Chip Errata for the MC92460 multichannel HDLC controller

This document details all known silicon errata for the MC92460 multichannel HDLC controller. This table provides a revision history for this document.

Table 1. Document revision history

Rev. number	Date	Substantive change(s)
1	03/2013	Added Errata No. 2.
0	01/2004	Initial public release

This table summarizes all known errata and lists the corresponding silicon revision level to which it applies. A 'Y' entry indicates the erratum applies to a particular revision level.

Table 2. Summary of silicon errata and applicable revision

Errata	Name	Projected solution	Silicon rev. 0
Errata No. 1	HDLC never starts data transfer when asynchronous HRESET_B is negated.	No plans to fix	Y
Errata No. 2	Erroneous frame deletion when closing and starting flag is shared	No plans to fix	Y

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Errata No. 1   HDLC never starts data transfer when asynchronous HRESET_B is negated.

Description:

When the HRESET_B signal is negated, HDLC's DMA is in failure state.

Projected impact:

HDLC never starts data transmission or reception.

Workaround:

After HRESET_B release (negation), and before starting HDLC data transfer, change DMA mode to Direct DMA mode and return the DMA mode to External DMA mode.

The patch program is as follows:

After HRESET, DMAMR has 0x4000_0000 initially.

Patch start

Write 0x8002_0000 to DMAMR #Switch to Direct DMA mode enabled

Write 0x0000_0000 to DMAMR #Disable DMA

isync

Return to Normal

To start HDLC DMA soon, write 0xc000_0000 to DMAMR.

Projected solution:

Do not fix. Installing the software patch solves the problem.

Errata No. 2   Erroneous frame deletion when closing and starting flag is shared

Description:

When the device receives a back-to-back HDLC frame, where the closing flag is shared with the opening flag, the frame that shared the flag is dropped. This is due to the internal state machine of the frame reception shifter, which requires an independent closing and opening flag.

Projected impact:

When the HDLC controller that supports flag sharing receives a back-to-back frame, the MC92460 drops all other frames. This significantly reduces frame throughput and causes the protocol to time out. Note that, because the device always has an independent opening and closing flag, the errata is not observed when a station using the MC92460 is communicating to another station using the MC92460.

Workaround:

Disable flag sharing on the station transmitting the frame to the station using MC92460.

Projected solution:

No plans to fix

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