USER'S MANUAL

SP-7625/7627/7629

15"/17"/19" Panel PC
Powered by Intel® 3rd Gen Core™ i5/i3 & Pentium® CPU
With VGA, 4COM, 4USB & 2LAN

SP-7625/7627/7629 M2

SP-7625/7627/7629

15”/17”/19” High Performance Panel PC

COPYRIGHT NOTICE & TRADEMARK

DISCLAIMER

This user’s manual is meant to assist you in installing and setting up the system. The information contained in this document is subject to change without any notice.

CE NOTICE

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

FCC NOTICE

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

You are cautioned that any change or modifications to the equipment not expressly approve by the party responsible for compliance could void your authority to operate such equipment.

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.
WARNING! Some internal parts of the system may have high electrical voltage. And therefore we strongly recommend that qualified engineers can open and disassemble the system. The LCD and touch screen are easily breakable, please handle them with extra care.

TABLE OF CONTENTS

APPENDIX A SYSTEM DIAGRAMS

APPENDIX B TECHNICAL SUMMARY

CHAPTER

1

INTRODUCTION

This chapter gives you the information for SP-7625/7627/7629. It also outlines the System specification.

Section includes:

- About This Manual
- System Specifications
- Safety Precautions

Experienced users can skip to chapter 2 on page 2-1 for Quick Start.

1-1. ABOUT THIS MANUAL

Thank you for purchasing our SP-7625/7627/7629, 15"/17"/19" high performance panel PC with Intel® 3rd Gen. Core™ i5/i3 & Pentium® processor, enhanced with VGA, 4COM, 4USB and 2LAN. SP-7625/7627/7629 provides faster processing speed, greater expandability and can handle more task than before. This manual is designed to assist you how to install and set up the system. It contains four chapters. The user can apply this manual for configuration according to the following chapters:

Chapter 1 Introduction

This chapter introduces you to the background of this manual, and the specifications for this system. The final page of this chapter will indicate how to avoid damaging this board.

Chapter 2 Hardware Configuration

This chapter outlines the component locations and their functions. In the end of this chapter, you will learn how to set jumper and how to configure this card to meet your own needs.

Chapter 3 Software Utilities

This chapter contains helpful information for proper installations of the VGA utility, LAN utility, and Sound utility.

Chapter 4 BIOS Setup

This chapter indicates you how to set up the BIOS configurations.

Appendix A System Diagrams

This appendix gives you the exploded diagrams and part numbers of the SP-7625/ 7627/7629.

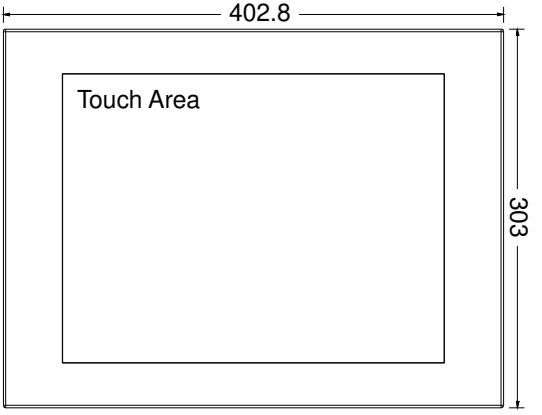
Appendix B Technical Summary

This appendix gives you the information about the Technical maps, Watchdog-timer configuration, and Flash BIOS Update.

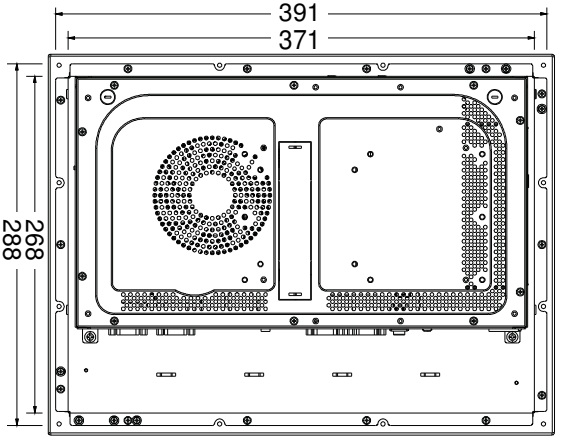
1-2. SYSTEM ILLUSTRATION

SP-7625

Front View

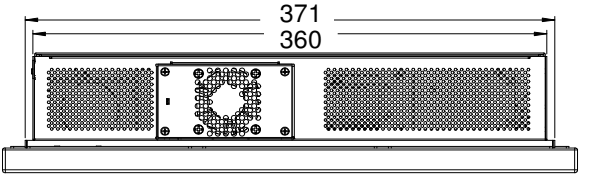


Rear View

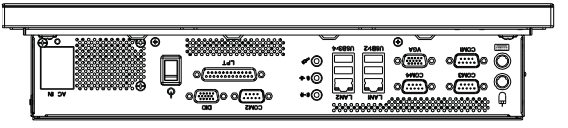


Unit: mm

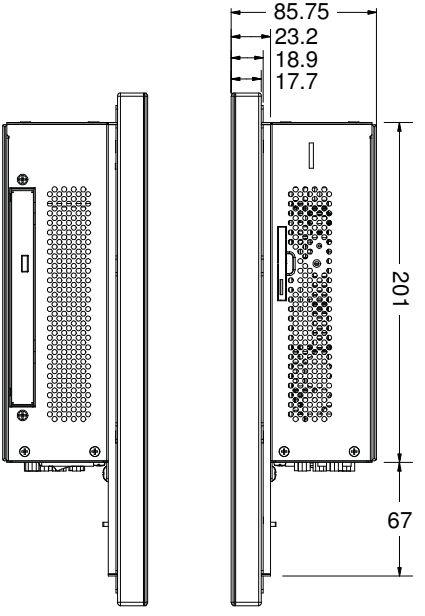
Top View



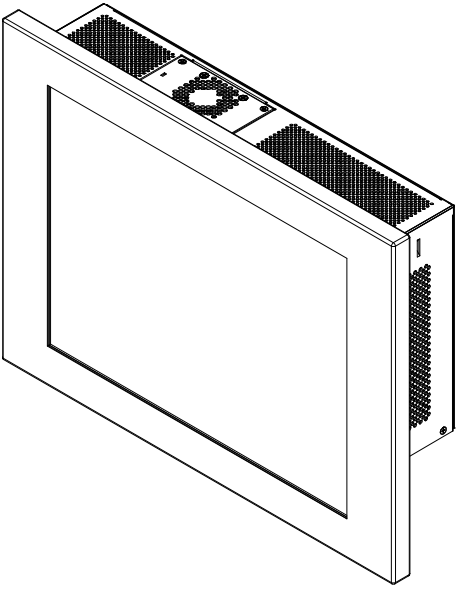
Bottom View



Side View



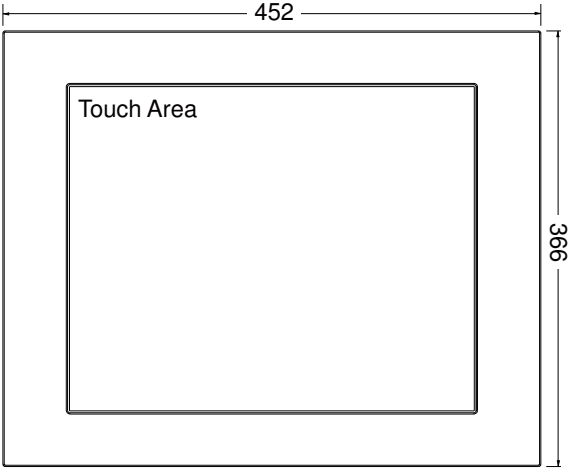
Quarter View



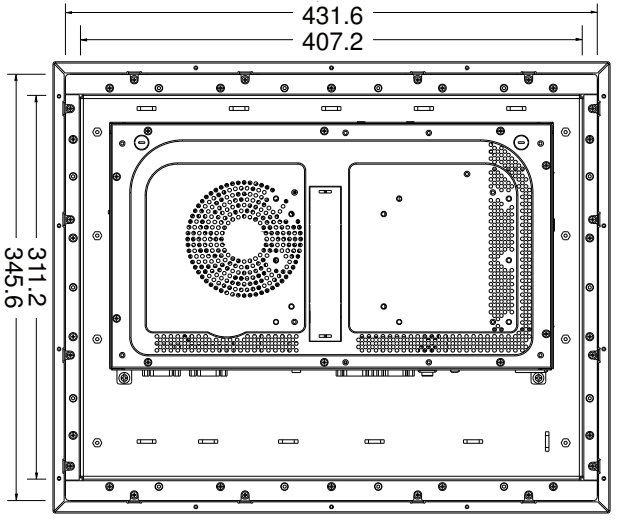
Unit: mm

SP-7627

Front View

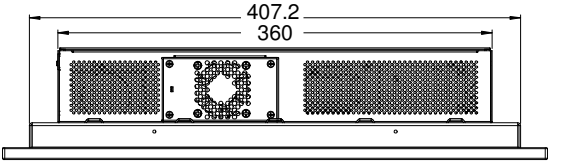


Rear View

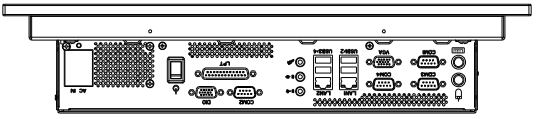


Unit: mm

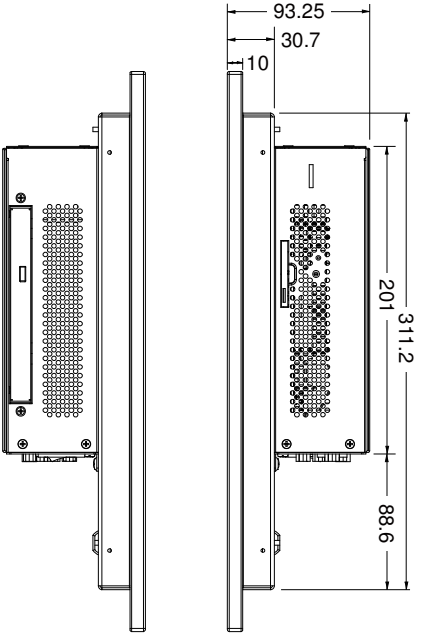
Top View



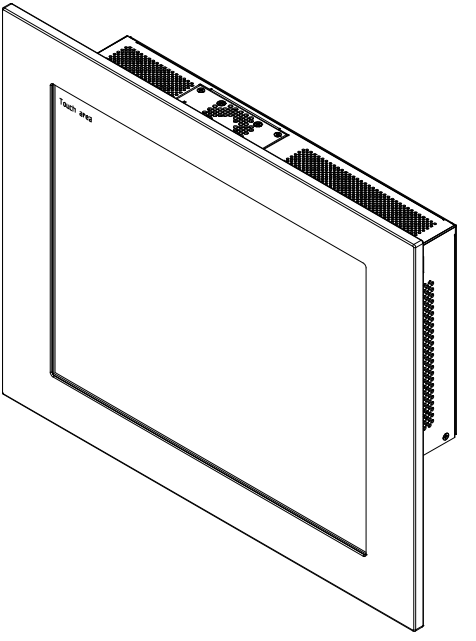
Bottom View



Side View



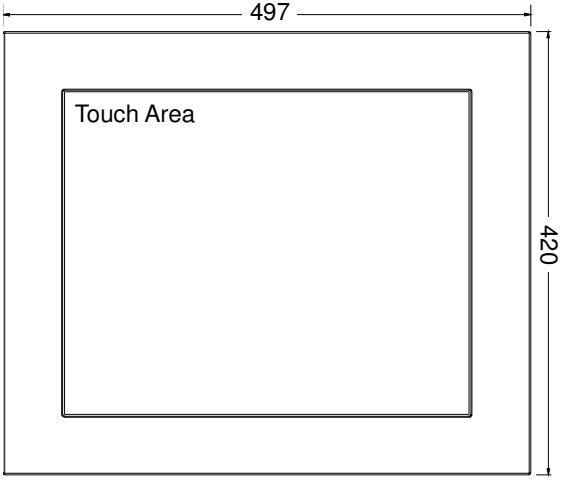
Quarter View



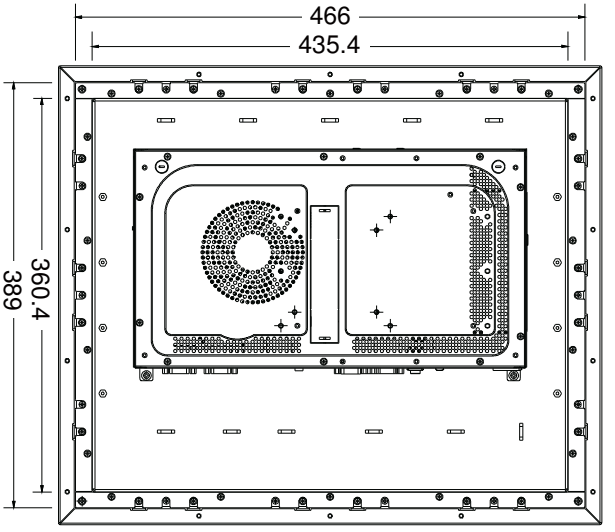
Unit: mm

SP-7629

Front View

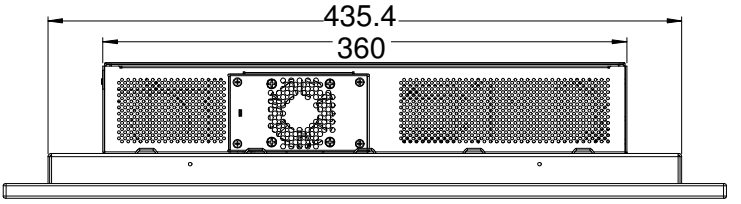


Rear View

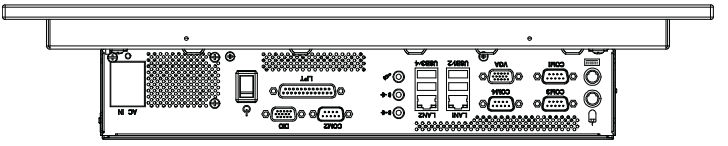


Unit: mm

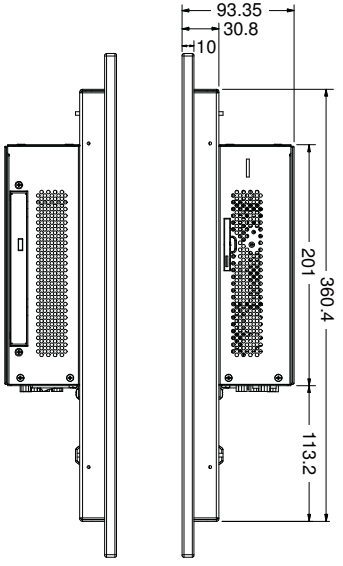
Top View



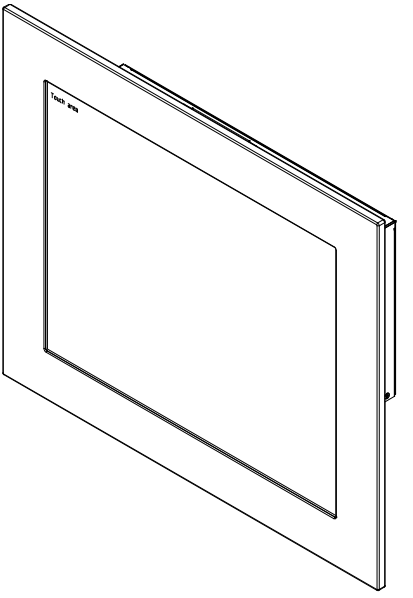
Bottom View



Side View



Quarter View



Unit: mm

1-3. SYSTEM SPECIFICATION

System

CPU Support	▪ Intel® 3rd Gen. Core™ i5/i3 ▪ Intel® Pentium®
Chipset	Intel® Q77
OS Support	Microsoft Windows 7
Memory Support	1 x DDR3 SO-DIMM socket, up to 16 GB
Watchdog	1~255s Watchdog timer
Power Supply	AC IN 100~230V ATX power
Front Bezel	Stainless steel
IP65	For front panel only
Mounting Type	VESA 100 x 100 mm & Wall Mount
Net Weight	▪ **SP-7625:** 7.5 kg ▪ **SP-7627**: 9 kg ▪ **SP-7629:** 10.6 kg
Dimension (W x H x D)	▪ **SP-7625:** 402.8 x 303 x 85.8 mm ▪ **SP-7627**: 452 x 366 x 93.3 mm ▪ **SP-7629:** 497 x 420 x 93.4 mm
Certificate	CE/FCC

I/O Ports

Serial Port	4 x COM ports : ▪ COM1/3/4 for RS-232 only ▪ COM2 for RS-232/422/485
Parallel Port	1 port, bi-direction, SPP/EPP/ECP
USB	4 x USB3.0
LAN	2 x LAN, RJ45 10/100/1000 Mbps, support Wake-on-LAN: LAN1: Intel® 82579LM LAN2: Intel® 82583V
VGA	1 x VGA
Keyboard & Mouse	PS/2 Connector with mini-DIN connector

Audio	Line-out, Line-in, MIC
GPIO	4 in / 4 out (with 5V)
Expansion slot	2 x PCI slot (optional), 1 x mini PCIe slot
Drive Bay	2 x 2.5" SATA HDD, 1 x slim CD-ROM (optional)

Display

LCD Panel Size	▪ **SP-7625:** 15” ▪ **SP-7627**: 17” ▪ **SP-7629:** 19”
Resolution (Brightness)	▪ **SP-7625:** 1024 x 768, 400 nit, LED backlight ▪ **SP-7627**: 1280 x 1024, 350nit LED backlight ▪ **SP-7629:** 1280 x 1024 , 300nit LED backlight
Touchscreen	(ELO) 5W Analog resistive (USB interface)

Environment

Temperature	▪ Operating: 0 ~ 50°C (32 ~ 122°F) ▪ Storage: -20 ~ 80°C (-4 ~ 176°F)
Humidity	▪ Operating: 20~90% RH (no condensation) ▪ Storage: 10 ~ 95% RH (no condensation)

1-4. SAFETY PRECAUTIONS

Follow the messages below to avoid your systems from damage:

1. Keep your system away from static electricity on all occasions.

2. Prevent electric shock. Don't touch any components of this card when the card is power-on. Always disconnect power when the system is not in use.

3. Disconnect power when you change any hardware devices. For instance, when you connect a jumper or install any cards, a surge of power may damage the electronic components or the whole system.

HARDWARE CONFIGURATION

CHAPTER

2

*** QUICK START ***

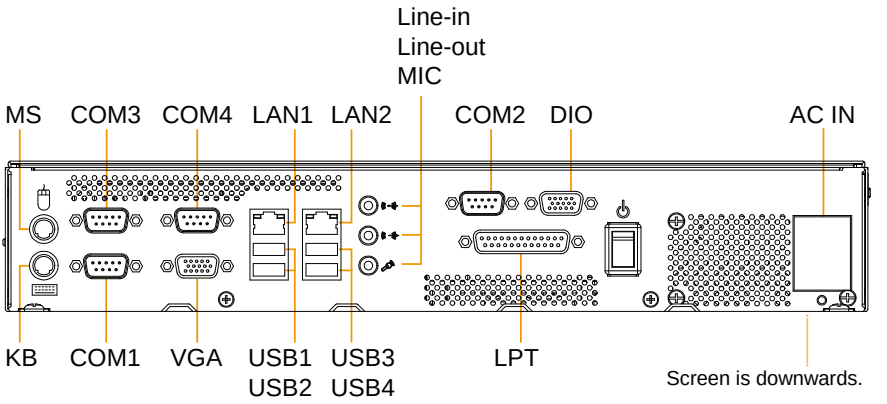
Helpful information describes the jumper & connector settings, and component locations.

Section includes:

- Jumper & Connector Quick Reference Table
- Component Locations
- Configuration and Jumper settings
- Connector's Pin Assignments

2-1. SYSTEM EXTERNAL I/O PORT & PIN ASSIGNMENT

I/O View



2-1-1. Keyboard & Mouse Ports

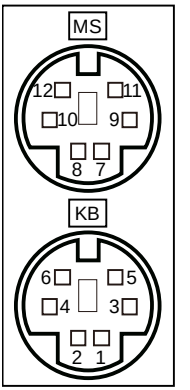
KB_MS1: PS/2 Keyboard & Mouse Port

Keyboard:

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	KBDATA	4	VCC5
2	NC	5	KBCLK
3	GND	6	NC

Mouse:

PIN	ASSIGNMENT	PIN	ASSIGNMENT
7	MSDATA	10	VCC5
8	NC	11	MSCLK
9	GND	12	NC



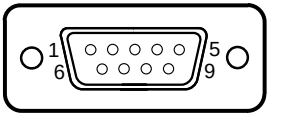
KB_MS1

2-1-2. COM Ports

COM1, COM2, COM3, COM4: COM Ports

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	COM_DCD#	6	COM_DSR#
2	COM_RX	7	COM_RTS#
3	COM_TX	8	COM_CTS#
4	COM_DTR#	9	COM_RI#
5	GND		

Note: COM2 port is connected from a connector on board. Refer to the section *COM connector.*

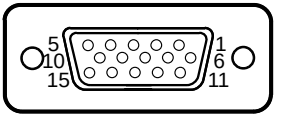


COM1/COM2/
COM3/COM4

2-1-3. VGA Port

VGA: VGA Port

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	CRTRED	9	CRTVCC_L
2	CRTGREEN	10	GND
3	CRTBLUE	11	NC
4	NC	12	CRTDATA
5	GND	13	HSYNC
6	CRT_ALWAYS_ ON	14	VSYNC
7	GND	15	CRTCLK
8	GND		

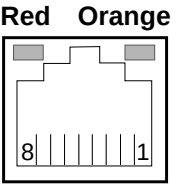


VGA

2-1-4. LAN Port

LAN1, LAN2: RJ45 LAN Ports

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	MDI_0P	5	MDI_2P
2	MDI_0N	6	MDI_2N
3	MDI_1P	7	MDI_3P
4	MDI_1N	8	MDI_3N



LAN1/
LAN2

LAN LED Indicator:

Left Side LED

Red Color On	Giga LAN Speed Indicator
Off	No LAN switch/hub connected.

Right Side LED

Orange Color Blinking	LAN Message Active
Off	No LAN Message Active

2-1-5. USB3.0 Ports

USB1, USB2, USB3, USB4: USB Connectors

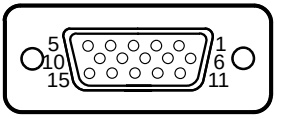
PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	VCCUSB	6	USB3_RX_DP
2	USBP_N	7	GND
3	USBP_P	8	USB3_TX_DN
4	GND	9	USB3_TX_DP
5	USB3_RX_DN		

USB1/USB2/
USB3/USB4

2-1-6. Digital Input/Output Port

DIO: Digital Input/Output Port

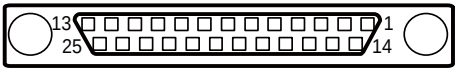
PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	VCC5	9	DIN3
2	GND	10	DOUT3
3	DIN0	11	NC
4	DOUT0	12	NC
5	DIN1	13	NC
6	DOUT1	14	NC
7	DIN2	15	NC
8	DOUT2		



DIO

2-1-7. Parallel Port

LPT1: Parallel Port
As to link the Printer to the card, you need a cable to connect both DB25 connector and parallel port.



LPT1

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	STB	14	AFD#
2	PDR0	15	ERR#
3	PDR1	16	INIT#
4	PDR2	17	SLIN#
5	PDR3	18	GND
6	PDR4	19	GND
7	PDR5	20	GND
8	PDR6	21	GND
9	PDR7	22	GND
10	ACK#	23	GND
11	BUSY	24	GND
12	PE	25	GND
13	SLCT	26	NC

2-1-8. Audio Jack

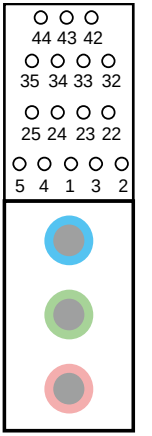
Audio Jack: Line-In, Line-Out & Microphone
Also can also support only microphone.

Line-In:

PIN	ASSIGNMENT
32	HD_LINE-L
33	GND
34	GND
35	HD_LINE-R

Line-Out:

PIN	ASSIGNMENT
22	HD_OUT-L
23	GND
24	GND
25	HD_OUT_-R



AUDIO1

Mic-In:

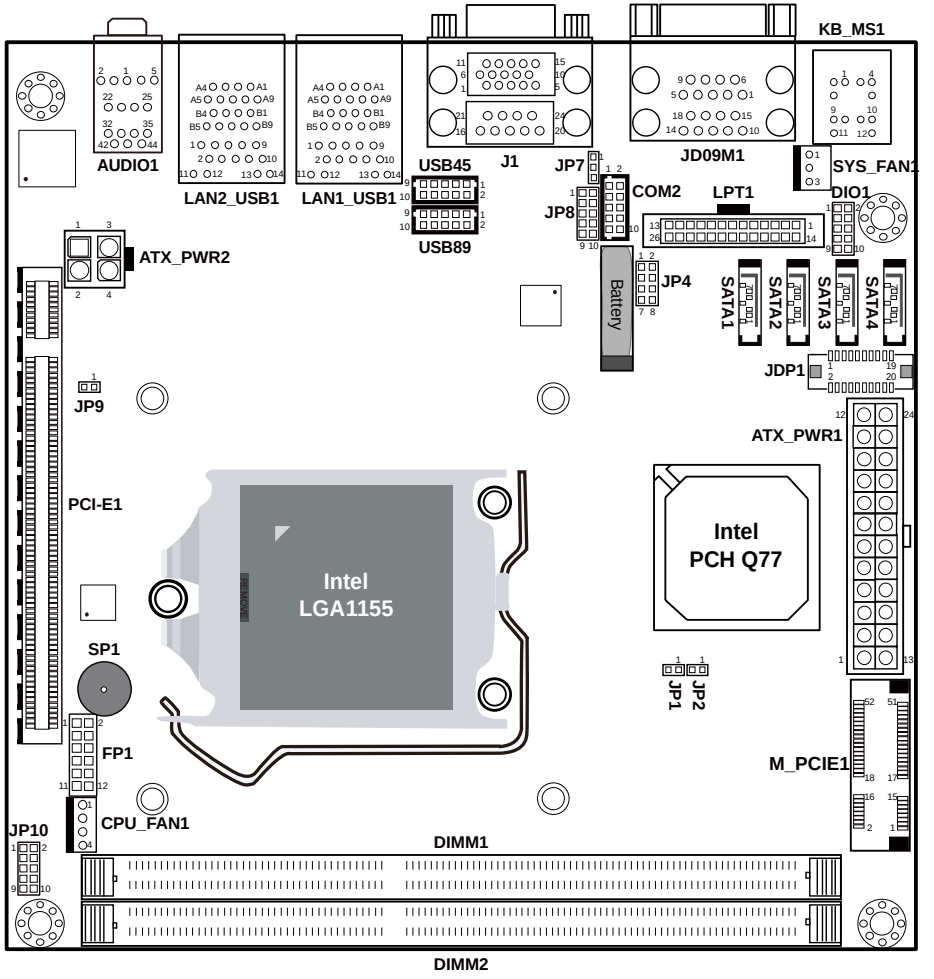
PIN	ASSIGNMENT
1	GND
2	HD_MIC1-L
3	HD_MIC_GND
4	GND
5	HD_MIC1-R

SPDIF (Optional; the same port with Line-In):

PIN	ASSIGNMENT
42	GND
43	VCC_AUD
44	SPDIF OUT

2-2. MAINBOARD COMPONENT LOCATIONS & JUMPER SETTINGS

M/B: BM-0892



SP-7625/7627/7629 Connectors, Jumpers and Component Locations

2-2-1. Jumpers & Connectors Quick Reference Table

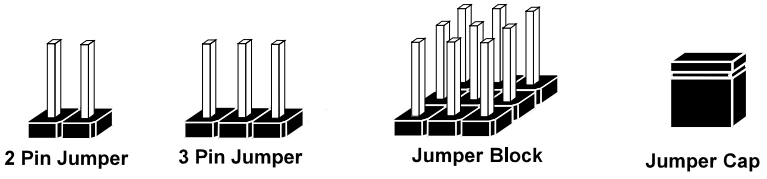
JUMPER/CONNECTOR	NAME
COM Connector	COM2
COM2 Auto Detect Selection	JP7
COM2 RS232/422/485 Selection	JP8
USB Connector	USB45, USB89
CPU Selection	JP9
Front Panel Connector	FP1
Clear CMOS Data Selection	JP2
Fan Connector	CPU_FAN1, SYS_FAN1
SATA Port	SATA1, SATA2, SATA3, SATA4
Parallel Port Connector	LPT1
Display Port Connector	JDP1
Digital Input/ Output Connector	DIO1
ATX Power Connector	ATX_PWR1, ATX_PWR2

2-2-2. How to Set Jumpers

You can configure your board by setting jumpers. Jumper is consists of two or three metal pins with a plastic base mounted on the card, and by using a small plastic "cap", Also known as the jumper cap (with a metal contact inside), you are able to connect the pins. So you can set-up your hardware configuration by "open" or "close" pins.

The jumper can be combined into sets that called jumper blocks. When the jumpers are all in the block, you have to put them together to set up the hardware configuration. The figure below shows how this looks like.

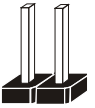
Jumpers & Caps



If a jumper has three pins (for examples, labelled PIN1, PIN2, and PIN3), You can connect PIN1 & PIN2 to create one setting by shorting. You can either connect PIN2 & PIN3 to create another setting. The same jumper diagrams are applied all through this manual. The figure below shows what the manual diagrams look and what they represent.

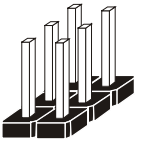
Jumper Diagrams

Jumper Cap looks like this

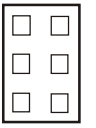


2 pin Jumper looks like this

3 pin Jumper looks like this

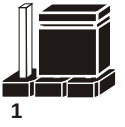


Jumper Block looks like this



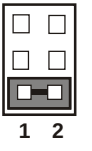
Jumper Settings

2 pin Jumper close(enabled) Looks like this



3 pin Jumper 2-3 pin close(enabled) Looks like this

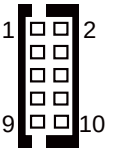
Jumper Block 1-2 pin close(enabled) Looks like this



2-2-3. COM Connector

COM2: COM Connector, selectable as RS-232/422/485

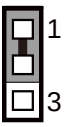
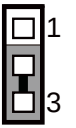
PIN	ASSIGNMENT		
	RS-232	**RS-422**	**RS-485**
1	COM2_DCD#	TX-	485-
2	COM2_DSR#	X	X
3	COM2_RX	TX+	485+
4	COM2_RTS#	X	X
5	COM2_TX	RX+	X
6	COM2_CTS#	X-	X
7	COM2_DTR#	RX-	X
8	COM2_ RI#	X	X
9	GND	GND	GND
10	NC	NC	NC



COM2

2-2-4. COM 2 Auto-Detect Selection

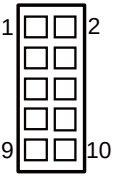
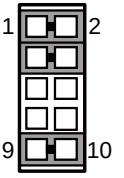
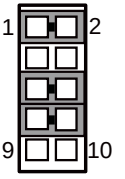
JP7: COM2 Auto Detect Selection

SELECTION	JUMPER SETTING	JUMPER ILLUSTRATION
Normal	1-2	 JP7
Auto Gating	2-3	 JP7

Note: Manufacturing Default is Normal.

2-2-5. COM2 RS-232/422/485 Selection

JP8: COM2 RS-232/422/485 Selection

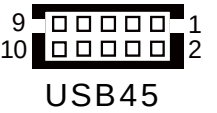
SELECTION	JUMPER SETTING	JUMPER ILLUSTRATION
RS-232	All open	 JP8
RS-422	1-2, 3-4, 9-10	 JP8
RS-485	1-2, 5-6, 7-8	 JP8

Note: Manufacturing Default is RS-232.

2-2-6. USB Connector

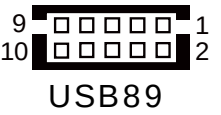
USB45: USB Connector

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	USB_45_VCC5	6	USBP5
2	USB_45_VCC5	7	GND
3	USBN4	8	GND
4	USBN5	9	GND
5	USBP4	10	GND



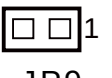
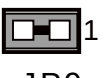
USB89: USB Connector

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	USB_89_VCC5	6	USBP9
2	USB_89_VCC5	7	GND
3	USBN8	8	GND
4	USBN9	9	GND
5	USBP8	10	GND



2-2-7. CPU Selection

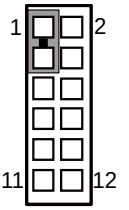
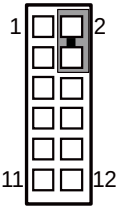
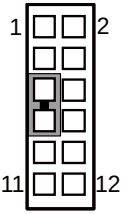
JP9 : CPU Selection

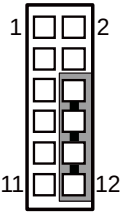
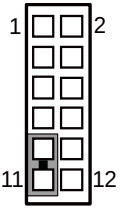
SELECTION	JUMPER SETTINGS	JUMPER ILLUSTRATION
Intel® 2nd Gen. Core™	Open	
Intel® 3rd Gen. Core™	1-2	

Note: Manufacturing Default is Intel® 3rd Gen. Core™.

2-2-8. Front Panel Selection

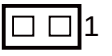
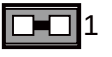
FP1: Front Panel Connector

SELECTION	PIN & ASSIGNMENT	JUMPER SETTINGS	JUMPER ILLUSTRATION
HDD LED	1. HD_LED+	1-3	 FP1
	3. HD_LED-		
Power LED	2. PW_LED+	2-4	 FP1
	4. PW_LED-		
Reset Button	5. GND	5-7	 FP1
	7. RST_BTN		

SELECTION	PIN & ASSIGNMENT	JUMPER SETTINGS	JUMPER ILLUSTRATION
External Speaker	6. SPK_VCC	6-8-10-12	 FP1
	8. Speaker signal		
	10. Speaker signal		
	12. Speaker signal		
ATX Power Button	9. PWRBTNSW	9-11	 FP1
	11. GND		

2-2-9. Clear CMOS Data Selection

JP2: Clear CMOS Data Selection

SELECTION	JUMPER SETTINGS	JUMPER ILLUSTRATION
Normal	Open	 JP2
Clear CMOS*	Close	 JP2

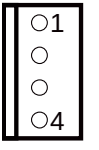
Note: Manufacturing Default is Normal.

*To clear CMOS data, user must power-off the computer and set the jumper to "Clear CMOS" as illustrated above. After five to six seconds, set the jumper back to "Normal" and power-on the computer.

2-2-10. Fan Connector

CPU_FAN1: CPU Fan Connector

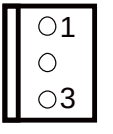
PIN	ASSIGNMENT
1	GND
2	VCC12
3	FAN_TAC1
4	FAN_CTL1



CPU FAN1

SYS_FAN1: System Fan Connector

PIN	ASSIGNMENT
1	GND
2	VCC12
3	FAN_TAC



SYS_FAN1

2-2-11. SATA Port

SATA1: SATA Port

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	GND	5	SATA_RXNC0
2	SATA_TXPC0	6	SATA_RXPC0
3	SATA_TXNC0	7	GND
4	GND		

SATA1

SATA2: SATA Port

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	GND	5	SATA_RXNC1
2	SATA_TXPC1	6	SATA_RXPC1
3	SATA_TXNC1	7	GND
4	GND		

SATA2

SATA3: SATA Port

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	GND	5	SATA_RXNC3
2	SATA_TXPC3	6	SATA_RXPC3
3	SATA_TXNC3	7	GND
4	GND		

SATA3

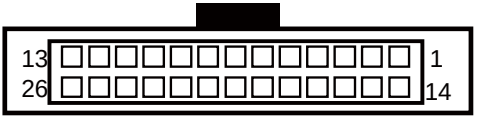
SATA4: SATA Port

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	GND	5	SATA_RXNC4
2	SATA_TXPC4	6	SATA_RXPC4
3	SATA_TXNC4	7	GND
4	GND		

SATA4

2-2-12. Parallel Port Connector

LPT1: Parallel Port Connector



LPT1

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	STB	14	AFD#
2	PDR0	15	ERR#
3	PDR1	16	INIT#
4	PDR2	17	SLIN#
5	PDR3	18	GND
6	PDR4	19	GND
7	PDR5	20	GND
8	PDR6	21	GND
9	PDR7	22	GND
10	ACK#	23	GND
11	BUSY	24	GND
12	PE	25	GND
13	SLCT	26	NC

2-2-13. Display Port Connector

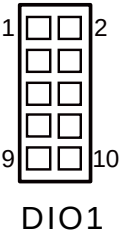
JDP1: Display Port Connector

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	DP_C_DATA0+	11	GND
2	GND	12	DP_C_DATA3-
3	DP_C_DATA0-	13	DP_C_AUX_ENJ
4	DP_C_DATA1+	14	GND
5	GND	15	DP_C_AUX+
6	DP_C_DATA1-	16	DP_C_HPD
7	DP_C_DATA2+	17	DP_C_AUX-
8	GND	18	DP_VCC3_3
9	DP_C_DATA2-	19	DP_VCC5
10	DP_C_DATA3+	20	DP_VCC3_3

2-2-14. Digital Input/Output Connector

DIO1: Digital I/O Connector

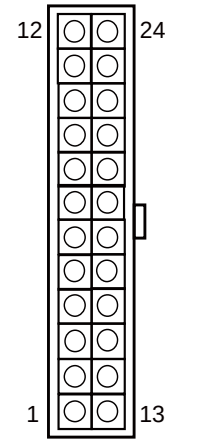
PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	VCC5	6	DOUT1
2	GND	7	DIN2
3	DIN0	8	DOUT2
4	DOUT0	9	DIN3
5	DIN1	10	DOUT3



2-2-15. ATX Power Connector

ATX_PWR1: ATX Power Connector

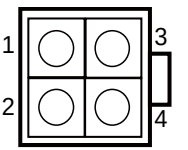
PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	+3.3V	13	+3.3V
2	+3.3V	14	-12V
3	GND	15	GND
4	+5V	16	PSON
5	GND	17	GND
6	+5V	18	GND
7	GND	19	GND
8	POK	20	-5V
9	5VSB	21	+5V
10	+12V	22	+5V
11	+12V	23	+5V
12	+3.3V	24	GND



ATX_PWR1

ATX_PWR2: ATX Power Connector

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



ATX PWR2

SOFTWARE UTILITIES

CHAPTER

3

This chapter comprises the detailed information of VGA driver, LAN driver, and Sound driver.

Section includes:

- Introduction
- Intel® Chipset Software Installation Utility
- Intel® Matrix Storage Manager Utility
- Intel® USB3.0 eXtensible Host Controller Utility
- Intel® Management Engine Components Utility
- VGA Driver Utility
- LAN Driver Utility
- Sound Driver Utility
- Touchscreen Driver Utility

3-1. INTRODUCTION

Enclosed with our SP-7625/7627/7629 package, you will find a CD ROM disk containing all types of drivers we have. As a SP-7625/7627/7629 user, you will only need some of files contained in the CD ROM disk, please take note of the following chart:

FILE NAME (Assume that CD ROM drive is D:)	**PURPOSE**
D:\Driver\Utility	Intel® chipset device software installs Windows INF files to the target system.
D:\Driver\RST	▪ Intel® Matrix Storage Manager Utility ▪ Intel® F6 Floppy Utility.
D:\Driver\USB3	Intel® USB3.0 eXtensible Host Controller
D:\Driver\ME	Intel® Management Engine Interface
D:\Driver\VGA	Intel® HD Graphics family for VGA driver installation
D:\Driver\LAN	Intel® 82579LM & 82583V for LAN driver installation
D:\Driver\Audio	Realtek ALC888S high definition audio for sound driver installation
D:\Driver\Touch	eGalax Touch Controller for surface capacitive
D:\Driver\BIOS	Aptio (EFI)BIOS update utility

Note:

1. Be sure to install the Utility right after the OS is fully installed.
2. The eGalax touch screen driver utility, we suggest you do not install this driver on your windows system.

3-2. INTEL® CHIPSET SOFTWARE INSTALLATION UTILITY

3-2-1. Introduction

The Intel® Chipset Device Software installs Windows *.INF files to the target system. These files outline to the operating system how to configure the Intel® chipset components in order to ensure that the following features function properly:

- PCIe Support
- SATA Storage Support
- USB Support
- Identification of Intel® Chipset Components in the Device Manager

3-2-2. Installation of Utility for Windows 7/8

The Utility Pack is made only for Windows 7/8. It should be installed right after the OS installation; kindly follow the following steps:

1. Place insert the Utility Disk into the CD ROM drive.
2. Under Windows system, go to the directory where Utility Disc is located. e.g.: D:\Driver\Utility\INF_allOS.exe
3. Click INF_allOS.exe file for utility installation.
4. Follow the instructions on the screen to complete the installation.
5. Once installation is completed, shut down the system and restart in order for the changes to take effect.

3-3. INTEL® MATRIX STORAGE MANAGER UTILITY (RST)

3-3-1. Introduction

The Intel® RST driver utility supports ACHI mode and fully compatible with Windows 7/8, and it should be installed after the operating system is installed completely. Perform F6 and ACHI BIOS configurations prior to installation of this driver for proper operation.

3-3-2. Installation of RST Driver for Windows 7/8

1. Insert the driver disk into a CD ROM device.
2. Under Windows system, go to the directory where the RST driver is located.
3. Run the application with administrative privileges.

3-4. INTEL® USB3.0 EXTENSIBLE HOST CONTROLLER UTILITY

3-4-1. Introduction

Intel® USB 3.0 eXtensible Host Controller Driver supports the following Intel® Chipsets/Processors:

- 3rd generation Intel(R) Core(TM) Processor Family
- 2nd generation Intel(R) Core(TM) i3 processor
- 2nd generation Intel(R) Core(TM) i5 processor
- 2nd generation Intel(R) Core(TM) i5 vPro(TM) processor
- 2nd generation Intel(R) Core(TM) i7 processor
- 2nd generation Intel(R) Core(TM) i7 vPro(TM) processor
- Intel(R) 7 Series/C216 Chipset Family (Panther Point PCH)

3-4-2. Installation Instructions for Windows 7/Server 2008 R2

1. Insert the driver disk into a CD ROM device.
2. Under Windows system, go to the directory where the driver is located.
3. Run the application with administrative privileges.

3-5. INTEL® MANAGEMENT ENGINE COMPONENTS UTILITY

3-5-1. Introduction

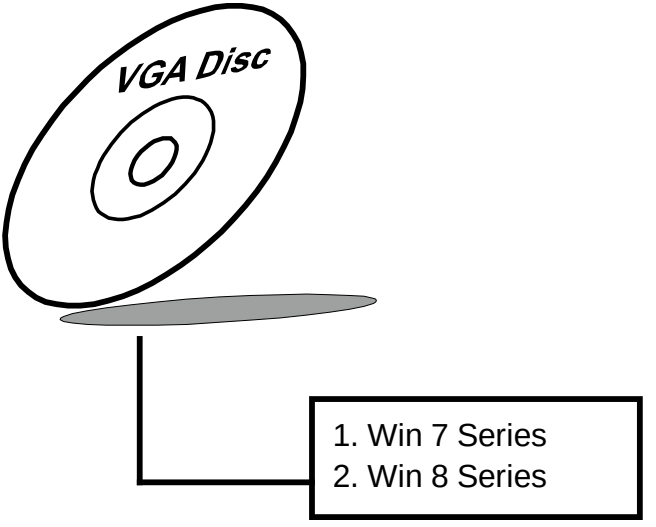
The Intel® ME software components that need to be installed depend on the system's specific hardware and firmware features. The installer, compatible with Windows 7/8/Server 2008 R2, detects the system's capabilities and installs the relevant drivers and applications.

3-5-2. Installation Instructions for Windows 7/8/Server 2008 R2

1. Insert the driver disk into a CD ROM device.
2. Under Windows system, go to the directory where the driver is located.
3. Run the application with administrative privileges.

3-6. VGA DRIVER UTILITY

The VGA interface is embedded with our SP-7625/7627/7629 system to support LVDS display. The following illustration briefly shows you the content of VGA driver.



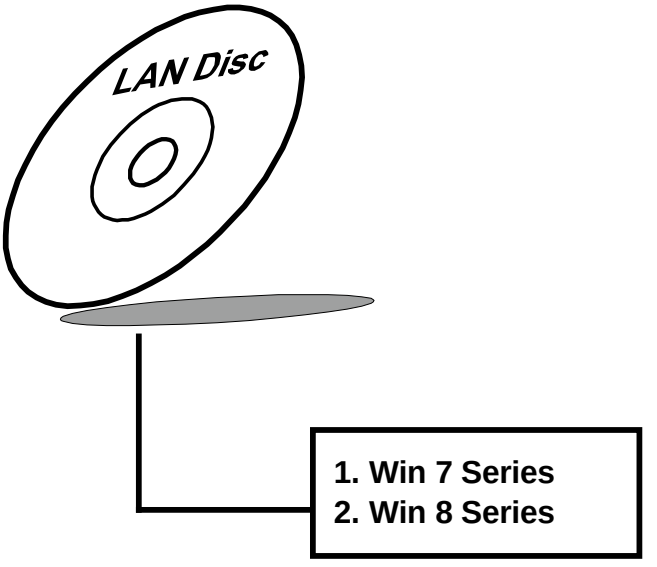
3-6-1. Installation of VGA Driver for Windows 7/8

1. Start the computer.
2. Insert the Utility Disk into the CD ROM drive.
3. Open the VGA folder for your system to choose an appropriate folder, and double-click "*.exe" file to install.
   e.g. D:\Driver\VGA\(Your CPU architecture)\ ***.exe
   (If D is not your CD-ROM drive, substitute D with the correct drive letter.)
4. Follow the Wizard's on-screen instructions to complete the installation.

3-7. LAN DRIVER UTILITY

3-7-1. Introduction

The SP-7625/7627/7629 is enhanced with LAN function that can support various network adapters. The content of the LAN driver is found as follows:

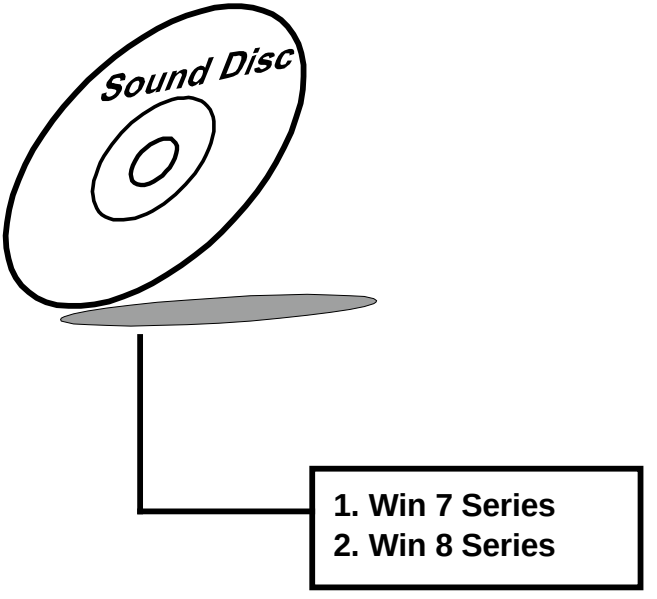


For more details on Installation procedure, please refer to Readme.txt file found on LAN DRIVER UTILITY.

3-8. SOUND DRIVER UTILITY

3-8-1. Introduction

The Audio chip enhanced in this system is fully compatible with Windows 7/8. Below, you will find the content of the Sound driver:



3-8-2. Installation Procedure for Windows 7/8

1. Open the "Audio" folder. For your system to choose an appropriate folder, and Run the setup.exe program to start the installation.
   e.g.: D:\Driver\Audio\Your system\setup.exe
   (If D is not your CD-ROM drive, substitute D with the correct drive letter.)
2. Click on [Next] to continue the procedure. If the Windows popup "Windows can't verify the publisher of this driver software" message, press "Install this driver software anyway" to continue the installation.
3. Finally, select to restart the system and press [Finish] to complete the installation.

3-9. TOUCHSCREEN DRIVER UTILITY

The touch screen driver utility, we recommended to use the built-in driver in Windows 7/8, and suggest you do not install this driver on your windows system (The driver is a mouse emulation driver. If your touch device is projected capacitive type, we suggest you do not install this driver).

3-9-1. Installation of Touchscreen Driver for Windows 7/8

To install the touchscreen driver, follow the steps below:

1. Open the “Device/Touchscreen” folder where the touchscreen driver is located.
2. Click **Setup.exe** file for driver installation.
3. Follow the on-screen instructions to complete the installation.
4. Once installation is completed, shut down the system and restart for the changes to take effect.

CHAPTER

4

BIOS SETUP

This chapter shows how to set up the BIOS.

Section includes:

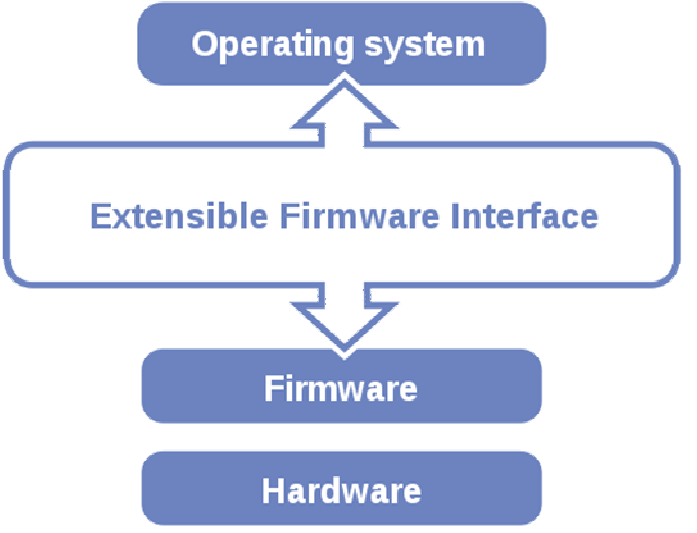
- Introduction
- Entering Setup
- Main
- Advanced
- Chipset
- Boot
- Security
- Save & Exit

4-1. INTRODUCTION

The system SP-7625/7627/7629 uses an AMI (American Megatrends Incorporated) Aptio BIOS that is stored in the Serial Peripheral Interface Flash Memory (4MB SPI Flash) and can be updated. The SPI Flash contains the BIOS (Basic Input Output System) setup menu, Power-on Self-test (POST), the PCI auto-configuration utility, LAN EEPROM information, and Plug and Play support.

Aptio is AMI's BIOS firmware based on the UEFI (Unified Extensible Firmware Interface) specifications and the Intel Platform Innovation Framework for EFI. The UEFI specification defines an interface between an operating system and platform firmware. The interface consists of data tables that contain platform-related information, boot service calls, and runtime service calls that are available to the operating system and its loader. These provide standard environment for booting an operating system and running pre-boot applications.

Following illustration shows Extensible Firmware Interface's position in the software stack.



EFI BIOS provides an user interface allow users the ability to modify hardware configuration, e.g. change system date and time, enable or disable a system component, decide bootable device priorities, setup personal password, etc., which is convenient for modifications and customization of the computer system and allows technicians another method for finding solutions if hardware has any problems.

The BIOS setup menu can be used to view and change the BIOS settings for the computer. The BIOS setup menu is accessible by pressing the <Del> or <F2> key on keyboard during the POST stage, right before the operating system is loading. All the settings are described in chapter to be followed.

4-2. ENTERING SETUP

Note: Take **SP-7625** for example.

When the system is powered on, the BIOS will enter the Power-on Self-test (POST) routines and the following message will appear on the lower screen:

First POST screen with AMI logo

For as long as this message is present on the screen before the operating system boot begins, you may press the <Del> key (the one that shares the decimal point at the bottom of the number keypad) to access the setup menu. In a moment, the main menu of the Aptio Setup Utility will appear on the screen:

BIOS setup program initial screen

The BIOS setup menu interface and help messages are shown in US English. You may move the cursor by up/down keys to highlight the individual menu items. As you highlight each item, a brief description of the highlighted selection will appear at the bottom of the screen.

4-2-1. BIOS Setup Menu Keys

The following table provides list of keys available for BIOS setup menu.

BIOS Setup menu key	Description
<←> and <→>	Selects a different menu screen (moves the selection left or right).
< ↑ > and < ↓ >	Selects an item (moves the selection up or down).
<Enter>	Executes command or selects the sub-menu.
<F2>	Load the previous configuration values.
<F3>	Load the default configuration values.
<F4>	Save the current values and exits the BIOS setup menu.
<Esc>	Leaves the sub-menu. Triggers confirmation to exit BIOS setup menu.

4-2-2. BIOS Messages

This section describes error messages generated by the board's BIOS. These messages would be displayed on the monitor when certain recoverable error/event occurs during POST stage. The table bellow gives an explanation of the BIOS messages.

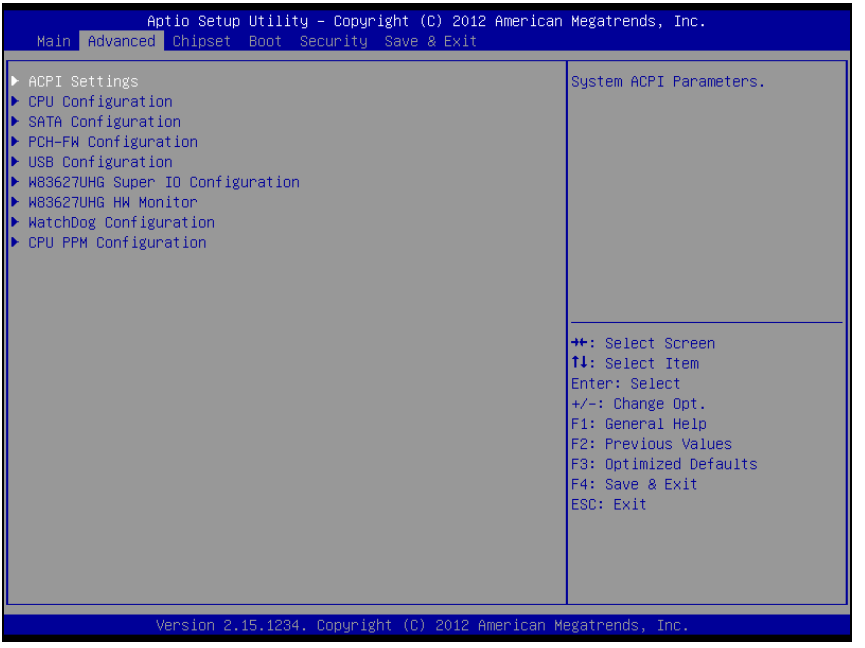
BIOS Setup menu key	Explanation
A first boot or NVRAM reset condition has been detected.	BIOS has been updated or the battery was replaced.
The CMOS defaults were loaded.	Default values have been loaded after the BIOS was updated or the battery was replaced.
The CMOS battery is bad or was recently replaced.	The battery may be losing power, replace the battery soon. Also, this message is displayed once the new battery was placed.

4-3. MAIN

Main screen

BIOS Setting	Options	Description/Purpose
BIOS Vendor	No changeable options	Displays the BIOS vendor.
Core Version	No changeable options	Displays the current BIOS core version.
Compliancy	No changeable options	Displays the current UEFI version.
Project Version	No changeable options	Displays the version of the BIOS currently installed on the platform.
Build Date and Time	No changeable options	Displays the date of current BIOS version.
System Date	month, day, year	Specifies the current date.
System Time	hour, minute, second	Specifies the current time.
Access Level	No changeable options	Displays the current user level.

4-4. ADVANCED

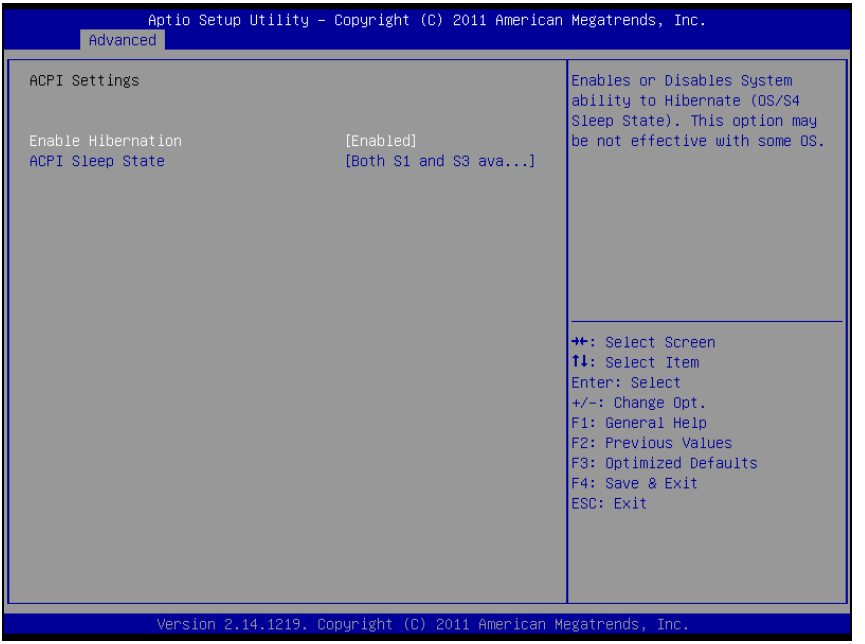


Advanced screen

BIOS Setting	Options	Description/Purpose
ACPI Settings	Sub-Menu	System ACPI Parameters.
CPU Configuration	Sub-Menu	CPU Configuration. Parameters.
SATA Configuration	Sub-Menu	SATA Configuration Parameters.
PCH-FW Configuration	Sub-Menu	Configure Management Engine Parameters
USB Configuration	Sub-Menu	USB Configuration Parameters.
W83627UHG Super IO Configuration	Sub-Menu	System Super IO Chip Parameters.

BIOS Setting	Options	Description/Purpose
W83627UHG HW Monitor	Sub-Menu	Monitor hardware status
WatchDog Configuration	Sub-Menu	Set System WatchDog Parameters.
CPU PPM Configuration	Sub-Menu	CPU PPM Configuration

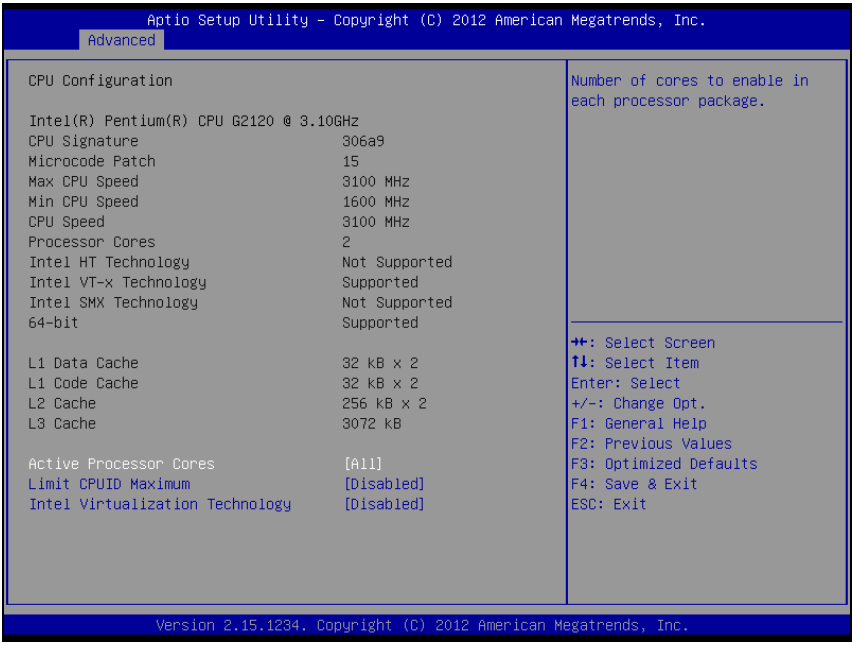
4-4-1. Advanced – APCI Settings



APCI Settings screen

BIOS Setting	Options	Description/Purpose
Enable Hibernation	- Disabled - Enabled	Enables or Disables System ability to Hibernate (OS/S4 Sleep State). This option may be not effective with some OS.
ACPI Sleep State	- Suspend Disabled - S1 (CPU Stop Clock) - S3 (Suspend to RAM) - Both S1 and S3 available for OS to choose from	Specifies the ACPI sleep state. ▪ **Suspend Disabled** disables ACPI sleep feature. ▪ **S1** mode allows the CPU enter Stop Clock mode to stop executing instructions. ▪ **S3** allows the platform to enter Suspend to RAM mode. ▪ **Both S1 and S3 available for OS to choose from** allows the OS to choose the sleep state type.

4-4-2. Advanced - CPU Configuration



CPU Configuration screen

BIOS Setting	Options	Description/Purpose
CPU Signature	No changeable options	Reports the CPU Signature
Microcode Patch	No changeable options	Reports the CPU Microcode Patch Version.
Max CPU Speed	No changeable options	Reports the Max CPU Speed.
Min CPU Speed	No changeable options	Reports the Min CPU Speed
Processor Cores	No changeable options	Displays number of physical cores in processor.
Intel HT Technology	No changeable options	Reports if Intel Hyper-Threading Technology is supported by processor
Intel VT-x Technology	No changeable options	Reports if Intel VT-x Technology is supported by processor.
Intel SMX	No changeable options	Reports if Intel SMX Technology is

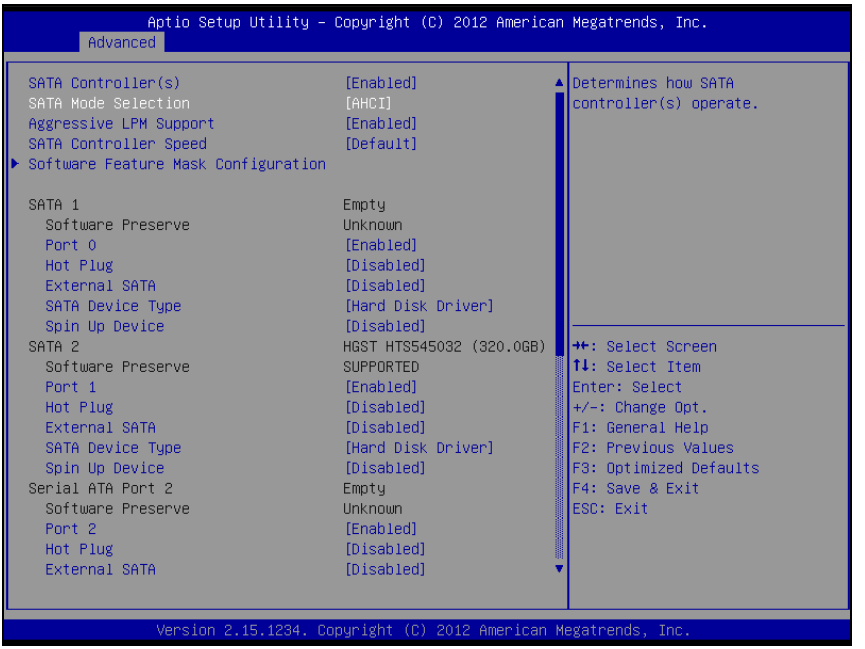
BIOS Setting	Options	Description/Purpose
Technology		supported by processor.
L1 Data Cache	No changeable options	Displays size of L1 Data Cache
L1 Code Cache	No changeable options	Displays size of L1 Code Cache
L2 Cache	No changeable options	Displays size of L2 Cache.
L3 Cache	No changeable options	Displays size of L3 Cache.
Hyper-threading	- Disabled - Enabled	Enable or disable Hyper-Threading technology.
Active Processor Cores	- All - 1 - 2 - 3	Indicates the number of cores to enable in processor.
Limit CPUID Maximum	- Disabled - Enabled	Enables for legacy operating systems to boot processors with extended CPUID functions.
Intel Virtualization Technology	-Disabled -Enabled	When enabled, a VMM can utilize the additional hardware capabilities provided by Vander pool Technology.

4-4-3. Advanced – SATA Configuration

SATA Configuration screen

BIOS Setting	Options	Description/Purpose
SATA Controller(s)	- Disabled - Enabled	Enable or disable SATA Device.
SATA Mode Selection	- IDE - AHCI - RAID	Configures SATA as IDE, AHCI or RAID mode.
SATA 1~4	[drive]	Displays the drive installed on this SATA port. Shows [Empty] if no drive is installed.
mSATA	[drive]	Displays the drive installed on this mSATA port. Shows [Empty] if no drive is installed. **Note:** Please configure the Mini PCI-E function as "mSATA" for this function.

4-4-3-1. SATA Configuration – AHCI Mode

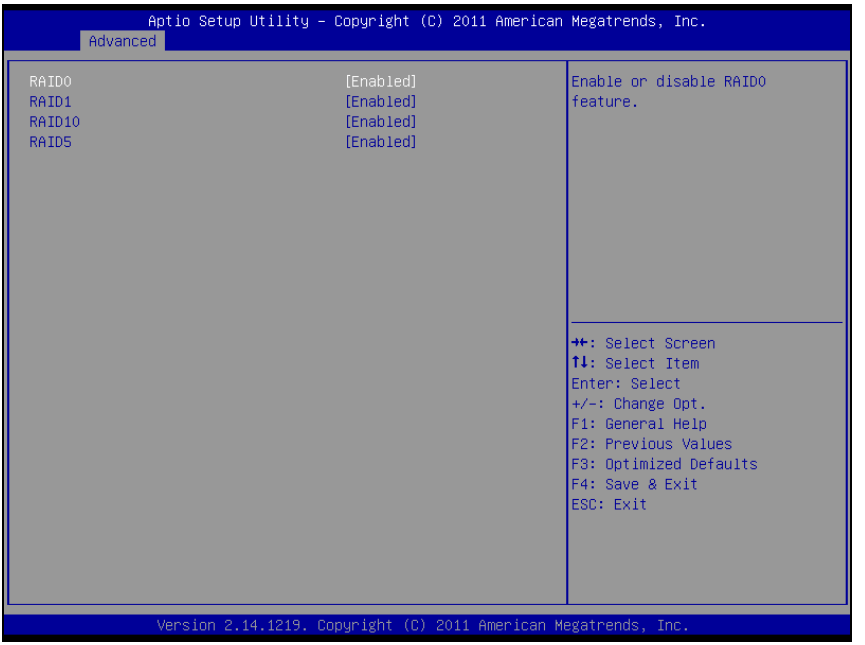


RAID/AHCI Mode screen

BIOS Setting	Options	Description/Purpose
Aggressive LPM Support	- Disabled - Enabled	Enable PCH to aggressively enter link power state.
SATA Controller Speed	- Gen1 - Gen2 - Gen3	Indicates the maximum speed the SATA controller can support.
Software Feature Mask Configuration	Sub-menu	RAID OROM/RST driver will refer to the SWFM configuration to enable or disable the storage features.
Alternate ID	- Disabled - Enabled	Report alternate Device ID. (Note that AHCI mode dose not support it.)
Port 0 - 5	- Disabled - Enabled	Enables or disable SATA port.

BIOS Setting	Options	Description/Purpose
Hot Plug	- Disabled - Enabled	Designates this port as Hot Pluggable.
External SATA	- Disabled - Enabled	External SATA Support.
SATA Device Type	- Hard Disk Driver - Solid State Drive	Identify the SATA port is connected to Solid State Drive or Hard Disk Drive.
Spin Up Device	- Disabled - Enabled	On an edge detect from 0 to 1, the PCH starts a COMRESET initialization sequence to the device.

RAID/AHCI Mode – Software Feature Mask Configuration



Software Feature Mask Configuration screen

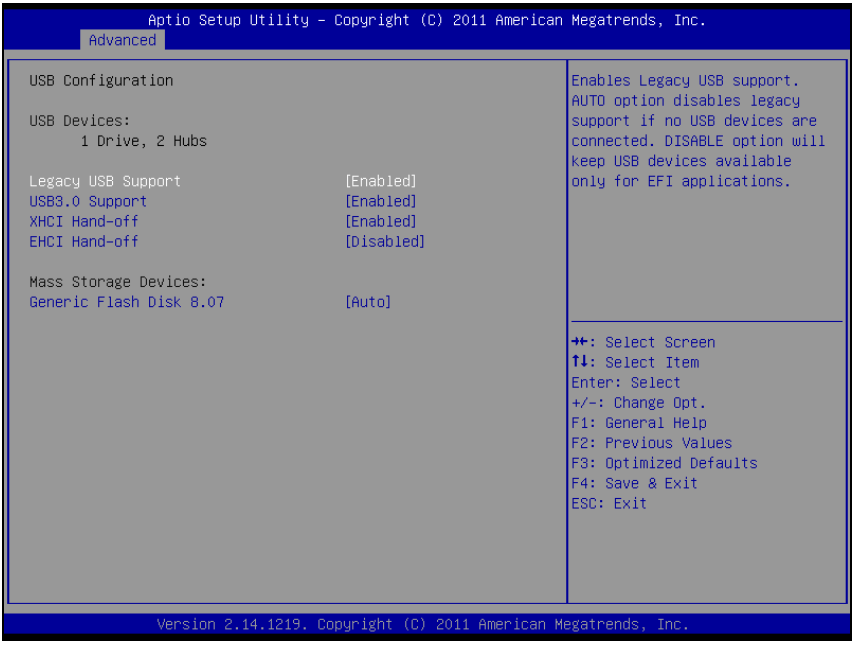
BIOS Setting	Options	Description/Purpose
RAID0	- Disabled - Enabled	Enable or disable RAID 0 feature.
RAID1	- Disabled - Enabled	Enable or disable RAID 1 feature.
RAID10	- Disabled - Enabled	Enable or disable RAID 10 feature.
RAID5	- Disabled - Enabled	Enable or disable RAID 5 feature.

4-4-4. Advanced –PCH FW Configuration

PCH FW Configuration screen

BIOS Setting	Options	Description/Purpose
ME FW Version	No changeable options	Display Intel ME FW revision of current BIOS image.

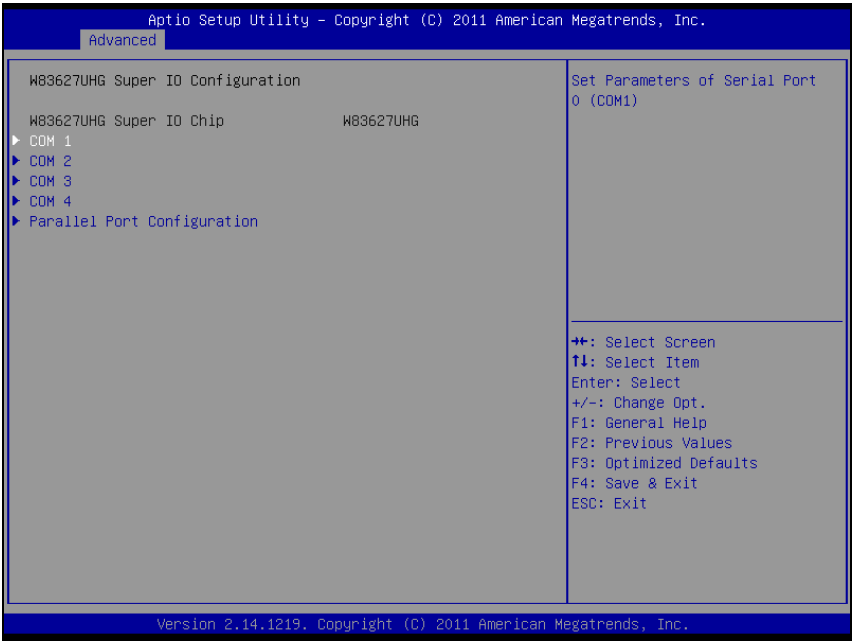
4-4-5. Advanced – USB Configuration



USB Configuration screen

BIOS Setting	Options	Description/Purpose
USB Devices	No changeable options	Displays number of available USB devices.
Legacy USB Support	- Enabled - Disabled - Auto	Enables support for legacy USB.
USB 3.0 Support	- Enabled - Disabled	Enable/Disable USB3.0 (XHCI) controller support.
XHCI Hand-off	- Enabled - Disabled	This is a workaround for OSes without XHCI hand-off support.
EHCI Hand-off	- Disabled - Enabled	This is a workaround for OSes w/o EHCI hand-off support.

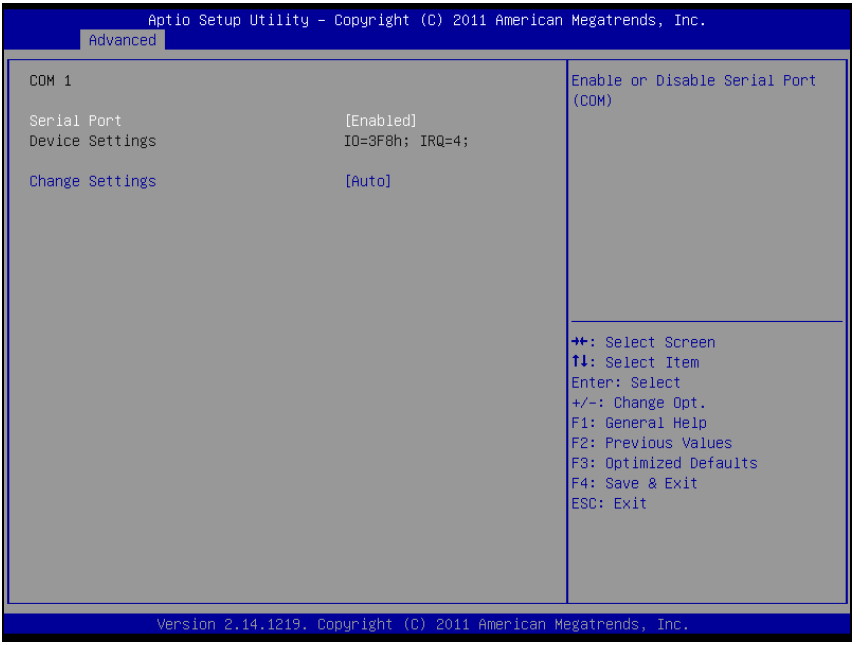
4-4-6. Advanced – W83627UHG Super IO Configuration



W83627UHG Super IO Configuration screen

BIOS Setting	Options	Description/Purpose
W83627UHG Super IO Chip	No changeable options	Displays the super IO chip model and its manufacturer.
COM 1	Sub-menu	Set Parameters for COM 1
COM 2	Sub-menu	Set Parameters for COM 2
COM 3	Sub-menu	Set Parameters for COM 3
COM 4	Sub-menu	Set Parameters for COM 4
Parallel Port Configuration	Sub-menu	Set Parameters for Parallel Port.

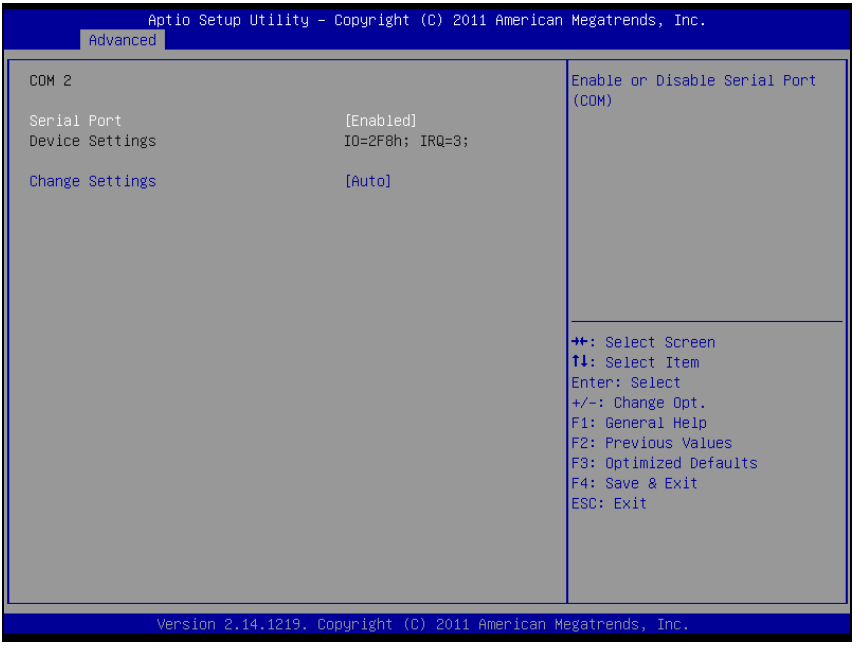
4-4-6-1. W83627UHG Super IO Configuration – Serial Port 0



Serial Port 0 Configuration screen

BIOS Setting	Options	Description/Purpose
Serial Port	- Disabled - Enabled	Enable/Disable COM 1.
Device Settings	No changeable options	Reports the current COM 1 setting.
Change Settings	- Auto - IO=3F8h; IRQ=4 - IO=3F8h; IRQ=3,4,5,6,7,10,11,12 - IO=2F8h; IRQ=3,4,5,6,7,10,11,12 - IO=3E8h; IRQ=3,4,5,6,7,10,11,12 - IO=2E8h; IRQ=3,4,5,6,7,10,11,12	Specifies the base I/O address and interrupt request for the serial port 0 if enabled.

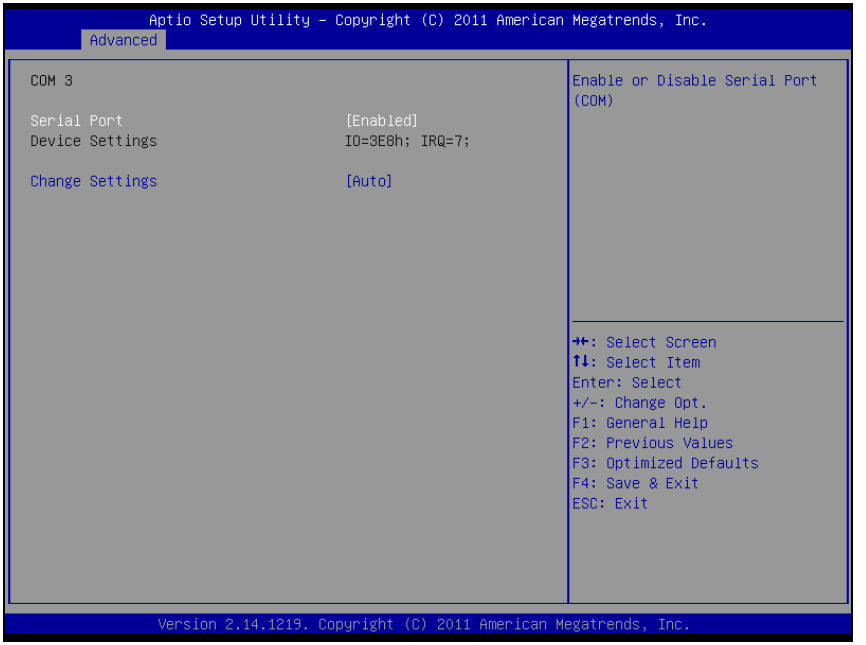
4-4-6-2. W83627UHG Super IO Configuration – Serial Port 1



Serial Port 1 Configuration screen

BIOS Setting	Options	Description/Purpose
Serial Port	-Disabled -Enabled	Enable/Disable COM 2.
Device Settings	No changeable options	Reports the current COM 2 setting.
Change Settings	- Auto - IO=2F8h; IRQ=3 - IO=3F8h; IRQ=3,4,5,6,7,10,11,12 - IO=2F8h; IRQ=3,4,5,6,7,10,11,12 - IO=3E8h; IRQ=3,4,5,6,7,10,11,12 - IO=2E8h; IRQ=3,4,5,6,7,10,11,12	Specifies the base I/O address and interrupt request for the serial port 1 if enabled.

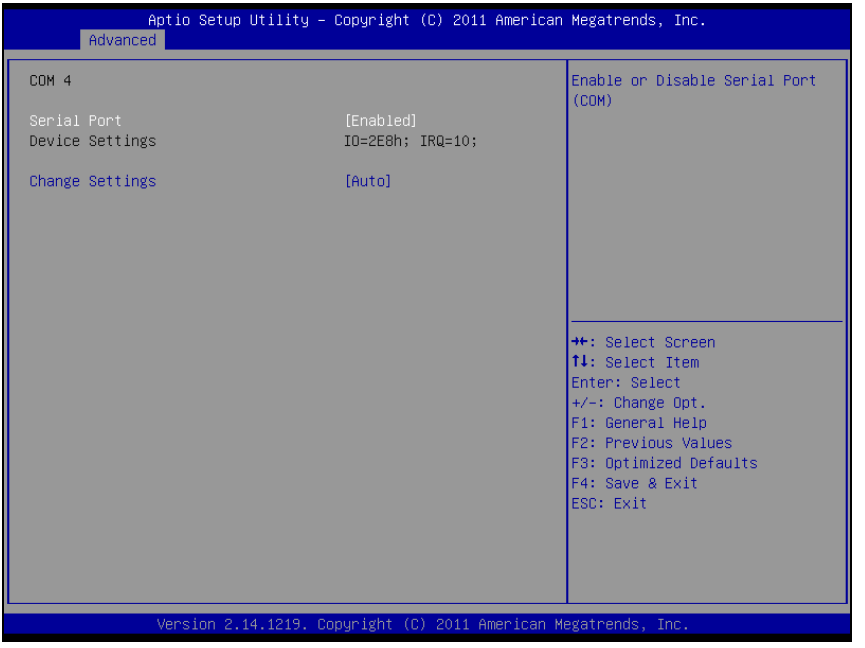
4-4-6-3. W83627UHG Super IO Configuration – Serial Port 2



Serial Port 2 Configuration screen

BIOS Setting	Options	Description/Purpose
Serial Port	-Disabled -Enabled	Enable/Disable COM 3.
Device Settings	No changeable options	Reports the current COM 3 setting.
Change Settings	- Auto - IO=3E8h; IRQ=7 - IO=3F8h; IRQ=3,4,5,6,7,10,11,12 - IO=2F8h; IRQ=3,4,5,6,7,10,11,12 - IO=3E8h; IRQ=3,4,5,6,7,10,11,12 - IO=2E8h; IRQ=3,4,5,6,7,10,11,12	Specifies the base I/O address and interrupt request for the serial port 2 if enabled.

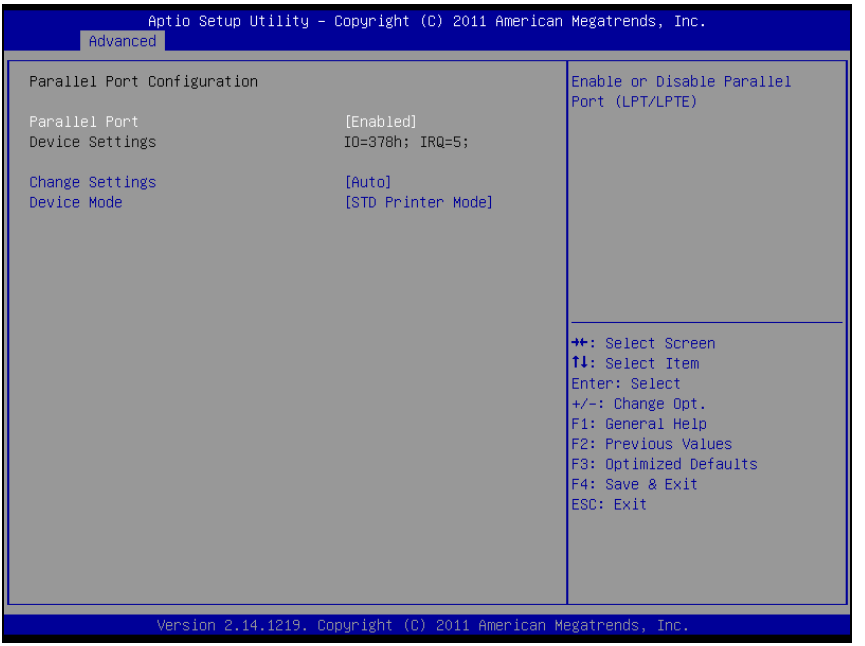
4-4-6-4. W83627UHG Super IO Configuration – Serial Port 3



Serial Port 3 Configuration screen

BIOS Setting	Options	Description/Purpose
Serial Port	-Disabled -Enabled	Enable/Disable COM 4.
Device Settings	No changeable options	Reports the current COM 4 setting.
Change Settings	- Auto - IO=2E8h; IRQ=10 - IO=3F8h; IRQ=3,4,5,6,7,10,11,12 - IO=2F8h; IRQ=3,4,5,6,7,10,11,12 - IO=3E8h; IRQ=3,4,5,6,7,10,11,12 - IO=2E8h; IRQ=3,4,5,6,7,10,11,12	Specifies the base I/O address and interrupt request for the serial port 3 if enabled.

4-4-6-5. W83627UHG Super IO Configuration – Parallel Port

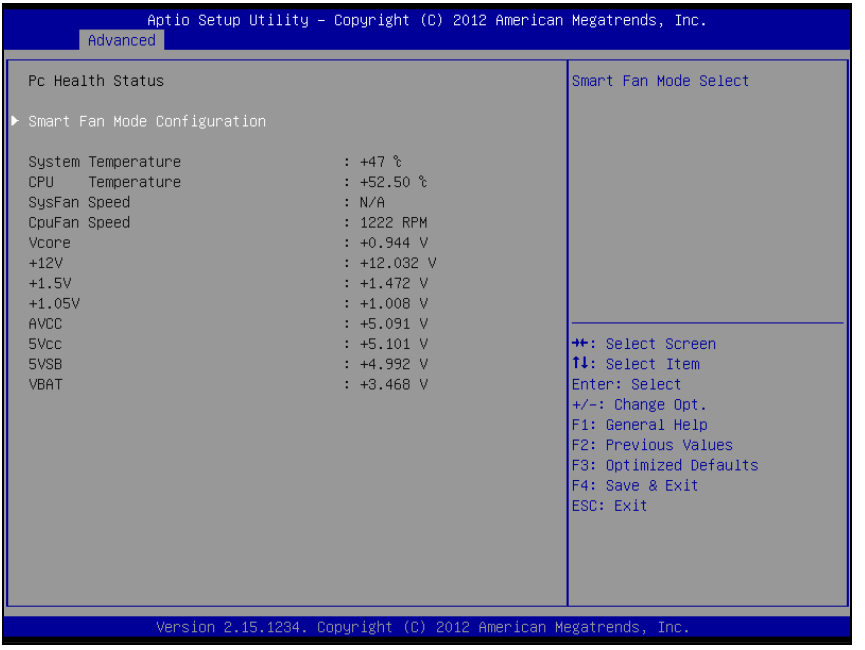


Parallel Port Configuration screen

BIOS Setting	Options	Description/Purpose
Parallel Port	- Disabled - Enabled	Configures the parallel port.
Device Settings	No changeable options	Reports the current parallel port setting.
Change Settings	- Auto - IO=378h; IRQ=5 - IO=378h; IRQ=5,6,7,10,11,12 - IO=278h; IRQ=5,6,7,10,11,12 - IO=3BCh; IRQ=5,6,7,10,11,12 - IO=378h; - IO=278h; - IO=3BCh;	Specifies the base I/O address and interrupt request for the parallel port if enabled.

BIOS Setting	Options	Description/Purpose
Device Mode	- STD Printer Mode - SPP Mode - EPP-1.9 and SPP Mode - EPP-1.7 and SPP Mode - ECP Mode - ECP and EPP 1.9 Mode - ECP and EPP 1.7 Mode	Selects the mode for the parallel port. Not available if the parallel port is disabled. ▪ **SPP** is Standard Parallel Port mode, a bi-directional mode for printers. ▪ **EPP** is Enhanced Parallel Port mode, a high-speed bi-directional mode for non-printer peripherals. ▪ **ECP** is Enhanced Capability Port mode, a high-speed bi-directional mode for printers and scanners.

4-4-7. Advanced – Hardware Monitor

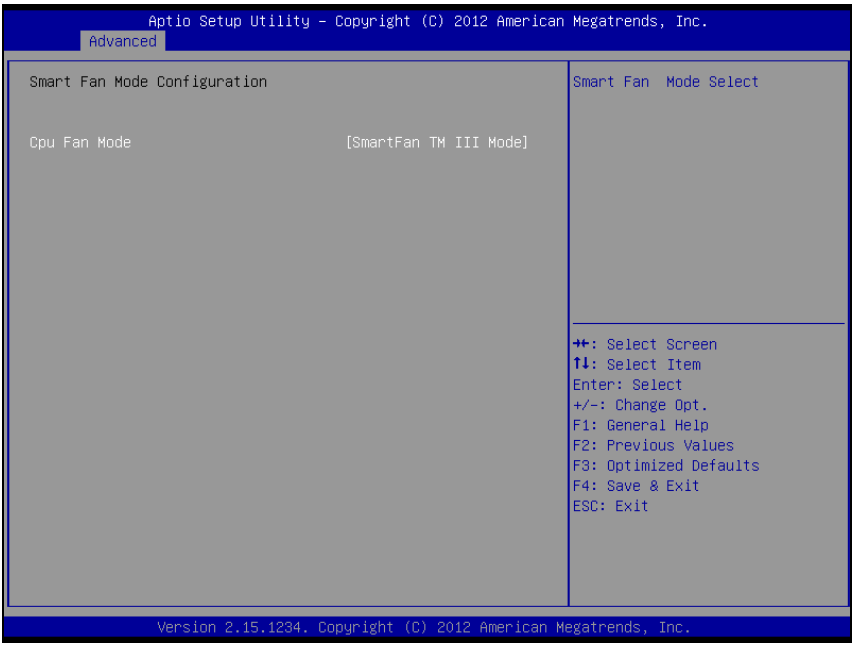


Hardware Monitor Configuration screen

BIOS Setting	Options	Description/Purpose
Smart Fan Mode Configuration	Sub-menu	Smart Fan Mode select.
System Temperature	No changeable options	Displays temperature in the remote thermal sensor zone.
CPU Temperature	No changeable options	Displays processor's temperature.
SysFan Speed	No changeable options	Displays fan speed of the chassis fan.
CpuFan Speed	No changeable options	Displays fan speed of the CPU fan.
Vcore	No changeable options	Displays voltage level of the +Vcore in supply.
+12V	No changeable options	Displays voltage level of the +12V in supply.
+1.5V	No changeable options	Displays voltage level of the +1.5V in supply.

BIOS Setting	Options	Description/Purpose
+1.05V	No changeable options	Displays voltage level of the +1.05V in supply.
AVCC	No changeable options	Displays voltage level of the +5V in supply.
5Vcc	No changeable options	Displays voltage level of the +5V in supply.
5VSB	No changeable options	Displays voltage level of the +5V in supply.
VBAT	No changeable options	Displays voltage level of the backup CMOS battery.

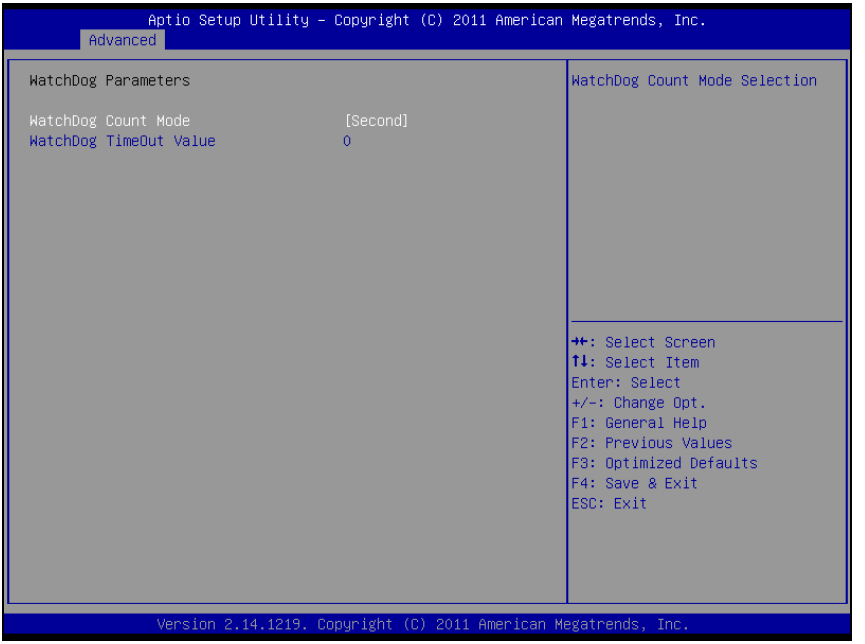
4-4-7-1. Hardware Monitor – Smart Fan Mode Configuration



Smart Fan Mode Configuration screen

BIOS Setting	Options	Description/Purpose
Cpu Fan Mode	- Manual Mode - SmartFan TM III Mode	Smart Fan Mode select.
CPU FAN PWM Output Duty	Multiple options ranging from 100 to 255	CPU FAN PWM Output Duty (Range: 0~255)

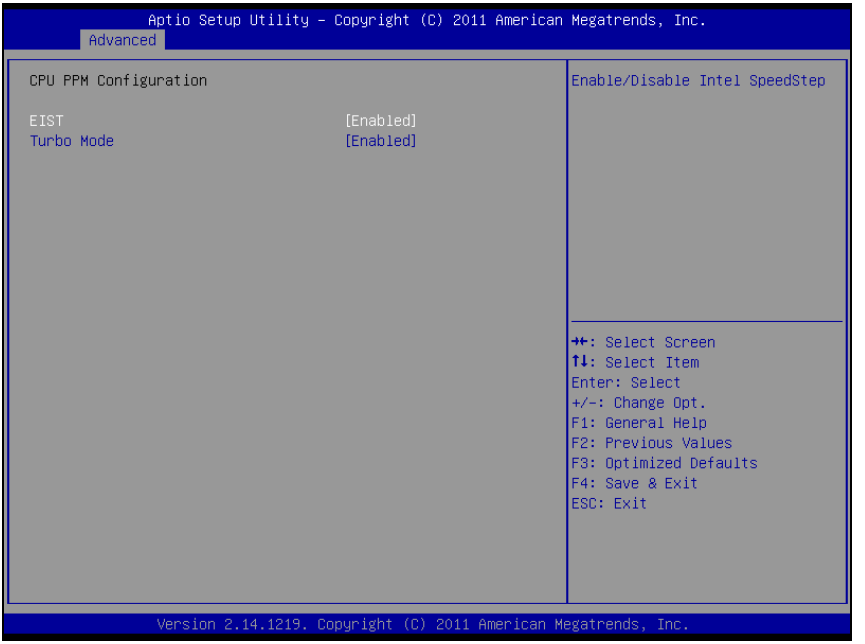
4-4-8. Advanced – Watchdog Configuration



Watchdog Configuration screen

BIOS Setting	Options	Description/Purpose
WatchDog Count Mode	- Second	Set the watchdog count mode.
WatchDog TimeOut Value	Multiple options ranging from 0 to 255	Sets the desired value (seconds) for watchdog timer.

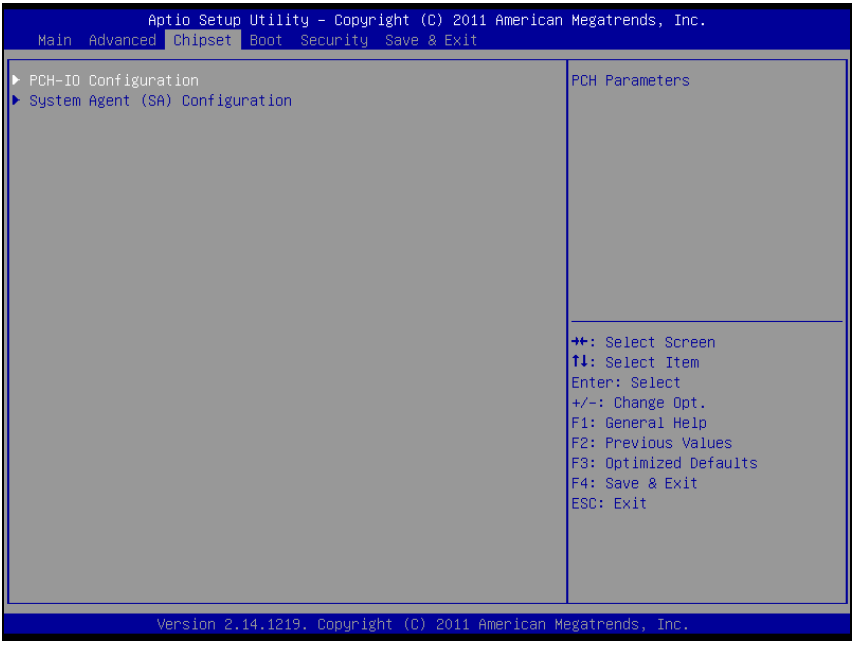
4-4-9. Advanced – CPU PPM Configuration



CPU PPM Configuration screen

BIOS Setting	Options	Description/Purpose
EIST	- Disabled - Enabled	Enable/Disable Intel Speedstep.
Turbo Mode	- Disabled - Enabled	Enable/Disable Turbo Mode.

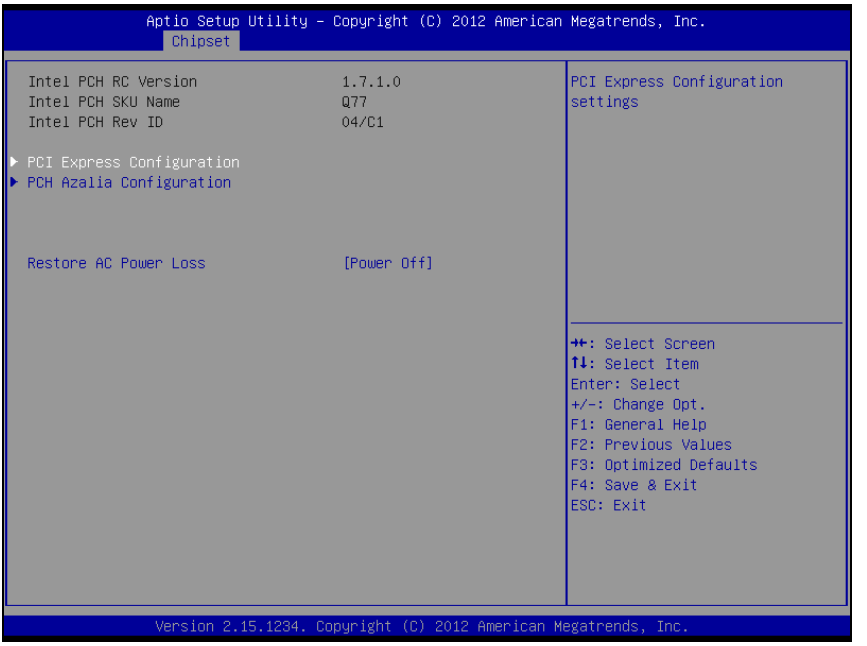
4-5. CHIPSET



Chipset screen

BIOS Setting	Options	Description/Purpose
PCH-IO Configuration	Sub-menu	Sets Parameter for Panther Point (South Bridge) configuration.
System Agent (SA) Configuration	Sub-menu	Sets Parameter for Ivy Bridge (North Bridge) configuration.

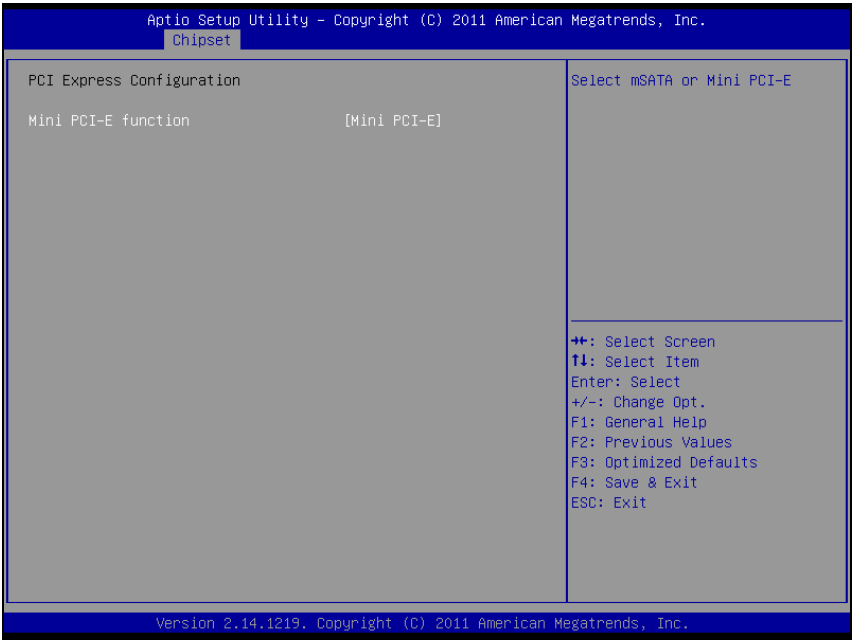
4-5-1. Chipset – PCH IO Configuration



PCH IO Configuration screen

BIOS Setting	Options	Description/Purpose
Intel PCH RC Version	No changeable options	Displays the PCH source code module version
Intel PCH SKU Name	No changeable options	Displays PCH product SKU name.
Intel PCH Rev ID	No changeable options	Displays onboard PCH chip revision.
PCI Express Configuration	Sub-menu	PCI Express Configuration settings.
PCH Azalia Configuration	Sub-menu	PCH Azalia Configuration settings.
Restore AC Power Loss	- Power off - Power on - Last State	Select AC power state when power is re-applied after a power failure.

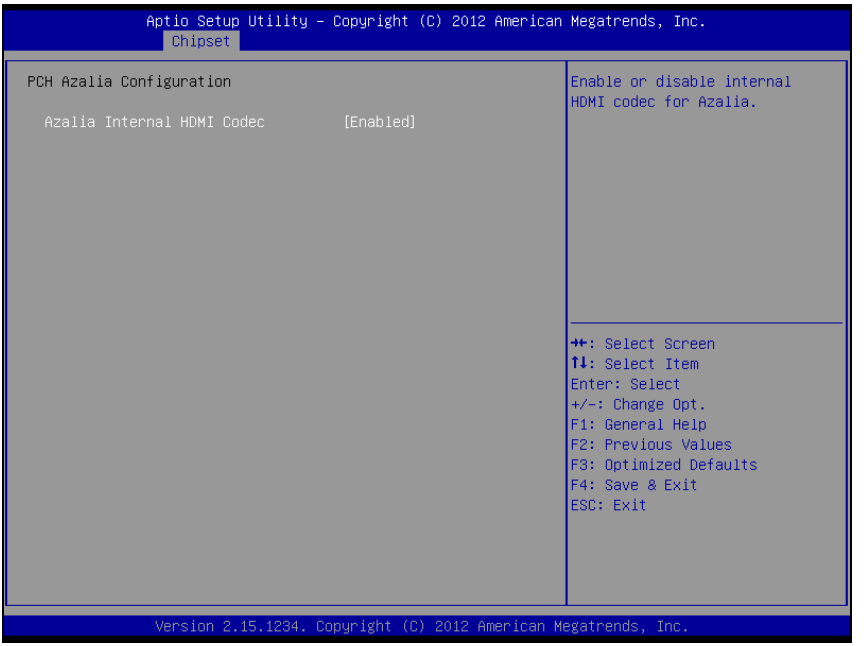
4-5-1-1. PCH IO Configuration – PCI Express Configuration



PCI Express screen

BIOS Setting	Options	Description/Purpose
Mini PCI-E function	- Mini PCI-E - mSATA	Set the mini PCI-E interface as Mini PCI-E or mSATA function.

4-5-1-2. PCH IO Configuration – PCH Azalia Configuration



PCH Azalia Configuration screen

BIOS Setting	Options	Description/Purpose
Azalia Internal HDMI Codec	- Enabled - Disabled	Enable or disable internal HDMI codec for Azalia.

4-5-2. Chipset – System Agent (SA) Configuration

System Agent Configuration screen

BIOS Setting	Options	Description/Purpose
System Agent Bridge Name	No changeable options	Displays the system bridge name..
System Agent RC version	No changeable options	Displays the IVB source code module version
Graphics Configuration	Sub-menu	Configure Graphic Settings.
Memory Configuration	Sub-menu	Memory Configuration Parameters

4-5-2-1. System Agent (SA) Configuration – Graphics Configuration

Graphics Configuration screen

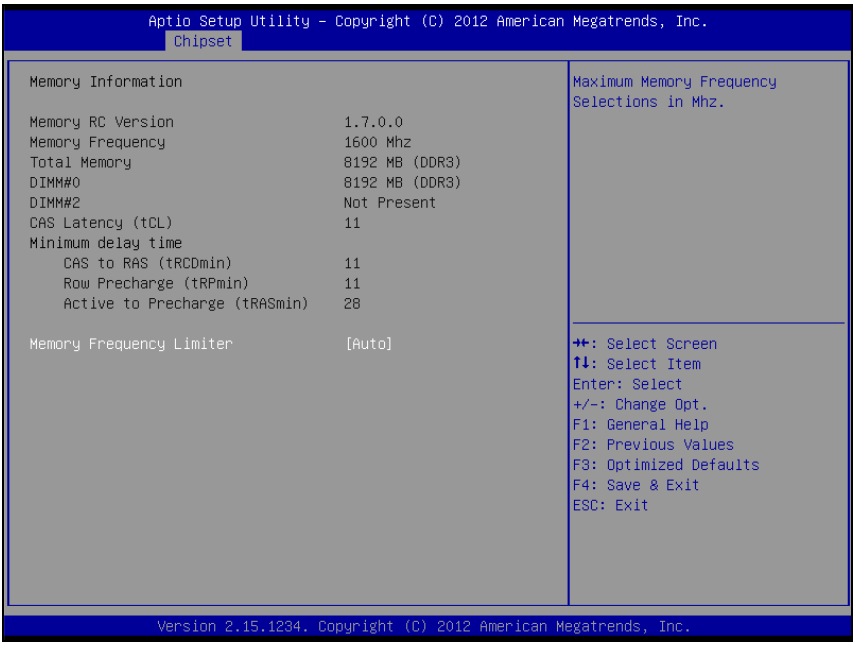
BIOS Setting	Options	Description/Purpose
IGFX VBIOS Version	No changeable options	Displays the VBIOS version of integrated graphic controller.
IGfx Frequency	No changeable options	Displays the frequency integrated graphic controller.
Primary Display	- AUTO - IGFX - PEG - SG	Select which of IGFX/PEG Graphics device should be Primary Display Or select SG for Switchable Gfx.
Internal Graphics	- AUTO - Disabled - Enabled	Keep IGD enabled based on the setup options.
LCD Control	Sub-menu	Select display device priority.

Graphics Configuration – LCD Control

LCD Control screen

BIOS Setting	Options	Description/Purpose
Primary IGFX Boot Display	- VBIOS Default - CRT - LVDS	Select primary display device
Secondary IGFX Boot Display	- Disabled - CRT - LVDS	Select secondary display device

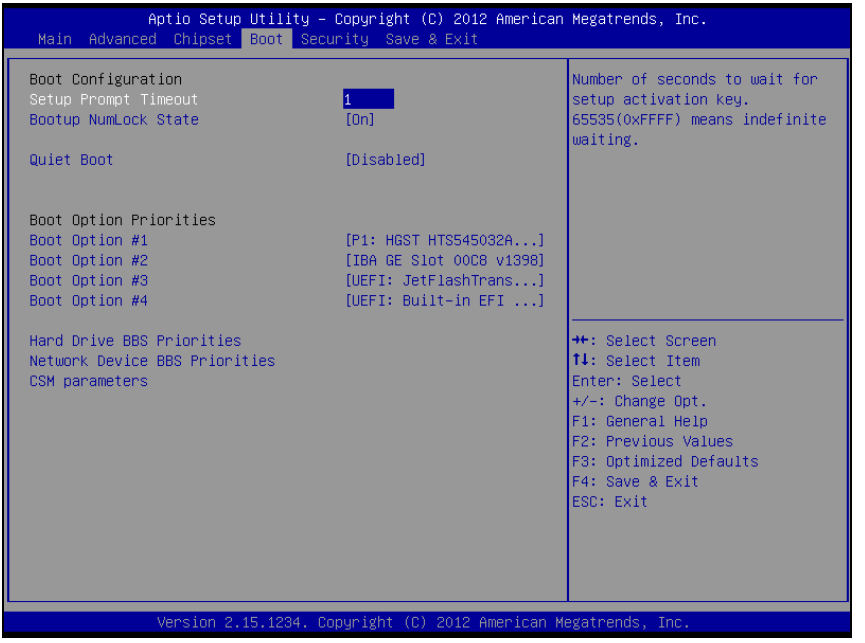
4-5-2-2. System Agent (SA) Configuration – Memory Information



Memory Information screen

BIOS Setting	Options	Description/Purpose
Memory Information	No changeable option lists.	Displays the detail DRAM information on platform.
Memory Frequency	- AUTO - 1067 - 1033 - 1600	Maximum memory frequency selection in Mhz.

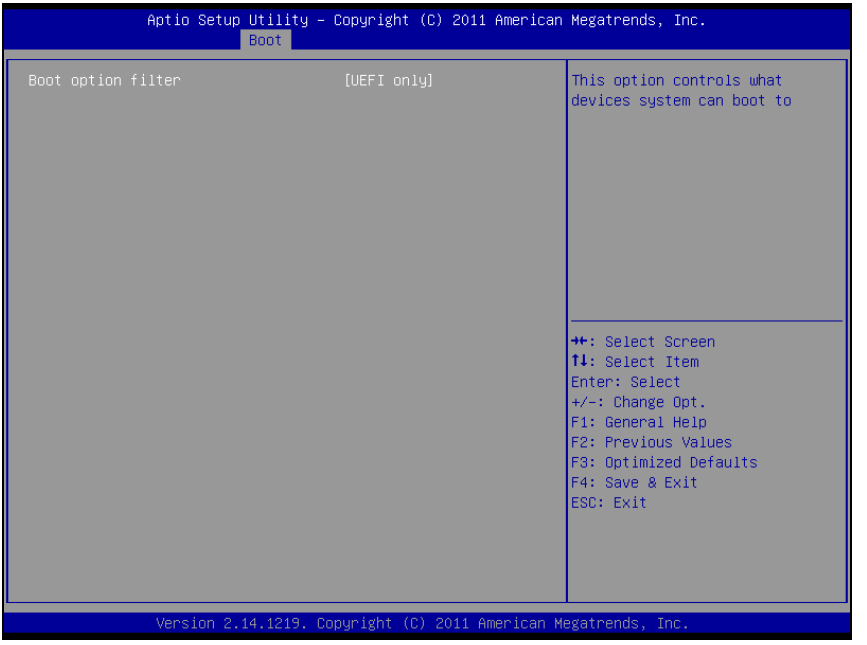
4-6. BOOT



Boot screen

BIOS Setting	Options	Description/Purpose
Setup Prompt Timeout	Numeric	Number of seconds to wait for setup activation key.
Bootup NumLock Status	- On - Off	Specifies the power-on state of the NumLock Key.
Quiet Boot	- Disabled - Enabled	Enable/Disable Quiet Boot Options
Boot Option #1~#3	- [Drive(s)] - Disabled	Allows setting boot option listed in Hard Drive BBS Priorities.
Hard Drive BBS Priorities	Sub-menu	Select hard drive boot priority.
Network Device BBS Priorities	Sub-menu	Select network device boot priority.
CSM Parameter	Sub-menu	Option ROM execution, boot option filters, etc.

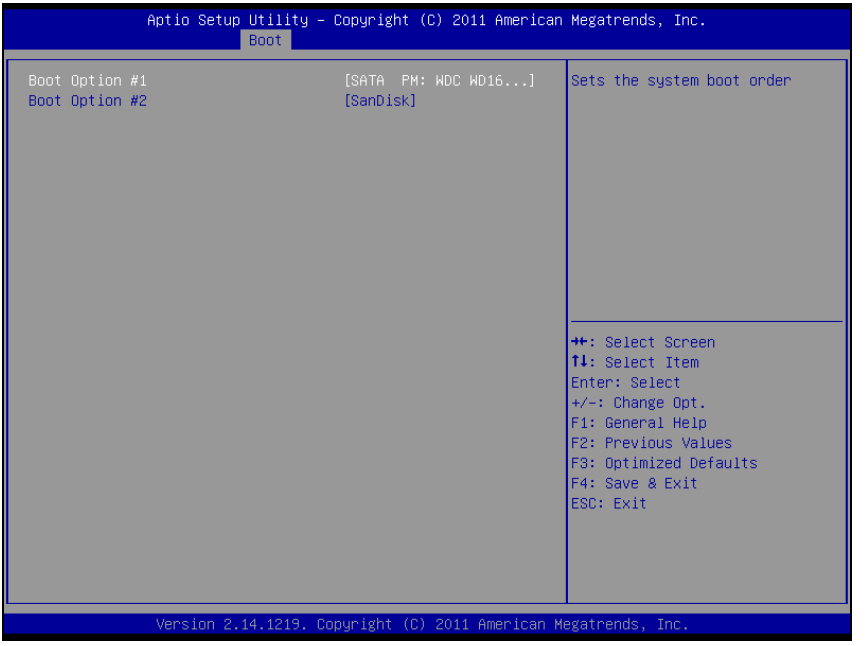
4-6-1. Boot – CSM Parameters



CSM Parameters screen

BIOS Setting	Options	Description/Purpose
Boot option filter	- UEFI and Legacy - Legacy only - UEFI only	Allows the system run the boot option ROM type.

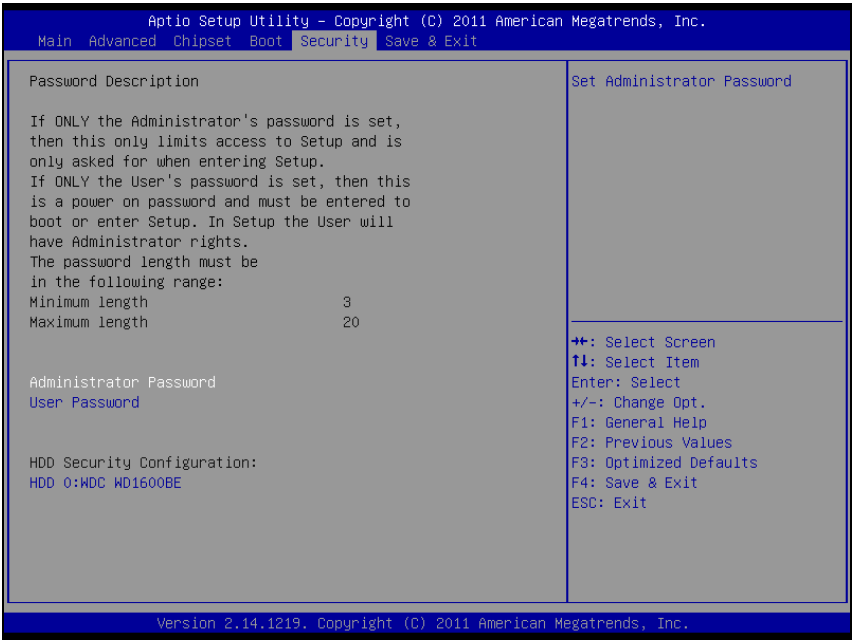
4-6-2. Boot – Hard Drive BBS Priorities



Hard Drive BBS Priorities screen

BIOS Setting	Options	Description/Purpose
Boot Option #1 - #3	- [Drive(s)] - Disabled	Allows setting the boot order of available drive(s).

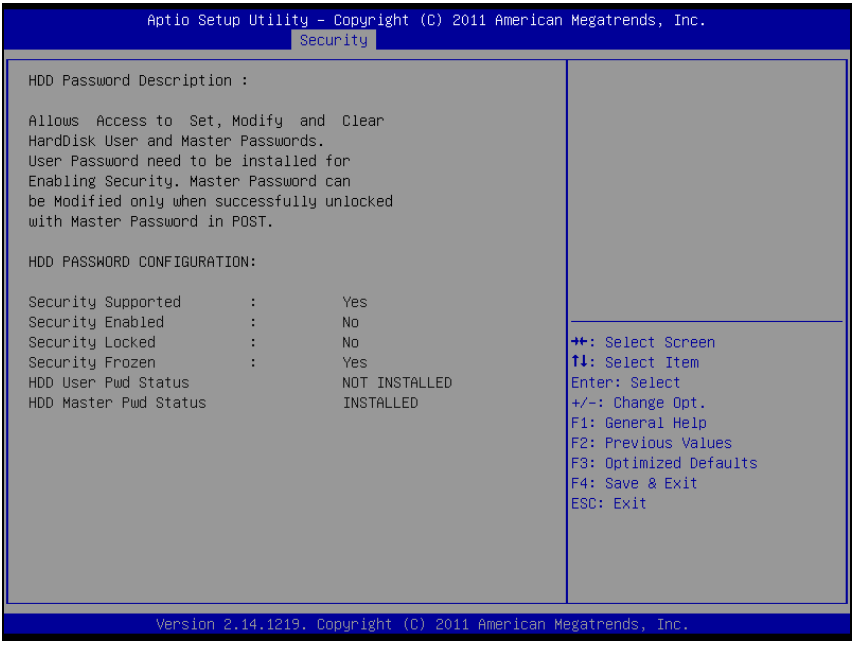
4-7. SECURITY



Security screen

BIOS Setting	Options	Description/Purpose
Administrator Password	Password can be 3-20 alphanumeric characters.	Specifies the administrator password.
User Password	Password can be 3-20 alphanumeric characters.	Specifies the user password.
HDD Security Configuration:	Sub-menu	Set HDD password.

4-7-1. Security – HDD Security Configuration

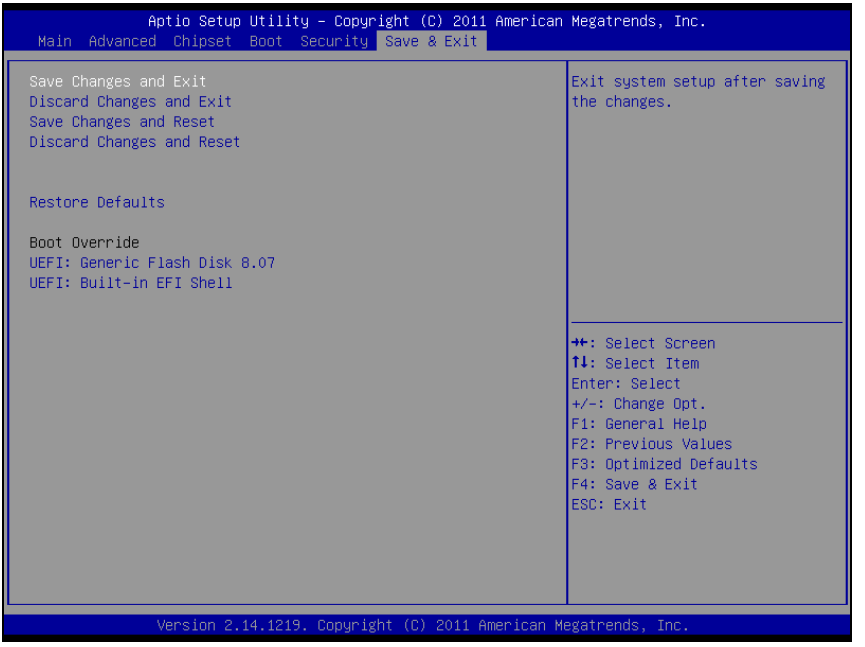


HDD 0: [drive] screen

BIOS Setting	Options	Description/Purpose
Security Supported	No changeable options	Reports if there is security feature available.
Security Enabled	No changeable options	Reports if there is security feature enabled.
Security Locked	No changeable options	Reports if there is security feature locked.
Security Frozen	No changeable options	Reports if there is security feature frozen.
HDD User Pwd Status	No changeable options	Reports if there is HDD User Password installed.
HDD Master Pwd Status	No changeable options	Reports if there is HDD Master Password installed.

BIOS Setting	Options	Description/Purpose
Set User Password	Password can be up to 32 alphanumeric characters.	Specifies the user password. (Need TPM module)
Set Master Password	Password can be up to 32 alphanumeric characters.	Specifies the master password.

4-8. Save & Exit



Save & Exit screen

BIOS Setting	Options	Description/Purpose
Save Changes and Exit	No changeable options	Exits and saves the changes in NVRAM.
Discard Changes and Exit	No changeable options	Exits without saving any changes made in BIOS settings.
Save Changes and Reset	No changeable options	Saves the changes in NVRAM and resets.
Discard Changes and Reset	No changeable options	Resets without saving any changes made in BIOS settings.
Restore Defaults	No changeable options	Loads the optimized defaults for BIOS settings.
Boot Override	- [Drive(s)]	Forces to boot from selected [drive(s)].

APPENDIX

A

SYSTEM ASSEMBLY

This appendix contains the exploded diagram of the system.

Section includes:

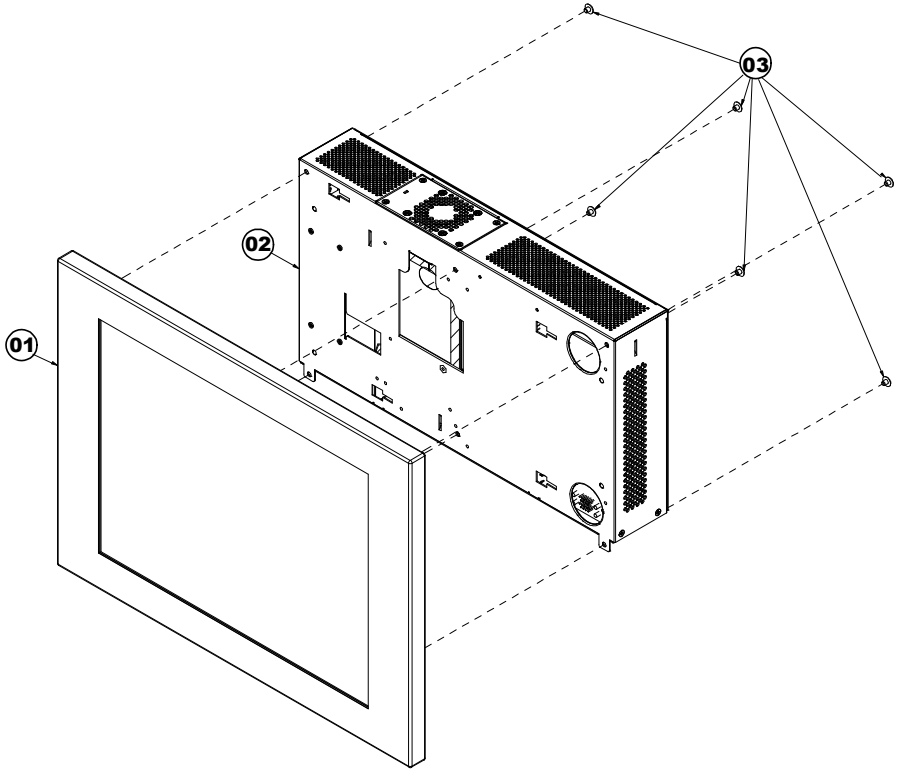
- Exploded Diagram for Panel
- Exploded Diagram for LCD Touchscreen
- Exploded Diagram for Whole System
- Exploded Diagram for Board Stand
- Exploded Diagram for CD Tray
- Exploded Diagram for HDD Holder
- Exploded Diagram for System Fan

EXPLODED DIAGRAM FOR PANEL

Panel

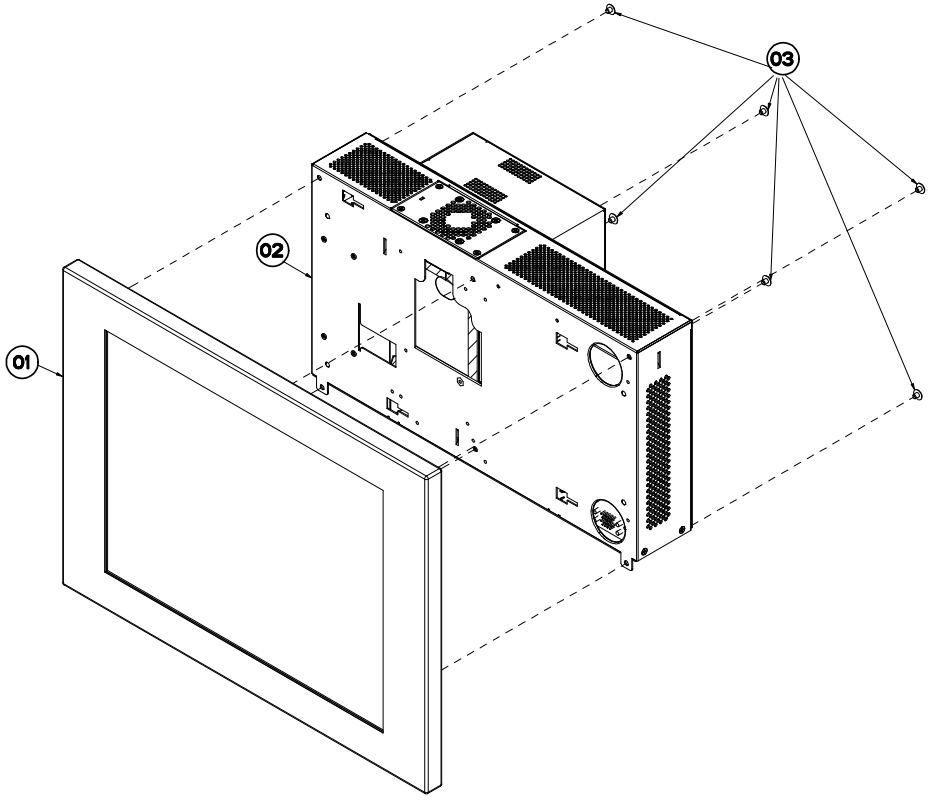
· SP-7625

1. Standard



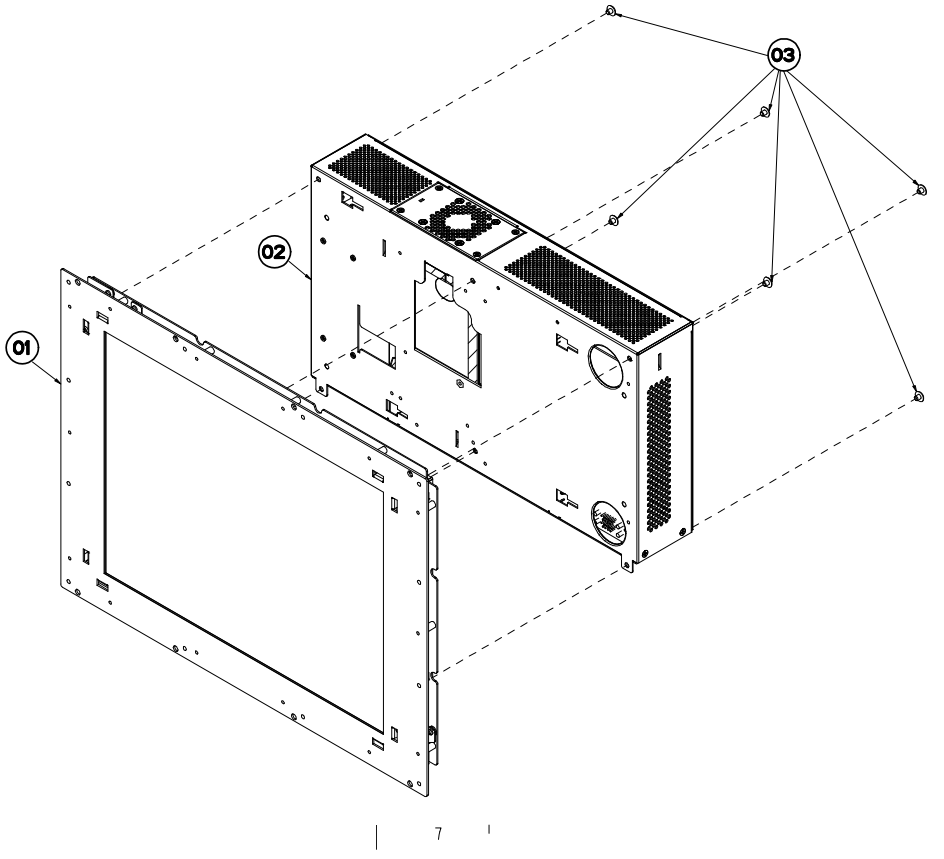
ITEM	COMPONENT NAME	PART No.	Q'TY
1	7625_PANEL_SUS_ASSY_GLASS_EXP		1
2	BOX_PC_BM0892_NO_VESA_TB_EXP		1
3	TRUSS HEAD SCREW #2/M4x0.7Px4mm	22-232-4000401I	6

2. With Riser Card Box



ITEM	COMPONENT NAME	PART No.	Q`TY
1	7625_PANEL_SUS_ASSY_EXP		1
2	BOX_PC_BM0892_VESA_EXP		1
3	TRUSS HEAD SCREW #2/M4x0.7Px4mm	22-232-40004011	6

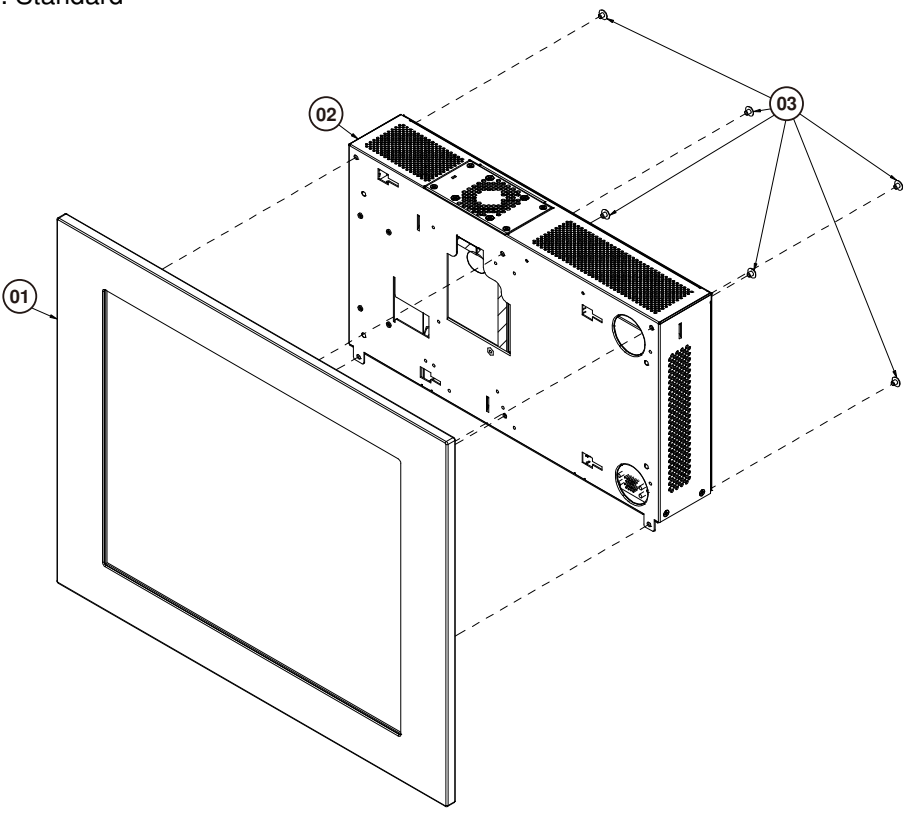
3. Open Frame



ITEM	COMPONENT NAME	PART No.	Q`TY
1	7625_OPEN_FRAME_ASSY_EXP		1
2	BOX_PC_BM0892_NO_VESA_EXP		1
3	TRUSS HEAD SCREW #2/M4x0.7Px4mm	22-232-40004011	6

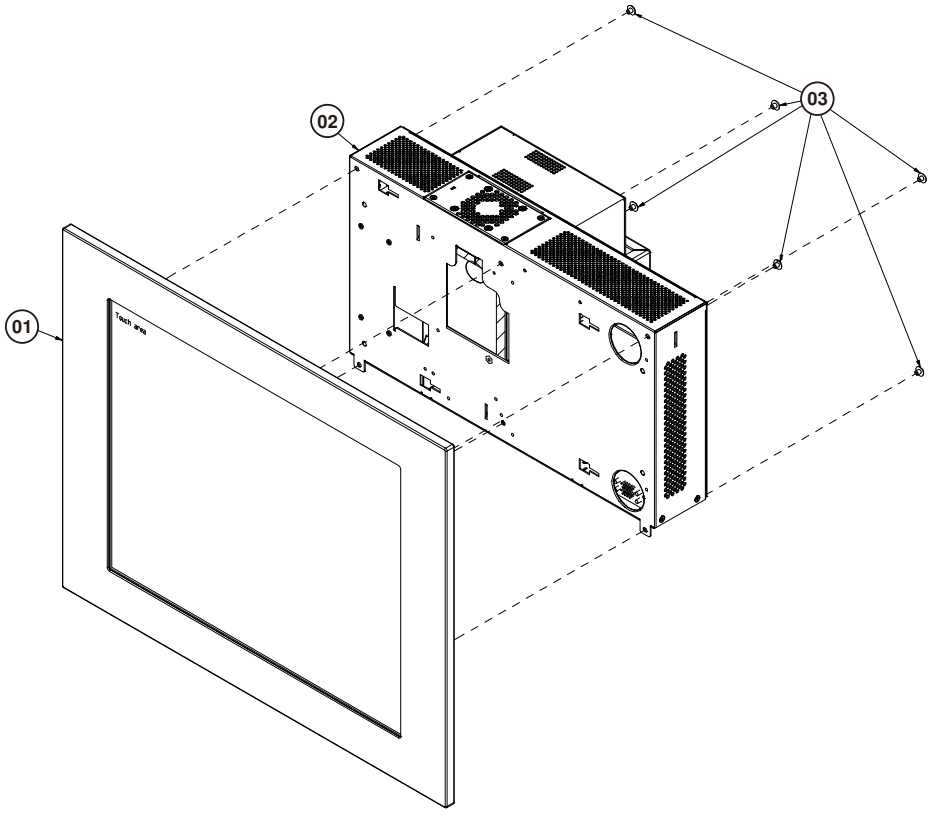
· SP-7627

1. Standard



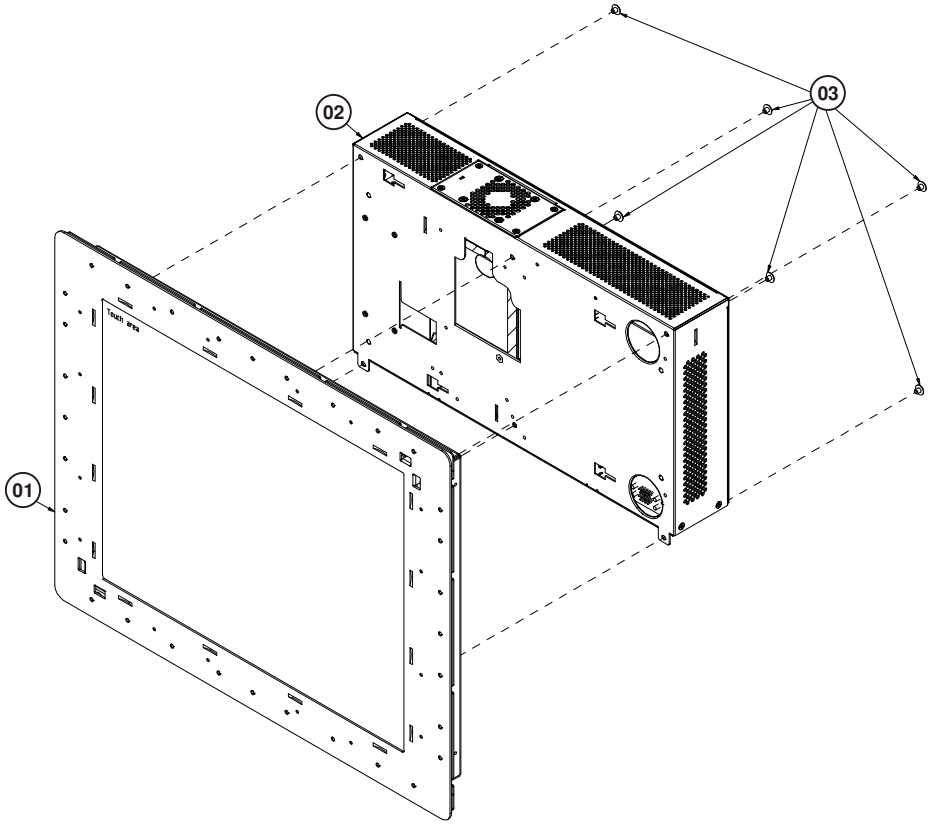
ITEM	COMPONENT NAME	PART No.	Q'TY
1	7627_PANEL_SUS_GLASS_EXP		1
2	BOX_PC_BM0892_NO_VESA_TB_EXP		1
3	TRUSS HEAD SCREW #2/M4x0.7Px4mm	22-232-40004011	6

2. With Riser Card Box



ITEM	COMPONENT NAME	PART No.	Q`TY
1	7627_PANEL_SUS_EXP		1
2	BOX_PC_BM0892_VESA_EXP		1
3	TRUSS HEAD SCREW #2/M4x0.7Px4mm	22-232-40004011	6

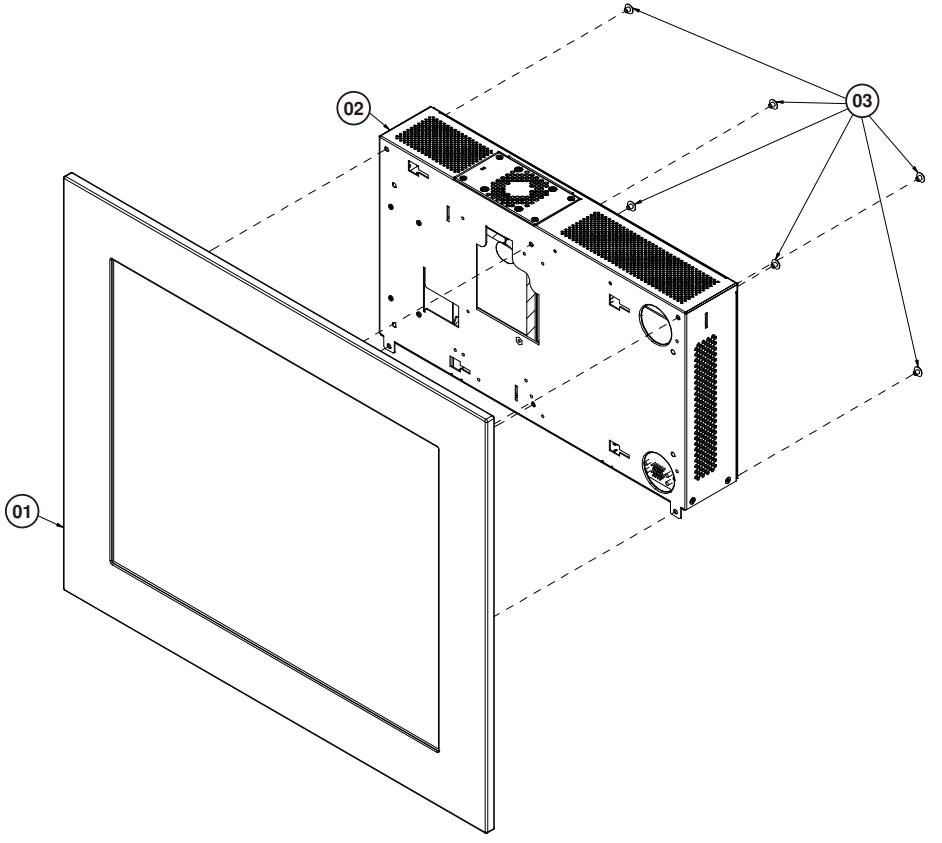
3. Open Frame



ITEM	COMPONENT NAME	PART No.	Q'TY
1	7627_OPEN_FRAME_ASSY_EXP		1
2	BOX_PC_BM0892_NO_VESA_EXP		1
3	TRUSS HEAD SCREW #2/M4x0.7Px4mm	22-232-40004011	6

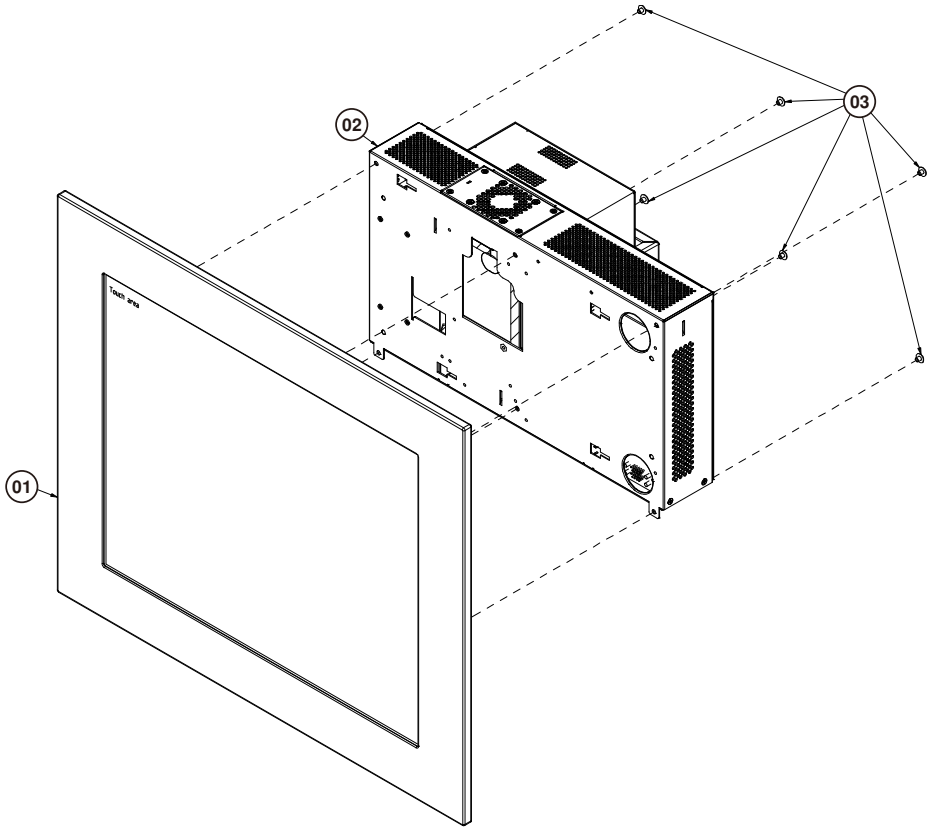
· SP-7629

1. Standard



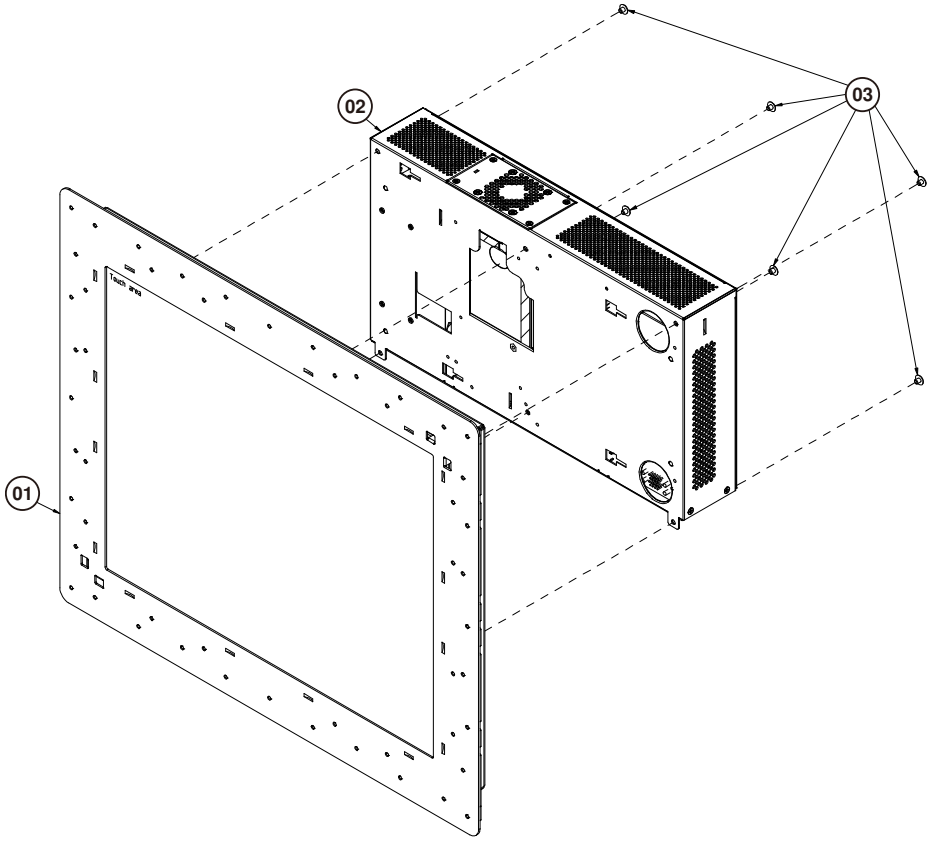
ITEM	COMPONENT NAME	PART No.	Q`TY
1	7629_PANEL_SUS_GLASS_EXP		1
2	BOX_PC_BM0892_NO_VESA_TB_EXP		1
3	TRUSS HEAD SCREW #2/M4x0.7Px4mm	22-232-40004011	6

2. With Riser Card Box



ITEM	COMPONENT NAME	PART No.	Q`TY
1	7629_PANEL_SUS_EXP		1
2	BOX_PC_BM0892_VESA_EXP		1
3	TRUSS HEAD SCREW #2/M4x0.7Px4mm	22-232-40004011	6

3. Open Frame

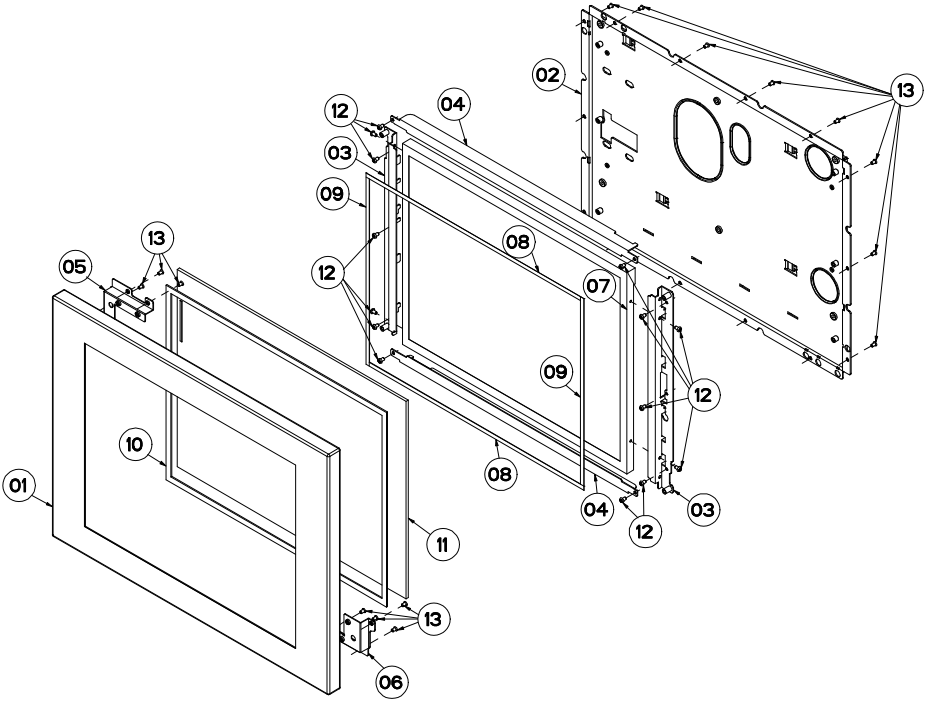


ITEM	COMPONENT NAME	PART No.	Q'TY	
1	7629_OPENFRAME_EXP		1	
2	BOX_PC_BM0892_NO_VESA_EXP		1	
3	TRUSS HEAD SCREW #2/M4x0.7Px4mm	22-232-40004011	6	

EXPLODED DIAGRAM FOR LCD TOUCHSCREEN

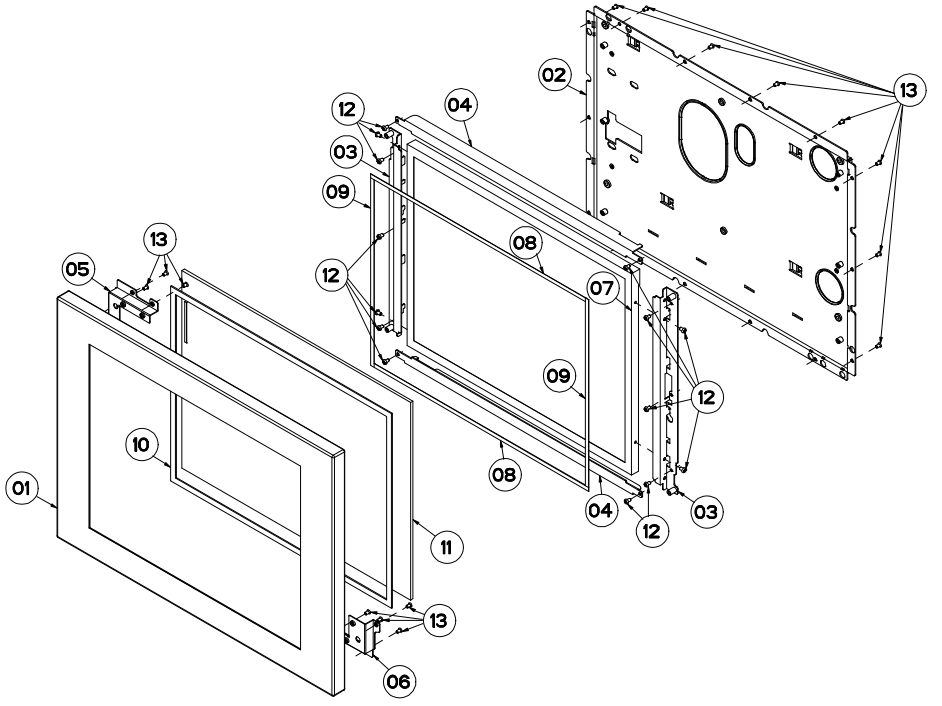
· SP-7625

1. Standard



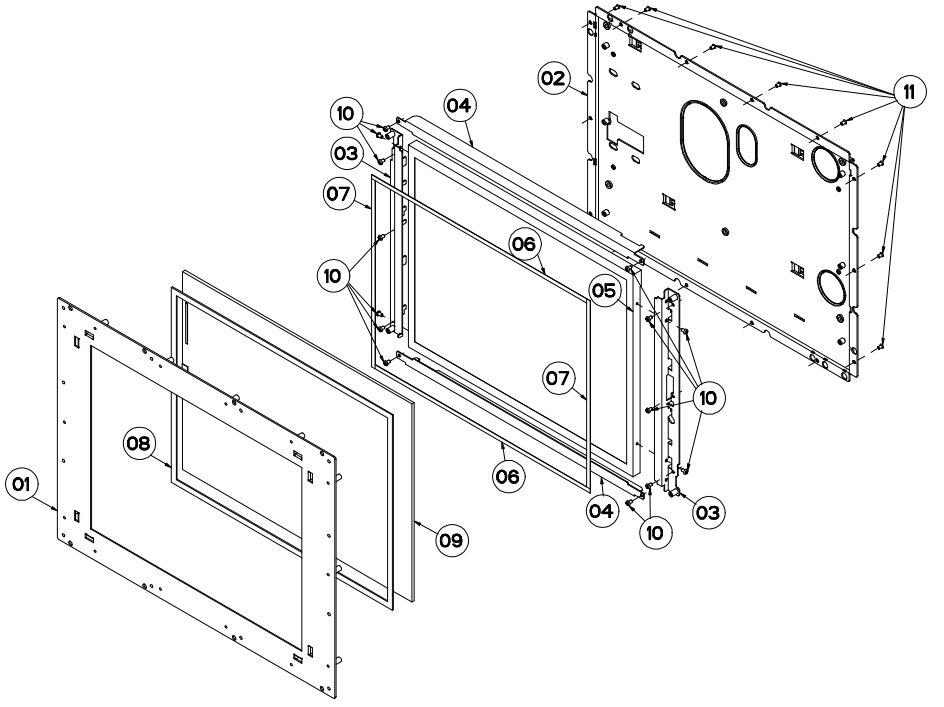
ITEM	COMPONENT NAME	PART No.	Q`TY
1	SP-7625 FRONT COVER	20-004-07001328	1
2	SP-7625 LCD HOLDER(w/Paint)(Black)	80-029-03061328	1
3	PPC-7615 PANEL SIDE HOLDER	20-029-07001168	2
4	PPC-7615 PRESS TOUCH BRACKET	20-006-07001168	2
5	PPC-7615 FIX NEW XY DIRECTION TOUCH OF RESIST FOR ELO RIGHT-3	20-006-03007168	1
6	PPC-7615 FIX NEW XY DIRECTION TOUCH OF RESIST FOR ELO LEFT-3	20-006-03008168	1
7	15" TFT LCD Panel(LED Backlight),400nits,XGA(1024x768)(NLT NLB150XG01L-01)	52-351-03015032	1
8	PPC-7615 PORON LCD SIDE 1(312.4x5x0.5mm)	30-013-24100168	2
9	PPC-7615 PORON LCD SIDE 2(236.3x5.0.5mm)	30-013-24200168	2
10	PPC-7615 EVA LCD(321.1x245.1x2mm)	30-013-15100168	1
11	15" 5-wire Resistance AccuTouch Panel (ELO SCN-A5-FLT15.0-Z01-0H1-R # P/N: E212465)	52-351-03650511	1
12	ROUND HEAD SCREW M3x0.5Px5mm	22-230-30005811	14
13	FLAT HEAD SCREW #2/M3x0.5Px5mm(BLACK)	22-215-30005011	21

2. With Riser Card Box



ITEM	COMPONENT NAME	PART No.	Q`TY
1	SP-7625 FRONT COVER	20-004-07001328	1
2	SP-7625 LCD HOLDER(w/Paint)(Black)	80-029-03061328	1
3	PPC-7615 PANEL SIDE HOLDER	20-029-07001168	2
4	PPC-7615 PRESS TOUCH BRACKET	20-006-07001168	2
5	PPC-7615 FIX NEW XY DIRECTION TOUCH OF RESIST FOR ELO RIGHT-3	20-006-03007168	1
6	PPC-7615 FIX NEW XY DIRECTION TOUCH OF RESIST FOR ELO LEFT-3	20-006-03008168	1
7	15" TFT LCD Panel(LED Backlight),400nits,XGA(1024x768)(NLT NLB150XG01L-01)	52-351-03015032	1
8	PPC-7615 PORON LCD SIDE 1(312.4x5x0.5mm)	30-013-24100168	2
9	PPC-7615 PORON LCD SIDE 2(236.3x5.0.5mm)	30-013-24200168	2
10	PPC-7615 EVA LCD(321.1x245.1x2mm)	30-013-15100168	1
11	15" 5-wire Resistance AccuTouch Panel (ELO SCN-A5-FLT15.0-Z01-0H1-R # P/N: E212465)	52-351-03650511	1
12	ROUND HEAD SCREW M3x0.5Px5mm	22-230-30005811	14
13	FLAT HEAD SCREW #2/M3x0.5Px5mm(BLACK)	22-215-30005011	21

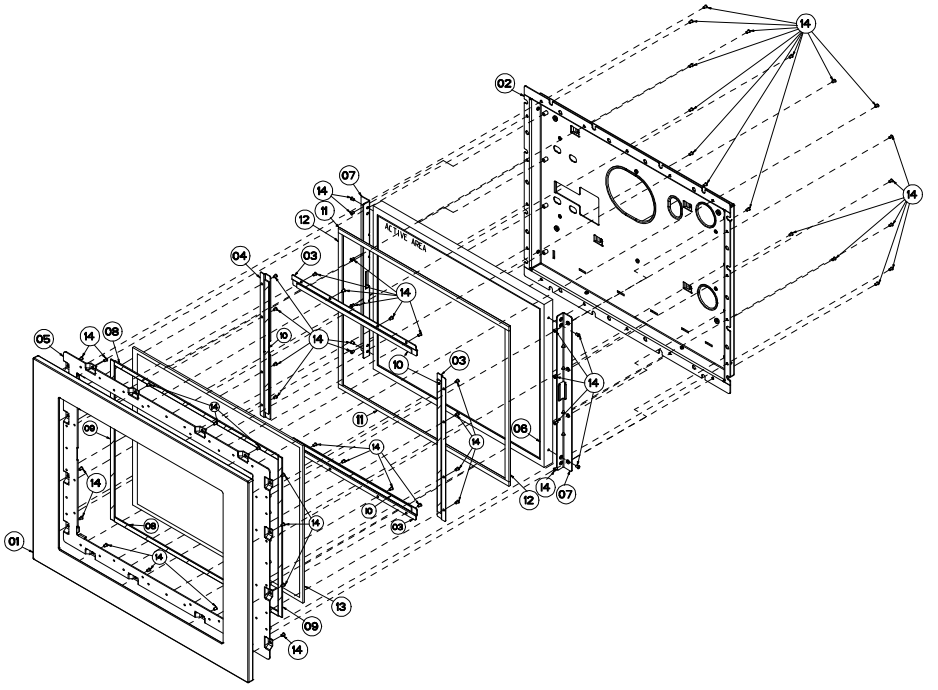
3. Open Frame



ITEM	COMPONENT NAME	PART No.	Q`TY
1	PPC-7615 OPENFRAME FRONT COVER-15(Black)	20-004-03063168	1
2	SP-7625 LCD HOLDER(w/Paint)(Black)	80-029-03061328	1
3	PPC-7615 PANEL SIDE HOLDER	20-029-07001168	2
4	PPC-7615 PRESS TOUCH BRACKET	20-006-07001168	2
5	15" TFT LCD Panel(LED Backlight),400nits,XGA(1024x768)(NLT NLB150XG01L-01)	52-351-03015032	1
6	PPC-7615 PORON LCD SIDE 1(312.4x5x0.5mm)	30-013-24100168	2
7	PPC-7615 PORON LCD SIDE 2(236.3x5.0.5mm)	30-013-24200168	2
8	PPC-7615 EVA LCD(321.1x245.1x2mm)	30-013-15100168	1
9	15" 5-wire Resistance AccuTouch Panel (ELO SCN-A5-FLT15.0-Z01-0H1-R # P/N: E212465)	52-351-03650511	1
10	ROUND HEAD SCREW M3x0.5Px5mm	22-230-30005811	14
11	FLAT HEAD SCREW #2/M3x0.5Px5mm(BLACK)	22-215-30005011	14

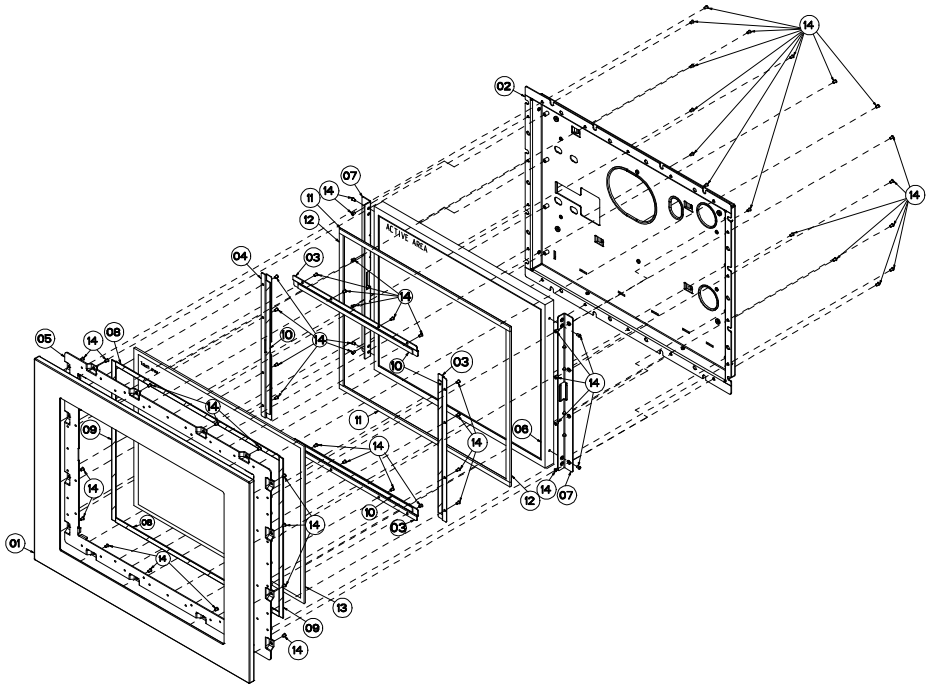
· SP-7627

1. Standard



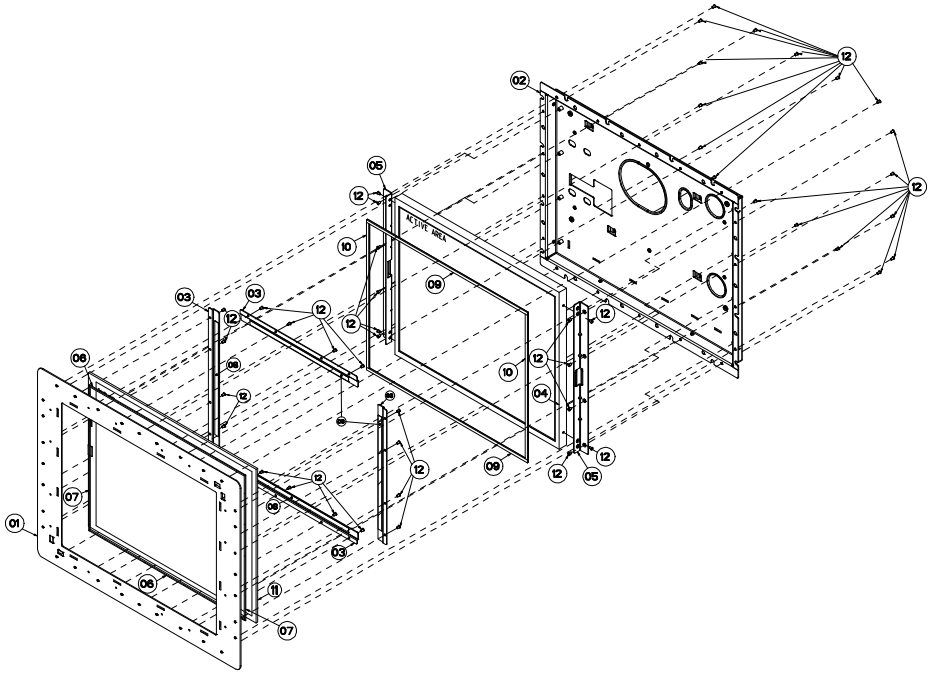
ITEM	COMPONENT NAME	PART No.	Q`TY
1	SP-7627 17" THIN GAP PANEL SUS COVER	20-004-07001329	1
2	SP-7627 LCD HOLDER(w/Paint)(Black)	80-029-03061329	1
3	PPC-7617 THIN GAP TOUCH SCREEN PACKING	20-006-03001169	3
4	SP-7617 THIN GAP CAP TOUCH PACKING	80-006-03001169	1
5	PPC-7627 THIN GAP SECC PANEL COVER	20-004-03003169	1
6	17" TFT LCD Panel(LED Backlight),350nits,SXGA(1280x1024)(AUO G170EG01-V1)	52-351-04017002	1
7	PPC-7617/7917 LCD LINK HOLDER	20-029-03001169	2
8	PPC-7617 TOUCH THIN GAP SPONGE H(343.2x8x1.5mm)	90-013-15100169	2
9	PPC-7617 TOUCH THIN GAP SPONGE V(292x8x1.5mm)	90-013-15200169	2
10	PPC-7617 THIN GAP TOUCH PORON(240x8x1.5mm)	90-013-24500169	4
11	PPC-7X17 LCD H PORON(351.6x5x2mm)	90-013-24100169	2
12	PPC-7X17 LCD V PORON(274x5x2mm)	90-013-24200169	2
13	PPC-7617/7917 17" Tempered Glass(強化玻璃)(365.4x290.2x3mm)	94-024-02301169	1
14	FLAT HEAD SCREW #2/M3x0.5Px5mm(BLACK)	22-215-30005011	62

2. With Riser Card Box



ITEM	COMPONENT NAME	PART No.	Q`TY
1	SP-7627 17" THIN GAP PANEL SUS COVER	20-004-07001329	1
2	SP-7627 LCD HOLDER(w/Paint)(Black)	80-029-03061329	1
3	PPC-7617 THIN GAP TOUCH SCREEN PACKING	20-006-03001169	3
4	SP-7617 THIN GAP CAP TOUCH PACKING	80-006-03001169	1
5	PPC-7627 THIN GAP SECC PANEL COVER	20-004-03003169	1
6	17" TFT LCD Panel(LED Backlight),350nits,SXGA(1280x1024)(AUO G170EG01-V1)	52-351-04017002	1
7	PPC-7617/7917 LCD LINK HOLDER	20-029-03001169	2
8	PPC-7617 TOUCH THIN GAP SPONGE H(343.2x8x1.5mm)	90-013-15100169	2
9	PPC-7617 TOUCH THIN GAP SPONGE V(292x8x1.5mm)	90-013-15200169	2
10	PPC-7617 THIN GAP TOUCH PORON(240x8x1.5mm)	90-013-24500169	4
11	PPC-7X17 LCD H PORON(351.6x5x2mm)	90-013-24100169	2
12	PPC-7X17 LCD V PORON(274x5x2mm)	90-013-24200169	2
13	17" 5-wire Resistance Touch Panel(電阻式)(ELO E389515)	52-380-04389501	1
14	FLAT HEAD SCREW #2/M3x0.5Px5mm(BLACK)	22-215-30005011	62

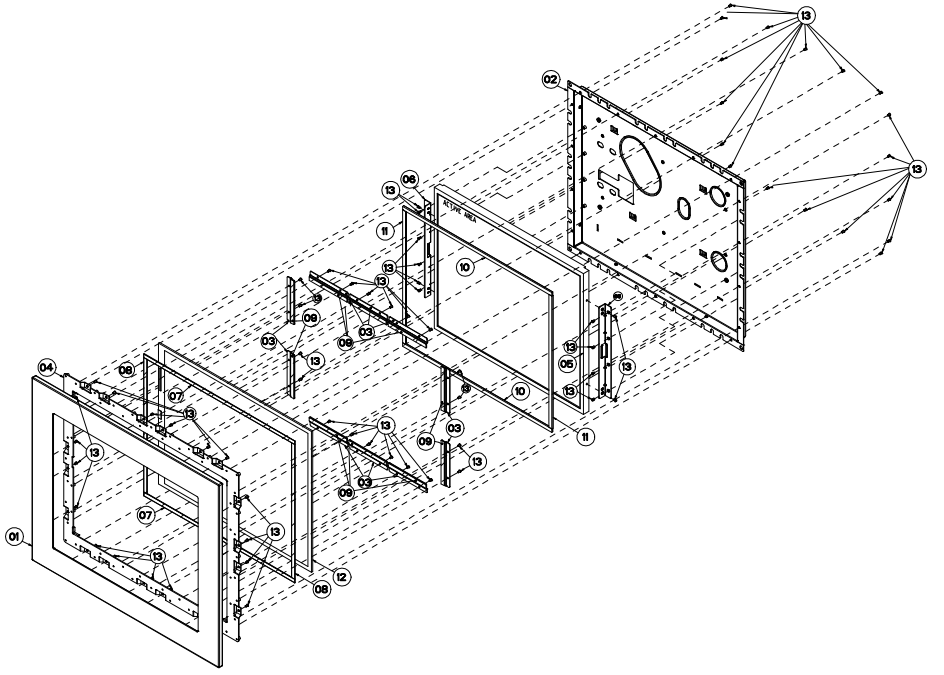
3. Open Frame



ITEM	COMPONENT NAME	PART No.	Q`TY
1	PPC-7917 OPEN FRAME MAIN STEEL PLATE(Black)	20-007-03061173	1
2	SP-7627 LCD HOLDER(w/Paint)(Black)	80-029-03061329	1
3	PPC-7617 THIN GAP TOUCH SCREEN PACKING	20-006-03001169	4
	SP-7617 THIN GAP CAP TOUCH PACKING	80-006-03001169	1
	PPC-7627 THIN GAP SECC PANEL COVER	20-004-03003169	1
4	17" TFT LCD Panel(LED Backlight),350nits,SXGA(1280x1024)(AUO G170EG01-V1)	52-351-04017002	1
5	PPC-7617/7917 LCD LINK HOLDER	20-029-03001169	2
6	PPC-7617 TOUCH THIN GAP SPONGE H(343.2x8x1.5mm)	90-013-15100169	2
7	PPC-7617 TOUCH THIN GAP SPONGE V(292x8x1.5mm)	90-013-15200169	2
8	PPC-7617 THIN GAP TOUCH PORON(240x8x1.5mm)	90-013-24500169	4
9	PPC-7X17 LCD H PORON(351.6x5x2mm)	90-013-24100169	2
10	PPC-7X17 LCD V PORON(274x5x2mm)	90-013-24200169	2
11	17" 5-wire Resistance Touch Panel(電阻式)(ELO E389515)	52-380-04389501	1
12	FLAT HEAD SCREW #2/M3x0.5Px5mm(BLACK)	22-215-30005011	46

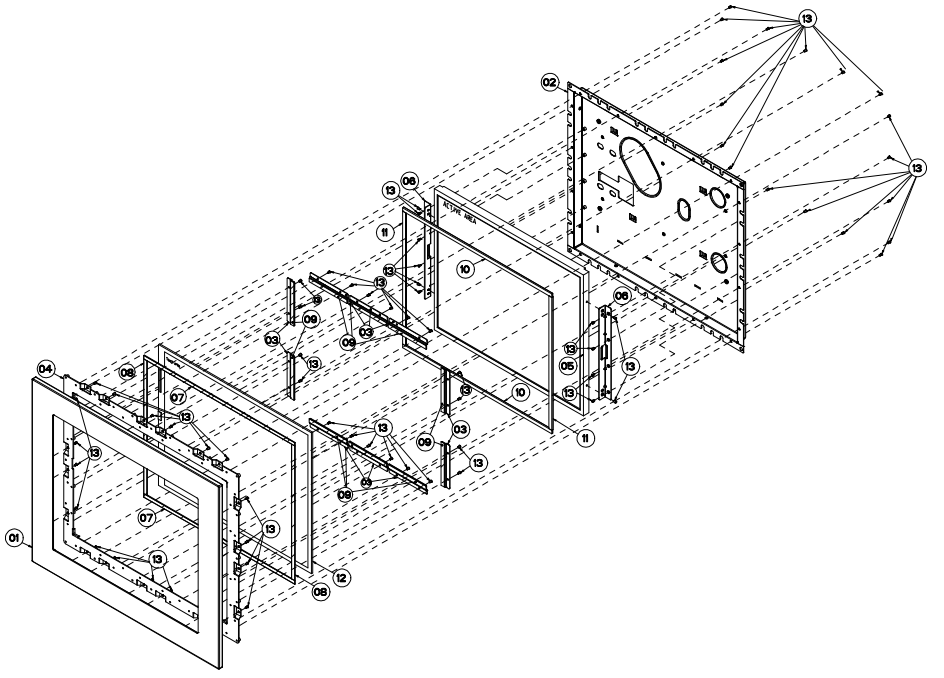
· SP-7629

1. Standard



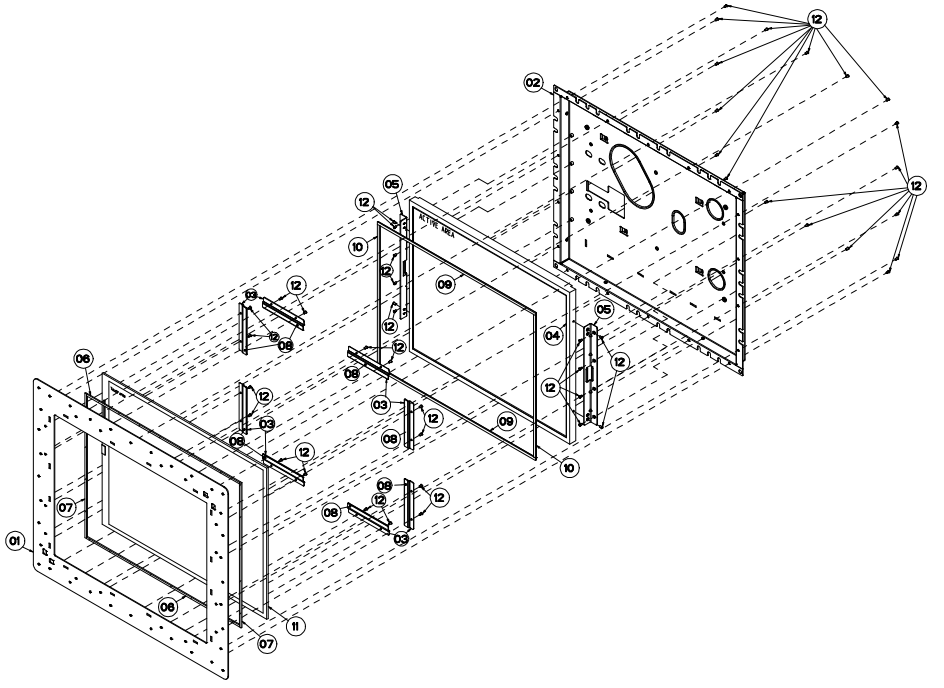
ITEM	COMPONENT NAME	PART No.	Q'TY
1	SP-7629 19" THIN GAP PANEL SUS COVER	20-004-07001330	1
2	SP-7629 LCD HOLDER(w/Paint)(Black)	80-029-03061330	1
3	PPC-7619/7919 TOUCHSCREEN PACKING	20-004-03002170	10
4	PPC-7627 THIN GAP SECC PANEL COVER	20-004-03003169	1
5	17" TFT LCD Panel(LED Backlight),350nits,SXGA(1280x1024)(AUO G170EG01-V1)	52-351-04017002	1
6	PPC-7617/7917 LCD LINK HOLDER	20-029-03001169	2
7	PPC-7617 TOUCH THIN GAP SPONGE H(343.2x8x1.5mm)	90-013-15100169	2
8	PPC-7617 TOUCH THIN GAP SPONGE V(292x8x1.5mm)	90-013-15200169	2
9	PPC-7617 THIN GAP TOUCH PORON(240x8x1.5mm)	90-013-24500169	10
10	PPC-7X17 LCD H PORON(351.6x5x2mm)	90-013-24100169	2
11	PPC-7X17 LCD V PORON(274x5x2mm)	90-013-24200169	2
12	PPC-7619/7919 19" Tempered Glass(強化玻璃)(406.3x323.4x3mm)	94-024-02301170	1
13	FLAT HEAD SCREW #2/M3x0.5Px5mm(BLACK)	22-215-30005011	70

2. With Riser Card Box



ITEM	COMPONENT NAME	PART No.	Q`TY
1	SP-7629 19" THIN GAP PANEL SUS COVER	20-004-07001330	1
2	SP-7629 LCD HOLDER(w/Paint)(Black)	80-029-03061330	1
3	PPC-7619/7919 TOUCHSCREEN PACKING	20-004-03002170	10
4	PPC-7627 THIN GAP SECC PANEL COVER	20-004-03003169	1
5	17" TFT LCD Panel(LED Backlight),350nits,SXGA(1280x1024)(AUO G170EG01-V1)	52-351-04017002	1
6	PPC-7617/7917 LCD LINK HOLDER	20-029-03001169	2
7	PPC-7617 TOUCH THIN GAP SPONGE H(343.2x8x1.5mm)	90-013-15100169	2
8	PPC-7617 TOUCH THIN GAP SPONGE V(292x8x1.5mm)	90-013-15200169	2
9	PPC-7617 THIN GAP TOUCH PORON(240x8x1.5mm)	90-013-24500169	10
10	PPC-7X17 LCD H PORON(351.6x5x2mm)	90-013-24100169	2
11	PPC-7X17 LCD V PORON(274x5x2mm)	90-013-24200169	2
12	17" 5-wire Resistance Touch Panel(電阻式)(ELO E389515)	52-380-04389501	1
13	FLAT HEAD SCREW #2/M3x0.5Px5mm(BLACK)	22-215-30005011	70

3. Open Frame

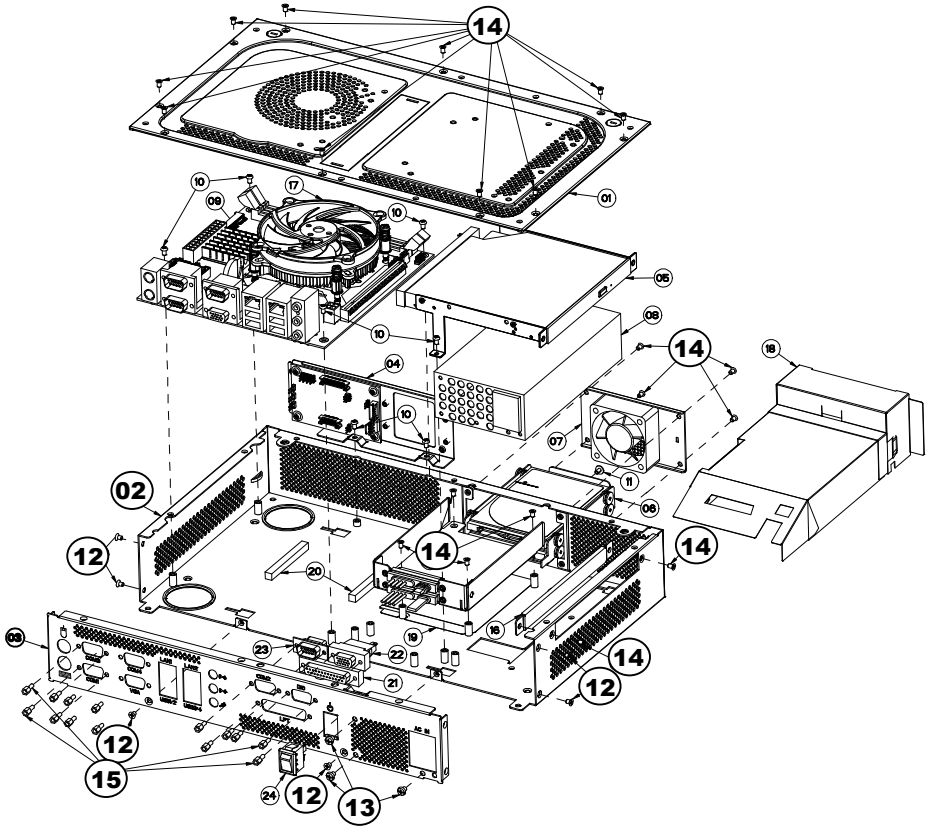


ITEM	COMPONENT NAME	PART No.	Q`TY
1	PPC-7919 OPEN-FRAME MAIN STEEL PLATE(Black)	80-007-03061173	1
2	SP-7629 LCD HOLDER(w/Paint)(Black)	80-029-03061330	1
3	PPC-7619/7919 TOUCHSCREEN PACKING	20-004-03002170	8
4	19" TFT LCD Panel,300nits,SXGA(1280x1024)(AUO G190EG02 V1)	52-351-08019002	1
5	PPC-7619/7919 LCD LINK HOLDER	20-029-03001170	2
6	PPC-7619 TOUCH THIN GAP SPONGE H(400.5x8x1.5mm)	90-013-15100170	2
7	PPC-7619 TOUCH THIN GAP SPONGE V(309.2x8x1.5mm)	90-013-15200170	2
8	PPC-7619 THIN GAP TOUCH PORON(100x8x1mm)	90-013-24500170	8
9	PPC-7X19 LCD H PORON(390.5x5x2mm)	90-013-24100170	2
10	PPC-7X19 LCD V PORON(305.1x5x2mm)	90-013-24200170	2
11	19" Touch Panel 5-Wire E863464(ELO SCN-A5-FLT19.0-Z01-0H1-R)	52-380-05519001	1
12	FLAT HEAD SCREW #2/M3x0.5Px5mm(BLACK)	22-215-30005011	46

EXPLODED DIAGRAM FOR WHOLE SYSTEM

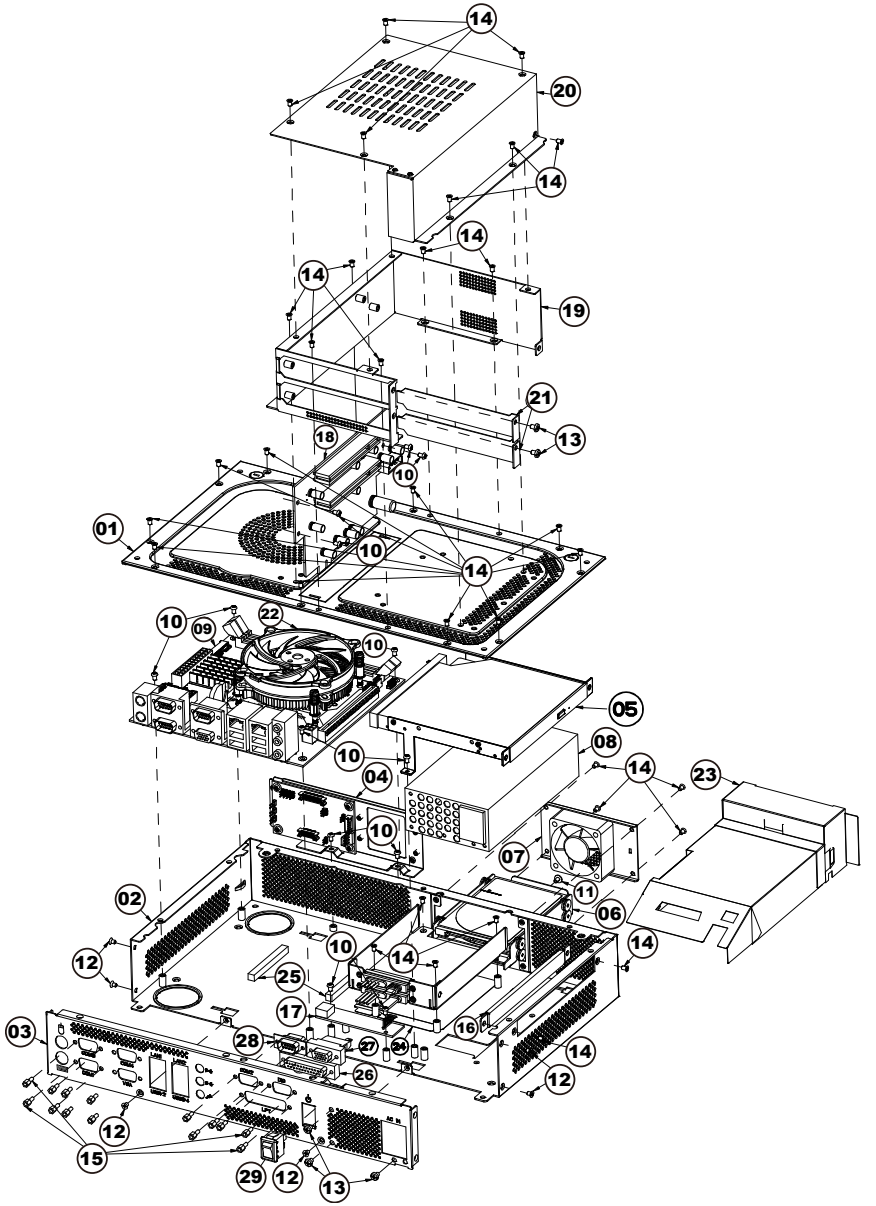
· SP-7625

1. Standard



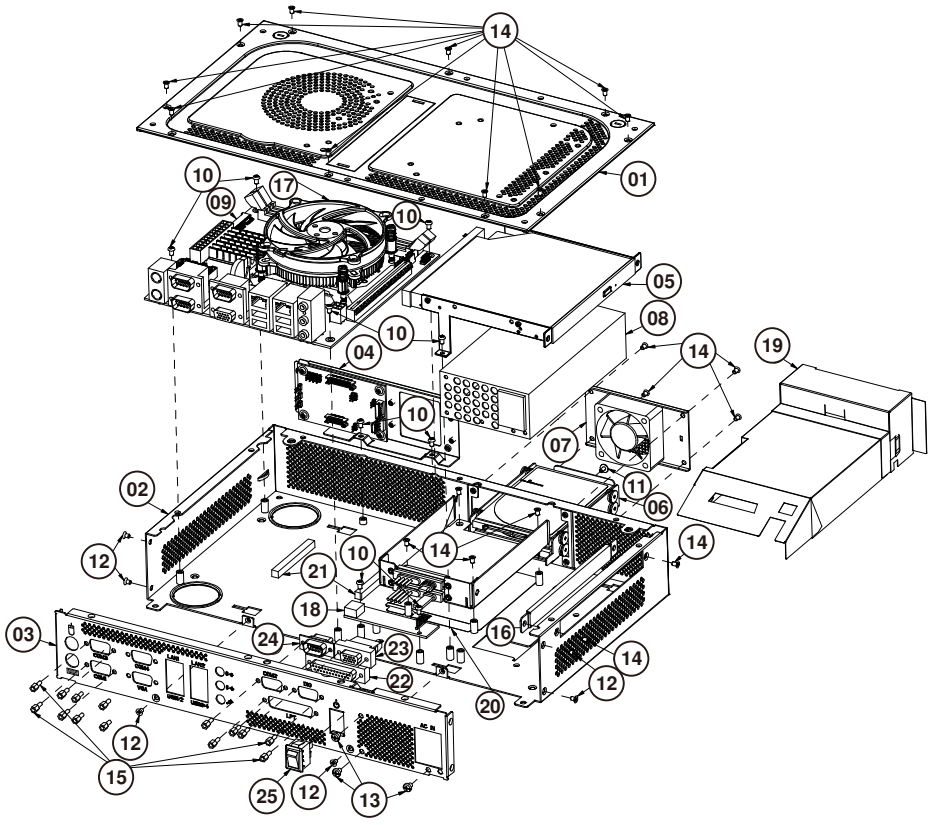
ITEM	COMPONENT NAME	PART No.	Q'TY
1	BR REAR COVER BM0892	80-004-03061328	1
2	BR BASE(w/Paint)(Black)	20-006-02061328	1
3	BR IO FOR SP762X(w/Paint)(Black)	80-006-03061328	1
4	BOARD_MODULE_ASSY_EXP		1
5	DVD_TRAY_ASM_EXP		1
6	PK-7090_HDD_ASSY_EXP		1
7	FAN_50X20_BRACKET_KIT_EXP		1
8	ATX 220W POWER SUPPLY(全漢 FSP220-60LE)	52-001-23220601	1
9	BM-0892 MAIN BOARD	BM-0892RA-00N	1
10	ROUND HEAD SCREW M3x0.5Px5mm	22-230-30005811	7
11	ROUND WASHER HEAD SCREW M3x0.5Px5mm	22-242-30005311	1
12	FLAT HEAD SCREW M3x0.5Px4.5mm(Black)	22-222-30004011	6
13	PAN HEAD SCREW UNC-No.6-32,L=5mm	22-622-60005011	3
14	FLAT HEAD SCREW #2/M3x0.5Px5mm(BLACK)	22-215-30005011	20
15	HEX CU BOSS UNC No.4-40,L=4.8,H=7mm	22-692-40048051	14
16	PPC-7615 CD-ROM DOOR(Black)	20-047-03061168	1
17	CPU HEAT SINK(φ90x13) & FAN(95x95x16mm)L=300mm	21-003-07575001	1
18	SP-7625 THERMAL SHIELD FOR HDD ASSY	90-056-02400328	1
19	SP-7625 CHOCK PIECE	90-056-02300328	1
20	PPC-7615 EVA FOR HEATSINK HOLDER(56.7x6x6mm)	90-013-15100168	2
21	LPTI CABLE L=280mm	27-004-32806031	1
22	DIO CABLE(15F to 10F)L=270mm	27-071-32806031	1
23	COM PORT CABLE(9M to 10F)L=190mm	27-024-32804031	1
24	POWER SWITCH CABLE L=260mm	27-019-32806071	1

2. With Riser Card Box



ITEM	COMPONENT NAME	PART No.	Q'TY
1	BR REAR COVER BM0892	80-004-03061328	1
2	BR BASE(w/Paint)(Black)	20-006-02061328	1
3	BR IO FOR SP762X(w/Paint)(Black)	80-006-03061328	1
4	BOARD_MODULE_ASSY_EXP		1
5	DVD_TRAY_ASM_EXP		1
6	PK-7090_HDD_ASSY_EXP		1
7	FAN_50X20_BRACKET_KIT_EXP		1
8	ATX 220W POWER SUPPLY(全漢 FSP220-60LE)	52-001-23220601	1
9	BM-0892 MAIN BOARD	BM-0892RA-00N	1
10	ROUND HEAD SCREW M3x0.5Px5mm	22-230-30005811	13
11	ROUND WASHER HEAD SCREW M3x0.5Px5mm	22-242-30005311	1
12	FLAT HEAD SCREW M3x0.5Px4.5mm(Black)	22-222-30004011	6
13	PAN HEAD SCREW UNC-No.6-32,L=5mm	22-622-60005011	5
14	FLAT HEAD SCREW #2/M3x0.5Px5mm(BLACK)	22-215-30005011	33
15	HEX CU BOSS UNC No.4-40,L=4.8,H=7mm	22-692-40048051	14
16	PPC-7615 CD-ROM DOOR(Black)	20-047-03061168	1
17	Touch control board for 5-wire(w/o Cable)(觸碰),USB interface(EETI ETP-MB-MER4050UEBG-03,F/W rl.012.4)	52-370-01040504	1
18	RISER CARD	SR-7910RB-01N	1
19	PPC-7615 RISER BOX BOTTOM BASE(Black)	20-032-03063168	1
20	PPC-7615 RISER COVER(Black)	20-004-03062168	1
21	PPC-7615 INTERFACE BRACKET(Black)	20-006-03062168	2
22	CPU HEAT SINK(φ90x13) & FAN(95x95x16mm)L=300mm	21-003-07575001	1
23	SP-7625 THERMAL SHIELD FOR HDD ASSY	90-056-02400328	1
24	SP-7625 CHOCK PIECE	90-056-02300328	1
25	PPC-7615 EVA FOR HEATSINK HOLDER(56.7x6x6mm)	90-013-15100168	2
26	LPTI CABLE L=280mm	27-004-32806031	1
27	DIO CABLE(15F to 10F)L=270mm	27-071-32806031	1
28	COM PORT CABLE(9M to 10F)L=190mm	27-024-32804031	1
29	POWER SWITCH CABLE L=260mm	27-019-32806071	1

3. Open Frame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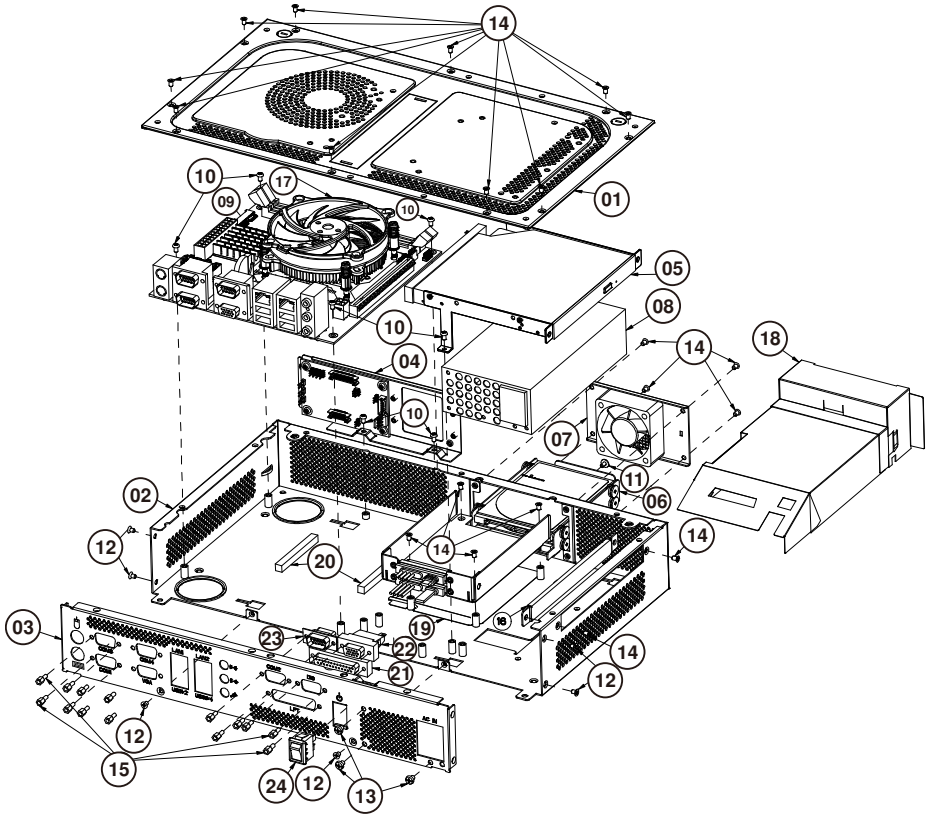
ITEM	COMPONENT NAME	PART No.	Q`TY
1	BR REAR COVER BM0892	80-004-03061328	1
2	BR BASE(w/Paint)(Black)	20-006-02061328	1
3	BR IO FOR SP762X(w/Paint)(Black)	80-006-03061328	1
4	BOARD_MODULE_ASSY_EXP		1
5	DVD_TRAY_ASM_EXP		1
6	PK-7090_HDD_ASSY_EXP		1
7	FAN_50X20_BRACKET_KIT_EXP		1
8	ATX 220W POWER SUPPLY(全漢 FSP220-60LE)	52-001-23220601	1
9	BM-0892 MAIN BOARD	BM-0892RA-00N	1
10	ROUND HEAD SCREW M3x0.5Px5mm	22-230-30005811	9
11	ROUND WASHER HEAD SCREW M3x0.5Px5mm	22-242-30005311	1
12	FLAT HEAD SCREW M3x0.5Px4.5mm(Black)	22-222-30004011	6
13	PAN HEAD SCREW UNC-No.6-32,L=5mm	22-622-60005011	3
14	FLAT HEAD SCREW #2/M3x0.5Px5mm(BLACK)	22-215-30005011	20
15	HEX CU BOSS UNC No.4-40,L=4.8,H=7mm	22-692-40048051	14
16	PPC-7615 CD-ROM DOOR(Black)	20-047-03061168	1
17	CPU HEAT SINK(φ90x13) & FAN(95x95x16mm)L=300mm	21-003-07575001	1
18	Touch control board for 5-wire(w/o Cable)(觸碰),USB interface(EETI ETP-MB-MER405QUEBG-03,F/W v1.012.4)	52-370-01040504	1
19	SP-7625 THERMAL SHIELD FOR HDD ASSY	90-056-02400328	1
20	SP-7625 CHOCK PIECE	90-056-02300328	1
21	PPC-7615 EVA FOR HEATSINK HOLDER(56.7x6x6mm)	90-013-15100168	2
22	LPTI CABLE L=280mm	27-004-32806031	1
23	DIO CABLE(15F to 10F)L=270mm	27-071-32806031	1
24	COM PORT CABLE(9M to 10F)L=190mm	27-024-32804031	1
25	POWER SWITCH CABLE L=260mm	27-019-32806071	1

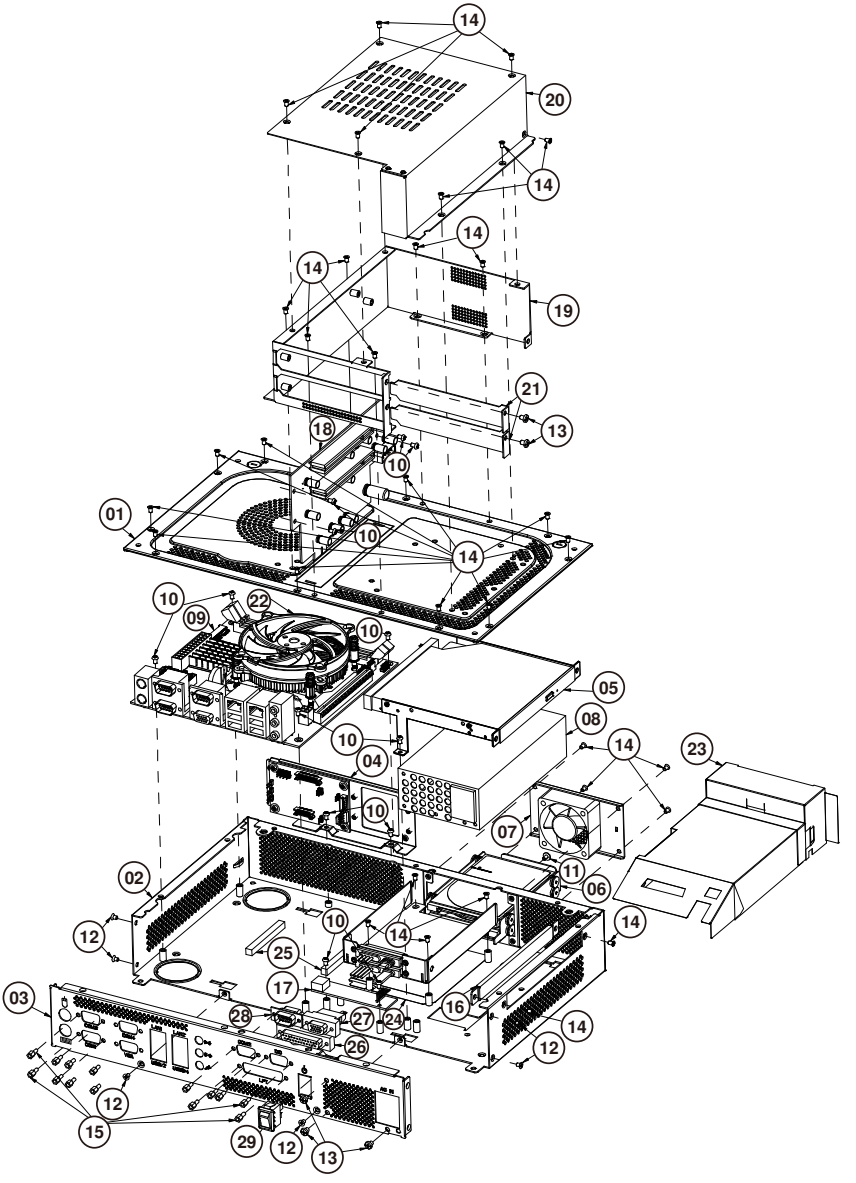
· SP-7627

1. Standard



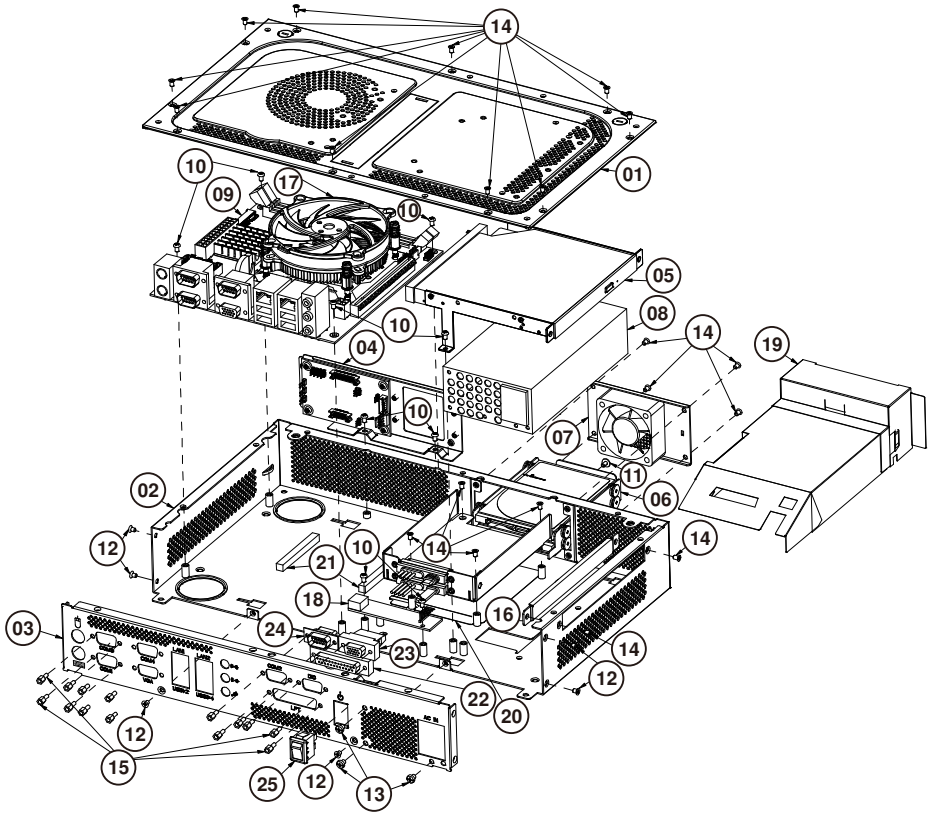
ITEM	COMPONENT NAME	PART No.	Q`TY
1	BR REAR COVER BM0892	80-004-03061328	1
2	BR BASE(w/Paint)(Black)	20-006-02061328	1
3	BR IO FOR SP762X(w/Paint)(Black)	80-006-03061328	1
4	BOARD_MODULE_ASSY_EXP		1
5	DVD_TRAY_ASM_EXP		1
6	PK-7090_HDD_ASSY_EXP		1
7	FAN_50X20_BRACKET_KIT_EXP		1
8	ATX 220W POWER SUPPLY(全漢 FSP220-60LE)	52-001-23220601	1
9	BM-0892 MAIN BOARD	BM-0892RA-00N	1
10	ROUND HEAD SCREW M3x0.5Px5mm	22-230-30005811	7
11	ROUND WASHER HEAD SCREW M3x0.5Px5mm	22-242-30005311	1
12	FLAT HEAD SCREW M3x0.5Px4.5mm(Black)	22-222-30004011	6
13	PAN HEAD SCREW UNC-No.6-32,L=5mm	22-622-60005011	3
14	FLAT HEAD SCREW #2/M3x0.5Px5mm(BLACK)	22-215-30005011	20
15	HEX CU BOSS UNC No.4-40,L=4.8,H=7mm	22-692-40048051	14
16	PPC-7615 CD-ROM DOOR(Black)	20-047-03061168	1
17	CPU HEAT SINK(φ90x13) & FAN(95x95x16mm)L=300mm	21-003-07575001	1
18	SP-7625 THERMAL SHIELD FOR HDD ASSY	90-056-02400328	1
19	SP-7625 CHOCK PIECE	90-056-02300328	1
20	PPC-7615 EVA FOR HEATSINK HOLDER(56.7x6x6mm)	90-013-15100168	2
21	LPT1 CABLE L=280mm	27-004-32806031	1
22	DIO CABLE(15F to 10F)L=270mm	27-071-32806031	1
23	COM PORT CABLE(9M to 10F)L=190mm	27-024-32804031	1
24	POWER SWITCH CABLE L=260mm	27-019-32806071	1

2. With Riser Card Box



ITEM	COMPONENT NAME	PART No.	Q`TY
1	BR REAR COVER BM0892	80-004-03061328	1
2	BR BASE(w/Paint)(Black)	20-006-02061328	1
3	BR IO FOR SP762X(w/Paint)(Black)	80-006-03061328	1
4	BOARD_MODULE_ASSY_EXP		1
5	DVD_TRAY_ASM_EXP		1
6	PK-7090_HDD_ASSY_EXP		1
7	FAN_50X20_BRACKET_KIT_EXP		1
8	ATX 220W POWER SUPPLY(全漢 FSP220-60LE)	52-001-23220601	1
9	BM-0892 MAIN BOARD	BM-0892RA-00N	1
10	ROUND HEAD SCREW M3x0.5Px5mm	22-230-30005811	13
11	ROUND WASHER HEAD SCREW M3x0.5Px5mm	22-242-30005311	1
12	FLAT HEAD SCREW M3x0.5Px4.5mm(Black)	22-222-30004011	6
13	PAN HEAD SCREW UNC-No.6-32,L=5mm	22-622-60005011	5
14	FLAT HEAD SCREW #2/M3x0.5Px5mm(BLACK)	22-215-30005011	33
15	HEX CU BOSS UNC No.4-40,L=4.8,H=7mm	22-692-40048051	14
16	PPC-7615 CD-ROM DOOR(Black)	20-047-03061168	1
17	Touch control board for 5-wire(w/o Cable)(電阻), USB interface(EETI ETP-MB-MER4050UEBG-03,F/W v1.012.4)	52-370-01040504	1
18	RISER CARD	SR-7910RB-01N	1
19	PPC-7615 RISER BOX BOTTOM BASE(Black)	20-032-03063168	1
20	PPC-7615 RISER COVER(Black)	20-004-03062168	1
21	PPC-7615 INTERFACE BRACKET(Black)	20-006-03062168	2
22	CPU HEAT SINK(φ90x13) & FAN(95x95x16mm)L=300mm	21-003-07575001	1
23	SP-7625 THERMAL SHIELD FOR HDD ASSY	90-056-02400328	1
24	SP-7625 CHOCK PIECE	90-056-02300328	1
25	PPC-7615 EVA FOR HEATSINK HOLDER(56.7x6x6mm)	90-013-15100168	2
26	LPT1 CABLE L=280mm	27-004-32806031	1
27	DIO CABLE(15F to 10F)L=270mm	27-071-32806031	1
28	COM PORT CABLE(9M to 10F)L=190mm	27-024-32804031	1
29	POWER SWITCH CABLE L=260mm	27-019-32806071	1

3. Open Frame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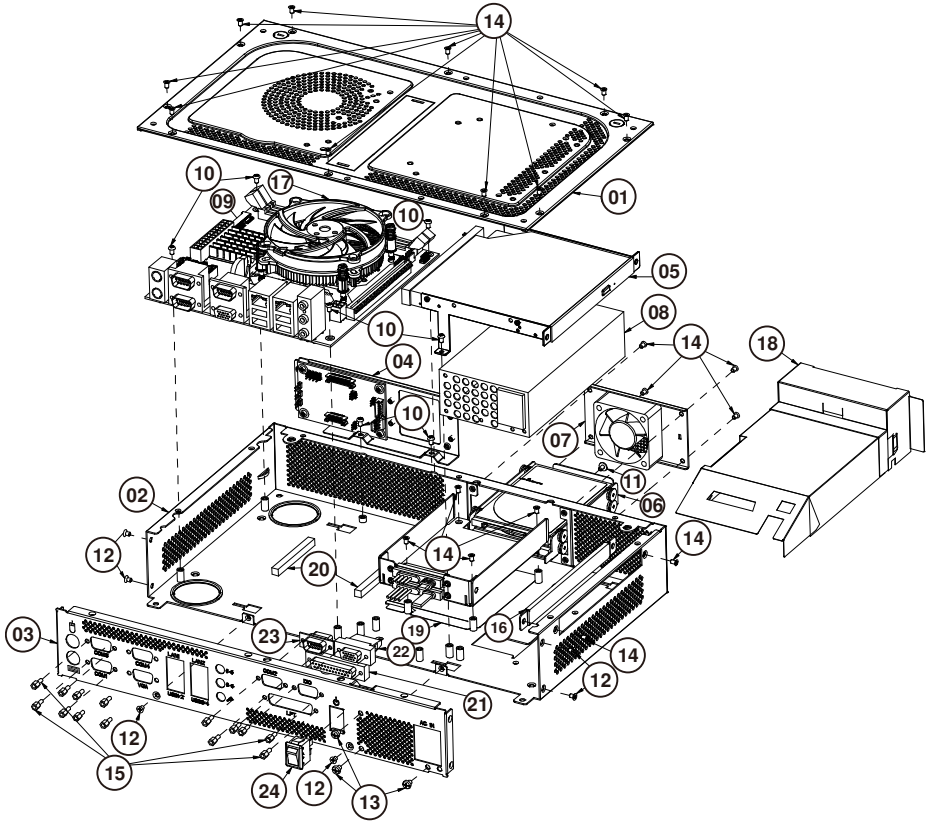
ITEM	COMPONENT NAME	PART No.	Q`TY
1	BR REAR COVER BM0892	80-004-03061328	1
2	BR BASE(w/Paint)(Black)	20-006-02061328	1
3	BR IO FOR SP762X(w/Paint)(Black)	80-006-03061328	1
4	BOARD_MODULE_ASSY_EXP		1
5	DVD_TRAY_ASM_EXP		1
6	PK-7090_HDD_ASSY_EXP		1
7	FAN_50X20_BRACKET_KIT_EXP		1
8	ATX 220W POWER SUPPLY(全漢 FSP220-60LE)	52-001-23220601	1
9	BM-0892 MAIN BOARD	BM-0892RA-00N	1
10	ROUND HEAD SCREW M3x0.5Px5mm	22-230-30005811	9
11	ROUND WASHER HEAD SCREW M3x0.5Px5mm	22-242-30005311	1
12	FLAT HEAD SCREW M3x0.5Px4.5mm(Black)	22-222-30004011	6
13	PAN HEAD SCREW UNC-No.6-32,L=5mm	22-622-60005011	3
14	FLAT HEAD SCREW #2/M3x0.5Px5mm(BLACK)	22-215-30005011	20
15	HEX CU BOSS UNC No.4-40,L=4.8,H=7mm	22-692-40048051	14
16	PPC-7615 CD-ROM DOOR(Black)	20-047-03061168	1
17	CPU HEAT SINK(φ90x13) & FAN(95x95x16mm)L=300mm	21-003-07575001	1
18	Touch control board for 5-wire(w/o Cable)(觸碰),USB interface(EETI ETP-MB-MER4050UEBG-03,F/W v1.012.4)	52-370-01040504	1
19	SP-7625 THERMAL SHIELD FOR HDD ASSY	90-056-02400328	1
20	SP-7625 CHOCK PIECE	90-056-02300328	1
21	PPC-7615 EVA FOR HEATSINK HOLDER(56.7x6x6mm)	90-013-15100168	2
22	LPTI CABLE L=280mm	27-004-32806031	1
23	DIO CABLE(15F to 10F)L=270mm	27-071-32806031	1
24	COM PORT CABLE(9M to 10F)L=190mm	27-024-32804031	1
25	POWER SWITCH CABLE L=260mm	27-019-32806071	1

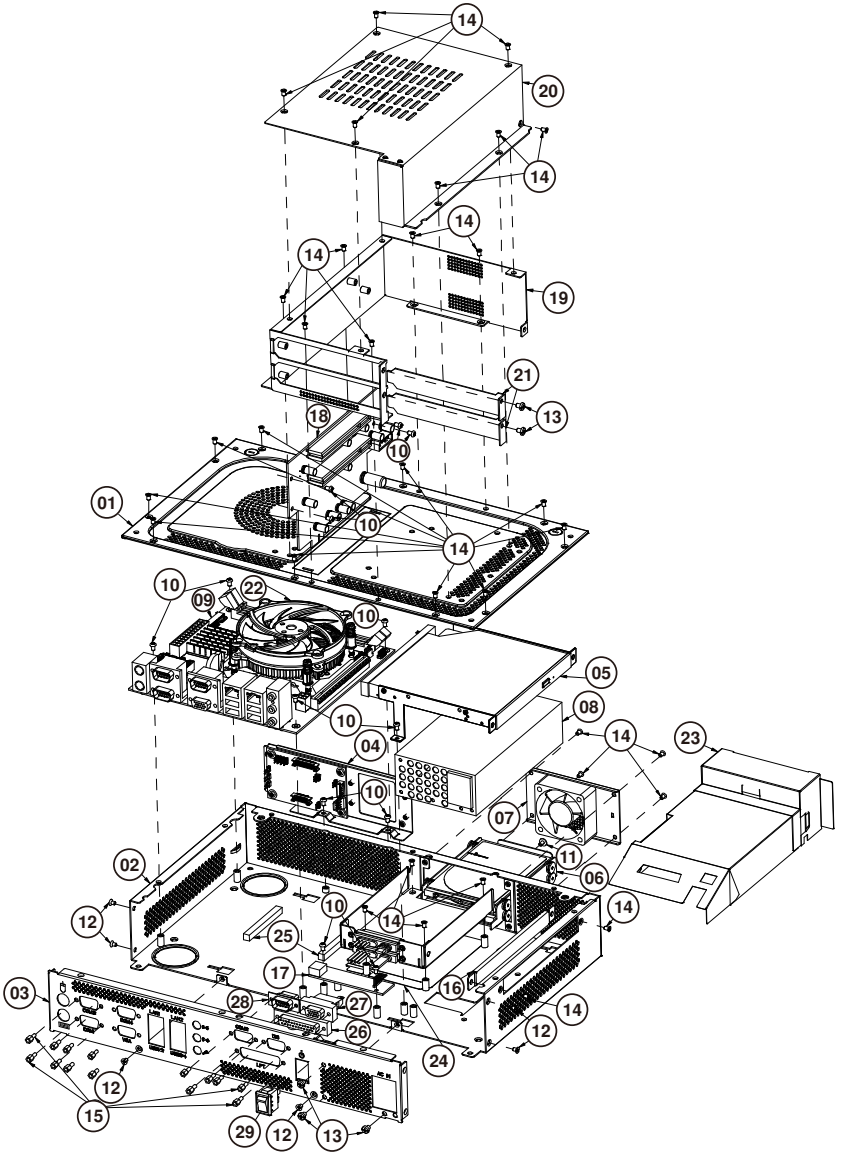
· SP-7629

1. Standard



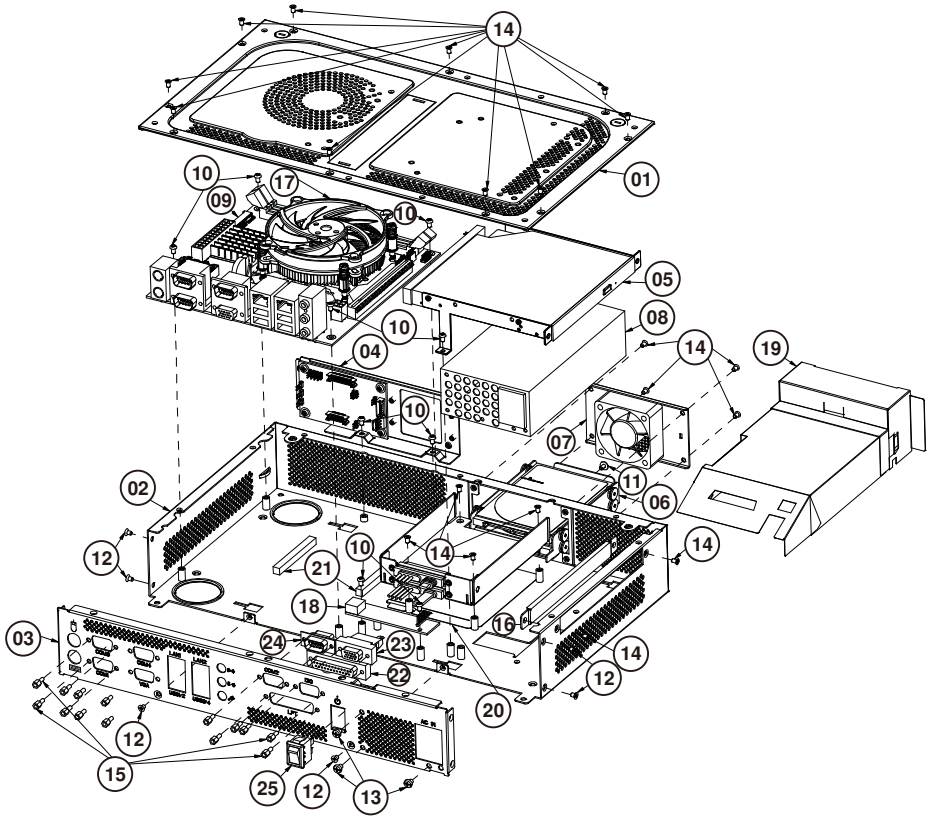
ITEM	COMPONENT NAME	PART No.	Q'TY
1	BR REAR COVER BM0892	80-004-03061328	1
2	BR BASE(w/Paint)(Black)	20-006-02061328	1
3	BR IO FOR SP762X(w/Paint)(Black)	80-006-03061328	1
4	BOARD_MODULE_ASSY_EXP		1
5	DVD_TRAY_ASM_EXP		1
6	PK-7090_HDD_ASSY_EXP		1
7	FAN_50X20_BRACKET_KIT_EXP		1
8	ATX 220W POWER SUPPLY(全漢 FSP220-60LE)	52-001-23220601	1
9	BM-0892 MAIN BOARD	BM-0892RA-00N	1
10	ROUND HEAD SCREW M3x0.5Px5mm	22-230-30005811	7
11	ROUND WASHER HEAD SCREW M3x0.5Px5mm	22-242-30005311	1
12	FLAT HEAD SCREW M3x0.5Px4.5mm(Black)	22-222-30004011	6
13	PAN HEAD SCREW UNC-No.6-32,L=5mm	22-622-60005011	3
14	FLAT HEAD SCREW #2/M3x0.5Px5mm(BLACK)	22-215-30005011	20
15	HEX CU BOSS UNC No.4-40,L=4.8,H=7mm	22-692-40048051	14
16	PPC-7615 CD-ROM DOOR(Black)	20-047-03061168	1
17	CPU HEAT SINK(φ90x13) & FAN(95x95x16mm)L=300mm	21-003-07575001	1
18	SP-7625 THERMAL SHIELD FOR HDD ASSY	90-056-02400328	1
19	SP-7625 CHOCK PIECE	90-056-02300328	1
20	PPC-7615 EVA FOR HEATSINK HOLDER(56.7x6x6mm)	90-013-15100168	2
21	LPTI CABLE L=280mm	27-004-32806031	1
22	DIO CABLE(15F to 10F)L=270mm	27-071-32806031	1
23	COM PORT CABLE(9M to 10F)L=190mm	27-024-32804031	1
24	POWER SWITCH CABLE L=260mm	27-019-32806071	1

2. With Riser Card Box



ITEM	COMPONENT NAME	PART No.	Q`TY
1	BR REAR COVER BM0892	80-004-03061328	1
2	BR BASE(w/Paint)(Black)	20-006-02061328	1
3	BR IO FOR SP762X(w/Paint)(Black)	80-006-03061328	1
4	BOARD_MODULE_ASSY_EXP		1
5	DVD_TRAY_ASM_EXP		1
6	PK-7090_HDD_ASSY_EXP		1
7	FAN_50X20_BRACKET_KIT_EXP		1
8	ATX 220W POWER SUPPLY(全漢 FSP220-60LE)	52-001-23220601	1
9	BM-0892 MAIN BOARD	BM-0892RA-00N	1
10	ROUND HEAD SCREW M3x0.5Px5mm	22-230-30005811	13
11	ROUND WASHER HEAD SCREW M3x0.5Px5mm	22-242-30005311	1
12	FLAT HEAD SCREW M3x0.5Px4.5mm(Black)	22-222-30004011	6
13	PAN HEAD SCREW UNC-No.6-32,L=5mm	22-622-60005011	5
14	FLAT HEAD SCREW #2/M3x0.5Px5mm(BLACK)	22-215-30005011	33
15	HEX CU BOSS UNC No.4-40,L=4.8,H=7mm	22-692-40048051	14
16	PPC-7615 CD-ROM DOOR(Black)	20-047-03061168	1
17	Touch control board for 5-wire(w/o Cable)(電阻式),USB interface(EETI ETP-MB-MER405UEBG-03,F/W v1.012.4)	52-370-01040504	1
18	RISER CARD	SR-7910RB-01N	1
19	PPC-7615 RISER BOX BOTTOM BASE(Black)	20-032-03063168	1
20	PPC-7615 RISER COVER(Black)	20-004-03062168	1
21	PPC-7615 INTERFACE BRACKET(Black)	20-006-03062168	2
22	CPU HEAT SINK(φ90x13) & FAN(95x95x16mm)L=300mm	21-003-07575001	1
23	SP-7625 THERMAL SHIELD FOR HDD ASSY	90-056-02400328	1
24	SP-7625 CHOCK PIECE	90-056-02300328	1
25	PPC-7615 EVA FOR HEATSINK HOLDER(56.7x6x6mm)	90-013-15100168	2
26	LPTI CABLE L=280mm	27-004-32806031	1
27	DIO CABLE(15F to 10F)L=270mm	27-071-32806031	1
28	COM PORT CABLE(9M to 10F)L=190mm	27-024-32804031	1
29	POWER SWITCH CABLE L=260mm	27-019-32806071	1

3. Open Frame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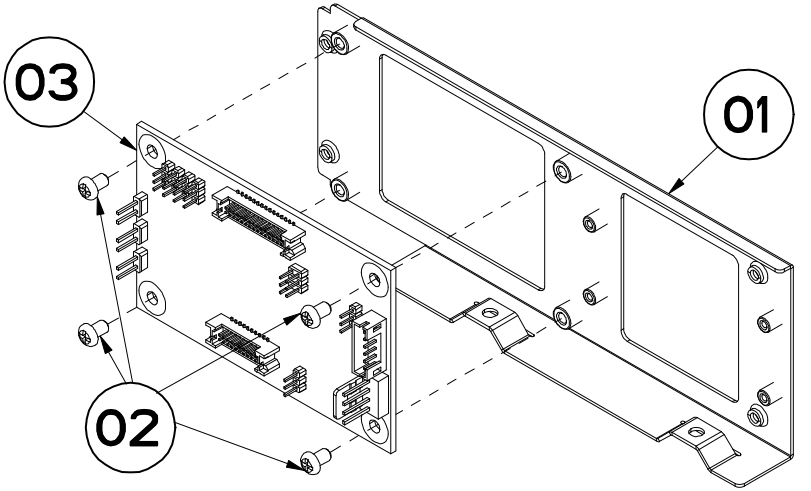
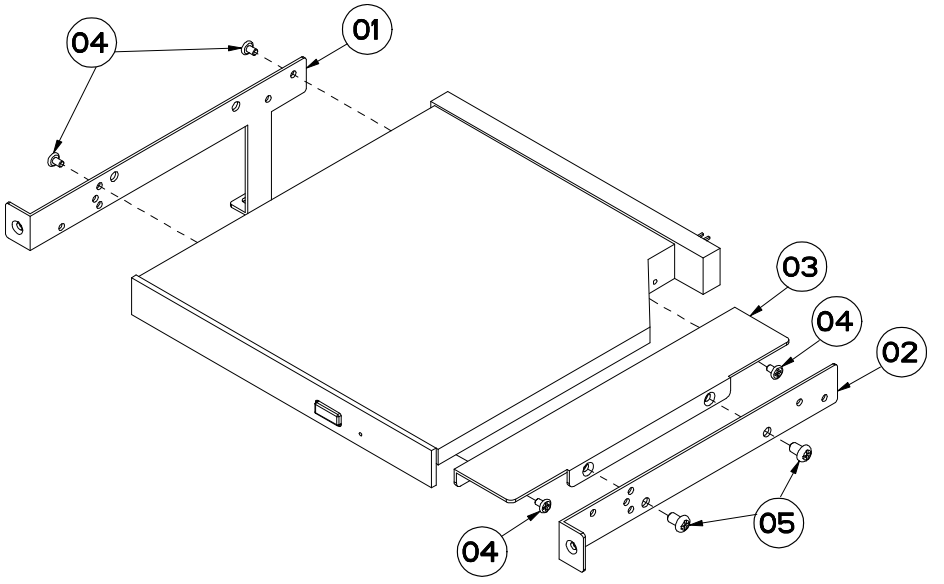
ITEM	COMPONENT NAME	PART No.	Q`TY
1	BR REAR COVER BM0892	80-004-03061328	1
2	BR BASE(w/Paint)(Black)	20-006-02061328	1
3	BR IO FOR SP762X(w/Paint)(Black)	80-006-03061328	1
4	BOARD_MODULE_ASSY_EXP		1
5	DVD_TRAY_ASM_EXP		1
6	PK-7090_HDD_ASSY_EXP		1
7	FAN_50X20_BRACKET_KIT_EXP		1
8	ATX 220W POWER SUPPLY(全漢 FSP220-60LE)	52-001-23220601	1
9	BM-0892 MAIN BOARD	BM-0892RA-00N	1
10	ROUND HEAD SCREW M3x0.5Px5mm	22-230-30005811	9
11	ROUND WASHER HEAD SCREW M3x0.5Px5mm	22-242-30005311	1
12	FLAT HEAD SCREW M3x0.5Px4.5mm(Black)	22-222-30004011	6
13	PAN HEAD SCREW UNC-No.6-32,L=5mm	22-622-60005011	3
14	FLAT HEAD SCREW #2/M3x0.5Px5mm(BLACK)	22-215-30005011	20
15	HEX CU BOSS UNC No.4-40,L=4.8,H=7mm	22-692-40048051	14
16	PPC-7615 CD-ROM DOOR(Black)	20-047-03061168	1
17	CPU HEAT SINK(φ90x13) & FAN(95x95x16mm)L=300mm	21-003-07575001	1
18	Touch control board for 5-wire(w/o Cable)(觸碰),USB interface(EETI ETP-MD-MER4050UEBG-03,F/W v1.012.4)	52-370-01040504	1
19	SP-7625 THERMAL SHIELD FOR HDD ASSY	90-056-02400328	1
20	SP-7625 CHOCK PIECE	90-056-02300328	1
21	PPC-7615 EVA FOR HEATSINK HOLDER(56.7x6x6mm)	90-013-15100168	2
22	LPTI CABLE L=280mm	27-004-32806031	1
23	DIO CABLE(15F to 10F)L=270mm	27-071-32806031	1
24	COM PORT CABLE(9M to 10F)L=190mm	27-024-32804031	1
25	POWER SWITCH CABLE L=260mm	27-019-32806071	1

EXPLODED DIAGRAM FOR BOARD STAND



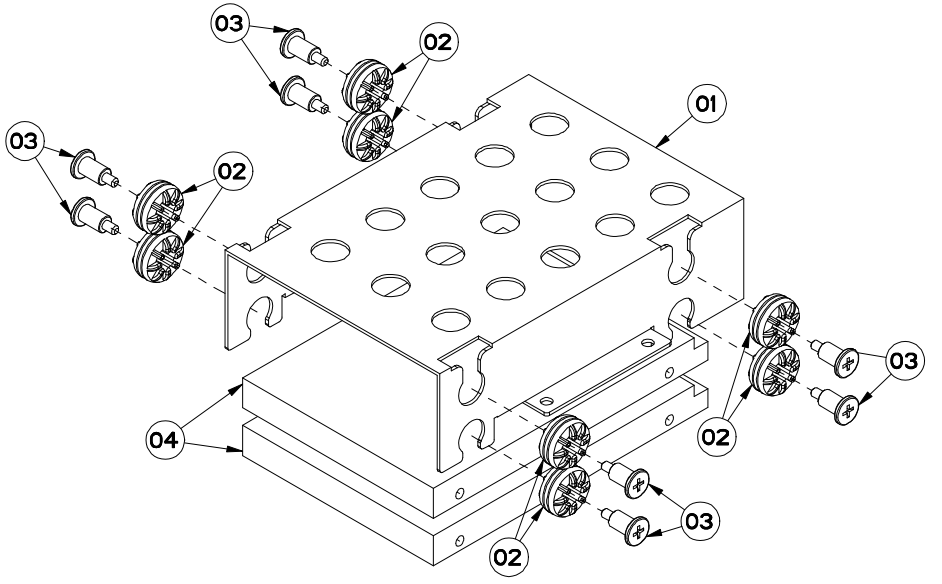
ITEM	COMPONENT NAME	PART No.	Q'TY
1	BOARD STAND	80-017-03001328	1
2	ROUND HEAD SCREW M3x0.5Px5mm	22-230-30005811	4
3	BR-8080	BR-8080RB-00N	1

EXPLODED DIAGRAM FOR CD TRAY



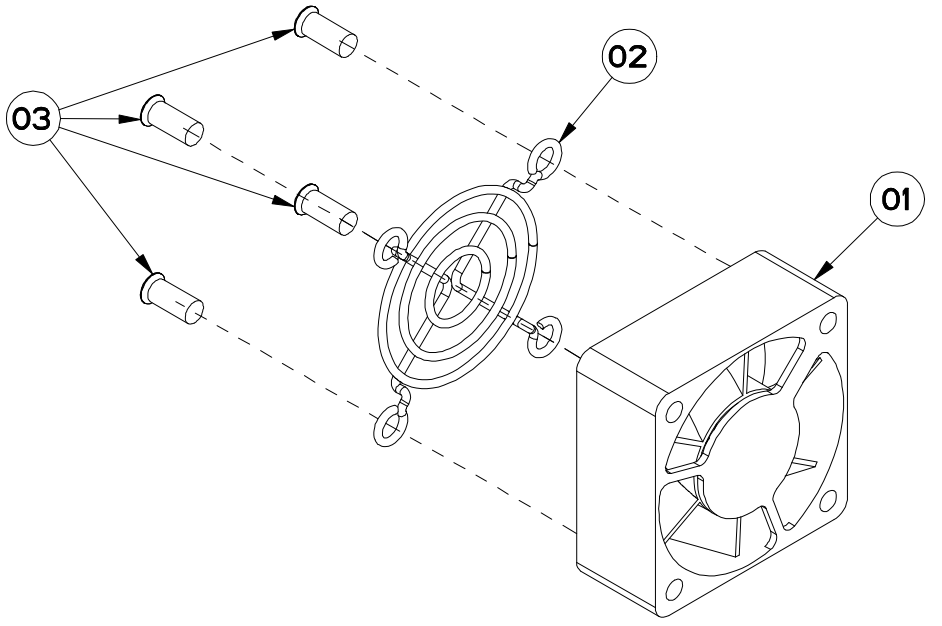
ITEM	COMPONENT NAME	PART No.	Q'TY
1	PPC-7615 CD HOLDER LEFT	20-029-03002168	1
2	PPC-7615 CD HOLDER RIGHT	20-029-03001168	1
3	PPC-7615 AUXILIARY CD TRAY BRACKET	20-006-03004168	1
4	FILLISTR HEAD SCREW M2x0.4Px2.5mm	22-272-20002011	4
5	ROUND HEAD SCREW M3x0.5Px5mm	22-230-30005811	2

EXPLODED DIAGRAM FOR HDD HOLDER



ITEM	COMPONENT NAME	PART No.	Q'TY
1	PPC-7615 HDD HOLDER	20-029-03003168	1
2	SHOCK ABSORB RUBBER	30-013-01100031	8
3	FILLISTER HEAD SCREW M3x0.5Px4L,H=7.6mm	22-272-30128018	8
4	HDD 2.5 Inch		2

EXPLODED DIAGRAM FOR SYSTEM FAN



ITEM	COMPONENT NAME	PART No.	Q'TY
1	SP-7625 SYSTEM FAN(50x50x20mm)L=420mm(ADDA AD5012MB-C76(TI))	21-004-05050184	1
2	SP-7625 50x50 FAN GUARD	20-044-29011328	1
3	FLAT HEAD SCREW #2/T4.7x11mm	82-712-47011018	4

TECHNICAL SUMMARY

APPENDIX

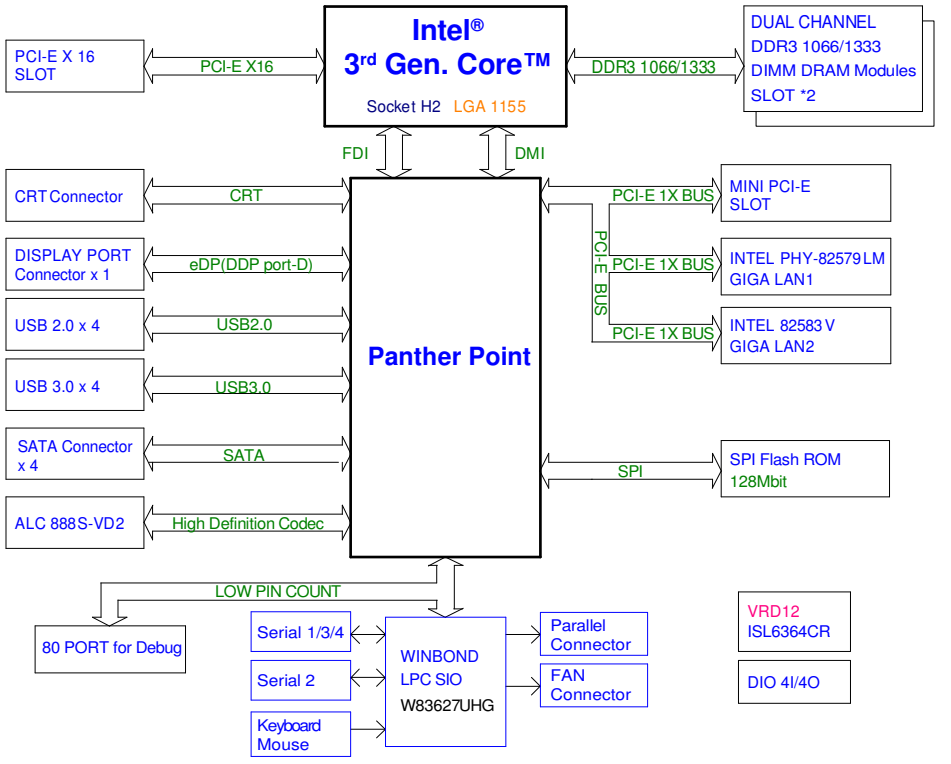
B

This section introduces you the maps concisely.

Section includes:

- Block Diagram
- Interrupt Map
- DMA Channels Map
- I/O Map
- Watchdog Timer Configuration
- Flash BIOS Update

BLOCK DIAGRAM



INTERRUPT MAP

IRQ	ASSIGNMENT
0	System timer
10	Communications Port (COM4)
100	Microsoft ACPI-Compliant System
101	Microsoft ACPI-Compliant System
102	Microsoft ACPI-Compliant System
103	Microsoft ACPI-Compliant System
104	Microsoft ACPI-Compliant System
105	Microsoft ACPI-Compliant System
106	Microsoft ACPI-Compliant System
107	Microsoft ACPI-Compliant System
108	Microsoft ACPI-Compliant System
109	Microsoft ACPI-Compliant System
11	Intel® 7 Series/C216 Chipset Family SMBus Host Controller - 1E22
110	Microsoft ACPI-Compliant System
111	Microsoft ACPI-Compliant System
112	Microsoft ACPI-Compliant System
113	Microsoft ACPI-Compliant System
114	Microsoft ACPI-Compliant System
115	Microsoft ACPI-Compliant System
116	Microsoft ACPI-Compliant System
117	Microsoft ACPI-Compliant System
118	Microsoft ACPI-Compliant System
119	Microsoft ACPI-Compliant System
120	Microsoft ACPI-Compliant System
121	Microsoft ACPI-Compliant System
122	Microsoft ACPI-Compliant System
123	Microsoft ACPI-Compliant System
124	Microsoft ACPI-Compliant System
125	Microsoft ACPI-Compliant System

IRQ	ASSIGNMENT
126	Microsoft ACPI-Compliant System
127	Microsoft ACPI-Compliant System
128	Microsoft ACPI-Compliant System
129	Microsoft ACPI-Compliant System
13	Numeric data processor
130	Microsoft ACPI-Compliant System
131	Microsoft ACPI-Compliant System
132	Microsoft ACPI-Compliant System
133	Microsoft ACPI-Compliant System
134	Microsoft ACPI-Compliant System
135	Microsoft ACPI-Compliant System
136	Microsoft ACPI-Compliant System
137	Microsoft ACPI-Compliant System
138	Microsoft ACPI-Compliant System
139	Microsoft ACPI-Compliant System
140	Microsoft ACPI-Compliant System
141	Microsoft ACPI-Compliant System
142	Microsoft ACPI-Compliant System
143	Microsoft ACPI-Compliant System
144	Microsoft ACPI-Compliant System
145	Microsoft ACPI-Compliant System
146	Microsoft ACPI-Compliant System
147	Microsoft ACPI-Compliant System
148	Microsoft ACPI-Compliant System
149	Microsoft ACPI-Compliant System
150	Microsoft ACPI-Compliant System
151	Microsoft ACPI-Compliant System
152	Microsoft ACPI-Compliant System
153	Microsoft ACPI-Compliant System
154	Microsoft ACPI-Compliant System
155	Microsoft ACPI-Compliant System
156	Microsoft ACPI-Compliant System

IRQ	ASSIGNMENT
157	Microsoft ACPI-Compliant System
158	Microsoft ACPI-Compliant System
159	Microsoft ACPI-Compliant System
16	Intel® 7 Series/C216 Chipset Family USB Enhanced Host Controller - 1E2D
16	Intel® Management Engine Interface
16	Intel® 7 Series/C216 Chipset Family PCI Express Root Port 1 - 1E10
160	Microsoft ACPI-Compliant System
161	Microsoft ACPI-Compliant System
162	Microsoft ACPI-Compliant System
163	Microsoft ACPI-Compliant System
164	Microsoft ACPI-Compliant System
165	Microsoft ACPI-Compliant System
166	Microsoft ACPI-Compliant System
167	Microsoft ACPI-Compliant System
168	Microsoft ACPI-Compliant System
169	Microsoft ACPI-Compliant System
17	Intel® 7 Series/C216 Chipset Family PCI Express Root Port 2 - 1E12
170	Microsoft ACPI-Compliant System
171	Microsoft ACPI-Compliant System
172	Microsoft ACPI-Compliant System
173	Microsoft ACPI-Compliant System
174	Microsoft ACPI-Compliant System
175	Microsoft ACPI-Compliant System
176	Microsoft ACPI-Compliant System
177	Microsoft ACPI-Compliant System
178	Microsoft ACPI-Compliant System
179	Microsoft ACPI-Compliant System
180	Microsoft ACPI-Compliant System
181	Microsoft ACPI-Compliant System

IRQ	ASSIGNMENT
182	Microsoft ACPI-Compliant System
183	Microsoft ACPI-Compliant System
184	Microsoft ACPI-Compliant System
185	Microsoft ACPI-Compliant System
186	Microsoft ACPI-Compliant System
187	Microsoft ACPI-Compliant System
188	Microsoft ACPI-Compliant System
189	Microsoft ACPI-Compliant System
19	Intel® 7 Series/C216 Chipset Family 4 port Serial ATA Storage Controller - 1E00
19	Intel® 7 Series/C216 Chipset Family 2 port Serial ATA Storage Controller - 1E08
19	Intel® Active Management Technology - SOL (COM3)
190	Microsoft ACPI-Compliant System
22	High Definition Audio Controller
23	Intel® 7 Series/C216 Chipset Family USB Enhanced Host Controller - 1E26
3	Communications Port (COM2)
4	Communications Port (COM1)
4294967290	Intel® 82583V Gigabit Network Connection
4294967291	802.11n Wireless LAN Card
4294967292	Intel® 82579LM Gigabit Network Connection
4294967293	Intel® USB 3.0 eXtensible Host Controller
4294967294	Intel® HD Graphics
7	Communications Port (COM3)
8	System CMOS/real time clock
81	Microsoft ACPI-Compliant System
82	Microsoft ACPI-Compliant System
83	Microsoft ACPI-Compliant System
84	Microsoft ACPI-Compliant System
85	Microsoft ACPI-Compliant System
86	Microsoft ACPI-Compliant System

IRQ	ASSIGNMENT
87	Microsoft ACPI-Compliant System
88	Microsoft ACPI-Compliant System
89	Microsoft ACPI-Compliant System
90	Microsoft ACPI-Compliant System
91	Microsoft ACPI-Compliant System
92	Microsoft ACPI-Compliant System
93	Microsoft ACPI-Compliant System
94	Microsoft ACPI-Compliant System
95	Microsoft ACPI-Compliant System
96	Microsoft ACPI-Compliant System
97	Microsoft ACPI-Compliant System
98	Microsoft ACPI-Compliant System
99	Microsoft ACPI-Compliant System

DMA CHANNELS MAP

TIMER CHANNEL	ASSIGNMENT
Channel 4	Direct memory access controller

I/O MAP

I/O MAP	ASSIGNMENT
0x00000000-0x00000CF7	PCI bus
0x00000000-0x00000CF7	Direct memory access controller
0x00000010-0x0000001F	Motherboard resources
0x00000020-0x00000021	Programmable interrupt controller
0x00000022-0x0000003F	Motherboard resources
0x00000024-0x00000025	Programmable interrupt controller
0x00000028-0x00000029	Programmable interrupt controller
0x0000002C-0x0000002D	Programmable interrupt controller
0x0000002E-0x0000002F	Motherboard resources
0x00000030-0x00000031	Programmable interrupt controller
0x00000034-0x00000035	Programmable interrupt controller
0x00000038-0x00000039	Programmable interrupt controller
0x0000003C-0x0000003D	Programmable interrupt controller
0x00000040-0x00000043	System timer
0x00000044-0x0000005F	Motherboard resources
0x0000004E-0x0000004F	Motherboard resources
0x00000050-0x00000053	System timer
0x00000061-0x00000061	Motherboard resources
0x00000062-0x00000063	Motherboard resources
0x00000063-0x00000063	Motherboard resources
0x00000065-0x0000006F	Motherboard resources
0x00000065-0x0000006F	Motherboard resources
0x00000067-0x00000067	Motherboard resources
0x00000070-0x00000077	System CMOS/real time clock
0x00000070-0x00000077	Motherboard resources
0x00000072-0x0000007F	Motherboard resources
0x00000080-0x00000080	Motherboard resources
0x00000080-0x00000080	Motherboard resources
0x00000081-0x00000091	Direct memory access controller
0x00000084-0x00000086	Motherboard resources

I/O MAP	ASSIGNMENT
0x00000088-0x00000088	Motherboard resources
0x0000008C-0x0000008E	Motherboard resources
0x00000090-0x0000009F	Motherboard resources
0x00000092-0x00000092	Motherboard resources
0x00000093-0x0000009F	Direct memory access controller
0x000000A0-0x000000A1	Programmable interrupt controller
0x000000A2-0x000000BF	Motherboard resources
0x000000A4-0x000000A5	Programmable interrupt controller
0x000000A8-0x000000A9	Programmable interrupt controller
0x000000AC-0x000000AD	Programmable interrupt controller
0x000000B0-0x000000B1	Programmable interrupt controller
0x000000B2-0x000000B3	Motherboard resources
0x000000B4-0x000000B5	Programmable interrupt controller
0x000000B8-0x000000B9	Programmable interrupt controller
0x000000BC-0x000000BD	Programmable interrupt controller
0x000000C0-0x000000DF	Direct memory access controller
0x000000E0-0x000000EF	Motherboard resources
0x000000F0-0x000000FF	Numeric data processor
0x00000290-0x00000297	Motherboard resources
0x000002E8-0x000002EF	Communications Port (COM4)
0x000002F8-0x000002FF	Communications Port (COM2)
0x00000378-0x0000037F	Printer Port (LPT1)
0x000003B0-0x000003BB	Intel® HD Graphics
0x000003C0-0x000003DF	Intel® HD Graphics
0x000003E8-0x000003EF	Communications Port (COM3)
0x000003F8-0x000003FF	Communications Port (COM1)
0x00000400-0x00000453	Motherboard resources
0x00000454-0x00000457	Motherboard resources
0x00000458-0x0000047F	Motherboard resources
0x000004D0-0x000004D1	Motherboard resources
0x000004D0-0x000004D1	Programmable interrupt controller
0x00000500-0x0000057F	Motherboard resources

I/O MAP	ASSIGNMENT
0x00000680-0x0000069F	Motherboard resources
0x00000D00-0x0000FFFF	PCI bus
0x00001000-0x0000100F	Motherboard resources
0x0000164E-0x0000164F	Motherboard resources
0x0000E000-0x0000EFFF	Intel® 7 Series/C216 Chipset Family PCI Express Root Port 2 - 1E12
0x0000F000-0x0000F03F	Intel® HD Graphics
0x0000F040-0x0000F05F	Intel® 7 Series/C216 Chipset Family SMBus Host Controller - 1E22
0x0000F080-0x0000F08F	Intel® 7 Series/C216 Chipset Family 2 port Serial ATA Storage Controller - 1E08
0x0000F090-0x0000F09F	Intel® 7 Series/C216 Chipset Family 2 port Serial ATA Storage Controller - 1E08
0x0000F0A0-0x0000F0A3	Intel® 7 Series/C216 Chipset Family 2 port Serial ATA Storage Controller - 1E08
0x0000F0B0-0x0000F0B7	Intel® 7 Series/C216 Chipset Family 2 port Serial ATA Storage Controller - 1E08
0x0000F0C0-0x0000F0C3	Intel® 7 Series/C216 Chipset Family 2 port Serial ATA Storage Controller - 1E08
0x0000F0D0-0x0000F0D7	Intel® 7 Series/C216 Chipset Family 2 port Serial ATA Storage Controller - 1E08
0x0000F0E0-0x0000F0EF	Intel® 7 Series/C216 Chipset Family 4 port Serial ATA Storage Controller - 1E00
0x0000F0F0-0x0000F0FF	Intel® 7 Series/C216 Chipset Family 4 port Serial ATA Storage Controller - 1E00
0x0000F100-0x0000F103	Intel® 7 Series/C216 Chipset Family 4 port Serial ATA Storage Controller - 1E00
0x0000F110-0x0000F117	Intel® 7 Series/C216 Chipset Family 4 port Serial ATA Storage Controller - 1E00
0x0000F120-0x0000F123	Intel® 7 Series/C216 Chipset Family 4 port Serial ATA Storage Controller - 1E00
0x0000F130-0x0000F137	Intel® 7 Series/C216 Chipset Family 4 port Serial ATA Storage Controller - 1E00
0x0000F140-0x0000F147	Intel® Active Management Technology - SOL (COM3)

I/O MAP	ASSIGNMENT
0x0000FFFF-0x0000FFFF	Motherboard resources
0x0000FFFF-0x0000FFFF	Motherboard resources

MEMORY MAP

MEMORY MAP	ASSIGNMENT
0xA0000-0xBFFFF	PCI bus
0xA0000-0xBFFFF	Intel® HD Graphics
0xD4000-0xD7FFF	PCI bus
0xD8000-0xDBFFF	PCI bus
0xDC000-0xDFFFF	PCI bus
0xE0000-0xE3FFF	PCI bus
0xE4000-0xE7FFF	PCI bus
0xDFA00000-0xFEAFFFFF	PCI bus
0xDFA00000-0xFEAFFFFF	Motherboard resources
0xF7C00000-0xF7CFFFFF	Intel® 7 Series/C216 Chipset Family PCI Express Root Port 2 - 1E12
0xF7C00000-0xF7CFFFFF	Intel® 82583V Gigabit Network Connection
0xFED40000-0xFED44FFF	System board
0x20000000-0x201FFFFF	System board
0x40004000-0x40004FFF	System board
0xF7E30000-0xF7E33FFF	High Definition Audio Controller
0xFED1C000-0xFED1FFFF	Motherboard resources
0xFED10000-0xFED17FFF	Motherboard resources
0xFED18000-0xFED18FFF	Motherboard resources
0xFED19000-0xFED19FFF	Motherboard resources
0xF8000000-0xFBFFFFFF	Motherboard resources
0xFED20000-0xFED3FFFF	Motherboard resources
0xFED90000-0xFED93FFF	Motherboard resources
0xFED45000-0xFED8FFFF	Motherboard resources
0xFF000000-0xFFFFFFFF	Motherboard resources
0xFF000000-0xFFFFFFFF	Intel® 82802 Firmware Hub Device
0xFEE00000-0xFEEFFFFF	Motherboard resources
0xF7800000-0xF7BFFFFF	Intel® HD Graphics
0xE0000000-0xEFFFFFFF	Intel® HD Graphics
0xF7E35000-0xF7E350FF	Intel® 7 Series/C216 Chipset Family SMBus Host Controller - 1E22

MEMORY MAP	ASSIGNMENT
0xF7E00000-0xF7E1FFFF	Intel® 82579LM Gigabit Network Connection
0xF7E38000-0xF7E38FFF	Intel® 82579LM Gigabit Network Connection
0xF7E36000-0xF7E363FF	Intel® 7 Series/C216 Chipset Family USB Enhanced Host Controller - 1E26
0xF7C20000-0xF7C23FFF	Intel® 82583V Gigabit Network Connection
0xF7E37000-0xF7E373FF	Intel® 7 Series/C216 Chipset Family USB Enhanced Host Controller - 1E2D
0xF7E20000-0xF7E2FFFF	Intel® USB 3.0 eXtensible Host Controller
0xFED00000-0xFED003FF	High precision event timer
0xF7E3B000-0xF7E3B00F	Intel® Management Engine Interface
0xF7D00000-0xF7D0FFFF	802.11n Wireless LAN Card
0xF7D00000-0xF7D0FFFF	Intel® 7 Series/C216 Chipset Family PCI Express Root Port 1 - 1E10
0xF7E39000-0xF7E39FFF	Intel® Active Management Technology - SOL (COM3)

WATCHDOG TIMER CONFIGURATION

The I/O port address of the watchdog timer is 2E (hex) and 2F (hex). 2E (hex) is the address port. 2F (hex) is the data port. User must first assign the address of register by writing address value into address port 2E (hex), then write/read data to/from the assigned register through data port 2F (hex).

Configuration Sequence

To program W83627UHG configuration registers, the following configuration sequence must be followed:

(1) Enter the extended function mode

(2) Configure the configuration registers

(3) Exit the extended function mode

(1) Enter the extended function mode

To place the chip into the Extended Function Mode, two successive writes of 0x87 must be applied to Extended Function Enable Registers (EFERs, i.e. 2Eh or 4Eh).

(2) Configure the configuration registers

The chip selects the Logical Device and activates the desired Logical Devices through Extended Function Index Register (EFIR) and Extended Function Data Register (EFDR). The EFIR is located at the same address as the EFER, and the EFDR is located at address (EFIR+1). First, write the Logical Device Number (i.e. 0x07) to the EFIR and then write the number of the desired Logical Device to the EFDR. If accessing the Chip (Global) Control Registers, this step is not required. Secondly, write the address of the desired configuration register within the Logical Device to the EFIR and then write (or read) the desired configuration register through the EFDR.

(3) Exit the extended function mode

To exit the Extended Function Mode, writing 0xAA to the EFER is required. Once the chip exits the Extended Function Mode, it is in the normal running mode and is ready to enter the configuration mode.

Code example for watchdog timer

Enable and start watchdog timer, then set 30 seconds as the timeout interval.

```
;------ Enter to extended function mode ------------------------------------------------------
mov     dx,     2eh
mov     al,     87h
out     dx,     al
out     dx,     al
;------ Select Logical Device 8 of watchdog timer ----------------------------------------
mov     al,     07h
out     dx,     al
inc     dx
mov     al,     08h
out     dx,     al
;------ Enable Watch dog feature ---------------------------------------------------------------
mov     al,     030h
out     dx,     al
inc     dx
mov     al,     01h
out     dx,     al
;------ Set second as counting unit ------------------------------------------------------------
dec     dx
mov     al,     0f5h
out     dx,     al
inc     dx
in      al,     dx
and     al,     not 08h
out     dx,     al
;------ Set timeout interval as 30seconds and start counting ----------------------------------
dec     dx
mov     al,     0f6h
out     dx,     al
inc     dx
```

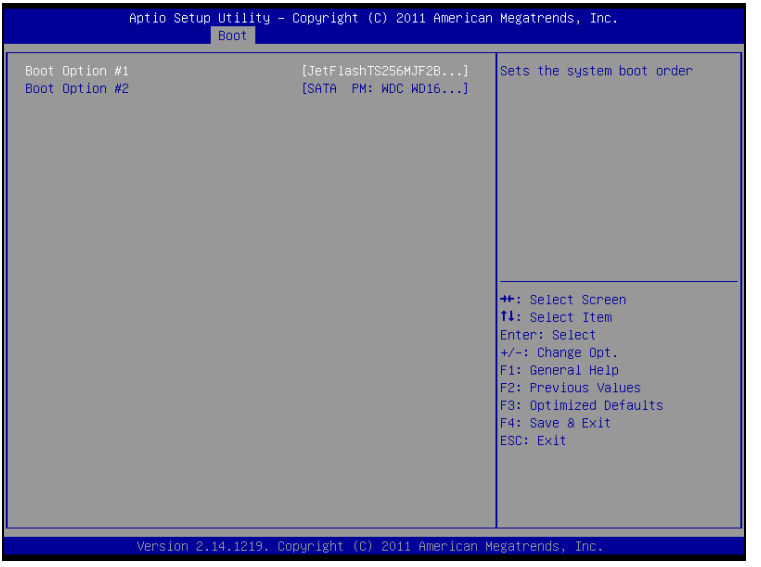
```
mov     al,     30
out     dx,     al
;------ Exit the extended function mode ------------------------------------------------------
dec     dx
mov     al,     0aah
out     dx,     al
```

FLASH BIOS UPDATE

Note: Take **SP-7625** for example.

I. Before system BIOS update

1. Prepare a bootable media (e.g. USB storage device) which can boot system to DOS prompt.
2. Download and save the BIOS file (e.g. 76250PD1.bin) to the bootable device.
3. Copy AMI flash utility – AFUDOS.exe (V3.04) into the bootable device
4. Make sure the target system can first boot to the bootable device.
   a. Connect the bootable USB device.
   b. Turn on the computer and press <Del> or <F2l> key during boot to enter BIOS setup menu.
   c. System will go into the BIOS setup menu.
   d. Select [Boot] menu as the picture shows below.
   e. Select [Hard Drive BBS Priorities], set the USB bootable device as the 1st boot device.
   f. Press <F4> key to save configuration and exit the BIOS setup menu.



II. AFUDOS command for system BIOS update

AFUDOS.exe is aforementioned AMI firmware update utility; the command line is shown as below:

AFUDOS <ROM File Name> [option1] [option2]…

You can type AFUDOS /? to see all the definition of each control options. The recommended options for BIOS ROM update consist of following parameters:

/P: program main BIOS image
/B: program Boot Block
/N: program NVRAM
/X: don't check ROM ID

III. BIOS update procedure

1. Use the bootable USB device to boot up system into the MS-DOS command prompt
2. Type in AFUDOS 7625xxxx.bin /p /b /n /x and press enter to start the flash procedure

   Note: xxxx means the BIOS revision part, ex. 0PD1…
3. During the update procedure, you will see the BIOS update process status and its percentage. Beware! Do not turn off or reset your computer before the update is complete, or it may crash the BIOS ROM and make the system unable to boot up next time. The whole update process may take up to 3 minutes.
4. After the BIOS update is complete, the messages from AFUDOS utility should be like the figure shown below.

```
C:\>afudos 76250PD1.in /p /b /n /x

+-------------------------------------------------+
|             AMI Firmware Update Utility     v3.04.00            |
|  Copyright (C) 2012 American Megatrends Inc. All Rights Reserved.  |
+-------------------------------------------------+

Reading flash ..... done
- ME Data Size checking . ok
- FFS checksums ..... ok
Erasing Boot Block ..... done
Updating Boot Block ..... done
Verifying Boot Block ..... done
Erasing Main Block ..... done
Updating Main Block ..... done
Verifying Main Block ..... done
Erasing NVRAM Block ..... done
Updating NVRAM Block ..... done
Verifying NVERAM Block ..... done

C:\>
```

5. You can restart the system and boot up with new BIOS now
6. Update is complete after restart
7. Verify during the following boot that BIOS version displayed at the initialization screen has changed.


American
Megatrends
Version: 2.15.1234. Copyright (C) 2012 American Magatrends, Inc.
BIOS Date: 06/30/2014 15:31:18 Ver: 76250PD1
Press <CTRL + P> to enter MEBX setup menu.
Press <DEL> or <ESC> to enter setup.
B2