PIC18F85J90 Family Rev. A5 Silicon Errata

The PIC18F85J90 family Rev. A5 parts you have received conform functionally to the Device Data Sheet (DS39770**B**), except for the anomalies described below. Any Data Sheet Clarification issues related to the PIC18F85J90 family appear in a separate Data Sheet errata. Please check the Microchip web site for any existing issues.

The following silicon errata apply only to PIC18F85J90 family devices with these Device/ Revision IDs:

Part Number	Device ID	Revision ID
PIC18F63J90	0011 1000 000	0 0101
PIC18F64J90	0011 1000 001	0 0101
PIC18F65J90	0011 1000 011	0 0101
PIC18F83J90	0011 1000 100	0 0101
PIC18F84J90	0011 1000 101	0 0101
PIC18F85J90	0011 1000 111	0 0101

The Device IDs (DEVID1 and DEVID2) are located at addresses 3FFFFEh:3FFFFFh in the device's configuration space. They are shown in binary in the format "DEVID2 DEVID1".

All of the issues listed here will be addressed in future revisions of the PIC18F85J90 family silicon.

1. Module: Timer1/3

When either Timer1 or Timer3 is configured for the internal clock source (FOSC/4, TxCON<1> (TMRxCS) = 0) and in the 8/16-Bit Counter mode (TxCON<7> (RD16) = 0 or 1), TMRxH and TMRxL will not increment on the instruction that turns off the counter (TxCON<0> (TMRxON) = 0).

Work around

None.

Date Codes that pertain to this issue:

All engineering and production devices.

2. Module: Timer1/3

When either Timer1 or Timer3 is in the 8/16-Bit Counter mode (TxCON<7> (RD16) = 0 or 1), incrementing the prescale value (TxCON<5:4> (TxCKPS<1:0>)) will take an additional count at the previous value before the prescale value is updated.

For example, changing the prescale value from 1:4 to 1:8 will occur four instruction cycles after the execution of the instruction to update the prescaler.

Work around

None.

Date Codes that pertain to this issue:

All engineering and production devices.

3. Module: Reset

When a Brown-out Reset (BOR) occurs and the BOR bit is reset, the Power-on Reset (POR) bit also may be reset. The resulting state matches that of the RCON register following a Power-on Reset event.

Consequently, an application may not be able to detect whether a BOR or POR event has occurred.

Work around

None.

Date Codes that pertain to this issue:

All engineering and production devices.

4. Module: MSSP (I²C™ Slave)

In extremely rare cases, when configured for I²C™ slave reception, the MSSP module may not receive the correct data. This occurs only if the Serial Receive/Transmit Buffer Register (SSPBUF) is not read within a window after the SSPIF interrupt (PIR1<3>) has occurred.

Work around

The issue can be resolved either of these ways:

- Prior to the I²C slave reception, enable the clock stretching feature.

  This is done by setting the SEN bit (SSPCON2<0>).
- Each time the SSPIF is set, read the SSPBUF before the first rising clock edge of the next byte being received.

Date Codes that pertain to this issue:

All engineering and production devices.

5. Module: MSSP (I²C™ Master)

When in I²C Master mode, if the slave performs clock stretching, the first clock pulse after the slave releases the SCL line may be narrower than the configured clock width. This may result in the slave missing the first clock in the next transmission/ reception.

Work around

The clock pulse will be the normal width if the slave does not perform clock stretching.

Date Codes that pertain to this issue:

All engineering and production devices

6. Module: Enhanced Universal Synchronous Asynchronous Receiver Transmitter (EUSART)

In rare situations, when interrupts are enabled, unexpected results may occur if:

- The EUSART is disabled (the SPEN bit, RCSTA<7> = 0)
- The EUSART is re-enabled (RCSTA<7> = 1)
- A two-cycle instruction is executed

Work around

Add a 2 TCY delay after re-enabling the EUSART.

1. Disable receive interrupts (RCIE bit, PIE1<5> = 0).
2. Disable the EUSART (RCSTA<7> = 0).
3. Re-enable the EUSART (RCSTA<7> = 1).
4. Re-enable receive interrupts (PIE1<5> = 1).

   (This is the first TCY delay.)
5. Execute a NOP instruction.

   (This is the second TCY delay.)

Date Codes that pertain to this issue:

All engineering and production devices.

REVISION HISTORY

Rev A Document (5/2009)

Initial release of this document. Includes silicon issues 1-2 (Timer1/3), 3 (Reset), 4 (MSSP – I^2C Slave), 5 (MSSP – I^2C Master) and 6 (Enhanced Universal Synchronous Asynchronous Receiver Transmitter – EUSART).

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.

Trademarks

QUALITY MANAGEMENT SYSTEM
CERTIFIED BY DNV
ISO/TS 16949:2002

Microchip received ISO/TS-16949:2002 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.

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://support.microchip.com
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

Kokomo
Kokomo, IN
Tel: 765-864-8360
Fax: 765-864-8387

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: 86-10-8528-2100
Fax: 86-10-8528-2104

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

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

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

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

ASIA/PACIFIC

India - Bangalore
Tel: 91-80-3090-4444
Fax: 91-80-3090-4080

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 - 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: 886-3-6578-300
Fax: 886-3-6578-370

Taiwan - Kaohsiung
Tel: 886-7-536-4818
Fax: 886-7-536-4803

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

03/26/09