

Installation and Operating handbook

Test Loop Translator Remote Series

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PEAK COMMUNICATIONS Ltd.
Unit 1, The Woodvale Centre, Woodvale Road,
Brighouse, West Yorkshire
HD6 4AB, England

Phone +44 (0)1484 714200
Fax +44 (0)1484 723666



**IMPORTANT NOTE: THE INFORMATION AND SPECIFICATIONS
CONTAINED IN THIS DOCUMENT SUPERSEDE ALL PREVIOUSLY
PUBLISHED INFORMATION CONCERNING THIS PRODUCT**

Peak Communications Ltd maintains a continuing programme of product improvement and therefore reserves the right to change specifications without notice

TLTR series SHF to L-Band remote mounted Test Loop Translators



Unit description

The TLTR Series remote mounted Test Loop Translators from Peak Communications are designed to be fully compatible with a wide range of receive equipment, to provide a monitor path from the output of the SHF amplifier. These high-grade units are designed to accept the signal at SHF and provide a further conversion to the appropriate output band.

The unit is packaged in a diecast IP67 box with integral mounting lugs for easy mounting.

The TLTR series are designed to operate over a wide range of SHF power level inputs. The unit is temperature compensated to avoid long warm up periods.

The internal construction of the unit is modular which give some flexibility in accommodating customers' requirements such as gain and frequency. The unit is powered from the 5-pin connector, 10MHz reference signal can be provided via the optional TNC connector. Levels of these are given in the unit specification. Where very long lengths of cable are used, gain can be incorporated as an option.

If option 14a is fitted then the DC input is via the L-Band interface and is not via the discrete DC connector.

The incoming RF is passed to the mixer which is fed with an internal LO this LO is referenced by a high stability temperature compensated OCXO. At all stages the components have isolators or attenuators to ensure correct matching is maintained. The L-band or receive band signal is then passed out to the N-Type connector with no filtering unless this has been specified. The unit will not tolerate DC on any RF connectors

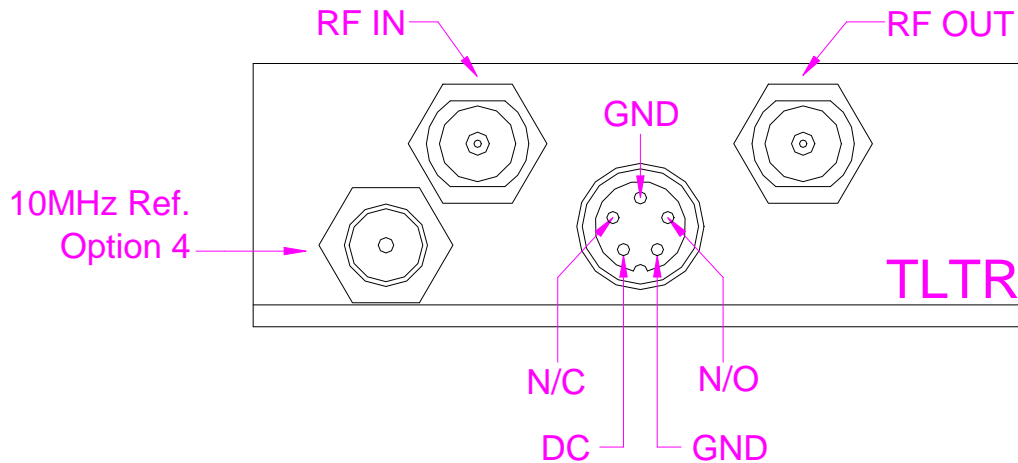
The TLTR units are not fitted with amplifiers as standard and have a through loss of 20dB nominal. Maximum input power with no damage is standard at +16dBm with a non-compressed signal level above 5dB nominal.

The third socket on the base of the unit is for an alarm and power cable. The 'Out of lock' signal from the DRO is passed to a relay which is powered when the DRO is in lock. Both the NO and NC sides of the relay are available on this connector.

As an option a fourth socket can be fitted which is for an external 10MHz reference and is usually a TNC connector. The operation for the 10MHz system is the same for a standard unit with the same alarms and internal reference detection circuitry. The DC and ground connections are placed on the pins, as shown in the diagram. If the above options are fitted the

composite arrangement of L-Band, 10MHz and DC being fed up the RF cable does not apply to the unit.

Installation



Connection panel view of TLTR Units

The unit has integral brackets on the box for attachment to a suitable fixture. The cables are all connected to one face which is the shorter side and the spacing of the four 5mm holes are 80mm apart and 190mm apart. The unit is cast aluminium and will break if excessive force is used.

Operation

Attach the N-type feed wire carrying the RF signal to the socket marked 'RF IN'.

Output of the unit is an N-type socket marked 'RF OUT'. Check out all cables for shorts before connecting and ensure the connections are weatherproofed. The connections to the unit have a low DC tolerance and connecting DC to either input or output may cause damage.

- N/C (NORMALLY CLOSED) defined as; shorted to ground with no power, open circuit when working OK.
- N/O (NORMALLY OPEN) defined as; open circuit with no power, short to ground when working OK.

The rating of the relay contacts is as follows;

Switch Voltage (Max)	100V
Switch Current (Max)	0.5A
Switch Power (Max)	10W
Contact resistance	0.2 Ω
Operate/release	0.5 ms

The 10MHz reference signal, if option 4 is ordered, should be 0dBm +/-3dB. Lock can be achieved down to -10dBm, but this gets progressively more susceptible to interference.

If option 4 is ordered the alarm output is normally configured as a summary of 'external reference disconnected' or 'LO alarm' ('DRO out of lock' or 'no power to the unit'). Special

configurations are available for applications where the user does not want 'external reference disconnected' to trigger an alarm.

Maintenance

The unit is maintenance free but the following should be considered.

If the unit has been opened for any reason and the unit is in a hostile atmosphere additional sealing of the box is advised.

The only monitoring position on the DRO is the monitor pin which should read 6 volts in lock position.

Specification

Input

Connector N-type (f), 50Ω
Return Loss >18dB
Max Input power +16dBm

Output

Connector N-Type (f), 50Ω
Return Loss 15dB

Transfer characteristics

Conversion Loss 20dB ±2dB at 0dB attenuation

RF Performance

LO phase noise 75dBc/Hz @ 100Hz
(typical) -92dBc/Hz @ 1kHz
-100dBc/Hz @ 10kHz
-107dBc/Hz @ 100kHz
-125dBc/Hz @ 1MHz

External Reference Input (Option 4)

Frequency 10MHz (5MHz factory settable)
Connection Separate 50Ω TNC
Level 0dBm ±3dB

Mechanical

Width 123mm (4.85")
Height 172mm (6.8"), plus connections & mounting flanges
Depth 48mm (1.89")
Construction Die-cast Aluminium, IP66 rated
Weight 1.4kgs (3lbs) approx.

Control System Interface

Alarms Summary alarm contacts
Connection 5-pin circular, weatherproof (mating part supplied)
Remote Control Ethernet option, supporting TCP-IP etc. (option 9).

Environmental

Operating temp. -25°C to +70°C
EMC EN 55022 part B & EN 50082-1
Safety EN 60950

Power Supply

Voltage +16.5 to +35VDC
Current 500mA nom.
Connection Fed in on 5-pin control interface connection or powered via L-Band connection (Option 14a)

TLT2225

Input Frequency 5.85-6.425GHz Output Frequency 3.625-4.2GHz

TLT585

Input Frequency 5.85-6.65GHz Output Frequency 3.4-4.2GHz

TLT585I

Input Frequency 5.85-6.65GHz Output Frequency 4.2-3.4GHz (Inverted Spectrum)

TLT600

Input Frequency 5.85-6.65GHz Output Frequency 950-1750MHz

TLT642

Input Frequency 6.425-6.725GHz Output Frequency 3.425-3.725GHz

TLT742

Input Frequency 7.90-8.40GHz Output Frequency 7.25-7.75GHz

TLT790

Input Frequency 7.90-8.40GHz Output Frequency 950-1450MHz

TLT127

Input Frequency 12.75-13.50GHz Output Frequency 950-1700MHz

TLT137

Input Frequency 13.75-14.50GHz Output Frequency 950-1700MHz

TLT140

Input Frequency 14.00-14.50GHz Output Frequency 950-1450MHz

TLT1000

Input Frequency 13.75-14.50GHz Output Frequency 11.85-12.60GHz

TLT142

Input Frequency 12.25-12.75GHz Output Frequency 3.70-4.20GHz

TLT180

Input Frequency 17.3-18.1GHz Output Frequency 950-1750MHz

TLT184

Input Frequency 17.3-18.4GHz Output Frequency 950-2050MHz

CUSTOMER CARE

Contact the Peak Communications support department for:

- ✚ Product operation, application support or training requests
- ✚ Information for returning or upgrading a product
- ✚ Comments or suggestions on any supplied literature

Contact Information

Peak Communications Ltd
Attention: Support Department
Unit 1, The Woodvale Centre
Woodvale Road
Brighouse
HD6 4AB
United Kingdom
Tel. +44 (0) 1484 714200
Fax +44 (0) 1484 723666
E-mail support@peakcom.co.uk

You can also contact us via our website at www.peakcom.co.uk

To return a Peak Communications product for repair:

1. Contact the Peak Communications support department and request a Return Material Authorisation (RMA) number.
2. You will be required to provide to our support representative the model number, serial number and a detailed description of the problem.
3. To prevent any damage to the product during shipment we recommend that the unit is returned in its original packaging or if this is not available the packaging used must be of an equal standard.
4. Return the product back to Peak Communications and advise shipment details to support representative for tracking purposes. (Any shipping charges should be prepaid)

