

# 400 Watt C-Band Antenna Mount Amplifiers With Block Upconverter



## FEATURES

- *L-band input*
- *Rugged 55 lb. antenna mount package*
- *Extended frequency band available*
- *RS-232/422/485 M&C interface*
- *Optional Ethernet*
- *1:1, 1:2, 1:N redundancy*

The **XTD-400C-B1** is a series of compact self contained antenna mountable power amplifiers with a built-in block upconverter designed for low cost installation and long life.

The **XTD-400C-B1** design eliminates the need for an amplifier shelter as well as a long waveguide run between the amplifier and the antenna feed horn. For example, an antenna mount 400 Watt C-Band amplifier with its shorter waveguide run will often deliver EIRP comparable to a 600 Watt rack mount HPA.

RF filters, cooling, and monitoring & control systems are all self contained within the HPA. These features provide high reliability, low maintenance costs, and low replacement costs.

The unit incorporates an L-Band block Upconverter, thereby eliminating the need for a separate outdoor unit (ODU). The L-Band transmit signal and a 10 MHz reference signal are brought out to the unit on a single coax line.

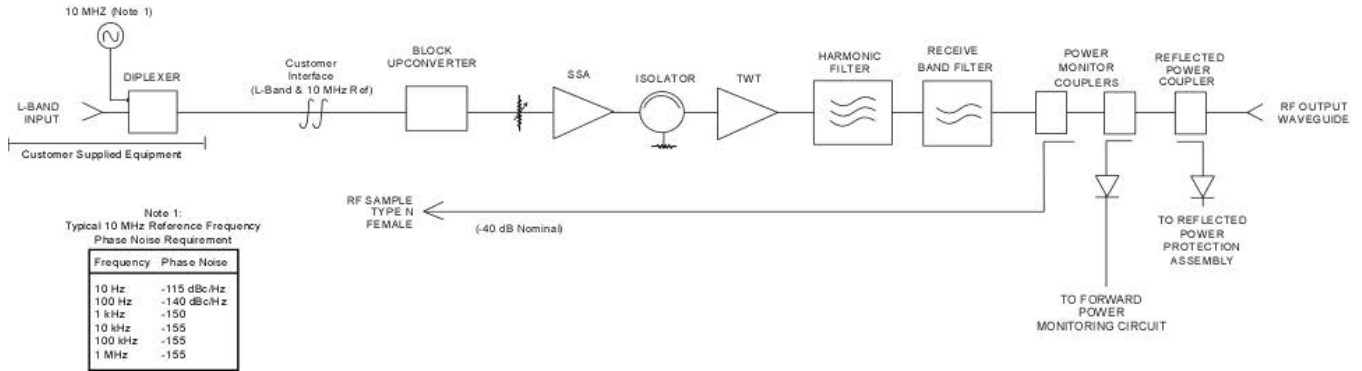
The **XTD-400C-B1** may be configured for single thread, redundant, phase-combined, to linearized operation. A remote external controller is available to operate the HPA from a user selected locations. Mounting brackets can be supplied to mount the HPA to most popular antennas.



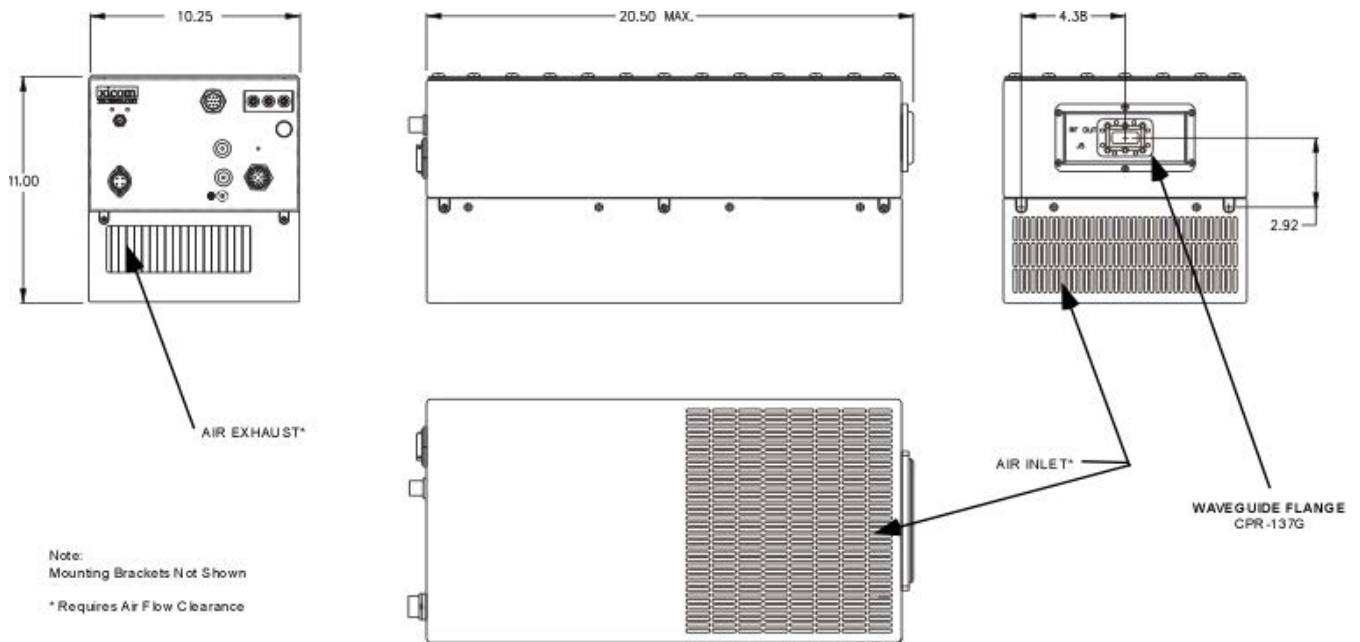
# PERFORMANCE SPECIFICATION

Parameters	XTD-400C-B1
<b>FREQUENCY RANGE</b> (extended frequency coverage available)	
Output	5.850 to 6.425 GHz
Input	950 to 1525 MHz
LO Frequency	4900 MHz
Input Level, w/o damage (maximum)	10 dBm
Reference Signal Frequency	external 10 MHz
10 MHz Power Level	2 dBm $\pm$ 5 dB
<b>OUTPUT POWER</b>	
Traveling Wave Tube	400 Watts
Rated Power @ Amplifier Flange (minimum)	350 Watts
<b>GAIN</b>	
Large Signal (minimum)	67 dB
Small Signal (minimum)	72 dB
Attenuator Range (continuous)	25 dB
Maximum SSG Variation Over	
Any Narrow Band	0.5 dB per 40 MHz
Full Band	$\pm$ 2 dB
Slope (maximum)	$\pm$ 0.04 dB/MHz
Stability, 24 hr. (maximum)	$\pm$ 0.25 dB
Stability, Temperature (maximum)	$\pm$ 1.0 dB over temperature range at any frequency
INTERMODULATION (maximum) with two equal carriers	-23 dBc @ 7 dB total output power backoff from rated power (4 dB backoff with linearizer)
HARMONIC OUTPUT (maximum)	-60 dBc
AM/PM CONVERSION (maximum)	2.5 deg/dB at 6 dB below rated power
<b>NOISE POWER (maximum)</b>	
Transmit Band	-70 dBW/4 kHz
Receive Band	-150 dBW/4 kHz 3.7 to 4.2 GHz
<b>GROUP DELAY (maximum)</b>	
Bandwidth	Any 40 MHz
Linear	0.01 nS/MHz
Parabolic	0.005 nS/MHz <sup>2</sup>
Ripple	0.5 nS/Pk-Pk
RESIDUAL AM NOISE (maximum)	-60 dBc > 100 kHz from carrier AC fundamental -50 dBc Sum of all spurs -47 dBc
PHASE NOISE (maximum)	3 dB below IESS-308/309 phase noise profile
<b>VSWR</b>	
Input (maximum)	1.6:1
Output (maximum)	1.3:1

# BLOCK DIAGRAM



# OUTLINE DRAWING



Typical Weight = 55 lbs (24.95 kg)

## PRIME POWER

100 to 260 VAC  
 47 to 63 Hz, Single Phase  
 1500 VA (maximum)  
 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 (maximum)
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	Standby: Continuous Amber
	HV ON: Green	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 Arc Detection
FORM C DRY CONTACT CLOSURE	Summary Fault	
COMPUTER SERIAL PORT	Hardware Interface: RS-232 & RS-422/485	Xicom Command Set: ASCII Commands
RF MONITOR PORT	-40 dB Coupling Value (nominal)	

## OPTIONS

- Remote External Controller
- 1:1, 1:2, 1:N Redundancy
- Integrated Linearizer
- Internal 10 MHz reference
- Ethernet

## 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](mailto:sales@xicomtech.com)

Web: [www.xicomtech.com](http://www.xicomtech.com)

## European 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](mailto:sales@xicomeurope.com)

Web: [www.xicomtech.com](http://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](mailto:asiasales@xicomtech.com)

Web: [www.xicomtech.com](http://www.xicomtech.com)

