ERRATA SHEET
71M6541DT/71M6541FT/71M6542FT

Revision B03 Errata

The errata listed below describe situations where 71M6541DT/71M6541FT/71M6542FT revision B03 components perform differently than expected or differently than described in the data sheet. Maxim Integrated Products, Inc., intends to correct these errata when the opportunity to redesign the product presents itself.

This errata sheet only applies to 71M6541DT/71M6541FT/71M6542FT revision B03 components. Revision B03 components are branded on the topside of the package with a six-digit code in the form yywwB03, where yy and ww are two-digit numbers representing the year and work week of manufacture, respectively. To obtain an errata sheet on another 71M6541DT/71M6541FT/71M6542FT die revision, visit our website at www.maximintegrated.com/errata*.*

1) WATCHDOG RESET CAUSES INCORRECT FUSE READ UNDER SOME CONDITIONS

Description:
The 71M654xT devices have a system of nonvolatile fuses that are trimmed during final test to store part-specific information. In operation these data are read from the fuses and stored in the device RAM. The fuse data in RAM are refreshed from the actual fuses whenever a watchdog timer reset instruction is executed and the CE is not enabled. Under some conditions, this fuse read operation can return incorrect data. Reading incorrect fuse data can cause a variety of problems, including:

a) Poor ADC accuracy due to internal reference voltage being off
b) Incorrect power management behavior

The improper fuse data read occurs when the CE has been disabled (CE_E = 0), but the CE is still executing code and a fuse read is performed due to a watchdog timer clear instruction.

Workaround:
The workaround is for software to avoid clearing the watchdog timer whenever the CE is disabled and is executing code (CE_BUSY = 1).

In the watchdog reset function, add an instruction to skip resetting the watchdog if CE is busy and CE_E = 0. The watchdog reset code for this test is as below:

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```
/* clear_wd() is typically called hundreds of times per second
 *   in the main loop. Since the watchdog time is 1.5 seconds and the time
 *   in which a bad read can occur is 0.0004 seconds, this works
 *   and introduces no unpredictable delay
 */
void clear_wd(void)
{
    if((CE6 & CE_E == 0) /* if the CE is not enabled */
    {
        if((INTBITS & 0x08) == 0)   /* if CE is not busy */
        {
            WDRST = 0x80; /* Clear the watchdog timer */
        }
    }
    else
    {
        WDRST = 0x80;   /* if CE is enabled, always clear watchdog */
    }
}
```

Because this function does not always reset the watchdog timer, the watchdog clear function must be called frequently enough to ensure that the watchdog does not expire.

2) RTC_FAIL FLAG CAN BE SET INCORRECTLY

Description:
For the 71M654xT devices, the RTC_FAIL flag can be set by events other than a failure of the VBAT_RTC voltage. In addition to the VBAT_RTC event, the RTC_FAIL flag can sometimes be set by a hardware reset and also when the WDT overflows (WD_OVF).

Workaround:
The suggested workaround qualifies RTC_FAIL with WF_CSTART, WF_RST and WF_OVF, using the following equation:

$$RTC\_FAIL\_QUAL = RTC\_FAIL \ \& \ \sim(WF\_CSTART \ | \ WF\_RST \ | \ WF\_OVF);$$

This operation filters out erroneous setting of the RTC_FAIL flag that could be caused by hardware resets or WDT resets.

71M6541DT/71M6541FT/71M6542FT
REV B03 ERRATA

REVISION HISTORY

REVISION NUMBER	REVISION DATE	DESCRIPTION	PAGES CHANGED
0	9/13	Initial release	—