ONE TOUCH

Gladius

User's Manual

Nova 3720 Motherboard, 12.1 & 15 inch LCD's

Federal Communications Commission (FCC)

This equipment has been tested and found to comply with the limits for a Class A 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 the receiver.

Connect the equipment to 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.

Shielded interconnect cables and shielded AC power cables must be employed with this equipment to insure compliance with the pertinent RF emission limits governing this device. Changes or modifications not expressly approved by the system's manufacturer could void the user's authority to operate the equipment.

Declaration of Conformity

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. this device must accept any interference received, including interference that may cause undesired operation.

DHHS- the CD-ROM Drive

FDA Regulations require the following statement for all laser-based devices:

"**Caution**, Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure."

Caution: This appliance contains a laser system and is classified as a "CLASS 1 LASER PRODUCT". To use this model properly, read the instruction manual carefully and keep this manual for future reference. In case of any trouble with this model, please contact your nearest "Authorized Service Station". To prevent direct exposure to the laser beam, do not try to open this enclosure.

Important Safety Information

SAFETY INSTRUCTIONS

1. Please read these safety instructions carefully.
2. Keep this User's Manual for later reference.
3. Disconnect this equipment from the AC outlet before cleaning. Don't use liquid or spray detergent for cleaning. Use only a moistened sheet or cloth.
4. For pluggable equipment, the socket-outlet should be installed near the equipment and should be easily accessible.
5. Keep this equipment from humidity.
6. Lay this equipment on a stable surface when installing.
7. Do not leave this equipment in an non-airconditioned environment, or in a storage temperature above 60° C. Such conditions may damage the equipment.
8. The openings on the enclosure are for air convection and protect the equipment from overheating. DO NOT COVER THE OPENINGS.
9. Check the voltage of the power source when connecting the equipment to the power outlet.
10. Place the power cord so that it will not be stepped on. Do not place anything over the power cord. The power cord must be rated for the product and for the voltage and current marked on the product's electrical ratings label. The voltage and current rating of the cord should be greater than the voltage and current rating marked on the product.
11. All cautions and warnings on the equipment should be noted.
12. If the equipment is not used for a long time, disconnect the equipment from the mains to avoid damage.
13. Never allow liquid into ventilation openings. This could cause fire or electrical shock.
14. Never open the equipment. For safety reasons, qualified service personnel should only open the equipment.
15. If one of the following situations arises, get the equipment checked by service personnel:
    a. The Power cord or plug is damaged.
    b. Liquid has penetrated the equipment.
    c. The equipment has been exposed to moisture.
    d. The equipment does not work well or you cannot get it work according to the user's manual.
    e. The Equipment has been dropped and damaged.
    f. The equipment has obvious signs of damage.

First Edition November 2001

Table of Content

Chapter 1

Introduction

Gladius Characteristics

- Gladius uses a high speed processor capable of handling a high capacity of data efficiently.

- Gladius's solid quality Aluminum housing distinguishes it from ordinary plastic housings.

- The Gladius touch terminal all-in-one design combines a powerful PC, multiple LCD and touch screens, which are suitable for any market. The primary LCD panel can be tilted at multiple angles.

- Gladius's functionality extends far beyond the standard setup. Gladius can be adapted for a variety of uses with the addition of any of the following options: Magnetic Card Reader, VFD/LCD customer display and cashdrawer, Modem, LAN, Audio devices, Compact Flash or USB devices (all available upon request).

- Gladius's security is designed to prevent data theft. The Gladius system is comprised of an internal 3.5" HDD and removable external CD-Rom and FDD making it hard to copy data without authority.

- The solid aluminum design enhances heat dissipation and passes EMI testing.

How to Use This Manual

This manual contains all the information you need to set up and use Gladius. In addition, you can also consult the manuals for the operating system and added hardware.

Chapter 1 Provides an introduction to Gladius and this manual.

Chapter 2 Provides all necessary information for all hardware setup.

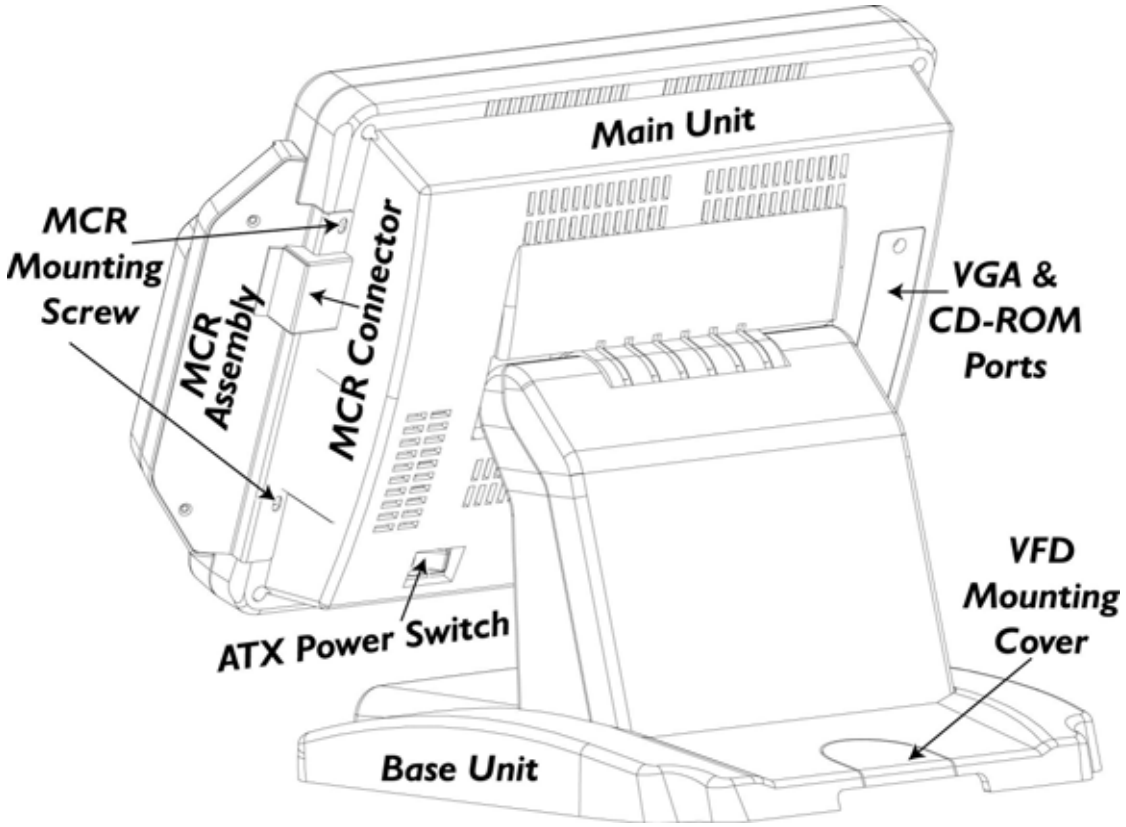
Chapter 3 Provides the necessary information for installing the Video drivers and the touch screen tools, Audio and LAN drivers.

Chapter 4 Lists all Gladius specifications and Information for the 9000PB0090, 9000PB0100 and 9000PB0230 I/O board configuration.

Chapter 5 Provides information for troubleshooting Gladius.

A Visual Tour of Gladius

Before you start, take a few moments to become familiar with Gladius.



What comes with Gladius

The following items are standard with Gladius:

- Main system with LCD panel
- Base
- ATX power supply
- Gladius user's guide
- Nova 3720 motherboard user's guide
- ELO touch screen driver CD
- Motherboard chipset driver CD
- AC power cord

Gladius and power adapter

Gladius with MCR

Gladius with VFD

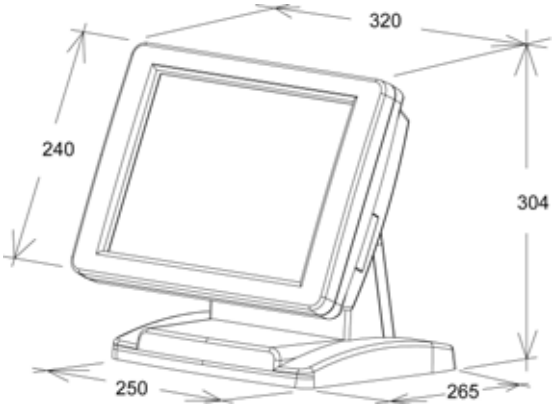
The following items are optional:

- Magnetic card reader (MCR) and bracket
- External CD-ROM drive with cable
- External floppy disk drive with cable
- VFD customer display

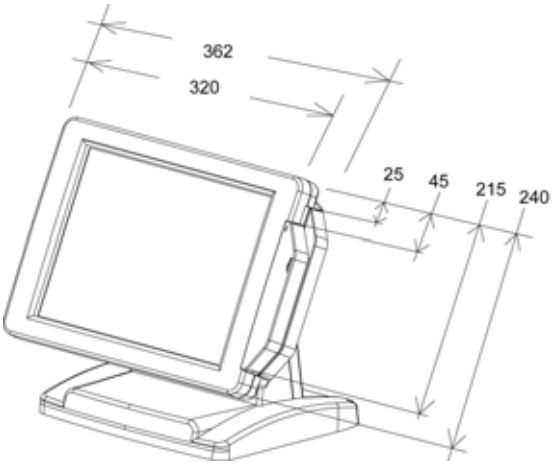
Optional accessories

Dimensions
12.1’’

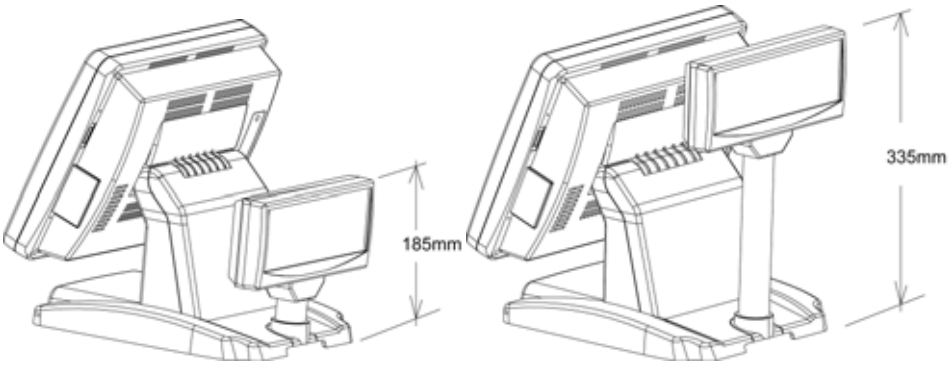
Gladius Dimensions



Gladius and MCR Dimensions

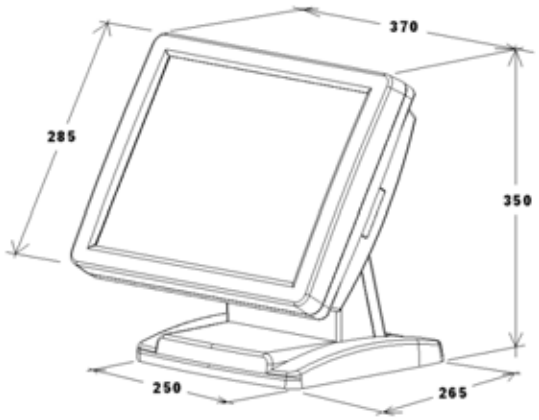


Gladius and VFD customer display

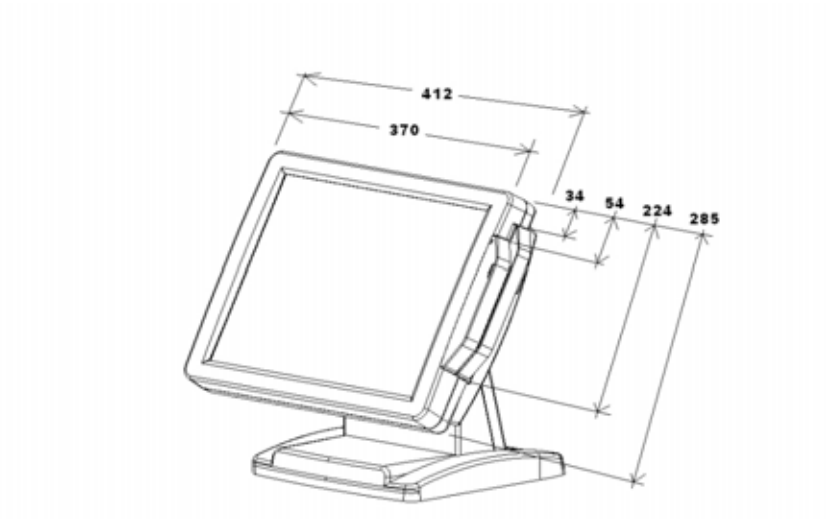


Dimensions
15’’

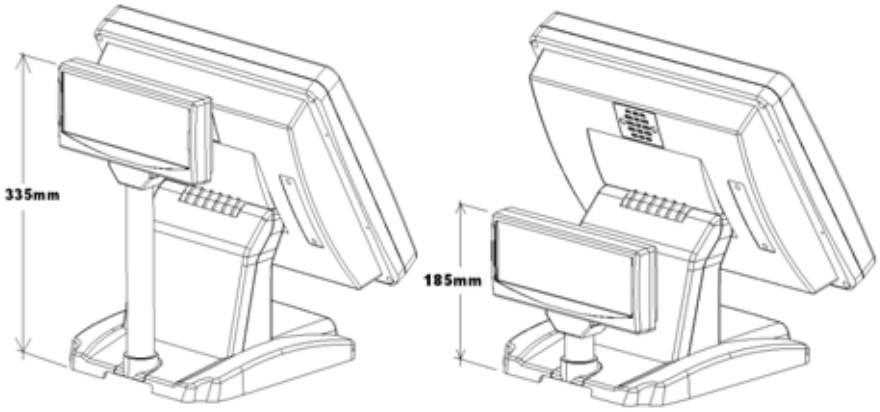
Gladius Dimensions



Gladius and MCR Dimensions



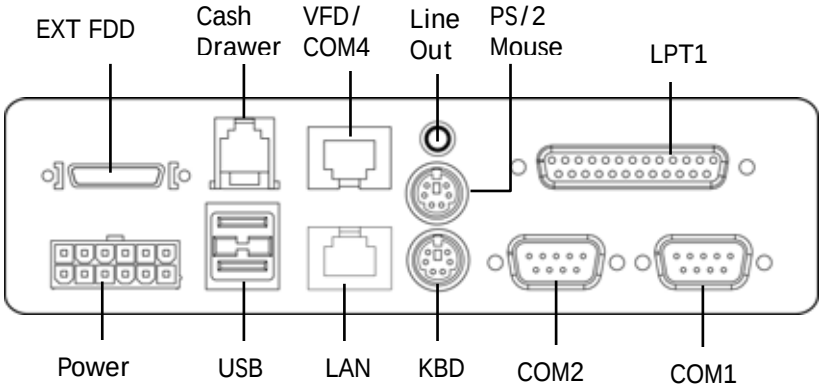
Gladius and VFD customer display



Connector Panels

Primary Connector Panel

The primary connector panel is located at the bottom of the main unit base. To clearly see the panel you must turn Gladius upside down.

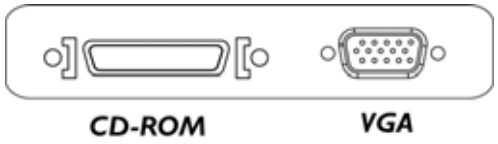


I/O Port	Connector Type	Description
Power	DC Power Connector	Connects Gladius to the power supply.
USB	USB	The USB (Universal Serial Bus) port can be used to connect USB devices.
LAN	LAN RJ45 Connector	The LAN port is used to hook Gladius to a local area network.
KBD	PS/2 Keyboard Connector	The KBD port for an external keyboard.
PS2/Mouse	PS/2 Mouse Connector	PS2 ports can be used for a mouse.
COM1 COM2	DSUB Connector	The serial ports COM1/COM2 can be used to connect serial devices such as a mouse or a fax/modem.
EXT FDD	26 PIN SCSI II Connector	The FDD port is used to attach an external 1.44MB floppy disk driver.
Cash Drawer	RJ11 Connector	Cash Drawer Connector, 12 V Actuation support for solenoid.
VFD	VFD/ COM4 RJ45 Connector	The VFD port is used to attach An RJ45 cable for a VFD customer display.
Line Out	Earphone Connector	The audio port is for speakers.
LPT1	DSUB Connector	The parallel port LPT1 can be used to connect parallel devices, such as a printer.

Secondary Connector Panel

The Second connector panel is located on left side of the back of the main unit. It comes with a cover that needs to be removed to install a CD ROM Driver or a VGA monitor.

I/O Port	Connector Type	Description
VGA	VGA Connector	The VGA port is for the external LCD or CRT monitor.
CD-ROM	36 PIN SCSI II Connector	The CD-ROM port is used to attach an external CD-ROM.



Chapter 2

Hardware Setup

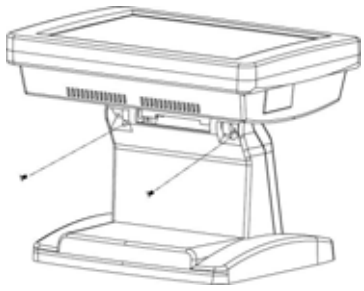
Gladius Assembly

Please make sure that the system power is turned off and the power supply is disconnected when making any hardware changes to Gladius.

Remove the rear neck plate

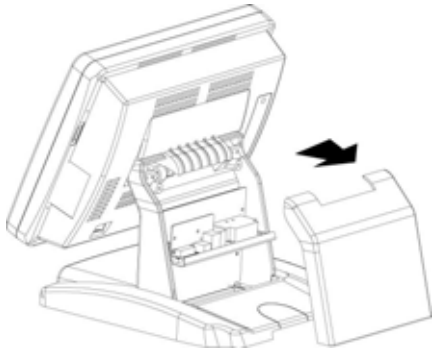
There are two I/O ports, 9000PB0090 and 9000PB0100, located on the back of the neck. The rear neck plate must therefore be removed before alterations can be made to the hardware. As an example, to set up for DC+5V or DC+12V at Pin9 of COM1 or COM2, follow the steps:

1. Tilt the screen to 180 degrees.



2. Unscrew the 2 screws adjacent to the hinges.

3. Tilt the screen to 90 degrees.



4. Remove the rear neck plate.

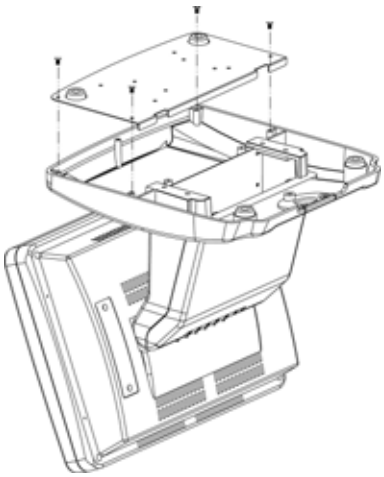
5. Select the appropriate jumper settings as needed; refer to CON4&CON41 of Com1 and COM2 D-sub connector.

Hard Disk Drive Installation

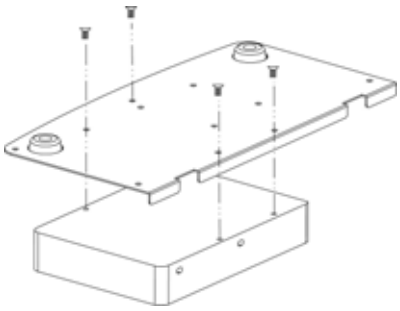
Gladius comes with an empty hard disk drive (HDD), unless a special request has been made.

Installing a HDD

1. Turn off power and remove power cable from main unit.

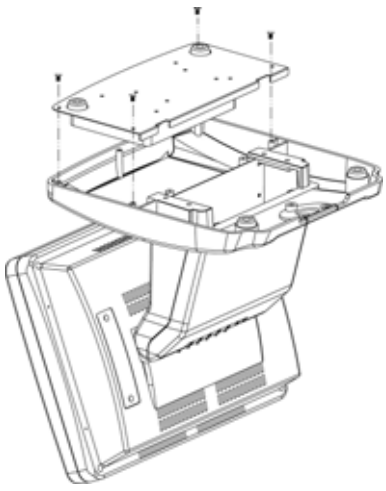


2. Remove the Base/HDD Plate from the base (4 screws).



3. Secure the hard disk drive on the plate (4 screws).

4. Plug the IDE and power cable to the HDD. The red stripe on the ribbon cable should be aligned with PIN1 on the IDE connector of HDD.



5. Put the plate back to the base and secure with 4 screws.
6. Connect the main unit power.

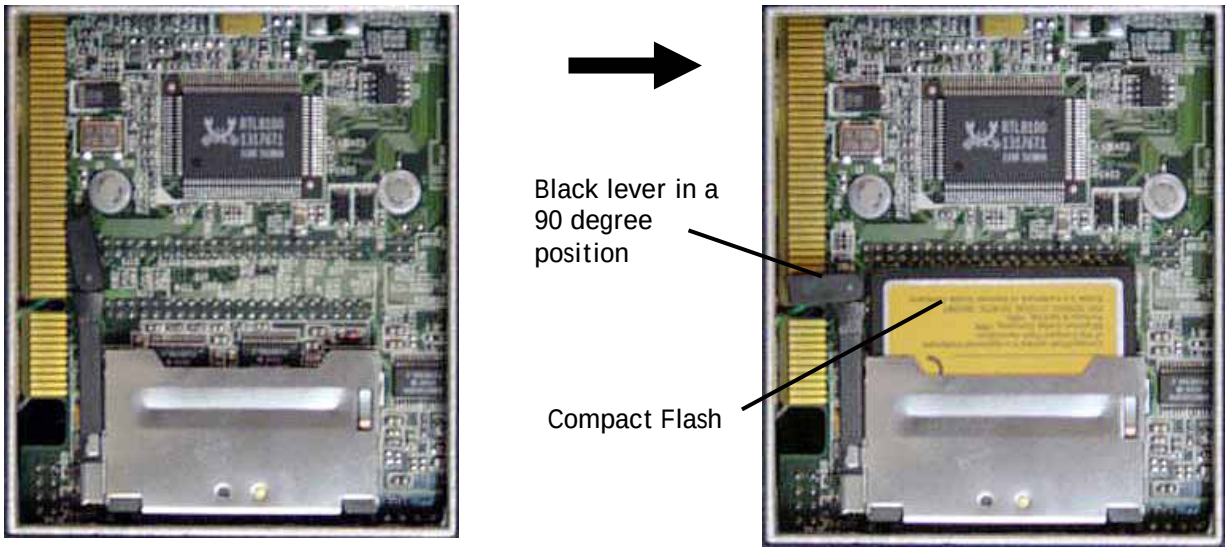
Note: If the HDD does not work normally, please refer to **troubleshooting**

Compact Flash Installation

Gladius will configure Compact Flash in IDE mode as secondary master after it is installed. The next available drive letter will be automatically assigned to Compact Flash.

Installing Compact Flash

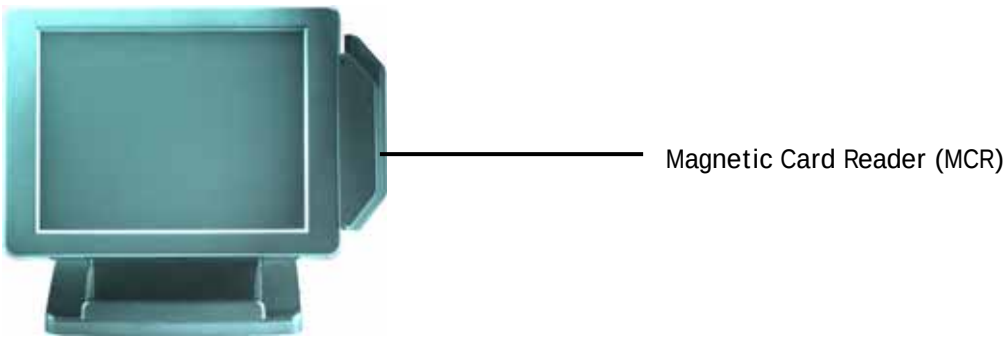
1. Turn off power and remove power cable from Gladius.
2. As the compact Flash socket is located on the soldering side of M/B, remove the 4 screws and disassemble the front panel plate.
3. Insert Compact Flash and lock the black lever in a 90 degree position.



4. Reassemble front panel plate to main unit.
5. Connect the main unit power.

Magnetic Card Reader Installation

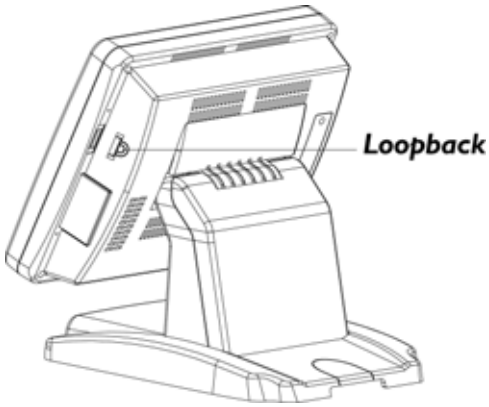
An optional Magnetic Card Reader (MCR) can be installed on the right side of Gladius.



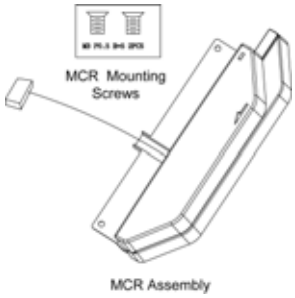
Installing an MCR

1. Turn off system power.

2. Unplug the loopback from the MCR socket. The MCR socket is found on the right side on the back of the main Unit.



3. Attach the MCR Assembly to the main unit and connect the MCR cable to the MCR socket.



4. Secure the MCR to the main unit with 2 screws.

5. Turn on system power.

Note: If the MCR does not work normally, please refer to **troubleshooting.**

Attention: The loopback or the MCR cable must be inserted in the socket for an external keyboard to function with Gladius.

MCR Parameter Modification

This option is for users who need to customize the MCR parameters for a particular task.
Some of the useful parameters include:

The selection of country code, other than the default English.

The choice of track combinations.

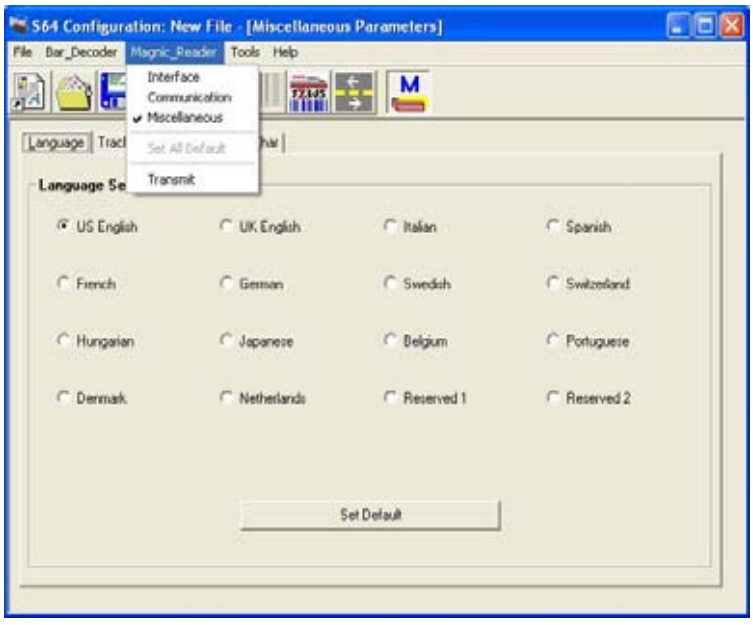
The preamble/postamble codes.

The MCR parameters can be modified by using the supplied utility program.
The utility can be found on the CD that came with your system in the "Utilities" folder. The program name is msr_v12_win.zip.
If you are upgrading and earlier system to include our MCR reader, then this utility can located on our website at http://www.firich.com.tw/tech_drivers.htm in the section labeled as "MSR Utility".

Unzip this file onto your system hard disk, in a folder of your choice.
It will also create 3 subfolders named Disk1, Disk2, and Disk3.
Change to the folder "**Disk1**" and run the "**Setup.exe**" program, and follow the simple onscreen instructions.
When the installation finishes, you will find that a new folder has been created in your "Program files" folder, labeled as "Decoder" with a subfolder named "S64 Decoder".

Now change folder to **C:\Program Files\Decoder\S64 Decoder** and run the program named "**S64_cfg.exe**".

When the program has loaded please select the **Magnic_Reader** menu item as in the following picture. By using the 3 top items listed; **Interface**, **Communication** and **Miscellaneous**, you will be able to alter many of the parameters associated with the MCR unit.
When you have finished your modifications and are sure that they are set exactly how you want them to be, just click on the menu item **Transmit** to download the new parameter to the MCR unit.
Please refer to the Help menu for any further assistance.



VFD Customer Display Installation

An optional VFD customer display can be installed on the back of Gladius.

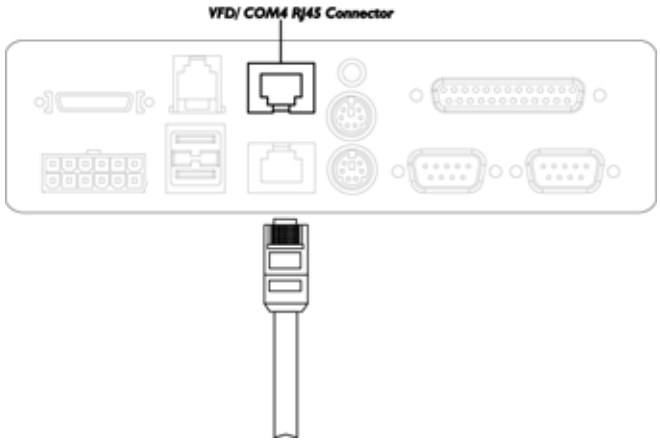
Rear view with VFD attached.

Installing a VFD

1. Turn off system power.
2. Make sure that JP1 and JP2 on the secondary I/O board 9000PB0100 are set correctly. It's important to note that the supply voltage for the customer display has been set to +12V, which is for VFD type. IF an LCD customer display is chosen, please change it to +5V through JP1 on 9000PB0100. Please refer to page 67, Mode1 RJ45 connector used for VFD.
3. Remove the VFD Mounting Cover from the base.

4. Secure the VFD Holder to the base with 3 screws and place VFD display into the holder.

5. Connect the VFD RJ45 cable in the VFD/COM4 port on the I/O panel which is located under the base.



6. Turn on VFD power switch, then turn on system power.

Note: If the VFD does not display correctly after an application is loaded, please refer to **troubleshooting**.

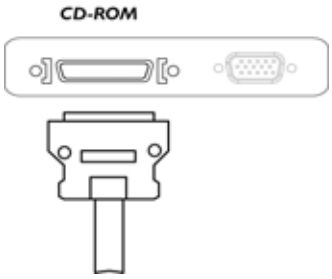
External Floppy Drive Installation

1. Please make sure that Drive A in the CMOS setup is enabled for 1.44MB.
2. Turn off system power.
3. Connect FDD cable to the EXT FDD port of Gladius.

Note: If the EXT FDD does not work normally, please refer to troubleshooting.

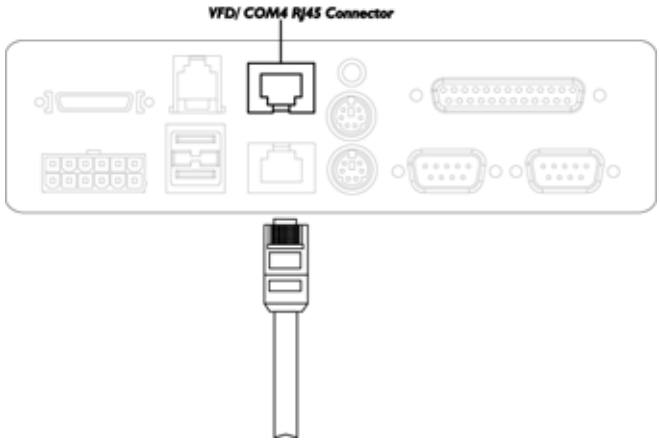
CD-ROM Installation

1. Please make sure the IDE 2 in the CMOS setup is enabled.
2. Turn off the power.
3. Plug the CD-ROM cable to the CD-ROM port.



Note: If the CD-ROM cannot be detected by the system, please refer to **troubleshooting.**

4. Connect the VFD RJ45 cable in the VFD/COM4 port on the I/O panel which located under the base.



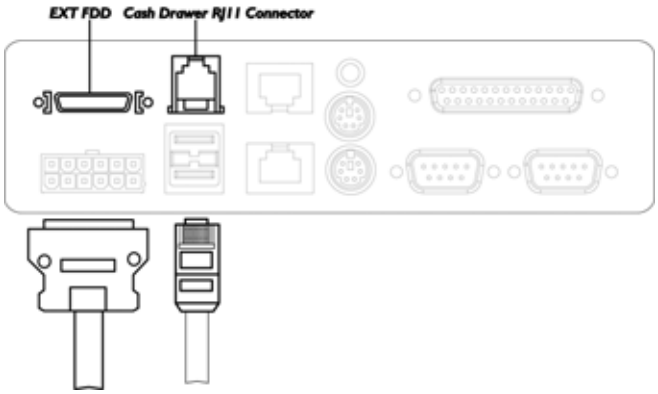
5. Turn on VFD power switch, then turn on system power.

Note: If the VFD does not display correctly after an application is loaded, please refer to **troubleshooting.**

Cash Drawer Installation

Before connecting the cash drawer to Gladius, please make sure the drive voltage and cable pin assignment of the cash drawer matches the definition of the cash drawer port of Gladius. Please refer to page 73 for more information on the Cash Drawer.

Plug cash drawer cable into cash drawer port.



Note: If the cash drawer cannot be detected by the system, please refer to **troubleshooting.**

Up to two cash drawers may be driven from this port. Driving voltage of the solenoid is DC+12V. I/O port 240h is used for drawer operation. A test program is supplied, for all Windows O/S, source code of which is available on request to software developers. Hardware logic is as follows.
To open drawer1, write F1h to port 240h, wait 200 msec, then write F0h to turn off the drive.
To open drawer2, write F2h to port 240h, wait 200 msec, then write F0h to turn off the drive.
To test for drawer open, read port 240h, if bit 0=1 then drawer is open, if bit 0=0 drawer is closed.

CMOS Setup

Gladius systems have adopted the motherboard NOVA-3720 , that uses AMI BIOS.

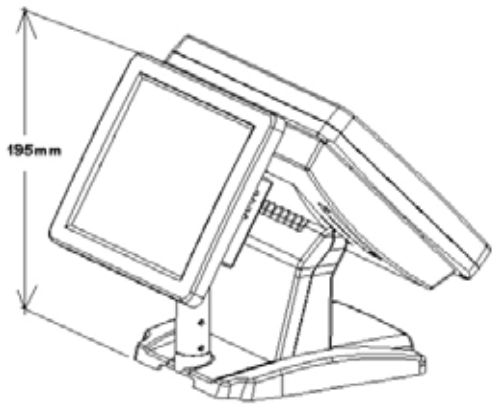
Please refer to the NOVA3720 M/B User's Manual Chapter 4 for a detailed description of the BIOS CMOS setup.

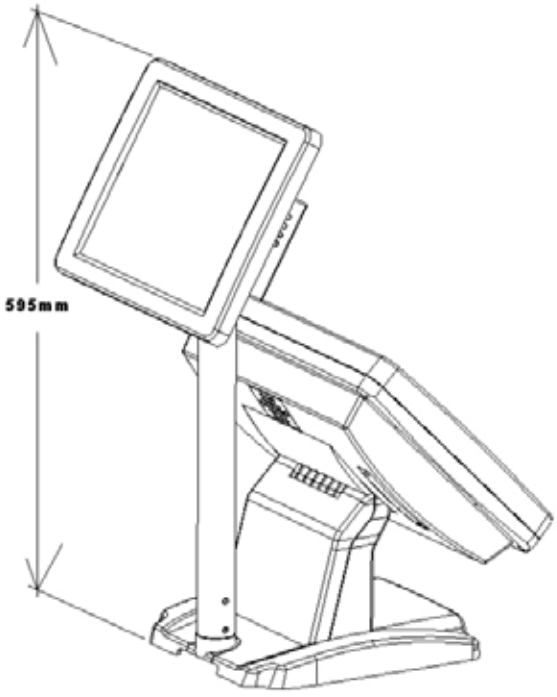
Optional Second LCD Panel Display

The Gladius system has the option of a second LCD panel display.
There are two standard pole heights that may be ordered, 150mm and 400mm.
The mechanical fitting of the second panel display is a very simple process.

Position the Gladius onto it's side.
Remove the 3 screws and Mounting Cover from the base unit.
Position the already assembled Second Panel Display, Pole and Holder to the base and secure firmly with the 3 screws.
Now connect the Second Panel Display cables to the Power and VGA sockets on the underside of the Gladius unit. If you also ordered the second display Touch panel option then connect this to the COM4 socket.

Note. CMOS BIOS settings should be altered to make COM4 use IRQ11, and both SIS and C&T VGA chips should be enabled.
SIS should be set as the primary display and C&T as the secondary display.
Dependant upon which operating system is used, drivers will have to be installed, therefore please refer to the CD that came with your Gladius, or visit our website at:
http://www.firich.com.tw/tech_drivers.htm





Chapter 3

Software Setup

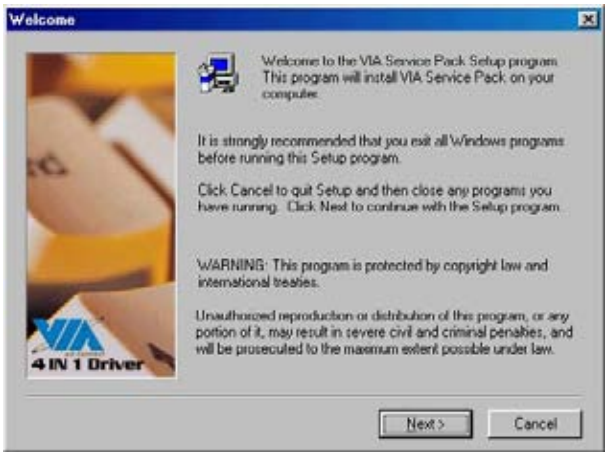
Gladius comes with a variety of drivers for different operating systems.

You will find 1 CD with Gladius.

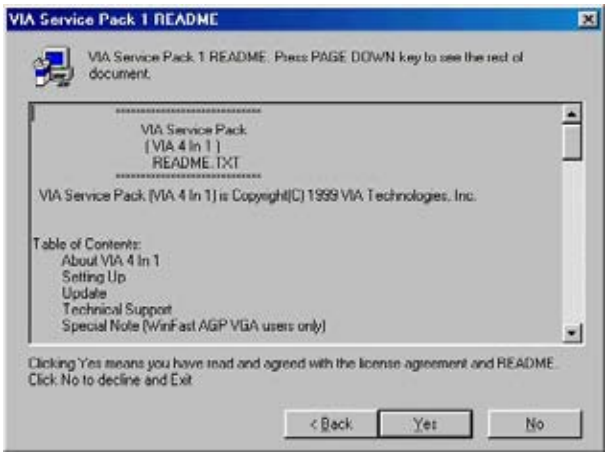
The CD has all the necessary drivers to setup Gladius.

VIA 4 in 1 Installation Utilities for Windows 98

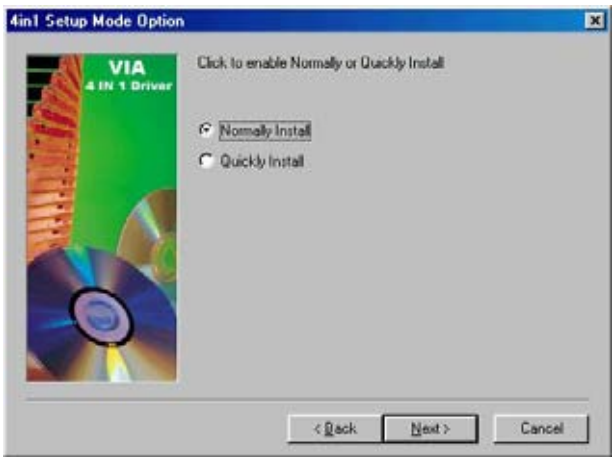
1. Locate **D:\4in1** folder.
2. Run **Setup.exe**



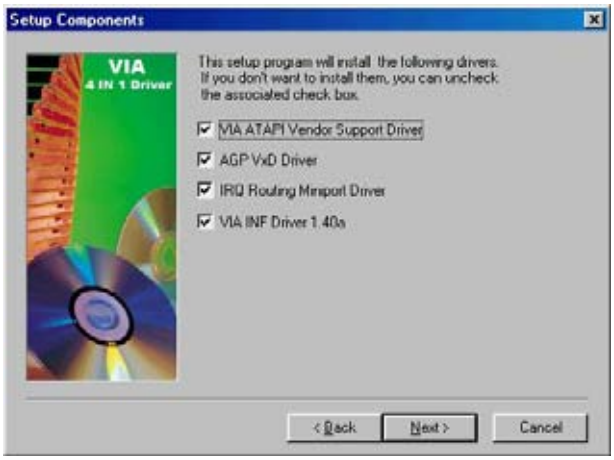
3. Click **Next**.



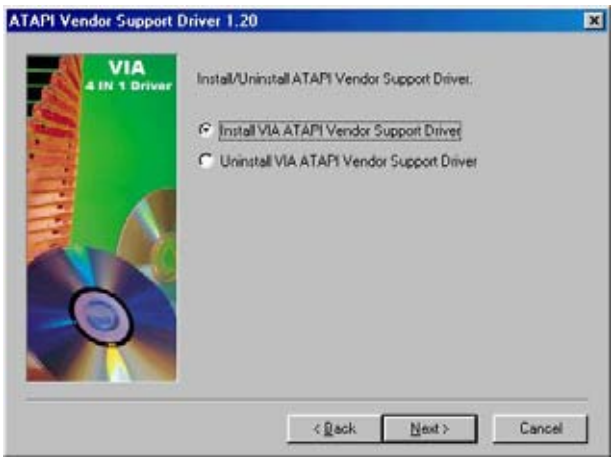
4. Click **Yes**.



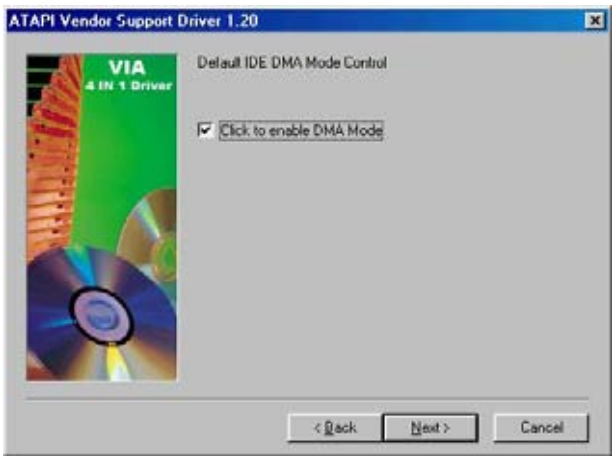
5. Click **Next**.



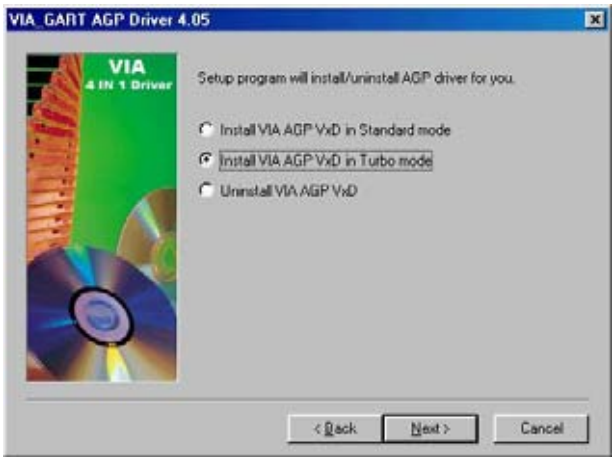
6. Click **Next**.



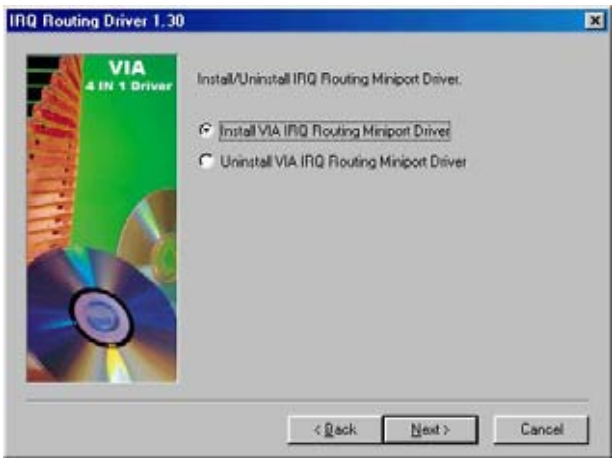
7. Click **Next**.



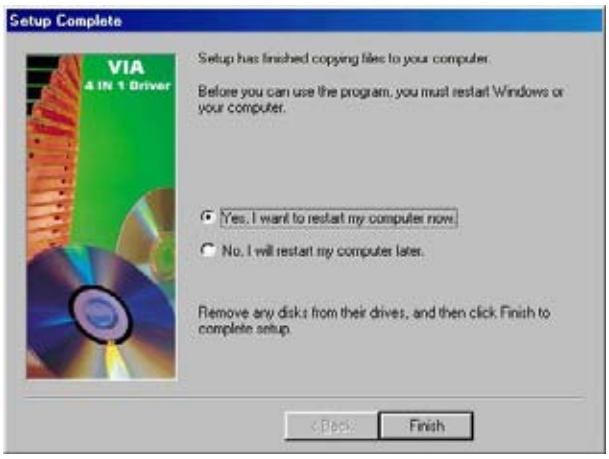
8. Click **Next**.



9. Click **Next**.



10. Click **Next**.

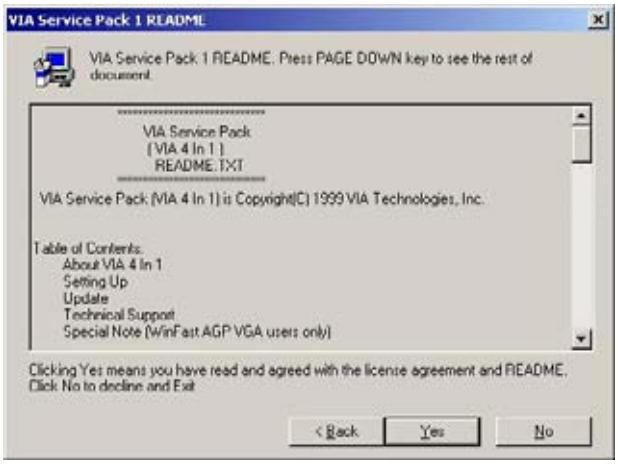


11. Click **Finish**.

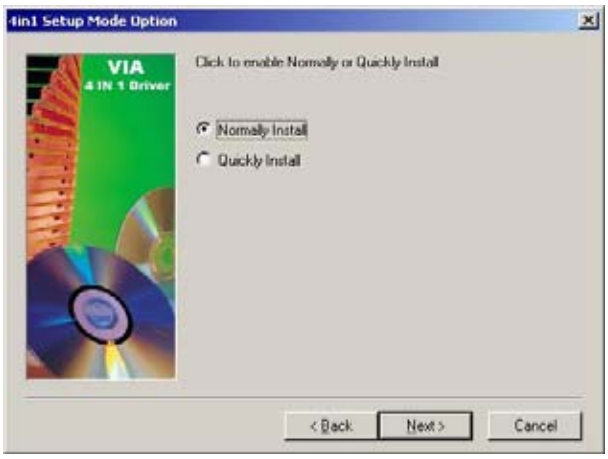
VIA 4 in 1 Installation Utilities for Windows 2000

1. Locate **D:\4in1** folder.
2. Run **Setup.exe**

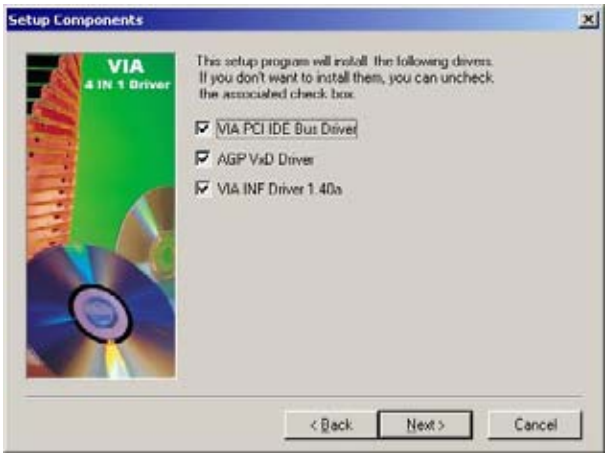
3. Click **Next**.



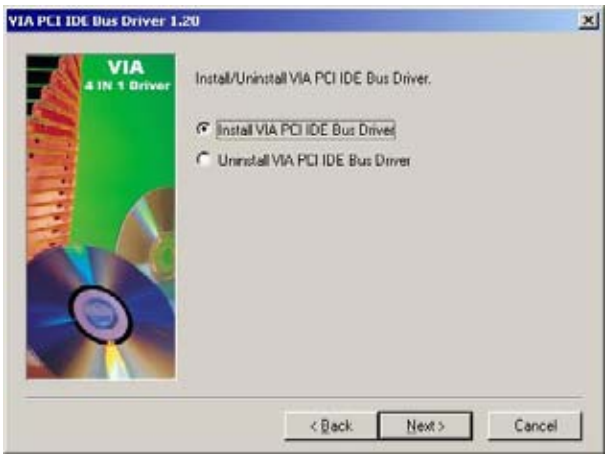
4. Click **Yes**.



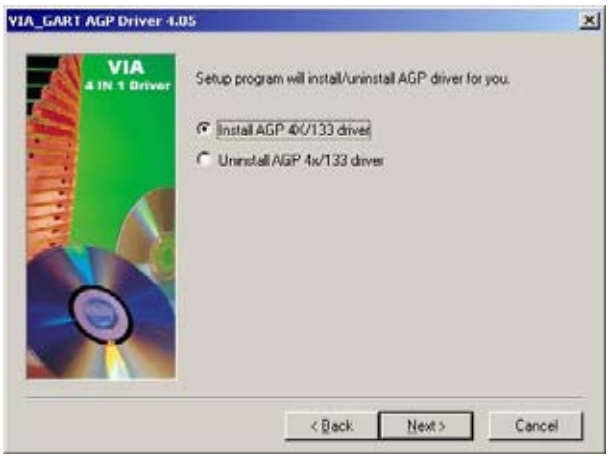
5. Click **Next**.



6. Click **Next**.



7. Click **Next**.



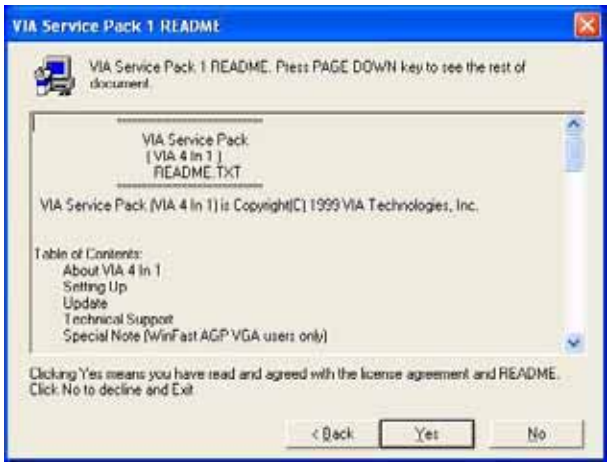
8. Click **Next**.

9. Click **Finish.**

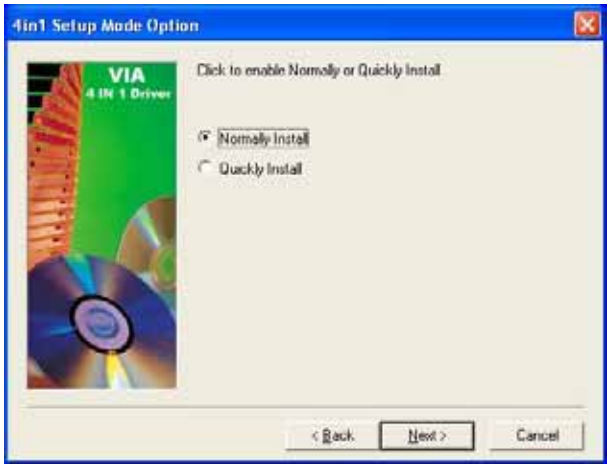
VIA 4 in 1 Installation Utilities for Windows XP

1. Locate **D:\4in1** folder
2. Run **Setup.exe**

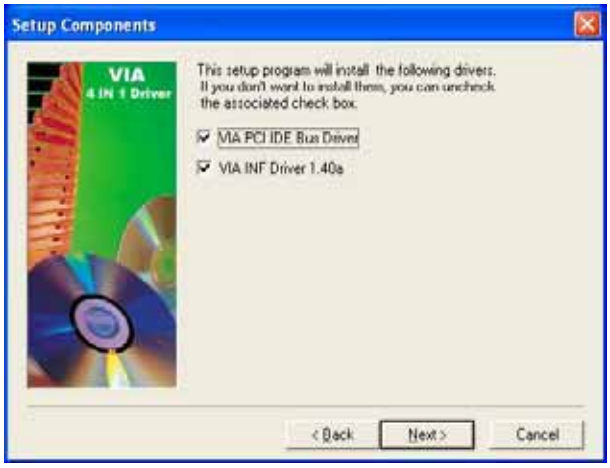
3. Click **Next**.



4. Click **Yes**.

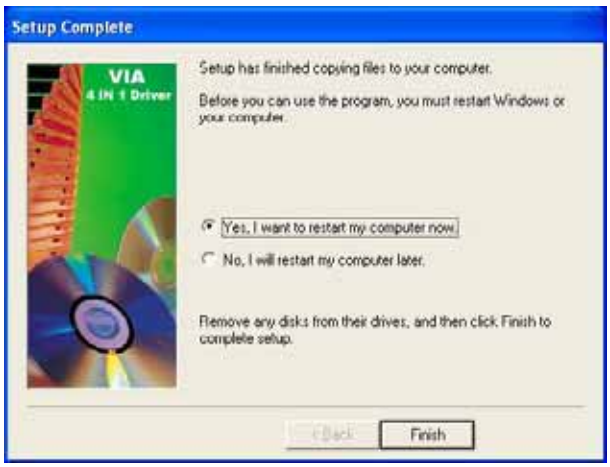


5. Click **Next**.



6. Click **Next**.

7. Click **Next**.



8. Click **Finish**.

VGA Driver Installation

Gladius can be equipped with two VGA chipsets. One for the main LCD panel and the other for an external VGA monitor or second LCD panel. If your Gladius has both VGA chips then both drivers need to be installed even if only one LCD is present.

The two VGA chipsets are:

- VT8606 controller for the first LCD panel.
- C & T 69000 chip set for the external VGA monitor or second LCD panel.

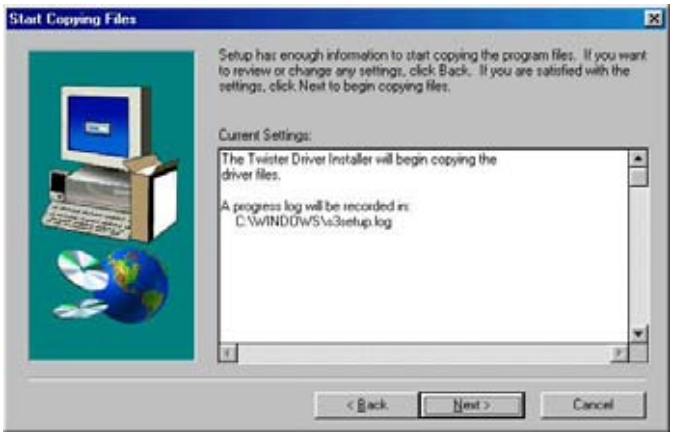
Attention: Install both drivers in Windows.

VT8606 driver installation Windows 98

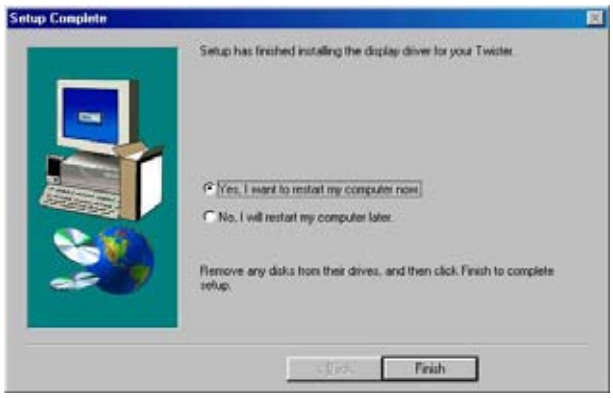
1. Locate the VGA folder on the utilities CD.
2. Open **D:\VGA\VIA\Twister\Win9x** folder
3. Run **Setup.exe**

4. Select **Next** to continue.

.



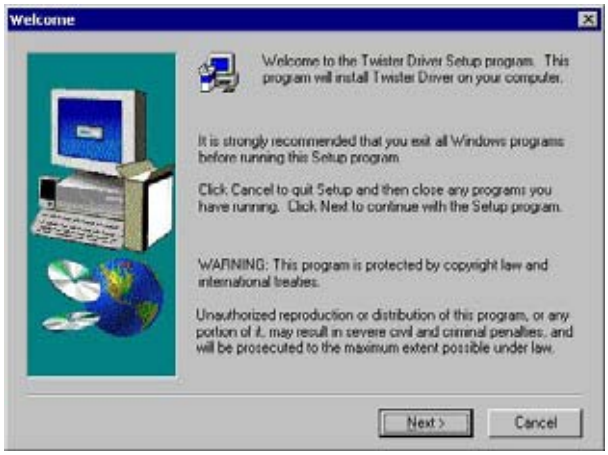
5. Select **Next** to continue.



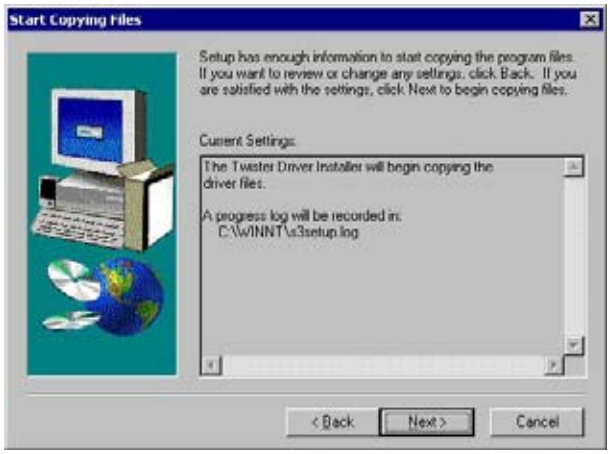
6. Click **Finish** to complete the installation procedure and restart Gladius.

VT8606 driver installation Windows 2000

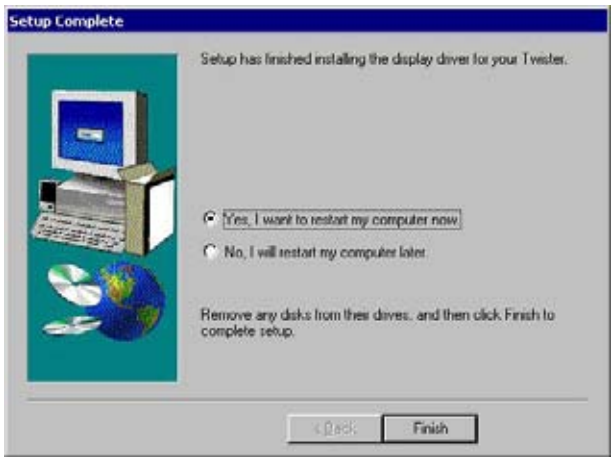
1. Open **D:\VGA\VIA\ Twister\WIN2K&XP** folder.
2. Run **Setup.exe**



3. Select **Next** to continue.



4. Select **Next** to continue.

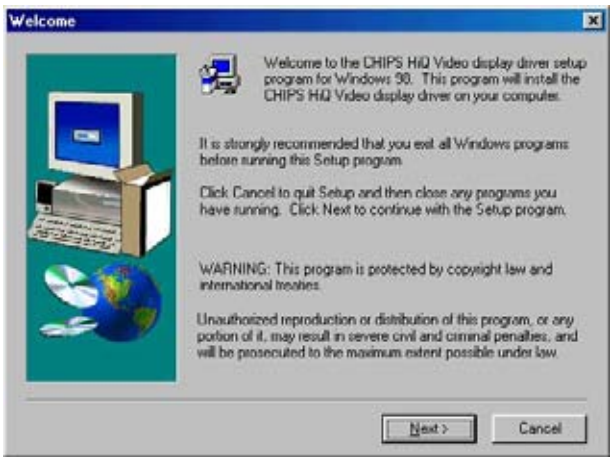


5. Click **Finish** to complete the installation procedure and restart Gladius.

Second LCD Panel Driver

C & T 69000 VGA Driver Installation Windows 98

1. Locate **D:\VGA\C&T\65555-69k\Win98** folder.
   Double click on the **W98600.exe** icon.



2. Click **Next**.

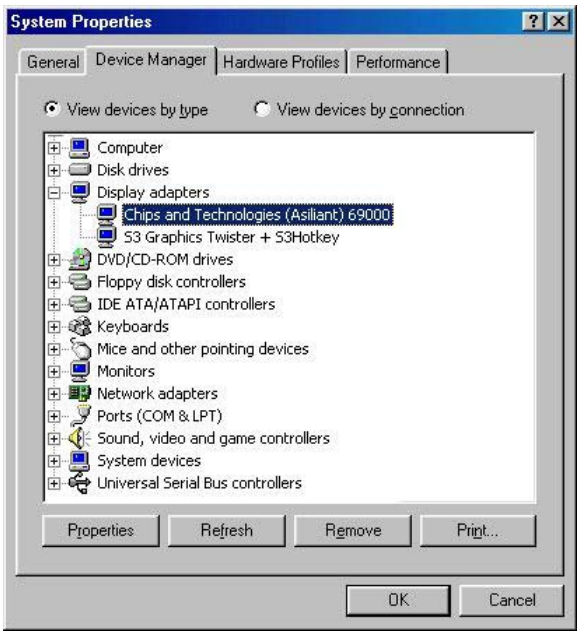
3. Click **Yes**.

4. Select **Yes, I want to restart my computer now** and Click **Finish**.

Enable Second LCD Panel Settings Windows 98

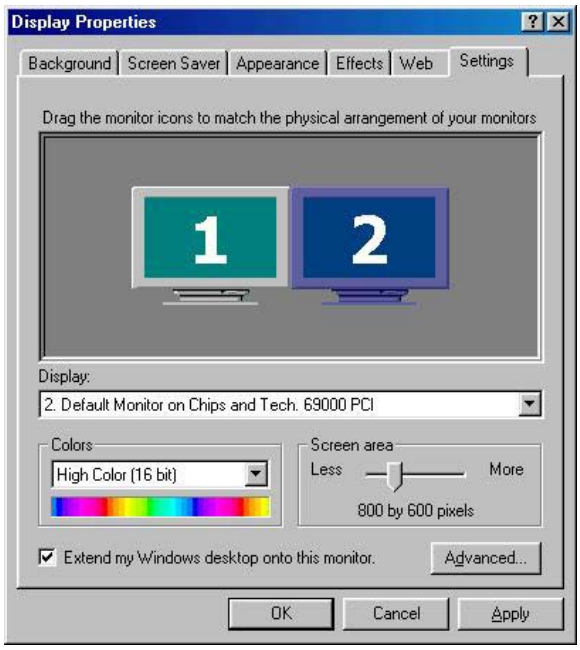
After you have installed the VGA drivers for both the primary LCD panel and second LCD panel you must adjust the settings.

1. Open **Device Manager** in the **System Properties**.
   Select **Chips and Tech 69000 PCI**



   Click **Properties**.

2. Click **Yes** to enable the second LCD monitor.

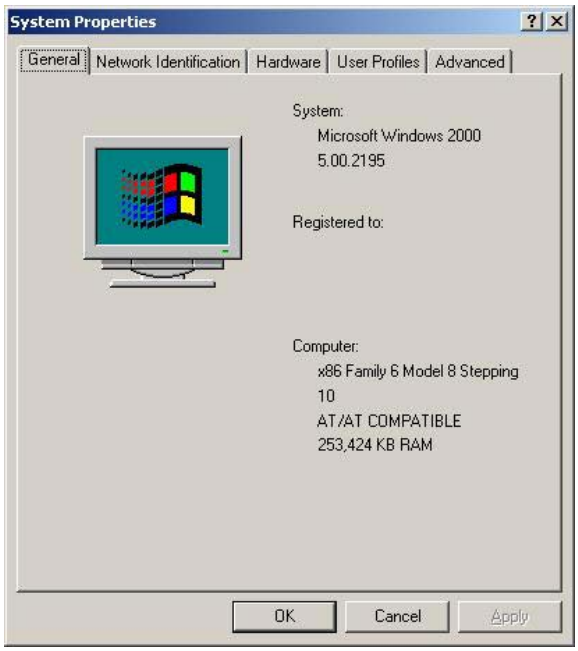


3. Select the **Extend my Windows desktop onto this monitor** box then Click **OK**.

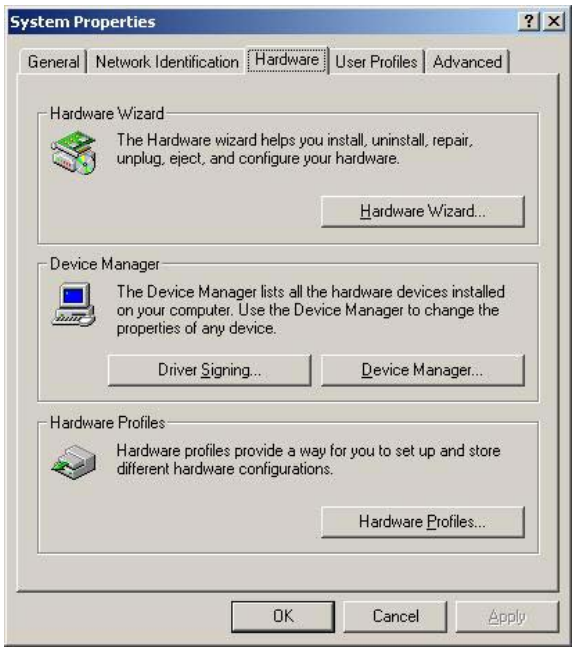
Note: During boot sequence "**No Sync**" will appear on the second LCD panel. The boot sequence can take a minute or so when a second LCD panel is installed.

C & T 69000 VGA Driver Installation Windows 2000

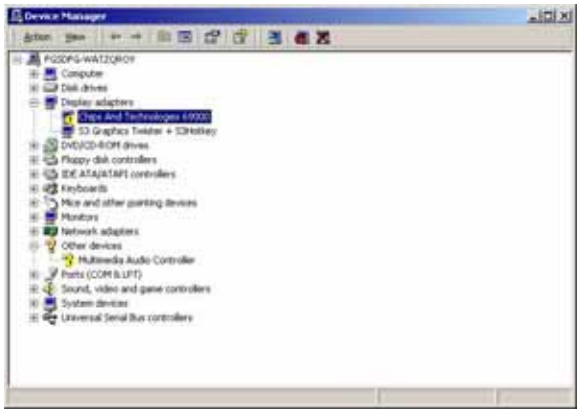
1. On the Gladius Desktop right click **My Computer** and select "**Properties**".



2. Click the **Hardware** tab.

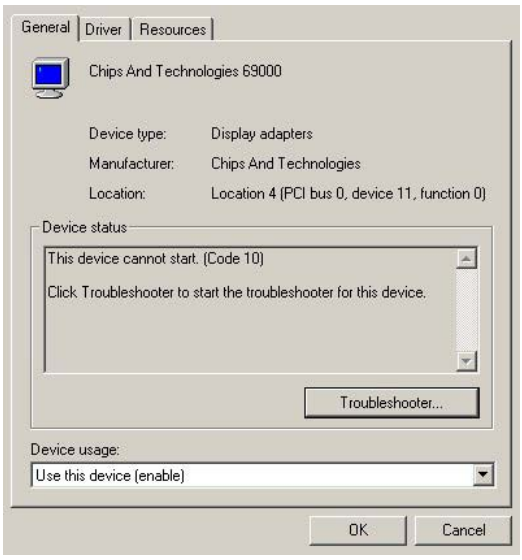


3. Click **Device Manager**.



4. Right click **Chips and Technologies (Asiliant) 69000**.

5. Select **Properties**.

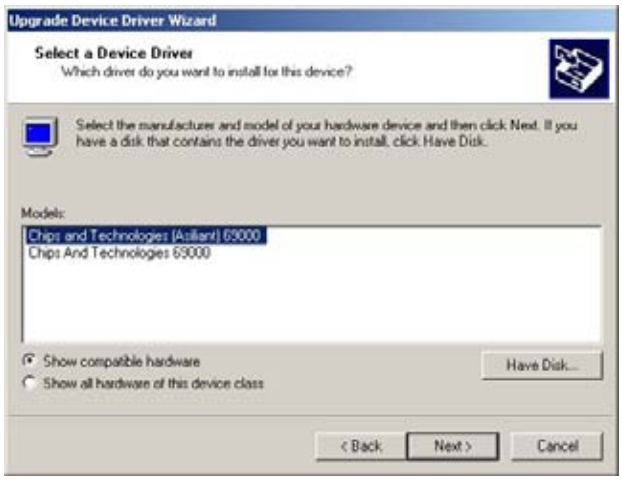


6. Click the **Driver** tab.

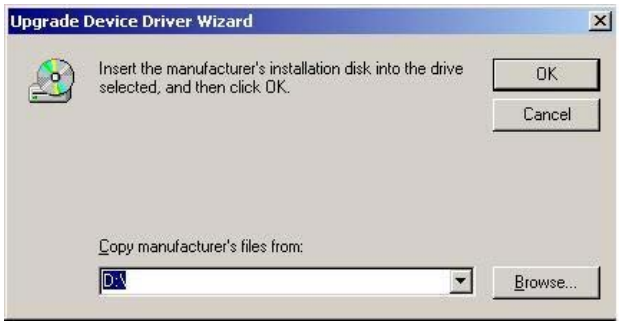
7. Click **Update Driver**.

8. Click **Next**.

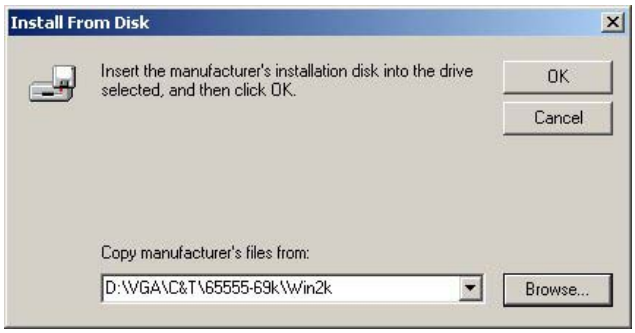
9. Select **Display a list of known drivers for this device so that I can choose a specific driver** and Click **Next**.



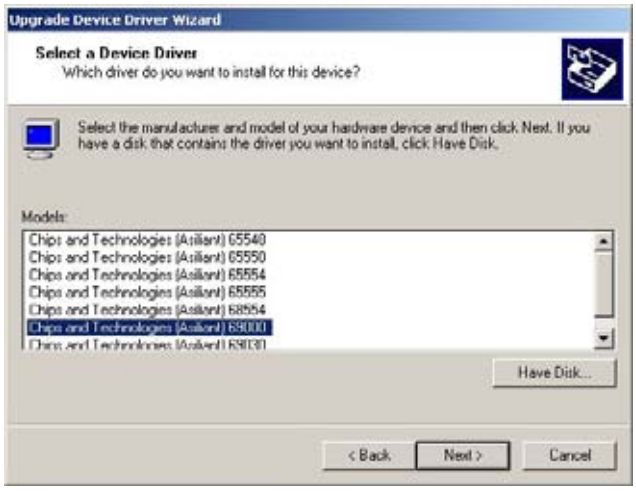
10. Select **Chips and Technology (Asiliant) 69000** then click **Have Disk**.



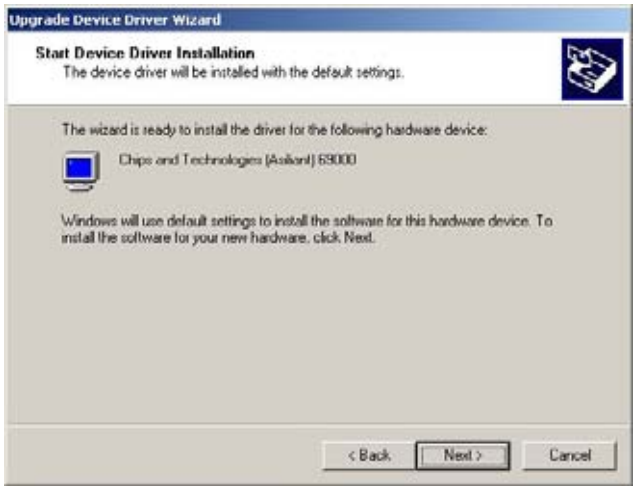
11. Click **Browse**.



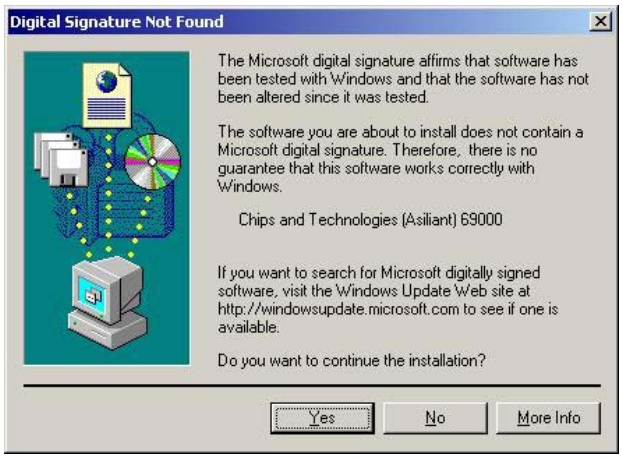
Find **D:\VGA\C&T\65555-69K\Win2k** on the utilities disk then click **OK**.



12. Select **Chips and Technologies (Asiliant) 69000** then click **OK**.



13. Click **Next**.



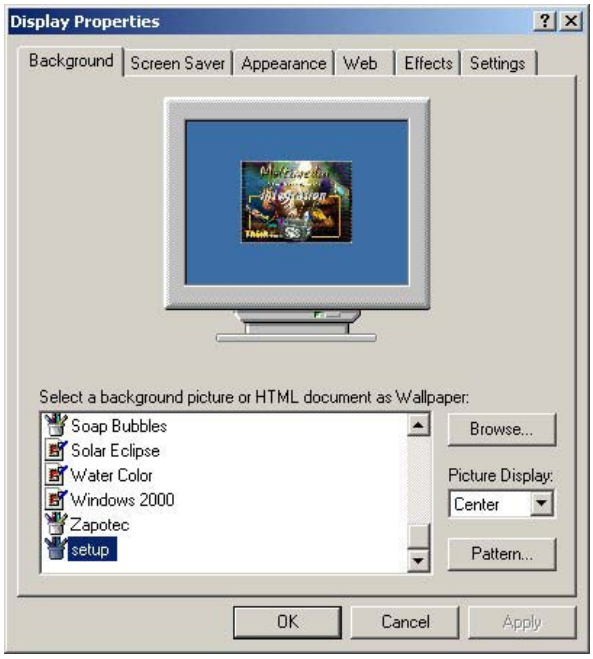
14. Click **Yes**.

15. Click **Finish**.

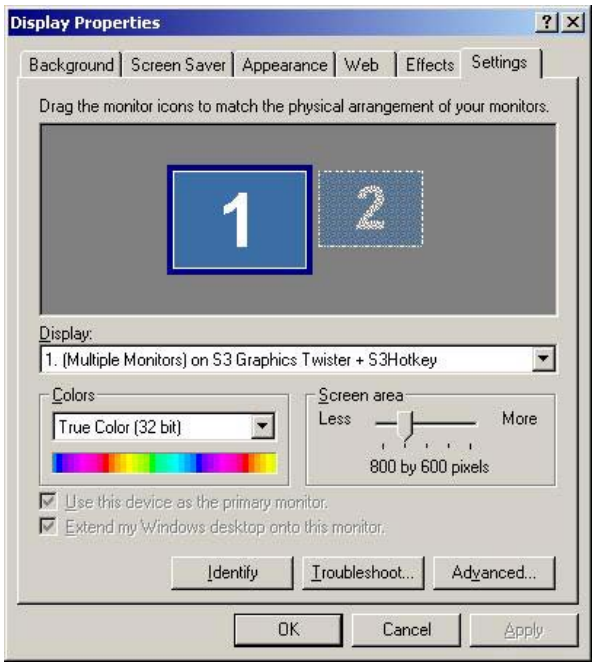
Enable Second LCD Panel Settings Windows 2000

After you have installed the VGA drivers for both the Primary LCD panel and second LCD panel you must adjust the settings.

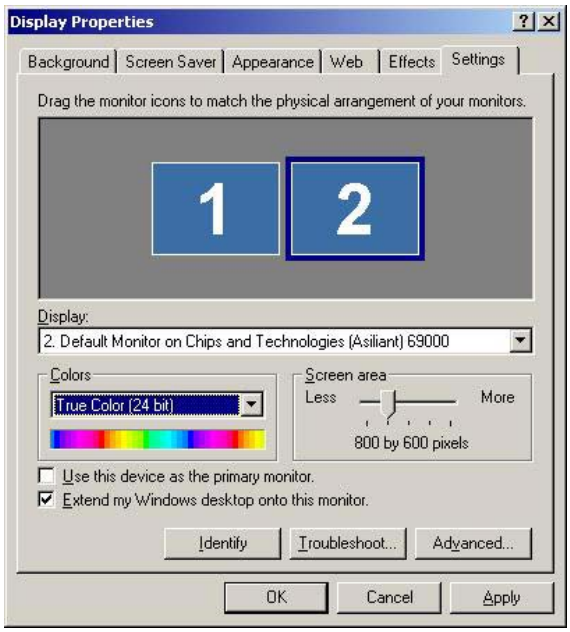
1. Right click your mouse anywhere on the desktop.



2. Click the **Settings** tab.



3. Make sure that for the primary LCD that both **Use this device as the primary monitor** and **Extend my Windows desktop onto this screen** are selected.



4. Select the second LCD panel. This is done either by clicking on the number 2 or selecting from the dropdown menu.

For the second LCD panel make sure that **Extend my Windows desktop onto this monitor** is selected.

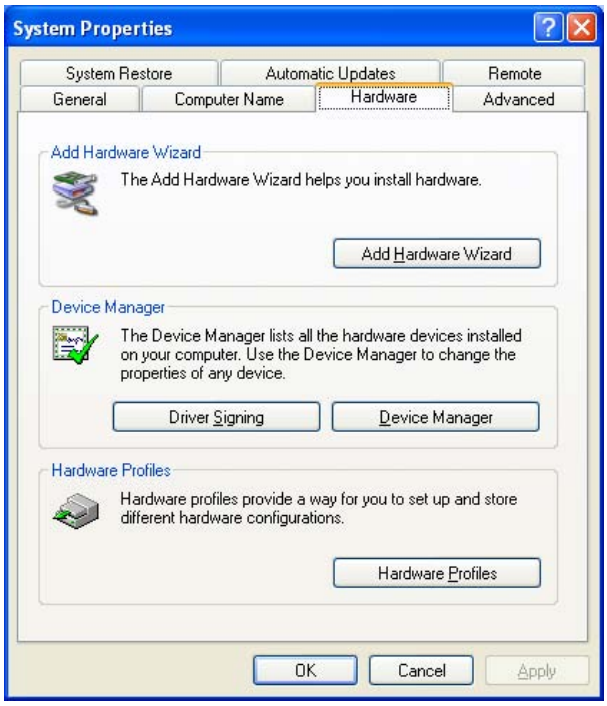
Note. During boot sequence **"No Sync"** will appear on the second LCD panel.

The boot sequence can take a minute or so when a second LCD panel is installed.

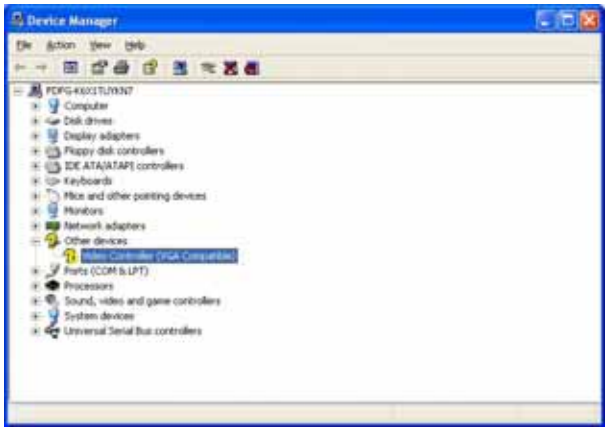
C & T 69000 VGA Driver Installation Windows XP

1. On the Gladius Desktop right click **My Computer**.

2. Click the **Hardware** tab.



3. Click **Device Manager**.

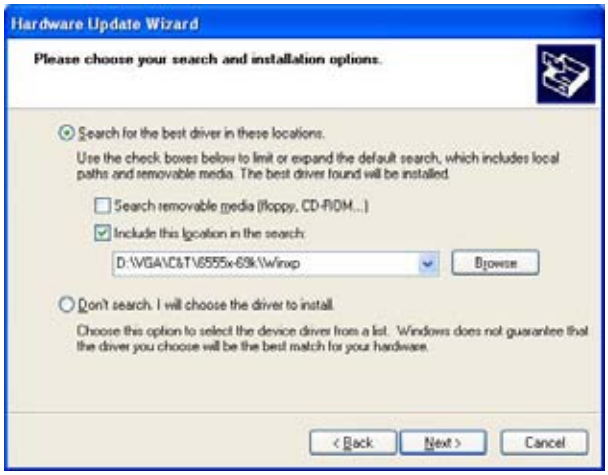


4. Right click **Video Controller (VGA Compatible)**.

5. Select **Properties**.

6. Click **Reinstall Driver.**

7. Click Install from a list or specific location and then click **Next**.



8. Locate **D:\VGA\C&T\6555x-69k\Winxp** and then Click **Next**.

9. Click **Continue Anyway**.

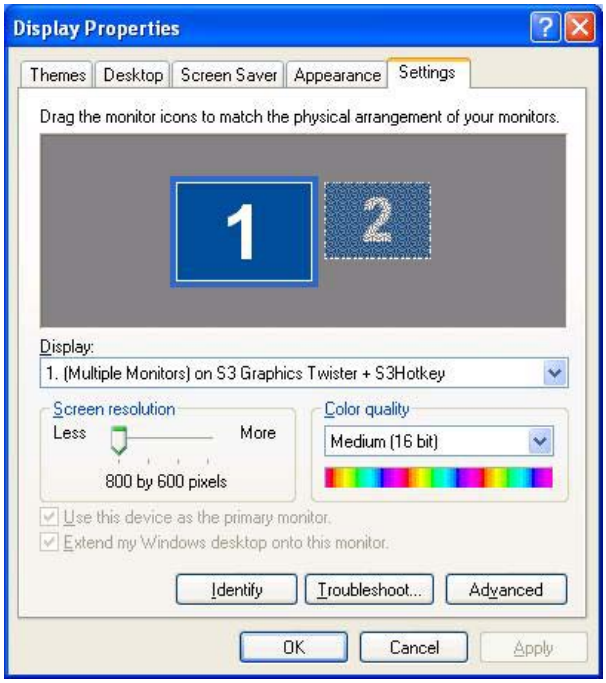
10. Click **Finish**.

Enable Second LCD Panel Settings Windows XP

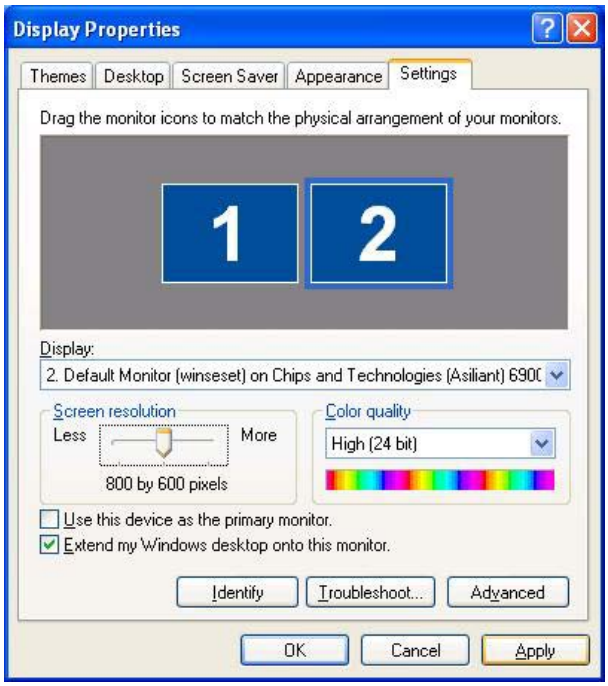
After you have installed the VGA drivers for both the Primary LCD panel and second LCD panel you must adjust the settings.

1. Right click your mouse anywhere on the desktop.

2. Click the **Settings** tab.



3. Make sure that for the primary LCD that both **Use this device as the primary monitor** and **Extend my Windows desktop onto this screen** are selected.



4. Select the second LCD panel. This is done either by clicking on the number 2 or selecting from the dropdown menu.

For the second LCD panel make sure that **Extend my Windows desktop onto this monitor** is selected.

Note. During boot sequence **"No Sync"** will appear on the second LCD panel.

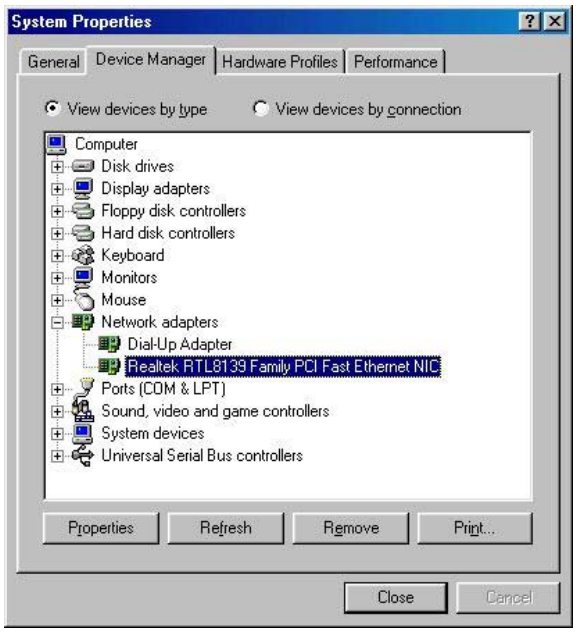
The boot sequence can take a minute or so when a second LCD panel is installed.

LAN Driver Installation

Realtek LAN Driver Installation Windows 98

1. Open **Device Manger** in the System Properties.

Select **PCI Ethernet Controller**.



Click **Properties**.

2. Select the **Driver** tab.

Click **Update Driver**.

3. Click **Next**.

4. Select Search for a better driver then the one your device is using now (Recommended).
Click **Next**.

5. Select **Specify a location:**
Click **Browse**.
Open **D:\LAN\REALTEK\8139C\WIN98**
Click **Next**.

6. Click **Next**.

7. Click **Finish**.

8. Click **Yes** to restart your computer.

Realtek LAN Driver Installation Windows 2000

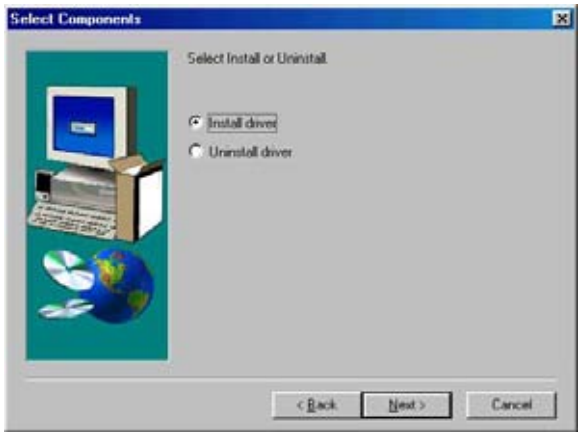
After Windows 2000 is installed the Realtek LAN driver will be automatically installed.

Audio Driver Installation

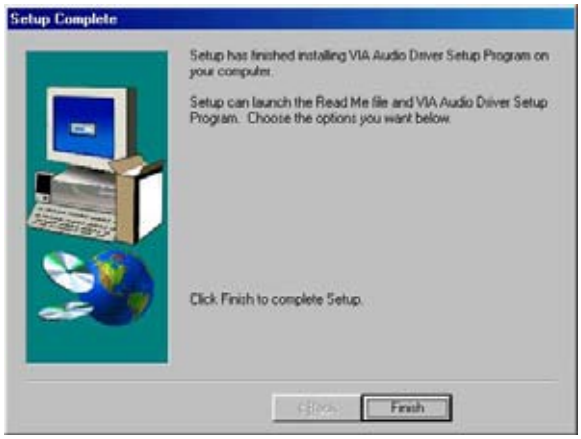
Audio Driver Installation for all Windows Operating Systems

1. Open **D:\AUDIO\VIA\686A_B**
2. Run **Setup.exe**

3. Click **Next**.



4. Click **Next**.



5. Click **Finish**.

USB 2.0 Installation

USB 2.0 Installation for Windows 98 and 2000 Operating Systems (2.0 optional)

1. Locate **D: \USB20\VIA**
2. Run **Setup.exe**

3. Click **Next**.

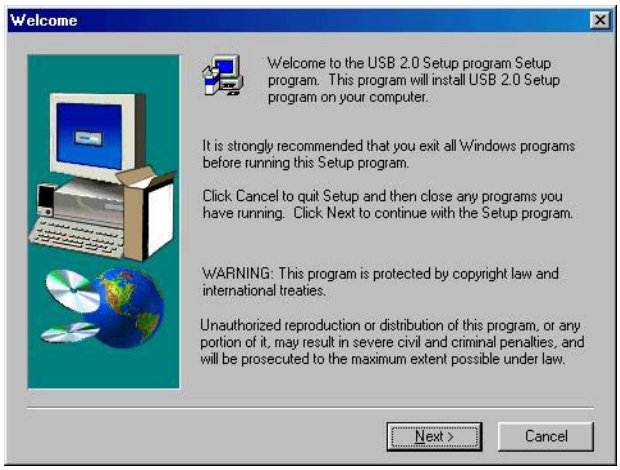
4. Click **Next**.

5. Click **Finish**.

USB 2.0 Installation for Windows XP Operating System (2.0 optional)

1. Locate **D: \USB20\VIA**

2. Run **Setup.exe**

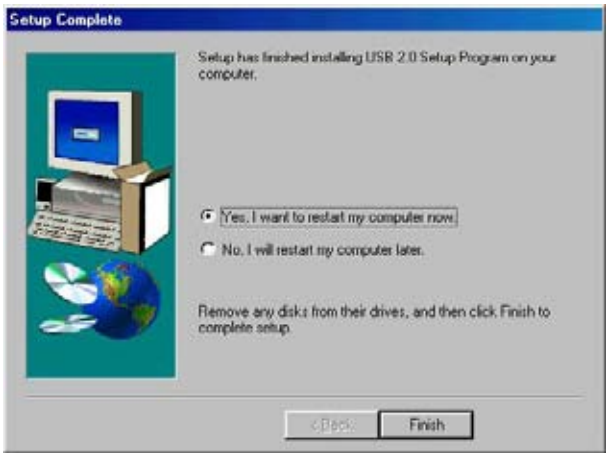


3. Click **Next.**

4. Click **Next**.

5. Click **Yes**.

6. Click **Print to File** then click **Next**.



7. Click **Finish**.

ELO Touch Tools Installation

ELO Touch Tools Installation for all Windows Operating Systems

1. Locate **D:\TOUCHSCREEN**

2. Select the relevant ELO folder for the operating system that you are using.

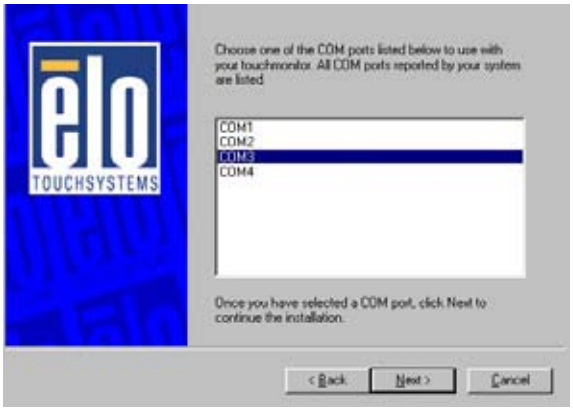
Example. If you are installing for a Windows 98 system, then select **EloWin98**. If you are installing under Windows 2000 or XP then select either **Elo Single Touch 2K_XP** if you have only one touch screen, or **Elo Multi Touch 2K_XP** for a Gladius with 2 touchscreens.

3. Run **Setup.exe**

4. Click **Next**.

5. Read the ***"License Agreement"*** and click **Yes** if you accept it.

6. Select If you have one or two monitors and click **Next**.



7. Select the COM port for the monitor. It is recommended that you select **COM3** for primary touch screen and **COM4** for second touch screen. Press **Next**.

8. Wait until the ELO Touch Tools have been installed.

9. Select **View ELO touch screen control panel** and click **Finish**. Gladius will reboot automatically.

After the system finishes rebooting follow the directions to calibrate ELO Touch Tools.

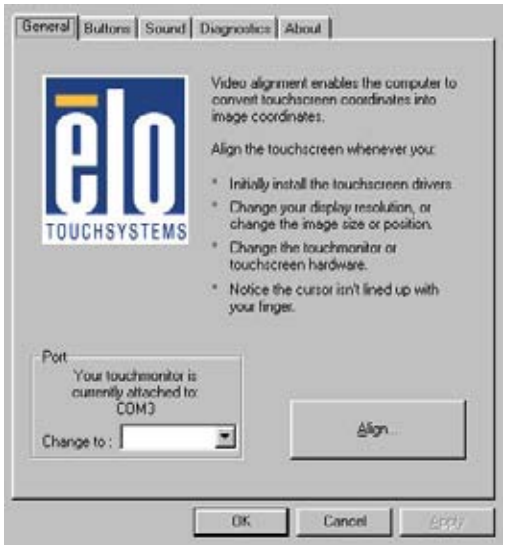
ELO Control Panel

This section explains the different options in the ELO control Panel.

General tab

The general tab allows you to:

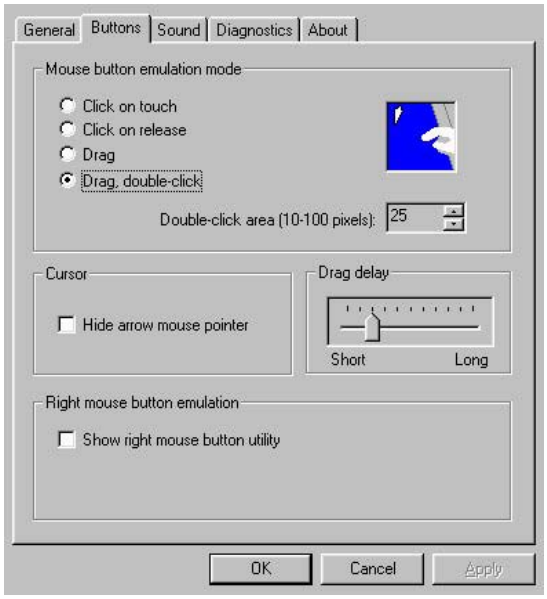
- Change the COM port your touch screen is set to.
- Calibrate the touch screen with the **Align** button.



Buttons tab

The Buttons tab allows you to:

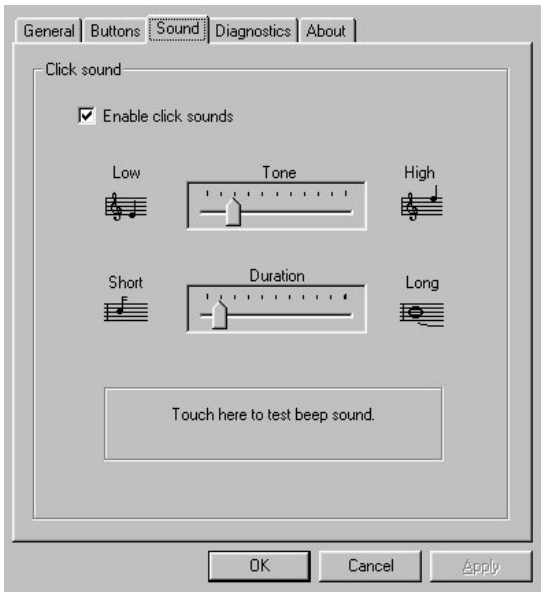
- Adjust all mouse emulation controls.
- Change cursor properties.
- Enable or disable right mouse button utility.



Sound tab

The Sound tab allows you to:

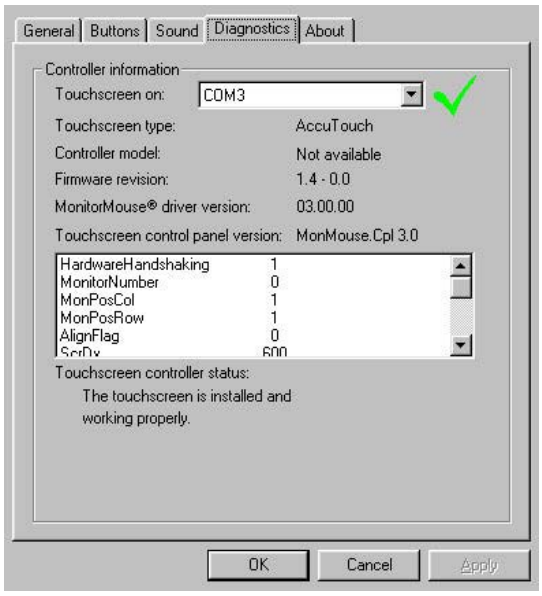
- To change sound properties for ELO touch tools.



Diagnostics tab

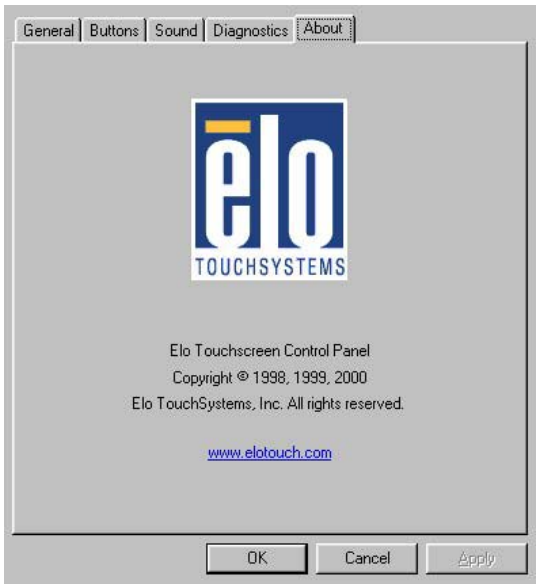
The Diagnostics tab allows you to:

- View Controller Information.



About tab

The About tab displays Information about ELO Touchsystems



Chapter 4

Specifications

System Configuration	
CPU	VIA® C3 EBGA packing (FSB:Supports 100/133MHz).
Chipset	VIA® VT8606 (Integrated 2D/3D graphics accelerator) & VT82C686B.
DRAM	One 168-pin DIMM socket. Maximum memory is 512MB.
Primary SVGA	AGP On chip VT8606 (Share memory up to 32MB RAM) for primary LCD panel.
Secondary SVGA[1]	PCI Onboard C&T69000 (2MB memory) for second LCD panel (NOVA3720DV only).
Primary LCD Panel	12” TFT LCD Panel (800X600).
Primary Touch Panel	12” ELO 5-wire resistive touch panel.
CompactFlash Disk socket	Type II CompactFlash™ Disk. The Flash Disk provides 100% compatibility with IDE hard disk.
HDD	Internal 3.5” 20GB hard disk drive (or above).
Speaker	3 watt pedestal-integrated speaker.
Power	120 watt external power adapter.
I/O Port	
Serial Port	2 User available Com ports (COM1 & COM2). 2 System assigned Com ports (COM3 & COM4). ➢ COM3 for primary touch screen. ➢ COM4 for secondary touch screen or customer character display.
Parallel Port	One Bi-directional Parallel Port Support ECP/EPP (IEEE1284).
USB port	Supports Two USB V1.1 ports for future expansion.(2.0 optional).
Cash drawer port	RJ11 Single/Dual Cashdrawer port ,12V actuation support.
Mouse Port	One PS/2 mouse port.
Keyboard Port	One PS/2 keyboard port.
LAN Port	10/100Mbps Ethernet Controller Realtek RTL8100.
VGA Port	Standard VGA Port for second LCD panel.
CD-ROM Port	Supports 24x Slim type external CD-Rom drive.
Audio Port	Integrated VT1612A PCI, Sound Blaster compatible, AC97.

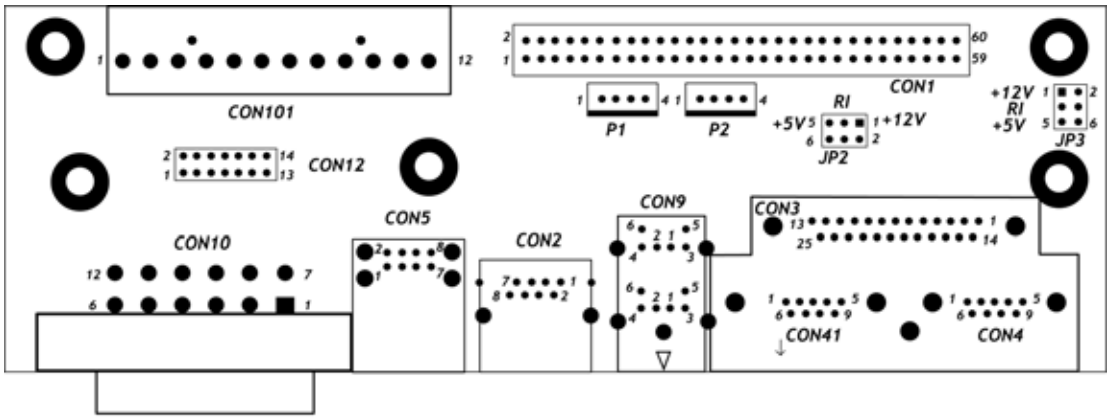
[1] On the NOVA3720SV there is only one VGA chip, VT8606, therefore there is no support for a second LCD panel.

Construction	
	Injection-Molded, Die-cast aluminum enclosure, spill resistance.
Optional Features	
Customer display	Integrated VFD/LCD customer display.
Magnetic card reader	Integrated Single／Dual／Triple Track MCR.
FDD	External USB Floppy disk drive.
CD-ROM	External 24X slim type CD-ROM drive.
Second LCD Panel	Integrated 12” TFT LCD Panel. Note. Gladius must have mainboard Nova-3720 DV installed to use a second LCD panel.
Second Touch Panel	12” ELO 5-wire resistive touch panel. Gladius must have the Nova-3720 DV mainboard installed to be able to use a second LCD touch panel.
Power Consumption	
	40-50W Idle (Standard system & secondary LCD panel while accessing HDD)

I/O board Configuration

The main I/O board 9000PB0090 covers the primary I/O ports to the mainboard. Including: DC power input, COM1 and COM2, LPT1, PS/2 keyboard, PS/2 mouse, audio, USB and LAN port.

9000PB0090 I/O Board Pin Definition



CON101 ***System DC power connector***

PIN No.	Description
1	DC +12V
2	+5SB
3	NC
4	GND
5	NC
6	GND
7	DC +5V
8	DC +5V
9	NC
10	GND
11	GND
12	PSON

CON10 ***DC power connector for Mainboard***

PIN No.	Description
1	DC +12V
2	+5SB
3	NC
4	GND
5	NC
6	GND
7	DC +5V

8	DC +5V
9	NC
10	GND
11	GND
12	PSON

CON3 ***parallel port LPT1 D-SUB25 connector***

PIN No.	Description	PIN No.	Description
1	PRT_STB#	**2**	PRT_D0
3	PRT_D1	**4**	PRT_D2
5	PRT_D3	**6**	PRT_D4
7	PRT_D5	**8**	PRT_D6
9	PRT_D7	**10**	PRT_ACK#
11	PRT_BUSY	**12**	PRT_PE
13	PRT_SLCT	**14**	PRT_AED#
15	PRT_ERR#	**16**	PRT_INIT#
17	PRT_SLIN	**18**	GND
19	GND	**20**	GND
21	GND	**22**	GND
23	GND	**24**	GND
25	GND		

CN10 ***PS/2 keyboard connector***

PIN No.	Description
1	KB-DATA
2	NC
3	GND
4	+5V
5	KB-CLK
6	NC

CON8 ***PS/2 mouse connector***

PIN No.	Description
1	Mouse_DATA
2	NC
3	GND
4	+5V
5	Mouse_CLK
6	NC

CON13 ***Audio line output EAR connector***

PIN No.	DESCRIPTION
1	EAROUT-L
2	GND
3	EAROUT-R

CON2 ***RJ45 LAN connector***

PIN No.	Description
1	LAN_TX+
2	LAN_TX-
3	LAN_RX+
4	LAN_L45
5	LAN_L45
6	LAN_RX-
7	LAN_L78
8	LAN_L78

CON4&CON41 ***RS232 port COM1 and COM2 D-SUB connector***

PIN No.	Description
1	DCD
2	SIN
3	SOUT
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI/DC output (RI is the default setting)

Pin9 signal can be selected as standard RI or DC power output depending on the JP2 and JP3 jumper settings. The default settings are for RI.

Attention: For devices using external power supplies and connected through Pin9 of COM1 or COM2, JP2 and JP3 should be open.

JP3	Description
1-2	PIN9 of COM1=DC +12V
3-4	PIN9 of COM1=RI (Default setting)
5-6	PIN9 of COM1=DC +5V

JP2	Description
1-2	PIN9 of COM2=DC +12V

3-4	PIN9 of COM1=RI (Default setting)
5-6	PIN9 of COM2=DC +5V

CON5 ***USB port***

PIN No.	Description	PIN No.	Description
1	+5V	**2**	+5V
3	USB_0-	**4**	USB_1-
5	USB_0+	**6**	USB_1+
7	GND	**8**	GND

CON1 ***I/O Bus connector***

PIN No.	Description	PIN No.	Description
1	EAROUT_L	**2**	DIO_IN00
3	DIO_OUT01	**4**	DIO_OUT00
5	COM4_DTR	**6**	COM4_DSR
7	COM4_RTS	**8**	COM4_CTS
9	EAROUT_R	**10**	COM4_SOUT
11	COM2_CTS	**12**	COM2_RI
13	COM2_DSR	**14**	COM2_RTS
15	COM2_SOUT	**16**	COM2_DTR
17	COM2_DCD	**18**	COM2_SIN
19	COM1_CTS	**20**	COM1_RI
21	COM1_DSR	**22**	COM1_RTS
23	COM1_SOUT	**24**	COM1_DTR
25	COM1_DCD	**26**	COM1_SIN
27	PC_CLK	**28**	PC_DATA
29	MOUSE_CLK	**30**	MOUSE_DATA
31	USB_1+	**32**	USB_1-
33	USB_0+	**34**	USB_0-
35	COM4_SIN	**36**	PRT_STB#
37	PRT_D0	**38**	PRT_D1
39	PRT_D2	**40**	PRT_D3
41	PRT_D4	**42**	PRT_D5
43	PRT_D6	**44**	PRT_D7
45	PRT_ACK#	**46**	PRT_PE
47	PRT_BUSY	**48**	PRT_SLCT
49	PRT_AED#	**50**	PRT_ERR#
51	PRT_INIT#	**52**	PRT_SLIN
53	LAN_L78	**54**	LAN_L78

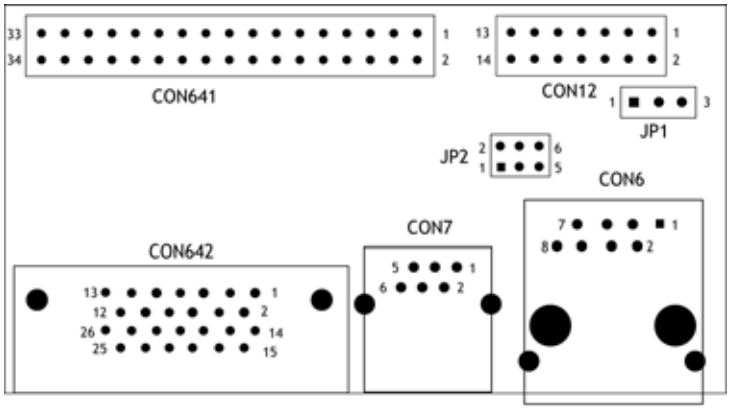
55	LAN_L45	**56**	LAN_L45
57	LAN_TX+	**58**	LAN_RX+
59	LAN_TX-	**60**	LAN_TX+

CON12 ***COM4, Digit I/O signal and DC power connector***

A 14 wire cable connects to 9000PB0100 secondary I/O board CN8, this supplies single and power for the VFD customer display and Cash Drawer.

PIN No.	Description	PIN NO	Description
1	DIO_OUT00	2	COM4_CTS
3	DIO_OUT01	4	COM4_SIN
5	DIO_IN00	6	COM4_OUT
7	+5V	8	COM4_RTS
9	+5V	10	COM4_DTR
11	+12V	12	COM4_DSR
13	+12V	14	GND

9000PB0100 I/O Board Pin Definition



9000PB0100

9000PB0100 secondary I/O board includes EXT FDD port, Cash drawer, and COM4/VFD ports.

CON6

Com4 uses the RJ-45 connector to accept VFD customer display. If the customer display is not required, this port may function as an RS-232C port. An adapter cable to convert RJ-45 to DB-9 may be obtained from your supplier. Jumpers on the circuit board must also be reconfigured as shown in the figure.

Mode1 RJ45 connector used for VFD (factory default setting)

JP1	
1-2	Short

JP2	
1-2	Short
3-5	Short
4-6	Short

PIN No.	Description
1	COM4_SIN
2	COM4_SOUT
3	COM4_DSR
4	COM4_DTR
5	GND
6	GND
7	+12V
8	+12V

Mode2 RJ45 connector used for RS232 device

JP1	
2-3	Short

JP2	
1-3	Short
2-4	Short

PIN No.	Description
1	COM4_SIN
2	COM4_SOUT
3	COM4_DSR
4	COM4_DTR
5	COM4_RTS
6	GND
7	COM4_CTS
8	+5V

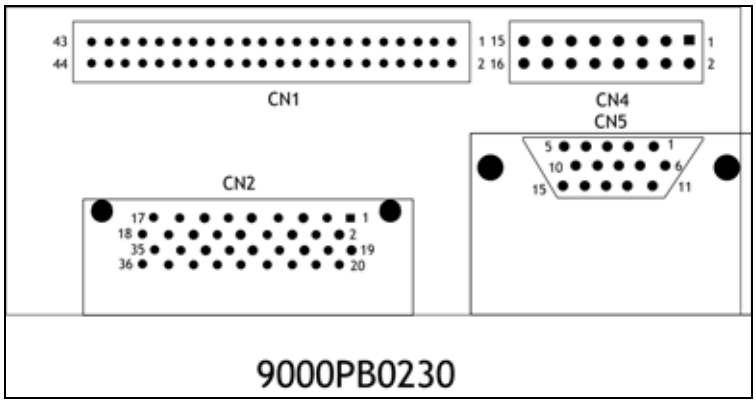
CON7 ***Cash drawer RJ11 connector***

PIN No.	DESCRIPTION
1	FG
2	L1-
3	SW+
4	DC +12V (L1+/L2+)
5	L2-
6	SW-

CON642 ***Floppy Disk Driver Connector***

PIN No.	Description	PIN No.	Description
1	REDECE_WRITE	2	TRACKO#
3	NC	4	WRITE PROTECT#
5	NC	6	READ DATA#
7	INDEX#	8	SIDE SELECT#
9	MOTOR ENABLE B#	10	DISK CHANGE#
11	DRIVE SELECT A#	12	GND
13	DRIVE SELECT B#	14	GND
15	MOTOR ENABLE B#	16	NC
17	DIRECTION#	18	GND
19	STEP#	20	GND
21	WRITE DATA#	22	+5V
23	WRITE GATE#	24	+5V
25	GND	26	+5V

9000PB0230 I/O Board Pin Definition



9000PB0230 Third I/O board includes external CD ROM and VGA port.

CN2 ***External CD ROM connector***

PIN No	Description	PIN No	Description
1	IDE RESET	**2**	GND
3	DATA7	**4**	DATA8
5	DATA6	**6**	DATA9
7	DATA5	**8**	DATA10
9	DATA4	**10**	DATA11
11	DATA3	**12**	DATA12
13	DATA2	**14**	DATA13
15	DATA1	**16**	DATA14
17	DATA0	**18**	DATA15
19	GND	**20**	GND
21	IO WRITE	**22**	ADDR2
23	IO READ	**24**	ADDR1
25	HD READY	**26**	ADDR0
27	IRQ14	**28**	HDD SELECT0
29	GND	**30**	HDD SELECT1
31	VCC	**32**	VCC
33	LINE-L	**34**	VCC
35	GND	**36**	LINE-R

CN5 ***VGA connector***

PIN No.	Description
1	RED
2	GREEN

3	BLUE
4	NC
5	GND
6	GND
7	GND
8	GND
9	NC
10	GND
11	NC
12	SM DATA
13	SM CLK
14	V-SYNC
15	H-SYNC

CN1 ***44PIN 2.00mm IDE connector connects to the mainboard secondary IDE connector CN3***

PIN No.	Description	PIN No.	Description
1	RESET#	**2**	GND
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	GND	**20**	N/C
21	IDE DRQ	**22**	GND
23	IOW#	**24**	GND
25	IOR#	**26**	GND
27	IDE CHRDY	**28**	GND
29	IDE DACK	**30**	GND
31	INTERRUPT	**32**	N/C
33	SA 1	**34**	N/C
35	SA 0	**36**	SA 2
37	HDC CS0#	**38**	HDC CS1#
39	HDD ACTIVE#	**40**	GND
41	+5V	**42**	+5V
43	GND	**44**	+5V

CN4 ***VGA 2x8 PIN header connector connects to the mainboard CN6***

PIN No.	Description
1	RED
2	GREEN
3	BLUE
4	NC
5	GND
6	GND
7	GND
8	GND
9	NC
10	GND
11	NC
12	SM DATA
13	SM CLK
14	V-SYNC
15	H-SYNC

Chapter 5

Troubleshooting

Please note that the following troubleshooting guide is designed for people with strong computer hardware knowledge such as System Administrators and Engineers.

Power is on, but there is no Panel Display

A) Check that the external power adapter LED is on when the power adapter power switch is in the on position.
Ensure that the correct AC voltage is selected (the voltage switch is located beside the power switch).

B) Check that the Power and CPU fans are running when system power is on.

B-1) Check whether the ATX power switch cable is properly connected to mainboard CN26 (Please refer to page9 and page16 in the NOVA3720 User's guide).

B-2) Check that the power cable is connected properly between 9000PB0090 primary I/O board CON101 and mainboard CN12.

C) Please ensure that the IDE cable is properly connected to the HDD and the red stripe on the ribbon cable should align with PIN1 on the IDE connector of HDD.

D) Reset CMOS DATA by shorting mainboard JP5 PIN1 and PIN2 for a few seconds (Please refer to page11 in the NOVA3720 User's guide).

E) Check if the system is beeping.

E-1) A single long repeated beep indicates that a DRAM error has occurred. Make sure DRAM is properly installed or replace DRAM.

E-2) One short beep after power on, means system is ok, but LCD panel or VGA interface could be defective.

E-2-1) INIT display should be set for AGP in the CMOS setup.

E-2-2) LVDS board connection to mainboard CN5 could be defective.

E-2-3) The connection between the LVDS board and the LCD panel connector not connected properly.

E-2-4) The 1st LCD connector board could be defective.

E-2-5) The connection between the 1st LCD connector board and the LCD panel is not connected properly or LCD cable could be defective.

E-2-6) The Inverter cannot produce backlight.

E-2-7) The LCD panel could be defective.

To check where the problem could be:

Please move the VGA cable from the mainboard VGA1 to CN3, and connect the CRT VGA monitor to the external VGA port. If the CRT monitor display is normal, one of the problems above is occurring, otherwise it could be the mainboard is not functioning properly.

Cannot Detect HDD

A) IDE cable is not connected properly to mainboard CN19 or it could be defective.

B) HDD power cable is not connected properly to the I/O board or it could be defective.

C) Check CMOS setup, set IDE HDD to Auto detects.

D) On-board IDE port could be defective.

Touch Panel Does not Work

A) Check CMOS settings, COM3 needs to be “Enabled”. The correct settings are “3E8h” and “IRQ10”.

B) Check that there are no conflicts between COM3 IRQ10 and any other devices.

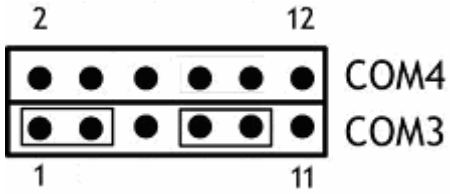
C) Check that the ELO driver has been properly installed. Or try to re-install again (Please refer to the ELO driver installation).

D) Check that the ELO controller on COM3 has been detected during the ELO driver installation. If yes, than check that the flat cable from the ELO touch screen has been properly connected to the ELO controller (**Attention:** Pin1 mark should be on the same side as the ELO controller).

E) Check that the ELO controller Green LED is blinking?

If no, there is no DC+5V support for the ELO controller from the mainboard.

E-1) Check the mainboard JP3 jumper settings. The correct jumper settings for the primary Touch screen are:



E-2) Check that the COM3 cable is properly connected between mainboard CN23 and the Touch screen controller.

F) Touch screen controller could be defective or the touch panel could be defective.

ELO Touch Panel Cannot Calibrate Correctly

A) Please replace the ELO controller, and re-calibrate. If this works, change back to the original ELO controller, and re-calibrate.

B) If the ELO touch panel still cannot calibrate correctly after changing to a new ELO controller, the touch panel may be not installed properly or it could be defective.

PS/2 Keyboard is not Functioning Normally

A) Make sure the keyboard is properly connected to the PS/2 keyboard port before the system is powered up. If the keyboard is connected after Windows2000 has been booted, the keyboard will not work.

B) Check that the LED on the keyboard goes on then off after power on. If yes, the keyboard is getting power correctly. If not, the F3 fuse on the 9000PB0090 primary I/O board could be faulty.

C) If the MCR is not required. Please make sure the loopback is plugged into the MCR connector board.

D) Check that the 6 wire cable has been properly connected between the MCR connector board and mainboard CN20.

The mainboard CN20 cable can be removed. Then short PINs 2-3 and PINs 4-5 If the keyboard still does not work, then check next step. Otherwise, the cable or MCR connector board could be defective.

E) Check that the 60PIN I/O bus cable is properly connected.

F) The mainboard could be defective.

MCR is not Functioning Properly

A) Check if the green MCR LED is on.

A-1) Check if the MCR is properly connected to the MCR connector board on main system.

A-2) Make sure the 6 wire cable is properly connected between mainboard CN20 and the MCR connector board.

A-3) The MCR connector board could be defective.

A-4) The MCR module could be defective.

B) If a keyboard is connected to the PS/2 keyboard port, and functions correctly, then the MCR module could be defective.

C) For an MCR to work under Windows2000, the keyboard must be connected prior to booting the system.

VFD Display is not Functioning Properly

A) Ensure that COM4 is enabled in the CMOS setup, and data is written to COM4 in the application.

B) Check if there is any display when system power is ON, if the screen is blank, please follow the steps below.

B-1) Make sure the power switch on the VFD display is on before powering the main system.

B-2) Make sure that the 9000PB0100 secondary I/O board JP1 & JP2 jumper settings are correct.

The proper settings are:**JP1 PINs 1-2 shorted**

JP2 PINs 1-2, PINs 3-5 and PINs 4-6 shorted

B-3) Fuse F1 on the 9000PB0100 secondary I/O board could be faulty.

C) Check if the 14pin cable is properly connected between 9000PB0100 secondary I/O

board CON12 and 9000PB0090 primary I/O board CON12.

D) The 9000PB0090 primary I/O board or 9000PB0100 secondary I/O board could be defective.

E) The on-board COM4 I/O chips could be defective.

External CD-ROM is not Functioning Properly

A) Make sure IDE2 is set to “AUTO” in the CMOS setup.

B) If compact flash memory is installed, remove it and try again.

C) Make sure the CD-ROM cable is properly connected to the CD-ROM port of I/O panel and the CD-ROM drive. This must be done with the system power off.

D) Check that the 44pin cable is properly connected between 9000PB0230 third I/O board CN1and mainboard CN2.

E) The CD-ROM could be defective.

F) The 9000PB0230 third I/O board could be defective.

G) The on board IDE2 port could be defective.

LAN is not Functioning Properly

A) Check if the LAN driver is installed properly. (Please refer to the LAN driver installation).

B) Check if there are any IRQ conflicts.

C) Check if the RJ45 twisted pair cable is properly connected.

D) Check if the 60pin I/O bus cable is properly connected.

E) The 9000PB0090 primary I/O board could be defective.

F) The on board LAN chip could be defective.

COM1, COM2 and LPT1 are not Functioning Properly

A) Check if the I/O ports are enabled in the CMOS setup.

B) Check if there are any IRQ conflicts.

C) Check if the 60pin I/O bus cable is properly connected.

D) The 9000PB0090 primary I/O board could be defective.

E) The mainboard could be defective.

Cash Drawer Port is not Functioning Properly

A) Make sure the pin assignment matches between the cash drawer and the RJ11 cash drawer port.

B) Use the supplied cash drawer utility program to test the digital i/o port is functioning. Check that Pins 2 & 5 of the RJ11 connector go low (gnd) when cash drawer 1 & 2 are exercised.

C) Check if the 60pin I/O bus cable is properly connected.

D) Check that the 14PIN cable is properly connected between 9000PB0090 primary I/O board CON12 and 9000PB0100 secondary I/O board CON2.

E) The 9000PB0090 primary I/O board or 9000PB0100 secondary I/O board could be defective.

F) The mainboard could be defective.

USB device is not Functioning Properly

A) Ensure that the USB controller is “enabled” in the CMOS setup.

B) Check if the 60pin I/O bus cable is properly connected.

C) Fuse F2 on the 9000PB0090 primary I/O board could be faulty. If so no power can supply the USB port.

D) The mainboard or 9000PB0090 primary I/O board could be defective.

External FDD is not Functioning Properly

A) Please make sure the Drive A in the CMOS setup are enabled for 1.44MB.

B) Make sure the FDD cable is properly connected to the FDD port on primary connector panel and FDD driver. This must be done with the system power off.

C) Check that the 34pin cable is properly connected between 9000PB0230 second I/O board CON641 and mainboard CN8.

D) The mainboard FDD controller could be defective.

E) The fuse1 on 9000PB0230 I/O board could be defective.

F) The 9000PB0230 I/O board could be defective.