

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

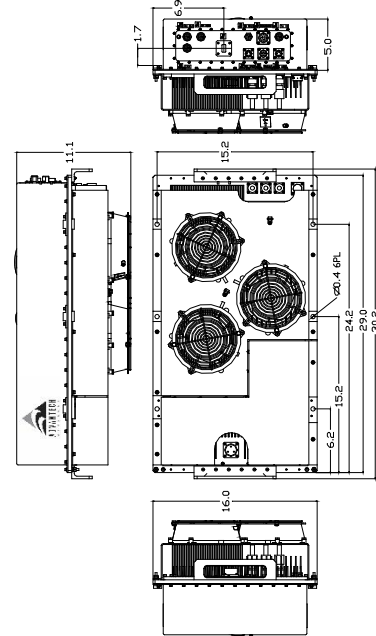
The Advantech Wireless range of transceivers uses the latest technology, local and remote control thus providing the ultimate in performance and user friendly operation at a very competitive price.

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 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.

Applications

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.

C-Band Transceiver

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 (W)	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	
Input Connector	Type N female		6.425 – 6.725 GHz	
Input Return Loss	18 dB / 50 Ω	Output connector	6.725 – 7.025 GHz	
			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	Gain (LNB + Receiver)	80 dB @ max gain set	
	3.400 – 3.700 GHz (CP)	Gain control range	20 dB (0.1 dB step size)	
	4.5 – 4.8 GHz (CI)	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)	

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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)		
100 Hz	-60 dBc/Hz	-65 dBc/Hz typical	Storage
1000 Hz	-70 dBc/Hz	-73 dBc/Hz typical	Humidity
10 KHz	-80 dBc/Hz	-85 dBc/Hz typical	Altitude
100 KHz	-90 dBc/Hz	-95 dBc/Hz typical	
Monitor & Control		Power Requirements	
Serial port (RS-485)	MS3112E10-6P	AC input voltage	220 VAC (47-63 Hz)
Serial port (RS-232)	MS3112E10-6P	AC Connector	MS3102R20-19P
Redundancy Port	MS3112E16-26P	Mechanical	
Discrete Port	MS3112E12-10P	Packaging	Weatherproof for outdoor use

Ref.: PB-AWMT5000-C-300-500-001-18226

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