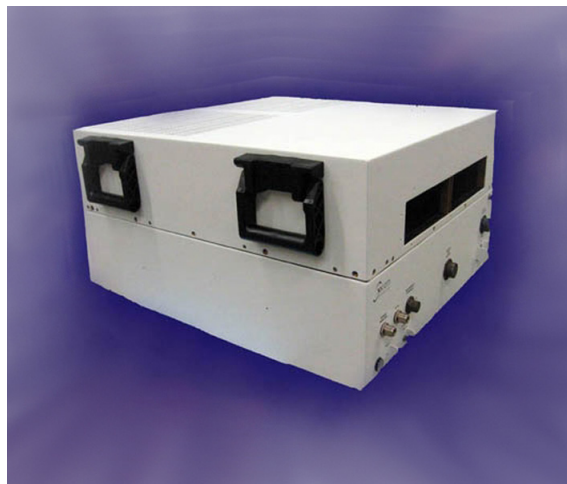


2500 Watt Ku-Band Antenna Mount High Power Amplifier



FEATURES

- *2500W Peak TWT Power, 800W Linear Power*
- *Full Instantaneous Bandwidth*
- *Linearizer Included*
- *Optional Block Upconverter*
- *No Shelter Required*
- *Variable Gain Control*

The **XTD-2500KHE** amplifier is a compact antenna mounted high power amplifier designed for applications requiring high transmit power levels. The unit includes integrated cooling and monitoring and control systems. All high-voltage cabling is contained within the amplifier chassis. The amplifier uses two peak-power TWTs operating in parallel and power combined in a hybrid circuit. The total peak power of the TWTs is 2,500 Watts. This technique enables power levels rivaling klystron-based amplifier solutions. Because these amplifiers are used outdoors, losses from waveguide runs, multiplexers and rotary joints are eliminated delivering more power to the antenna feed. The amplifier will deliver 800 watts of linear power. TWTs have very high instantaneous bandwidth compared to Klystron amplifiers allowing the simultaneous transmission of multiple carriers without the need to multiplex signals at the transmit frequency.

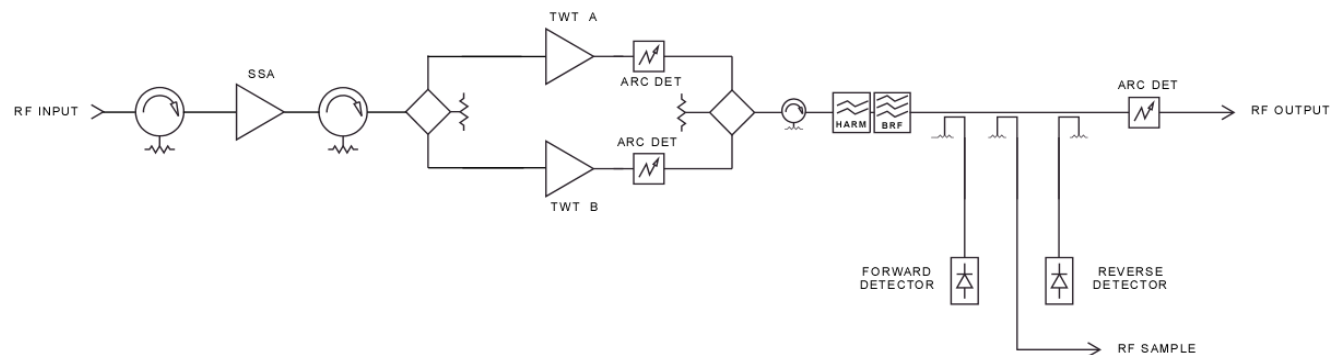
The **XTD-2500KHE** amplifiers include linearizers and several methods of fault protection including arc detectors and fast power supply shutdown circuits. The unit features power factor correction circuitry that minimizes line current distortion and reduces the required Volt-Amps input. The amplifier includes full remote control capability supporting either RS-232, or RS-485; and a controller is available to operate the amplifier from a remote location.



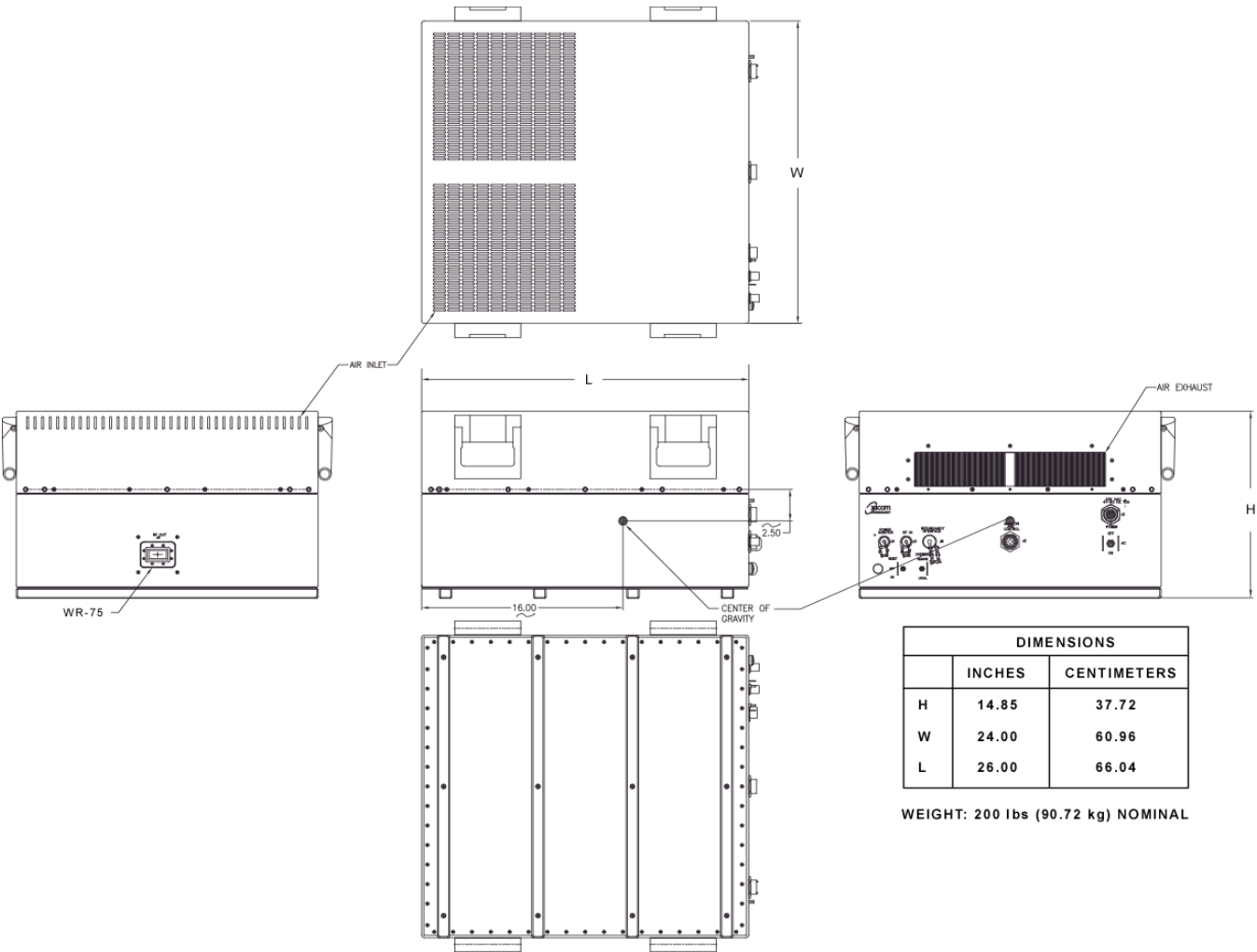
PERFORMANCE SPECIFICATION

Parameters	XTD-2500KHE	XTD-2500KHE1
FREQUENCY RANGE	13.75 to 14.5 GHz	12.75 to 14.5 GHz
OUTPUT POWER		
TWT Peak Power (typical)	64.0 dBm (2500 W)	
HPA Flange Peak Power	63.0 dBm (2000 W)	
Linear Rated Power, HPA Flange	59.0 dBm (800 W)	
Single Carrier Power, HPA Flange	60.0 dBm (1000 W)	
GAIN		
Large Signal (minimum)	70 dB	
Small Signal (minimum)	70 dB	
Attenuator Range (continuous)	25 dB	
Maximum SSG Variation Over		
Any Narrow Band	1.0 dB Pk-Pk per 80 MHz	
Full Band	2.5 dB Pk-Pk per 500 MHz	
Slope (maximum)	± 0.04 dB/MHz	
Stability, 24 hr. (maximum)	± 0.25 dB	
Stability, Temperature (maximum)	± 1.0 dB over temperature range at any frequency	
INTERMODULATION with two equal carriers	-25 dBc @ 800 W total power	
HARMONIC OUTPUT (maximum)	-60 dBc	
AM/PM CONVERSION (maximum)	1.5 deg/dB at ≤ 800 W	
NOISE POWER (maximum)		
Transmit Band	-70 dBW/4 kHz	
Receive Band	-150 dBW/4 kHz 10.95 to 12.75 GHz	-150 dBW/4 kHz 10.95 to 11.75 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)	1.3:1	

BLOCK DIAGRAM



OUTLINE DRAWING



PRIME POWER

230 VAC, 3 phase, 4 wire
47 to 63 Hz
6000 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 Max.
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 Settings	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: 2 ports: RS-232 & RS-422/485	Xicom Command Set: ASCII Commands
RF MONITOR PORT	-50 dB Nominal	

OPTIONS

- Block Upconverter
- Remote External Controller

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