The **XTRT-750X** 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, RF filters, cooling, and monitoring and control (M&C) systems. 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 **XTRT-750X** is a 750W X-band amplifier 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.

The **XTRT-750X** incorporates high efficiency, dual stage collector TW Ts. Reliability is enhanced because both prime power consumption and internal operating temperatures are reduced for both the linear and saturated modes of operation. Depending upon user requirements these amplifiers can be configured for either single thread or redundant system operation.
## PERFORMANCE SPECIFICATION

### Parameters | XTRT-750X
---|---
**FREQUENCY RANGE** | 7.90 to 8.40 GHz
**OUTPUT POWER** | 
- Traveling Wave Tube: 750 W (58.7 dBm)
- Rated Power @ Amplifier Flange (minimum): 650 W (58.1 dBm)
- Linear Power @ Amplifier Flange w/o Linearizer: 160 W (52.1 dBm)
- Linear Power @ Amplifier Flange w/Linearizer: 360 W (55.6 dBm)
**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
  - Slope (maximum): ± 0.04 dB/MHz
  - Stability, 24 hr. (maximum): ± 0.25 dB
  - Stability, Temperature (maximum): ± 1.0 dB over temperature range at any frequency
**INTERMODULATION (maximum)** | @ linear power referenced to the sum of the carriers
- with two equal carriers: -25 dBc
**SPECTRAL REGROWTH @ LINEAR POWER** | -30 dBc
**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/4 kHz
- Receive Band: -70 dBW/4 kHz
**GROUP DELAY (maximum)** | 
- Any 40 MHz
- Linear: 0.01 nS/MHz
- Parabolic: 0.005 nS/MHz²
- Ripple: 0.5 nS/Pk-Pk
**RESIDUAL AM NOISE (maximum)** | 
-50 dBc to 10 kHz
-20 (1.5 + log f) 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
XTRT-750X
PRIME POWER

100 to 260 VAC
47 to 63 Hz, Single Phase
2700 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

<table>
<thead>
<tr>
<th>Type</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOCAL</td>
<td>Local/Remote AC Power On/OFF</td>
</tr>
<tr>
<td>LOCAL AND REMOTE</td>
<td>Gain</td>
</tr>
<tr>
<td></td>
<td>Min/Max Power Alarm/Fault</td>
</tr>
<tr>
<td></td>
<td>Reflected Power Alarm/Fault</td>
</tr>
<tr>
<td></td>
<td>Fault Reset</td>
</tr>
<tr>
<td></td>
<td>Heater Standby On/OFF</td>
</tr>
<tr>
<td>FRONT PANEL LEDs</td>
<td>Standby</td>
</tr>
<tr>
<td></td>
<td>Local</td>
</tr>
<tr>
<td></td>
<td>Summary Fault</td>
</tr>
<tr>
<td></td>
<td>Heater Time Out (FTD)</td>
</tr>
<tr>
<td>FRONT PANEL DIGITAL</td>
<td>Power Out</td>
</tr>
<tr>
<td></td>
<td>Reflected Power</td>
</tr>
<tr>
<td></td>
<td>TWT Temperature</td>
</tr>
<tr>
<td></td>
<td>Heater Hours</td>
</tr>
<tr>
<td>DRY FORM-C RELAY</td>
<td>Summary Fault</td>
</tr>
<tr>
<td>CONTACTS (2)</td>
<td></td>
</tr>
</tbody>
</table>

COMPUTER SERIAL PORT

HARDWARE INTERFACE Two Ports: RS-232 & RS-422/RS-485
XICOM COMMAND SET ASCII Commands
RF SAMPLE PORT COUPLING -43 dB Nominal

OPTIONS

- 1:1, 1:2, 1:N Redundancy
- Variable Phase Combined
- Integrated Linearizer
- Block Upconverter