

*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.

### 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 DSN 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.

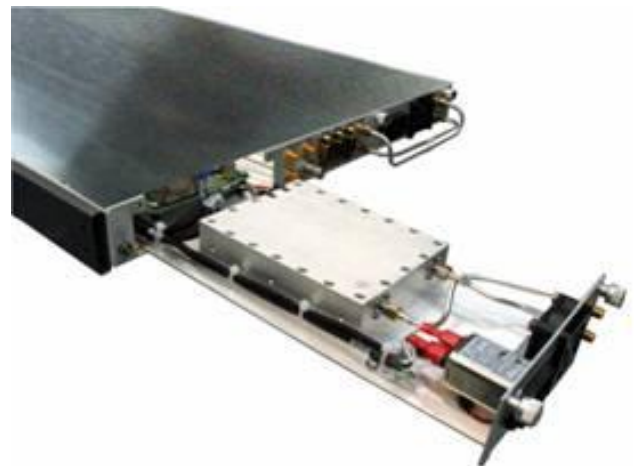
### Operating Bands

#### 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 Input	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)



# C-Band Block Frequency Converters

## Technical Specifications

Up-Converter		Down-Converter	
	<b>IF Input</b>		<b>RF Input</b>
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
	<b>RF Output</b>		<b>IF Output</b>
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		
	<b>Transfer Characteristics</b>		<b>Transfer Characteristics</b>
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 1.0 dB p-p over 40 MHz	Gain flatness	±2.0 dB p-p over 800 MHz (NINV Down Converters)+ 1.0 dB p-p over 40 MHz
Gain stability	±0.25 dB max. /24 hours ±1 dB over temp. range	Gain stability	±0.25 dB max. / 24 hours ±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
	<b>Reference</b>		<b>Mechanical</b>
External Reference	10 MHz, +/- 3 dBm input level	Dimensions	Width 19" (482.6 mm) Height 1U 1.75" (44.5 mm) Depth 24" (609.6 mm)
Internal reference stability	± 2 x 10 <sup>-10</sup> / day		
Aging	± 5 x 10 <sup>-8</sup> / year		
	<b>Environmental</b>		<b>Power Supply</b>
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		
			<b>Monitor and Control</b>
		RS 485	DB9
		RS 232	DB9
		Discrete	DB9
		Ethernet (optional)	RJ45 F

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