SUNTAC COMPACT-AT

USER'S MANUAL

ST62CS02-B

SUNTAC 62 CHIP SET

1. ST62BC001-B
2. ST62BC002-B
3. ST62BC003-B
4. ST62BC004-B
5. ST62C005-B
6. ST62C006

NORMAL MODE TO TURBO MODE

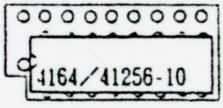
1. HARDSWITCH : PRESS " TURBO " SWITCH.
2. SOFTSWITCH : PRESS Ctrl Alt  KEYS AT ONCE.

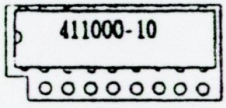
HOW TO SET UP AN EVALUATION MOTHERBOARD

A. BIOS ROM
1. BIOS ROM (Lo) is inserted into ROM1.
2. BIOS ROM (Hi) is inserted into ROM3.
3. When 27128 type is used, JP9 is set to 1-2 side, and DIP switch -5 is set to ON .
4. When 27256 type is used, JP9 is set to 2-3 side, and DIP switch -5 is set to OFF.

B. KEYBOARD BIOS
1. 8742 with keyboard BIOS programmed in it is inserted into 8742-marked location.
2. When an AWARD type keyboard BIOS (switchable by using Port 22) is used, JP7 is set to 2-3 side.
3. When a PHOENIX type keyboard BIOS (switchable by using Port 15) is used, JP7 is set to 1-2 side.

C. DRAM
1. A total of 8 (0 -7) modes are available, depending on memory sizes, for insertion of DRAMs. A figure below shows ways of the DRAM insertion. When 4164 or 41256 DRAM is used, either DRAM is inserted to the 16-pin side. When 411000 DRAM is used, it is inserted to the 18-pin side.





2. For base RAM setting, J18 is set to 2-3 side.
3. Mode 0
   A total of 18 DRAMs (41256-10) are inserted onto BANK 0. The DIP switches -6, -7, and -8 are each set to ON. In this instance, the memory location is 00000 - 7FFFFH and the memory size is 512KB.

4. Mode 1
   A total of 18 DRAMs (41256-10) are inserted onto BANK 0, and a total of 18 DRAMs (4164-10) are inserted onto BANK 1. The DIP switches -6, -7, and -8 are set to OFF, ON, ON, respectively. In this instance, the memory location is 00000 - 9FFFFH, and the memory size is 640KB.

5. Mode 2
   A total of 18 DRAMs (41256-10) are inserted onto BANK 0, and a total of 18 DRAMs (41256-10) are inserted onto BANK 1. The DIP switches -6, -7, and -8 are set to ON, OFF, ON, respectivery. In this instance, the memory locations are 00000- 9FFFFH, 100000H - 15FFFFH, and memory size is 640KB + 384KB.

6. Mode 3
   A total of 18 DRAMs (41256-10) are inserted onto BANK 0, and a total of 18 DRAMs (41256-10) are inserted onto BANK 1. The DIP switches -6, -7, and -8 are set to OFF, OFF, ON, respectively. In this instance, the memory location is 00000 - 9FFFFH, and the memory size is 640KB + EMS (384KB) The EMS (384KB) memory can be used as an EXPAND memory with a capacity of 16KB x 24 pages, by using a SUNTAC EMS driver program.

7. Mode 4
   A total of 18 DRAMs (411000-10) are inserted onto BANK 0. The DIP switches -6, -7, and -8 are set to ON, ON, OFF, respectively. In this

instance, the memory locations are 00000 - 9FFFFH, 100000H - 25FFFFH, and the memory size is 640KB + 1,408KB.

8. Mode 5
   A total of 18 DRAMs' (411000-10) are inserted onto BANK 0. The DIP switches -6,-7, and -8 are set to OFF, ON, OFF, respectively. In this instance, the memory location is 00000 - 9FFFFH, and the memory size is 640KB + EMS (1,408KB) . The EMS (1,408KB) memory can be used as an EXPAND memory with a capacity of 16KB x 88 pages, by using a SUNTAC EMS driver program.

9. Mode 6
   A total of 18 DRAMs (411000-10) are inserted onto BANK 0, and a total of 18 DRAMs (411000-10) are inserted onto BANK 1. The DIP switches -6, -7,and -8 are set to ON, OFF, OFF, respectively. In this instance, the memory locations are 00000 - 9FFFFH, 100000H - 45FFFFH and the memory size is 640KB + 3,456KB.

10. mode 7
    A total of 18 DRAMs (411000-10) are inserted onto BANK 0, and a total of 18 DRAMs (411000-10) are inserted onto BANK 1. The DIP switches -6, -7, and -8 are set to OFF, OFF, OFF, respectively. In this instance, the memory location is 00000 - 9FFFFH, and the memory size is 640KB + EMS (3,456KB) . The EMS (3,456KB) memory can be used as an EXPAND memory with a capacity of 16KB x 216 pages, by using a SUNTAC EMS driver program.

D. MONITOR TYPE
   1. When a color monitor is used, the SW1 is set to 2-3 side.
   2. When a monochrome monitor is used, the SW1 is set to 1-2 side.

E. CLOCK SPEED SWITCHING
   1. When fixing to High Speed :
      JP1 is set to 2-3 side, and DIP switch -1 is set to OFF.

   2. When fixing to Low Speed :
      JP1 is set to 2-3 side, and DIP switch -1 is set to ON.

   3. When switching speeds externaiiy :
      JP1 is set to 1-2 side, and a mechanical switch is installed onto JP4. JP4 in state of OPEN provides Low Speed, and JP4 in state of CLOSE provides High Speed.

      When JP4 is OPEN, the clock speed can be switched by use of the keyboard. When using AWARD BIOS, keys (CNTL, ALT and 1) are pressed simultaneously to turn to High Speed, and keys (CNTL, ALT and 2) are pressed simultaneously turn to Low Speed.

      When JP4 is OPEN and then power is turned on, it will turn to Low Speed. When JP4 is CLOSE and power is turned on, it will invalidate the keyboard operation and will turn to High Speed at all times.

F. I/O WAIT SELECTION
   1. When fixing to 4 WAIT :
      JP3 is set to 2-3 side, and DIP switch -3 is set to ON.
   2. When fixing to 6 WAIT :
      JP3 is set to 2-3 side, and DIP switch -3 is set to OFF.
   3. When selecting WAIT in conjunction with external clock speed switching :

      JP3 is set to 1-2 side, At this point, 6 WAIT is selected when the external clock speed is switched to High Speed ; 4 WAIT is selected when it is switched to Low Speed.

G. EMS PORT ADDRESS

1. When using 0E8 - 0EFH as EMS Port Address, DIP switch -4 is set to OFF. SUNTAC EMS driver program setting is used at this point.
2. When using 098 - 09FH as EMS Port Address, DIP switch -4 is set to ON. SUNTAC EMS driver program setting is used at this point.

H. EXTERNAL EMS SELECTION SWITCH

A mechanical switch is installed onto JP5. This will allow RAM size setting mode to be switched externally as follows : Mode 2 to Mode 3, Mode 4 to Mode 5, Mode 6 to Mode 7, respectively. In this instance, DIP switch -8 is set to OFF.

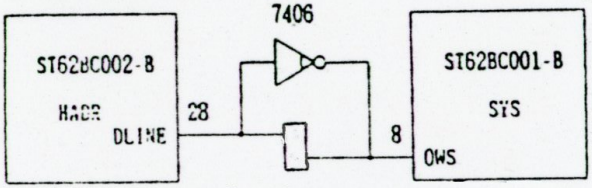
I. RESET SWITCH

A mechanical switch is installed onto JP6. When JP6 is OPEN, the CPU will run, and when JP6 is CLOSE, the CPU will be reset.

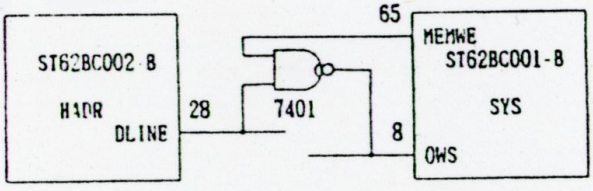
J. MAIN MEMORY 0 WAIT MODE

A following additional circuit needs to be installed when main memories are used at 0 WAIT mode :

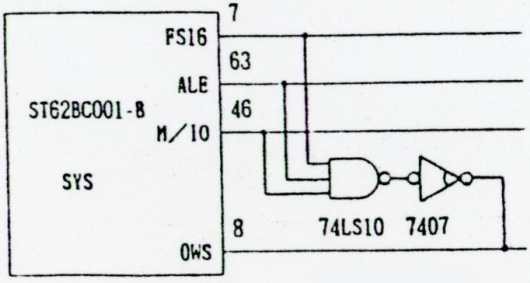
1. An additional circuit to be needed for 0 WAIT when DRAM is in state of READ or WRITE :



2. An additional circuit to be needed for 0 WAIT when DRAM is in state of READ :



3. An additional circuit to be needed for 0 WAIT when DRAM is in state of READ or WRITE and when PROM is in state of READ :



EMS DRIVER SET-UP

1. Boot PC system by using DOS and the system will prompt you with A>

2. Copy SEMS.SYS file on your DOS diskkette.

3. Type :

```
COPY CON CONFIG.SYS<ENTER>
DEVICE=SEMS.SYS /M:xxx /P:xxxx /I:xxx<ENTER>
^Z<ENTER>
```

where M:xxx : System memory size, defult is 640KB.
P:xxxx : EMS Phygical page segment address, defult automatic.
I:xxx : EMS Port address, defult E8H or 98H.

The screen will display as follows:

```
        1 File(s) copied
A>
```

4. Reboot your system. The screen will be display as follows:

```
*****************************************
* SUNTAC-62 Chip Set EMS Driver Rev. 1.00 *
* (C)Copyright SUN ELECTRONICS CORP. 1987 *
*****************************************
EMS DRIVER INSTALL TOTAL PAGES : xxxx
EMS PAGE SEGMENT : xxxxH
EMS PORT ADDRESS : xxxxH
A>
```

CONNECTOR PINOUT

1. POWER SUPPLY CONNECTOR (P8)

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

2. SPEAKER CONNECTOR (J19)

PIN	DESCRIPTION
1	SPEAKER DATA OUT
2	KEY
3	GROUND
4	+ 5V DC

3. KEYBOARD SWITCH & LED CONNECTOR (J20)

PIN	DESCRIPTION
1	LED POWER
2	KEY
3	GROUND
4	KEYBOARD INHIBITOR
5	GROUND

4. KEYBOARD CONNCTOR (J22)

PIN	DESCRIPTION
1	KEYBOARD CLOCK
2	KEYBOARD DATA
3	SPARE
4	KEYBOARD GROUND
5	+ 5V DC

5. BATTERY CONNECTOR (J21)

PIN	DESCRIPTION
1	BATTERY + 6V DC
2	KEY
3	GROUND
4	GROUND

6. RESET CONNECTOR (JP6)

PIN	DESCRIPTION
1	RESET IN
2	GROUND

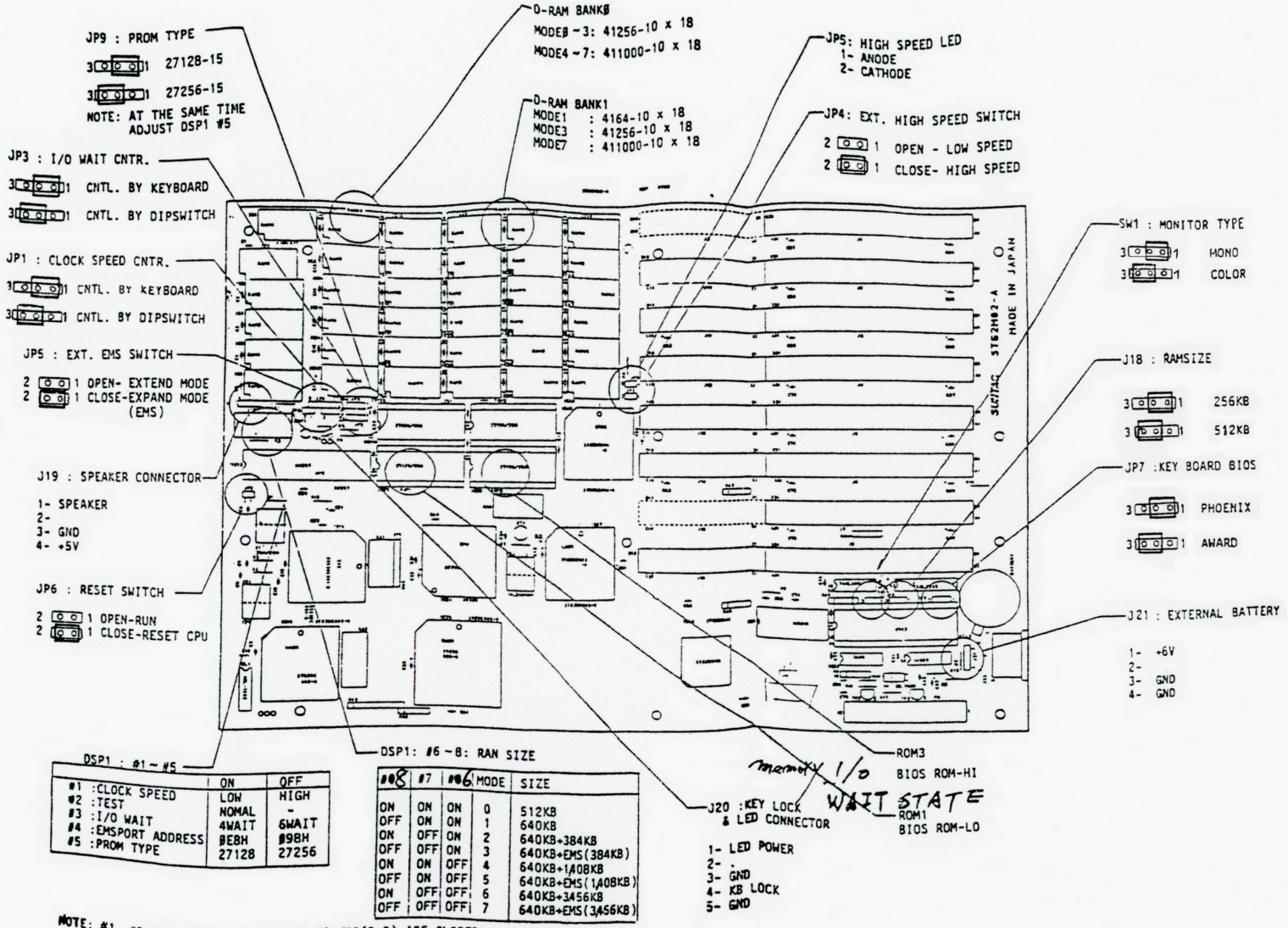
7. HIGH SPEED LED CONNECTOR (JP5)

PIN	DESCRIPTION
1	+ ANODE
2	- CATHODE

NOTES :

① XTAL SET 25MHz = LED ON
② XTAL SET 12MHz = LED OFF

8 CHARGE BATTERY ENABLE (J11)



	ON	OFF
#1 :CLOCK SPEED	LOW	HIGH
#2 :TEST	NOMAL	-
#3 :I/O WAIT	4WAIT	6WAIT
#4 :EMSPORT ADDRESS	#E8H	#98H
#5 :PROM TYPE	27128	27256

#8	#7	#6	MODE	SIZE
ON	ON	ON	0	512KB
OFF	ON	ON	1	640KB
ON	OFF	ON	2	640KB+384KB
OFF	OFF	ON	3	640KB+EMS(384KB)
ON	ON	OFF	4	640KB+1,408KB
OFF	ON	OFF	5	640KB+EMS(1,408KB)
ON	OFF	OFF	6	640KB+3456KB
OFF	OFF	OFF	7	640KB+EMS(3,456KB)

NOTE: #1, #3 ARE ENABLE WHEN JP1(2-3).JP3(2-3) ARE CLOSED.