

750 Watt C-Band Rack Mount High Power Amplifier



FEATURES

- *Compact 4RU chassis*
- *Extended frequency bands available*
- *Menu driven front panel display and control*
- *1:1, 1:2, 1:N redundancy*
- *Optional integrated linearizer*

The **XTRD-750C** is a highly efficient rack mountable traveling wave tube amplifier (TWTA) designed for fixed and mobile uplink applications. The unit includes RF gain control, a solid state pre-amplifier, cooling, and monitoring and control (M&C) system. Rack space is conserved because the amplifier occupies only 4 rack units (7 inches) of a standard 19 inch rack cabinet. Nominal weight is 75 pounds.

The unit features a menu driven front panel display and RS-232/422/485 serial port interfaces for complete computer control. RF, traveling wave tube, and default parameters are easily monitored on the 4-line front panel display. Gain control is provided via the front panel or through the serial interface.

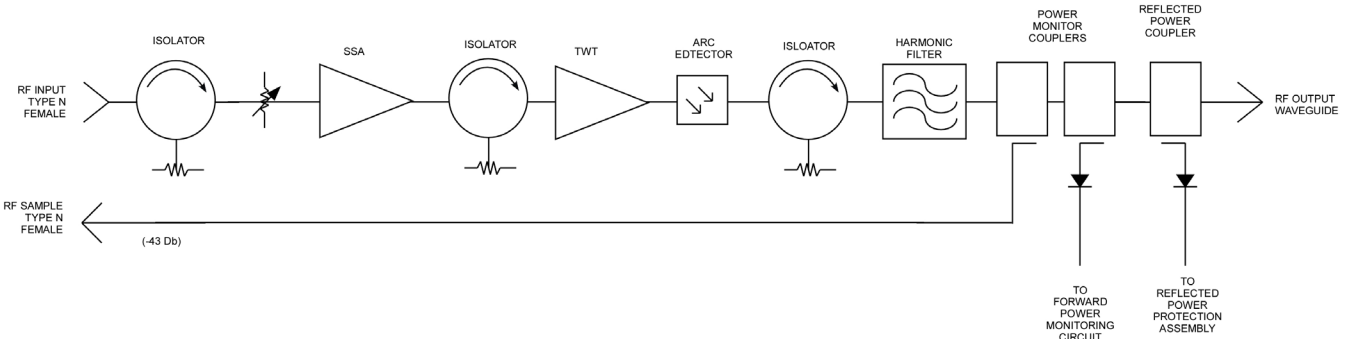
The **XTRD-750C** incorporates high efficiency, multi-stage collector TWTs. Reliability is enhanced because both prime power consumption and internal operating temperatures are reduced for both the linear and saturated modes of operation. Power factor correction circuitry is also included which minimizes line current distortion and reduces the required Volt-Amps input. The automatic features of the high frequency resonant conversion power supply include quick recovery from prime power outages and multiple helix fault resets (three fault cycles.) Depending upon user requirements, the amplifier can be configured for either single thread or redundant system operation



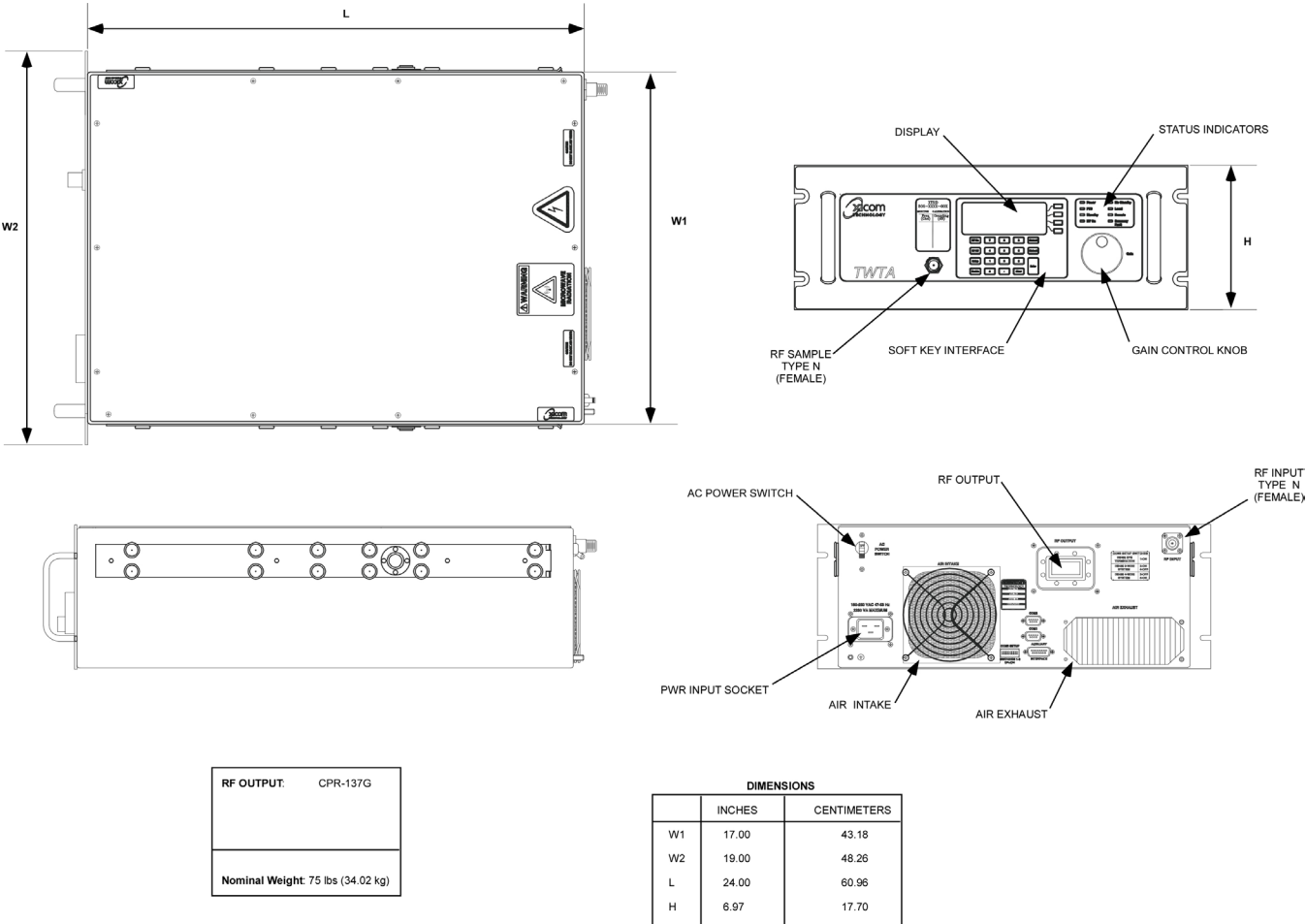
PERFORMANCE SPECIFICATION

Parameters	XTRD-750C
FREQUENCY RANGE (extended frequency coverage available)	5.850 to 6.425 GHz (5.850 to 6.650 GHz)
OUTPUT POWER	
Traveling Wave Tube	750 W
Rated Power @ Amplifier Flange (minimum)	650 W
GAIN	
Large Signal (minimum)	70 dB
Small Signal (minimum)	75 dB
Attenuator Range (continuous)	25 dB
Maximum SSG Variation Over:	
Any Narrow Band	1.0 dB per 40 MHz
Full Band	2.5 dB/575 MHz
Slope (maximum)	± 0.02 dB/MHz
Stability, 24 hr. (maximum)	± 0.25 dB
Stability, Temperature (maximum)	± 1.0 dB over temperature range at any frequency
INTERMODULATION (maximum) with two equal carriers	-18 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 power
NOISE POWER (maximum)	
Transmit Band	-70 dBW/4kHz
Receive Band	-150 dBW/4 kHz 3.7 to 4.2 GHz
GROUP DELAY (maximum)	
Bandwidth	Any 40 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 to 500 kHz -85 dBc above 500 kHz
PHASE NOISE (maximum)	12 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

180 to 260 VAC
47 to 63 Hz, Single Phase
2450 VA (maximum)
0.95 Minimum Prime Power Factor



ENVIRONMENT

NONOPERATING TEMPERATURE RANGE	-50°C to +70°C
OPERATING TEMPERATURE RANGE	-10°C to +50°C (2°C/1000 Feet Derating)
HUMIDITY	Up to 95% Noncondensing
ALTITUDE	10,000 Feet MSL (maximum)
SHOCK AND VIBRATION	Normal Transportation
COOLING	Forced Air: 250 CFM (typical)

INTERFACE

	Type	Function	
CONTROLS	LOCAL	Local/Remote	AC Power On/OFF
	LOCAL AND REMOTE	Gain	High Voltage ON/OFF
		Min/Max Power Alarm/Fault	Audio Alarm ON/OFF
		Reflected Power Alarm/Fault	Units (Watts, dBm, dBW)
		Fault Reset	Lamp Test
		Heater Standby ON/OFF	
STATUS	FRONT PANEL LEDs	Standby	Power
		Local	Remote
		Summary Fault	High Voltage ON/OFF
		Heater Time Out (FTD)	Heater Standby
	FRONT PANEL DIGITAL DISPLAY	Power Out	Beam Hours
		Reflected Power	Helix Current
		TWT Temperature	Helix Voltage
		Heater Hours	Faults:
			High VSWR
			High Voltage
COMPUTER SERIAL PORT	DRY FORM-C RELAY CONTACTS (2)	Summary Fault	Helix Current
	HARDWARE INTERFACE	Two Ports: RS-232 & RS-422/RS-485	TWT Temperature
	XICOM COMMAND SET	ASCII Commands	
	RF SAMPLE PORT COUPLING	-43 dB Nominal	

OPTIONS

- Extended Frequency Coverage
 - 5.85 to 6.725 GHz
 - 6.725 to 7.025 GHz
- 1:1, 1:2, 1:N Redundancy
- Variable Phase Combined
- Integrated Linearizer
- Block Upconverter

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



Document XTRD-750C Rev 7, 07/29/2011

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Note: Technical specifications are subject to change without notice. Please contact Xicom Technology before using this information for system design.