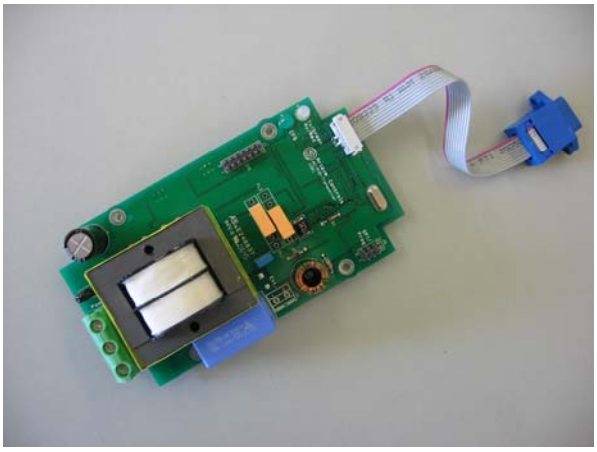
AC-MIO-RS232-262-240

Data Sheet

AC-MIO-RS232 Powerline Transceiver



OVERVIEW

The AC-MIO-RS232 transceiver is a PC-based device that allows transporting any communication data over the power line. This board features a compact design and is ideal for testing the Ariane Controls technology in a wide range of powerline communication applications.

The device is designed as a complete powerline transceiver. It integrates the highly reliable powerline modem PLM-1, an ATmega microcontroller, a RS-232 interface, a powerful analog front end with a versatile coupling unit and the power supply. The unit is provided with a DB-9 adapter cable for RS-232 communication.

The Ariane Controls Diagnosis Tool software provides an easy way to communicate using the AC-MIO-RS232 transceivers.

FEATURES

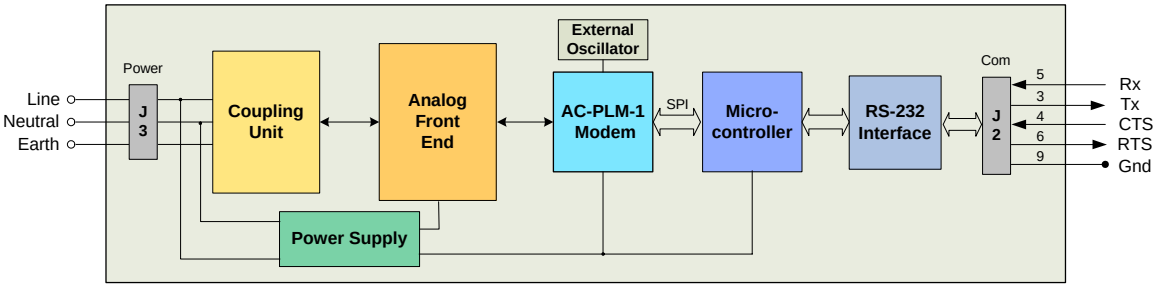
- Provides reliable powerline communication in high attenuation and noisy electrical environments
- Uses very robust narrowband FSK modulation technique including advanced processing functions
- Includes LED indicators for CFG, CPU and Tx/Rx
- RS-232 interface
- Small form factor
- Compliant with ICES-006 Industry Canada standard
- RoHS compliant
- Easy-to-use test software available

SPECIFICATIONS

- Operating voltage: 220-240VAC, 50/60Hz
- Powerline communication frequency: 262kHz
- Powerline communication bit rate: 2544bps
- Serial port parameters: 9600 8-N-1
- Dimensions (L × W × H): 95 × 72 × 42 mm

APPLICATION EXAMPLES

- Remote automatic meter reading
- Industrial control
- Remote diagnostic
- Building automation
- Inter-device peer-to-peer networking



AC-MIO-RS232 Powerline Transceiver Block Diagram

Ariane Controls 4913, Lionel-Groulx, suite 22 • Québec City, Québec G3A 1V1 • Canada
Tel: 1 418 874 1919 • Fax: 1 418 872 4348 • www.arianecontrols.com • sales@arianecontrols.com

QUICK START GUIDE

There are two ways to quickly start operating the AC-MIO-RS232 transceivers: using the Ariane Diagnosis Tool or using the HyperTerminal communication software available in Windows.

Using the Ariane Diagnosis Tool

The Ariane Diagnosis Tool is an easy-to-use software designed to evaluate the reliability of the powerline communication with the Ariane Controls PC-based transceivers.

The software is organized in three sections: Transmission, Reception, and Text. In Transmission, the following parameters can be set: transmit packet payload size, number of transmitted packets, and time delay between packets. The retransmission option can be used to send each packet 2 or 3 times. During the test, the Transmit section displays quantitative information: transmit packet rate, payload rate and test run length.

The Reception section displays real-time information regarding the communication performance, i.e. number of received and corrupted packets. Based on the number of the transmitted packets, the packet error rate can be displayed once the test was finished.

The Text section displays all received packets and allows you to exchange small text messages between the powerline transceivers.

With the Ariane Diagnosis Tool, no configuration is required. Simply connect the AC-MIO-RS232 to the computer, select the serial interface in the File menu of the software and begin the evaluation.

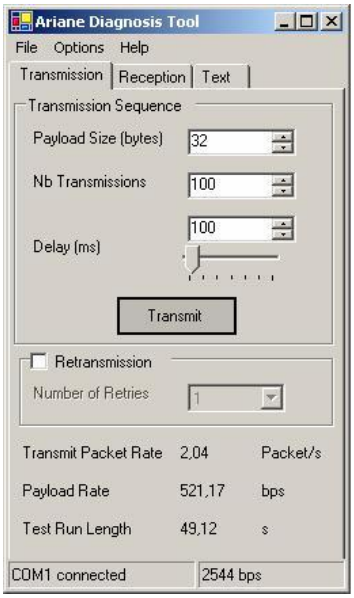


Fig.1 Transmission Section

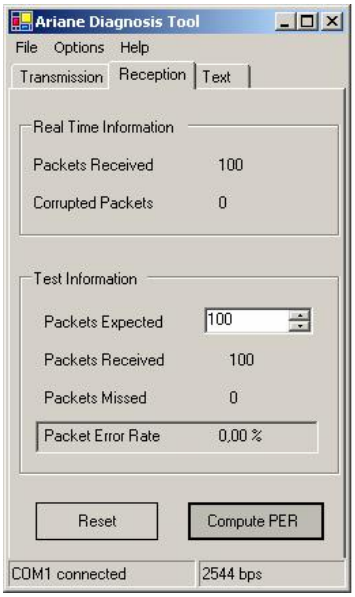


Fig.2 Reception Section

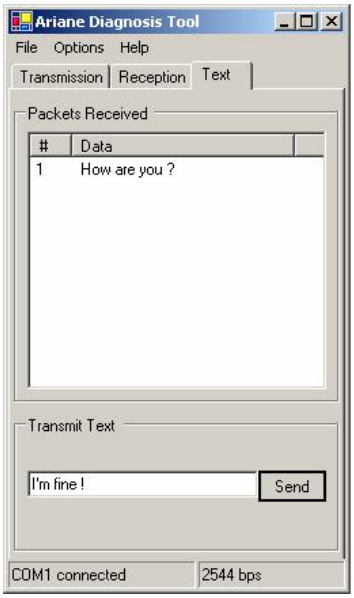


Fig.3 Text Section

Using the Hyper Terminal

When using HyperTerminal, the AC-MIO-RS232 transmits every character that is typed in. Actually, every character is converted in an Ariane Controls one-byte packet and transmitted on the power lines. If more than one character is entered at one time, for instance when using the “Send Text File” option or when pasting text in, the AC-MIO-RS232 converts the text in a multi-byte packet, which can be at most 62 bytes long.

The device support communication with and without hardware flow controls. However, it is recommended using the hardware flow control in environments in which many transmitters are subject to transmit frequently.

HyperTerminal Configuration

- Start HyperTerminal program from Windows: *Start/Programs/Accessories/Communications* menu.
- Create a new session, using the appropriate COM port.
- The connection must have the following properties:
    - Bits per second: 9600
    - Data bits: 8
    - Parity: None
    - Stop Bits: 1
    - Flow Control: Hardware
- From HyperTerminal menu, choose *File/Properties* and click on the *Settings* tab. Select ANSI in the Emulation drop down menu and press OK.
- Choose *File/Save* to save the settings.
- Back in the main window, you can connect. You are now ready to transmit with the AC-MIO-RS232.