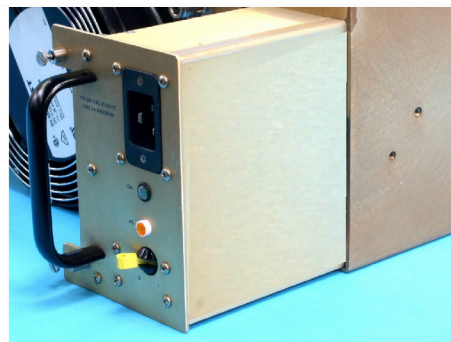


# 100 Watt C-Band Rack Mount High Power SSPA



Front Panel



Rear Panel showing Power  
Supply Partially Removed

## FEATURES

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

The **XTRS-100C** 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 85 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.

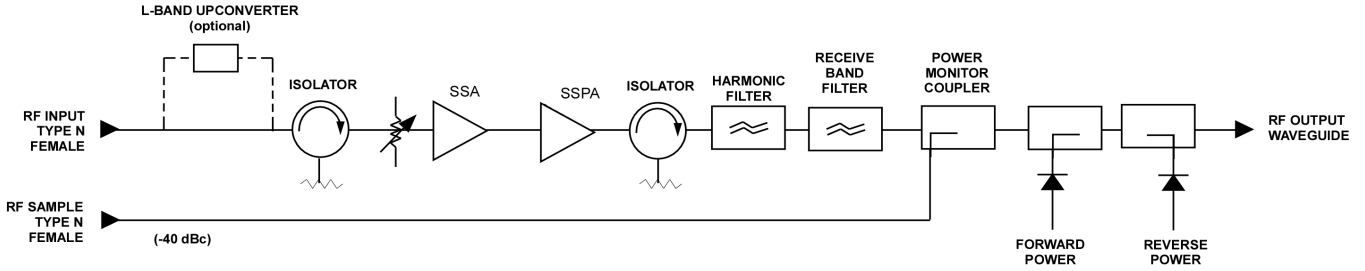
A high frequency resonant conversion power supply is used that accepts a wide range of prime power (90 to 264 VAC). Power factor correction circuitry is also included which minimizes line current distortion and reduces the required Volt-Amps input. Depending upon user requirements, this high power amplifier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



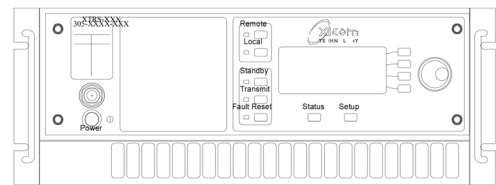
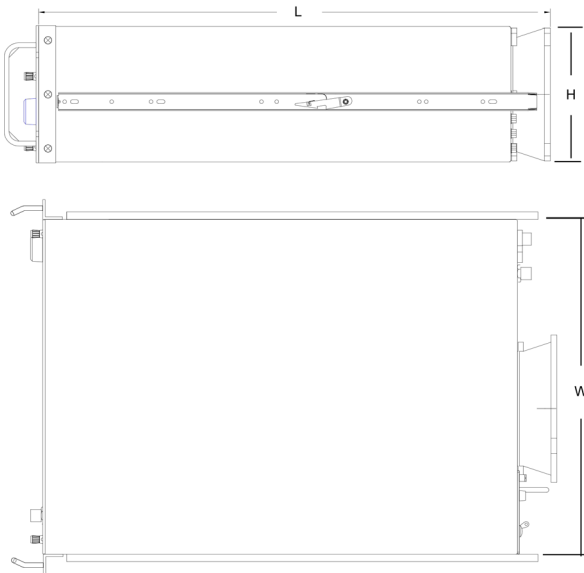
# PERFORMANCE SPECIFICATION

| Parameters  | XTRS-100C  | XTRS-100C1       |
|---|--|------------------|
| FREQUENCY RANGE,<br>extended frequency coverage available | 5.85 to 6.425 GHz  | 5.85 to 6.65 GHz |
| OUTPUT POWER  |  |                  |
| Saturated Power (typical)                                 |  | 50 dBm           |
| Rated Power (P1dB) @ Amplifier Flange<br>(minimum)        |  | 49 dBm           |
| GAIN  |  |                  |
| Small Signal (minimum)                                    | 65 dB, gain control set for maximum gain   |                  |
| Small Signal (maximum)                                    | 75 dB, gain control set for maximum gain   |                  |
| Gain Flatness (maximum)                                   | 2.5 dB   |                  |
| Maximum SSG Variation                                     | 0.8 dB per 40 MHz  |                  |
| 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                                 |                  |
| GAIN CONTROL  | 20 dB  |                  |
| INTERMODULATION (maximum)<br>with two equal carriers      | -25 dBc<br>@ 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  | -150 dBW/4 kHz<br>3.7 to 4.2 GHz   |                  |
| GROUP DELAY (maximum)                                     |  |                  |
| Bandwidth   | Any 40 MHz   |                  |
| Linear  | ± 0.03 nS/MHz  |                  |
| Parabolic   | ± 0.003 nS/MHz <sup>2</sup>  |                  |
| Ripple  | 1 nS/Pk-Pk   |                  |
| RESIDUAL AM NOISE (maximum)<br>In band discrete spurious  | -50 dBc to 10 kHz<br>-20 (1.5 + logf) dBc 10 to 500 kHz<br>-85 dBc above 500 kHz |                  |
| PHASE NOISE (maximum)                                     | 10 dB below IESS phase noise profile   |                  |
| VSWR  |  |                  |
| Input (maximum)   | 1.2:1  |                  |
| Output (maximum)  | 1.3:1  |                  |

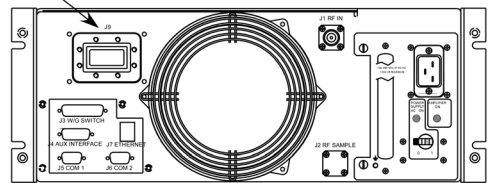
# BLOCK DIAGRAM



# OUTLINE DRAWING

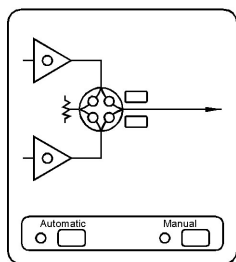


RF OUTPUT  
CPR-137G

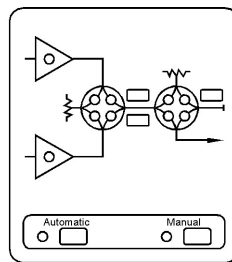


| WEIGHT (TYPICAL) |          |
|------------------|----------|
| 85 LBS           | 38.56 kg |

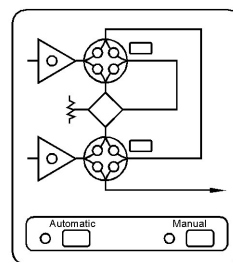
|   | DIMENSIONS |             |
|---|------------|-------------|
|   | INCHES     | CENTIMETERS |
| L | 25.25      | 64.135      |
| W | 17.00      | 43.18       |
| H | 6.969      | 17.70       |



Redundant 1:1



Redundant 1:1  
with Load Switching



1+1 Soft Fail

# PRIME POWER

90 to 264 VAC  
 47 to 63 Hz, Single Phase  
 650 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<br>(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                  |
|                      | FRONT PANEL DIGITAL DISPLAY   | Power Out   | Attenuator Setting      |
|                      |                               | Reflected Power   | Unit Selection          |
| Temperature          |                               | Standby Hours   |                         |
|                      | Transmit Hours                | Faults:<br>High VSWR<br>Temperature<br>Power Supply           |                         |
|                      | DRY FORM-C RELAY CONTACTS (2) | Summary Fault   |                         |
| COMPUTER SERIAL PORT | HARDWARE INTERFACE            | Two Serial Ports: RS-232 & RS-422/RS-485<br>One Ethernet Port |                         |
|                      | XICOM COMMAND SET             | ASCII Commands  |                         |
|                      | RF SAMPLE PORT COUPLING       | -40 dB Nominal  |                         |

# OPTIONS

- Extended Frequency Coverage  
 5.85 to 6.65 GHz (Option C1)  
 5.85 to 6.725 GHz (Option C2)
- 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)  
 Frequencies Available:  
 5.85 to 6.425 GHz  
 5.85 to 6.65 GHz

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