Mini USB to Terminal RS422 RS485 FTDI Plug-in Adapter

Product Manual

Coolgear, Inc.
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Model Number: USBG-422MiNi

Revision History

Revision	Date	Author	Comments
1.1	04/05/2018	Coolgear	New Manual

About this document

This product manual outlines installation and features of the USBG-422MiNi Mini USB to Terminal RS422 RS485 FTDI Plug-in Adapter.

Scope

The scope of this manual is to give the user of the product an understanding of its use with detailed diagrams and verbiage. The manual allows the users to apply the product to their application.

Intended Audience

This product is intended for use in numerous industries including but not limited to applications such as; Factory automation equipment, multi-drop data collection devices, barcode readers, time clocks, scales, data entry terminals, PC-to-PC long distance communications and serial communication.

Product Support

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1. Introduction

This mini   is a surge and static protected USB to RS-422/485 Plug-in Adapter. The USBG-422MiNi USB-to-Industrial Single RS-422/485 Plug-in Adapter is designed to provides instant connectivity to RS-422/485 communication device for factory automation equipment, multi-drop data collection devices, barcode readers, time clocks, scales, data entry terminals, PC-to-PC long distance communications and serial communication in harsh environments.

WEIGHT	.043 lbs
DIMENSIONS	1.91(L) x 1.55(W) x .736in(H)
CABLE LENGTH	3ft.
UPC	736983901668
WARRANTY	1 year from date of purchase
COLOR	Blue
PORTS	(1) 6-wire terminal connector

1.1 Features

- TAA Compliant
- Supported by Windows 10.
- Adds a high speed RS-422 / 485 serial port.
- 256 bytes receive buffer for high speed data throughput.
- 128 bytes transmit buffer for high speed data throughput.
- Requires no IRQ, DMA, I/O port.
- Data rates: 300 bps to 1M bps.
- Connector: one 6-pin terminal block connector.
- Auto transmit buffer control for 2-wire RS-485 half-duplex operation.
- Wide ambient temperature operation 0°C to 60°C (32°F to 140°F).

- Monitor LEDs of TxD, RxD indicating port status.
- Easy operating mode configuration and setting.
- Provides 15KV ESD protection and 600W surge protection for all serial signals.
- FTDI virtual COM port drivers provided for Windows 10, 8, 7, Vista, Server 2012, 2008, 2003, XP, 2000
- Linux kernel 2.4 and up built-in support.
- No driver installation required.
- CE, FCC approval Works with USB 1.1 & 2.0 host port.

2. Driver Installation

In most cases, the driver of USB-COMi-PL will be installed automatically.

2.1 Install in Windows 8, 7, Server 2012, 2008 Rs

Connect your computer to the Internet and plug the USB-COMi-PL to the USB port. The driver will be installed automatically via the Internet.

2.2 Install in Windows XP, Vista, Server 2003 and 2008

Connect your computer to Internet and plug USB-COMi-PL to the USB port, when asked to install the drivers, allow your computer to search the Internet to load and install the drivers automatically.

2.3 Pin-outs of the Terminal Block Connector

Figure 1

Terminal block connector pin numbers

3. RS422 / RS485 Pin-outs

RS-422/485 Full Duplex Mode Pin-out

The table below shows the RS-422 / 485 full duplex mode pin-out of the terminal block connector.

Pin Number	Pin Type	Description	
1	Output	TxD-	Transmit Data, negative polarity
2	Output	TxD+	Transmit Data, positive polarity
3	Input	RxD+	Receive Data, positive polarity
4	Input	RxD-	Receive Data, negative polarity
5	Power	VCC	DC +5V
6	Ground	GND	Signal Ground

RS-485 Half Duplex Mode Pin-out
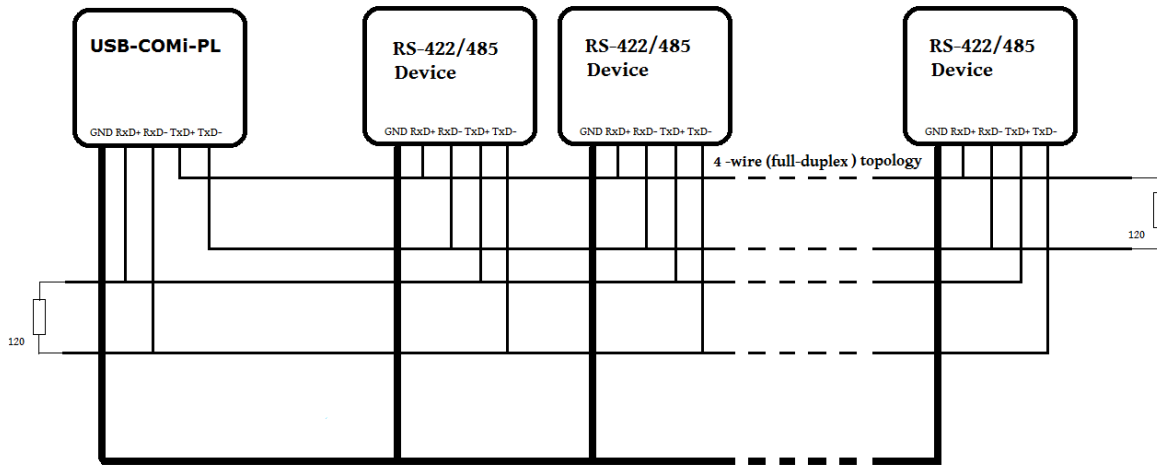
The table below shows the RS-485 half duplex mode pin-out of the DB-9 Male connector.

Pin Number	Pin Type	Description	
1	Out / In	Data-	Transmit / Receive Data, negative polarity
2	Out / In	Data+	Transmit / Receive Data, positive polarity
5	Power	VCC	DC +5V
6	Ground	GND	Signal Ground

RS-485 half duplex pin-out for terminal block connector.

4. Signal Wiring

The RS-422/485 signal requires dedicated wire pairs for transmit and receive. The transmit wires are used to send data to as many as 10 receivers, as stated in the specifications of RS-422. Since the USBG-422MiNi uses RS-485 line driver technology, up to 32 receivers are possible. The following diagram shows RS-422 and RS-485 4-wire scheme: Settings are listed as follows:
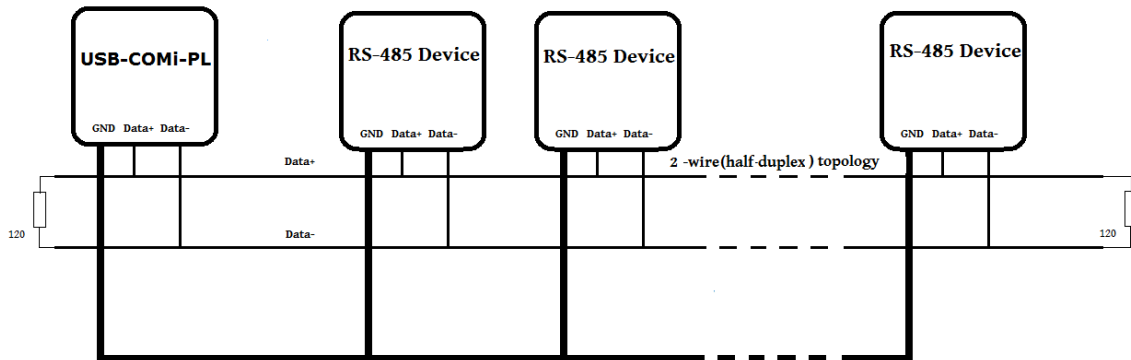

4-wire cabling scheme

Figure 2

RS-485 2-Wire Scheme

The following diagram shows RS-485 2-Wire scheme:

2-wire cabling scheme

Figure 3

The RS-485 operation of USBG-422MiNi allows for 2-wire cabling. Several RS-485 2-wire devices are connected in parallel to the wires, which is call bus topology. Each device can either send or receive data at a given time, so it is operating in half-duplex mode.

5. Notes, Tips, and Warnings

Note	N/A

Tip	N/A

Warning	N/A

Safety	- Read the entire Product Manual before implementing this product for your application. This manual contains important information about electrical connections that must be followed for safe and proper operation. - Inspect the product closely for visual defects before putting it to use. - Keep away from areas where moisture builds, this product contains electrical components that can be damaged by moisture build up, this can adversely affect your equipment connected to it. - Do not disassemble the product. Handling the product's internal components can expose it to ESD (Electro-Static Discharge) hazards that can affect the function of the device. - If this product is not functioning properly, email our support team at support@coolgear.com.

6. Supporting References

Document	Link
Website Product Page	https://www.coolgear.com/product/mini-usb-to-terminal-rs422-rs485-ftdi-plug-in-adapter