XTD-80Q_XTD-120Q Q-Band Antenna Mount Power Amplifiers

- **80 Watts**
- **120 Watts**
- **No Shelter Required**
- **Complete RS-232/422/485 Interface**
- **Designed for Uplink Applications**

The XTD-80Q and XTD-120Q is a compact self-contained antenna mount power amplifier designed for low cost installation and long life.

Cooling and monitor & control systems are all self-contained within the amplifier. By combining the power supply and the RF components within the same amplifier case the need for external high voltage cables (required for split box designs) is eliminated. These highly compact units typically weigh only 45 pounds.

TWTs are available delivering 80 Watts or 120 Watts across the 43.5 to 45.5 GHz band. Optional extended band frequency coverage is available.

The XTD-80Q and XTD-120Q provides several methods of tube protection. Due to Xicom's unique power supply design less than 1 joule is stored in the power supply. A high frequency resonant conversion power supply is used that accepts a wide range of prime power (100 to 260 VAC.)

The unit also features power factor correction circuitry that minimizes line current distortion and reduces the required volt-ampere input.

The amplifier is available with multiple options including redundant configurations, preamplifiers with fixed or variable gain, output power monitoring, and parallel interface.

A remote external controller is available to operate the HPA from a user selected location. Mounting brackets are supplied to mount the HPA to most popular antennas.

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PERFORMANCE SPECIFICATIONS

Parameter	XTD-80Q	XTD-120Q
FREQUENCY RANGE	43.5 - 45.5 GHz	43.5 - 45.5 GHz
OUTPUT POWER		
Traveling Wave Tube	80 W	120 W
Rated Power @ Amplifier Flange	70 W	100 W
GAIN		
Large Signal, minimum	60 dB	
Small Signal, minimum	65 dB	
Attenuator Range (continuous)	15 dB	
Maximum SSG Variation Over:		
Any Narrow Band	0.80 dB maximum per 60 MHz	
Full Band	3.0 dB maximum	
Slope, maximum	± 0.04 dB/MHz maximum	
Stability, 24 Hr maximum	± 0.25 dB	
LSG Stability Over Temperature Range	± 1.0 dB maximum at any frequency	
INTERMODULATION with two equal signals	- 18 dBc maximum with two equal carriers at 4 dB total output backoff	
AM/PM CONVERSION, maximum	2.5°/dB at 6 dB below rated output power	
NOISE POWER, maximum		
Transmit Band (43.5 - 45.5 GHz)	- 70 dBW/4 kHz	
GROUP DELAY, maximum		
Bandwidth	Any 60 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	1.5:1	
Output, maximum	1.5:1	

PRIME POWER

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

CE COMPLIANT

OPTIONS

Detected RF
Gain Control
Parallel (Discrete) Interface
Remote External Controller
1:1, 1:2, 1:N Redundancy
Power Combined

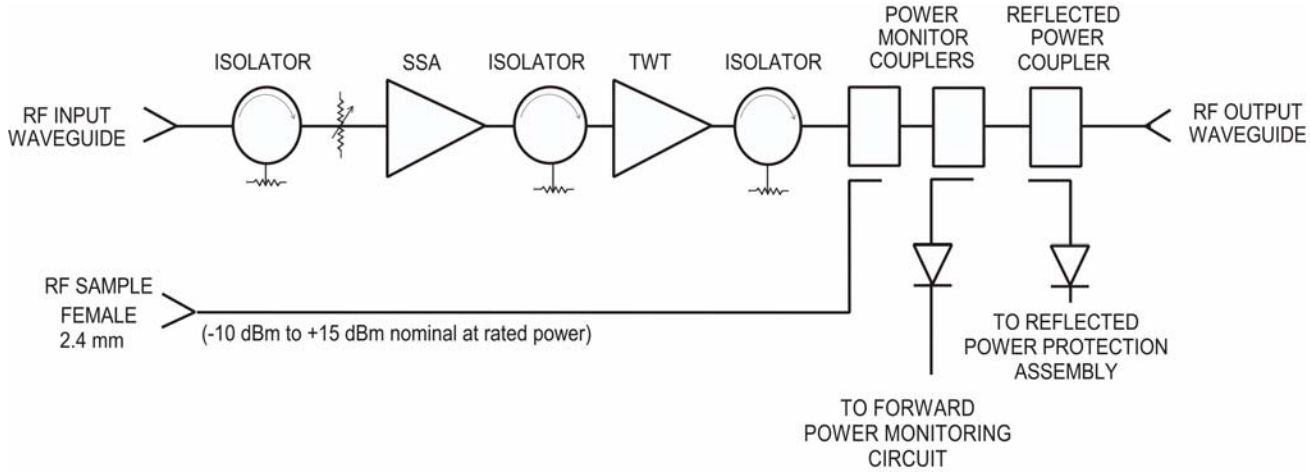
ENVIRONMENT

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

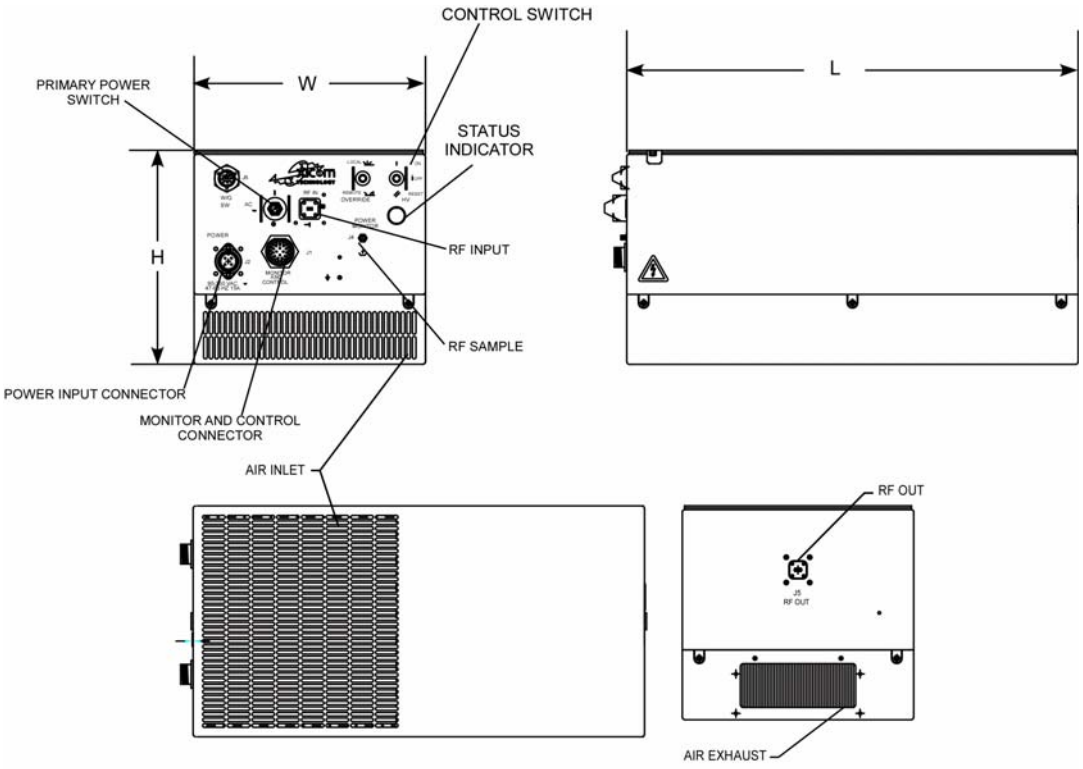
INTERFACE

TYPE	FUNCTION		
LOCAL CONTROL	Prime Power ON/OFF	Local/Remote	
	Power Supply ON/OFF	HV ON/OFF	
LOCAL STATUS	Tri-Color LED:		
	Fault: Red	Standby: Amber	
	Transmit ON: Green	FTD: Flashing Amber	
REMOTE CONTROL	HV ON/OFF	RF Inhibit (HV OFF)	Heater Standby
	RF Attenuation (w/preamp)	Fault Reset	
REMOTE STATUS	HV ON	Heater/Beam Hours	Filament Time Delay
	RF Output Power	Fault Identification	Helix Current
	Reflected Power	TWT Temperature	Helix Voltage
Form C Dry Contact Closure	Summary Fault		
RF MONITOR PORT	-37 dB Coupling Value (Approx)		

Block Diagram



Outline Drawing



DIMENSIONS

	INCHES	CENTIMETERS
W	10.25	26.04
L	20.00	50.80
H	9.50	24.13

RF OUTPUT

Q-Band	WR-22 Tapped (UNC-440)

Nominal Weight = 45 lbs. (20.41 kg)

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