



Quick Start Guide for MoBL-USB TX2 USB 2.0 UTMI PHY Evaluation and Development Kit

USB 2.0 Host Controller

Host Controller Hardware

Due to the requirement for backward compatibility in the USB 2.0 specification, the USB 2.0 UTMI PHY will function with either a Full Speed (12 Mbits/sec) USB host or a High Speed (480 Mbits/sec) USB host. Almost all current PCs will have a Full Speed host capability built in, so you can begin work with the USB 2.0 UTMI PHY right away.

Most PCs will also be pre-configured with High Speed USB support with High Speed USB integrated onto the motherboard. If High Speed USB is desired, but your computer does not have this capability already, then you will need to obtain a High Speed USB host controller from a 3rd party supplier. These are available from a number of vendors such as IO Gear, Adaptec, etc.

High Speed Host Controller Drivers

A USB 2.0 host controller driver is required for the USB 2.0 host controller. Support for Full Speed and High speed USB is already integrated into Windows XP and Mac OS X, so no further work is required and you can begin working with the USB 2.0 UTMI PHY right away.

For Windows 2000, drivers will be available from Microsoft. For legacy versions of Mac OS, please contact Apple directly for drivers.

For host controllers obtained from 3rd party vendors, drivers may have been included with the add-in card. Some vendors are offering support for Windows 98 or different versions of Mac OS. Often these drivers have only limited support for High Speed USB – no isochronous support or limited hub support, for example. Obtain more information from your supplier if necessary. You may also wish to upgrade to a native version of drivers from Microsoft or Apple when/if they are available.

UTMI Interface

USB 2.0 Transceiver Macrocell Interface (UTMI) is a standard interface developed to interface to an USB 2.0 PHY. The UTMI interface contains a DATA bus, control signals and status signals. The data bus can be configured as a bi-directional 16-bit bus, a bi-directional 8-bit bus or two uni-directional 8-bit buses. Control signals control data transfers on the data bus as well as termination on the transceiver and operational modes. The status signals indicate the preset status of the transceiver.

Setting up the hardware

The following sections walk through set up of the USB 2.0 UTMI PHY board. It is assumed that an UTMI device and power supply is available.

Connector and Jumper definition on the USB 2.0 UTMI PHY board

CN1: 100-pin UTMI connector

D1: Power Indication

J1: USB B connector



J2: Alternate Power connector

- Pin 1: GND
- Pin 2: 3.3 V power
- Pin 3: Gnd

J3: Jumper for power from UTMI when R9 is not loaded

J4: Jumper for 8-bit data bus

J5: Jumper for Uni-direction Data Bus

Power up the system

Turn on your computer. Turn on the power source for the UTMI device, thereby supplying power to the UTMI device and the USB 2.0 UTMI PHY board. Now connect the USB cable to the device and to the PC. The device should now enumerate. Assuming that you are using an OS with native mass storage support (i.e. not Windows 98) the operating system will detect that it is a mass storage device and will automatically load the mass storage class driver. A new drive icon should appear on the system.

Specification

The following specifications may be helpful during development with the USB 2.0 UTMI PHY. These Specifications can be found at www.usb.org.

USB 2.0 Transceiver Macrocell Interface (UTMI) Specification, v1.05, Intel Corporation

USB 2.0 Transceiver and Macrocell Tester (T&MT) Interface Specification, v1.2, Intel Corporation

USB 2.0 Specification, USB Implementers Forum (USB-IF)