

LPC553x

Errata sheet LPC553x

Rev. 1.2 — March 23, 2022

Errata sheet

Document information

Info	Content
Keywords	LPC5536, LPC5534
Abstract	LPC553x errata



Revision history

Rev	Date	Description
1.2	20220323	<ul style="list-style-type: none">Added CRP.1 Section 3.3 “CRP.1: Boot ROM does not give correct Code Read Protection (CRP) status when in CRP_LEVEL3”
1.1	20220117	<ul style="list-style-type: none">Added ADC.1 Section 3.1 “ADC.1: Missing code in Standard resolution mode”Added I3C Section 3.2 “I3C: Data lost when using the DMA to write transmit data to I3C, and the data size is greater than the I3C FIFO size”.
1.0	20210916	Initial release.

Contact information

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1. Product identification

The LPC553x HLQFP100 package has the following top-side marking:

- First line: LPC553x
- Second line: xxxxxxx
- Third line: **zzzyywwxR**
 - yyww: Date code with yy = year and ww = week.
 - xR: Device revision A

The LPC553x HTQFP64 package has the following top-side marking:

- First line: LPC553x
- Second line: JBD64
- Third line: xxxx
- Fourth line: xxxx
- Fifth line: **zzzyywwxR**
 - yyww: Date code with yy = year and ww = week.
 - xR: Device revision A

The LPC553x HVQFN48 package has the following top-side marking:

- First line: LPC553x
- Second line: JHI48
- Third line: xxxxxxxx
- Fourth line: xxxx
- Fifth line: **zzzyywwxR**
 - yyww: Date code with yy = year and ww = week.
 - xR: Device revision A

2. Errata overview

Table 1. Functional problems table

Functional problems	Short description	Revision identifier	Detailed description
ADC.1	Missing code in Standard resolution mode.	A	Section 3.1
I3C	Data lost when using the DMA to write transmit data to I3C, and the data size is greater than the I3C FIFO size.	A	Section 3.2
CRP.1	Boot ROM does not give correct Code Read Protection (CRP) status when in CRP_LEVEL3.	A	Section 3.3

Table 2. AC/DC deviations table

AC/DC deviations	Short description	Product version(s)	Detailed description
n/a	n/a	n/a	n/a

Table 3. Errata notes

Errata notes	Short description	Revision identifier	Detailed description
n/a	n/a	n/a	n/a

3. Functional problems detail

3.1 ADC.1: Missing code in Standard resolution mode

Introduction

LPC553x device family contains two instances of Analog to Digital Converter (ADC), ADC0 and ADC1. In single ended operation both ADCs support standard resolution mode (12-bit resolution) and High resolution mode (16-bit resolution).

Problem

In the standard resolution mode of single ended operation, both ADC0 and ADC1 may have approximately 1 missing code out of 20 codes. Both ADCs do not miss consecutive codes and maintain monotonicity in spite of missing codes.

Work-around

There is no work-around.

3.2 I3C: Data lost when using the DMA to write transmit data to I3C, and the data size is greater than the I3C FIFO size

Introduction

The LPC553x includes an I3C peripheral with a DMA interface that can be used to transfer data to or from the I3C data FIFO.

Problem

The issue occurs when using I3C to transmit data written by the SDMA to the Slave Write Data Half-word (SWDATAH)/Master Write Data Half-word (MWDATAH) registers or Master Write Message Data (MWMSG_SDR_DATA) register 2 bytes at a time. If the number of bytes to send exceeds the FIFO size of 8, data is overwritten by the SDMA after the FIFO becomes full.

Work-around

Set the DMAWIDTH field to 10 (Half word) in the Slave DMA Control (SDMACTRL)/Master DMA Control (MDMACTRL) registers and use the Slave Write Data Byte (SWDATAB)/Master Write Data Byte (MWDATAB) to write the SDMA data. Avoid using the Slave Write Data Half-word (SWDATAH)/Master Write Data Half-word (MWDATAH) registers or Master Write Message Data (MWMSG_SDR_DATA) register.

3.3 CRP.1: Boot ROM does not give correct Code Read Protection (CRP) status when in CRP_LEVEL3

Introduction

Code Read Protection (CRP) is a mechanism that allows the user to enable different levels of protections in the system, so that access to the on-chip flash and use of the ISP can be restricted.

The LPC553x device family contains 5 CRP levels:

- CRP_LEVEL0
- CRP_LEVEL1
- CRP_LEVEL2
- CRP_LEVEL3
- CRP_LEVEL4

Status of a CRP level can be returned by the LPC553x by using the debug mail box command get CRP Level (DM-AP command 2).

Problem

When the LPC553x is programmed with CRP_LEVEL3 (LC_STATE=0xF and ISP is disabled in CMPA), the Boot ROM does not return the correct status of CRP level. It returns CRP_LEVEL2 instead. The CRP_LEVEL3 restrictions are not impacted by this problem.

Work-around

There is no work-around.

4. AC/DC deviations detail

No known errata.

5. Errata notes detail

No known errata.

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