XTD-200Q Q-Band Antenna Mount Power Amplifier

- **200 Watts**
- **No Shelter Required**
- **Short Waveguide Run**
- **Complete RS-232/422/485 Interface**
- **Variable Gain**
- **Power Factor Corrected**

The XTD-200Q 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 125 pounds.

The XTD-200Q incorporates an integral air-to-air heat exchanger to protect the air cooled TWT from from external air contaminants. The TWT delivers 200 Watts across the full 43.5 to 45.5 GHz frequency band.

The XTD-200Q 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 XTD-200Q also features power factor correction circuitry that minimizes line current distortion and reduces the required volt-amps input.

The amplifiers are available with multiple options. Depending upon user requirements, these high power amplifiers can be configured for single thread, redundant, or phase combined configurations.

A remote external controller is available to operate the HPA from a user selected location.

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PERFORMANCE SPECIFICATIONS

Parameter	XTD-200Q
FREQUENCY RANGE	43.5 - 45.5 GHz
OUTPUT POWER	
Saturated Power (Typical)	200 W
Rated Power(P1dB) @ Amplifier Flange	165 W
GAIN	
Large Signal, minimum	58 dB
Small Signal, minimum	63 dB
Attenuator Range (continuous)	15 dB
Maximum SSG Variation Over:	
Any Narrow Band	1.5 dB maximum per 40 MHz
Full Band	10 dB maximum
Slope, maximum	±0.08 dB/MHz maximum
Stability, 24 Hr maximum	±0.25 dB
LSG Stability Over Temperature Range	±1.0 dB maximum over temperature range at any frequency
INTERMODULATION with two equal signals	- 15 dBc maximum with two equal carriers at 4 dB total output backoff
AM/PM CONVERSION, maximum	4°/dB at 6 dB below rated power
NOISE POWER DENSITY	
Transmit Band (43.5 - 45.5 GHz)	- 70 dBW/4 kHz maximum at rated power
GROUP DELAY, maximum	
Bandwidth	Any 40 MHz
Linear	± 0.02 nS/MHz
Parabolic	± 0.005 nS/MHz^2
Ripple	2.0 nS/Pk-Pk
RESIDUAL AM	- 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	2.0:1

PRIME POWER

100-260 VAC
47 to 63 Hz, single phase
1400 VA Maximum
0.95 Minimum Prime Power Factor

CE COMPLIANT

OPTIONS

Remote External Controller
1:1, 1:2, 1:N Redundancy
Variable Phase Combined

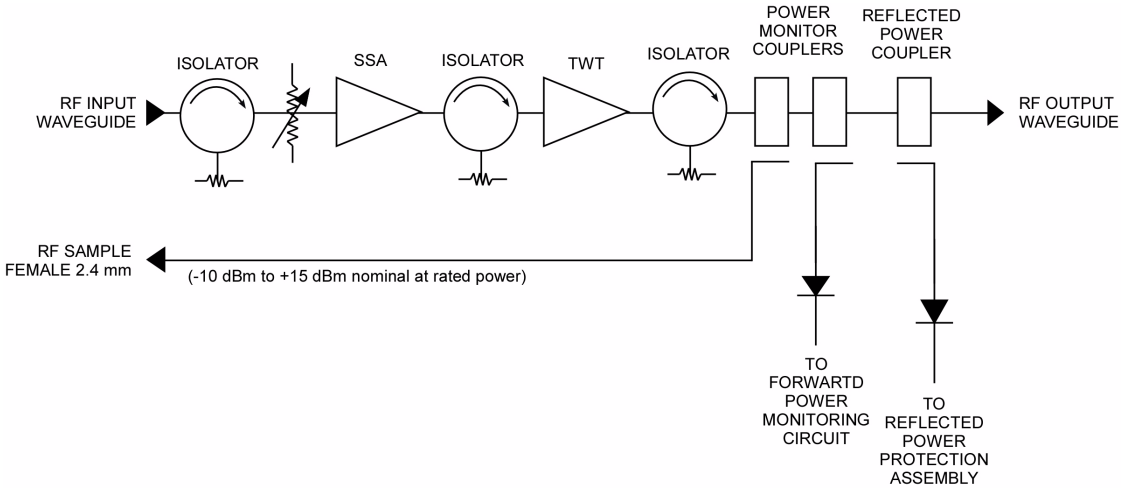
ENVIRONMENT

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

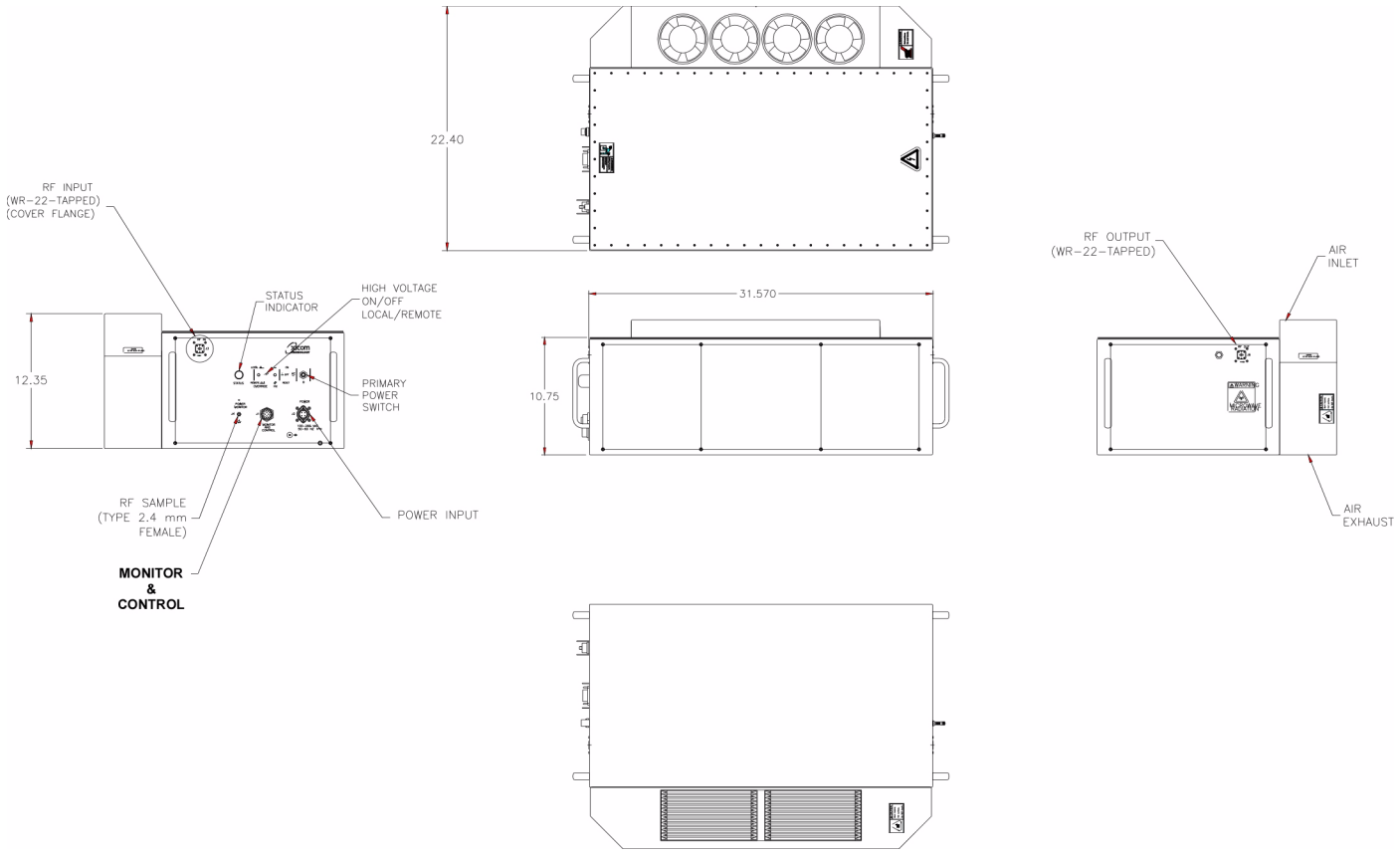
INTERFACE

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: Continuous Amber	
	HV 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



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