

Ku-Band Hub-mount SSPB



150W to 250W $AWM-4000K^{TM}$ series



Features

- Full range of output power up to 250W in a single package
- 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, assembled and tested
- Infinite VSWR protection with automatic high reflected power shutdown
- Built-in Receiver Reject Filter
- Weatherproof construction

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.

The AWM-K series 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.

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

Outline Drawing

Table A

| Band* | RF Band (GHz) | L-Band Input for BUC (MHz) | LO for BUC (GHz) | Output Power (W) | |
|-------|------------------|----------------------------------|------------------------|---------------------|--|
| KS | 14.00 - 14.50 | 950-1450 | 13.05 | 150 - 250 | |
| KX | 13.75 - 14.50 | 950-1700 | 12.80 | 150 - 250 | |
| KL | 12.75 - 13.25 | 950-1450 | 11.80 | 150 - 250 | |

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

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.

Options

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

Accessories

- Antenna Mounting kits
- External Receive Reject Filter
- Remote M&C panel
- Handheld terminal

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Technical Specifications

SSPA/SSPB (BUC) Line

Table B

| 00. A | GOI AIGGI B (BGG) EIRIG | | | | | | |
|---------------------|-------------------------|-------------|------------------------|-----|-------------------------------------|---------|--------------------------|
| Rated Power W | Psat dBm | P1dB dBm | Gain (dB) (minimum) | | Power consumption W (nominal) | Weight | Dimensions |
| VV | | | SSPA | BUC | | | |
| 150W | +52 | +51 | +62 | +72 | 1200 | 128 lbs | 30.00"x 16.00" x 11.00" |
| 200W | +53 | +52 | +63 | +73 | 1500 | (58 kg) | (762 x 406 x 280 mm) |
| 250W | +54 | +53 | +64 | +74 | 2000 | (30 kg) | (702 X 400 X 200 IIIIII) |

| 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 | ± 1dB max | | | |
| Gain slope over 40 MHz | ± 0.3 dB max | | | |
| Gain variation over temperature | ± 1 dB max | | | |
| Input Impedance and VSWR | 50 Ω SSPA 1.3:1 | SSPB (BUC) 1.4:1 | | |
| Output VSWR | 1.25:1 | 33FB (B0C) 1.4.1 | | |
| Noise power density | _ | Band, -145 dBm/Hz in Receive band (10.95 – | | |
| · · · · · · | 12.75 GHz) | Barid, -145 dbiii/HZ iii Neceive Barid (10.95 – | | |
| Spurious at P1dB | -65 dBc max | | | |
| Harmonics | -40 dBc @ P1dB, -50 dBc @ P1dB -3 dB max | | | |
| AM/PM conversion | 2.5º/dB at P1dB | | | |
| Third order intermod (two tones) | -25 dBc at 3 dB total back-off from rated P1dB | | | |
| Group delay | Linear 0.02 nsec/MHz max | | | |
| | Parabolic 0.003 nsec/MHz ² max | | | |
| | Ripple 1 nsec p-p ma | | | |
| Residual AM Noise | 0 – 10 kHz -45 d | | | |
| | 10 kHz – 500 kHz-20 (⁻ 500 kHz – 1 MHz -80 d | | | |
| SSPB (BUC) | | | | |
| Local Oscillator frequency | See table A | | | |
| Reference frequency | 10 MHz | | | |
| Phase Noise | -50 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 | -115 dBc/Hz at 10Hz | -150 dBc/Hz at 10 kHz | | |
| phase noise (max) | -135 dBc/Hz at 100Hz | -160 dBc/Hz at 100 kHz | | |
| | -148 dBc/Hz at 1000Hz | | | |
| Weight & Dimensions | See table B | | | |
| AC input voltage | 220 VAC 47 – 63 Hz | | | |
| Interfaces | Input (RF or L-Band) | N type female | | |
| | Output Sample Port | N type female | | |
| | RF output | WR75 cover | | |
| | AC line | MS3102 type | | |
| | RS232 serial port | MS3112E10-6P | | |
| | RS485/Ethernet | MS3112 type | | |
| Environmental | Temperature Opera | ating -30°C to +55 °C option 1 -40°C to +55 °C option 2 -50°C to +50 °C | | |
| | Stora | ge -55°C to +85 °C | | |
| | | condensing | | |
| | | | | |

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