

CH-386S-16/20/25G

Mainboard

User's Manual

1 st Edition

July 1991

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1. Introduction

- The Mainboard is a high performance, highly integrated main board base on the 80386SX CPU. It is fully compatible with the IBM PC/AT.

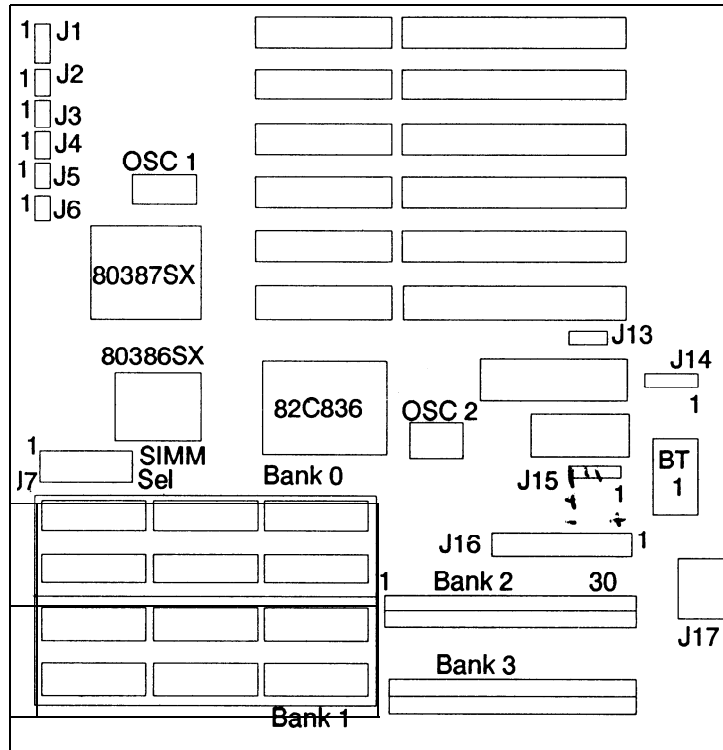
Features

- * 16, 20 or 25 MHz 80386SX microprocessor.
- * Socket for 80387SX COPROCESSOR.
- * Sync or Async Mode for Co-processor Operation.
- * Four Banks Memory socket on board.
(2 Banks DIP, 2 Banks SIMM)
- * Supports 256K DIP & 256K / 1 M / 4M RAM Module device.
- * PAGE INTERLEAVE and MRA (Multi-RAS Active) MODE Memory operation.
- * Multiple RAM configures provide.
- * SHADOW RAM provide for SYSTEM BIOS, VIDEO BIOS.
- * Hardware and Software TURBO mode operation.
- * Single BIOS ROM provide.
- * On board rechargeable battery backup for CMOS configuration and real-time clock.
- * 6 x 16-bit expansion slots.
- * Half size, 4-layer PCB.
- * Lotus / Intel / Microsoft Expanded Memory Specification 4.0 support.
- * Fast CPU Reset and Fast Gate A20 for OS/2 optimization.

2. MAINBOARD CONFIGURATION

2-1. CONNECTORS AND JUMPERS SETTING

- The following is a description of jumpers and connectors of CH-386S-16/20/25G mainboard.



CONNECTORS

- J1 = Keylock and power LED connector.
- J2 = Speaker connector.
- J3 = Reset switch connector.
- J4 = Turbo / Normal switch connector.
- J5 = Turbo LED connector.
- J15 = External battery connector.
- J16 = Power connector.
- J17 = Keyboard connector.

JUMPERS

CI J6 = Co-processor operation mode jumper

Short : Async Mode (default)

Open : Sync Mode

- Note : J6 is for 25 MHz used only.

J13 = CRT type jumper

Short : Color display

Open : Mono display (default)

J14 = CMOS RAM power jumper

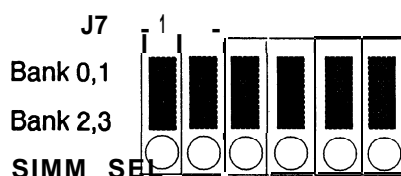
1-2 : Clear CMOS memory

2-3 : Normal operation (default)

2-2. DRAM BANKS CONFIGURATION

- The Mainboard supports 256K, 1M, and 4M memory devices on the system board in four 16-Bit banks, total main memory size can be up to 16MB. The memory configuration are supported as shown in the following table.

- J7 for SIMM module RAM bank selection:
 - 1,2 ON : select bank 0 & bank 1
 - 2,3 ON : select bank 2 & bank 3



- DIP DRAMs can be install 256K x 4 for data RAM and 256K x 1 for parity bit.

- Note : 1. DIP DRAMs are always on bank 0 & bank 1.
 - 2. 16 / 20 MHz mainboard 80 ns DRAM used
 - 25 MHz mainboard 80 ns DRAM for 1 wait state
 - 60 ns DRAM for 0 wait state
 - (reference to P3-4 Advance CHIPSET Setup)

- SIMM socket selected bank 0 & bank 1 DRAM configuration:

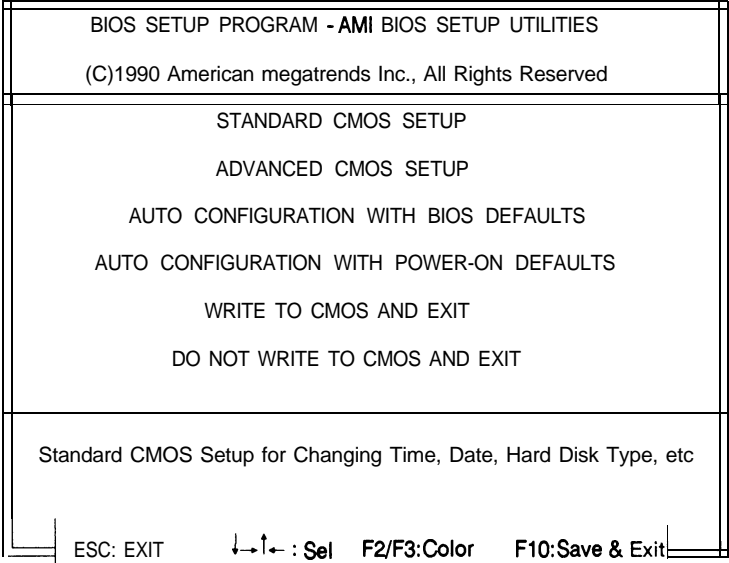
MEMORY SIZE	BANK 0	BANK 1
512 KB	256 K	
1 MB	256 K	256 K
2 MB	1M	
2.5 MB	256 K	1M
4MB	1 M	1M
10 MB	1 M	4M
16 MB	4 M	4M

- SIMM socket selected Bank 2 & Bank 3 DRAM configuration

MEMORY SIZE	BANK 0	BANK 1	BANK 2	BANK 3
512 KB	256 K	0	0	0
1 MB	256 K	256 K	0	0
1.5 MB	256 K	256 K	256 K	0
2 MB	256 K	256 K	256 K	256 K
3MB	256 K	256 K	1 MB	0
5MB	256 K	256 K	1 MB	1 MB
9MB	256 K	256 K	4 MB	0

3. BIOS SETUP

3-1. Setup Utilities Option



3-2. STANDARD CMOS SETUP OPTION

BIOS SETUP PROGRAM - STANDARD CMOS SETUP																																																							
(C) 1990 American Megatrends Inc., All Rights Reserved																																																							
Date (mm/date/year) : Thu, Jun 20 1991			Base memory : 640KB																																																				
Time(hour/min/sec): 14 : 45 : 01			Ext. memory : 0 KB																																																				
Daylight saving : Disabled		Cyln Head WPcomLZone Sect Size																																																					
Hard disk C: type : Not Installed																																																							
Hard disk D: type : Not Installed																																																							
Floppy drive A: : 1.2 MB, 5 1/4"																																																							
Floppy drive B: : Not Installed																																																							
Primary display : Monochrome																																																							
Keyboard : Installed																																																							
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ESC:Exit ↓→↑← Select F2/F3:Color PU/PD: Modify																																																							

3-3. ADVANCED CMOS SETUP OPTION

BIOS SETUP PROGRAM - ADVANCED CMOS SETUP	
(C)1990 American Megatrends Inc., All Rights Reserved	
Adaptor ROM Shadow C800,16K	: Disabled
Adaptor ROM Shadow D000,16K	: Disabled
Adaptor ROM Shadow D800,16K	: Disabled
Adaptor ROM Shadow E000, 16K	: Disabled
Adaptor ROM Shadow E800,16K	: Disabled
Shadow RAM Option	: Disabled

ESC:Exit	↑ → ← ↓ : Sel	(Ctrl) Pu/Pd:Modify	F1 :Help	F2/F3:Color
F5:Old Values	F6:BIOS Setup Defaults	F7:Power-On Defaults		

- NOTE : Above values are default.

BIOS SETUP PROGRAM - ADVANCED CHIPSET SETUP (C) 1990 American Megatrends Inc., All Rights Reserved	
RAM Wait State	: 1 W/S
ESC: Exit • ++* :Sel (Ctrl) Pu/Pd:Modify F1:Help F2/F3:Color F5:Old Values F6:BIOS Setup Defaults F7:Power-On Defaults	

- **Note : 1. Above values are default.**
- 2. Advance CHIPSET Setup option for 25 MHz mainboard used only.**

3-4. AUTO CONFIGURATION WITH BIOS DEFAULTS

STANDARD CMOS SETUP
ADVANCED CMOS SETUP
AUTO CONFIGURATION WITH BIOS DEFAULT
AUTO CONFIGURATION WITH POWER-ON DEFAULTS
WRITE TO CMOS AND EXIT
DO NOT WRITE TO CMOS AND EXIT

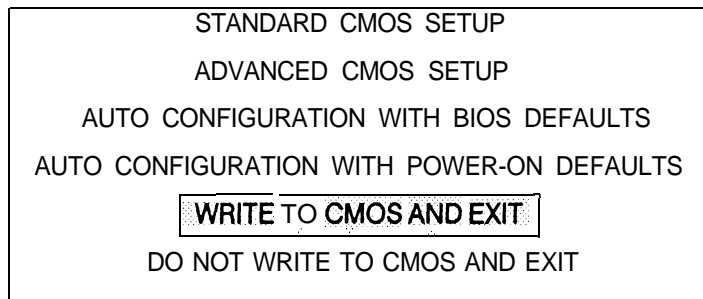
- NOTE : Load BIOS Setup Default Values from ROM Table.

3-5. AUTO CONFIGURATION WITH POWER-ON DEFAULTS

STANDARD CMOS SETUP
ADVANCED CMOS SETUP
AUTO CONFIGURATION WITH BIOS DEFAULTS
AUTO CONFIGURATION WITH POWER-ON DEFAULTS
WRITE TO CMOS AND EXIT
DO NOT WRITE TO CMOS AND EXIT

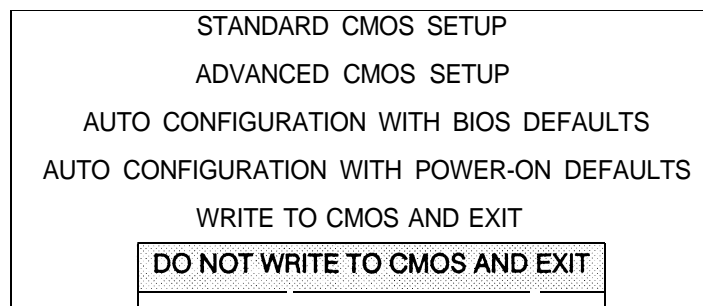
- NOTE : Load Power-ON Default Values from ROM Table.

3-6. WRITE TO CMOS AND EXIT



- **NOTE :** Write the settings to the CMOS and Exit.

3-7. DO NOT WRITE TO CMOS AND EXIT



- **NOTE :** Do not write the settings to the CMOS and Exit.