25/50/75W Ka-Band Linear Block Up Converter

FEATURES

- *Variable gain control*
- *Complete RS-232/422/485 interface*
- *Lightweight package*
- *Includes WGS certified Xicom L-band BUC*
- *< 30 lbs.*

The **XTLIN-25/50/75Ka1-B1** High Power Block Upconverters (BUC) are compact, fully integrated antenna mount units designed for low cost operation and longevity. The L-Band input interfaces to standard modems operating in the 1000 - 2000 MHz range.

Intended for outdoor operation, these BUCs increase the amount of RF power reaching the feed. The construction and light weight allows for direct mount to the antenna. This eliminates long waveguide runs and associated RF losses.

Forced air cooling is implemented in the package to allow reliable operation over extended temperature ranges. The monitor and control (M&C) interface provides a component system status.

COMTECH XICOM TECHNOLOGY

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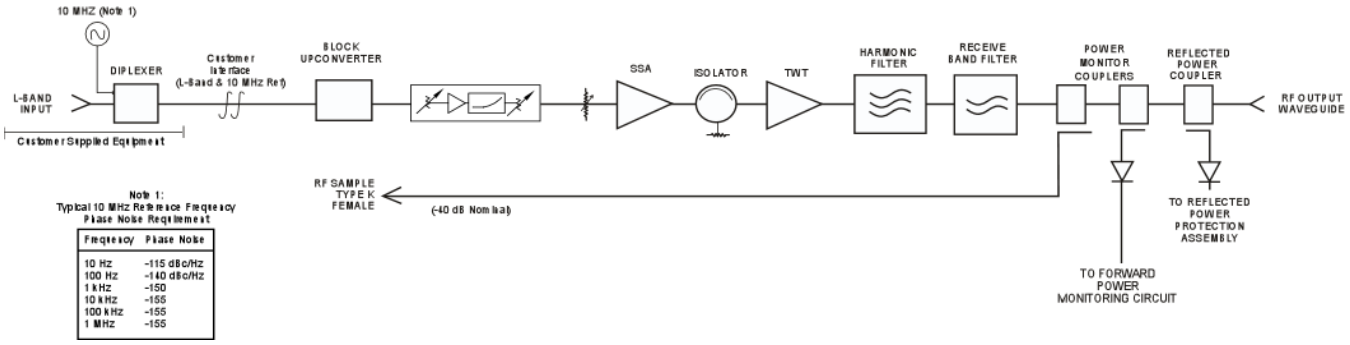
PERFORMANCE SPECIFICATION

Parameters	XTLIN-25Ka1-B1	XTLIN-50Ka1-B1	XTLIN-75Ka1-B1
FREQUENCY RANGE, extended frequency coverage available			
Output		30.0 to 31.0 GHz	
Input		1 to 2 GHz	
LO Frequency		29 GHz	
Input Level, w/o damage (maximum)		10 dBm	
Reference Signal Frequency		external 10 MHz	
10 MHz Power Level		2 dBm ± 5 dB	
Reference Input Impedance		50 Ohms	
LINEAR OUTPUT POWER	25W	50W	75W
GAIN			
Attenuator Range (continuous)		30 dB ± 0.1 dB step size	
Maximum SSG Variation Over			
Any Narrow Band		0.80 dB maximum per 60 MHz	
Full Band		± 2.5 dB	
Slope (maximum)		± 0.04 dB/MHz	
Stability, 24 hr. (maximum)		± 0.25 dB	
Stability, Temperature (maximum)		± 1.0 dB over temperature range at any frequency	
INTERMODULATION with two equal carriers @ linear power		-25 dBc relative to the sum of all carriers	
SPECTRAL REGROWTH, 1 SR offset @ linear power (maximum)		-30 dBc	
HARMONIC OUTPUT (maximum)		-60 dBc	
AM/PM CONVERSION (maximum)		2.0 deg/dB at or below linear power	
NOISE POWER (maximum)			
Transmit Band		-70 dBW/4 kHz	
Receive Band		-150 dBW/4 kHz	
GROUP DELAY (maximum)			
Bandwidth		Any 60 MHz	
Linear		0.01 nS/MHz	
Parabolic		0.005 nS/MHz^2	
Ripple		0.5 nS/Pk-Pk	
RESIDUAL AM NOISE (maximum)		-50 dBc to 10 kHz -20 (1.5 + logf) dBc 10 to 500 kHz -85 dBc above 500 kHz	
PHASE NOISE (maximum)		10 Hz 100 Hz 1 kHz 10 kHz 100 kHz 1 MHz 10 MHz	-40 dBc/Hz -70 dBc/Hz -80 dBc/Hz -90 dBc/Hz -100 dBc/Hz -110 dBc/Hz -120 dBc/Hz
VSWR			
Input (maximum)		1.8:1	
Output (maximum)		1.3:1	

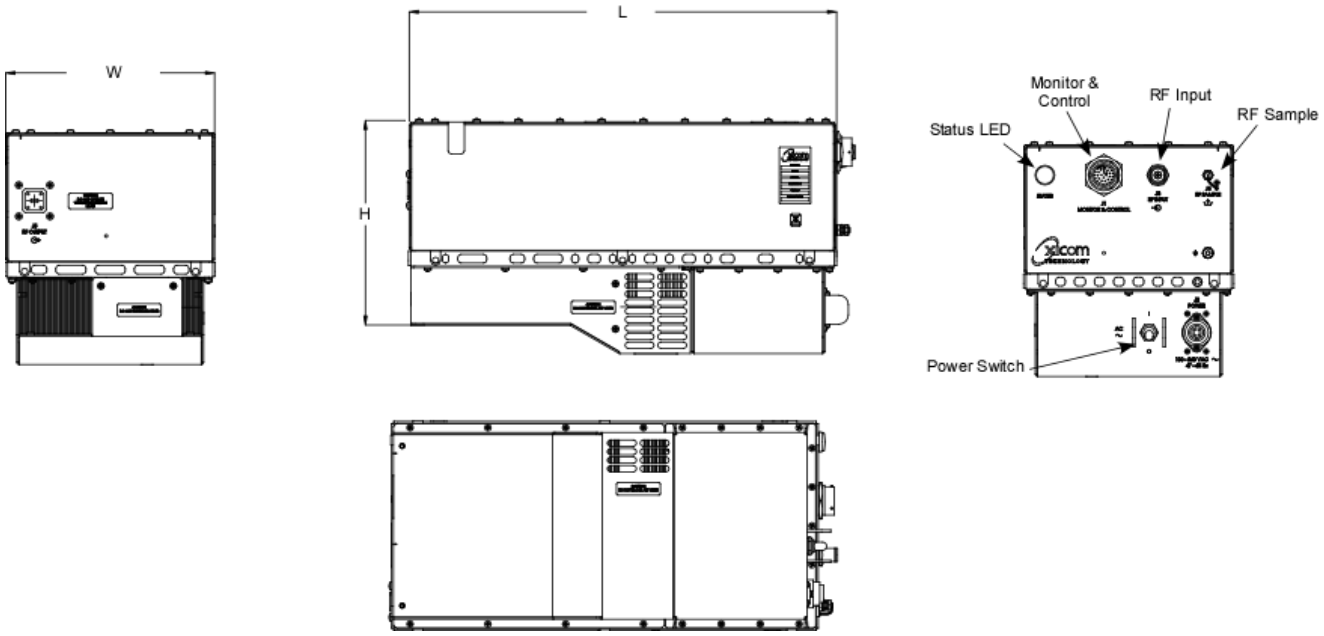
BLOCK DIAGRAM



Note 1:
Typical 10 MHz Reference Frequency Phase Noise Requirement

Frequency	Phase Noise
10 Hz	-115 dBc/Hz
100 Hz	-140 dBc/Hz
1 kHz	-150
10 kHz	-155
100 kHz	-155
1 MHz	-155

OUTLINE DRAWING



DIMENSIONS		
	INCHES	CENTIMETERS
H	9.22	23.42
W	8.32	21.13
L	17.06	43.33
Nominal Weight 29.5 lbs (13.28 kg)		
RF Output WR-28 Tapped		

PRIME POWER

90 to 264 VAC
47 to 63 Hz, Single Phase
400 VA Typical @ 90 VAC (25W Linear)
475 VA Typical @ 90 VAC (50W & 75W Linear)
0.95 Minimum Prime Power Factor
0.98 Prime Power Factor Typical

ENVIRONMENT

NONOPERATING TEMPERATURE RANGE	-50°C to +70°C
OPERATING TEMPERATURE RANGE	-40°C to +60°C
HUMIDITY	Up to 100% Condensing
ALTITUDE	10,000 feet MSL maximum
SHOCK AND VIBRATION	Normal Transportation
COOLING	Forced Air

INTERFACE

Type	Function	
LOCAL CONTROL	Prime Power ON/OFF	Local/Remote
	HV ON/OFF	
LOCAL STATUS	Tri-Color LED:	
	Fault Red	Standby: Continuous Amber
	HV ON: Green	FTD: Flashing Amber
REMOTE CONTROL	High Voltage ON/OFF	Constant Power
	Min/Max Power Alarm/Fault	Gain
	Reflected Power Alarm/Fault	Fault Reset
	Heater Standby ON/OFF	Units (Watts, dBm, dBW)
REMOTE STATUS	HV ON	Heater/Beam Hours
	RF Output Power	Fault Identification
	Reflected Power	TWT Temperature
	Upconverter Fault	Helix Current
	Filament Time Delay	Helix Voltage
FORM C DRY CONTACT CLOSURE	Summary Fault (2X Form C Dry Contact Closure)	
COMPUTER SERIAL PORT	Hardware Interface - 2 Ports: RS-232 & RS-422/485	Xicom Command Set: ASCII Commands
RF SAMPLE PORT COUPLING	-40 dB Coupling Value (approx.)	

OPTIONS

- WR-34 Waveguide
- Alternate Frequency Coverage
- Remote External Controller
- 1:1, 1:2, 1:N Redundancy
- Without L-band BUC
- Ethernet Option

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