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CHAPTER 1 INTRODUCTION

This manual describes how to configure the ATC-6120 mainboard for different environments. It's an overview of the layout and features of the mainboard, and also provides information for you to change the configuration or system environment.

This manual is divided into Three parts :

PART ONE includes page A and two chapters as following:
Page A contains layout diagram of the mainboard. Please refer to it when you configure the system.

Chapter 1 is an overview of the mainboard features and packing contents.
Chapter 2 describes how to upgrade and to change hardware configurations such as memory size, CPU type, and lists of jumper settings and connectors.

PART TWO includes chapter 3 which contains Award BIOS description..

Chapter 3 is the user's guide of the Award BIOS setup utility and Flash ROM BIOS. The menu shown in this chapter are the default settings.

PART THREE includes APPENDIX A and APPENDIX B,

APPENDIX A is a technical support form

Your system dealer will set up the mainboard according to your demand of the computer. It means that the current settings of your mainboard may not be the same as the defaults shown in this user's manual. If you need to change your configuration, please ask your dealer first. Be sure this will not void your system warranty, or ask your dealer to do it for you.

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1-1 SYSTEM FEATURES

- ☐ INTEL Pentium II CPU operating at 233MHz and 333MHz by using Single Edge Contact (S.E.C.) cartridge (or named Slot 1).
- ☐ INTEL 82440LX PCIset.
- ☐ Using three 168-pin DIMM sockets, provides three banks of 64-bit wide path up to 384MB SDRAM or 768MB EDO DRAM (with parity chip ECC support).
- ☐ Built-in Switching Voltage Regulator.
- ☐ INTEL LDCM software.(option)
- ☐ Supports auto-detect CPU core voltage range 1.8V to 3.5V.
- ☐ Supports one AGP slot, four PCI revision 2.1 interface compliant and three 16-bit ISA slots.
- ☐ Dual Master IDE connectors support Ultra DMA/33, up to four devices in two channels for connecting of high capacity hard drive, CD-ROM, tape backup etc..
- ☐ Supports the USB (Universal Serial Bus) connector.
- ☐ PS/2 keyboard connector and PS/2 mouse connector.
- ☐ Winbond 83977 high-speed Ultra Multi-I/O chipset.
- ☐ Supports Infrared transfer (IrDA TX/RX) connection.
- ☐ One FDC port supports two devices up to 2.88MB
- ☐ Two 16550A fast UARTs compatible serial ports
- ☐ One EPP/ECP mode parallel port
- ☐ Hardware Dimension is 190mm x 305mm (7.48" x 12.00").

1-2 SOFTWARE POWER OFF CONTROL

The mainboard design supports Software Power Off Control feature through the SMM code in the BIOS under Windows 95, Windows 3.1x, and MS-DOS operation system environment. This is Intel ATX form factor feature and you should use ATX power supply.

First, you should connect the power switch cable (provided by the ATX case supplier) to the connector “PS-ON” (next to SW1) on the mainboard. In the BIOS screen of ‘POWER MANAGEMENT SETUP’, choose “User Defined” (or “Min. Power Saving” or “Max. Power Saving”) in ‘Power Manager’ and choose “Yes” in ‘PM Control by APM’.

In Windows 95, if you would like to power off the system, you just choose “shutdown the computer ?” in the “Shut Down Windows“ from Windows 95, then the system power will be off directly, and become the stand-by status. You will find the power LED light blinking. If you would like to restart the system, just press the power switch button, and the system will be powered on.

In Windows 3.1x or MS-DOS, you should copy the program of “down.com” (you can find it in the diskette of the IDE driver) into the hard drive. When you would like to power off the system, just run this “**down.com**”, then the system will be shutdown and stay in standby status.

Note : If you will leave your system for several days, we suggest you use hardware power off to shutdown your system.

1-3 LDCM ;]LANDesk Client Manager;^(option)

ATC-6120 built-in controller support Intel LDCM. LDCM can satisfy users who want manageable systems that can interact automatically with the user. Client manager is the answer, enabling both administrators and clients to manage systems. The features of LDCM are as following :

i° **Review system inventory**

Client Manager enables you to view hundreds of inventoried items. Some of these items are software related, while many others are hardware related.

i° **View DMI-compliant component information**

Client manager enables you to view component information that is compliant with the Desktop Manager Interface ;]DMI;^. This means you can manage third-party DMI-compliant components not included with Client manager.

i° **Back up and restore system configuration files.**

Client Manager enables you back up and restore system configuration files. Whenever you plan on changing the system configuration , you can make a backup set. If the system no longer works correctly, after you the change the system configuration , you can simply restore the system configuration with the backup set.

i° **Troubleshoot**

Since Client manager enables you to view the system inventory, you can easily troubleshoot system problems.

i° **Receive notifications for system events**

Client manager enables you to receive notification of certain system events. For example, if the system is running low on virtual memory, you are notified of the potential problem.

i° **Transfer files to and from client workstations**

As an administrator, you have the ability to transfer files to and from client workstation. This is helpful, for example, when you need to update a client workstation driver.

i° **Remotely reboot client workstations**

Administrator also have the ability to remotely reboot a workstation . This is helpful when you want system configuration changes to take effect.

1-4 SMM LED OPERATION (option)

The mainboard supports SMM LED function to help users to easily recognized the system state, such as full on (working), APM (SMM function), Soft-off and mechanism-off (power cable remove).

You can use jumper JP7 to switch one LED mode or two LED mode, please see the following table.

MODE 1 : Two LED mode, JP7 set “2-3”

State	Power LED	SMM LED
Power-on	ON	OFF
Soft-off	OFF	Flush
Mech-off	OFF	OFF
APM	OFF	ON

MODE 2 : One LED mode, JP7 set “1-2”

State	Power LED
Power-on	ON
Soft-off	OFF
Mech-off	OFF
APM	Flush

1-5 Thermister (option)

This means that user can monitor the CPU temperature through thermister. When setting up the thermister, the Bios will load the CPU temperature automatically. There is a choice of the warning beep sound if the user set the option on. If the CPU temperature overheated, the user will get the notice from the thermister. This time you should shut down computer and check your devices. Or you can connect with you dealer.

Therefore, protecting and monitoring the CPU temperature is the thermister's job.

1-6 Wake-On-LAN

The remote Wake-On-LAN mode of operation is a mechanism that uses Advanced Micro Device Magic Packet technology to power up a sleeping workstation on the network. This mechanism is accomplished when the LAN card receives a specific packet of information, called a Magic Packet, addressed to the node on the network. For additional protection, Secure ON is an optional security feature that can be added to the Magic Packet that requires a password to power up the sleeping workstation. When the LAN card is in remote Wake-On-LAN mode, main system power can be shut down leaving power only for the LAN card and auxiliary power recondition.

The LAN card performs no network activities while in the remote Wake-On-LAN mode of operation-It only monitors the network for receipt of a Magic Packet. If a Magic Packet is addressed to the LAN card on the network, the LAN card wake up the system. If the Secure ON feature has been enabled, the password added to the Magic Packet is also verified prior to waking up the system.

You should select the LAN card also support WOL function. WOL has two protocol . That are INTEL and DEC. JP2 is set to recongize your LAN card is INTEL or DEC protocol. (DEC protocol is not recommend now.)

WOL LAN card will provide a 3-pin line to connect the WOL connector on the mainboard.

WOL	JP2
INTEL	1-2
DEC	2-3

1-7 CHECK LIST OF THE PACKAGING

The mainboard comes securely packed in a durable box and shipping carton. If any of the following items are missing or damaged, please contact your supplier.

Each mainboard contains:

<u>Q'TY</u>	<u>Description</u>
1	Mainboard : ATC-6120.
1	Retention module (for Pentium II installation)
1	CD : LDCM, IDE driver (option)
1	Diskette : Enhanced IDE driver (option)
	Award system BIOS
	Update Utility
1	Cable : Enhanced IDE connector.
1	Cable : F.D.D. connector.
1	Manual : User`s manual.

NOTE : Leave the mainboard in its original packaging until you are ready to install it.

CHAPTER 2 INSTALLATION

2-1 INSTALLATION PROCEDURE

Before installing the computer, please prepare all components such as CPU, DRAM; peripherals such as hard drive, keyboard, CD-ROM; and accessories such as cables. Then, install the system as following:

1. Plug CPU/ heat sink (refer to Pentium II installation guide), and DRAM modules in the mainboard.
2. Set DIP switch based on your configuration.
3. Plug add-on cards in PCI/ISA slots.
4. Connect cables to peripherals, power supply.
5. Make sure all components and devices are well connected, turn on the power and setup System BIOS based on your configuration.
6. Install peripherals, add-on card drivers and test them.
7. If all of above procedures are success, turn-off the power then plug all of them into your computer case.

2-2 CPU INSTALLATION

ATC-6120 supports INTEL Pentium II CPU cartridge.

2-2-1 CPU TYPE SELECTION (by BIOS)

1. Press the key when the system is booting up.
2. The following main menu will appear.

ROM PCI/ISA BIOS (ATC-6120)
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
AT Clock, DRAM Timmings,	

3. Select “CHIPSET FEATURES SETUP”

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
AT Clock, DRAM Timmings,	

4. Then the following screen will appear.

ROM PCI/ISA BIOS (ATC-6120)
 CHIPSET FEATURES SETUP
 AWARD SOFTWARE, INC.

Auto Configuration	: Enabled	SDRAM CAS latency Time	: 3
DRAM Speed Selection	: 60 ns	CPU Clock Ratio	:2.0x
MA Wait State	: Slow	Auto Detect DIMM/PCI Clk	:Enabled
EDO RAS# To CAS# Delay	: 3	Spread Spectrum	:Disabled
EDO RAS# Precharge Time	: 4	CPU Clock Frequency	:66MHz
EDO DRAM Read Burst	: x333		
EDO DRAM Write Burst	: x333		
DRAM Data Integrity Mode	: Non-ECC		
CPU-To-PCI IDE Posting	: Enabled		
System BIOS Cacheable	: Disabled		
Video BIOS Cacheable	: Disabled		
Video RAM Cacheable	: Disabled		
8 Bit I/O Recovery Time	: 1		
16 Bit I/O Recovery Time	: 1		
Memory Hole At 15M-16M	: Disabled		
Passive Release	: Enabled	Esc: Quit	↑↓→←:Select Item
Delayed Transaction	: Disabled	F1 : Help	PU/PD/+/-:Modify
AGP Aperture Size (MB)	: 64	F5 : Old Values	(Shift)F2 :Color
SDRAM RAS-to-CAS Delay	: Slow	F6 :Load BIOS Defaults	
SDRAM RAS Precharge Time	: Slow	F7 :Load Setup Defaults	

NOTE

If an incorrect CPU frequency is set through the BIOS, a system failure may occur. This system failure can be solved by pressing the “Insert” key on the keyboard to clear up the previous set frequency (i.e. back to 133MHz (66MHz x 2.0) or the default frequency), and then the power button to restart the system and reset the value in BIOS screen. Or user can clear CMOS to reset the BIOS value.

Also ATC-6120 supports keyboard power on or mouse power on function, (refer to ‘Integrated Peripherals’, page48,49). When you set ‘keyboard power on’, you can select set password or not. When you set password, you should key-in the password to power on the system. If you forget the password, you should clear CMOS to reset the system.

5a. Intel Pentium II 233MHz (66 x 3.5)

ROM PCI/ISA BIOS (ATC-6120)

CHIPSET FEATURES SETUP

AWARD SOFTWARE, INC.

Auto Configuration	: Enabled	SDRAM CAS latency Time	: 3
DRAM Speed Selection	: 60 ns	CPU Clock Ratio	:3.5x
MA Wait State	: Slow	Auto Detect DIMM/PCI Clk	:Enabled
EDO RAS# To CAS# Delay	: 3	Spread Spectrum	:Disabled
EDO RAS# Precharge Time	: 3	CPU Clock Frequency	:66MHz
EDO DRAM Read Burst (B/E/F)	: x333		
EDO DRAM Write Burst (B/E/F)	: x222		
DRAM Data Integrity Mode	: Non-ECC		
CPU-to-PCI IDE Posting	: Enabled		
System BIOS Cacheable	: Disabled		
Video BIOS Cacheable	: Disabled		
Video RAM Cacheable	: Disabled		
8-bit I/O Recovery Time	: 1		
16-bit I/O Recovery Time	: 1		
Memory Hole At 15M-16M	: Disabled		
Passive Release	: Enabled	Esc: Quit	↑↓→←:Select Item
Delayed Transaction	: Enabled	F1 : Help	PU/PD/+/-:Modify
AGP Aperture Size (MB)	: 64	F5 : Old Values	(Shift)F2 :Color
SDRAM RAS-to-CAS Delay	: Slow	F6 :Load BIOS Defaults	
SDRAM RAS Precharge Time	: Slow	F7 :Load Setup Defaults	

5b. Intel Pentium II 266MHz (66 x 4.0)

ROM PCI/ISA BIOS (ATC-6120)

CHIPSET FEATURES SETUP

AWARD SOFTWARE, INC.

Auto Configuration	: Enabled	SDRAM CAS latency Time	: 3
DRAM Speed Selection	: 60 ns	CPU Clock Ratio	:4.0x
MA Wait State	: Slow	Auto Detect DIMM/PCI Clk	:Enabled
EDO RAS# To CAS# Delay	: 3	Spread Spectrum	:Disabled
EDO RAS# Precharge Time	: 3	CPU Clock Frequency	:66MHz
EDO DRAM Read Burst (B/E/F)	: x333		
EDO DRAM Write Burst (B/E/F)	: x222		
DRAM Data Integrity Mode	: Non-ECC		
CPU-to-PCI IDE Posting	: Enabled		
System BIOS Cacheable	: Disabled		
Video BIOS Cacheable	: Disabled		
Video RAM Cacheable	: Disabled		
8-bit I/O Recovery Time	: 1		
16-bit I/O Recovery Time	: 1		
Memory Hole At 15M-16M	: Disabled		
Passive Release	: Enabled	Esc: Quit	↑↓→←:Select Item
Delayed Transaction	: Enabled	F1 : Help	PU/PD/+/-:Modify
AGP Aperture Size (MB)	: 64	F5 : Old Values	(Shift)F2 :Color
SDRAM RAS-to-CAS Delay	: Slow	F6 :Load BIOS Defaults	
SDRAM RAS Precharge Time	: Slow	F7 :Load Setup Defaults	

5c. Intel Pentium II 300MHz (66 x 4.5)

ROM PCI/ISA BIOS (ATC-6120)

CHIPSET FEATURES SETUP

AWARD SOFTWARE, INC.

Auto Configuration	: Enabled	SDRAM CAS latency Time	: 3
DRAM Speed Selection	: 60 ns	CPU Clock Ratio	:4.5x
MA Wait State	: Slow	Auto Detect DIMM/PCI Clk	:Enabled
EDO RAS# To CAS# Delay	: 3	Spread Spectrum	:Disabled
EDO RAS# Precharge Time	: 3	CPU Clock Frequency	:66MHz
EDO DRAM Read Burst (B/E/F)	: x333		
EDO DRAM Write Burst (B/E/F)	: x222		
DRAM Data Integrity Mode	: Non-ECC		
CPU-to-PCI IDE Posting	: Enabled		
System BIOS Cacheable	: Disabled		
Video BIOS Cacheable	: Disabled		
Video RAM Cacheable	: Disabled		
8-bit I/O Recovery Time	: 1		
16-bit I/O Recovery Time	: 1		
Memory Hole At 15M-16M	: Disabled		
Passive Release	: Enabled	Esc: Quit	↑↓→←:Select Item
Delayed Transaction	: Enabled	F1 : Help	PU/PD/+/-:Modify
AGP Aperture Size (MB)	: 64	F5 : Old Values	(Shift)F2 :Color
SDRAM RAS-to-CAS Delay	: Slow	F6 :Load BIOS Defaults	
SDRAM RAS Precharge Time	: Slow	F7 :Load Setup Defaults	

5d. Intel Pentium II 333MHz (66 x 5.0)

ROM PCI/ISA BIOS (ATC-6120)

CHIPSET FEATURES SETUP

AWARD SOFTWARE, INC.

Auto Configuration	: Enabled	SDRAM CAS latency Time	: 3
DRAM Speed Selection	: 60 ns	CPU Clock Ratio	:5.0x
MA Wait State	: Slow	Auto Detect DIMM/PCI Clk	:Enabled
EDO RAS# To CAS# Delay	: 3	Spread Spectrum	:Disabled
EDO RAS# Precharge Time	: 3	CPU Clock Frequency	:66MHz
EDO DRAM Read Burst (B/E/F)	: x333		
EDO DRAM Write Burst (B/E/F)	: x222		
DRAM Data Integrity Mode	: Non-ECC		
CPU-to-PCI IDE Posting	: Enabled		
System BIOS Cacheable	: Disabled		
Video BIOS Cacheable	: Disabled		
Video RAM Cacheable	: Disabled		
8-bit I/O Recovery Time	: 1		
16-bit I/O Recovery Time	: 1		
Memory Hole At 15M-16M	: Disabled		
Passive Release	: Enabled	Esc: Quit	↑↓→←:Select Item
Delayed Transaction	: Enabled	F1 : Help	PU/PD/+/-:Modify
AGP Aperture Size (MB)	: 64	F5 : Old Values	(Shift)F2 :Color
SDRAM RAS-to-CAS Delay	: Slow	F6 :Load BIOS Defaults	
SDRAM RAS Precharge Time	: Slow	F7 :Load Setup Defaults	

2-3 SYSTEM MEMORY INSTALLATION

The ATC-6120 provides three 168-pin DIMM sockets for system memory expansion from 8MB to 384MB. These three DIMMs are arranged to three banks, please refer to page A. Each bank provides 64-bit wide data path.

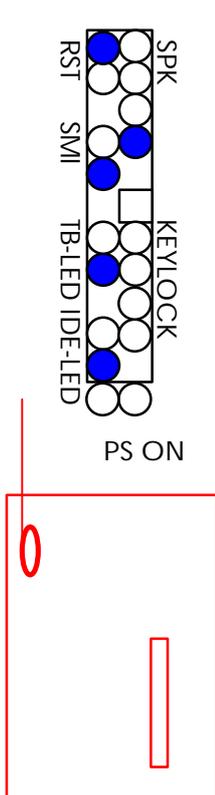
° Samples of System Memory Combinations Options °

BANK0 DIMM 1	BANK1 DIMM 2	BANK2 DIMM 3	Total Memory DIMM 1-3
8MBx1	-	-	8MB
-	8MBx1	-	8MB
-	-	8MBx1	8MB
8MBx1	8MBx1	-	16MB
-	8MBx1	8MBx1	16MB
8MBx1	-	8MBx1	16MB
16MBx1	-	-	16MB
-	16MBx1	-	16MB
-	-	16MBx1	16MB
8MBx1	8MBx1	8MBx1	24MB
8MBx1	16MBx1	-	24MB
-	16MBx1	16MBx1	32MB
16MBx1	-	16MBx1	32MB
32MBx1	-	-	32MB
-	32MBx1	-	32MB
-	-	32MBx1	32MB
8MBx1	16MBx2	16MBx1	56MB
32MBx1	32MBx1	-	64MB
-	32MBx1	32MBx1	64MB
64MBx1	-	-	64MB
-	64MBx1	64MBx1	128MB
:	:	:	:
128MBx1	128MBx1	128MBx1	384MB

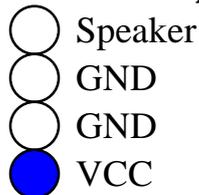
2-4 CONNECTORS DESCRIPTION

The locations of following connectors are indicated in page A. When you plug a cable into the following I/O connectors, you should have the pin 1 edge of the cable align with the pin 1 end of the connector.

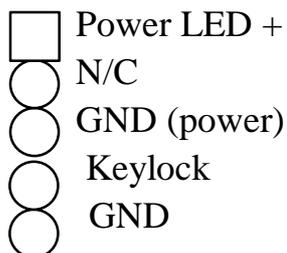
CONN1 : speaker, keyboard lock, reset, SMI, turbo LED, and IDE LED connectors.



SPK : speaker



Power LED connector



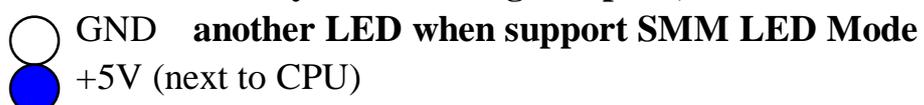
RST : Reset connector



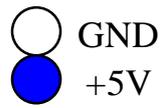
SMI : SMI lead



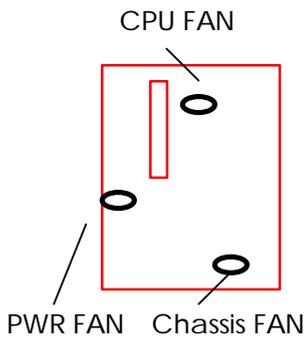
TB-LED : Turbo LED indicator, LED on when system runs higher speed, or as



IDE-LED : IDE devices indicator LED



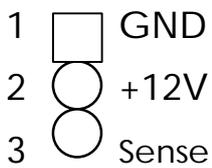
connector. IDE-LED stays ON indicates on-board IDE devices in operation. If plug wire into wrong connector, color of LED will be lighter and the IDE devices can still function properly.



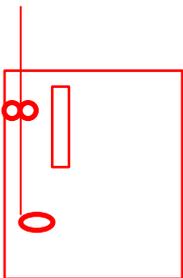
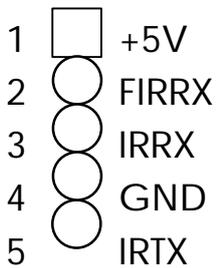
FAN : CPU cooling fan connector. Wire with +12V voltage (most likely red wire) must be plugged into pin2, and GROUND wires (most likely black wires) must be plugged into pin3. Please confirm the wire color re-presentation with your supplier.

CAUTION: Plug wire into wrong connector will DAMAGE fan and mainboard.

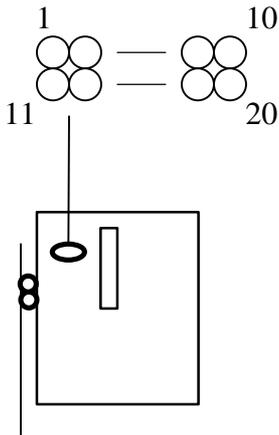
FAN1 for Pentium II CPU Fan, FAN2 Chassis, FAN3 for Power card.



IR1 : Infrared module connector.



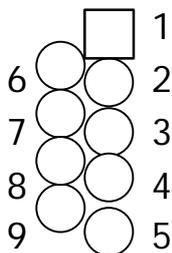
PW1 : ATX mode +3.3/5/12V power supply connector.



1	3.3V	6	+5V	11	3.3V	16	GND
2	3.3V	7	GND	12	-12V	17	GND
3	GND	8	PWRGD	13	GND	18	-5V
4	+5V	9	5VSB	14*	PS_ON	19	+5V
5	GND	10	+12V	15	GND	20	+5V

* PS_ON : Soft-Off power control

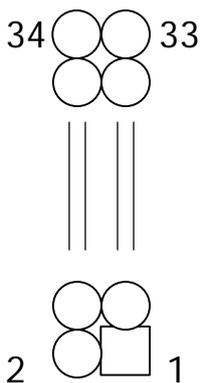
COM1/COM2 : these two connectors are used to connect serial port cables.



pin	signal name
1	NDCDA/B
2	NSINA/B
3	NSOUTA/B
4	NDTRA/B
5	GND
6	NDSRA/B
7	NRTSA/B
8	NCTSA/B
9	NRSA/B

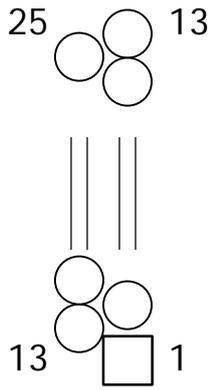
A is COM1, B is COM2

FDC1 : this connector is used to connect the floppy drive through a cable.

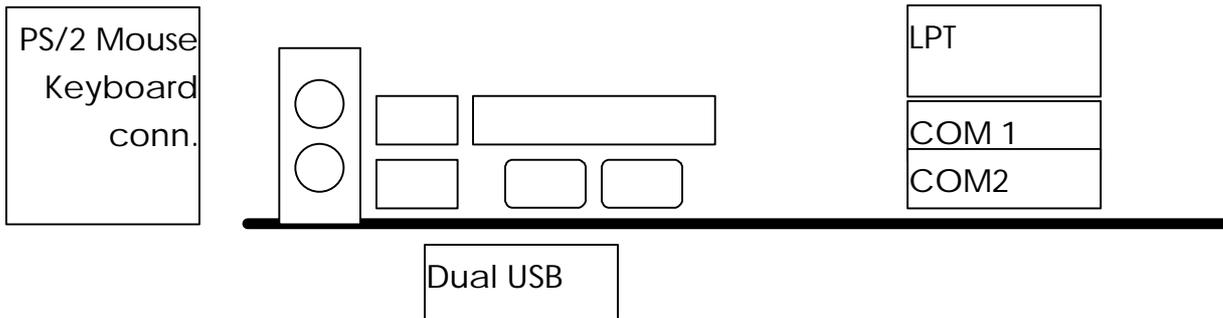


pin	signal	pin	signal
2	RWC-	20	STEP-
4	reserved	22	Write Data
6	FDEDIN	24	Write Gate
8	Index-	26	Track 00-
10	Motor EnableA-	28	Write Protect-
12	Drive Sele.B-	30	Read Data-
14	Drive Sele.A-	32	Side 1 Sele.-
16	Motor EnableB-	34	DisketteChange
18	DIR-		
All of odd pins are ground			

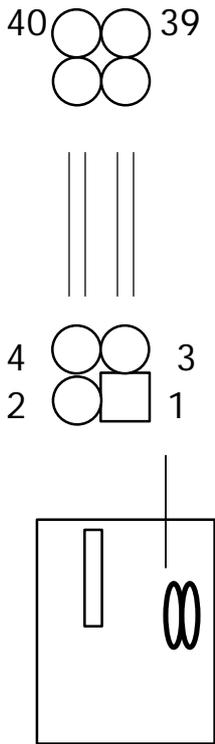
LPT : this connector is used to connect parallel port cable.



pin	signal	pin	signal
1	STROBE-	10	ACK-
2	Data Bit 0	11	BUSY
3	Data Bit 1	12	PE
4	Data Bit 2	13	SLCT
5	Data Bit 3	14	Auto Feed-
6	Data Bit 4	15	ERROR-
7	Data Bit 5	16	INIT-
8	Data Bit 6	17	SLCT IN-
9	Data Bit 7		
pin18 -- pin25 are ground			



IDE1/IDE2 : these two connectors are used to connect IDE devices through IDE cables, a total of 4 devices can be connected.



pin	signal	pin	signal
1	Reset IDE	21	DDRQ0(1)
2	GND	22	GND
3	Host Data 7	23	I/O Write-
4	Host Data 8	24	GND
5	Host Data 6	25	I/O Read-
6	Host Data 9	26	GND
7	Host Data 5	27	IORDY
8	Host Data 10	28	N/C
9	Host Data 4	29	DDAK0- (1-)
10	Host Data 11	30	GND
11	Host Data 3	31	IRQ14*
12	Host Data 12	32	IOCS16-
13	Host Data 2	33	Addr 1
14	Host Data 13	34	N/C
15	Host Data 1	35	Addr 0
16	Host Data 14	36	Addr 2
17	Host Data 0	37	ChipSele.1P-
18	Host Data 15	38	ChipSele.3P-
19	GND	39	Activity
20	Key	40	GND

* IDE1 : pin31 is IRQ14;

IDE2 : pin31 is IRQ15 or MIRQ0

2-5 IDE DRIVER INSTALLATION

The IDE driver installation procedure is as following :

Setup for Windows 95 :

1. Starting Windows 95
2. Select “START”, “RUN”.
3. Install INF.EXE before you install IDE driver, please refer to readme file.
4. Type “A:\WIN95\SETUP.EXE”.
5. Restart computer, then follow the instructions on your screen to install new IDE driver we offer in the 3.5“ diskette
6. Exit Windows 95, turn power off; then turn power on.

After installation, the screen will show a yellow ;I, please ignore it.

(The other platforms please refer to readme file.)

Make sure your HDD should follow ATA standard, and your CD-ROM should follow ATAPI standard. When you plug-in the IDE devices, please plug your first and second devices into IDE 1 port (Master then Slave), then plug third and fourth devices into IDE 2 port. If you have CD-ROM driver, please set it behind hard disk devices as the last device. For example, if you have 2 HDDs and 1 CD-ROM, you should set HDD1 and HDD2 in IDE1 Master and Slave, set CD-ROM in IDE 2 Master. Some of the brands devices combination may not work under this sequence, you can try to re-arrange the devices sequence, or contact your vendor.

Primary Master	Primary Slave	Secondary Master	Secondary Slave	
ATA				no ATAPI
ATA		ATAPI		disk & CD-ROM
ATA	ATAPI			use only one cable
ATA		ATAPI	ATAPI	CD-ROM and a tape or two CD-ROMs

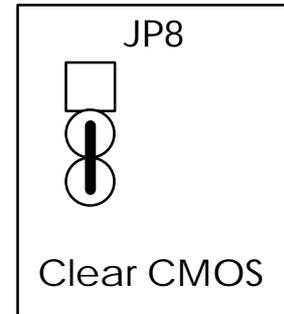
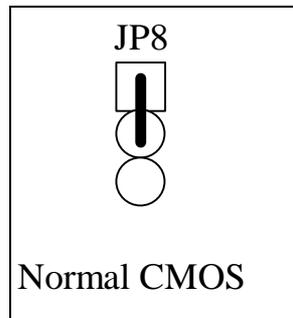
CHAPTER 3 Award BIOS SETUP

This chapter explains the system BIOS setup, and how to update to a new BIOS. All BIOS screens shown in the following pages are default values, your system dealer will set up these values according to your demand of the computer. Please refer to the next page for the update procedure.

ATC-6120 uses Flash ROM to make the BIOS easily to be updated by the floppy disk-based program. and to meet Microsoft Windows 95 plug & play feature. After the BIOS is updated, you should clear the setup data stored in the CMOS.

i° JP8 Setting is for Update System CMOS

	JP8
Normal	1-2
Clear	2-3



NOTE :

To clear CMOS you should unplug the power cord, then set 2-3 to clear, put it back to normal position and plug the power cord again.

3-1 UPDATE BIOS PROCEDURE

If the BIOS needs to be updated, you can get a diskette with the updated BIOS from your system supplier. The BIOS diskette includes :

“awdfash.exe” -- BIOS update utility program

“awdfash.doc”

“(update BIOS filename with version number).bin”

The update procedure is as following:

1. Boot the system to DOS mode in a normal manner.
2. Insert the updated diskette to drive A (or B).
3. Change working directory to floppy drive, A or B, which contains the update BIOS diskette. -- Type “a:\” or “b:\”, “ENTER”.
4. Run the BIOS update utility -- Type “awdfash”, “ENTER”.
5. Type “(update BIOS file name with version number).bin”, ENTER.
6. If you do not want to save the old BIOS Type “N” when the screen displays the message : " Do you want to save BIOS (Y/N) ?".
7. Type “Y” when the screen shows the message : " Are you sure to program (Y/N) ?".
8. Follow instructions displayed on the screen. DO NOT remove the update BIOS diskette from the floppy drive nor turn the system power off until the BIOS update is completed.
9. Turn the power off. Clear the data in CMOS according to the procedure described in the previous page.
10. Turn the system power on and test that your system is working properly.

3-1-2 UPDATE PENTIUM II MICROCODE API

Intel also provides MICROCODE API (Applications Programming Interface) for Pentium II processor-based mainboard user to update data block in BIOS quickly and easily. (You can find this utility in the 3.5“ diskette in the package).

The BIOS code on the Pentium II processor-based mainboards contains data that is specific to each silicon stepping of the processor. Integrators must ensure that this BIOS stepping data matches the processor stepping used. When the BIOS does not contain stepping data that matches the processor stepping, integrators must update the data in the BIOS before shipping the system. Historically, Pentium II systems have been updated by replacing the entire BIOS with a new revision of BIOS that contains the correct stepping data.

Intel's BIOS update API allows just the stepping data within the BIOS to be updated as needed. Mainboards that contain a BIOS with the Intel-defined BIOS update API can be quickly and easily updated, if required, without obtaining a complete BIOS upgrade. Using this utility, integrators can easily verify that the correct stepping data is present in all Pentium II processor-based mainboards. However, if the stepping data requires updating, the mainboard BIOS must contain the Intel-defined BIOS update API, otherwise a complete BIOS upgrade is required from the mainboard vendor.

Put the API diskette to floppy driver A and type

```
A:\>cd api; A:\api>checkup3
```

The main menu should now be displayed, showing the following four options :

- 1) Check and load update
- 2) Specify stepping data file [current : pep.pdb]
- 3) Help
- 4) Quit without loading update

Select 1 to know the stepping filename, select 2 to load right patch code, then select 1 to update proper patch code. Now, the screen will show the message “please remove floppy diskette from floppy disk drive”. Then cold boot (mechanical power off) system to continue. For more information, please refer to “CHECKUP.HLP“ file.

3-2 Award SYSTEM BIOS CONFIGURATION SETUP

The following pages explain how to set up the system configuration (CMOS) under the Award BIOS. The SETUP program is stored in the Read-Only-Memory (ROM) on the mainboard. To do the SETUP procedure, press the key when the system is booting up. The following main menu will appear. Please select " STANDARD CMOS SETUP" to enter the next screen.

ROM PCI/ISA BIOS (ATC-6120)
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
Time, Date, Hard Disk Type	

The section on the bottom of the main menu explains how to control this screen. The other section displays the items highlighted in the list.

This screen records some basic hardware information, and sets the system clock and error handling. These records can be lost or corrupted if the on-board battery has failed or is weak.

ROM PCI/ISA BIOS (ATC-6120)
 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
Time, Date, Hard Disk Type	

ROM PCI/ISA BIOS (ATC-6120)
 STANDARD CMOS SETUP
 AWARD SOFTWARE, INC.

Date (mm:dd:yy) : Wed, Jun 14 1996								
Time(hh:mm:ss) : 13 : 37 : 14								
HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
Primary Master	: Auto	0	0	0	0	0	0	Auto
Primary Slave	: Auto	0	0	0	0	0	0	Auto
Secondary Master	: Auto	0	0	0	0	0	0	Auto
Secondary Slave	: Auto	0	0	0	0	0	0	Auto
Drive A : 1.44M, 3.5 in.								
Drive B : None								
Floppy 3 Mode Support : Disabled								
Video : EGA/VGA								
Halt On: All Errors								
			Base Memory			: 640K		
			Extended memory			: 7168K		
			Other Memory			: 384K		

			Total Memory			: 8192K		
ESC	: Quit	↑↓→←:Select Item			PU/PD/+/- : Modify			
F1	: Help	(Shift) F2 : Change Color						

Date

The date format is <day>, <date><month><year>. Press<F3> to show the calendar.

day	The day, from Sun to Sat,determined by the BIOS and is display-only
date	The date, from 1 to 31
month	The month, Jan. through Dec.
year	The year, from 1900 to 2099

Time

The time format is <hour><minute><second>. The time is calculated based on the 24-hour military-time clock. For example, 1p.m. is 13:00:00.

Primary Master

Primary Slave

Secondary Master

Secondary Slave

These categories identify the types of the 2 channels that have been installed in the computer. There are 45 predefined types and 4 user definable types are for Enhanced IDE BIOS. Type 1 to 45 are predefined. Type **'user'** is user-definable. Press PgUp/PgDn to select a numbered hard disk type or type the number and press<Enter>. If you select **'Auto'**, the BIOS will auto-detect the HDD & CD-ROM Drive at the POST stage and show the IDE for HDD & CD-ROM Drive. If you select **'user'**, you will need to know the information listed below. Enter the information directly from the keyboard and press <Enter>. This information should be from your hard disk vender or dealer. If the controller of the HDD interface is ESDI, the selection shall be **'Type 1'**; if SCSI, the selection shall be **'None'**. If no device is installed select **'NONE'** and press <Enter>.

Type	drive type
SIZE	automatically adjusts
CYLS	number of cylinders
HEAD	number of heads
PRECOMP	write precom
LANDZ	landing zone
SECTOR	number of sectors
MODE	mode type

Drive A

Drive B

This category identifies the types of floppy disk drive A or drive B that have been installed in the computer.

None	No floppy drive installed
360K, 5.25 in	5.25" PC-type 360KB capacity
1.2M, 5.25 in	5.25" AT-type 1.2MB capacity
720K, 3.5 in	3.5" double-side 720KB capacity
1.44M, 3.5 in	3.5" double-side 1.44MB capacity
2.88M, 3.5 in	3.5" double-side 2.88MB capacity

Floppy 3 Mode Support

This is the Japanese standard floppy drive. This standard stores 1.2MB in a 3.5" diskette

Video

This category selects the type of video adapter used for the primary system monitor. Although secondary monitors are supported, you do not have to select the type in Setup.

EGA/VGA	Enhanced Graphics Adapter/Video Graphics Array. For EGA, VGA, SEGA, SVGA or PGA monitor adapters
CGA 40	Color Graphics Adapters, power up in 40 column mode
CGA 80	Color Graphics Adapters, power up in 80 column mode
MONO	Monochrome adapter, includes high resolution monochrome adapters

Halt On

This category determines whether the computer will stop if an error is detected during power up.

No errors	The system boot will not be stopped for any error that may be detected
All errors	When the BIOS detects a non-fatal error the system will be stopped and you will be prompted
All, But Keyboard	The system boot will not stop for a keyboard error, it will stop for all other errors
All, But Diskette	The system boot will not stop for a disk error, it will stop for all other errors
All, But Disk/Key	The system boot will not stop for a disk or keyboard error, it will stop for all other errors

Memory

This category is display-only which is determined by POST (Power On Self Test) of the BIOS.

Base Memory The POST will determine the amount of base (or conventional) memory installed in the system. The value of the base memory is typically 512K or 640K based on the memory installed on the mainboard.

Extended Memory How much extended memory is present during the POST. This is the amount of memory located above 1MB in the CPU's memory address map.

Other Memory This refers to the memory located in the 640K to 1024K address space. This is memory that can be used for different applications. DOS users this area to load device drivers in an effort to keep as much base memory free for application programs.

The BIOS is the most frequent user of this RAM area since this is where it shadows RAM.

This screen is a list of system configuration options. Some of them are defaults required by the mainboard's design, others depend on the features of your system.

ROM PCI/ISA BIOS (ATC-6120)

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
Virus, Protection, Boot Sequence	

ROM PCI/ISA BIOS (ATC-6120)

BIOS FEATURES SETUP

AWARD SOFTWARE, INC.

Virus Warning	: Disabled	Video BIOS Shadow	: Enabled
CPU Internal Cache	: Enabled	C8000-CBFFF Shadow	: Disabled
External Cache	: Enabled	CC000-CFFFF Shadow	: Disabled
Quick Power On Self Test	: Enabled	D0000-D3FFF Shadow	: Disabled
Boot Sequence	: A,C,SCSI	D4000-D7FFF Shadow	: Disabled
Swap Floppy Drive	: Disabled	D8000-DBFFF Shadow	: Disabled
Boot Up Floppy Seek	: Enabled	DC000-DFFFF Shadow	: Disabled
Boot Up NumLock Status	: On		
Boot Up System Speed	: High		
Gate A20 Option	: Fast		
Typematic Rate Setting	: Disabled		
Typematic Rate(Chars/Sec)	: 6	Esc : Quit	↑↓→←:Select Item
Typematic Delay(Msec)	: 250	F1 : Help	PU/PD/+/- : Modify
Security Option	: Setup	F5 : Old Values (SHIFT)	F2 : Color
PCI/VGA Palette Snoop	: Disabled	F6 : Load BIOS Defaults	
Assign IRQ For VGA	: Enabled	F7 : Load Setup Defaults	
OS Select for DRAM>64MB	: Non-OS2		
Report No FDD For Win95	: No		

Virus Warning

When this item is enabled, the Award BIOS will monitor the boot sector and partition table of the hard disk drive for any attempt at modification. If an attempt is made, the BIOS will halt the system and the following error message will appear. Afterwards, if necessary, you will be able to run an antivirus program to locate and remove the problem before any damage is done.

<p>! WARNING !</p> <p>Disk boot sector is to be modified Type 'Y' to accept write or 'N' to abort write Award Software, Inc.</p>

Enabled	Activates automatically when the system boots up, if anything attempts to access the boot sector or hard disk partition table will cause a warning message to appear.
Disabled	No warning message will appear when anything attempts to access the boot sector or hard disk partition table.

Many disk diagnostic programs which attempt to access the boot sector table can cause the above warning message. If you will be running such a program, we recommend that you first disable Virus Protection beforehand.

CPU

Internal Cache

External Cache

These two categories speed up memory access.

However, it depends on CPU/chipset design.

The default value is 'enabled'.

Quick Power On Self Test

This category speeds up Power On Self Test after you power up the computer. If you set Enabled, BIOS will shorten or skip some checked items during POST.

Boot Sequence

This category determines which drive to search first for the disk operating system (i.e., DOS).

A, C, SCSI	System will first search for floppy disk drive then hard disk drive, and the next is SCSI device.
C, A, SCSI	System will first search for hard disk drive then floppy disk drive, and the next is SCSI device.
C, CDROM, A	System will first search for hard disk drive then CDROM drive, and the next is floppy disk drive.
CDROM, C, A	System will first search for CDROM drive then hard disk drive, and the next is floppy disk drive.
D, A, SCSI	System will first search for secondary hard disk drive then floppy disk drive, and the next is SCSI device.
E, A, SCSI	System will first search for third hard disk drive then floppy disk drive, and the next is SCSI device.
F, A, SCSI	System will first search for fourth hard disk drive then floppy disk drive, and the next is SCSI device.
SCSI, A, C	System will first search for SCSI device then floppy disk drive, and the next is hard disk drive.
SCSI, C, A	System will first search for SCSI device then hard disk drive, and the next is floppy disk drive.
C only	System will search for hard disk drive only.
LS/ZIP, C	System will first search for LS120 or IOMEGA (ZIP) drive, and the next is hard disk drive.

C is primary master; D is primary slave;
E is secondary master, F is secondary slave

Swap Floppy Drive

This item allows you to determine whether to enable the swap floppy drive or not.

The choice : Enabled/ Disabled

Boot Up Floppy Seek

During POST, the BIOS will determine if the floppy disk drive installed is 40 tracks (360K) or 80 tracks (720K, 1.2M, 1.44M)

Enabled	BIOS searches for floppy disk drive to determine if it is 40 or 80 tracks
Disabled	BIOS will not search for the type of floppy disk drive by track number

Boot Up
NumLock Status

This allows you to determine the default state of the numeric keypad. By default, the system boots up with NumLock on.

	Keypad is number keys
Off	Keypad is arrow keys

Boot Up System
Speed

Selects the default system speed - the normal operating speed at power up.

High	Set the speed to high
Low	Set the speed to low

Gate A20
Option

This entry allows you to select how the gate A20 is handled. The gate A20 is a device used to address memory above 1 MB. Initially, the gate A20 was handled via a pin on the keyboard. Today, while keyboards still provide this support, it is more common, and much faster, for the system chipset to provide support for gate A20.
Normal is keyboard; Fast is chipset.

Typematic Rate
Setting

This determines if the typematic rate is to be used. When disabled, continually holding down a key on your keyboard will generate only one key instance. In other words, the BIOS will only report that the key is down. When the typematic rate is enabled, the BIOS will report as before, but it will then wait a moment, and, if the key is still down, it will begin the report that the key has been depressed repeatedly. For example, you would use such a feature to accelerate cursor movements with the arrow keys.
The choice : Enabled/Disabled

Typematic Rate
(Chars/Sec)

When the typematic rate is enabled, this section allows you select the rate at which the keys are repeated.

6	6 characters per second
8	8 characters per second
10	10 characters per second
12	12 characters per second
15	15 characters per second
20	20 characters per second
24	24 characters per second
30	30 characters per second

Typematic Delay
(Msec)

When the typematic rate is enabled, this section allows you select the delay between when the key was first depressed and when the acceleration begins.

250	250 msec
500	500 msec
750	750 msec
1000	1000 msec

Security Option

This category allows you to limit access to the system and Setup, or just to Setup

System	The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt
Setup	The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt

To disable security, select PASSWORD SETTING at Main Menu and then you will be asked to enter password. Do not type anything and just press <Enter>, it will disable security. Once the security is disabled, the system will boot and you can enter Setup freely.

PCI/VGA
Palette Snoop

It determines whether the MPEG ISA/VESA VGA cards can work with PCI/VGA or not.

Enabled	When PCI/VGA working with MPEG ISA/VESA VGA Card
Disabled	When PCI/VGA not working with MPEG ISA/VESA VGA Card

Assign IRQ for
VGA

When this items is enabled, the system will assign an IRQ for VGA. If this item is disabled, the VGA will not occupy an IRQ; therefore the IRQ of VGA will be released for other usage.

**OS Select for
DRAM > 64MB**

This item allows you to access the memory that is over 64MB in OS/2
The choice : Non-OS2, OS2

**Report No FDD
For WIN 95**

Set this item to Yes BIOS will report FDD to Win95.
If in standard CMOS setup, set Drive A to none, and set this item to yes. Inside Win95, My Computer and File manager Disk(A:) will show Removable Disk (A:).

**Video BIOS
Shadow**

Determines whether video BIOS will be copied to RAM. However it is optional depending on chipset design. Video Shadow will increase the video speed.
The choice : Enabled/Disabled

**C8000 - CBFFF
Shadow
DC000 - DFFFF
Shadow**

These categories determine whether option ROMs will be copied to RAM. An example of such option ROM would be the support of onboard SCSI.
The choice : Enabled/Disabled

This screen controls the setting for the chipset on the mainboard.

* these items require built-in hardware detected component, please confirm this with your vendor.

If the FAN is not installed, the FAN speed will be shown 0RPM.

ROM PCI/ISA BIOS (ATC-6120)

CMOS SETUP UTILITY

AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
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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
AT Clock, DRAM Timmings,	

ROM PCI/ISA BIOS (ATC-6120)

CHIPSET FEATURES SETUP

AWARD SOFTWARE, INC.

Auto Configuration	: Enabled	SDRAM CAS latency Time	: 3
DRAM Speed Selection	: 60 ns	CPU Clock Ratio	:3.0x
MA Wait State	: Slow	Auto Detect DIMM/PCI CIK	:Enabled
EDO RAS# To CAS# Delay	: 3	Spread Spectrum	:Disabled
EDO RAS# Precharge Time	: 4	CPU Clock Frequency	:66MHz
EDO DRAM Read Burst	: x222	CPU Warning Temperature*	: Disabled
EDO DRAM Write Burst	: x333	Current System Temperature*	: 20 °C/ 68 °F
DRAM Data Integrity Mode	: Non-ECC	Current CPU Temperature*	: 20 °C/ 68 °F
CPU-to-PCI IDE Posting	: Disabled	Current CPUFAN Speed*	: 0 PRM
System BIOS Cacheable	: Disabled	Current ChassisFAN Speed*	: 0 PRM
Video BIOS Cacheable	: Disabled	Current PWRFAN Speed*	: 0 PRM
Video RAM Cacheable	: Disabled	IN0(V) : 2.80V	IN1(V) : 2.81V
8-bit I/O Recovery Time	: 3	IN2(V) : 3.45V	+5V : 4.91V
16-bit I/O Recovery Time	: 2	+12V : 12.22V	-12V : -11.76
Memory Hole At 15M-16M	: Disabled	-5V : -5.16V	
Passive Release	: Enabled	Esc: Quit	:Select Item
Delayed Transaction	: Disabled	F1 : Help	PU/PD/+/-:Modify
AGP Aperture Size (MB)	: 64	F5 : Old Values	(Shift)F2 :Color
SDRAM RAS-to-CAS Delay	: Slow	F6 :Load BIOS Defaults	
SDRAM RAS Precharge Time	: Slow	F7 : Load Setup Defaults	

**Auto
Configuration**

The first chipset settings deal with CPU access to dynamic random access memory (DRAM). The default timings have been carefully chosen and should only be altered if data is being lost. Such a scenario might well occur if your system had mixed speed DRAM chips installed so that greater delays may be required to preserve the integrity of the data held in the slower memory chips.

**DRAM Speed
Selection**

The DRAM speed is controlled by the DRAM timing Registers. The timings programmed into this register are dependent on the system design. Slower rates may be required in certain system designs to support loose layouts or slower memory.
i.e. 60ns; 70ns

MA Wait State

This item allows you to select MA Wait State.
The choice : Fast, Slow

**EDO RAS# to
CAS# Delay**

This sets the relative delay between the row and column address strobes from DRAM (EDO). The choice : 2, 3

**EDO RAS#
Precharge Time**

Defines the length of time for Row Address Strobe from DRAM (EDO) is allowed to precharge.
The choice : 3,4

**EDO DRAM
Read Burst
EDO DRAM
Write Burst**

This sets the timing for burst mode read (or writes)from DRAM (EDO). Burst read and write requests are generated by the CPU in four separate parts. The lower the timing numbers, the faster the system will address memory.
i.e. x222 is read/write DRAM timings are 2-2-2-2

**DRAM Data
Integrity Mode**

Select parity, ECC, or Disabled, depending on the type of DRAM installed in your system.
The choice : ECC, Parity, Disabled

**CPU-To-PCI
IDE posting**

Select Enabled to post write cycles from the CPU to the PCI IDE interface. IDE access are posted in the CPU to PCI buffers, for cycle optimization. The choice : Enabled, disabled

System BIOS
Cacheable

Select Enabled allows caching of the system BIOS ROM at F0000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

Video BIOS
Cacheable

Select Enabled allows caching of the video BIOS ROM at F0000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

Video RAM
Cacheable

Select Enabled allows caching of the video RAM, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

8 Bit I/O
Recovery Time

The recovery time is the length of time, measured in CPU clocks, which the system will be delay after the completion of an I/O request. This delay takes place because the CPU is operating so much faster than the input/output bus that the CPU must be delayed to allow for the completion of the I/O. This item allows you to determine the recovery time allowed for 8-bit I/O. Choices are from NA, 1 to 8 CPU clocks.

16 Bit I/O
Recovery Time

This item allows you to determine the recovery time allowed for 16-bit I/O. Choices are from NA, 1 to 4 CPU clocks.

Memory Hole At
15M-16M

In order to improve performance, certain space in memory can be reserved for ISA cards. This memory must be mapped into the memory below 16MB.

Passive Release

When Enabled, CPU to PCI bus accesses are allowed during passive release. Otherwise, the arbiter only accepts another PCI master access to local DRAM. The choice : Enabled, disabled

Delayed
Transaction

This chipset has an embedded 32-bit posted write buffer to support dealy transactions cycles. Select Enabled to support compliance with PCI specification version 2.1. The choice : Enabled, disabled space

<u>AGP Aperture Size (MB)</u>	Select the size of the AGP aperture. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycle that hit the aperture range are forwarded to the AGP without any translation. See for AGP information. The choice 4, 8, 16, 32, 64, 128, 256
<u>SDRAM RAS-to-CAS Delay</u> <u>SDRAM CAS latency Time</u>	You can select RAS to CAS Delay time (CAS latency time) in HCLKs of 2/2 or 3/3. The system board designer should set the values in this field, depending on the DRAM installed. Do not change the values in this field unless you change specifications of the installed DRAM or the installed CPU. The choice: 2,3
<u>SDRAM RAS Precharge Time</u>	Defines the length of time for Row Address Strobe is allowed to precharge.
<u>CPU Clock Ratio</u>	Use this option to set CPU clock ratio. After change the CPU Clock Ratio, if the system can not start , please see “ CPU Clock Frequency “ item to solve the problem.
<u>Auto Detect DIMM/PCI CLK</u>	If this item is enabled, the unused DIMM and PCI slot clock will be disabled. If this item is disabled the unused DIMM and PCI slot will still get the active clock signal.
<u>Spread Spectrum.</u>	Enable / Disable this item the BIOS will Enable / Disable the clock generator spread spectrum .
<u>CPU Clock Frequency</u>	Use this item to set CPU base clock frequency. <u>After change the CPU Clock Frequency, if the system can not start, then turn power off, press and hold “ Insert ” key, power on until screen show up.</u>

¡° ¡° **NOTE** Press “ Del ” to enter BIOS setup and set the CPU clock frequency / CPU clock ratio to correct value.

The following functions are optional, the board must be built-in hardware controller. Please confirm this with your supplier.

**CPU Warning
Temperature.**

When this item is enabled, we can set the CPU warning temperature . If the CPU temperature is higher than the setting temperature, the system will beep.

**Current System
Temperature**

This field displays the *current* system temperature, if your computer contains a monitoring system.

**Current CPU
Temperature**

It shows the current system temperature.

**Current CPUFAN
/ChassisFAN/
PWRFAN Speed**

It shows the running speed of the system fan, Chassis fan and power fan. The value will be changing when the system is running. If you do not install the fan, the value will show 0.

Power Management

This category allows you to select the type (or degree) of power saving and is directly related to the following modes : **Doze; Standby; Suspend; HDD Power Down.**

Disabled	No power management. Disables all 4 modes
Min. Power Saving	Minimum power management. Doze =1hr.; Standby=1hr.; Suspend=1hr.; HDD Power Down=15min
Max. Power Saving	Maximum power management only available for SL CPU. Doze=1min.; Standby=1min.;Suspend=1min.;HDD Power Down=1min
User Defined	Allows you to set each mode individually. When not disabled, each of the ranges are from 1min. to 1hr. exect for HDD Power Down which ranges from 1 to 15min. and disable

If you would like to use Software Power-off Control function, you cannot choose“Disabled ”here, and should select “Yes” in PM Control by APM.

PM Control by APM

When enabled, an Advanced Power Management device will be activated to enhance the Max. Power Saving Mode and stop the CPU internal clock. If the Max. Power Saving is not enabled, this will be shown as NO.

Video Off Method

This determines the manner in which the monitor is blanked.

V/H SYNC + Blank	This selection will cause the system to turn off the vertical and horizontal sync. ports and write blanks to the video buffer
Blank Screen	This option only writes blanks to the video buffer
DPMS	Initial display power management signaling

Video off After When enabled, this feature allows the VGA adapter to operate in a power saving mode.

N/A	Monitor will remain on during power saving modes.
Suspend	Monitor bLANKed when the systems enters the Suspend mode.
Standby	Monitor bLANKed when the system enters Standby mode.
Doze	Monitor bLANKed when the system enters any power saving mode.

MODEM Use IRQ This item determines the IRQ in which the MODEM can be used. The choice : 3,4,5,7,9,10,11,NA.

The Following 4 modes are Green PC power saving functions which are only user configurable when 'User Defined' power management has been selected.

Doze Mode When enabled and after the set time of system inactivity, the CPU clock will run at slower speed while all other devices still operate at full speed

Standby Mode When enabled and after the set time of system inactivity, the fixed disk drive and the video would be shut off while all other devices still operate at full speed

Suspend Mode When enabled and after the set time of system inactivity, all devices except the CPU will be shut off

HDD Power Down When enabled and after the set time of system inactivity, the hard disk drive will be powered down while all other devices remain active

Throttle Duty Cycle When the system enters Doze mode, the CPU clock runs only part of time. You may select the percent of time that the clock runs.

ZZ Active in Suspend When Enabled, the ZZ signal is active during Suspend mode.

<u>VGA Active Monitor</u>	When Enabled, any video active restarts the global timer for Standby mode.
<u>Soft-Off by PWR-BTTN</u>	Instant-off : When push the power button, the system power will be off immediately. Delay 4 sce : when push the power button, it will enter suspend mode. We need to push the power button and hold for 4 seconds to turn off the power.
<u>CPUFAN Off In Suspend</u>	Enabled : under suspend mode, the CPU FAN will be turn off. Disabled : suspend mode will not turn off CPU FAN.
<u>Resume by Ring</u>	Enabled : when system in suspend mode, it can be wake up by modem. Disabled : it cannot be wake up by modem.
<u>Resume by Alarm</u>	When Enabled, two additional lines will be added to the screen : Date (of Month) Alarm; Time (hh:mm:ss) Alarm to let user set the desired date and time. After power off, the system will automatic power on at the specified date and time.
<u>IRQ 8 Break Suspend</u>	When enabled, the device which occupies the IRQ8 can wake up the system.
<u>Reload Global Timer Events</u>	When enabled, an event occurring on each device listed below restarts the global time for Standby mode. IRQ [3-7, 9-15], NMI; Primary IDE 0; Primary IDE 1; Secondary IDE0; Secondary IDE1; Flopp Disk; Serial Port; Parallel Port

This screen configures the PCI Bus slots.

ROM PCI/ISA BIOS (ATC-6120)
 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
IRQ Settings, Latency Timers,	

ROM PCI/ISA BIOS (ATC-6120)
 PNP/PCI CONFIGURATION
 AWARD SOFTWARE, INC.

PNP OS Installed : No	PCI IDE IRQ Map to : PCI-AUTO
Resources Controlled by : Auto	Primary IDE INT# : A
Reset Configuration Data : Disabled	Secondary IDE INT# : B
Esc: Quit ↑↓→← :Select Item F1 : Help PU/PD/+/- : Modify F5 : Old Values (Shift) F2: Color F6 : Load BIOS Defaults F7 : Load Setup Defaults	

<u>PNP OS Installed</u>	This item allows you to determine PnP OS or not. Choices are Yes or No.
<u>Resource Controlled by</u>	The Award Plug and Play BIOS has the capability to automatically configure all of the boot and Plug and Play compatible devices. However, this capability means absolutely nothing unless you are using a Plug and Play OS such as Windows 95. Choices are Auto and Manual
<u>Reset Configuration Data</u>	This item allows you to determine whether to reset the configuration data or not.
<u>IRQ3/4/5/7/9/10 11/12/14/15, DMA0/1/3/5/6/7 Assigne to</u>	This item allows you to determine the IRQ/DMA assigned to the ISA bus and is not available to any PCI slot. Choices are Legacy ISA and PCI/ISA PnP.
<u>PCI IDE IRQ Map To Primary IDE INT# Secondary IDE INT#</u>	This allows you to configure your system to the type of IDE disk controller in use. By default, Setup assumes that your controller is an ISA device rather than a PCI controller. The moe apparent difference is the type of slot being used. If you have equipped your system with a PCI controller, changing this allows you to specify which slot holds the controller and which PCI interrupt (A,B,C,D) is associated with the connected hard disk. This setting refers to the hard disk drive itself, rather than individual partitions. Since each IDE controller supports two separate hard drives, you can select the INT# for each. Again, you will note that the primary has a lower interrupt than the secondary as described in <i>lot x Using INT#</i> ” above. Select ‘PCI Auto’ allows the system to automatically determine how your IDE disk system is configured.
<u>Used MEM base addr</u>	This item allows you to determine which basic address do not be occupied by PCI card and leave these address for some special ISA card used only. Choices are C800, CC00, D000, D400, D800, DC00.
<u>Used MEM Length</u>	This item determines the memory length of address which is for some special ISA Card used. Choices are 8K, 64K, 32K, 16K.

This section page includes all the items of IDE hard drive and Programmed Input/Output features. See also Section “Chipset Features Setup”.

ROM PCI/ISA BIOS (ATC-6120)
 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
Time, Date, Hard Disk Type	

ROM PCI/ISA BIOS (ATC-6120)
 INTEGRATED PERIPHERALS
 AWARD SOFTWARE, INC.

IDE HDD Block Mode : Enabled	Onboard Parallel Port : 378H/IRQ7
IDE Primary Master PIO : Auto	Onboard Parallel Mode : ECP
IDE Primary Slave PIO : Auto	ECP Mode Use DMA : 3
IDE Secondary Master PIO : Auto	
IDE Secondary Slave PIO : Auto	
IDE Primary Master UDMA : Auto	
IDE Primary Slave UDMA : Auto	
IDE Secondary Master UDMA : Auto	
IDE Secondary Slave UDMA : Auto	
On-Chip Primary PCI IDE : Enabled	
On-Chip Secondary PCI IDE : Enabled	
USB Keyboard Support : Disabled	
Power On Function : Button Only	
KBC input clock : 8 MHz	Esc: Quit ↑↓→← :Select Item
Onboard FDC Controller : Enabled	F1 : Help PU/PD/+/- : Modify
Onboard Serial Port 1 : 3F8/IRQ4	F5 : Old Values (Shift) F2: Color
Onboard Serial Port 2 : 3F8/IRQ3	F6 : Load BIOS Defaults
UART Mode Select : Normal	F7 : Load Setup Defaults

IDE HDD Block Mode

This allows your HD controller to use the fast block mode to transfer data to and from your HD drive

Enabled	IDE controller uses block mode
Disabled	IDE controller uses standard mode

IDE Primary Master/Slave PIO IDE Secondary Master/Slave PIO

PIO - Programmed Input/Output, it allows the BIOS to tell the controller what it wants and then let the controller and the CPU to complete the task by themselves. This is simpler and more faster. Your system supports five modes, 0 - 4, which primarily differ in timing. When **Auto** is selected, the BIOS will select the best available mode.

IDE Primary Master/Slave UDMA IDE Secondary Master/Slave UDMA

Auto, will support the Ultra DMA function. Disabled, will not support the Ultra DMA function.

On-Chip Primary PCI IDE On-Chip Secondary PCI IDE

This setup item allows you to either enable or disable the primary/secondary controller. You might choose to disable the controller if you were to add a higher performance or specialized controller.

USB Keyboard Support

Enabled will support USB keyboard in Win95 2.1 and NT 5.0 or above operating system.

Power On Function

KB Power On Password: this function is available for ATX power only. User can select the power on method to power on the system. The options are the following :Password : when user select this option, it will show “Enter Password:”, after user type password, it will show “ Confirm Password:”, user should type the same password to confirm it. After power off, if user types the correct password, the system will power on. (refer to page 49)
Hot Key : when user select this option, it will show another line lines as Hot Key Power ON: Ctrl-F1”” select any one you like. After power off, if user key in the control-F, it will power up the system.
Mouse Left, Mouse Right : it will power up the system by mouse left, mouse right.
BUTTON ONLY : only the power button can power the system.

<u>KBC input clock</u>	Let user change the keyboard working clock.
<u>On Board FDC Controller</u>	This item will enable or disable the floppy disk controller.
<u>On Board Serial Port 1</u>	User can select serial port IRQ. If set to Auto, system will assign an IRQ for it. Note : set to Auto is not recommended.
<u>On Board Serial Port 2</u>	User can select serial port IRQ. If set to Auto, system will assign an IRQ for it. Note : set to Auto is not recommended.
<u>UART Mode Select</u>	This lets you select the Infrared mode. Choices are Standard, HPIR, and ASKIR. If you choose HPIR or ASKIR mode, the screen will show another two lines to let you choose 'IR Function Duplex' (Full or Half) and 'RxD TxD Active' (Hi Lo; Lo Hi; Hi Hi;Lo Lo).
<u>On Board Parallel Port</u>	Let user select IRQ for parallel port, when Disabled, the parallel port will be disabled
<u>On Board Parallel Mode</u>	Let user select error check mode. This item is not recommended to change except user has special request.
<u>ECP Mode Use DMA</u>	Select a DMA channel for the port. Choices are 3, 1.

ROM PCI/ISA BIOS (ATC-6120)
 CMOS SETUP UTILITY
 AWARD SOFTWARE, INC.

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

ROM PCI/ISA BIOS (ATC-6120)
 CMOS SETUP UTILITY
 AWARD SOFTWARE, INC.

Hard Disks	Type	Size	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE																																
Primary Master :																																								
<div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: 80%;"> <p style="text-align: center;">Select Primary Master Option (N=Skip) : N</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Options</th> <th style="text-align: left;">Size</th> <th style="text-align: left;">CYLS</th> <th style="text-align: left;">Head</th> <th style="text-align: left;">PRECOMP</th> <th style="text-align: left;">LANDZ</th> <th style="text-align: left;">Sector</th> <th style="text-align: left;">Mode</th> </tr> </thead> <tbody> <tr> <td>2(Y)</td> <td>1337</td> <td>648</td> <td>64</td> <td>0</td> <td>2594</td> <td>63</td> <td>LBA</td> </tr> <tr> <td>1</td> <td>1339</td> <td>2595</td> <td>16</td> <td>65535</td> <td>2594</td> <td>63</td> <td>NORMAL</td> </tr> <tr> <td>3</td> <td>1338</td> <td>1297</td> <td>32</td> <td>65535</td> <td>2594</td> <td>63</td> <td>LARGE</td> </tr> </tbody> </table> </div>									Options	Size	CYLS	Head	PRECOMP	LANDZ	Sector	Mode	2(Y)	1337	648	64	0	2594	63	LBA	1	1339	2595	16	65535	2594	63	NORMAL	3	1338	1297	32	65535	2594	63	LARGE
Options	Size	CYLS	Head	PRECOMP	LANDZ	Sector	Mode																																	
2(Y)	1337	648	64	0	2594	63	LBA																																	
1	1339	2595	16	65535	2594	63	NORMAL																																	
3	1338	1297	32	65535	2594	63	LARGE																																	
Note : Some OSes (like SCO-UNIX) must use "Normal" for installation ESC : Skip																																								

The last step is 'save and exit'. If you select this item and press 'Y', then these records will be saved in the CMOS memory on the mainboard. It will be checked every time you turn your computer on.

ROM PCI/ISA BIOS (ATC-6120)
 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
Time, Date, Hard Disk Type	

ROM PCI/ISA BIOS (ATC-6120)
 STANDARD CMOS SETUP
 AWARD SOFTWARE, INC.

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

LOAD BIOS DEFAULTS

When your mainboard has problems and needs to trouble shoot the system, you can use this function. The default values loaded only affect the BIOS Features Setup, Chipset Features Setup, Power Management Setup and PNP/PCI Configuration Setup. There is no effect on the Standard CMOS Setup. To use this function, select it from main menu and press <Enter>. A line will appear on the screen asking if you want to load the BIOS default values. Press <Yes> and <Enter> then the BIOS default values will be loaded.

LOAD SETUP DEFAULTS

This allows you to load optimal settings which are stored in the BIOS ROM. The default values loaded only affect the BIOS Features Setup, Chipset Features Setup, Power Management Setup and PNP/PCI Configuration Setup. There is no effect on the Standard CMOS Setup. To use this function, select it from main menu and press <Enter>. A line will appear on the screen asking if you want to load the Setup default values. Press <Yes> and <Enter> then the Setup default values will be loaded.

SUPERVISOR PASSWORD / USER PASSWORD

This allows you to set the password. The mainboard defaults with password disabled.

Enter/Change password : Enter the current password, at the prompt, key-in your new password (up to eight alphanumeric characters), press <Enter>. At the next prompt, confirm the new password by typing it again and press <Enter>.

Disable password : Press the <Enter> key instead of entering a new password when the 'Enter Password' dialog box appears. A message will appear confirming that the password is disabled.

If you set both supervisor and user passwords, only the supervisor password allows you to enter the BIOS SETUP program.

CAUTION :If you forgot your password, you must disable the CMOS by turning power off and set JP10 to ‘close‘. And then open reload the system.

IDE HDD AUTO DETECTION

This allows you to detect the IDE hard disk drivers‘ parameters and enter them into ‘Standard CMOS Setup’ automatically.

If the auto-detected parameters displayed do not match the ones that should be used for your hard drive, do not accept them. Press <N> to reject the values and enter the correct ones manually on the Standard CMOS Setup screen.

SAVE & EXIT SETUP

This allows you to save the new setting values in the CMOS memory and continue with the booting process. Select what you want to do, press <Enter>.

EXIT WITHOUT SAVING

This allows you to exit the BIOS setup utility without recording any new values or changing old ones.

° Control Key Description °

UP ARROW	↑	Move to previous item
DOWN ARROW	↓	Move to next item
LEFT ARROW	←	Move to the item in the left hand
RIGHT ARROW	→	Move to the item in the right hand
Esc KEY	Esc	Main Menu : Quit and not save changes Setup menu : Exit current page and return to main menu
PgUp KEY		Increase the numeric value or make changes
PgDn KEY		Decrease the numeric value or make changes
F1 KEY	Help	General help
F2 KEY	Shift + F2	Change color from total 16 colors
F5 KEY	Old Value	Restore the pervious CMOS value from CMOS
F6 KEY	Load BIOS default	Load the default CMOS value from BIOS default table
F7 KEY	Load setup default	Load Setup default
F10 KEY	Save & Exit Setup	Save all the CMOS changes and Exit setup, only for Main Menu

APPENDIX A

TECHNICAL SUPPORT REQUEST FORM

If the mainboard doesn't function properly, please complete the following information and return it to your system dealer. If the further information is needed, please attach it.

Model No : ATC-6120 Date of Purchase : _____

Serial No : _____

HARDWARE :

	BRAND	MODEL	SPEED	Q'TY
DIM Module				

CPU SPEED : _____ MHz

DRAM : _____ MB (__ EDO, __ SDRAM)

Hard Disk Interface Controller : _____ IDE, _____ SCSI

Hard Disk Brand : _____, Model : _____, Capacity : _____

Display Controller Brand : _____, Model : _____

Controller Chip Brand : _____, Model : _____

SOFTWARE:

Award SYSTEM BIOS: Version _____ Date Code _____

Other Add-on Cards Information:

Add-on Card	Bus Interface	Model	Remark

Error Description :
