



Ka-Band Test Loop Translator Module

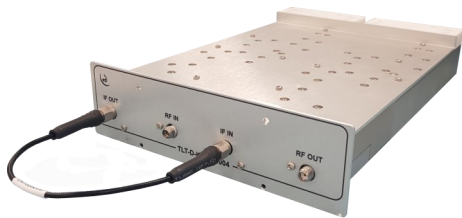
Ka-Band to Ka-Band

Typical applications:

- Teleports & Earth Stations
- Satellite Operations
- Government & Defence applications
- Telemetry, Tracking & Command
- High Resilience applications

TLT-D-K4KX-1024-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.



Frequency Conversion

Input Frequency: 27.5—31.0GHz
Output Frequency: 17.3—21.2GHz



Variable Attenuation

60dB of available attenuation.



Hot Swap & replaceable

RF TLT modules

Chassis Options



Local control & monitoring via HMI high resolution touchscreen



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



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



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



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



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



Secure protocols with SNMPv3 and HTTPS



Indoor Chassis



Outdoor Unit





GENERAL SPECIFICATIONS

		Mode 1	Mode 2	Mode 3	Mode 4
Operating Frequency Range <i>(Only one mode selectable at a time, and has to be the same mode for Input & Output)</i>	Input	27.5—28.5 GHz	28.5—29.5 GHz	29.5—30.5 GHz	30—31 GHz
	Output	17.3-18.3 GHz	18.3—19.3 GHz	19.2—20.2 GHz	20.2—21.2 GHz
Instantaneous Bandwidth		1 GHz			
LO Step Size		1 KHz * See note 1			
Internal Reference Stability		$\pm 5 \times 10^{-8}$ 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			
Conversion Gain		0 \pm 3.0 dB (At 0 dB attenuation setting)			
Flatness * see note 1	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 \pm 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 dBm input, min attenuation. Non-harmonic		
	Carrier related (> 1MHz Offset)	< -30 dBc			
Out-band Spurious	Non-carrier related	< -65 dBm	At 0 dBm input, min attenuation. Non-harmonic		
	Carrier related (Offset)	< -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		2 max	Module 8 slots wide; 16 slots per chassis		

Note 1: Input and output frequency user controllable but gain accuracy and flatness specs are only valid for the set mode frequencies as given in this datasheet.
 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.

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ETL Systems

New technologies
in RF distribution

Model Number:
TLT-D-K4KX-1024-K5K5

PHASE NOISE

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)

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