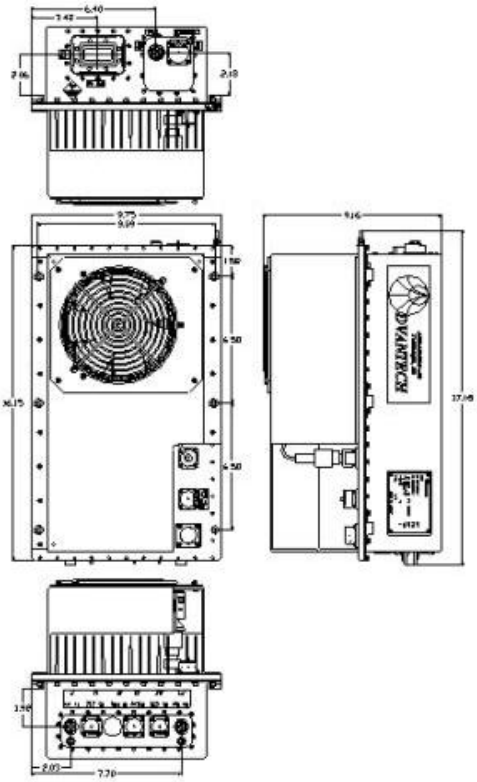
X-Band Transceiver

2W to 10W
AWMT-1000X® series





Features

- Operating X-band Tx: 7.90 – 8.40 GHz
  Rx: 7.25 – 7.75 GHz
- 70 or 140 MHz 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-1000X® is a family of hub-mount transceivers operating in the X-band with an output power ranging from 2W to 10W. 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-X® series for up to 400W.

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-1000X® is designed to operate in the X-band with 70 MHz or 140 MHz IF interface. The unit is self-contained and is intended for mounting outdoors, close to the OMT of an antenna.

Options

- Additional L-band interface
- Phase-locked LNB
- Step size 125 KHz option
- TX or RX Reject Filter
- 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-1000X® 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

Technical Specifications

Transmit Path			
Power	2W	5W	10W
P1dB min. (dBm)	33	37	40
Gain min @ max. gain set (dB)	54	58	61
Power Consumption	70	100	150
Unit Weight	55 lbs (25 kg)		
Dimensions (L x W x H)	16.15” x 9.75” x 9.16” (41.02 x 24.77 x 23.27 cm)		

Transmit Path			
IF Input		**RF Output**	
Frequency range	70 ± 18 MHz 140 ± 36 MHz (optional)	Frequency range (Non-inverting)	7.9 - 8.4 GHz
Input Connector	Type N female	Output connector	CPR 112
Input Return Loss	18 dB / 50 Ω	Output Return	20dB (18 dB for coaxial output)
		Third order IMD (2 tones 5 MHz apart)	-25 dBc max at 3dB total back-off from rated P1dB
Gain Specification			
Gain control range	20 dB (0.1 dB step size)	Spurious (in band)	-55 dBc max
Gain flatness	3.0 dB p-p max over 36 MHz	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		**Gain Specification**	
RF Input Frequency	7.25 - 7.75 GHz	Gain (LNB+ Receiver)	80 dB @ max gain set
RF Input Interface	CPR-112	Gain control range	20 dB (0.1 dB step size)
Input VSWR	2.5:1	Gain flatness	±2.5 dB max over full RF band
	1.3:1 with input isolator	Gain stability	±3.0 dB max over temp. range
		Spurious	-55 dBc
IF Output		Image Rejection	50 dB
Frequency range	70 ± 18 MHz 140 ± 36 MHz (optional)	**LNA Parameters**	
		Noise Temperature	55°K without input isolator
Output Level	+10 dBm		65°K with input isolator
		Output Interface	Type N female 50 Ω
Output Connector	Type N female / 50 Ω	Gain	60 dB
Output Return Loss	18 dB/ 50 Ω	DC power	12÷18V DC (via coaxial cable)
		LNB Parameters (optional)	
		LNB type	Phase lock to 10 MHz ref. (from Transceiver via coax. cable)
		Noise Temperature	90°K
		L-band Output Frequency	950-1450 MHz
		L-band Output Interface	Type N female 50 Ω
		Conversion Gain	60 dB
		DC power	12÷18V DC (via coaxial cable)

Common Parameters (Tx & Rx)			
Synthesizer step size	1 MHz (option 125 KHz)	**Environmental**	
Frequency Stability		Cooling	Forced Air
± 2 x 10^{-8} over 0ºC to +50ºC	± 2 x 10^{-10} / day	Operational	-30°C to +55°C standard (-40°C to +55°C option)
Aging	± 5 x 10^{-8} / year		
Phase Noise	(*With internal 10MHz reference*)	Storage	-55°C to +85°C
Offset frequency	Phase noise (max)	Humidity	Up to 100% condensing
100 Hz	-65 dBc/Hz	Altitude	3,000 m AMSL (derated 2°C/300m)
1000 Hz	-73 dBc/Hz		
10 KHz	-83 dBc/Hz	**Power Requirements**	
100 KHz	-100 dBc/Hz	AC input voltage	Auto ranging 110/220±15% (47-63 Hz)
Monitor & Control			
Serial port (RS-485)	MS3112E10-6P	AC Connector	MS3102R10SL-3P
Serial port (RS-232)	MS3112E10-6P	**Mechanical**	
Redundancy Port	MS3112E16-26P	Packaging	Weatherproof for outdoor use
Discrete Port	MS3112E12-10P		

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