

**USER'S MANUAL
MOD-MEP-1C**

**PC-BASED
EPROM PROGRAMMER**

MMAUMEP-1C.C.7/1996

 **MODULAR CIRCUIT TECHNOLOGY**

 **Made in Taiwan**

USER'S MANUAL
MOD-MEP-1C
PC-Based
EPROM Programmer

Manual V 1.0
June 1996

COPYRIGHT (C) 1996

Information in this document is subject to change without notice.

- * Information provided in this document is proprietary to
- * This document, or any part of it, may not be copied, reproduced or translated in any way or form.
- * The software may not be reproduced in magnetic tape, disk, or any other medium for any purpose other than the purchaser's personal use.

Model numbers referred in this manual are:

Programmer: MOD-MEP-1C

Interface card : SAC-201B

CONTENTS

1. INTRODUCTION	
1.1 Programmer and Accessories	1
2. INSTALLATION	
2.1 Host System Requirements	2
2.2 Software Installation Procedures	2
2.3 Hardware Installation Procedures	3
3. USING THE PROGRAMMER	
3.1 Viewing the Main Menu	7
3.2 Getting Started	8
3.2.1 Select PLD Mfr and Type	9
3.2.2 Load Disk File into Buffer	12
3.2.3 Read Contents from Master PLD	14
3.2.4 Insert the Blank PLD into Socket	16
3.2.5 Program Buffer Contents to PLD	16
4. FUNCTION REFERENCE GUIDE	
4.1 File	18
4.1.1 Load file to buffer	19
4.1.2 Save buffer to file	23
4.1.3 List file information	24
4.1.4 DOS shell	25
4.2 Edit	25
4.2.1 Edit buffer	26
4.2.2 Display buffer	27
4.2.3 Protection	28
4.3 Setup	30
4.3.1 Modify buffer range	30
4.3.2 Speed select	32
4.3.3 I/O base address	33
4.3.4 Modify buffer structure	34
4.4 Mfr	35
4.5 Type	36
4.6 Quit	37
4.7 Blank	38

4.8	Read	39
4.9	Verify	40
4.10	Program	41
4.11	Auto	42
4.12	Compare	42
4.13	Display	44
4.14	Erase	44

5. Utilities

5.1	Hex to Binary Converters	46
5.2	Dump Binary File to Console	48
5.3	Binary Splitter	49
	(2-way, 3-way, 4-way, 8-way, 2-way word binary)	
5.4	Binary Shuffler	49
	(2-way, 4-way)	
5.5	Binary to Hex Converter	50

APPENDICES

A.	List of Supported Devices	52
B.	Troubleshooting	59
C.	Glossary	62

1. INTRODUCTION

The manual provides instructions for installing and operating the EPROM Programmer with an IBM PC or compatible running MS-DOS or PC-DOS.

1.1 Programmer and Accessories

Your package should contain the following items:

- * EPROM Programmer
- * An interface card.
- * 1 meter cable with two 25-pin, D-type connectors on cable's end.
- * User's manual.
- * Software diskette

2. INSTALLATION

The EPROM programmer is easy to install and is good to work with an IBM PC386/486/Pentium computer or compatible running MS-DOS or PC-DOS. You are assumed familiar with the installation of PC add-on cards and software in PCs running MS-DOS.

2.1 Host System Requirements

- * IBM PC386/486/Pentium or compatible PC.
- * Max. system clock speed is up to 166 MHz. (A 166MHz Pentium is the fastest PC tested at the time of printing.)
- * Min. 640K-byte memory.
- * Min. one 3-1/2" floppy disk drive and a hard disk with min. 1.5 MBytes free disk space.
- * Operating system: MS-DOS or PC-DOS, version 3.3 or later.
- * Release of TSR programs and EMM386.sys before running the S/W
- * Do not run the S/W under Windows 3.x/95/NT DOS box.
- * Do not let Green PC's enter "Power down" or "Idle mode".

2.2 Software Installation Procedures

It is recommended that a copy of the original software diskettes is made before installation. This is just a precaution in case the original diskettes are lost or damaged.

To install the EPROM Programmer you first need to copy the supplied software to a subdirectory on your hard disk. The following example loads the software to a subdirectory called "EP":

Steps:	Description
C:\>md EP	To generate a programmer subdirectory (EP)
C:\>cd EP	To change directory to EP
C:\EP>copy A:*.*	To copy all files in A: to the current directory in C:

Note:

EP is only an example name. Any name can be used for the subdirectory.

To install software updates in the future use exactly the same procedure. The new software will overwrite the existing programmer software on your hard disk.

2.3 Hardware Installation Procedures

Before installation your programmer and PC should be turned off. The following guidelines should be followed during installation and during regular operation to insure a long productive life of the programmer:

Power on - first PC, then the programmer.
Power off - first programmer, then PC.
Never quit the software while the programmer is in operation
(Busy LED is on).

Check for I/O address availability in system first. Then install card. The available I/O addresses are: 200H, 210H, 220H, 230H, 240H, 250H, 260H, 270H, 280H, 290H, 2A0H, 2B0H, 2C0H, 2D0H, 2E0H (default), 2F0H.

Step 1:

Switch off your computer system and carefully open the computer cover.

Step 2:

Check and set the jumper for the interface card I/O address.

The interface cards come with I/O address at 2E0H(default)

SW1: only position 2E0 should be fixed with the jumper

Step 3:

Gently insert the interface card into the PC slot, and fasten it to the PC frame with the slot cover screw.

Step 4:

Connect the programmer to the PC using the included 1 meter DB-25 cable. Connect the 25 pin male connector to the interface card and the 25 pin female connector to the programmer.

CAUTION

Do not connect the programmer to the interface card while the computer is turned on. Such an installation can put the programmer in an "unknown" state, and damage the device and/or the programmer.

Step 5:

Power on the computer and check the LEDs on the programmer.

ON LED must be ON.

BUSY LED must be ON.

GOOD LED is possibly at OFF or ON state.

If the LEDs are not in the correct state, turn off the PC and the programmer and check all connections between interface card and the programmer. If the interface card is being used then check that the card is securely installed in the slot in the PC.

Then turn on the computer and the programmer to check the LEDs on the programmer again. If the LEDs are still not in the proper state you may have another peripheral on the PC set to the same I/O base address.

Step 6:

Boot DOS and then perform "I/O Base Address" function according to the following sequence:

Step 6-1

Boot DOS in disk drive A:

In response to the operating system prompt, replace the DOS diskette with a work copy and type the following command, if you are using the main program

A:>EP8x < enter >

Note

x stands for the how many sockets on the programmer.

The main program will be executed, and will look for the parameter file EP8x.DAT. If it exists on the default disk drive, the parameters of I/O address, manufacturer, type and programming speed will be loaded as your default state. Otherwise the values set before delivery, I/O address (2E0), manufacturer (General EPROM), Programming speed (Intelligent) will be considered as the default state.

At the same time, the main program will also check the identification circuit in the programmer. Once it has been checked, the main program will display the following function menu on the screen and wait for the user's command.

File Edit Setup Mfr Type Quit

MANUFACTURER: Amd/MMI TYPE :27C010 VPP: 12.75 V SPEED:QUICK	
BUFF D:\BUFF.TMP BUFF SIZE :1024K BUFF START:00000 BUFF END:1FFFF PROM START:00000 PROM END:1FFFF	CHECK SUM: 0000 I/O ADDR : 200 COUNTER :00000
Read Blank Program Verify Compare Ierase Auto Display	

main menu

Step 6-2

If the following error message appears on the screen:

Error identification on hardware!
Press "Q" to quit,
or press < CR > to continue

The hardware I/O address of the interface card does not match the default software I/O base address, there are conflicts with other add-on cards or peripherals inserted in the PC, or the programmer power is not turned on.

There are two solutions in turn to solve the problem.

1. Press < enter > to enter the main menu of the software, then enter "Setup" function group followed by selecting " I/O base addr " to select 2E0H as default of the H/W.
2. When the firstst solution fails, press "Q" to quit to DOS prompt, and then turn off the computer. Change the jumper address on the interface card to any of 16 choices for next identification check (repeat from Step 5 down to Step 6-2, solution 1). If you fail with both ways, the programmer needs maintenance.

After the Identification check is passed and quitting to DOS the I/O address set will be saved as default of next entry.

- Refer to Section 4.3.3 for more details about change I/O base address.

NOTE

Most problems are due to poor connections between the interface card and the PC slot, or poor cable connections between the interface card and the programmer.

3. USING THE PROGRAMMER

3.1 Viewing the Main Menu

Before beginning operation, please take a moment to familiarize yourself with the main menu. It contains following three parts.

File	Edit	Setup	Mfr	Type	Quit		
MANUFACTURER: Amd/MMI TYPE :27C010 VPP: 12.75 V SPEED:QUICK							
BUFF D:\BUFF.TMP BUFF SIZE :1024K			CHECK SUM: 0000				
BUFF START:00000 BUFF END:1FFFF			I/O ADDR : 200				
PROM START:00000 PROM END:1FFFF			COUNTER :00000				
Read	Blank	Program	Verify	Compare	Ierase	Auto	Display

Main menu

3.1.1 Main Function line

The top line of the main menu is called the Main Function line. It has six groups of functions: File, Edit, Setup, Mfr, Type, Quit.

3.1.2 Immediate Execution Line

The bottom line on the main menu is called the Immediate Execution line. From left to right 8 functions for selection are READ, BLANK, PROGRAM, VERIFY, COMPARE, AUTO, ERASE and DISPLAY; they can be immediately executed through the main program.

It is very simple to select an individual function by pressing the first letter of that function. After pressing the first letter of the desired function, the subwindow or description of that function will be prompted on the screen for the next instruction.

3.1.3 Status Field

On the right side of the main menu there are 4 windows with information on EPROM, from top to bottom, logo, version, current EPROM, Mfr, Type, Vpp, Speed, working buffer and EPROM address, I/O address. This group of windows is called the Status Field.

Whenever you are going to use this programmer, check to make sure that the status in this field meets your requirements. Otherwise, the EPROM will be destroyed or programmed to an unknown state.

3.2 Getting Started

The following example will demonstrate how to start and exit the main menu and use functions such a MFR, TYPE, LOAD, BLANK CHECK and PROGRAM. If you do not get the desired results, please double check your installation.

In the example, we are going to use a standard 27C010. The procedure for working with other types of devices is similar.

Execute the program under subdirectory EP

Change to the subdirectory where you installed the programmer's software and type the "EP8x" command at the DOS prompt.

C:\EP\EP8x

NOTE

x stands for how many sockets are on the programmer.

After entering the "EP8x" command, the following main menu will appear.

File Edit Setup Mfr Type Quit

MANUFACTURER: Amd/MMI	
TYPE :27C010	VPP: 12.75 V
SPEED:QUICK	
BUFF D:\BUFF.TMP	CHECK SUM: 0000
BUFF SIZE :1024K	
BUFF START:00000	I/O ADDR : 200
BUFF END:1FFFF	
PROM START:00000	COUNTER :00000
PROM END:1FFFF	

Read Blank Program Verify Compare Ierase Auto Display

main menu

3.2.1 Select MANUFACTURER and TYPE

Type " M " to display a list of device manufacturers supported by the device driver file. Make a selection by typing the number located in front of the desired manufacturer and pressing the < ENTER > key.

File	Edit	Setup	Mfr	Type	Quit
			00.GENERAL 01.Amd/MMI 02.Asahi Kasei 03.Atmel 04.BOWMAR-WHITE 05.Catalyst 06.Cypress 07.Dallas 08.Exel 09.Fujitsu Micro 10.Hitachi 11.Hyundai 12.Integrated Device 13.Intel 14.Intn'l COMS 15.ISSI		
			FACTURER: Amd/MMI :27C010 VPP: 12.75 V D:QUICK		
			D:\BUFF.TMP SIZE :1024K	CHECK SUM: 0000	
			START:00000 END:1FFFF	I/O ADDR : 200	
			START:00000 END:1FFFF	COUNTER :00000	
			Select number : 1		
Read	Blank	Progra	Ierase	Auto	Display

Submenu of manufacturer

When the manufacturer is entered, the name in the status field (right side of the screen) will be updated. Immediately the screen will display a list of available types for the selected device manufacturer as follows:

File	Edit	Setup	Mfr	Type	Quit	
				16.27C513 12.75V 17.27C010 12.75V 18.27C020 12.75V 19.27C040 12.75V 20.27C801 12.75V 21.2817A 22.2864A 23.2864B 24.2864AE 25.2864BE 26.28F256 12 V 27.28F512 12 V 28.28F010 12 V 29.28F020 12 V 30.29F010 31.29F040		
				RER: Amd/MMI 010 VPP: 12.75 V CK		
				UFF.TMP :1024K	CHECK SUM: 0000	
				T:00000 D:1FFFF	I/O ADDR : 200	
				T:00000 D:1FFFF	COUNTER :00000	
				Select number : 17		
Read	Blank	Program	Ve	ase	Auto Display	

Submenu of Type

Type in the number corresponding to the desired type , (e.g., 17 for 27C010). The type will automatically be updated and displayed in the status field.

NOTE

EPROM chips are not always clearly labeled; it may be difficult, for example, to determine whether the EPROM you wish to program is a 2732A requiring 21 V, or whether it is a 2732B, which requires 12.5 V. If you encounter this problem, try to program the EPROM at the lower voltage first; if this does not work, then erase the EPROM and try the higher voltage.

3.2.2 Load Disk File into Buffer

After selecting a device manufacturer and type you are ready to begin working with a device. Usually you will want to program a device with a data file you have stored on disk or you will want to read the contents of a master device and copy the contents from the master to another device. We will cover both methods in this example. Press **F** to have the File menu displayed on the screen.

File	Edit	Setup	Mfr	Type	Quit
Load file to buffer Save buffer to file File information list Dos			MANUFACTURER: Amd/MMI TYPE :27C010 VPP: 12.75 V SPEED:QUICK		
			BUFF D:\BUFF.TMP BUFF SIZE :1024K CHECK SUM: 0000		
			BUFF START:00000 BUFF END:1FFFF I/O ADDR : 200		
			PROM START:00000 PROM END:1FFFF COUNTER :00000		
Read Blank Program Verify Compare Ierase Auto Display					

File

Press "**L**", or use the up/down arrow keys to select Load file to buffer function. Press **< enter >** to access a dialog window for the File loading on the screen.

D:\WORK\SEP84\\$*.*				Quit
A: N:	.	<DIR>	05-24-96	MANUFACTURER: Amd/MMI TYPE :27C010 VPP: 12.75 V SPEED:QUICK
B: O:	..	<DIR>	05-24-96	
C: P:	EP84A.ASM	31813	05-17-96	
D: Q:	EP84.C	115157	05-24-96	BUFF D:\BUFF.TMP BUFF SIZE :1024K CHECK SUM: 0000
E: R:	EP84B.C	145705	05-08-96	
F: S:	EP84C.C	69138	08-17-95	LOAD : File name:
G: T:	EP84D.C	14180	03-25-96	
H: U:	EP84.DCL	4779	03-01-95	
I: V:	EP84.MAK	383	04-22-96	
J: W:	U13.JED	3199	04-08-94	
K: X:	U9.JED	3200	04-08-94	
L: Y:	U13.PDS	1653	04-27-94	
M: Z:	U9.PDS	1703	04-27-94	
	CV.MAK	422	03-13-96	
	EP84.EXE	145087	05-24-96	
	EP84.DAT	21	05-24-96	
	SEP84.DOC	4325	10-17-95	
	EP84A.OBJ	5207	05-17-96	

Command:Tab Esc Enter

Submenu of file loading

Type in the name of the file that you want to transfer to the working buffer. The drive letter and any path names must be included.

An alternative to the direct typing method is to select the intended file from the directory window shown on the left side of the screen. Please follow the listed steps to select the file from the window selection.

- When prompted for a file name press the **< TAB >** key to change the active window from the load window to the directory window.
- Use the **<UP>**, **<DOWN>** arrow keys or the **<PgUp>**, **<PgDn>**, **<Home>**, **<End>** keys to move the highlighted bar to the desired file or subdirectory.
- When a subdirectory name is highlighted, the directory window will show all the files included in that subdirectory for selection. Pressing the

< F1 > function key will let you enter a file mask such as "*.HEX" so only the files you are interested in are displayed for selection.

- Once the correct file is highlighted press the < ENTER > key to select the desired file.
- After selecting a file the active window will automatically change back to the "Load:" window, and the selected file name will appear on the "File Name" line.

After the file name has been entered, the software will begin to load the disk file to the working buffer and display:

Loading now...
Ok!

This message means the disk file is now in the working buffer. A file in the working buffer can be programmed to another device or edited and saved back to disk. Press < ESC > or < ENTER > to return to the main menu.

3.2.3 Read Contents from Master EPROM

If the EPROM data is in a MASTER EPROM instead of a disk file, you can transfer the device contents to the working buffer by typing "R" to enter the READ function. After pressing " R ", the following window will appear:

File Edit Setup Mfr Type Quit									
Read to buffer Ready to read (Y/CR) ? <CR> Back to main menu.									
<table border="1"> <tr> <td colspan="2">MANUFACTURER: Amd/MMI</td> </tr> <tr> <td>TYPE :27C010</td> <td>VPP: 12.75 V</td> </tr> <tr> <td colspan="2">SPEED:QUICK</td> </tr> <tr> <td> BUFF D:\BUFF.TMP BUFF SIZE :1024K BUFF START:00000 BUFF END:1FFFF PROM START:00000 PROM END:1FFFF </td> <td> CHECK SUM: 0000 I/O ADDR : 200 COUNTER :00000 </td> </tr> </table>		MANUFACTURER: Amd/MMI		TYPE :27C010	VPP: 12.75 V	SPEED:QUICK		BUFF D:\BUFF.TMP BUFF SIZE :1024K BUFF START:00000 BUFF END:1FFFF PROM START:00000 PROM END:1FFFF	CHECK SUM: 0000 I/O ADDR : 200 COUNTER :00000
MANUFACTURER: Amd/MMI									
TYPE :27C010	VPP: 12.75 V								
SPEED:QUICK									
BUFF D:\BUFF.TMP BUFF SIZE :1024K BUFF START:00000 BUFF END:1FFFF PROM START:00000 PROM END:1FFFF	CHECK SUM: 0000 I/O ADDR : 200 COUNTER :00000								
Read Blank Program Verify Compare Ierase Auto Display									

Window for Read

Insert the MASTER EPROM into the socket #1 while the pull lever is up. Pin 1 should be located on the lever side of the DIP socket. If the device has less pins than the DIP socket then the device should be bottom justified in the socket. Close the lever. Then press Y, and the data of the MASTER EPROM will be transferred to the working buffer and display:

Reading now...
Ok!

After the read operation has been completed, the check sum calculated during the operation will also be displayed in the status field for reference.

Press < ESC > or < enter > to return to the main menu.

3.2.4 Insert the Blank EPROM into the ZIF socket

After transferring the data from the disk file or Master EPROM to the memory buffer, you are ready to program a new device. Contiguously insert the blank EPROMs into the sockets (labeled from 1 to 4) while the pull lever is up. Again, Pin 1 should be located on the lever side of the DIP socket. If the device has less pins than the DIP socket then the device should be bottom justified in the socket. Close the lever.

CAUTION

The notch-end of the EPROM must face the lever on the programmer's DIP socket. If the device has less than 32 pins then the device should be bottom justified so the lower pins on the device (farthest from pin 1) are closest to the GOOD LED on the programmer. If the IC is inserted incorrectly the EPROM may be damaged or programmed to an unknown state.

3.2.5 Program Buffer Contents to EPROM

After loading the disk file or reading the MASTER EPROM data into the working buffer, and inserting a blank EPROM, the program function is used to copy the contents of the working buffer to a device. To invoke the programming function type P. After typing P, the PROGRAM function will display the following subwindow:

File		Edit		Setup		Mfr		Type		Quit	
Program Ready to program (Y/CR) ? NO.1 : NO.2 : NO.3 : NO.4 : <CR> Back to main menu.						MANUFACTURER: Amd/MMI TYPE :29F010 VPP: SPEED:FLASH MEMO					
						BUFF PC MEMORY BUFF SIZE :256K BUFF START:00000 BUFF END:1FFFF PROM START:00000 PROM END:1FFFF				CHECK SUM: 0000 I/O ADDR : 200 COUNTER :00000	
Read Blank Program Verify Compare Ierase Auto Display											

Subwindow of Program

Press "Y" to start programming the buffer contents into the blank EPROM. (If you are not sure if the device in the socket is BLANK please use the "B" function to test if the device is really blank before programming.) At the end of the programming process, the programmer will compare the device contents with the working buffer. If there are discrepancies, they will be displayed as follows:

#1 OK! (or #1 error at xxxx)

The comparison finalizes the programming process. For programming other EPROMs, wait until the BUSY LED turns off, then replace the EPROM and type "Y" again.

If you want to exit the programming process, press < ESC > or < enter > to return to the main menu.

4. FUNCTION REFERENCE GUIDE

The following reference guide describes each of the functions found in the main menu of the software. The functions will be described in the order as given in the menu. To enter into the desired function, press the letter or number preceding that function.

File Edit Setup Mfr Type Quit

MANUFACTURER: Amd/MMI TYPE :27C010 VPP: 12.75 V SPEED:QUICK	
BUFF D:\BUFF.TMP BUFF SIZE :1024K	CHECK SUM: 0000
BUFF START:00000 BUFF END:1FFFF	I/O ADDR : 200
PROM START:00000 PROM END:1FFFF	COUNTER :00000

Read Blank Program Verify Compare Ierase Auto Display

main menu

4.1 File

To enter File, press F or use the left/right arrow keys to move the highlighted bar to the desired function and then press < enter >. The menu will appear on the screen.

File Edit Setup Mfr Type Quit

Load file to buffer
Save buffer to file
File information list
Dos

MANUFACTURER: Amd/MMI TYPE :27C010 VPP: 12.75 V SPEED:QUICK	
BUFF D:\BUFF.TMP BUFF SIZE :1024K	CHECK SUM: 0000
BUFF START:00000 BUFF END:1FFFF	I/O ADDR : 200
PROM START:00000 PROM END:1FFFF	COUNTER :00000

Read Blank Program Verify Compare Ierase Auto Display

Subwindow of File

There are four subfunctions under File for selection: Load file to buffer, Save buffer to file, list File Information, DOS.

4.1.1 Load file to buffer

To enter Load file to buffer, press " L ", or use the up/down arrow keys to select Load file to buffer function. Press < enter > to access a dialog window for the File loading on the screen.

D:\WORK\SEP84\\$ *. *

A: N:	.	<DIR>	05-24-96
B: O:	..	<DIR>	05-24-96
C: P:	EP84A.ASM	31813	05-17-96
D: Q:	EP84.C	115157	05-24-96
E: R:	EP84B.C	145705	05-08-96
F: S:	EP84C.C	69138	08-17-95
G: T:	EP84D.C	14180	03-25-96
H: U:	EP84.DCL	4779	03-01-95
I: V:	EP84.MAK	383	04-22-96
J: W:	U13.JED	3199	04-08-94
K: X:	U9.JED	3200	04-08-94
L: Y:	U13.PDS	1653	04-27-94
M: Z:	U9.PDS	1703	04-27-94
	CV.MAK	422	03-13-96
	EP84.EXE	145087	05-24-96
	EP84.DAT	21	05-24-96
	SEP84.DOC	4325	10-17-95
	EP84A.OBJ	5207	05-17-96

Quit

MANUFACTURER: Amd/MMI
TYPE :27C010 VPP: 12.75 V
SPEED:QUICK

LOAD :
File name:

Command:Tab Esc Enter

Load file to buffer

Files in the following three formats can be loaded to the working buffer when working with memory or microcontroller devices:

1. BIN file
2. INTEL HEX
3. MOTOROLA S HEX

When prompted for a file name, you should:

- A) Enter the complete file name that you want to load including the path name if the file is not in the same directory as the programmer's software. OR
- B) Press the < Tab > key to switch control to the window on the left. When the window on the left is highlighted use the following commands to select a file for loading:

- < Tab > : the toggle switch to activate the left or the right window.
- < Page Up >, < Page Down >, < Up >, < Down >, < Home >, < End > : move the highlighted bar to a particular file or to a subdirectory where other files are located.
- < CR or Enter > : selects the file located under the highlighted bar to be loaded to the working buffer.
- < ESC > : exits the file loading menu.
- < Drive-letter > : type in a drive letter, for example, will display all of the files and directories located on that drive.

NOTE

These commands will only work when the Tab key is pressed to activate the left window.

Once a file has been selected to be downloaded to the buffer you will be prompted "< B >in, < I >ntel HEX, < M >otorola S HEX:". You should select 'B' if the file you are loading is a binary file, 'I' if the file you are loading is a Intel HEX file, or 'M' if the file is in one of the Motorola S Record formats. If your assembler or compiler has the option to output binary files it is the best to use that option. Files already in binary format will be loaded faster. All HEX files are actually converted to Binary by the driver file before being loaded to the buffer.

If 'B' is chosen you will be prompted "Load Address(00000):", at this point you should press < CR or enter > on the keyboard if you want the file loaded at address 0 of the buffer memory, or type in the HEX number of the address where you would like the file to be loaded. The file will then be loaded to the buffer at the address you entered.

If 'I' is chosen you will be prompted for 'File start seg.(0000):', here the file start segment address is required. All data between the start segment X 16 and the end of the file will be converted to binary and loaded to the buffer memory. The segment range is from 0 to F000.

If 'M' is chosen you will be prompted for 'File start addr.(00000000):', here the actual start address of the file is required. All data between the given start address until the end of the file will be converted to binary and loaded to the buffer. The address range is from 0 to FFFFFFFh.

If 'I' or 'M' is chosen you will be prompted, 'Unused bytes will be < 1 >00 < 2 > FF < 3 > don't care:-'. In a typical application when a HEX file is loaded to an EPROM only a portion of the EPROM's available memory is actually filled with your program or data after being converted to binary. The rest of the unused portions of the EPROM may be filled with all 00's or all FF's depending on your preference. To do this choose '1' or '2' at the prompt. If you would like to load more than one HEX file to one ROM then you should choose '3' at the prompt. This means that the portions of the EPROM not used by the first HEX file loaded to the buffer can be filled with whatever other data you want by loading other HEX files and choosing the " don't care " option.

NOTE

Intel HEX files and Motorola S records contain address information in their formats. This means data may only be specified starting at an address greater than 0000h in some files. If a start segment address or file start address of 0000h is selected then all bytes between the start segment or file start address and the first address where data is specified in the HEX file will be filled with 00 or FF depending upon the response to the "Fill unused bytes...." prompt. Sometimes this offset can be larger than the address space of the buffer for the target device you would like to program and no data is loaded to the buffer except for "00" or "FF" bytes. In this case the correct start segment or file start address should be entered. This information should be specified by the firmware engineer that compiled the source file.

4.1.2 Save buffer to file

To enter Save buffer to file press S from the File menu or use the up/down arrow keys to move the highlighted bar to the function and then press < enter >. A dialog window for the Save file to buffer function will appear on the screen.

File Edit Setup Mfr Type Quit

Save buffer to file

File name:

MANUFACTURER: Amd/MMI
TYPE :27C010 VPP: 12.75 V
SPEED:QUICK

BUFF D:\BUFF.TMP
BUFF SIZE :1024K

CHECK SUM: 0000

BUFF START:00000
BUFF END:1FFFF

I/O ADDR : 200

PROM START:00000
PROM END:1FFFF

COUNTER :00000

Read

Blank

Program

Verify

Compare

Ierase

Auto

Display

Save buffer to file

When prompted, type in the complete name under which you want the file to be saved including the drive letter and any path names and then press < enter >. You can save the entire buffer contents to disk or just a portion of the buffer. Prompts are displayed for the "Start Address" and "End Address". Please key in a hexadecimal address to respond to these prompts and then all the data in the specified address range will be saved to disk.

When the OK! message appears the function is completed. Press < ESC > to return to the main menu.

23

NOTE

Files saved under this function are Binary files with start and end addresses entered in byte addresses.

4.1.3 File Information List

To enter File Information List, press " F " from the File menu, or use the up/down arrow keys to move the highlighted bar to the function and then press < enter >. The last 15 loaded files and their loaded addresses will be displayed on the screen for reference.

File Edit Setup Mfr Type Quit

Load file information

Start	End	File name
00000	--00000	:
00000	--00000	:
00000	--00000	:
00000	--00000	:
00000	--00000	:
00000	--00000	:
00000	--00000	:
00000	--00000	:
00000	--00000	:
00000	--00000	:
00000	--00000	:
00000	--00000	:
00000	--00000	:
00000	--00000	:
00000	--00000	:
00000	--00000	:

Press any key to continue ..

Amd/MMI

VPP: 12.75 V

MP

4K

CHECK SUM: 0000

00

FF

I/O ADDR : 200

00

FF

COUNTER :00000

Auto

Display

File Information List

Press < ESC > to return to the main menu.

4.1.4 DOS

To enter DOS shell, press " D " from the File subwindow or use the up/down arrow keys to move the highlighted bar to the function then press < enter >.

After selecting this function, the software will look for the file COMMAND.COM at the DOS boot disk drive. If COMMAND.COM exists, the software will execute this file and pass control to a DOS prompt as follows:

Type EXIT to return to Programmer
Microsoft (R) MS-DOS (R) Version 3.30
(C) Copyright Microsoft Corp 1981-1987

C:\EP>>

The S/W is now controlled by DOS and waiting for your commands. Under the DOS prompt you can run other programs or utilities and easily return to the programmer software at the same point you exited to the DOS shell previously. The command format under the DOS shell is the same as for the standard DOS prompt. Type "exit" and press < enter > to return to the main menu.

NOTE

This function will work only if the COMMAND.COM is already on the DOS boot disk drive.

4.2 Edit

To enter Edit function group, press " E " from the main menu or use the left/right arrow keys to move the highlighted bar to Edit and then press < enter >. The Edit submenu will appear on the screen.

File	Edit	Setup	Mfr	Type	Quit
Edit buffer Display buffer Protection			MANUFACTURER: Amd/MMI TYPE :27C010 VPP: 12.75 V SPEED:QUICK		
			BUFF D:\BUFF.TMP BUFF SIZE :1024K	CHECK SUM: 0000	
			BUFF START:00000 BUFF END:1FFFF	I/O ADDR : 200	
			PROM START:00000 PROM END:1FFFF	COUNTER :00000	
Read Blank Program Verify Compare Ierase Auto Display					

Edit Menu

4.2.1 Edit buffer

After entering the subfunction, select " E " again. The screen will display the Edit command summary.

```

=====
EDITING COMMAND SUMMARY
=====
D [start],[end]      <RETURN> : DUMP
E start             <RETURN> : EDIT
M start,end,destination <RETURN> : MOVE BLOCK
F start,end,data    <RETURN> : FILL BLOCK
P start,end         <RETURN> : PRINT BLOCK
C start,end         <RETURN> : CHECK SUM
S start,end,ASCII data <RETURN> : ASCII SEARCH MAX. 15 characters
B start,end,BINARY data <RETURN> : BINARY SEARCH MAX. 7 bytes
. filename [argu1] [argu2]...<RETURN> : SHELL
?                  <RETURN> : HELP
Q                  <RETURN> : QUIT
=====
* The information listed below is for reference only :
  The Buffer size : 1024 K bytes

```

==

The "==" symbol is the command prompt for the editor. Use the "?" command at the prompt to display the available editor commands at any time.

If the PC memory is assigned as the working buffer then the actual buffer base address in the PC memory is shown at the bottom of the command summary. It is the real base address of the buffer in the PC memory and is displayed in SEGMENT : OFFSET form.

For special purposes, some advanced users pass this address to their own editing program which can edit the buffer contents in different ways.

EXAMPLE:

When the fictitious editor, FRED.EXE, is applied, the user can use the DOT command to pass the base address as follows:

. FRED SEGMENT : OFFSET < CR >

This will work for editors that have the command line capability to take the PC memory segment and offset parameters as inputs. For example:

A>FRED SEGMENT:OFFSET < CR >

You may return to the main menu by typing Q and < CR >.

4.2.2 Display buffer

To enter display buffer, press " D " from the Edit submenu or use the up/down arrow keys to move the highlighted bar to the desired function and then press < enter >. This function will display the working buffer contents ranging from the BUFFER START ADDRESS to the BUFFER END ADDRESS as shown in the status field. Data will be displayed on the screen, in HEX and ASCII format as follows:

Press <ESC> to terminate display

```
00000 00 00 00 00 00 00 00 00 --00 00 00 00 00 00 00 .....
00010 00 00 00 00 00 00 00 00 --00 00 00 00 00 00 00 .....
00020 00 00 00 00 00 00 00 00 --00 00 00 00 00 00 00 .....
00030 00 00 00 00 00 00 00 00 --00 00 00 00 00 00 00 .....
00040 00 00 00 00 00 00 00 00 --00 00 00 00 00 00 00 .....
00050 00 00 00 00 00 00 00 00 --00 00 00 00 00 00 00 .....
00060 00 00 00 00 00 00 00 00 --00 00 00 00 00 00 00 .....
00070 00 00 00 00 00 00 00 00 --00 00 00 00 00 00 00 .....
00080 00 00 00 00 00 00 00 00 --00 00 00 00 00 00 00 .....
00090 00 00 00 00 00 00 00 00 --00 00 00 00 00 00 00 .....
000A0 00 00 00 00 00 00 00 00 --00 00 00 00 00 00 00 .....
000B0 00 00 00 00 00 00 00 00 --00 00 00 00 00 00 00 .....
000C0 00 00 00 00 00 00 00 00 --00 00 00 00 00 00 00 .....
000D0 00 00 00 00 00 00 00 00 --00 00 00 00 00 00 00 .....
000E0 00 00 00 00 00 00 00 00 --00 00 00 00 00 00 00 .....
000F0 00 00 00 00 00 00 00 00 --00 00 00 00 00 00 00 .....
```

Press any key to continue

Display buffer

Pressing < ctrl > + "S" can hold the display. Pressing < ESC > will terminate the display. After terminating the display, press any key to return to the main menu.

4.2.3 Protection

To enter Protection, press P from the Edit menu or use the up/down arrow keys to move the highlighted bar to the function and then press < enter >. This function is to enable or disable the protection on EEPROM.

If the intended type does not have the protection function, the screen will display as follow:

File Edit Setup Mfr Type Quit

Protection Set or Disable (S/D/CR) ? <CR> Back to main menu.		MANUFACTURER: SST TYPE :29EE010 VPP: SPEED:DON'T CASE					
BUFF D:\BUFF.TMP BUFF SIZE :1024K		CHECK SUM: 0000					
BUFF START:00000 BUFF END:1FFFF		I/O ADDR : 200					
PROM START:00000 PROM END:1FFFF		COUNTER :00000					
Read	Blank	Program	Verify	Compare	Ierase	Auto	Display

Press " S " to enable the protection or press " D " to disable it , or press < enter > to return to the Edit menu. If the intended type does not have the protection function, the screen will display as follow:

File Edit Setup Mfr Type Quit

Protection No Protection function ! <CR> Back to main menu.		MANUFACTURER: Amd/MMI TYPE :27C010 VPP: 12.75 V SPEED:QUICK					
BUFF D:\BUFF.TMP BUFF SIZE :1024K		CHECK SUM: 0000					
BUFF START:00000 BUFF END:1FFFF		I/O ADDR : 200					
PROM START:00000 PROM END:1FFFF		COUNTER :00000					
Read	Blank	Program	Verify	Compare	Ierase	Auto	Display

4.3 Setup

To enter the Setup group function, press " S " from the main menu or use the left/right arrow keys to move the highlighted bar to the desired function and then press < enter >. The Setup menu will appear on the screen.

File	Edit	Setup	Mfr	Type	Quit		
Modify buffer range Speed select I/O base addr modify Buffer structure							
		MANUFACTURER: Amd/MMI TYPE :27C010 VPP: 12.75 V SPEED:QUICK					
		BUFF D:\BUFF.TMP BUFF SIZE :1024K		CHECK SUM: 0000			
		BUFF START:00000 BUFF END:1FFFF		I/O ADDR : 200			
		PROM START:00000 PROM END:1FFFF		COUNTER :00000			
Read	Blank	Program	Verify	Compare	Ierase	Auto	Display

The four subfunctions under Setup are Modify buffer range, Speed select, I/O base address and modify Buffer structure.

4.3.1 Modify buffer range

To enter Modify buffer, press " M " from the Setup menu or use the up/down keys to move the highlighted bar to the function then press < enter >. A dialog window for Modify buffer will appear.

File	Edit	Setup	Mfr	Type	Quit		
Modify buffer range Buffer start address:		MANUFACTURER: Amd/MMI TYPE :27C010 VPP: 12.75 V SPEED:QUICK					
		BUFF D:\BUFF.TMP BUFF SIZE :1024K		CHECK SUM: 0000			
		BUFF START:00000 BUFF END:1FFFF		I/O ADDR : 200			
		PROM START:00000 PROM END:1FFFF		COUNTER :00000			
Read	Blank	Program	Verify	Compare	Ierase	Auto	Display

When prompted, type in the new buffer start address and press < CR >. Next, type in the new buffer end address and press < CR >. Then, type in the new EPROM start address and press < CR >. The EPROM start address is the address in the target device where the information starting at the buffer start address will be programmed to in the target device. The values entered in HEX code will be updated in the STATUS FIELD for reference. But, when the type or manufacturer (Mfr) selection is changed the target zone will default to the normal target zone specified by the device selected. The normal address range is equal to the entire address range of the target device.

Press < ESC > to return to the main menu.

4.3.2 Speed select

Press " S " to select the speed function. A dialog window will be displayed on the screen as follows:

File Edit Setup Mfr Type Quit

Program speed select

0: Normal speed.
1: Intelligent.
2: Quick pulse.
3: Intr speed.
4: SNAP (FLASH).
5: NSCMOS .
<CR> Back to main menu.
Select number:2

MANUFACTURER: Amd/MMI
TYPE :27C010 VPP: 12.75 V
SPEED:QUICK

BUFF D:\BUFF.TMP
BUFF SIZE :1024K
BUFF START:00000
BUFF END:1FFFF

CHECK SUM: 0000
I/O ADDR : 200
COUNTER :00000

Read

Blank

Program

Verify

Compare

Ierase

Auto

Display

Speed select

When prompted, type in the number of the new programming speed desired. The speed selected will be updated in the STATUS FIELD for programming reference. This selection is only available for 27Cxxx series EPROM devices. Most newer devices can use the QUICK pulse algorithm. Some EPROM manufacturers require a proprietary algorithm which should not be changed from the default.

Press < ESC > or < enter > to return to the main menu.

4.3.3 I/O Base Address

Before performing any functions the software's I/O address setting must be set to match the address of the interface card. The computer power must be switched off when changing this jumper position. The default I/O address of the interface card supplied with the programmer is 2E0 (LPT3). The I/O address jumper of the interface card has following 16 choices:

I/O ADDRESS	
200H	210H
220H	230H
240H	250H
260H	270H
280H	290H
2A0H	2B0H
2C0H	2D0H
2E0H (default)	2F0H

If you want to change the software's I/O address, press letter "S" and then letter " I " to obtain the following menu:

File Edit Setup Mfr Type Quit

CHANGE I/O BASE ADDRESS

0: 200 8: 280
1: 210 9: 290
2: 220 A: 2A0
3: 230 B: 2B0
4: 240 C: 2C0
5: 250 D: 2D0
6: 260 E: 2E0
7: 270 F: 2F0

--- Programmer exists ---

Select number:0
<CR> Back to main menu.

MANUFACTURER: Amd/MMI
TYPE :27C010 VPP: 12.75 V
SPEED:QUICK

BUFF D:\BUFF.TMP
BUFF SIZE :1024K
BUFF START:00000
BUFF END:1FFFF

CHECK SUM: 0000
I/O ADDR : 200
COUNTER :00000

Read

Blank

Program

Verify

Compare

Ierase

Auto

Display

Then select the I/O address that corresponds to the address of the connected

hardware. The software will automatically check the hardware I/O circuits. It is necessary to check both I/O addresses carefully. The I/O address you have selected will be updated in the internal buffer for programming reference.

Press < ESC > or < enter > to return to the main menu. When you press "Q" to QUIT the software will save the new I/O address in the parameter file EP8x.DAT for later reference. The I/O base address only needs to be set one time and then will be remembered by the software.

4.3.4 Modify Buffer Structure

Press " B " to enter the modify buffer structure function. A dialog window will be displayed on the screen as follows:

File	Edit	Setup	Mfr	Type	Quit								
Modify buffer structure 0: PC MEMORY. 1: C:BUFF.TMP. 2: D:BUFF.TMP. 3: E:BUFF.TMP. 4: F:BUFF.TMP. <ESC> Back to main menu. Select number:2													
<table border="1"> <tr> <td colspan="2">MANUFACTURER: Amd/MMI</td> </tr> <tr> <td>TYPE :27C010</td> <td>VPP: 12.75 V</td> </tr> <tr> <td colspan="2">SPEED:QUICK</td> </tr> <tr> <td> BUFF D:\BUFF.TMP BUFF SIZE :1024K BUFF START:00000 BUFF END:1FFFF PROM START:00000 PROM END:1FFFF </td> <td> CHECK SUM: 0000 I/O ADDR : 200 COUNTER :00000 </td> </tr> </table>						MANUFACTURER: Amd/MMI		TYPE :27C010	VPP: 12.75 V	SPEED:QUICK		BUFF D:\BUFF.TMP BUFF SIZE :1024K BUFF START:00000 BUFF END:1FFFF PROM START:00000 PROM END:1FFFF	CHECK SUM: 0000 I/O ADDR : 200 COUNTER :00000
MANUFACTURER: Amd/MMI													
TYPE :27C010	VPP: 12.75 V												
SPEED:QUICK													
BUFF D:\BUFF.TMP BUFF SIZE :1024K BUFF START:00000 BUFF END:1FFFF PROM START:00000 PROM END:1FFFF	CHECK SUM: 0000 I/O ADDR : 200 COUNTER :00000												
Read Blank Program Verify Compare Ierase Auto Display													

The software only uses the conventional memory of a PC's which allows a buffer space of no more than 256K bytes. This is about the size of a buffer required for a 2Mbit EPROM. The modify buffer structure is used to resolve this limitation. The modify buffer structure function is used to reassign the

buffer to drive C:, D:, E:, or F:. When the hard disk is used as the working buffer programming delays can occur due to the limit of the hard disk access time. These delays can be overcome by using RAMDRIVE.SYS to create a RAM disk E: or F: which can then be assigned as the working buffer.

After the Quit function the parameters of the modify buffer structure will be saved to Buff.TMP. It will be automatically recalled when the software is again used.

4.4 Manufacturer

To enter Mfr. (manufacturer), press " M " from the main menu or use the left/right arrow keys to move the highlighted bar to the function and then press < enter >. The Mfr menu with currently supported manufacturers will appear on the screen.

File	Edit	Setup	Mfr	Type	Quit			
<table border="1"> <tr> <td> 00.GENERAL 01.Amd/MMI 02.Asahi Kasei 03.Atmel 04.BOWMAR-WHITE 05.Catalyst 06.Cypress 07.Dallas 08.Exel 09.Fujitsu Micro 10.Hitachi 11.Hyundai 12.Integrated Device 13.Intel 14.Intn'l COMS 15.ISSI Select number : 1 </td> <td> FACTURER: Amd/MMI :27C010 D:QUICK D:\BUFF.TMP SIZE :1024K START:00000 END:1FFFF START:00000 END:1FFFF COUNTER :00000 </td> <td> CHECK SUM: 0000 I/O ADDR : 200 COUNTER :00000 </td> </tr> </table>						00.GENERAL 01.Amd/MMI 02.Asahi Kasei 03.Atmel 04.BOWMAR-WHITE 05.Catalyst 06.Cypress 07.Dallas 08.Exel 09.Fujitsu Micro 10.Hitachi 11.Hyundai 12.Integrated Device 13.Intel 14.Intn'l COMS 15.ISSI Select number : 1	FACTURER: Amd/MMI :27C010 D:QUICK D:\BUFF.TMP SIZE :1024K START:00000 END:1FFFF START:00000 END:1FFFF COUNTER :00000	CHECK SUM: 0000 I/O ADDR : 200 COUNTER :00000
00.GENERAL 01.Amd/MMI 02.Asahi Kasei 03.Atmel 04.BOWMAR-WHITE 05.Catalyst 06.Cypress 07.Dallas 08.Exel 09.Fujitsu Micro 10.Hitachi 11.Hyundai 12.Integrated Device 13.Intel 14.Intn'l COMS 15.ISSI Select number : 1	FACTURER: Amd/MMI :27C010 D:QUICK D:\BUFF.TMP SIZE :1024K START:00000 END:1FFFF START:00000 END:1FFFF COUNTER :00000	CHECK SUM: 0000 I/O ADDR : 200 COUNTER :00000						
Read Blank Progra Ierase Auto Display								

Submenu of Mfr

Type in the number which corresponds to the intended manufacturer of the target device. After selecting the manufacturer, the new manufacturer status will be updated in the Status Field for reference.

4.5 Type Select

Press " T ", and the Type menu will be displayed as follows:

File	Edit	Setup	Mfr	Type	Quit																																																																
<table border="1"> <tr> <td>16.27C513</td> <td>12.75V</td> <td colspan="2"></td> </tr> <tr> <td>17.27C010</td> <td>12.75V</td> <td colspan="2"></td> </tr> <tr> <td>18.27C020</td> <td>12.75V</td> <td colspan="2"></td> </tr> <tr> <td>19.27C040</td> <td>12.75V</td> <td colspan="2"></td> </tr> <tr> <td>20.27C801</td> <td>12.75V</td> <td colspan="2"></td> </tr> <tr> <td>21.2817A</td> <td></td> <td colspan="2"></td> </tr> <tr> <td>22.2864A</td> <td></td> <td colspan="2"></td> </tr> <tr> <td>23.2864B</td> <td></td> <td colspan="2"></td> </tr> <tr> <td>24.2864AE</td> <td></td> <td colspan="2"></td> </tr> <tr> <td>25.2864BE</td> <td></td> <td colspan="2"></td> </tr> <tr> <td>26.28F256</td> <td>12 V</td> <td>T:00000</td> <td></td> </tr> <tr> <td>27.28F512</td> <td>12 V</td> <td>D:1FFFF</td> <td>I/O ADDR : 200</td> </tr> <tr> <td>28.28F010</td> <td>12 V</td> <td></td> <td></td> </tr> <tr> <td>29.28F020</td> <td>12 V</td> <td>T:00000</td> <td></td> </tr> <tr> <td>30.29F010</td> <td></td> <td>D:1FFFF</td> <td>COUNTER :00000</td> </tr> <tr> <td>31.29F040</td> <td></td> <td></td> <td></td> </tr> </table>						16.27C513	12.75V			17.27C010	12.75V			18.27C020	12.75V			19.27C040	12.75V			20.27C801	12.75V			21.2817A				22.2864A				23.2864B				24.2864AE				25.2864BE				26.28F256	12 V	T:00000		27.28F512	12 V	D:1FFFF	I/O ADDR : 200	28.28F010	12 V			29.28F020	12 V	T:00000		30.29F010		D:1FFFF	COUNTER :00000	31.29F040			
16.27C513	12.75V																																																																				
17.27C010	12.75V																																																																				
18.27C020	12.75V																																																																				
19.27C040	12.75V																																																																				
20.27C801	12.75V																																																																				
21.2817A																																																																					
22.2864A																																																																					
23.2864B																																																																					
24.2864AE																																																																					
25.2864BE																																																																					
26.28F256	12 V	T:00000																																																																			
27.28F512	12 V	D:1FFFF	I/O ADDR : 200																																																																		
28.28F010	12 V																																																																				
29.28F020	12 V	T:00000																																																																			
30.29F010		D:1FFFF	COUNTER :00000																																																																		
31.29F040																																																																					
RER: Amd/MMI 010 VPP: 12.75 V CK																																																																					
UFF.TMP :1024K CHECK SUM: 0000																																																																					
Select number : 17 Read Blank Program Verify Erase Auto Display																																																																					

Submenu of Type

Type in the number or letter that precedes the type listing of your target device. The type and voltage required for that device will be displayed in the STATUS FIELD for reference.

Press < ESC > or < CR > to return to the main menu.

NOTE

EPROM chips are not always clearly labeled; it may be difficult, for example, to determine whether the EPROM you wish to program is a 2732A requiring 21 V, or whether it is a 2732B, which requires 12.5 V. If you encounter this problem, try to program the EPROM at the lower voltage first; if this does not work, then erase the EPROM and try the higher voltage.

4.6 Quit

Press " Q " to exit the main menu and to return to DOS. If you are in one of the subwindows, you must first exit that submenu and return to the main menu before the "Q" function will work.

File	Edit	Setup	Mfr	Type	Quit												
Do you really want to quit [y/n]?																	
<table border="1"> <tr> <td colspan="2">MANUFACTURER: Amd/MMI</td> </tr> <tr> <td>TYPE :27C010</td> <td>VPP: 12.75 V</td> </tr> <tr> <td colspan="2">SPEED:QUICK</td> </tr> <tr> <td> BUFF D:\BUFF.TMP BUFF SIZE :1024K </td> <td>CHECK SUM: 0000</td> </tr> <tr> <td> BUFF START:00000 BUFF END:1FFFF </td> <td>I/O ADDR : 200</td> </tr> <tr> <td> PROM START:00000 PROM END:1FFFF </td> <td>COUNTER :00000</td> </tr> </table>						MANUFACTURER: Amd/MMI		TYPE :27C010	VPP: 12.75 V	SPEED:QUICK		BUFF D:\BUFF.TMP BUFF SIZE :1024K	CHECK SUM: 0000	BUFF START:00000 BUFF END:1FFFF	I/O ADDR : 200	PROM START:00000 PROM END:1FFFF	COUNTER :00000
MANUFACTURER: Amd/MMI																	
TYPE :27C010	VPP: 12.75 V																
SPEED:QUICK																	
BUFF D:\BUFF.TMP BUFF SIZE :1024K	CHECK SUM: 0000																
BUFF START:00000 BUFF END:1FFFF	I/O ADDR : 200																
PROM START:00000 PROM END:1FFFF	COUNTER :00000																
Read Blank Program Verify Compare Erase Auto Display																	

Before exiting to DOS, the software will save parameters including manufacturer, type, I/O address and programming speed in the EP8x.DAT file associated with software in use.

4.7 Blank (Check)

Press " B ", and the Blank check window will be displayed as shown.

File Edit Setup Mfr Type Quit

Blank check device Ready to check (Y/CR) ? NO.1 : NO.2 : NO.3 : NO.4 : <CR> Back to main menu.	MANUFACTURER: Amd/MMI TYPE :27C010 VPP: 12.75 V SPEED:QUICK BUFF D:\BUFF.TMP BUFF SIZE :1024K CHECK SUM: 0000 BUFF START:00000 BUFF END:1FFFF I/O ADDR : 200 PROM START:00000 PROM END:1FFFF COUNTER :00000	
---	--	--

Read

Blank

Program

Verify

Compare

Ierase

Auto

Display

Submenu of Blank check

The blank check function is used to check whether a target device is ready to be programmed. All devices except for EEPROM devices should be in the blank state before being programmed. Press " Y " to start the blank check. If the device fails the test, the first address that is not blank will be displayed. Otherwise, the "Blank Check OK !" message will be displayed.

4.8 Read

Press " R ", and the Read window will be displayed as shown.

File Edit Setup Mfr Type Quit

Read to buffer Ready to read (Y/CR) ? <CR> Back to main menu.	MANUFACTURER: Amd/MMI TYPE :27C010 VPP: 12.75 V SPEED:QUICK BUFF D:\BUFF.TMP BUFF SIZE :1024K CHECK SUM: 0000 BUFF START:00000 BUFF END:1FFFF I/O ADDR : 200 PROM START:00000 PROM END:1FFFF COUNTER :00000	
--	--	--

Read

Blank

Program

Verify

Compare

Ierase

Auto

Display

Submenu of Read

Press " Y " to read data from the EPROM to the buffer shown in the STATUS FIELD, or press < CR > to return to the main menu. The submenu will display the Reading now... message, and when the reading is completed, the "Read OK!" message will be displayed.

The check sum of all the data read into the buffer will be automatically calculated after the reading a device.

4.9 Verify

Press " V " from the main menu, and the verify window will be displayed as shown.

File Edit Setup Mfr Type Quit

Verify with buffer Ready to verify (Y/CR) ? NO.1 : NO.2 : NO.3 : NO.4 : <CR> Back to main menu.	MANUFACTURER: Amd/MMI TYPE :27C010 VPP: 12.75 V SPEED:QUICK BUFF D:\BUFF.TMP BUFF SIZE :1024K CHECK SUM: 0000 BUFF START:00000 BUFF END:1FFFF I/O ADDR : 200 PROM START:00000 PROM END:1FFFF COUNTER :00000	
--	--	--

Read Blank Program Verify Compare Ierase Auto Display

Submenu of Verify

Press "Y" to verify that the target device contents match the contents located in the buffer at the address range shown in the STATUS FIELD, or press < CR > to return to the main menu. The submenu will display the "Verifying now" message. When the verify function has been completed, the Verify OK! message will be displayed on the screen.

The verifying routine will be terminated and an error message will be displayed if the contents of the device under test do not match the contents found in the working buffer.

4.10 Program

Press " P " and the program window will be displayed as shown.

File Edit Setup Mfr Type Quit

Program Ready to program (Y/CR) ? NO.1 : NO.2 : NO.3 : NO.4 : <CR> Back to main menu.	MANUFACTURER: Amd/MMI TYPE :27C010 VPP: 12.75 V SPEED:QUICK BUFF D:\BUFF.TMP BUFF SIZE :1024K CHECK SUM: 0000 BUFF START:00000 BUFF END:1FFFF I/O ADDR : 200 PROM START:00000 PROM END:1FFFF COUNTER :00000	
--	--	--

Read Blank Program Verify Compare Ierase Auto Display

Submenu of Program

Select " Y " to begin transferring the data in the working buffer to the target device, or press < CR > to return to the main menu. The programming message will appear on the screen and the counter in the Status field will increment until the function is completed. Then, a Program OK ! message will be displayed on the screen. Immediately following the " Program OK ! " message the device will be verified against the buffer contents as a final check that the device has been programmed properly.

4.11 Auto (B & P & V)

To enter Auto function, press " A " from the main menu. The Auto window will be displayed as shown.

File Edit Setup Mfr Type Quit

Auto

Ready to start (Y/CR) ?

NO.1 :
NO.2 :
NO.3 :
NO.4 :
<CR> Back to main menu.

MANUFACTURER: Amd/MMI
TYPE :29F010 VPP:
SPEED:FLASH MEMO

BUFF PC MEMORY
BUFF SIZE :256K

CHECK SUM: 0000

BUFF START:00000
BUFF END:1FFFF

I/O ADDR : 200

PROM START:00000
PROM END:1FFFF

COUNTER :00000

Read

Blank

Program

Verify

Compare

Ierase

Auto

Display

Submenu of Auto

You can then press "Y" to start the Auto function, or press < CR > to return to the main menu. This function is similar to the Program function, but it also automatically performs a check before programming and the security fuse is automatically blown after verifying. Please note that not all device types have security fuses.

4.12 Compare

To enter Compare, press " C " from the main menu. The compare window will be displayed as shown.

File Edit Setup Mfr Type Quit

Compare with buffer

Ready to do (Y/CR) ?

<CR> Back to main menu.

MANUFACTURER: Amd/MMI
TYPE :29F010 VPP:
SPEED:FLASH MEMO

BUFF PC MEMORY
BUFF SIZE :256K

CHECK SUM: 0000

BUFF START:00000
BUFF END:1FFFF

I/O ADDR : 200

PROM START:00000
PROM END:1FFFF

COUNTER :00000

Read

Blank

Program

Verify

Compare

Ierase

Auto

Display

Submenu of Compare

This function will compare the buffer shown in the Status Field with the device in the master socket and display any differences on the screen.

Press "Y" if you wish to compare the data on the device with the working buffer, and the screen will display the differences in the format "address:data" where the buffer contents are enclosed in parenthesis. Otherwise, press < CR > to return to the main menu.

Error at :
Press < ESC > to terminate display.
00000:DA - (00000:21) , 00001:1F - (00001:05),
Press any key to continue.

While the differences are being displayed, you can press < ESC > to terminate the display, then press any key to return to the main menu. If no errors are found, the Compare OK! message will be displayed.

4.13 Display

Press " D " from the main menu, and the display window will be displayed as shown.

Press <ESC> to retry displaying

```
00000  FF FF FF FF FF FF FF FF --FF FF FF FF FF FF FF FF .....
00010  FF FF FF FF FF FF FF FF --FF FF FF FF FF FF FF FF .....
00020  FF FF FF FF FF FF FF FF --FF FF FF FF FF FF FF FF .....
00030  FF FF FF FF FF FF FF FF --FF FF FF FF FF FF FF FF .....
00040  FF FF FF FF FF FF FF FF --FF FF FF FF FF FF FF FF .....
00050  FF FF FF FF FF FF FF FF --FF FF FF FF FF FF FF FF .....
00060  FF FF FF FF FF FF FF FF --FF FF FF FF FF FF FF FF .....
00070  FF FF FF FF FF FF FF FF --FF FF FF FF FF FF FF FF .....
00080  FF FF FF FF FF FF FF FF --FF FF FF FF FF FF FF FF .....
00090  FF FF FF FF FF FF FF FF --FF FF FF FF FF FF FF FF .....
000A0  FF FF FF FF FF FF FF FF --FF FF FF FF FF FF FF FF .....
000B0  FF FF FF FF FF FF FF FF --FF FF FF FF FF FF FF FF .....
000C0  FF FF FF FF FF FF FF FF --FF FF FF FF FF FF FF FF .....
000D0  FF FF FF FF FF FF FF FF --FF FF FF FF FF FF FF FF .....
000E0  FF FF FF FF FF FF FF FF --FF FF FF FF FF FF FF FF .....
000F0  FF FF FF FF FF FF FF FF --FF FF FF FF FF FF FF FF .....
00100  FF FF FF FF FF FF FF FF --FF FF FF FF FF FF FF FF .....
00110  FF FF FF FF FF FF FF FF --FF FF FF FF FF FF FF FF .....
00120  FF FF FF FF FF FF FF FF --FF FF FF FF FF FF FF FF .....
00130  FF FF FF FF FF FF FF FF --FF FF FF FF FF FF FF FF .....
Press any key to continue
```

Submenu of display

The screen displays the address and current contents of the master EPROM. For programmers with multiple sockets this function displays only the contents of the device in master socket. Press < enter > to exit the display, and press any key to return to the main menu.

4.14 Erase

Press " I " from the main menu to enter the erase function. This function is to enable or disable the erase function on EEPROM. The screen will display as follow:

File Edit Setup Mfr Type Quit

Erase

Ready to erase (Y/CR) ?

NO.1 :
NO.2 :
NO.3 :
NO.4 :
<CR> Back to main menu.

MANUFACTURER: Amd/MMI
TYPE :29F010 VPP:
SPEED:FLASH MEMO

BUFF PC MEMORY
BUFF SIZE :256K

CHECK SUM: 0000

BUFF START:00000
BUFF END:1FFFF

I/O ADDR : 200

PROM START:00000
PROM END:1FFFF

COUNTER :00000

Read

Blank

Program

Verify

Compare

Ierase

Auto

Display

If the intended type does not have the erase function, the screen will display as follow:

File Edit Setup Mfr Type Quit

Erase

No Erase function !

<CR> Back to main menu.

MANUFACTURER: Amd/MMI
TYPE :27C010 VPP: 12.75 V
SPEED:QUICK

BUFF D:\BUFF.TMP
BUFF SIZE :1024K

CHECK SUM: 0000

BUFF START:00000
BUFF END:1FFFF

I/O ADDR : 200

PROM START:00000
PROM END:1FFFF

COUNTER :00000

Read

Blank

Program

Verify

Compare

Ierase

Auto

Display

5. UTILITIES

5.1 HEX TO BINARY code converters

Any data loaded to the working buffer must be first converted to binary format to be accepted by the driver file. These HEX converters will convert your HEX format files to executable BIN code that is recognizable to the target CPU. Even though the programmer can load HEX files directly, some users may like to use this converter to convert all their HEX files to binary format so that files will be downloaded at a faster rate to the working buffer. If, for example, a user has a 2 Mbit or larger file that needs to be split into several files, these HEX to BIN converters will be useful to produce files that other utilities can work on. (SPLITX.EXE and SHUFFX.EXE accept only binary files as input.)

There are two HEX file converters: HEXBIN and HEXBIN2. HEXBIN.EXE, with a maximum conversion size of 64K bytes, can be used to convert the following HEX formats to binary (BIN) format.

- INTEL HEX format
- MOTOROLA S HEX formats
- TEKTRONIX HEX format
- TI SOSMAC format
- STRAIGHT HEX format
- MD16 HEX format

HEXBIN2.EXE, with a maximum conversion size of 4096K bytes, can be used to convert the following HEX formats into binary (BIN) format.

- (I) INTEL HEX
- (M) MOTOROLA S HEX (S record)
- (T) TEKTRONIX HEX
- (D) DIGITAL RESEARCH HEX
- (H) INTEL HEX-32 extended HEX

HEXBIN2.EXE allows specifying a starting address, and the leading "garbage" of the file will be skipped to minimize the output binary file size. This is the main difference between HEXBIN2.EXE and HEXBIN.EXE.

The HEX to BIN converters can run in the command line mode or in the prompt mode. In the command line mode the converters can be operated as follows at the DOS prompt:

```
> HEXBIN2.EXE [HEX file name] [BIN file name] [HEX format]
               [start address] [end address] [unused byte selection]
```

All entries in brackets are optional.

HEX file name and BIN file name are the standard file names specified in DOS.

The HEX file name is the input file and the BIN file name is the output binary file to be produced by the utility. Start address and end address are Hexadecimal digits.

INTEL extended HEX

In the INTEL extended HEX format, the start address represents the start segment address. All data ranging from the start segment X 16 to the end of the file will be converted to binary format.

MOTOROLA S HEX format

In the MOTOROLA S HEX format the start address represents the actual file start address. All data ranging from the start address to the end of the file will be converted to binary format.

Unused byte select: To fill the unused bytes with 00 or FFH. Use 1 to fill with "00" and 2 to fill with "FF".

For example:

```
A:> HEXBIN2 DEMO.HEX DEMO.BIN | 1000 FFFF 1 < CR >
```

HEXBIN2 will convert the HEX file DEMO.HEX to binary file DEMO.BIN through INTEL HEX converting technique, and the data ranging from 0000H to the end of the data will be converted.

These programs can be used in the prompt mode as follows:

A:> HEXBIN2 < CR >

HEX FILE NAME : DEMO.HEX
BIN FILE NAME : DEMO.BIN
HEX FILE FORMAT < I > NTEL < M > MOTOROLA < D > DIGITAL RESEARCH
 < T > EKTRONIX < H > INTEL HEX-32
Input code segment start address [0000]
Input code segment end address [FFFF]
Unused bytes will be < 1 > 00 < 2 > FF [1]

5.2 Dump Binary File To Console

DUMP.EXE can convert an executable BINARY file to HEXADECIMAL characters to be displayed on screen or sent to a printer. The DOS type command can not display binary files.

The input format under the DOS command prompt is:

A:> [^P] DUMP.EXE FILENAME [start address] < enter >

All entries in brackets [] are options.

^P : <CTRL> + P

The ^P option can be used to send the data in the file a printer. The data will then be displayed on screen and will also be output to the printer.

FILENAME is a standard filename as specified in DOS.

Start address is a hexadecimal digit. All data from the start address to the end of the file will be displayed.

5.3 2-way, 3-way, 4-way, 8-way, 2-way word Binary File Splitter

SPLIT2.EXE can split a 16-bit binary source file into two 8-bit binary files. One output file contains the collection of bytes stored in the odd bytes of the original source file starting with the byte at address 1,3,5,... The other output file contains the collection of bytes stored in the even bytes of the original source file starting with the bytes stored at address 2, 4, 6,... This utility is used to split a file for systems that have one 16 bit input file that will be stored in two 8 bit EPROM/FLASH to form a 16 bit bus.

SPLIT3.EXE,
splits a source file of 24-bit into three 8-bit files to be programmed in sequence.

SPLIT4.EXE,
splits a source file of 32-bit into four 8-bit files to be programmed in sequence.

SPLIT8.EXE,
splits a source file of 64-bit into eight 8-bit files to be programmed in sequence.

SPLIT216.EXE,
splits a source of 32-bit into two 16-bit files to be programmed in sequence.

The input command under the DOS command prompt is:

A:>SPLIT2 [input file] [output EVEN file] [output ODD file name] < enter >
A:>SPLIT4 [inputfile] [output 1st file] [output 2nd file]
 [output 3rd file] [output 4th file]<enter>

All items in brackets [] are standard filenames specified under DOS.

5.4 2-way, 4-way, Binary File Shuffler

SHUFF2.EXE can shuffle two 8-bit binary source files to become a single 16-bit binary file. The first byte of first 8-bit file will be located at first byte of the

16 bit output file. The first byte of the second 8-bit file will be located at the second byte of the 16-bit output file.

SHUFF4.EXE can shuffle four 8-bit binary format source files to become a single 32-bit binary file. The first byte of the first 8-bit file will be at the first byte of the 32 bit output file. The first byte of the second 8-bit file will be at the second byte of the 32 bit output file. The first byte of the third 8-bit file will be at the third byte of the 32 bit output file. The first byte of the fourth 8-bit file will be at the fourth byte of the 32 bit output file.

The input command under the DOS command prompt is:

```
A:>SHUFF2 [output file] [input EVEN file] [input ODD file] < CR >
A:>SHUFF4 [output file] [input 1st file] [input 2nd file]
          [input 3rd file] [input 4th file]
```

Again, all terms in brackets are standard DOS file names.

5.5 Binary to Hex Converter

BIN2HEX.EXE can convert BIN file to INTEL or MOTOROLA S-HEX file format. The command format is as follows:

```
A:>BIN2HEX [input BIN file] [output HEX file] [HEX format]
           [input BIN file start address] [output HEX file start address]
           ([S-HEX format data length])
```

Input BIN file and Output HEX file are the complete DOS type file name. HEX format supported are INTEL HEX, MOTOROLA S1, MOTOROLA S2 and MOTOROLA S3.

The input BIN file start address asks for the first address in the binary file that should be converted and placed in the HEX file. All data from this address to the end of the file will be converted. When INTEL HEX format is selected, the input address will be the segment address (real address = segment address

x 16) Output HEX file start address asks for the offset address in the HEX file where the BINARY data should be loaded to.

When INTEL HEX is entered, the input address asks for segment address (real address = segment address x 16)

For example:

```
BIN2HEX TEST.BIN TEST.HEX I 0001 0000
```

if BINARY file content is as follow

```
0000 00 01 02 03 04 05.....
0010 10 11 12 13 14 15.....
```

the HEX file result will be

```
(0000 10 11 12 13.....)
:10 0000 00 10 11 12 13.....
```

the input command under DOS prompt is:

```
A:> BIN2HEX <CR>
A:> Input BIN file name: TEST.BIN
A:> Output HEX file name : [TEST.HEX]
A:> Select HEX format ( 0:INTEL, 1:MOTOROLA S1, 2:MOTOROLA S2,
                        3:MOTOROLA S3 ) [0]:
A:> Input BIN file start segment [0000]
A:> Output HEX file start segment [0000]
Select S-HEX format data length (0:16, 1:32, 2:64) [1]:
```

Only when Motorola S-HEX is entered will the above shadowed line appear for the user to modify the data length of each line.

APPENDIX A.

List of Supported Devices

GENERAL

00.2816	21 V	07.2732A	21 V	14.27256HV	21 V
01.2816A		08.2732B	12.5V	15.27512	12.75V
02.2817		09.2764	21 V	16.27512HV	21 V
03.2864		10.2764A	12.75V	17.27C010	12.75V
04.28256		11.27128	21 V	18.27C020	12.75V
05.27C16	21 V	12.27128A	12.75V	19.27C040	12.75V
06.2716B	21 V	13.27256/A	12.75V	20.27C080	12.75V

AMD/MMI

00.2716B	12.5V	11.27256	12.75V	22.2864A	
01.2732A	21 V	12.27C256	12.75V	23.2864B	
02.2732B	12.5V	13.27512	12.75V	24.2864AE	
03.9732A	21 V	14.27C512	12.75V	25.2864BE	
04.9732B	12.5V	15.27LV512	12.75V	26.28F256	12 V
05.2764	21 V	16.27C513	12.75V	27.28F512	12 V
06.9764	21 V	17.27C010	12.75V	28.28F010	12 V
07.2764A	12.75V	18.27C020	12.75V	29.28F020	12 V
08.27128	21 V	19.27C040	12.75V	30.29F010	
09.27C128	12.75V	20.27C801	12.75V	31.29F040	
10.27128A	12.75V	21.2817A			

ATMEL

00.27HC64	12.75V	12.27LV010	13.0V	25.28HC256	—
01.27C128	12.75V	13.27C020	13.0V	26.28MC010	—
02.27256	12.75V	14.27C040	13.0V	27.28C010	—
03.27C256	12.75V	15.27LV040	13.0V	28.28MC020	—
03.27C256R	13.0V	16.27C080	13.0V	29.28MC040	—
04.27LV256R	13.0V	17.28C04	—	30.29C256	—
05.27HC256R	13.0V	18.28C16	—	31.29C257	—
06.27C512	12.75V	19.28HC16	—	32.29LV512	—
07.27C512R	13.0V	20.28C17	—	33.29C512	—
08.27LV512R	13.0V	21.28HC17	—	34.29C010	—
09.27C513	12.75V	22.28C64	—	35.29C020	—
10.27C513R	13.0V	23.28HC64	—	36.29C040	—
11.27C010/L	13.0V	24.28C256	—	37.28LV256	—

Asahi Kasei

00.28C64 —

BOWMAR-WHITE

00.8023 —

CATALYST

00.2764A	12.75V	05.27010	12.75V	10.28C256	—
01.27128A	12.75V	06.27HC010	12.75V	11.28F512	12 V
02.27256	12.75V	07.28C16A	—	12.28F512V5	—
03.27HC256	12.75V	08.28C17A	—	13.28F010/I	12 V
04.27512	12.75V	09.28C64A	—	14.28F010V5/I	—

DALLAS

00.DS1220AB/AD	—	02.DS1230Y/AB	—	04.DS1245EE	—
01.DS1225D/E	—	03.DS1245Y/AB	—		

EXEL

00.28C04	—	03.2816A	—	06.2865A	—
01.2804A	—	04.2817A	—		
02.28C16	—	05.2864A	—		

FUJITSU

00.2732A	21 V	06.27256	12.5V	12.27C1001	12.5V
01.27C32A	21 V	07.27C256	21 V	13.27C4001	12.5V
02.2764	21 V	08.27C256A	12.5V	14.2864A	—
03.27C64	21 V	09.27C256H	12.5V	15.28C64	—
04.27128	21 V	10.27C512	12.5V	16.2865A	—
05.27C128	21 V	11.27C1000	12.5V	17.28C65	—

HITACHI

00.482732A	21 V	06.27C256	12.5V	12.29C101	12 V
01.27C64	21 V	07.27512	12.5V	13.29C101B	12 V
02.482764	21 V	08.27C101	12.5V	14.27C4001	12.5V
03.27128A	12.5V	09.27C101A	12.5V	15.28F101	12 V
04.4827128	21 V	10.27C301	12.5V	16.28F4001	12 V
05.27256	12.5V	11.27C301A	12.5V	17.58C256	—

Hyundai

00.27C64A 12.75V

Integrated

00.78C16A —

Intel					
00.2816A	—	12.27128	21 V	24.27C100	12.75V
01.2817A	—	13.27128A	12.75V	25.27C010	12.75V
02.2732A	21 V	14.27128B	12.75V	26.27C010A	12 V
03.2732B	12.5V	15.27C128	12.75V	27.27C020	12.75V
04.2764	21 V	16.P27128A	12.75V	28.27C040	12.75V
05.2764A	12.75V	17.27256	12.75V	29.27C080	12.75V
06.27C64	12.75V	18.27C256	12.75V	30.28F256	12 V
07.87C64	12.75V	19.P27256	12.75V	31.28F512	12 V
08.87C256	12.75V	20.27512	12.75V	32.28F010	12 V
09.87C257	12.75V	21.27C513	12.75V	33.28F020	12 V
10.68C257	12.75V	22.27010	12.75V	34.28F001BX-B	12 V
11.P2764A	12.75V	23.27011	12.75V	35.28F001BX-T	12 V

Intel COMS			
00.27CX256	12.75V	01.27CX010	12.75V

ISSI			
00.27HC256	12.75V	02.27HC010	12.75V
01.27HC512	12.75V	03.28F010	12 V

Itaucom	
00.27512	12.75V

MATSUSHITA			
00.2764	21 V	01.27128	21 V

Microchip					
00.27C64	13.0V	07.27LV256	13.0V	14.28HC16	—
01.27HC64	13.0V	08.27C512	13.0V	15.28C17/A	—
02.27LV64	13.0V	09.27C512A	13.0V	16.28HC17	—
03.27C128	13.0V	10.27LV512	13.0V	17.28CP64	—
04.27256	13.0V	11.27C513	13.0V	18.28C64/A	—
05.27C256	13.0V	12.28C04/A	—	19.28C256	—
06.27HC256	13.0V	13.28C16/A	—	20.28CP256	—

MITSUBISHI					
00.2732A	21 V	05.27C256	12.5V	10.27C201	12.5V
01.2764	21 V	06.27512	12.5V	11.27C401	12.5V
02.27128	21 V	07.27C512A	12.5V	12.28C64A	—
03.27C128	21 V	08.27C100	12.5V	13.28F101	12 V
04.27256	12.5V	09.27C101	12.5V		

Motorola			
00.TMS2716	12.5V	01.29F010	—

MXIC					
00.MX27C256	12.75V	06.MX27C1001	12.75V	12.28F4000	12 V
01.MX27L256DC	12.75V	07.MX27C2000	12.75V	13.28F1000C	12 V
02.MX27C512A	12.75V	08.MX27C4000	12.75V	14.28F1000P	12 V
03.MX27L512DC	12.75V	09.MX27L4000DC	12.75V	14.28F2000P	12 V
04.MX27C1000	12.75V	10.27C8000	12.75V		
05.MX27L1000	12.75V	11.28F1000	12 V		

National					
00.2816		11.NM27C128	12.5V	22.NMC27C512A	12.5V
01.2864		12.NMC27CP128	12.5V	23.NM27LC512	12.5V
02.NMC9816A		13.NMC27C256	13 V	24.NM27LV512	12.5V
03.NMC9817		14.NM27C256	12.75V	25.NMC27C1023	12.75V
04.NMC9817A		15.NMC27C256B	12.5V	26.NMC27C010	12.75V
05.NMC98C64		16.NM27LC256	12.5V	27.NM27C010	12.75V
06.NMC27C16B	13 V	17.NMC27CP256	12.5V	28.NM27LV010	12.75V
07.NMC27C32B	13 V	18.NMC27C512	13 V	29.NMC27C020	12.75V
08.NMC27C64	13 V	19.NMC27P512	13 V	30.NM27C040	12.75V
09.NMC27CP64	12.5V	20.NM27C512	12.75V	31.NM27P040	12.75V
10.NMC27C128C	13 V	21.NM27P512	12.75V		

NEC					
00.2732A	21 V	06.27C1000/A	12.75V	11.28C04	—
01.2764	21 V	07.27C1001/A	12.75V	12.28C05	—
02.27128	21 V	08.27C2001	12.75V	13.28C64	—
03.27256	21 V	09.27C4001	12.75V	14.28C256	—
04.27256A	12.75V	10.27C8001	12.75V		
05.27C512	12.75V				

OKI					
00.2816A	—	09.27256	12.75V	18.271000	12.75V
01.28C16A	—	10.27C256H	12.75V	19.271000ZB	12.75V
02.28C64A	—	11.27C256HZB	12.75V	20.27C101	12.75V
03.28C256	—	12.27C256ZB	12.75V	21.27C101ZB	12.75V
04.2732A	21 V	13.27256ZB	12.75V	22.27101H	12.75V
05.2764	21 V	14.27256ZC	12.75V	23.27C2000	12.75V
06.2764A	12.75V	15.27512	12.75V	24.27C2000ZB	12.75V
07.27128	21 V	16.27512ZB	12.75V	25.27C401	12.75V
08.27128A	12.75V	17.27C1000	12.75V	26.27C401ZB	12.75V

OMNI WAVE SE

00.27C256 12.75V 01.27C101 12.75V

PANASONIC

00.27C64A 12.75V 01.27C256 12.75V 02.27C512 12.75V

Richo

00.27C32 21 V 01.27C64 21 V 02.27C256 12.75V

ROCKWELL

00.2816A —

SAMSUNG

00.28C16	—	04.28C64	—	08.2865A	—
01.2816A	—	05.2864A	—	09.2865AH	—
02.28C17	—	06.2864AH	—	10.28C256	—
03.2817A	—	07.28C65	—	11.29C010	—

SEEQ

00.2764	21 V	07.5517A(H)	—	13.28C256	—
01.27128	21 V	08.2864	—	14.38C16	—
02.27C256	12.75V	09.2864H	—	15.38C32	—
03.28C04	—	10.28C64	—	16.52B13	—
04.2816A(H)	—	11.28C65	—	17.52B33	—
05.5516AH	—	12.28256	—	18.28C010	—
06.2817A(H)	—				

SEIKO

00.S2840R/A — 01.S28F512A 12V

SGS

00.MK48Z02/12(B)		09.87C257	12.75V	17.27C401	12.75V
01.MK48T02/12(B)		10.27512	12.75V	18.27C080	12.75V
02.2732A	21 V	11.27C1000	12.75V	19.28F256	12 V
03.2764	21 V	12.27C1001	12.75V	20.28F256A	12 V
04.2764A	12.75V	13.27C2001	12.75V	21.28F512	12 V
05.27C64	12.75V	14.27C4001	12.75V	22.28F101	12 V
06.27128A	12.75V	15.27C101	12.75V	23.28F1001	12 V
07.27256	12.75V	16.27C201	12.75V	24.28F201	12 V
08.27C256	12.75V				

SHARP

00.5762	12.75V	03.57126	12.75V	06.57254	12.75V
01.5763	12.75V	04.57127	12.75V	07.57255	12.75V
02.5764	12.75V	05.57128	12.75V	08.57256	12.75V

PHILIPS

00.27C64	21 V	03.27C256	12.75V	05.27C512	12.75V
01.27C64A	12.75V	04.27C256F	12.75V	06.27C010	12.75V
02.27C64AF	12.75V				

S-MOS

p00.27C64H 21 V 01.27128H 21 V 02.27C256H 12.75V

Sony

00.CXK27C256DQ	12.7V	02.CXK27C1000DQ	12.7V
01.CXK27512DQ	12.7V	03.CXK27C1001DQ	12.7V

SST

00.28EE011	—	02.29EE512	—	04.29EE020	—
01.29EE010	—	03.28SF040	—	05.29EE010(-E)	—

TI

00.27(P)32A	21 V	07.27C256	13.0V	14.27C040	13.0V
01.27(P)64	21 V	08.87C257	13.0V	15.27PC040	13.0V
02.27C64	13.0V	09.27C512	13.0V	16.28F010	12 V
03.27128	21 V	10.27PC512	13.0V	17.29C256	
04.27C128	13.0V	11.27C010A	13.0V	18.29C257	
05.27PC128	13.0V	12.27PC010A	13.0V	19.29C010	
06.27256	13.0V	13.27C020	13.0V		

TOSHIBA

00.2732A	21 V	11.27256A	12.75V	22.532000	13.0V
01.2464	21 V	12.27256B	12.75V	23.534000	12.75V
02.2464A	12.5V	13.27256(D)	21 V	24.541000	12.75V
03.2764A	12.75V	14.54256	21 V	25.541001	12.75V
04.2764D	21 V	15.54256A	12.75V	26.571000	12.75V
05.24128	21 V	16.57256	21 V	27.571001	12.75V
06.24128A	12.75V	17.57256A	12.75V	28.574000	12.75V
07.27128A	12.75V	18.24512	12.75V	29.544000	12.75V
08.27128D	21 V	19.27512	12.75V	30.578000	12.75V
09.24256	12.75V	20.27512A	12.75V		
10.24256A	12.75V	21.57512A	12.75V		

VLSI					
00.27C64	12.75V	02.27C256	12.75V	04.28H64	—
01.27C128	12.75V	03.27C512	12.75V		
WSI					
00.57C128	12.75V	02.27C512	12.75V	04.27C010L	12.75V
01.27C256	12.75V	03.27C512F	12.75V	05.27C010F	12.75V
Winbond					
00.27F256	12V	03.27E512	12V	05.27E010	12V
01.27E257	12V	04.27F010	12V	06.29EE011	—
02.27F512	12V				
XICOR					
00.2816A	—	03.2864B	—	06.28C256	—
01.2816B	—	04.2864H	—	07.28C010	—
02.2864A	—	05.28256	—		
CYPRESS					
00.27C128	12.5V	01.27C256	12.5V	02.27H010	12.75V
MEGA					
00.BL1988-1M					
ALLIANCE					
00.AS29F010		00.AS29F011			

APPENDIX B

TROUBLESHOOTING

PROBLEM 1

When I turn my computer on, I get no beeps, the fan does not spin, nothing happens!

RESOLUTION

- 1-1 The power cord may be disconnected from the computer or the wall. Check the power cable.
- 1-2 You may have a chip improperly inserted in the ZIF socket. Make sure your chip is correctly installed and the socket lever is pressed down.
- 1-3 Your power supply may not have sufficient power to drive both your system and the interface card.

PROBLEM 2

When I try to run a driver file, I get communication error messages!

RESOLUTION

- 2-1 You may not have the I/O port set correctly for your programmer. Double check the I/O port assignment.
- 2-2 You may have a chip improperly inserted in the ZIF socket. Make sure your chip is correctly installed and the socket lever is pressed down.
- 2-3 There may not be bad connection between the interface card and the programmer. Double check the cable connection.
- 2-4 Your system may be running too fast. Try slowing your system down as much as possible. For example, set clock of AT Bus or ISA Bus at 7.159 MHz in the PC BIOS setup.

PROBLEM 3

When I install the interface card, some of my other peripherals start behaving strangely!

RESOLUTION

- 3-1 You are probably experiencing an I/O port conflict. Double check the I/O port assignments on all your peripherals, including the interface card.

PROBLEM 4

Two or more programming failures in a row.

RESOLUTION

- 4-1 Ask your dealer if any Spec. revision has already been updated to the driver file.
- 4-2 Make sure you are running the programmer software directly from DOS. If you run from a DOS box in Windows 3.x or Windows 95 you may have problems.

10 Things to do Before Calling Your Dealer

1. Reboot the computer and try again.
2. If you change switches or jumpers, write down the original settings.
3. Repeat all the steps, following the instructions in this manual.
4. Make sure all cards and cables are firmly attached.
5. Remove any memory resident programs from memory.
6. See if your problem is listed in the Trouble-Shooting section.
7. Try it on another system.
8. Compare system requirements with your configuration.
9. Ask your in-house tech specialist (every office has one).
10. Ask whoever installed the product.

GENERAL TROUBLESHOOTING CHECKLIST

If your problem is not described above, check the following :

1. Is the interface card fully seated in its slot?
2. Are all cable connections securely fastened?
3. Does the interface card jumper have the same I/O address setting as in the driver file?
4. Does any other card on the bus have the same I/O address as the interface card?

GLOSSARY

Working Buffer

In the default state, the working buffer is a block area of PC memory allocated by the device driver file through DOS. The working buffer is used by the device driver file as an intermediate storage.

When you want to program a data file to a DEVICE you first load the file to the working buffer. The contents in the working buffer are then programmed to the target DEVICE. When you read the contents of a master DEVICE the data is stored in the working buffer. The working buffer can then be edited or saved to disk for future reference.

The minimum allocated size of the working buffer is 64K bytes, and the maximum size is the maximum available memory in the PC (This does not include expanded or extended memory. Please see the following section to overcome this limitation.)

Since the working buffer is dynamically allocated through DOS, the actual base address on the PC may vary from system to system, software to software. The user need not refer to the actual base address of the working buffer for most practical purposes.

NOTE

In the default state the PC memory buffer is used as the working buffer. PC memory is limited to just 640K. This limit can be overcome by using the "Modify buffer structure function to specify hard disk C:, D:, E:, or F: as the working buffer. You can also specify a RAM drive as the buffer area. (See 4.3.4 Modify buffer structure)

Device Start and Device End Addresses

The start and end addresses are offset addresses specified by the DEVICE. Data stored at the buffer start address in the working buffer will be programmed to a device at the Device Start Address location.

Buffer Start and Buffer End Addresses

The buffer start and end addresses are offset addresses specified from the base address of the WORKING BUFFER. The data stored in the WORKING BUFFER between the buffer start and buffer end addresses contains the subset of the working buffer that is programmed to a target device. This is also the area of the buffer used for checksum calculations.

Check Sum

This is the sum of all data contents between buffer start and end addresses. All bytes are added byte by byte and then the least significant 16 bits (4 HEX characters) are displayed as the check sum. Some bytes in the address range may not be included in the checksum as specified by the manufacturer of the particular DEVICE. Check sums will be calculated during the DEVICE reading, file loading, type changing or after buffer editing.

I/O Address

This is the I/O base address of the interface card. Each I/O interface card added into a PC slot will occupy one or more I/O addresses.

The default I/O base address of the interface card is 278 and occupies 3 contiguous spaces (278 to 27A).

Counter

This is the programming address counter. During the DEVICE programming, the counter on the screen will scroll to show the current address in the target device that is being programmed.

MFR, TYPE, VPP, SPEED

Every DEVICE has its own manufacturer (MFR), type number (TYPE), programming voltage (VPP) and programming speed (SPEED or algorithm). Please refer to Chapter 4 for detailed descriptions.