Mask Set Errata

68HC11E20MSE2
6/2002

Mask Set Errata 2
68HC11E20 8-Bit
Microcontroller Unit

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Introduction

This mask set errata provides information pertaining to the CONFIG register applicable to these 68HC11E20 MCU mask set devices. The x in the identifying number below is a placeholder for the revision number of the mask. For this errata, all revisions of this mask are affected:

- xK82H

MCU Device Mask Set Identification

The mask set is identified by a 5-character code consisting of a version number, a letter, two numerical digits, and a letter, for example 0K82H. Slight variations to the mask set identification code may result in an altered version number, for example 1K82H.

MCU Device Date Codes

Device markings indicate the week of manufacture and the mask set used. The data is coded as four numerical digits where the first two digits indicate the year and the last two digits indicate the work week. For instance, the date code “9915” indicates the 15th week of the year 1999.

MCU Device Part Number Prefixes

Some MCU samples and devices are marked with an SC or XC prefix. An SC prefix denotes special/custom device. An XC prefix denotes that the device is tested but is not fully characterized or qualified over the full range of normal manufacturing process variations. After full characterization and qualification, devices will be marked with the MC prefix.

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CONFIG Mechanism Operation

Errata for voltage range 3.0 V through 5.5 V 73% shrink MC68HC11E20 — The MC68HC11E20 contains a CONFIG register that is used to activate/disable the following features: NOSEC, NOCOP, ROMON, and EEON on the MCU. Most customers never modify the contents of the CONFIG register. This errata does not effect these customers.

Section 3.4.1 of the book *M68HC11 Reference Manual,* Rev. 6, (M68HC11RM/D) reads: The CONFIG register actually consists of an EEPROM byte (separate from the 512-byte EEPROM array), a static register that holds the configuration information during operation, and the associated logic, which controls transfer of information from the EEPROM byte to the working static register. Reads of this register return the contents of the static working register, not the EEPROM byte. During any reset, the contents of the EEPROM byte are transferred to the working static register over the data bus. Due to this mechanism, change to the EEPROM CONFIG location are not visible and do not alter the operation of the MCU until after a subsequent reset.

Changed Operation

The configuration mechanism on the low voltage MC68HC11E20 will not operate as stated above at voltages below 3.2 V. The MCU does not transfer the EEPROM contents to the static register upon a subsequent reset, but will transfer the contents upon a subsequent power up.

Workaround

As a result of the problem described above, one could either choose not to modify the contents of the configuration register at 3.1 V or less. Or, perform a power on reset (POR) after changing EEPROM CONFIG register contents in order to latch changes into the static register and alter the operation of the MCU.

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