

CMN-91

Multiformat Signal Analyzer



You don't have to look hard to see the benefits of the Videotek® Compact Monitor Series — including the CMN-91 multiformat signal analyzer with integral LCD. The smallest solution on the market for efficient video and audio signal monitoring, the CMN-91 tests signal quality across all DTV formats up to 3 Gb/s. It possesses two SDI inputs and provides selectable waveform, vector, gamut, timing and picture full-screen display.

With the CMN-91, you can meter all 16 channels of embedded audio or one AES input. You can also view the waveform of the composite or tri-level external reference to verify signal integrity and customize the MLT display with independent size and position of waveform, vector and picture.

PRODUCT DETAILS

The CMN-91 is available with either SD, HD/SD or 3G/HD/SD inputs. The SD and HD/SD models are fully upgradeable to 3G/HD/SD.

A standard 11-17 VDC power input and optional battery mount provide flexible powering for both fixed installations and field operation. Low power consumption allows the use of convection cooling for energy-saving, silent operation.

SPECIFICATIONS

Specifications are subject to change without notice.

Inputs

Input Type 2 active looping inputs
Input Connector Type BNC, female
Input Impedance 75 ohms nominal
Signal Source Amplitude 800 mV nominal
Signal Source DC Offset ± 0.5 VDC

SD-SDI Input

Input Return Loss ≤ -25 dB (5 to 270 MHz)
Cable EQ ≥ 300 m, Belden 8281

HD-SDI Input

Input Return Loss ≤ -15 dB (5 to 1.485 GHz)
Cable EQ ≥ 100 m, Belden 8281

3G-SDI Input

Input Return Loss ≤ -10 dB (1.485 to 2.97 GHz)
Cable EQ ≥ 80 m, Belden 1694A

FEATURES

- Available with SD, HD/SD or 3G/HD/SD inputs
- SD and HD/SD can be upgraded to 3G/HD/SD
- Metering of all 16 channels of embedded audio
- One AES audio input
- Two active looping SDI inputs
- Quad display of audio, picture, waveform and vector
- Thumbnail picture with adjustable size and position
- Waveform display of external reference or LTC input
- Overlay display with independent size and position of waveform, vector and picture
- DVI-D external display output
- 99 presets
- Standard four-pin XLR DC power input (AC adapter supplied)
- Anton-Bauer or IDX battery mount options
- Convection cooled, silent operation (no fan)
- Front-panel headphone jack
- Front-panel USB port for save/recall of presets, screen captures and SDI captures
- Dual rackmount option
- Portable case with handle and tripod mount option

The CMN-91 is extremely lightweight and is available as portable or rack mountable. The unit has a compact half-rack footprint less than seven inches deep — a short mounting depth that integrates easily in today's space-constrained facilities.

External Reference Input

Input Type Passive looping
Input Connector Type BNC, female
Input Impedance 75 ohms nominal
Blackburst Input Amplitude NTSC: sync and burst 286 mV nominal
IPAL: sync and burst 300 mV nominal
Blackburst Input Amplitude
Tolerance ± 6 dB
Tri-level Sync Amplitude 600 mV pk-pk
Tri-level Sync Amplitude Tolerance ± 3 dB
Return Loss ≤ -40 dB

Digital Audio Input

Audio Formats AES/EBU, embedded
AES Input Connector type 1 BNC, female
AES Input Impedance 75 ohms nominal
AES Input Return Loss > 25 dB (0.1 to 6 MHz)
AES Input Level 0.2 to 2 V
Input Sample Rate AES, 32 kHz, 44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz
(internal sample rate converted to 48 kHz)

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SDI Output

Output Connector Type	BNC, female
Output Impedance	75 ohms
Output Return Loss	≤-15 dB (5 MHz to 1.485 GHz) ≤-10 dB (1.485 to 2.97 GHz)
Output Signal Level	800 mV ±10%
Output DC Offset	0 V ±0.5 V

Analog Monitoring Output — Headphone

Number/Connector	1 stereo headphone jack, 1/8 in. (3.5 mm)
Load Impedance	16 ohms nominal
Maximum Output Level	44 mW RMS
Total Harmonic Distortion and Noise (THD+N)	≤-65 dB
Level Adjustment	From maximum output level to 0 mV with front-panel control
Source	Any audio input pair may be selected to appear on the headphone output

DVI Output

Output Connector	DVI-I connector supporting DVI-D
Output Resolution	1024x768 (XGA)
H-Sync Rate	48.363 Hz ±1%
V-Sync Rate	60.004 Hz ±1%

Communication Interfaces

Ethernet	1 Ethernet port, RJ-45 connector, 10/100Base-T
USB	1 USB 2.0 host port (except CMN-41L)
LTC/GPIO	1 LTC/GPIO connector 15-pin female D-sub
LTC	Nominal input amplitude: 2 V pk-pk
4 General Purpose Inputs	Input impedance: 10 K ohms returned to +3.3 VDC
1 General Purpose Output	Relay closure

Waveform/Vector Display — SDI Inputs

General	A full-screen display for viewing an input as picture, waveform, vector, audio, alarm status, or timing
Waveform	Composite; YC _B C _R or RGB, parade/overlay of like formats
Sweep time base	1H or 2H with x1, x5, and x10 horizontal magnification 1 V or 2 V with x1, x5, and x25 horizontal magnification
Waveform accuracy	≤±0.5%
Vector	C _B vs. C _R for HD or SD
Vector accuracy	≤1°
Gamut	Encoded or RGB gamut displays with upper and lower limit selection
Audio	2, 4, 6, 8 or 16-channels displayed simultaneously

Waveform Display — External Reference and LTC

Waveform Amplitude Accuracy	±5%
Waveform Frequency Response	25 Hz to 4.5 MHz within ±5% of amplitude at 50 kHz

Power Requirements

Power connector	15 VDC nominal 11 VDC minimum, 17 VDC maximum
Power consumption	20 W nominal
Over-voltage protection	±50 VDC nominal

Mechanical

Dimensions (H X W X D)	5.22 x 8.46 x 5.8 in. (13.26 x 21.49 x 14.73 cm)
Weight	5.0 lbs (2.27 kg)
Battery mount (optional)	Anton-Bauer Gold-mount battery bracket with InterActive connection IDX V-mount battery mount with Digi-View connection

Environmental

Operating temperature	32° to 122° F (0° to 50° C)
Storage temperature	-22° to 149° F (-30° to 65° C)
Humidity (non condensing)	Operating: 20% to 80% Non-operating: 5% to 90%
Transportation	24 in. (9.5 cm) impact-drop survivable in original factory packaging
Operating Altitude	6562 ft (2000 m)
Pollution Degree	2

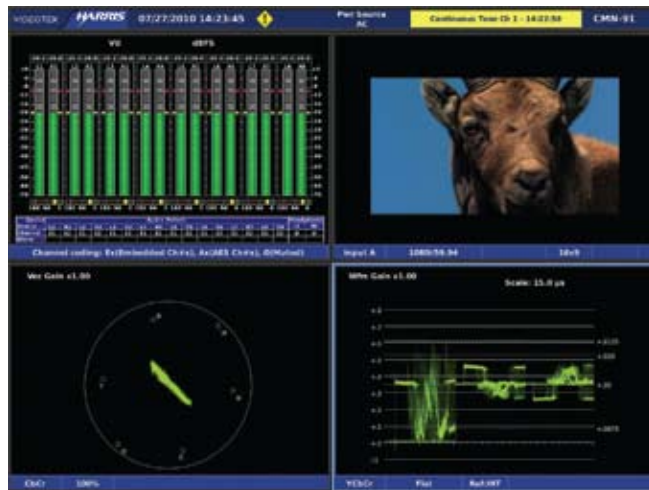
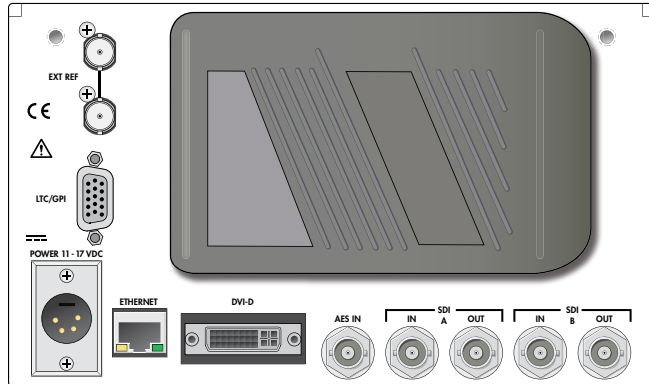
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TEST AND MEASUREMENT // VIDEO TEST

IMAGES/DIAGRAMS

Back Panel



CMN-91 Compact Monitor screen capture with quad display showing picture, audio, waveform and vector.



Compact Monitor Series screen capture in Overlay mode with waveform, vector and PiP display. Each component of the display is individually resizable.

ORDERING INFORMATION

CMN-91	Compact Monitor Series multiformat signal analyzer with integral LCD, HD/SD-SDI, 3RU, half rack, upgradeable to 3 Gb/s
CMN-91-3GB	Compact Monitor Series multiformat signal analyzer with integral LCD, 3G/HD/SD-SDI, 3RU, half rack
CMN-91-S	Compact Monitor Series multiformat signal analyzer with integral LCD, SD-SDI, 3RU, half rack, upgradeable to HD and 3 Gb/s
CMN-AB	Battery mount for CMN-91, Anton-Bauer gold mount
CMN-AB-F	Battery mount for CMN-91, Anton-Bauer gold mount, field upgrade
CMN-H23GB-F	Upgrade CMN-41 or CMN-91 to support 3 Gb/s, field upgrade
CMN-IDX	Battery mount for CMN-91, IDX V-mount
CMN-IDX-F	Battery mount for CMN-91, IDX V-mount, field upgrade

CMN-IN-DRC2	Hardware kit to mount a CMN-91 in a DRC-2A rackmount
CMN-S23GB-F	Upgrade CMN-41-S or CMN-91-S to support HD and 3 Gb/s, field upgrade
CMN-S2H-F	Upgrade CMN-41-S or CMN-91-S to support HD, field upgrade
BLK-1	Blank panel for DRC-1, DRC-2, DRC-2A or DRC-3
DRC-3	Double rackmount case for CMN-91, use BLK-1 to fill unused space if needed
PTC-3A	Portable case with handle and tilt bail for CMN-91 and CMN-LA
PTC-3-CC	Padded carrying case for CMN-91 mounted in a PTC-3
PTC-3-SC	PTC-3-CC padded carrying case in a hardshell wheeled shipping case