

**Ultralinear
Lightweight
High Efficiency
Broadband
Liquid Cooled**



STA5565P-LC Ka series 650W Antenna Mount HPA Liquid Cooled

The STA5565P-LC Ka series HPA provides ultra linear, high efficiency performance in a compact, lightweight, rugged, weatherproof, antenna mount enclosure. The HPA is Liquid Cooled offering the following advantages over Air Cooled units; lower acoustic noise, lower heat dissipation in the hub, improved gain stability. In addition, demands on the hub air conditioning are greatly reduced. Installation is simple with dripless connectors that do not leak when disconnected under pressure.

The amplifiers, 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.

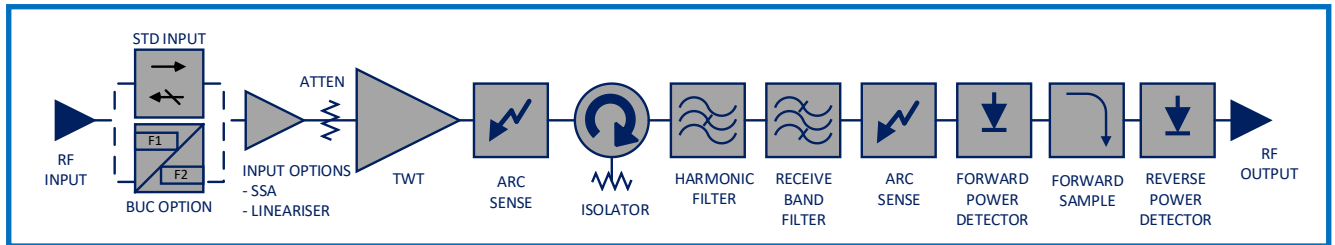
The company's products have an enviable reputation for performance, robust quality and reliable service.

The STA5565P-LC Ka is available with a wide range of options and accessories, backed by worldwide technical support.

Features

- Provides up to 304W of Linear Power at the flange
- Advanced cooling design enables operation at +60°C and in direct sunlight
- Liquid cooled for ease of hub installation
- 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

Full Bandwidth	27.0 – 31.0 GHz
Sub-Bands ^{1,2}	
KA1	27.5 – 30.0 GHz
KA2	30.0 – 31.0 GHz
KA3	27.0 – 30.0 GHz

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

Output Power²

TWT Power, Peak/CW	P1	650 W/350 W (58.13/55.44 dBm)
	P2	650 W/500 W (58.13/56.99 dBm)
HPA Flange Power, Peak/CW	P1	565 W/305 W (57.52/54.84 dBm)
	P2	565 W/435 W (57.52/56.38 dBm)

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.

Linearity

Intermodulation – with respect to each of 2 equal carriers 20 MHz apart	-23 dBc max. at total output power of 50.03dBm/100.7W (-25 dBc at 53.3dBm/215W with optional linearizer)
NPR (with linearizer option)	-19 dB at 53.3dBm/215W flange output power. -25 dB at 51.3dBm/135W dBm flange output power.

Prime Power:

AC Supply	Voltage	100-240 VAC ± 10%, single phase
	Frequency	47 – 63 Hz
Power	P1	1400VA max; 1200VA typ.
Consumption	P2	1500VA max; 1300VA typ.
Power Factor		0.98 typical
		0.96 minimum

AM/PM Conversion to 7dB OPBO	No Lineariser up to 4 dB OPBO	2.5°/dB max
	With linearizer up to 4 dB OPBO	2.0°/dB max

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		Liquid Cooled

Gain

Gain Rated Output	70 dB min.	
Gain Small Signal (SSG)	70 dB min.	
SSG Variation	Over 500 MHz	1.2 dB pk-pk max.
	Over 1 GHz	2.5 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	

Mechanical:

Dimensions WxHxD ³	254x254x520 mm (10x10x20 in.)
Weight	21 kg (46.2 lbs) typ.
RF Input	WR-28 (Optional WR-34)
RF Output	WR-28 (Optional WR-34)
RF Sample	2.9mm SMA Female
AC Input	Amphenol C016 20C003 200 12
Ethernet	RJF71B (IP67 RJ45 Connector)
M&C Connector	PT07E18-32S (MS3114E-18-32S)

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
Receive Band (≤ 21.2 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 nd & 3 rd	≤ -60 dBc
Spurious	≤ -60 dBc

Notes:

- Other frequency bands are available including BUC options covering 1GHz, consult Spacepath Communications 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.
- Contact Spacepath Communications for outline drawing.

Specification subject to change without notice