

TR400 HD-SDI to SDI converter using DIRAC PRO by NuMedia

The TR400 is a unique product that allows the transport of HD-SDI images using the existing SD-SDI infrastructure. The TR400 allows the use of HD-SDI contribution wherever the link bandwidth is limited to SD-SDI. The TR400 is particularly suitable for live event coverage and has been used extensively at major sporting events worldwide. The encoded output is fully compliant with SMPTE 259M (the standard for SD-SDI contribution) and is viewable using a DAC or waveform monitor for confidence monitoring. As the encoded output runs at SD-SDI rates, the TR400 output will operate over much longer cable runs than HD-SDI and is significantly more tolerant of jitter build-up.

The TR400 is designed to offer a wide range of options including a single channel optical transmitter and receiver. The TR400 incorporates true multi-standard interfacing and the decoder will bypass uncompressed SD-SDI (270Mbps).

DIRAC Pro modules in standard OpenGear rack frames can be mixed freely with other analogue, digital video or audio modules. This feature allows system designers to introduce HD-SDI capability into existing SD-SDI equipment as demand develops and provides for fully integrated solutions for the transmission of video and audio signals over distances that cannot be accomplished using conventional copper co-axial cable. Up to 40 km of fibre can be driven when HD-SDI signals are applied. The module can be supplied in either 1310nm or 1550nm versions. Other frequencies between 1470nm and 1610nm can be supplied for CWDM applications.

The TR400 comes in a non fibre version for use in copper only environments. There is the TR400EN which is the encoder and the TR400DE matching decoder. The fibre components can be retrofitted, if required at a later date.

Features

- True Multi-Rate inputs up to 3G-SDI
- Multi-standard 1080i50, 1080i59.94, 720P50, 720P59.94 processing
- Ultra low latency < 3ms
- Excellent all-round performance using multi-level wavelets.
- Full HD-SDI image raster at 10-bit resolution
- Encoded bit-stream can be viewed as an SD-SDI image.
- Fully compatible with existing SD-SDI test & measuring equipment
- Automatic uncompressed SD-SDI decoder bypass
- Embedded AES audio and data transparency
- Proposed SMPTE VC-2 compliant
- Open Technology supporting future-proof file interchange
- Single channel transmitter version (/T option)
- Single channel receiver version (/R option)
- 1310 or 1550nm versions (other wave lengths to order)
- Copper only versions (Fibre retro fittable)
- Two switchable inputs and two twin outputs switchable
- Reclocked pass through mode

Applications

- HD-SDI contribution using SD-SDI links
- OB and Live Sporting Event coverage using roving camera crews
- Remote studio contribution

Specifications

TR400 SERIAL INPUTS

Format	Compatible with SMPTE 292M, 259M, (1080i/720P)
Connector	BNC
Impedance	75ohms
Data Rates	143 Mbps, 177Mbps, 270Mbps, 360Mbps, 540Mbps, 1.485Gbps, 2.98Gbps Also accepts AES/EBU digital audio streams

TR400 SERIAL OUTPUTS

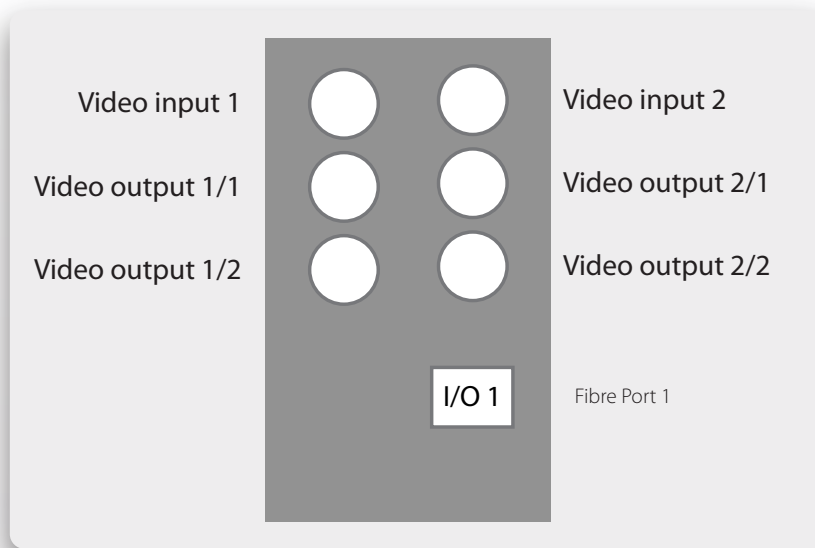
Connector	BNC
Impedance	75ohms
Amplitude	800mV p-p (terminated)
D.C. Offset	0V +/-0.5V
Controls	Status monitoring only

TR400 OPTICAL INPUTS

Connector	LC with shutter
Optical Wavelength range	1270nm to 1610nm
Optical Power input range	-23dBm to -1dBm (Typical)
Recommended Cable	Single-Mode

TR400 OPTICAL OUTPUTS

Connector	LC with shutter
Laser	FP or DFB
Optical Wavelength	1310nm or 1550nm
Optical Power Output	2 user selectable options: @ 1310nm -5/-2/+1dBm (Typical) @ 1610nm +1dBm (Typical))

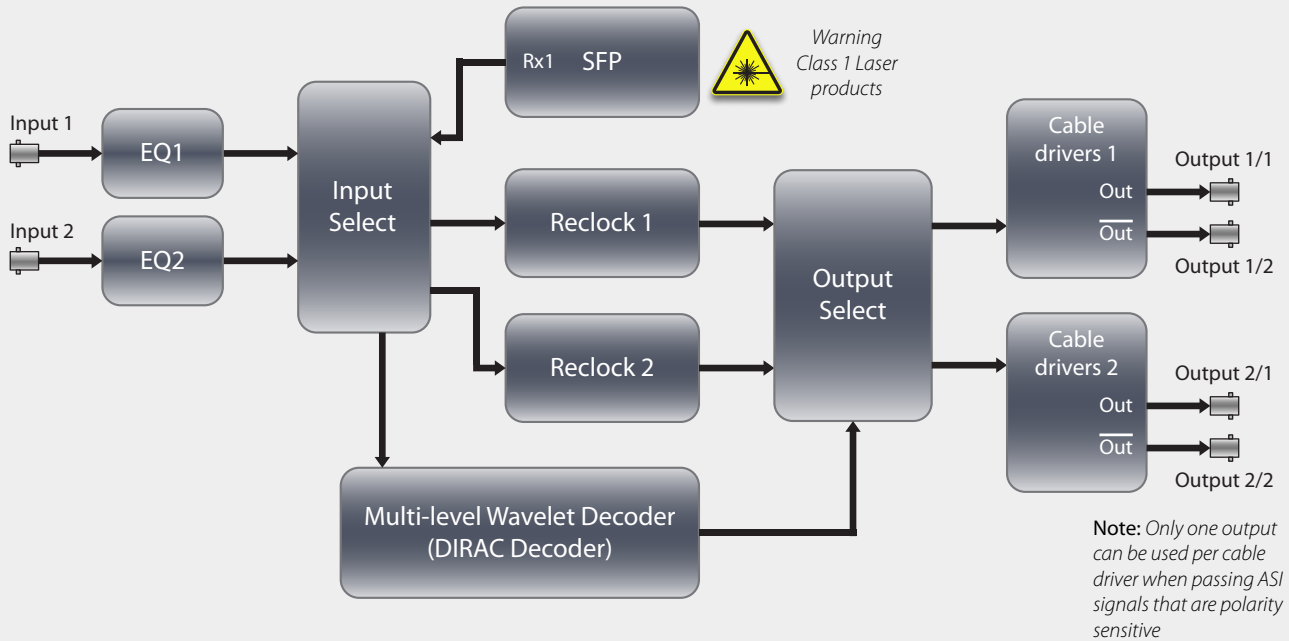


Ordering Information

- TR400/R Single Channel Receiver
- TR400/T/13 Single Channel Transmitter, @1310nm
- TR400/T/15 Single Channel Transmitter, @1550nm
- RM-Fibre-A Rear
- TR400/EN Dirac pro encoder (Without fiber transmitters)
- TR400/DE Dirac pro decoder (Without fibre receivers)

Transmitter	Receiver	Data Rate	Link Distance (Min)
1310nm	PIN	2.97Gbps	5km
		1485Mbps	10km
		270Mbps	15km
1550nm	PIN	2.97Gbps	33km
		1485Mbps	55km
		270Mbps	65km
	APD	2.97Gbps	33km
		1485Mbps	75km
		270Mbps	100km

Receive Mode



Transmit Mode

