

BlackcatUSB Operation Manual

Features:

- Fast 16MHz CISC processor
- 16KB programmable memory
- 2 DIP switches for mode changes
- Upgradeable firmware over USB
- On board reset button
- Universal CFI Flash programming support
- USB 1.1 / 2.0 compatible



BlackcatUSB is a multi protocol Flash memory programmer. It supports both parallel and serial type Flash devices using both JTAG and SPI communication protocols.

BlackcatUSB Supports:

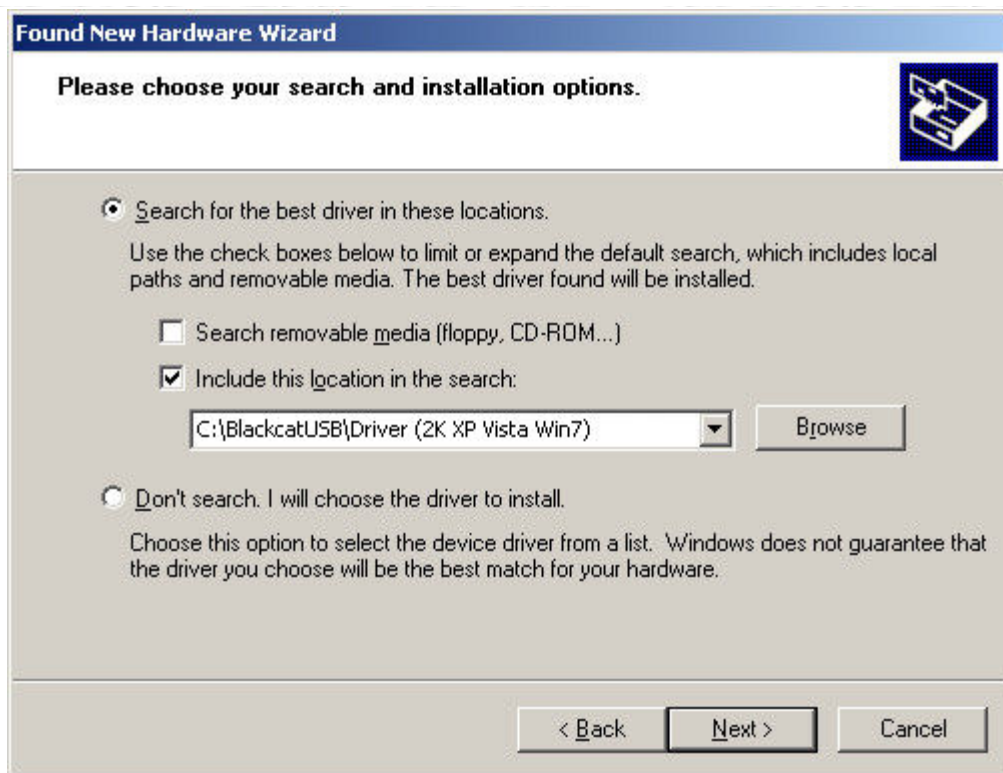
- Enhanced JTAG for MIPS
- SPI Mode 0, 1 and 2
- CFI Flash memory devices (with auto detection)
- High-density SPI Flash devices (2Mb~128Mb)

Driver installation

When you connect BlackcatUSB to your PC for the first time, you should notice a "Found new hardware" notification popup, after which this prompt should appear:



Select "Install from a list or specific location" and click Next.



Click Browse and locate the driver folder "Driver (2K XP Vista Win7)" from the software and click Next to install the software drivers.

Notice: for additional directions for installing on 64-bit platforms or Windows 7, please read the instructions in the "Install Directions (for 64 bit)" folder.

Setting up BlackcatUSB device mode or upgrading

BlackcatUSB is a multi protocol Flash memory programmer. That means it is able to function using different hardware protocols and can interface with different types of Flash memory devices. The functionality of your device can be changed by using the built in DFU (device firmware upgrade) feature.

To begin, plug in the BlackcatUSB to your computer using a USB cable. By default, the BlackcatUSB is in "Operation Mode". In order to update the firmware, you must put the device into "Bootloader Mode". To do this, use a pen and move turn off both switches of the board.



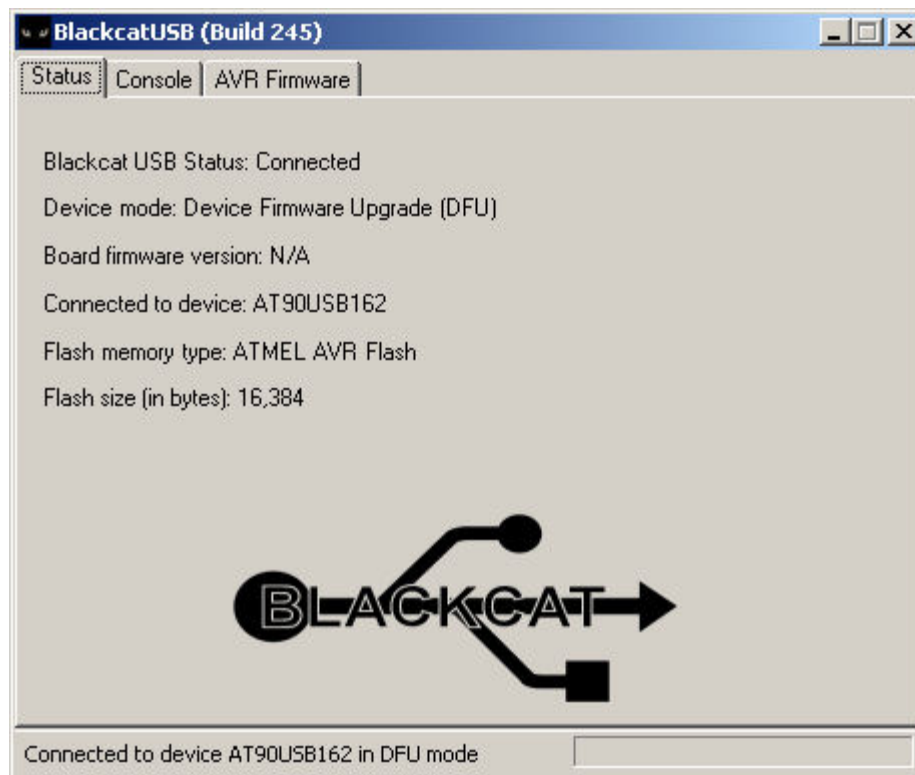
Operation Mode



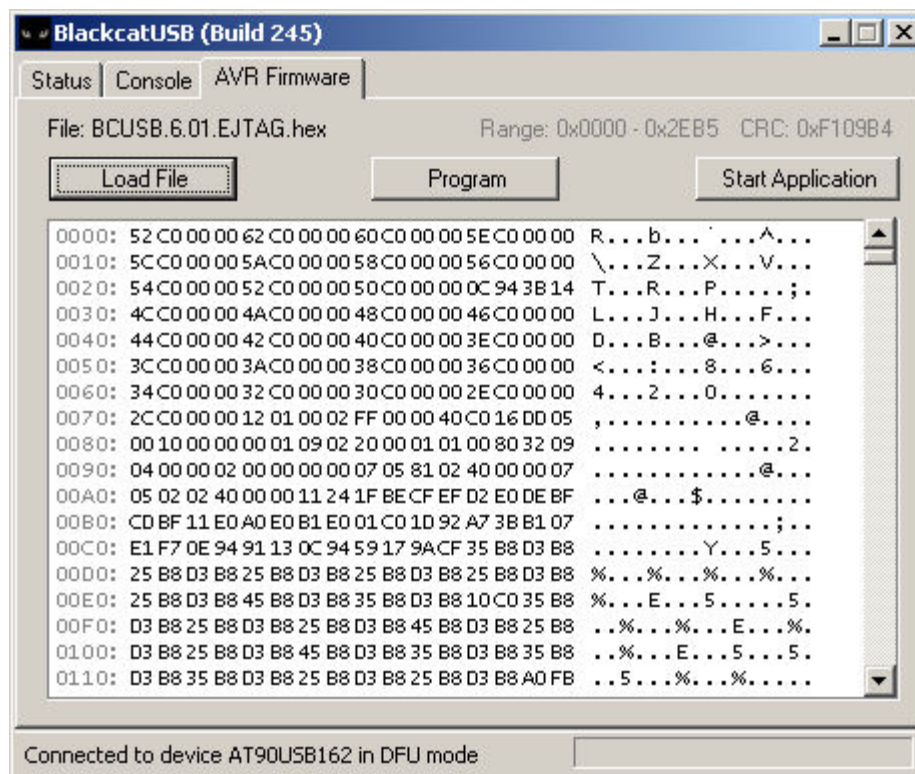
Bootloader Mode

Now, press the reset button on the board; which is the button located in the middle of the board. This will cause the device to restart in "Bootloader Mode". The first time you do this, you will be prompted for a driver for the AT90USB162 device. Just follow the steps above the same way you installed the BlackcatUSB drivers.

Start the software and you should see something very similar to this:



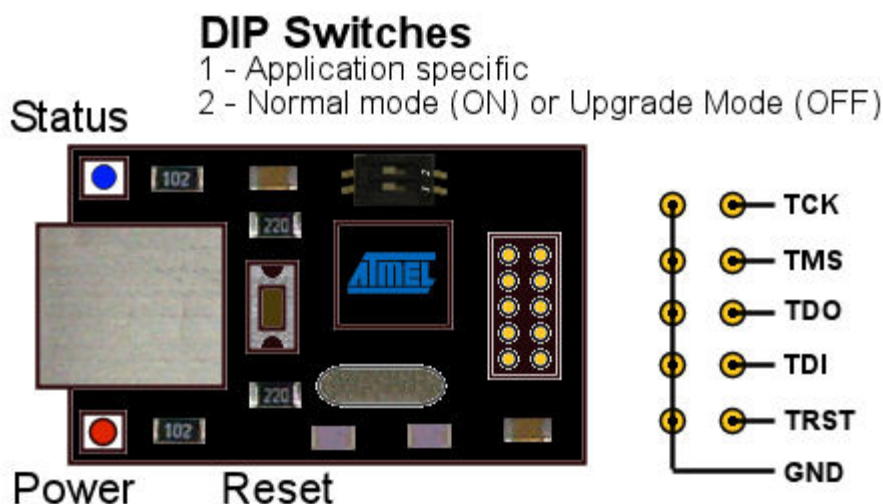
Now click on the "AVR Firmware" tab.



Click "Load File" button which will bring up a window to select the AVR Firmware. Select the firmware you want to use and click "OK". Now, press the "Program" button to install the firmware and finally click the "Start Application" button to reset the board and start the new firmware.

Using Enhanced JTAG Mode

With the "BCUSB.6.01.EJTAG.hex" firmware file installed, you can use BlackcatUSB as a JTAG interfacing tool to connect to a wide range of EJTAG compatible devices from routers to printers and everything else you can imagine.



BlackcatUSB will only act like a passive diagnostic tool for the target system, so the device will need to be powered on by itself. Follow the above diagram to connect the BlackcatUSB JTAG port to the target system, power it on, and start the software. The software will now allow you to interface with the device's memory and Flash device. For additional features or device support, please see the "Scripts.pdf" document for information about using the powerful script engine.

Using SPI Mode

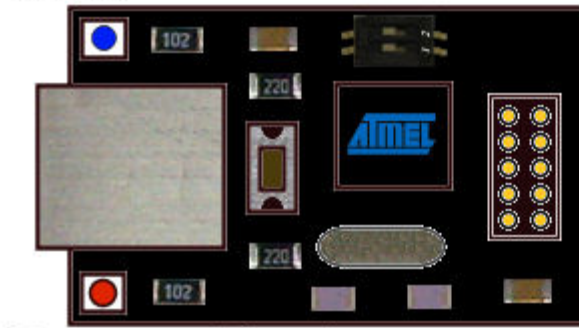
With the "BCUSB.1.05.SPI.hex" firmware file installed, BlackcatUSB will be a universal high density serial programming interface cable. Please see Flashes_Supported.pdf for a list of all the devices this software supports. If you have a device that it does not support, we offer a free service where you can send us the device and we can add support for you.

DIP Switches

1 - Application specific

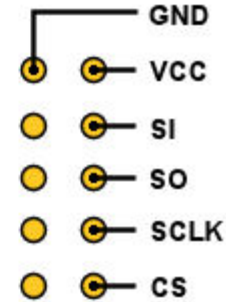
2 - Normal mode (ON) or Upgrade Mode (OFF)

Status

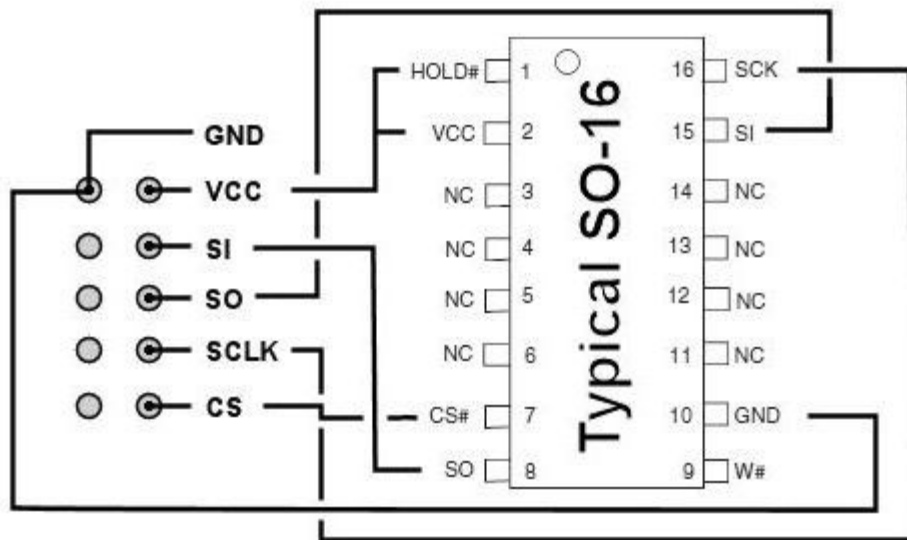


Power

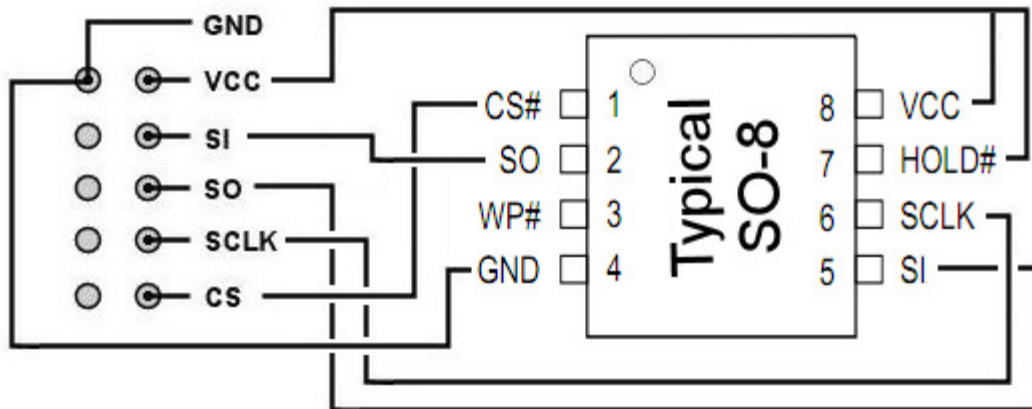
Reset



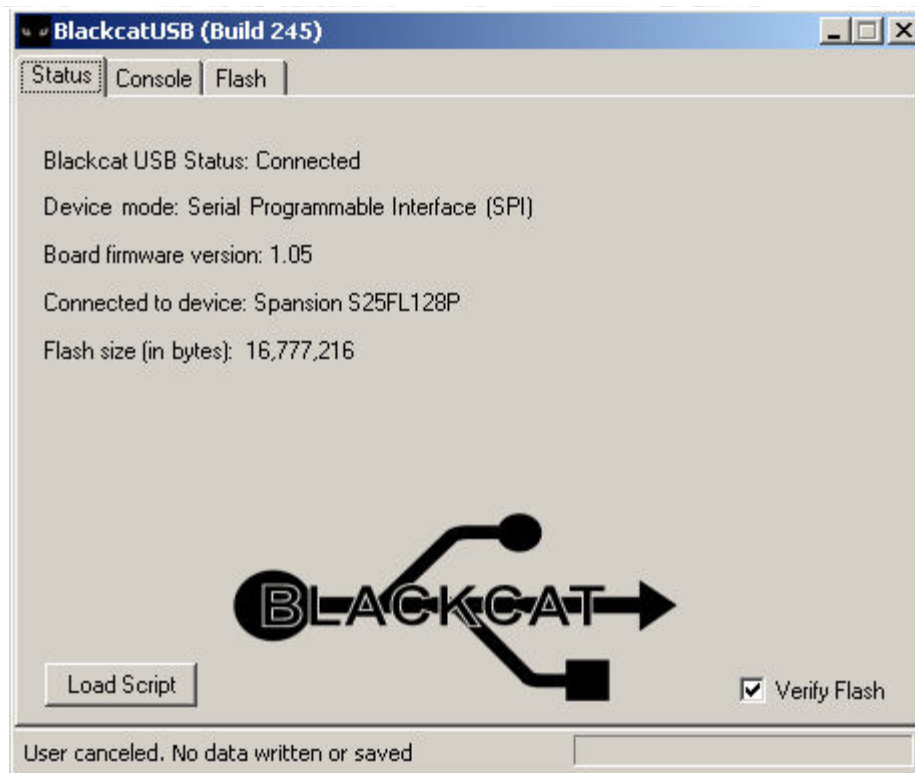
To interface your device with a SPI Flash device, follow this schematic for SOIC-16:



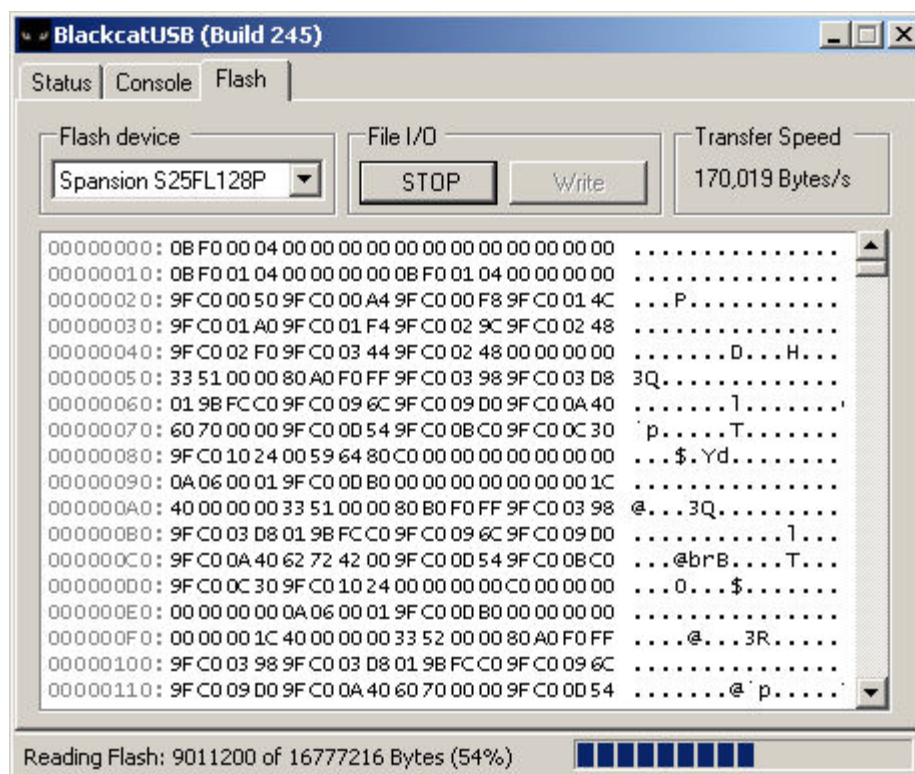
Or this one for SOIC-8:



You may need to double check the pin outs on the various IC packages, because not all follow this layout (although most do).



With the BlackcatUSB connected to your computer, and the SPI flash connected to the 10-pin SPI port, start the software and the interface should display the flash name and size.



The Flash tab will allow you to read and write data to the SPI flash memory. The speed will vary depending on the type of Flash, supported modes, clock settings and additional writing features.