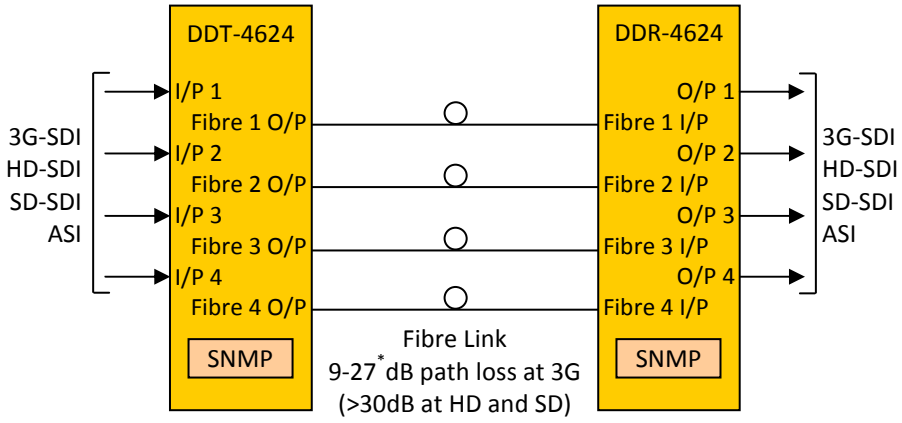
DDT-4624 & DDR-4624

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

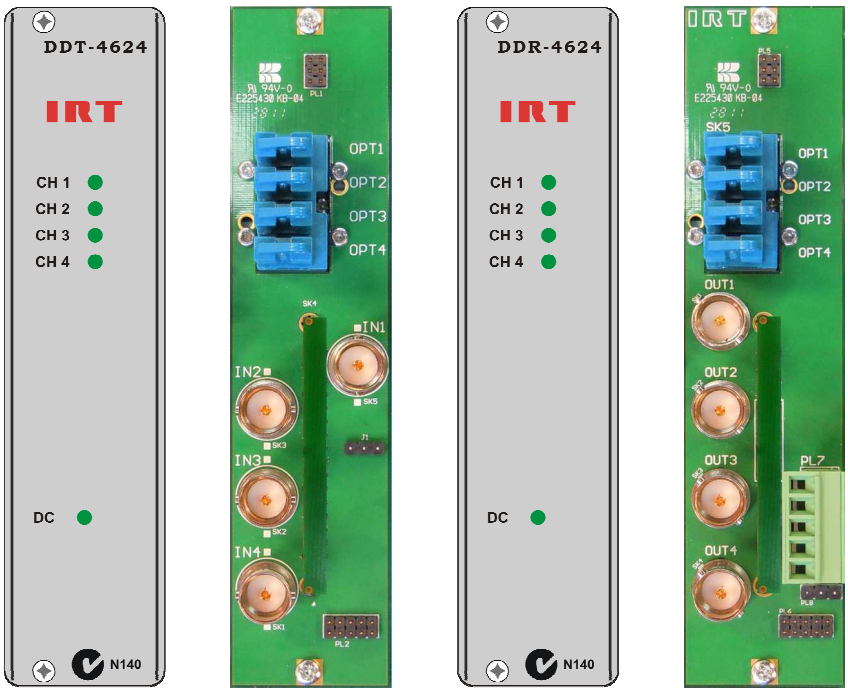
FEATURES

- **4 independent fibre links.**
- **Transports 2.97 Gb/s 3G-SDI, 1.485 Mb/s HD-SDI or 270 Mb/s SD-SDI & ASI signals.**
- **Hot pluggable fibre connections.**
- **Various independent wavelength options available for use with a CWDM system.**
- **Transmitter (Tx) and receiver (Rx) can be used separately with 4 independent single channel fibre Rx and Tx cards.**

BLOCK DIAGRAM DDT-4624 & DDR-4624 SIGNAL PATH



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



GENERAL

The IRT DDT-4624 and DDR-4624 are quad transmit and receive modules designed principally for use as four independent serial data fibre optic transmission links for 3G-SDI, HD-SDI or SD-SDI applications conforming to SMPTE standards 424M, 292M and 259M using 9/125 µm single mode fibre.

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, at time of order, with lasers of various wavelengths for use with a CWDM system.

The receiver uses a choice of either a PIN photodiode or 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 transmitter.

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

LED indicators are provided on both modules for digital signal presence and power.

Both the DDT-4624 and DDR-4624 are fully hot pluggable with the fibre connections being independent of the main card being connected solely to the modules rear assembly.

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

The DDT-4624 and DDR-4624 are Eurocard modules designed to fit IRT's current range of standard Eurocard frames and may be used alongside any other of IRT's analogue or digital Eurocards.

TECHNICAL SPECIFICATIONS

DDT-4624:

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 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 with Belden 1694A (typ. 130m); > 100 m at 1.485 Gb/s with Belden 1694A (typ. 170m); > 250 m at 270 Mb/s with Belden 8281 (typ. > 300m).
Input Connector	4 (1 per channel), BNC on rear panel.

DDR-4624:

Number of outputs	1 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; < 0.2 UI at 270 Mb/s reclocked (typically < 0.1 UI).
Output Connector	4 (1 per channel), BNC on rear assembly.

Optical:

DDT-4624 optical output	0 dBm +4.5/-0 dB CWDM DFB laser.
DDR-4624 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.
Available wavelengths	CWDM DFB laser - 1270nm, 1290nm, 1310nm 1330nm, 1350nm, 1410nm, 1430nm, 1450nm, 1470nm, 1490nm, 1510nm, 1530nm, 1550nm, 1570nm, 1590nm & 1610nm.
Optical path loss[1]	9 to 27 dB at 3G-SDI, typically > 30 dB at HD/SD-SDI, APD detector; 3 to 18 dB 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 connectors	4 (1 per channel), LC/PC on rear assembly.

Power Requirements:

Voltage	28 Vac CT (14-0-14) or ±16 Vdc.
Power consumption	DDT-4624 <6.0 VA, DDR-4624 <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	**Front panel**	Grey background, 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.
Optional accessories		SMU-4000 SNMP plug in module for use with 4000 series frame fitted with SNMP “Agent”.

NOTE: 1 Typical values based using DFB laser. Optical attenuator required for DDR-4624 when optical path loss is less than 3dB for PIN detector and 9dB for APD detector.