

## 'L' Band FM RF Fibre Optic Link RWT-3820 & RWR-3820

### Uses:

- TVRO Satellite antenna to control room 'L' band signal feeds (900 MHz - 2150 MHz).
- In-building satellite 'L' band distribution.
- Multi-site satellite 'L' band distribution.

### Fibre optic link benefits include:

- Immunity from RFI.
- Low signal attenuation.
- Lightning immunity.
- Electrical isolation eliminates ground loop problems.
- Elimination of equalisers & amplifiers.

### General:

The IRT RWT-3820 / RWR-3820 Wide Band RF Fibre Optic Link is a modular system for transmitting broadband RF 'L' band FM modulated signals over an optical fibre cable. The system response is from 900 - 2150 MHz.

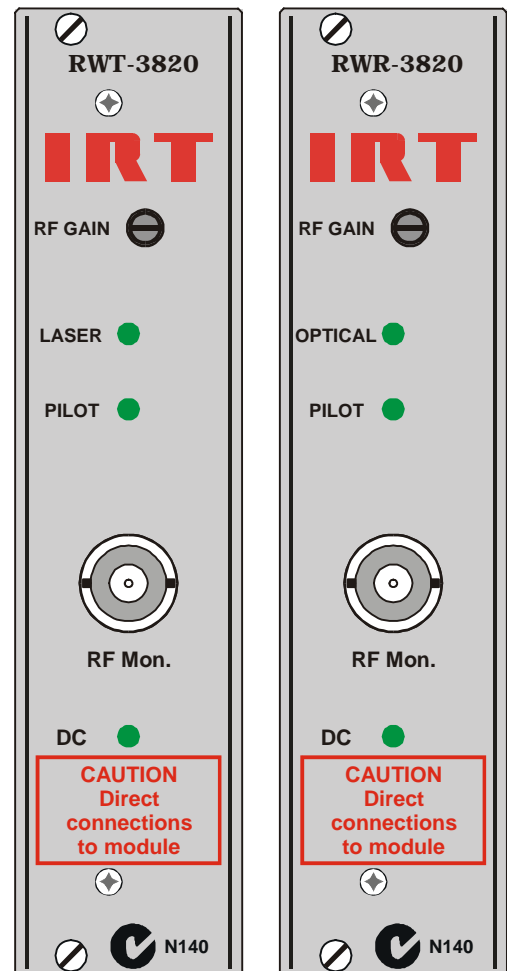
The link is designed for transferring the down converted 'L' band signals from satellite dishes to main equipment buildings. Fibre optic cable provides low signal attenuation with no gain or cable equalisation requirements with the added benefit of immunity to RFI and EMI and protection against lightning strikes.

The system is designed for single mode fibre (9/125  $\mu\text{m}$ ) at 1300 nm with a path loss of up to 12 dB. The operating distance will depend upon the actual cable and connector losses.

RF signal connections are made to 75 $\Omega$  SMC connectors on the rear panels. BNC and F adapters are provided.

Optical connections are made to SC/PC optical connectors on at the rear of the module.

Modules can be installed in IRT 1 RU or 3 RU frames.



### RWT-3820 LASER Transmitter

Wide band amplifiers are used to drive the DFB LASER with the RF signals applied to the module input. The signal level is set by a front panel control for optimum signal to noise ratio. A pilot signal is added to the RF path to monitor the RF path integrity at the receiver.

Pilot signal level and laser output LED indicators are provided as well as a relay contact set for external alarm indication of laser power or DC supply loss.

LNB power from the IRT PSU-3820 power supply can be applied through a connector on the rear panel.

### RWR-3820 Photo-detector Receiver

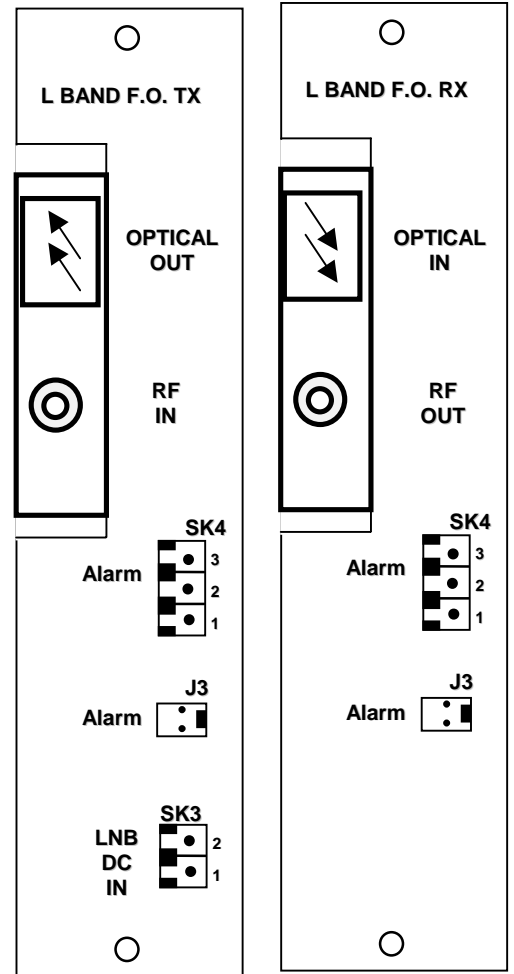
The receiver consists of an optical detector diode module followed by an adjustable gain stage and amplifiers to provide two RF outputs from the receiver.

The output signal level is adjusted to the required level as seen at the RF Mon connector. This level is the same as the rear output signal level.

Pilot and optical signal level LED indicators are provided as well as a relay contact set for external alarm indication of optical signal, pilot or DC supply loss.

# RWT/RWR-3820 Technical Specifications

RF signal connections	75Ω SMC on module rear panel. (BNC and F adapters provided).
RF Monitor connections	BNC connectors on transmitter and receiver front panels. Allows easy setting up of RF levels.
RF input level	Adjustable in the range -40 dBm to -20 dBm total power.
RF output level	Adjustable in the range -45 dBm to -20 dBm total power.
Input / output VSWR	< 2: 1 (75 Ω).
System frequency response	900MHz to 2150 MHz operation.
500 MHz flatness	± 1.5 dB.
36 MHz flatness	± 0.5 dB.
System group delay	±2 ns 900 MHz - 2150 MHz.
Carrier to noise	> 26 dB for 36 MHz bandwidth.
Intermodulation products.	< 40 dBc.
Tx optical output power	0 dBm.
Rx optical input power	-5 dBm to -15 dBm. (Note: 10 dB pad provided for back to back operation where path attenuation is less than 5 dB).



System optical budget	12 dB.
Optical signal connections	SC/PC (accessible from the rear of the module) for use with single mode (9/125 μm) fibre cable.
LNB power supply	13 or 18V input to rear panel, SK3, can be applied.

## Power Requirements

28 Vac CT (14-0-14) or ±16 Vdc  
6 VA for RWT-3820 and 5 VA for RWR-3820

**Mechanical** Suitable for mounting in IRT 19" rack chassis with optical, RF & alarm connections at the rear.

**Finish:** Front panel Grey with black lettering & red IRT logo.  
Rear assembly Detachable silk-screened PCB with direct mount connectors to Eurocard and external signals.

**Dimensions** 32 mm x 3 U x 220 mm IRT Eurocard.

**Optional accessories** TME-6 module extender card.

**NOTE:** All the parameters specified are only applicable when using single mode (9/125 μm) fibre cable with a return loss of ≥ 27 dB.

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

**Detailed specifications available from:**

**Manufacturer:**  
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