USB to RS232C Converter Compact

USB-511 ⟳RoHS

User's Manual

Ver.1.0

June 20, 2024

Precautions (Please be sure to read before use.)

⊘ Do Not

1. This product uses ordinary off-the-shelf electronic components, and is therefore inappropriate for use in applications that require special quality or reliability and are expected to protect human lives or prevent accidents, such as safety mechanisms in fields including space, aeronautics, medicine, and nuclear power.
2. Do not be used underwater or in high-humidity environments.
3. Do not be used in the presence of corrosive gases, combustible gases, or other flammable gases.
4. Do not turn on power when circuit board surface is in contact with other metal.
5. Do not apply voltage higher than rated voltage.

⚠ Attention

6. This manual may be revised in the future without notice owing to improvements.
7. All efforts have been made to produce the best manual possible, but if users notice an error or other problem, we ask that they notify us.
8. Item 7 notwithstanding, HuMANDATA cannot be held liable for the consequences arising from use of this product.
9. HuMANDATA cannot be held liable for consequences arising from using this product in a way different from the uses described herein, or from uses not shown herein.
10. This manual, circuit diagrams, sample circuits, and other content may not be copied, reproduced, or distributed without permission.
11. If the product emits smoke, catches fire, or becomes unusually hot, cut the power immediately.
12. Do not install the control cables or communication cables together with the main circuit lines or power cables. In such an environment, it may result in malfunction due to noise.
13. Be careful of static electricity.

1. Revision History

Date	Revision	Description
June 20, 2024	1.0	Initial release

2. Product packaging

Thank you very much for purchasing the USB-511. In this package, you will find the following items included. If there are any shortages or issues, please contact us.
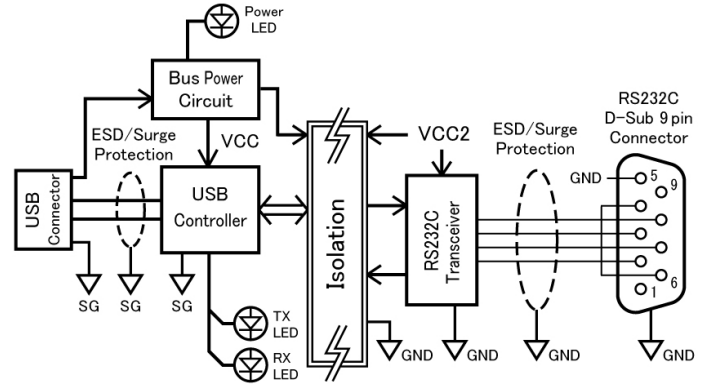
☐ USB to RS232C Converter Compact　USB-511　　　　1

☐ USB cable (1.8m)　　　　1

☐ Screw Lock M2.6 D-sub Connectors　　　　2
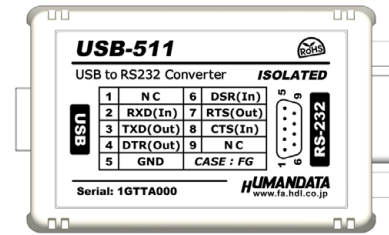　(#4-40 UNC Connectors are mounted by default)

3. Introduction

Thank you very much for purchasing our product of USB-511.
USB-511 is a USB to RS-232C converter that isolated between RS-232C and a USB port. So, it's safe for use in factory automation environment.
Although this product is an isolated type, it can support High-Speed communication up to 1Mbps.
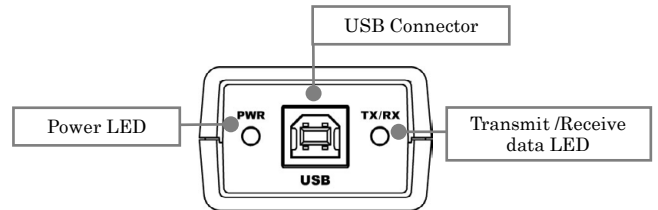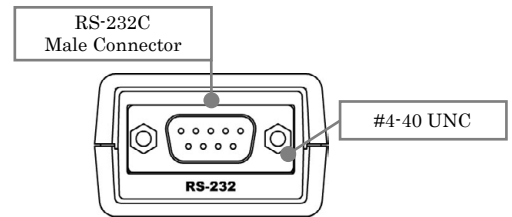
4. Block Diagram

Between USB and RS-232C are isolated.

5. Overview

TOP side (Block diagram)

Front Side (USB)

Rear Side (RS-232)

6. Power Supply

USB-511 is powered through a USB port (Bus-powered). No external power supply is required.
Between USB and RS-232C are isolated.

7. Product Specification

Item	Description	Remarks
Model	USB-511	
Input Power	5VDC Supplied through a USB port (Bus-powered)	No external power supply required
Current Consumption	Less than 100 mA	
I/O Interface	RS-232C	ESD protection ±15KV
HOST interface	USB 2.0 Compliant Support Full Speed (12Mbps)	USB 1.1 compatible ESD protection ±11KV
Communication Method	Asynchronous Serial Communication	
Baud Rate	1200 bps to 1 Mbps	Support custom baud rate
Data Bits	7 or 8 bit	
Stop Bits	1 or 2 bit	
Parity	Even, Odd, No-parity Mark, Space	
Flow control	RTS/CTS (Fixed)	
FIFO RX Buffer Size	384 bytes	
FIFO TX Buffer Size	128 bytes	
Isolation Method	Bus isolation	
Isolation Protection	2500VDC	Designed value
USB Driver	Virtual COM port driver	CDC-ACM
Supports OS	Windows 11/10/8.1/8/7	(Linux, Mac OS)
LED	PWR: USB bus power TX/RX: Transmit /Receive data, Bi-color LED	TX: green, RX: red
USB connector	Standard Type B Female	
RS-232C Connector	D-Sub 9pin (Male) (mounting screw: #4-40 UNC)	Exchangeable to attached optional M2.6 screws
Operating Ambient Temperature	-20 to 60 [°C] (-4 to 140 [°F])	
Operating Ambient Humidity	30 to 85%RH	No condensation permitted
Storage Ambient Temperature	-20 to 60 [°C] (-4 to 140 [°F])	
Storage Ambient Humidity	30 to 85%RH	
Weight	Approx. 50 [g]	Only main body
Dimensions	67 x 43.5 x 27 [mm] (2.638" x 1.713" x 1.063")	Without projections

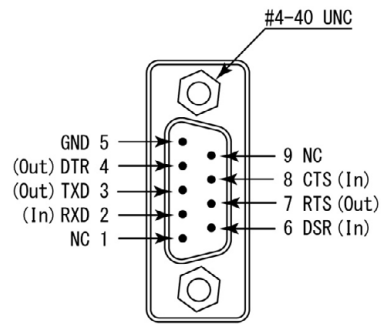* There is a case to be changed to the parts of the compatibility
* Power saving function (suspend, standby, sleep and others) is not supported

8. Optional Accessories

Model	Image	Description
PEN-003		Attachment with clamping screw JAN：4937920800709
PEN-003-DIN		Attachment for 35mm DIN rail JAN：4937920800716
PEN-003-MG		Attachment with neodymium magnet JAN：4937920801201

* These accessories attach to the product horizontally only.

9. RS-232C Pin Assignment

D-Sub 9pin Male

Pin No	Name	Direction	Remarks
1	NC	-	-
2	RXD	In	Receive data
3	TXD	Out	Transmit data
4	DTR	Out	Data terminal ready
5	GND	-	Signal ground
6	DSR	In	Data set ready
7	RTS	Out	Request to send
8	CTS	In	Clear to send
9	NC	-	-
CASE	FG	-	Connect to GND

* RTS/CTS Hardware Flow Control is enabled. If RTS/CTS hardware flow control is not used, short-circuit 7 (RTS) and 8 (CTS) on RS-232C cable-side.

* 4 (DTR) and 6 (DSR) are shorted internally

* #4-40 UNC screws are attached to D-sub 9pin connector when shipping a product. You can change those screws to included M2.6 screws.

10. CDC Class Driver Installation Guide

This product uses the CDC (Communication Device Class) driver, which is included in the operating system.

・Windows 10 or later:
No driver installation required
Automatically recognized as a "USB Serial Device (COM*)".

・Windows 8.1 or earlier or to display the model number of this device on the Device Manager in Windows 10 or later:
Driver installation required

11. Additional Documentation and User Support

The following documents and other supports are available at

・Product Documents and Device Driver:
http://www.hdl.co.jp/en/faspc/USB/usb-511/

・Support Center:
https://www.fa.hdl.co.jp/en/support.html

12. Warranty and Compensation

Please refer to the following URL for the warranty.
https://www.fa.hdl.co.jp/en/fa-warranty.html

13. Contact us

Please contact us using the inquiry form on our company's website or email us at SPC2@hdl.co.jp, providing the product model number and serial number.