CMN-41
Multiformat Onscreen Monitor

Meet the Videotek® Compact Monitor Series — including the CMN-41 family of multiformat onscreen monitors. The smallest solution on the market for efficient video and audio signal monitoring, the CMN-41 tests signal quality across all DTV formats up to 3 Gb/s. It’s available in three versions: the CMN-41 with DVI-D output, the CMN-41L with a blank front panel and DVI-D output, and the CMN-MV with 720p/59.94 SDI output. Each model possesses two SDI inputs and provides selectable waveform, vector, gamut, timing and picture full-screen display.

With Videotek compact monitors 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
All three CMN-41 units are available with 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 provides 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

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
.................................. PAL: sync and burst 300 mV nominal

Output DC Offset ............. 0 V ±0.5 V

SDI Output
Output Connector Type .......... BNC, female
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%

Blackburst Input Amplitude .. ±6 dB
Tolerance
Tri-level Sync Amplitude ...... 600 mV pk-pk
Tri-level Sync Amplitude Tolerance  ±3 dB
Return Loss .................. ≤-40 dB 100 kHz to 5 MHz

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)

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 (CMN-41 and CMN-41L)
- 720p/59.94 SDI display output (CMN-MV)
- 99 presets
- Standard four-pin XLR DC power input (AC adapter supplied)
- Convection cooled, silent operation (no fan)
- Front-panel USB port for save/recall of presets, screen captures and SDI captures (except CMN-41L)
- Dual rackmount option available
- Desktop case with tilt bail option available

The CMN-41 can be mounted in either a dual rackmount tray or a standalone desktop case. Each package has a compact half-rack footprint less than seven inches deep — a short mounting depth that integrates easily with today’s LCD monitors.
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Analog Monitoring Output — Headphone (except CMN-41L)
- 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 (except CMN-MV)
- 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
- Four General Purpose Inputs: Input impedance: 10 K ohms returned to +3.3 VDC
- One 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_LC, or RGB, parade/overlay of like formats
- Sweep time base: 1 or 2H with x1, x5 and x10 horizontal magnification
- 1 or 2 V with x1, x5 and x25 horizontal magnification
- Waveform accuracy: ≤±0.5%
- Vector: Cb vs. Cr 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
- Connector: 15 VDC nominal
- Minimum: 11 VDC, Maximum: 17 VDC
- Power Consumption: 15 W nominal
- Over-Voltage Protection: ≤±50 VDC nominal

Environmental
- Operating Temperature: 32°F to 122°F (0°C to 50°C)
- Storage Temperature: -22°F to 149°F (-30°C 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

IMAGES/DIAGRAMS
CMN-41L Front Panel
CMN-MV Back Panel
CMN-41 and CMN-MV Front Panel
CMN-41 Compact Monitor screen capture with quad display
showing picture, alarms, gamut and timing.

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-41 . . . . . . . . . . . . . . . . . . . Compact Monitor Series multiformat onscreen
monitor, HD/SD-SDI inputs, DVI-D output, 1RU, half rack, upgradeable to 3 Gb/s

CMN-41-3GB . . . . . . . . . . . . . . . Compact Monitor Series multiformat onscreen
monitor, 3G/HD/SD-SDI inputs, DVI-D output, 1RU, half rack

CMN-41-S . . . . . . . . . . . . . . . . . . . Compact Monitor Series multiformat onscreen
monitor, SD-SDI inputs, DVI-D output, 1RU, half rack, upgradeable to HD and 3 Gb/s

CMN-41L . . . . . . . . . . . . . . . . . . . . Compact Monitor Series multiformat onscreen
monitor with no front-panel controls. HD/SD-SDI inputs, DVI-D output, 1RU, half rack (requires
RCU-CMS or web page for control)

CMVS-DVI . . . . . . . . . . . . . . . . . . Compact Monitor and Signal generator test set,
includes CMN-41-3GB (DVI OUTPUT), VSG-401 and the DRT-4

CMN-MV . . . . . . . . . . . . . . . . . . . Compact Monitor Series multiformat onscreen
monitor, HD/SD-SDI inputs, SDI output, 1RU, half rack, upgradeable to 3 Gb/s

CMN-MV-3GB . . . . . . . . . . . . . . . . . Compact Monitor Series multiformat onscreen
monitor, 3G/HD/SD-SDI inputs, SDI output, 1RU, half rack

CMN-MV-S . . . . . . . . . . . . . . . . . . . Compact Monitor Series multiformat onscreen
monitor, SD-SDI inputs, SDI output, 1RU, half rack, upgradeable to HD and 3 Gb/s

CMVS-SDI . . . . . . . . . . . . . . . . . . Compact Monitor and Signal generator test set,
includes CMN-MV-3GB (SDI OUTPUT), VSG-401 and the DRT-4

CMN-H23GB-F . . . . . . . . . . . . . . . Upgrade CMN-41 or CMN-MV to support 3 Gb/s,
field upgrade

CMN-S23GB-F . . . . . . . . . . . . . . . . Upgrade CMN-41-S or CMN-MV-S to support HD
and 3 Gb/s, field upgrade

CMN-S2H-F . . . . . . . . . . . . . . . . . Upgrade CMN-41-S or CMN-MV-S to support HD,
field upgrade

RCU-CMS . . . . . . . . . . . . . . . . . . . Remote control panel

BLK-4 . . . . . . . . . . . . . . . . . . . . . . Blank panel for left or right side of DRT-4

DRT-4 . . . . . . . . . . . . . . . . . . . . . . Double rackmount tray for CMN-41 and CMN-MV,
use BLK-4 to fill unused space if needed

PTC-4 . . . . . . . . . . . . . . . . . . . . . Desktop case for CMN-41, CMN-MV and RCU-CMS