Ka-Band Test Loop Translator Module

Ka-Band to Ka-Band

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.

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 (Only one mode selectable at a time, and has to be the same mode for Input & Output)		Mode 1	Mode 2	Mode 3	Mode 4
	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		± 5 x 10-8 over 0 to 50°C			
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 ± 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			
Number of modules per chassis		1 Max		Module 8 slots wide; 16 slots per chassis	
MTBF		>80,000 hrs MTBF of each TLT Module			
RF input & output Connector		50 Ohm, 2.92mm			

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: 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.