

FEATURES

- Converts L-Band to C-Band (see table A)
- Integrated amplifier with an output power of 50W to 250W (see table A)
- Phase-locked oscillator to external 10MHz reference
- High linearity (low intermodulation products)
- Weatherproof package
- Remote Monitor & Control
- Protection against thermal runaway and out-of-lock conditions
- Output sample monitoring port
- Field Replaceable Power Supply
- Built-in Harmonic Filter
- Compact packaging
- CE Marking

OPTIONS

- Internal High Stability 10 MHz Reference
- Redundant system
- Remote M&C panel (Ethernet port optional)

ACCESSORIES

- Redundancy Kit
- Mounting Frame

OVERVIEW

The SSPB-2000C® series are hub-mount up-converter transmitters, operating in the C-Band. The SSPB-2000C® is an integrated unit, complete with power supply, phase-locked oscillator, mixer, filter and cooling mechanism. Intended for outdoor operation, the SSPB-2000C® provides the utmost in convenience and efficiency. They are the smallest fully integrated units on the market today. Other SSPBs are also available for diverse powers or for operation at other up-link frequencies.

The design of these units is based on Advantech AMT™ industry proven reliable solid-state high power amplifiers. Built-in design features and assembly methods incorporated with efficient combining techniques result in an amplifier with exceptional linearity and operating efficiency. 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.

REDUNDANCY

With the addition of the appropriate waveguide and switch kit, The SSPB-2000C series converters can be easily converted for the operation in a redundant configuration with full remote Monitor and Control capability of the redundant system via serial interface.

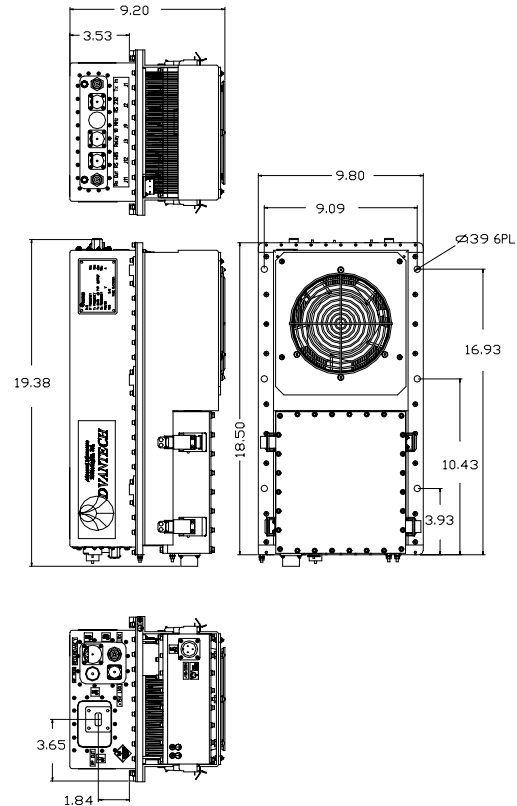


Table A

| Band | RF Band (GHz) | IF Band (MHz) | Output Power (W) | LO (GHz) |
|------|---------------|---------------|------------------|----------|
| CL | 4.400 – 5.000 | 950 – 1550 | 60 - 200 | 3.450 |
| CP | 6.425 – 6.725 | 1025 – 1325 | 50 - 200 | 5.400 |
| CI | 6.725 – 7.025 | 1225 – 1525 | 50 - 200 | 5.500 |
| CR | 5.725 – 6.025 | 950 – 1450 | 60 - 250 | 4.775 |
| CS | 5.850 – 6.425 | 950 – 1525 | 60 - 250 | 4.900 |
| CX | 5.850 – 6.725 | 950 – 1825 | 50 - 200 | 7.675 |

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

APPLICATION

The SSPB-2000C® series convert an L-Band signal to the C-band frequency (see table A). Designed for C-Band satellite up-link applications, the SSPB C series are available in output power from 2W to 1000W. For higher power Advantech provides phase-combined systems. The SSPB-2000C® series are fully integrated units with up to 250W output power designed for mounting outdoors, near the hub of an antenna.



C-BAND HUB-MOUNT SSPB (Solid State Power Block-Up Converter) 50W to 250W



SSPB-2000C® series

C-band Medium Power SSPB

| TECHNICAL SPECIFICATIONS | 50W | 60W | 80W | 100W | 125W | 150W | 200W | 250W |
|---|---|--|------------------------|---------------|------------------------|--|---------------------------------|--------|
| Electrical Characteristics | | | | | | | | |
| Availability in this series | | | | | | | | |
| CS, CR | Note 1 | √ | √ | √ | √ | √ | √ | √ |
| CL | Note 1 | √ | √ | √ | √ | √ | √ | Note 2 |
| CX, CI, CP | √ | √ | √ | √ | √ | √ | √ | Note 2 |
| Output power (P _{SAT}) (dBm) | +47 | +48 | +49 | +50 | +51 | +52 | +53 | +54 |
| Output power (P1dB) min. (dBm) | +46 | +47 | +48 | +49 | +50 | +51 | +52 | +53 |
| Conversion gain @ maximum setting at ambient temperature | 67 dB | 68 dB | 69 dB | 70 dB | 71 dB | 72 dB | 73 dB | 74 dB |
| Gain adjustment range | 20 dB | | | | | | | |
| Input/Output frequency range | See table A on front page | | | | | | | |
| Frequency sense | Non-inverting except for CX band (5.85 GHz – 6.725 GHz) | | | | | | | |
| Max input power without damage | +10 dBm | | | | | | | |
| Gain flatness | ±2.0 dB, max over full band, 0.3 dB/10 MHz at 25°C | | | | | | | |
| Gain variation over temperature | ±1.5 dB over full operating range | | | | | | | |
| Gain variation over 24 hours | ±0.25 dB max at constant temperature & drive level | | | | | | | |
| Input return loss | 18 dB | | | | | | | |
| Output return loss | 19 dB | | | | | | | |
| Noise power density | -70 dBm/Hz, max in TX band -140 dBm/Hz, max in RX band | | | | | | | |
| Spurious at rated power | -60 dBc, max | | | | | | | |
| Harmonics at rated power | -70 dBc, max | | | | | | | |
| AM/PM conversion at rated power | 2.5°/dB max. at P1dB, 1°/dB max. at 3 dB back-off | | | | | | | |
| Third order IMD (2 tones) | -26 dBc, max at 3 dB back-off from P1 dB | | | | | | | |
| Local Oscillator frequency (LO) | See table A on front page | | | | | | | |
| LO leakage | -20 dBm | | | | | | | |
| Phase noise | -50 dBc/Hz at 10Hz | | -75 dBc/Hz at 1000Hz | | -95 dBc/Hz at 100 kHz | | | |
| | -65 dBc/Hz at 100Hz | | -85 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 ² , max | |
| | Ripple | | 1 nsec p-p, max | | | | | |
| Reference (auto-switching) | | | | | | | | |
| <i>Note: In case external reference is not provided, the unit will automatically switch to internal reference. For 1:1 redundant operation, internal 10MHz reference is recommended</i> | | | | | | | | |
| Reference frequency | 10 MHz | | | | | | | |
| Reference frequency phase noise | -115 dBc/Hz at 10 Hz | | -148 dBc/Hz at 1000 Hz | | -160 dBc/Hz at 100 kHz | | | |
| | -135 dBc/Hz at 100 Hz | | -150 dBc/Hz at 10 kHz | | | | | |
| Reference frequency level | 0 dBm ± 5 dB | | | | | | | |
| Power Requirements | | | | | | | | |
| AC input voltage | 110 /220 VAC Auto ranging (47-63 Hz) | | | | | | | |
| Power consumption (nom.) (W) | 400W | 600W | 800W | 900W | 1000W | 1200W | 1300W | 1500W |
| Mechanical Characteristics | | | | | | | | |
| Dimensions (L x W x H) | 19.38"x 9.80" x 9.20" (49.22 x 25.40 x 23.36 cm) | | | | | | | |
| Weight | 44 lbs (20 kg) | | | | | | 52.80 lbs (24 kg) | |
| Interfaces: | RF input | N Type (Female) | Redundancy | MS3112E16-26P | RF output | CPR137 contact (for CL series – CPR 187) | | |
| | Relay port | MS3112E12-10P | RS-232 | MS3112E10-6P | | | | |
| | AC Line | MS3102R16-10P | RS-485 | MS3112E10-6P | | | | |
| Environmental Conditions | | | | | | | | |
| Temperature: | Operating | -30°C to +55°C; Option 1: -40°C to +55°C; option 2: -50°C to +50°C | | | | | | |
| | Storage | -55°C to +85°C | | | | | | |
| Humidity | 100%, condensing | | | | | | | |
| Altitude | 10,000' AMSL, de-rated 2°C/1,000' from AMSL | | | | | | | |

Note 1. Please refer to SSPB-1000C® product datasheet

Note 2. Please refer to SSPB-3000C® product datasheet

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