



16W to 125W
AWMT-3000K® 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

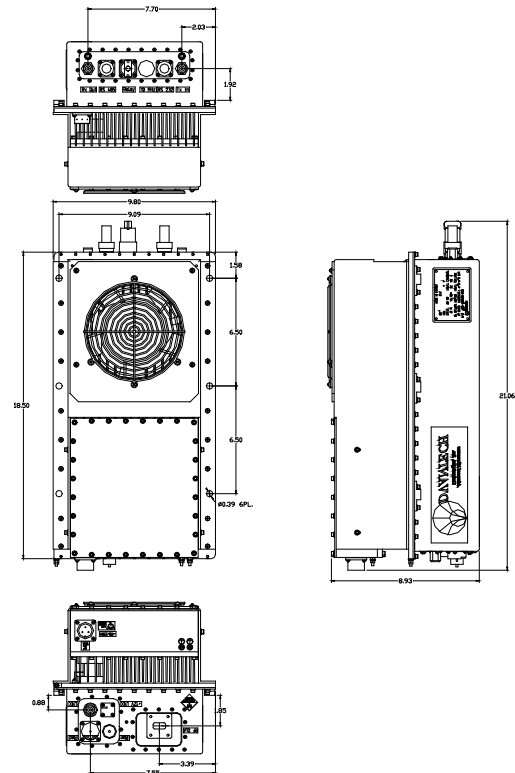
The **Advantech Wireless** range of transceivers uses the latest technology, thus providing the ultimate in performance and user friendly operation at a very competitive price.

AWMT-3000K® is a family of hub-mount transceivers operating in the Ku-band from 16W to 125 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-3000K® 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 – 14.5 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-3000K® 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 | 16W | 20W | 25W | 30W | 40W | 50W | 60W | 80W | 100W | 125W |
| P1dB min. (dBm) | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| Gain min @ max. gain set (dB) | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 |
| Power Consumption | 200 | 250 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 |
| Unit Weight | 32 kg (70 lbs) | | | | | | | | | |
| Dimensions (L x W x H) | 18.50" x 9.80" x 8.93" (46.99 x 24.89 x 22.68 cm) | | | | | | | | | |

| Transmit Path | | | |
|---------------------------|--|--|---|
| IF Band 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) |
| Gain Specification | | 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 2) 11.70-12.20 GHz 3) 12.25-12.75 GHz | Gain control range | 20 dB (0.1 dB step size) |
| RF Input Interface | WR75 | Gain flatness | ±2.5 dB max over full RF band |
| Input VSWR | 2.5:1 | Gain stability | ±3.0 dB max over temp. range |
| | | Spurious | -55 dBc |
| | | Image Rejection | 50 dB |
| IF Output | | LNB Parameters | |
| 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) |
| | | 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) | |
| Frequency Stability | | Environmental | |
| ± 2 x 10 ⁻⁸ over 0°C to +50°C | ± 2 x 10 ⁻¹⁰ / day | Cooling | Forced Air |
| Aging | ± 5 x 10 ⁻⁸ / year | Operational | -30°C to +55°C standard (-40°C to +55°C option) |
| Phase Noise | | Storage | -55°C to +85°C |
| (With internal 10MHz reference) | | Humidity | Up to 100% condensing |
| Offset frequency | Phase noise (max) | Altitude | 3,000 m AMSL (derated 2°C/300m) |
| 100 Hz | -60 dBc/Hz | | |
| 1000 Hz | -70 dBc/Hz | Power Requirements | |
| 10 KHz | -80 dBc/Hz | AC input voltage | Auto ranging 110/220±15% (47-63 Hz) |
| 100 KHz | -90 dBc/Hz | AC Connector | MS3102R16-10P |
| Monitor & Control | | Mechanical | |
| Serial port (RS-485) | MS3112E10-6P | Dimensions | See Table above |
| Serial port (RS-232) | MS3112E10-6P | Packaging | Weatherproof for outdoor use |
| Redundancy Port | MS3112E16-26P | | |
| Discrete Port | MS3112E12-10P | | |

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