

VTM Series - SPECIFICATIONS

VIDEO

HD/SD-SDI INPUT MODULE

Two- (2) dual standard inputs accepting Standard definition, SMPTE 259M-C formats or High definition SMPTE 292M, 372M (4:4:4 Y Cb Cr) formats including: 525/59.94, 625/50, 1080i/60, 1080i/59.94, 1080i/50, 1080p/30, 1080p/29.97, 1080p/25, 1080p/24, 1080p/23.98, 1080p/30sF, 1080p/29.97sF, 1080p/25sF, 1080p/24sF, 1080p/23.98sF, 720p/60, 720p/59.94, 720p/50, 720p/30, 720p/29.97, 720p/24, and 720p/23.98

DATA RATE:

270 Mb/s, 1.485 Gb/s, auto detect

CONNECTORS:

4 BNCs, Hi-Z passive looping

LEVEL:

800 mV, nominal

INPUT EQ:

270 Mb/s: 250 meters of 8281

1.485 Gb/s: 100 meters of 8281

RETURN LOSS:

≤-15 dB 5MHz to 1.485 GHz

SDI MONITOR OUTPUT:
Follows the selected digital input

DATA RATE:

270 Mb/s and 1.485 Gb/s

CONNECTOR:

BNC

LEVEL:

800 mV, nominal

SD-SDI INPUT MODULE

Two (2) SMPTE 259M-C inputs, auto detect 525/59.94, 625/50,

INPUT IMPEDANCE:

Hi-Z, looping

INPUT EQ:

Up to 250 meters of 8281 at 270 Mb/s

RETURN LOSS:

≤-25 dB 5 MHz to 270 MHz

ANALOG INPUT MODULE

Two (2) NTSC/PAL composite video, auto detect

SIGNAL LEVEL:

1V p-p

INPUT IMPEDANCE:

Hi-Z, looping

RETURN LOSS:

≤-45 dB 100 kHz to 5 MHz

DC Restore Clamp Time: Back Porch

DC restorer level shift due to pres. or absence of burst: ≤1 IRE/ Unit

DC restorer level shift with change from 50% APL to 10% APL or to 90% APL: ≤1 IRE/ Unit

DC restorer 60Hz attenuation:

Slow: ≤ 5%

Fast: ≥ 90%

Maximum input amplitude: (AC +DC)

+2.5V to -1.5V, DC restorer off,

± 3.0V, DC restorer on

REFERENCE:

Analog Blackburst, NTSC/PAL composite video, Tri-level sync

auto detect (per SMPTE 274M)

LEVELS:

286 mV p-p ± 6 dB (blackburst NTSC)

300 mV p-p ± 6 dB (PAL sync and burst)

600mV p-p ± 3 dB (Tri level Sync)

IMPEDANCE:

Selectable Hi-Z looping or 75 Ω

Terminating

RETURN LOSS:

≤-40 dB, 100 kHz to 5 MHz

CONNECTORS:

BNC

DVI-I OUTPUT

DIGITAL LEVELS:

Per DDWG DVI rev1

R, G, B LEVELS:

Selectable 0.7 or 1 V p-p, nominal

PIXEL RATE:

65 Mp/s

R, G, B IMPEDANCE: 75Ω

HORIZONTAL SYNC:

Negative TTL pulse

@ 48,363 Hz ± 1%

VERTICAL SYNC:

Negative TTL pulse

@ 60,004 Hz ± 1%

DISPLAY ACCURACY:

± 1% waveform

± 1° vector

± 37 nS Timing Digital

± 300 nS Timing Analog

CONNECTOR:

29-pin DVI-I, female

AUDIO OPTIONS

INPUTS (ANALOG):

Eight monophonic or four stereo channels, balanced or unbalanced

MAXIMUM INPUT LEVEL:

+24 dBu

INPUT CONNECTOR:

37-pin D-sub, male

IMPEDANCE:

> 20kΩ

INPUTS (DIGITAL):

Four AES/EBU serial digital pairs, Dolby® E or AC-3 stream with input expansion option to eight AES/EBU and 16 embedded audio channels.

INPUT CONNECTORS

Four or eight, BNC, female

IMPEDANCE:

75Ω

OUTPUTS (ANALOG):

Eight monophonic or four stereo channels, balanced or unbalanced,

follows selected audio input. Dolby

inputs produce a two channel mix

down and/or full 8 channel decode

OUTPUT LEVEL:

+24 dBu max.

+6 to -50 dB adjustable

For digital audio, -20 dBFS

produces a +4 dBu analog output

level

OUTPUT CONNECTOR

37-pin D-sub, male, shared with

inputs

IMPEDANCE:

10 Ω unbalanced or

20 Ω balanced, nominal

SIGNAL TO NOISE:

100 dB (relative to signal level out

of +24 dBu), typical

OUTPUTS (DIGITAL):

4 AES/EBU and one Dolby® Digital,

Dolby® E, or AES stream embedded

in the selected digital video source

OUTPUT CONNECTOR:

Four BNC, female shared with input

IMPEDANCE: 75Ω

CONTROL

GPI:

Nine total with four input and five

preset recall selections or

individually user configured

GPO:

Two Alarms, user configured

CONNECTOR:

26-pin HD (high density) D-sub,

female

INPUT IMPEDANCE:

10 kΩ returned to +5 VDC

ALARM OUTPUT:

Relay closure

MAXIMUM RELAY CURRENT:

350 mA @30VDC

EXTERNAL ROUTER CONTROL:

One RJ-11 female, for use with

Videotek RS-12A router for input

expansion

PERIPHERAL INTERFACE:

USB 1.1 supporting storage

devices, mouse and keyboard

CONNECTOR:

USB 1.1, Type A, female

COMMUNICATIONS:

Ethernet port - 10/100 Base-T

CONNECTOR:

RJ-45 Ethernet female

TIME CODE

Input:

LTC, Ancillary Time Code

(HD only), DVITC extracted

from SD inputs

DISPLAY

GENERAL:

A quadrant display for

viewing an input on up to

four different displays as

picture, waveform, vector,

audio, alarm status, timing,

optional eye pattern,

simultaneously or

individually as a full screen

display of each separately.

Additional data analyzer

display for pixel analysis.

Also view multiple

waveform and vectors of

the same or different inputs

WAVEFORM:

Composite, YCbCr or RGB,

parade/overlay of like

formats

SWEEP TIME BASE:

1H or 2H, with x1, x5 and

x10 horizontal magnification

1V or 2V with x1, x5 and

x25 horizontal magnification

WAVEFORM ACCURACY:

≤ 1%

WAVEFORM FREQUENCY

RESPONSE

ANALOG: 25 Hz to 5.75 MHz

within ± 1% of amplitude

at 50 kHz

SD: ± 0.5% to 5.75 MHz Y

± 0.5% to 2.50 MHz Cb, Cr

HD: ± 0.5% to 30 MHz Y

± 0.5% to 15 MHz Cb, Cr

EYE (OPTIONAL):

SWEEP TIME BASE:

Overlay (3 Eye) or 10 Eye

(SD), 20 Eye (HD)

FILTERS:

10 Hz, 100 Hz, 1 kHz

DISPLAY ACCURACY:

± 1%

MEASUREMENT ANALOG

BANDWIDTH:

250 kHz to 2250 MHz, -3 to

+1 dB relative to 750 MHz

JITTER OVERSHOOT:

≤ 20% for all frequencies up

to 300 kHz

INTRINSIC JITTER:

< 70 ps for HD

< 150 ps for SD

INTRINSIC WANDER:

< 150 ps for HD

< 300 ps for SD

JITTER:

Bar graph showing jitter

magnitude

DISPLAY RANGE:

0 UI to 1.0 UI

VECTOR:

R - Y vs. B - Y for Analog

Cb vs. Cr for HD or SD

VECTOR ACCURACY:

≤ 1°

GAMUT:

Encoded or RGB Gamut

displays with upper and

lower limit selection

AUDIO (OPTIONAL):

2, 4, 6 or 8 channels

displayed simultaneously

POWER

REQUIREMENTS

POWER INPUT:

90 to 260 VAC, 50/60 Hz

POWER CONSUMPTION:

180 VA

MECHANICAL

DIMENSIONS:

Height: 1.75" (4.5 cm)

Width: 19.0" (48.3 cm)

Depth: 19.75" (50.2 cm)

ENVIRONMENTAL

OPERATING TEMPERATURE:

0° to 50°C

STORAGE TEMPERATURE:

-40° to 65°C

HUMIDITY:

85% maximum (non-condensing)

OPERATING ALTITUDE:

To 10,000 feet (3,050 m) above sea

level

STANDARD

ACCESSORIES

Operator's manual

One 26-pin D-sub, male for GPI/LTC

breakout

DVI to VGA adapter

Rackmount Kit

Power Cord

OPTIONS

VTM-OPT 40: Graphic Display Engine

affords unit display capability of up to

four (4) - input source(s) at a time.

(VTM operation requires VTM-OPT 10

or VTM-OPT 40)

VTM-OPT 10: Graphic Display Engine

affords unit display capability of one (1) -

input source at a time.

(VTM operation requires VTM-OPT 10

or VTM-OPT 40)

VTM-OPT AAP: Advanced Analysis

Package. Adds Data Analyzer function

to VTM-OPT 10 and VTM-OPT 40

graphic display engine.

VTM-OPT HD/SD: Two (2) looping

SMPTE 292M (HD-SDI) and SMPTE

259M-C (SD-SDI) inputs, auto detect

and monitor output.

VTM-OPT EYE-2: Two (2) active

looping SMPTE 292M (HD-SDI) and

SMPTE 259M-C (SD-SDI) inputs, auto

detect with EYE pattern and monitor

output.

VTM-OPT SD: Two (2) looping SMPTE

259M-C (SD-SDI) inputs, auto detect.

VTM-OPT EYE-1: Two (2) active

looping SMPTE 259M-C (SD-SDI)

inputs, auto detect with EYE pattern and

monitor output.

VTM-OPT ACV-2: Two (2)