Tektronix®

WFM2300 and WFM2200A
Multiformat Multistandard Portable Waveform Monitors

Release Notes

Contacting Tektronix

Release notes

This document describes the key features and known limitations of software version 2.11.7 of the Tektronix WFM2300 and WFM2200A Multiformat, Multistandard Portable Waveform Monitors.

Some of these notes apply only to instruments with specific options installed. You can find a list of available instrument options at www.tektronix.com.

New features

This release of the WFM2300 and WFM2200A software introduces the following new features:

ASI signal monitoring (WFM2300 Option ASI only)

For the WFM2300 only, a new software option (ASI) is available which allows you to monitor ASI video signal inputs as follows:

■ **SDI/ASI Status display:** When Option ASI is installed, the SDI Status display is renamed to the SDI/ASI Status display. When an ASI signal source is being monitored, the SDI/ASI Status display shows details of the ASI signal as shown below, including Eye measurement results.

■ **MPEG2 PID List display:** When Option ASI is installed, the MEAS button menu includes a new MPEG2 PID List display selection. The MPEG2 PID List display shows the hierarchical structure of the elements in the MPEG2 transport stream. The colored LED icons next to each element in the stream indicate the status of the selected TR 101-290 tests performed on that element. Use the Error Log display to view the details of test results.
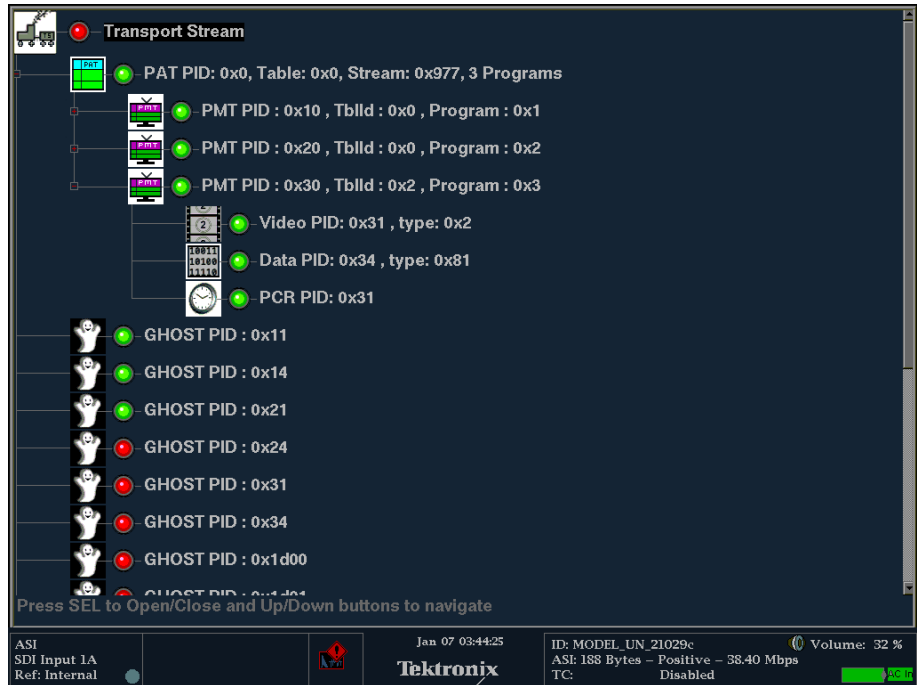
Moving Circle generator   ■ The Moving Circle feature has been reinstated in this software release. You can use this feature as a method of identifying the signal source. The Moving Circle feature can be configured to use a horizontal, vertical, or random motion.

General limitations

This release has the following general limitations. Topics are listed in alphabetical order.

Audio
- If a video signal is connected to and disconnected from the MULTI IN input, or a low amplitude LTC signal is applied to the MULTI IN input, the instrument may record a false alarm on the SDI A input signal.

- If you notice that the lissajous gain on the Audio display is not constant during normal operation, you can remedy the situation using one of the following methods:
  - Disconnect and reconnect the cable from the audio source
  - Toggle the Audio display back and forth between full-screen and four-tile mode
  - Change another trace display to a non-trace display and then back again

- High headphone volume levels can cause clipping with high audio level programs. To prevent possible ear damage, it is recommended to lower the volume before connecting headphones to the instrument.

- Test tone generation from AES output will be muted for a moment when the input video channel is switched or input video signal is connected/disconnected.

A/V delay measurement (Option AVDP only)
- The A/V delay measurement may produce CRC errors and audio glitches in sequence when Dolby E audio generation is enabled. Since it can be very difficult to detect the start of Dolby E audio, we recommend that you use standard PCM embedded or AES audio to make the A/V delay measurement.

- When embedded audio is enabled in the SDI output, the sum of all audio channels is used to measure the A/V delay.

Cable length measurement
- Be sure to use Belden 8281 cable to calibrate the cable length measurement. To prevent erroneous results in subsequent cable length measurements, use the Physical Layer Settings submenu in the CONFIG menu to select the cable type that best matches the cable you are using for the cable-length measurements. If the Cable Type setting does not match the cable type that you are using, the measurement results will be erroneous.

Displays
- The instrument is capable of showing only two of the following displays at a time: Waveform, Vector, Lightning, Arrowhead, Diamond, Split Diamond, Bowtie, Datalist, Eye, and Timing Measure. A warning messages appears when you try to open more than two of these displays.

External reference waveform display

- The waveform in the external reference Waveform display may appear garbled if there is no SDI input and you select to view a sync signal connected to the REF IN input. If this occurs, connect an SDI input or cycle the power to fix the display of the waveform.

Generator

- SDI generator output occasionally becomes invalid on toggling output formats. You may toggle to another format and back in case.

- If the AES output is configured to output a Dolby E program, then the SDI Output mode needs to be set to Test Signal (not Loopout Follows Input). If this condition is not met, then the Dolby E content in the AES output may not be able to be decoded.

- The Dialnorm readout on Audio Generator Status display does not always match the actual generator output as configured by the user. For example, if the user configures the Dolby-E generator to output a program with –18 dBFS signal levels (which has a dialnorm value of -23) and then reconfigures the system to output a program with -20 dBFS levels (which has a dialnorm value of –24) , the dialnorm value reported on the Audio Generator Status screen may remain at -23 when it should actually be shown as –24.

- Changing the Dolby E program configuration setting in the Audio Generator display may cause the Dolby guardband number to disappear in the Audio display. To redisplay the guardband number on the Audio display, select the Audio display and change it to full-screen mode.

Genlock

- If the reference frequency error is greater than 80 ppm, then the lock indicator may falsely indicate that the instrument is locked. In this case, the SDI OUT can be temporarily connected to the SDI input and the actual lock condition can be viewed on the Timing display using external reference.

HDMI signal monitoring (Option SFP-HDMI only)

- When you are using the HDMI input to monitor 625i format signals, a Field Length error may be reported on the Video Session display.

- When you are using the HDMI input to monitor 1080p/sf format signals in the range of 23.98 to 30 Hz or if you are monitoring 3G Level B signals, the signal may be detected as being 3G Level A format.

Input timing to external reference measurement

- The Input Timing to External Reference measurement display may be unstable when a 3G-SDI Level A input is being selected with a tri-level external reference signal.

LTC Waveform Display

- The LTC waveform trace occasionally appears to be smeared and noisy. This erroneous trace pattern will be displayed regardless of whether an LTC signal is applied to one of the inputs or not. This problem can be remedied by connecting a valid external reference signal to the product (such as NTSC, PAL, or Tri-Level Sync), otherwise the unit requires power cycle.

MPEG2 PID List display (WFM2300 Option ASI only)

- The highlighted (selected) PID position in the stream hierarchy may not be retained when the display has been changed to a different display and then back to the MPEG2 PID List display.

- For some transport streams, the TSDT table is not listed in the stream hierarchy but is instead displayed as a GHOST with PID value 0x2. In addition, the NULL PID with value 0x1FFF is not displayed.

- For streams with two NIT tables, only the second table ID is initially shown in the PID List hierarchy. The work around is to use the MEAS button menu to reset the monitoring session. After the reset, both NIT tables will appear in the PID List hierarchy.

- The PIDs for EMM and ECM elements are not specifically identified in PID List display and are instead shown as GHOST PIDs.

- The order of the PIDs for elementary stream elements may be varied.

MULTI IN input source selection

- When the Input Mode setting for the MULTI IN connector is configured for an LTC or AES signal, the video trace displays (Waveform, Vector, Diamond, etc.) and the Picture display are not available. If one of the unavailable displays is selected, a pop-up message appears stating that the display is not available and that the selected input is not set for video.

- When the MULTI IN input mode is changed to AES or LTC, the instrument responds as follows:

  - When set to AES, the instrument switches to monitor AES audio. When the MULTI IN input is then set to LTC, AES, SDI, or SDI/ASI (Option ASI only), the instrument then changes back to the previous audio monitoring selection.

  - When set to LTC, the instrument switches to using the LTC timecode on the input signal. When the MULTI IN input is then set to AES, SDI, or SDI/ASI (Option ASI only), the instrument then changes back to the previous time-of-day source.

Propagation Time measurement (Option AVDP only)

- When the Propagation Time measurement is initiated, it often takes 3 to 5 pulses of the measurement test pattern before a stable, valid measurement can be made (each pulse occurs about once every 10 seconds). During this settling period, the measurement readout sometimes reads "Invalid." When performing this measurement, you should wait for a few pulses to make sure that the measurement has been done correctly.

- When the Propagation Time measurement is made using a 3G-SDI Level B signal, the measurement readout may show an erroneous result. It is recommended that you use a different format, such as a 3G-SDI Level A signal, to perform the measurement.

SDI Status display

- The SDI Status display may show an incorrect value for the source level and cable parameters when the MULTI IN input is being monitored.

USB

- Always press the MAIN button and select USB Status > Unmount before you remove the USB memory device from the USB port. You risk permanent loss of any files saved on the USB device if you do not use the "Unmount" feature.

- It is recommended that you use a well known brand to prevent a slow instrument boot-up and/or response.

Web browser

- We recommend using Java Runtime Engine (JRE) version 1.6 or above.