C-Band HP-Converters Series

Single/Dual/Quad High Performance
Block Frequency Converters

HP-Frequency Converter Series

KEY 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.

APPLICATIONS

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	RF Output	IF Frequency
ARUN-LC	single	5.850 - 6.425 GHz Non-inverted	950-1525 MHz
ARUD-LC	dual		
ARUQ-LC	quad		

Down-Converters

Model Number	Type	RF Input	IF Frequency
AREN-CL	single	3.40 - 4.20 GHz	950 – 1750 MHz Inverted
ARED-CL	dual		
AREQ-CL	quad		
ARDN-CL	single	3.40 - 4.20 GHz	950 - 1750 MHz Non-inverted
ARDD-CL	dual		
ARDQ-CL	quad		

Up/Down -Converters

Model Number	Type	RF Output	IF Frequency
ARMT-LCE	Up/ Down	5.850 - 6.425 GHz Non-inverted 3.40 - 4.20 GHz Inverted	950-1525 MHz or 950-1750 MHz
ARMT-LC	Up/ Down	5.850 -6.425 GHz Non-inverted 3.40 - 4.20 GHz Non-Inverted	950-1525 MHz or 950-1750 MHz

MAJOR OPTIONS

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

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AMT ADVANTECH™

Up-Converter

IF input

Frequency range	(See table on front page)
Impedance	50 Ω
Input Connector	BNC (female)
Return loss	16 dB

RF output

Output power (P1dB)	0 dBm
Frequency range	(See table on front page)
IMD3 (two tone)	-40 dBc max @ -10 dBm output
Output connector	Type N (female)
Connector Impedance	50 Ω
Return loss	18 dB

Transfer Characteristics

Conversion Gain	20 dB @ max gain setting
Gain adjustment	20 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 stability	±0.25 dB max. /24 hours ±1 dB over temp. range
Spurious	-55 dBc carrier related @ -10 dBm < -60 dBm non-carrier related
Phase noise	Meets or Exceeds IESS 308/309

Reference

External Reference	10 MHz, +/- 3 dBm input level
Internal reference stability	$+/-2 \times 10^{-8}$ / day
Aging	$+/-1 \times 10^{-7}$ / year

Environmental

Operational	0°C to +50°C standard
Storage	-55°C to +85°C
Humidity	Non-condensing
Altitude	3,000m AMSL

Down-Converter

RF input

Frequency range	(See table on front page)
Impedance	50 Ω
Input Connector	Type N (female)
Return loss	18 dB

IF output

Frequency range	(See table on front page)
Output level	+5 dBm at P1dB
Output Connector	BNC female
Connector Impedance	50 Ω
Return Loss	16 dB

Transfer Characteristics

Conversion Gain	40 dB @ max gain setting
Gain adjustment	20 dB
Attenuator step size	0.1 dB
Gain flatness	±1.5.dB p-p over 800 MHz ±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
Spurious	-55 dBc @ -10 dBm
Image rejection	60 dB
Noise Figure	20 dB
Phase noise	Meets or Exceeds IESS 308/309

Mechanical

Dimensions	Width	19” (482.6 mm)
	Height	1U 1.75” (44.5 mm)
	Depth	22” (558.8 mm)

Power Supply

Voltage	90 – 265 VAC (47 – 63 Hz)
Power	50W (typical, single converter)
Connector	IEC 603320 10A

Monitor and Control

RS 485	DB9
RS 232	DB9
Discrete	DB9
Ethernet (optional)	RJ45 F

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