

TLTH(B) Series

Multi-Band, Test Loop Translators, with a full user interface & remote control



Test Loop Translator Products;

TLT Unit	Translation Plan	Input (GHz)	Output (GHz)
TLTH1002	Super extended Ku (Tx) to L-Band, 2-range	12.75-13.75, 13.75-14.50	0.95-1.95 max.
TLTH1003	Extended Ku (Tx) to 3-range Ku (Rx)	13.75-14.50	10.95-11.70, 11.70-12.25, 12.25-12.75
TLTH1004	Extended C & extended Ku (Tx) to C & 3-range Ku (Rx)	5.85-6.65 13.75-14.50	3.4-4.2 10.95-11.70, 11.70-12.25, 12.25-12.75
TLTH2001a	Extended C & Ku (Tx) to L-Band	5.85-6.65, 14.00-14.50	0.95-1.75 max.
TLTH2001b	Extended C & extended Ku (Tx) to L-Band	5.85-6.65, 13.75-14.50	0.95-1.75 max.
TLTH3004	Tri-Band (extended C, X & extended Ku) transmit to receive	5.85-6.65 7.9-8.4 13.75-14.50	3.4-4.2 7.25-7.75 11.45-12.20
TLTH3004b	Tri-Band (C, X & Ku) transmit to receive	5.850-6.425 7.9-8.4 14.00-14.50	3.625-4.200 7.25-7.75 11.70-12.20
TLTH4004	Quad-Band (C, X, Ku & Ka) transmit to receive	5.850-6.425 7.9-8.4 14.00-14.50 30.0-31.0	3.625-4.200 7.25-7.75 11.70-12.20 20.2-21.2
TLTH4004b	Quad-Band (C, X, Ku & full Ka) transmit to receive	5.850-6.425 7.9-8.4 14.00-14.50 27.5-31.0	3.625-4.200 7.25-7.75 11.70-12.20 17.7-21.2

For other 'non-standard' frequency requirements, please contact the factory.

For single-range TLT units please see TLTH(A) series datasheet.

For equivalent lower cost TLT units without the full user interface please see TLT(B) series datasheet.

The **TLTH(B) series** of test loop translators are designed to take a sample of the transmit signal and convert it to a frequency at which it can be monitored or analysed. Often monitoring of the transmit signal is required at L-Band, or alternatively a translation of the transmit signal to the receive band which is then applied to the receive equipment in a test mode.

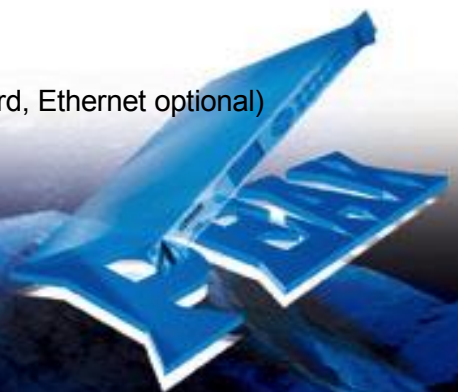
TLT units are supplied without filtering and the output of the unit therefore contains all mixing products. For higher level applications, units with filtering are also available, please consult the factory.

The optional 0 to 30dB variable attenuator control is used to balance the incoming power with the monitoring system.

The **TLTH(B) series** are housed in 19-inch 1RU rack mountable chassis and feature a full user interface with comprehensive remote-control features.

Peak Features

-  High stability and excellent phase noise
-  Full alarm monitoring
-  Internal switching of multiple-bands
-  Full 'local' user interface and remote control (RS232/485 as standard, Ethernet optional)
-  Optional electronically variable attenuators



Multi-Band TLTH(B) series – Typical Specification

Units are supplied with a single wideband input & output, with internally switched bands. Multiple input & output versions are available (see option 5).

Input (see Option 5a for multiple inputs)

Connector	SMA (f), 50Ω
Option 2a;	N-type (f), 50Ω
Return loss	>18dB
1dB GCP	+10dBm
Max input power	+15dBm

Output (see Option 5b for multiple outputs)

Connector	SMA (f), 50Ω,
Option 2b;	N-type (f), 50Ω
Return loss	15dB

Transfer Characteristics

Conversion loss	20 to 30dB (at 0dB attenuation), unit type & option dependent
Gain stability	±0.25dB from 0 to 40°C

RF Performance

LO phase noise (typical)	-75dBc/Hz @ 100Hz -92dBc/Hz @ 1kHz -100dBc/Hz @ 10kHz -105dBc/Hz @ 100kHz -125dBc/Hz @ 1MHz
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Internal Reference Stability

Allan deviation	5×10^{-11} over 1s
Ageing	$<5 \times 10^{-9}$ per day, $<5 \times 10^{-7}$ per year
Temp stability	$<5 \times 10^{-8}$ over 0 to 50°C

Note: Higher stability reference option available

External Reference Input (Option 4) with auto-detection

Frequency	10MHz (5MHz factory settable)
Level	0dBm ±5dB
Connector	BNC (f), 50Ω
Required phase noise	to be better than 50dBc/Hz of output phase noise
Locking delay	<2 minutes to stabilise from cold

Attenuation (Option 3)

Attenuation range	30dB nominal
Step size	0.1dB
Control	Electronically variable via local (front panel) & remote control

Notes: Multiple output options would require multiple attenuators.
Increases natural conversion throughput loss.

RF Mute (Option 13)

Activation	Front panel and remote control
Option 13a;	discrete control input on rear panel
Isolation	60dB min

Mechanical

Width	19" standard rack mountable
Height	1U (1.75")
Depth	534mm (21"), plus connectors
Construction	Aluminium chassis
Weight	Approx. 9.5kgs (21lbs)

Control System Interface

Remote control	RS232/ 485 port
Option 9;	Ethernet; embedded web server & SNMP network management support
Redundancy	CANBUS® interface for N+1 system
'Alarms' interface	In-built 1+1 & 2+1 controller PSU fail (form C) LO fail (form C)
Option 13a;	mute input control
Connector	D-type standard 15-way

Environmental

Operating temp	0°C to +50°C
EMC	EN 55022, part B & EN 50082-1
Safety	EN 60950

Power Supply

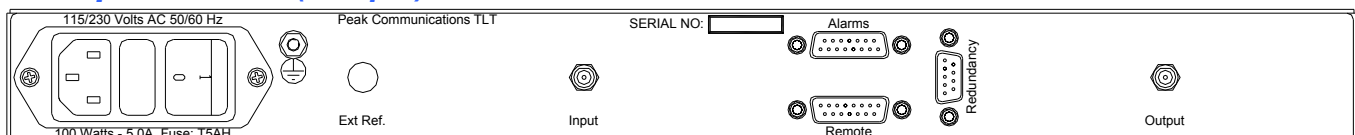
Voltage	90-264VAC
Frequency	47-63Hz
Power	30 Watts max

Options

- 2a) N-type (f) input connection
- 2b) N-type (f) output connection
- 3c) Electronic attenuator, 0-30dB (0.1dB steps), at Ku-Band
- 3d) Electronic attenuator, 0-30dB (0.1dB steps), at C or X-Band
- 3e) Wideband electronic attenuator, 0-30dB (0.5dB steps), covering C to Ku-Band.
- 4) External 10MHz reference input.
- 5a) Multiple inputs.
- 5b) Multiple outputs.
- 6) Lightweight Aluminium chassis.
- 9) Ethernet interface with embedded web server & SNMP
- 13) RF mute option with front panel and remote control
- 13a) Mute control input on rear panel

Note: Some of the above options have an impact on the general performance specification and factory guidance should be sought if this is thought to be critical.

Rear panel view (sample)



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