
Serial Hardware Manual

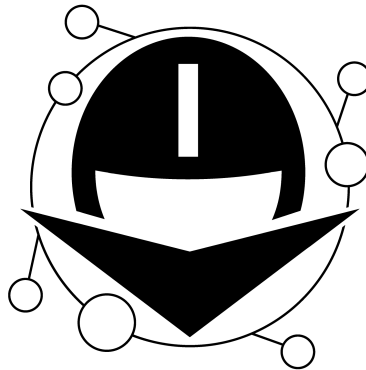
Release 1.0

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SERIAL | VERONTE A V I O N I C S

Veronte Serial is a double serial converter: UART to RS-232 and UART to RS-485.

Warning: Select your version before reading any user manual. The following image shows where to select a version from any Embention user manual.



The screenshot shows the Embention website interface. The top navigation bar includes links for Home, Version-4.8 (highlighted with a red box and a red arrow), Languages-EN, and Download. The main content area displays the title '1x Hardware Manual' and the Veronte Autopilots logo. Below the logo, the text reads: 'Veronte Autopilot 1x is a miniaturized high reliability avionics system for advanced control of unmanned systems.' At the bottom of the page, the version information is listed as 'Version: UM.305.4.8' and 'Date: 2023-11-24'.

INTRODUCTION

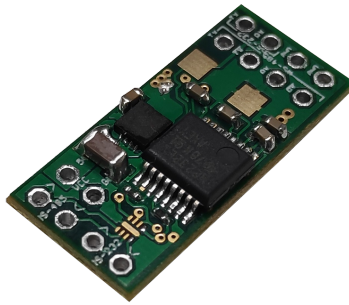


Fig. 1: **Veronte Serial**

Veronte Serial is a miniaturized double serial converter: UART to RS-232 and UART to full duplex RS-485. Since its size is very reduced (11.5 mm wide), it can be introduced in wires or heat shrinking tubes.

QUICK START

This user manual covers the assembly of **Veronte Serial**. To use it, weld wires according to the *Pinout* section. The following diagram summarizes the **Serial** behaviour:

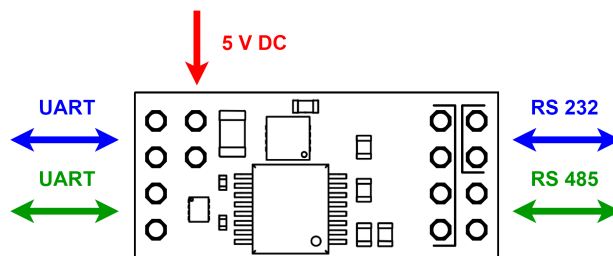


Fig. 1: Overall Serial diagram

2.1 Warnings

- When **Serial** is wrapped with a thermal tube or cable, make sure it is not excessively thermally insulated, to prevent overheating.
- Be careful welding pads and avoid short circuits between them.
- Ground pins are common, connect them to the same ground reference to prevent short circuits.

2.2 Requirements

- Power supply of 5 V DC.
- Cables with AWG from 22 to 24.
- A tin soldering iron to weld the cables.

3.1 Mechanical Specifications

- Operating temperature range: -40 to 85°C
- Weight: 3 g

3.1.1 Dimensions

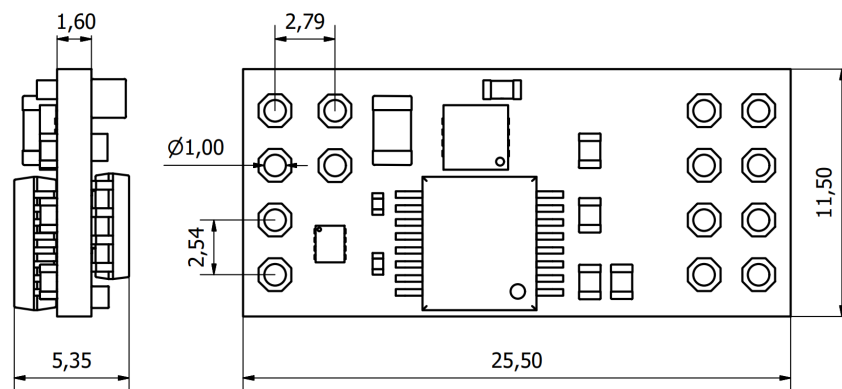


Fig. 1: Dimensions (mm)

3.2 Electrical Specifications

- Power Supply
 - Maximum load current: 2 A
 - Power supply voltage: 5 V DC (with a margin range from 2.3 to 6.5 V)
- ESD protection
 - RS-232 and RS-485 pins: 15 kV
 - UART pins: 30 kV
- Data rates

- RS-232: up to 250 kb/s
- RS-485: up to 25 Mb/s

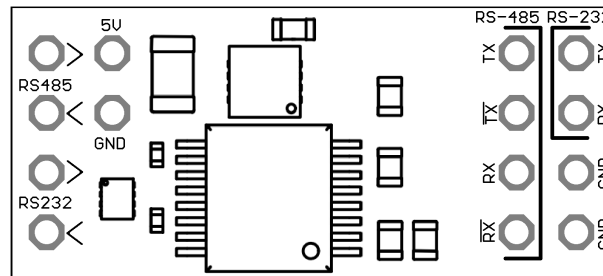
HARDWARE INSTALLATION

Since **Veronte Serial** is a small PCB, electrical connections are made by soldering cables. Once cables are welded, the device can be wrapped in a shrinking tube.

Important: Cables from 22 AWG to 24 AWG are required.

4.1 Pinout

Pins are physically marked on the board as the following drawing shows:



Danger: Ground pins are common. They MUST be connected to the same ground in order to prevent short circuits.

| Domain | Pin | Description |
|--------------|---------|--|
| Power supply | 5 V | Power supply of 5 V (with a margin range from 2.3 to 6.5 V). |
| | GND | Ground. |
| RS-232 | > | UART input for RS-232 channel. |
| | < | UART output for RS-232 channel. |
| | TX | Output signal (transmitter). |
| | RX | Input signal (receiver). |
| RS-485 | > | UART input for RS-485 channel. |
| | < | UART output for RS-485 channel. |
| | TX | Non-inverted output (transmitter). |
| | RX | Non-inverted input (receiver). |
| | — TX | Inverted output (transmitter). |
| | — RX | Inverted input (receiver). |

MAINTENANCE

Apart from cleaning, no extra maintenance is required to guarantee the correct operation of **Veronte Serial**.

In order to clean **Serial** properly, follow the next recommendations:

- Disconnect **Serial** from power supply and other devices before cleaning.
- Use a clean, soft and dry brush to clean the unit.
- Do not immerse the unit in water to clean it.

ACRONYMS AND DEFINITIONS

| | |
|--------|---|
| AWG | American Wire Gauge |
| DC | Direct Current |
| PCB | Printed Circuit Board |
| RS-232 | Recommended Standard 232 |
| RS-485 | Recommended Standard 485 |
| UART | Universal Asynchronous Receiver Transmitter |

CONTACT DATA

You can contact Embention if you need further help and support.

Embention contact data is as follows:

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