

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.

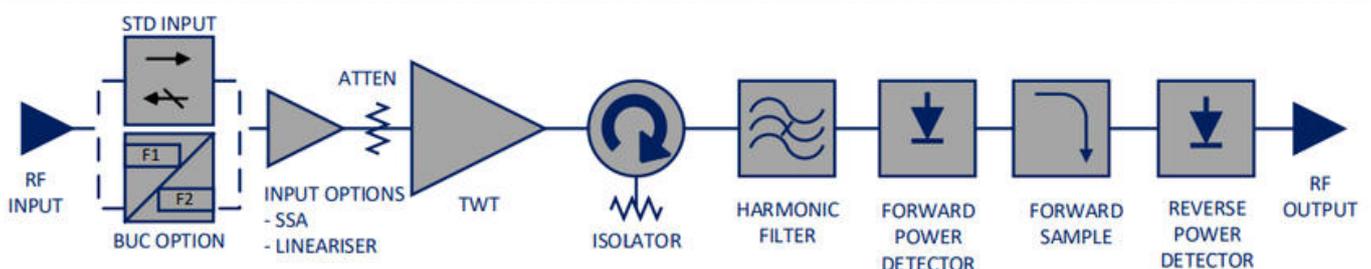
The company's products have an enviable reputation for performance, robust quality and reliable service. The STA6175 C is available with a wide range of options and accessories, backed by worldwide technical support.

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)
- 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 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, $\Delta G_{80\text{MHz}}$	≤ 0.8 dB peak-peak	
Gain Variation, 750 MHz, $\Delta G_{750\text{MHz}}$	≤ 2.5 dB peak-peak ¹ ≤ 4.0 dB peak-peak ²	
Slope, ΔG_{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 @ $P_o \leq \text{Prated} - 4 \text{ dB}^1$ ≤ -26 dBc @ $P_o \leq \text{Prated} - 4 \text{ dB}^2$	
Spectral Re-growth (SR)	≤ -30 dBc @ $P_o \leq \text{Prated} - 4 \text{ dB}^2$	
Noise Power Ratio (NPR)	≤ -19 dBc @ $P_o \leq \text{Prated} - 4 \text{ dB}^2$	
Noise power	Transmit band	≤ -70 dBW/4 kHz
	Receive band	≤ -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 / 3dB below IESS requirement with internal BUC ≤ -50 dBc max, AC fundamental ≤ -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 2 nd & 3 rd	≤ -60 dBc	

1) No Linearizer 2) With Linearizer

Electrical	
AC Input Voltage	200-240 VAC \pm 10%, single phase 50-60 Hz \pm 5%
Full Load Current	12.5 A max @ 200 VAC
Power Consumption	2200 VA typical 2450 VA maximum
Power Factor	0.98 typical 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 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
Solar Gain	1120 2/m2

Specifications are subject to change without notice