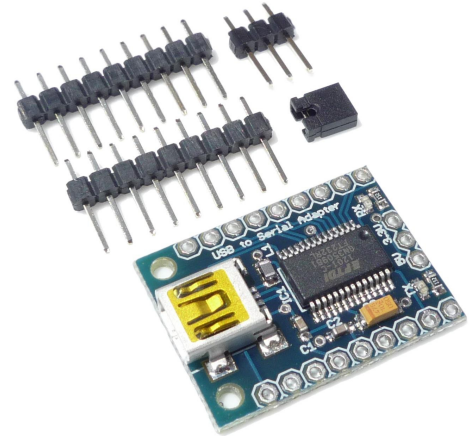


Name: **USB to Serial Adapter  
with FT232RL**  
Code: **MR002-003.1**



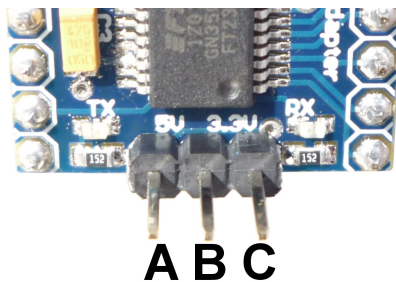
*USB to Serial Adapter with FT232RL* is an useful tool that allows to connect Personal Computers with any microcontroller system via the USB port.

It is based on the famous integrated circuit FT232RL produced by FTDI. It has a 128 byte receiving buffer and a 256 byte transmitting buffer; this grants robust transmissions up to 3Mbaud/s.

Besides TX and RX signals, there are also available  $\overline{CTS}$ ,  $\overline{RTS}$  and all others lines used for handshaking procedures (see Tab. 2).

When you plug the board into the USB port, the PC system will recognize it as a serial VirtualCOM Port (VCP) which will realize the communication with the microcontroller system connected to the *USB to Serial Adapter with FT232RL*; this allows to use systems designed to work with the RS232 serial port without modifying them.

This tiny and lightweight board is only 27x20 mm, including the mini-B connector, and its weight is only 0,09 oz (2,6 gr). Interfacing is realized by two 0,100" strip connectors that are distant 0,700" (17,78mm); this allows a stable and easy mounting on solderless breadboard and sockets.



**A B C**  
*Fig. 1 - Jumper*

A very useful feature of this board is the possibility to select the data I/O voltage level; in this way you can interface with microcontrollers that run at 5V, 3.3V or any other voltage level less than 5V.

The selection of data I/O voltage level is done by the jumper provided with the board; inserting the jumper between pins A and B, signals will output at 5V (see Fig. 1), whereas, inserting the jumper between pins B and C, signals

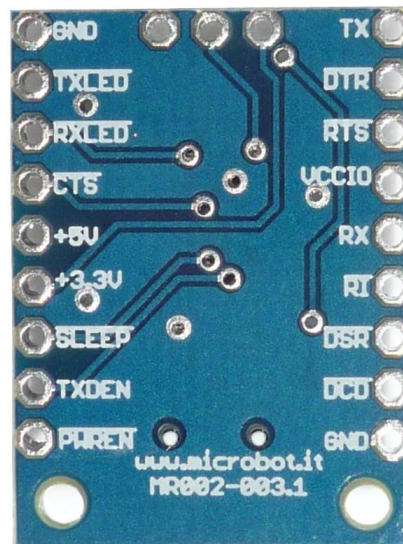
will output at 3.3V. If you do not insert the jumper the data I/O signals will output at the voltage level applied to the VCCIO pin (see Fig. 2).

The board is provided with two 9 pins 0,100” male strip connectors, one 3 pins 0,100” male strip connector and a jumper to select the data I/O voltage level.

## ***SPECIFICATIONS***

<b>Name</b>	<b>Description</b>
Supply voltage	5V from USB port
Supply current	15mA typ. (70uA in Suspend Mode)
Serial signals	TX, RX, RTS, CTS, DTR, DSR, DCD, RI
Data I/O voltage levels	Selectable: da 5V a 1,8V
Dimensions	27x20x7mm (connectors not included)
Weight	0,09oz / 2,6g
Temperature range	-40°C to +85°C
Connector	USB Mini-B

***Tab.1 - Specifications***



***Fig.2 - Signals***

## CONNECTIONS

Name	Description
RTS	Request to Send Control Output / Handshake Signal
CTS	Clear To Send Control Input / Handshake Signal
RX	Receiving Asynchronous Data Input
TX	Transmit Asynchronous Data Output
GND	Ground
TXLED	Transmit LED drive
RXLED	Receive LED drive
+5V	+5V from the USB connector
+3.3V	+3.3V Voltage output (50mA max.)
SLEEP	Low during USB suspend mode
TXDEN	Transmit data enable for RS485
PWREN	Power enable. Low after USB enumeration, high during USB suspend mode
DTR	Data Terminal Ready Control Output / Handshake Signal
VCCIO	Voltage Level selection pin
RI	Ring Indicator Control Input
DSR	Data Set Ready Control Input / Handshake Signal
DCD	Data Carrier Detect Control Input

Tab.2 – Connections

