**C-Band Transceiver**

**L-Band IF Interface**

*300W to 500W*

*AWMT-5000LC*TM series

od1t0-i3g1pt-3f0



# Features

* 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 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 operation ready

# Overview

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

AWMT-5000LCTM is a family of hub-mount transceivers operating in the C-band from 300W to 500W. 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-LCTM series for up to 1000W.

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-5000LCTM is designed to operate in the C-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 C-Band (5.85 – 6.725 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 AWMT-5000LCTM 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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| Technical Specifications | | | | | | | | |
| **Transmit Path** | | | | | | | | |
| Model | | **300W** | | **350W** | | **400W** | | **500W** |
| P1dB min. (dBm) | | 54 | | 54.5 | | 55 | | 56 |
| Gain min @ max. gain set (dB) | | 75 | | 76 | | 76 | | 77 |
| Power Consumption (W) | | 1700 | | 2000 | | 2200 | | 2700 |
| Unit Weight | | 58 Kg (128lbs) | | | | | | |
| Dimensions (L x W x H) | | 30.00” x 16.00” x 11.00” (76.20 x 40.60 x 28.00 cm) | | | | | | |
| **Transmit Path** |  | | | |  | |  | |
| **L-Band Input** | | | | | **RF Output** | | | |
| Frequency range | 950-1525 MHz | | | | Frequency range  (Non-inverting) | | 5.850 – 6.425 GHz  6.425 – 6.725 GHz  6.725 – 7.025 GHz | |
| Input Connector | Type N female | | | |
| Input Return Loss | 18 dB / 50 Ω | | | |
|  | | | | | Output connector | | CPR 137G | |
| **Gain Specification** | | | | | Output Return Loss | | 20 dB (18 dB for coaxial output) | |
| Gain control range | 20 dB (0.1 dB step size) | | | | Third order IMD (2 tones 5 MHz apart) | | -26 dBc max at 3dB total back-off from rated P1dB | |
| Gain flatness | 2.0 dB p-p max | | | | Spurious | | -55 dBc max at rated power | |
| Gain stability | 3.0 dB p-p max over temp. range | | | | Noise Power Density | | -70 dBm/Hz max in TX band | |
|  | | | | |  | | -155 dBm/Hz max in 3.4 – 4.2 GHz | |
|  | | | | | | | | |
| **Receive Path** |  | | | |  | |  | |
| **RF Input** | | | | | **LNB Parameters** | | | |
| RF Input Frequency | 3.4 – 4.2 GHz  4.2 – 4.5 GHz (CI) | | | | LNB type | | Phase lock to 10 MHz ref. (from Transceiver via coax. cable) | |
| RF Input Interface | CPR-229G | | | | Noise Temperature | | 35°K | |
| Input VSWR | 2.5:1 | | | | L-band Output Frequency | | 950-1750 MHz | |
| **L-band Output** | 950 – 1750 MHz | | | | L-band Output Interface | | Type N female 50 Ω | |
| Frequency range | +5 dBm | | | | Conversion Gain | | 60 dB | |
| Output P1dB min | Type N female / 50 Ω | | | | DC power | | 12÷18V DC (via coaxial cable) | |
| Output Connector | 18 dB/ 50 Ω | | | |  | | | |
| Output Return Loss |  | | | | **LNA Parameters *(optional)*** | | | |
|  |  | | | | Noise Temperature | | 35°K (30°K optional) | |
| **Gain Specification** |  | | | | Output Interface | | Type N female 50 Ω | |
| Gain (LNB + Receiver) | 80 dB @ max gain set | | | | Gain | | 60 dB | |
| Gain control range | 20 dB (0.1 dB step size) | | | | DC power | | 12÷18V DC (via coaxial cable) | |
| Gain flatness | ±2.5 dB max over full RF band | | | |  | |  | |
| Gain stability | 3.0 dB max over temp. range | | | |  | |  | |
| Spurious | -55 dBc max | | | |  | |  | |
| Image Rejection | 50 dB | | | |  | |  | |
|  | | | | | | | | |
| **Common Parameters (Tx & Rx)** | | | | | | | | |
| **Frequency Stability** | | | | | **Environmental** | | | |
| ± 2 x 10-8 over 0ºC to +50ºC | | | ± 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** | (*With internal 10MHz reference)* | | | |
| Offset frequency | Phase noise (max) | | | | Storage | | -55°C to +85°C | |
| 100 Hz | -60 dBc/Hz -65 dBc/Hz typical | | | | Humidity | | Up to 100% condensing | |
| 1000 Hz | -70 dBc/Hz -73 dBc/Hz typical | | | | Altitude | | 3,000 m AMSL (derated 2°C/300m) | |
| 10 KHz | -80 dBc/Hz -85 dBc/Hz typical | | | |  | |  | |
| 100 KHz | -90 dBc/Hz -95 dBc/Hz typical | | | | **Power Requirements** | | | |
| **Monitor & Control** | | | | | AC input voltage | | Auto ranging 110/220±15% (47-63 Hz) | |
| Serial port (RS-485) | MS3112E10-6P | | | |
| Serial port (RS-232) | MS3112E10-6P | | | | AC Connector | | MS3102R20-19P | |
| Redundancy Port | MS3112E16-26P | | | | **Mechanical** | | | |
| Discrete Port | MS3112E12-10P | | | | Packaging | | Weatherproof for outdoor use | |