



**Advantech**  
Wireless

# Ku-Band Hubmount 200W to 250W SapphireBlu™ SSPB/SSPA GaN Technology



MIL-STD-188-164 COMPLIANT

200W to 250W  
SSPBMg 3200-G series  
AWMA 3200-G series



## Features

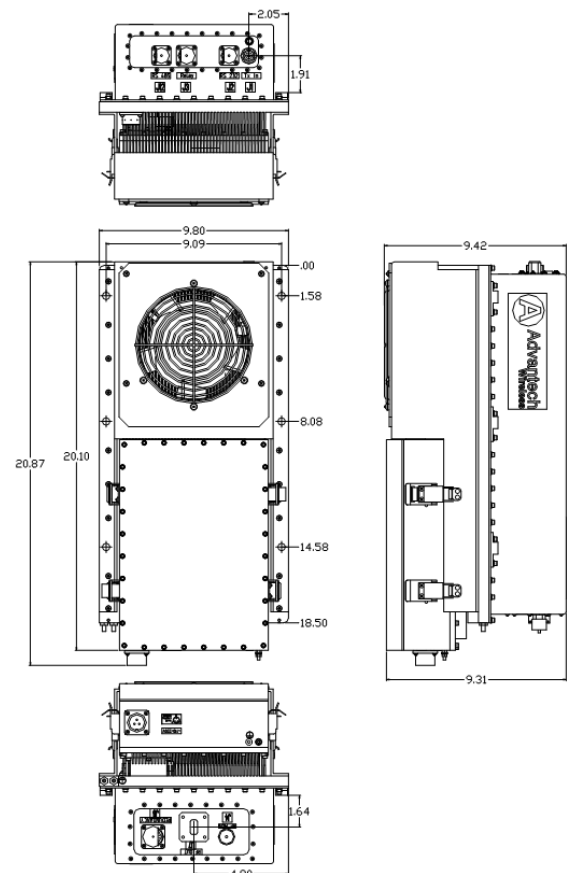
- Full range of output power of 200W and 250W in a single package
- SSPA or SSPB (BUC) option
- Super High linearity
- Redundant ready with no external controller
- Full M&C capability via RS232, RS485 or Ethernet port
- Built-in Forward precision powering metering
- Output RF calibrated Sample Port
- Redundant Systems shipped fully tested
- Infinite VSWR protection with automatic high reflected power shutdown
- Built-in 70 dB Receive Reject Filter
- Detachable power supply module
- Weatherproof construction
- CE marking

## Overview

Based on GaN technology the new G-Series Ku-Band BUCs provide highest possible power density and smallest size on the market. Combined with the traditional Advantech Wireless features, 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
- External Receive and Transmit Reject Filter
- Remote M&C panel with optional SNMP
- Handheld terminal
- Flexible and rigid waveguides
- Mounting frames
- High power terminations
- Replacement fans

# Ku-Band Hubmount SSPB SapphireBlu™ GaN

## General Specifications

|                                                | 200W                                                                                                                                                                                                       |                                                                   |                                                                           | 250W                   |          |  |
|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|---------------------------------------------------------------------------|------------------------|----------|--|
| Operating Frequency                            | KS 14.0 – 14.5 GHz<br>KX 13.75 - 14.5 GHz                                                                                                                                                                  |                                                                   |                                                                           |                        |          |  |
| L-Band input (BUC)                             | KS 950 – 1450 MHz<br>KX 950 – 1700 MHz                                                                                                                                                                     |                                                                   |                                                                           |                        |          |  |
| Output Power                                   | P <sub>SAT</sub> (typical)<br>P <sub>LINEAR</sub>                                                                                                                                                          | +53.0 dBm<br>+50.0 dBm                                            |                                                                           | +54.0 dBm<br>+50.5 dBm |          |  |
|                                                | P <sub>LINEAR</sub> 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<br>SSPB (BUC)                                                                                                                                                                                         | 62 ± 3 dB, Or optional 72 ± 3 dB<br>72 ± 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                                    | 1.3:1                                                                                                                                                                                                      |                                                                   |                                                                           |                        |          |  |
| Noise power density                            | -70 dBm/Hz in Transmit Band,<br>-150 dBm/Hz in Receive Band (10.95 GHz – 12.75 GHz)                                                                                                                        |                                                                   |                                                                           |                        |          |  |
| Spurious at P <sub>LINEAR 1</sub>              | SSPA: -65 dBc max                                                                                                                                                                                          |                                                                   | SSPB (BUC): -55 dBc max                                                   |                        |          |  |
| Harmonics                                      | -60 dBc @ P <sub>LINEAR</sub>                                                                                                                                                                              |                                                                   |                                                                           |                        |          |  |
| AM/PM conversion                               | <1°/dB P <sub>LINEAR</sub>                                                                                                                                                                                 |                                                                   |                                                                           |                        |          |  |
| Third order IMD (two tones)                    | -25 dBc two signal 5 MHz apart at P <sub>LINEAR</sub>                                                                                                                                                      |                                                                   |                                                                           |                        |          |  |
| Group delay                                    | Ripple 1 nsec p-p max over any 40 MHz band                                                                                                                                                                 |                                                                   |                                                                           |                        |          |  |
| Residual AM Noise                              | 0 – 10 kHz -45 dBc<br>10 kHz – 500 kHz -20 (1.25 + log F) dBc F = Frequency in kHz<br>500 kHz – 1 MHz -80 dBc                                                                                              |                                                                   |                                                                           |                        |          |  |
| SSPB (BUC)                                     |                                                                                                                                                                                                            |                                                                   |                                                                           |                        |          |  |
| Local Oscillator freq.                         | KS                                                                                                                                                                                                         | 13.05 GHz                                                         |                                                                           | KX                     | 12.8 GHz |  |
| Internal Reference frequency (optional)        | 10 MHz                                                                                                                                                                                                     | Aging/day<br>Aging/year<br>Stability                              | ±2 <sup>-10</sup><br>±5 <sup>-8</sup><br>±2 <sup>-8</sup> over temp range |                        |          |  |
| Max Phase Noise                                | -53 dBc/Hz at 10Hz<br>-69 dBc/Hz at 100Hz<br>-75 dBc/Hz at 1000Hz                                                                                                                                          |                                                                   | -90 dBc/Hz at 10 kHz<br>-105 dBc/Hz at 100 kHz                            |                        |          |  |
| External Reference Frequency phase noise (max) | 10 MHz<br>-120 dBc/Hz at 10Hz<br>-135 dBc/Hz at 100Hz<br>-150 dBc/Hz at 1000Hz                                                                                                                             |                                                                   | -155 dBc/Hz at 10 kHz<br>-160 dBc/Hz at 100 kHz                           |                        |          |  |
| Weight & Dimensions                            |                                                                                                                                                                                                            |                                                                   |                                                                           |                        |          |  |
| Dimensions                                     | L x W x H 20.1” x 9.8” x 9.31” (510.5x249x236.5 mm)                                                                                                                                                        |                                                                   |                                                                           |                        |          |  |
| Weight                                         | 48 lbs (22 kg)                                                                                                                                                                                             |                                                                   |                                                                           |                        |          |  |
| AC input voltage                               | 90 – 265 VAC (47-63 Hz )                                                                                                                                                                                   |                                                                   |                                                                           |                        |          |  |
| Power consumption at P Linear                  | 900W                                                                                                                                                                                                       |                                                                   |                                                                           | 1200W                  |          |  |
| Interfaces                                     | Input (RF or L-Band)<br>Output Sample Port<br>RS485/Ethernet                                                                                                                                               | N type female<br>N type female<br>MS3112 type                     | AC line MS3102 type<br>RF output WR75 Cover                               |                        |          |  |
| Environmental                                  | Temperature                                                                                                                                                                                                | Operating -30°C to +55 °C                                         | Option 1 -40°C to +55 °C<br>Option 2 -50°C to +65 °C                      |                        |          |  |
|                                                |                                                                                                                                                                                                            | Storage -55°C to +85 °C                                           |                                                                           |                        |          |  |
|                                                | Humidity<br>Altitude                                                                                                                                                                                       | 100% condensing<br>10,000’ AMSL, de-rated by 2 °C/1000’ from AMSL |                                                                           |                        |          |  |

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