



20W to 200W
AWMT-2000X® 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

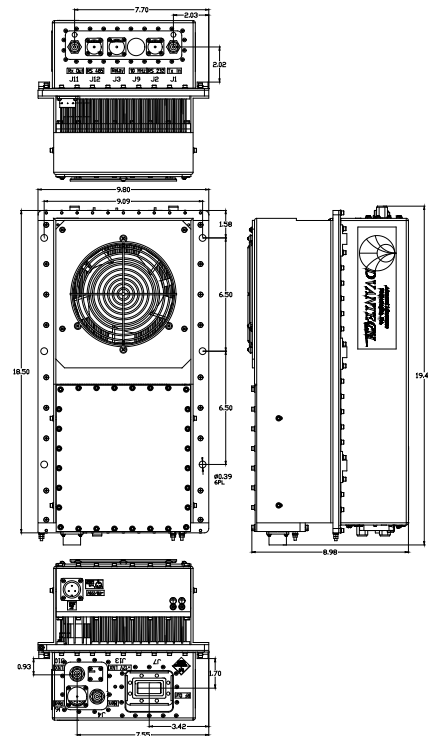
The **Advantech Wireless** range of transceivers uses the latest technology, local and remote control thus providing the ultimate in performance and user friendly operation at a very competitive price.

AWMT-2000X® is a family of hub-mount transceivers operating in the X-band with an output power ranging from 20W to 200W. 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-2000X® 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-2000X® 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 (W)	20	25	30	40	50	60	80	100	150	200
P1dB min. (dBm)	42	43	44	45	46	47	48	49	51	52
Gain min @ max. gain set (dB)	63	64	65	66	67	68	69	70	72	73
Power Consumption	150	200	250	300	400	500	800	1000	1200	1500
Unit Weight	32 kg (70 lbs)									
Dimensions (L x W x H)	18.50" x 9.80" x 8.93" (46.99 x 24.89 x 22.68 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		Spurious (in band)	-55 dBc max
Gain control range	20 dB (0.1 dB step size)	Noise Power Density	-70 dBm/Hz max in TX band -110 dBm/Hz max in 7.25 – 7.75 GHz in RX band
Gain flatness	3.0 dB p-p max over 36 MHz		
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
		Image Rejection	50 dB
IF Output		LNA Parameters	
Frequency range	70 ± 18 MHz 140 ± 36 MHz (optional)	Noise Temperature	55°K without input isolator 65°K with input isolator
Output Level	+10 dBm	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		Environmental	
Synthesizer step size	1 MHz (option 125 KHz)	Cooling	Forced Air
Frequency Stability		Operational	-30°C to +55°C standard (-40°C to +55°C option)
± 2 x 10 ⁻⁸ over 0°C to +50°C	± 2 x 10 ⁻¹⁰ / day	Storage	-55°C to +85°C
Aging	± 5 x 10 ⁻⁸ / year	Humidity	Up to 100% condensing
Phase Noise	(With internal 10MHz reference)	Altitude	3,000 m AMSL (derated 2°C/300m)
Offset frequency	Phase noise (max)		
100 Hz	-65 dBc/Hz	Power Requirements	
1000 Hz	-73 dBc/Hz	AC input voltage	Auto ranging 110/220±15% (47-63 Hz)
10 KHz	-83 dBc/Hz	AC Connector	MS3102R16-10P
100 KHz	-100 dBc/Hz	Mechanical	
Monitor & Control		Packaging	Weatherproof for outdoor use
Serial port (RS-485)	MS3112E10-6P		
Serial port (RS-232)	MS3112E10-6P		
Redundancy Port	MS3112E16-26P		
Discrete Port	MS3112E12-10P		

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