

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

Second Generation GaN Technology

SapphireBlu™ UltraLinear™

SSPA	AWMA-K	4200-G series
SSPB (BUC)	SSPBM-K	4200-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

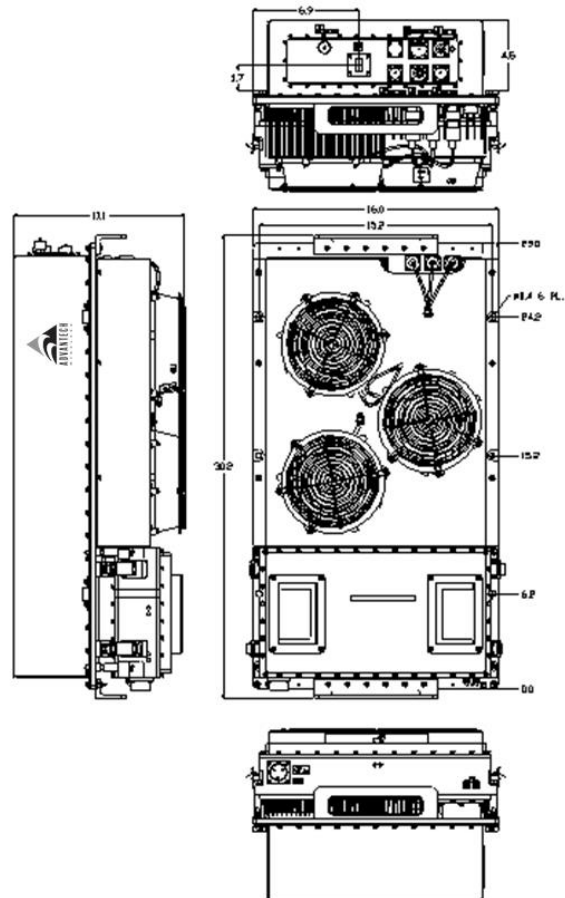
Based on GaN technology the new G-Series Ku-Band BUCs provide high power density in a compact size. Combined with the traditional from Advantech Wireless Technologies, these new series of BUCs and SSPAs provide the ultimate in performance and convenience.

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				
Operating Frequency	Ku-Band: 14.0 – 14.5 GHz Extended Ku-Band: 13.75 – 14.5 GHz			
L-Band input (BUC)	Ku-band IF: 950 – 1450 MHz Extended Ku-Band IF: 950 – 1700 MHz			
Output power	300W	400W	500W	
P_{SAT} (typ.)	+55.0 dBm	+56.0 dBm	+57.0 dBm	
P_{LINEAR}	+53.0 dBm	+54.0 dBm	+55.0 dBm	
	P_{LINEAR} 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 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) 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_{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 intermod (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		12.8 GHz	
Internal Reference frequency (optional)	10 MHz	Aging/day	$\pm 2 \times 10^{-10}$	
		Aging/year	$\pm 5 \times 10^{-8}$	
		Stability	$\pm 2 \times 10^{-8}$ over temp range	
Phase Noise	-53 dBc/Hz at 10Hz	-83 dBc/Hz at 10 kHz		
	-63 dBc/Hz at 100Hz	-93 dBc/Hz at 100 kHz		
	-73 dBc/Hz at 1000Hz			
External Reference	10 MHz	-120 dBc/Hz at 10Hz	-155 dBc/Hz at 10 kHz	
Frequency phase noise (max)		-135 dBc/Hz at 100Hz	-160 dBc/Hz at 100 kHz	
		-150 dBc/Hz at 1000Hz		
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)	2200W at P_{LINEAR}	2900W at P_{SA}	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	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	Option 2 -50°C to +50 °C
		Storage -55°C to +85 °C		
	Humidity	100% condensing		
	Altitude	10,000' AMSL, derated by 2 °C/1000' from AMSL		

Ref.: PB-SSPBMg-2G-Ku-300W-400W-500W-18134

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