

# 16 Watt Linear Ka-Band High Efficiency Block Upconverter



## FEATURES

- *16W linear WGS output power*
- *High efficiency - only 140W prime power draw*
- *Compact, rugged 5.5 lb. package*
- *Ethernet with SNMP*
- *Operates over -40°C to +60°C environment*

The **XTSLIN-16Ka-B2** High Power Solid State Block Upconverter (BUC) is a compact fully integrated feed mount unit designed for very low power consumption, and light weight to support tactical transportable and manpack terminals. This unit generates over 16W of linear power providing the most linear output power available in such a small a package. It also incorporates a proven L- to Ka Dual-band BUC, which has an L-Band input that interfaces to standard modems operating in the 1000 - 2000 MHz range via a single line carrying the L-Band transmit signal and 10 MHz frequency reference.

Intended for operation in challenging environments, the **XTSLIN-16Ka-B2** 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 extended temperature ranges.



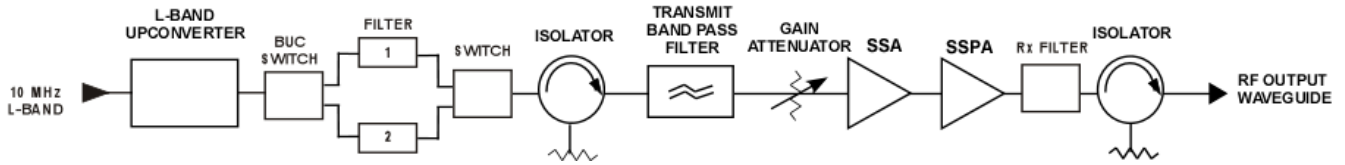
# PERFORMANCE SPECIFICATION

## Parameters

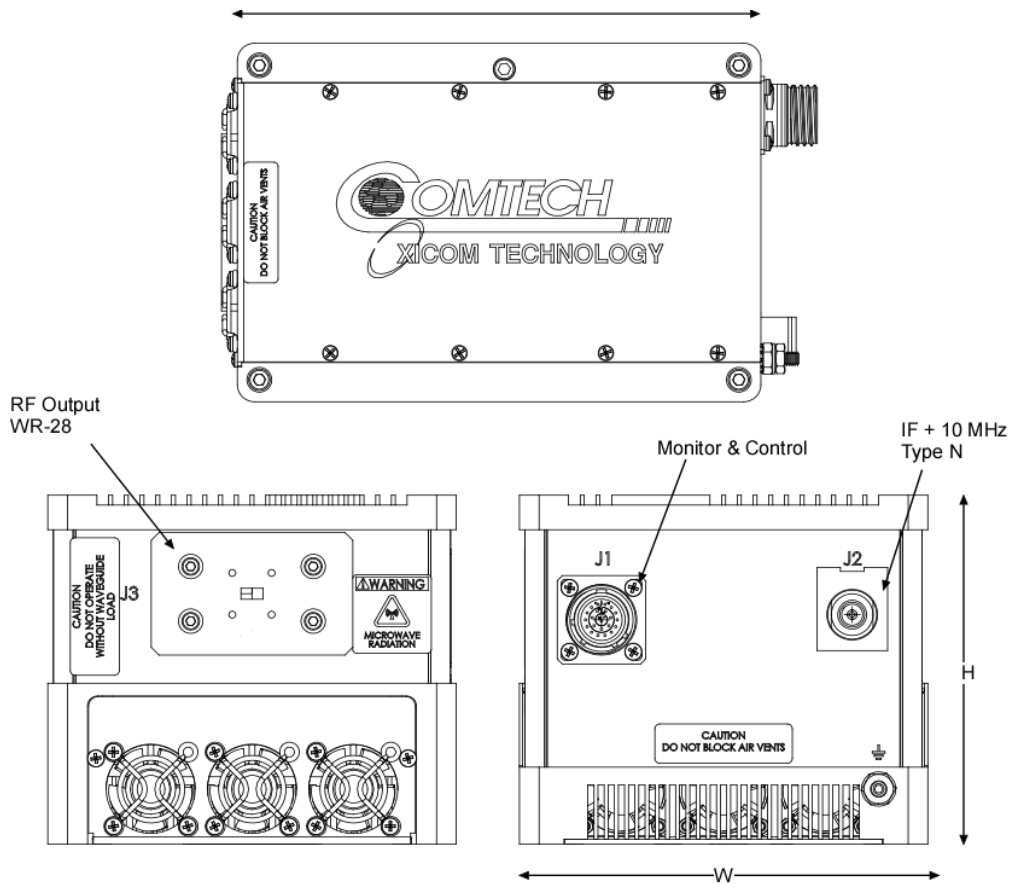
## XTSLIN-16Ka-B2

FREQUENCY RANGE		
Output	29 to 30 GHz / 30 to 31 GHz	
Input	1000 to 2000 MHz	
LO Frequency	28 GHz / 29 GHz	
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)	32W (45.0 dBm)	
$P_{LINEAR}$ (Minimum)	16 W (42.0 dBm)	
GAIN		
Small Signal (minimum)	55 $\pm$ 5 dB	
Maximum SSG Variation Over		
Any Narrow Band	$\pm$ 0.5 dB per 40 MHz	
Per Sub 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	
SPECTRAL REGROWTH @ Linear Power	-30 dBc, 1 SR, OQPSK, 1.5 SR, QPSK	
AM/PM CONVERSION (maximum)	2.0 deg/dB at Linear Power	
NOISE POWER (maximum)		
Transmit Band	-76 dBW/4 kHz	
Receive Band	-150 dBW/4 kHz	
GROUP DELAY (maximum)		
Bandwidth	Any 40 MHz	
Linear	$\pm$ 0.01 nS/MHz	
Parabolic	$\pm$ 0.005 nS/MHz <sup>2</sup>	
Ripple	0.5 nS/Pk-Pk	
RESIDUAL AM NOISE (maximum) In band discrete spurious	-60 dBc > 100 kHz from carrier AC fundamental - 50 dBc Sum of all spurs -47 dBc	
OUTPUT SPURIOUS @ $P_{LIN}$	-60 dBc	
PHASE NOISE (maximum)	100 Hz	-62 dBc/Hz
	1 kHz	-72 dBc/Hz
	10 kHz	-82 dBc/Hz
	100 kHz	-92 dBc/Hz
	1 MHz	-102 dBc/Hz
10 MHz REFERENCE PHASE NOISE (maximum)	10 Hz	-125 dBc/Hz
	100 Hz	-155 dBc/Hz
	1 kHz / 10 kHz	-165 dBc/Hz
VSWR		
Input (maximum)	1.5:1	
Output (maximum)	1.3:1	

# BLOCK DIAGRAM



# DIMENSIONS



DIMENSIONS (max)		
	INCHES	CENTIMETERS
L	7.60	19.30
H	4.24	10.77
W	5.20	13.21
WEIGHT (Typical)		
	5.5 lb.	2.49 kg.

## PRIME POWER

22 - 56 VDC  
140W @ P<sub>LIN</sub>

## 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	Battery Save
REMOTE STATUS	Transmit ON/OFF	Summary Fault
	Temperature (°C)	RF Inhibit (ON/OFF)
		Fault Identification Lock Detect Over Temperature
XICOM COMMAND SET	ASCII Commands	
	Ethernet	SNMP V1

## OPTION

- DC Power over IF Interface
- Battery Save Mode
- SNMP V3
- Forward Power Monitoring
- Tri-Band BUC (with package modification)
- Extended Frequency Coverage

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