The **XTLIN-25/50/75KaM** High Power Amplifiers are compact, fully integrated antenna mount units designed for low cost operation and longevity.

Intended for outdoor operation, these increase the amount of RF power reaching the feed. The construction and lightweight allows for direct mount to the antenna. This eliminates long waveguide runs and associated RF losses.

Forced air cooling is implemented in the package to allow reliable operation over extended temperature ranges. The monitor and control (M&C) interface provides a component system status.
## PERFORMANCE SPECIFICATION

<table>
<thead>
<tr>
<th>Parameters</th>
<th>XTLIN-25KaM</th>
<th>XTLIN-50KaM</th>
<th>XTLIN-75KaM</th>
</tr>
</thead>
<tbody>
<tr>
<td>FREQUENCY RANGE, extended frequency coverage available</td>
<td>30.0 to 31.0 GHz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reference Input Impedance</td>
<td>50 Ohms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LINEAR OUTPUT POWER</td>
<td>25W</td>
<td>50W</td>
<td>75W</td>
</tr>
</tbody>
</table>

### GAIN
- Large Signal (minimum) | 70 dB |
- Attenuator Range (continuous) | 30 dB ± 0.1 dB step size |
- Maximum SSG Variation Over
  - Any Narrow Band | 0.80 dB maximum per 60 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
- with two equal carriers @ linear power | -25 dBc relative to the sum of all carriers |

### SPECTRAL REGROWTH, 1 SR offset @ linear power (maximum) (QPSK) | -30 dBc |

### HARMONIC OUTPUT (maximum) | -60 dBc |

### AM/PM CONVERSION (maximum) | 2.0 deg/db at or below linear power |

### NOISE POWER (maximum)
- Transmit Band | -70 dBW/4 kHz |
- Receive Band | -150 dBW/4 kHz |

### GROUP DELAY (maximum)
- Bandwidth | Any 60 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 + logf) dBc 10 to 500 kHz |
- -85 dBc above 500 kHz |

### PHASE NOISE (maximum)
- 10 Hz | -42 dBc/Hz |
- 100 Hz | -72 dBc/Hz |
- 1 kHz | -82 dBc/Hz |
- 10 kHz | -102 dBc/Hz |
- 100 kHz | -112 dBc/Hz |
- 1 MHz | -122 dBc/Hz |
- 10 MHz | -122 dBc/Hz |
- 100 MHz | -122 dBc/Hz |

### VSWR
- Input (maximum) | 1.3:1 |
- Output (maximum) | 1.3:1 |
BLOCK DIAGRAM

OUTLINE DRAWING

DIMENSIONS

<table>
<thead>
<tr>
<th>INCHES</th>
<th>CENTIMETERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>W</td>
<td>13.96</td>
</tr>
<tr>
<td>L</td>
<td>12.41</td>
</tr>
<tr>
<td>H</td>
<td>6.625</td>
</tr>
</tbody>
</table>

Nominal Weight = 36 lb (16.4 kg)

RF OUTPUT

Ka-Band WR-28 Taped
PRIME POWER

90 to 264 VAC
47 to 63 Hz, Single Phase
400 VA Typical @ 90 VAC (25W Linear)
500 VA typical (50W & 75W Linear)
0.95 Minimum Prime Power Factor
0.98 Prime Power Factor Typical

ENVIRONMENT

NONOPERATING TEMPERATURE RANGE -54°C to +85°C
OPERATING TEMPERATURE RANGE -40°C to +60°C
2°C/1,000 ft. de-rating
HUMIDITY Up to 100% Condensing
ALTITUDE 15,000 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 Local/Remote</td>
</tr>
<tr>
<td></td>
<td>HV 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>HV ON: Green</td>
</tr>
<tr>
<td>REMOTE CONTROL</td>
<td>High Voltage ON/OFF</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>Heater Standby ON/OFF</td>
</tr>
<tr>
<td>REMOTE STATUS</td>
<td>HV ON</td>
</tr>
<tr>
<td></td>
<td>RF Output Power</td>
</tr>
<tr>
<td></td>
<td>Reflected Power</td>
</tr>
<tr>
<td></td>
<td>Upconverter Fault</td>
</tr>
<tr>
<td></td>
<td>Filament Time Delay</td>
</tr>
<tr>
<td>FORM C DRY CONTACT CLOSURE</td>
<td>Summary Fault (2X Form C Dry Contact Closure)</td>
</tr>
<tr>
<td>COMPUTER SERIAL PORT</td>
<td>Hardware Interface - 2 Ports: RS-232 &amp; RS-422/485</td>
</tr>
<tr>
<td></td>
<td>Xicom Command Set: ASCII Commands</td>
</tr>
<tr>
<td>RF SAMPLE PORT COUPLING</td>
<td>-40 dB Coupling Value (approx.)</td>
</tr>
</tbody>
</table>

OPTIONS

- Alternate Frequency Coverage
- Remote External Controller
- 1:1, 1:2, 1:N Redundancy
- Phase Combined

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