IRT COMMUNICATIONS

3G HD SD ASI

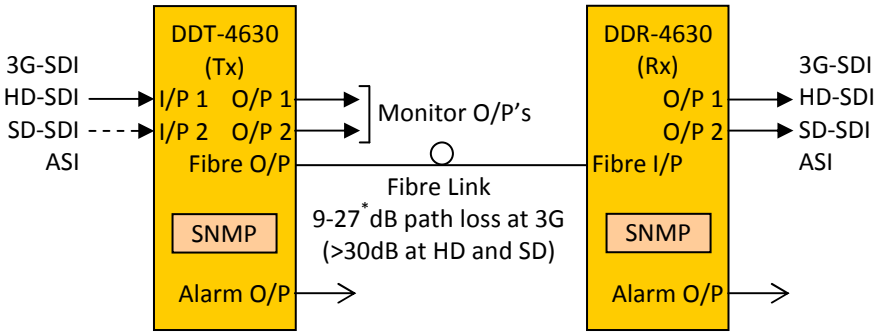
DDT-4630 & DDR-4630

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

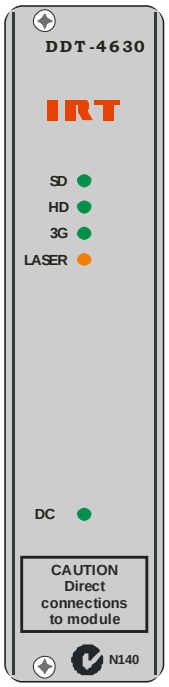
FEATURES

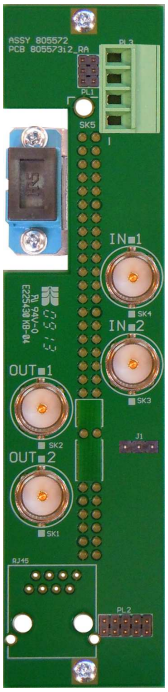
- **Transports 3G-SDI, HD-SDI, SD-SDI or ASI signal rates.**
- **Path lengths up to 30 dB[1] optical path loss using 9/125µm single mode fibre.**
- **Automatic changeover switching of input for signal redundancy on Tx.**
- **LED indicators and external alarm contacts.**
- **Fibre, video and alarm connections at rear.**
- **Remote monitoring via SNMP.**

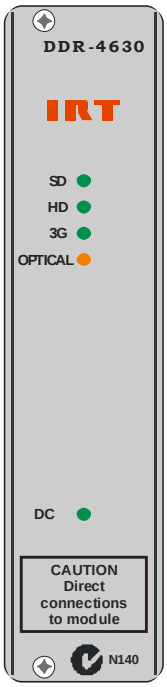
BLOCK DIAGRAM DDT-4630 & DDR-4630 SIGNAL PATH

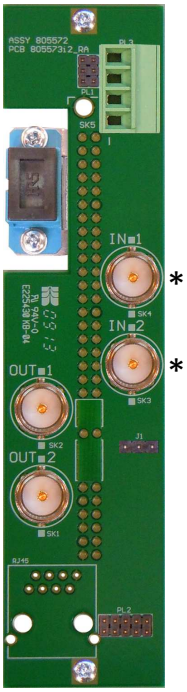


NOTE: * Fitted with APD detector. 3-18 dB when fitted with PIN detector.









DDR-4630:
* IN 1 & IN 2 BNC connectors not used.

GENERAL

The IRT DDT-4630 and DDR-4630 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. The unit can be configured with lasers of various wavelengths.

LED indicators are provided for digital signal presence, DC power and LASER failure.

A link selectable "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 a choice of either a PIN photodiode or APD detector with signal conditioning and reclocking circuits. The data rate is automatically set to match the 3G-SDI, HD-SDI or SD-SDI rates dependent on the actual input data rate to the transmitter.

Two serial digital outputs are provided. LED indicators are provided for digital signal presence, signal type, optical loss and power.

Relay contact outputs are also provided for external use of alarm signals on both modules.

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

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

TECHNICAL SPECIFICATIONS

DDT-4630:

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.

DDR-4630:

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:

DDT-4630 optical output	0 dBm +4.5/-0 dB CWDM DFB laser.
DDR-4630 optical input	APD detector, -9 to -27 dBm input level at 3G-SDI, typically < -30 dBm at HD/SD-SDI. PIN detector, -3 to -18 dBm input level at 3G-SDI, typically < -20 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 loss[2]	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 µm single mode fibre.
Optical connector	1 x SC/PC (standard) on rear – direct connection to main card.

Power Requirements:

Voltage	28 Vac CT (14-0-14) or ±16 Vdc.
Power consumption	DDT-4630 < 5.0 VA, DDR-4630 < 5.0 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	**Front panel**	Grey, black lettering & red IRT logo.
	Rear assembly	Detachable silk-screened PCB with direct mount connectors to Eurocard and external signals.
Dimensions		6 HP x 3 U x 220 mm IRT Eurocard.

NOTE: 2 Typical values based using DFB laser. Optical attenuator supplied for DDR-4630 when optical path loss is less than 3dB for PIN detector and 9dB for APD detector.