

Model OTDV-1250 - Multimedia/Multiformat Transport Link

Digital Video, Audio, Data, Ethernet Transport

The world's most versatile and highest quality unidirectional or bidirectional baseband NTSC or PAL B, D, G, H or I video & audio transport link includes selectable low-speed data (RS-232 or RS-422) and auto-negotiating 10/100Mb/s Ethernet.

Field interchangeable SFP standard interface allows the unit to instantly be adapted to transport over multimode fiber, single-mode fiber at 1310nm, 1550nm, CWDM, DWDM, or even bidirectionally on a single fiber.

Composite and S-Video NTSC or PAL video inputs and outputs! The receiver always presents both formats, so format conversion can be done on the fly. For instance, composite video can be put in the transmit end and S-Video can be used at the receive end.

12-Bit Digitized Video yields Broadcast quality video

24-bit Stereo audio offers unexcelled performance.

Multiple LED indicators and alarms for easy setup and maintenance.

Unit accepts any DC power supply voltage from +10 V_{DC} to +20V_{DC}.



The Olson OTDV-1250 Video/Stereo Audio, Data and Ethernet Fiber Optic Link provides a very high-quality system for transporting baseband NTSC or PAL video signals, stereo audio signals and bidirectional data with complete EMI immunity via multimode or single-mode optical fiber. The combination of video, stereo quality audio, data for touch screens, pan, tilt & zoom or pure data transport for communications and the addition of auto-negotiating 10/100Mb/s Ethernet make these links ideal for broadcast, contribution and distribution quality V/A/A transport, teleconferencing, distance learning, and surveillance applications. Each unit is built in a rugged, shielded enclosure. Units are available with four channels of audio and unidirectional transport options.

The defining feature of the OTDV-1250 is versatility. While there are numerous fiber optic broadcast transport links available, the addition of user/field-swappable SFP modules allows the unit to be rapidly reconfigured for any conceivable fiber requirement.

All signals are handled using state-of-the-art digital techniques resulting in no degradation in performance regardless of the fiber type and distance. All signals are digitized to a single serial data stream that easily fits into Gb/s data stream. Extensive use of overhead messaging allows the two units to be aware of problems at the far end.

Specifications

Video Specifications

	Min	Typ	Max	Units	Notes
Input Signal	Composite or S-Video				1
Output Signals	Composite and S-Video				1
I/O Impedance		75		Ohm	
Input Level	0.6	1.0	1.4	V	2
Output Level		1.0		V	
Bandwidth		6		MHz	
SNR (NTC7 Lum-Weighted)	67	72.5		dB	
SNR (Unified Lum-Weighted)	67	73.0		dB	
Differential Gain		1.3		%	
Differential Phase		0.7		°	
Line Time Distortion	0	0.25	0.50	%	
Chrom-Lum Delay	-20	0	20	ns	
Chrom-Lum Gain	98	100	103	%	
Conversion	10-bit 4:2:2 per ITU-R BT.601				

Audio Specifications

	Min	Typ	Max	Units	Notes
Number of Channels	2		4		3
Frequency Response	20		20,000	Hz	
THD+N	-85		-78	dB	
Input Impedance	600		10,000	Ω	4
Input Level			10	dBu	
Gain	-1		0	dB	
Resolution		24		bits	

Data Specifications

	Min	Typ	Max	Units	Notes
Number of Channels			1		
Protocol	RS-232 or RS-422				5
Data Rate (RS-232)			155	kb/s	
Data Rate (RS-422)			1	Mb/s	

Ethernet Specifications

	Min	Typ	Max	Units	Notes
Number of Channels			1		
Auto Negotiating	10Mb/s or 100 Mb/s				

Electrical Characteristics

	Min	Typ	Max	Units	Notes
DC Input Voltage	10		20	V _{DC}	6
DC Current	0.30		0.53	A	6
Power		6		W	6

Physical Characteristics*

	Min	Typ	Max	Units
Module Weight		25.4		oz.
		720		g.
Module Dimensions	11.0 x 6.0 x 1.25			in.
	279 x 152 x 32			mm

Environmental Characteristics

	Min	Typ	Max	Units
Operating Temp. Range	0		+50	°C
Storage Temp. Range	-10		+60	°C
Humidity	5		90	%

NOTES:

- 1) The transmitter accepts either NTSC or PAL composite or S-Video input. If both are present, the S-Video signal will be used. The receiver always presents both composite and S-Video outputs.
- 2) The output level will track the input level.
- 3) The standard transceiver model offers two audio channels. A special unidirectional model offers four(4) audio channels.
- 4) Input impedance is switch selectable by the user.
- 5) The data protocol is switch selectable by the user.
- 6) The OTDV-1250 utilizes high-efficiency switching power supplies internally. The power dissipation is nearly constant as the input voltage changes. The highest current draw will occur at the lowest input voltage and vice versa. Note that excessive noise and ripple on the power supply may degrade some of the performance parameters.
- 7) All test results are at +25°C with a +12V_{DC} to +15V_{DC} power supply.

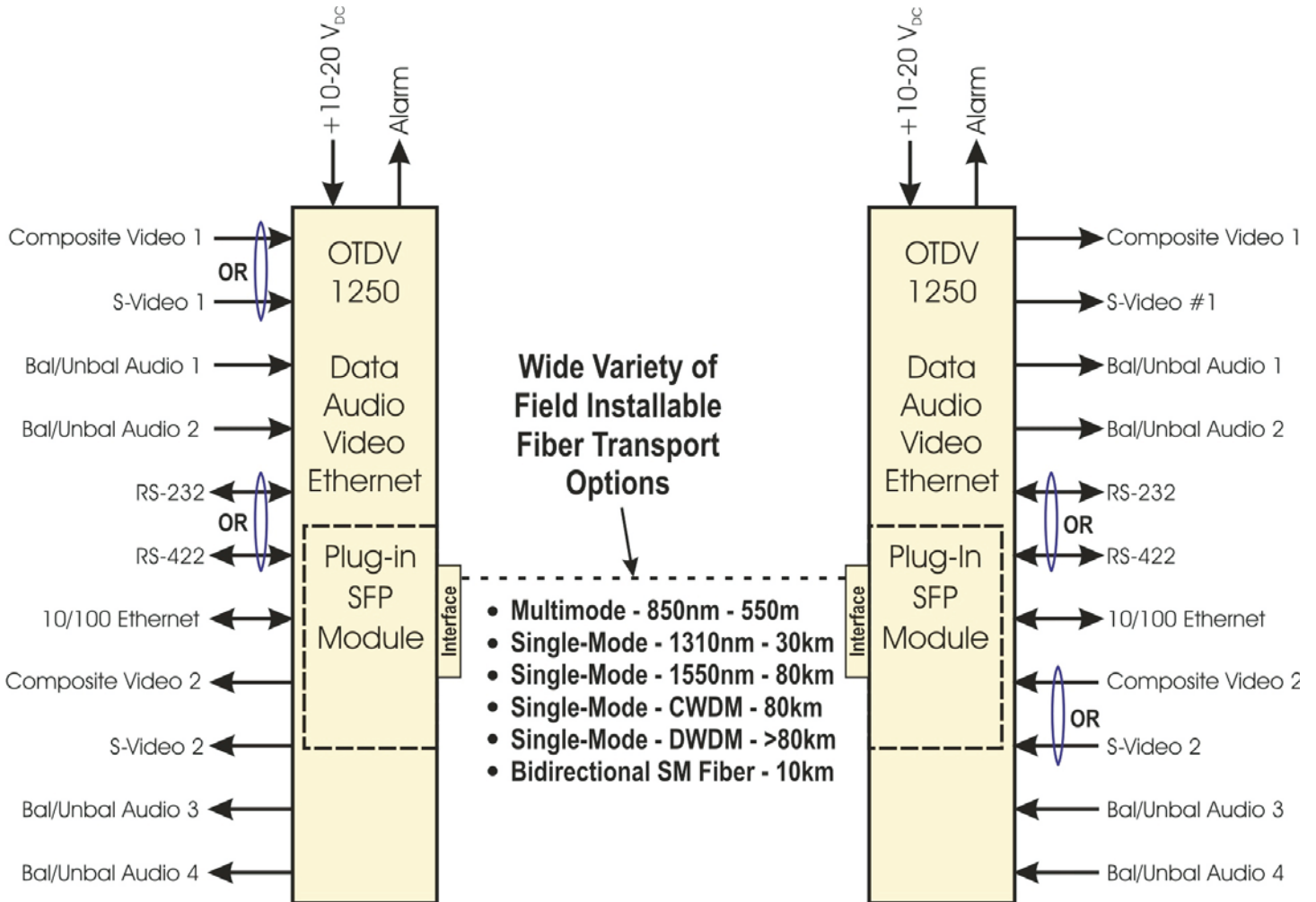


Figure 1 - OTDV-1250 Block Diagram

Figure 1 graphically demonstrates the extreme versatility and capability of the Olson OTDV-1250 Multimedia, Multi-Format Fiber Optic Transport Link.

Notes: 1) Olson offers a wide range of economical SFP modules that may be purchased separately.

Typical SFP Modules



Figure 2 - Multimode 850nm SFP Module with Dual LC Connectors



Figure 3 - Single-mode CWDM SFP Modules with Dual LC Connectors

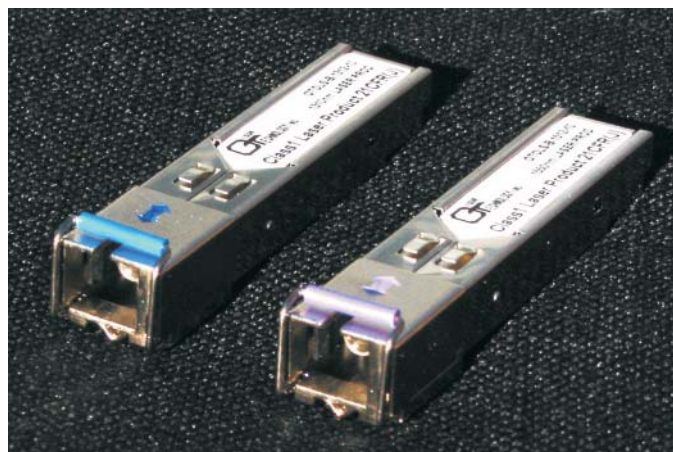


Figure 4 - Single-mode Bidirectional SFP Modules with Single SC

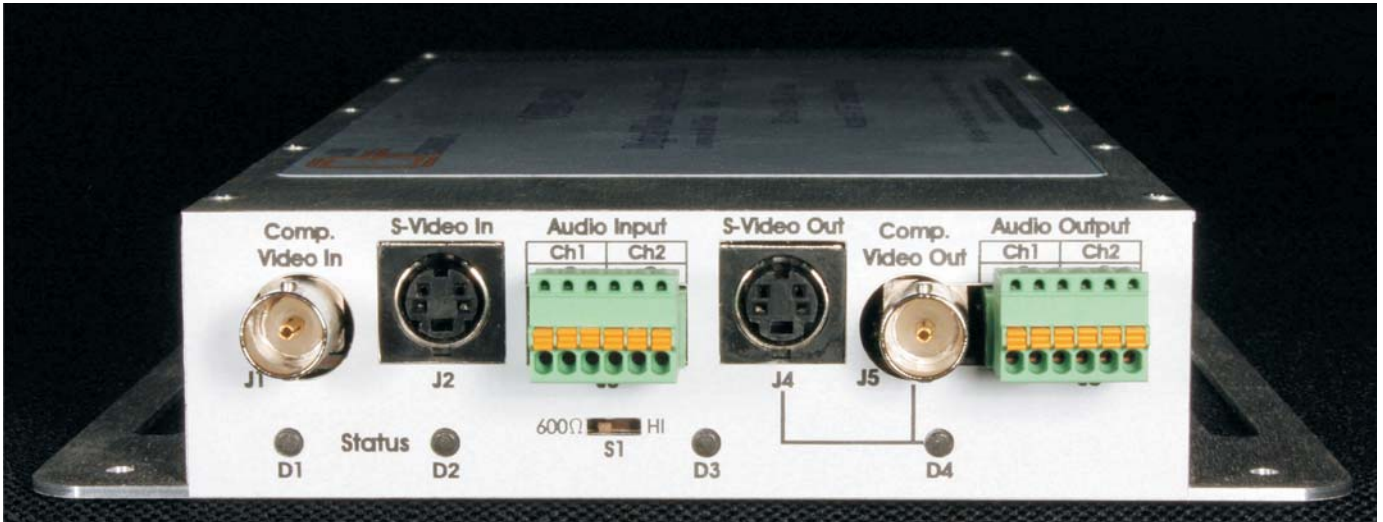


Figure 5 - Video/Audio I/O Side

The left side is the transmit side. J1 is the composite video transmit. J2 is the S-video transmit. J3 is the stereo audio transmit. The right side is the receive side. J4 is the composite video receive. J5 is the S-video receive. J6 is the stereo audio receive. D1, D2, D3 & D4 give the status of the unit. Switch S1 selects whether the audio input is configured to be high impedance or 600 Ohms.

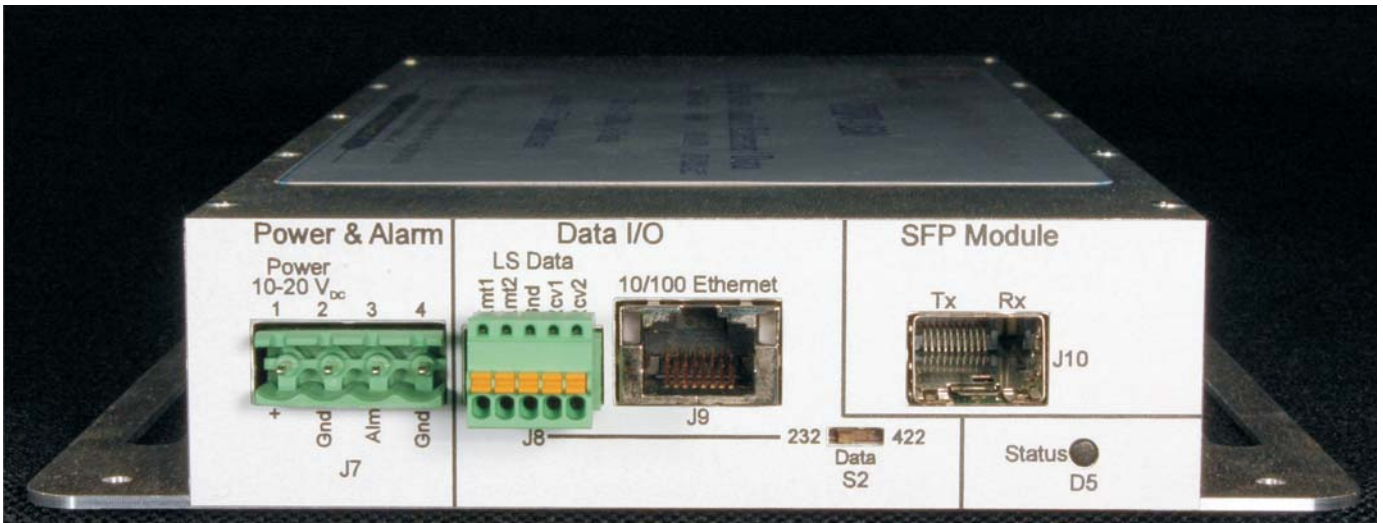


Figure 6 - Power, Data, Ethernet & Optics Side

The left side is the power and alarm section. Pins 1 & 2 of J7 are the DC power input. Pins 3 and 4 are the alarm output. The center section is the data interface. J8 is the low-speed data interface. Switch S2 is used to select RS-232 or RS-422. J9 is the bidirectional 10/100Mb/s Ethernet data port. The right side contains the SFP module interface (J10) and the unit status LED (D5).

Ordering Information

OTDV-1250 Platform Part Numbers (Order SFP Modules Separately)

OTDV-1250-B	NTSC Only - Bidirectional Digital Video, Audio, Data Transport Link.
OTDV-1250-TA	NTSC Only - Transmit Only Digital Video, Dual Audio, Data Transport Link.
OTDV-1250-RA	NTSC Only - Receive Only Digital Video, Dual Audio, Data Transport Link.
OTDV-1250-TAA	NTSC Only - Transmit Only Digital Video, Quad Audio, Data Transport Link.
OTDV-1250-RAA	NTSC Only - Receive Only Digital Video, Quad Audio, Data Transport Link.
OTDV-1250P-B	PAL B, D, G, H and I Only - Bidirectional Digital Video, Audio, Data Transport Link.
OTDV-1250P-TA	PAL B, D, G, H and I Only - Transmit Only Digital Video, Dual Audio, Data Transport Link.
OTDV-1250P-RA	PAL B, D, G, H and I Only - Receive Only Digital Video, Dual Audio, Data Transport Link.
OTDV-1250P-TAA	PAL B, D, G, H and I Only - Transmit Only Digital Video, Quad Audio, Data Transport Link.
OTDV-1250P-RAA	PAL B, D, G, H and I Only - Receive Only Digital Video, Quad Audio, Data Transport Link.

SFP Module Part Numbers

OTOLS-8512-02	SFP Optic Module, Dual MM Fiber , 850nm, 550 meter max, LC Connector
OTOLS-1312-30	SFP Optic Module, Dual SM Fiber 1310nm, 30km max, LC Connector
OTOLS-1512-80	SFP Optic Module, Dual SM Fiber 1550nm, 80km max, LC Connector
OTOLS-1612-CW-80-27	SFP Optic Module, Dual SM Fiber, CWDM, 1270nm, 80km max, LC Connector
OTOLS-1612-CW-80-29	SFP Optic Module, Dual SM Fiber, CWDM, 1290nm, 80km max, LC Connector
OTOLS-1612-CW-80-31	SFP Optic Module, Dual SM Fiber, CWDM, 1310nm, 80km max, LC Connector
OTOLS-1612-CW-80-33	SFP Optic Module, Dual SM Fiber, CWDM, 1330nm, 80km max, LC Connector
OTOLS-1612-CW-80-35	SFP Optic Module, Dual SM Fiber, CWDM, 1350nm, 80km max, LC Connector
OTOLS-1612-CW-80-37	SFP Optic Module, Dual SM Fiber, CWDM, 1370nm, 80km max, LC Connector
OTOLS-1612-CW-80-39	SFP Optic Module, Dual SM Fiber, CWDM, 1390nm, 80km max, LC Connector
OTOLS-1612-CW-80-41	SFP Optic Module, Dual SM Fiber, CWDM, 1410nm, 80km max, LC Connector
OTOLS-1612-CW-80-43	SFP Optic Module, Dual SM Fiber, CWDM, 1430nm, 80km max, LC Connector
OTOLS-1612-CW-80-45	SFP Optic Module, Dual SM Fiber, CWDM, 1450nm, 80km max, LC Connector
OTOLS-1612-CW-80-47	SFP Optic Module, Dual SM Fiber, CWDM, 1470nm, 80km max, LC Connector
OTOLS-1612-CW-80-49	SFP Optic Module, Dual SM Fiber, CWDM, 1490nm, 80km max, LC Connector
OTOLS-1612-CW-80-51	SFP Optic Module, Dual SM Fiber, CWDM, 1510nm, 80km max, LC Connector
OTOLS-1612-CW-80-53	SFP Optic Module, Dual SM Fiber, CWDM, 1530nm, 80km max, LC Connector
OTOLS-1612-CW-80-55	SFP Optic Module, Dual SM Fiber, CWDM, 1550nm, 80km max, LC Connector
OTOLS-1612-CW-80-57	SFP Optic Module, Dual SM Fiber, CWDM, 1570nm, 80km max, LC Connector
OTOLS-1612-CW-80-59	SFP Optic Module, Dual SM Fiber, CWDM, 1590nm, 80km max, LC Connector
OTOLS-1612-CW-80-61	SFP Optic Module, Dual SM Fiber, CWDM, 1610nm, 80km max, LC Connector
OTOLS-BI1312-10	SFP BiDi Optic Module, One SM Fiber, 1310nm Tx, 10km max, SC Connector
OTOLS-BI1512-10	SFP BiDi Optic Module, One SM Fiber, 1550nm Tx, 10km max, SC Connector

Note: Other options are available. Contact the factory, SFP modules not shown above.

Power Supply Part Numbers

OTPS-12A-4P	Universal AC Power Supply, +12 Volts, 1.5 Amps
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