



## Product Change Notification - SYST-10EKTf766

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**Date:**

14 Jan 2020

**Product Category:**

8-bit Microcontrollers

**Affected CPNs:****Notification subject:**

ERRATA - PIC16(L)F18326/18346 Family Silicon Errata and Data Sheet Clarification Errata Document Revision

**Notification text:**

SYST-10EKTf766

Microchip has released a new Product Documents for the PIC16(L)F18326/18346 Family Silicon Errata and Data Sheet Clarification of devices. If you are using one of these devices please read the document located at [PIC16\(L\)F18326/18346 Family Silicon Errata and Data Sheet Clarification](#).

**Notification Status:** Final

**Description of Change:**

- 1) Add Silicon rev. A3.
- 2) Data Sheet Clarification
- 3) Removed Modules 1 and 2 (Data Sheet updated).

**Impacts to Data Sheet:** None

**Reason for Change:** To Improve Productivity

**Change Implementation Status:** Complete

**Estimated First Ship Date:** 14 Jan 2020

**Markings to Distinguish Revised from Unrevised Devices:** Traceability Code

**Attachment(s):**

[PIC16\(L\)F18326/18346 Family Silicon Errata and Data Sheet Clarification](#)

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

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Affected Catalog Part Numbers (CPN)

PIC16F18326-E/7NVAO  
PIC16F18326-E/JQ  
PIC16F18326-E/JQVAO  
PIC16F18326-E/P  
PIC16F18326-E/SL  
PIC16F18326-E/SLVAO  
PIC16F18326-E/ST  
PIC16F18326-I/JQ  
PIC16F18326-I/P  
PIC16F18326-I/SL  
PIC16F18326-I/ST  
PIC16F18326T-E/7NVAO  
PIC16F18326T-E/SLVAO  
PIC16F18326T-E/ST  
PIC16F18326T-E/STV01  
PIC16F18326T-E/STVAO  
PIC16F18326T-I/7NV02  
PIC16F18326T-I/JQ  
PIC16F18326T-I/SL  
PIC16F18326T-I/ST  
PIC16F18346-E/GZ  
PIC16F18346-E/P  
PIC16F18346-E/SO  
PIC16F18346-E/SS  
PIC16F18346-E/SSVAO  
PIC16F18346-I/GZ  
PIC16F18346-I/GZC01  
PIC16F18346-I/ML  
PIC16F18346-I/MLC01  
PIC16F18346-I/P  
PIC16F18346-I/PREL  
PIC16F18346-I/SO  
PIC16F18346-I/SS  
PIC16F18346-I/SSC03  
PIC16F18346-I/SSVAO  
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PIC16F18346T-I/SSC03

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PIC16LF18326-E/P  
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PIC16LF18326T-I/JQ  
PIC16LF18326T-I/SL  
PIC16LF18326T-I/ST  
PIC16LF18346-E/GZ  
PIC16LF18346-E/P  
PIC16LF18346-E/SO  
PIC16LF18346-E/SS  
PIC16LF18346-E/SSVAO  
PIC16LF18346-I/GZ  
PIC16LF18346-I/GZC02  
PIC16LF18346-I/P  
PIC16LF18346-I/SO  
PIC16LF18346-I/SS  
PIC16LF18346T-E/GZ  
PIC16LF18346T-E/GZVAO  
PIC16LF18346T-E/SS  
PIC16LF18346T-E/SSVAO  
PIC16LF18346T-I/GZ  
PIC16LF18346T-I/GZC02  
PIC16LF18346T-I/SO  
PIC16LF18346T-I/SS

## PIC16(L)F18326/18346 Family Silicon Errata and Data Sheet Clarification

The PIC16(L)F18326/18346 family devices that you have received conform functionally to the current Device Data Sheet (DS40001839E), 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 PIC16(L)F18326/18346 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 5](#), 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 website ([www.microchip.com](http://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 PIC16(L)F18326/18346 silicon revisions are shown in [Table 1](#).

**TABLE 1: SILICON DEVREV VALUES**

Part Number	Device ID <sup>(1)</sup>	Revision ID for Silicon Revision <sup>(2)</sup>		
		A1	A2	A3
PIC16F18326	30A4h	2001h	2002h	2003h
PIC16LF18326	30A6h	2001h	2002h	2003h
PIC16F18346	30A5h	2001h	2002h	2003h
PIC16LF18346	30A7h	2001h	2002h	2003h

**Note 1:** The Device IDs (DEVID and DEVREV) are located at addresses 8006h and 8005h, respectively. They are shown in hexadecimal in the format "DEVID DEVREV".

**2:** Refer to the "PIC16(L)F183XX Memory Programming Specification" (DS40001738) for detailed information on Device and Revision IDs for your specific device.

# PIC16(L)F18326/18346

**TABLE 2: SILICON ISSUE SUMMARY**

Module	Feature	Item Number	Issue Summary	Affected Revisions <sup>(1)</sup>		
				A1	A2	A3
Oscillators	Fail-Safe Clock Monitor (FSCM)	1.1	The FSCM may fail to trigger with 4xPLL enabled.	X		
Master Synchronous Serial Port Module (MSSP2)	I <sup>2</sup> C Communication	2.1	Acknowledge failure on LF devices only.	X		
Electrical Specifications	VDD Parameter	3.1	Added new conditions to the VDD parameter, for LF devices only.	X	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 (**A2**).

### 1. Module: Oscillators

#### 1.1 Fail-Safe Clock Monitor (FSCM)

The Fail-Safe Clock Monitor may fail to trigger with the loss of the external clock signal when the 4x PLL is enabled. This includes all external clock modes, LP, XT, HS, ECL, ECM and ECH.

#### Work around

None.

#### Affected Silicon Revisions

A1	A2	A3					
X							

### 2. Module: Master Synchronous Serial Port Module (MSSP2)

#### 2.1 I<sup>2</sup>C Communication

When using the MSSP2 to perform I<sup>2</sup>C communication and the voltage for VDD is above 3.0 volts, the Acknowledge signal (ACK) does not always occur after the second address byte is received, as expected. This issue exhibits itself when the MSSP2 is configured either for 7-bit or 10-bit addressing and in either Master or Slave mode.

The issue occurs more frequently when using 10-bit addressing in Slave mode and the lower address bits (A7-A0) are transmitted by the Master on the SDA line.

#### Work around

Do not exceed 3.0 volts on VDD when using LF device.

#### Affected Silicon Revisions

A1	A2	A3					
X							

## 3. Module: Electrical Specifications

### 3.1 VDD Parameter

New conditions have been added to the VDD parameter, for the LF devices only. See the table below.

#### Work around

None

#### Affected Silicon Revisions

A1	A2	A3					
X	X	X					

**TABLE 34-1: SUPPLY VOLTAGE**

PIC16LF18326/18346			Standard Operating Conditions (unless otherwise Stated)				
Param. No.	Sym.	Characteristic	Min.	Typ.†	Max.	Units	Conditions
D002	VDD		1.8	—	3.6	V	FOSC ≤ 16 MHz, +25°C <TA ≤ +125°C
D002	VDD		2.3	—	3.6	V	FOSC ≤ 16 MHz, -40°C ≤TA ≤ +25°C
			2.5	—	3.6	V	FOSC >16 MHz

## Data Sheet Clarifications

The following typographic corrections and clarifications are to be noted for the latest version of the device data sheet (DS40001839E):

<p><b>Note:</b> Corrections are shown in <b>bold</b>. Where possible, the original bold text formatting has been removed for clarity.</p>
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None.



## APPENDIX A: DOCUMENT REVISION HISTORY

### **Rev D Document (01/2020)**

Add Silicon rev. A3.

Data Sheet Clarifications:

Removed Modules 1 and 2 (Data Sheet updated).

### **Rev C Document (01/2017)**

Silicon Errata Issues:

Added Silicon rev. A2.

Data Sheet Clarifications:

Changed Module 1 Memory to Analog-to-Digital.

### **Rev B Document (01/2017)**

Data Sheet Clarifications:

Added Module 2: Comparator.

### **Rev A Document (08/2016)**

Initial release of this document.

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