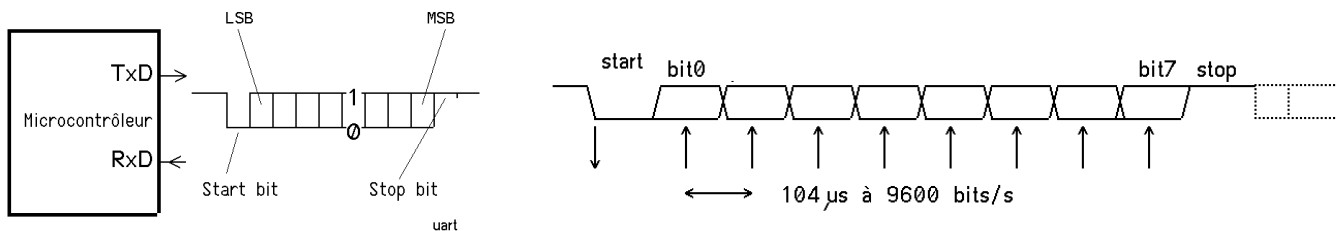# USB to serial communications
and Didel USB and OTG microUSB adapters

Serial communications

RS232 was the only way for computers and modem to communicate 40 years ago. Serial communication. The 5Volt UART descendant is still the easy was to communicate between PC, tablets, and microcomputer applications, frequently based on Arduino like hardware.
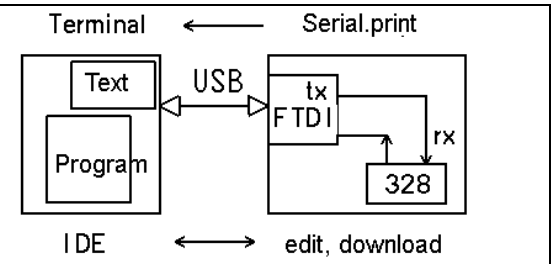

UART (Universal Asynchronous Receive and Transmit) still have options (parity, etc) one can forget about. 8 bits are transmitted, least significant bit first, with a start bit and a stop bit, at a bit rate (improperly documented Baud rate) that must be the same for the transmitter and the receiver. A frequent value is 9600b/s, 115'200b/s for faster transfers.

PC and tablets do not have UART inputs, but now USB is on every machine, and USB/Serial converter circuits exist for several years. FTDI was the first, recent circuits as the CH340G are simpler to implement.
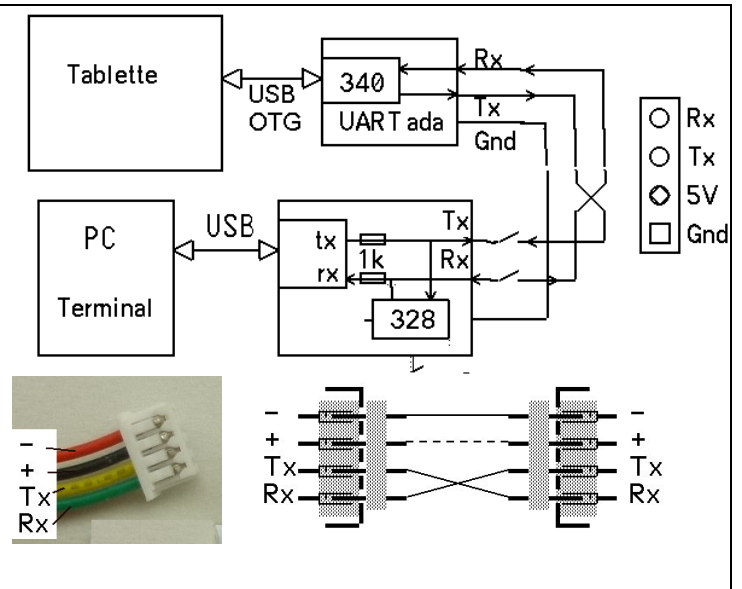
About Arduino Serial Terminal

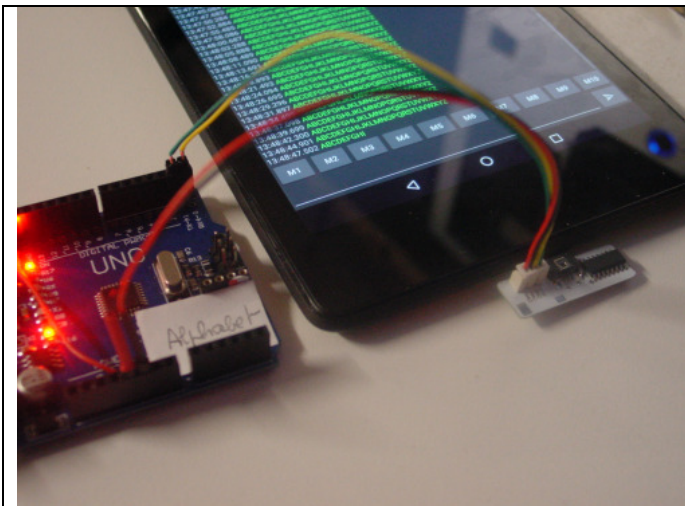|	
The board is already connected to usb and a "Terminal program" exist to use an additional window to show the data. All IDE like Arduino, Pinguino, Energia, etc. can send data to the screen. For Arduino, see http://www.didel.com/C/Terminal.pdf	

Using the Arduino Uno Rx/Tx port

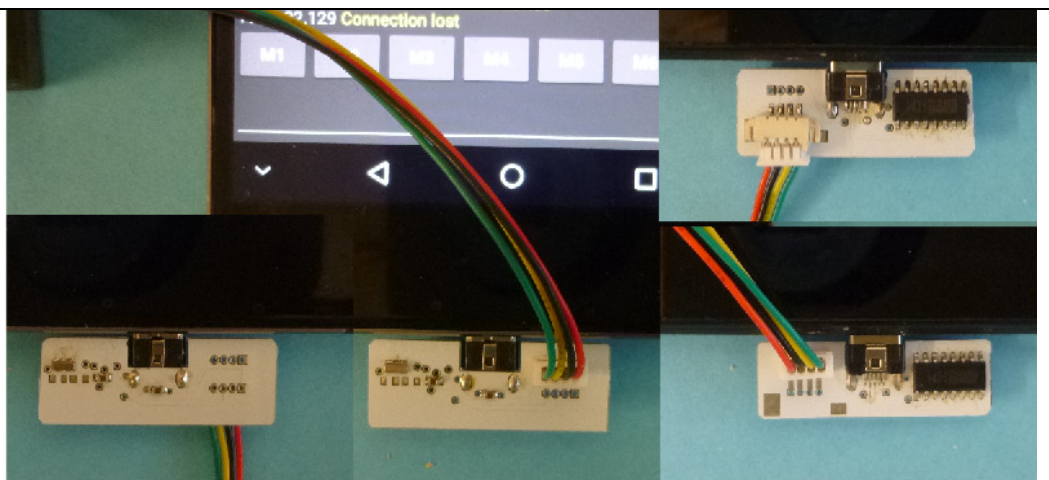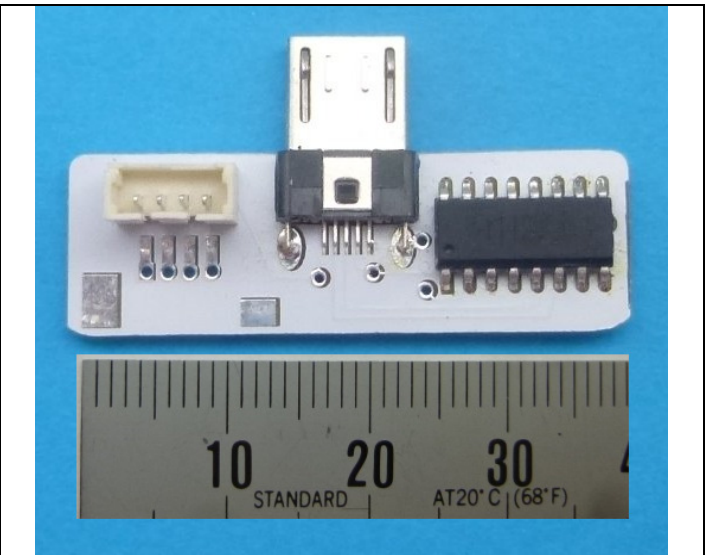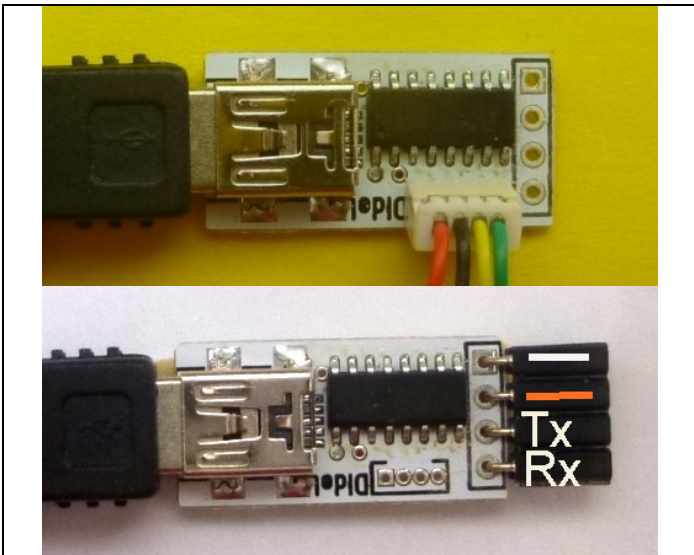|	
Arduino use the Rx/Tx signal of the AVR328 microcontroller (pins 0 and 1 on the UNO board) to communicate with the UART/USB adapter. Serial resistor allows to use the Rx/Tx pins, but they have to be disconnected while programming. To test the communication, it is possible to use the Terminal program. Serial data is available on both adapters. Going back to program modes need disconnecting the tablette, sometimes also resetting the board. 4-pin connectors according the pictures are recommended, using 2.54mm strips or compact 1.25mm Molex connectors and cable. Note Molex cable use a red wire on pin1 (is should be black since it is a Gnd)	

The OTG module is linked to the Rx/Tx Arduino Uno pins. The tablette power the card, but do it for test only.
There are many serial terminal available. Select a simple one, such as "Serial USB Terminal"

There are three options for soldering a picoblade connector- Select the best for your tablet
!! Red wire is Gnd !!

Pin 1 Gnd square pad
Pin2 Vcc
Pin3 TxD from tablet
Pin4 RxD for tablet

Didel USB-UART and USB/OTG-UART modules

Tx
Rx

USB-UART for PC (MiniUSB connector)
Available from Tindie and Didel

USB-UART OTG (MicroUSB connector)
Available from Tindie and Didel