

**Ultralinear
Lightweight
High Efficiency
Broadband**



STA5618 Series Q-Band 180W Peak Antenna Mount HPA

The STA5618 series Q-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.

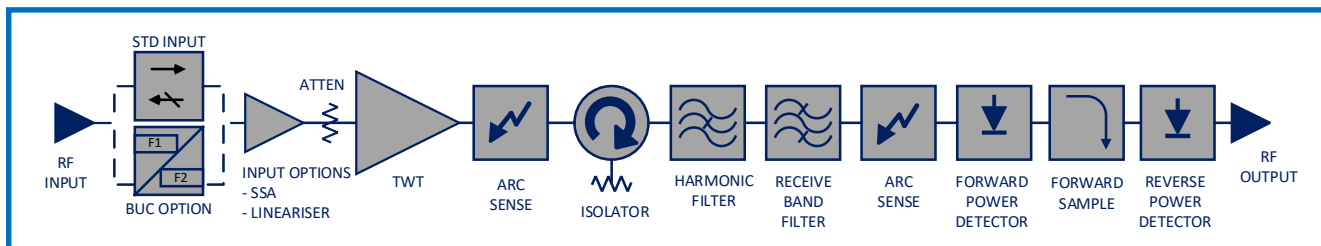
The company's products have an enviable reputation for performance, robust quality and reliable service.

The STA5618 Q-Band is available with a wide range of options and accessories, backed by worldwide technical support.

Features

- Provides up to 90W 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

QQ1 43.5 – 45.5 GHz

Output Power

TWT Power CW 180W (52.55 dBm)

HPA Rated CW Power 130W (51.14 dBm)

Linearity

Intermodulation – with respect to each of 2 equal carriers 20 MHz apart
 -17dBc at 72W (48.55 dBm)
 -25 dBc at 105W (50.21 dBm) with Linearizer

Spectral Regrowth -30 dBc at 105W (50.21 dBm)

AM/PM Conversion 3% dB max @ 45W (46.55 dBm)

Gain

Gain Rated Output 70 dB min.

Gain Small Signal (SSG) 65 dB min.

SSG Over 2 GHz 1.5 dB max.

Variation Over 500 MHz 0.8 dB max.

Over 100 MHz 0.4 dB max.

SSG Gain Slope ± 0.02 dB/MHz max.

Gain Stability at const. drive & temp. after 60 min warmup ± 0.20 dB/24 hours

Gain Stability vs temp. 0.02 dB/°C max

RF Level Adjust Range 0 to 30 dB typ.
 (via PIN Diode attenuator in 0.1dB steps)

VSWR (Return Loss)

Input 1.25:1 (19.1 dB) max

Output 1.25:1 (19.1 dB) max.

Load (Full perf.) $\leq 2.0:1$ (9.5 dB) Max.

Load V (No damage)

Noise Power

≤ -70 dBW/4kHz

Transmit Band ≤ -150 dBW/4kHz

Phase Noise

10 dB below IESS requirement

Continuous -47 dBc max.

AC Fundamental -50 dBc

Sum of all spurs ≤ -60 dBc

Harmonic (2nd) ≤ -60 dBc

Group Delay (any 80 MHz)

Linear 0.01 nsec/MHz, max

Parabolic 0.005 nsec/MHz², 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 $\pm 10\%$, single phase

Frequency 47 – 63 Hz

Power Consumption 1200VA max; 1100VA typ.

Power Factor 0.95 typical

Environmental:

Ambient Operating -40°C to +60°C (out of direct sunlight)
 Temp. -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 WxHxD³ 254x254x520 mm (10x10x20 in.)

Weight 21 kg (46.2 lbs) typ.

RF Input WR-22

RF Output WR-22

RF Sample 1.85mm Female (Optional 2.4mm)

AC Input Amphenol C016 20C003 200 12

Ethernet RJF71B (IP67 RJ45 Connector)

M&C Connector PT07E18-32S (MS3114E-18-32S)

Notes:

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

Specification subject to change without notice