

# 500W Ku-Band BUC/ SSPB/ SSPA

## Second Generation GaN Technology

### SapphireBlu™ UltraLinear™

SSPA	AWMA-K 4200-G series
Ext. Ku-Band SSPA	AWMAg-500KX-CSE
SSPB (BUC)	SSPBM-K4200-G series

### Features

- Full range of output power of 500W in a single package
- Very High linearity
- Redundant ready with no external controller
- Full M&C capability via RS232, RS485 or Ethernet port
- Built-in Forward precision powering metering
- Output RF calibrated Sample Port
- Redundant Systems shipped fully tested
- Infinite VSWR protection with automatic high reflected power shutdown
- Weatherproof construction
- CE marking

### Overview

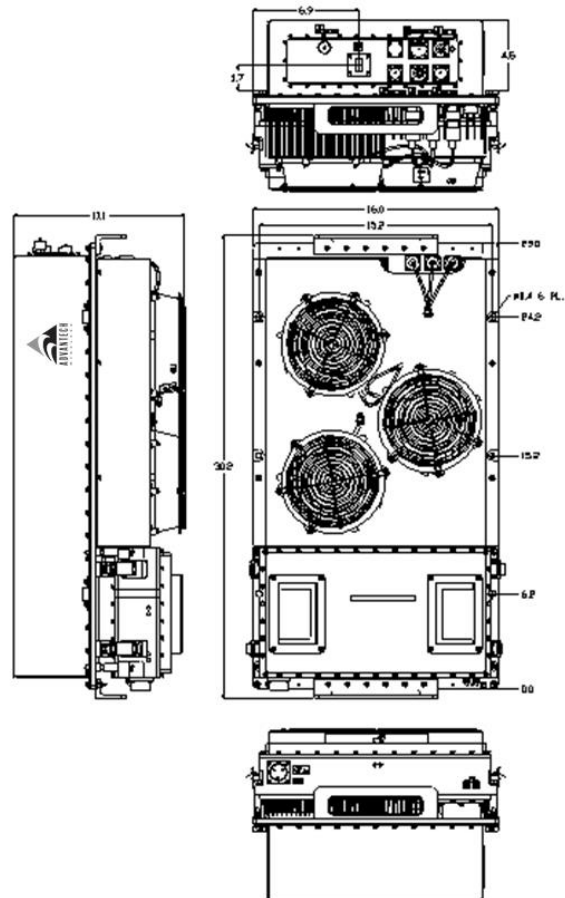
Based on GaN technology the new G-Series Ku-Band BUCs provide high power density in a compact size. Combined with the traditional from Advantech Wireless Technologies, these new series of BUCs and SSPAs provide the ultimate in performance and convenience.

### Options

- 1:1 or 1:2 Redundant configuration
- L-Band input (SSPB/BUC operation)
- Internal/External reference with auto-sensing
- Ethernet port

### Accessories

- Mounting kits
- Remote M&C panel with optional SNMP
- Handheld terminal
- Flexible and rigid waveguides
- Mounting frames



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### General Specifications

Output power		500W	
Operating Frequency	KS-band (14.00 – 14.50 GHz) KX-band (13.75 – 14.50 GHz)		
L-Band input (BUC)	950 – 1450 MHz (for KS) or 950 – 1700 MHz (for KX)		
	P <sub>SAT</sub> (typ.)	+57.0 dBm	
	P <sub>LINEAR</sub>	+54.0 dBm	
	P <sub>LINEAR</sub> is the power at which the IMD=-25 dBc for two CW signals 5 MHz apart versus total power, and the spectral regrowth is <-30 dBc @ 1.0 x symbol rate for a single QPSK/OQPSK/8PSK signal.		
Gain	SSPA	66 ± 3 dB	
	SSPB (BUC)	76 ± 3 dB	
Gain adjustment range	20 dB in 0.1 dB steps		
Gain flatness over full band	SSPA 2dB p-p max	SSPB (BUC) 4 dB p-p max	
Gain slope over 40 MHz	± 0.3 dB max	SSPB (BUC) ± 0.5 dB max	
Gain variation over temperature	± 1.5 dB max		
Input Impedance and VSWR	50 Ω	SSPA 1.3:1	SSPB (BUC) 1.4:1
Output VSWR	1.25:1		
Noise power density	-70 dBm/Hz in Transmit Band, -145 dBm/Hz in Receive Band (10.95 GHz – 12.75 GHz)		
Spurious at P <sub>LINEAR</sub>	SSPA: -65 dBc max	SSPB (BUC): -55 dBc max	
Harmonics	-60 dBc @ P <sub>LINEAR</sub>		
AM/PM conversion	<1.0°/dB P <sub>LINEAR</sub>		
Third order intermod (two tones)	-25 dBc two signal 5 MHz apart at P <sub>LINEAR</sub>		
Group delay	Ripple	1 nsec p-p max over any 40 MHz band	
Residual AM Noise	0 – 10 kHz	-45 dBc	
	10 kHz – 500 kHz	-20 (1.25 + log F) dBc F = Frequency in kHz	
	500 kHz – 1 MHz	-80 dBc	
<b>SSPB (BUC)</b>			
Local Oscillator freq.	13.05 GHz (for KS)	or	12.80 GHz (for KX)
Internal Reference frequency (optional)	10 MHz	Aging/day	±2 × 10 <sup>-10</sup>
		Aging/year	±5 × 10 <sup>-8</sup>
		Stability	±2 × 10 <sup>-8</sup> over temp range
Phase Noise	-53 dBc/Hz at 10Hz	-73 dBc/Hz at 1000Hz	-93 dBc/Hz at 100 kHz
	-63 dBc/Hz at 100Hz	-83 dBc/Hz at 10 kHz	
External Reference Frequency phase noise (max)	10 MHz		
	-120 dBc/Hz at 10Hz	-150 dBc/Hz at 1000Hz	-160 dBc/Hz at 100 kHz
	-135 dBc/Hz at 100Hz	-155 dBc/Hz at 10 kHz	
<b>Weight &amp; Dimensions</b>			
Dimensions (L x W x H)	30.2" x 16.0" x 11.1" (767x 406 x 282 mm)		
Weight	119 lbs (54 kg)		
AC input voltage	190 – 265 VAC (47-63 Hz)		
Power consumption (nominal)	2600W at P <sub>LINEAR</sub> 3500W at P <sub>SAT</sub>		
Interfaces	Input (RF or L-Band):	N type female	AC line: MS3102 type
	Output Sample Port:	N type female	RF output: WR75 Cover
	RS485/Ethernet:	MS3112 type	
Environmental	Temperature	Operating -30°C to +55 °C	Option 1 -40°C to +55 °C
		Storage -55°C to +85 °C	Option 2 -50°C to +50 °C
	Humidity	100% condensing	
	Altitude	10,000' AMSL, derated by 2 °C/1000' from AMSL	

Ref.: PB-SSPBMg-2G-Ku-500W-19109

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