STA5525 Ka Series
250W Ultralinear Ka-Band Antenna Mount HPA

FEATURES

Ultralinear
Lightweight
High Efficiency
Broadband

STA5525 Ka series 250W Antenna Mount HPA
The STA5525 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 STA5525 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/SMP/Webpage GUI interfaces
- Broadband – high efficiency operation
- CE compliant
- 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>Frequency</th>
<th>Bandwidth</th>
</tr>
</thead>
<tbody>
<tr>
<td>KA1</td>
<td>27.5 – 30.0 GHz</td>
</tr>
<tr>
<td>KA2</td>
<td>27.0 – 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>
</tbody>
</table>

Output Power (for load VSWR ≤ 1.5:1)
- TWT Power, CW: 54.0 dBm (250 W)
- Rated (flange): 53.4 dBm (220 W)
- Linear, P_{LIN}: 50.4 dBm (110 W)

Gain
- Variation, 250 MHz: ΔG_{SSOHH} ≤ 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: ΔG ≤ 0.25 dB/24 hours
- Gain Stability vs. Temperature: ΔG ≤ 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)
- 1.3:1 (17.7 dB)

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

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

Harmonic 2nd & 3rd
- ≤ -60 dBc

Noise Power
- Transmit Band (T_x)
  - ≤ -70 dBW/4KHz
- Receive Band (R_x)
  - ≤ -150 dBW/4KHz
  - (≤ 21.2 GHz)

Spurious @ P_s ≤ MLP
- ≤ -60 dBc

Residual AM
- ≤ -50 dBc, f < 10KHz
- ≤ -20(1.5+LOG(frequency KHz))dBc, f = 10KHz to 500KHz
- ≤ -85 dBc >500KHz

Phase Noise
- 10 dB below IESS requirement
- ≤ 50 dBc, AC fundamental
- ≤ 47 dBc, Sum of all spurs

Group Delay (any 80 MHz)
- Linear: 0.01 nsec/MHz, max
- Parabolic: 0.005 nsec/MHz², max
- Ripple: 0.5 nsec/Peak-Peak, max

Prime Power:

- AC Input Voltage: 200-240 VAC ± 10%, single phase
- Full Load Current: 8 A max @ 100 VAC
- Power Consumption: 750 VA typical
- Power Factor: 0.98 typical

Environmental:

- Ambient Temperature: -40°C to +60°C
- Relative Humidity: 100% condensing
- Altitude: 12,000 ft. with standard adiabatic de-rating of 2°C/1000 ft., operating 50,000 ft., non-operating
- Shock: 15 g peak, 11mSec, 1/2 sine
- Vibration: 3.2 g rms, 10-500 Hz
- Acoustic Noise: 65 dBA @ ≥ 3 ft. from amplifier
- Solar Gain: 1120 2/m²

Mechanical:

- Dimensions
  - Request outline
  - Length: 52 cm
  - Width: 26 cm
  - Height: 26 cm
  - Weight: 21 kg typical

- RF Input: WR-34
- RF Output: WR-34
- RF Sample
- AC Input: Amphenol C016 20C003 200 12
- Ethernet: RJ71B
- M&C Connector: PT07E18-32S (MS3114E-18-32S)