

750 Watt Ku-Band High Efficiency Antenna Mount High Power Amplifier with Blockupconverter

Green Power
by XICOM TECHNOLOGY



FEATURES

- 13.75 to 14.5 GHz
- 300 watts linear power
- Rugged design operates to +60°C
- L-band BUC included
- Optional Linearizer
- High efficiency peak TWT
- Ethernet interface

The **XTD-750KHE-B1** is a highly compact, rugged antenna mountable power amplifier designed for high efficiency and long life. The **XTD-750KHE-B1** design uses high efficiency, dual-stage collector peak Traveling Wave Tubes (TWT) to fit a 750 watt rated amplifier into the package size previously offered as a 400 watt TWTA. Some benefits of this type of tube are: significantly reduced prime power consumption, lower internal operating temperatures, and reliability enhancement.

RF filters, cooling, and monitoring & control (M&C) systems are all self-contained within the High Power Amplifier (HPA). An ethernet M&C interface is included.

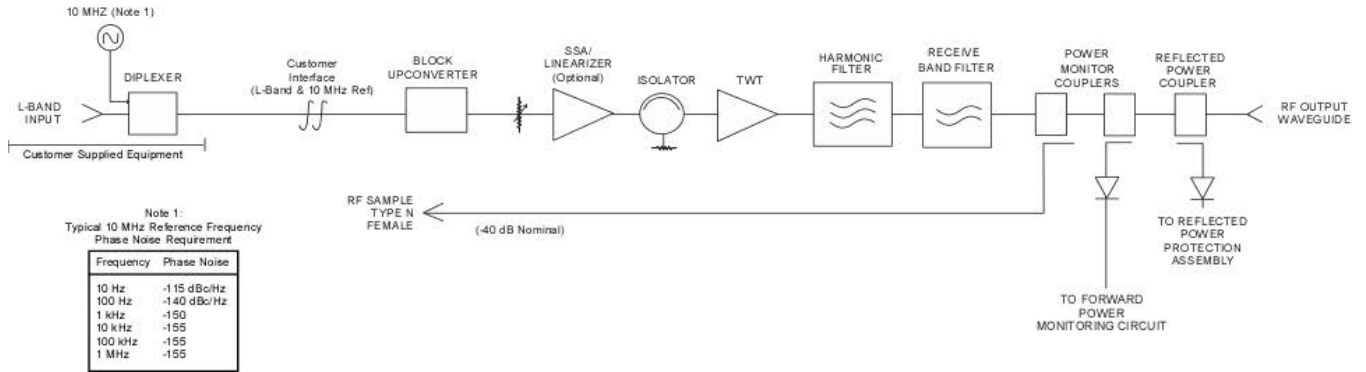
The **XTD-750KHE-B1** may be configured for single thread, redundant, or phase-combined operation.



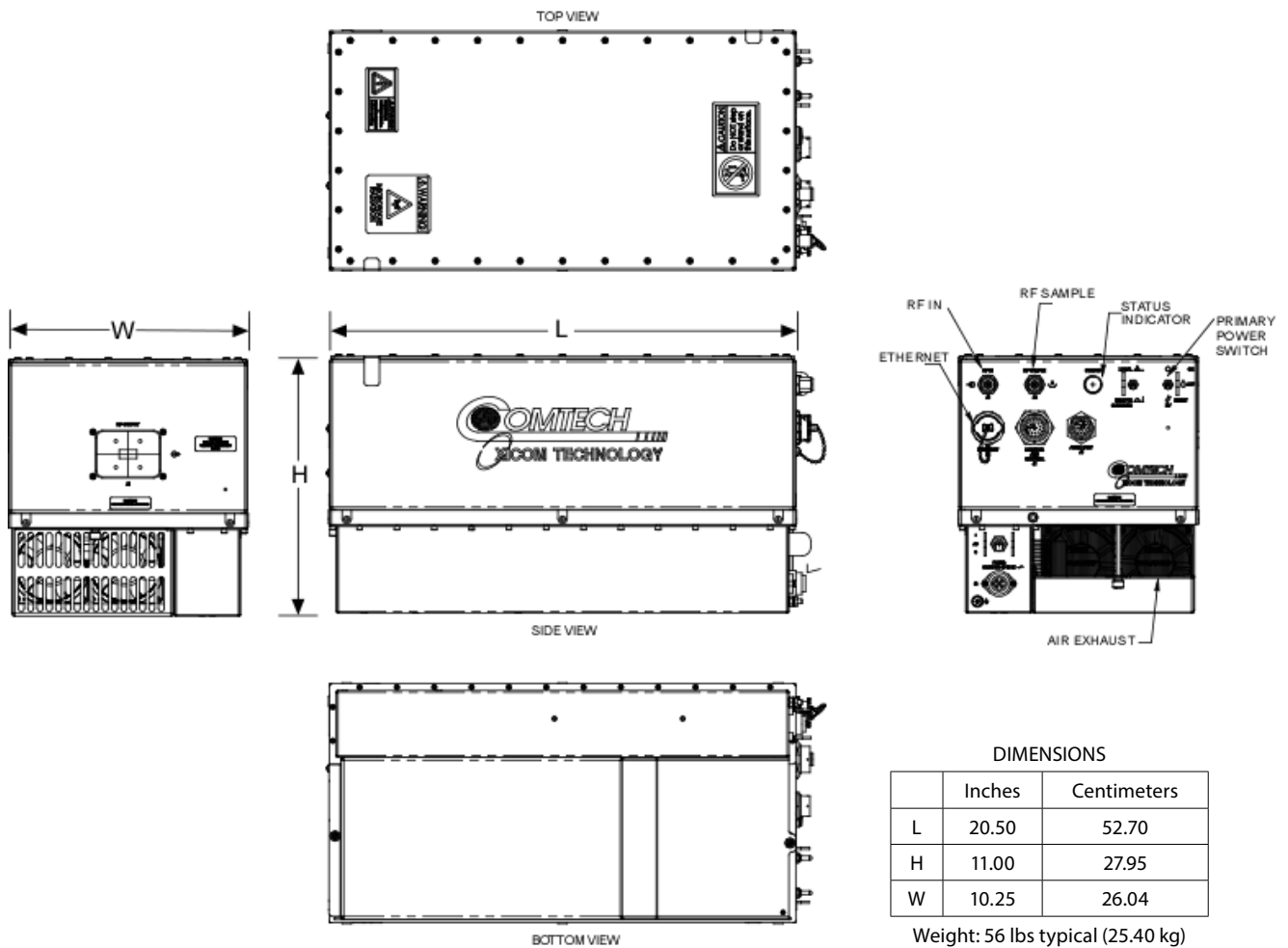
PERFORMANCE SPECIFICATION

Parameters	XTD-750KHE-B1
FREQUENCY RANGE	13.75 to 14.5 GHz
Input Frequency	950 to 1700 MHz
Reference Frequency	10 MHz
OUTPUT POWER	
Peak TWT Power	750 Watts
Maximum CW power (P_{MAX})	355 Watts
Linear Power (P_{LINEAR})	300 Watts with optional linearizer 165 Watts without linearizer
GAIN	
Large Signal (minimum)	70 dB
Small Signal (minimum)	70 dB
Attenuator Range (continuous)	30 dB, 0.1 dB steps
Maximum SSG Variation Over	
Any Narrow Band	1.0 dB per 80 MHz
Full Band	± 2.0 dB
Slope (maximum)	± 0.02 dB/MHz
Stability, 24 hr. (maximum)	± 0.25 dB
Stability, Temperature (maximum)	± 1.0 dB over temperature range at any frequency
INTERMODULATION (maximum) relative to the sum of two equal carriers	-25 dBc @ P_{LINEAR}
SPECTRAL REGROWTH @ 1 SR offset	-30 dBc @ P_{LINEAR}
AM/PM CONVERSION (maximum)	2.5 deg/dB @ P_{LINEAR}
HARMONIC OUTPUT (maximum)	-60 dBc
NOISE POWER (maximum)	
Transmit Band	-70 dBW/4 kHz
Receive Band	-150 dBW/4 kHz 10.95 to 12.75 GHz
GROUP DELAY (maximum)	
Bandwidth	Any 80 MHz
Linear	0.01 nS/MHz
Parabolic	0.005 nS/MHz ²
Ripple	0.05 nS/Pk-Pk
RESIDUAL AM NOISE (maximum)	-50 dBc to 10 kHz -20 (1.5 + logf) dBc 10 to 100 kHz -85 dBc above 100 kHz
PHASE NOISE (maximum)	IESS phase noise profile AC fundamental -50 dBc Sum of all spurs -47 dBc
VSWR	
Input (maximum)	1.6:1
Output (maximum)	1.3:1

BLOCK DIAGRAM



OUTLINE DRAWING



XTD-750KHE-B1



PRIME POWER

90 to 264 VAC
47 to 63 Hz, Single Phase
1650 VA Typical @ P_{LINEAR}
0.95 Minimum Prime Power Factor



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	
LOCAL CONTROL	Prime Power ON/OFF	Local/Remote
	Power Supply ON/OFF	HV ON/OFF
LOCAL STATUS	Tri-Color LED:	
	Fault: Red HV ON: Green	Standby: Continuous Amber FTD: Flashing Amber
REMOTE CONTROL	HV ON/OFF	Constant Power
	Min/Max Power Alarm/Fault	Gain
	Reflected Power Alarm/Fault	Fault Reset
	Heater Standby ON/OFF	Units (Watts, dBm, dBW)
REMOTE STATUS	Power Out	Reflected Power
	Helix Current	Helix Voltage
	Heater Hours	Beam Hours
	Attenuator Setting	Units Selection
	TWT Temperature	Faults: High VSWR High Voltage Helix Current TWT Temperature 10 MHz Lock
	FORM C DRY CONTACT CLOSURE	Summary Fault
COMPUTER PORT	Hardware Interface: RS-232 & RS-422/485 Ethernet	Xicom Command Set: ASCII Commands
	RF MONITOR PORT	-43 dB Coupling Value (nominal.)

OPTIONS

- Remote External Controller
- 1:1, 1:2, 1:N Redundancy
- Linearizer
- Alternate Frequencies Available

