



**ETL Systems**  
New technologies  
in RF distribution

LRU Series

# Test Loop Translator

## Ruggedised—Battery Powered

### Typical Applications

- To replace the satellite link for test and alignment of earth station systems operating in satcom frequency bands.
- SNG testing.
- Satcoms & Teleports testing.

The LRU series of Ka Band and Ku Band Ruggedised, Battery Powered Test Loop Translators (TLT) feature Synthesised Variable Frequency Local Oscillators (LOs) to provide the user with the most versatile and comprehensive operating configurations for translation of uplink (Tx) frequencies to either downlink (Rx) frequencies or to L Band, and for L-Band to downlink (Rx). These Translators simulate the satellite transponder frequency conversion for system alignment and continuous quality monitoring. Both the LO frequency and through path attenuation can be controlled either locally with direct readout on the front panel LCD or remotely via Ethernet with a virtual control panel. The TLT contains a 12V, 14AH rechargeable battery and an internal battery charger which is connected, via a Buccaneer 400 series connector, to a 100-240V, 50-60Hz A/C supply.



**Frequency Bands**  
Ka & Ku



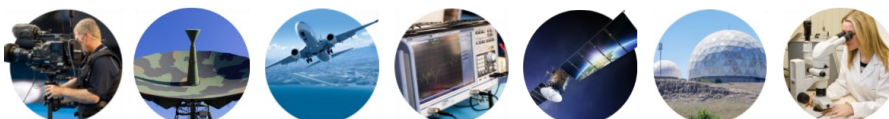
**Input Power**  
80-240V, 50-60Hz



**Monitoring & Control**  
Local via Front Controlled Panel and Remote via Ethernet

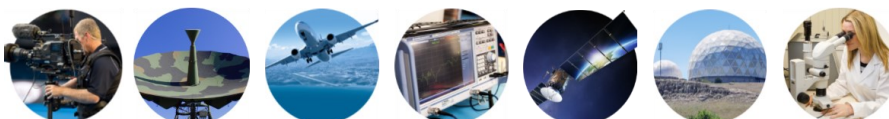


**Gain**  
-35dB nom. Conversion Gain





General Specification	
LO Frequency Steps	25MHz
Maximum Input Level	+10dBm
Conversion Gain	-35dB nom
Conversion Gain Flatness	+/-2dB typ. +/-0.5dB/40MHz max
Attenuation Range	30dB Min
Attenuation Control	0.25dB Steps
Impedance	50 ohms
Input VSWR	1.8:1 typical
Output VSWR	1.8:1 typical
Signal Related Spurious	-25dBc typical
LO Related Spurious & Harmonics	-30dBm typical
Non Signal or LO Related Spurious	-60dBm minimum
Input Power Connector	Bulgin Buccaneer 400 Series
Input Power	100-240V, 50-60Hz
Lock Alarm	LED, Front Panel & Ethernet
Input Connector	2.92 mm female Ka-band, SMA female Ku-band
Output Connector	SMA female
Reference Input Connector	BNC Female
Ethernet Connector	RJ45
Power—Internal Battery	12V, 14AH
Recharging Power Connector	3 Pin XLR
Battery Charger	Internal
Operating Temperature	0 to +50C
Storage Temperature	-10 to +70C
Ethernet Connector	RJ45
Dimensions	14.9" x 12.3" x 9.58"





**Fixed LO Phase Noise dBc/Hz (typical) (GHz)**

Offset Frequency	2.0	10.0	12.0	27.0
100Hz	-80	-70	-65	-60
1KHz	-90	-85	-75	-70
10KHz	-95	-90	-80	-75
100KHz	-95	-90	-80	-80
1MHZ	-120	-115	-115	-110

**General Specification**

Model Number	Translation Bands	Input Frequency Range	Output Frequency	LO Frequency Range
LRU-08801095-Ka	Ka Tx-Rx	27.5-31.5 GHz	17.7-21.2 GHz	8.80-10.95 GHz
LRU-25002700-Ka	Ka Tx-L	27.5-31.5 GHz	0.8-2.6 GHz	25.0-27.0 GHz
LRU-16901860-Ka	Ka L-Rx	0.8-2.6 GHz	17.7-21.2 GHz	16.9-18.6 GHz
LRU-01490330-Ku	Ku Tx-Rx	12.75-14.5 GHz	10.7-12.75 GHz	1.49-3.30 GHz
LRU-11801305-Ku	Ku Tx-L	12.75-14.5 GHz	0.95-2.7 GHz	11.8-13.05 GHz
LRU-09751005-Ku	Ku L-Rx	0.95-2.7 GHz	10.7-12.75 GHz	9.75-10.05 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.

