

Analog Dual-Standard Waveform Monitor

1741C



Features & Benefits

Inputs and Formats

Analog Composite (PAL and NTSC) and component video support with auto format detection

Four passive loop-through analog composite signal inputs

Monitoring Capabilities

Waveform display supports composite or component video for white and black balance and level checking

Vector display for analog composite signal allows system setup to specific chroma values

SCH display for color subcarrier-to-horizontal sync timing and color framing matching among edit sources

Additional Analysis Features

Timing display for measuring signal timing between each input and the reference

VITC or LTC time code decode and display

LTC waveform display for longitudinal time code amplitude and synchronization monitoring

Screen capture for pictures and traces facilitate reference setting, troubleshooting and documentation tasks

Video session, alarm status and error logging for quick identification and easier correction of problems

User Interface Tools

Four-tile FlexVu™ display capability

XGA display with full screen picture display and picture thumbnail for easy signal source verification

Ethernet interface for convenient freeze capture and error log download

USB port enables screen capture download

32 user presets for quick recall of commonly used configurations

Additional XGA output for instrument display on external monitor

Picture monitor output for analog composite signal

Ground-closure for remote selection of input or preset recall

Applications

Camera alignment and analog video equipment setup

Compliance checking in distribution and broadcast

Content QA of composite and component video in production and post-production

The 1741C is the latest analog waveform monitor from Tektronix that features user interface tools to simplify operations. Its precise displays provide high quality monitoring for traditional analog composite (PAL and NTSC) or component systems.

This instrument supports four analog composite signal inputs with waveform, vector, SCH and picture functions. The input ports can also be used for RGB signals.

The 4-tile FlexVu™ display and convenient picture thumbnail maximize the versatility of the 1741C.

For camera alignment, the user can display one, two, three or four waveforms simultaneously and overlay just as many vector displays, thus facilitating monitoring of multiple cameras during content acquisition.

Powerful tools such as timing display, VITC or LTC decode, freeze capture, video session, alarm status and error log allow for deeper signal inspection to enable superior video production and delivery quality.

Ease of Use

The intuitive user interface provides backlit buttons.

32 user-configurable presets allow users to recall commonly used configurations tailored to your personal work practices.

For remote operation, the Ground-Closure interface allows for remote selection of input or preset recall.

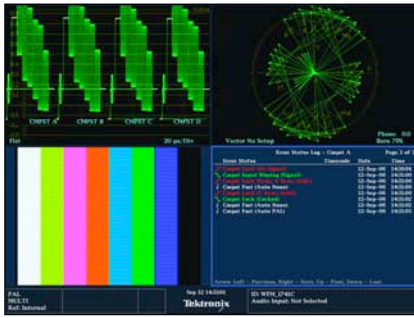
The user can download screenshots using the USB or Ethernet port.

The Error Log can be downloaded using a Web browser.

The unit provides an XGA output for instrument display on an external monitor and Picture Monitor output for Analog Composite signal.

Time and voltage cursors in Waveform display can be used as reference points or to measure values. User-defined labels allow for easy identification of input sources on screen.

Analog Dual-Standard Waveform Monitor 1741C



See and Solve with Tektronix Displays

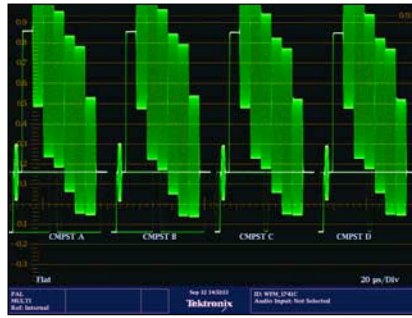
The “See and Solve” displays in Tektronix video monitors simplify video monitoring tasks such as equipment setup, error detection and content correction allowing to detect errors at a glance and troubleshoot them efficiently.

The FlexVu™ 4-tile display provides maximum flexibility to increase your productivity. With FlexVu,™ you can create a multi-view display tailored to your specific needs and work practices.

The Video Session, Alarm Status and Error Log displays are effective tools to verify the format and quality of the signal and allow for efficient detection and correction of errors by providing key content information at a glance. The Error Log captures up to 10,000 events and can be easily downloaded via Web browser.

The freeze function on the 1741C allows comparing of the frozen display to the live signal, facilitating tasks such as reference setting. A bitmap of the display can be downloaded using a Web browser for easy documentation.

With 32 user-configurable presets, operators can recall commonly used configurations for faster setup of the 1741C.



Sharp Waveform Display – Clear Measurements

Tektronix displays offer the sharpest CRT-like trace quality for clear waveform monitoring without pixilation distortions. With several sweep rates and easy control of vertical gain and horizontal magnification, you can efficiently monitor and measure video waveform parameters.

Full horizontal timing flexibility is provided with 1Line, 2Line, 1Field and 2Field sweep modes, with or without magnification.

Both fixed and variable vertical gain is offered, each with the outstanding accuracy and repeatability that comes from a fully digital design.

The Line Select provides a line marker in full screen and thumbnail picture modes.

With the time and voltage cursors in the waveform display, users can easily reference points or measure values. Users can also define labels to quickly identify the input sources active on the waveform display.

Vector Display

The vector display is offered with selectable 75% and 100% targets.

Each display automatically selects the appropriate graticule based on the input format.

The vector display offers user-selectable graticules.



Analog Video Multi-format Support

For a qualitative view of the content, a full-color picture display is offered, which can be displayed as a full-screen presentation. This display is compatible with PAL and NTSC inputs with format auto-sensing.

Timing and Synchronization Made Easy

The patented Tektronix Timing display makes facility timing easy through a simple graphical representation which shows the relative timing of the input signal and the reference signal on an X-Y axis. The display also has numeric readouts of the timing difference relative to the reference, showing vertical timing as number of lines and horizontal differences in μ sec.

The SCH Phase display helps quickly verify this critical timing parameter of composite analog video signals.

The 1741C provides VITC or LTC time code decode and display plus LTC waveform display for longitudinal time code amplitude and synchronization monitoring.

Characteristics

Composite Video Interface

Inputs – Four.

Input Type – Passive loopthrough BNC, 75 compensated.

Input Dynamic Range – ± 6 dB.

Maximum Operating Amplitude – -1.8 V to $+2.2$ V, DC + peak AC.

Absolute Maximum Input Voltage – -6.0 V to $+6.0$ V, DC + peak AC.

DC Input Impedance – 20 k, nominal.

Return Loss – >40 dB to 6 MHz, power on
 >40 dB to 10 MHz (typical).
 >46 dB to 6 MHz (typical).
 35 dB, power off (standard amplitude video).

Crosstalk Between Channels – >60 dB to 6 MHz.

Loopthrough Isolation – >70 dB to 6 MHz.

DC Offset with Restore Off – <7 mV (typical).

Attenuation – DC Restore 50 Hz and 60 Hz.
 Fast Mode $>95\%$ attenuation.
 Slow Mode $<10\%$ attenuation, $<10\%$ peaking.
 Slow mode Typical peaking 8% at 50 Hz and 60 Hz.

Lock Range – ± 50 ppm remains locked.

External Reference

Input Type – Passive loopthrough BNC, 75 compensated.

DC Input Impedance – 20 k, nominal.

Return Loss – >40 dB to 6 MHz, >35 dB to 30 MHz.

User Interface

1024 (H) x 768 (V) pixels LCD with FlexVu™ and backlit buttons.

Analog Composite Waveform Vertical Characteristics

Vertical Measurement Accuracy – $\pm 1\%$ all gain settings.

Gain – X1, X2, X5 and X10.

Frequency Response – Flat to 5.75 MHz, $\pm 1\%$.

Waveform Horizontal Sweep Characteristics

Sweep Timing Accuracy – $\pm 0.5\%$, all rates, fully digital system.

Sweep Linearity – 0.2% of time displayed on screen, fully digital system.

Power

100 to 240 VAC $\pm 10\%$, 50/60 Hz.

Physical Characteristics

Dimensions	mm	in.
Height	133.4	5.25
Width	215.9	8.5
Depth (front to back including handles and BNCs)	460.4	18.125
Weight	kg	lbs.
Net	3.1	6.8

Ordering Information

1741C

4-Input multi-function waveform monitor for analog component and composite PAL/NTSC dual standard with vector, SCH, picture and other advanced video monitoring functions. The unit provides an integrated XGA monitor with FlexVu™ user interface.

Note: Please specify power option when ordering.

Power Options

AC-DC Power Adapter

A0 – North America.

A1 – Universal EURO.

A2 – United Kingdom.

A3 – Australia.

A5 – Switzerland.

A6 – Japan.

A10 – China.

A11 – India.

Other

A99 – No Power Cord or AC Adapter.

Cabinet and Rackmount Accessories

WFM7F02 – Portable cabinet with handle, feet, tilt bail and front panel cover.

WFM7F05 – Dual rackmount for WFM6xxx/7xxx Series, 1700 Series, WFM601 Series, WFM700 Series and Audio Monitors.

WFM50F06 – Filler panel for dual rack cabinet.

Service Options

C3 – Calibration Service 3 Years.

C5 – Calibration Service 5 Years.

D1 – Calibration Data Report.

D3 – Calibration Report 3 Years (with C3).

D5 – Calibration Report 5 Years (with C5).

R3 – Repair Service 3 Years (including warranty).

R5 – Repair Service 5 Years (including warranty).

CA1 – Provides a single calibration event or coverage for the designated calibration interval, whichever comes first.

R1PW – Repair Service Coverage 1 Year post warranty.

R2PW – Repair Service Coverage 2 Years post warranty.

R3DW – Repair Service Coverage 3 Years (includes product warranty period) starts at the time of customer instrument purchase.

R5DW – Repair Service Coverage 5 Years (includes product warranty period) starts at the time of customer instrument purchase.

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Contact Tektronix:

ASEAN / Australasia (65) 6356 3900
Austria +41 52 675 3777
Balkans, Israel, South Africa and other ISE Countries +41 52 675 3777
Belgium 07 81 60166
Brazil & South America (11) 40669400
Canada 1 (800) 661-5625
Central East Europe, Ukraine and the Baltics +41 52 675 3777
Central Europe & Greece +41 52 675 3777
Denmark +45 80 88 1401
Finland +41 52 675 3777
France +33 (0) 1 69 86 81 81
Germany +49 (221) 94 77 400
Hong Kong (852) 2585-6688
India (91) 80-22275577
Italy +39 (02) 25086 1
Japan 81 (3) 6714-3010
Luxembourg +44 (0) 1344 392400
Mexico, Central America & Caribbean 52 (55) 5424700
Middle East, Asia and North Africa +41 52 675 3777
The Netherlands 090 02 021797
Norway 800 16098
People's Republic of China 86 (10) 6235 1230
Poland +41 52 675 3777
Portugal 80 08 12370
Republic of Korea 82 (2) 6917-5000
Russia & CIS +7 (495) 7484900
South Africa +27 11 206 8360
Spain (+34) 901 988 054
Sweden 020 08 80371
Switzerland +41 52 675 3777
Taiwan 886 (2) 2722-9622
United Kingdom & Eire +44 (0) 1344 392400
USA 1 (800) 426-2200

For other areas contact Tektronix, Inc. at: 1 (503) 627-7111

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For Further Information

Tektronix maintains a comprehensive, constantly expanding collection of application notes, technical briefs and other resources to help engineers working on the cutting edge of technology. Please visit www.tektronix.com



Product(s) are manufactured in ISO registered facilities.

Product(s) complies with IEEE Standard 488.1-1987, RS-232-C and with Tektronix Standard Codes and Formats.

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