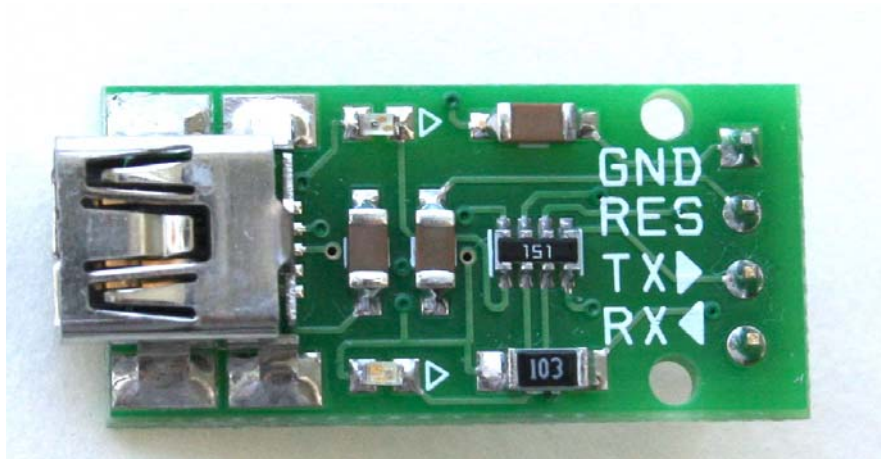


**USB-SER-NANO-5 and USB-SER-NANO-3.3  
USB to RS-232 Converter User Manual**

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# USB-SER-NANO-5 and USB-SER-NANO-3.3

## USB to RS-232 Converter User Manual

### Description

These USB-SER-NANO boards are the USB to Serial RS-232 (5VTTL or 3.3V level) converter module. They allow you to connect your computer through USB port and use them as the regular serial communication. All USB protocol is handled within the module. There is no other device or programming required.

These board features innovations that set them apart from other USB to Serial Converter boards. Innovations feature like 256 byte receive buffer and 128 byte transmit buffer utilize new buffer smoothing technology to allow for high data throughput. The voltage levels at TX and RX pins are 0 and 3.3V for USB-SER-NANO-3.3 and 0 and 5V for USB-SER-NANO-5. That mean the TX and RX pins from the USB-SER-NANO can be connected directly to RX and TX pins of your preferred microcontroller or any serial RS-232 application.

The USB-SER-NANO boards are perfect for embedded systems that require a serial connection to a computer. The boards attach directly to the USB bus via a standard type mini B receptacle connector. It shows up on any Windows computer as a standard serial COM port. Any applications that talk to this COM port is automatically convert to USB and back to RS-232 to your target board.

Drivers are available for Windows 98, 98SE, ME, 2000, Server 2003, XP, Vista, XP Embedded and CE.NET 4.2 & 5.0. Mac OS8/9, OS-X and Linux 2.4 and greater are supported.

### Features

- Two versions:
  - USB-SER-NANO-5 – for logic 5V circuit
  - USB-SER-NANO-3.3 – for logic 3.3V circuit
- Super small 1.05 x 0.50 inches board.
- Single board USB to asynchronous serial data transfer RS-232 interface.
- Decoupling supply voltage.
- Design easy for breadboard.
- RS-232 interface support for 7 or 8 data bits, 1 or 2 stop bits and odd/ even/ mark/ space/ no parity.
- Data transfer rates from 300 baud to 1 Mega baud.
- 256 byte receive buffer and 128 byte transmit buffer utilizing buffer smoothing technology to allow for high data throughput.
- Transmit and receive LEDs.
- Support for USB suspend and resume.
- Low USB bandwidth consumption

### Applications

- USB communication with your favorite microcontroller or project board.
- Data collection from external measurement instrument.
- Cell phone, PDA, MP3 player and laptop USB data transfer.
- USB to RS232 converters.
- And much more...

# USB-SER-NANO-5 and USB-SER-NANO-3.3

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### Interfaces

#### RS-232:

All serial interface pins are 5V logic level for USB-SER-NANO-5 and 3.3V logic level for USB-SER-NANO-3.3

- **TX** ► Transmit *from* the USB-SER-NANO board. It is a Serial Output and normally connected to the RX pin on any microcontroller or equivalent RS-232.
- **RX** ◄ Receive *into* the USB-SER-NANO board. It is a Serial Input and normally connected to the TX pin on any microcontroller or equivalent RS-232.

#### Power:

The USB-SER-NANO use power from the USB port via mini B USB connector. There is no external power supply require.

- **GND:** is a common ground for every pin. This pin must be connected to ground of your target board/application.
- **RES:** is connected to DTR# with a 10K Ohm pulled-up resistor. For some application, it can be use to reset the microcontroller or target board.

### USB Driver Installation

#### Download:

Go to the FTDI website [www.ftdichip.com](http://www.ftdichip.com) and click on the "Drivers" tab. Choose VCP (Virtual COM Port) drivers.

Save the appropriate .exe or .zip file for your operating system to disk. Remember the directory (path and folder). After the file has been downloads, double click on the .exe file and the installation process start automatically. Once the installation is completed, you are ready to plug USB-SER-NANO to your computer.

For the .zip file, unzip the files to a suitable directory then plug the USB-SER-NANO to your computer. Continue the driver installation process with the driver files from the zip file.

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## Accessories

All of the accessories are available for purchase via our website. If you don't see the item you need, please contract our sales department at

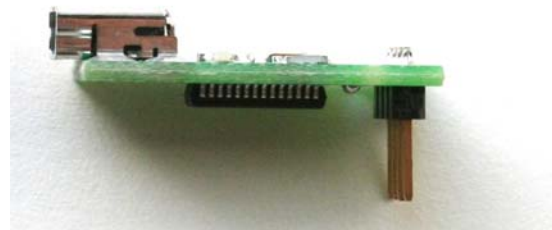
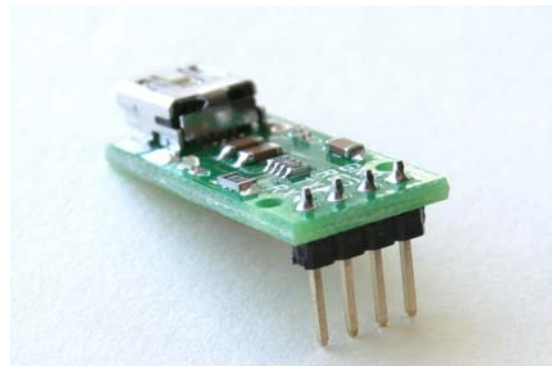
[sales@gravitech.us](mailto:sales@gravitech.us)

- USB A-B  
6Ft 4 pin male A type to 5 pin mini B type. The cable is use to connect to USB-SER board.



## Specifications

Circuit Board Size	1.05" x 0.50"
USB Supply (from PC)	4 – 5 VDC



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## Notes

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