SNB-M004A
12 MHZ TURBO
MAIN BOARD
USER'S MANUAL

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CHAPTER 1 INTRODUCTION

The SNB-M004A main board is compatible with the IBM PC/XT. This means that virtually all the softwares that are available for the IBM PC/XT can also be run on a system built with this SNB-M004A main board.

The main advantages of the SNB-M004A main board over ordinary PC/XT main boards are its Wait State Selectability (the wait state of on board I/O, on board memory, on board ROM, slot I/O, slot memory can be programmed), and it can adapt to all IBM PC/XT compatible peripheral cards.

CHAPTER 2 FEATURES

- Ultra-High speed V20 microprocessor.
- Math-Coprocessor 8087 (optional).
- Switchable between (4.77 MHz) Normal mode and (12 MHz) Super Turbo mode through either a hardware switch.
- Normal mode (4.77 MHz) is 100% compatible with IBM PC/XT and Super Turbo mode (12 MHz) is 250%** faster than IBM PC/XT.
- On board memory expandable to 640 KB.
- 2 socket for Bios/Basic (64K/256K ROM)
- Eight expansion slots.
- Eight interrupt levels.
- ø – 1 Wait State selectable: on board memory, on board ROM.
- ø – 3 Wait States selectable: on board I/O, slot I/O, slot memory.
- Parity check enable/disable.
- Four DMA channels for disk and special I/O.
- Three timer channels for sound, time and memory refresh.
- Connector for hardware reset, turbo switch keylock, speaker, turbo and power LED.

** The Landmark CPU Speed Test: 2.5X proformance relative to 4.77 MHz IBM PC/XT

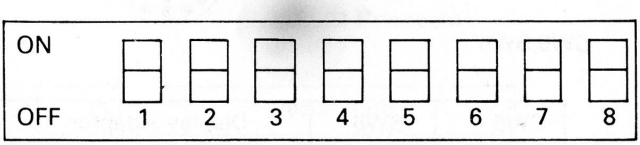
CHAPTER 3 SYSTEM CONFIGURATION

This section provides information for preparing the SNB-M004A main board to use.The user should understand all the Information contained in this section before beginning to configure the system.

3.1 System Configuration DIP Switches (SW-A)

The SNB-M004A main board has an eight way DIP switches to set the system configuration. The switch settings are listed as followings:

SW-A System Configuration DIP Switches



SW1–Parity Check Option
SW2–Must be ON (Reserved for Maths Co-Processor)
SW3,SW4–Amount of Memory on System Board
SW5,SW6–Type(s) of Display Adapter(s)
SW7,SW8–Number of 5¼ inch Diskette Drivers Installed

SW1,SW2

Switch	Function	
SW1	On	Disable Parity Check (DRAM)
	Off	Enable Parity Check (DRAM)
SW2	On	W/O 8087-1 CO-PROCESSOR
	Off	W/ 8087-1 CO-PROCESSOR

Note: Parity RAM chip(s) is required to insert to Parity Chip socket(s) if Parity Check is enabled.

SW3,SW4

SW3	SW4	Memory Size
On	On	øKB
Off	On	512KB
On	Off	640KB

SW5,SW6

SW5	SW6	Display Adapter
On	On	No Display Adapter
Off	On	Color Graphics Adapter (40x25)
On	Off	Color Graphics Adapter (80x25)
Off	Off	Monochrome Display Adapter

SW7,SW8

SW7	SW8	Diskette Drives
On	On	1 Drive
Off	On	2 Drives
On	Off	3 Drives
Off	Off	4 Drives

3.2 Switch Settings and Connector Descriptions

The SNB-M004A main board provides the following connectors for your control pannel, keyboard and power supply:

a) Keyboard Connector (CN1)

The keyboard connector is located at CN1, the pin out of CN1 are as follows:

5-Pin DIN Connector

Pin	Description
1	Keyboard Clock
2	Keyboard Data
3	Spare
4	Keyboard Ground
5	+5V DC

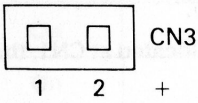
b) Power Supply Connector (CN2)

Power supply connector CN2 is a single plastic connector. The pin assigments for the power supply connector are as follows:

Pin	Description
1	Power Good
2	+5V DC
3	+12V DC
4	−12V DC
5	Ground
6	Ground
7	Ground
8	Ground
9	−5V DC
10	+5V DC
11	+5V DC
12	+5V DC

c) Power Light (CN3)

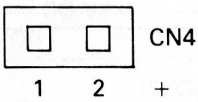
The power light connector is located at CN3. If the LED is connected to CN3, it will be on while the power is switched on. The pinout description is shown below:



Pin	Description
1	– Cathode
2	+ Anode

d) Reset Switch (CN4)

With a switch connected to CN4, the computer will operate normally while the switch is open. If you press and release the switch once, it will cause the system to reset. The switch setting and pinout are as follows:



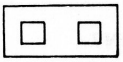
CN4	Function
Open	Executing
Close	Reset CPU

Pin	Description
1	Ground
2	Reset In

Warning: If the reset button is pressed accidentally to terminate any process, the data will be lost.

e) Speaker Connector (CN5)

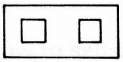
To use the speaker function, connecting a speaker to CN5 on the main board. The pinout assigment is shown belows:



Pin	Description
1	Speaker Date Out
2	+5V DC

f) Keylock (CN6)

The keylock connector is located at CN6 on the main board. The keyboard is locked while the CN6 is shorted. When the CN6 is open, the keyboard is unlocked. For the switch settings and pinout of keylock connector, refer to the following table:

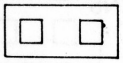


CN6	Function
Open	Enable Keyboard
Close	Lock Keyboard

Pin	Description
1	Ground
2	Key In

g) Turbo Light (CN7)

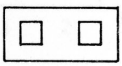
The Turbo LED indicates operation in Super Turbo mode. The Turbo Light Connector is located at CN7 on the main board.The pinouts for the connector at CN7 are as follows:



Pin	Description
1	− Cathode
2	+ Anode

h) Turbo Switch (CN8)

The operation of the system can be switched between Super Turbo and Normal mode. The connector of the switch is located at CN8 on the mainboard. The Super Turbo mode is on while the CN8 jumper is shorted. When the jumper is open, the system is in Normal mode. The pinout assigment and switch setting of Turbo Switch is show below:



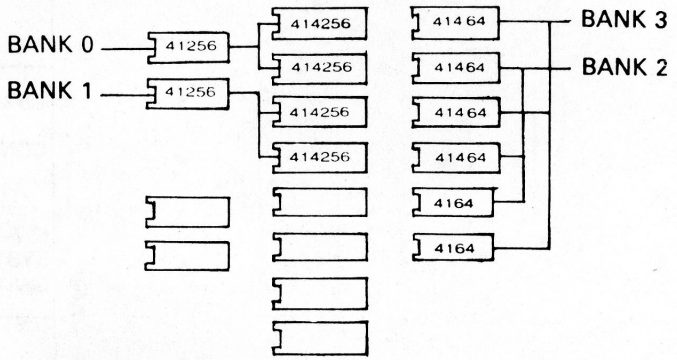
CN8	CPU Speed
Open	4.77 MHz
Close	12 MHz

CN8. Turbo Switch

Pin	Description
1	Turbo In
2	+5V DC

CHAPTER 4 RAM CHIP CONFIGURATION

To install the RAM chips, first locate the RAM banks on the SNB-M004 A main board as shown below:



Refer to the table below to select and install the apporiate chips for the RAM size you have chosen:

RAM chip configuration				
256KB	Bank 0 414256x2 *41256x1	Bank 1 no chips	Bank 2 no chips	Bank 3 no chips
512KB	414256x2 *41256x1	414256x2 *41256x1	no chips	no chips
640KB	414256x2 *41256x1	414256x2 *41256x1	41464x2 *4164x1	41464x2 *4164x1

* Where 41256 and 4164 is Parity RAM Chip(s).
If Parity Check is disabled on SWA, Parity RAM Chip(s) is not required to insert to Parity Chip socket(s).

CHAPTER 5 LAYOUT OF SNB-M004A MAIN BOARD