



Product Change Notification / SYST-08BYZB683

Date:

12-Oct-2020

Product Category:

8-bit Microcontrollers

PCN Type:

Silicon Die Revision

Notification Subject:

ERRATA - PIC18F27/47/57Q43 Family Silicon Errata and Data Sheet Clarifications

Affected CPNs:

[SYST-08BYZB683_Affected_CPN_10122020.pdf](#)

[SYST-08BYZB683_Affected_CPN_10122020.csv](#)

Notification Text:

SYST-08BYZB683

Microchip has released a new Product Documents for the PIC18F27/47/57Q43 Family Silicon Errata and Data Sheet Clarifications of devices. If you are using one of these devices please read the document located at [PIC18F27/ 47/ 57Q43 Family Silicon Errata and Data Sheet Clarifications](#).

Notification Status: Final

Description of Change:

- 1.) Adding silicon revision B3 and
- 2.) UART Transmit Collision Interrupt data sheet clarification
- 3.) Updating silicon erratum item 1.3.1.

Impacts to Data Sheet: None

Reason for Change: To Improve Productivity

Change Implementation Status: Complete

Estimated First Ship Date: 12 Oct 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:

[PIC18F27/47/57Q43 Family Silicon Errata and Data Sheet Clarifications](#)

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

Terms and Conditions:

If you wish to receive Microchip PCNs via email please register for our PCN email service at our [PCN home page](#) select register then fill in the required fields. You will find instructions about registering for Microchips PCN email service in the [PCN FAQ](#) section.

If you wish to change your PCN profile, including opt out, please go to the [PCN home page](#) select login and sign into your myMicrochip account. Select a profile option from the left navigation bar and make the applicable selections.

Affected Catalog Part Numbers (CPN)

PIC18F27Q43-E/ML
PIC18F27Q43-E/SO
PIC18F27Q43-E/SP
PIC18F27Q43-E/SS
PIC18F27Q43-E/STX
PIC18F27Q43-I/ML
PIC18F27Q43-I/SO
PIC18F27Q43-I/SP
PIC18F27Q43-I/SS
PIC18F27Q43-I/STX
PIC18F27Q43T-I/ML
PIC18F27Q43T-I/SO
PIC18F27Q43T-I/SS
PIC18F27Q43T-I/STX
PIC18F47Q43-E/ML
PIC18F47Q43-E/MP
PIC18F47Q43-E/P
PIC18F47Q43-E/PT
PIC18F47Q43-I/ML
PIC18F47Q43-I/MP
PIC18F47Q43-I/P
PIC18F47Q43-I/PT
PIC18F47Q43T-I/ML
PIC18F47Q43T-I/MP
PIC18F47Q43T-I/PT
PIC18F57Q43-E/6LX
PIC18F57Q43-E/PT
PIC18F57Q43-I/6LX
PIC18F57Q43-I/PT
PIC18F57Q43T-I/6LX
PIC18F57Q43T-I/PT

PIC18F27/47/57Q43 Silicon Errata and Data Sheet Clarifications

The PIC18F27/47/57Q43 devices you have received conform functionally to the current device data sheet (DS40002147D), 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 PIC18F27/47/57Q43 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		
		B0	B2	B3
PIC18F27Q43	0x7480	0xA040	0xA042	0xA043
PIC18F47Q43	0x74A0	0xA040	0xA042	0xA043
PIC18F57Q43	0x74C0	0xA040	0xA042	0xA043



Important: Refer to the **Device/Revision ID** section in the current “**PIC18FXXQ43 Family Programming Specification**” (DS40002079) 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		
				B0	B2	B3
ADCC	Capacitive Voltage Divider	1.1.1	CVD is only functional on PORTA[2:0] and PORTB[4:0]	X		
Oscillator	XT mode	1.2.1	Maximum clock frequency limited to 2 MHz for XT mode	X	X	
I ² C	I ² C	1.3.1	I2CxADR0/1/2/3 registers have incorrect Reset value	X	X	X
SRAM	SRAM Read-Back	1.4.1	SRAM read-back can be incorrect	X		
Note: Only those issues indicated in the last column apply to the current silicon revision.						

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 Capacitive Voltage Divider (CVD)

The CVD feature is only functional on PORTA[2:0] and PORTB[4:0]. This feature is not recommended for use on any other pins.

Work around

None.

Affected Silicon Revisions

B0	B2	B3
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

B0	B2	B3
X	X	

1.3 Module: I²C

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

The I2CxADR0/2 registers reset to 0xFF when the I2CxMD is enabled instead of 0x00. The I2CxADR1/3 registers reset to 0xFE when the I2CxMD is enabled instead of 0x00.

Work around

None.

Affected Silicon Revisions

B0	B2	B3
X	X	X

1.4 Module: SRAM

1.4.1 SRAM Read-Back

Following a device power-up sequence, there is a possibility that some SRAM locations will not return the expected written value but will read back '00' instead.

Work around

None. The device can only recover by power cycling.

This erroneous condition can be detected by running the following code that writes non-zero values to SRAM and then verifies that the returned read values are not '00'. If a returned value is '00', the application code has to be put into a safe state until a POR event occurs. This code has to be executed immediately after power-up. If the test passes, the device operation will be normal.

```
// SRAM test

FSR0 = 0xcff;           // Write data into RAM address for devices up to 2K RAM
INDF0 = 0x55;
PROD = INDF0;           // Read back data
if (PROD == 0) {
    SAFE_STATE();       // RAM incorrectly read, suspend operation and go to Safe state
}

//For devices with more than 2K of SRAM, add the following code
FSR0 = 0x14ff;          // Write data into RAM
INDF0 = 0x55;
PROD = INDF0;           // Read back data
if (PROD == 0) {
    SAFE_STATE();       // RAM incorrectly read, suspend operation and go to Safe state
}

//For devices with more than 4K of SRAM, add the following code
FSR0 = 0x24ff;          // Write data into RAM
INDF0 = 0x55;
PROD = INDF0;           // Read back data
if (PROD == 0) {
    SAFE_STATE();       // RAM incorrectly read, suspend operation and go to Safe state
}
```

Affected Silicon Revisions

B0	B2	B3
X		

2. Data Sheet Clarifications

The following typographic corrections and clarifications are to be noted for the latest version of the device data sheet (40002147D):

Note:

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

2.1 UART Transmit Collision Interrupt

The Transmit Collision Interrupt Enable (TXCIE) bit in the UxERRIE register (UxERRIE[0]) and the Transmit Collision Interrupt Flag (TXCIF) bit in the UxERRIR register (UxERRIR[0]) are only available in Full-Featured UART modules.

3. **Appendix A: Revision History**

Doc Rev.	Date	Comments
G	10/2020	Adding silicon revision B3 and UART Transmit Collision Interrupt data sheet clarification; Updating silicon erratum item 1.3.1.
F	08/2020	Adding silicon revision B2.
E	06/2020	Adding silicon erratum item 1.4.1.
D	06/2020	Adding silicon erratum item 1.3.1.
C	04/2020	Adding XT mode erratum and Temperature Indicator data sheet clarification.
B	02/2020	Add working pins for CVD.
A	12/2019	Initial document release.

The Microchip Website

Microchip provides online support via our website at www.microchip.com/. This website is used to make files and information easily available to customers. Some of the content available includes:

- **Product Support** – Data sheets and errata, application notes and sample programs, design resources, user's guides and hardware support documents, latest software releases and archived software
- **General Technical Support** – Frequently Asked Questions (FAQs), technical support requests, online discussion groups, Microchip design partner program member listing
- **Business of Microchip** – Product selector and ordering guides, latest Microchip press releases, listing of seminars and events, listings of Microchip sales offices, distributors and factory representatives

Product Change Notification Service

Microchip's product change notification service helps keep customers current on Microchip products. Subscribers will receive email notification whenever there are changes, updates, revisions or errata related to a specified product family or development tool of interest.

To register, go to www.microchip.com/pcn and follow the registration instructions.

Customer Support

Users of Microchip products can receive assistance through several channels:

- Distributor or Representative
- Local Sales Office
- Embedded Solutions Engineer (ESE)
- Technical Support

Customers should contact their distributor, representative or ESE for support. Local sales offices are also available to help customers. A listing of sales offices and locations is included in this document.

Technical support is available through the website at: www.microchip.com/support

Microchip Devices Code Protection Feature

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

- Microchip products meet the specifications contained in their particular Microchip Data Sheet.
- Microchip believes that its family of products is secure when used in the intended manner and under normal conditions.
- There are dishonest and possibly illegal methods being used in attempts to breach the code protection features of the Microchip devices. We believe that these methods require using the Microchip products in a manner outside the operating specifications contained in Microchip's Data Sheets. Attempts to breach these code protection features, most likely, cannot be accomplished without violating Microchip's intellectual property rights.
- Microchip is willing to work with any customer who is concerned about the integrity of its code.
- Neither Microchip nor any other semiconductor manufacturer can guarantee the security of its code. Code protection does not mean that we are guaranteeing the product is "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.

Legal Notice

Information contained in this publication is provided for the sole purpose of designing with and using Microchip products. Information 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.

THIS INFORMATION IS PROVIDED BY MICROCHIP "AS IS". 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 ANY IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY, AND FITNESS FOR A PARTICULAR PURPOSE OR WARRANTIES RELATED TO ITS CONDITION, QUALITY, OR PERFORMANCE.

IN NO EVENT WILL MICROCHIP BE LIABLE FOR ANY INDIRECT, SPECIAL, PUNITIVE, INCIDENTAL OR CONSEQUENTIAL LOSS, DAMAGE, COST OR EXPENSE OF ANY KIND WHATSOEVER RELATED TO THE INFORMATION OR ITS USE, HOWEVER CAUSED, EVEN IF MICROCHIP HAS BEEN ADVISED OF THE POSSIBILITY OR THE DAMAGES ARE FORESEEABLE. TO THE FULLEST EXTENT ALLOWED BY LAW, MICROCHIP'S TOTAL LIABILITY ON ALL CLAIMS IN ANY WAY RELATED TO THE INFORMATION OR ITS USE WILL NOT EXCEED THE AMOUNT OF FEES, IF ANY, THAT YOU HAVE PAID DIRECTLY TO MICROCHIP FOR THE INFORMATION. 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 unless otherwise stated.

Trademarks

The Microchip name and logo, the Microchip logo, Adaptec, AnyRate, AVR, AVR logo, AVR Freaks, BesTime, BitCloud, chipKIT, chipKIT logo, CryptoMemory, CryptoRF, dsPIC, FlashFlex, flexPWR, HELDO, IGLOO, JukeBlox, KeeLoq, Klear, LANCheck, LinkMD, maXStylus, maXTouch, MediaLB, megaAVR, Microsemi, Microsemi logo, MOST, MOST logo, MPLAB, OptoLyzer, PackeTime, PIC, picoPower, PICSTART, PIC32 logo, PolarFire, Prochip Designer, QTouch, SAM-BA, SenGenuity, SpyNIC, SST, SST Logo, SuperFlash, Symmetricom, SyncServer, Tachyon, TempTrackr, TimeSource, tinyAVR, UNI/O, Vectron, and XMEGA are registered trademarks of Microchip Technology Incorporated in the U.S.A. and other countries.

APT, ClockWorks, The Embedded Control Solutions Company, EtherSynch, FlashTec, Hyper Speed Control, HyperLight Load, IntelliMOS, Libero, motorBench, mTouch, Powermite 3, Precision Edge, ProASIC, ProASIC Plus, ProASIC Plus logo, Quiet-Wire, SmartFusion, SyncWorld, Temux, TimeCesium, TimeHub, TimePictra, TimeProvider, Vite, WinPath, and ZL are registered trademarks of Microchip Technology Incorporated in the U.S.A.

Adjacent Key Suppression, AKS, Analog-for-the-Digital Age, Any Capacitor, AnyIn, AnyOut, BlueSky, BodyCom, CodeGuard, CryptoAuthentication, CryptoAutomotive, CryptoCompanion, CryptoController, dsPICDEM, dsPICDEM.net, Dynamic Average Matching, DAM, ECAN, EtherGREEN, In-Circuit Serial Programming, ICSP, INICnet, Inter-Chip Connectivity, JitterBlocker, KlearNet, KlearNet logo, memBrain, Mindi, MiWi, MPASM, MPF, MPLAB Certified logo, MPLIB, MPLINK, MultiTRAK, NetDetach, Omniscient Code Generation, PICDEM, PICDEM.net, PICkit, PICtail, PowerSmart, PureSilicon, QMatrix, REAL ICE, Ripple Blocker, SAM-ICE, Serial Quad I/O, SMART-I.S., SQI, SuperSwitcher, SuperSwitcher II, Total Endurance, TSHARC, USBCheck, VariSense, ViewSpan, WiperLock, Wireless DNA, 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.

The Adaptec logo, Frequency on Demand, Silicon Storage Technology, and Symmcom are registered trademarks of Microchip Technology Inc. in other countries.

GestIC is a registered trademark of Microchip Technology Germany II GmbH & Co. KG, a subsidiary of Microchip Technology Inc., in other countries.

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

© 2020, Microchip Technology Incorporated, Printed in the U.S.A., All Rights Reserved.

ISBN: 978-1-5224-6868-4

Quality Management System

For information regarding Microchip's Quality Management Systems, please visit www.microchip.com/quality.

Worldwide Sales and Service

AMERICAS	ASIA/PACIFIC	ASIA/PACIFIC	EUROPE
Corporate Office 2355 West Chandler Blvd. Chandler, AZ 85224-6199 Tel: 480-792-7200 Fax: 480-792-7277 Technical Support: www.microchip.com/support Web Address: www.microchip.com	Australia - Sydney Tel: 61-2-9868-6733 China - Beijing Tel: 86-10-8569-7000 China - Chengdu Tel: 86-28-8665-5511 China - Chongqing Tel: 86-23-8980-9588 China - Dongguan Tel: 86-769-8702-9880 China - Guangzhou Tel: 86-20-8755-8029 China - Hangzhou Tel: 86-571-8792-8115 China - Hong Kong SAR Tel: 852-2943-5100 China - Nanjing Tel: 86-25-8473-2460 China - Qingdao Tel: 86-532-8502-7355 China - Shanghai Tel: 86-21-3326-8000 China - Shenyang Tel: 86-24-2334-2829 China - Shenzhen Tel: 86-755-8864-2200 China - Suzhou Tel: 86-186-6233-1526 China - Wuhan Tel: 86-27-5980-5300 China - Xian Tel: 86-29-8833-7252 China - Xiamen Tel: 86-592-2388138 China - Zhuhai Tel: 86-756-3210040	India - Bangalore Tel: 91-80-3090-4444 India - New Delhi Tel: 91-11-4160-8631 India - Pune Tel: 91-20-4121-0141 Japan - Osaka Tel: 81-6-6152-7160 Japan - Tokyo Tel: 81-3-6880-3770 Korea - Daegu Tel: 82-53-744-4301 Korea - Seoul Tel: 82-2-554-7200 Malaysia - Kuala Lumpur Tel: 60-3-7651-7906 Malaysia - Penang Tel: 60-4-227-8870 Philippines - Manila Tel: 63-2-634-9065 Singapore Tel: 65-6334-8870 Taiwan - Hsin Chu Tel: 886-3-577-8366 Taiwan - Kaohsiung Tel: 886-7-213-7830 Taiwan - Taipei Tel: 886-2-2508-8600 Thailand - Bangkok Tel: 66-2-694-1351 Vietnam - Ho Chi Minh Tel: 84-28-5448-2100	Austria - Wels Tel: 43-7242-2244-39 Fax: 43-7242-2244-393 Denmark - Copenhagen Tel: 45-4485-5910 Fax: 45-4485-2829 Finland - Espoo Tel: 358-9-4520-820 France - Paris Tel: 33-1-69-53-63-20 Fax: 33-1-69-30-90-79 Germany - Garching Tel: 49-8931-9700 Germany - Haan Tel: 49-2129-3766400 Germany - Heilbronn Tel: 49-7131-72400 Germany - Karlsruhe Tel: 49-721-625370 Germany - Munich Tel: 49-89-627-144-0 Fax: 49-89-627-144-44 Germany - Rosenheim Tel: 49-8031-354-560 Israel - Ra'anana Tel: 972-9-744-7705 Italy - Milan Tel: 39-0331-742611 Fax: 39-0331-466781 Italy - Padova Tel: 39-049-7625286 Netherlands - Drunen Tel: 31-416-690399 Fax: 31-416-690340 Norway - Trondheim Tel: 47-72884388 Poland - Warsaw Tel: 48-22-3325737 Romania - Bucharest Tel: 40-21-407-87-50 Spain - Madrid Tel: 34-91-708-08-90 Fax: 34-91-708-08-91 Sweden - Gothenberg Tel: 46-31-704-60-40 Sweden - Stockholm Tel: 46-8-5090-4654 UK - Wokingham Tel: 44-118-921-5800 Fax: 44-118-921-5820