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Programming the EEPROM on the MC68HC811E2 with the M68HC11EVM Board

By Edgar Saenz
Austin, Texas

Introduction

Special considerations must be taken when using the M68HC11EVM to program the on-chip EEPROM of the MC68HC811E2, hereafter referred to as the EVM board. The procedure to program the EEPROM is the same as that used to program the CONFIG register of the MC68HC811E2.

Programming Procedure

The monitor of the EVM must be revision 3.0 or later, and the jumper selector should be from 2 to 3 on J20. Once power is applied to the board, and the prompt appears on the screen, use this procedure to program your MC68HC811E2 part.

Step 1

Before inserting the MC68HC811E2 into the programming socket, make sure that S5 is in the OFF position and S4 is in the 3RESET2 position. Insert the MC68HC811E2 into the programming socket. Place S5 to the ON position and S4 on the OUT position.

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Step 2   Establishing communication with the MC68HC811E2 before attempting to execute a PROG or ERASE command is important. To ensure that the part to be programmed is working, a COPY command can be used. COPY, as described in the EVM manual, copies a block of memory from the MC68HC811E2's memory map into the EVM's pseudo RAM. When the COPY command completes successfully, it prompts the user with a message COPY COMPLETE. This confirms that the part is placed correctly and is communicating properly with the EVM.

From the EVM prompt, execute this command:

>COPY 103F 103F A or

>COPY F800 F80A A

If successful, the response from the EVM will be:

>COPY COMPLETED

Step 3   Erasing the EEPROM is required before programming the MC68HC811E2 if the byte was previously programmed to anything other then a hexadecimal value of $FF. Erasing is accomplished by using the ERASE command which uses a as its first parameter and as the second parameter.

From the EVM prompt, execute this command at the EVM prompt

>ERASE F800 FFFF

The EVM will respond by simply giving the prompt back.

>

Step 4   Download the program in S-record format at $F800 on the EVM's pseudo ROM using the LOAD command. The usage for this command is:

>LOAD T

At this point, the user can execute the proper command to the terminal emulation software on a personal computer to upload the file to the EVM.

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For instance, using PROCOMM, hit the page up key. PROCOMM responds by asking for a file name. Enter the file name and hit return on the computer keyboard. This action will initiate the file transfer.

The EVM also can generate a program by invoking its on-line assembler by typing this command

>ASM F800

The EVM responds

>F800 FF FF FF STX $FFFF>

Enter an instruction at the prompt. The assembler will interpret the mnemonic, generate the proper opcodes, disassemble the next instruction, and prompt the user to enter another instruction.

Step 5   Programming the part involves using the PROG command which takes two parameters only: the start and end address.

The PROG command copies the contents of the first parameter address, which points to the start of the program on the EVM, and makes a mirror image on the MC68HC811E2 memory map. From the EVM prompt, enter the PROG command like this

>PROG F800 FFFF

At this point the EVM responds with

>F800

>VERIFY COMPLETED

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JAPAN: Nippon Motorola Ltd.: SPD, Strategic Planning Office, 141, 4-32-1 Nishi-Gotanda, Shinigawa-Ku, Tokyo, Japan. 03-5487-8488

ASIA/PACIFIC: Motorola Semiconductors H.K. Ltd., 8B Tai Ping Industrial Park, 51 Ting Kok Road, Tai Po, N.T., Hong Kong. 852-26629298

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