4.1 Introduction

The 6502 microprocessor of the MPF-II can access 65,536 memory locations. You can regard the entire memory of the MPF-II is divided into 256 sections or "pages" with each page containing 256 memory locations. Thus, on page 30, the memory locations range from 3000H to 30FFH, totaling 256 locations. Since each address consists of four hexadecimal digits, the first two hex digits (high order byte) can be regarded as the page number, and the low order byte (the last two hex digits) as the location within a page.

The 256 pages of MPF-II memory is divided into three types: 1) RAM, 2) ROM, and 3) input/output (I/O) locations. Different types of memory are used for different purposes. Table 4-1 shows the memory map of the MPF-II.

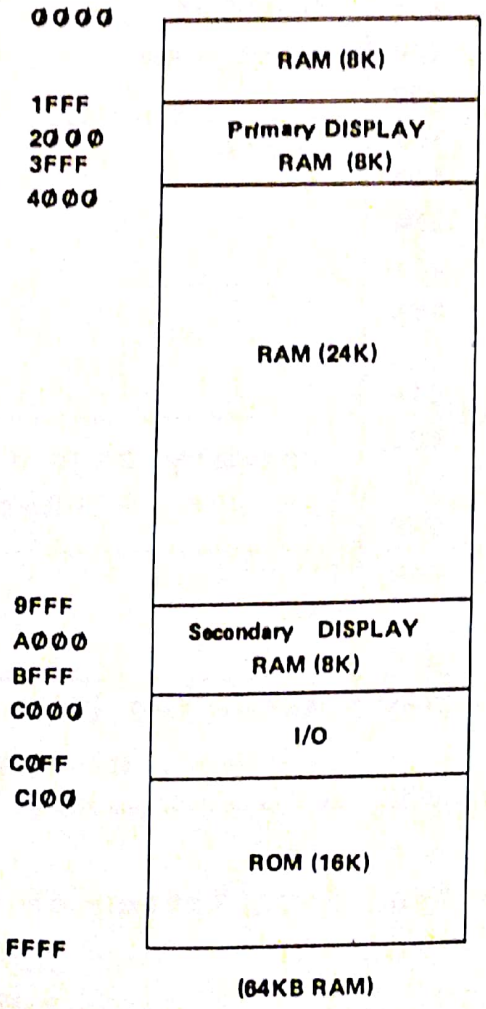

Table 4-1 Memory Map of MPF-II

4.2 RAM Area

The RAM area begins from the bottom of page Ø to the end of page 191. This memory range's starting address is ØØØØH and ends at BFFFH. Most of the locations in the RAM is used to store your program and data. But some areas in the RAM are reserved for the monitor, various programming languages, and other system functions. You can refer to Table 4-2 for a description of the uses of the RAM.

Page Number: Decimal	Hex	Used for
Ø	$ØØ	System Programs
1	$Ø1	System Stack
2	$Ø2	GETLN Input Buffer
3	$Ø3	Reserved for Peripheral devices
4	$Ø4	Monitor Program
5	$Ø5	
6	$Ø6	
7	$Ø7	
8	$Ø8	User's RAM
9	$Ø9	
10	$ØA	
11	$ØB	
12 through 31	$ØC through $1F	
32 through 63	$2Ø through $3F	Primary Page for Text, Low-Res, Hi-Res
64 through 159	$4Ø through $9F	User's RAM
160 through 191	$AØ through $BF	Secondary Page for Text, Low-Res, Hi-Res

Table 4-2 Description of RAM Usage

The usage of the RAM's various areas is described below:

4.2.1 Zero Page

Nearly 20 locations of this page are assigned to the system monitor, while the remaining locations in this page are assigned for use of the MPP-II BASIC. Refer to Table 4-3 and 4-4.

Decimal	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Hex	$0	$1	$2	$3	$4	$5	$6	$7	$8	$9	$A	$B	$C	$D	$E	$F
0 $00							•	•	•	•						
16 $10																
32 $20	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
48 $30	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
64 $40	•	•	•	•	•	•	•	•	•	•					•	•
80 $50	•	•	•	•	•	•										
96 $60																
112 $70																
128 $80																
144 $90																
160 $A0																
176 $B0																
192 $C0																
208 $D0																
224 $E0																
240 $F0																

Table 4-3 Monitor Zero Page Usage

Decimal	Hex	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		$0	$1	$2	$3	$4	$5	$6	$7	$8	$9	$A	$B	$C	$D	$E	$F
0	$00	•	•	•	•	•	•					•	•	•	•	•	•
16	$10	•	•	•	•	•	•	•	•	•							
32	$20																
48	$30																
64	$40																
80	$50	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
96	$60	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
112	$70	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
128	$80	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
144	$90	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
160	$A0	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
176	$B0	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
192	$C0	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
208	$D0	•	•	•	•	•	•			•	•	•	•	•	•	•	•
224	$E0	•	•	•		•	•	•	•	•	•	•					
240	$F0	•	•	•	•	•	•	•	•	•							

Table 4-4 MPF-II BASIC Zero Page Usage

4.2.2 Page One

The 65Ø2 microprocessor of the MPF-II uses the 256-byte locations of page 1 as a stack. Therefore, make sure your program and data are not stored in this area.

4.2.3 Page Two

The locations of this page are reserved for the GETLN subroutine as a memory buffer for an input line of characters.

4.2.4 Page Three

The locations of page three are reserved for use of peripheral devices to be added in the future.

4.2.5 Page Four through Page Seven

The 1Ø24-byte locations of this area are reserved for the monitor.

4.3 ROM Area

The MPF-II is built with 16K ROM, which can hold 16,384 bytes of data. The ROM is mainly used for system monitor, the BASIC Interpreter, utility programs, and subroutines.

The ROM occupies the top 16K locations of the MPF-II's memory map, beginning at location C000H and ending at FFFFH. Once the MPF-II is turned on, the 6502 microprocessor jumps to the top of the memory map and begins executing programs. Thus, the programs which begins at the top of the memory map are responsible for initializing the entire system.

Table 4-5 shows the memory map of the ROM of the MPF-II, the programs and subroutines in the ROM.

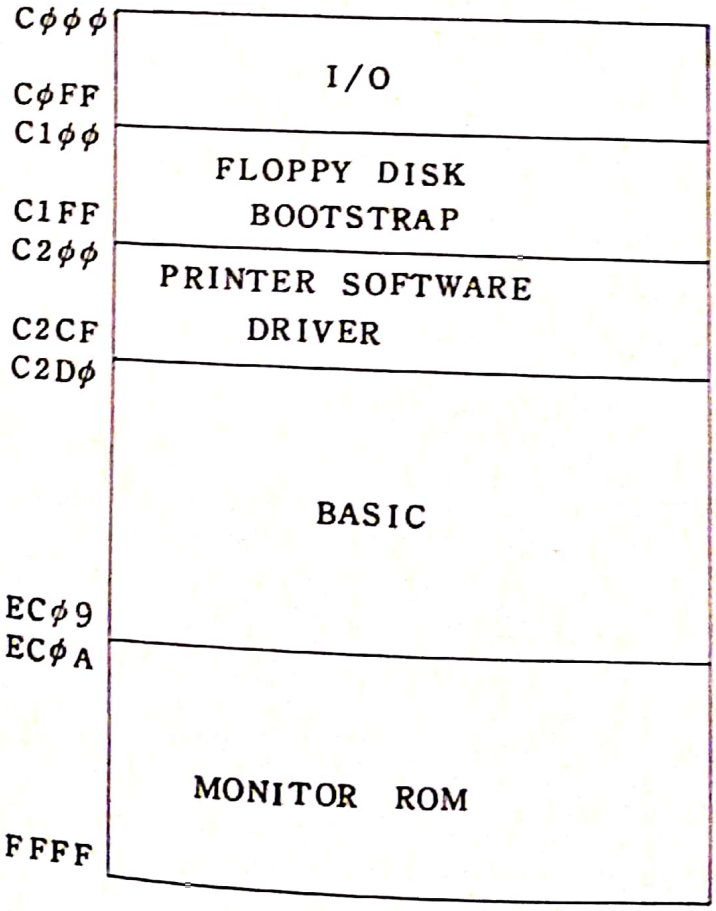

Table 4-5

4 • 4 Input/Output Locations

A total of 256 locations in the memory map of MPF-II are dedicated to input and output functions. This range of memory begins at location CØØØH (49152 or -16384 in decimal) and extends up through location CØFFH (49407 or -16129). The I/O locations ranging from CØØØH to CØ7FH are used by the MPF-II main board, and the remaining are reserved for external use.