



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)

Major Options

- Ethernet port and SNMP Interface

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

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-Converter

IF input

Frequency range 950-1950 MHz
 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 (27.0-28.0 GHz or 28.0-29.0 GHz or 29.0-30.0 GHz or 30.0-31.0GHz software selectable)
 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 20 dB @ max gain setting
 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 stability ±0.25 dB max. /24 hours
 Spurious ±1 dB over temp. range
 -55 dBc carrier related
 < -70 dBc non-carrier related
 Phase noise Exceeds IESS 308/309 by 4 dBc

Reference

External Reference (optional) 10 MHz, (5 MHz option)
 Internal reference stability $\pm 2 \times 10^{-8}$ / day
 Aging $\pm 1 \times 10^{-7}$ / 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 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 -60 dBm to -40 dBm
 Impedance 50 Ω
 Input Connector SMA (female)
 Return loss 16dB

IF output

Frequency range 950-1950 MHz
 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 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 stability ±0.25 dB max. / 24 hours
 ±1 dB over temp. range
 Spurious -55 dBc @ 0 dBm output
 Image rejection 60 dB
 Noise Figure 20 dB
 Phase noise Exceeds IESS 308/309 by 4 dBc

Mechanical

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

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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