# SpacePath Ultralinear 385W Ka-Band Antenna Mount LEO/MEO HPA

The STA45385P 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.

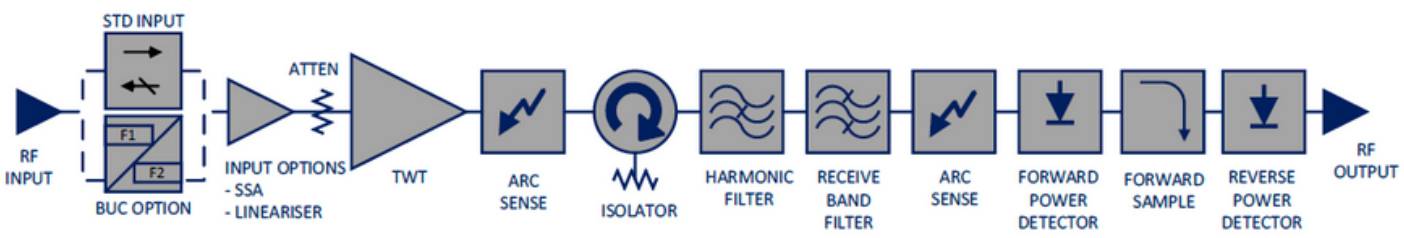
The HPA incorporates a high efficiency multi-collector TWT powered by an advanced power supply built on over 30 years of experience in the design and manufacture of satellite amplifiers.

The company's products have an enviable reputation for performance, robust quality and reliable service. The STA45385P 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
- Multi-Band BUC Options Available
- 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* | | **Full Bandwidth:** 27.5 - 31.0 GHz<br>**KA1:** 27.5 - 30.0 GHz **KA2:** 30.0 - 31.0 GHz **KA3:** 27.0 - 30.0 GHz |
| Output Power (for load VSWR ≤ 1.5:1) | TWT Power, PEAK | 55.8 dBm (385 W) |
| | Rated (flange) | 51.2 dBm (135 W) typical |
| | Linear, $P_{LIN}$ | 51.2 dBm (135 W) |
| Gain | | ≥ 70 dB |
| Gain Variation, 250 MHz, $\Delta G_{250MHz}$ | | ≤ 1.0 dB peak-peak |
| Gain Variation, 1000 MHz, $\Delta G_{1000MHz}$ | | ≤ 2.5 dB peak-peak |
| Slope, $\Delta G_{SLOPE}$ | | ± 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 / 24hrs @ constant drive and frequency |
| Adjustment range, $G_{ADJ}$ | | 30.0 dB typical |
| Adjustment step size | | 0.1 dB |
| AM/PM | | ≤ 1.5°/dB @ $P_O \leq P_{LIN}$ - 1dB |
| Noise Power Ratio | | ≤ -19 dBc @ $P_{LIN}$ (135W) |
| Inter-modulations (IMD) 2-tone | | ≤ -26 dBc @ 85W |
| Noise power | Transmit band | ≤ –70 dBW/4 kHz |
| | Receive band | ≤ –150 dBW/4 kHz<br>(≤ 21.2 GHz) |
| Spurious @ $P_O \leq$ 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 (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 (no damage) | | ≤ 2.0:1 (9.5 dB) |
| Harmonic $2^{nd}$ & $3^{rd}$ | | ≤ -60 dBc |

*Other frequency bands are available including multi-band BUC options, consult ETL Systems for details

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| Electrical | |
|---|---|
| Full Load Current | 8.0 A max @ 100 VAC |
| AC Input Voltage | 100-240 VAC ± 10%, single phase<br>50-60 Hz ± 5% |
| Power consumption | 750 VA typical<br>800 VA maximum |
| Power factor | 0.98 typical<br>0.96 minimum |

| Physical | |
|---|---|
| Dimensions (request outline) | 44 cm deep x 22 cm width x 22 cm height |
| Weight | 16 kg typical |
| Cooling | Integral forced-air |
| RF Input | WR-28 (Optional WR-34) |
| RF Output | WR-28 (Optional WR-34) |
| RF Sample port | 2.9mm SMA Female |
| AC Input | Amphenol C016 20C003 200 12 |
| Ethernet | RJF71B (IP67 RJ45 Connector) |
| 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/$m^2$ |

Specifications are subject to change without notice

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