



The Advantech Wireless Advantages

- Up converter or Down converter in a single enclosure
- 70 MHz ,or 140 MHz IF Frequency
- Ka-Band TX: 27.0-31.0 GHz, RX: 18.1-21.2 GHz frequency
- Cost effective solution
- Fully compliant with IESS 308/309 requirements
- High linearity
- Internal High Stability Reference
- Front panel control (local)
- Full remote control (remote)

Major Options

- Ethernet port and SNMP Interface
- Low Group Delay (option)

Overview

The Advantech Wireless 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.

This converter model provides up converter and down converter in a single enclosure.

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 is fully synthesized with the PLL oscillators 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.

Operating Bands*

Model number	Output	Input
ARUN-70Ka	27.0 - 31.0 GHz	70 +/- 18 MHz
ARUN-140Ka	27.0 - 31.0 GHz	140 +/- 36 MHz
ARDN-Ka70	70 +/- 18 MHz	18.1 -21.2 GHz
ARDN-Ka140	140 +/- 36 MHz	18.1 -21.2 GHz

* Other operating bands are available upon request

Applications

This type of converter is particularly well suited for wide band ka installations. The ka-band range of converters provides an industry leading MTBF of over 120,000 hours.

Up/Down Converters Series

70/140 MHz to Ka-Band Indoor Frequency Converter



Up-Converter

IF input

Frequency range	70 ± 18 MHz or 140 ± 36 MHz (option)
Input level	-25 dBm to -5 dBm
Impedance	50 Ω
Input Connector	BNC (female)
Return loss	16 dB

RF output

Frequency range	27.0 - 31.0 GHz
Output power (P1dB)	+10 dBm
IMD3 (two tone)	-26 dBc max @ +7 dBm tot. output
Output connector	WR28
Connector Impedance	50 Ω
Return loss	14 dB min

Transfer Characteristics

Conversion Gain	40 dB @ max gain setting
Gain adjustment	20 dB (0.1 dB step size)
Gain flatness	1.0 dB p-p max. 36 MHz 1.5 dB p-p max. 72 MHz
Gain stability	±0.25 dB max. /24 hours ±1 dB over temp. range
Spurious	-55 dBc carrier related < -70 dBc non-carrier related
Group delay (over 40 MHz)	10 -15 ns p-p
Group delay (with optional group delay equalizer)	Linear 0.03 ns/Hz Parabolic 0.01 ns/MHz ² Ripple 1 ns p-p
Phase noise	Exceeds IESS 308/309 by 4 dBc
Synthesizer step size	125KHz

Reference

External Reference (optional)	10 MHz, (5 MHz option)
Internal reference stability	+/-2 x 10 ⁻⁸ / day
Aging	+/-1 x 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	18.1 - 21.2 GHz
Input level	-60 dBm to -40 dBm
Impedance	50 Ω
Input Connector	SMA (female)
Return loss	16dB

IF output

Frequency range	70 ± 18 MHz (140 ± 36 MHz option)
Output power (P1dB)	+5 dBm at P1dB
Output Connector	BNC female
Connector Impedance	50 Ω
Return Loss	14 dB min

Transfer Characteristics

Conversion Gain	40 dB min @ max gain setting
Gain adjustment	30 dB (0.1 dB step size)
Gain flatness	1.0 dB p-p max. 36 MHz 1.5 dB p-p max. 72 MHz
Gain stability	±0.25 dB max. / 24 hours ±1 dB over temp. range
Spurious	-55 dBc @ 0 dBm output
Group delay (over 40 MHz)	10 -15 ns p-p
Group delay (with optional group delay equalizer)	Linear 0.03 ns/Hz Parabolic 0.01 ns/MHz ² Ripple 1 ns p-p
Image rejection	60 dB
Noise Figure	20 dB
Phase noise	Exceeds IESS 308/309 by 4 dBc
Synthesizer step size	125KHz

Mechanical

Dimensions	Width 19" (482.6 mm) Height 1U 1.75" (44.45 mm) Depth 20" (254 mm)
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Power Supply

Voltage	90 – 265 VAC (47 – 63 Hz)
Power	40W (typical)
Connector	IEC 603320 10A

Monitor and Control

RS 485	DB9
RS232	DB9
Discrete	DB9
Ethernet (optional)	RJ45 F

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