

# 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.

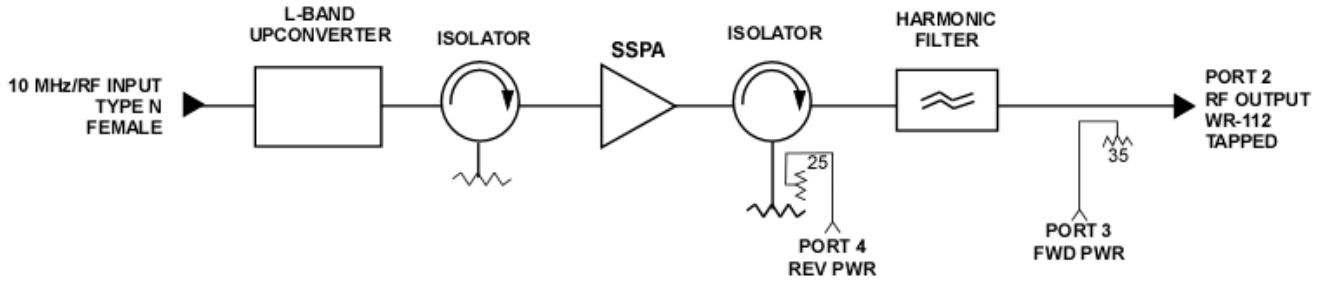
# PERFORMANCE SPECIFICATION

## Parameters

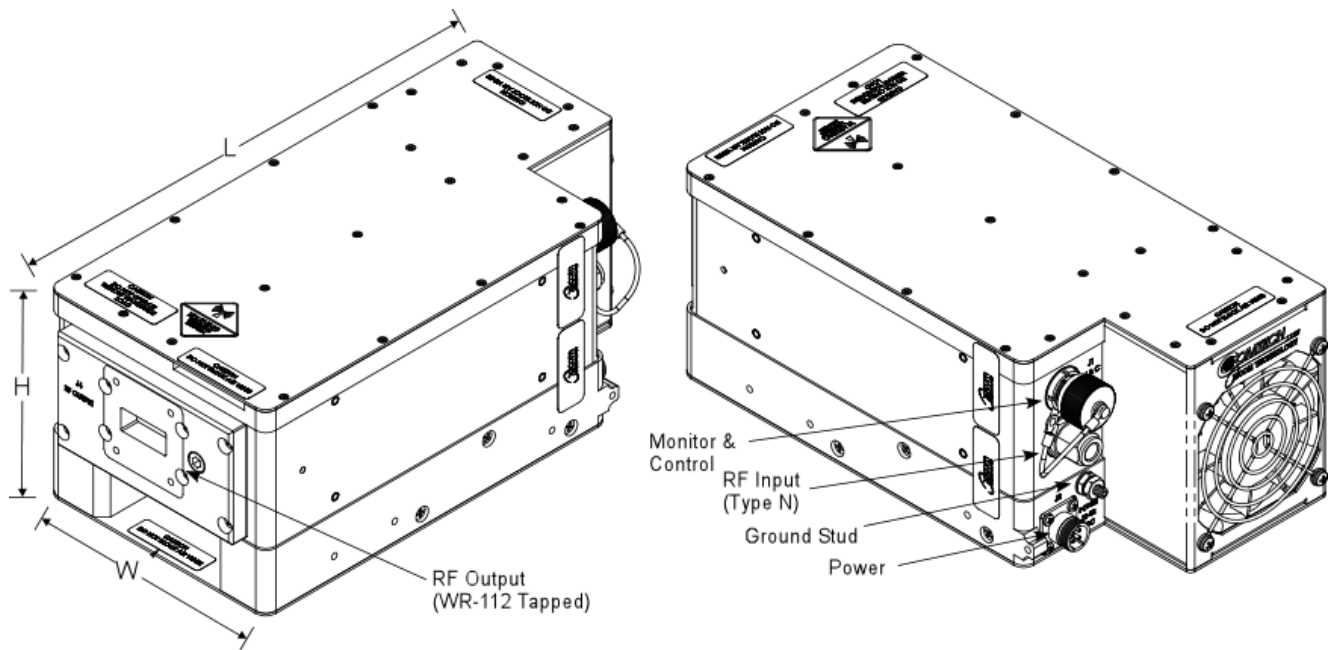
## XTSLIN-50X-B1

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 @ $P_{LINEAR}$	
SPECTRAL REGROWTH @ Linear Power	-30 dBc, 1 SR, OQPSK	
HARMONIC OUTPUT (maximum)	-60 dBc	
AM/PM CONVERSION (maximum)	2.0 deg/dB at Linear Power	
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	
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 RF Inhibit Fault Reset
REMOTE STATUS	Transmit ON/OFF Temperature (°C) Forward Power (Optional) Summary Fault RF Inhibit (ON/OFF) Fault Identification Lock Detect Over Temperature
XICOM COMMAND SET	ASCII Commands

# OPTIONS

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