

HD292 System Specifications

Analyzer

VIDEO

Inputs	HDSI Input (SMPTE 292M), GPI Trigger (TTL level)
Outputs	HDSI Output (no specifications, monitor only), Error Trigger (TTL level)
Video Formats, Frame Rates	1080-I/30, 29.97 Hz and 30.00 Hz 1080-I/25, 25.00 Hz 1035-I/30, 29.97 Hz and 30.00 Hz <u>Optional:</u> 720-P/60, 59.94 and 60.00 Hz 720-P/50, 50Hz 720-P/30, 29.97 and 30.00 Hz 720-P/25, 25.00 Hz. 1080-P/24, 23.98 and 24.00 Hz 1080-P/25, 25.00 Hz 1080-P/30, 29.97 and 30.00 Hz 1080-SF/24, 23.98 and 24.00 Hz 1080-SF/25, 25.00 Hz 1080-SF/30, 30.00 Hz
Standards	SMPTE 240M, SMPTE 260M, SMPTE 274M, SMPTE 292M, SMPTE 296M

ANALYSIS

Picture Display	Select F1, F2 or both, select FF or AP only
1H Waveform Display	Line select, line window maximum 10 lines
Frame Error Statistics	Total count, error free interval
Error Capture Detection	EAV position, SAV position, Checksum fail, F-bit position, V-bit position, line number, AP data low, AP data high, XYZ parity, TRS value, ANC parity, ANC overrun, Audio bit error
Frame Error Detection	Sync Loss, EAV position, SAV position, Checksum fail, F-bit position, V-bit position, line number, AP data low, AP data high, XYZ parity, TRS value, ANC parity, ANC overrun, AUDIO bit error
Error Logging	Up to 100,000 errored events
Error Detective	Up to 512,000 pixels captured
Error Detective Triggers	Mask any error types
Vectorscope	Line select, line window maximum 10 lines. Displays CB/CR color difference signals on an X-Y Cartesian coordinate plane. Includes graticule targets for 75% and 100% saturation color bars.

ANALYSIS (Continued)

Eye Diagram	With Eye Diagram/Jitter FFT Option: Digitize multiple bit cells of serial waveform and display as eye diagram. Multiple voltage and time zoom levels. Interactive panning, persistence, intensity, and cursor controls.
Jitter FFT	With Eye Diagram/Jitter FFT Option: 10 Hz PLL bandwidth recovered clock used as reference to calculate jitter levels on the incoming signal. Jitter sampled and processed with FFT algorithm to produce a frequency domain histogram of signal jitter up to 500 kHz.
Time Code	Decodes SMPTE RP188, RP196, and RP215 time code formats

Generator**VIDEO OUTPUT**

HDSDI Output A	75 Ω BNC connector for HDSDI output signal compliant with SMPTE 292M
HDSDI Output B	75 Ω BNC connector for HDSDI output signal. When configured with the Stress option, this output is used for serial stream jitter insertion. Therefore, the nominal jitter on this output may be slightly higher than outputs A or C. Otherwise, this signal is compliant with SMPTE 292M.
Stress	75 Ω BNC connector for HDSDI output signal compliant with SMPTE 292M

CONTROLLER

EXT VGA	15-Pin D connector for external VGA display
Mouse	9-Pin D connector for RS-232C mouse
Keyboard	Mini keyboard connector for PC-style keyboard
Remote	9-Pin D connector for RS-232C remote control operations
Printer	Centronix parallel port for printer
Ethernet	10-Base-T and Thin-net Ethernet connectors for networking

SYSTEM INPUT/OUTPUT

TRIG OUT	50 Ω BNC connector for TTL-level selectable pixel-wide or line-wide pulse.
INJ GPI Input	50 Ω BNC connector for TTL-level general purpose input that triggers digital errors to be injected using the Stress option
AES OUT	75 Ω BNC connector for "S/PDIF" format signals transporting either AES channels 1+2 or channels 3+4
EXT REF IN	75 Ω BNC connector for genlock reference. Signal may be tri-level (SMPTE 240M) or NTSC/PAL analog composite. The frame-rate of the input signal must match that of the source format being generated

SYSTEM INPUT/OUTPUT (Continued)

Source Formats, Frame Rates	1080-I/30, 29.97 Hz and 30.00 Hz 1080-I/25, 25.00 Hz 1035-I/30, 29.97 Hz and 30.00 Hz <i>Optional:</i> 720-P/60, 59.94 and 60.00 Hz 1080-P/24, 23.98 and 24.00 Hz 1080-P/25, 25.00 Hz 1080-P/30, 29.97 and 30.00 Hz 1080-SF/24, 23.98 and 24.00 Hz
Standards	SMPTE 240M, SMPTE 260M, SMPTE 274M, SMPTE 292M, SMPTE 296M

Technical**POWER**

Mains Voltage Range	100-240 V _{AC}
Mains Frequency	47–83 Hz
Power Consumption	200 Watts
Ethernet Connector	10/100 baseT

SERIAL DIGITAL INTERFACE

Video Inputs	1
Input Type	75 Ω unbalanced Loop-through
Launch Amplitude Accommodation	HD-SDI input per SMPTE 292M

PICTURE MONITOR OUTPUT

Signal Format, BNC Outputs	75 Ω unbalanced Loop-through
Signal Format, VGA DSUB Outputs	Same as screen display

EYE PATTERN DISPLAY

Signal Bandwidth	50 kHz to 2.5 GHz at –3 dB point (3.5 GHz typical)
Risetime	100 psec maximum for 20–80%
Intrinsic Jitter	16 psec p-p typical
Jitter Attenuation, Two Selectable Modes	10 Hz HPF <10% for frequencies >20 Hz, –3 dB at ≈10 Hz 100 Hz HPF <10% for frequencies >3000 Hz, –3 dB at ≈100 Hz

JITTER DISPLAY

Type	Recovered Clock PLL
Digital Readout	Accuracy: 0.1 UI, ±10% of reading
Jitter Waveform	Accuracy: 5% of reading ±15 psec

FFT SPECTRUM DISPLAY

Resolution	50 Hz at 1 Hz resolution
	500 Hz at 10 Hz resolution
	5 kHz at 100 Hz resolution
Amplitude	Selectable between picoseconds and %UI
	Accuracy: 5% of reading ± 15 psec
Measurement method	Automatic for frequency and amplitude, or cursors
SMPTE Standard Masking	Yes

TIME CODE DISPLAY

Type	Embedded per SMPTE RP188, RP196, and RP215
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Platform

COMPUTER

Processor	AMD Athalen 400 (Minimum)
Operating System	Microsoft WindowsNT®
RAM Memory	64 MB (Minimum)
Hard Disk	2 GBytes (Minimum)
Color TFT LCD	8.4 inch diagonal, 640x480 pixels, 4096 colors
Floppy Disk	1.44 MB, DOS-compatible
Keyboard	Compact size
Computer Connectors	Serial Port, Parallel Port, Keyboard, External VGA, Ethernet
Networking	Protocols supported by Microsoft WindowsNT®

ENVIRONMENTAL

Operating Temperature	0° to 40° C
Storage Temperature	30° to 75° C