

1000W Ku-Band Indoor BUC/SSPB/SSPA Second Generation GaN Technology

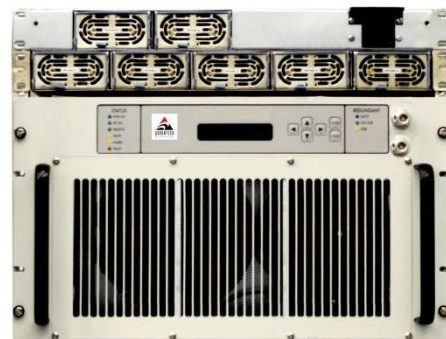
SSPA
SSPB (BUC)

ARMag-K
ARMUg-K

5200-SapphireBlu™ series
5200-SapphireBlu™ series

Overview

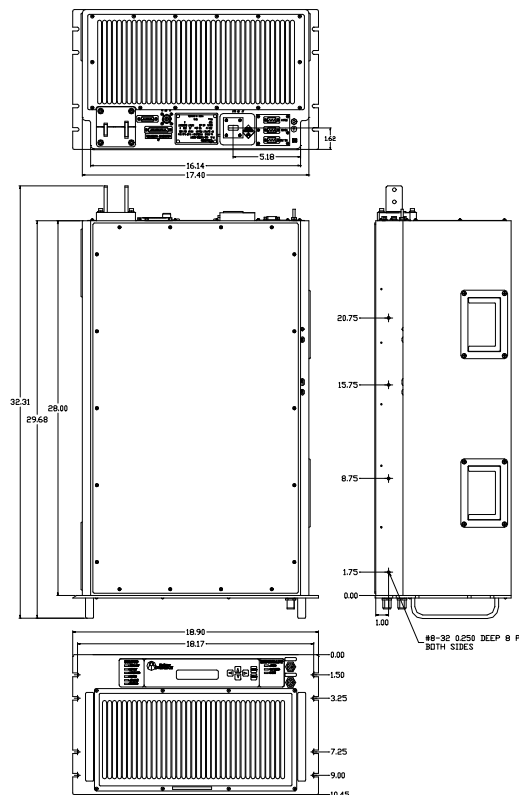
The 1000W Ku-Band Indoor unit is a high performance GaN technology based Indoor SSPA / BUC designed for Multi Carrier Operations. High Reliability, High Linearity and Low Energy Consumption in a compact indoor package.



The Ultimate Solution for Direct to Home TV

Features

- Redundant Ready, Power Expandable to 2-4 kW by phase combining
- Exceeds all barriers between Klystrons, TWTs and SSPAs
- Save in Energy Cost, Satellite Bandwidth, CAPEX
- Can cover multiple transponders, full DVB-S2 enabled
- Indoor Package, MIL-STD-188-164A Compliant
- We can now saturate all transponders of an entire satellite and obtain maximum bandwidth/power efficiency (using modular RF concept)
- 2 years warranty, due to increased GaN Technology reliability
- Backed by over 25 years of Indoor SSPA design and manufacturing



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| Technical Specifications | | | | |
|---|--|--|---------------------------|---|
| Output Power | | 1000W | | |
| P _{SAT} , at Flange | | +60 dBm nominal | | |
| P _{LINEAR} | | +56 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. | | |
| Operating Frequency | KS | 14.0 – 14.500 GHz | KX | 13.75 –14.5 GHz |
| L-Band input (BUC) | KS | 950 – 1450 MHz | KX | 950 – 1700 MHz |
| 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 | <1.0º/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. | KS –13.050 GHz | | KX – 12.800 GHz | |
| 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 10 kHz | | -73 dBc/Hz at 1000Hz | |
| | -63 dBc/Hz at 100Hz | | -83 dBc/Hz at 10 KHz | |
| External Reference | 10 MHz | | | |
| Frequency phase noise (max) | -120 dBc/Hz at 10Hz | | -150 dBc/Hz at 1000Hz | |
| | -135 dBc/Hz at 100Hz | | -155 dBc/Hz at 10 kHz | |
| Weight & Dimensions | | | | |
| Dimensions (L x W x H) | 19” Rackmount 6 RU + 2 RU Power supply 28” deep | | | |
| Weight | 198 lbs (90 kg) | | | |
| AC input voltage | 190 – 265 VAC (47-63 Hz) | | | |
| Power consumption (nominal) | 3.8KW at 46 dBm | 5KW at 56 dBm | 6.5KW at P _{SAT} | |
| Interfaces | Input (RF or L-Band): N type female | | AC line: IEC 320 Inlet | |
| | Output Sample Port: N type female | | RF output: WR75 Cover | |
| | RS485/ Ethernet: DB9/RJ45 | | | |
| Environmental | Temperature | Operating 0ºC to +50 ºC | | |
| | | Storage -55ºC to +85 ºC | | |
| | Humidity | 5% to 95% non condensing | | |
| | Altitude | 10,000’ AMSL, de-rated by 2 ºC/1000’ from AMSL | | |

Ref.: PB-SAPPH-2G-Ku-Rack-1000W-001-23125

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