

Dual 3G/HD/SD-SDI/ASI Fibre Optic Link

FEATURES

- 2 independent fibre links.
- Transports 3G-SDI, HD-SDI, SD-SDI or ASI signal rates.
- Transmitter (Tx) and receiver (Rx) can be used separately with 2 independent single channel fibre Rx and Tx cards.
- Path lengths up to 30 dB¹ optical path loss using 9/125µm single mode fibre.
- Optional on-board WDM² optical combiner for use on a single common fibre.
- DashBoard™ and SNMP software monitoring and control.

GENERAL

The IRT-6632-DDT and IRT-6632-DDR are dual transmit and receive modules designed principally for use as two independent serial data fibre optic transmission links 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 transmitters feature automatic input cable equalisation and an active loop through monitoring port on each input.

Both the transmitter and receiver modules are configurable for automatic changeover to both outputs on loss of either input, if required.

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.

The transmitter and receiver modules are compatible with IRT's single channel fibre cards for use as two independent fibre paths starting from or coming to a single location.

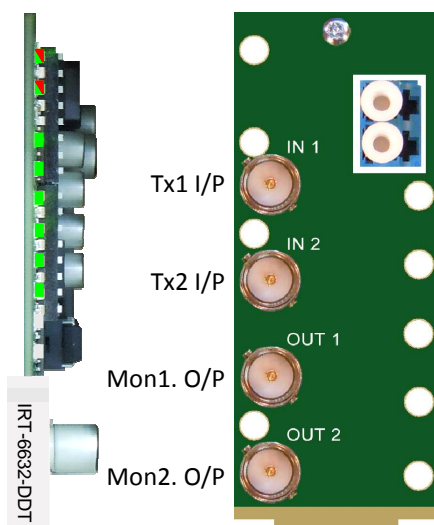
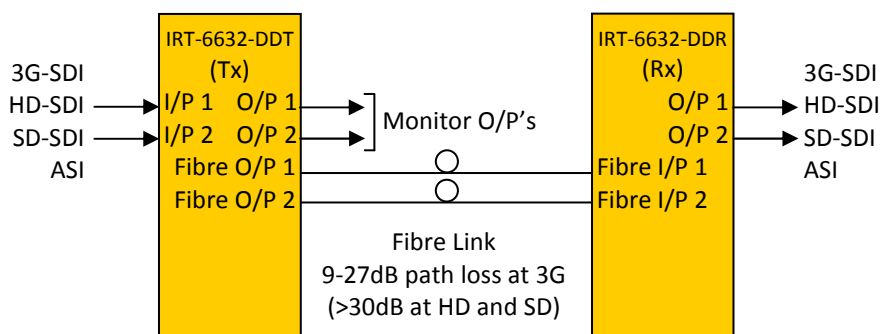
A link selectable "keep link alive" signal is available to maintain optical link operation when no electrical input is present.

Optionally a 1310/1550nm WDM² optical combiner can be fitted to allow for combined use on a single fibre.

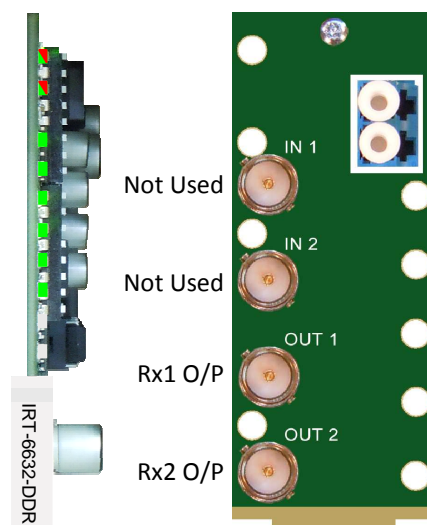
The IRT-6632-DDT and IRT-6632-DDR are designed to fit the openGear® standard 2RU frames which allow a mixture of cards from various manufacturers to be mounted within the same frame.

DashBoard™ control software is available as a free download.

BLOCK DIAGRAM IRT-6632-DDT & IRT-6632-DDR SIGNAL PATH



IRT-6632-DDT
Rear Assembly



IRT-6632-DDR
Rear Assembly

NOTE 1 27dB path loss at 3G. Typically >30dB at HD and SD. Fitted with APD detector.

2 With WDM option fitted for combined use on a single fibre, optical path loss is reduced by approximately 2dB.

IRT-6632-DDT & IRT-6632-DDR

TECHNICAL SPECIFICATIONS

IRT-6632-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	2 x BNC on rear panel, 1 per channel.
Output connector	2 x BNC on rear panel, monitor outputs.

IRT-6632-DDR:

Number of outputs	1 per channel, data reclocked, AC coupled.
Output level	800 mV \pm 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	2 x BNC on rear panel, 1 per channel.

Optical:

IRT-6632-DDT optical output	0 dBm +4.5/-0 dB CWDM DFB laser.
IRT-6632-DDR optical input	APD detector, -9 to -27 dBm input level at 3G-SDI, typically < -30 dBm at HD/SD-SDI.
Available wavelengths	CWDM DFB laser – 1310/1550nm (standard). Other wavelengths combinations available on request.
Optical path loss ^{3,4}	9 to 27 dB at 3G-SDI, typically >30 dB at HD/SD-SDI, APD detector; 3 to 18 dB at 3G-SDI, typically >20 dB at HD/SD-SDI, PIN detector. (Optical path loss = Laser O/P power – Detector I/P power)
Optical fibre	Designed for use with 9/125 μ m single mode fibre.
Optical connector	2 x LC/PC (standard) on rear – direct connection to main card, 1 per channel; 1 x SC/PC (standard) with WDM option fitted.

Power Requirements:

Voltage	+ 12 Vdc.
Power consumption	< 5 VA.

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.
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Ordering	IRT-6632-DDT	IRT-6632-DDT, fitted with standard 1310/1550nm laser, programmed with DashBoard™ control.
	IRT-6632-DDT/1550	IRT-6632-DDT, fitted with CWDM DFB 1550/1550nm laser, programmed with DashBoard™ control.
	IRT-6632-DDT/WDM	IRT-6632-DDT, fitted with standard 1310/1550nm laser and on-board 1310/1550nm WDM combiner, programmed with DashBoard™ control.
	IRT-6632-DDR	IRT-6632-DDR, fitted with APD detector, programmed with DashBoard™ control.
	IRT-6632-DDR/PIN	IRT-6632-DDR, fitted with PIN detector, programmed with DashBoard™ control.
	IRT-6632-DDR/WDM	IRT-6632-DDR, fitted with APD detector and on-board 1310/1550nm WDM de-combiner, programmed with DashBoard™ control.
	IRT-6632-DDR/PIN/WDM	IRT-6632-DDR, fitted with PIN detector and on-board 1310/1550nm WDM de-combiner, programmed with DashBoard™ control.

NOTE:	3	Typical values based using DFB laser. Optical attenuator required for IRT-6632-DDR when optical path loss is less 9dB for APD detector and 3dB for PIN detector.
	4	With WDM option fitted for combined use on a single fibre, optical path loss is reduced by approximately 2dB.

Due to our policy of continuing development, these specifications are subject to change without notice.

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