

TLTH(Ka) Series

Ka-Band Test Loop Translators, with full user Interface & remote control



Ka-Band Test Loop Translator Products;

TLTH2750	Ka-Band TX (27.5-28.5GHz) to L-Band
TLTH2800	Ka-Band TX (28.0-29.5GHz) to L-Band
TLTH2900	Ka-Band TX (29.0-30.0GHz) to L-Band
TLTH2960	Ka-Band TX (29.6-30.2GHz) to L-Band
TLTH3000	Ka-Band TX (30.0-31.0GHz) to L-Band
TLTH3100	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 lower cost TLT units without the full user interface please see TLT(Ka) series datasheet.

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





The **TLTH(Ka) series** of units are designed to take a sample of the TX 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 **TLTH(Ka) series** are housed in 19-inch 1RU rack mountable chassis and feature a full user interface with comprehensive remote-control features.

Peak Features

-  High stability and excellent phase noise
-  Full alarm monitoring
-  Full 'local' user interface and remote control (RS232/485 as standard, Ethernet optional)
-  Optional electronically variable attenuators



TLTH(Ka) series – Typical Specification

Models;

TLTH2750

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

TLTH2800

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

TLTH2900

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

TLTH2960

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

TLTH3000

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

TLTH3100

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.

Attenuation (Option 3)

Attenuation range 30dB
Step size 0.1dB, 0.125dB or 0.5dB (frequency dependent)
Control Electronically variable via local (front panel) & remote control

Input

Connector K-type (f) or 2.92mm (f), 50Ω
Return loss 18dB
P1dB GCP +10dBm
Max input power +15dBm

Output

Connector SMA (f), 50Ω
Note; K-Type(f) or 2.92mm(f), 50Ω as standard for TLTH3100.
Option 2b; N-type (f), 50Ω
Option 2c; K-type (f) or 2.92mm (f), 50Ω
Return loss 18dB

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 5×10^{-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

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

Remote control RS232/ 485 port
Option 9; Ethernet; embedded web server & SNMP network management support
Redundancy CANBUS® interface for N+1 system
In-built 1+1 & 2+1 controller
Alarms PSU failure (form C)
LO failure (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

- 2b) N-type (f) output connection
- 2c) K-type (f) or 2.92mm (f) output connection
- 3a) Electronic attenuator, 30dB range, 0.5dB steps, L-Band
- 3b) Electronic attenuator, 30dB range, 0.1dB steps, L-Band
- 3f) Electronic attenuator, 30dB range, 0.125dB steps, Ka-Band (Rx)
- 4) External 10MHz reference input
- 7) Redundant power supply
- 9) Ethernet interface with embedded web server & SNMP.

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)

