STA5565P Ka Series
650W Ultralinear Ka-Band
Antenna Mount HPA

FEATURES

Ultralinear
Lightweight
High Efficiency
Broadband

STA5565P Ka series 650W Antenna Mount HPA

The STA5565P Ka series HPA provides ultra linear, high efficiency performance in a compact, lightweight, rugged, weatherproof, antenna mount enclosure. The advanced packaging and cooling techniques enable the unit to operate in extreme environmental conditions from direct rain to direct sunlight. The amplifiers can be simply deployed anywhere in the world, are user-friendly and incorporate a comprehensive remote control facility as standard, including RS485, RS232 and Ethernet options.

The HPA incorporates a high efficiency multi-collector TWT powered by an advanced power supply built on over 30 years of experience in the design and manufacture of satellite amplifiers.

The company’s products have an enviable reputation for performance, robust quality and reliable service.

The STA5565P Ka is available with a wide range of options and accessories, backed by worldwide technical support.

Features

- Advanced cooling design enables operation at +60°C and in direct sunlight
- Weatherproof antenna mount construction allows exposed mounting
- Ethernet/SNMP/Webpage GUI interfaces
- Broadband – high efficiency operation
- CE complaint
- Wide input voltage range - can operate from mains supplies worldwide
- Redundant control - contains control and drive circuits for 1:1 redundancy
- Stand-alone setting - automatically sequences to transmit mode
- Wide range of accessories including: Controllers, waveguide networks, cable assemblies
### RF Performance:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>27.5 – 30.0 GHz</td>
</tr>
<tr>
<td>KA1</td>
<td>27.5 – 30.0 GHz</td>
</tr>
<tr>
<td>KA2</td>
<td>27.5 – 30.0 GHz</td>
</tr>
<tr>
<td>KA3</td>
<td>28.0 – 30.0 GHz</td>
</tr>
<tr>
<td>KA4</td>
<td>30.0 – 31.0 GHz</td>
</tr>
<tr>
<td>KA5</td>
<td>29.0 – 30.0 GHz</td>
</tr>
<tr>
<td>KA6</td>
<td>27.5 – 31.0 GHz</td>
</tr>
<tr>
<td>(Other frequency options available, consult SpacePath Communications for details)</td>
<td></td>
</tr>
<tr>
<td>Bandwidth</td>
<td>2500 MHz</td>
</tr>
<tr>
<td>Output Power</td>
<td>(for load VSWR ≤ 1.5:1)</td>
</tr>
<tr>
<td>TWT Power, PEAK / CW</td>
<td>58.1 / 56.9 dBm (650 W / 500 W)</td>
</tr>
<tr>
<td></td>
<td>58.1 / 56.0 dBm (650 W / 400 W)</td>
</tr>
<tr>
<td>Rated (flange)</td>
<td>56.4 dBm (435 W) typical</td>
</tr>
<tr>
<td></td>
<td>55.5 dBm (350 W) typical</td>
</tr>
<tr>
<td></td>
<td>54.5 dBm (280 W) typical</td>
</tr>
</tbody>
</table>

### Gain

- **Gain**: ≥ 70 dB
- **Variation, 250 MHz, ΔG_{50MHz}**: ≤ 1.0 dB peak-peak
- **Variation, 1000 MHz, ΔG_{1000MHz}**: ≤ 2.5 dB peak-peak
- **Slope, ΔG_{SLOPE}**: ± 0.04 dB/MHz
- **Gain Stability vs. Time @constant drive & temp**: ± 0.25 dB/24 hours
- **Gain Stability vs. Temperature @ constant drive & frequency**: ± 1.0 dB
- **Adjustment range, G_{ADJ}**: 30.0 dB typical
- **Adjustment step size**: 0.1 dB

### Linearity

- **AM/PM @ P_{O} ≤ P_{LIN} - 1 dB**: ≤ 1.5°/dB
- **Inter-modulations (IMD) 2-tone**: ≤ -28 dBc @ P_{O} ≤ P_{LIN} - 1 dB
- **Spectral Re-growth (SR)**: ≤ -30 dBc @ P_{O} ≤ P_{LIN} - 1 dB
- **Noise Power Ratio (NPR)**: ≤ -19 dBc @ P_{O} ≤ P_{LIN} - 1 dB

### Input VSWR (Return Loss)

- **Input VSWR (Return Loss)**: ≤ 1.3:1 (17.7 dB)

### Output VSWR (Return Loss)

- **Output VSWR (Return Loss)**: ≤ 1.3:1 (17.7 dB)

### Load VSWR (no damage)

- **Load VSWR (no damage)**: ≤ 2.0:1 (9.5 dB)

### Harmonic 2nd & 3rd

- **Harmonic 2nd & 3rd**: ≤ -60 dBc

### Noise Power

- **Transmit Band (T_{s})**: ≤ -70 dBW/4KHz
- **Receive Band (R_{s})**: ≤ -150 dBW/4KHz (≤ 21.2 GHz)

### Spurious @ P_{o} ≤ MLP

- **Spurious @ P_{o} ≤ MLP**: ≤ -60 dBc

### Residual AM

- **Residual AM**: ≤ -50 dBc, f < 10KHz
- **≤ -20(1.5+LOG(frequency KHz))dBc, f = 10KHz to 500KHz**: ≤ -85 dBc
- **≤ 50KHz**: ≤ -47 dBc, Sum of all spurs

### Phase Noise

- **10 dB below IESS requirement**: ≤ - 50 dBc, AC fundamental
- **≤ - 47 dBc, Sum of all spurs**: ≤ - 100 dBc, AC fundamental

#### Note:

- Peak/output power and frequency range must be selected at time of purchase, as these options are TWT dependent and cannot be changed in the field.