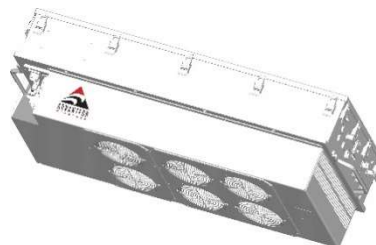


SapphireBlu-Series GaN 1000W Ku-Band BUC/SSPB/SSPA

With more linear power and higher MTBF than a 1250W TWTA

SSPA AWMg-K
Ext. Ku-Band SSPA
SSPB (BUC) SSPBMg-K

5200-SapphireBlu™ series
AWMg-1000KX
5200-SapphireBlu™ series



1:2 Redundant Version

Overview

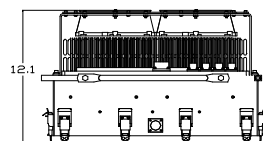
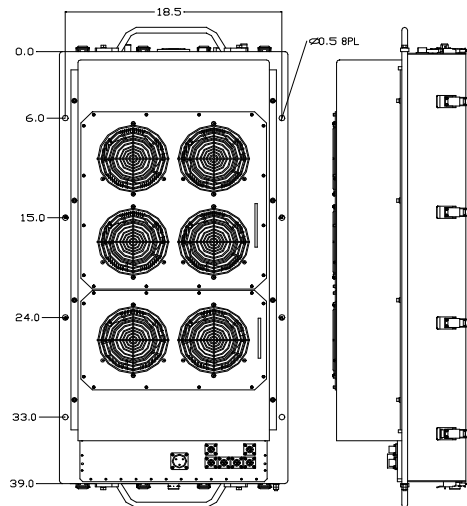
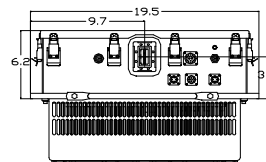
The SapphireBlu-Series GaN SSPA/BUC from Advantech Wireless Technologies is a high Performance GaN Technology based SSPA designed for Multi Carrier Operations in an outdoor design concept.

With High Reliability, High Linearity, and Low Energy Consumption these systems provide high power density in a compact, rugged, weatherproof package.

The Ultimate Solution for Direct to Home TV

Features

- Save 8 to 10 dB power compared to Indoor Klystron
- Save in Energy Cost, Satellite Bandwidth, CAPEX
- Can cover multiple transponders, full DVB-S2 enabled
- Rugged, Weatherproof Outdoor Package
- MIL-STD-188-164A Compliant
- Redundant Ready, Power Expandable to 2-5 kW by phase combining
- 2 years warranty, due to increased GaN Technology reliability
- Backed by over 25 years of Outdoor SSPA design and manufacturing
- Exceeds all barriers between Klystrons, TWTs and SSPAs
- We can now saturate all transponders of an entire satellite and obtain maximum bandwidth/power efficiency (using modular RF concept)



SapphireBlu-Series GaN 1000W Ku-Band BUC/SSPB/SSPA
With more linear power and higher MTBF than a 1250W TWTA

1000W Ku-Band BUC/SSPB/SSPA SapphireBlu-Series GaN			
General Specifications			
KS /KX			
Operating Frequency	14.0 – 14.5 GHz (KS)		13.75 – 14.5 GHz (KX)
L-Band input (BUC)	950 – 1450 MHz (KS)		950 – 1700 MHz (KX)
Output Power	1000W		
P _{SAT}	+60 dBm typ.		
P _{LINEAR}	+56.5 dBm minimum		
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	+70 dB minimum	
	SSPB (BUC)	+80 dB minimum	
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 max	SSPB (BUC) 1.4:1 max
Output VSWR	1.3:1 max		
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): -60 dBc max	
Harmonics	-50 dBc max @ P _{LINEAR}		
AM/PM conversion	<1.0°/dB P _{LINEAR}		
Third order IMD	< -25 dBc (two tones 5 MHz apart at P _{linear})		
Group delay	Linear	0.02 nsec/MHz max	Parabolic 0.003 nsec/MHz ² max
	Ripple	1 nsec p-p max	
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 (KS)		12.8 GHz (KX)
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 39.00" x 18.50" x 12.10" (990 x 470 x 307 mm)		
Weight	275 lbs (125 kg)		
AC input voltage	190 – 265 VAC (47-63 Hz)		
Power consumption	3.8kW at 46 dBm	5kW at 56 dBm	6.5kW at P _{SAT}
Interfaces	Input (RF or L-Band) Output Sample Port RS232/RS485	N type female N type female MS3102 type	AC line MS3102 type RF output WR75 Cover Ethernet RJ45 (Weatherized)
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 +55 °C with startup @ -40°C
	Humidity	100% condensing	
	Altitude	10,000' AMSL, derated by 2 °C/1000' from AMSL	

Ref.: PB-SAPPH-2G-Ku-1000W-22245

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