

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 (RS-232/RS-485)
- Relay alarm indicators
- LED status indicators
- Automatic high reflected power protection
- Harmonic Filter
- High stability internal 10MHz reference
- Downloadable PC GUI
- Redundant ready operation

Overview

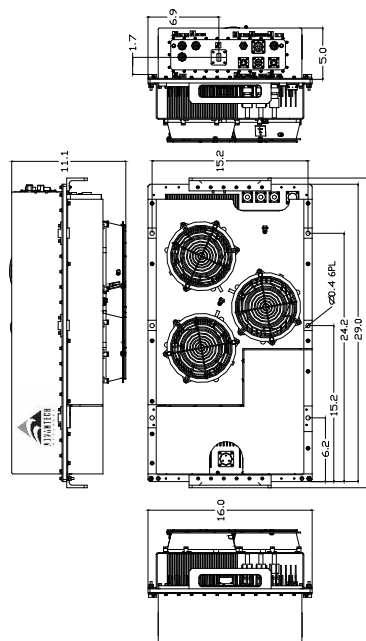
The Advantech Wireless range of transceivers uses the latest technology, local and remote control thus providing the ultimate in performance and user friendly operation at a very competitive price.

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 800W.

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 Panell.

Applications

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.

X-Band Transceiver

L-Band IF Interface

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 (W)	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)	Spurious	-55 dBc max at rated power
Gain flatness	3.0 dB p-p max	Noise Power Density	-70 dBm/Hz max in TX band -110 dBm/Hz max in 7.25 – 7.75 GHz in RX band
Gain stability	3.0 dB p-p max over temp range		
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)	
Output P1dB, min	+10 dBm	LNB type	Phase lock to 10 MHz ref. (from Transceiver via coax. cable)
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
		L-band Output Interface	Type N female 50 Ω
Gain Specification		Conversion Gain	60 dB
Gain (LNB+ Receiver)	80 dB @ max gain set	DC power	12÷18V DC (via coaxial cable)
Gain control range	20 dB (0.1 dB step size)		
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		

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Common Parameters (Tx & Rx)			
Frequency Stability		Environmental	
$\pm 2 \times 10^{-8}$ over 0°C to +50°C	$\pm 2 \times 10^{-10}$ / day	Cooling	Forced Air
Aging	$\pm 5 \times 10^{-8}$ / 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		
Monitor & Control		Power Requirements	
Serial port (RS-485)	MS3112E10-6P	AC input voltage	220 \pm 15% (47-63 Hz)
Serial port (RS-232)	MS3112E10-6P	AC Connector	MS3102R20-19P
Redundancy Port	MS3112E16-26P		
Discrete Port	MS3112E12-10P		
		Mechanical	
		Packaging	Weatherproof for outdoor use

Ref.: PB-AWMT4000-LX-300-500-18226

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