

C-Band Block Frequency Converter



Redundant
FCB100R

Features

- Two hot swappable converters in 1U
- Cost effective solution
- Full range of block and agile converters
- Meets or exceeds IESS 308/309 requirements
- High linearity
- Low group delay
- Front panel control (local)
- Full remote control (remote)

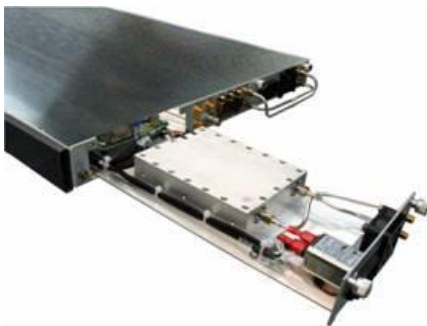
Overview

The Advantech Dual - HP range of converters uses the latest technology in conversion, giving two independent conversion chains in 1 RU package, local and remote control thus providing the ultimate in performance and user friendly operation at a very competitive price.

The spectral purity, low phase noise and stability exceed the requirements of all major international satellite network operators.

The flexible and comprehensive monitor and control features on the HP converter ensure that it will fit into any network management system architecture. The user-friendly front panel or the RS485 remote interface will provide full set-up and fault monitoring facilities. The RS232 will provide the Monitor and Control functions via a PC and will also allow for software downloading.

The converter uses a PLL oscillator either locked to a highly stable internal 10 MHz reference or if the external reference option is fitted and the proper level of signal is present, the PLL oscillator will automatically lock to the external reference.



Operating Bands

| Up-Converters | | |
|---------------|-----------------------------------|--------------|
| Model Number | RF Output | IF Frequency |
| ARUD-LCR | 5.850 - 6.425 GHz Non-inverted | 950-1525 MHz |
| ARUD-LCxR | 5.850 - 6.725 GHz Non-inverted | 950-1825 MHz |

| Down-Converters | | |
|-----------------|-----------------|--------------------------------|
| Model Number | RF Output | IF Frequency |
| ARED-CLR | 3.40 - 4.20 GHz | 950 - 1750 MHz Inverted |
| ARDD-CLR | 3.40 - 4.20 GHz | 950 - 1750 MHz Non-inverted |

Applications

The HP range of converters is particularly suited for use in VSAT, SCPC Networks, SNG, DVB-RCS and Hub systems where compact redundancy is required. This makes them an ideal choice for large earth stations requiring cost effective solutions for frequency conversion. The lightweight, rugged and compact design also ensures that the HP converter provides the ideal solution for mobile truck or flyaway DSNG systems. With fully welded aluminum chassis and robust modular internal construction the converter can even meet the demands of military installations. The HP range of converters provides an industry leading MTBF of over 120,000 hours.

The hot swappable 1:1 redundancy feature provides for the ultimate flexibility in a very compact package.

C-Band Block Frequency Converter

| Technical Specifications | | | |
|------------------------------|--|--------------------------|--|
| Up-Converter | | Down-Converter | |
| IF Input | | RF Input | |
| Frequency range | (See table on front page) | Frequency range | (See table on front page) |
| Impedance | 50 Ω | Impedance | 50 Ω |
| Input Connector | BNC (female) | Input Connector | Type N (female) |
| Return loss | 16 dB | Return loss | 18 dB |
| RF Output | | IF Output | |
| Output power (P1dB) | 0 dBm | Frequency range | (See table on front page) |
| Frequency range | (See table on front page) | Output level | +5 dBm at P1dB |
| IMD3 (two tone) | -40 dBc max @ -10 dBm output | Output Connector | BNC female |
| Output connector | Type N (female) | Connector Impedance | 50 Ω |
| Connector Impedance | 50 Ω | Return Loss | 16 dB |
| Return loss | 18 dB | | |
| Transfer Characteristics | | Transfer Characteristics | |
| Conversion Gain | 20 dB @ max gain setting | Conversion Gain | 40 dB @ max gain setting |
| Gain adjustment | 20 dB | Gain adjustment | 20 dB |
| Attenuator step size | 0.1 dB | Attenuator step size | 0.1 dB |
| Gain flatness | ±1.5 dB p-p over 575 MHz | Gain flatness | ±2.0 dB p-p over 800 MHz (NINV Down Converters) |
| | 1.0 dB p-p over 40 MHz | | + 1.0 dB p-p over 40 MHz |
| Gain stability | ±0.25 dB max. /24 hours | Gain stability | ±0.25 dB max. / 24 hours |
| | ±1 dB over temp. range | | ±1 dB over temp. range |
| Spurious | -55 dBc carrier related @ -10 dBm < -60 dBm non-carrier related | Spurious | -55 dBc @ -10 dBm |
| | | Image rejection | 60 dB |
| | | Noise Figure | 20 dB |
| Phase noise | Meets or Exceeds IESS 308/309 | Phase noise | Meets or Exceeds IESS 308/309 |
| Reference | | Mechanical | |
| External Reference | 10 MHz, +/- 3 dBm input level | Dimensions | Width 19" (482.6 mm) |
| Internal reference stability | ± 2 x 10 ⁻¹⁰ / day | | Height 1U 1.75" (44.5 mm) |
| Aging | ± 5 x 10 ⁻⁸ / year | | Depth 24" (609.6 mm) |
| Environmental | | Power Supply | |
| Operational | 0°C to +50°C standard | Voltage | 90 - 265 VAC (47 - 63 Hz) |
| Storage | -55°C to +85°C | Power | 50W (typical) |
| Humidity | Non-condensing | Connector | IEC 603320 10A |
| Altitude | 3,000m AMSL | | |
| Monitor and Control | | | |
| | | RS 485 | DB9 |
| | | RS 232 | DB9 |
| | | Discrete | DB9 |
| | | Ethernet (optional) | RJ45 F |

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