WVR6020, WVR7020, WVR7120, WVR6100 Opt. MB, WVR7000 Opt. MB, and WVR7100 Opt. MB Waveform Rasterizers

Release Notes

Tektronix

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This document supports software version 4.2.X and greater of the WVR6020, WVR7020 and WVR7120 Waveform Rasterizers. The following release notes apply to instruments with the indicated measurements or options installed. See the *Quick Start User Manual* for your instrument or visit www.Tektronix.com for a list of which options are available for each model.

Known Issues and Behaviors

The following pages describe known issues and behaviors of the waveform rasterizers. Topics are listed in alphabetical order.

Audio Errors
- Audio DSP heartbeat errors may be reported sporadically in the diagnostics log. The audio monitoring features are not impacted by this behavior. The instrument does not require any repair if this error is reported sporadically.

- When the Audio display is active and the audio input is changed, the displayed audio scale may not update automatically. Press the FULL button to toggle the display and update the audio scale.

*NOTE. See **SIM Mode** for audio issues related to SIM mode operation.*

Calibration and Performance Verification

- Before entering Calibration, connect any supported SDI signal to the SDI A input, select Input A, verify lock, then disconnect the SDI signal and start Calibration.

- On some units, the calibration screen might not be displayed after selecting CONFIG > Utilities > Calibration. If this occurs, press the STATUS button to display the calibration screen.

- Do not select SDI Deserializer Mode in the calibration menu during Eye Gain and Eye Signal Bandwidth performance verification. Instead, select Eye Gain Adjust SDI A to check the SDI A input, and select Eye Gain Adjust SDI B to check the SDI B input.

⚠️ **CAUTION.** *Select "Exit" (instead of "Save" or "Save then Exit") to leave the calibration mode without saving the settings. To avoid lost settings, record the values of the Eye Gain Adjust SDI A and B settings before initiating those calibration steps by pressing SEL. If either setting is accidently changed during performance verification, return the settings to their original values when the calibration step is complete.*

- If a clean waveform is not seen when Eye Gain Adjust is selected, then remove the calibration signal and connect an SD SDI signal to the selected SDI input. After the SDI eye diagram is stable, remove the SDI signal and reconnect the calibration signal.

- After calibration is complete, instrument power must be cycled to restore normal operation.

Capture and Freeze

- Capture Buffer is designed to capture digital video only, and not analog video.

- You can select Capture Buffer while monitoring a composite video input, but there will be no effect because the Capture Buffer mode does not apply to composite analog signals. Use the Capture Freeze mode when monitoring composite analog signals.

- Short duration trigger events are captured, but "frozen" status displays such as video session may not update in time to reflect the event.

- Captured format must match input. When viewing capture buffer data, ensure a signal with the same format is on the selected input.

- Capture mode works when at least one tile is one of the following: waveform, vector, gamut, or picture.

- Use Freeze instead of Buffer to capture physical layer characteristics.

- Selecting to delete the capture buffer from the Remote UI does not delete the capture buffer.

- Manipulating Capture data (such as changing display types or changing to full screen) can introduce spurious errors in the captured status and session screens.

Display Distortion

The audio phase display is optimized for a 4 x 3 monitor. When an external 16 x 9 XGA monitor is used, the X-Y axes of the audio phase display are not 90 degrees apart and the waveform is stretched somewhat horizontally.

Dolby Bar Labels

Depending on the current state of the input, surround channels may be indicated by numbers 1-10, rather than by labels L, R, C, and so on. The channels, if present in the AUDIO display, allow the Channel Labels to be present in both the audio input/output maps in the CONFIG menu and in the audio session. If channels are not present (input shifts from 5.1 to Stereo or downmixes are turned off), the affected bar numbers appear in the session and maps, replacing the Channel Labels. In the alarm status and error log, bar numbers are always shown regardless of the input format.

Dolby Operation With Option DDE

- In the AUDIO display, with a Dolby Digital input and a nonexistent stream selected, the downmix level bars continue to display levels instead of going to Mute status. The other bars go to Mute status as expected.

- For listening mode selections other than FULL or EX, clipping may occur. For example, if the Dolby Digital input is 3/2 with full-scale test tones and Stereo listening mode is selected, clipping will likely occur. To avoid clipping, choose either compression mode, Dialnorm+Line or Dialnorm+RF, in CONFIG > Audio Input/Outputs > Dolby D (AC-3) Setup > Dialnorm&DynRng.

- When in Channel Mode 2/2 and Phantom Listening Mode, the Surround Sound display (AUDIO tile) shows the Ls and Rs levels attenuated by 3 dB instead of displaying at full amplitude for this channel mode/listening mode combination.

- When in Channel Mode 3/0 and 3-Stereo Listening Mode, the Surround Sound display (AUDIO tile) shows the C level attenuated by 3 dB instead of displaying at full amplitude for this channel mode/listening mode combination.

- The Dolby E/Dolby Digital decoder will pass through PCM audio at 48 kHz frequencies or less. Audio frequencies above this will not pass through and may cause noise or distortion on both the bars and the audio outputs. If PCM audio at frequencies greater than 48 kHz is used, choose either AES A or B as the input source.

- For Dolby Digital (AC3) signals, the header in the Audio display may show Channel Mode incorrectly. See the Dolby Status display for the correct indication of Channel Mode.

Dual Link Mode

The audio phase display for 50p, 59.94p, and 60p formats is not displayed if there are two or more trace displays in other tiles.

Embedded Audio Active Bits (SD Only)

The Audio Active Bits field only reports up to 20 bits for SD.

Error Readouts

If every CRC or Line Number in a signal is incorrect, the status screen will display "Error" for a couple of seconds and then go back to "OK", even if the error is still present. If the error is present when the signal if first connected, it is never detected.

External Reference	■ Sometimes loss of the External Reference signal does not make the resulting loss of lock obvious. For example, if a 525 input has EXT REF selected and configured to lock to an NTSC reference, removing the external reference signal leaves the waveform stable, but shifted on the screen.

■ Note that the SDI Input Readout can be used to determine if the waveform is locked.

■ When in SDI mode, but with no SDI input signal present, the screen displays Ref: Ext Unlocked even though a valid External Reference signal is connected.

■ The following External Reference signal formats are not fully supported when in line select mode or in Sweep MAG mode. Although not supported, the following formats may be somewhat functional and are not locked out: NTSC and PAL with tri-level input, and 720p 23.98, 1080sf 29.97, 720p 24, 1080sf 30, 720p 25, and 1080sf 25.

■ With some combinations of SDI input and External Reference formats, the sweep stops prematurely when Sweep MAG is in one-line mode. To work around this limitation, turn off EXT REF to make the measurement.

Field Installs of Dolby Options

When you update an instrument with Option DDE, the Dolby input entries may not appear in the Audio popup menu until you cycle power. Therefore, after installing an option and powering up and updating the Option Key, be sure to cycle power once more to ensure that the menu items appear.

*NOTE. See **Dolby Operation With Option DDE** for Dolby and Option DDE related information.*

Incompatible Operation

When applying SD or HD signals to any rasterizer that does not support them, the unit indicates that the signal input is not standard. Applying unsupported video signals may result in a frozen PICT display.

OP47 Teletext

The OP47 Protocol Error alarm may not trigger accurately. To avoid getting this error, disable the alarm in CONFIG > Alarms > Closed Captions/Teletext.

SDI Status Display

When the input signal is missing, the Cable Length meter, the Cable Length readout, and the Cable Loss readout on the SDI Status display indicate zero. Use the Input Status on the Status Bar for the actual signal state.

Simultaneous Input Mode (SIM)
- To access Analog Output Mapping and AES Output Mapping settings while in simultaneous input mode, go to CONFIG > Audio Inputs/Outputs > Dual Audio > Audio Inputs.
- The phase pair selected as an audio source is for the channel of the phase pair you changed last.
- External Reference reports unlocked if no SDI A signal is on Channel 1.
- Selecting AES B as a source when it is an output causes a blank tile.

SNMP Messages
- Commands returning the audCurOutput OID return the string "Embed 7 & 8" for embedded audio channel pairs 9 & 10, 11 & 12, 13 & 14, and 15 & 16.
- The MIB contains the command dolbyPgmAvg, but the command name does not indicate that the OID is for loudness.
- The MIB contains the dolbyPgmCurLoudness command. However, it does not contain a command for program session loudness.

Sweep
The waveform style must be set to Overlay to get 2 line or 2 field sweep.

Sweep MAG
When in 2 line mode, waveform displays of SD or composite inputs will display invalid information at the left and/or right side of screen (beginning and/or end of sweep) when Sweep MAG is on. HD formats are unaffected.

Waveform Mode Cursor for XYZ Color Space
The voltage cursors are given in millivolt scale, but the XYZ color space is referenced in hex scale. If you want to see the values for 000 to FFF, change the graticule settings to max and percent.

Web Browser
- The Web browser applet will not resize when running in some versions of the Netscape browser and in some non-Windows Operating Systems (for example, Solaris).
- Use Java Runtime Engine (JRE) version 1.6; otherwise, issues may occur.