

IAC-F688 Series

***PICMG Full-size CPU Card with
VGA and Dual-LAN for Intel® Socket 370
Pentium® III Processor***

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Ver. No. V1.1
LEI-UM-IAC-F688
Date : 2001/9/11

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The IAC-F688 Series is a full-size Pentium® III/Celeron PICMG Single Board Computer. Targeting on the rapid growing networking, and telecommunication markets, the IAC-F688 Series are designed with Intel Dynamic Video memory technology, and 82559 Dual-10/100M Base-TX Ethernet chips. This makes the IAC-F688 Series a perfect solution for not only popular Networking Applications like Firewall, Gateway, and e-Server, but also for CTI (Computer Telephony Integration) equipments such as PBX, Digital Logger, etc.

It accommodates up to 512MB SDRAM for demanding applications. Its 6-layer printed circuit board combining with noise-tolerant and low power consumption CMOS technology enables the IAC-F688 Series to withstand any harsh industrial environments very well.

The IAC-F688 Series SBC comes with hardware monitoring that monitors system and CPU temperature, system voltages, fans Speed and CPU and chassis fan speeds to prevent unexpected system failures by warning the user of adverse conditions. The power management feature provides power savings by slowing down the CPU clock, turning off the monitor screen and stopping the HDD spindle motor to conserve energy. If the system stays idle for certain period of time

Other standard specification include two serial ports (one RS-232 and one RS-232/422/485 selectable), one multi-mode (ECP/EPP/SPP) parallel port, one floppy drive controller, and one PS/2 keyboard / mouse interface. The built-in PCI Enhanced IDE controller supports up to four IDE devices and Ultra ATA / 100/66/33 bus master modes.

For other more simple application, there are B version with one LAN and C version without LAN.

1.1 SPECIFICATION

- o Processor : Intel  Pentium III/Celeron  Processor in Socket 370 (66/100/133 MHz)
- o Chipset : Intel  815E chipset, Intel 82562EM and 82559 LAN Chip, IT8712F I/O Chipset, IT8888 PCI to ISA Bridge
- o System Memory/RAM : Two 168-pin DIMM sockets, support up to 512 MB SDRAM
- o BIOS : Award  licensed BIOS
- o Flash Memory Disk : Reserved socket for DiskOnChip from M-System, support up to 288MB flash memory disk
- o Graphics Controller : Internal graphic controller with Intel' s Dynamic Video Memory Technology, resolution up to 1600 x 1200 x 256 colors @ 85 Hz, with VGA connectors
- o Ethernet : support Dual-10/100M Base-T Ethernet, Wake On LAN supported via ATX power supply
- o IDE Drive Interface : Two PCI IDE port that support up to four IDE devices and Ultra ATA/100/66/33
- o Floppy Drive Interface : One FDD port, support up to two floppy devices
- o Serial Port : Two COM ports, one RS-232 and one RS-232/422/485
- o Smart Card interface : One 14-pin Smart Card interface
- o Parallel Port : One multi-mode parallel port (SPP / EPP / ECP)
- o Bus Interface : PICMG bus
- o RTC Battery : Internal RTC with Li battery
- o Mouse & Keyboard Connector : 6-pin mini-Din PS/2 keyboard/mouse connector and 5-pin keyboard header
- o Watchdog Timer : 16-level time-out intervals
- o Digital I/O : 4-bit digital I/O header
- o Universal Serial Bus : Support 4 USB ports
- o IR Interface : Support IrDA header
- o Health Monitoring : Enhanced hardware monitor functions
- o Operating Temperature : 0°C~60°C
- o Storage Temperature : -20 °C ~70 °C
- o Humidity : 5% ~ 95% RH, non-condensing
- o Dimensions : 338.5 x 122 mm (13 1/4" x 4 5/6") +/-0.5mm
- o EMI / EMS : EN 50081-1/1994>EN 55022/1997>EN 61000-3-2/1995 >EN 61000-3-3/1995, EN 50082-1/1994>IEC 1000-4-2/1995, IEC 1000-4-3/1995, IEC 1000-4-4/1995

1.2 PACKING CHECK LIST

Before you begin to install your card, please make sure that you received the following materials as listed below:

<i>Item</i>	<i>Qty</i>	<i>Remark</i>
Single Board Computer/CPU Card	1 pc	IAC-F688 Series SBC
Keyboard and Mouse cable	1 pcs	6-pinmale Mini-Din to two 6-pin Mini-Din adapter cable
LPT cable	1 pcs	26-pin to 25-pin D-Sub and 10-pin to 9-pin D-sub with bracket
IDE Cable	1 pc	IDE Cable
FDD Cable	1 pc	34-pin to 34-pin standard header flat ribbon cable
ATX Feature Cable	1 pc	4-pin to 4-pin
CD-ROM	1 pc	Drivers
User' s manual	1 pc	IAC-F688 Series

1.3 ORDER INFORMATION

The IAC-F688 single board computer is available in three Versions, to order, please check the requirement below:

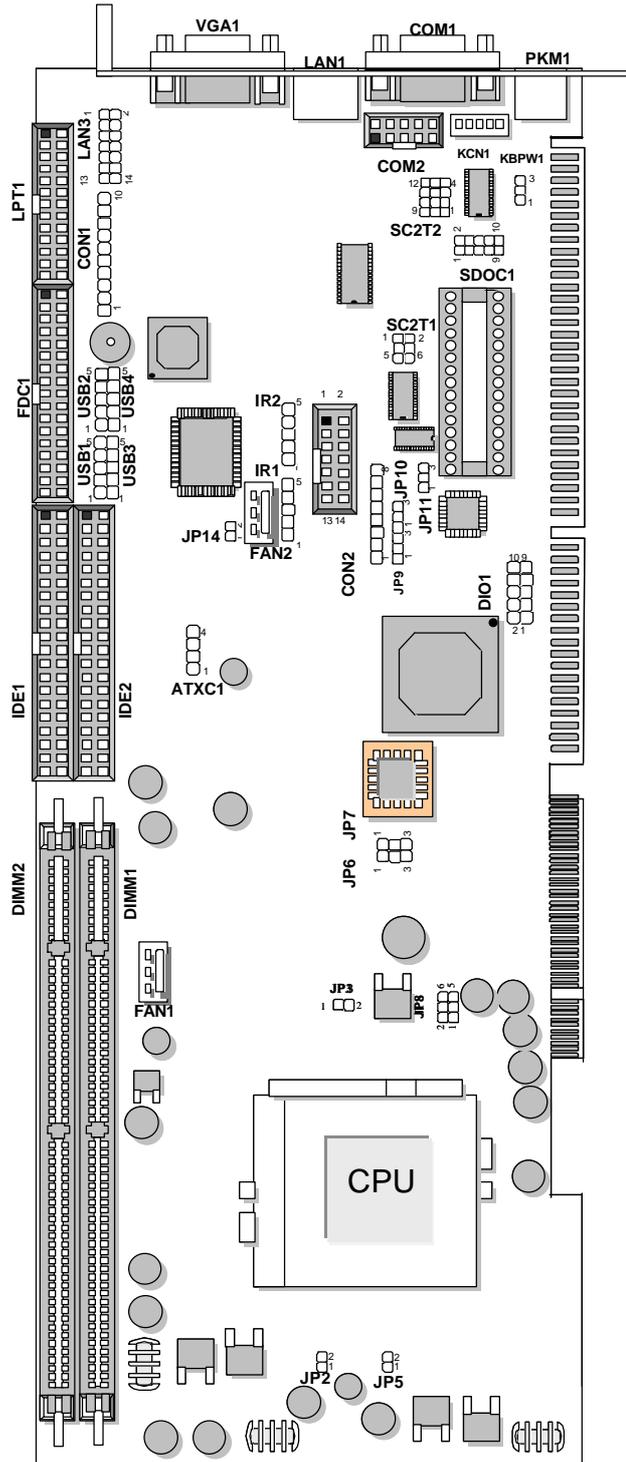
<i>MODEL</i>	<i>Description</i>	<i>VGA</i>	<i>Daul-LAN</i>	<i>ONE-LAN</i>
IAC-F688A	PICMG Full-size CPU card with VGA and Dual-LAN for Socket370 Pentium III Processor			
IAC-F688B	PICMG Full-size CPU card with VGA and ONE-LAN for Socket370 Pentium III Processor			
IAC-F688C	PICMG Full-size CPU card with VGA for Socket370 Pentium III Processor			

CHAPTER 2.

JUMPER SETTINGS AND CONNECTORS

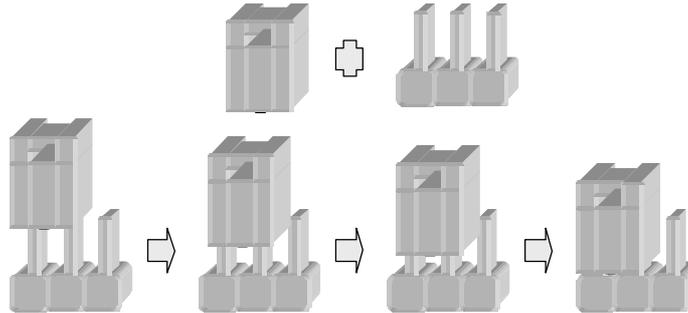
The figure below shows the jumpers and connectors location on the IAC-F688:

2.1 BOARD OUTLINE OF IAC-F688



2.2 JUMPER SETTING OVERVIEW

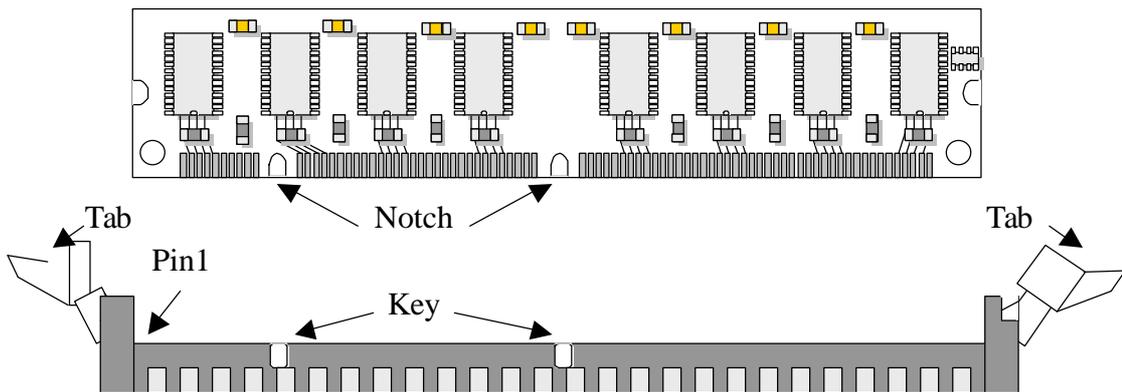
In order to select the operation modes of your system, configure and set the jumpers on your single board computer to match the need of your application. To set a jumper, a black plastic cap containing metal contacts is placed over the jumper pins as designated by the required configuration as listed in this section. A jumper is said to be “ on ” or “ 1-2 ” when the black cap has been placed on two of its pins, as show in the figure below:



A pair of needle-nose pliers is recommended when working with jumpers. If you have any doubts about the best hardware configuration for your application, contact your local sales representative before you make any changes. In general, you simply need a standard cable to make most connections.

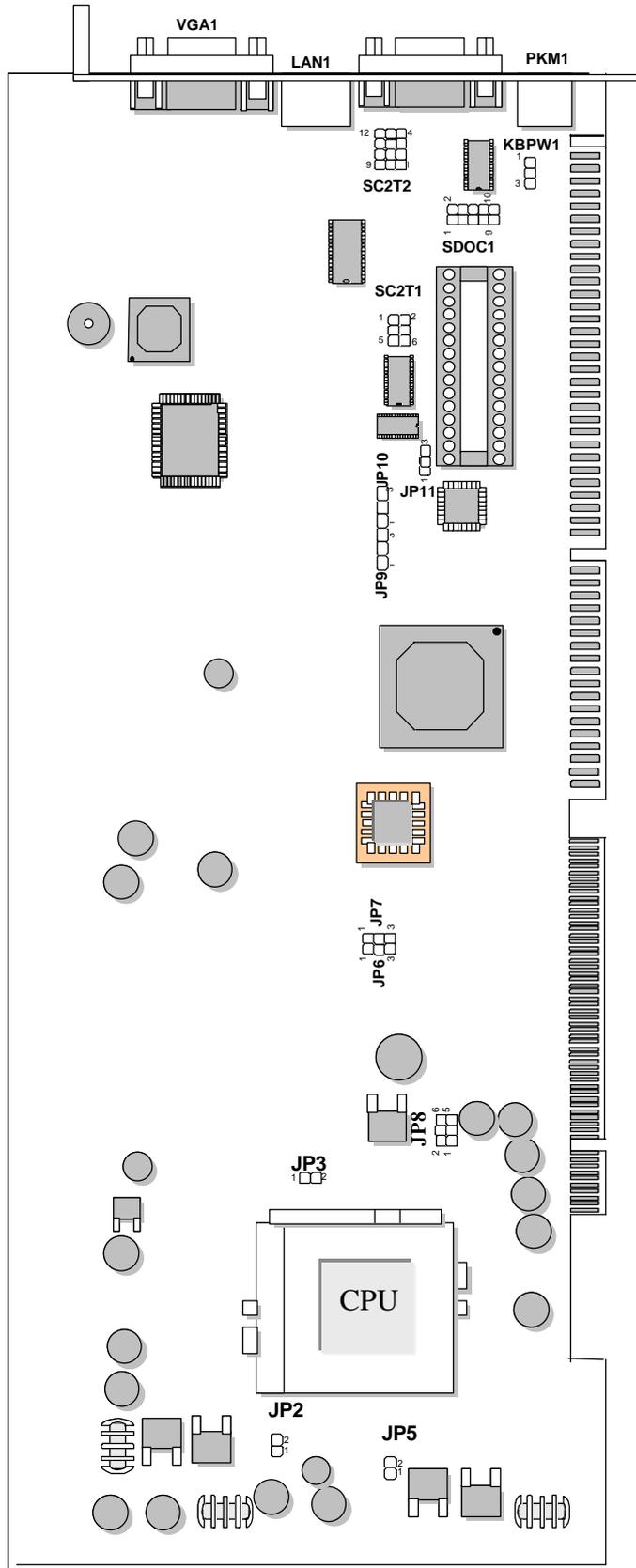
2.3 INSTALLING THE DIMM MODULE

A DIMM module simply snaps into a socket on the system board. Pin1 of the DIMM module must correspond with Pin1 of the socket.



1. Position the DIMM above the socket with the “ notch ” in the module aligned with the “ key ” on the socket.
2. Seat the module at a 90 angle into the bank. Make sure it is completely seated. Push down the module until handles of the socket lock up-right and up-left notches.

2.4 JUMPER LOCATION FOR IAC-F688



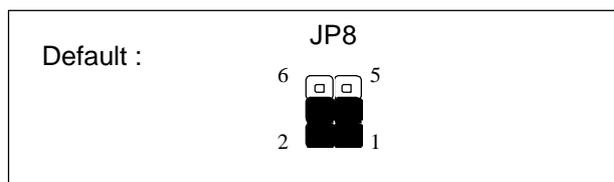
2.5 JUMPER SETTINGS SUMMARY FOR IAC-F688

LOCATION	FUNCTION
JP8	CPU Clock Select
JP6	Clear CMOS
JP7	Firmware Hub Control
SDOC1	Select DiskOnChip (Flash Disk) Address
SC2T1 / SC2T2	Select COM2 Type
KBPW1	Select PS/2 Keyboard/ Mouse Voltage Source
JP2, JP3, JP5	OFF Default Setting
JP9, JP10, JP11	(1-2) Default Setting

JUMPER SETTINGS AND CONNECTORS

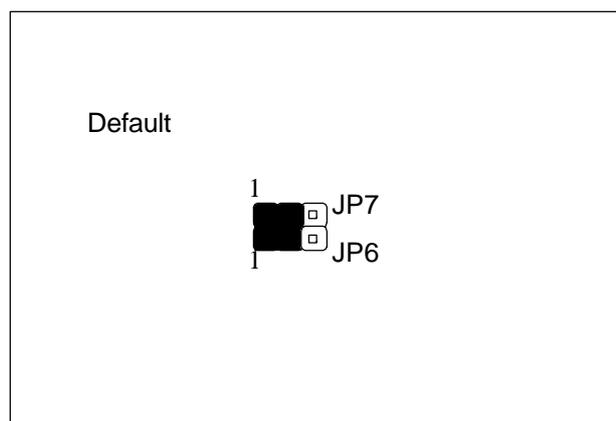
✦ JP8:CPU Clock Select

CPU Clock	JP8
66M CPU	3-5,4-6
100M CPU	1-3,4-6
100/133 CPU (Default) Auto Detect	1-3,2-4



✦ JP6:Clear CMOS

COMS States	JP6
Normal (Default)	1-2
CLEAR CMOS	2-3

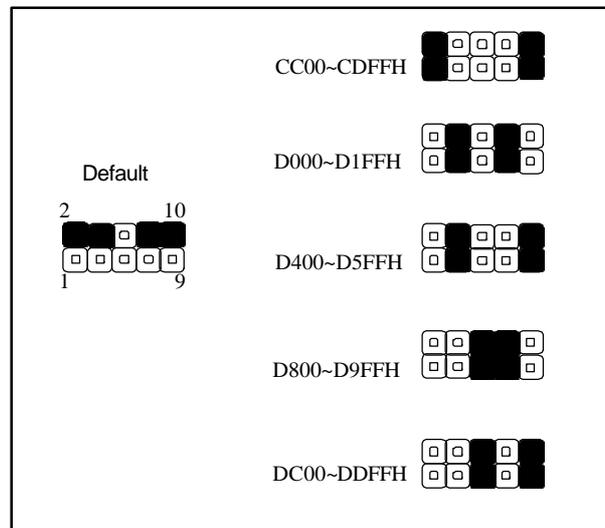


✦ JP7: Firmware Hub Control

Write to Firmware	JP7
Flash Enable (Default)	1-2
Flash Disable	2-3

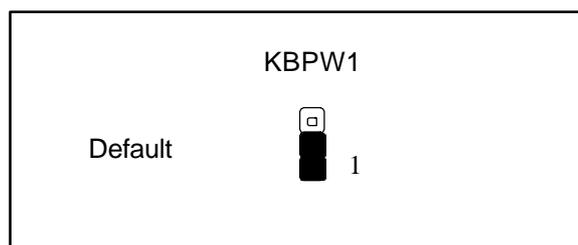
✦ SDOC1: Select DiskOnChip (Flash Disk) Address

Flash Disk Address	SDOC1
CC00~CDFFH	1-2,9-10
D000~D1FFH	3-4,7-8
D400~D5FFH	3-4,9-10
D800~D9FFH	5-6,7-8
DC00~DDFFH	5-6,9-10
OFF (Default)	2-4,8-10



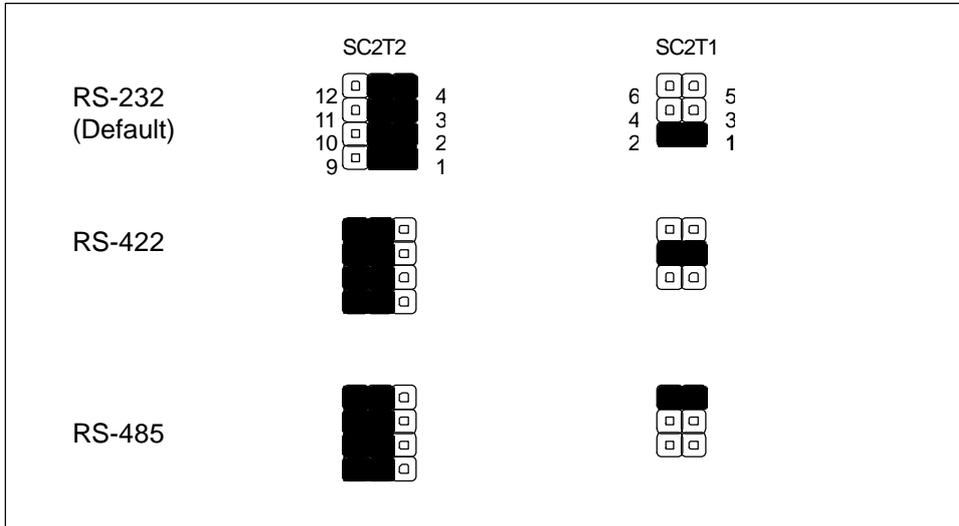
✦ KBPW1:Select PS/2 Keyboard/Mouse Voltage Source

PS/2 Keyboard/Mouse	KBPW1
+5V (Default)	1-2
5VSB	2-3



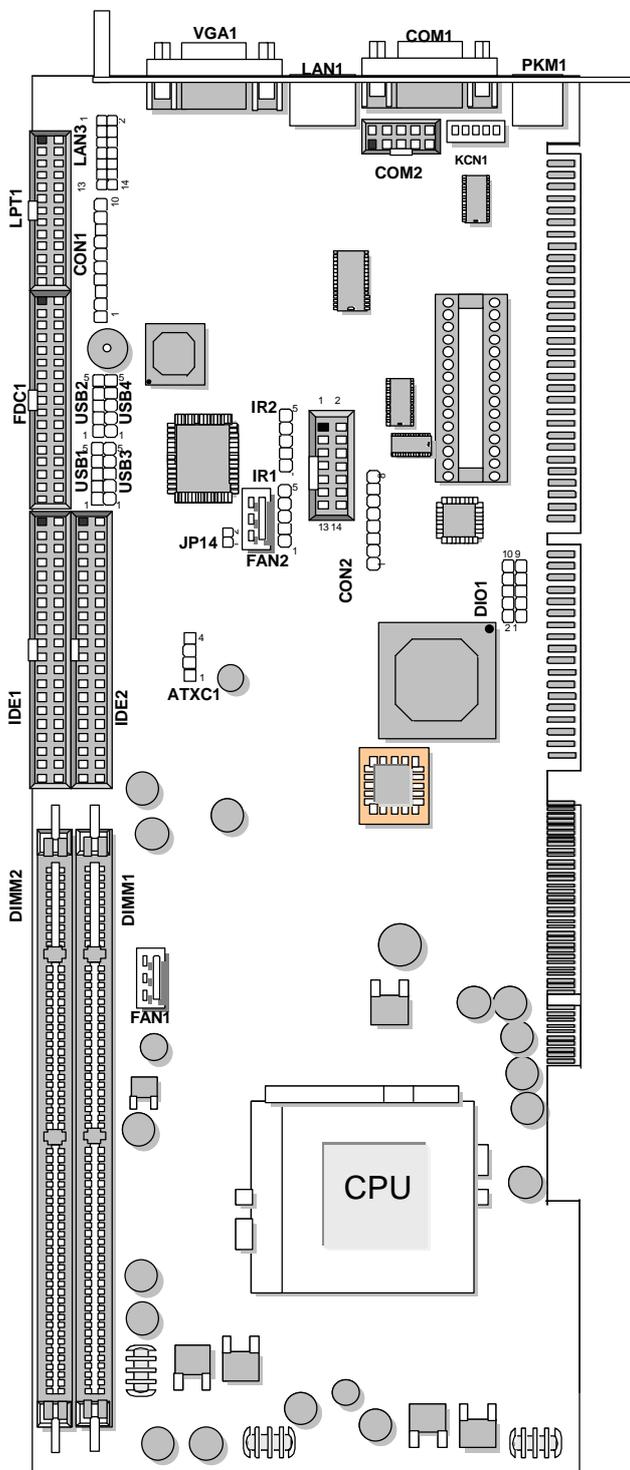
✦ **SC2T1/SC2T2: Select COM2 Type**

COM2 Type	SC2T1	SC2T2
RS-232 (Default)	1-2	1-5,2-6,3-7,4-8
RS-422	3-4	5-9,6-10,7-11,8-12
RS-485	5-6	5-9,6-10,7-11,8-12



- ✦ **JP2 : OFF Default Setting**
- ✦ **JP3 : OFF Default Setting**
- ✦ **JP5 : OFF Default Setting**
- ✦ **JP9 : (1-2) Default Setting**
- ✦ **JP10 : (1-2) Default Setting**
- ✦ **JP11 : (1-2) Default Setting**

2.6 I/O CONNECTOR LOCATION FOR IAC-F688



2.7 I/O CONNECTOR SUMMARY OF IAC-F688

CONNECTOR	FUNCTION
ATXC1	ATX Power Expansion Header
JP14	ATX Power ON Switch (Header)
KCN1	5pin Keyboard Cable Connector
PKM1	PS/2 Keyboard & Mouse Connector (Mini Din)
CON1	Power LED, Reset, Speaker Connector
CON2	Program ISP GAL Connector (Factory Only)
COM1	RS-232 Serial Port#1 Connector (D-Sub)
FAN1:	System FAN Connector
FAN2	CPU FAN Connector
IR1	Consumer Remote Control IR (CIR)
IR2	Alternate IrDA
VGA1:	VGA Connector
LAN1	LAN Connector
LAN2	LAN2 Connector
LAN3	Auxiliary LAN2 Connector
USB 1,2,3,4	USB Header
DVI1	DVI Connector
IDE1	Primary IDE Cable Connector (Header)
IDE2	Secondary IDE Cable Connector (Header)
COM2:	RS-232 Serial Port#2 Connector (Header)
DIO1	4bit Digital I/O Connector
SCR1	Smart Card Reader (Box Header)
FDC1	Floppy Cable Connector (Header)
LPT1	Parallel Port Connector (Header)

2.8 I/O CONNECTORS DESCRIPTION

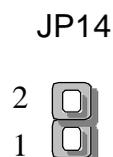
ATXC1: ATX Power Expansion (Header)

PIN NO.	Description
1	Ground
2	5V Standby
3	Ground
4	Power ON



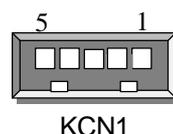
JP14: ATX Power ON Switch (Header)

PIN NO.	Description
1	SWON-
2	Ground



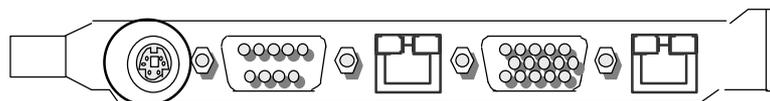
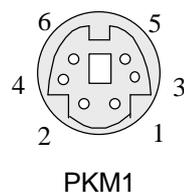
KCN1: 5pin Keyboard Cable Connector

PIN NO.	Description
1	Keyboard Clock
2	Keyboard Data
3	NC
4	Ground
5	+5V



PKM1: PS/2 Keyboard & Mouse Connector (Mini Din)

PIN NO.	Description
1	PS/2 Keyboard Data
2	PS/2 Mouse Data
3	Ground
4	VCC
5	PS/2 Keyboard Clock
6	PS/2 Mouse Clock



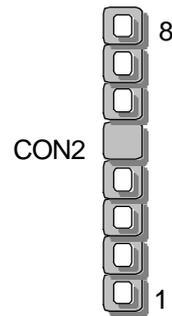
✦ **CON1: Power LED, Reset, Speaker Connector**

PIN NO.	Description
1	Power LED+
2	GND
3	HDD LED+
4	HDD LED-
5	RESET SW+
6	RESET SW- (GND)
7	External Speaker-
8	Internal Buzzer-
9	NC
10	External Speaker+



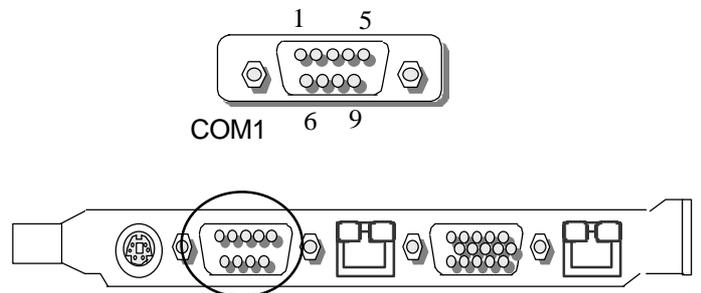
✦ **CON2: Program ISP GAL Connector (Factory Only)**

PIN NO.	Description
1	VCC
2	SDO
3	SDI
4	ISP
5	NC
6	MODE
7	Ground
8	SCLK



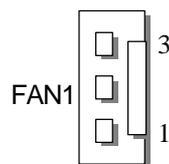
✦ **COM1: RS-232 Serial Port#1 Connector (D-Sub)**

PIN NO.	Description
1	Data Carrier Detect (DCDA#)
2	Receive Data (RXDA)
3	Transmit Data (TXDB)
4	Data Terminal Ready (DTRA#)
5	Ground (GND)
6	Data Set Ready (DSRA#)
7	Request To Send (RTSA#)
8	Clear To Send (CTSA#)
9	Ring Indicator (RIA#)



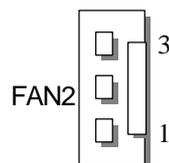
✦ **FAN1: System FAN Connector**

PIN NO.	Description
1	Ground
2	+12V
3	Fan Status Signal



✦ **FAN2: CPU FAN Connector**

PIN NO.	Description
1	Ground
2	+12V
3	Fan Status Signal



✦ **IR1: Consumer Remote Control IR (CIR)**

PIN NO.	Description
1	+5V
2	NC
3	CIRRX
4	Ground
5	CIRTX



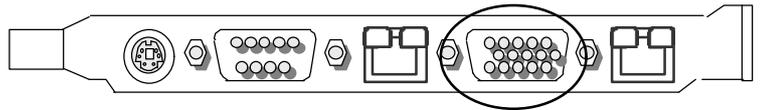
✦ **IR2: Alternate IrDA**

PIN NO.	Description
1	VCC
2	NC
3	IRRX
4	Ground
5	IRTX



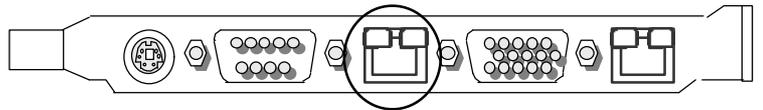
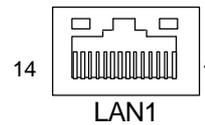
✦ **VGA1: VGA Connector**

PIN NO.	Description
1	Red Color Signal
2	Green Color Signal
3	Blue Color Signal
4	NC
5	Ground
6	Ground
7	Ground
8	Ground
9	+5V
10	Ground
11	NC
12	DDC-DATA
13	H-Sync.
14	V-Sync.
15	DDC-CLK



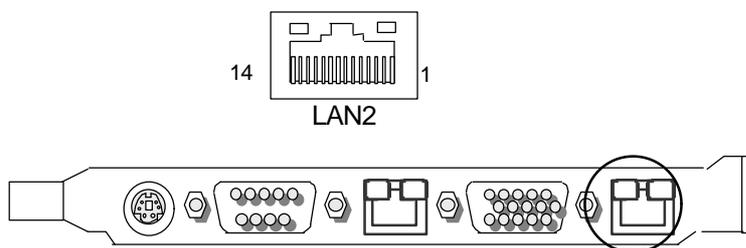
✦ **LAN1: LAN Connector**

PIN NO.	Description
1	TX+
2	TX-
3	RX+
4	T45
5	T45
6	RX-
7	T78
8	T78
9	LINK LED - (UP)
10	LINK LED +
11	ACTIVE LED - (DOWN)
12	ACTIVE LED +
13	LGND
14	LGND



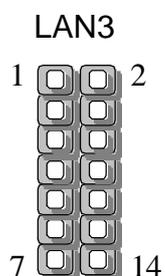
✦ **LAN2: LAN Connector**

PIN NO.	Description
1	TX+
2	TX-
3	RX+
4	T45
5	T45
6	RX-
7	T78
8	T78
9	LINK LED - (UP)
10	LINK LED +
11	ACTIVE LED - (DOWN)
12	ACTIVE LED +
13	LGND
14	LGND



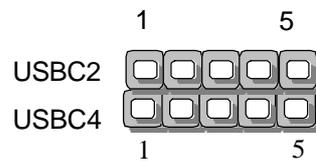
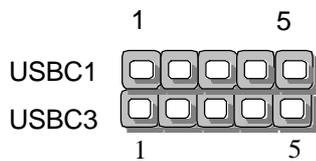
✦ **LAN3: Auxiliary LAN2 Connector for external connection**
(This is an auxiliary of LAN2 connector)

PIN NO.	Description	PIN NO.	Description
1	TX+	2	TX+
3	TX-	4	T45
5	T45	6	RX-
7	T78	8	T78
9	Ground	10	Ground
11	Link LED	12	Active LED
13	100M LED	14	3V Standby



✦ **USB 1,2,3,4: USB Header**

PIN NO.	Description			
	USB1	USB2	USB3	USB4
1	Standby 5V	Standby 5V	Standby 5V	Standby 5V
2	USB0-	USB1-	USB2-	USB3-
3	USB0+	USB1+	USB2+	USB3+
4	USB GND	USB GND	USB GND	USB GND
5	USB GND	USB GND	USB GND	USB GND

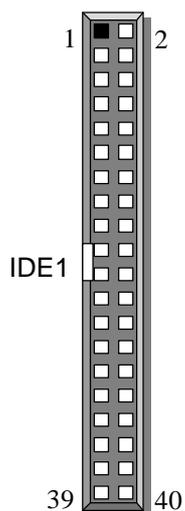


✦ **DVI1: DVI Connector**

PIN	Description	PIN	Description	PIN	Description
C1	Analog Red	C2	Analog Green	C3	Analog Blue
C4	Analog Hsync	C5	Analog Ground	C6	Analog Ground
1	TX2 -	2	TX2+	3	Ground
4	TX4 -	5	TX4+	6	DDC Clock
7	DDC DATA	8	DVI VSYNC	9	TX1-
10	TX1 +	11	Ground	12	TX3-
13	TX3 +	14	+5V	15	Ground
16	Hot Plug Detect	17	TX0 -	18	TX0+
19	Ground	20	TX5 -	21	TX5+
22	Ground	23	TXCLK +	24	TXCLK-

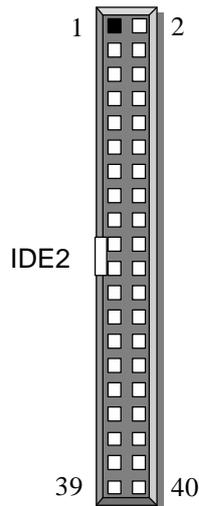
✦ **IDE1: Primary IDE Cable Connector (Header)**

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	NC
21	DMA REQ	22	Ground
23	IOW #	24	Ground
25	IOR #	26	Ground
27	IOCHRDY	28	NC
29	DMA ACK#	30	Ground
31	Interrupt	32	IOCS16#
33	SA1	34	DMA 66 Detect
35	SA0	36	SA2
37	HDC CS0#	38	HDC CS1#
39	HDD Active LED#	40	Ground



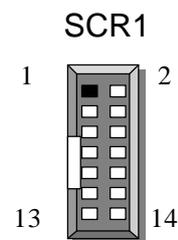
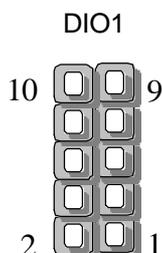
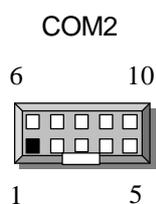
✦ **IDE2: Secondary IDE Cable Connector (Header)**

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	NC
21	DMA REQ	22	Ground
23	IOW #	24	Ground
25	IOR #	26	Ground
27	IOCHRDY	28	NC
29	DMA ACK#	30	Ground
31	Interrupt	32	IOCS16#
33	SA1	34	DMA 66 Detect
35	SA0	36	SA2
37	HDC CS0#	38	HDC CS1#
39	HDD Active LED#	40	Ground



✦ **COM2: RS-232/RS422/RS485 Serial Port#2 Connector (Header)**

PIN NO.	Description		
	RS-232	RS-422	RS-485
1	Data Carrier Detect (DCDB#)	Transmit Data- (TXD-)	Data -
2	Receive Data (RXDB)	Transmit Data+ (TXD+)	Data +
3	Transmit Data (TXDB)	Receive Data+ (RXD+)	NC
4	Data Terminal Ready (DTRB#)	Receive Data- (RXD-)	NC
5	Ground	NC	NC
6	Data Set Ready (DSRB #)	NC	NC
7	Request To Send (CTSB#)	NC	NC
8	Clear To Send (CTSB#)	NC	NC
9	Ring Indicator (RIB #)	NC	NC
10	NC	NC	NC



✦ **DIO1: 4bit Digital I/O Connector**

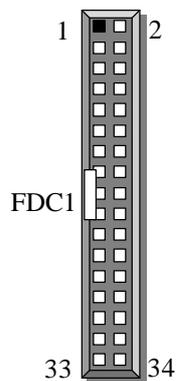
PIN NO.	Description	PIN NO.	Description
1	In0	2	Out0
3	In1	4	Out1
5	In2	6	Out2
7	In3	8	Out3
9	GND	10	GND

✦ **SCR1: Smart Card Reader (Box Header)**

PIN NO.	Description	PIN NO.	Description
1	+5V	2	NC
3	NC	4	NC
5	SCR FET #	6	SCR RESET
7	SCR CLOCK	8	NC
9	NC	10	SCR IO
11	Ground	12	SCR PRES #
13	NC	14	NC

✦ **FDC1: Floppy Cable Connector (Header)**

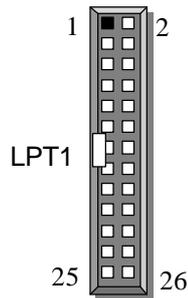
PIN NO.	Description	PIN NO.	Description
1	Ground	2	Density Select
3	Ground	4	NC
5	Ground	6	NC
7	Ground	8	Index #
9	Ground	10	Motor Enable A #
11	Ground	12	Drive Select B #
13	Ground	14	Drive Select A #
15	Ground	16	Motor Enable B #
17	Ground	18	Direction #
19	Ground	20	Step #
21	Ground	22	Write Data #
23	Ground	24	Write Gate #
25	Ground	26	Track 0 #
27	Ground	28	Write Protect #
29	NC	30	Read Data #
31	Ground	32	Head Side Select #
33	NC	34	Disk Change #



JUMPER SETTINGS AND CONNECTORS

LPT1: Parallel Port Connector (Header)

PIN NO.	Description	PIN NO.	Description
1	Strobe #	2	Auto Form Feed #
3	Data 0	4	Error #
5	Data 1	6	Initialize #
7	Data 2	8	Printer Select In #
9	Data 3	10	Ground
11	Data 4	12	Ground
13	Data 5	14	Ground
15	Data 6	16	Ground
17	Data 7	18	Ground
19	Acknowledge#	20	Ground
21	Busy	22	Ground
23	Paper Empty	24	Ground
25	Printer Select	26	NC



CHAPTER 3.**AWARD BIOS SETUP**

Award's ROM BIOS provides a built-in Setup program that allows user to modify the basic system configuration and settings. The modified data will be stored in a battery-backed CMOS RAM so that these data will be retained even when the power is turned off. In general, the information saved in the CMOS RAM stay unchanged unless there is configuration change in the system, such as hard drive replacement or new equipment is installed.

3.1 RUNNING AWARD BIOS

The Setup Utility is stored in the BIOS ROM. When the power of the computer system is turned on, a screen message appears to give you an opportunity to call up the Setup Utility; while the BIOS will enter the Power On Self Test (POST) routines. The POST routines perform various diagnostic checks while initializing the board hardware. If the routines encounter an error during the tests, the error will be reported either with a series of short beeps or an error message on the screen display. There are two kinds of error: fatal or non-fatal. The system can usually continue the boot up sequence with non-fatal errors. Non-fatal error messages usually appear on the screen along with the following instructions:

“ Press <F1> to RESUME ”

Write down the message and press F1 key to continue the boot up sequence. After the POST routines are completed, the following message appears:

“ Press DEL to enter SETUP ”

Entering Setup

Turn on the power of the computer system and press immediately. If you don't have the chance to respond, reset the system by simultaneously typing the <Ctrl>, <Alt> and <Delete> keys, or by pushing the ' Reset ' button on the system cabinet. You can also restart by turning the system OFF then ON.

3.2 CMOS SETUP UTILITY

To access the AWARD BIOS SETUP program, press the key. The screen display will appear as:

Main Program Screen

ROM PCI / ISA BIOS CMOS SETUP UTILITY AWARD SOFTWARE, INC.	
STANDARD CMOS FEATURE ADVANCED BIOS FEATURE ADVANCED CHIPSET FEATURE INTEGRATED PERIPHERALS POWER MANAGEMENT SETUP PNP / PCI CONFIGURATION PC HEALTH STATUS	FREQUENCY / VOLTAGE CONTROL LOAD FAIL-SAFE DEFAULTS LOAD OPTIMIZED SET SUPERVISOR PASSWORD SET USER PASSWORD SAVE & EXIT SETUP EXIT WITHOUT SAVING
ESC : Quit ↑ ↓ ← → : Select Item F10 : Save & Exit Setup	
Time, Date, Hard Disk Type....	

This screen provides access to the utility's various functions.

Listed below are explanations of the keys displayed at the bottom of the screen:

<ESC> : Exit the utility.

<↑ ↓ ← →> : Use arrow keys ↑ ↓ ← → to move cursor to your desired selection.

<F10> : Saves all changes made to Setup and exits program.

Standard CMOS Setup: Use this menu for basic system configurations.

Advanced BIOS Features: Use this menu to set the Advanced Features available on your system.

Advanced Chipset Features: Use this menu to change the values in the chipset registers and optimize your system's performance.

Integrated Peripherals: Use this menu to specify your settings for integrated peripherals.

PnP/PCI Configuration: This entry appears if your system supports PnP/PCI.

PC Health Status: This entry shows your PC health status. If Hardware Monitor Chipset is installed.

Frequency / Voltage Control: Use this menu to specify your settings for frequency / voltage control.

Load Fail-Safe Defaults : Use this menu to load the BIOS default values for the minimal/settings for optimal performance system operations.

Load Optimized Defaults: Use this menu to load the BIOS default values that are factory settings for optimal performance system operations.

Set Supervisor Password: Use this menu to set Supervisor Passwords.

Set User Password: Use this menu to set User Passwords.

Save & Exit Setup: Save CMOS value changes to CMOS and exit setup.

Exit Without Saving: Abandon all CMOS value changes and exit setup.

3.3 STANDARD CMOS SETUP

When you select the “STANDARD CMOS SETUP” on the main program, the screen display will appears as:

Standard CMOS Setup Screen

CMOS Setup Utility – Copyright ©1984-2000 Award Software

Standard CMOS Setup

Date (mm:dd:yy)	Thu, Apr 10 2001	Item Help
Time (hh:mm:ss)	21 : 43 : 8	Menu Level
IDE Primary Master	IBM-DLTA-307045	
IDE Primary Slave	None	
IDE Secondary Master	None	
IDE Secondary Slave	ASUS CD-S400/A	
Drive A	1.44M, 3.5 in.	
Drive B	None	
Video	EGA/VGA	
Halt On	All Errors	
Base Memory	640K	
Extended Memory	260096K	
Total Memory	261120K	

⏏ ⌨ ⌂ Move Enter: Select +/-/UP/PD: Value F10: Save ESC : Exit F1:General Help
 F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

The Standard CMOS Setup utility is used to configure the following components such as date, time, hard disk drive, floppy drive, display and memory. Once a field is highlighted, on-line help information is displayed in the left bottom of the Menu screen.

Set Date : Month, Date, Year.

Set Time : Hour, Minute and Second. Use 24-hour clock format (for p.m. time, add 12 to the hour number, e.g. you would enter 4:30 p.m. as 16:30). When you select the "STANDARD CMOS SETUP" on the main program, the screen display will appear as:
Primary Master / Primary Slave

Primary Master / Primary Slave

Secondary Master / Secondary Slave: Press PgUp / <+> or PgDn / <-> to select Manual, None, Auto type. Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category. If your hard disk drive type is not matched or listed, you can use Manual to define your own drive type manually.

If you select Manual, related information is asked to be entered to the following items. Enter the information directly from the keyboard. This information should be provided in the documentation from your hard disk vendor or the system manufacturer.

If the controller of HDD interface is SCSI, the selection shall be

"None"

If the controller of HDD interface is CD-ROM, the selection shall be

"None"

Here is a brief explanation of drive specifications:

- ✦ **Access Mode:** The settings are Auto, Normal, Large, and LBA.
- ✦ **Cylinder:** Number of cylinders
- ✦ **Head:** Number of heads
- ✦ **Precomp:** Write precom
- ✦ **Landing Zone:** Landing Zone
- ✦ **Sector:** Number of sectors

3.4 BIOS FEATURES SETUP

When you select “BIOS FEATURES SETUP” on the main program, the screen display will appear as:

BIOS Features Setup Screen

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Advanced BIOS Features

Anti-Virus Protection	Disabled		Item Help
CPU Internal Cache	Enabled		Menu Level
External Cache	Enabled		Allows you to choose the VIRUS warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep.
CPU L2 Cache ECC Checking	Enabled		
Processor Number Feature	Enabled		
Quick Power On Self Test	Enabled		
First Boot Device	Floppy		
Second Boot Device	HDD-0		
Third Boot Device	CD-ROM		
Boot Other Device	Enabled		
Swap Floppy Drive	Disabled		
Boot Up Floppy Seek	Disabled		
Boot Up NumLock Status	On		
Gate A20 Option	Fast		
Typematic Rate Setting	Disabled		
X Typematic Rate (Chars/Sec)	6		
X Typematic Delay (Msec)	250		
Security Option	Setup		
OS Select For DRAM >64MB	Non-OS2		
Report No FDD For WIN 95	No		
Video BIOS Shadow	Enabled	Selects power on state for NumLock.	
C8000 – CBFFF Shadow	Disabled		
CC000 – CFFFF Shadow	Disabled		
D0000 – D3FFF Shadow	Disabled		
D4000 – D7FFF Shadow	Disabled		
D8000 – DBFFF Shadow	Disabled		
DC000 – DFFFF Shadow	Disabled		
Small Logo (EPA) Show	Enabled		

⏏ ⌨ ⌂ Move Enter: Select +/-/PU/PD: Value F10: Save Esc: Exit F1: General Help
 F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

The following explains the options for each of the features as listed in the above menu:

Anti Virus Protection: The default setting of Virus Warning is “Disabled”. When it is enabled, any attempt to write the boot sector and partition table will halt the system and cause a warning message to appear. If this happens, you can use an anti-virus utility on

a virus free, bootable floppy diskette to reboot, to clean and to investigate your system.

CPU Internal Cache: The default setting is “Enabled”. This setting enables the CPU internal cache.

External Cache : The default setting is “Enabled”. This setting enables the external cache.

CPU L2 Cache ECC Checking : The default setting is “Enabled”. When you select Enabled, memory checking is enabled when the external cache contains ECC SRAMs.

Processor Number Feature : The default setting is “Enabled”. Enable to show the Pentium !!! CPU serial number.

Quick Power On Self Test : The default setting is “Enabled”. This speeds up the Power On Self Test (POST) by skipping some items that are normally checked during the full POST. If your system is functioning normally, you can choose this feature to speed up the booting process.

First / Second / Third / Other Boot Device : The BIOS attempts to load the operating system from the devices in the sequence selected in these items. The settings are Floppy, LS/ZIP, HDD-0/HDD-1/HDD-2/HDD-3, SCSI, CDROM, LAN, and Disabled

Swap Floppy Drive : The default setting is “Disabled”. This setting gives you an option to swap A and B floppy disks. Normally, the floppy drive A is the one at the end of the cable and drive B is at the other end. If you set this option to “Enabled”, the Drive A will function as Drive B, and vice-versa under the DOS.

Boot Up Floppy Seek : The defaults setting is “Disabled”. When enabled, the BIOS will check whether there is a floppy disk drive installed.

Boot Up Numlock Status : The default setting is “On”. If set “Off”, the cursor controls will function on the numeric keypad.

Gate A20 Option : The default setting is “Fast”. This is the optimal setting for the CPU card. The other option is “Normal”.

Typematic Rate Setting : The default setting is “Disabled”. If enabled, you can set the typematic rate and typematic delay.

Typematic Rate (Chars/Sec) : This setting controls the speed at which the system registers the repeated keystrokes. The choices range from 6 to 30 Chars/Sec. The default setting is “6” Chars/Sec.

Typematic Delay (M/Sec) : This setting controls the time between the display of the first and second characters. There are four delay choices: 250ms, 500ms, 750ms and 1000ms. The default setting is “250” ms.

Security Option : This setting controls the password in the main screen. The options are “Setup” and “System”. Select “Setup” and it will protect the Setup Utility settings from being tampered with. Select “System” if you want to use password feature every time the system boots up. The default setting is “Setup”. You can create your password by using the “SUPERVISOR/USER PASSWORD” utility on the main program screen.

OS Select For DRAM > 64MB : The default setting is “Non-OS2”. Set to “OS2” if the system memory size is greater than 64MB and the operating system is OS/2.

Report No FDD For Win95 : Select “Yes” to release IRQ6 when the system contains no floppy drive, for compatibility with Windows 95 logo certification. In the Integrated Peripherals screen select “Disabled” for the Onboard FDC Controller field.

Video BIOS Shadow : The default setting is “Enabled” which will copy the VGA display card BIOS into system DRAM to improve performance.

C8000-CBFFF Shadow to DC000-DFFFF Shadow : The default setting for the shadow feature is “Disabled”. When enabled, the ROM with the specific address is copied into system DRAM. It will also reduce the size of memory available to the system. After you have made your selection in the BIOS FEATURES SETUP, press the <ESC> key to go back to the main program screen.

3.5 CHIPSET FEATURES SETUP

When you select the “CHIPSET FEATURES SETUP” on the main program, the screen display will appears as:

Chipset Features Setup Screen

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Advanced Chipset Features

SDRAM CAS Latency Time	3		Item Help
SDRAM Cycle Time Tras / Trc	7/9		Menu Level
SDRAM RAS-to-CAS Delay	3		
SDRAM RAS Precharge Time	3		
System BIOS Cacheable	Enabled		
Video BIOS Cacheable	Enabled		
Memory Hole At 15M-16M	Disabled		
CPU Latency Timer	Enabled		
Delayed Transaction	Enabled		
AGP Graphic Aperture Size	64MB		
Use VGA BIOS in VBU Block	Enabled		
System Memory Frequency	133MHz		
Power-Supply Type	ATX		
OnChip Video Window Size	64MB		

⏏ ⏏ ⏏ Move Enter: Select +/-/PU/PD: Value F10: Save Esc: Exit F1: General Help

F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

The following explains the options for each of the features as listed in the above menu:

SDRAM CAS latency Time: When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing. Do not reset this field from the default value specified by the system designer.

SDRAM Cycle Time Tras/Trc: Select the number of SCLKs for an access cycle. The default setting is “7/9”.

SDRAM RAS-to-CAS Delay: This field lets you insert a timing delay between the CAS and RAS strobe signals, used when DRAM is written to, read from, or refreshed. Fast gives faster performance. This field applies only when synchronous DRAM is installed in the system.

SDRAM RAS Precharge Time: If an insufficient number of cycles is allowed for the RAS to accumulate its charge before DRAM refresh, the refresh may be incomplete and the DRAM may fail to retain data. Fast gives faster performance; and Slow gives more stable performance. This field applies only when synchronous DRAM is installed in the system.

System BIOS Cacheable : Selecting “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. The settings are “Enabled” and “Disabled”.

Video BIOS Cacheable: Selecting Enabled allows caching of the video BIOS ROM at C0000h to C7FFFh, resulting in better video performance. However, if any program writes to this memory area, a system error may result.

Memory Hole At 15M-16M: You can reserve this area of system memory for ISA adapter ROM. When this area is reserved, it cannot be cached. The user information of peripherals that need to use this area of system memory usually discusses their memory requirements.

CPU Latency Timer: Selecting “Enable”, the CPU cycle will only be deferred after it has been in a Snoop Stall for 31 clocks and another ADS# has arrived. Select “Disable”, the CPU cycle will be deferred immediately after the GMCH receives another ADS#.

Delayed Transaction: The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select enable to support compliance with PCI specification version 2.1.

AGP Graphic Aperture Size: Select the size of the Accelerated Graphics Port (AGP) aperture. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation.

System Memory Frequency: Select the Onboard Display Cache frequency. The default Setting is “ 133MHz”。

Power-Supply Type: select the power supply type. The default setting is “ ATX” 。

On-Chip Video Window Size: This selects allows the user to set the on-chip video window size for VGA driver use.

3.6 INTEGRATED PERIPHERALS

When you select the “INTEGRATED PERIPHERALS” on the main program, the screen display will appears as:

Integrated Peripherals Setup Screen

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Integrated Peripherals

			Item Help
	OnChip Primary PCI IDE	Enabled	
	OnChip Secondary PCI IDE	Enabled	
	IDE Primary Master PIO	Auto	Menu Level
	IDE Primary Slave PIO	Auto	
	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	
	USB Controller	Enabled	
	USB Keyboard Support	Disabled	
	Init Display First	PCI/ Slot	
	IDE HDD Block Mode	Enabled	
	POWER ON Function	Button only	
X	KB Power On Password	Enabled	
X	Hot Key Power On	Ctrl-F1	
	Onboard FDD Controller	Enabled	
	Onboard Serial Port 1	3F8/IRQ4	
	Onboard Serial Port 2	2F8/IRQ3	
	UART Mode Select	Normal	
X	UR2 Duplex Mode	Half	
	Onboard Parallel Port	378 / IRQ7	
	Parallel Mode	SPP	
X	ECP Mode Use DMA	3	
	PWRON After PWR-Fail	Off	
	CIR Port Address	Disabled	
X	CIR Port IRQ	11	

⏏ ⏏ ⏏ Move Enter: Select +/-/PU/PD: Value F10: Save Esc: Exit F1: General Help
 F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

On-Chip (Primary/Secondary) PCI IDE : The chipset contains a PCI IDE interface with support for two IDE channels. Select Enabled to activate the primary and/or secondary IDE interface. Select Disabled to deactivate this interface, if you install a primary and/or secondary add-in IDE interface.

IDE Primary / Secondary Master / Slave PIO : The four IDE PIO (Programmed Input/Output) fields let you set a PIO mode (0-4) for each of the four IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device. The settings are “Auto”, “Mode 0”, “Mode 1”, “Mode 2”, “Mode 3”, “Mode 4”.

Primary / Secondary Master / Slave UDMA : Ultra DMA/66 implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA driver (Windows 98 OSR2 or a third-party IDE bus master driver). If your hard drive and your system software both support Ultra DMA/66, select Auto to enable BIOS support. The settings are “Auto” and “Disabled”.

USB Controller: Select “Enabled” if your system contains a Universal Serial Bus(USB) controller and you have USB peripherals.

USB Keyboard Support: Select “Enabled” if your system contains a Universal Serial Bus (USB) controller and you have a USB keyboard.

Init Display First : This item allows you to decide to active whether PCI Slot of VGA card or AGP first. The settings are “PCI Slot” and “AGP Slot”.

IDE HDD Block Mode : Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard drive supports block mode (most new drives do), select Enabled for automatic detection of the optimal number of block read/writes per sector the drive can support. The settings are “Enabled” and “Disabled”.

Power on Function: this function allows you to select the item to power on the system. The settings are: Button Only, Mouse Left, Mouse Right, Password, Hotkey, Keyboard98.

Onboard FDD Controller : Select Enabled if your system has a floppy disk controller (FDC) installed on the system board and you want to use it. If you install add-in FDC or the system has no floppy drive, select Disabled in this field. The settings are “Enabled” and “Disabled”.

Onboard Serial Port 1 / Port 2 : Select an address and corresponding interrupt for the first and second serial ports. The settings are “3F8/IRQ4”, “2E8/IRQ3”, “3E8/IRQ4”, “2F8/IRQ3”, “Disabled”, “Auto”.

UART Mode Select: This item allows you to determine which InfraRed(IR) function of the onboard I/O chip, this functions uses.

UR 2 Duplex Mode: This item allows you to select the IR half/full duplex function. The default setting is “Half”。

Onboard Parallel Port: This item allows you to determine onboard parallel port controller I/O address setting. The settings are “378H/IRQ7” , “278H/IRQ5” , “3BC/IRQ7” , “Disabled” .

Onboard Parallel Mode : Select an operating mode for the onboard parallel (printer) port. Select “Normal”, “Compatible”, or “SPP” unless you are certain your hardware and software both support one of the other available modes.

ECP Mode Use DMA: Select a DMA channel for the parallel port for use during ECP mode. The settings are “3” and “1” .

Power After PWR-Fail: this option will determine how the system will power on after a power failure.

CIR Port Address: This item allows you to determine the Consumer IR (CIR) Address setting. the default setting is “Disabled”

3.7 POWER MANAGEMENT SETUP

The “Power Management Setup” controls the CPU card’s “Green” features. When you select the “POWER MANAGEMENT SETUP” on the main program, the screen display will appear as:

Power Management Setup Screen

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Power Management Setup

		Item Help
ACPI Function	Enabled	
ACPI Suspend Type	S1 (POS)	
Power Management	User Define	Menu Level
Video Off Method	DPMS	
Video Off In Suspend	Yes	
Suspend Type	Stop Grant	
MODEM Use IRQ	NA	
Suspend Mode	Disabled	
HDD Power Down	Disabled	
Soft-Off by PWR-BTTN	Instant – off	
Power On by Ring	Enabled	
USB KB Wake-Up From S3	Disabled	
Resume by Alarm	Disabled	
X Date (of Month) Alarm	0	
X Time (hh: mm:ss) Alarm	0 : 0 : 0	
** Reload Global Timer Events **		
Primary IDE 0	Disabled	
Primary IDE 1	Disabled	
Secondary IDE 0	Disabled	
Secondary IDE 1	Disabled	
FDD , COM, LPT Port	Disabled	
PCI PIRQ [A-D]#	Disabled	

⏏ ⏪ ⏩ Move Enter: Select +/-/PU/PD: Value F10: Save Esc: Exit F1: General Help
 F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

ACPI Function : This item allows you to enable or disable the Advanced Configuration and Power Management (ACPI). The settings are “Enabled” and “Disabled” .

ACPI Suspend Type: This item will set which ACPI suspend type will be used.

S1(POS)	The S1 sleeping state is low wake-up latency sleeping state. In this state, no system context is lost (CPU or chipset) and hardware maintains all system context.
S3(STR)	The S3 state is a low wake-up latency sleeping state where all system context is lost except system memory. CPU, cache, and chipset context are lost in this state. Hardware maintains memory context and restores some CPU and L2 configuration context.

Power Management :

Power Management	User Define	Item Help
HDD Power Down	Disable	Menu Level
Doze Mode	Disable	
Suspend Mode	Disable	

⏏ ⌨ ⌂ Move Enter: Select +/-/PU/PD: Value F10: Save Esc: Exit F1: General Help
 F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

This category allows you to select the type (or degree) of power saving and is directly related to the following modes:

1. HDD Power Down
2. Doze Mode
3. Suspend Mode

There are four selections for Power Management, three of which have fixed mode setting.

Disable (Default)	No power management. Disables all four modes.
Min. Power Saving	Minimum power management. Doze Mode=1hr. Standby Mode =1hr., Suspend Mode=1hr., and HDD Power Down=15min.
Max. Power Saving	Maximum power management. –Only available for SL CPU' s. Doze Mode=1min., Standby Mode=1min., Suspend Mode=1min., and HDD Power Down=1min.
User Defined	Allows you to set each mode individually. When not disabled, each of the ranges are from 1 min. to 1 hr. except for HDD Power Down which ranges from 1 min. to 15 min. and disabled.

Video Off Method : This determines the manner in which the monitor is blanked. The default setting is "V/H SYNC+Blank".

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

Video Off In Suspend: This determines the manner in which the monitor in which the monitor is blanked. The settings are "YES" and "NO".

Suspend Type: Select the Suspend Type. The settings are: "POWER Suspend, Stop Grant.

MODEM Use IRQ : Name the interrupt request (IRQ) line assigned to the modem (if any) on your system. Activity of the selected IRQ always awakens the system. The default setting is "NA".

Suspend Mode : Options are from "1 Min" to "1 Hour" and "Disable". The CPU clock will be stopped and the video signal will be suspended, if no Power Management events occur for a specified length of time. Full power function will return when a Wake-Up event is detected.

HDD Power Down : Options are from "1 Min." to "15 Min." and "Disable". The IDE hard drive will spin down if it is not accessed within a specified length of time.

Soft-Off by PWRBTN : Pressing the power button for more than 4 seconds forces the system to enter the Soft-Off state. The settings are: "Delay 4 Sec.", "Instant-Off".

Power On by Ring: When Enabled, an input signal on the serial Ring Indicator (RI) line (in other words, an incoming call on the modem) awakens the system from a soft off state.

USB KB Wake-UP From S3: This option is used to "Enabled" and "Disabled" USB keyboard wake up with suspend to RAM.

Resume by Alarm: This function is for setting date and time for your computer to boot up. During “Disabled”, you cannot use this function. During “Enabled”, choose the Date and Time Alarm:

Date Alarm	You can choose which month the system will boot up. Set to 0, to boot every day.
Time Alarm	You can choose what hour, minute and second the system will boot up.

Note: If you have change the setting, you must let the system boot up until it goes to the operating system, before this function will work.

Reload Global Timer Events : 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 IDE 0**
- Secondary IDE 1**
- Floppy Disk**
- Serial Port**
- Parallel Port**

After you have made your selection in the POWER MANAGEMENT SETUP, press the <ESC> key to go back to the main program screen.

3.8 PNP/PCI CONFIGURATION

Both the ISA and PCI buses on the CPU card use system IRQs & DMAs. You must set up the IRQ and DMA assignments correctly through the PnP/PCI Configuration Setup utility, otherwise the motherboard will not work properly.

PnP/PCI Configuration Setup Screen

CMOS Setup Utility – Copyright ©1984-2000 Award Software

PnP/PCI Configurations

PnP OS Installed	No	Item Help
Reset Configuration Data	Disabled	Menu Level
Resources Controlled By	Auto (ESCD)	Select Yes if you are using a Plug and Play capable operating system.
X IRQ Resources	Press Enter	Select No if you need the BIOS to configure non-boot devices.
X DMA Resources	Press Enter	
PCI/VGA Palette Snoop	Disabled	
INT Pin 1 Assignment	Auto	
INT Pin 2 Assignment	Auto	
INT Pin 3 Assignment	Auto	
INT Pin 4 Assignment	Auto	

⏏ ⌨ ⌂ Move Enter: Select +/-/PU/PD: Value F10: Save Esc: Exit F1: General Help

F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

PnP OS Installed : When set to “Yes”, BIOS will only initialize the PnP cards used for booting (VGA, IDE, SCSI). The rest of the cards will be initialized by the PnP operating system like Windows®95 or 98. When set to “No”, BIOS will initialize all the PnP cards. So, for non-PnP operating system (DOS, Netware®), this option must set to “Yes” .

Reset Configuration Data : Normally, you leave this field “Disabled”, Select “Enabled” to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the operating system cannot boot.

The settings are : “Enabled and Disabled” .

Resource Controlled By : The Award Plug and Play BIOS has the capacity 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 operating system such as Windows 98. If you set this field to "Manual" choose specific resources by going into each of the sub menu that follows this field (a sub menu is preceded by a " "). The settings are "Auto(ESCD)", "Manual".

IRQ Resources: When resources are controlled manually, assign each system interrupt as one of the following types, depending on the type of device using the interrupt.

DMA Resources: The sub menu can let you control the DMA resource.

PCI/VGA Palette Snoop : Leave this field at "Disabled". The settings are "Enabled", "Disabled".

3.9 PC HEALTH STATUS (OPTIONAL)

This section helps you to get more information about your system including CPU temperature, FAN speed and voltages. It is recommended that you contact your motherboard supplier to get proper value about your setting of the CPU temperature.

CMOS Setup Utility – Copyright ©1984-2000 Award Software

PC Health Status

Shutdown Temperature	75 / 167	Item Help
Voltage 0	1.68V	Menu Level
Voltage 1	3.42V	
Voltage 2	3.32	
Voltage 3	4.97 V	
Voltage 4	12.03 V	
Voltage 5	(-)11.62 V	
Voltage 6	(-)5.15 V	
Voltage 7	1.80 V	
Voltage Battery	3.39 V	
Temperature 1	59	
Temperature 2	35	
Temperature 3	55	
Fan 1 Speed	3394 RPM	
Fan 2 Speed	0 RPM	
Fan 3 Speed	6308 RPM	

⏏ 🏠 ☺ Move Enter: Select +/-/PU/PD: Value F10: Save Esc: Exit F1: General Help

F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

Shut down Temperature : This item shows the processor reach the temperature (75 /167) will shut down the system .

Voltage 1/2/3/4/5/6/7 : This item shows the current CPU1/2/3/4/5/6/7 voltage.

Temperature 1/2/3 : This item shows the current CPU1/2/3 temperature.

FAN 1/2/3 Speed : This item shows the FAN 1/2/3 speed.

3.10 FREQUENCY / VOLTAGE CONTROL

This section is for setting CPU Frequency / Voltage Control.

CMOS Setup Utility – Copyright ©1984-2000 Award Software

Frequency/Voltage Control

Auto Detect DIMM/PCI Clk	Disabled	Item Help
Spread Spectrum	Disabled	Menu Level
CPU Host Clock (CPU/PCI)	Default	
CPU Clock Ratio	X8	

⏏ ⌨ ☺ Move Enter: Select +/-/PU/PD: Value F10: Save Esc: Exit F1: General Help
 F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

Auto Dect DIMM/PCI Clk : This item allows you to enable / disable auto detect DIMM / PCI Clock. The settings are “Enabled” and “Disabled”.

Spread Specturm: This item allows you to set the Spread Specturm.

CPU Host Clock : This item allows you to select the CPU Host / PCI Clock.

3.11 LOAD FAIL-SAFE DEFAULTS

When you press “Enter” on this item, you get a confirmation dialog box with a message similar to :

STANDARD CMOS SETUP ADVANCED BIOS FEATURE ADVANCED CHIPSET FEATURE INTEGRATED PERIPHERALS POWER MANAGEMENT PNP / PCI CONFIGURATION PC HEALTH STATUS	FREQUENCY / VOLTAGE CONTROL LOAD FAIL-SAFE DEFAULTS LOAD OPTIMIZED GET SUPERVISOR PASSWORD SAVE & EXIT SETUP EXIT WITHOUT SAVING
LOAD FAIL-SAFE DEFAULTS(Y/N)? N	
ESC : Quit F10 : Save & Exit Setup	: Select Item (Shift) F2 : Change Color
Load Fail-Safe Defaults	

Pressing “Y” loads the BIOS default values for the most stable, minimal-performance system operations.

3.12 LOAD OPTIMIZED DEFAULTS

When you press “Enter” on this item, you get a confirmation dialog box with a message similar to :

STANDARD CMOS SETUP	FREQUENCY / VOLTAGE CONTROL
ADVANCED BIOS FEATURE	LOAD FAIL-SALF DEFAULTS
ADVANCED CHIPSET FEATURE	LOAD OPTIMIZED DEFAULTS
INTEGRATED PERIPHERALS	SET SUPERVISOR PASSWORD
POWER MANAGEMENT	LOAD OPTIMIZED DEFAULTS (Y/N)? N
PNP / PCI CONFIGURATION	SAVE & EXIT SETUP
PC HEALTH STATUS	EXIT WITHOUT SAVING
ESC : Quit	: Select Item
F10 : Save & Exit Setup	(Shift) F2 : Change Color
Load Optimized Defaults.....	

Pressing “Y” loads the default values that are factory settings for optimal performance system operations.

3.13 SET SUPERVISOR / USER PASSWORD

The “SUPERVISOR/USER PASSWORD” utility sets the password. The SBC is shipped with the password disabled. If you want to change the password, you must first enter the current password, then at the prompt -- enter your new password. The password is case sensitive, and can be up to 8 alphanumeric characters. Press <Enter> after you have finished typing in the password. At the next prompt, confirm the new password by re-typing it and pressing <Enter> again. When you are done, the screen automatically reverts to the main screen. Remember that when you use this feature, the “Security Option” line in BIOS FEATURES SETUP will determine when entering the password will be required.

To disable the password, press the <Enter> key instead of entering a new password when the “Enter Password” in the dialog box appears. A message will appear confirming that the password is disabled.

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

Note : If you forget your password, the only way to solve this problem is to discharge the CMOS memory.

3.14 SAVE & EXIT SETUP

Select this option and press the <Enter> key to save the new setting information in the CMOS memory and continue with the booting process.

3.15 EXIT WITHOUT SAVING

Select this option and press the <Enter > key to exit the Setup Utility without recording any new values or changing old ones.

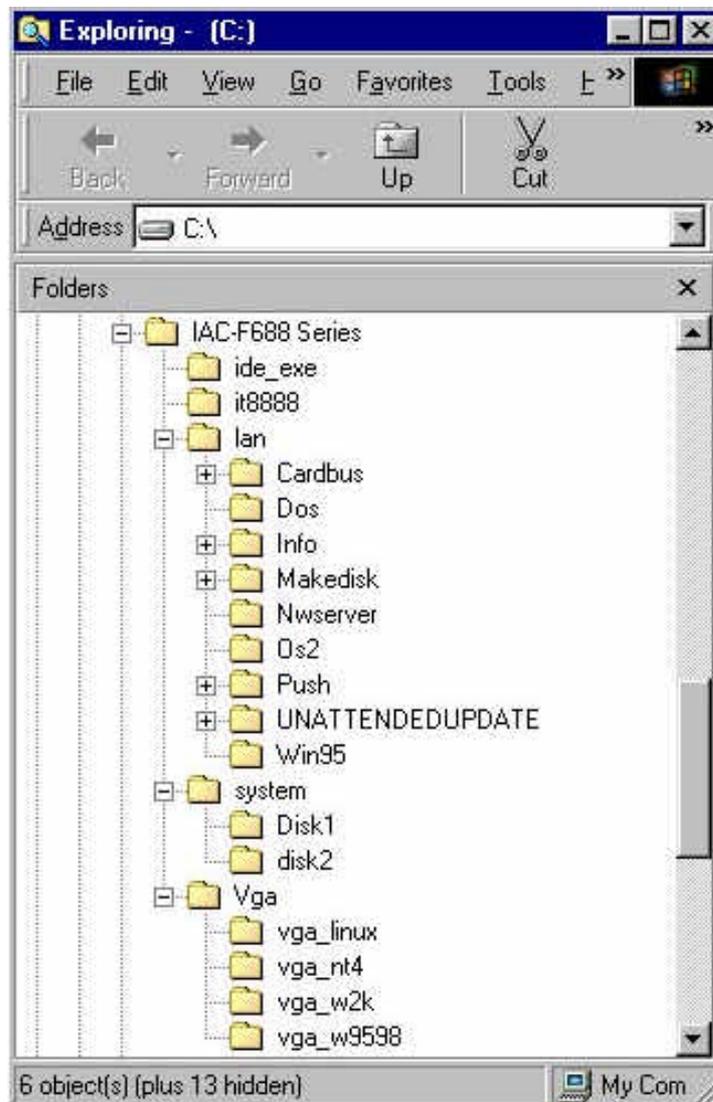
CHAPTER 4.

DRIVERS SUPPORT

4.1 DRIVERS OF CD-ROM LIST

The table below shows the list of drives for IAC-F688

Directory	Driver Function
BIOS	
LAN	LAN driver
SYSTEM	System driver
VGA	Display driver
UTILTIY	driver



APPENDIX A

HOW TO USE WATCH-DOG TIMER

If you enable the watch-dog, the hardware timer will reboot your system if your software encounters an unexpected error, or stops responding. The watch-dog timer period (from enable to reset) was decided by the jumper setting of watch-dog time out period. Please refer to the chapter on jumper settings and connectors. During the period of enable to reset, you could still cancel reset by disabling the watch-dog.

EX.1: For DOS

Execute the **DEBUG.EXE** file under DOS, Then key-in **i443**. The system will reboot automatically according to the time-out you set.

For example, if you want to Set **4 seconds** for the time-out, you should set **JP5 (4-8)**

Enable

```
C:\DOS> DEBUG
```

```
-i443
```

```
-
```

Disable

```
C:\DOS>DEBUG
```

```
i43
```

EX.2: For assembly Language

```
Enable :
```

```
:
```

```
:
```

```
MOV DX, 443H
```

```
IN AL, DX
```

```
:
```

```
:
```

```
Disable :
```

```
:
```

```
:
```

```
IN AL, 43H
```

```
:
```

```
:
```

APPENDIX B

TECHNICAL REFERENCE

I/O PORT ADDRESS MAP

Address	Function
000 - 01F	DMA Controller #1
020 - 03F	Interrupt Controller #1
040 - 05F	Timer Chip
043	Disable Watch-Dog Times Operation (Read)
060 - 06F	Keyboard Controller
070 - 07F	Read Time Clock/NMI Mask
080 - 09F	DMA Page Register
0A0 - 0BF	Interrupt Controller #2
0C0 - 0DF	DMA Controller #2
0F0 - 0F1	Clear/Reset Math Coprocessor
1F0 - 1F7	Hard Disk Controller
200 - 210	Game Port
278 - 27F	Parallel Port #2
2E8 - 2EF	Serial Port #4 (COM 4)
2F8 - 2FF	Serial Port #2 (COM 2)
300 - 31F	Prototype Card/Streaming Tape Adapter
360 - 36F	PC Network
378 - 3FF	Parallel Port #1
380 - 38F	SDLC #2
3A0 - 3AF	SDLC #1
3B0 - 3BF	MDA Video Card (Including LPT0)
3C0 - 3CF	EGA Card
3D0 - 3DF	CGA Card
3E8 - 3EF	Serial Port #3 (COM 3)
3F0 - 3F7	Floppy Disk Controller
3F8 - 3FF	Serial Port #1 (COM 1)
443	Enable Watch-dog Timer Operation (read)

MEMORY ADDRESS MAP

Address Range (Hex)	Description
000000H - 09FFFFH	640 KB of Conventional RAM
0A0000H - 0BFFFFH	128 KB of Video RAM
0C0000H - 0EFFFFH	256 KB of I/O Expansion ROM
0F0000H - 0FFFFFFH	64 KB of System BIOS ROM
0100000H - 7FFFFFFFH	1 MB ~ 128MB of User RAM

DMA CHANNELS

CHANNEL	Function
DMA 0	Reserved
DMA 1	Reserved
DMA 2	Floppy Disk Controller
DMA 3	ECP Parallel Port
DMA 4	Cascade for DMA #1
DMA 5	Reserved
DMA 6	Reserved
DMA 7	Reserved

INTERRUPT CONTROLLER

IRQ	Function
IRQ 0	System timer output
IRQ 1	Keyboard
IRQ 2	Cascade for INTC #2
IRQ 3	Serial port #2
IRQ 4	Serial port #1
IRQ 5	Parallel port #2
IRQ 6	Floppy disk controller
IRQ 7	Parallel port #1
IRQ 8	Real time clock
IRQ 9	Software redirected to INT 0AH (IRQ 2)
IRQ 10	Reserved
IRQ 11	Reserved
IRQ 12	PS/2 Mouse
IRQ 13	Math Coprocessor (CPU Internal)
IRQ 14	Primary Hard disk
IRQ 15	Secondary Hard Disk
NMI	Parity Check Error

GLOSSARY

8-Bit Bus – Data is transmitted to expansion slots and other components on the bus only along 8 parallel data line.

10Base-T – It is a 10Mbps IEEE 802.3/Ethernet standard that uses un-shielded twisted pair cable specification. 10Base-T supports network configuration using the CSMA/CD access method over a twisted pair transmission system up to 100 meters in length without the use of repeater.

16-Bit Bus or ISA Bus – Data is transmitted along either 8 or 16 data lines, depending on what kind of adapter card is used in an expansion slot. ISA is the abbreviation of Industry Standard Architecture.

100Base-TX – It is a 100Mbps IEEE 802.3/Ethernet standard that uses UTP cable. Also called Fast Ethernet, it uses RJ-45 connectors and EIA/TIA T568B pinning. Maximum cable length from hub to node is 100 meters without a repeater.

Adapter – It is also called an expansion board, expansion card, or adapter card. It is a small circuit board that is installed in the expansion slots on the motherboard. You can install a particular adapter that connects a new device such as internal modem, sound card, and scanner.

AGP (Accelerated Graphic Port) – is a 32-bit, 66MHz external frequency data bus that transmit a maximum of 528MB/s of data (4 times the speed of PCI transmission); this design improves the speed of large amount in video transaction.

BIOS (Basic Input /Output System) – This is a chip on the motherboard that contains the instructions for starting up, or booting, the computer, and more.

Bus – Data that travels in a computer along the circuits on the motherboard are called buses. Although three main buses (data bus, address bus, and control bus) manage the computer's operation, often these are collectively called the bus. The bus carries instructions back and forth between the CPU and other devices in the system. ISA, EISA, VL-Bus, PCI and SCSI are examples of PC buses.

bps – Bits per second. Also often preceded by K (kilo/thousands), Kbps – Kilo bytes per second, and M (mega/million), Mbps – Mega bytes per second.

Bus Mastering – A method of transferring data through a bus in which the device takes over the bus and directly controls the transfer of data to the computer's memory. Bus mastering is a method of Direct Memory Access (DMA) transfer.

Cache – Cache RAM is an extra holding area for program instructions that need to be frequently used by the CPU or swapped in and out of RAM. Your CPU can usually access those instructions from the cache more quickly than it could from a hard disk or even RAM, so a cache helps the system work more efficiently. Most systems sold today offer either 256K or 512K cache.

CPU (Central Processing Unit) – executes all commands and controls the flow of data, providing the “ brain ” that enables the PC to calculate and perform the operations like sorting information more quickly than a human could. The CPU makes perhaps the greatest contribution to a PC's speed and power. Note: Any additional information is subject to change without prior revision from the supplier.

Table 1 -- CPU Speeds

Processor type Speed ratings (MHz)

486DX2 66, 80

486DX4 75, 100, 120

Pentium 90, 100, 120, 133, 166, 200

Pentium MMX 166, 200, 233

Pentium Pro 166, 180, 200

Pentium II 233, 266, 300, 333

EIDE (Enhanced IDE) – It is a hard drive controller that enables your system to be able to handle fast hard disk drives at a speed of 10Mbps.

EISA or MCA Bus – Data is transmitted along 32 data lines to adapter cards designed specifically to work with the 32-bit buses. MCA expansion slots cannot accept 8-bit or 16-bit adapter cards. EISA stands for Extended Industry Standard Architecture, while MCA stands for Micro Channel Architecture. MCA is architecture used in IBM Microcomputer.

Expansion slots – Expansion slots are plug-in connectors that allow you to insert additional circuit boards that attach to the rest of the PC through special circuitry called the bus. By inserting the right circuit board -- usually called an adapter or an expansion card – you can increase the resolution and the number of colors used by the display, or you can transform your PC into a machine for recording and playing music.

Fast SCSI – The common nomenclature associated with SCSI-2, the second generation of SCSI offering mandatory parity checking improvements over SCSI-1.

IDE (Integrated Drive Electronics) – It was developed from ST-506 type hard drive interface, utilizes BIOS INT 13h hard drive secondary software and supports two hard drives (Master and Slave). Do not need extra software to drive since it is directly initiated in the BIOS. Data transfer rate is 4.1 Mbps. Take note that this interface cannot support other drive like CD-ROM drive.

IEEE (Institute of Electrical and Electronic Engineers) – It is an international professional society that issues its own standard, and is a member of ANSI and ISO. Popular known standards is:

IEEE802.3 – is a physical layer standard for 10Base-T, 100Base-T, Ethernet, and StarLAN.

IEEE802.5 – is a physical layer standard for Token Ring.

IEEE802.11 – is a physical layer standard for Wireless LAN/WAN compatibility.

IEEE802.12 – is a physical layer standard for 100VG AnyLAN.

LAN (Local Area Network) – A data communications network spanning a limited area. It provides communications between three or more computers and peripherals, in most cases using a high-speed media as it's backbone.

Keyboard – This is a component that comes in direct contact for you with your PC. The mechanism of keyboard converts a key cap's movement into a signal sent to the computer. The most common key mechanism are "capacitate" and "hard contact". Capacitate keyboard has a spring that causes the plastic and the metal plunger to move nearer to two pads that have large plates (plated in tin, nickel, and copper). These pads are connected to the keyboard's printed circuit board. Hard contact keyboard causes the key cap to collapse a foam rubber dome that presses against a sheet of plastic on the bottom of which is metallic area connected to the rest of the keyboard's circuit board.

LDCM (LANDesk Client Manager) – With the help of LDCM, PCs that are either stand-alone or on a network can not escape the control of a system administrator. Alerts will be sent to the user if an abnormal condition is encountered in a PC. It allows the administrator to give each PC a thorough check-up. Additionally, this feature is available to multiple OS' s on the market today. LDCM Key Features include the following :
■ Health Monitoring , ■ Real-Time Alerting , ■ Remote Accessibility , ■ Extensive Instrumentation. This is a product from Intel.

Mouse – The keyboard is a barrier to learn how to use a computer. Xerox Corporation first developed the concept of a pointing device, something a computer user could move with his or her hand, causing a corresponding move on screen. Because of its size and tail like cable, the device was named for the mouse. Apple Computer made the mouse a standard feature of its Macintosh computers, and with the popularity of Windows, a mouse is becoming standard equipment on all PCs, as well. The “ Trackball ” have survived more awkward methods of navigating with the keyboard. “ Digitizing tablets ” are popular with architects and engineers who must translate precise movements of a pen into lines on the screen. “ Touch screens “ , on which you press either your finger and a special light pen to control the software, are too tiring to use for any length of time.

MMX – CPU' s with MMX technology are optimized to run multimedia application, and therefore, offer faster multimedia playback than standard CPUs. However, when manufacturers introduce any new hardware technology, the software makers need to catch up. At this time of compilation, most applications can' t yet take advantage of MMX capabilities.

Parallel port – Parallel ports (labeled LPT1, LPT2, and so on) are usually for plugging in printers. It is also often called a Centronics port – has been almost synonymous with printer port. Although a serial port can also be used to send data from a PC to some models of printers, the parallel port is faster. A serial port sends data one bit at a time over a single one-way wire; a parallel port can send several bits of data across eight parallel wires simultaneously. Take note that a serial connection sends a single bit, a parallel port send an entire byte.

PCI Bus (Peripheral Component Interconnect) – It is a connection slot in a motherboard that supports 32-bit bus transfer rates. The now standard PCI Local Bus carries data along at least 32 lines, that is, at least 32 bits at a time. Local bus computer designs add special buses so the CPU can communicate directly with key

components like the monitor, resulting in much better performance. You should look for PCI local bus capabilities in any system you buy, especially PCI local bus video (which helps the monitor display more quickly).

POST (Power-On Self-Test) – is the first thing your PC does when you turn it on, and it's your first warning of trouble with any of the components. When the POST detects an error from the display, memory, keyboard, or other basic components, it produces an error warning in the form of a message on your display and—in case your display is part of the problem—in the form of a series of beeps.

RAM (Random Access Memory) – consists of a bank of chips that act as “ working memory ”, holding program instructions and data only while your computer's on. Unless the instructions and data are saved to a disk, RAM forgets them when you turn your computer off. RAM is measured in megabytes (M). Most computers today come with 32M of RAM, though some sell with only 16M installed. There are a few different flavors and speeds of RAM, as well. One of the most prominent today is Extended Data Output (EDO) RAM, but an even faster type of RAM that has just hit the market is called SyncDRAM.

Serial port – Serial ports are also sometimes called COM (short for COMmunications) ports, and are labeled COM1, COM2, and so on. It is simple in concept: one line to send data, another line to receive data, and a few other lines to regulate how data is sent over the other two lines – from commonplace modems and printers to plotters and burglar alarms. The most common use for serial port is with a mouse or modem. The reason for this is that a serial port is not a very efficient way to transfer data, so little data that speed is not crucial, and perfect for modems because. With current technology, phone lines cannot transport more than one signal at a time anyway. The serial port is often referred to as an RS-232 port.

SCSI (Small Computer System Interface) – An intelligent bus for transmitting data commands between varieties of devices. There are many implementations of SCSI, including Fast SCSI, Wide SCSI, Fast Wide SCSI, Fast-20, and Fast-40.

SCSI-2 – The second generation of SCSI; includes many improvements to SCSI-1, including Fast SCSI, Wide SCSI, and mandatory parity checking.

SCSI-3 – The third generation of SCSI; introduces Fast-20 and Fast-40 as improvements to the parallel bus. The standard also includes a number of specifications for high-speed serial bus architectures such as SSA, Fiber Channel, and IEEE 1394. Also known as Ultra SCSI.

Ultra SCSI – Also known as SCSI-3, is a third generation SCSI standard that introduced parallel bus speed improvements (FAST-20 and FAST-40), and the miniaturized 68-pin micro connector.

USB (Universal Serial Bus) – USB consolidates serial, parallel, keyboard, mouse, and game ports into one asynchronous and isochronous communications port with bandwidth for data transfer speeds up to 12 Mbps without termination. By daisy-chaining USB hubs, up to 127 I/O devices can be connected to one USB port on the PC. USB is completely plug-and-play meaning peripherals can be correctly detected and configured automatically as soon as they are connected.

UTP (Unshielded Twisted Pair) – Twisted pair cable with neither individual nor overall shielding. Twisted Pair are two wires twisted together to reduce susceptibility to RF crosswalk.

VGA (Video Graphics Array) – A video adapter that supports 640x480 pixels color resolution. The Windows OS provides medium text & graphics standard.

VL-Bus – It is also known as Local Bus; this is an I/O interface that is directly connected and depended of the system CPU. The VL-Bus is an abbreviation of VESA Local Bus.

Terms and Conditions

Date:1997.10.20

Warranty Policy

1. All products are warranted against defects in materials and workmanship for a period of two years from the date of purchase by the customer.
2. The buyer will bear the return freight charges for goods that are returned for repair within the warranty period whereas manufacturer will bear the return to user freight charges after repair.
3. The buyer will pay for repair (for the replaced materials plus service time) and transportation charges (both ways) for items after the expiration of the warranty period.
4. If the RMA Service Request Form does not meet the stated requirement as listed on "RMA Service " , RMA goods will be returned at the customer expense.
5. The following conditions are excluded from this warranty :
 - A. Improper or inadequate maintenance by the customer.
 - B. Unauthorized modification or misuse.
 - C. Operation outside of the environmental specifications for the product.

RMA Service

1. **Request a RMA#:**

Complete and fax to Supplier the "RMA Request Form" to obtain a RMA number.

2. **Shipping:**

- A. The customer is requested to fill up the problem code as listed. If none of the code is selected, please write the symptom description on the remark.
- B. Ship the defective units with freight prepaid.
- C. Mark the RMA # clearly on the box.
- D. Shipping damage as a result of inadequate packing is the customer's responsibility.
- E. Use the original packing materials whenever possible.

3. **All RMA# are valid for 30 days only:**

When RMA goods are received after valid RMA# period, the goods will be rejected.

When requesting RMA service, please fill out this **“RMA Service Request Form”**.
Without this form your RMA will be REJECTED!!!

RMA No:	Reasons to Return:	Repair(Please include failure details)	Testing Purpose
Company:	Contact Person:		
Phone No.	Purchased Date:		
Fax No.:	Applied Date:		
Return Shipping Address: _____			
Shipping by: Air Freight Sea Express:___ Others:___			

Item	Model Name	Serial Number	Configuration

Item	Problem Code	Failure Status

***Problem Code:**

- | | | | |
|------------------------|------------------------------|--------------------|--------------------------|
| 01: D.O.A. | 07: BIOS Problem | 13: SCSI | 19: DIO |
| 02: Second Time R.M.A. | 08: Keyboard Controller Fail | 14: LPT Port | 20: Buzzer |
| 03: CMOS Data Lost | 09: Cache RMA Problem | 15: PS2 | 21: Shut Down |
| 04: FDC Fail | 10: Memory Socket Bad | 16: LAN | 22: Panel Fail |
| 05: HDC Fail | 11: Hang Up Software | 17: COM Port | 23: CRT Fail |
| 06: Bad Slot | 12: Out Look Damage | 18: Watchdog Timer | 24: Others (Pls specify) |

Request Party

Confirmed By Supplier

Authorized Signatures / Date

Authorized Signatures / Date