

8-Channel HD/SD-SDI/ASI Fibre Optic Link

FEATURES

- Transports up to 8 independent HD-SDI, SD-SDI or ASI signal rates on a single fibre via an on-board CWDM optical combiner.
- Path lengths up to 27 dB¹ optical path loss using 9/125µm single mode fibre and APD receivers. Path lengths od 0-14dB for PIN receivers
- The DTR-4638 can be factory configured as either 8Tx, 8Rx, 4Tx+4Rx, 4Rx+4Tx, 6Tx+2Rx or 6Rx+2Tx
- OLED front panel display and external alarm contacts.
- Remote monitoring via SNMP.

GENERAL

The DDT-4638, DDR-4638 & DTR-4638 are 8-channel modules designed principally for use as eight serial data fibre optic transmission links on a single fibre for HD-SDI or SD-SDI applications conforming to SMPTE standards 424M, 292M and 259M-C using 9/125 µm single mode fibre. This enables the use of space saving fibre optic cable for reliable transmission of digital video signals over lengths greater than can be achieved with coaxial cable.

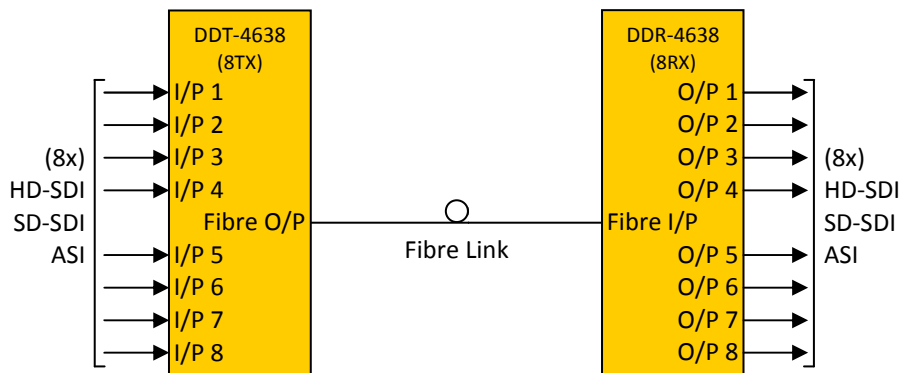
In addition, the links may be used for ASI transport streams for use with MPEG compressed video streams or other 270 Mb/s type data.

The receivers use either PIN or APD detectors with signal conditioning and reclocking circuits. The data rates are automatically set to match the HD-SDI or SD-SDI/ASI rates dependent on the actual input data rates to the transmitters. A PIN detector version is also available for short run applications.

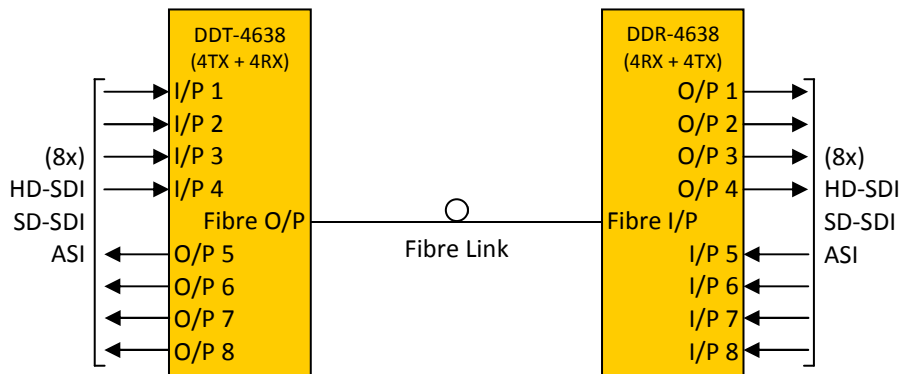
The modules are compatible with IRT's single channel fibre cards for use as eight independent fibre paths starting from or coming to a single location when used in conjunction with an external 8-channel CWDM optical combiner/de-combiner.

SNMP (Simple Network Management Protocol) is available for remote monitoring when used in conjunction with an IRT frame fitted with SNMP capability.

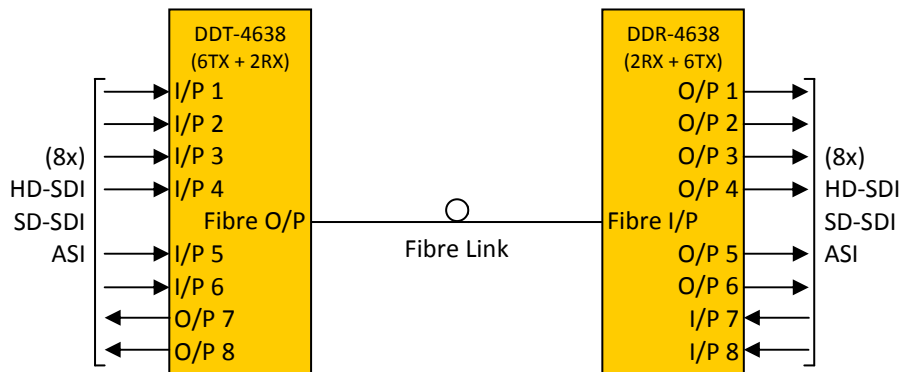
BLOCK DIAGRAM DDT-4638 & DDR-4638 SIGNAL PATH



BLOCK DIAGRAM DTR-4638/4TX+4RX & DTR-4638/4RX+4TX SIGNAL PATH



BLOCK DIAGRAM DTR-4638/6TX+2RX & DTR-4638/2RX+6TX SIGNAL PATH



NOTE 1 Typically >27dB at HD and SD. Fitted with APD detectors.

TECHNICAL SPECIFICATIONS

Transmitter Channels:

Input serial data signal	1.485 Gb/s (HD-SDI) to SMPTE 292M; 270 Mb/s (SD-SDI) to SMPTE 259M-C and DVB-ASI.
Input impedance	75 Ω.
Input return loss	> 15 dB 5 MHz to 1.5 GHz;
Automatic cable compensation	> 30 m at 1.485 Gb/s (HD-SDI) with Belden 1694A. > 50 m at 270 Mb/s (SD-SDI/ASI) with Belden 8281.
Input connector	BNC on rear panel, 1 per channel.

Receiver Channels:

Number of outputs	1 per channel, data reclocked, AC coupled.
Output level	800 mV ± 10%.
Output impedance	75 Ω.
Output return loss	> 15 dB 5 MHz to 1.5 GHz;
Output rise and fall time	< 135 ps at 2.97 Gb/s and 1.485 Gb/s; > 0.4 ns and < 1.5 ns at 270 Mb/s.
Intrinsic jitter	< 0.2 UI at 1.485 Gb/s reclocked; < 0.1 UI at 270 Mb/s reclocked.
Output connector	BNC on rear panel, 1 per channel.

Optical:

IRT-4638-DDT optical output	0 dBm +4.5/-0 dB CWDM DFB lasers per transmitter channel
IRT-4638-DDR optical input	APD detector, -5 to -27 dBm input level at HD/SD-SDI. PIN detector, 0 to 17 dBm input level at HD/SD-SDI.
Wavelengths	CWDM DFB lasers – 1470nm, 1490nm, 1510nm, 1530nm, 1550nm, 1570nm, 1590nm, 1610nm.
Optical path loss²	5 to 24 dB at HD/SD-SDI, APD detectors, 0 to 16 dB at HD/SD-SDI, PIN detectors. (Optical path loss = Laser O/P power – Detector I/P power)
Optical fibre	Designed for use with 9/125 µm single mode fibre.
Optical connector	1 x SC/PC (standard) on rear – direct connection to main card.
Optical Attenuator	10-15dB optical attenuator (supplied), is recommended for optical path lengths less than 10dB when modules fitted with APD receivers.

Power Requirements:

Voltage	28 Vac CT (14-0-14) or ±16 Vdc.
Power consumption	DDT-4634 <6.0 VA, DDR-4634 <6.5 VA.

Other:

Temperature range	0 - 50° C ambient.
Mechanical	For mounting in IRT 19" rack chassis with input, output and power connections on the rear panel.
Finish	Grey background, black lettering & red IRT logo.
Front panel	Detachable silk-screened PCB with direct mount connectors to Eurocard and external signals.
Rear assembly	
Dimensions	6 HP x 3 U x 220 mm IRT Eurocard.

Ordering:

DDT-4638	8 Channel transmitter (matches DDR-4638)
DDR-4638/PIN	8 Channel receiver with PIN receivers (matches DDT-4638)
DDR-4638/APD	8 Channel receiver with APD receivers (matches DDT-4638)
DTR-4638/4Tx+4RX/PIN	4 Channel Transmitter + 4 Channel receiver with PIN receivers (matches DTR-4638/4RX+4TX)
DTR-4638/4Tx+4RX/APD	4 Channel Transmitter + 4 Channel receiver with APD receivers (matches DTR-4638/4RX+4TX)
DTR-4638/4Rx+4TX/PIN	4 Channel Transmitter + 4 Channel receiver with PIN receivers (matches DTR-4638/4TX+4RX)
DTR-4638/4Rx+4TX/APD	4 Channel Transmitter + 4 Channel receiver with APD receivers (matches DTR-4638/4TX+4RX)
DTR-4638/6Tx+2RX/PIN	6 Channel Transmitter + 6 Channel receiver with PIN receivers (matches DTR-4638/2RX+6TX)
DTR-4638/6Tx+2RX/APD	6 Channel Transmitter + 6 Channel receiver with APD receivers (matches DTR-4638/2RX+6TX)
DTR-4638/2RX+6TX/PIN	2 Channel Transmitter + 6 Channel receiver with PIN receivers (matches DTR-4638/6TX+2RX)
DTR-4638/2RX+6TX/APD	2 Channel Transmitter + 6 Channel receiver with APD receivers (matches DTR-4638/6TX+2RX)