

Date: 18 Jul 2012

Product Category: 8-bit Microcontrollers

Device Family:  

Notification subject: ERRATA - PIC18(L)F26/46K22 Rev. A2/A4 Silicon Errata and Data Sheet Clarification Errata Document Revision

Notification text: SYST-18JLUF495

Microchip has released a new DeviceDoc for the PIC18(L)F26/46K22 Rev. A2/A4 Silicon Errata and Data Sheet Clarification of devices. If you are using one of these devices please read the document located at [PIC18\(L\)F26/46K22 Rev. A2/A4 Silicon Errata and Data Sheet Clarification](#).

Notification Status: Final

Description of Change: 1. Added MPLAB X IDE; 2. Added Module 5.2.

Pre Change: N/A

Post Change: N/A

Impacts to Data Sheet: None

Reason for Change: To Improve Productivity

Change Implementation Status: Complete

Date Document Changes Effective: 18 Jul 2012

NOTE: Please be advised that this is a change to the document only the product has not been changed..

Markings to Distinguish Revised from Unrevised Devices:N/A

Attachment(s): [PIC18\(L\)F26/46K22 Rev. A2/A4 Silicon Errata and Data Sheet Clarification](#)

Please contact your local [Microchip sales office](#) with questions or concerns regarding this notification.

Terms and Conditions:

If you wish to change your product/process change notification (PCN) profile please log on to our website at <http://www.microchip.com/PCN> sign into myMICROCHIP to open the myMICROCHIP home page, then select a profile option from the left navigation bar.

To opt out of future offer or information emails (other than product change notification emails), click here to go to [microchipDIRECT](#) and login, then click on the "My account" link, click on "Update profile" and un-check the box that states "Future offers or information about Microchip's products or services."

Parts Affected

PIC18F26K22

PIC18F46K22

PIC18(L)F26/46K22 Rev. A2/A4 Silicon Errata and Data Sheet Clarification

The PIC18(L)F26/46K22 family devices that you have received conform functionally to the current Device Data Sheet (DS41412F), 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 PIC18(L)F26/46K22 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 (**A4**).

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 ().
5. 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 PIC18(L)F26/46K22 silicon revisions are shown in [Table 1](#).

TABLE 1: SILICON DEVREV VALUES

Part Number	Device ID ⁽¹⁾	Revision ID for Silicon Revision ⁽²⁾	
		A2	A4
PIC18F46K22	0101 0100 000x xxxx	0 0010	0 0100
PIC18LF46K22	0101 0100 001x xxxx	0 0010	0 0100
PIC18F26K22	0101 0100 010x xxxx	0 0010	0 0100
PIC18LF26K22	0101 0100 011x xxxx	0 0010	0 0100

- Note 1:** The Device ID is located in the last configuration memory space.
- Note 2:** Refer to the “*PIC18(L)F2XK22/4XK22 Flash Memory Programming Specification*” (DS41398) for detailed information on Device and Revision IDs for your specific device.

PIC18(L)F26/46K22

TABLE 2: SILICON ISSUE SUMMARY

Module	Feature	Item Number	Issue Summary	Affected Revisions ⁽¹⁾	
				A2	A4
Comparators	CxSYNC Control	1.	The comparator output to the device pin (Cx) always bypasses the Timer1 synchronization latch.	X	X
Clock Switching	Fail-Safe Clock Monitor	2.	When the FCMEN Configuration bit is set and the IESO Configuration bit is not set, then a clock failure during Sleep will not be detected.	X	X
Power-on Reset (POR)	Power-on Reset	3.	Transient current spikes on some parts during power-up may cause the part to become stuck in Reset.	X	
Timer1/3/5 Gate	Timer1/3/5 Gate	4.	The Timer1/3/5 gate times cannot be resolved to the two Least Significant bits, when using Fosc as the Timer1/3/5 source.	X	X
EUSART	EUSART Asynchronous Operation	5.1	The EUSART asynchronous operation may miss the Start bit edge.	X	
EUSART	EUSART Synchronous Operation	5.2	LSb of transmitted data can be corrupt.	X	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 (A4).

1. Module: Comparators

The CxSYNC controls are inoperative. The comparator output (Cx) always bypasses the Timer1 synchronization latch.

Work around

None.

Affected Silicon Revisions

A2	A4						
X	X						

2. Module: Clock Switching

When the FCMEN Configuration bit is set and the IESO Configuration bit is not set, then a clock failure during Sleep will not be detected.

Work around

The IESO Configuration bit must also be set when the FCMEN Configuration bit is set.

Affected Silicon Revisions

A2	A4						
X	X						

3. Module: Power-on Reset (POR)

There may be transient current spikes on some parts during power-up. If the application cannot supply enough current to get past these transients, then the part may become stuck in Reset.

Work around

Ensure that the application is capable of supplying at least 30 mA of transient current during power-up.

Affected Silicon Revisions

A2	A4						
X	X						

4. Module: Timer1/3/5 Gate

The Timer gate times cannot be resolved to the two Least Significant timer bits when the source frequency is FOSC (TMRxCS [1:0] = 01). This is because the gate edges are synchronized with the FOSC/4 clock.

Work around

None.

Affected Silicon Revisions

A2	A4						
X	X						

5. Module: EUSART

5.1 The EUSART asynchronous operation has a probability of 1 in 256 of missing the Start bit edge for all combinations of BRGH and BRG16 values, other than BRGH = 1, BRG16 = 1.

Work around

Set BRGH = 1, and BRG16 = 1 and use this baud rate formula:

$$Baud_Rate = Fosc / [4 * ((SPBRGH:SPBRGL) + 1)]$$

Affected Silicon Revisions

A2	A4						
X	X						

5.2 In Synchronous mode operation, if SPBRG[H:L] = 0x0001, any character that is put in TXREG while a character is still in TSR, will transmit TX9D as the LSb.

Work around

Use the TRMT bit in place of, or in addition to the TXIF bit to ensure that only one character is set to transmit at a time

Affected Silicon Revisions

A2	A4						
X	X						

PIC18(L)F26/46K22

Data Sheet Clarifications

The following typographic corrections and clarifications are to be noted for the latest version of the device data sheet (DS41412F):

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

None.

APPENDIX A: DOCUMENT REVISION HISTORY

Rev A Document (8/2010)

Initial release of this document.

Rev B Document (7/2011)

Updated for Revision A4 silicon release; Module 3.1 errata fixed; Other minor corrections.

Data Sheet Clarifications: No changes.

Rev C Document (8/2011)

Added Module 5, EUSART; Module 5 errata fixed on Silicon revision A4.

Data Sheet Clarifications: No changes.

Rev D Document (2/2012)

Removed Module 3.2; Other minor corrections.

Data Sheet Clarifications: Removed Module 1.

Rev E Document (7/2012)

Added MPLAB X IDE; Added Module 5.2.

PIC18(L)F26/46K22

NOTES:

Note the following details of the code protection feature on Microchip devices:

- Microchip products meet the specification contained in their particular Microchip Data Sheet.
- Microchip believes that its family of products is one of the most secure families of its kind on the market today, when used in the intended manner and under normal conditions.
- There are dishonest and possibly illegal methods used to breach the code protection feature. All of these methods, to our knowledge, require using the Microchip products in a manner outside the operating specifications contained in Microchip's Data Sheets. Most likely, the person doing so is engaged in theft of intellectual property.
- Microchip is willing to work with the customer who is concerned about the integrity of their code.
- Neither Microchip nor any other semiconductor manufacturer can guarantee the security of their code. Code protection does not mean that we are guaranteeing the product as "unbreakable."

Code protection is constantly evolving. We at Microchip are committed to continuously improving the code protection features of our products. Attempts to break Microchip's code protection feature may be a violation of the Digital Millennium Copyright Act. If such acts allow unauthorized access to your software or other copyrighted work, you may have a right to sue for relief under that Act.

Information contained in this publication regarding device applications and the like is provided only for your convenience and may be superseded by updates. It is your responsibility to ensure that your application meets with your specifications. MICROCHIP MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND WHETHER EXPRESS OR IMPLIED, WRITTEN OR ORAL, STATUTORY OR OTHERWISE, RELATED TO THE INFORMATION, INCLUDING BUT NOT LIMITED TO ITS CONDITION, QUALITY, PERFORMANCE, MERCHANTABILITY OR FITNESS FOR PURPOSE. Microchip disclaims all liability arising from this information and its use. Use of Microchip devices in life support and/or safety applications is entirely at the buyer's risk, and the buyer agrees to defend, indemnify and hold harmless Microchip from any and all damages, claims, suits, or expenses resulting from such use. No licenses are conveyed, implicitly or otherwise, under any Microchip intellectual property rights.

Trademarks

The Microchip name and logo, the Microchip logo, dsPIC, KEELOQ, KEELOQ logo, MPLAB, PIC, PICmicro, PICSTART, PIC³² logo, rPIC and UNI/O are registered trademarks of Microchip Technology Incorporated in the U.S.A. and other countries.


FilterLab, Hampshire, HI-TECH C, Linear Active Thermistor, MXDEV, MXLAB, SEEVAL and The Embedded Control Solutions Company are registered trademarks of Microchip Technology Incorporated in the U.S.A.

Analog-for-the-Digital Age, Application Maestro, chipKIT, chipKIT logo, CodeGuard, dsPICDEM, dsPICDEM.net, dsPICworks, dsSPEAK, ECAN, ECONOMONITOR, FanSense, HI-TIDE, In-Circuit Serial Programming, ICSP, Mindi, MiWi, MPASM, MPLAB Certified logo, MPLIB, MPLINK, mTouch, Omniscient Code Generation, PICC, PICC-18, PICDEM, PICDEM.net, PICKit, PICtail, REAL ICE, rLAB, Select Mode, Total Endurance, TSHARC, UniWinDriver, WiperLock and ZENA are trademarks of Microchip Technology Incorporated in the U.S.A. and other countries.

SQTP is a service mark of Microchip Technology Incorporated in the U.S.A.

All other trademarks mentioned herein are property of their respective companies.

© 2010-2012, Microchip Technology Incorporated, Printed in the U.S.A., All Rights Reserved.

 Printed on recycled paper.

ISBN: 9781620764299

Microchip received ISO/TS-16949:2009 certification for its worldwide headquarters, design and wafer fabrication facilities in Chandler and Tempe, Arizona; Gresham, Oregon and design centers in California and India. The Company's quality system processes and procedures are for its PIC[®] MCUs and dsPIC[®] DSCs, KEELOQ[®] code hopping devices, Serial EEPROMs, microperipherals, nonvolatile memory and analog products. In addition, Microchip's quality system for the design and manufacture of development systems is ISO 9001:2000 certified.

**QUALITY MANAGEMENT SYSTEM
CERTIFIED BY DNV
= ISO/TS 16949 =**



Worldwide Sales and Service

AMERICAS

Corporate Office
2355 West Chandler Blvd.
Chandler, AZ 85224-6199
Tel: 480-792-7200
Fax: 480-792-7277
Technical Support:
<http://www.microchip.com/support>
Web Address:
www.microchip.com

Atlanta
Duluth, GA
Tel: 678-957-9614
Fax: 678-957-1455

Boston
Westborough, MA
Tel: 774-760-0087
Fax: 774-760-0088

Chicago
Itasca, IL
Tel: 630-285-0071
Fax: 630-285-0075

Cleveland
Independence, OH
Tel: 216-447-0464
Fax: 216-447-0643

Dallas
Addison, TX
Tel: 972-818-7423
Fax: 972-818-2924

Detroit
Farmington Hills, MI
Tel: 248-538-2250
Fax: 248-538-2260

Indianapolis
Noblesville, IN
Tel: 317-773-8323
Fax: 317-773-5453

Los Angeles
Mission Viejo, CA
Tel: 949-462-9523
Fax: 949-462-9608

Santa Clara
Santa Clara, CA
Tel: 408-961-6444
Fax: 408-961-6445

Toronto
Mississauga, Ontario,
Canada
Tel: 905-673-0699
Fax: 905-673-6509

ASIA/PACIFIC

Asia Pacific Office
Suites 3707-14, 37th Floor
Tower 6, The Gateway
Harbour City, Kowloon
Hong Kong
Tel: 852-2401-1200
Fax: 852-2401-3431

Australia - Sydney
Tel: 61-2-9868-6733
Fax: 61-2-9868-6755

China - Beijing
Tel: 86-10-8569-7000
Fax: 86-10-8528-2104

China - Chengdu
Tel: 86-28-8665-5511
Fax: 86-28-8665-7889

China - Chongqing
Tel: 86-23-8980-9588
Fax: 86-23-8980-9500

China - Hangzhou
Tel: 86-571-2819-3187
Fax: 86-571-2819-3189

China - Hong Kong SAR
Tel: 852-2401-1200
Fax: 852-2401-3431

China - Nanjing
Tel: 86-25-8473-2460
Fax: 86-25-8473-2470

China - Qingdao
Tel: 86-532-8502-7355
Fax: 86-532-8502-7205

China - Shanghai
Tel: 86-21-5407-5533
Fax: 86-21-5407-5066

China - Shenyang
Tel: 86-24-2334-2829
Fax: 86-24-2334-2393

China - Shenzhen
Tel: 86-755-8203-2660
Fax: 86-755-8203-1760

China - Wuhan
Tel: 86-27-5980-5300
Fax: 86-27-5980-5118

China - Xian
Tel: 86-29-8833-7252
Fax: 86-29-8833-7256

China - Xiamen
Tel: 86-592-2388138
Fax: 86-592-2388130

China - Zhuhai
Tel: 86-756-3210040
Fax: 86-756-3210049

ASIA/PACIFIC

India - Bangalore
Tel: 91-80-3090-4444
Fax: 91-80-3090-4123

India - New Delhi
Tel: 91-11-4160-8631
Fax: 91-11-4160-8632

India - Pune
Tel: 91-20-2566-1512
Fax: 91-20-2566-1513

Japan - Osaka
Tel: 81-66-152-7160
Fax: 81-66-152-9310

Japan - Yokohama
Tel: 81-45-471-6166
Fax: 81-45-471-6122

Korea - Daegu
Tel: 82-53-744-4301
Fax: 82-53-744-4302

Korea - Seoul
Tel: 82-2-554-7200
Fax: 82-2-558-5932 or
82-2-558-5934

Malaysia - Kuala Lumpur
Tel: 60-3-6201-9857
Fax: 60-3-6201-9859

Malaysia - Penang
Tel: 60-4-227-8870
Fax: 60-4-227-4068

Philippines - Manila
Tel: 63-2-634-9065
Fax: 63-2-634-9069

Singapore
Tel: 65-6334-8870
Fax: 65-6334-8850

Taiwan - Hsin Chu
Tel: 886-3-5778-366
Fax: 886-3-5770-955

Taiwan - Kaohsiung
Tel: 886-7-536-4818
Fax: 886-7-330-9305

Taiwan - Taipei
Tel: 886-2-2500-6610
Fax: 886-2-2508-0102

Thailand - Bangkok
Tel: 66-2-694-1351
Fax: 66-2-694-1350

EUROPE

Austria - Wels
Tel: 43-7242-2244-39
Fax: 43-7242-2244-393

Denmark - Copenhagen
Tel: 45-4450-2828
Fax: 45-4485-2829

France - Paris
Tel: 33-1-69-53-63-20
Fax: 33-1-69-30-90-79

Germany - Munich
Tel: 49-89-627-144-0
Fax: 49-89-627-144-44

Italy - Milan
Tel: 39-0331-742611
Fax: 39-0331-466781

Netherlands - Drunen
Tel: 31-416-690399
Fax: 31-416-690340

Spain - Madrid
Tel: 34-91-708-08-90
Fax: 34-91-708-08-91

UK - Wokingham
Tel: 44-118-921-5869
Fax: 44-118-921-5820

11/29/11