CY7C65620/30

May 2010

Errata Document for CY7C65620/30, EZ-USB HX2LP™ Low-Power USB 2.0 Hub Controller Family

This document describes the errata for the EZ-USB HX2LP™ Low-Power USB 2.0 Hub Controller Family, CY7C65620/30. Details include errata trigger conditions, scope of impact, available workarounds, and silicon revision applicability. Compare this document to the device's data sheet for a complete functional description.

Contact your local Cypress Sales Representative if you have questions.

Part Numbers Affected

Part Number	Device Characteristics
CY7C65620	All Packages
CY7C65630	All Packages

HX2LP Qualification Status

Product status: Production

HX2LP Errata Summary

1. Non-periodic and Isochronous OUT transfers in the same microframe

- **Description**
  With the operating in High-Speed mode with a Full-Speed device connected to a downstream port, Sometimes, an Isochronous OUT packet gets corrupted on the downstream port.
- **Implication**
  The main cause of this phenomenon is in the way the hub's Transaction Translator downstream handler state machine schedules transactions if non-periodic (Control or Bulk) transactions are found in the non-periodic buffer while an Isochronous OUT transaction is active on the port. If the downstream handler state machine sees an Isochronous OUT packet in the Transaction translation buffer and if it is scheduled in the same micro-frame by the host then it will skip the Isochronous OUT transaction and resume a non-periodic transaction.
- **Workaround**
  The workaround for this issue is for the host controller to avoid scheduling non-periodic traffic such that it will run while an Isochronous OUT transaction is active. Non-periodic traffic can be scheduled to run in the micro-frame before the Isochronous OUT transaction begins, or after the Isochronous OUT transaction completes.
- **Status**
  No plan to fix currently - recommend using workaround.

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2. Last data not received in multi-microframe Isochronous IN transfers

- **Description**
  With the hub operating in High-Speed mode with a Full-Speed device connected to a downstream port, Sometimes a multi-microframe Isochronous IN transaction resulted in the last two Complete Split transactions that should have returned data but instead returned NYET handshakes.
- **Implication**
  The main cause of this phenomenon is in the hub's Transaction Translator logic which tracks data stored in the periodic transaction buffer. If the Full-Speed transaction completes before the Complete-Split token is received from the host, there is a chance that buffer will be over-written if the requested Isochronous IN payload is greater than 440 bytes(USB2.0 specification on buffer size).
- **Workaround**
  The workaround for this issue is for the host controller to avoid scheduling the Complete Split token for the microframe where the Full-Speed packet ends too late in the frame. The TT is guaranteed to work correctly if the Complete Split is received in the first quarter of the microframe.
- **Status**
  No plan to fix currently - recommend using workaround.

References

[1] Document # 38-08037, CY7C656XX EZ-USB HX2LPTM Low-Power USB 2.0 HUB Controller Family Data Sheet

Revision History

Document Title: Errata Document for CY7C65620/30, EZ-USB HX2LP™ Low-Power USB 2.0 Hub Controller Family Document Number: 001-09968				
REV.	**ECN NO.**	**Issue Date**	**Orig. of Change**	**Description of Change**
**	501609	See ECN	KKU	Original release of spec.
*A	2559316	See ECN	KKU/AESA	Changed product status from Sampling to Production.
*B	3016378	08/26/2010	AASI	Added two errata items.
*C	4145384	10/03/2013	PRJI	Completing sunset review

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