



300W to 500W  
AWMT-5000K® series

## Features

- Operating Ku-Band Tx: 14.00 - 14.50 GHz  
13.75 - 14.50 GHz (optional)  
Rx: 10.95 - 12.75 GHz
- 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/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

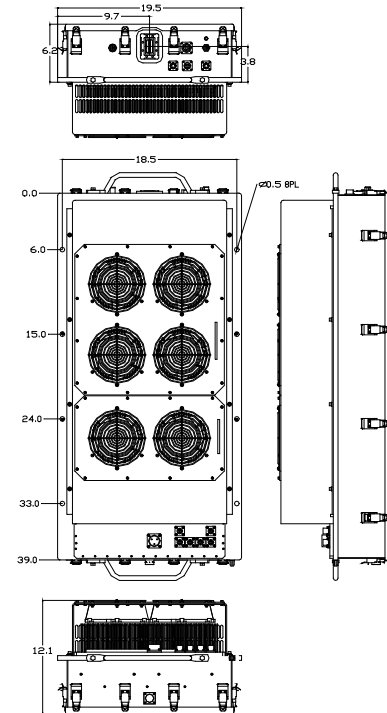
The **Advantech Wireless** range of transceivers uses the latest technology, thus providing the ultimate in performance and user friendly operation at a very competitive price.

AWMT-5000K® is a family of hub-mount transceivers operating in the Ku-band from 300W to 500 W. 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-K® 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-5000K® is designed to operate in the Ku-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 Ku-band (13.75 – 14.50 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

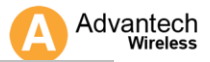
## Accessories

- Mounting kits for transceiver installation
- Redundancy kits
- Mounting frame for redundancy applications
- Transmit Reject Filter and/or Receive Reject Filter (external)
- Remote Control Panel

## Redundancy

The AWMT-5000K® 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.

# Ku-Band Transceiver



## Technical Specifications

### Transmit Path

Model	300W	400W	500W
P1dB min. (dBm)	+54	+55	+56
Gain min @ max. gain set (dB)	75	76	77
Power Consumption	2800W	3000W	4000W
Unit Weight	80 Kg (176lbs)		
Dimensions (L x W x H)	39.00" x 18.50" x 12.10" (99.00 x 47.00 x 30.70 cm)		

### Transmit Path

IF Input		RF Output	
Frequency range	70 ± 18 MHz (140 ± 36 MHz optional)	Frequency range (Non-inverting)	14.00 – 14.50 GHz 13.75 – 14.50 GHz (optional)
Input Connector	Type N female	Output connector	WR 75
Input Return Loss	18 dB / 50 Ω	Output Return Loss	20 dB (18 dB for coaxial output)
<b>Gain Specification</b>		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 (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 -135 dBm/Hz max in 10.95 – 12.75 GHz in RX band
Gain stability	3.0 dB p-p max over temp. range		

### Receive Path

RF Input		Gain Specification	
RF Input Frequency	10.95 – 12.75 GHz * Field selectable bands	Gain (LNB + Receiver)	75 dB @ max gain set
Bands	1) 10.95 – 11.70 GHz	Gain control range	20 dB (0.1 dB step size)
	2) 11.70-12.20 GHz	Gain flatness	±2.5 dB max over full RF band
	3) 12.25-12.75 GHz	Gain stability	±3.0 dB max over temp. range
RF Input Interface	WR75	Spurious	-55 dBc
Input VSWR	2.5:1	Image Rejection	50 dB
<b>IF Output</b>		<b>LNB Parameters</b>	
Frequency range	70 ± 18 MHz (140 ± 36 MHz optional)	LNB type	Phase locked to 10 MHz ref. (from Transceiver via cox. cable)
Output Level	+10 dBm	Noise Temperature	65°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)
		<b>LNA Parameters (optional)</b>	
		Noise Temperature	85°K
		Output Interface	Type N female 50 Ω
		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
<b>Frequency Stability</b>		Operational	-30°C to +55°C standard (-40°C to +55°C option)
± 2 x 10 <sup>-8</sup> over 0°C to +50°C	± 2 x 10 <sup>-10</sup> / day	Storage	-55°C to +85°C
Aging	± 5 x 10 <sup>-8</sup> / year	Humidity	Up to 100% condensing
<b>Phase Noise</b>	(With internal 10MHz reference)	Altitude	3,000 m AMSL (derated 2°C/300m)
Offset frequency	Phase noise (max)	<b>Power Requirements</b>	
100 Hz	-60 dBc/Hz	AC input voltage	220 VAC (47-63 Hz)
1000 Hz	-70 dBc/Hz	AC Connector	MS3102R20-19P
10 KHz	-80 dBc/Hz	<b>Mechanical</b>	
100 KHz	-90 dBc/Hz	Dimensions	See Table above
<b>Monitor &amp; Control</b>		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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