

X-Band Block Outdoor Frequency Converters



Overview

The AWUB-LX and AWDB-XL are hub mount converters operating in the transmit and receive X bands. They present as integrated units with internal power supply, phase-locked oscillator, mixer and filters. Other block converters are also available for operation at other frequencies.

The design of these units is based on Advantech Wireless industry proven reliable converters, resulting in MTBF exceeding 120 000 hours.

Application

Designed for X-Band satellite applications, the AWUB-LX and AWDB-XL have been designed to interface easily with popular L-band modulators and can provide a full bandwidth operation over the whole X-band transmission range. These converters are designed to be completely self-controlled, therefore it does not require any operator intervention.

Options

- Redundant system with automatic and manual switching
- External reference
- Reference and DC supply through L band connector
- Remote M&C panel
- RS485 interface
- Ethernet port

Operating Bands

Up-Converters		
Model Number	RF Output	IF Frequency
AWUB-LX	7.9-8.4 GHz Non-inverted	950-1450 MHz

Down-Converters		
Model Number	RF Input	IF Frequency
AWDB-XL	7.25 - 7.75 GHz Non-inverted	950 - 1450 MHz

Features

- Converts L-band to X-band
- Phase lock oscillator to 10MHz reference
- Internal high stability 10MHz reference
- Cost effective solution
- High stability and excellent phase noise characteristics
- Protection against out-of-lock condition
- High linearity
- Weatherproof package
- Built-in power supply
- CE marking

The Remote Control Panel is optional. The interface between the outdoor system and the Remote Control Panel is via the RS485 interface. The Remote Control Panel will also provide its own RS485 and TCP/IP interface



Optional Remote Control Panel

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Technical Specifications					
Up-Converter			Down-Converter		
IF Input			RF Input		
Frequency range	(See table on front page)		Frequency range	(See table on front page)	
Impedance	50 Ω		Impedance	50 Ω	
Input Connector	Type N (female)		Input Connector	Type N (female)	
Return loss	16 dB		Return loss	18 dB	
RF Output			IF Output		
Frequency range	(See table on front page)		Frequency range	(See table on front page)	
Output level	+5 dBm at P1dB		Output level	+% dBm at P1dB	
IMD3 (two tone)	-45 dBc max @ -5 dBm output		IMD3 (two tone)	-45 dBc max @ -5dBm output	
Output connector	Type N (female)		Output connector	Type N (female)	
Connector Impedance	50 Ω		Connector Impedance	50 Ω	
Return loss	18 dB		Return loss	16 dB	
Transfer Characteristics			Transfer Characteristics		
Conversion Gain	20 dB @ max gain setting		Conversion Gain	30dB @ max gain setting	
Gain flatness	3 dB p-p over the full band		Gain flatness	3 dB p-p over the full band	
	0.6 dB p-p over 40 MHz			0.6 dB p-p over 40 MHz	
Gain stability at constant temperature	±0.25 dB max. /24 hours ±1 dB over temp. range		Gain stability at constant temperature	±0.25 dB max. / 24 hours ±1 dB over temp. range	
In band Spurious	-60 dBc carrier related @ -5 dBm		Spurious	-60 dBc carrier related @ 0 dBm	
Noise Figure	20 dB		Noise Figure	15 dB	
Phase noise (dBc/Hz)	100Hz	1kHz	10kHz	100kHz	Phase noise
	-65	-75	-85	-105	
Reference (with external reference option)	External Reference		10 MHz, +/- 3 dBm input level		
	Internal reference stability		± 2 x 10 ⁻¹⁰ / day		
	Aging		± 5 x 10 ⁻⁸ / year		
Mechanical			Dimensions		Length 21" (26.67 cm)
					Width 4.5" (11.86 cm)
					Height 5.0" (20.02 cm)
			Weight		5.4 kg (12 lbs)
Environmental			Power Supply (Standard configuration)		
Operational	-30°C to +55°C standard		Voltage	90 – 265 VAC (47 – 63 Hz)	
	Option -40°C to +55°C standard		Power	40W (typical)	
Storage	-55°C to +85°C		Connector	MS 3102R16-10P	
Humidity	100% Condensing				
Altitude	3,000m AMSL				
Monitor and Control (Options)					
RS 485		MS 3112-E10-6P			
Discrete alarm		MS 3112-E10-6P			
Ethernet (optional)		MS 3112-E10-6P			
Redundancy		MS 3112-E16-16P			

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