

50 Watt DBS-Band Antenna Mount Amplifiers With Block Upconverters



FEATURES

- *L-band input*
- *Rugged 34 lb. antenna mount package*
- *Extended frequency available*
- *Simple low cost operations*

The **XTD-50DBS-B1** series are compact antenna mountable traveling wave tube amplifiers with built-in block upconverters designed for low cost installation and long life.

Intended for outdoor operation the self contained **XTD-50DBS-B1** eliminates the need for separate amplifier shelter. In addition, the distance between the amplifier and the antenna feed horn can be short, thus eliminating long waveguide runs and their associated losses. RF filters, cooling, and monitor & control (M&C) systems are all self contained within the package. A high frequency resonant conversion power supply is used that accepts a wide range of prime power (90 to 264 VAC).

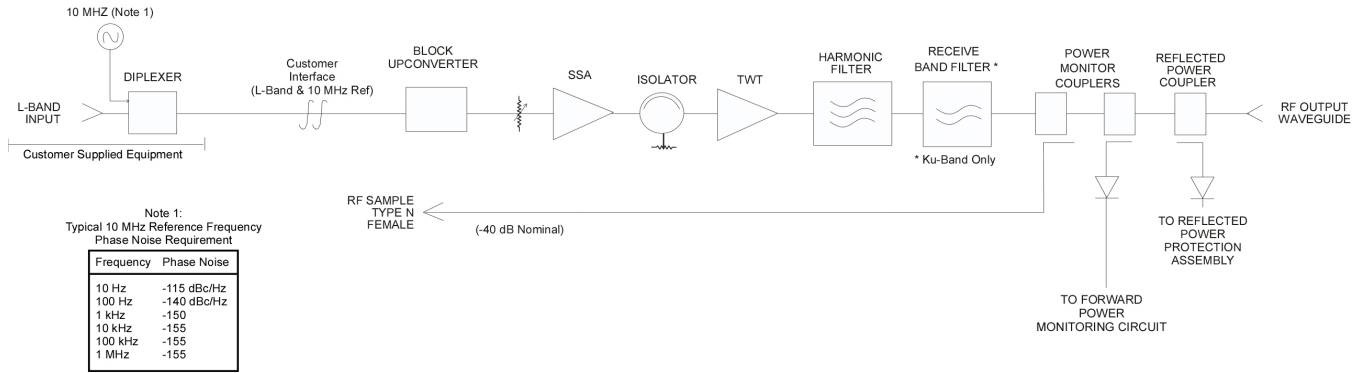
The unit incorporates an L-Band block upconverter that eliminates the need for a separate outdoor unit (ODU). The L-Band transmit signal and a 10 MHz reference signal are brought out to the Unit on a single coax line. A remote external controller is available to operate the HPA from a user selected location. In addition, a M&C cable and software driver are available enabling operation and setup from a PC. Depending upon user requirements, these high power amplifiers can be configured for single thread, redundant, or phase combined configurations. A redundancy waveguide switch controller is built into the amplifier. Mounting brackets are supplied to mount the high power amplifier to most popular antennas.



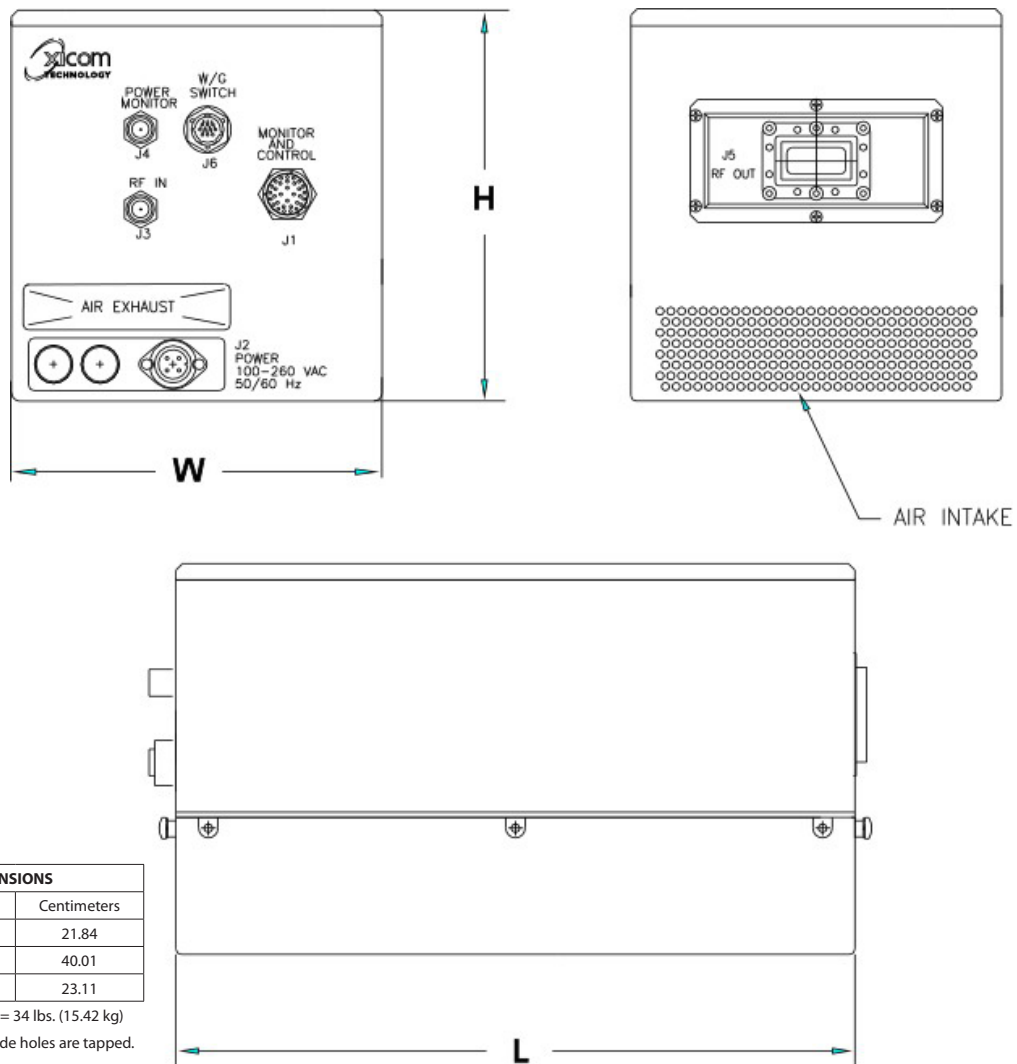
PERFORMANCE SPECIFICATION

Parameters	XTD-50DBS-B1
FREQUENCY RANGE	
Output	17.3 to 18.1 GHz
Input	950 to 1750 MHz
LO Frequency	16350 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	
Traveling Wave Tube	50 Watts
Rated Power @ Amplifier Flange (minimum)	40 Watts
GAIN	
Large Signal (minimum)	65 dB
Small Signal (minimum)	70 dB
Attenuator Range (continuous)	25 dB
Maximum SSG Variation Over	
Any Narrow Band	1.5 dB per 80 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	-15 dBc @ 4 dB total output power backoff from rated power
HARMONIC OUTPUT (maximum)	-60 dBc
AM/PM CONVERSION (maximum)	2.5 deg/dB at 6 dB below rated output power
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	0.5 nS/Pk-Pk
RESIDUAL AM NOISE (maximum)	-60 dBc > 100 kHz from carrier AC fundamental -50 dBc Sum of all spurs -45 dBc
PHASE NOISE (maximum)	Per IESS phase noise profile AC fundamental -50 dBc Sum of all Spurs -47 dBc
VSWR	
Input (maximum)	1.8:1
Output (maximum)	2.2:1

BLOCK DIAGRAM



OUTLINE DRAWING



PRIME POWER

90 to 264 VAC
47 to 63 Hz, Single Phase
500 VA (maximum)
0.95 Minimum Prime Power Factor



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	10,000 Feet MSL (maximum)
SHOCK AND VIBRATION	Normal Transportation
COOLING	Forced Air

INTERFACE

Type	Function	
REMOTE CONTROL	HV ON/OFF	RF Inhibit (HV OFF)
	RF Attenuation (w/preamp)	Fault Reset
	Constant Power	Heater Standby
	Min/Max Power Alarm/Fault	
REMOTE STATUS	HV ON	Heater/Beam Hours
	RF Output Power	Fault Identification
	Reflected Power	TWT Temperature
	Attenuator Setting	Helix Current
	Filament Time Delay	Helix Voltage
REDUNDANCY INTERFACE	External Waveguide Switch Control	
FORM C DRY CONTACT CLOSURE	Summary Fault	
RF MONITOR PORT	-40 dB Coupling Value (approx.)	

OPTIONS

- Remote External Controller
- M&C Cable and Software Driver
- Input Diplexer (combining IF & 10 MHz reference)
- Reverse RF Inhibit
- Extended Frequency Coverage
- Internal 10 MHz
- 60°C Operation
- Ethernet
- Extended Frequency Coverage

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

Web: www.xicomtech.com

Europe 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

Web: 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

Web: www.xicomtech.com