Product Alert

Product Name: **FireLink 82C862 PCI-to-USB Bridge**

Title: **Compatibility Issue with Mouse**

Date: **March 13, 2001**

Scope

This document provides information on a compatibility issue that has been identified with the Cypress Semiconductor mouse controller CP5417BM, when used with the OPTi 82C862 PCI-to-USB Bridge revision 0.2. The OPTi chip is identified by a four-digit code of "02 ME" that is stamped on the top side of the chip.

Issue

Tracking No: 12513

The compatibility issue has been seen in the lab only with the Logitech M-BA47 mouse, which uses a Cypress CP5417BM mouse controller chip. Both the mouse and the controller chip are now obsolete.

When this mouse is "hot" connected to a USB port of the 82C862 chip after the Windows OS has loaded, the mouse works properly. However, if the mouse is left connected to the port before the OS has loaded, it will fail to work. The OS will either report the mouse as an "Unknown Device" or will fail to load.

Unplugging and then reconnecting the mouse clears up the problem.

Explanation of Problem

The cause of this problem has been determined to be the initial state of the 82C862 USB ports. The 82C862 logic holds its D+ and D- lines low until the software puts the controller into USB Operational mode. While holding both lines low is an acceptable differential line condition according to the USB 1.1 spec., the CP5417BM mouse controller does not initialize properly once the D+/D- lines are released.

Workaround

The only workarounds are to leave the mouse disconnected until the OS has loaded, or to use a hub. The problem does not appear if the mouse resides behind a hub.

Fix

OPTi is still evaluating the impact of changing the behavior of the USB I/O cell. A silicon modification may be implemented at the next silicon revision opportunity if it is determined that the change will not impair the standby power consumption of the 82C862 device.