X-Band Block Frequency Converters

Single / Dual / Triple / Quad
FCB200

Features

- L-Band IF
- Cost effective solution
- Fully compliant with IESS 308/309
- High linearity
- Low group delay
- Front panel control (local)
- Full remote control (remote)

Overview

The Advantech HP range of converters uses the latest technology in conversion, 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 upgrades downloading.

The PLL oscillator used in the converter is 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 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. 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 a 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	Type	Input Frequency	Output Frequency
ARUN-LX	single	950-1450 MHz	7.9 - 8.4 GHz Non-inverted
ARUD-LX	dual		
ARUT-LX	triple		
ARUQ-LX	quad		

Down-Converters

Model Number	Type	Input Frequency	Output Frequency
ARDN-XL	single	7.25 - 7.75 GHz	950 – 1450 MHz Non-inverted
ARDD-XL	dual		
ARDT-XL	triple		
ARDQ-XL	quad		

Up/Down -Converters

Model Number	Type	Input Frequency	Output Frequency
ARMT-LX	Up section	950-1450 MHz	7.9 - 8.4 GHz Non-inverted
	Down section	7.25 - 7.75 GHz	950 – 1450 MHz Non-inverted

Options

- Ethernet port and SNMP Interface
- External 10 MHz with Autosensing
- Dual, quad, Up/Down, or 1:1 redundant hot swap converters in single 1RU chassis
- Redundant Ready (for 1:N)*

Note : Consult factory for detailed configuration

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 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)	+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 Ω	Connector Impedance	50 Ω
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	±1.5 dB p-p over 500 MHz 0.6 dB p-p over 40 MHz	Gain flatness	±1.5 dB p-p over 500 MHz 0.6 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	<-60 dBc signal related @ -5 dBm <-70 dBm signal independent	Spurious	-60 dBc @ Pout = -5 dBm
		Image rejection	60 dB
		Noise Figure	15 dB
Phase noise	-65 dBc/Hz @ 100Hz -75 dBc/Hz @ 1kHz -85 dBc/Hz @ 10kHz -105 dBc/Hz @ 100KHz	Phase noise	-67 dBc/Hz @ 100Hz -77 dBc/Hz @ 1kHz -87 dBc/Hz @ 10kHz -105 dBc/Hz @ 100KHz
Reference		**Mechanical**	
External Reference input	10 MHz, +/- 5 dBm, high purity	Dimensions	Width 19" (482.6 mm)
Internal reference stability	$\pm 2 \times 10^{-8}$ over 0°C to +50°C		Height 1U 1.75" (44.5 mm)
Aging	$\pm 2 \times 10^{-10}$ / day $\pm 5 \times 10^{-8}$ / year		Depth 22" (558.8 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	25W (typical, single converter) 35W (typical, dual converter) 50W (typical, quad converter)
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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