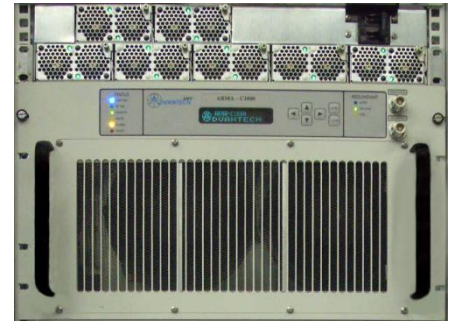


8W to 500W
ARM-K® series



Features

- Full range of output power from 8W to 500W
- High linearity
- Redundant ready with no external controller
- Full M&C capability via RS485 or Ethernet port
- Forward and Reflected power monitoring
- Output Sample Port
- Redundant Systems shipped fully tested
- Infinite VSWR protection with automatic high reflected power shutdown
- Built-in Receive Reject Filter
- Power factor correction
- CE marking

Overview

Advantech AMT Ku-Band line of Amplifiers and BUCs are intended for satellite up-link applications. The design of these units is based on Advantech's proven techniques resulting in high linearity and operating efficiency. Conservative thermal design contributes to the high MTBF for these units. Full monitor and control is provided via the serial or Ethernet ports. Special features such as automatic over-temperature shutdown and high-reflected power protection contribute to a trouble free operation.

Advantech also offers the SUMMIT modular SSPA system for either indoor or outdoor applications.

The full set of accessories made available will facilitate the integration of these units in any application.

The ARM-K series 19" rackmount SSPA/SSPB (BUC) is available in output power from 16W to 500W. Higher power operation may be provided using external phase combining techniques offering an output power up to 800W.

Please contact factory for more details.

Options

- 1:1 or 1:2 Redundant configuration
- Phase combined systems for higher power
- L-Band input (SSPB/BUC operation)
- SNMP interface

Accessories

- Mounting slides
- Remote M&C panel

Redundancy

Advantech AMT Ku-Band line of Amplifiers and BUCs may be configured to operate in 1:1 or 1:2 redundancy mode. No extra controller is required for the redundancy operation as the built-in controller in each unit provides this function. For 1:1 redundancy operation, in addition to the two units (operating and standby) a special redundancy kit is required. For 1:2 redundancy operation another redundancy kit is needed in addition to the three units. The kits include the waveguide switches, terminations, splitter, interconnecting cable assemblies and mounting frames.

All redundancy systems are delivered fully assembled, integrated, and tested.

Ku-Band Rack-mount SSPA/SSPB

Technical Specifications

Table A

| Band* | RF Band (GHz) | L-Band Input for BUC (MHz) | LO for BUC (GHz) | Output Power (W) |
|-------|---------------|----------------------------|------------------|------------------|
| KS | 14.0 – 14.50 | 950 – 1450 | 13.05 | 8 - 500 |
| KX | 13.75 – 14.50 | 950 – 1700 | 12.80 | 8- 500* |
| KL | 12.75 – 13.25 | 950 – 1450 | 11.80 | 8- 200 |

*Other frequency sub-bands are available. Please consult factory.

Table B

SSPA/SSPB (BUC) Line

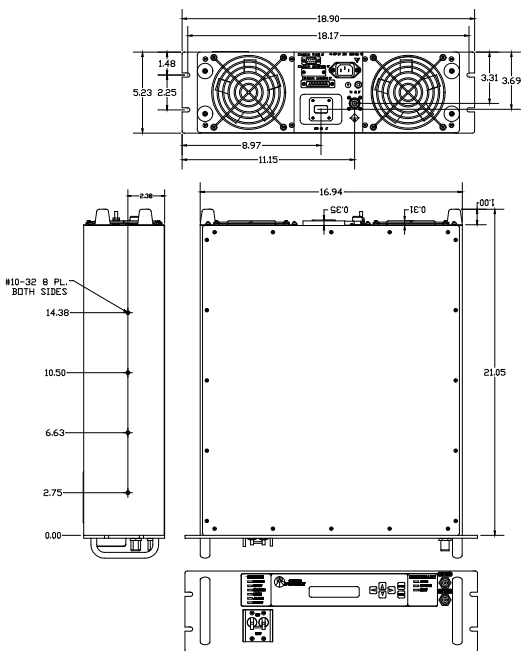
| Rated Power W | P _{sat} dBm | P _{1dB} dBm | Gain (dB) (minimum) | | Availability in this series | | | Power consumption W (nominal) | Weight | Dimensions Outline |
|---------------|----------------------|----------------------|---------------------|-----|-----------------------------|----|----|-------------------------------|------------------|--|
| | | | SSPA | BUC | KS | KX | KL | | | |
| 8W | +39 | +38 | +49 | +59 | √ | √ | √ | 170 | 37.5 lbs (17 kg) | 3RU Outline #1 |
| 10W | +40 | +39 | +50 | +60 | √ | √ | √ | 180 | | |
| 12W | +41 | +40 | +51 | +61 | √ | √ | √ | 200 | | |
| 16W | +42 | +41 | +52 | +62 | √ | √ | √ | 250 | | |
| 20W | +43 | +42 | +53 | +63 | √ | √ | √ | 300 | | |
| 25W | +44 | +43 | +54 | +64 | √ | √ | √ | 350 | | |
| 30W | +45 | +44 | +55 | +65 | √ | √ | √ | 550 | 66 lbs(30kg) | 4RU Outline #2 |
| 40W | +46 | +45 | +56 | +66 | √ | √ | √ | 800 | | |
| 50W | +47 | +46 | +57 | +67 | √ | √ | √ | 900 | | |
| 60W | +48 | +47 | +58 | +68 | √ | √ | √ | 950 | | |
| 80W | +49 | +48 | +59 | +69 | √ | √ | - | 1000 | | |
| 100W | +50 | +49 | +60 | +70 | √ | √ | - | 1100 | 99 lbs(45kg) | 5RU Outline #3 |
| 125W | +51 | +50 | +61 | +71 | √ | √ | √ | 1400 | | |
| 150W | +52 | +51 | +62 | +72 | √ | √ | - | 1700 | | |
| 200W | +53 | +52 | +63 | +73 | √ | √ | √ | 2000 | 198 lbs(90kg) | 8RU Outline #4 +2RU for power supply shelf |
| 250W | +54 | +53 | +64 | +74 | √ | √ | - | 2200 | | |
| 300W | +55 | +54 | +65 | +75 | √ | √ | - | 3500 | | |
| 400W | +56 | +55 | +66 | +76 | √ | √ | - | 4500 | | |
| 500W | +57 | +56 | +67 | +77 | √ | √ | - | 5500 | | |

Ku-Band Rack-mount SSPA/SSPB

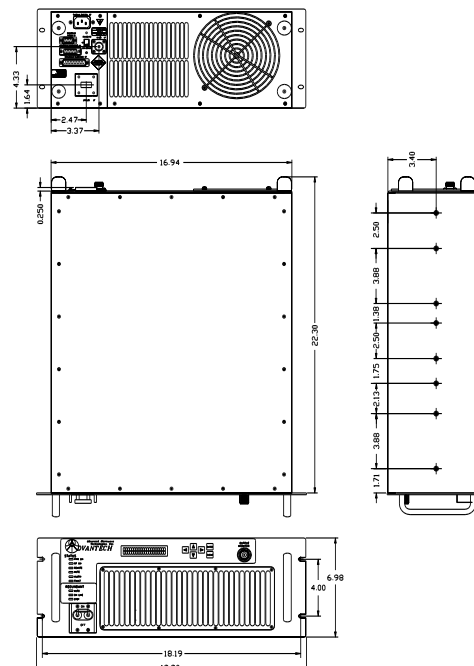
General Specifications

| | | |
|--|---|--|
| Operating Frequency | See table A | |
| L-Band input (BUC) | See table A | |
| Output Power | See table B | |
| Gain | See table B | |
| Gain adjustment range | 20 dB in 0.1 dB steps | |
| Gain flatness over full band | SSPA ± 1 dB max | SSPB ± 1.5 dB max |
| Gain slope over 40 MHz | SSPA ± 0.3 dB max | SSPB $\pm 0.0\%$ dB max |
| Gain variation over temperature | ± 1.0 dB max @ center frequency | |
| Input Impedance and VSWR | 50 Ω SSPA 1.3:1 | SSPB (BUC) 1.4:1 |
| Output VSWR | 1.25:1 | |
| Noise power density | -70 dBm/Hz in Transmit Band, -145 dBm/Hz in Receive Band (10.95 – 12.75 GHz) | |
| Spurious at P1dB | -65 dBc max | |
| Harmonics | -40 dBc @ P1dB, -50 dBc @ P1dB -3 dB max | |
| AM/PM conversion | 2.5°/dB at P1dB | |
| Third order intermod (two tones) | -25 dBc at 3 dB total back-off from rated P1dB (-23dBc max for 500W KX unit) | |
| Group delay | Linear | 0.02 nsec/MHz max |
| | Parabolic | 0.003 nsec/MHz ² max |
| | Ripple | 1 nsec p-p max |
| Residual AM Noise | 0 – 10 kHz | -45 dBc |
| | 10 kHz – 500 kHz | -20 (1.25 + log F) dBc |
| | 500 kHz – 1 MHz | -80 dBc |
| | F = Frequency in kHz | |
| SSPB (BUC) | | |
| Local Oscillator frequency | See table A | |
| Reference frequency | 10 MHz | stability $\pm 1^{-8}$ over temp range aging $\pm 1^{-7}$ /year |
| Phase Noise | -60 dBc/Hz at 10Hz | -85 dBc/Hz at 10 kHz |
| | -65 dBc/Hz at 100Hz | -95 dBc/Hz at 100 kHz |
| | -75 dBc/Hz at 1000Hz | |
| External Reference Frequency phase noise (max) | -115 dBc/Hz at 10Hz | -150 dBc/Hz at 10 kHz |
| | -135 dBc/Hz at 100Hz | -160 dBc/Hz at 100 kHz |
| | -148 dBc/Hz at 1000Hz | |
| Weight & Dimensions | See table B | |
| AC input voltage | Up to 125W output power | 95 - 265 VAC, 47-63 Hz, Option 48V DC |
| | 150W output power and higher | 220VAC 47 – 63 Hz |
| Cooling system | Forced air with front intake | |
| Interfaces | Input (RF or L-Band) | N type female |
| | Output Sample Port | N type female |
| | RF output | WR75 |
| | AC line | IEC 320 inlet |
| | RS232 serial port | D-sub 9S |
| | RS485 | D-sub 9S |
| | Ethernet (option) | RJ45 |
| Environmental | Temperature | Operating 0°C to +50 °C Storage -55°C to +85 °C |
| | Humidity | 5% to 95% non-condensing |
| | Altitude | 10,000' AMSL, derated by 2 °C/1000' from AMSL |

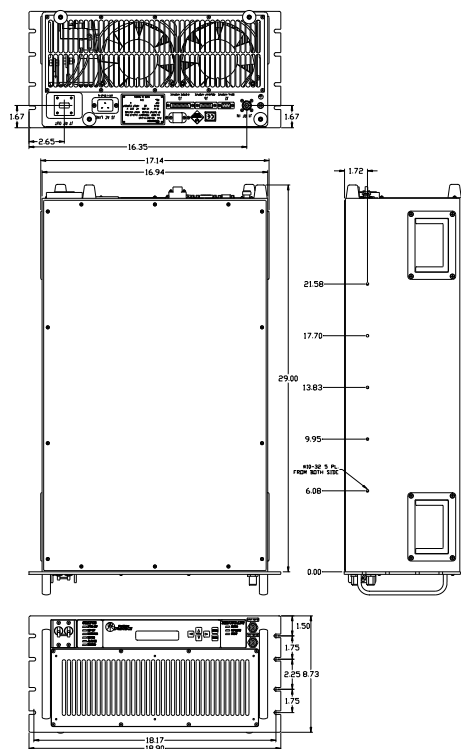
Ku-Band Rack-mount SSPA/SSPB



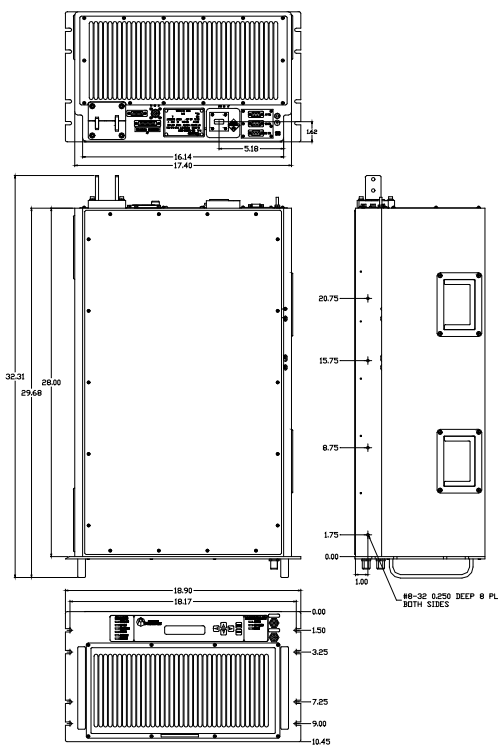
Outline 1



Outline 2



Outline 3



Outline 4

An ISO 9001 : 2008 Company



Ref.: PB-ARMA-Ku-8-500-11055