

Opto Standalone Endpoints

Secure fiber optic transmission up to 40km

Opto Standalone Transmit and Receive Modules convert native copper sources—DVI, HDMI, RGB and 3G/HD-SDI—to an optical format for transmission over single mode or multimode fiber (TX units), or from fiber back to copper (RX units).

All transmitter modules include a local loop through connection and all receiver modules include an auxiliary monitor output. With a low profile and built in mounting flanges, wall, desktop or under-table mounting is easily accomplished.

Like all Opto signal path components, a 6.22Gps per channel bandwidth ensures a perfectly clean video image without artifacts caused by bandwidth limitations, particularly for timings above 1920x1080/60p. Any compliant DVI or HDMI 1.3 timing is supported and all DVI single-link modules are HDCP compliant.

A transmit module of one video format can connect directly to a receiver of a different type; an RGB transmitter can be connected to a DVI receiver for example. Format conversion is automatic.

Connections between endpoints can be either simplex or duplex. A duplex connection supports real-time EDID as well as bi-directional audio and data if those options are used. Content protected HDMI signals do not require a duplex connection, reducing the I/O channel count and simplifying system install.

Onboard buttons and indicators facilitate efficient set-up for EDID, which includes multiple dynamic and fixed modes.

Opto Standalone modules can connect to other Opto products in a variety of ways:

- Point-point connection between transmit and receive modules
- Point-point connection between Opto standalone modules and Opto rackmounted transmitter or receivers
- Opto standalone modules connected to the inputs or outputs of an Opto matrix switcher

Single mode optics options are available in two versions, supporting distances up to 10km or 40km.

A universal power supply with locking connector is included with each module.

Opto Standalone Endpoints offer an unsurpassed range of options that expand the flexibility of Opto switcher systems, and add the benefits of fiber optic transmission when used as point-to-point extenders.

Secure Fiber Transmission

High 6.22 GHz Bandwidth

Plug-and-Play Operation

Single Mode and Multimode Fiber

Single and Dual-link DVI

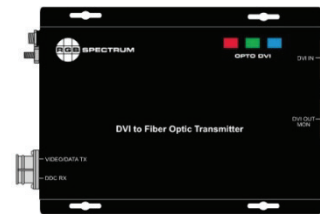
Simplex or Duplex Operation

RGB and 3G/HD-SDI

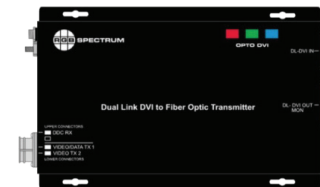
Audio and Serial or IP Data

Format conversion

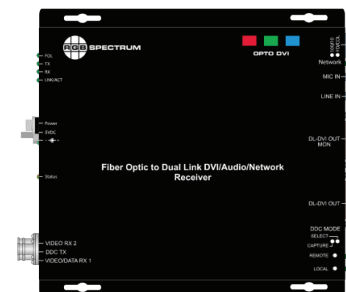
HDCP Compliant



Opto DVI Transmitter



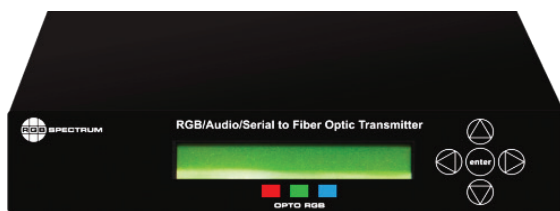
Opto Dual-link DVI Transmitter



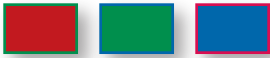
Opto Dual-link DVI Receiver with Audio/Network



Opto 3G/HD-SDI Receiver



Opto RGB Transmitter with Audio/Serial



Available Models

Model Number	Description	Feature
OP FS-T1M	Single-link DVI	Local loop through output
OP FS-R1M	Single-link DVI	Aux monitor out
OP FS-T1S	Single-link DVI, single mode optics	Local loop through output
OP FS-R1S	Single-link DVI, single mode optics	Aux monitor out
OP FS-T1M AD	Single-link DVI	Loop through, stereo analog audio, serial data
OP FS-R1M AD	Single-link DVI	Loop through, stereo analog audio, serial data
OP FS-T3M	Dual-link DVI	Local loop through output
OP FS-R3M	Dual-link DVI	Aux monitor out
OP FS-T3M AN	Dual-link DVI	Loop through, stereo analog audio, network data
OP FS-R3M AN	Dual-link DVI	Loop through, stereo analog audio, network data
OP FS-T4M AD	RGB	Loop through, stereo analog audio, serial data
OP FS-R4M AD	RGB	Loop through, stereo analog audio, serial data
OP FS-T5M	3G/HD-SDI	Two HD-SDI streams or one 3G-SDI stream

Specifications

	T1M, R1M;T1S, R1S	T3M, R3M	T4M, R4M	-AD, -AN
Signal Type	DVI	Dual-link DVI	RGB	Audio + Serial or Network
Pixel clock rate	25 MHz-165 MHz	165 MHz-330 MHz	25 MHz-165 MHz	N/A
Resolution(Max)	Up to 1920x1200/72	Up to 3840x2400/33	Up to 1920x1200/72	N/A
Connectors - TX	DVI-D x 2	DVI-DL x 2	VGA x 2	3.5 mm x 2, RJ-45
Connectors - RX	DVI-D x 2	DVI-DL x 2	VGA x 2	3.5 mm x 2, RJ-45
Connectors - Fiber	LC	LC	LC	LC
Weight	<1 lb	<1 lb	<5 lb	N/A
Power Consumption	6 watts	10 watts	15 watts	N/A
Size (H x W x D)	1.1 x 5.4 x 7.0 inches 28 x 137 x 178 mm	1.1 x 5.5 x 7.8 inches 28 x 140 x 197 mm	1.1 x 7.5 x 7.0 inches 28 x 191 x 178 mm	1.2 x 6.5 x 10 inches 30.2 x 165 x 254 mm
Operating Temp.	0° – 50°C (32° – 122°F)			
Humidity	5 – 95% RH, non-condensing			

T5M, R5M

Signal Type	3G/HD-SDI
Data Rate	270 Mbps to 2.97 Gbps
Supported Standards	SMPTE 254M, 292M, 372M, 424M and 435 level A and B compliant
Equalization	Automatic up to 140m of Belden 1694a @ 3Gbps, 230m @ 1.485 Gbps and 350m @ 270Mbps
Reclocking	At 270 Mbps, 1.485 Gbps and 2.97Gbps
Connectors - TX	2 x BNC (input, loop through); DB-9 F for RS-422
Connectors - RX	2 x BNC (parallel outputs 1 and 2); DB-9 M for RS-422
Connectors - Fiber	LC for all modules
Weight	<1 lb
Power Consumption	10 watts
Size (H x W x D)	1.7 x 3.4 x 5.6 inches 43 x 87 x 143 mm

System Performance

Multimode Fiber	Up to 350 meters using multi-mode fiber type OM2 Up to 750 meters using multi-mode fiber type OM3 Up to 1000 meters using multi-mode fiber type OM4
Single-mode Fiber	Up to 40 kilometers (24 miles)

Fiber Characteristics

	Multimode	10km Single-mode	40 km Single-mode
WaveLength (nominal)	850 nm	1310 nm	1550 nm
Emitter Type	VCSEL	DFB laser	DFB laser
Output Power (nominal)	-4 dBm	-1.5 dBm	-2.5 dBm