BRT_TN_001

FT93x Errata Technical Note

Version 1.0

Issue Date: 2017-03-07

The intention of this errata technical note is to give a detailed description of known functional or electrical issues with the BRT FT93x devices.

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1 FT93x Revision

FT93x part numbers are listed in Table 1-1. The letter at the end of date code identifies the device revision.

The current revision of the **Rev B**, released **March 2017**. All known issues with this silicon revision are recorded in this Technical Note.

Part Number	Package
FT930Q	68 Pin QFN
FT931Q	56 Pin QFN

Table 1-1 - FT93x Part Numbers

This errata technical note covers the revisions of FT930Q listed in Table 1-2.

Revision	Notes
A	Never released
B	Second device revision (Release March 2017)

Table 1-2 - FT930Q Revisions

This errata technical note covers the revisions of FT931Q listed in Table 1-3.

Revision	Notes
A	Never released
B	Second device revision (Release March 2017)

Table 1-3 - FT931Q Revisions

2 Errata History Table – Functional Issues

Functional Errata	Short Description	Errata occurs in device revision
FT930Q	Real Time Clock (RTC) alarm interrupt can be missed under certain conditions	**Rev B**
FT931Q	Real Time Clock (RTC) alarm interrupt can be missed under certain conditions	**Rev B**

Table 2-1 – Functional Issues

2.1 Errata History Table – Electrical and Timing Specification Deviations

Deviations	Short Description	Errata occurs in device revision
-	No known issues	**-**

Table 2-2 - Electrical and Timing Specification Deviations

3 Functional Issues of FT93x

3.1 Revision B

3.1.1 RTC Alarm can be missed under certain conditions

Introduction:

The FT93x RTC raises an interrupt request to the FT93x interrupt controller when any of the enabled interrupt conditions occur in the RTC. The RTC interrupts are enabled via RTC_CTRL register. The RTC interrupt service routine checks RTC interrupt pending status by reading RTC_STAT register and takes necessary action.

Issue:

1. The RTC interrupt may not be responded in certain conditions, for example when interrupts are globally masked in the FT93x interrupt controller or when the CPU core is in certain period while processing another interrupt.

Exception:

The issue doesn't affect another consequence that the RTC interrupt is also a wake-up source and when the system is in power down state, the RTC interrupt can wake up the system via the Power Management (PM) controller. Upon system wake-up, the PM interrupt service routine is executed first and the RTC interrupt is not serviced and consequently lost.

Workaround:

The workaround options are as follows:

1. When the system is in active mode, software shall use a timer to periodically check the RTC_STAT bits. If RTC_STAT indicates that status bits of enabled interrupts are set, then call the RTC interrupt service routine. The period to use shall be determined by the interrupt latency and processing requirements. If monitoring date and time interrupts (RTC_STAT.AINT1 and RTC_STAT.AINT2) only, then the timer period may be set to half a second because these alarms have a minimum period of 1 second.

2. When the system enters the powered down state, the periodic timer shall be disabled. If the RTC interrupt is enabled as a wake-up source, then software shall ensure that the RTC_STAT bits shall be checked and processed immediately upon system wake-up right after PM NMI service routine has been processed.

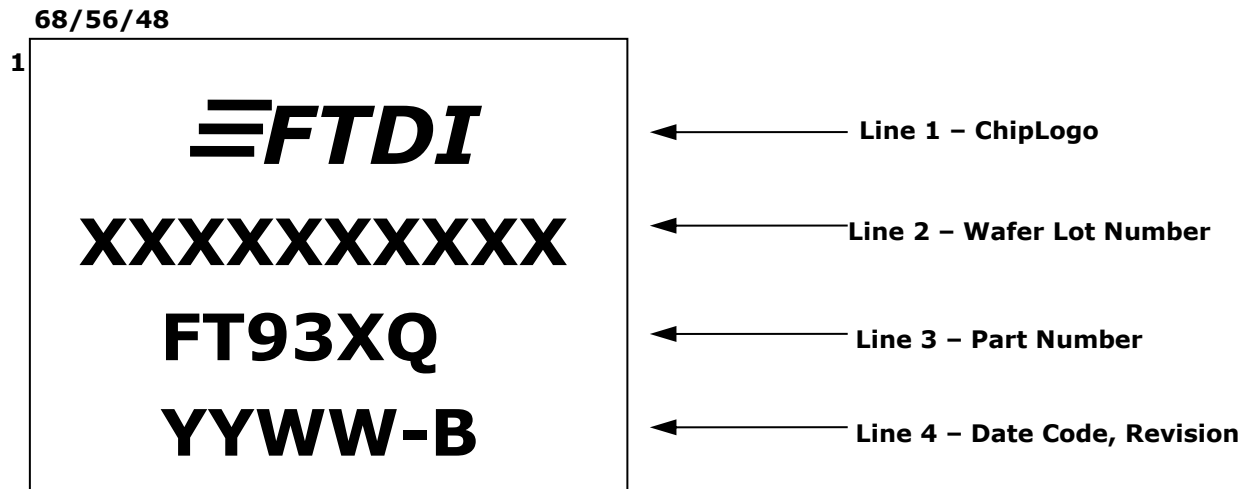**Package Specific:**

The affected packages are listed in Table 3-1.

Package	Applicable (Yes/No)
FT930Q	Y
FT931Q	Y

Table 3-1 - Affected Packages

4 Electrical and Timing Specification deviations of FT93x

There are no known electrical or timing problems with any revision of silicon.

5 FT93x Package Markings

68/56/48

Figure 5-1 - T93XQ Top Side

Notes:

1. FT93XQ symbol stands for FT930Q, FT931Q, FT932Q, and FT933Q.

2. YYWW = Date Code, where YY is year and WW is week number and following character B indicates the silicon revision B.

3. Marking alignment should be centre justified.

4. Laser marking should be used.

All marking dimensions should be marked proportionally. Marking font should be using standard font (Roman Simplex).

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Revision	Changes	Date
1.0	Initial Release	2017-03-07