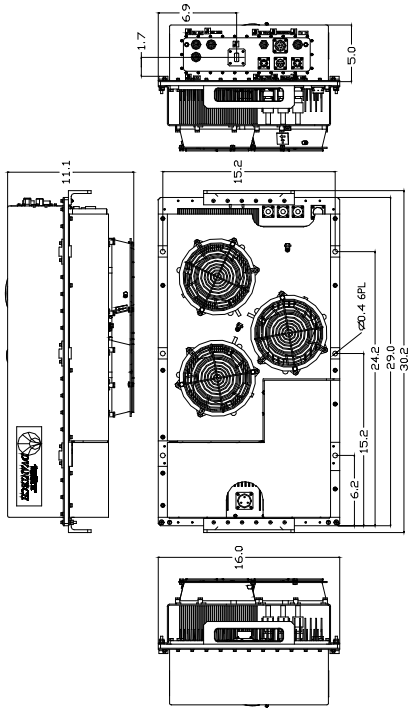
X-Band Transceiver
L-Band IF Interface

300W to 500W
AWMT-4000LX® series



Features

- Operating X-band Tx: 7.90 – 8.40 GHz
  Rx: 7.25 – 7.75 GHz
- L-band Tx and Rx interface
- Easy to install and operate
- Compact light weight design
- Weatherproof package
- LNA operation
- Low phase noise
- Remote Monitor & Control (RS232 / RS485)
- Relay alarm indicators
- LED status indicators
- Automatic high power reflected power protection
- Harmonic Filter
- High stability internal 10 MHz reference
- Downloadable PC GUI
- Redundant ready operation

Overview

The **Advantech Wireless** range of transceivers uses the latest technology, local and remote control thus providing the ultimate in performance and user friendly operation at a very competitive price.

AWMT-4000LX® is a family of hub-mount transceivers operating in the X-band with an output power ranging from 300W to 500W. These transceivers are designed for continuous operation in the harshest outdoor environment. The built-in microprocessor controller provides for external monitoring and control of the operating parameters, and for the redundancy control. The LNB is connected to the transceiver with a single coaxial cable. Apart from the LNB, the complete unit is available in a single integrated package. Higher power transceivers are also available in the AWMT-LX® series for up to 1000W.

The flexible and comprehensive monitor and control features on the transceiver ensure that it will fit into any network management system architecture. The user-friendly RS-232 interface will provide full set-up and fault monitoring facilities via a PC terminal mode communication or a hand-held terminal. The RS-485 interface will provide functional remote Monitor & Control, using the Graphic User Interface (GUI) or the Monitor & Control Panel.

Application

The AWMT-4000LX® is designed to operate in the X-band with L-Band Tx and Rx interface. The unit is self-contained and is intended for mounting outdoors, close to the OMT of an antenna.

Options

- Phase-locked LNB
- TX or RX Reject Filters
- Remote M&C panel (Ethernet port optional)
- External 10 MHz reference with auto sensing

Accessories

- Mounting kits for transceiver installation
- Redundancy kits
- Mounting frame for redundancy applications
- Transmit Reject Filter and/or Receive Reject Filter (external)
- Remote Control Panel
- Hand-held terminal

Redundancy

The AWMT-4000LX® series of transceivers may be configured to operate in 1:1 redundancy mode. No extra controller is required for redundancy operation, as the built-in controller in each amplifier provides this function. Redundancy kits are required for redundant operation.

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Advantech Wireless

Technical Specifications

Transmit Path			
Power	300W	400W	500W
P1dB min. (dBm)	+ 54	+ 55	+ 56
Gain min @ max. gain set (dB)	75	76	77
Power Consumption	2400	2800	3000
Unit Weight	58 Kg (128lbs)		
Dimensions (L x W x H)	30” x 16” x 11” (76.20 x 40.60 x 28.00 cm)		

Transmit Path			
L-Band Input		**RF Output**	
Frequency range	950 – 1450 MHz	Frequency range (Non-inverting)	7.9 - 8.4 GHz
Input Connector	Type N female		
Input Return Loss	18 dB / 50 Ω	Output connector	CPR 112
		Output Return	20dB (18 dB for coaxial output)
Gain Specification		Third order IMD (2 tones 5 MHz apart)	-25 dBc max at 3dB total back-off from rated P1dB
Gain control range	20 dB (0.1 dB step size)		
Gain flatness	3.0 dB p-p max	Spurious	-55 dBc max at rated power
Gain stability	3.0 dB p-p max over temp range	Noise Power Density	-70 dBm/Hz max in TX band -110 dBm/Hz max in 7.25 – 7.75 GHz in RX band

Receive Path			
RF Input		**LNA Parameters**	
RF Input Frequency	7.25 - 7.75 GHz	Noise Temperature	55°K without input isolator 65°K with input isolator
RF Input Interface	CPR-112		
Input VSWR	2.5:1 1.3:1 with input isolator	Output Interface	Type N female 50 Ω
		Gain	60 dB
		DC power	12÷18V DC (via coaxial cable)
L-Band Output			
Frequency range	950 – 1450 MHz 950 – 1700 MHz	**LNB Parameters** (optional)	
		LNB type	Phase lock to 10 MHz ref. (from Transceiver via coax. cable)
Output P1dB, min	+10 dBm		
Output Connector	Type N female / 50 Ω	Noise Temperature	90°K
Output Return Loss	18 dB/ 50 Ω	L-band Output Frequency	950-1450 MHz
Gain Specification		L-band Output Interface	Type N female 50 Ω
Gain (LNB+ Receiver)	75 dB @ max gain set	Conversion Gain	60 dB
Gain control range	20 dB (0.1 dB step size)	DC power	12÷18V DC (via coaxial cable)
Gain flatness	±2.5 dB max over full RF band		
Gain stability	3.0 dB max over temp range		
Spurious	-55 dBc max		
Image Rejection	50 dB		

Common Parameters (Tx & Rx)			
Frequency Stability		**Environmental**	
± 2 x 10^{-8} over 0ºC to +50ºC	± 2 x 10^{-10} / day	Cooling	Forced Air
Aging	± 5 x 10^{-8} / year	Operational	-30°C to +55°C standard (-40°C to +55°C option)
Phase Noise	(*With internal 10MHz reference*)		
Offset frequency	Phase noise (max)	Storage	-55°C to +85°C
100 Hz	-65 dBc/Hz	Humidity	Up to 100% condensing
1000 Hz	-73 dBc/Hz	Altitude	3,000 m AMSL (derated 2°C/300m)
10 KHz	-83 dBc/Hz		
100 KHz	-100 dBc/Hz	**Power Requirements**	
		AC input voltage	220 ± 15% (47-63 Hz)
Monitor & Control		AC Connector	MS3102R20-19P
Serial port (RS-485)	MS3112E10-6P		
Serial port (RS-232)	MS3112E10-6P	**Mechanical**	
Redundancy Port	MS3112E16-26P	Packaging	Weatherproof for outdoor use
Discrete Port	MS3112E12-10P		

NORTH AMERICA
USA
Tel: + 1 703 788-6882
Fax: +1 703 788-6511
info.usa@advantechwireless.com

CANADA
Tel: +1 514 420-0045
Fax: +1 514 420-0073
info.canada@advantechwireless.com

EUROPE
UNITED KINGDOM
Tel: +44 1480 357 600
Fax: +44 1480 357 601
info.uk@advantechwireless.com

RUSSIA & CIS
Tel: +7 495 967 1859
Fax: +7 495 967 30 24
info.russia@advantechwireless.com

SOUTH AMERICA
BRAZIL
Tel: +55 11 3054 5701
Fax: +55 11 5041 4026
info.brazil@advantechwireless.com

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