HS-1770

VIA V4 Eden processor
mITX Board

• CompactFlash • DDRII • PCI Slot •
• CRT/LVDS • TV-Out • Dual LAN •
• Audio • SPDIF • Serial ATA •
• ATA/33/66/100 • RS-232/422/485 •
• 4 COM • USB2.0 • PC/104 • WDT •

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Declaration of Conformity -- CE Mark

BOSER Technology hereby acknowledges that compliance testing in accordance with applicable standards of the EU's EMC Directive, 89/336/EEC, was successfully completed on a sample of the equipment identified below:

Equipment Class:	*Information Technology Equipment*	
Product Model Series:	***HS-1770***	
This Product Complies With:	*EN55022:*	*Class A for Radiated emissions*
	EN50082-2:	*Heavy Industrial EMC Immunity*

We, the undersigned, hereby declare that the equipment specified above conforms to the above directives and standards.

Manufacturer:
BOSER TECHNOLOGY CO., LTD.

Safety Instructions

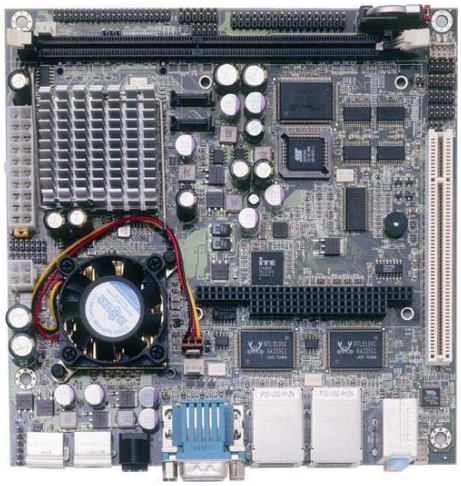
Integrated circuits on computer boards are sensitive to static electricity. To avoid damaging chips from electrostatic discharge, observe the following precautions:

- Do not remove boards or integrated circuits from their anti-static packaging until you are ready to install them.
- Before handling a board or integrated circuit, touch an unpainted portion of the system unit chassis for a few seconds. This helps to discharge any static electricity on your body.
- Wear a wrist-grounding strap, available from most electronic component stores, when handling boards and components. Fasten the ALLIGATOR clip of the strap to the end of the shielded wire lead from a grounded object. Please wear and connect the strap before handle the HS-1770 to ensure harmlessly discharge any static electricity through the strap.
- Please use an anti-static pad when putting down any components or parts or tools outside the computer. You may also use an anti-static bag instead of the pad. Please inquire from your local supplier for additional assistance in finding the necessary anti-static gadgets.

NOTE: *DO NOT TOUCH THE BOARD OR ANY OTHER SENSITIVE COMPONENTS WITHOUT ALL NECESSARY ANTI-STATIC PROTECTIONS.*

Chapter 1

General Description



The HS-1770 is a VIA CX700(M) chipset-based board designed. The HS-1770 is an ideal all-in-one mITX board. Additional features include an enhanced I/O with CF, CRT/LVDS, TV-Out, dual LAN, audio, SPDIF, SATA, 4 COM, USB2.0, and PC/104 interfaces.

Its onboard ATA/33/66/100 to IDE drive interface architecture allows the HS-1770 to support data transfers of 33, 66 or 100MB/sec. to one IDE drive connection. Designed with the VIA CX700(M), the board supports VIA V4 Eden 1GHz CPU.

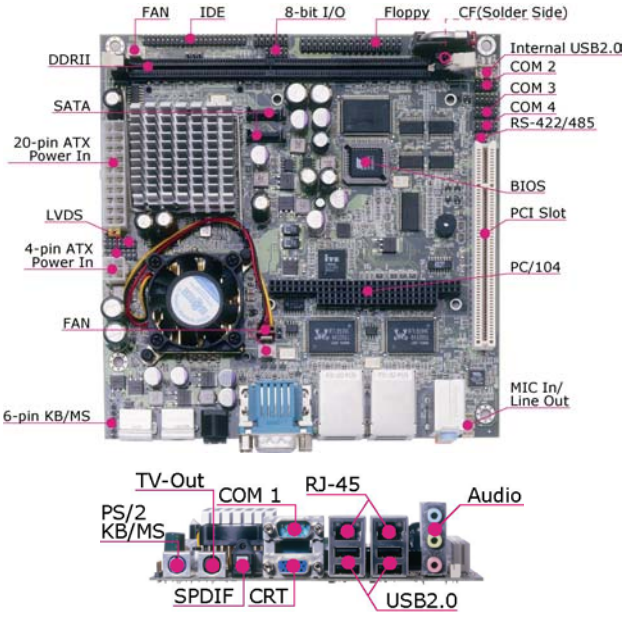
The VIA CX700(M) with 32/64/128MB shared main memory supporting CRT/Panel displays up to 1920 x 1440. It also supports 18-bit single channel/36-bit dual channel LVDS interface supporting up to 1600 x 1200.

System memory is also sufficient with the one DDRII socket that can support up to 1G.

Additional onboard connectors include an advanced USB2.0 port providing faster data transmission. And two external RJ-45 connectors for 10/100 Based Ethernet use.

To ensure the reliability in an unmanned or standalone system, the watchdog timer (WDT) onboard HS-1770 is designed with software that does not need the arithmetical functions of a real-time clock chip. If any program causes unexpected halts to the system, the onboard WDT will automatically reset the CPU or generate an interrupt to resolve such condition.

1.1 Major Features



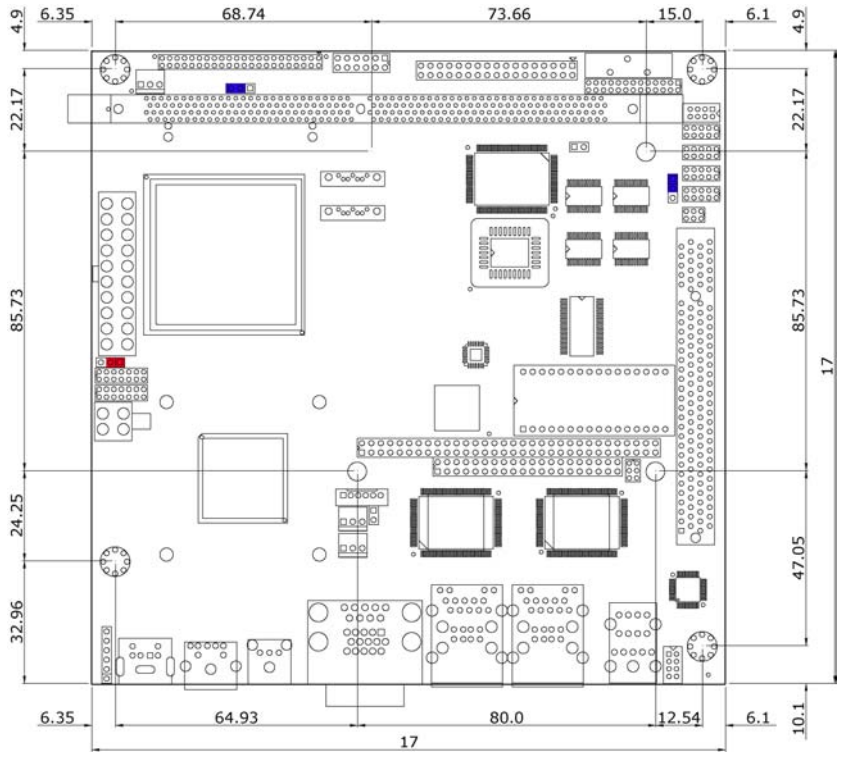
The HS-1770 comes with the following features:

- VIA V4 Eden processor 1.0GHz
- One DDRII socket with a max. capacity of 1GB
- VIA CX700(M) system chipset
- Winbond W83697UF super I/O chipset
- VIA CX700(M) graphics controller
- 24-bit/48-bit LVDS Panel display interface
- Dual Intel® 82551QM or RealTek RTL8100C Ethernet controller
- VIA VT1708A HD CODEC
- VIA CX700(M) Serial ATA controller
- Fast PCI ATA/33/66/100 IDE controller
- SPDIF, CF card adapter, DOC, 4 COM, 6 USB2.0, PC/104
- TV-Out function
- Hardware Monitor function

1.2 Specifications

- **CPU:** VIA V4 Eden processor 1.0GHz
- **Front Side Bus:** Supports 400MHz FSB
- **Memory:** One DDRII socket supporting up to 1GB
- **Chipset:** VIA CX700(M)
- **I/O Chipset:** Winbond W83697UF
- **CompactFlash:** One, Type I/II IDE interface adapter
- **PCI Slot:** One standard PCI slot
- **8-bit I/O:** 8-bit input/output (parallel port)
- **VGA:** VIA CX700(M) with 32/64/128MB shared main memory supporting CRT/Panel displays up to 1920 x 1440
- **LVDS Panel:** Supports 24-bit single channel/48-bit dual channel LVDS interface up to 1600 x 1200
- **TV-Out:** Supports PAL or NTSC TV systems
- **Ethernet:** Dual Intel® 82551QM or RealTek RTL8100C 10/100 Based LAN
- **Audio:** VIA VT1708A HD audio controller with SPDIF port
- **Serial ATA:** VIA CX700(M) controller and with two ports supporting a transfer rate up to 150MB/sec.
- **IDE:** One 2.0-pitch 44-pin IDE connector
- **FDD:** Supports up to two floppy disk drives
- **Serial Port:** 16C550 UART-compatible RS-232/422/485 x 1 and RS-232 x 3 serial ports with 16-byte FIFO
- **PC/104:** PC/104 Bus connector for 16-bit ISA Bus
- **USB:** 6 USB2.0 ports, internal x 2 and external x 4
- **Keyboard/Mouse:** PS/2 6-pin Mini DIN or 6-pin header
- **DiskOnChip:** DiskOnChip socket supporting memory sizes of up to 288MB (only for PCB v0.3 or above)
- **BIOS:** AMI PnP Flash BIOS
- **Watchdog Timer:** Software programmable time-out intervals from 1~256 sec.
- **CMOS:** Battery backup
- **Hardware Monitor:** Winbond W83697UF (only for PCB v0.3 or above)
- **Board Size:** 17.0(L) x 17.0(W) cm

1.3 Board Dimensions



Chapter 2

Unpacking

2.1 Opening the Delivery Package

The HS-1770 is packed in an anti-static bag. The board has components that are easily damaged by static electricity. Do not remove the anti-static wrapping until proper precautions have been taken. Safety Instructions in front of this manual describe anti-static precautions and procedures.

2.2 Inspection

After unpacking the board, place it on a raised surface and carefully inspect the board for any damage that might have occurred during shipment. Ground the board and exercise extreme care to prevent damage to the board from static electricity.

Integrated circuits will sometimes come out of their sockets during shipment. Examine all integrated circuits, particularly the BIOS, processor, memory modules, ROM-Disk, and keyboard controller chip to ensure that they are firmly seated. The HS-1770 delivery package contains the following items:

- **HS-1770 Board x 1**
- **Utility CD Disk x 1**
- **Cables Package x 1**
- **Jumper Bag x 1**
- **User's Manual**

Cables Package		
NO.	**Description**	**QTY.**
1	COM DB9-10P (2.0-pitch)	1
2	SPK 8-pin(2.0-pitch) phone jack x 2	1
3	1-to-2 Mini DIN cable	1
4	SATA device cable	1
5	34P(2.54)*3 FDC cable	1

It is recommended that you keep all the parts of the delivery package intact and store them in a safe/dry place for any unforeseen event requiring the return shipment of the product. In case you discover any missing and/or damaged items from the list of items, please contact your dealer immediately.

Option Accessories	
NO.	**Description**
1	1-to-2 USB cable with bracket
2	COM DB9-10P (2.0-pitch)
3	SATA power cable
4	40-pin to 44-pin IDE flat cable

Chapter 3

Hardware Installation

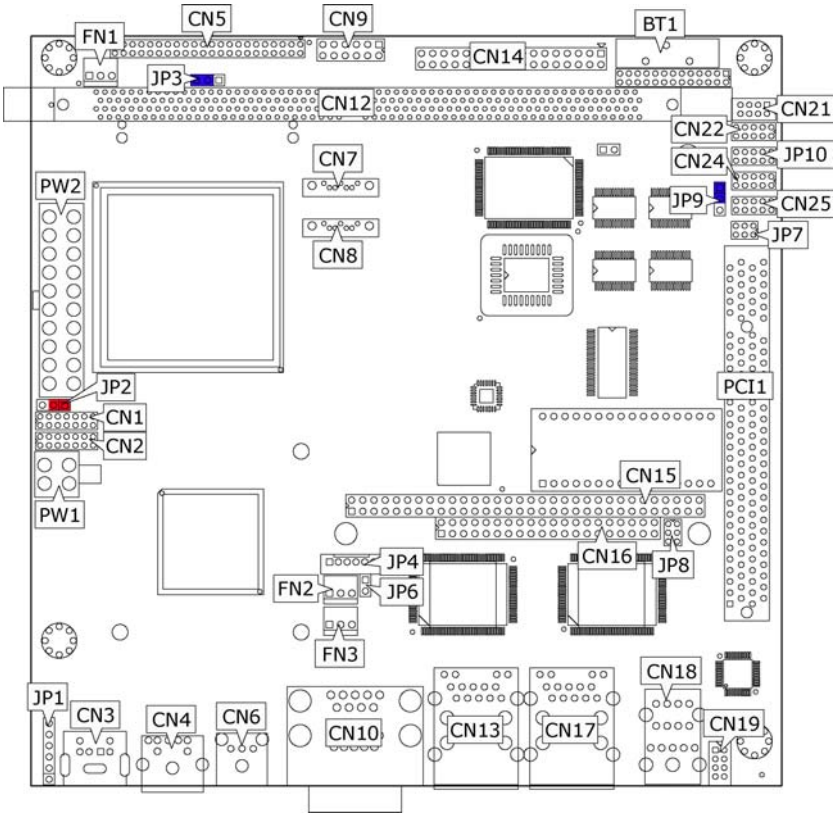
This chapter provides the information on how to install the hardware using the HS-1770. This chapter also contains information related to jumper settings of switch, and watchdog timer selection etc.

3.1 Before Installation

After confirming your package contents, you are now ready to install your hardware. The following are important reminders and steps to take before you begin with your installation process.

1. Make sure that all jumper settings match their default settings and CMOS setup correctly. Refer to the sections on this chapter for the default settings of each jumper. (JP9 open)
2. Go through the connections of all external devices and make sure that they are installed properly and configured correctly within the CMOS setup. Refer to the sections on this chapter for the detailed information on the connectors.
3. Keep the manual and diskette in good condition for future reference and use.

3.2 Board Layout



3.3 Jumper List

Jumper	Default Setting	Setting	Page
JP2	Panel Voltage Select: *+3.3V*	Short 1-2	10
JP3	CF Use Master/Slave Select: *Slave*	Short 2-3	26
JP6	Display Out Function Select: *CRT*	Open	22
JP9	Clear CMOS: *Normal Operation*	Short 1-2	17
JP10	COM4 Use RS-232 or RS-422/485 Select: *RS-232*	Open	15
JP8(1-4)	DOC Address Select: *D000*	Short 1-2, 3-4	26
U33(SW7/SW8)	Single Channel/Dual Channel LVDS Panel Select: *Single Channel*	Off	10
U33(SW1/SW2) U34(SW8)	CRT/TV Output Mode Select: RGB for CRT	SW1➔Off SW2➔On SW8➔Off	22

3.4 Connector List

Connector	Definition	Page
CN1/CN2	LVDS Panel Connector	10
CN3/JP1	PS/2 6-pin Mini DIN/6-pin KB/MS Connector	19
CN4	TV-Out Connector	22
CN5	IDE Connector	12
CN6	SPDIF Connector	25
CN7/CN8	Serial ATA Connector	13
CN9	System Front Panel Control	20
CN10	15-pin CRT Connector & COM 1 (DB9)	10/15
CN11	8-bit I/O Port	27
CN12	DDRII Socket	10
CN13/CN17	RJ-45 & Dual USB2.0 Port	16/17
CN14	Floppy Connector	14
CN15/CN16	PC/104 Bus 64-pin/40-pin Connector	23
CN18	External Audio Connector	25
CN19	MIC In/Line Out Connector	25
CN21	Internal USB2.0 Port	17
CN22/CN24/CN25	COM 2~COM 4 Connector (5x2 header)	15
CN26	CompactFlash Connector	26
FAN1~FAN3	Fan Power In Connector	18
PW1/PW2	4-pin/20-pin ATX Power In Connector	18
JP4	Inverter Power In Connector	10
JP7	RS-422/485 Connector	15
PCI1	Standard PCI Slot	----

3.5 Configuring the CPU

The HS-1770 embedded with VIA V4 Eden processor 1.0GHz. User don't need to adjust the frequently and check speed of CPU.

3.6 System Memory

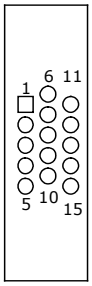
The HS-1770 provides one DDRII socket at locations *CN12*. The maximum capacity of the onboard memory is 1GB.

3.7 VGA Controller

The HS-1770 provides two connection methods of a VGA device. *CN10A* offers a single standard CRT connector and *CN2/CN1* are the LVDS interface connectors onboard reserved for flat panel installation.

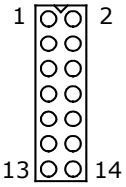
- **CN10A: CRT Connector**

PIN	Description	PIN	Description
1	Red	2	Green
3	Blue	4	N/C
5	GND	6	GND
7	GND	8	GND
9	N/C	10	GND
11	N/C	12	SDA
13	HSYNC	14	VSYNC
15	SCL		



- **CN2/CN1: LVDS Interface Connector**

PIN	Description	PIN	Description
1	V_{LCD}	2	V_{LCD}
3	GND	4	GND
5	Y0-/Z0-	6	Y0+/Z0+
7	Y1-/Z1-	8	Y1+/Z1+
9	Y2-/Z2-	10	Y2+/Z2+
11	CLK-	12	CLK+
13	Y3-/Z3-	14	Y3+/Z3+



NOTE: *LVDS cable should be produced very carefully. Y0- & Y0+ have to be fabricated in twister pair (Y1- & Y1+, Y2- & Y2+ and so on) otherwise the signal won't be stable. Please set the proper voltage of your panel using JP2 before proceeding on installing it.*

- **U33(SW7/SW8): Single Channel/ Dual Channel LVDS Panel Select**

Options	Settings	
	SW7	SW8
Single Channel (default)	OFF	OFF
Dual Channel	ON	OFF

NOTE: *If use CN2 only, it just supports 24-bit single channel LVDS panel; If you want to use 48-bit dual channel LVDS panel, please use CN2 and CN1 combined.*

The HS-1770 has an onboard jumper that selects the working voltage of the flat panel connected to the system. Jumper *JP2* offers two voltage settings for the user.

- **JP2: Panel Voltage Select**

Options	Settings
+3.3V (default)	Short 1-2
+5V	Short 2-3

- **JP5: Inverter Power In Connector**

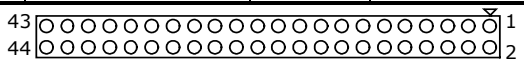
PIN	Description
1	+12V
2	+12V
3	VDDEN
4	GND

3.8 PCI E-IDE Drive Connector

CN5 is a standard 44-pin 2.0-pitch connector daisy-chain driver connector serves the PCI E-IDE drive provisions onboard the HS-1770. A maximum of two ATA/33/66/100 IDE drives can be connected to the HS-1770 via *CN5*.

- **CN5: IDE Connector**

PIN	Description	PIN	Description
1	IDERST	2	GND
3	PDD7	4	PDD8
5	PDD6	6	PDD9
7	PDD5	8	PDD10
9	PDD4	10	PDD11
11	PDD3	12	PDD12
13	PDD2	14	PDD13
15	PDD1	16	PDD14
17	PDD0	18	PDD15
19	GND	20	N/C
21	PDDREQ	22	GND
23	IOW#	24	GND
25	IOR#	26	GND
27	PIORDY	28	470Ω with GND
29	PDDACK#	30	GND
31	IRQ14	32	N/C
33	PDA1	34	PD33/66
35	PDA0	36	PDA2
37	PDCS1#	38	PDCS3#
39	HDD Active	40	GND
41	VCC	42	VCC
43	GND	44	N/C

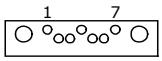


3.9 Serial ATA Connector

You can connect the Serial ATA device that provides you high speeds transfer rates (150MB/sec.). If you wish to use RAID function, please note that these two serial ATA connectors just support RAID0 and only compatible with WIN XP.

- **CN7/CN8: Serial ATA Connector**

PIN	Description
1	GND
2	SATATXP
3	SATATXN
4	GND
5	SATARXN
6	SATARXP
7	GND

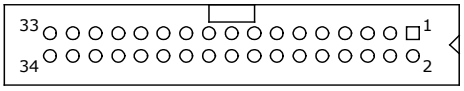


3.10 Floppy Disk Drive Connector

The HS-1770 uses a standard 34-pin header connector, *CN14*, for floppy disk drive connection. A total of two FDD drives may be connected to *CN14* at any given time.

- **CN14: Floppy Connector**

PIN	Description	PIN	Description
1	GND	2	DRVDEN0
3	GND	4	N/C
5	GND	6	DRVDEN1
7	GND	8	INDEX#
9	GND	10	MTR0#
11	GND	12	DS1#
13	GND	14	DS0#
15	GND	16	MTR1#
17	GND	18	DIR#
19	GND	20	STEP#
21	GND	22	WDATA#
23	GND	24	WGATE#
25	GND	26	TRAK00#
27	GND	28	WRTPRT#
29	GND	30	RDATA#
31	GND	32	HDSEL#
33	GND	34	DSKCHG#

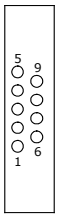


3.11 Serial Port Connectors

The HS-1770 offers NS16C550 compatible UARTs with Read/ Receive 16-byte FIFO serial ports and four internal 10-pin headers and one RS-422/485 connector.

- **CN10A: COM 1 Connector (DB9)**

PIN	Description	PIN	Description
1	DCD	2	DSR
3	RXD	4	RTS
5	TXD	6	CTS
7	DTR	8	RI
9	GND		



- **CN22/CN24/CN25: COM 2~COM 4 Connector (5x2 Header)**

PIN	Description	PIN	Description
1	DCD	2	DSR
3	RXD	4	RTS
5	TXD	6	CTS
7	DTR	8	RI
9	GND	10	N/C

- **JP7: RS-422/485 Connector (3x2 Header, COM4)**

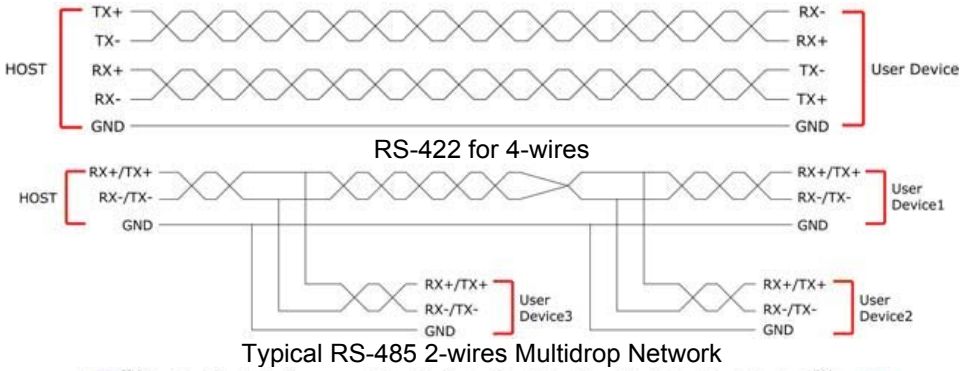
PIN	Description	PIN	Description
1	TX-	2	TX+
3	RX+	4	RX-
5	GND	6	+5V

NOTE: *The terminal resistance of RX & TX is set at 180 Ω.*

- **JP10: COM 4 use RS-232 or RS-422/485 Select**

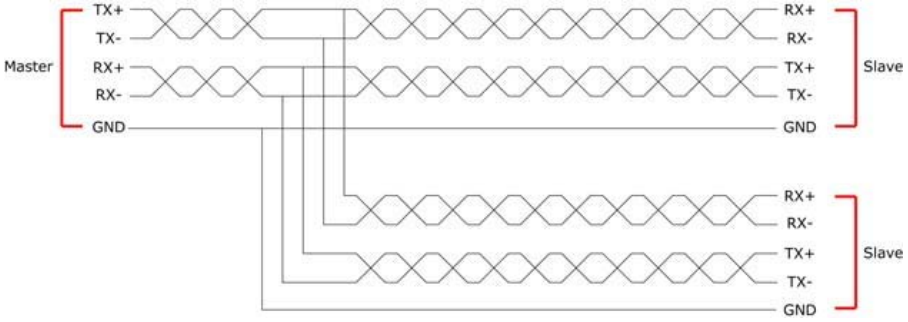
Options	Settings
RS-232 (default)	Open
RS-485 by Auto	1-2, 3-4, 5-7, 8-10 Short
RS-485 by -RTS	1-2, 3-4, 7-9, 8-10 Short
RS-422 Full Duplex	1-2, 3-4, 6-8 Short

NOTE: *If COM 4 is using for RS-422/485, that COM4 cannot be used while RS-422/485 is selected.*



RS-422 for 4-wires

Typical RS-485 2-wires Multidrop Network



Typical RS-485 4-wires Multidrop Network

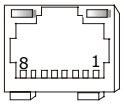
3.12 Ethernet Connector

The HS-1770 provides two external RJ-45 interface connectors. Please refer to the following for its pin information.

When installs OS, this driver namely can automatically install. User does not need to renewal.

- **CN13A/CN17A: RJ-45 Connector**

PIN	Description
1	TX+
2	TX-
3	RX+
4	R/C GND
5	R/C GND
6	RX-
7	R/C GND
8	R/C GND

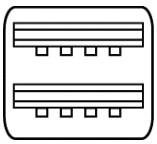


3.13 USB Connector

The HS-1770 provides one 8-pin connectors, at location *CN21*, for two USB ports, and four external USB2.0 ports at *CN13B/CN17B*.

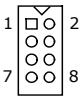
- **CN13B/CN17B: External USB2.0 Connector**

PIN	Description	PIN	Description
1	VCC	2	VCC
3	USBD0-/USB2-	4	USBD1-/USB3-
5	USBD0+/USB2+	6	USBD1+/USB3+
7	GND	8	GND



- **CN21: Internal USB2.0 Connector**

PIN	Description	PIN	Description
1	VCC	2	VCC
3	USBD4-	4	USBD5-
5	USBD4+	6	USBD5+
7	GND	8	GND



3.14 CMOS Data Clear

The HS-1770 has a Clear CMOS jumper on *JP9.*

- **JP9: Clear CMOS**

Options	Settings
Normal Operation (default)	Short 1-2
Clear CMOS	Short 2-3

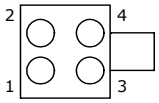
IMPORTANT: *Before you turn on the power of your system, please set JP9 to Short 1-2 for normal operation.*

3.15 Power and Fan Connectors

HS-1770 provides one 4-pin ATX power in at *PW1*, one 20-pin ATX power in at *PW2*.

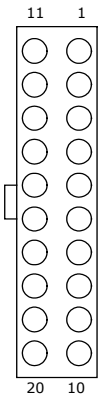
- **PW1: 4-pin ATX Power In Connector**

PIN	Description
1	GND
2	GND
3	+12V
4	+12V



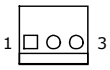
- **PW2: 20-pin ATX Power In Connector**

PIN	Description	PIN	Description
1	+3.3V	11	+3.3V
2	+3.3V	12	-12V
3	GND	13	GND
4	+5V	14	PS_ON
5	GND	15	GND
6	+5V	16	GND
7	GND	17	GND
8	Power OK	18	-5V
9	5VSB	19	+5V
10	+12V	20	+5V



- **FAN1~FAN3: Fan Power In Connector**

PIN	Description
1	GND
2	+12V
3	N/C



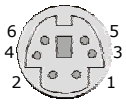
Connector *FAN1~FAN3* onboard HS-1770 is a 3-pin fan power output connector. And HS-1770 supports +12V Fan only.

3.16 Keyboard/Mouse Connectors

The HS-1770 offers two possibilities for keyboard/mouse connections. The connections are via *CN3* for an external PS/2 type keyboard/mouse or via *JP1* for an internal 6-pin cable converter to an keyboard/mouse.

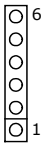
- **CN3: PS/2 6-pin Mini DIN Keyboard/Mouse Connector**

PIN	Description
1	Keyboard Data
2	Mouse Data
3	GND
4	+5V
5	Keyboard Clock
6	Mouse Clock



- **JP1: 6-pin Keyboard/Mouse Connector**

PIN	Description
1	Keyboard Clock
2	Keyboard Data
3	Mouse Data
4	GND
5	+5V
6	Mouse Clock



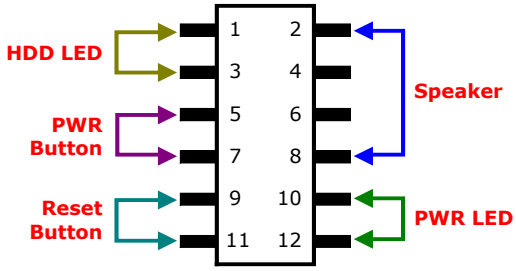
3.17 System Front Panel Control

The HS-1770 has front panel control at location *CN9* that indicates the power-on status.

- **CN9: System Front Panel Control**

PIN	Description	PIN	Description
1	VCC	2	Speaker
3	HDD LED	4	N/C
5	PWR Button	6	GND
7	VCC	8	GND
9	Reset Switch	10	VCC
11	GND	12	PWR LED

Connector CN9 Orientation



3.18 Watchdog Timer

Once the Enable cycle is active a Refresh cycle is requested before the time-out period. This restarts counting of the WDT period. When the time counting goes over the period preset of WDT, it will assume that the program operation is abnormal. A system reset signal will restart when such error happens.

The following sample programs show how to enable, disable and refresh the watchdog timer:

```
;-----------------------------------------------------------------
;Enter the WDT function mode, interruptible double-write
;-----------------------------------------------------------------
        MOV     DX, 2EH
        MOV     AL, 87H
        OUT     DX, AL
        OUT     DX, AL
        MOV     DX, 2EH
        MOV     AL, 07H
        OUT     DX, AL
        MOV     DX, 2FH
        MOV     AL, 08H
        OUT     DX, AL
        MOV     DX, 2EH
        MOV     AL, F5H
        OUT     DX, AL              ;select CRF0
        MOV     DX, 2FH
        MOV     AL, 80H
        OUT     DX, AL
        MOV     DX, 2EH
        MOV     AL, F7H
        OUT     DX, AL
        MOV     DX, 2FH

        MOV     AL, 00H
        OUT     DX, AL
        MOV     DX, 2EH
        MOV     AL, F6H
        OUT     DX, AL
```

```
        MOV     DX, 2FH
        MOV     AL, 00H             ; *00H=Disabled
        OUT     DX, AL
;-------------------------------------------------------------
;Exit extended function mode
;-------------------------------------------------------------
        MOV     DX, 2EH
        MOV     AL, AAH
        OUT     DX, AL
```

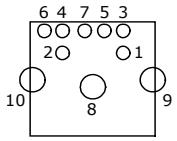
User can also use AL, 00H's defined time for reset purposes, e.g.00H for Disable, 01H = 1sec, 02H=2sec….FFH=255sec.

3.19 TV-Out Function

The HS-1770 can support TV-out function whose input could be up to 800 x 600 graphics resolutions. World Wide Video standards are supported including NTSC-M (North America, Taiwan), NTSC-J (Japan), PAL-b, D, G, H, I (Europe, Asia), PAL-M (Brazil), PAL-N (Uruguay, Paraguay) and PAL-NC (Argentina).

- **CN4: TV-Out Connector**

PIN	Description	PIN	Description
1	GND	2	GND
3	Y	4	Pb
5	N/C	6	Pr
7	N/C	8	GND
9	GND	10	GND



- **JP6: Display Out Function Select**

Options	Settings
CRT (default)	Open
TV-Out	Short

- **U33(SW1/SW2)/U34(SW8): CRT/TV Output Mode Select**

Options	Settings		
	U33(SW1)	U33(SW2)	U34(SW8)
RGB for CRT (default)	OFF	ON	OFF
C/Y/CVBS for TV	ON	OFF	ON
C/Y/Y for TV	ON	OFF	OFF
R/G/B for TV	OFF	OFF	ON
Pr/Y/Pb for TV	OFF	OFF	OFF

3.20 PC/104 Connectors

The PC/104 expansion bus offers provisions to connect all types of PC/104 modules. With the PC/104 bus being known as the new generation of industrial embedded 16-bit PC standard bus, thousands of PC/104 modules from multiple venders can be easily installed onboard. The detailed pin assignment of the PC/104 expansion bus connectors *CN15* and *CN16* are listed on the following tables:

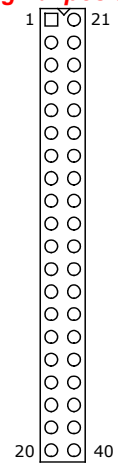
NOTE1: *The PC/104 connector allows direct plugging or stack-through piling of PC/104 modules without requiring the PC/104 mounting kit.*

NOTE2: *PC/104 Bus connector only for 16-bit ISA Bus, DO NOT support DMA mode.*

- **CN16: PC/104 40-pin Connector**

PIN	Description	PIN	Description
1	GND	21	GND
2	-MEMCS16	22	-SBHE
3	-IOSC16	23	SA23
4	IRQ10	24	SA22
5	IRQ11	25	SA21
6	IRQ12	26	SA20
7	IRQ15	27	SA19
8	IRQ14	28	SA18
9	-DACK0	29	SA17
10	DRQ0	30	-MEMR
11	-DACK5	31	-MEMW
12	DRQ5	32	SD8
13	-DACK6	33	SD9
14	DRQ6	34	SD10
15	-DACK7	35	SD11
16	DRQ7	36	SD12
17	+5V	37	SD13
18	-MASTER	38	SD14
19	GND	39	SD15
20	GND	40	N/C

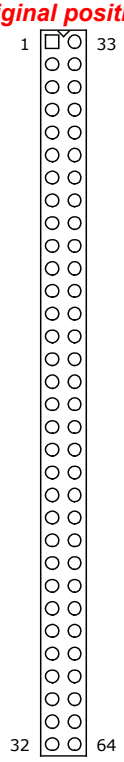
Connector diagram rotated 90 degrees clockwise from original position



- **CN15: PC/104 64-pin Connector**

PIN	Description	PIN	Description
1	-IOCHECK	33	GND
2	SD7	34	RESETDRV
3	SD6	35	+5V
4	SD5	36	IRQ9
5	SD4	37	N/C
6	SD3	38	DRQ2
7	SD2	39	-12V
8	SD1	40	N/C
9	SD0	41	+12V
10	IOCHRDY	42	GND
11	AEN	43	-SMEMW
12	SA19	44	-SMEMR
13	SA18	45	-IOW
14	SA17	46	-IOR
15	SA16	47	-DACK3
16	SA15	48	DRQ3
17	SA14	49	-DACK1
18	SA13	50	DRQ1
19	SA12	51	-REFRESH
20	SA11	52	SYSCLK
21	SA10	53	IRQ7
22	SA9	54	IRQ6
23	SA8	55	IRQ5
24	SA7	56	IRQ4
25	SA6	57	IRQ3
26	SA5	58	-DACK2
27	SA4	59	TC
28	SA3	60	BALE
29	SA2	61	+5V
30	SA1	62	OSC
31	SA0	63	N/C
32	GND	64	GND

Connector diagram rotated 90 degrees clockwise from original position



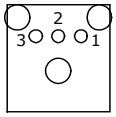
3.21 Audio Connectors

The HS-1770 has an onboard VIA VT1708A High Definition Audio CODEC. The following tables list the pin assignments of the Line In/Audio Out connector.

- 4 stereo DACs support 24-bit, 192KHz samples
- DAC with 100dB S/N Ratio
- 2 stereo ADCs support 24-bit, 192KHz samples
- ADC with 95dB S/N ratio
- 8-channels of DAC support 16/20/24-bit PCM format for 7.1 audio solution
- 16/20/24-bit SPDIF TX supports 24-bit, 44.1K/48K/96KHz samples

CN6: SPDIF Connector

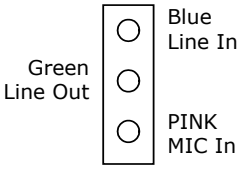
PIN	Description
1	GND
2	VCC
3	SPDIF



CN19: MIC In/Line Out Connector

PIN	Description	PIN	Description
1	AOUTL	2	AOUTR
3	GND	4	GND
5	MIC IN R	6	MIC IN L
7	GND	8	GND

CN18: External Audio Connector



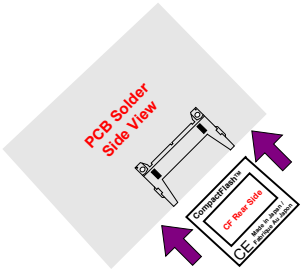
3.22 CompactFlash™ Connector

The HS-1770 also offers a Type I/II CompactFlash™ connector which is IDE interface located at the solder side of the board (beneath the SO-DIMM connector). The designated *CN26* connector, once soldered with an adapter, can hold CompactFlash™ cards of various sizes. Please turn off the power before inserting the CF card.

- **CN26: CompactFlash™ Connector**

PIN	Description	PIN	Description
1	GND	2	IDE_PDD3
3	IDE_PDD4	4	IDE_PDD5
5	IDE_PDD6	6	IDE_PDD7
7	IDE_PDCS1#	8	GND
9	GND	10	GND
11	GND	12	GND
13	+3.3V	14	GND
15	GND	16	GND
17	GND	18	IDE_PDA2
19	IDE_PDA1	20	IDE_PDA0
21	IDE_PDD0	22	IDE_PDD1
23	IDE_PDD2	24	GND
25	GND	26	GND
27	IDE_PDD11	28	IDE_PDD12
29	IDE_PDD13	30	IDE_PDD14
31	IDE_PDD15	32	IDE_PDCS3#
33	GND	34	IDE_PDIOR#
35	IDE_PDIOW#	36	+3.3V
37	INT_IRQ15	38	+3.3V
39	+3.3V	40	N/C
41	RESET#	42	IDE_PDIORDY
43	CF_PDERQ	44	CF_REGB
45	IDE_ACTP#	46	DETECT
47	IDE_PDD8	48	IDE_PDD9
49	IDE_PDD10	50	GND

Inserting a CompactFlash™ card into the adapter is not a difficult task. The socket and card are both keyed and there is only one direction for the card to be completely inserted. Refer to the diagram on the following page for the traditional way of inserting the card.



- **JP3: CF Use Master/Slave Select**

Options	Setting
Master	Short 1-2
Slave(default)	Short 2-3

NOTE: *When use CF card, IDE device function will be disabled.*

3.23 DiskOnChip™ Address Setting

The DOC function allows the system to boot or operate without a FDD or a HDD. DOC modules may be formatted as drive C or A. With DOC, user may also execute DOS commands such as FORMAT, SYS, COPY, XCOPY, DISCOPY and DISKCOMP etc.

The U11 location onboard the HS-1770 is the DOC module socket. Jumper *JP8* assigns the address setting of the installed module. Setting the 4-pins of *JP8* allows you to select the starting memory devices in the system, please set both at different memory address mapping to avoid the mapping area conflicts.

- **JP8(1-4): DOC Address Select**

Options	Settings
D000 (default)	Short 1-2, 3-4
D800	Short 3-4

3.24 8-bit I/O Function

The HS-1770 offers one 8-bit input/output port by parallel port.

- **CN11: 8-bit Input/Output**

PIN	Description	PIN	Description
1	VCC	2	GND
3	GD0	4	GD4
5	GD1	6	GD5
7	GD2	8	GD6
9	GD3	10	GD7


```
.286

        .MODEL SMALL
        .DATA                           ;this is data area
port    equ     0378h                   ;print port can be change to 278h

        .CODE

print   macro   buff
        mov     dx, offset buff;
        mov     ah,09h
        int     21h
        endm

delay :
        push    cx
        mov     cx,0155h
@@:
        jmp     $+2
        push    cx
        mov     cx,0ffffh

wait1:  loop    wait1
        pop     cx
        loop    @b
        pop     cx
        ret


begin   proc    near
        mov     ax,@data
        mov     ds,ax
        STI

        Mov     dx, port
        Mov     al, 80h                 out     dx, al

;;--------------------
;;ROR
        mov     cx, 08h
@@:
        ror     al, 1
```

```
        call      delay
        out       dx, al
        loop      @b
        pop       cx
;;ROL
        push      cx
        mov       cx, 08h
@@:
        rol       al, 1
        out       dx, al
        call delay
        loop      @b
        pop       cx
;;--------------------
;;--------------------
;;ROR
        mov       cx, 08h
@@:
        ror       al, 1
        call delay
        out       dx, al
        loop      @b
        pop       cx
;;ROL
        push      cx
        mov       cx, 08h
@@:
        rol       al, 1
        out       dx, al
        call delay
        loop      @b
        pop       cx
;;--------------------
;;--------------------
;;ROR
        mov       cx, 08h
@@:
        ror       al, 1
        call delay
        out       dx, al
        loop      @b
        pop       cx
;;ROL
        push      cx
        mov       cx, 08h
@@:
        rol       al, 1
        out       dx, al
        call delay
        loop      @b
        pop       cx
;;--------------------
;;--------------------
;;ROR
        mov       cx, 08h
@@:
        ror       al, 1
        call delay
```

```
        out     dx, al
        loop    @b
        pop     cx
;;ROL
        push    cx
        mov     cx, 08h
@@:
        rol     al, 1
        out     dx, al
        call delay
        loop    @b
        pop     cx
;;--------------------
;;--------------------
;;ROR
        mov     cx, 08h
@@:
        ror     al, 1
        call delay
        out     dx, al
        loop    @b
        pop     cx
;;ROL
        push    cx
        mov     cx, 08h
@@:
        rol     al, 1
        out     dx, al
        call delay
        loop    @b
        pop     cx
;;--------------------
;;--------------------
;;ROR
        mov     cx, 08h
@@:
        ror     al, 1
        call delay
        out     dx, al
        loop  @b
        pop     cx
;;ROL
        push    cx
        mov     cx, 08h
@@:
        rol     al, 1
        out     dx, al
        call delay
        loop    @b
        pop     cx
;;--------------------
;;--------------------
;;ROR
        mov     cx, 08h
@@:
        ror     al, 1
        call delay
        out     dx, al
```

```
        loop    @b
        pop     cx
;;ROL
        push    cx
        mov     cx, 08h
@@:
        rol     al, 1
        out     dx, al
        call delay
        loop    @b
        pop     cx
;;--------------------

;flash LED 3 time
        mov     cx, 01h
@@:
        mov     al, 0ffh
        out     dx, al
        call delay
        mov     al,0h
        out     dx, al
        call delay
        loop    @b
ee:

        mov     ah, 4ch             ;go back to dos
        int     21h
        .stack
        begin   endp
        end begin
```

Chapter 4

AMI BIOS Setup

The HS-1770 uses AMI BIOS for the system configuration. The AMI BIOS setup program is designed to provide the maximum flexibility in configuring the system by offering various options that could be selected for end-user requirements. This chapter is written to assist you in the proper usage of these features.

4.1 Starting Setup

The AMI BIOS is immediately activated when you first power on the computer. The BIOS reads the system information contained in the CMOS and begins the process of checking out the system and configuring it. When it finishes, the BIOS will seek an operating system on one of the disks and then launch and turn control over to the operating system.

While the BIOS is in control, the Setup program can be activated in one of two ways:

1. By pressing <Del> immediately after switching the system on, or
2. By pressing the <Del> key when the following message appears briefly at the bottom of the screen during the POST (Power On Self Test).

Press DEL to enter SETUP.

If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the "RESET" button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will be asked to...

PRESS F1 TO CONTINUE, DEL TO ENTER SETUP

4.2 Using Setup

In general, you use the arrow keys to highlight items, press <Enter> to select, use the <PageUp> and <PageDown> keys to change entries, and press <Esc> to quit. The following table provides more detail about how to navigate in the Setup program using the keyboard.

↑	Move to previous item
↓	Move to next item
←	Move to previous item
→	Move to previous item
Esc key	Main Menu -- Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu -- Exit current page and return to Main Menu
PgUp key	Decrease the numeric value or make changes
PgDn key	Increase the numeric value or make changes
+ key	Increase the numeric value or make changes
- key	Decrease the numeric value or make changes
F1 key	Reserved
F2 key	Change color from total 8 colors. F2 to select color forward
F3 key	F2 to select color backward
F4 key	Reserved
F5 key	Reserved
F6 key	Reserved
F7 key	Reserved
F8 key	Reserved
F9 key	Reserved
F10 key	Save all the CMOS changes, only for Main Menu

4.3 Main Menu

Once you enter the AMI BIOS CMOS Setup Utility, the Main Menu will appear on the screen. The Main Menu allows you to select from several setup functions and two exit choices. Use the arrow keys to select among the items and press <Enter> to enter the sub-menu.

BIOS SETUP UTILITY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Exit

System Overview

AMI BIOS

Version : 08.00.13
Build Date : 11/01/06
ID : HS177000

Processor

Type : VIA Esther processor 1000MHz
Speed : 1000MHz
Count : 1

System Memory

Size : 1016MB

System Time [00:29:32]
System Date [Tue 01/01/2002]

←	Select Screen
↑ ↓	Select Item
+ -	Change Field
Tab	Select Field
F1	General Help
F10	Save and Exit
ESC	Exit

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NOTE: *A brief description of the highlighted choice appears at the bottom of the screen.*

4.4 Advanced Settings

This section allows you to configure your system for the basic operation. You have the opportunity to select the system's default speed, boot-up sequence, keyboard operation, shadowing and security.

BIOS SETUP UTILITY

Main	**Advanced**	PCIPnP	Boot	Security	Chipset	Exit

Advanced Settings

WARNING: Setting wrong values in below sections may cause system to malfunction.

- ► CPU Configuration
- ► IDE Configuration
- ► Floppy Configuration
- ► SuperIO Configuration
- ► ACPI Configuration
- ► APM Configuration
- ► USB Configuration

←	Select Screen
↑ ↓	Select Item
+ -	Change Field
Tab	Select Field
F1	General Help
F10	Save and Exit
ESC	Exit

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BIOS SETUP UTILITY

Main	**Advanced**	PCIPnP	Boot	Security	Chipset	Exit

Configure advanced CPU settings

Module Version –13.00

Manufacturer	:	VIA
Brand String	:	VIA Esther processor 100MHz
Frequency	:	1.00GHz
FSB Speed	:	400MHz
Cache L1	:	128 KB
Cache L2	:	128 KB
Ratio Status	:	Unlocked (Max:10, Min:08)
Ratio Actual Value	:	10

CMPXCHG8B instruction support	[Disabled]
VIA Processor Power Management	[Enabled]

←	Select Screen
↑ ↓	Select Item
+ -	Change Field
Tab	Select Field
F1	General Help
F10	Save and Exit
ESC	Exit

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BIOS SETUP UTILITY

Main	**Advanced**	PCIPnP	Boot	Security	Chipset	Exit

IDE Configuration

Parallel ATA IDE device

► Primary IDE Master	:	[Not Detected]
► Primary IDE Slave	:	[Not Detected]
► Secondary IDE Master	:	[Not Detected]
► Secondary IDE Slave	:	[Not Detected]

Parallel ATA IDE Controller	[Both]
Hard Disk Write Protect	[Disabled]
IDE Detect Time Out (Sec)	[35]
ATA(PI) 80Pin Cable Detection	[Host]

←	Select Screen
↑↓	Select Item
+ -	Change Field
Tab	Select Field
F1	General Help
F10	Save and Exit
ESC	Exit

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BIOS SETUP UTILITY

Main	**Advanced**	PCIPnP	Boot	Security	Chipset	Exit

Floppy Configuration

Floppy A	[1.44 MB 3.5”]
Floppy B	[Disabled]

←	Select Screen
↑↓	Select Item
+ -	Change Field
Tab	Select Field
F1	General Help
F10	Save and Exit
ESC	Exit

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BIOS SETUP UTILITY

Main	**Advanced**	PCIPnP	Boot	Security	Chipset	Exit

Configure WIN697UF Super IO Chipset

OnBoard Floppy Controller	[Enabled]		
Floppy Drive Swap	[Disabled]		
Serial Port1 Address	[3F8/IRQ4]		
Serial Port2Address	[2F8/IRQ3]		
Serial Port3Address	[3E8]		
Serial Port3 IRQ Select	[IRQ11]		
Serial Port4 address	[2E8]		
Serial Port4 IRQ Select	[IRQ10]	←	Select Screen
Parallel Port Address	[378]	↑↓	Select Item
Parallel Port Mode	[Normal]	+ -	Change Field
Parallel Port IRQ	[IRQ7]	Tab	Select Field
		F1	General Help
		F10	Save and Exit
		ESC	Exit

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BIOS SETUP UTILITY

Main	**Advanced**	PCIPnP	Boot	Security	Chipset	Exit

ACPI Settings

ACPI Aware O/S	[Yes]		
► General ACPI Configuration			
► Advanced ACPI Configuration		←	Select Screen
► Chipset ACPI Configuration		↑↓	Select Item
		+ -	Change Field
		Tab	Select Field
		F1	General Help
		F10	Save and Exit
		ESC	Exit

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BIOS SETUP UTILITY

Main	**Advanced**	PCIPnP	Boot	Security	Chipset	Exit

General ACPI Configuration

Suspend mode	[Auto]		
Repost Video on S3 Resume	[No]	←	Select Screen
		↑↓	Select Item
		+ –	Change Field
		Tab	Select Field
		F1	General Help
		F10	Save and Exit
		ESC	Exit

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BIOS SETUP UTILITY

Main	**Advanced**	PCIPnP	Boot	Security	Chipset	Exit

Advanced ACPI Configuration

ACPI 2.0 Features	[No]		
ACPI APIC support	[Enabled]		
AMI 0EMB table	[Enabled]		
Headless mode	[Disabled]		
		←	Select Screen
		↑↓	Select Item
		+ –	Change Field
		Tab	Select Field
		F1	General Help
		F10	Save and Exit
		ESC	Exit

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BIOS SETUP UTILITY

Main	**Advanced**	PCIPnP	Boot	Security	Chipset	Exit

USB Device Wakeup Function	[Enabled]		
		←	Select Screen
		↑↓	Select Item
		+ –	Change Field
		Tab	Select Field
		F1	General Help
		F10	Save and Exit
		ESC	Exit

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BIOS SETUP UTILITY

Main	**Advanced**	PCIPnP	Boot	Security	Chipset	Exit

Power Management/APM	[Enabled]		
Power Button Mode	[On/Off]		
Suspend Power Saving Type	[C3]		
Restore on AC/Power Loss	[Power On]		
Manual Throttle Ratio	[50%-56.25%]		
Standby Time Out	[Disabled]		
Suspend Time Out	[Disabled]		
Hard Disk Time Out (Minute)	[Disabled]		
Green PC Monitor Power State	[Suspend]		
Video Power Down Mode	[Suspend]		
Hard Disk Power Down Mode	[Suspend]		
Advanced Monitor Events Controls			
Display Activity	[Ignore]		
Monitor IRQ3	[Monitor]		
Monitor IRQ4	[Ignore]		
Monitor IRQ5	[Ignore]		
Monitor IRQ7	[Ignore]		
Monitor IRQ9	[Ignore]		
Monitor IRQ10	[Ignore]		
Monitor IRQ11	[Ignore]		
Monitor IRQ13	[Ignore]		
Monitor IRQ14	[Monitor]		
Monitor IRQ15	[Ignore]		
Advanced Resume Events Controls			
Resume On Ring	[Disabled]		
Resume On PME#	[Disabled]	←	Select Screen
Resume On KBC	[Disabled]	↑ ↓	Select Item
Wake-Up Key	[Any Key]	+ -	Change Field
Resume On PS/2 Mouse	[Disabled]	Tab	Select Field
Resume On RTC Alarm	[Disabled]	F1	General Help
		F10	Save and Exit
		ESC	Exit

BIOS SETUP UTILITY

Main	**Advanced**	PCIPnP	Boot	Security	Chipset	Exit

USB Configuration

Module Version – 2.24.0-11.4

USB Devices Enabled :
None

USB 1.1 Ports Configuration	[USB 6 Ports]		
USB 2.0 Ports Enable	[Enabled]		
Legacy USB Support	[Enabled]	←	Select Screen
USB 2.0 Controller Mode	[HiSpeed]	↑↓	Select Item
		+ –	Change Field
		Tab	Select Field
		F1	General Help
		F10	Save and Exit
		ESC	Exit

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BIOS SETUP UTILITY

Main	**Advanced**	PCIPnP	Boot	Security	Chipset	Exit

Hardware Health Configuration

H/W Health Function	[Enabled]
Chassis Intrusion	[Disabled]

Hardware Health Event Monitoring

CPU Temperature
System Temperature

CPU Fan
System Fan

VcoreA
+3.3Vin
+3.3V BAT

←	Select Screen
↑↓	Select Item
+ –	Change Field
Tab	Select Field
F1	General Help
F10	Save and Exit
ESC	Exit

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4.5 Advanced PCI/PnP Settings

This section describes configuring the PCI bus system. PCI, or Personal Computer Interconnect, is a system that allows I/O devices to operate at speeds nearing the speed the CPU itself uses when communicating with its own special components. This section covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.

BIOS SETUP UTILITY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Exit

Advanced PCI/PnP Settings

WARNING:	**Setting wrong values in below sections may cause system to malfunction.**		
Clean NVRAM	[No]		
Plug & Play O/S	[No]		
PCI Latency Timer	[64]		
Allocate IRQ to PCI VGA	[Yes]		
Palette Snooping	[Disabled]		
PCI IDE BusMaster	[Disabled]		
Offboard PCI/ISA IDE Card	[Auto]		
IRQ3	[Available]		
IRQ4	[Available]		
IRQ5	[Available]		
IRQ7	[Available]		
IRQ9	[Available]		
IRQ10	[Available]		
IRQ11	[Available]		
IRQ14	[Available]		
IRQ15	[Available]		
DMA Channel 0	[Available]		
DMA Channel 1	[Available]	←	Select Screen
DMA Channel 3	[Available]	↑ ↓	Select Item
DMA Channel 5	[Available]	+ -	Change Field
DMA Channel 6	[Available]	Tab	Select Field
DMA Channel 7	[Available]	F1	General Help
		F10	Save and Exit
Reserved Memory Size	[Disabled]	ESC	Exit

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4.6 Boot Settings

BIOS SETUP UTILITY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Exit

Boot Settings

► Boot Settings Configuration

► Boot Device Priority
► Removable Drives

←	Select Screen
↑ ↓	Select Item
+ –	Change Field
Tab	Select Field
F1	General Help
F10	Save and Exit
ESC	Exit

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BIOS SETUP UTILITY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Exit

Boot Settings Configuration

Quick Boot	[Enabled]
Quiet Boot	[Disabled]
AddOn ROM Display Mode	[Force BIOS]
Bootup Nom-Lock	[On]
PS/2 Mouse Support	[Auto]
Wait For 'F1' If Error	[Enabled]
Hit 'DEL' Message Display	[Enabled]
Interrupt 19 Capture	[Disabled]

←	Select Screen
↑ ↓	Select Item
+ –	Change Field
Tab	Select Field
F1	General Help
F10	Save and Exit
ESC	Exit

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BIOS SETUP UTILITY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Exit

Boot Device Priority

1st Boot Device	[1st FLOPPY DRIVE]	
		← Select Screen
		↑↓ Select Item
		+ - Change Field
		Tab Select Field
		F1 General Help
		F10 Save and Exit
		ESC Exit

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BIOS SETUP UTILITY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Exit

Removable Drives

1st Drive	[1st FLOPPY DRIVE]	
		← Select Screen
		↑↓ Select Item
		+ - Change Field
		Tab Select Field
		F1 General Help
		F10 Save and Exit
		ESC Exit

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4.7 Security Settings

BIOS SETUP UTILITY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Exit

Security Settings

Supervisor Password	:	Not Installed	
User Password	:	Not Installed	
			← Select Screen
Change Supervisor Password			↑↓ Select Item
Change User Password			+ - Change Field
Boot Sector Virus Protection		[Disabled]	Tab Select Field
			F1 General Help
			F10 Save and Exit
			ESC Exit

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4.8 Advanced Chipset Settings

BIOS SETUP UTILITY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Exit

Advanced Chipset Settings

WARNING: Setting wrong values in below sections may cause system to malfunction.

► NorthBridge VIA CX700 Configuration
► SouthBridge VIA CX700 Configuration

←	Select Screen
↑ ↓	Select Item
+ -	Change Field
Tab	Select Field
F1	General Help
F10	Save and Exit
ESC	Exit

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BIOS SETUP UTILITY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Exit

NorthBridge VIA CX700 Configuration

► DRAM Clock/Timing Configuration
► AGP & P2P Bridge Configuration
► V-Link & PCI Bus Configuration

Top Performance	[Disabled]		
Software Reset E2 issue	[Escape Patch]	←	Select Screen
Change DCLK using RDCKM	[Program]	↑ ↓	Select Item
► OnChip VGA Configuration		+ -	Change Field
		Tab	Select Field
		F1	General Help
		F10	Save and Exit
		ESC	Exit

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BIOS SETUP UTILITY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Exit

DRAM Frequency/Timing Configuration

DRAM Frequency	[400MHz]
DRAM Timing	[Auto]
DRAM Command Rate	[2T Command]
RDSAIT/RDSBIT mode	[Auto]
Memory Chip Driving	[Normal]
DDR2 Memory Chip ODT	[Auto]
DDR DQSSBAR	[Disabled]
BA0 SEL	[A13]
BA1 SEL	[A14]
BA2 SEL	[A15]
BA Scramble	[Disabled]
DQSO scanning mode	[Disabled]

←	Select Screen
↑↓	Select Item
+ –	Change Field
Tab	Select Field
F1	General Help
F10	Save and Exit
ESC	Exit

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BIOS SETUP UTILITY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Exit

AGP & P2P Bridge Configuration

Primary Graphics Adapter	[PCI]
AGP Aperture Size	[128MB]
AGP 3.0 Mode	[8X]
AGP Driving Control	[Auto]
AGP Fast Write	[Enabled]
AGP Master 1 WS Read	[Disabled]
AGP Master 1 WS Write	[Disabled]
AGP 3.0 Calibration cycle	[Disabled]

←	Select Screen
↑↓	Select Item
+ –	Change Field
Tab	Select Field
F1	General Help
F10	Save and Exit
ESC	Exit

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BIOS SETUP UTILITY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Exit

V-Link & PCI Bus Configuration

PCI Master 0 WS Write	[Enabled]
V-Link mode selection	[Auto]
V-Link 8X Supported	[Enabled]
V-Link Data 2X Support	[Disabled]
DRDY Timing	[Default]
RCONV	[Enabled]
Dynamic CKE select	[Auto]
Dynamic Clock Stop Control	[00]
PCI Read Caching Select	[EE]

←	Select Screen
↑↓	Select Item
+ -	Change Field
Tab	Select Field
F1	General Help
F10	Save and Exit
ESC	Exit

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OnChip VGA Configuration

Main	Advanced	PCIPnP	Boot	Security	Chipset	Exit

VGA Frame Buffer Size	[64MB]
CPU Direct Access Frame Buffer	[Enabled
Select Display Device	[CRT]
Panel Type	[00:640X480]
Outport Port	[DI1]
Dithering	[Enabled]
TV H/W Layout	[S-Video+Y,Cb,Cr]
TV Type	[NTSC Japan]
TV Output Connector	[S-Video 1 (Y/C)]

←	Select Screen
↑↓	Select Item
+ -	Change Field
Tab	Select Field
F1	General Help
F10	Save and Exit
ESC	Exit

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SouthBridge VIA CX700 Configuration

Main	Advanced	PCIPnP	Boot	Security	Chipset	Exit
* High Definition Audio			[Auto]			
PCI Delay Transaction			[Disabled]			

←	Select Screen
↑↓	Select Item
+ -	Change Field
Tab	Select Field
F1	General Help
F10	Save and Exit
ESC	Exit

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4.9 Exit Options

BIOS SETUP UTILITY

Main	Advanced	PCIPnP	Boot	Security	Chipset	Exit

Exit Options

Save Changes and Exit
Discard Changes and Exit
Discard Changes

Load Optimal Defaults
Load Failsafe Defaults

←	Select Screen
↑↓	Select Item
+ -	Change Field
Tab	Select Field
F1	General Help
F10	Save and Exit
ESC	Exit

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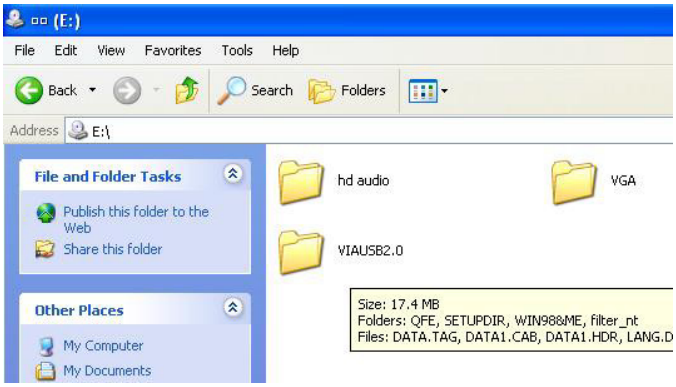
Chapter 5

Software Utilities

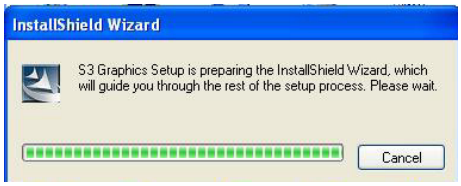
This chapter contains the detailed information of VGA, LAN, audio and USB2.0 driver installation procedures. The utility disk that comes with the delivery package contains an auto-run program that invokes the installation programs for the VGA, LAN and Audio drivers. The following sections describe the installation procedures of each driver based on Win 95/98, Win 2000/XP operating systems. It is recommended that you install the drivers matching the sections listed in this chapter.

5.1 VGA Driver Installation

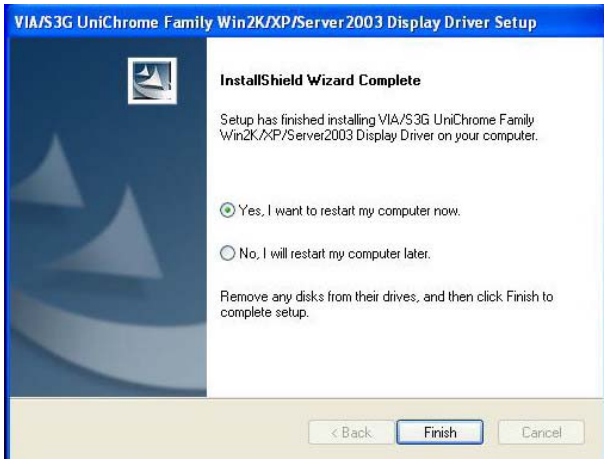
1. With the Utility CD Disk in your CD-ROM drive, open the **File Manager** and then select the CD-ROM drive. Open the VGA folder and click **Setup.exe** to start proceed.



2. When the display below appears on your screen, setup is ready to install and copy the related files onto your hard drive.

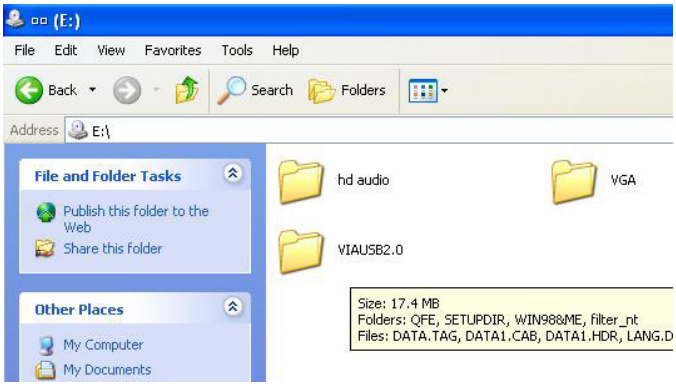


3. After the installation finishes, you will be prompted to restart your system. We recommend you to reboot your computer to allow the new settings to take effect. Click on the **Finish** button to reboot.



5.2 Audio Driver Installation

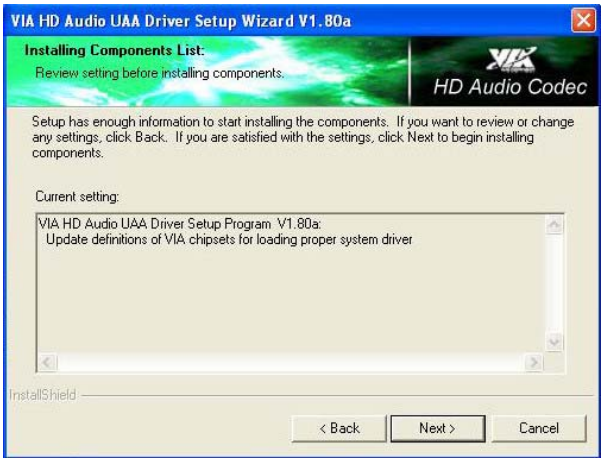
1. With the Utility CD Disk in you CD-ROM drive, open the **File Manager** and then select the CD-ROM drive. Open the **HD Audio** folder and click **Setup.exe** to start proceed.



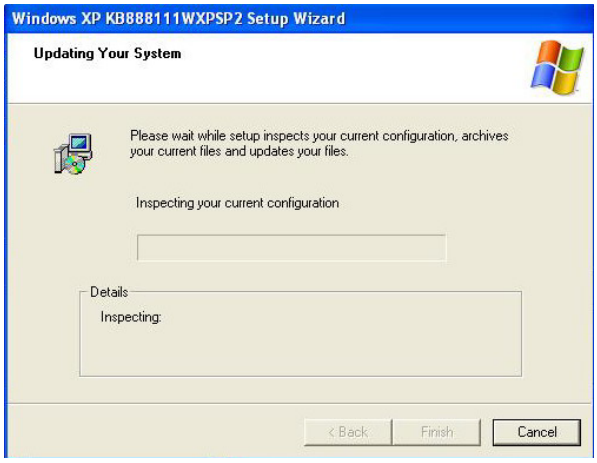
2. Once the Setup Wizard appears on the screen, make sure to close applications that are running, and then tick Install/Update, and click on the Next> button.

3. Setup Wizard will display the install list. Select on **VIA HD…… V1.80a**, and then click on **Next>** to continue.

4. Make sure the Current Setting is ok, and then click on Next> button.



5. After the audio driver installation finishes, select the **Finish** button to complete the installation process.

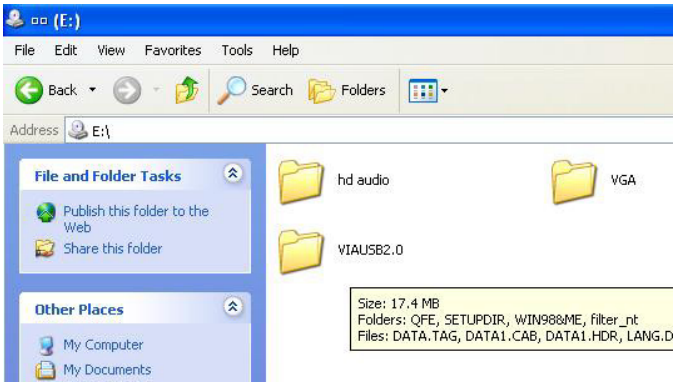


6. When the display below appears on your screen, tick on Yes, this time only, and then click on Next> to continue.

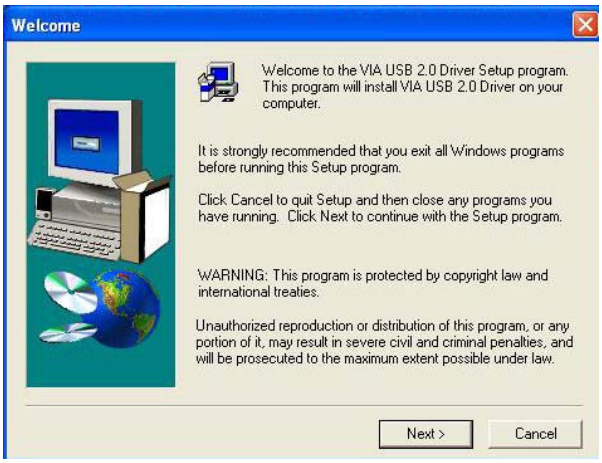
7. After all installation finish, you will be prompted to start your system, click on the **Finish** button to reboot.

5.3 USB2.0 Driver Installation

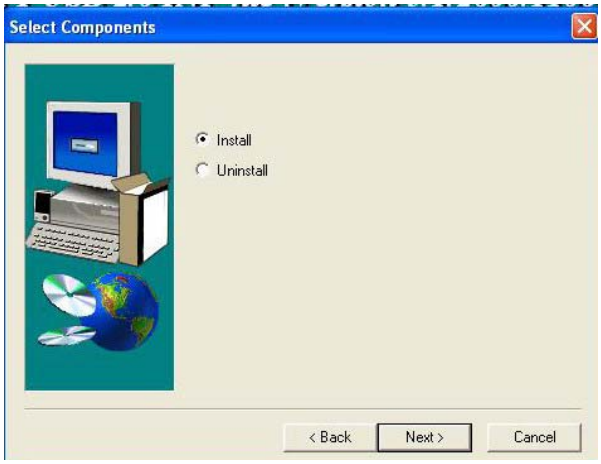
1. With the Utility CD Disk in you CD-ROM drive, open the **File Manager** and then select the CD-ROM drive. Open the **VIAUSB2.0** folder and click **Setup.exe** to start proceed.



2. Once the **Welcome** screen appears on the screen, make sure to close applications that are running and then click on **Next>** button.



3. The **Select Components** dialog box is now displayed. Select on Install and then click on **Next>**.



4. After all installation finish, you will be prompted to start your system, click on the **Yes** button to reboot.