Read this first

Product documentation for firmware version 3.3.X

Covered products

The following Tektronix products are covered by this document:

- WFM7200 Waveform Monitor
- WVR7200 Waveform Rasterizer

Product documentation version

Your instrument was shipped with firmware version 3.3.X installed, which is newer than the firmware version described by the product documentation that was shipped with your instrument. This document provides a brief description of the new features being introduced with firmware version 3.3.X.

You can download the latest versions of the documentation for your product at the Tektronix Web site (www.tektronix.com).

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New features in firmware version 3.3.X

Firmware version 3.3.X introduces the new features and functions described on the following pages.

Datalist display

ANC Data highlighting. The following new ANC Data highlighting has been added to the Datalist display (See Figure 1.):

- Blue background highlighting indicates Ancillary Data
- Cyan highlighting in an ANC Data packet indicates the checksum data
- White text in an ANC Data packet indicates the packet header data
- Green text in an ANC Data packet indicates user-defined data words
- Red text in an ANC Data packet indicates a data word error

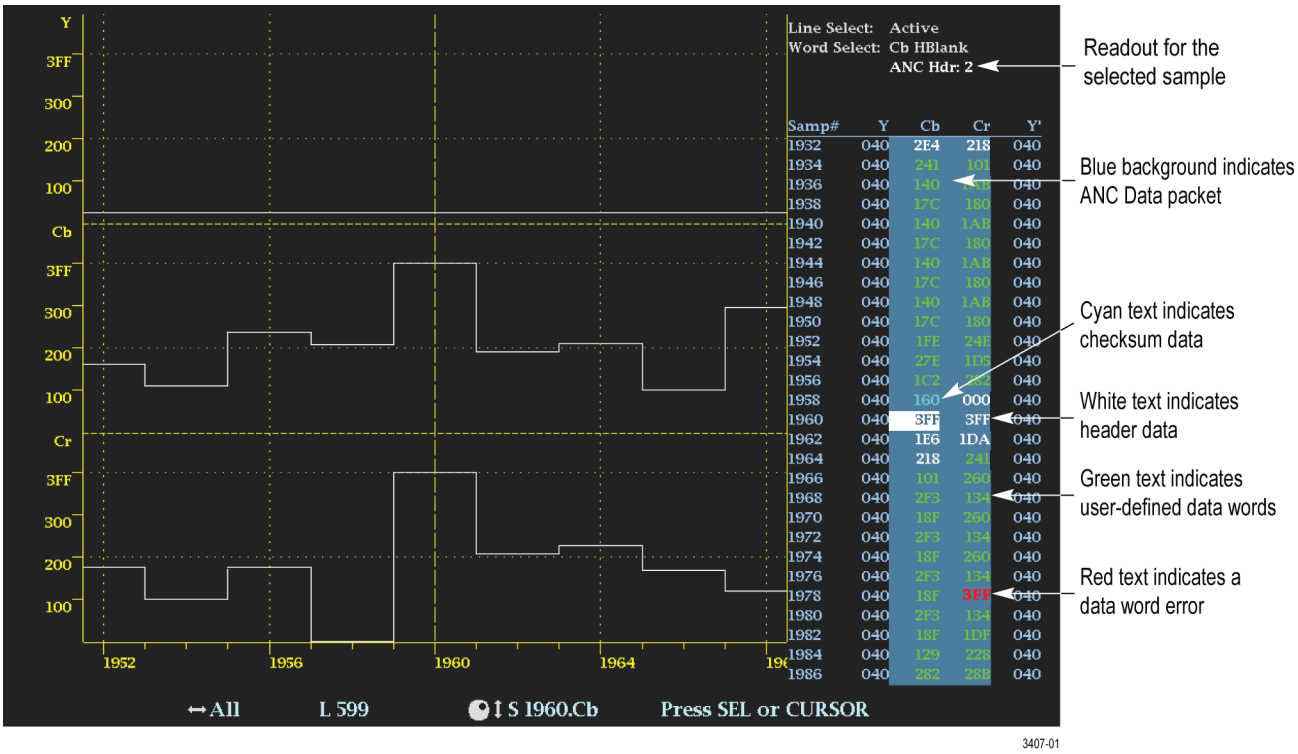

Figure 1: Datalist display showing ANC Data packet highlighting

Switch line highlighting. New gold highlighting indicates a switch line. (See Figure 2.)

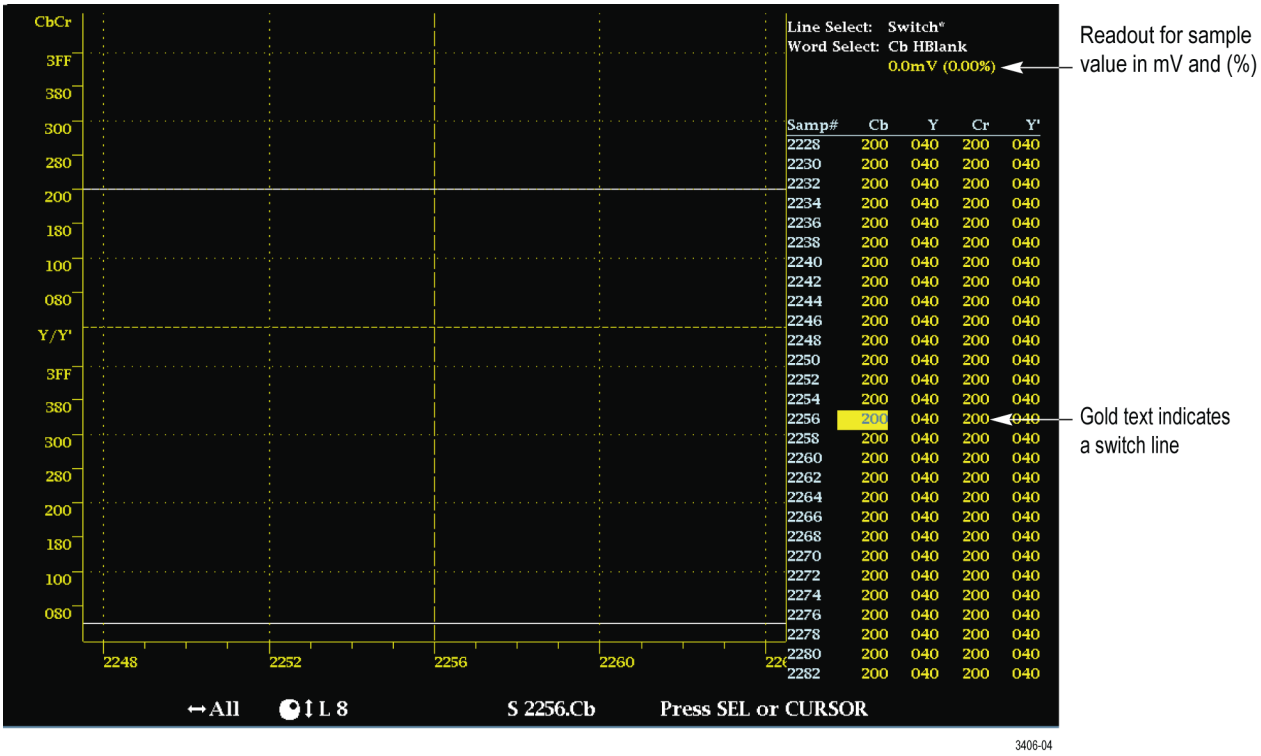

Figure 2: Datalist display with switch line highlighting

Sample value readout. In full-screen mode, a new readout near the top right of the Datalist display (See Figure 1.) provides a description of the selected sample. The readout value depends on the type of the selected sample:

- SAV/EAV Header: Values 0, 1, 2 (3FF, 000, 000)
- SAV/EAV XYZ: F (Field: 0 = Field 1, 1 = Field 2) V (Vertical: 0 = Not Blanking, 1 = Field Blanking) H (Horizontal: 0 = SAV, 1 = EAV)
- ANC Data Header: Values 1, 2, 3 (000, 3FF, 3FF)
- ANC Data (DID) Data Identifier
- ANC Data (SDID/DBN) Secondary Data Identifier / Data Block Number
- ANC Data (DC) Data Count
- ANC Data (UDW[x]) User Data Word Number
- ANC Data (CS) Checksum
- Sample value shown in millivolts and (%) (See Figure 2.)

Audio Loudness Session reset using the GPI interface

There is a new Loudness Session Logging setting in the CONFIG > Utilities > Ground Closure Mode menu that allows you to configure the GPI interface (REMOTE connector) to reset the Audio Loudness Session and to note the reset in the Loudness Trigger Log.

When a selected pin on the REMOTE connector is grounded (See Table 1.), the Audio Loudness Session will save the values of the loudness measurement parameters in the Loudness Trigger Log. The loudness meter will then be reset and begin a new measurement when the GPI trigger is released.

Use the Tektronix WFM Remote Interface to view the Loudness Trigger Log.

Trigger events. There are three trigger events that can be used to reset the Audio Loudness Session:

- **Start Commercial 1:** Use this GPI trigger to reset the Audio Loudness Session when a commercial program is provided and to indicate the commercial program in the Loudness Trigger Log.
- **Start Program 1:** Use this GPI trigger to reset the Audio Loudness Session when a main program is provided and to indicate the main program in the Loudness Trigger Log.
- **Pause Monitoring Channel 1:** Use this GPI trigger to reset the Audio Loudness Session when monitoring is paused and to indicate the pause in the Loudness Trigger Log.

Use only the Channel 1 trigger events when the CONFIG > Input Mode is configured to Single mode. When the CONFIG > Input Mode is configured to Simultaneous, you can also use the Channel 2 trigger events to reset the Audio Loudness Session for the secondary channel.

REMOTE connector pin functions. The following table shows the functions of the REMOTE connector pins when the Ground Closure Mode is set to Loudness Session Logging.

Table 1: REMOTE connector pin functions in Loudness Session Logging mode

REMOTE connector pin	Function
1	GND (In)
2	Reserved (I/O)
3	Reserved (I/O)
4	Reserved (In)
5	Reserved (In)
6	GND (In)
7	Time Code Positive (LTC In)
8	Time Code Negative (LTC In)
9	Ground Closure (Alarm Out)
10	Start Commercial Monitoring Channel 1
11	Start Program Monitoring Channel 1
12	Pause Monitoring Channel 1
13	Start Commercial Monitoring Channel 2
14	Start Program Monitoring Channel 2
15	Pause Monitoring Channel 2

ITU-R BT.2020 color space

There is a new ITU-R BT.2020 setting in the CONFIG > SDI Input > HD Colorimetry menu that allows you to monitor the BT.2020 color space for HD formats. When the HD Colorimetry is set to ITU 2020, the targets on the Vector and Lightning displays shift slightly to conform to the BT.2020 color space and the gamut measurement limits also change.

If the colorspace is set to AUTO, the instrument will select BT.2020 if signalled in the VPID.

HD colorimetry readout

The Video Session display has a new readout to indicate the current HD colorimetry setting (CONFIG > SDI Input > HD Colorimetry).

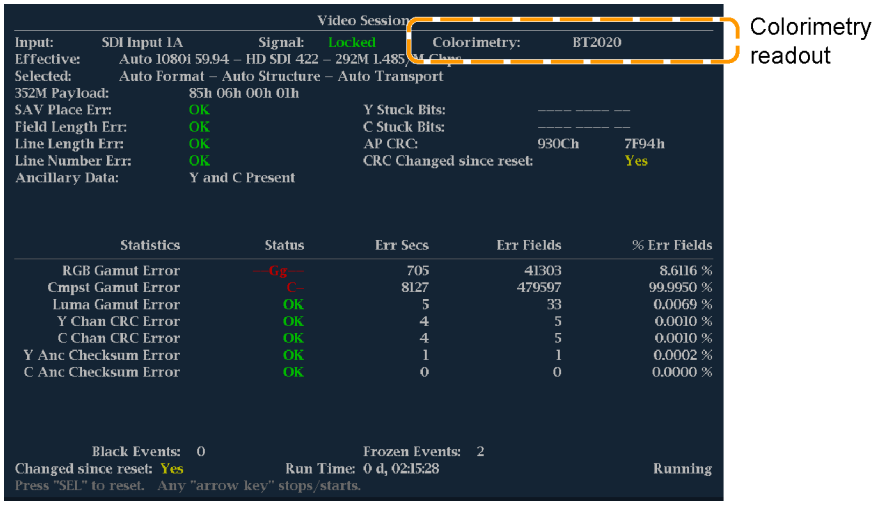

Figure 3: New colorimetry readout on the Video Session display

Audio level readouts

The audio levels for each of the audio channels (1–8) are now shown on the Audio Session display and the Audio Auxiliary Loudness display.

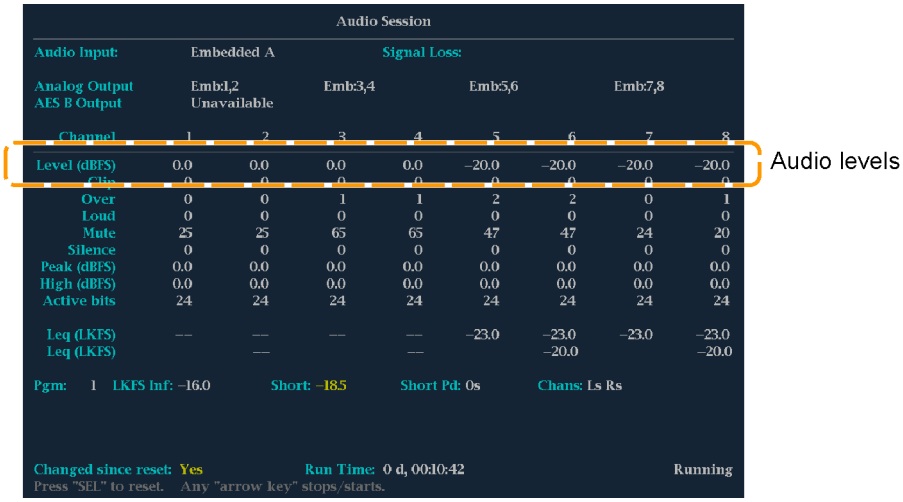

Figure 4: New audio level readouts on the Audio Session display

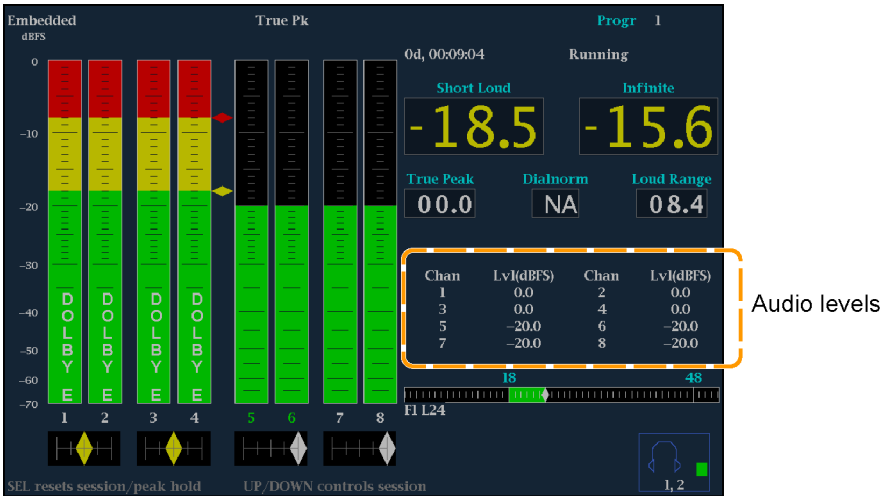

Figure 5: New audio level readouts on the Audio Auxiliary Loudness display

Additional SDI format support

The following table lists the additional SDI formats that are supported in firmware version 3.3.X. Included are deep color formats for 3G-SDI Level A/B and 48p frame rate support for HD formats.

Table 2: New SDI formats supported in firmware version 3.3.X

Link	Format	Sample structure		Bits	Frame/field rates
HD-SDI	2048×1080	4:2:2	YCbCr	10b	23.98/24/25/29.97/30p and psF
Dual Link HD-SDI	2048×1080	4:2:2	YCbCr	10b	47.95/48/50/59.94/60p
	2048×1080	4:4:4	YCbCr	10b	23.98/24/25/29.97/30p and psF
	2048×1080	4:4:4	GBR	10b	23.98/24/25/29.97/30p and psF
	2048×1080	4:4:4	YCbCr	12b	23.98/24/25/29.97/30p and psF
	2048×1080	4:2:2	YCbCr	12b	23.98/24/25/29.97/30p and psF
3G-SDI Level A (Option 3G)	2048×1080	4:2:2	YCbCr	10b	47.95/48/50/59.94/60p
	1920×1080	4:4:4	GBR	10b	50/59.94/60i, 23.98/24/25/29.97/30p and psF
	2048×1080	4:4:4	GBR	10b	23.98/24/25/29.97/30p and psF
	1920×1080	4:4:4	GBR	12b	50/59.94/60i, 23.98/24/25/29.97/30p
	2048×1080	4:4:4	GBR	12b	23.98/24/25/29.97/30p and psF
	2048×1080	4:4:4	XYZ	12b	24/25/30p and psF
3G-SDI Level B (Option 3G)	2048×1080	4:2:2	YCbCr	10b	47.95/48/50/59.94/60p
	2048×1080	4:4:4	YCbCr	10b	23.98/24/25/29.97/30p and psF
	2048×1080	4:4:4	GBR	10b	23.98/24/25/29.97/30p and psF
	2048×1080	4:4:4	YCbCr	12b	23.98/24/25/29.97/30p and psF
	2048×1080	4:2:2	YCbCr	12b	23.98/24/25/29.97/30p and psF