

## [MS-RDPRFX]:

# Remote Desktop Protocol: RemoteFX Codec Extension

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# 1 Introduction

The Remote Desktop Protocol: RemoteFX Codec Extension is an extension to the Remote Desktop Protocol: Basic Connectivity and Graphics Remoting (as specified in [\[MS-RDPBCGR\]](#)). The RemoteFX Codec Extension specifies a lossy image codec that can be used to encode screen images by using efficient and effective compression.

Sections 1.5, 1.8, 1.9, 2, and 3 of this specification are normative. All other sections and examples in this specification are informative.

## 1.1 Glossary

This document uses the following terms:

**blit:** Also known as block image transfer. An operation in which a rectangular block of pixels in a source image is copied onto a destination image.

**discrete wavelet transform (DWT):** A mathematical procedure that can be used to derive a discrete representation of a signal.

**entropy coding:** A lossless data compression scheme used to generate compression codes for input symbols based on their statistical properties.

**inverse discrete wavelet transform (IDWT):** A mathematical procedure that can be used to reconstruct a signal without loss of information.

**little-endian:** Multiple-byte values that are byte-ordered with the least significant byte stored in the memory location with the lowest address.

**quantization:** A technique used to reduce a range of values to a single representative value.

**tile-based transform:** A transform technique in which an input image is segmented into a grid of disjoint tiles and the transform is then applied separately to each individual tile.

**YCbCr color space:** A color space where each color is represented as a triplet (Y,Cb,Cr), where Y stands for the Luma (brightness) component and Cb,Cr stand for the two Chroma (color) components.

**MAY, SHOULD, MUST, SHOULD NOT, MUST NOT:** These terms (in all caps) are used as defined in [\[RFC2119\]](#). All statements of optional behavior use either MAY, SHOULD, or SHOULD NOT.

## 1.2 References

Links to a document in the Microsoft Open Specifications library point to the correct section in the most recently published version of the referenced document. However, because individual documents in the library are not updated at the same time, the section numbers in the documents may not match. You can confirm the correct section numbering by checking the [Errata](#).

### 1.2.1 Normative References

We conduct frequent surveys of the normative references to assure their continued availability. If you have any issue with finding a normative reference, please contact [dochelp@microsoft.com](mailto:dochelp@microsoft.com). We will assist you in finding the relevant information.

[ARLGR] Malvar, H.S., "Adaptive Run-Length / Golomb-Rice Encoding of Quantized Generalized Gaussian Sources with Unknown Statistics", Proceedings of the Data Compression Conference, 2006 (DCC 2006) pp. 23 - 32, March 2006, <http://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=1607237>

[MS-RDPBCGR] Microsoft Corporation, "[Remote Desktop Protocol: Basic Connectivity and Graphics Remoting](#)".

[MS-RDPEGDI] Microsoft Corporation, "[Remote Desktop Protocol: Graphics Device Interface \(GDI\) Acceleration Extensions](#)".

[MS-RDPNSC] Microsoft Corporation, "[Remote Desktop Protocol: NSCodec Extension](#)".

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997, <http://www.rfc-editor.org/rfc/rfc2119.txt>

[T123] ITU-T, "Network-Specific Data Protocol Stacks for Multimedia Conferencing", Recommendation T.123, May 1999, <http://www.itu.int/rec/T-REC-T.123/en>

**Note** There is a charge to download the specification.

[T125] ITU-T, "Multipoint Communication Service Protocol Specification", Recommendation T.125, February 1998, <http://www.itu.int/rec/T-REC-T.125-199802-I/en>

**Note** There is a charge to download the specification.

[X224] ITU-T, "Information technology - Open Systems Interconnection - Protocol for Providing the Connection-Mode Transport Service", Recommendation X.224, November 1995, <http://www.itu.int/rec/T-REC-X.224-199511-I/en>

**Note** There is a charge to download the specification.

## 1.2.2 Informative References

None.

## 1.3 Protocol Overview (Synopsis)

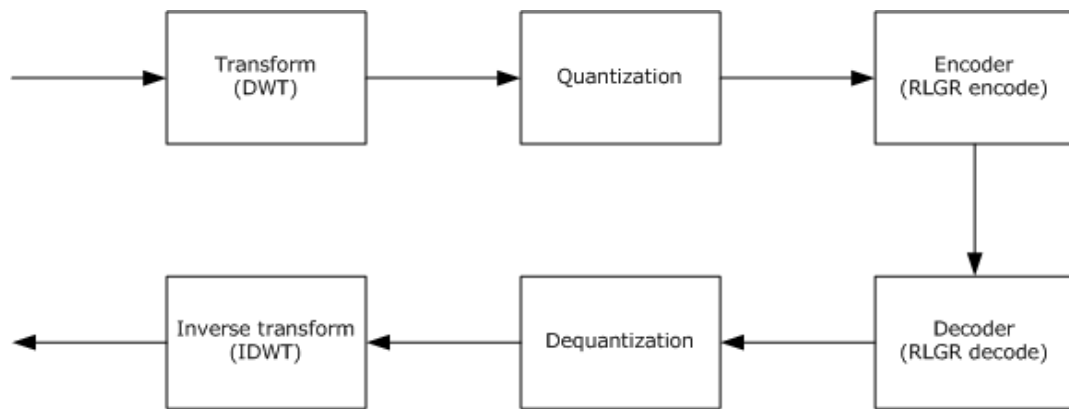
The Remote Desktop Protocol: RemoteFX Codec Extension reduces the bandwidth associated with desktop remoting by efficiently compressing images. This is achieved by using the RemoteFX codec. The following sections provide an overview of this codec.

### 1.3.1 RemoteFX Codec

One of the core requirements of desktop remoting is the ability to efficiently compress server-side screen images so that they can be transported over a network and displayed on a client screen. Any codec used for this purpose needs to be able to deliver effective compression (to reduce network bandwidth requirements) and operate with low-latency (to enable efficient interactions with remoted content). A typical desktop screen contains textual content (synthetic images) along with video and photographic content (natural images). Given the sensitivity of the human eye to the sharp features present in textual content, any applied compression has to be visually lossless; otherwise the text will appear blurred.

The RemoteFX codec has been designed to achieve efficient compression, satisfying the goals of high quality and low latency while using a modest amount of computing resources. It is a **tile-based transform** codec. The transform chosen was a **discrete wavelet transform (DWT)** because it enables superior compression performance when compressing textual bitmap regions at high quality. The **entropy coding** is performed using the Run-Length Golomb-Rice Coder (RLGR) ([\[ARLGR\]](#) section 3), which yields compression gains at relatively low computing requirements. The core functional blocks of the RemoteFX codec are shown in the following diagram.





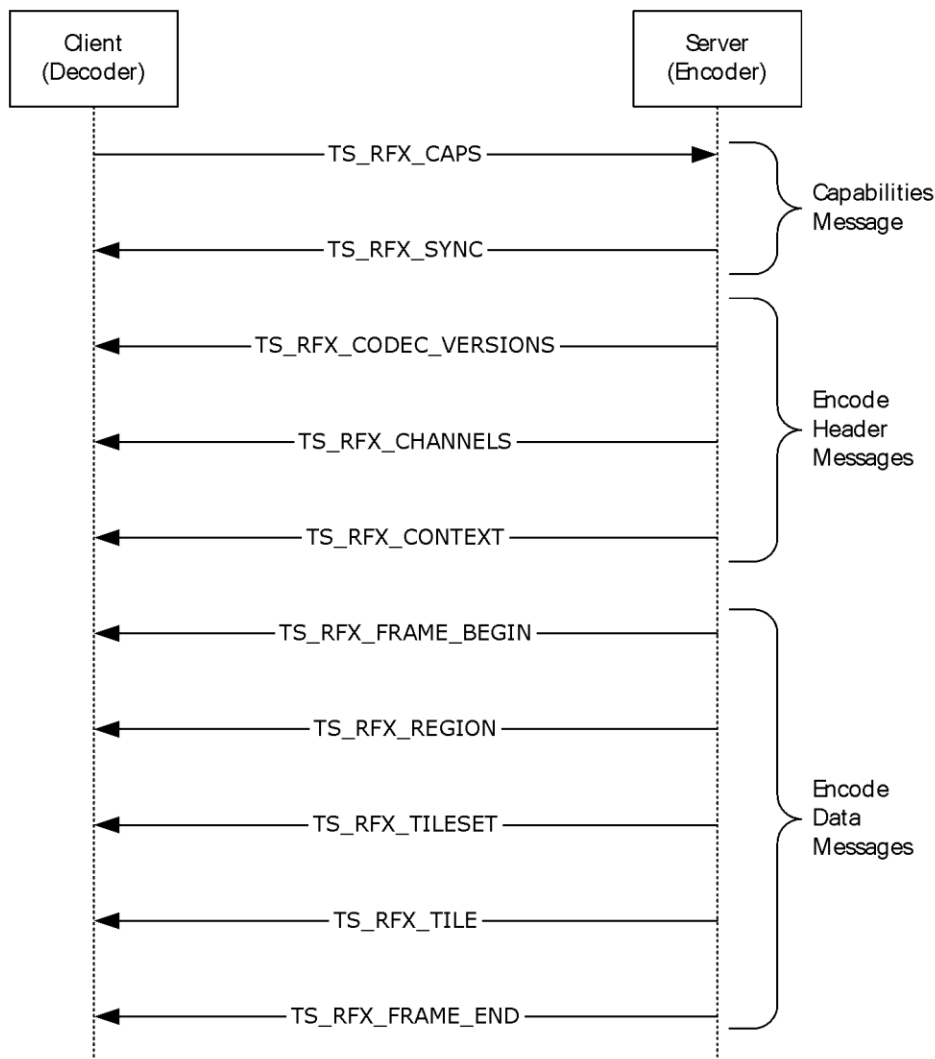
**Figure 1: Core functional blocks of the RemoteFX codec**

### 1.3.1.1 Message Flows

RemoteFX codec messages are transported in order over a lossless transport such as TCP/IP. The message syntax has been designed with this prerequisite.

There are two types of messages: (1) capability messages sent from the client to the server; and (2) encode stream messages sent from the server to the client. The encode stream messages can be broadly categorized as header or data messages. The syntax of each message is described in detail in section 2. Processing events and sequencing rules are described in section 3.

The message sequence is depicted in the following diagram. Note that the messages in this diagram are encapsulated in RDP wire structures (described in [MS-RDPBCGR] section 2.2) when sent on the wire – for the sake of simplicity only the RemoteFX messages are shown. The encapsulating RDP structures are referenced in sections 2 and 3 when describing the structure and processing of the RemoteFX messages.



**Figure 2: The RemoteFX message sequence**

The client initiates the session by sending a TS\_RFX\_CAPS Capabilities message (section [2.2.1.1](#)). This is the only message sent from the client to the server; it lists the client-side support and preferences for various RemoteFX codec properties.

The server initializes its encoding state based on the client Capabilities message. It starts the encoding stream (section [2.2.2](#)) by sending a sequence of Header Messages (section [2.2.2.2](#)) that inform the client of the RemoteFX properties selected by the server:

1. The TS\_RFX\_SYNC message (section [2.2.2.2.1](#)) contains the RemoteFX magic number and the version of the wire format.
2. The TS\_RFX\_CODEEC\_VERSIONS message (section [2.2.2.2.2](#)) contains the version of the RemoteFX codec.
3. The TS\_RFX\_CHANNELS message (section [2.2.2.2.3](#)) lists the channel or multi-monitor information.
4. The TS\_RFX\_CONTEXT message (section [2.2.2.2.4](#)) contains the encoding properties of the stream.

The header messages are followed by the Data messages (section [2.2.2.3](#)), which represent the sequence of encoded frames in the stream:

1. The TS\_RFX\_FRAME\_BEGIN and TS\_RFX\_FRAME\_END messages (sections [2.2.2.3.1](#) and [2.2.2.3.2](#) respectively) are used to demarcate an encoded frame.
2. The TS\_RFX\_REGION message (section [2.2.2.3.3](#)) contains the list of rectangles that have been encoded.
3. The TS\_RFX\_TILESET message (section [2.2.2.3.4](#)) encapsulates the list of tiles that have been encoded.

## 1.4 Relationship to Other Protocols

This protocol extends the Remote Desktop Protocol: Basic Connectivity and Graphics Remoting [[MS-RDPBCGR](#)] by adding advanced compression techniques.

## 1.5 Prerequisites/Preconditions

The following capabilities are mandatory when used with RemoteFX:

- The client MUST support fast-path graphics output ([\[MS-RDPBCGR\]](#) section 2.2.9.1.2) and acknowledge this support by specifying the FASTPATH\_OUTPUT\_SUPPORTED (0x0001) flag in the General Capability Set ([\[MS-RDPBCGR\]](#) section 2.2.7.1.1).
- The client MUST send the Multiframe Update Capability Set ([\[MS-RDPBCGR\]](#) section 2.2.7.2.6). The **MaxRequestSize** field in the client-to-server Multiframe Update Capability Set MUST be set to a value greater than or equal to the value in the **MaxRequestSize** field of the server-to-client Multiframe Update Capability Set. The client-to-server Multiframe Update Capability Set is transported in the Confirm Active PDU as specified in [\[MS-RDPBCGR\]](#) section 2.2.1.13.2, and the server-to-client Multiframe Update Capability Set is transported in the Demand Active PDU as specified in [\[MS-RDPBCGR\]](#) section 2.2.1.13.1.
- The client MUST send the Large Pointer Capability Set ([\[MS-RDPBCGR\]](#) section 2.2.7.2.7) and the LARGE\_POINTER\_FLAG\_96x96 (0x00000001) MUST be present in the **largePointerSupportFlags** field.
- If the Revision 2 Bitmap Cache Capability Set ([\[MS-RDPBCGR\]](#) section 2.2.7.1.4.2) is sent by the client, then the ALLOW\_CACHE\_WAITING\_LIST\_FLAG (0x0002) MUST be present in the **CacheFlags** field.
- The client MUST support the Stream Surface Bits Surface Command ([\[MS-RDPBCGR\]](#) section 2.2.9.2.2). Support for this surface command MUST be advertised in the Surface Commands Capability Set ([\[MS-RDPBCGR\]](#) section 2.2.7.2.9).
- The client MUST support a color depth of 32 bits per pixel. This means that the RNS\_UD\_32BPP\_SUPPORT (0x0008) flag must be set in the **supportedColorDepths** field of the Client Core Data structure ([\[MS-RDPBCGR\]](#) section 2.2.1.3.2).
- The client MUST support either the NSCodec Bitmap Codec ([\[MS-RDPNSC\]](#) sections 2 and 3) or the Planar Codec ([\[MS-RDPEGDI\]](#) sections 2.2.2.5.1 and 3.1.9) to handle server fallback scenarios.

The [TS\\_FRAME\\_ACKNOWLEDGE\\_CAPABILITYSET](#) (section 2.2.1.3) SHOULD<1> be sent by the client. Furthermore, if the **connectionType** field of the Client Core Data ([\[MS-RDPBCGR\]](#) section 2.2.1.3.2) is set to any value other than CONNECTION\_TYPE\_LAN (0x06), then the RemoteFX server SHOULD NOT<2> indicate that the RemoteFX codec is supported, that is, none of the TS\_BITMAPCODEC ([\[MS-RDPBCGR\]](#) section 2.2.7.2.10.1.1) structures included in the **bitmapCodecArray** field of the TS\_BITMAPCODECS ([\[MS-RDPBCGR\]](#) section 2.2.7.2.10) structure have the **codecGUID** field set to CODEC\_GUID\_REMOTEFX.

## 1.6 Applicability Statement

This protocol is applicable in situations in which it is necessary to optimize the bandwidth required for graphics remoting. The advanced compression techniques specified in this document enable the efficient transfer of server-side images and video.

## 1.7 Versioning and Capability Negotiation

This protocol builds on the basic Remote Desktop Protocol [\[MS-RDPBCGR\]](#). The features provided by this extension are negotiated during the capabilities negotiation phase of the RDP connection sequence (see [\[MS-RDPBCGR\]](#) section 1.3.1.1). In effect, this extension merely expands the set of capabilities used by the base RDP. (RDP versioning and capability negotiation is described in [\[MS-RDPBCGR\]](#) section 1.7.)

Some capabilities, which are specified as optional in [\[MS-RDPBCGR\]](#) section 2.2.7.2, are mandatory when used with RemoteFX. These capabilities are described in detail in section [2.1](#).

## 1.8 Vendor-Extensible Fields

None.

## 1.9 Standards Assignments

None.

## 2 Messages

### 2.1 Transport

This protocol is an extension to the Remote Desktop Protocol: Basic Connectivity and Graphics Remoting Specification and all packets are tunneled within the RDP transport ([\[MS-RDPBCGR\]](#) section 2.1).

### 2.2 Message Syntax

All multiple-byte fields within a message MUST be marshaled in **little-endian** byte order, unless otherwise specified.

#### 2.2.1 Capabilities Messages

##### 2.2.1.1 TS\_RFX\_CLNT\_CAPS\_CONTAINER

The TS\_RFX\_CLNT\_CAPS\_CONTAINER structure is the top-level client capability container that wraps a [TS\\_RFX\\_CAPS \(section 2.2.1.1.1\)](#) structure and is sent from the client to the server. It is encapsulated in the **codecProperties** field of the Bitmap Codec ([\[MS-RDPBCGR\]](#) section 2.2.7.2.10.1.1) structure, which is ultimately encapsulated in the Bitmap Codecs Capability Set ([\[MS-RDPBCGR\]](#) section 2.2.7.2.10), which is encapsulated in a client-to-server Confirm Active PDU ([\[MS-RDPBCGR\]](#) section 2.2.1.13.2).

|                     |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0                   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 |
| length              |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| captureFlags        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| capsLength          |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| capsData (variable) |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| ...                 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

**length (4 bytes):** A 32-bit, unsigned integer. Specifies the combined size, in bytes, of the **length**, **captureFlags**, **capsLength**, and **capsData** fields.

**captureFlags (4 bytes):** A 32-bit, unsigned integer. A collection of flags that allow a client to control how data is captured and transmitted by the server.

| Flag                                     | Meaning  |
|--|--|
| CARDP_CAPS_CAPTURE_NON_CAC<br>0x00000001 | The client supports mixing RemoteFX data with data compressed by other codecs. The set of other codecs supported by the client will be negotiated using the Bitmap Codecs Capability Set ( <a href="#">[MS-RDPBCGR]</a> section 2.2.7.2.10). |

**capsLength (4 bytes):** A 32-bit, unsigned integer. Specifies the size, in bytes, of the **capsData** field.

**capsData (variable):** A variable-sized field that contains a TS\_RFX\_CAPS (section 2.2.1.1.1) structure.

### 2.2.1.1.1 TS\_RFX\_CAPS

The TS\_RFX\_CAPS structure contains information about the decoder capabilities.

|                        |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |            |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|------------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 0                      | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16         | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |
| blockType              |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    | blockLen   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| ...                    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    | numCapsets |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| capsetsData (variable) |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |            |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| ...                    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |            |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

**blockType (2 bytes):** A 16-bit, unsigned integer. Specifies the data block type. This field MUST be set to CBY\_CAPS (0xCBC0).

**blockLen (4 bytes):** A 32-bit, unsigned integer. Specifies the combined size, in bytes, of the **blockType**, **blockLen**, and **numCapsets** fields. This field MUST be set to 0x0008.

**numCapsets (2 bytes):** A 16-bit, unsigned integer. Specifies the number of [TS\\_RFX\\_CAPSET \(section 2.2.1.1.1.1\)](#) structures contained in the **capsetsData** field. This field MUST be set to 0x0001.

**capsetsData (variable):** A variable-sized array of TS\_RFX\_CAPSET (section 2.2.1.1.1.1) structures. The structures in this array MUST be packed on byte boundaries. The **blockType** and **blockLen** fields of each TS\_RFX\_CAPSET structure identify the type and size of the structure.

#### 2.2.1.1.1.1 TS\_RFX\_CAPSET

The TS\_RFX\_CAPSET structure contains the capability information specific to the RemoteFX codec. It contains a variable number of [TS\\_RFX\\_ICAP \(section 2.2.1.1.1.1.1\)](#) structures that are used to configure the encoder state.

|           |   |   |   |   |   |   |   |                      |   |    |    |    |    |    |    |          |    |    |    |    |    |    |    |            |    |    |    |    |    |    |    |
|-----------|---|---|---|---|---|---|---|----------------------|---|----|----|----|----|----|----|----------|----|----|----|----|----|----|----|------------|----|----|----|----|----|----|----|
| 0         | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8                    | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16       | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24         | 25 | 26 | 27 | 28 | 29 | 30 | 31 |
| blockType |   |   |   |   |   |   |   |                      |   |    |    |    |    |    |    | blockLen |    |    |    |    |    |    |    |            |    |    |    |    |    |    |    |
| ...       |   |   |   |   |   |   |   |                      |   |    |    |    |    |    |    | codecId  |    |    |    |    |    |    |    | capsetType |    |    |    |    |    |    |    |
| ...       |   |   |   |   |   |   |   | numIcaps             |   |    |    |    |    |    |    |          |    |    |    |    |    |    |    | icapLen    |    |    |    |    |    |    |    |
| ...       |   |   |   |   |   |   |   | icapsData (variable) |   |    |    |    |    |    |    |          |    |    |    |    |    |    |    |            |    |    |    |    |    |    |    |
| ...       |   |   |   |   |   |   |   |                      |   |    |    |    |    |    |    |          |    |    |    |    |    |    |    |            |    |    |    |    |    |    |    |

**blockType (2 bytes):** A 16-bit, unsigned integer. Specifies the data block type. This field MUST be set to CBY\_CAPSET (0xCBC1).

**blockLen (4 bytes):** A 32-bit, unsigned integer. Specifies the combined size, in bytes, of the **blockType**, **blockLen**, **codecId**, **capsetType**, **numIcaps**, **icapLen**, and **icapsData** fields.

**codecId (1 byte):** An 8-bit, unsigned integer. Specifies the codec ID. This field MUST be set to 0x01.

**capsetType (2 bytes):** A 16-bit, unsigned integer. This field MUST be set to CLY\_CAPSET (0xCFC0).

**numIcaps (2 bytes):** A 16-bit, unsigned integer. The number of TS\_RFX\_ICAP structures contained in the **icapsData** field.

**icapLen (2 bytes):** A 16-bit, unsigned integer. Specifies the size, in bytes, of each TS\_RFX\_ICAP structure contained in the **icapsData** field.

**icapsData (variable):** A variable-length array of TS\_RFX\_ICAP (section 2.2.1.1.1.1.1) structures. Each structure MUST be packed on byte boundaries. The size of each TS\_RFX\_ICAP structure within the array is specified in the **icapLen** field.

### 2.2.1.1.1.1.1 TS\_RFX\_ICAP

The TS\_RFX\_ICAP structure specifies the set of codec properties that the decoder supports.

|         |   |   |   |   |   |   |   |             |   |    |    |    |    |    |    |               |    |    |    |    |    |    |    |             |    |    |    |    |    |    |    |
|---------|---|---|---|---|---|---|---|-------------|---|----|----|----|----|----|----|---------------|----|----|----|----|----|----|----|-------------|----|----|----|----|----|----|----|
| 0       | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8           | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16            | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24          | 25 | 26 | 27 | 28 | 29 | 30 | 31 |
| version |   |   |   |   |   |   |   |             |   |    |    |    |    |    |    | tileSize      |    |    |    |    |    |    |    |             |    |    |    |    |    |    |    |
| flags   |   |   |   |   |   |   |   | colConvBits |   |    |    |    |    |    |    | transformBits |    |    |    |    |    |    |    | entropyBits |    |    |    |    |    |    |    |

**version (2 bytes):** A 16-bit, unsigned integer. Specifies the codec version. This field MUST be set to CLW\_VERSION\_1\_0 (0x0100), to indicate protocol version 1.0.

**tileSize (2 bytes):** A 16-bit, signed integer. Specifies the width and height of a tile. This field MUST be set to CT\_TILE\_64x64 (0x0040), indicating that a tile is 64 x 64 pixels.

**flags (1 byte):** An 8-bit, unsigned integer. Specifies operational flags.

| Flag               | Meaning  |
|--------------------|--|
| CODEC_MODE<br>0x02 | When this flag is set, it indicates that only image mode is supported by the decoder, and therefore, the codec MUST operate in image mode. When this flag is not set, it indicates that both the image mode and the video mode of the codec are supported by the decoder and the codec MUST operate in video mode. |

When operating in image mode, the encode headers messages (section 2.2.2.2) MUST always precede an encoded frame. When operating in video mode, the header messages MUST be present at the beginning of the stream and are optional elsewhere.

**colConvBits (1 byte):** An 8-bit, unsigned integer. Specifies the color conversion transform. This field MUST be set to CLW\_COL\_CONV\_ICT (0x1), and the transformation is by the equations in sections 3.1.8.1.3 and 3.1.8.2.5.

**transformBits (1 byte):** An 8-bit, unsigned integer. Specifies the **DWT**. This field MUST be set to CLW\_XFORM\_DWT\_53\_A (0x1), the DWT transform given by the lifting equations for the DWT shown in section 3.1.8.1.4 and by the lifting equations for the inverse DWT shown in section 3.1.8.2.4.

**entropyBits (1 byte):** An 8-bit, unsigned integer. Specifies the entropy algorithm. This field MUST be set to one of the following values.

| Value                     | Meaning  |
|---------------------------|--|
| CLW_ENTROPY_RLGR1<br>0x01 | RLGR algorithm as described in <a href="#">3.1.8.1.7.1</a> .         |
| CLW_ENTROPY_RLGR3<br>0x04 | RLGR algorithm as described in section <a href="#">3.1.8.1.7.2</a> . |

### 2.2.1.2 TS\_RFX\_SRVR\_CAPS\_CONTAINER

The TS\_RFX\_SRVR\_CAPS\_CONTAINER structure is the top-level server capability container, which is sent from the server to the client. It is encapsulated in the **codecProperties** field of the Bitmap Codec structure ([\[MS-RDPBCGR\] section 2.2.7.2.10.1.1](#)), which is ultimately encapsulated in the Bitmap Codecs Capability Set ([\[MS-RDPBCGR\] section 2.2.7.2.10](#)). The Bitmap Codecs Capability Set is encapsulated in a server-to-client Demand Active PDU ([\[MS-RDPBCGR\] section 2.2.1.13.1](#)).

|                     |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0                   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3 | 0 | 1 |
| reserved (variable) |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| ...                 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

**reserved (variable):** A variable-sized array of bytes. All the bytes in this field MUST be set to 0. The size of the field is given by the corresponding **codecPropertiesLength** field of the parent TS\_BITMAPCODEC, as specified in [\[MS-RDPBCGR\] section 2.2.7.2.10.1.1](#) Bitmap Codecs Capability Set.

### 2.2.1.3 TS\_FRAME\_ACKNOWLEDGE\_CAPABILITYSET

The TS\_FRAME\_ACKNOWLEDGE\_CAPABILITYSET structure advertises support for frame acknowledgment using the [TS\\_FRAME\\_ACKNOWLEDGE\\_PDU \(section 2.2.3.1\)](#) structure. This capability is sent by both the client and the server and is encapsulated in a server-to-client Demand Active PDU ([\[MS-RDPBCGR\] section 2.2.1.13.1](#)) or a client-to-server Confirm Active PDU ([\[MS-RDPBCGR\] section 2.2.1.13.2](#)).

|                             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|-----------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0                           | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1 | 0 | 1 | 2 | 3 | 4 | 5                | 6 | 7 | 8 | 9 | 2 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3 | 0 | 1 |
| capabilitySetType           |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | lengthCapability |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| maxUnacknowledgedFrameCount |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

**capabilitySetType (2 bytes):** A 16-bit unsigned integer. The type of capability set. This field MUST be set to CAPSETTYPE\_FRAME\_ACKNOWLEDGE (0x001E).

**lengthCapability (2 bytes):** A 16-bit unsigned integer. The length, in bytes, of the capability data.

**maxUnacknowledgedFrameCount (4 bytes):** A 32-bit unsigned integer. When sent by the server, it MAY be set to 0, in which case it simply advertises the server's ability to receive and process the TS\_FRAME\_ACKNOWLEDGE\_PDU (section 2.2.3.1). If it is not set to 0, it can be used by the client as a hint that indicates the number of in-flight TS\_FRAME\_ACKNOWLEDGE\_PDUs that the server is prepared to accept. When sent by the client, it provides a hint to the server as to how many in-



flight frames the client can buffer. Note that if the server chooses to have more in-flight frames than this number specifies, it is possible that the client could be overloaded with frame data. The client MAY set this field to 0, but this behavior SHOULD be avoided because it provides very little information to the server other than that the client acknowledges frames.

## 2.2.2 Encode Messages

An encoded RemoteFX stream comprises a sequence of encode messages. The sequencing and encapsulation of these messages are described in section [3.1.8.3.1](#).

### 2.2.2.1 Common Data Types

#### 2.2.2.1.1 TS\_RFX\_BLOCKT

The TS\_RFX\_BLOCKT structure identifies the type of an encode message and specifies the size of the message.

|           |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |          |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|-----------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 0         | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16       | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |
| blockType |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    | blockLen |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| ...       |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |          |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

**blockType (2 bytes):** A 16-bit, unsigned integer. Specifies the data block type. This field MUST be set to one of the following values.

| Value                         | Meaning  |
|-------------------------------|--|
| CBT_TILE<br>0xCAC3            | A TS_RFX_TILE (section <a href="#">2.2.2.3.4.1</a> ) structure.          |
| CBY_CAPS<br>0xCBC0            | A TS_RFX_CAPS (section <a href="#">2.2.1.1.1</a> ) structure.            |
| CBY_CAPSET<br>0xCBC1          | A TS_RFX_CAPSET (section <a href="#">2.2.1.1.1.1</a> ) structure.        |
| WBT_SYNC<br>0xCCC0            | A TS_RFX_SYNC (section <a href="#">2.2.2.2.1</a> ) structure.            |
| WBT_CODEEC_VERSIONS<br>0xCCC1 | A TS_RFX_CODEEC_VERSIONS (section <a href="#">2.2.2.2.2</a> ) structure. |
| WBT_CHANNELS<br>0xCCC2        | A TS_RFX_CHANNELS (section <a href="#">2.2.2.2.3</a> ) structure.        |

**blockLen (4 bytes):** A 32-bit, unsigned integer. Specifies the size, in bytes, of the data block. This size includes the size of the **blockType** and **blockLen** fields, as well as all trailing data.

#### 2.2.2.1.2 TS\_RFX\_CODEEC\_CHANNELT

The TS\_RFX\_CODEEC\_CHANNELT structure is an extension of the TS\_RFX\_BLOCKT structure. It is present as the first field in messages that are targeted for a specific combination of codec and channel.

|           |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |          |   |   |   |           |   |   |   |   |   |   |   |   |   |   |   |
|-----------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----------|---|---|---|-----------|---|---|---|---|---|---|---|---|---|---|---|
| 0         | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6        | 7 | 8 | 9 | 0         | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 |
| blockType |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | blockLen |   |   |   |           |   |   |   |   |   |   |   |   |   |   |   |
| ...       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | codecId  |   |   |   | channelId |   |   |   |   |   |   |   |   |   |   |   |

**blockType (2 bytes):** A 16-bit, unsigned integer. Specifies the data block type. This field MUST be set to one of the following values.

| Value                     | Meaning   |
|---------------------------|---|
| WBT_CONTEXT<br>0xCCC3     | A <a href="#">TS_RFX_CONTEXT (section 2.2.2.2.4)</a> structure.     |
| WBT_FRAME_BEGIN<br>0xCCC4 | A <a href="#">TS_RFX_FRAME_BEGIN (section 2.2.2.3.1)</a> structure. |
| WBT_FRAME_END<br>0xCCC5   | A <a href="#">TS_RFX_FRAME_END (section 2.2.2.3.2)</a> structure.   |
| WBT_REGION<br>0xCCC6      | A <a href="#">TS_RFX_REGION (section 2.2.2.3.3)</a> structure.      |
| WBT_EXTENSION<br>0xCCC7   | A <a href="#">TS_RFX_TILESET (section 2.2.2.3.4)</a> structure.     |

**blockLen (4 bytes):** A 32-bit, unsigned integer. Specifies the size, in bytes, of the data block. This size includes the size of the **blockType**, **blockLen**, **codecId**, and **channelId** fields, as well as all trailing data.

**codecId (1 byte):** An 8-bit, unsigned integer. Specifies the codec ID. This field MUST be set to 0x01.

**channelId (1 byte):** An 8-bit, unsigned integer. Specifies the channel ID. If the **blockType** is set to WBT\_CONTEXT (0xCCC3), then **channelId** MUST be set to 0xFF. For all other values of **blockType**, **channelId** MUST be set to 0x00.

### 2.2.2.1.3 TS\_RFX\_CHANNELT

The TS\_RFX\_CHANNELT structure is used to specify the screen resolution of a channel.

|           |   |   |   |   |   |   |   |       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |
|-----------|---|---|---|---|---|---|---|-------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--------|---|---|---|---|---|---|---|
| 0         | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8     | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4      | 5 | 6 | 7 | 8 | 9 | 0 | 1 |
| channelId |   |   |   |   |   |   |   | width |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | height |   |   |   |   |   |   |   |
| ...       |   |   |   |   |   |   |   |       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |

**channelId (1 byte):** An 8-bit, unsigned integer. Specifies the identifier of the channel. This field MUST be set to 0x00.

**width (2 bytes):** A 16-bit, signed integer. Specifies the frame width of the channel. This field SHOULD [<3>](#) be within the range of 1 to 4096 (inclusive).

**height (2 bytes):** A 16-bit, signed integer. Specifies the frame height of the channel. This field SHOULD [<4>](#) be within the range of 1 to 2048 (inclusive).

### 2.2.2.1.4 TS\_RFX\_CODEC\_VERSIONT

The TS\_RFX\_CODEC\_VERSIONT structure is used to specify support for a specific version of the RemoteFX codec.

|         |   |   |   |   |   |   |   |   |   |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---------|---|---|---|---|---|---|---|---|---|---------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0       | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0       | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 |
| codecId |   |   |   |   |   |   |   |   |   | version |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

**codecId (1 byte):** An 8-bit, unsigned integer. Specifies the codec ID. This field MUST be set to 0x01. The decoder SHOULD ignore this field.

**version (2 bytes):** A 16-bit, signed integer. This field MUST be set to 0x0100. The decoder SHOULD ignore this field.

### 2.2.2.1.5 TS\_RFX\_CODEC\_QUANT

The TS\_RFX\_CODEC\_QUANT structure holds the scalar **quantization** values for the ten sub-bands in the 3-level **DWT** decomposition. Each field in this structure MUST have a value in the range of 6 to 15.

|     |   |   |   |     |   |   |   |     |   |   |   |     |   |   |   |     |   |   |   |     |   |   |   |     |   |   |   |     |   |   |   |
|-----|---|---|---|-----|---|---|---|-----|---|---|---|-----|---|---|---|-----|---|---|---|-----|---|---|---|-----|---|---|---|-----|---|---|---|
| 0   | 1 | 2 | 3 | 4   | 5 | 6 | 7 | 8   | 9 | 0 | 1 | 2   | 3 | 4 | 5 | 6   | 7 | 8 | 9 | 0   | 1 | 2 | 3 | 4   | 5 | 6 | 7 | 8   | 9 | 0 | 1 |
| LL3 |   |   |   | LH3 |   |   |   | HL3 |   |   |   | HH3 |   |   |   | LH2 |   |   |   | HL2 |   |   |   | HH2 |   |   |   | LH1 |   |   |   |
| HL1 |   |   |   | HH1 |   |   |   |     |   |   |   |     |   |   |   |     |   |   |   |     |   |   |   |     |   |   |   |     |   |   |   |

**LL3 (4 bits):** A 4-bit, unsigned integer. The LL quantization factor for the level-3 DWT sub-band.

**LH3 (4 bits):** A 4-bit, unsigned integer. The LH quantization factor for the level-3 DWT sub-band.

**HL3 (4 bits):** A 4-bit, unsigned integer. The HL quantization factors for the level-3 DWT sub-band.

**HH3 (4 bits):** A 4-bit, unsigned integer. The HH quantization factors for the level-3 DWT sub-band.

**LH2 (4 bits):** A 4-bit, unsigned integer. The LH quantization factor for the level-2 DWT sub-band.

**HL2 (4 bits):** A 4-bit, unsigned integer. The HL quantization factor for the level-2 DWT sub-band.

**HH2 (4 bits):** A 4-bit, unsigned integer. The HH quantization factor for the level-2 DWT sub-band.

**LH1 (4 bits):** A 4-bit, unsigned integer. The LH quantization factors for the level-1 DWT sub-band.

**HL1 (4 bits):** A 4-bit, unsigned integer. The HL quantization factors for the level-1 DWT sub-band.

**HH1 (4 bits):** A 4-bit, unsigned integer. The HH quantization factor for the level-1 DWT sub-band.

### 2.2.2.1.6 TS\_RFX\_RECT

The TS\_RFX\_RECT structure is used to specify a rectangle.

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--|--|--|--|
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 |  |  |  |  |
| x |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | y |   |   |   |   |   |   |   |   |   |   |   |   |   |  |  |  |  |

|       |        |
|-------|--------|
| width | height |
|-------|--------|

**x (2 bytes):** A 16-bit, unsigned integer. The X-coordinate of the rectangle.

**y (2 bytes):** A 16-bit, unsigned integer. The Y-coordinate of the rectangle.

**width (2 bytes):** A 16-bit, unsigned integer. The width of the rectangle.

**height (2 bytes):** A 16-bit, unsigned integer. The height of the rectangle.

## 2.2.2.2 Encode Header Messages

### 2.2.2.2.1 TS\_RFX\_SYNC

The TS\_RFX\_SYNC message MUST be the first message in any encoded stream. The decoder MUST examine this message to determine whether the protocol version is supported.

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0      | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6       | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 |
| BlockT |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| ...    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | magic   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| ...    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | version |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

**BlockT (6 bytes):** A [TS\\_RFX\\_BLOCKT \(section 2.2.2.1.1\)](#) structure. The **blockType** field MUST be set to WBT\_SYNC (0xCCCC0).

**magic (4 bytes):** A 32-bit, unsigned integer. This field MUST be set to WF\_MAGIC (0xCACCACCA).

**version (2 bytes):** A 16-bit, unsigned integer. Indicates the version number. This field MUST be set to WF\_VERSION\_1\_0 (0x0100).

### 2.2.2.2.2 TS\_RFX\_CODECS\_VERSIONS

The TS\_RFX\_CODECS\_VERSIONS message indicates the version of the RemoteFX codec that is being used.

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |           |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------|---|---|---|---|---|---|---|--------|---|---|---|---|---|---|---|
| 0      | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6         | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4      | 5 | 6 | 7 | 8 | 9 | 0 | 1 |
| BlockT |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |           |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |
| ...    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | numCodecs |   |   |   |   |   |   |   | codecs |   |   |   |   |   |   |   |
| ...    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |           |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |

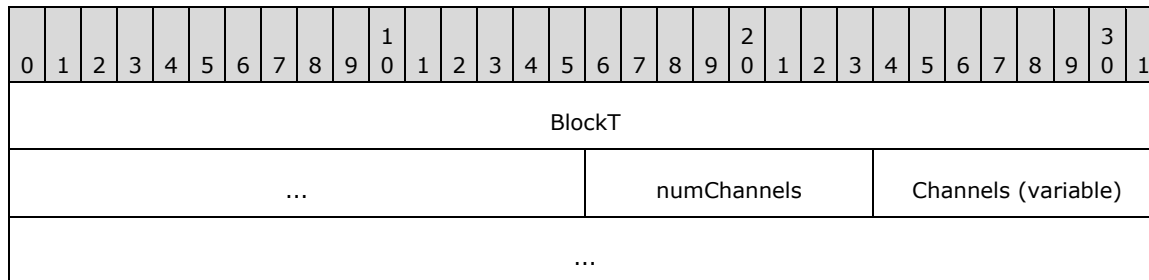
**BlockT (6 bytes):** A [TS\\_RFX\\_BLOCKT \(section 2.2.2.1.1\)](#) structure. The **blockType** field MUST be set to WBT\_CODECS\_VERSIONS (0xCCC1).

**numCodecs (1 byte):** An 8-bit, unsigned integer. Specifies the number of codec version data blocks in the **codecs** field. This field MUST be set to 0x01.

**codecs (3 bytes):** A [TS\\_RFX\\_CODEC\\_VERSIONT \(section 2.2.2.1.4\)](#) structure. The **codecId** field MUST be set to 0x01 and the **version** field MUST be set to WF\_VERSION\_1\_0 (0x0100).

### 2.2.2.2.3 TS\_RFX\_CHANNELS

The TS\_RFX\_CHANNELS message contains the list of channels. Each active monitor on the server must correspond to an entry in this list. The list can have more entries than the number of active monitors. The decoder endpoint MUST be able to support channels with different frame dimensions.



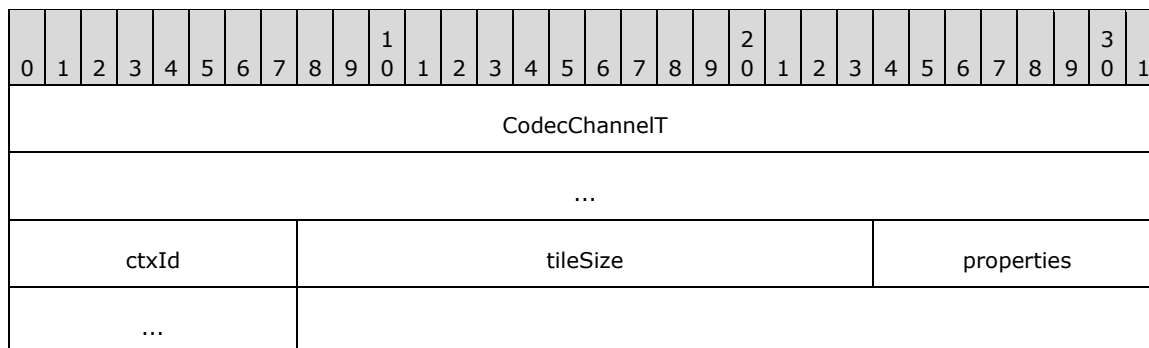
**BlockT (6 bytes):** A [TS\\_RFX\\_BLOCKT \(section 2.2.2.1.1\)](#) structure. The **blockType** field MUST be set to WBT\_CHANNELS (0xCCC2).

**numChannels (1 byte):** An 8-bit, unsigned integer. Specifies the number of channel data blocks in the **channels** field.

**Channels (variable):** A variable-length array of [TS\\_RFX\\_CHANNELT \(section 2.2.2.1.3\)](#) structures. The number of elements in this array is specified in the **numChannels** field.

### 2.2.2.2.4 TS\_RFX\_CONTEXT

The TS\_RFX\_CONTEXT message contains information regarding the encoding properties being used.



**CodecChannelT (8 bytes):** A [TS\\_RFX\\_CODEC\\_CHANNELT](#) structure. The **blockType** field MUST be set to WBT\_CONTEXT (0xCCC3).

**ctxId (1 byte):** An 8-bit unsigned integer. Specifies an identifier for this context message. This field MUST be set to 0x00. The decoder SHOULD ignore this field.

**tileSize (2 bytes):** A 16-bit unsigned integer. Specifies the tile size used by the RemoteFX codec. This field MUST be set to CT\_TILE\_64x64 (0x0040), indicating that a tile is 64 x 64 pixels.

**properties (2 bytes):** A 16-bit unsigned integer. Contains a collection of bit-packed property fields. The format of this field is described by the following bitfield diagram.

|       |   |   |     |   |     |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|-------|---|---|-----|---|-----|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 0     | 1 | 2 | 3   | 4 | 5   | 6 | 7 | 8 | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |
| flags |   |   | cct |   | xft |   |   |   | et |    |    |    | qt |    | r  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

**flags (3 bits):** A 3-bit unsigned integer. Specifies operational flags.

| Flag               | Meaning  |
|--------------------|--|
| CODEC_MODE<br>0x02 | The codec is operating in image mode. If this flag is not set, the codec is operating in video mode. |

When operating in image mode, the Encode Headers messages (section [2.2.2.2](#)) MUST always precede an encoded frame. When operating in video mode, the header messages MUST be present at the beginning of the stream and MAY be present elsewhere.

**cct (2 bits):** A 2-bit unsigned integer. Specifies the color conversion transform. This field MUST be set to COL\_CONV\_ICT (0x1) to specify the transform defined by the equations in sections [3.1.8.1.3](#) and [3.1.8.2.5](#). The decoder SHOULD ignore this field.

**xft (4 bits):** A 4-bit unsigned integer. Specifies the **DWT**. This field MUST be set to CLW\_XFORM\_DWT\_53\_A (0x1), which indicates the DWT given by the equations in sections [3.1.8.1.4](#) and [3.1.8.2.4](#).

**et (4 bits):** A 4-bit unsigned integer. Specifies the entropy algorithm. This field MUST be set to one of the following values.

| Value                     | Meaning   |
|---------------------------|---|
| CLW_ENTROPY_RLGR1<br>0x01 | RLGR algorithm as detailed in <a href="#">3.1.8.1.7.1</a> . |
| CLW_ENTROPY_RLGR3<br>0x04 | RLGR algorithm as detailed in <a href="#">3.1.8.1.7.2</a> . |

The decoder SHOULD ignore this value and use the value defined in the properties field of TS\_RFX\_TILESET (section [2.2.2.3.4](#)).

**qt (2 bits):** A 2-bit unsigned integer. Specifies the **quantization** type. This field MUST be set to SCALAR\_QUANTIZATION (0x1). The decoder SHOULD ignore this field.

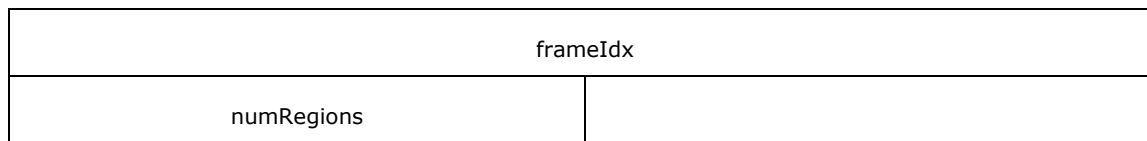
**r (1 bit):** A 1-bit field reserved for future use. This field MUST be ignored when received.

## 2.2.2.3 Encode Data Messages

### 2.2.2.3.1 TS\_RFX\_FRAME\_BEGIN

The TS\_RFX\_FRAME\_BEGIN message indicates the start of a new frame for a specific channel in the encoded stream.

|                |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|----------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 0              | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |
| CodecChannelIT |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| ...            |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |



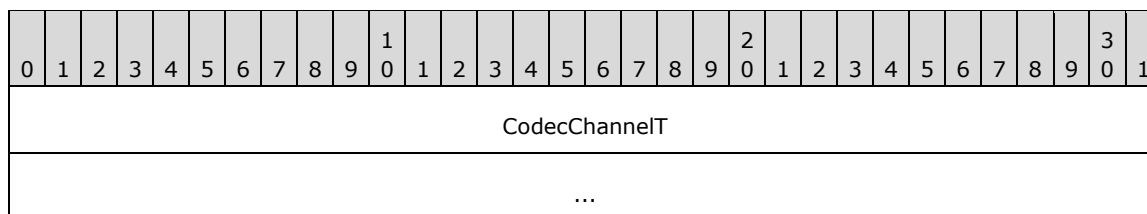
**CodecChannelT (8 bytes):** A [TS\\_RFX\\_CODEC\\_CHANNELT \(section 2.2.2.1.2\)](#) structure. The **blockType** field MUST be set to WBT\_FRAME\_BEGIN (0xCCC4).

**frameIdx (4 bytes):** A 32-bit unsigned integer. Specifies the index of the frame in the current video sequence. This field is used when the codec is operating in video mode, as specified using the **flags** field of the [TS\\_RFX\\_CONTEXT \(section 2.2.2.2.4\)](#) message. If the codec is operating in image mode, this field MUST be ignored. If the codec is operating in video mode, this field SHOULD be ignored.

**numRegions (2 bytes):** A 16-bit signed integer. Specifies the number of [TS\\_RFX\\_REGION \(section 2.2.2.3.3\)](#) messages following this TS\_RFX\_FRAME\_BEGIN message. That is, the number of regions in the frame.

### 2.2.2.3.2 TS\_RFX\_FRAME\_END

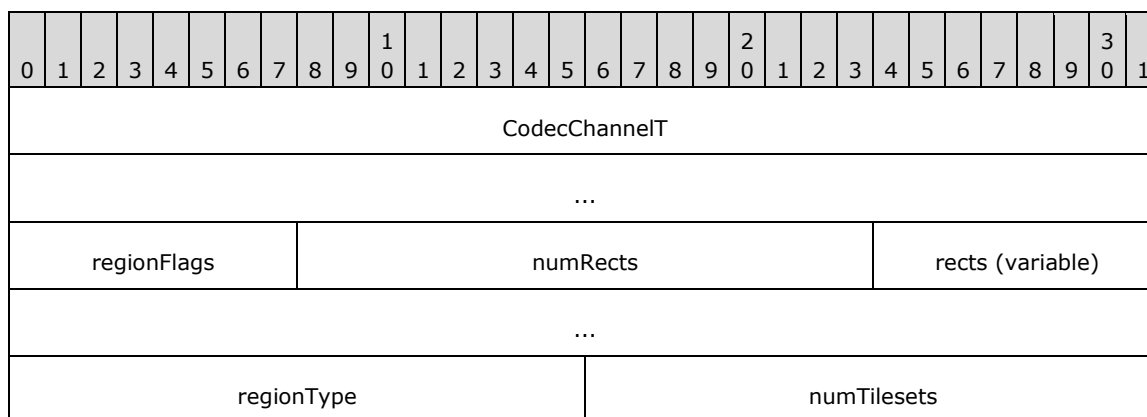
The TS\_RFX\_FRAME\_END message specifies the end of a frame for a specific channel in the encoded stream.



**CodecChannelT (8 bytes):** A [TS\\_RFX\\_CODEC\\_CHANNELT \(section 2.2.2.1.2\)](#) structure. The **blockType** field MUST be set to WBT\_FRAME\_END (0xCCC5).

### 2.2.2.3.3 TS\_RFX\_REGION

The TS\_RFX\_REGION message contains information about the list of change rectangles on the screen for a specific channel. It also specifies the number of trailing [TS\\_RFX\\_TILESET \(section 2.2.2.3.4\)](#) messages.



**CodecChannelT (8 bytes):** A [TS\\_RFX\\_CODEC\\_CHANNELT \(section 2.2.2.1.2\)](#) structure. The **blockType** field MUST be set to WBT\_REGION (0xCCC6).

**regionFlags (1 byte):** An 8-bit, unsigned integer. Contains a collection of bit-packed property fields. The format of this field is described by the following bitfield diagram.

|     |   |          |   |   |   |   |   |
|-----|---|----------|---|---|---|---|---|
| 0   | 1 | 2        | 3 | 4 | 5 | 6 | 7 |
| lrf |   | reserved |   |   |   |   |   |

**lrf (1 bit):** A 1-bit unsigned integer. This field MUST be set to 0x1. The decoder SHOULD ignore this field.

**reserved (7 bits):** A 7-bit integer reserved for future use. This field MUST be ignored.

**numRects (2 bytes):** A 16-bit, unsigned integer. Specifies the number of [TS\\_RFX\\_RECT \(section 2.2.2.1.6\)](#) structures present in the **rects** field. If this value is zero, the decoder MUST generate a rectangle with coordinates (0, 0, width, height) that reflects the width and height of the channel's frame (section [2.2.2.1.3](#)).

**rects (variable):** A variable-length array of TS\_RFX\_RECT (section 2.2.2.1.6) structures. This array defines the region. The number of rectangles in the array is specified in the **numRects** field. Processing rules for the rectangles in this array are specified in section [3.1.8.2.6](#).

**regionType (2 bytes):** A 16-bit, unsigned integer. Specifies the region type. This field MUST be set to CBT\_REGION (0xCAC1).

**numTilesets (2 bytes):** A 16-bit, unsigned integer. Specifies the number of TS\_RFX\_TILESET (section 2.2.2.3.4) messages following this TS\_RFX\_REGION message. This field MUST be set to 0x0001.

### 2.2.2.3.4 TS\_RFX\_TILESET

The TS\_RFX\_TILESET message contains encoding parameters and data for an arbitrary number of encoded tiles.

|                  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                      |   |   |   |   |   |   |   |          |   |   |   |   |   |   |   |
|------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----------------------|---|---|---|---|---|---|---|----------|---|---|---|---|---|---|---|
| 0                | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6                    | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4        | 5 | 6 | 7 | 8 | 9 | 0 | 1 |
| CodecChannelT    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                      |   |   |   |   |   |   |   |          |   |   |   |   |   |   |   |
| ...              |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                      |   |   |   |   |   |   |   |          |   |   |   |   |   |   |   |
| subtype          |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | idx                  |   |   |   |   |   |   |   |          |   |   |   |   |   |   |   |
| properties       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | numQuant             |   |   |   |   |   |   |   | tileSize |   |   |   |   |   |   |   |
| numTiles         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | tilesDataSize        |   |   |   |   |   |   |   |          |   |   |   |   |   |   |   |
| ...              |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | quantVals (variable) |   |   |   |   |   |   |   |          |   |   |   |   |   |   |   |
| ...              |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                      |   |   |   |   |   |   |   |          |   |   |   |   |   |   |   |
| tiles (variable) |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                      |   |   |   |   |   |   |   |          |   |   |   |   |   |   |   |
| ...              |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                      |   |   |   |   |   |   |   |          |   |   |   |   |   |   |   |



**CodecChannelT (8 bytes):** A [TS\\_RFX\\_CODEC\\_CHANNELT \(section 2.2.2.1.2\)](#) structure. The **blockType** field MUST be set to WBT\_EXTENSION (0xCCC7).

**subtype (2 bytes):** A 16-bit, unsigned integer. Specifies the message type. This field MUST be set to CBT\_TILESET (0xCAC2).

**idx (2 bytes):** A 16-bit, unsigned integer. Specifies the identifier of the TS\_RFX\_CONTEXT (section [2.2.2.2.4](#)) message referenced by this TileSet message. This field MUST be set to 0x0000. The decoder SHOULD ignore this field.

**properties (2 bytes):** A 16-bit unsigned integer. Contains a collection of bit-packed property fields. The format of this field is described by the following bitmask diagram.

|   |       |   |   |     |   |     |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|---|-------|---|---|-----|---|-----|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 0 | 1     | 2 | 3 | 4   | 5 | 6   | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |
| A | flags |   |   | cct |   | xft |   |   |   | et |    |    |    | qt |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

**A - It (1 bit):** A 1-bit field that specifies whether this is the last TS\_RFX\_TILESET in the region. This field MUST be set to TRUE (0x1). The decoder SHOULD ignore this field.

**flags (3 bits):** A 3-bit unsigned integer. Specifies operational flags.

| Flag               | Meaning  |
|--------------------|--|
| CODEC_MODE<br>0x02 | The codec is operating in image mode. If this flag is not set, the codec is operating in video mode. |

The encoder MUST set this value to the value of flags that is set in the properties field of TS\_RFX\_CONTEXT. The decoder MUST ignore this flag and MUST use the flags specified in the **flags** field of the TS\_RFX\_CONTEXT.

**cct (2 bits):** A 2-bit unsigned integer. Specifies the color conversion transform. This field MUST be set to COL\_CONV\_ICT (0x1) to specify the transform defined by the equations in sections [3.1.8.1.3](#) and [3.1.8.2.5](#). The decoder SHOULD ignore this field.

**xft (4 bits):** A 4-bit unsigned integer. Specifies the **DWT**. This field MUST be set to CLW\_XFORM\_DWT\_53\_A (0x1), which indicates the DWT given by the equations in sections [3.1.8.1.4](#) and [3.1.8.2.4](#). The decoder SHOULD ignore this field.

**et (4 bits):** A 4-bit unsigned integer. Specifies the entropy algorithm. This field MUST be set to one of the following values.

| Value                     | Meaning   |
|---------------------------|---|
| CLW_ENTROPY_RLGR1<br>0x01 | RLGR algorithm as detailed in <a href="#">3.1.8.1.7.1</a> . |
| CLW_ENTROPY_RLGR3<br>0x04 | RLGR algorithm as detailed in <a href="#">3.1.8.1.7.2</a> . |

**qt (2 bits):** A 2-bit unsigned integer. Specifies the **quantization** type. This field MUST be set to SCALAR\_QUANTIZATION (0x1). The decoder SHOULD ignore this field.

**numQuant (1 byte):** An 8-bit, unsigned integer. Specifies the number of TS\_RFX\_CODEC\_QUANT (section [2.2.2.1.5](#)) structures present in the **quantVals** field.

**tileSize (1 byte):** An 8-bit, unsigned integer. Specifies the width and height of a tile. This field MUST be set to 0x40. The decoder SHOULD ignore this field.

**numTiles (2 bytes):** A 16-bit, unsigned integer. Specifies the number of TS\_RFX\_TILE (section 2.2.2.3.4.1) structures present in the **tiles** field.

**tilesDataSize (4 bytes):** A 32-bit, unsigned integer. Specifies the size, in bytes, of the **tiles** field. The **tiles** field contains encoded data for all of the tiles that have changed.

**quantVals (variable):** A variable-length array of TS\_RFX\_CODEEC\_QUANT (section 2.2.2.1.5) structures. The number of structures present in the array is indicated in the **numQuant** field.

**tiles (variable):** A variable-length array of TS\_RFX\_TILE (section 2.2.2.3.4.1) structures. The number of structures present in the array is indicated in the **numTiles** field, while the total size, in bytes, of this field is specified by the **tilesDataSize** field.

### 2.2.2.3.4.1 TS\_RFX\_TILE

The TS\_RFX\_TILE structure specifies the position of the tile on the frame and contains the encoded data for the three tile components of Y, Cb, and Cr.

|                   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |           |   |   |   |   |   |   |   |                  |   |   |   |   |   |   |   |
|-------------------|---|---|---|---|---|---|---|------|---|---|---|---|---|---|---|-----------|---|---|---|---|---|---|---|------------------|---|---|---|---|---|---|---|
| 0                 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8    | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6         | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4                | 5 | 6 | 7 | 8 | 9 | 0 | 1 |
| BlockT            |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |           |   |   |   |   |   |   |   |                  |   |   |   |   |   |   |   |
| ...               |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   | quantIdxY |   |   |   |   |   |   |   | quantIdxCb       |   |   |   |   |   |   |   |
| quantIdxCr        |   |   |   |   |   |   |   | xIdx |   |   |   |   |   |   |   |           |   |   |   |   |   |   |   | yIdx             |   |   |   |   |   |   |   |
| ...               |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   | YLen      |   |   |   |   |   |   |   | CbLen            |   |   |   |   |   |   |   |
| ...               |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   | CrLen     |   |   |   |   |   |   |   | YData (variable) |   |   |   |   |   |   |   |
| ...               |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |           |   |   |   |   |   |   |   |                  |   |   |   |   |   |   |   |
| CbData (variable) |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |           |   |   |   |   |   |   |   |                  |   |   |   |   |   |   |   |
| ...               |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |           |   |   |   |   |   |   |   |                  |   |   |   |   |   |   |   |
| CrData (variable) |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |           |   |   |   |   |   |   |   |                  |   |   |   |   |   |   |   |
| ...               |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |           |   |   |   |   |   |   |   |                  |   |   |   |   |   |   |   |

**BlockT (6 bytes):** A [TS\\_RFX\\_BLOCKT \(section 2.2.2.1.1\)](#) structure. The **blockType** field MUST be set to CBT\_TILE (0xCAC3).

**quantIdxY (1 byte):** An 8-bit, unsigned integer. Specifies an index into the TS\_RFX\_CODEEC\_QUANT array provided in the TS\_RFX\_TILESET message. The specified **TS\_RFX\_CODEEC\_QUANT** element MUST be used for de-**quantization** of the sub-bands for the Y-component.

**quantIdxCb (1 byte):** An 8-bit, unsigned integer. Specifies an index into the TS\_RFX\_CODEEC\_QUANT array provided in the TS\_RFX\_TILESET message. The specified **TS\_RFX\_CODEEC\_QUANT** element MUST be used for de-quantization of the sub-bands for the Cb-component.

**quantIdxCr (1 byte):** An 8-bit, unsigned integer. Specifies an index into the [TS\\_RFX\\_CODEC\\_QUANT](#) array provided in the [TS\\_RFX\\_TILESET](#) message. The specified **TS\_RFX\_CODEC\_QUANT** element MUST be used for de-quantization of the sub-bands for the Cr-component.

**xIdx (2 bytes):** A 16-bit, unsigned integer. The X-index of the encoded tile in the screen tile grid.

**yIdx (2 bytes):** A 16-bit, unsigned integer. The Y-index of the encoded tile in the screen tile grid.

**YLen (2 bytes):** A 16-bit, unsigned integer. Specifies the size, in bytes, of the **YData** field.

**CbLen (2 bytes):** A 16-bit, unsigned integer. Specifies the size, in bytes, of the **CbData** field.

**CrLen (2 bytes):** A 16-bit, unsigned integer. Specifies the size, in bytes, of the **CrData** field.

**YData (variable):** A variable-length array. Contains the encoded data for the Y-component of the tile. The size, in bytes, of this field is specified by the **YLen** field.

**CbData (variable):** A variable-length array. Contains the encoded data for the Cb-component of the tile. The size, in bytes, of this field is specified by the **CbLen** field.

**CrData (variable):** A variable-length array. Contains the encoded data for the Cr-component of the tile. The size, in bytes, of this field is specified by the **CrLen** field.

## 2.2.3 Control Messages

### 2.2.3.1 TS\_FRAME\_ACKNOWLEDGE\_PDU

The **TS\_FRAME\_ACKNOWLEDGE\_PDU** structure is a client-to-server PDU sent to the server whenever the client receives a Frame Marker Command ([\[MS-RDPBCGR\]](#) section 2.2.9.2.3) with the **frameAction** field set to SURFACECMD\_FRAMEACTION\_END (0x0001) and it has finished processing this particular frame (that is, the surface bits have been rendered on the screen). The server uses this acknowledgment to throttle the rate at which it generates frames of data to avoid overloading the client with too many updates. The server SHOULD NOT wait for an acknowledgment for each frame before sending the next frame. Instead, the server SHOULD have a "window" mechanism where it allows multiple frames to be unacknowledged before it slows down its frame rate (or stops completely).

| 0                          | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4                  | 5 | 6 | 7 | 8 | 9 | 0 | 1 |  |  |
|----------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--------------------|---|---|---|---|---|---|---|--|--|
| tpktHeader                 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                    |   |   |   |   |   |   |   |  |  |
| x224Data                   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | mcsSDrq (variable) |   |   |   |   |   |   |   |  |  |
| ...                        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                    |   |   |   |   |   |   |   |  |  |
| securityHeader (variable)  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                    |   |   |   |   |   |   |   |  |  |
| ...                        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                    |   |   |   |   |   |   |   |  |  |
| shareDataHeader (18 bytes) |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                    |   |   |   |   |   |   |   |  |  |
| ...                        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                    |   |   |   |   |   |   |   |  |  |
| ...                        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                    |   |   |   |   |   |   |   |  |  |

|     |         |
|-----|---------|
| ... | frameID |
| ... |         |

**tpktHeader (4 bytes):** A TPKT Header as specified in [\[T123\]](#) section 8.

**x224Data (3 bytes):** An X.224 Class 0 Data TPDU, as specified in [\[X224\]](#) section 13.7.

**mcsSDrq (variable):** Variable-length PER-encoded MCS Domain PDU (DomainMCSPDU) that encapsulates an MCS Send Data Request structure (SDrq, choice 25 from DomainMCSPDU). This is as specified in [\[T125\]](#) section 11.32, and the ASN.1 structure definitions are specified in [\[T125\]](#) section 7, parts 7 and 10. The **userData** field of the MCS Send Data Request PDU contains a Security Header, Share Data Header, and a frame ID.

**securityHeader (variable):** Optional security header. The presence and format of the security header depend on the Encryption Level and Encryption Method selected by the server ([\[MS-RDPBCGR\]](#) sections 5.3.2 and 2.2.1.4.3). If the Encryption Level selected by the server is greater than ENCRYPTION\_LEVEL\_NONE (0) and the Encryption Method selected by the server is greater than ENCRYPTION\_METHOD\_NONE (0), this field MUST contain one of the following headers:

- Non-FIPS Security Header ([\[MS-RDPBCGR\]](#) section 2.2.8.1.1.2.2) if the Encryption Method selected by the server is ENCRYPTION\_METHOD\_40BIT (0x00000001), ENCRYPTION\_METHOD\_56BIT (0x00000008), or ENCRYPTION\_METHOD\_128BIT (0x00000002).
- FIPS Security Header ([\[MS-RDPBCGR\]](#) section 2.2.8.1.1.2.3) if the Encryption Level selected by the server is ENCRYPTION\_METHOD\_FIPS (0x00000010).

If the Encryption Level selected by the server is ENCRYPTION\_LEVEL\_NONE (0) and the Encryption Method selected by the server is ENCRYPTION\_METHOD\_NONE (0), this header MUST NOT be included in the PDU.

**shareDataHeader (18 bytes):** Share Data Header ([\[MS-RDPBCGR\]](#) section 2.2.8.1.1.1.2) containing information about the packet. The type subfield of the **pduType** field of the Share Control Header ([\[MS-RDPBCGR\]](#) section 2.2.8.1.1.1.1) within the Share Data Header MUST be set to PDUTYPE\_DATAPDU (0x0007). The **pduType2** field of the Share Data Header MUST be set to PDUTYPE2\_FRAME\_ACKNOWLEDGE (0x38).

**frameID (4 bytes):** A 32-bit unsigned integer. This field specifies the 32-bit identifier of the frame that was sent to the client using a Frame Marker Command and is being acknowledged as delivered. The **frameID** field MUST be populated with the value of the **frameID** field that was specified in the Frame Marker Command associated with the frame being acknowledged. If the **frameID** field is set to the value 0xFFFFFFFF, the server SHOULD [<5>](#) assume that all in-flight frames have been acknowledged.

## 3 Protocol Details

### 3.1 Common Details

#### 3.1.1 Abstract Data Model

This section describes a conceptual model of possible data organization that an implementation maintains to participate in this protocol. The described organization is provided to facilitate the explanation of how the protocol behaves. This document does not mandate that implementations adhere to this model, as long as their external behavior is consistent with that described in this document.

**OperationalMode:** Stores the operational mode currently in use. Operational modes include video mode, and image mode.

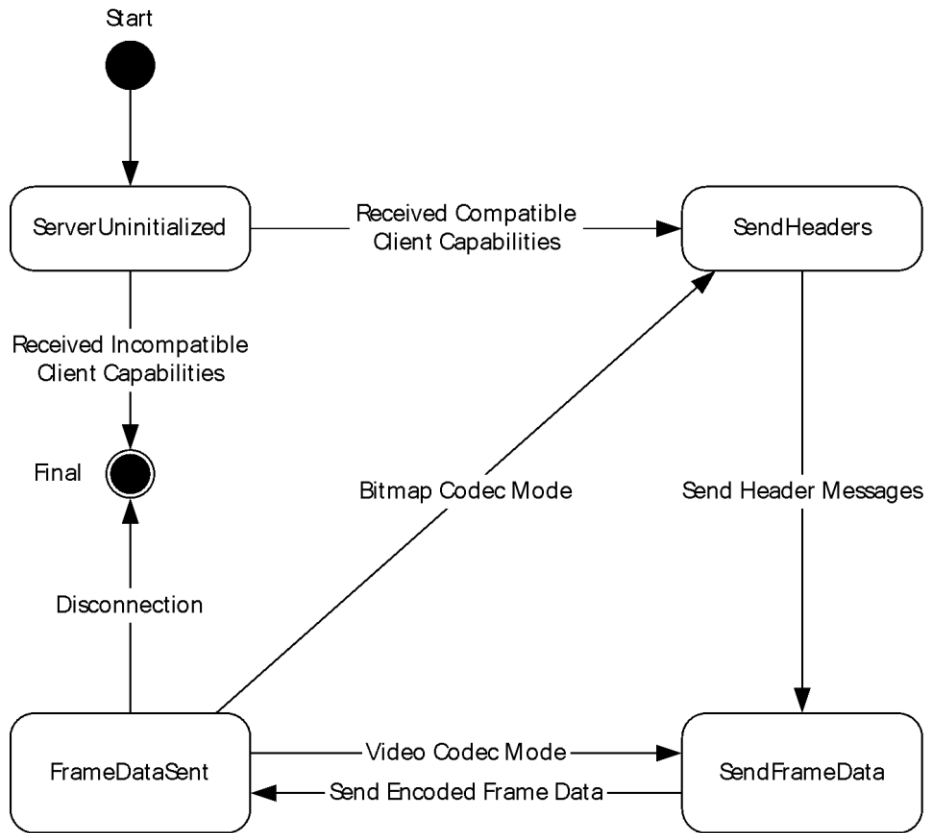
**EntropyAlgorithm:** Stores the entropy algorithm currently in use. Entropy algorithms include RLGR1 and RLGR3.

**FrameIndex:** A 32-bit integer variable. Used by the server to keep track of the current index of the encoded frame within an encoding session. This variable is used only when the **OperationalMode** is video mode. If the **OperationalMode** is image mode, the server does not need to maintain this variable.

In video mode, initialize this variable to 0 at the start of the session and then increment it by 1 after every encoded frame. The current value of this variable is stored in the **frameIdx** field of the [TS\\_RFX\\_FRAME\\_BEGIN](#) message (section 2.2.2.3.1).

##### 3.1.1.1 State Machine

The following figure and table describe the state machine of the codec at the server end.



**Figure 3: Server state diagram**

| State Name          | Description   |
|---------------------|---|
| ServerUninitialized | This is the initial state of the server. In this state, the server waits for the <a href="#">TS_RFX_CLNT_CAPS_CONTAINER</a> message from the client. On receiving this message, the server processes it as described in section 3.1.5.1. If it finds a compatible <a href="#">TS_RFX_ICAP</a> , it initializes itself and gets into the SendHeaders state. Otherwise, the connection is terminated (section 3.1.5.1). |
| SendHeaders         | In this state, the server sends the Header message sequence as described in section 3.1.8.3.1 and shown in Figure 17. The server then transitions to the SendFrameData state.   |
| SendFrameData       | In this state, the server sends the encoded frame data messages as described in section 3.1.8.3.1 and shown in Figure 18. The server then transitions to the FrameDataSent state.   |
| FrameDataSent       | If the <b>OperationalMode</b> of the server is image mode, the server transitions to the SendHeaders state. If the <b>OperationalMode</b> is video mode, the server transitions to either the SendFrameData state or the SendHeaders state.   |

### 3.1.2 Timers

None.

### 3.1.3 Initialization

The Bitmap Codecs Capability Set message ([\[MS-RDPBCGR\]](#) section 2.2.7.2.10) MUST be processed by the server, as specified in section [3.1.5.1](#), before RemoteFX encoding begins. This establishes the encoding properties that will be used by the server when sending the encoded data stream.

The Bitmap Codecs Capability Set is sent by the client, encapsulating the [TS\\_RFX\\_CLNT\\_CAPS\\_CONTAINER](#) (section 2.2.1.1). The server ultimately processes the encapsulated [TS\\_RFX\\_CLNT\\_CAPS\\_CONTAINER](#) (section 2.2.1.1) message as specified in section 3.1.5.1, picking a [TS\\_RFX\\_ICAP](#) (section 2.2.1.1.1.1.1) element. From that point on, the server uses the capability properties listed in that element to encode RemoteFX data streams.

### 3.1.4 Higher-Layer Triggered Events

None.

### 3.1.5 Processing Events and Sequencing Rules

**Establishing the connection:** RemoteFX capabilities messages are exchanged to establish the encoding properties used by the server, as specified in sections [3.1.3](#) and [3.1.5.1](#). A compliant server MUST process the [TS\\_RFX\\_CLNT\\_CAPS\\_CONTAINER](#) message as specified in section 3.1.5.1 before RemoteFX encoding can begin.

**Sending RemoteFX encoded data:** RemoteFX encoded data is sent to the client as a sequence of the RemoteFX messages defined in section [2.2.2](#). A compliant server MUST always send the encoded messages in the correct order, as specified in section [3.1.8.3.1](#).

**Header messages:** The encoded message sequence MUST include header messages, as specified in section 3.1.8.3.1.

Header messages contain information about the encoding properties used for encoding data messages, and are used by the client to decode the message stream. Header messages MUST always specify the encoding properties initialized and stored in **OperationalMode** and **EntropyAlgorithm**. The encode header and data message sequences are shown in the figures [Generation of RemoteFX encode header messages](#) and [Generation of RemoteFX encode data messages](#) (section 3.1.8.3.1).

Header messages can appear multiple times within the message stream, depending on the **OperationalMode** property:

- If the encoder is initialized with **OperationalMode** set to video mode, then it MUST send the encode header message sequence at the start of the stream. The encode header message sequence is then followed by an arbitrary number of encode data message sequences.
- If the encoder is initialized with **OperationalMode** set to image mode, then it MUST send the encode header message sequence before every encode data message sequence.

**Entropy Algorithm:** The server MUST use the entropy algorithm, initialized and stored in **EntropyAlgorithm**, to encode every data message in the encoded data stream.

**Error conditions:** If the client receives an out-of-sequence, unspecified, or malformed message, then the client MUST treat this as an error and terminate the RDP connection.

#### 3.1.5.1 Processing the TS\_RFX\_CLNT\_CAPS\_CONTAINER Message

The structure and fields of the [TS\\_RFX\\_CLNT\\_CAPS\\_CONTAINER](#), and its constituent members, are specified in section 2.2.1.1.

TS\_RFX\_CLNT\_CAPS\_CONTAINER has a [TS\\_RFX\\_CAPS](#) field. The TS\_RFX\_CAPS field contains a [TS\\_RFX\\_CAPSET](#) sub-field, which is composed of a variable number of [TS\\_RFX\\_ICAP](#) structures.

The encoder parses the TS\_RFX\_CLNT\_CAPS\_CONTAINER message to get to the array of TS\_RFX\_ICAP structures. It processes each element of this array to check whether it can support all the properties listed in that TS\_RFX\_ICAP element. From this set of supported elements, it will arbitrarily pick one element and use only the properties listed in that specific TS\_RFX\_ICAP to encode the data stream.

For example, if the decoder supports both RLGR1 and RLGR3, the client can specify support for both of them. This support is specified using two TS\_RFX\_ICAP elements in the TS\_RFX\_CAPSET message that the client sends to the server. If the encoder also supports both RLGR1 and RLGR3, it then arbitrarily picks one of the TS\_RFX\_CAPSET elements to use for encoding.

Once a TS\_RFX\_ICAP element has been picked, the **OperationalMode** and **EntropyAlgorithm** ADM elements are set as follows.

- If the TS\_RFX\_ICAP element's **flags** field is set to include the 0x02 flag, the **OperationalMode** is set to image mode; otherwise, the **OperationalMode** is set to video mode.
- When the TS\_RFX\_ICAP element's **entropyBits** field is set to 0x01, the **EntropyAlgorithm** is set to RLGR1; when **entropyBits** is set to 0x04, **EntropyAlgorithm** is set to RLGR3.

**Error conditions:** If the server cannot support any of the TS\_RFX\_ICAP elements, it MUST stop sending messages and consider the RDP connection terminated.

### 3.1.6 Timer Events

None.

### 3.1.7 Other Local Events

None.

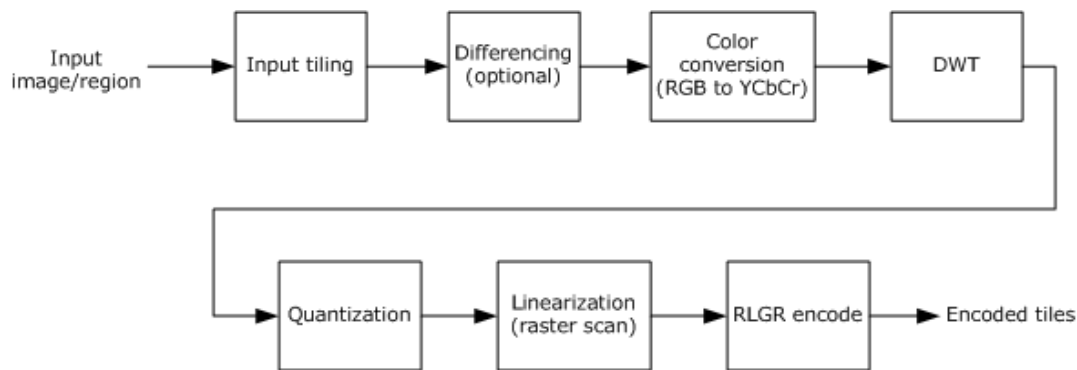
### 3.1.8 RemoteFX Algorithm

RemoteFX is a **tile-based transform** codec. It has the same functional stages as those found in most structured compression systems (section [1.3.1](#)). At the encode endpoint, these stages are transform, **quantization**, and entropy encoding. The inverse of these operations (in the reverse order) takes place at the decode endpoint. RemoteFX uses **DWTs** and Run-Length Golomb-Rice Coding (RLGR) ([\[ARLGR\]](#) section 3) for transformation and entropy encoding respectively.

#### 3.1.8.1 Encoding

The functional stages involved in the encoding path are illustrated in the following figure. Each of these stages is described in the subsections that follow.





**Figure 4: RemoteFX encoding stages**

### 3.1.8.1.1 Input Tiling

The input to the encoder is an arbitrary region contained within an image to be encoded. The input image is overlaid with a tile grid anchored to the top left corner of the screen (0, 0) and aligned to the tile size (the tile size MUST be 64 x 64 pixels). The set of tiles that map to the input region are computed. These tiles are candidates for further processing, and each tile is processed independently of the others.

### 3.1.8.1.2 Differencing (Optional)

If the RemoteFX codec is to be used as a video codec, the encoder can, optionally, do differencing between current and previous frames to compute the smallest set of tiles that have changed. The differencing is done by comparing the set of input tiles in the current frame with collocated tiles from the previous frame to determine whether any pixels have changed. Only the input tiles with changed pixels in the current frame are processed for compression. Note that the input tile is compressed as is; this algorithm does not compress the tile of difference values formed by subtracting the input tile pixels of the current frame from the collocated tile pixels in the previous frame. This means that the decoder does not need to determine whether the encoder is doing differencing. The encoder can use differencing to reduce the number of tiles that it needs to encode, thereby reducing the bandwidth required to send the compressed tiles to the decoder. If the codec is to be used as an image codec, this stage MUST be skipped.

### 3.1.8.1.3 Color Conversion (RGB to YCbCr)

Each input tile is converted from the RGB color space to the **YCbCr color space**. The transform used takes an RGB input value with each component in the range [0-255] and transforms it into Y, Cb, and Cr, in the ranges [0.0, 255.0], [-128.0, 127.0], and [-128.0, 127.0], respectively. The Y-component is level-shifted down by 128, so that it also falls into the [-128.0, 127.0] range. The input tile in this level-shifted symmetric YCbCr color space is used as the input for the next stage of **DWT**. The matrix equation for this conversion is shown in the following figure.

$$[Y \ Cb \ Cr] = [RGB] \begin{bmatrix} 0.299 & -0.168935 & 0.499813 \\ 0.587 & -0.331665 & -0.418531 \\ 0.114 & 0.50059 & -0.081282 \end{bmatrix}$$

**Figure 5: The RGB to YCbCr conversion matrix**

### 3.1.8.1.4 DWT

Each tile component (Y, Cb, Cr) is individually transformed by a 2-D **DWT** using a 5/3 wavelet basis. The filter coefficients used for both of the lifting-based implementations are presented in the following figure.

$$H[n] = \left[ \frac{X[2n+1] - \left[ \frac{X[2n] + X[2n+2]}{2} \right]}{2} \right] \quad L[n] = X[2n] + \left[ \frac{H[n-1] + H[n]}{2} \right]$$

a. High-pass coefficients                      b. Low-pass coefficients

**Figure 6: Lifting equations for the DWT**

Filtering at the boundary is done by mirroring the input coefficients. For example, if there are eight input coefficients:

[0, 1, 2, 3, 4, 5, 6, 7]

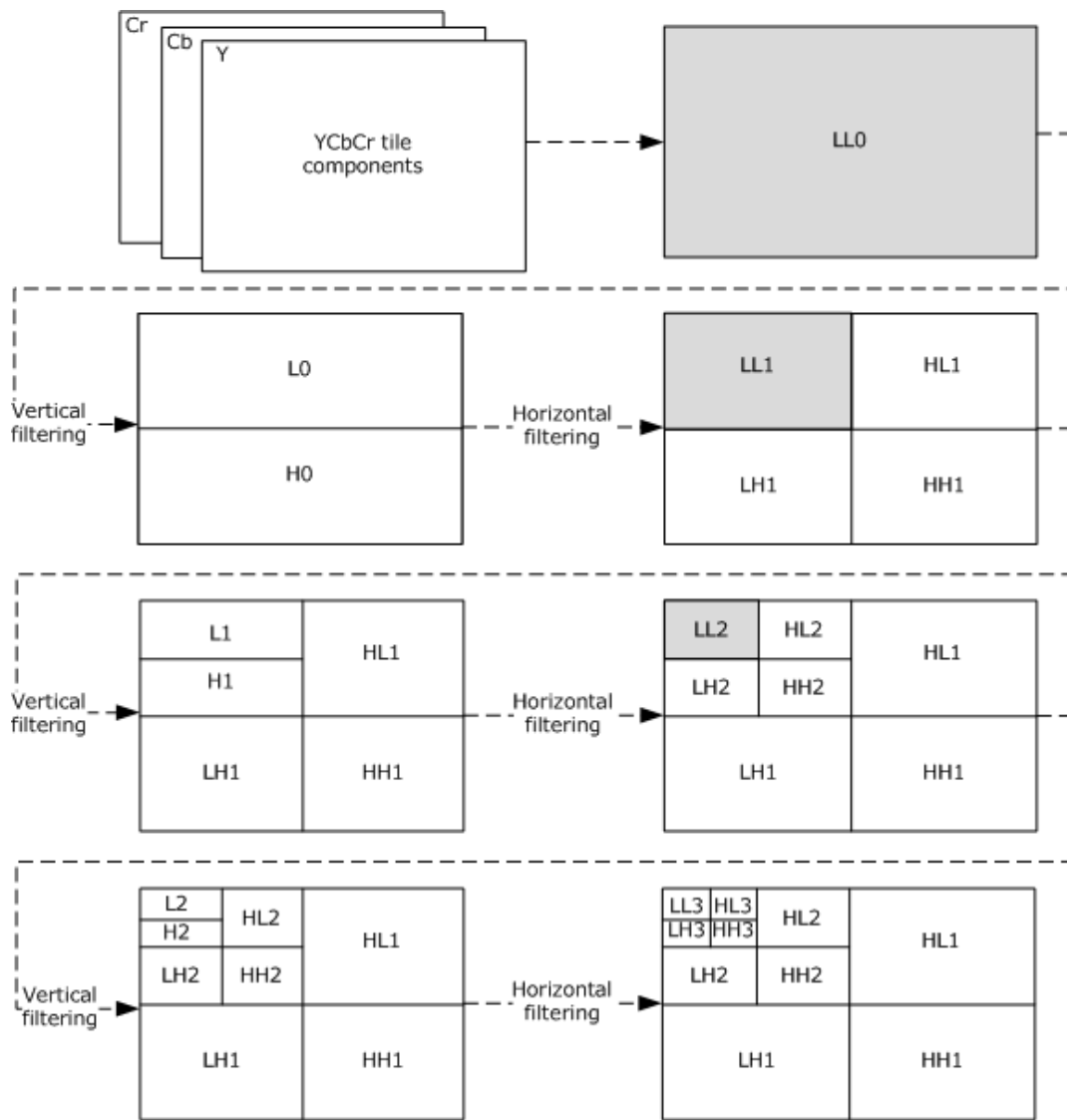
then, after mirroring, the coefficients get logically extended as follows:

[..., 7, 6, 5, 4, 3, 2, 1, 0, 1, 2, 3, 4, 5, 6, 7, 6, 5, 4, 3, 2, 1, 0, ...]

Use this logical extension when filtering at boundaries where coefficients are required before or after the first and last available coefficient.

For each level of decomposition, we first perform the DWT in the vertical direction, followed by the DWT in the horizontal direction. After the first level of decomposition, there are 4 sub-bands: LL1, LH1, HL1, HH1. For each successive level of decomposition, the LL sub-band of the previous level is used as the input. Each tile component undergoes three levels of decomposition. This results in 10 sub-bands per component. LH1, HL1, and HH1 contain the highest frequency bands present in the image tile, while LL3 contains the lowest frequency band.

The three-level DWT decomposition is illustrated in the following figure.



**Figure 7: Three-level DWT decomposition**

### 3.1.8.1.5 Quantization

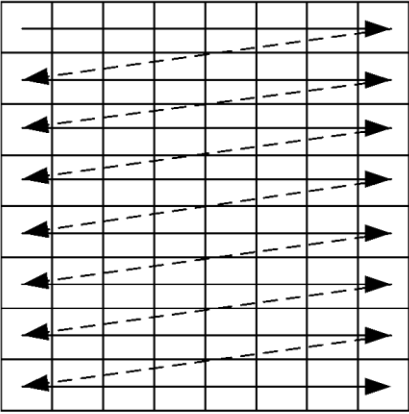
The encoder determines a scale value for each sub-band and uses it to **quantize** all the coefficients in that sub-band, which is done by dividing each coefficient by the scale value and rounding it. These scale values are represented as quantization factors in a [TS\\_RFX\\_CODEC\\_QUANT](#) structure, which is embedded in a [TS\\_RFX\\_TILESET](#) message. The conversion between a scale value and a quantization factor is given by the following figure.

$$\text{Scale\_value} = (1 << (\text{quantization\_factor} - 6))$$

**Figure 8: Quantization factor to scale value conversion**

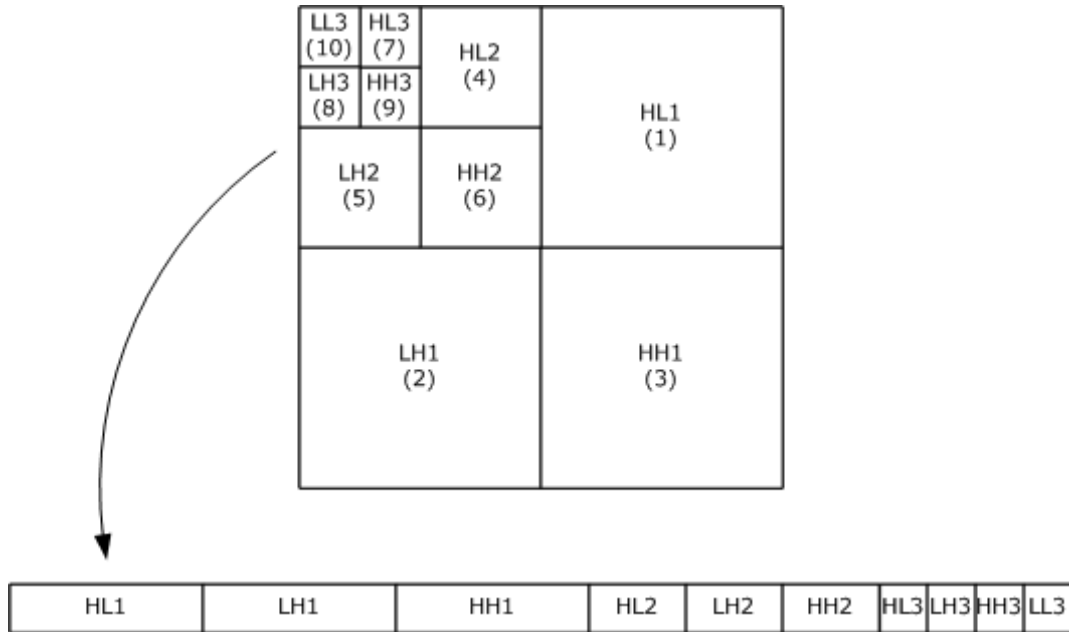
### 3.1.8.1.6 Linearization

The quantized tile components are linearized by raster scanning each of the sub-bands. The sub-band coefficient scan and traversal order is illustrated in the following figure.



**Figure 9: Raster scan of sub-band coefficients**

Linearization of the sub-bands is conducted in the following sequence: HL1, LH1, HH1, HL2, LH2, HH2, HL3, LH3, HH3, and LL3, as shown in the following figure.



**Figure 10: Sub-band traversal order**

The coefficients from LL3 also undergo differential encoding. Except for the first coefficient, every raster-scanned LL3 coefficient is subtracted from its previous neighbor. For example, if the raster-scanned LL3 coefficients are

[64, 32, 42, 54, 50, 60, 40, 70]

Then, after differential encoding, they would get converted to

[64, -32, 10, 12, -4, -10, -20, 30]

### 3.1.8.1.7 RLGR Entropy Encoding

Each 64 x 64-pixel tile contains an array of 4,096 coefficients. This coefficient array is losslessly entropy-encoded using the RLGR algorithm ([ARLGR] section 3). The three tile components are assembled into an encoded tile packet (section 2.2.2.3.4.1). RLGR is an algorithm that adaptively switches between Run-Length encoding of zeros and Golomb-Rice coding of nonzero coefficients. There are two variants of the RLGR algorithm that can be used, RLGR1 and RLGR3. The decoder endpoint specifies its preference through the capabilities negotiation (see the **entropyBits** field in section 2.2.1.1.1.1.1). The pseudocode that describes the complete RLGR1/RLGR3 algorithm in detail is given in section 3.1.8.1.7.3.

#### 3.1.8.1.7.1 RLGR1

The RLGR algorithm is described in [ARLGR]. In this specification, the parameter adaptation rules, which are central to the algorithm, are detailed in section [ARLGR] section 3. The specific adaptation values used by RLGR1 are given in the following two tables.

|         |   |
|---------|---|
| $P = 0$ | Decrease $k_R$ by setting $k_P = k_P - 2$ |
| $P = 1$ | no change $k_R$                           |
| $P > 1$ | increase $k_R$ by setting $k_P = k_P + p$ |

**Figure 11: Adaptation rule for RLGR1/RLGR3 parameter kR**

|         |                         |                 |
|---------|-------------------------|-----------------|
| $k = 0$ | $u = 0 : k_P = k_P + 3$ |                 |
|         | $u > 0 : k_P = k_P - 3$ |                 |
| $k > 0$ | complete run            | $k_P = k_P + 4$ |
|         | partial run             | $k_P = k_P - 6$ |

**Figure 12: Adaptation rule for RLGR1/RLGR3 main parameter k**

The initial value for the parameters  $k_{RP}$  and  $k_P$  is 8, and the value of  $L$  is 8. Both the parameters  $k_{RP}$  and  $k_P$  are clipped to the range [0, 80] after every update.

#### 3.1.8.1.7.2 RLGR3

The core RLGR algorithm [ARLGR] switches between the Run-Length and the Golomb-Rice mode as a stream of data is encoded, based on the Run-Length parameter,  $k$ , as shown in figure "Adaptation rule for RLGR1/RLGR3 main parameter k" in section 3.1.8.1.7.2. The Golomb-Rice mode in the RLGR algorithm [ARLGR], operates by encoding one coefficient at a time and updating the Golomb-Rice parameter,  $k_R$ , as shown in figure "Adaptation rule for RLGR1/RLGR3 parameter kR" in section 3.1.8.1.7.2. In RLGR3, the Run-Length mode parameter,  $k$ , and the Golomb-Rice parameter,  $k_R$ , are updated exactly as in RLGR1, but the Golomb-Rice mode is processed differently. Once the algorithm enters into the Golomb-Rice mode, RLGR3 takes the sum of the next two coefficients and Golomb-Rice encodes the sum and updates the parameters  $k$  and  $k_R$  as with RLGR1. After the sum is encoded, the

value of the first coefficient is emitted as binary code in the exact number of bits it takes to represent the sum. Pseudocode for Golomb-Rice mode in RLGR3 encode follows.

```
ENCODER GOLOMB-RICE MODE:

SUM = COEFF[n] + COEFF[n+1] // sum of the next two coefficients in the input stream
GOLOMB_RICE_ENCODE(SUM)    // Golomb-Rice encode the value of SUM
BINARY_ENCODE(COEFF[n])    // using LOG2(SUM) bits
UPDATE_RLGR_PARAMETERS(SUM) // update RLGR parameters (k,kR) based on SUM
```

The decoder follows the same sequence of steps as the encoder, as it decodes the encoded data. The pseudocode for the decoder in Golomb-Rice mode is given below.

```
DECODER GOLOMB-RICE MODE:

SUM = GOLOMB_RICE_DECODE() // decode the next value from the encoded stream
NBS = LOG2(SUM)            // number of bits in binary representation of SUM
COEFF[n] = BINARY_DECODE(NBS) // read next NBS bits from input stream as COEFF[n]
COEFF[n+1] = SUM - COEFF[n] // compute COEFF[n+1]
UPDATE_RLGR_PARAMETERS(SUM) // update RLGR parameters (k,kR) based on SUM
```

In general, RLGR3 encodes faster than RLGR1 but is marginally worse in terms of compression ratio.

### 3.1.8.1.7.3 RLGR1/RLGR3 Pseudocode

#### 3.1.8.1.7.3.1 RLGR1/RLGR3 Decode

The following pseudocode sample shows how to decode a stream of bits encoded using the RLGR1/RLGR3 algorithm.

```
// Constants used within the RLGR1/RLGR3 algorithm

#define KP_MAX    (80) // max value for kp or krp
#define LSGR     (3)  // shift count to convert kp to k
#define UP_GR    (4)  // increase in kp after a zero run in RL mode
#define DN_GR    (6)  // decrease in kp after a nonzero symbol in RL mode
#define UQ_GR    (3)  // increase in kp after nonzero symbol in GR mode
#define DQ_GR    (3)  // decrease in kp after zero symbol in GR mode

//
// Gets (returns) the next nBits from the bitstream
// The layout of N bits in the bitstream with regard to a byte array is:
// [0..N] -> [0..7] (MSB..LSB), [8..15] (MSB..LSB) ...,
// where (MSB..LSB) denotes a byte.
//
UINT GetBits(
    UINT nBits
);

//
// From current output pointer, write "value", check and update *termsToDecode
//
VOID WriteValue(
    INT value,
    INT *termsToDecode
);
```

```

//
// From current output pointer, write next nZeroes terms with value 0;
// check and update *termsToDecode
//
VOID
WriteZeroes(
    UINT nZeroes,
    INT *termsToDecode
);

//
// Returns the least number of bits required to represent a given value
//
UINT
GetMinBits(
    UINT val// returns ceil(log2(val))
);

//
// Converts from (2 * magnitude - sign) to integer
//
INT
GetIntFrom2MagSign(
    UINT twoMs
);

//
// Update the passed parameter and clamp it to the range [0,KPMAX]
// Return the value of parameter right-shifted by LSGR
//
INT
UpdateParam(
    INT* param, // parameter to update
    INT deltaP // update delta
)
{
    *param += deltaP;// adjust parameter
    if (*param > KPMAX) *param = KPMAX;// max clamp
    if (*param < 0) *param = 0;// min clamp
    return (*param >> LSGR);
}

//
// Outputs the Golomb/Rice encoding of a non-negative integer
//
UINT
GetGRCode(
    INT* krp,
    INT* kr
)
{
    INT vk;
    UINT mag;

    // chew up/count leading 1s and escape 0
    for (vk=0;GetBits(1)==1;) {
        vk++;
    }

    // get next *kr bits, and combine with leading 1s
    mag = (vk<<*kr) | GetBits(*kr);
}

```

```

// adjust kpr and kr based on vk
if (!vk)
{
    *kr = UpdateParam(kpr, -2);
}
else if (vk!=1)// at 1, no change!
{
    *kr = UpdateParam(kpr, vk);
}

return (mag);
}

//
// Routine that reads and decodes stream of RLGR data
//
VOID
RLGR_Decode(
    RLGR_MODE rlgrMode,    // RLGR1 || RLGR3
    INT termsToDecode
)
{
    // initialize the parameters
    INT k = 1;
    INT kp = k << LSGR;
    INT kr = 1;
    INT krp = kr << LSGR;

    while (termsToDecode > 0)
    {
        INT run;

        if (k)
        {
            // RL MODE
            while (GetBits(1) == 0)
            {
                // we have an RL escape "0", which translates to a run (1<<k) of zeros
                WriteZeroes(1<<k, &termsToDecode);
                k = UpdateParam(&kp, UpGR); // raise k and kp up because of zero run
            }

            if (termsToDecode > 0)
            {
                // next k bits will contain remaining run of zeros
                run = GetBits(k);
                WriteZeroes(run, &termsToDecode);
            }

            if (termsToDecode > 0)
            {
                // get nonzero value, starting with sign bit and
                // then GRCode for magnitude - 1
                UINT sign = GetBits(1);

                // magnitude - 1 was coded (because it was nonzero)
                INT mag = (INT)GetGRCode(&krp, &kr) + 1;

                WriteValue(sign ? -mag : mag, &termsToDecode);
                k = UpdateParam(&kp, -DnGR); // lower k and kp because of nonzero term
            }
        }
        else
        {
            // GR (GOLOMB-RICE) MODE
            UINT mag = GetGRCode(&krp, &kr); // values coded are 2*magnitude - sign
        }
    }
}

```



```

if (rlgrMode == RLGR1)
{
    if (!mag)
    {
        WriteValue(0, &termsToDecode);
        k = UpdateParam(&kp, UqGR); // raise k and kp due to zero
    }
    else
    {
        WriteValue(GetIntFrom2MagSign(mag), &termsToDecode);
        k = UpdateParam(&kp, -DqGR); // lower k and kp due to nonzero
    }
}
else // rlgrMode == RLGR3
{
    // In GR mode FOR RLGR3, we have encoded the
    // sum of two (2*mag - sign) values

    // maximum possible bits for first term
    UINT nIdx = GetMinBits(mag);

    // decode val1 is first term's (2*mag - sign) value
    UINT val1 = GetBits(nIdx);

    // val2 is second term's (2*mag - sign) value
    UINT val2 = mag - val1;

    if (val1 && val2) {
        // raise k and kp if both terms nonzero
        k = UpdateParam(&kp, -2*DqGR);
    }
    else if (!val1 && !val2) {
        // lower k and kp if both terms zero
        k = UpdateParam(&kp, 2*UqGR);
    }

    WriteValue(GetIntFrom2MagSign(val1), &termsToDecode);
    WriteValue(GetIntFrom2MagSign(val2), &termsToDecode);
}
}
}
}

```

### 3.1.8.1.7.3.2 RLGR1/RLGR3 Encode

The following pseudocode sample shows how to encode a stream of input symbols using the RLGR1/RLGR3 algorithm.

```

// Constants used within the RLGR1/RLGR3 algorithm

#define KP_MAX    (80)  // max value for kp or krp
#define L_SGR    (3)   // shift count to convert kp to k
#define UP_GR    (4)   // increase in kp after a zero run in RL mode
#define DN_GR    (6)   // decrease in kp after a nonzero symbol in RL mode
#define UQ_GR    (3)   // increase in kp after nonzero symbol in GR mode
#define DQ_GR    (3)   // decrease in kp after zero symbol in GR mode

//
// Returns the next coefficient (a signed int) to encode, from the input stream
//
INT
GetNextInput();

```

```

//
// Emit bitPattern to the output bitstream.
// The bitPattern value represents a bit sequence that is generated by shifting
// new bits in from the right. If we take the binary representation of bitPattern,
// with N(numBits-1) being the leftmost bit position and 0 being the rightmost bit position,
// the mapping of bitPattern to the output bytes is as follows:
//
//      bitPattern[N..0] -> byte[MSB..LSB] .. byte[MSB..LSB]
//
VOID
OutputBits(
    INT numBits,      // number of bits in bitPattern
    INT bitPattern    // bit pattern
);

//
// Emit a bit (0 or 1), count number of times, to the output bitstream
//
VOID
OutputBit(
    INT count,        // number of times to emit the bit
    INT bit           // 0 or 1
);

//
// Returns the least number of bits required to represent a given value
//
UINT
GetMinBits(
    INT val           // returns ceil(log2(val))
);

//
// Converts the input value to (2 * abs(input) - sign(input)),
// where sign(input) = (input < 0 ? 1 : 0) and returns it
//
UINT
Get2MagSign(
    INT input         // input value
);

//
// Update the passed parameter and clamp it to the range [0,KPMAX]
// Return the value of parameter right-shifted by LSGR
//
INT
UpdateParam(
    INT* param,      // parameter to update
    INT deltaP       // update delta
)
{
    *param += deltaP;
    if (*param > KPMAX) *param = KPMAX;
    if (*param < 0) *param = 0;
    return (*param >> LSGR);
}

//
// Outputs the Golomb/Rice encoding of a non-negative integer
//
VOID
CodeGR(
    INT* krp,        // GR parameter, used and updated based on the input value
    UINT val         // input non-negative value to be encoded
)
{

```

```

INT kr = *krp >> LSGR;

// unary part of GR code

UINT vk = val >> kr;
OutputBit(vk, 1);
OutputBit(1, 0);

// remainder part of GR code, if needed
if (kr) {
    OutputBits(kr, val & ((1 << kr) - 1));
}

// update krp, only if it is not equal to 1
if (vk == 0) {
    UpdateParam(krp, -2);
}
else if (vk > 1) {
    UpdateParam(krp, vk);
}
}

//
// Routine that outputs a stream of RLGR1/RLGR3-encoded bits
//
VOID
RLGR_Encode(
    RLGR_MODE rlgrMode    // RLGR1 || RLGR3
)
{
    // initialize the parameters
    INT k = 1;
    INT kp = 1 << LSGR;
    INT kr = 1;
    INT krp = 1 << LSGR;

    // process all the input coefficients
    while (1)
    {
        INT input;

        if (k)
        {
            // RUN-LENGTH MODE

            // collect the run of zeros in the input stream
            INT numZeros = 0;
            while ((input = GetNextInput()) == 0) {
                ++ numZeros;
            }

            // emit output zeros
            INT runmax = 1 << k;
            while (numZeros >= runmax)
            {
                OutputBit(1, 0);           // output a zero bit
                numZeros -= runmax;
                k = UpdateParam(&kp, UpGR); // update kp, k
                runmax = 1 << k;
            }

            // output a 1 to terminate runs
            OutputBit(1, 1);

            // output the remaining run length using k bits
            OutputBits(k, numZeros);

            // encode the nonzero value using GR coding

```

```

        INT mag = abs(input);          // absolute value of input coefficient
        INT sign = (input < 0 ? 1 : 0); // sign of input coefficient

        OutputBit(1, sign);          // output the sign bit
        CodeGR(&krp, mag - 1);       // output GR code for (mag - 1)

        k = UpdateParam(&kp, -DnGR);
    }
else
{
    // GOLOMB-RICE MODE

    if (rlgrMode == RLGR1)
    {
        // RLGR1 variant

        // convert input to (2*magnitude - sign), encode using GR code
        UINT twoMs = Get2MagSign(GetNextInput());
        CodeGR(&krp, twoMs);

        // update k, kp
        if (!twoMs) {
            k = UpdateParam(&kp, UqGR);
        }
        else {
            k = UpdateParam(&kp, -DqGR);
        }
    }
    else // rlgrMode == RLGR3
    {
        // RLGR3 variant

        // convert the next two input values to (2*magnitude - sign) and
        // encode their sum using GR code

        UINT twoMs1 = Get2MagSign(GetNextInput());
        UINT twoMs2 = Get2MagSign(GetNextInput());
        UINT sum2Ms = twoMs1 + twoMs2;

        CodeGR(&krp, sum2Ms);

        // encode binary representation of the first input (twoMs1).
        OutputBits(GetMinBits(sum2Ms), twoMs1);

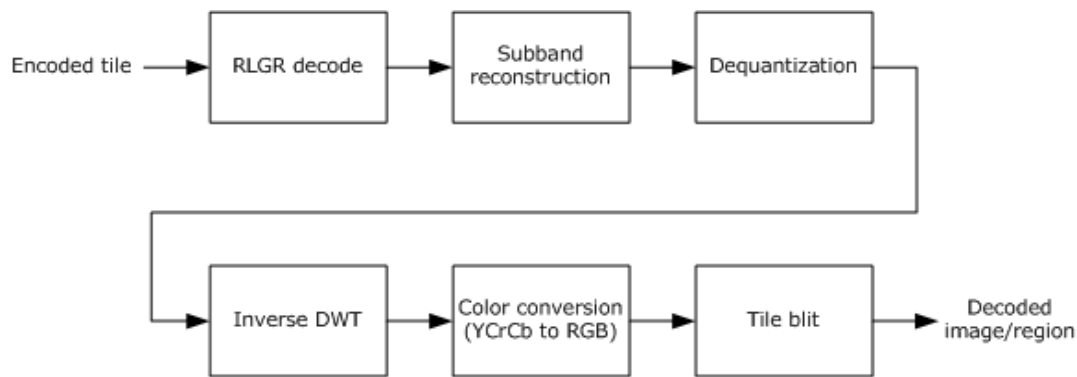
        // update k,kp for the two input values

        if (twoMs1 && twoMs2) {
            k = UpdateParam(&kp, -2*DqGR);
        }
        else if (!twoMs1 && !twoMs2) {
            k = UpdateParam(&kp, 2*UqGR);
        }
    }
}
}
}
}
}

```

### 3.1.8.2 Decoding

The functional stages involved in the decoding path are illustrated in the following figure. Compared to the encoding stages, the decoding stage operations are the operations of the encoding stage in reverse order.



**Figure 13: RemoteFX decoding stages**

### 3.1.8.2.1 RLGR Entropy Decoding

The three encoded tile components (Y, Cb, and Cr) are entropy decoded independently. The algorithm used is either inverse RLGR1 or RLGR3, depending on which one was used for encoding. For details of the decoding process, refer to [\[ARLGR\]](#) (the encoding process is described in section [3.1.8.1.7](#)).

### 3.1.8.2.2 Sub-Band Reconstruction

The RLGR entropy decoding stage results in the generation of an array of 4096 coefficients per tile component. The last 64 coefficients (which correspond to the LL3 sub-band) are differentially decoded. After this step, the coefficients are rearranged to form the sub-band structure shown in the figure in section [3.1.8.1.6](#) that describes the sub-band traversal order.

### 3.1.8.2.3 Dequantization

The **quantization** factors used for each sub-band are specified in the TS\_RFX\_TILE (section [2.2.2.3.4.1](#)) structure. A scale value is computed from the quantization factor using the formula shown in the figure in section [3.1.8.1.5](#). Each coefficient in the appropriate sub-band is dequantized by multiplying it with this scale value and rounded.

### 3.1.8.2.4 Inverse DWT

Each tile component undergoes three levels of inverse **discrete wavelet transformation** (IDWT). The 5/3 lifting equations used for the IDWT are presented in the following figure.

$$\begin{array}{cc}
 X[2n] = L[n] - \left\lfloor \frac{H[n-1] + H[n] + 1}{2} \right\rfloor & X[2n+1] = 2 * H[n] + \left\lfloor \frac{X[2n] + X[2n+2]}{2} \right\rfloor \\
 \text{a. Even coefficients} & \text{b. Odd coefficients}
 \end{array}$$

**Figure 14: Lifting equations for inverse DWT**

This stage results in the decoded Y, Cb, and Cr components for the tile.

### 3.1.8.2.5 Color Conversion (YCbCr to RGB)

The Y-component is first level shifted up by 128 so that it falls in the [0.0, 255.0] range. The three **YCbCr** components are then transformed to the RGB color space by using the following transform matrix.

$$[R\ G\ B] = [Y\ Cb\ Cr] \begin{bmatrix} 1.0 & 1.0 & 1.0 \\ 0.0 & -0.343730 & 1.769905 \\ 1.402525 & -0.714401 & 0.000013 \end{bmatrix}$$

**Figure 15: The YCbCr to RGB conversion matrix**

### 3.1.8.2.6 Reconstructed Frame

Each decoded RGB tile is intersected and clipped against the set of rectangles from the **rects** field of the [TS\\_RFX\\_REGION \(section 2.2.2.3.3\)](#) message. This gives a set of clipped rectangles, which are blitted to the appropriate location on the screen. Doing this for all the tiles present in the [TS\\_RFX\\_TILESET \(section 2.2.2.3.4\)](#) message will result in the reconstructed frame.

There are two reasons for doing this tile-region intersection. One is that the changed region on the screen, which comprises a set of arbitrary-sized rectangles, is converted to 64x64 tiles (section [3.1.8.1.1](#)) and these tiles can extend beyond the boundary of the rectangles of the change region. The second reason is that the differencing operation (section [3.1.8.1.2](#)) could cull some of these tiles and the decoder will not receive these tiles within the TS\_RFX\_TILESET message.

### 3.1.8.3 RemoteFX Stream

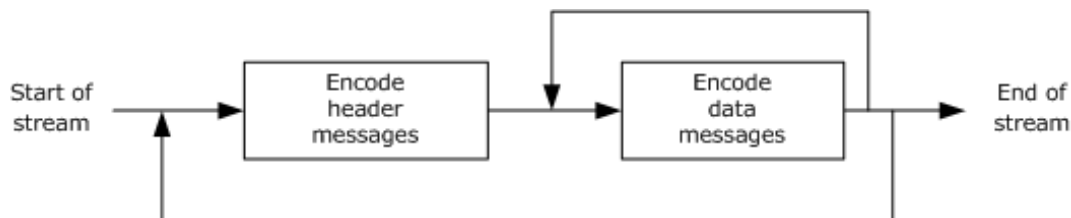
A RemoteFX stream is defined to be the set of all of the codec messages, sent sequentially from an encoder endpoint to a decoder endpoint. There is no message to signify the end of a stream. If the RemoteFX codec is to be used as an image codec, the stream only contains messages pertaining to a single image. If the RemoteFX codec is to be used as a video codec, the stream can contain an arbitrary number of images.

#### 3.1.8.3.1 Encode Message Sequencing

An encoded RemoteFX stream is composed of a sequence of encode messages that are described in section [2.2.2](#). The sequence of encode messages is encapsulated inside an Extended Bitmap Data structure ([\[MS-RDPBCGR\] section 2.2.9.2.1.1](#)), which is encapsulated in a Stream Surface Bits Surface Command ([\[MS-RDPBCGR\] section 2.2.9.2.2](#)).

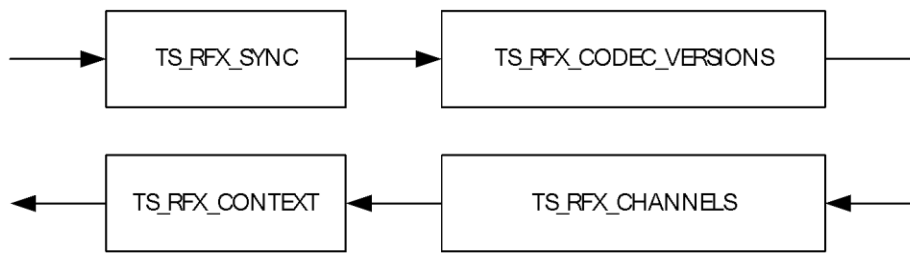
All encode messages start with a TS\_RFX\_BLOCKT (section [2.2.2.1.1](#)) structure. When parsing the message blocks, the **blockLen** field of a TS\_RFX\_BLOCKT MUST be used to obtain the length of the data block. This length MUST NOT be less than the length based on the **blockType** field of the TS\_RFX\_BLOCKT.

The RemoteFX stream is structured as a set of header messages followed by encoded data messages. The header messages contain global information necessary to decompress the data messages. The header messages are described in section [2.2.2.2](#), and the data messages are described in section [2.2.2.3](#). The stream MUST start with the header messages and any of these headers can appear in the stream at a later stage. The header messages can be repeated.



**Figure 16: Message sequencing in the RemoteFX stream**

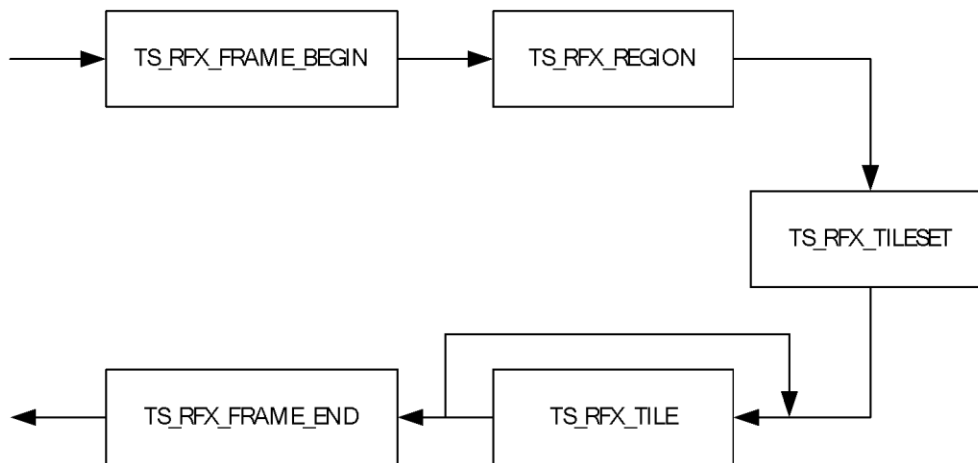
The first message in a RemoteFX stream MUST be the TS\_RFX\_SYNC (section [2.2.2.2.1](#)) message. This message MUST be followed by the TS\_RFX\_CHANNELS (section [2.2.2.2.3](#)), TS\_RFX\_CODEC\_VERSIONS (section [2.2.2.2.2](#)), and TS\_RFX\_CONTEXT (section [2.2.2.2.4](#)) messages, as shown in the figure that follows. It is permissible for these three messages to occur in any order. These three messages contain all of the information needed to initialize the decoder.



**Figure 17: Generation of RemoteFX encode header messages**

The TS\_RFX\_CHANNELS message MUST contain a single channel, and the frame dimensions of this channel are given by the **width** and **height** fields of the corresponding [TS\\_RFX\\_CHANNEL](#) structure (section 2.2.2.1.3). The decoder MUST check the TS\_RFX\_CODEC\_VERSIONS and TS\_RFX\_CONTEXT messages to determine whether it is compatible with the RemoteFX codec version and the encoding properties listed in these messages. If the decoder cannot support the codec version, the channel frame dimensions, or any of the listed encoding properties, it MUST reject the encoded stream.

The data associated with each encoded frame or image is always bracketed by the TS\_RFX\_FRAME\_BEGIN (section [2.2.2.3.1](#)) and TS\_RFX\_FRAME\_END (section [2.2.2.3.2](#)) messages. The sequence of blocks that comprise a frame are described in the figure that follows. There MUST only be one TS\_RFX\_REGION (section [2.2.2.3.3](#)) message per frame and one TS\_RFX\_TILESET (section [2.2.2.3.4](#)) message per TS\_RFX\_REGION. All of the messages corresponding to a frame associated with a given channel MUST occur consecutively within the codec byte-stream. The messages corresponding to frames from two different channels MUST NOT be interleaved.



**Figure 18: Generation of RemoteFX encode data messages**

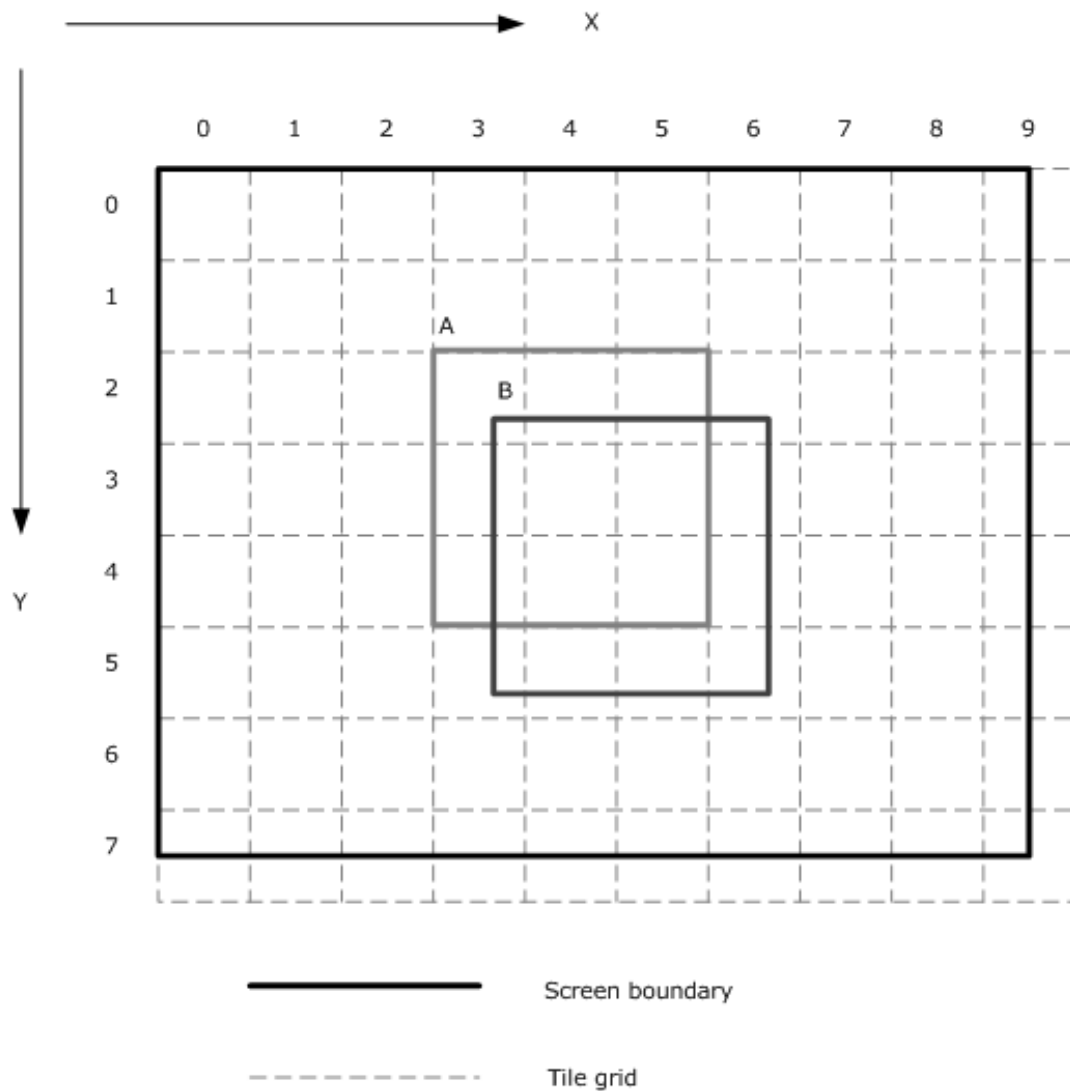
## 4 Protocol Examples

### 4.1 Sample Use Case

Consider the case of a remote endpoint system with one monitor configured to use a display resolution of 1280 x 1024 pixels. In this scenario, there is one instance of the RemoteFX encoder running on the remote system. The encoder is configured to use one channel with frame buffer dimensions of 1280 x 1024. As the contents of the screen are updated over time, the changes are captured, and the affected regions in the frame buffer corresponding to the bounding rectangles of the updated areas are fed as input to the encoder to compress.

The encoder examines the update regions and determines the set of tiles that correspond to those regions. The tile grid is anchored to the frame at (0, 0) and aligned to the tile size. This means that as an update region (for example, a window being dragged) moves around on the screen, the number of tiles corresponding to that update region can vary. In the figure that follows, the regions A and B are the same size (3 x 3) but they correspond to 9 and 16 tiles respectively due to their location on the screen. In the case of border tiles where the update region is not aligned to the tile grid, the area of the tile outside of the actual update region can contain arbitrary data and hence cannot be relied upon to contain valid image data. In the figure that follows, region B is not aligned to the tile grid and hence the perimeter tiles only contain a partial image.





**Figure 19: Update region to tile grid mapping**

The single monitor configuration results in a `TS_RFX_CHANNELS` (section [2.2.2.2.3](#)) header message that specifies one channel set to 1280 x 1024. For every frame that is encoded due to region updates, the message sequence that results is described in the encode messages diagram in section [3.1.8.3.1](#). The `TS_RFX_REGION` (section [2.2.2.3.3](#)) message contains the list of updated rectangles, and the accompanying `TS_RFX_TILESET` (section [2.2.2.3.4](#)) message contains the corresponding set of tiles. The `TS_RFX_TILE` (section [2.2.2.3.4.1](#)) structure contains the location of the tile in the frame. Conceptually, the decoder can decode each tile, **blit** it to the proper location in a temporary frame buffer, and then blit all of the updated rectangles to an output frame buffer.

## 4.2 Annotated RemoteFX Messages

### 4.2.1 Capabilities Messages

The following is an annotated network capture of the [TS\\_RFX\\_CLNT\\_CAPS\\_CONTAINER](#) message (section 2.2.1.1).

```
00000000 31 00 00 00 01 00 00 00 25 00 00 00 c0 cb 08 00
00000010 00 00 01 00 c1 cb 1d 00 00 00 01 c0 cf 02 00 08
00000020 00 00 01 40 00 00 01 01 01 00 01 40 00 00 01 01
00000030 04
```

#### [TS\\_RFX\\_CAPS](#) message (section 2.2.1.1.1):

```
c0 cb -> TS_RFX_CAPS::blockType = CBY_CAPS
08 00 00 00 -> TS_RFX_CAPS::blockLen = 8
01 00 -> TS_RFX_CAPS::numCapsets = 1
```

#### [TS\\_RFX\\_CAPSET](#) message (section 2.2.1.1.1.1):

```
c1 cb -> TS_RFX_CAPS::TS_RFX_CAPSET[0]::blockType = CBY_CAPSET
1d 00 00 00 -> TS_RFX_CAPS::TS_RFX_CAPSET[0]::blockLen = 29
01 -> TS_RFX_CAPS::TS_RFX_CAPSET[0]::codecId = 1
c0 cf -> TS_RFX_CAPS::TS_RFX_CAPSET[0]::capsetType = CLY_CAPSET
02 00 -> TS_RFX_CAPS::TS_RFX_CAPSET[0]::numIcaps = 2
08 00 -> TS_RFX_CAPS::TS_RFX_CAPSET[0]::icapLen = 8
```

#### [TS\\_RFX\\_ICAP](#) message (section 2.2.1.1.1.1.1):

```
00 01 -> TS_RFX_CAPS::TS_RFX_CAPSET[0]::TS_RFX_ICAP[0]::version = CLW_VERSION_1_0
40 00 -> TS_RFX_CAPS::TS_RFX_CAPSET[0]::TS_RFX_ICAP[0]::tileSize = 64
00 -> TS_RFX_CAPS::TS_RFX_CAPSET[0]::TS_RFX_ICAP[0]::flags = VIDEO_MODE (0)
01 -> TS_RFX_CAPS::TS_RFX_CAPSET[0]::TS_RFX_ICAP[0]::colConvBits = CLW_COL_CONV_ICT
01 -> TS_RFX_CAPS::TS_RFX_CAPSET[0]::TS_RFX_ICAP[0]::transformBits = CLW_XFORM_DWT_53_A
01 -> TS_RFX_CAPS::TS_RFX_CAPSET[0]::TS_RFX_ICAP[0]::entropyBits = CLW_ENTROPY_RLGR1
00 01 -> TS_RFX_CAPS::TS_RFX_CAPSET[0]::TS_RFX_ICAP[1]::version = CLW_VERSION_1_0
40 00 -> TS_RFX_CAPS::TS_RFX_CAPSET[0]::TS_RFX_ICAP[1]::tileSize = 64
00 -> TS_RFX_CAPS::TS_RFX_CAPSET[0]::TS_RFX_ICAP[1]::flags = VIDEO_MODE (0)
01 -> TS_RFX_CAPS::TS_RFX_CAPSET[0]::TS_RFX_ICAP[1]::colConvBits = CLW_COL_CONV_ICT
01 -> TS_RFX_CAPS::TS_RFX_CAPSET[0]::TS_RFX_ICAP[1]::transformBits = CLW_XFORM_DWT_53_A
04 -> TS_RFX_CAPS::TS_RFX_CAPSET[0]::TS_RFX_ICAP[1]::entropyBits = CLW_ENTROPY_RLGR3
```

The client has specified support for both RLGR1 and RLGR3, by including two TS\_RFX\_ICAP elements. The server can pick either of the two and use the corresponding encoding properties, as described in section [3.1.5.1](#).

The following is an annotated dump of the [TS\\_RFX\\_SRV\\_CAPS\\_CONTAINER](#) message (section 2.2.1.2).

```
00000000 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00000010 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00000020 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00000030 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
```

The server has sent an array of bytes set to zero as described in section 2.2.1.2.

## 4.2.2 Encode Header Messages

The following is an annotated network capture of the [Encode Header Messages](#) (section 2.2.2.2).

```
00000000 c0 cc 0c 00 00 00 ca ac cc ca 00 01 c3 cc 0d 00
00000010 00 00 01 ff 00 40 00 28 a8 c1 cc 0a 00 00 00 01
```

```
00000020 01 00 01 c2 cc 0c 00 00 00 01 00 40 00 40 00
```

#### [TS\\_RFX\\_SYNC](#) message (section 2.2.2.2.1):

```
c0 cc -> TS_RFX_SYNC::BlockT::blockType = WBT_SYNC
0c 00 00 00 -> TS_RFX_SYNC::BlockT::blockLen = 12
ca ac cc ca -> TS_RFX_SYNC::magic = WF_MAGIC
00 01 -> TS_RFX_SYNC::version = 0x0100
```

#### [TS\\_RFX\\_CONTEXT](#) message (section 2.2.2.2.4):

```
c3 cc -> TS_RFX_CONTEXT::CodecChannelT::BlockT::blockType = WBT_CONTEXT
0d 00 00 00 -> TS_RFX_CONTEXT::CodecChannelT::BlockT::blockLen = 13
01 -> TS_RFX_CONTEXT::CodecChannelT::codecId = 1
ff -> TS_RFX_CONTEXT::CodecChannelT::channelId = 255
00 -> TS_RFX_CONTEXT::ctxId = 0
40 00 -> TS_RFX_CONTEXT::tileSize = 64
28 a8 -> TS_RFX_CONTEXT::properties
TS_RFX_CONTEXT::properties::flags = VIDEO_MODE (0)
TS_RFX_CONTEXT::properties::cct = COL_CONV_ICT (1)
TS_RFX_CONTEXT::properties::xft = CLW_XFORM_DWT_53_A (1)
TS_RFX_CONTEXT::properties::et = CLW_ENTROPY_RLGR3 (4)
TS_RFX_CONTEXT::properties::qt = SCALAR_QUANTIZATION (1)
TS_RFX_CONTEXT::properties::r = RESERVED
```

#### [TS\\_RFX\\_CODEC\\_VERSIONS](#) message (section 2.2.2.2.2):

```
c1 cc -> TS_RFX_CODEC_VERSIONS::BlockT::blockType = WBT_CODEC_VERSION
0a 00 00 00 -> TS_RFX_CODEC_VERSIONS::BlockT::blockLen = 10
01 -> TS_RFX_CODEC_VERSIONS::numCodecs = 1
01 -> TS_RFX_CODEC_VERSIONS::TS_RFX_CODEC_VERSIONT::codecId = 1
00 01 -> TS_RFX_CODEC_VERSIONS::TS_RFX_CODEC_VERSIONT::version 0x0100
```

#### [TS\\_RFX\\_CHANNELS](#) message (section 2.2.2.2.3):

```
c2 cc -> TS_RFX_CHANNELS::BlockT::blockType = WBT_CHANNELS
0c 00 00 00 -> TS_RFX_CHANNELS::BlockT::blockLen = 12
01 -> TS_RFX_CHANNELS::numChannels = 1
00 -> TS_RFX_CHANNELS::TS_RFX_CHANNELT::channelId = 0
40 00 -> TS_RFX_CHANNELS::TS_RFX_CHANNELT::width = 64
40 00 -> TS_RFX_CHANNELS::TS_RFX_CHANNELT::height = 64
```

The server has chosen to encode using RLGR3 (TS\_RFX\_CONTEXT) and specified one channel with dimensions of 64x64 (TS\_RFX\_CHANNELS).

### 4.2.3 Encode Data Messages

The following is an annotated network capture of the [Encode Data Messages \(section 2.2.2.3\)](#).

```
00000000 c4 cc 0e 00 00 00 01 00 00 00 00 01 00 c6 cc
00000010 17 00 00 00 01 00 cd 01 00 00 00 00 40 00 40
00000020 00 c1 ca 01 00 c7 cc d9 03 00 00 01 00 c2 ca 00
00000030 00 51 50 01 40 01 00 be 03 00 00 66 66 77 88 98
00000040 c3 ca be 03 00 00 00 00 00 00 00 00 26 01 3d
00000050 01 48 01 19 82 1d 10 62 9d 28 85 2c a2 14 b2 88
00000060 52 ca 21 4b 28 85 2c a2 14 b2 88 52 ca 21 4b 28
00000070 85 2c a2 14 b2 88 52 ca 21 4b 28 85 2c a2 14 b2
```

```
00000080 88 52 ca 21 4b 28 85 2c a2 14 b2 88 52 ca 21 4b
00000090 28 85 2c a2 14 b2 88 52 ca 21 4b 28 85 2c a2 14
000000A0 b2 88 52 ca 21 4b 28 85 2c a2 14 b0 00 20 f4 40
000000B0 0c c1 1e 20 26 22 20 33 23 c4 23 88 86 50 f1 22
000000C0 68 4c 91 85 10 34 4c 84 78 a2 0d 13 21 1e 29 06
000000D0 89 90 8f 14 83 44 f4 23 c5 20 d1 3d 08 f1 48 34
000000E0 4f 42 3c 52 0d 13 d0 8f 14 83 44 f4 23 c5 20 d1
000000F0 3d 08 f1 48 34 4f 42 3c 52 0d 13 d0 8f 14 83 44
00000100 f4 23 c5 20 00 08 47 70 15 02 e0 7f e4 9d c2 51
00000110 71 f4 99 c9 57 ff 32 87 9d 17 d6 50 6e 06 2f ac
00000120 a0 9c 0c 5f 59 41 38 18 be b2 82 70 31 7d 65 00
00000130 00 10 ff 9c 33 41 f1 c4 b0 3c ff a2 15 bd 7b ea
00000140 86 9b 5f fc 78 8c f5 ed a8 68 da fd 3c 45 7a f4
00000150 d4 34 6d 7e 9e 22 bd 7a 6a 1a 36 bf 4f 11 5e bd
00000160 35 0d 1b 5f a7 88 af 5e 9a 86 8d af d3 c4 57 af
00000170 4d 43 46 d7 e9 e2 20 30 00 1b 04 7f 04 31 5f c2
00000180 94 af 05 29 5e 0a 52 bc 14 a5 78 29 25 78 29 25
00000190 78 29 25 68 52 4a f0 52 4a f0 52 4a d0 a4 95 e0
000001A0 a4 95 e0 a4 95 a1 49 2b c1 49 2b c1 49 2b 42 92
000001B0 57 82 92 57 82 92 56 85 24 af 05 24 af 05 24 ad
000001C0 0a 49 5e 0a 49 5e 0a 49 5a 14 92 bc 14 92 bc 14
000001D0 92 b4 29 25 78 29 25 78 00 02 0f 02 00 ac 13 fc
000001E0 c0 0a 20 10 2b 27 f9 80 b0 08 aa 3d 60 8c 0b 24
000001F0 ff 30 80 c0 aa 13 fc c2 03 05 90 9f e6 10 18 2c
00000200 84 ff 30 81 82 c8 4f f3 08 18 2c 84 ff 31 03 05
00000210 90 9f ff d8 40 60 59 09 fe 61 01 81 64 27 f9 84
00000220 06 0b 21 3f cc 20 30 59 09 fe 61 03 05 90 9f e6
00000230 10 30 59 09 fe 62 00 00 42 15 00 10 15 01 fe 20
00000240 84 d5 01 0a 8f f1 40 33 78 17 f9 c2 03 83 01 78
00000250 e1 01 c1 00 bc 70 80 e0 80 5e 38 40 70 40 2f 1c
00000260 20 38 20 17 8e 10 00 00 87 d5 08 70 ef 81 a2 d8
00000270 ff ff ff fb d1 2d 4e a6 ce 20 a4 ef 05 78 35 3a
00000280 9b 38 82 93 bc 15 e0 d4 ea 66 71 05 27 78 2b c1
00000290 29 d4 cc e2 0a 4e f0 57 82 53 a9 99 c4 14 9d e0
000002A0 af 04 a7 53 33 88 29 3b c1 5e 09 4e a6 67 10 52
000002B0 77 82 bc 00 18 00 1b fc 11 c1 0f 4a c1 4f 4a c1
000002C0 4f 4a a1 4d 95 42 9e 95 42 9e 95 42 9b 2a 85 3d
000002D0 2a 85 3d 2a 85 36 55 0a 7a 55 0a 7a 55 0a 6c aa
000002E0 14 f4 aa 14 f4 aa 14 d9 54 29 e9 54 29 e9 54 29
000002F0 b2 a8 53 d2 a8 53 d2 a8 53 65 50 a7 a5 50 a7 a5
00000300 50 a6 ca a1 4f 4a a1 4f 4a a1 4d 95 42 9e 95 42
00000310 9e 95 42 9b 2a 80 00 41 e3 80 3f e2 09 9c 00 22
00000320 07 03 e1 26 70 06 07 1f 04 67 00 61 df 02 67 00
00000330 0c 3b fe 01 33 80 06 1d ff 00 99 c0 03 0e ff 80
00000340 4c e0 01 87 7f c0 26 70 00 c3 bf e0 13 38 00 61
00000350 df f0 09 9c 00 30 ef f8 04 ce 00 18 77 fc 02 67
00000360 00 0c 3b fe 01 33 80 06 1d ff 00 99 c0 03 0e ff
00000370 80 4c e0 01 87 7f c0 26 70 00 00 08 3c 20 1f f1
00000380 00 f0 05 02 93 84 3d 20 f0 52 81 c7 ff ff ea 54
00000390 01 80 05 f5 4a 80 30 00 b6 a5 40 18 00 5f 54 a8
000003A0 03 00 0b ea 95 00 60 01 6d 4a 80 30 00 00 22 3f
000003B0 ba 08 10 2b 1f f2 20 3e 49 9c 1f 6e 0f 5a 0f fb
000003C0 18 46 ae 27 9b 83 cb 41 f3 18 46 ae 27 9b 83 c5
000003D0 a0 f9 8c 22 d7 13 8d c1 e2 d0 7c c6 11 6b 89 c6
000003E0 e0 f1 68 3e 63 08 b5 c4 e3 70 78 b4 1f 31 84 5a
000003F0 e2 71 b8 3c 5a 0f 98 c2 2d 71 30 83 c0 00 c5 cc
00000400 08 00 00 00 01 00
```

TS\_RFX\_FRAME\_BEGIN message (section 2.2.2.3.1):

```
c4 cc -> TS_RFX_FRAME_BEGIN::CodecChannelT::blockType = WBT_FRAME_BEGIN
0e 00 00 00 -> TS_RFX_FRAME_BEGIN::CodecChannelT::blockLen = 14
01 -> TS_RFX_FRAME_BEGIN::CodecChannelT::codecId = 1
00 -> TS_RFX_FRAME_BEGIN::CodecChannelT::channelId = 0
00 00 00 00 -> TS_RFX_FRAME_BEGIN::frameIdx = 0
01 00 -> TS_RFX_FRAME_BEGIN::numRegions = 1
```

### TS\_RFX\_REGION message (section 2.2.2.3.3):

```
c6 cc -> TS_RFX_REGION::CodecChannelT::blockType = WBT_REGION
17 00 00 00 -> TS_RFX_REGION::CodecChannelT::blockLen = 23
01 -> TS_RFX_REGION::CodecChannelT::codecId = 1
00 -> TS_RFX_REGION::CodecChannelT::channelId = 0
0d -> TS_RFX_REGION::regionFlags
TS_RFX_REGION::regionFlags::lrf = 1
01 00 -> TS_RFX_REGION::numRects = 1
00 00 -> TS_RFX_REGION::TS_RFX_RECT::x = 0
00 00 -> TS_RFX_REGION::TS_RFX_RECT::y = 0
40 00 -> TS_RFX_REGION::TS_RFX_RECT::width = 64
40 00 -> TS_RFX_REGION::TS_RFX_RECT::height = 64
c1 ca -> TS_RFX_REGION::regionType = CBT_REGION
01 00 -> TS_RFX_REGION::numTilesets = 1
```

### TS\_RFX\_TILESET message (section 2.2.2.3.4):

```
c7 cc -> TS_RFX_TILESET::CodecChannelT::blockType = WBT_EXTENSION
d9 03 00 00 -> TS_RFX_TILESET::CodecChannelT::blockLen = 985
01 -> TS_RFX_TILESET::codecId = 1
00 -> TS_RFX_TILESET::channelId = 0
c2 ca -> TS_RFX_TILESET::subtype = CBT_TILESET
00 00 -> TS_RFX_TILESET::idx = 0x00
51 50 -> TS_RFX_TILESET::properties
TS_RFX_TILESET::properties::lt = TRUE (1)
TS_RFX_TILESET::properties::flags = VIDEO_MODE (0)
TS_RFX_TILESET::properties::cct = COL_CONV_ICT (1)
TS_RFX_TILESET::properties::xft = CLW_XFORM_DWT_53_A (1)
TS_RFX_TILESET::properties::et = CLW_ENTROPY_RLGR3 (4)
TS_RFX_TILESET::properties::qt = SCALAR_QUANTIZATION (1)
01 -> TS_RFX_TILESET::numQuant = 1
40 -> TS_RFX_TILESET::tileSize = 64
01 00 -> TS_RFX_TILESET::numTiles = 1
df 03 00 00 -> TS_RFX_TILESET::tilesDataSize = 991
66 66 77 88 98 -> TS_RFX_TILESET::quantVals
TS_RFX_TILESET::quantVals::LL3 = 6
TS_RFX_TILESET::quantVals::LH3 = 6
TS_RFX_TILESET::quantVals::HL3 = 6
TS_RFX_TILESET::quantVals::HH3 = 6
TS_RFX_TILESET::quantVals::LH2 = 7
TS_RFX_TILESET::quantVals::HL2 = 7
TS_RFX_TILESET::quantVals::HH2 = 8
TS_RFX_TILESET::quantVals::LH1 = 8
TS_RFX_TILESET::quantVals::HL1 = 8
TS_RFX_TILESET::quantVals::HH1 = 9
```

### TS\_RFX\_TILE message (section 2.2.2.3.4.1):

```
c3 ca -> TS_RFX_TILE::BlockT::blockType = CBT_TILE
be 03 -> TS_RFX_TILE::BlockT::blockLen = 958
00 -> TS_RFX_TILE::quantIdxY = 0
00 -> TS_RFX_TILE::quantIdxCb = 0
00 -> TS_RFX_TILE::quantIdxCr = 0
00 00 -> TS_RFX_TILE::xIdx = 0
00 00 -> TS_RFX_TILE::yIdx = 0
26 01 -> TS_RFX_TILE::YLen = 294
3d 01 -> TS_RFX_TILE::CbLen = 317
48 01 -> TS_RFX_TILE::CrLen = 328
00000053:00000178 -> TS_RFX_TILE::YData
00000179:000002b5 -> TS_RFX_TILE::CbData
000002b6:000003fd -> TS_RFX_TILE::CrData
```

## [TS\\_RFX\\_FRAME\\_END](#) message (section 2.2.2.3.2):

```
c5 cc -> TS_RFX_FRAME_END::CodecChannelT::blockType = WBT_FRAME_END
08 00 00 00 -> TS_FRAME_END::CodecChannelT::blockLen = 14
01 -> TS_FRAME_END::CodecChannelT::codecId = 1
00 -> TS_FRAME_END::CodecChannelT::channelId = 0
```

The server has sent a frame that is delineated by `TS_RFX_FRAME_BEGIN` and `TS_RFX_FRAME_END` messages. The frame contains a single region, which has a single tileset. This tileset, in turn, consists of one 64x64 tile. The compressed sizes, in bytes, for the **YCbCr** components of this tile are (294, 317, 328).

### 4.2.4 Sample Decode Data Flow Sequence

The following sections present a sequence of annotated dumps of an encoded tile as it goes through the steps of the decoding algorithm. The sequence starts with the [TS\\_RFX\\_TILESET](#) (section 2.2.2.3.4) message, which contains the encoded tile data, and ends with the resulting decoded 64x64 XRGB image.

#### 4.2.4.1 Input TS\_RFX\_TILESET Message

The following is an annotated dump of a `TS_RFX_TILESET` (section 2.2.2.3.4) message containing a single encoded 64x64 tile.

```
00000000 c7 cc 3e 0b 00 00 01 01 c2 ca 00 00 51 50 01 40
00000010 01 00 23 0b 00 00 66 66 77 88 98 c3 ca 23 0b 00
00000020 00 00 00 00 00 00 00 00 ae 03 cf 03 93 03 c0 01
00000030 01 15 48 99 c7 41 a1 12 68 11 dc 22 29 74 ef fd
00000040 20 92 e0 4e a8 69 3b fd 41 83 bf 28 53 0c 1f e2
00000050 54 0c 77 7c a3 05 7c 30 d0 9c e8 09 39 1a 5d ff
00000060 e2 01 22 13 80 90 87 d2 9f fd fd 50 09 0d 24 a0
00000070 8f ab fe 3c 04 84 c6 9c de f8 80 c3 22 50 af 4c
00000080 2a 7f fe e0 5c a9 52 8a 06 7d 3d 09 03 65 a3 af
00000090 d2 61 1f 72 04 50 8d 3e 16 4a 3f ff fd 41 42 87
000000A0 24 37 06 17 2e 56 05 9c 1c b3 84 6a ff fb 43 8b
000000B0 a3 7a 32 43 28 e1 1f 50 54 fc ca a5 df ff 08 04
000000C0 48 15 61 d9 76 43 f8 2a 07 e9 65 f7 c6 89 2d 40
000000D0 a1 c3 35 8d f5 ed f5 91 ae 2f cc 01 ce 03 48 c0
000000E0 8d 63 f4 fd 50 20 2d 0c 9b b0 8d 13 c0 8a 09 52
000000F0 1b 02 6e 42 3b d0 13 4e 84 01 26 88 6a 04 84 34
00000100 2a a5 00 ba 54 48 58 ea 54 02 b4 1d a7 fa 47 82
00000110 ec 7a 77 fd 00 92 66 62 04 a6 9b ff f6 80 c0 69
00000120 01 c2 3e 90 14 20 2f fc 40 96 59 58 0c b1 13 68
00000130 20 2e b5 f5 df ff f8 fc 56 88 60 24 53 b5 41 46
00000140 5f f8 f1 7e de 4a 08 97 e0 55 03 8f e5 75 61 03
00000150 f2 e1 90 01 a2 8e 88 04 98 05 93 6b ff ea c0 60
00000160 a1 88 04 49 bf f7 ff 8c b4 59 90 80 30 64 53 ff
00000170 f5 c4 48 da da cb 80 38 61 57 b2 af 00 e8 7b 46
00000180 e6 d8 02 03 8a 06 18 14 32 83 d0 8a ee bc 81 b4
00000190 28 c4 7f f9 a1 69 00 91 c5 51 ff fe 3f e9 f1 70
000001A0 30 24 10 a7 cb 1f 8a 24 93 ed 83 00 36 20 d1 50
000001B0 e7 d8 ad 58 20 09 22 80 d0 ca 5d 1a d7 f1 60 75
000001C0 2a f2 d7 f8 c0 32 45 86 00 43 01 fe 80 f7 42 81
000001D0 74 84 4c a1 60 4c cb 14 58 01 4d 18 a1 aa 47 0e
000001E0 11 1a 40 7d 41 02 e3 30 cd 33 81 34 06 46 83 a2
000001F0 47 1c 04 aa 20 12 a2 8b 81 c4 9c a0 2e 06 32 f8
00000200 86 85 01 e8 70 f9 46 09 6a bf e0 f5 a4 c8 78 e7
00000210 d2 97 0b bc 3c 97 ff d5 40 94 b2 c1 18 18 11 1f
00000220 43 c1 18 c3 83 7f 9a 31 c4 8e 70 56 da f6 17 de
00000230 d1 02 0d 42 21 13 dc 3a 3c 40 9e f4 01 43 ea 0c
00000240 46 73 a2 7b 0c 80 ff e4 ad 2e 09 b4 63 b0 8c 54
00000250 59 fa ac 76 36 10 05 f0 98 88 83 42 00 20 71 cc
00000260 c1 a9 97 3e 5a 0d 04 50 92 23 20 0d 0a 1c 57 d7
```

00000270 ff 10 f2 03 0f 58 1b a5 11 f8 f1 b4 12 db 1a 48  
00000280 56 1f e3 c7 50 e9 16 b4 bc b0 40 93 ea b5 5b 2f  
00000290 fc 50 0a 6f cc 25 e0 06 ab 5f 24 fe 8b cb 42 43  
000002A0 7e 69 02 25 c7 38 00 6e e5 80 a8 a4 30 44 15 8f  
000002B0 e9 0c d3 a6 c2 14 34 4a fe 03 7f 06 a5 91 02 54  
000002C0 f1 a1 a1 53 bf 11 f2 8f 83 67 80 09 08 12 3f fd  
000002D0 44 91 c2 83 30 50 07 02 82 4d 31 34 06 41 79 6f  
000002E0 f0 cc 03 79 00 2c 05 24 ec 8d 29 15 af 44 c8 eb  
000002F0 4f e1 fd f1 41 48 81 08 af fe 51 48 ce e7 f9 b6  
00000300 0a 30 83 11 f0 0c 3b d2 a6 24 24 ef 25 fa 5a 3e  
00000310 92 3e 79 0e 35 61 c8 aa 1c 2e 9a 27 7f ff f0 7d  
00000320 30 5b bc 91 ff fe 43 24 28 66 a7 70 99 28 6e 2b  
00000330 18 2b d4 a1 77 3b 96 9f f7 eb be 1f 04 34 75 84  
00000340 31 42 4c 65 aa 09 50 a0 c4 51 31 d3 26 3a 1b f4  
00000350 6e 4a 4e 17 25 84 78 7d 2c 3f 46 18 ca 5f f9 e5  
00000360 38 2f d8 71 94 94 e2 cc a3 15 b0 da a9 cb 58 e4  
00000370 18 77 93 8a 51 c6 23 c4 4e 6d d9 14 1e 9b 8d bc  
00000380 cb 9d c4 18 05 f5 a9 29 f8 6d 29 38 c7 44 e5 3a  
00000390 cd ba 61 98 4a 57 02 96 42 02 d9 37 11 de 2d d4  
000003A0 3f fe 61 e7 33 d7 89 4a dd b0 34 47 f4 dc ad aa  
000003B0 c9 9d 7e 6d 4b cc dc 17 89 57 fd bb 37 75 47 5a  
000003C0 ec 2c 6e 3c 15 92 54 64 2c ab 9e ab 2b dd 3c 66  
000003D0 a0 8f 47 5e 93 1a 37 16 f4 89 23 00 00 b0 33 56  
000003E0 fa 14 1e ff 48 7a 7e 0f 10 1f f4 91 c8 10 56 84  
000003F0 ff 08 ec b4 ac 0e 0f ff ad c5 e0 1a 2f 82 04 9f  
00000400 91 c2 0e fe 48 36 79 01 42 14 ff fe 30 f0 08 18  
00000410 f1 81 45 9a 60 c1 79 f0 14 12 10 ce ea 31 5a ff  
00000420 fc 20 13 82 2f c9 02 1f 81 cb 00 e1 10 d2 b4 be  
00000430 87 ff b0 1e 27 81 b7 04 06 3c c2 04 f6 06 0e 28  
00000440 bc 40 bf 12 1e 86 d4 6a 7f 18 1b 96 85 4c 16 80  
00000450 df 2c a5 8d 86 a3 4a 8a b4 1b a1 38 a9 d5 ff ff  
00000460 ea 06 20 d2 95 1e f4 2f b2 12 0e 61 78 4a 17 52  
00000470 5d e4 25 1f fe c0 b3 1f ff ff ec 02 82 80 90 41  
00000480 88 de 48 2c 42 52 0b 2f 43 7e 50 78 f2 67 78 41  
00000490 34 3d c8 0f 67 a1 eb 21 fe c0 1f 22 60 41 6c 00  
000004A0 92 4b 60 10 d0 0d 01 35 05 0e 87 a2 a0 5d 1f a3  
000004B0 af 7f f1 be 8f cd a5 00 1c 10 40 15 76 81 05 ef  
000004C0 ee 00 60 84 00 99 40 4a 82 17 e9 fc c4 7f ff fd  
000004D0 04 80 06 06 dc af a7 7e 94 75 74 01 00 e0 91 00  
000004E0 85 7f 8e d6 0b 20 21 30 ca 62 8e 07 04 e9 45 40  
000004F0 5f 47 4a 30 15 41 cb df ff fc bf c3 b4 46 6a 01  
00000500 40 d0 a7 34 18 24 1c 2a 45 fe a8 05 08 61 fd a8  
00000510 80 71 01 25 9c c1 47 17 37 02 7a 15 ff f3 01 45  
00000520 7f d6 80 60 83 67 f8 9d 2f f4 dd 8c 30 01 51 42  
00000530 bc 43 7a 6b 9f 84 1e 00 48 c1 e0 b7 e0 7e 99 f2  
00000540 4a e9 40 02 81 c3 00 24 3a c5 52 0f 91 c8 68 25  
00000550 40 99 a4 25 1a 04 d0 a2 91 dd eb 93 00 21 49 24  
00000560 8b 40 75 38 14 a1 fd 3f 88 25 bf 32 00 e3 19 fc  
00000570 b9 f8 6f 81 c0 01 b3 93 20 09 08 25 84 e1 34 d4  
00000580 1b 48 88 11 a0 15 59 d7 07 81 81 3b a1 40 2e 2f  
00000590 48 70 09 c4 76 49 0f 2e 50 2e 46 19 a4 16 a2 1b  
000005A0 84 a2 89 58 fc 4f 3f 40 90 4c a3 01 32 09 02 80  
000005B0 9c 91 13 2c ba de 5d 99 f2 ff ff 3d 5a 1f a9 02  
000005C0 90 8f f3 08 bd 01 f8 d0 2a 95 41 0c 40 0a 20 c4  
000005D0 d4 cc 6b 0f f0 80 b1 5d 28 3d 08 c2 f8 31 02 49  
000005E0 88 14 28 ed e8 86 3b 00 9f 95 06 37 15 a4 59 c8  
000005F0 80 b6 10 f0 e5 b8 18 00 56 1c ff 95 21 0e 7f 2b  
00000600 c5 08 59 10 e1 46 31 8d ec e0 a1 99 bb 21 ff fe  
00000610 30 10 d0 05 e3 08 50 fc f3 0e 00 8d 68 8e 07 a6  
00000620 80 34 42 ed 1f 88 00 f0 8a 21 ae f7 fb 80 28 86  
00000630 0f ff ff 82 ea 47 95 91 e0 04 01 44 0c 29 ff 0e  
00000640 33 e8 c0 54 04 23 fc 81 5b f0 3c 07 10 70 30 d8  
00000650 21 6f ef de 46 09 43 fa 5f ff 0d 72 30 dd 00 db  
00000660 e4 48 24 97 08 46 b1 49 c4 4d 80 12 60 ff a4 a6  
00000670 ff f6 8c 00 40 05 02 b4 0f f0 3e fc 84 38 81 94  
00000680 8b fe 49 ef c0 10 49 88 28 a2 1c 2a 8b 64 d4 86  
00000690 d7 ff ff ff eb 91 6b 11 10 00 69 4c bf b4 1c d8  
000006A0 00 07 16 80 60 0a 1c 82 42 27 82 43 c9 0a 64 20  
000006B0 5a 5f 4e bf 8c 38 82 36 02 07 72 79 07 23 b4 bb

000006C0 57 5f e8 04 dd 39 e9 07 95 be 04 2b dd 8e 22 dc  
000006D0 14 2c 61 a3 a9 cd 4f 82 5d a0 44 df f4 96 ff f5  
000006E0 2b ff fe 01 19 d2 a2 9e 43 a5 7f f0 4c 4c 2b 3c  
000006F0 33 e2 55 ff 04 06 29 2c 0d 22 5d 7c 93 ba 18 af  
00000700 f9 32 a6 c3 99 46 79 e3 06 a6 38 8b 92 22 4b db  
00000710 1b 36 20 b0 6c 20 ce 37 42 e1 66 d4 49 34 42 8b  
00000720 fa 9c 12 99 dc 06 87 fa 46 f8 2f 04 a9 d8 82 07  
00000730 a6 30 0f c0 df 35 e8 90 f0 ff ff a8 e0 d7 02 60  
00000740 1a c3 20 28 a2 31 29 3c eb 04 a5 dd 48 0e 82 a4  
00000750 b6 56 22 06 57 e0 da 10 27 31 0e 11 77 fe 02 60  
00000760 16 48 81 8c 0d 05 17 7f cb bb 7e 25 2a 41 fd 8a  
00000770 7f c9 36 7c e0 98 7e 92 ef 7e 06 03 13 3e 20 3a  
00000780 bf 4c c3 0f 2e 80 74 bf 39 3c f0 a6 b2 e9 3f 41  
00000790 55 1f 2c f5 d2 7e 8c ae 4e aa 61 3c bc 3f c4 c7  
000007A0 36 dc 23 c8 b8 52 e2 8a 80 18 00 00 b2 46 a2 56  
000007B0 0d 12 94 aa bd 01 07 ff fa 34 0c 5f f8 0c 12 50  
000007C0 af d6 d1 89 40 a4 ff e0 ce c4 49 25 9d c1 ff 7e  
000007D0 60 24 5d cc 10 c0 be 5a 12 d3 c3 fe 2d 40 7c 28  
000007E0 9e 71 01 d2 6e 86 0b c8 f2 9b 45 08 4c 04 52 7e  
000007F0 f2 7e d9 cc 0b 1c 20 80 ae af fe b0 6d 23 f2 41  
00000800 e3 2e 20 11 4b 74 89 dd ff a8 38 a3 95 82 15 f0  
00000810 d0 d5 f1 92 8e ee c0 26 81 e9 47 ff ee 0d 20 34  
00000820 31 3a ef 40 b2 29 47 19 7f 04 27 f1 90 85 09 86  
00000830 7d 42 e2 54 5d 5f e8 0e d0 2c aa 16 bf 04 a7 f8  
00000840 a2 46 0b 08 7a 79 e9 28 62 7c 33 f4 0b 14 82 fa  
00000850 61 eb c1 ff 4c a4 11 7f 03 68 44 c1 1f 81 3a 6c  
00000860 77 95 02 2b 53 80 e5 10 1e 90 e8 fd 1f a6 40 0b  
00000870 13 ff 4e 4d 7f 52 e8 af 9a c1 80 0f 0a 14 02 3c  
00000880 c0 09 13 e7 dc c0 1a 28 a0 e4 83 8e 03 88 d5 af  
00000890 1a bd 91 00 b7 4e ba df f8 db cc 02 43 c4 14 2a  
000008A0 3f c8 0d 09 1c 44 f4 01 3c ca 28 56 80 a6 85 00  
000008B0 ea 3e 8f eb 9f fc 6e 07 c4 e0 30 78 a0 1e 6f 54  
000008C0 78 51 ff 56 4a 01 47 02 4c 21 3b fb 90 0a cc 1d  
000008D0 d2 47 ff fc 70 18 22 c0 b9 2f e9 7f 91 d3 66 2f  
000008E0 80 2c 24 a7 fa 84 51 ab 6b 72 00 ab 33 04 cf 43  
000008F0 ff 17 51 84 0c 01 50 10 8f 90 34 41 44 84 8e 08  
00000900 19 04 48 50 84 38 3d 02 52 f9 7c d2 d0 1f 13 42  
00000910 a0 21 41 c4 02 02 3d 09 c8 fd 60 7d 35 4f 7f ff  
00000920 f9 97 6a d8 00 c3 83 00 09 50 4b 90 8a c7 94 4d  
00000930 47 c1 62 32 28 24 09 52 2e 2e 1c 96 44 a0 09 c8  
00000940 ce 64 a9 1c 19 0e 52 3e 3e 19 93 a0 36 26 22 08  
00000950 9a 00 dd 66 3a 93 d5 89 d1 40 06 d4 a8 22 73 7b  
00000960 3d 3f e3 04 94 ff ff ff ff 0c 56 77 ac e0 c4 06  
00000970 1f b8 a5 80 fd 68 1c 32 16 03 de 71 2a 3d 14 19  
00000980 be c2 88 d9 24 92 5f c5 90 0a 85 c2 3f 87 03 a8  
00000990 26 17 c4 06 86 12 87 76 0a 48 16 ed 96 93 ec 1b  
000009A0 30 73 e8 1a 3f ff 4d ce 40 f3 0c 51 4b 84 9e 67  
000009B0 2b 15 40 1a a0 fc 10 0f d8 81 35 87 ff 98 0f 40  
000009C0 00 ba c0 71 e2 00 18 28 b3 82 cc 80 6a a0 43 ff  
000009D0 2d d6 04 8a 68 ff ff ff fc 1a f3 1a 2a 06 c0 01  
000009E0 40 0c 30 c1 d0 d7 4f cb 74 1f 07 d3 b4 0d 88 98  
000009F0 ea da 9f ce 2b 3c 55 b3 40 14 ff ff ff ea db 9b  
00000A00 92 d8 68 08 0b 41 09 26 40 8c f1 b0 9a 98 c0 80  
00000A10 8b f0 3d e7 ec 19 68 21 03 29 7f e1 6d 4c 0f 01  
00000A20 d1 51 01 1a 50 2a 59 27 80 c1 6e 33 f1 80 e1 49  
00000A30 08 e9 17 ff ff ff 80 5a 10 10 36 5e ca f8 3a 00  
00000A40 1e b0 06 84 01 f3 07 1b 4a c0 1e 21 43 8e a5 55  
00000A50 77 c7 65 7c c2 df 5e 0c 42 20 d2 48 61 c8 1c 65  
00000A60 f8 fe 4c 88 71 1f 82 50 81 a3 54 09 13 28 52 f5  
00000A70 e0 82 c3 06 7f fa 2c cf f8 f4 7f ff fd 01 49 a4  
00000A80 b8 de 62 84 fe ed 65 1f 3c 3c b2 50 76 30 5b 03  
00000A90 c0 08 a6 64 90 c8 cd 14 6e 69 46 7a c6 1c 87 d7  
00000AA0 48 7b 49 05 2d 5e 7f cb 67 f0 d9 0d 1e 9e 53 b7  
00000AB0 64 a5 a5 10 39 06 11 3f b1 a9 a6 e8 4d 47 77 da  
00000AC0 43 76 89 45 09 70 c2 38 0f 09 6f e7 2d 82 35 07  
00000AD0 fe 64 18 2e b8 04 42 54 80 43 12 6c 9a 55 c9 0a  
00000AE0 a0 79 47 52 65 2a ff 50 11 c9 4e fe 5b 30 a4 e8  
00000AF0 30 63 ff 21 12 1b dc 1c 01 41 51 1f ff fa c3 e3  
00000B00 55 f1 66 e2 d5 78 5e fa 4d f2 61 01 26 15 a9 f9



```
00000B10 d9 32 41 90 36 4e ae e3 0b 16 56 8c 6e 42 5d d8
00000B20 1e fe 1d 40 3a 50 9f 09 14 eb 6e 48 7a 91 88 7b
00000B30 7d 8f 72 42 39 b0 1c 65 18 23 8b 60 30 00
```

#### TS\_RFX\_TILESET message (section 4.2.4.1).

```
c7 cc -> TS_RFX_TILESET::CodecChannelT::blockType = WBT_EXTENSION
3e 0b 00 00 -> TS_RFX_TILESET::CodecChannelT::blockLen = 2878
01 -> TS_RFX_TILESET::codecId = 1
00 -> TS_RFX_TILESET::channelId = 0
c2 ca -> TS_RFX_TILESET::subtype = CBT_TILESET
00 00 -> TS_RFX_TILESET::idx = 0x00
51 50 -> TS_RFX_TILESET::properties
TS_RFX_TILESET::properties::lt = TRUE (1)
TS_RFX_TILESET::properties::flags = VIDEO_MODE (0)
TS_RFX_TILESET::properties::cct = COL_CONV_ICT (1)
TS_RFX_TILESET::properties::xft = CLW_XFORM_DWT_53_A (1)
TS_RFX_TILESET::properties::et = CLW_ENTROPY_RLGR3 (4)
TS_RFX_TILESET::properties::qt = SCALAR_QUANTIZATION (1)
01 -> TS_RFX_TILESET::numQuant = 1
40 -> TS_RFX_TILESET::tileSize = 64
01 00 -> TS_RFX_TILESET::numTiles = 1
23 0b 00 00 -> TS_RFX_TILESET::tilesDataSize = 2851
66 66 77 88 98 -> TS_RFX_TILESET::quantVals
TS_RFX_TILESET::quantVals::LL3 = 6
TS_RFX_TILESET::quantVals::LH3 = 6
TS_RFX_TILESET::quantVals::HL3 = 6
TS_RFX_TILESET::quantVals::HH3 = 6
TS_RFX_TILESET::quantVals::LH2 = 7
TS_RFX_TILESET::quantVals::HL2 = 7
TS_RFX_TILESET::quantVals::HH2 = 8
TS_RFX_TILESET::quantVals::LH1 = 8
TS_RFX_TILESET::quantVals::HL1 = 8
TS_RFX_TILESET::quantVals::HH1 = 9
```

#### TS\_RFX\_TILE message (section 2.2.2.3.4.1).

```
c3 ca -> TS_RFX_TILE::BlockT::blockType = CBT_TILE
23 0b -> TS_RFX_TILE::BlockT::blockLen = 2851
00 -> TS_RFX_TILE::quantIdxY = 0
00 -> TS_RFX_TILE::quantIdxCb = 0
00 -> TS_RFX_TILE::quantIdxCr = 0
00 00 -> TS_RFX_TILE::xIdx = 0
00 00 -> TS_RFX_TILE::yIdx = 0
ae 03 -> TS_RFX_TILE::YLen = 942
cf 03 -> TS_RFX_TILE::CbLen = 975
93 03 -> TS_RFX_TILE::CrLen = 915
0000002e:000003db -> TS_RFX_TILE::YData
000003dc:000007aa -> TS_RFX_TILE::CbData
000007ab:00000b3d -> TS_RFX_TILE::CrData
```

#### 4.2.4.2 Entropy Decoded Data

The following are dumps of the Y, Cb, and Cr components of the tile after they are decoded using the [RLGR3 \(section 3.1.8.1.7.2\)](#) algorithm. The decoded data for each component has 4,096 (64x64) coefficients, and they contain the quantized DWT sub-bands (see the figure illustrating three-level DWT decomposition in section [3.1.8.1.4](#)) at the following ranges.

```
00000000:000003FF -> HL1 (32x32 coefficients)
00000400:000007FF -> LH1 (32x32 coefficients)
```

```

00000800:00000BFF -> HH1 (32x32 coefficients)
00000C00:00000CFF -> HL2 (16x16 coefficients)
00000D00:00000DFF -> LH2 (16x16 coefficients)
00000E00:00000EFF -> HH2 (16x16 coefficients)
00000F00:00000F3F -> HL3 (8x8 coefficients)
00000F40:00000F7F -> LH3 (8x8 coefficients)
00000F80:00000FBF -> HH3 (8x8 coefficients)
00000FC0:00000FFF -> LL3 (8x8 coefficients)

```

#### 4.2.4.2.1 Y Component Data

The following is a dump of the Y component data, as shown in the figure illustrating three-level DWT decomposition in section [3.1.8.1.4](#).

```

00000000 +0 +1 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
00000010 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
00000020 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
00000030 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
00000040 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
00000050 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
00000060 +1 +0 +2 +0 +0 +0 +0 -1 +0 +0 +0 +0 +0 +0 +0
00000070 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +1 +0 +0 +0
00000080 +0 +0 +1 +0 +0 +0 +2 +0 +0 +0 +0 +0 +0 +0 +0
00000090 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
000000A0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +1 +0 +0 +0 +0 +0
000000B0 +0 +0 -1 +0 +0 +0 +0 +0 +0 +0 +0 -1 +1 +0 +0
000000C0 +0 +0 +0 +0 +0 +0 -3 +0 +0 +1 +0 +0 +0 +0 +0
000000D0 +0 +2 +0 +0 +0 +0 +0 +0 +0 +1 +0 -2 +4 -5 -1 +0
000000E0 +0 +0 +0 +0 +0 -1 -3 +0 +0 +0 +0 +0 +0 +0 +0
000000F0 +0 -3 +0 +3 +0 +0 +0 +0 +0 +0 -1 +4 +4 -5 -1 +0
00000100 +0 +0 +0 +0 +0 -2 +5 +0 +0 +0 +0 +0 +2 +1 +0
00000110 +2 -5 -4 +1 +0 +0 +0 +0 +0 +1 +3 -1 +5 +0 -1
00000120 +0 +0 +0 +0 +0 -2 -2 -3 +0 +0 +0 +0 +3 +0 +0
00000130 +7 +0 -4 +0 +0 +0 +0 +0 +0 +0 +0 -1 +0 -1 +2 -1
00000140 +0 +0 +0 +0 +0 -3 +1 +5 +0 +0 +0 +0 +0 -1 +0
00000150 +0 +1 +7 +0 +0 +0 +0 +0 +0 +0 +0 +0 -1 +0 +0
00000160 +0 +0 +0 +0 +2 +0 +0 +0 -2 +0 +0 +0 +0 +1 +0
00000170 -9 -3 +5 +0 +0 +0 +0 +0 +0 +0 +0 +0 -1 +0 +0
00000180 +0 +0 +0 +0 +0 +0 -1 -1 -1 +0 +0 +0 +0 +0 +6
00000190 -2 -8 -1 +0 +0 +0 +0 +0 +0 +0 +0 +0 -1 +0 +0
000001A0 +0 +0 +0 +0 -3 +0 +0 +0 +0 +0 +0 -1 +0 -1 +0 +5
000001B0 +2 +3 +0 +0 +0 +0 +0 +0 +0 +1 +0 +2 +0 +0 +0
000001C0 +0 +0 +0 -1 +1 +0 +0 -1 +2 +0 +0 +1 +0 -1 +0
000001D0 -1 +7 +0 +0 +0 +0 +0 +0 +0 +0 +0 -3 -2 +0 +0
000001E0 +0 +0 +0 +3 -1 +0 -1 +0 +1 +0 +0 +0 +1 +2 -1 +0
000001F0 -5 +1 +0 +0 +0 +0 +0 +0 +0 +0 +0 -3 -4 +0 +0 +0
00000200 +0 +0 -1 -6 +1 +0 -1 +0 +0 +0 +0 +0 +0 +6 +0
00000210 -1 +0 +1 +0 +0 +1 -1 +0 +0 +0 +0 +0 +0 +0 +0
00000220 +0 +0 +3 -5 +0 +0 +0 +0 +0 +0 +0 +0 -1 -1 +1
00000230 +10 +0 +0 +0 -1 +1 +0 +0 +0 +0 -1 +1 +0 +0 +0
00000240 +0 +0 +7 +0 +0 +0 +0 +0 +0 +0 +0 +0 +1 -5 -5
00000250 +3 +0 +0 +0 +0 +0 +0 +0 -1 +0 -1 +0 +0 +0 +0
00000260 +0 -1 -2 +0 +0 +0 -1 +0 +0 +0 +0 +0 +3 -1 -7
00000270 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +1 -6 +0 +0 +0
00000280 +0 +0 -8 +0 +0 +0 +0 +0 +0 +0 +0 +0 +3 +2 +4
00000290 +0 +0 +0 +0 +0 -1 +0 +0 +0 +0 +6 -1 +0 +0 +0
000002A0 -1 +7 -1 +0 +0 +0 -1 -1 +0 +0 +0 +0 -3 -1 +6
000002B0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +3 +1 +0 +0 +0
000002C0 +0 +4 +1 +2 -2 -2 +0 -1 +0 +0 +0 +1 -1 -7 +1
000002D0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 -6 +0 +0 +0 +0
000002E0 -1 -10 +3 +1 +2 +0 -2 +1 +0 +0 +0 +0 +0 -1 +0
000002F0 +0 +0 -1 +0 +0 +0 +0 +0 +0 +3 -2 +0 +0 +0 +0
00000300 +6 -8 -2 +0 -2 +1 +0 +0 -1 -1 -1 +1 +1 +1 +6
00000310 +0 +0 +0 +0 +0 +0 +0 +0 +0 +4 +1 +0 +0 +0 +0
00000320 +3 +2 +0 +1 +0 +0 +1 +1 +0 +0 +1 -2 +5 -3 +2 +0
00000330 +0 +0 +0 +1 +0 +0 +0 +0 +0 -2 +0 +0 +0 +0 +0

```

|          |    |    |    |     |    |    |    |    |    |    |    |    |    |    |    |    |    |
|----------|----|----|----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 00000340 | +0 | +0 | +0 | +0  | +0 | +0 | +0 | +0 | +0 | +0 | +0 | -1 | +0 | +0 | -3 | +0 | +1 |
| 00000350 | +0 | +0 | +1 | +1  | +0 | +0 | +0 | +0 | +0 | -4 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000360 | +0 | +0 | +0 | +0  | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | -1 | +1 |
| 00000370 | -1 | -1 | +0 | +0  | +1 | +0 | +0 | +0 | +0 | +3 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000380 | +0 | +0 | +0 | +0  | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | -1 | +0 |
| 00000390 | +0 | +0 | +1 | +1  | +1 | -2 | +0 | +1 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 000003A0 | +0 | +0 | +0 | +0  | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 000003B0 | -1 | +0 | -2 | +1  | +1 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 000003C0 | +0 | +0 | +0 | +0  | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 000003D0 | +0 | +0 | +0 | +3  | -1 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 000003E0 | +0 | +0 | +0 | +0  | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 000003F0 | +0 | +0 | +0 | -1  | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000400 | +0 | +0 | +0 | +0  | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000410 | +0 | +0 | +0 | +0  | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000420 | +0 | +0 | +0 | +0  | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000430 | +0 | +0 | +0 | +0  | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000440 | +0 | +0 | +0 | +0  | +0 | +0 | +0 | +0 | +1 | +0 | -1 | -1 | +0 | +0 | -1 | -1 | -1 |
| 00000450 | +1 | +0 | +0 | +0  | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000460 | -1 | -1 | -1 | +0  | +0 | +0 | +0 | -1 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000470 | +0 | -1 | +0 | +0  | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000480 | -1 | -1 | -1 | +0  | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000490 | +0 | +0 | +0 | +0  | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 000004A0 | +0 | +0 | +0 | +0  | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 000004B0 | +0 | +0 | +0 | +0  | -1 | +1 | +0 | +0 | +0 | +0 | +0 | +0 | -2 | -8 | +2 | +0 | +0 |
| 000004C0 | +0 | +0 | +0 | +0  | +0 | +0 | -1 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 000004D0 | +0 | +0 | +0 | +0  | +0 | +0 | -1 | +0 | +0 | +1 | +0 | -2 | +4 | +4 | -1 | +0 | +0 |
| 000004E0 | +0 | +0 | +0 | +0  | +0 | -1 | +3 | -1 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +1 | +0 |
| 000004F0 | +0 | +1 | +0 | +0  | +0 | +0 | +0 | +0 | +0 | +0 | -1 | +3 | +3 | -7 | -1 | +0 | +0 |
| 00000500 | +0 | +0 | +0 | +0  | +0 | +0 | +0 | +1 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000510 | +0 | +0 | -1 | +1  | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +1 | +0 | +0 | +0 | +6 | +3 |
| 00000520 | +0 | +0 | +0 | +0  | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +1 | +0 | +0 | +0 | +0 | +0 |
| 00000530 | +1 | +0 | +0 | +0  | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | -8 | +0 |
| 00000540 | +0 | +0 | +0 | +0  | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +1 | -2 | -2 | +2 | -1 | +0 |
| 00000550 | +0 | +0 | -1 | +0  | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000560 | +0 | +0 | +0 | +0  | +0 | -1 | +0 | +0 | +1 | +1 | +3 | +1 | +0 | +0 | +0 | +0 | +0 |
| 00000570 | +0 | +0 | +0 | +0  | +0 | +0 | +0 | +1 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000580 | +0 | +0 | +0 | +0  | +0 | -1 | +0 | -1 | -5 | -3 | -4 | -6 | -6 | +7 | +1 | +1 | +1 |
| 00000590 | -1 | +0 | +0 | +0  | +0 | +0 | +0 | +0 | -1 | -2 | -3 | +0 | +1 | +0 | +0 | +0 | +0 |
| 000005A0 | +0 | +0 | +0 | +0  | +0 | +1 | +0 | +2 | -1 | +0 | -2 | -3 | +1 | +1 | -8 | +6 | +6 |
| 000005B0 | +0 | -1 | +1 | +0  | +0 | +0 | +0 | +1 | +1 | +0 | +0 | +6 | -3 | -1 | +0 | +0 | +0 |
| 000005C0 | +0 | +0 | +0 | -1  | +5 | +2 | -6 | -2 | +0 | +0 | +0 | +2 | +7 | -6 | -1 | +0 | +0 |
| 000005D0 | +0 | +1 | +0 | +0  | +0 | +0 | +0 | +0 | +0 | +0 | -1 | -1 | +1 | +6 | +0 | +0 | +0 |
| 000005E0 | +0 | +0 | +0 | +0  | -2 | +1 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | -1 | +6 | -1 | +0 |
| 000005F0 | +1 | -6 | +7 | +0  | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +1 | -1 | -1 | +0 | +0 | +0 |
| 00000600 | +0 | +0 | +0 | +1  | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000610 | -1 | -2 | +0 | -8  | +6 | +6 | +4 | +3 | +3 | +4 | -1 | -2 | +0 | +0 | +0 | +0 | +0 |
| 00000620 | +0 | +0 | +0 | +0  | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +2 | -1 |
| 00000630 | -1 | +7 | -8 | +0  | +1 | -2 | -4 | -3 | -1 | +1 | -3 | -4 | +1 | +0 | +0 | +0 | +0 |
| 00000640 | +0 | +0 | +0 | +0  | +0 | +0 | +0 | +0 | +0 | +0 | +1 | +0 | +1 | -3 | -5 | +0 | +0 |
| 00000650 | +1 | +0 | +0 | +8  | -1 | -7 | -9 | -7 | -2 | +6 | +3 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000660 | +0 | +0 | +1 | +0  | +0 | +0 | -1 | -1 | +0 | +0 | +0 | +0 | +0 | +1 | -1 | +0 | +0 |
| 00000670 | +0 | +0 | +0 | +0  | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000680 | +0 | +0 | +0 | +0  | +0 | +0 | +1 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | -1 |
| 00000690 | +1 | +0 | +0 | +0  | +0 | +0 | -1 | +1 | +0 | +0 | +1 | -1 | +0 | +0 | +0 | +0 | +0 |
| 000006A0 | -1 | +1 | -1 | +1  | +1 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 000006B0 | +0 | +0 | +0 | +0  | +0 | +0 | +0 | +0 | -1 | +1 | -1 | +0 | +0 | +0 | +0 | +0 | +0 |
| 000006C0 | +0 | +1 | +1 | +3  | +3 | +0 | +1 | +1 | -1 | +1 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 000006D0 | +0 | +0 | +0 | +0  | +0 | +0 | +0 | +0 | +0 | +0 | +1 | +0 | +0 | +0 | +1 | +0 | +0 |
| 000006E0 | +0 | +0 | +2 | +1  | -4 | -5 | -8 | -6 | -4 | +1 | +0 | +0 | -1 | +0 | +0 | +0 | +0 |
| 000006F0 | +0 | +0 | +0 | +0  | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +1 | +0 | +0 | +0 | +0 | +0 |
| 00000700 | +3 | -9 | -5 | +10 | +2 | +2 | +0 | -1 | +2 | +6 | -4 | -1 | +0 | +0 | +0 | +0 | +0 |
| 00000710 | +0 | +0 | +0 | +0  | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000720 | -1 | +2 | -1 | -1  | +1 | +0 | +0 | +0 | +0 | +0 | -1 | +4 | -2 | -1 | +1 | -1 | -1 |
| 00000730 | +1 | -1 | +0 | +0  | +0 | +0 | +0 | +0 | +0 | +1 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000740 | +0 | +0 | +0 | +0  | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +1 |
| 00000750 | -1 | +1 | +0 | +0  | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000760 | +0 | +1 | +0 | +0  | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | -1 | -1 | -1 |
| 00000770 | +0 | -1 | +1 | +1  | +0 | +1 | +0 | -1 | +3 | -1 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000780 | +0 | +0 | +0 | +0  | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | -1 |

|          |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|----------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 00000790 | -1 | -1 | +1 | +1 | +1 | +0 | -2 | -3 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 000007A0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 000007B0 | +0 | +0 | -1 | +4 | +2 | +1 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 000007C0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 000007D0 | +0 | +0 | +0 | +0 | -2 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 000007E0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 000007F0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000800 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000810 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000820 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000830 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000840 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000850 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000860 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000870 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000880 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000890 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 000008A0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 000008B0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | -1 | +1 | +0 | +0 |
| 000008C0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 000008D0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | -2 | -1 | +1 | +0 | +0 |
| 000008E0 | +0 | +0 | +0 | +0 | +0 | -1 | -1 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 000008F0 | +0 | -1 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | -1 | +1 | -2 | +0 | +0 | +0 |
| 00000900 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000910 | +0 | +0 | -1 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | -1 | +0 | +0 | +1 | -1 |
| 00000920 | +0 | +0 | +0 | +0 | +0 | -1 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000930 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000940 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000950 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000960 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000970 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000980 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | -1 | +0 | +0 | +0 | +1 |
| 00000990 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 000009A0 | +0 | +0 | +0 | +0 | +1 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | -1 |
| 000009B0 | +0 | +1 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +1 | +0 | +0 | +0 |
| 000009C0 | +0 | +0 | +0 | +0 | +1 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | -1 | +0 | +0 |
| 000009D0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +1 | +1 | +0 | +0 | +0 |
| 000009E0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | -1 | +0 |
| 000009F0 | +1 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +1 | +0 | +0 | +0 | +0 |
| 00000A00 | +0 | +0 | +0 | -1 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000A10 | -2 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000A20 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | -1 | +0 |
| 00000A30 | -1 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +1 | +0 | +0 | +0 | +0 |
| 00000A40 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | -1 | +1 | +0 |
| 00000A50 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | -1 | +0 | +0 | +0 | +0 |
| 00000A60 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +1 | +0 | +0 |
| 00000A70 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000A80 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +1 |
| 00000A90 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +1 | +0 | +0 | +0 | +0 | +0 |
| 00000AA0 | +0 | +1 | +0 | +0 | +0 | +1 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000AB0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000AC0 | +0 | +0 | -1 | +0 | +0 | +1 | +1 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000AD0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000AE0 | +0 | -1 | -1 | +2 | +0 | -1 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000AF0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000B00 | +1 | -1 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +1 | -1 | +0 | +0 | +0 | +0 | +0 |
| 00000B10 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000B20 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +1 | +0 |
| 00000B30 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000B40 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000B50 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000B60 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000B70 | -1 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000B80 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000B90 | -1 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000BA0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000BB0 | +0 | +0 | -1 | -1 | +1 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000BC0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000BD0 | +0 | +0 | +0 | -1 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |

|          |     |      |     |     |      |     |     |     |     |      |     |     |     |     |     |      |
|----------|-----|------|-----|-----|------|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|------|
| 00000BE0 | +0  | +0   | +0  | +0  | +0   | +0  | +0  | +0  | +0  | +0   | +0  | +0  | +0  | +0  | +0  | +0   |
| 00000BF0 | +0  | +0   | +0  | +0  | +0   | +0  | +0  | +0  | +0  | +0   | +0  | +0  | +0  | +0  | +0  | +0   |
| 00000C00 | +1  | +0   | +0  | +0  | +0   | +0  | +0  | +0  | +0  | +0   | +0  | +0  | +0  | +0  | +0  | +0   |
| 00000C10 | +1  | +0   | +0  | +1  | +0   | +0  | +1  | +0  | +0  | +0   | +0  | +0  | +0  | -1  | +0  | +0   |
| 00000C20 | -1  | -1   | +0  | -5  | +3   | -2  | +1  | +0  | -1  | +0   | +0  | +0  | +0  | +1  | -4  | -1   |
| 00000C30 | +0  | +0   | +1  | -5  | -2   | +1  | +1  | +1  | +6  | -2   | -1  | +0  | +1  | -4  | +21 | +6   |
| 00000C40 | +0  | +0   | -5  | -1  | +1   | +2  | +4  | +4  | +3  | +5   | +0  | +0  | -1  | +4  | -8  | -11  |
| 00000C50 | +0  | +0   | -2  | +8  | -1   | +0  | +3  | +1  | -18 | +16  | +1  | -1  | +2  | +0  | -4  | -4   |
| 00000C60 | +0  | +0   | -6  | +1  | -3   | -1  | +1  | +14 | -23 | +1   | +0  | +1  | +0  | +1  | -3  | -1   |
| 00000C70 | +0  | +0   | +0  | -5  | -2   | +3  | -1  | +11 | -8  | -3   | +0  | +1  | +0  | -1  | -3  | +1   |
| 00000C80 | +0  | +14  | +1  | +0  | -1   | +0  | +0  | -15 | -2  | +7   | +1  | -1  | +1  | -3  | -1  | -1   |
| 00000C90 | -2  | -14  | +0  | +1  | +0   | +0  | +5  | -18 | +14 | -7   | -1  | -1  | -2  | +13 | +1  | -1   |
| 00000CA0 | +3  | -14  | +1  | -2  | +2   | -1  | +11 | -16 | -2  | +2   | -1  | +1  | +0  | -9  | +0  | -1   |
| 00000CB0 | +19 | +1   | +1  | +1  | +0   | +2  | +2  | +8  | +0  | +0   | +0  | +0  | +1  | -13 | +0  | +0   |
| 00000CC0 | -6  | -3   | -1  | +0  | -2   | -2  | +6  | +13 | +0  | +0   | +0  | +1  | +9  | +1  | +0  | +0   |
| 00000CD0 | -1  | +2   | +0  | +0  | +1   | +0  | -5  | +0  | +0  | -1   | +0  | +0  | +1  | +1  | +0  | +0   |
| 00000CE0 | +0  | +0   | +0  | +0  | +0   | +0  | +1  | -2  | -4  | +1   | +4  | +4  | -2  | +0  | +0  | -1   |
| 00000CF0 | +0  | +0   | +0  | +0  | +0   | +0  | +0  | +0  | +1  | +0   | -4  | -1  | +0  | +0  | +0  | +0   |
| 00000D00 | +0  | +0   | +0  | +0  | +0   | +0  | +0  | +0  | +0  | +0   | +0  | +0  | +0  | +0  | +0  | +0   |
| 00000D10 | -2  | -1   | +1  | +1  | -1   | -3  | +0  | -2  | -3  | +0   | +0  | +0  | +0  | +0  | +0  | +0   |
| 00000D20 | -2  | -2   | +0  | +1  | -1   | +2  | +0  | +0  | +0  | +1   | -1  | +1  | +0  | +1  | -8  | -1   |
| 00000D30 | +0  | +0   | +1  | -3  | +0   | +0  | -1  | +3  | +0  | +0   | +1  | -3  | -3  | -3  | +3  | -4   |
| 00000D40 | +0  | +0   | +0  | +1  | +0   | +0  | +3  | -3  | -3  | -1   | +1  | +1  | +0  | +1  | -5  | +20  |
| 00000D50 | +0  | +0   | +0  | -1  | +2   | +7  | -1  | +0  | +3  | -2   | +1  | +0  | +4  | -1  | +0  | +1   |
| 00000D60 | +0  | +1   | -3  | +2  | -9   | -12 | -19 | +10 | -1  | +2   | +0  | -1  | +1  | +9  | -13 | +0   |
| 00000D70 | +0  | +1   | -4  | -13 | +0   | +0  | +16 | -7  | +0  | +16  | -3  | +1  | -2  | -1  | +2  | -1   |
| 00000D80 | +0  | +0   | +0  | +1  | +1   | +0  | +0  | +4  | -3  | -17  | -14 | +2  | -4  | -14 | -1  | +0   |
| 00000D90 | -1  | +1   | +0  | -1  | +0   | +1  | +1  | -2  | +1  | +3   | +17 | +13 | +15 | +9  | -2  | +0   |
| 00000DA0 | +2  | -3   | +2  | +2  | -2   | +2  | +1  | -1  | +1  | +0   | +0  | -2  | +5  | +7  | -1  | +0   |
| 00000DB0 | +1  | +4   | -7  | -14 | -7   | +2  | -2  | +0  | +0  | +0   | +0  | +0  | +0  | -1  | +1  | +0   |
| 00000DC0 | -3  | +17  | +8  | -1  | +4   | +8  | -9  | +6  | +0  | +1   | +0  | +0  | +0  | +0  | +0  | +0   |
| 00000DD0 | -1  | +1   | +0  | +0  | +0   | +0  | +0  | -2  | -2  | +2   | +0  | +0  | +5  | -1  | +0  | +0   |
| 00000DE0 | -1  | +0   | +0  | +0  | +0   | +0  | +0  | +0  | -5  | -4   | -2  | -6  | -1  | +0  | +0  | +0   |
| 00000DF0 | +0  | +0   | +0  | +0  | +0   | +0  | +0  | +0  | +0  | +0   | -7  | +1  | +0  | +0  | +0  | +0   |
| 00000E00 | +0  | +0   | +0  | +0  | +0   | +0  | +0  | +0  | +0  | +0   | +0  | +0  | +0  | +0  | +0  | +0   |
| 00000E10 | +0  | +0   | +0  | +1  | +0   | +0  | +0  | +0  | +0  | +0   | +0  | +0  | +0  | +0  | +0  | +0   |
| 00000E20 | +0  | +0   | +0  | +0  | +0   | +0  | +0  | +0  | +0  | +0   | +0  | +0  | -1  | +0  | -4  | -1   |
| 00000E30 | +0  | +0   | +0  | +0  | +0   | +0  | -1  | -1  | +1  | -1   | +0  | +0  | +0  | +0  | +2  | +2   |
| 00000E40 | +0  | +0   | +0  | +3  | +0   | +0  | +1  | +1  | -1  | +1   | +0  | +0  | +0  | +0  | -4  | -8   |
| 00000E50 | +0  | +0   | +0  | -1  | +0   | +0  | -1  | -1  | -1  | +0   | +0  | +0  | +0  | +0  | +0  | +0   |
| 00000E60 | +0  | +0   | +0  | +1  | +1   | -1  | -3  | +3  | +0  | +0   | +0  | -1  | +1  | +0  | +0  | +0   |
| 00000E70 | +0  | +1   | -2  | +0  | +0   | -1  | +3  | +1  | +2  | -1   | +0  | +0  | +0  | -2  | -1  | +0   |
| 00000E80 | +0  | +0   | +0  | +0  | +0   | +0  | +0  | +0  | +1  | +0   | +1  | +1  | +0  | -3  | +0  | +0   |
| 00000E90 | +0  | +0   | +0  | +0  | +0   | +0  | +1  | +0  | -1  | +2   | +0  | -1  | +1  | +0  | +0  | +0   |
| 00000EA0 | +1  | +1   | +0  | +0  | +0   | +0  | +0  | -1  | +0  | +0   | +0  | -1  | +0  | -2  | +0  | +0   |
| 00000EB0 | +2  | +2   | +1  | -1  | +0   | -1  | +0  | +0  | +0  | +0   | +0  | +0  | +0  | +0  | +0  | +0   |
| 00000EC0 | -2  | +2   | +0  | +0  | +1   | -2  | +1  | -1  | -1  | +0   | +0  | +0  | +0  | +0  | +0  | +0   |
| 00000ED0 | +0  | +0   | +0  | +0  | +0   | +0  | +1  | +0  | +0  | +0   | +0  | -1  | -2  | +0  | +0  | +0   |
| 00000EE0 | +0  | +0   | +0  | +0  | +0   | +0  | +0  | +0  | +1  | +1   | -1  | -1  | +0  | +0  | +0  | +0   |
| 00000EF0 | +0  | +0   | +0  | +0  | +0   | +0  | +0  | +0  | +0  | +0   | +1  | +0  | +0  | +0  | +0  | +0   |
| 00000F00 | +0  | +0   | -2  | -2  | +1   | +0  | -1  | -2  | +0  | -1   | +8  | +6  | +3  | +0  | -1  | -6   |
| 00000F10 | +0  | +4   | +5  | -13 | -53  | -3  | -2  | +0  | -2  | -15  | -7  | +25 | +8  | +3  | +7  | -25  |
| 00000F20 | +26 | -12  | +5  | +20 | +6   | +7  | -5  | -13 | +2  | -2   | +5  | -54 | +10 | -2  | +30 | +3   |
| 00000F30 | -46 | +11  | -9  | -1  | -2   | +1  | -18 | -2  | +8  | -3   | +3  | -5  | -4  | -1  | -5  | -2   |
| 00000F40 | -3  | +0   | +1  | -10 | -3   | +1  | -1  | +1  | -5  | -1   | -3  | +3  | +7  | -14 | -13 | +10  |
| 00000F50 | +0  | -1   | +11 | +2  | +5   | +2  | +12 | +0  | -8  | +24  | -21 | -49 | -4  | +10 | +9  | +31  |
| 00000F60 | -1  | +5   | +10 | +1  | +13  | -57 | -52 | +9  | +12 | -6   | -18 | +5  | +1  | -3  | -4  | -1   |
| 00000F70 | +13 | +21  | +8  | +11 | +3   | +7  | +7  | -2  | -3  | -1   | +0  | +2  | -14 | -19 | -7  | +1   |
| 00000F80 | -1  | -1   | -3  | -2  | +0   | +0  | -1  | -1  | -1  | -7   | +3  | +4  | +7  | -1  | -6  | -14  |
| 00000F90 | -1  | -7   | +3  | -12 | -16  | -2  | +2  | -1  | -9  | +1   | +7  | -21 | +25 | -4  | -2  | -23  |
| 00000FA0 | +2  | +2   | +3  | -4  | +22  | -4  | +5  | -4  | -2  | -2   | +4  | -7  | +0  | +0  | +3  | +2   |
| 00000FB0 | +17 | -6   | +7  | +5  | +3   | +1  | -5  | +0  | +1  | +0   | +0  | +6  | +1  | -4  | +2  | +0   |
| 00000FC0 | -1  | +1   | -1  | -14 | +3   | +0  | -7  | -4  | +50 | -13  | -11 | +34 | -26 | -23 | -3  | -1   |
| 00000FD0 | +45 | -4   | +21 | +57 | -17  | -43 | -17 | -15 | +27 | -7   | +25 | +30 | -23 | +65 | -13 | -88  |
| 00000FE0 | +45 | -103 | +85 | +71 | -116 | +88 | -30 | -57 | +57 | -101 | +94 | +25 | +17 | +5  | +6  | -107 |
| 00000FF0 | +15 | -31  | +20 | -26 | +142 | -18 | -23 | -95 | +69 | -7   | -13 | -9  | +5  | +18 | -38 | -18  |

#### 4.2.4.2.2 Cb Component Data

The following is a dump of the Cb component data, as shown in the figure illustrating three-level DWT decomposition in section [3.1.8.1.4](#).

```
00000000 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
00000010 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
00000020 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
00000030 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
00000040 +0 +0 +0 +0 +0 +0 +0 +0 +1 +0 +0 +0 +0 +0
00000050 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
00000060 +0 +0 -1 +0 +0 +0 +0 -1 +0 +0 +0 +0 +0 +0
00000070 -1 +1 -1 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
00000080 +0 +0 +0 +0 +0 +0 +9 -1 +0 +0 +0 +0 +0 +0
00000090 +0 -1 +7 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
000000A0 +0 +0 +0 +0 +0 +1 +1 +0 +0 +0 +0 +0 +0 +0
000000B0 +0 -6 +3 +2 +2 +0 +0 +0 +0 +0 +1 -1 +1 +0
000000C0 +0 +0 +0 +0 +0 +0 -8 +0 +0 +0 +0 +0 +0 +0
000000D0 +0 -6 -2 -1 -1 +1 +0 +1 +0 +0 +3 -7 +7 -8 +1
000000E0 +0 +0 +0 +0 +0 +5 -4 +0 +0 +0 +0 +0 +0 +0
000000F0 +1 +6 +0 -10 +0 +0 -1 +0 +1 +0 +0 +0 -2 -5 -2
00000100 +0 +0 +0 +0 +0 +5 +4 +0 +0 +0 +0 +0 +1 +1 +0
00000110 -2 +6 +9 -2 +0 +0 +0 +0 +0 +0 +1 +0 +2 +6 +0
00000120 +0 +0 +0 +0 -1 -6 -2 -2 +0 +0 +0 +0 +1 +0 +0
00000130 -7 +0 +5 +1 +0 +0 +0 +0 +0 +0 +0 +0 -1 +0 +0
00000140 +0 +0 +0 +0 +2 -6 +0 +4 +0 +0 +0 +0 +1 -1 +1
00000150 +0 -1 -7 +0 +0 +0 +0 +0 +0 +0 +0 +0 -9 +0 +0
00000160 +0 +0 +0 +0 +8 +0 +0 +0 -2 +0 +0 +0 +1 +1 +0
00000170 +6 +3 -4 +0 +0 +0 +0 +0 +0 +0 +1 +2 +0 +0
00000180 +0 +0 +0 +0 +0 +0 -1 -2 -1 +0 +0 +0 +0 +0 -4
00000190 +1 +6 +0 +0 +0 +0 +0 +0 +0 +0 +0 -1 +9 +0 +0
000001A0 +0 +0 +0 +0 -8 +1 +0 +1 +0 +0 +0 +0 +1 +0 -3
000001B0 -1 -2 +0 +0 +0 +0 +0 +0 +0 +0 +0 -8 +1 +0 +0
000001C0 +0 +0 +0 +0 +1 +0 +0 +0 -1 +0 +0 +0 +0 +1 +0
000001D0 +0 -4 +0 +0 +0 +0 +1 +0 +0 +0 +0 -5 +0 +0 +0
000001E0 +0 +0 +0 -1 +0 +0 +0 +0 +0 +0 +0 +0 -1 +1 +0
000001F0 +3 -1 +0 +0 +0 +0 +0 +0 +0 +0 -1 +8 +0 +0 +0
00000200 +0 +0 +0 +1 +0 +0 +0 +0 +0 +0 +0 +0 +0 -3 +0
00000210 +0 +0 +0 +0 -1 +1 +0 +0 -1 +0 -1 +0 +1 +0 +0
00000220 +0 +0 -1 +1 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
00000230 -5 +0 +0 +0 +0 +0 -1 +0 +0 +0 +1 -2 +0 +0 +0
00000240 +0 +0 -2 +0 +0 +0 +0 +0 +0 +0 +0 +0 -1 +3 +2
00000250 -1 +0 +0 +0 +0 +0 +0 +0 +0 +2 +0 +2 +0 +0 +0
00000260 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 -2 +1 +4
00000270 +0 +0 +0 +0 +0 +2 +0 +0 +0 -1 -1 +10 +0 +0 +0
00000280 +0 +0 +2 +0 +0 +0 +0 +0 +0 +0 +0 +0 -1 -1 -2
00000290 +0 +0 +0 +0 +0 -2 +2 +0 +0 +0 -10 +1 +0 +0 +0
000002A0 +0 -1 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +2 +1 -4
000002B0 +0 +0 +0 +0 +0 +0 -1 +1 +0 +0 -3 -1 +0 +0 +0
000002C0 +0 -1 +0 -1 +1 +1 +0 +0 +0 +0 +0 +0 -1 +1 +6 +0
000002D0 +0 +0 +0 +0 +0 +0 -1 +0 +0 +1 +12 +0 +0 +0 +0
000002E0 +0 +1 -1 +0 -1 +0 +1 +0 -1 +0 +0 +0 +0 +2 +0
000002F0 +0 +0 +0 +0 +0 +0 +0 +0 -7 +5 +0 +0 +0 +0 +0
00000300 -1 +1 +1 +0 +1 +0 +0 +0 +0 +0 +0 +0 -1 -8 +0
00000310 +0 +0 +0 +0 +0 +0 +0 +0 +0 -11 -1 +0 +0 +0 +0
00000320 +0 +0 +0 +0 +0 +0 -1 +0 +0 +0 +0 +0 -1 +5 -4 +0
00000330 +0 +0 +0 +0 +0 +0 +0 +0 +1 +6 +0 +0 +0 +0 +0
00000340 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +7 +1 +0
00000350 +0 +0 +0 +0 +0 +0 +0 +0 -2 +10 +0 +0 +0 +0 +0
00000360 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +4 -1 +0
00000370 +0 +0 +0 +0 +0 +0 +0 -10 +1 +0 +0 +0 +0 +0 +0
00000380 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 -1 +3 +0
00000390 +1 +0 +0 +0 +0 +1 -2 +0 +1 +0 +0 +0 +0 +0 +0
000003A0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
000003B0 +1 +0 +1 +0 -1 +0 +1 +0 +0 +0 +0 +0 +0 +0 +0
000003C0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
000003D0 +0 +0 +0 -2 +1 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
000003E0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
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000003F0 +0 +0 +0 +1 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
00000400 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
00000410 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
00000420 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 -1 +2 +4 +5 +2 -1
00000430 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
00000440 +0 +0 +0 +0 +0 +0 +0 -1 +7 +4 -8 -7 -4 -4 -6 -7
00000450 +7 +1 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
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00000480 +1 +1 +1 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
00000490 +0 +0 -1 +0 +1 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
000004A0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
000004B0 +0 -1 +1 +1 -6 +8 -1 +0 +0 +0 +0 +2 +8 +2 +2
000004C0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
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000004E0 +0 +0 +0 +0 +0 +0 +1 +0 +0 +0 +0 +0 +0 +1 +0
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00000570 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 -1 +1 +0
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00000590 +1 +0 +0 +0 +0 +0 +0 -1 -4 -3 +0 +0 +0 +0 +0
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000005B0 +0 +0 +0 +0 +0 +0 +0 +1 +2 +0 +1 +5 -3 +2 +0 +0
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000007C0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
000007D0 +0 +0 +0 +0 +2 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
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00000830 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0

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00000840 +0 +0 +0 +0 +0 +0 +0 +0 +1 +0 +0 +0 +0 +0 +0  
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000009C0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0  
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000009E0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0  
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00000B20 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0  
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00000B40 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 -2 +0 +0  
00000B50 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0  
00000B60 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 -1 +1 +0  
00000B70 +0 +0 +0 +0 +0 +0 +0 +0 +1 +0 +0 +0 +0 +0 +0 +0  
00000B80 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0  
00000B90 +1 +0 +0 +1 +0 +0 +1 +0 +0 +0 +0 +0 +0 +0 +0 +0  
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00000BB0 +0 +0 +1 +1 -1 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0  
00000BC0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0  
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00000BE0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0  
00000BF0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0  
00000C00 +0 +0 +0 +1 +0 +0 +1 -1 +0 +0 +0 +0 +0 +0 +0 +0  
00000C10 -1 +0 +0 +2 +0 -1 -2 +1 +1 -2 +0 +0 +0 +0 +0 +0  
00000C20 +1 +1 -2 -8 -1 +1 +0 -1 -5 +9 +2 +0 +0 -1 +2 +0  
00000C30 +0 +0 +1 -17 +0 +0 -1 -1 -18 +20 -1 +1 +0 +5 -8 +8  
00000C40 +0 +0 +17 +1 +0 +0 +2 +3 -6 -10 +3 -1 +1 +0 +3 +32  
00000C50 +0 -1 +5 +5 -1 +0 +5 +4 +14 -16 +1 +0 +0 -1 -17 +2  
00000C60 +0 -1 -17 -3 -2 +1 -1 -9 +15 -1 +0 +1 -1 -8 -4  
00000C70 +0 +1 +0 +3 +1 -1 +1 -6 +3 +2 +0 +2 -1 +2 +11 +0  
00000C80 +0 -3 +0 +1 +1 +0 +0 +7 +1 -3 +0 -1 -4 +0 +4 +0



```

00000C90 +0 +3 +0 +0 +0 +0 -2 +10 -7 +4 +0 -1 +3 -24 -2 +0
00000CA0 -1 +4 +0 +2 -1 +0 -5 +10 +2 -1 -3 +4 -1 +11 -1 +0
00000CB0 -4 +1 +0 -1 +0 +0 -2 -6 +0 +0 +1 -2 +0 +24 +0 +0
00000CC0 +1 +2 +1 +0 +0 +0 -1 -17 +0 +0 +0 -1 -26 +0 +0 +0
00000CD0 +0 -1 +0 +0 +0 +0 +22 -2 -1 +0 +0 +2 -7 -3 +0 +0
00000CE0 +0 +0 +0 +0 +0 +0 -1 +2 +1 -1 -2 -4 +8 +0 +0 +0
00000CF0 +0 +0 +0 +0 +0 +0 -1 +0 +0 +3 +2 +0 +0 +0 +0 +0
00000D00 +0 +0 +0 +0 -2 +0 +10 +6 -2 +0 +0 +0 +0 +0 +0 +0
00000D10 +1 +1 +0 +2 -3 -19 -9 -13 -13 +14 -2 +0 +0 +0 +0 +0
00000D20 +1 +1 +0 +0 +1 -1 +0 +0 +0 -2 +14 +2 -2 -2 +6 +8
00000D30 +0 +0 +1 -2 +0 +0 +0 +1 +0 +1 +0 -17 -6 +1 -8 -9
00000D40 +0 +0 +1 -1 +0 +1 +1 -1 +0 +0 +0 -2 -1 +0 +0 -2
00000D50 +0 +0 +1 +1 -1 -8 +0 +3 -1 +0 +1 +1 +3 +1 +0 +0
00000D60 +0 +1 -7 +13 +13 +12 +14 -7 +0 +0 +0 -1 +1 +9 -7 +2
00000D70 +0 +0 -1 +2 +0 +0 -8 +4 +0 -9 +2 +2 +0 +1 -12 +3
00000D80 +0 +0 +0 +0 +0 +0 -2 +1 +9 +10 -4 +2 +35 +4 +0
00000D90 +0 +0 +0 +1 +0 +0 -1 +1 +0 -1 -10 -8 -21 -13 +3 +0
00000DA0 -1 +1 -1 +0 +1 -1 +0 +1 +0 +1 +1 -5 +14 +14 -2 +0
00000DB0 +0 +0 +2 +3 +2 +0 +1 +1 +0 +1 +0 +0 +1 +1 -1 +0
00000DC0 +0 -3 -1 +0 +0 -2 +2 +0 -1 -1 +0 +0 -1 +1 +0 +0
00000DD0 +0 -1 +0 +0 +0 +0 +2 -12 -4 +1 +1 +2 -20 +4 +0 +0
00000DE0 +0 +0 +0 +0 +0 +0 +0 -3 +19 +16 +15 +24 +3 +0 +0 +0
00000DF0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +6 -1 +0 +0 +0 +0 +0
00000E00 +0 +0 +0 +0 +0 +0 +1 +0 +0 +0 +0 +0 +0 +0 +0 +0
00000E10 +0 +0 +0 +4 -1 +0 +0 -1 +3 -2 +0 +0 +0 +0 +0 +0
00000E20 +0 +0 +0 -1 +0 +0 +0 +0 +0 -1 +3 +0 +0 -1 +2 +0
00000E30 +0 +0 +1 +0 +0 +0 +0 +0 -1 +2 +2 -1 +1 -1 +3 +4
00000E40 +0 +0 +1 +2 +0 +0 +0 +1 +2 -1 +0 +0 +0 +0 +1 +0
00000E50 +0 +0 -2 -1 -1 +0 +0 +1 +1 +0 +0 +0 +0 +0 -1 +0
00000E60 +0 +1 -2 +0 +0 +0 +2 -2 +0 +0 +0 -1 +1 -1 +4 +0
00000E70 +0 +0 +0 +0 +0 +0 -2 +0 -1 +0 -1 -1 +1 -1 +3 +0
00000E80 +0 +0 +0 +0 +0 +0 +0 +0 -1 +0 +0 -1 +0 +6 +0 +0
00000E90 +0 +0 +0 +0 +0 +0 +0 +0 +1 -1 +0 -2 -2 +0 +0 +0
00000EA0 +0 +0 +0 +0 +0 +0 +0 +1 +0 +0 +1 -2 +0 -2 +0 +0
00000EB0 +0 +0 -1 +0 +0 +0 +0 +0 +0 +0 +0 -1 +0 +0 +0
00000EC0 +0 +0 +0 +0 +0 +1 +0 +0 +0 +0 +0 +0 -1 +0 +0 +0
00000ED0 +0 +0 +0 +0 +0 +0 +2 -3 +0 +0 +0 +2 +6 +0 +0 +0
00000EE0 +0 +0 +0 +0 +0 +0 +0 -1 +0 -1 +0 +2 +0 +0 +0 +0
00000EF0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 -1 +0 +0 +0 +0 +0
00000F00 +0 -9 -1 -2 +5 +1 +1 +0 +1 +33 -2 -2 +5 +1 +2 -3
00000F10 -4 -14 -3 +2 +76 +4 +5 +17 +3 -37 +1 -15 -8 +3 -1 +80
00000F20 -5 +14 -2 -11 +2 +7 -16 +15 -2 +3 -2 +29 -2 +1 -51 -8
00000F30 +6 -4 +3 +4 +6 +4 +35 -1 -1 +1 -2 +8 -3 -7 +17 +1
00000F40 +1 -4 +35 -4 +34 -5 +2 -1 +3 +0 +0 +2 +3 -17 +46 +10
00000F50 -2 +4 -9 -5 -2 +3 +4 +0 +1 +4 +28 +33 +2 -3 +14 -6
00000F60 -1 +0 -4 -1 -7 +38 +60 -5 -3 +2 +6 +1 +4 +4 -3 +1
00000F70 -1 -3 -2 -7 -28 -5 -31 +8 +2 +0 +0 -8 +56 +85 +24 -3
00000F80 +0 -10 +3 -4 +4 +2 +1 +0 +1 +4 +2 +4 +15 +10 +6 -9
00000F90 -1 -1 -4 +1 +5 +2 +0 +4 +1 +13 -3 +10 -11 -4 +2 +7
00000FA0 -1 +0 -2 +1 -14 -3 +2 +2 +0 -1 -1 +3 +0 -5 -9 -4
00000FB0 -2 +2 -5 -28 +1 +7 +17 +1 +0 +0 +0 -18 +5 +15 -6 +0
00000FC0 +55 -4 +34 -14 +18 -33 +7 -1 -16 +19-109 -29 +19+123 +10 -6
00000FD0 -31 +13-129 +32 +31 -43 +7 +9 +83 -29 -34 +15 +32 -44 -12 -18
00000FE0 +79 +31 -21 -40 +58 -51 -33 +63 -8 +35 -31 -13 -10 -20 -44+102
00000FF0 -11 +9 +2 +17-136 +4 -58+208 -49 +6 +4 +11 -83 -38 +84 +54

```

#### 4.2.4.2.3 Cr Component Data

The following is a dump of the Cr component data, as shown in the figure illustrating three-level DWT decomposition in section [3.1.8.1.4](#).

```

00000000 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
00000010 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
00000020 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
00000030 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
00000040 +0 +0 +0 +0 +0 +0 +0 -1 +0 -1 +0 +0 +1 -1 +0

```

```

00000050 -1 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
00000060 +0 +0 +1 +0 +0 +0 +0 +0 +2 +0 +0 +0 +0 +0 +1 +0
00000070 +2 -1 +2 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
00000080 +0 +0 +1 +0 +0 +0 +0 -13 +2 -1 +0 +0 +0 +0 +0 +0
00000090 +0 +1 -10 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
000000A0 +0 +0 +0 +0 +0 +1 -1 -1 +0 +0 +0 +0 +0 +0 +0
000000B0 +0 +7 -4 -1 -1 +0 +0 +0 +0 +0 +0 +0 -1 +1 +0 +0
000000C0 +0 +0 +0 +0 +0 +1 +12 +0 +0 +0 +0 +0 +0 +0 +0
000000D0 +0 +8 +2 +0 +0 +0 +0 +0 +0 +0 +0 -1 +3 -3 +3 -1
000000E0 +0 +0 +0 +0 +0 -7 +6 +0 +0 +0 +0 +0 +0 +0 +0
000000F0 -1 -6 +0 +4 +0 +0 +0 +0 +0 +0 +0 +0 +0 +2 +1
00000100 +0 +0 +0 +0 +0 -7 -4 +0 +0 +0 +0 +0 +0 -2 -1 +0
00000110 +2 -6 -4 +1 +0 +0 +0 +0 +0 +0 +0 +0 +0 -3 +0
00000120 +0 +0 +0 +0 +1 +9 +1 +2 +0 +0 +0 +0 +0 -2 +0 +0
00000130 +6 +0 -3 -1 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
00000140 +0 +0 +0 +0 -3 +9 -1 -3 +0 +0 +0 +0 +0 +0 +1 +0
00000150 +0 +1 +5 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +4 +0 +0
00000160 +0 +0 +0 +0 -12 +0 +0 +0 +2 +0 +0 +0 +0 +0 +0 +0
00000170 -6 -3 +3 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 -1 +0 +0
00000180 +0 +0 +0 +1 +0 +0 +1 +1 +0 +0 +0 +0 +0 +0 +0 +4
00000190 -1 -6 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 -4 +0 +0
000001A0 +0 +0 +0 +0 +13 -1 +0 +0 +0 +0 +0 +0 +0 -1 +0 +3
000001B0 +1 +2 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +4 +0 +0 +0
000001C0 +0 +0 +0 +0 -2 +0 +0 -1 +2 +0 +0 +0 +0 +0 -1 +0
000001D0 -1 +5 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +1 -1 +0 +0
000001E0 +0 +0 +0 -1 +0 +0 -1 +0 +1 +0 +0 +0 +0 +1 -1 +0
000001F0 -3 +1 +0 +0 +0 +0 +0 +0 +0 +0 -1 -5 +0 +0 +0
00000200 +0 +0 +0 +2 +0 +0 -1 +0 +0 +0 +0 +0 +0 +0 +4 +0
00000210 -1 +0 +1 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
00000220 +0 +0 -1 +1 +0 +0 +0 +0 +0 +0 +0 +0 +0 -1 -1 +1
00000230 +7 +0 +0 +0 +0 +0 +0 +0 +0 +0 -1 +1 +0 +0 +0 +0
00000240 +0 +0 -1 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +1 -3 -3
00000250 +2 +0 +0 +0 +0 +0 +0 +0 +0 -1 +1 -1 +0 +0 +0 +0
00000260 +0 +0 +1 +0 +0 +0 -1 +0 +0 +0 +0 +0 +0 +2 +0 -5
00000270 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +1 -7 +0 +0 +0 +0
00000280 +0 +0 +2 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +2 +1 +3
00000290 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +6 -1 +0 +0 +0 +0
000002A0 +0 -2 +0 +0 +0 +0 -1 -1 +0 +0 +0 +0 +0 -2 -1 +4
000002B0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +3 +1 +0 +0 +0 +0
000002C0 +0 -1 +0 +0 -1 -1 +0 +0 +0 +0 +0 +0 +0 -1 -6 +0
000002D0 +0 +0 +0 +0 +0 +0 +0 +0 +0 -1 -8 +0 +0 +0 +0 +0
000002E0 +1 +2 +0 +0 +0 +0 +0 +0 +1 +0 +0 +0 +0 +0 -1 +0
000002F0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +5 -4 +0 +0 +0 +0 +0
00000300 -1 +2 +0 +0 -1 +0 +0 +0 +0 +0 +0 +0 +0 +1 +6 +0
00000310 +0 +0 +0 +0 +0 +0 +0 +0 +0 +7 +1 +0 +0 +0 +0 +0
00000320 -1 +0 +0 +0 +0 +0 +1 +1 +0 +0 +0 +0 +0 -4 +3 +0
00000330 +0 +0 +0 +0 +0 +0 +0 +0 -1 -4 +0 +0 +0 +0 +0 +0
00000340 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 -5 -2 +0
00000350 +0 +0 +1 +1 +0 +0 +0 +0 +1 -7 +0 +0 +0 +0 +0 +0
00000360 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 -1 +1 +1
00000370 +0 -1 +0 +1 +0 +0 +0 +0 +7 +0 +0 +0 +0 +0 +0 +0
00000380 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 -2 +0
00000390 -1 +0 +0 +1 +0 -1 +1 +1 -1 +0 +0 +0 +0 +0 +0 +0
000003A0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
000003B0 -1 +0 -1 +0 +1 +0 -1 +0 +0 +0 +0 +0 +0 +0 +0 +0
000003C0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
000003D0 +0 +0 +0 +2 -1 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
000003E0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
000003F0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
00000400 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
00000410 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
00000420 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +1 -3 -6 -6 -3 +1
00000430 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
00000440 +0 +0 +0 +0 +0 +0 +0 +1 -10 -5 +11 +9 +6 +5 +9 +11
00000450 -11 -1 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
00000460 -1 -1 -1 +0 +0 +0 +0 +4 +4 -1 +0 +0 +0 +0 +0 +0
00000470 -1 +11 -10 +2 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
00000480 -1 -1 -1 +0 +0 +0 -1 +1 +0 +0 +0 +0 +0 +0 +0 +0
00000490 +0 +0 +1 +0 -1 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0

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000004A0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0  
000004B0 +0 +1 -2 +0 +3 -4 +0 +0 +0 +0 +0 -1 -4 -1 -1  
000004C0 +0 +0 +0 +0 +0 +0 +1 +0 +0 +0 +0 +0 +0 +0 +0  
000004D0 +0 +0 +0 +0 +0 +0 +4 -3 -3 -2 -2 -4 -1 +1 +3 +0  
000004E0 +0 +0 +0 +0 +0 +0 -1 +0 +0 +0 +0 +0 +0 -1 +0  
000004F0 +0 +1 -1 +0 +0 +0 -1 +1 +2 +2 +0 +0 +0 +0 +0  
00000500 +0 +0 +0 +0 +0 +0 -1 +0 +0 +0 +0 +0 +0 +0 +0  
00000510 +0 +0 +0 +1 +0 +0 +0 +0 +0 +0 +0 +0 +0 +1 +2  
00000520 +0 +0 +0 +0 +0 -1 +1 +0 +0 +0 +0 +0 +0 +0 +0  
00000530 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 -3 +0  
00000540 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 -1 +2 +1 -1 +1  
00000550 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0  
00000560 +0 +0 +0 +0 +0 +0 +0 +0 +0 +3 +2 +1 +0 +0 +0  
00000570 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0  
00000580 +0 +0 +0 +0 -1 +6 +8 -5 -7 -5 -4 -5 -4 +5 +0 +0  
00000590 -1 +0 +0 +0 +0 +0 +0 +0 +0 -1 -1 +0 +0 +0 +0  
000005A0 +0 +0 +0 +0 -2 -8 +1 +0 -1 +0 -1 -2 +0 +1 -6 +4  
000005B0 +0 -1 +1 +0 +0 +0 +0 +0 +0 +0 +1 +0 -1 +0 +0  
000005C0 +0 +0 +0 +0 -1 +0 +1 +0 +0 +0 +1 +4 -4 +0 +0  
000005D0 +0 +1 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +3 +0 +0  
000005E0 +0 +0 +0 +0 +1 +0 +0 +0 +0 +0 +0 +0 +0 +4 -1  
000005F0 +1 -4 +5 +0 +0 +0 +0 +0 +0 +0 +1 +2 -1 +0 +0  
00000600 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0  
00000610 -1 -1 +0 -5 +4 +4 +3 +3 +4 +4 -1 -4 +0 +0 +0 +0  
00000620 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +1 -1  
00000630 -1 +4 -5 +0 +1 -1 -3 -3 -1 +1 -3 -5 +1 +0 +0 +0  
00000640 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 -2 -3 +0  
00000650 +1 +0 +0 +5 +0 -5 -6 -5 -1 +6 +4 +0 -1 +0 +0  
00000660 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 -1 +0  
00000670 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0  
00000680 +0 +0 +0 +0 +0 +0 -1 +0 +0 +0 +0 +0 +0 +0 -1  
00000690 +1 +0 +0 +0 +0 +0 +0 -1 +0 +0 +1 -1 +0 +0 +0 +0  
000006A0 -1 +0 +0 +0 +0 +0 +0 +0 +0 -1 +0 +0 +0 +0 +0 +0  
000006B0 +0 +0 +0 +0 +0 +0 +0 +1 +0 +0 +0 +0 +0 +0 +0  
000006C0 +0 +1 +0 +0 +0 +0 +0 +0 +0 -1 +0 +0 +0 +0 +0  
000006D0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0  
000006E0 +0 +0 +0 +0 +1 +2 +1 +1 +1 +0 +0 +0 -1 +0 +0 +0  
000006F0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 -1 +1 +0 +0 +0 +0  
00000700 -1 +2 +1 -2 -2 +1 +0 -1 +0 -1 +1 +0 +0 +0 +0 +0  
00000710 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0  
00000720 +0 -1 +0 +0 +0 +0 +0 +0 +0 +0 +0 -1 +1 -1 +1 +0  
00000730 +0 +0 +0 +0 +0 +0 +0 +0 +0 +1 -1 +0 +0 +0 +0 +0  
00000740 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +1 +1 +0  
00000750 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0  
00000760 +0 +1 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 -4 +2  
00000770 +0 +0 +0 +0 +0 +0 +0 +1 +7 -2 +0 +0 +0 +0 +0 +0  
00000780 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 -1  
00000790 -2 -1 +5 +6 +4 +3 -5 -6 +1 +0 +0 +0 +0 +0 +0 +0  
000007A0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0  
000007B0 +0 +0 +0 +4 +2 +1 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0  
000007C0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0  
000007D0 +0 +0 +0 +0 -2 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0  
000007E0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0  
000007F0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0  
00000800 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0  
00000810 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0  
00000820 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0  
00000830 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0  
00000840 +0 +0 +0 +0 +0 +0 +0 +0 -1 +0 +1 +0 +0 +0 +0  
00000850 -1 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0  
00000860 +0 +0 +0 +0 +0 +0 +0 +2 -1 +0 +0 +0 +0 +0 +0  
00000870 +0 +0 +2 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0  
00000880 +0 +0 +0 +0 +0 +0 -1 +0 +0 +0 +0 +0 +0 +0 +0  
00000890 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0  
000008A0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0  
000008B0 +0 +1 +0 -1 +0 +0 +0 +0 +0 +0 +0 -1 +1 -1 +0  
000008C0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0  
000008D0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 -1 +0 +1 +0 +0  
000008E0 +0 +0 +0 +0 +0 -1 +0 +0 +0 +0 +0 +0 +0 +0 +0

|          |    |    |     |     |    |     |     |     |     |     |    |    |     |     |    |
|----------|----|----|-----|-----|----|-----|-----|-----|-----|-----|----|----|-----|-----|----|
| 000008F0 | +0 | -1 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | +0 | +0 | +0  | +0  | +0 |
| 00000900 | +0 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | +0 | +0 | +0  | +0  | +0 |
| 00000910 | +0 | +0 | -1  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | +0 | +0 | +0  | +1  | -1 |
| 00000920 | +0 | +0 | +0  | +0  | +0 | +1  | +0  | +0  | +0  | +0  | +0 | +0 | +0  | +0  | +0 |
| 00000930 | +0 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | +0 | +0 | +0  | +0  | +0 |
| 00000940 | +0 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | +0 | +0 | +0  | +0  | +0 |
| 00000950 | +0 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | +0 | +0 | +0  | +0  | +0 |
| 00000960 | +0 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | +0 | +0 | +0  | +0  | +0 |
| 00000970 | +0 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | +0 | +0 | +0  | +0  | +0 |
| 00000980 | +0 | +0 | +0  | +0  | +0 | +1  | +0  | -1  | +0  | +0  | +0 | +0 | +0  | +0  | +0 |
| 00000990 | +0 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | +0 | +0 | +0  | +0  | +0 |
| 000009A0 | +0 | +0 | +0  | +0  | -2 | +0  | +0  | +0  | +0  | +0  | +0 | +0 | +0  | +0  | -1 |
| 000009B0 | +0 | +1 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | +0 | +1 | +0  | +0  | +0 |
| 000009C0 | +0 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | +0 | +0 | -1  | +0  | +0 |
| 000009D0 | +0 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | +0 | +0 | +0  | +0  | +0 |
| 000009E0 | +0 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | +0 | +0 | +0  | -1  | +0 |
| 000009F0 | +1 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | +0 | -1 | +0  | +0  | +0 |
| 00000A00 | +0 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | +0 | +0 | +0  | +0  | +0 |
| 00000A10 | -1 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | +0 | +0 | +0  | +0  | +0 |
| 00000A20 | +0 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | +0 | +0 | +0  | -1  | +0 |
| 00000A30 | +0 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | -1  | +1 | +0 | +0  | +0  | +0 |
| 00000A40 | +0 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | +0 | +0 | -1  | +0  | +0 |
| 00000A50 | +0 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | -1 | +0 | +0  | +0  | +0 |
| 00000A60 | +0 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | +0 | +0 | +0  | +1  | +0 |
| 00000A70 | +0 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | +0 | +0 | +0  | +0  | +0 |
| 00000A80 | +0 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | +0 | +0 | +0  | +0  | +1 |
| 00000A90 | +0 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +1  | +0 | +0 | +0  | +0  | +0 |
| 00000AA0 | +0 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | +0 | +0 | +0  | +0  | +0 |
| 00000AB0 | +0 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | +0 | +0 | +0  | +0  | +0 |
| 00000AC0 | +0 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | +0 | +0 | +0  | +0  | +0 |
| 00000AD0 | +0 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | +0 | +0 | +0  | +0  | +0 |
| 00000AE0 | +0 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | +0 | +0 | +0  | +0  | +0 |
| 00000AF0 | +0 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | +0 | +0 | +0  | +0  | +0 |
| 00000B00 | +0 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | +0 | +0 | +0  | +0  | +0 |
| 00000B10 | +0 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | +0 | +0 | +0  | +0  | +0 |
| 00000B20 | +0 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | +0 | +0 | +0  | +0  | +0 |
| 00000B30 | +0 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | -1  | +0  | +0 | +0 | +0  | +0  | +0 |
| 00000B40 | +0 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | +0 | +0 | +1  | +0  | +0 |
| 00000B50 | +0 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | +0 | +0 | +0  | +0  | +0 |
| 00000B60 | +0 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | +0 | +0 | +0  | +0  | +0 |
| 00000B70 | +0 | +0 | +0  | +0  | +0 | +0  | +0  | -1  | +0  | +0  | +0 | +0 | +0  | +0  | +0 |
| 00000B80 | +0 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | +0 | +0 | +0  | +0  | +0 |
| 00000B90 | -1 | +0 | +0  | +0  | +0 | -1  | +0  | +0  | +0  | +0  | +0 | +0 | +0  | +0  | +0 |
| 00000BA0 | +0 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | +0 | +0 | +0  | +0  | +0 |
| 00000BB0 | +0 | +0 | -1  | -1  | +1 | +0  | +0  | +0  | +0  | +0  | +0 | +0 | +0  | +0  | +0 |
| 00000BC0 | +0 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | +0 | +0 | +0  | +0  | +0 |
| 00000BD0 | +0 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | +0 | +0 | +0  | +0  | +0 |
| 00000BE0 | +0 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | +0 | +0 | +0  | +0  | +0 |
| 00000BF0 | +0 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | +0 | +0 | +0  | +0  | +0 |
| 00000C00 | +0 | +0 | +0  | -1  | +0 | +0  | -1  | +1  | -1  | +0  | +0 | +0 | +0  | +0  | +0 |
| 00000C10 | +1 | +0 | +0  | -4  | +0 | +1  | +2  | +0  | -2  | +3  | +0 | +0 | +0  | +0  | +0 |
| 00000C20 | -1 | -1 | +3  | +13 | -2 | +1  | -2  | +2  | +7  | -15 | -1 | +0 | +0  | +1  | -1 |
| 00000C30 | +0 | +0 | -3  | +25 | +2 | -1  | +0  | +0  | +20 | -7  | +1 | -1 | +0  | -2  | +6 |
| 00000C40 | +0 | +0 | -20 | +0  | -1 | -1  | -2  | -4  | +5  | +5  | -1 | +0 | -1  | +1  | -3 |
| 00000C50 | +0 | +1 | -5  | -7  | +2 | +0  | -3  | -3  | -13 | +12 | +0 | +0 | +1  | +0  | +7 |
| 00000C60 | +0 | +1 | +28 | +0  | +1 | -1  | +2  | +10 | -16 | +1  | +0 | +1 | -1  | +0  | +3 |
| 00000C70 | +0 | -1 | +0  | -3  | -2 | +2  | +0  | +7  | -5  | -2  | +0 | +0 | +0  | -1  | -6 |
| 00000C80 | +0 | -2 | +1  | -3  | -1 | -1  | +0  | -10 | -2  | +4  | +0 | +0 | +1  | -1  | -2 |
| 00000C90 | +0 | +3 | -1  | +0  | +0 | +1  | +3  | -12 | +9  | -5  | +0 | +0 | -2  | +16 | +1 |
| 00000CA0 | -1 | +2 | +0  | -4  | +2 | +0  | +7  | -11 | -2  | +1  | +0 | -1 | +0  | -7  | +0 |
| 00000CB0 | -3 | -1 | +0  | +1  | -1 | +0  | +2  | +6  | +0  | +0  | +0 | +0 | +0  | -16 | +0 |
| 00000CC0 | +1 | -1 | -1  | -1  | +1 | +0  | +1  | +12 | +0  | +0  | +0 | +0 | +18 | +0  | +0 |
| 00000CD0 | +0 | +0 | +0  | +0  | +0 | +0  | -14 | +1  | +0  | +0  | +0 | -2 | +4  | +2  | +0 |
| 00000CE0 | +0 | +0 | +0  | +0  | +0 | +0  | +1  | -1  | -1  | +3  | +1 | +3 | -5  | +0  | +0 |
| 00000CF0 | +0 | +0 | +0  | +0  | +0 | +0  | +0  | +0  | +0  | +0  | -3 | -1 | +0  | +0  | +0 |
| 00000D00 | +0 | +0 | +0  | +0  | +2 | +0  | -13 | -8  | +3  | +0  | +0 | +0 | +0  | +0  | +0 |
| 00000D10 | -1 | -1 | +0  | -3  | +3 | +27 | +12 | +19 | +20 | -21 | +3 | +0 | +0  | +0  | +0 |
| 00000D20 | -1 | -1 | +0  | -1  | +0 | -1  | +0  | +0  | +0  | -5  | -1 | +1 | +1  | -3  | -4 |
| 00000D30 | +0 | +0 | -1  | +5  | -1 | +0  | +0  | -2  | +0  | -1  | -2 | +7 | +2  | +0  | +5 |

```

00000D40 +0 +0 -1 +0 -1 +0 -2 +1 -1 -1 +1 +1 -1 +0 -2 +7
00000D50 +0 +0 -1 -1 +3 +5 +1 -2 +2 -1 +0 +0 +1 +0 +0 +0
00000D60 +0 -1 +11 -17 -14 -10 -14 +7 -1 +1 +0 +0 +0 +2 -3 +0
00000D70 +0 +0 +3 +2 +0 +0 +9 -5 +0 +11 -2 -1 -1 -2 +5 -1
00000D80 +0 +0 +0 +0 +1 +0 +0 +3 -2 -11 -10 +2 -2 -18 -3 +0
00000D90 +0 +0 -1 -2 +0 +0 +0 -2 +1 +2 +11 +9 +12 +9 -2 +0
00000DA0 +0 +0 +1 -1 -3 +2 +0 -1 +0 +0 +0 +1 -3 -3 +0 +0
00000DB0 +0 -1 +1 +2 +1 -4 -2 +0 +0 +0 +0 +0 +0 +0 +0 +0
00000DC0 +1 -4 -2 -1 -1 +0 +3 +1 +0 +0 +0 +0 +0 -1 +0 +0
00000DD0 -1 +1 +0 +0 +0 +0 +0 +4 +3 +0 -1 +0 +14 -3 +0 +0
00000DE0 -1 +0 +0 +0 +0 +0 +0 +2 -11 -11 -9 -15 -2 +0 +0 +0
00000DF0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 -6 +1 +0 +0 +0 +0
00000E00 +0 +0 +0 +0 +0 +0 -1 +1 +0 +0 +0 +0 +0 +0 +0 +0
00000E10 +0 +0 +0 -6 +1 +0 -1 +2 -4 +3 +0 +0 +0 +0 +0 +0
00000E20 +0 +0 +0 +0 +0 +0 +0 +0 -1 +1 -1 +0 +0 +0 -1 +0
00000E30 +0 +0 -1 -1 +0 +0 +0 +0 +0 -1 -1 +0 +0 +0 -1 -2
00000E40 +0 +0 -2 -2 +0 +0 +0 -1 -2 +1 +0 +0 +0 +0 -2 -3
00000E50 +0 +0 +3 +1 +1 +0 +0 -1 -1 +0 +0 +0 +0 +0 +0 +0
00000E60 +0 -1 +3 +0 +1 -1 -2 +2 +0 +0 +0 +0 +0 +0 -1 +0
00000E70 +0 +0 +1 -1 +0 -1 +2 +1 +2 -1 +0 +0 +0 -1 -1 +0
00000E80 +0 +0 +0 +0 +0 +0 +0 +0 +1 +0 +0 +1 +0 -4 +0 +0
00000E90 +0 +0 +0 +0 +0 +0 +0 +0 -1 +1 +0 +0 +1 +0 +0 +0
00000EA0 +0 +0 +0 +0 +0 +0 +0 -1 +0 +0 +0 +0 +0 +0 +0 +0
00000EB0 -1 +0 +1 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0
00000EC0 +1 +0 +0 +0 +0 +0 -1 +0 +0 +0 +0 +0 +1 +0 +0 +0
00000ED0 +0 +0 +0 +0 +0 +0 +0 +2 +0 +0 +0 -1 -4 +0 +0 +0
00000EE0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +1 +0 -1 +0 +0 +0 +0
00000EF0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +0 +1 +0 +0 +0 +0 +0
00000F00 +0 +13 +4 +5 -8 -2 +0 +1 -1 -43 -7 -3 -4 +1 -1 +1
00000F10 +5 +22 -1 -1 -54 -2 -2 -4 -4 +52 -5 +17 +7 +1 -3 -33
00000F20 -4 -25 +1 +15 +3 +2 +2 -11 +4 -14 +5 -34 +6 -1 +35 +6
00000F30 +11 +4 -2 -5 -4 -7 -21 +1 -2 +0 +1 -6 +1 +3 -11 +0
00000F40 -2 +6 -45 +14 -45 +4 -1 +1 -3 +1 +1 -7 -7 +5 -19 -4
00000F50 +2 -4 +8 +4 -1 +3 +0 +0 +2 -15 -27 -36 -2 +5 -1 +14
00000F60 +2 -5 +7 +0 +8 -39 -41 +6 +1 +4 -12 -6 +0 -2 -2 -1
00000F70 -4 -5 -3 +6 +14 -2 +22 -5 -2 -1 +0 +5 -33 -51 -15 +2
00000F80 +0 +14 -1 +8 -5 -1 +0 +0 -1 -2 -5 -5 -10 -5 -3 +2
00000F90 +2 +5 +5 -4 -8 -1 +0 -3 +2 -13 +5 -14 +15 -1 -1 -12
00000FA0 +1 -1 +2 -3 +15 -1 +3 -3 +1 +5 -4 -2 +0 +2 +6 +2
00000FB0 -4 +0 +2 +15 +0 -5 -12 +0 +0 +0 +0 +12 -3 -10 +4 +0
00000FC0 -68 +7 -44 +27 -28 +42 -3 +3 +1 -23+147 +12 +8-162 +6 +3
00000FD0 +10 -12+147 -60 -13 -24 -1 +1 -44 +40 +33 -24 -22 +48 -14 -22
00000FE0 -38 -3 -1 +61 -68 +60 -4 -37 +1 -18 +2 +29 +29 +8 +18 -74
00000FF0 +10 +5 -17 -22+108 -16 +33-124 +22 -7 +0 -4 +48 +26 -46 -33

```

#### 4.2.4.3 Inverse Quantization/DWT

The following sections present the three-level inverse **DWT** of the Y component data. The inverse DWT process follows the steps shown in the figure illustrating three-level DWT decomposition in section [3.1.8.1.4](#), in reverse order. The inverse DWT steps for the Cb and Cr components are the same as for the Y component, so the intermediate data dumps for these two components have been omitted, but their final reconstructed data is presented in sections [4.2.4.4](#) and [4.2.4.5](#).

Microsoft RDP 7.1 and Microsoft RDP 8.0 both use 11.5 fixed-point integers for **IDWT** and color conversion, while Microsoft RDP 8.1 uses 12.4 fixed-point integers. This is due to differences in dequantization (section [3.1.8.2.3](#)). The example data in the following sections is shown for both 11.5 and 12.4 fixed-point integers.

##### 4.2.4.3.1 Level-3 Sub-bands

The following are annotated dumps of the four level-3 dequantized sub-bands (LL3, LH3, HL3, and HH3). The LL3 sub-band first gives inverse differential encoding before being de-quantized (section [3.1.8.1.6](#)). The level-3 sub-bands have dimensions of 8 x 8.

#### 4.2.4.3.1.1 LL3

The following is a dump of the LL3 sub-band, as shown in the figure illustrating three-level DWT decomposition in section [3.1.8.1.4](#).

The sample data for 11.5 fixed-point integers (RDP 7.1/8.0) is:

|          |       |       |       |       |       |       |       |      |
|----------|-------|-------|-------|-------|-------|-------|-------|------|
| 00000000 | -32   | +0    | -32   | -480  | -384  | -384  | -608  | -736 |
| 00000008 | +864  | +448  | +96   | +1184 | +352  | -384  | -480  | -512 |
| 00000010 | +928  | +800  | +1472 | +3296 | +2752 | +1376 | +832  | +352 |
| 00000018 | +1216 | +992  | +1792 | +2752 | +2016 | +4096 | +3680 | +864 |
| 00000020 | +2304 | -992  | +1728 | +4000 | +288  | +3104 | +2144 | +320 |
| 00000028 | +2144 | -1088 | +1920 | +2720 | +3264 | +3424 | +3616 | +192 |
| 00000030 | +672  | -320  | +320  | -512  | +4032 | +3456 | +2720 | -320 |
| 00000038 | +1888 | +1664 | +1248 | +960  | +1120 | +1696 | +480  | -96  |

The sample data for 12.4 fixed-point integers (RDP 8.1) is:

|          |       |      |      |       |       |       |       |      |
|----------|-------|------|------|-------|-------|-------|-------|------|
| 00000000 | -16   | +0   | -16  | -240  | -192  | -192  | -304  | -368 |
| 00000008 | +432  | +224 | +48  | +592  | +176  | -192  | -240  | -256 |
| 00000010 | +464  | +400 | +736 | +1648 | +1376 | +688  | +416  | +176 |
| 00000018 | +608  | +496 | +896 | +1376 | +1008 | +2048 | +1840 | +432 |
| 00000020 | +1152 | -496 | +864 | +2000 | +144  | +1552 | +1072 | +160 |
| 00000028 | +1072 | -544 | +960 | +1360 | +1632 | +1712 | +1808 | +96  |
| 00000030 | +336  | -160 | +160 | -256  | +2016 | +1728 | +1360 | -160 |
| 00000038 | +944  | +832 | +624 | +480  | +560  | +848  | +240  | -48  |

#### 4.2.4.3.1.2 HL3

The following is a dump of the HL3 sub-band, as shown in the figure illustrating three-level DWT decomposition in section [3.1.8.1.4](#).

The sample data for 11.5 fixed-point integers (RDP 7.1/8.0) is:

|          |       |      |      |       |       |      |      |      |
|----------|-------|------|------|-------|-------|------|------|------|
| 00000000 | +0    | +0   | -64  | -64   | +32   | +0   | -32  | -64  |
| 00000008 | +0    | -32  | +256 | +192  | +96   | +0   | -32  | -192 |
| 00000010 | +0    | +128 | +160 | -416  | -1696 | -96  | -64  | +0   |
| 00000018 | -64   | -480 | -224 | +800  | +256  | +96  | +224 | -800 |
| 00000020 | +832  | -384 | +160 | +640  | +192  | +224 | -160 | -416 |
| 00000028 | +64   | -64  | +160 | -1728 | +320  | -64  | +960 | +96  |
| 00000030 | -1472 | +352 | -288 | -32   | -64   | +32  | -576 | -64  |
| 00000038 | +256  | -96  | +96  | -160  | -128  | -32  | -160 | -64  |

The sample data for 12.4 fixed-point integers (RDP 8.1) is:

|          |      |      |      |      |      |      |      |      |
|----------|------|------|------|------|------|------|------|------|
| 00000000 | +0   | +0   | -32  | -32  | +16  | +0   | -16  | -32  |
| 00000008 | +0   | -16  | +128 | +96  | +48  | +0   | -16  | -96  |
| 00000010 | +0   | +64  | +80  | -208 | -848 | -48  | -32  | +0   |
| 00000018 | -32  | -240 | -112 | +400 | +128 | +48  | +112 | -400 |
| 00000020 | +416 | -192 | +80  | +320 | +96  | +112 | -80  | -208 |
| 00000028 | +32  | -32  | +80  | -864 | +160 | -32  | +480 | +48  |
| 00000030 | -736 | +176 | -144 | -16  | -32  | +16  | -288 | -32  |
| 00000038 | +128 | -48  | +48  | -80  | -64  | -16  | -80  | -32  |

#### 4.2.4.3.1.3 LH3

The following is a dump of the LH3 sub-band, as shown in the figure illustrating three-level DWT decomposition in section [3.1.8.1.4](#).

The sample data for 11.5 fixed-point integers (RDP 7.1/8.0) is:

|          |      |      |      |       |      |       |       |      |
|----------|------|------|------|-------|------|-------|-------|------|
| 00000000 | -96  | +0   | +32  | -320  | -96  | +32   | -32   | +32  |
| 00000008 | -160 | -32  | -96  | +96   | +224 | -448  | -416  | +320 |
| 00000010 | +0   | -32  | +352 | +64   | +160 | +64   | +384  | +0   |
| 00000018 | -256 | +768 | -672 | -1568 | -128 | +320  | +288  | +992 |
| 00000020 | -32  | +160 | +320 | +32   | +416 | -1824 | -1664 | +288 |
| 00000028 | +384 | -192 | -576 | +160  | +32  | -96   | -128  | -32  |
| 00000030 | +416 | +672 | +256 | +352  | +96  | +224  | +224  | -64  |
| 00000038 | -96  | -32  | +0   | +64   | -448 | -608  | -224  | +32  |

The sample data for 12.4 fixed-point integers (RDP 8.1) is:

|          |      |      |      |      |      |      |      |      |
|----------|------|------|------|------|------|------|------|------|
| 00000000 | -48  | +0   | +16  | -160 | -48  | +16  | -16  | +16  |
| 00000008 | -80  | -16  | -48  | +48  | +112 | -224 | -208 | +160 |
| 00000010 | +0   | -16  | +176 | +32  | +80  | +32  | +192 | +0   |
| 00000018 | -128 | +384 | -336 | -784 | -64  | +160 | +144 | +496 |
| 00000020 | -16  | +80  | +160 | +16  | +208 | -912 | -832 | +144 |
| 00000028 | +192 | -96  | -288 | +80  | +16  | -48  | -64  | -16  |
| 00000030 | +208 | +336 | +128 | +176 | +48  | +112 | +112 | -32  |
| 00000038 | -48  | -16  | +0   | +32  | -224 | -304 | -112 | +16  |

#### 4.2.4.3.1.4 HH3

The following is a dump of the HH3 sub-band, as shown in the figure illustrating three-level DWT decomposition in section [3.1.8.1.4](#).

The sample data for 11.5 fixed-point integers (RDP 7.1/8.0) is:

|          |      |      |      |      |      |      |      |      |
|----------|------|------|------|------|------|------|------|------|
| 00000000 | -32  | -32  | -96  | -64  | +0   | +0   | -32  | -32  |
| 00000008 | -32  | -224 | +96  | +128 | +224 | -32  | -192 | -448 |
| 00000010 | -32  | -224 | +96  | -384 | -512 | -64  | +64  | -32  |
| 00000018 | -288 | +32  | +224 | -672 | +800 | -128 | -64  | -736 |
| 00000020 | +64  | +64  | +96  | -128 | +704 | -128 | +160 | -128 |
| 00000028 | -64  | -64  | +128 | -224 | +0   | +0   | +96  | +64  |
| 00000030 | +544 | -192 | +224 | +160 | +96  | +32  | -160 | +0   |
| 00000038 | +32  | +0   | +0   | +192 | +32  | -128 | +64  | +0   |

The sample data for 12.4 fixed-point (RDP 8.1) is:

|          |      |      |      |      |      |     |     |      |
|----------|------|------|------|------|------|-----|-----|------|
| 00000000 | -16  | -16  | -48  | -32  | +0   | +0  | -16 | -16  |
| 00000008 | -16  | -112 | +48  | +64  | +112 | -16 | -96 | -224 |
| 00000010 | -16  | -112 | +48  | -192 | -256 | -32 | +32 | -16  |
| 00000018 | -144 | +16  | +112 | -336 | +400 | -64 | -32 | -368 |
| 00000020 | +32  | +32  | +48  | -64  | +352 | -64 | +80 | -64  |
| 00000028 | -32  | -32  | +64  | -112 | +0   | +0  | +48 | +32  |
| 00000030 | +272 | -96  | +112 | +80  | +48  | +16 | -80 | +0   |
| 00000038 | +16  | +0   | +0   | +96  | +16  | -64 | +32 | +0   |

#### 4.2.4.3.1.5 Inverse DWT-X (LL3 - HL3)

The following is a dump of the L2 sub-band, as shown in the figure illustrating three-level DWT decomposition in section [3.1.8.1.4](#).

The sample data for 11.5 fixed-point integers (RDP 7.1/8.0) is:

|          |      |      |      |      |      |      |      |      |
|----------|------|------|------|------|------|------|------|------|
| 00000000 | -32  | -16  | +0   | +0   | +0   | -336 | -416 | -520 |
| 00000008 | -368 | -320 | -400 | -496 | -592 | -704 | -688 | -816 |
| 00000010 | +864 | +664 | +464 | +160 | -16  | +984 | +960 | +968 |

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000018 | +208  | +80   | -432  | -448  | -464  | -496  | -400  | -784  |
| 00000020 | +928  | +832  | +736  | +1288 | +1328 | +2696 | +3424 | +2784 |
| 00000028 | +3808 | -352  | +2272 | +1400 | +912  | +520  | +384  | +384  |
| 00000030 | +1280 | +1144 | +1264 | +744  | +2144 | +1856 | +2464 | +3576 |
| 00000038 | +1488 | +3216 | +3920 | +3912 | +3520 | +2784 | +1152 | -448  |
| 00000040 | +1472 | +1792 | -1216 | -456  | +1840 | +3040 | +3600 | +3016 |
| 00000048 | -128  | +1768 | +2896 | +2952 | +2112 | +1040 | +608  | -224  |
| 00000050 | +2080 | +624  | -1088 | +264  | +1872 | +3008 | +3504 | +280  |
| 00000058 | +3968 | +4272 | +3296 | +3104 | +3168 | +3336 | -336  | -144  |
| 00000060 | +2144 | -1752 | +240  | +968  | +288  | -608  | -352  | +1800 |
| 00000068 | +4080 | +3648 | +3472 | +3296 | +2992 | +344  | +0    | -128  |
| 00000070 | +1632 | +2120 | +1584 | +1224 | +1248 | +1312 | +992  | +808  |
| 00000078 | +1264 | +1264 | +1776 | +1112 | +576  | -24   | +16   | -112  |

The sample data for 12.4 fixed-point integers (RDP 8.1) is:

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000000 | -16   | -8    | +0    | +0    | +0    | -168  | -208  | -260  |
| 00000008 | -184  | -160  | -200  | -248  | -296  | -352  | -344  | -408  |
| 00000010 | +432  | +332  | +232  | +80   | -8    | +492  | +480  | +484  |
| 00000018 | +104  | +40   | -216  | -224  | -232  | -248  | -200  | -392  |
| 00000020 | +464  | +416  | +368  | +644  | +664  | +1348 | +1712 | +1392 |
| 00000028 | +1904 | -176  | +1136 | +700  | +456  | +260  | +192  | +192  |
| 00000030 | +640  | +572  | +632  | +372  | +1072 | +928  | +1232 | +1788 |
| 00000038 | +744  | +1608 | +1960 | +1956 | +1760 | +1392 | +576  | -224  |
| 00000040 | +736  | +896  | -608  | -228  | +920  | +1520 | +1800 | +1508 |
| 00000048 | -64   | +884  | +1448 | +1476 | +1056 | +520  | +304  | -112  |
| 00000050 | +1040 | +312  | -544  | +132  | +936  | +1504 | +1752 | +140  |
| 00000058 | +1984 | +2136 | +1648 | +1552 | +1584 | +1668 | -168  | -72   |
| 00000060 | +1072 | -876  | +120  | +484  | +144  | -304  | -176  | +900  |
| 00000068 | +2040 | +1824 | +1736 | +1648 | +1496 | +172  | +0    | -64   |
| 00000070 | +816  | +1060 | +792  | +612  | +624  | +656  | +496  | +404  |
| 00000078 | +632  | +632  | +888  | +556  | +288  | -12   | +8    | -56   |

#### 4.2.4.3.1.6 Inverse DWT-X (LH3 – HH3)

The following is a dump of the H2 sub-band, as shown in the figure illustrating three-level DWT decomposition in section [3.1.8.1.4](#).

The sample data for 11.5 fixed-point integers (RDP 7.1/8.0) is:

|          |      |       |       |       |       |      |       |       |
|----------|------|-------|-------|-------|-------|------|-------|-------|
| 00000000 | -64  | -80   | +32   | +0    | +96   | -264 | -240  | -280  |
| 00000008 | -64  | -16   | +32   | +8    | -16   | -40  | +64   | +0    |
| 00000010 | -128 | -80   | +96   | -416  | -32   | +168 | -16   | +272  |
| 00000018 | +48  | +200  | -544  | -488  | -304  | -216 | +640  | -256  |
| 00000020 | +32  | +0    | +96   | -192  | +416  | +504 | +208  | -360  |
| 00000028 | +608 | -544  | +352  | +240  | +384  | +312 | -16   | -80   |
| 00000030 | +32  | -112  | +896  | +112  | -800  | -624 | -1344 | -2112 |
| 00000038 | -192 | +1496 | -16   | -72   | +384  | +760 | +1392 | -80   |
| 00000040 | -96  | +128  | +96   | +296  | +240  | +336 | +48   | -168  |
| 00000048 | +128 | +416  | -2112 | -2152 | -1680 | -384 | +272  | +16   |
| 00000050 | +448 | +32   | -128  | -496  | -608  | +56  | +208  | -272  |
| 00000058 | +144 | +24   | -96   | -136  | -176  | +48  | -112  | +16   |
| 00000060 | -128 | +1272 | +496  | -16   | +240  | +648 | +160  | +384  |
| 00000068 | -32  | +256  | +160  | +288  | +288  | -168 | +16   | +16   |
| 00000070 | -128 | -24   | -48   | -24   | +0    | -16  | -32   | +88   |
| 00000078 | -560 | -496  | -560  | -632  | -192  | +32  | +0    | +0    |

The sample data for 12.4 fixed-point integers (RDP 8.1) is:

|          |     |     |     |    |     |      |      |      |
|----------|-----|-----|-----|----|-----|------|------|------|
| 00000000 | -32 | -40 | +16 | +0 | +48 | -132 | -120 | -140 |
| 00000008 | -32 | -8  | +16 | +4 | -8  | -20  | +32  | +0   |



|          |      |      |       |       |      |      |      |       |
|----------|------|------|-------|-------|------|------|------|-------|
| 00000010 | -64  | -40  | +48   | -208  | -16  | +84  | -8   | +136  |
| 00000018 | +24  | +100 | -272  | -244  | -152 | -108 | +320 | -128  |
| 00000020 | +16  | +0   | +48   | -96   | +208 | +252 | +104 | -180  |
| 00000028 | +304 | -272 | +176  | +120  | +192 | +156 | -8   | -40   |
| 00000030 | +16  | -56  | +448  | +56   | -400 | -312 | -672 | -1056 |
| 00000038 | -96  | +748 | -8    | -36   | +192 | +380 | +696 | -40   |
| 00000040 | -48  | +64  | +48   | +148  | +120 | +168 | +24  | -84   |
| 00000048 | +64  | +208 | -1056 | -1076 | -840 | -192 | +136 | +8    |
| 00000050 | +224 | +16  | -64   | -248  | -304 | +28  | +104 | -136  |
| 00000058 | +72  | +12  | -48   | -68   | -88  | +24  | -56  | +8    |
| 00000060 | -64  | +636 | +248  | -8    | +120 | +324 | +80  | +192  |
| 00000068 | -16  | +128 | +80   | +144  | +144 | -84  | +8   | +8    |
| 00000070 | -64  | -12  | -24   | -12   | +0   | -8   | -16  | +44   |
| 00000078 | -280 | -248 | -280  | -316  | -96  | +16  | +0   | +0    |

#### 4.2.4.3.1.7 Inverse DWT-Y (L2 – H2)

The following is a dump of the LL2 sub-band, as shown in the figure illustrating three-level DWT decomposition in section [3.1.8.1.4](#).

The sample data for 11.5 fixed-point integers (RDP 7.1/8.0) is:

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000000 | +32   | +64   | -32   | +0    | -96   | -72   | -176  | -240  |
| 00000008 | -304  | -304  | -432  | -504  | -576  | -664  | -752  | -816  |
| 00000010 | +368  | +244  | +248  | +184  | +120  | -48   | -24   | -194  |
| 00000018 | -172  | -190  | -240  | -340  | -472  | -596  | -624  | -736  |
| 00000020 | +960  | +744  | +400  | +368  | -48   | +1032 | +1088 | +972  |
| 00000028 | +216  | -12   | -176  | -208  | -304  | -368  | -752  | -656  |
| 00000030 | +712  | +648  | +712  | +148  | +480  | +2032 | +2176 | +2444 |
| 00000038 | +1944 | +304  | +8    | -318  | -324  | -380  | +940  | -564  |
| 00000040 | +976  | +872  | +640  | +1592 | +1136 | +2360 | +3328 | +2828 |
| 00000048 | +3480 | -180  | +2368 | +1524 | +872  | +472  | +72   | +552  |
| 00000050 | +1176 | +1036 | +896  | +804  | +2568 | +3146 | +3596 | +3100 |
| 00000058 | +3596 | +192  | +3764 | +3156 | +2772 | +1984 | +236  | -68   |
| 00000060 | +1248 | +1200 | +768  | +784  | +2336 | +1916 | +3032 | +4812 |
| 00000068 | +1280 | +2740 | +3752 | +3828 | +3136 | +2248 | +464  | -368  |
| 00000070 | +1440 | +1268 | +1320 | +286  | +628  | +1302 | +952  | +260  |
| 00000078 | +208  | +4768 | +3824 | +3802 | +3716 | +3070 | +2904 | -440  |
| 00000080 | +1504 | +1784 | -1712 | -660  | +2120 | +3184 | +4248 | +4156 |
| 00000088 | -96   | +812  | +3960 | +4064 | +2760 | +852  | -224  | -192  |
| 00000090 | +1512 | +1420 | -1200 | +444  | +2568 | +3670 | +3908 | +1992 |
| 00000098 | +2124 | +3264 | -44   | -148  | +68   | +1410 | +224  | -144  |
| 000000A0 | +1904 | +544  | -1072 | +364  | +2056 | +2812 | +3376 | +500  |
| 000000A8 | +3832 | +4052 | +4400 | +4248 | +4096 | +3504 | -416  | -160  |
| 000000B0 | +2840 | -866  | -764  | -198  | +48   | +1038 | +1836 | +578  |
| 000000B8 | +4216 | +3828 | +3728 | +3462 | +3164 | +2050 | -408  | -120  |
| 000000C0 | +1984 | -2404 | +56   | +1224 | +472  | -960  | -536  | +1744 |
| 000000C8 | +4024 | +3508 | +3440 | +3220 | +2936 | +404  | +48   | -144  |
| 000000D0 | +1616 | +2090 | +1700 | +1202 | +1280 | +1314 | +516  | +1926 |
| 000000D8 | +2728 | +2958 | +3028 | +2828 | +2308 | -112  | +60   | -100  |
| 000000E0 | +1760 | +1496 | +1360 | +1244 | +1128 | +996  | +928  | +572  |
| 000000E8 | +1560 | +1384 | +1976 | +1284 | +528  | +44   | +8    | -120  |
| 000000F0 | +1504 | +1448 | +1264 | +1196 | +1128 | +964  | +864  | +748  |
| 000000F8 | +440  | +392  | +856  | +20   | +144  | +108  | +8    | -120  |

The sample data for 12.4 fixed-point integers (RDP 8.1) is:

|          |      |      |      |      |      |       |       |       |
|----------|------|------|------|------|------|-------|-------|-------|
| 00000000 | +16  | +32  | -16  | +0   | -48  | -36   | -88   | -120  |
| 00000008 | -152 | -152 | -216 | -252 | -288 | -332  | -376  | -408  |
| 00000010 | +184 | +122 | +124 | +92  | +60  | -24   | -12   | -97   |
| 00000018 | -86  | -95  | -120 | -170 | -236 | -298  | -312  | -368  |
| 00000020 | +480 | +372 | +200 | +184 | -24  | +516  | +544  | +486  |
| 00000028 | +108 | -6   | -88  | -104 | -152 | -184  | -376  | -328  |
| 00000030 | +356 | +324 | +356 | +74  | +240 | +1016 | +1088 | +1222 |

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000038 | +972  | +152  | +4    | -159  | -162  | -190  | +470  | -282  |
| 00000040 | +488  | +436  | +320  | +796  | +568  | +1180 | +1664 | +1414 |
| 00000048 | +1740 | -90   | +1184 | +762  | +436  | +236  | +36   | +276  |
| 00000050 | +588  | +518  | +448  | +402  | +1284 | +1573 | +1798 | +1550 |
| 00000058 | +1798 | +96   | +1882 | +1578 | +1386 | +992  | +118  | -34   |
| 00000060 | +624  | +600  | +384  | +392  | +1168 | +958  | +1516 | +2406 |
| 00000068 | +640  | +1370 | +1876 | +1914 | +1568 | +1124 | +232  | -184  |
| 00000070 | +720  | +634  | +660  | +143  | +314  | +651  | +476  | +130  |
| 00000078 | +104  | +2384 | +1912 | +1901 | +1858 | +1535 | +1452 | -220  |
| 00000080 | +752  | +892  | -856  | -330  | +1060 | +1592 | +2124 | +2078 |
| 00000088 | -48   | +406  | +1980 | +2032 | +1380 | +426  | -112  | -96   |
| 00000090 | +756  | +710  | -600  | +222  | +1284 | +1835 | +1954 | +996  |
| 00000098 | +1062 | +1632 | -22   | -74   | +34   | +705  | +112  | -72   |
| 000000a0 | +952  | +272  | -536  | +182  | +1028 | +1406 | +1688 | +250  |
| 000000a8 | +1916 | +2026 | +2200 | +2124 | +2048 | +1752 | -208  | -80   |
| 000000b0 | +1420 | -433  | -382  | -99   | +24   | +519  | +918  | +289  |
| 000000b8 | +2108 | +1914 | +1864 | +1731 | +1582 | +1025 | -204  | -60   |
| 000000c0 | +992  | -1202 | +28   | +612  | +236  | -480  | -268  | +872  |
| 000000c8 | +2012 | +1754 | +1720 | +1610 | +1468 | +202  | +24   | -72   |
| 000000d0 | +808  | +1045 | +850  | +601  | +640  | +657  | +258  | +963  |
| 000000d8 | +1364 | +1479 | +1514 | +1414 | +1154 | -56   | +30   | -50   |
| 000000e0 | +880  | +748  | +680  | +622  | +564  | +498  | +464  | +286  |
| 000000e8 | +780  | +692  | +988  | +642  | +264  | +22   | +4    | -60   |
| 000000f0 | +752  | +724  | +632  | +598  | +564  | +482  | +432  | +374  |
| 000000f8 | +220  | +196  | +428  | +10   | +72   | +54   | +4    | -60   |

#### 4.2.4.3.2 Level-2 Sub-bands

The following are the dumps of the four level-2 dequantized sub-bands (LL2, LH2, HL2, and HH2). LL2 is reconstructed from level-3 sub-bands. LH2, HL2, and HH2 are generated by dequantizing the corresponding decoded sub-bands, as shown in sections [4.2.4.2](#) and [4.2.4.2.1](#).

##### 4.2.4.3.2.1 LL2

The LL2 sub-band is the same as that shown in section [4.2.4.3.1.7](#).

##### 4.2.4.3.2.2 HL2

The following is a dump of the HL2 sub-band, as shown in the figure illustrating three-level DWT decomposition in section [3.1.8.1.4](#).

The sample data for 11.5 fixed-point integers (RDP 7.1/8.0) is:

|          |       |       |      |      |      |      |       |       |
|----------|-------|-------|------|------|------|------|-------|-------|
| 00000000 | +64   | +0    | +0   | +0   | +0   | +0   | +0    | +0    |
| 00000008 | +0    | +0    | +0   | +0   | +0   | +0   | +0    | +0    |
| 00000010 | +64   | +0    | +0   | +64  | +0   | +0   | +64   | +0    |
| 00000018 | +0    | +0    | +0   | +0   | +0   | -64  | +0    | +0    |
| 00000020 | -64   | -64   | +0   | -320 | +192 | -128 | +64   | +0    |
| 00000028 | -64   | +0    | +0   | +0   | +0   | +64  | -256  | -64   |
| 00000030 | +0    | +0    | +64  | -320 | -128 | +64  | +64   | +64   |
| 00000038 | +384  | -128  | -64  | +0   | +64  | -256 | +1344 | +384  |
| 00000040 | +0    | +0    | -320 | -64  | +64  | +128 | +256  | +256  |
| 00000048 | +192  | +320  | +0   | +0   | -64  | +256 | -512  | -704  |
| 00000050 | +0    | +0    | -128 | +512 | -64  | +0   | +192  | +64   |
| 00000058 | -1152 | +1024 | +64  | -64  | +128 | +0   | -256  | -256  |
| 00000060 | +0    | +0    | -384 | +64  | -192 | -64  | +64   | +896  |
| 00000068 | -1472 | +64   | +0   | +64  | +0   | +64  | -192  | -64   |
| 00000070 | +0    | +0    | +0   | -320 | -128 | +192 | -64   | +704  |
| 00000078 | -512  | -192  | +0   | +64  | +0   | -64  | -192  | +64   |
| 00000080 | +0    | +896  | +64  | +0   | -64  | +0   | +0    | -960  |
| 00000088 | -128  | +448  | +64  | -64  | +64  | -192 | -64   | -64   |
| 00000090 | -128  | -896  | +0   | +64  | +0   | +0   | +320  | -1152 |
| 00000098 | +896  | -448  | -64  | -64  | -128 | +832 | +64   | -64   |

|          |       |      |      |      |      |      |      |       |
|----------|-------|------|------|------|------|------|------|-------|
| 000000A0 | +192  | -896 | +64  | -128 | +128 | -64  | +704 | -1024 |
| 000000A8 | -128  | +128 | -64  | +64  | +0   | -576 | +0   | -64   |
| 000000B0 | +1216 | +64  | +64  | +64  | +0   | +128 | +128 | +512  |
| 000000B8 | +0    | +0   | +0   | +0   | +64  | -832 | +0   | +0    |
| 000000C0 | -384  | -192 | -64  | +0   | -128 | -128 | +384 | +832  |
| 000000C8 | +0    | +0   | +0   | +64  | +576 | +64  | +0   | +0    |
| 000000D0 | -64   | +128 | +0   | +0   | +64  | +0   | -320 | +0    |
| 000000D8 | +0    | -64  | +0   | +0   | +64  | +64  | +0   | +0    |
| 000000E0 | +0    | +0   | +0   | +0   | +0   | +0   | +64  | -128  |
| 000000E8 | -256  | +64  | +256 | +256 | -128 | +0   | +0   | -64   |
| 000000F0 | +0    | +0   | +0   | +0   | +0   | +0   | +0   | +0    |
| 000000F8 | +64   | +0   | -256 | -64  | +0   | +0   | +0   | +0    |

The sample data for 12.4 fixed-point integers (RDP 8.1) is:

|          |      |      |      |      |      |      |      |      |
|----------|------|------|------|------|------|------|------|------|
| 00000000 | +32  | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000008 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000010 | +32  | +0   | +0   | +32  | +0   | +0   | +32  | +0   |
| 00000018 | +0   | +0   | +0   | +0   | +0   | -32  | +0   | +0   |
| 00000020 | -32  | -32  | +0   | -160 | +96  | -64  | +32  | +0   |
| 00000028 | -32  | +0   | +0   | +0   | +0   | +32  | -128 | -32  |
| 00000030 | +0   | +0   | +32  | -160 | -64  | +32  | +32  | +32  |
| 00000038 | +192 | -64  | -32  | +0   | +32  | -128 | +672 | +192 |
| 00000040 | +0   | +0   | -160 | -32  | +32  | +64  | +128 | +128 |
| 00000048 | +96  | +160 | +0   | +0   | -32  | +128 | -256 | -352 |
| 00000050 | +0   | +0   | -64  | +256 | -32  | +0   | +96  | +32  |
| 00000058 | -576 | +512 | +32  | -32  | +64  | +0   | -128 | -128 |
| 00000060 | +0   | +0   | -192 | +32  | -96  | -32  | +32  | +448 |
| 00000068 | -736 | +32  | +0   | +32  | +0   | +32  | -96  | -32  |
| 00000070 | +0   | +0   | +0   | -160 | -64  | +96  | -32  | +352 |
| 00000078 | -256 | -96  | +0   | +32  | +0   | -32  | -96  | +32  |
| 00000080 | +0   | +448 | +32  | +0   | -32  | +0   | +0   | -480 |
| 00000088 | -64  | +224 | +32  | -32  | +32  | -96  | -32  | -32  |
| 00000090 | -64  | -448 | +0   | +32  | +0   | +0   | +160 | -576 |
| 00000098 | +448 | -224 | -32  | -32  | -64  | +416 | +32  | -32  |
| 000000a0 | +96  | -448 | +32  | -64  | +64  | -32  | +352 | -512 |
| 000000a8 | -64  | +64  | -32  | +32  | +0   | -288 | +0   | -32  |
| 000000b0 | +608 | +32  | +32  | +32  | +0   | +64  | +64  | +256 |
| 000000b8 | +0   | +0   | +0   | +0   | +32  | -416 | +0   | +0   |
| 000000c0 | -192 | -96  | -32  | +0   | -64  | -64  | +192 | +416 |
| 000000c8 | +0   | +0   | +0   | +32  | +288 | +32  | +0   | +0   |
| 000000d0 | -32  | +64  | +0   | +0   | +32  | +0   | -160 | +0   |
| 000000d8 | +0   | -32  | +0   | +0   | +32  | +32  | +0   | +0   |
| 000000e0 | +0   | +0   | +0   | +0   | +0   | +0   | +32  | -64  |
| 000000e8 | -128 | +32  | +128 | +128 | -64  | +0   | +0   | -32  |
| 000000f0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000000f8 | +32  | +0   | -128 | -32  | +0   | +0   | +0   | +0   |

#### 4.2.4.3.2.3 LH2

The following is a dump of the HL2 sub-band, as shown in the figure illustrating three-level DWT decomposition in section [3.1.8.1.4](#).

The sample data for 11.5 fixed-point integers (RDP 7.1/8.0) is:

|          |      |      |     |      |      |      |      |      |
|----------|------|------|-----|------|------|------|------|------|
| 00000000 | +0   | +0   | +0  | +0   | +0   | +0   | +0   | +0   |
| 00000008 | +0   | +0   | +0  | +0   | +0   | +0   | +0   | +0   |
| 00000010 | -128 | -64  | +64 | +64  | -64  | -192 | +0   | -128 |
| 00000018 | -192 | +0   | +0  | +0   | +0   | +0   | +0   | +0   |
| 00000020 | -128 | -128 | +0  | +64  | -64  | +128 | +0   | +0   |
| 00000028 | +0   | +64  | -64 | +64  | +0   | +64  | -512 | -64  |
| 00000030 | +0   | +0   | +64 | -192 | +0   | +0   | -64  | +192 |
| 00000038 | +0   | +0   | +64 | -192 | -192 | -192 | +192 | -256 |
| 00000040 | +0   | +0   | +0  | +64  | +0   | +0   | +192 | -192 |

|          |      |       |       |      |      |      |       |       |
|----------|------|-------|-------|------|------|------|-------|-------|
| 00000048 | +192 | -64   | +64   | +64  | +0   | +64  | -320  | +1280 |
| 00000050 | +0   | +0    | +0    | -64  | +128 | +448 | -64   | +0    |
| 00000058 | +192 | -128  | +64   | +0   | +256 | -64  | +0    | +64   |
| 00000060 | +0   | +64   | -192  | +128 | -576 | -768 | -1216 | +640  |
| 00000068 | -64  | +128  | +0    | -64  | +64  | +576 | -832  | +0    |
| 00000070 | +0   | +64   | -256  | -832 | +0   | +0   | +1024 | -448  |
| 00000078 | +0   | +1024 | -192  | +64  | -128 | -64  | +128  | -64   |
| 00000080 | +0   | +0    | +0    | +64  | +64  | +0   | +0    | +256  |
| 00000088 | -192 | -1088 | -896  | +128 | -256 | -896 | -64   | +0    |
| 00000090 | -64  | +64   | +0    | -64  | +0   | +64  | +64   | -128  |
| 00000098 | +64  | +192  | +1088 | +832 | +960 | +576 | -128  | +0    |
| 000000A0 | +128 | -192  | +128  | +128 | -128 | +128 | +64   | -64   |
| 000000A8 | +64  | +0    | +0    | -128 | +320 | +448 | -64   | +0    |
| 000000B0 | +64  | +256  | -448  | -896 | -448 | +128 | -128  | +0    |
| 000000B8 | +0   | +0    | +0    | +0   | +0   | -64  | +64   | +0    |
| 000000C0 | -192 | +1088 | +512  | -64  | +256 | +512 | -576  | +384  |
| 000000C8 | +0   | +64   | +0    | +0   | +0   | +0   | +0    | +0    |
| 000000D0 | -64  | +64   | +0    | +0   | +0   | +0   | +0    | -128  |
| 000000D8 | -128 | +128  | +0    | +0   | +320 | -64  | +0    | +0    |
| 000000E0 | -64  | +0    | +0    | +0   | +0   | +0   | +0    | +0    |
| 000000E8 | -320 | -256  | -128  | -384 | -64  | +0   | +0    | +0    |
| 000000F0 | +0   | +0    | +0    | +0   | +0   | +0   | +0    | +0    |
| 000000F8 | +0   | +0    | -448  | +64  | +0   | +0   | +0    | +0    |

The sample data for 12.4 fixed-point integers (RDP 8.1) is:

|          |      |      |      |      |      |      |      |      |
|----------|------|------|------|------|------|------|------|------|
| 00000000 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000008 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000010 | -64  | -32  | +32  | +32  | -32  | -96  | +0   | -64  |
| 00000018 | -96  | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000020 | -64  | -64  | +0   | +32  | -32  | +64  | +0   | +0   |
| 00000028 | +0   | +32  | -32  | +32  | +0   | +32  | -256 | -32  |
| 00000030 | +0   | +0   | +32  | -96  | +0   | +0   | -32  | +96  |
| 00000038 | +0   | +0   | +32  | -96  | -96  | -96  | +96  | -128 |
| 00000040 | +0   | +0   | +0   | +32  | +0   | +0   | +96  | -96  |
| 00000048 | +96  | -32  | +32  | +32  | +0   | +32  | -160 | +640 |
| 00000050 | +0   | +0   | +0   | -32  | +64  | +224 | -32  | +0   |
| 00000058 | +96  | -64  | +32  | +0   | +128 | -32  | +0   | +32  |
| 00000060 | +0   | +32  | -96  | +64  | -288 | -384 | -608 | +320 |
| 00000068 | -32  | +64  | +0   | -32  | +32  | +288 | -416 | +0   |
| 00000070 | +0   | +32  | -128 | -416 | +0   | +0   | +512 | -224 |
| 00000078 | +0   | +512 | -96  | +32  | -64  | -32  | +64  | -32  |
| 00000080 | +0   | +0   | +0   | +32  | +32  | +0   | +0   | +128 |
| 00000088 | -96  | -544 | -448 | +64  | -128 | -448 | -32  | +0   |
| 00000090 | -32  | +32  | +0   | -32  | +0   | +32  | +32  | -64  |
| 00000098 | +32  | +96  | +544 | +416 | +480 | +288 | -64  | +0   |
| 000000a0 | +64  | -96  | +64  | +64  | -64  | +64  | +32  | -32  |
| 000000a8 | +32  | +0   | +0   | -64  | +160 | +224 | -32  | +0   |
| 000000b0 | +32  | +128 | -224 | -448 | -224 | +64  | -64  | +0   |
| 000000b8 | +0   | +0   | +0   | +0   | +0   | -32  | +32  | +0   |
| 000000c0 | -96  | +544 | +256 | -32  | +128 | +256 | -288 | +192 |
| 000000c8 | +0   | +32  | +0   | +0   | +0   | +0   | +0   | +0   |
| 000000d0 | -32  | +32  | +0   | +0   | +0   | +0   | +0   | -64  |
| 000000d8 | -64  | +64  | +0   | +0   | +160 | -32  | +0   | +0   |
| 000000e0 | -32  | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000000e8 | -160 | -128 | -64  | -192 | -32  | +0   | +0   | +0   |
| 000000f0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000000f8 | +0   | +0   | -224 | +32  | +0   | +0   | +0   | +0   |

#### 4.2.4.3.2.4 HH2

The following is a dump of the HH2 sub-band, as shown in the figure illustrating three-level DWT decomposition in section [3.1.8.1.4](#).

The sample data for 11.5 fixed-point integers (RDP 7.1/8.0) is:

|          |      |      |      |      |      |      |      |       |
|----------|------|------|------|------|------|------|------|-------|
| 00000000 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0    |
| 00000008 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0    |
| 00000010 | +0   | +0   | +0   | +128 | +0   | +0   | +0   | +0    |
| 00000018 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0    |
| 00000020 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0    |
| 00000028 | +0   | +0   | +0   | +0   | -128 | +0   | -512 | -128  |
| 00000030 | +0   | +0   | +0   | +0   | +0   | +0   | -128 | -128  |
| 00000038 | +128 | -128 | +0   | +0   | +0   | +0   | +256 | +256  |
| 00000040 | +0   | +0   | +0   | +384 | +0   | +0   | +128 | +128  |
| 00000048 | -128 | +128 | +0   | +0   | +0   | +0   | -512 | -1024 |
| 00000050 | +0   | +0   | +0   | -128 | +0   | +0   | -128 | -128  |
| 00000058 | -128 | +0   | +0   | +0   | +0   | +0   | +0   | +0    |
| 00000060 | +0   | +0   | +0   | +128 | +128 | -128 | -384 | +384  |
| 00000068 | +0   | +0   | +0   | -128 | +128 | +0   | +0   | +0    |
| 00000070 | +0   | +128 | -256 | +0   | +0   | -128 | +384 | +128  |
| 00000078 | +256 | -128 | +0   | +0   | +0   | -256 | -128 | +0    |
| 00000080 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0    |
| 00000088 | +128 | +0   | +128 | +128 | +0   | -384 | +0   | +0    |
| 00000090 | +0   | +0   | +0   | +0   | +0   | +0   | +128 | +0    |
| 00000098 | -128 | +256 | +0   | -128 | +128 | +0   | +0   | +0    |
| 000000A0 | +128 | +128 | +0   | +0   | +0   | +0   | +0   | -128  |
| 000000A8 | +0   | +0   | +0   | -128 | +0   | -256 | +0   | +0    |
| 000000B0 | +256 | +256 | +128 | -128 | +0   | -128 | +0   | +0    |
| 000000B8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0    |
| 000000C0 | -256 | +256 | +0   | +0   | +128 | -256 | +128 | -128  |
| 000000C8 | -128 | +0   | +0   | +0   | +0   | +0   | +0   | +0    |
| 000000D0 | +0   | +0   | +0   | +0   | +0   | +0   | +128 | +0    |
| 000000D8 | +0   | +0   | +0   | -128 | -256 | +0   | +0   | +0    |
| 000000E0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0    |
| 000000E8 | +128 | +128 | -128 | -128 | +0   | +0   | +0   | +0    |
| 000000F0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0    |
| 000000F8 | +0   | +0   | +128 | +0   | +0   | +0   | +0   | +0    |

The sample data for 12.4 fixed-point integers (RDP 8.1) is:

|          |      |      |      |      |      |      |      |      |
|----------|------|------|------|------|------|------|------|------|
| 00000000 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000008 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000010 | +0   | +0   | +0   | +64  | +0   | +0   | +0   | +0   |
| 00000018 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000020 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000028 | +0   | +0   | +0   | +0   | -64  | +0   | -256 | -64  |
| 00000030 | +0   | +0   | +0   | +0   | +0   | +0   | -64  | -64  |
| 00000038 | +64  | -64  | +0   | +0   | +0   | +0   | +128 | +128 |
| 00000040 | +0   | +0   | +0   | +192 | +0   | +0   | +64  | +64  |
| 00000048 | -64  | +64  | +0   | +0   | +0   | +0   | -256 | -512 |
| 00000050 | +0   | +0   | +0   | -64  | +0   | +0   | -64  | -64  |
| 00000058 | -64  | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000060 | +0   | +0   | +0   | +64  | +64  | -64  | -192 | +192 |
| 00000068 | +0   | +0   | +0   | -64  | +64  | +0   | +0   | +0   |
| 00000070 | +0   | +64  | -128 | +0   | +0   | -64  | +192 | +64  |
| 00000078 | +128 | -64  | +0   | +0   | +0   | -128 | -64  | +0   |
| 00000080 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000088 | +64  | +0   | +64  | +64  | +0   | -192 | +0   | +0   |
| 00000090 | +0   | +0   | +0   | +0   | +0   | +0   | +64  | +0   |
| 00000098 | -64  | +128 | +0   | -64  | +64  | +0   | +0   | +0   |
| 000000a0 | +64  | +64  | +0   | +0   | +0   | +0   | +0   | -64  |
| 000000a8 | +0   | +0   | +0   | -64  | +0   | -128 | +0   | +0   |
| 000000b0 | +128 | +128 | +64  | -64  | +0   | -64  | +0   | +0   |
| 000000b8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000000c0 | -128 | +128 | +0   | +0   | +64  | -128 | +64  | -64  |
| 000000c8 | -64  | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000000d0 | +0   | +0   | +0   | +0   | +0   | +0   | +64  | +0   |
| 000000d8 | +0   | +0   | +0   | -64  | -128 | +0   | +0   | +0   |
| 000000e0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000000e8 | +64  | +64  | -64  | -64  | +0   | +0   | +0   | +0   |
| 000000f0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000000f8 | +0   | +0   | +64  | +0   | +0   | +0   | +0   | +0   |

#### 4.2.4.3.2.5 Inverse DWT-X (LL2 – HL2)

The following is a dump of the L1 sub-band, as shown in the figure illustrating three-level DWT decomposition in section [3.1.8.1.4](#).

The sample data for 11.5 fixed-point integers (RDP 7.1/8.0) is:

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000000 | -32   | +128  | +32   | +0    | -32   | -16   | +0    | -48   |
| 00000008 | -96   | -84   | -72   | -124  | -176  | -208  | -240  | -272  |
| 00000010 | -304  | -304  | -304  | -368  | -432  | -468  | -504  | -540  |
| 00000018 | -576  | -620  | -664  | -708  | -752  | -784  | -816  | -816  |
| 00000020 | +304  | +386  | +212  | +230  | +248  | +200  | +152  | +248  |
| 00000028 | +88   | +20   | -48   | -52   | -56   | -13   | -226  | -199  |
| 00000030 | -172  | -181  | -190  | -215  | -240  | -290  | -340  | -406  |
| 00000038 | -472  | -518  | -564  | -706  | -592  | -664  | -736  | -736  |
| 00000040 | +1024 | +788  | +808  | +492  | +432  | +480  | +528  | -368  |
| 00000048 | +16   | +892  | +1000 | +804  | +1120 | +1158 | +940  | +594  |
| 00000050 | +248  | +6    | +20   | -78   | -176  | -192  | -208  | -256  |
| 00000058 | -304  | -352  | -400  | -400  | -656  | -1088 | -496  | -624  |
| 00000060 | +712  | +680  | +648  | +664  | +680  | +606  | +276  | -150  |
| 00000068 | +704  | +1128 | +2064 | +2216 | +2112 | +2374 | +2380 | +2178 |
| 00000070 | +1720 | +1716 | +176  | -116  | +104  | -219  | -286  | -321  |
| 00000078 | -356  | -192  | -284  | -456  | +396  | +2172 | -1428 | -660  |
| 00000080 | +976  | +924  | +872  | +836  | +800  | +652  | +1784 | +1332 |
| 00000088 | +1136 | +1828 | +2264 | +2956 | +3136 | +3366 | +2572 | +3426 |
| 00000090 | +3256 | +1794 | -436  | +1526 | +2208 | +1866 | +1524 | +1214 |
| 00000098 | +904  | +512  | +376  | +800  | +200  | -344  | +1160 | -248  |
| 000000A0 | +1176 | +1106 | +1036 | +998  | +960  | +530  | +612  | +2502 |
| 000000A8 | +2344 | +2633 | +3178 | +3339 | +3500 | +3620 | +2972 | +3684 |
| 000000B0 | +4140 | -106  | +256  | +3786 | +3220 | +3316 | +3156 | +2820 |
| 000000B8 | +2740 | +2586 | +1920 | +1142 | +364  | -236  | +188  | -324  |
| 000000C0 | +1248 | +1224 | +1200 | +1080 | +960  | +184  | +944  | +1800 |
| 000000C8 | +2400 | +1838 | +2044 | +2410 | +3032 | +3810 | +4332 | +4742 |
| 000000D0 | +1568 | -438  | +3444 | +3710 | +3720 | +3758 | +3796 | +3578 |
| 000000D8 | +3104 | +2660 | +2216 | +1500 | +528  | -240  | -240  | -368  |
| 000000E0 | +1440 | +1354 | +1268 | +1294 | +1320 | +883  | +446  | +9    |
| 000000E8 | +852  | +805  | +1270 | +1463 | +888  | +286  | -60   | +1434 |
| 000000F0 | +112  | +1592 | +5120 | +4136 | +3920 | +3845 | +3770 | +3855 |
| 000000F8 | +3684 | +3393 | +3102 | +2939 | +3032 | +944  | -376  | -248  |
| 00000100 | +1504 | +1420 | +1336 | +1364 | -2192 | -1314 | -692  | +730  |
| 00000108 | +2152 | +2556 | +3216 | +3732 | +4248 | +4442 | +4636 | +622  |
| 00000110 | +448  | +294  | +652  | +3074 | +3704 | +4012 | +4064 | +3284 |
| 00000118 | +2760 | +1966 | +916  | +26   | -96   | -240  | -128  | -256  |
| 00000120 | +1640 | +1530 | +1932 | -1202 | -752  | -170  | +412  | +1602 |
| 00000128 | +2536 | +3103 | +3670 | +3709 | +3748 | +3718 | +2408 | +26   |
| 00000130 | +2252 | +4438 | +3040 | +730  | +212  | -64   | -84   | -88   |
| 00000138 | +164  | +355  | +1058 | +2081 | -224  | -56   | -144  | -272  |
| 00000140 | +1712 | +1688 | +896  | -1672 | -656  | -2    | +396  | +970  |
| 00000148 | +2056 | +2674 | +2780 | +2790 | +3056 | +3266 | +660  | +486  |
| 00000150 | +4408 | +3974 | +4052 | +4466 | +4368 | +4180 | +4248 | +4284 |
| 00000158 | +4064 | +3928 | +3792 | +680  | -128  | -128  | -128  | -256  |
| 00000160 | +1624 | +2491 | -1506 | -1039 | -828  | -417  | -262  | +5    |
| 00000168 | +16   | +495  | +974  | +1597 | +1708 | +1239 | +258  | +3133 |
| 00000170 | +3960 | +3894 | +3828 | +3778 | +3728 | +3595 | +3462 | +3297 |
| 00000178 | +3132 | +2911 | +2434 | -443  | +8    | -56   | -120  | -120  |
| 00000180 | +2368 | -642  | -2116 | -1350 | +184  | +592  | +1256 | +896  |
| 00000188 | +536  | -404  | -832  | -1004 | -664  | +1004 | +1136 | +4036 |
| 00000190 | +3608 | +3558 | +3508 | +3474 | +3440 | +3314 | +3188 | +3030 |
| 00000198 | +2616 | +2502 | +84   | +178  | +16   | -64   | -144  | -144  |
| 000001A0 | +1680 | +1741 | +2058 | +2103 | +1636 | +1419 | +1202 | +1225 |
| 000001A8 | +1248 | +1393 | +1282 | +979  | +676  | +741  | +2086 | +2407 |
| 000001B0 | +2728 | +2859 | +2990 | +2897 | +3060 | +2944 | +2828 | +2552 |
| 000001B8 | +2276 | +1178 | -176  | +54   | +28   | -36   | -100  | -100  |
| 000001C0 | +1760 | +1628 | +1496 | +1428 | +1360 | +1302 | +1244 | +1186 |

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 000001C8 | +1128 | +1062 | +996  | +946  | +896  | +878  | +604  | +922  |
| 000001D0 | +1752 | +1104 | +1480 | +1776 | +1816 | +1934 | +1028 | +1258 |
| 000001D8 | +464  | +30   | +108  | +58   | +8    | -40   | -88   | -216  |
| 000001E0 | +1504 | +1476 | +1448 | +1356 | +1264 | +1230 | +1196 | +1162 |
| 000001E8 | +1128 | +1046 | +964  | +914  | +864  | +806  | +748  | +578  |
| 000001F0 | +408  | +512  | +360  | +672  | +984  | +70   | +180  | +50   |
| 000001F8 | +176  | +142  | +108  | +58   | +8    | -56   | -120  | -120  |

The sample data for 12.4 fixed-point integers (RDP 8.1) is:

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000000 | -16   | +64   | +16   | +0    | -16   | -8    | +0    | -24   |
| 00000008 | -48   | -42   | -36   | -62   | -88   | -104  | -120  | -136  |
| 00000010 | -152  | -152  | -152  | -184  | -216  | -234  | -252  | -270  |
| 00000018 | -288  | -310  | -332  | -354  | -376  | -392  | -408  | -408  |
| 00000020 | +152  | +193  | +106  | +115  | +124  | +100  | +76   | +124  |
| 00000028 | +44   | +10   | -24   | -26   | -28   | -6    | -113  | -99   |
| 00000030 | -86   | -90   | -95   | -107  | -120  | -145  | -170  | -203  |
| 00000038 | -236  | -259  | -282  | -353  | -296  | -332  | -368  | -368  |
| 00000040 | +512  | +394  | +404  | +246  | +216  | +240  | +264  | -184  |
| 00000048 | +8    | +446  | +500  | +402  | +560  | +579  | +470  | +297  |
| 00000050 | +124  | +3    | +10   | -39   | -88   | -96   | -104  | -128  |
| 00000058 | -152  | -176  | -200  | -200  | -328  | -544  | -248  | -312  |
| 00000060 | +356  | +340  | +324  | +332  | +340  | +303  | +138  | -75   |
| 00000068 | +352  | +564  | +1032 | +1108 | +1056 | +1187 | +1190 | +1089 |
| 00000070 | +860  | +858  | +88   | -58   | +52   | -109  | -143  | -160  |
| 00000078 | -178  | -96   | -142  | -228  | +198  | +1086 | -714  | -330  |
| 00000080 | +488  | +462  | +436  | +418  | +400  | +326  | +892  | +666  |
| 00000088 | +568  | +914  | +1132 | +1478 | +1568 | +1683 | +1286 | +1713 |
| 00000090 | +1628 | +897  | -218  | +763  | +1104 | +933  | +762  | +607  |
| 00000098 | +452  | +256  | +188  | +400  | +100  | -172  | +580  | -124  |
| 000000a0 | +588  | +553  | +518  | +499  | +480  | +265  | +306  | +1251 |
| 000000a8 | +1172 | +1316 | +1589 | +1669 | +1750 | +1810 | +1486 | +1842 |
| 000000b0 | +2070 | -53   | +128  | +1893 | +1610 | +1658 | +1578 | +1410 |
| 000000b8 | +1370 | +1293 | +960  | +571  | +182  | -118  | +94   | -162  |
| 000000c0 | +624  | +612  | +600  | +540  | +480  | +92   | +472  | +900  |
| 000000c8 | +1200 | +919  | +1022 | +1205 | +1516 | +1905 | +2166 | +2371 |
| 000000d0 | +784  | -219  | +1722 | +1855 | +1860 | +1879 | +1898 | +1789 |
| 000000d8 | +1552 | +1330 | +1108 | +750  | +264  | -120  | -120  | -184  |
| 000000e0 | +720  | +677  | +634  | +647  | +660  | +441  | +223  | +4    |
| 000000e8 | +426  | +402  | +635  | +731  | +444  | +143  | -30   | +717  |
| 000000f0 | +56   | +796  | +2560 | +2068 | +1960 | +1922 | +1885 | +1927 |
| 000000f8 | +1842 | +1696 | +1551 | +1469 | +1516 | +472  | -188  | -124  |
| 00000100 | +752  | +710  | +668  | +682  | -1096 | -657  | -346  | +365  |
| 00000108 | +1076 | +1278 | +1608 | +1866 | +2124 | +2221 | +2318 | +311  |
| 00000110 | +224  | +147  | +326  | +1537 | +1852 | +2006 | +2032 | +1642 |
| 00000118 | +1380 | +983  | +458  | +13   | -48   | -120  | -64   | -128  |
| 00000120 | +820  | +765  | +966  | -601  | -376  | -85   | +206  | +801  |
| 00000128 | +1268 | +1551 | +1835 | +1854 | +1874 | +1859 | +1204 | +13   |
| 00000130 | +1126 | +2219 | +1520 | +365  | +106  | -32   | -42   | -44   |
| 00000138 | +82   | +177  | +529  | +1040 | -112  | -28   | -72   | -136  |
| 00000140 | +856  | +844  | +448  | -836  | -328  | -1    | +198  | +485  |
| 00000148 | +1028 | +1337 | +1390 | +1395 | +1528 | +1633 | +330  | +243  |
| 00000150 | +2204 | +1987 | +2026 | +2233 | +2184 | +2090 | +2124 | +2142 |
| 00000158 | +2032 | +1964 | +1896 | +340  | -64   | -64   | -64   | -128  |
| 00000160 | +812  | +1245 | -753  | -519  | -414  | -208  | -131  | +2    |
| 00000168 | +8    | +247  | +487  | +798  | +854  | +619  | +129  | +1566 |
| 00000170 | +1980 | +1947 | +1914 | +1889 | +1864 | +1797 | +1731 | +1648 |
| 00000178 | +1566 | +1455 | +1217 | -221  | +4    | -28   | -60   | -60   |
| 00000180 | +1184 | -321  | -1058 | -675  | +92   | +296  | +628  | +448  |
| 00000188 | +268  | -202  | -416  | -502  | -332  | +502  | +568  | +2018 |
| 00000190 | +1804 | +1779 | +1754 | +1737 | +1720 | +1657 | +1594 | +1515 |
| 00000198 | +1308 | +1251 | +42   | +89   | +8    | -32   | -72   | -72   |
| 000001a0 | +840  | +870  | +1029 | +1051 | +818  | +709  | +601  | +612  |
| 000001a8 | +624  | +696  | +641  | +489  | +338  | +370  | +1043 | +1203 |
| 000001b0 | +1364 | +1429 | +1495 | +1448 | +1530 | +1472 | +1414 | +1276 |
| 000001b8 | +1138 | +589  | -88   | +27   | +14   | -18   | -50   | -50   |
| 000001c0 | +880  | +814  | +748  | +714  | +680  | +651  | +622  | +593  |

|          |      |      |      |      |      |      |      |      |
|----------|------|------|------|------|------|------|------|------|
| 000001c8 | +564 | +531 | +498 | +473 | +448 | +439 | +302 | +461 |
| 000001d0 | +876 | +552 | +740 | +888 | +908 | +967 | +514 | +629 |
| 000001d8 | +232 | +15  | +54  | +29  | +4   | -20  | -44  | -108 |
| 000001e0 | +752 | +738 | +724 | +678 | +632 | +615 | +598 | +581 |
| 000001e8 | +564 | +523 | +482 | +457 | +432 | +403 | +374 | +289 |
| 000001f0 | +204 | +256 | +180 | +336 | +492 | +35  | +90  | +25  |
| 000001f8 | +88  | +71  | +54  | +29  | +4   | -28  | -60  | -60  |

#### 4.2.4.3.2.6 Inverse DWT-X (LH2 - HH2)

The following is a dump of the H1 sub-band, as shown in the figure illustrating three-level DWT decomposition in section [3.1.8.1.4](#).

The sample data for 11.5 fixed-point integers (RDP 7.1/8.0) is:

|          |      |      |       |       |      |       |       |      |
|----------|------|------|-------|-------|------|-------|-------|------|
| 00000000 | +0   | +0   | +0    | +0    | +0   | +0    | +0    | +0   |
| 00000008 | +0   | +0   | +0    | +0    | +0   | +0    | +0    | +0   |
| 00000010 | +0   | +0   | +0    | +0    | +0   | +0    | +0    | +0   |
| 00000018 | +0   | +0   | +0    | +0    | +0   | +0    | +0    | +0   |
| 00000020 | -128 | -96  | -64   | +0    | +64  | +32   | +0    | +192 |
| 00000028 | -128 | -160 | -192  | -96   | +0   | -64   | -128  | -160 |
| 00000030 | -192 | -96  | +0    | +0    | +0   | +0    | +0    | +0   |
| 00000038 | +0   | +0   | +0    | +0    | +0   | +0    | +0    | +0   |
| 00000040 | -128 | -128 | -128  | -64   | +0   | +32   | +64   | +0   |
| 00000048 | -64  | +32  | +128  | +64   | +0   | +0    | +0    | +0   |
| 00000050 | +0   | +32  | +64   | +0    | -64  | +0    | +64   | +64  |
| 00000058 | +64  | -160 | +128  | -64   | -256 | -1024 | +256  | +0   |
| 00000060 | +0   | +0   | +0    | +32   | +64  | -64   | -192  | -96  |
| 00000068 | +0   | +0   | +0    | +0    | +0   | -96   | +320  | -96  |
| 00000070 | +0   | +256 | +0    | -192  | +128 | -32   | -192  | -192 |
| 00000078 | -192 | -192 | -192  | -64   | +64  | +288  | -512  | +0   |
| 00000080 | +0   | +0   | +0    | +0    | +0   | -64   | -128  | +608 |
| 00000088 | -192 | -96  | +0    | +64   | +128 | +160  | -320  | +192 |
| 00000090 | +192 | -192 | -64   | +224  | +0   | +32   | +64   | +32  |
| 00000098 | +0   | +32  | +64   | +0    | -64  | -32   | +2048 | +0   |
| 000000A0 | +0   | +0   | +0    | +0    | +0   | +0    | +0    | -160 |
| 000000A8 | +192 | +320 | +448  | +224  | +0   | -192  | +128  | -32  |
| 000000B0 | +320 | -128 | -64   | +0    | +64  | +32   | +0    | +128 |
| 000000B8 | +256 | +96  | -64   | -32   | +0   | +32   | +64   | +64  |
| 000000C0 | +0   | +32  | +64   | -64   | -192 | -64   | +64   | -64  |
| 000000C8 | -704 | -480 | -768  | -1120 | -960 | -928  | +640  | +960 |
| 000000D0 | -256 | -64  | +128  | +64   | +0   | +0    | +0    | -224 |
| 000000D8 | +64  | +544 | +512  | -160  | -832 | -416  | +0    | +0   |
| 000000E0 | +0   | +0   | +0    | +160  | -192 | -960  | -704  | -352 |
| 000000E8 | +0   | +32  | +64   | +224  | +896 | +864  | -704  | -192 |
| 000000F0 | -192 | +896 | +960  | +160  | -128 | -32   | +64   | -32  |
| 000000F8 | -128 | -32  | +64   | -320  | +320 | -96   | +0    | +0   |
| 00000100 | +0   | +0   | +0    | +0    | +0   | +32   | +64   | +64  |
| 00000108 | +64  | +32  | +0    | +0    | +0   | +128  | +256  | +0   |
| 00000110 | -256 | -448 | -1152 | -1056 | -960 | -224  | +0    | +96  |
| 00000118 | -320 | -512 | -704  | -1056 | +128 | +64   | +0    | +0   |
| 00000120 | -64  | +0   | +64   | +32   | +0   | -32   | -64   | -32  |
| 00000128 | +0   | +32  | +64   | +32   | +0   | +160  | -192  | -32  |
| 00000130 | +128 | -128 | +128  | +1056 | +960 | +928  | +896  | +672 |
| 00000138 | +960 | +992 | +512  | +192  | -128 | -64   | +0    | +0   |
| 00000140 | +0   | +96  | -320  | +128  | +64  | +96   | +128  | +0   |
| 00000148 | -128 | +0   | +128  | +96   | +64  | +32   | +0    | -192 |
| 00000150 | +128 | +64  | +0    | +0    | +0   | -32   | -64   | -96  |
| 00000158 | +384 | +480 | +576  | -192  | +64  | +32   | +0    | +0   |
| 00000160 | -192 | +416 | +0    | +192  | -640 | -512  | -896  | -896 |
| 00000168 | -384 | -96  | +192  | -192  | -64  | -32   | +0    | +0   |
| 00000170 | +0   | +0   | +0    | +0    | +0   | +0    | +0    | +0   |
| 00000178 | +0   | -32  | -64   | +0    | +64  | +32   | +0    | +0   |
| 00000180 | +64  | +64  | +1088 | +1248 | +384 | +160  | -64   | +64  |
| 00000188 | +192 | +640 | +576  | -480  | -512 | +192  | +384  | +0   |
| 00000190 | +128 | -128 | +128  | +64   | +0   | +0    | +0    | +0   |



|          |      |      |      |      |      |      |      |      |
|----------|------|------|------|------|------|------|------|------|
| 00000198 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000001A0 | -64  | +0   | +64  | +32  | +0   | +0   | +0   | +0   |
| 000001A8 | +0   | +0   | +0   | -32  | -64  | +128 | -192 | -160 |
| 000001B0 | -128 | +0   | +128 | +64  | +0   | +32  | +64  | +32  |
| 000001B8 | +512 | -224 | +64  | +32  | +0   | +0   | +0   | +0   |
| 000001C0 | -64  | -32  | +0   | +0   | +0   | +0   | +0   | +0   |
| 000001C8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | -192 |
| 000001D0 | -384 | -128 | -384 | +0   | -128 | -448 | -256 | -384 |
| 000001D8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000001E0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000001E8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000001F0 | +0   | +0   | +0   | -256 | -512 | +0   | +0   | +0   |
| 000001F8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |

The sample data for 12.4 fixed-point integers (RDP 8.1) is:

|          |      |      |      |      |      |      |       |      |
|----------|------|------|------|------|------|------|-------|------|
| 00000000 | +0   | +0   | +0   | +0   | +0   | +0   | +0    | +0   |
| 00000008 | +0   | +0   | +0   | +0   | +0   | +0   | +0    | +0   |
| 00000010 | +0   | +0   | +0   | +0   | +0   | +0   | +0    | +0   |
| 00000018 | +0   | +0   | +0   | +0   | +0   | +0   | +0    | +0   |
| 00000020 | -64  | -48  | -32  | +0   | +32  | +16  | +0    | +96  |
| 00000028 | -64  | -80  | -96  | -48  | +0   | -32  | -64   | -80  |
| 00000030 | -96  | -48  | +0   | +0   | +0   | +0   | +0    | +0   |
| 00000038 | +0   | +0   | +0   | +0   | +0   | +0   | +0    | +0   |
| 00000040 | -64  | -64  | -64  | -32  | +0   | +16  | +32   | +0   |
| 00000048 | -32  | +16  | +64  | +32  | +0   | +0   | +0    | +0   |
| 00000050 | +0   | +16  | +32  | +0   | -32  | +0   | +32   | +32  |
| 00000058 | +32  | -80  | +64  | -32  | -128 | -512 | +128  | +0   |
| 00000060 | +0   | +0   | +0   | +16  | +32  | -32  | -96   | -48  |
| 00000068 | +0   | +0   | +0   | +0   | +0   | -48  | +160  | -48  |
| 00000070 | +0   | +128 | +0   | -96  | +64  | -16  | -96   | -96  |
| 00000078 | -96  | -96  | -96  | -32  | +32  | +144 | -256  | +0   |
| 00000080 | +0   | +0   | +0   | +0   | +0   | -32  | -64   | +304 |
| 00000088 | -96  | -48  | +0   | +32  | +64  | +80  | -160  | +96  |
| 00000090 | +96  | -96  | -32  | +112 | +0   | +16  | +32   | +16  |
| 00000098 | +0   | +16  | +32  | +0   | -32  | -16  | +1024 | +0   |
| 000000a0 | +0   | +0   | +0   | +0   | +0   | +0   | +0    | -80  |
| 000000a8 | +96  | +160 | +224 | +112 | +0   | -96  | +64   | -16  |
| 000000b0 | +160 | -64  | -32  | +0   | +32  | +16  | +0    | +64  |
| 000000b8 | +128 | +48  | -32  | -16  | +0   | +16  | +32   | +32  |
| 000000c0 | +0   | +16  | +32  | -32  | -96  | -32  | +32   | -32  |
| 000000c8 | -352 | -240 | -384 | -560 | -480 | -464 | +320  | +480 |
| 000000d0 | -128 | -32  | +64  | +32  | +0   | +0   | +0    | -112 |
| 000000d8 | +32  | +272 | +256 | -80  | -416 | -208 | +0    | +0   |
| 000000e0 | +0   | +0   | +0   | +80  | -96  | -480 | -352  | -176 |
| 000000e8 | +0   | +16  | +32  | +112 | +448 | +432 | -352  | -96  |
| 000000f0 | -96  | +448 | +480 | +80  | -64  | -16  | +32   | -16  |
| 000000f8 | -64  | -16  | +32  | -160 | +160 | -48  | +0    | +0   |
| 00000100 | +0   | +0   | +0   | +0   | +0   | +16  | +32   | +32  |
| 00000108 | +32  | +16  | +0   | +0   | +0   | +64  | +128  | +0   |
| 00000110 | -128 | -224 | -576 | -528 | -480 | -112 | +0    | +48  |
| 00000118 | -160 | -256 | -352 | -528 | +64  | +32  | +0    | +0   |
| 00000120 | -32  | +0   | +32  | +16  | +0   | -16  | -32   | -16  |
| 00000128 | +0   | +16  | +32  | +16  | +0   | +80  | -96   | -16  |
| 00000130 | +64  | -64  | +64  | +528 | +480 | +464 | +448  | +336 |
| 00000138 | +480 | +496 | +256 | +96  | -64  | -32  | +0    | +0   |
| 00000140 | +0   | +48  | -160 | +64  | +32  | +48  | +64   | +0   |
| 00000148 | -64  | +0   | +64  | +48  | +32  | +16  | +0    | -96  |
| 00000150 | +64  | +32  | +0   | +0   | +0   | -16  | -32   | -48  |
| 00000158 | +192 | +240 | +288 | -96  | +32  | +16  | +0    | +0   |
| 00000160 | -96  | +208 | +0   | +96  | -320 | -256 | -448  | -448 |
| 00000168 | -192 | -48  | +96  | -96  | -32  | -16  | +0    | +0   |
| 00000170 | +0   | +0   | +0   | +0   | +0   | +0   | +0    | +0   |
| 00000178 | +0   | -16  | -32  | +0   | +32  | +16  | +0    | +0   |
| 00000180 | +32  | +32  | +544 | +624 | +192 | +80  | -32   | +32  |
| 00000188 | +96  | +320 | +288 | -240 | -256 | +96  | +192  | +0   |
| 00000190 | +64  | -64  | +64  | +32  | +0   | +0   | +0    | +0   |

|          |      |      |      |      |      |      |      |      |
|----------|------|------|------|------|------|------|------|------|
| 00000198 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000001a0 | -32  | +0   | +32  | +16  | +0   | +0   | +0   | +0   |
| 000001a8 | +0   | +0   | +0   | -16  | -32  | +64  | -96  | -80  |
| 000001b0 | -64  | +0   | +64  | +32  | +0   | +16  | +32  | +16  |
| 000001b8 | +256 | -112 | +32  | +16  | +0   | +0   | +0   | +0   |
| 000001c0 | -32  | -16  | +0   | +0   | +0   | +0   | +0   | +0   |
| 000001c8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | -96  |
| 000001d0 | -192 | -64  | -192 | +0   | -64  | -224 | -128 | -192 |
| 000001d8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000001e0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000001e8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000001f0 | +0   | +0   | +0   | -128 | -256 | +0   | +0   | +0   |
| 000001f8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |

#### 4.2.4.3.2.7 Inverse DWT-Y (L1 – H1)

The following is a dump of the LL1 sub-band, as shown in the figure illustrating three-level DWT decomposition in section [3.1.8.1.4](#).

The sample data for 11.5 fixed-point integers (RDP 7.1/8.0) is:

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000000 | -32   | +128  | +32   | +0    | -32   | -16   | +0    | -48   |
| 00000008 | -96   | -84   | -72   | -124  | -176  | -208  | -240  | -272  |
| 00000010 | -304  | -304  | -304  | -368  | -432  | -468  | -504  | -540  |
| 00000018 | -576  | -620  | -664  | -708  | -752  | -784  | -816  | -816  |
| 00000020 | +168  | +281  | +138  | +115  | +92   | +84   | +76   | +52   |
| 00000028 | +28   | +8    | -12   | -64   | -116  | -95   | -201  | -195  |
| 00000030 | -190  | -218  | -247  | -291  | -336  | -379  | -422  | -473  |
| 00000038 | -524  | -569  | -614  | -707  | -672  | -724  | -776  | -776  |
| 00000040 | +368  | +434  | +244  | +230  | +216  | +184  | +152  | +152  |
| 00000048 | +152  | +100  | +48   | -4    | -56   | +19   | -162  | -119  |
| 00000050 | -76   | -133  | -190  | -215  | -240  | -290  | -340  | -406  |
| 00000058 | -472  | -518  | -564  | -706  | -592  | -664  | -736  | -736  |
| 00000060 | +504  | +475  | +446  | +377  | +436  | +380  | +324  | +228  |
| 00000068 | -124  | +208  | +156  | +216  | +532  | +476  | +165  | -42   |
| 00000070 | -250  | -239  | -101  | -146  | -192  | -241  | -290  | -347  |
| 00000078 | -404  | -395  | -514  | -537  | -560  | -620  | -680  | -680  |
| 00000080 | +1152 | +900  | +904  | +524  | +400  | +448  | +496  | -464  |
| 00000088 | +112  | +956  | +1032 | +820  | +1120 | +1190 | +1004 | +674  |
| 00000090 | +344  | +38   | -12   | -78   | -144  | -192  | -240  | -288  |
| 00000098 | -336  | -272  | -464  | -368  | -528  | -576  | -624  | -624  |
| 000000A0 | +708  | +566  | +552  | +474  | +524  | +599  | +546  | -283  |
| 000000A8 | +296  | +1098 | +1772 | +1630 | +1616 | +1806 | +1612 | +1450 |
| 000000B0 | +1032 | +869  | +194  | -49   | -164  | -197  | -103  | -144  |
| 000000B8 | -186  | -464  | -102  | -508  | -530  | -1066 | -450  | -642  |
| 000000C0 | +776  | +744  | +712  | +680  | +648  | +622  | +340  | -102  |
| 000000C8 | +736  | +1112 | +2000 | +2184 | +2112 | +2422 | +2220 | +2226 |
| 000000D0 | +1720 | +1572 | +144  | -20   | +72   | -203  | -222  | -257  |
| 000000D8 | -292  | -16   | -252  | -392  | +492  | +2540 | -1300 | -660  |
| 000000E0 | +876  | +834  | +792  | +814  | +836  | +541  | +758  | +295  |
| 000000E8 | +984  | +1494 | +2132 | +2554 | +2592 | +2686 | +3036 | +2610 |
| 000000F0 | +2440 | +2179 | -130  | +361  | +1364 | +768  | +299  | +135  |
| 000000F8 | -30   | -96   | -290  | +92   | +474  | +1610 | -1478 | -454  |
| 00000100 | +976  | +924  | +872  | +820  | +768  | +716  | +1944 | +1076 |
| 00000108 | +1232 | +1876 | +2264 | +2924 | +3072 | +3334 | +2572 | +3378 |
| 00000110 | +3160 | +1762 | -404  | +1510 | +2144 | +1866 | +1588 | +1294 |
| 00000118 | +1000 | +592  | +440  | +832  | +200  | -472  | +392  | -248  |
| 00000120 | +1076 | +1015 | +954  | +909  | +864  | +511  | +1054 | +2893 |
| 00000128 | +1404 | +2006 | +2609 | +3187 | +3510 | +3805 | +2180 | +3875 |
| 00000130 | +3906 | +524  | -170  | +3040 | +2666 | +2639 | +2484 | +2081 |
| 00000138 | +1806 | +1621 | +1308 | +995  | +170  | -418  | +3858 | -302  |
| 00000140 | +1176 | +1106 | +1036 | +998  | +960  | +562  | +676  | +2278 |
| 00000148 | +2344 | +2521 | +2954 | +3195 | +3436 | +3636 | +3068 | +3604 |
| 00000150 | +3884 | +54   | +320  | +3674 | +3188 | +3284 | +3124 | +2740 |
| 00000158 | +2612 | +2522 | +1920 | +1158 | +396  | -236  | -868  | -356  |
| 00000160 | +1212 | +1157 | +1102 | +1055 | +1008 | +389  | +794  | +1775 |

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000168 | +2884 | +2859 | +3475 | +3474 | +3474 | +3619 | +3764 | +3877 |
| 00000170 | +3350 | -400  | +1738 | +3676 | +3566 | +3577 | +3460 | +3439 |
| 00000178 | +3290 | +2623 | +1828 | +1313 | +670  | -78   | -442  | -250  |
| 00000180 | +1248 | +1208 | +1168 | +1112 | +1056 | +216  | +912  | +1912 |
| 00000188 | +2656 | +1918 | +2204 | +2858 | +3512 | +4370 | +3948 | +4278 |
| 00000190 | +1536 | -342  | +3412 | +3678 | +3688 | +3742 | +3796 | +3626 |
| 00000198 | +2944 | +2340 | +1992 | +1596 | +944  | -48   | -272  | -400  |
| 000001A0 | +1344 | +1337 | +1330 | +1051 | +900  | +677  | +967  | +936  |
| 000001A8 | +522  | +513  | +377  | +144  | +296  | +488  | +3240 | +4584 |
| 000001B0 | +424  | +289  | +4250 | +3979 | +3836 | +3801 | +3767 | +3356 |
| 000001B8 | +3458 | +3826 | +3427 | +2067 | +452  | -256  | -324  | -324  |
| 000001C0 | +1440 | +1338 | +1236 | +1246 | +1512 | +1395 | +766  | +217  |
| 000001C8 | +1204 | +1029 | +1622 | +1911 | +920  | +318  | -28   | +1050 |
| 000001D0 | +336  | +1176 | +4576 | +4024 | +3984 | +3861 | +3738 | +3983 |
| 000001D8 | +3716 | +3137 | +2814 | +3179 | +3288 | +1200 | -376  | -248  |
| 000001E0 | +1472 | +1379 | +1286 | +1585 | -676  | -1648 | -1211 | -159  |
| 000001E8 | +1662 | +1840 | +2531 | +3213 | +4152 | +3860 | +1008 | +500  |
| 000001F0 | +120  | +2415 | +4582 | +4093 | +3860 | +3936 | +4013 | +3553 |
| 000001F8 | +3094 | +2623 | +2153 | +1306 | +2124 | +296  | -252  | -252  |
| 00000200 | +1504 | +1420 | +1336 | +1284 | -2096 | -850  | -372  | +874  |
| 00000208 | +2120 | +2524 | +3184 | +3620 | +3800 | +3946 | +4860 | +718  |
| 00000210 | +672  | +70   | +748  | +3522 | +4248 | +4140 | +4032 | +3252 |
| 00000218 | +2984 | +2238 | +1236 | +714  | -320  | -224  | -128  | -256  |
| 00000220 | +1588 | +1475 | +1618 | +33   | -1424 | -446  | +148  | +1358 |
| 00000228 | +2440 | +2861 | +3411 | +3656 | +3774 | +4016 | +4130 | +380  |
| 00000230 | +982  | +1502 | -154  | +14   | +310  | +1414 | +1750 | +1582 |
| 00000238 | +774  | +152  | -213  | -499  | -16   | -12   | -136  | -264  |
| 00000240 | +1672 | +1530 | +1900 | -1218 | -752  | -170  | +412  | +1586 |
| 00000248 | +2504 | +3071 | +3638 | +3693 | +3748 | +3574 | +2376 | +42   |
| 00000250 | +2316 | +4726 | +3552 | +730  | +212  | -416  | -532  | -472  |
| 00000258 | -156  | +115  | +1154 | +2513 | -224  | -56   | -144  | -272  |
| 00000260 | +1580 | +1585 | +1590 | -1421 | -720  | -166  | +260  | +1222 |
| 00000268 | +2312 | +2928 | +3289 | +3273 | +3386 | +3692 | +1182 | +256  |
| 00000270 | +3554 | +4110 | +4026 | +4446 | +3970 | +3514 | +3442 | +3106 |
| 00000278 | +3538 | +3637 | +3225 | +1980 | -416  | -212  | -136  | -264  |
| 00000280 | +1744 | +1640 | +1024 | -1752 | -688  | -34   | +364  | +986  |
| 00000288 | +2120 | +2658 | +2684 | +2726 | +3024 | +3170 | +756  | +598  |
| 00000290 | +4280 | +4006 | +3988 | +3938 | +3888 | +3732 | +3832 | +3996 |
| 00000298 | +3392 | +3192 | +3248 | +680  | -96   | -112  | -128  | -256  |
| 000002A0 | +1732 | +2129 | -801  | -1219 | -486  | +71   | +499  | +719  |
| 000002A8 | +940  | +1600 | +2005 | +2377 | +2494 | +2268 | +507  | +1529 |
| 000002B0 | +4344 | +4062 | +3908 | +3858 | +3808 | +3607 | +3535 | +3478 |
| 000002B8 | +3934 | +3899 | +3865 | -217  | +52   | -36   | -124  | -188  |
| 000002C0 | +1720 | +2235 | -1346 | -1199 | -540  | -209  | +122  | +453  |
| 000002C8 | +272  | +543  | +814  | +1645 | +1708 | +1239 | +258  | +3229 |
| 000002D0 | +3896 | +3862 | +3828 | +3778 | +3728 | +3611 | +3494 | +3345 |
| 000002D8 | +2940 | +2687 | +2178 | -347  | -56   | -88   | -120  | -120  |
| 000002E0 | +1692 | +1508 | -2003 | -1250 | -1394 | -744  | -863  | -910  |
| 000002E8 | -316  | -259  | +183  | +104  | +538  | +1017 | +601  | +3632 |
| 000002F0 | +3720 | +3742 | +3636 | +3610 | +3584 | +3462 | +3341 | +3187 |
| 000002F8 | +2778 | +2538 | +1019 | -84   | +92   | -20   | -132  | -132  |
| 00000300 | +2432 | -882  | -2660 | -2070 | +312  | +768  | +1736 | +1312 |
| 00000308 | +632  | -676  | -1216 | -668  | -376  | +924  | +944  | +4036 |
| 00000310 | +3544 | +3622 | +3444 | +3442 | +3440 | +3314 | +3188 | +3030 |
| 00000318 | +2616 | +2518 | +116  | +178  | -16   | -80   | -144  | -144  |
| 00000320 | +2184 | +541  | +1587 | +2192 | +1646 | +1373 | +1357 | +1380 |
| 00000328 | +1276 | +1478 | +1041 | -677  | -730  | +1136 | +2235 | +3261 |
| 00000330 | +3392 | +3016 | +3409 | +3265 | +3250 | +3121 | +2992 | +2783 |
| 00000338 | +2318 | +1904 | -46   | +108  | +6    | -58   | -122  | -122  |
| 00000340 | +1680 | +1709 | +1482 | +1463 | +1444 | +1339 | +1234 | +1193 |
| 00000348 | +1152 | +1073 | +994  | +1235 | +964  | +581  | +1990 | +2487 |
| 00000350 | +2728 | +2923 | +2862 | +2833 | +3060 | +2928 | +2796 | +2536 |
| 00000358 | +2020 | +1290 | -208  | +38   | +28   | -36   | -100  | -100  |
| 00000360 | +1624 | +1676 | +1601 | +1501 | +1402 | +1320 | +1239 | +1189 |
| 00000368 | +1140 | +1067 | +995  | +1034 | +818  | +953  | +961  | +1472 |
| 00000370 | +2112 | +2045 | +2491 | +2416 | +2470 | +2599 | +2088 | +2049 |
| 00000378 | +2138 | +268  | +62   | +104  | +18   | -38   | -94   | -158  |
| 00000380 | +1824 | +1644 | +1464 | +1412 | +1360 | +1302 | +1244 | +1186 |
| 00000388 | +1128 | +1062 | +996  | +962  | +928  | +814  | +700  | +1098 |

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000390 | +2008 | +1168 | +1608 | +1744 | +1880 | +2142 | +1124 | +1434 |
| 00000398 | +208  | +142  | +76   | +42   | +8    | -40   | -88   | -216  |
| 000003A0 | +1552 | +1504 | +1456 | +1384 | +1312 | +1266 | +1220 | +1174 |
| 000003A8 | +1128 | +1054 | +980  | +938  | +896  | +810  | +724  | +502  |
| 000003B0 | +536  | +616  | +312  | +1272 | +1336 | +322  | +204  | +70   |
| 000003B8 | +192  | +142  | +92   | +50   | +8    | -48   | -104  | -168  |
| 000003C0 | +1536 | +1492 | +1448 | +1356 | +1264 | +1230 | +1196 | +1162 |
| 000003C8 | +1128 | +1046 | +964  | +914  | +864  | +806  | +748  | +674  |
| 000003D0 | +600  | +576  | +552  | +800  | +1304 | +294  | +308  | +242  |
| 000003D8 | +176  | +142  | +108  | +58   | +8    | -56   | -120  | -120  |
| 000003E0 | +1536 | +1492 | +1448 | +1356 | +1264 | +1230 | +1196 | +1162 |
| 000003E8 | +1128 | +1046 | +964  | +914  | +864  | +806  | +748  | +674  |
| 000003F0 | +600  | +576  | +552  | +288  | +280  | +294  | +308  | +242  |
| 000003F8 | +176  | +142  | +108  | +58   | +8    | -56   | -120  | -120  |
| 00000400 | +0    | +128  | +0    | +0    | +0    | +0    | +0    | +0    |
| 00000408 | +0    | +0    | +0    | +0    | +0    | +0    | +0    | +0    |

The sample data for 12.4 fixed-point integers (RDP 8.1) is:

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000000 | -16   | +64   | +16   | +0    | -16   | -8    | +0    | -24   |
| 00000008 | -48   | -42   | -36   | -62   | -88   | -104  | -120  | -136  |
| 00000010 | -152  | -152  | -152  | -184  | -216  | -234  | -252  | -270  |
| 00000018 | -288  | -310  | -332  | -354  | -376  | -392  | -408  | -408  |
| 00000020 | +84   | +140  | +69   | +57   | +46   | +42   | +38   | +26   |
| 00000028 | +14   | +4    | -6    | -32   | -58   | -47   | -100  | -97   |
| 00000030 | -95   | -109  | -123  | -145  | -168  | -189  | -211  | -236  |
| 00000038 | -262  | -284  | -307  | -353  | -336  | -362  | -388  | -388  |
| 00000040 | +184  | +217  | +122  | +115  | +108  | +92   | +76   | +76   |
| 00000048 | +76   | +50   | +24   | -2    | -28   | +9    | -81   | -59   |
| 00000050 | -38   | -66   | -95   | -107  | -120  | -145  | -170  | -203  |
| 00000058 | -236  | -259  | -282  | -353  | -296  | -332  | -368  | -368  |
| 00000060 | +252  | +237  | +223  | +188  | +218  | +190  | +162  | +114  |
| 00000068 | -62   | +104  | +78   | +108  | +266  | +238  | +82   | -21   |
| 00000070 | -125  | -119  | -50   | -73   | -96   | -120  | -145  | -173  |
| 00000078 | -202  | -197  | -257  | -268  | -280  | -310  | -340  | -340  |
| 00000080 | +576  | +450  | +452  | +262  | +200  | +224  | +248  | -232  |
| 00000088 | +56   | +478  | +516  | +410  | +560  | +595  | +502  | +337  |
| 00000090 | +172  | +19   | -6    | -39   | -72   | -96   | -120  | -144  |
| 00000098 | -168  | -136  | -232  | -184  | -264  | -288  | -312  | -312  |
| 000000A0 | +354  | +283  | +276  | +237  | +262  | +299  | +273  | -141  |
| 000000A8 | +148  | +549  | +886  | +815  | +808  | +903  | +806  | +725  |
| 000000B0 | +516  | +434  | +97   | -24   | -82   | -98   | -51   | -72   |
| 000000B8 | -93   | -232  | -51   | -254  | -265  | -533  | -225  | -321  |
| 000000C0 | +388  | +372  | +356  | +340  | +324  | +311  | +170  | -51   |
| 000000C8 | +368  | +556  | +1000 | +1092 | +1056 | +1211 | +1110 | +1113 |
| 000000D0 | +860  | +786  | +72   | -10   | +36   | -101  | -111  | -128  |
| 000000D8 | -146  | -8    | -126  | -196  | +246  | +1270 | -650  | -330  |
| 000000E0 | +438  | +417  | +396  | +407  | +418  | +270  | +379  | +147  |
| 000000E8 | +492  | +747  | +1066 | +1277 | +1296 | +1343 | +1518 | +1305 |
| 000000F0 | +1220 | +1089 | -65   | +180  | +682  | +384  | +149  | +67   |
| 000000F8 | -15   | -48   | -145  | +46   | +237  | +805  | -739  | -227  |
| 00000100 | +488  | +462  | +436  | +410  | +384  | +358  | +972  | +538  |
| 00000108 | +616  | +938  | +1132 | +1462 | +1536 | +1667 | +1286 | +1689 |
| 00000110 | +1580 | +881  | -202  | +755  | +1072 | +933  | +794  | +647  |
| 00000118 | +500  | +296  | +220  | +416  | +100  | -236  | +196  | -124  |
| 00000120 | +538  | +507  | +477  | +454  | +432  | +255  | +527  | +1446 |
| 00000128 | +702  | +1003 | +1304 | +1593 | +1755 | +1902 | +1090 | +1937 |
| 00000130 | +1953 | +262  | -85   | +1520 | +1333 | +1319 | +1242 | +1040 |
| 00000138 | +903  | +810  | +654  | +497  | +85   | -209  | +1929 | -151  |
| 00000140 | +588  | +553  | +518  | +499  | +480  | +281  | +338  | +1139 |
| 00000148 | +1172 | +1260 | +1477 | +1597 | +1718 | +1818 | +1534 | +1802 |
| 00000150 | +1942 | +27   | +160  | +1837 | +1594 | +1642 | +1562 | +1370 |
| 00000158 | +1306 | +1261 | +960  | +579  | +198  | -118  | -434  | -178  |
| 00000160 | +606  | +578  | +551  | +527  | +504  | +194  | +397  | +887  |
| 00000168 | +1442 | +1429 | +1737 | +1737 | +1737 | +1809 | +1882 | +1938 |
| 00000170 | +1675 | -200  | +869  | +1838 | +1783 | +1788 | +1730 | +1719 |
| 00000178 | +1645 | +1311 | +914  | +656  | +335  | -39   | -221  | -125  |

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000180 | +624  | +604  | +584  | +556  | +528  | +108  | +456  | +956  |
| 00000188 | +1328 | +959  | +1102 | +1429 | +1756 | +2185 | +1974 | +2139 |
| 00000190 | +768  | -171  | +1706 | +1839 | +1844 | +1871 | +1898 | +1813 |
| 00000198 | +1472 | +1170 | +996  | +798  | +472  | -24   | -136  | -200  |
| 000001A0 | +672  | +668  | +665  | +525  | +450  | +338  | +483  | +468  |
| 000001A8 | +261  | +256  | +188  | +72   | +148  | +244  | +1620 | +2292 |
| 000001B0 | +212  | +144  | +2125 | +1989 | +1918 | +1900 | +1883 | +1678 |
| 000001B8 | +1729 | +1913 | +1713 | +1033 | +226  | -128  | -162  | -162  |
| 000001C0 | +720  | +669  | +618  | +623  | +756  | +697  | +383  | +108  |
| 000001C8 | +602  | +514  | +811  | +955  | +460  | +159  | -14   | +525  |
| 000001D0 | +168  | +588  | +2288 | +2012 | +1992 | +1930 | +1869 | +1991 |
| 000001D8 | +1858 | +1568 | +1407 | +1589 | +1644 | +600  | -188  | -124  |
| 000001E0 | +736  | +689  | +643  | +792  | -338  | -824  | -605  | -79   |
| 000001E8 | +831  | +920  | +1265 | +1606 | +2076 | +1930 | +504  | +250  |
| 000001F0 | +60   | +1207 | +2291 | +2046 | +1930 | +1968 | +2006 | +1776 |
| 000001F8 | +1547 | +1311 | +1076 | +653  | +1062 | +148  | -126  | -126  |
| 00000200 | +752  | +710  | +668  | +642  | -1048 | -425  | -186  | +437  |
| 00000208 | +1060 | +1262 | +1592 | +1810 | +1900 | +1973 | +2430 | +359  |
| 00000210 | +336  | +35   | +374  | +1761 | +2124 | +2070 | +2016 | +1626 |
| 00000218 | +1492 | +1119 | +618  | +357  | -160  | -112  | -64   | -128  |
| 00000220 | +794  | +737  | +809  | +16   | -712  | -223  | +74   | +679  |
| 00000228 | +1220 | +1430 | +1705 | +1828 | +1887 | +2008 | +2065 | +190  |
| 00000230 | +491  | +751  | -77   | +7    | +155  | +707  | +875  | +791  |
| 00000238 | +387  | +76   | -106  | -249  | -8    | -6    | -68   | -132  |
| 00000240 | +836  | +765  | +950  | -609  | -376  | -85   | +206  | +793  |
| 00000248 | +1252 | +1535 | +1819 | +1846 | +1874 | +1787 | +1188 | +21   |
| 00000250 | +1158 | +2363 | +1776 | +365  | +106  | -208  | -266  | -236  |
| 00000258 | -78   | +57   | +577  | +1256 | -112  | -28   | -72   | -136  |
| 00000260 | +790  | +792  | +795  | -710  | -360  | -83   | +130  | +611  |
| 00000268 | +1156 | +1464 | +1644 | +1636 | +1693 | +1846 | +591  | +128  |
| 00000270 | +1777 | +2055 | +2013 | +2223 | +1985 | +1757 | +1721 | +1553 |
| 00000278 | +1769 | +1818 | +1612 | +990  | -208  | -106  | -68   | -132  |
| 00000280 | +872  | +820  | +512  | -876  | -344  | -17   | +182  | +493  |
| 00000288 | +1060 | +1329 | +1342 | +1363 | +1512 | +1585 | +378  | +299  |
| 00000290 | +2140 | +2003 | +1994 | +1969 | +1944 | +1866 | +1916 | +1998 |
| 00000298 | +1696 | +1596 | +1624 | +340  | -48   | -56   | -64   | -128  |
| 000002A0 | +866  | +1064 | -400  | -609  | -243  | +35   | +249  | +359  |
| 000002A8 | +470  | +800  | +1002 | +1188 | +1247 | +1134 | +253  | +764  |
| 000002B0 | +2172 | +2031 | +1954 | +1929 | +1904 | +1803 | +1767 | +1739 |
| 000002B8 | +1967 | +1949 | +1932 | -108  | +26   | -18   | -62   | -94   |
| 000002C0 | +860  | +1117 | -673  | -599  | -270  | -104  | +61   | +226  |
| 000002C8 | +136  | +271  | +407  | +822  | +854  | +619  | +129  | +1614 |
| 000002D0 | +1948 | +1931 | +1914 | +1889 | +1864 | +1805 | +1747 | +1672 |
| 000002D8 | +1470 | +1343 | +1089 | -173  | -28   | -44   | -60   | -60   |
| 000002E0 | +846  | +754  | -1001 | -625  | -697  | -372  | -431  | -455  |
| 000002E8 | -158  | -129  | +91   | +52   | +269  | +508  | +300  | +1816 |
| 000002F0 | +1860 | +1871 | +1818 | +1805 | +1792 | +1731 | +1670 | +1593 |
| 000002F8 | +1389 | +1269 | +509  | -42   | +46   | -10   | -66   | -66   |
| 00000300 | +1216 | -441  | -1330 | -1035 | +156  | +384  | +868  | +656  |
| 00000308 | +316  | -338  | -608  | -334  | -188  | +462  | +472  | +2018 |
| 00000310 | +1772 | +1811 | +1722 | +1721 | +1720 | +1657 | +1594 | +1515 |
| 00000318 | +1308 | +1259 | +58   | +89   | -8    | -40   | -72   | -72   |
| 00000320 | +1092 | +270  | +793  | +1096 | +823  | +686  | +678  | +690  |
| 00000328 | +638  | +739  | +520  | -338  | -365  | +568  | +1117 | +1630 |
| 00000330 | +1696 | +1508 | +1704 | +1632 | +1625 | +1560 | +1496 | +1391 |
| 00000338 | +1159 | +952  | -23   | +54   | +3    | -29   | -61   | -61   |
| 00000340 | +840  | +854  | +741  | +731  | +722  | +669  | +617  | +596  |
| 00000348 | +576  | +536  | +497  | +617  | +482  | +290  | +995  | +1243 |
| 00000350 | +1364 | +1461 | +1431 | +1416 | +1530 | +1464 | +1398 | +1268 |
| 00000358 | +1010 | +645  | -104  | +19   | +14   | -18   | -50   | -50   |
| 00000360 | +812  | +838  | +800  | +750  | +701  | +660  | +619  | +594  |
| 00000368 | +570  | +533  | +497  | +517  | +409  | +476  | +480  | +736  |
| 00000370 | +1056 | +1022 | +1245 | +1208 | +1235 | +1299 | +1044 | +1024 |
| 00000378 | +1069 | +134  | +31   | +52   | +9    | -19   | -47   | -79   |
| 00000380 | +912  | +822  | +732  | +706  | +680  | +651  | +622  | +593  |
| 00000388 | +564  | +531  | +498  | +481  | +464  | +407  | +350  | +549  |
| 00000390 | +1004 | +584  | +804  | +872  | +940  | +1071 | +562  | +717  |
| 00000398 | +104  | +71   | +38   | +21   | +4    | -20   | -44   | -108  |
| 000003A0 | +776  | +752  | +728  | +692  | +656  | +633  | +610  | +587  |

|          |      |      |      |      |      |      |      |      |
|----------|------|------|------|------|------|------|------|------|
| 000003A8 | +564 | +527 | +490 | +469 | +448 | +405 | +362 | +251 |
| 000003B0 | +268 | +308 | +156 | +636 | +668 | +161 | +102 | +35  |
| 000003B8 | +96  | +71  | +46  | +25  | +4   | -24  | -52  | -84  |
| 000003C0 | +768 | +746 | +724 | +678 | +632 | +615 | +598 | +581 |
| 000003C8 | +564 | +523 | +482 | +457 | +432 | +403 | +374 | +337 |
| 000003D0 | +300 | +288 | +276 | +400 | +652 | +147 | +154 | +121 |
| 000003D8 | +88  | +71  | +54  | +29  | +4   | -28  | -60  | -60  |
| 000003E0 | +768 | +746 | +724 | +678 | +632 | +615 | +598 | +581 |
| 000003E8 | +564 | +523 | +482 | +457 | +432 | +403 | +374 | +337 |
| 000003F0 | +300 | +288 | +276 | +144 | +140 | +147 | +154 | +121 |
| 000003F8 | +88  | +71  | +54  | +29  | +4   | -28  | -60  | -60  |
| 00000400 | +0   | +64  | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000408 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |

#### 4.2.4.3.3 Level-1 Sub-bands

The following are the dumps of the four level-1 dequantized sub-bands (LL1, LH1, HL1, and HH1). LL1 is reconstructed from level-2 sub-bands. LH1, HL1, and HH1 are generated by dequantizing the corresponding decoded sub-bands, as shown in sections [4.2.4.2](#) and [4.2.4.2.1](#).

##### 4.2.4.3.3.1 LL1

The LL1 sub-band is the same as that shown in section [4.2.4.3.2.7](#).

##### 4.2.4.3.3.2 HL1

The following is a dump of the HL1 sub-band, as shown in the figure illustrating three-level DWT decomposition in section [3.1.8.1.4](#).

The sample data for 11.5 fixed-point integers (RDP 7.1/8.0) is:

|          |      |      |      |      |      |      |      |      |
|----------|------|------|------|------|------|------|------|------|
| 00000000 | +0   | +128 | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000008 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000010 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000018 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000020 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000028 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000030 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000038 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000040 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000048 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000050 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000058 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000060 | +128 | +0   | +256 | +0   | +0   | +0   | +0   | -128 |
| 00000068 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000070 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000078 | +0   | +0   | +0   | +128 | +0   | +0   | +0   | +0   |
| 00000080 | +0   | +0   | +128 | +0   | +0   | +0   | +256 | +0   |
| 00000088 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000090 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000098 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000000A0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000000A8 | +0   | +128 | +0   | +0   | +0   | +0   | +0   | +0   |
| 000000B0 | +0   | +0   | -128 | +0   | +0   | +0   | +0   | +0   |
| 000000B8 | +0   | +0   | +0   | +0   | -128 | +128 | +0   | +0   |
| 000000C0 | +0   | +0   | +0   | +0   | +0   | +0   | -384 | +0   |
| 000000C8 | +0   | +0   | +128 | +0   | +0   | +0   | +0   | +0   |
| 000000D0 | +0   | +256 | +0   | +0   | +0   | +0   | +0   | +0   |
| 000000D8 | +0   | +128 | +0   | -256 | +512 | -640 | -128 | +0   |
| 000000E0 | +0   | +0   | +0   | +0   | +0   | -128 | -384 | +0   |
| 000000E8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000000F0 | +0   | -384 | +0   | +384 | +0   | +0   | +0   | +0   |
| 000000F8 | +0   | +0   | -128 | +512 | +512 | -640 | -128 | +0   |
| 00000100 | +0   | +0   | +0   | +0   | +0   | -256 | +640 | +0   |

|          |       |       |       |      |      |      |      |      |
|----------|-------|-------|-------|------|------|------|------|------|
| 00000108 | +0    | +0    | +0    | +0   | +0   | +256 | +128 | +0   |
| 00000110 | +256  | -640  | -512  | +128 | +0   | +0   | +0   | +0   |
| 00000118 | +0    | +0    | +128  | +384 | -128 | +640 | +0   | -128 |
| 00000120 | +0    | +0    | +0    | +0   | +0   | -256 | -256 | -384 |
| 00000128 | +0    | +0    | +0    | +0   | +0   | +384 | +0   | +0   |
| 00000130 | +896  | +0    | -512  | +0   | +0   | +0   | +0   | +0   |
| 00000138 | +0    | +0    | +0    | -128 | +0   | -128 | +256 | -128 |
| 00000140 | +0    | +0    | +0    | +0   | +0   | -384 | +128 | +640 |
| 00000148 | +0    | +0    | +0    | +0   | +0   | +0   | -128 | +0   |
| 00000150 | +0    | +128  | +896  | +0   | +0   | +0   | +0   | +0   |
| 00000158 | +0    | +0    | +0    | +0   | +0   | -128 | +0   | +0   |
| 00000160 | +0    | +0    | +0    | +0   | +256 | +0   | +0   | +0   |
| 00000168 | -256  | +0    | +0    | +0   | +0   | +0   | +128 | +0   |
| 00000170 | -1152 | -384  | +640  | +0   | +0   | +0   | +0   | +0   |
| 00000178 | +0    | +0    | +0    | +0   | +0   | -128 | +0   | +0   |
| 00000180 | +0    | +0    | +0    | +0   | +0   | +0   | -128 | -128 |
| 00000188 | -128  | +0    | +0    | +0   | +0   | +0   | +0   | +768 |
| 00000190 | -256  | -1024 | -128  | +0   | +0   | +0   | +0   | +0   |
| 00000198 | +0    | +0    | +0    | +0   | +0   | -128 | +0   | +0   |
| 000001A0 | +0    | +0    | +0    | +0   | -384 | +0   | +0   | +0   |
| 000001A8 | +0    | +0    | +0    | -128 | +0   | -128 | +0   | +640 |
| 000001B0 | +256  | +384  | +0    | +0   | +0   | +0   | +0   | +0   |
| 000001B8 | +0    | +0    | +128  | +0   | +256 | +0   | +0   | +0   |
| 000001C0 | +0    | +0    | +0    | -128 | +128 | +0   | +0   | -128 |
| 000001C8 | +256  | +0    | +0    | +128 | +0   | +0   | -128 | +0   |
| 000001D0 | -128  | +896  | +0    | +0   | +0   | +0   | +0   | +0   |
| 000001D8 | +0    | +0    | +0    | +0   | -384 | -256 | +0   | +0   |
| 000001E0 | +0    | +0    | +0    | +384 | -128 | +0   | -128 | +0   |
| 000001E8 | +128  | +0    | +0    | +0   | +128 | +256 | -128 | +0   |
| 000001F0 | -640  | +128  | +0    | +0   | +0   | +0   | +0   | +0   |
| 000001F8 | +0    | +0    | +0    | -384 | -512 | +0   | +0   | +0   |
| 00000200 | +0    | +0    | -128  | -768 | +128 | +0   | -128 | +0   |
| 00000208 | +0    | +0    | +0    | +0   | +0   | +0   | +768 | +0   |
| 00000210 | -128  | +0    | +128  | +0   | +0   | +128 | -128 | +0   |
| 00000218 | +0    | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 00000220 | +0    | +0    | +384  | -640 | +0   | +0   | +0   | +0   |
| 00000228 | +0    | +0    | +0    | +0   | +0   | -128 | -128 | +128 |
| 00000230 | +1280 | +0    | +0    | +0   | -128 | +128 | +0   | +0   |
| 00000238 | +0    | +0    | -128  | +128 | +0   | +0   | +0   | +0   |
| 00000240 | +0    | +0    | +896  | +0   | +0   | +0   | +0   | +0   |
| 00000248 | +0    | +0    | +0    | +0   | +0   | +128 | -640 | -640 |
| 00000250 | +384  | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 00000258 | +0    | -128  | +0    | -128 | +0   | +0   | +0   | +0   |
| 00000260 | +0    | -128  | -256  | +0   | +0   | +0   | -128 | +0   |
| 00000268 | +0    | +0    | +0    | +0   | +0   | +384 | -128 | -896 |
| 00000270 | +0    | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 00000278 | +0    | +0    | +128  | -768 | +0   | +0   | +0   | +0   |
| 00000280 | +0    | +0    | -1024 | +0   | +0   | +0   | +0   | +0   |
| 00000288 | +0    | +0    | +0    | +0   | +0   | +384 | +256 | +512 |
| 00000290 | +0    | +0    | +0    | +0   | +0   | -128 | +0   | +0   |
| 00000298 | +0    | +0    | +768  | -128 | +0   | +0   | +0   | +0   |
| 000002A0 | -128  | +896  | -128  | +0   | +0   | +0   | -128 | -128 |
| 000002A8 | +0    | +0    | +0    | +0   | +0   | -384 | -128 | +768 |
| 000002B0 | +0    | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 000002B8 | +0    | +0    | +384  | +128 | +0   | +0   | +0   | +0   |
| 000002C0 | +0    | +512  | +128  | +256 | -256 | -256 | +0   | -128 |
| 000002C8 | +0    | +0    | +0    | +0   | +128 | -128 | -896 | +128 |
| 000002D0 | +0    | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 000002D8 | +0    | +0    | -768  | +0   | +0   | +0   | +0   | +0   |
| 000002E0 | -128  | -1280 | +384  | +128 | +256 | +0   | -256 | +128 |
| 000002E8 | +128  | +0    | +0    | +0   | +0   | +0   | -128 | +0   |
| 000002F0 | +0    | +0    | -128  | +0   | +0   | +0   | +0   | +0   |
| 000002F8 | +0    | +384  | -256  | +0   | +0   | +0   | +0   | +0   |
| 00000300 | +768  | -1024 | -256  | +0   | -256 | +128 | +0   | +0   |
| 00000308 | -128  | -128  | -128  | +128 | +128 | +128 | +768 | +0   |
| 00000310 | +0    | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 00000318 | +0    | +512  | +128  | +0   | +0   | +0   | +0   | +0   |
| 00000320 | +384  | +256  | +0    | +128 | +0   | +0   | +128 | +128 |
| 00000328 | +0    | +0    | +128  | -256 | +640 | -384 | +256 | +0   |

|          |      |      |      |      |      |      |      |      |
|----------|------|------|------|------|------|------|------|------|
| 00000330 | +0   | +0   | +0   | +128 | +0   | +0   | +0   | +0   |
| 00000338 | +0   | -256 | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000340 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000348 | +0   | +0   | -128 | +0   | +0   | -384 | +0   | +128 |
| 00000350 | +0   | +0   | +128 | +128 | +0   | +0   | +0   | +0   |
| 00000358 | +0   | -512 | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000360 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000368 | +0   | +0   | +0   | +0   | +0   | +0   | -128 | +128 |
| 00000370 | -128 | -128 | +0   | +0   | +128 | +0   | +0   | +0   |
| 00000378 | +384 | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000380 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000388 | +0   | +0   | +0   | +0   | +0   | +0   | -128 | +0   |
| 00000390 | +0   | +0   | +128 | +128 | +128 | -256 | +0   | +128 |
| 00000398 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000003A0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000003A8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000003B0 | -128 | +0   | -256 | +128 | +128 | +0   | +0   | +0   |
| 000003B8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000003C0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000003C8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000003D0 | +0   | +0   | +0   | +384 | -128 | +0   | +0   | +0   |
| 000003D8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000003E0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000003E8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000003F0 | +0   | +0   | +0   | -128 | +0   | +0   | +0   | +0   |
| 000003F8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |

The sample data for 12.4 fixed-point integers (RDP 8.1) is:

|          |      |      |      |      |      |      |      |      |
|----------|------|------|------|------|------|------|------|------|
| 00000000 | +0   | +64  | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000008 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000010 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000018 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000020 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000028 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000030 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000038 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000040 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000048 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000050 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000058 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000060 | +64  | +0   | +128 | +0   | +0   | +0   | +0   | -64  |
| 00000068 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000070 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000078 | +0   | +0   | +0   | +64  | +0   | +0   | +0   | +0   |
| 00000080 | +0   | +0   | +64  | +0   | +0   | +0   | +128 | +0   |
| 00000088 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000090 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000098 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000000A0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000000A8 | +0   | +64  | +0   | +0   | +0   | +0   | +0   | +0   |
| 000000B0 | +0   | +0   | -64  | +0   | +0   | +0   | +0   | +0   |
| 000000B8 | +0   | +0   | +0   | +0   | -64  | +64  | +0   | +0   |
| 000000C0 | +0   | +0   | +0   | +0   | +0   | +0   | -192 | +0   |
| 000000C8 | +0   | +0   | +64  | +0   | +0   | +0   | +0   | +0   |
| 000000D0 | +0   | +128 | +0   | +0   | +0   | +0   | +0   | +0   |
| 000000D8 | +0   | +64  | +0   | -128 | +256 | -320 | -64  | +0   |
| 000000E0 | +0   | +0   | +0   | +0   | +0   | -64  | -192 | +0   |
| 000000E8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000000F0 | +0   | -192 | +0   | +192 | +0   | +0   | +0   | +0   |
| 000000F8 | +0   | +0   | -64  | +256 | +256 | -320 | -64  | +0   |
| 00000100 | +0   | +0   | +0   | +0   | +0   | -128 | +320 | +0   |
| 00000108 | +0   | +0   | +0   | +0   | +0   | +128 | +64  | +0   |
| 00000110 | +128 | -320 | -256 | +64  | +0   | +0   | +0   | +0   |
| 00000118 | +0   | +0   | +64  | +192 | -64  | +320 | +0   | -64  |
| 00000120 | +0   | +0   | +0   | +0   | +0   | -128 | -128 | -192 |
| 00000128 | +0   | +0   | +0   | +0   | +0   | +192 | +0   | +0   |



|          |      |      |      |      |      |      |      |      |
|----------|------|------|------|------|------|------|------|------|
| 00000130 | +448 | +0   | -256 | +0   | +0   | +0   | +0   | +0   |
| 00000138 | +0   | +0   | +0   | -64  | +0   | -64  | +128 | -64  |
| 00000140 | +0   | +0   | +0   | +0   | +0   | -192 | +64  | +320 |
| 00000148 | +0   | +0   | +0   | +0   | +0   | +0   | -64  | +0   |
| 00000150 | +0   | +64  | +448 | +0   | +0   | +0   | +0   | +0   |
| 00000158 | +0   | +0   | +0   | +0   | +0   | -64  | +0   | +0   |
| 00000160 | +0   | +0   | +0   | +0   | +128 | +0   | +0   | +0   |
| 00000168 | -128 | +0   | +0   | +0   | +0   | +0   | +64  | +0   |
| 00000170 | -576 | -192 | +320 | +0   | +0   | +0   | +0   | +0   |
| 00000178 | +0   | +0   | +0   | +0   | +0   | -64  | +0   | +0   |
| 00000180 | +0   | +0   | +0   | +0   | +0   | +0   | -64  | -64  |
| 00000188 | -64  | +0   | +0   | +0   | +0   | +0   | +0   | +384 |
| 00000190 | -128 | -512 | -64  | +0   | +0   | +0   | +0   | +0   |
| 00000198 | +0   | +0   | +0   | +0   | +0   | -64  | +0   | +0   |
| 000001A0 | +0   | +0   | +0   | +0   | -192 | +0   | +0   | +0   |
| 000001A8 | +0   | +0   | +0   | -64  | +0   | -64  | +0   | +320 |
| 000001B0 | +128 | +192 | +0   | +0   | +0   | +0   | +0   | +0   |
| 000001B8 | +0   | +0   | +64  | +0   | +128 | +0   | +0   | +0   |
| 000001C0 | +0   | +0   | +0   | -64  | +64  | +0   | +0   | -64  |
| 000001C8 | +128 | +0   | +0   | +64  | +0   | +0   | -64  | +0   |
| 000001D0 | -64  | +448 | +0   | +0   | +0   | +0   | +0   | +0   |
| 000001D8 | +0   | +0   | +0   | +0   | -192 | -128 | +0   | +0   |
| 000001E0 | +0   | +0   | +0   | +192 | -64  | +0   | -64  | +0   |
| 000001E8 | +64  | +0   | +0   | +0   | +64  | +128 | -64  | +0   |
| 000001F0 | -320 | +64  | +0   | +0   | +0   | +0   | +0   | +0   |
| 000001F8 | +0   | +0   | +0   | -192 | -256 | +0   | +0   | +0   |
| 00000200 | +0   | +0   | -64  | -384 | +64  | +0   | -64  | +0   |
| 00000208 | +0   | +0   | +0   | +0   | +0   | +0   | +384 | +0   |
| 00000210 | -64  | +0   | +64  | +0   | +0   | +64  | -64  | +0   |
| 00000218 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000220 | +0   | +0   | +192 | -320 | +0   | +0   | +0   | +0   |
| 00000228 | +0   | +0   | +0   | +0   | +0   | -64  | -64  | +64  |
| 00000230 | +640 | +0   | +0   | +0   | -64  | +64  | +0   | +0   |
| 00000238 | +0   | +0   | -64  | +64  | +0   | +0   | +0   | +0   |
| 00000240 | +0   | +0   | +448 | +0   | +0   | +0   | +0   | +0   |
| 00000248 | +0   | +0   | +0   | +0   | +0   | +64  | -320 | -320 |
| 00000250 | +192 | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000258 | +0   | -64  | +0   | -64  | +0   | +0   | +0   | +0   |
| 00000260 | +0   | -64  | -128 | +0   | +0   | +0   | -64  | +0   |
| 00000268 | +0   | +0   | +0   | +0   | +0   | +192 | -64  | -448 |
| 00000270 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000278 | +0   | +0   | +64  | -384 | +0   | +0   | +0   | +0   |
| 00000280 | +0   | +0   | -512 | +0   | +0   | +0   | +0   | +0   |
| 00000288 | +0   | +0   | +0   | +0   | +0   | +192 | +128 | +256 |
| 00000290 | +0   | +0   | +0   | +0   | +0   | -64  | +0   | +0   |
| 00000298 | +0   | +0   | +384 | -64  | +0   | +0   | +0   | +0   |
| 000002A0 | -64  | +448 | -64  | +0   | +0   | +0   | -64  | -64  |
| 000002A8 | +0   | +0   | +0   | +0   | +0   | -192 | -64  | +384 |
| 000002B0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000002B8 | +0   | +0   | +192 | +64  | +0   | +0   | +0   | +0   |
| 000002C0 | +0   | +256 | +64  | +128 | -128 | -128 | +0   | -64  |
| 000002C8 | +0   | +0   | +0   | +0   | +64  | -64  | -448 | +64  |
| 000002D0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000002D8 | +0   | +0   | -384 | +0   | +0   | +0   | +0   | +0   |
| 000002E0 | -64  | -640 | +192 | +64  | +128 | +0   | -128 | +64  |
| 000002E8 | +64  | +0   | +0   | +0   | +0   | +0   | -64  | +0   |
| 000002F0 | +0   | +0   | -64  | +0   | +0   | +0   | +0   | +0   |
| 000002F8 | +0   | +192 | -128 | +0   | +0   | +0   | +0   | +0   |
| 00000300 | +384 | -512 | -128 | +0   | -128 | +64  | +0   | +0   |
| 00000308 | -64  | -64  | -64  | +64  | +64  | +64  | +384 | +0   |
| 00000310 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000318 | +0   | +256 | +64  | +0   | +0   | +0   | +0   | +0   |
| 00000320 | +192 | +128 | +0   | +64  | +0   | +0   | +64  | +64  |
| 00000328 | +0   | +0   | +64  | -128 | +320 | -192 | +128 | +0   |
| 00000330 | +0   | +0   | +0   | +64  | +0   | +0   | +0   | +0   |
| 00000338 | +0   | -128 | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000340 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000348 | +0   | +0   | -64  | +0   | +0   | -192 | +0   | +64  |
| 00000350 | +0   | +0   | +64  | +64  | +0   | +0   | +0   | +0   |

|          |      |      |      |      |     |      |     |     |
|----------|------|------|------|------|-----|------|-----|-----|
| 00000358 | +0   | -256 | +0   | +0   | +0  | +0   | +0  | +0  |
| 00000360 | +0   | +0   | +0   | +0   | +0  | +0   | +0  | +0  |
| 00000368 | +0   | +0   | +0   | +0   | +0  | +0   | -64 | +64 |
| 00000370 | -64  | -64  | +0   | +0   | +64 | +0   | +0  | +0  |
| 00000378 | +192 | +0   | +0   | +0   | +0  | +0   | +0  | +0  |
| 00000380 | +0   | +0   | +0   | +0   | +0  | +0   | +0  | +0  |
| 00000388 | +0   | +0   | +0   | +0   | +0  | +0   | -64 | +0  |
| 00000390 | +0   | +0   | +64  | +64  | +64 | -128 | +0  | +64 |
| 00000398 | +0   | +0   | +0   | +0   | +0  | +0   | +0  | +0  |
| 000003A0 | +0   | +0   | +0   | +0   | +0  | +0   | +0  | +0  |
| 000003A8 | +0   | +0   | +0   | +0   | +0  | +0   | +0  | +0  |
| 000003B0 | -64  | +0   | -128 | +64  | +64 | +0   | +0  | +0  |
| 000003B8 | +0   | +0   | +0   | +0   | +0  | +0   | +0  | +0  |
| 000003C0 | +0   | +0   | +0   | +0   | +0  | +0   | +0  | +0  |
| 000003C8 | +0   | +0   | +0   | +0   | +0  | +0   | +0  | +0  |
| 000003D0 | +0   | +0   | +0   | +192 | -64 | +0   | +0  | +0  |
| 000003D8 | +0   | +0   | +0   | +0   | +0  | +0   | +0  | +0  |
| 000003E0 | +0   | +0   | +0   | +0   | +0  | +0   | +0  | +0  |
| 000003E8 | +0   | +0   | +0   | +0   | +0  | +0   | +0  | +0  |
| 000003F0 | +0   | +0   | +0   | -64  | +0  | +0   | +0  | +0  |
| 000003F8 | +0   | +0   | +0   | +0   | +0  | +0   | +0  | +0  |

#### 4.2.4.3.3 LH1

The following is a dump of the LH1 sub-band, as shown in the figure illustrating three-level DWT decomposition in section [3.1.8.1.4](#).

The sample data for 11.5 fixed-point integers (RDP 7.1/8.0) is:

|          |      |      |      |      |      |       |      |      |
|----------|------|------|------|------|------|-------|------|------|
| 00000000 | +0   | +0   | +0   | +0   | +0   | +0    | +0   | +0   |
| 00000008 | +0   | +0   | +0   | +0   | +0   | +0    | +0   | +0   |
| 00000010 | +0   | +0   | +0   | +0   | +0   | +0    | +0   | +0   |
| 00000018 | +0   | +0   | +0   | +0   | +0   | +0    | +0   | +0   |
| 00000020 | +0   | +0   | +0   | +0   | +0   | +0    | +0   | +0   |
| 00000028 | +0   | +0   | +0   | +0   | +0   | +0    | +0   | +0   |
| 00000030 | +0   | +0   | +0   | +0   | +0   | +0    | +0   | +0   |
| 00000038 | +0   | +0   | +0   | +0   | +0   | +0    | +0   | +0   |
| 00000040 | +0   | +0   | +0   | +0   | +0   | +0    | +0   | +0   |
| 00000048 | +128 | +0   | -128 | -128 | +0   | +0    | -128 | -128 |
| 00000050 | +128 | +0   | +0   | +0   | +0   | +0    | +0   | +0   |
| 00000058 | +0   | +0   | +0   | +0   | +0   | +0    | +0   | +0   |
| 00000060 | -128 | -128 | -128 | +0   | +0   | +0    | +0   | -128 |
| 00000068 | +0   | +0   | +0   | +0   | +0   | +0    | +0   | +0   |
| 00000070 | +0   | -128 | +0   | +0   | +0   | +0    | +0   | +0   |
| 00000078 | +0   | +0   | +0   | +0   | +0   | +0    | +0   | +0   |
| 00000080 | -128 | -128 | -128 | +0   | +0   | +0    | +0   | +0   |
| 00000088 | +0   | +0   | +0   | +0   | +0   | +0    | +0   | +0   |
| 00000090 | +0   | +0   | +0   | +0   | +0   | +0    | +0   | +0   |
| 00000098 | +0   | +0   | +0   | +0   | +0   | +0    | +0   | +0   |
| 000000A0 | +0   | +0   | +0   | +0   | +0   | +0    | +0   | +0   |
| 000000A8 | +0   | +0   | +0   | +0   | +0   | +0    | +0   | +0   |
| 000000B0 | +0   | +0   | +0   | +0   | -128 | +128  | +0   | +0   |
| 000000B8 | +0   | +0   | +0   | +0   | -256 | -1024 | +256 | +0   |
| 000000C0 | +0   | +0   | +0   | +0   | +0   | +0    | -128 | +0   |
| 000000C8 | +0   | +0   | +0   | +0   | +0   | +0    | +0   | +0   |
| 000000D0 | +0   | +0   | +0   | +0   | +0   | +0    | -128 | +0   |
| 000000D8 | +0   | +128 | +0   | -256 | +512 | +512  | -128 | +0   |
| 000000E0 | +0   | +0   | +0   | +0   | +0   | -128  | +384 | -128 |
| 000000E8 | +0   | +0   | +0   | +0   | +0   | +0    | +128 | +0   |
| 000000F0 | +0   | +128 | +0   | +0   | +0   | +0    | +0   | +0   |
| 000000F8 | +0   | +0   | -128 | +384 | +384 | -896  | -128 | +0   |
| 00000100 | +0   | +0   | +0   | +0   | +0   | +0    | +0   | +128 |
| 00000108 | +0   | +0   | +0   | +0   | +0   | +0    | +0   | +0   |
| 00000110 | +0   | +0   | -128 | +128 | +0   | +0    | +0   | +0   |
| 00000118 | +0   | +0   | +0   | +128 | +0   | +0    | +768 | +384 |

|          |      |       |       |       |      |      |       |      |
|----------|------|-------|-------|-------|------|------|-------|------|
| 00000120 | +0   | +0    | +0    | +0    | +0   | +0   | +0    | +0   |
| 00000128 | +0   | +0    | +0    | +128  | +0   | +0   | +0    | +0   |
| 00000130 | +128 | +0    | +0    | +0    | +0   | +0   | +0    | +0   |
| 00000138 | +0   | +0    | +0    | +0    | +0   | +0   | -1024 | +0   |
| 00000140 | +0   | +0    | +0    | +0    | +0   | +0   | +0    | +0   |
| 00000148 | +0   | +0    | +0    | +128  | -256 | -256 | +256  | -128 |
| 00000150 | +0   | +0    | -128  | +0    | +0   | +0   | +0    | +0   |
| 00000158 | +0   | +0    | +0    | +0    | +0   | +0   | +0    | +0   |
| 00000160 | +0   | +0    | +0    | +0    | +0   | -128 | +0    | +0   |
| 00000168 | +128 | +128  | +384  | +128  | +0   | +0   | +0    | +0   |
| 00000170 | +0   | +0    | +0    | +0    | +0   | +0   | +0    | +128 |
| 00000178 | +0   | +0    | +0    | +0    | +0   | +0   | +0    | +0   |
| 00000180 | +0   | +0    | +0    | +0    | +0   | -128 | +0    | -128 |
| 00000188 | -640 | -384  | -512  | -768  | -768 | +896 | +128  | +128 |
| 00000190 | -128 | +0    | +0    | +0    | +0   | +0   | +0    | +0   |
| 00000198 | -128 | -256  | -384  | +0    | +128 | +0   | +0    | +0   |
| 000001A0 | +0   | +0    | +0    | +0    | +0   | +128 | +0    | +256 |
| 000001A8 | -128 | +0    | -256  | -384  | +128 | +128 | -1024 | +768 |
| 000001B0 | +0   | -128  | +128  | +0    | +0   | +0   | +0    | +128 |
| 000001B8 | +128 | +0    | +0    | +768  | -384 | -128 | +0    | +0   |
| 000001C0 | +0   | +0    | +0    | -128  | +640 | +256 | -768  | -256 |
| 000001C8 | +0   | +0    | +0    | +256  | +896 | -768 | -128  | +0   |
| 000001D0 | +0   | +128  | +0    | +0    | +0   | +0   | +0    | +0   |
| 000001D8 | +0   | +0    | -128  | -128  | +128 | +768 | +0    | +0   |
| 000001E0 | +0   | +0    | +0    | +0    | -256 | +128 | +0    | +0   |
| 000001E8 | +0   | +0    | +0    | +0    | +0   | -128 | +768  | -128 |
| 000001F0 | +128 | -768  | +896  | +0    | +0   | +0   | +0    | +0   |
| 000001F8 | +0   | +0    | +0    | +128  | -128 | -128 | +0    | +0   |
| 00000200 | +0   | +0    | +0    | +128  | +0   | +0   | +0    | +0   |
| 00000208 | +0   | +0    | +0    | +0    | +0   | +0   | +0    | +0   |
| 00000210 | -128 | -256  | +0    | -1024 | +768 | +768 | +512  | +384 |
| 00000218 | +384 | +512  | -128  | -256  | +0   | +0   | +0    | +0   |
| 00000220 | +0   | +0    | +0    | +0    | +0   | +0   | +0    | +0   |
| 00000228 | +0   | +0    | +0    | +0    | +0   | +0   | +256  | -128 |
| 00000230 | -128 | +896  | -1024 | +0    | +128 | -256 | -512  | -384 |
| 00000238 | -128 | +128  | -384  | -512  | +128 | +0   | +0    | +0   |
| 00000240 | +0   | +0    | +0    | +0    | +0   | +0   | +0    | +0   |
| 00000248 | +0   | +0    | +128  | +0    | +128 | -384 | -640  | +0   |
| 00000250 | +128 | +0    | +0    | +1024 | -128 | -896 | -1152 | -896 |
| 00000258 | -256 | +768  | +384  | +0    | +0   | +0   | +0    | +0   |
| 00000260 | +0   | +0    | +128  | +0    | +0   | +0   | -128  | -128 |
| 00000268 | +0   | +0    | +0    | +0    | +0   | +128 | -128  | +0   |
| 00000270 | +0   | +0    | +0    | +0    | +0   | +0   | +0    | +0   |
| 00000278 | +0   | +0    | +0    | +0    | +0   | +0   | +0    | +0   |
| 00000280 | +0   | +0    | +0    | +0    | +0   | +0   | +128  | +0   |
| 00000288 | +0   | +0    | +0    | +0    | +0   | +0   | +0    | -128 |
| 00000290 | +128 | +0    | +0    | +0    | +0   | +0   | -128  | +128 |
| 00000298 | +0   | +0    | +128  | -128  | +0   | +0   | +0    | +0   |
| 000002A0 | -128 | +128  | -128  | +128  | +128 | +0   | +0    | +0   |
| 000002A8 | +0   | +0    | +0    | +0    | +0   | +0   | +0    | +0   |
| 000002B0 | +0   | +0    | +0    | +0    | +0   | +0   | +0    | +0   |
| 000002B8 | -128 | +128  | -128  | +0    | +0   | +0   | +0    | +0   |
| 000002C0 | +0   | +128  | +128  | +384  | +384 | +0   | +128  | +128 |
| 000002C8 | -128 | +128  | +0    | +0    | +0   | +0   | +0    | +0   |
| 000002D0 | +0   | +0    | +0    | +0    | +0   | +0   | +0    | +0   |
| 000002D8 | +0   | +0    | +128  | +0    | +0   | +0   | +128  | +0   |
| 000002E0 | +0   | +0    | +256  | +128  | -512 | -640 | -1024 | -768 |
| 000002E8 | -512 | +128  | +0    | +0    | -128 | +0   | +0    | +0   |
| 000002F0 | +0   | +0    | +0    | +0    | +0   | +0   | +0    | +0   |
| 000002F8 | +0   | +0    | +0    | +128  | +0   | +0   | +0    | +0   |
| 00000300 | +384 | -1152 | -640  | +1280 | +256 | +256 | +0    | -128 |
| 00000308 | +256 | +768  | -512  | -128  | +0   | +0   | +0    | +0   |
| 00000310 | +0   | +0    | +0    | +0    | +0   | +0   | +0    | +0   |
| 00000318 | +0   | +0    | +0    | +0    | +0   | +0   | +0    | +0   |
| 00000320 | -128 | +256  | -128  | -128  | +128 | +0   | +0    | +0   |
| 00000328 | +0   | +0    | -128  | +512  | -256 | -128 | +128  | -128 |
| 00000330 | +128 | -128  | +0    | +0    | +0   | +0   | +0    | +0   |
| 00000338 | +0   | +128  | +0    | +0    | +0   | +0   | +0    | +0   |
| 00000340 | +0   | +0    | +0    | +0    | +0   | +0   | +0    | +0   |

|          |      |      |      |      |      |      |      |      |
|----------|------|------|------|------|------|------|------|------|
| 00000348 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +128 |
| 00000350 | -128 | +128 | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000358 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000360 | +0   | +128 | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000368 | +0   | +0   | +0   | +0   | +0   | +0   | -128 | -128 |
| 00000370 | +0   | -128 | +128 | +128 | +0   | +128 | +0   | -128 |
| 00000378 | +384 | -128 | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000380 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000388 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | -128 |
| 00000390 | -128 | -128 | +128 | +128 | +128 | +0   | -256 | -384 |
| 00000398 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000003A0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000003A8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000003B0 | +0   | +0   | -128 | +512 | +256 | +128 | +0   | +0   |
| 000003B8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000003C0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000003C8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000003D0 | +0   | +0   | +0   | +0   | -256 | +0   | +0   | +0   |
| 000003D8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000003E0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000003E8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000003F0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000003F8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000400 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000408 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |

The sample data for 12.4 fixed-point integers (RDP 8.1) is:

|          |     |     |     |      |      |      |      |      |
|----------|-----|-----|-----|------|------|------|------|------|
| 00000000 | +0  | +0  | +0  | +0   | +0   | +0   | +0   | +0   |
| 00000008 | +0  | +0  | +0  | +0   | +0   | +0   | +0   | +0   |
| 00000010 | +0  | +0  | +0  | +0   | +0   | +0   | +0   | +0   |
| 00000018 | +0  | +0  | +0  | +0   | +0   | +0   | +0   | +0   |
| 00000020 | +0  | +0  | +0  | +0   | +0   | +0   | +0   | +0   |
| 00000028 | +0  | +0  | +0  | +0   | +0   | +0   | +0   | +0   |
| 00000030 | +0  | +0  | +0  | +0   | +0   | +0   | +0   | +0   |
| 00000038 | +0  | +0  | +0  | +0   | +0   | +0   | +0   | +0   |
| 00000040 | +0  | +0  | +0  | +0   | +0   | +0   | +0   | +0   |
| 00000048 | +64 | +0  | -64 | -64  | +0   | +0   | -64  | -64  |
| 00000050 | +64 | +0  | +0  | +0   | +0   | +0   | +0   | +0   |
| 00000058 | +0  | +0  | +0  | +0   | +0   | +0   | +0   | +0   |
| 00000060 | -64 | -64 | -64 | +0   | +0   | +0   | +0   | -64  |
| 00000068 | +0  | +0  | +0  | +0   | +0   | +0   | +0   | +0   |
| 00000070 | +0  | -64 | +0  | +0   | +0   | +0   | +0   | +0   |
| 00000078 | +0  | +0  | +0  | +0   | +0   | +0   | +0   | +0   |
| 00000080 | -64 | -64 | -64 | +0   | +0   | +0   | +0   | +0   |
| 00000088 | +0  | +0  | +0  | +0   | +0   | +0   | +0   | +0   |
| 00000090 | +0  | +0  | +0  | +0   | +0   | +0   | +0   | +0   |
| 00000098 | +0  | +0  | +0  | +0   | +0   | +0   | +0   | +0   |
| 000000A0 | +0  | +0  | +0  | +0   | +0   | +0   | +0   | +0   |
| 000000A8 | +0  | +0  | +0  | +0   | +0   | +0   | +0   | +0   |
| 000000B0 | +0  | +0  | +0  | +0   | -64  | +64  | +0   | +0   |
| 000000B8 | +0  | +0  | +0  | +0   | -128 | -512 | +128 | +0   |
| 000000C0 | +0  | +0  | +0  | +0   | +0   | +0   | -64  | +0   |
| 000000C8 | +0  | +0  | +0  | +0   | +0   | +0   | +0   | +0   |
| 000000D0 | +0  | +0  | +0  | +0   | +0   | +0   | -64  | +0   |
| 000000D8 | +0  | +64 | +0  | -128 | +256 | +256 | -64  | +0   |
| 000000E0 | +0  | +0  | +0  | +0   | +0   | -64  | +192 | -64  |
| 000000E8 | +0  | +0  | +0  | +0   | +0   | +0   | +64  | +0   |
| 000000F0 | +0  | +64 | +0  | +0   | +0   | +0   | +0   | +0   |
| 000000F8 | +0  | +0  | -64 | +192 | +192 | -448 | -64  | +0   |
| 00000100 | +0  | +0  | +0  | +0   | +0   | +0   | +0   | +64  |
| 00000108 | +0  | +0  | +0  | +0   | +0   | +0   | +0   | +0   |
| 00000110 | +0  | +0  | -64 | +64  | +0   | +0   | +0   | +0   |
| 00000118 | +0  | +0  | +0  | +64  | +0   | +0   | +384 | +192 |
| 00000120 | +0  | +0  | +0  | +0   | +0   | +0   | +0   | +0   |
| 00000128 | +0  | +0  | +0  | +64  | +0   | +0   | +0   | +0   |

|          |      |      |      |      |      |      |      |      |
|----------|------|------|------|------|------|------|------|------|
| 00000130 | +64  | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000138 | +0   | +0   | +0   | +0   | +0   | +0   | -512 | +0   |
| 00000140 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000148 | +0   | +0   | +0   | +64  | -128 | -128 | +128 | -64  |
| 00000150 | +0   | +0   | -64  | +0   | +0   | +0   | +0   | +0   |
| 00000158 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000160 | +0   | +0   | +0   | +0   | +0   | -64  | +0   | +0   |
| 00000168 | +64  | +64  | +192 | +64  | +0   | +0   | +0   | +0   |
| 00000170 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +64  |
| 00000178 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000180 | +0   | +0   | +0   | +0   | +0   | -64  | +0   | -64  |
| 00000188 | -320 | -192 | -256 | -384 | -384 | +448 | +64  | +64  |
| 00000190 | -64  | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000198 | -64  | -128 | -192 | +0   | +64  | +0   | +0   | +0   |
| 000001A0 | +0   | +0   | +0   | +0   | +0   | +64  | +0   | +128 |
| 000001A8 | -64  | +0   | -128 | -192 | +64  | +64  | -512 | +384 |
| 000001B0 | +0   | -64  | +64  | +0   | +0   | +0   | +0   | +64  |
| 000001B8 | +64  | +0   | +0   | +384 | -192 | -64  | +0   | +0   |
| 000001C0 | +0   | +0   | +0   | -64  | +320 | +128 | -384 | -128 |
| 000001C8 | +0   | +0   | +0   | +128 | +448 | -384 | -64  | +0   |
| 000001D0 | +0   | +64  | +0   | +0   | +0   | +0   | +0   | +0   |
| 000001D8 | +0   | +0   | -64  | -64  | +64  | +384 | +0   | +0   |
| 000001E0 | +0   | +0   | +0   | +0   | -128 | +64  | +0   | +0   |
| 000001E8 | +0   | +0   | +0   | +0   | +0   | -64  | +384 | -64  |
| 000001F0 | +64  | -384 | +448 | +0   | +0   | +0   | +0   | +0   |
| 000001F8 | +0   | +0   | +0   | +64  | -64  | -64  | +0   | +0   |
| 00000200 | +0   | +0   | +0   | +64  | +0   | +0   | +0   | +0   |
| 00000208 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000210 | -64  | -128 | +0   | -512 | +384 | +384 | +256 | +192 |
| 00000218 | +192 | +256 | -64  | -128 | +0   | +0   | +0   | +0   |
| 00000220 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000228 | +0   | +0   | +0   | +0   | +0   | +0   | +128 | -64  |
| 00000230 | -64  | +448 | -512 | +0   | +64  | -128 | -256 | -192 |
| 00000238 | -64  | +64  | -192 | -256 | +64  | +0   | +0   | +0   |
| 00000240 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000248 | +0   | +0   | +64  | +0   | +64  | -192 | -320 | +0   |
| 00000250 | +64  | +0   | +0   | +512 | -64  | -448 | -576 | -448 |
| 00000258 | -128 | +384 | +192 | +0   | +0   | +0   | +0   | +0   |
| 00000260 | +0   | +0   | +64  | +0   | +0   | +0   | -64  | -64  |
| 00000268 | +0   | +0   | +0   | +0   | +0   | +64  | -64  | +0   |
| 00000270 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000278 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000280 | +0   | +0   | +0   | +0   | +0   | +0   | +64  | +0   |
| 00000288 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | -64  |
| 00000290 | +64  | +0   | +0   | +0   | +0   | +0   | -64  | +64  |
| 00000298 | +0   | +0   | +64  | -64  | +0   | +0   | +0   | +0   |
| 000002A0 | -64  | +64  | -64  | +64  | +64  | +0   | +0   | +0   |
| 000002A8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000002B0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000002B8 | -64  | +64  | -64  | +0   | +0   | +0   | +0   | +0   |
| 000002C0 | +0   | +64  | +64  | +192 | +192 | +0   | +64  | +64  |
| 000002C8 | -64  | +64  | +0   | +0   | +0   | +0   | +0   | +0   |
| 000002D0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000002D8 | +0   | +0   | +64  | +0   | +0   | +0   | +64  | +0   |
| 000002E0 | +0   | +0   | +128 | +64  | -256 | -320 | -512 | -384 |
| 000002E8 | -256 | +64  | +0   | +0   | -64  | +0   | +0   | +0   |
| 000002F0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000002F8 | +0   | +0   | +0   | +64  | +0   | +0   | +0   | +0   |
| 00000300 | +192 | -576 | -320 | +640 | +128 | +128 | +0   | -64  |
| 00000308 | +128 | +384 | -256 | -64  | +0   | +0   | +0   | +0   |
| 00000310 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000318 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000320 | -64  | +128 | -64  | -64  | +64  | +0   | +0   | +0   |
| 00000328 | +0   | +0   | -64  | +256 | -128 | -64  | +64  | -64  |
| 00000330 | +64  | -64  | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000338 | +0   | +64  | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000340 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000348 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +64  |
| 00000350 | -64  | +64  | +0   | +0   | +0   | +0   | +0   | +0   |

|          |      |     |     |      |      |     |      |      |
|----------|------|-----|-----|------|------|-----|------|------|
| 00000358 | +0   | +0  | +0  | +0   | +0   | +0  | +0   | +0   |
| 00000360 | +0   | +64 | +0  | +0   | +0   | +0  | +0   | +0   |
| 00000368 | +0   | +0  | +0  | +0   | +0   | +0  | -64  | -64  |
| 00000370 | +0   | -64 | +64 | +64  | +0   | +64 | +0   | -64  |
| 00000378 | +192 | -64 | +0  | +0   | +0   | +0  | +0   | +0   |
| 00000380 | +0   | +0  | +0  | +0   | +0   | +0  | +0   | +0   |
| 00000388 | +0   | +0  | +0  | +0   | +0   | +0  | +0   | -64  |
| 00000390 | -64  | -64 | +64 | +64  | +64  | +0  | -128 | -192 |
| 00000398 | +0   | +0  | +0  | +0   | +0   | +0  | +0   | +0   |
| 000003A0 | +0   | +0  | +0  | +0   | +0   | +0  | +0   | +0   |
| 000003A8 | +0   | +0  | +0  | +0   | +0   | +0  | +0   | +0   |
| 000003B0 | +0   | +0  | -64 | +256 | +128 | +64 | +0   | +0   |
| 000003B8 | +0   | +0  | +0  | +0   | +0   | +0  | +0   | +0   |
| 000003C0 | +0   | +0  | +0  | +0   | +0   | +0  | +0   | +0   |
| 000003C8 | +0   | +0  | +0  | +0   | +0   | +0  | +0   | +0   |
| 000003D0 | +0   | +0  | +0  | +0   | -128 | +0  | +0   | +0   |
| 000003D8 | +0   | +0  | +0  | +0   | +0   | +0  | +0   | +0   |
| 000003E0 | +0   | +0  | +0  | +0   | +0   | +0  | +0   | +0   |
| 000003E8 | +0   | +0  | +0  | +0   | +0   | +0  | +0   | +0   |
| 000003F0 | +0   | +0  | +0  | +0   | +0   | +0  | +0   | +0   |
| 000003F8 | +0   | +0  | +0  | +0   | +0   | +0  | +0   | +0   |
| 00000400 | +0   | +0  | +0  | +0   | +0   | +0  | +0   | +0   |
| 00000408 | +0   | +0  | +0  | +0   | +0   | +0  | +0   | +0   |

#### 4.2.4.3.3.4 HH1

The following is a dump of the HL1 sub-band, as shown in the figure illustrating three-level DWT decomposition in section [3.1.8.1.4](#).

The sample data for 11.5 fixed-point integers (RDP 7.1/8.0) is:

|          |    |      |      |      |      |      |      |    |
|----------|----|------|------|------|------|------|------|----|
| 00000000 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0 |
| 00000008 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0 |
| 00000010 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0 |
| 00000018 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0 |
| 00000020 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0 |
| 00000028 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0 |
| 00000030 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0 |
| 00000038 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0 |
| 00000040 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0 |
| 00000048 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0 |
| 00000050 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0 |
| 00000058 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0 |
| 00000060 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0 |
| 00000068 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0 |
| 00000070 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0 |
| 00000078 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0 |
| 00000080 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0 |
| 00000088 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0 |
| 00000090 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0 |
| 00000098 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0 |
| 000000A0 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0 |
| 000000A8 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0 |
| 000000B0 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0 |
| 000000B8 | +0 | +0   | +0   | +0   | -256 | +256 | +0   | +0 |
| 000000C0 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0 |
| 000000C8 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0 |
| 000000D0 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0 |
| 000000D8 | +0 | +0   | +0   | -512 | -256 | +256 | +0   | +0 |
| 000000E0 | +0 | +0   | +0   | +0   | +0   | -256 | -256 | +0 |
| 000000E8 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0 |
| 000000F0 | +0 | -256 | +0   | +0   | +0   | +0   | +0   | +0 |
| 000000F8 | +0 | +0   | -256 | +256 | -512 | +0   | +0   | +0 |
| 00000100 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0 |
| 00000108 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0 |
| 00000110 | +0 | +0   | -256 | +0   | +0   | +0   | +0   | +0 |

|          |      |      |      |      |      |      |      |      |
|----------|------|------|------|------|------|------|------|------|
| 00000118 | +0   | +0   | +0   | -256 | +0   | +0   | +256 | -256 |
| 00000120 | +0   | +0   | +0   | +0   | +0   | -256 | +0   | +0   |
| 00000128 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000130 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000138 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000140 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000148 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000150 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000158 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000160 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000168 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000170 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000178 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000180 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000188 | +0   | +0   | +0   | -256 | +0   | +0   | +0   | +256 |
| 00000190 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000198 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000001A0 | +0   | +0   | +0   | +0   | +256 | +0   | +0   | +0   |
| 000001A8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | -256 |
| 000001B0 | +0   | +256 | +0   | +0   | +0   | +0   | +0   | +0   |
| 000001B8 | +0   | +0   | +0   | +0   | +256 | +0   | +0   | +0   |
| 000001C0 | +0   | +0   | +0   | +0   | +256 | +0   | +0   | +0   |
| 000001C8 | +0   | +0   | +0   | +0   | +0   | -256 | +0   | +0   |
| 000001D0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000001D8 | +0   | +0   | +0   | +256 | +256 | +0   | +0   | +0   |
| 000001E0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000001E8 | +0   | +0   | +0   | +0   | +0   | +0   | -256 | +0   |
| 000001F0 | +256 | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000001F8 | +0   | +0   | +0   | +256 | +0   | +0   | +0   | +0   |
| 00000200 | +0   | +0   | +0   | -256 | +0   | +0   | +0   | +0   |
| 00000208 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000210 | -512 | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000218 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000220 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000228 | +0   | +0   | +0   | +0   | +0   | +0   | -256 | +0   |
| 00000230 | -256 | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000238 | +0   | +0   | +0   | +256 | +0   | +0   | +0   | +0   |
| 00000240 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000248 | +0   | +0   | +0   | +0   | +0   | -256 | +256 | +0   |
| 00000250 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000258 | +0   | +0   | +0   | -256 | +0   | +0   | +0   | +0   |
| 00000260 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000268 | +0   | +0   | +0   | +0   | +0   | +256 | +0   | +0   |
| 00000270 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000278 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000280 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000288 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +256 |
| 00000290 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000298 | +0   | +0   | +256 | +0   | +0   | +0   | +0   | +0   |
| 000002A0 | +0   | +256 | +0   | +0   | +0   | +256 | +0   | +0   |
| 000002A8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000002B0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000002B8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000002C0 | +0   | +0   | -256 | +0   | +0   | +256 | +256 | +0   |
| 000002C8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000002D0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000002D8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000002E0 | +0   | -256 | -256 | +512 | +0   | -256 | +0   | +0   |
| 000002E8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000002F0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000002F8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000300 | +256 | -256 | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000308 | +0   | +256 | -256 | +0   | +0   | +0   | +0   | +0   |
| 00000310 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000318 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000320 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000328 | +0   | +0   | +0   | +0   | +0   | +0   | +256 | +0   |
| 00000330 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000338 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |

|          |      |    |      |      |      |    |    |    |
|----------|------|----|------|------|------|----|----|----|
| 00000340 | +0   | +0 | +0   | +0   | +0   | +0 | +0 | +0 |
| 00000348 | +0   | +0 | +0   | +0   | +0   | +0 | +0 | +0 |
| 00000350 | +0   | +0 | +0   | +0   | +0   | +0 | +0 | +0 |
| 00000358 | +0   | +0 | +0   | +0   | +0   | +0 | +0 | +0 |
| 00000360 | +0   | +0 | +0   | +0   | +0   | +0 | +0 | +0 |
| 00000368 | +0   | +0 | +0   | +0   | +0   | +0 | +0 | +0 |
| 00000370 | -256 | +0 | +0   | +0   | +0   | +0 | +0 | +0 |
| 00000378 | +0   | +0 | +0   | +0   | +0   | +0 | +0 | +0 |
| 00000380 | +0   | +0 | +0   | +0   | +0   | +0 | +0 | +0 |
| 00000388 | +0   | +0 | +0   | +0   | +0   | +0 | +0 | +0 |
| 00000390 | -256 | +0 | +0   | +0   | +0   | +0 | +0 | +0 |
| 00000398 | +0   | +0 | +0   | +0   | +0   | +0 | +0 | +0 |
| 000003A0 | +0   | +0 | +0   | +0   | +0   | +0 | +0 | +0 |
| 000003A8 | +0   | +0 | +0   | +0   | +0   | +0 | +0 | +0 |
| 000003B0 | +0   | +0 | -256 | -256 | +256 | +0 | +0 | +0 |
| 000003B8 | +0   | +0 | +0   | +0   | +0   | +0 | +0 | +0 |
| 000003C0 | +0   | +0 | +0   | +0   | +0   | +0 | +0 | +0 |
| 000003C8 | +0   | +0 | +0   | +0   | +0   | +0 | +0 | +0 |
| 000003D0 | +0   | +0 | +0   | -256 | +0   | +0 | +0 | +0 |
| 000003D8 | +0   | +0 | +0   | +0   | +0   | +0 | +0 | +0 |
| 000003E0 | +0   | +0 | +0   | +0   | +0   | +0 | +0 | +0 |
| 000003E8 | +0   | +0 | +0   | +0   | +0   | +0 | +0 | +0 |
| 000003F0 | +0   | +0 | +0   | +0   | +0   | +0 | +0 | +0 |
| 000003F8 | +0   | +0 | +0   | +0   | +0   | +0 | +0 | +0 |

The sample data for 12.4 fixed-point integers (RDP 8.1) is:

|          |    |      |      |      |      |      |      |      |
|----------|----|------|------|------|------|------|------|------|
| 00000000 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000008 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000010 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000018 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000020 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000028 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000030 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000038 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000040 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000048 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000050 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000058 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000060 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000068 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000070 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000078 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000080 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000088 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000090 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000098 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000000A0 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000000A8 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000000B0 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000000B8 | +0 | +0   | +0   | +0   | -128 | +128 | +0   | +0   |
| 000000C0 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000000C8 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000000D0 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000000D8 | +0 | +0   | +0   | -256 | -128 | +128 | +0   | +0   |
| 000000E0 | +0 | +0   | +0   | +0   | +0   | -128 | -128 | +0   |
| 000000E8 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000000F0 | +0 | -128 | +0   | +0   | +0   | +0   | +0   | +0   |
| 000000F8 | +0 | +0   | -128 | +128 | -256 | +0   | +0   | +0   |
| 00000100 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000108 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000110 | +0 | +0   | -128 | +0   | +0   | +0   | +0   | +0   |
| 00000118 | +0 | +0   | +0   | -128 | +0   | +0   | +128 | -128 |
| 00000120 | +0 | +0   | +0   | +0   | +0   | -128 | +0   | +0   |
| 00000128 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000130 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000138 | +0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   |



|          |      |      |      |      |      |      |      |      |
|----------|------|------|------|------|------|------|------|------|
| 00000140 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000148 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000150 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000158 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000160 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000168 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000170 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000178 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000180 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000188 | +0   | +0   | +0   | -128 | +0   | +0   | +0   | +128 |
| 00000190 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000198 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000001A0 | +0   | +0   | +0   | +0   | +128 | +0   | +0   | +0   |
| 000001A8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | -128 |
| 000001B0 | +0   | +128 | +0   | +0   | +0   | +0   | +0   | +0   |
| 000001B8 | +0   | +0   | +0   | +0   | +128 | +0   | +0   | +0   |
| 000001C0 | +0   | +0   | +0   | +0   | +128 | +0   | +0   | +0   |
| 000001C8 | +0   | +0   | +0   | +0   | +0   | -128 | +0   | +0   |
| 000001D0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000001D8 | +0   | +0   | +0   | +128 | +128 | +0   | +0   | +0   |
| 000001E0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000001E8 | +0   | +0   | +0   | +0   | +0   | +0   | -128 | +0   |
| 000001F0 | +128 | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000001F8 | +0   | +0   | +0   | +128 | +0   | +0   | +0   | +0   |
| 00000200 | +0   | +0   | +0   | -128 | +0   | +0   | +0   | +0   |
| 00000208 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000210 | -256 | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000218 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000220 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000228 | +0   | +0   | +0   | +0   | +0   | +0   | -128 | +0   |
| 00000230 | -128 | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000238 | +0   | +0   | +0   | +128 | +0   | +0   | +0   | +0   |
| 00000240 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000248 | +0   | +0   | +0   | +0   | +0   | -128 | +128 | +0   |
| 00000250 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000258 | +0   | +0   | +0   | -128 | +0   | +0   | +0   | +0   |
| 00000260 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000268 | +0   | +0   | +0   | +0   | +0   | +128 | +0   | +0   |
| 00000270 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000278 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000280 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000288 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +128 |
| 00000290 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000298 | +0   | +0   | +128 | +0   | +0   | +0   | +0   | +0   |
| 000002A0 | +0   | +128 | +0   | +0   | +0   | +128 | +0   | +0   |
| 000002A8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000002B0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000002B8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000002C0 | +0   | +0   | -128 | +0   | +0   | +128 | +128 | +0   |
| 000002C8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000002D0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000002D8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000002E0 | +0   | -128 | -128 | +256 | +0   | -128 | +0   | +0   |
| 000002E8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000002F0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000002F8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000300 | +128 | -128 | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000308 | +0   | +128 | -128 | +0   | +0   | +0   | +0   | +0   |
| 00000310 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000318 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000320 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000328 | +0   | +0   | +0   | +0   | +0   | +0   | +128 | +0   |
| 00000330 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000338 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000340 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000348 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000350 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000358 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000360 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |

|          |      |    |      |      |      |    |    |    |
|----------|------|----|------|------|------|----|----|----|
| 00000368 | +0   | +0 | +0   | +0   | +0   | +0 | +0 | +0 |
| 00000370 | -128 | +0 | +0   | +0   | +0   | +0 | +0 | +0 |
| 00000378 | +0   | +0 | +0   | +0   | +0   | +0 | +0 | +0 |
| 00000380 | +0   | +0 | +0   | +0   | +0   | +0 | +0 | +0 |
| 00000388 | +0   | +0 | +0   | +0   | +0   | +0 | +0 | +0 |
| 00000390 | -128 | +0 | +0   | +0   | +0   | +0 | +0 | +0 |
| 00000398 | +0   | +0 | +0   | +0   | +0   | +0 | +0 | +0 |
| 000003A0 | +0   | +0 | +0   | +0   | +0   | +0 | +0 | +0 |
| 000003A8 | +0   | +0 | +0   | +0   | +0   | +0 | +0 | +0 |
| 000003B0 | +0   | +0 | -128 | -128 | +128 | +0 | +0 | +0 |
| 000003B8 | +0   | +0 | +0   | +0   | +0   | +0 | +0 | +0 |
| 000003C0 | +0   | +0 | +0   | +0   | +0   | +0 | +0 | +0 |
| 000003C8 | +0   | +0 | +0   | +0   | +0   | +0 | +0 | +0 |
| 000003D0 | +0   | +0 | +0   | -128 | +0   | +0 | +0 | +0 |
| 000003D8 | +0   | +0 | +0   | +0   | +0   | +0 | +0 | +0 |
| 000003E0 | +0   | +0 | +0   | +0   | +0   | +0 | +0 | +0 |
| 000003E8 | +0   | +0 | +0   | +0   | +0   | +0 | +0 | +0 |
| 000003F0 | +0   | +0 | +0   | +0   | +0   | +0 | +0 | +0 |
| 000003F8 | +0   | +0 | +0   | +0   | +0   | +0 | +0 | +0 |

#### 4.2.4.3.3.5 Inverse DWT-X (LL1 - HL1)

The following is a dump of the L0 sub-band, as shown in the figure illustrating three-level DWT decomposition in section [3.1.8.1.4](#).

The sample data for 11.5 fixed-point integers (RDP 7.1/8.0) is:

|          |       |       |       |       |       |      |      |      |
|----------|-------|-------|-------|-------|-------|------|------|------|
| 00000000 | -32   | +16   | +64   | +272  | -32   | -16  | +0   | -16  |
| 00000008 | -32   | -24   | -16   | -8    | +0    | -24  | -48  | -72  |
| 00000010 | -96   | -90   | -84   | -78   | -72   | -98  | -124 | -150 |
| 00000018 | -176  | -192  | -208  | -224  | -240  | -256 | -272 | -288 |
| 00000020 | -304  | -304  | -304  | -304  | -304  | -336 | -368 | -400 |
| 00000028 | -432  | -450  | -468  | -486  | -504  | -522 | -540 | -558 |
| 00000030 | -576  | -598  | -620  | -642  | -664  | -686 | -708 | -730 |
| 00000038 | -752  | -768  | -784  | -800  | -816  | -816 | -816 | -816 |
| 00000040 | +168  | +224  | +281  | +209  | +138  | +126 | +115 | +103 |
| 00000048 | +92   | +88   | +84   | +80   | +76   | +64  | +52  | +40  |
| 00000050 | +28   | +18   | +8    | -2    | -12   | -38  | -64  | -90  |
| 00000058 | -116  | -105  | -95   | -148  | -201  | -198 | -195 | -192 |
| 00000060 | -190  | -204  | -218  | -232  | -247  | -269 | -291 | -313 |
| 00000068 | -336  | -357  | -379  | -400  | -422  | -447 | -473 | -498 |
| 00000070 | -524  | -546  | -569  | -591  | -614  | -660 | -707 | -689 |
| 00000078 | -672  | -698  | -724  | -750  | -776  | -776 | -776 | -776 |
| 00000080 | +368  | +401  | +434  | +339  | +244  | +237 | +230 | +223 |
| 00000088 | +216  | +200  | +184  | +168  | +152  | +152 | +152 | +152 |
| 00000090 | +152  | +126  | +100  | +74   | +48   | +22  | -4   | -30  |
| 00000098 | -56   | -18   | +19   | -71   | -162  | -140 | -119 | -97  |
| 000000A0 | -76   | -104  | -133  | -161  | -190  | -202 | -215 | -227 |
| 000000A8 | -240  | -265  | -290  | -315  | -340  | -373 | -406 | -439 |
| 000000B0 | -472  | -495  | -518  | -541  | -564  | -635 | -706 | -649 |
| 000000B8 | -592  | -628  | -664  | -700  | -736  | -736 | -736 | -736 |
| 000000C0 | +376  | +649  | +411  | +364  | +318  | +795 | +249 | +342 |
| 000000C8 | +436  | +408  | +380  | +352  | +324  | +308 | +292 | -140 |
| 000000D0 | -60   | +74   | +208  | +182  | +156  | +186 | +216 | +374 |
| 000000D8 | +532  | +504  | +476  | +320  | +165  | +61  | -42  | -146 |
| 000000E0 | -250  | -244  | -239  | -170  | -101  | -123 | -146 | -169 |
| 000000E8 | -192  | -216  | -241  | -265  | -290  | -318 | -347 | -375 |
| 000000F0 | -404  | -399  | -395  | -454  | -514  | -557 | -601 | -356 |
| 000000F8 | -624  | -622  | -620  | -650  | -680  | -680 | -680 | -680 |
| 00000100 | +1152 | +1026 | +900  | +870  | +840  | +906 | +460 | +430 |
| 00000108 | +400  | +424  | +448  | +408  | +368  | +400 | -592 | -240 |
| 00000110 | +112  | +534  | +956  | +994  | +1032 | +926 | +820 | +970 |
| 00000118 | +1120 | +1155 | +1190 | +1097 | +1004 | +839 | +674 | +509 |
| 00000120 | +344  | +191  | +38   | +13   | -12   | -45  | -78  | -111 |
| 00000128 | -144  | -168  | -192  | -216  | -240  | -264 | -288 | -312 |
| 00000130 | -336  | -304  | -272  | -368  | -464  | -416 | -368 | -448 |

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000138 | -528  | -552  | -576  | -600  | -624  | -624  | -624  | -624  |
| 00000140 | +708  | +637  | +566  | +559  | +552  | +513  | +474  | +499  |
| 00000148 | +524  | +561  | +599  | +572  | +546  | +131  | -283  | +6    |
| 00000150 | +296  | +665  | +1034 | +1627 | +1708 | +1669 | +1630 | +1623 |
| 00000158 | +1616 | +1711 | +1806 | +1709 | +1612 | +1531 | +1450 | +1241 |
| 00000160 | +1032 | +950  | +869  | +563  | +258  | -120  | +15   | -74   |
| 00000168 | -164  | -180  | -197  | -150  | -103  | -123  | -144  | -165  |
| 00000170 | -186  | -325  | -464  | -283  | -102  | -305  | -508  | -487  |
| 00000178 | -466  | -1022 | -1066 | -534  | -514  | -578  | -642  | -642  |
| 00000180 | +776  | +760  | +744  | +728  | +712  | +696  | +680  | +664  |
| 00000188 | +648  | +635  | +622  | +577  | +532  | -457  | +90   | +413  |
| 00000190 | +736  | +924  | +1112 | +1524 | +1936 | +2284 | +2120 | +2116 |
| 00000198 | +2112 | +2267 | +2422 | +2321 | +2220 | +2223 | +2226 | +1973 |
| 000001A0 | +1720 | +1582 | +1444 | +1242 | +16   | -2    | -20   | +26   |
| 000001A8 | +72   | -65   | -203  | -212  | -222  | -239  | -257  | -274  |
| 000001B0 | -292  | -186  | -80   | +58   | -316  | -290  | -264  | -462  |
| 000001B8 | +364  | +2508 | +2604 | -436  | -916  | -1012 | -596  | -596  |
| 000001C0 | +876  | +855  | +834  | +813  | +792  | +803  | +814  | +825  |
| 000001C8 | +836  | +720  | +605  | +553  | +1014 | -18   | +487  | +735  |
| 000001D0 | +984  | +1239 | +1494 | +1813 | +2132 | +2343 | +2554 | +2573 |
| 000001D8 | +2592 | +2639 | +2686 | +2861 | +3036 | +2823 | +2610 | +2525 |
| 000001E0 | +2440 | +2405 | +2371 | +448  | +62   | +115  | +169  | +1438 |
| 000001E8 | +1172 | +970  | +768  | +533  | +299  | +217  | +135  | +52   |
| 000001F0 | -30   | -63   | -96   | -161  | -226  | -419  | -100  | +955  |
| 000001F8 | -38   | +1842 | +1674 | -990  | -1094 | -998  | -390  | -390  |
| 00000200 | +976  | +950  | +924  | +898  | +872  | +846  | +820  | +794  |
| 00000208 | +768  | +806  | +844  | +786  | +1752 | +2534 | +756  | +994  |
| 00000210 | +1232 | +1554 | +1876 | +2070 | +2264 | +2594 | +2924 | +2998 |
| 00000218 | +3072 | +3139 | +3206 | +3305 | +2380 | +3103 | +3314 | +3173 |
| 00000220 | +3032 | +3005 | +1954 | -217  | +172  | -87   | +1702 | +2147 |
| 00000228 | +2080 | +1973 | +1866 | +1727 | +1588 | +1441 | +1294 | +1147 |
| 00000230 | +1000 | +796  | +592  | +484  | +376  | +732  | +576  | +1092 |
| 00000238 | +72   | -584  | -728  | +952  | +72   | -56   | -184  | -440  |
| 00000240 | +1076 | +1045 | +1015 | +984  | +954  | +931  | +909  | +886  |
| 00000248 | +864  | +751  | +639  | +462  | +1310 | +1749 | +3213 | +1636 |
| 00000250 | +1596 | +1801 | +2006 | +2307 | +2609 | +2898 | +3187 | +3348 |
| 00000258 | +3510 | +3561 | +3613 | +3568 | +1988 | +2931 | +3875 | +3666 |
| 00000260 | +3458 | +3559 | +76   | +81   | +86   | +667  | +3296 | +2981 |
| 00000268 | +2666 | +2652 | +2639 | +2561 | +2484 | +2282 | +2081 | +1943 |
| 00000270 | +1806 | +1713 | +1621 | +1464 | +1308 | +1183 | +1059 | +390  |
| 00000278 | +234  | -60   | -354  | +1464 | +3794 | +2226 | -366  | -622  |
| 00000280 | +1176 | +1141 | +1106 | +1071 | +1036 | +1017 | +998  | +979  |
| 00000288 | +960  | +857  | +754  | +11   | +804  | +1605 | +1894 | +3239 |
| 00000290 | +2024 | +2272 | +2521 | +2737 | +2954 | +3074 | +3195 | +3315 |
| 00000298 | +3436 | +3536 | +3636 | +3384 | +3132 | +3144 | +3668 | +3776 |
| 000002A0 | +3884 | +1937 | -10   | +155  | -192  | +3309 | +3226 | +3207 |
| 000002A8 | +3188 | +3236 | +3284 | +3204 | +3124 | +2932 | +2740 | +2676 |
| 000002B0 | +2612 | +2567 | +2522 | +2221 | +1920 | +1539 | +1158 | +777  |
| 000002B8 | +396  | +112  | -172  | -744  | -804  | -580  | -356  | -356  |
| 000002C0 | +1212 | +1184 | +1157 | +1129 | +1102 | +1078 | +1055 | +967  |
| 000002C8 | +880  | +1082 | +261  | +527  | +794  | +1284 | +1775 | +2393 |
| 000002D0 | +3012 | +2487 | +2987 | +3231 | +3475 | +3474 | +3474 | +3474 |
| 000002D8 | +3474 | +3546 | +3619 | +3659 | +3700 | +4012 | +3813 | +3869 |
| 000002E0 | +3926 | -157  | +368  | +221  | +1610 | +3763 | +3356 | +3461 |
| 000002E8 | +3566 | +3571 | +3577 | +3518 | +3460 | +3449 | +3439 | +3364 |
| 000002F0 | +3290 | +2956 | +2623 | +2225 | +1828 | +1570 | +1313 | +991  |
| 000002F8 | +670  | +328  | -14   | -452  | -378  | -314  | -250  | -250  |
| 00000300 | +1248 | +1228 | +1208 | +1188 | +1168 | +1140 | +1112 | +1084 |
| 00000308 | +1056 | +636  | +216  | +596  | +976  | +1252 | +2040 | +2156 |
| 00000310 | +2784 | +2127 | +1982 | +2093 | +2204 | +2531 | +2858 | +3185 |
| 00000318 | +3512 | +3941 | +4370 | +4159 | +3948 | +3921 | +3894 | +4123 |
| 00000320 | +1280 | +277  | +298  | +95   | +3988 | +3609 | +3742 | +3715 |
| 00000328 | +3688 | +3715 | +3742 | +3769 | +3796 | +3711 | +3626 | +3285 |
| 00000330 | +2944 | +2642 | +2340 | +2166 | +1992 | +1794 | +1596 | +1270 |
| 00000338 | +944  | +480  | +16   | -352  | -208  | -304  | -400  | -400  |
| 00000340 | +1344 | +1340 | +1337 | +1333 | +1330 | +1190 | +1051 | +1071 |
| 00000348 | +1092 | +212  | +869  | +918  | +967  | +951  | +936  | +729  |
| 00000350 | +522  | +517  | +513  | +445  | +377  | +292  | +208  | +28   |
| 00000358 | +360  | +456  | +552  | +1672 | +3304 | +3784 | +4264 | +3400 |

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000360 | -24   | +485  | -31   | +2781 | +4058 | +4018 | +3979 | +3907 |
| 00000368 | +3836 | +3818 | +3801 | +3784 | +3767 | +3561 | +3356 | +3407 |
| 00000370 | +3458 | +3642 | +3826 | +3594 | +3363 | +2939 | +2003 | +1163 |
| 00000378 | +324  | +482  | -384  | -354  | -324  | -324  | -324  | -324  |
| 00000380 | +1440 | +1389 | +1338 | +1287 | +1236 | +1273 | +1310 | +1155 |
| 00000388 | +1512 | +1677 | +1331 | +1048 | +766  | +523  | +281  | +454  |
| 00000390 | +1140 | +1532 | +901  | +1261 | +1622 | +1734 | +1847 | +1607 |
| 00000398 | +856  | +587  | +318  | +177  | +36   | +319  | +1114 | +757  |
| 000003A0 | +400  | +340  | +792  | +4252 | +4128 | +4076 | +4024 | +4004 |
| 000003A8 | +3984 | +3922 | +3861 | +3799 | +3738 | +3860 | +3983 | +3849 |
| 000003B0 | +3716 | +3426 | +3137 | +2975 | +2814 | +2996 | +3179 | +3329 |
| 000003B8 | +3480 | +1732 | +1520 | +124  | -248  | -248  | -248  | -248  |
| 000003C0 | +1472 | +1425 | +1379 | +1332 | +1286 | +1339 | +1393 | +1062 |
| 000003C8 | -804  | -1450 | -1584 | -1365 | -1147 | -877  | -95   | +751  |
| 000003D0 | +1598 | +1943 | +1776 | +2153 | +2531 | +2872 | +3213 | +3650 |
| 000003D8 | +4088 | +4134 | +3668 | +2818 | +944  | +498  | +564  | +502  |
| 000003E0 | +440  | +275  | +2671 | +3850 | +4518 | +4305 | +4093 | +3976 |
| 000003E8 | +3860 | +3898 | +3936 | +3974 | +4013 | +3783 | +3553 | +3323 |
| 000003F0 | +3094 | +2858 | +2623 | +2388 | +2153 | +1825 | +1498 | +1267 |
| 000003F8 | +2572 | +538  | +552  | +150  | -252  | -252  | -252  | -252  |
| 00000400 | +1504 | +1462 | +1420 | +1410 | +1400 | +1310 | +1732 | -1558 |
| 00000408 | -1776 | -1089 | -914  | -611  | -308  | +59   | +938  | +1529 |
| 00000410 | +2120 | +2322 | +2524 | +2854 | +3184 | +3402 | +3620 | +3710 |
| 00000418 | +3800 | +3873 | +3946 | +4211 | +4476 | +3941 | +334  | +535  |
| 00000420 | +736  | +179  | +134  | +409  | +684  | +2327 | +3458 | +3853 |
| 00000428 | +4248 | +4162 | +4076 | +4310 | +4032 | +3418 | +3316 | +3150 |
| 00000430 | +2984 | +2611 | +2238 | +1737 | +1236 | +975  | +714  | +197  |
| 00000438 | -320  | -272  | -224  | -176  | -128  | -192  | -256  | -256  |
| 00000440 | +1588 | +1531 | +1475 | +1450 | +1426 | +1561 | +161  | -1751 |
| 00000448 | -1104 | -775  | -446  | -149  | +148  | +753  | +1358 | +1899 |
| 00000450 | +2440 | +2650 | +2861 | +3136 | +3411 | +3533 | +3656 | +3715 |
| 00000458 | +3774 | +3927 | +4080 | +3913 | +4258 | +2063 | +380  | +585  |
| 00000460 | +278  | +3130 | +862  | +354  | -154  | -70   | +14   | +194  |
| 00000468 | +374  | +638  | +1414 | +1806 | +1686 | +1634 | +1582 | +1178 |
| 00000470 | +774  | +463  | +152  | +1    | -149  | -580  | -499  | -33   |
| 00000478 | -80   | -46   | -12   | -74   | -136  | -200  | -264  | -264  |
| 00000480 | +1672 | +1601 | +1530 | +1491 | +1452 | +1685 | -1666 | -1209 |
| 00000488 | -752  | -461  | -170  | +121  | +412  | +999  | +1586 | +2045 |
| 00000490 | +2504 | +2787 | +3071 | +3354 | +3638 | +3665 | +3693 | +3720 |
| 00000498 | +3748 | +3629 | +3510 | +3327 | +2632 | +377  | +682  | +283  |
| 000004A0 | +2444 | +4257 | +4534 | +4043 | +3552 | +2141 | +730  | +471  |
| 000004A8 | +212  | -102  | -416  | -474  | -532  | -502  | -472  | -314  |
| 000004B0 | -156  | +11   | +179  | +442  | +1218 | +1897 | +2577 | +952  |
| 000004B8 | -160  | -108  | -56   | -100  | -144  | -208  | -272  | -272  |
| 000004C0 | +1580 | +1614 | +1649 | +1459 | +1782 | -268  | -1293 | -1006 |
| 000004C8 | -720  | -443  | -166  | +79   | +324  | +549  | +1286 | +1799 |
| 000004D0 | +2312 | +2620 | +2928 | +3108 | +3289 | +3281 | +3273 | +3329 |
| 000004D8 | +3386 | +3443 | +3500 | +3045 | +1054 | +655  | +768  | +593  |
| 000004E0 | +4002 | +4056 | +4110 | +4068 | +4026 | +4236 | +4446 | +4208 |
| 000004E8 | +3970 | +3742 | +3514 | +3478 | +3442 | +3274 | +3106 | +3322 |
| 000004F0 | +3538 | +3587 | +3637 | +3399 | +3161 | +2986 | +2300 | -402  |
| 000004F8 | -32   | -122  | -212  | -174  | -136  | -200  | -264  | -264  |
| 00000500 | +1744 | +1692 | +1640 | +1588 | +1536 | -1900 | -1240 | -964  |
| 00000508 | -688  | -361  | -34   | +165  | +364  | +675  | +986  | +1553 |
| 00000510 | +2120 | +2389 | +2658 | +2671 | +2684 | +2705 | +2726 | +2875 |
| 00000518 | +3024 | +3001 | +2978 | +2475 | +436  | +837  | +214  | +3143 |
| 00000520 | +4024 | +4015 | +4006 | +3997 | +3988 | +3963 | +3938 | +3913 |
| 00000528 | +3888 | +3842 | +3796 | +3590 | +3896 | +3946 | +3996 | +3694 |
| 00000530 | +3392 | +3292 | +3192 | +3028 | +2864 | +3148 | +360  | -92   |
| 00000538 | -32   | -72   | -112  | -120  | -128  | -192  | -256  | -256  |
| 00000540 | +1860 | +1546 | +1745 | +2072 | -1185 | -1426 | -1155 | -820  |
| 00000548 | -486  | -207  | +71   | +317  | +563  | +449  | +847  | +669  |
| 00000550 | +1004 | +1302 | +1600 | +1802 | +2005 | +2191 | +2377 | +2435 |
| 00000558 | +2494 | +2477 | +2460 | +843  | +763  | +730  | +1209 | +4120 |
| 00000560 | +3960 | +4011 | +4062 | +3985 | +3908 | +3883 | +3858 | +3833 |
| 00000568 | +3808 | +3707 | +3607 | +3571 | +3535 | +3506 | +3478 | +3706 |
| 00000570 | +3934 | +3916 | +3899 | +3786 | +3673 | +2368 | -473  | +14   |
| 00000578 | -12   | -24   | -36   | -80   | -124  | -156  | -188  | -188  |
| 00000580 | +1720 | +1849 | +1979 | +1180 | -1666 | -1272 | -1391 | -453  |

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000588 | -540  | -758  | +47   | -364  | +250  | +383  | +517  | +170  |
| 00000590 | +336  | +439  | +543  | +678  | +814  | +1229 | +1645 | +1644 |
| 00000598 | +1644 | +1697 | +1239 | +748  | +770  | +399  | +3613 | +3978 |
| 000005A0 | +3832 | +3847 | +3862 | +3845 | +3828 | +3803 | +3778 | +3753 |
| 000005A8 | +3728 | +3669 | +3611 | +3552 | +3494 | +3419 | +3345 | +3142 |
| 000005B0 | +2940 | +2813 | +2687 | +2624 | +2562 | -237  | +37   | -9    |
| 000005B8 | -56   | -72   | -88   | -104  | -120  | -120  | -120  | -120  |
| 000005C0 | +1820 | +1760 | +2212 | -2232 | -1555 | -762  | -1506 | -1290 |
| 000005C8 | -1586 | -717  | -872  | -803  | -735  | -1302 | -846  | -389  |
| 000005D0 | -444  | -127  | -323  | -70   | +183  | +143  | +104  | +321  |
| 000005D8 | +538  | +777  | +1017 | +841  | +665  | +1924 | +3696 | +3708 |
| 000005E0 | +3720 | +3731 | +3742 | +3721 | +3700 | +3431 | +3674 | +3629 |
| 000005E8 | +3584 | +3523 | +3462 | +3401 | +3341 | +3264 | +3187 | +2982 |
| 000005F0 | +2778 | +2562 | +2346 | +2418 | +955  | -13   | +44   | +68   |
| 000005F8 | +92   | +36   | -20   | -76   | -132  | -132  | -132  | -132  |
| 00000600 | +1664 | +1991 | -754  | -3435 | -2020 | -2493 | -1942 | -751  |
| 00000608 | +440  | +124  | +832  | +1508 | +1672 | +1492 | +1312 | +1004 |
| 00000610 | +696  | -182  | -548  | -1074 | -1088 | -1134 | -668  | -330  |
| 00000618 | -504  | +402  | +796  | +902  | +496  | +3610 | +3652 | +3598 |
| 00000620 | +3544 | +3583 | +3622 | +3533 | +3444 | +3443 | +3442 | +3441 |
| 00000628 | +3440 | +3377 | +3314 | +3251 | +3188 | +3109 | +3030 | +2823 |
| 00000630 | +2616 | +2439 | +2262 | +2053 | -204  | +211  | +114  | +49   |
| 00000638 | -16   | -48   | -80   | -112  | -144  | -144  | -144  | -144  |
| 00000640 | +1800 | +1778 | +221  | +1352 | +1459 | +1793 | +2128 | +2111 |
| 00000648 | +1582 | +1477 | +1373 | +1333 | +1293 | +1528 | +1252 | +1488 |
| 00000650 | +1212 | +1345 | +1478 | +1227 | +977  | +438  | -613  | -1279 |
| 00000658 | -922  | +1323 | +1008 | +885  | +2299 | +3228 | +3133 | +3262 |
| 00000660 | +3392 | +3204 | +3016 | +3212 | +3409 | +3305 | +3201 | +3449 |
| 00000668 | +3186 | +3153 | +3121 | +3056 | +2992 | +2887 | +2783 | +2550 |
| 00000670 | +2318 | +2175 | +2032 | +545  | +82   | +95   | +108  | +57   |
| 00000678 | +6    | -26   | -58   | -90   | -122  | -122  | -122  | -122  |
| 00000680 | +1680 | +1694 | +1709 | +1595 | +1482 | +1472 | +1463 | +1453 |
| 00000688 | +1444 | +1391 | +1339 | +1286 | +1234 | +1213 | +1193 | +1172 |
| 00000690 | +1152 | +1112 | +1073 | +1065 | +1058 | +922  | +1299 | +1131 |
| 00000698 | +964  | +868  | +773  | +709  | +2182 | +2302 | +2423 | +2799 |
| 000006A0 | +2664 | +2793 | +2923 | +2860 | +2798 | +3007 | +2705 | +3106 |
| 000006A8 | +2996 | +2962 | +2928 | +2862 | +2796 | +2666 | +2536 | +2278 |
| 000006B0 | +2020 | +1783 | +1546 | -227  | +48   | +43   | +38   | +33   |
| 000006B8 | +28   | -4    | -36   | -68   | -100  | -100  | -100  | -100  |
| 000006C0 | +1624 | +1650 | +1676 | +1638 | +1601 | +1551 | +1501 | +1451 |
| 000006C8 | +1402 | +1361 | +1320 | +1279 | +1239 | +1214 | +1189 | +1164 |
| 000006D0 | +1140 | +1103 | +1067 | +1031 | +995  | +1014 | +1034 | +926  |
| 000006D8 | +818  | +885  | +953  | +989  | +1025 | +992  | +1472 | +2048 |
| 000006E0 | +2112 | +1886 | +2173 | +2108 | +2555 | +2485 | +2416 | +2411 |
| 000006E8 | +2406 | +2726 | +2535 | +2311 | +2088 | +2068 | +2049 | +1997 |
| 000006F0 | +1946 | +1779 | +76   | +69   | +62   | +83   | +104  | +61   |
| 000006F8 | +18   | -10   | -38   | -66   | -94   | -126  | -158  | -158  |
| 00000700 | +1824 | +1734 | +1644 | +1554 | +1464 | +1438 | +1412 | +1386 |
| 00000708 | +1360 | +1331 | +1302 | +1273 | +1244 | +1215 | +1186 | +1157 |
| 00000710 | +1128 | +1095 | +1062 | +1029 | +996  | +979  | +962  | +945  |
| 00000718 | +928  | +871  | +814  | +789  | +764  | +707  | +1162 | +1585 |
| 00000720 | +2008 | +1588 | +1168 | +1356 | +1544 | +1836 | +1616 | +1940 |
| 00000728 | +1752 | +2235 | +2206 | +1217 | +1252 | +1311 | +1370 | +1013 |
| 00000730 | +144  | +143  | +142  | +109  | +76   | +59   | +42   | +25   |
| 00000738 | +8    | -16   | -40   | -64   | -88   | -152  | -216  | -216  |
| 00000740 | +1552 | +1528 | +1504 | +1480 | +1456 | +1420 | +1384 | +1348 |
| 00000748 | +1312 | +1289 | +1266 | +1243 | +1220 | +1197 | +1174 | +1151 |
| 00000750 | +1128 | +1091 | +1054 | +1017 | +980  | +959  | +938  | +917  |
| 00000758 | +896  | +853  | +810  | +767  | +724  | +613  | +502  | +551  |
| 00000760 | +600  | +384  | +680  | +560  | +440  | +376  | +1336 | +1528 |
| 00000768 | +1208 | +989  | +258  | +231  | +204  | +137  | +70   | +131  |
| 00000770 | +192  | +167  | +142  | +117  | +92   | +71   | +50   | +29   |
| 00000778 | +8    | -20   | -48   | -76   | -104  | -136  | -168  | -168  |
| 00000780 | +1536 | +1514 | +1492 | +1470 | +1448 | +1402 | +1356 | +1310 |
| 00000788 | +1264 | +1247 | +1230 | +1213 | +1196 | +1179 | +1162 | +1145 |
| 00000790 | +1128 | +1087 | +1046 | +1005 | +964  | +939  | +914  | +889  |
| 00000798 | +864  | +835  | +806  | +777  | +748  | +711  | +674  | +637  |
| 000007A0 | +600  | +588  | +576  | +564  | +552  | +580  | +608  | +1660 |
| 000007A8 | +1176 | +511  | +358  | +333  | +308  | +275  | +242  | +209  |

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 000007B0 | +176  | +159  | +142  | +125  | +108  | +83   | +58   | +33   |
| 000007B8 | +8    | -24   | -56   | -88   | -120  | -120  | -120  | -120  |
| 000007C0 | +1536 | +1514 | +1492 | +1470 | +1448 | +1402 | +1356 | +1310 |
| 000007C8 | +1264 | +1247 | +1230 | +1213 | +1196 | +1179 | +1162 | +1145 |
| 000007D0 | +1128 | +1087 | +1046 | +1005 | +964  | +939  | +914  | +889  |
| 000007D8 | +864  | +835  | +806  | +777  | +748  | +711  | +674  | +637  |
| 000007E0 | +600  | +588  | +576  | +564  | +552  | +452  | +352  | +92   |
| 000007E8 | +344  | +319  | +294  | +301  | +308  | +275  | +242  | +209  |
| 000007F0 | +176  | +159  | +142  | +125  | +108  | +83   | +58   | +33   |
| 000007F8 | +8    | -24   | -56   | -88   | -120  | -120  | -120  | -120  |

The sample data for 12.4 fixed-point integers (RDP 8.1) is:

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000000 | -16   | +8    | +32   | +136  | -16   | -8    | +0    | -8    |
| 00000008 | -16   | -12   | -8    | -4    | +0    | -12   | -24   | -36   |
| 00000010 | -48   | -45   | -42   | -39   | -36   | -49   | -62   | -75   |
| 00000018 | -88   | -96   | -104  | -112  | -120  | -128  | -136  | -144  |
| 00000020 | -152  | -152  | -152  | -152  | -152  | -168  | -184  | -200  |
| 00000028 | -216  | -225  | -234  | -243  | -252  | -261  | -270  | -279  |
| 00000030 | -288  | -299  | -310  | -321  | -332  | -343  | -354  | -365  |
| 00000038 | -376  | -384  | -392  | -400  | -408  | -408  | -408  | -408  |
| 00000040 | +84   | +112  | +140  | +104  | +69   | +63   | +57   | +51   |
| 00000048 | +46   | +44   | +42   | +40   | +38   | +32   | +26   | +20   |
| 00000050 | +14   | +9    | +4    | -1    | -6    | -19   | -32   | -45   |
| 00000058 | -58   | -52   | -47   | -74   | -100  | -99   | -97   | -96   |
| 00000060 | -95   | -102  | -109  | -116  | -123  | -134  | -145  | -156  |
| 00000068 | -168  | -178  | -189  | -200  | -211  | -223  | -236  | -249  |
| 00000070 | -262  | -273  | -284  | -295  | -307  | -330  | -353  | -344  |
| 00000078 | -336  | -349  | -362  | -375  | -388  | -388  | -388  | -388  |
| 00000080 | +184  | +200  | +217  | +169  | +122  | +118  | +115  | +111  |
| 00000088 | +108  | +100  | +92   | +84   | +76   | +76   | +76   | +76   |
| 00000090 | +76   | +63   | +50   | +37   | +24   | +11   | -2    | -15   |
| 00000098 | -28   | -9    | +9    | -35   | -81   | -70   | -59   | -48   |
| 000000A0 | -38   | -52   | -66   | -80   | -95   | -101  | -107  | -113  |
| 000000A8 | -120  | -132  | -145  | -157  | -170  | -186  | -203  | -219  |
| 000000B0 | -236  | -247  | -259  | -270  | -282  | -317  | -353  | -324  |
| 000000B8 | -296  | -314  | -332  | -350  | -368  | -368  | -368  | -368  |
| 000000C0 | +188  | +324  | +205  | +182  | +159  | +397  | +124  | +171  |
| 000000C8 | +218  | +204  | +190  | +176  | +162  | +154  | +146  | -70   |
| 000000D0 | -30   | +37   | +104  | +91   | +78   | +93   | +108  | +187  |
| 000000D8 | +266  | +252  | +238  | +160  | +82   | +30   | -21   | -73   |
| 000000E0 | -125  | -122  | -119  | -85   | -50   | -61   | -73   | -84   |
| 000000E8 | -96   | -108  | -120  | -132  | -145  | -159  | -173  | -187  |
| 000000F0 | -202  | -199  | -197  | -227  | -257  | -278  | -300  | -178  |
| 000000F8 | -312  | -311  | -310  | -325  | -340  | -340  | -340  | -340  |
| 00000100 | +576  | +513  | +450  | +435  | +420  | +453  | +230  | +215  |
| 00000108 | +200  | +212  | +224  | +204  | +184  | +200  | -296  | -120  |
| 00000110 | +56   | +267  | +478  | +497  | +516  | +463  | +410  | +485  |
| 00000118 | +560  | +577  | +595  | +548  | +502  | +419  | +337  | +254  |
| 00000120 | +172  | +95   | +19   | +6    | -6    | -22   | -39   | -55   |
| 00000128 | -72   | -84   | -96   | -108  | -120  | -132  | -144  | -156  |
| 00000130 | -168  | -152  | -136  | -184  | -232  | -208  | -184  | -224  |
| 00000138 | -264  | -276  | -288  | -300  | -312  | -312  | -312  | -312  |
| 00000140 | +354  | +318  | +283  | +279  | +276  | +256  | +237  | +249  |
| 00000148 | +262  | +280  | +299  | +286  | +273  | +65   | -141  | +3    |
| 00000150 | +148  | +332  | +517  | +813  | +854  | +834  | +815  | +811  |
| 00000158 | +808  | +855  | +903  | +854  | +806  | +765  | +725  | +620  |
| 00000160 | +516  | +475  | +434  | +281  | +129  | -60   | +7    | -37   |
| 00000168 | -82   | -90   | -98   | -75   | -51   | -61   | -72   | -82   |
| 00000170 | -93   | -162  | -232  | -141  | -51   | -152  | -254  | -243  |
| 00000178 | -233  | -511  | -533  | -267  | -257  | -289  | -321  | -321  |
| 00000180 | +388  | +380  | +372  | +364  | +356  | +348  | +340  | +332  |
| 00000188 | +324  | +317  | +311  | +288  | +266  | -228  | +45   | +206  |
| 00000190 | +368  | +462  | +556  | +762  | +968  | +1142 | +1060 | +1058 |
| 00000198 | +1056 | +1133 | +1211 | +1160 | +1110 | +1111 | +1113 | +986  |
| 000001A0 | +860  | +791  | +722  | +621  | +8    | -1    | -10   | +13   |
| 000001A8 | +36   | -32   | -101  | -106  | -111  | -119  | -128  | -137  |

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 000001B0 | -146  | -93   | -40   | +29   | -158  | -145  | -132  | -231  |
| 000001B8 | +182  | +1254 | +1302 | -218  | -458  | -506  | -298  | -298  |
| 000001C0 | +438  | +427  | +417  | +406  | +396  | +401  | +407  | +412  |
| 000001C8 | +418  | +360  | +302  | +276  | +507  | -9    | +243  | +367  |
| 000001D0 | +492  | +619  | +747  | +906  | +1066 | +1171 | +1277 | +1286 |
| 000001D8 | +1296 | +1319 | +1343 | +1430 | +1518 | +1411 | +1305 | +1262 |
| 000001E0 | +1220 | +1202 | +1185 | +224  | +31   | +57   | +84   | +719  |
| 000001E8 | +586  | +485  | +384  | +266  | +149  | +108  | +67   | +26   |
| 000001F0 | -15   | -31   | -48   | -80   | -113  | -209  | -50   | +477  |
| 000001F8 | -19   | +921  | +837  | -495  | -547  | -499  | -195  | -195  |
| 00000200 | +488  | +475  | +462  | +449  | +436  | +423  | +410  | +397  |
| 00000208 | +384  | +403  | +422  | +393  | +876  | +1267 | +378  | +497  |
| 00000210 | +616  | +777  | +938  | +1035 | +1132 | +1297 | +1462 | +1499 |
| 00000218 | +1536 | +1569 | +1603 | +1652 | +1190 | +1551 | +1657 | +1586 |
| 00000220 | +1516 | +1502 | +977  | -108  | +86   | -43   | +851  | +1073 |
| 00000228 | +1040 | +986  | +933  | +863  | +794  | +720  | +647  | +573  |
| 00000230 | +500  | +398  | +296  | +242  | +188  | +366  | +288  | +546  |
| 00000238 | +36   | -292  | -364  | +476  | +36   | -28   | -92   | -220  |
| 00000240 | +538  | +522  | +507  | +492  | +477  | +465  | +454  | +443  |
| 00000248 | +432  | +375  | +319  | +231  | +655  | +874  | +1606 | +818  |
| 00000250 | +798  | +900  | +1003 | +1153 | +1304 | +1449 | +1593 | +1674 |
| 00000258 | +1755 | +1780 | +1806 | +1784 | +994  | +1465 | +1937 | +1833 |
| 00000260 | +1729 | +1779 | +38   | +40   | +43   | +333  | +1648 | +1490 |
| 00000268 | +1333 | +1326 | +1319 | +1280 | +1242 | +1141 | +1040 | +971  |
| 00000270 | +903  | +856  | +810  | +732  | +654  | +591  | +529  | +195  |
| 00000278 | +117  | -30   | -177  | +732  | +1897 | +1113 | -183  | -311  |
| 00000280 | +588  | +570  | +553  | +535  | +518  | +508  | +499  | +489  |
| 00000288 | +480  | +428  | +377  | +5    | +402  | +802  | +947  | +1619 |
| 00000290 | +1012 | +1136 | +1260 | +1368 | +1477 | +1537 | +1597 | +1657 |
| 00000298 | +1718 | +1768 | +1818 | +1692 | +1566 | +1572 | +1834 | +1888 |
| 000002A0 | +1942 | +968  | -5    | +77   | -96   | +1654 | +1613 | +1603 |
| 000002A8 | +1594 | +1618 | +1642 | +1602 | +1562 | +1466 | +1370 | +1338 |
| 000002B0 | +1306 | +1283 | +1261 | +1110 | +960  | +769  | +579  | +388  |
| 000002B8 | +198  | +56   | -86   | -372  | -402  | -290  | -178  | -178  |
| 000002C0 | +606  | +592  | +578  | +564  | +551  | +539  | +527  | +483  |
| 000002C8 | +440  | +541  | +130  | +263  | +397  | +642  | +887  | +1196 |
| 000002D0 | +1506 | +1243 | +1493 | +1615 | +1737 | +1737 | +1737 | +1737 |
| 000002D8 | +1737 | +1773 | +1809 | +1829 | +1850 | +2006 | +1906 | +1934 |
| 000002E0 | +1963 | -78   | +184  | +110  | +805  | +1881 | +1678 | +1730 |
| 000002E8 | +1783 | +1785 | +1788 | +1759 | +1730 | +1724 | +1719 | +1682 |
| 000002F0 | +1645 | +1478 | +1311 | +1112 | +914  | +785  | +656  | +495  |
| 000002F8 | +335  | +164  | -7    | -226  | -189  | -157  | -125  | -125  |
| 00000300 | +624  | +614  | +604  | +594  | +584  | +570  | +556  | +542  |
| 00000308 | +528  | +318  | +108  | +298  | +488  | +626  | +1020 | +1078 |
| 00000310 | +1392 | +1063 | +991  | +1046 | +1102 | +1265 | +1429 | +1592 |
| 00000318 | +1756 | +1970 | +2185 | +2079 | +1974 | +1960 | +1947 | +2061 |
| 00000320 | +640  | +138  | +149  | +47   | +1994 | +1804 | +1871 | +1857 |
| 00000328 | +1844 | +1857 | +1871 | +1884 | +1898 | +1855 | +1813 | +1642 |
| 00000330 | +1472 | +1321 | +1170 | +1083 | +996  | +897  | +798  | +635  |
| 00000338 | +472  | +240  | +8    | -176  | -104  | -152  | -200  | -200  |
| 00000340 | +672  | +670  | +668  | +666  | +665  | +595  | +525  | +535  |
| 00000348 | +546  | +106  | +434  | +459  | +483  | +475  | +468  | +364  |
| 00000350 | +261  | +258  | +256  | +222  | +188  | +146  | +104  | +14   |
| 00000358 | +180  | +228  | +276  | +836  | +1652 | +1892 | +2132 | +1700 |
| 00000360 | -12   | +242  | -15   | +1390 | +2029 | +2009 | +1989 | +1953 |
| 00000368 | +1918 | +1909 | +1900 | +1892 | +1883 | +1780 | +1678 | +1703 |
| 00000370 | +1729 | +1821 | +1913 | +1797 | +1681 | +1469 | +1001 | +581  |
| 00000378 | +162  | +241  | -192  | -177  | -162  | -162  | -162  | -162  |
| 00000380 | +720  | +694  | +669  | +643  | +618  | +636  | +655  | +577  |
| 00000388 | +756  | +838  | +665  | +524  | +383  | +261  | +140  | +227  |
| 00000390 | +570  | +766  | +450  | +630  | +811  | +867  | +923  | +803  |
| 00000398 | +428  | +293  | +159  | +88   | +18   | +159  | +557  | +378  |
| 000003A0 | +200  | +170  | +396  | +2126 | +2064 | +2038 | +2012 | +2002 |
| 000003A8 | +1992 | +1961 | +1930 | +1899 | +1869 | +1930 | +1991 | +1924 |
| 000003B0 | +1858 | +1713 | +1568 | +1487 | +1407 | +1498 | +1589 | +1664 |
| 000003B8 | +1740 | +866  | +760  | +62   | -124  | -124  | -124  | -124  |
| 000003C0 | +736  | +712  | +689  | +666  | +643  | +669  | +696  | +531  |
| 000003C8 | -402  | -725  | -792  | -682  | -573  | -438  | -47   | +375  |
| 000003D0 | +799  | +971  | +888  | +1076 | +1265 | +1436 | +1606 | +1825 |

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 000003D8 | +2044 | +2067 | +1834 | +1409 | +472  | +249  | +282  | +251  |
| 000003E0 | +220  | +137  | +1335 | +1925 | +2259 | +2152 | +2046 | +1988 |
| 000003E8 | +1930 | +1949 | +1968 | +1987 | +2006 | +1891 | +1776 | +1661 |
| 000003F0 | +1547 | +1429 | +1311 | +1194 | +1076 | +912  | +749  | +633  |
| 000003F8 | +1286 | +269  | +276  | +75   | -126  | -126  | -126  | -126  |
| 00000400 | +752  | +731  | +710  | +705  | +700  | +655  | +866  | -779  |
| 00000408 | -888  | -544  | -457  | -305  | -154  | +29   | +469  | +764  |
| 00000410 | +1060 | +1161 | +1262 | +1427 | +1592 | +1701 | +1810 | +1855 |
| 00000418 | +1900 | +1936 | +1973 | +2105 | +2238 | +1970 | +167  | +267  |
| 00000420 | +368  | +89   | +67   | +204  | +342  | +1163 | +1729 | +1926 |
| 00000428 | +2124 | +2081 | +2038 | +2155 | +2016 | +1709 | +1658 | +1575 |
| 00000430 | +1492 | +1305 | +1119 | +868  | +618  | +487  | +357  | +98   |
| 00000438 | -160  | -136  | -112  | -88   | -64   | -96   | -128  | -128  |
| 00000440 | +794  | +765  | +737  | +725  | +713  | +780  | +80   | -875  |
| 00000448 | -552  | -387  | -223  | -74   | +74   | +376  | +679  | +949  |
| 00000450 | +1220 | +1325 | +1430 | +1568 | +1705 | +1766 | +1828 | +1857 |
| 00000458 | +1887 | +1963 | +2040 | +1956 | +2129 | +1031 | +190  | +292  |
| 00000460 | +139  | +1565 | +431  | +177  | -77   | -35   | +7    | +97   |
| 00000468 | +187  | +319  | +707  | +903  | +843  | +817  | +791  | +589  |
| 00000470 | +387  | +231  | +76   | +0    | -74   | -290  | -249  | -16   |
| 00000478 | -40   | -23   | -6    | -37   | -68   | -100  | -132  | -132  |
| 00000480 | +836  | +800  | +765  | +745  | +726  | +842  | -833  | -604  |
| 00000488 | -376  | -230  | -85   | +60   | +206  | +499  | +793  | +1022 |
| 00000490 | +1252 | +1393 | +1535 | +1677 | +1819 | +1832 | +1846 | +1860 |
| 00000498 | +1874 | +1814 | +1755 | +1663 | +1316 | +188  | +341  | +141  |
| 000004A0 | +1222 | +2128 | +2267 | +2021 | +1776 | +1070 | +365  | +235  |
| 000004A8 | +106  | -51   | -208  | -237  | -266  | -251  | -236  | -157  |
| 000004B0 | -78   | +5    | +89   | +221  | +609  | +948  | +1288 | +476  |
| 000004B8 | -80   | -54   | -28   | -50   | -72   | -104  | -136  | -136  |
| 000004C0 | +790  | +807  | +824  | +729  | +891  | -134  | -646  | -503  |
| 000004C8 | -360  | -221  | -83   | +39   | +162  | +274  | +643  | +899  |
| 000004D0 | +1156 | +1310 | +1464 | +1554 | +1644 | +1640 | +1636 | +1664 |
| 000004D8 | +1693 | +1721 | +1750 | +1522 | +527  | +327  | +384  | +296  |
| 000004E0 | +2001 | +2028 | +2055 | +2034 | +2013 | +2118 | +2223 | +2104 |
| 000004E8 | +1985 | +1871 | +1757 | +1739 | +1721 | +1637 | +1553 | +1661 |
| 000004F0 | +1769 | +1793 | +1818 | +1699 | +1580 | +1493 | +1150 | -201  |
| 000004F8 | -16   | -61   | -106  | -87   | -68   | -100  | -132  | -132  |
| 00000500 | +872  | +846  | +820  | +794  | +768  | -950  | -620  | -482  |
| 00000508 | -344  | -180  | -17   | +82   | +182  | +337  | +493  | +776  |
| 00000510 | +1060 | +1194 | +1329 | +1335 | +1342 | +1352 | +1363 | +1437 |
| 00000518 | +1512 | +1500 | +1489 | +1237 | +218  | +418  | +107  | +1571 |
| 00000520 | +2012 | +2007 | +2003 | +1998 | +1994 | +1981 | +1969 | +1956 |
| 00000528 | +1944 | +1921 | +1898 | +1795 | +1948 | +1973 | +1998 | +1847 |
| 00000530 | +1696 | +1646 | +1596 | +1514 | +1432 | +1574 | +180  | -46   |
| 00000538 | -16   | -36   | -56   | -60   | -64   | -96   | -128  | -128  |
| 00000540 | +930  | +773  | +872  | +1036 | -592  | -713  | -577  | -410  |
| 00000548 | -243  | -103  | +35   | +158  | +281  | +224  | +423  | +334  |
| 00000550 | +502  | +651  | +800  | +901  | +1002 | +1095 | +1188 | +1217 |
| 00000558 | +1247 | +1238 | +1230 | +421  | +381  | +365  | +604  | +2060 |
| 00000560 | +1980 | +2005 | +2031 | +1992 | +1954 | +1941 | +1929 | +1916 |
| 00000568 | +1904 | +1853 | +1803 | +1785 | +1767 | +1753 | +1739 | +1853 |
| 00000570 | +1967 | +1958 | +1949 | +1893 | +1836 | +1184 | -236  | +7    |
| 00000578 | -6    | -12   | -18   | -40   | -62   | -78   | -94   | -94   |
| 00000580 | +860  | +924  | +989  | +590  | -833  | -636  | -695  | -226  |
| 00000588 | -270  | -379  | +23   | -182  | +125  | +191  | +258  | +85   |
| 00000590 | +168  | +219  | +271  | +339  | +407  | +614  | +822  | +822  |
| 00000598 | +822  | +848  | +619  | +374  | +385  | +199  | +1806 | +1989 |
| 000005A0 | +1916 | +1923 | +1931 | +1922 | +1914 | +1901 | +1889 | +1876 |
| 000005A8 | +1864 | +1834 | +1805 | +1776 | +1747 | +1709 | +1672 | +1571 |
| 000005B0 | +1470 | +1406 | +1343 | +1312 | +1281 | -118  | +18   | -4    |
| 000005B8 | -28   | -36   | -44   | -52   | -60   | -60   | -60   | -60   |
| 000005C0 | +910  | +880  | +1106 | -1116 | -777  | -381  | -753  | -645  |
| 000005C8 | -793  | -358  | -436  | -401  | -367  | -651  | -423  | -194  |
| 000005D0 | -222  | -63   | -161  | -35   | +91   | +71   | +52   | +160  |
| 000005D8 | +269  | +388  | +508  | +420  | +332  | +962  | +1848 | +1854 |
| 000005E0 | +1860 | +1865 | +1871 | +1860 | +1850 | +1715 | +1837 | +1814 |
| 000005E8 | +1792 | +1761 | +1731 | +1700 | +1670 | +1632 | +1593 | +1491 |
| 000005F0 | +1389 | +1281 | +1173 | +1209 | +477  | -6    | +22   | +34   |
| 000005F8 | +46   | +18   | -10   | -38   | -66   | -66   | -66   | -66   |



|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000600 | +832  | +995  | -377  | -1717 | -1010 | -1246 | -971  | -375  |
| 00000608 | +220  | +62   | +416  | +754  | +836  | +746  | +656  | +502  |
| 00000610 | +348  | -91   | -274  | -537  | -544  | -567  | -334  | -165  |
| 00000618 | -252  | +201  | +398  | +451  | +248  | +1805 | +1826 | +1799 |
| 00000620 | +1772 | +1791 | +1811 | +1766 | +1722 | +1721 | +1721 | +1720 |
| 00000628 | +1720 | +1688 | +1657 | +1625 | +1594 | +1554 | +1515 | +1411 |
| 00000630 | +1308 | +1219 | +1131 | +1026 | -102  | +105  | +57   | +24   |
| 00000638 | -8    | -24   | -40   | -56   | -72   | -72   | -72   | -72   |
| 00000640 | +900  | +889  | +110  | +676  | +729  | +896  | +1064 | +1055 |
| 00000648 | +791  | +738  | +686  | +666  | +646  | +764  | +626  | +744  |
| 00000650 | +606  | +672  | +739  | +613  | +488  | +219  | -306  | -639  |
| 00000658 | -461  | +661  | +504  | +442  | +1149 | +1614 | +1566 | +1631 |
| 00000660 | +1696 | +1602 | +1508 | +1606 | +1704 | +1652 | +1600 | +1724 |
| 00000668 | +1593 | +1576 | +1560 | +1528 | +1496 | +1443 | +1391 | +1275 |
| 00000670 | +1159 | +1087 | +1016 | +272  | +41   | +47   | +54   | +28   |
| 00000678 | +3    | -13   | -29   | -45   | -61   | -61   | -61   | -61   |
| 00000680 | +840  | +847  | +854  | +797  | +741  | +736  | +731  | +726  |
| 00000688 | +722  | +695  | +669  | +643  | +617  | +606  | +596  | +586  |
| 00000690 | +576  | +556  | +536  | +532  | +529  | +461  | +649  | +565  |
| 00000698 | +482  | +434  | +386  | +354  | +1091 | +1151 | +1211 | +1399 |
| 000006A0 | +1332 | +1396 | +1461 | +1430 | +1399 | +1503 | +1352 | +1553 |
| 000006A8 | +1498 | +1481 | +1464 | +1431 | +1398 | +1333 | +1268 | +1139 |
| 000006B0 | +1010 | +891  | +773  | -113  | +24   | +21   | +19   | +16   |
| 000006B8 | +14   | -2    | -18   | -34   | -50   | -50   | -50   | -50   |
| 000006C0 | +812  | +825  | +838  | +819  | +800  | +775  | +750  | +725  |
| 000006C8 | +701  | +680  | +660  | +639  | +619  | +607  | +594  | +582  |
| 000006D0 | +570  | +551  | +533  | +515  | +497  | +507  | +517  | +463  |
| 000006D8 | +409  | +442  | +476  | +494  | +512  | +496  | +736  | +1024 |
| 000006E0 | +1056 | +943  | +1086 | +1054 | +1277 | +1242 | +1208 | +1205 |
| 000006E8 | +1203 | +1363 | +1267 | +1155 | +1044 | +1034 | +1024 | +998  |
| 000006F0 | +973  | +889  | +38   | +34   | +31   | +41   | +52   | +30   |
| 000006F8 | +9    | -5    | -19   | -33   | -47   | -63   | -79   | -79   |
| 00000700 | +912  | +867  | +822  | +777  | +732  | +719  | +706  | +693  |
| 00000708 | +680  | +665  | +651  | +636  | +622  | +607  | +593  | +578  |
| 00000710 | +564  | +547  | +531  | +514  | +498  | +489  | +481  | +472  |
| 00000718 | +464  | +435  | +407  | +394  | +382  | +353  | +581  | +792  |
| 00000720 | +1004 | +794  | +584  | +678  | +772  | +918  | +808  | +970  |
| 00000728 | +876  | +1117 | +1103 | +608  | +626  | +655  | +685  | +506  |
| 00000730 | +72   | +71   | +71   | +54   | +38   | +29   | +21   | +12   |
| 00000738 | +4    | -8    | -20   | -32   | -44   | -76   | -108  | -108  |
| 00000740 | +776  | +764  | +752  | +740  | +728  | +710  | +692  | +674  |
| 00000748 | +656  | +644  | +633  | +621  | +610  | +598  | +587  | +575  |
| 00000750 | +564  | +545  | +527  | +508  | +490  | +479  | +469  | +458  |
| 00000758 | +448  | +426  | +405  | +383  | +362  | +306  | +251  | +275  |
| 00000760 | +300  | +192  | +340  | +280  | +220  | +188  | +668  | +764  |
| 00000768 | +604  | +494  | +129  | +115  | +102  | +68   | +35   | +65   |
| 00000770 | +96   | +83   | +71   | +58   | +46   | +35   | +25   | +14   |
| 00000778 | +4    | -10   | -24   | -38   | -52   | -68   | -84   | -84   |
| 00000780 | +768  | +757  | +746  | +735  | +724  | +701  | +678  | +655  |
| 00000788 | +632  | +623  | +615  | +606  | +598  | +589  | +581  | +572  |
| 00000790 | +564  | +543  | +523  | +502  | +482  | +469  | +457  | +444  |
| 00000798 | +432  | +417  | +403  | +388  | +374  | +355  | +337  | +318  |
| 000007A0 | +300  | +294  | +288  | +282  | +276  | +290  | +304  | +830  |
| 000007A8 | +588  | +255  | +179  | +166  | +154  | +137  | +121  | +104  |
| 000007B0 | +88   | +79   | +71   | +62   | +54   | +41   | +29   | +16   |
| 000007B8 | +4    | -12   | -28   | -44   | -60   | -60   | -60   | -60   |
| 000007C0 | +768  | +757  | +746  | +735  | +724  | +701  | +678  | +655  |
| 000007C8 | +632  | +623  | +615  | +606  | +598  | +589  | +581  | +572  |
| 000007D0 | +564  | +543  | +523  | +502  | +482  | +469  | +457  | +444  |
| 000007D8 | +432  | +417  | +403  | +388  | +374  | +355  | +337  | +318  |
| 000007E0 | +300  | +294  | +288  | +282  | +276  | +226  | +176  | +46   |
| 000007E8 | +172  | +159  | +147  | +150  | +154  | +137  | +121  | +104  |
| 000007F0 | +88   | +79   | +71   | +62   | +54   | +41   | +29   | +16   |
| 000007F8 | +4    | -12   | -28   | -44   | -60   | -60   | -60   | -60   |

#### 4.2.4.3.3.6 Inverse DWT-X (LH1 - HH1)

The following is a dump of the H0 sub-band, as shown in the figure illustrating three-level DWT decomposition in section [3.1.8.1.4](#).

The sample data for 11.5 fixed-point integers (RDP 7.1/8.0) is:

|          |      |       |       |      |      |      |      |      |
|----------|------|-------|-------|------|------|------|------|------|
| 00000000 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 00000008 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 00000010 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 00000018 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 00000020 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 00000028 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 00000030 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 00000038 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 00000040 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 00000048 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 00000050 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 00000058 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 00000060 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 00000068 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 00000070 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 00000078 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 00000080 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 00000088 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +64  |
| 00000090 | +128 | +64   | +0    | -64  | -128 | -128 | -128 | -64  |
| 00000098 | +0   | +0    | +0    | -64  | -128 | -128 | -128 | +0   |
| 000000A0 | +128 | +64   | +0    | +0   | +0   | +0   | +0   | +0   |
| 000000A8 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 000000B0 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 000000B8 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 000000C0 | -128 | -128  | -128  | -128 | -128 | -64  | +0   | +0   |
| 000000C8 | +0   | +0    | +0    | +0   | +0   | -64  | -128 | -64  |
| 000000D0 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 000000D8 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 000000E0 | +0   | -64   | -128  | -64  | +0   | +0   | +0   | +0   |
| 000000E8 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 000000F0 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 000000F8 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 00000100 | -128 | -128  | -128  | -128 | -128 | -64  | +0   | +0   |
| 00000108 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 00000110 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 00000118 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 00000120 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 00000128 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 00000130 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 00000138 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 00000140 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 00000148 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 00000150 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 00000158 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 00000160 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | -64  |
| 00000168 | -128 | +0    | +128  | +64  | +0   | +0   | +0   | +0   |
| 00000170 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | -64  |
| 00000178 | -128 | -1088 | -1024 | +64  | +128 | +64  | +0   | +0   |
| 00000180 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 00000188 | +0   | +0    | +0    | -64  | -128 | -64  | +0   | +0   |
| 00000190 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 00000198 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 000001A0 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 000001A8 | +0   | +0    | +0    | -64  | -128 | -64  | +0   | +0   |
| 000001B0 | +0   | +64   | +128  | +64  | +0   | +0   | +0   | -576 |
| 000001B8 | +896 | +192  | +512  | +640 | -256 | -128 | +0   | +0   |
| 000001C0 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 000001C8 | +0   | +0    | +0    | -192 | +640 | -192 | +0   | +0   |
| 000001D0 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 000001D8 | +0   | +0    | +0    | +64  | +128 | +64  | +0   | +0   |
| 000001E0 | +0   | +128  | +256  | -320 | +128 | +64  | +0   | +0   |
| 000001E8 | +0   | +0    | +0    | +0   | +0   | +0   | +0   | +0   |
| 000001F0 | +0   | +0    | +0    | +0   | +0   | -320 | +384 | +960 |

|          |      |       |      |      |       |       |      |       |
|----------|------|-------|------|------|-------|-------|------|-------|
| 000001F8 | +512 | -1088 | -640 | -384 | -128  | -64   | +0   | +0    |
| 00000200 | +0   | +0    | +0   | +0   | +0    | +0    | +0   | +0    |
| 00000208 | +0   | +0    | +0   | +0   | +0    | +64   | +128 | +64   |
| 00000210 | +0   | +0    | +0   | +0   | +0    | +0    | +0   | +0    |
| 00000218 | +0   | +0    | +0   | +0   | +0    | +0    | +0   | +0    |
| 00000220 | +0   | +0    | +0   | +0   | +0    | -384  | +256 | +128  |
| 00000228 | +0   | +0    | +0   | +0   | +0    | +0    | +0   | +0    |
| 00000230 | +0   | +0    | +0   | +0   | +0    | +128  | +256 | -320  |
| 00000238 | +128 | +64   | +0   | +320 | +640  | +1024 | +384 | -128  |
| 00000240 | +0   | +0    | +0   | +0   | +0    | +0    | +0   | +0    |
| 00000248 | +0   | +64   | +128 | -384 | +128  | +64   | +0   | +0    |
| 00000250 | +0   | +0    | +0   | +0   | +0    | +64   | +128 | +64   |
| 00000258 | +0   | +0    | +0   | +0   | +0    | +0    | +0   | +64   |
| 00000260 | +128 | +64   | +0   | +0   | +0    | +0    | +0   | +0    |
| 00000268 | +0   | +0    | +0   | +0   | +0    | +0    | +0   | +0    |
| 00000270 | +0   | +0    | +0   | +0   | +0    | +0    | +0   | +0    |
| 00000278 | +0   | +0    | +0   | -512 | -1024 | -512  | +0   | +0    |
| 00000280 | +0   | +0    | +0   | +0   | +0    | +0    | +0   | +0    |
| 00000288 | +0   | +0    | +0   | +0   | +0    | +0    | +0   | +0    |
| 00000290 | +0   | +0    | +0   | +0   | +0    | +64   | +128 | -64   |
| 00000298 | -256 | -256  | -256 | +0   | +256  | +64   | -128 | -64   |
| 000002A0 | +0   | +0    | +0   | -64  | -128  | -64   | +0   | +0    |
| 000002A8 | +0   | +0    | +0   | +0   | +0    | +0    | +0   | +0    |
| 000002B0 | +0   | +0    | +0   | +0   | +0    | +0    | +0   | +0    |
| 000002B8 | +0   | +0    | +0   | +0   | +0    | +0    | +0   | +0    |
| 000002C0 | +0   | +0    | +0   | +0   | +0    | +0    | +0   | +0    |
| 000002C8 | +0   | -64   | -128 | -64  | +0    | +0    | +0   | +64   |
| 000002D0 | +128 | +128  | +128 | +256 | +384  | +256  | +128 | +64   |
| 000002D8 | +0   | +0    | +0   | +0   | +0    | +0    | +0   | +0    |
| 000002E0 | +0   | +0    | +0   | +0   | +0    | +0    | +0   | +0    |
| 000002E8 | +0   | +0    | +0   | +0   | +0    | +64   | +128 | +64   |
| 000002F0 | +0   | +0    | +0   | +0   | +0    | +0    | +0   | +0    |
| 000002F8 | +0   | +0    | +0   | +0   | +0    | +0    | +0   | +0    |
| 00000300 | +0   | +0    | +0   | +0   | +0    | +0    | +0   | +0    |
| 00000308 | +0   | -64   | -128 | -64  | +0    | -64   | -128 | -384  |
| 00000310 | -640 | -512  | -384 | -448 | -512  | -576  | -640 | -1152 |
| 00000318 | -640 | +128  | +896 | +512 | +128  | +64   | +0   | +384  |
| 00000320 | -256 | -128  | +0   | +0   | +0    | +0    | +0   | +0    |
| 00000328 | +0   | +0    | +0   | +0   | +0    | +0    | +0   | -64   |
| 00000330 | -128 | -192  | -256 | -320 | -384  | -192  | +0   | +64   |
| 00000338 | +128 | +64   | +0   | +0   | +0    | +0    | +0   | +0    |
| 00000340 | +0   | +0    | +0   | +0   | +0    | +0    | +0   | -64   |
| 00000348 | -128 | +448  | +0   | +0   | +0    | +128  | +256 | +64   |
| 00000350 | -128 | -64   | +0   | -128 | -256  | -320  | -384 | -128  |
| 00000358 | +128 | +128  | +128 | -448 | -1024 | -64   | +896 | +0    |
| 00000360 | +128 | -64   | -256 | +384 | +0    | +0    | +0   | +0    |
| 00000368 | +0   | +0    | +0   | +0   | +0    | +64   | +128 | +128  |
| 00000370 | +128 | +64   | +0   | +0   | +0    | +384  | +768 | +128  |
| 00000378 | -512 | +128  | -256 | -128 | +0    | +0    | +0   | +0    |
| 00000380 | +0   | +0    | +0   | +0   | +0    | -64   | -128 | +192  |
| 00000388 | +512 | +832  | +128 | -320 | -768  | -512  | -256 | -128  |
| 00000390 | +0   | +0    | +0   | +0   | +0    | +128  | +256 | +576  |
| 00000398 | +896 | +128  | -640 | -832 | +0    | +0    | +0   | +0    |
| 000003A0 | +0   | +64   | +128 | +64  | +0    | +0    | +0   | +0    |
| 000003A8 | +0   | +0    | +0   | +0   | +0    | +0    | +0   | +0    |
| 000003B0 | +0   | +0    | +0   | -64  | -128  | -192  | -256 | +320  |
| 000003B8 | -128 | +768  | +640 | +320 | +0    | +0    | +0   | +0    |
| 000003C0 | +0   | +0    | +0   | +0   | +0    | +0    | +0   | -128  |
| 000003C8 | -256 | -64   | +128 | +64  | +0    | +0    | +0   | +0    |
| 000003D0 | +0   | +0    | +0   | +0   | +0    | +0    | +0   | +0    |
| 000003D8 | +0   | -64   | -128 | +384 | +896  | -64   | +0   | +0    |
| 000003E0 | +0   | +64   | -896 | +0   | +896  | +448  | +0   | +0    |
| 000003E8 | +0   | +0    | +0   | +0   | +0    | +0    | +0   | +0    |
| 000003F0 | +0   | +0    | +0   | +0   | +0    | +0    | +0   | +384  |
| 000003F8 | -256 | -192  | -128 | -64  | +0    | +0    | +0   | +0    |
| 00000400 | +0   | +0    | +0   | +0   | +0    | +128  | +256 | -320  |
| 00000408 | +128 | +64   | +0   | +0   | +0    | +0    | +0   | +0    |
| 00000410 | +0   | +0    | +0   | +0   | +0    | +0    | +0   | +0    |
| 00000418 | +0   | +0    | +0   | +0   | +0    | +0    | +0   | +64   |

|          |      |      |       |       |       |       |       |      |
|----------|------|------|-------|-------|-------|-------|-------|------|
| 00000420 | +128 | -960 | +0    | +0    | +0    | -512  | -1024 | -128 |
| 00000428 | +768 | +768 | +768  | +640  | +512  | +448  | +384  | +384 |
| 00000430 | +384 | +448 | +512  | +192  | -128  | -192  | -256  | -128 |
| 00000438 | +0   | +0   | +0    | +0    | +0    | +0    | +0    | +0   |
| 00000440 | +0   | +0   | +0    | +0    | +0    | +0    | +0    | +0   |
| 00000448 | +0   | +0   | +0    | +0    | +0    | +0    | +0    | +0   |
| 00000450 | +0   | +0   | +0    | +0    | +0    | +0    | +0    | +0   |
| 00000458 | +0   | +0   | +0    | +192  | +384  | -320  | +0    | +0   |
| 00000460 | +0   | +0   | +1024 | +0    | -1024 | -512  | +0    | +64  |
| 00000468 | +128 | -64  | -256  | -384  | -512  | -448  | -384  | -256 |
| 00000470 | -128 | +0   | +128  | -128  | -384  | -512  | -640  | +192 |
| 00000478 | +0   | +0   | +0    | +0    | +0    | +0    | +0    | +0   |
| 00000480 | +0   | +0   | +0    | +0    | +0    | +0    | +0    | +0   |
| 00000488 | +0   | +0   | +0    | +0    | +0    | +0    | +0    | +0   |
| 00000490 | +0   | +0   | +0    | +64   | +128  | +64   | +0    | +64  |
| 00000498 | +128 | -64  | -256  | -960  | -640  | +128  | -128  | +0   |
| 000004A0 | +128 | +64  | +0    | +0    | +0    | +512  | +1024 | +448 |
| 000004A8 | -128 | -512 | -896  | -1024 | -1152 | -1024 | -896  | -576 |
| 000004B0 | -256 | +256 | +768  | +576  | +384  | +256  | +128  | -384 |
| 000004B8 | +128 | +64  | +0    | +0    | +0    | +0    | +0    | +0   |
| 000004C0 | +0   | +0   | +0    | +64   | +128  | +64   | +0    | +0   |
| 000004C8 | +0   | +0   | +0    | -64   | -128  | -128  | -128  | -64  |
| 000004D0 | +0   | +0   | +0    | +0    | +0    | +0    | +0    | +0   |
| 000004D8 | +0   | +0   | +0    | +384  | -256  | -128  | +0    | +0   |
| 000004E0 | +0   | +0   | +0    | +0    | +0    | +0    | +0    | +0   |
| 000004E8 | +0   | +0   | +0    | +0    | +0    | +0    | +0    | +0   |
| 000004F0 | +0   | +0   | +0    | +0    | +0    | +0    | +0    | +0   |
| 000004F8 | +0   | +0   | +0    | +0    | +0    | +0    | +0    | +0   |
| 00000500 | +0   | +0   | +0    | +0    | +0    | +0    | +0    | +0   |
| 00000508 | +0   | +0   | +0    | +64   | +128  | +64   | +0    | +0   |
| 00000510 | +0   | +0   | +0    | +0    | +0    | +0    | +0    | +0   |
| 00000518 | +0   | +0   | +0    | +0    | +0    | -128  | -256  | +384 |
| 00000520 | +0   | +0   | +0    | +0    | +0    | +0    | +0    | +0   |
| 00000528 | +0   | +0   | +0    | -64   | -128  | +0    | +128  | +64  |
| 00000530 | +0   | +0   | +0    | +0    | +0    | +384  | -256  | -128 |
| 00000538 | +0   | +0   | +0    | +0    | +0    | +0    | +0    | +0   |
| 00000540 | -128 | -64  | +0    | +384  | -256  | -64   | +128  | +128 |
| 00000548 | +128 | +0   | -128  | +384  | -128  | -64   | +0    | +0   |
| 00000550 | +0   | +0   | +0    | +0    | +0    | +0    | +0    | +0   |
| 00000558 | +0   | +0   | +0    | +0    | +0    | +0    | +0    | +0   |
| 00000560 | +0   | +0   | +0    | +0    | +0    | +0    | +0    | +0   |
| 00000568 | +0   | +0   | +0    | +0    | +0    | +0    | +0    | -64  |
| 00000570 | -128 | +0   | +128  | +0    | -128  | -64   | +0    | +0   |
| 00000578 | +0   | +0   | +0    | +0    | +0    | +0    | +0    | +0   |
| 00000580 | +0   | +64  | +128  | +192  | +256  | -128  | +512  | +448 |
| 00000588 | +384 | +128 | -128  | +384  | -128  | +448  | +0    | -64  |
| 00000590 | -128 | +0   | +128  | +64   | +0    | +0    | +0    | +0   |
| 00000598 | +0   | +0   | +0    | +0    | +0    | +0    | +0    | +0   |
| 000005A0 | +0   | +0   | +0    | +0    | +0    | +0    | +0    | +0   |
| 000005A8 | +0   | +0   | +0    | +0    | +0    | +0    | +0    | +0   |
| 000005B0 | +0   | +0   | +0    | +64   | +128  | +64   | +0    | +0   |
| 000005B8 | +0   | +0   | +0    | +64   | +128  | +64   | +0    | +0   |
| 000005C0 | +0   | +64  | +128  | -192  | +512  | -256  | +0    | +640 |
| 000005C8 | -768 | -640 | -512  | -1216 | -896  | -832  | -768  | -640 |
| 000005D0 | -512 | -192 | +128  | +64   | +0    | +0    | +0    | -64  |
| 000005D8 | -128 | -64  | +0    | +0    | +0    | +0    | +0    | +0   |
| 000005E0 | +0   | +0   | +0    | +0    | +0    | +0    | +0    | +0   |
| 000005E8 | +0   | +0   | +0    | +0    | +0    | +0    | +0    | +0   |
| 000005F0 | +0   | +0   | +0    | +0    | +0    | +64   | +128  | +64  |
| 000005F8 | +0   | +0   | +0    | +0    | +0    | +0    | +0    | +0   |
| 00000600 | +128 | +0   | -1152 | -1344 | -512  | +384  | +1280 | +768 |
| 00000608 | +256 | +256 | +256  | +128  | +0    | -64   | -128  | +64  |
| 00000610 | +256 | +448 | +640  | +576  | -512  | -768  | +0    | +0   |
| 00000618 | +0   | +0   | +0    | +0    | +0    | +0    | +0    | +0   |
| 00000620 | +0   | +0   | +0    | +0    | +0    | +0    | +0    | +0   |
| 00000628 | +0   | +0   | +0    | +0    | +0    | +0    | +0    | +0   |
| 00000630 | +0   | +0   | +0    | +0    | +0    | +0    | +0    | +0   |
| 00000638 | +0   | +0   | +0    | +0    | +0    | +0    | +0    | +0   |
| 00000640 | -128 | +64  | +256  | +64   | -128  | -128  | -128  | +0   |

|          |      |      |      |      |      |      |      |      |
|----------|------|------|------|------|------|------|------|------|
| 00000648 | +128 | +64  | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000650 | +0   | +0   | +0   | -64  | -128 | +192 | +512 | +128 |
| 00000658 | -256 | -192 | -128 | -64  | +0   | +384 | -256 | -64  |
| 00000660 | +128 | +0   | -128 | -64  | +0   | +0   | +0   | +0   |
| 00000668 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000670 | +0   | +64  | +128 | +64  | +0   | +0   | +0   | +0   |
| 00000678 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000680 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000688 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000690 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000698 | +0   | +0   | +0   | +0   | +0   | +64  | +128 | +0   |
| 000006A0 | -128 | +0   | +128 | +64  | +0   | +0   | +0   | +0   |
| 000006A8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000006B0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000006B8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000006C0 | +0   | +64  | +128 | +64  | +0   | +0   | +0   | +0   |
| 000006C8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000006D0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000006D8 | +0   | +0   | +0   | -64  | -128 | -128 | -128 | +0   |
| 000006E0 | +128 | -448 | +0   | +64  | +128 | +128 | +128 | +64  |
| 000006E8 | +0   | +64  | +128 | +64  | +0   | -64  | -128 | +128 |
| 000006F0 | +384 | +128 | -128 | -64  | +0   | +0   | +0   | +0   |
| 000006F8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000700 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000708 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000710 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000718 | +0   | +0   | +0   | +0   | +0   | -64  | -128 | -64  |
| 00000720 | +0   | -512 | +0   | +64  | +128 | +128 | +128 | +128 |
| 00000728 | +128 | +64  | +0   | -128 | -256 | -320 | -384 | -192 |
| 00000730 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000738 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000740 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000748 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000750 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000758 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000760 | +0   | +0   | +0   | +0   | +0   | -128 | +768 | +0   |
| 00000768 | +256 | +640 | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000770 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000778 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000780 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000788 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000790 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000798 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000007A0 | +0   | +0   | +0   | +0   | +0   | +64  | +128 | -512 |
| 000007A8 | -128 | -64  | +0   | +0   | +0   | +0   | +0   | +0   |
| 000007B0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000007B8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000007C0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000007C8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000007D0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000007D8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000007E0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000007E8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000007F0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000007F8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |

The sample data for 12.4 fixed-point integers (RDP 8.1) is:

|          |    |    |    |    |    |    |    |    |
|----------|----|----|----|----|----|----|----|----|
| 00000000 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000008 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000010 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000018 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000020 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000028 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000030 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000038 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |
| 00000040 | +0 | +0 | +0 | +0 | +0 | +0 | +0 | +0 |

|          |      |      |      |      |      |      |      |      |
|----------|------|------|------|------|------|------|------|------|
| 00000048 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000050 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000058 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000060 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000068 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000070 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000078 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000080 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000088 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +32  |
| 00000090 | +64  | +32  | +0   | -32  | -64  | -64  | -64  | -32  |
| 00000098 | +0   | +0   | +0   | -32  | -64  | -64  | -64  | +0   |
| 000000A0 | +64  | +32  | +0   | +0   | +0   | +0   | +0   | +0   |
| 000000A8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000000B0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000000B8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000000C0 | -64  | -64  | -64  | -64  | -64  | -32  | +0   | +0   |
| 000000C8 | +0   | +0   | +0   | +0   | +0   | -32  | -64  | -32  |
| 000000D0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000000D8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000000E0 | +0   | -32  | -64  | -32  | +0   | +0   | +0   | +0   |
| 000000E8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000000F0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000000F8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000100 | -64  | -64  | -64  | -64  | -64  | -32  | +0   | +0   |
| 00000108 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000110 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000118 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000120 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000128 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000130 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000138 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000140 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000148 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000150 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000158 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000160 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | -32  |
| 00000168 | -64  | +0   | +64  | +32  | +0   | +0   | +0   | +0   |
| 00000170 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | -32  |
| 00000178 | -64  | -544 | -512 | +32  | +64  | +32  | +0   | +0   |
| 00000180 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000188 | +0   | +0   | +0   | -32  | -64  | -32  | +0   | +0   |
| 00000190 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000198 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000001A0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000001A8 | +0   | +0   | +0   | -32  | -64  | -32  | +0   | +0   |
| 000001B0 | +0   | +32  | +64  | +32  | +0   | +0   | +0   | -288 |
| 000001B8 | +448 | +96  | +256 | +320 | -128 | -64  | +0   | +0   |
| 000001C0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000001C8 | +0   | +0   | +0   | -96  | +320 | -96  | +0   | +0   |
| 000001D0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000001D8 | +0   | +0   | +0   | +32  | +64  | +32  | +0   | +0   |
| 000001E0 | +0   | +64  | +128 | -160 | +64  | +32  | +0   | +0   |
| 000001E8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000001F0 | +0   | +0   | +0   | +0   | +0   | -160 | +192 | +480 |
| 000001F8 | +256 | -544 | -320 | -192 | -64  | -32  | +0   | +0   |
| 00000200 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000208 | +0   | +0   | +0   | +0   | +0   | +32  | +64  | +32  |
| 00000210 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000218 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000220 | +0   | +0   | +0   | +0   | +0   | -192 | +128 | +64  |
| 00000228 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000230 | +0   | +0   | +0   | +0   | +0   | +64  | +128 | -160 |
| 00000238 | +64  | +32  | +0   | +160 | +320 | +512 | +192 | -64  |
| 00000240 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000248 | +0   | +32  | +64  | -192 | +64  | +32  | +0   | +0   |
| 00000250 | +0   | +0   | +0   | +0   | +0   | +32  | +64  | +32  |
| 00000258 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +32  |
| 00000260 | +64  | +32  | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000268 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |

|          |      |      |      |      |      |      |      |      |
|----------|------|------|------|------|------|------|------|------|
| 00000270 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000278 | +0   | +0   | +0   | -256 | -512 | -256 | +0   | +0   |
| 00000280 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000288 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000290 | +0   | +0   | +0   | +0   | +0   | +32  | +64  | -32  |
| 00000298 | -128 | -128 | -128 | +0   | +128 | +32  | -64  | -32  |
| 000002A0 | +0   | +0   | +0   | -32  | -64  | -32  | +0   | +0   |
| 000002A8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000002B0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000002B8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000002C0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000002C8 | +0   | -32  | -64  | -32  | +0   | +0   | +0   | +32  |
| 000002D0 | +64  | +64  | +64  | +128 | +192 | +128 | +64  | +32  |
| 000002D8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000002E0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000002E8 | +0   | +0   | +0   | +0   | +0   | +32  | +64  | +32  |
| 000002F0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000002F8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000300 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000308 | +0   | -32  | -64  | -32  | +0   | -32  | -64  | -192 |
| 00000310 | -320 | -256 | -192 | -224 | -256 | -288 | -320 | -576 |
| 00000318 | -320 | +64  | +448 | +256 | +64  | +32  | +0   | +192 |
| 00000320 | -128 | -64  | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000328 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | -32  |
| 00000330 | -64  | -96  | -128 | -160 | -192 | -96  | +0   | +32  |
| 00000338 | +64  | +32  | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000340 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | -32  |
| 00000348 | -64  | +224 | +0   | +0   | +0   | +64  | +128 | +32  |
| 00000350 | -64  | -32  | +0   | -64  | -128 | -160 | -192 | -64  |
| 00000358 | +64  | +64  | +64  | -224 | -512 | -32  | +448 | +0   |
| 00000360 | +64  | -32  | -128 | +192 | +0   | +0   | +0   | +0   |
| 00000368 | +0   | +0   | +0   | +0   | +0   | +32  | +64  | +64  |
| 00000370 | +64  | +32  | +0   | +0   | +0   | +192 | +384 | +64  |
| 00000378 | -256 | +64  | -128 | -64  | +0   | +0   | +0   | +0   |
| 00000380 | +0   | +0   | +0   | +0   | +0   | -32  | -64  | +96  |
| 00000388 | +256 | +416 | +64  | -160 | -384 | -256 | -128 | -64  |
| 00000390 | +0   | +0   | +0   | +0   | +0   | +64  | +128 | +288 |
| 00000398 | +448 | +64  | -320 | -416 | +0   | +0   | +0   | +0   |
| 000003A0 | +0   | +32  | +64  | +32  | +0   | +0   | +0   | +0   |
| 000003A8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000003B0 | +0   | +0   | +0   | -32  | -64  | -96  | -128 | +160 |
| 000003B8 | -64  | +384 | +320 | +160 | +0   | +0   | +0   | +0   |
| 000003C0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | -64  |
| 000003C8 | -128 | -32  | +64  | +32  | +0   | +0   | +0   | +0   |
| 000003D0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000003D8 | +0   | -32  | -64  | +192 | +448 | -32  | +0   | +0   |
| 000003E0 | +0   | +32  | -448 | +0   | +448 | +224 | +0   | +0   |
| 000003E8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000003F0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +192 |
| 000003F8 | -128 | -96  | -64  | -32  | +0   | +0   | +0   | +0   |
| 00000400 | +0   | +0   | +0   | +0   | +0   | +64  | +128 | -160 |
| 00000408 | +64  | +32  | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000410 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000418 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +32  |
| 00000420 | +64  | -480 | +0   | +0   | +0   | -256 | -512 | -64  |
| 00000428 | +384 | +384 | +384 | +320 | +256 | +224 | +192 | +192 |
| 00000430 | +192 | +224 | +256 | +96  | -64  | -96  | -128 | -64  |
| 00000438 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000440 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000448 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000450 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000458 | +0   | +0   | +0   | +96  | +192 | -160 | +0   | +0   |
| 00000460 | +0   | +0   | +512 | +0   | -512 | -256 | +0   | +32  |
| 00000468 | +64  | -32  | -128 | -192 | -256 | -224 | -192 | -128 |
| 00000470 | -64  | +0   | +64  | -64  | -192 | -256 | -320 | +96  |
| 00000478 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000480 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000488 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000490 | +0   | +0   | +0   | +32  | +64  | +32  | +0   | +32  |

|          |      |      |      |      |      |      |      |      |
|----------|------|------|------|------|------|------|------|------|
| 00000498 | +64  | -32  | -128 | -480 | -320 | +64  | -64  | +0   |
| 000004A0 | +64  | +32  | +0   | +0   | +0   | +256 | +512 | +224 |
| 000004A8 | -64  | -256 | -448 | -512 | -576 | -512 | -448 | -288 |
| 000004B0 | -128 | +128 | +384 | +288 | +192 | +128 | +64  | -192 |
| 000004B8 | +64  | +32  | +0   | +0   | +0   | +0   | +0   | +0   |
| 000004C0 | +0   | +0   | +0   | +32  | +64  | +32  | +0   | +0   |
| 000004C8 | +0   | +0   | +0   | -32  | -64  | -64  | -64  | -32  |
| 000004D0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000004D8 | +0   | +0   | +0   | +192 | -128 | -64  | +0   | +0   |
| 000004E0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000004E8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000004F0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000004F8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000500 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000508 | +0   | +0   | +0   | +32  | +64  | +32  | +0   | +0   |
| 00000510 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000518 | +0   | +0   | +0   | +0   | +0   | -64  | -128 | +192 |
| 00000520 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000528 | +0   | +0   | +0   | -32  | -64  | +0   | +64  | +32  |
| 00000530 | +0   | +0   | +0   | +0   | +0   | +192 | -128 | -64  |
| 00000538 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000540 | -64  | -32  | +0   | +192 | -128 | -32  | +64  | +64  |
| 00000548 | +64  | +0   | -64  | +192 | -64  | -32  | +0   | +0   |
| 00000550 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000558 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000560 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000568 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | -32  |
| 00000570 | -64  | +0   | +64  | +0   | -64  | -32  | +0   | +0   |
| 00000578 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000580 | +0   | +32  | +64  | +96  | +128 | -64  | +256 | +224 |
| 00000588 | +192 | +64  | -64  | +192 | -64  | +224 | +0   | -32  |
| 00000590 | -64  | +0   | +64  | +32  | +0   | +0   | +0   | +0   |
| 00000598 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000005A0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000005A8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000005B0 | +0   | +0   | +0   | +32  | +64  | +32  | +0   | +0   |
| 000005B8 | +0   | +0   | +0   | +32  | +64  | +32  | +0   | +0   |
| 000005C0 | +0   | +32  | +64  | -96  | +256 | -128 | +0   | +320 |
| 000005C8 | -384 | -320 | -256 | -608 | -448 | -416 | -384 | -320 |
| 000005D0 | -256 | -96  | +64  | +32  | +0   | +0   | +0   | -32  |
| 000005D8 | -64  | -32  | +0   | +0   | +0   | +0   | +0   | +0   |
| 000005E0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000005E8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000005F0 | +0   | +0   | +0   | +0   | +0   | +32  | +64  | +32  |
| 000005F8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000600 | +64  | +0   | -576 | -672 | -256 | +192 | +640 | +384 |
| 00000608 | +128 | +128 | +128 | +64  | +0   | -32  | -64  | +32  |
| 00000610 | +128 | +224 | +320 | +288 | -256 | -384 | +0   | +0   |
| 00000618 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000620 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000628 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000630 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000638 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000640 | -64  | +32  | +128 | +32  | -64  | -64  | -64  | +0   |
| 00000648 | +64  | +32  | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000650 | +0   | +0   | +0   | -32  | -64  | +96  | +256 | +64  |
| 00000658 | -128 | -96  | -64  | -32  | +0   | +192 | -128 | -32  |
| 00000660 | +64  | +0   | -64  | -32  | +0   | +0   | +0   | +0   |
| 00000668 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000670 | +0   | +32  | +64  | +32  | +0   | +0   | +0   | +0   |
| 00000678 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000680 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000688 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000690 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 00000698 | +0   | +0   | +0   | +0   | +0   | +32  | +64  | +0   |
| 000006A0 | -64  | +0   | +64  | +32  | +0   | +0   | +0   | +0   |
| 000006A8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000006B0 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |
| 000006B8 | +0   | +0   | +0   | +0   | +0   | +0   | +0   | +0   |



|          |      |      |     |     |      |      |      |      |
|----------|------|------|-----|-----|------|------|------|------|
| 000006C0 | +0   | +32  | +64 | +32 | +0   | +0   | +0   | +0   |
| 000006C8 | +0   | +0   | +0  | +0  | +0   | +0   | +0   | +0   |
| 000006D0 | +0   | +0   | +0  | +0  | +0   | +0   | +0   | +0   |
| 000006D8 | +0   | +0   | +0  | -32 | -64  | -64  | -64  | +0   |
| 000006E0 | +64  | -224 | +0  | +32 | +64  | +64  | +64  | +32  |
| 000006E8 | +0   | +32  | +64 | +32 | +0   | -32  | -64  | +64  |
| 000006F0 | +192 | +64  | -64 | -32 | +0   | +0   | +0   | +0   |
| 000006F8 | +0   | +0   | +0  | +0  | +0   | +0   | +0   | +0   |
| 00000700 | +0   | +0   | +0  | +0  | +0   | +0   | +0   | +0   |
| 00000708 | +0   | +0   | +0  | +0  | +0   | +0   | +0   | +0   |
| 00000710 | +0   | +0   | +0  | +0  | +0   | +0   | +0   | +0   |
| 00000718 | +0   | +0   | +0  | +0  | +0   | -32  | -64  | -32  |
| 00000720 | +0   | -256 | +0  | +32 | +64  | +64  | +64  | +64  |
| 00000728 | +64  | +32  | +0  | -64 | -128 | -160 | -192 | -96  |
| 00000730 | +0   | +0   | +0  | +0  | +0   | +0   | +0   | +0   |
| 00000738 | +0   | +0   | +0  | +0  | +0   | +0   | +0   | +0   |
| 00000740 | +0   | +0   | +0  | +0  | +0   | +0   | +0   | +0   |
| 00000748 | +0   | +0   | +0  | +0  | +0   | +0   | +0   | +0   |
| 00000750 | +0   | +0   | +0  | +0  | +0   | +0   | +0   | +0   |
| 00000758 | +0   | +0   | +0  | +0  | +0   | +0   | +0   | +0   |
| 00000760 | +0   | +0   | +0  | +0  | +0   | -64  | +384 | +0   |
| 00000768 | +128 | +320 | +0  | +0  | +0   | +0   | +0   | +0   |
| 00000770 | +0   | +0   | +0  | +0  | +0   | +0   | +0   | +0   |
| 00000778 | +0   | +0   | +0  | +0  | +0   | +0   | +0   | +0   |
| 00000780 | +0   | +0   | +0  | +0  | +0   | +0   | +0   | +0   |
| 00000788 | +0   | +0   | +0  | +0  | +0   | +0   | +0   | +0   |
| 00000790 | +0   | +0   | +0  | +0  | +0   | +0   | +0   | +0   |
| 00000798 | +0   | +0   | +0  | +0  | +0   | +0   | +0   | +0   |
| 000007A0 | +0   | +0   | +0  | +0  | +0   | +32  | +64  | -256 |
| 000007A8 | -64  | -32  | +0  | +0  | +0   | +0   | +0   | +0   |
| 000007B0 | +0   | +0   | +0  | +0  | +0   | +0   | +0   | +0   |
| 000007B8 | +0   | +0   | +0  | +0  | +0   | +0   | +0   | +0   |
| 000007C0 | +0   | +0   | +0  | +0  | +0   | +0   | +0   | +0   |
| 000007C8 | +0   | +0   | +0  | +0  | +0   | +0   | +0   | +0   |
| 000007D0 | +0   | +0   | +0  | +0  | +0   | +0   | +0   | +0   |
| 000007D8 | +0   | +0   | +0  | +0  | +0   | +0   | +0   | +0   |
| 000007E0 | +0   | +0   | +0  | +0  | +0   | +0   | +0   | +0   |
| 000007E8 | +0   | +0   | +0  | +0  | +0   | +0   | +0   | +0   |
| 000007F0 | +0   | +0   | +0  | +0  | +0   | +0   | +0   | +0   |
| 000007F8 | +0   | +0   | +0  | +0  | +0   | +0   | +0   | +0   |

#### 4.2.4.3.3.7 Inverse DWT-Y (L0 – H0)

The following is a dump of the LL0 sub-band, as shown in the figure illustrating three-level DWT decomposition in section [3.1.8.1.4](#).

The sample data for 11.5 fixed-point integers (RDP 7.1/8.0) is:

|          |      |      |      |      |      |      |      |      |
|----------|------|------|------|------|------|------|------|------|
| 00000000 | -32  | +16  | +64  | +272 | -32  | -16  | +0   | -16  |
| 00000008 | -32  | -24  | -16  | -8   | +0   | -24  | -48  | -72  |
| 00000010 | -96  | -90  | -84  | -78  | -72  | -98  | -124 | -150 |
| 00000018 | -176 | -192 | -208 | -224 | -240 | -256 | -272 | -288 |
| 00000020 | -304 | -304 | -304 | -304 | -304 | -336 | -368 | -400 |
| 00000028 | -432 | -450 | -468 | -486 | -504 | -522 | -540 | -558 |
| 00000030 | -576 | -598 | -620 | -642 | -664 | -686 | -708 | -730 |
| 00000038 | -752 | -768 | -784 | -800 | -816 | -816 | -816 | -816 |
| 00000040 | +68  | +120 | +172 | +240 | +53  | +55  | +57  | +43  |
| 00000048 | +30  | +32  | +34  | +36  | +38  | +20  | +2   | -16  |
| 00000050 | -34  | -36  | -38  | -40  | -42  | -68  | -94  | -120 |
| 00000058 | -146 | -148 | -151 | -186 | -220 | -227 | -233 | -240 |
| 00000060 | -247 | -254 | -261 | -268 | -275 | -302 | -329 | -356 |
| 00000068 | -384 | -403 | -423 | -443 | -463 | -484 | -506 | -528 |
| 00000070 | -550 | -572 | -594 | -616 | -639 | -673 | -707 | -709 |
| 00000078 | -712 | -733 | -754 | -775 | -796 | -796 | -796 | -796 |
| 00000080 | +168 | +224 | +281 | +209 | +138 | +126 | +115 | +103 |
| 00000088 | +92  | +88  | +84  | +80  | +76  | +64  | +52  | +40  |

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000090 | +28   | +18   | +8    | -2    | -12   | -38   | -64   | -90   |
| 00000098 | -116  | -105  | -95   | -148  | -201  | -198  | -195  | -192  |
| 000000A0 | -190  | -204  | -218  | -232  | -247  | -269  | -291  | -313  |
| 000000A8 | -336  | -357  | -379  | -400  | -422  | -447  | -473  | -498  |
| 000000B0 | -524  | -546  | -569  | -591  | -614  | -660  | -707  | -689  |
| 000000B8 | -672  | -698  | -724  | -750  | -776  | -776  | -776  | -776  |
| 000000C0 | +268  | +312  | +357  | +273  | +191  | +181  | +172  | +162  |
| 000000C8 | +154  | +144  | +134  | +124  | +114  | +108  | +102  | +80   |
| 000000D0 | +58   | +56   | +54   | +52   | +50   | +24   | -2    | -44   |
| 000000D8 | -86   | -61   | -38   | -93   | -149  | -137  | -124  | -144  |
| 000000E0 | -165  | -170  | -175  | -196  | -218  | -235  | -252  | -269  |
| 000000E8 | -288  | -310  | -334  | -357  | -381  | -409  | -439  | -468  |
| 000000F0 | -498  | -520  | -543  | -565  | -589  | -647  | -706  | -668  |
| 000000F8 | -632  | -663  | -694  | -725  | -756  | -756  | -756  | -756  |
| 00000100 | +368  | +401  | +434  | +339  | +244  | +237  | +230  | +223  |
| 00000108 | +216  | +200  | +184  | +168  | +152  | +152  | +152  | +120  |
| 00000110 | +88   | +94   | +100  | +106  | +112  | +86   | +60   | +2    |
| 00000118 | -56   | -18   | +19   | -39   | -98   | -76   | -55   | -97   |
| 00000120 | -140  | -136  | -133  | -161  | -190  | -202  | -215  | -227  |
| 00000128 | -240  | -265  | -290  | -315  | -340  | -373  | -406  | -439  |
| 00000130 | -472  | -495  | -518  | -541  | -564  | -635  | -706  | -649  |
| 00000138 | -592  | -628  | -664  | -700  | -736  | -736  | -736  | -736  |
| 00000140 | +404  | +556  | +454  | +383  | +313  | +531  | +239  | +282  |
| 00000148 | +326  | +304  | +282  | +260  | +238  | +246  | +254  | +118  |
| 00000150 | +238  | +196  | +154  | +32   | -90   | -88   | -86   | +76   |
| 00000158 | +238  | +243  | +247  | +29   | -191  | -232  | -272  | -121  |
| 00000160 | +29   | -62   | -153  | -149  | -145  | -162  | -180  | -197  |
| 00000168 | -216  | -240  | -265  | -289  | -315  | -345  | -376  | -406  |
| 00000170 | -438  | -446  | -456  | -497  | -539  | -595  | -653  | -502  |
| 00000178 | -608  | -625  | -642  | -675  | -708  | -708  | -708  | -708  |
| 00000180 | +440  | +713  | +475  | +428  | +382  | +827  | +249  | +342  |
| 00000188 | +436  | +408  | +380  | +352  | +324  | +340  | +356  | -140  |
| 00000190 | -124  | +42   | +208  | +214  | +220  | +250  | +280  | +406  |
| 00000198 | +532  | +504  | +476  | +352  | +229  | +125  | +22   | -146  |
| 000001A0 | -314  | -244  | -175  | -138  | -101  | -123  | -146  | -169  |
| 000001A8 | -192  | -216  | -241  | -265  | -290  | -318  | -347  | -375  |
| 000001B0 | -404  | -399  | -395  | -454  | -514  | -557  | -601  | -356  |
| 000001B8 | -624  | -622  | -620  | -650  | -680  | -680  | -680  | -680  |
| 000001C0 | +604  | +677  | +495  | +457  | +419  | +770  | +354  | +386  |
| 000001C8 | +418  | +416  | +414  | +380  | +346  | +258  | +412  | -302  |
| 000001D0 | -6    | +288  | +582  | +604  | +626  | +588  | +550  | +688  |
| 000001D8 | +826  | +829  | +833  | +724  | +616  | +481  | +348  | +181  |
| 000001E0 | +15   | -139  | -292  | -175  | -56   | -83   | -112  | -139  |
| 000001E8 | -168  | -192  | -216  | -240  | -265  | -291  | -317  | -343  |
| 000001F0 | -370  | -351  | -333  | -411  | -489  | -486  | -484  | -402  |
| 000001F8 | -576  | -587  | -598  | -625  | -652  | -652  | -652  | -652  |
| 00000200 | +1280 | +1154 | +1028 | +998  | +968  | +970  | +460  | +430  |
| 00000208 | +400  | +424  | +448  | +408  | +368  | +432  | -528  | -208  |
| 00000210 | +112  | +534  | +956  | +994  | +1032 | +926  | +820  | +970  |
| 00000218 | +1120 | +1155 | +1190 | +1097 | +1004 | +839  | +674  | +509  |
| 00000220 | +344  | +223  | +102  | +45   | -12   | -45   | -78   | -111  |
| 00000228 | -144  | -168  | -192  | -216  | -240  | -264  | -288  | -312  |
| 00000230 | -336  | -304  | -272  | -368  | -464  | -416  | -368  | -448  |
| 00000238 | -528  | -552  | -576  | -600  | -624  | -624  | -624  | -624  |
| 00000240 | +770  | +671  | +573  | +554  | +536  | +629  | +467  | +464  |
| 00000248 | +462  | +492  | +523  | +490  | +457  | +281  | -405  | -101  |
| 00000250 | +204  | +599  | +995  | +1310 | +1370 | +1297 | +1225 | +1296 |
| 00000258 | +1368 | +1432 | +1498 | +1402 | +1308 | +1184 | +1062 | +874  |
| 00000260 | +688  | +586  | +485  | +303  | +123  | -82   | -32   | -76   |
| 00000268 | -122  | -174  | -226  | -199  | -171  | -193  | -216  | -238  |
| 00000270 | -261  | -314  | -368  | -325  | -283  | -360  | -438  | -451  |
| 00000278 | -465  | -515  | -565  | -583  | -601  | -617  | -633  | -633  |
| 00000280 | +772  | +701  | +630  | +623  | +616  | +545  | +474  | +499  |
| 00000288 | +524  | +561  | +599  | +572  | +546  | +131  | -283  | +6    |
| 00000290 | +296  | +665  | +1034 | +1627 | +1708 | +1669 | +1630 | +1623 |
| 00000298 | +1616 | +1711 | +1806 | +1709 | +1612 | +1531 | +1450 | +1241 |
| 000002A0 | +1032 | +950  | +869  | +563  | +258  | -120  | +15   | -42   |
| 000002A8 | -100  | -180  | -261  | -182  | -103  | -123  | -144  | -165  |
| 000002B0 | -186  | -325  | -464  | -283  | -102  | -305  | -508  | -455  |

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 000002B8 | -402  | -478  | -554  | -566  | -578  | -610  | -642  | -642  |
| 000002C0 | +774  | +730  | +687  | +675  | +664  | +620  | +577  | +581  |
| 000002C8 | +586  | +597  | +610  | +590  | +571  | -147  | -96   | +209  |
| 000002D0 | +516  | +794  | +1073 | +1575 | +1822 | +1976 | +1875 | +1869 |
| 000002D8 | +1864 | +1988 | +2114 | +2014 | +1916 | +1876 | +1838 | +1606 |
| 000002E0 | +1376 | +1266 | +1156 | +902  | +137  | -61   | -3    | -120  |
| 000002E8 | -238  | -122  | -7    | -69   | -130  | -164  | -200  | -219  |
| 000002F0 | -239  | -271  | -304  | -128  | -209  | -297  | -386  | -426  |
| 000002F8 | -467  | -937  | -895  | -549  | -459  | -667  | -619  | -619  |
| 00000300 | +776  | +760  | +744  | +728  | +712  | +696  | +680  | +664  |
| 00000308 | +648  | +635  | +622  | +609  | +596  | -425  | +90   | +413  |
| 00000310 | +736  | +924  | +1112 | +1524 | +1936 | +2284 | +2120 | +2116 |
| 00000318 | +2112 | +2267 | +2422 | +2321 | +2220 | +2223 | +2226 | +1973 |
| 00000320 | +1720 | +1582 | +1444 | +1242 | +16   | -2    | -20   | +58   |
| 00000328 | +136  | -65   | -267  | -212  | -158  | -207  | -257  | -274  |
| 00000330 | -292  | -218  | -144  | +26   | -316  | -290  | -264  | -142  |
| 00000338 | -20   | +2956 | +2860 | -788  | -852  | -980  | -596  | -596  |
| 00000340 | +826  | +807  | +789  | +770  | +752  | +749  | +747  | +744  |
| 00000348 | +742  | +677  | +613  | +516  | +421  | -285  | +288  | +573  |
| 00000350 | +860  | +1081 | +1303 | +1668 | +2034 | +2313 | +2337 | +2344 |
| 00000358 | +2352 | +2452 | +2554 | +2574 | +2596 | +2506 | +2418 | +2248 |
| 00000360 | +2080 | +1961 | +1843 | +925  | +7    | +40   | +74   | +748  |
| 00000368 | +654  | +453  | +251  | +48   | -154  | -107  | -61   | -111  |
| 00000370 | -161  | -28   | +104  | +45   | -271  | -274  | -278  | -842  |
| 00000378 | +1411 | +3007 | +3323 | +327  | -1389 | -1197 | -493  | -493  |
| 00000380 | +876  | +855  | +834  | +813  | +792  | +803  | +814  | +825  |
| 00000388 | +836  | +720  | +605  | +681  | +758  | +110  | +487  | +735  |
| 00000390 | +984  | +1239 | +1494 | +1813 | +2132 | +2343 | +2554 | +2573 |
| 00000398 | +2592 | +2639 | +2686 | +2829 | +2972 | +2791 | +2610 | +2525 |
| 000003A0 | +2440 | +2341 | +2243 | +608  | -2    | +83   | +169  | +1438 |
| 000003A8 | +1172 | +970  | +768  | +565  | +363  | +249  | +135  | +52   |
| 000003B0 | -30   | -95   | -160  | -193  | -226  | -259  | -292  | +763  |
| 000003B8 | -742  | +2290 | +1738 | -1118 | -902  | -902  | -390  | -390  |
| 000003C0 | +926  | +902  | +879  | +855  | +832  | +824  | +817  | +809  |
| 000003C8 | +802  | +763  | +724  | +397  | +2375 | +970  | +589  | +848  |
| 000003D0 | +1108 | +1396 | +1685 | +1941 | +2198 | +2468 | +2739 | +2785 |
| 000003D8 | +2832 | +2888 | +2946 | +3178 | +2900 | +3058 | +2962 | +2848 |
| 000003E0 | +2736 | +2896 | +2546 | -364  | +309  | +205  | +871  | +1760 |
| 000003E8 | +1626 | +1471 | +1317 | +1145 | +975  | +844  | +714  | +599  |
| 000003F0 | +485  | +351  | +216  | +146  | +75   | -355  | +750  | +2687 |
| 000003F8 | +529  | -1067 | -615  | -835  | -799  | -847  | -383  | -383  |
| 00000400 | +976  | +950  | +924  | +898  | +872  | +846  | +820  | +794  |
| 00000408 | +768  | +806  | +844  | +882  | +1432 | +2598 | +692  | +962  |
| 00000410 | +1232 | +1554 | +1876 | +2070 | +2264 | +2594 | +2924 | +2998 |
| 00000418 | +3072 | +3139 | +3206 | +3273 | +2316 | +3071 | +3314 | +3173 |
| 00000420 | +3032 | +2941 | +1826 | -57   | +108  | +73   | +1574 | +2083 |
| 00000428 | +2080 | +1973 | +1866 | +1727 | +1588 | +1441 | +1294 | +1147 |
| 00000430 | +1000 | +796  | +592  | +484  | +376  | +828  | +256  | +772  |
| 00000438 | -248  | -72   | -408  | +984  | -184  | -536  | -376  | -376  |
| 00000440 | +1026 | +997  | +969  | +941  | +913  | +888  | +864  | +840  |
| 00000448 | +816  | +762  | +709  | +768  | +1339 | +2269 | +2176 | +1411 |
| 00000450 | +1414 | +1677 | +1941 | +2188 | +2436 | +2730 | +3023 | +3157 |
| 00000458 | +3291 | +3349 | +3409 | +3420 | +2152 | +3000 | +3594 | +3403 |
| 00000460 | +3213 | +3233 | +951  | +12   | +97   | -303  | +2883 | +2755 |
| 00000468 | +2373 | +2312 | +2252 | +2143 | +2036 | +1861 | +1687 | +1544 |
| 00000470 | +1403 | +1254 | +1106 | +974  | +842  | +1229 | +1105 | +21   |
| 00000478 | +217  | +46   | -381  | +1912 | +3181 | +2765 | +301  | -723  |
| 00000480 | +1076 | +1045 | +1015 | +984  | +954  | +931  | +909  | +886  |
| 00000488 | +864  | +719  | +575  | +654  | +1246 | +1685 | +3149 | +1604 |
| 00000490 | +1596 | +1801 | +2006 | +2307 | +2609 | +2866 | +3123 | +3316 |
| 00000498 | +3510 | +3561 | +3613 | +3568 | +1988 | +2931 | +3875 | +3634 |
| 000004A0 | +3394 | +3527 | +76   | +81   | +86   | +859  | +3168 | +2917 |
| 000004A8 | +2666 | +2652 | +2639 | +2561 | +2484 | +2282 | +2081 | +1943 |
| 000004B0 | +1806 | +1713 | +1621 | +1464 | +1308 | +1119 | +931  | +550  |
| 000004B8 | +170  | -92   | -354  | +1560 | +3986 | +1970 | -558  | -558  |
| 000004C0 | +1126 | +1092 | +1060 | +1027 | +995  | +973  | +953  | +932  |
| 000004C8 | +912  | +899  | +888  | -340  | +1249 | +1756 | +2521 | +2421 |
| 000004D0 | +1810 | +2036 | +2263 | +2521 | +2781 | +3066 | +3350 | +3443 |
| 000004D8 | +3537 | +3612 | +3688 | +3476 | +2496 | +3021 | +3803 | +3833 |

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 000004E0 | +3863 | +2843 | +33   | +133  | -21   | +2099 | +3197 | +3061 |
| 000004E8 | +2927 | +2944 | +2961 | +2882 | +2804 | +2607 | +2410 | +2309 |
| 000004F0 | +2209 | +2139 | +2071 | +1842 | +1614 | +1328 | +1044 | +663  |
| 000004F8 | +283  | +10   | -263  | -488  | -201  | -201  | -457  | -457  |
| 00000500 | +1176 | +1141 | +1106 | +1071 | +1036 | +1017 | +998  | +979  |
| 00000508 | +960  | +825  | +690  | +203  | +740  | +1573 | +1894 | +3239 |
| 00000510 | +2024 | +2272 | +2521 | +2737 | +2954 | +3010 | +3067 | +3315 |
| 00000518 | +3564 | +3664 | +3764 | +3384 | +3004 | +3112 | +3732 | +3776 |
| 00000520 | +3820 | +1905 | -10   | +187  | -128  | +3341 | +3226 | +3207 |
| 00000528 | +3188 | +3236 | +3284 | +3204 | +3124 | +2932 | +2740 | +2676 |
| 00000530 | +2612 | +2567 | +2522 | +2221 | +1920 | +1539 | +1158 | +777  |
| 00000538 | +396  | +112  | -172  | -488  | -292  | -324  | -356  | -356  |
| 00000540 | +1194 | +1162 | +1131 | +1099 | +1069 | +1047 | +1026 | +972  |
| 00000548 | +920  | +969  | +507  | +380  | +767  | +1428 | +1834 | +2799 |
| 00000550 | +2486 | +2347 | +2721 | +2919 | +3118 | +3290 | +3462 | +3266 |
| 00000558 | +3071 | +3157 | +3243 | +3521 | +3800 | +3674 | +3548 | +3710 |
| 00000560 | +3873 | +874  | +179  | +91   | +517  | +3439 | +3291 | +3333 |
| 00000568 | +3377 | +3403 | +3430 | +3361 | +3292 | +3174 | +3057 | +3004 |
| 00000570 | +2951 | +2761 | +2572 | +2222 | +1874 | +1554 | +1235 | +883  |
| 00000578 | +533  | +220  | -93   | -470  | -335  | -319  | -303  | -303  |
| 00000580 | +1212 | +1184 | +1157 | +1129 | +1102 | +1078 | +1055 | +967  |
| 00000588 | +880  | +1114 | +325  | +559  | +794  | +1284 | +1775 | +2361 |
| 00000590 | +2948 | +2423 | +2923 | +3103 | +3283 | +3314 | +3346 | +3474 |
| 00000598 | +3602 | +3674 | +3747 | +3659 | +3572 | +3980 | +3877 | +3901 |
| 000005A0 | +3926 | -157  | +368  | +253  | +1674 | +3795 | +3356 | +3461 |
| 000005A8 | +3566 | +3571 | +3577 | +3518 | +3460 | +3417 | +3375 | +3332 |
| 000005B0 | +3290 | +2956 | +2623 | +2225 | +1828 | +1570 | +1313 | +991  |
| 000005B8 | +670  | +328  | -14   | -452  | -378  | -314  | -250  | -250  |
| 000005C0 | +1230 | +1206 | +1182 | +1158 | +1135 | +1109 | +1083 | +1025 |
| 000005C8 | +968  | +779  | +78   | +481  | +885  | +1284 | +1939 | +2466 |
| 000005D0 | +3250 | +2626 | +2772 | +3157 | +3543 | +3514 | +3486 | +3729 |
| 000005D8 | +3717 | +3775 | +3834 | +3780 | +3728 | +3934 | +3885 | +3915 |
| 000005E0 | +2667 | +92   | +333  | +173  | +2831 | +3701 | +3549 | +3587 |
| 000005E8 | +3627 | +3642 | +3659 | +3643 | +3628 | +3675 | +3724 | +3436 |
| 000005F0 | +3149 | +2847 | +2545 | +2275 | +2006 | +1730 | +1454 | +1114 |
| 000005F8 | +775  | +388  | +1    | -402  | -293  | -309  | -325  | -325  |
| 00000600 | +1248 | +1228 | +1208 | +1188 | +1168 | +1140 | +1112 | +1084 |
| 00000608 | +1056 | +700  | +344  | +660  | +976  | +1284 | +2104 | +2316 |
| 00000610 | +3040 | +2319 | +2110 | +2189 | +2268 | +2691 | +3114 | +3729 |
| 00000618 | +3832 | +3877 | +3922 | +3903 | +3884 | +3889 | +3894 | +3931 |
| 00000620 | +1408 | +341  | +298  | +95   | +3988 | +3609 | +3742 | +3715 |
| 00000628 | +3688 | +3715 | +3742 | +3769 | +3796 | +3679 | +3562 | +3285 |
| 00000630 | +3008 | +2738 | +2468 | +2326 | +2184 | +1890 | +1596 | +1238 |
| 00000638 | +880  | +448  | +16   | -352  | -208  | -304  | -400  | -400  |
| 00000640 | +1296 | +1284 | +1272 | +1260 | +1249 | +1165 | +1081 | +1093 |
| 00000648 | +1106 | +232  | +382  | +677  | +971  | +973  | +1232 | +834  |
| 00000650 | +693  | +537  | +639  | +564  | +490  | +563  | +637  | -106  |
| 00000658 | +944  | +2358 | +3773 | +3795 | +4074 | +3964 | +3855 | +4337 |
| 00000660 | +212  | +204  | +197  | +1341 | +4023 | +3813 | +3860 | +3810 |
| 00000668 | +3762 | +3766 | +3771 | +3776 | +3781 | +3603 | +3427 | +3201 |
| 00000670 | +2977 | +2838 | +2699 | +2400 | +2101 | +1982 | +1607 | +1280 |
| 00000678 | +954  | +545  | -120  | -321  | -266  | -314  | -362  | -362  |
| 00000680 | +1344 | +1340 | +1337 | +1333 | +1330 | +1190 | +1051 | +1103 |
| 00000688 | +1156 | +20   | +933  | +950  | +967  | +919  | +872  | +889  |
| 00000690 | +906  | +805  | +705  | +733  | +761  | +740  | +720  | +668  |
| 00000698 | +616  | +328  | +40   | +1640 | +3752 | +3784 | +3816 | +3208 |
| 000006A0 | +40   | +581  | +97   | +2589 | +4058 | +4018 | +3979 | +3907 |
| 000006A8 | +3836 | +3818 | +3801 | +3784 | +3767 | +3529 | +3292 | +3375 |
| 000006B0 | +3458 | +3706 | +3954 | +3754 | +3555 | +2843 | +1619 | +1067 |
| 000006B8 | +516  | +386  | -256  | -290  | -324  | -324  | -324  | -324  |
| 000006C0 | +1392 | +1364 | +1337 | +1309 | +1283 | +1247 | +1212 | +968  |
| 000006C8 | +982  | +1424 | +1099 | +1079 | +1058 | +1072 | +1088 | +815  |
| 000006D0 | +799  | +1056 | +802  | +772  | +743  | +645  | +547  | +769  |
| 000006D8 | +736  | +649  | +563  | +332  | +102  | +1939 | +4033 | +1982 |
| 000006E0 | +444  | +332  | -36   | +4076 | +4093 | +4047 | +4001 | +3955 |
| 000006E8 | +3910 | +3870 | +3830 | +3791 | +3752 | +3806 | +3861 | +3835 |
| 000006F0 | +3811 | +3678 | +3545 | +3380 | +3216 | +3639 | +3806 | +2341 |
| 000006F8 | +1134 | +1091 | +24   | -387  | -286  | -286  | -286  | -286  |
| 00000700 | +1440 | +1389 | +1338 | +1287 | +1236 | +1305 | +1374 | +1091 |

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000708 | +1320 | +1037 | +1267 | +1208 | +1150 | +715  | +281  | +486  |
| 00000710 | +1204 | +1564 | +901  | +1325 | +1750 | +1830 | +1911 | +1383 |
| 00000718 | +344  | +459  | +574  | +817  | +548  | +351  | +666  | +757  |
| 00000720 | +336  | +340  | +856  | +4028 | +4128 | +4076 | +4024 | +4004 |
| 00000728 | +3984 | +3922 | +3861 | +3799 | +3738 | +3828 | +3919 | +3785 |
| 00000730 | +3652 | +3394 | +3137 | +3007 | +2878 | +2900 | +2923 | +3105 |
| 00000738 | +3800 | +1284 | +1328 | +28   | -248  | -248  | -248  | -248  |
| 00000740 | +1456 | +1406 | +1358 | +1309 | +1261 | +1209 | +1159 | +1444 |
| 00000748 | +1218 | +1265 | +33   | -654  | -1342 | -977  | -356  | +394  |
| 00000750 | +1401 | +1753 | +1338 | +1738 | +2140 | +2575 | +3009 | +3524 |
| 00000758 | +3784 | +2536 | +1033 | +265  | +522  | +440  | +615  | +629  |
| 00000760 | +388  | +403  | +2211 | +4051 | +4099 | +4078 | +4058 | +3990 |
| 00000768 | +3922 | +3910 | +3898 | +3886 | +3875 | +3805 | +3735 | +3553 |
| 00000770 | +3373 | +3126 | +2879 | +2585 | +2291 | +2026 | +1762 | +2649 |
| 00000778 | +3026 | +2303 | +2092 | +665  | -250  | -250  | -250  | -250  |
| 00000780 | +1472 | +1425 | +1379 | +1332 | +1286 | +1371 | +1457 | +1030 |
| 00000788 | -932  | -1834 | -1712 | -1237 | -763  | -621  | +33   | +815  |
| 00000790 | +1598 | +1943 | +1776 | +2153 | +2531 | +2808 | +3085 | +3362 |
| 00000798 | +3640 | +4102 | +4052 | +3042 | +496  | +530  | +564  | +502  |
| 000007A0 | +440  | +211  | +3055 | +3818 | +4070 | +4081 | +4093 | +3976 |
| 000007A8 | +3860 | +3898 | +3936 | +3974 | +4013 | +3783 | +3553 | +3323 |
| 000007B0 | +3094 | +2858 | +2623 | +2420 | +2217 | +1921 | +1626 | +915  |
| 000007B8 | +2764 | +250  | +296  | +22   | -252  | -252  | -252  | -252  |
| 000007C0 | +1488 | +1443 | +1399 | +1371 | +1343 | +1308 | +1530 | -408  |
| 000007C8 | -1834 | -1589 | -1089 | -811  | -535  | -281  | +485  | +1171 |
| 000007D0 | +1859 | +2132 | +2150 | +2503 | +2857 | +3105 | +3352 | +3536 |
| 000007D8 | +3720 | +3875 | +3775 | +4298 | +4054 | +2123 | +449  | +502  |
| 000007E0 | +556  | +546  | +26   | +2113 | +3945 | +4115 | +4031 | +3946 |
| 000007E8 | +3862 | +3838 | +3814 | +3982 | +3894 | +3488 | +3338 | +3140 |
| 000007F0 | +2943 | +2622 | +2302 | +2030 | +1758 | +1495 | +1234 | +1259 |
| 000007F8 | +774  | -347  | -188  | -189  | -190  | -222  | -254  | -254  |
| 00000800 | +1504 | +1462 | +1420 | +1410 | +1400 | +1246 | +1604 | -1334 |
| 00000808 | -1712 | -1089 | -978  | -643  | -308  | +59   | +938  | +1529 |
| 00000810 | +2120 | +2322 | +2524 | +2854 | +3184 | +3402 | +3620 | +3710 |
| 00000818 | +3800 | +3905 | +4010 | +4019 | +4028 | +3973 | +334  | +503  |
| 00000820 | +672  | +627  | +582  | +409  | +236  | +2359 | +3970 | +3917 |
| 00000828 | +3864 | +3778 | +3692 | +3990 | +3776 | +3194 | +3124 | +2958 |
| 00000830 | +2792 | +2387 | +1982 | +1641 | +1300 | +1071 | +842  | +69   |
| 00000838 | -192  | -176  | -160  | -144  | -128  | -192  | -256  | -256  |
| 00000840 | +1546 | +1496 | +1447 | +1430 | +1413 | +1627 | +1330 | -2102 |
| 00000848 | -1184 | -819  | -712  | -395  | -80   | +405  | +1148 | +1713 |
| 00000850 | +2280 | +2486 | +2692 | +2995 | +3297 | +3467 | +3638 | +3712 |
| 00000858 | +3787 | +3915 | +4045 | +3917 | +4047 | +3097 | +357  | +655  |
| 00000860 | +699  | +198  | +466  | +381  | +297  | +376  | +200  | +1815 |
| 00000868 | +3431 | +3568 | +3961 | +4114 | +3755 | +3310 | +3121 | +2804 |
| 00000870 | +2487 | +2208 | +1931 | +1189 | +447  | +37   | -116  | -254  |
| 00000878 | -136  | -111  | -86   | -109  | -132  | -196  | -260  | -260  |
| 00000880 | +1588 | +1531 | +1475 | +1450 | +1426 | +1497 | +33   | -1591 |
| 00000888 | -1168 | -807  | -446  | -149  | +148  | +753  | +1358 | +1899 |
| 00000890 | +2440 | +2650 | +2861 | +3136 | +3411 | +3533 | +3656 | +3715 |
| 00000898 | +3774 | +3927 | +4080 | +3817 | +4066 | +2223 | +380  | +553  |
| 000008A0 | +214  | +3610 | +350  | +354  | +358  | +442  | +526  | +226  |
| 000008A8 | -74   | +286  | +1158 | +1678 | +1686 | +1634 | +1582 | +1114 |
| 000008B0 | +646  | +239  | -168  | -31   | +107  | -228  | -51   | -65   |
| 000008B8 | -80   | -46   | -12   | -74   | -136  | -200  | -264  | -264  |
| 000008C0 | +1630 | +1565 | +1502 | +1470 | +1439 | +1590 | -817  | -1399 |
| 000008C8 | -960  | -633  | -308  | -14   | +280  | +875  | +1472 | +1971 |
| 000008D0 | +2472 | +2718 | +2965 | +3229 | +3492 | +3582 | +3674 | +3701 |
| 000008D8 | +3729 | +3793 | +3859 | +4147 | +4181 | +707  | +563  | +417  |
| 000008E0 | +1297 | +3917 | +4234 | +2198 | +163  | +267  | +372  | +348  |
| 000008E8 | +325  | +108  | +147  | +186  | -31   | +38   | +107  | +96   |
| 000008F0 | +85   | +61   | +38   | -162  | -106  | -126  | +111  | +876  |
| 000008F8 | -152  | -93   | -34   | -87   | -140  | -204  | -268  | -268  |
| 00000900 | +1672 | +1601 | +1530 | +1491 | +1452 | +1685 | -1666 | -1209 |
| 00000908 | -752  | -461  | -170  | +121  | +412  | +999  | +1586 | +2045 |
| 00000910 | +2504 | +2787 | +3071 | +3322 | +3574 | +3633 | +3693 | +3688 |
| 00000918 | +3684 | +3661 | +3638 | +3711 | +2760 | +473  | +746  | +283  |
| 00000920 | +2380 | +4225 | +4022 | +4043 | +4064 | +2141 | +218  | +215  |
| 00000928 | +212  | +186  | +160  | +230  | +300  | +234  | +168  | +102  |

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000930 | +36   | -117  | -269  | +218  | +1218 | +2025 | +2833 | +1048 |
| 00000938 | -224  | -140  | -56   | -100  | -144  | -208  | -272  | -272  |
| 00000940 | +1626 | +1607 | +1589 | +1458 | +1585 | +692  | -1479 | -1107 |
| 00000948 | -736  | -451  | -168  | +115  | +400  | +805  | +1468 | +1937 |
| 00000950 | +2408 | +2703 | +2999 | +3327 | +3655 | +3568 | +3482 | +3620 |
| 00000958 | +3759 | +3439 | +3121 | +1601 | +851  | +819  | +533  | +437  |
| 00000960 | +3415 | +4252 | +4066 | +4055 | +4045 | +4084 | +4124 | +2995 |
| 00000968 | +1867 | +1068 | +269  | +62   | -145  | -38   | +69   | +704  |
| 00000970 | +1339 | +2183 | +3028 | +2816 | +2861 | +2953 | +2790 | -349  |
| 00000978 | +96   | -19   | -134  | -137  | -140  | -204  | -268  | -268  |
| 00000980 | +1580 | +1614 | +1649 | +1427 | +1718 | -300  | -1293 | -1006 |
| 00000988 | -720  | -443  | -166  | +111  | +388  | +613  | +1350 | +1831 |
| 00000990 | +2312 | +2620 | +2928 | +3076 | +3225 | +3249 | +3273 | +3297 |
| 00000998 | +3322 | +3475 | +3628 | +3333 | +1502 | +655  | +832  | +593  |
| 000009A0 | +3938 | +4024 | +4110 | +4068 | +4026 | +3980 | +3934 | +3984 |
| 000009A8 | +4034 | +3998 | +3962 | +3990 | +4018 | +3786 | +3554 | +3610 |
| 000009B0 | +3666 | +3459 | +3253 | +3111 | +2969 | +2858 | +2236 | -210  |
| 000009B8 | -96   | -154  | -212  | -174  | -136  | -200  | -264  | -264  |
| 000009C0 | +1662 | +1653 | +1644 | +1619 | +1851 | -988  | -1266 | -985  |
| 000009C8 | -704  | -401  | -100  | +9    | +120  | +403  | +944  | +1579 |
| 000009D0 | +2216 | +2504 | +2793 | +2873 | +2954 | +2976 | +2999 | +3085 |
| 000009D8 | +3173 | +3237 | +3303 | +3575 | +521  | +553  | +587  | +1771 |
| 000009E0 | +3981 | +4019 | +4058 | +4032 | +4007 | +3971 | +3936 | +3948 |
| 000009E8 | +3961 | +3920 | +3879 | +3806 | +3989 | +3866 | +3743 | +3636 |
| 000009F0 | +3529 | +3375 | +3222 | +3069 | +2916 | +2907 | +1362 | -119  |
| 000009F8 | -64   | -113  | -162  | -147  | -132  | -196  | -260  | -260  |
| 00000A00 | +1744 | +1692 | +1640 | +1556 | +1472 | -1932 | -1240 | -964  |
| 00000A08 | -688  | -361  | -34   | +165  | +364  | +707  | +1050 | +1585 |
| 00000A10 | +2120 | +2389 | +2658 | +2671 | +2684 | +2705 | +2726 | +2875 |
| 00000A18 | +3024 | +3001 | +2978 | +2283 | +564  | +965  | +342  | +2951 |
| 00000A20 | +4024 | +4015 | +4006 | +3997 | +3988 | +3963 | +3938 | +3913 |
| 00000A28 | +3888 | +3842 | +3796 | +3622 | +3960 | +3946 | +3932 | +3662 |
| 00000A30 | +3392 | +3292 | +3192 | +3028 | +2864 | +2956 | +488  | -28   |
| 00000A38 | -32   | -72   | -112  | -120  | -128  | -192  | -256  | -256  |
| 00000A40 | +1834 | +1635 | +1692 | +1718 | +208  | -1663 | -1229 | -924  |
| 00000A48 | -619  | -283  | +50   | +256  | +719  | +705  | +948  | +1126 |
| 00000A50 | +1562 | +1845 | +2129 | +2236 | +2344 | +2447 | +2551 | +2654 |
| 00000A58 | +2759 | +2738 | +2719 | +1562 | +663  | +623  | +327  | +4207 |
| 00000A60 | +3992 | +4012 | +4034 | +3990 | +3948 | +3922 | +3898 | +3872 |
| 00000A68 | +3848 | +3774 | +3701 | +3484 | +3523 | +3726 | +3929 | +3812 |
| 00000A70 | +3695 | +3604 | +3513 | +3407 | +3300 | +3350 | -440  | -231  |
| 00000A78 | -22   | -48   | -74   | -100  | -126  | -174  | -222  | -222  |
| 00000A80 | +1924 | +1578 | +1745 | +1880 | -1057 | -1394 | -1219 | -884  |
| 00000A88 | -550  | -207  | +135  | +93   | +563  | +449  | +847  | +669  |
| 00000A90 | +1004 | +1302 | +1600 | +1802 | +2005 | +2191 | +2377 | +2435 |
| 00000A98 | +2494 | +2477 | +2460 | +843  | +763  | +794  | +1337 | +3928 |
| 00000AA0 | +3960 | +4011 | +4062 | +3985 | +3908 | +3883 | +3858 | +3833 |
| 00000AA8 | +3808 | +3707 | +3607 | +3603 | +3599 | +3506 | +3414 | +3706 |
| 00000AB0 | +3998 | +3916 | +3835 | +3786 | +3737 | +2208 | -345  | +78   |
| 00000AB8 | -12   | -24   | -36   | -80   | -124  | -156  | -188  | -188  |
| 00000AC0 | +1598 | +1585 | +1829 | +2154 | -1873 | -1413 | -1208 | -556  |
| 00000AC8 | -417  | -514  | -102  | +440  | +214  | +191  | +681  | +435  |
| 00000AD0 | +702  | +870  | +1039 | +1224 | +1409 | +1709 | +2010 | +2039 |
| 00000AD8 | +2069 | +2086 | +1849 | +795  | +766  | +596  | +2474 | +3953 |
| 00000AE0 | +3896 | +3928 | +3962 | +3914 | +3868 | +3842 | +3818 | +3792 |
| 00000AE8 | +3768 | +3687 | +3608 | +3577 | +3546 | +3462 | +3379 | +3312 |
| 00000AF0 | +3245 | +3364 | +3484 | +3189 | +2893 | +858  | -154  | +35   |
| 00000AF8 | -34   | -48   | -62   | -108  | -154  | -154  | -154  | -154  |
| 00000B00 | +1784 | +1849 | +1915 | +892  | -1666 | -1176 | -1711 | -741  |
| 00000B08 | -796  | -822  | +175  | -748  | +378  | +191  | +517  | +202  |
| 00000B10 | +400  | +439  | +479  | +646  | +814  | +1229 | +1645 | +1644 |
| 00000B18 | +1644 | +1697 | +1239 | +748  | +770  | +399  | +3613 | +3978 |
| 00000B20 | +3832 | +3847 | +3862 | +3845 | +3828 | +3803 | +3778 | +3753 |
| 00000B28 | +3728 | +3669 | +3611 | +3552 | +3494 | +3419 | +3345 | +3174 |
| 00000B30 | +3004 | +2813 | +2623 | +2592 | +2562 | -237  | +37   | -9    |
| 00000B38 | -56   | -72   | -88   | -136  | -184  | -152  | -120  | -120  |
| 00000B40 | +1802 | +1900 | +2255 | -286  | -1290 | -1129 | -712  | -391  |
| 00000B48 | -327  | -385  | -445  | +201  | -178  | +436  | +27   | -45   |
| 00000B50 | -118  | +204  | +270  | +384  | +498  | +685  | +874  | +998  |

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000B58 | +1123 | +1252 | +1127 | +794  | +717  | +1161 | +3654 | +3843 |
| 00000B60 | +3776 | +3788 | +3802 | +3782 | +3764 | +3616 | +3726 | +3690 |
| 00000B68 | +3656 | +3595 | +3536 | +3476 | +3417 | +3341 | +3265 | +3078 |
| 00000B70 | +2891 | +2687 | +2484 | +2617 | +1982 | -28   | +8    | +14   |
| 00000B78 | +18   | -18   | -54   | +6    | +66   | -30   | -126  | -126  |
| 00000B80 | +1820 | +1696 | +2084 | -2232 | -1939 | -570  | -1762 | -1834 |
| 00000B88 | -1394 | -461  | -552  | -387  | -223  | -1110 | -462  | -37   |
| 00000B90 | -124  | -31   | -451  | -134  | +183  | +143  | +104  | +353  |
| 00000B98 | +602  | +809  | +1017 | +841  | +665  | +1924 | +3696 | +3708 |
| 00000BA0 | +3720 | +3731 | +3742 | +3721 | +3700 | +3431 | +3674 | +3629 |
| 00000BA8 | +3584 | +3523 | +3462 | +3401 | +3341 | +3264 | +3187 | +2982 |
| 00000BB0 | +2778 | +2562 | +2346 | +2386 | +891  | -77   | -20   | +36   |
| 00000BB8 | +92   | +36   | -20   | -108  | -196  | -164  | -132  | -132  |
| 00000BC0 | +1710 | +1955 | +1177 | -2833 | -955  | -2075 | -2172 | -364  |
| 00000BC8 | -1885 | -1352 | -820  | -1599 | -843  | -1249 | -887  | -652  |
| 00000BD0 | -674  | -554  | -435  | -636  | -325  | -304  | -282  | -101  |
| 00000BD8 | -175  | +493  | +906  | +871  | +580  | +2767 | +3674 | +3653 |
| 00000BE0 | +3632 | +3656 | +3682 | +3626 | +3572 | +3436 | +3558 | +3534 |
| 00000BE8 | +3512 | +3449 | +3388 | +3325 | +3264 | +3186 | +3108 | +2902 |
| 00000BF0 | +2697 | +2500 | +2304 | +2219 | +343  | +179  | +271  | +154  |
| 00000BF8 | +38   | -6    | -50   | -110  | -170  | -154  | -138  | -138  |
| 00000C00 | +1600 | +1959 | -242  | -2667 | -2020 | -2557 | -2582 | -1455 |
| 00000C08 | +696  | +316  | +960  | +2052 | +2120 | +1940 | +1760 | +1292 |
| 00000C10 | +824  | -310  | -932  | -1394 | -832  | -750  | -668  | -298  |
| 00000C18 | -440  | +434  | +796  | +902  | +496  | +3610 | +3652 | +3598 |
| 00000C20 | +3544 | +3583 | +3622 | +3533 | +3444 | +3443 | +3442 | +3441 |
| 00000C28 | +3440 | +3377 | +3314 | +3251 | +3188 | +3109 | +3030 | +2823 |
| 00000C30 | +2616 | +2439 | +2262 | +2053 | -204  | +179  | +50   | +17   |
| 00000C38 | -16   | -48   | -80   | -112  | -144  | -144  | -144  | -144  |
| 00000C40 | +1956 | +1852 | -2091 | -3025 | -1145 | +322  | +2045 | +1672 |
| 00000C48 | +1555 | +1328 | +1614 | +1916 | +1706 | +1622 | +1282 | +1502 |
| 00000C50 | +1466 | +1301 | +1393 | +940  | -792  | -1548 | -768  | -820  |
| 00000C58 | -617  | +926  | +934  | +909  | +1397 | +3323 | +3456 | +3446 |
| 00000C60 | +3436 | +3393 | +3351 | +3388 | +3426 | +3373 | +3321 | +3444 |
| 00000C68 | +3313 | +3264 | +3217 | +3153 | +3090 | +2997 | +2906 | +2686 |
| 00000C70 | +2467 | +2290 | +2115 | +1282 | -61   | +136  | +79   | +36   |
| 00000C78 | -5    | -37   | -69   | -101  | -133  | -133  | -133  | -133  |
| 00000C80 | +1800 | +1746 | +669  | +1992 | +1779 | +1665 | +1552 | +1727 |
| 00000C88 | +1390 | +1317 | +1245 | +1269 | +1293 | +1560 | +1316 | +1456 |
| 00000C90 | +1084 | +1121 | +1158 | +971  | +1297 | +726  | -869  | -1343 |
| 00000C98 | -794  | +1419 | +1072 | +917  | +2299 | +3036 | +3261 | +3294 |
| 00000CA0 | +3328 | +3204 | +3080 | +3244 | +3409 | +3305 | +3201 | +3449 |
| 00000CA8 | +3186 | +3153 | +3121 | +3056 | +2992 | +2887 | +2783 | +2550 |
| 00000CB0 | +2318 | +2143 | +1968 | +513  | +82   | +95   | +108  | +57   |
| 00000CB8 | +6    | -26   | -58   | -90   | -122  | -122  | -122  | -122  |
| 00000CC0 | +1516 | +1832 | +1636 | +1905 | +1406 | +1344 | +1283 | +1589 |
| 00000CC8 | +1641 | +1465 | +1291 | +1277 | +1263 | +1386 | +1254 | +1314 |
| 00000CD0 | +1118 | +1116 | +1115 | +905  | +953  | +1160 | +1111 | +118  |
| 00000CD8 | -363  | +807  | +698  | +700  | +2240 | +3325 | +2361 | +2934 |
| 00000CE0 | +3252 | +2998 | +2745 | +2924 | +3103 | +3155 | +2952 | +3277 |
| 00000CE8 | +3091 | +3057 | +3024 | +2959 | +2894 | +2776 | +2659 | +2414 |
| 00000CF0 | +2169 | +2074 | +1981 | +255  | +65   | +68   | +73   | +44   |
| 00000CF8 | +17   | -15   | -47   | -79   | -111  | -111  | -111  | -111  |
| 00000D00 | +1744 | +1662 | +1581 | +1563 | +1546 | +1536 | +1527 | +1453 |
| 00000D08 | +1380 | +1359 | +1339 | +1286 | +1234 | +1213 | +1193 | +1172 |
| 00000D10 | +1152 | +1112 | +1073 | +1097 | +1122 | +826  | +1043 | +1067 |
| 00000D18 | +1092 | +964  | +837  | +741  | +2182 | +2078 | +2487 | +2831 |
| 00000D20 | +2664 | +2793 | +2923 | +2860 | +2798 | +3007 | +2705 | +3106 |
| 00000D28 | +2996 | +2962 | +2928 | +2862 | +2796 | +2666 | +2536 | +2278 |
| 00000D30 | +2020 | +1751 | +1482 | -259  | +48   | +43   | +38   | +33   |
| 00000D38 | +28   | -4    | -36   | -68   | -100  | -100  | -100  | -100  |
| 00000D40 | +1684 | +1640 | +1596 | +1584 | +1573 | +1543 | +1513 | +1451 |
| 00000D48 | +1391 | +1359 | +1329 | +1282 | +1236 | +1213 | +1190 | +1168 |
| 00000D50 | +1146 | +1107 | +1069 | +1063 | +1058 | +920  | +1038 | +996  |
| 00000D58 | +955  | +924  | +894  | +880  | +1635 | +1679 | +2235 | +2439 |
| 00000D60 | +2132 | +2451 | +2771 | +2580 | +2644 | +2713 | +2528 | +2742 |
| 00000D68 | +2701 | +2828 | +2699 | +2570 | +2442 | +2383 | +2324 | +2105 |
| 00000D70 | +1887 | +1732 | +811  | -79   | +55   | +62   | +71   | +46   |
| 00000D78 | +23   | -7    | -37   | -67   | -97   | -113  | -129  | -129  |

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000D80 | +1624 | +1618 | +1612 | +1606 | +1601 | +1551 | +1501 | +1451 |
| 00000D88 | +1402 | +1361 | +1320 | +1279 | +1239 | +1214 | +1189 | +1164 |
| 00000D90 | +1140 | +1103 | +1067 | +1031 | +995  | +1014 | +1034 | +926  |
| 00000D98 | +818  | +885  | +953  | +1021 | +1089 | +1024 | +1472 | +2048 |
| 00000DA0 | +2112 | +2110 | +2109 | +2044 | +2491 | +2421 | +2352 | +2379 |
| 00000DA8 | +2406 | +2694 | +2471 | +2279 | +2088 | +2100 | +2113 | +1933 |
| 00000DB0 | +1754 | +1715 | +140  | +101  | +62   | +83   | +104  | +61   |
| 00000DB8 | +18   | -10   | -38   | -66   | -94   | -126  | -158  | -158  |
| 00000DC0 | +1724 | +1788 | +1852 | +1692 | +1532 | +1494 | +1456 | +1418 |
| 00000DC8 | +1381 | +1345 | +1311 | +1275 | +1241 | +1214 | +1187 | +1160 |
| 00000DD0 | +1134 | +1098 | +1064 | +1029 | +995  | +996  | +998  | +935  |
| 00000DD8 | +873  | +877  | +883  | +792  | +702  | +657  | +1125 | +1832 |
| 00000DE0 | +2284 | +1193 | +1638 | +1796 | +2209 | +2320 | +2176 | +2239 |
| 00000DE8 | +2047 | +2560 | +2562 | +1891 | +1734 | +1673 | +1613 | +1744 |
| 00000DF0 | +1621 | +1152 | -83   | -8    | +69   | +70   | +73   | +42   |
| 00000DF8 | +13   | -13   | -39   | -65   | -91   | -139  | -187  | -187  |
| 00000E00 | +1824 | +1702 | +1580 | +1522 | +1464 | +1438 | +1412 | +1386 |
| 00000E08 | +1360 | +1331 | +1302 | +1273 | +1244 | +1215 | +1186 | +1157 |
| 00000E10 | +1128 | +1095 | +1062 | +1029 | +996  | +979  | +962  | +945  |
| 00000E18 | +928  | +871  | +814  | +821  | +828  | +803  | +1290 | +1617 |
| 00000E20 | +1944 | +2068 | +1168 | +1292 | +1416 | +1708 | +1488 | +1844 |
| 00000E28 | +1688 | +2171 | +2142 | +1249 | +1380 | +1503 | +1626 | +1045 |
| 00000E30 | -48   | +79   | +206  | +141  | +76   | +59   | +42   | +25   |
| 00000E38 | +8    | -16   | -40   | -64   | -88   | -152  | -216  | -216  |
| 00000E40 | +1688 | +1615 | +1542 | +1501 | +1460 | +1429 | +1398 | +1367 |
| 00000E48 | +1336 | +1309 | +1284 | +1257 | +1232 | +1205 | +1180 | +1153 |
| 00000E50 | +1128 | +1092 | +1058 | +1022 | +988  | +968  | +950  | +930  |
| 00000E58 | +912  | +861  | +812  | +793  | +776  | +595  | +672  | +971  |
| 00000E60 | +1272 | +330  | +924  | +1038 | +1152 | +1298 | +1444 | +1910 |
| 00000E68 | +1608 | +1531 | +1200 | +515  | +344  | +259  | +176  | +251  |
| 00000E70 | +72   | +122  | +174  | +128  | +84   | +64   | +46   | +26   |
| 00000E78 | +8    | -18   | -44   | -70   | -96   | -144  | -192  | -192  |
| 00000E80 | +1552 | +1528 | +1504 | +1480 | +1456 | +1420 | +1384 | +1348 |
| 00000E88 | +1312 | +1289 | +1266 | +1243 | +1220 | +1197 | +1174 | +1151 |
| 00000E90 | +1128 | +1091 | +1054 | +1017 | +980  | +959  | +938  | +917  |
| 00000E98 | +896  | +853  | +810  | +767  | +724  | +645  | +566  | +583  |
| 00000EA0 | +600  | +640  | +680  | +528  | +376  | +376  | +888  | +1464 |
| 00000EA8 | +1016 | +637  | +258  | +295  | +332  | +297  | +262  | +227  |
| 00000EB0 | +192  | +167  | +142  | +117  | +92   | +71   | +50   | +29   |
| 00000EB8 | +8    | -20   | -48   | -76   | -104  | -136  | -168  | -168  |
| 00000EC0 | +1544 | +1521 | +1498 | +1475 | +1452 | +1411 | +1370 | +1329 |
| 00000EC8 | +1288 | +1267 | +1248 | +1227 | +1208 | +1187 | +1168 | +1147 |
| 00000ED0 | +1128 | +1088 | +1050 | +1010 | +972  | +948  | +926  | +902  |
| 00000ED8 | +880  | +843  | +808  | +771  | +736  | +677  | +620  | +609  |
| 00000EE0 | +600  | +614  | +628  | +546  | +464  | +238  | +2060 | +1690 |
| 00000EE8 | +1576 | +1709 | +308  | +313  | +320  | +285  | +252  | +217  |
| 00000EF0 | +184  | +162  | +142  | +120  | +100  | +76   | +54   | +30   |
| 00000EF8 | +8    | -22   | -52   | -82   | -112  | -128  | -144  | -144  |
| 00000F00 | +1536 | +1514 | +1492 | +1470 | +1448 | +1402 | +1356 | +1310 |
| 00000F08 | +1264 | +1247 | +1230 | +1213 | +1196 | +1179 | +1162 | +1145 |
| 00000F10 | +1128 | +1087 | +1046 | +1005 | +964  | +939  | +914  | +889  |
| 00000F18 | +864  | +835  | +806  | +777  | +748  | +711  | +674  | +637  |
| 00000F20 | +600  | +588  | +576  | +564  | +552  | +612  | +160  | +1916 |
| 00000F28 | +1112 | +223  | +358  | +333  | +308  | +275  | +242  | +209  |
| 00000F30 | +176  | +159  | +142  | +125  | +108  | +83   | +58   | +33   |
| 00000F38 | +8    | -24   | -56   | -88   | -120  | -120  | -120  | -120  |
| 00000F40 | +1536 | +1514 | +1492 | +1470 | +1448 | +1402 | +1356 | +1310 |
| 00000F48 | +1264 | +1246 | +1230 | +1212 | +1196 | +1178 | +1162 | +1144 |
| 00000F50 | +1128 | +1086 | +1046 | +1004 | +964  | +938  | +914  | +888  |
| 00000F58 | +864  | +834  | +806  | +776  | +748  | +710  | +674  | +636  |
| 00000F60 | +600  | +588  | +576  | +564  | +552  | +644  | +480  | +108  |
| 00000F68 | +504  | +158  | +326  | +316  | +308  | +274  | +242  | +208  |
| 00000F70 | +176  | +158  | +142  | +124  | +108  | +82   | +58   | +32   |
| 00000F78 | +8    | -24   | -56   | -88   | -120  | -120  | -120  | -120  |
| 00000F80 | +1536 | +1514 | +1492 | +1470 | +1448 | +1402 | +1356 | +1310 |
| 00000F88 | +1264 | +1247 | +1230 | +1213 | +1196 | +1179 | +1162 | +1145 |
| 00000F90 | +1128 | +1087 | +1046 | +1005 | +964  | +939  | +914  | +889  |
| 00000F98 | +864  | +835  | +806  | +777  | +748  | +711  | +674  | +637  |
| 00000FA0 | +600  | +588  | +576  | +564  | +552  | +420  | +288  | +348  |



|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000FA8 | +408  | +351  | +294  | +301  | +308  | +275  | +242  | +209  |
| 00000FB0 | +176  | +159  | +142  | +125  | +108  | +83   | +58   | +33   |
| 00000FB8 | +8    | -24   | -56   | -88   | -120  | -120  | -120  | -120  |
| 00000FC0 | +1536 | +1514 | +1492 | +1470 | +1448 | +1402 | +1356 | +1310 |
| 00000FC8 | +1264 | +1246 | +1230 | +1212 | +1196 | +1178 | +1162 | +1144 |
| 00000FD0 | +1128 | +1086 | +1046 | +1004 | +964  | +938  | +914  | +888  |
| 00000FD8 | +864  | +834  | +806  | +776  | +748  | +710  | +674  | +636  |
| 00000FE0 | +600  | +588  | +576  | +564  | +552  | +420  | +288  | +348  |
| 00000FE8 | +408  | +350  | +294  | +300  | +308  | +274  | +242  | +208  |
| 00000FF0 | +176  | +158  | +142  | +124  | +108  | +82   | +58   | +32   |
| 00000FF8 | +8    | -24   | -56   | -88   | -120  | -120  | -120  | -120  |

The sample data for 12.4 fixed-point integers (RDP 8.1) is:

|          |      |      |      |      |      |      |      |      |
|----------|------|------|------|------|------|------|------|------|
| 00000000 | -16  | +8   | +32  | +136 | -16  | -8   | +0   | -8   |
| 00000008 | -16  | -12  | -8   | -4   | +0   | -12  | -24  | -36  |
| 00000010 | -48  | -45  | -42  | -39  | -36  | -49  | -62  | -75  |
| 00000018 | -88  | -96  | -104 | -112 | -120 | -128 | -136 | -144 |
| 00000020 | -152 | -152 | -152 | -152 | -152 | -168 | -184 | -200 |
| 00000028 | -216 | -225 | -234 | -243 | -252 | -261 | -270 | -279 |
| 00000030 | -288 | -299 | -310 | -321 | -332 | -343 | -354 | -365 |
| 00000038 | -376 | -384 | -392 | -400 | -408 | -408 | -408 | -408 |
| 00000040 | +34  | +60  | +86  | +120 | +26  | +27  | +28  | +21  |
| 00000048 | +15  | +16  | +17  | +18  | +19  | +10  | +1   | -8   |
| 00000050 | -17  | -18  | -19  | -20  | -21  | -34  | -47  | -60  |
| 00000058 | -73  | -74  | -75  | -93  | -110 | -113 | -116 | -120 |
| 00000060 | -123 | -127 | -130 | -134 | -137 | -151 | -164 | -178 |
| 00000068 | -192 | -201 | -211 | -221 | -231 | -242 | -253 | -264 |
| 00000070 | -275 | -286 | -297 | -308 | -319 | -336 | -353 | -354 |
| 00000078 | -356 | -366 | -377 | -387 | -398 | -398 | -398 | -398 |
| 00000080 | +84  | +112 | +140 | +104 | +69  | +63  | +57  | +51  |
| 00000088 | +46  | +44  | +42  | +40  | +38  | +32  | +26  | +20  |
| 00000090 | +14  | +9   | +4   | -1   | -6   | -19  | -32  | -45  |
| 00000098 | -58  | -52  | -47  | -74  | -100 | -99  | -97  | -96  |
| 000000A0 | -95  | -102 | -109 | -116 | -123 | -134 | -145 | -156 |
| 000000A8 | -168 | -178 | -189 | -200 | -211 | -223 | -236 | -249 |
| 000000B0 | -262 | -273 | -284 | -295 | -307 | -330 | -353 | -344 |
| 000000B8 | -336 | -349 | -362 | -375 | -388 | -388 | -388 | -388 |
| 000000C0 | +134 | +156 | +178 | +136 | +95  | +90  | +86  | +81  |
| 000000C8 | +77  | +72  | +67  | +62  | +57  | +54  | +51  | +40  |
| 000000D0 | +29  | +28  | +27  | +26  | +25  | +12  | -1   | -22  |
| 000000D8 | -43  | -30  | -19  | -46  | -74  | -68  | -62  | -72  |
| 000000E0 | -82  | -85  | -87  | -98  | -109 | -117 | -126 | -134 |
| 000000E8 | -144 | -155 | -167 | -178 | -190 | -204 | -219 | -234 |
| 000000F0 | -249 | -260 | -271 | -282 | -294 | -323 | -353 | -334 |
| 000000F8 | -316 | -331 | -347 | -362 | -378 | -378 | -378 | -378 |
| 00000100 | +184 | +200 | +217 | +169 | +122 | +118 | +115 | +111 |
| 00000108 | +108 | +100 | +92  | +84  | +76  | +76  | +76  | +60  |
| 00000110 | +44  | +47  | +50  | +53  | +56  | +43  | +30  | +1   |
| 00000118 | -28  | -9   | +9   | -19  | -49  | -38  | -27  | -48  |
| 00000120 | -70  | -68  | -66  | -80  | -95  | -101 | -107 | -113 |
| 00000128 | -120 | -132 | -145 | -157 | -170 | -186 | -203 | -219 |
| 00000130 | -236 | -247 | -259 | -270 | -282 | -317 | -353 | -324 |
| 00000138 | -296 | -314 | -332 | -350 | -368 | -368 | -368 | -368 |
| 00000140 | +202 | +278 | +227 | +191 | +156 | +265 | +119 | +141 |
| 00000148 | +163 | +152 | +141 | +130 | +119 | +123 | +127 | +59  |
| 00000150 | +119 | +98  | +77  | +16  | -45  | -44  | -43  | +38  |
| 00000158 | +119 | +121 | +123 | +14  | -95  | -116 | -136 | -60  |
| 00000160 | +14  | -31  | -76  | -74  | -72  | -81  | -90  | -98  |
| 00000168 | -108 | -120 | -132 | -144 | -157 | -172 | -188 | -203 |
| 00000170 | -219 | -223 | -228 | -248 | -269 | -297 | -326 | -251 |
| 00000178 | -304 | -312 | -321 | -337 | -354 | -354 | -354 | -354 |
| 00000180 | +220 | +356 | +237 | +214 | +191 | +413 | +124 | +171 |
| 00000188 | +218 | +204 | +190 | +176 | +162 | +170 | +178 | -70  |
| 00000190 | -62  | +21  | +104 | +107 | +110 | +125 | +140 | +203 |
| 00000198 | +266 | +252 | +238 | +176 | +114 | +62  | +11  | -73  |
| 000001A0 | -157 | -122 | -87  | -69  | -50  | -61  | -73  | -84  |

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 000001A8 | -96   | -108  | -120  | -132  | -145  | -159  | -173  | -187  |
| 000001B0 | -202  | -199  | -197  | -227  | -257  | -278  | -300  | -178  |
| 000001B8 | -312  | -311  | -310  | -325  | -340  | -340  | -340  | -340  |
| 000001C0 | +302  | +338  | +247  | +228  | +209  | +385  | +177  | +193  |
| 000001C8 | +209  | +208  | +207  | +190  | +173  | +129  | -171  | -151  |
| 000001D0 | -3    | +144  | +291  | +302  | +313  | +294  | +275  | +344  |
| 000001D8 | +413  | +414  | +416  | +362  | +308  | +240  | +174  | +90   |
| 000001E0 | +7    | -69   | -146  | -87   | -28   | -41   | -56   | -69   |
| 000001E8 | -84   | -96   | -108  | -120  | -132  | -145  | -158  | -171  |
| 000001F0 | -185  | -175  | -166  | -205  | -244  | -243  | -242  | -201  |
| 000001F8 | -288  | -293  | -299  | -312  | -326  | -326  | -326  | -326  |
| 00000200 | +640  | +577  | +514  | +499  | +484  | +485  | +230  | +215  |
| 00000208 | +200  | +212  | +224  | +204  | +184  | +216  | -264  | -104  |
| 00000210 | +56   | +267  | +478  | +497  | +516  | +463  | +410  | +485  |
| 00000218 | +560  | +577  | +595  | +548  | +502  | +419  | +337  | +254  |
| 00000220 | +172  | +111  | +51   | +22   | -6    | -22   | -39   | -55   |
| 00000228 | -72   | -84   | -96   | -108  | -120  | -132  | -144  | -156  |
| 00000230 | -168  | -152  | -136  | -184  | -232  | -208  | -184  | -224  |
| 00000238 | -264  | -276  | -288  | -300  | -312  | -312  | -312  | -312  |
| 00000240 | +385  | +335  | +286  | +277  | +268  | +314  | +233  | +232  |
| 00000248 | +231  | +246  | +261  | +245  | +228  | +140  | -202  | -50   |
| 00000250 | +102  | +299  | +497  | +655  | +685  | +648  | +612  | +648  |
| 00000258 | +684  | +716  | +749  | +701  | +654  | +592  | +531  | +437  |
| 00000260 | +344  | +293  | +242  | +151  | +61   | -41   | -16   | -38   |
| 00000268 | -61   | -87   | -113  | -99   | -85   | -96   | -108  | -119  |
| 00000270 | -130  | -157  | -184  | -162  | -141  | -180  | -219  | -225  |
| 00000278 | -232  | -257  | -282  | -291  | -300  | -308  | -316  | -316  |
| 00000280 | +386  | +350  | +315  | +311  | +308  | +272  | +237  | +249  |
| 00000288 | +262  | +280  | +299  | +286  | +273  | +65   | -141  | +3    |
| 00000290 | +148  | +332  | +517  | +813  | +854  | +834  | +815  | +811  |
| 00000298 | +808  | +855  | +903  | +854  | +806  | +765  | +725  | +620  |
| 000002A0 | +516  | +475  | +434  | +281  | +129  | -60   | +7    | -21   |
| 000002A8 | -50   | -90   | -130  | -91   | -51   | -61   | -72   | -82   |
| 000002B0 | -93   | -162  | -232  | -141  | -51   | -152  | -254  | -227  |
| 000002B8 | -201  | -239  | -277  | -283  | -289  | -305  | -321  | -321  |
| 000002C0 | +387  | +365  | +343  | +337  | +332  | +310  | +288  | +290  |
| 000002C8 | +293  | +298  | +305  | +295  | +285  | -73   | -48   | +104  |
| 000002D0 | +258  | +397  | +536  | +787  | +911  | +988  | +937  | +934  |
| 000002D8 | +932  | +994  | +1057 | +1007 | +958  | +938  | +919  | +803  |
| 000002E0 | +688  | +633  | +578  | +451  | +68   | -30   | -1    | -60   |
| 000002E8 | -119  | -61   | -3    | -34   | -65   | -82   | -100  | -109  |
| 000002F0 | -119  | -135  | -152  | -64   | -104  | -148  | -193  | -213  |
| 000002F8 | -233  | -468  | -447  | -274  | -229  | -333  | -309  | -309  |
| 00000300 | +388  | +380  | +372  | +364  | +356  | +348  | +340  | +332  |
| 00000308 | +324  | +317  | +311  | +304  | +298  | -212  | +45   | +206  |
| 00000310 | +368  | +462  | +556  | +762  | +968  | +1142 | +1060 | +1058 |
| 00000318 | +1056 | +1133 | +1211 | +1160 | +1110 | +1111 | +1113 | +986  |
| 00000320 | +860  | +791  | +722  | +621  | +8    | -1    | -10   | +29   |
| 00000328 | +68   | -32   | -133  | -106  | -79   | -103  | -128  | -137  |
| 00000330 | -146  | -109  | -72   | +13   | -158  | -145  | -132  | -71   |
| 00000338 | -10   | +1478 | +1430 | -394  | -426  | -490  | -298  | -298  |
| 00000340 | +413  | +403  | +394  | +385  | +376  | +374  | +373  | +372  |
| 00000348 | +371  | +338  | +306  | +258  | +210  | -142  | +144  | +286  |
| 00000350 | +430  | +540  | +651  | +834  | +1017 | +1156 | +1168 | +1172 |
| 00000358 | +1176 | +1226 | +1277 | +1287 | +1298 | +1253 | +1209 | +1124 |
| 00000360 | +1040 | +980  | +921  | +462  | +3    | +20   | +37   | +374  |
| 00000368 | +327  | +226  | +125  | +24   | -77   | -53   | -30   | -55   |
| 00000370 | -80   | -14   | +52   | +22   | -135  | -137  | -139  | -421  |
| 00000378 | +705  | +1503 | +1661 | +163  | -694  | -598  | -246  | -246  |
| 00000380 | +438  | +427  | +417  | +406  | +396  | +401  | +407  | +412  |
| 00000388 | +418  | +360  | +302  | +340  | +379  | +55   | +243  | +367  |
| 00000390 | +492  | +619  | +747  | +906  | +1066 | +1171 | +1277 | +1286 |
| 00000398 | +1296 | +1319 | +1343 | +1414 | +1486 | +1395 | +1305 | +1262 |
| 000003A0 | +1220 | +1170 | +1121 | +304  | -1    | +41   | +84   | +719  |
| 000003A8 | +586  | +485  | +384  | +282  | +181  | +124  | +67   | +26   |
| 000003B0 | -15   | -47   | -80   | -96   | -113  | -129  | -146  | +381  |
| 000003B8 | -371  | +1145 | +869  | -559  | -451  | -451  | -195  | -195  |
| 000003C0 | +463  | +451  | +439  | +427  | +416  | +412  | +408  | +404  |
| 000003C8 | +401  | +381  | +362  | +198  | +1187 | +485  | +294  | +424  |

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 000003D0 | +554  | +698  | +842  | +970  | +1099 | +1234 | +1369 | +1392 |
| 000003D8 | +1416 | +1444 | +1473 | +1589 | +1450 | +1529 | +1481 | +1424 |
| 000003E0 | +1368 | +1448 | +1273 | -182  | +154  | +102  | +435  | +880  |
| 000003E8 | +813  | +735  | +658  | +572  | +487  | +422  | +357  | +299  |
| 000003F0 | +242  | +175  | +108  | +73   | +37   | -177  | +375  | +1343 |
| 000003F8 | +264  | -533  | -307  | -417  | -399  | -423  | -191  | -191  |
| 00000400 | +488  | +475  | +462  | +449  | +436  | +423  | +410  | +397  |
| 00000408 | +384  | +403  | +422  | +441  | +716  | +1299 | +346  | +481  |
| 00000410 | +616  | +777  | +938  | +1035 | +1132 | +1297 | +1462 | +1499 |
| 00000418 | +1536 | +1569 | +1603 | +1636 | +1158 | +1535 | +1657 | +1586 |
| 00000420 | +1516 | +1470 | +913  | -28   | +54   | +36   | +787  | +1041 |
| 00000428 | +1040 | +986  | +933  | +863  | +794  | +720  | +647  | +573  |
| 00000430 | +500  | +398  | +296  | +242  | +188  | +414  | +128  | +386  |
| 00000438 | -124  | -36   | -204  | +492  | -92   | -268  | -188  | -188  |
| 00000440 | +513  | +498  | +484  | +470  | +456  | +444  | +432  | +420  |
| 00000448 | +408  | +381  | +354  | +384  | +669  | +1134 | +1088 | +705  |
| 00000450 | +707  | +838  | +970  | +1094 | +1218 | +1365 | +1511 | +1578 |
| 00000458 | +1645 | +1674 | +1704 | +1710 | +1076 | +1500 | +1797 | +1701 |
| 00000460 | +1606 | +1616 | +475  | +6    | +48   | -151  | +1441 | +1377 |
| 00000468 | +1186 | +1156 | +1126 | +1071 | +1018 | +930  | +843  | +772  |
| 00000470 | +701  | +627  | +553  | +487  | +421  | +614  | +552  | +10   |
| 00000478 | +108  | +23   | -190  | +956  | +1590 | +1382 | +150  | -361  |
| 00000480 | +538  | +522  | +507  | +492  | +477  | +465  | +454  | +443  |
| 00000488 | +432  | +359  | +287  | +327  | +623  | +842  | +1574 | +802  |
| 00000490 | +798  | +900  | +1003 | +1153 | +1304 | +1433 | +1561 | +1658 |
| 00000498 | +1755 | +1780 | +1806 | +1784 | +994  | +1465 | +1937 | +1817 |
| 000004A0 | +1697 | +1763 | +38   | +40   | +43   | +429  | +1584 | +1458 |
| 000004A8 | +1333 | +1326 | +1319 | +1280 | +1242 | +1141 | +1040 | +971  |
| 000004B0 | +903  | +856  | +810  | +732  | +654  | +559  | +465  | +275  |
| 000004B8 | +85   | -46   | -177  | +780  | +1993 | +985  | -279  | -279  |
| 000004C0 | +563  | +546  | +530  | +513  | +497  | +486  | +476  | +466  |
| 000004C8 | +456  | +449  | +444  | -170  | +624  | +878  | +1260 | +1210 |
| 000004D0 | +905  | +1018 | +1131 | +1260 | +1390 | +1533 | +1675 | +1721 |
| 000004D8 | +1768 | +1806 | +1844 | +1738 | +1248 | +1510 | +1901 | +1916 |
| 000004E0 | +1931 | +1421 | +16   | +66   | -10   | +1049 | +1598 | +1530 |
| 000004E8 | +1463 | +1472 | +1480 | +1441 | +1402 | +1303 | +1205 | +1154 |
| 000004F0 | +1104 | +1069 | +1035 | +921  | +807  | +664  | +522  | +331  |
| 000004F8 | +141  | +5    | -131  | -244  | -100  | -100  | -228  | -228  |
| 00000500 | +588  | +570  | +553  | +535  | +518  | +508  | +499  | +489  |
| 00000508 | +480  | +412  | +345  | +101  | +370  | +786  | +947  | +1619 |
| 00000510 | +1012 | +1136 | +1260 | +1368 | +1477 | +1505 | +1533 | +1657 |
| 00000518 | +1782 | +1832 | +1882 | +1692 | +1502 | +1556 | +1866 | +1888 |
| 00000520 | +1910 | +952  | -5    | +93   | -64   | +1670 | +1613 | +1603 |
| 00000528 | +1594 | +1618 | +1642 | +1602 | +1562 | +1466 | +1370 | +1338 |
| 00000530 | +1306 | +1283 | +1261 | +1110 | +960  | +769  | +579  | +388  |
| 00000538 | +198  | +56   | -86   | -244  | -146  | -162  | -178  | -178  |
| 00000540 | +597  | +581  | +565  | +549  | +534  | +523  | +513  | +486  |
| 00000548 | +460  | +484  | +253  | +190  | +383  | +714  | +917  | +1399 |
| 00000550 | +1243 | +1173 | +1360 | +1459 | +1559 | +1645 | +1731 | +1633 |
| 00000558 | +1535 | +1578 | +1621 | +1760 | +1900 | +1837 | +1774 | +1855 |
| 00000560 | +1936 | +437  | +89   | +45   | +258  | +1719 | +1645 | +1666 |
| 00000568 | +1688 | +1701 | +1715 | +1680 | +1646 | +1587 | +1528 | +1502 |
| 00000570 | +1475 | +1380 | +1286 | +1111 | +937  | +777  | +617  | +441  |
| 00000578 | +266  | +110  | -46   | -235  | -167  | -159  | -151  | -151  |
| 00000580 | +606  | +592  | +578  | +564  | +551  | +539  | +527  | +483  |
| 00000588 | +440  | +557  | +162  | +279  | +397  | +642  | +887  | +1180 |
| 00000590 | +1474 | +1211 | +1461 | +1551 | +1641 | +1657 | +1673 | +1737 |
| 00000598 | +1801 | +1837 | +1873 | +1829 | +1786 | +1990 | +1938 | +1950 |
| 000005A0 | +1963 | -78   | +184  | +126  | +837  | +1897 | +1678 | +1730 |
| 000005A8 | +1783 | +1785 | +1788 | +1759 | +1730 | +1708 | +1687 | +1666 |
| 000005B0 | +1645 | +1478 | +1311 | +1112 | +914  | +785  | +656  | +495  |
| 000005B8 | +335  | +164  | -7    | -226  | -189  | -157  | -125  | -125  |
| 000005C0 | +615  | +603  | +591  | +579  | +567  | +554  | +541  | +512  |
| 000005C8 | +484  | +389  | +39   | +240  | +442  | +642  | +969  | +1233 |
| 000005D0 | +1625 | +1313 | +1386 | +1578 | +1771 | +1757 | +1743 | +1864 |
| 000005D8 | +1858 | +1887 | +1917 | +1890 | +1864 | +1967 | +1942 | +1957 |
| 000005E0 | +1333 | +46   | +166  | +86   | +1415 | +1850 | +1774 | +1793 |
| 000005E8 | +1813 | +1821 | +1829 | +1821 | +1814 | +1837 | +1862 | +1718 |
| 000005F0 | +1574 | +1423 | +1272 | +1137 | +1003 | +865  | +727  | +557  |

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 000005F8 | +387  | +194  | +0    | -201  | -146  | -154  | -162  | -162  |
| 00000600 | +624  | +614  | +604  | +594  | +584  | +570  | +556  | +542  |
| 00000608 | +528  | +350  | +172  | +330  | +488  | +642  | +1052 | +1158 |
| 00000610 | +1520 | +1159 | +1055 | +1094 | +1134 | +1345 | +1557 | +1864 |
| 00000618 | +1916 | +1938 | +1961 | +1951 | +1942 | +1944 | +1947 | +1965 |
| 00000620 | +704  | +170  | +149  | +47   | +1994 | +1804 | +1871 | +1857 |
| 00000628 | +1844 | +1857 | +1871 | +1884 | +1898 | +1839 | +1781 | +1642 |
| 00000630 | +1504 | +1369 | +1234 | +1163 | +1092 | +945  | +798  | +619  |
| 00000638 | +440  | +224  | +8    | -176  | -104  | -152  | -200  | -200  |
| 00000640 | +648  | +642  | +636  | +630  | +624  | +582  | +540  | +546  |
| 00000648 | +553  | +116  | +191  | +338  | +485  | +486  | +616  | +417  |
| 00000650 | +346  | +268  | +319  | +282  | +245  | +281  | +318  | -53   |
| 00000658 | +472  | +1179 | +1886 | +1897 | +2037 | +1982 | +1927 | +2168 |
| 00000660 | +106  | +102  | +98   | +670  | +2011 | +1906 | +1930 | +1905 |
| 00000668 | +1881 | +1883 | +1885 | +1888 | +1890 | +1801 | +1713 | +1600 |
| 00000670 | +1488 | +1419 | +1349 | +1200 | +1050 | +991  | +803  | +640  |
| 00000678 | +477  | +272  | -60   | -160  | -133  | -157  | -181  | -181  |
| 00000680 | +672  | +670  | +668  | +666  | +665  | +595  | +525  | +551  |
| 00000688 | +578  | +10   | +466  | +475  | +483  | +459  | +436  | +444  |
| 00000690 | +453  | +402  | +352  | +366  | +380  | +370  | +360  | +334  |
| 00000698 | +308  | +164  | +20   | +820  | +1876 | +1892 | +1908 | +1604 |
| 000006A0 | +20   | +290  | +48   | +1294 | +2029 | +2009 | +1989 | +1953 |
| 000006A8 | +1918 | +1909 | +1900 | +1892 | +1883 | +1764 | +1646 | +1687 |
| 000006B0 | +1729 | +1853 | +1977 | +1877 | +1777 | +1421 | +809  | +533  |
| 000006B8 | +258  | +193  | -128  | -145  | -162  | -162  | -162  | -162  |
| 000006C0 | +696  | +682  | +668  | +654  | +641  | +623  | +606  | +484  |
| 000006C8 | +491  | +712  | +549  | +539  | +529  | +536  | +544  | +407  |
| 000006D0 | +399  | +528  | +401  | +386  | +371  | +322  | +273  | +384  |
| 000006D8 | +368  | +324  | +281  | +166  | +51   | +969  | +2016 | +991  |
| 000006E0 | +222  | +166  | -18   | +2038 | +2046 | +2023 | +2000 | +1977 |
| 000006E8 | +1955 | +1935 | +1915 | +1895 | +1876 | +1903 | +1930 | +1917 |
| 000006F0 | +1905 | +1839 | +1772 | +1690 | +1608 | +1819 | +1903 | +1170 |
| 000006F8 | +567  | +545  | +12   | -193  | -143  | -143  | -143  | -143  |
| 00000700 | +720  | +694  | +669  | +643  | +618  | +652  | +687  | +545  |
| 00000708 | +660  | +518  | +633  | +604  | +575  | +357  | +140  | +243  |
| 00000710 | +602  | +782  | +450  | +662  | +875  | +915  | +955  | +691  |
| 00000718 | +172  | +229  | +287  | +408  | +274  | +175  | +333  | +378  |
| 00000720 | +168  | +170  | +428  | +2014 | +2064 | +2038 | +2012 | +2002 |
| 00000728 | +1992 | +1961 | +1930 | +1899 | +1869 | +1914 | +1959 | +1892 |
| 00000730 | +1826 | +1697 | +1568 | +1503 | +1439 | +1450 | +1461 | +1552 |
| 00000738 | +1900 | +642  | +664  | +14   | -124  | -124  | -124  | -124  |
| 00000740 | +728  | +703  | +679  | +654  | +630  | +604  | +579  | +722  |
| 00000748 | +609  | +632  | +16   | -327  | -671  | -488  | -178  | +197  |
| 00000750 | +700  | +876  | +669  | +869  | +1070 | +1287 | +1504 | +1762 |
| 00000758 | +1892 | +1268 | +516  | +132  | +261  | +220  | +307  | +314  |
| 00000760 | +194  | +201  | +1105 | +2025 | +2049 | +2039 | +2029 | +1995 |
| 00000768 | +1961 | +1955 | +1949 | +1943 | +1937 | +1902 | +1867 | +1776 |
| 00000770 | +1686 | +1563 | +1439 | +1292 | +1145 | +1013 | +881  | +1324 |
| 00000778 | +1513 | +1151 | +1046 | +332  | -125  | -125  | -125  | -125  |
| 00000780 | +736  | +712  | +689  | +666  | +643  | +685  | +728  | +515  |
| 00000788 | -466  | -917  | -856  | -618  | -381  | -310  | +16   | +407  |
| 00000790 | +799  | +971  | +888  | +1076 | +1265 | +1404 | +1542 | +1681 |
| 00000798 | +1820 | +2051 | +2026 | +1521 | +248  | +265  | +282  | +251  |
| 000007A0 | +220  | +105  | +1527 | +1909 | +2035 | +2040 | +2046 | +1988 |
| 000007A8 | +1930 | +1949 | +1968 | +1987 | +2006 | +1891 | +1776 | +1661 |
| 000007B0 | +1547 | +1429 | +1311 | +1210 | +1108 | +960  | +813  | +457  |
| 000007B8 | +1382 | +125  | +148  | +11   | -126  | -126  | -126  | -126  |
| 000007C0 | +744  | +721  | +699  | +685  | +671  | +654  | +765  | -204  |
| 000007C8 | -917  | -794  | -544  | -405  | -267  | -140  | +242  | +585  |
| 000007D0 | +929  | +1066 | +1075 | +1251 | +1428 | +1552 | +1676 | +1768 |
| 000007D8 | +1860 | +1937 | +1887 | +2149 | +2027 | +1061 | +224  | +251  |
| 000007E0 | +278  | +273  | +13   | +1056 | +1972 | +2057 | +2015 | +1973 |
| 000007E8 | +1931 | +1919 | +1907 | +1991 | +1947 | +1744 | +1669 | +1570 |
| 000007F0 | +1471 | +1311 | +1151 | +1015 | +879  | +747  | +617  | +629  |
| 000007F8 | +387  | -173  | -94   | -94   | -95   | -111  | -127  | -127  |
| 00000800 | +752  | +731  | +710  | +705  | +700  | +623  | +802  | -667  |
| 00000808 | -856  | -544  | -489  | -321  | -154  | +29   | +469  | +764  |
| 00000810 | +1060 | +1161 | +1262 | +1427 | +1592 | +1701 | +1810 | +1855 |
| 00000818 | +1900 | +1952 | +2005 | +2009 | +2014 | +1986 | +167  | +251  |

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000820 | +336  | +313  | +291  | +204  | +118  | +1179 | +1985 | +1958 |
| 00000828 | +1932 | +1889 | +1846 | +1995 | +1888 | +1597 | +1562 | +1479 |
| 00000830 | +1396 | +1193 | +991  | +820  | +650  | +535  | +421  | +34   |
| 00000838 | -96   | -88   | -80   | -72   | -64   | -96   | -128  | -128  |
| 00000840 | +773  | +748  | +723  | +715  | +706  | +813  | +665  | -1051 |
| 00000848 | -592  | -409  | -356  | -197  | -40   | +202  | +574  | +856  |
| 00000850 | +1140 | +1243 | +1346 | +1497 | +1648 | +1733 | +1819 | +1856 |
| 00000858 | +1893 | +1957 | +2022 | +1958 | +2023 | +1548 | +178  | +327  |
| 00000860 | +349  | +99   | +233  | +190  | +148  | +188  | +100  | +907  |
| 00000868 | +1715 | +1784 | +1980 | +2057 | +1877 | +1655 | +1560 | +1402 |
| 00000870 | +1243 | +1104 | +965  | +594  | +223  | +18   | -58   | -127  |
| 00000878 | -68   | -55   | -43   | -54   | -66   | -98   | -130  | -130  |
| 00000880 | +794  | +765  | +737  | +725  | +713  | +748  | +16   | -795  |
| 00000888 | -584  | -403  | -223  | -74   | +74   | +376  | +679  | +949  |
| 00000890 | +1220 | +1325 | +1430 | +1568 | +1705 | +1766 | +1828 | +1857 |
| 00000898 | +1887 | +1963 | +2040 | +1908 | +2033 | +1111 | +190  | +276  |
| 000008A0 | +107  | +1805 | +175  | +177  | +179  | +221  | +263  | +113  |
| 000008A8 | -37   | +143  | +579  | +839  | +843  | +817  | +791  | +557  |
| 000008B0 | +323  | +119  | -84   | -15   | +53   | -114  | -25   | -32   |
| 000008B8 | -40   | -23   | -6    | -37   | -68   | -100  | -132  | -132  |
| 000008C0 | +815  | +782  | +751  | +735  | +719  | +795  | -408  | -699  |
| 000008C8 | -480  | -316  | -154  | -7    | +140  | +437  | +736  | +985  |
| 000008D0 | +1236 | +1359 | +1482 | +1614 | +1746 | +1791 | +1837 | +1850 |
| 000008D8 | +1864 | +1896 | +1929 | +2073 | +2090 | +353  | +281  | +208  |
| 000008E0 | +648  | +1958 | +2117 | +1099 | +81   | +133  | +186  | +174  |
| 000008E8 | +162  | +54   | +73   | +93   | -15   | +19   | +53   | +48   |
| 000008F0 | +42   | +30   | +19   | -81   | -53   | -63   | +55   | +438  |
| 000008F8 | -76   | -46   | -17   | -43   | -70   | -102  | -134  | -134  |
| 00000900 | +836  | +800  | +765  | +745  | +726  | +842  | -833  | -604  |
| 00000908 | -376  | -230  | -85   | +60   | +206  | +499  | +793  | +1022 |
| 00000910 | +1252 | +1393 | +1535 | +1661 | +1787 | +1816 | +1846 | +1844 |
| 00000918 | +1842 | +1830 | +1819 | +1855 | +1380 | +236  | +373  | +141  |
| 00000920 | +1190 | +2112 | +2011 | +2021 | +2032 | +1070 | +109  | +107  |
| 00000928 | +106  | +93   | +80   | +115  | +150  | +117  | +84   | +51   |
| 00000930 | +18   | -58   | -134  | +109  | +609  | +1012 | +1416 | +524  |
| 00000938 | -112  | -70   | -28   | -50   | -72   | -104  | -136  | -136  |
| 00000940 | +813  | +803  | +794  | +729  | +792  | +346  | -739  | -553  |
| 00000948 | -368  | -225  | -84   | +57   | +200  | +402  | +734  | +968  |
| 00000950 | +1204 | +1351 | +1499 | +1663 | +1827 | +1784 | +1741 | +1810 |
| 00000958 | +1879 | +1719 | +1560 | +800  | +425  | +409  | +266  | +218  |
| 00000960 | +1707 | +2126 | +2033 | +2027 | +2022 | +2042 | +2062 | +1497 |
| 00000968 | +933  | +534  | +134  | +31   | -72   | -19   | +34   | +352  |
| 00000970 | +669  | +1091 | +1514 | +1408 | +1430 | +1476 | +1395 | -174  |
| 00000978 | +48   | -9    | -67   | -68   | -70   | -102  | -134  | -134  |
| 00000980 | +790  | +807  | +824  | +713  | +859  | -150  | -646  | -503  |
| 00000988 | -360  | -221  | -83   | +55   | +194  | +306  | +675  | +915  |
| 00000990 | +1156 | +1310 | +1464 | +1538 | +1612 | +1624 | +1636 | +1648 |
| 00000998 | +1661 | +1737 | +1814 | +1666 | +751  | +327  | +416  | +296  |
| 000009A0 | +1969 | +2012 | +2055 | +2034 | +2013 | +1990 | +1967 | +1992 |
| 000009A8 | +2017 | +1999 | +1981 | +1995 | +2009 | +1893 | +1777 | +1805 |
| 000009B0 | +1833 | +1729 | +1626 | +1555 | +1484 | +1429 | +1118 | -105  |
| 000009B8 | -48   | -77   | -106  | -87   | -68   | -100  | -132  | -132  |
| 000009C0 | +831  | +826  | +822  | +809  | +925  | -494  | -633  | -492  |
| 000009C8 | -352  | -200  | -50   | +4    | +60   | +201  | +472  | +789  |
| 000009D0 | +1108 | +1252 | +1396 | +1436 | +1477 | +1488 | +1499 | +1542 |
| 000009D8 | +1586 | +1618 | +1651 | +1787 | +260  | +276  | +293  | +885  |
| 000009E0 | +1990 | +2009 | +2029 | +2016 | +2003 | +1985 | +1968 | +1974 |
| 000009E8 | +1980 | +1960 | +1939 | +1903 | +1994 | +1933 | +1871 | +1818 |
| 000009F0 | +1764 | +1687 | +1611 | +1534 | +1458 | +1453 | +681  | -59   |
| 000009F8 | -32   | -56   | -81   | -73   | -66   | -98   | -130  | -130  |
| 00000A00 | +872  | +846  | +820  | +778  | +736  | -966  | -620  | -482  |
| 00000A08 | -344  | -180  | -17   | +82   | +182  | +353  | +525  | +792  |
| 00000A10 | +1060 | +1194 | +1329 | +1335 | +1342 | +1352 | +1363 | +1437 |
| 00000A18 | +1512 | +1500 | +1489 | +1141 | +282  | +482  | +171  | +1475 |
| 00000A20 | +2012 | +2007 | +2003 | +1998 | +1994 | +1981 | +1969 | +1956 |
| 00000A28 | +1944 | +1921 | +1898 | +1811 | +1980 | +1973 | +1966 | +1831 |
| 00000A30 | +1696 | +1646 | +1596 | +1514 | +1432 | +1478 | +244  | -14   |
| 00000A38 | -16   | -36   | -56   | -60   | -64   | -96   | -128  | -128  |
| 00000A40 | +917  | +817  | +846  | +859  | +104  | -831  | -614  | -462  |

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000A48 | -309  | -141  | +25   | +128  | +359  | +352  | +474  | +563  |
| 00000A50 | +781  | +922  | +1064 | +1118 | +1172 | +1223 | +1275 | +1327 |
| 00000A58 | +1379 | +1369 | +1359 | +781  | +331  | +311  | +163  | +2103 |
| 00000A60 | +1996 | +2006 | +2017 | +1995 | +1974 | +1961 | +1949 | +1936 |
| 00000A68 | +1924 | +1887 | +1850 | +1742 | +1761 | +1863 | +1964 | +1906 |
| 00000A70 | +1847 | +1802 | +1756 | +1703 | +1650 | +1675 | -220  | -115  |
| 00000A78 | -11   | -24   | -37   | -50   | -63   | -87   | -111  | -111  |
| 00000A80 | +962  | +789  | +872  | +940  | -528  | -697  | -609  | -442  |
| 00000A88 | -275  | -103  | +67   | +46   | +281  | +224  | +423  | +334  |
| 00000A90 | +502  | +651  | +800  | +901  | +1002 | +1095 | +1188 | +1217 |
| 00000A98 | +1247 | +1238 | +1230 | +421  | +381  | +397  | +668  | +1964 |
| 00000AA0 | +1980 | +2005 | +2031 | +1992 | +1954 | +1941 | +1929 | +1916 |
| 00000AA8 | +1904 | +1853 | +1803 | +1801 | +1799 | +1753 | +1707 | +1853 |
| 00000AB0 | +1999 | +1958 | +1917 | +1893 | +1868 | +1104 | -172  | +39   |
| 00000AB8 | -6    | -12   | -18   | -40   | -62   | -78   | -94   | -94   |
| 00000AC0 | +799  | +792  | +914  | +1077 | -936  | -706  | -604  | -278  |
| 00000AC8 | -208  | -257  | -51   | +220  | +107  | +95   | +340  | +217  |
| 00000AD0 | +351  | +435  | +519  | +612  | +704  | +854  | +1005 | +1019 |
| 00000AD8 | +1034 | +1043 | +924  | +397  | +383  | +298  | +1237 | +1976 |
| 00000AE0 | +1948 | +1964 | +1981 | +1957 | +1934 | +1921 | +1909 | +1896 |
| 00000AE8 | +1884 | +1843 | +1804 | +1788 | +1773 | +1731 | +1689 | +1656 |
| 00000AF0 | +1622 | +1682 | +1742 | +1594 | +1446 | +429  | -77   | +17   |
| 00000AF8 | -17   | -24   | -31   | -54   | -77   | -77   | -77   | -77   |
| 00000B00 | +892  | +924  | +957  | +446  | -833  | -588  | -855  | -370  |
| 00000B08 | -398  | -411  | +87   | -374  | +189  | +95   | +258  | +101  |
| 00000B10 | +200  | +219  | +239  | +323  | +407  | +614  | +822  | +822  |
| 00000B18 | +822  | +848  | +619  | +374  | +385  | +199  | +1806 | +1989 |
| 00000B20 | +1916 | +1923 | +1931 | +1922 | +1914 | +1901 | +1889 | +1876 |
| 00000B28 | +1864 | +1834 | +1805 | +1776 | +1747 | +1709 | +1672 | +1587 |
| 00000B30 | +1502 | +1406 | +1311 | +1296 | +1281 | -118  | +18   | -4    |
| 00000B38 | -28   | -36   | -44   | -68   | -92   | -76   | -60   | -60   |
| 00000B40 | +901  | +950  | +1127 | -143  | -645  | -564  | -356  | -195  |
| 00000B48 | -163  | -192  | -222  | +100  | -89   | +218  | +13   | -22   |
| 00000B50 | -59   | +102  | +135  | +192  | +249  | +342  | +437  | +499  |
| 00000B58 | +561  | +626  | +563  | +397  | +358  | +580  | +1827 | +1921 |
| 00000B60 | +1888 | +1894 | +1901 | +1891 | +1882 | +1808 | +1863 | +1845 |
| 00000B68 | +1828 | +1797 | +1768 | +1738 | +1708 | +1670 | +1632 | +1539 |
| 00000B70 | +1445 | +1343 | +1242 | +1308 | +991  | -14   | +4    | +7    |
| 00000B78 | +9    | -9    | -27   | +3    | +33   | -15   | -63   | -63   |
| 00000B80 | +910  | +848  | +1042 | -1116 | -969  | -285  | -881  | -917  |
| 00000B88 | -697  | -230  | -276  | -193  | -111  | -555  | -231  | -18   |
| 00000B90 | -62   | -15   | -225  | -67   | +91   | +71   | +52   | +176  |
| 00000B98 | +301  | +404  | +508  | +420  | +332  | +962  | +1848 | +1854 |
| 00000BA0 | +1860 | +1865 | +1871 | +1860 | +1850 | +1715 | +1837 | +1814 |
| 00000BA8 | +1792 | +1761 | +1731 | +1700 | +1670 | +1632 | +1593 | +1491 |
| 00000BB0 | +1389 | +1281 | +1173 | +1193 | +445  | -38   | -10   | +18   |
| 00000BB8 | +46   | +18   | -10   | -54   | -98   | -82   | -66   | -66   |
| 00000BC0 | +855  | +977  | +588  | -1416 | -477  | -1037 | -1086 | -182  |
| 00000BC8 | -942  | -676  | -410  | -799  | -421  | -624  | -443  | -326  |
| 00000BD0 | -337  | -277  | -217  | -318  | -162  | -152  | -141  | -50   |
| 00000BD8 | -87   | +246  | +453  | +435  | +290  | +1383 | +1837 | +1826 |
| 00000BE0 | +1816 | +1828 | +1841 | +1813 | +1786 | +1718 | +1779 | +1767 |
| 00000BE8 | +1756 | +1724 | +1694 | +1662 | +1632 | +1593 | +1554 | +1451 |
| 00000BF0 | +1348 | +1250 | +1152 | +1109 | +171  | +89   | +135  | +77   |
| 00000BF8 | +19   | -3    | -25   | -55   | -85   | -77   | -69   | -69   |
| 00000C00 | +800  | +979  | -121  | -1333 | -1010 | -1278 | -1291 | -727  |
| 00000C08 | +348  | +158  | +480  | +1026 | +1060 | +970  | +880  | +646  |
| 00000C10 | +412  | -155  | -466  | -697  | -416  | -375  | -334  | -149  |
| 00000C18 | -220  | +217  | +398  | +451  | +248  | +1805 | +1826 | +1799 |
| 00000C20 | +1772 | +1791 | +1811 | +1766 | +1722 | +1721 | +1721 | +1720 |
| 00000C28 | +1720 | +1688 | +1657 | +1625 | +1594 | +1554 | +1515 | +1411 |
| 00000C30 | +1308 | +1219 | +1131 | +1026 | -102  | +89   | +25   | +8    |
| 00000C38 | -8    | -24   | -40   | -56   | -72   | -72   | -72   | -72   |
| 00000C40 | +978  | +926  | -1045 | -1512 | -572  | +161  | +1022 | +836  |
| 00000C48 | +777  | +664  | +807  | +958  | +853  | +811  | +641  | +751  |
| 00000C50 | +733  | +650  | +696  | +470  | -396  | -774  | -384  | -410  |
| 00000C58 | -308  | +463  | +467  | +454  | +698  | +1661 | +1728 | +1723 |
| 00000C60 | +1718 | +1696 | +1675 | +1694 | +1713 | +1686 | +1660 | +1722 |
| 00000C68 | +1656 | +1632 | +1608 | +1576 | +1545 | +1498 | +1453 | +1343 |

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000C70 | +1233 | +1145 | +1057 | +641  | -30   | +68   | +39   | +18   |
| 00000C78 | -2    | -18   | -34   | -50   | -66   | -66   | -66   | -66   |
| 00000C80 | +900  | +873  | +334  | +996  | +889  | +832  | +776  | +863  |
| 00000C88 | +695  | +658  | +622  | +634  | +646  | +780  | +658  | +728  |
| 00000C90 | +542  | +560  | +579  | +485  | +648  | +363  | -434  | -671  |
| 00000C98 | -397  | +709  | +536  | +458  | +1149 | +1518 | +1630 | +1647 |
| 00000CA0 | +1664 | +1602 | +1540 | +1622 | +1704 | +1652 | +1600 | +1724 |
| 00000CA8 | +1593 | +1576 | +1560 | +1528 | +1496 | +1443 | +1391 | +1275 |
| 00000CB0 | +1159 | +1071 | +984  | +256  | +41   | +47   | +54   | +28   |
| 00000CB8 | +3    | -13   | -29   | -45   | -61   | -61   | -61   | -61   |
| 00000CC0 | +758  | +916  | +818  | +952  | +703  | +672  | +641  | +794  |
| 00000CC8 | +820  | +732  | +645  | +638  | +631  | +693  | +627  | +657  |
| 00000CD0 | +559  | +558  | +557  | +452  | +476  | +580  | +555  | +59   |
| 00000CD8 | -181  | +403  | +349  | +350  | +1120 | +1662 | +1180 | +1467 |
| 00000CE0 | +1626 | +1499 | +1372 | +1462 | +1551 | +1577 | +1476 | +1638 |
| 00000CE8 | +1545 | +1528 | +1512 | +1479 | +1447 | +1388 | +1329 | +1207 |
| 00000CF0 | +1084 | +1037 | +990  | +127  | +32   | +34   | +36   | +22   |
| 00000CF8 | +8    | -7    | -23   | -39   | -55   | -55   | -55   | -55   |
| 00000D00 | +872  | +831  | +790  | +781  | +773  | +768  | +763  | +726  |
| 00000D08 | +690  | +679  | +669  | +643  | +617  | +606  | +566  | +586  |
| 00000D10 | +576  | +556  | +536  | +548  | +561  | +413  | +521  | +533  |
| 00000D18 | +546  | +482  | +418  | +370  | +1091 | +1039 | +1243 | +1415 |
| 00000D20 | +1332 | +1396 | +1461 | +1430 | +1399 | +1503 | +1352 | +1553 |
| 00000D28 | +1498 | +1481 | +1464 | +1431 | +1398 | +1333 | +1268 | +1139 |
| 00000D30 | +1010 | +875  | +741  | -129  | +24   | +21   | +19   | +16   |
| 00000D38 | +14   | -2    | -18   | -34   | -50   | -50   | -50   | -50   |
| 00000D40 | +842  | +820  | +798  | +792  | +786  | +771  | +756  | +725  |
| 00000D48 | +695  | +679  | +664  | +641  | +618  | +606  | +595  | +584  |
| 00000D50 | +573  | +553  | +534  | +531  | +529  | +460  | +519  | +498  |
| 00000D58 | +477  | +462  | +447  | +440  | +817  | +839  | +1117 | +1219 |
| 00000D60 | +1066 | +1225 | +1385 | +1290 | +1322 | +1356 | +1264 | +1371 |
| 00000D68 | +1350 | +1414 | +1349 | +1285 | +1221 | +1191 | +1162 | +1052 |
| 00000D70 | +943  | +866  | +405  | -39   | +27   | +31   | +35   | +23   |
| 00000D78 | +11   | -3    | -18   | -33   | -48   | -56   | -64   | -64   |
| 00000D80 | +812  | +809  | +806  | +803  | +800  | +775  | +750  | +725  |
| 00000D88 | +701  | +680  | +660  | +639  | +619  | +607  | +594  | +582  |
| 00000D90 | +570  | +551  | +533  | +515  | +497  | +507  | +517  | +463  |
| 00000D98 | +409  | +442  | +476  | +510  | +544  | +512  | +736  | +1024 |
| 00000DA0 | +1056 | +1055 | +1054 | +1022 | +1245 | +1210 | +1176 | +1189 |
| 00000DA8 | +1203 | +1347 | +1235 | +1139 | +1044 | +1050 | +1056 | +966  |
| 00000DB0 | +877  | +857  | +70   | +50   | +31   | +41   | +52   | +30   |
| 00000DB8 | +9    | -5    | -19   | -33   | -47   | -63   | -79   | -79   |
| 00000DC0 | +862  | +894  | +926  | +846  | +766  | +747  | +728  | +709  |
| 00000DC8 | +690  | +672  | +655  | +637  | +620  | +607  | +593  | +580  |
| 00000DD0 | +567  | +549  | +532  | +514  | +497  | +498  | +499  | +467  |
| 00000DD8 | +436  | +438  | +441  | +396  | +351  | +328  | +562  | +916  |
| 00000DE0 | +1142 | +596  | +819  | +898  | +1104 | +1160 | +1088 | +1119 |
| 00000DE8 | +1023 | +1280 | +1281 | +945  | +867  | +836  | +806  | +872  |
| 00000DF0 | +810  | +576  | -41   | -4    | +34   | +35   | +36   | +21   |
| 00000DF8 | +6    | -6    | -19   | -32   | -45   | -69   | -93   | -93   |
| 00000E00 | +912  | +851  | +790  | +761  | +732  | +719  | +706  | +693  |
| 00000E08 | +680  | +665  | +651  | +636  | +622  | +607  | +593  | +578  |
| 00000E10 | +564  | +547  | +531  | +514  | +498  | +489  | +481  | +472  |
| 00000E18 | +464  | +435  | +407  | +410  | +414  | +401  | +645  | +808  |
| 00000E20 | +972  | +1034 | +584  | +646  | +708  | +854  | +744  | +922  |
| 00000E28 | +844  | +1085 | +1071 | +624  | +690  | +751  | +813  | +522  |
| 00000E30 | -24   | +39   | +103  | +70   | +38   | +29   | +21   | +12   |
| 00000E38 | +4    | -8    | -20   | -32   | -44   | -76   | -108  | -108  |
| 00000E40 | +844  | +807  | +771  | +750  | +730  | +714  | +699  | +683  |
| 00000E48 | +668  | +654  | +642  | +628  | +616  | +602  | +590  | +576  |
| 00000E50 | +564  | +546  | +529  | +511  | +494  | +484  | +475  | +465  |
| 00000E58 | +456  | +430  | +406  | +396  | +388  | +297  | +336  | +485  |
| 00000E60 | +636  | +165  | +462  | +519  | +576  | +649  | +722  | +955  |
| 00000E68 | +804  | +765  | +600  | +257  | +172  | +129  | +88   | +125  |
| 00000E70 | +36   | +61   | +87   | +64   | +42   | +32   | +23   | +13   |
| 00000E78 | +4    | -9    | -22   | -35   | -48   | -72   | -96   | -96   |
| 00000E80 | +776  | +764  | +752  | +740  | +728  | +710  | +692  | +674  |
| 00000E88 | +656  | +644  | +633  | +621  | +610  | +598  | +587  | +575  |
| 00000E90 | +564  | +545  | +527  | +508  | +490  | +479  | +469  | +458  |

|          |      |      |      |      |      |      |       |      |
|----------|------|------|------|------|------|------|-------|------|
| 00000E98 | +448 | +426 | +405 | +383 | +362 | +322 | +283  | +291 |
| 00000EA0 | +300 | +320 | +340 | +264 | +188 | +188 | +444  | +732 |
| 00000EA8 | +508 | +318 | +129 | +147 | +166 | +148 | +131  | +113 |
| 00000EB0 | +96  | +83  | +71  | +58  | +46  | +35  | +25   | +14  |
| 00000EB8 | +4   | -10  | -24  | -38  | -52  | -68  | -84   | -84  |
| 00000EC0 | +772 | +760 | +749 | +737 | +726 | +705 | +685  | +664 |
| 00000EC8 | +644 | +633 | +624 | +613 | +604 | +593 | +584  | +573 |
| 00000ED0 | +564 | +544 | +525 | +505 | +486 | +474 | +463  | +451 |
| 00000ED8 | +440 | +421 | +404 | +385 | +368 | +338 | +310  | +304 |
| 00000EE0 | +300 | +307 | +314 | +273 | +232 | +119 | +1030 | +845 |
| 00000EE8 | +788 | +854 | +154 | +156 | +160 | +142 | +126  | +108 |
| 00000EF0 | +92  | +81  | +71  | +60  | +50  | +38  | +27   | +15  |
| 00000EF8 | +4   | -11  | -26  | -41  | -56  | -64  | -72   | -72  |
| 00000F00 | +768 | +757 | +746 | +735 | +724 | +701 | +678  | +655 |
| 00000F08 | +632 | +623 | +615 | +606 | +598 | +589 | +581  | +572 |
| 00000F10 | +564 | +543 | +523 | +502 | +482 | +469 | +457  | +444 |
| 00000F18 | +432 | +417 | +403 | +388 | +374 | +355 | +337  | +318 |
| 00000F20 | +300 | +294 | +288 | +282 | +276 | +306 | +80   | +958 |
| 00000F28 | +556 | +111 | +179 | +166 | +154 | +137 | +121  | +104 |
| 00000F30 | +88  | +79  | +71  | +62  | +54  | +41  | +29   | +16  |
| 00000F38 | +4   | -12  | -28  | -44  | -60  | -60  | -60   | -60  |
| 00000F40 | +768 | +757 | +746 | +735 | +724 | +701 | +678  | +655 |
| 00000F48 | +632 | +623 | +615 | +606 | +598 | +589 | +581  | +572 |
| 00000F50 | +564 | +543 | +523 | +502 | +482 | +469 | +457  | +444 |
| 00000F58 | +432 | +417 | +403 | +388 | +374 | +355 | +337  | +318 |
| 00000F60 | +300 | +294 | +288 | +282 | +276 | +322 | +240  | +54  |
| 00000F68 | +252 | +79  | +163 | +158 | +154 | +137 | +121  | +104 |
| 00000F70 | +88  | +79  | +71  | +62  | +54  | +41  | +29   | +16  |
| 00000F78 | +4   | -12  | -28  | -44  | -60  | -60  | -60   | -60  |
| 00000F80 | +768 | +757 | +746 | +735 | +724 | +701 | +678  | +655 |
| 00000F88 | +632 | +623 | +615 | +606 | +598 | +589 | +581  | +572 |
| 00000F90 | +564 | +543 | +523 | +502 | +482 | +469 | +457  | +444 |
| 00000F98 | +432 | +417 | +403 | +388 | +374 | +355 | +337  | +318 |
| 00000FA0 | +300 | +294 | +288 | +282 | +276 | +210 | +144  | +174 |
| 00000FA8 | +204 | +175 | +147 | +150 | +154 | +137 | +121  | +104 |
| 00000FB0 | +88  | +79  | +71  | +62  | +54  | +41  | +29   | +16  |
| 00000FB8 | +4   | -12  | -28  | -44  | -60  | -60  | -60   | -60  |
| 00000FC0 | +768 | +757 | +746 | +735 | +724 | +701 | +678  | +655 |
| 00000FC8 | +632 | +623 | +615 | +606 | +598 | +589 | +581  | +572 |
| 00000FD0 | +564 | +543 | +523 | +502 | +482 | +469 | +457  | +444 |
| 00000FD8 | +432 | +417 | +403 | +388 | +374 | +355 | +337  | +318 |
| 00000FE0 | +300 | +294 | +288 | +282 | +276 | +210 | +144  | +174 |
| 00000FE8 | +204 | +175 | +147 | +150 | +154 | +137 | +121  | +104 |
| 00000FF0 | +88  | +79  | +71  | +62  | +54  | +41  | +29   | +16  |
| 00000FF8 | +4   | -12  | -28  | -44  | -60  | -60  | -60   | -60  |

#### 4.2.4.3.4 Reconstructed Y Component

The reconstructed Y component is the same as the LL0 band shown in section [4.2.4.3.3.7](#).

#### 4.2.4.3.5 Reconstructed Cb Component

The following is a dump of the reconstructed Cb component.

The sample data for 11.5 fixed-point integers (RDP 7.1/8.0) is:

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000000 | +1728 | +1730 | +1732 | +1734 | +1736 | +1738 | +1740 | +1742 |
| 00000008 | +1744 | +1740 | +1736 | +1732 | +1728 | +1796 | +1864 | +1804 |
| 00000010 | +1744 | +1754 | +1764 | +1774 | +1784 | +1794 | +1804 | +1814 |
| 00000018 | +1824 | +1774 | +1724 | +1802 | +1880 | +1814 | +1748 | +1810 |
| 00000020 | +1872 | +1878 | +1884 | +1890 | +1896 | +1910 | +1924 | +1938 |
| 00000028 | +1952 | +1938 | +1924 | +1910 | +1896 | +1914 | +1932 | +1950 |
| 00000030 | +1968 | +1974 | +1980 | +1986 | +1992 | +1998 | +2004 | +2010 |
| 00000038 | +2016 | +2016 | +2016 | +2016 | +2016 | +2016 | +2016 | +2016 |



|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000040 | +1710 | +1697 | +1684 | +1704 | +1723 | +1726 | +1730 | +1733 |
| 00000048 | +1737 | +1738 | +1740 | +1741 | +1743 | +1758 | +1774 | +1757 |
| 00000050 | +1741 | +1762 | +1783 | +1788 | +1793 | +1774 | +1755 | +1784 |
| 00000058 | +1813 | +1817 | +1821 | +1825 | +1829 | +1857 | +1885 | +1881 |
| 00000060 | +1877 | +1849 | +1821 | +1857 | +1894 | +1904 | +1914 | +1924 |
| 00000068 | +1935 | +1928 | +1922 | +1915 | +1909 | +1922 | +1936 | +1949 |
| 00000070 | +1963 | +1974 | +1985 | +1997 | +2008 | +2009 | +2011 | +2012 |
| 00000078 | +2014 | +2017 | +2020 | +2023 | +2026 | +2026 | +2026 | +2026 |
| 00000080 | +1692 | +1664 | +1637 | +1674 | +1711 | +1715 | +1720 | +1725 |
| 00000088 | +1730 | +1737 | +1744 | +1751 | +1758 | +1721 | +1684 | +1711 |
| 00000090 | +1738 | +1770 | +1802 | +1802 | +1802 | +1754 | +1706 | +1754 |
| 00000098 | +1802 | +1860 | +1918 | +1848 | +1778 | +1900 | +2022 | +1952 |
| 000000A0 | +1882 | +1820 | +1759 | +1825 | +1892 | +1898 | +1905 | +1911 |
| 000000A8 | +1918 | +1919 | +1920 | +1921 | +1922 | +1931 | +1940 | +1949 |
| 000000B0 | +1958 | +1974 | +1991 | +2008 | +2025 | +2021 | +2018 | +2015 |
| 000000B8 | +2012 | +2018 | +2024 | +2030 | +2036 | +2036 | +2036 | +2036 |
| 000000C0 | +1674 | +1631 | +1589 | +1644 | +1698 | +1703 | +1710 | +1716 |
| 000000C8 | +1723 | +1735 | +1748 | +1760 | +1773 | +1763 | +1754 | +1760 |
| 000000D0 | +1767 | +1794 | +1821 | +1800 | +1779 | +1830 | +1881 | +1900 |
| 000000D8 | +1919 | +2047 | +2175 | +2015 | +1855 | +1879 | +1903 | +1927 |
| 000000E0 | +1951 | +1759 | +1824 | +1856 | +1890 | +1892 | +1895 | +1897 |
| 000000E8 | +1901 | +1909 | +1918 | +1926 | +1935 | +1939 | +1944 | +1948 |
| 000000F0 | +1953 | +1974 | +1996 | +2019 | +2041 | +2032 | +2025 | +2017 |
| 000000F8 | +2010 | +2019 | +2028 | +2037 | +2046 | +2046 | +2046 | +2046 |
| 00000100 | +1656 | +1599 | +1543 | +1614 | +1686 | +1693 | +1701 | +1708 |
| 00000108 | +1716 | +1734 | +1752 | +1770 | +1788 | +1806 | +1824 | +1810 |
| 00000110 | +1796 | +1818 | +1840 | +2054 | +2268 | +1650 | +1032 | +510  |
| 00000118 | -12   | -70   | -128  | +390  | +908  | +1602 | +2296 | +2158 |
| 00000120 | +2020 | +1699 | +1890 | +1889 | +1888 | +1887 | +1886 | +1885 |
| 00000128 | +1884 | +1900 | +1916 | +1932 | +1948 | +1948 | +1948 | +1948 |
| 00000130 | +1948 | +1975 | +2003 | +2030 | +2058 | +2045 | +2033 | +2020 |
| 00000138 | +2008 | +2020 | +2032 | +2044 | +2056 | +2056 | +2056 | +2056 |
| 00000140 | +1590 | +1570 | +1551 | +1612 | +1673 | +1579 | +1742 | +1713 |
| 00000148 | +1685 | +1672 | +1660 | +1711 | +1763 | +1694 | +1626 | +1941 |
| 00000150 | +2001 | +2060 | +583  | -654  | -1891 | -2046 | -2201 | -2084 |
| 00000158 | -1967 | -2049 | -2131 | -2053 | -1975 | -1751 | -1527 | +41   |
| 00000160 | +1609 | +2374 | +1859 | +2000 | +1886 | +1898 | +1912 | +1909 |
| 00000168 | +1907 | +1900 | +1894 | +1919 | +1945 | +1944 | +1944 | +1943 |
| 00000170 | +1943 | +1967 | +1992 | +2017 | +2042 | +2032 | +2023 | +2014 |
| 00000178 | +2006 | +2017 | +2028 | +2039 | +2050 | +2050 | +2050 | +2050 |
| 00000180 | +1524 | +1542 | +1560 | +1610 | +1661 | +1467 | +1785 | +1719 |
| 00000188 | +1654 | +1611 | +1568 | +1653 | +1738 | +1839 | +1940 | +793  |
| 00000190 | -866  | -2050 | -2210 | -2082 | -1954 | -1902 | -1850 | -1862 |
| 00000198 | -1874 | -1980 | -2086 | -1936 | -1786 | -1776 | -1766 | -1820 |
| 000001A0 | -1874 | -534  | +1829 | +2112 | +1884 | +1911 | +1939 | +1934 |
| 000001A8 | +1930 | +1901 | +1872 | +1907 | +1942 | +1941 | +1940 | +1939 |
| 000001B0 | +1938 | +1960 | +1982 | +2004 | +2027 | +2021 | +2015 | +2009 |
| 000001B8 | +2004 | +2014 | +2024 | +2034 | +2044 | +2044 | +2044 | +2044 |
| 000001C0 | +1586 | +1641 | +1697 | +1704 | +1712 | +1577 | +1699 | +1660 |
| 000001C8 | +1623 | +1613 | +1604 | +1642 | +1681 | +1791 | -402  | -2036 |
| 000001D0 | -1877 | -2144 | -1899 | -1942 | -1985 | -1918 | -1851 | -1880 |
| 000001D8 | -1909 | -1959 | -2009 | -1931 | -1853 | -1801 | -1749 | -1617 |
| 000001E0 | -1485 | -1939 | -1882 | +96   | +2074 | +1971 | +1869 | +1895 |
| 000001E8 | +1921 | +1885 | +1850 | +1894 | +1939 | +1937 | +1936 | +1934 |
| 000001F0 | +1933 | +1952 | +1972 | +1991 | +2011 | +2008 | +2006 | +2003 |
| 000001F8 | +2002 | +2011 | +2020 | +2029 | +2038 | +2038 | +2038 | +2038 |
| 00000200 | +1136 | +1229 | +1322 | +1287 | +1252 | +1433 | +1614 | +1603 |
| 00000208 | +1592 | +1616 | +1640 | +1632 | +1624 | +2256 | -1720 | -1792 |
| 00000210 | -1864 | -1982 | -2100 | -2058 | -2016 | -1934 | -1852 | -1898 |
| 00000218 | -1944 | -1938 | -1932 | -1926 | -1920 | -1826 | -1732 | -1670 |
| 00000220 | -1608 | -1552 | -1496 | -1664 | -1320 | +2288 | +1800 | +1856 |
| 00000228 | +1912 | +1870 | +1828 | +1882 | +1936 | +1934 | +1932 | +1930 |
| 00000230 | +1928 | +1945 | +1962 | +1979 | +1996 | +1997 | +1998 | +1999 |
| 00000238 | +2000 | +2008 | +2016 | +2024 | +2032 | +2032 | +2032 | +2032 |
| 00000240 | +1552 | +1624 | +1698 | +1674 | +1652 | +1644 | +1638 | +1614 |
| 00000248 | +1592 | +1611 | +1630 | +1681 | +1733 | +1146 | -2000 | -1787 |
| 00000250 | -1830 | -1924 | -2019 | -2049 | -2080 | -1986 | -1893 | -1895 |
| 00000258 | -1898 | -1896 | -1894 | -1860 | -1827 | -1779 | -1731 | -1667 |
| 00000260 | -1604 | -1615 | -1626 | -1878 | -594  | +2063 | +1903 | +2016 |

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000268 | +1873 | +2132 | +1880 | +1884 | +1888 | +1921 | +1955 | +1941 |
| 00000270 | +1927 | +1925 | +1925 | +1955 | +1987 | +2005 | +2025 | +2043 |
| 00000278 | +2063 | +1995 | +1927 | +2099 | +2015 | +2095 | +2175 | +2175 |
| 00000280 | +1456 | +1509 | +1562 | +1551 | +1540 | +1601 | +1662 | +1627 |
| 00000288 | +1592 | +1606 | +1621 | +1731 | +1842 | +37   | -2281 | -1782 |
| 00000290 | -1796 | -1867 | -1938 | -2041 | -2144 | -2039 | -1934 | -1893 |
| 00000298 | -1852 | -1854 | -1857 | -1795 | -1734 | -1732 | -1731 | -1665 |
| 000002A0 | -1600 | -1678 | -1757 | -1836 | +645  | +2094 | +2007 | +1920 |
| 000002A8 | +1322 | +2139 | +1933 | +1886 | +1840 | +1909 | +1979 | +1952 |
| 000002B0 | +1926 | +1907 | +1888 | +1933 | +1978 | +2015 | +2052 | +2089 |
| 000002B8 | +2126 | +1982 | +1838 | +2174 | +1998 | +2158 | +2318 | +2318 |
| 000002C0 | +1488 | +1520 | +1554 | +1554 | +1556 | +1588 | +1622 | +1606 |
| 000002C8 | +1592 | +1569 | +1547 | +1700 | +1855 | -993  | -2049 | -1825 |
| 000002D0 | -1858 | -1905 | -1953 | -2016 | -2080 | -1995 | -1911 | -1858 |
| 000002D8 | -1806 | -1812 | -1819 | -1729 | -1641 | -1685 | -1730 | -1678 |
| 000002E0 | -1628 | -1677 | -1727 | -2194 | +1947 | +2125 | +2046 | +945  |
| 000002E8 | -2205 | +114  | +2177 | +2144 | +1856 | +1912 | +1970 | +1963 |
| 000002F0 | +1957 | +1935 | +1915 | +1925 | +1937 | +1991 | +2047 | +2181 |
| 000002F8 | +2061 | +2337 | +2613 | +1817 | +2301 | +2157 | +2269 | +2397 |
| 00000300 | +1520 | +1533 | +1546 | +1559 | +1572 | +1577 | +1582 | +1587 |
| 00000308 | +1592 | +1533 | +1474 | +1671 | +1868 | -2023 | -1818 | -1869 |
| 00000310 | -1920 | -1944 | -1968 | -1992 | -2016 | -1952 | -1888 | -1824 |
| 00000318 | -1760 | -1771 | -1782 | -1665 | -1548 | -1639 | -1730 | -1693 |
| 00000320 | -1656 | -1677 | -1699 | -1017 | +2226 | +1644 | +2087 | -286  |
| 00000328 | -2148 | -2167 | -1674 | +611  | +2384 | +2173 | +1962 | +1975 |
| 00000330 | +1988 | +1965 | +1942 | +1919 | +1896 | +1969 | +2042 | +2019 |
| 00000338 | +1484 | -1916 | -1220 | +2484 | +1068 | -916  | +1708 | +1964 |
| 00000340 | +1504 | +1514 | +1526 | +1536 | +1548 | +1550 | +1554 | +1556 |
| 00000348 | +1560 | +1581 | +1604 | +1786 | +689  | -2138 | -1894 | -1905 |
| 00000350 | -1918 | -1926 | -1935 | -1943 | -1952 | -1878 | -1805 | -1731 |
| 00000358 | -1658 | -1626 | -1596 | -1549 | -1503 | -1507 | -1513 | -1518 |
| 00000360 | -1524 | -1526 | -1785 | +148  | +2080 | +1995 | +2422 | -2094 |
| 00000368 | -2003 | -2033 | -1809 | -1665 | -1776 | -189  | +1398 | +2536 |
| 00000370 | +2139 | +2122 | +2105 | +2327 | +2295 | +2204 | +2113 | +2870 |
| 00000378 | -213  | -1669 | -1077 | -1237 | -1653 | -1589 | +2059 | +1931 |
| 00000380 | +1488 | +1497 | +1506 | +1515 | +1524 | +1525 | +1526 | +1527 |
| 00000388 | +1528 | +1631 | +1735 | +1902 | -490  | -2254 | -1971 | -1943 |
| 00000390 | -1916 | -1909 | -1902 | -1895 | -1888 | -1805 | -1722 | -1639 |
| 00000398 | -1556 | -1483 | -1411 | -1434 | -1458 | -1377 | -1297 | -1344 |
| 000003A0 | -1392 | -1376 | -1872 | +1312 | +1935 | +1834 | +1734 | -2622 |
| 000003A8 | -2370 | -2157 | -1945 | -1892 | -1840 | -2039 | -2239 | -2022 |
| 000003B0 | -782  | -281  | +220  | +433  | +134  | -377  | -888  | -1655 |
| 000003B8 | -1398 | -1166 | -934  | -1374 | -1302 | -726  | +2410 | +1898 |
| 000003C0 | +1472 | +1478 | +1486 | +1492 | +1500 | +1498 | +1498 | +1496 |
| 000003C8 | +1496 | +1600 | +1705 | +1666 | -933  | -1474 | -2015 | -1964 |
| 000003D0 | -1914 | -1891 | -1869 | -1846 | -1824 | -1731 | -1639 | -1546 |
| 000003D8 | -1454 | -1387 | -1321 | -1191 | -1317 | -1150 | -1240 | -1250 |
| 000003E0 | -1260 | -1545 | -1575 | +2459 | +1885 | +2057 | +182  | -2429 |
| 000003E8 | -2225 | -2088 | -1952 | -1928 | -1904 | -1905 | -1907 | -2149 |
| 000003F0 | -1879 | -1835 | -1793 | -1670 | -1803 | -1645 | -1489 | -1491 |
| 000003F8 | -1239 | -1335 | -1431 | -1335 | -1495 | +681  | +2345 | +2089 |
| 00000400 | +1456 | +1461 | +1466 | +1471 | +1476 | +1473 | +1470 | +1467 |
| 00000408 | +1464 | +1570 | +1676 | +1174 | -1888 | -950  | -2060 | -1986 |
| 00000410 | -1912 | -1874 | -1836 | -1798 | -1760 | -1658 | -1556 | -1454 |
| 00000418 | -1352 | -1292 | -1232 | -1204 | -1688 | -1180 | -1184 | -1156 |
| 00000420 | -1128 | -1203 | -254  | +2071 | +1836 | +2281 | -1370 | -2237 |
| 00000428 | -2080 | -2020 | -1960 | -1964 | -1968 | -2028 | -2088 | -2020 |
| 00000430 | -1952 | -1855 | -1758 | -1725 | -1692 | -1635 | -1578 | -1329 |
| 00000438 | -1592 | -1504 | -1416 | -1040 | -1688 | +2088 | +2280 | +2280 |
| 00000440 | +1428 | +1438 | +1450 | +1460 | +1472 | +1463 | +1454 | +1493 |
| 00000448 | +1533 | +1512 | +1748 | -160  | -2068 | -1346 | -1137 | -1775 |
| 00000450 | -1902 | -1848 | -1794 | -1708 | -1622 | -1544 | -1466 | -1356 |
| 00000458 | -1247 | -1198 | -1149 | -1196 | -1755 | -1246 | -993  | -1012 |
| 00000460 | -1032 | -1202 | +930  | +2023 | +1837 | +2238 | -2480 | -2286 |
| 00000468 | -1838 | -1799 | -1761 | -1835 | -1909 | -1954 | -2000 | -1982 |
| 00000470 | -1964 | -1908 | -1853 | -1829 | -1807 | -1749 | -1692 | -1538 |
| 00000478 | -1642 | -1526 | -1410 | -638  | -122  | +774  | +1926 | +1926 |
| 00000480 | +1400 | +1417 | +1434 | +1451 | +1469 | +1454 | +1439 | +1520 |
| 00000488 | +1602 | +1455 | +1820 | -1239 | -1737 | -1743 | -726  | -1821 |

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000490 | -1892 | -1822 | -1752 | -1618 | -1485 | -1431 | -1377 | -1259 |
| 00000498 | -1142 | -1104 | -1066 | -1188 | -1823 | -1313 | -803  | -869  |
| 000004A0 | -936  | -1203 | +2115 | +1976 | +1838 | +916  | -2055 | -1569 |
| 000004A8 | -1596 | -1579 | -1563 | -1706 | -1850 | -1881 | -1913 | -1944 |
| 000004B0 | -1976 | -1962 | -1949 | -1935 | -1922 | -1864 | -1807 | -1749 |
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| 000004C8 | +1543 | +1765 | +1732 | -2204 | -1533 | -1611 | -1179 | -1274 |
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| 000005D0 | -786  | -1686 | -1819 | -1712 | -1605 | -1371 | -1139 | -921  |
| 000005D8 | -705  | -656  | -608  | -384  | -416  | -233  | -308  | -477  |
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| 000005F0 | -1164 | -1432 | -1702 | -1843 | -1985 | -1977 | -1971 | -1884 |
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| 000006A0 | +1974 | +1786 | +2111 | +484  | -119  | -198  | -277  | -356  |
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|          |       |       |       |       |       |       |       |       |
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| 000006C8 | +1389 | +1381 | +1629 | +1748 | +1356 | +1495 | +1635 | +1631 |
| 000006D0 | +1627 | +1551 | +1732 | +1689 | +1647 | +1728 | +1809 | +1730 |
| 000006D8 | +1652 | +1686 | +1721 | +1948 | +1921 | +874  | -430  | +363  |
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| 00000700 | +1304 | +1312 | +1321 | +1329 | +1338 | +1378 | +1419 | +1459 |
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| 00000710 | +1244 | +1022 | +1313 | +1187 | +1062 | +1088 | +1115 | +1397 |
| 00000718 | +1680 | +1728 | +1777 | +1729 | +1682 | +1922 | +1651 | +1763 |
| 00000720 | +1876 | +1742 | +1609 | -189  | +62   | +8    | -45   | -226  |
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| 00000740 | +1290 | +1304 | +1319 | +1334 | +1350 | +1377 | +1404 | +1271 |
| 00000748 | +1395 | +1525 | +1655 | +1769 | +1884 | +1802 | +1720 | +1430 |
| 00000750 | +1141 | +1026 | +1168 | +1037 | +908  | +700  | +491  | +331  |
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| 00000768 | -346  | -407  | -470  | -324  | -179  | -213  | -503  | -810  |
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| 00000790 | +1038 | +1031 | +1024 | +889  | +755  | +568  | +381  | +290  |
| 00000798 | +200  | +19   | -162  | +553  | +1781 | +2060 | +1827 | +1786 |
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| 000007A8 | -284  | -419  | -554  | -337  | -121  | -456  | -791  | -934  |
| 000007B0 | -1078 | -1244 | -1411 | -1514 | -1617 | -1907 | -1686 | -1657 |
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| 000007C8 | +1921 | +1927 | +1934 | +1876 | +1820 | +1702 | +1585 | +1259 |
| 000007D0 | +935  | +907  | +880  | +724  | +569  | +436  | +302  | +217  |
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| 000007E8 | -446  | -461  | -478  | -237  | -254  | -522  | -790  | -962  |
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| 00000800 | +1248 | +1283 | +1318 | +1353 | +1388 | +1343 | +1298 | +1925 |
| 00000808 | +2040 | +2001 | +1962 | +1891 | +1820 | +1637 | +1454 | +1143 |
| 00000810 | +832  | +784  | +736  | +560  | +384  | +304  | +224  | +144  |
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| 00000830 | -1192 | -1794 | -1884 | -2006 | -2128 | -2266 | -868  | +818  |
| 00000838 | +2504 | +2288 | +2072 | +2112 | +2152 | +2152 | +2152 | +2152 |
| 00000840 | +1238 | +1263 | +1290 | +1332 | +1375 | +1301 | +1484 | +2002 |
| 00000848 | +2009 | +1973 | +1939 | +1871 | +1805 | +1608 | +1411 | +1118 |
| 00000850 | +826  | +751  | +676  | +505  | +334  | +273  | +212  | +151  |
| 00000858 | +91   | +69   | +48   | +11   | -26   | +482  | +1758 | +1771 |
| 00000860 | +1784 | +2033 | +1771 | +1860 | +1950 | +1989 | +2029 | +884  |
| 00000868 | -260  | -1156 | -261  | -309  | -614  | -922  | -975  | -1411 |
| 00000870 | -1848 | -2062 | -2019 | -697  | +626  | +2060 | +2471 | +2273 |
| 00000878 | +2076 | +2051 | +2026 | +2081 | +2136 | +2136 | +2136 | +2136 |
| 00000880 | +1228 | +1245 | +1263 | +1313 | +1363 | +1260 | +1670 | +2080 |
| 00000888 | +1978 | +1947 | +1916 | +1853 | +1791 | +1580 | +1369 | +1094 |
| 00000890 | +820  | +718  | +616  | +450  | +285  | +243  | +201  | +159  |
| 00000898 | +118  | +69   | +20   | +4    | -13   | +910  | +1833 | +1828 |
| 000008A0 | +1824 | +229  | +1706 | +1839 | +1972 | +1901 | +1830 | +1983 |
| 000008A8 | +2136 | +2032 | +1416 | +1056 | +696  | +280  | +376  | +728  |
| 000008B0 | +1080 | +1767 | +2454 | +2405 | +2356 | +2035 | +2226 | +2193 |
| 000008B8 | +2160 | +2070 | +1980 | +2050 | +2120 | +2120 | +2120 | +2120 |
| 000008C0 | +1218 | +1226 | +1235 | +1292 | +1350 | +1235 | +1888 | +2061 |
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| 000008D0 | +814  | +685  | +556  | +395  | +235  | +212  | +189  | +166  |
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| 000008F8 | +2244 | +2121 | +1998 | +2051 | +2104 | +2104 | +2104 | +2104 |
| 00000900 | +1208 | +1208 | +1209 | +1273 | +1338 | +1210 | +2107 | +2043 |
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| 00000910 | +808  | +652  | +497  | +341  | +186  | +182  | +179  | +175  |
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| 00000920 | +816  | +140  | -24   | -28   | -32   | +988  | +2008 | +2036 |
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| 00000938 | +2328 | +2172 | +2016 | +2052 | +2088 | +2088 | +2088 | +2088 |
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| 00000990 | +924  | +778  | +633  | +552  | +471  | +409  | +348  | +287  |
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| 000009A0 | -48   | +43   | +134  | +1    | -132  | -181  | -230  | -343  |
| 000009A8 | -456  | -670  | -884  | -202  | -544  | -946  | -1860 | -1718 |
| 000009B0 | -2088 | -2311 | -2534 | -2469 | -2404 | -2311 | -1706 | +2483 |
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| 000009D0 | +982  | +841  | +701  | +657  | +613  | +554  | +497  | +438  |
| 000009D8 | +381  | +412  | +445  | +717  | +1758 | +1782 | +1807 | +1095 |
| 000009E0 | -128  | -70   | -11   | -97   | -182  | -253  | -325  | -428  |
| 000009E8 | -532  | -761  | -991  | -580  | -170  | -1033 | -873  | -1976 |
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| 00000A08 | +2016 | +1946 | +1876 | +1806 | +1736 | +1690 | +1644 | +1342 |
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| 00000A18 | +536  | +539  | +542  | +897  | +1764 | +1607 | +1962 | +365  |
| 00000A20 | -208  | -182  | -156  | -194  | -232  | -326  | -420  | -514  |
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| 00000A50 | +1275 | +1130 | +986  | +937  | +889  | +840  | +792  | +743  |
| 00000A58 | +696  | +684  | +674  | +1335 | +1741 | +1839 | +1939 | +54   |
| 00000A60 | -294  | -295  | -297  | -298  | -300  | -414  | -527  | -641  |
| 00000A68 | -755  | -947  | -1140 | -1732 | -1813 | -733  | -166  | -1038 |
| 00000A70 | -887  | -1234 | -1581 | -1609 | -1636 | -1158 | +2392 | +2279 |
| 00000A78 | +2166 | +2119 | +2072 | +2121 | +2170 | +2170 | +2170 | +2170 |
| 00000A80 | +1132 | +1145 | +1159 | +1205 | +1763 | +1924 | +2086 | +1960 |
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| 00000A98 | +856  | +831  | +807  | +1774 | +1718 | +1817 | +1405 | -512  |
| 00000AA0 | -380  | -409  | -438  | -403  | -369  | -502  | -635  | -768  |
| 00000AA8 | -902  | -1042 | -1182 | -1482 | -1782 | -2138 | -1982 | -610  |
| 00000AB0 | -262  | -486  | -711  | -744  | -777  | +162  | +2125 | +1912 |
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|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000B08 | +1972 | +2129 | +1774 | +1931 | +1576 | +1565 | +1554 | +1639 |
| 00000B10 | +1724 | +1679 | +1635 | +1590 | +1546 | +1453 | +1361 | +1300 |
| 00000B18 | +1240 | +1060 | +1392 | +1788 | +1672 | +2092 | -560  | -620  |
| 00000B20 | -680  | -700  | -721  | -741  | -762  | -870  | -979  | -1087 |
| 00000B28 | -1196 | -1423 | -1650 | -1877 | -2104 | -2291 | -2478 | -2857 |
| 00000B30 | -2724 | -2895 | -3067 | -3110 | -3666 | +2547 | +2103 | +2107 |
| 00000B38 | +2112 | +2116 | +2120 | +2124 | +2128 | +2128 | +2128 | +2128 |
| 00000B40 | +1214 | +1170 | +1128 | +1453 | +1779 | +1692 | +1861 | +1807 |
| 00000B48 | +1753 | +1732 | +1712 | +1803 | +1640 | +1759 | +1623 | +1710 |
| 00000B50 | +1799 | +1666 | +1790 | +1755 | +1719 | +1628 | +1539 | +1497 |
| 00000B58 | +1456 | +1352 | +1504 | +1752 | +1745 | +1445 | -902  | -898  |
| 00000B60 | -894  | -907  | -921  | -935  | -950  | -1070 | -1190 | -1310 |
| 00000B68 | -1431 | -1641 | -1852 | -2062 | -2273 | -2431 | -2590 | -2812 |
| 00000B70 | -2779 | -2929 | -3080 | -3279 | -2198 | +2298 | +2187 | +2124 |
| 00000B78 | +2062 | +2081 | +2100 | +2119 | +2138 | +2138 | +2138 | +2138 |
| 00000B80 | +1172 | +1193 | +1214 | +1747 | +1769 | +1710 | +2163 | +2360 |
| 00000B88 | +2046 | +1592 | +1651 | +1677 | +1704 | +1954 | +1693 | +1783 |
| 00000B90 | +1874 | +1654 | +1947 | +1920 | +1893 | +1805 | +1718 | +1695 |
| 00000B98 | +1672 | +1644 | +1617 | +1717 | +1818 | +798  | -1245 | -1176 |
| 00000BA0 | -1108 | -1115 | -1123 | -1131 | -1139 | -1270 | -1402 | -1534 |
| 00000BA8 | -1666 | -1860 | -2054 | -2248 | -2442 | -2572 | -2702 | -2768 |
| 00000BB0 | -2834 | -2964 | -3094 | -3192 | -219  | +2306 | +2272 | +2142 |
| 00000BB8 | +2012 | +2046 | +2080 | +2114 | +2148 | +2148 | +2148 | +2148 |
| 00000BC0 | +1194 | +1150 | +1364 | +1784 | +1694 | +1983 | +2272 | +1441 |
| 00000BC8 | +2147 | +1980 | +1813 | +1838 | +1864 | +1909 | +1698 | +1823 |
| 00000BD0 | +1949 | +1818 | +1943 | +1989 | +2034 | +1933 | +1833 | +1812 |
| 00000BD8 | +1792 | +1712 | +1633 | +1649 | +1923 | -536  | -1459 | -1390 |
| 00000BE0 | -1322 | -1354 | -1388 | -1421 | -1455 | -1566 | -1678 | -1789 |
| 00000BE8 | -1901 | -2078 | -2256 | -2433 | -2611 | -2744 | -2878 | -2915 |
| 00000BF0 | -2953 | -2998 | -3044 | -3777 | +1633 | +2298 | +1941 | +2015 |
| 00000BF8 | +2090 | +2107 | +2124 | +2141 | +2158 | +2158 | +2158 | +2158 |
| 00000C00 | +1216 | +1109 | +1514 | +1823 | +1620 | +2001 | +1870 | +1803 |
| 00000C08 | +1224 | +1600 | +1464 | +1232 | +1000 | +1096 | +1192 | +1352 |
| 00000C10 | +1512 | +1726 | +1940 | +2058 | +2176 | +2062 | +1948 | +1930 |
| 00000C18 | +1912 | +1781 | +1650 | +1583 | +2028 | -1871 | -1674 | -1605 |
| 00000C20 | -1536 | -1595 | -1654 | -1713 | -1772 | -1863 | -1954 | -2045 |
| 00000C28 | -2136 | -2297 | -2458 | -2619 | -2780 | -2917 | -3054 | -3063 |
| 00000C30 | -3072 | -3033 | -2994 | -2827 | +2460 | +2035 | +2122 | +2145 |
| 00000C38 | +2168 | +2168 | +2168 | +2168 | +2168 | +2168 | +2168 | +2168 |
| 00000C40 | +1190 | +1271 | +1610 | +1756 | +1647 | +1523 | +1144 | +1324 |
| 00000C48 | +1249 | +1364 | +1224 | +1211 | +1199 | +1255 | +1566 | +1430 |
| 00000C50 | +1294 | +1404 | +1514 | +1800 | +2087 | +2075 | +2063 | +2003 |
| 00000C58 | +1944 | +1654 | +1621 | +1811 | +979  | -1997 | -1903 | -1888 |
| 00000C60 | -1874 | -1927 | -1982 | -2036 | -2091 | -2163 | -2236 | -2308 |
| 00000C68 | -2381 | -2513 | -2646 | -2778 | -2911 | -3005 | -3100 | -3114 |
| 00000C70 | -3129 | -3039 | -3206 | -1084 | +2317 | +2104 | +2148 | +2159 |
| 00000C78 | +2171 | +2175 | +2179 | +2183 | +2187 | +2187 | +2187 | +2187 |
| 00000C80 | +1164 | +1179 | +1195 | +1179 | +1163 | +1302 | +1442 | +1358 |
| 00000C88 | +1274 | +1385 | +1496 | +1447 | +1399 | +1158 | +1429 | +1508 |
| 00000C90 | +1588 | +1594 | +1601 | +1543 | +1486 | +1832 | +2179 | +2077 |
| 00000C98 | +1976 | +1528 | +1593 | +1785 | -582  | -2381 | -2133 | -2172 |
| 00000CA0 | -2212 | -2261 | -2311 | -2361 | -2411 | -2464 | -2518 | -2572 |
| 00000CA8 | -2626 | -2730 | -2834 | -2938 | -3042 | -3094 | -3146 | -3166 |
| 00000CB0 | -3186 | -3046 | -3418 | +658  | +2174 | +2174 | +2174 | +2174 |
| 00000CB8 | +2174 | +2182 | +2190 | +2198 | +2206 | +2206 | +2206 | +2206 |
| 00000CC0 | +1202 | +1230 | +1259 | +1272 | +1286 | +1321 | +1356 | +1343 |
| 00000CC8 | +1331 | +1405 | +1480 | +1474 | +1470 | +1349 | +1483 | +1522 |
| 00000CD0 | +1562 | +1576 | +1591 | +1573 | +1557 | +1589 | +1622 | +1718 |
| 00000CD8 | +1816 | +1690 | +1820 | +1694 | -2015 | -2556 | -2330 | -2376 |
| 00000CE0 | -2422 | -2610 | -2799 | -2700 | -2602 | -2669 | -2736 | -2803 |
| 00000CE8 | -2871 | -2946 | -3022 | -3097 | -3173 | -3182 | -3192 | -3153 |
| 00000CF0 | -3115 | -3324 | -3278 | +2256 | +2159 | +2147 | +2136 | +2156 |
| 00000CF8 | +2177 | +2189 | +2201 | +2213 | +2225 | +2225 | +2225 | +2225 |
| 00000D00 | +1240 | +1282 | +1325 | +1367 | +1410 | +1340 | +1271 | +1329 |
| 00000D08 | +1388 | +1426 | +1465 | +1503 | +1542 | +1540 | +1539 | +1537 |
| 00000D10 | +1536 | +1559 | +1582 | +1605 | +1628 | +1603 | +1578 | +1617 |
| 00000D18 | +1656 | +1596 | +1536 | +1604 | -2936 | -2476 | -2528 | -2580 |
| 00000D20 | -2632 | -2704 | -2777 | -2785 | -2794 | -2874 | -2955 | -3035 |
| 00000D28 | -3116 | -3163 | -3210 | -3257 | -3304 | -3271 | -3238 | -3141 |

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000D30 | -3044 | -3091 | -2114 | +2319 | +2144 | +2121 | +2098 | +2139 |
| 00000D38 | +2180 | +2196 | +2212 | +2228 | +2244 | +2244 | +2244 | +2244 |
| 00000D40 | +1230 | +1255 | +1281 | +1306 | +1333 | +1303 | +1272 | +1338 |
| 00000D48 | +1405 | +1436 | +1468 | +1500 | +1533 | +1535 | +1537 | +1539 |
| 00000D50 | +1542 | +1562 | +1584 | +1605 | +1627 | +1601 | +1577 | +1616 |
| 00000D58 | +1656 | +1807 | +1959 | -417  | -2793 | -2797 | -2545 | -2581 |
| 00000D60 | -2618 | -2687 | -2757 | -2794 | -2833 | -2901 | -2968 | -3036 |
| 00000D68 | -3105 | -3145 | -3186 | -3178 | -3171 | -3149 | -3128 | -3058 |
| 00000D70 | -2989 | -3221 | -126  | +2281 | +2129 | +2084 | +2040 | +2107 |
| 00000D78 | +2175 | +2189 | +2203 | +2217 | +2231 | +2231 | +2231 | +2231 |
| 00000D80 | +1220 | +1229 | +1238 | +1247 | +1257 | +1266 | +1275 | +1348 |
| 00000D88 | +1422 | +1447 | +1473 | +1499 | +1525 | +1530 | +1536 | +1542 |
| 00000D90 | +1548 | +1567 | +1587 | +1606 | +1626 | +1601 | +1577 | +1616 |
| 00000D98 | +1656 | +1763 | +1871 | +1658 | -2138 | -2862 | -2563 | -2583 |
| 00000DA0 | -2604 | -2671 | -2738 | -2805 | -2873 | -2928 | -2983 | -3038 |
| 00000DA8 | -3094 | -3128 | -3162 | -3100 | -3038 | -3028 | -3018 | -2976 |
| 00000DB0 | -2934 | -3352 | +1862 | +2244 | +2114 | +2048 | +1982 | +2076 |
| 00000DB8 | +2170 | +2182 | +2194 | +2206 | +2218 | +2218 | +2218 | +2218 |
| 00000DC0 | +1210 | +1234 | +1259 | +1283 | +1308 | +1325 | +1341 | +1390 |
| 00000DC8 | +1439 | +1457 | +1477 | +1496 | +1516 | +1525 | +1535 | +1544 |
| 00000DD0 | +1554 | +1571 | +1589 | +1607 | +1625 | +1616 | +1608 | +1632 |
| 00000DD8 | +1656 | +1718 | +1782 | +1685 | +1845 | +528  | -2836 | -2728 |
| 00000DE0 | -2622 | -2654 | -2687 | -2719 | -2752 | -2763 | -2773 | -2992 |
| 00000DE8 | -2955 | -3030 | -3106 | -2813 | -2777 | -3226 | -2908 | -3134 |
| 00000DF0 | -3359 | -971  | +2186 | +2270 | +2099 | +2075 | +2052 | +2108 |
| 00000DF8 | +2165 | +2175 | +2185 | +2195 | +2205 | +2205 | +2205 | +2205 |
| 00000E00 | +1200 | +1240 | +1280 | +1320 | +1360 | +1384 | +1408 | +1432 |
| 00000E08 | +1456 | +1469 | +1482 | +1495 | +1508 | +1521 | +1534 | +1547 |
| 00000E10 | +1560 | +1576 | +1592 | +1608 | +1624 | +1632 | +1640 | +1648 |
| 00000E18 | +1656 | +1675 | +1694 | +1713 | +1732 | +1871 | +986  | -827  |
| 00000E20 | -2640 | -2638 | -2636 | -2634 | -2632 | -2598 | -2564 | -2946 |
| 00000E28 | -2816 | -2933 | -3050 | -2783 | -3028 | -3169 | -1774 | +293  |
| 00000E30 | +2360 | +2179 | +1998 | +2041 | +2084 | +2103 | +2122 | +2141 |
| 00000E38 | +2160 | +2168 | +2176 | +2184 | +2192 | +2192 | +2192 | +2192 |
| 00000E40 | +1232 | +1266 | +1300 | +1334 | +1368 | +1390 | +1412 | +1434 |
| 00000E48 | +1456 | +1468 | +1482 | +1494 | +1508 | +1520 | +1534 | +1546 |
| 00000E50 | +1560 | +1578 | +1596 | +1614 | +1632 | +1640 | +1648 | +1656 |
| 00000E58 | +1664 | +1645 | +1628 | +1705 | +1784 | +2101 | +1908 | +1298 |
| 00000E60 | +688  | +1071 | -594  | -1587 | -2580 | -2891 | -3202 | -2281 |
| 00000E68 | -2640 | -2058 | -1476 | -94   | +1032 | +2278 | +2244 | +2209 |
| 00000E70 | +2176 | +2131 | +2088 | +2091 | +2096 | +2111 | +2128 | +2143 |
| 00000E78 | +2160 | +2168 | +2176 | +2184 | +2192 | +2192 | +2192 | +2192 |
| 00000E80 | +1264 | +1292 | +1320 | +1348 | +1376 | +1396 | +1416 | +1436 |
| 00000E88 | +1456 | +1469 | +1482 | +1495 | +1508 | +1521 | +1534 | +1547 |
| 00000E90 | +1560 | +1580 | +1600 | +1620 | +1640 | +1648 | +1656 | +1664 |
| 00000E98 | +1672 | +1617 | +1562 | +1699 | +1836 | +1821 | +1806 | +1887 |
| 00000EA0 | +1968 | +1964 | +1960 | +2020 | +2080 | +1936 | +1792 | +1200 |
| 00000EA8 | +1632 | +1889 | +2146 | +2083 | +2020 | +2093 | +2166 | +2079 |
| 00000EB0 | +1992 | +2085 | +2178 | +2143 | +2108 | +2121 | +2134 | +2147 |
| 00000EB8 | +2160 | +2168 | +2176 | +2184 | +2192 | +2192 | +2192 | +2192 |
| 00000EC0 | +1296 | +1318 | +1340 | +1362 | +1384 | +1402 | +1420 | +1438 |
| 00000EC8 | +1456 | +1468 | +1482 | +1494 | +1508 | +1520 | +1534 | +1546 |
| 00000ED0 | +1560 | +1582 | +1604 | +1626 | +1648 | +1656 | +1664 | +1672 |
| 00000ED8 | +1680 | +1667 | +1656 | +1739 | +1824 | +1811 | +1800 | +1835 |
| 00000EE0 | +1872 | +1881 | +1890 | +1819 | +1748 | +1995 | +450  | +937  |
| 00000EE8 | +912  | +715  | +2056 | +2019 | +1984 | +2035 | +2088 | +2059 |
| 00000EF0 | +2032 | +2085 | +2140 | +2129 | +2120 | +2129 | +2140 | +2149 |
| 00000EF8 | +2160 | +2168 | +2176 | +2184 | +2192 | +2192 | +2192 | +2192 |
| 00000F00 | +1328 | +1344 | +1360 | +1376 | +1392 | +1408 | +1424 | +1440 |
| 00000F08 | +1456 | +1469 | +1482 | +1495 | +1508 | +1521 | +1534 | +1547 |
| 00000F10 | +1560 | +1584 | +1608 | +1632 | +1656 | +1664 | +1672 | +1680 |
| 00000F18 | +1688 | +1719 | +1750 | +1781 | +1812 | +1803 | +1794 | +1785 |
| 00000F20 | +1776 | +1798 | +1820 | +1874 | +1928 | +1798 | +2180 | +674  |
| 00000F28 | +1216 | +2103 | +1966 | +1957 | +1948 | +1979 | +2010 | +2041 |
| 00000F30 | +2072 | +2087 | +2102 | +2117 | +2132 | +2139 | +2146 | +2153 |
| 00000F38 | +2160 | +2168 | +2176 | +2184 | +2192 | +2192 | +2192 | +2192 |
| 00000F40 | +1328 | +1344 | +1360 | +1376 | +1392 | +1408 | +1424 | +1440 |
| 00000F48 | +1456 | +1468 | +1482 | +1494 | +1508 | +1520 | +1534 | +1546 |
| 00000F50 | +1560 | +1584 | +1608 | +1632 | +1656 | +1664 | +1672 | +1680 |

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000F58 | +1688 | +1718 | +1750 | +1780 | +1812 | +1802 | +1794 | +1784 |
| 00000F60 | +1776 | +1798 | +1820 | +1858 | +1896 | +1750 | +1860 | +2338 |
| 00000F68 | +1792 | +2134 | +1966 | +1956 | +1948 | +1978 | +2010 | +2040 |
| 00000F70 | +2072 | +2086 | +2102 | +2116 | +2132 | +2138 | +2146 | +2152 |
| 00000F78 | +2160 | +2168 | +2176 | +2184 | +2192 | +2192 | +2192 | +2192 |
| 00000F80 | +1328 | +1344 | +1360 | +1376 | +1392 | +1408 | +1424 | +1440 |
| 00000F88 | +1456 | +1469 | +1482 | +1495 | +1508 | +1521 | +1534 | +1547 |
| 00000F90 | +1560 | +1584 | +1608 | +1632 | +1656 | +1664 | +1672 | +1680 |
| 00000F98 | +1688 | +1719 | +1750 | +1781 | +1812 | +1803 | +1794 | +1785 |
| 00000FA0 | +1776 | +1798 | +1820 | +1842 | +1864 | +1958 | +2052 | +1954 |
| 00000FA8 | +1856 | +1911 | +1966 | +1957 | +1948 | +1979 | +2010 | +2041 |
| 00000FB0 | +2072 | +2087 | +2102 | +2117 | +2132 | +2139 | +2146 | +2153 |
| 00000FB8 | +2160 | +2168 | +2176 | +2184 | +2192 | +2192 | +2192 | +2192 |
| 00000FC0 | +1328 | +1344 | +1360 | +1376 | +1392 | +1408 | +1424 | +1440 |
| 00000FC8 | +1456 | +1468 | +1482 | +1494 | +1508 | +1520 | +1534 | +1546 |
| 00000FD0 | +1560 | +1584 | +1608 | +1632 | +1656 | +1664 | +1672 | +1680 |
| 00000FD8 | +1688 | +1718 | +1750 | +1780 | +1812 | +1802 | +1794 | +1784 |
| 00000FE0 | +1776 | +1798 | +1820 | +1842 | +1864 | +1958 | +2052 | +1954 |
| 00000FE8 | +1856 | +1910 | +1966 | +1956 | +1948 | +1978 | +2010 | +2040 |
| 00000FF0 | +2072 | +2086 | +2102 | +2116 | +2132 | +2138 | +2146 | +2152 |
| 00000FF8 | +2160 | +2168 | +2176 | +2184 | +2192 | +2192 | +2192 | +2192 |

The sample data for 12.4 fixed-point integers (RDP 8.1) is:

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000000 | +864  | +865  | +866  | +867  | +868  | +869  | +870  | +871  |
| 00000008 | +872  | +870  | +868  | +866  | +864  | +898  | +932  | +902  |
| 00000010 | +872  | +877  | +882  | +887  | +892  | +897  | +902  | +907  |
| 00000018 | +912  | +887  | +862  | +901  | +940  | +907  | +874  | +905  |
| 00000020 | +936  | +939  | +942  | +945  | +948  | +955  | +962  | +969  |
| 00000028 | +976  | +969  | +962  | +955  | +948  | +957  | +966  | +975  |
| 00000030 | +984  | +987  | +990  | +993  | +996  | +999  | +1002 | +1005 |
| 00000038 | +1008 | +1008 | +1008 | +1008 | +1008 | +1008 | +1008 | +1008 |
| 00000040 | +855  | +848  | +842  | +852  | +861  | +863  | +865  | +866  |
| 00000048 | +868  | +869  | +870  | +870  | +871  | +879  | +887  | +878  |
| 00000050 | +870  | +881  | +891  | +894  | +896  | +887  | +877  | +892  |
| 00000058 | +906  | +908  | +910  | +912  | +914  | +928  | +942  | +940  |
| 00000060 | +938  | +924  | +910  | +928  | +947  | +952  | +957  | +962  |
| 00000068 | +967  | +964  | +961  | +957  | +954  | +961  | +968  | +974  |
| 00000070 | +981  | +987  | +992  | +998  | +1004 | +1004 | +1005 | +1006 |
| 00000078 | +1007 | +1008 | +1010 | +1011 | +1013 | +1013 | +1013 | +1013 |
| 00000080 | +846  | +832  | +818  | +837  | +855  | +857  | +860  | +862  |
| 00000088 | +865  | +868  | +872  | +875  | +879  | +860  | +842  | +855  |
| 00000090 | +869  | +885  | +901  | +901  | +901  | +877  | +853  | +877  |
| 00000098 | +901  | +930  | +959  | +924  | +889  | +950  | +1011 | +976  |
| 000000A0 | +941  | +910  | +879  | +912  | +946  | +949  | +952  | +955  |
| 000000A8 | +959  | +959  | +960  | +960  | +961  | +965  | +970  | +974  |
| 000000B0 | +979  | +987  | +995  | +1004 | +1012 | +1010 | +1009 | +1007 |
| 000000B8 | +1006 | +1009 | +1012 | +1015 | +1018 | +1018 | +1018 | +1018 |
| 000000C0 | +837  | +815  | +794  | +822  | +849  | +851  | +855  | +858  |
| 000000C8 | +861  | +867  | +874  | +880  | +886  | +881  | +877  | +880  |
| 000000D0 | +883  | +897  | +910  | +900  | +889  | +915  | +940  | +950  |
| 000000D8 | +959  | +1023 | +1087 | +1007 | +927  | +939  | +951  | +963  |
| 000000E0 | +975  | +879  | +912  | +928  | +945  | +946  | +947  | +948  |
| 000000E8 | +950  | +954  | +959  | +963  | +967  | +969  | +972  | +974  |
| 000000F0 | +976  | +987  | +998  | +1009 | +1020 | +1016 | +1012 | +1008 |
| 000000F8 | +1005 | +1009 | +1014 | +1018 | +1023 | +1023 | +1023 | +1023 |
| 00000100 | +828  | +799  | +771  | +807  | +843  | +846  | +850  | +854  |
| 00000108 | +858  | +867  | +876  | +885  | +894  | +903  | +912  | +905  |
| 00000110 | +898  | +909  | +920  | +1027 | +1134 | +825  | +516  | +255  |
| 00000118 | -6    | -35   | -64   | +195  | +454  | +801  | +1148 | +1079 |
| 00000120 | +1010 | +849  | +945  | +944  | +944  | +943  | +943  | +942  |
| 00000128 | +942  | +950  | +958  | +966  | +974  | +974  | +974  | +974  |
| 00000130 | +974  | +987  | +1001 | +1015 | +1029 | +1022 | +1016 | +1010 |
| 00000138 | +1004 | +1010 | +1016 | +1022 | +1028 | +1028 | +1028 | +1028 |
| 00000140 | +795  | +785  | +775  | +806  | +836  | +789  | +871  | +856  |
| 00000148 | +842  | +836  | +830  | +855  | +881  | +847  | +813  | +970  |



|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000150 | +1000 | +1030 | +291  | -327  | -945  | -1023 | -1100 | -1042 |
| 00000158 | -983  | -1024 | -1065 | -1026 | -987  | -875  | -763  | +20   |
| 00000160 | +804  | +1187 | +929  | +1000 | +943  | +949  | +956  | +954  |
| 00000168 | +953  | +950  | +947  | +959  | +972  | +972  | +972  | +971  |
| 00000170 | +971  | +983  | +996  | +1008 | +1021 | +1016 | +1011 | +1007 |
| 00000178 | +1003 | +1008 | +1014 | +1019 | +1025 | +1025 | +1025 | +1025 |
| 00000180 | +762  | +771  | +780  | +805  | +830  | +733  | +892  | +859  |
| 00000188 | +827  | +805  | +784  | +826  | +869  | +919  | +970  | +396  |
| 00000190 | -433  | -1025 | -1105 | -1041 | -977  | -951  | -925  | -931  |
| 00000198 | -937  | -990  | -1043 | -968  | -893  | -888  | -883  | -910  |
| 000001A0 | -937  | -267  | +914  | +1056 | +942  | +955  | +969  | +967  |
| 000001A8 | +965  | +950  | +936  | +953  | +971  | +970  | +970  | +969  |
| 000001B0 | +969  | +980  | +991  | +1002 | +1013 | +1010 | +1007 | +1004 |
| 000001B8 | +1002 | +1007 | +1012 | +1017 | +1022 | +1022 | +1022 | +1022 |
| 000001C0 | +793  | +820  | +848  | +852  | +856  | +788  | +849  | +830  |
| 000001C8 | +811  | +806  | +802  | +821  | +840  | +895  | -201  | -1018 |
| 000001D0 | -938  | -1072 | -949  | -971  | -992  | -959  | -925  | -940  |
| 000001D8 | -954  | -979  | -1004 | -965  | -926  | -900  | -874  | -808  |
| 000001E0 | -742  | -969  | -941  | +48   | +1037 | +985  | +934  | +947  |
| 000001E8 | +960  | +942  | +925  | +947  | +969  | +968  | +968  | +967  |
| 000001F0 | +966  | +976  | +986  | +995  | +1005 | +1004 | +1003 | +1001 |
| 000001F8 | +1001 | +1005 | +1010 | +1014 | +1019 | +1019 | +1019 | +1019 |
| 00000200 | +568  | +614  | +661  | +643  | +626  | +716  | +807  | +801  |
| 00000208 | +796  | +808  | +820  | +816  | +812  | +1128 | -860  | -896  |
| 00000210 | -932  | -991  | -1050 | -1029 | -1008 | -967  | -926  | -949  |
| 00000218 | -972  | -969  | -966  | -963  | -960  | -913  | -866  | -835  |
| 00000220 | -804  | -776  | -748  | -832  | -660  | +1144 | +900  | +928  |
| 00000228 | +956  | +935  | +914  | +941  | +968  | +967  | +966  | +965  |
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| 00000238 | +1000 | +1004 | +1008 | +1012 | +1016 | +1016 | +1016 | +1016 |
| 00000240 | +776  | +812  | +849  | +837  | +826  | +822  | +819  | +807  |
| 00000248 | +796  | +805  | +815  | +840  | +866  | +573  | -1000 | -893  |
| 00000250 | -915  | -962  | -1009 | -1024 | -1040 | -993  | -946  | -947  |
| 00000258 | -949  | -948  | -947  | -930  | -913  | -889  | -865  | -833  |
| 00000260 | -802  | -807  | -813  | -939  | -297  | +1031 | +951  | +1008 |
| 00000268 | +936  | +1066 | +940  | +942  | +944  | +960  | +977  | +970  |
| 00000270 | +963  | +962  | +962  | +977  | +993  | +1002 | +1012 | +1021 |
| 00000278 | +1031 | +997  | +963  | +1049 | +1007 | +1047 | +1087 | +1087 |
| 00000280 | +728  | +754  | +781  | +775  | +770  | +800  | +831  | +813  |
| 00000288 | +796  | +803  | +810  | +865  | +921  | +18   | -1140 | -891  |
| 00000290 | -898  | -933  | -969  | -1020 | -1072 | -1019 | -967  | -946  |
| 00000298 | -926  | -927  | -928  | -897  | -867  | -866  | -865  | -832  |
| 000002A0 | -800  | -839  | -878  | -918  | +322  | +1047 | +1003 | +960  |
| 000002A8 | +661  | +1069 | +966  | +943  | +920  | +954  | +989  | +976  |
| 000002B0 | +963  | +953  | +944  | +966  | +989  | +1007 | +1026 | +1044 |
| 000002B8 | +1063 | +991  | +919  | +1087 | +999  | +1079 | +1159 | +1159 |
| 000002C0 | +744  | +760  | +777  | +777  | +778  | +794  | +811  | +803  |
| 000002C8 | +796  | +784  | +773  | +850  | +927  | -496  | -1024 | -912  |
| 000002D0 | -929  | -952  | -976  | -1008 | -1040 | -997  | -955  | -929  |
| 000002D8 | -903  | -906  | -909  | -864  | -820  | -842  | -865  | -839  |
| 000002E0 | -814  | -838  | -863  | -1097 | +973  | +1062 | +1023 | +472  |
| 000002E8 | -1102 | +57   | +1088 | +1072 | +928  | +956  | +985  | +981  |
| 000002F0 | +978  | +967  | +957  | +962  | +968  | +995  | +1023 | +1090 |
| 000002F8 | +1030 | +1168 | +1306 | +908  | +1150 | +1078 | +1134 | +1198 |
| 00000300 | +760  | +766  | +773  | +779  | +786  | +788  | +791  | +793  |
| 00000308 | +796  | +766  | +737  | +835  | +934  | -1011 | -909  | -934  |
| 00000310 | -960  | -972  | -984  | -996  | -1008 | -976  | -944  | -912  |
| 00000318 | -880  | -885  | -891  | -832  | -774  | -819  | -865  | -846  |
| 00000320 | -828  | -838  | -849  | -508  | +1113 | +822  | +1043 | -143  |
| 00000328 | -1074 | -1083 | -837  | +305  | +1192 | +1086 | +981  | +987  |
| 00000330 | +994  | +982  | +971  | +959  | +948  | +984  | +1021 | +1009 |
| 00000338 | +742  | -958  | -610  | +1242 | +534  | -458  | +854  | +982  |
| 00000340 | +752  | +757  | +763  | +768  | +774  | +775  | +777  | +778  |
| 00000348 | +780  | +790  | +802  | +893  | +344  | -1069 | -947  | -952  |
| 00000350 | -959  | -963  | -967  | -971  | -976  | -939  | -902  | -865  |
| 00000358 | -829  | -813  | -798  | -774  | -751  | -753  | -756  | -759  |
| 00000360 | -762  | -763  | -892  | +74   | +1040 | +997  | +1211 | -1047 |
| 00000368 | -1001 | -1016 | -904  | -832  | -888  | -94   | +699  | +1268 |
| 00000370 | +1069 | +1061 | +1052 | +1163 | +1147 | +1102 | +1056 | +1435 |

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000378 | -106  | -834  | -538  | -618  | -826  | -794  | +1029 | +965  |
| 00000380 | +744  | +748  | +753  | +757  | +762  | +762  | +763  | +763  |
| 00000388 | +764  | +815  | +867  | +951  | -245  | -1127 | -985  | -971  |
| 00000390 | -958  | -954  | -951  | -947  | -944  | -902  | -861  | -819  |
| 00000398 | -778  | -741  | -705  | -717  | -729  | -688  | -648  | -672  |
| 000003A0 | -696  | -688  | -936  | +656  | +967  | +917  | +867  | -1311 |
| 000003A8 | -1185 | -1078 | -972  | -946  | -920  | -1019 | -1119 | -1011 |
| 000003B0 | -391  | -140  | +110  | +216  | +67   | -188  | -444  | -827  |
| 000003B8 | -699  | -583  | -467  | -687  | -651  | -363  | +1205 | +949  |
| 000003C0 | +736  | +739  | +743  | +746  | +750  | +749  | +749  | +748  |
| 000003C8 | +748  | +800  | +852  | +833  | -466  | -737  | -1007 | -982  |
| 000003D0 | -957  | -945  | -934  | -923  | -912  | -865  | -819  | -773  |
| 000003D8 | -727  | -693  | -660  | -595  | -658  | -575  | -620  | -625  |
| 000003E0 | -630  | -772  | -787  | +1229 | +942  | +1028 | +91   | -1214 |
| 000003E8 | -1112 | -1044 | -976  | -964  | -952  | -952  | -953  | -1074 |
| 000003F0 | -939  | -917  | -896  | -835  | -901  | -822  | -744  | -745  |
| 000003F8 | -619  | -667  | -715  | -667  | -747  | +340  | +1172 | +1044 |
| 00000400 | +728  | +730  | +733  | +735  | +738  | +736  | +735  | +733  |
| 00000408 | +732  | +785  | +838  | +587  | -944  | -475  | -1030 | -993  |
| 00000410 | -956  | -937  | -918  | -899  | -880  | -829  | -778  | -727  |
| 00000418 | -676  | -646  | -616  | -602  | -844  | -590  | -592  | -578  |
| 00000420 | -564  | -601  | -127  | +1035 | +918  | +1140 | -685  | -1118 |
| 00000428 | -1040 | -1010 | -980  | -982  | -984  | -1014 | -1044 | -1010 |
| 00000430 | -976  | -927  | -879  | -862  | -846  | -817  | -789  | -664  |
| 00000438 | -796  | -752  | -708  | -520  | -844  | +1044 | +1140 | +1140 |
| 00000440 | +714  | +719  | +725  | +730  | +736  | +731  | +727  | +746  |
| 00000448 | +766  | +756  | +874  | -80   | -1034 | -673  | -568  | -887  |
| 00000450 | -951  | -924  | -897  | -854  | -811  | -772  | -733  | -678  |
| 00000458 | -623  | -599  | -574  | -598  | -877  | -623  | -496  | -506  |
| 00000460 | -516  | -601  | +465  | +1011 | +918  | +1119 | -1240 | -1143 |
| 00000468 | -919  | -899  | -880  | -917  | -954  | -977  | -1000 | -991  |
| 00000470 | -982  | -954  | -926  | -914  | -903  | -874  | -846  | -769  |
| 00000478 | -821  | -763  | -705  | -319  | -61   | +387  | +963  | +963  |
| 00000480 | +700  | +708  | +717  | +725  | +734  | +727  | +719  | +760  |
| 00000488 | +801  | +727  | +910  | -619  | -868  | -871  | -363  | -910  |
| 00000490 | -946  | -911  | -876  | -809  | -742  | -715  | -688  | -629  |
| 00000498 | -571  | -552  | -533  | -594  | -911  | -656  | -401  | -434  |
| 000004A0 | -468  | -601  | +1057 | +988  | +919  | +458  | -1027 | -784  |
| 000004A8 | -798  | -789  | -781  | -853  | -925  | -940  | -956  | -972  |
| 000004B0 | -988  | -981  | -974  | -967  | -961  | -932  | -903  | -874  |
| 000004B8 | -846  | -774  | -702  | -502  | -46   | +498  | +1042 | +1042 |
| 000004C0 | +686  | +697  | +709  | +720  | +732  | +722  | +711  | +741  |
| 000004C8 | +771  | +882  | +866  | -1102 | -766  | -805  | -589  | -637  |
| 000004D0 | -941  | -882  | -823  | -780  | -737  | -650  | -563  | -556  |
| 000004D8 | -550  | -497  | -443  | -526  | -865  | -697  | -402  | -354  |
| 000004E0 | -436  | -153  | +1025 | +964  | +1031 | -75   | -798  | -673  |
| 000004E8 | -677  | -663  | -650  | -708  | -767  | -799  | -832  | -865  |
| 000004F0 | -898  | -912  | -926  | -940  | -954  | -941  | -928  | -883  |
| 000004F8 | -839  | -785  | -731  | -717  | +577  | +1201 | +929  | +929  |
| 00000500 | +672  | +686  | +701  | +716  | +731  | +717  | +704  | +723  |
| 00000508 | +742  | +782  | +310  | -945  | -921  | -868  | -816  | -364  |
| 00000510 | -936  | -853  | -770  | -751  | -733  | -714  | -695  | -612  |
| 00000518 | -530  | -442  | -354  | -458  | -819  | -739  | -403  | -275  |
| 00000520 | -404  | +295  | +994  | +941  | +1144 | -609  | -570  | -563  |
| 00000528 | -556  | -537  | -519  | -564  | -610  | -659  | -709  | -758  |
| 00000530 | -808  | -843  | -878  | -913  | -948  | -951  | -954  | -893  |
| 00000538 | -832  | -796  | -760  | -932  | +1200 | +1008 | +1072 | +1072 |
| 00000540 | +674  | +686  | +699  | +712  | +725  | +731  | +738  | +745  |
| 00000548 | +752  | +864  | -303  | -919  | -895  | -867  | -840  | -501  |
| 00000550 | -675  | -855  | -779  | -759  | -740  | -691  | -642  | -689  |
| 00000558 | -737  | -604  | -470  | -305  | -396  | -398  | -400  | -305  |
| 00000560 | -340  | +682  | +936  | +966  | +740  | -575  | -483  | -463  |
| 00000568 | -443  | -434  | -425  | -464  | -504  | -530  | -557  | -615  |
| 00000570 | -674  | -760  | -847  | -902  | -957  | -950  | -943  | -896  |
| 00000578 | -849  | -802  | -883  | -372  | +1163 | +1067 | +1099 | +1099 |
| 00000580 | +676  | +686  | +697  | +708  | +719  | +746  | +773  | +768  |
| 00000588 | +763  | +947  | -917  | -893  | -869  | -867  | -865  | -639  |
| 00000590 | -414  | -857  | -788  | -768  | -747  | -668  | -590  | -511  |
| 00000598 | -433  | -382  | -331  | -281  | -486  | -185  | -141  | -208  |

|          |      |       |       |       |       |       |       |       |
|----------|------|-------|-------|-------|-------|-------|-------|-------|
| 000005A0 | -276 | +1069 | +878  | +991  | +337  | -541  | -396  | -363  |
| 000005A8 | -330 | -331  | -332  | -365  | -399  | -402  | -405  | -472  |
| 000005B0 | -540 | -678  | -817  | -892  | -967  | -949  | -932  | -899  |
| 000005B8 | -866 | -808  | -1006 | +188  | +1126 | +1126 | +1126 | +1126 |
| 000005C0 | +678 | +686  | +695  | +704  | +713  | +712  | +711  | +750  |
| 000005C8 | +789 | +453  | -907  | -851  | -923  | -954  | -858  | -817  |
| 000005D0 | -393 | -843  | -909  | -856  | -802  | -685  | -569  | -460  |
| 000005D8 | -352 | -328  | -304  | -192  | -208  | -116  | -154  | -238  |
| 000005E0 | +188 | +984  | +884  | +1016 | -2    | -419  | -325  | -303  |
| 000005E8 | -281 | -292  | -303  | -330  | -357  | -369  | -381  | -481  |
| 000005F0 | -582 | -716  | -851  | -921  | -992  | -988  | -985  | -942  |
| 000005F8 | -899 | -1006 | -1113 | +1076 | +1089 | +1097 | +1105 | +1105 |
| 00000600 | +680 | +687  | +694  | +701  | +708  | +679  | +650  | +733  |
| 00000608 | +816 | -40   | -897  | -809  | -978  | -1042 | -851  | -995  |
| 00000610 | -372 | -445  | -263  | -176  | -90   | -191  | -293  | -410  |
| 00000618 | -528 | -402  | -277  | -231  | -186  | -176  | -167  | -269  |
| 00000620 | +652 | +899  | +891  | +1042 | -342  | -298  | -255  | -243  |
| 00000628 | -232 | -253  | -274  | -295  | -316  | -337  | -358  | -491  |
| 00000630 | -624 | -754  | -885  | -951  | -1018 | -1028 | -1039 | -985  |
| 00000638 | -932 | -948  | -708  | +1196 | +1052 | +1068 | +1084 | +1084 |
| 00000640 | +673 | +679  | +685  | +691  | +698  | +697  | +696  | +776  |
| 00000648 | +855 | -588  | -881  | -1101 | -682  | -232  | +345  | +971  |
| 00000650 | +956 | +873  | +918  | +908  | +897  | +944  | +991  | +887  |
| 00000658 | +782 | +274  | -234  | -149  | -193  | -195  | -199  | -73   |
| 00000660 | +947 | +960  | +973  | +642  | -200  | -198  | -196  | -210  |
| 00000668 | -225 | -239  | -253  | -284  | -314  | -361  | -407  | -534  |
| 00000670 | -660 | -848  | -1037 | -1041 | -1045 | -1064 | -1084 | -1015 |
| 00000678 | -947 | -1014 | +71   | +1140 | +1057 | +1041 | +1025 | +1025 |
| 00000680 | +666 | +671  | +677  | +682  | +688  | +716  | +743  | +691  |
| 00000688 | +639 | -881  | -97   | +654  | +894  | +833  | +773  | +761  |
| 00000690 | +749 | +784  | +820  | +840  | +860  | +800  | +740  | +776  |
| 00000698 | +812 | +950  | +1089 | +572  | -200  | -215  | -231  | -6    |
| 000006A0 | +987 | +893  | +1055 | +242  | -59   | -99   | -138  | -178  |
| 000006A8 | -218 | -225  | -233  | -273  | -313  | -385  | -457  | -449  |
| 000006B0 | -441 | -303  | -165  | -235  | -305  | -717  | -1129 | -1045 |
| 000006B8 | -962 | -1080 | +850  | +1084 | +1062 | +1014 | +966  | +966  |
| 000006C0 | +659 | +663  | +668  | +673  | +678  | +702  | +726  | +710  |
| 000006C8 | +694 | +690  | +814  | +874  | +678  | +747  | +817  | +815  |
| 000006D0 | +813 | +775  | +866  | +844  | +823  | +864  | +904  | +865  |
| 000006D8 | +826 | +843  | +860  | +974  | +960  | +437  | -215  | +181  |
| 000006E0 | +962 | +882  | +929  | +74   | -14   | -47   | -80   | -145  |
| 000006E8 | -211 | -211  | -213  | -278  | -344  | -185  | -154  | -140  |
| 000006F0 | -125 | -285  | -445  | -429  | -413  | -281  | -150  | -539  |
| 000006F8 | -929 | -818  | +1085 | +1148 | +1083 | +1059 | +1035 | +1035 |
| 00000700 | +652 | +656  | +660  | +664  | +669  | +689  | +709  | +729  |
| 00000708 | +750 | +726  | +702  | +710  | +718  | +790  | +862  | +742  |
| 00000710 | +622 | +511  | +656  | +593  | +531  | +544  | +557  | +698  |
| 00000718 | +840 | +864  | +888  | +864  | +841  | +961  | +825  | +881  |
| 00000720 | +938 | +871  | +804  | -94   | +31   | +4    | -22   | -113  |
| 00000728 | -204 | -198  | -193  | -284  | -375  | -113  | -108  | -215  |
| 00000730 | -322 | -523  | -725  | -751  | -777  | -614  | -452  | -290  |
| 00000738 | -128 | -428  | +808  | +956  | +1104 | +1104 | +1104 | +1104 |
| 00000740 | +645 | +652  | +659  | +667  | +675  | +688  | +702  | +635  |
| 00000748 | +697 | +762  | +827  | +884  | +942  | +901  | +860  | +715  |
| 00000750 | +570 | +513  | +584  | +518  | +454  | +350  | +245  | +165  |
| 00000758 | +86  | +436  | +787  | +762  | +865  | +995  | +869  | +887  |
| 00000760 | +905 | +957  | +496  | -59   | +24   | -37   | -98   | -135  |
| 00000768 | -173 | -203  | -235  | -162  | -89   | -106  | -251  | -405  |
| 00000770 | -558 | -636  | -715  | -818  | -920  | -911  | -775  | -623  |
| 00000778 | -343 | +597  | +513  | +805  | +1097 | +1097 | +1097 | +1097 |
| 00000780 | +638 | +648  | +659  | +670  | +681  | +688  | +695  | +670  |
| 00000788 | +901 | +927  | +953  | +931  | +910  | +884  | +858  | +688  |
| 00000790 | +519 | +515  | +512  | +444  | +377  | +284  | +190  | +145  |
| 00000798 | +100 | +9    | -81   | +276  | +890  | +1030 | +913  | +893  |
| 000007A0 | +873 | +1043 | +189  | -25   | +17   | -78   | -174  | -158  |
| 000007A8 | -142 | -209  | -277  | -168  | -60   | -228  | -395  | -467  |
| 000007B0 | -539 | -622  | -705  | -757  | -808  | -953  | -843  | -828  |
| 000007B8 | -558 | +982  | +986  | +1038 | +1090 | +1090 | +1090 | +1090 |
| 000007C0 | +631 | +644  | +659  | +673  | +687  | +679  | +672  | +816  |

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 000007C8 | +960  | +963  | +967  | +938  | +910  | +851  | +792  | +629  |
| 000007D0 | +467  | +453  | +440  | +362  | +284  | +218  | +151  | +108  |
| 000007D8 | +66   | +22   | -21   | -49   | +51   | +400  | +1005 | +939  |
| 000007E0 | +872  | +713  | +1065 | +458  | -21   | -95   | -170  | -196  |
| 000007E8 | -223  | -230  | -239  | -118  | -127  | -261  | -395  | -481  |
| 000007F0 | -567  | -759  | -823  | -880  | -936  | -723  | -1022 | -913  |
| 000007F8 | -677  | +1127 | +1139 | +1111 | +1083 | +1083 | +1083 | +1083 |
| 00000800 | +624  | +641  | +659  | +676  | +694  | +671  | +649  | +962  |
| 00000808 | +1020 | +1000 | +981  | +945  | +910  | +818  | +727  | +571  |
| 00000810 | +416  | +392  | +368  | +280  | +192  | +152  | +112  | +72   |
| 00000818 | +32   | +35   | +38   | +9    | -20   | +27   | +842  | +857  |
| 00000820 | +872  | +895  | +918  | +941  | +964  | +399  | -166  | -235  |
| 00000828 | -304  | -252  | -201  | -69   | -194  | -294  | -395  | -495  |
| 00000830 | -596  | -897  | -942  | -1003 | -1064 | -1133 | -434  | +409  |
| 00000838 | +1252 | +1144 | +1036 | +1056 | +1076 | +1076 | +1076 | +1076 |
| 00000840 | +619  | +631  | +645  | +666  | +687  | +650  | +742  | +1001 |
| 00000848 | +1004 | +986  | +969  | +935  | +902  | +804  | +705  | +559  |
| 00000850 | +413  | +375  | +338  | +252  | +167  | +136  | +106  | +75   |
| 00000858 | +45   | +34   | +24   | +5    | -13   | +241  | +879  | +885  |
| 00000860 | +892  | +1016 | +885  | +930  | +975  | +994  | +1014 | +442  |
| 00000868 | -130  | -578  | -130  | -154  | -307  | -461  | -487  | -705  |
| 00000870 | -924  | -1031 | -1009 | -348  | +313  | +1030 | +1235 | +1136 |
| 00000878 | +1038 | +1025 | +1013 | +1040 | +1068 | +1068 | +1068 | +1068 |
| 00000880 | +614  | +622  | +631  | +656  | +681  | +630  | +835  | +1040 |
| 00000888 | +989  | +973  | +958  | +926  | +895  | +790  | +684  | +547  |
| 00000890 | +410  | +359  | +308  | +225  | +142  | +121  | +100  | +79   |
| 00000898 | +59   | +34   | +10   | +2    | -6    | +455  | +916  | +914  |
| 000008A0 | +912  | +114  | +853  | +919  | +986  | +950  | +915  | +991  |
| 000008A8 | +1068 | +1016 | +708  | +528  | +348  | +140  | +188  | +364  |
| 000008B0 | +540  | +883  | +1227 | +1202 | +1178 | +1017 | +1113 | +1096 |
| 000008B8 | +1080 | +1035 | +990  | +1025 | +1060 | +1060 | +1060 | +1060 |
| 000008C0 | +609  | +613  | +617  | +646  | +675  | +617  | +944  | +1030 |
| 000008C8 | +989  | +967  | +946  | +917  | +888  | +775  | +663  | +535  |
| 000008D0 | +407  | +342  | +278  | +197  | +117  | +106  | +94   | +83   |
| 000008D8 | +72   | +58   | +44   | -34   | +16   | +653  | +905  | +974  |
| 000008E0 | +788  | -100  | -91   | +452  | +997  | +978  | +959  | +940  |
| 000008E8 | +922  | +1002 | +954  | +1002 | +1051 | +1021 | +1119 | +1097 |
| 000008F0 | +1076 | +1021 | +967  | +1185 | +1019 | +1348 | +910  | +184  |
| 000008F8 | +1122 | +1060 | +999  | +1025 | +1052 | +1052 | +1052 | +1052 |
| 00000900 | +604  | +604  | +604  | +636  | +669  | +605  | +1053 | +1021 |
| 00000908 | +990  | +962  | +935  | +908  | +881  | +761  | +642  | +523  |
| 00000910 | +404  | +326  | +248  | +170  | +93   | +91   | +89   | +87   |
| 00000918 | +86   | +82   | +78   | +58   | +295  | +979  | +895  | +907  |
| 00000920 | +408  | +70   | -12   | -14   | -16   | +494  | +1004 | +1018 |
| 00000928 | +1032 | +988  | +945  | +965  | +986  | +1006 | +1027 | +1063 |
| 00000930 | +1100 | +1160 | +1220 | +1040 | +92   | -880  | -1596 | +168  |
| 00000938 | +1164 | +1086 | +1008 | +1026 | +1044 | +1044 | +1044 | +1044 |
| 00000940 | +611  | +607  | +604  | +633  | +662  | +729  | +1052 | +1023 |
| 00000948 | +994  | +972  | +951  | +930  | +909  | +806  | +703  | +568  |
| 00000950 | +433  | +357  | +282  | +223  | +164  | +147  | +131  | +115  |
| 00000958 | +99   | +240  | +382  | +355  | +713  | +1043 | +860  | +846  |
| 00000960 | +64   | -18   | +27   | -7    | -41   | -54   | -67   | +167  |
| 00000968 | +402  | +646  | +891  | +1136 | +1125 | +1098 | +944  | +678  |
| 00000970 | +284  | -381  | -1047 | -1505 | -1323 | -1465 | -1352 | +1152 |
| 00000978 | +1098 | +1079 | +1061 | +1058 | +1056 | +1056 | +1056 | +1056 |
| 00000980 | +618  | +611  | +605  | +630  | +656  | +854  | +1051 | +1025 |
| 00000988 | +999  | +983  | +968  | +953  | +938  | +851  | +764  | +613  |
| 00000990 | +462  | +389  | +316  | +276  | +235  | +204  | +174  | +143  |
| 00000998 | +113  | +143  | +174  | +141  | +620  | +851  | +826  | +913  |
| 000009A0 | -24   | +21   | +67   | +0    | -66   | -90   | -115  | -171  |
| 000009A8 | -228  | -335  | -442  | -101  | -272  | -473  | -930  | -859  |
| 000009B0 | -1044 | -1155 | -1267 | -1234 | -1202 | -1155 | -853  | +1241 |
| 000009B8 | +1032 | +1073 | +1114 | +1091 | +1068 | +1068 | +1068 | +1068 |
| 000009C0 | +625  | +615  | +605  | +627  | +650  | +978  | +1050 | +1027 |
| 000009C8 | +1003 | +978  | +953  | +928  | +903  | +848  | +793  | +642  |
| 000009D0 | +491  | +420  | +350  | +328  | +306  | +277  | +248  | +219  |
| 000009D8 | +190  | +206  | +222  | +358  | +879  | +891  | +903  | +547  |
| 000009E0 | -64   | -35   | -5    | -48   | -91   | -126  | -162  | -214  |
| 000009E8 | -266  | -380  | -495  | -290  | -85   | -516  | -436  | -988  |

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 000009F0 | -900  | -1009 | -1118 | -1171 | -1225 | -1325 | -17   | +1154 |
| 000009F8 | +1046 | +1058 | +1071 | +1075 | +1080 | +1080 | +1080 | +1080 |
| 00000A00 | +632  | +619  | +606  | +625  | +644  | +1103 | +1050 | +1029 |
| 00000A08 | +1008 | +973  | +938  | +903  | +868  | +845  | +822  | +671  |
| 00000A10 | +520  | +452  | +385  | +381  | +378  | +350  | +323  | +295  |
| 00000A18 | +268  | +269  | +271  | +448  | +882  | +803  | +981  | +182  |
| 00000A20 | -104  | -91   | -78   | -97   | -116  | -163  | -210  | -257  |
| 00000A28 | -304  | -426  | -549  | -735  | -410  | -48   | -455  | -477  |
| 00000A30 | -1012 | -1119 | -1226 | -1237 | -1248 | -1495 | +818  | +1067 |
| 00000A38 | +1060 | +1044 | +1028 | +1060 | +1092 | +1092 | +1092 | +1092 |
| 00000A40 | +599  | +595  | +592  | +613  | +762  | +1032 | +1046 | +1004 |
| 00000A48 | +962  | +943  | +925  | +890  | +856  | +841  | +826  | +732  |
| 00000A50 | +637  | +565  | +493  | +468  | +444  | +420  | +396  | +371  |
| 00000A58 | +348  | +342  | +337  | +667  | +870  | +919  | +969  | +27   |
| 00000A60 | -147  | -147  | -148  | -149  | -150  | -207  | -263  | -320  |
| 00000A68 | -377  | -473  | -570  | -866  | -906  | -366  | -83   | -519  |
| 00000A70 | -443  | -617  | -790  | -804  | -818  | -579  | +1196 | +1139 |
| 00000A78 | +1083 | +1059 | +1036 | +1060 | +1085 | +1085 | +1085 | +1085 |
| 00000A80 | +566  | +572  | +579  | +602  | +881  | +962  | +1043 | +980  |
| 00000A88 | +917  | +914  | +912  | +878  | +844  | +837  | +831  | +793  |
| 00000A90 | +755  | +678  | +601  | +556  | +511  | +490  | +469  | +448  |
| 00000A98 | +428  | +415  | +403  | +887  | +859  | +908  | +702  | -256  |
| 00000AA0 | -190  | -204  | -219  | -201  | -184  | -251  | -317  | -384  |
| 00000AA8 | -451  | -521  | -591  | -741  | -891  | -1069 | -991  | -305  |
| 00000AB0 | -131  | -243  | -355  | -372  | -388  | +81   | +1062 | +956  |
| 00000AB8 | +1106 | +1075 | +1044 | +1061 | +1078 | +1078 | +1078 | +1078 |
| 00000AC0 | +597  | +573  | +550  | +591  | +888  | +963  | +1039 | +931  |
| 00000AC8 | +951  | +989  | +899  | +921  | +816  | +809  | +804  | +806  |
| 00000AD0 | +808  | +758  | +709  | +675  | +642  | +608  | +574  | +549  |
| 00000AD8 | +524  | +472  | +549  | +890  | +847  | +977  | +211  | -283  |
| 00000AE0 | -265  | -277  | -289  | -285  | -282  | -343  | -403  | -463  |
| 00000AE8 | -524  | -616  | -708  | -839  | -971  | -1171 | -1243 | -1250 |
| 00000AF0 | -1386 | -1037 | -688  | -835  | -1110 | +229  | +1184 | +1068 |
| 00000AF8 | +1081 | +1066 | +1052 | +1061 | +1071 | +1071 | +1071 | +1071 |
| 00000B00 | +628  | +574  | +521  | +580  | +895  | +965  | +1036 | +883  |
| 00000B08 | +986  | +1064 | +887  | +965  | +788  | +782  | +777  | +819  |
| 00000B10 | +862  | +839  | +817  | +795  | +773  | +726  | +680  | +650  |
| 00000B18 | +620  | +530  | +696  | +894  | +836  | +1046 | -280  | -310  |
| 00000B20 | -340  | -350  | -360  | -370  | -381  | -435  | -489  | -543  |
| 00000B28 | -598  | -711  | -825  | -938  | -1052 | -1145 | -1239 | -1428 |
| 00000B30 | -1362 | -1447 | -1533 | -1555 | -1833 | +1273 | +1051 | +1053 |
| 00000B38 | +1056 | +1058 | +1060 | +1062 | +1064 | +1064 | +1064 | +1064 |
| 00000B40 | +607  | +585  | +564  | +726  | +889  | +846  | +930  | +903  |
| 00000B48 | +876  | +866  | +856  | +901  | +820  | +879  | +811  | +855  |
| 00000B50 | +899  | +833  | +895  | +877  | +859  | +814  | +769  | +748  |
| 00000B58 | +728  | +676  | +752  | +876  | +872  | +722  | -451  | -449  |
| 00000B60 | -447  | -453  | -460  | -467  | -475  | -535  | -595  | -655  |
| 00000B68 | -715  | -820  | -926  | -1031 | -1136 | -1215 | -1295 | -1406 |
| 00000B70 | -1389 | -1464 | -1540 | -1639 | -1099 | +1149 | +1093 | +1062 |
| 00000B78 | +1031 | +1040 | +1050 | +1059 | +1069 | +1069 | +1069 | +1069 |
| 00000B80 | +586  | +596  | +607  | +873  | +884  | +855  | +1081 | +1180 |
| 00000B88 | +1023 | +796  | +825  | +838  | +852  | +977  | +846  | +891  |
| 00000B90 | +937  | +827  | +973  | +960  | +946  | +902  | +859  | +847  |
| 00000B98 | +836  | +822  | +808  | +858  | +909  | +399  | -622  | -588  |
| 00000BA0 | -554  | -557  | -561  | -565  | -569  | -635  | -701  | -767  |
| 00000BA8 | -833  | -930  | -1027 | -1124 | -1221 | -1286 | -1351 | -1384 |
| 00000BB0 | -1417 | -1482 | -1547 | -1596 | -109  | +1153 | +1136 | +1071 |
| 00000BB8 | +1006 | +1023 | +1040 | +1057 | +1074 | +1074 | +1074 | +1074 |
| 00000BC0 | +597  | +575  | +682  | +892  | +847  | +991  | +1136 | +720  |
| 00000BC8 | +1073 | +990  | +906  | +919  | +932  | +954  | +849  | +911  |
| 00000BD0 | +974  | +909  | +971  | +994  | +1017 | +966  | +916  | +906  |
| 00000BD8 | +896  | +856  | +816  | +824  | +961  | -268  | -729  | -695  |
| 00000BE0 | -661  | -677  | -694  | -710  | -727  | -783  | -839  | -894  |
| 00000BE8 | -950  | -1039 | -1128 | -1216 | -1305 | -1372 | -1439 | -1457 |
| 00000BF0 | -1476 | -1499 | -1522 | -1888 | +816  | +1149 | +970  | +1007 |
| 00000BF8 | +1045 | +1053 | +1062 | +1070 | +1079 | +1079 | +1079 | +1079 |
| 00000C00 | +608  | +554  | +757  | +911  | +810  | +1000 | +935  | +901  |
| 00000C08 | +612  | +800  | +732  | +616  | +500  | +548  | +596  | +676  |
| 00000C10 | +756  | +863  | +970  | +1029 | +1088 | +1031 | +974  | +965  |

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000C18 | +956  | +890  | +825  | +791  | +1014 | -935  | -837  | -802  |
| 00000C20 | -768  | -797  | -827  | -856  | -886  | -931  | -977  | -1022 |
| 00000C28 | -1068 | -1148 | -1229 | -1309 | -1390 | -1458 | -1527 | -1531 |
| 00000C30 | -1536 | -1516 | -1497 | -1413 | +1230 | +1017 | +1061 | +1072 |
| 00000C38 | +1084 | +1084 | +1084 | +1084 | +1084 | +1084 | +1084 | +1084 |
| 00000C40 | +595  | +635  | +805  | +878  | +823  | +761  | +572  | +662  |
| 00000C48 | +624  | +682  | +612  | +605  | +599  | +627  | +783  | +715  |
| 00000C50 | +647  | +702  | +757  | +900  | +1043 | +1037 | +1031 | +1001 |
| 00000C58 | +972  | +827  | +810  | +905  | +489  | -998  | -951  | -944  |
| 00000C60 | -937  | -963  | -991  | -1018 | -1045 | -1081 | -1118 | -1154 |
| 00000C68 | -1190 | -1256 | -1323 | -1389 | -1455 | -1502 | -1550 | -1557 |
| 00000C70 | -1564 | -1519 | -1603 | -542  | +1158 | +1052 | +1074 | +1079 |
| 00000C78 | +1085 | +1087 | +1089 | +1091 | +1093 | +1093 | +1093 | +1093 |
| 00000C80 | +582  | +589  | +597  | +589  | +581  | +651  | +721  | +679  |
| 00000C88 | +637  | +692  | +748  | +723  | +699  | +579  | +714  | +754  |
| 00000C90 | +794  | +797  | +800  | +771  | +743  | +916  | +1089 | +1038 |
| 00000C98 | +988  | +764  | +796  | +892  | -291  | -1190 | -1066 | -1086 |
| 00000CA0 | -1106 | -1130 | -1155 | -1180 | -1205 | -1232 | -1259 | -1286 |
| 00000CA8 | -1313 | -1365 | -1417 | -1469 | -1521 | -1547 | -1573 | -1583 |
| 00000CB0 | -1593 | -1523 | -1709 | +329  | +1087 | +1087 | +1087 | +1087 |
| 00000CB8 | +1087 | +1091 | +1095 | +1099 | +1103 | +1103 | +1103 | +1103 |
| 00000CC0 | +601  | +615  | +629  | +636  | +643  | +660  | +678  | +671  |
| 00000CC8 | +665  | +702  | +740  | +737  | +735  | +674  | +741  | +761  |
| 00000CD0 | +781  | +788  | +795  | +786  | +778  | +794  | +811  | +859  |
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| 00000CF0 | -1557 | -1662 | -1639 | +1128 | +1079 | +1073 | +1068 | +1078 |
| 00000CF8 | +1088 | +1094 | +1100 | +1106 | +1112 | +1112 | +1112 | +1112 |
| 00000D00 | +620  | +641  | +662  | +683  | +705  | +670  | +635  | +664  |
| 00000D08 | +694  | +713  | +732  | +751  | +771  | +770  | +769  | +768  |
| 00000D10 | +768  | +779  | +791  | +802  | +814  | +801  | +789  | +808  |
| 00000D18 | +828  | +798  | +768  | +802  | -1468 | -1238 | -1264 | -1290 |
| 00000D20 | -1316 | -1352 | -1388 | -1392 | -1397 | -1437 | -1477 | -1517 |
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| 00000D30 | -1522 | -1545 | -1057 | +1159 | +1072 | +1060 | +1049 | +1069 |
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| 00000D40 | +615  | +627  | +640  | +653  | +666  | +651  | +636  | +669  |
| 00000D48 | +702  | +718  | +734  | +750  | +766  | +767  | +768  | +769  |
| 00000D50 | +771  | +781  | +792  | +802  | +813  | +800  | +788  | +808  |
| 00000D58 | +828  | +903  | +979  | -208  | -1396 | -1398 | -1272 | -1290 |
| 00000D60 | -1309 | -1343 | -1378 | -1397 | -1416 | -1450 | -1484 | -1518 |
| 00000D68 | -1552 | -1572 | -1593 | -1589 | -1585 | -1574 | -1564 | -1529 |
| 00000D70 | -1494 | -1610 | -63   | +1140 | +1064 | +1042 | +1020 | +1053 |
| 00000D78 | +1087 | +1094 | +1101 | +1108 | +1115 | +1115 | +1115 | +1115 |
| 00000D80 | +610  | +614  | +619  | +623  | +628  | +633  | +637  | +674  |
| 00000D88 | +711  | +723  | +736  | +749  | +762  | +765  | +768  | +771  |
| 00000D90 | +774  | +783  | +793  | +803  | +813  | +800  | +788  | +808  |
| 00000D98 | +828  | +881  | +935  | +829  | -1069 | -1431 | -1281 | -1291 |
| 00000DA0 | -1302 | -1335 | -1369 | -1402 | -1436 | -1464 | -1491 | -1519 |
| 00000DA8 | -1547 | -1564 | -1581 | -1550 | -1519 | -1514 | -1509 | -1488 |
| 00000DB0 | -1467 | -1676 | +931  | +1122 | +1057 | +1024 | +991  | +1038 |
| 00000DB8 | +1085 | +1091 | +1097 | +1103 | +1109 | +1109 | +1109 | +1109 |
| 00000DC0 | +605  | +617  | +629  | +641  | +654  | +662  | +670  | +695  |
| 00000DC8 | +719  | +728  | +738  | +748  | +758  | +762  | +767  | +772  |
| 00000DD0 | +777  | +785  | +794  | +803  | +812  | +808  | +804  | +816  |
| 00000DD8 | +828  | +859  | +891  | +842  | +922  | +264  | -1418 | -1364 |
| 00000DE0 | -1311 | -1327 | -1343 | -1359 | -1376 | -1381 | -1386 | -1496 |
| 00000DE8 | -1477 | -1515 | -1553 | -1406 | -1388 | -1613 | -1454 | -1567 |
| 00000DF0 | -1679 | -485  | +1093 | +1135 | +1049 | +1037 | +1026 | +1054 |
| 00000DF8 | +1082 | +1087 | +1092 | +1097 | +1102 | +1102 | +1102 | +1102 |
| 00000E00 | +600  | +620  | +640  | +660  | +680  | +692  | +704  | +716  |
| 00000E08 | +728  | +734  | +741  | +747  | +754  | +760  | +767  | +773  |
| 00000E10 | +780  | +788  | +796  | +804  | +812  | +816  | +820  | +824  |
| 00000E18 | +828  | +837  | +847  | +856  | +866  | +935  | +493  | -413  |
| 00000E20 | -1320 | -1319 | -1318 | -1317 | -1316 | -1299 | -1282 | -1473 |
| 00000E28 | -1408 | -1466 | -1525 | -1391 | -1514 | -1584 | -887  | +146  |
| 00000E30 | +1180 | +1089 | +999  | +1020 | +1042 | +1051 | +1061 | +1070 |
| 00000E38 | +1080 | +1084 | +1088 | +1092 | +1096 | +1096 | +1096 | +1096 |

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000E40 | +616  | +633  | +650  | +667  | +684  | +695  | +706  | +717  |
| 00000E48 | +728  | +734  | +741  | +747  | +754  | +760  | +767  | +773  |
| 00000E50 | +780  | +789  | +798  | +807  | +816  | +820  | +824  | +828  |
| 00000E58 | +832  | +822  | +814  | +852  | +892  | +1050 | +954  | +649  |
| 00000E60 | +344  | +535  | -297  | -793  | -1290 | -1445 | -1601 | -1140 |
| 00000E68 | -1320 | -1029 | -738  | -47   | +516  | +1139 | +1122 | +1104 |
| 00000E70 | +1088 | +1065 | +1044 | +1045 | +1048 | +1055 | +1064 | +1071 |
| 00000E78 | +1080 | +1084 | +1088 | +1092 | +1096 | +1096 | +1096 | +1096 |
| 00000E80 | +632  | +646  | +660  | +674  | +688  | +698  | +708  | +718  |
| 00000E88 | +728  | +734  | +741  | +747  | +754  | +760  | +767  | +773  |
| 00000E90 | +780  | +790  | +800  | +810  | +820  | +824  | +828  | +832  |
| 00000E98 | +836  | +808  | +781  | +849  | +918  | +910  | +903  | +943  |
| 00000EA0 | +984  | +982  | +980  | +1010 | +1040 | +968  | +896  | +600  |
| 00000EA8 | +816  | +944  | +1073 | +1041 | +1010 | +1046 | +1083 | +1039 |
| 00000EB0 | +996  | +1042 | +1089 | +1071 | +1054 | +1060 | +1067 | +1073 |
| 00000EB8 | +1080 | +1084 | +1088 | +1092 | +1096 | +1096 | +1096 | +1096 |
| 00000EC0 | +648  | +659  | +670  | +681  | +692  | +701  | +710  | +719  |
| 00000EC8 | +728  | +734  | +741  | +747  | +754  | +760  | +767  | +773  |
| 00000ED0 | +780  | +791  | +802  | +813  | +824  | +828  | +832  | +836  |
| 00000ED8 | +840  | +833  | +828  | +869  | +912  | +905  | +900  | +917  |
| 00000EE0 | +936  | +940  | +945  | +909  | +874  | +997  | +225  | +468  |
| 00000EE8 | +456  | +357  | +1028 | +1009 | +992  | +1017 | +1044 | +1029 |
| 00000EF0 | +1016 | +1042 | +1070 | +1064 | +1060 | +1064 | +1070 | +1074 |
| 00000EF8 | +1080 | +1084 | +1088 | +1092 | +1096 | +1096 | +1096 | +1096 |
| 00000F00 | +664  | +672  | +680  | +688  | +696  | +704  | +712  | +720  |
| 00000F08 | +728  | +734  | +741  | +747  | +754  | +760  | +767  | +773  |
| 00000F10 | +780  | +792  | +804  | +816  | +828  | +832  | +836  | +840  |
| 00000F18 | +844  | +859  | +875  | +890  | +906  | +901  | +897  | +892  |
| 00000F20 | +888  | +899  | +910  | +937  | +964  | +899  | +1090 | +337  |
| 00000F28 | +608  | +1051 | +983  | +978  | +974  | +989  | +1005 | +1020 |
| 00000F30 | +1036 | +1043 | +1051 | +1058 | +1066 | +1069 | +1073 | +1076 |
| 00000F38 | +1080 | +1084 | +1088 | +1092 | +1096 | +1096 | +1096 | +1096 |
| 00000F40 | +664  | +672  | +680  | +688  | +696  | +704  | +712  | +720  |
| 00000F48 | +728  | +734  | +741  | +747  | +754  | +760  | +767  | +773  |
| 00000F50 | +780  | +792  | +804  | +816  | +828  | +832  | +836  | +840  |
| 00000F58 | +844  | +859  | +875  | +890  | +906  | +901  | +897  | +892  |
| 00000F60 | +888  | +899  | +910  | +929  | +948  | +875  | +930  | +1169 |
| 00000F68 | +896  | +1067 | +983  | +978  | +974  | +989  | +1005 | +1020 |
| 00000F70 | +1036 | +1043 | +1051 | +1058 | +1066 | +1069 | +1073 | +1076 |
| 00000F78 | +1080 | +1084 | +1088 | +1092 | +1096 | +1096 | +1096 | +1096 |
| 00000F80 | +664  | +672  | +680  | +688  | +696  | +704  | +712  | +720  |
| 00000F88 | +728  | +734  | +741  | +747  | +754  | +760  | +767  | +773  |
| 00000F90 | +780  | +792  | +804  | +816  | +828  | +832  | +836  | +840  |
| 00000F98 | +844  | +859  | +875  | +890  | +906  | +901  | +897  | +892  |
| 00000FA0 | +888  | +899  | +910  | +921  | +932  | +979  | +1026 | +977  |
| 00000FA8 | +928  | +955  | +983  | +978  | +974  | +989  | +1005 | +1020 |
| 00000FB0 | +1036 | +1043 | +1051 | +1058 | +1066 | +1069 | +1073 | +1076 |
| 00000FB8 | +1080 | +1084 | +1088 | +1092 | +1096 | +1096 | +1096 | +1096 |
| 00000FC0 | +664  | +672  | +680  | +688  | +696  | +704  | +712  | +720  |
| 00000FC8 | +728  | +734  | +741  | +747  | +754  | +760  | +767  | +773  |
| 00000FD0 | +780  | +792  | +804  | +816  | +828  | +832  | +836  | +840  |
| 00000FD8 | +844  | +859  | +875  | +890  | +906  | +901  | +897  | +892  |
| 00000FE0 | +888  | +899  | +910  | +921  | +932  | +979  | +1026 | +977  |
| 00000FE8 | +928  | +955  | +983  | +978  | +974  | +989  | +1005 | +1020 |
| 00000FF0 | +1036 | +1043 | +1051 | +1058 | +1066 | +1069 | +1073 | +1076 |
| 00000FF8 | +1080 | +1084 | +1088 | +1092 | +1096 | +1096 | +1096 | +1096 |

#### 4.2.4.3.6 Reconstructed Cr Component

The following is a dump of the reconstructed Cb component.

The sample data for 11.5 fixed-point integers (RDP 7.1/8.0) is:

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000000 | -2112 | -2114 | -2116 | -2118 | -2120 | -2122 | -2124 | -2126 |
| 00000008 | -2128 | -2118 | -2108 | -2098 | -2088 | -2150 | -2212 | -2146 |
| 00000010 | -2080 | -2100 | -2120 | -2140 | -2160 | -2164 | -2168 | -2172 |

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000018 | -2176 | -2092 | -2008 | -2052 | -2096 | -2132 | -2168 | -2076 |
| 00000020 | -1984 | -2088 | -2192 | -2168 | -2144 | -2136 | -2128 | -2120 |
| 00000028 | -2112 | -2126 | -2140 | -2154 | -2168 | -2150 | -2132 | -2114 |
| 00000030 | -2096 | -2096 | -2096 | -2096 | -2096 | -2096 | -2096 | -2096 |
| 00000038 | -2096 | -2080 | -2064 | -2048 | -2032 | -2032 | -2032 | -2032 |
| 00000040 | -2128 | -2113 | -2098 | -2115 | -2132 | -2133 | -2134 | -2135 |
| 00000048 | -2137 | -2127 | -2117 | -2107 | -2097 | -2117 | -2137 | -2125 |
| 00000050 | -2114 | -2134 | -2154 | -2159 | -2163 | -2135 | -2108 | -2128 |
| 00000058 | -2149 | -2132 | -2116 | -2116 | -2115 | -2115 | -2114 | -2098 |
| 00000060 | -2082 | -2112 | -2142 | -2141 | -2139 | -2133 | -2128 | -2122 |
| 00000068 | -2117 | -2127 | -2137 | -2147 | -2158 | -2146 | -2134 | -2122 |
| 00000070 | -2111 | -2108 | -2106 | -2104 | -2102 | -2101 | -2101 | -2101 |
| 00000078 | -2101 | -2087 | -2073 | -2059 | -2045 | -2045 | -2045 | -2045 |
| 00000080 | -2144 | -2112 | -2080 | -2112 | -2145 | -2145 | -2145 | -2145 |
| 00000088 | -2146 | -2136 | -2126 | -2116 | -2107 | -2085 | -2063 | -2105 |
| 00000090 | -2148 | -2168 | -2189 | -2178 | -2167 | -2107 | -2048 | -2085 |
| 00000098 | -2122 | -2173 | -2225 | -2180 | -2135 | -2098 | -2061 | -2120 |
| 000000A0 | -2180 | -2136 | -2093 | -2114 | -2135 | -2131 | -2128 | -2125 |
| 000000A8 | -2122 | -2128 | -2135 | -2141 | -2148 | -2142 | -2137 | -2131 |
| 000000B0 | -2126 | -2121 | -2117 | -2112 | -2108 | -2107 | -2107 | -2106 |
| 000000B8 | -2106 | -2094 | -2082 | -2070 | -2058 | -2058 | -2058 | -2058 |
| 000000C0 | -2160 | -2111 | -2062 | -2109 | -2157 | -2156 | -2155 | -2154 |
| 000000C8 | -2155 | -2145 | -2135 | -2125 | -2116 | -2132 | -2148 | -2132 |
| 000000D0 | -2118 | -2154 | -2191 | -2181 | -2170 | -2494 | -2308 | -2393 |
| 000000D8 | -2479 | -2470 | -2461 | -2243 | -2282 | -2353 | -2167 | -2174 |
| 000000E0 | -2182 | -2160 | -2139 | -2135 | -2130 | -2128 | -2128 | -2127 |
| 000000E8 | -2127 | -2129 | -2132 | -2134 | -2138 | -2138 | -2139 | -2139 |
| 000000F0 | -2141 | -2133 | -2127 | -2120 | -2114 | -2112 | -2112 | -2111 |
| 000000F8 | -2111 | -2101 | -2091 | -2081 | -2071 | -2071 | -2071 | -2071 |
| 00000100 | -2176 | -2110 | -2045 | -2107 | -2170 | -2168 | -2167 | -2165 |
| 00000108 | -2164 | -2154 | -2145 | -2135 | -2126 | -2180 | -2235 | -2161 |
| 00000110 | -2088 | -2141 | -2195 | -2440 | -2686 | -2371 | -1033 | -398  |
| 00000118 | +236  | +305  | +375  | -3    | -894  | -2096 | -2787 | -2485 |
| 00000120 | -2184 | -2185 | -2187 | -2156 | -2126 | -2127 | -2129 | -2130 |
| 00000128 | -2132 | -2131 | -2130 | -2129 | -2128 | -2135 | -2142 | -2149 |
| 00000130 | -2156 | -2147 | -2138 | -2129 | -2120 | -2119 | -2118 | -2117 |
| 00000138 | -2116 | -2108 | -2100 | -2092 | -2084 | -2084 | -2084 | -2084 |
| 00000140 | -2112 | -2085 | -2058 | -2112 | -2166 | -2067 | -2225 | -2190 |
| 00000148 | -2157 | -2107 | -2057 | -2104 | -2151 | -2119 | -2088 | -2632 |
| 00000150 | -2666 | -2263 | -837  | +844  | +2526 | +3327 | +2847 | +2847 |
| 00000158 | +2847 | +2726 | +2606 | +2967 | +3070 | +2968 | +2867 | +397  |
| 00000160 | -2074 | -2745 | -2137 | -2281 | -2169 | -2202 | -2236 | -2190 |
| 00000168 | -2145 | -2145 | -2147 | -2148 | -2150 | -2152 | -2156 | -2159 |
| 00000170 | -2163 | -2159 | -2156 | -2152 | -2150 | -2130 | -2111 | -2123 |
| 00000178 | -2137 | -2127 | -2117 | -2107 | -2097 | -2097 | -2097 | -2097 |
| 00000180 | -2048 | -2060 | -2073 | -2118 | -2163 | -1967 | -2284 | -2217 |
| 00000188 | -2150 | -2060 | -1971 | -2074 | -2177 | -2315 | -2454 | -1057 |
| 00000190 | +1364 | +2990 | +2568 | +2593 | +2619 | +2369 | +2631 | +2508 |
| 00000198 | +2386 | +2332 | +2278 | +2352 | +2427 | +2913 | +2888 | +3022 |
| 000001A0 | +3156 | +1302 | -2088 | -2406 | -2213 | -2279 | -2345 | -2251 |
| 000001A8 | -2158 | -2161 | -2165 | -2168 | -2172 | -2171 | -2171 | -2170 |
| 000001B0 | -2170 | -2172 | -2175 | -2177 | -2180 | -2142 | -2105 | -2131 |
| 000001B8 | -2158 | -2146 | -2134 | -2122 | -2110 | -2110 | -2110 | -2110 |
| 000001C0 | -2112 | -2163 | -2215 | -2235 | -2255 | -1994 | -2247 | -2194 |
| 000001C8 | -2143 | -2109 | -2076 | -2123 | -2170 | -2270 | +700  | +3527 |
| 000001D0 | +2770 | +2035 | +2325 | +2293 | +2263 | +2178 | +2350 | +2265 |
| 000001D8 | +2181 | +2129 | +2078 | +2154 | +2231 | +2521 | +2557 | +2559 |
| 000001E0 | +2562 | +3221 | +3113 | +140  | -2832 | -2034 | -2261 | -2199 |
| 000001E8 | -2139 | -2160 | -2182 | -2188 | -2194 | -2189 | -2185 | -2181 |
| 000001F0 | -2177 | -2185 | -2193 | -2201 | -2210 | -2154 | -2098 | -2138 |
| 000001F8 | -2179 | -2165 | -2151 | -2137 | -2123 | -2123 | -2123 | -2123 |
| 00000200 | -1664 | -1755 | -1846 | -1841 | -1836 | -1767 | -2210 | -2173 |
| 00000208 | -2136 | -2159 | -2182 | -2173 | -2164 | -2739 | +2830 | +2735 |
| 00000210 | +2640 | +2361 | +2082 | +1995 | +1908 | +1989 | +2070 | +2023 |
| 00000218 | +1976 | +1927 | +1878 | +1957 | +2036 | +2131 | +2226 | +2353 |
| 00000220 | +2480 | +2581 | +2682 | +2943 | +2692 | -2815 | -2178 | -2149 |
| 00000228 | -2120 | -2160 | -2200 | -2208 | -2216 | -2208 | -2200 | -2192 |
| 00000230 | -2184 | -2198 | -2212 | -2226 | -2240 | -2166 | -2092 | -2146 |
| 00000238 | -2200 | -2184 | -2168 | -2152 | -2136 | -2136 | -2136 | -2136 |



|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000240 | -2096 | -2166 | -2238 | -2228 | -2220 | -2087 | -2210 | -2173 |
| 00000248 | -2137 | -2189 | -2243 | -2152 | -2318 | -2031 | +3375 | +2861 |
| 00000250 | +2605 | +2305 | +2007 | +1851 | +1697 | +1756 | +1815 | +1810 |
| 00000258 | +1806 | +1756 | +1707 | +1754 | +1801 | +1911 | +2023 | +2149 |
| 00000260 | +2277 | +2299 | +2323 | +2729 | +1345 | -2439 | -2129 | -2217 |
| 00000268 | -2307 | -2349 | -2136 | -2179 | -2222 | -2223 | -2224 | -2193 |
| 00000270 | -2162 | -2171 | -2180 | -2190 | -2199 | -2198 | -2198 | -2213 |
| 00000278 | -2229 | -2172 | -2115 | -2170 | -2225 | -2113 | -2257 | -2257 |
| 00000280 | -2016 | -2067 | -2118 | -2105 | -2093 | -2152 | -2211 | -2174 |
| 00000288 | -2138 | -2221 | -2305 | -2132 | -2472 | +212  | +2897 | +2477 |
| 00000290 | +2570 | +2251 | +1932 | +1709 | +1487 | +1524 | +1561 | +1598 |
| 00000298 | +1636 | +1586 | +1537 | +1552 | +1567 | +1693 | +1820 | +1947 |
| 000002A0 | +2074 | +2019 | +1964 | +2261 | -514  | -2321 | -2080 | -2031 |
| 000002A8 | -1982 | -2283 | -2073 | -2151 | -2229 | -2238 | -2248 | -2194 |
| 000002B0 | -2140 | -2144 | -2149 | -2154 | -2159 | -2231 | -2304 | -2281 |
| 000002B8 | -2258 | -2160 | -2062 | -2188 | -2314 | -2090 | -2378 | -2378 |
| 000002C0 | -2064 | -2094 | -2126 | -2125 | -2125 | -2152 | -2179 | -2159 |
| 000002C8 | -2139 | -2204 | -2270 | -2144 | -2530 | +1688 | +2834 | +2460 |
| 000002D0 | +2343 | +2147 | +1953 | +1678 | +1404 | +1387 | +1370 | +1418 |
| 000002D8 | +1466 | +1416 | +1366 | +1349 | +1332 | +1442 | +1553 | +1663 |
| 000002E0 | +1775 | +1817 | +1861 | +2415 | -2405 | -2457 | -1999 | -2035 |
| 000002E8 | -281  | -1464 | -2393 | -2378 | -2363 | -2301 | -2240 | -2195 |
| 000002F0 | -2150 | -2165 | -2181 | -2182 | -2182 | -2199 | -2218 | -2188 |
| 000002F8 | -2159 | -2756 | -2329 | -1934 | -2307 | -2627 | -2179 | -2307 |
| 00000300 | -2112 | -2123 | -2135 | -2146 | -2158 | -2153 | -2149 | -2144 |
| 00000308 | -2140 | -2188 | -2236 | -2156 | -2588 | +3164 | +2772 | +2444 |
| 00000310 | +2116 | +2045 | +1975 | +1648 | +1322 | +1251 | +1181 | +1238 |
| 00000318 | +1296 | +1246 | +1197 | +1147 | +1098 | +1192 | +1287 | +1381 |
| 00000320 | +1476 | +1617 | +1758 | +1291 | -2760 | -2083 | -2430 | -1273 |
| 00000328 | -628  | -647  | -667  | -1582 | -2498 | -2365 | -2233 | -2196 |
| 00000330 | -2160 | -2187 | -2215 | -2210 | -2206 | -2169 | -2133 | -2096 |
| 00000338 | -2060 | -280  | -548  | -2448 | -1788 | -860  | -1980 | -2236 |
| 00000340 | -2112 | -2120 | -2130 | -2140 | -2150 | -2145 | -2141 | -2137 |
| 00000348 | -2133 | -2147 | -2161 | -2079 | -718  | +3207 | +2525 | +2291 |
| 00000350 | +2057 | +1941 | +1827 | +1553 | +1279 | +1174 | +1070 | +1094 |
| 00000358 | +1118 | +1044 | +970  | +976  | +983  | +1001 | +1019 | +1165 |
| 00000360 | +1313 | +1305 | +1555 | -212  | -2491 | -2189 | -2401 | -867  |
| 00000368 | -615  | -642  | -671  | -603  | -536  | -1354 | -2172 | -2271 |
| 00000370 | -2370 | -2340 | -2311 | -2330 | -2349 | -2315 | -2282 | -2697 |
| 00000378 | -1321 | -420  | -543  | -394  | -757  | -741  | -2261 | -2261 |
| 00000380 | -2112 | -2119 | -2127 | -2135 | -2143 | -2138 | -2134 | -2130 |
| 00000388 | -2126 | -2106 | -2087 | -2259 | +640  | +2995 | +2279 | +2138 |
| 00000390 | +1998 | +1839 | +1681 | +1459 | +1237 | +1098 | +960  | +950  |
| 00000398 | +940  | +842  | +744  | +806  | +869  | +811  | +753  | +951  |
| 000003A0 | +1150 | +995  | +1352 | -1715 | -2222 | -2297 | -2372 | -463  |
| 000003A8 | -602  | -639  | -676  | -649  | -623  | -600  | -577  | -810  |
| 000003B0 | -1044 | -1214 | -1384 | -1426 | -1469 | -1183 | -897  | -483  |
| 000003B8 | -582  | -560  | -538  | -900  | -750  | -1134 | -2542 | -2286 |
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| 00000A00 | -1936 | -2002 | -2068 | -2070 | -2072 | -1514 | -1980 | -2126 |
| 00000A08 | -2272 | -2446 | -2620 | -2794 | -2968 | -2942 | -2916 | -2442 |
| 00000A10 | -1968 | -1667 | -1366 | -1321 | -1276 | -1247 | -1218 | -1189 |
| 00000A18 | -1160 | -1041 | -922  | -1411 | -2412 | -2189 | -2478 | -719  |
| 00000A20 | +16   | +6    | -4    | +18   | +40   | +54   | +68   | +82   |
| 00000A28 | +96   | +100  | +104  | +108  | +112  | +132  | +152  | +236  |
| 00000A30 | +320  | +408  | +496  | +520  | +544  | +632  | -1840 | -2360 |
| 00000A38 | -2368 | -2368 | -2368 | -2336 | -2304 | -2304 | -2304 | -2304 |
| 00000A40 | -1898 | -1921 | -1944 | -2111 | -1766 | -1551 | -1848 | -1985 |
| 00000A48 | -2122 | -2318 | -2515 | -2664 | -2813 | -3074 | -3079 | -2828 |
| 00000A50 | -2321 | -2024 | -1729 | -1608 | -1489 | -1457 | -1425 | -1393 |
| 00000A58 | -1362 | -1246 | -1131 | -1879 | -2372 | -2532 | -2693 | +331  |
| 00000A60 | +25   | +40   | +55   | +54   | +54   | +71   | +88   | +105  |
| 00000A68 | +123  | +151  | +180  | +208  | +237  | +83   | -70   | +48   |
| 00000A70 | +167  | +248  | +329  | +346  | +363  | +733  | -2738 | -2577 |
| 00000A78 | -2416 | -2395 | -2374 | -2353 | -2332 | -2332 | -2332 | -2332 |
| 00000A80 | -1860 | -1840 | -1820 | -2152 | -1460 | -1588 | -1716 | -1844 |
| 00000A88 | -1972 | -2191 | -2411 | -2535 | -2659 | -2950 | -2730 | -2958 |
| 00000A90 | -2674 | -2383 | -2092 | -1897 | -1703 | -1668 | -1633 | -1598 |
| 00000A98 | -1564 | -1452 | -1340 | -2348 | -2333 | -2365 | -1885 | -157  |
| 00000AA0 | +34   | +74   | +115  | +91   | +68   | +88   | +109  | +129  |
| 00000AA8 | +150  | +203  | +256  | +309  | +362  | +291  | +220  | +117  |
| 00000AB0 | +14   | +88   | +162  | +172  | +183  | -702  | -2612 | -2282 |
| 00000AB8 | -2464 | -2422 | -2380 | -2370 | -2360 | -2360 | -2360 | -2360 |
| 00000AC0 | -2110 | -1967 | -1824 | -1953 | -1314 | -1513 | -1712 | -1815 |
| 00000AC8 | -1918 | -2207 | -2242 | -2453 | -2408 | -2602 | -2541 | -2752 |
| 00000AD0 | -2707 | -2692 | -2679 | -2409 | -2140 | -2054 | -1968 | -1867 |
| 00000AD8 | -1766 | -1721 | -1677 | -2369 | -2293 | -2516 | -948  | -53   |

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000AE0 | +75   | +92   | +110  | +95   | +82   | +105  | +129  | +152  |
| 00000AE8 | +177  | +222  | +268  | +313  | +359  | +354  | +350  | +441  |
| 00000AF0 | +533  | +472  | +411  | +414  | +674  | -1689 | -2518 | -2339 |
| 00000AF8 | -2416 | -2401 | -2386 | -2387 | -2388 | -2388 | -2388 | -2388 |
| 00000B00 | -1848 | -1838 | -1828 | -1754 | -1168 | -1438 | -1708 | -1786 |
| 00000B08 | -1864 | -2225 | -2075 | -2372 | -2158 | -2255 | -2353 | -2546 |
| 00000B10 | -2740 | -2747 | -2755 | -2666 | -2578 | -2441 | -2305 | -2136 |
| 00000B18 | -1968 | -1991 | -2015 | -2390 | -2254 | -2669 | -13   | +51   |
| 00000B20 | +116  | +111  | +106  | +101  | +96   | +123  | +150  | +177  |
| 00000B28 | +204  | +242  | +280  | +318  | +356  | +418  | +480  | +510  |
| 00000B30 | +540  | +600  | +661  | +657  | +1166 | -2677 | -2425 | -2396 |
| 00000B38 | -2368 | -2380 | -2392 | -2404 | -2416 | -2416 | -2416 | -2416 |
| 00000B40 | -1882 | -1711 | -1796 | -1369 | -1198 | -1419 | -1640 | -1749 |
| 00000B48 | -1858 | -1977 | -1842 | -2058 | -2019 | -2113 | -2207 | -2366 |
| 00000B50 | -2525 | -2478 | -2689 | -2836 | -2983 | -2759 | -2536 | -2393 |
| 00000B58 | -2250 | -2194 | -2139 | -2357 | -2318 | -2018 | +72   | +113  |
| 00000B60 | +157  | +150  | +145  | +139  | +134  | +159  | +186  | +212  |
| 00000B68 | +239  | +273  | +308  | +342  | +377  | +439  | +502  | +548  |
| 00000B70 | +595  | +632  | +669  | +931  | +170  | -2666 | -2430 | -2403 |
| 00000B78 | -2376 | -2385 | -2394 | -2403 | -2412 | -2412 | -2412 | -2412 |
| 00000B80 | -1916 | -1840 | -2276 | -1240 | -1228 | -1400 | -1572 | -1712 |
| 00000B88 | -1852 | -1731 | -1610 | -1745 | -1881 | -1972 | -2063 | -2186 |
| 00000B90 | -2310 | -2211 | -2625 | -2751 | -2877 | -2822 | -2768 | -2650 |
| 00000B98 | -2532 | -2398 | -2265 | -2324 | -2383 | -1369 | +156  | +177  |
| 00000BA0 | +198  | +191  | +185  | +178  | +172  | +197  | +223  | +248  |
| 00000BA8 | +274  | +305  | +336  | +367  | +398  | +461  | +524  | +587  |
| 00000BB0 | +650  | +664  | +679  | +1206 | -827  | -2656 | -2437 | -2410 |
| 00000BB8 | -2384 | -2390 | -2396 | -2402 | -2408 | -2408 | -2408 | -2408 |
| 00000BC0 | -1950 | -1953 | -1956 | -1063 | -1194 | -1317 | -1440 | -1435 |
| 00000BC8 | -1430 | -1499 | -1314 | -1431 | -1550 | -1638 | -1726 | -1798 |
| 00000BD0 | -1871 | -1927 | -2240 | -2409 | -2578 | -2597 | -2616 | -2731 |
| 00000BD8 | -2846 | -2554 | -2262 | -2259 | -2511 | -527  | +176  | +207  |
| 00000BE0 | +239  | +231  | +224  | +217  | +210  | +234  | +259  | +284  |
| 00000BE8 | +309  | +336  | +364  | +391  | +419  | +482  | +546  | +609  |
| 00000BF0 | +673  | +744  | +816  | +936  | -2015 | -2485 | -2187 | -2289 |
| 00000BF8 | -2392 | -2395 | -2398 | -2401 | -2404 | -2404 | -2404 | -2404 |
| 00000C00 | -1984 | -2066 | -1636 | -886  | -1160 | -1234 | -1308 | -1414 |
| 00000C08 | -1520 | -2037 | -2042 | -1887 | -1732 | -1817 | -1902 | -1923 |
| 00000C10 | -1944 | -1900 | -1856 | -2068 | -2280 | -2372 | -2464 | -2556 |
| 00000C18 | -2648 | -2454 | -2260 | -2194 | -2640 | +314  | +196  | +238  |
| 00000C20 | +280  | +272  | +264  | +256  | +248  | +272  | +296  | +320  |
| 00000C28 | +344  | +368  | +392  | +416  | +440  | +504  | +568  | +632  |
| 00000C30 | +696  | +825  | +954  | +923  | -2692 | -2315 | -2450 | -2425 |
| 00000C38 | -2400 | -2400 | -2400 | -2400 | -2400 | -2400 | -2400 | -2400 |
| 00000C40 | -2252 | -1953 | -1142 | -1035 | -1441 | -1826 | -2211 | -2244 |
| 00000C48 | -2278 | -2220 | -1908 | -1914 | -1922 | -2001 | -2336 | -2095 |
| 00000C50 | -2111 | -2171 | -2231 | -2131 | -2031 | -2143 | -2255 | -2303 |
| 00000C58 | -2352 | -2306 | -2260 | -2359 | -1689 | +442  | +269  | +305  |
| 00000C60 | +341  | +333  | +325  | +317  | +309  | +329  | +349  | +369  |
| 00000C68 | +389  | +415  | +441  | +468  | +494  | +536  | +579  | +669  |
| 00000C70 | +760  | +797  | +1091 | -248  | -2610 | -2406 | -2459 | -2431 |
| 00000C78 | -2404 | -2400 | -2396 | -2392 | -2388 | -2388 | -2388 | -2388 |
| 00000C80 | -2008 | -2096 | -1673 | -1953 | -2234 | -2162 | -2091 | -2051 |
| 00000C88 | -2012 | -2149 | -2286 | -2199 | -2113 | -1930 | -2259 | -2012 |
| 00000C90 | -2278 | -2186 | -2094 | -2194 | -2295 | -2171 | -2047 | -2051 |
| 00000C98 | -2056 | -2158 | -2261 | -2524 | -739  | +570  | +343  | +372  |
| 00000CA0 | +402  | +394  | +386  | +378  | +370  | +386  | +402  | +418  |
| 00000CA8 | +434  | +462  | +491  | +520  | +549  | +569  | +590  | +707  |
| 00000CB0 | +824  | +770  | +1228 | -1418 | -2528 | -2498 | -2468 | -2438 |
| 00000CB8 | -2408 | -2400 | -2392 | -2384 | -2376 | -2376 | -2376 | -2376 |
| 00000CC0 | -1988 | -2191 | -2139 | -2150 | -2163 | -2130 | -2098 | -2081 |
| 00000CC8 | -2066 | -2140 | -2216 | -2179 | -2143 | -2066 | -2245 | -2137 |
| 00000CD0 | -2285 | -2233 | -2181 | -2225 | -2270 | -2326 | -2382 | -2166 |
| 00000CD8 | -1952 | -2250 | -2549 | -2465 | +180  | +394  | +352  | +407  |
| 00000CE0 | +463  | +455  | +447  | +423  | +399  | +523  | +391  | +547  |
| 00000CE8 | +447  | +493  | +540  | +572  | +603  | +633  | +665  | +792  |
| 00000CF0 | +920  | +1094 | +1269 | -2764 | -2446 | -2429 | -2413 | -2412 |
| 00000CF8 | -2412 | -2400 | -2388 | -2376 | -2364 | -2364 | -2364 | -2364 |
| 00000D00 | -1968 | -2031 | -2094 | -2093 | -2092 | -2099 | -2106 | -2113 |

|         |       |       |       |       |       |       |       |       |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0000D08 | -2120 | -2133 | -2147 | -2160 | -2174 | -2203 | -2233 | -2262 |
| 0000D10 | -2292 | -2280 | -2269 | -2257 | -2246 | -2226 | -2207 | -2283 |
| 0000D18 | -2360 | -2343 | -2327 | -2406 | +586  | -38   | +363  | +443  |
| 0000D20 | +524  | +516  | +508  | +468  | +428  | +660  | +380  | +676  |
| 0000D28 | +460  | +525  | +591  | +624  | +658  | +699  | +741  | +878  |
| 0000D30 | +1016 | +907  | +286  | -2575 | -2364 | -2361 | -2358 | -2387 |
| 0000D38 | -2416 | -2400 | -2384 | -2368 | -2352 | -2352 | -2352 | -2352 |
| 0000D40 | -2020 | -2071 | -2124 | -2080 | -2037 | -2062 | -2089 | -2115 |
| 0000D48 | -2142 | -2152 | -2164 | -2176 | -2188 | -2211 | -2235 | -2259 |
| 0000D50 | -2283 | -2275 | -2267 | -2260 | -2253 | -2249 | -2246 | -2290 |
| 0000D58 | -2336 | -2337 | -2339 | -1205 | -71   | -16   | +296  | +496  |
| 0000D60 | +441  | +469  | +497  | +381  | +521  | +635  | +493  | +735  |
| 0000D68 | +465  | +544  | +624  | +640  | +656  | +747  | +839  | +899  |
| 0000D70 | +960  | +1115 | -1033 | -2493 | -2418 | -2378 | -2339 | -2379 |
| 0000D78 | -2420 | -2408 | -2396 | -2384 | -2372 | -2372 | -2372 | -2372 |
| 0000D80 | -2072 | -2113 | -2155 | -2068 | -1982 | -2027 | -2073 | -2118 |
| 0000D88 | -2164 | -2173 | -2183 | -2193 | -2203 | -2220 | -2238 | -2256 |
| 0000D90 | -2274 | -2270 | -2267 | -2264 | -2261 | -2273 | -2286 | -2299 |
| 0000D98 | -2312 | -2332 | -2352 | -2052 | -729  | +7    | +230  | +550  |
| 0000DA0 | +358  | +422  | +486  | +294  | +614  | +610  | +606  | +794  |
| 0000DA8 | +470  | +564  | +658  | +656  | +655  | +797  | +939  | +921  |
| 0000DB0 | +904  | +1324 | -2352 | -2412 | -2472 | -2396 | -2320 | -2372 |
| 0000DB8 | -2424 | -2416 | -2408 | -2400 | -2392 | -2392 | -2392 | -2392 |
| 0000DC0 | -1996 | -1930 | -1865 | -1960 | -2055 | -2087 | -2120 | -2153 |
| 0000DC8 | -2186 | -2193 | -2201 | -2209 | -2217 | -2229 | -2241 | -2253 |
| 0000DD0 | -2265 | -2265 | -2266 | -2267 | -2268 | -2280 | -2294 | -2306 |
| 0000DD8 | -2320 | -2342 | -2365 | -2707 | -2538 | -1491 | -188  | +172  |
| 0000DE0 | +275  | +327  | +379  | +287  | +451  | +505  | +559  | +773  |
| 0000DE8 | +475  | +551  | +628  | +512  | +653  | +909  | +654  | +1007 |
| 0000DF0 | +1104 | -739  | -2583 | -2506 | -2430 | -2397 | -2365 | -2396 |
| 0000DF8 | -2428 | -2424 | -2420 | -2416 | -2412 | -2412 | -2412 | -2412 |
| 0000E00 | -1920 | -2004 | -2088 | -2108 | -2128 | -2148 | -2168 | -2188 |
| 0000E08 | -2208 | -2214 | -2220 | -2226 | -2232 | -2238 | -2244 | -2250 |
| 0000E10 | -2256 | -2261 | -2266 | -2271 | -2276 | -2289 | -2302 | -2315 |
| 0000E18 | -2328 | -2353 | -2378 | -2339 | -2300 | -2477 | -1630 | -719  |
| 0000E20 | +192  | +232  | +272  | +280  | +288  | +400  | +512  | +752  |
| 0000E28 | +480  | +539  | +598  | +369  | +652  | +767  | -142  | -1211 |
| 0000E30 | -2792 | -2547 | -2302 | -2345 | -2388 | -2399 | -2410 | -2421 |
| 0000E38 | -2432 | -2432 | -2432 | -2432 | -2432 | -2432 | -2432 | -2432 |
| 0000E40 | -2024 | -2070 | -2116 | -2130 | -2144 | -2164 | -2184 | -2204 |
| 0000E48 | -2224 | -2228 | -2232 | -2236 | -2240 | -2244 | -2248 | -2252 |
| 0000E50 | -2256 | -2262 | -2270 | -2276 | -2284 | -2296 | -2310 | -2322 |
| 0000E58 | -2336 | -2319 | -2304 | -2287 | -2272 | -2559 | -2336 | -1855 |
| 0000E60 | -1376 | -2264 | -1104 | -520  | +64   | +384  | +704  | +704  |
| 0000E68 | +192  | -44   | -280  | -1236 | -1936 | -3018 | -2564 | -2349 |
| 0000E70 | -2392 | -2390 | -2390 | -2388 | -2388 | -2398 | -2410 | -2420 |
| 0000E78 | -2432 | -2432 | -2432 | -2432 | -2432 | -2432 | -2432 | -2432 |
| 0000E80 | -2128 | -2136 | -2144 | -2152 | -2160 | -2180 | -2200 | -2220 |
| 0000E88 | -2240 | -2242 | -2244 | -2246 | -2248 | -2250 | -2252 | -2254 |
| 0000E90 | -2256 | -2265 | -2274 | -2283 | -2292 | -2305 | -2318 | -2331 |
| 0000E98 | -2344 | -2287 | -2230 | -2237 | -2244 | -2387 | -2530 | -2481 |
| 0000EA0 | -2432 | -2456 | -2480 | -2600 | -2720 | -2448 | -2176 | -1904 |
| 0000EA8 | -2144 | -2419 | -2694 | -2585 | -2476 | -2451 | -2426 | -2465 |
| 0000EB0 | -2504 | -2491 | -2478 | -2433 | -2388 | -2399 | -2410 | -2421 |
| 0000EB8 | -2432 | -2432 | -2432 | -2432 | -2432 | -2432 | -2432 | -2432 |
| 0000EC0 | -2104 | -2122 | -2140 | -2158 | -2176 | -2196 | -2216 | -2236 |
| 0000EC8 | -2256 | -2256 | -2256 | -2256 | -2256 | -2256 | -2256 | -2256 |
| 0000ED0 | -2256 | -2266 | -2278 | -2288 | -2300 | -2312 | -2326 | -2338 |
| 0000ED8 | -2352 | -2317 | -2284 | -2281 | -2280 | -2357 | -2436 | -2417 |
| 0000EE0 | -2400 | -2408 | -2416 | -2360 | -2304 | -2480 | -864  | -1648 |
| 0000EE8 | -1408 | -1225 | -2580 | -2509 | -2440 | -2427 | -2416 | -2435 |
| 0000EF0 | -2456 | -2446 | -2438 | -2412 | -2388 | -2398 | -2410 | -2420 |
| 0000EF8 | -2432 | -2432 | -2432 | -2432 | -2432 | -2432 | -2432 | -2432 |
| 0000F00 | -2080 | -2108 | -2136 | -2164 | -2192 | -2212 | -2232 | -2252 |
| 0000F08 | -2272 | -2270 | -2268 | -2266 | -2264 | -2262 | -2260 | -2258 |
| 0000F10 | -2256 | -2269 | -2282 | -2295 | -2308 | -2321 | -2334 | -2347 |
| 0000F18 | -2360 | -2349 | -2338 | -2327 | -2316 | -2329 | -2342 | -2355 |
| 0000F20 | -2368 | -2360 | -2352 | -2376 | -2400 | -2256 | -2624 | -1392 |
| 0000F28 | -1696 | -2593 | -2466 | -2435 | -2404 | -2405 | -2406 | -2407 |

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000F30 | -2408 | -2403 | -2398 | -2393 | -2388 | -2399 | -2410 | -2421 |
| 00000F38 | -2432 | -2432 | -2432 | -2432 | -2432 | -2432 | -2432 | -2432 |
| 00000F40 | -2080 | -2108 | -2136 | -2164 | -2192 | -2212 | -2232 | -2252 |
| 00000F48 | -2272 | -2270 | -2268 | -2266 | -2264 | -2262 | -2260 | -2258 |
| 00000F50 | -2256 | -2268 | -2282 | -2294 | -2308 | -2320 | -2334 | -2346 |
| 00000F58 | -2360 | -2348 | -2338 | -2326 | -2316 | -2328 | -2342 | -2354 |
| 00000F60 | -2368 | -2360 | -2352 | -2360 | -2368 | -2352 | -2592 | -2192 |
| 00000F68 | -2560 | -2768 | -2466 | -2434 | -2404 | -2404 | -2406 | -2406 |
| 00000F70 | -2408 | -2402 | -2398 | -2392 | -2388 | -2398 | -2410 | -2420 |
| 00000F78 | -2432 | -2432 | -2432 | -2432 | -2432 | -2432 | -2432 | -2432 |
| 00000F80 | -2080 | -2108 | -2136 | -2164 | -2192 | -2212 | -2232 | -2252 |
| 00000F88 | -2272 | -2270 | -2268 | -2266 | -2264 | -2262 | -2260 | -2258 |
| 00000F90 | -2256 | -2269 | -2282 | -2295 | -2308 | -2321 | -2334 | -2347 |
| 00000F98 | -2360 | -2349 | -2338 | -2327 | -2316 | -2329 | -2342 | -2355 |
| 00000FA0 | -2368 | -2360 | -2352 | -2344 | -2336 | -2448 | -2560 | -2480 |
| 00000FA8 | -2400 | -2433 | -2466 | -2435 | -2404 | -2405 | -2406 | -2407 |
| 00000FB0 | -2408 | -2403 | -2398 | -2393 | -2388 | -2399 | -2410 | -2421 |
| 00000FB8 | -2432 | -2432 | -2432 | -2432 | -2432 | -2432 | -2432 | -2432 |
| 00000FC0 | -2080 | -2108 | -2136 | -2164 | -2192 | -2212 | -2232 | -2252 |
| 00000FC8 | -2272 | -2270 | -2268 | -2266 | -2264 | -2262 | -2260 | -2258 |
| 00000FD0 | -2256 | -2268 | -2282 | -2294 | -2308 | -2320 | -2334 | -2346 |
| 00000FD8 | -2360 | -2348 | -2338 | -2326 | -2316 | -2328 | -2342 | -2354 |
| 00000FE0 | -2368 | -2360 | -2352 | -2344 | -2336 | -2448 | -2560 | -2480 |
| 00000FE8 | -2400 | -2432 | -2466 | -2434 | -2404 | -2404 | -2406 | -2406 |
| 00000FF0 | -2408 | -2402 | -2398 | -2392 | -2388 | -2398 | -2410 | -2420 |
| 00000FF8 | -2432 | -2432 | -2432 | -2432 | -2432 | -2432 | -2432 | -2432 |

The sample data for 12.4 fixed-point integers (RDP 8.1) is:

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000000 | -1056 | -1057 | -1058 | -1059 | -1060 | -1061 | -1062 | -1063 |
| 00000008 | -1064 | -1059 | -1054 | -1049 | -1044 | -1075 | -1106 | -1073 |
| 00000010 | -1040 | -1050 | -1060 | -1070 | -1080 | -1082 | -1084 | -1086 |
| 00000018 | -1088 | -1046 | -1004 | -1026 | -1048 | -1066 | -1084 | -1038 |
| 00000020 | -992  | -1044 | -1096 | -1084 | -1072 | -1068 | -1064 | -1060 |
| 00000028 | -1056 | -1063 | -1070 | -1077 | -1084 | -1075 | -1066 | -1057 |
| 00000030 | -1048 | -1048 | -1048 | -1048 | -1048 | -1048 | -1048 | -1048 |
| 00000038 | -1048 | -1040 | -1032 | -1024 | -1016 | -1016 | -1016 | -1016 |
| 00000040 | -1064 | -1056 | -1049 | -1057 | -1066 | -1066 | -1067 | -1067 |
| 00000048 | -1068 | -1063 | -1058 | -1053 | -1048 | -1058 | -1068 | -1062 |
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| 00000CD8 | -976  | -1125 | -1274 | -1232 | +90   | +197  | +176  | +203  |
| 00000CE0 | +231  | +227  | +223  | +211  | +199  | +261  | +195  | +273  |
| 00000CE8 | +223  | +246  | +270  | +286  | +301  | +316  | +332  | +396  |
| 00000CF0 | +460  | +547  | +634  | -1382 | -1223 | -1214 | -1206 | -1206 |
| 00000CF8 | -1206 | -1200 | -1194 | -1188 | -1182 | -1182 | -1182 | -1182 |
| 00000D00 | -984  | -1015 | -1047 | -1046 | -1046 | -1049 | -1053 | -1056 |
| 00000D08 | -1060 | -1066 | -1073 | -1080 | -1087 | -1101 | -1116 | -1131 |
| 00000D10 | -1146 | -1140 | -1134 | -1128 | -1123 | -1113 | -1103 | -1141 |
| 00000D18 | -1180 | -1171 | -1163 | -1203 | +293  | -19   | +181  | +221  |
| 00000D20 | +262  | +258  | +254  | +234  | +214  | +330  | +190  | +338  |
| 00000D28 | +230  | +262  | +295  | +312  | +329  | +349  | +370  | +439  |
| 00000D30 | +508  | +453  | +143  | -1287 | -1182 | -1180 | -1179 | -1193 |
| 00000D38 | -1208 | -1200 | -1192 | -1184 | -1176 | -1176 | -1176 | -1176 |
| 00000D40 | -1010 | -1035 | -1062 | -1040 | -1018 | -1031 | -1044 | -1057 |
| 00000D48 | -1071 | -1076 | -1082 | -1088 | -1094 | -1105 | -1117 | -1129 |
| 00000D50 | -1141 | -1137 | -1133 | -1130 | -1126 | -1124 | -1123 | -1145 |
| 00000D58 | -1168 | -1168 | -1169 | -602  | -35   | -8    | +148  | +248  |
| 00000D60 | +220  | +234  | +248  | +190  | +260  | +317  | +246  | +367  |
| 00000D68 | +232  | +272  | +312  | +320  | +328  | +373  | +419  | +449  |
| 00000D70 | +480  | +557  | -516  | -1246 | -1209 | -1189 | -1169 | -1189 |
| 00000D78 | -1210 | -1204 | -1198 | -1192 | -1186 | -1186 | -1186 | -1186 |
| 00000D80 | -1036 | -1056 | -1077 | -1034 | -991  | -1013 | -1036 | -1059 |
| 00000D88 | -1082 | -1086 | -1091 | -1096 | -1101 | -1110 | -1119 | -1128 |
| 00000D90 | -1137 | -1135 | -1133 | -1132 | -1130 | -1136 | -1143 | -1149 |
| 00000D98 | -1156 | -1166 | -1176 | -1026 | -364  | +3    | +115  | +275  |
| 00000DA0 | +179  | +211  | +243  | +147  | +307  | +305  | +303  | +397  |
| 00000DA8 | +235  | +282  | +329  | +328  | +327  | +398  | +469  | +460  |
| 00000DB0 | +452  | +662  | -1176 | -1206 | -1236 | -1198 | -1160 | -1186 |
| 00000DB8 | -1212 | -1208 | -1204 | -1200 | -1196 | -1196 | -1196 | -1196 |
| 00000DC0 | -998  | -965  | -932  | -980  | -1027 | -1043 | -1060 | -1076 |
| 00000DC8 | -1093 | -1096 | -1100 | -1104 | -1108 | -1114 | -1120 | -1126 |
| 00000DD0 | -1132 | -1132 | -1133 | -1133 | -1134 | -1140 | -1147 | -1153 |
| 00000DD8 | -1160 | -1171 | -1182 | -1353 | -1269 | -745  | -94   | +86   |
| 00000DE0 | +137  | +163  | +189  | +143  | +225  | +252  | +279  | +386  |
| 00000DE8 | +237  | +275  | +314  | +256  | +326  | +454  | +327  | +503  |
| 00000DF0 | +552  | -369  | -1291 | -1253 | -1215 | -1198 | -1182 | -1198 |
| 00000DF8 | -1214 | -1212 | -1210 | -1208 | -1206 | -1206 | -1206 | -1206 |
| 00000E00 | -960  | -1002 | -1044 | -1054 | -1064 | -1074 | -1084 | -1094 |
| 00000E08 | -1104 | -1107 | -1110 | -1113 | -1116 | -1119 | -1122 | -1125 |
| 00000E10 | -1128 | -1130 | -1133 | -1135 | -1138 | -1144 | -1151 | -1157 |
| 00000E18 | -1164 | -1176 | -1189 | -1169 | -1150 | -1238 | -815  | -359  |

|          |       |       |       |       |       |       |       |       |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 00000E20 | +96   | +116  | +136  | +140  | +144  | +200  | +256  | +376  |
| 00000E28 | +240  | +269  | +299  | +184  | +326  | +383  | -71   | -605  |
| 00000E30 | -1396 | -1273 | -1151 | -1172 | -1194 | -1199 | -1205 | -1210 |
| 00000E38 | -1216 | -1216 | -1216 | -1216 | -1216 | -1216 | -1216 | -1216 |
| 00000E40 | -1012 | -1035 | -1058 | -1065 | -1072 | -1082 | -1092 | -1102 |
| 00000E48 | -1112 | -1114 | -1116 | -1118 | -1120 | -1122 | -1124 | -1126 |
| 00000E50 | -1128 | -1131 | -1135 | -1138 | -1142 | -1148 | -1155 | -1161 |
| 00000E58 | -1168 | -1159 | -1152 | -1143 | -1136 | -1279 | -1168 | -927  |
| 00000E60 | -688  | -1132 | -552  | -260  | +32   | +192  | +352  | +352  |
| 00000E68 | +96   | -22   | -140  | -618  | -968  | -1509 | -1282 | -1174 |
| 00000E70 | -1196 | -1195 | -1195 | -1194 | -1194 | -1199 | -1205 | -1210 |
| 00000E78 | -1216 | -1216 | -1216 | -1216 | -1216 | -1216 | -1216 | -1216 |
| 00000E80 | -1064 | -1068 | -1072 | -1076 | -1080 | -1090 | -1100 | -1110 |
| 00000E88 | -1120 | -1121 | -1122 | -1123 | -1124 | -1125 | -1126 | -1127 |
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| 00000E98 | -1172 | -1143 | -1115 | -1118 | -1122 | -1193 | -1265 | -1240 |
| 00000EA0 | -1216 | -1228 | -1240 | -1300 | -1360 | -1224 | -1088 | -952  |
| 00000EA8 | -1072 | -1209 | -1347 | -1292 | -1238 | -1225 | -1213 | -1232 |
| 00000EB0 | -1252 | -1245 | -1239 | -1216 | -1194 | -1199 | -1205 | -1210 |
| 00000EB8 | -1216 | -1216 | -1216 | -1216 | -1216 | -1216 | -1216 | -1216 |
| 00000EC0 | -1052 | -1061 | -1070 | -1079 | -1088 | -1098 | -1108 | -1118 |
| 00000EC8 | -1128 | -1128 | -1128 | -1128 | -1128 | -1128 | -1128 | -1128 |
| 00000ED0 | -1128 | -1133 | -1139 | -1144 | -1150 | -1156 | -1163 | -1169 |
| 00000ED8 | -1176 | -1158 | -1142 | -1140 | -1140 | -1178 | -1218 | -1208 |
| 00000EE0 | -1200 | -1204 | -1208 | -1180 | -1152 | -1240 | -432  | -824  |
| 00000EE8 | -704  | -612  | -1290 | -1254 | -1220 | -1213 | -1208 | -1217 |
| 00000EF0 | -1228 | -1223 | -1219 | -1206 | -1194 | -1199 | -1205 | -1210 |
| 00000EF8 | -1216 | -1216 | -1216 | -1216 | -1216 | -1216 | -1216 | -1216 |
| 00000F00 | -1040 | -1054 | -1068 | -1082 | -1096 | -1106 | -1116 | -1126 |
| 00000F08 | -1136 | -1135 | -1134 | -1133 | -1132 | -1131 | -1130 | -1129 |
| 00000F10 | -1128 | -1134 | -1141 | -1147 | -1154 | -1160 | -1167 | -1173 |
| 00000F18 | -1180 | -1174 | -1169 | -1163 | -1158 | -1164 | -1171 | -1177 |
| 00000F20 | -1184 | -1180 | -1176 | -1188 | -1200 | -1128 | -1312 | -696  |
| 00000F28 | -848  | -1296 | -1233 | -1217 | -1202 | -1202 | -1203 | -1203 |
| 00000F30 | -1204 | -1201 | -1199 | -1196 | -1194 | -1199 | -1205 | -1210 |
| 00000F38 | -1216 | -1216 | -1216 | -1216 | -1216 | -1216 | -1216 | -1216 |
| 00000F40 | -1040 | -1054 | -1068 | -1082 | -1096 | -1106 | -1116 | -1126 |
| 00000F48 | -1136 | -1135 | -1134 | -1133 | -1132 | -1131 | -1130 | -1129 |
| 00000F50 | -1128 | -1134 | -1141 | -1147 | -1154 | -1160 | -1167 | -1173 |
| 00000F58 | -1180 | -1174 | -1169 | -1163 | -1158 | -1164 | -1171 | -1177 |
| 00000F60 | -1184 | -1180 | -1176 | -1180 | -1184 | -1176 | -1296 | -1096 |
| 00000F68 | -1280 | -1384 | -1233 | -1217 | -1202 | -1202 | -1203 | -1203 |
| 00000F70 | -1204 | -1201 | -1199 | -1196 | -1194 | -1199 | -1205 | -1210 |
| 00000F78 | -1216 | -1216 | -1216 | -1216 | -1216 | -1216 | -1216 | -1216 |
| 00000F80 | -1040 | -1054 | -1068 | -1082 | -1096 | -1106 | -1116 | -1126 |
| 00000F88 | -1136 | -1135 | -1134 | -1133 | -1132 | -1131 | -1130 | -1129 |
| 00000F90 | -1128 | -1134 | -1141 | -1147 | -1154 | -1160 | -1167 | -1173 |
| 00000F98 | -1180 | -1174 | -1169 | -1163 | -1158 | -1164 | -1171 | -1177 |
| 00000FA0 | -1184 | -1180 | -1176 | -1172 | -1168 | -1224 | -1280 | -1240 |
| 00000FA8 | -1200 | -1216 | -1233 | -1217 | -1202 | -1202 | -1203 | -1203 |
| 00000FB0 | -1204 | -1201 | -1199 | -1196 | -1194 | -1199 | -1205 | -1210 |
| 00000FB8 | -1216 | -1216 | -1216 | -1216 | -1216 | -1216 | -1216 | -1216 |
| 00000FC0 | -1040 | -1054 | -1068 | -1082 | -1096 | -1106 | -1116 | -1126 |
| 00000FC8 | -1136 | -1135 | -1134 | -1133 | -1132 | -1131 | -1130 | -1129 |
| 00000FD0 | -1128 | -1134 | -1141 | -1147 | -1154 | -1160 | -1167 | -1173 |
| 00000FD8 | -1180 | -1174 | -1169 | -1163 | -1158 | -1164 | -1171 | -1177 |
| 00000FE0 | -1184 | -1180 | -1176 | -1172 | -1168 | -1224 | -1280 | -1240 |
| 00000FE8 | -1200 | -1216 | -1233 | -1217 | -1202 | -1202 | -1203 | -1203 |
| 00000FF0 | -1204 | -1201 | -1199 | -1196 | -1194 | -1199 | -1205 | -1210 |
| 00000FF8 | -1216 | -1216 | -1216 | -1216 | -1216 | -1216 | -1216 | -1216 |

#### 4.2.4.4 Inverse Color Conversion

The following is a dump of the decoded 64 x 64 XRGB image obtained by using the [Color Conversion transform matrix \(section 3.1.8.2.5\)](#) on the reconstructed Y, Cb, and Cr component data. The Y, Cb, and Cr component data, presented in earlier sections, was in 11.5 fixed-point format for Microsoft RDP

7.1 and Microsoft RDP 8.0 and 12.4 fixed-point format for Microsoft RDP 8.1. The 11.5 fixed-point format is used in this inverse color conversion example and is converted to floating-point representation before using the transform matrix given in section 3.1.8.2.5. Alternatively, the transform matrix can be appropriately modified to handle fixed-point data.

```

00000000 00229cdf 00249de0 00259fe2 002ca5e8 00229cdf 00229ce0 00239de0 00229ce0
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00000010 002299dd 002199de 00209adf 00209ae0 001f9be0 001e9ae0 001d99e0 001c98e0
00000018 001b97df 001e96dc 002194d9 001f93dd 001d93e0 001b94dc 001895d8 001c92db
00000020 00208fde 001b91de 001693df 001793df 001992df 001891df 00178fdf 00178edf
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00000030 001288db 001187da 001186da 001085da 000f85d9 000f84d9 000e83d9 000d82d8
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00000040 00259fe1 0027a1e2 0029a2e3 002ba4e6 00249fe1 00249fe1 00249fe1 00249ee1
00000048 00239ee1 00249ee1 00249ee1 00259de1 00259de2 00249de2 00229de2 00229ce1
00000050 00229bdf 00219ce0 00209ce1 00209ce2 00209ce2 00209ae0 002199de 001f99df
00000058 001d98e0 001e97e0 001f97e0 001d96df 001c95de 001c94e0 001c94e1 001d93e1
00000060 001d92e0 001b93de 001a94dc 001a93de 001a93e0 001992e0 001891df 00188fdf
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00000070 001289db 001288db 001187db 001186db 001085db 000f84da 000e83d9 000e83d9
00000078 000e83d9 000e82d9 000e81d8 000e80d8 000d7fd7 000d7fd7 000d7fd7 000d7fd7
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00000090 00239ee1 00219ee2 00209ee4 00209de4 00219de3 00229be0 002499dc 002299de
00000098 001f98e0 001d99e4 001b9ae7 001c98e2 001c96dc 001e94e3 002092ea 001d94e6
000000A0 001a96e2 001c96de 001d95da 001c94de 001b94e1 001a93e0 001a92e0 001991e0
000000A8 001890e0 001790df 00178fde 00168fde 00158edd 00148ddd 00138cdc 00138bdb
000000B0 00128adc 001289dc 001188dc 001187dd 001086dd 000f85db 000e83d9 000e84da
000000B8 000f84da 000e83da 000e82d9 000e81d9 000e80d8 000e80d8 000e80d8 000e80d8
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00000120 001c97eb 001c9ada 001c98e4 001c97e3 001d95e2 001c95e2 001c94e2 001c94e1
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00000178 000f87dc 000f86dc 000f85dc 000f84dc 000e83db 000e83db 000e83db 000e83db
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```

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#### 4.2.4.5 Decoded Image

The following is the decoded image that is represented by the XRGB data given in section [4.2.4.4](#).



**Figure 20: Decoded image**

## **5 Security**

### **5.1 Security Considerations for Implementers**

None.

### **5.2 Index of Security Parameters**

None.



## 6 Appendix A: Product Behavior

The information in this specification is applicable to the following Microsoft products or supplemental software. References to product versions include updates to those products.

- Windows 7 Enterprise operating system with Service Pack 1 (SP1)
- Windows 7 Ultimate operating system with Service Pack 1 (SP1)
- Windows Server 2008 R2 Standard operating system with Service Pack 1 (SP1)
- Windows Server 2008 R2 Enterprise operating system with Service Pack 1 (SP1)
- Windows Server 2008 R2 Datacenter operating system with Service Pack 1 (SP1)
- Microsoft Hyper-V Server 2008 R2 Service Pack 1
- Windows 8 operating system
- Windows Server 2012 operating system
- Windows 8.1 operating system
- Windows Server 2012 R2 operating system
- Windows 10 operating system
- Windows Server 2016 operating system
- Windows Server 2019 operating system

Exceptions, if any, are noted in this section. If an update version, service pack or Knowledge Base (KB) number appears with a product name, the behavior changed in that update. The new behavior also applies to subsequent updates unless otherwise specified. If a product edition appears with the product version, behavior is different in that product edition.

Unless otherwise specified, any statement of optional behavior in this specification that is prescribed using the terms "SHOULD" or "SHOULD NOT" implies product behavior in accordance with the SHOULD or SHOULD NOT prescription. Unless otherwise specified, the term "MAY" implies that the product does not follow the prescription.

[<1> Section 1.5](#): Microsoft RDP 8.0 RemoteFX servers require that the [TS\\_FRAME\\_ACKNOWLEDGE\\_CAPABILITYSET \(section 2.2.1.3\)](#) be sent by the client.

[<2> Section 1.5](#): Microsoft RDP 8.0 RemoteFX servers do not require that the **connectionType** field of the Client Core Data ([\[MS-RDPBCGR\]](#) section 2.2.1.3.2) be set to CONNECTION\_TYPE\_LAN (0x06).

[<3> Section 2.2.2.1.3](#): Microsoft RDP 7.1 RemoteFX clients validate the **width** field.

[<4> Section 2.2.2.1.3](#): Microsoft RDP 7.1 RemoteFX clients validate the **height** field.

[<5> Section 2.2.3.1](#): Microsoft RDP 8.0 RemoteFX servers do not check for the special **frameID** value of 0xFFFFFFFF.

## 7 Change Tracking

This section identifies changes that were made to this document since the last release. Changes are classified as Major, Minor, or None.

The revision class **Major** means that the technical content in the document was significantly revised. Major changes affect protocol interoperability or implementation. Examples of major changes are:

- A document revision that incorporates changes to interoperability requirements.
- A document revision that captures changes to protocol functionality.

The revision class **Minor** means that the meaning of the technical content was clarified. Minor changes do not affect protocol interoperability or implementation. Examples of minor changes are updates to clarify ambiguity at the sentence, paragraph, or table level.

The revision class **None** means that no new technical changes were introduced. Minor editorial and formatting changes may have been made, but the relevant technical content is identical to the last released version.

The changes made to this document are listed in the following table. For more information, please contact [dochelp@microsoft.com](mailto:dochelp@microsoft.com).

| Section  | Description   | Revision class |
|--|---|----------------|
| <a href="#">6</a> Appendix A: Product Behavior | Removed Windows Server operating system from the list of applicable products and added Windows Server 2019. | Major          |

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