

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.



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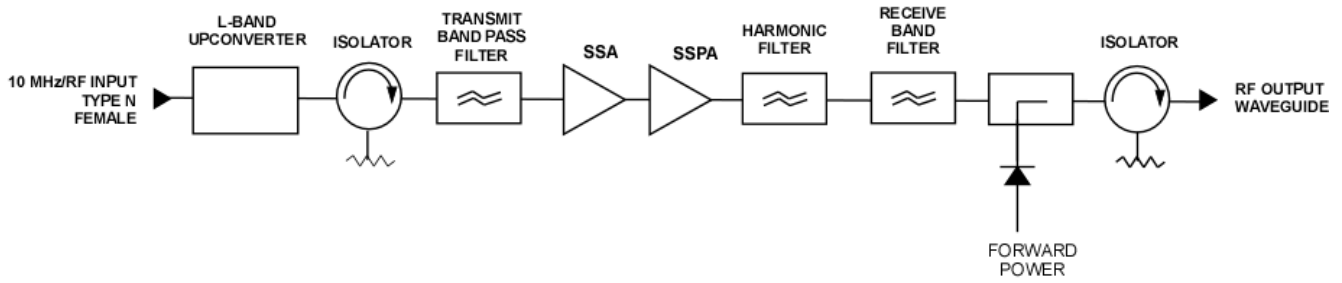
PERFORMANCE SPECIFICATION

Parameters

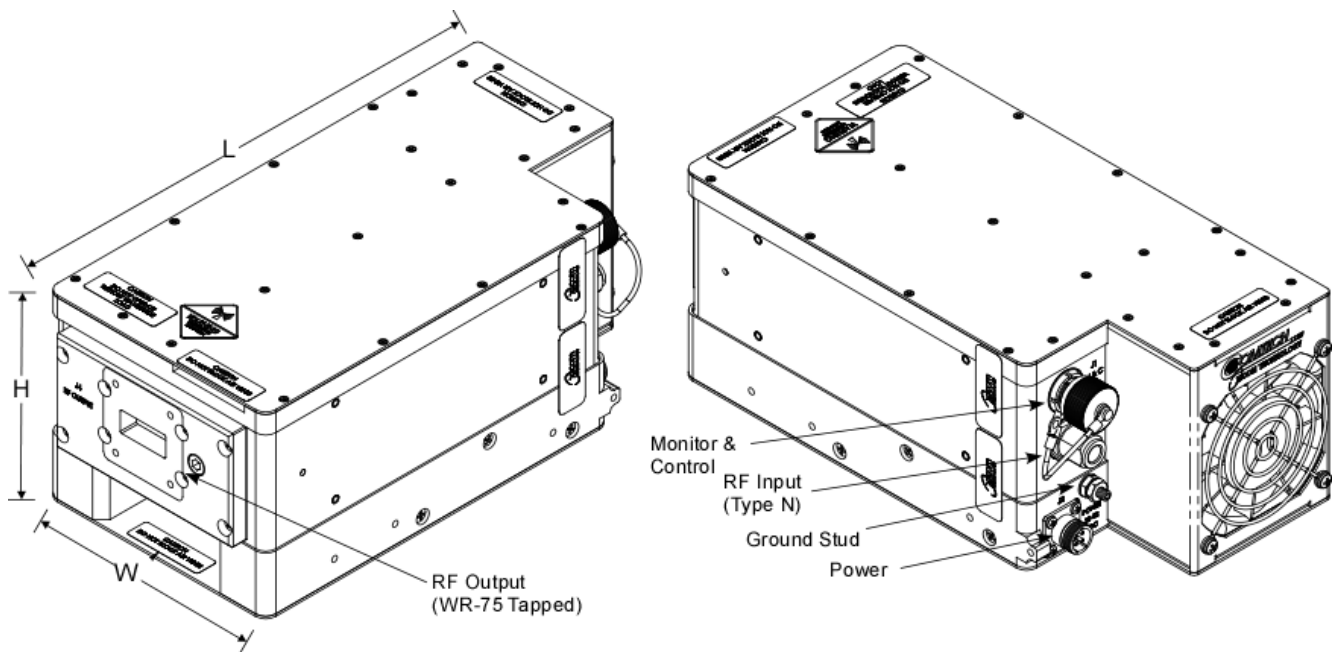
XTS-40KHE-B1

| | |
|---|--|
| 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 | |
| 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) | |
| In band discrete spurious | -60 dBc > 100 kHz from carrier 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}



Headquarters

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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 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

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