# SpacePath 750W Ultralinear C-Band Antenna Mount HPA

The STA6175 C series HPA provides ultra linear, high efficiency performance in a compact, lightweight, rugged, weatherproof, antenna mount enclosure. The amplifier incorporates a comprehensive remote-control facility as standard, including RS485, RS232 and Ethernet options.

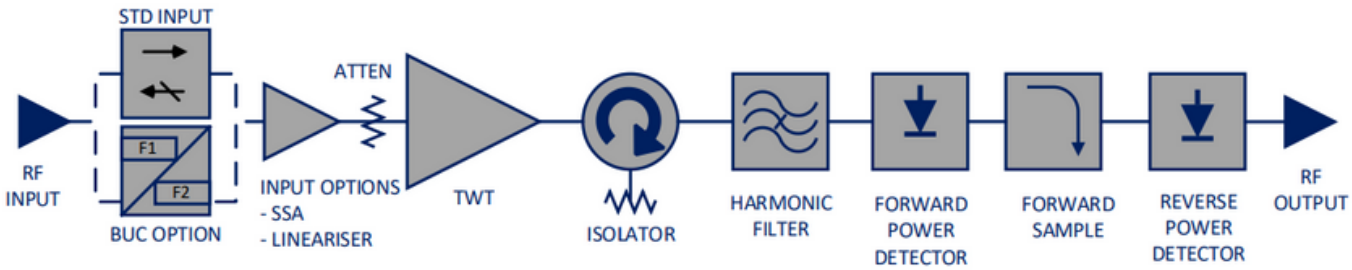
The HPA incorporates a high efficiency multi-collector TWT powered by an advanced power supply built on over 30 years of experience in the design and manufacture of satellite amplifiers.

The company's products have an enviable reputation for performance, robust quality and reliable service.
The STA6175 C 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
- Optional Linearizer
- Optional Internal BUC (consult SpacePath for full details
- 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

## Block Diagram



| RF Performance | | | |
|---|---|---|---|
| Frequency range | | **CC1:** 5.850 – 6.425 GHz **CC2:** 5.850 – 6.650 GHz **CC3:** 5.850 – 6.725 GHz<br>**CC4:** 5.850 – 7.025 GHz **CC5:** 5.725 – 6.725 GHz **CC6:** 6.725 – 7.025 GHz | |
| Output Power (for load VSWR ≤ 1.5:1) | TWT Power | 58.80 dBm (750 W) | |
| | Rated at HPA Flange (Prated) | 58.13 dBm (650 W) min. | |
| Gain | | ≥ 70 dB (At Prated) ≥ 75 dB (Small Signal) *Low gain option 46dB (49dB with Linearizer)* | |
| Gain Variation, 80 MHz, $\Delta G_{80MHz}$ | | ≤ 0.8 dB peak-peak | |
| Gain Variation, 750 MHz, $\Delta G_{750MHz}$ | | ≤ 2.5 dB peak-peak[1]<br>≤ 4.0 dB peak-peak[2] | |
| Slope, $\Delta G_{SLOPE}$ | | ± 0.04 dB/MHz | |
| Gain Stability vs. Time | | ± 0.25 dB / 24hrs | @ constant drive and temperature |
| Gain Stability vs. Temperature | | ± 1.0 dB | @ constant drive and frequency |
| Adjustment range, $G_{ADJ}$ | | 30.0 dB typical | |
| Adjustment step size | | 0.1 dB | |
| AM/PM | | ≤ 2.5°/dB at Prated -6 dB | |
| Inter-modulations (IMD) 2 equal carriers | | ≤ -18 dBc @ $P_O$ ≤ Prated -4 dB[1]<br>≤ -26 dBc @ $P_O$ ≤ Prated -4 dB[2] | |
| Spectral Re-growth (SR) | | ≤ -30 dBc @ $P_O$ ≤ Prated -4 dB[2] | |
| Noise Power Ratio (NPR) | | ≤ -19 dBc @ $P_O$ ≤ Prated -4 dB[2] | |
| Noise power | Transmit band | ≤ –70 dBW/4 kHz | |
| | Receive band | ≤ –150 dBW/4 kHz | |
| Spurious @ $P_O$ ≤ 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 / *3dB below IESS requirement with internal BUC*<br>≤ -50 dBc max, AC fundamental<br>≤ -47 dBc max, Sum of all spurs | |
| Group Delay | Linear | 0.01 nsec/MHz, max | |
| | Parabolic | 0.002 nsec/MHz$^2$, max | |
| | Ripple | 0.5 nsec/Peak-Peak, max | |
| Input VSWR (Return Loss) | | ≤ 1.3:1 (17.7 dB) *≤ 1.6:1 (12.7 dB) with internal BUC* | |
| 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 | |

1) No Linearizer 2) With Linearizer

| Electrical | |
|---|---|
| AC Input Voltage | 200-240 VAC ± 10%, single phase<br>50-60 Hz ± 5% |
| Full Load Current | 12.5 A max @ 200 VAC |
| Power Consumption | 2200 VA typical<br>2450 VA maximum |
| Power Factor | 0.98 typical<br>0.96 minimum |

| Physical | |
|---|---|
| Dimensions (request outline) | 58.8 cm deep x 25.4 cm width x 28.0 cm height |
| Weight | 25Kg typ |
| Cooling | Internal Forced Air |
| Heat Dissipation | 1100W typ |
| RF Input | Type N(f) 50 ohm |
| RF Output | CPRG-137 |
| RF Sample port | Type N(f) 50 ohm |
| 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/m2 |

Specifications are subject to change without notice

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