PM-1033

HMC86508

Flat Panel Control Module

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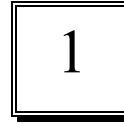
Introduction

Welcome to the PM-1033 HM86508 Flat Panel Control Module. The PM-1033 is a PC/104 form factor module. It uses HM86508 LCD/CRT Controller Chips to support high resolution LCD/CRT display panel. It is made for the SBCs that are not equipped with LCD/CRT interface from the factory and is the best solution for internal flat panel connection.

1.1 Specifications :

PC/104 form factor

LCD/CRT Interface : HM86508 Chipset with 1MB RAM display memory

Resolution: up to   1024 x 768, 256 colors for CRT

                                       800 x 600, 16M colors for LCD

Output +/-40V VEE for flat panel need

LCD Type :   TFT or DSTN (selectable from JP5)

                         Support 18/24-bit data signals

Simultaneous VGA and LCD display

Flash Disk: support M-Systems Disk On Chip®

Operating Temperature: 0-60°C

Support LCD Type :

Prime View   P64CV1   640 x 480 TFT 6.4" (BIOS 5081.HMC)

Toshiba   LTM10C209A   640 x 480 TFT 10.4"(BIOS 5081.HMC)

Toshiba   LTM10C273A   800 x 600 TFT 10.4" (BIOS 5082.HMC)

Toshiba   LTM12C275A   800 x 600 TFT 12.1"(BIOS 5082.HMC)

NEC   NL8060AC33-13   640 x 480 TFT 10.4"
(BIOS 5081.HMC)
NEC   NL8060AC26-04   800 x 600 TFT 10.4"
(BIOS 5082.HMC)
NEC   NL8060BC31-09   800 x 600 TFT 12.1"
(BIOS 5082.HMC)
Hitachi   LMG9211XUCC 640 x 480 DSTN 9.4"(BIOS 5081/2.HMC)

Chunghwa   CLX-8102S-C3X640 x 480 DSTN 9.4"(BIOS 5081/2.HMC)

Kyocera   KCB104VG2BA-A01640X480 DSTN 10.4"(BIOS
      5081/2.HMC)

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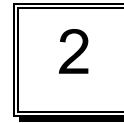
Installation

This chapter describes how to install the PM-1033. The layout of PM-1033 is shown on the next page and the Unpacking Precautions that you should be careful with are described on the following page. Also included is the jumpers and connectors description for this PM-1033.

Hardware Installation :

1.   Please read the Unpacking Precautions first before you install the PM-1033 (see page 6).
2.   If your LCD panel is TFT type then skip JP7 and JP8 (default setting of JP8 is for TFT type LCD panel)
3.   If your LCD panel is MONO or DSTN type, JP7 must be set according to the data sheet of the LCD panel (+VEE or –VEE) then adjust the output of VEE through R19 (Variable Resistor). **Caution:** don't make connection to your LCD panel while you adjust the output of VEE, it may damage your LCD panel. Measure the voltage with a voltage meter.
4.   **Caution:** Don't set the JP8 to VEE if your LCD panel is TFT type. It will cause fatal damage to your LCD panel.
5.   Select the correct BIOS type for your LCD panel on JP5.
6.   Connect your LCD panel cable to CN16 and CRT monitor to CN15.

Software (driver) Installation :

If this is the first time you install Windows, please plug the PM-1033 into the PC/104 (in POWER OFF condition) then start to install the Windows. After the installation complete, press the [Start] button > Settings > Control Panel. Select the *Display* Icon and then press *Settings* Menu and press the *Advanced* button. Press *Adapter* Menu and then press the *Change* button. Windows will go into *Update Device Driver Wizard*, press *Next* button and then check on: *Display a list of all the drivers in a specific location, so you can select the driver you want.* Then press *Have Disk* button and browse or select the correct driver from the diskette. Choose the HM86508 driver from the disk under the NT40, WIN31 or WIN95 directory, depending on the Windows version that you install.

For hard disk, which has been installed by another VGA driver before, to update the driver: under *Control Panel*, select *System* icon then press *Device Manager* Menu. *Remove* the old display adapters and then install the new driver using *Add New Hardware* wizard under the *Control Panel*. Consult the **Microsoft Windows User Manual** for the driver installation.

2.2   PM-1033's Layout
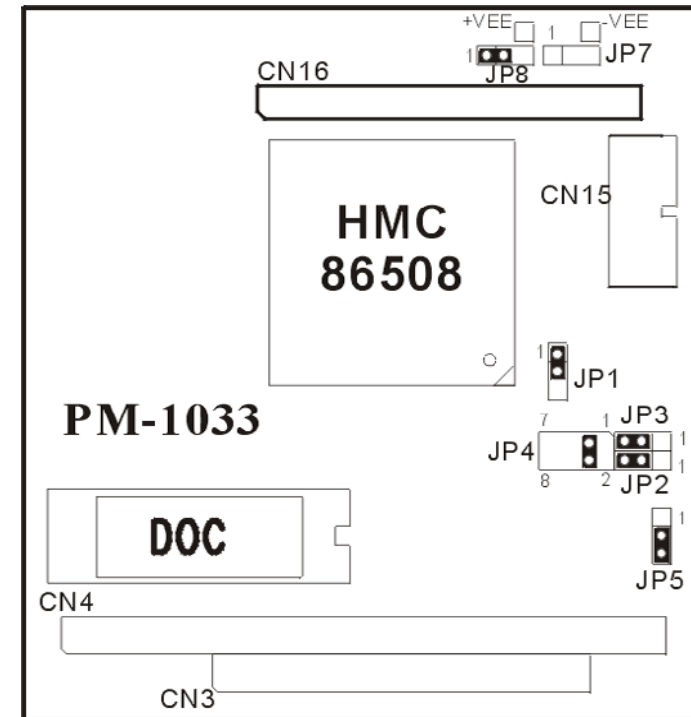
2.2 Unpacking Precautions

✓ Some components on PM-1033 are very sensitive to static electric charges and can be damaged by a sudden rush of power. Ground yourself to remove any static charge before touching your PM-1033. You can do it by using a grounded wrist strap at all times or by frequently touching any conducting materials that is connected to the ground.

✓ Disconnect power supply before handling and doing connection on PM-1033. Do not plug any connector or jumper while the power is on. It will cause fatal damage to your LCD panel.

✓ Make sure that every connector is connected in correct direction. Any incorrect connection may cause smoke or burn of electrical parts or fatal damage of your LCD panel.

2.3 JUMPER SETTING

• JP1 JP2 JP3 JP4: Disk On Chip Memory Address

FUNCTION	JP1	JP2	JP3	JP4
CE000H	1-2	2-3	2-3	3-4
D6000H	1-2	2-3	2-3	5-6
DE000H	1-2	2-3	2-3	7-8

• JP5 : SELECT FLASHROM SEGMENT

The Flash ROM used on PM-1033 is 64K Flash ROM. It is divided into two segment, 32K each, BIOS 1 and BIOS 2.

JP5	DESCRIPTION
1-2	BIOS 1
2-3	BIOS 2

Note: PM-1033 is equipped with one BIOS diskette which contains the following files:

File Name	BIOS 1	BIOS 2
5081.HMC	**640 x 480 TFT**	640 x 480 DSTN
5082.HMC	800 x 600 TFT	640 x 480 DSTN

PM-1033 is initially installed with 5081.HMC. The BIOS can be programmed or updated with the other *.HMC files by using an EPROM programmer.

• JP7 : VEE SELECTION (for LCD type DSTN/MONO)

FUNCTION	JP7
+VEE	1-2
-VEE	2-3

+VEE = +5V ~ +40V
-VEE = -0V ~ -40V

User must read the specification of the LCD panel to know the polarity and bias voltage of the LCD panel. The bias voltage can be set from R19.

• **JP8 : CN16 Pin7 VEE or FPVEE SELECTION**

FUNCTION	JP8
VEE	1-2
FPVEE	**2-3**

FPVEE = LCD control signal
VEE = +/- 40V output (adjustable through R19) for MONO or
DSTN type of LCD panel.
Caution: don't set JP8 to VEE for TFT type of LCD panel, it will
cause fatal damage!

2.4 PM-1033'S CONNECTOR

• **CN4: PC104-64 pin Connector**

• **CN3: PC104-40 pin Connector**

• **CN16 : 22x2 header/2.0mm LCD Connector**

PIN NO	FUNCTION	PIN NO	FUNCTION
1	+12V	23	P14
2	+12V	24	P15
3	GND	25	P16
4	GND	26	P17
5	+5V	27	P18
6	+5V	28	P19
7	FPVEE/VEE	29	P20
8	GND	30	P21
9	P0	31	P22
10	P1	32	P23
11	P2	33	GND
12	P3	34	GND
13	P4	35	SHFCLK
14	P5	36	FLM
15	P6	37	M
16	P7	38	LP
17	P8	39	GND
18	P9	40	ENBKL
19	P10	41	GND
20	P11	42	N/C
21	P12	43	+5V
22	P13	44	N/C

Note: * pin 7 of CN16 can be set as FPVEE or VEE from JP8
   * the range of VEE is +5V ~ +40V and 0V ~ -40V,
      tunable from R19

- **CN15: 5X2 header/2.54mm CRT Connector**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	RED	6	NC
2	GREEN	7	NC
3	BLUE	8	GND
4	HS	9	GND
5	VS	10	GND