STA4613 Q Series 130W Ultralinear Q-Band Antenna Mount HPA

FEATURES

Ultralinear
Lightweight
High Efficiency
Broadband

STA4613 Q series 130W Antenna Mount HPA

The STA4613 Q series 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.

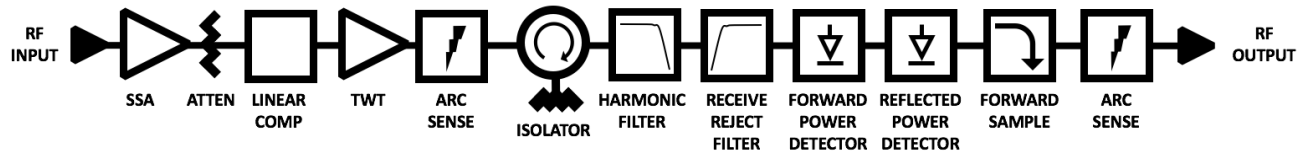
The company's products have an enviable reputation for performance, robust quality and reliable service.

The STA4613 Q is available with a wide range of options and accessories, backed by worldwide technical support.

Features

- 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
- CE complaint
- 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	42.5 – 45.5 GHz
QQ2	42.5 – 43.5 GHz
QQ3	42.5 – 44.5 GHz
QQ4	43.5 – 44.5 GHz
QQ5	43.5 – 45.5 GHz
Bandwidth, up to 2000 MHz	2000 MHz
Output Power	(for load VSWR ≤ 1.5:1)
TWT Power, PEAK	51.2 dBm (130 W)
Rated (flange)	50.4 dBm (110 W) typical
Linear, P_{LIN}	47.4 dBm (55 W)
Gain	
Gain	≥ 70 dB
Variation, 250 MHz, ΔG_{250MHz}	≤ 1.0 dB peak-peak
Variation, 1000 MHz, $\Delta G_{1000MHz}$	≤ 2.0 dB peak-peak
Slope, ΔG_{SLOPE}	± 0.04 dB/MHz
Gain Stability vs. Time @constant drive & temp	± 0.25 dB/24 hours
Gain Stability vs. Temperature @ constant drive & frequency	± 1.0 dB
Adjustment range, G_{ADJ}	30.0 dB typical
Adjustment step size	0.1 dB
Linearity	
AM/PM @ $P_O \leq P_{LIN}$ - 1dB	≤ 1.5°/dB
Inter-modulations (IMD) 2-tone	≤ -28 dBc @ $P_O \leq P_{LIN}$ – 1 dB
Spectral Re-growth (SR)	≤ -30 dBc @ $P_O \leq P_{LIN}$ – 1 dB
Noise Power Ratio (NPR)	≤ -19 dBc @ $P_O \leq P_{LIN}$ – 1 dB
Input VSWR (Return Loss)	≤ 1.3:1 (17.7 dB)
Output VSWR (Return Loss)	≤ 1.3:1 (17.7 dB)
Load VSWR (no damage)	≤ 2.0:1 (9.5 dB)
Harmonic 2nd & 3rd	≤ -60 dBc
Noise Power	
Transmit Band (T_X)	≤ -70 dBW/4KHz
Receive Band (R_X)	≤ -150 dBW/4KHz (≤ 21.2 GHz)
Spurious @ $P_o \leq$ 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	10 dB below IESS requirement ≤ - 50 dBc, AC fundamental ≤ - 47 dBc, Sum of all spurs
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

Prime Power:

AC Input Voltage	100-240 VAC ± 10%, single phase 50-60 Hz ± 5%
Full Load Current	6.3 A max @ 100 VAC
Power Consumption	550 VA typical 625 VA maximum
Power Factor	0.98 typical 0.96 minimum

Environmental:

Ambient Temperature	-40°C to +60°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
Solar Gain	1120 2/m^2

Mechanical:

Dimensions	Request outline
Length	52 cm
Width	26 cm
Height	26 cm
Weight	21 kg typical
RF Input	WR-22
RF Output	WR-22
RF Sample	Type 2.9mm(f)
AC Input	Amphenol C016 20C003 200 12
Ethernet	RJF71B
M&C Connector	PT07E18-32S (MS3114E-18-32S)