

40 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*
- *Ethernet interface*

The **XTS-40KHE-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 construction and light weight of the **XTS-40KHE-B1** 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 L-Band transmit signal and 10 MHz reference frequency are brought to the unit over a single coaxial line.



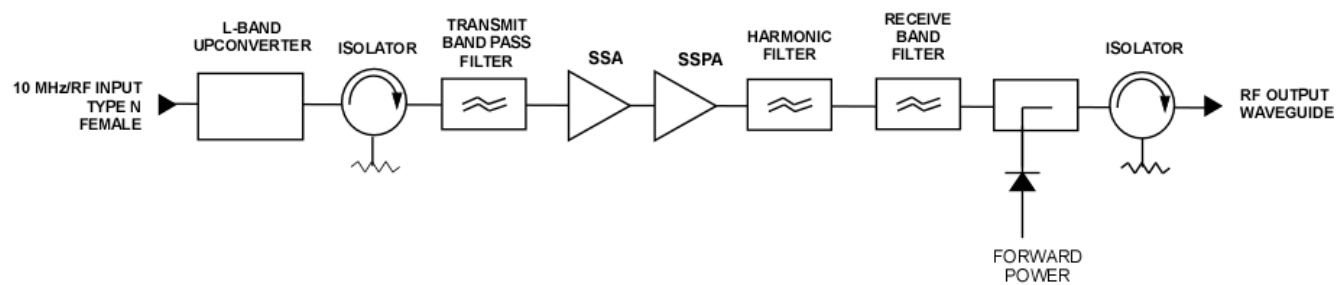
PERFORMANCE SPECIFICATION

Parameters

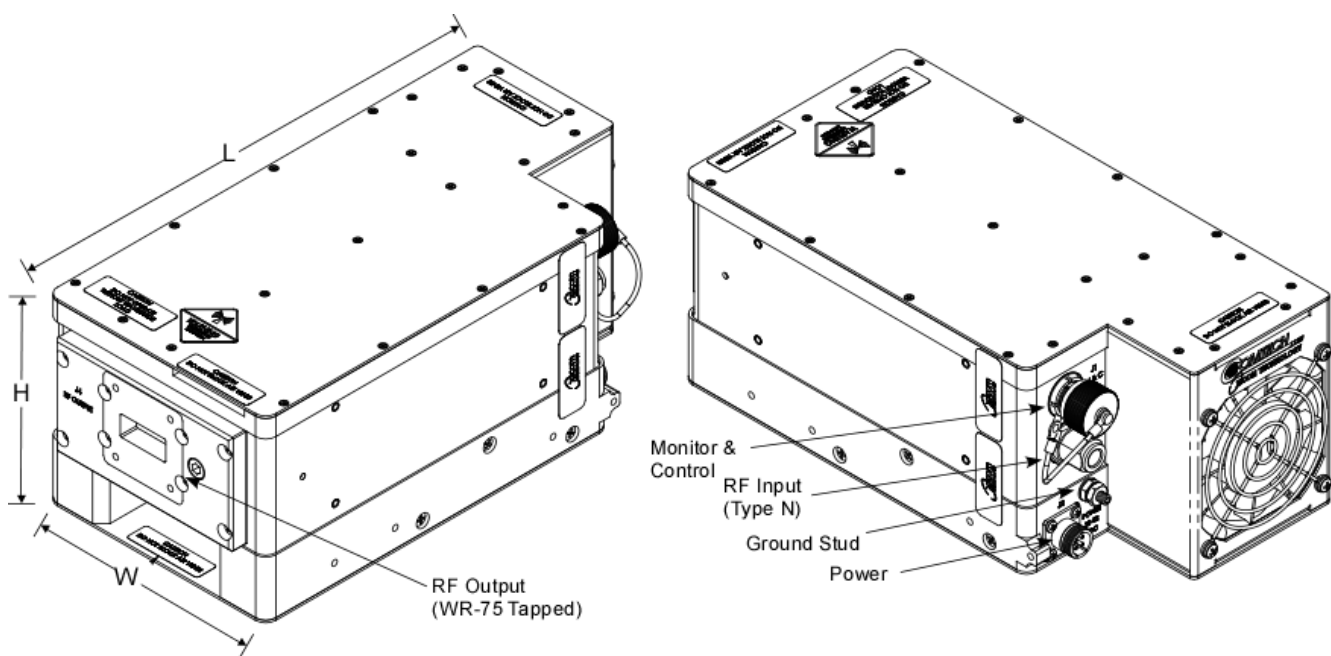
XTS-40KHE-B1

FREQUENCY RANGE		
Output		13.75 to 14.5 GHz
Input		950 to 1700 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 Impedance		50 Ohms
OUTPUT POWER		13.75 to 14.5 GHz
Saturated Power (typical)		47 dBm
Rated Power (P1dB) @ Amplifier Flange (typical)		46 dBm
Linear Power (minimum) P_{LIN}		43 dBm
INTERMODULATION (maximum) with two equal carriers		-25 dBc @ P_{LIN}
SPECTRAL REGROWTH (OQPSK1 S. R. offset)		-30 dBc @ P_{LIN}
AM/PM CONVERSION (maximum)		2.0 deg/dB @ P_{LIN}
GAIN		
Small Signal, min.		50 dB
Maximum SSG Variation Over		
Any Narrow Band		$\pm$ 0.65 dB per 80 MHz
Full Band		$\pm$ 1.5 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
HARMONIC OUTPUT (maximum)		-60 dBc
NOISE POWER (maximum)		
Transmit Band		-76 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)		-60 dBc > 100 kHz from carrier
In band discrete spurious		AC fundamental -50 dBc Sum of all spurs -47 dBc
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)		1.3:1
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.	4.53 kg.

PRIME POWER

20 to 56 VDC
210 W Typical @ P_{LIN}
300 W Maximum @ P_{SAT}



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	10,000 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

- 14.0 to 14.5 GHz Frequency Range with 950 to 1450 MHz IF Available

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