The XTKT-3000C and XTKT-3000C2 are compact Klystron Power Amplifiers (KPAs) designed for fixed and mobile uplink applications. Xicom KPAs are ½ the height of conventional KPAs. Reduced height is complimented by reduced weight. Shipping is greatly simplified as the RF deck, klystron tube, and power supply are shipped individually and weigh 100 pounds each.

These are amplifiers with a touch screen front panel for easy customer interface. The display shows HPA status, parameter trend analysis and event logs, and remote diagnostics can be easily performed via the Ethernet interface. Also, because the display can show and control waveguide switches or a combiner, the need for separate external controllers is eliminated for common architectures.
## PERFORMANCE SPECIFICATION

<table>
<thead>
<tr>
<th>Parameters</th>
<th>XTKT-3000C</th>
<th>XTKT-3000C2</th>
</tr>
</thead>
<tbody>
<tr>
<td>FREQUENCY RANGE</td>
<td>5.85 to 6.425 GHz</td>
<td>6.70 to 7.05 GHz</td>
</tr>
<tr>
<td>OUTPUT POWER</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Klystron</td>
<td>3350 W</td>
<td>3000 W</td>
</tr>
<tr>
<td>Rated Power @ Amplifier Flange</td>
<td>3000 W</td>
<td>2600 W</td>
</tr>
<tr>
<td>PRESET CHANNELS</td>
<td>6, 12, 24</td>
<td>12</td>
</tr>
<tr>
<td>BANDWIDTH</td>
<td>45 MHz</td>
<td>40 MHz</td>
</tr>
<tr>
<td>GAIN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>At Rated Power</td>
<td>77 dB</td>
<td></td>
</tr>
<tr>
<td>Variation, at rated power</td>
<td>0.40 dB Pk-Pk over Fo ± 30 MHz</td>
<td></td>
</tr>
<tr>
<td>Slope, at rated power</td>
<td>± 0.04 dB/MHz over Fo ± 30 MHz</td>
<td></td>
</tr>
<tr>
<td>Stability, 24 hr. (maximum)</td>
<td>± 0.25 dB/24 hrs at constant drive/temperature</td>
<td></td>
</tr>
<tr>
<td>Stability, Temperature (maximum)</td>
<td>± 2.5 dB at constant drive</td>
<td></td>
</tr>
<tr>
<td>GAIN ADJUSTMENT</td>
<td>0 to 30 dB, 0.1 dB steps</td>
<td></td>
</tr>
<tr>
<td>INTERMODULATION (maximum)</td>
<td>-29 dBc</td>
<td></td>
</tr>
<tr>
<td>with two equal carriers</td>
<td>@ 7 dB total output power backoff from rated power</td>
<td></td>
</tr>
<tr>
<td>HARMONIC OUTPUT (maximum)</td>
<td>-80 dBc</td>
<td></td>
</tr>
<tr>
<td>AM/PM CONVERSION (maximum)</td>
<td>4.0 deg/db at rated power</td>
<td></td>
</tr>
<tr>
<td>NOISE POWER (maximum)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transmit Band</td>
<td>-70 dBW/4 kHz</td>
<td></td>
</tr>
<tr>
<td>Receive Band</td>
<td>-150 dBW/4 kHz (3.7 to 4.2 GHz)</td>
<td>-110 dBW/4 kHz (4.2 to 40.0 GHz) excludes passband</td>
</tr>
<tr>
<td>GROUP DELAY (maximum)</td>
<td>Any 36 MHz</td>
<td></td>
</tr>
<tr>
<td>Bandwidth</td>
<td>± 0.25 nS/MHz</td>
<td></td>
</tr>
<tr>
<td>Linear</td>
<td>± 0.05 nS/MHz²</td>
<td></td>
</tr>
<tr>
<td>Parabolic</td>
<td>2.0 nS/Pk-Pk</td>
<td></td>
</tr>
<tr>
<td>Ripple</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RESIDUAL AM NOISE (maximum)</td>
<td>-50 dBc up to 10 kHz</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-20 (1.5 + logf) dBc 10 to 500 kHz</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-85 dBc above 500 kHz</td>
<td></td>
</tr>
<tr>
<td>PHASE NOISE (maximum)</td>
<td>10 dB below IESS phase noise profile</td>
<td></td>
</tr>
<tr>
<td>VSWR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input (maximum)</td>
<td>1.2:1</td>
<td></td>
</tr>
<tr>
<td>Output (maximum)</td>
<td>1.25:1</td>
<td></td>
</tr>
<tr>
<td>Load w/o damage</td>
<td>2.0:1</td>
<td></td>
</tr>
<tr>
<td>Load, shutdown</td>
<td>&gt; 2.0:1</td>
<td></td>
</tr>
</tbody>
</table>
**C-Band Klystron Amplifiers**

**BLOCK DIAGRAM**

- RF INPUT TYPE SMA
- SSA ISOLATOR
- KLYSTRON DETECTOR
- ISOLATOR
- HARMONIC FILTER
- REJECT FILTER
- POWER MONITOR COUPLERS
- REFLECTED POWER COUPLER
- REFLECTED POWER SOURCE

**OUTLINE DRAWING**

- Dimensions (max)
  - INCHES: 19.00, 21.00, 8.72
  - CENTIMETERS: 48.26, 53.34, 22.15

- Nominal Weight
  - 300 lb. / 136.1 kg.

- RF OUTPUT: C-Band: CPR137G
**PRIME POWER**
190 to 260 VAC, L-L, Delta
50 to 60 Hz, Three Phase, Three Wire, Plus Ground
11500 VA (maximum)
0.95 Minimum Prime Power Factor
180% in-rush current (maximum)

**ENVIRONMENT**
- **NONOPERATING TEMPERATURE RANGE**
  -50°C to +70°C
  (2°C/1000 Feet Derating)
- **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

**INTERFACE**

<table>
<thead>
<tr>
<th>TYPE</th>
<th>FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOCAL</td>
<td>Local/Remote</td>
</tr>
<tr>
<td>Lamp Test</td>
<td></td>
</tr>
<tr>
<td>Channel Selector</td>
<td></td>
</tr>
<tr>
<td>LOCAL AND REMOTE</td>
<td>Heater Standby ON/OFF</td>
</tr>
<tr>
<td>Lamp Test</td>
<td></td>
</tr>
<tr>
<td>Audio Alarm ON/OFF</td>
<td>Beam Voltage Adjust</td>
</tr>
<tr>
<td>Fault Reset</td>
<td>HV ON/OFF</td>
</tr>
<tr>
<td>Auto Power Save</td>
<td>Units (Watts, dBm, dBW)</td>
</tr>
<tr>
<td>Attenuator Setting</td>
<td>RF Inhibit</td>
</tr>
<tr>
<td>FRONT PANEL LCD</td>
<td>HV On</td>
</tr>
<tr>
<td>Standby</td>
<td>High Voltage Fault</td>
</tr>
<tr>
<td>Remote Mode</td>
<td>Local Mode</td>
</tr>
<tr>
<td>Summary Fault</td>
<td>Body Current Fault</td>
</tr>
<tr>
<td>Power Out</td>
<td>Reflected Power</td>
</tr>
<tr>
<td>Attenuator Setting</td>
<td>Klystron Temperature</td>
</tr>
<tr>
<td>Body Current</td>
<td>Beam Voltage</td>
</tr>
<tr>
<td>Beam Current</td>
<td>Channel Selected</td>
</tr>
<tr>
<td>Heater Voltage</td>
<td>Faults:</td>
</tr>
<tr>
<td>Heater Hours</td>
<td>High VSWR</td>
</tr>
<tr>
<td>Beam Hours</td>
<td>Body Current</td>
</tr>
<tr>
<td>Waveguide Arc</td>
<td>High Voltage</td>
</tr>
<tr>
<td>Blower Pressure</td>
<td>Klystron Temperature</td>
</tr>
<tr>
<td>Fan Speed</td>
<td>P.S. Temperature</td>
</tr>
<tr>
<td>SUMMARY FAULT:</td>
<td>Blower</td>
</tr>
<tr>
<td>DRY FORM-C RELAY CONTACTS (2)</td>
<td></td>
</tr>
<tr>
<td>COMPUTER PORT</td>
<td>HARDWARE INTERFACE</td>
</tr>
<tr>
<td>XICOM COMMAND SET</td>
<td>ASCII Commands</td>
</tr>
<tr>
<td>RF SAMPLE PORT COUPLING</td>
<td></td>
</tr>
</tbody>
</table>

**OPTIONS**
- 330 to 450 VAC, L-L, Wye
- 50 to 60 Hz, Three Phase, Four Wire + Ground
- Redundant 1:1 Configuration in One Cabinet
- Phase Combined & 1:N Configurations
- Fast Tuner (< 1 second)