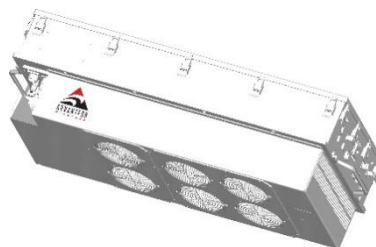


SapphireBlu-Series GaN 1000W SSPA/BUC

1250W TWTa alternative

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

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



1:2 Redundant Version

Overview

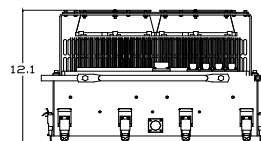
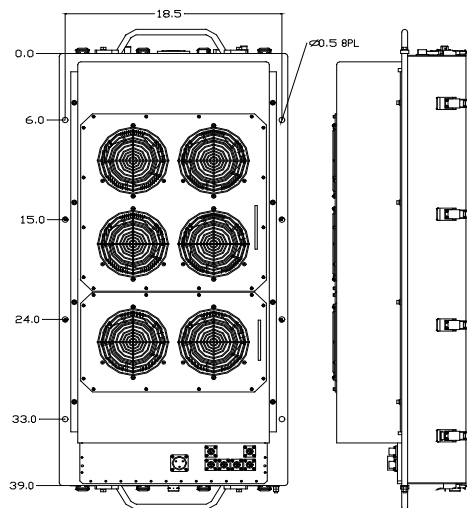
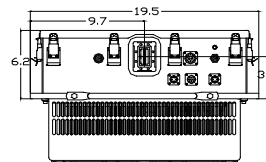
The SapphireBlu-Series GaN SSPA/BUC from Advantech Wireless Technologies is a high Performance GaN Technology based SSPA designed for Multi Carrier Operations in an outdoor design concept.

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 SSPA/BUC

1250W TWTa alternative

General Specifications				
	KS /KX /KL			
Operating Frequency	14.0 – 14.5 GHz (KS)		13.75 – 14.5 GHz (KX) 12.75 – 13.25 GHz (KL)	
L-Band input (BUC)	950 – 1450 MHz (KS)		950 – 1700 MHz (KX) 950 – 1450 MHz (KL)	
Output Power	1000W			
P _{SAT}	+60 dBm nominal			
P _{LINEAR}	+57.0 dBm minimum			
	P _{LINEAR} is the maximum combined transmit power of two equal amplitude continuous wave (CW) carriers 5MHz apart, when the third order intermodulation product power is -25dB relative to each carrier and the spectral regrowth is <-30 dBc @ 1.0 x symbol rate for QPSK/OQPSK/8PSK modulation.			
Gain	SSPA	68 ± 3 dB		
	SSPB (BUC)	78 ± 3 dB		
Gain adjustment range	20 dB in 1.0 dB steps			
Gain flatness over 500 MHz	SSPA: 2 dB 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	1.3:1			
Noise power density	-75 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 @ P _{LINEAR}			
AM/PM conversion	<1.0°/dB P _{LINEAR}			
Third order intermod (two tones)	-25 dBc two signals 5 MHz apart at total +57 dBm Plinear, versus each carrier			
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 (KS)		12.8 GHz (KX)	11.8 GHz (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 39.00” x 18.50” x 12.10” (990 x 470 x 307 mm)			
Weight	176 lbs (80 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 RF output Ethernet	MS3102 type WR75 Cover RJ45 (Weatherized)
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-SAPPH-2G-Ku-1000W-001-19227

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