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PRODUCT CHANGE NOTIFICATION

PCN: PCN154205

Date: October 16, 2015

Subject: Qualification of Minor Mask Revision to Select PSoC 1 and USB enCoRe III Products

To: PRICE CONTROL
NEWARK
pricecontrol@newark.com

Change Type: Minor

Description of Change:

Cypress has qualified a new mask revision on select Industrial and Commercial grade PSoC 1 and USB enCoRe III products. This mask revision will result in improved HCI (Hot Carrier Injection) performance of devices in certain applications that use UART or USB protocols utilizing the Internal Main Oscillator (IMO) of the device. Refer to the Erratum in Appendix A, which contains details on the problem statement, trigger conditions, and possible containments.

Functionality and specifications remain unchanged from the original design. This change will be applicable to select Industrial and Commercial grade PSoC 1 and USB enCoRe III products manufactured at the CMI (Cypress Semiconductor Minnesota Incorporated) fab in Bloomington, MN, and the HHGrace fab in Shanghai, China.

Benefit of Change:

The design changes provide improved immunity to HCI degradation, specifically for the Internal Main Oscillator (IMO) circuit.

Part Numbers Affected: 76

Affected Parts: See attached 'Affected Part List' file for the parts affected by this notice.

Qualification Status:

As per Cypress specified list of changes, this change has been qualified through a series of tests identified in the following Qualification Test Plans (QTP). These QTP reports can be found attached to this PCN.

QTP	Description
151003	Mask revision qualification for select PSOC 1 and USB enCoRe III parts in CMI fab
151005	Mask revision qualification for select PSOC 1 and USB enCoRe III parts in HHGrace fab

Sample Status:

Samples will be available within 15 days after the request is received. Please contact your Sales Representative as soon as possible to place any sample requests.

Approximate Implementation Date:

Effective 30 days from the date of this notification, Cypress will start to transition to shipments of the affected part numbers with the mask changes described above.

Anticipated Impact:

This mask revision will improve performance of devices in some applications that use UART or USB protocols utilizing the Internal Main Oscillator (IMO) of the device. Products manufactured with the new mask revision are completely compatible with existing product from a functional, parametric, and quality performance perspective.

Cypress also recommends that customers take this opportunity to review these changes against current application notes, system design considerations and customer environment conditions to assess impact (if any) to their application.

Method of Identification:

Cypress maintains traceability of product to wafer level, including wafer fabrication location, through the lot number marked on the package. Mask revision letter is marked on the top of the package as shown in the example below for the QFN package:

**Response Required:**

No response to this notice is required. For additional information regarding this change, contact your local sales representative or contact the PCN Administrator at pcn_adm@cypress.com.

Sincerely,

Cypress PCN Administration

Appendix A

ERRATUM

This section describes the Erratum for the selected PSoC 1 and USB enCoRe III device families. The information in this section describes hardware issues associated with Silicon Revision A.

Contact your local Cypress sales representative if you have questions.

SELECTED PSoC 1/enCoRe III QUALIFICATION STATUS

Product Status: In Production

ERRATUM SUMMARY

This summary defines the Erratum applicability to selected PSoC 1 and USB enCoRe III family devices.

1. The Internal Main Oscillator (IMO) frequency parameter (FIMO245V) may increase over a period of time during usage in the field and exceed the maximum spec limit of 24.96 MHz.

PROBLEM DEFINITION

When the device has been operating at 4.75 V to 5.25 V for a cumulatively long duration in the field, the IMO Frequency may slowly increase over the duration of usage in the field and eventually exceed the maximum spec limit of 24.96 MHz. This may affect applications that are sensitive to the max value of IMO frequency, such as those using UART communication and result in a functional failure.

The expected failure rate is highly dependent on the application use and conditions. Approximate expected failure rate is 300-3000ppm over 6 months to 5 years.

TRIGGER CONDITION(S)

The above issue may be observed on some devices if the following conditions exist:

1. Application is using the device internal main oscillator instead of an external oscillator.
2. Application is using UART/USB communications
3. The Application Vcc voltage is > 3.6V

WORKAROUNDS

Operating the device with the power supply voltage range of 3.0 V to 3.6 V, would avoid the degradation of IMO Frequency beyond the max spec limit of 24.96 MHz.

FIX STATUS

A new revision of the silicon (Rev C), with a fix for this issue, is now available