The **XTS-100X** high power solid state power amplifier is a compact, fully integrated antenna-mount unit designed for low cost operation and longevity.

Intended for outdoor operation, the **XTS-100X** eliminates the need for a separate amplifier shelter. In addition, the distance between the amplifier and the antenna feed can be shorter, thus eliminating long waveguide runs and associated RF losses.

RF Filters, cooling, and monitor and control (M&C) systems are all self-contained within the package.

A fully integrated power supply is used that accepts a wide range of prime power (90 to 264 VAC) and includes power factor correction.

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

Depending upon user requirements, these high power amplifiers can be configured for single thread, redundant, or phase combined configurations. A built in L-band block upconverter is also available as an optional feature.

Mounting brackets are supplied to mount the high power amplifier to most popular antennas.
## PERFORMANCE SPECIFICATION

<table>
<thead>
<tr>
<th>Parameters</th>
<th>XTS-100X</th>
</tr>
</thead>
<tbody>
<tr>
<td>FREQUENCY RANGE, (extended frequency coverage available)</td>
<td>7.9 to 8.4 GHz</td>
</tr>
<tr>
<td>OUTPUT POWER</td>
<td></td>
</tr>
<tr>
<td>Saturated Power (typical)</td>
<td>50 dBm</td>
</tr>
<tr>
<td>Rated Power @ Amplifier Flange</td>
<td>49 dBm</td>
</tr>
<tr>
<td>Linear Power</td>
<td>47 dBm</td>
</tr>
<tr>
<td>GAIN</td>
<td></td>
</tr>
<tr>
<td>Small Signal (minimum)</td>
<td>65 dB, gain control set for maximum gain</td>
</tr>
<tr>
<td>Small Signal (maximum)</td>
<td>75 dB, gain control set for maximum gain</td>
</tr>
<tr>
<td>Gain Flatness (maximum)</td>
<td>2.5 dB</td>
</tr>
<tr>
<td>Maximum SSG Variation</td>
<td>0.8 dB per 80 MHz</td>
</tr>
<tr>
<td>Slope (maximum)</td>
<td>± 0.04 dB/MHz</td>
</tr>
<tr>
<td>Stability, 24 hr. (maximum)</td>
<td>± 0.25 dB</td>
</tr>
<tr>
<td>Stability, Temperature (maximum)</td>
<td>± 2.0 dB over temperature range at any frequency</td>
</tr>
<tr>
<td>GAIN CONTROL</td>
<td>20 dB</td>
</tr>
<tr>
<td>INTERMODULATION (maximum) WRT combined power with two equal carriers @ linear power</td>
<td>-25 dBc</td>
</tr>
<tr>
<td>SPECTRAL REGROWTH @ LINEAR POWER</td>
<td>-30 dBc, 1 SR, OQPSK</td>
</tr>
<tr>
<td>HARMONIC OUTPUT (maximum)</td>
<td>-60 dBc</td>
</tr>
<tr>
<td>AM/PM Conversion (maximum)</td>
<td>2.5 deg/db @ 3 dB below rated power</td>
</tr>
<tr>
<td>NOISE POWER (maximum)</td>
<td></td>
</tr>
<tr>
<td>Transmit Band</td>
<td>-80 dBW/4 kHz</td>
</tr>
<tr>
<td>Receive Band</td>
<td>-80 dBW/4 kHz, 7.25 to 7.75 GHz</td>
</tr>
<tr>
<td>GROUP DELAY (maximum)</td>
<td></td>
</tr>
<tr>
<td>Bandwidth</td>
<td>Any 80 MHz</td>
</tr>
<tr>
<td>Linear</td>
<td>± 0.05 nS/MHz</td>
</tr>
<tr>
<td>Parabolic</td>
<td>± 0.005 nS/MHz</td>
</tr>
<tr>
<td>Ripple</td>
<td>1 nS/Pk-Pk</td>
</tr>
<tr>
<td>RESIDUAL AM NOISE (maximum)</td>
<td>-50 dBc to 10 kHz</td>
</tr>
<tr>
<td>PHASE NOISE (maximum)</td>
<td>-20 (1.5 + logf) dBc 10 to 500 kHz</td>
</tr>
<tr>
<td></td>
<td>-85 dBc above 500 kHz</td>
</tr>
<tr>
<td>VSWR</td>
<td>10 dB below IESS phase noise profile</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Input (maximum)</td>
<td>1.3:1</td>
</tr>
<tr>
<td>Output (maximum)</td>
<td>1.3:1</td>
</tr>
</tbody>
</table>
**BLOCK DIAGRAM**

- L-BAND UPCONVERTER (optional)
- ISOLATOR
- SSA
- SS PA
- ISOLATOR
- POWER MONITOR COUPLER
- FORWARD POWER
- REVERSE POWER
- RF OUTPUT WAVEGUIDE

**OUTLINE DRAWING**

**DIMENSIONS**

<table>
<thead>
<tr>
<th>INCHES</th>
<th>CENTIMETERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>L: 16.25</td>
<td>41.275</td>
</tr>
<tr>
<td>H: 9.1</td>
<td>23.114</td>
</tr>
<tr>
<td>W: 8.6</td>
<td>21.844</td>
</tr>
</tbody>
</table>

WEIGHT = 42 lbs (19.05 kg)

RF OUTPUT: CPR-137G or CPR-112G
PRIME POWER
90 to 264 VAC
47 to 63 Hz, Single Phase
650 VA (maximum)
0.95 Minimum Prime Power Factor

ENVIRONMENT
NONOPERATING TEMPERATURE RANGE -50°C to +70°C
OPERATING TEMPERATURE RANGE -40°C to +50°C (2°C/1000 Feet Derating)
HUMIDITY Up to 100% Condensing
ALTITUDE 12,000 Feet MSL (maximum)
SHOCK AND VIBRATION Normal Transportation
COOLING Forced Air

INTERFACE

<table>
<thead>
<tr>
<th>Type</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOCAL CONTROL</td>
<td>Prime Power ON/OFF</td>
</tr>
<tr>
<td></td>
<td>Power Supply ON/OFF</td>
</tr>
<tr>
<td>LOCAL STATUS</td>
<td>Tri-Color LED:</td>
</tr>
<tr>
<td></td>
<td>Fault: Red</td>
</tr>
<tr>
<td></td>
<td>Transmit ON: Green</td>
</tr>
<tr>
<td>REMOTE CONTROL</td>
<td>Transmit ON/OFF</td>
</tr>
<tr>
<td></td>
<td>RF Attenuation</td>
</tr>
<tr>
<td></td>
<td>Summary Fault</td>
</tr>
<tr>
<td>REMOTE STATUS</td>
<td>Transmit ON</td>
</tr>
<tr>
<td></td>
<td>RF Output Power</td>
</tr>
<tr>
<td></td>
<td>Reflected Power</td>
</tr>
<tr>
<td>FORM C DRY CONTACT CLOSURE</td>
<td>Summary Fault</td>
</tr>
<tr>
<td>COMPUTER SERIAL PORT</td>
<td>Hardware Interface:</td>
</tr>
<tr>
<td></td>
<td>2 Ports: RS-232 &amp; RS-422/485</td>
</tr>
<tr>
<td>RF MONITOR PORT</td>
<td>-40 dB Coupling Value (Nominal)</td>
</tr>
</tbody>
</table>

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)
- Ethernet Interface

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