

SEL-DDA1-EES/-REL

Selenio Dual D to A Converter, Dual DA Module

The Selenio SEL-DDA1-xxx provides multiple functions: Conversion from SDI (270 Mb/s) to analog composite (dual channels) adds NTSC/PAL and PAL-M outputs to the Selenio platform. The DDA can be used as a single / dual distribution amplifier, small routing switcher SDI / ASI and electrical fiber optic converter.

Features

The DDA may be placed in any open Selenio slot.

- Dual D to A conversion
- Single/Dual SDI/ASI DA function
- Single/Dual SDI/Monitoring DA function (for SD)
- Small SDI/ASI routing switcher function
- Optional relay bypass (dual-channel capability)
- Optional SFP for optical input and output
- Optional MAGELLAN remote panels for control and monitoring

Specifications

Specifications and designs are subject to change without notice

SDI INPUT	
Number of Inputs	1 (-OOS back module) 2 (-EES, -REL, and -EOS back modules)
Standard	1080p (SMPTE 424M) 3G HD-SDI 1080i/p (SMPTE 292M) HD-SDI 720p (SMPTE 296M) HD-SDI 525/625 component (SMPTE 259M-C, 270 Mb/s) SD-SDI
Frame Rate	1080i/p/psf: 23.98, 24, 25, 29.97, 30, 50, 59.94, 60 Hz 720p: 50, 59.94, 60 Hz 525/625
Connector	(High-Density) HD-BNC
Impedance	75 ohms
Return Loss	>15 dB to 1485 MHz >10 dB from 1485 to 2790 MHz
Equalization	3G: Adaptive cable equalization for up to 459 ft (140 m), typical, of Belden 1694A coaxial cable; 328 ft (100 m) for SEL-DDA1-REL version, typical** HD: Adaptive cable equalization for up to 656 ft (200 m) typical, of Belden 1694A coaxial cable; 524 ft (160 m) for SEL-DDA1-REL version, typical** SD: Adaptive cable equalization for up to 984 ft (300 m) typical, of Belden 8281 coaxial cable; 1,312 ft (400 m), typical, of 1694A Belden 1694A coaxial cable**
3G/HD/SD-SDI OUTPUT VIDEO	

3G/HD/SD-SDI OUTPUT VIDEO	
Number of Outputs	2 (-OOS back module) 4 (-EOS back module) 7 (-OES back module) 8 (-EES and -REL back modules)
Standard	1080p (SMPTE 424M) 3G HD-SDI 1080i/p (SMPTE 292M) HD-SDI 720p (SMPTE 296M) HD-SDI 525/625 component (SMPTE 259M-C, 270 Mb/s) SD-SDI
Frame Rate	1080i/p/psf: 23.98, 24, 25, 29.97, 30, 50, 59.94, 60 Hz 720p: 50, 59.94, 60 Hz 525/625
Connector	(High-Density) HD-BNC
Impedance	75 ohms
Return Loss	>15 dB to 1485 MHz >10 dB from 1485 to 2790 MHz
Signal Level	800 mV ±10%
DC Offset	0.0 V ±0.5 V
Rise and Fall Time	3G: <135 ps HD-SDI: <270 ps SD-SDI: 400 to 1500 ps
Overshoot	<10%
Jitter	Timing jitter: 3G HD-SDI: <2 UI pk-pk (>10 Hz) HD-SDI: <1 UI pk-pk (>10 Hz) SD-SDI: <0.2 UI pk-pk (>10 Hz) Alignment jitter: 3G HD-SDI: <0.3 UI pk-pk (>100 Hz) HD-SDI: <0.2 UI pk-pk (>100 Hz) SD-SDI: <0.2 UI pk-pk (>1 kHz)

SDI FIBER

OP+SFP+RR Dual Input Fiber				
Item	Minimum	Typical	Maximum	Note
Number of LC Input Connectors	–	–	2	
Input Wavelength	1260 nm	–	1620 nm	
Optical Power Monitor Accuracy	-2 dB	–	-2 dB	
Sensitivity at 270 Mb/s (SMPTE 259M)	–	-22	-20	Pathological*
Sensitivity at 1.5 Gb/s (SMPTE 292M)	–	-22	-20	Pathological
Sensitivities at 3 Gb/s (SMPTE 424M)	–	-20	-18	Pathological
Overload	0 dBm	–	–	2.97 Gb/s*

*BER = 1E-12 against SDI matrix. Check field signals for video applications. BER = 1E-12 against PRBS 223-1 for datacom applications.

OP+SFP+RR DUAL INPUT FIBER

Item	Minimum	Typical	Maximum	Note
Number of LC Connector Outputs			2X2	
Standards	3G: SMPTE 424M HD: SMPTE 292M SD: SMPTE 259M			
Peak Wavelength	1280 nm	1310 nm	1340 nm	Measured at 25°C

OP+SFP+RR DUAL INPUT FIBER				
Spectrum Width (RMS)	–	1.5 nm	3 nm	
Average Output Power	-5 dBm	-2 dBm	0 dBm	
Optical Rise/Fall Time (3G HD-SDI)		105/120 ps	165/180 ps	
Extinction Ratio	7 dB	–	–	
Jitter	–	45 ps	70 ps	3 Gb/s Pathological
	–	60 ps	100 ps	1.5 Gb/s Pathological
	–	110 ps	180 ps	270 MHz Pathological
Laser Safety Level	Class 1			
COMPOSITE VIDEO OUTPUT				
Standard	NTSC (SMPTE 170M) PAL-B (ITU 624-2) PAL-M (ITU-R BT.470-6)			
Connector	(High-Density) HD-BNC			
Quantization	12 bits			
Impedance	75 ohms			
Return loss	>40 dB (0.1 to 6 MHz)			
Frequency response	±0.2dB, typical (0.1 to 6 MHz)			
DC offset	<0.0 ±0.005 V			
Differential gain	<0.5%			
Differential phase	<0.5°			
Y/C delay	<10 ns			
Transient response	<0.5% K Factor			
SNR	>63 dB typical (luma ramp) (0.1 to 6 MHz) >80 dB typical (Flat field)			
Module Power Consumption	40 W maximum			

Ordering Information

DUAL DIGITAL TO ANALOG CONVERTER	
SEL-DDA1-EES	Dual Distribution Amplifier (SDI/ASI) and Dual Digital (SDI 270 Mb/s) to Analog (NTSC, PAL) module with routing capability, includes back module with HD-BNC inputs and outputs
SEL-DDA1-REL	Dual Distribution Amplifier (SDI/ASI) and Dual Digital (SDI 270 Mb/s) to Analog (NTSC, PAL) module with routing capability, includes back module with dual relays, HD-BNC inputs and outputs, single back module
DUAL DIGITAL TO ANALOG CONVERTER BACK MODULES	
SEL-BM-VEXDDA-REL	HD-BNC to HD-BNC back module for VEX and DDA front module with dual relay
SEL-BM-VEXDDA-EES	HD-BNC to HD-BNC back module for VEX and DDA front module
SEL-BM-VEXDDA-EOS	HD-BNC to SFP back module for VEX and DDA front module, (order 1 or 2 SFP dual output options separately)

DUAL DIGITAL TO ANALOG CONVERTER BACK MODULES	
SEL-BM-VEXDDA-OES	SFP to HD-BNC back module for VEX and DDA front module, (order 1 SFP dual input option separately)
SEL-BM-VEXDDA-OOS	SFP to SFP back module for VEX and DDA front module, (order 1 or 2 SFP dual output options and one SFP dual input option separately)
REMOTE CONTROL PANELS	
MAGELLAN PANEL with OLED Displays, Rotary Control and LCD Pushbuttons (user programmable LCD pushbuttons)	
RCP-24LCD-OLED*	1RU control panel with 24 LCD buttons and OLED display
RCP-48LCD-OLED*	2RU control panel with 48 LCD buttons and OLED display
MAGELLAN PANEL with OLED Displays, Rotary Control and Pushbuttons (user prints out legends for the pushbuttons)	
RCP-32PB-OLED*	1RU control panel with one OLED display, one control knob and 32 push buttons
RCP-64PB-OLED*	2RU control panel with two OLED displays, two control knobs and 64 push buttons
SOFTWARE KEY FOR MAGELLAN PANEL*	
RCP-PROCMV-OPT	Software key license that enables control of Imagine Communications multiviewers and processing devices on Magellan Remote Control Panels (OLED display with LCD programmable push button and OLED display with pushbutton versions only)

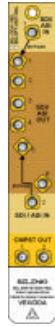
Images/Diagrams



PROD - MCP MODULE - SEL-DDA1 / SEL-BM-VEXDDA-EES - SWATCH



PROD - MCP MODULE - SEL-DDA1 / SEL-BM-VEXDDA-EOS - SWATCH



PROD - MCP MODULE - SEL-DDA1 / SEL-BM-VEXDDA-REL - SWATCH



PROD - MCP MODULE - SEL-DDA1 / SEL-BM-VEXDDA-OOS - SWATCH