

SpacePath Ultralinear 250W V-Band Antenna Mount HPA

The STA5725P series V-Band 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 SNMP V3 and a feature-rich web user interface, alongside RS485, and RS232.

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 STA5725P V-Band is available with a wide range of options and accessories, backed by worldwide technical support.

Features

- Provides up to 80W of Linear Power at the flange
- 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* | | VV1: 47.2 - 51.4 GHz VV2: 47.2 - 52.4 GHz |
| Output Power | TWT Power, Peak | 250W (54.0 dBm) |
| | TWT Power, CW | 150W (51.8 dBm) |
| | HPA Rated, CW | 100W (51.0 dBm) |
| Gain Rated Output | | ≥ 65 dB |
| Gain Small Signal (SSG) | | ≥ 65 dB |
| SSG Variation, over 4.2 GHz | | ≤ 4.0 dB pk-pk |
| SSG Variation, over 1 GHz | | ≤ 2.5 dB pk-pk |
| SSG Variation, over 500 MHz | | ≤ 2.0 dB pk-pk |
| SSG Variation, over 250 MHz | | ≤ 1.0 dB pk-pk |
| Slope, ΔG_{SLOPE} | | ± 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 / °C @ constant drive and frequency |
| Adjustment range, G_{ADJ} | | 30.0 dB typical |
| Adjustment step size | | 0.1 dB |
| AM/PM | | ≤ 2.5°/dB @ 50 dBm (100W) with Linearizer |
| Inter-modulations (IMD) 2-tone | | ≤ -25 dBc at 49.0 dBm (80W) with Linearizer |
| Noise power ratio (NPR) | | ≤ -19 dBc at 49.0 dBm (80W) with Linearizer |
| Spectral Re-growth (SR) | | ≤ -30 dBc at 50.0 dBm (100W) |
| Noise power | Transmit band | ≤ -70 dBW/4 kHz |
| | Receive band | Below 31.4 GHz: ≤ -150 dBW/4 kHz / 37.5 - 42.5 GHz: ≤ -150 dBW/4 kHz |
| Spurious @ $P_o \leq \text{MLP}$ | | ≤ -60 dBc |
| Residual AM | | ≤ -50 dBc, $f < 10\text{kHz}$ ≤ -20(1.5+LOG(frequency KHz))dBc, $f = 10\text{kHz}$ to 500KHz ≤ -85 dBc >500KHz |
| Phase Noise | | 10dB below IESS requirement ≤ -47 dBc max, Continuous ≤ -50 dBc max, AC fundamental ≤ -60 dBc max, Sum of all spurs / ≤ -60 dBc max, Harmonic 2 nd |
| 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 |
| Input VSWR (Return Loss) | | ≤ 1.3:1 (17.7 dB) |
| Output VSWR (Return Loss) | | ≤ 1.3:1 (17.7 dB) |
| Load VSWR (Full perf.) | | ≤ 1.5:1 (14.0 dB) |
| Load VSWR (no damage) | | ≤ 2.0:1 (9.5 dB) |

*Note: Other frequency bands are available including BUC options covering 1GHz, consult ETL Systems for details.

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.



| Electrical | |
|-------------------|---|
| AC Input Voltage | 100-240 VAC \pm 10%, single phase 47-63 Hz |
| Power consumption | 1200 VA maximum, 1100 VA typical |
| Power factor | 0.98 typical 0.96 minimum |

| Physical | |
|------------------------------|---|
| Dimensions (request outline) | 52 cm deep x 25.4 cm width x 25.4 cm height |
| Weight | 21 kg typical |
| Cooling | Forced air with integral blower |
| RF Input | WR-22 |
| RF Output | WR-22 |
| RF Sample port | 1.85mm Female |
| AC Input | Amphenol C016 20C003 200 12 |
| Ethernet | RJF71B (IP67 RJ45 Connector) |
| M&C Connector | PT07E18-32S (MS3114E-18-32S) |

| Environmental | |
|-----------------------|--|
| Operating temperature | -40°C to +60°C (out of direct sunlight) -40°C to +55°C (direct sunlight) |
| Storage temperature | -54°C to +71°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 @ \geq 3 ft. from amplifier |

Specifications are subject to change without notice