

8-Channel 3G/HD/SD-SDI/ASI Fibre Optic Link

FEATURES

- Transports up to 8 independent 3G-SDI, 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.
- Transmitter (Tx) and receiver (Rx) can be used separately with 8 independent single channel fibre Rx and Tx cards via an external CWDM optical combiner.
- DashBoard™ and SNMP software monitoring and control.

GENERAL

The IRT-6638-DDT and IRT-6638-DDR are 8-channel transmit and receive modules designed principally for use as eight serial data fibre optic transmission links on a single fibre for 3G-SDI, 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 APD detectors with signal conditioning and reclocking circuits. The data rates are automatically set to match the 3G-SDI, 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.

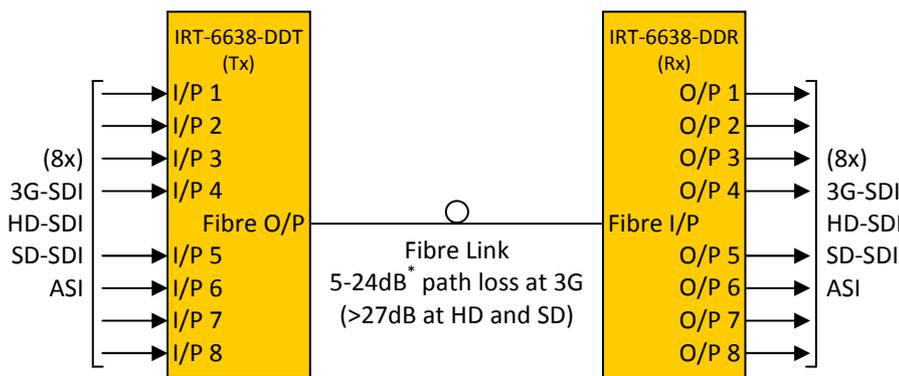
The transmitter and receiver modules are compatible with IRT's single channel fibre cards for use as eight independent fibre paths starting from or coming to a single location when used in conjunction with an external 8-channel CWDM optical combiner/de-combiner.

A DIP switch selectable "keep link alive" signal is available to maintain optical link operation when no electrical input is present.

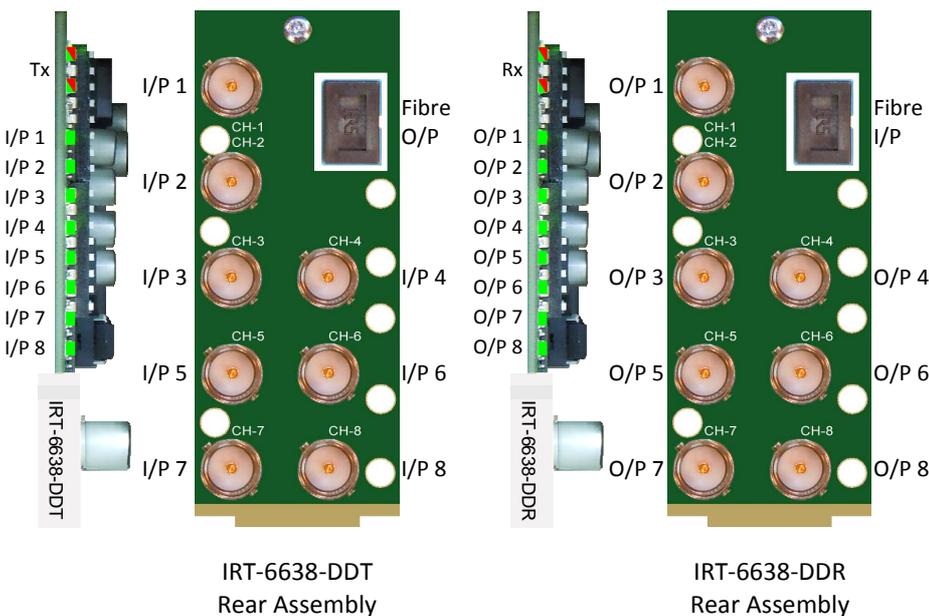
The IRT-6638-DDT and IRT-6638-DDR are designed to fit the openGear® standard 2RU frames which allow a mixture of cards from various manufacturers to be mounted within the same frame.

DashBoard™ control software is available as a free download.

BLOCK DIAGRAM IRT-6638-DDT & IRT-6638-DDR SIGNAL PATH



NOTE: * When fitted with APD detectors.
0 to 14dB when fitted with PIN detectors.



NOTE 1 24dB path loss at 3G. Typically >27dB at HD and SD. Fitted with APD detectors.

IRT-6638-DDT & IRT-6638-DDR

TECHNICAL SPECIFICATIONS

IRT-6638-DDT:

Input serial data signal	2.97 Gb/s (3G-SDI) to SMPTE 424M; 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; > 10 dB 1.5 GHz to 2.97 GHz.
Automatic cable compensation	> 100 m at 2.97 Gb/s (3G-SDI) with Belden 1694A (typ. 110m); > 100 m at 1.485 Gb/s (HD-SDI) with Belden 1694A (typ. 160m); > 250 m at 270 Mb/s (SD-SDI/ASI) with Belden 8281 (typ. >300m).
Input connector	8 x BNC on rear panel, 1 per channel.

IRT-6638-DDR:

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; > 10 dB 1.5 GHz to 2.97 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	< 0.3 UI at 2.97 Gb/s reclocked; < 0.2 UI at 1.485 Gb/s reclocked; < 0.1 UI at 270 Mb/s reclocked.
Output connector	8 x BNC on rear panel, 1 per channel.

Optical:

IRT-6638-DDT optical output	0 dBm +4.5/-0 dB CWDM DFB lasers.
IRT-6638-DDR optical input	APD detector, -5 to -24 dBm input level at 3G-SDI, typically < -27 dBm at HD/SD-SDI. PIN detector, 0 to 14 dBm input level at 3G-SDI, typically < -17 dBm at HD/SD-SDI.
Wavelengths	CWDM DFB lasers – 1470nm, 1490nm, 1510nm, 1530nm, 1550nm, 1570nm, 1590nm, 1610nm.
Optical path loss²	5 to 24 dB at 3G-SDI, typically >27 dB at HD/SD-SDI, APD detectors, 0 to 14 dB at 3G-SDI, typically >17 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.

Power Requirements:

Voltage	+ 12 Vdc.
Power consumption	IRT-6638-DDT < 19 VA, IRT-6638-DDR < 14VA.

Other:

Temperature range	0 - 50° C ambient.
Mechanical	Suitable for mounting in an openGear® 2RU rack chassis.
Dimensions (openGear® standard)	33.6 mm x 2U x 325 mm.

Supplied accessories Rear connector assembly.

Ordering	IRT-6638-DDT	IRT-6638-DDT, fitted with 1470-1610nm DFB lasers and on-board 8-channel CWDM combiner, programmed with Dashboard™ control.
	IRT-6638-DDR	IRT-6638-DDR, fitted with APD detectors and on-board 8-channel CWDM de-combiner, programmed with Dashboard™ control.
	IRT-6638-DDR/PIN	IRT-6638-DDR, fitted with PIN detectors and on-board 8-channel CWDM de-combiner, programmed with Dashboard™ control.

NOTE: 2 Typical values based using DFB laser. Optical attenuator supplied for IRT-6638-DDR when optical path loss is less 5dB for APD detector.