

# FLASH PROGRAMMER

# **FP-8903**

# **VER 2.00**

# **USER'S MANUAL**





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# 1. INTRODUCTION

# 1.1 MANUAL CONTENTS

This manual describes the method for installing and operating the FP8903 PROGRAMMER with an IBM PC running on window environment. This manual also contains information about the PROGRAMMER usage in stand-alone mode.

# 1.2 PROGRAMMER AND ACCESSORIES

Before using this product, please carefully check that the package includes :

- \* FP8903 PROGRAMMER.
- \* 9 pin D type connector communication cable
- \* Power cord
- \* User's manual.
- \* CD-ROM.



# 2.0 FEATURES

### Supports following devices:

- a) 89C1051, 89C2051, 89C4051, 89C51, 89C51RC, 89C52, 89C55, 89C55WD, 89S8252, 89S51,89S52, 89S53,89LS51,89LS52.
- b) 90S1200, 90S1200A, 90S2313, 90S4414, 90S8515, 90S4434, 90S8535.

#### Performs following functions on each device

- a) Signature check
- b) Blank check
- c) Verify
- d) Erase
- e) Program
- f) Read
- g) Program lock bits
- h) Checksum
- i) Auto
- j) Edit

## PC interface for all above functions and following additional functions:

a) File load from PC to PROGRAMMER (DOWNLOAD)

b) File read from PROGRAMMER to PC (UPLOAD)

Menu driven PC software to select various functions run under windows environment.

Built in battery back up RAM (32768 bytes) to store the program data.

Local keyboard (20 keys membrane) & local LCD (16 x 1 LCD) for PC independent operation, thus useful for programming devices for mass production.

PC interface through any one of the serial ports COM1 to COM10.

PROGRAMMER operates with 230 V 50 Hz AC and requires very low power. No special power supply is necessary.

40-pin ZIF socket for 40 pin devices and 20-pin ZIF socket for 20 pin devices.



# 3.0 INSTALLATION

## **System Requirements:**

PC PENTIUM I or above.

Minimum 32 MB RAM

Minimum 5 MB Hard Disk Space

CD-ROM Drive

Color Monitor (EGA / CGA)

One RS-232 Compatible Serial Port

Operating system win95 and above

# **3.1 INSTALLING SOFTWARE**

To install FP8903 PROGRAMMER and software supplied, follow the steps below to copy all the files on supplied diskette to a sub directory on the hard disk.

## **STEPS DESCRIPTION**

# Open the CD-ROM form windows explorer.

- # Run the 'setup' application from package folder
- # Follow guideline provided by the installation wizard.

#After the successful installation process restart the system.



### **Contents of CD-ROM:**

MANUALThis file itself.

Package folder containing setup application file..

# 3.2 HARDWARE INSTALLATION:

The PROGRAMMER can be connected to standard serial port of IBM compatible PC or LAPTOP.

Connect the PROGRAMMER through communication cable (supplied with PROGRAMMER) to any one of the serial ports of the PC (COM1 to COM10).

Male connector must be connected to the PROGRAMMER.

Turn ON the power switch of PROGRAMMER . LCD will display the following messages in steps

- ✓ ORIOLE presents,
- ✓ ATMEL PROGRAMMER
- ✓ VER 2.00
- ✓ SELECT DEVICE



## **3.3 RUNNING SOFTWARE**

To RUN the software follow the steps given below.

- 1. Run the software start \programs\FP8903\FP8903 Or create shortcut on desktop of FP8903 and run application from it.
- 2. The following Display will display on screen

🗾 FP8903 (Oriole's Atmel Programmer)		
Load Device Edit Setup Quick Help		
Download Upload Device Edit Flash Set Com Erase	Program         Program <t< th=""><th></th></t<>	
Auto Option	Oriole's Programmer Found on Port 1	
□ Reload File □ Load EEPROM		
<ul> <li>✓ Erase</li> <li>✓ Blank Check</li> <li>✓ Program Device</li> <li>✓ Verify Device</li> <li>✓ Device</li> </ul>	Fill Unused Bytes With File Format File Format Intel Hex Binary 00 Don't Care	
Information	Auto Run	
Device       : Not Selected         Buffer Checksum       Not Selected         Pins       : Not Selected         File Name       : Not Selected	Company : Not Selected Vcc : Not Selected EEPROM Size : Not Selected Vpp : Not Selected Adapter : Not Selected FLASH Size : Not Selected SRAM Size : Not Selected	



# 4.0 OPERATING MODE

PROGRAMMER is used to program ATMEL Micro controllers having Flash program memory. The main advantage of this programmer over the others is that it can work in two modes as:

- i. PC Interface Mode
- ii. Stand Alone Mode

To use the Flash programmer FP8903 in various mode follow the instruction given in the respective section .To use FLASH PROGRAMMER FP8903 in PC interface mode refer the section 4.1 And for using the STAND ALONE mode refer the section 4.2 of this user manual



# 4.1 PC Interface Mode

### Power On:

When the software runs it shows the Splash form which contains picture of programmer and company name i.e. Oriole electronics Pvt. Ltd.. Software automatically detecting for the programmer if it not found it shows the message "Oriole's programmer not found Do you want to start in demo mode? ". If user press 'yes' key the software runes in **Demo mode** otherwise the software runes in **Normal mode**.

### Demo Mode:

PC Software not found the Programmer. Some users wants to see the software and want to use the hex editor then it will be useful. The status window shows the message "Programmer Not Found Software Force to Demo Mode "

In this mode following menu will enable

- 1. download (and its shortcut)
- 2. setup (and its shortcut)
- 3. edit (and its shortcut)
- 4. help(and its shortcut)
- 5. exit (and its shortcut)

if user try to download file in to the programmer then it will show the message "Downloading Flash File in Buffer ..... Please Wait" and file will download in the PC's buffer not in the programmers buffer and user can see its file in to editor.

#### Normal mode:

PC Soft found the Programmer the its runs in the normal mode. The status window shows the message "Oriole's Programmer Found on Port 2"

In this mode following menu will enable

- 1. Download (and its shortcut)
- 2. Upload (and its shortcut)
- 3. Device (and its shortcut)
- 4. Setup (and its shortcut)
- 5. Edit (and its shortcut)
- 6. Help (and its shortcut)
- 7. Exit (and its shortcut)

#### If device not selected :

If device has not selected and user presses the download button then also it will ask for the open file to download. After selection of hex or bin file, it shows the message "Downloading file" and then "File Can't Transfer to Programmer's Buffer Please Select the Device". User can see he file in editor only cant go in to quick menu or its shortcut.



In the PC Interface mode, the serial ports COM1 to COM10 can be used. The user can select the COM ports from the Setup menu. The user can download the file to the programmer or upload the file from the programmer to the PC. Menu driven software is provided to select various functions run under Windows environment.

The Front Window of the FP8903 software consists of the following subparts/windows/frames with a brief description of them as listed below: -

- **TOOL BAR**:It depicts the program parameters with their<br/>respective identical icons. Execution of the program<br/>parameter is enabled by a single click only.
- **STATUS WINDOW**: The outcome (successful/unsuccessful) after the Execution of the selected program parameter is reflected in the Status Window.

AUTO OPTION FRAME: The enlisted program parameters are selected as per the user requirement and are thereby executed sequentially.

**DEVICE INFO FRAME**: It gives a detailed description of the device selected along with essential specifications regarding the selected device.



Auto Programming frame			
1	Status Windo	W	
		Ţoolbar	
FP8903 (Oriole's Atmel Programmer) Load Device Edit Setup Orick Help			
Opwinload         Upload         Opwinload         Edit Flash         Set Com         Erase	Blank Program Verlfy Lock	Auto Signature Stest	
Auto Option	Oriole's Programmer Found on 1	Port 1	
Reload File			
Erase	- Fill Unused Bytes With		
🔽 Blank Check		File Format © Intel Hex	
✓ Program Device	• FF	C Binary	
Verify Device	000		
Device LockBits	O Don't Lare	OT UN	
		Auto Hun	
Information			
Device : Not Selected	Company : Not Selected	Vcc : Not Selected	
Pins : Not Selected	Adapter : Not Selected	FLASH Size : Not Selected	
File Name : Not Selected		SRAM Size : Not Selected	
		)	
4			
/			
Device Info Frame			



## **DESCRIPTION OF MENU COMMAND**

# <u>LOAD</u>

UPLOAD	:Transfers the selected Hex/Binary file from FP-8903 to PC

DOWNLOAD :Transfers the selected Hex/Binary file from PC to FP-8903

**DEVICE** :To choose the required ATMEL 89/90 series micro Controller

## <u>EDIT</u>

FLASH	:Edits the selected FLASH program file
EEPROM	:Edits the selected EEPROM program file
<u>SETUP</u>	:Builds communication setup for COM port for FP-8903 with the PC

# <u>QUICK</u>

ERASE	:Erase the Flash / EEPROM is blank.
BLANK	:Checks whether the Flash / EEPROM is blank.
PROGRAM	Copies the selected program file contents in the Flash/EEPROM To the Chip from the FP8903's buffer.
VERIFY	:Verifies the contents of the chip with FP8903's buffer.
SIGNATURE	:Checks signature bytes of the chip.
STEST	:Read the checksum of the program within the chip.
LOCKBITS	:Programs all the lock bits of the chip.
AUTORUN	:Selected program parameters in the Auto Option Frame



are executed sequentially.

### PROCESS TO USE FP8903 IN PC INTERFACING MODE

Use following menu command during operating the FP8903 in PC interfacing mode .

### SETUP

This command is used to establish communication system and FP8903 unit. There are 2 port selection options available as:

- 1) AUTODETECT
- 2) FORCE

🖏 Por	t Setting	×
	Port Selection Auto Detect Force	OK Close

**AUTODETECT** :-If this option is selected then the software automatically selects the serial communication port on which FP8903 is connected.

**FORCE**:-If this option is selected then the serial communication port mentioned in the Combo Box is detected for FP8903 connection.



# DEVICE SELECTION

FP8903 can program various Atmel devices of 89 Series and 90 Series. The required device can be selected from one of the various available devices as listed in Window as shown

Select MicroController	×
Atmel's Controllers	
89 Series 90 Series	
01       AT89C1051         02       AT89C2051         03       AT89C4051         04       AT89C51         05       AT89C51RC         06       AT89C52         07       AT89C55WD         08       AT89C55WD         09       AT89LS51         10       AT89S52         11       AT89S51         12       AT89S52	
Device Not Selected OK Cancel	



# Following Micro controllers can program in FP8903

## **Device List**

Following micro controllers can be program in FP8903

# **89 Series Micro controllers**

AT 89C1051 AT 89C2051 AT 89C4051 AT 89C51 AT 89C51RC AT 89C52 AT 89C55 AT 89C55 AT 89C55WD AT 89LS51 AT 89LS52 AT 89S51 AT89S52 AT89S53 AT89S53 AT89S8252

# 90 AVR Series

AT 90 S1200 AT 90 S1200A AT90 S2313 AT 90S 4414 AT 90 S8515 AT 90 S4434 AT 90 S8535



# SIGNATURE CHECK

This command reads the signature bytes of the selected device and displays it on the status window

🧾 FP8903 (Orio	ole's Atmel Programmer)				_ & ×
Load Device E Download Uploa	dit Setup Quick Help Device Edit Flash Set Com Erase	Blank Program Verify Lock	Auto Signature Litest Exit		
	Auto Option	Signature Read OK Signature Bytes 1E9301			
	<ul> <li>✓ Erase</li> <li>✓ Blank Check</li> <li>✓ Program Device</li> <li>✓ Verify Device</li> <li>✓ Device LockBits</li> </ul>	Fill Unused Bytes With	File Format © Intel Hex © Binary Auto Run		
	Information Device : AT90S8515 Buffer Checksum : Not Selected Pins : 40 File Name : Not Selected	Company : Atmel EEPROM Size : Not Required Adapter : 512 byte	Vcc : 5V(DC) Vpp : 12V(DC) FLASH Size : 8K Bytes SRAM Size : 512 Bytes		
Start 🗹	🖏 🏧 ╆ 🏈 🔯 🕕 🖽 orcad c	ap   🦳 manual   團] FP8903 PR   실	]pic3 - Paint T <b>FP8903 (0</b> 7.3Por	t Setting	3:41 PM





If the chip is faulty then the Status Window displays the following error message.

Load Device E	idit Setup Quick Help		au 🔪 💽 🔍	
Download Uplea	Auto Option  Reload File  Load EEPROM	Blank Program Verify Lock	Auto Signature Stest Exit	
	<ul> <li>✓ Erase</li> <li>✓ Blank Check</li> <li>✓ Program Device</li> <li>✓ Verify Device</li> <li>✓ Device LockBits</li> </ul>	Fill Unused Bytes With © FF © 00 © Don't Care	File Format © Intel Hex © Binary Auto Run	
	Device : AT89C51RC Buffer Checksum : Not Selected Pins : 40 File Name : Not Selected	Company : Atmel EEPROM Size : Not Required Adapter : O bytes	Vcc : 5 V (DC) Vpp : 12 V (DC) FLASH Size : 32 K Bytes SRAM Size : 512 Bytes	
Start 2	🛱 🗃 🍬 🏈 🔟 🗍 🔣 Orcad c	🕞 manual 🛛 🖻 FP8903 🛛 🏠 pic4 - F	aint <b>FP8903</b> Z <sub>3</sub> Port Sett	🌠 💞 🏥 🍥 🏷 🖂 3:44 PM



### DOWNLOAD MENU

Download Menu Allows the user to transfer the required program file from PC to FP8903.

Required program file can be in program formats as :

1.Intel Hex

2.Bin

Open			? ×
Look in: 🕞	(C:)	🗾 🗈 💆	<b>*</b> 🔳
📄 _istmp0.dir		🚞 Acrobat3	
istmp1.dir		🚞 Adobeapp	
istmp2.dir		🚞 all11	
istmp3.dir		🧰 amod	
2188modb 🔁	ak	🚞 Anant	
accountsb	k	🛄 Atmel	
•			F
File <u>n</u> ame:			<u>O</u> pen
Files of type:	Hex Files (*.Hex)	•	Cancel
	🔽 Open as read-only		//

If the file format is selected on **Intel Hex** option, the software check for the intel hex standard format. If it is not there then it will give the error message in status window.

If the file format is selected on **Binary** option, the software downloads any file by converting in to binary.

And the empty space is filled with FF or 00 or don't care, whatever it selected in Fill unused byte with frame.

Once the required file selected, it gets downloaded t in the programmers buffer with internal baud rate of 19200. A confirmation message is displayed in the Status Window as





Once the required file selected, it gets downloaded. A confirmation message is displayed in the Status Window as

FP8903 (Oriole's Atmel Programmer)	_ 5 ×
Bevice Edit Setup Quick Help	
Download Jeload Device Edit Flash Set Com Erase Blank Program Verify Lock Auto Signatur	e Stest Exit
Flash File Downloaded in Buffer	
Beload File	
d Load EEPROM	
Erase	
Fill Unused Bytes With	mat
F Program Davies	Intel Hex
	Binary
Verify Device	
Device LockBits     On't Care	θ <sup>μ</sup> το
	Auto Run
⊂ Information	
Device : AT89C5TRC Company : Atmel Vcc	: 5 V (DC)
Pine 40 Adapter : 0 butes ELASH Size	- 32 K Butes
SRAM Size	512 Rutes
File Name : C:\128X64.HEX	
📴 🔂 🖬 💭 🖼 🌾 🍪 🛄 🔰 📓 OrCAD C 🔄 manual 🔤 FP8903 🦉 pic5 - Paint 🔃 FP890	3 🔀 Port Sett 🛛 🛛 🖓 🕮 🔮 🏹 🖾 3:50 PM

If the device is having the EEPROM along with FLASH,command will ask you for EEPROM file and FLASH file separately ,Follow the same procedure to select the file from its location.





### ERASE DEVICE

The entire flash array is erased electrically by using proper combination of control signal. The code array is written with all "1"s. The chip erase operation must be executed before the code memory can be re-programmed.

It erases the contents of FLASH/EEPROM. After the Erase operation is executed successfully then the Status Window displays the following confirmation message as;

🧾 FP8903 (Oric	ole's Atmel Programmer)			<u>_8×</u>
Load Device E	Edit Setup Quick Help			
Download Uploa	ad Device Edit Flash Set Co	ank Program Verify Lock Auto Sign	ature Stest Exit	
	Auto Option	Erase OK		
	Load EEPROM			
	Erase	- Fill Unused Bytes With		
	🔽 Blank Check	File I	Format	
	✓ Program Device	○ FF	C Binary	
	Verify Device	O 00		
	Device LockBits	🔿 Don't Care	Auto Run	
	Information			
	Device : AT89C51RC	Company : <mark>Atmel</mark> Vcc	: 5 V (DC)	
	Buffer Checksum : 7D8D29	EEPROM Size : Not Required Vpp	: 12 V (DC)	
	Pins : 40	Adapter : 0 bytes FLASH Siz	e : 32 K Bytes	
	File Name : C:\128X64.HEX	SHAM Siz	e : 512 Bytes	
	<u> </u>			
😹 Start 🛛 🗹	) 🗊 🔤 ╆ 🏉 🛄 👘 🗍 🔣 orcad c	. 🔄 manual 🛛 🕅 FP8903 🛛 🍟 pic6 - Paint 🕅 🗾 FP8	8903 🖓 Port Sett	🏹 😽 🕮 🍥 🔭 🖂 🛛 3:51 PM



If the Erase operation is not performed successfully then the Status Window displays the following error message,

👖 FP8903 (Oriole's Atme	el Programmer)			
Load Device Edit Setup	> Quick Help	/ 3 🖋 🕾 3	🥦 🛃 🕵 👢	
Auto O	pption	e Blank Program Verify Lock Frase Not Ok	Auto Signature Stest Exit	
	Reload File Load EEPROM			
의 고 고 고 고	Erase Blank Check Program Device Verify Device Device LockBits	Fill Unused Bytes With	File Format © Intel Hex © Binary	
∼ Informa Devia Buffe Pins File N	ation ce : AT9088535 or Checksum : 7D8D29 : 40 Name : C:\128X64.HE	Company : Atmel EEPROM Size : Required Adapter : 512 byte	Auto Run       Vcc     : 5 V (DC)       Vpp     : 12 V (DC)       FLASH Size     : 8 K Bytes       SRAM Size     : 512 Bytes	
jftstart	🍲 🌮 🔯 🗍 🔀 OFCAI	) C∫ manual FP8903 P [ ∰]fP890	- Paint <b>FP8903 (</b> 2, Port Setting	🔀 💱 🏨 🛞 🏷 3:57 PM



# **BLANK CHECK DEVICE**

It checks whether the contents of FLASH/EEPROM are blank (FF in Hex). After the blank check operation is executed successfully the Status Window display the following confirmation message

FP8903 (Oriole's Atmel Programmer) Load Device Edit Setup Quick Help			
Download Upload Device Edt Flash Set Com	Eras Blank Program Verify Lock	Signature Stest Exit	
Auto Option Reload File Load EEPROM	Device Blank Check OK		
<ul> <li>✓ Erase</li> <li>✓ Blank Check</li> <li>✓ Program Device</li> <li>✓ Verify Device</li> <li>✓ Device LockBits</li> </ul>	Fill Unused Bytes With FF 0 00 C Don't Care	File Format © Intel Hex © Binary Auto Run	
Information Device : AT89C51 Buffer Checksum: 7D8D29 Pins : 40 File Name : C:\128X6	RC Company : Atmel EEPROM Size : Not Required Adapter : O bytes	Vcc : 5 V (DC) Vpp : 12 V (DC) FLASH Size : 32 K Bytes SRAM Size : 512 Bytes	
)我Start 🛛 😭 📾 🎓 🏈 🛄 🔡	rCAD C   🔄 manual 🛛 🗐 FP8903 P   逊pic8 -	Paint DiFP8903 ( RyPort Setting	🔚 🖗 🎒 🖏 3:59 PM



If the blank check operation is not successfully executed then Status Window will display following error message.

FP8903 (Driole's Atmel Programm Load Device Edit Setup Ouick Held	ner)	_ & ×
Download Upload Device Edit Flash	th Set Com Erase Blank Program Verify Lock Auto Signature Stest Exit	
Auto Option	e Device Blank Fail	
☐ Load EEPR ☐ Erase ☐ Blank Chec ☐ Program De ☐ Verify Devic ☐ Device Loc	ROM Fill Unused Bytes With Pevice File Format C Intel Hex Binary Don't Care	
Information Device Buffer Checksum Pins File Name	: AT9058535 Company : Atmel Vcc : 5 V (DC) n: 7D8D29 EEPROM Size : Required Vpp : 12 V (DC) : 40 Adapter : 512 byte FLASH Size : 8 K Bytes : C:\128X64.HEX SRAM Size : 512 Bytes	
j∰Start 🛛 🖨 😂 🍱	🗑 DrCAD C Cmmanual 👼 FP8903 P Mpic9 - Paint FP8903 ( 🖓 Port Setting 💽 🚱 🛾	學 🖗 🏷 4:00 PM



### **PROGRAM DEVICE**

It loads the selected program file into the chip from the programmer's buffer. Also verification of single data byte is performed by this command. After the successful execution of this command the Status Window displays the following confirmation message.

FP8903 (Ori	iole's Atmel Programmer) Edit Setup Quick Help				_ <del>-</del> ×
Download Uplo	ad Device Edit Flash Set Com Eras	Blank Program Perify Lock A	uto Signature Stest Exit		
	Auto Option Reload File Load EEPROM	Device Programmed OK			
ſ	iv Elase IV Blank Check IV Program Device IV Verify Device IV Device LockBits	Fill Unused Bytes With © FF © 00 © Don't Care	File Format © Intel Hex © Binary Auto Run		
	Information Device : AT89C51RC Buffer Checksum : 7D8D29 Pins : 40 File Name : C:\128X64.HE	Company : Atmel M EEPROM Size : Not Required M Adapter : O bytes I	/cc : 5 V (DC) /pp : 12 V (DC) FLASH Size : 32 K Bytes SRAM Size : 512 Bytes		
Astart 3	1 🗊 🕮 🌾 🏉 🛄 🗍 💽 OFCAT	C ) 🦳 manual 🔰 👼 FP8903 P ) 🖓 pic10 -	P Presos ( 2., Port Setting	<u>र</u> @ <b>8 9</b>	4:03 PM



If the command is not executed successfully then the Status Window displays following error message

FP8903 (Oriole's a     Load Device Edit	Atmel Programmer) Sehn - Cuick Heln	_ <u>8 ×</u>		
Image: Program Device       Edit       Setup       Quick       Help         Download       Upload       Device       Edit       Flash       Set Com       Erase       Blank       Program       Werify       Lock       Junto       Signature       Steat       Exit         Auto Option       Image: Program       Program       Werify       Lock       Junto       Signature       Steat       Exit         Image: Program Device       Image: Pr				
Inf I I I I I I I I I I I I I I I I I I	Ormation         Device       : AT89C51RC       Company       : Atmel       Vcc       : 5 V (DC)         Buffer Checksum       : 7D8D29       EEPROM Size       : Not Required       Vpp       : 12 V (DC)         Pins       : 40       Adapter       : 0 bytes       FLASH Size       : 32 K Bytes         File Name       : C:\128X64.HEX       SRAM Size       : 512 Bytes         Image: State Sta	1:04 PM		



### **VERIFY DEVICE**

The command reads the contents, which is loaded in the chip and compares it with the contents in buffer of the programmer. Thus it performs an overall verification check of the program file loaded in the chip.

After the successful execution of the command, the Status Window displays the following confirmation message.

FP8903 (Oriole's Atmel Programmer)			
Download Upload Device Edit Flash Set Com Eras	Blank Prog n Verify Lock Auto	Signature	
Auto Option Reload File Load EEPROM	Device Verify OK		
<ul> <li>✓ Erase</li> <li>✓ Blank Check</li> <li>✓ Program Device</li> <li>✓ Verify Device</li> <li>✓ Device LockBits</li> </ul>	Fill Unused Bytes With	File Format © Intel Hex © Binary	
Information Device : AT89C51RC Buffer Checksum : 7D8D29 Pins : 40 File Name : C:\128X64.HE	Company : Atmel Vcc EEPROM Size : Not Required Vpp Adapter : O bytes FLAS X	: 5 V (DC) : 12 V (DC) H Size : 32 K Bytes H Size : 512 Bytes	
😹 Start 🛛 🗹 😂 🔤 🍲 🍘 💹 🗍 🔛 OFCA	· C ] (국제anual ] 题 FP8903 P ] 姬)pic12 - P	FP8903 ( 2.)Port Setting	💽 👯 🏨 🍥 🏷 4:05 PM



If the command is not executed successfully then the Status Window displays the following error message as

E FP8903 (Orio Load Device E	ole <b>'s Atmel Programmer)</b> Edit Setup Quick Help			_ 8 ×
Download Uploa	ad Device Edit Flash Set Com	Se Blank Program Verify Lock	Auto Signature Stest Exit	
	Auto Option	Device Verify Fail		
8	<ul> <li>✓ Erase</li> <li>✓ Blank Check</li> <li>✓ Program Device</li> <li>✓ Verify Device</li> <li>✓ Device LockBits</li> </ul>	Fill Unused Bytes With FF 0 00 C Don't Care	File Format C Intel Hex C Binary Auto Run	
	Information Device : AT9058535 Buffer Checksum : 7D8D29 Pins : 40 File Name : C:\128X64.H	Company : Atmel EEPROM Size : Required Adapter : 512 byte EX	Vcc : 5 V (DC) Vpp : 12 V (DC) FLASH Size : 8 K Bytes SRAM Size : 512 Bytes	
Astart 2	) 🖏 🎟 🌾 🏉 🔡 🗍 🖪 ord	.D C   😋 manual   國] FP8903 P   劉 pic1	3 - P FP8903 ( 2, Port Setting	🌠 💱 🏨 🍥 🏷 4:06 PM



### UPLOAD MENU

Allows the user to transfer the required program file from FP8903 to PC. Required program file can be in program formats as:

- 1. Intel Hex
- 2. Bin

E FP890	8903 (Oriole's Atmel Programmer) Device tak Setup Quick Help	
Downloa.	Luplad Luplad Lupla Luck Flash Set Com Erase Blank Program Verify Lock Auto Signature St	est Exit
	Auto Option Device Read OK	
	☐ Reload File	
5	Load EEPROM	
*	I Erase	
	Fill Unused Bytes With File Format	
	I Program Device I FF C Binary	ex
	✓ Verify Device C 00	
	✓ Device LockBits // // // // // // // // // // // // //	TO Bun
	Information	
	Device : AT89C51RC Company : Atmel Vcc : 5V	(DC)
	Buffer Checksum : 708029 EEPROM Size : Not Required Vpp : 121 Adapter : 0 holes ELACU Size : 220	V (DC)
	File Name C:\128X64 HEX SRAM Size : 512	Bytes Bytes
-		
Start	tart    🖸 💱 🕮 🐐 🍘 📓    🖺 OrCAD C   🔄 manual    🖉 FP8903 P  🏠 pic14 - P    🗾 FP8903 (	🚬 Port Setting 🛛 🔽 👯 🎒 🐯 4:08 PM



## STEST DEVICE

The command reads the chip's checksum and displays it on the Status Windows and information frame.

FP8903 (Oriole's Atmel Programmer)			B×
Download Upload Device Edit Flash Set Com Erase	Blank Program Verify Lock Auto	Signature Stest	
Auto Option	Checksum Read OK Checksum 7D8D29		
<ul> <li>✓ Erase</li> <li>✓ Blank Check</li> <li>✓ Program Device</li> <li>✓ Verily Device</li> <li>✓ Device LockBits</li> </ul>	Fill Unused Bytes With FF 00 C Don't Care	File Format	
Information Device : AT89C51RC Buffer Checksum : 7D8D29 Pins : 40 File Name : C:\128X64.HEX	Company : Atmel Vcc EEPROM Size : Not Required Vpp Adapter : O bytes FLA SR/	: 5 V (DC) : 12 V (DC) :SH Size : 32 K Bytes AM Size : 512 Bytes	
😹 Start 🛛 🗹 🗊 🗃 🍲 🏈 🔯 🔰 🖳 OrCAD C.	. 🕞 manual 🛛 🗐 FP8903 P 🖓 pic15 - P	FP8903 ( 2., Port Setting	🌉 😽 🏥 🍥 🏷 🛛 4:10 PM



# AUTO RUN OPERATION

This command enables sequential execution of the programming parameters as selected by the user in the AUTO OPTION window. After successful execution of the individual selected program parameters the Status Window displays the respective confirmation message as;

FP8903 (Oriole's Atmel Programmer)			_ 8 ×
Device Loit Security Quick Teep Download Upload Device Edit Flash Set Com Erase	Blank Program Verify Lock	Auto	
Auto Option Reload File Load EEPROM F Erase Blank Check Program Device Verify Device Verify Device	Device Locked OK Auto Successful Fill Unused Bytes With © FF © 00 © Don't Care	File Format © Intel Hex © Binary Binary	
Information Device : AT89C51RC Buffer Checksum : 7D8D29 Pins : 40 File Name : C:\128X64.HEX	Company : Atmel EEPROM Size : Not Required Adapter : O bytes	Auto Run       Vcc     : 5 V (DC)       Vpp     : 12 V (DC)       FLASH Size     : 32 K Bytes       SRAM Size     : 512 Bytes	
<b>≇start</b> ]	Capture   Gamanual ( 편) FP 8903	PROGR 🕅 pic16 - Paint	 4:11 PM



If any one of the selected program parameter is not executed successfully then the Status Window displays the respective error message as;

FP8903 (Or Load Device	<mark>riole's Atmel Programmer)</mark> Edit Setup Quick Help		<u>_8×</u>
Download Up	load Device Edit Flash Set Com	e Blank Program Verify Lock Auto Signature Stest Exit	
	Auto Option Reload File Load EEPROM V Erase	Device Verify Fail Auto Unsuccessful	
ſ	<ul> <li>✓ Blank Check</li> <li>✓ Program Device</li> <li>✓ Verify Device</li> <li>✓ Device LockBits</li> </ul>	Fill Unused Bytes With File Format File Format C Don't Care Auto Run	
	Information Device : AT89C51RC Buffer Checksum : 7D8D29 Pins : 40 File Name : C:\128X64.HE	Company : Atmel Vcc : 5V(DC) EEPROM Size : Not Required Vpp : 12V(DC) Adapter : 0 bytes FLASH Size : 32 K Bytes SRAM Size : 512 Bytes	
Start 5	🗹 🖏 📾 🐐 🏉 🛄 🗍 🔣 orCAD	D Capture   ːːː ːːː ːːː ːːːːːːːːːːːːːːːːːːːː	4:12 PM



## **EEPROM OPERATION**

The selected EEPROM file to be uploaded/downloaded can be:

- Modified
- o Saved
- o **Printed**
- o Viewed as per requirement
- o Translated

If the "Load EEPROM " command in the AUTO OPTION window is checked, then the selected EEPROM file is loaded in the HEX EDITOR.

🏭 SynEdi	t Binary	/HEX E	Editor [(	C:\Prog	ram Fil	es\Com	mon Fi	es\SY	STEM\Mapi\1033\95\Dumpster.dll]	_ 8 ×
<u>F</u> ile <u>E</u> dit	<u>V</u> iew _	<u>H</u> elp								
🗅 😅 🖕	6	B 3	κ 🛍	ŝ						
0x0000:	4D5A	9000	0300	0000	0400	0000	FFFF	0000	MZDÿÿ	▲
0x0010:	B800	0000	0000	0000	4000	0000	0000	0000	<u>,</u>	
0x0020:	0000	0000	0000	0000	0000	0000	0000	0000		
0x0030:	0000	0000	0000	0000	0000	0000	B800	0000	•••••	
0x0040:	OE1F	BAOE	00B4	09CD	21B8	014C	CD21	5468	°´.Í! <u>.</u> .LÍ!Th	
0x0050:	6973	2070	726F	6772	616D	2063	616E	6E6F	is program canno	
0x0060:	7420	62.65	2072	756E	2069	6E20	444F	5320	t be run in DOS	
0x0070:	6D6F	6465	2 EOD	ODOA	2400	0000	0000	0000	mode\$	
0x0080:	450D	89DE	016C	E78D	016C	E78D	016C	E78D	E.‰Þ.lçO.lçO.lçO	
0x0090:	F173	E38D	006C	E78D	016C	E78D	5C6C	E78D	ñsã⊡.lç⊡.lç⊡\lç⊡	
OX00A0:	F173	EC8D	066C	E78D	52.69	63.68	016C	E78D	ñsì⊡.lçORich.lçO	
OXOOBO:	0000	0000	0000	0000	5045	0000	4001	0400	PEL	
OXOOCO:	A548	A636	0000	0000	0000	0000	E000	0E21	¥H¦6à!	
OXOODO:	0801	0600	0040	0000	0030	0000	0000	0000		
OXOOEO:	7041	0000	0010	0000	0050	0000	0000	D23A	pAPÒ:	
OxOOFO:	0010	0000	0010	0000	0400	0000	0000	0000	•••••	
0x0100:	0400	0000	0000	0000	0080	0000	0010	0000	€	
0x0110:	0486	0000	0200	0000	0000	1000	0010	0000	.†	
0x0120:	0000	1000	0010	0000	0000	0000	1000	0000	•••••	
0x0130:	0048	0000	4E00	0000	4442	0000	A000	0000	.HNDB	
0x0140:	0060	0000	A804	0000	0000	0000	0000	0000	• • • • • • • • • • • • • • • • • • • •	
0x0150:	0000	0000	0000	0000	0070	0000	8402	0000	pp	
0x0160:	2011	0000	1000	0000	0000	0000	0000	0000	•••••	
0x0170:	0000	0000	0000	0000	0000	0000	0000	0000	•••••	
0x0180:	0000	0000	0000	0000	0000	0000	0000	0000	•••••	
0x0190:	0010	0000	2001	0000	0000	0000	0000	0000	•••••	
0x01A0:	0000	0000	0000	0000	0000	0000	0000	0000		
0x01B0:	2E74	6578	7400	0000	4E38	0000	0010	0000	.textN8	<b>.</b>
Post 0	0040	0000	0010	0000	0000	0000			0 Grain 20010	
105.0								A AA. 10	126. 32010	



If the "Load EEPROM " command in the AUTO OPTION window is not checked, then the selected EEPROM file is not loaded in the HEX EDITOR.

🊻 SynEdit Binary/H	IEX Editor [	Untitled]	₽×
<u>File E</u> dit <u>V</u> iew <u>H</u> el	P		
🗅 🛩 🖪 🕼 🛙	b X 🖻	<u>م</u>	
0x0:			
Pos · 0		B OVW/ Size 0	



# **FLASH OPERATION**

The selected FLASH file to be uploaded/downloaded can be:

- o Modified
- o Saved
- o Printed
- o Viewed as per requirement
- o Translated

If the "Load EEPROM " command in the AUTO OPTION window is checked, then the selected EEPROM file is loaded in the HEX EDITOR.

If the "Load EEPROM " command in the AUTO OPTION window is not checked, then the selected EEPROM file is not loaded in the HEX EDITOR.

🏭 SynEdi	t Binary	/HEX B	Editor [(	C:\Prog	ram Filo	es\Com	mon Fil	es\SYS	STEM\Mapi\1033\95\Dumpster.dll]	
<u>F</u> ile <u>E</u> dit	<u>V</u> iew <u>I</u>	<u>H</u> elp								
🗅 🚔 🔚	8	B 3	6 🛍	K)						
0x0000:	4D5A	9000	0300	0000	0400	0000	FFFF	0000	MZDÿÿ	<b>_</b>
0x0010:	B800	0000	0000	0000	4000	0000	0000	0000	<u>`</u> @	
0x0020:	0000	0000	0000	0000	0000	0000	0000	0000		
0x0030:	0000	0000	0000	0000	0000	0000	B800	0000		
0x0040:	OE1F	BAOE	00B4	09CD	2188	014C	CD21	5468	°´.Í!.LÍ!Th	
0x0050:	6973	2070	726F	6772	616D	2063	616E	6E6F	is program canno	
0x0060:	7420	62.65	2072	756E	2069	6E20	444F	5320	t be run in DOS	
0x0070:	6D6F	6465	2  EOD	ODOA	2400	0000	0000	0000	mode\$	
0x0080:	450D	89DE	016C	E78D	016C	E78D	016C	E78D	E.‰Þ.lçO.lçO.lçO	
0x0090:	F173	E38D	006C	E78D	016C	E78D	5C6C	E78D	ñsã⊡.lç⊡.lç⊡\lç⊡	
OXOOAO:	F173	EC8D	066C	E78D	52.69	63.68	016C	E78D	ñsìO.lçORich.lçO	
OXOOBO:	0000	0000	0000	0000	5045	0000	4001	0400	PEL	
oxooco:	A548	A636	0000	0000	0000	0000	<b>E</b> 000	0E21	¥H¦6à!	
0x00D0:	0801	0600	0040	0000	0030	0000	0000	0000	@	
OXOOEO:	7041	0000	0010	0000	0050	0000	0000	D23A	pAPÒ:	
OxOOFO:	0010	0000	0010	0000	0400	0000	0000	0000		
0x0100:	0400	0000	0000	0000	0080	0000	0010	0000	€	
0x0110:	0486	0000	0200	0000	0000	1000	0010	0000	.†	
0x0120:	0000	1000	0010	0000	0000	0000	1000	0000		
0x0130:	0048	0000	4E00	0000	4442	0000	¥000	0000	.HNDB	
0x0140:	0060	0000	A804	0000	0000	0000	0000	0000	• • • • • • • • • • • • • • • • • • • •	
0x0150:	0000	0000	0000	0000	0070	0000	8402	0000	pp	
Ox0160:	2011	0000	1000	0000	0000	0000	0000	0000		
0x0170:	0000	0000	0000	0000	0000	0000	0000	0000		
0x0180:	0000	0000	0000	0000	0000	0000	0000	0000		
0x0190:	0010	0000	2001	0000	0000	0000	0000	0000		
0x01A0:	0000	0000	0000	0000	0000	0000	0000	0000		
Ox01B0:	2E74	6578	7400	0000	4E38	0000	0010	0000	.textN8	<b>•</b>
Pos: 0	0040		0010	0000	0000	0000	0000		и те - 32818	



# **EXIT OPERATION**

This command terminates FP8903 Software.

FP8903 (Ori	iole's Atmel Programmer)			
Download Uplo	Luis Secup Quick Prep ad Device Edit Flash Set Com Erase	Program         Program <t< th=""><th>Auto Signature</th><th></th></t<>	Auto Signature	
	Auto Option	Oriole's Programmer Found on F	ort 1	
	<ul> <li>□ Load EEPROM</li> <li>□ Erase</li> <li>□ Blank Check</li> <li>□ Program Device</li> <li>□ Verify Device</li> <li>□ Device LockBits</li> </ul>	Fill Unused Bytes With FF 00 Don't Care	File Format C Intel Hex C Binary	
	Information Device : Not Selected Buffer Checksum : Not Selected Pins : Not Selected File Name : Not Selected	Company : Not Selected EEPROM Size : Not Selected Adapter : Not Selected	Vcc : Not Selected Vpp : Not Selected FLASH Size : Not Selected SRAM Size : Not Selected	



# 4.2 STAND ALONE MODE

This PROGRAMMER can work in stand-alone mode. User can down load the file from PC to Programmer's buffer (RAM) and can use the unit without PC. The different functions in this mode are as given below.

### **KEY FUNCTION**

- 0. DEVICES: SELECTING THE DEVICE
- 1. READ: READING THE DEVICE CONTENTS
- 2. LBIT: PROGRAMMING LOCKBITS OF THE DEVICE
- 3.SIG: READING THE SIGNATURE BYTE OF THE DEVICE
- **4.ERASE:** ERASING THE DEVICE
- 5.BLANK: BLANK CHECKING OF THE DEVICE
- 6.PRGM: PROGRAMMING THE DEVICE
- 7.VRFY: VERIFYING THE DEVICE
- 8. STEST: CALCULATING CHKSUM OF FLASH MEMORY OF THE DEVICE.
- 9. EDIT: EDITING THE PROGRAMMER BUFFER.

**10.AUTO:** TO EXECUTEAUTOCYCLE (ERASE/BLANK/PROGRAM/VERIFY/ LOCKBIT)



# 2.1 FUNCTIONAL DESCRIPTION OF KEYS:

# [0] 'DEVICE' KEY:

Pressing 'DEVICE' key shows range of devices that can be programmed. Keep on pressing 'DEVICE' Key till unit displays desired device. After selecting the device put the device in the ZIF SOCKET.

**NOTE:** All the numeric keys are dual function keys and can be used for the numeric operations In the edit mode only. In all other functions these keys are used as per their normal operations.

# CAUTION: ENSURE THAT ONLY THE SELECTED DEVICE IS PUT IN THE ZIF SOCKET.

Example: Switch ON the unit .It will give message:

'ORIOLE presents, ATMEL PROGRAMMER', 'VER 2.00'& then 'SELECT DEVICE' Press 'DEVICE ' key four times to select micro-controller '89C52'.

# [1] 'READ' KEY:

On pressing 'READ KEY', the unit reads the contents of the flash memory of the selected device into its buffer. Example:

To execute this option follow the following key sequence after selecting the device.

KEY	RESULT	MESSAGE
READ		Read 89C52
ENTER	Reading flash	Reading
	Read completion	CHKSUM (6 digit checksum)

If the device selected is from the AVR family or it is AT89S8252 then the READ operation reads the EEPROM of the device after reading the flash. CHKSUM is calculated for flash only. If 'ENTER' KEY is pressed again, the same operation will be repeated.



# [2] 'LBIT' KEY:

Pressing 'LBIT' key programs all the lock bits of the selected device. Example: To execute this option follow the following key sequence after selecting the device.

KEY	RESULT	MESSAGE
LBIT		PGMLB 89C52
ENTER	Locking flash	PGM LOCK BIT-
	Lock completion	LOCKBIT OK!!

If 'ENTER' KEY is pressed again, the same operation will be repeated.

# [3] 'SIG' KEY:

On pressing 'SIG'key, the unit will check selected device's signature bytes. Example: To execute this option follow the following key sequence After selecting the device.

KEY	RESULT	MESSAGE
SIG		SIG 89C52
ENTER	Checking Signature	SIGNATURE CHECK—
	SIG matches	SIG OK
	SIG not matching	SIG FAIL

If 'ENTER' KEY is pressed again, the same operation will be repeated.

# ENSURE THAT THE CORRECT DEVICE IS PUT IN THE ZIF SOCKET BEFORE DOING THE 'SIG' OPERATION.



## [4] 'ERASE' KEY:

Pressing 'ERASE' key erases the contents of the Flash memory of the selected device.

Example: To execute this option follow the following key sequence after selecting the device

<b>KEY</b> ERASE	RESULT	MESSAGE ERASE 89C52
ENTER	Erasing Flash	ERASING!!
	Erase completion	ERASE OK!!

If 'ENTER' KEY is pressed again, the same operation will be repeated.

### [5] 'BLANK' KEY:

On pressing 'BLANK' key the PROGRAMMER will check whether selected device is blank or not.

Example:

To execute this option follow the following key sequence after selecting the deviceKEYRESULTMESSAGEBLANKBLANK 89C52

ENTER	Checking Flash	BLANK CHECK—
	Blank successful	BLANK OK!!
	Blank unsuccessful	BLANK FAIL!!

If 'ENTER' KEY is pressed again, the same operation will be repeated.



## [6] 'PRGM' KEY:

On pressing 'PRGM' key, PROGRAMMER programs contents of the buffer into the flash memory of the selected device.

Example: To execute this option follow the following key sequence

<b>KEY</b> PRGM	RESULT	MESSAGE PGM 89C52
ENTER	Programming Flash	PROGRAMMING—
	Program completion	PROGRAMED OK!!
	Verifying device	VERIFYING—
	Verify successful	VRF OK!
	Verify unsuccessful	VRF FAIL!!

If device contents do not match with buffer contents then 'VRF FAIL' message will appear. If 'ENTER' KEY is pressed again, the same operation will be repeated. At this stage the programming cycle stops if the device selected is from AT89 family excluding AT89S8252. If the device belongs to the AVR family or it is AT89S8252 and the EEPROM buffer is not empty then it will program the EEPROM. While programming EEPROM following message is displayed.

#### 'PGM EEPROM- -'

And after a few moments following display will appear

#### **'PGM EEPROM OK'**

After programming the EEPROM, the PROGRAMMER will execute the EEPROM verify cycle. During this cycle it will display following message 'VERIFYING EEPROM -'

If the EEPROM is successfully verified then the PROGRAMMER will give the following message

**'EEPROM VRF OK!'** Else it will show

'EEPROM VRF FAIL'



## [7] 'VRFY' KEY:

On pressing 'VRFY' key, the unit will check contents of the flash memory of the selected device with units buffer.

Example: To execute this option follow the following key sequence after selecting the device.

KEY	RESULT	MESSAGE
VRF		VRF 89C52
ENTER	Checking Buffer	VERIFYING-
	Verify successful	VRF OK!!
	Verify unsuccessful	VRF FAIL!!

If device contents are different from buffer contents, then 'VRF FAIL" message will be displayed If 'ENTER' KEY is pressed again, the same operation will be repeated.

## [8] 'STEST' KEY:

On pressing 'STEST' key, the unit will calculate checksum of the contents of the device Example: To execute this option follow the following key sequence **KEY RESULT MESSAGE** STEST CHKSUM 89C52 ENTER Calculate Checksum CHKSUM— Checksum calculated CHKSUM (6 digit checksum)



## [9] 'AUTO' Key:

This key is provided to execute all the necessary operations required to program the device. This will accelerate the programming procedure. This feature is useful for mass programming. This option performs the following operations sequentially.

'ERASE',
'BLANK CHECK',
'PROGRAM',
'VERIFY',
LOCK BIT'

Example: To execute this option follow the following key sequence

KEY RESULT MESSAGE AUTO AUTO 89C52 ENTER Erasing Flash ERASING --Erase completion ERASE OK!! Checking Flash **BLANK CHECK--!** Blank completion BLANK OK!! Programming Flash **PROGRAMMING--**Program completion PROGRAMED OK!! Verifying device **VERIFYING--**Verify completion

Locking flash

Lock completion

**NOTE:** Once the AUTO MODE is being executed, the PROGRAMMER cannot be interrupted till the AUTO MODE is over. While in the AUTO MODE if any operation is unsuccessful, the PROGRAMMER stops the execution and remains in that state until the user presses any other key. The failure of any operation will be indicated by operation name followed by the 'FAIL' message (e.g. if verify operation is unsuccessful display shows 'VRF FAIL')

VRF OK!

PGM LOCK BIT--

LOCKBIT OK!!



# [10] 'EDIT' KEY:

This function provides the facility to edit the contents of the PROGRAMMER BUFFER in which a BIN file is downloaded for programming the device. As the PROGRAMMER is capable of programming both FLASH and EEPROM of the device, facility is provided to edit the data of both the buffers.

This function can be invoked by pressing the 'EDIT' key. When the 'EDIT' key is pressed following message is displayed.

# EDIT (E / F)?

Before starting the edit procedure PROGRAMMER asks the user to select the buffer to be edited. If 'E' is pressed following message is displayed.

#### **'EDITING EEPROM!!'**

If 'F' is pressed it will show the following message.

#### 'EDITING FLASH!!'

Press 'ENTER' key to start the edit mode. 'EDIT' key is a dual function key. When the user enters into the edit mode 'EDIT' key is used for entering digit '9'. When the 'ENTER' key is pressed, first address of RAM BUFFER and the data contents of that address are displayed as shown below:

#### Address Data

### 0000 (contents of 0000th location)

Address field size is 4 characters

Data field size is 2 characters

For both the buffers (FLASH and EEPROM) starting address displayed is the same As shown above, LCD display is divided in two fields, first field displays the address of the RAM BUFFER, and the second field displays contents of the address displayed in address field. A blinking cursor is displayed on the left most character of the address field i.e. on the first 0 of the Address field.

**NOTE:** Blinking cursor anywhere in the address field or in the data field prompts the user to enter a new character at that position.



**'AUTO' Key:** Moving The Blinking Cursor To The Right With the help of 'AUTO' key user can move the cursor to any location in the right direction.

E.g. Following are the address and data displayed on the LCD and cursor is blinking on the left most character in the data field.

#### 0023 02

At this position if address 0123 and its corresponding data is to be displayed then press 'AUTO' key to move the blinking cursor in the right direction until it rolls back on the address field. As the cursor is shifted without changing the data; the data is retained at the address displayed. The cursor is now positioned on the left most character of the address field.

Pressing 'AUTO' again, retains left most 0 in the address displayed; thus the user need not overwrite that '0'. Cursor now shifts to the right by one position. Here, user can change the character to '1'. By pressing 'AUTO' key again, remaining address locations can be skipped.

When the cursor jumps on the data field, data of the address 0123 is displayed and cursor blinks at the starting point of data field. User can also change all the locations of the address field or the data field without skipping any of the characters.

The user is endowed with the provision of scrolling the address field and the corresponding data

Field with the help of 'UP' and 'DOWN' arrow keys. When the 'DOWN' arrow key is pressed the subsequent address appears on the display with the corresponding data contents. The blinking cursor on the first character of the data field anticipates data change. When 'UP' arrow key is pressed, the address prior to the one currently displayed appears on the display. The blinking cursor at the start of the data field anticipates a data change.

If the user doesn't want to edit the data contents, then he can use the arrow keys for moving ahead or back from the current address location. Data on the current address will be retained as it is.



**NOTE:** The maximum address displayed depends on the size of the program memory available for the particular device being worked on. If the user violates this condition by entering the address, beyond the maximum address of the program memory then, maximum address and the corresponding data are displayed.

While changing contents of the data or address field, change is expected at the blinking cursor position only. When the character at the blinking cursor position is altered the cursor shifts to the next position. Any change made by the user is directly stored in the RAM BUFFER. The user is not expected to press 'ENTER' key for storing the changes made in the current field. While editing the EEPROM memory buffer, the user is not allowed to enter any digit or character at the left most location because EEPROM buffer size is 2Kb only.

The address of EEPROM buffer ranges from 0000H to 07FFH. The procedure for editing the EEPROM data is in the same manner as that explained for the flash. After the completion of editing procedure, press 'ENTER' key to quit the edit mode. With the entry of the 'ENTER' key the following message is displayed:

#### EDIT MODE OVER!!

After quitting the edit mode user can perform any of the operations on the device selected.

# 5. SUPPORT



### FOR DETAILS / FURTHER INFORMATION CONTACT OUR NEAREST OFFICE

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