

TLT(A) Series

Single Band Test Loop Translators



Test Loop Translator Products;

TLT202	S-Band (TX) to S-Band (RX)
TLT600	C-Band (TX: 5.85-6.65GHz) to L-Band
TLT601i	C-Band (TX: 5.85-6.425GHz) to L-Band, inverted spectrum
TLT672	Extended C-Band (TX) to L-Band
TLT7025	Super extended C-Band (TX) to L-Band
TLT7025B	INSAT C-Band (TX) to L-Band
TLT642, 2225	C-Band (TX) to C-Band (RX)
TLT585, 585i	C-Band (TX) to C-Band (RX), inverted and non-inverted spectrum available
TLT6725	INSAT C-Band (TX) to INSAT C-Band (RX)
TLT790	X-Band (TX) to L-Band
TLT742	X-Band (TX) to X-Band (RX)
TLT127	Ku-Band (TX; 12.75 to 13.50GHz) to L-Band
TLT137	Ku-Band (TX; 13.75 to 14.50GHz) to L-Band
TLT140	Ku-Band (TX; 14.00 to 14.50GHz) to L-Band
TLT148	Ku-Band (TX; 13.75 to 14.80GHz) to L-Band
TLT145	Ku-Band (TX; 14.50 to 14.80GHz) to L-Band
TLT1000, 1001	Ku-Band (TX) to Ku-Band (RX)
TLT142	Ku-Band (RX) to C-Band (RX)
TLT180	DBS-Band (TX) to L-Band
TLT184	Extended DBS-Band (TX) to L-Band
TLT173	Extended DBS-Band (TX) to Ku-Band (RX)

For other 'non-standard' frequency requirements or multi-channel versions, please contact the factory.

For multiple-range TLT units please see TLT(B) series datasheet.

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

For equivalent remote mount units, please see TLTR(A) series datasheet.

The **TLT(A) 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 unit is housed in 19-inch 1'U' high chassis, suitable for rack mounting, is 400 mm deep and may be fitted with rack slides if required.

Peak Features



High stability and excellent phase noise



Full alarm monitoring



Optional manual continuously variable 0 to 30dB attenuator



TLT(A) series – Typical Specification

Model	Input	Output	Notes
TLT202	2020-2120MHz	2200-2300MHz	
TLT600	5.85-6.65GHz	950-1750MHz	
TLT601i	5.85-6.425GHz	1525-950MHz	Inverted output spectrum.
TLT672	5.850-6.725GHz	950-1825MHz	
TLT7025	5.850-7.025GHz	950-2125MHz	In-band carrier related spurious limited to -38dBc at 0dBm input typ.
TLT7025B	6.725-7.025GHz	950-1250MHz	
TLT2225	5.850-6.425GHz	3.625-4.200GHz	In-band carrier related spurious limited to -40dBc at 0dBm input typ.
TLT585	5.85-6.65GHz	3.4-4.2GHz	In-band carrier related spurious limited to -40dBc at 0dBm input typ.
TLT585i	5.85-6.65GHz	4.2-3.4GHz	Inverted output spectrum.
TLT642	6.425-6.725GHz	3.4-3.7GHz	
TLT6725	6.725-7.025GHz	4.5-4.8GHz	
TLT790	7.9-8.4GHz	950-1450MHz	
TLT742	7.9-8.4GHz	7.25-7.75GHz	In-band carrier related spurious limited to -45dBc at 0dBm input typ.
TLT127	12.75-13.50GHz	950-1700MHz	
TLT137	13.75-14.50GHz	950-1700MHz	
TLT148	13.75-14.8GHz	950-2000MHz	
TLT140	14.0-14.5GHz	950-1450MHz	
TLT145	14.5-14.8GHz	950-1250MHz	
TLT142	12.25-12.75GHz	3.7-4.2GHz	
TLT1000	13.75-14.50GHz	11.85-12.60GHz	
TLT1001	14.0-14.5GHz	11.7-12.2GHz	
TLT180	17.3-18.1GHz	950-1750MHz	
TLT184	17.3-18.4GHz	950-2050MHz	
TLT173	17.3-18.4GHz	10.85-11.95GHz	In-band carrier related spurious limited to -45dBc at 0dBm input typ.

Note; other ranges are available as well as multi-channel versions, please consult the factory.

Input

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

Output

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

Transfer Characteristics

Conversion loss	20dB ±2dB at 0dB attenuation
Gain stability	±0.25dB from 0 to 40°C

RF Performance

LO phase noise	-75dBc/Hz @ 100Hz
	-92dBc/Hz @ 1kHz
	-100dBc/Hz @ 10kHz
	-105dBc/Hz @ 100kHz
	-125dBc/Hz @ 1MHz

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 automatic 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

Manual Attenuation (Option 1)

Attenuation range	30dB
Control	Continuously variable from front panel.

Note; can degrade gain flatness performance

RF Mute (Option 13)

Activation	Front panel switch
Option 13a;	Discrete control input on rear panel (replaces the front panel switch actuation)
Option 13b;	Discrete control input on rear panel (in addition to the standard front panel switch)
Isolation	60dB min

Mechanical

Width	19" standard rack mountable
Height	1U (1.75")
Depth	~400mm (15.7"), plus connectors
Construction	Aluminium chassis
Weight	4.5kgs (10lbs)

Control System Interface

Alarms	PSU fail (form C), LO fail (form C)
Controls	Mute input (Option 13a)
Connector	D-type, 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
Option 7;	Redundant PSU; provides a 1+1 redundant PSU configuration with separate prime power inputs

Options

- 1a) Manual variable attenuator, 0-30dB, at L/ S-band
- 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
- 7) Redundant power supply
- 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 as well as front panel switch

Note; some of the above options have an impact on the performance specification, for details please contact the factory if this is thought to be critical.

Rear panel view (sample)



ESATCOM INC.

3628 Francis Lewis Blvd.
Flushing, NY 11358
www.esatcom.com
Tel: 718.799.0084
Email: sales@esatcom.com