PLEASE READ ME FIRST

Installation Reference

For installation and operating instructions for the USB Development board hardware and software see the following documentation:

1. To install and operate the USB Monitor/Debug software see the *USB Development System Software Guid*e.
2. To install and operate the CYASM assembler see the *CYASM Assembler User's Guide*.
3. To connect, configure and operate the Development Board see the *CY3652 USB Development System User's Guide*.

Kit Contents

- USB development board (in an anti-static bag).
- Wall transformer power supply
- USB cable
- RS-232 serial cable
- RS-232 9-pin to 25-pin adapter
- USB Monitor/Debug Software (3 disks)
- CYASM Assembler software and example application software (1 disk)
- CYASM Assembler User's Guide
- USB Development System Software Guide
- USB Development System User's Guide
- Quick Start User's Guide (this document)
- Registration Card

System Requirements

In order to operate the USB Development Board you must have a PC with the following components:

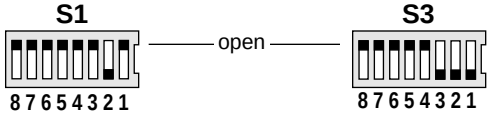
- 3.5 inch diskette drive
- Serial port
- USB ports
- Windows95™ OSR2.1 or later operating system

The Selftest (EPROM) program

The included EPROM program is meant to test the functionality of the development board and USB host computer. This program is referred to as "selftest" because it should run without any intervention when the development board USB cable is plugged into the host computer. This program enumerates as a USB mouse and moves the cursor to write out "USB" on the screen.

Procedure to run Selftest

1. The USB Host needs to be running Windows98™ Beta 3. It has been tested with build number 4.10.1650.
2. Install the Windows 98 Beta 3 CD on the CD drive so that USB drivers can be loaded.
3. Turn the mouse pointer trails on and set the "pointer speed" to the midpoint setting between "fast" and "slow", otherwise the "USB" will wander across the screen. Set the pointer trail length to the longest possible configuration. These features are accessible through the "mouse" applet in the Windows control panel.
4. The switches on the USB development board should have the following settings:



Note: S1-3 open enables the USB Bus Reset.

5. Apply power to the USB development board, the green LED indicates power on.
6. Plug the USB cable into the host and then plug the other end into the development board.
7. When the cable is plugged into the development board an hourglass hold appears momentarily, followed by a window that displays "NEW HARDWARE FOUND". The window will then disappear, and the mouse cursor should move in a pattern to spell out "USB" on the screen.

If the Selftest program fails to run…

1. Check the settings of switches shown above.
2. Check the cables.

Considerations

The following are known considerations and errata:

1. The HAPI interface does not always work under all conditions.
2. Babble cut-off does not always work under all conditions.
3. A new connection on a downstream port may fail to be detected. This appears to be very rare occurrence.
4. Port 1 may fail to enumerate. We have only seen this problem on a Toshiba PC running OSR2.1 usbhub.sys 4.03.1214. The problem does not appear in later versions such as 4.10.1056 or in Windows98™.
5. Setting a breakpoint at address 0 may not work, or may operate erratically.
6. If the "Page Down" is used in the Debug Monitor prior to using the right hand scroll bar the list file will scroll but then remain stuck and neither the scroll bar nor the Page Up/Down keys will work. To avoid this problem do not use the PgDn key until the scroll bar has be used at least once.
7. The WRITE ALL buttons in the Debug Monitor are broken. The user specified data value is ignored. The data written to the development board is the current contents of the ***selected*** region of the data displayed in the window.
8. The communications between the Development Board and the Debug Monitor may hang. Click on the "Initialize Comm Port" from the Communications Menu to restart communications.
9. Moving windows (e.g. status window) during download of a ROM file can cause the download to fail.
10. If the size of the ROM file is greater than physical ROM no warning is issued.
11. User code that writes to the Status_Control register at I/O location FFh should leave the state of bits 1 and zero in the state shown in the following table:

7	6	5	4	3	2	1	0
X	X	X	X	X	X	0	1

    Bits positions 1 and 0 are used by the debug monitor to control single stepping and running (respectively). When debugging user code any writes to the Status_Control register cause the Single Step bit to be reset. The effect is that execution does not terminate after one instruction but continues as if the "Run" button had been depressed.

    The work-around for this bug is to set a breakpoint on the following instruction whenever one encounters an instruction that writes to the Status_Control Register.
12. The Debug Monitor uses bits 0 and 1 of the Status_Control register (as noted above). A side-effect of Single Stepping, Running, Breaking and Breakpoints is that bits 7–2 of the Status_Control register are cleared.
13. The development board only implements four of the seven downstream USB ports.

Differences between the development board and silicon

The development board is lacking some of the features that are present on the integrated circuit. Three notable differences are:

1. Only four of the downstream ports are implemented
2. The development board lacks the programmable driver modes on GPIO pins
3. The DAC port operates like a GPIO port where the output sink current is fixed.

The USB Development System User's Guide has more on the differences between the board and silicon.