

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

FEATURES

- Transports 3G-SDI, HD-SDI, SD-SDI or ASI signal rates.
- Automatic changeover switching of input for signal redundancy on Tx.
- Path lengths up to 30 dB¹ optical path loss using 9/125µm single mode fibre.
- DashBoard® software monitoring and control.

GENERAL

The IRT-6630-DDT and IRT-6630-DDR are transmit and receive modules designed principally for use as a serial data fibre optic transmission link 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 link may be used for ASI transport streams for use with MPEG compressed video streams or other 270 Mb/s type data.

The transmitter features automatic input cable equalisation. A “keep link alive” signal is available to maintain optical link operation when no electrical input is present.

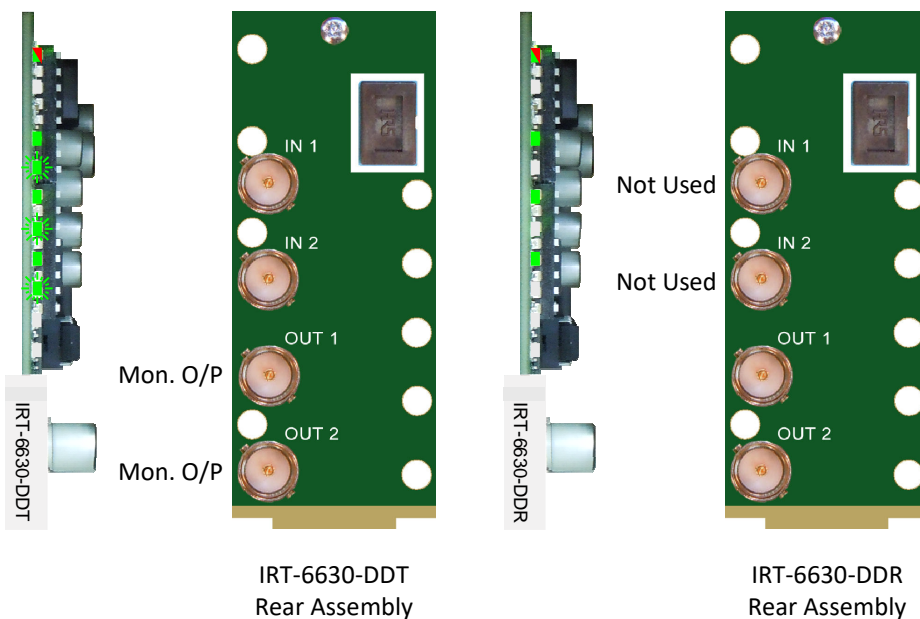
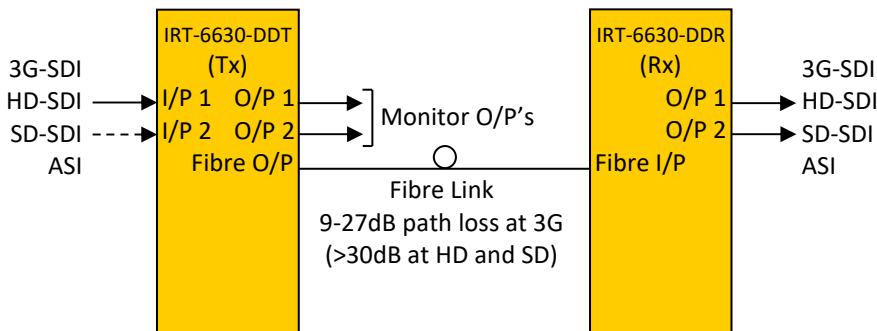
Two inputs are provided with automatic changeover to input 2 on loss of input 1 for input signal redundancy.

The receiver uses an APD detector with signal conditioning and reclocking circuits. The data rate is automatically set to match the 3G-SDI, HD-SDI or SD-SDI/ASI rates dependent on the actual input data rate to the transmitter.

The IRT-6630-DDT and IRT-6630-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.

The DashBoard® control software is available as a free download.

BLOCK DIAGRAM IRT-6630-DDT & IRT-6630-DDR SIGNAL PATH



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

IRT-6630-DDT & IRT-6630-DDR

TECHNICAL SPECIFICATIONS

IRT-6630-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, with I/P 1 taking priority & I/P 2 automatically switching in on loss of I/P 1.
Output connector	2 x BNC on rear panel, monitor outputs.

IRT-6630-DDR:

Number of outputs	2 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	2 x BNC on rear assembly.

Optical:

IRT-6630-DDT optical output	0 dBm +4.5/-0 dB CWDM DFB laser.
IRT-6630-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 - 1270nm, 1290nm, 1310nm (standard), 1330nm, 1350nm, 1410nm, 1430nm, 1450nm, 1470nm, 1490nm, 1510nm, 1530nm, 1550nm, 1570nm, 1590nm & 1610nm.
Optical path loss²	9 to 27 dB at 3G-SDI, typically >30 dB at HD/SD-SDI, APD detector. (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	< 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.

Ordering	IRT-6630-DDT	IRT-6630-DDT, fitted with standard 1310nm laser, programmed with Dashboard® control.
	IRT-6630-DDT/xxxx	IRT-6630-DDT, fitted with CWDM DFB laser other than 1310nm where xxxx = wavelength required. For example, IRT-6630-DDT/1550 is an IRT-6630-DDT fitted with a 1550nm laser.
	IRT-6630-DDR	IRT-6630-DDR, fitted with APD detector, programmed with Dashboard® control.

NOTE: 2 Typical values based using DFB laser. Optical attenuator supplied for IRT-6630-DDR when optical path loss is less 9dB for APD detector.