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.

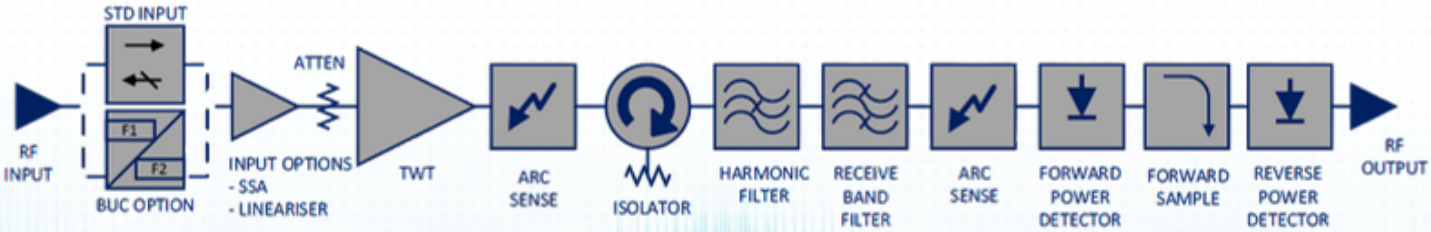
The HPA incorporates a high efficiency multi-collector TWT powered by an advanced power supply built on over 30 years of experience in the design and manufacture of satellite amplifiers.

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 ≤ MLP		≤ -60 dBc
Residual AM		≤ –50 dBc, f < 10kHz ≤ -20(1.5+LOG(frequency KHz))dBc, f = 10KHz 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 2nd
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 ± 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 @ ≥ 3 ft. from amplifier

Specifications are subject to change without notice