MICROCHIP

Product Change Notification / SYST-01HLFQ106

Date:

06-Jul-2022

Product Category:

Real-Time Clock/Calendar

PCN Type:

Document Change

Notification Subject:

ERRATA - MCP795XX Family Silicon Errata Revison

Affected CPNs:

SYST-01HLFQ106_Affected_CPN_07062022.pdf
SYST-01HLFQ106_Affected_CPN_07062022.csv

Notification Text:

SYST-01HLFQ106

Microchip has released a new Errata for the MCP795XX Family Silicon Errata of devices. If you are using one of these devices please read the document located at MCP795XX Family Silicon Errata.

Notification Status: Final

Description of Change: Edited Issue 2.

Impacts to Data Sheet: None

Reason for Change: To Improve Productivity

Change Implementation Status: Complete

Date Document Changes Effective: 06 Jul 2022

NOTE: Please be advised that this is a change to the document only the product has not been changed.

Markings to Distinguish Revised from Unrevised Devices:: N/A

Attachments:

MCP795XX Family Silicon Errata

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.

MCP795XX

MCP795XX Family Silicon Errata

The MCP795XX family devices that you have received conform functionally to the current Device Data Sheet (DS20002300**C**), 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 MCP795XX 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 Packaging Information section of the product Data Sheet or contact your local Microchip sales office.

TABLE 1: AFFECTED PART NUMBERS

Part Number
MCP79510
MCP79511
MCP79512
MCP79520
MCP79521
MCP79522

TABLE 2: SILICON ISSUE SUMMARY

Issue Number	Issue Summary	Affected Date Codes[1, 2]
		All
1	Date incrementing at noon.	X
2	Month or year write changing date value.	X
3	Day of week write resetting to 1.	X
4	Hundredth-second out of sync with second.	X
5	Hundredth of Second value not changing.	X
6	Square Wave Clock Output affecting timekeeping.	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.

MCP795XX

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. Issue: 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 OSCON bit to clear before loading the new hour value.

Affected Silicon Revisions

All
X

2. Issue: Date Reset after Month or Year Write

When writing a new value in the Year, Month or Date registers, the Date register value may change unexpectedly.

Work around

If any of the Date, Month or Year values is to be changed, then write new Date, Month and Year value, in that order (this write can be continuous or discontinuous operation). Then, write Date value again. The ST bit can remain set during this operation, or it can be cleared and set again afterward.

Affected Silicon Revisions

All
X

3. Issue: Day of Week Reset after Day of Week Write

If the day of week (RTCWKDAY<2:0>) is equal to the value of 7 and the application writes a new day of week value to the timekeeping registers while the oscillator is not running, then when the oscillator is enabled, the day of week may reset the value to 1.

Work around

Update the day of week while the oscillator is enabled. Or, change the day of week value to another value besides 7 before disabling the oscillator, then set to the correct day while the oscillator is disabled, before re-enabling the oscillator.

Affected Silicon Revisions

All
X

4. Issue: HSEC Value Not Synchronized with Second Value

When reading the HSEC register and Second register shortly after the time values are set, the two registers may not roll over at the same moment.

Work around

The HSEC register does not cause the Second value to change, but instead the values are clocked off an internal clock divisor independently. The HSEC value is automatically synchronized with the Second value at the beginning of the minute, when the second rolls over from 59 to 00. Following that first minute change, the HSEC and Second registers will be in sync.

Affected Silicon Revisions

All
X

5. Issue: HSEC Value Not Changing

The HSEC register may appear stuck at the same value for two or more successive reads, even though more than 10 ms have passed. If the oscillator is running, then the internal value is still counting, but the value may not be updated every time it is read.

Work around

Read the HSEC value, then read it again 120 µs later to ensure an unstuck value. Alternatively, read the HSEC register and compare the present value with the previous value, and if the same, re-read the HSEC register until it is different.

Affected Silicon Revisions

All
X

6. Issue: Square Wave Clock Output Selection Affecting Timekeeping

Selecting the MFP pin to output 8 kHz or 32 kHz Square Wave can affect timekeeping accuracy when a crystal is used for the time base. External oscillator selection is not affected.

Work around

Avoid using MFP pin for 8 kHz or 32 kHz Square Wave output selections when using a crystal.

Affected Silicon Revisions

All
X

APPENDIX A: DOCUMENT REVISION HISTORY

Rev E Document (06/2022)

Edited Issue 2.

Rev D Document (10/2018)

Added Issue 6: Square Wave Clock Output affecting timekeeping.

Rev C Document (06/2017)

Edited Issue 2; Added Issues 4 and 5.

Rev B Document (12/2016)

Added Issue 3: Day of Week Reset after Day of Week Write.

Rev A Document (12/2015)

Initial release of this document.

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.

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 - 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: 47-7288-4388

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

09/14/21

SYST-01HLFQ106 - ERRATA - MCP795XX Family Silicon Errata Revison

Affected Catalog Part Numbers(CPN)

MCP79520-I/MS
MCP79521-I/MS
MCP79522-I/MS
MCP79520-I/MSVAO
MCP79520T-I/MS
MCP79521T-I/MS
MCP79522T-I/MS
MCP79520T-I/MSVAO
MCP79520T-I/MN
MCP79521T-I/MN
MCP79522T-I/MN
MCP79510-I/MS
MCP79511-I/MS
MCP79512-I/MS
MCP79510-I/MSVAO
MCP79510T-I/MS
MCP79511T-I/MS
MCP79512T-I/MS
MCP79510T-I/MN
MCP79511T-I/MN
MCP79512T-I/MN