

# K-Band Test Loop Translator Module

## K-Band to Ku-Band

TLT-D-KXK1-1006-K5S5 is a K band input to Ku band output Test Loop Translator designed to be housed in the 1U GENUS chassis, with 60dB of variable attenuation and LO synthesised frequency. The 1U chassis has the capacity for up to 16 hot-swap RF modules (dependant upon module type fitted). Contact ETL for module types available.

### TLT Module



#### TLT Module

Compact form factor allowing multiple modules to be housed in the Genus chassis. Each module occupies 8 slots in the chassis.

**Hot Swap & replaceable**  
RF TLT modules

#### Frequency Conversion

Input Frequency: 17.3 - 18.3GHz  
Output Frequency: 10.7 - 12.75GHz

#### Variable Attenuation

60dB of available attenuation

### Chassis Options

**Local control & monitoring**  
via HMI high resolution touchscreen

**Resilience**  
from dual redundant hot-swap power supplies & field replaceable CPU & HMI

**Compact indoor & outdoor**  
chassis options, which can be part populated

**Secure protocols**  
with SNMPv3 and HTTPS

**Flexible Module Configurations**  
choose from a mixture of TLT modules with different operating frequencies.

**Remote control & monitoring**  
via RJ45 Ethernet port with SNMP & web browser interface

**Field replaceable Internal 10MHz reference source**  
and external reference inject port with auto detection



Indoor Chassis



Outdoor Unit



GENERAL SPECIFICATIONS			
Operating Frequency Range	Input	17.3 GHz - 18.3 GHz	
	Output	10.7 GHz - 12.75 GHz	
LO Frequency Control Range		1250 MHz (17.3 GHz can be translated down to 10.7 GHz min and 18.3 GHz can be translated down to 12.75 GHz max)	
LO Step Size		1 MHz (Output frequency user controllable)	
Internal Reference Stability		±0.05 ppm over 0 to 50°C	
External Reference		Input Freq. 10 MHz. Auto detection (External reference optional)	
External Reference Level		+3 dBm ±3 dB	
Conversion Gain		0 ± 3.0 dB (At 0 dB attenuation setting)	
Flatness	Any 1 GHz	±2.0 dB	
	Any 500 MHz	±1.0 dB	
	Any 40 MHz	±0.5 dB	
Impedance		50 ohms	
Attenuation Control Range		0 to 60 dB	
Attenuation Control Steps		0.25 dB ±0.20 Over full operating band	
Input Return Loss		14 dB typ. 10 dB min.	
Output Return Loss		14 dB typ. 10 dB min.	
Max Input Power Level		0 dBm (Operational)	
Absolute max Input Power Level		+15 dBm (For no damage)	
In-band Spurious	Non-carrier related	< -60 dBm	At 0 dB input, min attenuation. Non-harmonic
	Carrier related (> 1MHz Offset)	< -30 dBc	
Out-band Spurious	Non-carrier related	< -65 dBm	At 0 dB input, min attenuation. Non-harmonic
	Carrier related	< -30 dBc	
Harmonics		-30 dBc max. At 0 dBm input, min attenuation.	
LO Breakthrough		< -60 dBm max.	
Mute function		80 dB	
Spectral Inversion		Non-inverting	
Number of modules per chassis		1 Max	Module 8 slots wide
MTBF		>80,000 hrs MTBF of each TLT Module	
RF input & output Connector		Input K-Type, Output SMA	



PHASE NOISE	
100 Hz	-70 dBc / Hz (typical)
1 KHz	-80 dBc / Hz (typical)
10 KHz	-80 dBc / Hz (typical)
100 KHz	-85 dBc / Hz (typical)
1 MHz	-100 dBc / Hz (typical)

Note 1: The specification is subject to regular reviews and will be updated from time to time as part of our continuing product development and improved spec accuracy.

Note 2: Operation beyond the quoted limits stated above may cause instantaneous and permanent damage.

Note 3: All specs are for 50 Ohm connectors unless detailed otherwise.