SI-32-N Series

User Manual

iBASE

Revision	Release Date
V0.1	2014/09/01

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Safety Information

Your SI-32-N is designed and tested to meet the latest standards of safety for information technology equipment. However, to ensure your safety, it is important that you read the following safety instructions

Setting up your system

- Read and follow all instructions in the documentation before you operate your system.
- Do not use this product near water.
- Set up the system on a stable surface. Do not secure the system on any unstable plane.
- Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.
- Slots and openings on the chassis are for ventilation. Do not block or cover these openings. Make sure you leave plenty of space around the system for ventilation. ***Never insert objects of any kind into the ventilation openings***.
- This system should be operated from the type of power indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.
- Use this product in environments with ambient temperatures between 0˚C and 45˚C.
- If you use an extension cord, make sure that the total ampere rating of the devices plugged into the extension cord does not exceed its ampere rating.
- DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT WHERE THE STORAGE TEMPERATURE MAY GO BELOW -20° C (-4° F) OR ABOVE 80° C (176° F). THIS COULD DAMAGE THE EQUIPMENT. THE EQUIPMENT SHOULD BE IN A CONTROLLED ENVIRONMENT.

Care during use

- Do not walk on the power cord or allow anything to rest on it.
- Do not spill water or any other liquids on your system.
- When the system is turned off, a small amount of electrical current still flows. Always unplug all power, and network cables from the power outlets before cleaning the system.
- If you encounter the following technical problems with the product, unplug the power cord and contact a qualified service technician or your retailer.
  - ➢ The power cord or plug is damaged.
  - ➢ Liquid has been spilled into the system.
  - ➢ The system does not function properly even if you follow the operating instructions.
  - ➢ The system was dropped or the cabinet is damaged.

Lithium-Ion Battery Warning

CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

NO DISASSEMBLY

The warranty does not apply to the products that have been disassembled by users

WARNING
HAZARDOUS MOVING PARTS
KEEP FINGERS AND OTHER BODY PARTS AWAY

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CHAPTER 1 INTRODUCTION

1.1 General Description

The "Signature Book™" SI-32-N is a professional fanless digital signage system powered by the AMD Embedded high performance R-Series Quad-Core R-452L (1.6/2.4GHz) APU. Clients can have flexible video wall display configuration support from AMD Eyefinity function. The slim-design player comes with a chassis that provides passive cooling for better system reliability and quiet operation.

SI-32-N

1.2 System Specifications

1.2.1 Hardware Specifications

Model Name	SI-32-N
System Mainboard	IB939-45
CPU	AMD R-452L Quad-Core (1.6/2.4GHz) APU
Memory	2 x DDR3 1600MHz SO-DIMM Memory, Max. 8GB
I/O Interface	1 x Hybrid-DVI (VGA/DVI/HDMI with audio) 1 x Dual-link DVI-I 3 x USB 3.0 ports 2 x RJ45 for LAN 1 x RJ45 for RS232 2 x Microjack audio connectors for Line-in/Line-out Power LED/HDD LED & power on/off button 1 x ATX 4-pin Power jack connector
Storage	1 x open frame SSD 1 x mSATA
Expansion Slots	1 x mSATA/mPCIe(x1) Full size 1 x mPCIe(x1) Half size For WIFI, Bluetooth, 3G or TV Tuner options
Power Supply	+ 12V~24V DC-in
Construction	Aluminum + SGCC
Mounting	Slim design with wall mounting holes
Dimensions	218 mm(W) x 140 mm(D) x 35mm(H)
Operating Temperature	0°C~ 45°C (32°F~113°F)
Storage Temperature	-20° ~ 80°C (-4°F~176°F)
Relative Humidity	5~90% @ 45°C, (non-condensing)
Vibration	SSD: 5 grms / 5~500Hz / random operation HDD: 0.25 grms / 5~500Hz / random operation
RoHS	Available
Certification	CE, FCC, UL, CCC

·This specification is subject to change without prior notice.

1.2.2 Dimensions
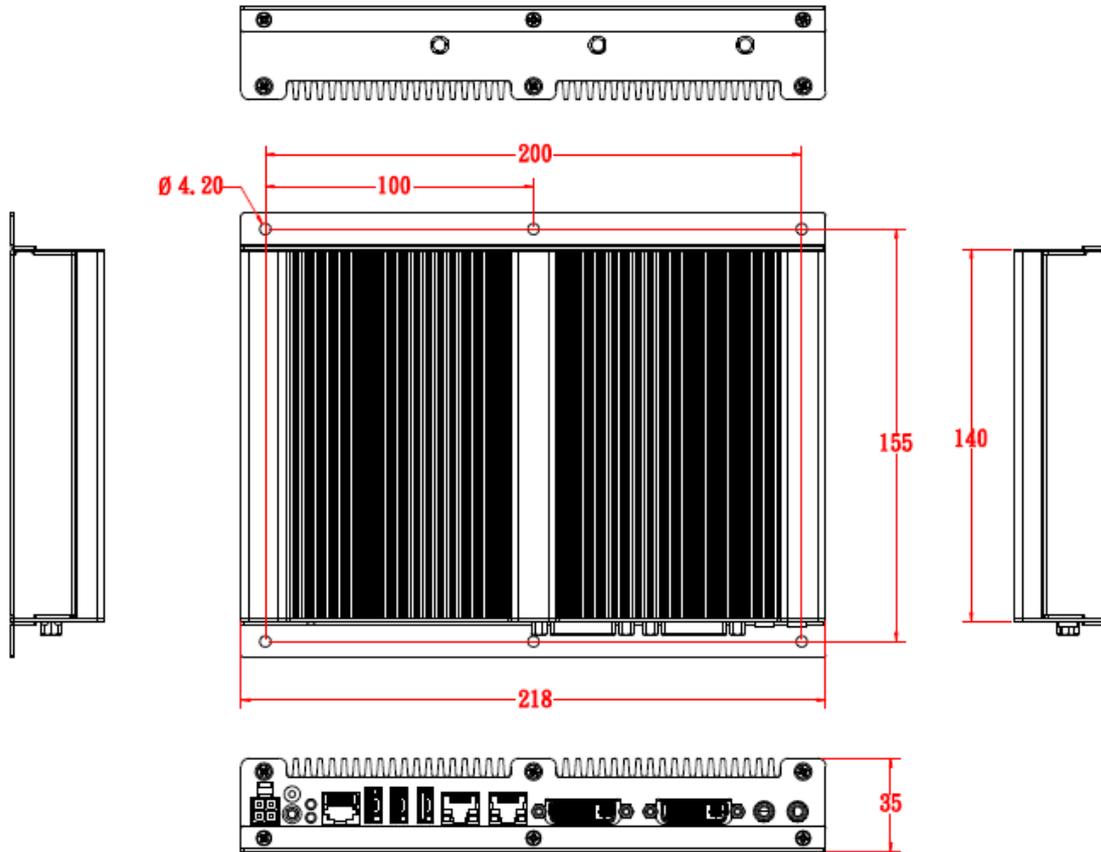
1.2.3 I/O View
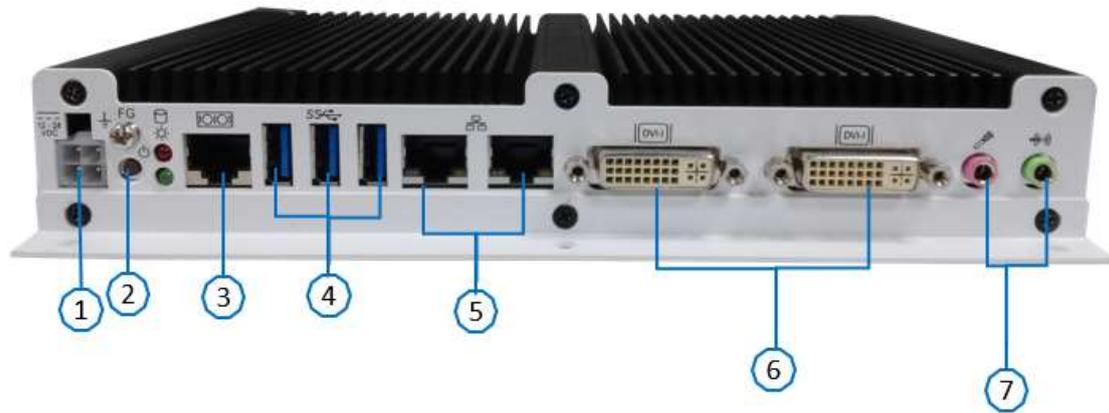
Item	Connector	Item	Connector
1	ATX 4pin Power Jack	5	2 x RJ45 for Gigabit LAN
2	Power On/off button	6	2 x DVI-I
3	COM port	7	Line-in / Line-out
4	3 x USB 3.0 ports (Vertical type)		

1.3 Exploded View of the SI-32-N Assembly
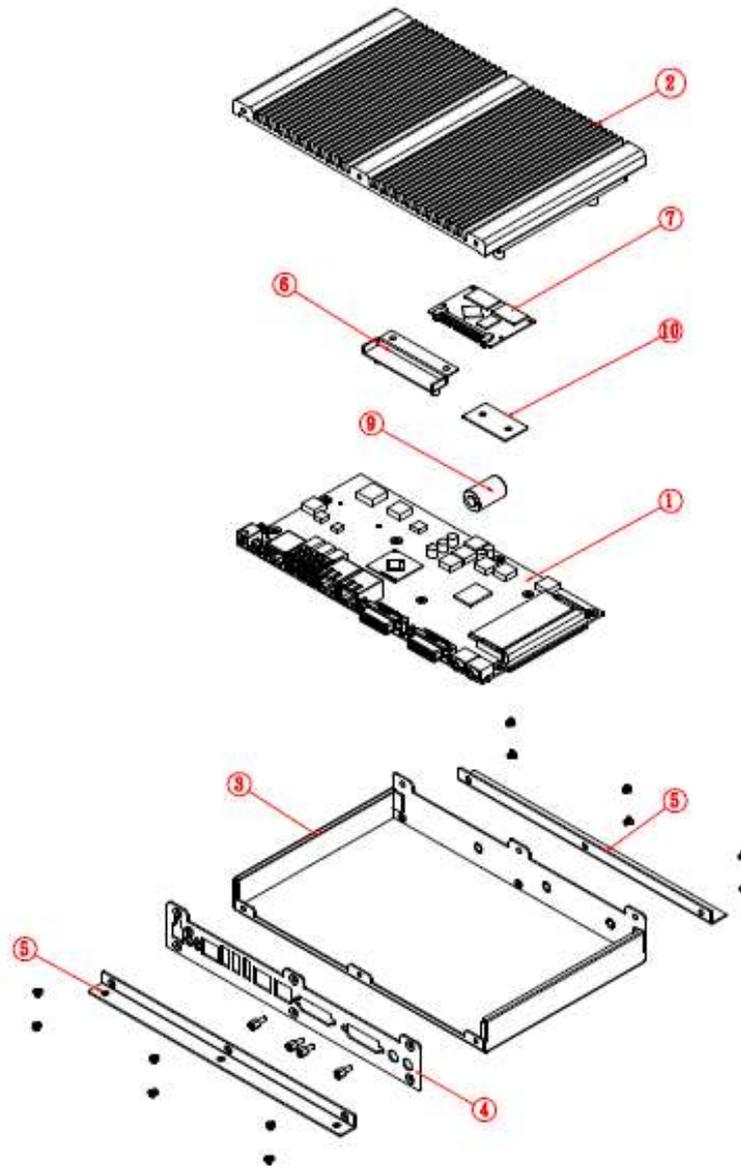
1.3.1 Parts Description

Part No.	Description	Part No.	Description
1	IB939 main board	2	SI-32-N Heat sink
3	SI-32-N Base	4	SI-32-N rear bracket
5	SI-32-N wall mount bracket	6	SI-32-N SSD bracket
7	mSATA	8	N/A
9	Battery	10	SI-32-N battery bracket

1.4 Packing List

Item No.	Description	Qty
1	Driver CD	1
2	Power adaptor	1
3	Power Cord	1

1.4.1 Optional Items

WiFi Solution	Description	
QCOM WiFi module	Wireless; PCI-E Mini Card 802.11B/G/N [AW-NE238H] (A008WLAWNE238H000P)	
External Antenna-2pcs	WiFi Antenna (A055RFA02C2M20800P)	
Internal cable-2pcs	Internal Antenna, 100mm [BTC130-1-70B-200-1] RoHS (A055RFA0000020000P)	
3G Solution	**Description**	
ZU 202	Wireless; 3.75G UMTS/HSPA [ZU202] RoHS (A008WIRELESS00520P)	
ZU 200	Wireless; 3.75G UMTS/HSPA & GPS Module [ZU200] RoHS (A008WIRELESS00510P)	
Cable	Cable; Antenna-2 30CM P 2pcs (C501ANT0200300000P)	
Antenna	Antenna; 3G, P, 2pcs (A055ANT0921Q2P000P)	
COM Port Cable	**Description**	
EXT-311	Cable; EXT-311 2-HD 10C 150CM; DSUB-9F => RJ45-10M RoHS (C501EXT3110A12000P)	
EXT-312	Cable; EXT-312 2-HD 10C 150CM; DSUB-9M => RJ45-10M RoHS (C501EXT3120A12000P)	

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1.5 HARDWARE INSTALLATION

1.5.1 Installing the optional Wireless Module

1. Remove the 13 screws on the sides that are used to secure the cover to the chassis. Once all the screws are removed, from the side, push the cover forward to remove it.
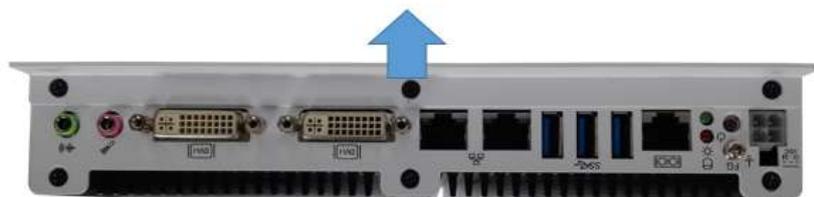
2. Push the WIFI module into the slot. Screw two screws to secure the module into the slot.
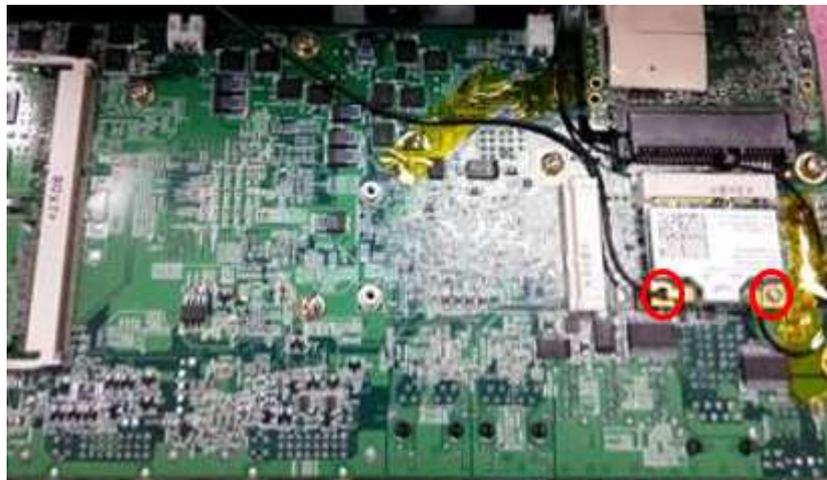
1.5.2 Installing Storage

1. Remove the 13 screws on the sides that are used to secure the cover to the chassis. Once all the screws are removed, from the side, push the cover forward to remove it.
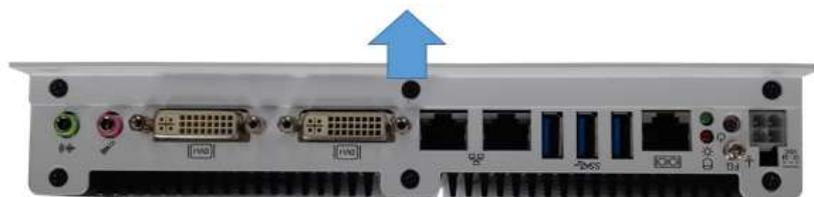
2. First, put the thermal pad and push the module into the slot. Screw two screws to secure the module into the slot.

CHAPTER 2 MOTHERBOARD INTRODUCTION

2.1 Introduction

The IB939 is a custom sized SBC with dimensions of 210mm x 105 mm. It supports the AMD® eTrinity processor with 2.4GHz speed with 4MB of L2 cache. With the AMD® eTrinity integrated memory controller, the board's two DDRIII (1600MHz) SODIMM accept up to 8GB of system memory.

IB939 Mainboard	
CPU	
Model	AMD® 32nm QC APU R-452L (1.6/2.4 GHz) 2MBx2
Speed	R-452L (1.6/2.4 GHz)
Cache	2MBx2
Socket	837mm*2; 827-BGA
TDP	R-452L (19W)
Chipset	
Model	AMD A70M; 7.4W FCBGA-656 Package (24.5 x 24.5 mm)
BIOS	
Model	AMI BIOS, support ACPI Function
Memory	
Configuration	2 X 2GB (4GB)
Max. Support	AMD® integrated memory controller DDRIII 1600 MHz Dual Channel -SO-DIMM x 2 (w/o ECC), Max. 8GB
Edge I/O	
Display	AMD® QC APU Fusion IGX (480 Core @ 650 MHz) Dual Link DVI-I (Connector #1) ■ Dual-Link DVI (DP3 + DP4) ■ VGA (DP0 via iTE6512 Display Port to CRT converter) Hybrid DVI-I (Connector #2) ■ HDMI (DP2) ■ VGA (DP1 via A70M FCH integrated CRT translator)
LAN / PHY	2 x RJ45 for Gigabit LAN
Audio	2 x Microjack Audio connectors for Line-in / Line-out
USB	3 x USB 3.0 ports
SATA / eSATA	Same as SI-38 1 x SATA 3.0 2.5'' open frame SSD. 1 x SATA 3.0 header

LPC I / O	NCT6106 COM1 (RS232) (RJ45 same as original IB938) Monitor (2 thermal inputs, 2 voltage monitor inputs COM 2/3 with pin-9 with power for 2 ports (500 mA each port)
Expansion slot	1x mPCIe(x1) 26.8 mm 1x mPCIe(x1) 51 mm (mPCIe & mSATA)
Digital IO	4 in & 4 out
Internal I/O	
Audio	Header for speaker out (w/ amplifier)
USB	2x 10-pin header for two USB 2.0 Do Not Populate For Si System
Serial ATA	1x 10-pin header; Do Not Populate For Si System
Expansion Slot	1 x mPCIe(x1) 26.8 mm; 1 x mPCIe(x1) 51 mm (mPCIe & mSATA)
Add-On Features	
	Watchdog, H/W monitoring, iSMART, LAN Wakeup
Dimensions	
PCB Dimensions	- 105mm x 205mm
Power	
Power	- 12~24V DC in(+-10%)

2.2 Installations

2.2.1 Installing the Memory

The IB939 board supports two DDR3 memory socket for a maximum total memory of 8GB in DDR3 1600 memory type.

Installing and Removing Memory Modules

To install DDR3 modules, locate the memory socket on the board and perform the following steps:

1. Hold the DDR3 module so that the keys of the DDR3 module align with those on the memory slot.

2. Gently push the DDR3 module in an angle as shown in the picture below until the clips of the sockets lock to hold the DDR3 module in place when the DDR3 module touches the bottom of the socket.

3. To remove the DDR3 module, press the clips with both hands.

2.3 Setting the Jumpers

JP4, JP5: COM4 RS232 RI/+5V/+12V Power Setting

JP4/JP5	Setting	Function
	Pin 1-2 Short/Closed	+12V
	Pin 3-4 Short/Closed	RI
	Pin 5-6 Short/Closed	+5V

J15: Clear CMOS Setting

JP15	Function
1 2 3	Normal
1 2 3	Clear CMOS
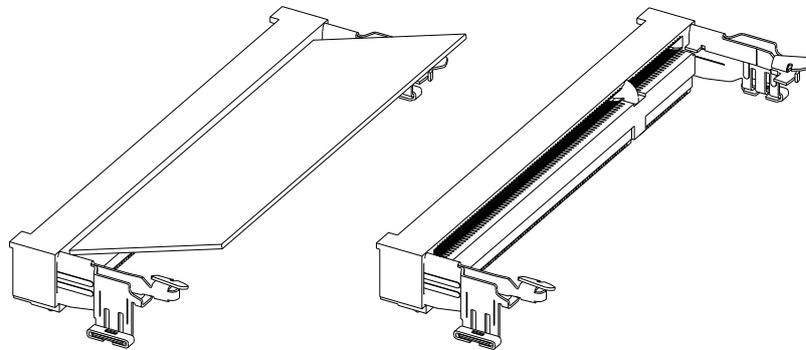
2.4 Connectors on IB939

Connector Locations on IB939

JP13 J19 JP10
J20
J15

J5

J9 J17
J16
JP9
COM2
JP4 JP5
JP4 JP5
J22
CN19 SW1 COM1 CN20 CN15 CN22 CN21
LED3 CN16
CN13 CN3 CN18 CN17

CN16
CN19 LED3 COM1 CN20 CN15 CN22 CN21
SW1
CN13 CN3 CN18 CN17

J15
J8
J4
SATA1
J25 J24
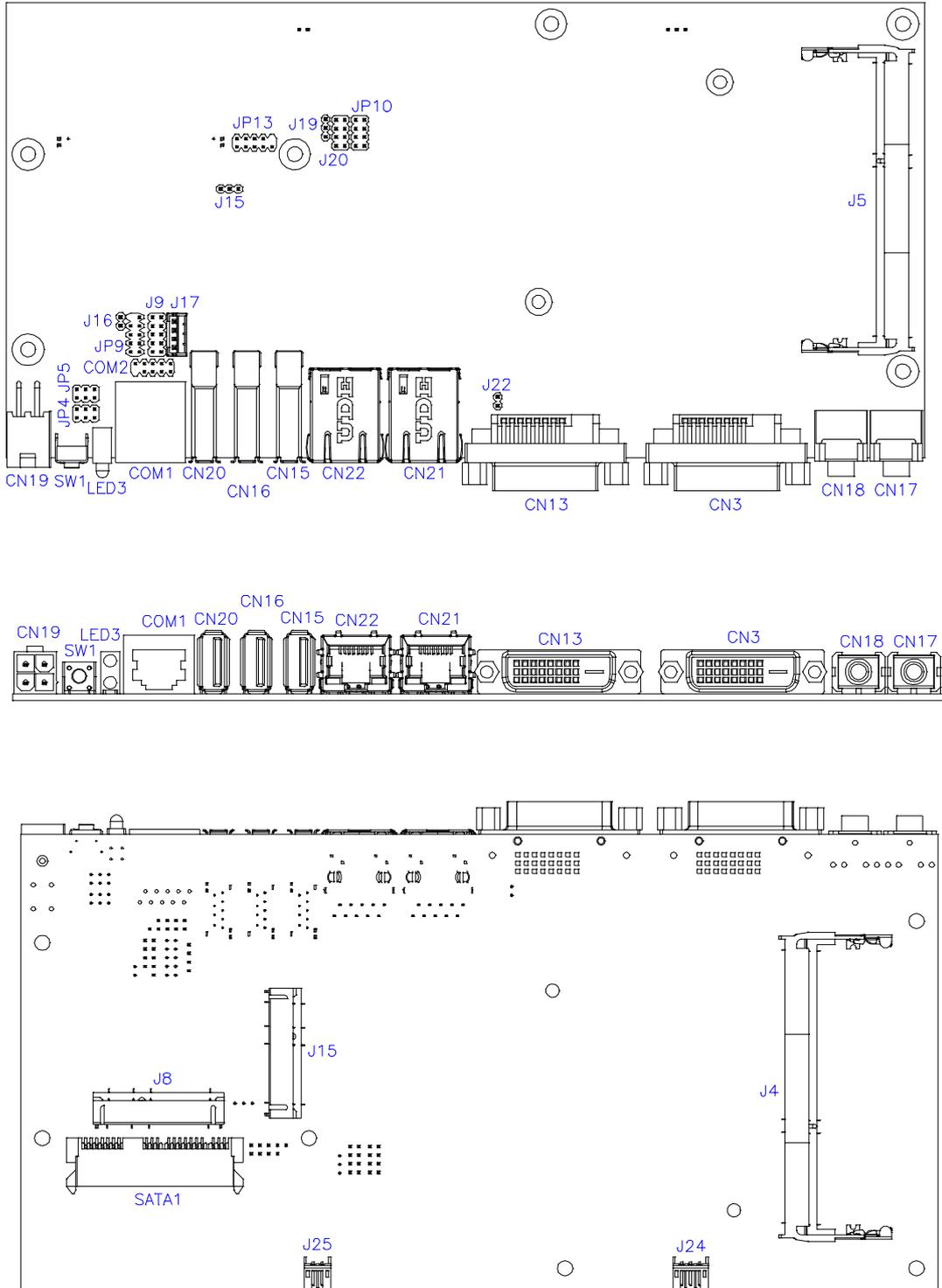
CN19: DC_IN Connector (+12V~24V 4 Pin)

Pin #	Signal Name
1	GND
2	GND
3	DC_IN
4	DC_IN

SW1: Power Button

LED3: Power LED (Green), HDD LED (RED)

The green LED at the bottom is power LED. The red LED on top is the HDD LED.

COM1: COM1 Connector

COM1	Pin #	Signal Name
	1	DSR, Data set ready
	2	GND, ground
	3	GND, ground
	4	TXD, Transmit data
	5	RXD, Receive data
	6	DCD, Data carrier detect
	7	DTR, Data terminal ready
	8	CTS, Clear to send
	9	RTS, Request to send
	10	RI, Ring indicator
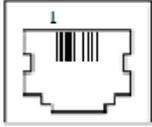
CN15, CN16, CN20: USB3.0 Connector

CN14: RJ45 Gigabit LAN

CN13: Dual Link DVI-I Connector

CN3: DVI-I Connector

CN18: Audio MIC-in

CN17: Audio Line out

JP13: SPI Flash Connector

J8: Half Mini PCIE Slot

JP9: LPC Debug Port Connector

COM2: COM2 Connector
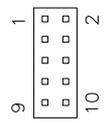
Signal Name	Pin #	Pin #	Signal Name
Data carrier detect	1	2	Data set ready
Receive data	3	4	Request to send
Transmit data	5	6	Clear to send
Data terminal ready	7	8	Ring indicator
Ground	9	10	No connect.

J9: Digital I/O
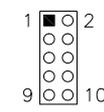
Signal Name	Pin #	Pin #	Signal Name
GND	1	2	VCC
OUT3	3	4	OUT1
OUT2	5	6	OUT0
IN3	7	8	IN1
IN2	9	10	IN0

JP10: US2.0 Connector
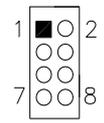
Signal Name	Pin #	Pin #	Signal Name
Vcc	1	2	Ground
D-	3	4	D+
D+	5	6	D-
Ground	7	8	Vcc

J12: Mini PCIE Slot (Support mSATA)

J17: MCU JTAG (factory use only)

J19: Power LED Connector

J20: System Function Connector

```
┌─┌──────┐┌∩Pin 1/2 ATX Power On Switch
└ │ □  □ │  Pin 3/4 HDD LED connector
  │ □  □ │  Pin 5/6 Reset Switch
∩ │ □  □ │∞Pin 7/8 +5V and 5VSB signals
  └──────┘
```
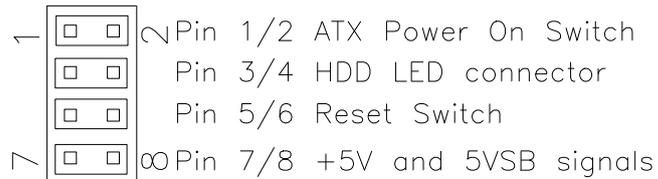
J19: Power LED Connector

Pin #	Signal Name
1	+5V
2	NC
3	Ground

J24: CPU_FAN Connector

This is a 3-pin header for the CPU fan. The fan must be a 12V (500mA).

Pin #	Signal Name
1	Ground
2	+12V
3	Rotation detection

J25: Battery Connector

J23: Audio Amplifier

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CHAPTER 3 BIOS SETUP

This chapter describes the different settings available in the BIOS that comes with the board. The topics covered in this chapter are as follows:

3.1 BIOS Introduction

The BIOS (Basic Input/Output System) installed in your computer system's ROM provides critical low-level support for a standard device such as disk drives, serial ports and parallel ports. It also adds virus and password protection as well as special support for detailed fine-tuning of the chipset controlling the entire system.

3.2 BIOS Setup

The BIOS provides a Setup utility program for specifying the system configurations and settings. The BIOS ROM of the system stores the Setup utility. When you turn on the computer, the BIOS is immediately activated. Pressing the <Del> key immediately allows you to enter the Setup utility. If you are a little bit late pressing the <Del> key, POST (Power On Self Test) will continue with its test routines, thus preventing you from invoking the Setup. If you still wish to enter Setup, restart the system by pressing the "Reset" button or simultaneously pressing the <Ctrl>, <Alt> and <Delete> keys. You can also restart by turning the system Off and back On again. The following message will appear on the screen:

```
Press  <DEL> or <ESC>  to  Enter  Setup
```

In general, you press the arrow keys to highlight items, <Enter> to select, the <PgUp> and <PgDn> keys to change entries, <F1> for help and <Esc> to quit.

When you enter the Setup utility, the Main Menu screen will appear on the screen. The Main Menu allows you to select from various setup functions and exit choices.

Main Settings

Main	Advanced	Chipset	Boot	Security	Save & Exit

```
BIOS Information                                     Choose the system
                                                    default language
Memory Information          8176 MB (DDR3)
Total memory                                        → ←Select Screen
System Date                 [Tue 01/20/2009]        ↑ ↓ Select Item
System Time                 [15:27:20]              Enter: Select
Access Level                Administrator           +- Change Field
                                                    F1:General Help
                                                    F2:Previous Values
                                                    F3: Optimized Default
                                                    F4: Save  ESC: Exit
```

System Date
Set the Date. Use Tab to switch between Data elements.

System Time
Set the Time. Use Tab to switch between Data elements.

Advanced Settings

This section allows you to configure and improve your system and allows you to set up some system features according to your preference.

Main	Advanced	Chipset	Boot	Security	Save & Exit

```
Display CN13 Controller              [Auto]

► PCI Subsystem Settings
► ACPI Settings
► CPU Configuration
► EuP/ErP Power Saving Controller
► IDE Configuration                              → ← Select Screen
► Shutdown Temperature Configuration             ↑ ↓ Select Item
                                                 Enter: Select
► USB Configuration                              +- Change Field
► NCT6106D Super IO Configuration                F1:General Help
► NCT6106D HW Monitor                            F2:Previous Values
                                                 F3: Optimized Default
                                                 F4: Save
                                                 ESC: Exit
```

Display CN13 Controller
Options are Auto VFA and DVI

PCI Subsystem Settings

Aptio Setup Utility

Main	**Advanced**	Chipset	Boot	Security	Save & Exit

PCI Bus Driver Version	V 2.0502	→ ←Select Screen
		↑↓ Select Item
PCI Common Settings		Enter: Select
PCI Latency Timer	32 PCI Bus Clocks	+- Change Field
VGA Palette Snoop	Disabled	F1:General Help
PERR# Generation	Disabled	F2:Previous Values
SERR# Generation	Disabled	F3: Optimized Default
		F4: Save ESC: Exit

PCI Latency Timer

Value to be programmed into PCI Latency Timer Register.

VGA Palette Snoop

Enables or disables VGA Palette Registers Snooping.

PERR# Generation

Enables or disables PCI device to generate PERR#.

SERR# Generation

Enables or disables PCI device to generate SERR#.

ACPI Settings

Aptio Setup Utility

Main	**Advanced**	Chipset	Boot	Security	Save & Exit

ACPI Settings		→ ←Select Screen
		↑↓Select Item
ACPI Sleep State	S3 (Suspend to R…)	Enter: Select
		+- Change Field
Lock Legacy Resources	Disabled	F1:General Help
		F2:Previous Values
		F3: Optimized Default
		F4: Save ESC: Exit

ACPI Sleep State

Select ACPI sleep state the system will enter, when the SUSPEND button is pressed.

Lock Legacy Resources

Enabled or Disabled Lock of Legacy Resources.

CPU Configuration

This section shows the CPU configuration parameters.

Aptio Setup Utility

Main	Advanced	Chipset	Boot	Security	Save & Exit

```
CPU Configuration


     Module Version: 4.6.5.1 TrinityPI 012
     AGESA Version: 1.0.0.3                  → ← Select Screen
                                             ↑ ↓  Select Item
PSS Support               Enable             Enter: Select
PSTATE Adjustment         Pstate 0           +- Change Field
NX Mode                   Enable             F1:General Help
SVM Mode                  Enable             F2:Previous Values
► Node 0 Information                         F3: Optimized Default
                                             F4: Save  ESC: Exit
```

PSS Support

Enable/disable the generation of ACPI _PPC, _PPC, _PSS, and _PCT objects.

PSTATE Adjustment

Provide to adjust startup P-state level.

PPC Adjustment

Provide to adjust _PPC object.

NX Mode

Enable/disable No-execute page protection function.

SVM Mode

Enable/disable CPU Virtualization.

Node 0 Information

View memory information related to Node 0.

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EuP/ErP Power Saving Controller

Aptio Setup Utility

Main	Advanced	Chipset	Boot	Security	Save & Exit

```
                                              EuP/ErP control on S5
                                              [Keep standby power] Enable
EuP/ErP standby power control   Keep standby  All of the standby power and
                                power         ignore EuP/ErP specification.
                                              [Ethernet Only] Only provide
                                              the standby power for Ethernet
                                              chip.
                                              [No standby power] Shutdown all
                                                of the standby power.


                                              → ← Select Screen
                                              ↑↓  Select Item
                                              Enter: Select
                                              +- Change Field
                                              F1:General Help
                                              F2:Previous Values
                                              F3: Optimized Default
                                              F4: Save  ESC: Exit
```

EuP/ErP control on S5 options:

[Keep standby power] Enable All of the standby power and ignore EuP/ErP specification.

[Ethernet Only] Only provide the standby power for Ethernet chip.

[No standby power] Shut down all of the standby power.

IDE Configuration

Aptio Setup Utility

Main	Advanced	Chipset	Boot	Security	Save & Exit

```
IDE Configuration
                                                       → ← Select Screen
                                                       ↑ ↓ Select Item
SATA Port0          WDC WD800AAJS-(80.0G  Enter: Select
                                                       +- Change Field
SATA Port2          Not Present                F1: General Help
                                                       F2: Previous Values
                                                       F3: Optimized Default
                                                       F4: Save   ESC: Exit
```

Shutdown Temperature Configuration

Aptio Setup Utility

Main	**Advanced**	Chipset	Boot	Security	Save & Exit

APCI Shutdown Temperature	Disabled	→ ←Select Screen ↑ ↓ Select Item Enter: Select +- Change Field F1:General Help F2:Previous Values F3: Optimized Default F4: Save ESC: Exit

ACPI Shutdown Temperature

The default setting is Disabled.

Auto Power On Schedule

Aptio Setup Utility

Main	**Advanced**	Chipset	Boot	Security	Save & Exit

Auto Power On Schedule		→ ←Select Screen ↑ ↓ Select Item Enter: Select +- Change Field F1:General Help F2:Previous Values F3: Optimized Default F4: Save ESC: Exit
Power-On after Power failure	Enable	
Schedule Slot 1	None	
Schedule Slot 2	None	

Power-On after Power failure

Enable or Disable.

Schedule Slot 1 / 2

Setup the hour/minute for system power on.

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USB Configuration

Main	Advanced	Chipset	Boot	Security	Save & Exit

USB Configuration

USB Devices:
      1 Keyboard, 1 Mouse

Legacy USB Support   Enabled
XHCI Hand-off   Enabled
EHCI Hand-off   Enabled

USB hardware delays and time-outs:
USB Transfer time-out   20 sec
Device reset tine-out   20 sec
Device power-up delay   Auto

```
→ ←Select Screen
↑ ↓ Select Item
Enter: Select
+- Change Field
F1: General Help
F2: Previous Values
F3: Optimized Default
F4: Save   ESC: Exit
```

Legacy USB Support

Enables Legacy USB support.
AUTO option disables legacy support if no USB devices are connected.
DISABLE option keeps USB devices available only for EFI applications.

XHCI Hand-off

This is a workaround for OSes without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver.

EHCI Hand-off

Enabled/Disabled. This is a workaround for OSes without EHCI hand-off support. The EHCI ownership change should be claimed by EHCI driver.

USB Transfer time-out

The time-out value for Control, Bulk, and Interrupt transfers.

Device reset time-out

USB mass Storage device start Unit command time-out.

Device power-up delay

Maximum time the device will take before it properly reports itself to the Host Controller. 'Auto' uses default value: for a Root port it is 100ms, for a Hub port the delay is taken from Hub descriptor.

NCT6106D Super IO Configuration

Main	Advanced	Chipset	Boot	Security	Save & Exit

NCT6106D Super IO Configuration

→ ←Select Screen
↑ ↓Select Item

NCT6106D Super IO Chip   NCT6106D   Enter: Select
+- Change Field
► Serial Port 0 Configuration   F1:General Help
F2:Previous Values
► Serial Port 1 Configuration   F3: Optimized Default
F4: Save ESC: Exit

Serial Port Configuration

Set Parameters of Serial Ports.   User can Enable/Disable the serial port and Select an optimal settings for the Super IO Device.

NCT6106D H/W Monitor

Main	Advanced	Chipset	Boot	Security	Save & Exit

PC Health Status

System Smart Fan Function	50	
SYS Temp	+35 C	→ ←Select Screen
CPU Temp	+52 C	↑ ↓Select Item
Vcore	+1.000 V	Enter: Select
+5V	+4.413 V	+- Change Field
+12V	+11.408 V	F1:General Help
+1.5V	+1.544 V	F2:Previous Values
		F3: Optimized Default
		F4: Save ESC: Exit

Temperatures/Voltages

These fields are the parameters of the hardware monitoring function feature of the board. The values are read-only values as monitored by the system and show the PC health status.

Smart Fan Function

This field enables or disables the smart fan feature. At a certain temperature, the fan starts turning. Once the temperature drops to a certain level, it stops turning again.

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Chipset Settings

This section allows you to configure and improve your system and allows you to set up some system features according to your preference.

Aptio Setup Utility

Main	Advanced	Chipset	Boot	Security	Save & Exit

► South Bridge

► North Bridge

```
→ ←Select Screen
↑ ↓ Select Item
Enter: Select
+- Change Field
F1: General Help
F2: Previous Values
F3: Optimized Default
F4: Save  ESC: Exit
```

Aptio Setup Utility

Main	Advanced	**Chipset**	Boot	Security	Save & Exit

AMD Reference code Version: Trinity PI 1.0.0.3

► SB SATA Configuration

► SB USB Configuration

```
→ ←Select Screen
↑ ↓ Select Item
Enter: Select
+- Change Field
F1:General Help
F2:Previous Values
F3: Optimized Default
F4: Save  ESC: Exit
```

Aptio Setup Utility

Main	Advanced	Chipset	Boot	Security	Save & Exit

OnChip SATA Channel	Enabled	
OnChip SATA Type	Native iDE	
OnChip iDE mode	Legacy mode	
SATA IDE Combined Mode	Enabled	

```
→ ←Select Screen
↑ ↓ Select Item
Enter: Select
+- Change Field
F1:General Help
F2:Previous Values
F3: Optimized Default
F4: Save  ESC: Exit
```

OnChip SATA Channel
Enabled or Disabled.

OnChip SATA Type
Native IDE /n RAID /n AHCI /n AHCI /n Legacy IDE /n IDE->AHCI /n HyperFlash

OnChip IDE mode
Legacy mode or Native mode

SATA IDE Combined Mode
Enabled or Disabled.

SB USB Configuration Options:

Main	Advanced	Chipset	Boot	Security	Save & Exit

XHCI Controller 0   Disabled

XHCI Controller 1   Disabled

```
→ ←Select Screen
↑ ↓Select Item
Enter: Select
+- Change Field
F1:General Help
F2:Previous Values
F3: Optimized Default
F4: Save  ESC: Exit
```

Aptio Setup Utility

Main	Advanced	**Chipset**	Boot	Security	Save & Exit

North Bridge Configuration

Memory Information

Total memory: 8176 MB (DDR3)

► Socket 0 Information

```
→ ←Select Screen
↑ ↓Select Item
Enter: Select
+- Change Field
F1:General Help
F2:Previous Values
F3: Optimized Default
F4: Save  ESC: Exit
```

Aptio Setup Utility

Main	Advanced	**Chipset**	Boot	Security	Save & Exit

Socket 0 Information

Starting Address: 0KB

Ending Address: 8388607 KB

Dimm0: Not Present

Dimm1: size=8192 MB, speed=667 MHz

```
→ ←Select Screen
↑ ↓Select Item
Enter: Select
+- Change Field
F1:General Help
F2:Previous Values
F3: Optimized Default
F4: Save  ESC: Exit
```

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Boot Settings

Aptio Setup Utility

Main	Advanced	Chipset	Boot	Security	Save & Exit
Boot Configuration					
Setup Prompt Timeout		1			
Bootup NumLock State		On			
Quiet Boot		Disabled			
Fast Boot		Disabled			
CSM16 Module Version		07.69			
GateA20 Active		Upon Request			→ ←Select Screen
Option ROM Messages		Force BIOS			↑ ↓Select Item
INT19 Trap Response		Immediate			Enter: Select
CSM Support		Enabled			+- Change Field
					F1:General Help
					F2:Previous Values
Boot Option Priorities					F3: Optimized Default
Boot Option #1		SATA PM: WDC WD80			F4: Save ESC: Exit
► CSM parameters					

Setup Prompt Timeout

Number of seconds to wait for setup activation key.
65535(0xFFFF) means indefinite waiting.

Bootup NumLock State

Select the keyboard NumLock state.

Quiet Boot

Enables/Disables Quiet Boot option.

Fast Boot

Enables/Disables boot with initialization of a minimal set of devices required to launch active boot option. Has no effect for BBS boot options.

GateA20 Active

UPON REQUEST – GA20 can be disabled using BIOS services.
ALWAYS – do not allow disabling GA20; this option is useful when any RT code is executed above 1MB.

Option ROM Messages

Set display mode for Option ROM. Options are Force BIOS and Keep Current.

INT19 Trap Response

Enable: Allows Option ROMs to trap Int 19.

Boot Option Priorities

Sets the system boot order.

CSM parameters

OpROM execution, boot options, filter, etc.

Aptio Setup Utility

Main	Advanced	Chipset	Boot	Security	Save & Exit

```
Launch CSM                        Always
Boot option filter                UEFI and Legacy   → ←Select Screen
Launch PXE OpROM policy           UEFI only         ↑ ↓Select Item
Launch Storage OpROM policy       UEFI only         Enter: Select
Launch Video OpROM policy         Legacy only       +- Change Field
                                                    F1:General Help
Other PCI device ROM priority     UEFI OpROM        F2:Previous Values
                                                    F3: Optimized Default
                                                    F4: Save  ESC: Exit
```

Launch CSM

This option controls if CSM will be launched.

Boot option filter

This option controls what devices system can boot to.

Launch PXE OpROM policy

Controls the execution of UEFI and Legacy PXE OpROM.

Launch Storatge OpROM policy

Controls the execution of UEFI and Legacy Storage OpROM.

Launch Video OpROM policy

Controls the execution of UEFI and Legacy Video OpROM.

Other PCI device ROM priority

For PCI devices other than Network, Mass storage or Video defines which OpROM to launch.

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Security Settings

This section allows you to configure and improve your system and allows you to set up some system features according to your preference.

Aptio Setup Utility

Main	Advanced	Chipset	Boot	Security	Save & Exit

Password Description		
If ONLY the Administrator's password is set, then this only limit access to Setup and is only asked for when entering Setup.		
If ONLY the User's password is set, then this is a power on password and must be entered to boot or enter Setup. In Setup the User will have Administrator rights		
The password length must be		→ ←Select Screen
in the following range:		↑ ↓ Select Item
Minimum length	3	Enter: Select
Maximum length	20	+– Change Field
		F1:General Help
Administrator Password		F2:Previous Values
User Password		F3: Optimized Default
		F4: Save ESC: Exit

Administrator Password

Set Setup Administrator Password.

User Password

Set User Password.

Save & Exit Settings

Main	Advanced	Chipset	Boot	Security	Save & Exit

```
Save Changes and Exit
Discard Changes and Exit
Save Changes and Reset
Discard Changes and Reset


Save Options
Save Changes                          → ←Select Screen
Discard Changes                       ↑ ↓ Select Item
                                      Enter: Select
                                      +- Change Field
Restore Defaults                      F1:General Help
Save as User Defaults                 F2:Previous Values
Restore User Defaults                 F3: Optimized Default
                                      F4: Save  ESC: Exit
```

Save Changes and Exit
Exit system setup after saving the changes.

Discard Changes and Exit
Exit system setup without saving any changes.

Save Changes and Reset
Reset the system after saving the changes.

Discard Changes and Reset
Reset system setup without saving any changes.

Save Changes
Save Changes done so far to any of the setup options.

Discard Changes
Discard Changes done so far to any of the setup options.

Restore Defaults
Restore/Load Defaults values for all the setup options.

Save as User Defaults
Save the changes done so far as User Defaults.

Restore User Defaults
Restore the User Defaults to all the setup options.

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CHAPTER 4 DRIVERS INSTALLATION

This section describes the installation procedures for software and drivers. The software and drivers are included with your package. If you find the items missing, please contact the vendor where you made the purchase.

IMPORTANT NOTE:

After installing your Windows operating system, you must install first the Intel Chipset Software Installation Utility before proceeding with the drivers installation.

4.1 VGA Drivers Installation

1. Insert the drivers DVD that comes with the board. Click *AMD*, then *AMD A70M Chipset Drivers*.
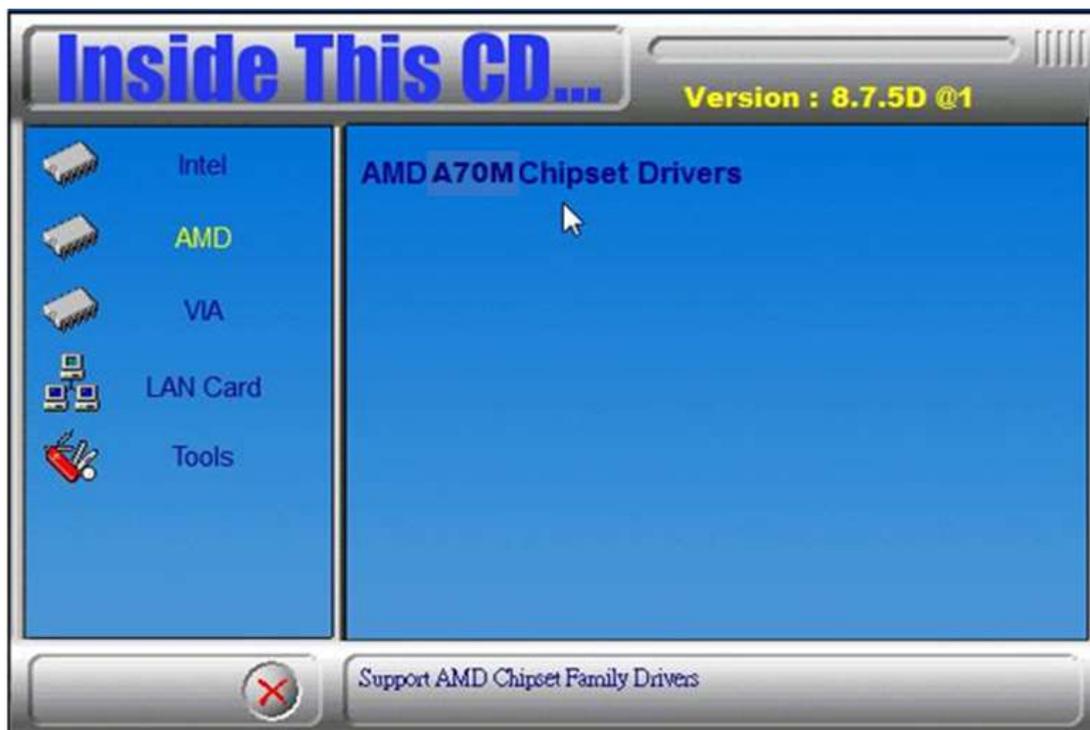
2. Click **AMD A70M Series Graphics Drivers**.
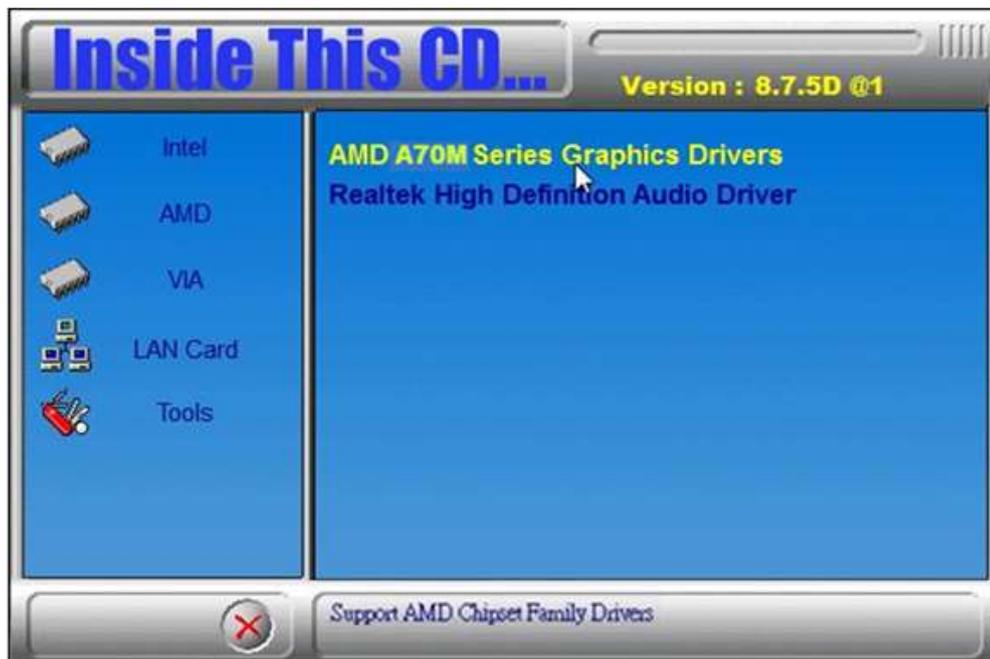
3. When the welcome screen appears, click **Next**.
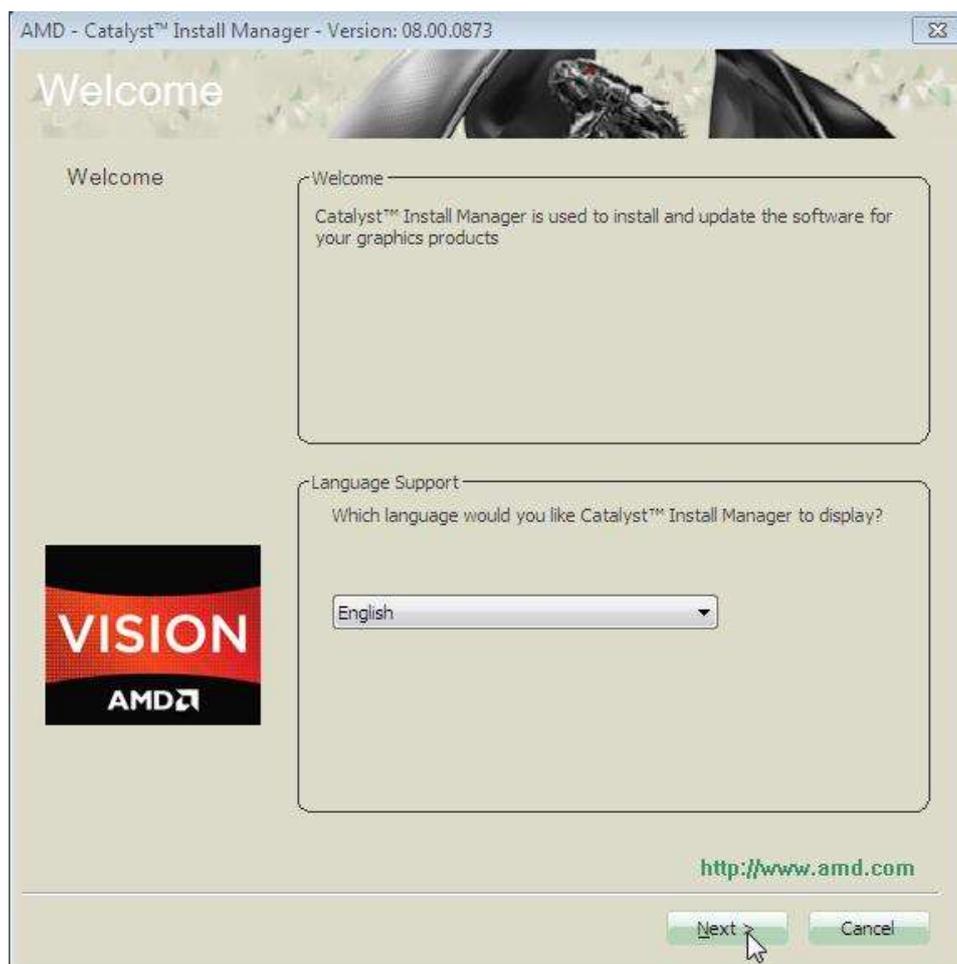
4. Select the language you would like to be displayed and click *Next*.

5. Click *Next* to continue the installation process.
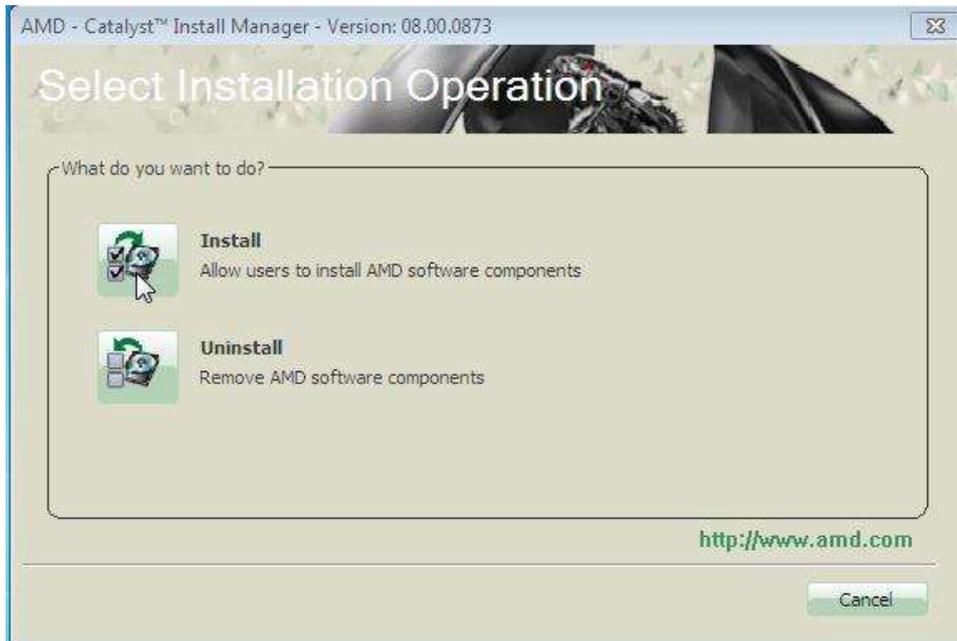
6. Select **Express** and the **installation location** and click *Next*.
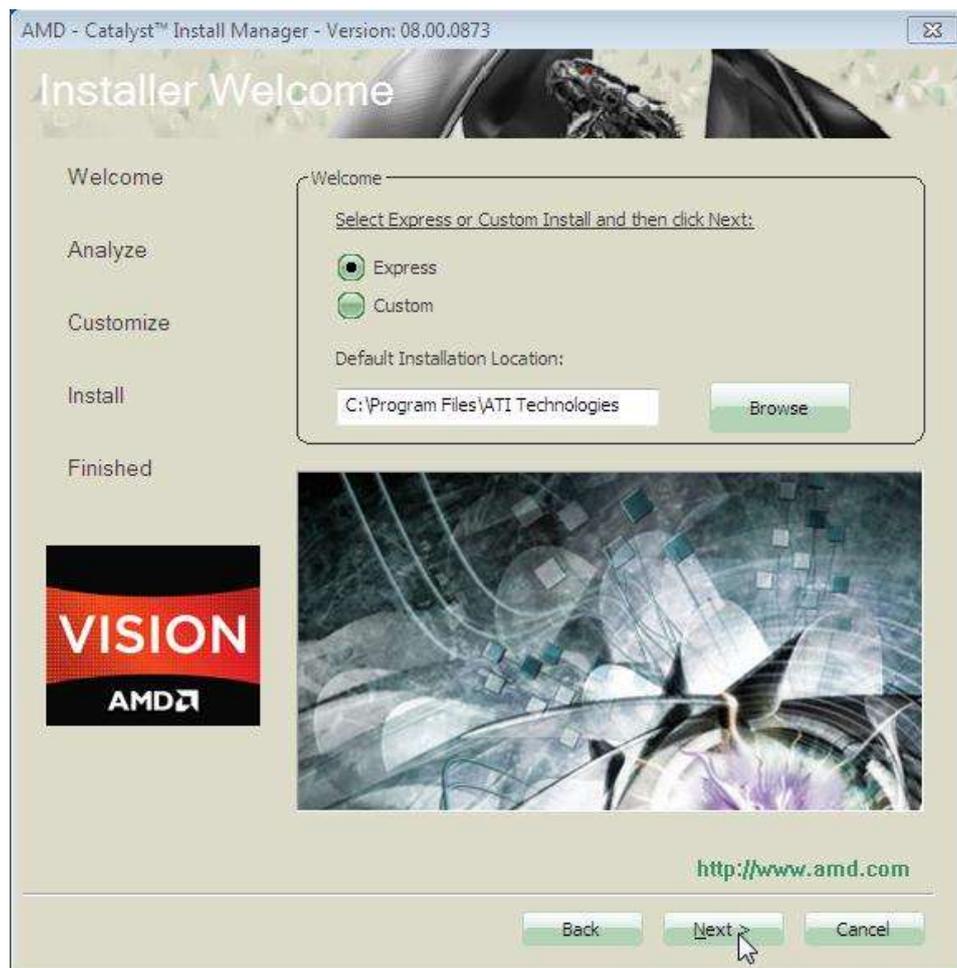
7. Click **Accept** to accept the End User License Agreement.

8. To reboot the system, click **Yes**.
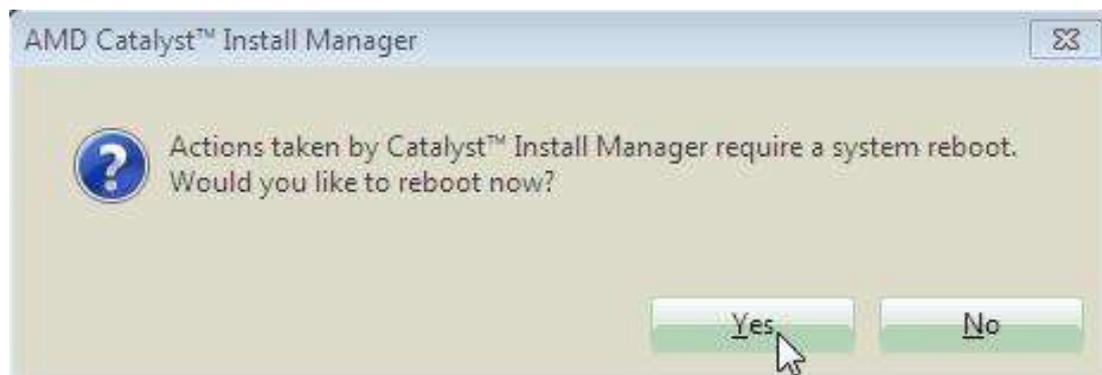
4.2 Audio Driver Installation

1. Insert the drivers DVD that comes with the board. Click **AMD**, then **Realtek High Definition Audio Driver**.
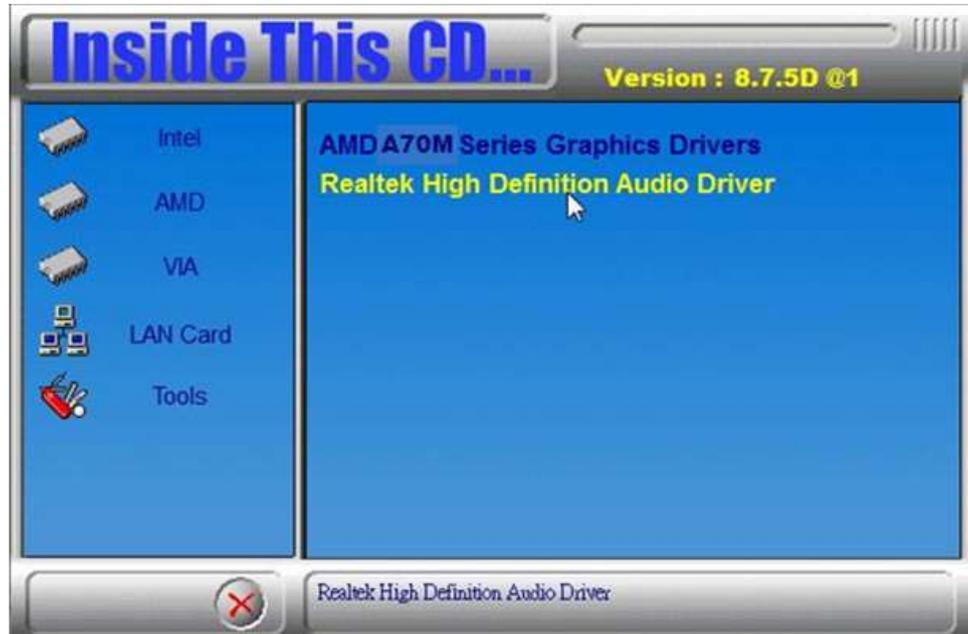
2. When the Welcome screen to the InstallShield Wizard appears, click **Next**.

3. InstallShield Wizard is now complete, click **Finish** to restart the system and for changes to take effect.

4.3 LAN Drivers Installation

1. Insert the drivers DVD that comes with the board. Click **LAN Card**.
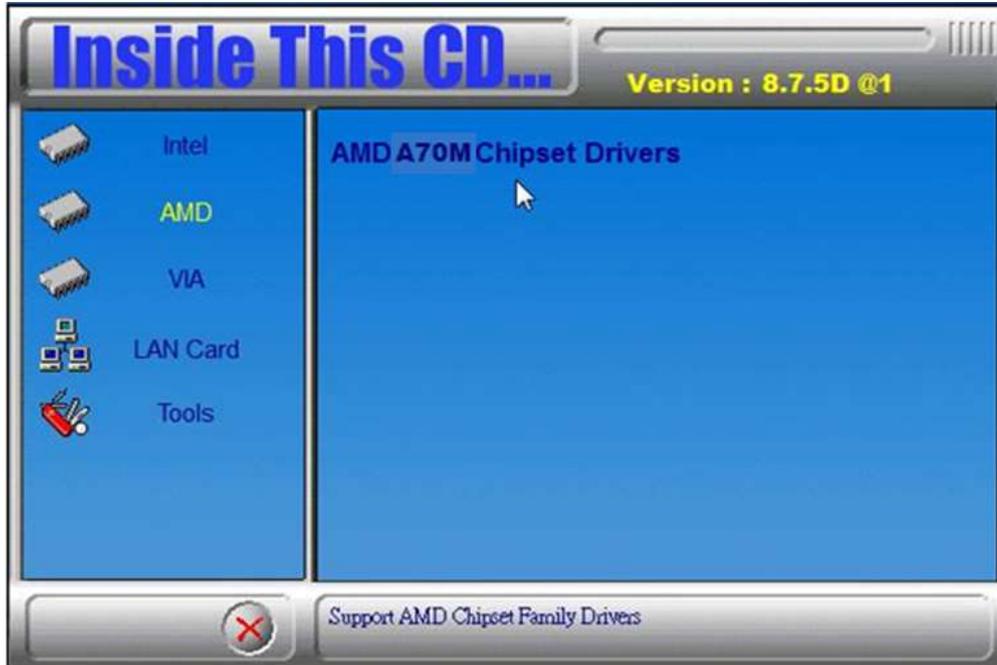
2. Click **Realtek LAN Controller Drivers**.

3. When the Welcome screen appears, click **Next**.

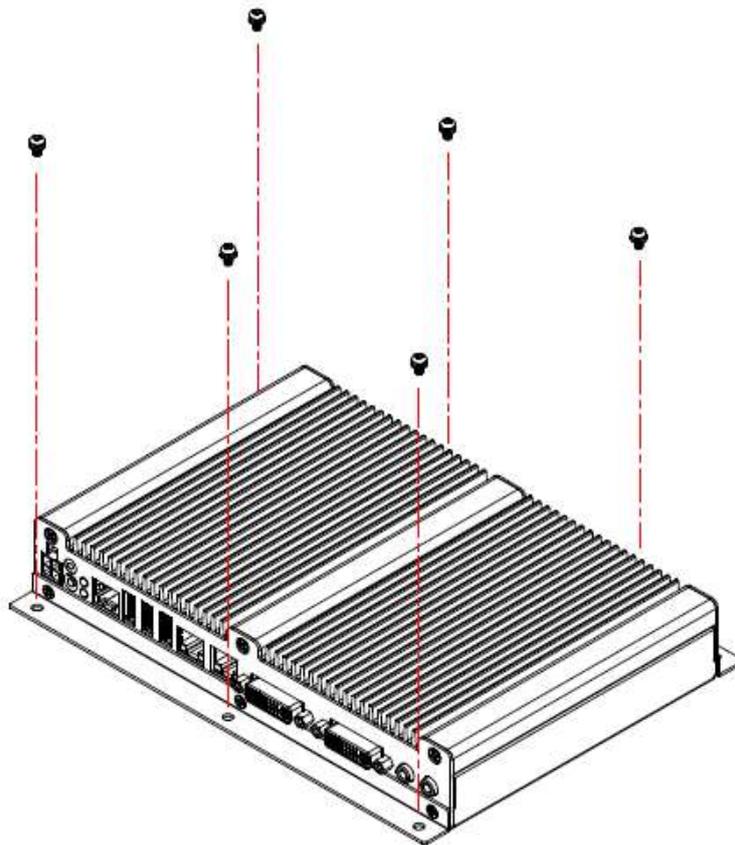4. Now click **Install** to begin the installation.
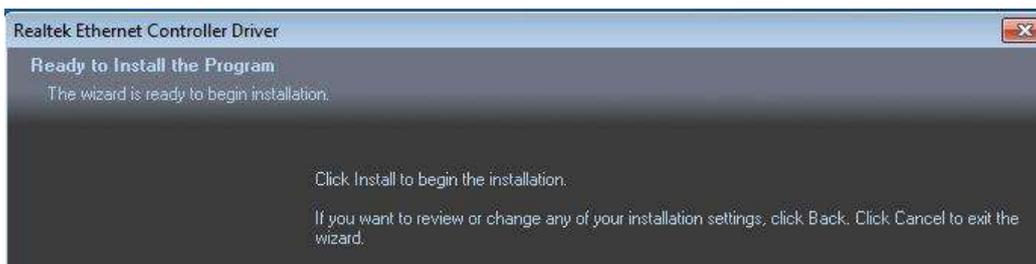
5. InstallShield Wizard is complete. Click **Finish**.
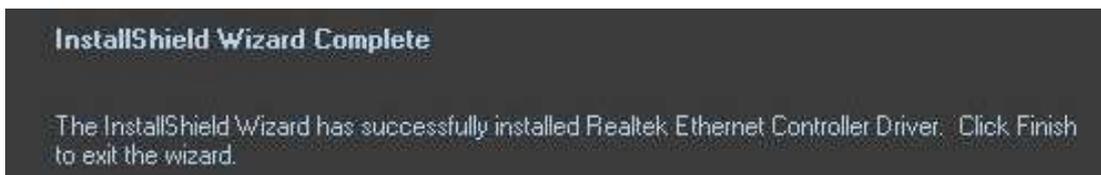
Appendix

Mounting SI-32-N to the Wall

You can install SI-32-N on plastic (LCD monitor), wood, drywall surface over studs, or a solid concrete or metal plane directly. Ensure the installer uses at least six M3 length 6mm screws to secure the system on the wall. ***Two M3 length 6mm screws are recommended to secure the system onto the wall.***

Fasteners are not included with the unit, and must be supplied by the installer. The types of fasteners required are dependent on the type of wall construction. Choose fasteners that are rated either "Medium Duty" or "Heavy Duty." To assure proper fastener selection and installation, follow the fastener manufacturer's recommendations.

Wall Mounting Requirements

Note: Before mounting the system onto the wall, ensure that you are following all applicable building and electric codes.

When mounting, ensure that you have enough room for power and signal cable routing and have good ventilation for power adapter. The method of mounting must be able to support the weight of SI-32-N plus the suspend weight of all the cables to be attached to the system. Use the following methods for mounting your system:

Mounting to hollow walls
- **Method 1: Wood surface** – A minimum wood thickness – 38mm (1.5in.) by 25.4 cm (10in.) – of high, construction – grade wood is recommended.
  Note: This method provides the most reliable attachment of the unit with little risk that the unit will come loose or require ongoing maintenance.
- **Method 2: Drywall walls** - Drywall over wood studs is acceptable.

Mounting to a solid concrete or brick wall - Mounts on a flat smooth surface.

Selecting the Location

Plan the mounting location thoroughly. Locations such as walkway areas, hallways, and crowded areas are not recommended. Mount the unit to a flat, sturdy, structurally sound column or wall surface.

The best mounting surface is a standard countertop, cabinet, table, or other structure that is minimally the width and length of the unit. This recommendation reduces the risk that someone may accidentally walk into and damage the device. Local laws governing the safety of individuals might require this type of consideration.

SI-32-N Mounting Bracket Solution

SI-32-N mounting bracket Ibase part number: SC2SIMK3---0A1100P
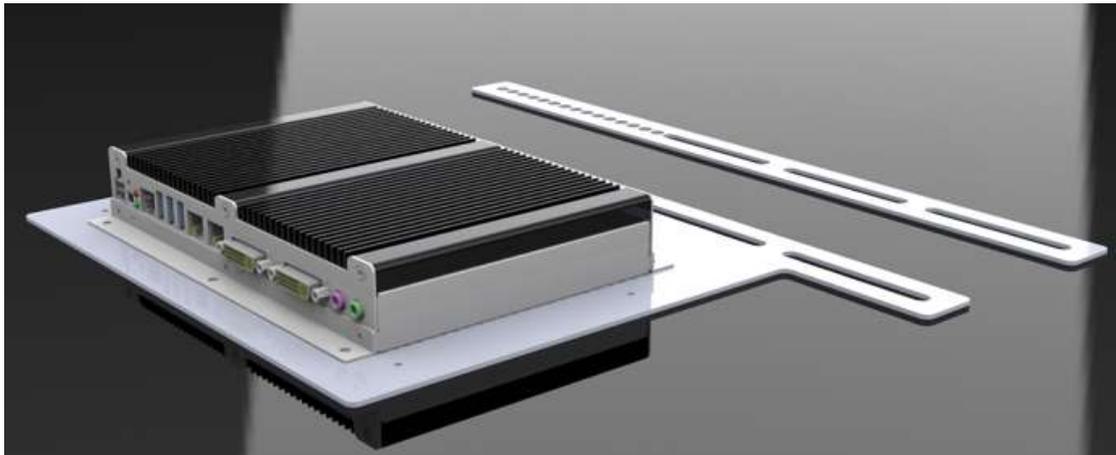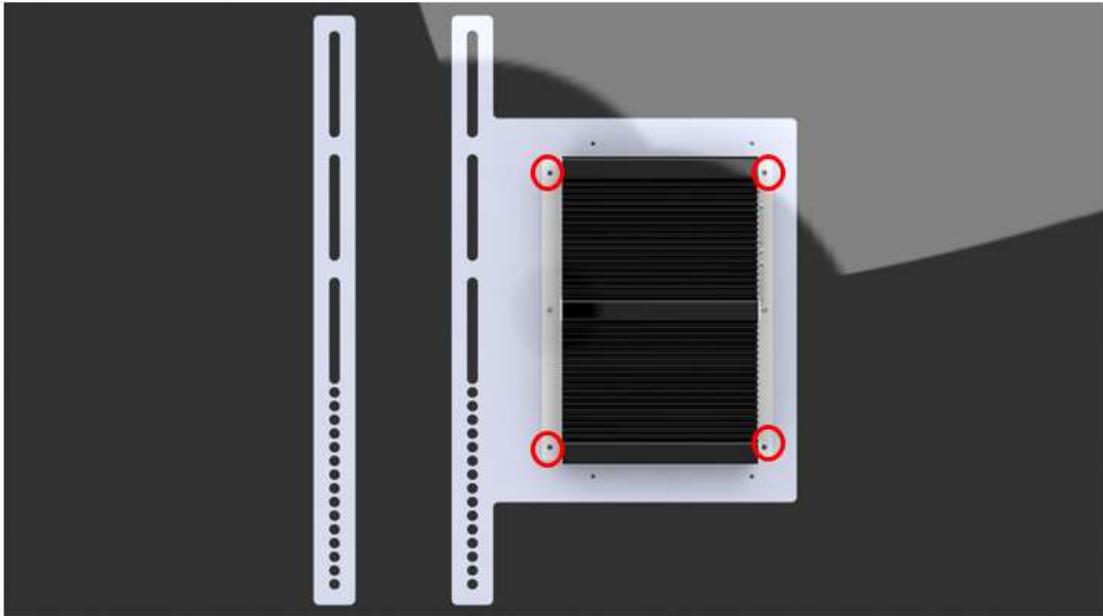
Please install SI-32-N to the mounting bracket with 4 screws as shown.