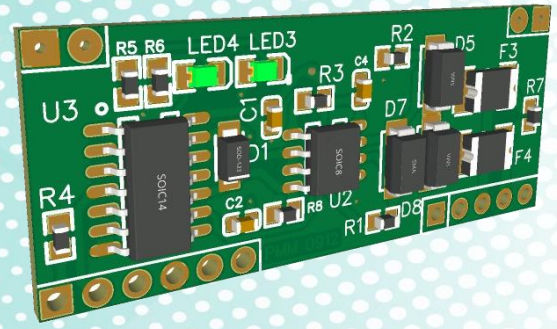# PMM

Power Meter Monitor

Model: PMM0912

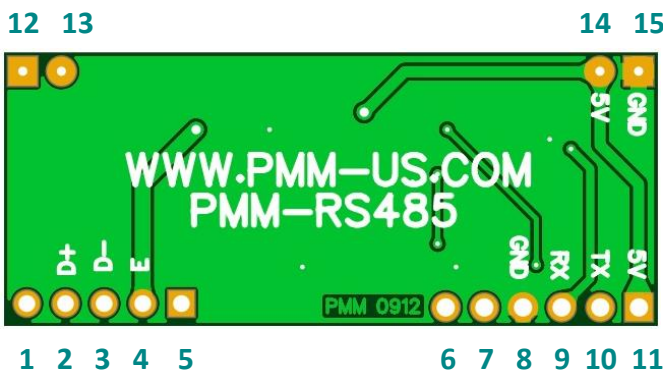**Document version:** 1.2
Date: October 2020

UART/TTL to RS485 Converter Module

KEY FEATURES AND SPECIFICATIONS

- Compatible with 3.3V and 5.0V power supply and signals
- Supports baud rate: 110-256000 bps
- Transmittance distances up to 1200 meters
- Operating temperature: -40 to 80⁰C
- Very high EMC and EMI performance
- RXT and TXD signal indicator LEDs to monitor, send and receive status
- 120 Ohm terminal resistors
- Support multi-machine communication, allowing access for up to 32 devices on bus
- Electrical interference and noise is greatly reduced by the presence of a large copper area
- Radio transmission anti-jamming and lightning protection.
- Module size: 43mm X 18mm X 3mm
- Vertical and horizontal mounting options, compatible with standard DIP/SIP pinout
- RoHS Compliant
- Proven PCB Layout
- Fully Assembled and Tested

DESCRIPTION

PMM0912 is a TTL to RS485 converter module via MAX485 TTL to RS-485 Interface chipset which allows ICs to use RS-485 differential signaling for robust long-distance serial communications. This module allows for data transmission and communication of a CPU/MCU with any 2-wire RS485 device over large distances up to 1200m (4000').

Earthing the module by connecting its terminal to ground gives it an excellent anti-jamming and anti-lightning effect, thus making it more secure and perfect for industrial use. Moreover, it has the ability to work under difficult environmental conditions.
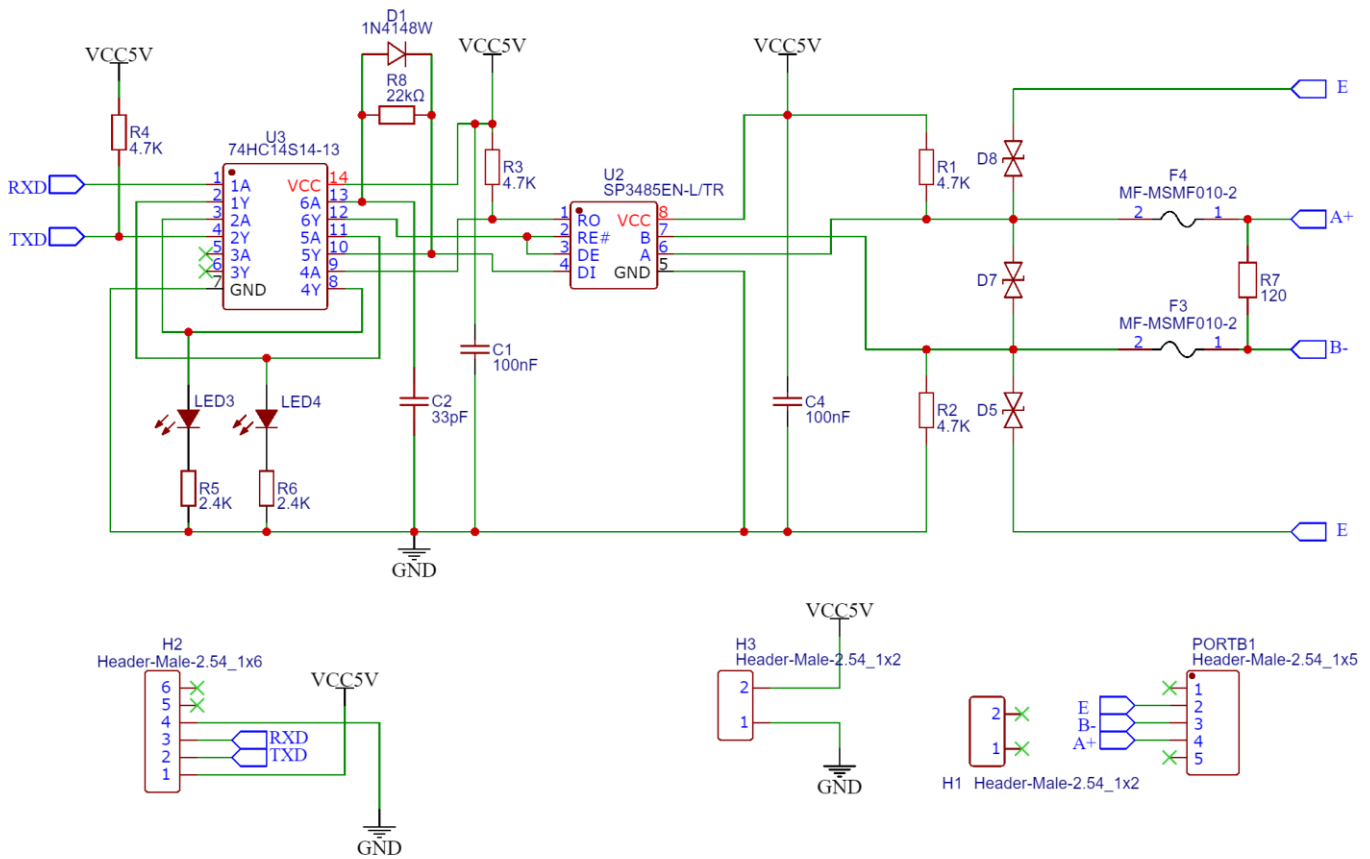
WIRING RS-485 MODULE

The Two differential data lines (labeled as D-&D+) on the output side of the module are connected to the communication network, the wiring should be straight through, where D- on one end should be connected to D- on the other end and D+ connects to D+.

The wires should ideally be twisted and shielded within one cable, this method is important as it runs for longer where there is a lot of electrical noise. The shield or the common ground is labeled as E in output side of the module.

BOARD PINOUT

BOARD PINOUT DESCRIPTION

PINs	DESCRIPTION
1,5,6,7,12,13	NOT CONNECTED
2	D+ DIFFERENTIAL OUTPUT
3	D- DIFFERENTIAL OUTPUT
4	SHIELD / COMMON GROUND
8,15	TTL/UART GND
9	TTL/UART RX
10	TTL/UART TX
11,14	(VCC) POWER SUPPLY: 5VDC OR 3.3VDC
NOTE	TTL level should match the connected VCC

SCHEMATIC DIAGRAM

MULTI-DROP SUPPORT FOR MULTIPLE DEVICES

A significant benefit of RS-485 is that it supports up to 32 devices on the same cable, commonly referred to as a 'multi-drop' FIGURE (2-2).

These devices are typically setup in a Master/Slave configuration with one Master and one or more Slave device. Since they all share the same bus, to avoid conflict the Slave devices only talk when they are asked by the Master such as requesting a temperature reading.
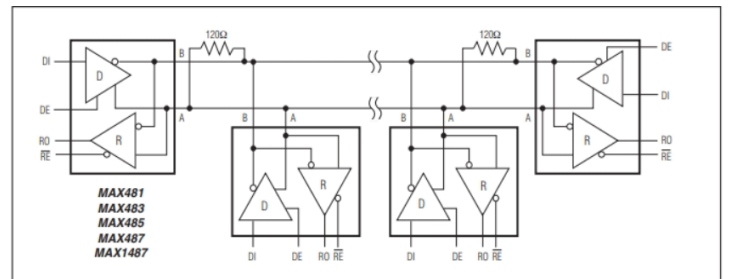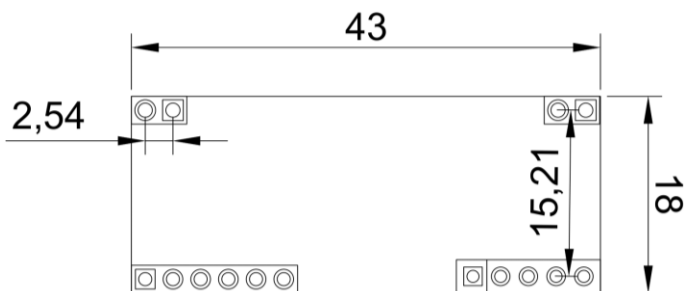

FIGURE (2-2) MULTI-DROP CONNECTION

DIMENSIONS (mm)

ORDERING INFORMATION

Part Number	Description
PMM0912	UART/TTL to RS485 Converter Module

CUSTOMIZED REQUIREMENT

For any customized inquiries and orders, contact us
on **info@Pmm-usa.us**