STA5619 Series Q-Band 190W Antenna Mount HPA

Ultralinear
Lightweight
High Efficiency
Broadband

STA5619 Series Q-Band 190W Peak Antenna Mount HPA

The STA5619 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.

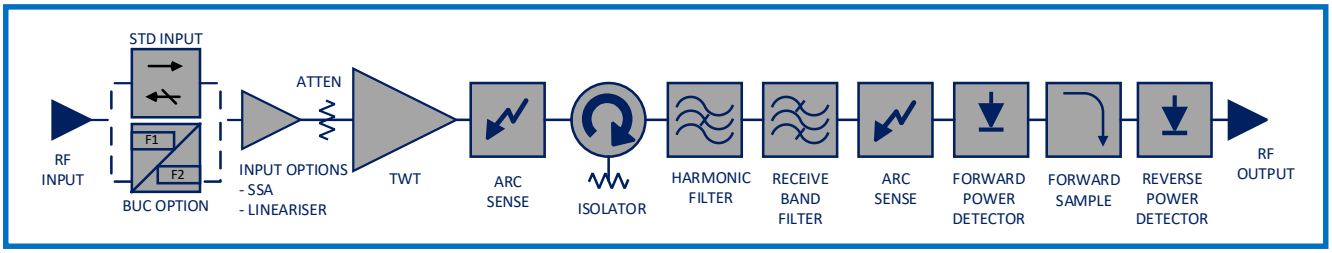
The STA5619 Q-Band is available with a wide range of options and accessories, backed by worldwide technical support.

Features

- Provides up to 95W 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

SpacePath Communications Ltd. Unit 4 Bartley Point, Osborn Way, Hook, Hampshire RG27 9GX United Kingdom.
Telephone: +44 (0)1256 760525. e-mail: sales@space-path.com. Internet: www.space-path.com

BLOCK DIAGRAM



RF Performance:

Frequency

QQ1	43.5 – 45.5 GHz

Output Power

TWT Power CW	190W (52.78 dBm)
HPA Rated CW Power	137W (51.37 dBm)

Linearity

Intermodulation – with respect to each of 2 equal carriers 20 MHz apart	-17dBc at 75.5 (48.78 dBm) -25 dBc at 110W (50.41 dBm) with Linearizer
Spectral Regrowth	-30 dBc at 110W (50.41 dBm)
AM/PM Conversion	3°/ dB max @ 47.5W (46.77 dBm)

Gain

Gain Rated Output		70 dB min.
Gain Small Signal (SSG)		65 dB min.
SSG Variation	Over 2 GHz	1.5 dB max.
	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.)	≤ 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/MHz^2, 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		0.95 typical

Environmental:

Ambient Temp.	Operating	-40°C to +60°C (out of direct sunlight) -40°C to +55°C (direct sunlight)
	Storage	-54ºC to +71ºC
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[3]	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