

# Ku-Band Transceiver

150W to 250W  
AWMT-4000K™ 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 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 ready operation

## Overview

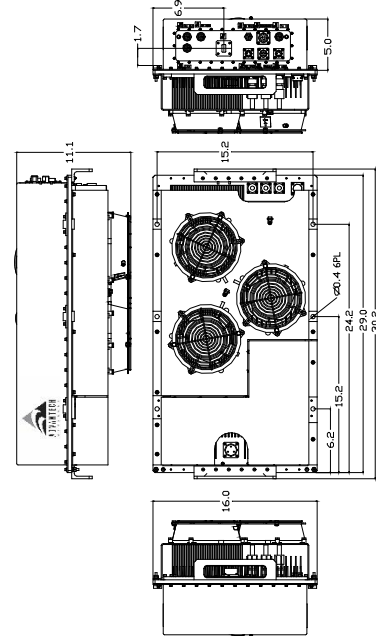
The Advantech Wireless range of transceivers uses the latest technology, thus providing the ultimate in performance and user friendly operation at a very competitive price.

AWMT-4000K is a family of hub-mount transceivers operating in the Ku-band from 150W to 250 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.

## Applications

The AWMT-4000K 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
- Hand-Held terminal

## Redundancy

The AWMT-4000K 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	150W	200W	250W
P1dB min. (dBm)	+51	+52	+53
Gain min @ max. gain set (dB)	72	73	74
Power Consumption	1400W	1600W	1800W
Unit Weight	58 kg (128 bs)		
Dimensions (L x W x H)	30" x 16" x 11" (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)	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)
		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 -135 dBm/Hz max in 10.95 – 12.75 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	10.95 – 12.75 GHz * Field selectable bands	Gain (LNB + Receiver)	75 dB @ max gain set
Bands	1) 10.95 – 11.70 GHz 2) 11.70-12.20 GHz 3) 12.25-12.75 GHz	Gain control range	20 dB (0.1 dB step size)
		Gain flatness	±2.5 dB max over full RF band
		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
		LNB Parameters	
IF Output		LNB type	Phase locked to 10 MHz ref. (from Transceiver via cox. cable)
Frequency range	70 ± 18 MHz (140 ± 36 MHz optional)	Noise Temperature	65°K
Output Level	+10 dBm	L-band Output Frequency	950-1750 MHz
Output Connector	Type N female / 50 Ω	L-band Output Interface	Type N female 50 Ω
Output Return Loss	18 dB/50 Ω	Conversion Gain	60 dB
		DC power	12±18V DC (via coaxial cable)
		LNA Parameters (optional)	
		Noise Temperature	85°K
		Output Interface	Type N female 50 Ω
		Gain	60 dB
		DC Power	12±18V DC (via coaxial cable)

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## Ku-Band Transceiver

Common Parameters (Tx & Rx)			
Synthesizer step size	1 MHz (option 125 KHz)		<b>Environmental</b>
<b>Frequency Stability</b>		Cooling	Forced Air
$\pm 2 \times 10^{-8}$ over 0°C to +50°C	$\pm 2 \times 10^{-10}$ / day		Operational
Aging	$\pm 5 \times 10^{-8}$ / year		-30°C to +55°C standard (-40°C to +55°C option)
<b>Phase Noise</b>	<i>(With internal 10MHz reference)</i>		
Offset frequency	Phase noise (max)		Storage
100 Hz	-60 dBc/Hz		Humidity
1000 Hz	-70 dBc/Hz		Altitude
10 KHz	-80 dBc/Hz		Up to 100% condensing
100 KHz	-90 dBc/Hz		3,000 m AMSL (derated 2°C/300m)
<b>Monitor &amp; Control</b>		<b>Power Requirements</b>	
Serial port (RS-485)	MS3112E10-6P		AC input voltage
Serial port (RS-232)	MS3112E10-6P		AC Connector
Redundancy Port	MS3112E16-26P		MS3102R20-19P
Discrete Port	MS3112E12-10P		<b>Mechanical</b>
		Dimensions	See Table above
		Packaging	Weatherproof for outdoor use

Ref.: PB-AWMT4000-K-150-250-18226

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