

## Spacepath STA1140 400W C Band Antenna Mount TWTA



### STA1140 Series 400 W, C-Band Antenna Mount TWTA

The STA1140 range of C-Band TWT amplifiers from SpacePath Communications provide over 350W of output power in a compact, lightweight, rugged, weatherproof, antenna mount enclosure.

The advanced packaging and cooling techniques (Stellar Cool™, patent pending) 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 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 STA1140 is available with a wide range of options and accessories, backed by round-the-clock, worldwide technical support.

#### OPTIONS

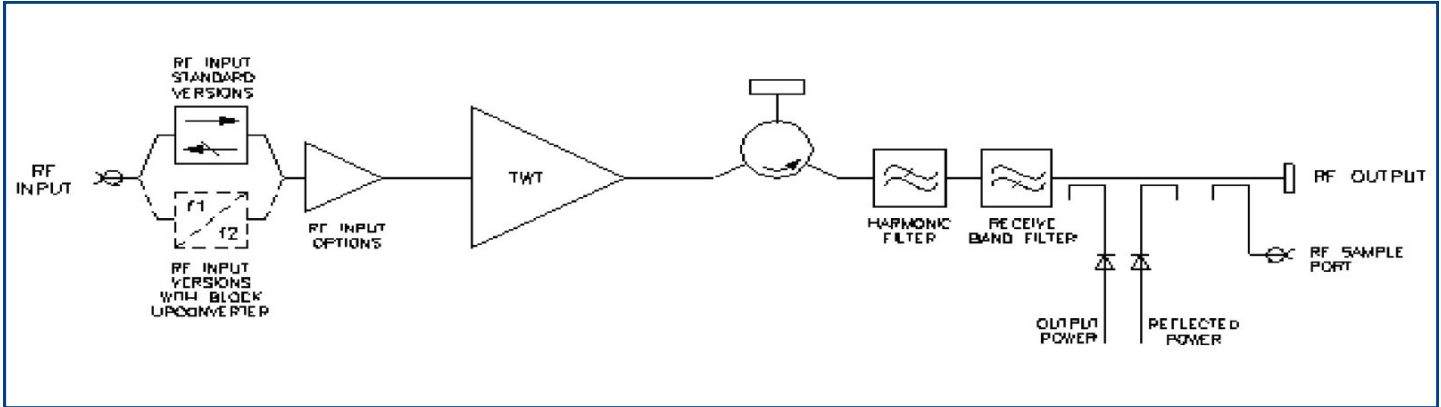
- Integral solid-state amplifier (SSA)
- Gain control (requires SSA)
- L-band block upconverter
- Lineariser
- Break-out link for upconverter

#### FEATURES

- Advanced cooling design (Stellar Cool™, patent pending) enables operation at +55 °C and in direct sunlight.
- Weatherproof antenna mount construction allows exposed mounting.

- CE compliant
- cETLus listed
- CB certified
- 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
- Round-the-clock hotline support
- Wide range of accessories including: controllers, waveguide networks, cable assemblies.

**BLOCK DIAGRAM**



**PERFORMANCE (Without Upconverter)**

Frequency range:

standard – CC1	5.850 to 6.425
extended – CC2	5.850 to 6.650
extended – CC3	5.850 to 6.725
extended – CC4	5.850 to 7.025
extended – CC5	5.725 to 6.725

Output power:

TWT output flange	400
HPA rated output	350

Gain:

at rated power (C option)	45
at rated power (A, D, Z option)	70
SSG $P_{rated} - 10$ dB (C option)	50
SSG $P_{rated} - 10$ dB (A, D, Z option)	75
Attenuation range (D, Z option)	25

Gain variation:

full band	2.5
over any 40 MHz band	1.0
slope	0.08

Gain stability 24hrs (constant drive, temperature and load):

temperature and load	0.5
Gain stability over full operating temperature	2.0

Intermodulation (two equal carriers) with total output =  $P_{rated} - 4$  dB:

options C, A, D	-18
performance with linearised option, Z	-24

Harmonic output

Harmonic output	-60
AM to PM conversion at $P_{rated} - 6$ dB	2.5

Noise power:

transmit band	-70
receive band (3.2 – 4.2 GHz)	-150

Residual AM:

<10 kHz	-50
10 kHz < f < 500 kHz	-20(1.5+log f)
>500 kHz	-85

Group delay:

linear	0.01
parabolic	0.005
ripple	0.5

Phase noise:

continuous	10 dB lower than IESS phase noise profile
AC fundamental	-50
sum of all spurs	-47

Input VSWR (operating): 1.3:1

Output VSWR (non-operating): 1.3:1

Load VSWR, no damage: 2.0:1

**ELECTRICAL**

Prime power	single phase, line-neutral or line-line	
Voltage	99 to 265	V
Frequency	47 to 63	Hz
Power requirement	1500	VA max
Power factor	0.95	min

**MECHANICAL**

Weight	25.0 kg (55 lb) typ
GHz Dimensions	see outline
GHz Cooling	integral forced-air

**CONNECTORS**

GHz RF input	N-type female
GHz RF output	CPR137G with 10-32 UNF 2B threaded holes
W min RF sample port	N-type female
W min Prime power	ITT Cannon - CGL02A20-3P-E1B-B
Control interface	62GB-12E-2041-PN

dB min  
dB min **Note:** Mating connectors for the mains supply and control interface are supplied.  
dB min

**ENVIRONMENTAL**

For operation outside these parameters, refer to SpacePath

dB max Communications for guidance	
dB max Operating temperature (see note 1)	-40 to +55 °C
dB/MHz max Derating	2°C/300 m above sea level (3.6 °F/1000 ft)
dB max Solar gain	1120 W/m <sup>2</sup>
dB max Storage temperature	-40 to +80 °C
Relative humidity (condensing)	100 %
Altitude:	
dBc max operating	4.5 km (15,000 ft) max
dBc max non-operating	12 km (40,000 ft) max
dBc max Vibration:	BS EN 60068-2-64 test Fh, Transportation
°/dB Shock:	IEC Publication 68-2-27 Part 2 Test Ea, 25 g
EMC:	
dBW/4 kHz max	EN61000-6-3:2001 (Emissions)
dBW/4 kHz max	EN61000-6-2:2001 (Immunity)
	FCC CFR47 Part 15B

dBc max  
dBc max **CE CERTIFIED**  
dBc max EMC Directive 89/336/EEC, Low Voltage Directive 73/23/EEC.

**NOTES**

1. +55 °C applies when the input supply voltage is between 180 and 265V. Below 180V, the maximum operating temperature is +50 °C.
2. Safety applies for operating altitude up to 2000 m and operating temperature up to +50 °C.