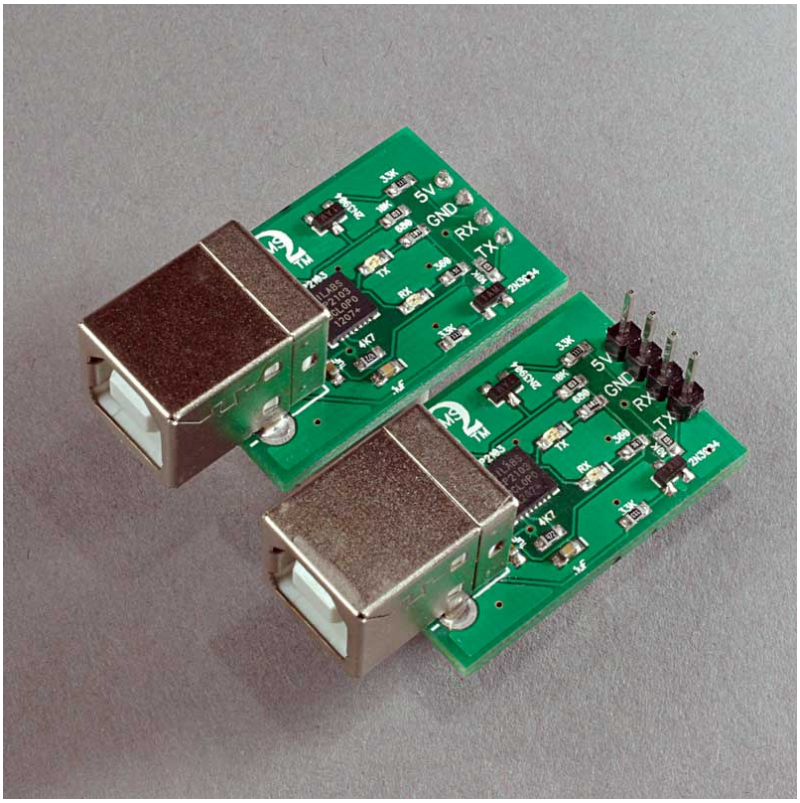
U2P

USB Programmer for PICAXE® MCUs

Data Sheet



Contents

Introduction

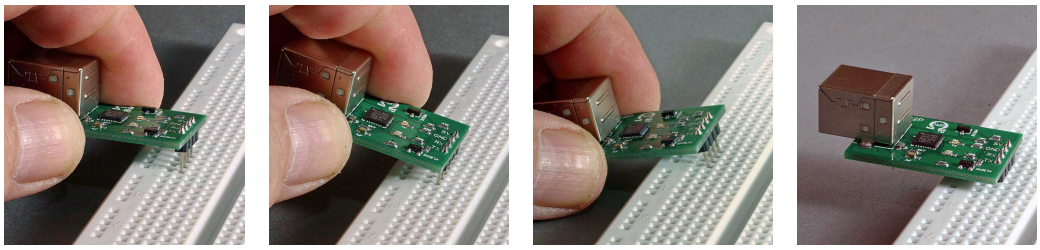
The Omega MCU Systems U2B is a small USB programmer for PICAXE® microcontrollers. It comes in 2 versions, a breadboard module and a standalone board. It was purposely designed to offer professional level handling and improved process in cases where the target device or circuit is either built onto a solderless breadboard or provides reasonable access for in-circuit programming.

U2B features:

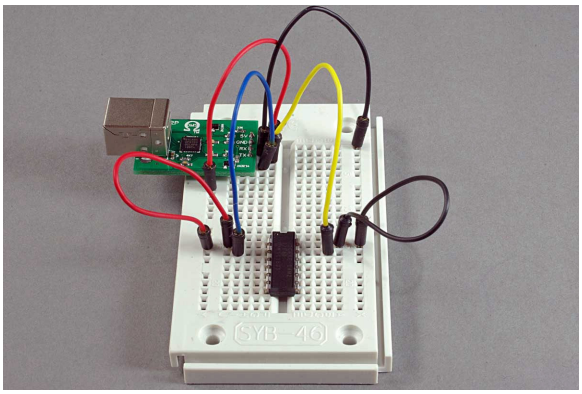
- 1.6mm FR4 fiberglass board with 1oz copper and HAL tinning for long life
- Built-in RX and TX data activity indicators
- Supplies 5V from the USB host to power the MCU
- Industry standard USB 2.0 interface based on the SI Labs 2103 USB Bridge
- All signals are available through headers for use with commonly available DuPont style wire jumpers or for direct mounting onto a solderless breadboard

Usage

Solderless Breadboard Version

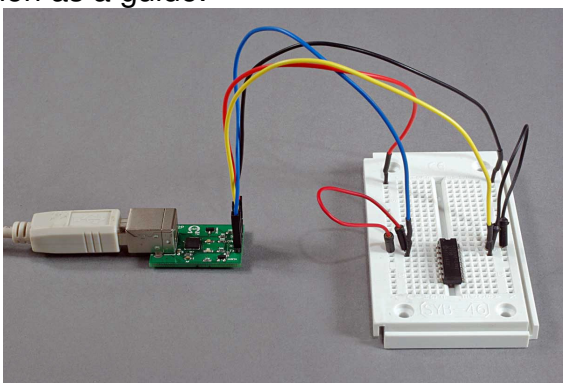


To mount the solderless breadboard version of the U2P, place the pins of the underside header in the holes of the breadboard where you intend to use it. Carefully rock the board back and forth a little while applying gentle downward pressure until it eases into place. This allows the header pins to align properly with the contacts of the solderless breadboard. Be careful not to use too much force to push the U2P into place as doing so could damage the solderless breadboard contacts. The U2P can then easily be connected to the MCU using male-to-male jumpers as shown.



Standalone Version

The standalone version can be connected in various ways. Connecting to a breadboard is simply a matter of using female-to-male jumpers as shown below. To use it as an in circuit programmer or as a USB adapter for a PICAXE® or PICAXE® compatible development/experimenter board, use the information in the connections section as a guide.



Connections

Generally, connect the GND pin to the ground of the breadboard or circuit (usually the ground rail). The TX signal is the data transmitted from the host system. This signal is connected to the serial in signal on the PICAXE. The serial out signal of the PICAXE® is connected to the RX signal on the U2P, which is the host's data receive.

U2P pin-out

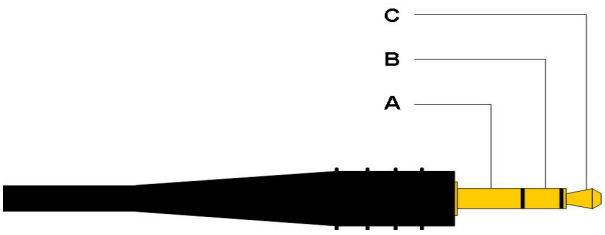
U2P	Function
5V	5 volt supply from USB host
GND	Ground
RX	Data received by host
TX	Data transmitted by host

Connection to PICAXE®

U2P	8 pin	14 pin	18 pin	20 pin	28 pin	40 pin
5V	1	1	14	1	20	11, 32
GND	8	14	5	20	8, 19	12, 31
RX	7	13	2	19	7	7
TX	2	2	3	2	6	6

Connection to a 3.5mm Plug

U2P	3.5mm
5V	NC
GND	C (Tip)
RX	A(Sleeve)
TX	B (Ring)



Installing the Driver

The OMS U2P uses a Silicon Labs CP2103 USB bridge for communication and downloading programs from the PICAXE® Programming Editor. This requires that a driver be installed before the U2P is attached to the host computer. The latest driver can be downloaded either from the Downloads page at www.Omegamcu.com or from Silicon Labs website at www.silabs.com. Download the driver setup program to your computer and run it. We strongly suggest you use the default options, and follow the prompts. Before clicking "Finish" during the install procedure, make sure the "Launch the CP210X VCP Driver Installer" check box is checked. Then follow the prompts to install the VCP driver.

Note: The U2B has been designed to work with the PICAXE® Programming Editor, which is available at **www.picaxe.com/Software**. PICAXE® is a registered trademark of Revolution Education Ltd.

Specifications

Power Requirements

- Supply Voltage: 5V DC from USB host
- Current draw: < 25 ma while operating

NOTE: The current supplied buy the OMS U2B comes from the USB host, therefore the maximum allowable will depend on the host's USB controller. Please refer to the specifications of the host computer's USB port to determine the maximum allowable current draw.

Communications requirements

- Interface Type: USB 2.0
- Connection: Standard USB 'B' connector

Physical

- Length: 39mm
- Width: 21mm
- Height: 21mm (breadboard version)
  13mm (standalone version)
- Weight: 6g
- Operating Temp. $0^{o}C$ – $85^{o}C$

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