Release Notes

Tektronix

WFM700 Series
Waveform Monitors

061-4247-08

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  distributor; see the Tektronix web site for a list of offices.

Release Notes

These release notes provide the following information:

■ Descriptions of the new features released with the firmware version covered by this document (firmware version is listed on the title page).

■ Descriptions of problems or behaviors that you might encounter while using the waveform monitor and explanations of how you can minimize or eliminate the impact on instrument operation.

About Firmware Upgrades

> **CAUTION.** *To avoid firmware upgrade problems, be sure to use the firmware upgrade procedure in the* WFM700 Series Technical Reference *document if your instrument has firmware version 2.0.X or earlier.*
>
> *The part numbers for the documents supporting this firmware release are listed on the next page. You can download these documents from the Tektronix, Inc. Web site (www.tektronix.com).*

With the introduction of the "B" version of the Real Time Display board at firmware version 2.1.X, the procedure for upgrading the instrument firmware changed. The firmware upgrade package that you download from the Tektronix, Inc. Web site, contains two versions of the firmware file: *a.fmw or *b.fmw. You must use the *a.fmw file if your instrument contains the "A" version of the Real Time Display board, or you must use the *b.fmw file if your instrument contains the "B" version of the board.

The Installed Options display, accessed from the System Info submenu of the Help menu, lists which version of the Real Time Display board is installed in the instrument. RTD v.A is displayed when the "A" version of the board is installed and RTD v.B is displayed when the "B" version is installed.

> **NOTE**. *If you attempt to upgrade the instrument using the wrong version (A or B) of the firmware image file, the instrument cancels the upgrade, reports an error message, and continues operation using the currently installed firmware.*

New Features with Firmware Version 2.4.X

The following new feature enhancements were implemented with firmware version 2.4.X:

User Documentation

The *WFM700 Series User Manual* includes a CD-ROM attached to the back cover. The CD-ROM contains PDF files of the following user documents that support version 2.4.X firmware:

- *WFM700 Series User Manual*
  (Tektronix, Inc. part number 071-0916-06)

- *WFM700 Series Technical Reference*
  (Tektronix, Inc. part number 071-1403-00)

- *WFM700 Series Management Information Base (MIB) Reference*
  (Tektronix, Inc. part number 071-1404-00)

Gamut Limits

The following enhancements were implemented for making gamut limit measurements:

Gamut Limit Thresholds. You can set separate limits for NTSC and PAL signals. For composite gamut limits, you can set high and low limits for both Y+C and luminance.

EBU-R103 Gamut Thresholds. You can select between two standards when you reset the gamut-limit thresholds to their default values. You can select between the Tektronix and EBU-R103 standards.

Supported Video Standards

The WFM700 Series monitors support 720p: 50 Hz and 720p: 60 Hz video input signals and support 1080i: 50 Hz external reference signals.

NOTE. With the introduction of firmware version 2.4.X, all instruments are shipped with a "B" version External Reference module. Your instrument must have a version "B" External Reference module installed before the 1080i: 50 Hz external reference format selection is available. Earlier "A" version modules do not support this format.

View the Installed Options display in the System Info portion of the Help menu to determine which version of the External Reference module is installed in your instrument. Instruments with firmware versions older than 2.4.X cannot distinguish between the two versions of the External Reference module.

Remote Control The following enhancements were made for remotely controlling the instrument:

SNMP Capability. You can configure the instrument to be remotely controlled over a network using SNMP variables and traps. All available alarms can be configured to send SNMP traps for monitored events.

The Remote Web Interface allows you to download the complete SNMP MIB file used by the Tektronix waveform monitors. The *WFM700 Series CD-ROM* at the back of the *WFM700 Series User Manual* contains descriptions of only the variables and traps used by the WFM700 Series monitors.

Remote Web UI Java Application. You can download a Remote Web UI Java application from the Tektronix, Inc. Web site (www.tektronix.com) to your PC. The Java application operates the same as the Java applet that you download from the instrument when you connect to the instrument using a Web browser. The Java application starts faster than the Java applet since you do not have to wait for the applet to download from the instrument. Additionally, the Java application does not run within a Web browser and, thus, is not subject to the various browser limitations.

Waveform Display Graticule Units You can select IRE and % Full Scale graticule units for the Waveform display mode.

Diamond Display Graticule The Diamond and Split Diamond displays have a graticule mark for determining compliance using 75% color bars.

Printer Support You can configure the instrument to print to a named LPD printer on your network.

Multi Mode Audio correlation meters appear at the bottom of the Level Meters and Lissajous displays when Audio is selected as one of the Multi mode displays.

Audio Program Type You can select the audio program type, Surround or Stereo Pairs, from both the Configure menu and the Audio mode menu.

SD Signal Alarm You can enable an alarm that will be triggered when the video input signal is not HD format.

Problems and Behaviors

The following problems and behaviors are organized by the affected operating mode(s) in the instrument:

General Topic   The following item applies to multiple operating modes:

Display Intensity. Display Intensity dims in some modes. Use the Trace Settings in the Display menu to increase the display intensity.

Audio Topics   The following topics apply to the Audio operating mode:

Mute Indication During Audio Unlock. Certain error conditions can cause the AES/EBU receiver to generate zero samples to protect internal hardware while the receiver relocks to the signal. The number of samples can exceed the configured threshold for indicating a mute condition. Under these circumstances, the Audio Session screen will indicate that the audio signal is unlocked.

Embedded Audio. If the instrument receives embedded audio at an unsupported rate, or cannot successfully de-embed the audio channels due to unrecoverable errors in the embedded audio data, it will indicate embedded audio presence, but all audio-mode displays will show an unlocked condition.

Audio Session Display: 24 Bit Audio Not Supported for SD Signals. The instrument cannot distinguish 24-bit embedded audio in SD signals. The detection capability is limited to 20-bit audio maximum. The number of audio bits is reported correctly in HD signals. This problem affects firmware versions 2.0.3 and higher.

Cursor Topic   The following item applies to the measurement cursors:

Overlay / 2 Line Mode. The location of the time cursors may shift slightly relative to the waveform when you switch between normal and Mag in Line or 2 Line mode. However, the relationship between the two time cursors is accurate in either mode. Be sure to line up both cursors in the same mode. The Mag setting does not affect the voltage cursors.

External Reference Topics   The following items apply to using an external reference signal:

No Valid Signal Present. False Vector Display. If external reference is selected and there is no valid external reference signal, the wrong waveform is displayed when you switch between Vector and Lightning modes. This can also affect performance in other operating modes. Be sure to supply a valid external reference signal when the input is externally referenced.

Timing Offset. Some standards may not have zero timing shift when switching between internal and a correctly timed external reference.

Waveform Mode: 2 Line Sweep with Line Select On and External Reference Selected. When 2 Line Sweep is selected in the Waveform mode, if the Line Select mode is on and External Reference is selected, the displayed lines are swapped with most combinations of video input standards and external reference standards. Usually this error does not occur when the timing of the video input signal is matched exactly with the timing of the external reference input. If the horizontal timing is varied, this error will appear. This problem affects firmware versions 2.0.3 and higher.

HD Signals: Vertical Timing in Sweep Modes with MAG On. In the Waveform mode, with certain external reference signal formats, especially 720p: 59.94 Hz, the vertical timing in field sweep modes (with MAG on) occasionally shifts back and forth by 1 to 3 lines during normal operation. In line sweep modes, the timing can shift back and forth by 2 or 3 minor divisions (with MAG on).

This problem will occur when the frame rates between the video input and external reference signals differ by a factor of two or by a factor of 5. Turning the instrument power off and then back on will usually resolve this problem.

Freeze Topics   The following items apply to using the Freeze function:

Ghost Images. In Picture and Thumbnail mode, some Freeze operations leave ghost images. To clear these images, select Delete Capture from the Freeze menu or restore the factory preset from Preset menu.

Vector Mode. In Vector mode, Freeze offsets the image to the left by several pixels.

Display Color. If the waveform trace color is white when a capture is completed, the live waveform color turns to green and remains green until you press a major mode button.

Measure Topics   The following items apply to the Measure operating mode:

Momentary Red Values in Data Display. Rapidly scrolling horizontally through video samples in the Data display can cause some legal data values to momentarily appear in red. Reducing the scrolling speed will eliminate this problem.

Color Coding Illegal Values. In the Data display, reserved data values 0x000–0x003 and 0x3FC–0x3FF in the active video will appear in red. Illegal timing reference signal (TRS) values will also appear in red. Values in the horizontal and vertical blanking intervals will appear in gray including reserved data values or other illegal values.

Multi Mode Topics   The following items apply to the Multi operating mode:

Line Select Mode. Entering Multi mode when the instrument is already in Line Select mode will cause the front-panel Line Select indicator to turn off, although the instrument remains in Line Select mode. Exiting Multi mode or pressing the Go to *<Mode>* Menu soft key in the Multi menu will turn on the Line Select front-panel indicator when the instrument is in Line Select mode.

When a Multi-mode window contains the Data display and you disable the Line Select mode from the other Multi-mode window, Line Select mode will remain disabled when you select the Data display in the Multi-mode window. In this situation, press the Line Select button or touch the Go To Data Menu soft key to enable the Line Select mode and allow the General Purpose knob to change line and sample values.

Missing Component in Field Sweep. When the Waveform and Data displays are selected in Multi mode, and the Waveform display is in Field sweep, one of the components is omitted from the Waveform display. This problem affects firmware versions 2.0.3 and higher.

Print Topics   The following items apply to the Print operating mode:

Print and Freeze mode. Pressing Print removes the contents of the capture buffer previously stored in Freeze mode.

Network Printing Using an LPD Server. The instrument does not support printing to a network printer through an LPD Server that manages several print queues. Further, the instrument does not supply print queue names to the printer. The instrument must have a direct connection to a network printer supporting LPD protocol that does not require a print queue identifier.

Remote Interface Topic   The following item applies to the Remote Control Interface:

Vector Display. The Vector display on the remote interface is a captured display and is offset by several pixels (see *Vector Mode* in *Freeze Topics* on page 5).

Vector Topic   The following item applies to the Vector operating mode:

Gain. In Vector mode, when switching between X1 and X5 gain with a variable gain above 2.8, the signal or graticule magnification may be incorrect. This problem does not occur with variable gain settings under 2.8 or with X10 gain. To correct this problem, select X10 gain and then switch to X1 or X5 gain.

Waveform Topics   The following items apply to the Waveform operating mode:

Parade Mode Display with MAG On (720p, 24 Hz / 23.98 Hz Signals Only). In the Waveform (Parade mode) display with MAG turned on, when horizontally scrolling between the displayed components of a 720p 24 Hz / 23.98 Hz signal, the waveform will shift horizontally as you scroll through the horizontal blanking interval. This shift will appear in the following two cases:

- When the color space display mode is set to YRGB.

- When EAV/SAV stripping is turned off and 2 or more paraded components are selected (Y–Pb, R–B, etc.).

For example, with the YRGB components displayed, as you scroll from the Y component to the R component, the leading edge of the R display will suddenly appear (about 1/4 of the screen width from the right edge of the display). Scrolling from the R component to the Y component will produce the same effect on the left side of the screen.

Progressive Scan Signals: Second Field in 2 Field Sweep with MAG On Not Visible. When viewing certain progressive-scan format signals (1080p formats only) in 2 Field sweep with MAG on, the second field is not displayed correctly. The latter portion of the second field display will appear to be from another portion of the video frame.