



## 300W, 400W, 500W Ku-Band 800W, 1000W C, X-Band GaN SSPA BUC Rack-mount

### Overview

Designed for use primarily in satellite communications applications. These units are characterized by high linearity and high power efficiency, as well as excellent thermal efficiency and dependability over the full operating temperature range.

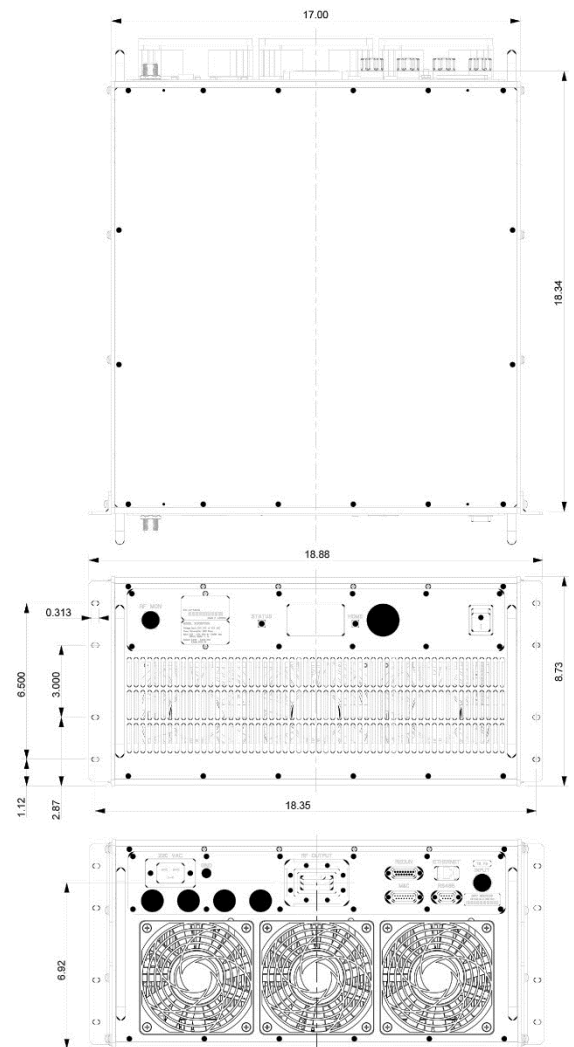
- Ku-Band GaN: 300W / 400W / 500W
- C-Band GaN: 800W / 1000W
- X-Band GaN: 800W / 1000W

### Features

- Redundancy ready
- Light weight and compact – highest power density on the market
- High thermal dissipation efficiency
- Over temperature shutdown
- High Mean Time Before Failure (MTBF over 100K hours)
- Monitor & Control Interface
- Serial and Analog M&C
- Internet web page interface
- Alarms: Voltage/Current/Temperature/Summary
- Control: Mute/Gain
- RF power detection

### Options

- Frequency range options available
- 1:1 and 1:2 Redundancy Systems
- Extended Warranty
- BUC: BUILT IN with or without internal 10 MHz ref





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### Technical Specifications

Ku-Band			
Electrical Characteristics	300W	400W	500W
RF Output at P Sat	55 dBm	56 dBm	57 dBm
RF Output at P Lin	52 dBm	53 dBm	54 dBm
Output Frequency Range	Lower Ku: 12.75 – 13.25 GHz	Standard Ku: 14.00 – 14.50 GHz	Extended Ku: 13.75 – 14.50 GHz
Input Frequency Range	Lower Ku: 950 – 1450 MHz	Standard Ku: 950 – 1450 MHz	Extended Ku: 950 – 1700 MHz
Local Oscillator Frequency	Lower Ku: 11.80 GHz	Standard Ku: 13.05 GHz	Extended Ku: 12.80 GHz
Gain Stability Over Temp.	Low Ku Band: $\pm 1.5$ dB nominal; $\pm 2.25$ dB max Standard Band: $\pm 1.5$ dB nominal; $\pm 2.0$ dB max Extended Band: $\pm 1.5$ dB nominal; $\pm 2.25$ dB max		
Gain Variation at fixed temp	Low Ku Band: $\pm 0.75$ dB over max over 40 MHz; $\pm 2.25$ dB over full band Standard Band: $\pm 0.5$ dB over max over 40 MHz; $\pm 2.0$ dB over full band Extended Band: $\pm 0.75$ dB over max over 40 MHz; $\pm 2.25$ dB over full band		
Linear Gain	70 dB min.		
User Adjustable Gain	20 dB nominal in 0.5 dB steps		
C-Band			
Electrical Characteristics	800W	1000W	
RF Output at P Sat	59 dBm	60 dBm	
RF Output at P Lin	56 dBm	57 dBm	
Output Frequency Range	Lower C: 5.725 – 6.425 GHz	Standard C: 5.85 – 6.425 GHz	Extended C: 5.85 – 6.725 GHz Insat C: 6.725 – 7.025 GHz
Input Frequency Range	Lower C: 975 – 1675 MHz	Standard C: 950 – 1525 MHz	Extended C: 950 – 1825 MHz Insat C: 1275 – 1575 MHz
Local Oscillator Frequency	Lower C: 4.75 GHz	Standard C: 4.9 GHz	Extended C: 4.9 GHz Insat C: 5.45 GHz
Gain Stability Over Temperature	$\pm 1.5$ dB nominal		
Gain Variation at fixed temperature	$\pm 0.5$ dB over max over 36 MHz; $\pm 2.0$ dB over full band		
Linear Gain	70 dB min.		
User Adjustable Gain	20 dB in 0.5 dB steps		
X-Band			
Electrical Characteristics	800W	1000W	
RF Output at P Sat	59 dBm	60 dBm	
RF Output at P Lin	56 dBm	57 dBm	
Output Frequency Range	7.9 – 8.4 GHz		
Input Frequency Range	950 – 1450 MHz		
Local Oscillator Frequency	6.95 GHz		
Gain Stability Over Temperature	$\pm 1.5$ dB nominal		
Gain Variation at fixed temperature	$\pm 0.5$ dB over max over 40 MHz; $\pm 2.0$ dB over full band		
Linear Gain	70 dB min.		
User Adjustable Gain	20 dB in 0.5 dB steps		



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Technical Specifications					
Ku, C, X Band					
Spectral Re-growth	-30dBc @PLinear				
Third order IMD (2 equal tones 5MHz apart)	-25 dBc, with 2 equal carriers at 3dB total power back off from rated power (P Sat -3dB)				
10MHz Reference	0dBm ± 5.0 dB - External via IF / (Internal 10MHz reference optional)				
	<b>@ 100 Hz</b>	<b>@ 1 KHz</b>	<b>@ 10 KHz</b>	<b>@ 100 KHz</b>	<b>@ 1 MHz</b>
Ref Phase Noise Requirement		-140 dBc/Hz max	-150 dBc/Hz max	-155 dBc/Hz max	
Local Oscillator Phase Noise	-63 dBc/Hz max	-73 dBc/Hz max	-83 dBc/Hz max	-93 dBc/Hz max	-103 dBc/Hz max
Output Spurious	-55dBc max @PLinear				
Harmonics	-50dBc max @PLinear				
VSWR	Input (1:50:1) Output (1:30:1)				
Power consumption					
	<b>Ku-Band</b>	<b>300W</b>	<b>400W</b>	<b>500W</b>	
Power consumption (at rated power) AC version		2400W	2500W	3200W	
	<b>C-Band</b>	<b>800W</b>		<b>1000W</b>	
Power consumption (at rated power) AC version		3500W		3750W	
	<b>X-Band</b>	<b>800W</b>		<b>1000W</b>	
Power consumption (at rated power) AC version		3750W		4000W	
Power requirement	220 VAC				
Interface					
Output Interface	Ku-Band: Waveguide, WR75G (Grooved) C-Band: Waveguide, CPR 137G (Grooved) X-Band: Waveguide, CPR 112G (Grooved)				
Input Interface	N-Type Female, 50 Ohms				
Connectors	AC (NEMA Type)	Ethernet: Rj45	M&C: DB15	RS-845: DB9	Redundancy: DB15
Mechanical					
Dimensions (L x W x H)	5 RU				
Weight	82Lb / 37kg				
Environmental					
	<b>Temperature Range (ambient)</b>		<b>Humidity</b>		<b>Altitude</b>
	-40°C to + 55°C (operating) -40°C to + 75°C (storage)		0 to 100% (condensing)		10,000 ft ASL

Ref.: PB-ALTX-Rack-5RU-GaN-20338