USER MANUAL

KF-7130

Kiosk System Powered By Intel® Bay Trail Platform

KF-7130 M1

KF-7130 17" Projected Capacitive Touch Kiosk
With 18.5" Second Display

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 may occur when the battery is incorrectly replaced. Replace the battery 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. We strongly recommend that only qualified engineers are allowed to open and disassemble the system. Please operate the LCD and Touchscreen with extra care as they can be broken easily.

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1 **Introduction**

This chapter provides the information for the KF-7130
Kiosk. It describes how to set up the system quickly and
outlines the system specifications.

The following topics are included:

- About This Manual
- Kiosk System Diagram
- Quick Setup
- System Specification
- OS Specification
- API Specification
- Safety Precautions

**Experienced users can go to Chapter 2 System
Configuration on page 2-1 for a quick start.**

1.1   About This Manual

Thank you for purchasing our KF-7130 Kiosk System. The KF-7130 is an updated system designed to be comparable with the highest performance of IBM AT personal computers. The KF-7130 provides faster processing speed, greater expandability and can handle more tasks than before. This manual is designed to assist you how to install and set up the whole system. It contains four chapters and three appendixes. Users can configure the system according to their own needs.

Chapter 1 Introduction

This chapter introduces you to the background of this manual. It also includes the physical illustrations, quick setup and specifications for the KF-7130 system. The final section of this chapter indicates some safety reminders on how to take care of your system properly.

Chapter 2 System Configuration

This chapter outlines the locations of the motherboard and sensor board components and their respective functions. You will learn how to set the jumpers and configure the system to meet your own needs.

Chapter 3 Software Utilities

This chapter contains helpful information for proper installations of the Intel Chipset Software Installation Utility, VGA Driver Utility, LAN Driver Utility, Sound Driver Utility, and Touch Screen Driver Utility.

Chapter 4 AMI BIOS Setup

This chapter indicates you how to change the BIOS configurations.

Appendix A System Assembly Diagrams

This appendix provides the exploded diagrams and part numbers of the KF-7130.

Appendix B Technical Summary

This appendix provides the information about the allocation maps for the system block diagram, system resources, Watchdog Timer Configuration, .Flash BIOS Update and ACPI functions list.

1.2 Kiosk System Diagrams

Unit: mm

1.2.1 Front View
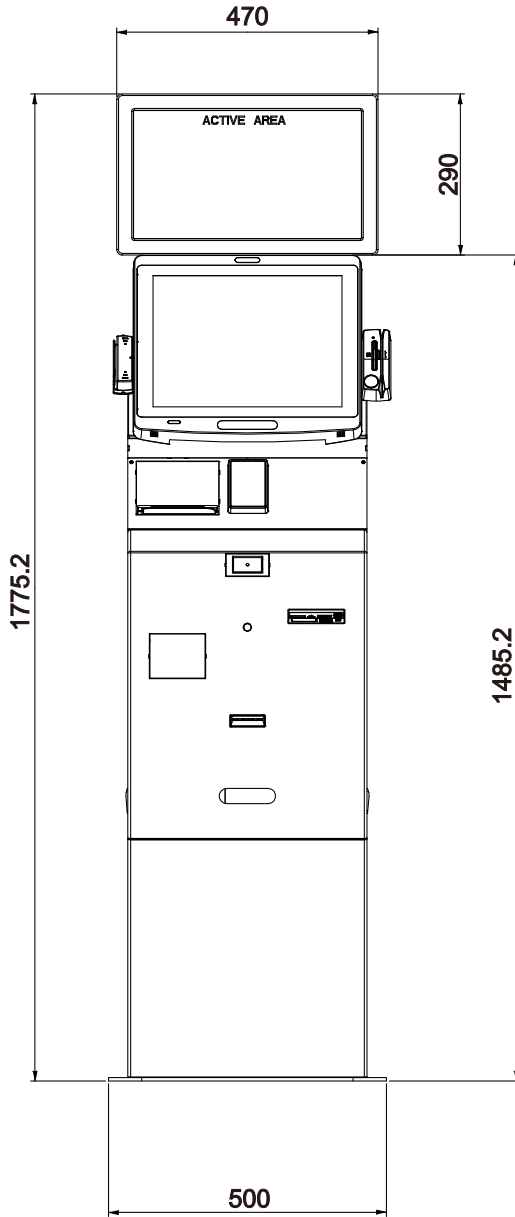
1.2.2   Rear View
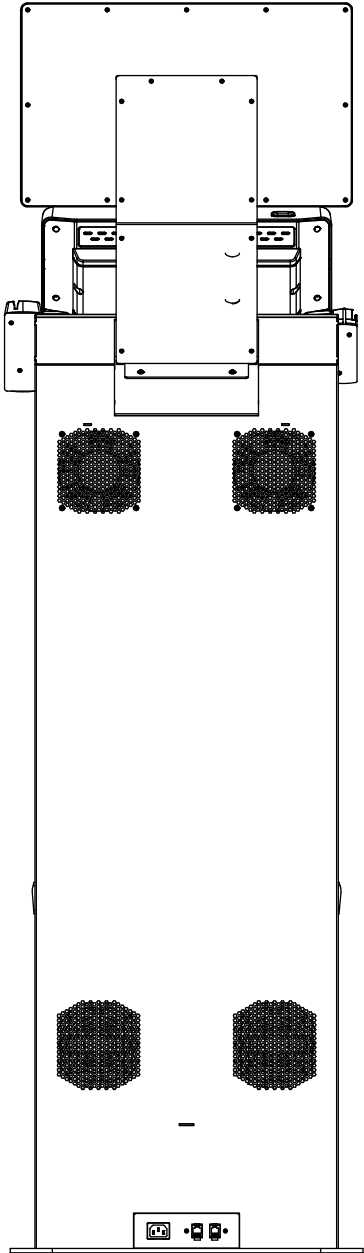
1.2.3   Top View
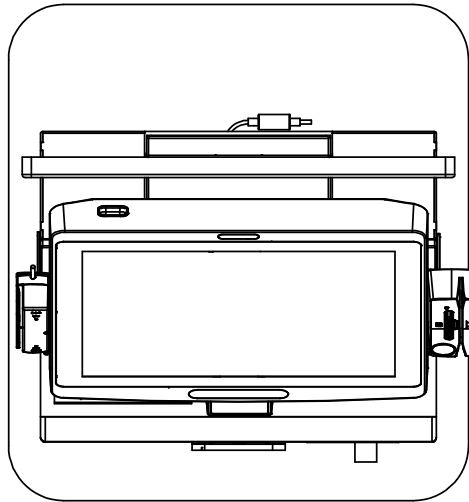
1.2.4   Quarter View
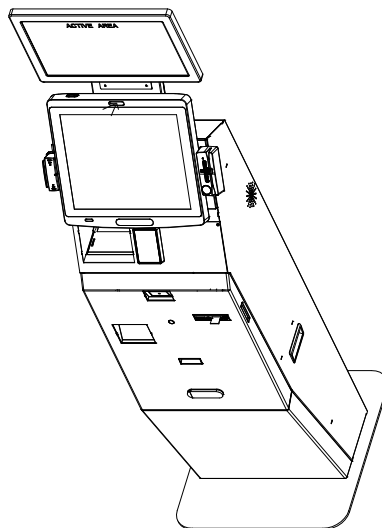
1.2.5 Side View

Unit: mm
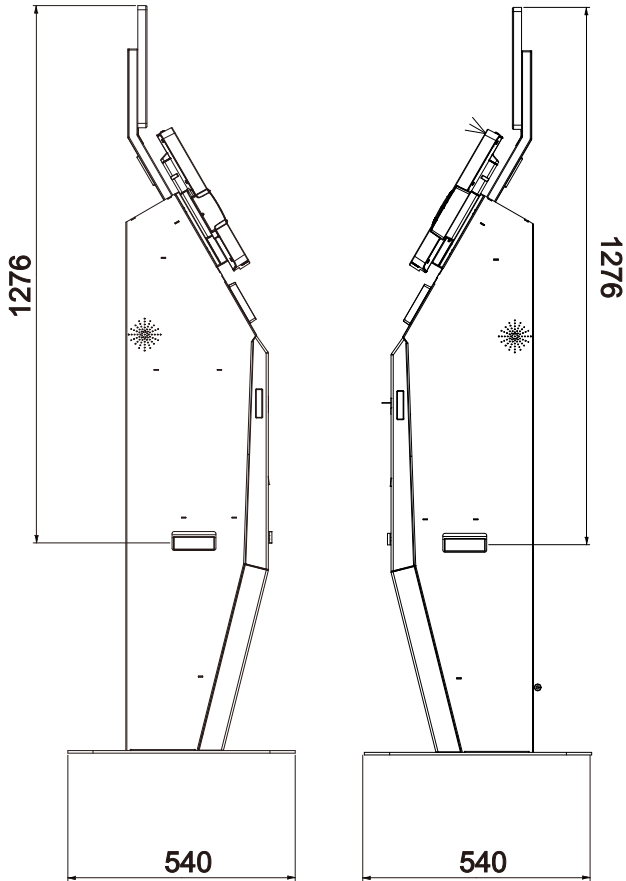
1.3   Quick Setup
1.3.1   Power On KF-7130 and Connect to the Network

Connect the AC power cord to the AC power jack located on the rear side of the kiosk system and plug the other end to an AC power outlet. Connect the Ethernet cable to the LAN port on the back of the system and the other end of the network cable to a port on your hub, switch or router. See the figure shown below:
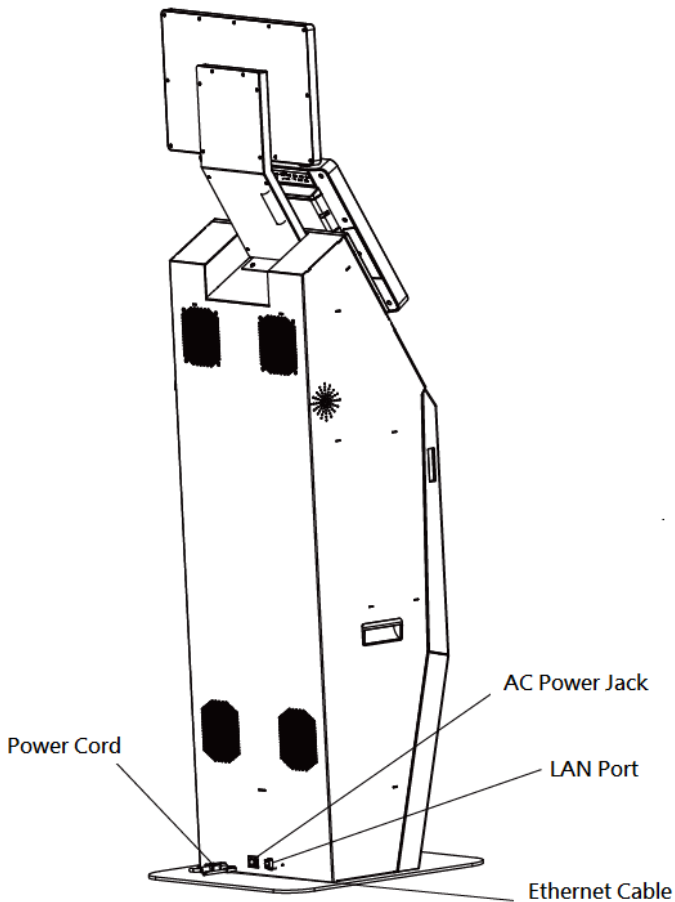
Figure 1-1. Connect KF-7130 to the Network and Power

1.3.2   Installing Paper Roll Axis

1. Unlock the front door and open it.
2. Install the paper roll axis into the paper roll.
3. Install paper roll onto the paper holder as shown below:
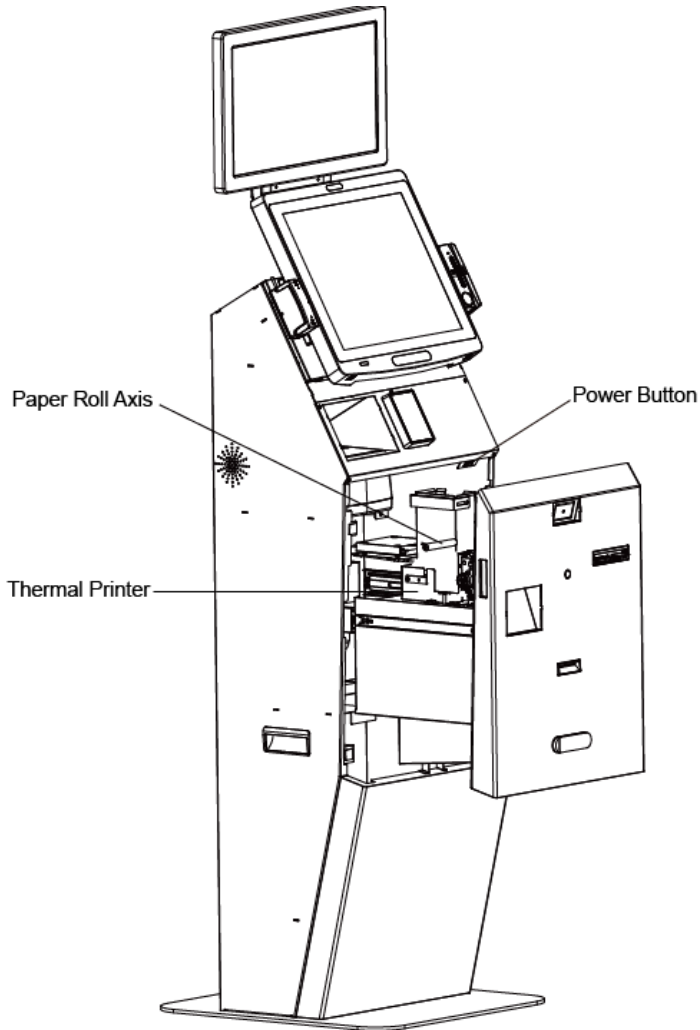
Figure 1-2. Installing Paper Roll Axis

1.4 System Specifications

Operator Display (LCD)	Type	17 inch (4:3)
	Resolution	18/24bit LVDS 1280x1024 dots SXGA
	Brightness	Typical 350 cd/m^2
	View Angle	Horizontal : (R) 85°/(L) 85° Vertical : (U) 80°/(L) 80°
	Estimated luminance lifetime	50,000h
	Backlight	LED Backlight
Customer Display (LCD) (Option)	Type	18.5 inch (16:9)
	Resolution	18/24bit LVDS 1366x768 dots WXGA
	Brightness	typical 300 cd/m^2
	View Angle	Horizontal : 170° Vertical : 160°
	Estimated luminance lifetime	50,000h
	Backlight	LED Backlight
Operator Touch Panel (P-CAP)	Type	17" Bezel free P-CAP
	Interface	USB
CPU	FCBGA1170 Socket	Intel® Celeron J1900
Chipset	Intel platform	Bay Trail SoC
Memory	1x So-DDR3 slot	4GB 204pin PC3-12800(DDR3L-1600)SODIMM Based on 512Mx8

Storage (HDD)	Type	500GB 2.5" SATA Ⅲ HDD 5,400rpm,8MB cache
	Interface	eSATA
BIOS	AMI BIOS	SPI Flash ROM
Kiosk System Fan	Type	DC FAN(120x120x38mm)
Speaker	Type	2x 5W HD speaker
LED Indicator	1x Green LED	Located on the front end of PPC and indicates the Power ON status.
Power Adapter	Type	120W Power Adapter
Dimension	W x H x D	500mm (W)x 540mm (D) x 1775mm (H) (with 2nd display)
Weight	Kg	85Kg
Temperature	Operating temp.	5°C ~ 35°C
	Storage temp.	0°C ~ 60°C
Humidity	Operating humidity	20~85H (no condensation)
	Storage humidity	20~85H (no condensation)
	IP54	Front End of PPC only
Power	AC input	AC 100-240V , 7.2A , 50-60HZ
Integrated Device		
MSR+IC	Interface	USB 2.0 * 1

Card+RFID (Option)	Specification	- Chip card reader can read/write ISO ID-1 size of smart card which follows ISO7816 / EMV specification and synchronous memory cards ex. SLE4432/4442, SLE4418/4428 and SLE4436/6636. - ID-1 card dimension: 85.6 x 53.98 x 0.76 (mm) - ISO14443A _ reader & writer - Mifare serial
	Type	Document Reader
MRZ Passport Reader (Option)	Interface	USB 2.0 * 1
	Specification	- ICAO compliant documents in near infrared (IR) 875nm per ICAO 9303 specification Parts 1-4. - Near ICAO compliant travel documents such as French ID cards.
	Type	Full Page Reader
Full Page Passport Reader (Option)	Interface	USB 2.0 * 1
	Specification	- ICAO compliant documents in near infrared (IR) per ICAO 9303 specification. 1D barcodes (2 of 5 interleaved, 2 of 5 industrial, Code 128, and Code 39) from paper documents and some mobile devices. 2D barcodes used on BCBP and other documents (PDF 417, QR CodeR, DataMatrix™ and Aztec formats) from paper documents and some mobile devices.
RFID Reader	Interface	USB 2.0 * 1

(Option)	Specification	• ISO14443 Type A & B communication scheme • Support the ISO18092 NFCIP-1 standard • Reads/Writes NXP Mifare Plus / Class / Ultralight / DESFire cards • NFC Peer-to-Peer function • Certification American Express$^{®}$ ExpressPay$^{®}$ Discover® Network ZipSM MasterCard$^{®}$ PayPass M/Chip™ Visa$^{®}$ payWave qVSDC Google wallet ISIS wallet
Barcode scanner (Option)	Interface	USB 2.0 * 1
	Specification	• **1D** UPC-A , UPC-E , EAN-8 , EAN-13 , UCC/EAN-128 , Code 39 , Code 93, Interleaved 2 of 5 ,Codabar, MSI , GS1 DataBar • **2D** PDF 417, MicroPDF417 , Datamatrix , QR Code , MaxiCode
Media Card	Interface	USB 2.0 *2

Reader(Option)	Specification	• **CF/MicroDrive Socket** - CompactFlash Spec v3.0, v4.0, v5.0, v6.0 - Compact Flash Type-I/II (CF) - UDMA Mode 4/5/6/7 supported (Update to 512GB) • **SD/MMC Socket** - Secure Digital™ (SD) - Secure Digital High Capacity (SDHC / UHS-I, Update to 256GB) - Secure Digital eXtended Capacity (SDXC / UHS-I / Update to 256GB) - Mini-Secure DigitalTM (MiniSD) - Mini-Secure DigitalTM (miniSDHC)
Thermal Printer (Option)	Interface	USB 2.0 * 1
	Specification	General use thermal printer Printer speed : 250mm/sec Paper width : 79.5mm (3.13") Paper thickness : 56 to 150μ m {0.0022" to 0.0059" } Cutter : Auto cutter with one point left Ticket use thermal printer Printer speed : 250mm/sec Paper width : 82.5mm (3.25") meet ATB1 standard Paper thickness : 56 to 186μ m {0.0022" to0.0073" } Cutter : Auto cutter with one point left
Card dispenser	Interface	RS-232 * 2

+ RFID Module(Option)	Specification	Card type: Max. Card Width & Card Length ISO 7816
		Card type: Max. Card Thickness 0.22 ~ 1.0 mm
		RF reader: Supported card types: Mifare1K/4K; Ultra Light; ISO7816
		RF reader : Auto detecting card: Supported
		RF reader : EEPROM 512 bytes
	Ultrasonic sensor	Centra frequency　40.0　1.0KHz
Motion Sensor	Detection distance	350mm ~ 1000mm
	Detection Angle	Horizonal　: +/- 30 degree
		Vertical　: +/- 30 degree
	Tolerance	+/- 50mm
	Tolerance	+/- 50mm
External I/O Port		
LAN Port	Type	1x RJ45 8pin connector
Phone Port	Type	1x RJ11 6pin connector

1.5　OS Specification

OS	Description
Windows® 7 Pro FES	If hardware supports 64bit, then the OS spec is both 64bit and 32bit.
Windows® 7 Ultimate FES	
Windows® Embedded Standard 7 / WS7E	Follow Protech standard OS spec.
Windows® Embedded Standard 7 / WS7P	.

OS	Description
POSReady 7	OS spec is 32bit / traditional Chinese

1.6　API Specification
- Watch Dog Timer API
- Digit I/O API
- Hardware Monitor API
- USB power API
- RS232 power API
- VoIP switch API
- Barcode scanner camera API
- Card Dispensers API
- Pin-Pad API
- IC Card Reader API
- RFID/NFC API
- Passport Reader API
- Virtual Keyboard API

1.7　Safety Precautions

Before operating this system, read the following information carefully to protect your systems from damages, and extend the life cycle of the system.

1. Check the Line Voltage
   - The operating voltage for the power supply should be within the range of 100V to 240V AC; otherwise the system may be damaged.

2. Environmental Conditions
   - Place your KF-7130 on a sturdy, level surface. Be sure to allow enough space around the system to have easy access needs.
   - Avoid installing your KF-7130 Kiosk system in extremely hot or cold places.
   - Avoid direct sunlight exposure for a long period of time (for example, in a closed car in summer time. Also avoid the system from any heating device.). Or do not use KF-7130 when it has been left outdoors in a cold winter day.
   - Bear in mind that the operating ambient temperature is between 5°C and 35°C (41°F and 95°F).
   - Avoid moving the system rapidly from a hot place to a cold place, and vice versa, because condensation may occur inside the system.
   - Protect your KF-7130 from strong vibrations which may cause hard disk failure.
   - Do not place the system too close to any radio-active device. Radio-active

device may cause signal interference.
- Always shut down the operating system before turning off the power.

3. Handling
   - Avoid placing heavy objects on the top of the system.
   - Do not turn the system upside down. This may cause the hard drive to malfunction.
   - Do not allow any objects to fall into this device.
   - If water or other liquid spills into the device, unplug the power cord immediately.

4. Good Care
   - When the outside case gets stained, remove the stains using neutral washing agent with a dry cloth.
   - Never use strong agents such as benzene and thinner to clean the surface of the case.
   - If heavy stains are present, moisten a cloth with diluted neutral washing agent or alcohol and then wipe thoroughly with a dry cloth.
   - If dust is accumulated on the case surface, remove it by using a special vacuum cleaner for computers.

2 System Configuration

This chapter contains helpful information that describes the jumper and connector settings, component locations, and pin assignment.

The following topics are included:

- LAN Port
- PPC Rear I/O Ports Diagram
- Main Board Component Locations
- Setting Jumpers
- Setting Main Board Connectors and Jumpers
- Sensor Board Component Locations
- Setting Sensor Board Connectors and Jumpers

2.1   LAN Port

Power Cord

AC Power Jack

LAN Port

Ethernet Cable
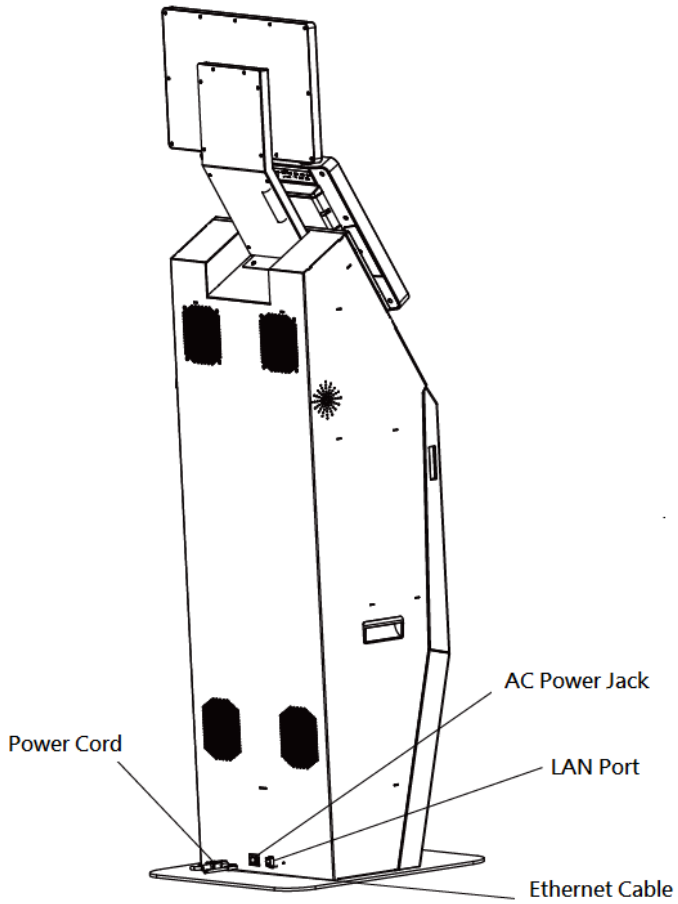
LAN Port

Yellow   Green

LAN: LAN RJ-45 Port (rear I/O)

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	MDIP0	5	MDIP2
2	MDIN0	6	MDIN2
3	MDIP1	7	MDIP3
4	MDIN1	8	MDIN3
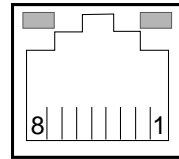
LAN

LAN LED Status

There are one LAN LED indicators on the rear side of the system. By observing their status, you can know the status of the Ethernet connection.

LAN LED Indicator	Color	Status	Description
Left Side LED	Yellow	Blink	LAN Message Active
	-	Off	No LAN Message Active
Right Side LED	Green	On	10/100 LAN connection is enabled.
	Orange	On	Giga LAN connection is enabled.
	-	Off	No LAN switch/hub is connected

2.2 Power Button

Open the front door and press the Power button. Please see for the location of the Power button.

ACTION	ASSIGNMENT
Click	0V
Release	+3.3V
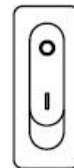
Power

Button

2.3 PPC Rear I/O Ports Diagram
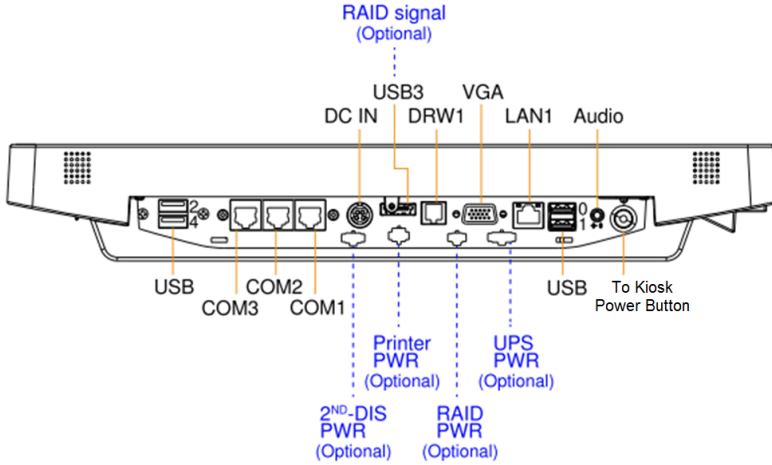
2.4 DC-IN Port

DC-IN: DC Power-In Port (rear I/O)

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	GND	3	+24V
2	GND	4	+24V
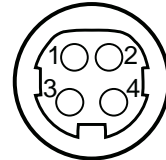
DC IN

2.5 VGA Port

VGA: VGA Port, D-Sub 15-pin (rear I/O)

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	RED	9	+5V
2	GREEN	10	GND
3	BLUE	11	NC
4	NC	12	DDCA DATA
5	GND	13	HSYNC
6	GND	14	VSYNC
7	GND	15	DDCA CLK
8	GND	-	-
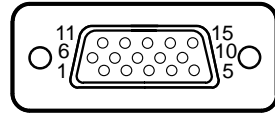
VGA

2.6 COM Port

COM1, COM2, COM3: COM Ports (rear I/O)

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	DCD1/2/3	6	DSR1/2/3
2	RXD1/2/3	7	RTS1/2/3
3	TXD1/2/3	8	CTS1/2/3
4	DTR1/2/3	9	RI/+5V/+12V selectable (Maximum current: 1A)
5	GND	10	NC
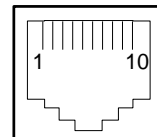
**COM1/
COM2/
COM3**

2.7 Cash Drawer Port

DRW1: Signal from M/B GPIO (rear I/O)

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	GND	4	+12V/+24V (Max. current: 1A)
2	Drawer Open	5	NC
3	Drawer Sense	6	GND
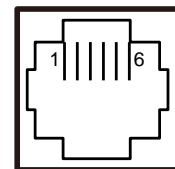
	DRW1
Open	Write "700"h to I/O port "588"h
Close	Write "00"h to I/O port "588"h

DRW1

2.8 USB Ports

USB0, USB1, USB2, USB3, USB4: USB Type A ports.

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	+5V (Max. current: 0.5A)	3	D+
2	D-	4	GND

USB0/

USB1/

USB2/

USB4
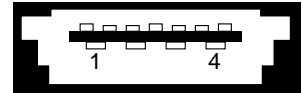
USB3

2.9 RAID Port

RAID: Link to stand-RAID storage device for signals

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	GND	5	RX-
2	TX+	6	RX+
3	TX-	7	GND
4	GND	-	-
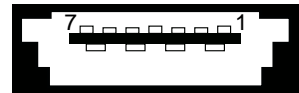
RAID

2.10 RAID Power Port

RAID PWR: Power supply for the stand-RAID storage device

PIN	ASSIGNMENT
1	+24V
2	GNDV
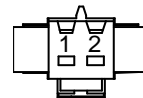
RAID PWR

2.11 Printer Power Port

PRINT PWR: DC24V power supply for the stand-printer

PIN	ASSIGNMENT
1	+24V
2	GNDV
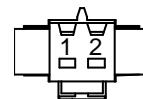
PRINT PWR

2.12 2nd Display Power Port

2ND DIS PWR: DC12V power supply of for 2nd display

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	VCC12	3	VCC12
2	GND	4	NC

2ND DIS PWR
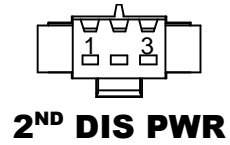
2.13 Main Board Component Location & Jumper Settings
M/B: PB-6822
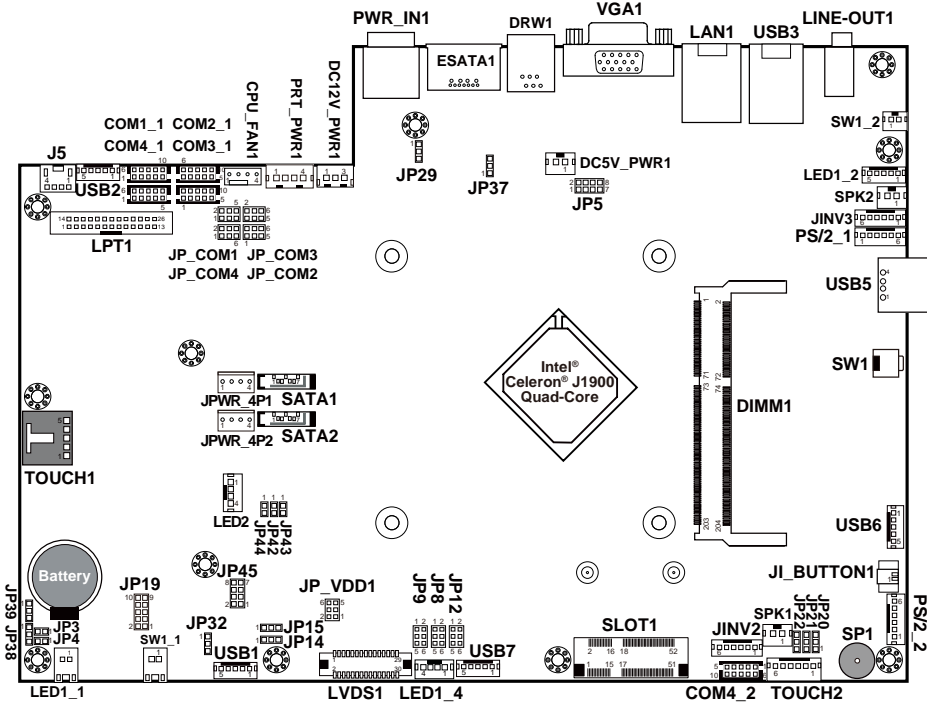
Figure 2-1. PB-6822 Main Board Component Location

⚠	**WARNING:** Always disconnect the power cord when you are working with the connectors and jumpers on the main board. Make sure both the system and the external devices are turned OFF as sudden surge of power could ruin sensitive components. Make sure KF-7130 is properly grounded.

⚡	**CAUTION:** Observe precautions while handling electrostatic sensitive components. Make sure to ground yourself to prevent static charge while configuring the connectors and jumpers. Use a grounding wrist strap and place all electronic components in any static-shielded devices.

2.14 Setting Jumpers

You can configure your board by setting the jumpers. A jumper consists of two or three metal pins with a plastic base mounted on the card. 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 configure your hardware settings by "opening" or "closing" jumpers.

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

Jumpers & Caps

2 Pin Jumper　　**3 Pin Jumper**　　**Jumper Block**　　**Jumper Cap**
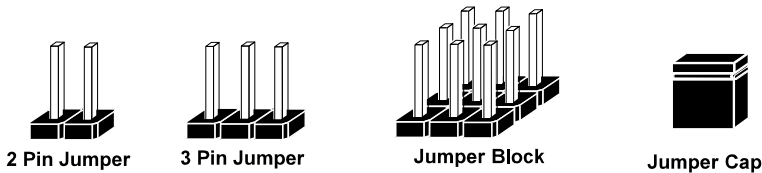
If a jumper has three pins, for example, labeled 1, 2 and 3. You can connect pins 1 and 2 to create one setting and shorting. You can also select to connect pins 2 and 3 to create another setting. The format of the jumper picture will be illustrated throughout this manual. The figure below shows different types of jumpers and jumper settings.

Jumper diagrams

Jumper Cap looks like this
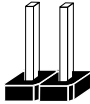
2 pin Jumper looks like this
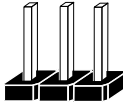
3 pin Jumper looks like this
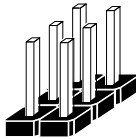
Jumper Block looks like this
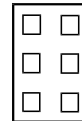
Jumper settings

2 pin Jumper closed(enabled)
looks like this

1
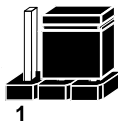
3 pin Jumper
2-3 pin closed(enabled)
looks like this

1
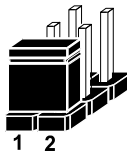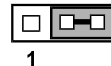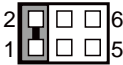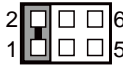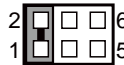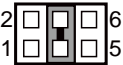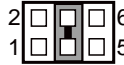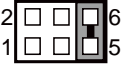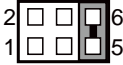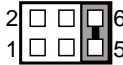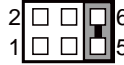
Jumper Block
1-2 pin closed(enabled)
looks like this

1   2
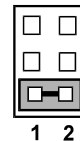
2.15 Setting Main Board Connectors and Jumpers
2.15.1   COM Port RI & Voltage Selection

JP_COM1, JP_COM2, JP_COM3, JP_COM4: Pin-headers on board

SELECTION	JUMPER SETTING	JUMPER ILLUSTRATION			
RI	1-2	JP_COM1	JP_COM2	JP_COM3	JP_COM4
+12V	3-4	JP_COM1	JP_COM2	JP_COM3	JP_ COM4
+5V	5-6	JP_COM1	JP_COM2	JP_COM3	JP_ COM4

Note: Default is RI for JP_COM4, and no pin connection for JP_COM1, JP_COM2 or JP_COM3.

	CAUTION:
	1. The voltage levels of the external COM1 ~ 3 ports are adjustable on BIOS or via the corresponding jumpers JP_COM1, JP_COM2 & JP_COM3. You cannot perform both of the actions at the same time in prevention of system error, component damage or serious boot failure. For instance, JP_COM1 can be enabled when COM1 is disabled on BIOS.
	2. There is no pin connection for JP_COM2 or JP_COM3 by default. Refer to the **Voltage/RI Adjustment Configuration** section in chapter 3 for detailed BIOS setting (BIOS default: Disabled)
	3. The voltage level of COM4 is not adjustable on BIOS.

```
                  Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
          Advanced

    COM1 select                      [Disabled]          COM4 select RI 12V and 5V
    COM2 select                      [Disabled]
    COM3 select                      [Disabled]
    Cash drawer                      [Cash drawer 12V]
```

2.15.2 COM Connector

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	DCD	6	DSR
2	RXD	7	RTS
3	TXD	8	CTS
4	DTR	9	RI/+5V/+12V selectable (Max. current: 1A)
5	GND	10	NC

COM1-1/

COM2-1/

COM3-1/

COM4-1

Note: Each COM connector is selectable for RI/+5V/+12V. **COM Port RI & Voltage Selection** section for details.
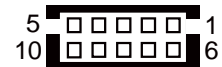
COM4-2

2.15.3 i-Button Connector

JI_BUTTON1: i-Button Connector

PIN	ASSIGNMENT
1	COM3_DTR_R_I
2	COM3_RXD_R_I
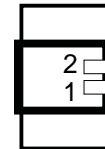
JI_BUTTON1

2.15.4 COM3 / i-Button Function Selection
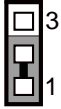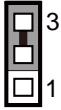
JP20, JP21, JP22: COM3 / i-Button Function Connectors

SELECTION	JUMPER SETTING	JUMPER ILLUSTRATION
COM 3 (Default)	1-2	**JP20/JP21/JP22**
i-Button*	2-3	**JP20/JP21/JP22**

Note: COM3 & COM3-1 will not function when jumpers JP20, JP21 & JP22 are set as "i-Button."
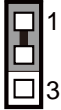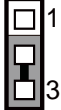
2.15.5   Cash Drawer Control Selection

JP37: Cash Drawer Control Connector

SELECTION	JUMPER SETTING	JUMPER ILLUSTRATION
DRW1-2 Open	1-2	3 1 **JP37**
GND (Default)	2-3	3 1 **JP37**

2.15.6   Cash Drawer Power Selection

JP29: Cash Drawer Power Selection

SELECTION	JUMPER SETTING	JUMPER ILLUSTRATION
+24V	1-2	1 3 **JP29**
+12V	2-3	1 3 **JP29**

Note: Default is no pin connection.

CAUTION:

1. The voltage level of the external cash drawer port DRW1 is adjustable on BIOS or via the corresponding jumper JP29. You cannot perform both of the methods at the same time in prevention of system error, component damage or serious boot failure. That is, JP29 can be enabled when DRW1 has been disabled on BIOS.

2. There is no pin connection for JP29 by default. Refer to the **Voltage/RI Adjustment Configuration** section in Chapter 3 for detailed BIOS setting (BIOS default: 12V).

```
              Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
         Advanced

 COM1 select                    [Disabled]              COM4 select RI 12V and 5V
 COM2 select                    [Disabled]
 COM3 select                    [Disabled]
 Cash drawer                    [Cash drawer 12V]
```

2.15.7   USB Connector

USB1, USB2 , USB6 , USB7: USB 2.0 Connectors

PIN	ASSIGNMENT
1	5V (Maximum current: 0.5A)
2	D-
3	D+
4	GND
5	GND

Note: USB1 would be used when jumpers JP14 & JP15 are set as 1-2 (short) connected.
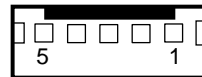
USB1/

USB2/

USB7
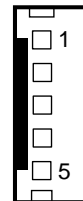
USB6

2.15.8   LED Connector

LED1_1: Power LED Indication Connector

PIN	ASSIGNMENT
1	GND
2	PWR_LED
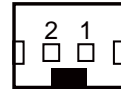
LED1_2: Power & HDD LED Indication Connector

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	PWR_LED	4	HDD_LEDJ
2	PWR_LEDJ	5	GND
3	HDD_LED	-	-
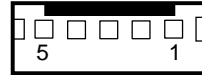
LED1_4: Power & HDD LED Indication Connector

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	PWR_LED	3	HDD_LEDJ
2	PWR_LEDJ	4	HDD_LEDJ
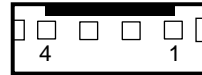
2.15.9   Power Connector

DC12V_PWR1: DC 12Voltage Provider Connector

PIN	ASSIGNMENT
1	VCC12
2	GND
3	VCC12
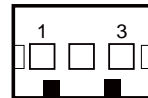
DC5V_PWR1: DC 5Voltage Provider Connector

PIN	ASSIGNMENT
1	5V
2	GND
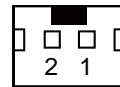
2.15.10 Power for Thermal Printer Connector
PRT_PWR1: Power for Thermal Printer Connector

PIN	ASSIGNMENT
1	VCC24SB
2	VCC24SB
3	GND
4	GND

```
 1      4
┌─────────┐
│□□ □□□│
│ ▪    ▪ │
└─────────┘
```
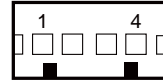
PRT_PWR1

2.15.11 External Speaker Connector
SPK1, SPK2: External Speaker Connector

PIN	ASSIGNMENT
1	SPK_GND
2	SPK_OUT

```
┌───────┐
│ ▪▪▪ │
│ □ □ □ │
│  2 1  │
└───────┘
```
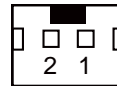
SPK1/

SPK2

2.15.12 Inverter Connector
JINV2, JINV3: Inverter Connectors

PIN	ASSIGNMENT
1	+12V
2	+12V
3	GND
4	BRCTR
5	GND
6	LVDS_BKLTEN

```
┌──────────┐
│□□□□□□□□│
│ 6      1 │
└──────────┘
```
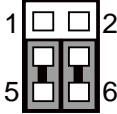
JINV2/

JINV3

2.15.13 LED Backlight Power Control Selection
JP12: LED Backlight Power Control Connector
    (for LED backlight panel without the built-in power driver)
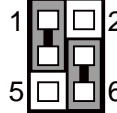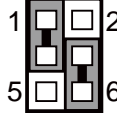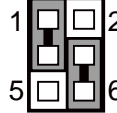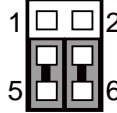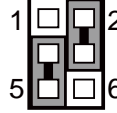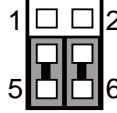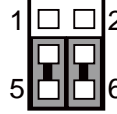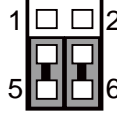
SELECTION	JUMPER SETTING	JUMPER ILLUSTRATION
On	1-3 2-4	1 ▪ ▪ 2 5 □ □ 6 **JP12**

SELECTION	JUMPER SETTING	JUMPER ILLUSTRATION
Off	3-5 4-6	1 □ □ 2 5 6 **JP12**

Note: Default is LED.

2.15.14 Panel Resolution Selection

JP8, JP9: Panel Resolution Control Connectors

SELECTION	JUMPER SETTING	JUMPER ILLUSTRATION	
17" **1280 x 1024** **(24 bit Dual)** (Default)	JP8: 1-3, 4-6 JP9: 1-3, 4-6	1 □ □ 2 5 □ 6 **JP8**	1 □ □ 2 5 □ 6 **JP9**
15" 1024 x 768 (24 bit)	JP8: 1-3, 4-6 JP9: 3-5, 4-6	1 □ 2 5 □ □ 6 **JP8**	1 □ □ 2 5 6 **JP9**
10.4" 1024 x 768 (18 bit)	JP8: 2-4, 3-5 JP9: 3-5, 4-6	1 □ 2 5 □ □ 6 **JP8**	1 □ □ 2 5 6 **JP9**
10.4" 800 x 600 (18bit)	JP8: 3-5, 4-6 JP9: 3-5, 4-6	1 □ □ 2 5 6 **JP8**	1 □ □ 2 5 6 **JP9**

2.15.15 LVDS Connector

LVDS1: LVDS Connector

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	LVDS_VCC	16	LVDS_CLKA_D+
2	GND	17	VDS_CLKA_D-
3	NC	18	GND
4	NC	19	LVDS_A2_D+
5	GND	20	LVDS_A2_D-
6	LVDS_B2_D-	21	GND
7	LVDS_B2_D+	22	LVDS_A1_D+
8	GND	23	LVDS_A1_D-
9	LVDS_B1_D-	24	GND
10	LVDS_B1_D+	25	LVDS_A0_D+
11	LVDS_B3_D+	26	LVDS_A0_D-
12	LVDS_B3_D-	27	LVDS_A3_D+
13	LVDS_B0_D+	28	LVDS_A3_D-
14	LVDS_B0_D-	29	LVDS_VCC
15	GND	30	LVDS_VCC

LVDS1

2.15.16 Touch Panel Connector

TOUCH1: Touch Panel Connector

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	LR (Low Right)	4	UR (Up Right)
2	LL (Low Left)	5	UL (Up Left)
3	Probe	-	
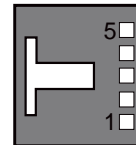
TOUCH1

TOUCH2: Touch Panel Connector
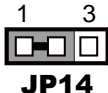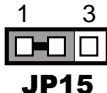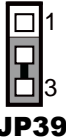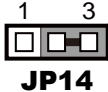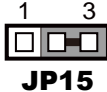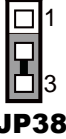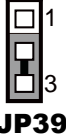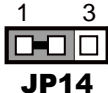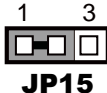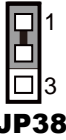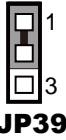
PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	LR (Low Right)	4	UR (Up Right)
2	LL (Low Left)	5	UL (Up Left)
3	Probe	-	
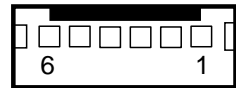
TOUCH2

2.15.17 Touch Panel Signal Interface Selection

JP14, JP15, JP38, JP39: Control connectors for touch panel signal interface
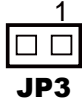
SELECTION	JUMPER SETTING	JUMPER ILLUSTRATION			
USB1 Connector (Default)	JP14: 1-2 JP15: 1-2 JP38: 2-3 JP39: 2-3	JP14	JP15	JP38	JP39
USB Interface	JP14: 2-3 JP15: 2-3 JP38: 2-3 JP39: 2-3	JP14	JP15	JP38	JP39
RS-232 Interface	JP14: 1-2 JP15: 1-2 JP38: 1-2 JP39: 1-2	JP14	JP15	JP38	JP39

Notes:

1. The COM2 & COM2-1 connector will not function when JP38 & JP39 are set as 1-2 connected.
2. USB1 connector when JP14 & JP15 are set as 1-2 connected.

2.15.18 Clear CMOS Data Selection

JP3: Clear CMOS Data Selection

SELECTION	JUMPER SETTING	JUMPER ILLUSTRATION
Normal (Default)	Open	1 □□ **JP3**
Clear CMOS*	1-2	1 ■□ **JP3**

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

2.15.19 MSR/Card Reader Connector

PS/2_1, PS/2_2: MSR/Card Reader Connectors

PIN	ASSIGNMENT
1	KB_CLK (Output)
2	KB_CLK_C (Input)
3	KB_DATA_C (Input)
4	KB_DATA (Output)
5	+5V
6	GND

1 6

PS/2_1

6
1
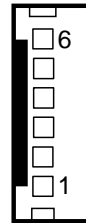
PS/2_2

2.15.20 UPS Connector

J5: UPS Data Connector

PIN	ASSIGNMENT
1	LPC_PSONJ
2	LPC_PWRBTN
3	PCIE_DBG_CLK
4	PCIE_DBG_DATA
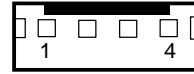
J5

2.15.21 Fan Connector

CPU_FAN1: CPU Fan Connector

PIN	ASSIGNMENT
1	GND
2	VCC5
3	CPU_FANIN
4	CPU_FANOUT
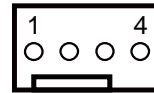
CPU_FAN1

2.15.22 RAID LED Connector (Optional)

LED2: SATA RAID LED Connector

PIN	ASSIGNMENT
1	VCC3_3
2	LED1_E
3	VCC3_3
4	LED2_E
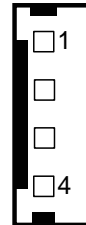
LED2

2.15.23 SATA & SATA Power Connector

SATA1, SATA2: Serial ATA Connector

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	G1	5	RX-
2	TX+	6	RX+
3	TX-	7	G3
4	G2	-	-

**SATA1/
SATA2**

Note: SATA1 only supports the optional RAID
function on board.

JPWR_4P1, JPWR_4P2: Serial ATA Power Connectors

PIN	ASSIGNMENT
1	VCC
2	GND
3	GND
4	VCC12
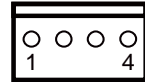
**JPWR_4P1/
JPWR_4P2**

Note: JPWR_4P1 only supports the
optional RAID function on board.

2.15.24 SATA RAID Function Selection (Optional)
JP42, JP43, JP44: SATA RAID Function Pin-headers

SELECTION	JUMPER SETTING	JUMPER ILLUSTRATION		
RAID1 (Default)	JP42: 1-2 JP43: Open JP44: 1-2	1 **JP42**	1 **JP43**	1 **JP44**

2.15.25 Power Button Connector
SW1_1, SW1_2: Power Button Connector

PIN	ASSIGNMENT
1	LPC_PWRBTNJ
2	GND

1 2
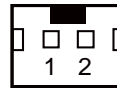
SW1_1/

SW1_2

2.15.26 Printer Connector
LPT1: Printer Connector

```
14 □ □ □ □ □ □ □ □ □ □ □ □ 26
 1 □ □ □ □ □ □ □ □ □ □ □ □ 13
```
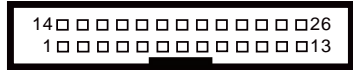
LPT1

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	STBJ	14	ALFJ
2	PDR0	15	ERRJ
3	PDR1	16	PAR_INITJ
4	PDR2	17	SLCTINJ
5	PDR3	18	GND
6	PDR4	19	GND
7	PDR5	20	GND
8	PDR6	21	GND
9	PDR7	22	GND
10	ACKJ	23	GND
11	BUSY	24	GND
12	PE	25	GND
13	SLCTJ	26	NC

2.15.27 Mini-PCIe / mSATA Connector

SLOT1: Mini-PCIe Connector (USB function not supported.)

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	WAKE#	27	GND
2	+3.3V	28	+1.5V
3	Reserved	29	GND
4	GND	30	SMB_CLK
5	Reserved	31	PETn2
6	+1.5V	32	SMB_DATA
7	CLKREQ#	33	PETp2
8	Reserved	34	GND
9	GND	35	GND
10	Reserved	36	NC
11	REFCLK1-	37	GND
12	Reserved	38	NC
13	REFCLK1+	39	+3.3V
14	Reserved	40	GND
15	GND	41	+3.3V
16	Reserved	42	Reserved
17	Reserved	43	GND
18	GND	44	Reserved
19	Reserved	45	NC
20	Reserved	46	Reserved
21	GND	47	NC
22	PERST#	48	+1.5V
23	PERn2	49	NC
24	+3.3SB	50	GND
25	PERp2	51	Reserved
26	GND	52	+3.3V

```
2    16 18          52
1    15 17          51
```
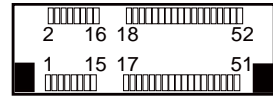
SLOT1

2.16 Sensor Board Component Locations
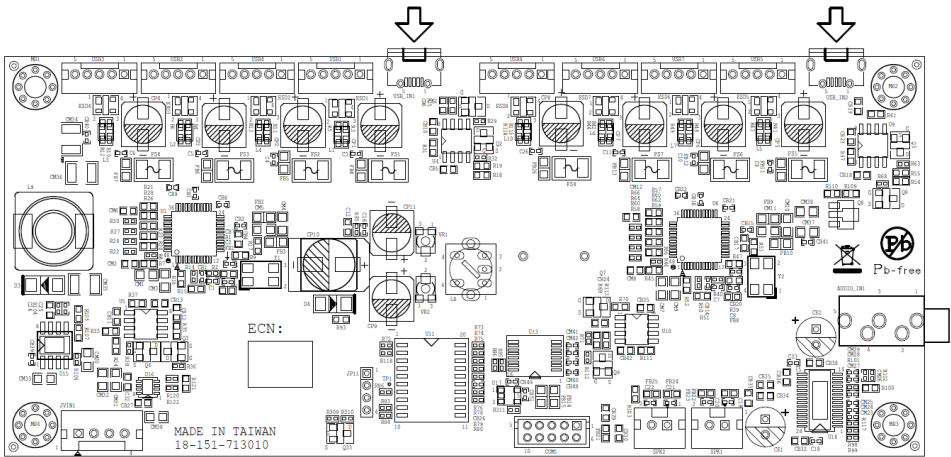
Figure 2-2. Sensor Board Component Location

2.17 Setting Sensor Board Connectors and Jumpers
2.17.1 Power Supply Connector

JVIN1: Power Supply Wafer

PIN	ASSIGNMENT
1	+24V
2	+24V
3	GND
4	GND
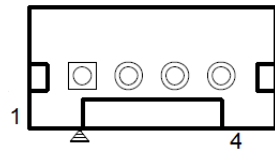
JVIN1

2.17.2　COM Connector

COM1: COM Connector

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	NC	6	NC
2	RXD	7	NC
3	TXD	8	NC
4	NC	9	NC
5	GND	10	NC
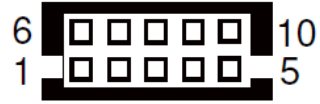
2.17.3　External Speaker Connector

SPK1, SPK2: External Speaker Connector

The pin assignments for SPK1 are as follows:

PIN	ASSIGNMENT
1	OUTPL
2	OUTNL
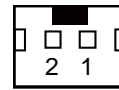
The pin assignments for SPK2 are as follows:

PIN	ASSIGNMENT
1	OUTNR
2	OURPR

2.17.4　Micro USB Connector

USB_IN1, USB_IN2 : Micro USB IN Connector

PIN	ASSIGNMENT
1	NC
2	D-
3	D+
4	GND
5	GND
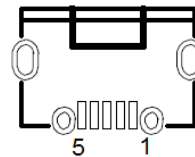
2.17.5 USB Connector

USB1, USB2 , USB3 , USB4 , USB5 , USB6 , USB7 , USB8: USB 2.0 Wafers

PIN	ASSIGNMENT
1	5V
2	D-
3	D+
4	GND
5	GND
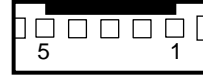
USB1/

USB2/

USB3/

USB4/

USB5

USB6/

USB7/

USB8

2.17.6 Audio Connector

AUDIO_IN1 : LINE_OUT Connector

PIN	ASSIGNMENT
1	AUDIO_GND
2	L_IN
3	GND
4	R_IN
5	GND
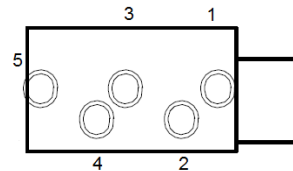
AUDIO_IN1

3 Software Utilities

This chapter provides the detailed information that guides users to install driver utilities for the system. The following topics are included:

- Installing Intel$^®$ Chipset Software Installation Utility
- Installing VGA Driver Utility
- Installing LAN Driver Utility
- Installing Sound Driver Utility

3.1 Introduction

Enclosed with the KF-7130 Series package is our driver utilities contained in a CD-ROM disk. Refer to the following table for driver locations:

Filename (Assume that CD-ROM drive is D:)	Purpose	OS
		WIN7 32bit
D:\Driver\Platform\ WIN7 POSReady 7 (32bit) \UTILITY	Main Chip /INTEL /BayTrail J1900	V
D:\Driver\ Platform\ WIN7 POSReady 7 (32bit) \VGA	Graphic /INTEL /BayTrail J1900	V
D:\Driver\ Platform\ WIN7 POSReady 7 (32bit) \LAN	LAN Chip /REALTEK /RTL8119-CG	V
D:\Driver\ Platform\ WIN7 POSReady 7 (32bit) \Sound	Sound Codec /REALTEK / ALC888S-VD2-GR	V
D:\Driver\ Platform \ WIN7 POSReady 7 (32bit) \ Intel TXE Firmware	Intel TXE Firmware	V
D:\Driver\ Platform \ WIN7 POSReady 7 (32bit) \ Windows 7 update KMDF	Windows 7 update KMDF	V
D:\ Device \ Thermal Printer\ BA-T500IIUtility130.exe	Thermal Printer	V
D:\ Device \ KR-9000\ 3M Page Reader SDK 3.1.15.2 Setup.exe	Full Page Passport Reader	V
D:\ Device \ CR-100\ 3M Swipe Reader SDK 1.0.12 Setup.exe	Swipe type Passport Reader	V
D:\ Device \ Card Dispensers\ EWTJ-680\ Test Program (APIs)\ 680test.exe	Card Dispensers (RFID card Writer)	V
D:\ Device \ Card Dispensers\ EWTK-22x4C1\ Test Program (APIs)\ 2244test.exe	Card Dispensers	V
D:\ Device \ RFID\ 68TP9X1C.exe	Contact less Credit Card Reader	V
D:\ Device \ MSR\ CIDTestAP V0600.exe	MSR 3 in 1 (ICC,MSR,RFID)	V
D:\ Device \ Ultrasonic Sensor\ KR-713X TestAP.exe	Ultrasonic Sensor	V

Note: Install the driver utilities immediately after the OS installation is completed.

3.2   Installing Intel® Chipset Software Installation Utility

3.2.1   Introduction

The Intel® Chipset Software Installation Utility installs the 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 functions work properly:

- Core PCI and ISAPNP Services
- PCIe Support
- SATA Storage Support
- USB Support
- Identification of Intel® Chipset Components in the Device Manager

3.2.2   Intel® Chipset Software Installation Utility

The utility pack is to be installed only for POSReady 7 & Windows®
7 series, and it should be installed immediately after the OS
installation is finished. Please follow the steps below:

1   Connect the USB CD-ROM device to KF-7130 and insert the
driver disk.

2   Enter the **Main Chip** folder where the Chipset driver is located
(depending on your OS platform).

3   Click **Setup.exe** file for driver installation.

4   Follow the on-screen instructions to install the driver.

5   Once the installation is completed, shut down the system and
restart KF-7130 for the changes to take effects.

3.3 Installing VGA Driver Utility

The VGA interface embedded in KF-7130 can support a wide range of display types. You can have dual displays via LVDS interfaces and make the system work simultaneously.

To install the VGA driver utility, follow the steps below:

1 Connect the USB CD-ROM device to KF-7130 and insert the driver disk.

2 Enter the **VGA** folder where the driver is located (depending on your OS platform).

3 Click the **Setup.exe** file for driver installation.

4 Follow the on-screen instructions to complete the installation.

5 Once the installation is completed, shut down the system and restart KF-7130 for the changes to take effects.

3.4 Installing LAN Driver Utility

Enhanced with LAN function, KF-7130 supports various network adapters. To install the LAN Driver, follow the steps below:

1 Connect the USB CD-ROM device to KF-7130 and insert the driver disk.

2 Enter the **LAN** folder where the driver is located (depending on your OS platform).

3 Click **Setup.exe** file for driver installation.

4 Follow the on-screen instructions to complete the installation.

5 Once the installation is completed, shut down the system and restart KF-7130 for the changes to take effects.

For more details on the installation procedure, refer to the Readme.txt file that you can find on LAN Driver Utility.

3.5   Installing Sound Driver Utility

The sound function enhanced in this system is fully compatible with POSReady 7 & Windows® 7 series.

To install the Sound Driver, follow the steps below:

1   Connect the USB CD-ROM device to KF-7130 and insert the driver disk.

2   Open the **Sound** folder where the driver is located (depending on your OS platform).

3   Click the **Setup.exe** file for driver installation.

4   Follow the on-screen instructions to complete the installation.

5   Once the installation is completed, shut down the system and restart KF-7130 for the changes to take effects.

4 BIOS SETUP

This chapter guides users how to configure the basic system configurations via the BIOS Setup Utilities. The information of the system configuration is saved in battery-backed CMOS RAM and BIOS NVRAM so that the Setup information is retained when the system power is off. The BIOS Setup Utilities consist of the following menu items:

- Accessing Setup Utilities
- Main Menu
- Advanced Menu
- Chipset Menu
- Boot Menu
- Security Menu
- Save & Exit Menu

4.1　Introduction

The KF-7130 Kiosk System uses an AMI (American Megatrends Incorporated) Aptio BIOS that is stored in the Serial Peripheral Interface Flash Memory (SPI Flash) and can be updated. The SPI Flash contains the built-in BIOS setup program, Power-On Self-Test (POST), 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 the 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 elements have combined to provide a standard environment for booting the operating system and running pre-boot applications.

The diagram below shows the Extensible Firmware Interface's location in the software stack.
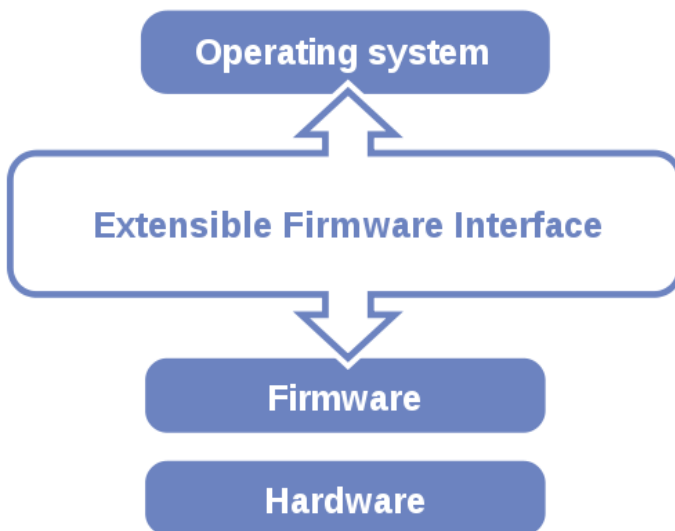
Figure 4-1. Extensible Firmware Interface Diagram

EFI BIOS provides an user interface that allows you to modify hardware configuration, e.g. change the system date and time, enable/disable a system component, determine bootable device priority, set up personal password, etc., which is convenient for engineers to perform modifications and customize the computer system and allows technicians to troubleshoot the occurred errors when the hardware is faulty.

The BIOS setup menu allows users to view and modify the BIOS settings for the computer. After the system is powered on, users can access the BIOS setup menu by pressing <Del> or <Esc> immediately while the POST message is running before the operating system is loading.

Users will need to set up the system configuration from the BIOS Setup Utility when any of the following conditions occurs:
1. You are starting your system for the first time.
2. You have changed the hardware in your system or the hardware becomes faulty.
3. The system configuration is reset after the user configures to clear CMOS data via the JP3 jumper.
4. The power of the CMOS RAM became lost and the system configuration has been erased.

All the menu settings are described in details in this chapter.

4.2 Accessing Setup Utility

After the system is powered on, BIOS will enter the Power-On Self-Test (POST) routines and the POST message will be displayed:

Figure 4-2. POST Screen with AMI Logo

Press the <Del> key to access the Setup Utility program and enter the password in the dialog window below:
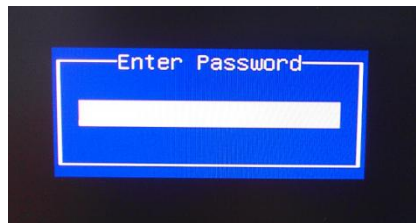
Figure 4-3. Enter Password

After you type the correct password and press **Enter**, the **Main** menu of the Aptio Setup Utility will appear on the screen as below:

```
              Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
     Main  Advanced  Chipset  Security  Boot  Save & Exit

     BIOS Information                                      Choose the system default
     BIOS Vendor                    American Megatrends    language
     Core Version                   5.009
     Compliancy                     UEFI 2.3; PI 1.2
     Project Version                68221PD1 0.20 x64
     Build Date and Time            04/03/2014 09:41:48

     TXE Information
     Sec RC Version                 00.05.00.00
     TXE FW Version                 01.01.00.1089

     System Language                [English]

     System Date                    [Thu 04/03/2014]      →←: Select Screen
     System Time                    [23:53:49]            ↑↓: Select Item
                                                          Enter: Select
                                                          +/-: Change Opt.
                                                          F1: General Help
                                                          F2: Previous Values
                                                          F3: Optimized Defaults
                                                          F4: Save & Exit
                                                          ESC: Exit


              Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.
```

Figure 4-4. BIOS Setup Menu Initialization Screen

If you enter incorrect passwords for 3 consecutive times, the screen will be locked and you will not be able to enter any data unless the system is restarted.

The language of the BIOS setup menu interface and help messages are shown in US English. You may use the up <↑> /down <↓> arrow key to select among the items and press <Enter> to confirm and enter the sub-menu. A brief help message of the selected item will also appear at the bottom of the screen for your information. The following table provides the list of the keys that you can use while operating the BIOS setup menu.

BIOS Setup Menu Key	Description
<←> and <→>	Select a different menu screen (move the cursor from the selected menu to the left or right).
<↑> and <↓>	Select a different item (move the cursor from the selected item upwards or downwards)

BIOS Setup Menu Key	Description
<Enter>	Execute the command or select the sub-menu.
<F2>	Load the previous configuration values.
<F3>	Load the default configuration values.
<F4>	Save the current values and exit the BIOS setup menu.
<Esc>	Close the sub-menu. Trigger the confirmation to exit BIOS setup menu.

BIOS Messages

This section describes the alert messages generated by the board's BIOS. These messages would be shown on the monitor when certain recoverable errors/events occur during the POST stage. The table bellow gives an explanation of the BIOS alert messages:

BIOS Message	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 has been recently replaced.	The battery may be losing power and users should replace the battery immediately. Also, this message is displayed once the new battery is replaced.

4.3   Main Menu

The **Main** menu allows you to view the BIOS Information, change the system date and time, and view the user access privilege level. Use tab to switch between date elements.

```
            Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
   Main  Advanced  Chipset  Security  Boot  Save & Exit

   BIOS Information                                      Choose the system default
   BIOS Vendor                    American Megatrends    language
   Core Version                   5.009
   Compliancy                     UEFI 2.3; PI 1.2
   Project Version                68221PD1 0.20 x64
   Build Date and Time            04/03/2014 09:41:48

   TXE Information
   Sec RC Version                 00.05.00.00
   TXE FW Version                 01.01.00.1089

   System Language                [English]

   System Date                    [Thu 04/03/2014]      →←: Select Screen
   System Time                    [23:53:49]            ↑↓: Select Item
                                                        Enter: Select
                                                        +/-: Change Opt.
                                                        F1: General Help
                                                        F2: Previous Values
                                                        F3: Optimized Defaults
                                                        F4: Save & Exit
                                                        ESC: Exit



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```

Figure 4-5. BIOS Main Menu

BIOS Setting	Options	Description/Purpose
BIOS Vendor	No changeable options	Display the BIOS vendor.
Core Version	No changeable options	Display the current BIOS core version.
Compliancy	No changeable options	Display the current UEFI version.
Project Version	No changeable options	Display the version of the BIOS currently installed on the platform.
Build Date and Time	No changeable options	Display the date of current BIOS version.
Sec RC Version	No changeable options	Display the current Sec RC version.
TXE FW Version	No changeable options	Display the current TXE Version
System Language	English	BIOS Setup language.
System Date	month, day, year	Specify the current date.
System Time	hour, minute, second	Specify the current time.

4.4 Advanced Menu

From the **Advanced** menu, you are allowed to configure the following items:
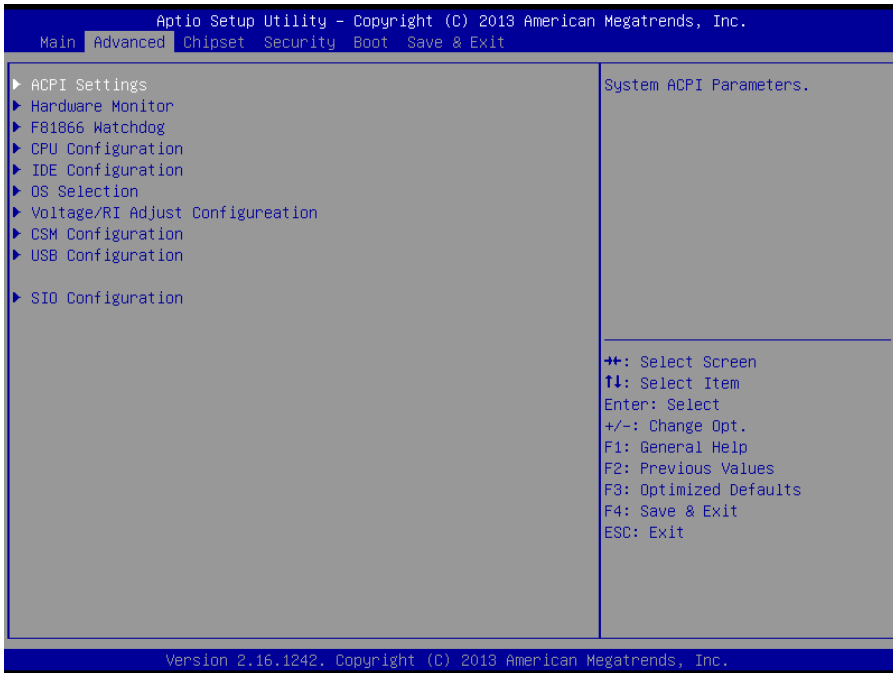
Figure 4-6. BIOS Advanced Menu

BIOS Setting	Options	Description/Purpose
ACPI Settings	Sub-Menu	System ACPI Parameters.
Hardware Monitor	Sub-Menu	Monitor hardware status
F81866 Watchdog	Sub-Menu	F81866 Watchdog Parameters.
CPU Configuration	Sub-Menu	CPU Configuration. Parameters.
IDE Configuration	Sub-Menu	SATA Configuration Parameters.
OS Selection	Sub-Menu	OS Selection
Voltage/RI Adjust Configuration	Sub-Menu	Voltage/RI Adjust settings.
CSM Configuration	Sub-Menu	Configure Option ROM execution, boot options filters, etc.
USB Configuration	Sub-Menu	USB Configuration Parameters.
SIO Configuration	Sub-Menu	System Super I/O Chip Configuration.

4.4.1   ACPI Settings

Select **ACPI Configuration** from the **Advanced** menu and press **Enter** to configure relevant ACPI configuration parameters.

```
                  Aptio Setup Utility – Copyright (C) 2013 American Megatrends, Inc.
        Advanced

   ACPI Settings                                                   Enables or Disables BIOS A
                                                                   Auto Configuration.
   Enable ACPI Auto Configuration      [Disabled]

   Enable Hibernation                  [Enabled]
   ACPI Sleep State                    [S3 (Suspend to RAM)]
   Lock Legacy Resources               [Disabled]




                                                                   →←: Select Screen
                                                                   ↑↓: Select Item
                                                                   Enter: Select
                                                                   +/-: Change Opt.
                                                                   F1: General Help
                                                                   F2: Previous Values
                                                                   F3: Optimized Defaults
                                                                   F4: Save & Exit
                                                                   ESC: Exit


                  Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.
```

Figure 4-7. ACPI Settings Screen

BIOS Setting	Options	Description/Purpose
Enable ACPI Auto Configuration	- Disabled - Enabled	Enable or disable ACPI feature.
Enable Hibernation	- Disabled - Enabled	Enable or disable the system ability to hibernate (OS/S4 Sleep State). This option may be not effective with some OS.
ACPI Sleep State	- Suspend Disabled - S3 Only (Suspend to RAM)	Specifies the ACPI sleep state. **Suspend Disabled** disables ACPI sleep feature. **S3** allows the platform to enter the Suspend to RAM mode.
Lock Legacy Resources.	- Disabled - Enabled	Enable or disable the lock of Legacy Resources.

4.4.2 Hardware Monitor

Select **Hardware Monitor** from the **Advanced** menu and press **Enter** to monitor the status of the system hardware, including system temperature, CPU temperature, CPU fan speed and the voltage levels of VCORE, 5VSB, VCC5 and VCC12 in supply.

```
             Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
         Advanced

        Pc Health Status

        CPU Temperature                  : +27 ℃
        System temperature               : +27 ℃
        CPU Fan Speed                    : N/A
        VCORE                            : +0.864 V
        5VSB                             : +5.087 V
        VCC5                             : +5.087 V
        VCC12                            : +12.056 V


                                                          →←: Select Screen
                                                          ↑↓: Select Item
                                                          Enter: Select
                                                          +/-: Change Opt.
                                                          F1: General Help
                                                          F2: Previous Values
                                                          F3: Optimized Defaults
                                                          F4: Save & Exit
                                                          ESC: Exit


             Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.
```

Figure 4-8. Hardware Monitor Screen

BIOS Setting	Options	Description/Purpose
CPU Temperature	No changeable Options	Display the processor temperature.
System Temperature	No changeable Options	Display the system temperature.
CPU Fan Speed	No changeable Options	Display the fan speed.
VCORE	No changeable options	Display the voltage level of the +VCORE in supply.
5VSB	No changeable options	Display the voltage level of the +VSB5 in supply.
VCC5	No changeable options	Display the voltage level of the + VCC5 in supply.
VCC12	No changeable options	Display the voltage level of the + VCC12 in supply.

4.4.3 F81866 Watchdog

Select **F81866 Watchdog** from the **Advanced** menu and press **Enter** to enable/disable Watchdog timer.

```
            Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
     Advanced

   F81866 Watchdog                                    The number of second count for
                                                      Timer (1-255 seconds)
   Enable Watchdog                  [Enabled]

   Watchdog timer unit              [1s]
   Count for Timer (Seconds)        60




                                                      ↔: Select Screen
                                                      ↑↓: Select Item
                                                      Enter: Select
                                                      +/-: Change Opt.
                                                      F1: General Help
                                                      F2: Previous Values
                                                      F3: Optimized Defaults
                                                      F4: Save & Exit
                                                      ESC: Exit



            Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.
```

Figure 4-9. F81866 Watchdog Screen

BIOS Setting	Options	Description/Purpose
Enable WatchDog	-Enabled -Disable	Enable/ disable the watchdog timer.
Watchdog timer unit	-1s -60s	Select the time interval in seconds or minutes
Count for Timer (Seconds)	multiple options ranging from 1 to 255	Set the desired value (seconds) for the watchdog timer.

4.4.4   CPU Configuration

Select **CPU Configuration** from the **Advanced** menu and press **Enter** to view CPU signature, configure Socket 0 CPU information, view CPU speed, 64-bit support, enable/disable the legacy operating systems to boot processors with extended CPUID functions, etc.

```
                 Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
          Advanced

   CPU Configuration                                         Socket specific CPU Information

 ▶ Socket 0 CPU Information

   CPU Speed                          2001 MHz
   64-bit                             Supported

   Active Processor Cores             [All]
   Limit CPUID Maximum                [Disabled]
   Intel Virtualization Technology    [Enabled]

                                                             →←: Select Screen
                                                             ↑↓: Select Item
                                                             Enter: Select
                                                             +/-: Change Opt.
                                                             F1: General Help
                                                             F2: Previous Values
                                                             F3: Optimized Defaults
                                                             F4: Save & Exit
                                                             ESC: Exit

                 Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.
```

Figure 4-10. Advanced Menu > CPU Configuration Screen

BIOS Setting	Options	Description/Purpose
CPU Signature	No changeable options	Report the CPU Signature
Socket 0 CPU Information	Sub-Menu	Report the CPU Information
CPU Speed	No changeable options	Report the current CPU Speed
64-bit	No changeable options	Report if 64-bit is supported by the processor.
Active Processor Cores	- All - 1	Choose the number of cores to be enabled in the current processor.
Limit CPUID Maximum	- Disabled - Enabled	Enable for legacy operating systems to boot processors with extended CPUID functions. Select **Disabled** for Win XP.
Intel Virtualization Technology	- Disabled - Enabled	When **Enabled** is selected, a VMM can utilize additional hardware capabilities provided by Vanderpool Technology(VT).

4.4.4.1　　　Socket 0 CPU Information

Select **CPU Configuration > Socket 0 CPU Information** from the **Advanced** menu and press **Enter** to view the relevant settings.

```
              Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
       Advanced

       Socket 0 CPU Information

       Intel(R) Celeron(R) CPU J1900 @ 1.99GHz
       CPU Signature                     30673
       Microcode Patch                   320
       Max CPU Speed                     1990 MHz
       Min CPU Speed                     1334 MHz
       Processor Cores                   4
       Intel HT Technology               Not Supported
       Intel VT-x Technology             Supported

       L1 Data Cache                     24 kB x 4
       L1 Code Cache                     32 kB x 4
       L2 Cache                          1024 kB x 2          →←: Select Screen
       L3 Cache                          Not Present          ↑↓: Select Item
                                                              Enter: Select
                                                              +/-: Change Opt.
                                                              F1: General Help
                                                              F2: Previous Values
                                                              F3: Optimized Defaults
                                                              F4: Save & Exit
                                                              ESC: Exit




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```

Figure 4-11. Socket 0 CPU Information Screen

BIOS Setting	Options	Description/Purpose
CPU Signature	No changeable options	Report the CPU Signature
Microcode Patch	No changeable options	Report the CPU Microcode Patch Version.
Max CPU Speed	No changeable options	Report the maximum CPU Speed.
Min CPU Speed	No changeable options	Report the minimum CPU Speed
Processor Cores	No changeable options	Display the number of physical cores in processor.
Intel HT Technology	No changeable options	Report if Intel Hyper-Threading Technology is supported by processor
Intel VT-x Technology	No changeable options	Report if Intel VT-x Technology is supported by processor.
L1 Data Cache	No changeable options	Display L1 data cache size.
L1 Code Cache	No changeable options	Display L1 code cache size.
L2 Cache	No changeable options	Display L2 cache size.
L3 Cache	No changeable options	Display L3 cache size.

4.4.5   IDE Configuration

Select **CPU Configuration > IDE Configuration** from the **Advanced** menu and press **Enter** to configure relevant SATA settings.

```
            Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
     Advanced

   IDE Configuration                                          Enable / Disable Serial ATA

   Serial-ATA (SATA)              [Enabled]
   SATA Test Mode                 [Disabled]

   SATA Speed Support             [Gen2]
   SATA Mode                      [AHCI Mode]

   SATA Port 0(Note*1)            [Enabled]
   SATA Port0 HotPlug             [Disabled]

   SATA Port 1(Note*2)            [Enabled]
   SATA Port1 HotPlug             [Disabled]

   SATA Port0                                                 →←: Select Screen
   WDC WD1600BEVT (160.0GB)                                   ↑↓: Select Item
                                                              Enter: Select
   SATA Port1                                                 +/-: Change Opt.
   Not Present                                                F1: General Help
                                                              F2: Previous Values
                                                              F3: Optimized Defaults
                                                              F4: Save & Exit
                                                              ESC: Exit




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```

Figure 4-12. IDE Configuration Screen

BIOS Setting	Options	Description/Purpose
Serial-ATA Controller(s)	- Disabled - Enabled	Enable or disable SATA Device.
SATA Test Mode	- Disabled - Enabled	Enable or disable SATA Test Mode.
SATA Speed Support	- GEN1 - GEN2	Gen1 mode sets the device to 1.5 Gbit/s speed. Gen2 mode sets the device to 3 Gbit/s speed (in case it is compatible).
SATA Mode	- IDE mode - AHCI mode	Configure SATA as following: • **IDE:** Set SATA operation mode to IDE mode. • **AHCI:** SATA works as AHCI (Advanced Host Controller Interface) mode for getting better performance.
SATA Port 0(Note*1)	- Disabled - Enabled	Enable or disable SATA port 0 device.
SATA Port 0 HotPlug	- Disabled - Enabled	Enable or disable SATA port 0 device Hot Plug

BIOS Setting	Options	Description/Purpose
SATA Port 1(Note*2)	- Disabled - Enabled	Enable or disable SATA port 1 device.
SATA Port 1 HotPlug	- Disabled - Enabled	Enable or disable SATA port 1 Device Hot Plug
SATA Port 0	[drive]	Display the drive installed on this SATA port 0. Shows [Empty] if no drive is installed. If the mother board supports RAID, it will show ASMT109x- Conf (0.1GB)
SATA Port 1	[drive]	Display the drive installed on this SATA port 1. Shows [Empty] if no drive is installed.

4.4.6 OS Selection

Select **CPU Configuration > OS Selection** from the **Advanced** menu and press **Enter** to select the Windows operating system.

```
          Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
       Advanced

    OS Selection                                              OS Selection
    OS Selection                        [Windows 7]




                                                          ↔: Select Screen
                                                          ↑↓: Select Item
                                                          Enter: Select
                                                          +/-: Change Opt.
                                                          F1: General Help
                                                          F2: Previous Values
                                                          F3: Optimized Defaults
                                                          F4: Save & Exit
                                                          ESC: Exit



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```
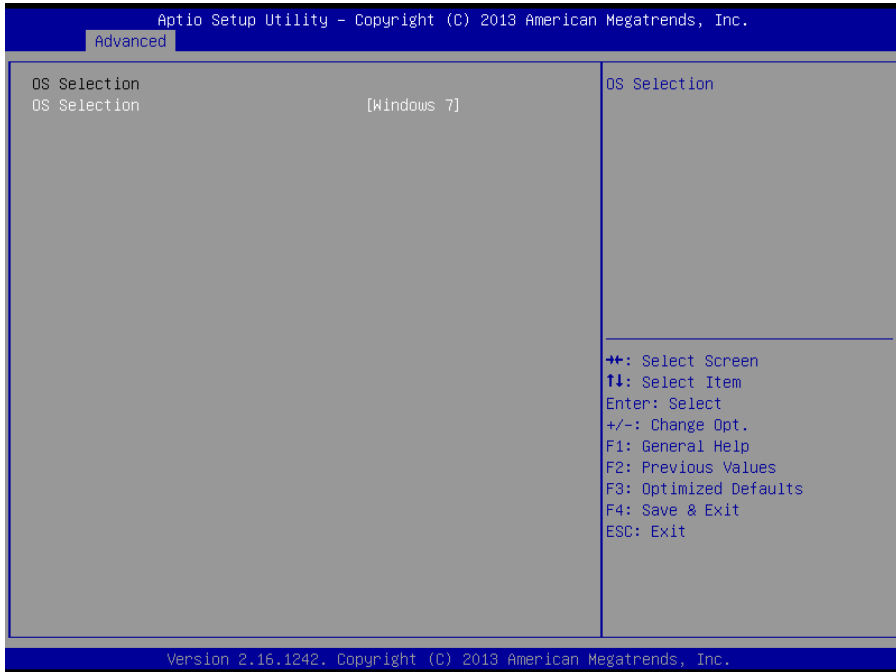
Figure 4-13. OS Selection Screen

BIOS Setting	Options	Description/Purpose
OS Selection	- Windows 8 - Android - Windows 7	Operating System Selection

4.4.7　　Voltage/RI Adjustment Configuration

Select **CPU Configuration > Voltage/RI Adjust Configuration** from the **Advanced** menu and press **Enter** to configure the voltage levels of COM1-COM4 and cash drawer.

```
             Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
       Advanced

   COM1 select                      [Disabled]              COM1 select RI 12V and 5V
   COM2 select                      [RI]
   COM3 select                      [RI]
   COM4 select                      [Disabled]
   Cash drawer                      [Cash drawer 12V]




                                                            →←: Select Screen
                                                            ↑↓: Select Item
                                                            Enter: Select
                                                            +/-: Change Opt.
                                                            F1: General Help
                                                            F2: Previous Values
                                                            F3: Optimized Defaults
                                                            F4: Save & Exit
                                                            ESC: Exit




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```

Figure 4-14. Voltage/RI Adjustment Screen

BIOS Setting	Options	Description/Purpose
COM1 Select	- Disabled - RI -12V -5V	Select the voltage level of COM1 port.
COM2 Select	- Disabled - RI -12V -5V	Select the voltage level of COM2 port.
COM3 Select	- Disabled - RI -12V -5V	Select the voltage level of COM3 port.
COM4 Select	- Disabled - RI -12V	Select the voltage level of COM4 port.

BIOS Setting	Options	Description/Purpose
	-5V	
Cash drawer	- Cash drawer 12V - Cash drawer 24V	Select the voltage level of the cash drawer.

4.4.8   CSM Configuration

Select **CPU Configuration > CSM Configuration** from the **Advanced** menu and press **Enter** to configure the relevant CSM settings.
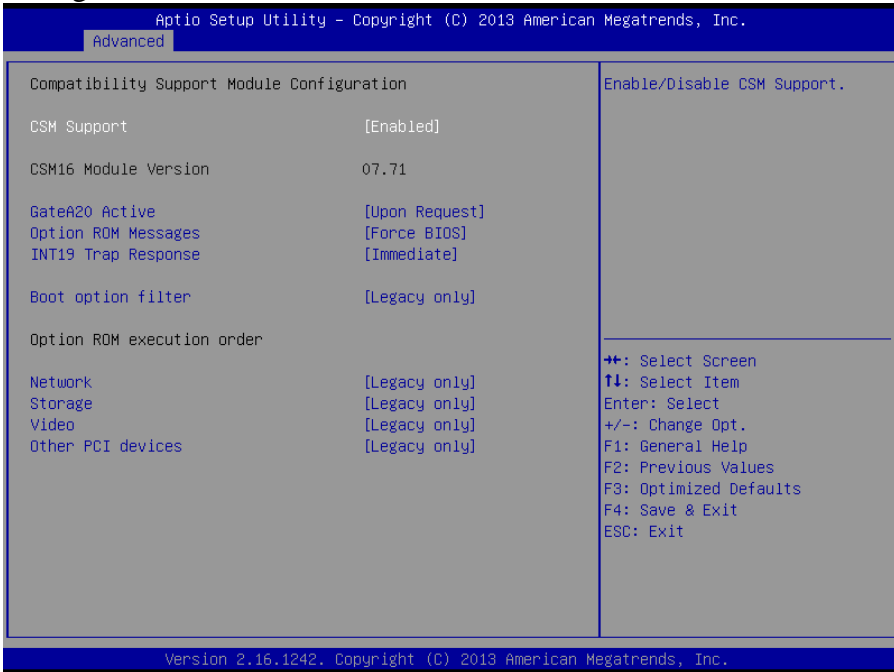
Figure 4-15. CSM Configuration Screen

BIOS Setting	Options	Description/Purpose
CSM Support	- Disabled - Enabled	Disable or enable CSM support
CSM16 Module Version	No changeable options	Display the current CSM (Compatibility Support Module) version.
GateA20 Active	- Upon Request - Always	Select Gate A20 operation mode. • **Upon Request**: GA20 can be disabled using BIOS services. • **Always:** do not allow disabling GA20; this option is useful when any RT code is executed above 1MB.
Option ROM Messages	- Force BIOS - Keep Current	Set the display mode for Option ROM messages.

BIOS Setting	Options	Description/Purpose
INT19 Trap Response	- Immediately - Postponed	BIOS reaction on INT19 trapping by Option ROM. • **Immediate:** Execute the trap right away. • **Postponed:** Execute the trap during legacy boot.
Boot option filter	- UEFI and Legacy - Legacy only - UEFI only	This option controls what kind of devices that the system can boot.
Network	- Do not launch - UEFI only - Legacy only - Legacy first - UEFI first	Control the execution of UEFI or Legacy PXE
Storage	- Do not launch - UEFI only - Legacy only - Legacy first - UEFI first	Control the execution of UEFI or Legacy Storage
Video	- Do not launch - UEFI only - Legacy only - Legacy first - UEFI first	Control the execution of UEFI and Legacy Video.
Other PCI devices	- UEFI first - Legacy only	Select the launch method for other PCI devices, such as NIC, mass storage or video card.

4.4.9   USB Configuration

Select **CPU Configuration > USB Configuration** from the **Advanced** menu and press **Enter** to configure the relevant USB settings.

Figure 4-16. USB Configuration Screen

BIOS Setting	Options	Description/Purpose
USB Devices	No changeable options	Display the number of available USB devices.
Legacy USB Support	- Disabled - Enabled - Auto	Enable the support for legacy USB.
USB3.0 Support	- Disabled - Enabled	Enable/disable USB3.0 (XHCI) Controller support.
EHCI Hand-of	- Disabled - Enabled	This is a workaround for OSes without EHCI hand-off support.
USB Mass Storage Driver Support	- Disabled - Enabled	Enable/disable USB mass storage driver support.
USB transfer time-out	1 / 5 / 10 /20 sec	The time-out value for Control, Bulk, and Interrupt transfers.
Device reset time-out	10 / 20 / 30 / 40 sec	USB mass storage device Start Unit command time-out.
Device power-up delay	- Auto - Manual	The maximum time that the device will take before it properly reports itself to the Host Controller. **Auto** uses the default value: for a Root

BIOS Setting	Options	Description/Purpose
		port, it is 100 ms; for a Hub port, the delay is taken from Hub descriptor.
Device power-up delay in seconds	multiple options ranging from 0 to 40	The delay range is from 1 to 40 seconds in one second increment.
Mass Storage Devices:	- Auto - Floppy - Force FDD - Hard Disk - CD-ROM	Display the device name and choose the device emulation type.

4.4.10   Super IO Configuration

Select **Super IO Configuration** from the **Advanced** menu and press **Enter** to configure the serial ports 1-4, parallel port and PS2 Controller.

```
                  Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
          Advanced

   AMI SIO Driver Version :   A5.03.03                        View and Set Basic properties
                                                             of the SIO Logical device.
   Super IO Chip Logical Device(s) Configuration             Like IO Base, IRQ Range, DMA
 ▶ [*Active*]  Serial Port  1                                 Channel and Device Mode.
 ▶ [*Active*]  Serial Port  2
 ▶ [*Active*]  Serial Port  3
 ▶ [*Active*]  Serial Port  4
 ▶ [*Active*]  Parallel Port
 ▶ [*Active*]  PS2 Controller(KB&MS)

   WARNING: Logical Devices state showing at the left side of
   the controll, reflects current Logical Device state.
   Cahnges made during Setup Session will be shown after you     →←: Select Screen
   restart the system.                                           ↑↓: Select Item
                                                                 Enter: Select
                                                                 +/-: Change Opt.
                                                                 F1: General Help
                                                                 F2: Previous Values
                                                                 F3: Optimized Defaults
                                                                 F4: Save & Exit
                                                                 ESC: Exit


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```

Figure 4-17. Super IO Configuration Screen

BIOS Setting	Options	Description/Purpose
[*Active*] Serial Port 1	Sub-menu	Set the parameters for COM1.
[*Active*] Serial Port 2	Sub-menu	Set the parameters for COM2.
[*Active*] Serial Port 3	Sub-menu	Set the parameters for COM3.
[*Active*] Serial Port 4	Sub-menu	Set the parameters for COM4.
[*Active*] Parallel Port	Sub-menu	Set the parameters for LPT port.
[*Active*] PS2 Controller (KB&MS)	Sub-menu	Set the parameters for PS2 controller.

4.4.10.1 Serial Port 1 Configuration

Select **Super IO Configuration** from the **Advanced** menu and select **Serial Port 1 Configuration**, and press **Enter** to configure relevant settings.

```
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     Advanced

   Serial Port  1 Configuration                        Enable or Disable this Logical
                                                        Devcie.
   Use This Device                    [Enabled]

   Logical Device Settings:
   Current :     IO=3F8h; IRQ=4;

   Possible:                          [Use Automatic Settings]

   WARNING: disabling SIO Logical Devices may have unwanted
   side effects.
   PROCEED WITH CAUTION.

                                                        →←: Select Screen
                                                        ↑↓: Select Item
                                                        Enter: Select
                                                        +/-: Change Opt.
                                                        F1: General Help
                                                        F2: Previous Values
                                                        F3: Optimized Defaults
                                                        F4: Save & Exit
                                                        ESC: Exit

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```

Figure 4-18. Serial Port 1 Configuration Screen

BIOS Setting	Options	Description/Purpose
Use This Device	-Disabled -Enabled	Enable or disable Serial Port 1.
Logical device setting	No changeable options	Display the current settings of Serial Port 1.
Possible:	-Use Automatic Settings -IO=3F8h; IRQ=4 DMA -IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12 DMA -IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12 DMA -IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12 DMA -IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12 DMA	Select the IRQ and I/O resource setting for Serial Port 1.

4.4.10.2   Serial Port 2 Configuration

Select **Super IO Configuration** from the **Advanced** menu and select **Serial Port 2 Configuration**, and press **Enter** to configure relevant settings.

```
          Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
      Advanced

   Serial Port  2 Configuration                    Enable or Disable this Logical
                                                    Devcie.
   Use This Device                  [Enabled]

   Logical Device Settings:
   Current :     IO=2F8h; IRQ=3;

   Possible:                        [Use Automatic Settings]

   WARNING: disabling SIO Logical Devices may have unwanted
   side effects.
   PROCEED WITH CAUTION.

                                                    →←: Select Screen
                                                    ↑↓: Select Item
                                                    Enter: Select
                                                    +/-: Change Opt.
                                                    F1: General Help
                                                    F2: Previous Values
                                                    F3: Optimized Defaults
                                                    F4: Save & Exit
                                                    ESC: Exit

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```

Figure 4-19. Serial Port 2 Configuration Screen

BIOS Setting	Options	Description/Purpose
Use This Device	-Disabled -Enabled	Enable or disable Serial Port 2.
Logical device setting	No changeable options	Display the current settings of Serial Port 2.
Possible:	-Use Automatic Settings -IO=2F8h; IRQ=3 DMA -IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12 DMA -IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12 DMA -IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12 DMA -IO=2E8h; IRQ=3,4,5,6,7,10,11,12 DMA	Select the IRQ and I/O resource setting for Serial Port 2

4.4.10.3   Serial Port 3 Configuration

Select **Super IO Configuration** from the **Advanced** menu and select **Serial Port 3 Configuration**, and press **Enter** to configure relevant settings.

```
             Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
      Advanced

      Serial Port  3 Configuration                         Enable or Disable this Logical
                                                           Devcie.
      Use This Device                    [Enabled]

      Logical Device Settings:
      Current :     IO=3E8h; IRQ=7;

      Possible:                          [Use Automatic Settings]

      WARNING: disabling SIO Logical Devices may have unwanted
      side effects.
      PROCEED WITH CAUTION.

                                                           →←: Select Screen
                                                           ↑↓: Select Item
                                                           Enter: Select
                                                           +/-: Change Opt.
                                                           F1: General Help
                                                           F2: Previous Values
                                                           F3: Optimized Defaults
                                                           F4: Save & Exit
                                                           ESC: Exit

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```

Figure 4-20. Serial Port 3 Configuration Screen

BIOS Setting	Options	Description/Purpose
Use This Device	-Disabled -Enabled	Enable or disable Serial Port 3.
Logical device setting	No changeable options	Display the current settings of Serial Port 3.
Possible:	-Use Automatic Settings -IO=3E8h; IRQ=7 DMA -IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12 DMA -IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12 DMA -IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12 DMA -IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12 DMA -IO=2F0h;	Select the IRQ and I/O resource setting for Serial Port 3.

BIOS Setting	Options	Description/Purpose
	IRQ=3,4,5,6,7,9,10,11,12 DMA -IO=2E0h; IRQ=3,4,5,6,7,9,10,11,12 DMA	

4.4.10.4   Serial Port 4 Configuration

Select **Super IO Configuration** from the **Advanced** menu and select **Serial Port 4 Configuration**, and press **Enter** to configure relevant settings.

```
            Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
       Advanced

   Serial Port  4 Configuration                    Enable or Disable this Logical
                                                   Devcie.
   Use This Device                  [Enabled]

   Logical Device Settings:
   Current :    IO=2E8h; IRQ=10;

   Possible:                        [Use Automatic Settings]

   WARNING: disabling SIO Logical Devices may have unwanted
   side effects.
   PROCEED WITH CAUTION.

                                                   →←: Select Screen
                                                   ↑↓: Select Item
                                                   Enter: Select
                                                   +/-: Change Opt.
                                                   F1: General Help
                                                   F2: Previous Values
                                                   F3: Optimized Defaults
                                                   F4: Save & Exit
                                                   ESC: Exit

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```

Figure 4-21. Serial Port 4 Configuration Screen

BIOS Setting	Options	Description/Purpose
Use This Device	-Disabled -Enabled	Enable or disable Serial Port 4.
Logical device setting	No changeable options	Display the current settings of Serial Port 4.
Possible:	-Use Automatic Settings -IO=2E8h; IRQ=7 DMA -IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12 DMA -IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12 DMA	Select the IRQ and I/O resource setting for Serial Port 4

BIOS Setting	Options	Description/Purpose
	-IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12 DMA -IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12 DMA -IO=2F0h; IRQ=3,4,5,6,7,9,10,11,12 DMA -IO=2E0h; IRQ=3,4,5,6,7,9,10,11,12 DMA	

4.4.10.5   Parallel Port Configuration

Select **Super IO Configuration** from the **Advanced** menu and select **Parallel Port Configuration**, and press **Enter** to configure relevant settings.
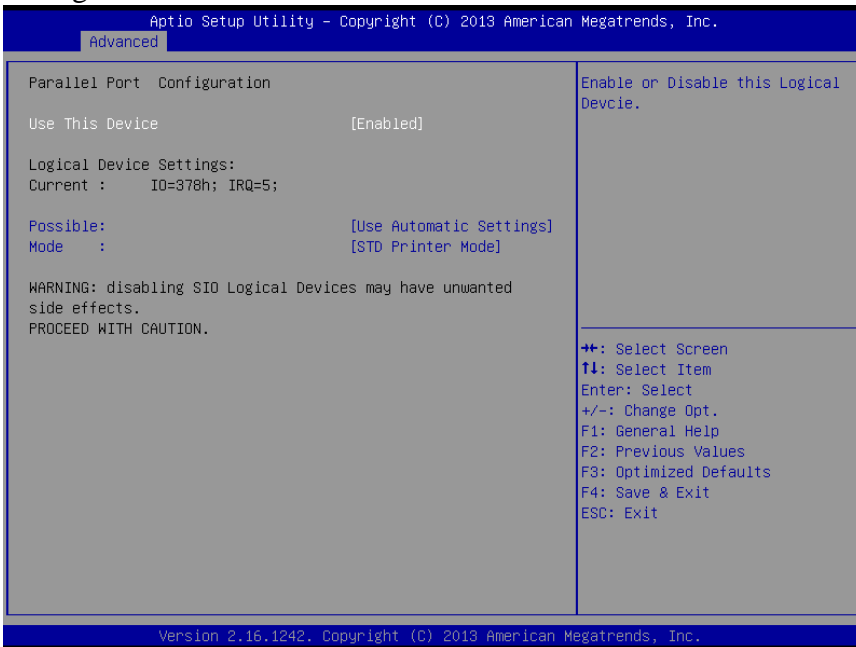
Figure 4-22. Parallel Port Configuration Screen

BIOS Setting	Options	Description/Purpose
Use This Device	-Disabled -Enabled	Enable or disable the printer port.
Logical device setting	No changeable options	Display the current settings of the printer port.
Possible:	- Use Automatic Settings -IO=378h; IRQ=5	Select the IRQ and I/O resource setting for the printer port.

BIOS Setting	Options	Description/Purpose
	-IO=378h; IRQ=5,6,7,9,10,11,12 -IO=278h; IRQ=5,6,7,9,10,11,12 -IO=3BCh; IRQ=5,6,7,9,10,11,12	
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	Select the mode for the parallel port. Not available if the parallel port is disabled. **SPP** is the Standard Parallel Port mode, a bi-directional mode for printers. **EPP** is the Enhanced Parallel Port mode, a high-speed bi-directional mode for non-printer peripherals. **ECP** is the Enhanced Capability Port mode, a high-speed bi-directional mode for printers and scanners.

4.4.10.6 PS2 Controller Configuration

Select **Super IO Configuration** from the **Advanced** menu and select **PS2 Controller Configuration**, and press **Enter** to configure relevant settings.

```
          Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
     Advanced

   PS2 Controller(KB&MS)  Configuration              Enable or Disable this Logical
                                                     Devcie.
   Use This Device                   [Enabled]

   Logical Device Settings:
   Current :    IO=60h; IO=64h; IRQ=1;

   Possible:                         [Use Automatic Settings]

   WARNING: disabling SIO Logical Devices may have unwanted
   side effects.
   PROCEED WITH CAUTION.

                                                     →←: Select Screen
                                                     ↑↓: Select Item
                                                     Enter: Select
                                                     +/-: Change Opt.
                                                     F1: General Help
                                                     F2: Previous Values
                                                     F3: Optimized Defaults
                                                     F4: Save & Exit
                                                     ESC: Exit

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```

Figure 4-23. PS2 Controller (KB & MS) Configuration Screen

BIOS Setting	Options	Description/Purpose
Use This Device	-Disabled -Enabled	Enable or disable the PS2 controller.
Logical device setting Current	No changeable options	Display the current settings of the printer port.
Possible:	- Use Automatic Settings -IO=60h; IO=60h; IRQ=1	Select the IRQ and I/O resource setting for the PS2 controller.

4.5   Chipset Menu

Select the **Chipset** menu and press **Enter** to configure the North Bridge and South Bridge.
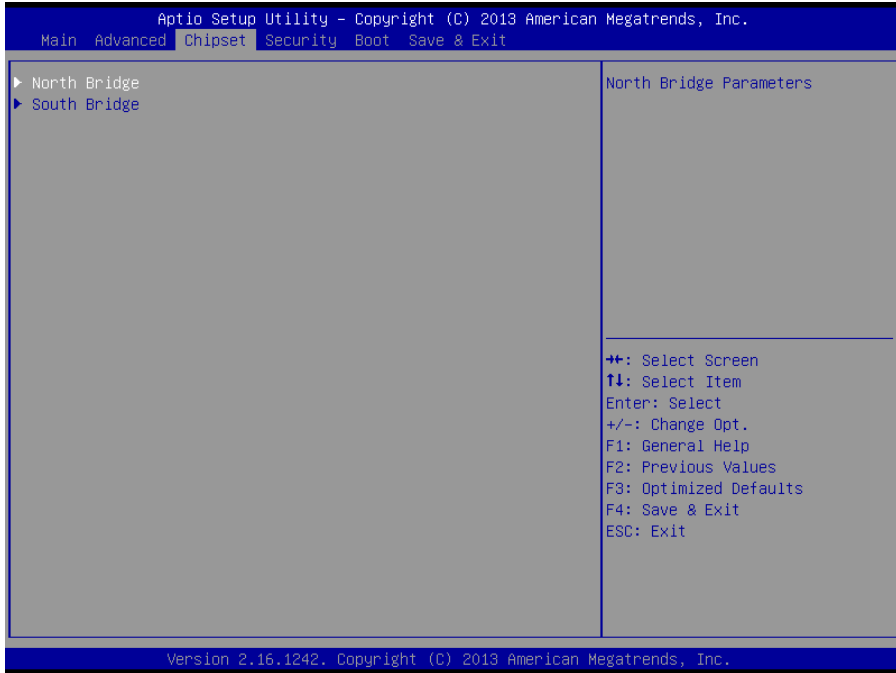
Figure 4-24. Chipset Menu Screen

BIOS Setting	Options	Description/Purpose
North Bridge	Sub-menu	Set the parameter for North Bridge configuration.
South Bridge	Sub-menu	Set the parameter for South Bridge configuration.

4.5.1   Configuring North Bridge

Select the **North Bridge** option from the **Chipset** menu, and press **Enter** to configure relevant parameters.
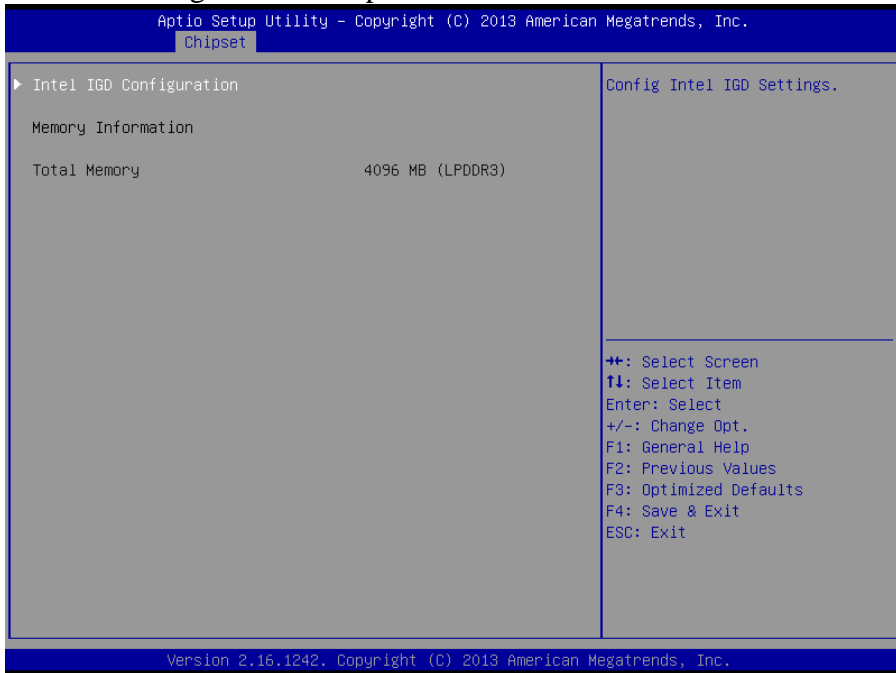
Figure 4-25. North Bridge Configuration Screen

BIOS Setting	Options	Description/Purpose
Intel IGD Configuration	Sub-menu	Configure Graphic Settings.
Memory Information	No changeable options	Display the DRAM information on platform.
Total Memory	No changeable options	Display the DRAM size

4.5.1.1　　　　GOP Configuration

Select **GOP Configuration** from **Chipset** menu **> North Bridge** > **Intel IGD Configuration** and press **Enter** to configure relevant parameters.

```
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                    Chipset

        GOP Configuration                                   Enable GOP Driver will unload
        GOP Driver                        [Enabled]         VBIOS; Disbale it will load
                                                            VBIOS
        Intel IGD Configuration

        Integrated Graphics Device        [Enabled]

        IGD Turbo Enable                  [Enabled]
        GFX Boost                         [Disabled]
        DVMT Pre-Allocated                [64M]


                                                            ++: Select Screen
                                                            ↑↓: Select Item
                                                            Enter: Select
                                                            +/-: Change Opt.
                                                            F1: General Help
                                                            F2: Previous Values
                                                            F3: Optimized Defaults
                                                            F4: Save & Exit
                                                            ESC: Exit



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```

Figure 4-26. Intel IGD Configuration Screen

BIOS Setting	Options	Description/Purpose
GOP Driver	- Disabled - Enabled	Enable or disable GOP Driver for UEFI OS
Intel IGD Configuration	No changeable options	Display the IGD information on platform.
Integrated Graphics Device	- Disabled - Enabled	• **Enabled:** Enable Integrated Graphics Device (IGD) when selected as the Primary Video Adaptor. • **Disabled:** Always disable IGD.
IGD Turbo Enable	- Disabled - Enabled	Enable or disable IGD Turbo
GFX Boost	- Disabled - Enabled	Enable or disable GFX Boost accelerated graphics processing
DVMT Pre-Allocated	- 32M	Select DVMT 5.0 Pre-Allocated (Fixed)

BIOS Setting	Options	Description/Purpose
	- 64M - 96M - 128M - 256M - 512M	Graphics Memory size used by the Internal Graphics Device.

4.5.2 South Bridge

Select **South Bridge** from the **Chipset** menu, and press **Enter** to configure relevant parameters.
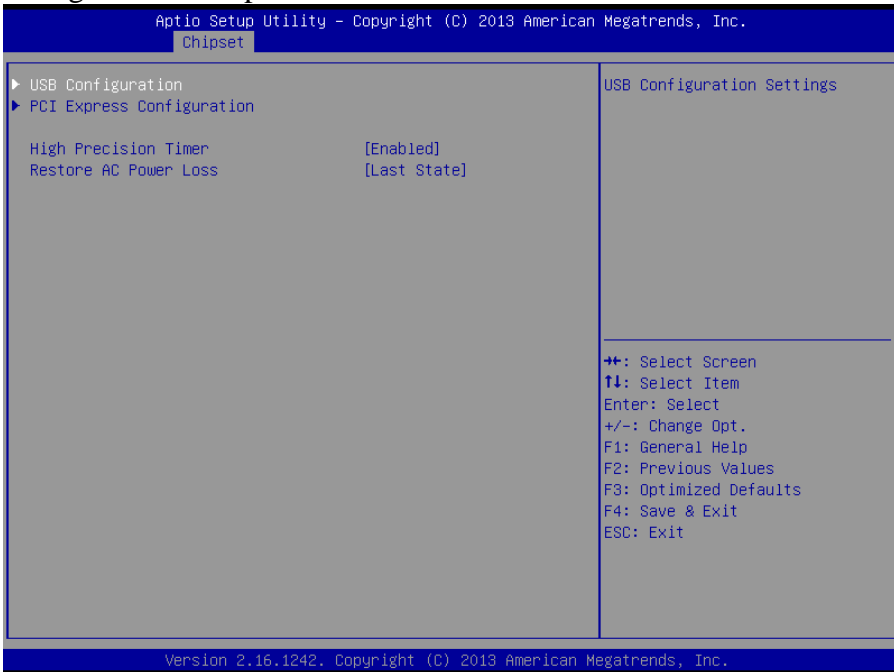
Figure 4-27. South Bridge Screen

BIOS Setting	Options	Description/Purpose
USB Configuration	Sub-menu	Configure USB parameters.
PCI Express Configuration	Sub-menu	Configure PCH PCIE parameters
High Precision Timer	- Disabled - Enabled	Enable or disable the HPET (High Precision Event Timer)
Restore AC Power Loss	- Power Off - Power On - Last State	Select the AC power state when the power supply is restored following a power failure. • **Power Off** keeps the power off unless the power button is pressed. • **Power On** keeps the system power on

BIOS Setting	Options	Description/Purpose
		after the AC power is restored to the board. • **Last State** brings the system back to the last power state before the AC power is lost.

4.5.3   USB Configuration

Select the **South Bridge** option from the **Chipset** menu, and select **USB Configuration** and press **Enter** to configure relevant parameters.
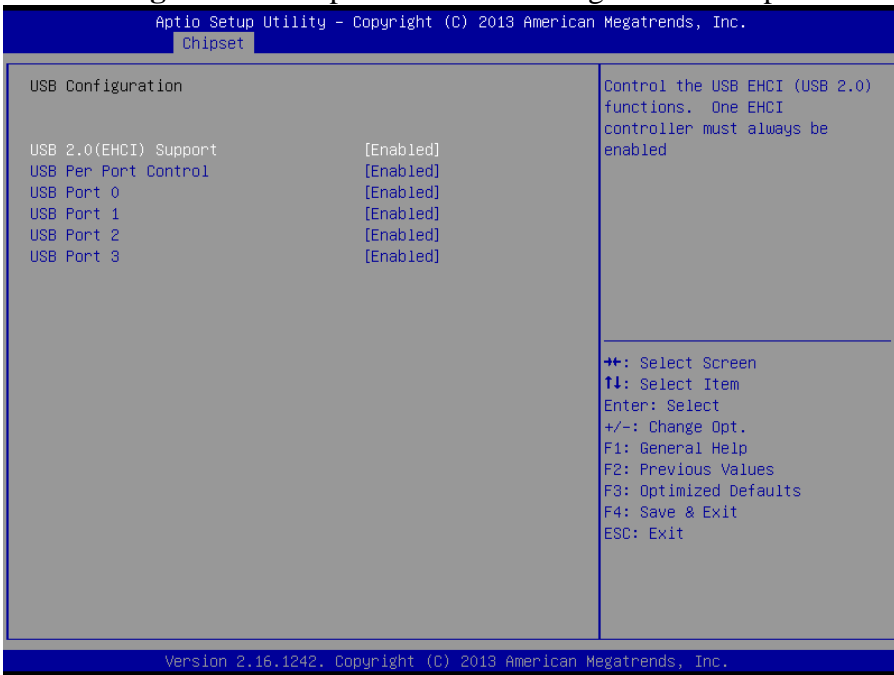
Figure 4-28. Chipset Menu > USB Configuration Screen

BIOS Setting	Options	Description/Purpose
USB 2.0(EHCI) Support	- Disabled - Enabled	(XHCI Mode need set disabled.) Enable the Enhanced Host Controller Interface 1 for high-speed USB functions (USB 2.0).
USB Per Port Control	- Disabled - Enabled	Enable or disable per USB port.
USB Port 0	- Disabled - Enabled	Enable or disable USB Port 0.
USB Port 1	- Disabled - Enabled	Enable or disable USB Port 1.
USB Port 2	- Disabled	Enable or disable USB Port 2.

BIOS Setting	Options	Description/Purpose
	- Enabled	
USB Port 3	- Disabled - Enabled	Enable or disable USB Port 3.

4.5.4   PCI Express Configuration

Select the **South Bridge** option from the **Chipset** menu, and select **PCI Express Configuration** and press **Enter** to enable/disable the PCI Express Ports 0-3, and their speeds.

```
            Aptio Setup Utility – Copyright (C) 2013 American Megatrends, Inc.
                Chipset

    PCI Express Configuration                          Enable or Disable the PCI
    PCI Express Port 0 (Note*1)       [Enabled]        Express Port 0 in the Chipset.
    Speed                             [Auto]
                                                       Note*1
                                                        If the "Slot_2" of the board
    PCI Express Port 2(For mini PCI-E) [Enabled]       support PCIE function, the
    Speed                             [Auto]           switch could control it.

    PCI Express Port 3(For RTL8111)   [Enabled]
    Speed                             [Auto]


                                                       ←→: Select Screen
                                                       ↑↓: Select Item
                                                       Enter: Select
                                                       +/-: Change Opt.
                                                       F1: General Help
                                                       F2: Previous Values
                                                       F3: Optimized Defaults
                                                       F4: Save & Exit
                                                       ESC: Exit


            Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.
```

Figure 4-29. PCI Express Configuration Screen

BIOS Setting	Options	Description/Purpose
PCI Express Port 0 (Note*1)	- Disabled - Enabled	Enable or disable PCI Express Port 0.
speed	- Auto - Gen1 - Gen2	Select the speed of PCI Express Port 0.
PCI Express Port 2(For mini PCI-E)	- Disabled - Enabled	Enable or disable PCI Express Port 2.
speed	- Auto - Gen1 - Gen2	Select the speed of PCI Express Port 2.
PCI Express Port 3	- Disabled	Enable or disable PCI Express Port 3.

BIOS Setting	Options	Description/Purpose
(For RTL8111)	- Enabled	
speed	- Auto - Gen1 - Gen2	Select the speed of PCI Express Port 3.

4.6   Security Menu

From the **Security** menu, you are allowed to configure or change the administrator password. You will be asked to enter the configured administrator password before you are allowed to access the Setup Utility.

By setting an administrator password, you will prevent other users from changing your BIOS settings. You can configure an Administrator password and then configure a user password. Heed that a user password does not provide access to many of the features in the Setup utility.

```
Aptio Setup Utility – Copyright (C) 2013 American Megatrends, Inc.
 Main  Advanced  Chipset  Security  Boot  Save & Exit

 Password Description                            Set Administrator Password

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

 HDD Security Configuration:
 P0:WDC WD10EADS

       Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.
```

Figure 4-30. BIOS Password Configuration Screen

Configure the Administrator Password according to the password policy specified below:

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

Follow the instructions below to configure the administrator password:
1. Select the **Administrator Password** item and press **Enter**.
2. Type in the new administrator password and press **Enter** when you are finished.
3. Another dialog box prompts you to retype the password for confirmation. Retype the password correctly and press **Enter**.
4. Navigate back to the main menu and select **SAVE & EXIT** menu. Your system will then reboot and you'll be prompted for the password.

To remove the password protection, highlight the **Administrator Password** item and type in the current password. Press **Enter** to disable the password protection from the dialog box that opens.

4.7   Boot Menu

Select the **Boot** menu to configure the boot sequence and priority of the boot devices.

```
              Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
      Main  Advanced  Chipset  Security  Boot  Save & Exit

   Boot Configuration                                         Number of seconds to wait for
   Setup Prompt Timeout                  3                     setup activation key.
   Bootup NumLock State                  [On]                  65535(0xFFFF) means indefinite
                                                               waiting.
   Quiet Boot                            [Disabled]


   Boot Option Priorities
   Boot Option #1                        [P0: WDC WD1600BEVT-...]

   Hard Drive BBS Priorities


                                                              ++: Select Screen
                                                              ↑↓: Select Item
                                                              Enter: Select
                                                              +/-: Change Opt.
                                                              F1: General Help
                                                              F2: Previous Values
                                                              F3: Optimized Defaults
                                                              F4: Save & Exit
                                                              ESC: Exit




              Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.
```

Figure 4-31. Boot Configuration Screen

BIOS Setting	Option	Description/Purpose
Setup Prompt Timeout	Numeric	Number of seconds to wait for setup activation key.
Bootup NumLock State	- On - Off	Select the NumLock sate after the system is powered on. • **On:** Enable the NumLock function automatically after the system is powered on. • **Off:** Disable the NumLock function after the system is powered on.
Quiet Boot	- Disabled - Enabled	Enable/Disable Quiet Boot Options.
Boot Option #1~#n	- [Drive(s)] - Disabled	Allow users to set the boot option listed in Hard Drive BBS Priorities.
Hard Drive BBS Priorities	Sub-Menu	Allow users to select the boot order of the available drive(s).

4.7.1   Configuring Hard Drive BBS Priorities

Select **Hard Drive BBS Priorities** from the **Boot** menu to configure the boot sequence and priority of the available drives.

```
          Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
                                      Boot

   Boot Option #1                [P0: WDC WD10EADS-00...]      Sets the system boot order
   Boot Option #2                [JetFlashTranscend 4...]



                                                              ←→: Select Screen
                                                              ↑↓: Select Item
                                                              Enter: Select
                                                              +/-: Change Opt.
                                                              F1: General Help
                                                              F2: Previous Values
                                                              F3: Optimized Defaults
                                                              F4: Save & Exit
                                                              ESC: Exit

          Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.
```
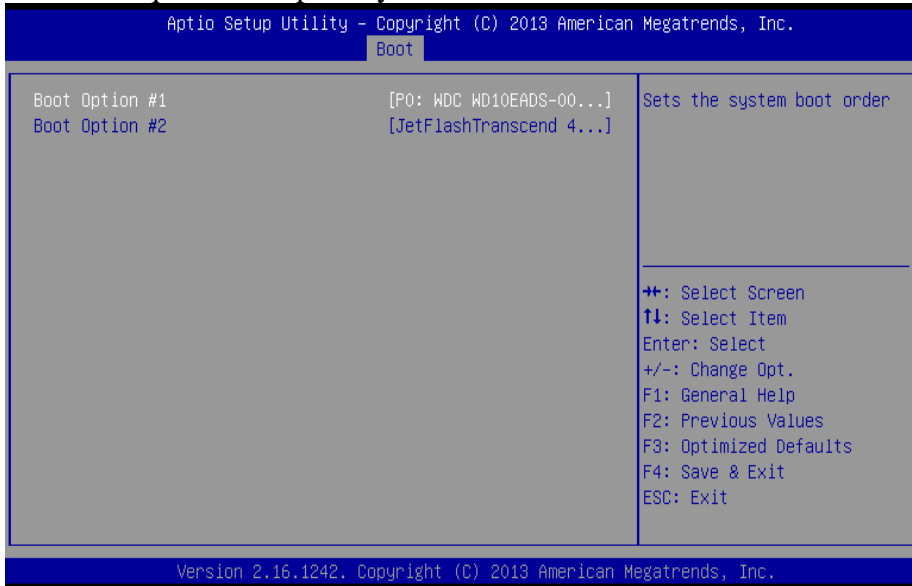
Figure 4-32. Hard Drive BBS Priorities Screen

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

4.8 Save & Exit Menu

To save and validate the changed BIOS settings, select the **Save & Exit** menu and the following page will display:

```
             Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
    Main  Advanced  Chipset  Security  Boot  Save & Exit

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


  Restore Defaults

  Boot Override
  P0: WDC WD1600BEVT-00A23T0



                                                           →←: Select Screen
                                                           ↑↓: Select Item
                                                           Enter: Select
                                                           +/-: Change Opt.
                                                           F1: General Help
                                                           F2: Previous Values
                                                           F3: Optimized Defaults
                                                           F4: Save & Exit
                                                           ESC: Exit



             Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.
```

Figure 4-33. Save & Exit Menu Screen

Configure the following fields according to your needs:

BIOS Setting	Options	Description/Purpose
Save Changes and Exit	No changeable option	Exit and save the changes in NVRAM.
Discard Changes and Exit	No changeable options	Exit the system without saving any changes made in BIOS settings.
Save Changes and Reset	No changeable options	Save the changes in NVRAM and reset the system.
Discard Changes and Reset	No changeable options	Reset the system without saving any changes made in BIOS settings.
Restore Defaults	No changeable options	Load the optimized defaults for BIOS settings.
Boot Override	- [Drive(s)]	Force to boot from the selected [drive(s)].

Appendix A   System Diagrams

This appendix contains exploded diagrams and part numbers of the KF-7130 system.

The following topics are included:

KF-7130 System Exploded Diagram

NO.	Component Name	Part No.	Q'ty	Remark
1	PA-7225		1	
2	PLASTIC_PANEL_ASSM		1	
3	DRAWER_ASSM		1	
4	LASER_PRINTER_DOOR	20-047-02063360	1	
5	FLAT HEAD SCREW M3x0.5Px6mm	22-215-30060011	7	2.5-3.5kg-cm

Second Display Exploded Diagram
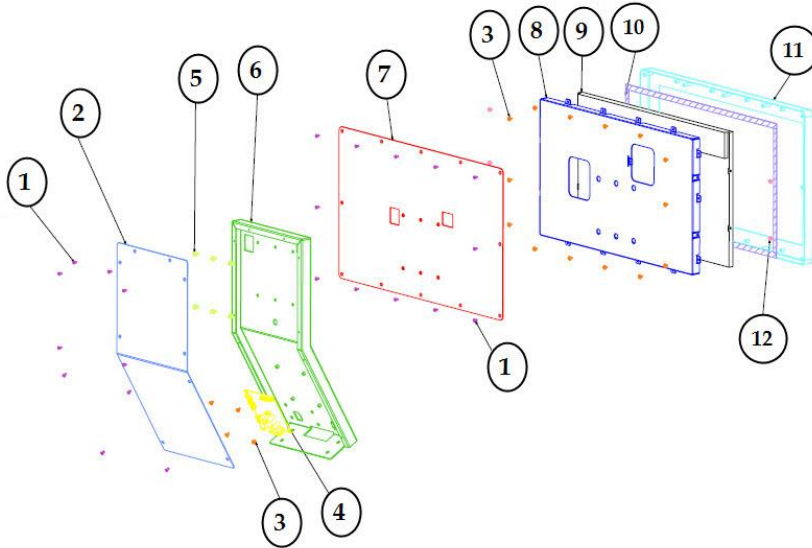
NO.	Component Name	Part No.	Q'ty	Remark
01	FLAT HEAD SCREW M3x0.5Px6mm	22-215-30060011	22	2.5-3.5kg-cm
02	2ND_MONITOR_FRAME_COVER	20-004-03061360	1	
03	ROUND WASHER HEAD SCREW M3x0.5Px5mm	22-242-30005311	18	2.5-3.5kg-cm
04	DISPLAY_BOARD_PCB		1	
05	ROUND HEAD WITH SPRING WASHER SCREW M4x0.7Px8mm	22-232-40008211	6	3.0-3.5kg-cm
06	2ND_DISPLAY_HOLDER	20-029-02061360	1	
07	2ND_BACK_BRACKET	20-006-03061360	1	
08	LCD_HOLDER	20-029-03001360	1	
09	18.5" LCD panel	52-351-14018521	1	
10	PK-7090 2ND LCD PORON H (430x10x0.5mm)	30-013-24100284	4	
11	2ND_FRONT_HOLDER	20-006-03062360	1	
12	ROUND HEAD WITH SPRING WASHER SCREW M3x0.5Px5mm	22-232-30060011	4	2.5-3.5kg-cm

Second Display Installation Exploded Diagram
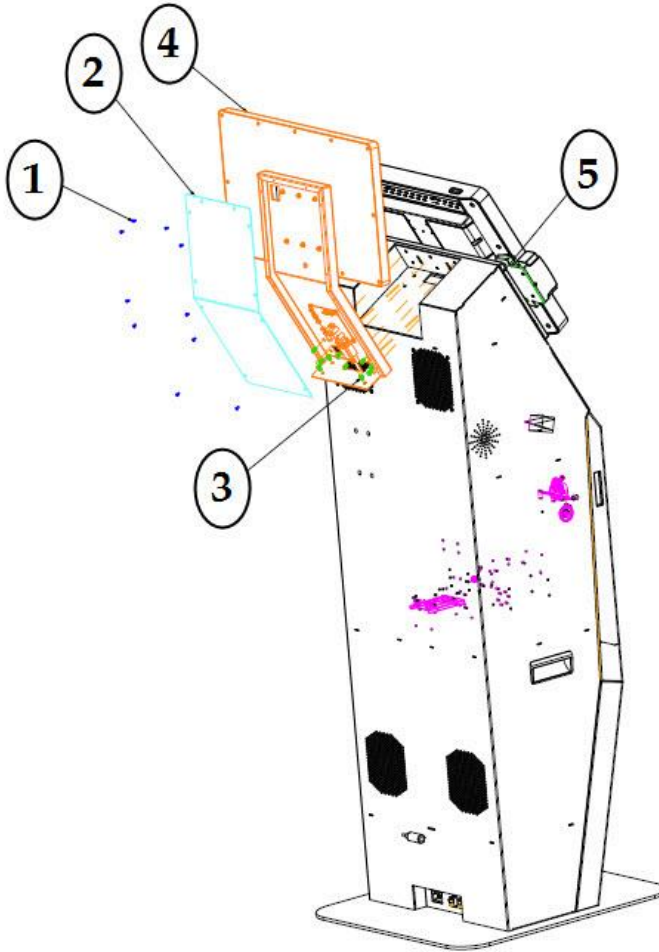
NO.	Component Name	Part No.	Q'ty	Remark
1	FLAT HEAD SCREW M3x0.5Px6mm	22-215-30060011	10	2.5-3.5kg-cm
2	2ND_MONITOR_FRAME_COVER	20-004-03061360	1	
3	ROUND WASHER HEAD SCREW M4x0.7Px8mm	22-232-40008011	10	3.0-3.5kg-cm
4	2ND_DISPLAY_ASSM		1	
5	MAIN_BODY_ASSM		1	

Bar Code Scanner Exploded Diagram
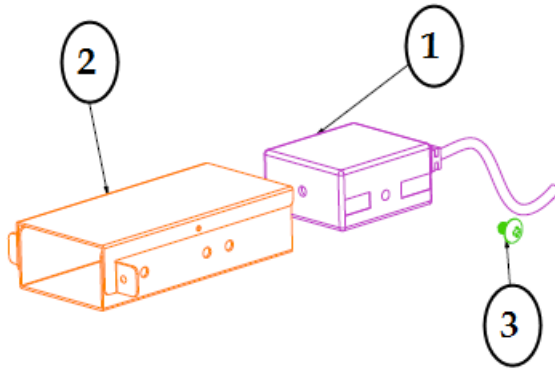
NO.	Component Name	Part No.	Q'ty	Remark
1	BARCODE_SCANNER		1	
2	BARCODE_SCANNER _BRACKET	20-006-03060360	1	
3	TRUSS HEAD SCREW M5x0.8Px8mm	22-242-50008011	1	3.0-3.5kg-cm

Card Reader Exploded Diagram
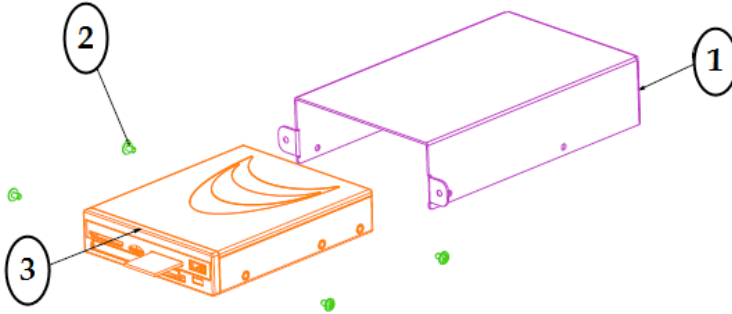
NO.	Component Name	Part No.	Q'ty	Remark
1	CARD_READER_HOLDER	20-029-03002360	1	
2	ROUND WASHER HEAD SCREW M3x0.5Px5mm	22-242-30005311	4	
3	CARD_READER		1	

Drawer Exploded Diagram (1)
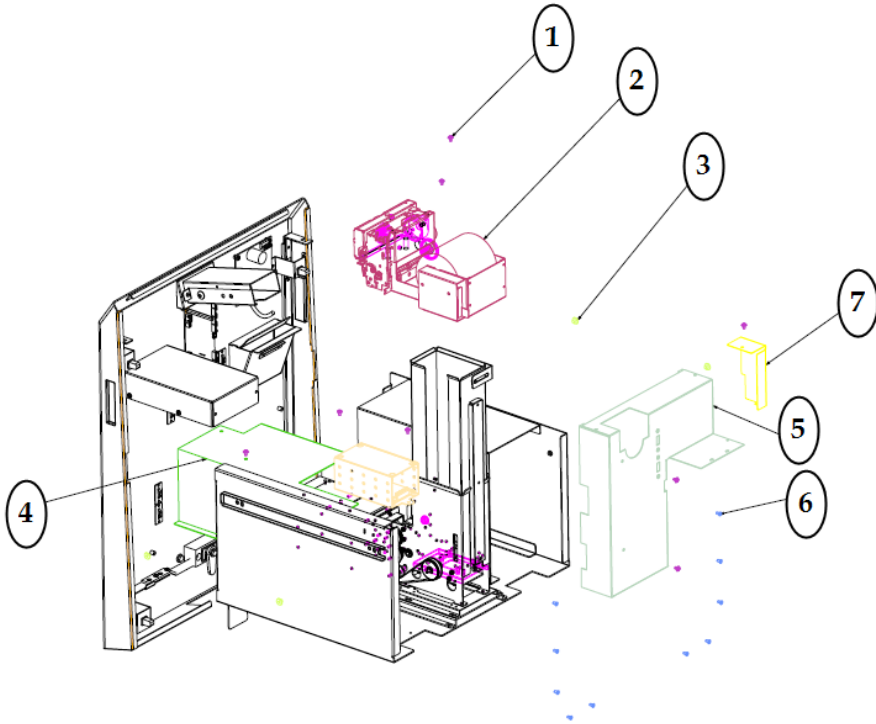
NO.	Component Name	Part No.	Q'ty	Remark
1	ROUND WASHER HEAD SCREW M3x0.5Px5mm	22-242-30005311	8	2.5-3.5kg-cm
2	THERMAL_PRINTER_ASSM		1	
3	FILLISTR HEAD SCREW M4x0.7Px4mm(Black)	22-275-40004911	4	3.0-3.5kg-cm
4	EWTK_BRACKET	20-029-03116360	1	
5	COVER_LINK_HOLDER	20-006-03116360	1	
6	FLAT HEAD SCREW M3x0.5Px6mm	22-215-30060011	12	2.5-3.5kg-cm
7	GEAR_BRACKET	20-006-03122360	1	

Drawer Exploded Diagram (2)
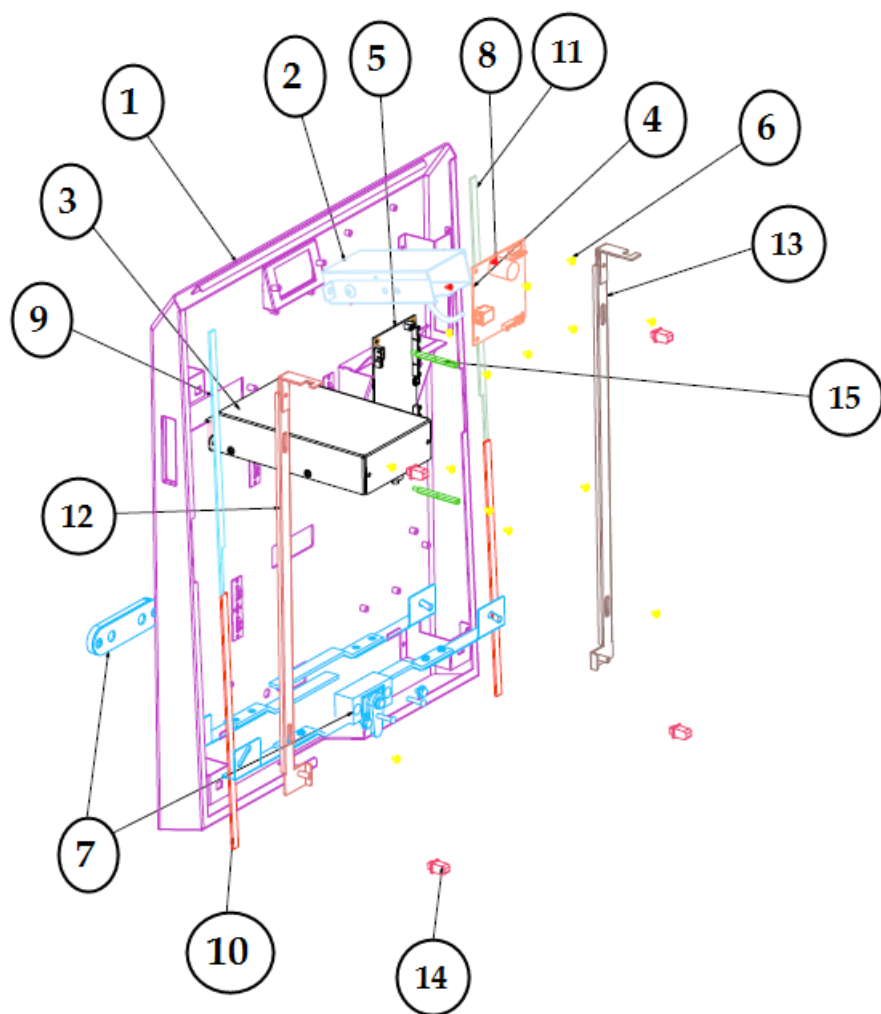
NO.	Component Name	Part No.	Q'ty	Remark
1	FRONT_DOOR_MATEL	20-047-02061360	1	
2	BARCODE_SCANNER_ASSM		1	
3	CARD_READER_ASSM		1	
4	BA-T500_PCB_ASSM		1	
5	KR-7130_PCB		1	
6	ROUND WASHER HEAD SCREW M3x0.5Px5mm	22-242-30005311	14	2.5-3.5kg-cm
7	LOCKS_ASSM		1	
8	FLAT HEAD SCREW M3x0.5Px6mm	22-215-30060011	2	2.5-3.5kg-cm
9	FRONT_SPONGE_TOP	30-013-40200360	1	
10	FRONT_SPONGE_BOT	30-013-40100360	2	
11	FRONT_SPONGE_TOP_R	30-013-40300360	1	
12	LOCK_BRACKET_R	20-006-03113360	1	
13	LOCK_BRACKET_L	20-006-03114360	1	
14	STRIKER	90-023-09300000	4	
15	HEX CU BOSS M3x0.5Px6L,H=23mm	22-290-30023051	4	2.5-3.5kg-cm

HDD Exploded Diagram
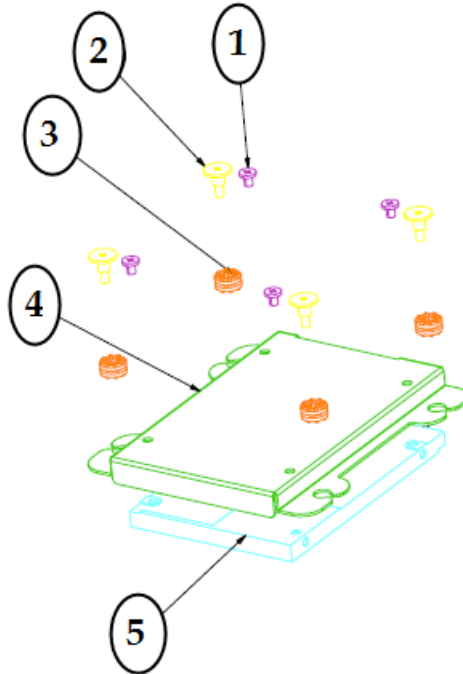
NO.	Component Name	Part No.	Q'ty	Remark
1	M3x0.5Px4mm SCREW	82-272-30004018	4	2.5-3.5kg-cm
2	M3x0.5Px4.8mm SCREW	82-272-30005013	4	2.5-3.5kg-cm
3	RUBBER WASHER (Blue)	23-680-39580963	4	
4	HDD HOLDER	20-029-03114360	1	
5	SSD		1	

Full Page Passport Reader Exploded Diagram
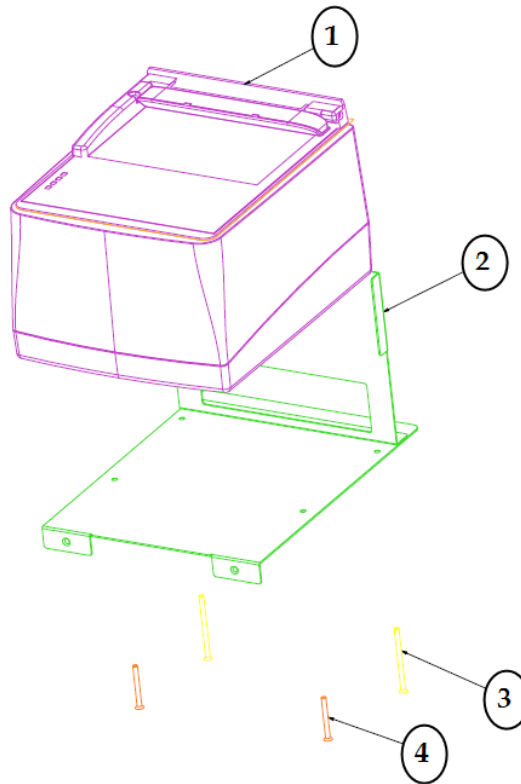
NO.	Component Name	Part No.	Q'ty	Remark
1	Passport_Reader		1	
2	KR9000_BRACKET	20-006-03001360	1	
3	FLAT HEAD SCREW T3.0x45mm	22-112-30045011	2	2.5-3.5kg-cm
4	FLAT HEAD SCREW M3x0.5Px30mm	22-212-30030011	2	2.5-3.5kg-cm

Main Body –Internal Exploded Diagram (1)
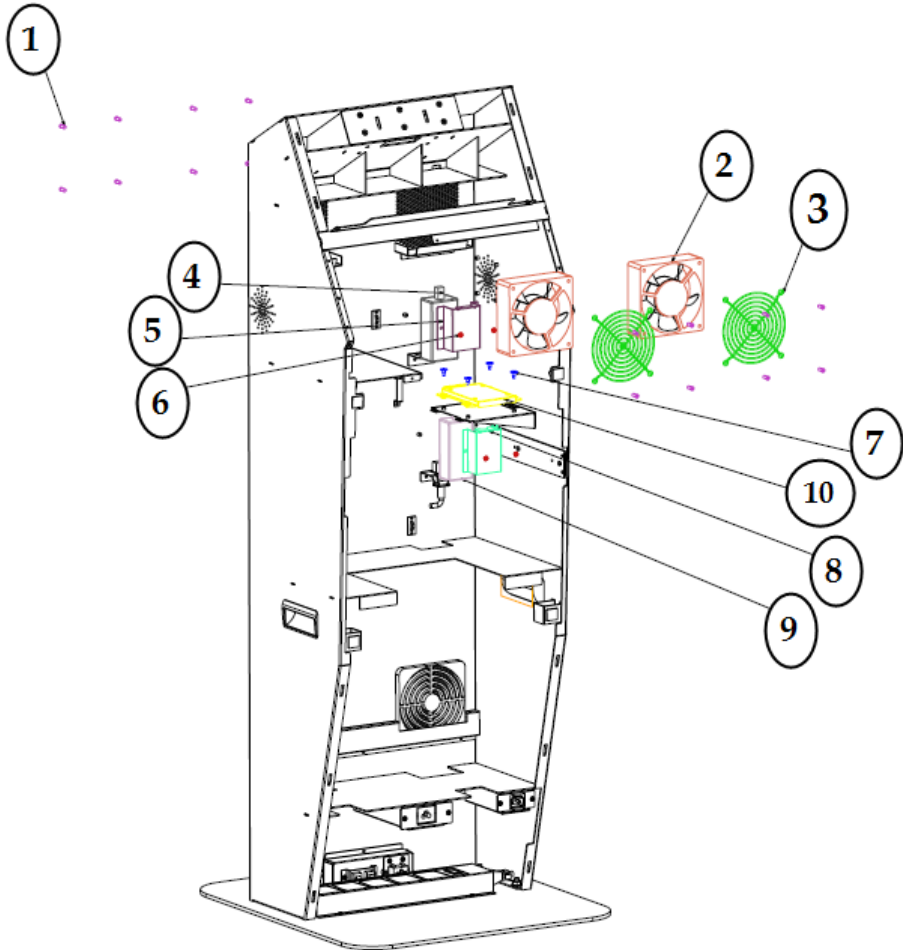
NO.	Component Name	Part No.	Q'ty	Remark
1	FLAT HEAD SCREW T4.7x11mm	22-112-47011011	16	3.0-3.5kg-cm
2	PK-7090 SYSTEM FAN (120x120x38mm)	21-004-01212002	2	
3	PK-7090 12CM FAN GUARD	20-044-29031284	2	
4	ADAPTER_POWER(FOR KR9000)		1	
5	SWITCHING_ADAPTER_HOLDER	20-029-03113360	1	
6	ROUND WASHER HEAD SCREW M3x0.5Px5mm	22-242-30005311	4	2.5-3.5kg-cm
7	FILLISTR HEAD SCREW M3x0.5Px4.8mm	82-272-30005013	4	2.5-3.5kg-cm
8	ADAPTER_DISPLAY BOARD_HOLDER	20-029-03006360	1	
9	ADAPTER_POWER (FOR AD BOARD)		1	
10	SSD_ASSM		1	

Main Body –Internal Exploded Diagram (2)
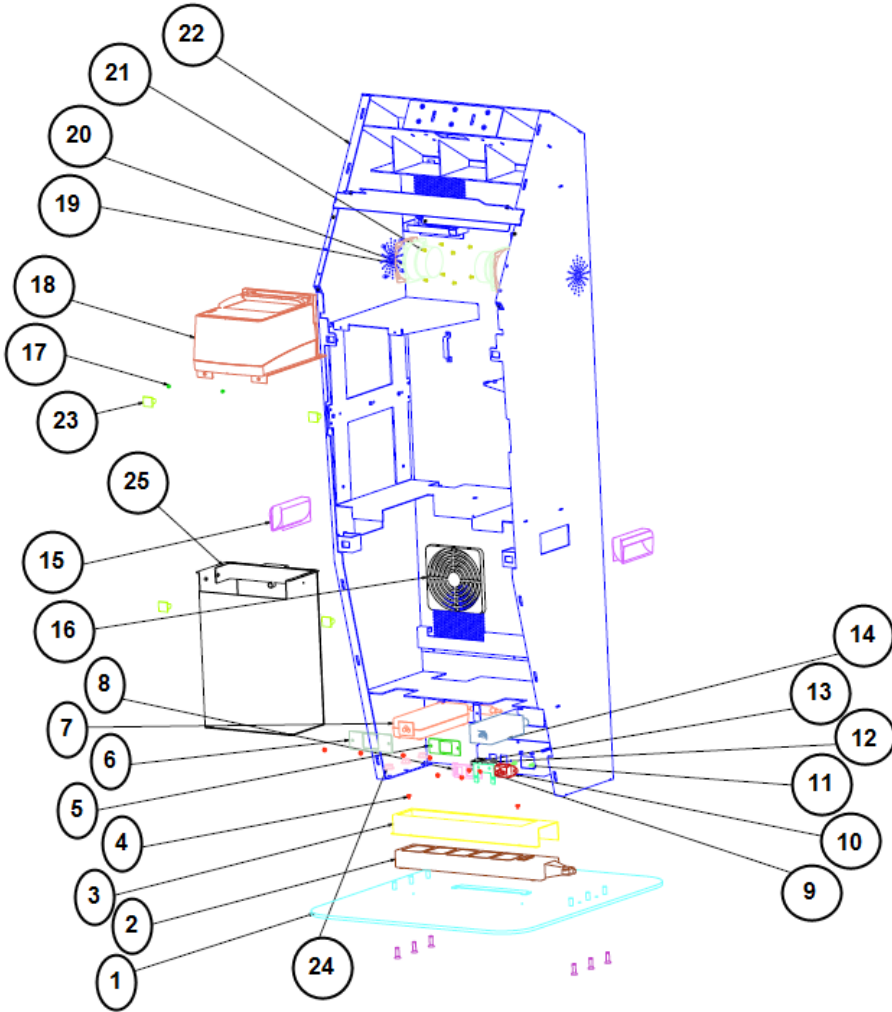
No.	Component Name	Part No.	Q'ty	Remark
1	BASE_BRACKET	20-006-02061360	1	
2	EXTENSION	52-990-01050040	1	
3	EXTENSION_SET_HOLDER	20-029-03000360	1	
4	ROUND WASHER HEAD SCREW M3x0.5Px5mm	22-242-30005311	10	2.5-3.5kg-cm
5	ADAPTER_BRACKET_PRINTER	20-006-03003360	1	
6	ADAPTER_BRACKET_PPC	20-006-03004360	1	
7	120W DC Power Adapter	52-002-02012001	1	
8	LAN_PHONE_HOLDER	20-029-03004360	1	
9	AC_CABLE_BRACKET	20-006-03005360	1	
10	AC POWER EXTEND CABLE	27-012-36004111	1	
11	FLAT HEAD SCREW M3x0.5Px10mm	22-212-30010311	2	2.5-3.5kg-cm
12	8P8C MODULAR COUPLER JACK SHIELDED	10-085-08012135	1	
13	6P6C Modular Coupler Jack shielded	10-085-06012035	1	
14	48W AC to DC 24V/2.08A Power Adapter	52-002-21106802	1	
15	PK-7090 PULL	30-080-08110284	2	
16	PK-7090 Plastic Filters(12cm)(ADDA)	30-089-28100284	2	
17	FLAT HEAD SCREW M3x0.5Px6mm	22-215-30060011	2	2.5-3.5kg-cm
18	KR-9000_ASSM		1	
19	SPEAKER_SPONGE	30-013-01100360	2	
20	SPEAKER		2	
21	ROUND HEAD SCREW M3x0.5Px5mm	22-230-30005811	8	2.5-3.5kg-cm
22	MAIN_BODY_BRACKET	20-006-02062360	1	
23	LATCH	90-023-04108000	4	
24	SLIP NUTS(M6x1.0P,H=6mm)	23-142-60601271	6	5.0-6.0kg-cm
25	WASTE_SLOT_ASSM		1	

Plastic Panel Exploded Diagram
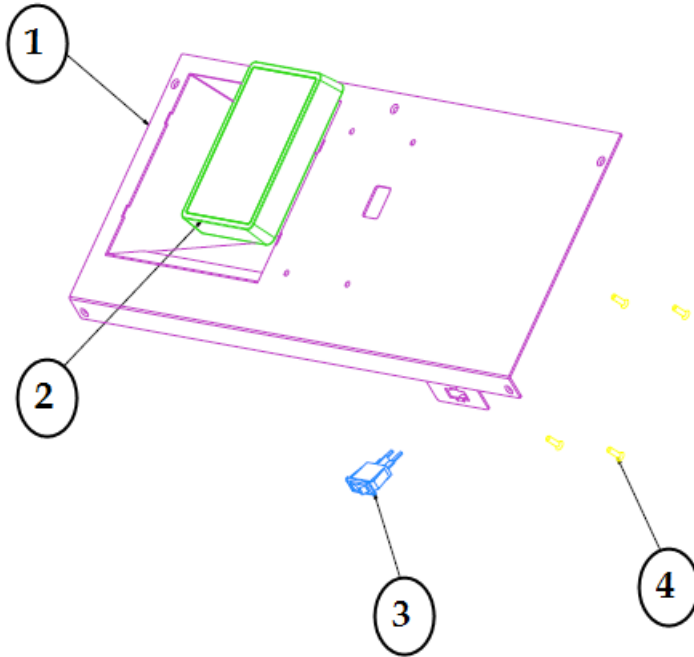
NO.	Component Name	Part No.	Q'ty	Remark
1	PLASTIC_PANEL_BRACKET	20-006-03063360	1	
2	UIC680_ASSM		1	
3	POWER SWITCH	27-019-36008071	1	
4	FLAT HEAD SCREW M3x0.5Px10mm	22-212-30010311	4	2.5-3.5kg-cm

Power Supply Exploded Diagram
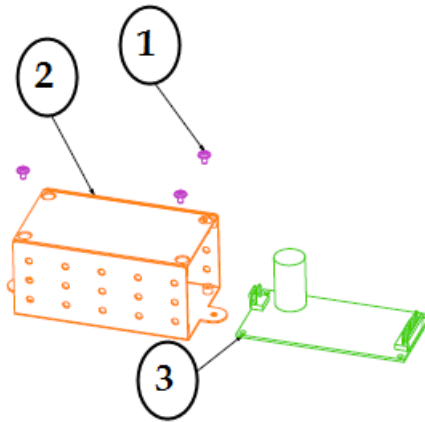
NO.	Component Name	Part No.	Q'ty	Remark
1	ROUND WASHER HEAD SCREW M3x0.5Px5mm	22-242-30005311	3	2.5-3.5kg-cm
2	BARCODE_SCANNER_BRACKET	20-006-03002360	1	
3	POWER_PCB		1	

PPC Exploded Diagram
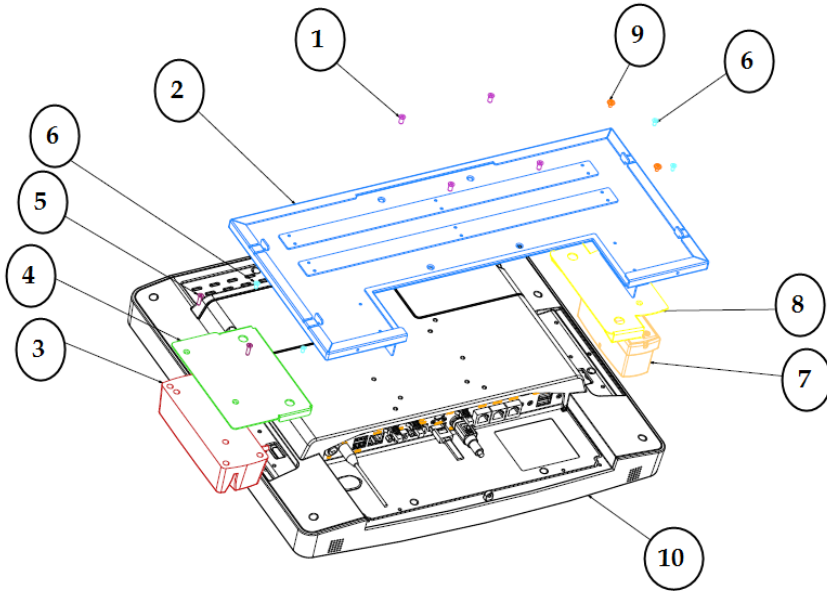
NO.	Component Name	Part No.	Q'ty	Remark
1	FLAT HEAD SCREW M4x0.7Px6mm	22-215-40006011	4	3.0-3.5kg-cm
2	PPC_HOLDER	20-029-02062360	1	
3	IMI300_MSR		1	
4	IMI300_MSR_BRACKET	20-006-03065360	1	
5	FLAT HEAD SCREW M3x0.5Px12mm	22-215-30012011	2	2.5-3.5kg-cm
6	FLAT HEAD SCREW M3x0.5Px6mm	22-215-30060011	4	2.5-3.5kg-cm
7	CR100_DOCUMENT_READER		1	
8	CR100_BRACKET	20-006-03064360	1	
9	ROUND WASHER HEAD SCREW M3x0.5Px5mm	22-242-30005311	2	
10	PA-7225_ASSM		1	

Thermal Printer Exploded Diagram
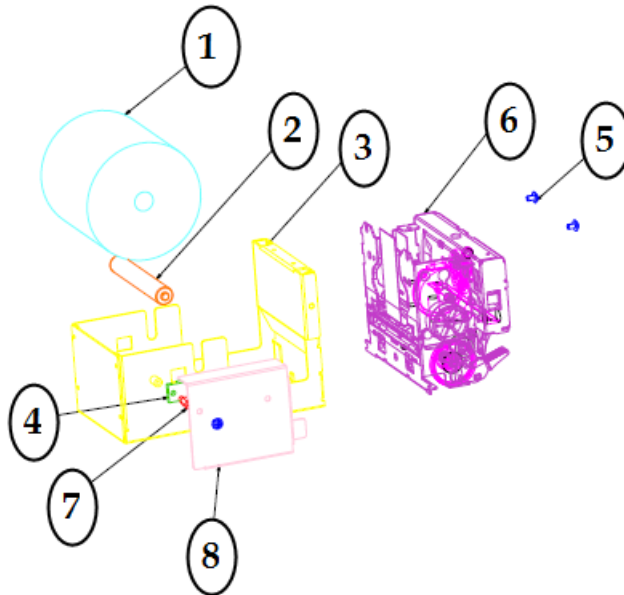
NO.	Component Name	Part No.	Q'ty	Remark
1	80X80MM		1	
2	BARS_AXIS(12MM)	22-000-12087001	1	
3	THERMAL_PRINTER_HOLDER	20-029-03009360	1	
4	Paper Near end sensor		1	
5	ROUND WASHER HEAD SCREW M3x0.5Px5mm	22-242-30005311	3	2.5-3.5kg-cm
6	M-T532_PRINTER		1	
7	HEX CU BOSS M3x0.5Px6L,H=8mm	22-290-30008051	1	2.5-3.5kg-cm
8	SENSOR_HOLDER	20-029-03118360	1	

Appendix B   Technical Summary

This appendix will give you a brief introduction of the allocation maps for the system resources.

The following topics are included:
- System Block Diagram
- Interrupt Map
- DMA Channels Map
- I/O Map
- Memory Map
- Configuring WatchDog Timer
- Flash BIOS Update

System Block Diagram
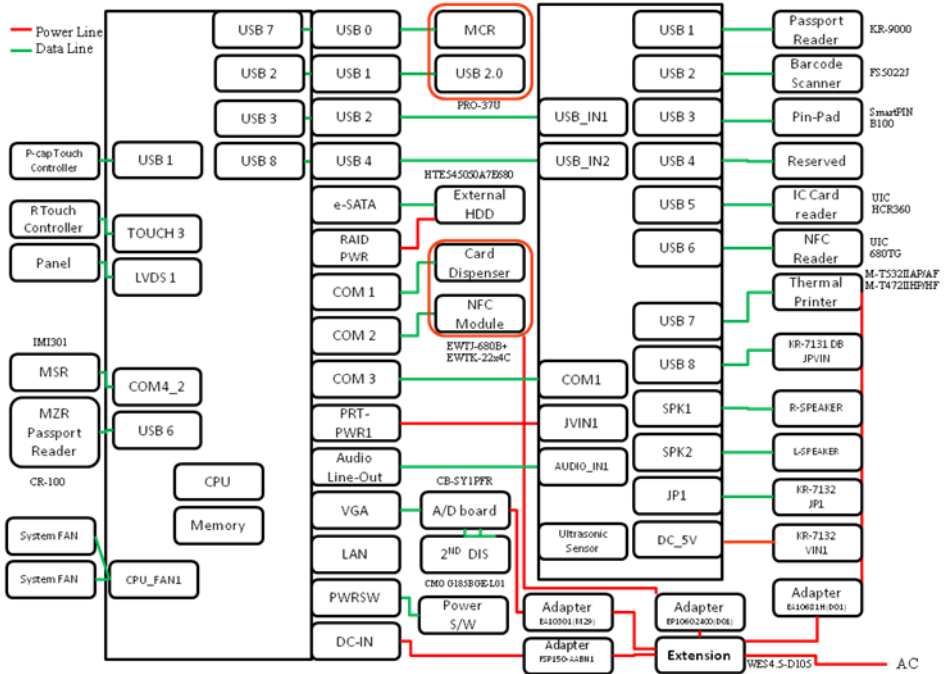
Interrupt Map

IRQ	Assignment
0	System timer
1	Standard PS/2 Keyboard
3	Communications Port (COM2)
4	Communications Port (COM1)
5	Printer Port (LPT1)
7	Communications Port (COM3)
8	High precision event timer
10	Communications Port (COM4)
16	Intel® Pentium® processor N- and J-series / Intel® Celeron® processor N- and J-series PCI Express - Root Port 1 - 0F48
17	Intel® Pentium® processor N- and J-series / Intel® Celeron® processor N- and J-series PCI Express - Root Port 2 - 0F4A
18	Intel® Pentium® processor N- and J-series / Intel® Celeron® processor N- and J-series PCI Express - Root Port 3 - 0F4C
19	Intel® Pentium® processor N- and J-series / Intel® Celeron® processor N- and J-series PCI Express - Root Port 4 - 0F4E
19	Intel® Pentium® processor N- and J-series / Intel® Celeron® processor N- and J-series AHCI - 0F23
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
87	Microsoft ACPI-Compliant System
88	Microsoft ACPI-Compliant System

IRQ	Assignment
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
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
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IRQ	Assignment
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IRQ	Assignment
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IRQ	Assignment
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IRQ	Assignment
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IRQ	Assignment
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IRQ	Assignment
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IRQ	Assignment
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IRQ	Assignment
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IRQ	Assignment
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IRQ	Assignment
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IRQ	Assignment
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IRQ	Assignment
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IRQ	Assignment
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4294967291	Intel® HD Graphics
4294967292	Intel® USB 3.0 eXtensible Host Controller - 0100 (Microsoft)
4294967293	Intel® Trusted Execution Engine Interface
4294967294	Realtek® PCIe GBE Family Controller

I/O MAP

I/O Map	Assignment
0x00000000-0x0000006F	PCI Express Root Complex
0x00000020-0x00000021	Programmable interrupt controller
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
0x0000004E-0x0000004F	Motherboard resources
0x00000050-0x00000053	System timer
0x00000060-0x00000060	Standard PS/2 Keyboard
0x00000061-0x00000061	Motherboard resources
0x00000063-0x00000063	Motherboard resources
0x00000064-0x00000064	Standard PS/2 Keyboard
0x00000065-0x00000065	Motherboard resources
0x00000067-0x00000067	Motherboard resources
0x00000070-0x00000070	Motherboard resources
0x00000070-0x00000070	System CMOS/real time clock
0x00000078-0x00000CF7	PCI Express Root Complex
0x00000080-0x0000008F	Motherboard resources
0x00000092-0x00000092	Motherboard resources
0x000000A0-0x000000A1	Programmable interrupt controller

I/O Map	Assignment
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
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)
0x00000400-0x0000047F	Motherboard resources
0x000004D0-0x000004D1	Programmable interrupt controller
0x00000500-0x000005FE	Motherboard resources
0x00000600-0x0000061F	Motherboard resources
0x00000680-0x0000069F	Motherboard resources
0x00000A00-0x00000A0F	Motherboard resources
0x00000A10-0x00000A1F	Motherboard resources
0x00000A20-0x00000A2F	Motherboard resources
0x00000D00-0x0000FFFF	PCI Express Root Complex
0x0000164E-0x0000164F	Motherboard resources
0x0000E000-0x0000E0FF	Realtek® PCIe GBE Family Controller
0x0000E000-0x0000E0FF	Intel® Pentium® processor N- and J-series /

I/O Map	Assignment
	Intel® Celeron® processor N- and J-series PCI Express - Root Port 4 - 0F4E
0x0000F000-0x0000F01F	Intel® Pentium® processor N- and J-series / Intel® Celeron® processor N- and J-series Platform Control Unit - SMBus Port - 0F12
0x0000F020-0x0000F03F	Intel® Pentium® processor N- and J-series / Intel® Celeron® processor N- and J-series AHCI - 0F23
0x0000F040-0x0000F043	Intel® Pentium® processor N- and J-series / Intel® Celeron® processor N- and J-series AHCI - 0F23
0x0000F050-0x0000F057	Intel® Pentium® processor N- and J-series / Intel® Celeron® processor N- and J-series AHCI - 0F23
0x0000F060-0x0000F063	Intel® Pentium® processor N- and J-series / Intel® Celeron® processor N- and J-series AHCI - 0F23
0x0000F070-0x0000F077	Intel® Pentium® processor N- and J-series / Intel® Celeron® processor N- and J-series AHCI - 0F23
0x0000F080-0x0000F087	Intel® HD Graphics

Memory Map

Memory Map	Assignment
0xE0000000-0xEFFFFFFF	Motherboard resources
0xFED01000-0xFED01FFF	Motherboard resources
0xFED03000-0xFED03FFF	Motherboard resources
0xFED04000-0xFED04FFF	Motherboard resources
0xFED0C000-0xFED0FFFF	Motherboard resources
0xFED08000-0xFED08FFF	Motherboard resources
0xFED1C000-0xFED1CFFF	Motherboard resources
0xFEE00000-0xFEEFFFFF	Motherboard resources
0xFEF00000-0xFEFFFFFF	Motherboard resources
0xD0604000-0xD0604FFF	Realtek® PCIe GBE Family Controller
0xD0600000-0xD0603FFF	Realtek® PCIe GBE Family Controller
0xD0600000-0xD0603FFF	Intel® Pentium® processor N- and J-series / Intel® Celeron® processor N- and J-series PCI Express - Root Port 4 - 0F4E
0xFED00000-0xFED003FF	High precision event timer
0xC0000000-0xD0711FFE	PCI Express Root Complex
0xC0000000-0xD0711FFE	Intel® HD Graphics
0xD0000000-0xD03FFFFF	Intel® HD Graphics
0xD0700000-0xD070FFFF	Intel® USB 3.0 eXtensible Host Controller - 0100 (Microsoft)
0xD0710000-0xD071001F	Intel® Pentium® processor N- and J-series / Intel® Celeron® processor N- and J-series Platform Control Unit - SMBus Port - 0F12
0xD0500000-0xD05FFFFF	Intel® Trusted Execution Engine Interface
0xD0400000-0xD04FFFFF	Intel® Trusted Execution Engine Interface

Memory Map	Assignment
0xD0711000-0xD07117FF	Intel® Pentium® processor N- and J-series / Intel® Celeron® processor N- and J-series AHCI - 0F23
0xE00000D0-0xE00000DB	Intel® Sideband Fabric Device
0xFF000000-0xFFFFFFFF	Intel® 82802 Firmware Hub Device
0xA0000-0xBFFFF	PCI Express Root Complex
0xA0000-0xBFFFF	Intel® HD Graphics
0xC0000-0xDFFFF	PCI Express Root Complex
0xE0000-0xFFFFF	PCI Express Root Complex

Configuring WatchDog Timer

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 F81866 configuration registers, the following configuration sequence must be followed:

(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 watch dog timer

Enable watchdog timer and set timeout interval to 30 seconds.

```
; ----------------------- Enter to extended function mode
mov          dx,            2eh
mov    al,     87h
out          dx,            al
out          dx,            al
; --------------------- Select Logical Device 7 of watchdog timer
mov          al,            07h
out          dx, al
inc          dx
mov          al,            07h
out          dx,            al
;-------------------------------Enable Watch dog feature
mov          al,            030h
out          dx,            al
inc          dx
mov          al,            01h
out          dx,            al
;---------------------------- Enable Watch PME
dec          dx
mov          al,            0FAh
out          dx,            al
inc          dx
in           al,            dx
and          al,            51h
out          dx,            al
;------------------------ Set second as counting unit
dec          dx
mov          al,            0f5h
```

```
out              dx,              al
inc              dx
in               al,              dx
and              al,              30h
out              dx,              al
; --------------- Set timeout interval as 30seconds and start counting
dec                               dx
mov              al,              0f6h
out              dx,              al
inc              dx
mov              al,              1Eh
out              dx,              al
;-----------------------------Exit the extended function mode
dec              dx
mov              al,              0aah
out              dx,              al
```

Flash BIOS Update

I. Prerequisites

1 Prepare a bootable media (ex. USB storage device) which can boot system to DOS prompt.

2 Download and save the BIOS file (ex. 71300PD2.bin) to the bootable device.

3 Copy AMI flash utility − AFUDOS.exe (v3.03) into bootable device.

4 Make sure the target system can first boot to the bootable device.

   (1) Connect the bootable USB device.

   (2) Turn on the computer and press **<ESC>** or **<DEL>** during boot to enter BIOS Setup.

   (3) The system will go into the BIOS setup menu.

   (4) Select **[Boot]** menu.

   (5) Select **[Hard Drive BBS Priorities]** and set the USB bootable device as the 1st boot device.

   (6) Press **F4** to save the configuration and exit the BIOS setup menu.

```
Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
                              Boot

   Boot Option #1                    [JetFlashTS256MJF2B...]     Sets the system boot order
   Boot Option #2                    [SATA  PM: WDC WD16...]




                                                                ↔: Select Screen
                                                                ↑↓: Select Item
                                                                Enter: Select
                                                                +/-: Change Opt.
                                                                F1: General Help
                                                                F2: Previous Values
                                                                F3: Optimized Defaults
                                                                F4: Save & Exit
                                                                ESC: Exit


              Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
```

II. AFUDOS Command for System BIOS Update

```
                Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
                              Boot

   Boot Option #1                    [JetFlashTranscend 4...]    Sets the system boot order
   Boot Option #2                    [P0: WDC WD1600BEVT-...]




                                                                ↔: Select Screen
                                                                ↑↓: Select Item
                                                                Enter: Select
                                                                +/-: Change Opt.
                                                                F1: General Help
                                                                F2: Previous Values
                                                                F3: Optimized Defaults
                                                                F4: Save & Exit
                                                                ESC: Exit


              Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.
```

AFUDOS command for system BIOS update

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

AFUDOS <ROM File Name> [option1] [option2]….
Users can type "AFUDOS/ ?" to see all the definition of each control options. The recommended options for BIOS ROM update include 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 storage to boot up the system into the DOS command prompt.

2   Type "**AFUDOS 7130xxxx.bin /p /b /n /x"** and press **Enter** to start the flash procedure.

   (Note that xxxx means the BIOS revision part, ex. 0PD1…)

3   During the BIOS update procedure, you will see the BIOS update process status and its percentage. Beware! Do not turn off the system power or reset your computer when the entire update procedure are not complete; otherwise, the BIOS ROM may be crashed and the system will be unable to boot up next time.

4   After the BIOS update procedure is completed, the following messages will be shown:

```
C:\AFU\3.04>afudos.exe 71300PD2.BIN  /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 NVRAM Block ....... done

C:\AFU\3.04>

C:\AFU\3.04>_
```

5. Restart the system and boot up with the new BIOS configurations.

6. The BIO Update is completed after the system is restarted.

7. Reboot the system and verify if the BIOS version shown on the initialization screen has been updated.

American
Megatrends

Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.
BIOS Date: 06/17/2015 05:55:42 Ver:71300PD2
Press <DEL> or <ESC> to enter setup.

B2

ACPI Functions List

#	ACPI Function
1	RS232_Initial
2	USB_CH1_ON
3	USB_CH1_OFF
4	USB_CH2_ON
5	USB_CH2_OFF
6	USB_CH3_ON
7	USB_CH3_OFF
8	USB_CH4_ON
9	USB_CH4_OFF
10	USB_CH5_ON
11	USB_CH5_OFF
12	USB_CH6_ON
13	USB_CH6_OFF
14	USB_CH7_ON
15	USB_CH7_OFF
16	USB_CH8_ON
17	USB_CH8_OFF
18	Check_Near_Sensor

1. RS232_Initial()

C Prototype

RS232_Initial();

Description

This function is used to initial COM1 with following protocol:

115200 Baud, no parity, 8 data bits, 1 stop bit.

Return Value

None

2. USB_CH1_ON

C Prototype

USB_CH1_ON();

Description

This function is used to enable USB1 port.

Return Value

None

3. USB_CH1_OFF

C Prototype

USB_CH1_OFF();

Description

This function is used to disable USB1 port.

Return Value

None

4. USB_CH2_ON

C Prototype

USB_CH2_ON();

Description

This function is used to enable USB2 port.

Return Value

None

5. USB_CH2_OFF

C Prototype

USB_CH2_OFF();

Description

This function is used to disable USB2 port.

Return Value

None

6. USB_CH3_ON

C Prototype

USB_CH3_ON();

Description

This function is used to enable USB3 port.

Return Value

None

7. USB_CH3_OFF

C Prototype

USB_CH3_OFF();

Description

This function is used to disable USB3 port.

Return Value

None

8. USB_CH4_ON

C Prototype

USB_CH4_ON();

Description

This function is used to enable USB4 port.

Return Value

None

9. USB_CH4_OFF

C Prototype

USB_CH4_OFF();

Description

This function is used to disable USB4port.

Return Value

None

10. USB_CH5_ON

   C Prototype

   USB_CH5_ON();

   Description

   This function is used to enable USB5 port.

   Return Value

   None

11. USB_CH5_OFF

   C Prototype

   USB_CH5_OFF();

   Description

   This function is used to disable USB5 port.

   Return Value

   None

12. USB_CH6_ON

   C Prototype

   USB_CH6_ON();

   Description

   This function is used to enable USB6 port.

   Return Value

   None

13. USB_CH6_OFF

   C Prototype

   USB_CH6_OFF();

   Description

   This function is used to disable USB6 port.

   Return Value

   None

14. USB_CH7_ON

    C Prototype

        USB_CH7_ON();

    Description

        This function is used to enable USB7 port.

    Return Value

        None

15. USB_CH7_OFF

    C Prototype

        USB_CH7_OFF();

    Description

        This function is used to disable USB7 port.

    Return Value

        None

16. Check_Near_Sensor

    C Prototype

        Check_Near_Sensor();

    Description

        This function returns a value that indicates Near Sensor status.

    Return Value

        0x00: Far

        0x01: Near