

TLT(Ka) Series

Ka-Band Test Loop Translators



Test Loop Translator Products;

TLT2750	Ka-Band TX (27.5-28.5GHz) to L-Band
TLT2800	Ka-Band TX (28.0-29.5GHz) to L-Band
TLT2900	Ka-Band TX (29.0-30.0GHz) to L-Band
TLT2960	Ka-Band TX (29.6-30.2GHz) to L-Band
TLT3000	Ka-Band TX (30.0-31.0GHz) to L-Band
TLT3100	Full Ka-Band TX (27.5-31.0GHz) to Ka-Band RX (17.7-21.2GHz)

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

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

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

The **TLT(Ka) 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 a 19-inch 1'RU' high chassis which is suitable for rack mounting and is 400mm 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(Ka) series – Typical Specification

Models;

TLT2750

Input frequency	27.5-28.5GHz
Output frequency	950-1950MHz

TLT2800

Input frequency	28.0-29.5GHz
Output frequency	950-2450MHz

TLT2900

Input frequency	29.0-30.0GHz
Output frequency	950-1950MHz

TLT2960

Input frequency	29.6-30.2GHz
Output frequency	950-1550MHz

TLT3000

Input frequency	30.0-31.0GHz
Output frequency	950-1950MHz

TLT3100

Input frequency	27.5-31.0GHz
Output frequency	17.7-21.2GHz

Notes; LO related spurious performance limited to -25dBm typ., for 20dB insertion loss. Lower LO related spurious levels can be achieved with higher insertion loss (please contact the factory).
Signal related spurious -16dBc typ.

Manual L-Band Attenuation (Option 1)

Attenuation range	30dB
Control	Continuously variable from front panel.

Note; can degrade gain flatness performance

Input

Connector	K-type (f) or 2.92mm (f), 50Ω
Return loss	>18dB
1dB GCP	+10dBm
Max input power	+15dBm

Output

Connector	SMA (f), 50Ω
Note; K-Type(f) or 2.92mm(f), 50Ω as standard for TLT3100.	
Option 2b;	N-type (f), 50Ω
Option 2c;	K-type (f) or 2.92mm (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	-65dBc/Hz @ 100Hz
	-90dBc/Hz @ 1kHz
	-95dBc/Hz @ 10kHz
	-100dBc/Hz @ 100kHz
	-120dBc/Hz @ 1MHz

Internal Reference Stability

Allan deviation	5 x 10 ⁻¹¹ over 1s
Ageing	<5 x 10 ⁻⁹ per day, <5 x 10 ⁻⁷ per year
Temp stability	<5 x 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

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)
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	50 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-band
- 2b) N-type (f) output connection
- 2c) K-type (f) or 2.92mm (f) output connection
- 4) External 10MHz reference input
- 7) Redundant power supply

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



ESATCOM INC.

3628 Francis Lewis Blvd.

Flushing, NY 11358

www.esatcom.com

Tel: 718.799.0084

Email: sales@esatcom.com