

Outdoor Ka-Band Block-Up and Block-Down Converters



Introduction

Advantech Wireless offers a full line of Synthesized and Block Frequency Converters for outdoor applications. These Ka band Block Up and Down Converters could be used as standalone, 1:1 or 1:2 weatherproof assemblies. They are part of our Block Frequency Converter family which covers all Satcom bands in L, S, C, X DBS, Ku and Ka commercial and military bands, based on HP series of Advantech converters.

The outdoor assemblies are fully integrated with redundant integral controllers without the need for any Remote Control Panel. A remote control panel is also available for convenience purposes.

Overview

These Advantech Wireless Ka-band outdoor Block Converters use the latest technology in conversion, local and remote control thus providing the ultimate in performance and userfriendly operation at a very competitive price.

The spectral purity, low phase noise and stability exceed the requirements of all major international satellite network operators.

Remote management interfaces ensure complete flexibility of integration into existing or new installations. The Ethernet and RS485 remote interface will provide full set-up and fault monitoring facilities.

The system reference guaranteeing conversion function's accuracy can optionally be provided externally, internally as a highly stable temperature compensated oscillator, or with auto-detection capacity that will use internal reference only in the absence of an externally provided one.

Features

- Wide selection of Tx Bands in 27.5-31.0GHz range
- Wide selection of Rx bands 17.7 to 21.2 GHz
- Hermetic construction for outdoor - IP65
- Available Covers all Satcom bands
- Superior phase noise performance
- Superior linearity
- Built-in internal reference
- Agile internal reference aging correction capability
- Standard Ethernet port with Web Interface
- Redundant ready

Options

- 1:1 or 1:2 Redundancy Kits
- Secured Ethernet: SNMPV3 and Web page
- Remote control panel

Redundancy

The Advantech Wireless redundant system consists of the following elements:

- 1) Universal mounting plate for either system
- 2) Switching and interface modules
- 3) Outdoor Interconnections

While the system can be fully operated through Web interface an optional Remote Control Panel will interface with the outdoor system via the RS485 interface. The Remote Control Panel will also provide its own RS485 and Ethernet interface.

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Technical Specifications

Up Converter			Down Converter		
L-band Input frequency (MHz)	RF Output frequency (GHz)	Model Number	RF Input frequency (GHz)	L-band Output frequency (GHz)	Model Number
950-1950	27.5-28.5 28.0-29.0 29.0-30.0 30.0-30.1	Example: AWUN-LKa-27_5-28_5	17.7-18.7 GHz 18.7-19.7GHz 19.7-20.2GHz 20.2-21.2GHz	950-1950	Example: AWDN-KaL-17_7_18_7
The above is a partial listing, please consult the factory for any different band. (Any 1GHz input band avail upon request)					
Input / Output Interfaces	SMA (f) / 2.92 (f) (WR28 option)		SMA (f) / SMA (f) (WR42 option)		
Impedance	50 ohms		50 ohms		
Return Loss	18dB/18dB		18dB/18dB		
RF/IF Output level	+12 dBm at P1dB at maximum gain				
OIP3 at max gain	25 dBm max @ 10dBm output				
Conversion Gain	30 dB @ max gain setting (40dB gain option)				
Gain adjustment range	30 dB (0.1 dB step size)				
Gain flatness	± 1.0 dB max. over band		1 dB p-p max. over 40MHz		
Gain stability at mid-band	±0.25 dB max. /24 hours		±1.0 dB over temp. range		
Spurious (in band)	<-60 dBc carrier related @ 10 dBm <-75 dBm non-carrier related				
Noise Figure at max gain	15 dB		15dB		
Image rejection			-80 dBc		
Phase noise @ dBc/Hz	10Hz	-50 max.	10Hz	-53 max.	
	100Hz	-78 max.	100Hz	-81 max.	
	1kHz	-90 max.	1kHz	-93 max.	
	10kHz	-92 max.	10kHz	-95 max.	
	100kHz	-98 max.	100kHz	-101 max.	
	1MHz	-108 max.	1MHz	-112 max	
Group delay (any 40MHz)	1ns p-p				
Reference			Mechanical		
External Reference	10 MHz (optional) – over separate coax.		Dimensions single unit		W x H x L 4.5" x 5.0" x 21"
Internal reference stability	± 1 x 10 ⁻⁷ over 0° to +50°C +/-1E7		Redundancy		W x H x L 18" x 5.15" x 30"
Aging	± 2 x 10 ⁻¹⁰ / day ± 5 x 10 ⁻⁸ / year				
Environmental			Power Supply		
Operational	-30°C to +55°C standard		Voltage		90 – 265 VAC (47 – 63 Hz)
Storage	-55°C to +85°C		Power		50W max.
Humidity	Non-condensing		Connector		MS3102R16-10P
Altitude	3,000m AMSL				
* Other options			Monitor and Control		
1) 1:1, 1:2 redundancy kit			RS 485		MS3112E10-6P
2) 20dB Input and Output monitor ports			Ethernet		MS3112E10-6P
3) Ethernet port protocol: SNMP_V3 / Serial over IP, Secured web page			Discrete		MS3112E10-6P
			Redundancy		MS3112E16-16P

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