BS1USB (#BS1USB)

General Description

The BS1USB module is a BASIC Stamp® 1 microcontroller with an on-board USB interface and USB-A connector. Headers provide easy access to Vdd (+5 V), Vss (ground) and all eight BASIC Stamp 1 I/O pins.

Application Ideas

This handy little device is perfect for adding a user-definable function to your PC. For example, with a few lines of code and a little hardware, you can create a project timer/data logger to keep track of how much time you spend on a particular project that uploads the tallied information to your PC. Ryan Clarke, our newest Tech, prefers to work by candlelight. Using the application note #1 found at: www.parallaxfx.com, Ryan created his own PC-side LED based candle to enjoy every time he boots up his computer. The possibilities are endless!
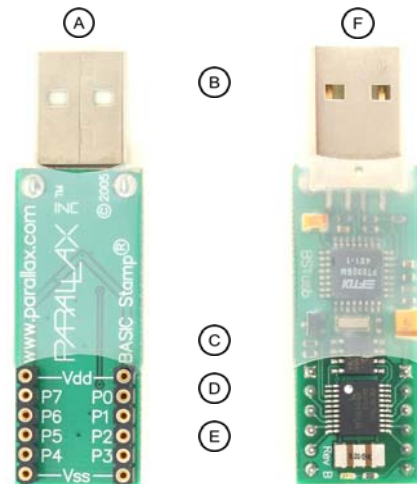
Features

- BASIC Stamp 1 processor
- 8 I/O pins easily accessible
- 5 VDC sourced directly from the USB port
- Plug directly into USB port or USB-A male to USB-A female extension cable
- FTDI USB Drivers are free and easy to install

Device Information

A. BS1USB Top
B. USB-A connector connects directly your PC USB port.
C. Vdd = 5 Volt supply connection.
D. P0 through P7 are the eight user I/O pins
E. VSS = ground connection.
F. BS1USB Bottom

Approximate Dimensions
Overall Length: 2.25 in (5.72 cm)
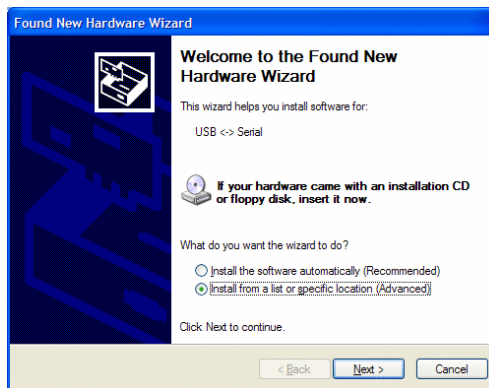Width: 0.64 in (1.63 cm)
Thickness: 0.30 in (0.76 cm)

Installation

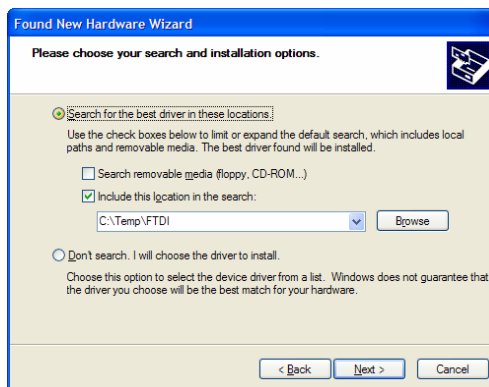**NOTE: Do not plug the BS1USB in to the USB port before installing the drivers.**

1. Download the FTDI VCP Drivers from the bottom of the BS1USB product page:
   http://www.parallax.com/detail.asp?product_id=BS1USB

2. Extract the driver files to a temporary folder that is easy to locate on your system. For the purposes of these instructions we will use the folder:
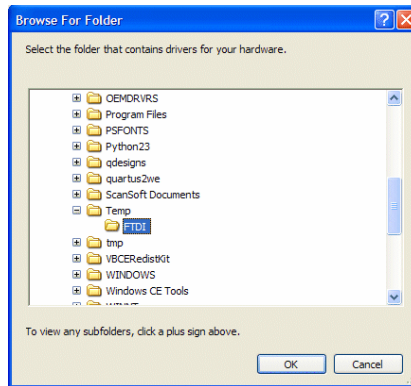
   C:\Temp\FTDI

3. Plug the BS1USB module into your system's USB port. A "Found New Hardware" message should appear, followed by the "Found New Hardware Wizard" dialog:

4. Select "Install from a list or specific location (Advanced)," click on the "Next" button, and follow the steps below.

5. Select "Search for the best driver in these locations," mark the checkbox next to "Include this location in the search:" and enter the path (as shown below)...
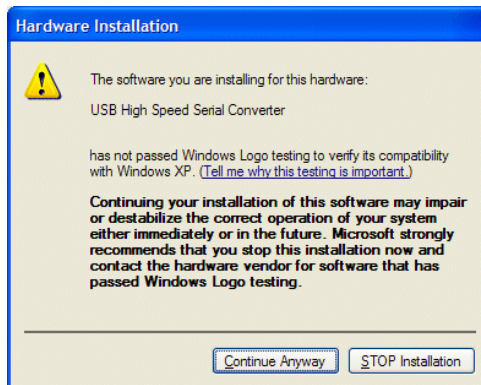

...or click the "Browse" button to find the folder where the driver files have been saved:

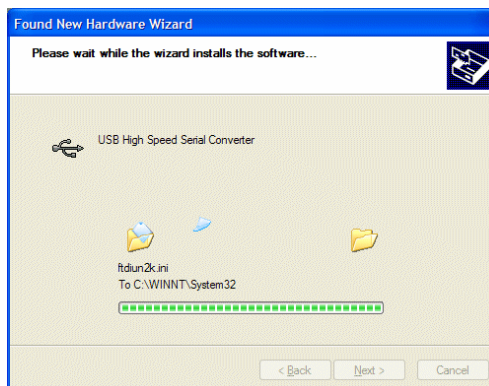© Parallax, Inc. • BS1USB (#BS1USB) • v1.0 11/2005

Select the target folder and then click "OK," then "Next" on the Wizard dialog. (Note: Some systems may report that it cannot locate the drivers. If this happens, click on the Finish button. The "Add New Hardware Wizard" will restart, this time finding the "USB <-> Serial" device. Repeat steps 4 and 5.)

6. Windows will search for the appropriate driver file(s) in the specified location. You may see the following dialog:
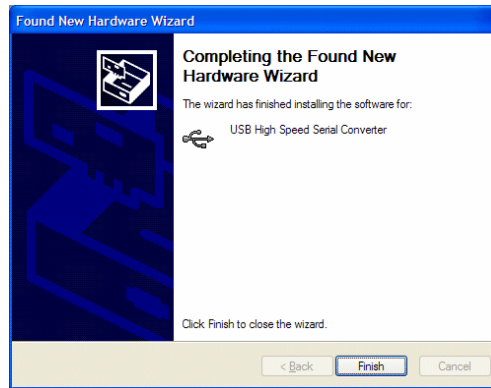

Click on the "Continue Anyway" button to proceed.

This dialog will be displayed as the appropriate files are installed:

When the installation is complete the following dialog will appear:

Click on the "Finish" button. If the "Found New Hardware Wizard" restarts, repeat steps 4 through 6. If you experience difficulty, call Parallax Tech Support for assistance at (888) 512-1024 in the US, weekdays from 7:00 am to 5:00 pm PT, or email us at: support@parallax.com.

Power Considerations

If your BS1USB will be sharing a non-powered hub with other USB devices, be sure that the hub can supply adequate current for all devices.

Maximum current for:	Source	Sink
Each individual I/O pin	20 mA	25 mA
Total of all I/O pins combined	40 mA	50 mA

Sample Program

This program requires the BASIC Stamp Editor for Windows v2.0 or higher. Download this free software from www.parallax.com, from the Downloads > Software menu. When you enter and run this program, a Debug Terminal should open, displaying the message "Hello World!"

```
' =========================================================================
'
'   File....... BS1USB_Hello_World.BS1
'   Purpose.... Test program for the BS1USB
'   Author..... Parallax, Inc.
'   E-mail..... support@parallax.com
'   Started.... 8 SEP 2005
'
'   {$STAMP BS1}
'   {$PBASIC 1.0}
' =========================================================================

Main:
  DEBUG CLS, "Hello World!", CR
  END
```

See the BASIC Stamp Syntax and Reference Manual for more PBASIC 1 programming information, available for purchase or download from http://www.parallax.com/detail.asp?product_id=27218.