SOM-2354

**Geode™ GX533 SOM 144
System On Module**

User Manual

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This manual is for SOM-2354

Part No. 2006235400

1st Edition, Printed in Taiwan Dec. 2004

Packing list

Before you begin installing your card, please make sure that the following materials have been shipped:

• 1 SOM-2354 System On Module CPU module

• CD-ROM or Disks for utility, drivers, and manual (in PDF format)

If any of these items are missing or damaged, contact your distributor or sales representative immediately.

FCC

This device complies with the requirements in 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

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 when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this device in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense. The user is advised that any equipment changes or modifications not expressly approved by the party responsible for compliance would void the compliance to FCC regulations and therefore, the user's authority to operate the equipment.

Caution!

There is a danger of a new battery exploding if it is incorrectly installed. Do not attempt to recharge, force open, or heat the battery. Replace the battery only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

Contents

General Information

This chapter provides background information for the SOM-2354.

Sections include:

- Card specifications

- Board layout

Chapter 1 General Information

1.1 Introduction

Advantech's new SOM 144 Module, the SOM-2354, a Geode GX1 system on module comes equipped with 64M SDRAM , a VGA interface which supports CRT monitor with up to 4MB display memory, two USB interfaces, IrDA interfaces, AC 97 interfaces, a 10/100 base-T Ethernet interface (for SOM-2354) and a Compact Flash solid state disk socket (for SOM-2354). In addition, it is equipped with two RS-232 serial ports. One bi-directional printer port supports SPP, ECP and EPP modes. Three master PCI interfaces, an IDE HDD interface and a floppy disk controller provide functional expansion. With its industrial grade reliability, the SOM-2354 can operate continuously at temperatures up to 140° F (60° C). This compact unit offers all these functions within the space of a 2.5" hard disk drive (68mm * 100mm). The numerous features provide an ideal price/performance solution for high-end commercial and industrial applications where stability and reliability are essential. The SOM-2354 is compact; highly integrated; and easy to maintain, upgrade, and install. These features make it ideal for applications of small industrial controller, Panel PC, security system, Internet gateway, instruments, medical equipment, building automation and so on.

1.2 Specifications

CPU: On-board AMD TM Geode TM GX533-400 MHz processor

Chipset: AMD CS 5535

BIOS: Insyde 256KB FLASH BIOS

RAM memory: 128 MB DDR DRAM on board.

SSD: CompactFlash socket

PCI/IDE/ Serial port /USB/AC97/KB/Mouse (SODIMM socket):

I/O expansion: 3 master PCI bus (3.3V PCI)

Enhanced IDE hard disk drive interface:

Supports up to two hard disk drives. BIOS auto-detect. (DMA33)

Serial ports: Support two serial ports ,TTL signal

PS/2 Keyboard and PS/2 Mouse

Universal Serial Bus:

Two independent USB interfaces (OpenHCI, Rev. 1.0) specification compliant

AC97 codec interface:

AC97 Specification Revision 1.3, 2.0, and 2.1 compliant interface.

VGA/Ethernet/IrDA/FDD/Printer/ATX Power (front-end connector):

VGA:

2D Graphics Accelerator, supports VGA and VESA

Display memory: up to 16 MB share memory

Supports up to 1024x268 @ 24 bpp (60 Hz)

10/100 Base T Ethernet interface: controller Intel 82551ER (SOM 2354 only)

Infrared: Supports IrDA version 1.0 SIR (115.2kbps)

Supports ATX power supply

Floppy disk drive interface/Multi-mode parallel port:

FDD interface and parallel port share the same bus either FDD or Parallel port can be used at one time.

FDD interface supports up to two floppy disk drives

Parallel supports SPP, ECP and EPP.

Power management: Supports power saving modes including Normal/Doze/Sleep modes. APM 1.1 compliant

40 Pin FPC connector: 24 bit LCD signal output

Note: All interfaces are compliant with SOM 144 Speci-fication and Design Guide Rev 1.0

1.2.1 Mechanical and Environmental

Power supply voltage: +5 V± 5%

Power requirements: Max. : 5 V @ 1.4 A
                         Typical: 5 V @ 1A

Operating temperature: 32 to 140° F (0 to 60° C), fanless operation

Board Size: 68 mm x 100 mm

Weight: 0.07 Kg

1.3 Board layout: dimensions
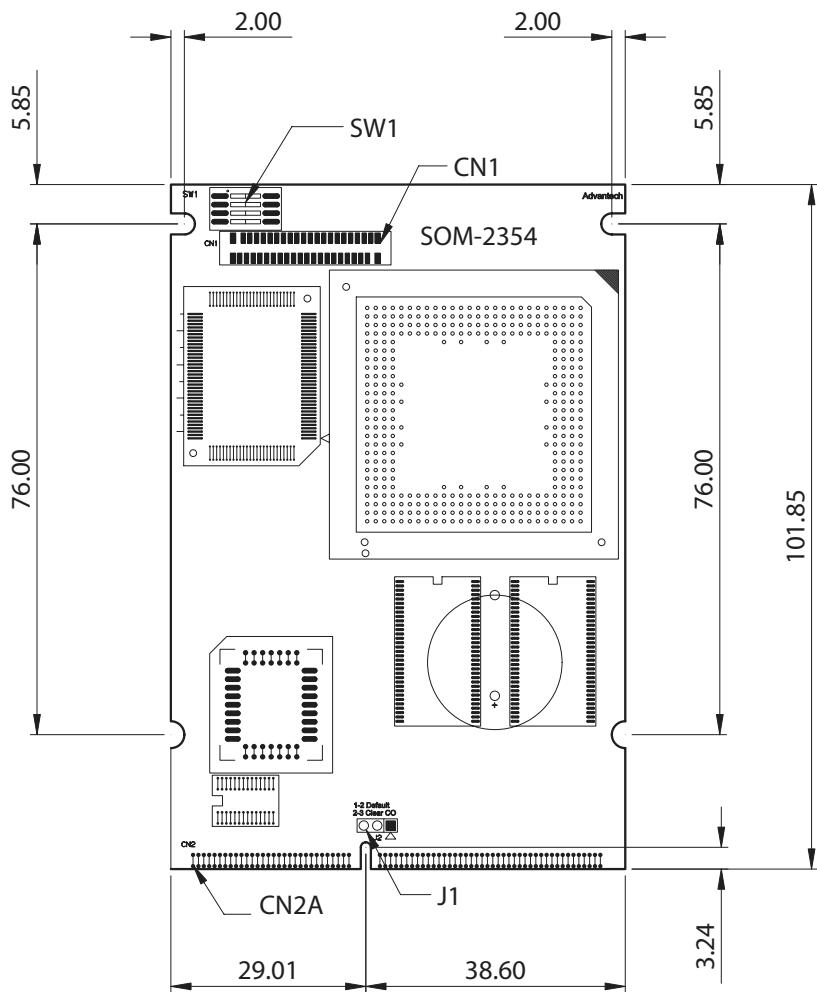
Installation

This chapter explains the setup procedures of SOM-2354 hardware, including instructions on setting jumpers and connecting peripherals, switches and indicators. Be sure to read all safety precautions before you begin the installation procedure.

Chapter 2 Installation

2.1 Jumpers and connectors

On-board connectors link to external devices such as hard disk drives, keyboards, floppy drives, and so on. In addition, the board has jumpers for configuring your board for specific applications.

The table below lists the function of each of the board's jumpers and connectors. Later sections in this chapter give detailed information on each jumper setting, and instructions for connecting external devices to your card.

Table 2.1: Jumpers and connectors	
Name	Function
CN1	30 Pin FPC connector for 18-bit LCD signal
CN2 A	SODIMM gold finger (PCI/IDE/ Serial port /USB/AC97/KB/Mouse)
CN2 B	Front-end connector (VGA/Ethernet/IrDA/FDD/Printer)
JP1	Clear CMOS
SW 1	Panel type selection

## 2.2 Board layout: jumper/connector locations
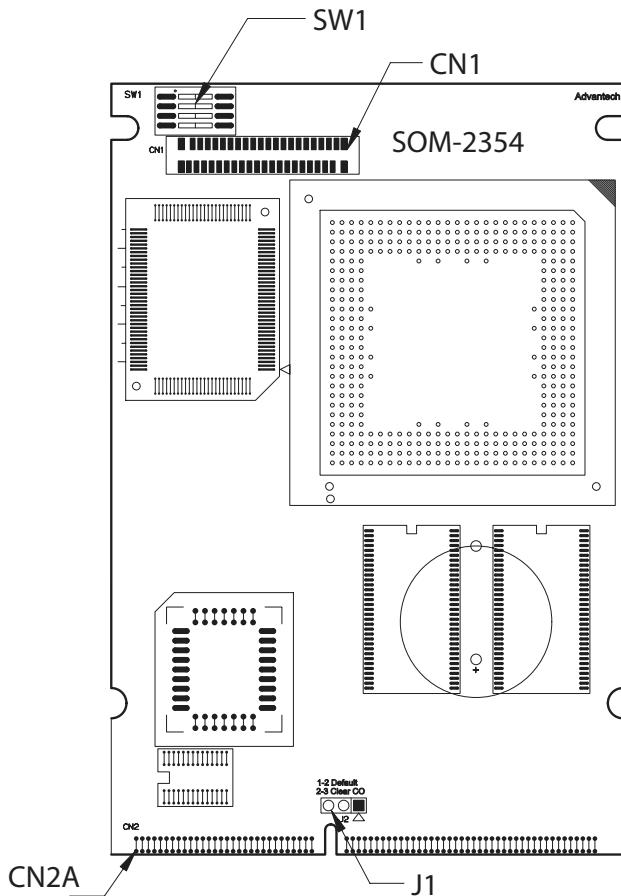
*Figure 2.1: Board layout: jumper/connector locations*
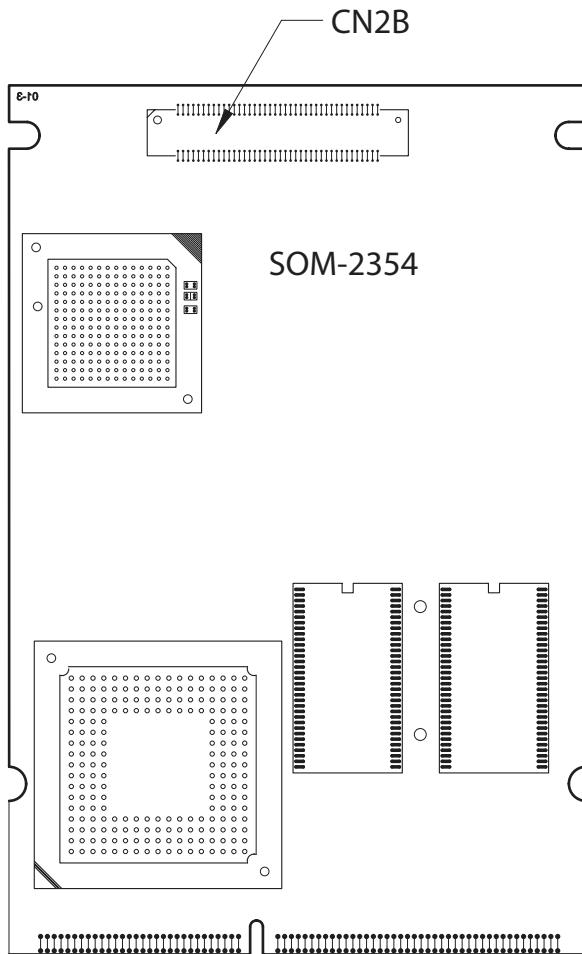
Figure 2.2: Solder side connectors

2.3 Safety precautions

Warning!   *Always completely disconnect the power cord from your chassis whenever you are working on it. Do not make connections while the power is on because sensitive electronic components can be damaged by the sudden rush of power. Only experienced electronics personnel should open the PC chassis.*

Caution!   *Always ground yourself to remove any static charge before touching the CPU card. Modern electronic devices are very sensitive to static electric charges. Use a grounding wrist strap at all times. Place all electronic components on a static-dissipative surface or in a static-shielded bag when they are not in the chassis.*

2.4 Setting jumpers

You may configure your card to match the needs of your application by setting jumpers. A jumper is a metal bridge used to close an electric circuit. It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To "close" a jumper, you connect the pins with the clip. To "open" a jumper, you remove the clip. Sometimes a jumper will have three pins, labeled 1, 2 and 3. In this case you would connect either pins 1 and 2, or 2 and 3.
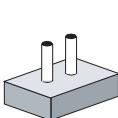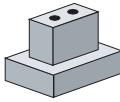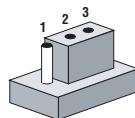
Open   **Closed**   **Closed 2-3**

The jumper settings are schematically depicted in this manual as follows:

Open   **Closed**   **Closed 2-3**

A pair of needle-nose pliers may be helpful when working with jumpers.

If you have any doubts about the best hardware configuration for your application, contact your local distributor or sales representative before you make any changes.

Generally, you simply need a standard cable to make most connections.

2.4.1 Clear CMOS (J2)

This jumper is used to erase CMOS data and reset system BIOS information.

The procedure for clearing CMOS is:

1.   Turn off the system.
2.   Short pin 1 and pin 2.
3.   Turn on the system. The BIOS is now reset to its default setting.

2.4.2 Panel Type Selection (SW1)

SW1(3,4)	Panel Type
(1,1)	640 x 480 18bit
(1,0)	800 x 600 18bit
(0,1)	1024 x 768 18bit
(0,0)	Reserved

2.5 40-pin FPC Connector (CN1)

This connector provides interfaces for 18-bit LCD signal outputs.

To connect a LCD panel output, users need to build their LCD control cirket in the solution board or carrier board that they want to put SOM-2354 module on.

Note   *About the LCD control circuit, please refer SOM-DB2300.pdf or in your CD-ROM and NS Geode™ CS5530A I/O Companion Multi-Function South Bridge Manual*
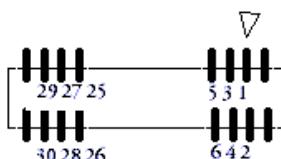
2.5.1 Pinout of 40-pin FPC connector

Table 2.2: 40-pin FPC connector (CN1)			
Pin	Signal	Pin	Signal
1	GND	2	FP_DD2
3	FP_DD3	4	FP_DD4
5	FP_DD5	6	FP_DD6
7	FP_DD7	8	FP_DD8
9	FP_DD11	10	GND
11	FP_DD12	12	FP_DD13
13	FP_DD14	14	FP_DD15
15	FP_DD18	16	FP_DD19
17	FP_DD20	18	FP_DD21
19	GND	20	FP_DD22
21	FP_DD23	22	GND
23	FP_SCLK	24	FP_FVSYNC
25	FP_ENDISP	26	FP_FHSYNC
27	FP_EN_BL	28	FP_BIASEN
29	FP_VDDEN	30	GND
31	FP_DD0	32	FP_DD1
33	FP_DD8	34	FP_DD9
35	FP_DD16	36	FP_DD17
37	FP_NC	38	FP_NC
39	FP_NC	40	FP_NC

2.5.2 Signal Description

GND

Ground

FP_DD0~17

Flat Panel Data Port Lines 17 to 0. This is the data port to an attached active matrix TFT panel. This port may optionally be tied to a DSTN formatter chip, LVDS transmitter, or digital NTSC/PAL encoder.

F4BAR+Memory Offset 04h[7] enables the flat panel data bus:

0 = FP_DATA[17:0] is forced low

1 = FP_DATA[17:0] is driven based upon power sequence control

FP_SCLK

Flat Panel Clock.This is the clock for the flat panel interface.

FP_FVSYNC

Flat Panel Vertical Sync Output. This is the vertical sync for an attached active matrix TFT flat panel. This represents a delayed version of the input flat panel vertical sync signal with the appropriate pipeline delay relative to the pixel data.

FP_FHSYNC

Flat Panel Horizontal Sync Output. This is the horizontal sync for an attached active matrix TFT flat panel. This represents a delayed version of the input flat panel horizontal sync signal with the appropriate pipeline delay relative to the pixel data.

FP_EN

Flat Panel Display Enable Output. This is the display enable for an attached active matrix TFT flat panel. This.signal qualifies active pixel data on the flat panel interface.

FP_ENDISP

Display Enable Input. This signal qualifies active data on the pixel input port. It is used to qualify active pixel data for all display modes and con-figurations and is not specific

FP_BIASEN

Flat Panel Backlight Enable Output. This is the enable signal for the backlight power supply to an attached flat panel. It is under control of the power sequence control logic.

FP_VDDEN

Flat Panel VDD Enable. This is the enable signal for the VDD supply to an attached flat panel. It is under the control of power sequence control logic. A transition on bit 6 of the Display Configuration Register (F4BAR+Memory Offset 04h) initiates a power-up/down sequence.

2.6 CompactFlash interface (CN2)

This socket accepts an IDE-compatible CompactFlash memory card.

The CompactFlash interface uses a secondary IDE channel, which should be set as the master channel.

## 2.7 144-pin SODIMM of SOM 144/PCI (PCI/IDE/ Serial port /USB/AC97/KB/Mouse)(CN3)

The SOM-2354 is compliant with SOM 144 Design Specification Rev. 1.0. For the description of each signal, please refer this document. You may find it in the CD-ROM that comes with your SOM-2354 module.

2.8 Recommended front-end 80-pin connector (VGA/ Ethernet/IrDA/Printer/FDD/ATX) (CN4)

The SOM-2354 is compliant with the SOM 144 Design Specification Rev. 1.0. For the description of each signal, please refer to this document. It is included on the CD-ROM that comes with your SOM-2354 module.

2.9 Card installation

1. Plug SOM 144 module into the solution board's SODIMM socket.
2. Connect the front-end connector to the solution board
3. Must screw the SOM 144 module and the solution board together.
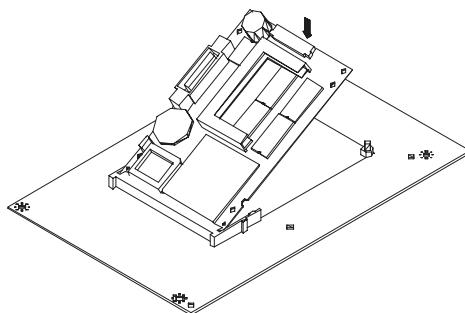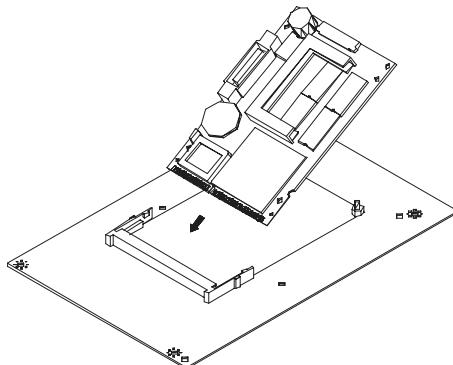
2.10 Card removal

1. Unscrew two screws.
2. Bend out the positioning holders of SODIMM socket and release the SOM 144 module.
3. Unplug SOM 144 module from the socket.

Software Configuration

This chapter details the software configuration information. It shows you how to configure the card to match your application requirements.

Sections include:

- VGA display software configuration
- Ethernet interface configuration
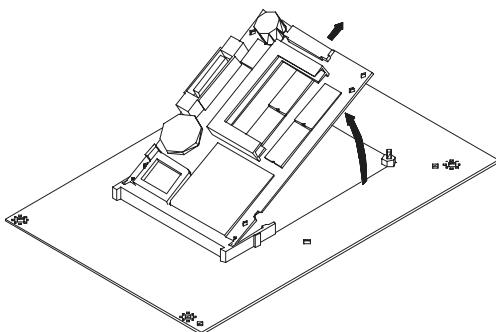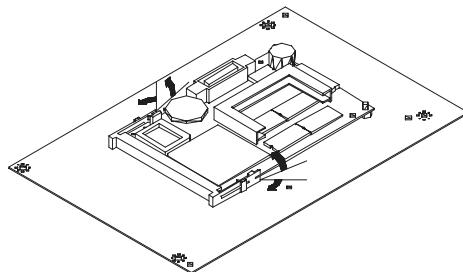
Chapter 3 Software Configuration

3.1 Introduction

The SOM-2354 system BIOS and custom drivers are located in a 256 KB, 32-pin Flash ROM device, designated U14. A single Flash chip holds the system BIOS and VGA BIOS. The display type can be configured via software. This method minimizes the number of chips and eases configuration. You can change the display BIOS simply by reprogramming the Flash chip.

3.2 Utility CD disk

The SOM-2354 is supplied with a software utility on CD-ROM. This disk contains the necessary file for setting up the VGA display. Directories and files on the disk are as follows:

```
┌──────── AWDFLASH.EXE
├──────── CBROM.EXE
├──────── RSET8139.EXE
└──────── 2354Vxxx.BIN
```

Figure 3.1: Contents of the SOM-2354 utility disk

AWDFLASH.EXE

This program allows you to update the BIOS Flash ROM.

2354V110.BIN

This binary file contains the system BIOS.

CBROM.EXE

This program allows you to combine your own VGA BIOS with system BIOS (2354V110.BIN).

RSET8139.EXE

This program enables you to view the current Ethernet configuration, reconfigure the Ethernet interface (medium type, etc.), and execute useful diagnostic functions.

3.3 VGA display software configuration

The SOM-2354 on-board VGA/LCD interface supports an 18-bit TFT LCD, flat panel displays and traditional analog CRT monitors. The interface can drive CRT displays with resolutions up to 1024 x 768 in 16 bpp. It is also capable of driving color panel displays with resolutions of 1024 x 768 at 18 bpp. The LCD type is configured completely via the software utility, so you do not have to set any jumpers. Configure the LCD type as follows:

1. Apply power to the SOM-2354 with a color TFT display attached. This is the default setting for the SOM-2354. Make sure that the AWDFLASH.EXE and *.BIN files are located in the working drive.

Note: *Make sure that you do not run AWDFLASH.EXE while your system is operating in EMM386 mode.*

2. At the prompt, type AWDFLASH.EXE and press <Enter>. The VGA configuration program will then display the following:
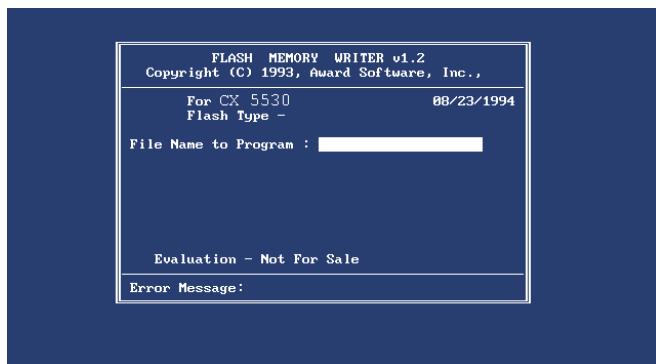

Figure 3.2: BIOS VGA setup screen

3. At the prompt, type in the BIN file which supports your display. When you are sure that you have entered the file name correctly press <Enter>. The screen will ask "Do you want to save?" If you wish to continue press Y. If you change your mind or have made a mistake press N.

4. If you decide to continue, the screen will issue a prompt which will then ask "Are you sure to program (Y/N)?" If you wish to continue, press Y. Press N to exit the program.

The new VGA configuration will then write to the ROM BIOS chip. This configuration will remain the same until you run the AWDFLASH.EXE program and change the settings.

3.4 Ethernet interface configuration

The SOM-2354 on-board Ethernet interface supports all major network operating systems. To configure the medium type, to view the current configuration, or to run diagnostics, do the following:

1. Power the SOM-2354 on. Make sure that the RSET8139.EXE file is located in the working drive.

2. At the prompt, type RSET8139.EXE and press <Enter>. The Ethernet configuration program will then be displayed.

3. This simple screen shows all the available options for the Ethernet interface. Just highlight the option you wish to change by using the Up and Down keys. To change a selected item, press <Enter>, and a screen will appear with the available options. Highlight your option and press <Enter>. Each highlighted option has a helpful message guide displayed at the bottom of the screen for additional information.

4. After you have made your selections and are sure this is the configuration you want, press ESC. A prompt will appear asking if you want to save the configuration. Press Y if you want to save.

The Ethernet Setup Menu also offers three very useful diagnostic functions. These are:

1. Run EEPROM test

2. Run Diagnostics on Board

3. Run Diagnostics on Network

Each option has its own display screen that shows the format and result of any diagnostic tests undertaken.

PCI Graphic Setup

Introduction
Installation of PCI Graphic drivers
-for Windows 98/2000/XP
Further information

Chapter 4 PCI Graphic Setup

4.1 Introduction

The SOM-2354 has an onboard PCI/flat panel/VGA interface. The specifications and features are described as follows:

4.1.1 Chipset

The SOM-2354 uses a AMD CS 5535 for its graphic controller. It supports TFT LCD displays, and CRT monitors.

4.1.2 Display memory

The 855GME chip can support up to 8MB dynamic frame buffer shared with system memory; the VGA controller can drive CRT displays up to 1600 x 1200 at 85-Hz and 2048 x 1536 at 75-Hz, color panel displays in LVDS model with resolutions up to UGXA panel resolution with frequency range from 25 MHz to 112 MHz.

4.1.3 Display types

CRT and panel displays can be chosen by different CPU type: CRT(SOM-2354V-JEA1), panel(SOM-2354P-JEA1).

4.2 Installation of the PCI Graphic driver

Complete the following steps to install the PCI graphic driver. Follow the procedures in the flow chart that apply to the operating system that you are using within your SOM-2354.

Notes: *1. The windows illustrations in this chapter are intended as examples only. Please follow the listed steps, and pay attention to the instructions which appear on your screen.*

2. For convenience, the CD-ROM drive is designated as "D" throughout this chapter.

4.2.1 Installation for Windows 98/ME/2000/XP

To install PCI Graphic driver for Windows 98/2000/XP, please run the set up wizard "Intel Extreme Graphic 2" in CD-ROM. Example of installation steps is shown as bellow:

1.
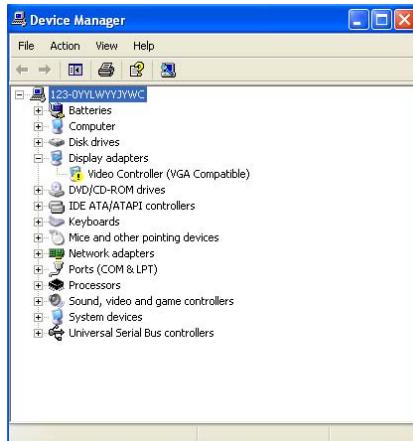
2.
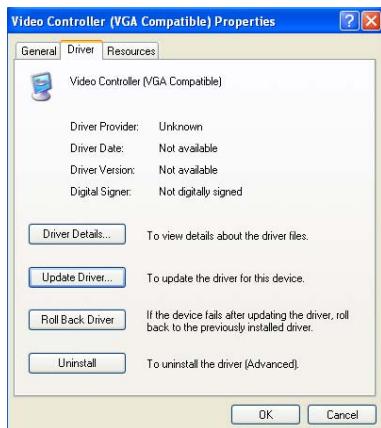
3. Follow Hardware Update Wizard instruction, then click "Next."

4. Click "Next."
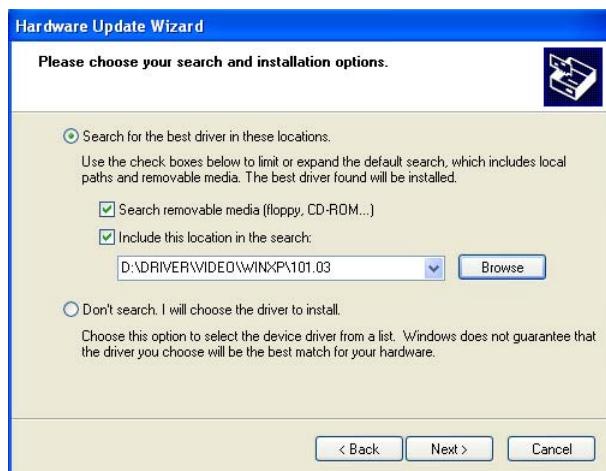
5. Click "Finish" to exit.

4.3 Further Information

For further information about the AGP/VGA installation in your SOM-2354, including driver updates, troubleshooting guides and FAQ lists, visit the following web resources:

Advantech websites: www.advantech.com

www.advantech.com.tw

PCI Bus Ethernet Interface

This chapter provides information on Ethernet configuration.

- Introduction
- Installation of Ethernet driver for Windows 98/NT/2000
- Further information

Chapter 5 PCI Bus Ethernet

5.1 Introduction

The SOM-2354 is equipped with a high performance 32-bit Ethernet chipset which is fully compliant with IEEE 802.3 100 Mbps CSMA/CD standards. It is supported by major network operating systems. It is also both 100Base-T and 10Base-T compatible.

5.2 Installation of Ethernet driver

Before installing the Ethernet driver, note the procedures below. You must know which operating system you are using in your SOM-2354 Series, and then refer to the corresponding installation flow chart. Then just follow the steps described in the flow chart. You will quickly and successfully complete the installation, even if you are not familiar with instructions for MS-DOS or Windows.

Note:　　　*The windows illustrations in this chapter are examples only. You must follow the flow chart instructions and pay attention to the instructions which then appear on your screen.*

5.2.1 Installation for Windows 98/2000

Step 1. a. Select "Start", "Settings". "Control Panel".
   b. Double click "Network".

Step 2. a. Click "Add" and prepare to install network functions.
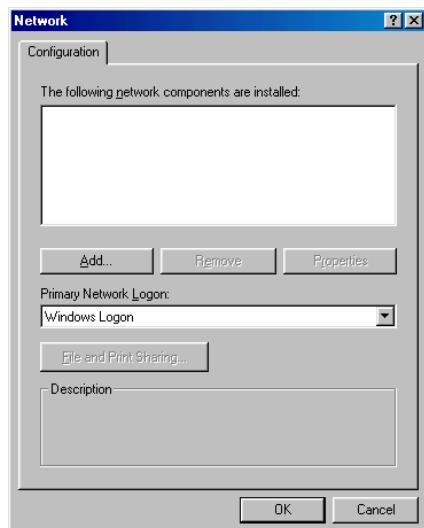
Step 3. a. Select the "Adapter" item to add the Ethernet card.
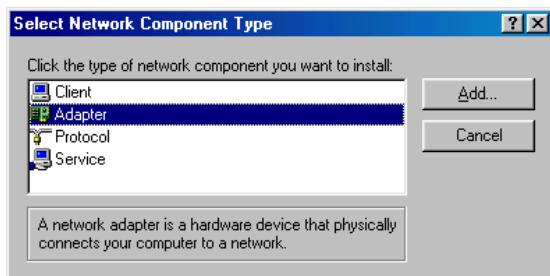
Step 4. a. Click "Have Disk" to install the driver.
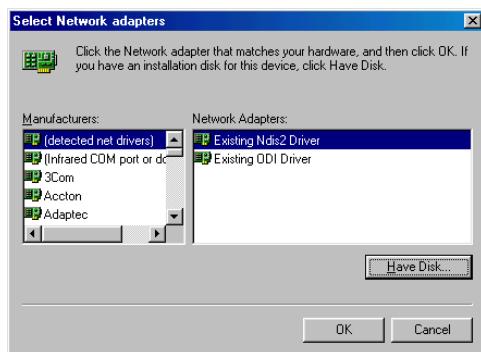
Step 5. a. Insert the CD into the D:\drive
       b. Fill in "D:\SOM144\2354\LAN\''
       c. Click "OK"t

Step 6. a. Choose the "82559ER" item.
         b. Click "OK".
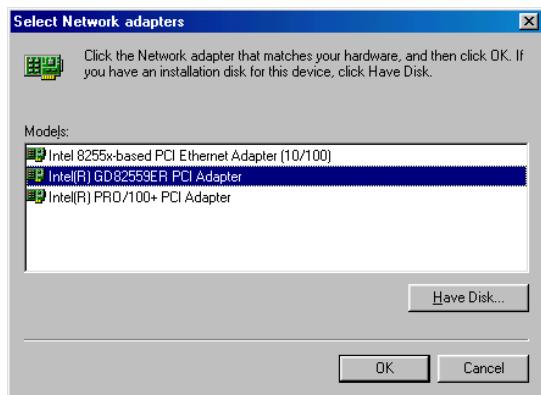
Step 7. a. Make sure the configurations of relative items are set correctly.
         b. Click "OK" to reboot.

Note:T"   The correct path for Windows NT is:
*   "D:\SOM144\2354\Lan\WinNT"*

5.2.2 Installation for Window NT
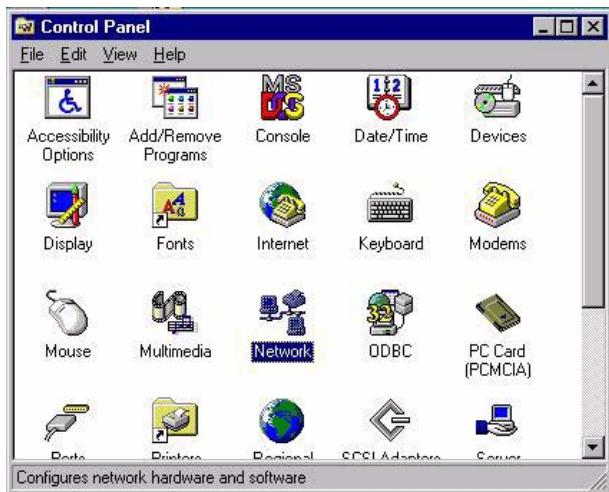
Step 1. a. Copy 82559ER drivers from CD into your HDD install from
         HDD.

b. Select "Start", "settings", "control Panel"

c. Double click "Network"

d. "Do you want to install it now?" Click "Yes"

e. "Wired to the network?: Click "Next"
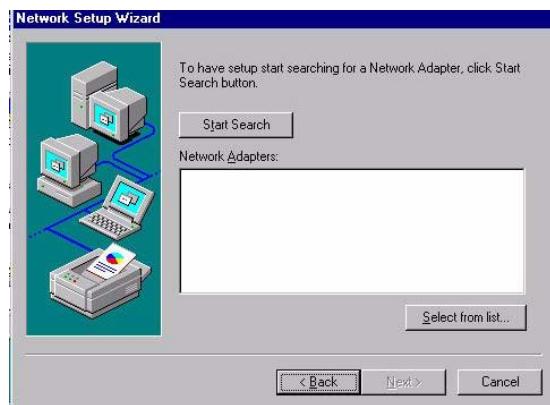
Step 2. a. Click "Select from list
         b. Click "Have disk..."
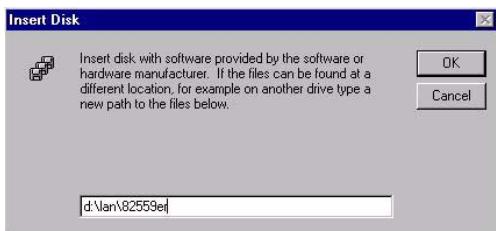
Step 3. a Type the directory where the drivers are installed in your HDD.
         b. Click "OK"
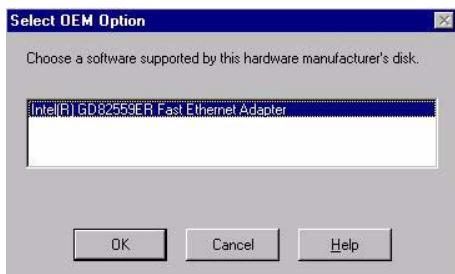
Step 4. a Check the highlighted item and click "Ok"
       b. Choose "intel 82559ER Fast Ethernet Adapter" then click "Next"
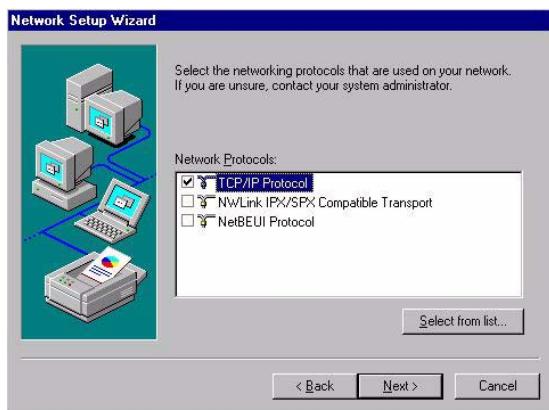
Step 5. a. Select the correct protocol for your system then click "Next"
       b. Select the correct Network Services then click "Next"
       c. Click Next to install selected components
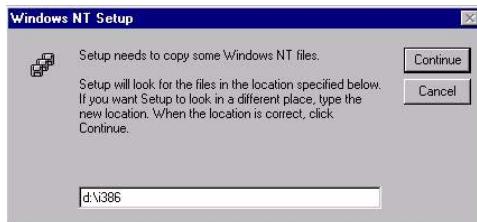
Step 6.   a. Type the directory where the WinNT files are located
        b. Follow the setup instruction to complete the installation
         and,restart your computer to make the setting effective

5.3 Further information

Intel website: www.intel.com

Advantech websites:www.advantech.com

www.advantech.com.tw

System Assignments

- System I/O ports
- DMA channel assignments
- Interrupt assignments
- 1st MB memory map

Appendix A System Assignments

A.1 System I/O ports

Table A.1: System I/O ports	
Addr. range (Hex)	**Device**
000-01F	DMA controller, slave
020-03F	Interrupt controller 1, master
040-05F	8254 timer/counter
060-06F	8042 (keyboard controller)
070-07F	Real-time clock, non-maskable interrupt (NMI) control
080-09F	DMA page register,
0A0-0BF	Interrupt controller 2, slave
0C0-0DF	DMA controller, master
0F0	Clear math co-processor
0F1	Reset math co-processor
0F8-0FF	Math co-processor
170- 178	2nd fixed disk for CompactFlash
1F0-1F8	1st fixed disk
200-207	Game I/O
278-27F	LPT2
2F8-2FF	Serial port 2
360-36F	Reserved
378-37F	Parallel printer port 1 (LPT1)
380-38F	SDLC, bisynchronous 2
3A0-3AF	Bisynchronous 1
3B0-3BF	Monochrome display and printer adapter
3C0-3CF	EGA
3D0-3DF	Color/graphics monitor adapter
3F0-3F7	Diskette controller
3F8-3FF	Serial port 1

*   PNP audio I/O map range from 220 ~ 250H (16 bytes)
     MPU-401 select from 300 ~ 330H (2 bytes)

**   default setting

A.2 DMA channel assignments

Table A.2: DMA channel assignments	
Channel	**Function**
0	Available
1	Audio*
2	Floppy disk (8-bit transfer)
3	Parallel**
4	Cascade for DMA controller 1
5	Audio*
6	Available
7	Available

*   Audio DMA default setting: DMA 1.5
     Audio Low DMA select: DMA 1.3
     Audio High DMA select: DMA 5.6.7

** Parallel port DMA default setting: DMA 3
     Parallel port DMA select: DMA 1.3

A.3 Interrupt assignments

Table A.3: Interrupt assignments	
Interrupt#	Interrupt source
NMI	Parity error detected
IRQ 0	Interval timer
IRQ 1	Keyboard
IRQ 2	Interrupt from controller 2 (cascade)
IRQ 8	Real-time clock
IRQ 9	Reserve
IRQ 10	Available
IRQ 11	Reserved for watchdog timer
IRQ 12	PS/2 mouse
IRQ 13	INT from co-processor
IRQ 14	Preliminary IDE
IRQ 15	Secondary IDE for CompactFlash
IRQ 3	Serial communication port 2
IRQ 4	Serial communication port 1
IRQ 5	Audio*
IRQ 6	Diskette controller (FDC)
IRQ 7	Parallel port 1 (print port)

* Audio default setting: IRQ5
  USB and Ethernet IRQ is automatically set by the system

A.4 1st MB memory map

Table A.4: 1st MB memory map	
Addr. range (Hex)	**Device**
E000h - FFFFh	System ROM
C800h - DFFFh	Available
C000h - C7FFh	VGA BIOS
B800h - BFFFh	CGA/EGA/VGA text
B000h - B7FFh	Reserved for graphic mode usage
A000h - AFFFh	EGA/VGA graphics
0000h - 9FFFh	Base memory

*   default setting

LCD Services

This appendix contains information of a detailed or specialized nature. It includes information about 18-bit TFT LCD interfaces.

Appendix B LCD Services

B.1 LCD services

LCD screens are very popular on Advantech's CPU cards, biscuit PCs and POS series products, such as the PCA-6135/6145/6153, and PCA-6751/PCA-6751V. "Lighting" LCDs is virtually impossible without technical expertise. Advantech provides LCD lighting and integration services to assist our customers in setting up their systems. Advantech's LCD lighting guide explains how to make connections between LCD interfaces and LCD panels, as well as how to control contrast, brightness, VEE source, LCD inverter and all other factors that affect the successful installation of LCD panels.

The following information details our LCD lighting services:

a)   This policy is only valid for Advantech products that include LCD support

b)   The customer should send the following LCD components for service:

   • DC-AC inverter and cable (i.e. connector with/without wires) and data sheet

   • LCD flat panel and cable (connector with/without wires) and complete data sheet

c)   Advantech will normally charge the customer a deposit. The deposit will be refunded when servicing exceeds a minimum volume

d)   The customer must sign the agreement and fax it to us prior to sending the LCD package. Advantech reserves the right to refuse service if the customer cannot provide the required documents and auxiliary parts

e)   Advantech will supply a BIOS file and connection cable to the customer upon completing the service

f)   A minimum of seven working days is required for completion of service, starting from receipt of the LCD package by Advantech

For the 18-bit TFT display support list, please contact our customer service department for more detailed information and service files. See our web site at: **http://support.advantech.com/**