

Release Notes



WFM6100, WFM7000, and WFM7100 Waveform Monitors

071-1895-00

This document applies to firmware version 1.0.X
and above.

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Release Notes

This document describes the new features introduced with the WFM6100, WFM7000, and WFM7100 Waveform Monitors. Also described are known problems and behaviors with the monitors.

New Features

The new features that are implemented in the waveform monitors are described on the following pages.

User Interface

The user interface offers the following new features:

XGA Resolution Display with FlexVu. All waveform monitor models are equipped with a high-resolution XGA display, which is controlled by high-quality signal processing to provide analog-like waveform displays of the digital signal. The FlexVu interface allows you to create multiple-view displays of the video signal you are monitoring.

My Menu. All waveform monitor models include a user-defined menu that allows quick access to frequently used functions, thereby simplifying the operation of the instrument.

Presets. All waveform monitor models allow you to save up to 20 instrument presets of configuration settings. To aid access, the presets are organized into 4 groups, with 5 presets per group. To aid identification, you can assign user-defined labels to the presets.

CaptureVu

The WFM7100 and WFM6100 models allow you to capture a full frame of video data, and then compare that data to a live signal on the waveform, vector, gamut, and picture displays. You can manually initiate a data capture or you can trigger the instrument to capture data when alarm conditions occur. You can save the captured data onto a USB memory drive, which allows you to transfer the data to another waveform monitor or to a PC for additional in-depth analysis.

Picture Display

All waveform monitor models can display up to four independently configured picture displays of the input signal. This allows you to display different safe area graticules and to decode different closed caption services at the same time.

Timing Display

All waveform monitor models provide a Timing display that graphically shows the timing relationship between the input signal and an external-reference signal or a saved offset. This easy-to-interpret display includes numeric readouts of vertical and horizontal timing relationships, which reduces the time and effort to verify and correct signal timing.

SDI Signal Analysis

When you purchase the appropriate options, the WFM7100 and WFM6100 models offer the following new SDI signal analysis features:

Multiple SDI Signal Displays. These models can show up to four independently configured displays of SDI signal characteristics. The available displays include an Eye diagram with a jitter bar display and numeric readouts of key signal parameters, a jitter waveform display, and an SDI Status screen.

Simultaneous Jitter Measurement. These models can make two independent jitter measurements with separate high pass filters, letting you simultaneously monitor the peak-to-peak amplitudes of timing and alignment jitter.

Cable Parameter Measurements. These models measure cable loss and use this measurement to estimate the source level and cable length based on the user-specified cable type.

Audio Analysis

When you purchase the appropriate options, the waveform monitors offer the following new audio features:

Headphone Port. All waveform monitor models include a front-panel headphone port for quickly verifying sound quality. Touch screen controls let you quickly check the stereo pairs shown on the audio bar display.

Dolby Audio. The WFM7100 and WFM6100 models provide extensive support for monitoring Dolby audio content, including auto-sensing of Dolby formats, decoding Dolby content and automatically configuring the appropriate audio level and phase displays, and showing decoded Dolby metadata.

USB Port

All waveform monitor models include a front-panel USB 1.1 port for storing and recalling captured data and instrument presets. You can share saved data and presets between different waveform monitors.

Problems and Behaviors

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

Alarm Topics

The following topics apply to the Alarm operating mode(s):

SDI Presence and SDI Lock Alarms. When an SDI signal missing condition is detected, the waveform monitor will generate an SDI Input Missing alarm, but will not generate an SDI Input Signal Lock alarm.

Cable Launch Amplitude Alarm. For signal inputs that are in SD digital formats, the threshold for the Cable Launch Amplitude alarm cannot be changed. Although the onscreen readouts of this threshold respond to the signal, the threshold value of the alarm remains unchanged. The alarm threshold value can be changed for signal inputs in HD digital formats.

Audio Topics

The following topics apply to the Audio operating modes:

Sample Rate Readout in Audio Session Display. When you switch between audio inputs, the Audio Session display may show a sample rate greater than zero for an unlocked audio input. In particular, switching between Dolby and AES audio inputs can produce this effect.

Follows Video Setting for Audio Source The Audio Input soft key in the Audio menu will incorrectly show the audio input as Follows Video until the audio input is changed to a source other than Follows Video. For any subsequent change of the audio input, including a change to the Follows Video setting, the Audio Input soft key will correctly display the selected audio input.

Dolby Presets. When you change the audio input from a Dolby preset with active audio to a Dolby preset with no active audio, the waveform monitor may not fully transition the audio source. Select the desired Dolby preset again to complete the transition.

Capture Topic The following topic applies to the Capture operating mode:

Capture Menu for Composite Analog Video Inputs. When you enable the Capture Buffer while monitoring a composite video input, the Capture menu will have both the Capture Buffer and Settings soft keys active. If you press the Capture Buffer soft key, there will be no effect because the Capture Buffer mode does not apply to composite analog signals.

For composite analog signals, use the Capture Trace mode, which is activated using the Settings soft key. Changing to the Capture Trace mode removes the Settings soft key. This soft key will reappear when a digital video input is selected for monitoring.

Cursor Topics The following topics apply to the Cursor operating modes:

Disabling Cursors in Track Mode. If you set voltage or time cursors while in Track Cursor mode, and then turn a cursor off using the Show Volts or Show Time soft keys in the Cursor Menu, the cursor is placed in the Independent mode but the mode select soft-key label does not change to Independent. Use the soft key in the Cursor menu to select Independent mode, then select Track mode to set the cursors back to Track mode.

Time Cursor Behavior. The time cursors cannot be moved below $-0.1x$ the sweep rate and above $12.7x$ the sweep rate. In Track Cursor mode, if you attempt to move the time cursor beyond these fixed limits, the time difference will decrease between the cursors. The Volts cursors do not have upper or lower limits.

Data Analysis Topics The following topics apply to the Data Analysis operating modes:

Data Display Readouts with Line Select in All Fields Mode. When you use the Data Display to monitor a digital video input with an interlaced format, if you turn on Line Select and select the All Fields mode, the instrument will display data from line $n + 1$ when you set the line number readout to line n . In this situation, set Line Select to Field 1 or Field 2 modes to ensure that the line number readout matches the actual line number of the displayed data.

Display of EAV value for Digital Video Inputs in 720p Formats. When you use the Data Display to monitor a digital video input in 720p format at either a 24 Hz or a 23.98 Hz frame rate, the display will show incorrect EAV data values if the Word selector is set to a value greater than 1293. The Data Display shows the correct EAV values if the Word selector is set at 1293 or lower.

Word Readout Labels with HD Digital Video Formats. When you use the Data Display to monitor a digital video input in HD format, the labels on the Word readout do not correctly indicate the components used to form the 20-bit digital word used in HD formats. Instead, these labels follow the sequence of components found in the 10-bit words used in SD digital video formats.

ARIB Alarms on Alarm Status Display. When you view the Alarm Status display at full-screen size, the display does not contain readouts for the ITU.R BT-1685 Missing, ARIB STD-B.35 Missing, ARIB TR-B.23 (1) Missing, ARIB TR-B.23 (2) Missing, ARIB TR-B.22 Missing alarms. When you view the Alarm Status display at 1/4-screen size, the display does contain these readouts.

Diagnostic Topic The following topic applies to the Diagnostic operating modes:

Serial EEPROM Diagnostic. On rare occasions, the Main Board Serial EEPROM Diagnostics Test can generate a false Fail indication. If this diagnostic test fails but the instrument is able to display the Diagnostic Log, then perform the diagnostic test again to clear the failure condition.

Measure Topics The following topics apply to the Measurement operating mode(s):

Measurement Readouts in Equalized Eye Display. In the Equalized Eye display, the measurement readouts show the parameters of the signal after it has passed through the internal equalizer. The readouts are not the parameters of the signal as seen at the input connector.

Cable Launch Amplitude Readout. The Cable Launch Amplitude readout always appears in red, regardless of the threshold value used to trigger an alarm. The readout value is correct.

Changing Vertical Position in the Jitter Waveform Display (Option PHY Only). When you adjust the vertical position while viewing the Jitter waveform display, you may observe intermittent flashes in the display. These flashes only appear during movement of the waveform. This effect is most visible on HD digital video signals when the Jitter waveform display is set to a slow sweep rate and a high vertical gain. While less visible, the effect can appear on any SDI input at any sweep rate and gain.

Eye Displays of SDI Signals with Low Frequency Jitter. The Eye diagram can exhibit some random horizontal shifting if the SDI input signal contains jitter at frequencies below about 30 Hz. This effect is most noticeable if the Jitter1 high-pass filter (HPF) associated with the two upper tiles (in the four-tile display) is set below 100 Hz while the Jitter2 HPF associated with the lower two tiles is set above 100 Hz.

Network Topics

The following topics apply to the network interface:

Saving Presets from the Remote User Interface. You cannot use the remote user interface to save presets. When you attempt to save a preset using the remote user interface, the preset label changes but the preset contents remain empty.

Multi-display Menus. When you select a multi-display menu using the remote user interface (such as Status, Measure, Main, or User), the local instrument display does not change until you select one of the choices in the multi-display menu.

Upgrading Software Using DHCP. When you perform a software upgrade on an instrument that is configured to operate on a network supporting DHCP service, use the Network Setup screen to obtain the correct IP address to use in performing the software upgrade.

The IP address shown on the System Upgrade screen is the IP address from the Manual configuration mode. If the network is configured for DHCP operation, do not use the displayed Manual mode address to perform the system upgrade because it will usually differ from the IP address acquired through DHCP service.

Vector Display Topic

The following topic applies to the Vector operating modes:

Composite Vector Display for Digital Video with SMPTE 240 Colorimetry. When you view a Vector display with the composite graticule enabled, if the colorimetry of the digital video input conforms to SMPTE 240M (such as 1035i formats), the vertices of a correct color bar test signal do not fall precisely at the center of the bar targets on the display. This effect will also occur if the Colorimetry control, located in the Digital submenu of the In/Out menu, is set to SMPTE 240M.

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