

**M35080V6 EEPROM ERASER/PROGRAMMER**

**User's Guide**

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## 1. Introduction

This manual will guide you through the installation of the M35080V6 eraser/programmer, referenced hereafter as the M35080V6 Programmer. The M35080V6 Programmer has been designed for on-board and ISP (in-circuit programming) modes via PC control operation for reading all EEPROM data, incremental area EEPROM writing, EEPROM writing, erasing data to delivery state of M35080V6 SPI EEPROM memory with incremental registers area.

## 2. Check list and Requirements

### *Hardware requirements*

<b>Host</b>	- A 32-bit x86 based with a free Serial port (Com1, 2) a hard-disk system.
<b>Memory</b>	- Minimum 16 Mbytes
<b>Display</b>	- Color VGA display recommended
<b>Power supply</b>	- A 12-14 volt/500 mA linear power supply source
<b>Tool</b>	- M35080V6 ERASER/Programmer board*
<b>Cable</b>	- An RS232C “straight-thru” cable*
<b>Adapters</b>	- four 8-pins SMD adapters*

### *Software checklist*

<b>OS</b>	- MS-Windows (Win95, Win98, Win2000, WinXP)
<b>Software tool -</b>	- ETL M35080V6 control software*

### *\* Package check list*

**Contents:** -M35080V6 eraser/ programmer board set included:

- M35080V6 eraser/programmer board \*\*
- 9-pin “straight-thru” cable \*\*
- (4 pc.) 8 pins SMD adapters \*\*
- CD (included control software) \*\*
- This manual \*\*

**\*\*NOTE:** See M35080V6 ERASER/PROGRAMMER Package check list

## 3. Installing

The M35080V6 Programmer is designed to accept M35080 8 Kbit Serial SPI Bus EEPROM with Incremental Registers. M35080V6 Programmer support 2,5; 5,0 ; 6.0; 8.0 MHz Clock Rates devices (See Appendix1, 2). To understand M35080V6 Programmer components meaning see Figure 1. To install and use the M35080V6 Programmer, follow these steps:

- Install M35080V6 control software. Insert the supplied ETL CD-ROM into a CD drive and navigate to “Install Software” > “Install M35080V6 Prog.”, then execute the “Setup.exe” file; this will guide you through the setup process.

**NOTE:** M35080V6 software, version 4.0 or later is required new M35080V6 (rev 4.0) hardware only. Don't use version 4.0 to communicate old hardware (See Appendix1).

- Connect M35080V6 Programmer to the power supply source (12-14 V  $\geq$ 500 mA).
- Attach M35080V6 Programmer to computer. Use the 9-pin RS232C cable that is shipped with the M35080V6 Programmer.
- Before connecting programmer in ISP mode or inserting target device M35080, make sure that programmer and a target board are not powered and ISP jumper mounted to ISP position.

**NOTE:** M35080V6 can not be ERASED in ISP mode. To erase M35080V6 device must be inserted to the M35080V6 socket.

**NOTE:** Only one mode (on-board or ISP) should be used during operate at a time. Don't use at the same time programmer with inserted M35080 or M35080V6 IC in the target socket and ISP mode. When you using ISP mode make sure, that target sockets is empty. When you using target socket make sure that ISP interface not connected and second one socket is empty.

- Insert M35080/M35080V6 device into a target socket or connect ISP interface cable.
- M35080V6 control software can now be started. However do not run control software until power supply not apply to M35080V6 programmer.
- Turn ON power switch. LED 1 must appear to the Green color, telling that power is present and M35080V6 Programmer ready to operate.

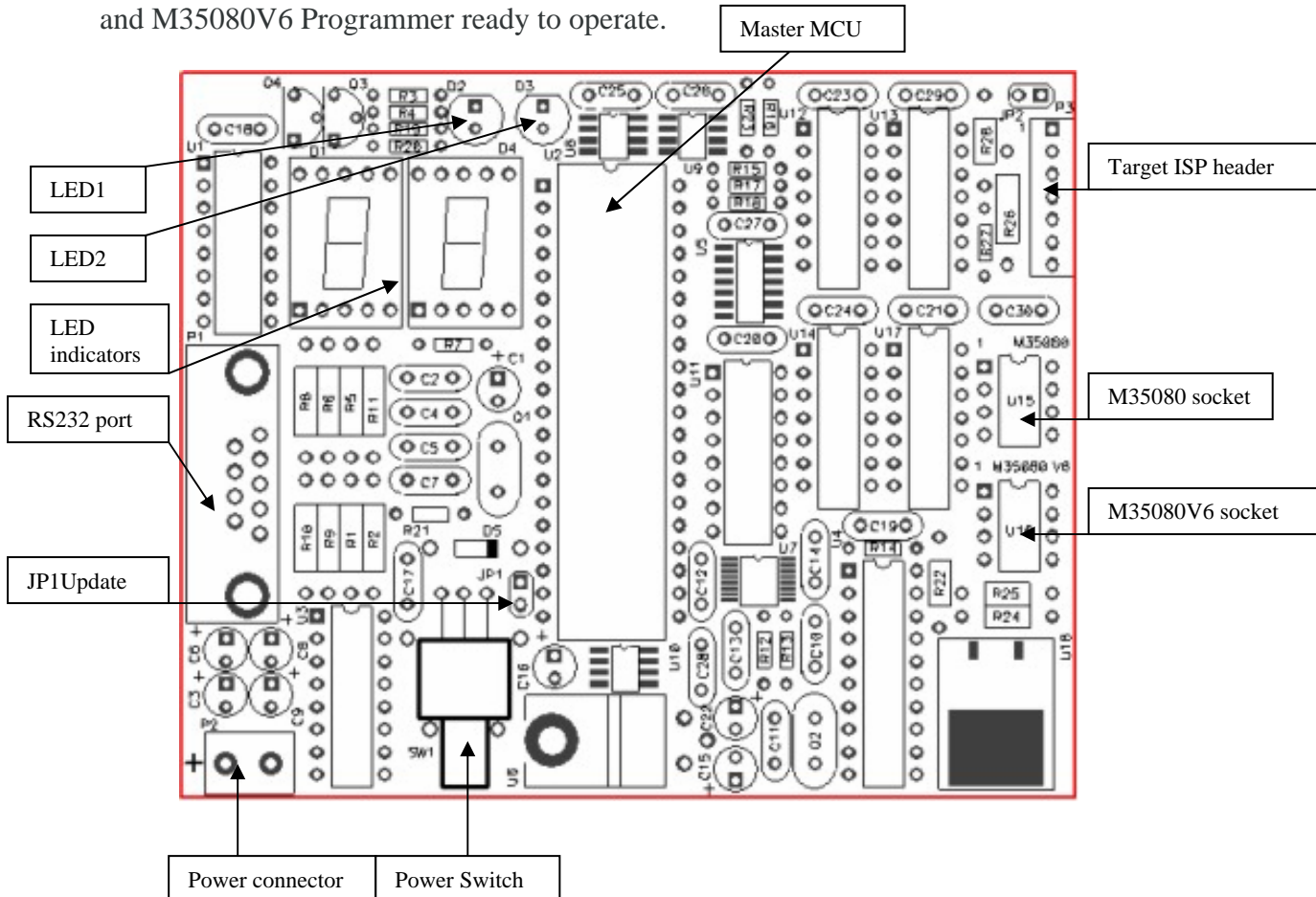


Figure 1. M35080V6 ERASER/PROGRAMMER components

## 4. Quick Start

Follow the procedure described below to configure M35080V6 Programmer:

- Turn ON M35080V6 programmer via Power Switch (see Figure 1)
- Execute M35080V6.exe file then start

After start you should see M35080V6 window interface. Select Com port number to activate command buttons, then click “Port\_Number” item on Menu bar.

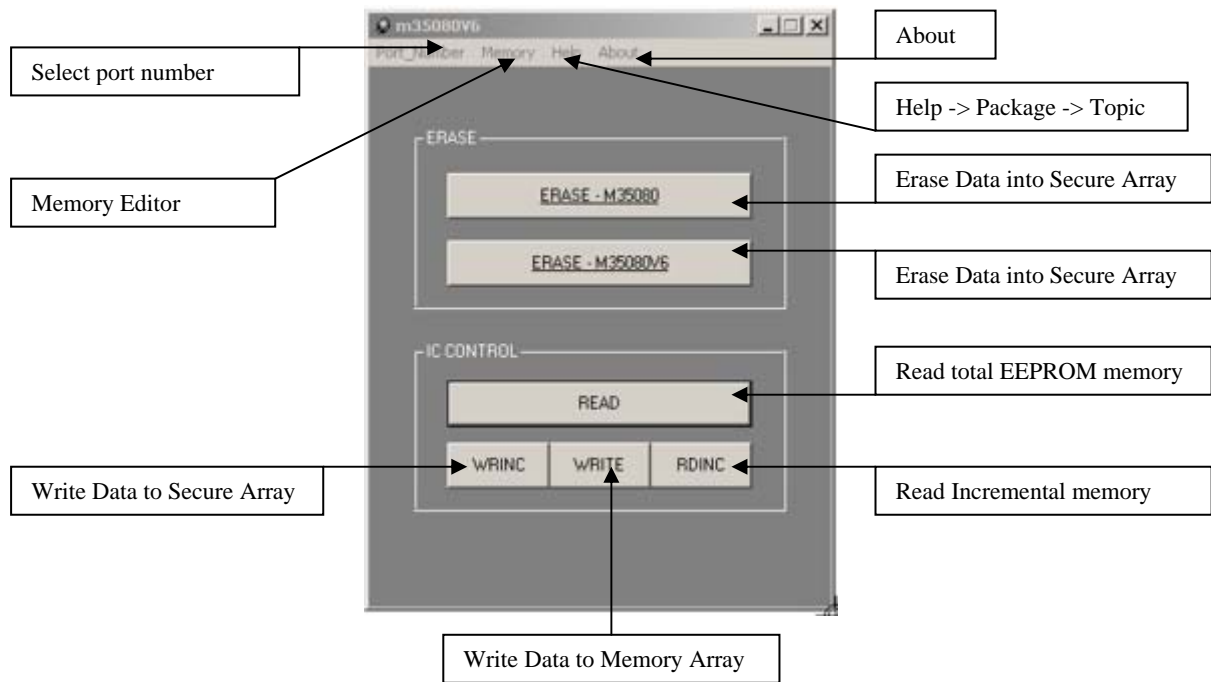


Figure 2. M35080V6 window interface

Solder M35080V6 IC on M35080P programming adapter according with 1-pin orientation and insert into target IC socket when using on-board mode. ISP mode operation see section 5.

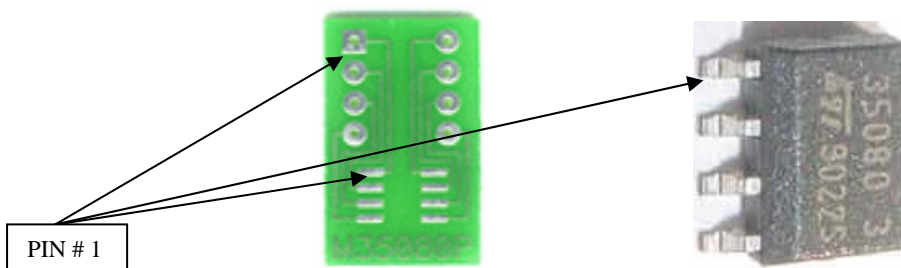


Figure 3. Device orientation

### 4.1 “READ” EEPROM command button

Read operation will execute every time when user click “READ” command button. During this operation the LED 1 will illuminate continuously green until the incremental registers and

EEPROM data of the M35080/M35080V6 (address \$0000 to \$3FF) have been copied to the destination file (file size 1024 bytes). You should see:

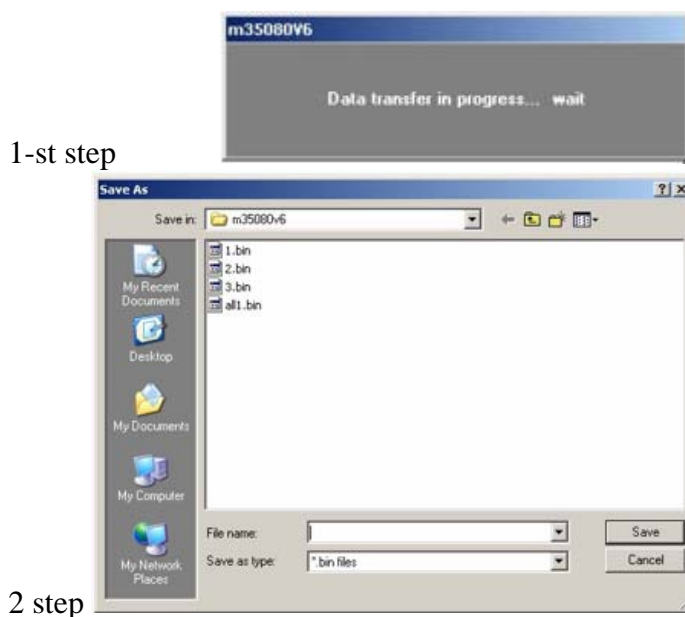


Figure 4. Read total EEPROM area operation

## 4.2 “WRITE” EEPROM command button

Write operation will execute every time when user click “WRITE” command button. During this operation the LED2 will illuminate continuously in red until the EEPROM contents taken form a file (address \$0020 to \$3FF) have been copied to the M35080/V6 (address \$0020 to \$3FFF).

**NOTE:** Don't forget to save previous data from the M35080/V6 to a binary file. Click “READ” button first then save original data to a binary file.

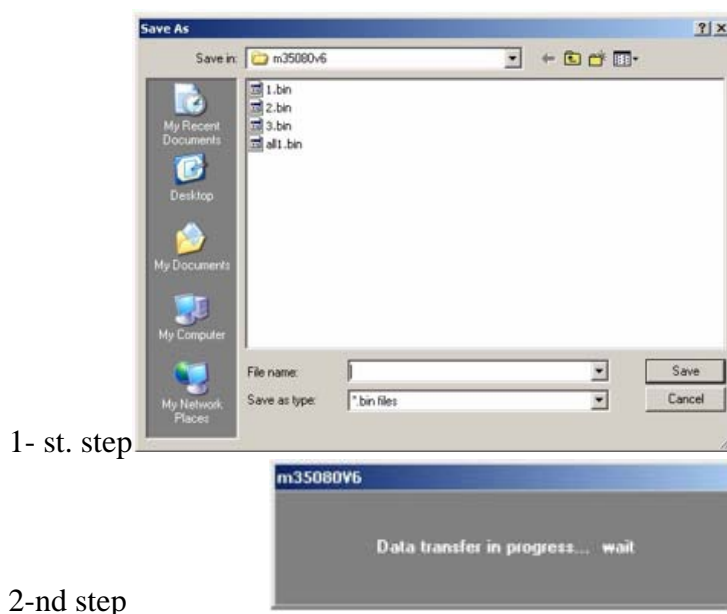


Figure 5. Write EEPROM area operation

### 4.3 “WRINC” Write Incremental Registers command button

Write Incremental Registers operation will execute every time when user click “WRINC” command button. During this operation the LED2 will flash red until the EEPROM contents, taken from a file (address \$0000 to \$001F), have been copied to the incremental registers of the M35080/V6 (address \$0000 to \$001F).

*NOTE: Don’t forget to save previous data from the M35080/V6 to a binary file.*

*Click “READ” data first then save data to a binary file.*

*For writing a lower value to the incremental registers into the M35080/V6 must be erased (incremental area) always before Write Incremental Registers area command.*

### 4.4 “RDINC” Read Incremental Registers command button

Read Incremental Registers operation will execute every time when user click “RDINC” command button. During this operation the LED 1 will illuminate continuously green until the incremental registers and EEPROM data of the M35080/M35080V6 (address \$0000 to 00FF) have been copied to the destination file (file size 32 bytes).

### 4.5 “ERASE M-35080” Incremental Registers command button

Erase Incremental Registers operation will execute every time when user click “ERASE-M35080” command button. During this operation the LED2 appear to the red color short time. The incremental area of M35080 reset to \$0000.

*NOTE: Don’t forget to save previous data from the M35080/V6 to a binary file.*

*Click “READ” data first then save data to a binary file.*

\*\*\* The device is erased with the incremental array in a erased state. The first 32 bytes set to all ‘0’s, and hence the first 16 words at 0000h. The status register bits are initialized to ‘0’s, except for bit 4, which is set to ‘1’.

### 4.6 “ERASE M-35080V6” Incremental Registers command button

Erase Incremental Registers operation will execute every time when user click “ERASE -M35080V6” command button. During this operation you should see real address of the incremental memory cell erased already on the LED indicators (see Figure 1). For example if you should see a display same to this“0A”:

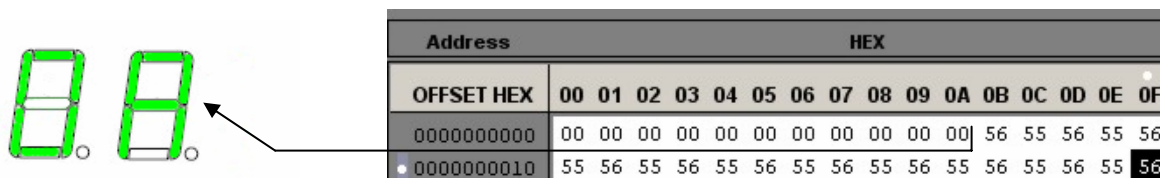
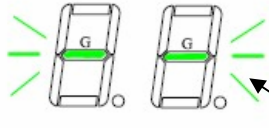


Figure 6. Erase incremental area M35080V6 in progress

This mean 11 addresses of the incremental area set to \$00 already. When erase operation complete, LED2 will appear to red for a 3...5 seconds than LED indicators displays flashing “G” segments simultaneously.



Address		HEX															
OFFSET HEX		00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
0000000000		00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
0000000010		00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00

Figure 7. Delivery state indication

\*\*\* The device is erased in delivery state. The first 32 bytes set to all '0's and hence the first 16 words at 0000h, rest of EEPROM memory set to \$FF. The status register bits are initialized to '0's, except for bit 4, which is set to '1'.

### 4.7 Quick start practice. Erase incremental area of M35080V6 device

Step 1: Jumper JP2 must be not mounted (M35080V6 OBP mode) then insert target device M35080 inside of the U16 socket

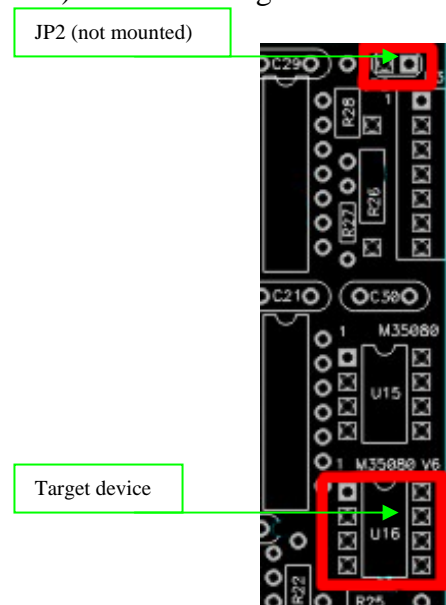


Figure 8.

Step2: Turn ON power supply switch SW1

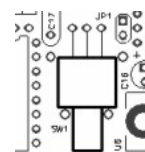


Figure 9.

Step3: Start m35080V6.exe



Figure 10.

Step 4: Select serial port



Figure 11.



Step 5: To make backup copy of the original data click “READ” button (see section 4.1)



Figure 12.

Step6: Click ERASE-M35080V6 button

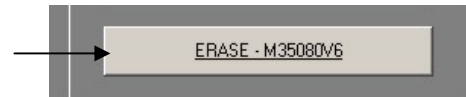


Figure 13.

Step 7: Wait until LED indicators pass incremental addresses starts from \$00 to \$1F

Step 8: LED2 (see figure 1) will appear to the red color for a 3...5 seconds, then LED indicators will flashing “G” segments simultaneously (see Figure 7)

Step9: Turn OFF/ Turn ON power supply then click RELOAD button to continue or TERMINATE button to exit

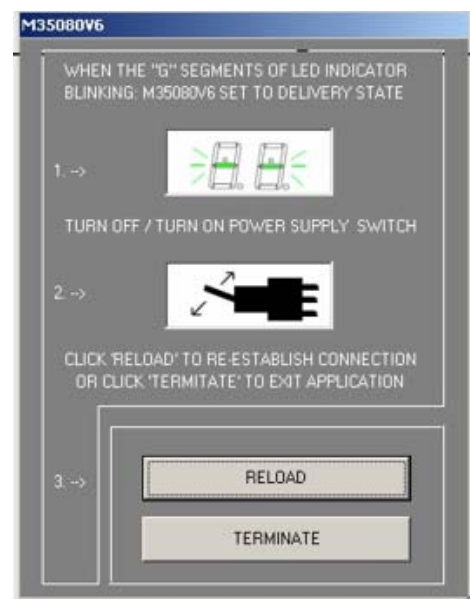


Figure 14.

Step 10: In case, if “RELOAD” command chosen select serial port again and re-establish connection

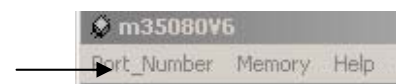


Figure 15.

This command reloads communication program and starts afresh M35080V6 software.

## 4.8 Quick start practice. Erase incremental area of M35080 device

Step 1: Jumper JP2 must be mounted (M35080 OBP and ISP modes) then insert target device M35080 inside of the U15 socket or connect target board to ISP connector according to signals connector P3 (See Figure 16, Figure 17)

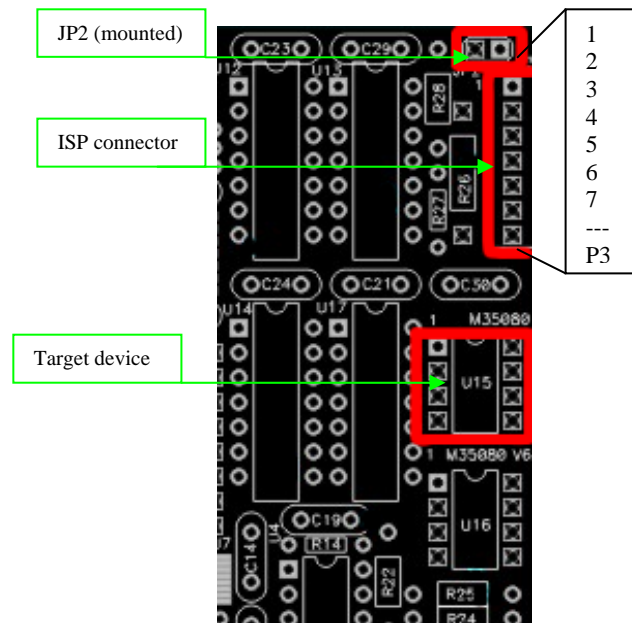


Figure 16.

**NOTE: Only one mode (on-board or ISP) should be used during operate at a time. Don't use at the same time programmer with inserted M35080 IC in the target socket and ISP mode. When you using ISP mode make sure, that target socket is empty. When you using target socket make sure that ISP interface not connected.**

Step 2: Turn ON power supply switch SW1 (See Figure 9)

Step 3: Start m35080V6.exe (See Figure 10)

Step 4: Select serial port (See Figure 11)

Step 5: To make backup copy of the original data click "READ" button (See section 4.1; Figure 12)

Step 6: Click ERASE-M35080 button

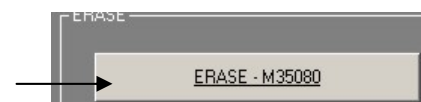


Figure 17.

Step 7: Click RDINC button then Memory menu item then make sure incremental area erased already



Figure 18.

To enter M35080 ISP/OBP mode users must pay kindly attention to JP2 jumper position and corresponding programming sockets/ connector. JP2 must be mounted for M35080 and not mounted for M35080V6 devices. Implementation of M35080 ISP/OBP interface as shown in Figure 19 (Schematic capture of M35080 ISP/OBP interface):

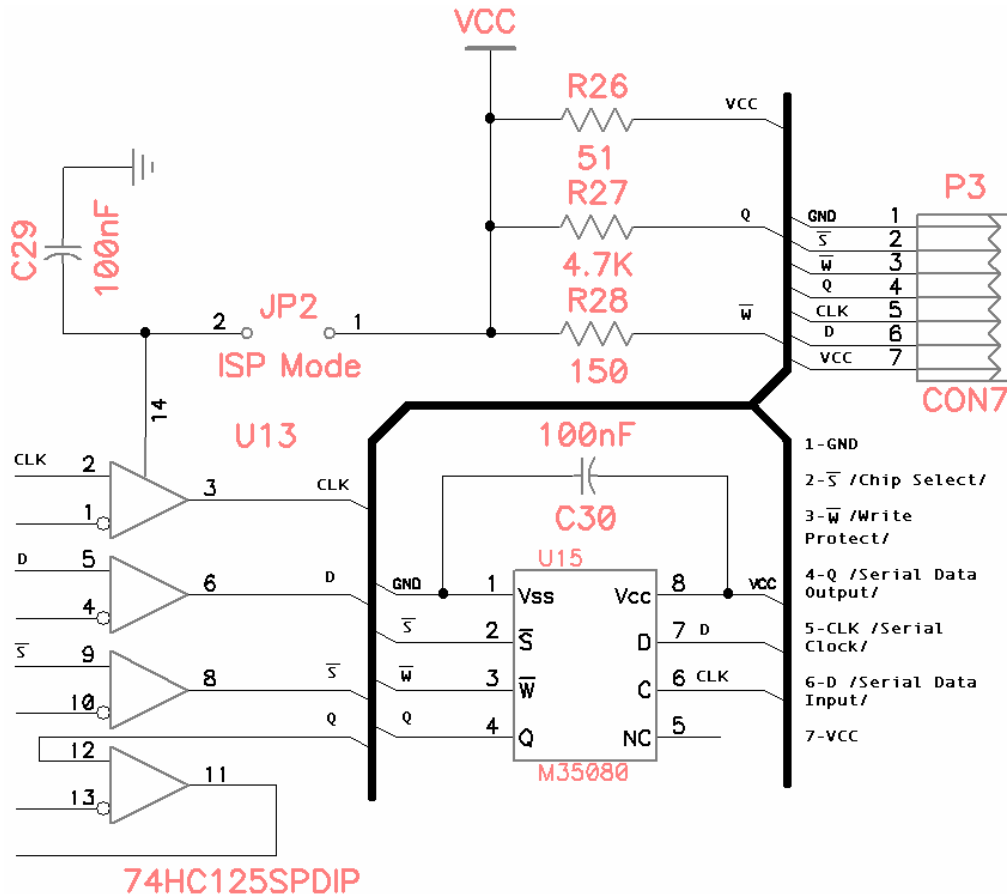


Figure 19. M35080 ISP/OBP programming interface

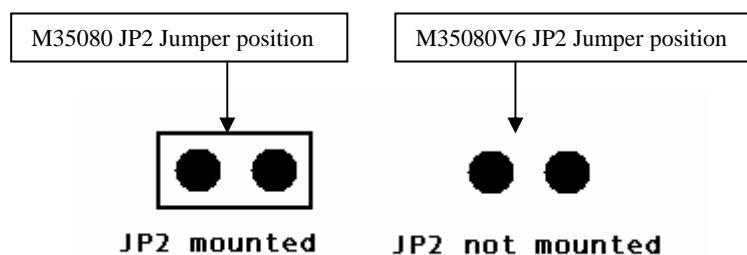


Figure 20. M35080 JP 2 mounted/ M35080 V6 JP2 not mounted

## 5. Memory viewer

Click “Memory” menu item to enter dump viewer mode. Click “File” menu item to review a dump contents. Memory address space display in HEX and DEC formats. Use “Page Up” and “Page Down” PC keyboard buttons to navigate highest addresses. The memory buffer contains the file downloaded from disk into memory. A cursor driven byte positioned to the highlighted area. As you make changes to the memory buffer, the changes on the current file may be stored at the same file on exit. Click “Done” menu item for return to main window interface then save an edited file in case of necessary.

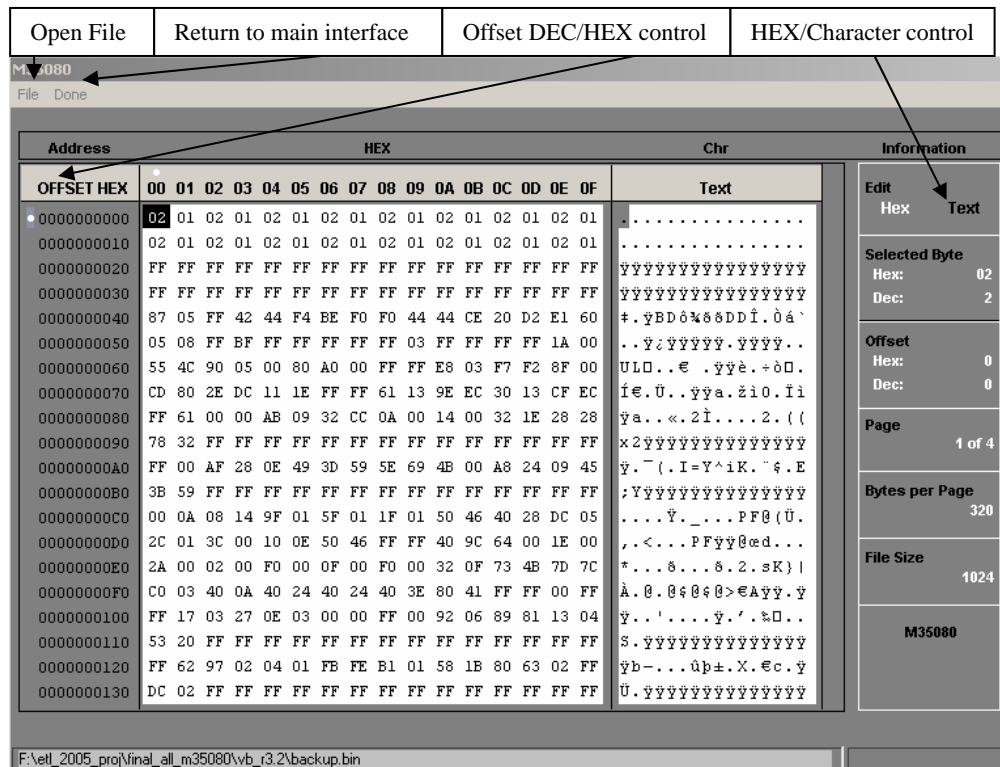


Figure 21. Memory viewer window

## 6. LED's meaning

### LED's meaning

The M35080 board included 2 LED's. See LED's meaning tables with short explanation:

LED1 (Green color):	Status LED	Function LED	Error LED
	Continuously lit: Programmer ready	Middle flashing: Data transfer in progress	NO light Power supply error
LED2 (Red color):	Communication LED	Function LED	Error LED
	Short pulse lit: Data transfer in progress	Long pulse lit: Writing in progress	Continuously lit: Command error

Figure 22. LED's meaning table

## 7. Troubleshooting; Error messages



Figure 23. Critical error messages windows

- ✓ Message “ERROR, RESTART PROGRAM”/Critical error; program must be terminated/
  - Reason: incorrect characters returned. This message appear with next errors: Target IC not inserted; incorrect ISP connection; error during command execution
  - Solution: Insert IC into socket; check ISP connection; Turn OFF and Turn ON power switch and restart the M35080V6.exe. Restart your Operation System and try start the program again
- ✓ Message “Communication Error”/Critical error; further program running with errors/
  - Reason: incorrect characters returned. This message appear with next errors: receive/transmit error during executing commands
  - Solution: Continue running program with errors; Turn OFF and Turn ON power switch and restart the M35080V6.exe
- ✓ Message “Error Comm: Check Port Number/Cable/Turn On Power Supply”/Critical error/
  - Reason: Power switch turned OFF; Serial cable not connected; Port number incorrect;
  - Solution: Turn ON Power switch; Connect serial cable from PC to programmer board
- ✓ Message “The Comm1 already open with another process, use other port”/Non critical error/
  - Solution: Select Comm2 serial port
- ✓ Message “The Comm2 already open with another process, use other port”/Non critical error/
  - Solution: Select Comm1 serial port
- ✓ Message “Port not available”/Non critical error/
  - Solution: Select Comm1 or Comm2 serial port
- ✓ Message “Port not open”/Non critical error/
  - Solution: Close other process, close M35080V6 program and restart M35080V6 program
- ✓ Message “Warning: uploading buffer size <> 1024 bytes!”/Non critical error/

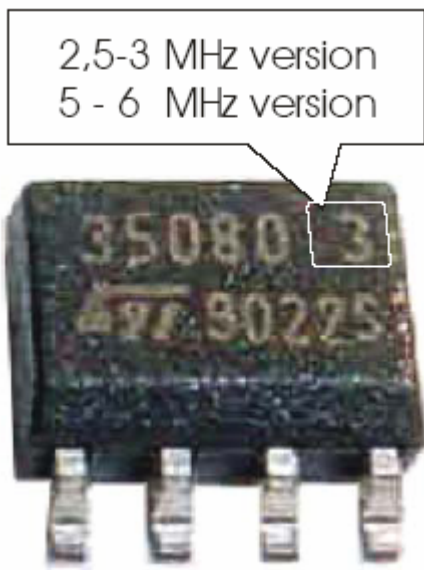


Figure 24. M35080 clock rate index

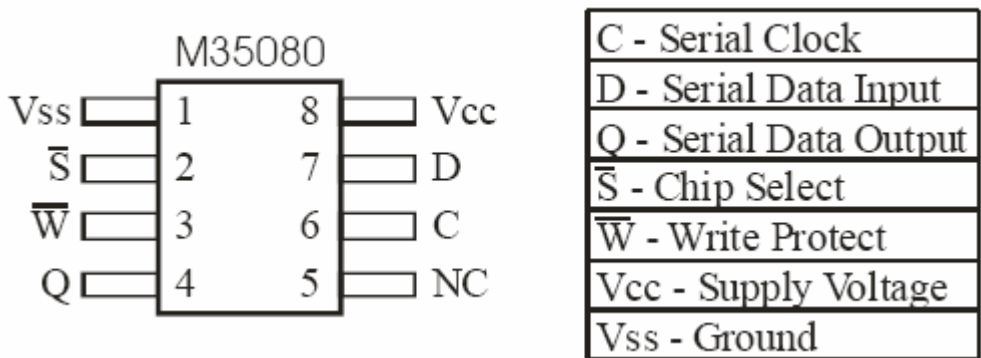


Figure 25. M35080 signal names



Figure 26. Rev2 /left side/ and Rev1 /right side/ M35080 hardware

**ATTENTION:** Only version 4.0 or higher of m35080V6.exe control software must be use with newRev4 hardware. Versions 2.0; 2.1 of m35080.exe control software must be used with Rev2.0 hardware only!!! Versions 1.0; 1.1 of m35080.exe control software must be used with Rev1.0 hardware only!!!

## APPENDIX 2

### M35080V6 conventional signs:

1) 35080VP = ST M35080V6\*

\* VP index - clock rate up to 8Mhz

2) 35080V6 = ST M35080V6\*\*

\*\*V6 index - clock rate up to 6 Mhz