

## Up/Down Block Converters Series

### L-band to Ka-Band Indoor Up/Down Frequency Converters



#### The Advantech Wireless Advantages

- Up converter or Down converter in a single enclosure
- L-band 950-1950 MHz IF Frequency
- Ka-Band TX: 27.0-31.0 GHz, RX: 18.1-21.2 GHz frequency, sub band selectable ( 1 GHz wide sub band)
- Cost effective solution
- Fully compliant with IESS 308/309 requirements
- High linearity
- Internal High Stability Reference
- Front panel control (local)
- Full remote control (remote)

#### 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 Ka-band 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 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-LKa	27.0 - 31.0 GHz	950-1950 MHz
ARDN-KaL	950-1950 MHz	18.1 -21.2 GHz

- The operating band is software selectable in 1GHz segments
- Other operating bands are available upon request

#### Major Options

- Ethernet port and SNMP Interface

#### 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

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Technical Specifications			
Up-Converter		Down-Converter	
IF Input		RF Input	
Frequency range	950-1950 MHz	Frequency range	18.1 - 21.2 GHz (sub band selectable 18.1-18.7 GHz or 18.7-19.2 GHz or 19.2-20.2 GHz or 20.2-21.2 GHz)
Input Level	-25 dBm to -5 dBm	Input level	-60 dBm to -40 dBm
Impedance	50 $\Omega$	Impedance	50 $\Omega$
Input Connector	BNC (female)	Input Connector	SMA (female)
Return loss	16 dB	Return loss	16dB
RF Output		IF Output	
Frequency range	27.0 - 31.0 GHz (27.0-28.0 GHz or 28.0-29.0 GHz or 29.0-30.0 GHz or 30.0-31.0 GHz software selectable)	Frequency range	950-1950 MHz
Output power (P1dB)	+10 dBm	Output power (P1dB)	+5 dBm at P1dB
IMD3 (two tone)	-26 dBc max @ +7 dBm tot. output	Output Connector	BNC female
Output connector	WR28	Connector Impedance	50 $\Omega$
Connector Impedance	50 $\Omega$	Return Loss	14 dB min
Return loss	14 dB min		
Transfer Characteristics		Transfer Characteristics	
Conversion Gain	20 dB @ max gain setting	Conversion Gain	40 dB min @ max gain setting
Gain adjustment	20 dB (0.1 dB step size)	Gain adjustment	20 dB (0.1 dB step size)
Gain flatness	4.0 dB p-p max. over 1 GHz 1.0 dB p-p max. 40 MHz	Gain flatness	4.0 dB p-p max. over 1 GHz 1.0 dB p-p max. 40 MHz
Gain stability	$\pm 0.25$ dB max. / 24 hours $\pm 1$ dB over temp. range	Gain stability	$\pm 0.25$ dB max. / 24 hours $\pm 1$ dB over temp. range
Spurious	-55 dBc carrier related < -70 dBc non-carrier related	Spurious	-55 dBc @ 0 dBm output
Phase noise	Exceeds IESS 308/309 by 4 dBc	Image rejection	60 dB
		Noise Figure	20 dB
		Phase noise	Exceeds IESS 308/309 by 4 dBc
Reference		Mechanical	
External Reference (optional)	10 MHz, (5 MHz option)	Dimensions	Width 19" (482.6 mm)
Internal reference stability	+/-2 x 10-8 / day		Height 1U 1.75" (44.45 mm)
Aging	+/-1 x 10-7 / year		Depth 20" (254 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	40W (typical)
Humidity	Non-condensing	Connector	IEC 603320 10A
Altitude	3,000m AMSL		
Monitor and Control			
RS 485	DB9		
RS232	DB9		
Discrete	DB9		
Ethernet (optional)	RJ45 F		

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