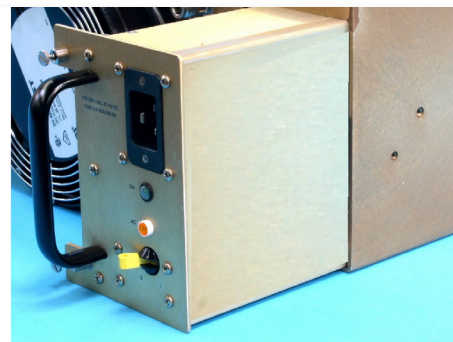


# 100 Watt X-Band Rack Mount High Power SSPA



Front Panel



Rear Panel showing Power  
Supply Partially Removed

## FEATURES

- Complete Digital M&C Interface
- Optional Redundancy Control
- Removable Power Supply

The **XTR-100X** is a highly efficient rack-mountable solid state power amplifier (SSPA) designed for fixed and mobile uplink applications. RF filters, isolators, cooling, and monitor and control (M&C) systems are all self-contained within the package. Rack space is conserved because the amplifiers occupy only 4 rack units (7 inches) of a standard 19 inch rack cabinet. Nominal weight is 50 pounds.

The unit features a menu driven front panel display, RS-232/422/485 serial port and Ethernet interfaces for complete computer control. Forward power, reverse power and temperature, and default parameters are easily monitored on the four line front panel display. Gain control is provided via the front panel or through the remote interfaces.

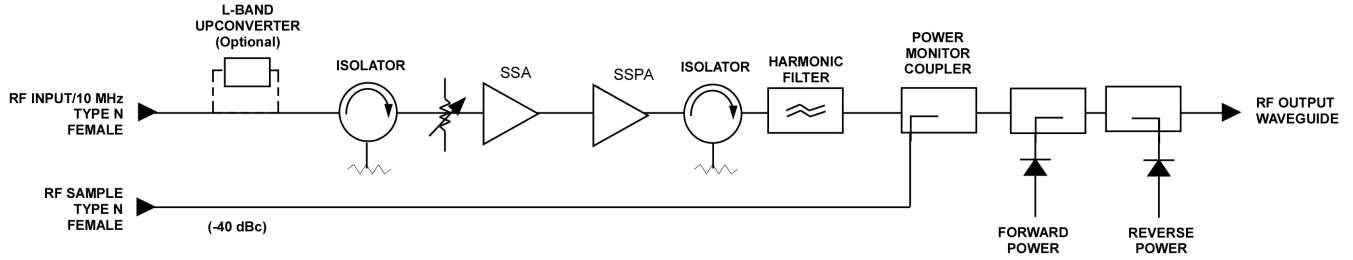
A high frequency resonant conversion power supply is used that accepts a wide range of prime power (90 to 264 VAC). Power factor correction circuitry is also included which minimizes line current distortion and reduces the required Volt-Amps input. Depending upon user requirements, this high power amplifier can be configured for single thread, redundant, or phase combined configurations.



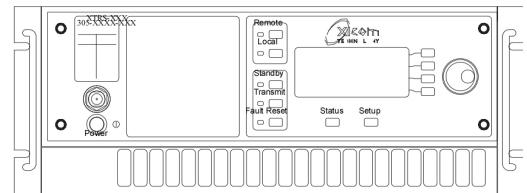
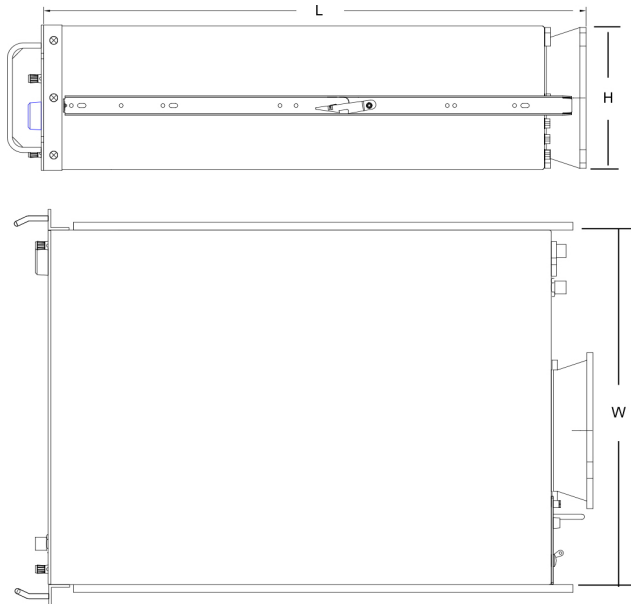
# PERFORMANCE SPECIFICATION

Parameters	XTRS-100X
FREQUENCY RANGE, Standard Output	7.9 to 8.4 GHz
OUTPUT POWER	
Saturated Power (typical)	50 dBm
Rated Power (P1dB) @ Amplifier Flange (minimum)	49 dBm
GAIN	
Small Signal (minimum)	60 dB
Maximum SSG Variation	
Any Narrow Band	± 0.65 dB per 80 MHz
Full Band	± 1.25 dB
Slope (maximum)	± 0.04 dB/MHz
Stability, 24 hr. (maximum)	± 0.25 dB
Stability, Temperature (maximum)	± 2.0 dB over temperature range at any frequency
INTERMODULATION (maximum) with two equal carriers	-25 dBc @ 3 dB total output power backoff from rated power
HARMONIC OUTPUT (maximum)	-60 dBc
AM/PM Conversion (maximum)	2.5 deg/dB at 3 dB below rated output power
NOISE POWER (maximum)	
Transmit Band	-80 dBW/4 kHz
Receive Band	-80 dBW/4 kHz
GROUP DELAY (maximum)	
Bandwidth	Any 80 MHz
Linear	± 0.03 nS/MHz
Parabolic	± 0.003 nS/MHz <sup>2</sup>
Ripple	0.5 nS/Pk-Pk
RESIDUAL AM NOISE (maximum) In band discrete spurious	-60 dBc to 100 kHz AC fundamental -50 dBc Sum of all spurs -47 dBc
PHASE NOISE (maximum)	10 dB below IESS phase noise profile
VSWR	
Input (maximum)	1.3:1
Output (maximum)	1.3:1

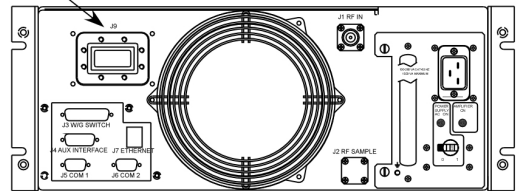
# BLOCK DIAGRAM



# OUTLINE DRAWING

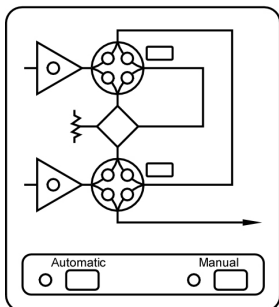


RF OUTPUT  
CPR-112G or CPR-137G

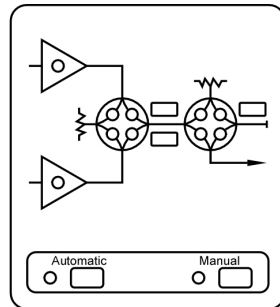


WEIGHT (TYPICAL)	
50 LB	22.68 kg

	DIMENSIONS	
	INCHES	CENTIMETERS
L	25.25	64.135
W	17.00	43.18
H	6.969	17.70



1+1 Soft Fail



1:1 Configuration  
with Load Switching

# PRIME POWER

90 to 264 VAC  
 47 to 63 Hz, Single Phase  
 1000 VA (typical)  
 0.95 Minimum Prime Power Factor



# ENVIRONMENT

NONOPERATING TEMPERATURE RANGE	-50°C to +70°C
OPERATING TEMPERATURE RANGE	0°C to +50°C (2°C/1000 Feet Derating)
HUMIDITY	Up to 95% Noncondensing
ALTITUDE	12,000 Feet MSL (maximum)
SHOCK AND VIBRATION	Normal Transportation
COOLING	Forced Air (100 CFM Typical)

# INTERFACE

	Type	Function	
CONTROLS	LOCAL	Local/Remote	AC Power On/OFF
	LOCAL AND REMOTE	Gain	Transmit ON/OFF
		Min/Max Power Alarm/Fault	Audio Alarm ON/OFF
		Reflected Power Alarm/Fault	Units (Watts, dBm, dBW)
		Fault Reset	Lamp Test
Constant Power			
STATUS	FRONT PANEL LEDs	Standby	Transmit
		Local	Remote
		Summary Fault	
	FRONT PANEL DIGITAL DISPLAY	Power Out	Attenuator Setting
	Reflected Power	Unit Selection	
	Temperature	Standby Hours	
	Transmit Hours	Faults: High VSWR Temperature Power Supply	
	DRY FORM-C RELAY CONTACTS (2)	Summary Fault	
COMPUTER SERIAL PORT	HARDWARE INTERFACE	Two Serial Ports: RS-232 & RS-422/RS-485 One Ethernet Port	
	XICOM COMMAND SET	ASCII Commands	
	RF SAMPLE PORT COUPLING	-40 dB Nominal	

# OPTIONS

- Redundancy Control
  - 1:1 (Option 29)
  - 1:1 w/Load Switching (Option 30)
  - 1+1 Soft Fail (Option 31)
- Built-in L-Band Block Upconverter (Option B1)

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