POS-564

VIA C3 LPX SBC for POS Applications

Users Manual

Acknowledgements

Part No. 2006056410

1st Edition July 2003

Packing List

Before installing your board, insure that the following materials have been received:

- 1 POS-564 all-in-one single board computer
- 1 CD-ROM or disks for utility, drivers, and manual (in PDF format)
- 1 warranty certificate
- 1 FDD cable
- 1 DMA/33/66 IDE flat cable
- 1 startup manual

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

Contents

CHAPTER 1

General Information

This chapter gives background information on the POS-564.

Sections include:

- Introduction
- Features
- Specifications
- Board layout and dimensions

Chapter 1 General Information

1.1 Introduction

The POS-564 is a low cost, VIA Eden 400/667/800 (VIA Eden 400 is a fanless board) board especially designed for POS applications. The POS-564 is made with industrial grade construction that can better withstand constant 24 hour a day use, high vibration, shock, exposure to humidity, moisture and heat. The VIA Eden 400 processor allows for fanless operation that virtually eliminates heat buildup problems that has traditionally been the number one cause of failure in enclosed POS systems.

The POS-564 has one PCI/ISA expansion slot and four digital I/Os and four on-board serial ports each with +5 V/+12 V power. These flexible I/Os have standard OLE interfacing that allow for application hardware independence to be realized. Peripherals ranging from bar code scanners, card readers, printers, cash drawers etc., are all easily supported. The POS-564 uses a standardized layout based on Western Digital's LPM/LPX form factor. It is 100% PC compatible and ready for any existing PC software or hardware.

Other on-board industrial features not found on conventional motherboards include a watchdog timer for dependability during unmanned operations, and CMOS backup to Flash ROM. The on-board SSD socket can also be used to support DiskOnChip and Flash modules.

1.2 Features

- VIA Eden 400/667/800 processor on board
- Fanless operation
- VGA/LCD controller with Universal Memory Architecture
- VIA VT8606/Twister supports 18 bit TFT display
- 10/100 Mbps PCI ethernet interface with wake-on-LAN support
- 4 COM ports with power line support in Pin 9
- Digital I/O (4 in & 4 out)
- 2 parallel ports
- 4 x USB 1.1
- 4 Mbps FIR
- Socket for DiskOnChip® and CompactFlash™ card
- Watchdog timer: Software enabled/disabled 1 ~ 62 sec. selectable.
- SMI LynxEM+712 (optional)
- AC97 audio interface
- 64 MB onboard DRAM (POS-564F only)

1.3 Specifications

Standard SBC functions

- CPU: Onboard VIA Eden 400/667/800
- BIOS: 2 Mbit Flash BIOS, supports Plug & Play, APM 1.2, Supports Ethernet boot ROM, boot from CD-ROM and boot from LS-120 ZIP Drive, optional customer icon available.
- Chipset: VIA 8601A and VT82C686B
- System memory: One DIMM socket accepts 32 ~ 512 MB SDRAM (32/64/128/256/512 MB)
- 64 MB onboard DRAM (POS-564F only)
- Enhanced IDE interface: Supports up to four EIDE devices. BIOS auto-detect, PIO Mode 3 or Mode 4 transfer, Ultra DMA33 mode (ATA-4) up to 33 MB/sec

- FDD interface: Supports 360K/1.2M/720K/1.44MB/2.88MB up to two FDDs
- Serial ports: Four serial RS-232 ports, COM1,2, 3, 4, all provide power support.
- Parallel port: Two parallel ports, supports EPP/ECP mode
- Infrared port: Two IR port. One is shared with COM2 up to 115.2Kbps. The other one is fixed IR, it can up to 1.152Mbps
- Keyboard/mouse connector: Supports standard PS/2 keyboard and a PS/2 mouse
- Power management: Supports power saving modes including Normal/ Standby modes. APM 1.1 compliant
- Watchdog timer: 1 ~ 62 sec. selectable
- USB: Four universal serial bus ports
- Compliant with USB Spec. Rev. 1.10

VGA/LCD Interface

- Chipset: 8601A Integrated 2MB~8MB memory
- Display mode: CRT monitors up to 800 x 600 @ 24 bpp, 1024 x 768 @ 16 bpp

Ethernet Interface

- Chipset: RTL 8100BL
- Ethernet interface: PCI 10/100 Mbps Ethernet. IEEE 802.3 U protocol compatible
- Connection: On-board RJ-45 connector

Audio Function

- Audio controller: AC97 version 2.0 compliant interface
- Audio interface: Microphone in, line in, CD audio in, line out, speaker L and Speaker R

Digital I/O

- 4 high-drive digital output; 2 MOSFET output to direct drive relay or solenoid up to 1 A max/24 VDC
- Four digital inputs; TTL compatible

Mechanical and Environmental

- Dimensions (L x W): 220 x 235 mm (8.7" x 9.25")
- Power supply voltage: +5 V ±5 %

- Power requirements: typical 5 V@7 A (w/ Eden 400 MHz CPU & 128 MB RAM)
- Operating temperature: 0 ~ 60× C (32 ~ 140× F)
- Weight: 0.5 kg (1.1 lb)

1.4 Board Dimensions

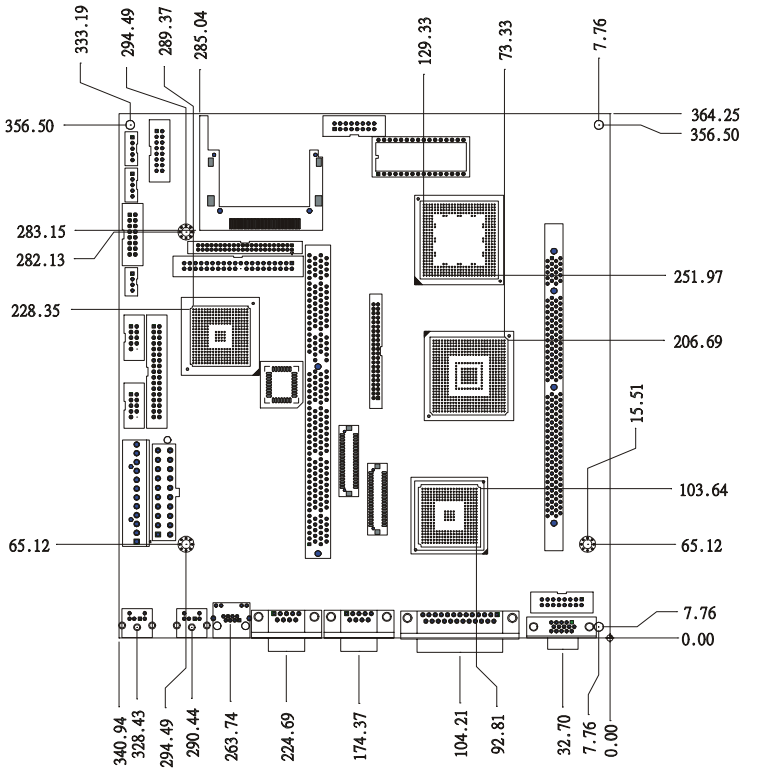


Figure 1.1: POS-564 Dimensions (Component Side)

CHAPTER 2

Introduction

This chapter explains how to set up the POS-564 hardware, including instructions on setting jumpers and connecting peripherals, switches and indicators. Be sure to read all the safety precautions before you begin the installation procedure.

Chapter 2 Introduction

2.1 Jumpers

The POS-564 has a number of jumpers that allow you to configure your system to suit your application. The table below lists the function of each of the board's jumpers.

Table 2.1: Table 2-1: Jumpers

Label	Function
J1	Clear RTC
J2	Watchdog Setting
J3	DOC 2000 and DIO address select
J5/6/7	COM2 RS-232/422/485 Setting
J8	COM2, COM4 Voltage select
J9	COM1, COM3 Voltage select
J10	CN38 Keyboard/Mouse select
J11	COM4, COM2 Ring/Voltage select
J12	COM1, COM3 Ring/Voltage select

2.2 Connectors

On-board connectors link the POS-564 to external devices such as hard disk drives, a keyboard, or floppy drives. The tables below lists the function of each of the board's connectors.

Table 2.2: Connectors

Label	Function
CN1	Digital I/O Connector
CN2	IR Connector
CN3	Game Port/MIDI Connector
CN4	FIR Connector
CN5	FAN1 Control Connector
CN6	Audio Connector
CN7	Secondary Slave IDE connector

CN9	Primary IDE Connector
CN10	CD ROM Audio-In Connector
CN11	LCD Brightness adjustor connector
CN12	LCD Contrast adjustor connector
CN13	USB3, USB4 Connector
CN14	LCD Backlight connector
CN15	LCD Constrast DC to DC connector
CN16	LCD1 connector
CN17	FDD connector
CN18	SM Bus connector
CN19	PCI/ISA Slot
CN20	USB1, USB2 Connector
CN21	LCD2-2 connector
CN22	AT Power connector
CN23	ATX Power connector
CN24	LCD2-1 connector
CN25	System Function Connector
CN26	FAN2 Control connector
CN27	LPT2 connector
CN28	LAN connector
CN29	COM4 connector
CN30	COM3 connector
CN31	Keyboard connector
CN32	Keyboard+PS/2 Mouse connector
CN33	CRT connector
CN34	LAN connector
CN35	COM2 connector
CN36	COM1 connector
CN37	LPT1 connector
CN38	Keyboard+PS/2 Mouse connector
CN39	Keyboard&PS/2 Mouse connector
CN40	CRT connector

2.3 Locating Jumpers and Connectors

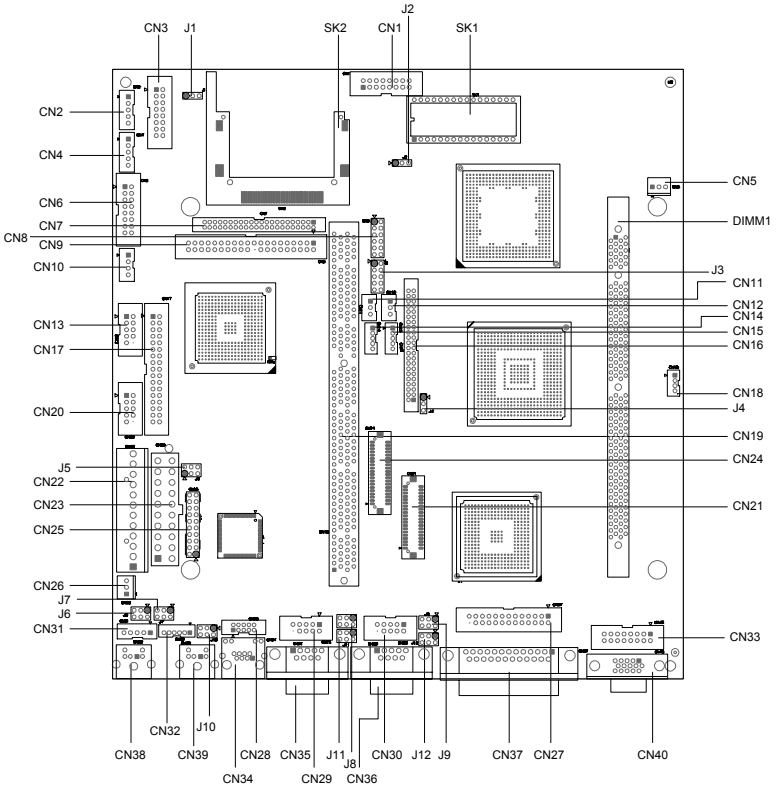


Figure 2.1: Locating jumpers

2.4 Safety Precautions

The following sections tell how to make each connection. In most cases, you will simply need to connect a standard cable.

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. Sensitive electronic components can be damaged by a sudden rush of power. Only experienced electronics personnel should open the PC chassis.

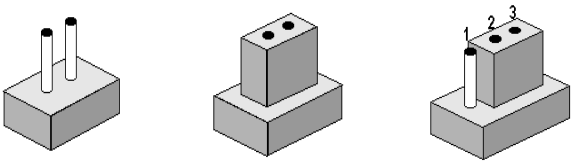
Caution:

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.

2.5 Setting jumpers

2.5.1 Introduction

You may configure your card to match the needs of your application by setting jumpers. A jumper is the simplest kind of electrical switch. 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.

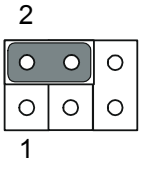
Generally, you simply need a standard cable to make most connections.

2.5.2 Settings details

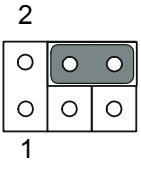
J3: DOC® 2000 and DIO address select			
DOC 2000	5-6	3-4	1-2
C800	Short	Short	Short
CA00	Short	Short	Open
CC00	Short	Open	Short
CE00	Short	Open	Open
D000	Open	Short	Short
D200	Open	Short	Open
D400	Open	Open	Short
D600*	Open	Open	Open
NOTE: With SMI on board version, C800 and CA00 were reserved for SMI VGA BIOS address.			
DIO		9-10	7-8
200		Open	Open
210		Open	Short
220		Short	Open
230*		Short	Short

J1: Clear RTC	
Closed pins	Result
1-2	RTC*
2-3	Clear RTC

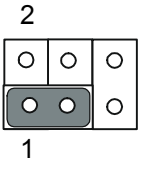
J8: COM2, COM4 Voltage select	
Closed pins	Result
2-4	COM2 (+5 V)*
4-6	COM2 (+12 V)
1-3	COM4 (+5 V)*
3-5	COM4 (+12 V)



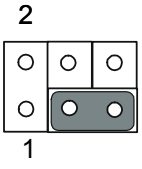
COM3 5V*



COM3 12V*

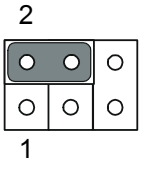


COM4 5V*

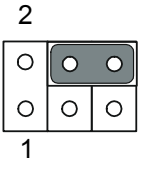


COM4 12V*

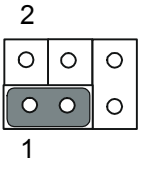
J11: COM2, COM4 Ring/Voltage select	
Closed pins	Result
2-4	COM2 Voltage
4-6	COM2 Ring*
1-3	COM4 Voltage
3-5	COM4 Ring*



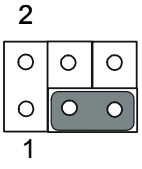
COM3 Volt



COM3 Ring*

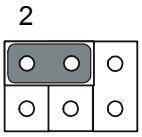


COM4 Volt*

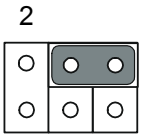


COM4 Ring*

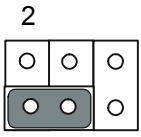
J9: COM1, COM3 Voltage select	
Closed pins	Result
2-4	COM1 (+5 V)*
4-6	COM1 (+12 V)
1-3	COM3 (+5 V)*
3-5	COM3 (+12 V)



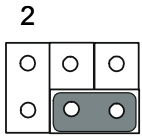
COM1 3V*



COM1 12V

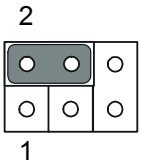


COM3 5V

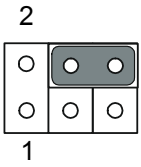


COM3 12V

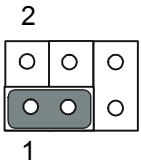
J10: COM1, COM3 Ring/Voltage select	
Closed pins	Result
2-4	COM1 Voltage
4-6	COM1 Ring*
1-3	COM3 Voltage
3-5	COM3 Ring*



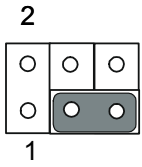
COM3 Volt



COM3 Ring*

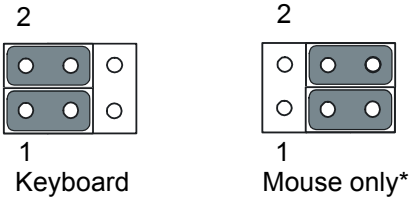


COM3 Volt*



COM3 Ring*

J10: CN39 Keyboard/mouse select	
Closed pins	Result
1-3, 2-4	Keyboard
3-5, 4-6	mouse only*



J5/6/7: COM2 Rs-232/422/485 Setting (*: Default value)			
J5	J6	J7	
Close pins	Close pins	Close pins	Result
1-2	1-3/2-4	1-3/2-4	RS-232*
3-4	3-5/4-6	3-5/4-6	RS-422
5-6	3-5/4-6	3-5/4-6	RS-485
J8: COM2, COM4 Voltage select (*: Default value)			
Close pins	COM2		
2-4	+5V *		
4-6	+12V		
Close pins	COM4		
1-3	+5V *		
3-5	+12V		

2.6 Digital I/O (CN1: 4 Outputs, 4 Inputs)

The POS-564 has two high drive digital outputs, OUT0, OUT1 (24 VDC, 1 A max), two TTL level digital outputs, OUT2, OUT3 and four digital inputs (TTL level). You can configure the digital I/O to control the opening of the cash drawer and to sense the closing of the cash drawer. The following explains how the digital I/O is controlled via software programming and how a 12 V solenoid or relay can be triggered:

Digital I/O Connector			
IN0	1	2	+5 V
IN1	3	4	OUT0
IN2	5	6	GND
IN3	7	8	OUT1
GND	9	10	+ 12 V
NC	11	12	NC
OUT3	13	14	GND
OUT2	15	16	+ 12

Note: The POS-564/POS-563 series and the POS-560 series have different digital I/O outputs

2.6.1 Digital output programming

Output is CMOS MOSFET (high drive) type, capable of handling 24 VDC / 1 A loading. It is meant to drive relays or a solenoid.

Table 2.3: Digital output programming

Output	Address	Bit
Out 1	220	0
Out 2	220	1

Example: ("0" = off "1" = on)

Data 00 = Out 0 and Out 1 = "0"

Data 01 = Out 0 = "1"

Data 02 = Out 1 = "1"

Data 03 = Out 0 and Out 1 = "1"

2.7 CompactFlash™ I/II connector (SK2)

The POS-564 Series is equipped with a CompactFlash disk socket that supports an IDE interface CompactFlash disk card. The socket itself is especially designed to prevent any incorrect installation of the CompactFlash disk card. When installing or removing the CompactFlash disk card, please make sure that the system power is off.

The CompactFlash disk card is defaulted as the Secondary IDE Master HDD in your PC system.

2.8 USB connector (CN13/CN20)

The POS-564 board provides four USB (Universal Serial Bus) interfaces which support plug and play and hot attach/detach for up to 127 external devices. The USB interfaces comply with USB specification Rev. 1.1 and are fuse protected.

The USB interfaces are accessed through 10-pin (5x2) flat-cable connectors, CN13/CN20. You will need an adapter cable if you use a standard USB connector. The adapter cable has a 5 x 2 pin connector on one end and two USB connectors on the other.

The USB interfaces can be disabled in the system BIOS setup.

2.9 Audio interfaces (CN6, CN10)

The POS-564 is equipped with a high quality audio interface, which provides 16-bit CD-quality recording and playback as well as OPL3 compatible FM music. It is supported by all major operating systems and is 100% Sound Blaster Pro compatible.

2.9.1 Audio connector (CN6)

The POS-564 provides all major audio signals on a 16-pin flat-cable connector, CN6. These audio signals include Microphone in (mono), Line in (stereo), Line out (stereo), and Speaker out (stereo). You will need an adapter cable if you use traditional telephone jack connectors for these audio signals.

2.9.2 CD audio-in connector (CN10)

All CD-ROM drives can provide analog audio signal output when used as a music CD player. The CN10 on POS-564 is a connector to input CD audio signal into the audio controller. The audio cable of your CD-ROM drive will be used to connect to CN10.

2.10 40-pin Primary IDE (3.5" HDD) Connector (CN9)

The 40-pin IDE connector (CN9) supports up to two 40-pin IDE interface devices, including CD-ROM drives, tape-backup drives, HDDs, etc. When connecting, make sure pin 1 of the connector is matched with pin 1 of the device's connector.

The built-in Enhanced IDE (Integrated Device Electronics) controller supports up to two IDE channels, including CD-ROM drives, tape backup drives, a large hard disk drive and other IDE devices. It also supports faster data transfer rates and allows IDE hard disk drives with capacities in excess of 528 MB.

Connecting the hard drive

Connecting drives is done in a daisy-chain fashion. Wire number 1 on the cable is red or blue, while the other wires are gray.

Unlike floppy drives, IDE hard drives can connect to either end of the cable. If you install two drives, you will need to set one as the master and one as the slave by using jumpers on the drives. If you install just one drive, set it as the master.

2.11 FDD connector (CN17)

You can attach up to two floppy disks to the POS-564's on-board controller. You can use any combination of 5º" (360 KB and 1.2 MB) and/or 3¾" (720 KB, 1.44 MB, and 2.88 MB) drives.

A 34-pin daisy-chain drive connector cable is required for a dual-drive system. On one end of the cable is a 34-pin flat-cable connector. On the other end are two sets of floppy disk drive connectors. Each set consists of a 34-pin flat-cable connector (usually used for 3¾" drives) and a printed-circuit board connector (usually used for 5º" drives).

2.11.1 Connecting the floppy drive

1. Plug the 34-pin flat-cable connector into CN17. Make sure that the red wire corresponds to pin one on the connector.
2. Attach the appropriate connector on the other end of the cable to the floppy drive(s). You can use only one connector in the set. The set on the end (after the twist in the cable) connects to the A: drive. The set in the middle connects to the B: drive.
3. If you are connecting a 5º" floppy drive, line up the slot in the printed circuit board with the blocked-off part of the cable connector.
4. If you are connecting a 3¾" floppy drive, you may have trouble determining which pin is pin number one. Look for a number printed on the circuit board indicating pin number one. Also, the connector on the floppy drive connector may have a slot. When the slot is up, pin number one should be on the right. Check the documentation that came with the drive for more information.

The B: drive can be attached to the connectors in the middle of the cable as described above.

2.12 44-pin Secondary Mini-pitched IDE Interface (2.5" HDD or SSD) (CN7)

The onboard 44-pin mini-pitched IDE interface allows users to support either a 2.5" HDD or an IDE Flash module that is available in both 2 and 4 MB versions.

Follow the same connection arrangement as the 3.5" HDD if you want to connect to a 2.5" IDE device. Read the BIOS setup section for more information regarding system settings.

2.13 VGA interface connections

The POS-564 's PCI interface can drive conventional CRT displays and is capable of driving a wide range of flat panel displays, including electroluminescent (EL), gas plasma, passive LCD and active LCD displays. The board has two connectors to support these displays, one for standard CRT VGA monitors and one for flat panel displays.

2.13.1 CRT display connector (CN33 and CN40)

CN40 is a standard 15-pin D-SUB connector commonly used for the CRT VGA monitor only. CN33 is a 16-pin header connector allowing users to extend the VGA connector interface elsewhere via a customized cable. Pin assignments appear in the appendix.

2.13.2 Flat panel display connector (CN16, CN24, CN21)

LCD1 in CN16 consists of a 44-pin, dual inline header. It can connect to a 24-bit TFT LCD panel. LCD2 is an optional (SMI 721), CN24, CN21 consists of a 40-pin dual inline header can connect up to a 48-bit TFT LCD panel. Pin assignments appear in the appendix.

2.13.3 LCD1 power setting (J4)

The POS-564's PCI interface supports 5 V and 3.3 V LCD displays. By changing the setting of J4, you can select the panel video signal level to be 5 V or 3.3 V.

2.14 Power connectors (CN22, CN23)

2.14.1 Main power connector (CN22)

The power connection is a 12-pin connector (PS/2 or AT power standard) requiring ±5 V and ±12 V power. Always keep the ground wires (black color) toward the middle when connecting the power wire from the power supply.

2.14.2 ATX power input connector (CN23)

The power connection is a 20-pin connector requiring ±5 V and ±12 V and 5VSB single.

2.15 IR connector (CN2)

The POS-564 provides an IrDA port. This connector supports the optional wireless infrared transmitting and receiving module, which is mounted on the system case. Configuration of the module is done through BIOS setup.

2.16 Serial ports (COM1 - 4) (CN36, CN35, CN30, CN29)

The POS-564 has a total of four on-board RS-232 serial ports, COM1-4. All four serial ports have +5 V and +12 V power capabilities on pin #9, (CN36, CN35) pin # 8 (CN30/CN29) depending on the jumper setting. Pin assignments for both internal and external COM ports can be found in the appendix.

2.16.1 Primary serial ports (COM1: CN36, COM2: CN35)

Each primary serial port has two connections, one external DB-9 and one internal 10-pin header giving the user the flexibility to adapt the board to many different systems. IRQ for COM1 and COM2 is default with COM1 on IRQ4 and COM2 on IRQ3. COM1 and COM2 can be enabled or disabled via BIOS (see Chapter 4).

2.16.2 Secondary serial ports (COM3: CN30, COM4: CN29)

The secondary serial ports each have one 10-pin, internally positioned header connection. The IRQ for COM3 is fixed at IRQ10 and COM4 is fixed at IRQ5. COM3 and COM4 can be enabled/disabled via BIOS (see Chapter 4).

2.17 Keyboard/mouse connectors (CN31, CN32, CN38, CN39)

The POS-564 is uniquely designed to allow 4 ways for keyboard and mouse input. Please note that only one keyboard and one mouse can be connected at one time.

- External mini-DIN PS/2 keyboard/mouse jack (CN38)
- Internal 5-pin header for KB (CN31)
- Internal 6-pin KB/Mouse connector (CN32)
- External mini-DIN PS/2 mouse/keyboard jack (CN39) selected by J10

Please see J10 (jumper settings) on page 18 of chapter 2.

2.18 LPT1 (primary parallel port) connectors (CN37)

The primary parallel printer port is located at the rear edge of the board, and has a DB-25 connector. This printer port is typically used to connect a printer via an adapter cable. LPT1's IRQ setting is defined as IRQ7. You can select Normal/EPP/ECP for LPT1, and enable/disable it in BIOS (see Chapter 4). There is another internal parallel port connector, CN24, also available.

2.19 LPT2 (secondary parallel port) connector (CN27)

The secondary parallel port is located next to and on the inner side of the primary parallel port. This secondary port has a 26-pin box header. LPT2ís IRQ setting is defined as IRQ9. You can select Printer/EPP/ECP/ SPP for LPT2, and enable/disable it in BIOS (see Chapter 4).

2.20 Ethernet configuration

The POS-564 is equipped with a high performance 32-bit PCI-bus Ethernet interface which is fully compliant with IEEE 802.3 u 10/100Mbps CSMA/CD standards. It is supported by all major network operating systems.

2.20.1 RJ-45 connector (CN34)

100/10Base-T connects to the POS-564 via an RJ-45 standard jack.

2.20.2 Internal LAN Connector.

There is an internal 10-pin pin header for LAN connection.

CHAPTER 3

Software Configuration

This chapter details the software configuration information. It shows you how to configure the card to match your application requirements. Award system BIOS is covered in Chapter 4.

Chapter 3 Software Configuration

3.1 Introduction

The POS-564 system BIOS and custom drivers are located in a 256 KB, 32-pin Flash ROM device, designated SK3. A single Flash chip holds the system BIOS and VGA BIOS.

3.2 Utility CD disk

The POS-564 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:

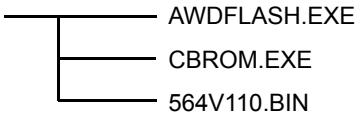


Figure 3.1: Contents of the POS-564 Series utility disk

AWDFLASH.EXE

This program allows you to update the BIOS Flash ROM.

Vxxx.BIN

This binary file contains the system BIOS.

CBROM.EXE

This program allows you to combine your own VGA BIOS with system BIOS.

3.3 BIOS Program Setup

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

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

Figure 3.2: BIOS program setup screen

2. 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 ìDo you want to save?î If you wish to continue press Y. If you change your mind or have made a mistake press N.
3. 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 Connections for two standard LCDs

3.4.1 Connections for Toshiba LTM10C042 (640 x 480 TFT color LCD)

Table 3.1: Connections for Toshiba LTM10C042

LTM10C042		POS-564 CN16	
Pin	Name	Pin	Name
1	GND	3	GND
2	CLK	35	SHFCLK
3	GND	4	GND
4	R0	27	PD18
5	R1	28	PD19
6	R2	29	PD20
7	GND	8	GND
8	R3	30	PD21
9	R4	31	PD22
10	R5	32	PD23
11	GND	33	GND
12	G0	19	PD10
13	G1	20	PD11
14	G2	21	PD12
15	GND	33	GND
16	G3	22	PD13
17	G4	23	PD14
18	G5	24	PD15
19	GND	34	GND
20	ENAB	37	M(DE)
21	GND	34	GND
22	B0	11	PD2
23	B1	12	PD3
24	B2	13	PD4
25	GND	39	GND
26	B3	14	PD5

27	B4	15	PD6
28	B5	16	PD9
29	GND	39	GND
30	VDD	5	+5 V
31	VDD	6	+5 V

3.4.2 Connections for Toshiba LTM12C275A (800 x 600 TFT color LCD)

Table 3.2: Connections for Toshiba LTM12C275A

LTM12C275A		POS-564 CN16	
Pin	Name	Pin	Name
1	GND	3	GND
2	NCLK	35	SHFCLK
3	NC	-	NC
4	NC	-	NC
5	GND	4	GND
6	R0	27	PD18
7	R1	28	PD19
8	R2	29	PD20
9	R3	30	PD21
10	R4	31	PD22
11	R5	32	PD23
12	GND	8	GND
13	G0	19	PD10
14	G1	20	PD11
15	G2	21	PD12
16	G3	22	PD13
17	G4	23	PD14
18	G5	24	PD15
19	GND	33	GND
20	B0	11	PD2
21	B1	12	PD3
22	B2	13	PD4

23	B3	14	PD5
24	B4	15	PD6
25	B5	16	PD7
26	ENAB	37	M/DE
27	GND	34	GND
28	VCC	5	+5 V
29	VCC	6	+5 V
30	GND	39	GND

CHAPTER 4

Award BIOS Setup

This chapter describes how to set BIOS configuration data.

Chapter 4 Award BIOS Setup

4.1 System test and initialization

These routines test and initialize board hardware. If the routines encounter an error during the tests, you will either hear a few short beeps or see an error message on the screen. There are two kinds of errors: fatal and non-fatal. The system can usually continue the boot up sequence with non-fatal errors. Non-fatal error messages usually appear on the screen along with the following instructions:

press <F1> to RESUME

Write down the message and press the F1 key to continue the bootup sequence.

4.1.1 System configuration verification

These routines check the current system configuration against the values stored in the cardís CMOS memory. If they do not match, the program outputs an error message. You will then need to run the BIOS setup program to set the configuration information in memory.

There are three situations in which you will need to change the CMOS settings:

1. You are starting your system for the first time.
2. You have changed the hardware attached to your system.
3. The CMOS memory has lost power and the configuration information has been erased.

The POS-564ís CMOS memory has an integral lithium battery backup. The battery backup should last ten years in normal service, but when it finally runs down, you will need to replace the complete unit.

4.2 Award BIOS setup

Awardís BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This type of information is stored in battery-backed CMOS RAM so that it retains the Setup information when the power is turned off.

4.2.1 Entering setup

Power on the computer and press <Del> immediately. This will allow you to enter Setup.

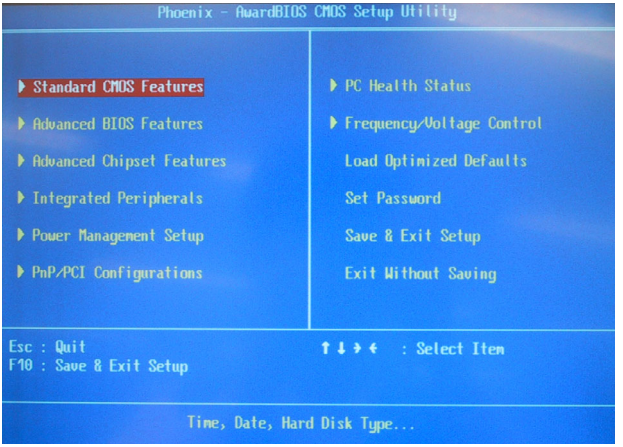


Figure 4.1: Setup program initial screen

4.2.2 Standard CMOS setup

When you choose the Standard CMOS Setup option from the Initial Setup Screen menu, the screen shown below is displayed. This standard Setup Menu allows users to configure system components such as date, time, hard disk drive, floppy drive, display, and memory. Once a field is

highlighted, online help information is displayed in the left bottom of the Menu screen.

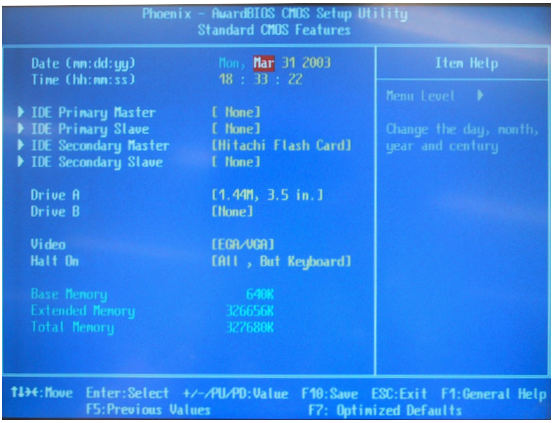


Figure 4.2: CMOS setup screen

4.2.3 BIOS features setup

By choosing the BIOS FEATURES Setup option from the Initial Setup Screen menu, the screen below is displayed. This sample screen contains the manufacturerís default values for the POS-564.

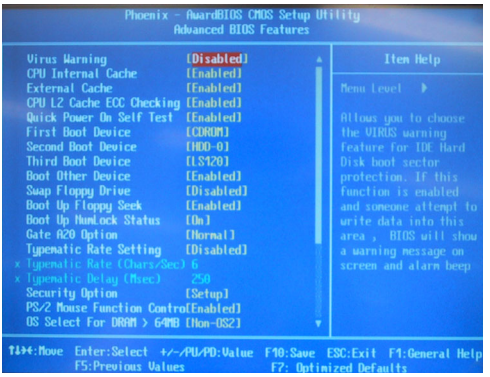


Figure 4.3: BIOS features setup screen

4.2.4 Chipset features setup

By choosing the CHIPSET FEATURES Setup option from the Initial Setup Screen menu, the screen below is displayed. This sample screen contains the manufacturerís default values for the POS-564.

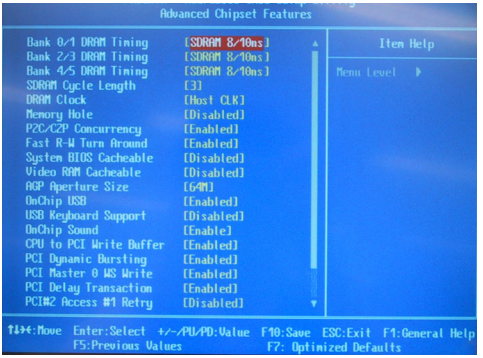


Figure 4.4: Chipset features setup screen

4.2.5 Power management setup

By choosing the POWER MANAGEMENT Setup option from the Initial Setup Screen menu, the screen below is displayed. This sample screen contains the manufacturer's default values for the POS-564.

Figure 4.5: Power management setup screen

4.2.6 PnP/PCI configuration setup

By choosing the PnP/PCI CONFIGURATION option from the Initial Setup Screen menu, the screen below is displayed. This sample screen contains the manufacturerís default values for the POS-564.

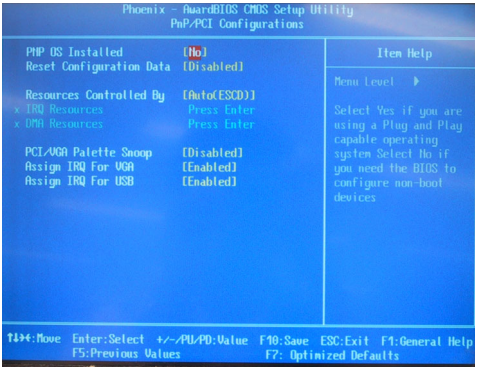


Figure 4.6: PCI configuration setup screen

4.2.7 Integrated peripherals

By choosing the INTEGRATED PERIPHERALS option from the Initial Setup Screen menu, the screen below is displayed. This sample screen contains the manufacturer's default values for the POS-564.

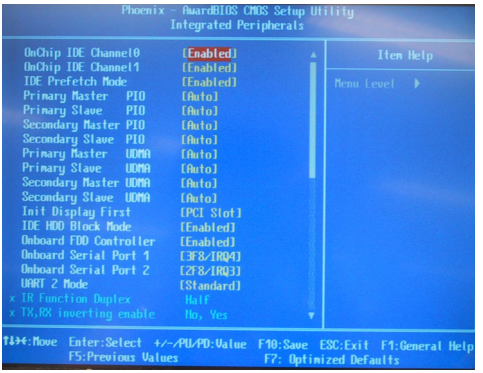


Figure 4.7: Integrated peripherals setup screen

4.2.8 Load BIOS defaults

LOAD BIOS DEFAULTS loads the default system values directly from ROM. If the stored record created by the Setup program becomes corrupted (and therefore unusable), these defaults will load automatically when you turn the POS-564 on.

4.2.9 Change password

To change the password, choose the Set Password option form the Award Bios setup utility menu, and press <Enter>.

1. If the CMOS is bad or this option has never been used, a default password is stored in the ROM. The screen will display the following message:

Enter Password:

Press <Enter>.

2. If the CMOS is good or this option has been used to change the default password, the user is asked for the password stored in the CMOS. The screen will display the following message:

Confirm Password:

Enter the current password and press <Enter>.

3. After pressing <Enter> (ROM password) or the current password (user-defined), you can change the password stored in the CMOS. The password can be at most eight (8) characters long.

Remember: To enable this feature, you must first select either Setup or System in Change User Password.

4.2.10 Quit screen

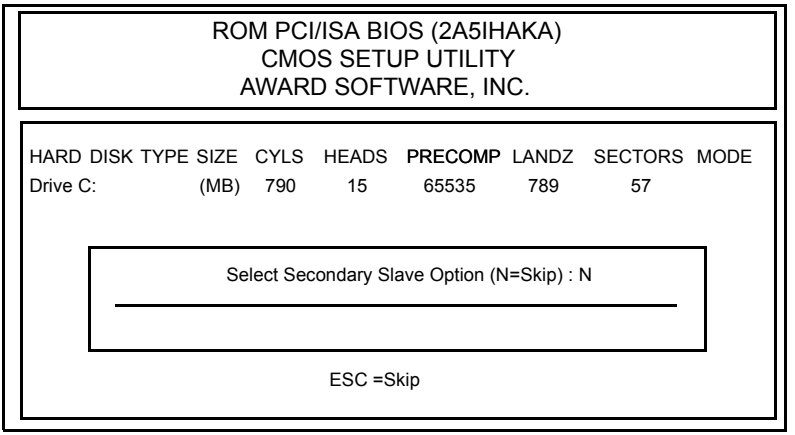


Figure 4.8: BIOS setup program quit screen

4.2.11 Save settings and exit

If you select this option and press <Enter>, the values entered in the setup utilities will be recorded in the chipset's CMOS memory. The microprocessor will check this every time you turn your system on and compare this to what it finds as it checks the system. This record is required for the system to operate.

4.2.12 Exit without saving

Selecting this option and pressing <Enter> lets you exit the Setup program without recording any new values or changing old ones.

CHAPTER 5

PCI SVGA Setup

- Introduction
- Installation of SVGA drivers
  - -for Windows 95/98/Me
  - -for Windows NT/2000/XP
- Further information

Chapter 5 PCI SVGA Setup

5.1 Introduction

The POS-564 has an onboard AGP flat panel/VGA interface. The specifications and features are described as follows:

5.1.1 Chipset

The POS-564 uses a VIA 8601A chipset from VIA Technology Inc. for its AGP/SVGA controller. It supports many popular LCD, and LVDS LCD displays and conventional analog CRT monitors. The VIA8601A VGA BIOS supports color TFT and DSTN LCD flat panel displays. In addition, it also supports interlaced and non-interlaced analog monitors (color and monochrome VGA) in high-resolution modes while maintaining complete IBM VGA compatibility. Digital monitors (i.e. MDA, CGA, and EGA) are NOT supported. Multiple frequency (multisync) monitors are handled as if they were analog monitors.

5.1.2 Display memory

The 8601A chip can support 2 to 8 MB frame buffer shared with system memory; the VGA controller can drive CRT displays or color panel displays with resolutions up to 1600 x 1200 at 16 M colors.

5.1.3 Display types

CRT and panel displays can be used simultaneously. The POS-564 can be set in one of three configurations: on a CRT, on a flat panel display, or on both simultaneously. The system is initially set to simultaneous display mode. If you want to enable the CRT display only or the flat panel display only, please contact VIA Technology Inc., or our sales representative for detailed information.

5.2 Installation of the SVGA Driver

Complete the following steps to install the SVGA driver. Follow the procedures in the flow chart that apply to the operating system that you are using within your POS-564.

Note 1: *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.*

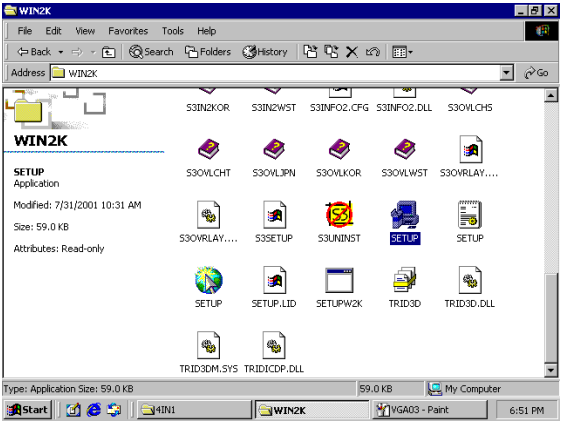
2. For convenience, the CD-ROM drive is designated as "D" throughout this chapter.

The procedure to install VGA driver in Win 98, NT4.0 and XP are almost the same as Windows 2000. For VGA installation procedure, please refer to the Windows 2000 installation procedure.

However, the path is different. For the Windows 2000 driver, it is in "WIN2K" directory, WindowsMe VGA driver in "WINME" directory, WindowsNT 4.0 in "WINNT4" directory, and Windows XP is "WINXP" directory.

5.2.1 Installation for Windows Win2000

1. Insert the CD into the CD-ROM drive. Run the setup.exe file in the path D:\vga\VT860\WIN2K



2. Select "Yes, I want to restart my computer now" and click "Finish" to complete the installation.

5.3 Further Information

For further information about the AGP/VGA installation in your PCM-9575, including driver updates, troubleshooting guides and FAQ lists, visit the following web resources:

VIA website: www.via.com.tw

Advantech websites: www.advantech.com
www.advantech.com.tw

CHAPTER 6

Audio Setup

The POS-564 is equipped with an audio interface that records and plays back CD-quality audio. This chapter provides instructions for installing the software drivers included on the audio driver diskettes.

Chapter 6 Audio Setup

6.1 Audio setup

The POS-564's on-board audio interface provides high-quality stereo sound and FM music synthesis (ESFM) by using the Realtek ALC201 audio controller. The audio interface can record, compress, and play back voice, sound, and music with built-in mixer control.

The POS-564 on board audio interface also supports the Plug and Play (PnP) standard and provides PnP configuration for the audio, FM, and MPU-104 logical devices. It is compatible with Sound Blaster™; Sound Blaster Pro™ version 3.01, voice and music functions. The ESFM synthesizer is register compatible with the OPL3 and has extended capabilities.

6.2 DOS utilities

6.2.1 VIA Sound Blaster Pro compatible set up program

Please "Enable" the Sound Blaster setting in the BIOS before playing Sound Blaster compatible DOS games. To enable the settings in the BIOS:

INTEGRATED PERIPHERALS -> Onboard Legacy Audio

-> Sound Blaster (Disable -> Enable)

Chipset Feature Setup ->On Chip Sound (Disable-> Enable)

The Sound Blaster Pro compatible sound chip is integrated into the VIA PCI audio device in order to have Sound Blaster compatible DOS games running on the system.

If you want to play Sound Blaster compatible DOS games under the real mode MS-DOS or the "Restart in MS-DOS" from Win9x, then you should run this setup program to enable OPL3 MIDI music. Otherwise, the sound effects will be heard, but not the music. If you want to play legacy games in a Windows DOS Box, then you don't need to install this program.

6.2.2 VIA Sound Blaster Installation

Follow these steps to enable the Sound Blaster Pro compatible functions.

1. Enable the Sound Blaster first on the BIOS setting of the "Onboard Legacy Audio" and "On-Chip Sound".
2. Run the "Install.exe".
   A:> INSTALL
3. The program will copy the relative files into the directory which you assign. Next, the program will insert the following new line into the AUTOEXEC.BAT and copy the original AUTOEXEC.BAT to AUTOEXEC.VIA.
   C: \VIAUDIO\VIAUDIO.COM
4. Reboot the system when the installation is complete.
5. Uninstall by deleting the new line from the AUTOEXEC.BAT.

6.3 Driver installation

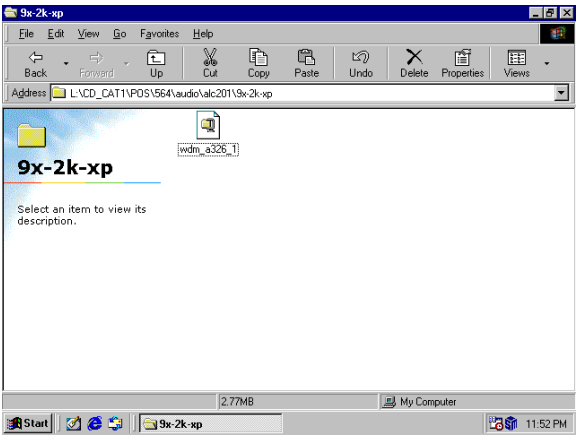
6.3.1 Before you begin

Please read the instructions in this chapter carefully before you attempt installation. The audio drivers for the POS-564 board are located on the audio driver CD. Run the supplied SETUP program to install the drivers; don't copy the files manually.

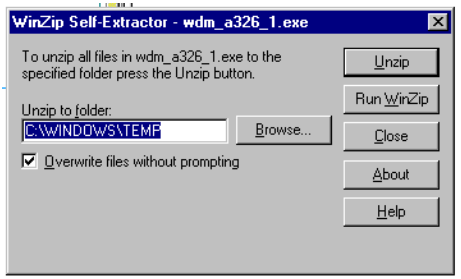
Note: *The files on the software installation diskette are compressed. Do not attempt to install the drivers by copying the files manually. You must use the supplied SETUP program to install the drivers.*

6.3.2 Windows 95/98/2000/XP drivers

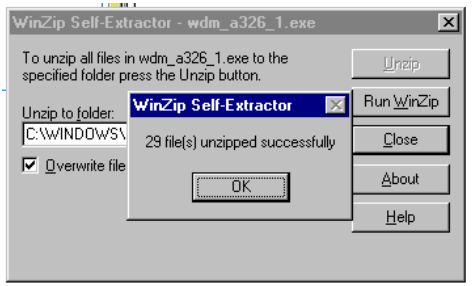
1. Double Click "wdm_a326_1" in "D:\564\Audio\alc2019x-2k-xp" to start the installation procedure.



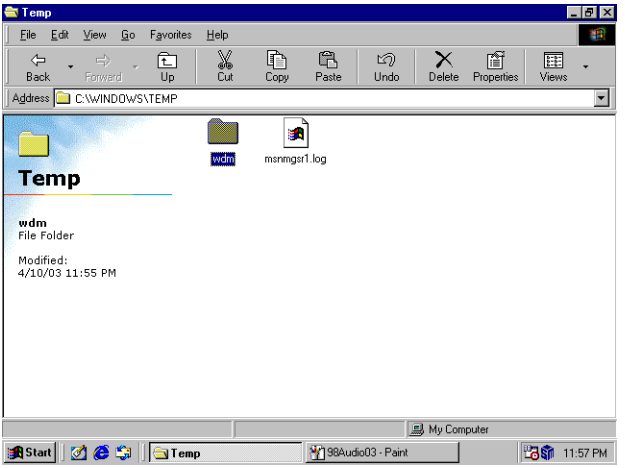
2. Enter the unzip folder. Such as "C:\WINDOWS\TEMP" then click "Unzip".



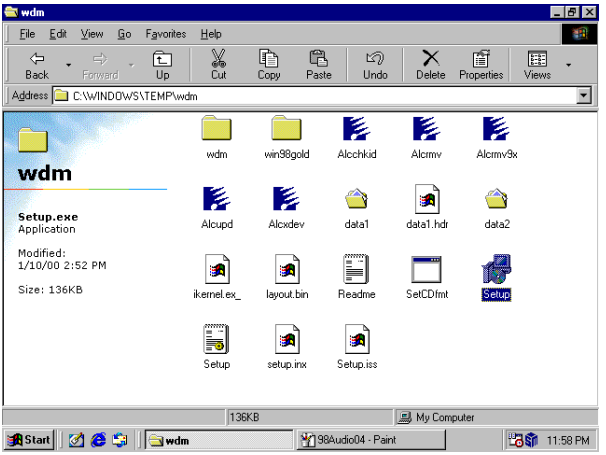
3. Wait until the unzipped file successfully then click "OK".



4. Go to the directory of the files had been unzipped. Such as "C:\WINDOWS\TEMP" then go into the "wdm" directory

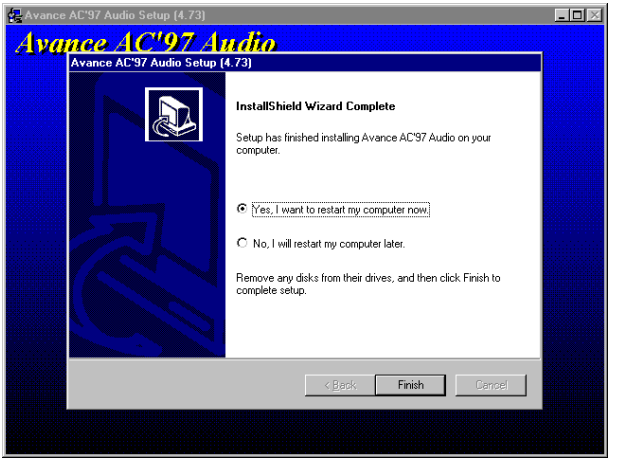


5. Click "Setup" to do installation.



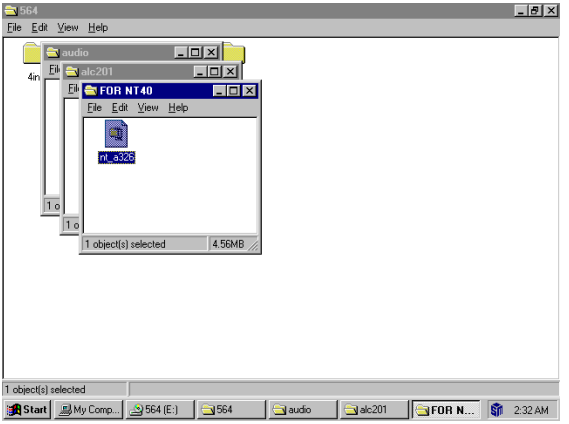
6. Click "Next" to continue.

7. Select "Yes, I want to restart my computer now." and click "Finish" to finish audio driver installation.

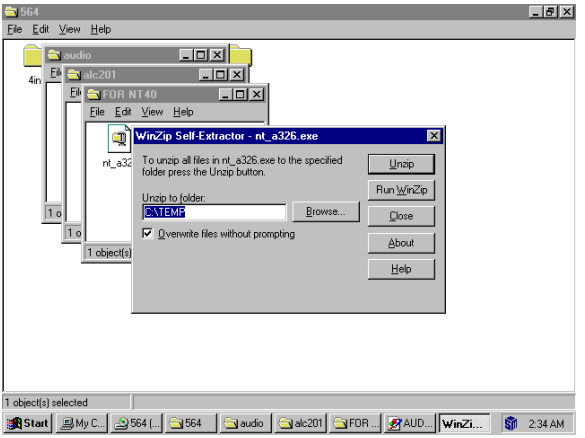


6.3.3 Windows NT drivers

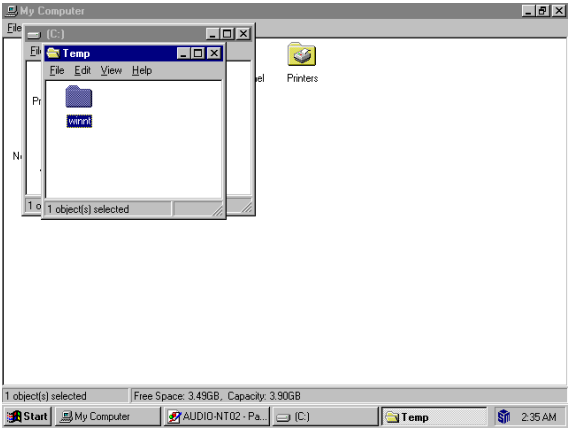
1. Click "nt_a326" at the directory of "D:\564\Audio\alc201\FOR NT40". D driver is the CD_ROM location in your system.



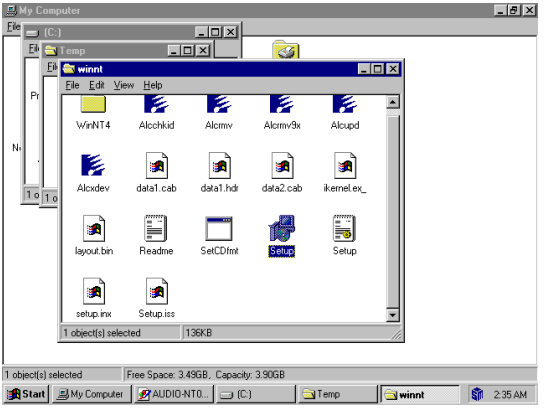
2. Enter the unzip folder, such as"C:\TEMP" then click "Unzip".



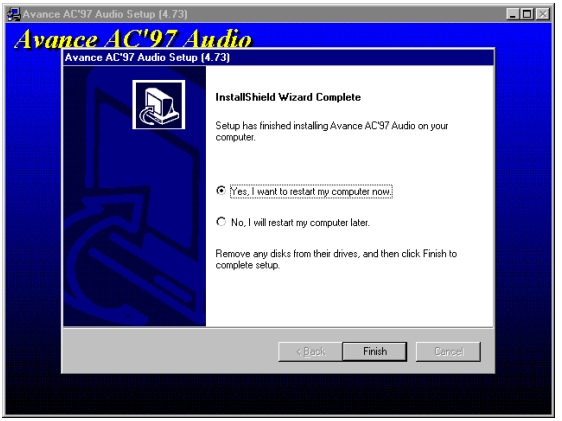
3. Go the the unzip directory, such as"C:\Temp" then click the "winnt" sub-directory.



4. Click "Setup" to instal audio driver.



5. Select "Yes, I want to restart my computer now." and click "Finish" to finish the audio driver installation.



CHAPTER 7

PCI Bus Ethernet Interface

This chapter provides information on Ethernet configuration.

Sections include:

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

Chapter 7 PCI Bus Ethernet Interface

7.1 Introduction

The POS-564 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. The medium type can be configured via the RSET8139.exe program included on the utility disk. The Ethernet port provides a standard RJ-45 jack on board.

7.2 Installation of Ethernet driver

Before installing the Ethernet driver, note the procedures below. You must know which operating system you are using in your POS-564, 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.

Notes: *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.*

7.2.1 Installation for MS-DOS and Windows

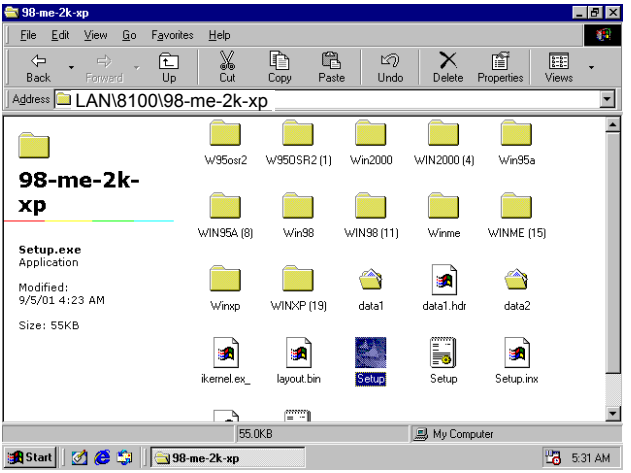
If you want to set up your Ethernet connection under the MS-DOS or Windows environment, you should first check your server system model. For example, MS-NT, IBM-LAN server, and so on.

Then choose the correct driver to install in your panel PC.

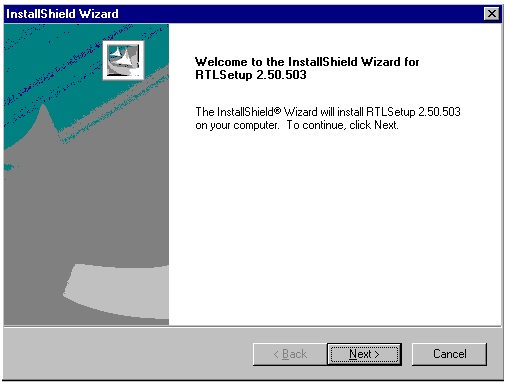
7.2.2 Installation for Windows 98/2000/Me/XP

1. a. Search path for "LAN\8100BL\98-me-2k-xp" in CD-ROM diskette.

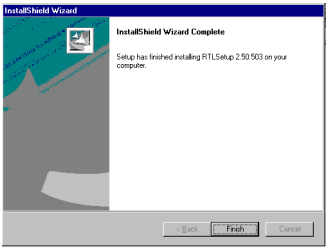
   b. Double click "Setup"



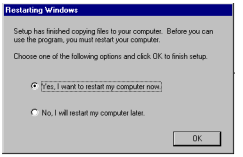
2. a. Wizard will start to install Ethernet driver.Click "Next" to continue install.



3. a. Then the Wizard will start to install Ethernet Driver..
4. Cick "Finish" to finish install Ethernet Driver.

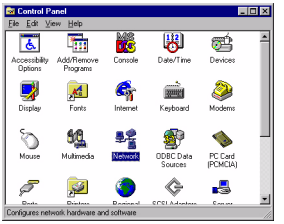


5. Select "Yes, I want to restart my computer now." and Click "OK" to reboot system.

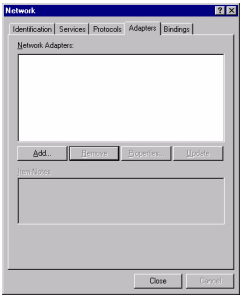


7.2.3 Installation for Windows NT

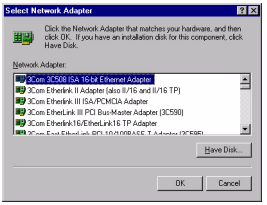
1. a. Select "Start", "Settings", "Control Panel".
   b. Double click, "Network".



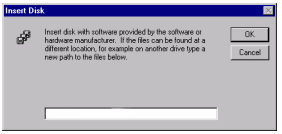
2. a. Choose the "Adaptors" label.
   b. Click the "add" button.



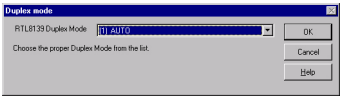
3. Press "Have Disk".



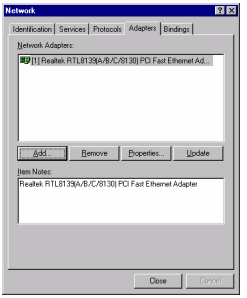
4. a. Insert the CD into the D: \drive.
   b. D:\LAN\8100BL\NT40\winnt40
   c. Click "OK".



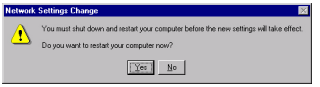
5. a. Click "OK".



6. a. Click "Add".



7. a. Click "Yes".



Appendix A

DOC® 2000 Installation Guide

This appendix contains information on the DiskOnChip® 2000 quick installation guide. It includes:

- DiskOnChip® 2000 installation instructions
- Additional information and assistance

Appendix A DOC® 2000 Installation Guide

A.1 DiskOnChip® 2000 Quick Installation Guide

A.1.1 DiskOnChip® 2000 installation instructions

1. Make sure the target platform is powered OFF.
2. Plug the DiskOnChip® 2000 device into its socket. Verify the direction is correct (pin 1 of the DiskOnChip 2000 is aligned with pin 1 of the socket).
3. Power up the system.
4. During power up you may observe the messages displayed by the DiskOnChip 2000 when its drivers are automatically loaded into the system's memory.
5. At this stage the DiskOnChip 2000 can be accessed as any disk in the system.
6. If the DiskOnChip 2000 is the only disk in the system, it will appear as the first disk (drive C: in DOS).
7. If there are more disks besides the DiskOnChip 2000, the DiskOnChip 2000 will appear by default as the last drive, unless it was programmed as the first drive. (Please refer to the DiskOnChip 2000 utilities user manual.)
8. If you want the DiskOnChip 2000 to be bootable:

a. Copy the operating system files into the DiskOnChip by using the standard DOS command (for example: sys d:).

b. The DiskOnChip 2000 should be the only disk in the systems or would be configured as the first disk in the system (c:) using the DUPDATE utility.

```
DUPDATE D /S: DOC121.EXB /FIRST(set as c:)
DUPDATE C /S: DOC121.EXB(set as d:)
```

A.1.2 Additional information and assistance

1. Visit M-Systems' website at www.m-sys.com where you can find Utilities Manuals, Data Sheets and Application Notes. In addition, you can find the latest DiskOnChip 2000 S/W utilities.

2. Contact your dealer for technical support if you need additional assistance, and have the following information ready:
   - Product name and serial number.
   - Description of your computer hardware (manufacturer, model, attached devices, etc.)
   - Description of your software (operating system, version, application software, etc.)
   - A complete description of the problem.
   - The exact wording of any error messages.

Appendix B

Pin Assignments

This appendix gives instructions for installing PC/104 modules.

Appendix B Pin Assignments

B.1 Digital I/O ConnectorType: Box-Header 16-Pin 2.54mm (CN1)

Table B.1: Digital I/O ConnectorType: Box-Header 16-Pin 2.54mm (CN1)

Pin	Pin name	Pin	Pin name
1	DIO IN1	2	+5V
3	DIO IN2	4	DIO OUT1
5	DIO IN3	6	DIO GND
7	DIO IN4	8	DIO OUT2
9	GND	10	+12V
11	NC	12	NC
13	DIO OUT4	14	DIO GND
15	DIO OUT3	16	+12V

B.2 IR Connector Type: Wafer-Box 5-Pin 2.54mm (CN2)

Table B.2: IR Connector Type: Wafer-Box 5-Pin 2.54mm (CN2)

Pin	Pin name
1	+5V
2	NC
3	IR RX
4	GND
5	IR TX

B.3 Game Port /MIDI Connector Type: Box-Header 16-Pin 2.54mm (CN3)

Table B.3: Game Port /MIDI Connector Type: Box-Header 16-Pin 2.54mm (CN3)

Pin	Pin name	Pin	Pin name
1	+5V	2	+5V
3	JAB1	4	JBB1
5	JAX	6	JBX
7	GND	8	MSO
9	GND	10	JBY
11	JAY	12	JBB2
13	JAB2	14	MSI
15	+5V	16	GND

B.4 FIR Connector Type: WaferBox 5-Pin 2.54mm (CN4)

Table B.4: FIR Connector Type: WaferBox 5-Pin 2.54mm (CN4)

Pin	Pin name
1	+5V
2	FIR RX
3	IR RX
4	GND
5	IR TX

B.5 FAN1 Control Connector (CN5)

Table B.5: FAN1 Control Connector (CN5)

Pin	Pin name
1	GND
2	+12v
3	FAN

B.6 Audio Connector Type: Box-Header 16-Pin 2.54mm (CN6)

Table B.6: Audio Connector Type: Box-Header 16-Pin 2.54mm (CN6)

Pin	Pin name	Pin	Pin name
1	SPEAKER (R)	2	GND
3	SPEAKER (L)	4	GND
5	LINE OUT (R)	6	LINE OUT (L)
7	GND	8	GND
9	LINE IN (R)	10	LINE IN (L)
11	GND	12	GND
13	NC	14	MICRO IN (L)
15	MICRO IN (R)	16	GND

B.7 Secondary Slaver IDE Connector Type: Box-Header 44-Pin 2.0mm (CN7)

Table B.7: Secondary Slaver IDE Connector Type: Box-Header 44-Pin 2.0mm (CN7)

Pin	Pin name	Pin	Pin name *LOW ACTIVE
1	IDE RESET*	2	GND
3	D7	4	D8
5	D6	6	D9
7	D5	8	D10
9	D4	10	D11
11	D3	12	D12
13	D2	14	D13
15	D1	16	D14
17	D0	18	D15
19	GND	20	NC
21	IDE DREQ	22	GND
23	IOW*	24	GND
25	IOR*	26	GND
27	CHRDY	28	NC
29	IDE DACK*	30	GND
31	IDE IRQ	32	NC
33	A1	34	DMA33/66
35	A0	36	A2
37	CS0*	38	CS1*
39	ACTIVE*	40	GND
41	+5V	42	+5V
43	GND	44	NC

B.8 Primary IDE Connector Type: Box-Header 40-Pin 2.54mm (CN9)

Table B.8: Primary IDE Connector Type: Box-Header 40-Pin 2.54mm (CN9)

Pin	Pin name	Pin	Pin name *: LOW ACTIVE
1	IDE RESET*	2	GND
3	D7	4	D8
5	D6	6	D9
7	D5	8	D10
9	D4	10	D11
11	D3	12	D12
13	D2	14	D13
15	D1	16	D14
17	D0	18	D15
19	GND	20	NC
21	IDE DREQ	22	GND
23	IOW*	24	GND
25	IOR*	26	GND
27	CHRDY	28	NC
29	IDE DACK*	30	GND
31	IDE IRQ	32	NC
33	A1	34	DMA33/66
35	A0	36	A2
37	CS0*	38	CS1*
39	ACTIVE*	40	GND

B.9 CDROM Audio-In ConnectorType: Wafer-Box 4-Pin 2.54mm (CN10)

Table B.9: CDROM Audio-In Connector Type: Wafer-Box 4-Pin 2.54mm (CN10)

Pin	Pin name
1	AUDIO IN (L)
2	AUDIO GND
3	AUDIO GND
4	AUDIO IN (R)

B.10 LCD Brightness Adjustor Connector Type: Wafer-Box 3-Pin 2.54mm (CN11)

Table B.10: LCD Brightness Adjustor Connector Type: Wafer-Box 3-Pin 2.54mm (CN11)

Pin	Pin Name
1	BR HIGH
2	BRIGHTNESS ADJ.
3	BR LOW

B.11 LCD Contrast Adjustor Connector Type: Wafer-Box 3-Pin 2.54mm (CN12)

Table B.11: LCD Contrast Adjustor Connector Type: Wafer-Box 3-Pin 2.54mm (CN12)

Pin	Pin Name
1	CON HIGH
2	CONTRAST ADJ.
3	CON LOW

B.12 USB3, USB4 Connector Type: Box-Header 10-Pin 2.54mm (CN13)

Table B.12: USB3, USB4 Connector Type: Box-Header 10-Pin 2.54mm (CN13)

Pin	Pin name	Pin	Pin name
1	USB VCC	2	USBV CC
3	DATA3-	4	DATA4--
5	DATA3+	6	DATA4+
7	USB GND	8	USB GND
9	USB GND	10	USB GND

B.13 LCD Backlight Connector Type: Wafer-Box 5-Pin 2.0mm (CN14)

Table B.13: LCD Backlight Connector Type: Wafer-Box 5-Pin 2.0mm (CN14)

Pin	Pin name
1	+12V
2	GND
3	ENABLE BACKLITE
4	BRIGHTNESS ADJ.
5	+5V

B.14 LCD Contrast Dc to DC Connector Type: Wafer-Box 5-Pin 2.0mm (CN15)

Table B.14: LCD Contrast Dc to DC Connector Type: Wafer-Box 5-Pin 2.0mm (CN15)

Pin	Pin name
1	+5V
2	ENABLE CONTRAST
3	GND
4	CONTRAST ADJ
5	GND

B.15 LCD1 Connector Type: Pin-Header 44-Pin 2.0mm (CN16)

Table B.15: LCD1 Connector Type: Pin-Header 44-Pin 2.0mm (CN16)

Pin	Pin name	Pin	Pin name
1	+12V	2	+12V
3	GND	4	GND
5	LCD VDD	6	LCD VDD
7	CONTRAST ADJ.	8	GND
9	P0	10	P1
11	P2	12	P3
13	P4	14	P5
15	P6	16	P7
17	P8	18	P9
19	P10	20	P11
21	P12	22	P13
23	P14	24	P15
25	P16	26	P17
27	P18	28	P19
29	P20	30	P21
31	P22	32	P23
33	GND	34	GND
35	SHFCLK	36	FLM (V-SYNC)
37	M (DE)	38	LP (H-SYNC)
39	GND	40	ENABLE BACKLITE
41	NC	42	NC
43	NC	44	NC

B.16 FDD Connector Type: Box-Header 34-Pin 2.54mm (CN17)

Table B.16: FDD Connector Type: Box-Header 34-Pin 2.54mm (CN17)

Pin	Pin name	Pin	Pin name *: LOW ACTIVE
1	GND	2	DRVDEN A
3	GND	4	NC
5	GND	6	DRVDEN B
7	GND	8	INDEX*
9	GND	10	MTR A*
11	GND	12	DS B*
13	GND	14	DS A*
15	GND	16	MTR B*
17	GND	18	DIR*
19	GND	20	STEP*
21	GND	22	WDATA*
23	GND	24	WGATE*
25	GND	26	TRK00*
27	GND	28	WRTPRT*
29	GND	30	RDATA*
31	GND	32	HDSEL*
33	GND	34	DSKCHG*

B.17 SMBus Connector Type: Wafer-Box 4-Pin 2.0mm (CN18)

Table B.17: SMBus Connector Type: Wafer-Box 4-Pin 2.0mm (CN18)

Pin	Pin name
1	+3.3V
2	SMB CLK
3	SMB DATA
4	GND

B.18 PCI/ISA Slot (CN19)

Table B.18: PCI/ISA Slot (CN19)

Pin	Pin name	Pin	Pin name *: LOW ACTIVE
A1	IOCHK*	B1	GND
A2	SD7	B2	RST
A3	SD6	B3	VCC
A4	SDD5	B4	IRQ9
A5	SD4	B5	-5V
A6	SD3	B6	DRQ2
A7	SD2	B7	-12V
A8	SD1	B8	OWS
A9	SD0	B9	+12V
A10	IORDY	B10	GND
A11	AEN	B11	SMW*
A12	SA19	B12	SMR*
A13	SA18	B13	IOW*
A14	SA17	B14	IOR*
A15	SA16	B15	DACK3
A16	SA15	B16	DRQ3
A17	SA14	B17	DACK1
A18	SA13	B18	DRQ1

Table B.18: PCI/ISA Slot (CN19)

Pin	Pin name	Pin	Pin name *: LOW ACTIVE
A19	SA12	B19	REF*
A20	SA11	B20	SCLK
A21	SA10	B21	IRQ7
A22	SA9	B22	IQO6
A23	SA8	B23	IRQ5
A24	SA7	B24	IRQ4
A25	SA6	B25	IRQ3
A26	SA5	B26	DACK2
A27	SA4	B27	TC
A28	SA3	B28	ALE
A29	SA2	B29	VCC
A30	SA1	B30	OSC
A31	SA0	B31	GND
C1	SBHE*	D1	MEM16*
C2	LA23	D2	IO16*
C3	LA22	D3	IRQ10
C4	LA21	D4	IRQ11
C5	LA20	D5	IRQ12
C6	LA19	D6	IRQ15
C7	LA18	D7	IRQ14
C8	LA17	D8	DACK0
C9	MEMR*	D9	DRQ0
C10	MEMW*	D10	DACK5
C11	SD8	D11	DRQ5
C12	SD9	D12	DACK6
C13	SD10	D13	DRQ6
C14	SD11	D14	DACK7
C15	SD12	D15	DRQ7
C16	SD13	D16	VCC
C17	SD14	D17	MASTER*

Table B.18: PCI/ISA Slot (CN19)

Pin	Pin name	Pin	Pin name *: LOW ACTIVE
C18	SD15	D18	GND
E1	GND	F1	GND
E2	GND	F2	GND
E3	INTA	F3	INTC
E4	INTB	F4	INTD
E5	VCC	F5	VCC
E6	NC	F6	NC
E7	VCC	F7	VCC
E8	RST	F8	PCLKF
E9	GNTA	F9	GND
E10	REQA	F10	GNTB
E11	GND	F11	GND
E12	PCLKE	F12	REQB
E13	GND	F13	AD31
E14	AD30	F14	AD29
E15	NC	F15	SYNC
E16	NC	F16	NC
E17	SDATIN	F17	SDATOUT
E18	AD28	F18	AD27
E19	AD26	F19	AD25
E20	AD24	F20	CBE3
E21	AD22	F21	AD23
E22	AD20	F22	AD21
E23	AD18	F23	AD19
E24	CLKBIT	F24	PCIRST
E25	NC	F25	NC
E26	NC	F26	NC
E27	AD16	F27	AD17
E28	FRAME	F28	IRDY
E29	CBE2	F29	DEVSEL

Table B.18: PCI/ISA Slot (CN19)

Pin	Pin name	Pin	Pin name *: LOW ACTIVE
E30	TRDY	F30	LOCK
E31	STOP	F31	PERR
G1	NC	H1	SERR
G2	NC	H2	AD15
G3	CBE1	H3	AD14
G4	PAR	H4	AD12
G5	GND	H5	GND
G6	NC	H6	NC
G7	GND	H7	GND
G8	AD13	H8	AD10
G9	AD11	H9	AD8
G10	AD9	H10	AD7
G11	CBE0	H11	AD5
G12	AD6	H12	AD3
G13	AD4	H13	AD1
G14	AD2	H14	AD0
G15	NC	H15	NC
G16	VCC	H16	VCC
G17	VCC	H17	VCC
G18	GND	H18	GND
G19	GND	H19	GND

B.19 USB1, USB2 Connector Type: Box-Header 10-Pin 2.54mm (CN20)

Table B.19: USB1, USB2 Connector
Table B.20: Type: Box-Header 10-Pin 2.54mm (CN20)

Pin	Pin name	Pin	Pin name
1	USB VCC	2	USB VCC
3	DATA1-	4	DATA2--
5	DATA1+	6	DATA2+
7	USB GND	8	USB GND
9	USB GND	10	USB GND

B.20 LCD2-2 Connector Type: DF13 40-Pin 1.25mm (CN21)

Table B.21: LCD2-2 Connector Type: DF13 40-Pin 1.25mm (CN21)

Pin	Pin name	Pin	Pin name
1	+5VDD	2	+5VDD
3	GND	4	GND
5	+3.3VDD	6	+3.3VDD
7	CONTRAST ADJ.	8	GND
9	P24	10	P25
11	P26	12	P27
13	P28	14	P29
15	P30	16	P31
17	P32	18	P33
19	P34	20	P35
21	P36	22	P37
23	P38	24	P39
25	P40	26	P41
27	P42	28	P43
29	P44	30	P45
31	P46	32	P47

Table B.21: LCD2-2 Connector Type: DF13 40-Pin 1.25mm (CN21)

Pin	Pin name	Pin	Pin name
33	GND	34	GND
35	SHFCLK2	36	FLM2 (V-SYNC2)
37	M2 (DE2)	38	LP2 (H-SYNC2)
39	ENABLE BACKLITE	40	NC

B.21 AT Power Connector Type: Wafer PC/AT PWR 12-Pin 3.96mm (CN22)

Table B.22: AT Power Connector Type: Wafer PC/AT PWR 12-Pin 3.96mm (CN22)

Pin	Pin name
1	PWROK
2	+5V
3	+12V
4	-12V
5	GND
6	GND
7	GND
8	GND
9	-5V
10	+5V
11	+5V
12	+5V

B.22 ATX Power Connector Type: Wafer ATX PWR 20-Pin (CN23)

Table B.23: ATX Power Connector Type: Wafer ATX PWR 20-Pin (CN23)

Pin	Pin name	Pin	Pin name *: LOW ACTIVE
1	NC	11	NC
2	NC	12	-12V
3	GND	13	GND
4	+5V	14	PSON*
5	GND	15	GND
6	+5V	16	GND
7	GND	17	GND
8	PWROK	18	-5V
9	+5VSB	19	+5V
10	+12V	20	+5V

B.23 LCD2-1 ConnectorType: DF13 40-Pin 1.25mm (CN24)

Table B.24: LCD2-1 Connector Type: DF13 40-Pin 1.25mm (CN24)

Pin	Pin name	Pin	Pin name
1	+5VDD	2	+5VDD
3	GND	4	GND
5	+3.3VDD	6	+3.3VDD
7	CONTRAST ADJ.	8	GND
9	P0	10	P1
11	P2	12	P3
13	P4	14	P5
15	P6	16	P7
17	P8	18	P9
19	P10	20	P11
21	P12	22	P13
23	P14	24	P15
25	P16	26	P17
27	P18	28	P19
29	P20	30	P21
31	P22	32	P23
33	GND	34	GND
35	SHFCLK1	36	FLM1 (V-SYNC1)
37	M1 (DE1)	38	LP1 (H-SYNC1)
39	ENABLE BACKLITE	40	NC

B.24 System Function Connector Type: Pin-Header 20-Pin 2.54mm (CN25)

Table B.25: System Function Connector Type: Pin-Header 20-Pin 2.54mm (CN25)

Pin	Pin name	Pin	Pin name *: LOW ACTIVE
1	PW LED	2	+5V
3	PW LED	4	GND
5	PW LED GND	6	SPKB
7	KB LOCK*	8	SPKA
9	KB LOCK* GND	10	NC
11	PANSW* GND	12	HDD LED
13	PANSW*	14	HDD LED +5V
15	NC	16	NC
17	EXT SMI*	18	FP RST*
19	GND	20	FP RST* GND

B.25 FAN2 Control Connector (CN26)

Table B.26: FAN2 Control Connector (CN26)

Pin	Pin name
1	GND
2	+12v
3	FAN

B.26 LPT2 ConnectorType: Box-Header 26-Pin 2.54mm (CN27)

Table B.27: LPT2 Connector	Type: Box-Header 26-Pin 2.54mm (CN27)		
Pin	**Pin name**	**Pin**	**Pin name *: LOW ACTIVE**
1	STROBE*	2	AUTO FEED*
3	PD0	4	ERROR*
5	PD1	6	INIT*
7	PD2	8	SELECT IN*
9	PD3	10	GND
11	PD4	12	GND
13	PD5	14	GND
15	PD6	16	GND
17	PD7	18	GND
19	ACK*	20	GND
21	BUSY	22	GND
23	PE	24	GND
25	SELECT	26	NC

B.27 LAN Connector Type: Pin-Header 10-Pin 2.0mm (CN28)

Table B.28: LAN Connector Type: Pin-Header 10-Pin 2.0mm (CN28)

Pin	**Pin name**	**Pin**	**Pin name *: LOW ACTIVE**
1	LAN VCC	2	LED ACTIVE*
3	RX+	4	RX-
5	LED LINK*	6	RXCT
7	NC	8	TXCT
9	TX+	10	TX-

B.28 COM4 Connector Type: Box-Header 10-Pin 2.54mm (CN29)

Table B.29: COM4 Connector Type: Box-Header 10-Pin 2.54mm (CN29)

Pin	Pin name	Pin	Pin name *: LOW ACTIVE
1	DCD*	2	DSR*
3	RX	4	RTS*
5	TX	6	CTS*
7	DTR*	8	RI (set by J8, J11)
9	GND	10	GND

B.29 COM3 CONNECTORType: Box-Header 10-Pin 2.54mm (CN30)

Table B.30: COM3 CONNECTOR Type: Box-Header 10-Pin 2.54mm (CN30)

Pin	Pin name	Pin	Pin name *: LOW ACTIVE
1	DCD*	2	DSR*
3	RX	4	RTS*
5	TX	6	CTS*
7	DTR*	8	RI (set by J9, J12)
9	GND	10	GND

B.30 Keyboard Connector Type: Wafer-Box 5-Pin 2.54mm (CN31)

Table B.31: Keyboard Connector Type: Wafer-Box 5-Pin 2.54mm (CN31)

Pin	Pin name
1	KB CLOCK
2	KB DATA
3	NC
4	GND
5	+5V

B.31 Keyboard + PS/2 Mouse Connector Type: Wafer-Box 6-Pin 2.0mm (CN32)

Table B.32: Keyboard + PS/2 Mouse Connector Type: Wafer-Box 6-Pin 2.0mm (CN32)

Pin	Pin name
1	KB CLOCK
2	KB DATA
3	MS CLOCK
4	GND
5	+5V
6	MS DATA

B.32 CRT Connector Type: Box-Header 16-Pin 2.54mm (CN33)

Table B.33: CRT Connector Type: Box-Header 16-Pin 2.54mm (CN33)

Pin	Pin name	Pin	Pin name
1	RED	2	NC
3	GREEN	4	GND
5	BLUE	6	NC
7	NC	8	DDC DATA
9	GND	10	H-SYNC
11	GND	12	V-SYNC
13	GND	14	DDC CLOCK
15	GND	16	GND

B.33 LAN Connector Type: RJ45 (CN34)

Table B.34: LAN Connector Type: RJ45 (CN34)

Pin	Pin name
1	TX+
2	TX-
3	RX+
4	TXCT
5	TXCT
6	RX-
7	RXCT
8	RXCT

B.34 COM2 CONNECTORType: D-SUB 9-Pin (CN35)

Table B.35: COM2 CONNECTOR Type: D-SUB 9-Pin (CN35)

Pin	Pin name	Pin	Pin name *: LOW ACTIVE
1	DCD*	6	DSR*
2	RX	7	RTS*
3	TX	8	CTS*
4	DTR*	9	RI (set by J8, J11)
5	GND		

B.35 COM1 CONNECTOR Type: D-SUB 9-Pin (CN36)

Table B.36: COM1 CONNECTOR Type: D-SUB 9-Pin (CN36)

Pin	Pin name	Pin	Pin name *: LOW ACTIVE
1	DCD*	6	DSR*
2	RX	7	RTS*
3	TX	8	CTS*
4	DTR*	9	RI (set by J9,J 12)
5	GND		

B.36 LPT1 Connector Type: D-SUB 25-Pin (CN37)

Table B.37: LPT1 Connector Type: D-SUB 25-Pin (CN37)

Pin	Pin name	Pin	Pin name *: LOW ACTIVE
1	STROBE*	14	AUTO FEED*
2	PD0	15	ERROR*
3	PD1	16	INIT*
4	PD2	17	SELECT IN*
5	PD3	18	GND
6	PD4	19	GND
7	PD5	20	GND
8	PD6	21	GND
9	PD7	22	GND
10	ACK*	23	GND
11	BUSY	24	GND
12	PE	25	GND
13	SELECT		

B.37 Keyboard + PS/2 Mouse Connector Type: Mini-DIN 6-Pin (CN38)

Table B.38: Keyboard + PS/2 Mouse Connector Type: Mini-DIN 6-Pin (CN38)

Pin	Pin name
1	KB DATA
2	MS DATA
3	GND
4	+5V
5	KB CLOCK
6	MS CLOCK

B.38 Keyboard / PS/2 Mouse ConnectorType: Mini-DIN 6-Pin (CN29)

Table B.39: Keyboard / PS/2 Mouse Connector Type: Mini-DIN 6-Pin (CN29)

Pin	Pin name
1	KB/MS DATA (set by J10)
2	MS DATA
3	GND
4	+5V
5	KB/MS CLOCK (set by J10)
7	MS CLOCK

B.39 CRT Connector Type: D-SUB 15-Pin (CN40)

Table B.40: CRT Connector Type: D-SUB 15-Pin (CN40)

Pin	Pin name	Pin	Pin name	Pin	Pin name
1	RED	6	GND	11	NC
2	GREEN	7	GND	12	DDC DATA
3	BLUE	8	GND	13	H-SYNC
4	NC	9	NC	14	V-SYNC
5	GND	10	GND	15	DDC CLOCK

B.40 Clear RTC (J1)

Table B.41: Clear RTC (J1)

Close pins	Result
1-2	RTC *
2-3	Clear RTC

*: Default value

B.41 Watchdog Setting (J2)

Table B.42: Watchdog Setting (J2)

Close pins	Result
1-2	Reset*
2-3	IRQ11

*: Default value

B.42 DOC 2000 and DIO address select (J3)

Table B.43: DOC 2000 and DIO address select (J3)

Close pins	DOC2000
1-2,3-4,5-6	C800
3-4,5-6	CA00
1-2,5-6	CC00
5-6	CE00
1-2,3-4	D000
3-4	D200
1-2	D400
NC	D600 *
Close pins	DIO
NC	200
7-8	210
9-10	220
7-8,9-10	230 *

*: Default value

Note: With SMI on board version, C800 amd CA00 were reserved for SMI VGA BIOS address.

B.43 COM2 Rs-232/422/485 Setting (J5/6/7)

Table B.44: COM2 Rs-232/422/485 Setting (J5/6/7)

J5	J6	J7	
Close pins	Close pins	Close pins	Result
1-2	1-3/2-4	1-3/2-4	RS-232*
3-4	3-5/4-6	3-5/4-6	RS-422
5-6	3-5/4-6	3-5/4-6	RS-485

*: Default value

B.44 COM2, COM4 Voltage select (J8)

*Table B.45: COM2, COM4 Voltage select *: Default value (J8)*

Close pins	COM2
2-4	+5V *
4-6	+12V
Close pins	COM4
1-3	+5V *
3-5	+12V

*: Default value

B.45 COM1, COM3 Voltage select (J9)

Table B.46: COM1, COM3 Voltage select (J9)

Table B.47: Close pins	COM1
2-4	+5V *
4-6	+12V
Close pins	COM3
1-3	+5V *
3-5	+12V

B.46 CN39 Keyboard/Mouse select (J10)

Table B.48: CN39 Keyboard/Mouse select (J10)

Close pins	Result
1-3,2-4	Keyboard
3-5,4-6	Mouse *

*: Default value

B.47 COM2, COM4 Ring/Voltage select (J11)

Table B.49: COM2, COM4 Ring/Voltage select (J11)

Close pins	COM2
2-4	Voltage
4-6	Ring *
Close pins	COM4
1-3	Voltage
3-5	Ring *

*: Default value

B.48 COM1, COM3 Ring/Voltage select (J12)

Table B.50: COM1, COM3 Ring/Voltage select (J12)

Close pins	COM1
2-4	Voltage
4-6	Ring *
Close pins	COM3
1-3	Voltage
3-5	Ring *

*: Default value