

### Redundant FCB200R



### Features

- Two hot swappable converters in 1RU
- Cost effective solution
- Full range of block and agile converters
- 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.

### Application

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.

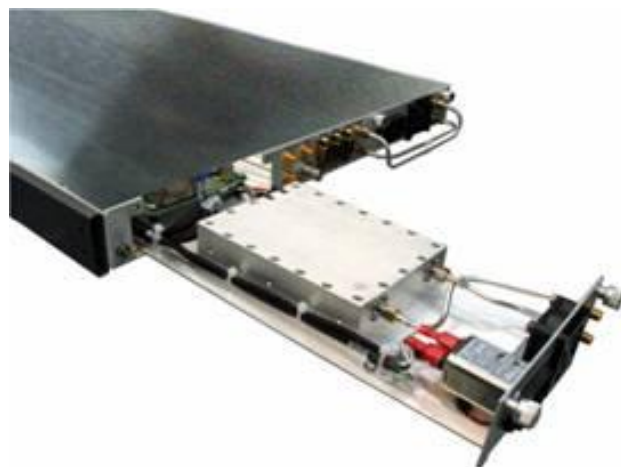
### Operating Bands

#### Up-Converters

| Model Number | Input Frequency | Output Frequency              |
|--------------|-----------------|-------------------------------|
| ARUD-LXR     | 950-1450 MHz    | 7.9 - 8.4 GHz<br>Non-inverted |

#### Down-Converters

| Model Number | Input Frequency | Output Frequency               |
|--------------|-----------------|--------------------------------|
| ARDD-XLR     | 7.25 - 7.75 GHz | 950 - 1450 MHz<br>Non-inverted |



# X-Band Block Frequency Converters

## 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 $\Omega$   | Impedance                | 50 $\Omega$   |
| Input Connector              | BNC (female)  | Input Connector          | Type N (female)   |
| Return loss                  | 16 dB   | Return loss              | 18 dB   |
| RF Output                    |   | IF Output                |   |
| Output power (P1dB)          | +5 dBm at P1dB  | Output power (P1dB)      | +5 dBm at P1dB  |
| Frequency range              | (See table on front page)   | Frequency range          | (See table on front page)   |
| IMD3 (two tone)              | -45 dBc max @ -5 dBm output   | IMD3 (two tone)          | -45 dBc max @ -5 dBm output   |
| Output connector             | Type N (female)   | Output connector         | BNC (female)  |
| Connector Impedance          | 50 $\Omega$   | Connector Impedance      | 50 $\Omega$   |
| Return loss                  | 18 dB   | Return loss              | 16 dB   |
| Transfer Characteristics     |   | Transfer Characteristics |   |
| Conversion Gain              | 20 dB @ max gain setting  | Conversion Gain          | 30 dB @ max gain setting (20dB option)  |
| Gain adjustment              | 20 dB   | Gain adjustment          | 20 dB   |
| Attenuator step size         | 0.1 dB  | Attenuator step size     | 0.1 dB  |
| Gain flatness                | $\pm 1.5$ dB p-p over 500 MHz<br>0.6 dB p-p over 40 MHz                               | Gain flatness            | $\pm 1.5$ dB p-p over 500 MHz<br>0.6 dB p-p over 40 MHz                               |
| Gain stability               | $\pm 0.25$ dB max. /24 hours<br>$\pm 1.0$ dB over temp. range                         | Gain stability           | $\pm 0.25$ dB max. / 24 hours<br>$\pm 1$ dB over temp. range                          |
| Spurious                     | <-60 dBc signal related @ -5 dBm<br><-70 dBm signal independent                       | Spurious                 | -60 dBc @ Pout = -5 dBm   |
|                              |   | Image rejection          | 60 dB   |
|                              |   | Noise Figure             | 15 dB   |
| Phase noise                  | -65 dBc/Hz @ 100Hz<br>-75 dBc/Hz @ 1kHz<br>-85 dBc/Hz @ 10kHz<br>-105 dBc/Hz @ 100KHz | Phase noise              | -67 dBc/Hz @ 100Hz<br>-77 dBc/Hz @ 1kHz<br>-87 dBc/Hz @ 10kHz<br>-105 dBc/Hz @ 100KHz |
| Reference                    |   | Mechanical               |   |
| External Reference           | 10 MHz, +/- 5 dBm input level   | Dimensions               | Width 19" (482.6 mm)<br>Height 1U 1.75" (44.5 mm)<br>Depth 22" (558.8 mm)             |
| Internal reference stability | $\pm 2 \times 10^{-8}$ over 0°C to +50°C  |                          |   |
| Aging                        | $\pm 2 \times 10^{-10}$ / day<br>$\pm 5 \times 10^{-8}$ / year                        |                          |   |
| Environmental                |   | Power Supply             |   |
| Operational                  | 0°C to +50°C standard   | Voltage                  | 90 – 265 VAC (47 – 63 Hz)   |
| Storage                      | -55°C to +85°C  | Power                    | 40W (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  |

**NORTH AMERICA**  
USA  
Tel: +1 703 788-6882  
Fax: +1 703 788-6511  
sales@advantechwireless.com

**CANADA**  
Tel: +1 514 420-0045  
Fax: +1 514 420-0073  
sales@advantechwireless.com

**EUROPE**  
UNITED KINGDOM  
Tel: +44 1480 357 600  
Fax: +44 1480 357 601  
sales@advantechwireless.com

**RUSSIA & CIS**  
Tel: +7 495 967 1859  
Fax: +7 495 967 30 24  
sales@advantechwireless.com

**SOUTH AMERICA**  
BRAZIL  
Tel: +55 11 3054 5701  
Fax: +55 11 5041 4026  
sales@advantechwireless.com

An ISO 9001 : 2008 Company



Ref.: PB-FCB200R-X-11040