

PIC12(L)F1501 Family Silicon Errata and Data Sheet Clarification

The PIC12(L)F1501 family devices that you have received conform functionally to the current Device Data Sheet (DS41615A), 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 [Table 1](#). The silicon issues are summarized in [Table 2](#).


The errata described in this document will be addressed in future revisions of the PIC12(L)F1501 silicon.

Note: This document summarizes all silicon errata issues from all revisions of silicon, previous as well as current. Only the issues indicated in the last column of [Table 2](#) apply to the current silicon revision (**A3**).

Data Sheet clarifications and corrections start on [page 4](#), following the discussion of silicon issues.

The silicon revision level can be identified using the current version of MPLAB® IDE and Microchip's programmers, debuggers, and emulation tools, which are available at the Microchip corporate web site (www.microchip.com).

For example, to identify the silicon revision level using MPLAB IDE in conjunction with a hardware debugger:

1. Using the appropriate interface, connect the device to the hardware debugger.
2. Open an MPLAB IDE project.
3. Configure the MPLAB IDE project for the appropriate device and hardware debugger.
4. Based on the version of MPLAB IDE you are using, do one of the following:
 - a) For MPLAB IDE 8, select *Programmer > Reconnect*.
 - b) For MPLAB X IDE, select *Window > Dashboard* and click the **Refresh Debug Tool Status** icon ().

Depending on the development tool used, the part number and Device Revision ID value appear in the **Output** window.

Note: If you are unable to extract the silicon revision level, please contact your local Microchip sales office for assistance.

The DEVREV values for the various PIC12(L)F1501 silicon revisions are shown in [Table 1](#).

TABLE 1: SILICON DEVREV VALUES

Part Number	DEVICE ID<13:0>			
	DEV<8:0> ⁽¹⁾	REV<4:0> Silicon Revision ⁽²⁾		
		A0	A2	A3
PIC12F1501	10 1100 110	0 0000	0 0010	0 0011
PIC12LF1501	10 1101 100	0 0000	0 0010	0 0011

- Note 1:** The Device ID is located in the configuration memory at address 8006h.
- 2:** Refer to the “*PIC12(L)F1501/PIC16(L)F150X Memory Programming Specification*” (DS41573) for detailed information on Device and Revision IDs for your specific device.

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TABLE 2: SILICON ISSUE SUMMARY

Module	Feature	Item Number	Issue Summary	Affected Revisions ⁽¹⁾		
				A0	A2	A3
Oscillator	HFINTOSC Ready/Stable bit	1.1	Bits remained set to '1' after initial trigger.	X		
Oscillator	Clock Switching	1.2	Clock switching fails.	X		
FVR	FVR Module	2.1	Use of FVR module can cause the device to reset.	X		

Note 1: Only those issues indicated in the last column apply to the current silicon revision.

Silicon Errata Issues

Note: This document summarizes all silicon errata issues from all revisions of silicon, previous as well as current. Only the issues indicated by the shaded column in the following tables apply to the current silicon revision (**A3**).

1. Module: Oscillator

1.1 OSCSTAT bits: HFIOFR and HFIOFS

When HFINTOSC is selected, the HFIOFR and HFIOFS bits will become set when the oscillator becomes ready and stable. Once these bits are set, they become “stuck”, indicating that HFINTOSC is always ready and stable. If the HFINTOSC is disabled, the bits fail to be cleared.

Work around

None.

Affected Silicon Revisions

A0	A2	A3					
X							

1.2 Clock Switching

When switching clock sources between INTOSC clock source and an external clock source, one corrupted instruction may be executed after the switch occurs.

Work around

When switching from an external oscillator clock source, first switch to 16 MHz HFINTOSC. Once running at 16 MHz HFINTOSC, configure IRCF to run at desired internal oscillator frequency.

When switching from an internal oscillator (INTOSC) to an external oscillator clock source, first switch to HFINTOSC High-Power mode (8 MHz or 16 MHz). Once running from HFINTOSC, switch to the external oscillator clock source.

Affected Silicon Revisions

A0	A2	A3					
X							

2. Module: FVR

2.1 FVR Module

When using the FVR module, if the gain amplifier outputs are set via the CDAFVR or ADFVR bits in FVRCON while the module is disabled (FVREN = 0), the internal oscillator frequency may shift, device current consumption can increase, and a Brown-out Reset may occur. Additionally, after the FVREN is enabled, a switch from 4x to 1x can also cause a Reset.

Work around

Set the FVREN bit of FVRCON to enable the module prior to adjusting the amplifier output selections with the CDAFVR and ADFVR bits. Always set the amplifier output selections to off ('0 0') before disabling the FVR module. When switching from 4x to 1x, first switch from 4x to 2x and then from 2x to 1x.

Affected Silicon Revisions

A0	A2	A3				
X						

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Data Sheet Clarifications

The following typographic corrections and clarifications are to be noted for the latest version of the device data sheet (DS41615A):

<p>Note: Corrections are shown in bold. Where possible, the original bold text formatting has been removed for clarity.</p>

None.

APPENDIX A: DOCUMENT REVISION HISTORY

Rev A Document (3/2012)

Initial release of this document.

Rev B Document (8/2012)

Added Module 2.1.

Rev C Document (10/2012)

Added Silicon Revision A2.

Rev D Document (11/2013)

Added Silicon Revision A3.

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