Si72xx Errata

This document contains information on the errata of revision B of the Si72xx Hall Effect Sensors.

The device data sheet explains how to identify chip revision, either from the orderable part number or electronically.

Errata effective date: August 2018.

Note: This document applies to Orderable Part Numbers (OPNs) which refer to product revision **B**. For example: Si7201-**B**-00-IV or Si72xx-**B**, where xx is the hall effect sensor family type and **B** refers to the product revision.

ERRATA DEFINITIONS

Impact Definition: Each erratum is marked with an impact, as defined below:

- Minor—Workaround exists.
- Major—Errata that do not conform to the data sheet or standard.
- Information—The device behavior is not ideal but acceptable.

Table .1. Errata History Overview

Erratum	Title/Problem	Impact	Workarounds	Solution
1	V_{DD} brownout during sleep time causes lockup	Information	Yes	Si720x and Si7210 datasheets will be updated.

1. Brownout During Sleep Causes Lockup

Description

If a Si72xx device is subject to a brownout event (300 mV < V_{DD} < 1.71 V) during sleep time, the device may become unresponsive to host communication and operation will halt. In this locked up state, the device will:

- Draw a current of ~60 µA from V_{DD}.
- NACK all I^2C transactions.

The output pin will maintain its state once the lockup occurs.

Affected Condition/Impacts

If a brownout event occurs during the sensor's sleep time, sensor operation may halt. The sleep time occurs between burst measurements if the sensor is configured for sleep mode.

For Si7210 I^2C parts, sleep mode is enabled if the sltimeena bit is set. For Si720x switch or latch parts, see the data sheet or ordering guide to identify if the part is configured for sleep mode.

Workaround

To prevent lockup from occurring, guarantee that V_{DD} is power cycled if the supply voltage drops below the minimum operating voltage of 1.71 V. A full reset will occur if V_{DD} is brought below 300 mV.

If brownout occurs and the sensor locks up, the sensor operation can be restored by performing a full power cycle reset.

For a Si7210 I^2C part, lockup due to brownout can be avoided if the sensor is kept in idle mode.

Resolution

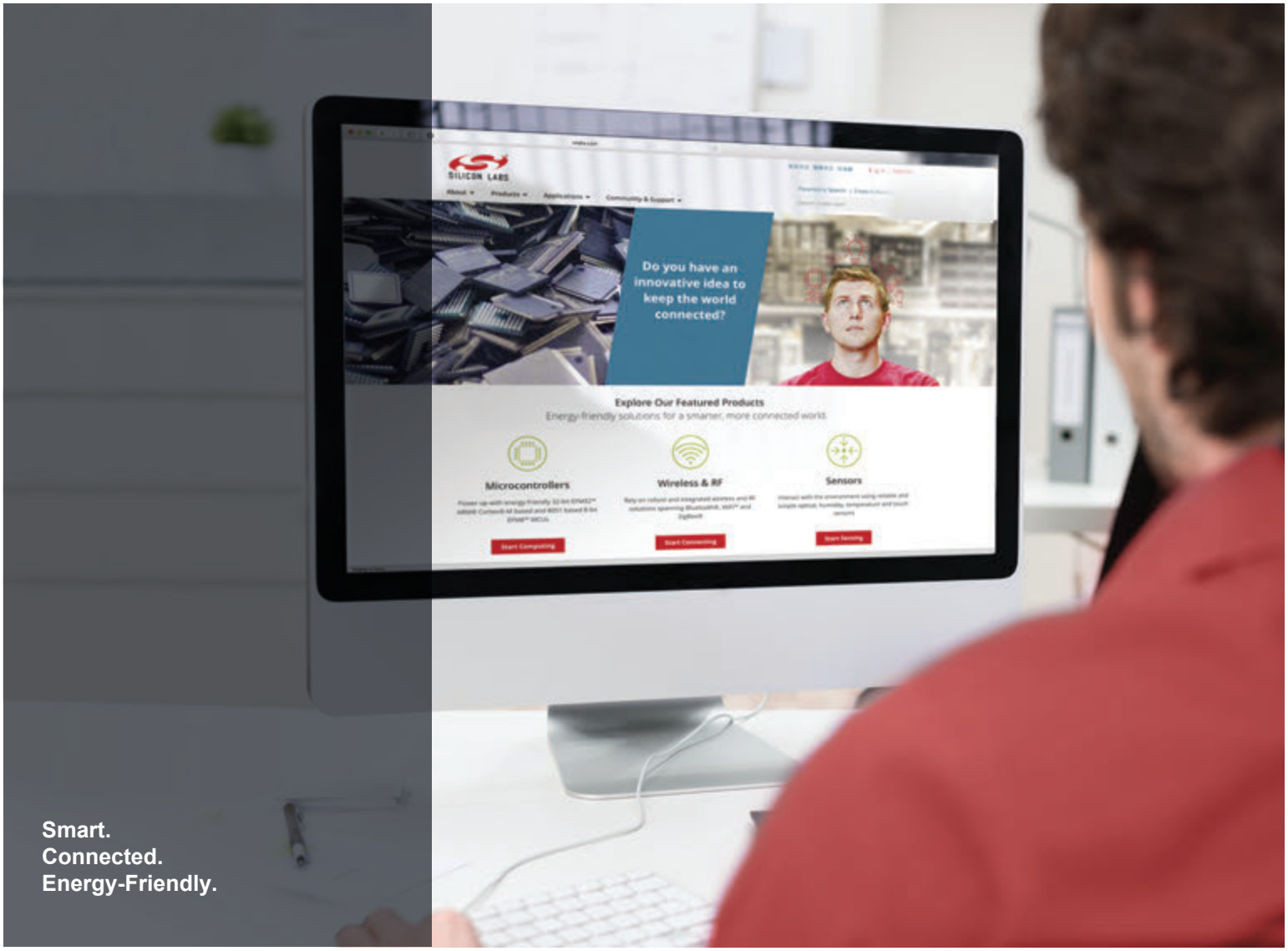
This erratum will be fixed in the next silicon revision.

2. Revision History

Version 0.1

August 2018

- Initial release of this document for Si72xx-B errata. Document applies to all Si72xx-B part numbers.



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