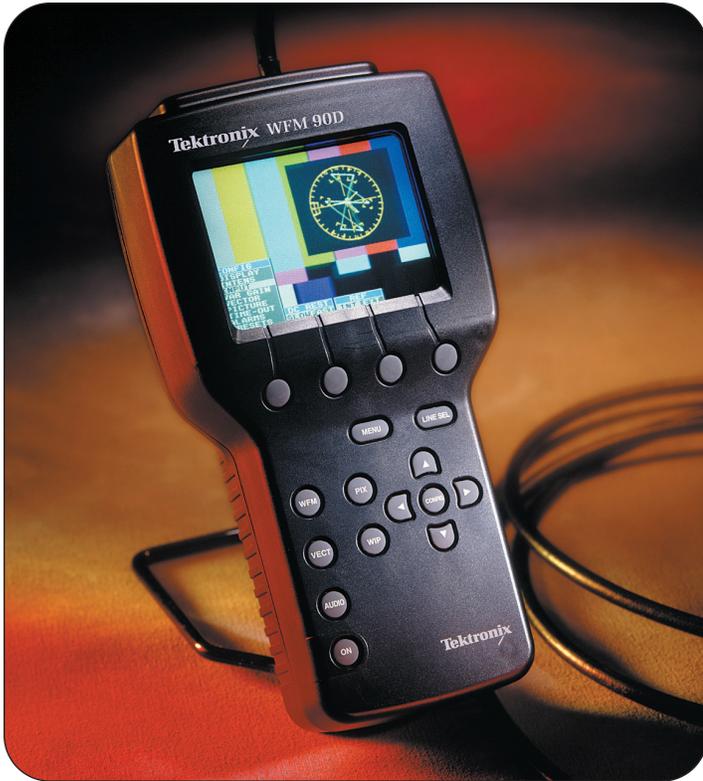


# Handheld Waveform Monitors

► WFM90D • WFM91D



The Tektronix WFM90D/WFM91D are handheld, multifunction monitors ideally suited to the monitoring needs of field production, equipment installation or any situation where portability and battery operation is required for analysis of analog composite video and 270 Mbps – SDI systems. The combination of features and monitoring modes provided makes these instruments powerful enough to set up, time and troubleshoot complex video and audio systems, combining the power of four separate instruments in the palm of your hand.

The high-resolution, 4 in./102 mm color LCD display provides a clear picture of the incoming video signal. Alternately, the waveform, vector or audio displays may be shown full-screen or any one may be cut into any corner of the display. In addition to the LCD display, a composite video output supplies a monochrome waveform, vector or audio display, either full-screen or cut into a color picture.

## ► Features & Benefits

- Battery or AC Powered
- Truly Portable
- 4 in./102 mm Color LCD Display
- Picture Monitor
- Waveform Monitor
- Vectorscope
- Line Select Display
- Audio Monitor
- Waveform-in-picture Mode
- Video Output for Routing to External Display
- AutoDetect of Analog/270 Mbps – SDI Signal
- Models
  - WFM90D:
    - NTSC/270 Mbps – SDI (525)
  - WFM91D:
    - PAL/270 Mbps – SDI (625)

## ► Applications

- Field Production
- Troubleshooting
- Equipment Installation

## Handheld Waveform Monitors

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As a waveform monitor, the WFM90D/WFM91D provides all the features expected on a basic, single-channel monitor: external reference; 1H, 2H and 2F sweeps; X1, X5 and variable vertical gain; flat and luminance filters. The external reference input allows users to perform the system timing adjustments critical to sophisticated field productions. In addition to these basic features, an alarm mode, where the waveform's color changes above 100 IRE (WFM90D) or 700 mV (WFM91D), provides quick feedback when video levels exceed accepted standards.

The WFM90D/91D also reports presence/absence of EDH packet, FF/AP CRC Errored Seconds and Cable Length Margin Flag. All display controls are selected through simple, on-screen menus.

Whether adjusting a camera's black/white balance or adjusting chroma levels and hues on a time base corrector, the WFM90D/WFM91D Composite Vector Mode provides the needed display controls. Variable, X1 and X5 gain settings and a 360 degree phase shifter are selectable via on-screen menus, as is 75% or 100% bars for the WFM90D. The Analog Audio Mode's voltage vs. time display is useful for setting or checking levels and for detecting certain types of distortions. The audio display, driven via a single XLR connector and a headphone jack, permits listening to the displayed audio.



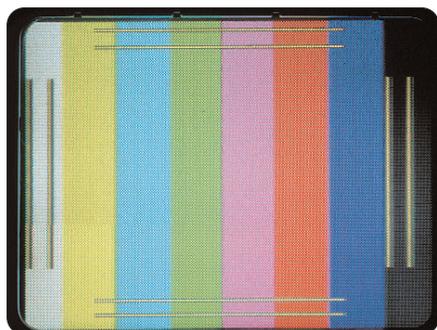
► Photo reprinted courtesy of Video System Magazine, Aug. '94.

WFM90D/WFM91D monitors can be powered with a NiMH battery pack or an AC adapter, which also charges the NiMH battery pack. A 12 volt cigarette lighter adapter may also be used as a power source.

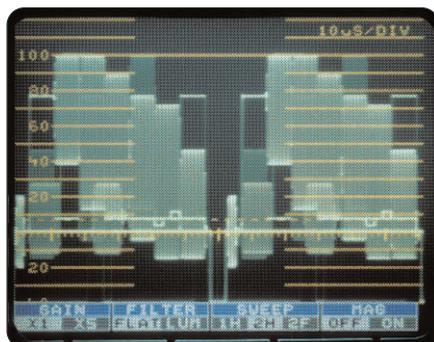
A rugged case with a shoulder strap makes transporting WFM90D/WFM91D monitors easy. Several options are available for the WFM90D/WFM91D monitor, including a viewing hood for operating in bright light and a desk stand that simplifies benchtop use.

# Handheld Waveform Monitors

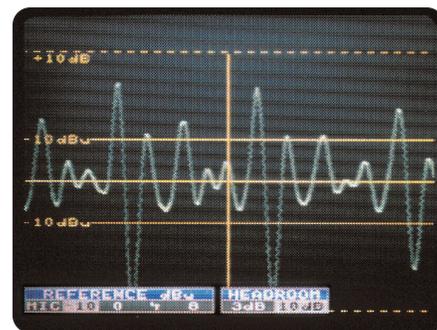
▶ WFM90D • WFM91D



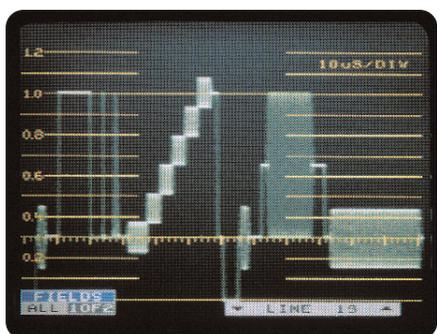
▶ WFM90D/91D Safe Title/Safe Action markers are provided for production monitoring.



▶ WFM90D 2H waveform display.



▶ WFM91D Analog display.



▶ WFM91D line select display.



▶ WFM90D vector display.

## ▶ Characteristics

### Operating Modes

**Picture Mode** – Full-screen, unprocessed representation of incoming video.

**Waveform Mode (Composite/Component)** –

Sweep Modes: 1H, 2H, 2F.

Vertical Gain: X1, X5, variable.

Filters: flat, luminance (low pass).

Alarm: waveform changes color above 100 IRE

(WFM90D) or 700 mV (WFM91D).

Selection of Y'P'bP'r, GBR, Y/C and

Composite Waveform.

**Vector Mode (Composite)** –

Gain: X1, X5, variable.

Phase Control: 360 degree rotation.

Bar Amplitude: 75% or 100%.

**Audio Mode (Analog Only)** –

Voltage vs. Time Display.

Reference Levels: Mic, -10, 0, 4, 8 dBu.

**Waveform-in-picture Mode** – Either Waveform,

Vector or Audio displays may be cut into picture and placed in any corner of display.

## Inputs

**Video** – 1 switchable composite analog or 270 Mbps – SDI.

**External Reference** – 1 composite analog.

**Audio** – 1 analog balanced XLR.

**Power** – 12 V DC or internal battery.

**SDI Reporting** –

- ▶ Cable length margin flag
- ▶ AutoDetect of Analog/270 Mbps – SDI
- ▶ Presence/Absence of EDH packets
- ▶ FF/AP CRC errored seconds

## Outputs

**Video** – 1 composite video. Picture in color, Waveform, Vector and Audio in monochrome.

**Audio** – 1 stereo headphone jack. The mono input drives both headphone channels.

## Certifications

**EMC** – Certified to the EMC Directive 89/336/EEC.

## Physical Characteristics

Dimensions	mm	in.
Height	244	9.6
Width at display	127	5
Width at hand grip	89	3.5
Depth at display	81	3.2
Depth at hand grip	60	2.4
Weight	kg	lbs.
Approximate with batteries	1.4	3

# Handheld Waveform Monitors

▶ WFM90D • WFM91D

## ▶ Ordering Information

### WFM90D

NTSC/270 Mbps – SDI (525) Handheld  
Waveform/Vector/Picture/Analog Audio Monitor.

### WFM91D

PAL/270 Mbps – SDI (625) Handheld  
Waveform/Vector/Picture/Analog Audio Monitor.

**Note:** WFM90D/WFM91D monitors are self-contained instruments.

**All Include:** User manual, carrying pouch with shoulder strap, AC adapter.

**Opt. 01** – NiMH battery.

**Opt. 33** – Travel line package.

**Includes:** Carrying case, NiMH battery pack, desk stand and viewing hood.

### Optional Accessories

**NiMH Battery Pack** – Order 146-0107-01.

**Desk Stand** – Order 386-6787-00.

**Large Carrying Bag** – Order 016-1344-00.

**Viewing Hood** – Order 011-0167-00.

**Service Manual** – Order 071-1143-00.

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