

HS-6200/6600

BX Pentium®-II L/VGA LAN

- Half Size
- All-in-one
- VGA CRT-LCD Interface
- Supports DMA33
- WDT
- DOC
- EAN
- USB
- FDA
- ISA Bus Industrial Single Board Computer

HS-6200L/6600L

BX Pentium®-II LAN I.S.B.

- Half Size
- All-in-one
- Supports DMA33
- WDT
- DOC
- EAN
- USB
- FDA
- ISA Bus Industrial Single Board Computer

HS-6200V/6600V

BX Pentium®-II L/VGA I.S.B.

- Half Size
- All-in-one
- VGA CRT-LCD Interface
- Supports DMA33
- WDT
- DOC
- USB
- FDA
- ISA Bus Industrial Single Board Computer

HS-6200P/6600P

BX Pentium®-II I.S.B.

- Half Size
- All-in-one
- Supports DMA33
- WDT
- DOC
- USB
- FDA
- ISA Bus Industrial Single Board Computer

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Chapter-1

General Information

The HS-6200/6600 is a bus-100MHz Intel® BX chipset design PISA/ISA bus Pentium®II/III Industrial Single Board (I.S.B.) CPU card with features combine together to make it an ideal all-in-one industrial single board computer, enhanced I/O effects with LAN and VGA CRT-LCD interface.

With onboard DMA33 of mode 4 to IDE drive interface architecture, the HS-6200/6600 supports with maximum 33.3 MB/sec in data transfer rating to 2 pieces IDE drive connection. Design with Intel®82443 BX core logic chipset supports all series Pentium®II/III operating at 233MHz, 266MHz, 300MHz, 333MHz, 400MHz and 650MHz. The on-board INTEL® 69000 VGA chipset which has 2 MB VGA RAM supports up to 1280 x 1024 256 colors display resolution. And it also provides one internal 50-pin connector for various type of the LCD Panel connection.

The advanced ISA bus backplane system of HS-6200/6600 allows user could easily obtain one 16-bit ISA slot. The HS-6200/6600 provides with two pieces 168-pin DIMM sockets support up to 1GBytes of main system memory.

A single Flash chip holds the system BIOS, and you can easy update the Flash BIOS by the Utility Update. Advanced USB and IR ports also provide for faster and easily in data transmission. You can also use the DOS version of the "DiskOnChip™" socket by issuing commands from the DOS prompt without the necessity of other software supports up to 144MB.

The HS-6200/6600 features includes one Intel® 82558B 100-Based LAN chipset on-board. Also has one external RJ-45 connector on board for user's LAN application.

If a non-expect program cause halts, the onboard watchdog timer will automatically reset the CPU or generate an interrupt. The watchdog is designed with in hardware only and doesn't need any arithmetical functions of a real-time clock chip. This ensures the reliability in an unmanned or standalone system.

1.1 Major Features

- ✓ ISA bus supported for HS-6200.
PISA bus supported for HS-6600.
- ✓ One axial-horizontal type Slot-1 socket for Intel® Pentium® II 233
i 650 MHz Processors.
- ✓ Intel® 82443 BX chipset.
- ✓ Two pieces DIMM sockets supports memory up to 1 GB.
- ✓ Fast PCI DMA33 controller supports two IDE drives include large hard disks, CD-ROM and tape backup etc.
- ✓ PnP I/O address & IRQ selection
- ✓ On-board Intel® 82558B 100-Based LAN chipset.
- ✓ Two high-speed RS-232 serial ports with 16C550 UART 16-byte FIFO.
- ✓ One enhanced bi-directional parallel port supports SPP/EPP/ECP.
- ✓ On-board PS/2 Keyboard and PS/2 Mouse connector.
- ✓ On-board INTEL® 69000 SVGA adapter.
- ✓ On-board one 50-pin for various types LCD Panel connection.
- ✓ DiskOnChip™ Socket supports memory size up to 144 MB.
- ✓ On-board two USB ports and one IrDA port.
- ✓ Build-in one industrial WDT Watch-Dog-Timer.
- ✓ AWARD PnP Y2K Flash BIOS.

1.2 Specifications

- ✧ **CPU:** One piece Intel® Pentium® II 233/266/300/333/400/450/650 MHz.
- ✧ **Bus interface:** ISA bus
- ✧ **Chipset:** Intel® 82443 BX with bus-100MHz frequency.
- ✧ **Data bus:** 64-bit
- ✧ **Processing ability:** 64-bit
- ✧ **CRT-LCD SVGA Controller:** INTEL® 69000 chipset with on-chip 2MB memory supports CRT up to 1280x1024 256 colors. Provides internal 50-pin LCD connector.
- ✧ **LAN Interface:** Intel® 82558B 100-Based LAN provides 10-Based or 100-Based ability.
- ✧ **PCI Enhanced IDE Interfaces:** Two IDE drives supports modes 3&4 with DMA33 function provide data transfer rate up to 33MB/Sec.
- ✧ **RAM memory:** Two pieces 168-pin DIMM sockets provide up to 1 GBytes.
- ✧ **Cache memory:** Slot-1 socket supports Intel's Pentium® II/III CPU with build-in 512KB Pipeline burst cache memory.
- ✧ **Floppy disk drive interface:** Supports up to two floppy disk drives.
- ✧ **Parallel port:** One bi-directional parallel port. Supports SPP/ECP/EPP.
- ✧ **Serial ports:** Two RS-232 ports. Both use 16C550 UART with 16-byte FIFO.
- ✧ **BIOS:** AWARD PnP Y2K Flash BIOS.
- ✧ **Watchdog timer:** Hardware circuit can be set by 1, 2, 10, 20, 110, or 220 seconds period Reset or NMI were generated when CPU did not periodically trigger the timer.
- ✧ **DMA channels:** 7

-
- ✧ **Interrupt levels:** 15
 - ✧ **Keyboard:** 6-pin mini DIN connector or 5-pin header supports standard PC/AT keyboard.
 - ✧ **Mouse:** 6-pin mini DIN connector support PS/2 type mouse.
 - ✧ **USB:** Supports 2 USB header.
 - ✧ **IR interface:** Supports one IrDA TX/RX header.
 - ✧ **Flash memory Disk:** Socket for DiskOnChip™ (DOC), support up to 144MB Flash memory disk.
 - ✧ **Extra Power Input:** Provides one 4-PIN extra DC +5V/+12V power input connector.
 - ✧ **CMOS:** Real-time clock/calendar and battery backup by DS12B887 or equivalent device.
 - ✧ **Power supply voltage:** +5V (4.75 to 5.25V), +12V.
 - ✧ **Max. Power requirement:** +5V @12A(266MHz), +12V@20mA.
 - ✧ **Operating temperature:** 0-55°C (CPU need cooler)
 - ✧ **Board size:** 7.3"(L) x 5" (W) (158mm x 127mm)

The HS-6200/6600 provides with VGA CRT-LCD Interface, supports DMA33, WDT, DOC, LAN, USB and IrDA.

The HS-6200/6600V provides with VGA CRT-LCD Interface, supports DMA33, WDT, DOC, USB and IrDA. (A version without LAN of HS-6200/6600).

The HS-6200/6600L provides with support DMA33, WDT, DOC, LAN, USB and IrDA. (A version without VGA CRT-LCD on-board of HS-6200/6600).

The HS-6200/6600P provides with support DMA33, WDT, DOC, USB and IrDA. (A version without LAN and VGA CRT-LCD on-board of HS-6200/6600).

1.3 Delivery Package

The delivery package of HS-6200/6600 includes all following items:

- * PISA Bus supported.(HS-6200)
- * ISA Bus supported.(HS-6600)
- * One Printer Ports Bracketed Flat Cable
- * One COM Ports Bracketed Flat Cable
- * One IDE port Flat Cable
- * One FDD port Flat Cable
- * One PS/2 to Standard DIN type Keyboard Transfer Cable
- * Utility Diskette
- * User's Manual

Please contact with your dealer if any of these items are missing or damaged when purchasing. And please keep all parts of the delivery package with packing materials in case of you want to ship or store the product in feature.

There are a few differences with in different versions of HS-6200/6600, please also check the dealer.

Chapter-2

Hardware Installation

This chapter provides the information on how to install the hardware of HS-6200/6600. At first, please follow up sections 1.3, 2.1 and 2.2 in check the delivery package and carefully unpacking. Following after, the jumpers setting of switch, watchdog timer and the DiskOnChip™ address selection etc.

2.1 Caution of Static Electricity

The HS-6200/6600 has been well package with an anti-static bag in protect its sensitive computer components and circuitry from the damage of static electric discharge.

Note: DO NOT TOUCH THE BOARD OR ANY OTHER SENSITIVE COMPONENTS WITHOUT ALL NECESSARY ANTI-STATIC PROTECTION.

You should follow the steps as following to protect the board in against the static electric discharge whenever you handle the board:

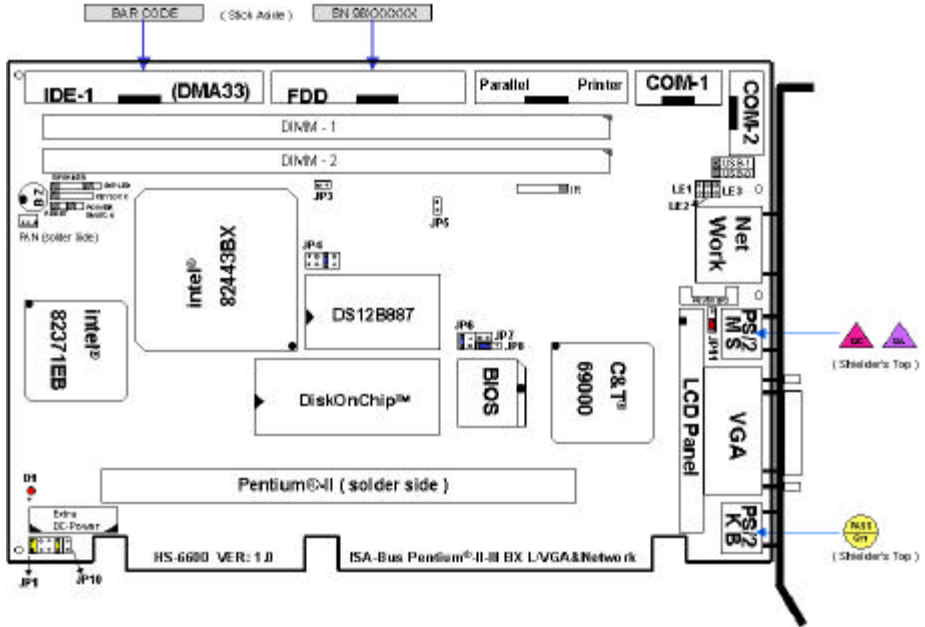
1. Please use a grounding wrist strap on whoever needs to handle the HS-6200/6600. Well clip the ALLIGATOR clip of the strap to the end of the shielded wire lead from a grounded object. Please put on and connect the strap before handle the HS-6200/6600 for harmlessly discharge any static electricity through the strap.
2. Please use anti-static pad for put any components or parts or tools on the pad whenever you work on them outside the computer. You may also in use the anti-static bag instead the pad. Please ask from your local supplier in help up your necessary parts on anti-static requirement.

2.2 Caution on Unpacking and Before Installation

First of all, please follow with all necessary steps of section 2.1 in protection the HS-6200/6600 from electricity discharge. With refer to section 1.3, please check the delivery package again with following steps:

1. Unpacking the HS-6200/6600, keep well storage of all packing material, manual and diskette etc. if has.
2. Is there any components lose or drop from the board? DO NOT INSTALL IF HAPPENED.
3. Is there any visual damaged of the board? DO NOT INSTALL IF HAPPENED.
4. Well check from your optional parts (i.e. CPU, SRAM, DRAM, ROM-Disk etc.) for completed setting all necessary jumpers setting to jumper pin-set and CMOS setup correctly. Please also reference to all information of jumpers setting in this manual.
5. Well check from your external devices (i.e. Add-On-Card, Driver Type etc.) for completed add-in or connection and CMOS setup correctly. Please also reference to all information of connector connection in this manual.
6. Please keep all necessary manual and diskette in a good condition for your necessary re-installation if you change your Operating System or whatever needs.

2.3 HS-6200/6600's Layout



HS-6200/6600's Layout

2.4 Quick Listing of Jumpers

- JP1 (1-2,7-8 ON) ; Frequency Multiplier setting of System Bus to Processor Core
- JP3 (1-2 OFF) ; Manufacture Default Setting
- JP4 (5-6 ON) ; Time scale of Watch-Dog Timer
- JP5 (1-2 OFF) ; Bus-Clock Select
- JP6 (1-2 ON) ; DiskOnChip™ Address setting
- JP7 (1-2 OFF) ; RTC Clear Jumper
- JP8 (1-2 ON) ; WATCHDOG Active Select
- JP10 (1-2 OFF) ; Bus-Clock Select
- JP11 (2-3 ON) ; Flat Panel Voltage Select

2.5 Quick Listing of Connectors

BZ1: ON-BOARD BUZZER
CN1: FAN POWER CONNECTOR
CN2: POWER 4-PIN CONNECTOR
CN3: SPEAKER CONNECTOR
CN4: KEYLOCK CONNECTOR
CN5: PS/2 POWER SWITCH CONNECTOR
CN6: 1st IDE CONNECTOR
CN7: HDD LED CONNECTOR
CN10: FDD CONNECTOR
CN11: IR CONNECTOR (5-PIN)
CN12: PARALLEL PORT CONNECTOR
CN13: COM1 (HEADER 5x2)
CN14: INTERNAL VGA LCD CONNECTOR (HEADER 25x2)
CN15: INTERNAL 5-PIN KEYBOARD CONNECTOR
CN16: COM2 (HEADER 5x2)
CN17: 100-BASED LAN CONNECTOR
CN18: EXTERNAL MINI-DIN PS/2 MOUSE CONNECTOR
CN19: EXTERNAL VGA CONNECTOR (DB15)
CN20: EXTERNAL MINI-DIN PS/2 KEYBOARD CONNECTOR
CN21: EXTERNAL COM1 CONNECTOR (DB9) (HS-6200P/6600P only)
CN22: EXTERNAL COM2 CONNECTOR (DB9) (HS-6200P/6600P only)
D1: ON-BOARD POWER-ON LED INDICATOR
JP2: RESET PIN
JP9: USB PORTS CONNECTOR
LE1: 10T LED INDICATOR OF LAN
LE2: 100T LED INDICATOR OF LAN
LE3: ACTIVE LED INDICATOR OF LAN
U5: DiskOnChip™ SOCKET

2.6 Jumper Setting Description

A jumper pin-set is **ON** as a shorted circuit with a plastic cap inserted over two pins. A jumper pin-set is **OFF** as a open circuit with a plastic cap inserted over one or no pin(s) between pins. The below figure 2.2 shows the examples of different jumper pin-set setting as **ON** or **OFF** in this manual.

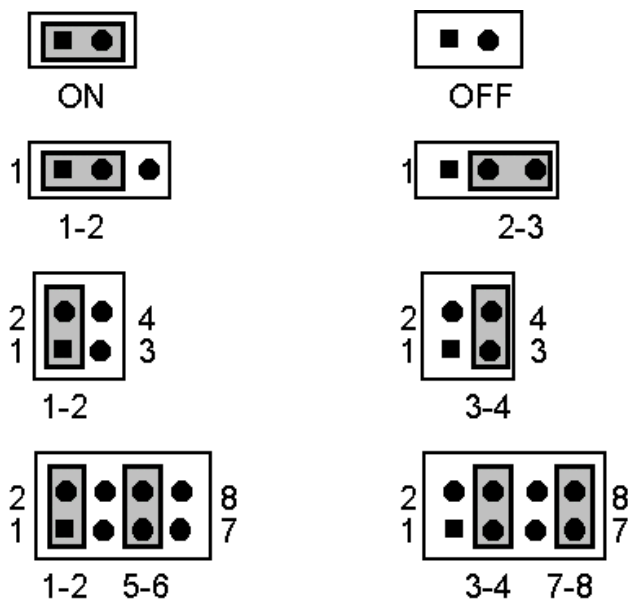


Figure 2.2

All jumper pin-set already has its default setting with the plastic cap inserted as ON, or without the plastic cap inserted as OFF. The default setting may reference in this manual with a " * " symbol in front of the selected item.

2.7 Manufacture Default Setting

The following shows the manufacture's default setting, no change allows.

- **Default Setting of JP3:**

Manufacture Setting	JP3
default setting	* OFF

2.8 Setting the Bus-Clock Frequency

The HS-6200/6600 provides all necessary by jumper setting in using Bus-Clock frequency as the system bus clocking with JP5 and HP10 setting as following:

- **Bus-Clock Frequency Setting of JP5 and JP10:**

Bus-Clock Frequency	JP10	JP5
* 100MHz	OFF	OFF
66MHz	ON	ON

2.9 Frequency Multiplier Setting

The HS-6200/6600 provides JP1 for define the selection of the Frequency Multiplier value of system bus to processor core in following table:

- **Frequency Multiplier Setting of JP1:**

Frequency Multiplier: (System Bus to Processor Core)	7-8	5-6	3-4	1-2	Bus- 66MHz	Bus- 100MHz
3x	ON	ON	OFF	ON	200	300
4x	ON	ON	ON	OFF	266	400
5x	ON	ON	OFF	OFF	333	500
2.5x	ON	OFF	ON	ON	166	250
* 3.5x	ON	OFF	OFF	ON	233	* 350
4.5	ON	OFF	ON	OFF	300	450
5.5x	ON	OFF	ON	ON	366	550
7.0x	ON	OFF	OFF	ON	466	700

The bus-clock is setting by JP5 and JP10. The default setting is for Intel®

Pentium® II/III 350MHz processor.

2.10 Setting the RTC Configuration

The HS-6200/6600 provides a setting for the selection of the RTC Clear Jumper by JP7 setting as following:

- **CMOS Setting of JP7:**

CMOS Clear Jumper	JP7
Normal	* OFF
Clear CMOS	ON

2.11 System Memory DRAM

The HS-6200/6600 provides a wide range on-board DRAM memory by two pieces DIMM sockets (DIMM-1, DIMM-2) request the access time should meet PC-100 standard. The maximum capacity of the on board memory is 1GBytes.

See the figure on section 2.3 for get the identifying the banks.

2.12 Setting the Flat Panel Voltage

The HS-6200/6600 provides a setting for the selection of the working voltage of individual flat panel by JP11 setting as following:

- **Flat Panel Voltage Selecting of JP11:**

Panel's Working Voltage	JP11
5.0 V	* 2-3
3.3 V	1-2

Please contact with your flat panel supplier for make sure a correct Panel's Working Voltage. Any mistake will cause defect to your flat panel.

2.13 Watch-Dog Timer

There are three access cycles of Watch-Dog Timer as Enable, Refresh and Disable. The Enable cycle should proceed by READ PORT 443H. The Disable cycle should proceed by READ PORT 043H. A continue Enable cycle after a first Enable cycle means Refresh.

Once if the Enable cycle activity, a Refresh cycle is request before the time-out period for restart counting the WDT Timer's period. Otherwise, it will assume that the program operation is abnormal when the time counting over the period preset of WDT Timer. A System Reset signal to start again or a NMI cycle to the CPU comes if over.

The JP8 is using for select the active function of watch-dog timer in disable the watch-dog timer, or presetting the watch-dog timer activity at the reset trigger, or presetting the watch-dog timer activity at the NMI trigger.

- **JP8 : Watch-Dog Active Type Setting**

JP8	DESCRIPTION
*1-2	System Reset
2-3	Active NMI
OFF	disable Watch-dog timer

- **JP4 : WDT Time - Out Period**

PERIOD	1-2	3-4	5-6	7-8
*1 sec	OFF	OFF	ON	OFF
2 sec	OFF	OFF	ON	ON
10 sec	OFF	ON	OFF	OFF
20 sec	OFF	ON	OFF	ON
110 sec	ON	OFF	OFF	OFF
220 sec	ON	OFF	OFF	ON

The Watch-dog timer is disabled after the system Power-On. The watch-dog timer can be enabled by a Enable cycle with reading the control port (443H), a Refresh cycle with reading the control port (443H) and a Disable cycle by reading the Watch-dog timer disable control port (043H). After a Enable cycle of WDT, user must constantly proceed a Refresh cycle to WDT before its period setting comes ending of every 1, 2, 10, 20, 110 or 120 seconds which pre-setting by JP4. If the Refresh cycle does not active before WDT period cycle, the on board WDT architecture will issue a Reset or NMI cycle to the system.

The Watch-Dog Timer is controlled by two I/O ports.

443H	I/O Read	The Enable cycle.
443H	I/O Read	The Refresh cycle.
043H	I/O Read	The Disable cycle.

The following sample programs showing how to Enable, Disable and Refresh the Watch-dog timer:

```

WDT_EN_RF      EQU    0443H
WDT_DIS        EQU    0043H
WT_Enable      PUSH   AX                ; keep AX DX
                PUSH   DX
                MOV    DX,WDT_EN_RF    ; enable the watch-dog timer
                IN     AL,DX
                POP    DX                ; get back AX, DX
                POP    AX
                RET
WT_Rresh       PUSH   AX                ; keep AX, DX
                PUSH   DX
                MOV    DX,WDT_ET_RF    ; refresh the watch-dog timer
                IN     AL,DX
                POP    DX                ; get back AX, DX
                POP    AX
                RET
WT_DISABLE     PUSH   AX
                PUSH   DX
                MOV    DX,WDT_DIS      ; disable the watch-dog timer
                IN     AL,DX
                POP    DX                ; get back AX, DX
                POP    AX
                RET

```

2.14 PCI VGA Controller

The HS-6200/6600 has built-in a Intel® 69000 VGA Controller with on-chip 2 MB memory, support resolutions up to 1280 x 1024 256 colors, reserved internal 50-pin LCD Panel connector.

To get more VGA drivers information, please refer to the INTEL Internet address : **WWW.CHIPS.COM**

2.15 DiskOnChip™ Address Setting

The HS-6200/6600 provides a U5 socket for install the DiskOnChip™ module.

A JP6 may select the starting memory address of the DiskOnChip™ (D.O.C.) for avoid the mapping area with any other memory devices. If you have another extra memory devices in the system with the same memory, neither the HS-6200/6600 nor the extra memory devices will function normally. Please setting both at different memory address mapping.

- **JP6 : DiskOnChipä Address**

Memory Address Mapping	JP6
D000	* 1-2
D800	3-4

*) : default setting

The D.O.C. function allows the system in using without FDD nor HDD. The D.O.C. may formatting as driver C: or driver A:. User may also easily uses the DOS's commands such as FORMAT, SYS, COPY, XCOPY, DISCOPY and DISKCOMP etc. This is means that the D.O.C. may uses as driver-A if the system without FDD-A for ambient application. Please contact with your supplier for different size D.O.C. module.

Chapter-3

Connection

This chapter gives all necessary information of the peripheral's connections, switches and indicators.

3.1 Power and FAN Connectors

The HS-6200/6600 provides one 4-pin DC-Power connector as following CN2 pin information. And also provides one 3-pin fan out connector as following CN1 pin information.

- **CN2 : 4-PIN POWER CONNECTOR**

PIN NO.	DESCRIPTION
1	Vcc
2	GND
3	GND
4	+12V

- **CN1 : 3-PIN FAN OUT CONNECTOR**

PIN NO.	DESCRIPTION
1	GND
2	+12V
3	N.C.

3.2 IDE's LED, Key-Lock and Reset Button

The HS-6200/6600 has one LED (D1) indicates out power-on status. And the following provides the pin information for IDE's LED indicator, Key-Lock and Reset Button connections from CN7, CN4 and JP2.

- **CN7 : IDE LED connector**

PIN NO.	DESCRIPTION
1	+5V
2	HDD ACTIVE#

- **CN4 : POWER LED & KEYLOCK**

PIN NO.	DESCRIPTION
1	POWER LED ANODE
2	NC
3	GROUND
4	KEYLOCK
5	GROUND

- **JP2 : RESET BUTTON**

PIN NO.	DESCRIPTION
1	EXTERNAL RESET
2	GROUND

3.3 External Speaker

The HS-6200/6600 has an on-board buzzer (BZ1). And it also provides the CN3 in allows user to connecting to the external speaker.

- **CN3 : Speaker Connector**

PIN NO.	DESCRIPTION
1	SPEAKER SIGNAL
2	NC
3	GROUND

4	+5V
---	-----

3.4 PCI E-IDE Drive Connector

One standard 40-pin header daisy-chain driver connector provides as CN6 with following pin assignment. Total two IDE (Integrated Device Electronics) drivers may connect.

CN6(IDE 1) : Primary IDE Connector

- **CN6 : IDE Interface Connector**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	RESET	2	GROUND
3	DATA 7	4	DATA 8
5	DATA 6	6	DATA 9
7	DATA 5	8	DATA 10
9	DATA 4	10	DATA 11
11	DATA 3	12	DATA 12
13	DATA 2	14	DATA 13
15	DATA 1	16	DATA 14
17	DATA 0	18	DATA 15
19	GROUND	20	N/C
21	N/C	22	GROUND
23	IOW#	24	GROUND
25	IOR#	26	GROUND
27	N/C	28	BALE - DEFAULT
29	N/C	30	GROUND# -DEFAULT
31	INTERRUPT	32	IOCS16#-DEFAULT
33	SA1	34	N/C
35	SA0	36	SA2
37	HDC CS0	38	HDC CS1#
39	HDD ACTIVE	40	GROUND

3.5 PS/2 Power ON/OFF Control

The HS-6200/6600 reserved a CN5 for PS/2 Power ON/OFF Control.

- **CN5 : PS/2 Power ON/OFF Control**

CN5	DESCRIPTION	
1	LOW	HIGH
	Switch Power OFF	Switch Power ON
2	GND	

3.6 Parallel Port Connector

A standard 26-pin flat cable driver connector provides as CN12 with following pin assignment for connection to parallel printer.

- **CN12 : Parallel Port Connector**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	STROBE	2	DATA 0
3	DATA 1	4	DATA 2
5	DATA 3	6	DATA 4
7	DATA 5	8	DATA 6
9	DATA 7	10	ACKNOWLEDGE
11	BUSY	12	PAPER EMPTY
13	PRINTER SELECT	14	AUTO FORM FEED
15	ERROR#	16	INITIALIZE
17	PRINTER SELECT LN#	18	GROUND
19	GROUND	20	GROUND
21	GROUND	22	GROUND
23	GROUND	24	GROUND
25	GROUND	26	GROUND

3.7 The Floppy Disk Drive Connector

A standard 34-pin header daisy-chain driver connector provides as CN10 with following pin assignment. Total two FDD drivers may connect.

- **CN10 : FDD CONNECTOR**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GROUND	2	REDUCE WRITE
3	GROUND	4	N/C
5	GROUND	6	N/C
7	GROUND	8	INDEX#
9	GROUND	10	MOTOR ENABLE A#
11	GROUND	12	DRIVE SELECT B#
13	GROUND	14	DRIVE SELECT A#
15	GROUND	16	MOTOR ENABLE B#
17	GROUND	18	DIRECTION#
19	GROUND	20	STEP#
21	GROUND	22	WRITE DATA#
23	GROUND	24	WRITE DATA#
25	GROUND	26	TRACK 0#
27	GROUND	28	WRITE PROTECT#
29	GROUND	30	READ DATA#
31	GROUND	32	SIDE 1 SELECT
33	GROUND	34	DISK CHANGE#

3.8 Serial Ports Connectors

The HS-6200/6600 offers two high speed NS16C550 compatible UARTs with Read/Receive 16 byte FIFO serial ports with two internal 10-pin header. The HS-6200P/6600P which is with two external DB-9 connectors without VGA nor LAN on-board. All pin-assignment are listing at below:

- **CN21/22 : Serial Port DB-9 Connector (COM1/COM2)**

PIN NO.	DESCRIPTION
1	DATA CARRIER DETECT (DCD)
2	RECEIVE DATA (RXD)
3	TRANSMIT DATA (TXD)
4	DATA TERMINAL READY (DTR)
5	GROUND (GND)
6	DATA SET READY (DSR)
7	REQUEST TO SEND (RTS)
8	CLEAR TO SEND (CTS)
9	RING INDICATOR (RI)

- **CN13/16 : Serial Port 10-pin Header (COM1/COM2)**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DCD	2	DSR
3	RXD	4	RTX
5	TXD	6	CTX
7	DTR	8	RI
9	GND	10	NC

3.9 Keyboard Connectors

The HS-6200/6600 offers two possibilities for keyboard connections to external PS/2 type keyboard at CN20, or an internal 5-pin header at CN15.

- **CN15 : 5-pin Header Keyboard Connector**

PIN NO.	DESCRIPTION
1	KEYBOARD CLOCK
2	KEYBOARD DATA
3	N/C
4	GROUND
5	+5V

- **CN20 : 6-pin Mini-DIN Keyboard Connector**

PIN NO.	DESCRIPTION
1	KEYBOARD DATA
2	N/C
3	GROUND
4	+5V
5	KEYBOARD CLOCK
6	N/C

3.10 PS/2 Mouse 6-pin Mini-DIN Connector

The HS-6200/6600 provides an external PS/2 mouse connector at CN18 with following pin information.

- **CN18 : PS/2 Mouse Connector**

PIN NO.	DESCRIPTION
1	DATA
2	NC
3	GROUND
4	+5V
5	CLK
6	NC

3.11 VGA CRT and LCD Connectors

The HS-6200/6600 provides two possible connectives of VGA connections. One standard DB-15 external VGA connector as following CN19 pin information. Another internal 50-pin header for LCD Panel connection as following CN14 pin information.

- **CN14 : 50-pin Internal LCD Panel Connector**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+12V	2	+12V
3	Ground	4	Ground
5	3.3V / 5V ^{Note-1}	6	ENAVDD
7	ENAVEE	8	Ground
9	P0	10	P1
11	P2	12	P3
13	P4	14	P5
15	P6	16	P7
17	P8	18	P9
19	P10	20	P11
21	P12	22	P13
23	P14	24	P15
25	P16	26	P17
27	P18	28	P19
29	P20	30	P21
31	P22	32	P23
33	P24	34	P25
35	SHFCLK	36	FP
37	M	38	LP
39	Ground	40	FPBACK
41	P26	42	P27
43	P28	44	P29
45	P30	46	P31
47	P32	48	P33
49	P34	50	P35

Note-1: Please setting the voltage correctly of individual panel by JP11.

CN19 : 15-pin DB-15 Female VGA connector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	RED	2	GREEN
3	BLUE	4	NC
5	GROUND	6	GROUND
7	GROUND	8	GROUND
9	NC	10	GROUND
11	NC	12	NC
13	HSYNC	14	VSYNC
15	NC		

3.12 IR Connector

The HS-6200/6600 provides a 5-pin internal IR communication connector as following CN11 pin information.

- **CN11 : 5-PIN IR CONNECTOR**

PIN NO.	DESCRIPTION
1	Vcc
2	FIRRX
3	IRRX
4	GROUND
5	IRTX

3.13 USB Ports Connector

The HS-6200/6600 provides two internal 8-pin USB ports connectors. Please refer to the following detail pin information.

- **JP9 : 8-pin Header USB Connector**

PIN NO.	JP9	PIN NO.	JP9
1	Vcc	2	Vcc
3	BD0-	4	BD1-
5	BD0+	6	BD1+
7	GROUND	8	GROUND

3.14 LAN Interface Connector

The HS-6200/6600 provides one external RJ-45 100-based LAN interface connector. Please refer to the following detail of pin information.

- **CN17 : RJ-45 9-pin LAN Connector**

PIN NO.	JP9
1	TX+
2	TX-
3	RX+
4	N/C
5	N/C
6	RX-
7	N/C
8	N/C
9	Ground

There are three LED indicators provide the running conditions of the LAN with LE1, LE2 and LE3:

- LE1: 10T speed running
- LE2: 100T speed running
- LE3: LAN active

Chapter-4

AWARD BIOS Setup

The HS-6200/6600 uses the Award PCI/ISA BIOS for the system configuration. The Award BIOS setup program is designed to provide the maximum flexibility in configuring the system by offering various options which could be selected for end-user requirements. This chapter is written to assist you in the proper usage of these features.

To access AWARD PCI/ISA BIOS Setup program, press key. The Main Menu will be displayed at this time.

4.1 Main Menu

Once you enter the Award BIOS CMOS Setup Utility, the Main Menu will appear on the screen. The Main Menu allows you to select from several setup functions and two exit choices. Use the arrow keys to select among the items and press <Enter> to enter the sub-menu.

ROM PCI/ISA BIOS (2A69KD29)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP/PCI CONFIGURATION	SAVE & EXIT SETUP
LOAD BIOS DEFAULTS	EXIT WITHOUT SAVING
LOAD SETUP DEFAULTS	
Esc : Quit	↑ ↓ → ← : Select Item
F10 : Save & Exit Setup	(Shift)F2 : Change Color

Note that a brief description of each highlighted selection appears at the bottom of the screen.

4.2 Standard CMOS Setup

The Standard Setup is used for the basic hardware system configuration. The main function is for Data/Time and Floppy/Hard Disk Drive settings. Please refer to the following screen for the setup. When the IDE hard disk drive you are using is larger than 528MB, please set the HDD mode to **LBA** mode. Please use the IDE Setup Utility in BIOS SETUP to install the HDD correctly.

ROM PCI/ISA BIOS (2A69KD29)
STANDARD CMOS SETUP
AWARD SOFTWARE, INC.

Date (mm:dd:yy) : Tue, Nov 10 1998								
Time (hh:mm:ss) : 15 : 41 : 0								
HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
Primary Master	:	0	0	0	0	0	0	NORMAL
Primary Slave	:	0	0	0	0	0	0	NORMAL
Drive A : None								
Drive B : None								
Video : EGA/VGA								
Halt On : All Errors								
ESC : Quit		↑ ↓ → ← : Select Item			PU/PD/+/- : Modify			
F1 : Help		{Shift}F2 : Change Color						

4.3 BIOS Features Setup

This section allows you to configure your system for the basic operation. You have the opportunity to select the system's default speed, boot-up sequence, keyboard operation, shadowing and security.

ROM PCI/ISA BIOS (2A69KD29)
BIOS FEATURES SETUP
AWARD SOFTWARE, INC.

Virus Warning	: Enabled	Video BIOS Shadow	: Disabled
CPU Internal Cache	: Disabled	C8000-CBFFF Shadow	: Disabled
External Cache	: Disabled	CC000-CFFFF Shadow	: Disabled
CPU L2 Cache ECC Checking	: Enabled	D0000-D3FFF Shadow	: Disabled
Quick Power On Self Test	: Disabled	D4000-D7FFF Shadow	: Disabled
Boot Sequence	: A,C,SCSI	D8000-DBFFF Shadow	: Disabled
Swap Floppy Drive	: Disabled	DC000-DFFFF Shadow	: Disabled
Boot Up Floppy Seek	: Disabled		
Boot Up NumLock Status	: Off		
Gate A20 Option	: Normal		
Typeomatic Rate Setting	: Disabled		
Typeomatic Rate (Chars/Sec)	: 6		
Typeomatic Delay (Msec)	: 250		
Security Option	: Setup		
PS/2 mouse function control	: Disabled		
PCI/VGA Palette Snoop	: Disabled	ESC : Quit	↑↓←→ : Select Item
OS Select For DRAM > 64MB	: Non-OS2	F1 : Help	PU/PD/+/- : Modify
Report No FDD For WIN 95	: No	F5 : Old Values (Shift)	F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

4.4 Chipset Features Setup

This section allows you to configure the system based on the specific features of the installed chipset. This chipset manages bus speeds and the access to the system memory resources, such as DRAM and the external cache. It also coordinates the communications between the conventional ISA and PCI buses. It must be stated that these items should never be altered. The default settings have been chosen because they provide the best operating conditions for your system. You might consider and make any changes only if you discover that the data has been lost while using your system.

ROM PCI/ISA BIOS (2A69KD29)
CHIPSET FEATURES SETUP
AWARD SOFTWARE, INC.

Auto Configuration	: Disabled	CPU Warning Temperature	:
EDO CASx# MA Wait State	: 1	Current CPU Temperature	:
EDO RASx# Wait State	: 1		
SDRAM RAS-to-CAS Delay	: 3		
SDRAM RAS Precharge Time	: 3		
SDRAM CAS latency Time	: 2		
SDRAM Precharge Control	: Disabled		
DRAM Data Integrity Mode	: Non-ECC		
System BIOS Cacheable	: Disabled		
Video BIOS Cacheable	: Disabled		
Video RAM Cacheable	: Disabled		
8 Bit I/O Recovery Time	: NA		
16 Bit I/O Recovery Time	: NA		
Memory Hole At 15M-16M	: Disabled		
Passive Release	: Disabled	ESC : Quit	↑↓←→ : Select Item
Delayed Transaction	: Disabled	F1 : Help	PU/PD/+/- : Modify
AGP Aperture Size (MB)	: 4	F5 : Old Values (Shift)F2 : Color	
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

4.5 Integrated Peripherals

The IDE hard drive controllers can support up to two separate hard drives. These drives have a master/slave relationship which is determined by the cabling configuration used to attach them to the controller. Your system supports two IDE controllers--a primary and a secondary--so you can install up to four separate hard disks.

PIO means Programmed Input /Output. Rather than having the BIOS issue a series of commands to affect the transfer to or from the disk drive, PIO allows the BIOS to tell the controller what it wants and then let the controller and the CPU perform the complete task by them. This is much simpler and more efficient (also faster).

ROM PCI/ISA BIOS (2A69KD29)
INTEGRATED PERIPHERALS
AWARD SOFTWARE, INC.

IDE HDD Block Mode	: Disabled	IR Transmittiion delay	: Disabled
		Onboard Parallel Port	:
		Parallel Port Mode	:
		ECP Mode Use DMA	: 1
		EPP Mode Select	: EPP1.9
IDE Primary Master UDMA	: Disabled		
IDE Primary Slave UDMA	: Disabled		
On-Chip Primary PCI IDE:	Disabled		
USB Keyboard Support	: Disabled		
Init Display First	: PCI Slot		
KBC input clock	: 6 MHz		
Onboard FDC Controller	: Disabled	ESC : Quit	↑↓←→ : Select Item
Onboard Serial Port 1	: Disabled	F1 : Help	PU/PD/+/- : Modify
Onboard Serial Port 2	:	F5 : Old Values (Shift)	F2 : Color
UART Mode Select	:	F6 : Load BIOS Defaults	
RxD , TxD Active	: Hi,Hi	F7 : Load Setup Defaults	

4.6 Power Management Setup

The Power Management Setup allows user to configure the system for saving energy in a most effective way while operating in a manner consistent with his own style of computer use.

ROM PCI/ISA BIOS (2A69KD29)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

Power Management : Min Saving	** Reload Global Timer Events **
PM Control by APM : No	IRQ(3-7,9-15),NMI : Disabled
Video Off Method : Blank Screen	Primary IDE 0 : Disabled
Video Off After : NA	Primary IDE 1 : Disabled
MODEM Use IRQ : NA	Secondary IDE 0 : Disabled
Doze Mode : Disable	Secondary IDE 1 : Disabled
Standby Mode : Disable	Floppy Disk : Disabled
Suspend Mode : Disable	Serial Port : Disabled
HDD Power Down : Disable	Parallel Port : Disabled
Throttle Duty Cycle : 12.5%	
PCI/VGA Act-Monitor : Disabled	
Soft-Off by PWR-BTIN : Instant-Off	
PowerOn by Ring : Disabled	
CPU fan on temp high : Disabled	
IRQ 8 Break Suspend : Disabled	
	ESC : Quit ↑↓←→ : Select Item
	F1 : Help PU/PD/+/- : Modify
	F5 : Old Values (Shift)F2 : Color
	F6 : Load BIOS Defaults
	F7 : Load Setup Defaults

Chapter-5

A Brief Information of 10/100 based-T LAN

The HS-6200/6600 provides an on board 32-bit PCI 10/100 based-T Intel® 82558B Ethernet LAN interface RJ-45 connection for easy using the HS-6200/6600 half size all-in-one Pentium® VGA CRT-LCD interface with 100-based network industrial single board in connection to-with Novell NE2000 compatible LAN network system.

The HS-6200/6600's design that is basing on Intel® 82558B chipset with provides a RJ-45 100 base-T NE2000 compatible interfaces. For more information, please contact with your supplier.

For completed information, please visit Intel® Web and Internet Sites:

Support: <http://support.intel.com>

News: <news://cs.intel.com>

Network Products: <http://www.intel.com/comm-net.sns>

Corporate: <http://www.intel.com>

FTP Host: <ftp.intel.com>

FTP Directory:

/pub/support/enduser_reseller/etherexpress_lan_adapters