

**Ultralinear  
Lightweight  
High Efficiency  
Broadband**



## STA5725P Series V-Band 250W Peak 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 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.

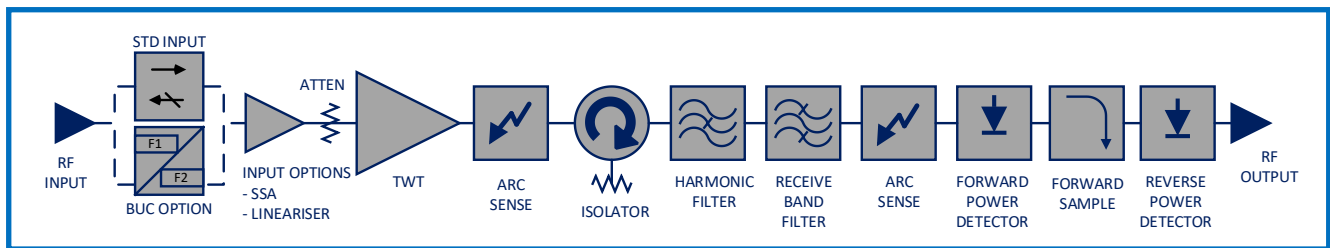
The company's products have an enviable reputation for performance, robust quality and reliable service.

The 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/SNMP/Webpage GUI interfaces
- Broadband – high efficiency operation
- 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<sup>1,2</sup>

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 Power	100W (51.0 dBm)

#### Linearity

Intermodulation – with respect to each of 2 equal carriers 20 MHz apart	-25 dBc at 80W/49.0 dBm with Linearizer
NPR (with linearizer option)	-19 dB 80W/49.0 dBm with Linearizer
Spectral Regrowth	-30 dBc at 100W/50.0dBm
AM/PM Conversion	2.5°/dB max (No Linearizer up to 50W/47.0dBm With Linearizer 100W/50.0dBm)

#### Gain

Gain Rated Output	65 dB min.
Gain Small Signal (SSG)	965 dB min.
SSG Over 4.2 GHz	4.0 dB pk-pk max.
Variation Over 1 GHz	2.5 dB pk-pk max.
Over 500 MHz	2.0 dB pk-pk max.
Over 250 MHz	1.0 dB pk-pk max.
SSG Gain Slope	± 0.04 dB/MHz
Gain Stability at const. drive & temp. after 30 min warmup	± 0.25 dB/24 hours
Gain Stability over temp.	± 1.0 dB
RF Level Adjust Range	0 to 30 dB typ. (via PIN diode attenuator) 0.1 dB steps

#### VSWR (Return Loss)

Input	1.3:1 (17.7 dB) max.
Output	1.3:1 (17.7 dB) max
Load (Full perf.)	1.5:1 (14.0) max.
Load V (No damage)	≤ 2.0:1 (9.5 dB) Max.

#### Noise Power

Transmit Band	≤ -70 dBW/4kHz
Below 31.4 GHz	≤ -150 dBW/4kHz
37.5 to 42.5 GHz	≤ -150 dBW/4kHz

#### Phase Noise

Continuous	10 dB below IESS requirement
AC Fundamental	-47 dBc max.
Sum of all spurs	-50 dBc
Harmonic (2 <sup>nd</sup> )	≤ -60 dBc
Spurious	≤ -60 dBc

#### Group Delay (any 80 MHz)

Linear	0.01 nsec/MHz, max
Parabolic	0.005 nsec/MHz <sup>2</sup> , max
Ripple	0.5 nsec/Peak-Peak, max

#### Residual AM

f < 10 kHz	-50 dBc max.
f = 10KHz to 500 kHz	-20(1.5 + logf) dBc max
f > 500 kHz	-85 dBc max.

#### Prime Power:

AC Supply Voltage	100-240 VAC ± 10%, single phase
Frequency	47 – 63 Hz
Power Consumption	1200VA max; 1100VA typ.
Power Factor	0.98 typical 0.96 minimum

#### Environmental:

Ambient Temp.	Operating	-40°C to +60°C (out of direct sunlight) -40°C to +55°C (direct sunlight)
	Storage	-54°C to +71°C
Relative Humidity		100% condensing
Altitude	Operating	12,000 ft. with standard adiabatic de-rating of 2°C/1000ft
	Non-Op	50,000 ft.
Shock		15 g peak, 11mSec, 1/2 sine
Vibration		3.2 g rms, 10-500 Hz
Acoustic Noise		65 dBA @ ≥3 ft. from amplifier
Cooling		Forced air with integral blower

#### Mechanical:

Dimensions WxHxD <sup>3</sup>	254x254x520 mm (10x10x20 in.)
Weight	21 kg (46.2 lbs) typ.
RF Input	WR-22
RF Output	WR-22
RF Sample	1.85mm Female
AC Input	Amphenol C016 20C003 200 12
Ethernet	RJF71B (IP67 RJ45 Connector)
M&C Connector	PT07E18-32S (MS3114E-18-32S)

#### Notes:

- Other frequency bands are available including BUC options covering 1GHz, consult Spacepath Communications for details.
- Frequency range must be selected at time of purchase, as these options are TWT dependent and cannot be changed in the field.
- Contact Spacepath Communications for outline drawing.

Specification subject to change without notice