

TLTR(A) series

Single-Range, Remote Mounted, Test Loop Translators



TLTR202	S-Band (TX) to S-Band (RX)
TLTR600, 601i, 672	C-Band (TX) to L-Band
TLTR642, 2225	C-Band (TX) to C-Band (RX)
TLTR585, 585i	Extended C-Band (TX) to C-Band (RX), inverted and non-inverted spectrum available
TLTR6725	INSAT C-Band (TX) to INSAT C-Band (RX)
TLTR790	X-Band (TX) to L-Band
TLTR742	X-Band (TX) to X-Band (RX)
TLTR127	Ku-Band (TX; 12.75-13.50GHz) to L-Band
TLTR137	Ku-Band (TX; 13.75-14.50GHz) to L-Band
TLTR148	Ku-Band (TX; 13.75-14.80GHz) to L-Band
TLTR140	Ku-Band (TX; 14.00-14.50GHz) to L-Band
TLTR145	Ku-Band (TX; 14.50-14.80GHz) to L-Band
TLTR1000, 1001	Ku-Band (TX) to Ku-Band (RX)
TLTR142	Ku-Band (RX) to C-Band (RX)
TLTR180	DBS-Band (TX) to L-Band
TLTR184	Extended DBS-Band (TX) to L-Band
TLTR173	Extended DBS-Band (TX) to Ku-Band

For other non-standard frequency requirements, please contact the factory.
For equivalent rack mount units, please see TLTR(A) & TLTH(A) series datasheets.








The **TLTR(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. Units with filtering are also available, please consult the factory.

These units are offered with optional electronically variable attenuation and Ethernet for remote control (with embedded web-server and supporting SNMP network management control).

The unit is housed in a rugged weatherproof chassis, suitable for either internal or external/remote locations. For supply, the unit accepts a wide range of DC voltages, or can be offered with the **OPS18a/ OPS18b** outdoor AC/DC PSU's.

Peak Features

-  High stability and excellent phase noise
-  Full alarm monitoring
-  Rugged weatherproof housing
-  Optional electronically variable 0 to 30dB attenuator
-  Outdoor weatherproof OPS series AC/DC PSU's available
-  Source selection switching options available
-  Optional Ethernet based remote control



TLTR(A) series – Typical Specification

Model	Input	Output	Notes
TLTR202	2020-2120MHz	2200-2300MHz	
TLTR600	5.85-6.65GHz	950-1750MHz	
TLTR601i	5.85-6.425GHz	1525-950MHz	Inverted output spectrum.
TLTR672	5.850-6.725GHz	950-1825MHz	
TLTR2225	5.850-6.425GHz	3.625-4.200GHz	In-band carrier related spurious limited to -40dBc at 0dBm input typ.
TLTR585	5.85-6.65GHz	3.4-4.2GHz	In-band carrier related spurious limited to -40dBc at 0dBm input typ.
TLTR585I	5.85-6.65GHz	4.2-3.4GHz	Inverted output spectrum.
TLTR642	6.425-6.725GHz	3.4-3.7GHz	
TLTR6725	6.725-7.025GHz	4.5-4.8GHz	
TLTR790	7.9-8.4GHz	950-1450MHz	
TLTR742	7.9-8.4GHz	7.25-7.75GHz	In-band carrier related spurious limited to -45dBc at 0dBm input typ.
TLTR127	12.75-13.50GHz	950-1700MHz	
TLTR137	13.75-14.50GHz	950-1700MHz	
TLTR148	13.75-14.80GHz	950-2000MHz	
TLTR140	14.0-14.5GHz	950-1450MHz	
TLTR145	14.5-14.8GHz	950-1250MHz	
TLTR1000	13.75-14.50GHz	11.85-12.60GHz	
TLTR1001	14.0-14.5GHz	11.7-12.2GHz	
TLTR142	12.25-12.75GHz	3.7-4.2GHz	
TLTR180	17.3-18.1GHz	950-1750MHz	
TLTR184	17.3-18.4GHz	950-2050MHz	
TLTR173	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, please consult the factory.

Input

Connector	N-type (f), 50Ω
Return loss	>18dB
P1dB GCP	+10dBm
Max input power	+15dBm

Output

Connector	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 Back-up Reference;

Allan deviation	1 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 60°C

Variable Attenuation (Option 3)

Attenuation range	30dB nominal
Step size	0.1dB or 0.5dB (see options list)
Control	Remote via Ethernet (requires option 9b)

RF Mute (Option 13)

Activation	Remote via Ethernet (requires option 9b)
Option 13a;	Discrete control input
Isolation	60dB min

Input Source Selection Switching (Option 18, 18b)

Inputs supported	2, 4
Activation	Remote control (requires option 9b)

Note: local (push button) & discrete (connector pin) control options available. Increases size of the unit to H290x W230x D95mm and voltage range to +27 to +36VDC.

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)

Control System Interface

Alarms	Summary alarm contacts
Controls	Mute input (Option 13a)
Connection	Multi-pin circular, weatherproof (mating part supplied)

Remote control (Option 9b)	Ethernet; embedded web server & SNMP network management support
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Note: option 9 increases size of the unit to H290x W230x D95mm and voltage range to +27 to +36VDC.

Environmental

Operating temp	-25°C to +55°C (less solar gain)
Option 12;	-40°C to +55°C (less solar gain), with extended warm-up time for cold start operation & higher current
Humidity	0-100% condensing
EMC	EN 55022, part B & EN 50082-1
Safety	EN 60950

Power Supply

Voltage	+16.5 to +35VDC
Current	500mA nom (option dependent)
Connection	Fed via control system interface connection
Option 14a;	fed in on L-band cable (L-Band output versions only)
Option 14b;	fed in on the L-Band cable as well as the multi-pin circular control interface connection (L-Band output versions only)

Options

- 3a) 30dB L/ S-Band electronic variable attenuator, 0.5dB step
- 3b) 30dB L/ S-Band electronic variable attenuator, 0.1dB step
- 3c) 30dB Ku-Band electronic variable attenuator, 0.1dB step
- 3d) 30dB C/ X-Band electronic variable attenuator, 0.1dB step
- 4) External 10MHz reference input.
- 9b) Ethernet interface with embedded web server & SNMP
- 12) Low temperature operation to -40°C
- 13) RF mute option with remote control
- 13a) Mute discrete control input
- 14a) DC input via L-Band interface, replacing the control interface feed system
- 14b) DC input via the L-Band interface, as well as the standard DC feed system via the control interface
- 18) Remote controlled source selection switching, dual input.
- 18b) Remote controlled source selection switching, quad input.

Note; some of the above options have an impact on the performance specification, for details please contact the factory

Rear panel view (sample)

