

Ka-Band Test Loop Translator Module

Ka-Band to Ka-Band

TLT-D-K4KX-1004-K5K5 is a Ka band input to Ka 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: 27.5 - 31.0GHz
Output Frequency: 17.3 - 21.2GHz

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 <small>(Only one mode selectable at a time, and has to be the same mode for Input & Output)</small>	Input	27 - 31 GHz	
	Output	17.3 - 21.2 GHz	
Instantaneous Bandwidth		1 GHz	
LO Frequency Control Range		± 1.75 GHz, Instantaneous bandwidth is reduced when LO not set to centre frequency	
LO Step Size		1 KHz, Input and output frequency user controllable	
Internal Reference Stability		± 5 x 10 ⁻⁸ over 0 to 50°C	
External Reference		Input Freq. 10 MHz. Auto detection (External reference optional)	
Maximum Input Power Level		0 dBm (Operational)	
Absolute max Input Power Level		+20 dBm (For no damage)	
External Reference Level		+3 dBm +/-3 dB	
Mean Conversion Gain <small>Note 1</small>		0 ± 3.0 dB (At 0dB attenuation setting)	
Flatness	Full band	±3.0 dB	
	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.	
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	
MTBF		>80,000 hrs MTBF of each TLT Module	
RF input & output Connector		50 Ohm, 2.92mm	
Number of modules per chassis		1 Max	Module 8 slots wide; 16 slots per chassis



PHASE NOISE	
100 Hz	-70 dBc / Hz (typical)
1 KHz	-75 dBc / Hz (typical)
10 KHz	-80 dBc / Hz (typical)
100 KHz	-85 dBc / Hz (typical)
1 MHz	-100 dBc / Hz (typical)

Note 1: Gain accuracy & Flatness is specified for operation at these set conversion frequencies: 27.5-28.5 to 17.3-18.3 GHz, 28.5-29.5 to 18.3-19.3 GHz, 29.5-30.5 to 19.2-20.2 GHz, 30-31 to 20.2-21.2 GHz Operation at other user-set frequencies may result in degraded performance

Note 2: 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 3: Operation beyond the quoted limits stated above may cause instantaneous and permanent damage.

Note 4: All specs are for 50 Ohm connectors unless detailed otherwise.