Mercury KX1

Revision 3

Known Issues and Changes

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Author(s)	Christoph Glattfelder
Reviewer(s)	
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Document History

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Table of Contents

1 Introduction 4

1.1 Scope 4

2 Known Issues 5

2.1 Flash programming errors using Impact 5

3 Functional Changes 6

3.1 No power up when VCC_CFG_B13 is not applied 6

3.2 New coils in the power supplies 6

3.3 VCC_CFG_B13 6

3.4 Level shifter for I2C 6

3.5 New SPI Flash 7

3.6 New Security EEPROM 7

1 Introduction

1.1 Scope

This document describes the known issues and the revision changes related to the Mercury KX1 FPGA module.

2 Known Issues

In addition to the errata from the FPGA and component manufacturers, Enclustra knows about the following issues with the ME-KX1-R3 modules.

2.1 Flash programming errors using Impact

ID	ME-KX1-R3_KI1
Description	The Mercury KX1 does not boot from the SPI flash after programming it with Xilinx Impact. This problem especially occurs when a data file is added after the bitstream.
Workaround	Use Vivado or Enclustra MCT to program the SPI Flash
Status	Xilinx won't update Impact anymore.

3 Functional Changes

The following functional changes were made from revision R2 to R3.

3.1 No power up when VCC_CFG_B13 is not applied

ID	ME-KX1-R3_CH1
Description	Race condition removed by connecting the enable input of the oscillator to VCC_OSC instead of PWR_EN

3.2 New coils in the power supplies

ID	ME-KX1-R3_CH2
Description	Smaller coils are now used in the power supplies. The maximum current of the 1.0V supply is reduced from 20A to 16A.

3.3 VCC_CFG_B13

ID	ME-KX1-R3_CH3
Description	VCC_CFG_B13 now supports 1.8V and 2.5-3.3V.

3.4 Level shifter for I2C

ID	ME-KX1-R3_CH4
Description	A level shifter in inserted between the I2C bus and FPGA bank 13.

3.5 New SPI Flash

ID	ME-KX1-R3_CH5
Description	The Micron N25Q256A SPI flash is replaced by a Spansion S25FL512S. The new flash is now 512 Mbit and has bigger sectors. This may require adaptations in your programming algorithm.

3.6 New Security EEPROM

ID	ME-KX1-R3_CH6
Description	The security EEPROM is replaced by a new type. This requires different I2C accesses to read the module information and MAC address. A software example supporting the new EEPROM is found in the Mercury KX1 Vivado reference design.

Figures

No table of figures entries found.

Tables

No table of figures entries found.