

100W Ku-Band BUC/SSPB Airborne Grade Second Generation Advanced GaN Technology

- 100W SSPBM-K 2500-G Series
- ARINC 791
 - RTCA/DO-160G
 - MIL-STD-188-164



Features

- Outperforms ARINC 791 requirements
- Weatherproof construction, meets RTCA/DO-160G
- Low profile, ideal for Airborne SATCOM applications
- Saturated output power of 100W in a single compact package
- Input and Output TDMA and SCPC power detection.
- Reflected power protection
- M&C via RS-422/RS-485 or Ethernet configurations

Advantages

- High Reliability GaN design
- Unprecedented transmit power while still meeting airborne power dissipation limits.
- Excess power margin allows installation up to 10m away from antenna, for easier access.
- Accurate burst mode power detection.
- Forced air, base plate or ducted air operation ready
- Capable of operation at +70oC
- Distributed fan assembly allowing soft failure

Overview

Based on GaN technology the new 2500-G Series Ku-Band BUCs provide high power density in a compact size. Advantech Wireless solid expertise in Earth Station SSPB has now been combined with the specific features and operational requirements of airborne operation. The 2500-G Series' rugged and conservative thermal design allows operation over an extreme temperature range. These new Ku-Band BUCs are designed to meet stringent Commercial Airborne ARINC 791 and DO-160G specifications.

*Other power levels available upon request.

100W Ku-Band BUC/SSPB AIRBORNE Grade Second Generation Advanced GaN Technology

| General Specifications | |
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| Parameter | Limit of Specification |
| Operating Frequency | 13.75 – 14.50 GHz |
| L-Band input (BUC) | 950 – 1700 MHz |
| P _{1dB} | +49.0 dBm min |
| P _{Linear} | +48.0 dBm min. |
| Spectral Regrowth | -30 dBc max. @ 1.0 x symbol rate (QPSK, 0.2 roll-off) @ P _{Linear} |
| Maximum Input Power | +10 dBm max. without damage |
| Gain @ minimum attenuation | 65 dB min |
| Gain adjustment range | 20 dB min. in 0.25 dB steps (nom.) |
| Gain flatness per 500 MHz | 3 dB p-p max |
| Gain slope over 40 MHz | 1dB p-p dB max |
| Gain slope over 1 MHz | ± 0.04 dB max. |
| Gain variation over temperature | ± 2.0 dB max |
| Input Impedance and VSWR | 50 Ω 1.35:1 max. |
| Output VSWR | 1.20:1 max. |
| Noise power density | -86 dBm/Hz in Transmit Band, -120 dBm/4 kHz in Receive Band (10.95 GHz – 12.75 GHz) |
| Spurious | |
| Harmonics | -60 dBc max at P _{Linear} |
| AC Power related spurs | -30 dBc max. |
| SSB non-line related (10 Hz to 1 MHz from carrier) | -36 dBc max. |
| Non-line Related (>1 MHz from carrier) | -60 dBc max. |
| Input Power Detector | Range: -40 dBm to -3 dBm L Band input |
| Output Power Detector | Range: 32 dBm to 50 dBm Ku Band output |
| Reflected Power Detector | Range: 28 dBm to 46 dBm |
| Local Oscillator freq. | 12.8 GHz |
| Phase Noise (max.) | -35 dBc/Hz at 10Hz -93 dBc/Hz at 100 kHz -63 dBc/Hz at 100Hz -103 dBc/Hz at 1 MHz -73 dBc/Hz at 1000Hz -83 dBc/Hz at 10 kHz |
| External Reference Frequency | 10 MHz (+2 dBm ± 5 dB) |
| Ref. Phase noise (max) | -120 dBc/Hz at 10Hz -160 dBc/Hz at 10 kHz -135 dBc/Hz at 100Hz -160 dBc/Hz at 100 kHz -150 dBc/Hz at 1000Hz |
| M&C Electrical Interface | RS-485/RS-422 and Ethernet options |
| M&C Summary | Monitor: Temperature, fans, power supplies, detected RF levels (input, output, reflected), etc. Control: Attenuator setting, mute, etc. |
| RF Inhibit Input | Separate discrete interface to mute KRFU within 1 ms of applied signal |
| Physical Characteristics | |
| Dimensions | L x W x H 16.22"x13.75x2.91" (412x350x74 mm) |
| Weight | 22lbs (10 kg) nom. |
| Input voltage | 115VAC ±8 VAC (360-800 Hz) |
| Power consumption | 550W typ at 50W output, 700W max. @ rated P1dB |
| Interface Connectors | IF Input (L-Band): TNC female 10 MHz Ref. Input: TNC female RF output: WR62 AC line: MS3102 type |
| Environmental Characteristics | |
| Temperature | Operating, Short Term: -40°C to +70°C Operating, Long Term: -15°C to +55°C Non-Operating: -55°C to +85 °C |
| Other | In accordance with applicable parts of RTCA/DO-160G Category A1 |

Ref.: PB-SSPBM-2G-2500G-Ku-100W-18130

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