



Product Change Notification / SYST-04RUIV247

Date:

05-Aug-2020

PCN Type:

Silicon Die Revision

Notification Subject:

ERRATA - PIC32MK General Purpose and Motor Control (GPG/MCJ) with CAN FD Family Silicon Errata

Affected CPNs:

[SYST-04RUIV247_Affected_CPN_08052020.pdf](#)

[SYST-04RUIV247_Affected_CPN_08052020.csv](#)

Notification Text:

SYST-04RUIV247

Microchip has released a new Product Documents for the PIC32MK General Purpose and Motor Control (GPG/MCJ) with CAN FD Family Silicon Errata of devices. If you are using one of these devices please read the document located at [PIC32MK General Purpose and Motor Control \(GPG/MCJ\) with CAN FD Family Silicon Errata](#).

Notification Status: Final

Description of Change: 1) Added Silicon Revision A1. 2) The following silicon errata issues were added:

Oscillator: 2.1.1 Hardware Clock Source Selection, ADC 2.2.1 Scan Mode, I2C Speed 2.3.1 Speed and I2C Slave 2.3.2 Slave

Impacts to Data Sheet: None

Reason for Change: To Improve Productivity

Change Implementation Status: Complete

Estimated First Ship Date: 05 Aug 2020

NOTE: Please be advised that after the estimated first ship date customers may receive pre and post change parts.

Markings to Distinguish Revised from Unrevised Devices: Traceability Code

Attachments:

PIC32MK General Purpose and Motor Control (GPG/MCJ) with CAN FD Family Silicon Errata

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PIC32MK GPG/MCJ Family

PIC32MK General Purpose and Motor Control GPG/MCJ with CAN FD Family Silicon Errata and Data Sheet Clarifications

PIC32MK (GPG/MCJ) Family Errata

The PIC32MK family of devices that you have received conform functionally to the device data sheet, PIC32MK General Purpose and Motor Control (GPG/MCJ) with CAN FD Family Data Sheet (DS60001570C), except for the anomalies described in this document.

The silicon issues discussed in the following pages are for silicon revisions with the Device and Revision IDs listed in the following table. The silicon issues are summarized in the Table of Contents following this section.

The errata described in this document will be addressed in future revisions of the PIC32MK family silicon.

Note: This document summarizes all silicon errata issues from all revisions of silicon, previous as well as current.

Table 1. PIC32MK Family Silicon Device Identification

Part Number	Device Identification (DEVID[27:0])	Revision ID (DEVID[31:28])
		A1
PIC32MK0512MCJ064	0x6300053	0x1
PIC32MK0512MCJ048	0x6301053	
PIC32MK0256MCJ064	0x6304053	
PIC32MK0256MCJ048	0x6305053	
PIC32MK0512GPG064	0x6318053	
PIC32MK0512GPG048	0x6319053	
PIC32MK0256GPG064	0x631C053	
PIC32MK0256GPG048	0x631D053	

Data Sheet clarifications and corrections (if applicable) are located in the section "Data Sheet Clarifications", following the discussion of silicon issues.

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PIC32MK GPG/MCJ Family

Silicon Errata Issues Summary

1. Silicon Errata Issues Summary

The following errata issues are to be noted for the current device data sheet, PIC32MK General Purpose and Motor Control (GPG/MCJ) with CAN FD Family (DS60001570C).

Table 1-1. Silicon Errata Summary

Module	Feature	Item #	Issue Summary	Affected Revisions
				A1
Oscillator	Hardware Clock Source Selection	2.1.1	Clock source selection in hardware, that is, using the Fuse Configuration register FNOOSC <2:0> bits (DEVCFG1 <2:0>) does not work.	X
ADC	Scan mode	2.2.1	Shared ADC7 on high Offset and Gain Error in Scan mode.	X
I2C	Speed	2.3.1	I ² C master module does not meet low period of the SCL Clock (t_{LOW}) parameter from I ² C specification for clock frequency ≥ 400 kHz.	X
I2C	Slave	2.3.2	The 7-bit address that matches the 10-bit upper address value (111_10xx) is not accepted regardless of the STRICT bit setting.	X

2. Silicon Errata Issues

The following issues apply to the PIC32MK GPG/MCJ family of devices.

Notes:

- An 'X' indicates the issue is present in this revision of silicon.
- Cells with a dash ('-') indicate that this silicon revision does not exist for this issue.
- Blank cells indicate an issue has been corrected or does not exist in this revision of silicon.

2.1 Oscillator

2.1.1 Hardware Clock Source Selection

After a Brown-out Reset, the system clock source may default to FRC instead of the clock source defined using the Fuse Configuration register FNOSC<2:0> bits (DEVCFG1<2:0>).

Workaround:

Upon any reset, verify if the Current Clock Source Selection register COSC<2:0> bits (OSCCON<14:12>) match the clock source selected using the Fuse Configuration register FNOSC<2:0> bits (DEVCFG1<2:0>). If the clock sources do not match, perform a software clock switch to the desired clock source. Refer to Section 42. *Oscillators with Enhanced PLL (DS60001250)*, subsection 42.3.7.2 *Oscillator Switching Sequence* in the *PIC32 Family Reference Manual* for details on software clock switching.

Affected Revisions:

A1							
X							

2.2 ADC

2.2.1 Scan Mode

Shred ADC 7 has high offset and gain error up to 38 Lsb in ADC7 Scan mode, as defined in the ADCCSS1/ADCCSS2 registers.

Workaround:

Increase the user-defined SMAC<9:0> bits (ADCCON2<25:16> sample time register value) by 4 T_{AD}. This will reduce the ADC7 throughput that the user must consider, but it will reduce the gain and offset to less than 4 Lsb in 12-bit mode.

Affected Revisions:

A1							
X							

2.3 I²C

2.3.1 Speed

The I²C master module does not meet low period of the SCL clock (t_{LOW}) parameter from I²C specification for clock frequency >= 400 kHz.

Workaround:

None.

PIC32MK GPG/MCJ Family

Silicon Errata Issues

Affected Revisions:

A1							
X							

2.3.2 Slave

The 7-bit address that matches the 10-bit upper address value (111_10xx) is not accepted regardless of the STRICT bit setting.

Workaround:

None

Affected Revisions:

A1							
X							

3. Data Sheet Clarifications

The following typographic corrections and clarifications are to be noted for the current device data sheet, PIC32MK General Purpose and Motor Control (GPG/MCJ) with CAN FD Family (DS60001570C), and are showed in **BOLD** type.

Currently there are no known issues to report.

4. Revision History

Revision B - June 2020

Addition of A1 silicon revision.

The following silicon errata issues were added:

- Oscillator: [2.1.1 Hardware Clock Source Selection](#)
- ADC [2.2.1 Scan Mode](#)
- I²C Speed [2.3.1 Speed](#) and I²C Slave [2.3.2 Slave](#)

Revision A - May 2019

This is the initial released version of this document.

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SYST-04RUIV247 - ERRATA - PIC32MK General Purpose and Motor Control (GPG/MCJ) with CAN FD Fan

Affected Catalog Part Numbers(CPN)

- PIC32MK0256GPG048-E/7MX
- PIC32MK0256GPG048-E/Y8X
- PIC32MK0256GPG048-I/7MX
- PIC32MK0256GPG048-I/Y8X
- PIC32MK0256GPG048T-E/7MX
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- PIC32MK0256GPG048T-I/7MX
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- PIC32MK0256GPG064T-E/R4X
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- PIC32MK0512GPG064-E/PT
- PIC32MK0512GPG064-E/R4X

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PIC32MK0512MCJ048T-I/Y8X
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PIC32MK0512MCJ064-E/R4X
PIC32MK0512MCJ064-I/PT
PIC32MK0512MCJ064-I/R4X
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