

# SpacePath 1250W Ultralinear Ku-Band Antenna Mount HPA

The STA53125P Ku 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.

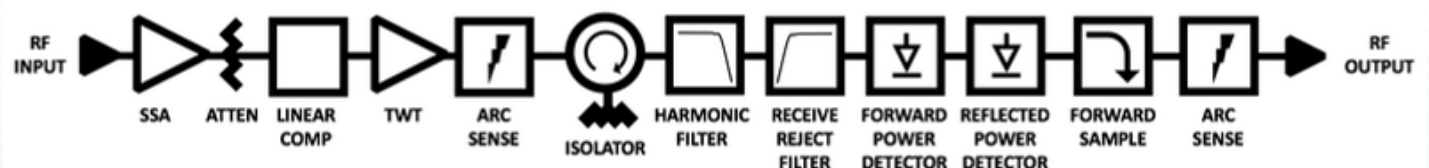
The company's products have an enviable reputation for performance, robust quality and reliable service. The STA53125P Ku is available with a wide range of options and accessories, backed by worldwide technical support.

## 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
- 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



## Block Diagram



| RF Performance                                |  |   |
|---|--|---|
| Frequency range                               | KU1: 13.75 – 14.50 GHz KU2: 12.75 – 14.50 GHz<br>KU3: 13.75 – 14.80 GHz KU4: 12.75 – 13.25 GHz     |   |
| Bandwidth                                     | 500 MHz / 750 MHz  |   |
| Output Power<br>(for load VSWR<br>≤ 1.5:1)    | TWT Power  | 61.0 dBm (1250 W)                             |
|   | HPA Rated Power<br>(flange)  | 57.5 dBm (565 W) typical                      |
|   | Linear, P <sub>LIN</sub>   | 57.5 dBm (565 W)                              |
| Gain  | ≥ 70 dB  |   |
| Gain Variation, 80 MHz, ΔG <sub>80MHz</sub>   | ≤ 0.8 dB peak-peak   |   |
| Gain Variation, 750 MHz, ΔG <sub>750MHz</sub> | ≤ 2.5 dB peak-peak   |   |
| Slope, ΔG <sub>SLOPE</sub>                    | ± 0.04 dB/MHz max  |   |
| Gain Stability vs. Time                       | ± 0.25 dB max / 24hrs @ constant drive and temperature   |   |
| Gain Stability vs. Temperature                | ± 1.0 dB max / 24hrs @ constant drive and frequency  |   |
| Adjustment range, G <sub>ADJ</sub>            | 30.0 dB typical  |   |
| Adjustment step size                          | 0.1 dB   |   |
| AM/PM   | ≤ 2.0°/dB @ P <sub>O</sub> ≤ P <sub>LIN</sub> - 1dB  |   |
| Inter-modulations (IMD) 2-tone                | ≤ -28 dBc @ P <sub>O</sub> ≤ P <sub>LIN</sub> - 1dB  |   |
| Spectral Re-growth (SR)                       | ≤ -30 dBc @ P <sub>O</sub> ≤ P <sub>LIN</sub> - 1dB  |   |
| Noise Power Ratio (NPR)                       | ≤ -19 dBc @ P <sub>O</sub> ≤ P <sub>LIN</sub> - 1dB  |   |
| Noise power                                   | Transmit band  | ≤ -70 dBW/4 kHz                               |
|   | Receive band   | ≤ -150 dBW/4 kHz<br>(10.65 - 11.75/12.75 GHz) |
| Spurious @ P <sub>O</sub> ≤ MLP               | ≤ -60 dBc  |   |
| Residual AM                                   | ≤ -50 dBc, f < 10kHz<br>≤ -20(1.5+LOG(frequency KHz))dBc, f = 10KHz to 500KHz<br>≤ -85 dBc >500KHz |   |
| Phase Noise                                   | 10dB below IESS requirement<br>≤ -50 dBc max, AC fundamental<br>≤ -47 dBc max, Sum of all spurs    |   |
| Group Delay<br>(any 80 MHz)                   | Linear   | 0.01 nsec/MHz, max                            |
|   | Parabolic  | 0.005 nsec/MHz <sup>2</sup> , max             |
|   | Ripple   | 0.5 nsec/Peak-Peak, max                       |
| 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 <sup>nd</sup> & 3 <sup>rd</sup>    | ≤ -60 dBc  |   |



| Electrical        |  |
|-------------------|--|
| Full Load Current | 13 A max @ 200 VAC                                       |
| AC Input Voltage  | 200-240 VAC $\pm$ 10%, single phase<br>50-60 Hz $\pm$ 5% |
| Power consumption | 2200 VA typical<br>2600 VA maximum                       |
| Power factor      | 0.98 typical<br>0.96 minimum                             |

| Physical                     |  |
|------------------------------|--|
| Dimensions (request outline) | 52cm deep x 26 cm width x 26 cm height |
| Weight                       | 21KG typical                           |
| Cooling                      | Integral forced-air                    |
| RF Input                     | Type N(f) 50 ohm                       |
| RF Output                    | WR-75                                  |
| RF Sample port               | Type N(f) 50 ohm                       |
| AC Input                     | Amphenol C016 20C003 200 12            |
| Ethernet                     | RJF71B                                 |
| M&C Connector                | PT07E18-32S (MS3114E-18-32S)           |

| 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<br>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  |

Specifications are subject to change without notice