



# X-Band Test Loop Translator Module

## X-Band to X-Band

**Typical applications:**

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

TLT-D-X3X3-1007-S5S5 is a X band input to X band output Test Loop Translator designed to be housed in the 1U GENUS chassis, with 60dB of variable attenuation. 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: 7.9—8.4GHz  
Output Frequency: 7.25—7.75GHz



**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			
Operating Frequency Range	Input	7.9—8.4 GHz	
	Output	7.25—7.75 GHz	
Instantaneous Bandwidth		500 MHz	
LO Frequency Control Range		N/A (Fixed Frequency)	
LO Step Size		N/A (Fixed Frequency)	
Internal Reference Stability		± 0.05 ppm 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		+15 dBm (For no damage)	
External Reference Input Level		+3 dBm +/-3 dB	
Conversion Gain		0 ± 3.0 dB (At 0 dB attenuation setting)	
Flatness	Full Band	±2.0 dB	
	Any 40 MHz	±0.5 dB	
RF Ports		50 ohms SMA Input/Output	
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 dBm input, min attenuation. Non-harmonic
	Carrier related (> 1 MHz 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	
Mute function		80 dB	
Spectral Inversion		Non-inverting	
MTBF		>80,000 hrs MTBF of each TLT Module	
Number of modules per chassis		1 max	Module 8 slots wide; 16 slots per chassis (1 reserved for fan)

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.

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**ETL Systems**

New technologies  
in RF distribution

Model Number:  
TLT-D-X3X3-1007-S5S5

**PHASE NOISE**

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)

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