

Cascade - Line

300W/400W/500W X-Band GaN SSPA BUC

Overview

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

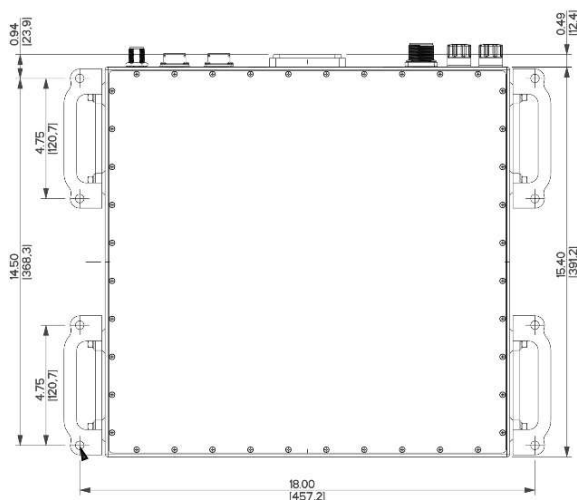
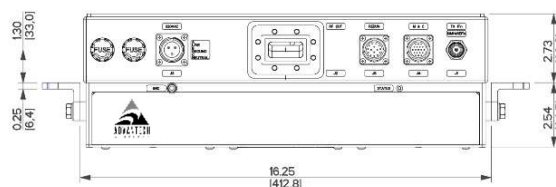
- X-Band: 300W / 400W / 500W

Features:

- Highest power density in the industry
- Up to 500W of Saturated RF Output Power
- Up to 200W of RF Linear power
- Designed to comply with the Mil-STD-461 and Mil-STD-810G
- Built-in monitoring of critical parameters such as: RF power detection, mute control, over temperature shutdown, summary alarm
- M&C Interfaces included: RS485, RS232, Ethernet and dry-contacts
- WEB interface and SNMP monitoring
- 1:1 and 1:2 built-in Redundant Ready to eliminate external controller

Options:

- Internal/External reference with auto-sensing
- Remote control unit
- External X-Band Tx and Rx band-pass and band-reject filters to comply with X-Band Certification Test



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Technical Specifications

| X-Band | | | |
|---------------------------------|---|--------|--------|
| Electrical Characteristics | 300W | 400W | *500W |
| RF Output at P Sat (typ.) | 55 dBm | 56 dBm | 57 dBm |
| RF Output at P Lin | 51 dBm | 52 dBm | 53 dBm |
| Output Frequency Range | Standard X-band: 7.9 – 8.4 GHz/Low X-band: 7.145 to 7.250 GHz | | |
| Input Frequency Range | Standard X-band: 950 – 1450 MHz/ Low X-band: 965-1070 MHz | | |
| Local Oscillator Frequency | Standard X-band: 6.95 GHz/ Low X-band: 6.180 GHz | | |
| Linear Gain | 70 dB min. | | |
| Gain Flatness | 3dB p-p max | | |
| Gain Slope | 1dB p-p max. over 40MHz | | |
| Gain Stability Over Temperature | ± 1.5 dB max. | | |
| User Adjustable Gain | 20 dB in 0.5 dB steps | | |

| | | | | | |
|--|---|-----------------|-----------------|-----------------|-----------------|
| Spectral Re-growth | -30dBc @PLinear | | | | |
| Third order IMD (2 equal tones 5MHz apart) | - 25dBc at Plin (MIL-STD-188-164B). | | | | |
| 10MHz Reference | 0dBm ± 5.0 dB - External via IF / (Internal 10MHz reference optional) | | | | |
| | @ 100 Hz | @ 1 KHz | @ 10 KHz | @ 100 KHz | @ 1 MHz |
| 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 |

| | | | | | |
|---------------------|---|--|--|--|--|
| Noise Power Density | -75 dBm/Hz in TX band, -155 dBm/Hz in RX band | | | | |
| Output Spurious | -60dBc max @PLinear | | | | |
| Harmonics | -50dBc max @PLinear | | | | |
| AM/PM | < 2deg/dB at PLin | | | | |
| VSWR | Input (1:50:1) Output (1:30:1) | | | | |

Power consumption

| X-Band | 300W | 400W | 500W |
|---|---------|-------|-------|
| Power consumption (at rated power) AC version | 2100W | 2300W | 2500W |
| Power requirement | 220 VAC | | |

Interface

| | | | |
|------------------|-------------------------------|--------------------|---------------------------|
| Output Interface | Waveguide, CPR 112G (Grooved) | | |
| Input Interface | N-Type Female, 50 Ohms | | |
| Connectors | AC Connector: MS3102R16-10P | M&C: MS3112E14-19P | Redundancy: MS3112E14-15P |

Mechanical

| | | | |
|------------------------|---|--|--|
| Dimensions (L x W x H) | 16.0 x 16.9 x 5.2 in. / 41.0 x 43.0 x 13.2 cm | | |
| Weight | 45 lbs / 20.4 kg | | |

Environmental

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

* Operating the unit at Psat long term could cause permanent damage. For maximum reliability and link performance, the units should not be operated at more than 250W

Ref.: PB-AWT-CMLg-X-25044

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