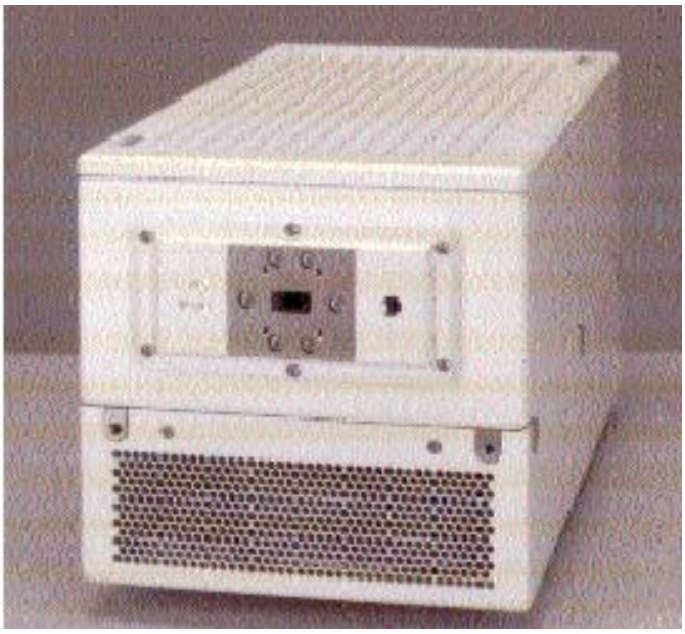
XT-100DBS DBS-Band Antenna Mount Amplifier



- 95 Watts DBS-Band
- No Shelter Required
- Short Waveguide Run
- Low Cost Installation
- Power Factor Corrected

The XT-100DBS is a compact, antenna-mountable, traveling wave tube amplifier designed for low-cost installation and long life.

Intended for outdoor operation, the self-contained XT-100DBS eliminates the need for a 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 RF losses.

RF filters and cooling 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 (100 to 260 VAC.)

A remote external controller is available to operate the XT-100DBS amplifier from a user-selected location. Depending upon user requirements, these high power amplifiers can be configured for single-thread, redundant, or phase-combined configurations.

Mounting brackets are supplied to mount the high power amplifier to most popular antennas.

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PERFORMANCE SPECIFICATIONS

Parameter	XT-100DBS, DBS-Band
FREQUENCY RANGE standard	17.3 - 18.1 GHz
extended frequency coverage availablle	(17.3 - 18.4 GHz)
OUTPUT POWER	
Traveling Wave Tube	95 W (17.3 - 18.1 GHz); 85W (18.1 - 18.4 GHz)
Rated Power @ Amplifier Flange	80 W (17.3 - 18.1 GHz); 70W (18.1 - 18.4 GHz)
GAIN	
Large Signal, minimum	30 dB (63 dB with optional IPA)
Small Signal, minimum	35 dB (70 dB with optional IPA)
Maximum SSG Variation Over:	
Any Narrow Band	1.0 dB per 80 MHz
Slope, maximum	± 0.04 dB/MHz
Stability, 24 Hr maximum	± 0.25 dB
Stability, Temperature	± 1.0 dB maximum over temperature range at any frequency
INTERMODULATION	- 16 dBc maximum with two equal carriers at
with two equal signals	4 dB total output backoff
HARMONIC OUTPUT, maximum	- 60 dBc
AM/PM CONVERSION, maximum	2.5 deg/dB at 6 dB below rated 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	- 50 dBc to 10 kHz - 20 (1.5 + logf) dBc 10 to 500 kHz - 85 dBc above 500 kHz
PHASE NOISE, maximum	10 dB below IESS phase noise profile AC fundamental -50 dBc Sum of all spurs -47 dBc
VSWR	
Input, maximum	1.3:1
Output, maximum	2.2:1

Note: 1.3:1 Output VSWR available with optional External Isolator

PRIME POWER

100-260 VAC
47 to 63 Hz, single phase
500 VA Typical
0.95 Minimum Prime Power Factor

CE COMPLIANT

OPTIONS

Detected RF
Remote External Controller
Preamplifiers
Gain Control
Serial Interface
Extended Frequency Coverage
1:1, 1:2, 1:N Redundancy

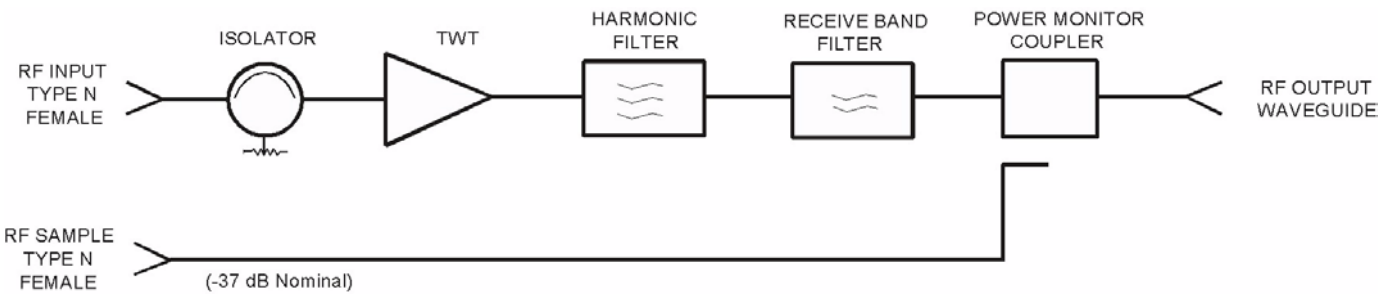
ENVIRONMENT

NONOPERATING TEMPERATURE RANGE	-50° C to + 70° C
OPERATING TEMPERATURE RANGE	-40° C to +50° C
HUMIDITY	Up to 100% Condensing
ALTITUDE	10,000 feet MSL maximum
SHOCK AND VIBRATION	Normal Transportation
COOLING	Forced Air

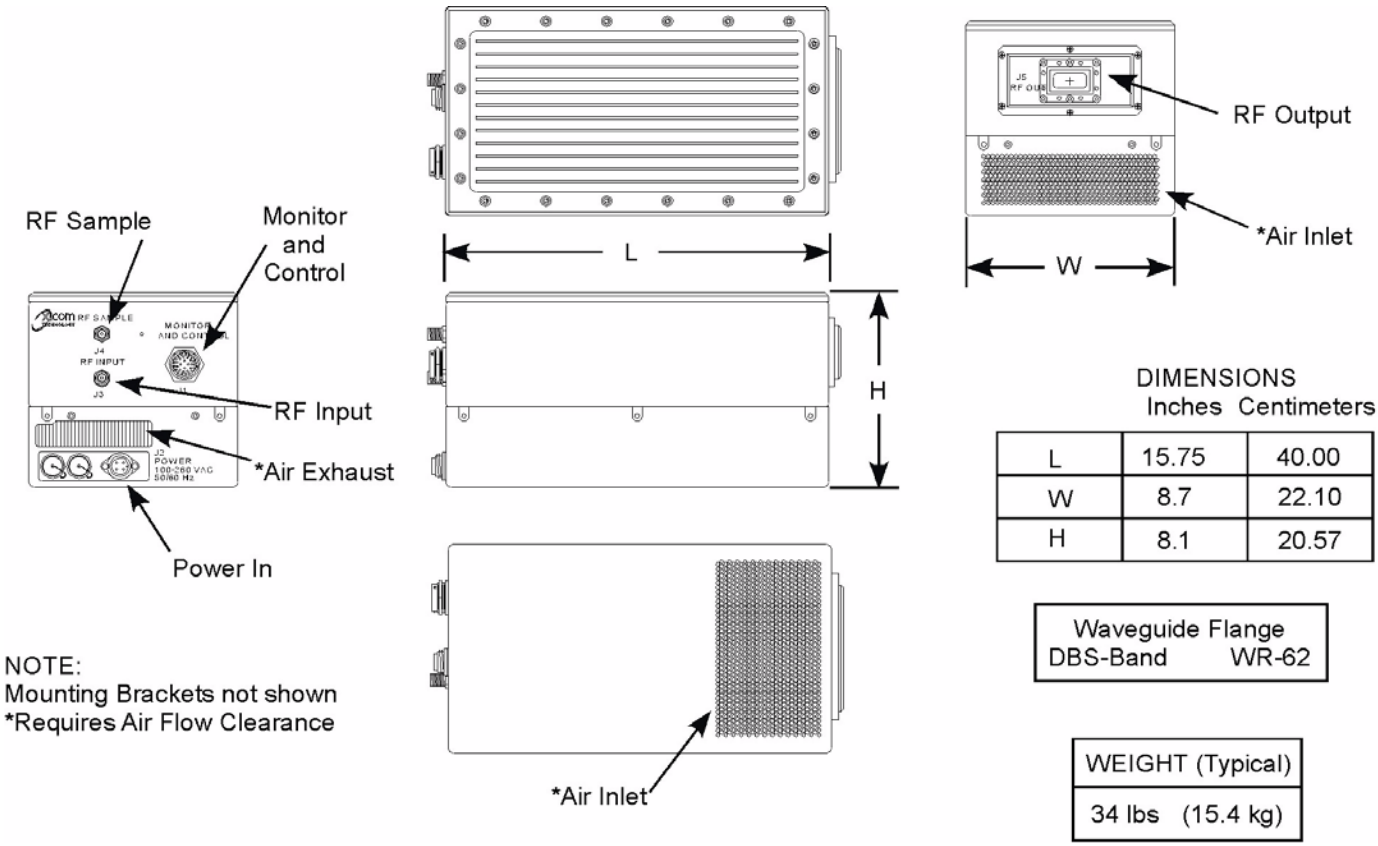
INTERFACE

TYPE		FUNCTION
CONTROLS	High Voltage ON/OFF	Heater Standby
	Fault Reset	
	Note: Heater Standby reduces the TWT heater voltage for situations where the high voltage is off for extended periods.	
MONITORS — ANALOG	Helix Current (2 mA/V)	Cathode Voltage (1000:1 V/V)
	TWT Temperature	RF Output Power (optional)
AUXILIARY VOLTAGES	+15 VDC (100 MA Max)	
	+24 VDC (100 MA Max)	

Block Diagram



Outline Drawing



NOTE:
Mounting Brackets not shown
*Requires Air Flow Clearance

DIMENSIONS

	Inches	Centimeters
L	15.75	40.00
W	8.7	22.10
H	8.1	20.57

Waveguide Flange	
DBS-Band	WR-62

WEIGHT (Typical)
34 lbs (15.4 kg)

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