

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, writing incremental registers area, writing EEPROM, erasing data to renew M35080, M35080V6/VP memories to factory delivery state (incremental registers area and EEPROM).

2. Check list and Requirements

Hardware requirements

Host	- A 32-bit x86 based with a free Serial port (Com. 1-10) a hard-disk system
Memory	- Minimum 16 Mbytes
Display	- Color VGA display recommended
Power supply	- A 12-14 volt/500 mA linear power supply source
Tool	- M35080V6 ERASER/Programmer board*
Cable	- An RS232C “straight-thru” cable*
Adapters	- four 8-pins SMD adapters*

Software checklist

OS	- MS-Windows (Win95, Win98, Win2000, WinXP, Win7)
Software tool -	- CPL 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 access 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 Appendix). 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 CD-R CPL supplied into a CD drive and navigate to “Install Software” > “Install M35080V6 Programmer”, then execute the “Setup.exe” file; this will guide you through the setup process.
- 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, M35080VP modifications can not be ERASED in ISP mode. For enter erase mode M35080V6/VP device must be install into the M35080V6 socket.

NOTE: Only one mode (on-board or ISP) should be used during operate at a time. Make sure that second one socket is empty! To prevent damage of the target IC(s) do not install two devices into the target sockets at the same time. Keep one target socket empty! When you using target socket make sure that ISP interface not connected and second one socket is empty.

- Install M35080 or M35080V6 device into the 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.

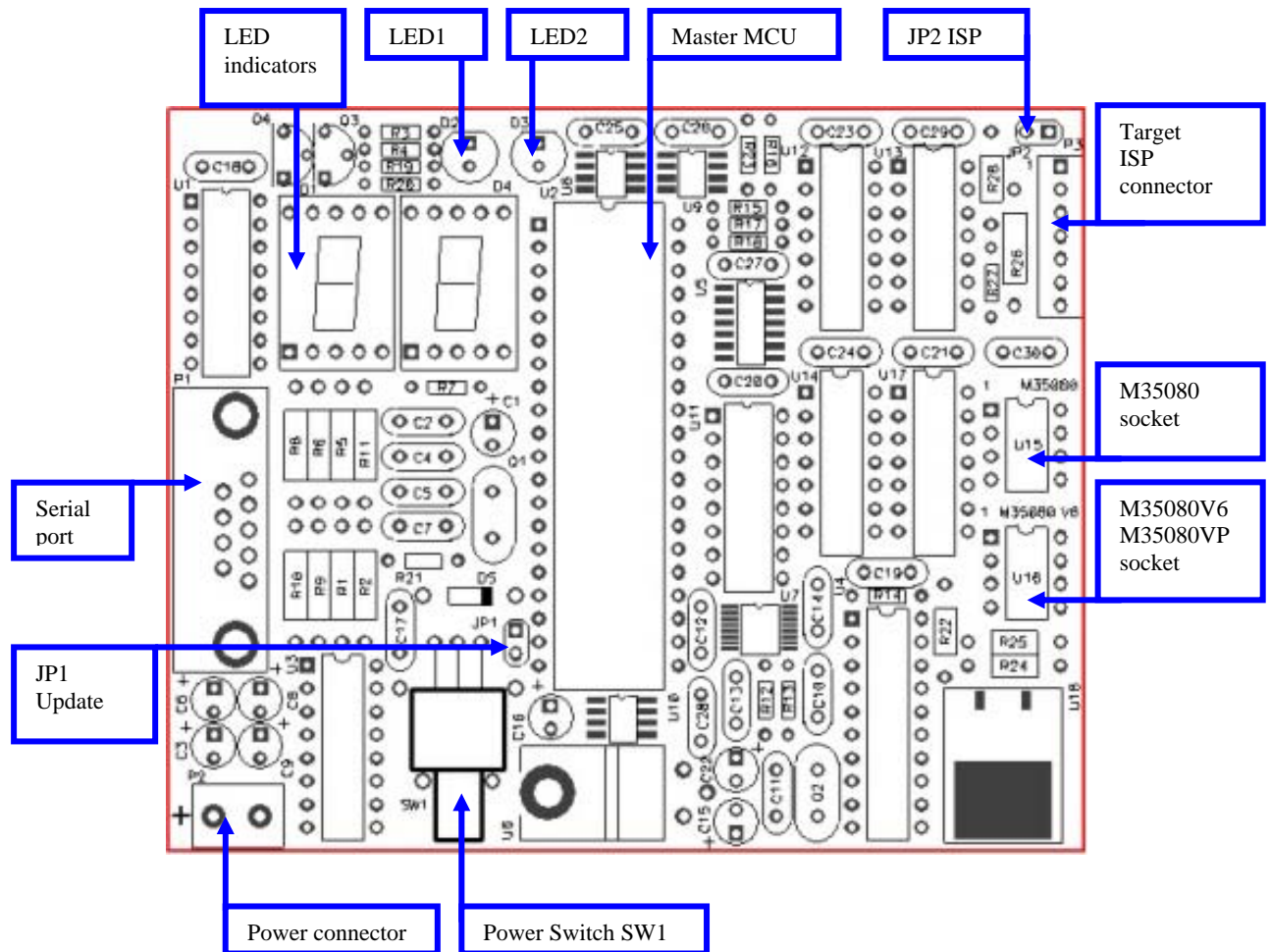


Figure 1. M35080V6 ERASER-PROGRAMMER components

4. Quick Start

Follow the procedure described below to configure M35080V6 Programmer:

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

After start you should see M35080V6 window interface. Select serial port number to activate command buttons, i.e. click “Port_Number” item on the menu bar.

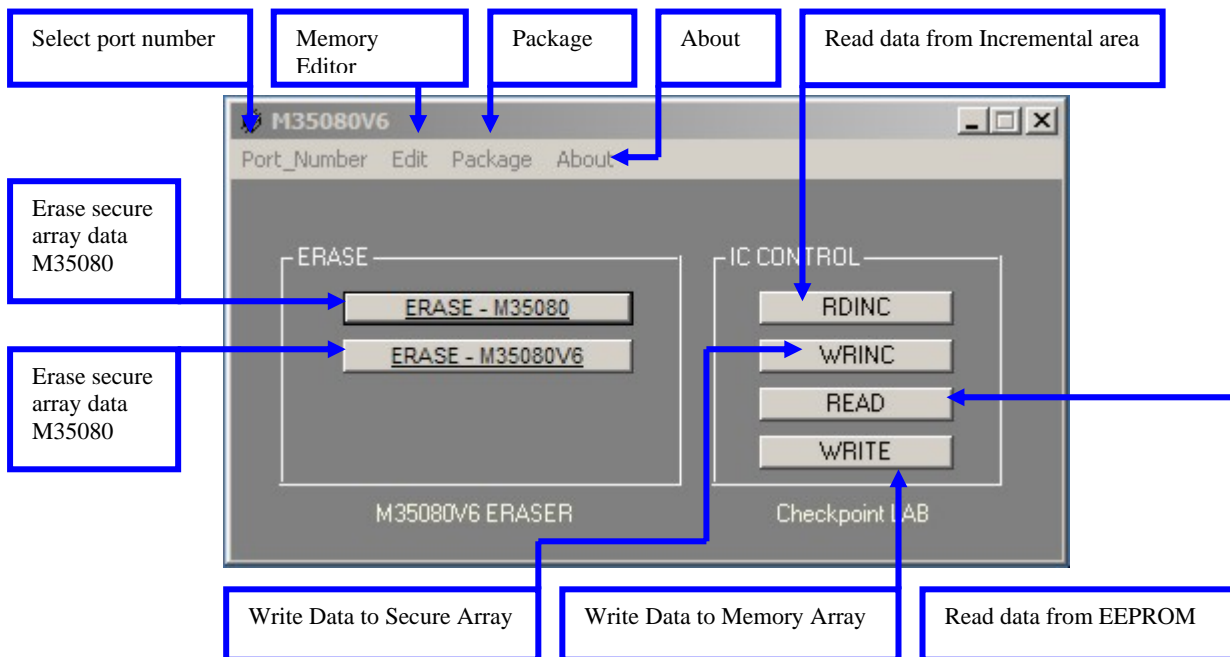


Figure 2. M35080V6 Programmer main window

Solder M35080V6 IC on SOIC8-to-DIP8 programming adapter according with 1-pin orientation and install it into target IC socket, for on-board mode operation (ISP mode operation section 5).

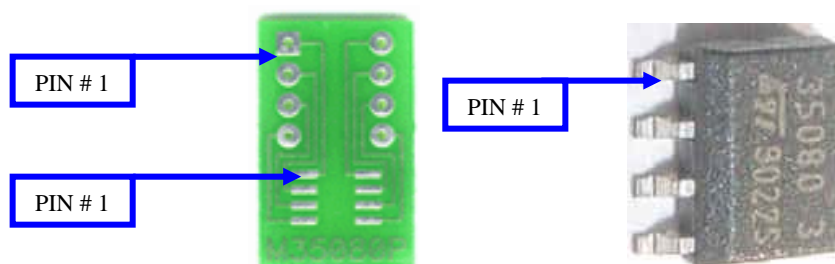


Figure 3. First pin device orientation

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 from \$0000 to \$3FF) have been copied to the destination file (file size 1024 bytes). You should see:

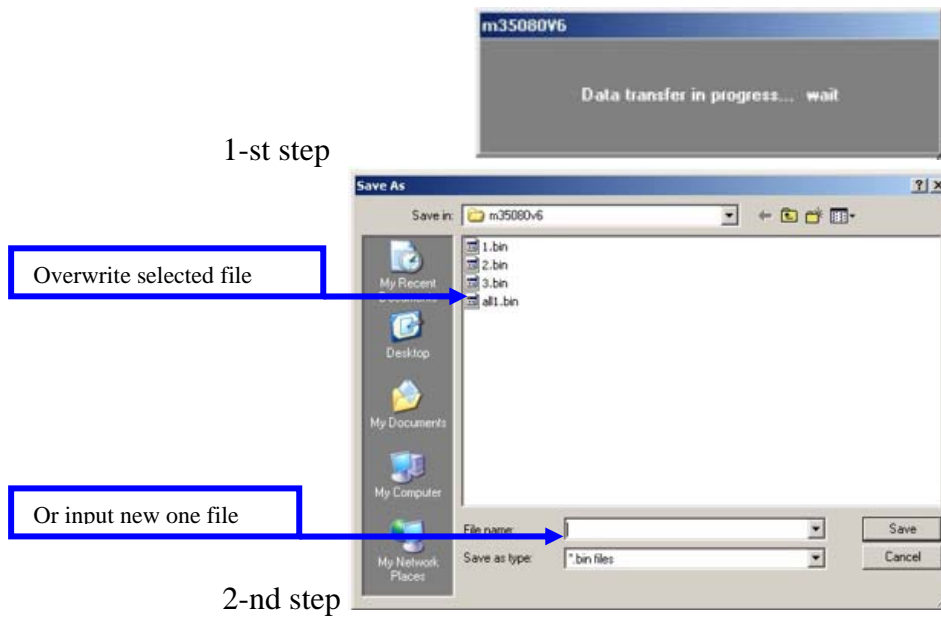


Figure 4. Read total EEPROM area operation

4.2 “WRITE” EEPROM command button

Write operation will execute every time when user click “WRITE” command button. During this operation the LED 2 will illuminate continuously in red until the EEPROM contents taken form a file (address from \$0020 to \$3FF) have been copied to the M35080/M35080V6 (address from \$0020 to \$3FFF).

NOTE: Don't forget to save previous data from the M35080/M35080V6 to a binary file. Click “READ” button first then save original data to a binary file.

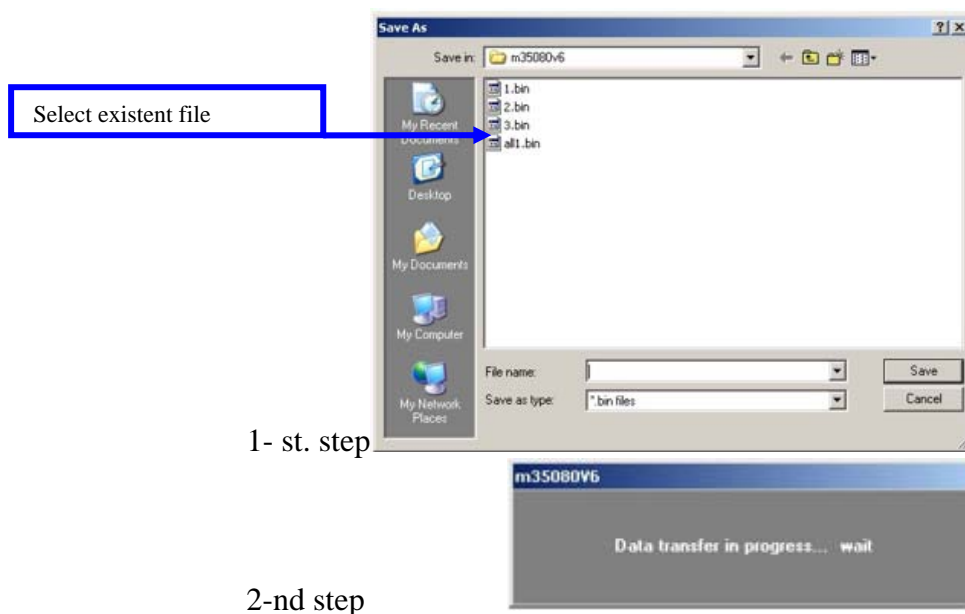


Figure 5. Write EEPROM area operation

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 LED 2 will flash red until the EEPROM contents, taken from a file (address from \$0000 to \$001F), have been copied to the incremental registers of the M35080/M35080V6 (address from \$0000 to \$001F).

NOTE: Don’t forget to save previous data from the M35080/M35080V6 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/M35080V6 must be erased (incremental area) before execution 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 from \$0000 to \$001F) 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 LED 2 appear to the red color short time. The incremental area of M35080 reset to \$0000 (32 bytes from \$0000 to \$001F).

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

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

*** The device is erased with the incremental array to delivery 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 (Figure 1). For example if you should see a display same to this “0A”:

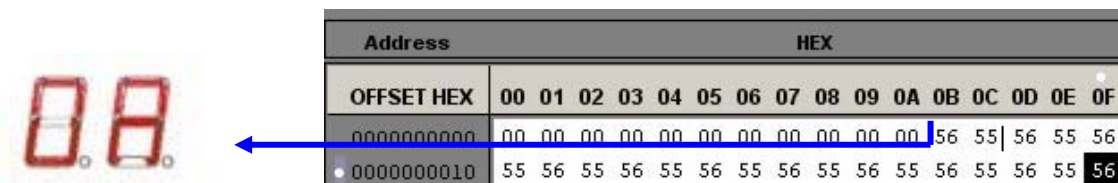


Figure 6. Erase incremental area M35080V6 in progress

This mean 11 addresses of the incremental area set to \$00 already. When erase operation complete, LED 2 will appear to red for a 3-5 seconds than LED indicators displays flashing “oo” message on each indicator simultaneously.

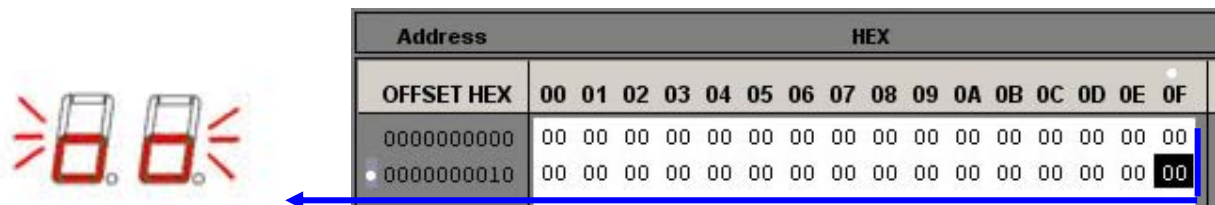


Figure 7. Delivery state indication

*** The device is erased to 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: Remove jumper JP2 (JP2 must be un-mounted for M35080V6/P OBP mode).
Install target device M35080V6 into U16 socket

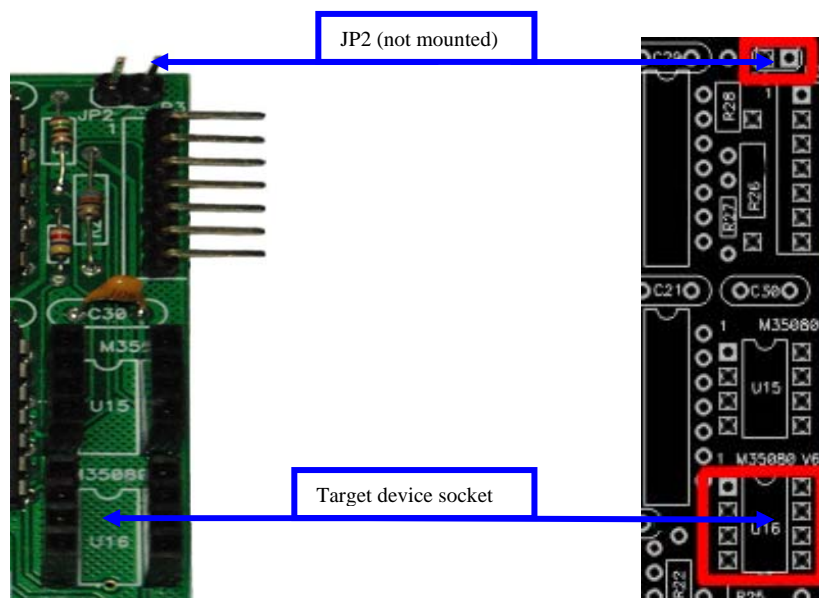


Figure 8.

Step2: Turn ON power supply switch SW1

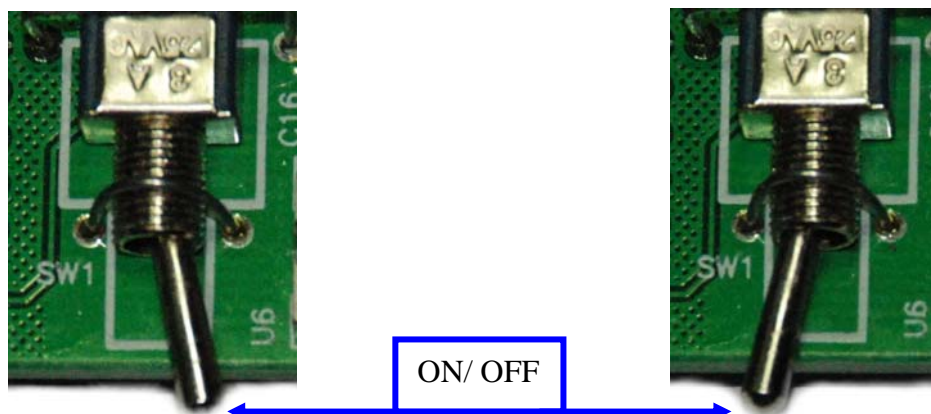


Figure 9.

Step3: You should see message “Pass Pause” i.e. “PP” on LED display.
Then start m35080V6.exe control program



Figure 10.

Step 4: Select serial port

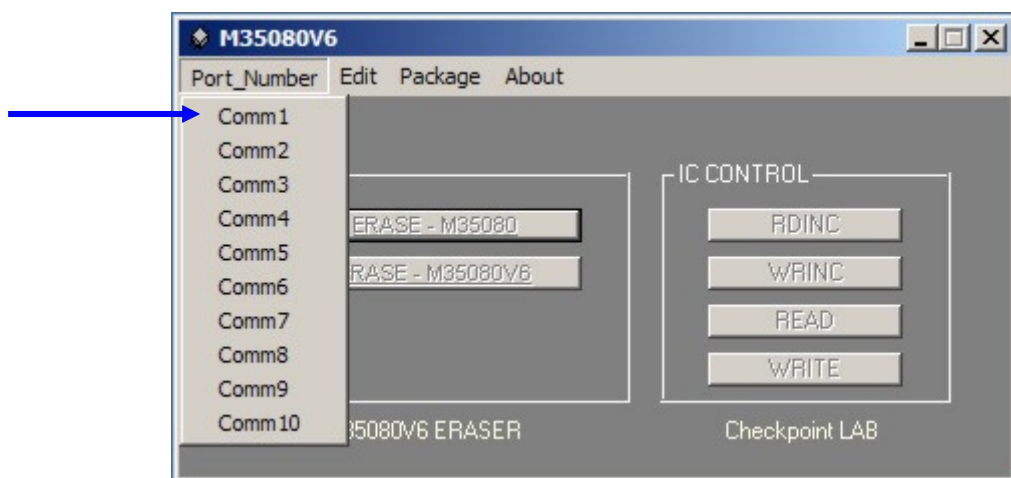


Figure 11.

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

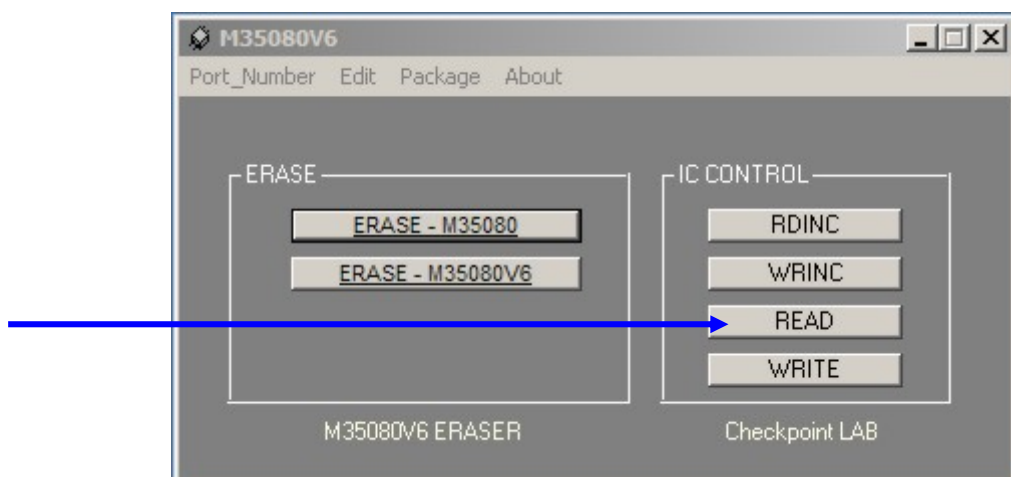


Figure 12.

1024 bytes will save to specified file. I.e. incremental registers page and EEPROM memory array.

Step6: Click ERASE-M35080V6 button

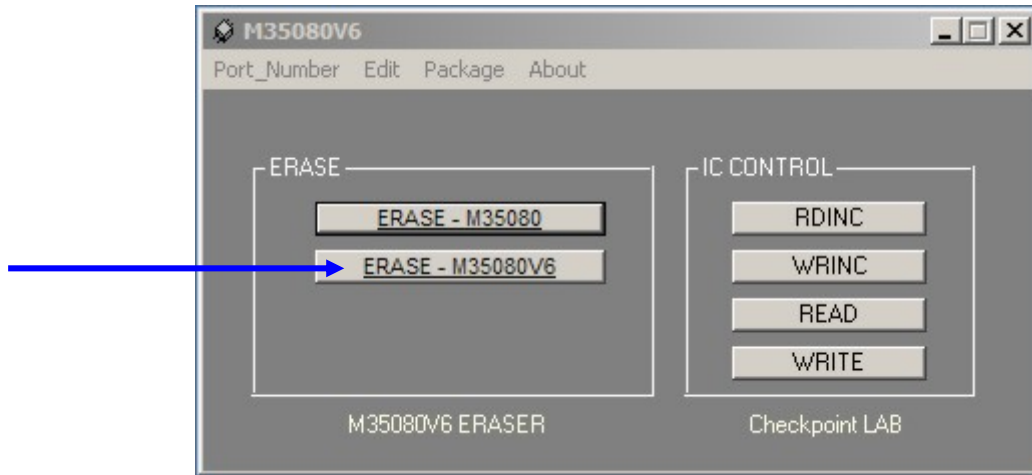


Figure 13.

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



Figure 14.

Step8: You should see “Busy” window during erase procedure

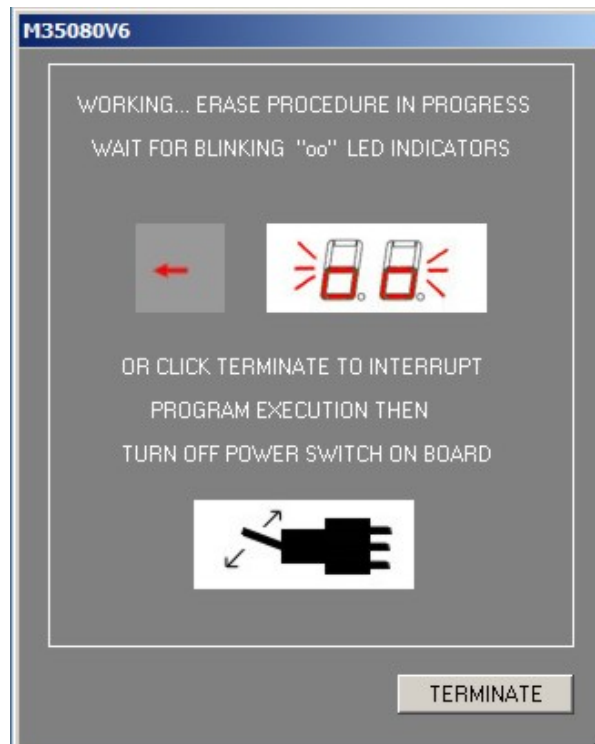


Figure 15.

Step 9: LED 2 (Figure 1) will appear to the red color for a 3-5 seconds, you'll see message on display (Figure 16) and LED indicators will flashing "oo" message simultaneously (Figure 17)

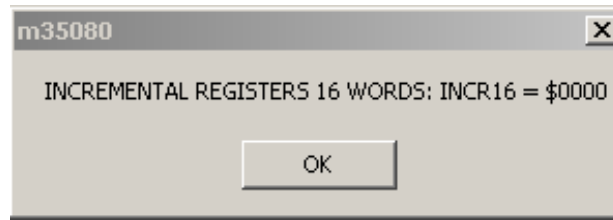


Figure 16.

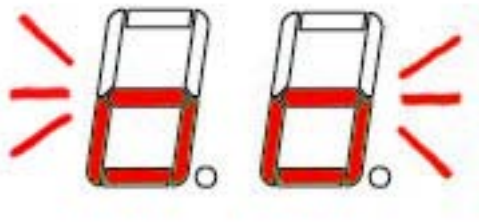


Figure 17.

Or you'll see error message on LED display "Er":

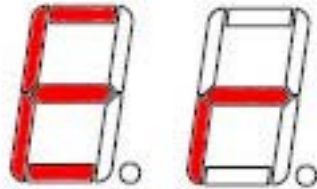


Figure 18.

And on the screen:

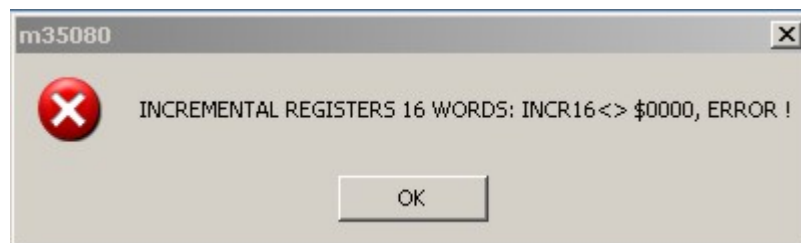


Figure 19.

Click OK button and try to repeat erase procedure. Follow from step 6 of this section.

4.8 Quick start practice. Erase incremental area of M35080 device

Step 1: Jumper JP2 must be mounted (M35080 OBP and ISP modes). Install target device M35080 into U15 socket or connect target board to ISP connector according to signals connector P3

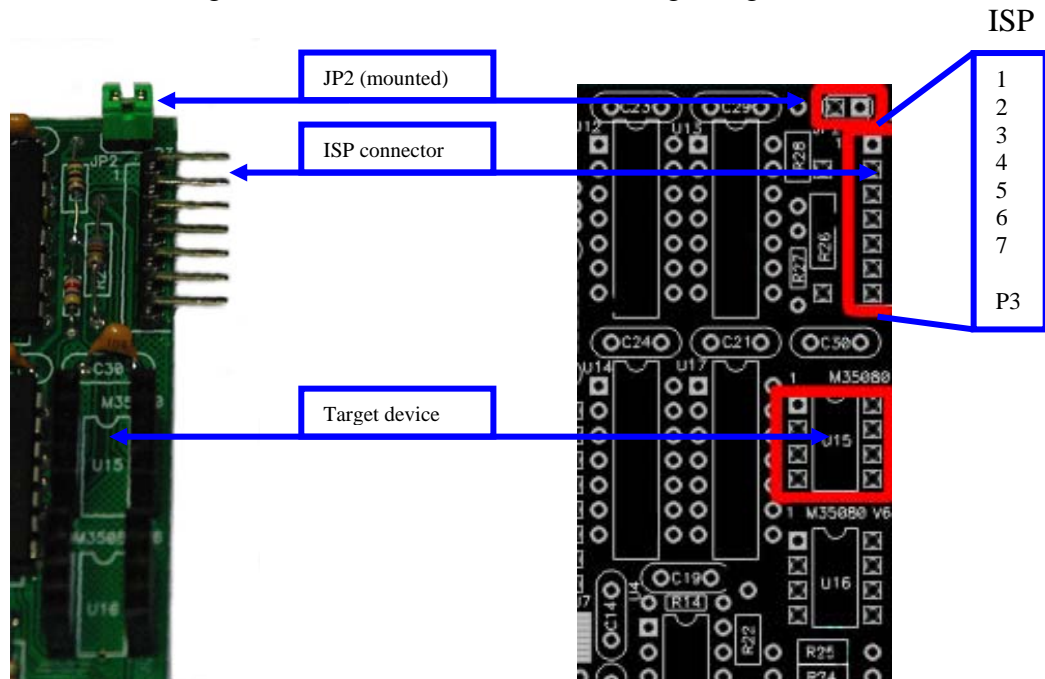


Figure 20.

ISP connector signals meaning: 1 “G” – GND ; 2 “S” – Chip Select ; 3 “W” – Write protect ; 4 “Q” – Serial data output ; 5 “CLK” – Serial clock ; 6 “D” – Serial data input ; 7 “VCC” – Power supply voltage

NOTE: Only one mode (on-board or ISP) should be used during operate at a time. Make sure that second one socket is empty! To prevent damage of the target IC(s) do not install two devices into the target sockets at the same time. Keep one target socket empty! When you using target socket make sure that ISP interface not connected and second one socket is empty.

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

You should see message “Pass Pause” i.e. “PP” on LED display (Figure 10)

Step 3: 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 (section 4.1; Figure 12)

Step 6: Click ERASE-M35080 button

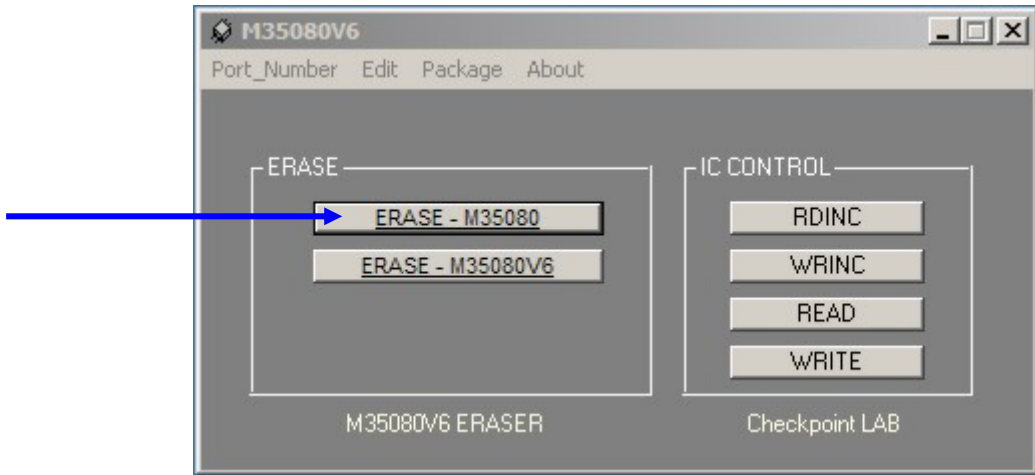


Figure 21.

In case of success you'll see message on the screen:

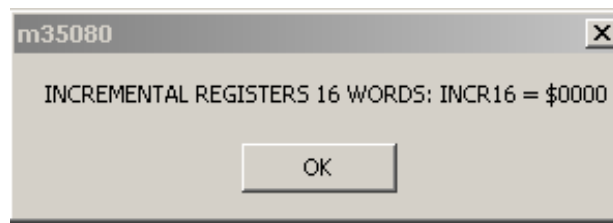


Figure 22.

An other case you'll see error message on the screen:

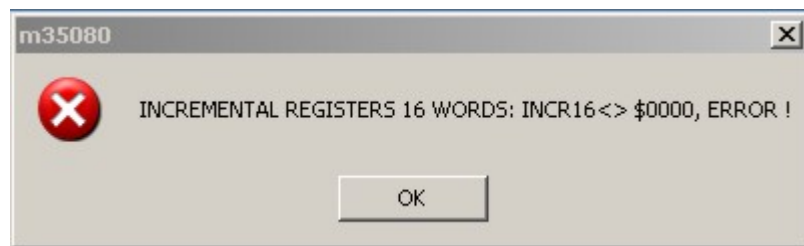


Figure 23.

To enter M35080 ISP mode users must pay attention to JP2 jumper position and corresponding programming connector. JP2 must be mounted for M35080 ISP mode. Implementation of M35080 ISP/OBP interface as shown on Figure 24 (Schematic capture of M35080 ISP/OBP interface):

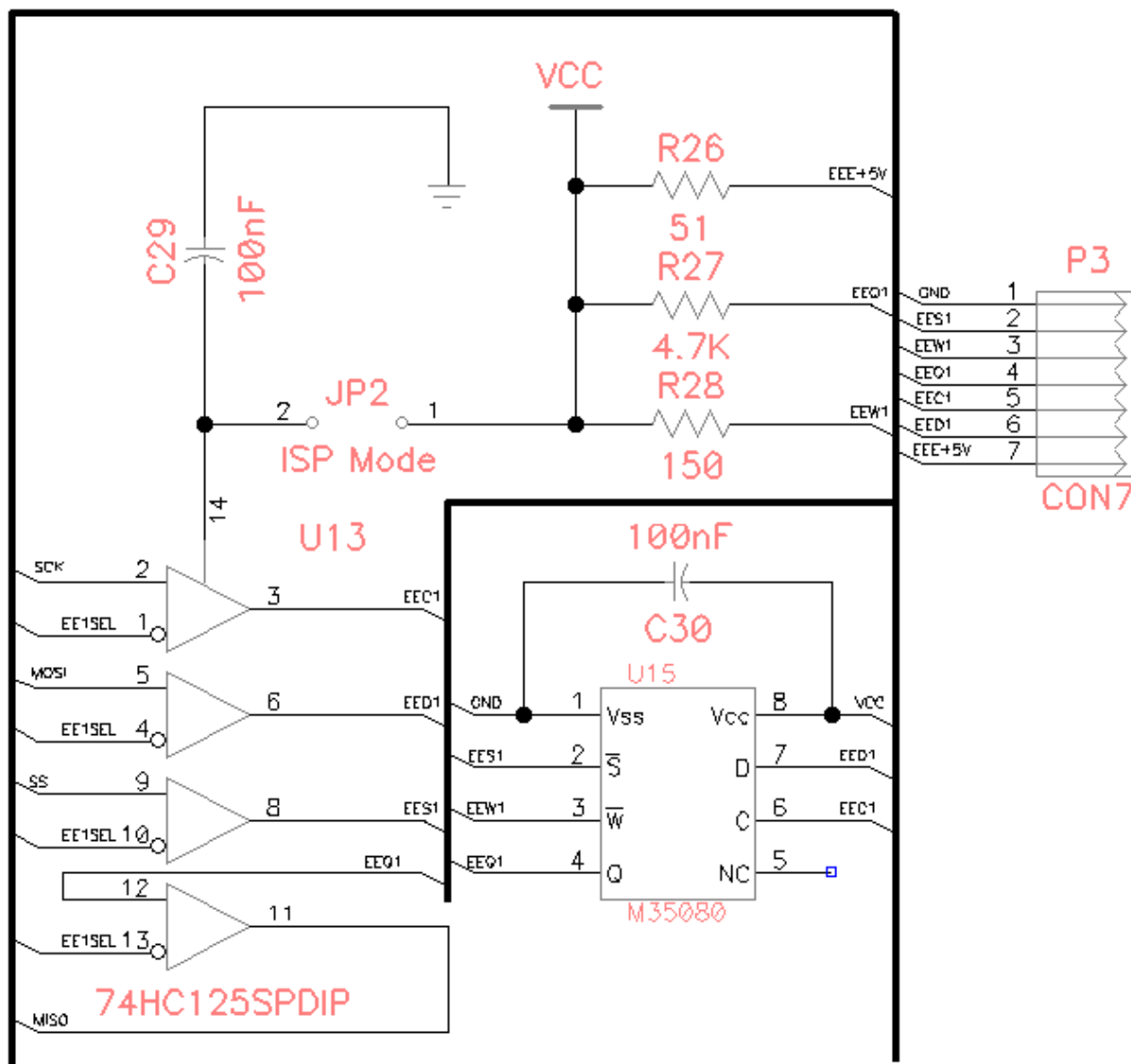


Figure 24. M35080 ISP/OBP programming interface



Figure 25. M35080 JP 2 mounted/ M35080 V6 JP2 not mounted

5. Memory editor

Click “Edit” menu item to enter dump editor mode:

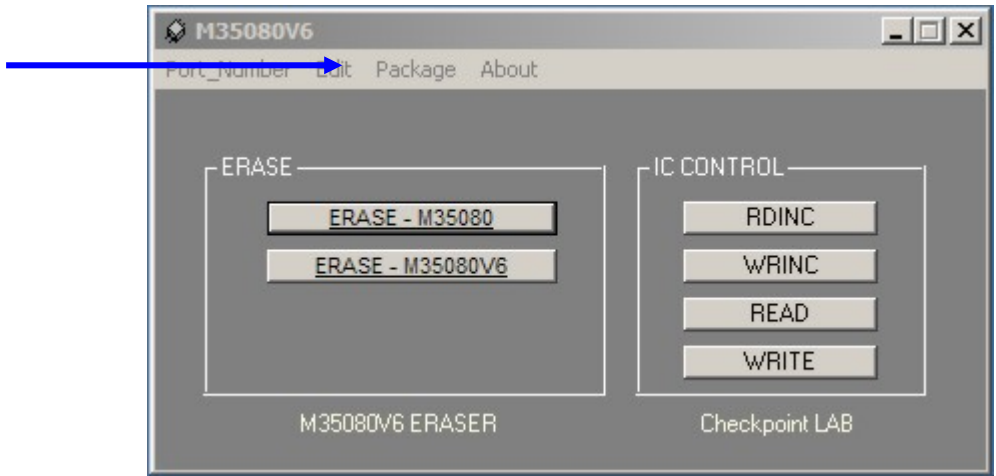


Figure 26.

Click “File” menu item to review a dump contents. Memory address space display data 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 after changes.

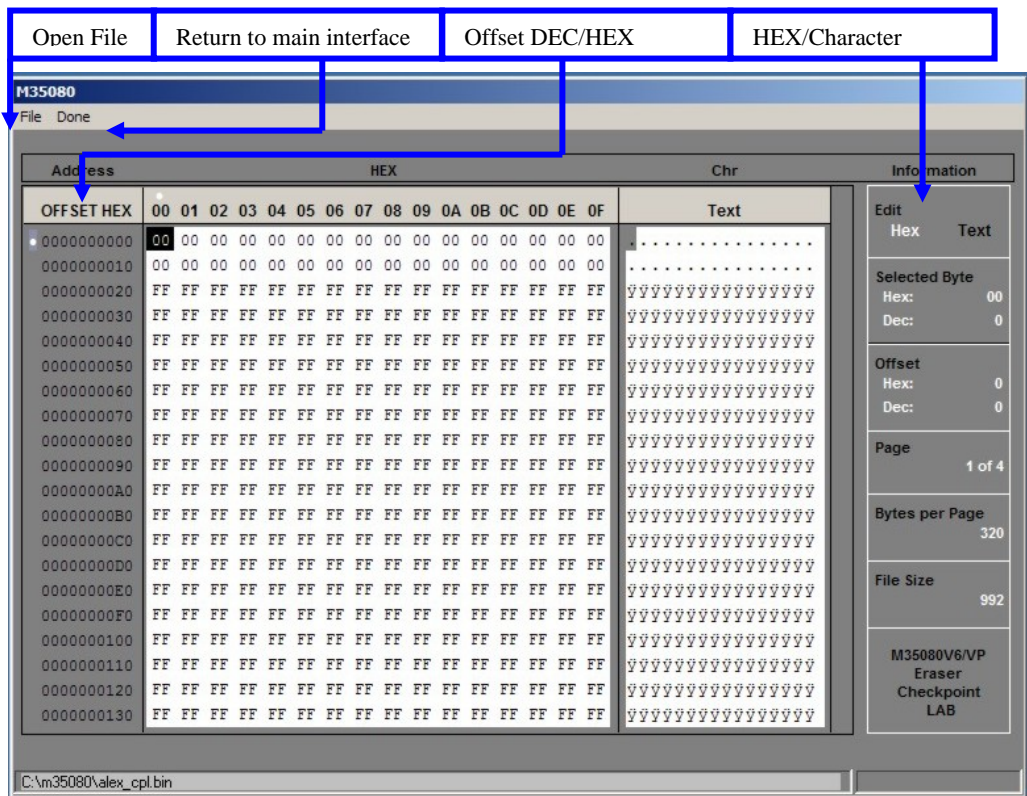


Figure 27. Memory editor window

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 28. LED's meaning table

7. Troubleshooting; Error messages

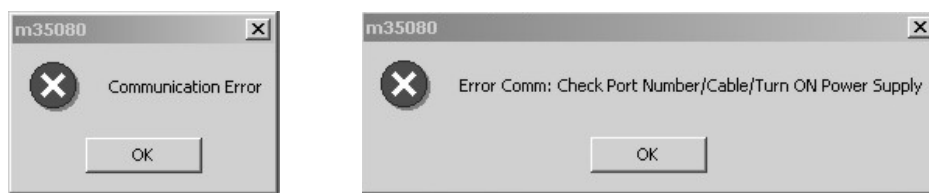


Figure 29. Critical error messages windows

- ✓ 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 supply switch SW1 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 port already open with another process, use other port”/Non critical error/
 - Solution: Turn OFF and Turn ON power supply switch SW1 and restart the M35080V6.exe
- ✓ Message “Port not available”/Non critical error/

- ✓ 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/

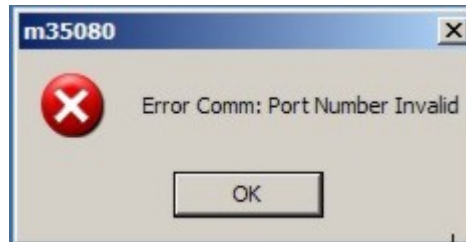


Figure 30. Error Comm

- ✓ Message “Error Comm: Port Number Invalid” /Non critical error/
- Solution: Serial port not exist, select valid port number

8. Update procedure

Step 1: Remove jumper JP1 (Figure 1). JP1 must be un-mounted for entering update mode. Make sure that LED 1 and LED 2 (Figure 1) lit continuously.

Step 2: Start update utility m35080v6_update.exe

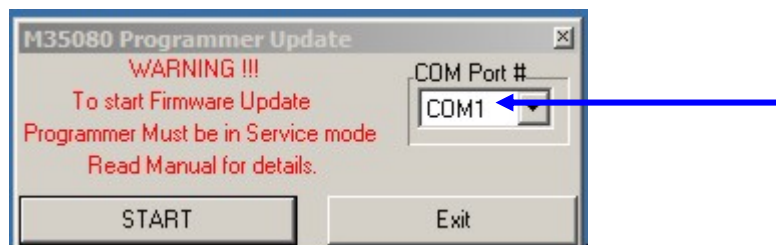


Figure 31.

- Step 3: Select serial port number (Com. 1-10)
- Step 4: Click “START” button to start update procedure
- Step 5: Turn OFF power supply switch SW1 (Figure 9)
- Step 6: Mount JP1 back (Install JP 1 to enter operate mode)
- Step 7: Turn ON power supply switch SW1 (Figure 9)
- Step 8: Start control software m35080v6.exe



Figure 32. M35080 clock rate index

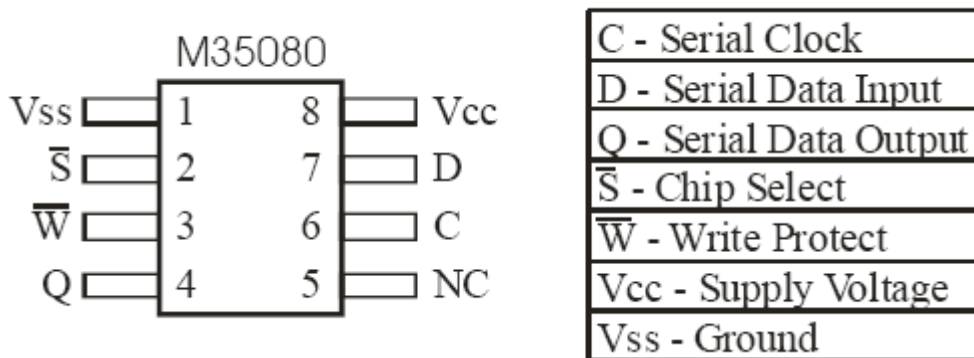


Figure 33. M35080 signal names

M35080V6 conventional signs:

1) 35080VP = ST M35080V8*

* VP(V8) index - clock rate up to 10Mhz (8Mhz)

2) 35080V6 = ST M35080V6**

**V6 index - clock rate up to 6 Mhz