

Loop Test and Noise Injection – Combined System

- Ku Band, Ka 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

The AtlantecRF 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.

The loop test (LTT) function is controllable in terms of input attenuation over a 60dB range in 0.5dB steps and local oscillator (LO) frequency in 25MHz steps while the white noise level is variable by up to 60dB in 0.25dB steps with an additional mute facility.



The LTT has a typical 0dB conversion loss at zero input attenuation selected while the base noise level generated is nominally -84dBm/Hz and is injected via a variable attenuator and 20dB directional coupler into the LTT's L-band output. The noise level can be muted completely for LTT only operation and is also switchable to an external output for noise only operation. Filtering is included to prevent noise appearing at the Tx input port or mixing with the synthesised LO output.

Control of both LTT and noise injection is effected by either front panel controls or remotely via ethernet with an easy-to-use GUI. Frequency stability of the LO is derived from either the internal OCXO or from a system 10MHz reference.

General Specifications	
LTT Section	
LO Frequency Steps	25MHz
LO Reference	10MHz Int/Ext
Internal Ref. Stability	+/-0.05ppm over 0+50C
Internal Ref. Ageing	+/-0.1ppm/year
Maximum Input Level	0dBm
Conversion Loss	0dB nom.
Conversion Loss Flatness	+/-2dB typ. +/-0.5dB/40MHz
Attenuation Range	60dB min.
Attenuation Steps	0.5dB
Impedance	50 ohms
Input VSWR	1.8:1 typ.
Output VSWR	1.8:1 typ.
Signal Related Spurious	-25dBc typ.
LO Related Spurious & Harmonics	-30dBm typ.
Non Signal or LO Related Spurious	-60dBc min.
Attenuation & LO Frequency Control	Front Panel Up/Down Buttons & LCD Readout Remote via Ethernet with GUI

LO Phase Noise (dBc/Hz) typical			
Offset Frequency (Hz)	LO Frequency (GHz)		
	12.0	27.0	43.0
100	-65	-60	-50
1K	-75	-70	-65
10K	-80	-75	-70
100K	-80	-80	-70
1M	-115	-110	-105

Model No	Input Frequency Range (GHz)	Output Frequency Range (GHz)	LO Frequency (GHz)
LNI-1180-1305-Ku	12.75-14.5	0.8-2.6	11.8-13.05
LNI-2500-2700-Ka	27.5-31.5	0.8-2.6	25.0-27.0
LNI-4250-4400-Q	43.5-45.5	0.8-2.6	42.5-44.0

General Specifications	
Noise Generator Section	
Noise Frequency Range	10-2600MHz
Total Noise Power	+10dBm nom.
Base Noise Density	-84dBm/Hz
Noise Flatness	+/-1.5dB typ.
Noise Attenuation Range	60dB min.
Attenuation Steps	0.25dB
Noise Coupling Factor	20dB nom.
Noise Level Control	Front Panel Up/Down Buttons & LCD Readout Remote via Ethernet with GUI
Noise Mute Function	- Local & Ethernet

General Specifications	
Combined System	
Tx Input Connector	Ku – SMA Female Ka – 2.92mm Female Q – 2.4mm Female
L-Band Output Connector	SMA Female
Ext. Ref. Input Connector	BNC Female
Noise Output Connector	SMA Female
Ethernet Connector	RJ45x2
Input Power	80-240V, 50/60Hz
Input Power Connector	IEC with Fuse
Size	19" x 2U x 13.5" (343mm) incl. connectors & protrusions

We reserve the right to change standard product specifications without notice but will be pleased to consider control drawings for quotation.