IPPC08A7-RE

User Manual

2014 January V1

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Safety Information

Your IPPC08A7-RE is designed and tested to meet the latest standards of safety for information technology equipment. However, to ensure your safety, it is important that you read the following safety instructions

Setting up your system

- Read and follow all instructions in the documentation before you operate your system.
- Do not use this product near water.
- Set up the system on a stable surface. Do not secure the system on any unstable plane.
- Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.
- Slots and openings on the chassis are for ventilation. Do not block or cover these openings. Make sure you leave plenty of space around the system for ventilation. ***Never insert objects of any kind into the ventilation openings***.
- This system should be operated from the type of power indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.
- Use this product in environments with ambient temperatures between 0˚C and 45˚C.
- If you use an extension cord, make sure that the total ampere rating of the devices plugged into the extension cord does not exceed its ampere rating.
- DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT WHERE THESTORAGE TEMPERATURE MAY GO BELOW -10° C OR ABOVE 60° C. THIS COULD DAMAGE THE EQUIPMENT. THE EQUIPMENT SHOULD BE IN A CONTROLLED ENVIRONMENT.

Care during use

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

Lithium-Ion Battery Warning

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

NO DISASSEMBLY

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

WARNING
HAZARDOUS MOVING PARTS
KEEP FINGERS AND OTHER BODY PARTS AWAY

Acknowledgments

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- AMD and ATI are registered trademarks of AMD Corporation.
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CHAPTER 1 INTRODUCTION

1.1 General Description

IPPC08A7-RE is a fanless panel pc, powered by Intel Atom processor N2600 1.6GHz. It supports one SO-DIMM for up to 2GB DDRIII 1066MHz FSB memory, 4x USB connectors, 4x COM ports, 1x CFast or SATA HDD/SSD storage, and DC power 12~24V input. It is ideal for industrial automation, factory automation applications.

1.2 System Specification

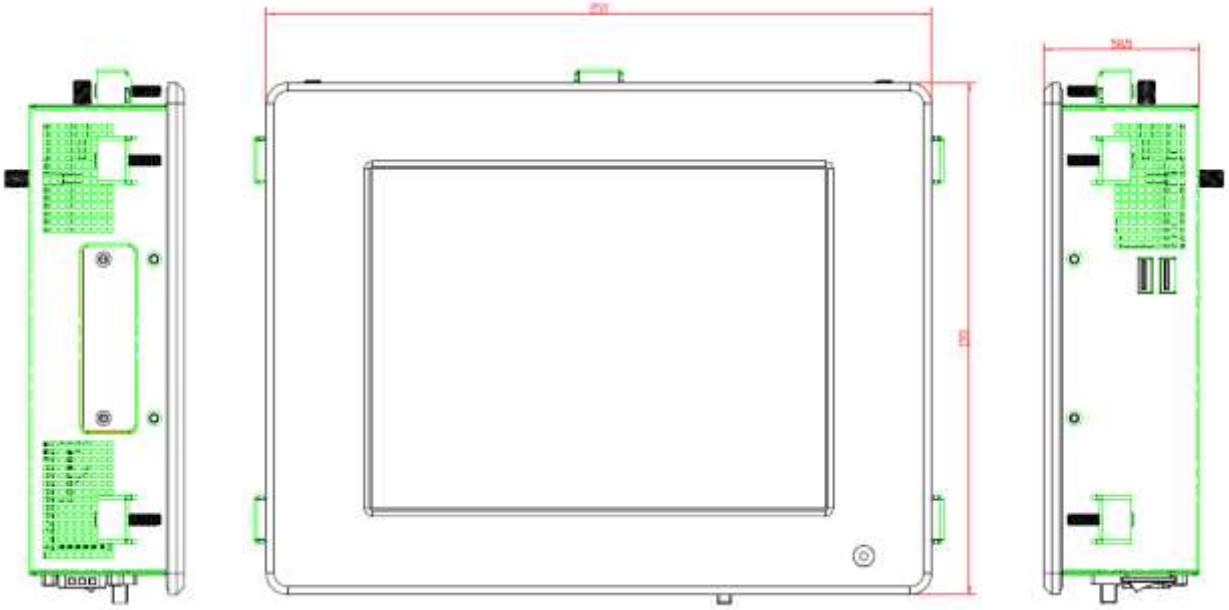
1.2.1 Hardware Specifications

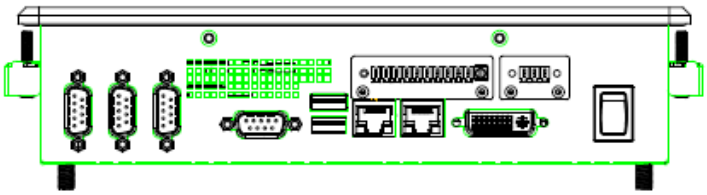
Model Name	IPPC08A7-RE
System Mainboard	IB895N
CPU	Intel Atom Processor N2600 1.6GHz
Chipset	Intel® CG82NM10 PCH
Memory	1x DDR3-1066 SO-DIMM up to 2GB
I/O Interface	1x DVI-I 2x GbE LAN 4x USB2.0 (2x USB2.0 on side panel) 1x Digital I/O 4x COM ports (COM1:RS-232/422/485) 1x CFAST slot on side 1x Power On/Off Switch
Storage	1x CFAST or 1x 2.5” HDD/SDD
Expansion Slots	None
Power Supply	12~24V DC input
LCD Size	8.4” TFT LCD
LCD Color	16.2M colors
LCD Resolution	800 x 600
LCD Brightness	350 cd/m2
LCD Viewing Angle	150(H)/130(V)
Backlight MTBF	50,000 hrs
Touch Screen	Resistive Touch Screen
Construction	Aluminum Front Bezel & SGCC
Mounting	Panel and VESA Mount 75x75 mm
Dimensions (W)x(D)x(H) mm	250 x 193 x 58.5
Operating Temperature	0°C~ 45°C (32°F~113°F)
Storage Temperature	-20° ~ 80°C (-4°F~176°F)
Relative Humidity	5~90% @45°C (non-condensing)
Protection Class	IP65 (front panel)

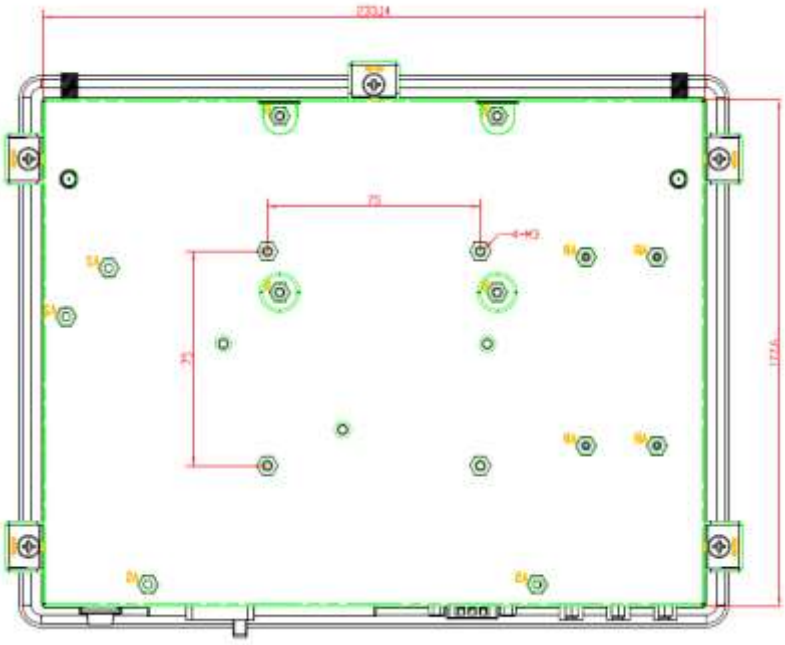
·This specification is subject to change without prior notice.

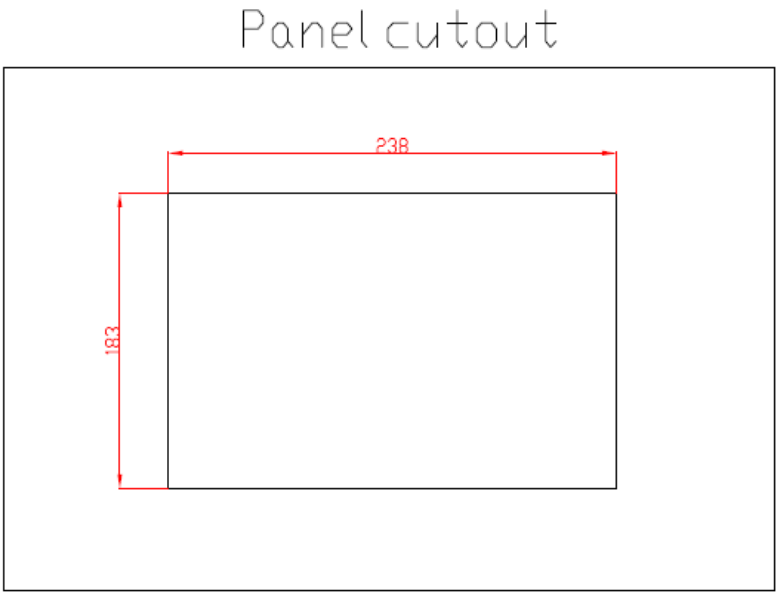
1.2.2 Dimensions

IPPC08A7-RE

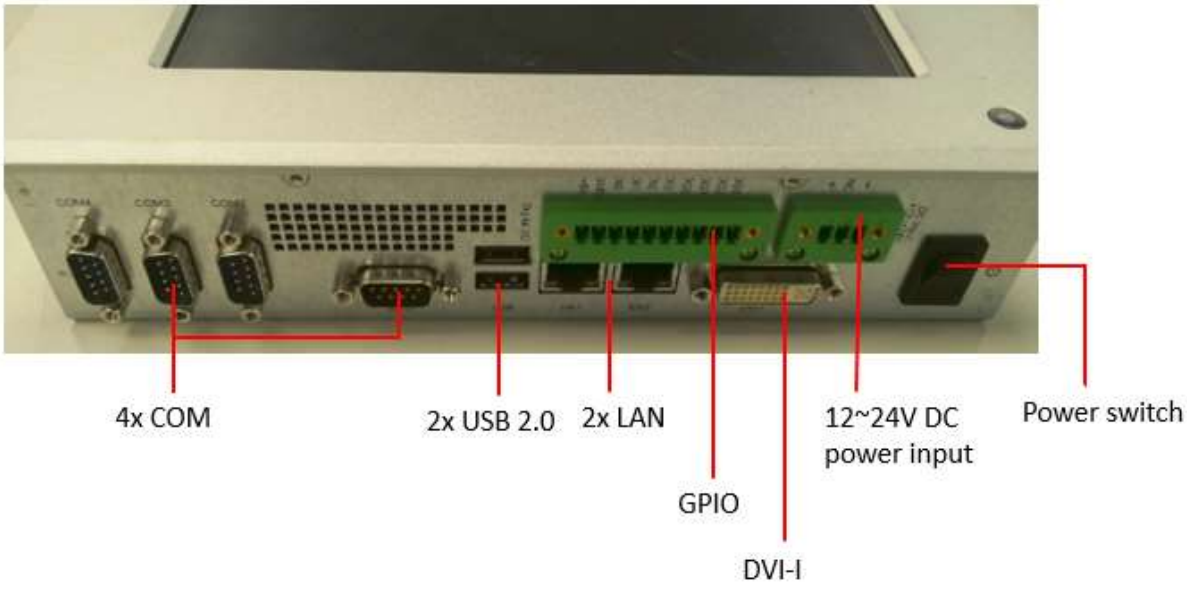







Panel cutout
238
183

1.2.3 I/O View



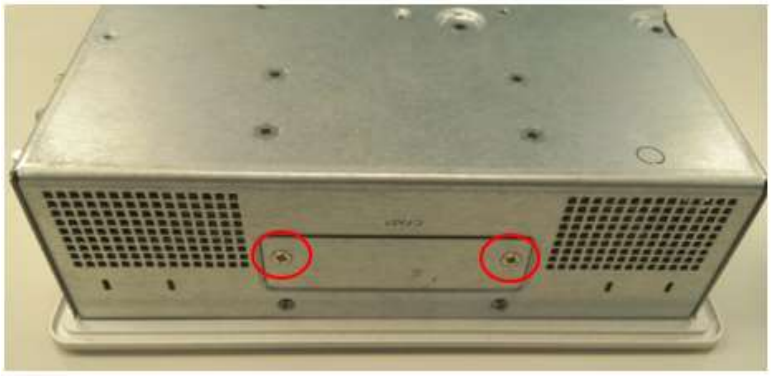
1.3 Packing List

Part No.	Description	Quantity
1	Driver CD	1 pc
2	Mounting kit	1 set
3	Power cord	1 pc
4	Power adaptor	1 pc

1.4 Installation

1.4.1 Installing CFAST module

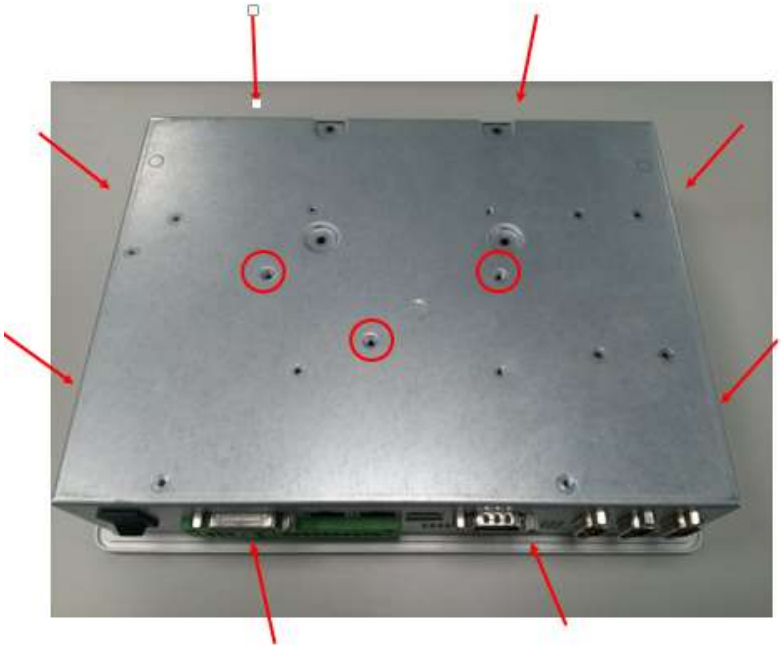
1. Unlock and remove 2 screws as shown in the picture below.



2. Install the CFAST module and replace the screws.

1.4.2 Installing HDD/SSD module

1. Unlock and remove 11 screws as shown.



Note: After opening the back cover, please note the mating cable.

2. After unlocking 4 screws and removing the SATA cable as shown, you can remove the HDD/SSD module if you want to remove and change the HDD with a different storage capacity.

CHAPTER 2 MOTHERBOARD INTRODUCTION

2.1 Introduction

The IB895 is a 3.5-inch single board computer based on the Intel® Atom Cedarview chipset. The Cedar Trail is a platform that uses the Intel Cedarview-D or Cedarview -M Processor and Intel NM10 Express Chipset family in the desktop platforms.

The role of the processor in the system is to manage the flow of information between the following interfaces: DDR3 System Memory interface, DVI display interface, VGA graphics interface, Low Voltage Differential Signaling (LVDS) and the Direct Media Interface (DMI). The processor supports single channel, one DDR3 SODIMM memory module.

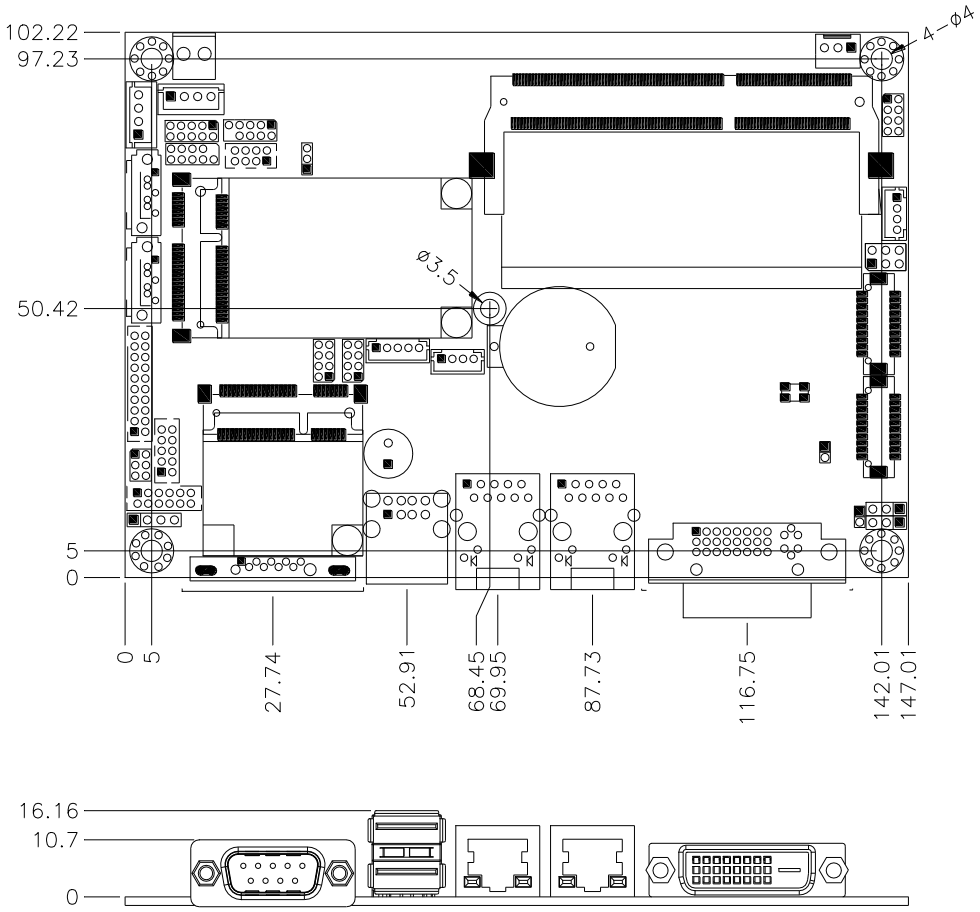
The Intel® processors provide advanced performance in both computing and graphics quality. This meets the requirement of customers in the gaming, POS, digital signage and server market segment.

The processor is built on 32-nanometer Hi-K process technology with Micro-FCBGA11 packaging.

* ***Note: IB895 with Intel Atom D2550 supports up to 4GB memory.***
and IB895N with Intel Atom N2600 supports up to 2GB memory.

Specifications – Mainboard	
Model	IB895 [default silk screen model # on PCB] IB895N (N2600 onboard)
Form Factor	3.5”
CPU Type	Intel® Atom™ DC D2550 / 1MB cache / 1.86 GHz [TDP=10W] (IB895) Intel® Atom™ DC N2600 / 1MB cache / 1.60 GHz [TDP=3.5W] (IB895N) Package = FCBGA559 [22 mm x 22 mm]; Cores / Threads = 2 / 4
Chipset	Intel® CG82NM10 PCH [TDP = 2.1W] Package = BGA360, 17mm x 17 mm
BIOS	AMI BIOS, support ACPI Function
Memory	Intel® Atom TM on-die memory controller 1x DDR3-1066 SO-DIMM socket [Horizontal type] **Maximum memory: 4GB for D2550; 2GB for N2600** Non-ECC, Unbuffered, 1.5V
VGA	Intel® GMA 3650 (Gfx freq @ 640MHz) for D2550 Intel® GMA accelerator 3600 (Gfx freq @ 400MHz) for N2600 Supports DirectX 9 Graphics, OpenGL 3.0 DVI-I x 1 (Thru VGA + ASM1422 for DVI-D via D2550 or N2600)
LVDS	24-bit dual channel via CH7511thru eDP
LAN	Intel 82583V PCIe Gigabit LAN x 2
Audio	Intel® NM10 PCH built-in HD Audio controller + Realtek ALC269QHD Codec w/class-D speaker amplifier (2.3W per channel @ 5V power supply) [7mm x 7mm @ 48-QFN] ; support 2-channel audio out + amp
USB	NM10 built-in USB 2.0 host controller, support 6 ports
Serial ATA Ports	NM10 built-in SATA II controller, supports 2 ports
LPC I / O	Nuvoton NCT6627UD [128-pin QFP, 14x14x1.4mm] - COM #1 (RS232/422/485) support ring-in with power @500 mA (selectable for 5V or 12V) [EXAR SP339EER1 232/422/485 transceiver for jumper-less] - COM #2 (RS232 only) - COM #3 / COM #4 (RS-232 only) [Hardware monitor] 2x thermal inputs; 2x voltage monitoring 1x fan header (DC fan type)
Expansion Slot	Mini PCI-e socket x 2 (1x Full-sized+1xHalf-sized) **Full-sized MiniPCIe(1x) support mSATA**
Digital IO	4 in & 4 out
Keyboard/ Mouse	Pin header connectors
Edge Connector	DVI-I, 2x RJ45, 2x USB, COM1
Onboard Header/Connector	Keyboard/mouse, 4x USB 2.0, 2x DF13 for 24-bit dual channel LVDS, audio, speaker, COM2, COM3/4, LPC (80-port card debugging purpose), 2x Mini PCI-e(1x), smart battery, backlight/brightness control, 2x power connector SATA HDD [JST type]
Watchdog Timer	Yes (256 segments, 0, 1, 2…255 sec/min)
Power Connector	+12V ~ +24V DC-in
Others	- i-Smart function (TI MSP430G2433 MCU) - AT24C02C EEPROM [SO8 type] via SMbus (optional)
OS Support	- Windows 7 (32-bit only), Linux
RoHS	Yes
Board Size	102mm x 147mm

Board Dimensions



2.2 Installing the Memory

The IB895 board supports one DDR3 memory socket for a maximum total memory of 2GB or 4GB DDR3 memory type.

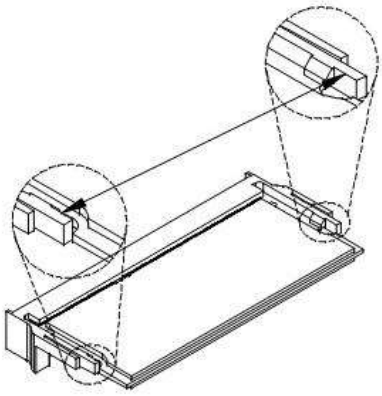
Note: IB895 with Intel Atom DC D2550 supports up to 4GB and

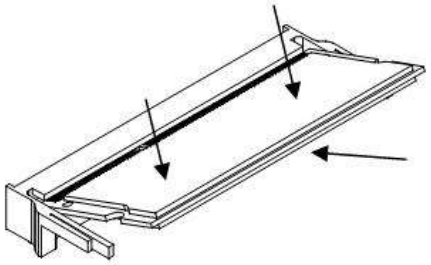
IB895N with Intel Atom DC N2600 supports up to 2GB.

Installing and Removing Memory Modules

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

1. Hold the DDR3 module so that the key of the DDR3 module aligned with that on the memory slot.
2. Gently push the DDR3 module in an upright position until the clips of the slot close to hold the DDR3 module in place when the DDR3 module touches the bottom of the slot.
3. To remove the DDR3 module, press the clips with both hands.

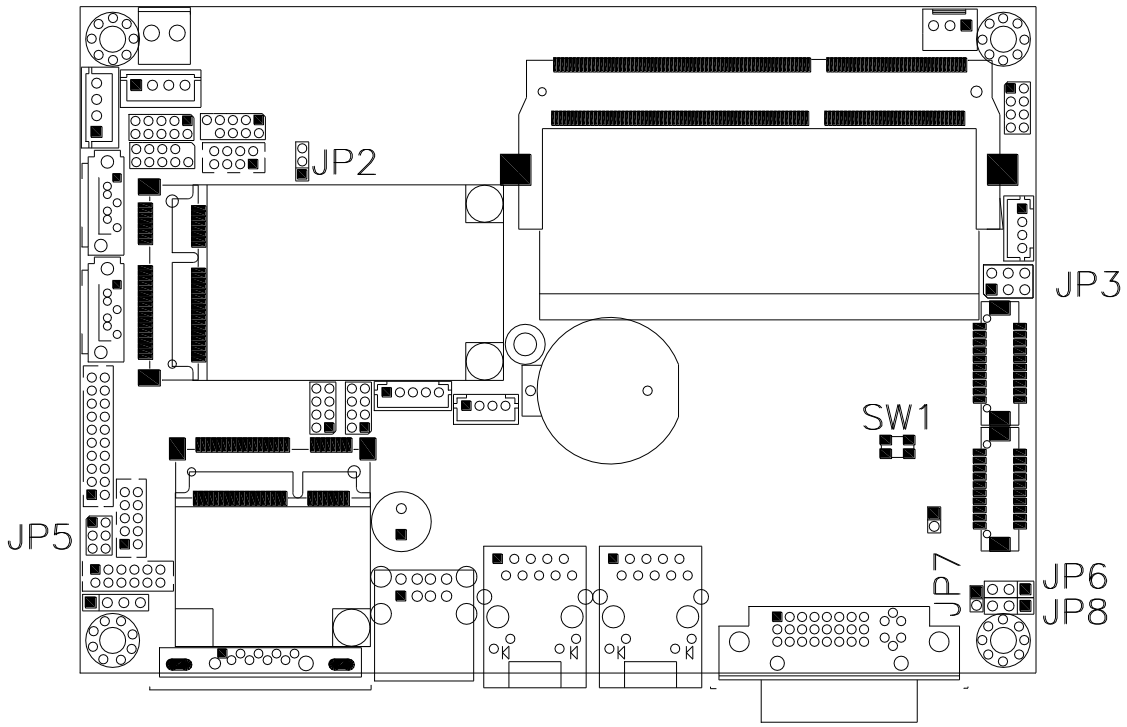




2.3 Setting Jumpers

Jumpers are used on IB895 to select various settings and features according to your needs and applications. Contact your supplier if you have doubts about the best configuration for your needs.

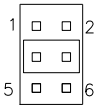
Jumper Locations on I895



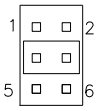
JP2: Clear CMOS Contents

JP2	Setting	Function
	Pin 1-2 Short/Closed	Normal
	Pin 2-3 Short/Closed	Clear CMOS

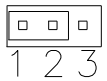
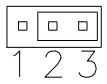
JP3: BL Voltage Setting

JP3	Setting	Function
	Pin 1-2 Short/Closed	+3.3V
	Pin 3-4 Short/Closed	+5V
	Pin 5-6 Short/Closed	+12V(Default)

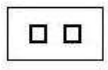
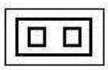
JP5: COM1 RS232 RI/+5V/+12V Power Setting

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

JP6: LVDS Panel Power Selection

JP6	Setting	Panel Voltage
	Pin 1-2 Short/Closed	3.3V (default)
	Pin 2-3 Short/Closed	5V

JP7: BL_ADJ_LEVEL Setting (PWM Mode)

JP7	Setting	Voltage
	Open	3.3V (default)
	Close	5V

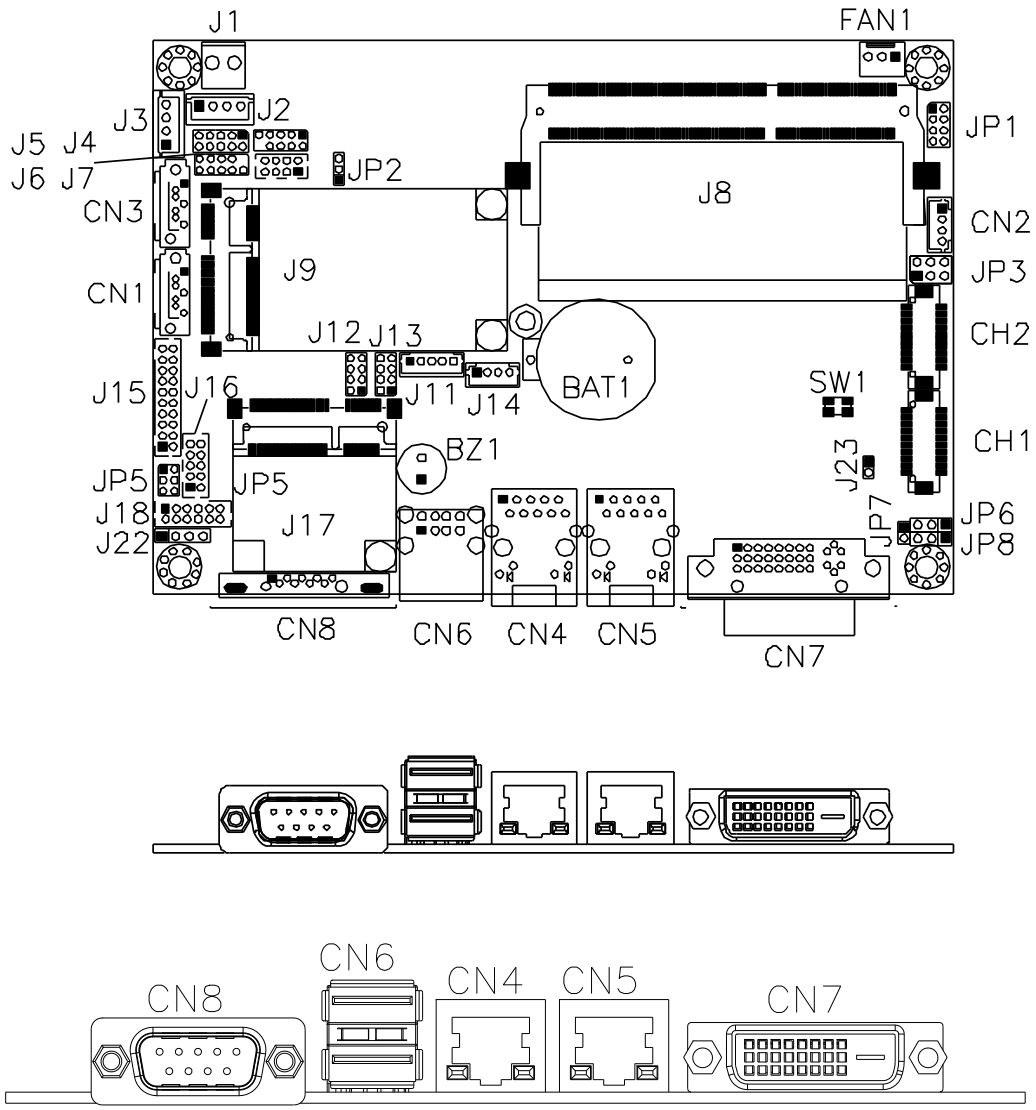
JP8: Factory use only

SW1: LVDS Panel Type Setting

SW1-4	SW1-3	SW1-2	SW1-1	Panel Type
ON	ON	ON	ON	800*600 18bit 1ch
ON	ON	ON	OFF	1024*768 18bit 1ch
ON	ON	OFF	ON	1024*768 24bit 1ch
ON	ON	OFF	OFF	1280*768 18bit 1ch
ON	OFF	ON	ON	1280*800 18bit 1ch
ON	OFF	ON	OFF	1280*960 18bit 1ch
ON	OFF	OFF	ON	1280*1024 24bit 2ch
ON	OFF	OFF	OFF	1366*768 18bit 1ch
OFF	ON	ON	ON	1366*768 24bit 1ch
OFF	ON	ON	OFF	1440*900 24bit 2ch
OFF	ON	OFF	ON	1440*1050 24bit 2ch
OFF	ON	OFF	OFF	1600*900 24bit 2ch
OFF	OFF	ON	ON	1680*1050 24bit 2ch
OFF	OFF	ON	OFF	1600*1200 24bit 2ch
OFF	OFF	OFF	ON	1920*1080 24bit 2ch
OFF	OFF	OFF	OFF	1920*1200 24bit 2ch

2.4 Connectors

Connector Locations on I895



CN4, CN5: Gigabit LAN (Intel 82583V)

This RJ45 LAN connector (CN4 only) features for EUP LAN wakeup.

CN6: USB 1/2 Connector

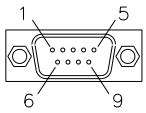
CN7: VGA DVI-I Connector

CN8: DB9 Connector

(COM1) is a DB-9 connector.

Signal Name	Pin #	Pin #	Signal Name
DCD, Data carrier detect	1	6	DSR, Data set ready
RXD, Receive data	2	7	RTS, Request to send
TXD, Transmit data	3	8	CTS, Clear to send
DTR, Data terminal ready	4	9	RI, Ring indicator
GND, ground	5	10	Not Used

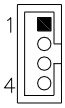
COM1 is jumper-less for RS-232, RS-422 and RS-485 and configured with BIOS Selection.



Pin #	Signal Name		
	RS-232	R2-422	RS-485
1	DCD	RX+	DATA-
2	RX	RX-	DATA+
3	TX	TX+	NC
4	DTR	TX-	NC
5	Ground	Ground	Ground
6	DSR	NC	NC
7	RTS	NC	NC
8	CTS	NC	NC
9	RI	NC	NC
10	NC	NC	NC

CN1, CN3: SATA Connectors

CN2: LCD Backlight Connector



Pin #	Signal Name
1	Backlight Power
2	Backlight Enable
3	Brightness Control
4	Ground

Note: Brightness Control only support PWM-Mode Panel

J1: Board Input Power Connector

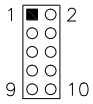
Pin #	Signal Name
1	+12V to +24V
2	GND

J2, J3: SATA HDD Power Connector

Pin #	Signal Name
1	+5V
2	Ground
3	Ground
4	+12V

J4: Debug 80 Port Connector (factory use only)

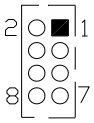
J5: Digital I/O Connector



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

J6: SPI Flash Connector (factory use only)

J7: Keyboard & Mouse Connector (DF11 Connector)



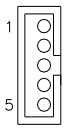
Signal Name	Pin #	Pin #	Signal Name
VCC	2	1	VCC
KBDA	4	3	MDA
KBCL	6	5	MCL
Ground	8	7	Ground

J8: DDR3 SO-DIMM Socket

J9: Mini PCIE Connector(Support mSATA)

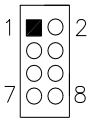
J9 also supports mSATA. However, when J9 is used for mSATA, then CN3 SATA port cannot be used. Only one of them can be used at one time to support SATA.

J11: Smart Battery Interface Connector



Pin #	Signal Name
1	RST
2	EXTSMI
3	Ground
4	DATA
5	CLK

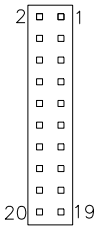
J12, J13: USB3/4/5/6 Connector



Signal Name	Pin #	Pin #	Signal Name
Vcc	1	2	Ground
D-	3	4	D+
D+	5	6	D-
Ground	7	8	Vcc

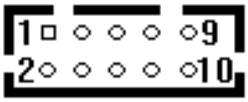
J14: MCU Flash Connector (factory use only)

J15: COM3, COM4 Serial Port (DF11 Connector)



Signal Name	Pin #	Pin #	Signal Name
DSR3	2	1	DCD3
RTS3	4	3	RXD3
CTS3	6	5	TXD3
RI3	8	7	DTR3
NC	10	9	Ground
DSR4	12	11	DCD4
RTS4	14	13	RXD4
CTS4	16	15	TXD4
RI4	18	17	DTR4
NC	20	19	Ground

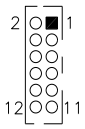
J16: COM2/RS232 Serial Port



Signal Name	Pin #	Pin #	Signal Name
DCD, Data carrier detect	1	2	RXD, Receive data
TXD, Transmit data	3	4	DTR, Data terminal ready
GND, ground	5	6	DSR, Data set ready
RTS, Request to send	7	8	CTS, Clear to send
RI, Ring indicator	9	10	Not Used

J17: Mini PCIE Connector

J18: Audio Connector (DF11 Connector)



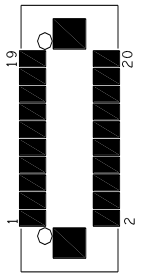
Signal Name	Pin #	Pin #	Signal Name
LINEOUT_R	2	1	LINEOUT_L
Ground	4	3	JD_FRONT
LINEIN_R	6	5	LINEIN_L
Ground	8	7	JD_LINEIN
MIC-R	10	9	MIC_L
Ground	12	11	JD_MIC1

J22: Amplifier Connector

Pin #	Signal Name
1	OUTL+
2	OUTL-
3	OUTR-
4	OUTR+

J23: LVDS EEPROM Flash Connector (factory use only)

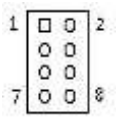
CH1, CH2: LVDS Connectors



Signal Name	Pin #	Pin #	Signal Name
N.C	19	20	N.C
ENABLE	17	18	LCD_PWR
CLK+	15	16	CLK-
GND	13	14	GND
LD2+	11	12	LD2-
LD3+	9	10	LD3-
GND	7	8	LCD_PWR
LD1+	5	6	LD1-
GND	3	4	GND
LD0+	1	2	LD0-

JP1: Front Panel Connector

The following table shows the pin outs of the 2x4 pin header



Signal Name	Pin #	Pin #	Signal Name
Ground	1	2	PWR_SW
PWR_LED+	3	4	PWR_LED-(GND)
HDD_LED+	5	6	HDD_LED-
Ground	7	8	RESET

JP1 provides connectors for system indicators that provide light indication of the computer activities and switches to change the computer status. JP1 is an 8-pin header that provides interfaces for the following functions.

ATX Power ON Switch: Pins 1 and 2

This 2-pin connector is an “ATX Power Supply On/Off Switch” on the system that connects to the power switch on the case. When pressed, the power switch will force the system to power on. When pressed again, it will force the system to power off.

Power LED: Pins 3 and 4

Pin #	Signal Name
3	LED(+)
4	LED(-)

Hard Disk Drive LED Connector: Pins 5 and 6

This connector connects to the hard drive activity LED on control panel. This LED will flash when the HDD is being accessed.

Pin #	Signal Name
5	LED(+)
6	LED(-)

Reset Switch: Pins 7 and 8

The reset switch allows the user to reset the system without turning the main power switch off and then on again. Orientation is not required when making a connection to this header.

CHAPTER 3 BIOS SETUP

3.1 BIOS Introduction

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

3.2 BIOS Setup

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

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

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

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

Warning: *It is strongly recommended that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both AMI and your system manufacturer to provide the absolute maximum performance and reliability. Changing the defaults could cause the system to become unstable and crash in some cases.*

System Date

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

System Time

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

3.3 Advanced Settings

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

Aptio Setup Utility

Main	**Advanced**	Chipset	Boot	Security	Save & Exit
Legacy OpROM Support					
Launch PXE OpROM			Disabled		
► PCI Subsystem Settings					
► ACPI Settings					
► Wake up event setting					
► CPU Configuration					
► iSmart Controller					
► IDE Configuration					
► USB Configuration					
► W83627UHG Super IO Configuration					
► H/W Monitor					
► PPM Configuration					

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

Launch PXE OpROM

Enable or Disable Boot Option for Legacy Network Devices.

PCI Subsystem Settings

Aptio Setup Utility

Main	**Advanced**	Chipset	Boot	Security	Save & Exit
PCI Bus Driver Version		V 2.05.01			
PCI ROM Priority			Legacy ROM		→ ← Select Screen ↑ ↓ Select Item Enter: Select +- Change Opt F1:General Help F2:Previous Values F3: Optimized Default F4: Save & EXIT ESC: Exit
PCI Common Settings					
PCI Latency Timer			32 PCI Bus clocks		
VGA Palette Snoop			Disabled		
PERR# Generation			Disabled		
SERR# Generation			Disabled		

PCI ROM Priority

In case of multiple Option ROMs (Legacy and EFI Compatible), specifies what PCI Option ROM to launch.

PCI Latency Timer

Value to be programmed into PCI Latency Timer Register.

VGA Palette Snoop

Enables or Disables VGA Palette Registers Snooping.

PERR# Generation

Enables or Disables PCI Device to Generate PERR#.

SERR# Generation

Enables or Disables PCI Device to Generate SERR#.

ACPI Settings

Aptio Setup Utility

Main	**Advanced**	Chipset	Boot	Security	Save & Exit
ACPI Settings					
Enable ACPI Auto Configuration			Disabled		

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

Enabled ACPI Auto Configuration

Enables or Disables BIOS ACPI Auto Configuration.

Wake up event settings

Aptio Setup Utility

Main	**Advanced**	Chipset	Boot	Security	Save & Exit
Wake on Ring			Disabled		
Wake on PCI PME			Disabled		

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

Wake on Ring

The options are Disabled and Enabled.

Wake on PCIE PME

The options are Disabled and Enabled.

CPU Configuration

This section shows the CPU configuration parameters.

Aptio Setup Utility

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

CPU Configuration		
Processor Type	Intel(R) Atom(TM) CPU	→ ←Select Screen
EMT64	Supported	↑ ↓ Select Item
Processor Speed	1865 MHz	Enter: Select
System Bus Speed	533 MHz	+- Change Opt
Ratio Status	14	F1: General Help
Actual Ratio	14	F2: Previous Values
System Bus Speed	533 MHz	F3: Optimized Default
Processor Stepping	30661	F4: Save & EXIT
Microcode Revision	269	ESC: Exit
L1 Cache RAM	2x56 k	
L2 Cache RAM	2x512 k	
Processor Core	Dual	
Hyper-Threading	Supported	
Hyper-Threading	Enabled	
Execute Disable Bit	Enabled	
Limit CPUID Maximum	Disabled	

Hyper-threading

Enabled for Windows XP and Linux (OS optimized for Hyper-Threading Technology) and Disabled for other OS (OS not optimized for Hyper-Threading Technology). When Disabled, only one thread per enabled core is enabled.

Execute Disable Bit

XD can prevent certain classes of malicious buffer overflow attacks when combined with a supporting OS (Windows Server 2003 SP1, Windows XP SP2, SuSE Linux 9.2, Re33dHat Enterprise 3 Update 3.)

Limit CPUID Maximum

Disabled for Windows XP.

iSmart Controller

Aptio Setup Utility

Main	**Advanced**	Chipset	Boot	Security	Save & Exit
iSmart Controller					
EuP/ErP standby power Control			Keep standby power		→← Select Screen
Power-On after Power failure			Disable		↑↓ Select Item
					Enter: Select
Schedule Slot 1			None		+- Change Opt
Schedule Slot 2			None		F1: General Help
					F2: Previous Values
					F3: Optimized Default
					F4: Save & EXIT
					ESC: Exit

EuP/ErP standby power Control

Saving the power consumption on power off.

Power-On after Power failure

This field sets the system power status whether *on or off* when power returns to the system from a power failure situation.

Schedule Slot

None / Power On / Power On/Off – Setup the hour/minute for system power on

IDE Configuration

Aptio Setup Utility

Main	**Advanced**	Chipset	Boot	Security	Save & Exit
SATA Port0			Not Present		
SATA Port1			Not Present		
SATA Controller(s)			Enabled		
Configure SATA as			IDE		

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

SATA Controller(s)

Enable / Disable Serial ATA Controller.

Configure SATA as

(1) IDE Mode.

(2) AHCI Mode.

USB Configuration

Aptio Setup Utility

Main	Advanced	Chipset	Boot	Security	Save & Exit
USB Configuration					
USB Devices:					
None					
Legacy USB Support				Enabled	
EHCI Hand-off				Enabled	
USB hardware delays and time-outs:					
USB Transfer time-out				20 sec	
Device reset time-out				20 sec	
Device power-up delay				AUTO	

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

Legacy USB Support

Enables Legacy USB support.

AUTO option disables legacy support if no USB devices are connected.

DISABLE option will keep USB devices available only for EFI applications.

EHCI Hand-off

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

USB Transfer time-out

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

Device reset time-out

USB mass Storage device start Unit command time-out.

Device power-up delay

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

Super IO Configuration

Aptio Setup Utility

Main	**Advanced**	Chipset	Boot	Security	Save & Exit
W83627UHG Super IO Configuration					
Super IO Chip			Winbond W83627UHG		
► W83627UHG Serial Port 0 Configuration					
► W83627UHG Serial Port 1 Configuration					
► W83627UHG Serial Port 2 Configuration					
► W83627UHG Serial Port 3 Configuration					

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

Serial Port Configuration

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

H/W Monitor

Aptio Setup Utility

Main	**Advanced**	Chipset	Boot	Security	Save & Exit
PC Health Status					
System temperature				+50C	
CPU temperature				+55C	
VCORE				N/A	
+12V				+1.184 V	
+3.3V				+12.032 V	
+5V				+3.248 V	
CPU Shutdown Temperature				Disabled	
SmartFan Control				Disabled	

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

Temperatures/Voltages

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

CPU Shutdown Temperature

The default setting is Disabled.

Smart Fan Control

Disabled (default)

60 ℃

70 ℃

80 ℃

90 ℃

PPM Configuration

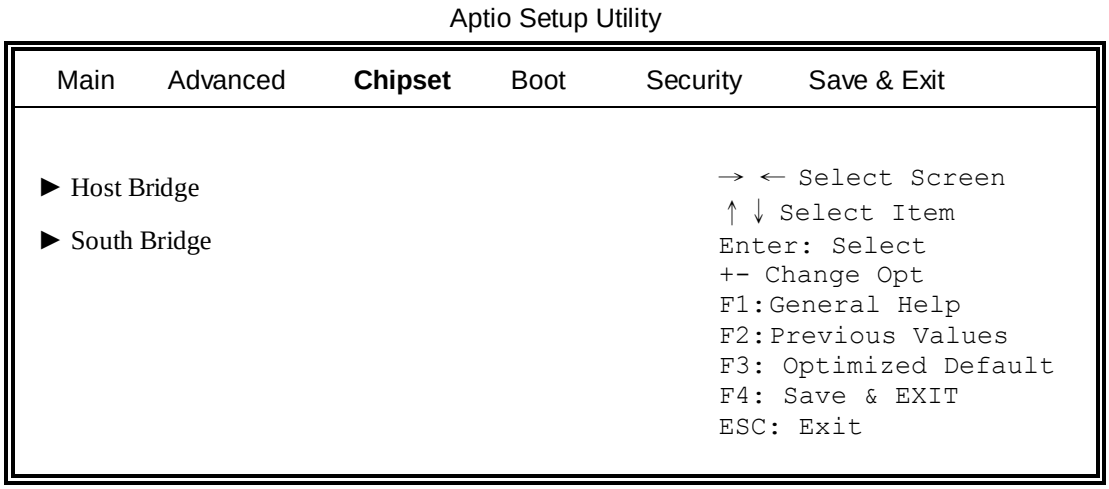
Aptio Setup Utility

Main	**Advanced**	Chipset	Boot	Security	Save & Exit
PPM Configuration					
EIST			Enabled		

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

3.4 Chipset Settings

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



Host Bridge

This item shows the Host Bridge Parameters.

South Bridge

This item shows the South Bridge Parameters.

Host Bridge

This section allows you to configure the Host Bridge Chipset.

Aptio Setup Utility

Main	Advanced	**Chipset**	Boot	Security	Save & Exit
► **Memory Frequency and Timing**					
► **Intel IGD Configuration**					→ ← Select Screen
***********Memory					↑ ↓ Select Item
Information**********			1067 MHz(DDR3)		Enter: Select
Memory Frequency			2048 MB		+- Change Opt
Total Memory			2048 MB		F1:General Help
DIMM#1					F2:Previous Values
					F3: Optimized Default
					F4: Save & EXIT
					ESC: Exit

Memory Frequency and Timing

Aptio Setup Utility

Main	Advanced	**Chipset**	Boot	Security	Save & Exit
Memory Frequency and Timing					
					→ ← Select Screen
					↑ ↓ Select Item
MRC Fast Boot			Enabled		Enter: Select
Max TOLUD			Dynamic		+- Change Opt
					F1:General Help
					F2:Previous Values
					F3: Optimized Default
					F4: Save & EXIT
					ESC: Exit

MRC Fast Boot

The options are Disabled and Enabled.

Max TOLUD

The default setting is Dynamic.

Intel IGD Configuration

Aptio Setup Utility

Main	Advanced	Chipset	Boot	Security	Save & Exit
Intel IGD Configuration					
IGFX-Boot Type			VBIOS Default		
LVDS Back Light Control			7(MAX)		

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

IGFX-Boot Type

Select the video Device which will be activated during POST .

South Bridge

This section allows you to configure the South Bridge Chipset.

Aptio Setup Utility

Main	Advanced	Chipset	Boot	Security	Save & Exit

► TPT Device		
► PCI Express Root Port0		
► PCI Express Root Port1		
► PCI Express Root Port2		
► PCI Express Root Port3		
DMI Link ASPM Control	Enabled	
PCI-Exp. High Priority Port	Disabled	
High Precision Event Timer Configuration		
High Precision Timer	Enabled	
SLP_SP4 Assertion Width	1-2 Seconds	

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

DMI Clink ASPM Control

The control of Active State Power Management on both NB side and SB side of the DMI Link.

PCI-Exp. High Priority Port

The options are Disabled, Port1, Port2, Port3, and Port4.

High Precision Event Timer Configuration

Enable/or Disable the High Precision Event Timer.

SLP_S4 Assertion Stretch Enable

Select a minimum assertion width of the SLP_S4# signal.

TPT Device

Aptio Setup Utility

Main	Advanced	Chipset	Boot	Security	Save & Exit
Azalia Controller			HD Audio		
Select USB Mode			By Controllers		
UHCI #1 (port 0 and 1)			Enabled		
UHCI #2 (port 2 and 3)			Enabled		
UHCI #3 (port 4 and 5)			Enabled		
UHCI #4 (port 6 and 7)			Enabled		
USB 2.0(EHCI) Support			Enabled		

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

PCI Express Root Port0

Aptio Setup Utility

Main	Advanced	Chipset	Boot	Security	Save & Exit
PCI Express Port 0			Enabled		
Port 0 IOxAPIC			Disabled		
Automatic ASPM			Manual		
ASPM L0s			Root Port Only		
ASPM L1			Enabled		

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

PCI Express Root Port1

Aptio Setup Utility

Main	Advanced	Chipset	Boot	Security	Save & Exit
PCI Express Port 0			Auto		
Port 0 IOxAPIC			Disabled		
Automatic ASPM			Manual		
ASPM L0s			Root Port Only		
ASPM L1			Enabled		

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

PCI Express Root Port2

Aptio Setup Utility

Main	Advanced	Chipset	Boot	Security	Save & Exit
PCI Express Port 2			Auto		
Port 0 IOxAPIC			Disabled		
Automatic ASPM			Manual		
ASPM L0s			Disabled		
ASPM L1			Disabled		

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

PCI Express Root Port3

Aptio Setup Utility

Main	Advanced	Chipset	Boot	Security	Save & Exit
PCI Express Port 3			Auto		
Port 0 IOxAPIC			Disabled		
Automatic ASPM			Manual		
ASPM L0s			Disabled		
ASPM L1			Disabled		

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

Boot Settings

Aptio Setup Utility

Main	Advanced	Chipset	Boot	Security	Save & Exit
Boot Configuration					
Setup Prompt Timeout			1		
Bootup NumLock State			On		
Quiet Boot			Disabled		
Fast Boot			Disabled		
CSM16 Module Version			07.68		
GateA20 Active			Upon Request		
Option ROM Messages			Force BIOS		
Interrupt 19 Canture			Enabled		
CSM Support			Enabled		
Boot Option Priorities					

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

Setup Prompt Timeout

Number of seconds to wait for setup activation key.

65535(0xFFFF) means indefinite waiting.

Bootup NumLock State

Select the keyboard NumLock state.

Quiet Boot

Enables/Disables Quiet Boot option.

Fast Boot

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

GateA20 Active

UPON REQUEST – GA20 can be disabled using BIOS services.

ALWAYS – do not allow disabling GA20; this option is useful when any RT code is executed above 1MB.

Option ROM Messages

Set display mode for Option ROM. Options: Force BIOS; Keep Current.

Interrupt 19 Capture

Enable: Allows Option ROMs to trap Int 19.

CSM Support

Enables/Disables/Auto CSM Support.

Security Settings

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

Aptio Setup Utility

Main	Advanced	Chipset	Boot	Security	Save & Exit

Password Description

If ONLY the Administrator's password is set, then this only 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

Administrator Password

User Password

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

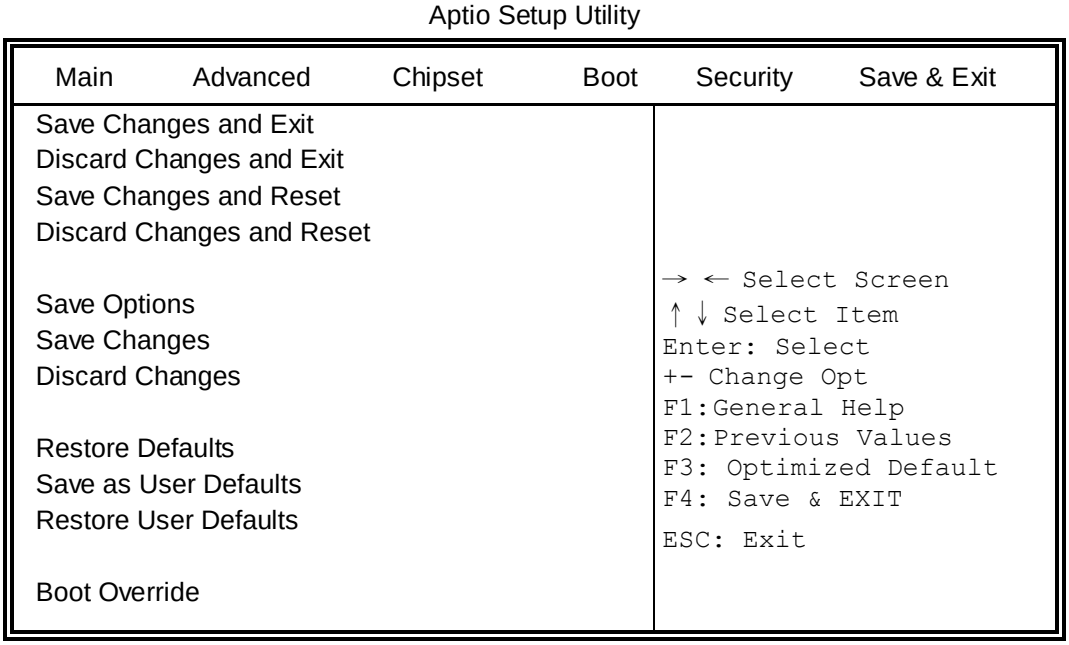
Administrator Password

Set Setup Administrator Password.

User Password

Set User Password.

Save & Exit Settings



Save Changes and Exit

Exit system setup after saving the changes.

Discard Changes and Exit

Exit system setup without saving any changes.

Save Changes and Reset

Reset the system after saving the changes.

Discard Changes and Reset

Reset system setup without saving any changes.

Save Changes

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

Discard Changes

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

Restore Defaults

Restore/Load Defaults values for all the setup options.

Save as User Defaults

Save the changes done so far as User Defaults.

Restore User Defaults

Restore the User Defaults to all the setup options.

CHAPTER 4 DRIVERS INSTALLATION

This section describes the installation procedures for software and drivers. The software and drivers are included with the motherboard.

IMPORTANT NOTE:

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

4.1 Intel Chipset Software Installation Utility

The Intel Chipset Drivers should be installed first before the software drivers to enable Plug & Play INF support for Intel chipset components. Follow the instructions below to complete the installation.

1. Insert the disc that comes with the board. Click ***Intel*** and then ***Intel(R) Cedarview Chipset Drivers***.

2. Click ***Intel(R) Chipset Software Installation Utility.***

3. When the Welcome screen to the Intel® Chipset Device Software appears, click ***Next*** to continue.

4. Click ***Yes*** to accept the software license agreement and proceed with the installation process.

5. On the Readme File Information screen, click ***Next*** to continue the installation.

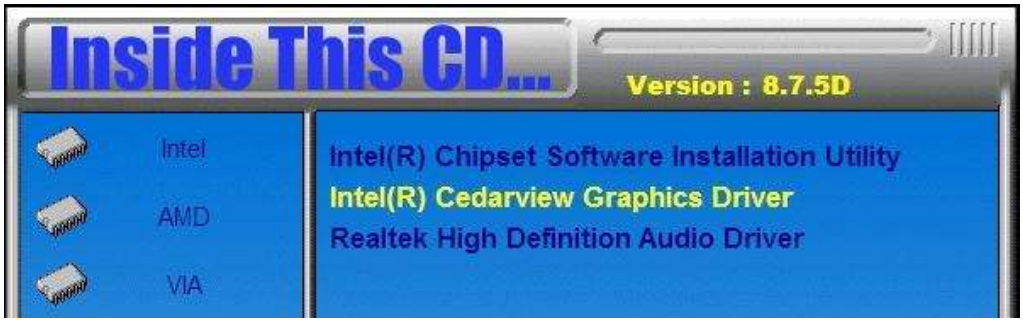
6. The Setup process is now complete. Click ***Finish*** to restart the computer and for changes to take effect.

4.2 VGA Drivers Installation

NOTE: After installing the graphics driver, the default display is still LVDS. Both VGA/CRT and DVI will only be extended displays. To switch to any of these displays, use the hot key:

For VGA – Ctrl+Alt+F1
For DVI – Ctrl+Alt+F3

1. Click ***Intel(R) Cedarview Graphics Driver.***



2. When the Welcome screen appears, click ***Next*** to continue.

4. Click ***Yes*** to to agree with the license agreement and continue the installation.

5. On the Readme File Information screen, click ***Next*** to continue the installation of the Intel® Graphics Media Accelerator Driver.

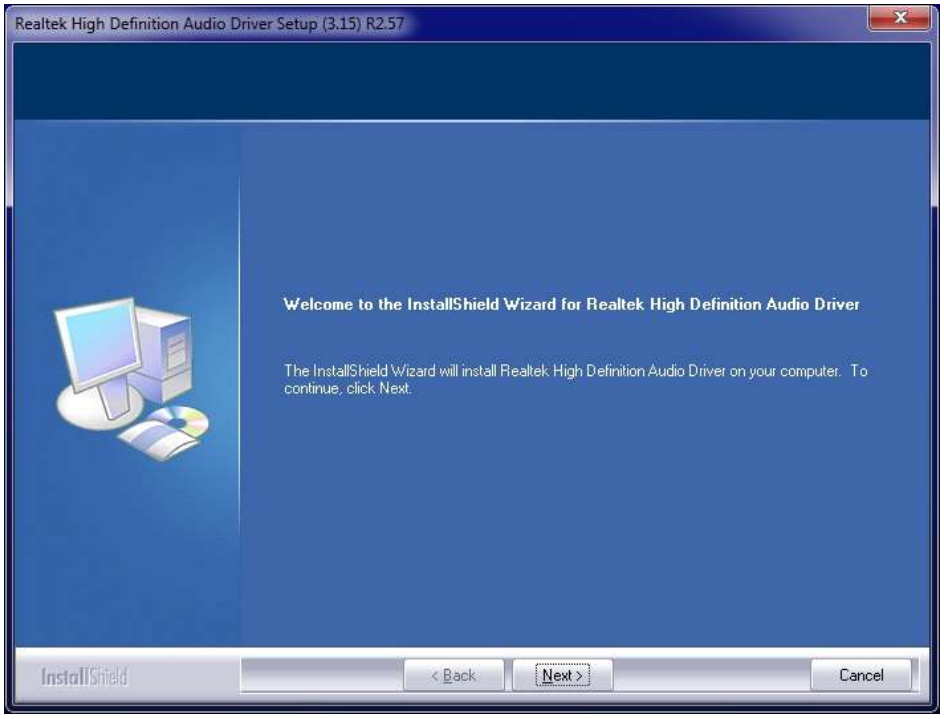
6. On Setup Progress screen, click ***Next*** to continue.

7. Setup complete. Click ***Finish*** to restart the computer and for changes to take effect.

4.3 Realtek HD Audio Driver Installation

1. Click ***Realtek High Definition Audio*** Driver.

2. On the Welcome to the InstallShield Wizard screen, click ***Next*** to proceed with and complete the installation process.



3. Restart the computer when prompted.

4.4 LAN Drivers Installation

1. Insert the CD that comes with the board. Click ***LAN Card*** and then ***Intel(R) LAN Controller Drivers.***

2. Click I***ntel(R) Gigabit Ethernet Drivers.***

3. In the Welcome screen, click ***Next***.

4. In the License Agreement screen, click ***I accept the terms in license agreement*** and ***Next*** to accept the software license agreement and proceed with the installation process.

5. Click the checkbox for ***Drivers*** in the Setup Options screen to select it and click ***Next*** to continue.

6. When the Ready to Install the Program screen appears, click ***Install*** to continue.

7. When InstallShield Wizard is complete, click ***Finish***.