



20W to 80W  
SSPB-S2100K<sup>®</sup> series



### Features

- Converts L-Band to Ku-Band (see table A)
- Integrated amplifier with an output power of 20W to 80W (see table A)
- Phase-locked oscillator to external 10MHz reference
- High linearity (low intermodulation products)
- Built-in Receive Reject Filter
- Remote Monitor & Control
- Protection against thermal runaway and out-of-lock conditions
- Built-in power supply
- Light weight
- Weatherproof package
- Compact packaging
- CE Marking

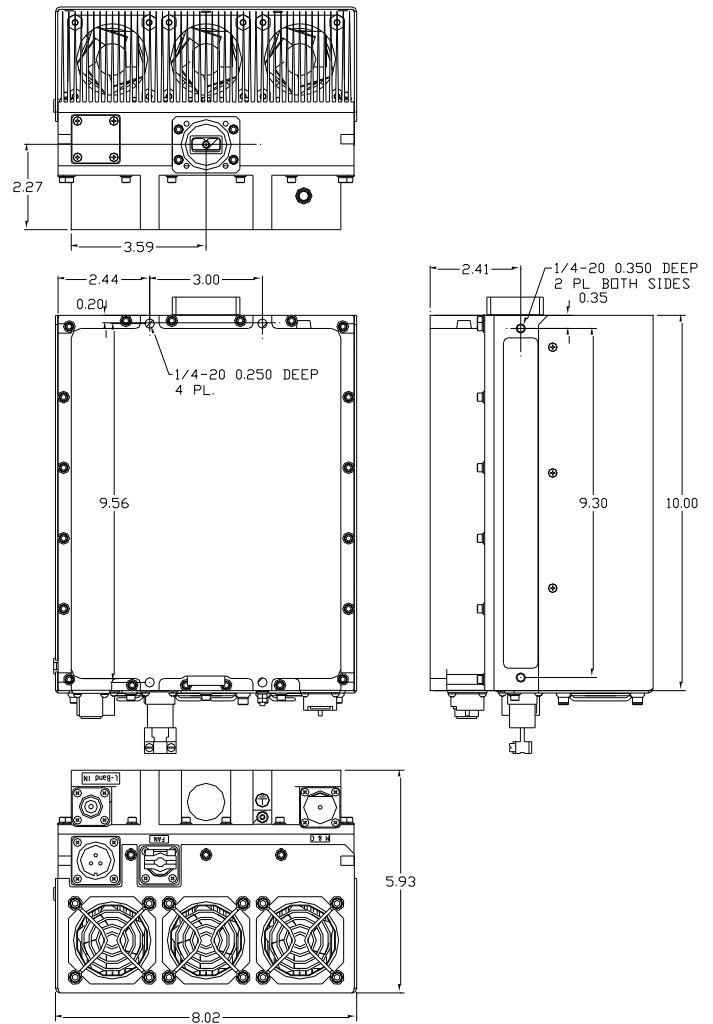
### Overview

The SSPB-S2100K<sup>®</sup> series are hub-mount up-converter transmitters, operating in the Ku-Band. The SSPB-S2100K<sup>®</sup> is an integrated unit, complete with power supply, phase-locked oscillator, mixer, filter and cooling mechanism. Intended for outdoor operation, the SSPB-2100K<sup>®</sup> provides the utmost in convenience and efficiency. Other SSPB's are also available for higher powers or for operation at other up-link frequencies.

The design of these units is based on ADVANTECH AMT<sup>™</sup> industryproven reliable solid-state high power amplifiers. The use of high efficiency power supply and conservative thermal designs contribute to the trouble-free operation of the amplifier. Built-in microprocessor controller provides the capability for serial port interfaces (RS232/485) for remote monitoring and control.

### Application

The SSPB-2100K<sup>®</sup> series convert an L-Band signal to the Ku-band frequency (see table A). Designed for Ku-Band satellite up-link applications, the SSPB K series are available in output power from 8W to 500W. The SSPB-S2100K<sup>®</sup> series are fully integrated units from 20W to 80W output power designed for mounting outdoors, near the hub of an antenna.



**Table A**

| Band | RF Band (GHz) | IF Band (MHz) | Output Power W | LO (GHz) |
|------|---------------|---------------|----------------|----------|
| KS   | 14.00 – 14.50 | 950 - 1450    | 20-80          | 13.05    |
| KX   | 13.75 – 14.5  | 950 - 1700    | 20 -60         | 12.8     |

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

### Accessories

- Remote M&C panel (Ethernet port optional)
- Handheld terminal
- Boom mounting kit

# Compact Ku-Band Hub-mount SSPB

| Technical Specifications             | 20W       | 25W   | 30W          | 40W                    | 50W             | 60W                                    | 80W   |       |
|--------------------------------------|-----------|---|--------------|------------------------|-----------------|--|-------|-------|
| <b>Electrical Characteristics</b>    |           |   |              |                        |                 |  |       |       |
| KS                                   | √         | √   | √            | √                      | √               | √                                      | √     |       |
| KX                                   | √         | √   | √            | √                      | √               | √                                      | -     |       |
| Output power (P <sub>SAT</sub> )     | dBm       | 43  | +44          | +45                    | +46             | +47                                    | +48   | + 49  |
| Output power (P <sub>1dB</sub> ) min | dBm       | +42   | +43          | +44                    | +45             | +46                                    | +47   | +48   |
| Conversion gain @ maximum setting    |           | 63 dB   | 64 dB        | 65 dB                  | +66 dB          | 67 dB                                  | 68 dB | 69 dB |
| Gain adjustment range                |           | 20 dB min   |              |                        |                 |  |       |       |
| Input/Output frequency range         |           | See table A on front page   |              |                        |                 |  |       |       |
| Max input power without damage       |           | +10 dBm   |              |                        |                 |  |       |       |
| Gain flatness                        |           | 3.0 dB p-p , max over full band, 1 dB p-p dB/40 MHz                                   |              |                        |                 |  |       |       |
| Gain variation over temperature      |           | ±1.5 dB over full operating range   |              |                        |                 |  |       |       |
| Gain variation over 24 hours         |           | ±0.5 dB max at constant temperature & drive level                                     |              |                        |                 |  |       |       |
| Input VSWR                           |           | 1.5:1 dB, min   |              |                        |                 |  |       |       |
| Output VSWR                          |           | 1.5:1 dB typical,   |              |                        |                 |  |       |       |
| Noise power density (NPD)            |           | -85 dBm/Hz in TX band<br>-135 dBm/Hz in RX band                                       |              |                        |                 |  |       |       |
| Spurious at rated power              |           | -55 dBc, max  |              |                        |                 |  |       |       |
| AM/PM conversion                     |           | 3°/dB typical (at P <sub>1dB</sub> )  |              |                        |                 |  |       |       |
| Third order IMD (2 tones)            |           | -25 dBc, max at 3 dB back-off from P <sub>1dB</sub>                                   |              |                        |                 |  |       |       |
| Local Oscillator frequency (LO)      |           | See table A on front page   |              |                        |                 |  |       |       |
| LO leakage                           |           | -20 dBm max   |              |                        |                 |  |       |       |
| Phase noise                          |           | -50 dBc/Hz at 10Hz  |              | -73 dBc/Hz at 1000Hz   |                 | -93 dBc/Hz at 100 kHz                  |       |       |
|                                      |           | -63 dBc/Hz at 100Hz   |              | -83 dBc/Hz at 10 kHz   |                 | -105 dBc/Hz at 1 MHz                   |       |       |
| Group delay (over any 40 MHz):       | Linear    | 0.02 ns /MHz, max   |              |                        |                 |  |       |       |
|                                      | Parabolic | 0.003 ns/MHz <sup>2</sup> , max   |              |                        |                 |  |       |       |
|                                      | Ripple    | 1 nsec p-p, max   |              |                        |                 |  |       |       |
| <b>External reference</b>            |           |   |              |                        |                 |  |       |       |
| Reference frequency                  |           | 10 MHz  |              |                        |                 |  |       |       |
| Reference frequency phase noise      |           | -115 dBc/Hz at 10 Hz  |              | -155 dBc/Hz at 10 kHz  |                 |  |       |       |
|                                      |           | -135 dBc/Hz at 100 Hz   |              | -160 dBc/Hz at 100 kHz |                 |  |       |       |
|                                      |           | -148 dBc/Hz at 1000 Hz  |              |                        |                 |  |       |       |
| Reference frequency level            |           | 0 dBm ± 5 dB supplied via input L-Band cable  |              |                        |                 |  |       |       |
| <b>Power Requirements</b>            |           |   |              |                        |                 |  |       |       |
| Input voltage                        |           | 110 /220V AC (47-63 Hz) auto-ranging (90-132 V / 180-264 V)<br>24-35V DC or 40-60V DC |              |                        |                 |  |       |       |
| Power consumption (nominal)          |           | 250W  | 270W         | 300W                   | 350W            | 400W                                   | 450W√ | 500W  |
| <b>Mechanical Characteristics</b>    |           |   |              |                        |                 |  |       |       |
| Dimensions (L x W x H)               |           | 10" x 8" x4.8"<br>(254 x 203 x 114 mm)  |              |                        | DC              | 13" x 8" x4.8"<br>(330 x 203 x 114 mm) |       |       |
|                                      |           |   |              |                        | AC              | 13" x 8" x5.2"<br>(330 x 203 x 132 mm) |       |       |
| Weight                               |           | 14.4 lbs (6.5 kg)   |              |                        | 18 lbs (8.2 kg) |  |       |       |
| Interfaces:                          | RF input  | Type N ( optional SMA)  |              |                        | AC Line         | MS3102R16-10P                          |       |       |
|                                      | RF output | WR-75 contact   | RS-485/RS232 | MS3112E12-10P          | DC Line         | MS3102R16-10PX                         |       |       |
| <b>Environmental Conditions</b>      |           |   |              |                        |                 |  |       |       |
| Temperature:                         | Operating | -30°C to +55°C; Option: -40°C to +55°C;   |              |                        |                 |  |       |       |
|                                      | Storage   | -55°C to +85°C  |              |                        |                 |  |       |       |
| Humidity                             |           | 100%, condensing (2" rain/hour)   |              |                        |                 |  |       |       |
| Altitude                             |           | 10,000' AMSL, de-rated 2°C/1,000' from AMSL   |              |                        |                 |  |       |       |

