

25 Watt Ku-Band Outdoor High Power SSPA Block Upconverter



FEATURES

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

The **XTS-25K-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-25K-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.

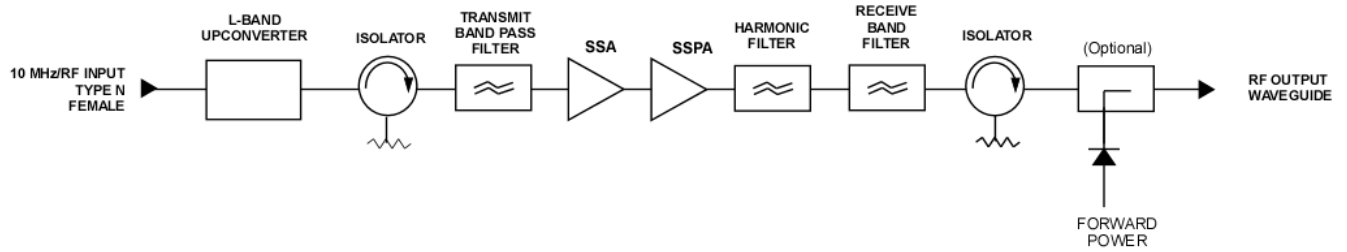
The L-Band transmit signal and 10 MHz reference frequency are brought to the unit over a single coaxial line.



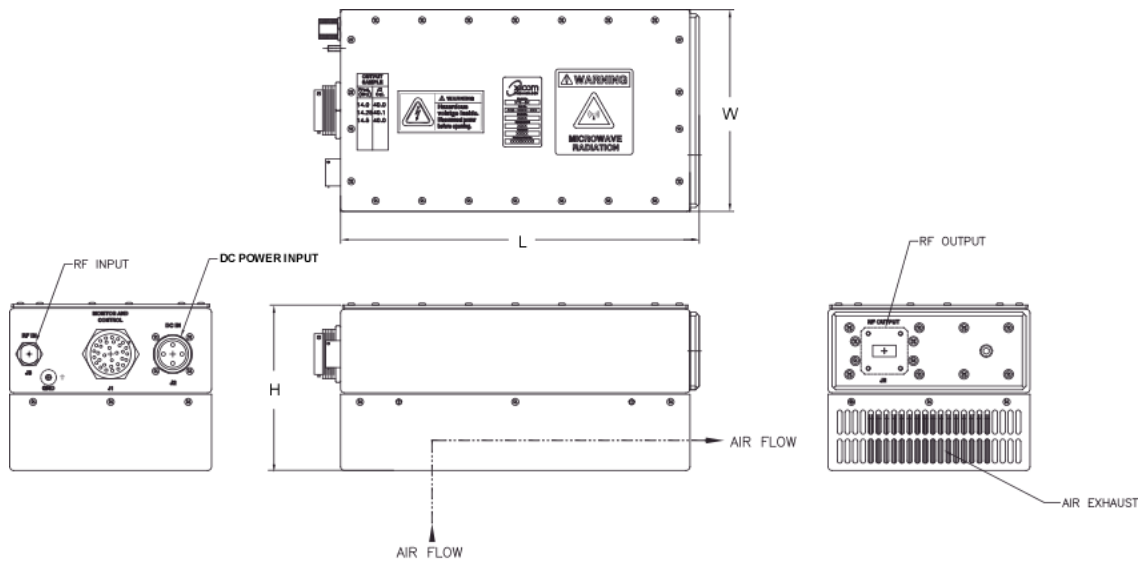
PERFORMANCE SPECIFICATION

Parameters	XTS-25K-B1	XTS-25K1-B1	XTS-25K2-B1	
FREQUENCY RANGE (other frequency coverage available)				
Output	14.0 to 14.5 GHz	13.75 to 14.5 GHz	13.75 to 14.5 GHz	
Input	950 to 1450 MHz	950 to 1700 MHz	950 to 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 \pm 5 dB		
Reference Input Signal		50 Ohms		
OUTPUT POWER				
Saturated Power (typical)	45 dBm	44 dBm	13.75-14 GHz 44 dBm	14-14.5 GHz 45 dBm
Rated Power (P1dB) @ Amplifier Flange (minimum)	44 dBm	43 dBm	43 dBm	44 dBm
GAIN				
Small Signal (minimum)		50 dB		
Maximum SSG Variation Over				
Any Narrow Band		\pm 0.65 dB per 80 MHz		
Full Band		\pm 1.25 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) 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		\pm 0.01 nS/MHz		
Parabolic		\pm 0.005 nS/MHz ²		
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 -45 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		

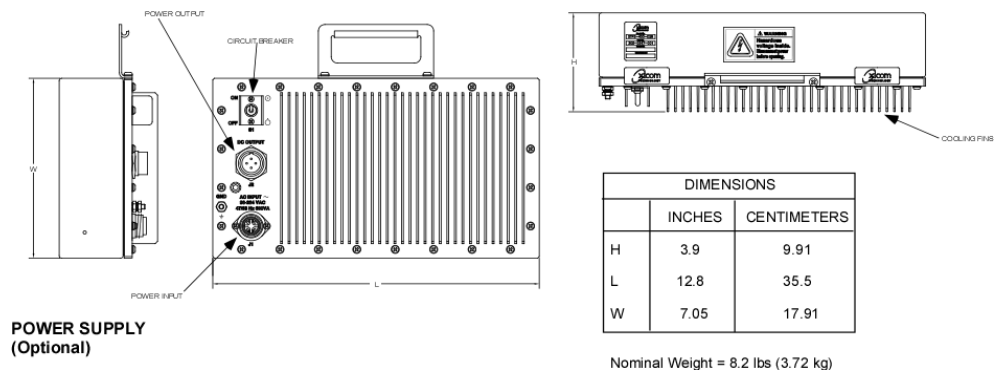
BLOCK DIAGRAM



OUTLINE DRAWING



DIMENSIONS (MAX)		
	INCHES	CENTIMETERS
L	11.63	29.54
H	5.5	13.97
W	6.5	16.51
WEIGHT (Typical)		
	14 lb	6.4 kg
RF OUTPUT = WR-75 Tapped		



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)

XTS-25K-B1

PRIME POWER

22 to 56 VDC
250 VA (typical)



ENVIRONMENT

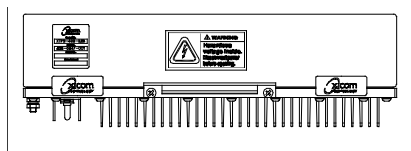
NONOPERATING TEMPERATURE RANGE	-50°C to +70°C
OPERATING TEMPERATURE RANGE	-40°C to +50°C (2°C/1000 Feet Derating)
HUMIDITY	Up to 100% Condensing
ALTITUDE	12,000 Feet MSL (maximum)
SHOCK AND VIBRATION	Normal Transportation
COOLING	Forced Air

INTERFACE

Type	Function
REMOTE CONTROL	Transmit ON/OFF RF Attenuation Summary Fault Constant Power
REMOTE STATUS	Transmit ON RF Output Power Reflected Power Temperature
XICOM COMMAND SET	ASCII Commands

OPTIONS

- Input Diplexer (combining IF and 10 MHz reference)
- Detected RF Transmit Power
- External AC Power Supply, 90 to 264 VAC, 47-63 Hz
- Ethernet Interface



External Power Supply

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