

TLT(B) Series

Multi-Band, Test Loop Translators



Test Loop Translator Products;

TLT Unit	Translation Plan	Input (GHz)	Output (GHz)
TLT1002	Super extended Ku (Tx) to L-Band, 2-range	12.75-13.75, 13.75-14.50	0.95-1.95 max.
TLT1003	Extended Ku (Tx) to 3-range Ku (Rx)	13.75-14.50	10.95-11.70, 11.70-12.25, 12.25-12.75
TLT1004	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
TLT2001a	Extended C & Ku (Tx) to L-Band	5.85-6.65, 14.00-14.50	0.95-1.75 max.
TLT2001b	Extended C & extended Ku (Tx) to L-Band	5.85-6.65, 13.75-14.50	0.95-1.75 max.
TLT3004	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
TLT3004b	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
TLT4004	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
TLT4004b	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 TLT(A) series datasheet.

For equivalent units with full user interface, remote control and digital attenuation, please see TLTH(B) series datasheet.

The **TLT(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.

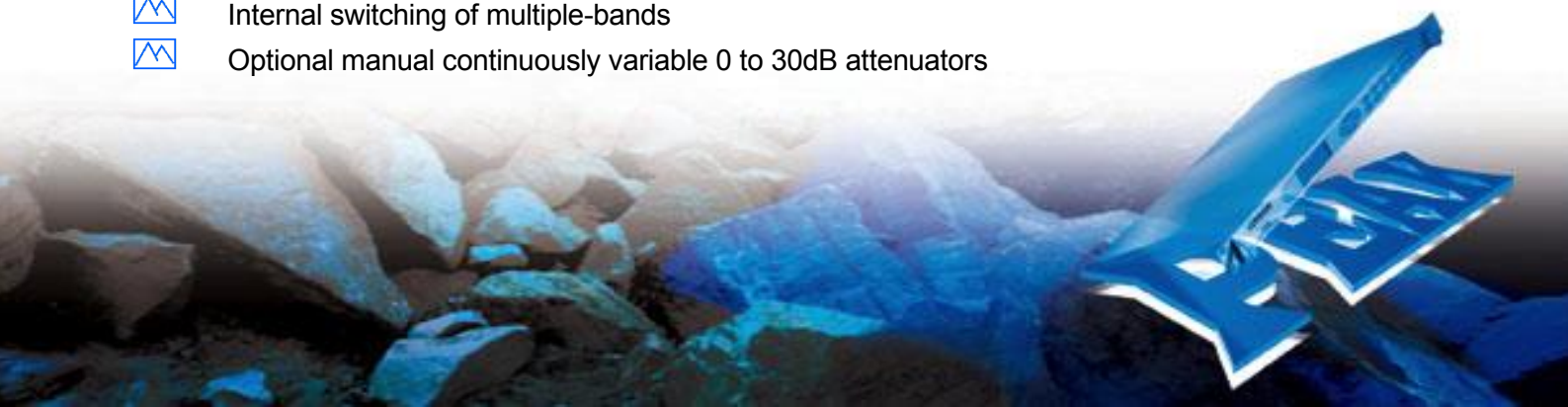
TLT units are supplied without filtering and the output of the unit therefore contains all mixing products. For higher level applications, units with filtering are also available, please consult the factory.

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

The **TLT(B) Series** are housed in 19-inch 1RU rack mountable chassis.

Peak Features

-  High stability and excellent phase noise
-  Full alarm monitoring
-  Internal switching of multiple-bands
-  Optional manual continuously variable 0 to 30dB attenuators



Multi-Band TLT(B) series – Typical Specification

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)

Frequency	10MHz (5MHz factory settable)
Level	0dBm ±5dB
Connector	BNC (f), 50Ω

Attenuation (Option 1b)

Attenuation range	30dB nominal
Control	Continuously variable from front panel
Notes: Multiple output options would require multiple attenuators. Can degrade gain flatness performance & increase throughput loss.	

RF Mute (Option 13)

Activation	Front panel switch
Option 13a;	Discrete control input on rear panel (replaces front panel switch actuation)
Option 13b;	Discrete control input on rear panel (in addition to the front panel switch)
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

Alarms	PSU fail (form C) LO fail (form C)
Controls	Mute input (Option 13a)
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

- 1b) Manual variable attenuator, 0-30dB, at SHF
- 2a) N-type (f) input connection
- 2b) N-type (f) output connection
- 4) External 10MHz reference input
- 5a) Multiple inputs for dual-band requirements
- 5b) Multiple outputs for dual-band requirements (1x C-Band and 1x Ku-Band)
- 6) Lightweight Aluminium chassis
- 13) RF mute option, activated from front panel
- 13a) Mute control input on rear panel replacing front panel switch
- 13b) Mute control input on rear panel & front panel switch

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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