C-Band Transceiver

300W to 500W
AWMT-5000C™ series

Features

- 70 or 140 MHz Tx and Rx interface
- Easy to install and operate
- Compact light weight design
- Weatherproof package
- Phase-locked LNB
- Low phase noise
- Remote Monitor & Control (RS-232 and RS-485)
- Relay alarm indicators
- LED status indicators
- Automatic high reflected power protection
- Harmonic Filter
- High stability internal 10MHz reference
- Downloadable PC GUI
- Redundant operation ready

Overview

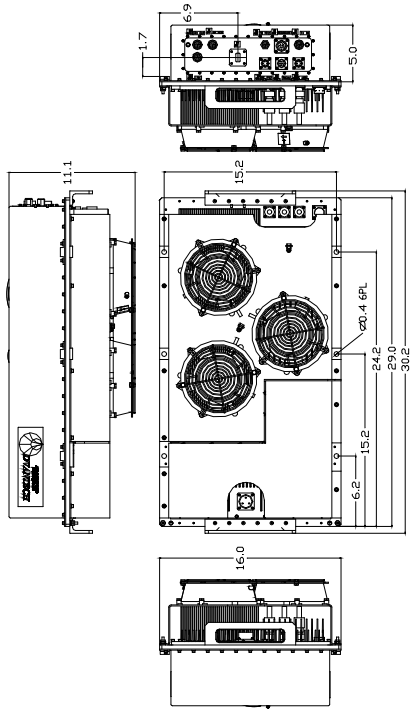
The **Advantech Wireless** range of transceivers uses the latest technology, local and remote control thus providing the ultimate in performance and user friendly operation at a very competitive price.

AWMT-5000C™ is a family of hub-mount transceivers operating in the C-band 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-C™ series for up to 500W.

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-5000C™ is designed to operate in the C-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

- Extended C-Band (5.85 – 6.725 GHz)
- Additional L band interface
- LNA operation
- Step Size 125 KHz option
- 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-5000C™ 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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Technical Specifications

Transmit Path

Model	300W	350W	400W	500W
P1dB min. (dBm)	54	54.5	55	56
Gain min @ max. gain set (dB)	75	76	76	77
Power Consumption	1700	2000	2200	2700
Unit Weight	58 kg (128 lbs)			
Dimensions (L x W x H)	30.00” x 16.00” x 11.00” (76.20 x 40.60 x 28.00 cm)			

Transmit Path

IF Input		**RF Output**	
Frequency range	70 ± 18 MHz (140 ± 36 MHz optional)	Frequency range (Non-inverting)	5.850 – 6.425 GHz 6.425 – 6.725 GHz 6.725 – 7.025 GHz
Input Connector	Type N female		
Input Return Loss	18 dB / 50 Ω	Output connector	CPR 137G (N-Type option up to 150 W)
		Output Return Loss	20 dB (18 dB for coaxial cable)
Gain Specification		Third order IMD (2 tones 5 MHz apart)	-26 dBc max at 3dB total back-off from rated P1dB
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
Gain stability	3.0 dB p-p max over temp range		-155 dBm/Hz in max 3.4 – 4.2 GHz in RX band

Receive Path

RF Input		**Gain Specification**	
RF Input Frequency	3.625 – 4.2 GHz 3.400 – 3.700 GHz (CP) 4.5 – 4.8 GHz (CI)	Gain (LNB + Receiver)	80 dB @ max gain set
		Gain control range	20 dB (0.1 dB step size)
		Gain flatness	±3.0 dB max over full RF band
RF Input Interface	CPR-229G	Gain stability	3.0 dB p-p max over temp. range
Input VSWR	2.5:1	Spurious	-55 dBc
		Image Rejection	50 dB
IF Output		**LNB Parameters**	
Frequency range	70 ± 18 MHz (140 ± 36 MHz optional)	LNB type	Phase lock to 10 MHz ref. (from Transceiver via coax. cable)
Output Level	+5 dBm	Noise Temperature	35°K
Output Connector	Type N female / 50 Ω	L-band Output Frequency	950-1750 MHz
Output Return Loss	18 dB/50 Ω	L-band Output Interface	Type N female 50 Ω
		Conversion Gain	60 dB
		DC power	12÷18V DC (via coaxial cable)
		LNA Parameters *(optional)*	
		Noise Temperature	35°K (30°K optional)
		Output Interface	Type N female 50 Ω
		Gain	60 dB
		DC power	12÷18V DC (via coaxial cable)

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	-60 dBc/Hz -65 dBc/Hz typical	Humidity	Up to 100% condensing
1000 Hz	-70 dBc/Hz -73 dBc/Hz typical	Altitude	3,000 m AMSL (derated 2°C/300m)
10 KHz	-80 dBc/Hz -85 dBc/Hz typical		
100 KHz	-90 dBc/Hz -95 dBc/Hz typical	**Power Requirements**	
Monitor & Control		AC input voltage	220 VAC (47-63 Hz)
Serial port (RS-485)	MS3112E10-6P	AC Connector	MS3102R20-19P
Serial port (RS-232)	MS3112E10-6P	**Mechanical**	
Redundancy Port	MS3112E16-26P	Packaging	Weatherproof for outdoor use
Discrete Port	MS3112E12-10P		

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