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
- Modular construction for long term serviceability
- Removable air filters
- 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

STA5450 DBS series 500W Antenna Mount HPA

The STA5450 DBS 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 STA5450 DBS is available with a wide range of options and accessories, backed by worldwide technical support.
**RF Performance:**

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Bandwidth</th>
</tr>
</thead>
<tbody>
<tr>
<td>DB1</td>
<td>17.3 – 18.1 GHz</td>
</tr>
<tr>
<td>DB2</td>
<td>17.3 – 18.4 GHz</td>
</tr>
<tr>
<td>DB3</td>
<td>17.3 – 17.8 GHz</td>
</tr>
</tbody>
</table>

Output Power (for load VSWR ≤ 1.5:1)
- TWT Power: 56.9 dBm (500 W)
- Rated (flange): 56.2 dBm (420 W) typical
- Linear, \( P_{LIN} \): 51.1 dBm (130 W) with optional Linearizer: 53.4 dBm (220 W)

Gain
- \( G_{LIN} \) ≥ 70 dB
- Variation, 80 MHz, \( \Delta G_{80MHz} \) ≤ 0.8 dB peak-peak
- Slope, \( \Delta G_{SLOPE} \) ≤ 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: ≤ 2.0°/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 2\(^{nd}\) & 3\(^{rd}\): ≤ -60 dBc

Noise Power
- Transmit Band (\( T_x \)): ≤ -70 dBW/4KHz
- Receive Band (\( R_x \)): ≤ -150 dBW/4KHz (10.65 – 11.75/12.75 GHz)

Spurious @ \( P_o \) ≤ MLP ≤ -60 dBc
- Residual AM
  - ≤ -50 dBc, \( f < 10\)KHz
  - ≤ -20(1.5+LOG(freqency KHz))dBc, \( f = 10\)KHz 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/MHz\(^2\), max
- Ripple: 0.5 nsec/Peak-Peak, max

**Prime Power:**

- AC Input Voltage: 90-264 VAC ± 10%, single phase
- Full Load Current: 50-60 Hz ± 5%
- Power Consumption: 2000 VA typical, 2250 VA maximum
- Power Factor: 0.98 typical, 0.96 minimum

**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
- 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/m\(^2\)

**Mechanical:**

- Dimensions: Request outline
- Length: 52 cm
- Width: 26 cm
- Height: 26 cm
- Weight: 21 kg typical
- RF Input: Type N(f) 50 ohm
- RF Output: WR-62
- RF Sample: Type N(f) 50 ohm
- AC Input: Amphenol C016 20C003 200 12
- Ethernet: RJF71B
- M&C Connector: PT07E18-32S (MS3114E-18-32S)