

# Test Loop Translator and Noise Injection—Combined System

The LNI series of Noise Injection Loop Test Translator Systems provide the satellite communications engineer with a complete and versatile set up for off-satellite loop back testing of the transmit (Tx) signal to L-band combined with the ability to inject white symmetrical gaussian noise for simultaneous receiver and modem testing.

### Typical applications:

- Ku Band and Q Band Models
- Provides Loop Back Translation Tx to L-Band
- And variable L-band noise injection
- Local & remote, ethernet control
- Versatile and comprehensive test system
- Tests RF chain and receiver/modem in one



**Operating Frequency**  
Range Q, KA, KU Band



**Compact**  
2U high chassis



**Local Front & Remote Control Monitoring**  
Front panel and Ethernet Remote Controlled



**Synthesised LO**



General Specification		Attenuation Steps	0.25dB		
LO Frequency Steps	25MHz	Noise Coupling Factor	20dB nom.		
LO Reference	10MHz Int/Ext	Noise Level Control	Front Panel Up/Down Buttons & LCD Readout Remote via Ethernet with GUI		
Internal Ref. Stability	+/-0.05ppm over 0+50C	Noise Mute Function	Local & Ethernet		
Internal Ref. Ageing	+/-0.1ppm/year	Combined System			
Maximum Input Level	0dBm	Tx Input Connector	Ku—SMA Female		
Conversion Loss	0dBm nom		KA—2.92mm Female		
Conversion Loss Flatness	+/-2dB typ. +/-0.5dB/40MHz max		Q— 2.4mm Female		
Attenuation Range	60dB min	L-band Output Connector	SMA Female		
Attenuation Steps	0.5dB	Ext Ref Input Connector	BNC Female		
Impedance	50 ohms	Noise Output Connector	SMA Female		
Input VSWR	1.8:1 typical	Ethernet Connector	RJ45x2		
Output VSWR	1.8:1 typical	Input Power	80-240V, 50/60Hz		
Signal Related Spurious	-25dBc typical	Input Power Connector	IEC with Fuse		
LO Related Spurious & Harmonics	-30dBm typical	Dimensions	19" x 2U x 13.5" (343mm) excl. connectors & protrusions		
Non Signal or LO Related	-60dBm minimum	Fixed LO Phase Noise dBc/Hz (typical) (GHz)			
Attenuation & LO Frequency Control	Attenuation & LO Frequency Control	Offset Frequency (Hz)	12.0	27.0	43.0
Noise Generator		100	-65	-60	-50
Noise Frequency Range	10-2600MHz	1K	-75	-70	-65
Total Noise Power	+10dBm nom	10K	-80	-75	-70
Base Noise Density	=84dBm/Hz	100K	-80	-80	-70
Noise Flatness	+/-1.5dB typ.	1M	-115	-110	-105
Noise Attenuation Range	60dB min.				

General Specification			
Model Number	Input Frequency Range	Output Frequency Range	LO Frequency Range
LNI-1180-1305-Ku	12.75-14.5GHz	0.8-2.6 GHz	11.80-13.05 GHz
LNI-2500-2700-Ka	27.5-31.5GHz	0.8-2.6 GHz	25.0-27.0 GHz
LNI-4250-4400-Q	43.5-45.5GHz	0.8-2.6 GHz	42.5-44.0 GHz

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.

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