

# Sierra-Line

## Ku, C, X Band GaN SSPA BUC



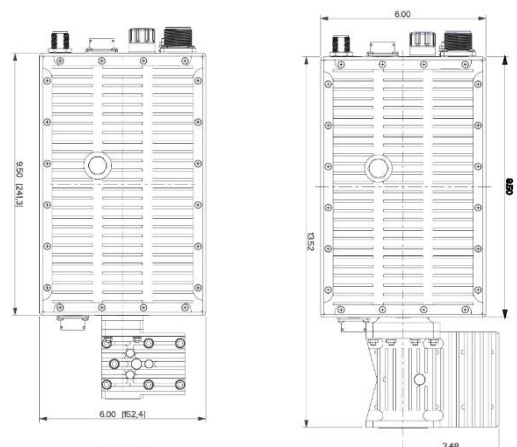
### Overview

The Sierra-Line SSPAs / BUCs are an ideal solution for both mobile and fixed Communication terminals. The Sierra-Line SSPAs / BUCs are designed for high efficiency resulting in an optimal compact form factor with high performance and reliability. With advanced customer interface and HTTP embedded web page, the operator is able to monitor and control the BUC and the System Redundancy.

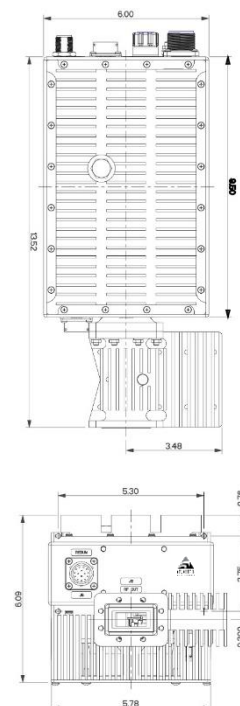
- Ku-Band: 25W / 40W / 50W
- C-Band: 40W / 50W / 60W / 80W / 100W
- X-Band: 40W / 50W / 60W / 80W / 100W

### Features

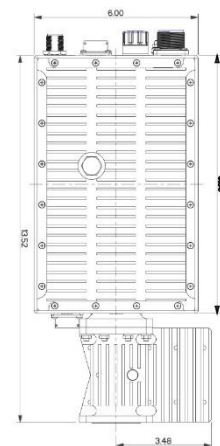
- Compact size
- Available in AC or DC
- Up to 100W of RF Output Power
- Up to 50W of Linear power
- Built-in monitoring of critical parameters such as: RF power detection, mute control, over temperature shutdown, summary alarm
- IP55 rated housing and fan (weather proof construction)
- M&C Interfaces included: RS485, RS232, Ethernet and dry-contacts
- WEB interface and SNMP monitoring
- Redundant Ready
- 1:1 and 1:2 built into the BUC eliminating external controller
- Ku-Band: Optional Dual LO (Switchable). covers both regular and ext. Ku-Band
- Other frequency ranges available
- Internal 10MHz reference
- Optional output sample port
- Optional Remote control unit



**Ku-Band**



**X-Band**



**C-Band**

## Sierra-Line GaN SSPA BUC

### Technical Specifications

#### Ku-Band

Electrical Characteristics	25W	40W	50W
RF Output at P Sat	44 dBm	46 dBm	47 dBm
RF Output at P Lin	41 dBm	43 dBm	44 dBm
Output Frequency Range	Low Ku: 12.75 – 13.25 GHz	Standard Ku: 14.00 – 14.50 GHz	Extended Ku: 13.75 – 14.50 GHz
Input Frequency Range	Low Ku: 950 – 1450 MHz	Standard Ku: 950 – 1450 MHz	Extended Ku: 950 – 1700 MHz
Local Oscillator Frequency	Low Ku: 11.80 GHz	Standard Ku: 13.05 GHz	Extended Ku: 12.80 GHz
Gain Stability Over Temp.	Low Ku Band: ± 1.5 dB nominal; ± 2.25 dB max Standard Band: ± 1.5 dB nominal; ± 2.0 dB max Extended Band: ± 1.5 dB nominal; ± 2.25 dB max		
Gain Variation at fixed temp	Low Ku Band: ± 0.75 dB over max over 40 MHz; ± 2.25 dB over full band Standard Band: ± 0.5 dB over max over 40 MHz; ± 2.0 dB over full band Extended Band: ± 0.75 dB over max over 40 MHz; ± 2.25 dB over full band		
User Adjustable Gain	20 dB nominal in 0.5 dB steps		

#### C-Band

Electrical Characteristics	40W	50W	60W	80W	100W
RF Output at P Sat	46 dBm	47 dBm	48 dBm	49 dBm	50 dBm
RF Output at P Lin	43 dBm	44 dBm	45 dBm	46 dBm	47 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	
Linear Gain	70 dB nominal				
Max Input Power w/o Damage	0 dBm				
Gain flatness Over Full Band	± 2.0 dB max				
Gain Slope	± 0.4 dB max / 40 MHz max.				
Gain Variation	± 2.0 dB over max over operating temperature range				
Gain Adjustment Range	20 dB in 0.1 dB steps				
In/Output Return Loss (VSWR)	14 dB min. (1.5:1 max)				

#### X-Band

Electrical Characteristics	40W	50W	60W	80W	100W
RF Output at P Sat	46 dBm	47 dBm	48 dBm	49 dBm	50 dBm
RF Output at P Lin	43 dBm	44 dBm	45 dBm	46 dBm	47 dBm
Output Frequency Range	7.9 – 8.4 GHz				
Input Frequency Range	950 – 1450 MHz				
Local Oscillator Frequency	6.95 GHz				
Linear Gain	70 dB nominal				
Max Input Power w/o Damage	0 dBm				
Gain flatness Over Full Band	± 2.0 dB max				
Gain Slope	± 0.4 dB max / 40 MHz max.				
Gain Variation	± 2.0 dB over max over operating temperature range				
Gain Adjustment Range	20 dB in 0.1 dB steps				
In/Output Return Loss (VSWR)	14 dB min. (1.5:1 max)				

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## Sierra-Line GaN SSPA BUC

### 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)				
	<b>@ 100 Hz</b>	<b>@ 1 KHz</b>	<b>@ 10 KHz</b>	<b>@ 100 KHz</b>	<b>@ 1 MHz</b>
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

Ku-Band	25W		40W		50W
Power consumption (at rated power) AC version	200W		350W		400W
C -Band	40W	50W	60W	80W	100W
Power consumption (at rated power) AC version	300W	350W	400W	450W	500W
X -Band	40W	50W	60W	80W	100W
Power consumption (at rated power) AC version	375W	400W	450W	475W	500W
Power requirement	110-220 VAC or 48 VDC isolated				
Prime Power Voltage	90 – 265 VAC (high power models 190 – 265)				
Prime Power Frequency	47 – 63 Hz				

#### 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, F-Type Female, 75 Ohms (optional)				
Connectors	DC Connector: MS3102R16-11P AC Connector: MS3102R16-10P	M&C: MS3112E14-19P	Redundancy: MS3112E14-15P (Optional)		

#### Mechanical

Cooling	Forced Air				
Dimensions (L x W x H)	9.3 x 6.0 x 5.8 / 23.6 x 15.2 x 14.7				
Weight	Ku-Band: 12.9 / 6.3 X-Band / C-Band: 14.7 / 6.7				

#### Environmental

Temperature Range (ambient)	Humidity	Altitude
-40°C to + 55°C (operating) -40°C to + 75°C (storage)	0 to 100% (condensing)	10,000 ft ASL

Ref.: PB-AWT-SLg-19073

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