

300W/400W/500W Ku-Band BUC/ SSPB/ SSPA 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 300W, 400W or 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

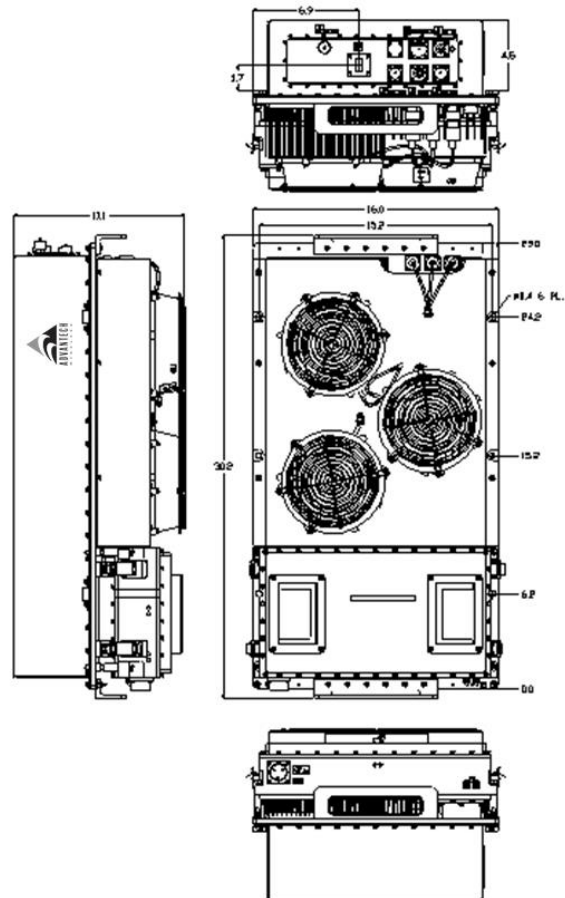
Based on GaN technology the new G-Series Ku-Band BUCs provide high power density in a compact size. Combined with the traditional from Advantech Wireless Technologies, these new series of BUCs and SSPAs provide the ultimate in performance and convenience.

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		300W	400W	500W
Operating Frequency				
KS-band (14.00 – 14.50 GHz)		✓	✓	✓
KX-band (13.75 – 14.50 GHz)		✓	✓	✓
KL-band (12.75 – 13.25 GHz)		✓	✓	-
L-Band input (BUC)		950 – 1450 MHz (for KS/KL) or 950 – 1700 MHz (for KX)		
P _{SAT} (typ.)		+55.0 dBm	+56.0 dBm	+57.0 dBm
P _{LINEAR}		+52.0 dBm	+53.0 dBm	+54.0 dBm
P _{LINEAR} is the power at which the IMD=-25 dBc for two CW signals 5 MHz apart, and the spectral regrowth is <-30 dBc @ 1.0 x symbol rate for a single QPSK/OQPSK/8PSK signal.				
Gain	SSPA SSPB (BUC)	66 ± 3 dB 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) 3 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 _{LINEAR}		SSPA: -65 dBc max SSPB (BUC): -55 dBc max		
Harmonics -60 dBc @ P _{LINEAR}				
AM/PM conversion <1.0°/dB P _{LINEAR}				
Third order IMD (two tones) -25 dBc two signal 5 MHz apart at P _{LINEAR}				
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		

SSPB (BUC)

Local Oscillator freq.	13.05 GHz (for KS)	or	12.80 GHz (for KX)	or	11.80 GHz (for KL)
Internal Reference frequency (optional)	10 MHz	Aging/day	±2 × 10 ⁻¹⁰	Aging/year	±5 × 10 ⁻⁸
		Stability	±2 × 10 ⁻⁸ over temp range		
Phase Noise	-53 dBc/Hz at 10Hz -63 dBc/Hz at 100Hz	-73 dBc/Hz at 1000Hz -83 dBc/Hz at 10 kHz	-93 dBc/Hz at 100 kHz		
External Reference Frequency phase noise (max)	10 MHz -120 dBc/Hz at 10Hz -135 dBc/Hz at 100Hz	-150 dBc/Hz at 1000Hz -155 dBc/Hz at 10 kHz	-160 dBc/Hz at 100 kHz		

Weight & Dimensions

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)	1800W at P _{LINEAR} 2500W at P _{SAT}	2400W at P _{LINEAR} 3200W at P _{SAT}	2600W at P _{LINEAR} 3500W at P _{SAT}		
Interfaces	Input (RF or L-Band): N type female Output Sample Port: N type female RS485/Ethernet: MS3112 type	AC line: MS3102 type RF output: WR75 Cover			
Environmental	Temperature	Operating -30°C to +55 °C Storage -55°C to +85 °C	Option 1 -40°C to +55 °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-300W-400W-500W-21142

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