TLTR(Ka) series

Ka-Band, Remote Mounted, Test Loop Translators

TLTR2750	Ka-Band TX (27.5-28.5GHz) to L-Band
TLTR2800	Ka-Band TX (28.0-29.5GHz) to L-Band
TLTR2900	Ka-Band TX (29. 0-30.0GHz) to L-Band
TLTR2960	Ka-Band TX (29.6-30.2GHz) to L-Band
TLTR3000	Ka-Band TX (30.0-31.0GHz) to L-Band
TLTR3100	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 rack mount units, please see TLT(Ka) & TLTH(Ka) series datasheets.

The **TLTR(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. 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 **OPS18b/ OPS27c** 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
- Optional Ethernet based remote control

TLTR(Ka) series – Typical Specification

TLTR2750
Input frequency 27.5-28.5GHz
Output frequency 950-1950MHz

TLTR2800
Input frequency 28.0-29.5GHz
Output frequency 950-2450MHz

TLTR2900
Input frequency 29.0-30.0GHz
Output frequency 950-1950MHz

TLTR2960
Input frequency 29.6-30.2GHz
Output frequency 950-1550MHz

TLTR3000
Input frequency 30.0-31.0GHz
Output frequency 950-1950MHz

TLTR3100
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.

Variable Attenuation (Option 3)
Attenuation range	30dB nominal
Step size	0.1dB, 0.125dB or 0.5dB (see options list)
Control	Remote via Ethernet (requires option 9)

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

Output
Connector	N-type (f), 50Ω

Note; K-Type(f) or 2.92mm(f), 50Ω as standard for TLTR3100.

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 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^{0}C

External Reference Input (Option 4)
Frequency	10MHz (5MHz factory settable)
Level	0dBm ±5dB
Connector	Separate TNC (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	147mm (5.79")
Height	223mm (8.78"), plus connections & mounting flanges
Depth	56mm (2.2")
Construction	Die-cast Aluminium, IP66 rated
Weight	1.4kgs (3lbs)

Control System Interface
Alarms	Summary alarm contacts
Connection	Multi-pin circular, weatherproof (mating part supplied)
Remote control (Option 9)	Ethernet; embedded web server & SNMP network management support

Note; option 9 increases size of the unit to H290x W230x D95mm and voltage range to +27 to +36VDC.

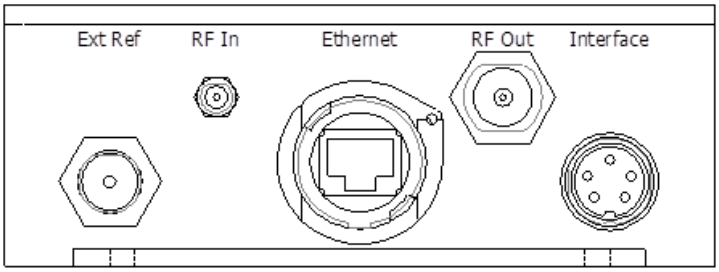
Environmental
Operating temp	-25°C to +55ºC (less solar gain)
Option 12b;	-40^{0}C to +55°C (less solar gain), with extended warm-up time for cold start & higher current
Humidity	0-100% condensing
EMC	EN 55022 part B & EN 50082-1
Safety	EN 60950

Power Supply
Voltage	+16.5 to +35VDC
Current	1.5A max (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
2c)	K-type (f) or 2.92mm (f) output connection
3a)	30dB L-Band electronic variable attenuator, 0.5dB step
3b)	30dB L-Band electronic variable attenuator, 0.1dB step
3f)	30dB Ka-Band electronic variable attenuator, 0.125dB step
4)	External 10MHz reference input.
9)	Ethernet interface with embedded web server & SNMP
12b)	Low temperature operation to -40°C
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

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

Connector panel view (sample)



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