Federal Communications Commission Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures :

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio / TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Table of Contents

1 Instruction

1-1. Overview

The CB649M-SI motherboard integrates the latest advances in processor, memory and I/O technologies into an micro-ATX form factor (244 x 205mm) that combines performance, flexibility and ease of use into high integrated capable of meeting a variety of price/performance levels.
The CB649M-SI supports not only FSB(Front Side Bus) 66MHz but also FSB 100MHz. Celeron PPGA370 333MHz~466MHz with FSB 66MHz can be supported for the higher performance level.

The CB649M-SI motherboard supports Intel Celeron processor based on the SiS620 and 5595B. Two standard 168-pin unbuffered DIMM sockets with memory size up to 1 GB support Synchronous DRAM modules.

The CB649M-SI has an integrated Bus Master IDE controller and Ultra DMA-33/66 with high performance IDE interfaces for up to four devices.

In addition, the CB649M-SI comes with integrated AGP (Accelerated Graphics Port) controller and provides either UMA(select 2/4/8MB for video memory) or Non-UMA(2/4MB SGRAM).

The CB649M-SI provides two USB(Universal Serial Bus) ports to fit today and tomorrow's requirements.

The CB649M-SI has integrated Trident 4DWAVE-DX-1 PCI Audio which has three jacks(Line-out, Line-in and Mic-in), MIDI/Game port and internal connectors.

Caution :
There is the danger of an explosion if the battery is incorrectly replaced. Replace the battery with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the battery manufacturer's instructions.

1-2. Main Features

1. Processor

- ZIF Socket PPGA370
- Supports Intel Celeron - 333 / 366 / 400 / 433 / 466MHz processor with FSB 66MHz
- Supports future Intel Celeron processors with FSB 100MHz

2. Main Chipset

- SiS620 PCI / AGP 3D VGA Chipset
- SiS5595B PCI System I / O Chipset

3. BIOS

- Award System BIOS
  - 2 Mbits Flash ROM
- Supports PnP, APM, ACPI, DMI & CD-ROM booting

4. Main Memory

- Two 168-pin DIMM Sockets
- Support 8 / 16 / 32 / 64 / 128 / 256 / 512 MB 3.3V Unbuffered Synchronous DRAM(up to 1 GB)

5. I/O Features

- ITE, IT8661F Super I / O Controller
- Standard I / O Functions
  - ▶ One Floppy Disk Drive Connector
  - ▶ One SPP / EPP / ECP Compatible Parallel Port

▶ Two 16C550 UART Compatible Serial Ports
▶ One IrDA Compatible Port (Internal)

6. Expansion SLOTs

- Three 32-bit PCI Slots
  ▶ PCI Specification version 2.2 compliant
- Two 16-bit ISA Slots

7. Input/Output Ports

- PS/2 Keyboard and PS/2 Mouse
  ▶ Integrated into SiS5595B PCI System I/O Chipset
  ▶ Provide Double Height PS/2 Style Keyboard and Mouse Connector
- Serial/Parallel Ports
  ▶ One multi-mode parallel port with chip-protect circuitry supports standard, EPP and ECP modes (25-pin D-sub)
  ▶ Two high speed 16C550 UART compatible buffer serial ports (One 9-pin D-sub and one internal header)
- USB Ports
  ▶ Provide two USB ports
  ▶ Fully supports UHCI(Universal Host Controller Interface) and uses UHCI compatible software drivers.
- IrDA
  ▶ Supports an optional Infrared port module for wireless interface(5-pin Header)

8. Enhanced IDE

- Provides two independent bus mastering PCI IDE interfaces (40-pin Boxed Headers)
- Supports PIO mode 4 and Ultra DMA-33/66
- The BIOS detects IDE devices, transfer rates and translation modes automatically

9. FDD

- Provides One 34-pin Boxed Header
- Supports 360K / 720K / 1.2M / 1.44M / 2.88M floppy drives.

10. Audio Subsystem :

- Trident 4DWAVE-DX-1 PCI Audio Controller
  - ▶ 64-voices polyphony wavetable synthesizer supports all combinations of stereo / mono, 8- / 16-bits, and signed / unsigned samples
  - ▶ Legacy game audio support with SoundBlaster Pro / 16 compatibility on the PCI bus
  - ▶ Complete DirectX driver suite (DirectSound3D, DirectSound, DirectMusic, and DirectInput for Window® 95 and Windows® 98 / NT 4.0® / NT 5.0®)
  - ▶ Configuration, installation, and diagnostics under real mode DOS, Win95, and Win98 DOS box
  - ▶ Windows® 3.1 / 95 / 98 / NT4.0 / NT5.0 configuration, installation, and mixer program
  - ▶ 1, 2, or 6 Mbytes General MIDI (GM) / General Sound(GS) compliant sample Library
- Provide Line-Out, Line-In and Microphone-In Jacks
- One MIDI / Game Port

11. Integrated VGA

- AGP Video has Integrated SiS620 PCI / AGP 3D VGA Chipset
  - ▶ Non-UMA Mode(2 / 4MB SGRAM) achives optimum 2D / 3D performance
  - ▶ UMA Mode(2 / 4 / 8MB from System memory) requires no external display memory
- 3D Graphics Accelerator
- 2D Graphics Accelerator

12. Power-On Function

- Power Button On
- Keyboard Password Power On
- Hotkey Power On
- PC98 Keyboard Power On

13. Hardware Monitoring

- Integrated SiS5595B like LM78 hardware monitor
  - ▶ Supports two FAN speed monitoring, CPU Temperature monitoring and, Voltage Monitoring

14. Type

- 244mm(W) x 205mm(D), micro-ATX Form Factor

2 Installation

This chapter provides information how to install and configure CB649M-SI motherboard.

2-1. Check List

The standard packing of CB649M-SI should include:

- ☑ CB649M-SI motherboard
- ☑ 1 IDE cable
- ☑ 1 Floppy cable
- ☑ CB649M-SI User's Manual
- ☑ Device driver CD

2-2. Installation Steps

Installing of the CB649M-SI motherboard depends on the type of case what you use. The CB649M-SI motherboard is designed for the micro ATX form factor and must be installed in an ATX or Micro ATX (chassis).

Before using your computer, you must complete the following steps :

1. Set Jumpers

2. Install the System Memory

3. Install the CPU

4. Connect Cables

2-3. Set Jumpers

Several hardware settings are made through the use of jumper caps to connect jumper pins (JP) on the motherboard. Refer to motherboard layout on following page. The jumper settings will be described numerically such as [1-2], [2-3] for connect pins 1&2, connect pins 2&3 respectively, or [ON(Short)], [OFF(Open)]

Warning!

Computer motherboards and Add-on cards contain very delicate IC chips. To protect them against damage from electricity, you should follow some precaution whenever you work on your computer.

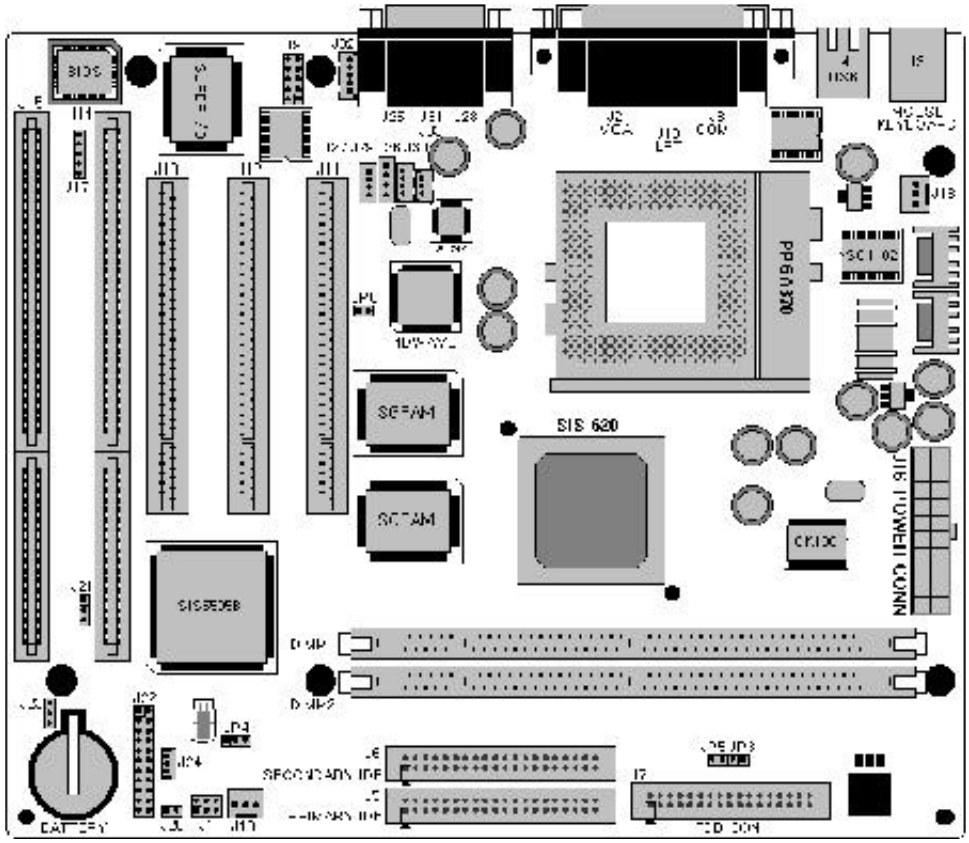
1. Unplug your computer when working on the inside.

2. Use a grounded wrist strap before handling computer components. If you do not have one, touch both of your hands to a safely grounded object or to a metal object, such as the power supply case.

3. Hold components by the edges and try not to touch such the IC chips, leads or connectors, or other components.

4. Place components on a grounded anti-static pad or on the bag that came with the component whenever the components are separated from the system.

2-4. Motherboard Layout



<Fig. 2-1> System Board Layout Diagram

2-5. Connectors and Jumpers

1. Connectors Description

• J1	SB-Link Connector (Option)	• J21	Standby 5V(5VSB) Supply Connector
• J2	VGA Connector	• J22	Front Panel (LED,S/W) Connector
• J3	PS/2 Mouse and Keyboard Connector	• J23	Modem RING Connector
• J4	USB0/1 Connector	• J24	Wake-On LAN Connector
• J5	Primary IDE Connector	• J25	Mic-In Jack
• J6	Secondary IDE Connector	• J26	Telephony(TAD) Connector
• J7	FDD Connector	• J27	CD-Audio Connector (Panasonic Type)
• J8	COM1 Port Connector	• J28	Line-Out Jack
• J9	COM2 Port Connector	• J29	CD-Audio Connector (ATAPI Type)
• J10	Parallel Port Connector	• J30	Aux-In Conn.(Option)
• J11	PCI 1 Connector	• J31	Line-In Jack
• J12	PCI 2 Connector	• J32	Front Panel MIC/Line-Out Conn. (Option)
• J13	PCI 3 Connector	• J33	MIDI/Game Port
• J14	ISA Connector	• DM1	DIMM 1 Connector
• J15	ISA Connector	• DM2	DIMM 2 Connector
• J16	ATX Power Connector	• JP3	Int. VGA Setting (Enable/Disable)
• J17	IrDA Connector	• JP4	CMOS Setting (Normal/Clear)
• J18	CPU Fan Connector	• JP6	Int. Sound Setting (Enable/Disable)
• J19	System(Secondary) Fan Connector		
• J20	Power Switch Connector		

<Table 2-1> Description of the Motherboard connectors

2. Jumpers Description

- Clear CMOS (JP4)

  The CMOS RAM is powered by the onboard coin-cell battery or power supply.

  To clear the CMOS data, first of all you should turn off your computer and unplug the AC cord from the system. Short pins 2&3 for 2~5 seconds and place jumper back to pins 1&2 position. If not the system may malfunctions.

Clear CMOS	JP4
NORMAL	1-2
CLEAR	2-3

<Table 2-2> Clear CMOS Jumper

- Internal SOUND Setting (JP6)

  This jumper uses for Enable or Disable the onboard Audio chip.

Int. SOUND	JP6
Enable	ON
Disable	OFF

< Table 2-3> Internal Sound Setting

- Internal VGA Setting (JP3)

  This jumper uses for Enable or Disable the onboard VGA.

Int. VGA	JP3
Enable	OFF
Disable	ON

< Table 2-4> Internal VGA Setting

- Other Jumper

  ▶ JP5 Power-Up when Plug-In AC Power Cord to the System (Use Factory Only)

2-6. Install DRAM Modules

The CB649M-SI motherboard has two 3.3V unbuffered 64/72-bit, 168-pin DIMM sockets for upto 1 GB of SDRAM memory.

1. Adding Memory

If you use FSB 100MHz CPU(future Intel Celeron CPUs), use PC100 SDRAMs and FSB 66MHz CPU(i.e., 333/366/400/433/466MHz CPUs), you can use either Normal SDRAMs or PC100 SDRAMs.

2. Memory Configuration

DIMM		TOTAL
DIMM1	DIMM2	
8MB	8MB	DIMM1+DIMM2 The combination of memory size is 8MB to 1 GB. All DIMM sockets can use SDRAM memory like left table.
16MB	16MB	
32MB	32MB	
64MB	64MB	
128MB	128MB	
256MB	256MB	
512MB	512MB	

<Table 2-5> Memory Configurations

Note:

In case of using the future Intel Celeron CPUs with FSB 100MHz, please use the DIMM satisfied PC100 specifications. The combination of incorrect DIMM and CPU may cause the system malfunction, or system stability problems.

3. Installing and removing DIMMs

To Install the DIMMs, locate the memory banks on the mother board and perform the following steps:

1. Release tab which you want to install the DIMM
2. Hold the DIMM so that notched edge is aligned with the notch on the DIMM socket.
3. Insert the DIMM at a 90 degree angle and gently push the DIMM straight down until it locks by the tabs.

< FIG. 2-2> Installing a SDRAM Module

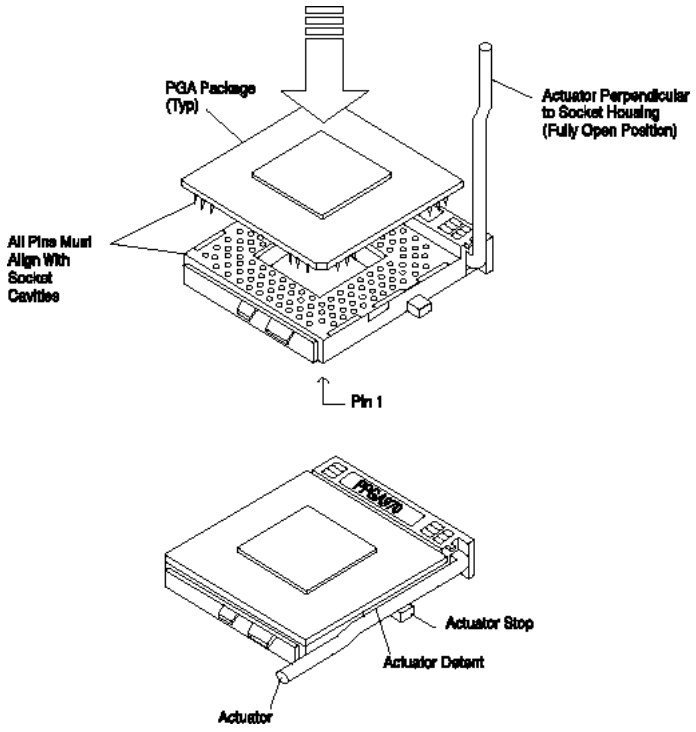
To Remove the DIMMs, follow the steps below:

1. Press the both the release tabs away from the socket.
2. With the DIMM free from the release tabs, lift the module up and place in the anti-static bag or clean place.

2-7. Install the CPU

The CB649M-SI is designed to support a Intel Celeron Processor.
The Celeron processor comes installed in a Zero Insertion Force (ZIF) PPGA370 on the motherboard.

To install the Celeron PPGA370 CPU, refer to the following steps
1. Raise the knob
2. Install the CPU with right direction.
3. Lock the knob to the Socket completely



< FIG. 2-3> Installing the CPU

2-8. Connect Cables

1. CPU Fan Connector (J18)

This connector supplies the power for the CPU cooling fan cable (3-pin or 2-pin). If you have a fan which has two cables(Red and Black), then match Red line to Pin No.2 and connect 1&2 .

Pin	Signal Name
1	Conrol(Ground)
2	+12V
3	Sense

2. Primary / Secondary IDE Connectors (J5 / J6)

These connectors support for the provided 40-pin ribbon cable. After connecting the single end to the motherboard, connect the two plugs at the other end of your hard disk drive(s).

3. FDD Connector (J7)

This connector supports for the provided 34-pin ribbon cable. After connecting the single end to the motherboard, connect the two plugs on the other end of the floppy drive(s).

4. IR Connector (J17)

CB649M-SI provides one connector which can support IrDA (InfraRed Data Association) receiver module. It gives to users IR wireless data exchange directly from mobile computers, printers and PDAs,. etc.

Pin	Signal Name
1	+5V
2	IR_RXH
3	IR_RXL
4	Ground
5	IR_TX

5. Wake On LAN (WOL) Connector (J24)

This connector supports Wake On LAN function. If you use Wake on LAN function, connect 3-pin cable between this connector and your LAN Card.

Pin	Signal Name
1	+5V Stby (5VSB)
2	Ground
3	WOL

6. Internal Modem Ring Connector (J23)

This connector supports internal modem ring wake-up function.
If you use this function, connect 3-pin cable between this connector and your modem card.

Pin	Signal Name
1	+5V Stby (5VSB)
2	Ground
3	RING#

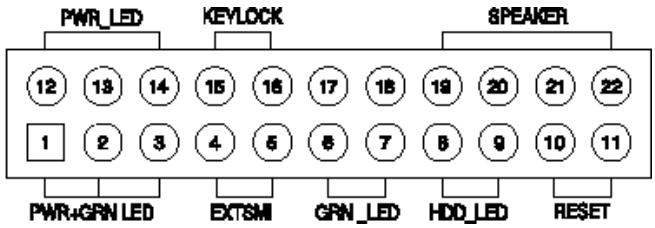
7. Secondary Fan Connector (J19)

This connector supports additional system fan such as Front Fan.

Pin	Signal Name
1	Control(Ground)
2	+12V
3	Sense

8. Front Panel (LED, S/W) Connector (J22)

This connector provides the signals of the Power LED, HDD LED, Reset Switch, Suspend / Resume Switch, Internal Speaker and Key Lock.



< FIG. 2-4> Features of Front Panel Connector

Pin	Signal Name	Pin	Signal Name
1	PWR_LED 2	12	PWR_LED1
2	GND	13	NC
3	Sleep LED2	14	Ground for PWR_LED 1
4	Suspend / Resume Switch	15	KBLOCK#
5	Ground for S / R SW	16	Ground for KBLOCK
6	Sleep LED 1	17	NC
7	Ground for Sleep LED 1	18	NC
8	HD_PWR	19	VCC for Speaker
9	HD Active#	20	Ground
10	Ground for HW Reset	21	Ground
11	H / W Reset#	22	Speaker In

9. Power Switch Connector (J20)

This connector is used to turn the system on. Connect the power switch from the front panel.

Pin	Signal Name
1	PWRBT#
2	Ground

NOTE :

In order to prevent the system from shutting down by mistake, the CB649M-SI motherboard provides one optional item of the BIOS setup (refer to the Power Management Setup).
This item is called Soft-Off by PWR-BUTTON. The function is as follows:

Delay 4 sec:
1. Pushing the power button, system will turn the power on,
2. System is under operating, pushing the button one time will change the system from Normal operation mode to Suspend mode. Pushing the button again will wake up the system.
2. Pushing the power button more than 4 seconds will shut down the system.

Instant-Off:
Pushing the power button one time will turn the system on,
Push and release it, system will turn the power off.

Before boot the system:
Push and release the power button, system will shut down immediately.

10. ATX Power Supply Connector (J16)

This connector connects to an micro-ATX or ATX power supply. The plug from the power supply will only insert in one orientation because of the different hole-size. Find the proper orientation and push down firmly but gently making sure that the pins aligned.

Pin	Signal Name	Pin	Signal Name
1	+3.3V	11	+3.3V
2	+3.3V	12	-12V
3	Ground	13	Ground
4	+5V	14	PSON#(Power supply remote on / off control)
5	Ground	15	Ground
6	+5V	16	Ground
7	Ground	17	Ground
8	PWRGD(Power Good)	18	N.C
9	+5VSB(Standby for RTC)	19	+5V
10	+12V	20	+5V

11. +5V Standby Supply Connector (J21)

This connector can be used to supply power (+5V Stanby) to an add-on card which can work while the system power is out.

Pin	Signal Name
1	N.C.
2	Ground
3	+5VSB

12. SB-Link Connector (J1) : Factory Option

SB-Link is a connector(J1) on the mainboard which is especially for use with a Creative Labs PCI soundcard. The SB-link guides signals from the ISA bus to the PCI soundcard through a cable which comes with the PCI soundcard. This is necessary because some DOS based games address the ISA bus directly. In this way compatibility with these games is guaranteed.

Pin	Signal Name	Pin	Signal Name
1	PCGNT#	2	Ground
3	N.C.	4	PCREQ#
5	Ground	6	SIRQ

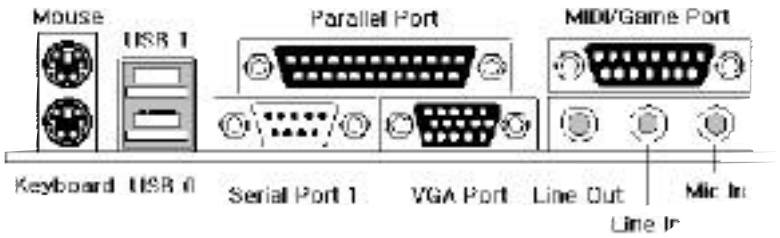
NOTE : SB-Link

The official explanation of SB-Link (as posted on Creative Labs website) is as follows:

SB-LINK combines Intel's PC-PCI and "Serialized IRQ" protocols. These technologies can be found in Intel's TX, LX and newer core logic chip sets. This technology provides the DMA and IRQ signals present in ISA Bus today, but not available on the PCI Bus. The SB-LINK serves as a bridge between the motherboard and PCI sound card to deliver Sound Blaster 16 compatibility for real-mode DOS games, a widely accepted audio standard in Multimedia Personal Computers.

SB-LINK, endorsed by leading motherboard suppliers, is becoming a standard audio connector on new motherboards. With SB-LINK, sound card users can look forward to the best gaming experience ever.

2-9. Connect External I/Os



< FIG. 2-5> Layout of Back Panels

1. PS/2 Keyboard and Mouse Connector (J3)

The CB649M-SI provides one PS/2 keyboard and one PS/2 mouse connector. Refer to the Fig. 2.5 for the location of keyboard(lower side) and mouse(upper side) cables and install to keyboard and mouse connectors.

Pin	Signal Name
1	Data
2	No connect
3	Ground
4	+5V (fused)
5	Clock
6	No connect

2. Universal Serial Bus (USB) Connector (J4)

The CB649M-SI provides double(2) stacked USB Ports.

The USB is a new external bus standard that supports data transfer rates of 12 Mbps (12 million bits per second). A single USB port can be used to connect up to 127 peripheral devices, such as mice, modems, and keyboards. USB also supports Plug-and-Play installation and hot plugging.

Pin	Signal Name
1	Power
2	USBP0# [USBP1#]
3	USBP0 [USBP1]
4	Ground

3. Serial Port 1 & Header for Serial Port 2 (J8 & J9)

The CB649M-SI provides two sets of high speed serial port. One is ready for serial devices. An optional second serial port is available using a serial port bracket connected from motherboard to an expansion slot.

Pin	Signal Name	Pin	Signal Name
1	DCD#	2	DSR#
3	Serial In	4	RTS#
5	Serial Out	6	CTS#
7	DTR#	8	RI#
9	Ground		

4. VGA Port (J2)

The CB649M-SI provides VGA port which can support a DDC monitor.

Pin	Signal Name	Pin	Signal Name
1	RED	9	Key - N.C
2	Green	10	Logic GND (Sync GND)
3	Blue	11	N.C
4	N.C	12	DDCDAT
5	Self Test (TTL Ground)	13	Horizontal Sync
6	R Ground	14	Vertical Sync
7	G Ground	15	DDCCLK
8	B Ground		

5. Parallel Port (J10)

The CB649M-SI provides one set of high speed parallel port. The parallel port supports bi-direction / EPP / ECP modes.

Pin	Signal Name	Pin	Signal Name
1	Strobe#	14	AUTO Feed#
2	Data bit 0	15	Fault#
3	Data bit 1	16	INIT#
4	Data bit 2	17	SLCT IN#
5	Data bit 3	18	Ground
6	Data bit 4	19	Ground
7	Data bit 5	20	Ground
8	Data bit 6	21	Ground
9	Data bit 7	22	Ground
10	ACK#	23	Ground
11	Busy	24	Ground
12	Error	25	Ground
13	Select		

6. Audio Jacks (J28/J31/J25/J33)

The CB649M-SI motherboard contains Trident 4DWAVE-DX-1 PCI Audio. It provides Line-out(J28), Line-in(J31), MIC-in(J25) jacks and MIDI / Game port(J33).

In the Audio Subsystem, describes detail about these jacks.

2-10. Audio Subsystem (Trident 4DWAVE-DX-1)

2-10-1 Overview

The CB649M-SI motherboard has built-in Trident 4DWAVE-DX-1 PCI audio chipset.

It is an advanced PCI audio accelerator providing full legacy compatibility, wavetable synthesis, DirectMusic, DirectSound and DirectSound3D.

It supports full Sound Blaster compatibility and is fully PC97/PC98 compliant.

The 4DWAVE-DX-1 integrates a 64-voice wavetable engine with per voice effect processing capability. It supports the upcoming Microsoft DirectMusic API and is fully compatible with DLS Level 1 (downloadable samples) specification. The 4DWAVE-DX-1 is optimized for Microsoft Windows 98 and Windows NT5.0 WDM streaming architecture with re-routable end-point support. 4DWAVE-DX-1 integrates DirectX 5 3D positional audio accelerator by incorporating QSound Labs QSoft3D technology. It includes DirectSound3D acceleration hardware for ITD(Interaural Time Difference), IID (Interaural Intensity Difference), Pan, Delay, and Doppler hardware. VirtualFM, VirtualGS technologies maintains Sound Blaster Pro / 16 DOS games compatibility while improving gaming audio quality. The 4DWAVE-DX-1 utilizes a Digital Enhanced Game Port, which when coupled with a DirectInput driver, can save up to 12% of the CPU overhead nominally required by a conventional analog game port. 4DWAVE-DX-1 employs a high precision 26-bit digital mixer, providing an accurate 20-bit output and higher than 90dB signal-to-noise ratio when used with a high quality AC'97 codec. The 4DWAVE-DX-1 supports dual AC'97 interfaces, and is AC'97 Rev 2.0 compliant.

2-10-2 Audio I/O Features

1. MIDI/Game Port

- Standard PC joystick port or Midi device.

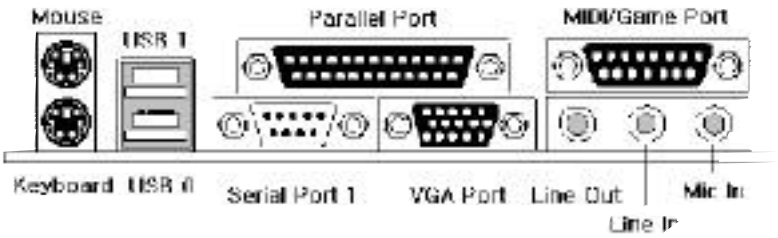
2. Inputs and Outputs

- Line Out
- Line In
- Microphone In
- CD In (supports two types of connector)
- Aux In (Option)
- TAD (Telephone Answering Device)
- Front Panel Control Interface for OEM PCs (Option)

2-10-3 Connectors and Jumpers

< FIG. 2-6> Layout of Onboard PCI Audio

The board consists of the following connectors that support the connection of internal devices or hardware configuration changes:



< FIG. 2-7> Layout of Back Panels

- LINE-OUT Jack (J28)

  This is line-out for an external speaker or an amplifier.

Pin	Signal Name
Sleeve	Ground
Tip	Audio Left Out
Ring	Audio Right Out

- **LINE-IN Jack (J31)**

  This line-in jack is for input from external sources, such as cassette recorder, DAT or CD-Player. This is for mixing with the other sources and so on.

Pin	Signal Name
Sleeve	Ground
Tip	Audio Left In
Ring	Audio Right In

- **MIC-IN Jack (J25)**

  Microphone input port. You can connect Dynamic or Condensor mic.

Pin	Signal Name
Sleeve	Ground
Tip	Mono In
Ring	(Electret Bias Voltage)

- **MIDI/GAME Port (J33)**

  Connect MIDI Kit or Joystick.

Pin	Signal Name	Pin	Signal Name
1	Power	9	Power
2	Joystick button 0	10	Joystick button 2
3	Joystick X1	11	Joystick X1
4	Ground	12	MIDI out
5	Ground	13	Joystick Y2
6	Joystick Y1	14	Joystick button 3
7	Joystick button 1	15	MIDI in
8	Power		

- **Telephone Answering Device(TAD) Connector (J26)**

  Connect to modem phone and mic cable which supports speaker phone.

Pin	Signal Name
1	MIC input (Phone)
2	Ground
3	Ground
4	Mono output

- **Aux-In (Line-In) Audio Connector (J30) : Factory Option**

  Connect to expansion card aux-in such as MPEG card or TV tuner card.

Pin	Signal Name
1	Left channel audio in
2	Ground
3	Right channel audio in

- **Front Panel Audio Connector (J32) : Factory Option**

  This connecter can support front panel line-out and mic-in.
  It is populated the only for OEMs.

Pin	Signal Name
1	Left, Line-Out
2	Ground
3	Right, Line-Out
4	Ground
5	MIC input

- **CD-ROM (Panasonic) Audio Connector (J27)**

  Connect to CD-audio cable which has 2mm pitch so called Panasonic type.

Pin	Signal Name
1	Ground
2	CD Audio left channel
3	Ground
4	CD Audio right channel

- **CD-ROM (ATAPI) Audio Connector (J29)**

  Connect to CD-audio cable which has 2.54mm pitch so called ATAPI type.

PIN	Signal Name
1	CD Audio left channel
2	Ground
3	Ground
4	CD Audio right channel

- Internal SOUND Enable/Disable Jumper (JP6)

  This jumper allows user to disable internal PCI audio to change a new sound card or somthing.

Int.SOUND	JP6
Enable	ON
Disable	OFF

2-10-4 Audio Driver Installation

1. Windows95/98

- First Time Installation

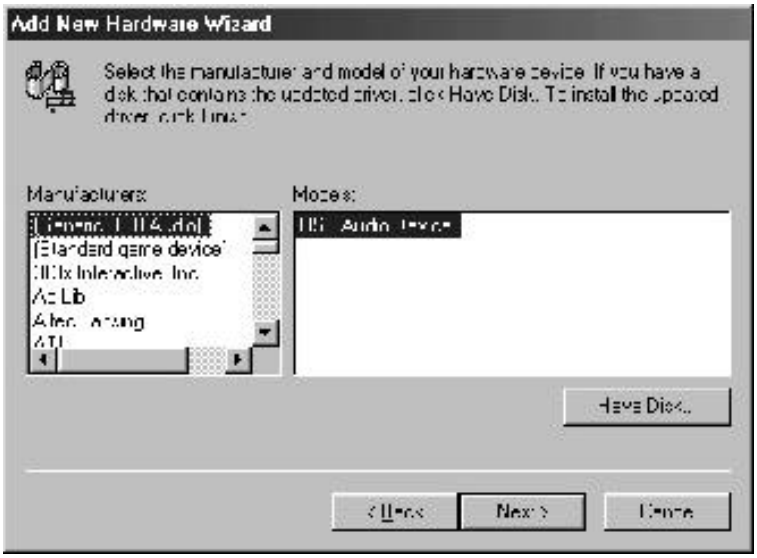
  System will find PCI Multimedia Audio Device and show you like below picture.

  Click "Next" Button

When system shows you following window then check lower item and Click "Next" Button.

Select "Sound, video and game controllers" and Click "Next".

Then "Have Disk" Button and insert your Driver CD into the CD-ROM drive.



Browse your Driver CD and find Win95 Folder.
This may D:\Sound\Drivers\Win95.

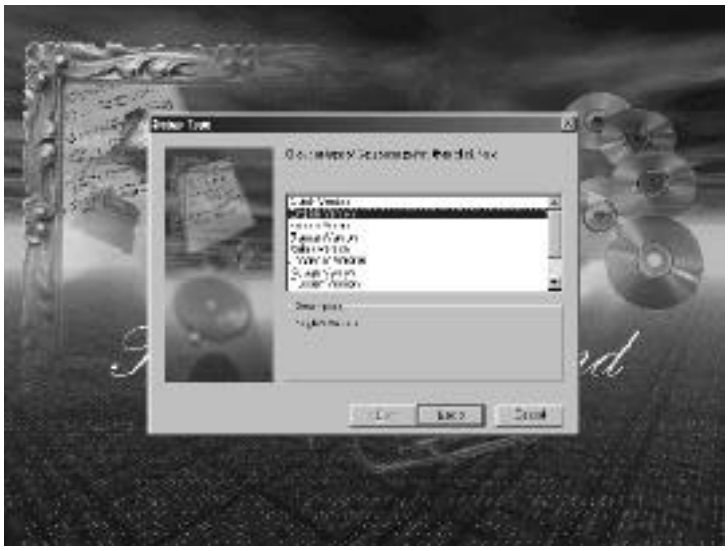
Here, system will show you searched device and folder
Click "Next" Button.

Click "Finish" Button.

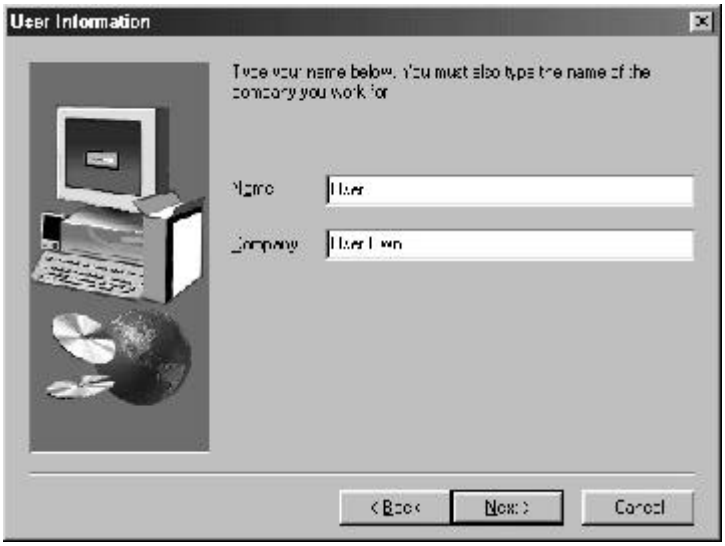
System will copy files from CD-ROM drive into your Hard disk drive and system also wants to install "Trident Direct Input Driver", then you can install the same way just you have done before.

2. Voyetra Installation

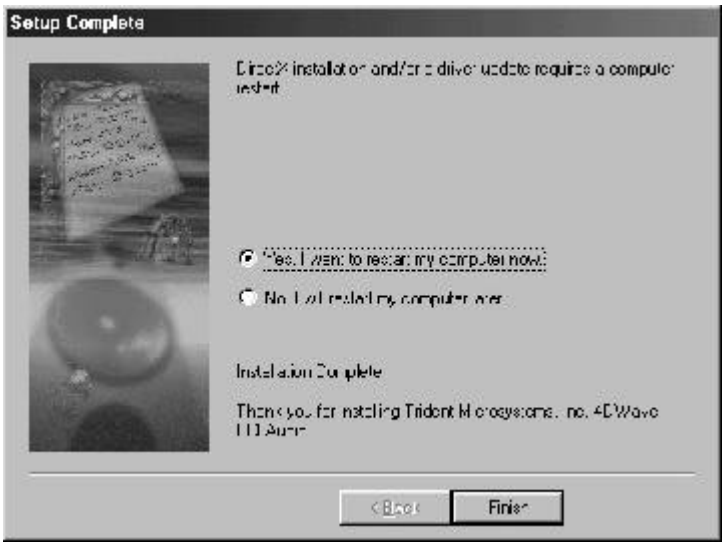
Run the Setup.exe at the D:\Sound\Setup.exe or
D:\Sound\Apps\Voyetra\Setup.exe
This will setup Audio Driver, DirectX and Voyetra audio Utilities.
System shows you like following windows, then select your Win95/98 language and Click "Next" Button.



User Information window appears and waits until enter your Name and Company.
Click "Next" Button.



Follow the system wants you "Next" or "OK" then finally system shows you "Setup Complete"
Click "Finish".



3. Audio Station

Audio Station includes everything you need to run your PC just like a home stereo system. An intuitive hardware-style interface lets you play and edit sound(WAV) and music (MIDI) files, control sound levels and even play your favorite audio CDs with your PC's CD-ROM drive-all from a single convenient interface.

▶ Power Bar

▶ Mixer Component

▶ CD Player Component

▶ WAV Player Component

▶ MIDI Player Component

- Player Common Control Button

Buttons	Functions
	Play
	Pause
	Stop
	Rewind
	Fast Forward
	Record
	Move to the Previous Track
	Move to the Next Track
	Closes the Current Component
	Volume Control
	Playlist

- Audio Station Menu and Functions

Buttons	Functions	Descriptions
	Audio Mixer	Dispalys or hides Digital Audio Mixer
	CD Player	Dispalys or hides CD Player
	WAV Player	Dispalys or hides Wave Player
	MIDI Player	Dispalys or hides MIDI Player

4.Using CD Player

Player can play an Audio CD through CD-ROM drive
It provides various functions like a Home CD Player.

- Playlist Window

When you click the Playlist on the Component, you will see Windows for Playlist.

You can see information for an Audio CD on the left-hand-side and it dispalys name of Title, Total Tracks and Total Time for playing.

- Making Playlist

  To play CD, you need to edit tracks which you want to hear. i.e., click "Add" or"AddAll", and songs are listed on Playlist. Then click the "OK", Audio Station will play.

5. Using Audio Mixer

- Function Control for Players

Buttons	Functions	Descriptions
	Master Volume Control	Control the Slide up and down, Master Volume is controlled.
	Wave Volume Control	Volume control for Digital Audio files
	MIDI Volume Control	Volume control for MIDI files
	CD Volume Control	Volume control for CD-Audio.
	Line-In Control	Volume control for connection to the Line-In (Casette Recorder or CDP...)
	MIC Control	Volume control for Microphone input
	SRS Volume Control	Volume control for SRS 3D input
	Mono-In Volume Control	Volume control for Mono-In input

6. Using Wave Player

Wave Player can play various digital audio files(.WAV, .VOC) and you can see their waves. Also you can record input from external devices such as Microphone, CD-ROM drive and Cassette recorder.

7. Using MIDI Player

MIDI Player can play or record to standard MIDI file(.MID).

You can edit Playlist your favorite MIDI files and play in sequence. Also you can make a MIDI file using MIDI keyboard.

8. Uninstall Voyetra AudioStation

Double click the "Add/Remove Programs" icon in the Control panel, select "Voyetra AudioStation" at Install/Uninstall tab and click "Add/Remove...".

2-11. Integrated VGA (SiS620)

2-11-1 Overview

The CB649M-SI provides built-in 3D AGP VGA controller (SiS620).
The integrated graphics accelerator is compatible with AGP1.0 and PCI2.2 configuration.
The CB649M-SI provides two options -- UMA and Non-UMA modes for display memory allocation.
In UMA mode, the display memory is shared with system memory and user can select 2/4/8MB of system memory as dispaly memory on the system SETUP.
In Non-UMA mode, on-board SGRAM (up to 4MB) is used as display memory and the display memory size is fixed from factory 2 or 4MB SGRAM.
The SiS620 super-AGP architecture provides 800MB/s bandwidth between VGA and host bus, which is 50% more than the AGP 2X mode(532MB/s). The display memory interface bus frequency can also be operated at up to 100MHz, with 64-bit data path.
In summary, CB649M-SI provides consistent 800MB/s bandwidth among internal module as well as external memory interfaces, and delivers high performance in 2D and 3D applications.

NOTE :
In UMA mode, System will use First Bank of system memory as dispaly memory so that user install the system memory into the DM1 slot.

NOTE :
CB649M-SI motherboard provides built-in AGP video controller.
If you need to change video card for your special purpose, use JP3 to disable the internal VGA.

Internal VGA Setting (JP3)

This jumper uses for Enable or Disable the onboard VGA.

Int. VGA	JP3
Enable	OFF
Disable	ON

2-11-2 Driver Installation

SiS620 VGA Drivers can find in Driver CD.
SiS620 VGA Drivers support upto 30 languages for Windows95/98(briefly Windows9x)

1. Windows 95/98

To setup integrated AGP VGA Driver, insert Driver CD into the CD-ROM drive and Run D:\Video\Win9x\Setup.exe
System will show you following screen.

Click "Next" Button.

You can see three type of installation, such as Typical, Compact and Custom.

You should select "Typical" for install everything what system needs.

Click "Next" Button.

After installation is done, Setup Complete window will appear.

Click "Finish", then the system will reboot.

2. Changing Display Settings

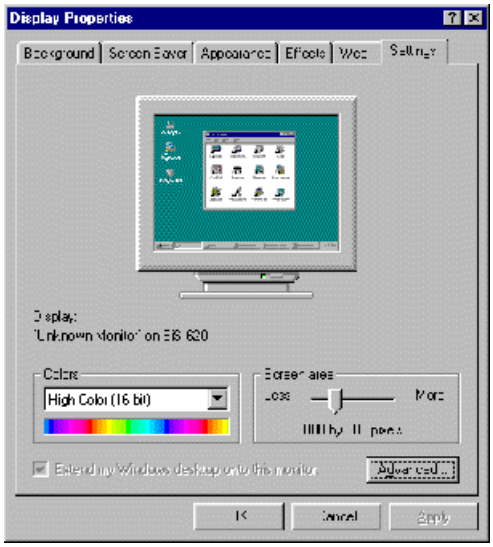
To change the Dispaly setting, click "Display" in the Control panel.

Select "Setting" tab, then system shows you "Colors" and "Screen area".

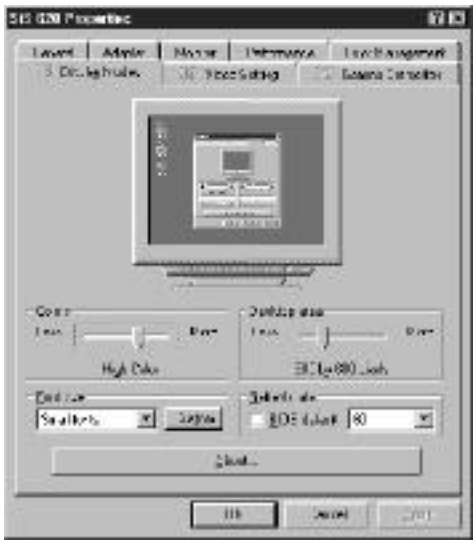
To change Color depth to the other, use Color's tab.

To change Screen area to the other, use slide bar for Screen area.

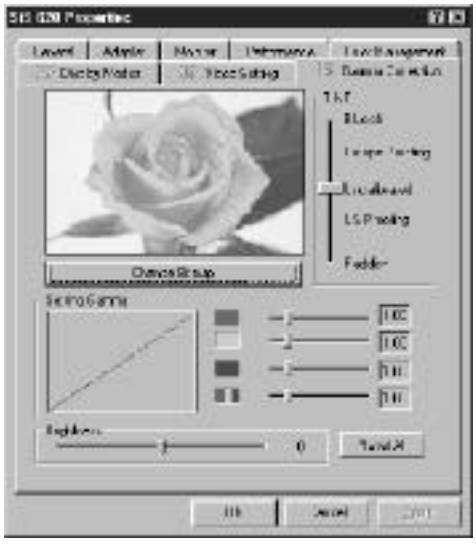
You can choose 640x480, 800x600, 1024x768, 1280x1024 and 1600x1280.



At Display Modes, also can change Colors and Screen area(Desktop area)
If your display monitor has shown irregular figures, such as Pincushion, then check and adjust Refresh rate.



If your display monitor has shown irregular figures, such as bluish, then check and adjust Gamma Correction.



3. WindowsNT 4.0

1. Click "Start" at task bar and select Control Panel from Setting group.
2. Select Display icon.
3. Select Settings of Display Properties.
4. Select Display Type.
5. Select Change from the Adapter Type area.
6. Select Have Disk of Change Display.
7. Place the CB649M-SI Driver CD into the CD-ROM drive.
8. When the "Install from Disk" dialog box appears, type the directory storing the drivers and click "OK".
   The directory in Driver CD is D:\Video\WinNT40.
9. When the "Change Display" dialog box appears, click "OK".
10. When the "Third-party Drivers" dialog box appears, click "Yes".

- Selecting resolution and color depth:
  1. Click "Start" at task bar and select Control Panel from Setting group.
  2. Select Display icon.
  3. Select Settings.
  4. Select Color Palette to change between 16, 256, 32768, 65536 and 16.7M colors.
  5. To select desktop resolution, go to the Desktop area and use the slide bar to change resolution. You can select 640x480, 800x600, 1024x764, and 1280x1024.
  6. Select Test to test the resolution. If the display test screen was good then select "Yes" when the "Testing Mode" dialog box appears. If the display test screen was bad then select "No". Windows NT will give you an error message.
  7. Click "OK". If the display test screen was good and you select "Yes",Windows NT 4.0 will change the mode without restarting Windows NT 4.0.

4. WindowsNT 5.0 (Windows 2000)

1. Click "Start" at task bar and select Control Panel from Setting group.
2. Select Display icon.
3. Click "Hardware" of System Properties.
4. Click "Device Manager..." of Hardware tab.
5. Remove "VGA adapter device" item of Devmgmt [Device Manager on local computer\Devices].
6. Restart Computer.
7. Place the CB649M-SI Driver CD into the CD-ROM drive.
8. When WindowsNT 5.0 searches a new VGA hardware device driver, indicate driver directory.
   The directory in Driver CD is D:\Video\WinNT50.
9. The driver will successfully installed after restarting Windows NT 5.0.