
PIC18F06/16Q41 Silicon Errata and Data Sheet Clarifications

The PIC18F06/16Q41 devices you have received conform functionally to the current device data sheet (DS40002214B), 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 table below.

The errata described in this document will be addressed in future revisions of the PIC18F06/16Q41 silicon.

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

Table 1. Silicon Device Identification

Part Number	Device ID	Revision ID
		A4
PIC18F06Q41	0x7580	0xA004
PIC18F16Q41	0x7560	0xA004



Important: Refer to the **Device/Revision ID** section in the current “**PIC18FXXQ41 Family Programming Specification**” (DS40002143) for more detailed information on Device Identification and Revision IDs for your specific device.

Table 2. Silicon Issue Summary

Module	Feature	Item No.	Issue Summary	Affected Revisions
				A4
Analog-to-Digital Converter with Computation	ADCC	1.1.1	ADC cannot operate in certain low-power conditions	X
Oscillator	XT mode	1.2.1	Maximum clock frequency limited to 2 MHz for XT mode	X
	Fail-Safe Clock Monitor	1.2.2	Enabling the FOSC Fail-Safe Clock Monitor alongside the Primary or Secondary Oscillator Clock Monitor causes issues in Sleep	X
	EC mode	1.2.3	Maximum clock frequency for EC mode is 32 MHz for $V_{DD} < 2.0V$	X
I ² C	I ² C	1.3.1	I2CxADR0/1/2/3 registers have incorrect Reset value	X
Operational Amplifier	OPA	1.4.1	Charge Pump On Control (CPON) bit is reserved	X
	OPA	1.4.2	Internal resistor ladder does not disconnect in Unity Gain mode	X
Program Flash Memory	PFM	1.5.1	Endurance of PFM cell is lower than specified	X
Note: Only those issues indicated in the last column apply to the current silicon revision.				

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1. Silicon Errata Issues



Notice: This document summarizes all silicon errata issues from all revisions of silicon, previous as well as current. Only the issues indicated by the bold font in the following tables apply to the current silicon revision.

1.1 Module: Analog-to-Digital Converter with Computation (ADCC)

1.1.1 ADC Cannot Operate in Certain Low-Power Conditions

The ADC will not function when all of the following conditions exist: When the MCU system clock is sourced from LFINTOSC or SOSC and when both the BOR and FVR features are disabled.

Work around

- Method 1: Use a system clock other than LFINTOSC or SOSC.
- Method 2: Enable the BOR feature.
- Method 3: Enable the FVR feature.

Affected Silicon Revisions

A4
X

1.2 Module: Oscillator

1.2.1 Maximum Clock Frequency Limited to 2 MHz for XT Mode

The maximum clock frequency for the intermediate gain setting that supports quartz crystal and ceramic resonator operation (XT mode) is being reduced from 4 MHz to 2 MHz.

Work around

For crystal or resonator frequencies above 2 MHz, use HS mode.

Affected Silicon Revisions

A4
X

1.2.2 Enabling the FOSC Fail-Safe Clock Monitor Alongside the Primary or Secondary Oscillator Clock Monitor Causes Issues with Sleep

When the FOSC Fail-Safe Clock Monitor is enabled (FCMEN Configuration bit = 1) and either the Primary or Secondary Fail-Safe Clock Monitor is also enabled (FCMENS and/or FCMENP = 1), putting the device to Sleep will cause a Fail-Safe condition to trigger. This has the effect of erroneously triggering Fail-Safe interrupts when there has not been a clock interruption. This can also cause the Watchdog Timer to not properly wake up the part from Sleep.

Work around

If proper functionality in Sleep is required, do not enable the Primary or Secondary Fail-Safe Clock Monitor while the FOSC Fail-Safe Clock Monitor is enabled. If Primary or Secondary Clock Monitoring in Sleep is desired, disable the FOSC Fail-Safe Clock Monitor before the device goes to Sleep.

Affected Silicon Revisions

A4
X

1.2.3 Maximum Clock Frequency for EC Mode Is 32 MHz for $V_{DD} < 2.0V$

When configured in External Clock High-Power (ECH) mode and operating at $V_{DD} < 2.0V$, the maximum input clock frequency is 32 MHz.

Work around

To obtain a system clock frequency of 64 MHz in ECH mode at $V_{DD} < 2.0V$, use a 16 MHz external clock in conjunction with the 4x Phase-Locked Loop (PLL) circuit (i.e., either RSTOSC Configuration bits = 0b010 or OSCCON1bits.NOSC = 0b010).

Affected Silicon Revisions

A4
X

1.3 Module: I²C

1.3.1 I2CxADR0/1/2/3 Registers Have Incorrect Reset Value

The I2CxADR0/1/2/3 registers reset to 0xFF when the I2CxMD is enabled instead of 0x00.

Work around

None.

Affected Silicon Revisions

A4
X

1.4 Module: Operational Amplifier

1.4.1 Charge Pump On Control (CPON) Bit Is Reserved

When not operating the OPAMP near the rails, the Charge Pump On Control (CPON) bit can be used to disable the charge pump in order to save on current consumption. This feature is currently not available, and the charge pump is always enabled whenever the OPAMP module is in operation.

Work around

None.

Affected Silicon Revisions

A4
X

1.4.2 Internal Resistor Ladder Does Not Disconnect in Unity Gain Mode

When using the OPA module in a unity gain configuration, the internal resistor ladder will not automatically disconnect from the operational amplifier, which may adversely affect the gain of the circuit. This applies when the peripheral has been configured to operate in Unity Gain mode in software by setting the UG bit, or in hardware using the hardware controlled override feature.

Work around

Disconnect the internal resistor ladder from the operational amplifier by writing to the Inverting Input Channel Selection (NCH) bits. All signals can be disconnected from the operational amplifier by writing 0b000 to the NCH bits.

Affected Silicon Revisions

A4
X

1.5 Module: PFM - Program Flash Memory

1.5.1 Endurance of PFM Cell Is Lower than Specified

The Flash memory cell endurance specification (Parameter MEM30) is lower than specified in the device data sheet. The PFM cell endurance is 1K cycles instead of 10K cycles.

Work around

None.

Affected Silicon Revisions

A4
X

2. Data Sheet Clarifications

The following typographic corrections and clarifications are to be noted for the latest version of the device data sheet (DS40002214B):

Note:

Corrections are shown in **bold**. Where possible, the original bold text formatting has been removed for clarity.

2.1 None

There are no known data sheet clarifications as of this publication date.

3. Appendix A: Revision History

Doc Rev.	Date	Comments
B	08/2020	Adding silicon erratum item 1.5.1.
A	06/2020	Initial document release.

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ISBN: 978-1-5224-6644-4

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