



- Compact and energy efficient
- Integrated Multi-Element Redundancy
- Solid State Reliability
- Easy System Integration
- Thermally Efficient
- Low Thermal Noise
- Superior Harmonic and Spurious Suppression
- Frequency agile design covers complete frequency band
- 3 Year GeoSat Product Warranty

20W Linear Ka-Band Block Up-Converter (BUC)

Model: GB44KAL2931



| Section | Item | Specification |
|---------------------|------------------------------------|---|
| Power Requirement | Voltage | 90 - 264VAC @50/60 Hz |
| | Power Consumption | 540 W Prime Power at maximum Linear Output Power |
| RF Characteristics | Frequency | 29.0 - 31.0 GHz (single model covers frequency range) |
| | Psat | 20 Watts (Typical) |
| | Output Power P-Linear | 12 Watts |
| IF Characteristics | Frequency Range | 950-1950 MHz, 1000-2000 MHz |
| | Impedance | 50 Ohms |
| | Input VSWR | 1.5:1 Max |
| | Input Level | -10 dBm Nominal |
| Interface: | IF Input | N-Female |
| | Reference Input | Multiplexed with IF Input |
| | RF Output | WR 28 |
| | Monitor & Control I/O | RS-485 or Ethernet (SNMP/HTTP) |
| | Ethernet Connector | Weatherproof RJ-45 |
| | Serial Monitor & Control Connector | Mil-Circ- Bayonet |
| | Power Connector | Mil-Circ- Bayonet |
| External Reference: | Frequency | 10 MHz |
| | Frequency Stability | Per Mil-Std-188-115 |
| | Input Level | -10 to +10 dBm |

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| Section | Item | Specification | |
|--------------------------|--------------------------------------|---|-----------------|
| Transfer Characteristics | Type | Single Conversion | |
| | Frequency Sense | Non-inversion | |
| | Gain | 60 dB +/-2 dB | |
| | Gain Flatness @ Maximum Gain ▼ | | |
| | Over RF Output band: | ± 2 dB. Max. | |
| | Over any 125 MHz segment | ±0.50 dB Max. | |
| | Over any 40 MHz segment | ±0.3 dB Max. | |
| | Gain Adjustment Range | 30 dB. Min. | |
| | Mute | -60 dB relative to P-Linear | |
| | Gain Variation over operational temp | ±2.0 dB max. | |
| | Gain Step Size | 0.25 dB max. | |
| | Group Delay variation | 3.5 nsec over 36 MHz Meets Mil-Std 188-164B | |
| | Third Order IMD @ P-Linear | With two output carriers @ 43dBm total output power: -25 dBc referenced to total output power, Max. | |
| | Output Noise Density TX | -75 dBm/Hz | |
| | Output Noise Density in RX Band | -157 dBm/Hz | |
| | Spurious | -60 dBc max. | |
| | Harmonics | -60 dBc max. measured at P-Linear | |
| | Spectral Regrowth | -30 dBc at P-Linear, QPSK, 5 Ms/s, Alpha=30% at 1 x symbol rate away from the carrier. | |
| | Phase Noise ▼ | | |
| | | 100Hz | -32 dBc/Hz max. |
| | | 100Hz | -63 dBc/Hz max. |
| | | 1kHz | -72 dBc/Hz max. |
| | | 10kHz | -82 dBc/Hz max. |
| | 100kHz | -92 dBc/Hz max. | |
| | 1mHz | -112 dBc/Hz max. | |
| | 10mHz | -122 dBc/Hz max. | |
| | Output VSWR | 1.3:1 Max Infinite @ 5 Watts | |
| | Max Load VSWR (no damage) | Infinite @ 20 Watts Linear Output Power | |
| Environmental: | Operating Temperature Range | -40°C to +60°C | |
| | Storage Temperature Range | -40°C to + 85°C | |
| | Humidity | 100% Condensing | |
| | Altitude | 10K ft. | |
| | Vibration | MIL-STD-810G | |
| | Shock | MIL-STD-810G | |
| Physical | Size | (LxWxH): 14.0" x 6.7" x 6.6" | |
| | Weight | 29 lbs. | |
| | FAN | Field Replaceable | |