

HFD-2004

3G/HD/SD-SDI Analog Audio Demultiplexer with Frame Sync

The HFD-2004 is a 3G/HD/SD-SDI analog audio demultiplexer with frame sync which is used in i-MOD series frames. The HFD-2004 demultiplexer offers one 3G/HD/SD-SDI (2.97Gbps, 2.97/1.001Gbps, 1.485Gbps, 1.485/1.001Gbps, 270Mbps) digital video input, 1 fiber signal input, four analog audio outputs and provides one fiber signal output and two 3G/HD/SD-SDI digital video outputs. H & V phase adjustment and automatic alignment. The HFD-2004 demultiplexer extracts digital audio signal from 3G/HD/SD-SDI digital video signal with embedded audio. De-embedding channels are selectable and de-embedded audio can output to designated port. De-embedding modes are selectable, including L/R swap, copy and mix. Input audio gain is adjustable within ± 20 dB. The 3G-SDI input signal supports 328 ft (100 m)/656 ft (200 m)/984 ft (300 m) cable equalization compensation (Belden 1694A cable or equivalent cables).

Status presence indication and parameters manual adjustment are provided via the LED indicators, selector and paddle switches located on the module edge. 1RU and 2RU back modules are provided for HFD-2004 modules when used in 1RU and 2RU i-MOD series frames, respectively.

SPECIFICATIONS

Specifications are subject to change without notice.

DIGITAL VIDEO INPUT

Signal Format.....	1080P/50,1080P/59.94,1080P/60; 1080I/50,1080I/59.94,1080I/60; 720P/23.98,720P/24,720P/25, 720P/29.97,720P/30,720P/50, 720P/59.94,720P/60; 1080P/25, 1080P/29.97,1080P/30; 525i/59.94,625i/50
Signal Standard.....	SMPTE 259M, SMPTE 272M, SMPTE 292M, SMPTE 424M
Connector.....	BNC (x1)
Impedance.....	75 ohms
Return Loss.....	SD > 18 dB @ 270 MHz HD > 15 dB @ 1.485 GHz/2.97 GHz
Cable EQ.....	SD<984 ft (300 m) HD<656 ft (200 m) 3Gbps<328 ft (100 m) (Belden 1694A or equivalent cables)

REF VIDEO INPUT

Signal Format.....	BB/HD tri-level Sync
Connector.....	BNC(x2),hi-z loop-thru supported

DIGITAL VIDEO OUTPUT

Signal Format.....	1080P/50,1080P/59.94,1080P/60; 1080I/50,1080I/59.94,1080I/60; 720P/23.98,720P/24,720P/25, 720P/29.97,720P/30,720P/50, 720P/59.94,720P/60;1080P/25, 1080P/29.97,1080P/30; 525i/59.94,625i/50
Signal Standard.....	SMPTE 259M, SMPTE 272M, SMPTE 292, SMPTE 424M
Connector.....	BNC (x2)
Impedance.....	75 ohms
Return Loss.....	SD > 18 dB @ 270 MHz HD > 15 dB @ 1.485 GHz/2.97GHz
Amplitude.....	800 mVp-p $\pm 10\%$
Alignment Jitter.....	100kHz~300MHz 3Gbps: < 0.3 UI HD/SD: < 0.2 UI
Rise/Fall Time.....	SD:400~1500ps; HD: <270 ps 3Gbps: < 135ps 3G: < 135ps

FEATURES

- One 3G/HD/SD-SDI video input signal with embedded audio
- SMPTE 259M, SMPTE 272M, SMPTE 292M and SMPTE 424M standard
- Four analog audio de-embedding
- 1 fiber input and output, selectable
- H & V phase adjustment and automatic alignment
- Output audio gain selectable within ± 20 dB
- De-embedding channel selectable; de-embedded audio can output to designated port
- De-embedded mode selectable, including L & R swap, copy and mixing
- Automatic detection of input video and audio loss
- Cable EQ for up to 328 ft (100 m) (2.97Gbps)/656 ft (200 m) (1.485Gbps)/984 ft (300 m) (270Mbps)
- Stores settings in non-volatile memory
- Hot-swappable
- Computer control supported

Overshoot	<10% amplitude
H Adjustment Precision	$\pm 1/2$ H
V Adjustment Precision	$\pm 1/2$ F
Power	7 W

ANALOG AUDIO OUTPUT

Signal Format.....	Analog audio (balanced)
Connector	3Pin (x4)
Level	+20dB (maximum)
Impedance.....	>33k Ω
THD+N	<0.03%
Frequency Response	± 0.5 dB, 20 Hz ~ 20 kHz
Timing Jitter	10 Hz 3Gbps: <2.0 UI HD: < 1.0 UI SD: < 0.2 UI
Crosstalk.....	<-90dB 1kHz~20kHz

FIBER INPUT

Connector	LC
Signal Format.....	1080P/50,1080P/59.94,1080P/60; 1080I/50,1080I/59.94,1080I/60; 720P/23.98,720P/24,720P/25, 720P/29.97,720P/30,720P/50, 720P/59.94,720P/60;1080P/25, 1080P/29.97,1080P/30; 525i/59.94,625i/50
Signal Standard.....	SMPTE 259M, SMPTE 272M, SMPTE 292M, SMPTE 424M

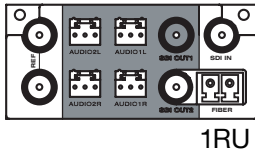
FIBER OUTPUT

Connector.....	LC
Signal Format.....	1080P/50,1080P/59.94,1080P/60; 1080I/50,1080I/59.94,1080I/60; 720P/23.98,720P/24,720P/25, 720P/29.97,720P/30,720P/50, 720P/59.94,720P/60;1080P/25, 1080P/29.97,1080P/30; 525i/59.94,625i/50
Signal Standard.....	SMPTE 259M, SMPTE 272M, SMPTE 292M, SMPTE 424M
H Adjustment Precision	$\pm 1/2$ H
V Adjustment Precision	$\pm 1/2$ F

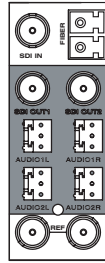
ENVIRONMENTAL

Operating Temperature	32° ~ 104° F (0° ~ 40° C)
Relative Humidity	10% ~ 90%

BACK MODULES



1RU



2RU

Note: Fiber connectors selectable.

BLOCK DIAGRAM

