16 Watt Ku-Band Outdoor High Power SSPA Block Upconverter

FEATURES

- No Shelter Required
- Low Cost Operation
- Complete Digital M&C Interface
- RS-232, RS-422, RS-485 Interface
- Optional Ethernet Interface

The **XTS-16K-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. The L-Band input interfaces to standard modems operating in the 950 - 1700 MHz range.

Intended for outdoor operation, the **XTS-16K-B1** eliminates the need for a separate shelter. 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.

The block upconverter operates from an external, weatherized power supply which provides the system DC sources.

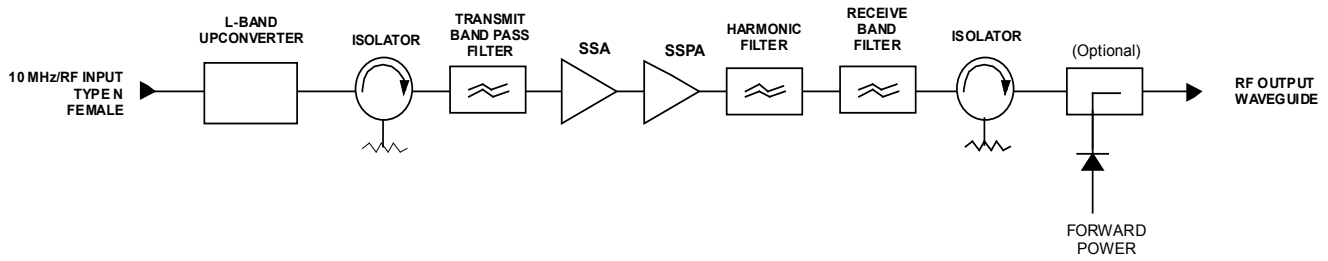
The L-Band transmit signal and 10 MHz reference frequency are brought to the unit over a single coaxial line.

COMTECH
XICOM TECHNOLOGY
3550 Bassett Street • Santa Clara • CA 95054 • Tel: (408) 213-3000 • Fax: (408) 213-3001
www.xicomtech.com • email sales@xicomtech.com

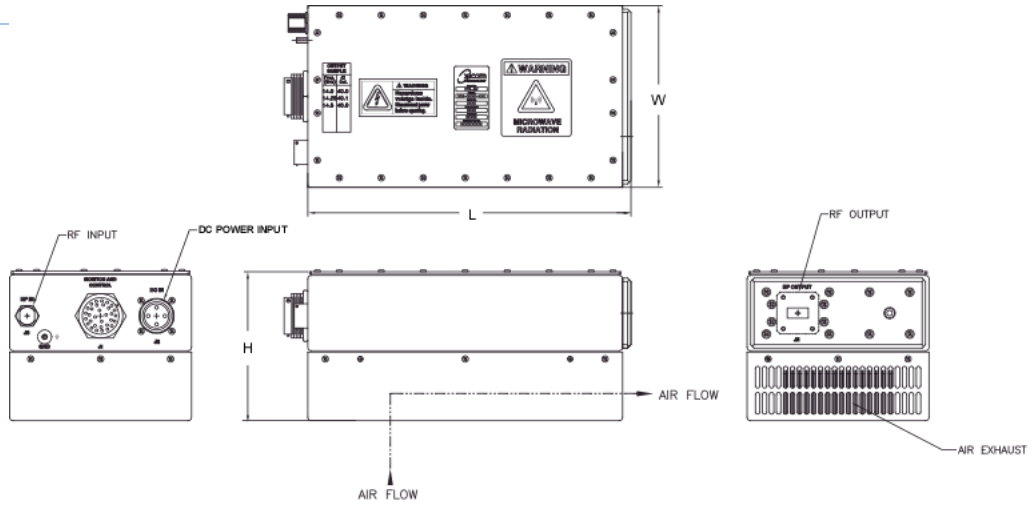
PERFORMANCE SPECIFICATION

Parameters	XTS-16K-B1	XTS-16K1-B1	XTS-16K2-B1	
FREQUENCY RANGE, extended frequency coverage available				
Output	14.0 - 14.5 GHz	13.75 - 14.5 GHz	13.75 - 14.5 GHz	
Input	950 - 1450 MHz	950 - 1700 MHz	950 - 1700 MHz	
LO Frequency	13050 MHz	12800 MHz	12800 MHz	
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		
OUTPUT POWER			13.75 GHz	14.5 GHz
Saturated Power (typical)	43 dBm	42 dBm	42 dBm	43 dBm
Rated Power (P1dB) @ Amplifier Flange (minimum)	42 dBm	41 dBm	41 dBm	42 dBm
GAIN				
Small Signal (minimum)		55 dB		
Maximum SSG Variation Over				
Any Narrow Band		± 0.65 dB per 80 MHz		
Full Band		± 1.25 dB		
Slope (maximum)		± 0.04 dB/MHz		
Stability, 24 hr. (maximum)		± 0.25 dB		
Stability, Temperature (maximum)		± 2.0 dB over temperature range at any frequency		
INTERMODULATION (maximum) with two equal carriers		-25 dBc @ 3 dB total output power backoff from rated power		
HARMONIC OUTPUT (maximum)		-60 dBc		
AM/PM Conversion (maximum)		2.5 deg/dB @ 3 dB below rated output power		
NOISE POWER (maximum)				
Transmit Band		-80 dBW/4 kHz		
Receive Band		-150 dBW/4 kHz		
GROUP DELAY (maximum)				
Bandwidth		Any 80 MHz		
Linear		± 0.01 nS/MHz		
Parabolic		± 0.005 nS/MHz^2		
Ripple		0.5 nS/Pk-Pk		
RESIDUAL AM NOISE (maximum)		-60 dBc > 100 kHz from carrier		
In band discrete spurious		AC fundamental -50 dBc, sum of all spurs -47 dBc		
SPURIOUS (In band) @ Rated Power (P1db)		-60 dBc		
PHASE NOISE (maximum)		100 Hz 1 kHz 10 kHz 100 kHz 1 MHz	-63 dBc/Hz -73 dBc/Hz -83 dBc/Hz -93 dBc/Hz -103 dBc/Hz	
10 MHz Reference Phase Noise (maximum)		1 kHz 10 kHz 100 kHz	-150 dBc/Hz -160 dBc/Hz -160 dBc/Hz	
VSWR				
Input (maximum)		2.0:1		
Output (maximum)		1.3:1		

BLOCK DIAGRAM

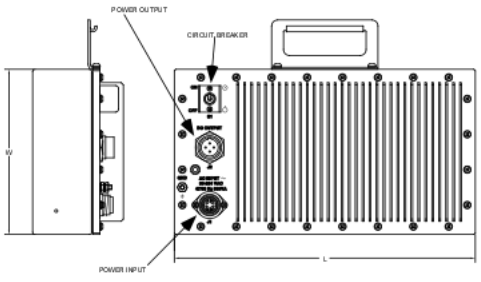


OUTLINE DRAWING

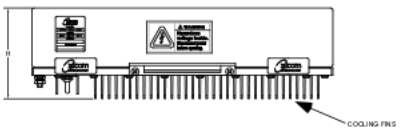


DIMENSIONS (MAX)		
	INCHES	CENTIMETERS
L	11.63	29.54
H	5.5	13.97
W	6.5	16.51
WEIGHT (Typical)		
	15 lb	6.8 kg
RF OUTPUT = WR-75 Tapped		

AMPLIFIER



POWER SUPPLY
(Optional)



DIMENSIONS		
	INCHES	CENTIMETERS
H	3.9	9.91
L	12.8	35.5
W	7.05	17.91

Nominal Weight = 8.2 lbs (3.72 kg)

PRIME POWER

20-56 VDC
90-264 VAC, 47-63 Hz with External Supply
200 VA Typical

CE

ENVIRONMENT

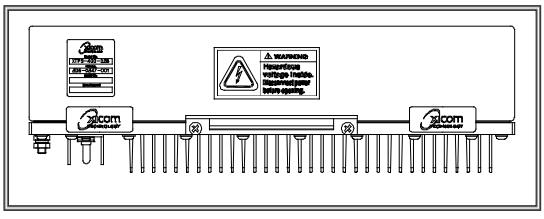
NONOPERATING TEMPERATURE RANGE	-50°C to +70°C
OPERATING TEMPERATURE RANGE	-40°C to +50°C (60°C optional) (2°C/1000 Feet Derating)
HUMIDITY	Up to 100% Condensing
ALTITUDE	12,000 Feet MSL Maximum
SHOCK AND VIBRATION	Normal Transporting
COOLING	Forced Air

INTERFACE

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

OPTIONS

- Input Diplexer (combining IF and 10 MHz reference)
- Detected RF Transmit Power
- External AC Power Supply
- Ethernet Interface



Headquarters
Comtech Xicom Technology, Inc.
3550 Bassett Street
Santa Clara, CA 95054
USA

Phone: +1-408-213-3000
Fax: +1-408-213-3001

email: sales@xicomtech.com
Web: www.xicomtech.com

Europe Sales Office
Comtech Xicom Technology Europe, LTD
4 Portland Business Center
Manor House Lane
Datchet
Berkshire SL3 9EG
United Kingdom

Phone: +011 44 (0) 1753 549 999
Fax: +011 44 (0) 1753 549 997

email: sales@xicomeurope.com
Web: www.xicomtech.com

Asia Sales Office
Comtech Xicom Technology
150 Cecil Street
#08-02
Singapore 069543

Phone: +011 65 6325 1953
Fax: +011 65 6325 1950

email: asiasales@xicomtech.com
Web: www.xicomtech.com

Document XTS-16K-B1 Rev 2, 07/23/2010

© 2010
Note: Technical specifications are subject to change without notice. Please contact Xicom Technology before using this information for system design.