
USB2412

Silicon Errata and Data Sheet Clarification

This document describes known anomalies in the USB2412 device.

TABLE 1: SILICON ISSUE SUMMARY

Item Number	Silicon Issue Summary
1	Detach detection failure

Module 1: Detach detection failure

DESCRIPTION

When a Full-Speed/Low-Speed device detaches and quickly re-attaches, such as when issued a reset command over USB or other sideband control signal, there is a chance that the USB hub will not recognize the device detach and communicate the device detach event to the USB host. This may result in a failure to establish a connection with the device after the device is re-attached.

The hub requires 100us of uninterrupted SE0 line state (both D+ and D- lines below V_{IL}(min)) before a device detach is detected.

END USER IMPLICATIONS

This issue does not typically apply to a physical detach, as a physical device detach and re-attach typically involves much longer time scales.

This issue may be encountered when a device performs a self detach and re-attach as a result of some special command over USB or a reset due to some stimulus within the device's system (such as a button reset).

Work around

There are two possible work arounds:

1. Ensure that the hub port detects an SE0 line state for > 100us before re-attaching the device.
 - a) The device must remove its D+ or D- pull-up resistor to ensure SE0 line state is achieved.
 - b) There must be at least one 100μs gap in between packets while the device is in the detached state.
2. If the device is being commanded to detach and re-attach from USB host command (such as when instructing a device to re-enumerate in a different mode of operation), issue a Port Reset command to the hub for the respective port immediately after the detach command is issued to ensure that the device can be properly detected when it re-attaches.

PLAN

This erratum will not be corrected in a future revision.

APPENDIX A: DOCUMENT REVISION HISTORY

TABLE A-1: REVISION HISTORY

Revision Level & Date	Section/Figure/Entry	Correction
DS80000824A (03-20-19)	All	Initial release.

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