MCP7941X

MCP7941X Family Silicon Errata

The MCP7941X family devices that you have received conform functionally to the current Device Data Sheet (DS20002266**F**), except for the anomalies described in this document.

The silicon issues discussed in the following pages are for devices 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 MCP7941X 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.

Note: For more information on identifying the product date code, refer to the Packaging Information section of the product Data Sheet or contact your local Microchip sales office.

TABLE 1: AFFECTED PART NUMBERS

Part Number
MCP79410
MCP79411
MCP79412

TABLE 2: SILICON ISSUE SUMMARY

Module Number	Issue Summary	Affected Date Codes(1, 2)		
		≤1109	≤1352	>1352
1	$\overline{\text{AM}}$/PM bit modified when OSCRUN is cleared	X		
2	High operating current following Stop condition	X	X	
3	Date incrementing at noon	X	X	X

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

2: The date codes are presented in YYWW format.

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.

1. Module: $\overline{\text{AM}}$/PM Bit

If the oscillator is stopped for longer than a period of TOSF, then the OSCRUN bit (RTCWKDAY<5>) will be cleared. This may cause the $\overline{\text{AM}}$/PM/HRTEN1 bit (RTCHOUR<5>) to toggle. This can occur in both 12-hour and 24-hour modes.

The oscillator can stop for any of the following reasons:

- The oscillator stops in the application.
- When using an external crystal, the ST bit (RTCSEC<7>) is cleared by the user.
- When using an external clock source, the EXTOSC bit (CONTROL<3>) is cleared by the user.

Work around

If the OSCRUN bit is cleared, then the oscillator has stopped and the time and date values may no longer be valid. Therefore, before restarting the oscillator, the application should fetch and load the current time and date.

Affected date codes

≤1109	≤1352	>1352
X		

2. Module: Operating Current

When operating from VCC, operating current may slowly increase and can exceed the data sheet limits. The time necessary for the current to increase and stabilize can range from a few seconds to a few minutes. Operation from VBAT is not affected.

Work around

The reception of an EEPROM control byte will briefly reset the VCC current to below the data sheet limits. A sequence consisting of a Start condition, EEPROM write control byte, and Stop condition can be repeated periodically to reduce current.

Affected date codes

≤1109	≤1352	>1352
X	X	

3. Module: Date Increment

When operating in 12-hour mode (RTCHOUR<6> is set) if the application loads an hour value before 12:00 PM while the oscillator is running then the date and day of week may increment at 12:00 PM. When this occurs, the month and year will also increment according to the normal rollover rules. The date will increment again at 12:00 AM.

Work around

Disable the oscillator by ensuring both the ST and EXTOSC bits are cleared and wait for the OSCRUN bit to clear before loading the new hour value.

Affected date codes

≤1109	≤1352	>1352
X	X	X

APPENDIX A: DOCUMENT REVISION HISTORY

Rev A Document (3/2014)

Initial release of this document.

NOTES:

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

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- 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.
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