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MC68HC705F8PGMR PROGRAMMER BOARD USER'S GUIDE (REV 1.1)

1. INTRODUCTION

This document contains information on the operation of MC68HC705F8PGMR, a programmer board for programming MC68HC705F8 devices.

The on-chip EPROM feature of MC68HC705F8 MCU enables user to emulate the MC68HC05F8 device. EPROM programming is facilitated through the program contained in the on-chip boot-strap ROM of the MC68HC705F8, and the bootstrap program is invoked by using the program-mer board described herein. Besides programming, verification between the contents of the MCU EPROM can also be performed with this board.

2. PROGRAMMER BOARD OPERATION

Operating procedure for the MC68HC705F8PGMR is described in this section. The MC68HC705F8PGMR enables programming of the MCU internal EPROM or ROM areas directly from an external 27256 EPROM. The 27256 external EPROM should contain the data to be programmed. To perform programming the MC68HC705F8 MCU device and the target code 27256 EPROM should be inserted into the MCU socket and the EPROM socket on the program-mer board respectively. There is a direct correspondence of addresses between the target MCU and the external EPROM, locations of the external EPROM not in the internal EPROM or ROM address range are omitted, as are locations containing the data $FF, thus speeding up the program-ming operation. Bootstrap mode function of the MC68HC705F8 is selected via SW1. Placing SW2 from the reset state to run state will enable the MCU to enter the selected bootstrap mode.

The procedure for invoking the bootstrap routine is as followings:

1. Place SW3 and SW4 in OFF position and SW2 in RESET position.

2. Connect +5V, Vpp (+12V) and GND to power connector P1.

3. Place the 27256 EPROM and MC68HC705F8 in the appropriate sockets.

4. Select the desire bootstrap routine via SW1.

5. Place switch SW4 (Vpp) to ON position.

6. Place switch SW3 (Vcc) to ON position.

7. Place SW2 (RESET/RUN) to RUN position to start the selected bootstrap function.

8. During programming/verification operation the LED DS2 flashes to indicate normal operation. The result of the operation is indicated by LED DS1.

9. When the programming operation is completed place switch SW2 (RESET/RUN) to RESET position.

10. Place SW3 (Vcc) to OFF position.

11. Place SW4 (Vpp) to OFF position.

12. Remove the MC68HC705F8 from the programming sockets.

13. Repeat step 3 to 12 to program additional MCUs.

Once the bootstrap mode is entered, mode switch setting of SW1 is scanned and the selected bootstrap routine will be executed accordingly, refer to the following table for mode selection.

1 = ON
0 = OFF

SW1			Bootstrap Mode
A	B	C	
0	0	0	Program & Verify HC05
1	0	0	Verify HC05 Contents

CAUTION: Vpp must be applied before Vcc, otherwise, damage to the MCU device may result.

2.1 Program and Verify EPROM

This routine enables the contents of an external EPROM to be copied into the EPROM area of MC68HC705F8 device. The programming LED DS2 will flash while programming is in progress. When programming operation is completed, the verification routine is entered. If the contents of the MCU EPROM and external EPROM are the same, the verification LED DS1 will be illuminated within 1 minute.

2.2 Verify EPROM Contents

When this routine is executed the contents of the MCU EPROM are compared with those of the external EPROM. DS2 LED flashes to indicate verification is being performed. Upon completion

of the verification routine (i.e. every location verified), the VERIFIED LED DS1 is illuminated. If DS1 does not illuminated within 1 minute, a discrepancy has been detected and the error address location will be placed on the external memory address bus.
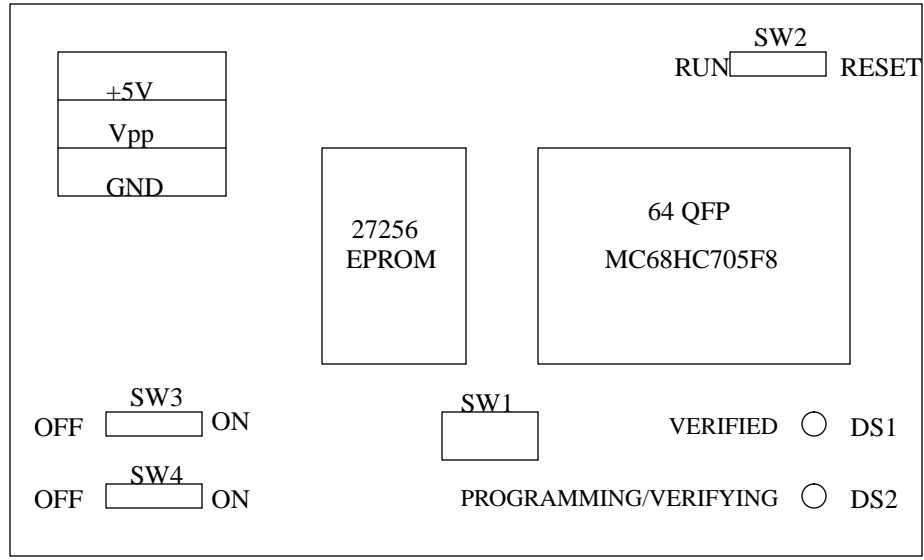
LAYOUT OF F8PGMR COMPONENTS
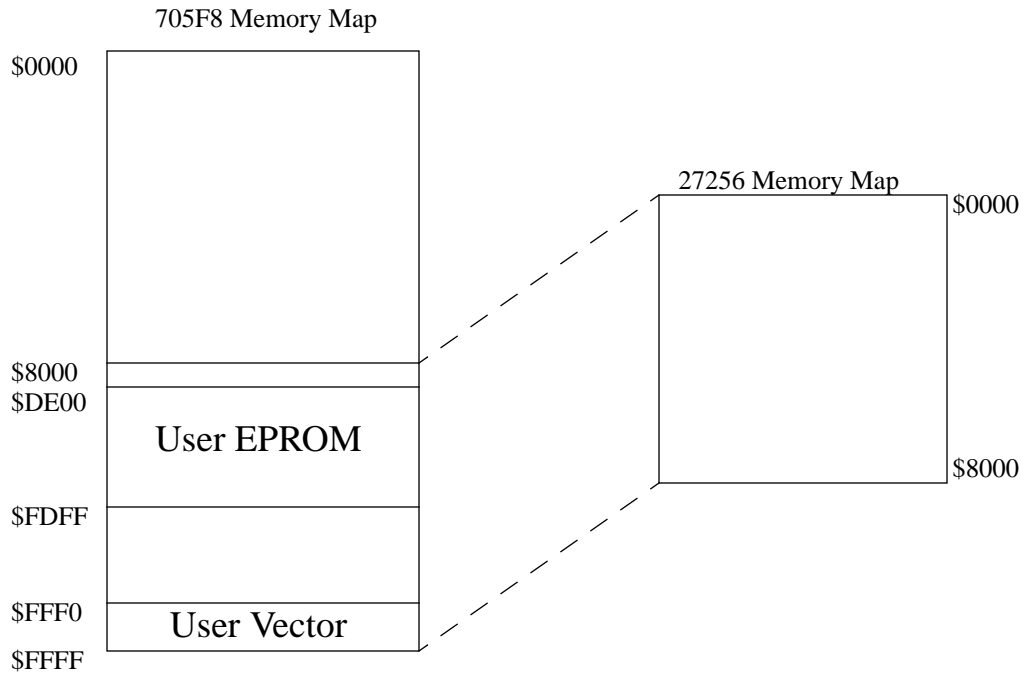
Mapping Between 705F8 and Programming EPROM 27256