

50 Watt Linear X-Band Outdoor High Power SSPA Block Upconverter



FEATURES

- *50W linear output power*
- *High efficiency GaN design*
- *Compact, rugged 10 lb. package*
- *Operates over -40°C to +60°C environment*

The **XTSLIN-50X-B1** High Power Solid State Block Upconverters (BUC) are a series of compact fully integrated antenna mount units designed for low cost operation and longevity. This unit generates over 50W of linear power providing the most linear output power available in a package this size. By using the latest in high efficiency GaN technology, this linear power can be achieved with a prime power consumption of only 300 watts.

Intended for outdoor operation in challenging environments, the **XTSLIN-50X-B1** is light weight and allows for direct mount to the antenna, minimizing waveguide RF losses. Forced air cooling is implemented in the package to allow reliable operation over an extended temperature range. The monitor and control (M&C) interface provides a component system status via Ethernet or RS-485 and RS-232.



PERFORMANCE SPECIFICATION

Parameters

XTSLIN-50X-B1

FREQUENCY RANGE

Output	7.9 to 8.4 GHz
Input	950 to 1450 MHz
LO Frequency	6950 MHz
Input Level, w/o damage (maximum)	10 dBm
Reference Signal Frequency	external 10 MHz
10 MHz Power Level	0 dBm $\pm$ 5 dB
IF/Reference Input Impedance	50 Ohms

OUTPUT POWER

P_{SAT} (Peak, typical)	100 W (50.0 dBm)
P_{LINEAR} (Minimum)	50 W (47.0 dBm)

GAIN

Small Signal (minimum)	58 dB
Adjustable Attenuator Range	25 dB min, 0.1 dB steps
Maximum SSG Variation Over	
Any Narrow Band	$\pm$ 0.5 dB per 40 MHz
Full Band	$\pm$ 1.50 dB
Slope (maximum)	$\pm$ 0.04 dB/MHz
Stability, 24 hr. (maximum)	$\pm$ 0.25 dB
Stability, Temperature (maximum)	$\pm$ 2.0 dB over temperature range at any frequency

INTERMODULATION (maximum) WRT sum of two equal carriers	-25 dBc @ P_{LINEAR}
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SPECTRAL REGROWTH @ Linear Power	-30 dBc, 1 SR, OQPSK
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HARMONIC OUTPUT (maximum)	-60 dBc
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AM/PM CONVERSION (maximum)	2.0 deg/dB at Linear Power
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NOISE POWER (maximum)

Transmit Band	-75 dBW/4 kHz
Receive Band	-75 dBW/4 kHz

OUTPUT SPURIOUS @ RATED POWER (P_{LIN})	-60 dBc, excluding 2 MHz centered on the carrier
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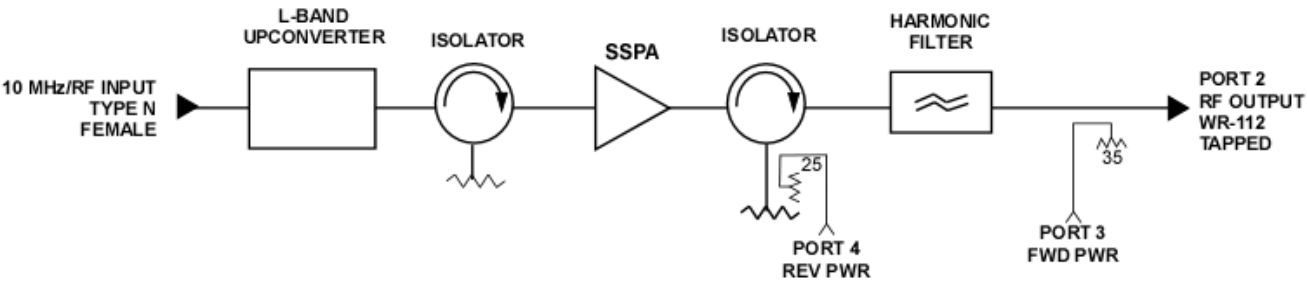
PHASE NOISE (maximum)	100 Hz	-63 dBc/Hz
	1 kHz	-73 dBc/Hz
	10 kHz	-83 dBc/Hz
	100 kHz	-93 dBc/Hz
	1 MHz	-103 dBc/Hz

10 MHz REFERENCE PHASE NOISE (maximum)	1 kHz	-150 dBc/Hz
	10 kHz	-160 dBc/Hz
	100 kHz	-160 dBc/Hz

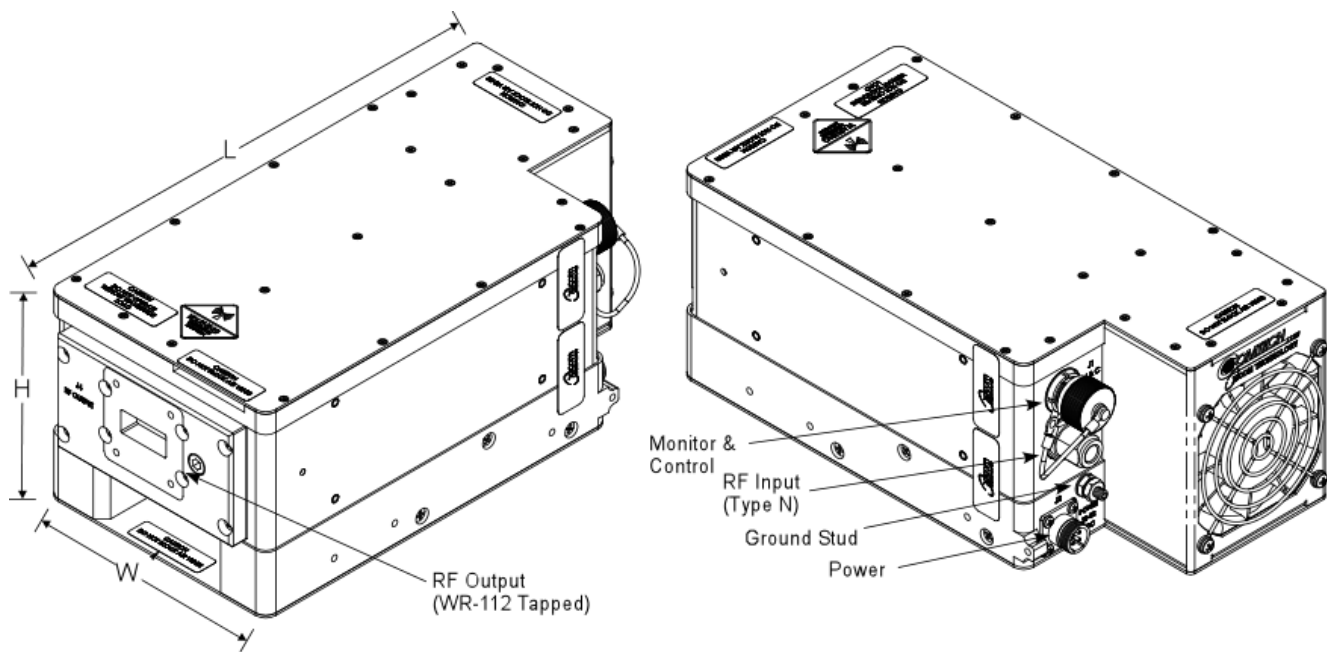
VSWR

Input (maximum)	1.8:1
Output (maximum)	1.3:1

BLOCK DIAGRAM



OUTLINE DRAWING



DIMENSIONS (max)		
	INCHES	CENTIMETERS
L	11.16	28.35
H	4.43	11.25
W	5.40	13.76
WEIGHT (Typical)		
	10 lb.	4.6 kg.

PRIME POWER

22 to 56 VDC
300 VA Typical at Linear Power

ENVIRONMENT

NONOPERATING TEMPERATURE RANGE	-50°C to +70°C
OPERATING TEMPERATURE RANGE	-40°C to +60°C (2°C/1000 Feet Derating)
HUMIDITY	Up to 100% Condensing
ALTITUDE	12,000 Feet MSL Max.
SHOCK AND VIBRATION	Normal Transportation
COOLING	Forced Air

INTERFACE

Type	Function	
REMOTE CONTROL	Transmit ON/OFF	Fault Reset
	RF Inhibit	
REMOTE STATUS	Transmit ON/OFF	Summary Fault
	Temperature (°C)	RF Inhibit (ON/OFF)
	Forward Power (Optional)	Fault Identification
		Lock Detect Over Temperature
XICOM COMMAND SET	ASCII Commands	

OPTIONS

- External AC Power Supply, 90 to 264 VAC, 47 to 63 Hz

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