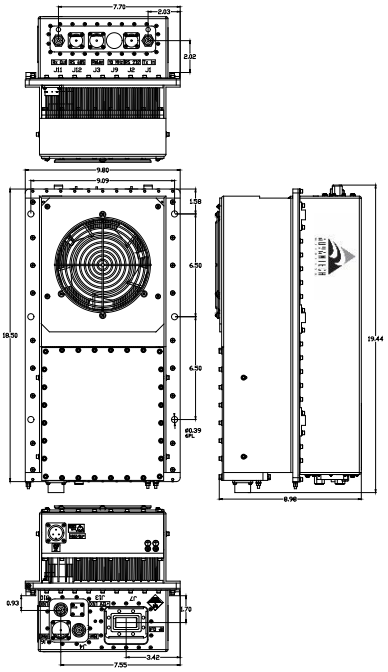
Ku-Band Transceiver
L-Band IF Interface
GaN Technology

150W to 250W
AWMTg-3000K™ series



Features

- Operating Ku-Band Tx: 14.00 - 14.50 GHz
  13.75 - 14.50 GHz (optional)
  Rx: 10.95 - 12.75 GHz (sub-bands)
- L-band 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 range of transceivers uses the latest GaN technology, thus providing the ultimate in performance and user friendly operation at a very competitive price.

AWMTg-3000K is a family of GaN based hub-mount transceivers operating in the Ku-band from 150W to 250W. 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 AWMTg-K series for up to 1250W.

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 AWMTg-3000K is designed to operate in the Ku-band with L-band 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 – 14.5 GHz)
- LNA operation
- 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 AWMTg-3000K series of GaN based 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	**150**	**200**	**250W**
Psat nominal. (dBm)	+52.0	+53.0	+53.7
PLinear min. (dBm)	+48.0	+49.0	+50.0
Plinear is the power at which IMD specifications are met, and the Spectral Regrowth is <-30 dBc @1.0 x symbol rate for QPSK/OQPSK/8PSK modulations			
Gain min @ max. gain set	72 dB	73 dB	74 dB
Power Consumption(at Plinear)	800 W	950W	1,200W
Unit Weight	25 kg (55 lbs)		
Dimensions (L x W x H)	18.50" x 9.80" x9.21" (47.00 x 25.00 x 29.00 cm)		

Transmit Path			
IF Band Input		**RF Output**	
Frequency range	950-1450 MHz (950-1700 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	Typical 16 dB / 50 Ω	Output Return Loss	20 dB (18 dB for coaxial output)
Gain Specification		Third order IMD (2 tones 5 MHz apart)	-25 dBc max versus Plinear total outout power
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 full RF band	Noise Power Density	-70 dBm/Hz max in TX band -145 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	Gain (LNB + Receiver)	75 dB @ max gain set
	* Field selectable bands or Switching Voltage	Gain control range	20 dB (0.1 dB step size)
Bands	1) 10.95 – 11.70 GHz 2) 11.70-12.20 GHz 3) 12.25-12.75 GHz	Gain flatness	±2.5 dB max over full RF band
		Gain stability	±3.0 dB max over temp. range
RF Input Interface	WR75	Image Rejection	50 dB
Input VSWR	2.5:1	**LNB Parameters**	
		LNB type	Phase locked to 10 MHz ref. (from Transceiver via cox. cable)
IF Output			
Frequency range	950-1450 MHz (950-1700 MHz optional)	Noise Temperature	65°K
		L-band Output Frequency	950-1450 MHz/ 950-1700 MHz
Output Level	+10 dBm	L-band Output Interface	Type N female 50 Ω
Output Connector	Type N female / 50 Ω	Conversion Gain	55 dB
Output Return Loss	Typical 16 dB/50 Ω	DC power	12÷18V DC (via coaxial cable)
		LNA Parameters (optional)	
		Noise Temperature	60°K
		Output Interface	Type N female 50 Ω
		Gain	55 dB
		DC Power	12÷18V DC (via coaxial cable)

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Common Parameters (Tx & Rx)			
Frequency Stability		**Environmental**	
		Cooling	Forced Air
± 2 x 10^{-8} over 0ºC to +50ºC	± 2 x 10^{-10} / day	Operational	-30°C to +55°C standard (-40°C to +55°C option)
Aging	± 5 x 10^{-8} / year		
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	Auto ranging 110/220±15% (47-63 Hz)
Monitor & Control			
Serial port (RS-485)	MS3112E10-6P	AC Connector	MS3102R16-10P
Serial port (RS-232)	MS3112E10-6P	**Mechanical**	
Redundancy Port	MS3112E16-26P	Dimensions	See Table above
Discrete Port	MS3112E12-10P	Packaging	Weatherproof for outdoor use

Ref.: PB-AWMTg3000-K-150-250-18226

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