

Ku-Band Transceiver



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

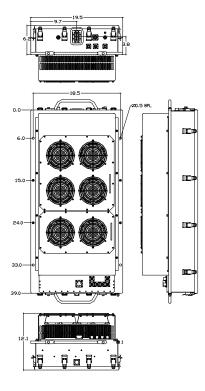
The **Advantech Wireless** range of transceivers uses the latest technology, thus providing the ultimate in performance and user friendly operation at a very competitive price.

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.

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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	200011	80 Kg (176lbs)	
Dimensions (L x W x H)	39.00" x 1	18.50" x 12.10" (99.00 x 47.00	0 x 30.70 cm)
Transmit Path		(00000000000000000000000000000000000000	
IF Input		RF Output	
Frequency range	70 ± 18 MHz	Frequency range	14.00 – 14.50 GHz
. requeries rainge	(140 ± 36 MHz optional)	(Non-inverting)	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)
input restain 2000	10 00 12	Third order IMD (2 tones	-25 dBc max at 3dB total back-off
Gain Specification		5 MHz apart)	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
		INDISE FOWEL DELISITY	-70 dBm/Hz max in 1X band -135 dBm/Hz max in 10.95 – 12.75
Gain stability	3.0 dB p-p max over temp. range	_	-135 dBm/Hz max in 10.95 – 12.75 GHz in RX band
Receive Path			GITZ III NA DAHU
		Coin Specification	
RF Input	10.95 – 12.75 GHz	Gain Specification Gain (LNB + Receiver)	00 dD @ may gain ant
RF Input Frequency			80 dB @ max gain set
D I.	* Field selectable bands	Gain control range	20 dB (0.1 dB step size)
Bands	1) 10.95 – 11.70 GHz	Gain flatness	±2.5 dB max over full RF band
	2) 11.70-12.20 GHz	Gain stability	±3.0 dB max over temp. range
	3) 12.25-12.75 GHz	Spurious	-55 dBc
RF Input Interface	WR75	Image Rejection	50 dB
Input VSWR	2.5:1		
		LNB Parameters	
IF Output		LNB type	Phase locked to 10 MHz ref. (from
Frequency range	70 ± 18 MHz		Transceiver via cox. cable)
	(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	Convertion Gain	60 dB
	10 UD/30 \(\frac{1}{2}\)	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)
Common Parameters (Tx	& Rx)		
Synthesizer step size 1 MHz (option 125 KHz)		Environmental	
Frequency Stability	40	Cooling	Forced Air
± 2 x 10 ⁻⁸ over 0°C to +50°C		Operational	-30°C to +55°C standard
Aging	± 5 x 10 ⁻⁸ / year		(-40°C to +55°C option)
Phase Noise	(With internal 10MHz reference)	Storage	-55°C to +85°C
Offset frequency	Phase noise (max)	Humidity	Up to 100% condensing
100 Hz	-60 dBc/Hz	Altitude	3,000 m AMSL (derated 2°C/300m)
1000 Hz	-70 dBc/Hz		
10 KHz	-80 dBc/Hz	Power Requirements	
100 KHz	-90 dBc/Hz	AC input voltage	220 VAC (47-63 Hz)
Monitor & Control		AC Connector	MS3102R20-19P
Serial port (RS-485)	MS3112E10-6P		
Serial port (RS-232)	MS3112E10-6P	Mechanical	
Redundancy Port	MS3112E16-26P	Dimensions	See Table above
Discrete Port	MS3112E12-10P	Packaging	Weatherproof for outdoor use

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