

**PIC24FJ64GP205/GU205 Family
Silicon Errata and Data Sheet Clarification**

The PIC24FJ64GP205/GU205 family devices conform functionally to the current Device Data Sheet (DS30010221D), 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 PIC24FJ64GP205/GU205 family 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 (**A0**).

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).

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 PIC24FJ64GP205/GU205 family silicon revisions are shown in [Table 1](#).

TABLE 1: SILICON DEVREV VALUES

Part Number	Device ID ⁽¹⁾	Revision ID for Silicon Revision ⁽²⁾
		A0
PIC24FJ64GU205	0x9A19	0x00
PIC24FJ32GU205	0x9A09	
PIC24FJ64GU203	0x9A15	
PIC24FJ32GU203	0x9A05	
PIC24FJ64GU202	0x9A11	
PIC24FJ32GU202	0x9A01	
PIC24FJ64GP205	0x9A18	
PIC24FJ32GP205	0x9A08	
PIC24FJ64GP203	0x9A14	
PIC24FJ32GP203	0x9A04	
PIC24FJ64GP202	0x9A10	
PIC24FJ32GP202	0x9A00	

- Note 1:** The Device IDs (DEVID and DEVREV) are located at the last two implemented addresses of configuration memory space. They are shown in hexadecimal in the format “DEVID DEVREV”.
- 2:** Refer to the “*PIC24FJ64GP205/GU205 Family Flash Programming Specification*” (DS30010202) for detailed information on Device and Revision IDs for your specific device.

PIC24FJ64GP205/GU205 FAMILY

TABLE 2: SILICON ISSUE SUMMARY

Module	Feature	Item Number	Issue Summary	Affected Revisions ⁽¹⁾
				A0
I2C	Multiple Client Mode	1.	In applications with multiple I ² C Clients and General Call enabled, unexpected behavior is observed in the unaddressed Client.	X
I2C	Client Mode	2.	In Client mode, an address cannot be received when the device is in Idle and the module is set for discontinue in Idle (I2CSIDL = 1).	X
I2C	Client Transmit	3.	Client transmits 0xFF if the ACKDT bit is set prior to transmission.	X
UART	Break Character Transmission	4.	The Transmit Shift Register Empty (TRMT) bit is unreliable when there are back-to-back Break character transmissions.	X
Oscillator	FSCM	5.	RESET instruction in oscillator trap locks up device.	X
Flash Program Memory	Double Error Trap	6.	Using software breakpoints in the last page of program memory can lead to an ECC double error trap getting generated.	X
I/O	POR	7.	Voltage on RB10 and RB11 pins at POR.	X
Power	Power	8.	At hot temperatures, the device pin leakage current can increase up to 2 μ A.	X

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

PIC24FJ64GP205/GU205 FAMILY

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 (**A0**).

1. Module: I²C

In applications with multiple I²C Clients and General Call (GCEN (I2CxCONL[7]) = 1) are enabled, unexpected behavior is observed in the unaddressed Client when the data payload of the addressed Client matches the general call address (00h).

When the issue occurs, unexpected data might be received in the unaddressed Client. If Address Hold is enabled (AHEN (I2CxCONH[1]) = 1), then I²C will erroneously ACK the byte.

Work around

If Address Hold is enabled (I2CxCONH[1] = 1), Acknowledge Data (ACKDT (I2CxCONL[5]) = 1) should be set during initialization.

Instead of a Client interrupt, poll the Receive Buffer Full Status bit and read the receive buffer to clear the unwanted data.

Affected Silicon Revisions

A0								
X								

2. Module: I²C

When I²C is in Client mode, an address cannot be received when the device is in Idle and the module is set for discontinue in Idle (I2CSIDL = 1).

Work around

None.

Affected Silicon Revisions

A0								
X								

3. Module: I²C

When the Client is transmitting data, if Acknowledge Data (ACKDT (I2CxCONL[5]) = 1) is set before the Client starts transmission, then the second data transmitted will be 0xFF, irrespective of the actual data in I2CxTRN.

Work around

Clear the ACKDT bit before the Client transmission.

Affected Silicon Revisions

A0								
X								

4. Module: UART

The Transmit Shift Register Empty (TRMT) bit is unreliable when there are back-to-back Break character transmissions. For back-to-back Break characters, the TRMT bit may not reflect the actual status. If user software is polling for this bit to be set, it may result in dummy bytes getting transmitted instead of Break characters.

Work around

Poll the UARTx Transmit Break bit, UTXBRK (UxSTA[11]), to be cleared instead of the TRMT bit (UxSTA[8]) to be set. The UTXBRK status bit will be cleared after a Break character transmission.

Affected Silicon Revisions

A0								
X								

5. Module: Oscillator

When the device is clocked from the Primary Oscillator with PLL (XT+PLL, HS+PLL or EC+PLL), it may not recover from the oscillator failure (Fail-Safe Clock Monitor event) if a RESET instruction is executed in the oscillator trap. The device will lock up.

Work around

In the application code, the device should start from FRC (defined in the Configuration bits). Then, the clock should be switched to the Primary Oscillator with PLL.

Affected Silicon Revisions

A0								
X								

PIC24FJ64GP205/GU205 FAMILY

6. Module: Flash Program Memory

Using software breakpoints in the last page of program memory can lead to an ECC double error trap getting generated.

Work around

Avoid using software breakpoints in the last page; use hardware breakpoints instead.

Affected Silicon Revisions

A0								
X								

7. Module: I/O

At device power-up, the RB10 and RB11 pins may drive a pulse up to 1.5V for a duration of up to 2 μ s in the PIC24FJXXGUXXX devices.

Work around

It is recommended to ensure the circuitry, that is connected to these pins, can endure this pulse.

Example applications affected may include complementary power switches where a transient current shoot-through might occur.

High-voltage applications with complementary switches should power the high-voltage 200 μ Sec later than powering the PIC[®] MCU to avoid the issue.

Small C-R circuitry can be used to reduce this voltage spike for GPIO operations.

Behavior is specific to each part and not affected by aging.

Affected Silicon Revisions

A0								
X								

8. Module: Power

For hot temperatures between +65°C and +125°C, the device pin leakage current specified by parameters DI50, DI51, DI55 and DI56 can increase up to 2 μ A.

Work around

None.

Affected Silicon Revisions

A0								
X								

PIC24FJ64GP205/GU205 FAMILY

Data Sheet Clarifications

The following typographic corrections and clarifications are to be noted for the latest version of the device data sheet (30010221D):

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

1. Module: Electrical Characteristics

Note 3 in TABLE 30-29: A/D Module Specifications has been added as shown below in bold:

Note 3: Codes 511, 1023, 1535, 2559 and 3583 can have a DNL error of -1 LSB to < +1 LSB; code 2047 can have a DNL error of -1 LSB to < +2 LSB; and code 3071 can have a DNL error of -1 LSB to < +2.5 LSB.

PIC24FJ64GP205/GU205 FAMILY

APPENDIX A: DOCUMENT REVISION HISTORY

Rev A Document (11/2020)

Initial release of this document; issued for Silicon Revision A0.

Rev B Document (5/2024)

Added silicon issue 8 ([Power](#)).

PIC24FJ64GP205/GU205 FAMILY

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

- 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, within operating specifications, and under normal conditions.
- Microchip values and aggressively protects its intellectual property rights. Attempts to breach the code protection features of Microchip product is strictly prohibited and may violate the Digital Millennium Copyright Act.
- 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. Microchip is committed to continuously improving the code protection features of our products.

This publication and the information herein may be used only with Microchip products, including to design, test, and integrate Microchip products with your application. Use of this information in any other manner violates these terms. Information regarding device applications 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. Contact your local Microchip sales office for additional support or, obtain additional support at <https://www.microchip.com/en-us/support/design-help/client-support-services>.

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.

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

Trademarks

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

AgileSwitch, ClockWorks, The Embedded Control Solutions Company, EtherSynch, Flashtec, Hyper Speed Control, HyperLight Load, Libero, motorBench, mTouch, Powermite 3, Precision Edge, ProASIC, ProASIC Plus, ProASIC Plus logo, Quiet-Wire, SmartFusion, SyncWorld, TimeCesium, TimeHub, TimePictra, TimeProvider, 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, Augmented Switching, BlueSky, BodyCom, Clockstudio, CodeGuard, CryptoAuthentication, CryptoAutomotive, CryptoCompanion, CryptoController, dsPICDEM, dsPICDEM.net, Dynamic Average Matching, DAM, ECAN, Espresso T1S, EtherGREEN, EyeOpen, GridTime, IdealBridge, IGaT, In-Circuit Serial Programming, ICSP, INICnet, Intelligent Paralleling, IntelliMOS, Inter-Chip Connectivity, JitterBlocker, Knob-on-Display, MarginLink, maxCrypto, maxView, memBrain, Mindi, MiWi, MPASM, MPF, MPLAB Certified logo, MPLIB, MPLINK, mSiC, MultiTRAK, NetDetach, Omniscient Code Generation, PICDEM, PICDEM.net, PICTkit, PICTail, Power MOS IV, Power MOS 7, PowerSmart, PureSilicon, QMatrix, REAL ICE, Ripple Blocker, RTAX, RTG4, SAM-ICE, Serial Quad I/O, simpleMAP, SimpliPHY, SmartBuffer, SmartHLS, SMART-I.S., storClad, SQL, SuperSwitcher, SuperSwitcher II, Switchtec, SynchroPHY, Total Endurance, Trusted Time, TSHARC, Turing, USBCheck, VariSense, VectorBlox, VeriPHY, ViewSpan, WiperLock, XpressConnect, 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.

© 2020-2024, Microchip Technology Incorporated and its subsidiaries.

All Rights Reserved.

ISBN: 978-1-6683-4475-0



MICROCHIP

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

Austin, TX

Tel: 512-257-3370

Boston

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

Chicago

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

Dallas

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

Detroit

Novi, MI
Tel: 248-848-4000

Houston, TX

Tel: 281-894-5983

Indianapolis

Noblesville, IN
Tel: 317-773-8323
Fax: 317-773-5453
Tel: 317-536-2380

Los Angeles

Mission Viejo, CA
Tel: 949-462-9523
Fax: 949-462-9608
Tel: 951-273-7800

Raleigh, NC

Tel: 919-844-7510

New York, NY

Tel: 631-435-6000

San Jose, CA

Tel: 408-735-9110
Tel: 408-436-4270

Canada - Toronto

Tel: 905-695-1980
Fax: 905-695-2078

ASIA/PACIFIC

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

ASIA/PACIFIC

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

EUROPE

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 - Hod Hasharon
Tel: 972-9-775-5100

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: 47-7288-4388

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