

# User Manual for Motherboard **3I380A / 3I380CW**

Intel Bay Trail-I E3815 / E3845  
(Single Core / Quad Core) CPU, DDR3L 1066 / 1333 MT/s,  
2 x LAN / HDMI / Audio / USB / COM / PCIe mini card

## Features:

All-In-One PC

Intel Bay Trail-I E3815 / E3845

(Single Core 1.46 GHz / Quad Core 1.91 GHz) CPU

2 x Intel GbE LAN, 2 x PCIe mini card slots, VGA, HDMI, Audio,  
SATA, USB, 6 x COM, Wide Range DC-IN, LVDS, Touch Screen



**CAUTION**

**RISK OF EXPLOSION IF BATTERY IS  
REPLACED BY AN INCORRECT TYPE.**

**DISPOSE OF USED BATTERIES  
ACCORDING TO THE INSTRUCTIONS!**

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## Warning !

1. Battery  
Batteries on board are consumables.  
The life time of them are not guaranteed.
2. Fanless solution with HDD  
The specification & limitation of HDD should be considered carefully when the fanless solution is implemented.
3. We will not give further notification in case of changes of product information and manual.
4. SATA interface does not support Hot SWAP function.
5. There might be a 20% inaccuracy of WDT at room temperature.
6. Please make sure the voltage specification meets the requirement of equipment before plugging in.
7. There are two types of SSD, commercial grade and industrial grade, which provide different read / write speed performance, operation temperature and life cycle. Please contact sales for further information before making orders.
8. Caution! Please notice that the heat dissipation problem could cause the MB system unstable. Please deal with heat dissipation properly when buying single MB set.
9. Please avoid approaching the heat sink area to prevent users from being scalded with fanless products.
10. If users repair, modify or destroy any component of product unauthorizedly, We will not take responsibility or provide warranty anymore.
11. DO NOT apply any other material which may reduce cooling performance onto the thermal pad.
12. It is important to install a system fan toward the CPU to decrease the possibility of overheating / system hanging up issues, or customer is suggested to have a fine cooling system to dissipate heat from CPU.

## \* Hardware Notice Guide

1. Before linking power supply with the motherboard, please attach DC-in adapter to the motherboard first. Then plug the adapter power to AC outlet.  
Always shut down the computer normally before you move the system unit or remove the power supply from the motherboard. Please unplug the DC-in adapter first and then unplug the adapter from the AC outlet.  
Please refer photo 1 as standard procedures.
2. In case of using DIRECT DC-in (without adapter), please check the allowed range for voltage & current of cables. And make sure you have the safety protection for outer issues such as short / broken circuit, overvoltage, surge, lightning strike.
3. In case of using DC-out to an external device, please make sure its voltage and current comply with the motherboard specification.
4. The total power consumption is determined by various conditions (CPU / motherboard type, device, application, etc.). Be cautious to the power cable you use for the system, one with UL standard will be highly recommended.
5. It's highly possible to burn out the CPU if you change / modify any parts of the CPU cooler.
6. Please wear wrist strap and attach it to a metal part of the system unit before handling a component. You can also touch an object which is ground connected or attached with metal surface if you don't have wrist strap.
7. Please be careful to handle & don't touch the sharp-pointed components on the bottom of PCBA.
8. Remove or change any components from the motherboard will VOID the warranty of the motherboard.
9. Before you install / remove any components or even make any jumper setting on the motherboard, please make sure to disconnect the power supply first. (follow the aforementioned instruction guide)
10. "POWERON after PWR-Fail" function must be used carefully as below:  
When the DC power adaptor runs out of power, unplug it from the DC current;  
Once power returns, plug it back after 5 seconds.  
If there is a power outage, unplug it from the AC current, once power returns, plug it back after 30 seconds. Otherwise it will cause system locked or made a severe damage.

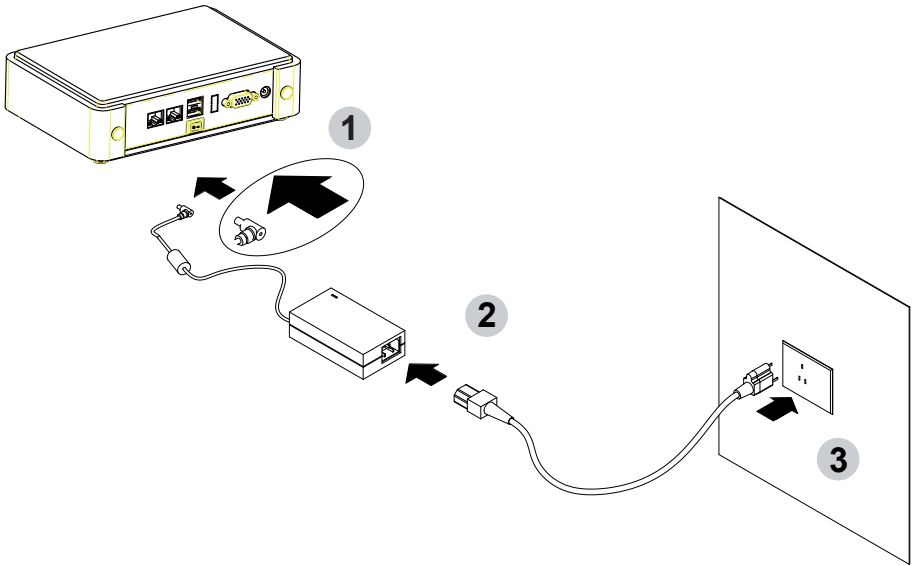
### **Remark 1:**

**Always insert / unplug the DC-in horizontally & directly to / from the motherboard. DO NOT twist, it is designed to fit snugly.**

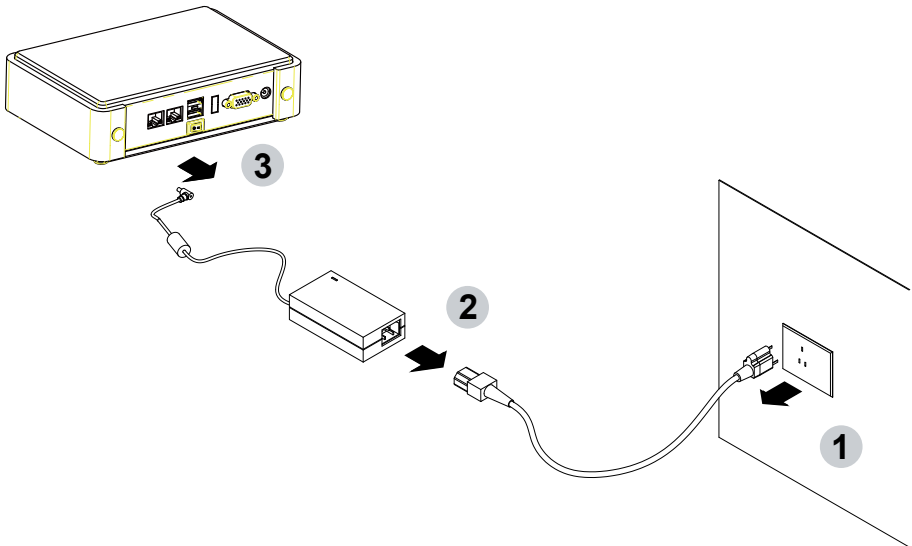
**Moreover, erratic pull / push action might cause an unpredictable damage to the component & system unit.**

# Photo 1

# Insert



# Unplug





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# Chapter-1

## General Information

The 3I380A/CW is a 3.5-inch compact embedded system board that features Intel® Bay Trail SoC to support one super speed USB 3.0 port, and one onboard memory or SODIMM up to 4GB SDRAM 1066/1333MHz.

High-performance and power-efficient communication platform, the embedded motherboard of 3I380A/CW is specially designed for advanced embedded car PC or POS system applications where the economical use of power is in high demand. Also, there is a sizable on board DDR3L memory from 3I380A/CW motherboards which will provide more stability to the system. This motherboard will ensure the high performance levels required for today's most popular POS/Automation control applications including Embedded Car PC, POS, ATM, Kiosk and Panel PC applications.

The 3I380A/CW integrates with Intel's 7th generation (Gen 7) graphics and media encode/decode engine, dual displays of CRT resolution up to 2560 x 1600, single/dual channel 18/24-bit LVDS(3I380CW) and HDMI 1080p. Besides, 3I380A/CW has Intel LAN chipset with 10/100/1000 Mbps Ethernet for seamless broadband connectivity. With the Wake-On LAN function and the PXE function in BIOS for Intel LAN chipset, it is perfect control board for networking devices. 3I380A/CW also supports multiple COM ports of five RS232 and one RS422/485 to meet the needs of connectivity for multiple COM ports.

In addition, there are multi-ports of Hi-Speed USB 3.0 and USB 2.0 to enhance the host controller interface which will ensure the high performance level and flexible expansion. A single Flash chip holds the system BIOS, and you can change the Flash BIOS by the Utility Update. The 3I380A/CW is All-In-One board which could apply to the use of Networking, POS or Automation Control Board. It is designed to combine all necessary input and output affects interfaces, which makes it to be ideal All-In-One control board for the demand of Networking, POS and Automation Control applications. 3I380A/CW is the perfect platform for a whole range of small form factor.

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## 1-1 Major Feature

1. INTEL Atom Processor Baytrail-I E3845 / E3815
2. Onboard DDR3L 2GB/4GB; data transfer rates of 1066MT/s and 1333 MT/s
3. 2 x Intel® Giga LAN
4. On board SSD 2/4/8/16/32/64 GBytes (Option)
5. Support expanded PCIe Mini card for PCIe x1 and USB interface,  
PCIe Mini card for PCIe x1 or mSATA Gen II Auto detect and USB interface
6. Support up to 2 SATA ports (mSATA & SATA Connector)
7. Hardware digital Input & Output, 8 x DI / 8 x DO  
Hardware Watch Dog Timer, 0~255 sec programmable
8. DC +12V Input(31380A) or Wide range DC input from +9V to +36V(±1V)(31380CW)
9. PCB Dimension: 146 x 102 mm
10. 1 SIM card socket
11. Touch : USB interface Touch screen controller (31380CW),  
support 4- , 5- , 8- wire Analog  
Resistive touch screen. Resolution is up to 2048 x 2048

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## 1-2 Specification

1. SoC: INTEL Atom Processor Baytrail-I E3845 / E3815
2. Memory: Onboard DDR3L 2GB/4GB, data transfer rates of 1066/1333 MT/s
3. VGA: Intel Bay Trail-I Integrated Graphics chipset
4. SATA: Integrated Serial ATA Host Controller Up to 2 SATA ports:  
All ports support 2.0 Data transfer rates up to 3.0 Gb/s (600 MB/s).
5. LAN: Intel I211AT PCIe LAN NIC
6. Serial Port: 5 x RS232 (Internal); 1 x 422/485 (Internal)
7. USB: 1 x USB 3.0/2.0 (external) + 3 x USB 2.0 (external) onboard;  
2 x USB 2.0 (internal) share with Mini card (3I380CW)  
3 x USB 2.0 (internal) (2 x share with Mini card (3I380A))
8. Sound: Intel High Definition Audio Interface
9. Audio Amplifier: 2 channel Class D Audio Amplifier;  
2.57W/Ch (Typ.) into a 4ΩLoad,  
1.46 W/Ch (Typ.) into a 8ΩLoad
10. WDT/DIO: Hardware digital Input & Output, 8 x DI / 8 x DO  
Hardware Watch Dog Timer, 0~255 sec programmable
11. Expansion interface: 1 PCIe Mini card for PCIe x1 and USB interface,  
1 PCIe Mini card for PCIe x1 or mSATA auto detect and USB interface
12. BIOS: Insyde BIOS
13. Dimension: 145 x 102 mm
14. Power: DC +12V Input(3I380A) or Wide range  
DC input from +9V to +36V(±1V)(3I380CW)
15. Power Consumption: Please refer to Page. 96
16. 3G Wireless: 3G SIM card reader
17. LVDS: 1 LVDS 2x15 pin (1.25mm) connector for 24bits/2ch LVDS interface (3I380CW)
18. Touch function: USB interface Touch screen controller (3I380CW)  
support 4- , 5- , 8- wire Analog Resistive touch screen.  
Resolution is up to 2048 x 2048

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## 1-3 Installing the SO-DIMM (OEM)

1. Align the SO-DIMM with the connector at a 45 degree angle.

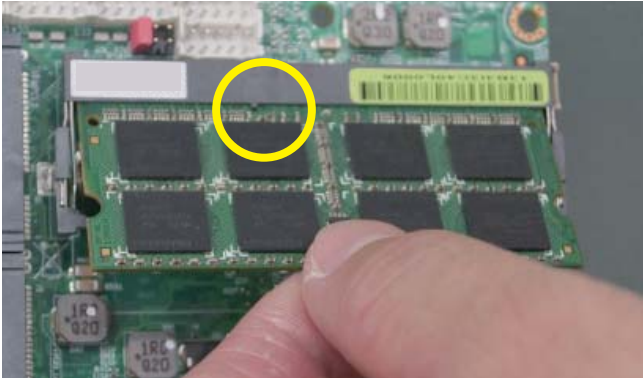


2. Press the SO-DIMM into the connector until you hear a click.



Notices:

1. The connectors are designed to ensure the correct insertion. If you feel resistance, check the connectors & golden finger direction, and realign the card.



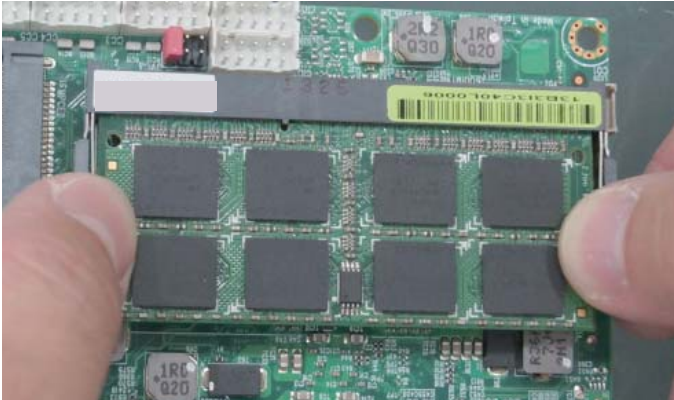
2. Make sure the retaining clips (on two sides of the slot) lock onto the notches of the card firmly.



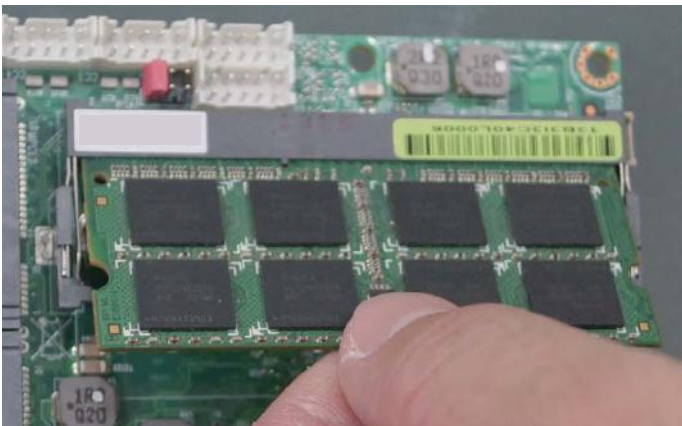
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### 1-3-1.1 Removing the SO-DIMM (OEM)

1. Release the SO-DIMM by pulling outward the two retaining clips and the SO-DIMM pops up slightly.



2. Lift the SO-DIMM out of its connector carefully.



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## 1-4 Directions for installing the Mini Card

1. Unscrew the screw on the board



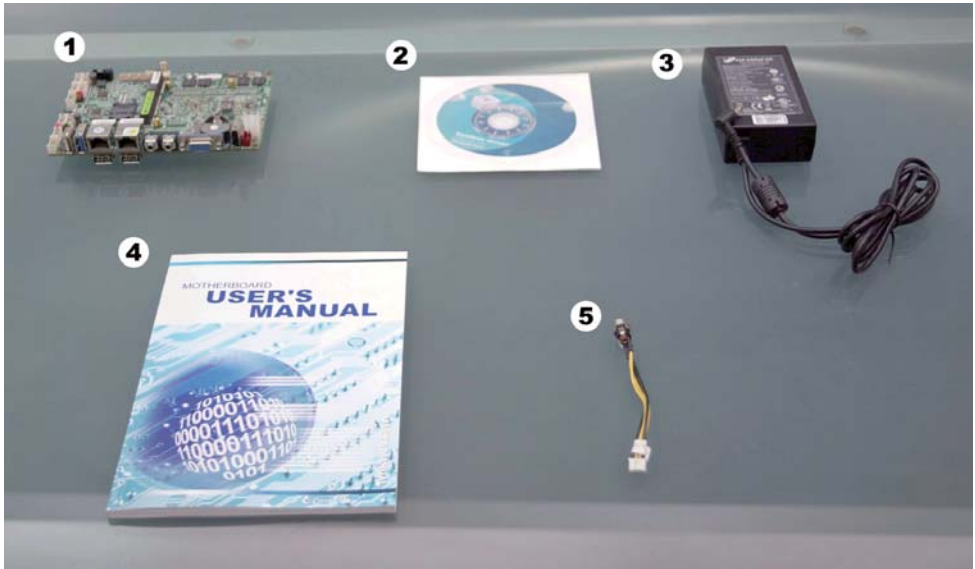
2. Plug in the Mini Card in a 45 angle



3. Gently push down the Mini Card and screw the screw back.



## 1-5 Packing List



	Material Code	Description	Detail Specification	Quantit
1	7G1901-1441002-0	MB-3I380A-I44-00-002	LF,3I380A-I44-00,Rev.:002	1
2	6G8006-2347-0100	LEX Product Driver DVD	LF, Intel Baytrail Driver	1
3	6G5212-0601-0200	60W Power Adapter,12V/5A,2.5	LF,L Type,FSP060-DBAE1,FSP	1
4	6G8001-2187-0400	Manual	LF,M/B,3I380A/CW	1
5	6G6003-7330-0100	Power Cable	LF,L=9cm,2.0 1*4/DC JK	1

**Optional accessories (items in addition to motherboard)  
are not included in the standard packing.  
Please contact your dealer to purchase the optional accessories.**



---

# Chapter-2

## Hardware Installation

### 2-1 Unpacking Precaution

This chapter provides the information how to install the hardware of 3I380A/CW. Please follow section 1-5, 2-1 and 2-2 to check the delivery package and unpack carefully. Please follow the jumper setting procedure.

**NOTE!**

1. Do not touch the board or any other sensitive components without all necessary anti-static protection.
2. Please pay attention to the voltage limitation of DC-IN 12V 5%.  
Overuse of DC-IN voltage limitation or change to another power adapter ( not provided with this system ) will VOID warranty.

You should follow these steps to protect the board from the static electric discharge whenever you handle the board:

1. Ground yourself by a grounded wrist strap at all times when you handle the 3I380A/CW.  
Well secure the ALLIGATOR clip of the strap to the end of the shielded wire lead from a grounded object. Please put on and connect the strap before handling the 3I380A/CW for harmlessly discharge any static electricity through the strap.
2. Please use anti-static pad to put any components, parts, or tools on the pad whenever you work on them outside the computer. You may also use the anti-static bag instead of the pad. Please ask your local supplier for necessary parts on anti-static requirement.
3. Do not plug any connector or set any jumper when the power is on.

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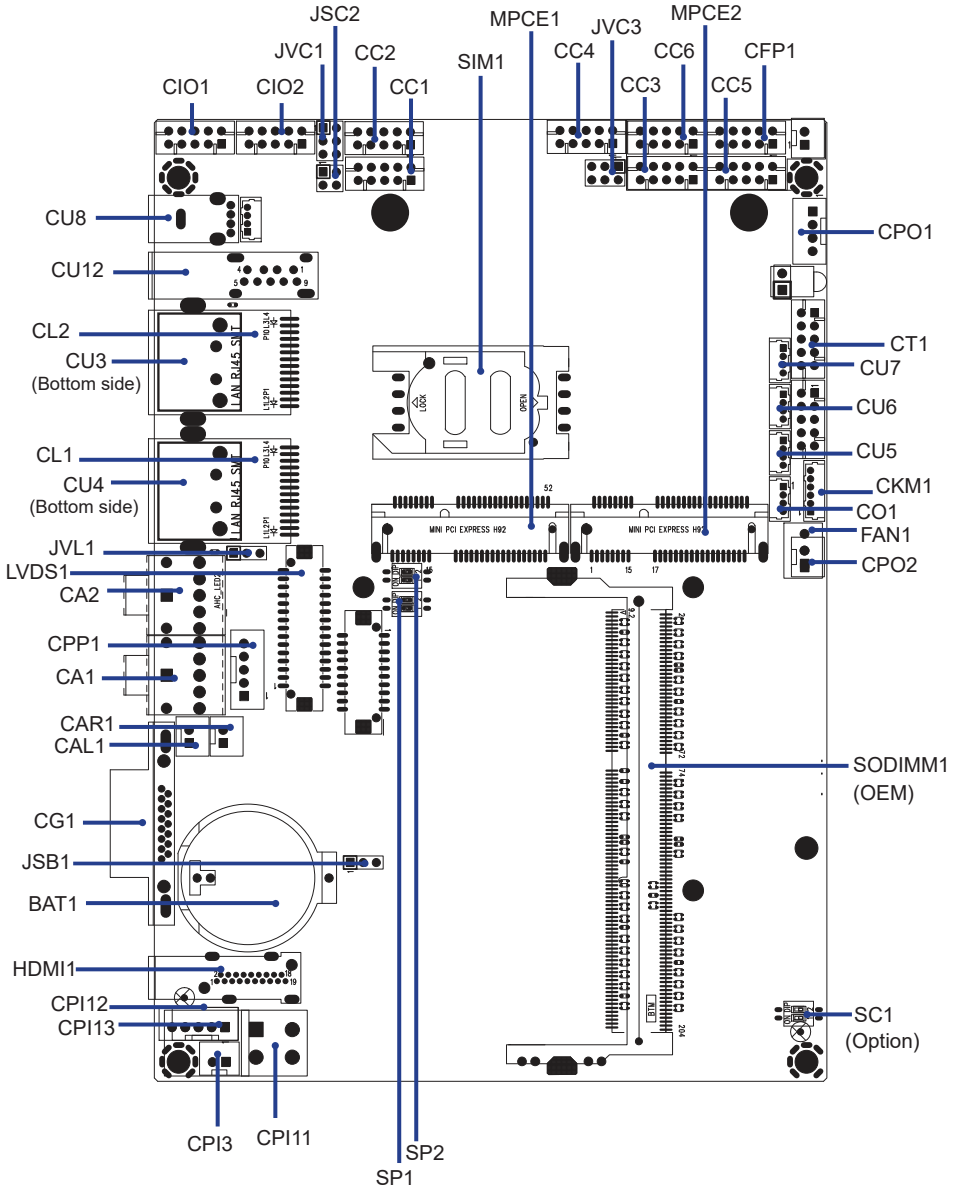
## 2-2 Unpacking checkup

First of all, please follow all necessary steps of section 2-1 to protect 3I380A/CW from electricity discharge. With reference to section 1-5 please check the delivery package again with following steps:

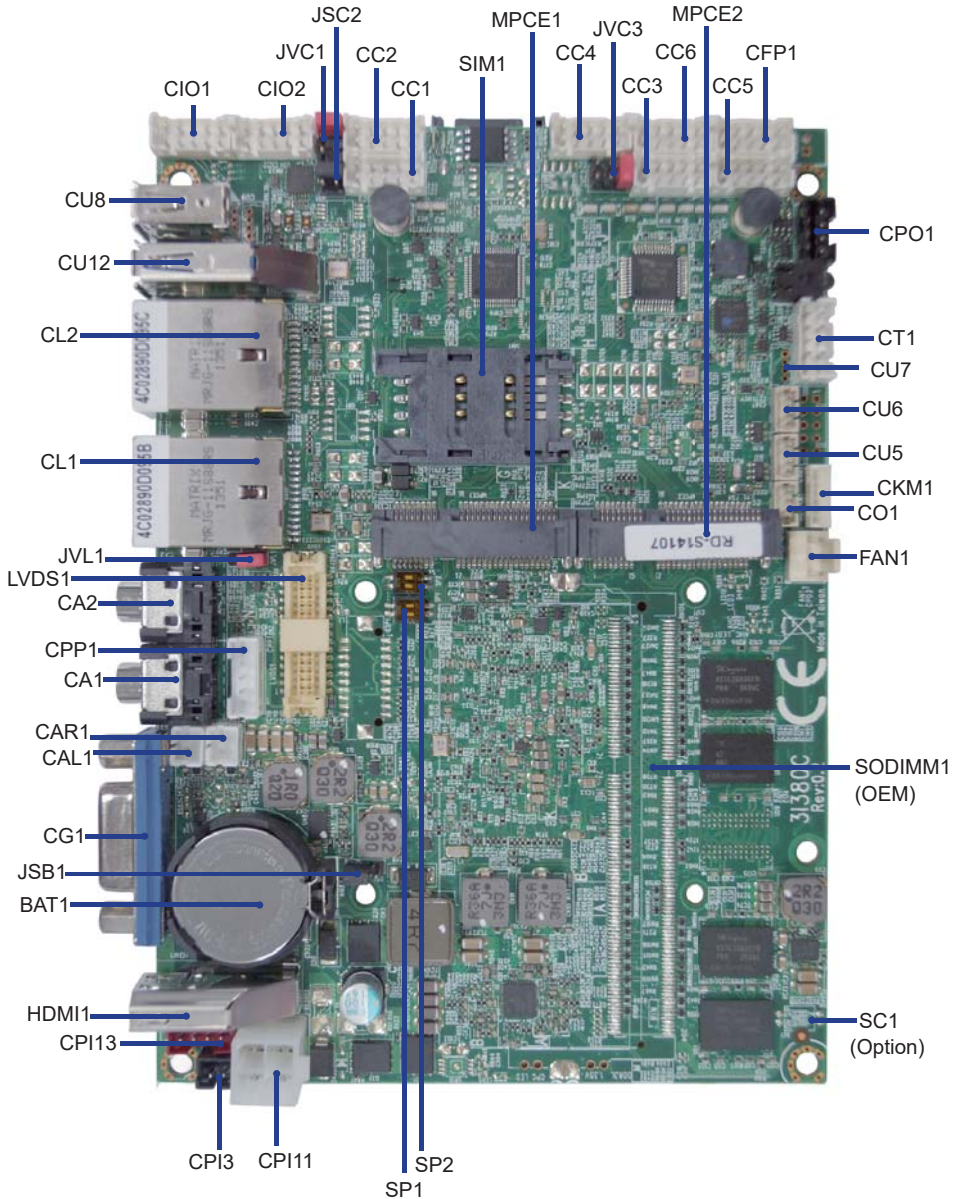
1. Unpack the 3I380A/CW board and keep all packing material, manual and driver disc etc, do not dispose !
2. Is there any components lose or drops from the board?  
DO NOT CONTINUE TO INSTALL THIS BOARD!  
CONTACT THE DEALER YOU PURCHASED THIS BOARD FROM, IMMEDIATELY.
3. Is there any visible damage on the board?  
DO NOT CONTINUE TO INSTALL THIS BOARD!CONTACT THE DEALER YOU PURCHASED THIS BOARD FROM, IMMEDIATELY.
4. Check your optional parts (i.e. DDR, CF etc.), all necessary jumpers setting to jumper pin-set, and CMOS setup correctly.  
Please also refer to all information of jumper settings in this manual.
5. Check your external devices (i.e. Add-On-Card, Driver Type etc.) for complete add-in or connection and CMOS setup correctly.  
Please also refer to all information of connector connection in this manual.
6. Please keep all necessary manual and driver disc in a good condition for future re-installation if you change your Operating System.



## 2-4 Layout-3I380A/CW

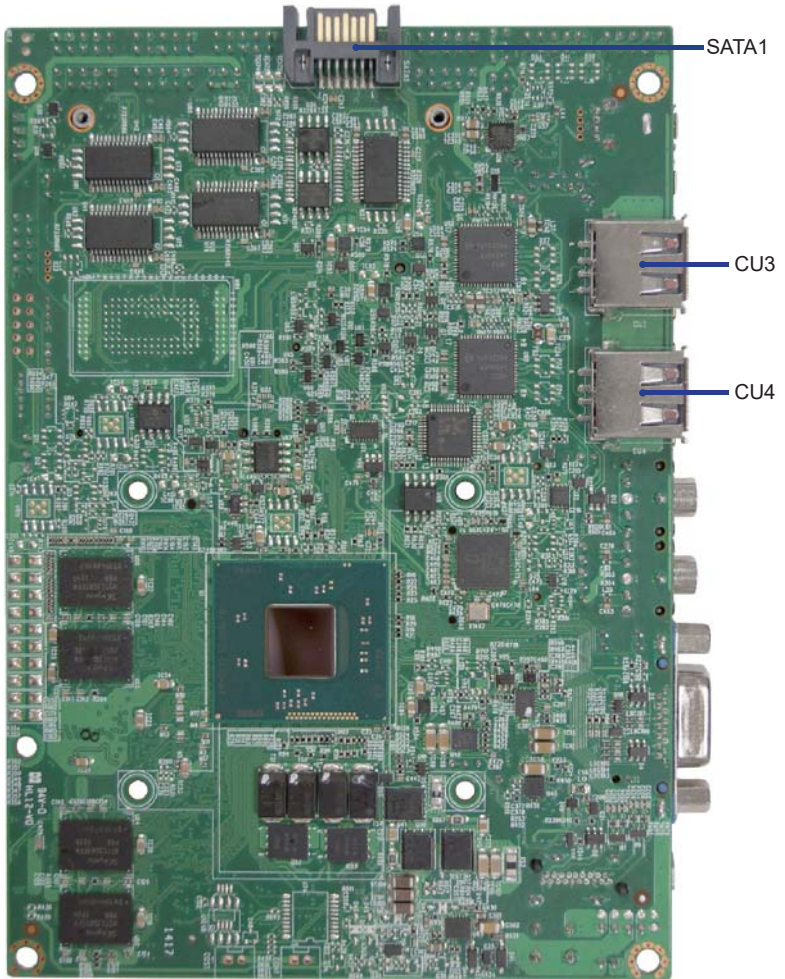


## 2-5 Diagram- 3I380A/CW



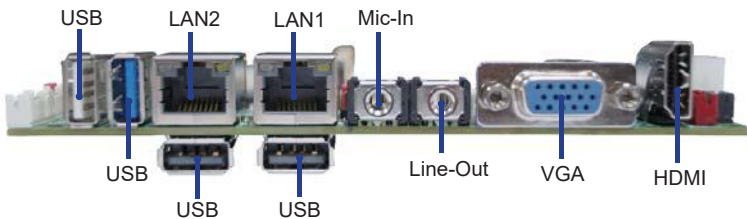
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## 2-5-1 Bottom Side Diagram- 3I380A/CW



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## BACK Panel-3I380A/CW



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## 2-6 Install Memory

This motherboard provides one 204-pin Small Outline Dual In-line Memory Module (SODIMM) socket for memory expansion available maximum to of 2GB/4GB/8GB DDR3L SDRAM.  
DDR3L clock supports: DDR3L 1333/1066MT/S

### Valid Memory Configurations

DIMM1	System Accept or Not	Total Memory
		Max.
DS/SS	Accept	8GB

**DS: Double Sided DIMM**

**SS: Single Sided DIMM**

#### **NOTE!**

The detected memory size is less than actual installed memory size since some memory has been allocated for system use.  
That's how PC works with system memory.

Please refer to page 7 for installation of memory module.

---

## 2-7 List of Jumpers

JSB1: CMOS clear select

JSC2: COM2 RS422/RS485 select

JVC1: COM1 voltage select

JVC3: COM3 voltage select

JVL1: LCD Panel power select

## 2-8 Jumper Setting Description

A jumper is ON as a closed circuit with a plastic cap covering two pins. A jumper is OFF as an open circuit without the plastic cap. Some jumpers have three pins, labeled 1, 2, and 3. You could connect either pin 1 and 2 or 2 and 3. The below figure 2.2 shows the examples of different jumper settings in this manual.

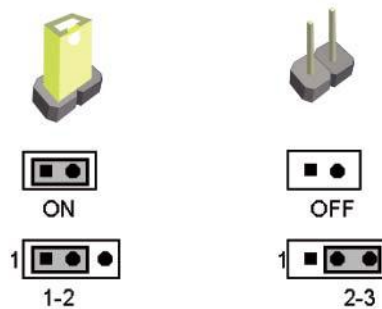


Figure 2.2

All jumpers already have its default setting with the plastic cap inserted as ON, or without the plastic cap as OFF. The default setting may be referred in this manual with a " \* " symbol .



A battery must be used to retain the motherboard configuration in CMOS RAM.  
Close Pin1 and pin 2 of JSB1 to store the CMOS data.

To clear the CMOS, follow the procedures below:

1. Turn off the system and unplug the AC power
2. Remove power cable from power connector
3. Locate JSB1 and close pin 2-3 for few seconds
4. Return to default setting by close pin 1-2
5. Connect power cable back to power connector

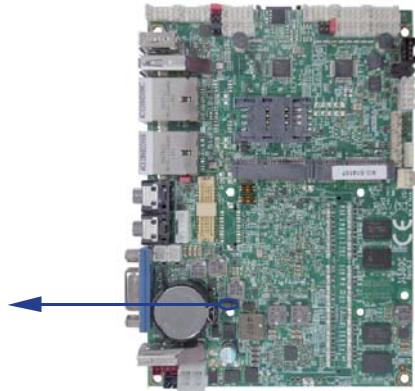
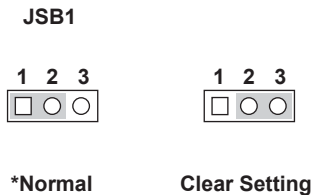
## 2-9 JSB1: CMOS DATA SET

JSB1	Description
1-2	Normal set
2-3	CMOS data clear

Note: Normal work is open jumper

Note: Do not clear CMOS unless

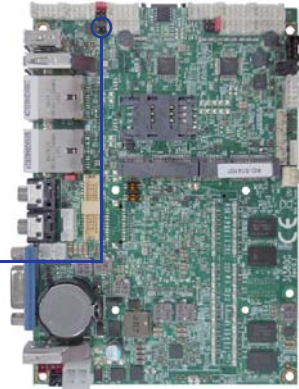
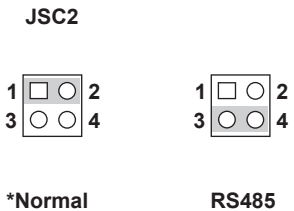
1. **Troubleshooting**
2. **Forget password**
3. **You fail over-clocking system**



## 2-10 JSC2: COM2 RS422/RS485 select

JSC2	Description
*1-2	RS422
3-4	RS485

Note: RS422/485 setting by both H/W jumper and BIOS CMOS setting

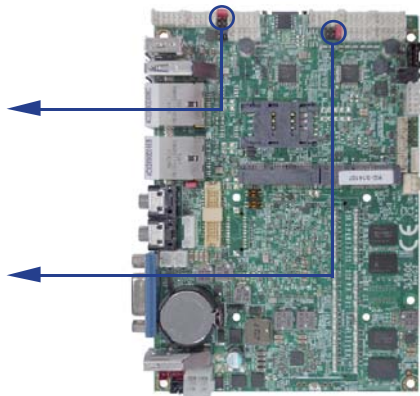
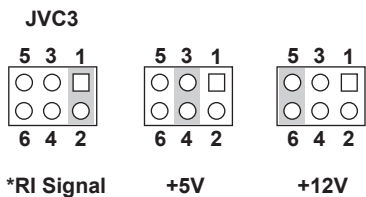
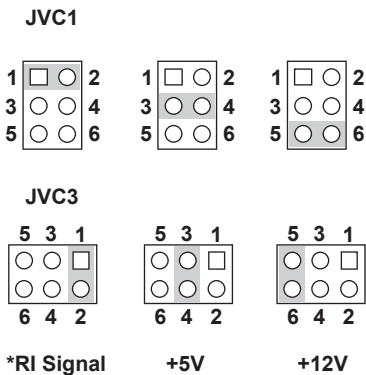


## 2-11 COM port pin9 select RI signal or Voltage source

JVC1: COM1 PIN9 select    JVC3: COM3 PIN9 select

JVC1/3	Description
*1-2	COM port pin9 use RI signal
3-4	COM port pin9 use +5V voltage
5-6	COM port pin9 use +12V voltage

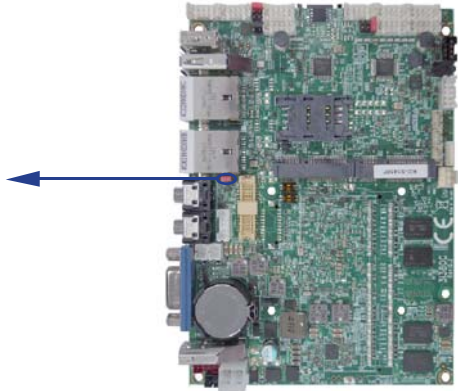
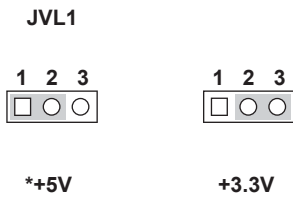
Note: 1. Note: Attention ! Check Device Power in spec  
 2. If want to use +5V/+12V need check system power design spec



## 2-12 JVL1: LCD panel power select

JVL1	Description
*1-2	+5V
2-3	+3.3V

Note: Attention ! Check Device Power in spec



---

# Chapter-3

## Connection

This chapter provides all necessary information of the peripheral's connections, switches and indicators. Always power off the board before you install the peripherals.

### 3-1 List of Connectors

CPI11: DC-in internal connector (2x2pin 4.2mm ATX connector)

CPI12: DC-in 1x4 pin (2.0mm) Red wafer connector

CPI13: DC-in 1x5 pin (2.0mm) wafer connector (Option)

CPI3: DC-in 1x2 pin (2.0mm) Black wafer connector (Option)

BAT1: Li 3V battery holder

CPO1: DC +5/+12V output 1x4 pin(2.0mm) Black wafer connector

CFP1: Front panel port 2x5 pin (2.00mm) wafer

FAN1: CPU fan 1x3 pin (2.54mm) wafer

CG1: DSUB VGA connector

HDMI1: HDMI type A connector

LVDS1: LVDS 2x15 pin (1.25mm) connector (3I380CW)

EDP1: Embedded display-port 2x10pin (1.25mm) wafer.(TBD) (option)

CPP1: Panel inverter power connector 1x5 pin (2.0mm) wafer (3I380CW)

CT1: Touch screen device 2x5 pin (2.0mm) Wafer (3I380CW)

CA1: Line out phone jack

CA2: Mic-in phone jack

CAL1: Amplifier Line-out Left channel 2pin (2.0mm) wafer (3I380CW)

CAR1: Amplifier Line-out Right channel 2pin (2.0mm) wafer (3I380CW)

CC1/CC2/CC3/CC4/CC5/CC6: COM 2x5pin (2.0mm) wafer

CIO1: DI port 0 ~ 3, DO port 0 ~ 3 2x5 pin (2.0mm) wafer

CIO2: DI port 4 ~ 7, DO port 4 ~ 7 2x5 pin (2.0mm) wafer

CO1: I<sup>2</sup>C 4pin (1.25mm) wafer

CKM1: KB/MS port 1x6 pin (1.25mm) wafer connector

CL1/CL2: LAN RJ45 connector

CU3/CU4: USB 2.0 port 4/5 Type A connector

CU5/CU6/CU7: USB port 5/6/7 4pin(1.25mm) wafer (CU7 for 3I380A only)

CU12: USB 3.0/2.0 connector

CU8: USB 2.0 port Type A connector

SATA1: SATA port 0 (Gen III) connectors 7pin

MPCE1/MPCE2: Mini card port 1/2 sockets 52pin

SIM1: SIM port 1 card socket

SODIM1: SO-DIM DDR3L 1.35V DRAM Socket (OEM)

## 3-2 DC power input

- **CPI11: DC-IN Internal Connector (2x2pin 4.2mm ATX 田 connector)**

PIN NO.	Description	PIN NO.	Description
1	GND	2	GND
3	NC / CAR_IN_ACC	4	DC-IN

Note: 1. DC in from adapter plug in  
2. CPI11 Pin 3 for CPC function use for OEM option

- **CPI12: DC-IN Internal Connector (1x4 pin 2.0mm Red Wafer)**

PIN NO.	Description
1	GND
2	DC-IN
3	DC-IN
4	GND

Note: DC in from adapter plug in

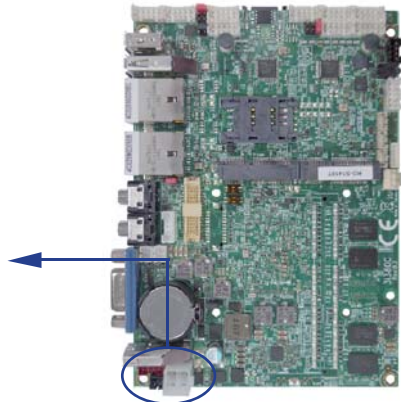
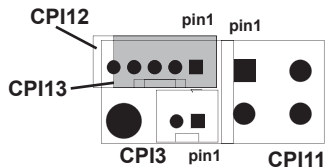
- **CPI13: DC-IN Internal Connector (1x5 pin 2.0mm Wafer) (Option)**

PIN NO.	Description
1	GND
2	DC-IN
3	DC-IN
4	GND
5	CAR_IN_ACC

Note: 1. DC in from adapter plug in  
2. share CPI12 Connector

- **CPI3: DC-IN Internal Connector (1x2 pin 2.0mm Red Wafer)(Option)**

PIN NO.	Description
1	DC-IN
2	GND

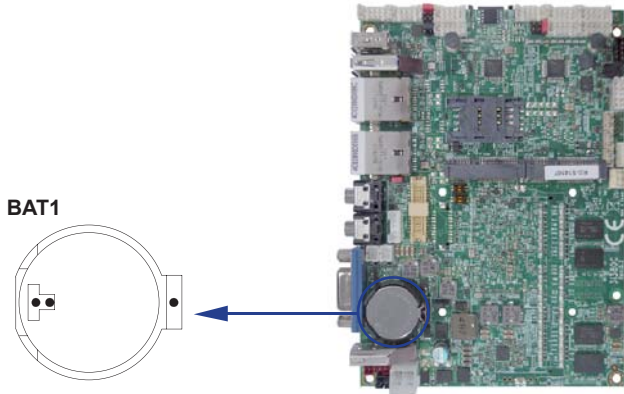


### 3-3 Battery Input

- **BAT1: 3V Battery hold 2pin**

**BAT1: Battery use Li 3V / 220mAh (CR2032)**

Note: 1. When board without Adaptor plug in, this board power RTC consumption about 2.7uA  
2. If adaptor always plug in RTC power consumption about 0.1uA

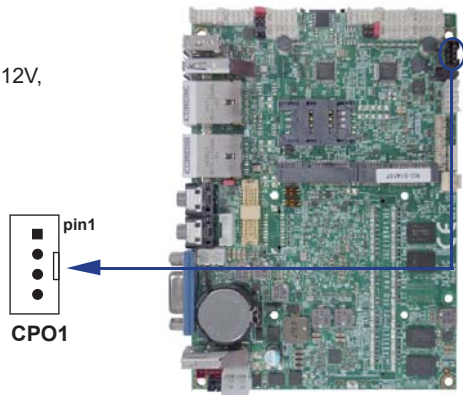


### 3-4 DC Power output

- **CPO1: +12V/+5V DC voltage output (4pin 2.00mm Black Wafer)**

PIN NO.	Description
1	+5V
2	GND
3	GND
4	+12V*

\*Note: DC in +12V by switch to DC-out voltage +12V, so DC in need stable +12V input



## 3-5 Front panel & FAN

### • CFP1 Front panel connector (2x5pin 2.00mm wafer)

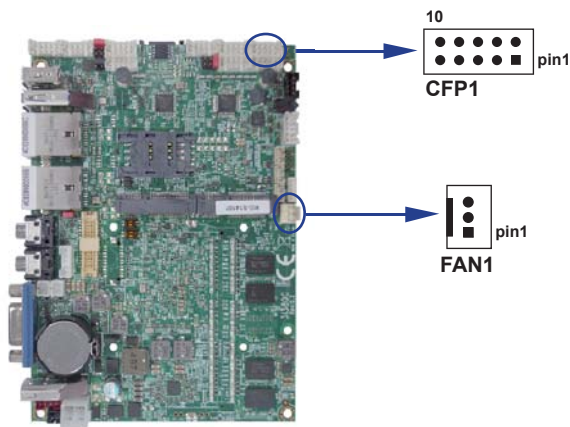
PIN NO.	Description	PIN NO.	Description
1	Power button pin	2	Power button GND
3	Reset pin	4	Reset GND
5	Power LED -	6	Power LED +
7	HDD LED-	8	HDD LED+
9	LAN LED-	10	LAN LED+

### FAN connectors

#### • FAN1: CPU FAN connector (3pin 2.5mm wafer)

PIN NO.	Description
1	GND
2	+12V
3	FAN speed detect

Note: DC in +12V by switch to FAN power +12V,  
so DC in need stable +12V input



## 3-6 Display & Touch interface

### ● CG1: DSUB VGA connector (DB15 pin)

PIN NO.	Description	PIN NO.	Description	PIN NO.	Description
1	RED	6	GND	11	NC
2	GREEN	7	GND	12	DDC DATA
3	BLUE	8	GND	13	H-SYNC
4	NC	9	NC	14	V-SYNC
5	GND	10	GND	15	DDC CLOCK

### ● HDMI1: HDMI Connector (Type A)

PIN NO.	Description	PIN NO.	Description
1	TMDS DATA2+	2	GND
3	TMDS DATA2-	4	TMDS DATA1+
5	GND	6	TMDS DATA1-
7	TMDS DATA0+	8	GND
9	TMDS DATA0-	10	TMDS CLK+
11	GND	12	TMDS CLK-
13	NC	14	NC
15	DDC CLK	16	DDC DATA
17	GND	18	+5V
19	H.P. Detect		

\*Note: HDMI support 1.3a Spec





● **EDP1: Embedded display-port 2x10pin (1.25mm) wafer.(TBD) (option)**

PIN NO.	Description	PIN NO.	Description
1	eDP-TX0-	2	+12V or +5V
3	eDP-TX0+	4	+12V or +5V
5	eDP-TX1-	6	GND
7	eDP-TX1+	8	GND
9	eDP-TX2-	10	GND
11	eDP-TX2+	12	GND
13	eDP-TX3-	14	LCD Power
15	eDP-TX3+	16	LCD Power
17	eDP-AUX+	18	LCD Power
19	eDP-AUX-	20	eDP-HPD

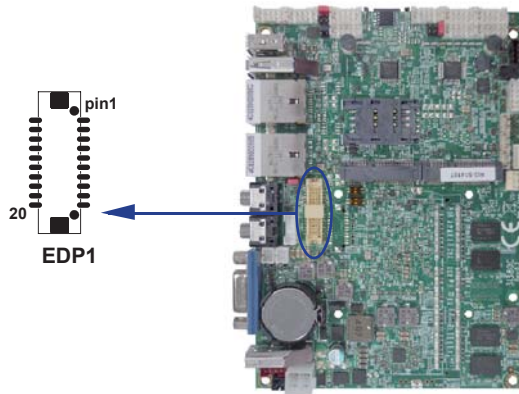
Note: 1. All signal from CPU DDI1 interface.

2. LCD Power pin from JVL1 LCD panel +5V/+3.3V Voltage select.

3. Backlight Power refer CPP1.

4. PIN2/PIN4 default is +12V

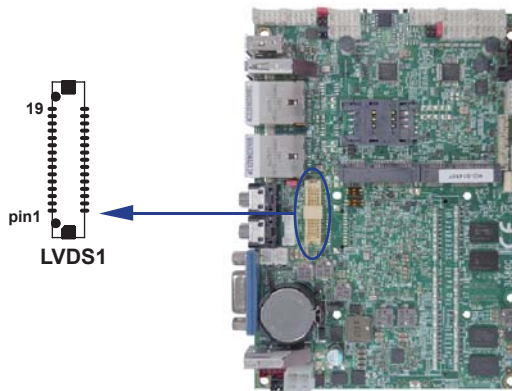
5. This function is for OEM panel only.



● **LVDS1: LVDS interface (2x15 pin 1.25mm wafer)**

PIN NO.	Description	PIN NO.	Description
1	PWM dimming	2	+5V
3	+LCD(5V or 3.3V)	4	+LCD(5V or 3.3V)
5	Channel-1-DATA3+	6	Channel-0-DATA3+
7	Channel-1-DATA3-	8	Channel-0-DATA3-
9	Channel-0-DATA2+	10	Channel-0-CLK+
11	Channel-0-DATA2-	12	Channel-0-CLK-
13	GND	14	GND
15	Channel-0-DATA1+	16	Channel-0-DATA0+
17	Channel-0-DATA1-	18	Channel-0-DATA0-
19	GND	20	GND
21	+LCD(5V or 3.3V)	22	+LCD(5V or 3.3V)
23	Channel-1-DATA2+	24	Channel-1-CLK+
25	Channel-1-DATA2-	26	Channel-1-CLK-
27	Channel-1-DATA1+	28	Channel-1-DATA0+
29	Channel-1-DATA1-	30	Channel-1-DATA0-

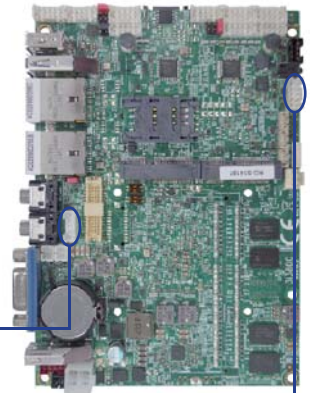
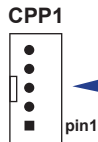
- Note: 1. LVDS interface support 18/24bits two channel .  
 2. JVL1: LVDS panel +5V/+3.3V(default) Voltage select.  
 3. LVDS1 PIN 1 for panel backlight active.  
 4. Pin 1 back light dimming control. Provided 200Hz / 275Hz / 380Hz / 20KHz / 25KHz and adjust PWM duty cycle by software program.  
 5. For 3I380CW, please disable the LVDS function from BIOS setting if you don't need to use it.  
 (Advanced->Video Configuration->Configure DD11 as -> (select to No Device) )



● **CPP1: Panel Inverter power (5pin 2.0mm wafer)**

PIN NO.	Description
1	+12V
2	GND
3	PWM dimming
4	ENBKL (3.3V)
5	ENBKL ( 5V )

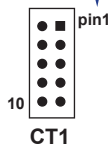
Note: 1. JVP1 Inverter Voltage select  
 2. CPP1 PIN 3 and LVDS1 PIN1 is same signal.  
 3. Pin 3 back light dimming control,  
 Provided 200Hz / 275Hz / 380Hz / 20KHz / 25KHz  
 and adjust PWM duty cycle by software program.



● **CT1: Touch screen (2x5 pin 2.0mm wafer) USB interface**

● **For 8- wire type pin define**

PIN NO.	Description	PIN NO.	Description
1	Bottom	2	Bottom Sense
3	Top Sense	4	Top
5	Right	6	Right Sense
7	Left	8	Left Sense
9	GND	10	KEY



Note: 1. For eight wire type cable Pin 3 and Pin4 need short.  
 2. Touch controller use USB port 4

● **For 4- wire type pin define**

PIN NO.	Description	PIN NO.	Description
1	Bottom	2	N/A
3	N/A	4	Top
5	Right	6	N/A
7	Left	8	N/A
9	GND	10	KEY

Note: 1. For four wire type cable Pin 3 and Pin4 need short.  
 2. Touch controller use USB port 4

● For 5- wire type pin define

PIN NO.	Description	PIN NO.	Description
1	UR(H)	2	N/A
3	Sense	4	UL(Y)
5	LR(X)	6	N/A
7	LL(L)	8	N/A
9	GND	10	KEY

Note: 1. Touch controller use USB port 4

### 3-7 Audio interface

● CA11: Line out (3.5mm phone jack)

PIN NO.	1	2	3	4	5
Description	GND	Line OUT-L	NC	NC	Line OUT-R

● CA12: Mic in (3.5mm phone jack)

PIN NO.	1	2	3	4	5
Description	GND	Mic-IN	NC	NC	Mic-IN

● Audio Amplifier class D Two channel

2.57 W/Ch (Typ.) into a 4ΩLoad

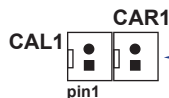
1.46 W/Ch (Typ.) into a 8ΩLoad

● CAR1: Audio Amplifier Line Out Right (2pin 2.0mm wafer)

PIN NO.	Description
1	LINE-OUT_R+
2	LINE-OUT_R-

● CAL1: Audio Amplifier Line Out Left (2pin 2.0mm wafer)

PIN NO.	Description
1	LINE-OUT_L+
2	LINE-OUT_L-



### 3-8 I/O Interface

- **COM ports (COM1~COM6 from super I/O)**

COM1/3/4/5/6 default support RS232 mode

COM2 default support RS422/RS485 mode

- **RS232 mode ports (2x5pin 2.0mm Wafer)**

CC1: COM1    CC2: COM2

CC3: COM3    CC4: COM4

CC5: COM5    CC6: COM6

PIN NO.	Description	PIN NO.	Description
1	DCD	2	RXD
3	TXD	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI/ Voltage	10	+5V

Note: 1. CC1/CC3/CC4/CC5/CC6 connector RS485 function for OEM BOM request

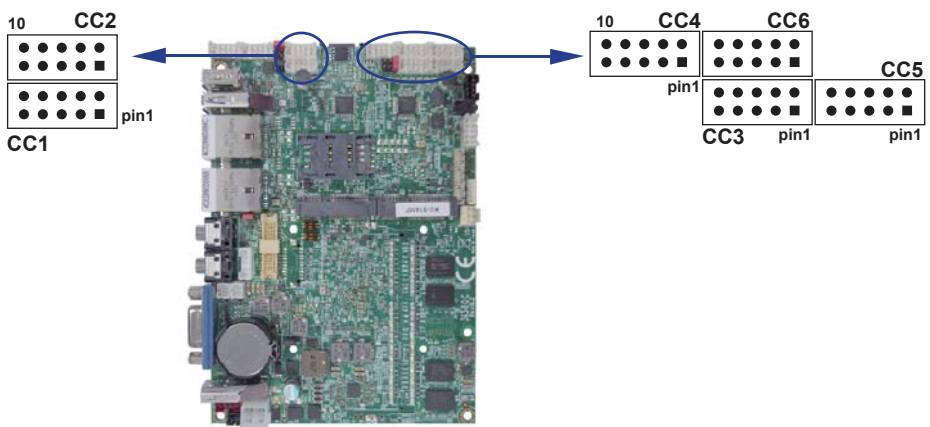
2. BIOS need setting to RS485 mode

- **RS485 mode ports (2x5pin 2.0mm Wafer)**

PIN NO.	Description	PIN NO.	Description
1	RS485 TX-	2	RS485 TX+
3	NC	4	NC
5	GND	6	NC
7	NC	8	NC
9	NC	10	+5V

Note: 1. CC1/CC3/CC4/CC5/CC6 connector RS485 function for OEM BOM request

2. BIOS need setting to RS485 mode



● **RS422 mode ports (2x5pin 2.0mm Wafer)**

CC1: COM1    CC2: COM2  
 CC3: COM3    CC4: COM4  
 CC5: COM5    CC6: COM6

PIN NO.	Description	PIN NO.	Description
1	TX-	2	TX+
3	RX+	4	RX-
5	GND	6	NC
7	NC	8	NC
9	NC	10	+5V

Note: 1. CC1/CC3/CC4/CC5/CC6 connector RS422 function for OEM BOM request

**3-9 Digital Input / Output**

● **CIO1 DIO 0 ~ 3 (2x5pin 2.0mm wafer)**

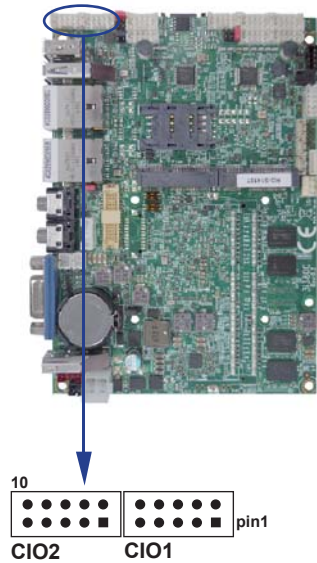
PIN NO.	Description	PIN NO.	Description
1	DI-0	2	DO-3
3	DI-1	4	DO-2
5	DI-2	6	DO-1
7	DI-3	8	DO-0
9	GND	10	+5V

Note: 1. DI pin default pull up 10KΩ to +5V  
 2. If use need isolate circuit to control external device  
 3. F75111N-1 I<sup>2</sup>C bus address 0x9c

● **CIO2 DIO 4 ~ 7 (2x5pin 2.0mm wafer)**

PIN NO.	Description	PIN NO.	Description
1	DI-4	2	DO-7
3	DI-5	4	DO-6
5	DI-6	6	DO-5
7	DI-7	8	DO-4
9	GND	10	+5V

Note: 1. DI pin default pull up 10KΩ to +5V  
 2. If use need isolate circuit to control external device  
 3. F75111N-1 I<sup>2</sup>C bus address 0x9c



---

- **For F75111N I<sup>2</sup>C watch dog timer device:**

DC spec:

Input low Voltage (VIL): +0.8 Max

Input High Voltage (VIH): +2V Min

Output low Current (IOL): 10mA (Min) VOL=0.4V

Output High Current (IOH): -10mA (Min) VOH=2.4V

Watch Dog Time value 0~255 sec

The system will be issued reset.

When WDT is enable the hardware start down counter to zero.

The reset timer have 10~20% tolerance upon the Temperature.

Note: If want to SDK support. Please contact to sales window.

### 3-9-1 IO Device: F75111 under Windows

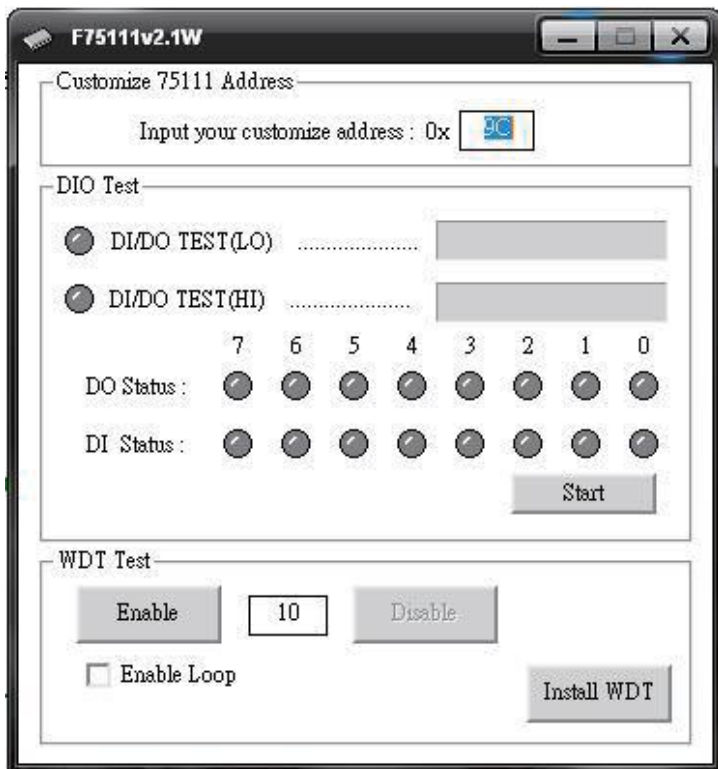
The Sample code source you can download from



Source file: F75111\_DIOSrc.rar [http://tprd.info/lexwiki/index.php/IO\\_Device:F75111](http://tprd.info/lexwiki/index.php/IO_Device:F75111)

Binary file: F75111\_DemoBin.rar

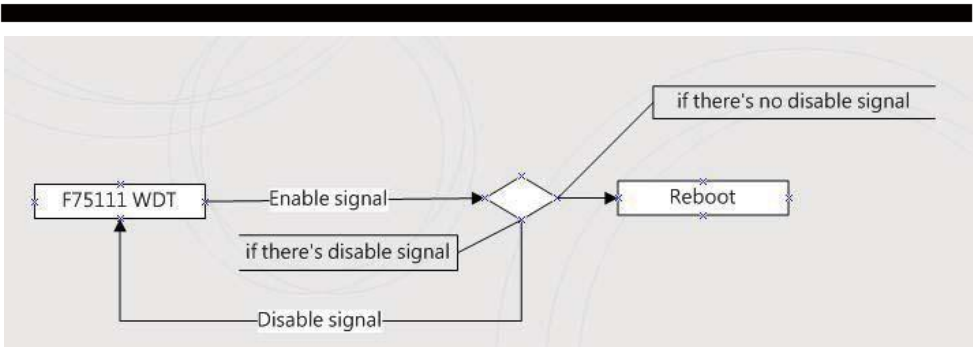
USERNAME & PASSWORD: sf

#### How to use this Demo Application



1. Press the "Start" button to test DIO function
2. Press the "Enable" button to test WDT function
3. Press the "Disable" button to disable WDT
4. Check the "Enable Loop" box and press "Enable" to do WDT loop test
5. Press "Install WDT" to set the system to autorun this application when booting, press again to remove this application when booting.
6. If WDT enable, system icon will be . if disable, system icon will be .





p.s.

f75111 send "F75111\_SetWDTEnable(BYTE byteTimer)" including a parameter "timer",  
 if there's no disable signal (F75111\_SetWDTDisable()) to stop it before timer countdown to 0, System will reboot.  
 if there's disable signal received, resent Enable WDT signal, for a loop to prevent from reboot

## Introduction

### Initial Internal F75111 port address (0x9c)

```

define GPIO1X, GPIO2X, GPIO3X to input or output
and Enable WDT function pin
  
```

### Set F75111 DI/DO ( sample code as below Get Input value/Set output value )

```

DO: InterDigitalOutput(BYTE byteValue))
DI: InterDigitalInput()
  
```

### Enable/Disable WDT

```

Enable : F75111_SetWDTEnable (BYTE byteTimer)
Disable: F75111_SetWDTDisable ()
  
```

## PULSE mode

### Sample to setting GP33, 32, 31, 30 output 1mS low pulse signal.

```

{
this->Write_Byte(F75111_INTERNAL_ADDR, GPIO3X_PULSE_CONTROL,      0x00); //This is setting low pulse output
this->Write_Byte(F75111_INTERNAL_ADDR, GPIO3X_PULSE_WIDTH_CONTROL, 0x01); //This selects the pulse width to 1mS
this->Write_Byte(F75111_INTERNAL_ADDR, GPIO3X_CONTROL_MODE,       0x0F); //This is setting the GP33, 32, 31, 30 to output function.
this->Write_Byte(F75111_INTERNAL_ADDR, GPIO3X_Output_Data ,       0x0F); //This is setting the GP33, 32, 31, 30 output data.
}
  
```

### Sample to setting GP33, 32, 31, 30 output 1mS low pulse signal.

```

void F75111::InitInternalF75111()
{
this->Write_Byte(F75111_INTERNAL_ADDR,GPIO1X_CONTROL_MODE ,0x00); //set GPIO1X to Input function
this->Write_Byte(F75111_INTERNAL_ADDR,GPIO3X_CONTROL_MODE ,0x00); //set GPIO3X to Input function
this->Write_Byte(F75111_INTERNAL_ADDR,GPIO2X_CONTROL_MODE ,0xFF); //set GPIO2X to Output function

this->Write_Byte(F75111_INTERNAL_ADDR,F75111_CONFIGURATION ,0x03); //Enable WDT OUT function
}
  
```

## Set output value

```
void F75111::InterDigitalOutput(BYTE byteValue)
{
    BYTE byteData = 0;
    byteData = (byteData & 0x01 )? byteValue + 0x01 : byteValue;
    byteData = (byteData & 0x02 )? byteValue + 0x02 : byteValue;
    byteData = (byteData & 0x04 )? byteValue + 0x04 : byteValue;
    byteData = (byteData & 0x08 )? byteValue + 0x08 : byteValue;
    byteData = (byteData & 0x10 )? byteValue + 0x10 : byteValue;
    byteData = (byteData & 0x20 )? byteValue + 0x20 : byteValue;
    byteData = (byteData & 0x40 )? byteValue + 0x40 : byteValue;
    byteData = (byteData & 0x80 )? byteValue + 0x80 : byteValue;           // get value bit by bit

    this->Write_Byte(F75111_INTERNAL_ADDR,GPIO2X_OUTPUT_DATA,byteData); // write byteData value via GPIO2X output pin
}
```

## Get Input value

```
BYTE F75111::InterDigitalInput()
{
    BYTE byteGPIO1X = 0;
    BYTE byteGPIO3X = 0;
    BYTE byteData = 0;

    this->Read_Byte(F75111_INTERNAL_ADDR,GPIO1X_INPUT_DATA,&byteGPIO1X); // Get value from GPIO1X
    this->Read_Byte(F75111_INTERNAL_ADDR,GPIO3X_INPUT_DATA,&byteGPIO3X); // Get value from GPIO3X

    byteGPIO1X = byteGPIO1X & 0xF0;           // Mask unuseful value
    byteGPIO3X = byteGPIO3X & 0x0F;           // Mask unuseful value

    byteData = ( byteGPIO1X & 0x10 )? byteData + 0x01 : byteData;
    byteData = ( byteGPIO1X & 0x80 )? byteData + 0x02 : byteData;
    byteData = ( byteGPIO1X & 0x40 )? byteData + 0x04 : byteData;
    byteData = ( byteGPIO3X & 0x01 )? byteData + 0x08 : byteData;

    byteData = ( byteGPIO3X & 0x02 )? byteData + 0x10 : byteData;
    byteData = ( byteGPIO3X & 0x04 )? byteData + 0x20 : byteData;
    byteData = ( byteGPIO3X & 0x08 )? byteData + 0x40 : byteData;
    byteData = ( byteGPIO1X & 0x20 )? byteData + 0x80 : byteData;           // Get correct DI value from GPIO1X & GPIO3X

    return byteData;
}
```

## Enable WatchDog

```
void F75111_SetWDTEnable (BYTE byteTimer)
{
    WriteByte(F75111_INTERNAL_ADDR,WDT_TIMER_RANGE ,byteTimer);           // set WatchDog range and timer
    WriteByte(F75111_INTERNAL_ADDR,WDT_CONFIGURATION,WDT_TIMEOUT_FLAG | WDT_ENABLE | WDT_PULSE | WDT_PSWIDTH_100MS);
                                                                           // Enable WatchDog, Setting WatchDog configure
}
```

## Disable WatchDog

```
void F75111_SetWDTDisable ()  
{  
    WriteByte(F75111_INTERNAL_ADDR.WDT_CONFIGURATION,0x00);           // Disable WatchDog  
}
```

### 3-9-2 IO Device: F75111 VB6 under Windows

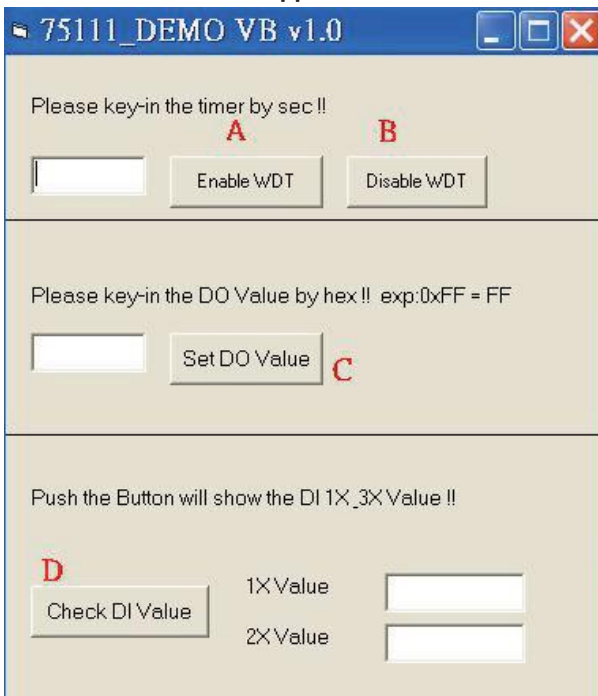
The Sample code source you can download from

Source file: 75111\_VB\_v10.rar [http://tprd.info/lexwiki/index.php/IO\\_Device:F75111\\_VB6](http://tprd.info/lexwiki/index.php/IO_Device:F75111_VB6)

Binary file: 75111\_VB\_Src.rar

USERNAME & PASSWORD: sf

How to use this Demo Application



**A Function** - Enable WDT timer ,Key-in the value by seconds then system will reboot after value which you key-in in left text box !!

**B Function** - Disable WDT timer ,Push down the button then WDT timer value will be clear !!

**C Function** - Set DO Value ,Key-in the DO value by hex then push the button !!

**D Function** - Check DI Value ,The right side two text box will display DI 1X & 2X Value when you push down the button!!

## SDK Function Introduction

### Function EnableWDT

```
Function EnableWDT(timer As Integer)

Call Writel2CByte(&H3, &H3)
Call Writel2CByte(&H37, timer)
Call Writel2CByte(&H36, &H73)

End Function
```

### Function DisableWDT

```
Function DisableWDT()

Call Writel2CByte(&H36, &H0)

End Function
```

### Function SetDOValue

```
Function SetDOValue(dovalue As Integer)

Call Writel2CByte(&H23, &H0)
Call Writel2CByte(&H20, &HFF)
Call Writel2CByte(&H2B, &HFF)
Call Writel2CByte(&H21, dovalue)

End Function
```

### Function CheckDIValue

```
Function CheckDIValue()
Dim GPIO1X As Integer
Dim GPIO3X As Integer
Dim DI1Xhex As String
Dim DI3Xhex As String

Call Readl2CByte(&H12, GPIO1X)
Call Readl2CByte(&H42, GPIO3X)

DI1Xhex = Hex(GPIO1X)
DI3Xhex = Hex(GPIO3X)

Text3.Text = "0x" + DI1Xhex
Text4.Text = "0x" + DI3Xhex

End Function
```

### 3-9-3 IO Device: F75111 under linux

The Sample code source you can download from

Source file: F75111v2.0L.tar.gz [http://tprd.info/lexwiki/index.php/IO\\_Device:F75111\\_under\\_linux](http://tprd.info/lexwiki/index.php/IO_Device:F75111_under_linux)

Binary file: F75111v2.0LBin.tar.gz

USERNAME & PASSWORD: sf

How to compile source code

1. Compile source code with Code::Blocks

download and install the Code::Block with command "apt-get install codeblocks"

Open an exist project(F75111.cbp) in Code::Blocks, click the compile button

( add an option 'pkg-config --libs gtk+-2.0 gthread-2.0' in "Project->Build Option->Linker Setting->Other linker option")

2. Compile source code with "make"

1.cd F75111

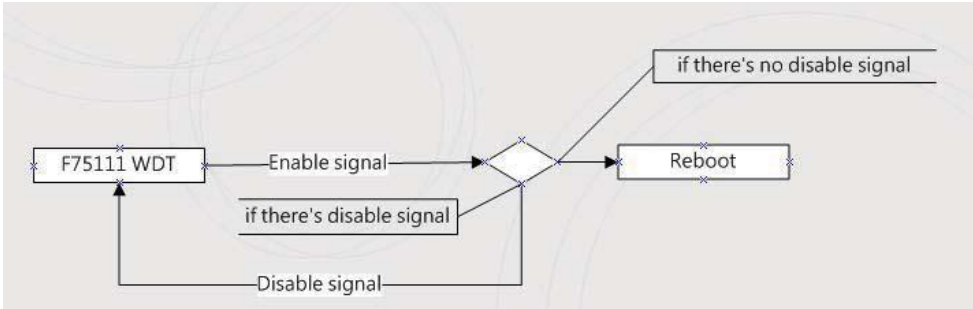
1.make

1.src/f75111 // execute the binary file

How to use this Demo Application



1. Press the "Start" button to test DIO function
2. Press the "Enable" button to test WDT function
3. Press the "Disable" button to disable WDT
4. Check the "Enable Loop" box and press "Enable" to do WDT loop test
5. Press "Install" to set the system to autorun this application when booting, press "Uninstall" to remove this application when booting.
6. If WDT enable, system icon will be blinking.



p.s.

f75111 send "F75111\_SetWDTEnable(BYTE byteTimer)" including a parameter "timer",  
 if there's no disable signal (F75111\_SetWDTDisable()) to stop it before timer countdown to 0, System will reboot.  
 if there's disable signal received, resent Enable WDT signal, for a loop to prevent from reboot p.s.

## Introduction

### IO function In file SMBus.c

```

void SMBusIoWrite(BYTE byteOffset,BYTE byteData)
{
    outb( byteData , m_SMBusMapIoAddr + byteOffset);
}

BYTE SMBusIoRead(BYTE byteOffset)
{
    DWORD dwAddrVal;

    dwAddrVal = inb(m_SMBusMapIoAddr + byteOffset);
    return (BYTE)(dwAddrVal & 0xFF);
}
  
```

### Initial internal F75111

```

void F75111::InitInternalF75111()
{
    this->Write_Byte(F75111_INTERNAL_ADDR,GPIO1X_CONTROL_MODE ,0x00); //set GPIO1X to Input function
    this->Write_Byte(F75111_INTERNAL_ADDR,GPIO3X_CONTROL_MODE ,0x00); //set GPIO3X to Input function
    this->Write_Byte(F75111_INTERNAL_ADDR,GPIO2X_CONTROL_MODE ,0xFF); //set GPIO2X to Output function

    this->Write_Byte(F75111_INTERNAL_ADDR,F75111_CONFIGURATION, 0x03); //Enable WDT OUT function
}
  
```

## Set output value

```
void F75111::InterDigitalOutput(BYTE byteValue)
{
    BYTE byteData = 0;
    byteData = (byteData & 0x01 )? byteValue + 0x01 : byteValue;
    byteData = (byteData & 0x02 )? byteValue + 0x02 : byteValue;
    byteData = (byteData & 0x04 )? byteValue + 0x04 : byteValue;
    byteData = (byteData & 0x08 )? byteValue + 0x08 : byteValue;
    byteData = (byteData & 0x10 )? byteValue + 0x10 : byteValue;
    byteData = (byteData & 0x20 )? byteValue + 0x20 : byteValue;
    byteData = (byteData & 0x40 )? byteValue + 0x40 : byteValue;
    byteData = (byteData & 0x08 )? byteValue + 0x80 : byteValue;           // get value bit by bit

    this->Write_Byte(F75111_INTERNAL_ADDR,GPIO2X_OUTPUT_DATA,byteData); // write byteData value via GPIO2X output pin
}
```

## Get Input value

```
BYTE F75111::InterDigitalInput()
{
    BYTE byteGPIO1X = 0;
    BYTE byteGPIO3X = 0;
    BYTE byteData = 0;

    this->Read_Byte(F75111_INTERNAL_ADDR,GPIO1X_INPUT_DATA,&byteGPIO1X); // Get value from GPIO1X
    this->Read_Byte(F75111_INTERNAL_ADDR,GPIO3X_INPUT_DATA,&byteGPIO3X); // Get value from GPIO3X

    byteGPIO1X = byteGPIO1X & 0xF0;           // Mask unuseful value
    byteGPIO3X = byteGPIO3X & 0x0F;           // Mask unuseful value

    byteData = ( byteGPIO1X & 0x10 )? byteData + 0x01 : byteData;
    byteData = ( byteGPIO1X & 0x80 )? byteData + 0x02 : byteData;
    byteData = ( byteGPIO1X & 0x40 )? byteData + 0x04 : byteData;
    byteData = ( byteGPIO3X & 0x01 )? byteData + 0x08 : byteData;

    byteData = ( byteGPIO3X & 0x02 )? byteData + 0x10 : byteData;
    byteData = ( byteGPIO3X & 0x04 )? byteData + 0x20 : byteData;
    byteData = ( byteGPIO3X & 0x08 )? byteData + 0x40 : byteData;
    byteData = ( byteGPIO1X & 0x20 )? byteData + 0x80 : byteData;           // Get correct DI value from GPIO1X & GPIO3X

    return byteData;
}
```

## Enable WatchDog

```
void F75111_SetWDTEnable (BYTE byteTimer)
{
    WriteByte(F75111_INTERNAL_ADDR,WDT_TIMER_RANGE ,byteTimer);           // set WatchDog range and timer
    WriteByte(F75111_INTERNAL_ADDR,WDT_CONFIGURATION,WDT_TIMEOUT_FLAG | WDT_ENABLE | WDT_PULSE | WDT_PSWIDTH_100MS);
                                                                           // Enable WatchDog, Setting WatchDog configure
}
```

## Disable WatchDog

```
void F75111_SetWDTDisable ()
{
    WriteByte(F75111_INTERNAL_ADDR,WDT_CONFIGURATION,0x00);           // Disable WatchDog
}
```



### 3-10 I<sup>2</sup>C Bus Interface

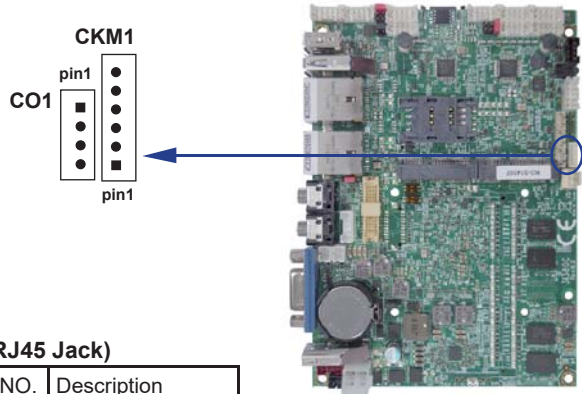
- CO1: I<sup>2</sup>C (SM) bus connector (4 pin 1.25mm wafer)

PIN NO.	1	2	3	4
Description	+3.3V	GND	SMB_CLK	SMB_DATA

### 3-11 PS2 KB/MS

- CKM1: KB/MS port 1x6pin (1.25mm) Wafer

PIN NO.	1	2	3	4	5	6
Description	+5V	KB/DAT	KB/CLK	GND	MS/DAT	MS/CLK



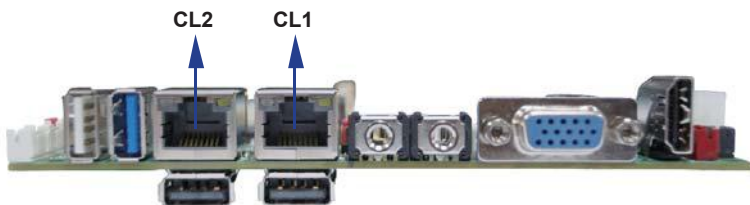
### 3-12 LAN Interface

- CL1 / CL2: LAN Giga/100Mb (RJ45 Jack)

PIN NO.	Description	PIN NO.	Description
1	TD0-/TX+	5	TD2-/NC
2	TD0+/TX-	6	TD2+/RX-
3	TD1-/RX+	7	TD3-/NC
4	TD1+/NC	8	TD3+/NC

- RJ45 LAN Connector--- LED define Giga/100MB Connector

Back side con	RED LED	GREEN LED	YELLOW LED
Indicate	GIGA LAN Link(light)	100Mb LAN Link(light)	Active LED Link(Blink)



### 3-13 USB Interface

● **CU3/CU4/CU8: Back panel USB ports (USB Type A connector)**

PIN NO.	Description
1	+5V
2	USB DATA -
3	USB DATA +
4	GND

Note: 1. Attention ! Check Device Power in spec

● **CU5/CU6/CU7: Internal USB ports (4pin 1.25mm Wafer)**

PIN NO.	Description
1	+5V
2	USB DATA -
3	USB DATA +
4	GND

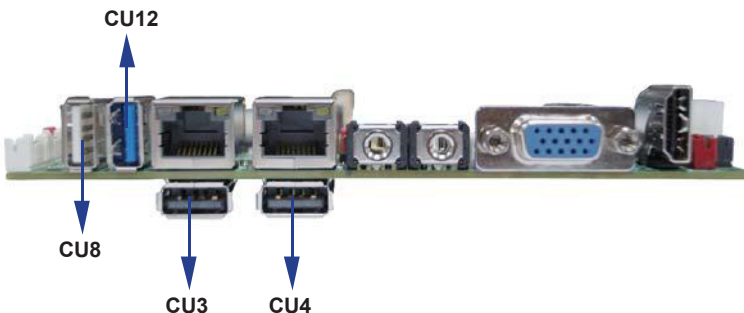
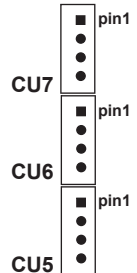
Note: 1. Attention ! Check Device Power in spec

2. CU5/CU6 Share Mini card1/2 USB signal, CU7 Share TOUCH USB signal.
3. Only internal CU5/CU6/CU7 support USB wake up function.

● **CU12: Single USB3.0/2.0 port**

PIN NO.	Description	PIN NO.	Description
1	+5V	5	USB3.0 RX-
2	USB 2.0 D-	6	USB3.0 RX+
		7	GND
3	USB 2.0 D+	8	USB3.0 TX-
4	GND	9	USB3.0 TX+

Note: 1. USB 3.0 and USB 2.0 single connector

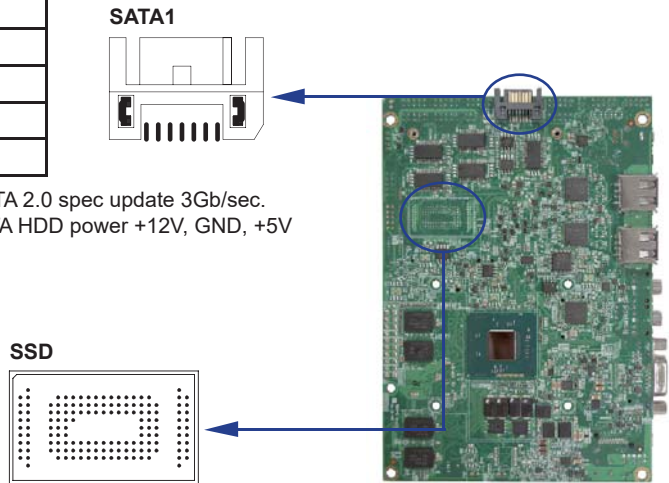


## 3-14 SATA interface

### ● SATA1: SATA1 connector

PIN NO.	Description
1	GND
2	DATA TX+
3	DATA TX-
4	GND
5	DATA RX-
6	DATA RX+
7	GND

Note: 1. SATA1 support SATA 2.0 spec update 3Gb/sec.  
2. CPO1 provide SATA HDD power +12V, GND, +5V



### ● SSD use SATA port 2 channel

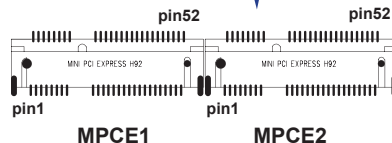
Note: 1. On board SSD for OEM option

### 3-15 Module socket

• Mini card & SIM card

**MPCE1/MPCE2: Support USB and PCIe by one Interface (Mini card socket 52pin)**

PIN NO.	Description	PIN NO.	Description
1	NC	2	+3.3V
3	NC	4	GND
5	NC	6	+1.5V
7	NC	8	SIM Power
9	GND	10	SIM Data
11	PCIe-CLK-	12	SIM CLK
13	PCIe-CLK+	14	SIM Reset
15	GND	16	SIM RFU
KEY	KEY	KEY	KEY
17	NC	18	GND
19	NC	20	NC
21	GND	22	RST-
23	PCIe-RX-/mSATA-RX+	24	+3.3V
25	PCIe-RX+/mSATA-RX-	26	GND
27	GND	28	+1.5V
29	GND	30	SMB-CLK
31	PCIe-TX-/mSATA-TX-	32	SMB-DATA
33	PCIe-TX+/mSATA-TX+	34	GND
35	GND	36	USB-DATA-
37	GND	38	USB-DATA+
39	+3.3V	40	GND
41	+3.3V	42	NC
43	NC	44	NC
45	NC	46	NC
47	NC	48	+1.5V
49	NC	50	GND
51	mSATA-Detect	52	+3.3V



- Note:
1. MPCE1 used USB port 1(share with CU5), MPCE2 used USB port 2(Share with CU6)
  2. MPCE2 Pin 8,10,12,14,16 for SIM1 card reader use.
  3. Just only MPCE1 pin 23, 25, 31, 33 supported mSATA device and PCIe device alternatively.
  4. MPCE1 Pin51 mSATA / PCIe auto detect function
  5. mSATA use system SATA port 2 (share with onboard SSD)

### 3-16 SIM Socket

• SIM1: SIM card socket pin define is follow ISO 7816-2 smart card standard.

PIN NO.	Description	PIN NO.	Description
1	Vcc	1	GND
2	RST	2	NC
3	CLK	3	DATA
4	RUF	4	RUF

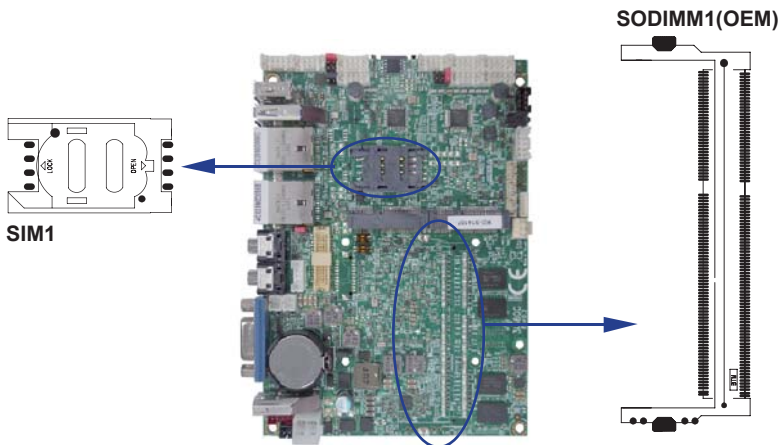
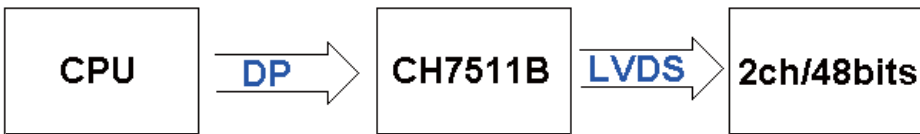
Note: 1. MPCE2 Pin 8, 10,12,14,16 for SIM1 card reader use.

### 3-17 SODIMM socket (OEM)

Note: SODIMM1: SO-DIMM DDR3L 1.35V DRAM Socket

For 3I380CW only

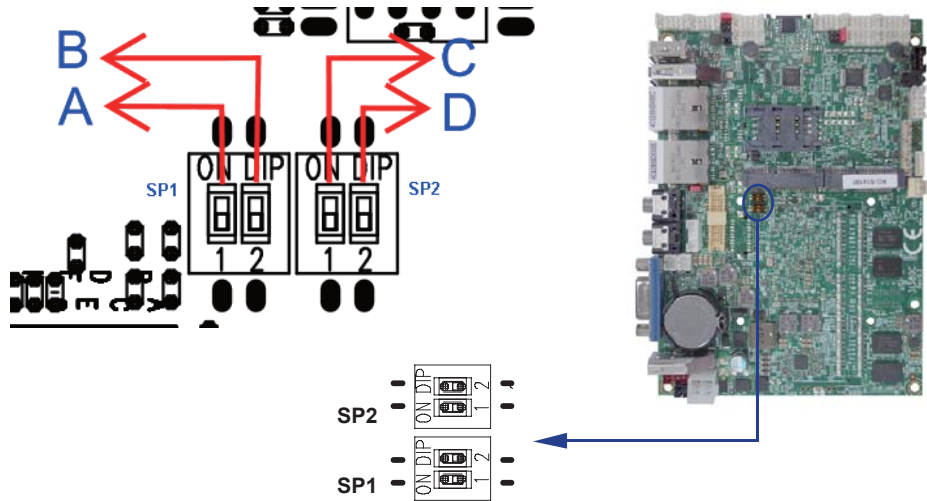
Display port to LVDS 48bits dual channel



### 3-18 SP1,SP2 Panel resolution switch

• 3I380CW Panel resolution adjust configuration manual

A. To set panel resolution by two switch jumper, which number figure.  
Switch number



#### B. Panel type and switch configuration table:

Item	Resolution	A	B	C	D
1	640 x 480 18bit	↑	↑	↑	↑
2	800 x 600 18bit	↓	↑	↑	↑
3	1024 x 768 18bit (Default)	↑	↓	↑	↑
4	800 x 480 18bit	↓	↓	↑	↑
5	1024 x 600 18bit	↑	↑	↓	↑
6	1280 x 800 18bit	↓	↑	↓	↑
7	1366 x 768 18bit	↑	↓	↓	↑
8	800 x 600 24bit	↓	↓	↓	↑
9	1024 x 768 24bit	↑	↑	↑	↓
10	1280 x 800 24bit	↓	↑	↑	↓
11	1366 x 768 24bit	↑	↓	↑	↓
12	1280 x 1024 48bit	↓	↓	↑	↓
13	1440 x 900 48bit	↑	↑	↓	↓
14	1600 x 1200 48bit	↓	↑	↓	↓
15	1920 x 1080 48bit	↑	↓	↓	↓

---

# Chapter-4

## Introduction of BIOS

The BIOS is a program located in the Flash Memory on the motherboard.

This program is a bridge between motherboard and operating system.

When you start the computer, the BIOS program gains control.

The BIOS first operates an auto-diagnostic test called POST

(Power on Self Test) for all the necessary hardware, it detects the entire hardware

devices and configures the parameters of the hardware synchronization. After these tasks

are completed, BIOS will give control of the computer back to operating system (OS).

Since the BIOS is the only channel for hardware and software to communicate with, it is the key factor of system stability and of ensuring your system performance at best.

In the BIOS Setup main menu, you can see several options. We will explain these options in the following pages. First, let us see the function keys you may use here:

Press <Esc> to quit the BIOS Setup.

Press ↑↓←→(up, down, left, right) to choose the option you want to confirm or modify.

Press <F10> to save these parameters and to exit the BIOS Setup menu after you complete the setup of BIOS parameters.

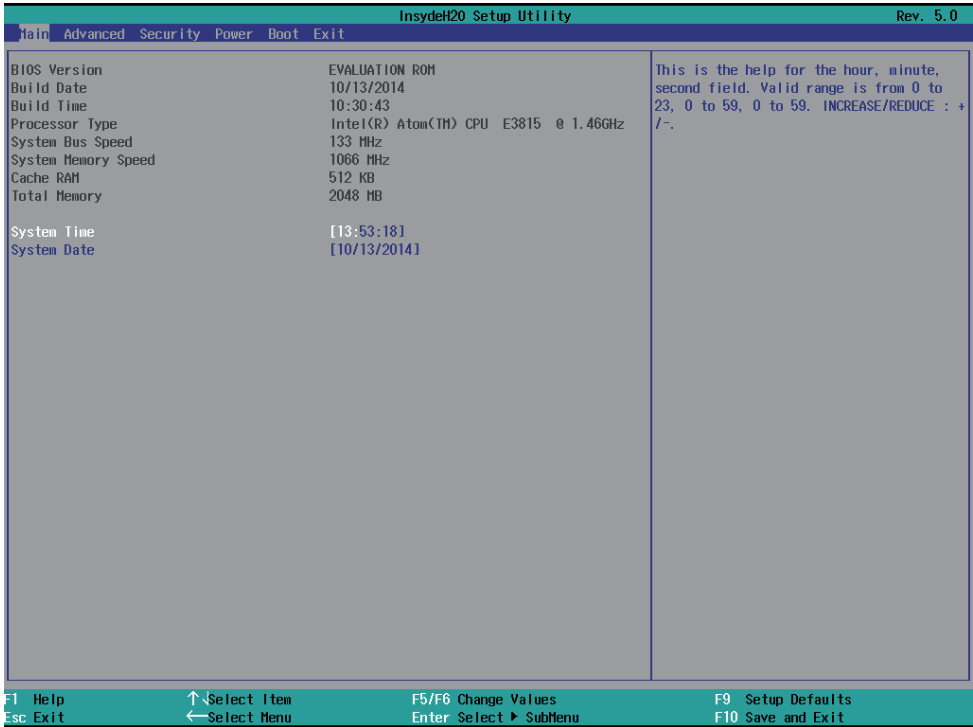
Press Page Up/Page Down or +/- keys to modify the BIOS parameters for the active option.

### 4-1 Enter Setup

Power on the computer and press <Del> key immediately to enter Setup.

If the message disappears before your respond but you still wish to enter Setup, restart the system by turning it OFF then ON or You may also restart the system by simultaneously pressing <Ctrl>, <Alt> and <Delete> keys.

## 4-2 BIOS Menu Screen & Function Keys



In the above BIOS Setup main menu of, you can see several options.

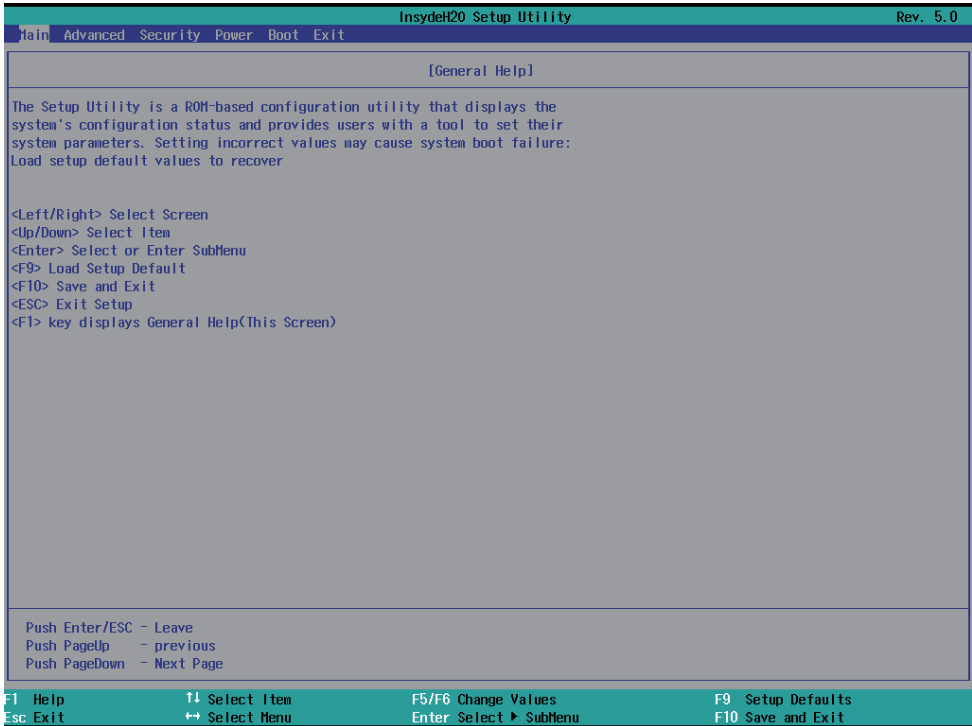
We will explain these options step by step in the following pages of this

chapter, but let us first see a short description of the function keys you may use here:

- Press ←→ (left, right) to select screen;
- Press ↑↓ (up, down) to choose, in the main menu, the option you want to confirm or to modify.
- Press <Enter> to select.
- Press <+>/<-> or <F5>/<F6> keys when you want to modify the BIOS parameters for the active option.
- [F1]: General help.
- [F9]: Optimized defaults.
- [F10]: Save & Exit.
- Press <Esc> to quit the BIOS Setup.



## 4-3 General Help



### Status Page Setup Menu/ Option Page Setup Menu

Press F1 to pop up a help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window, press <Esc>.

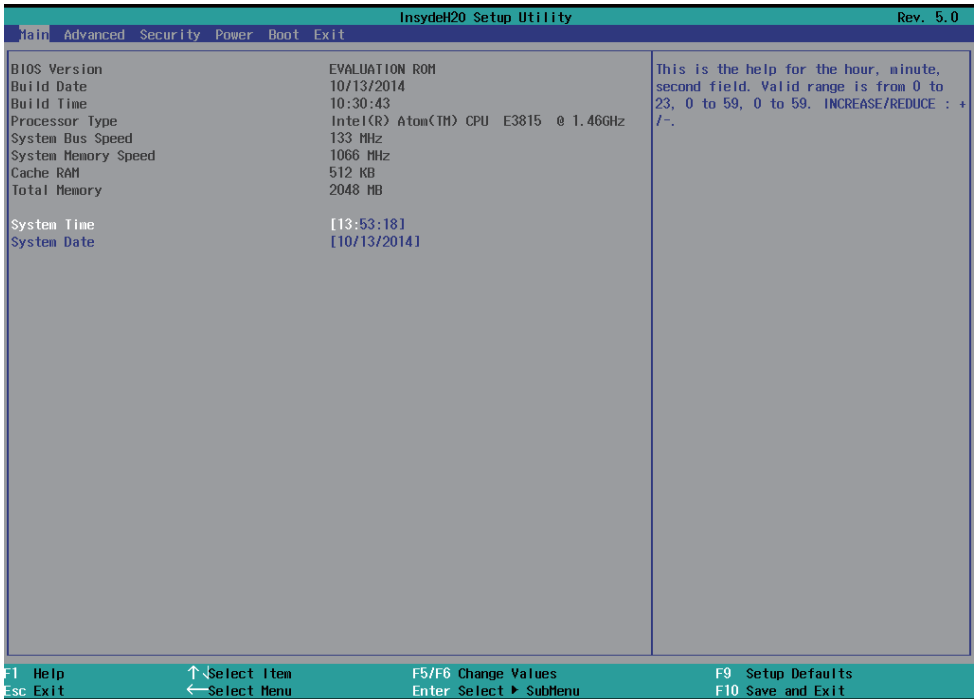
## 4-4 Menu Bars

**There are six menu bars on top of BIOS screen:**

- Main** To change system basic configuration
- Advanced** To change system advanced configuration
- Security** Password settings
- Power** PME & Power button settings
- Boot Exit** Save setting, loading and exit options.

User can press the right or left arrow key on the keyboard to switch from menu bar. The selected one is highlighted.

## 4-5 Main



Main menu screen includes some basic system information. Highlight the item and then use the <+> or <-> and numerical keyboard keys to select the value you want in each item.

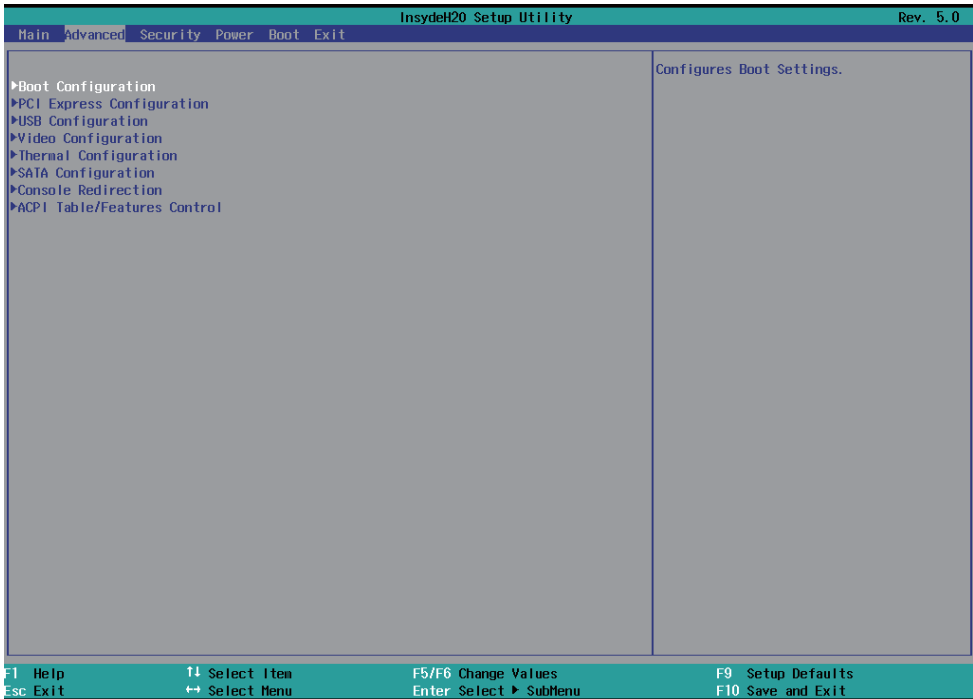
### System Date

Set the Date. Please use [Tab] to switch between data elements.

### System Time

Set the Time. Please use [Tab] to switch between data elements.

## 4-6 Advanced



### Boot Configuration

Please refer section 4-6-1

### PCI Express Configuration

Please refer section 4-6-2

### USB Configuration

Please refer section 4-6-3

### Video Configuration

Please refer section 4-6-4

### Thermal Configuration

Please refer section 4-6-5

### SATA Configuration

Please refer section 4-6-6

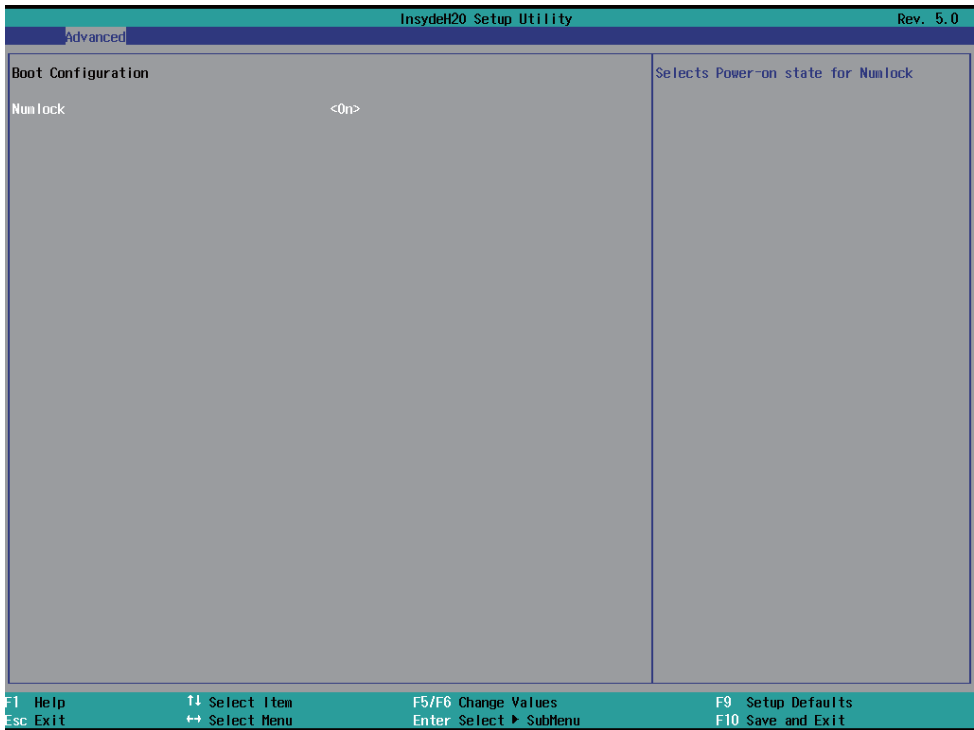
### Console Redirection

Please refer section 4-6-7

### ACPI Table/Features Control

Please refer section 4-6-8

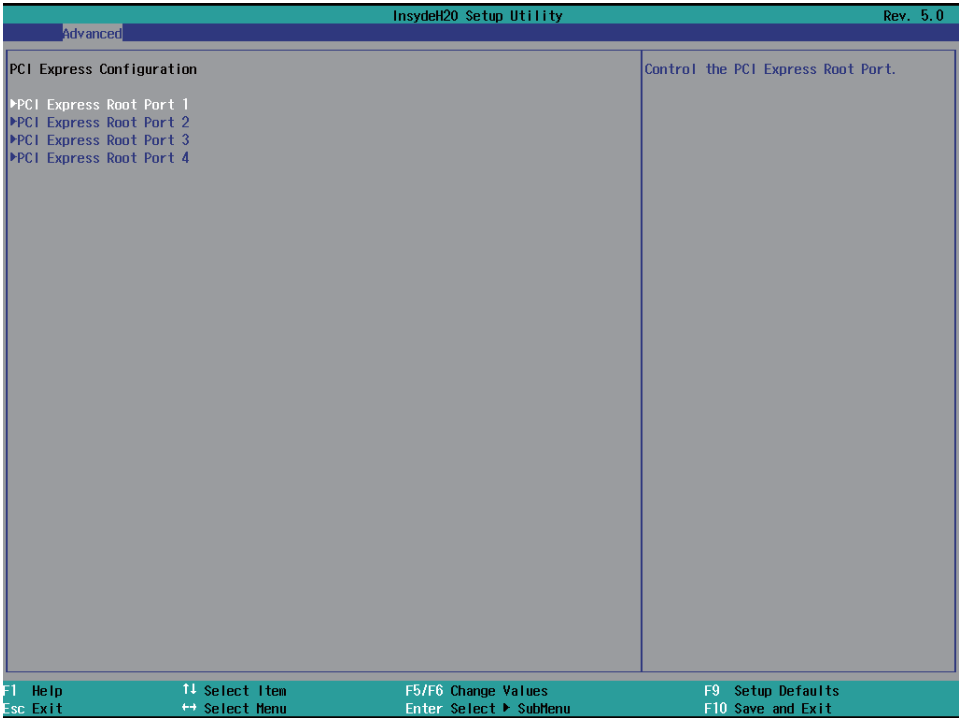
## 4-6-1 Boot Configuration



### Numlock

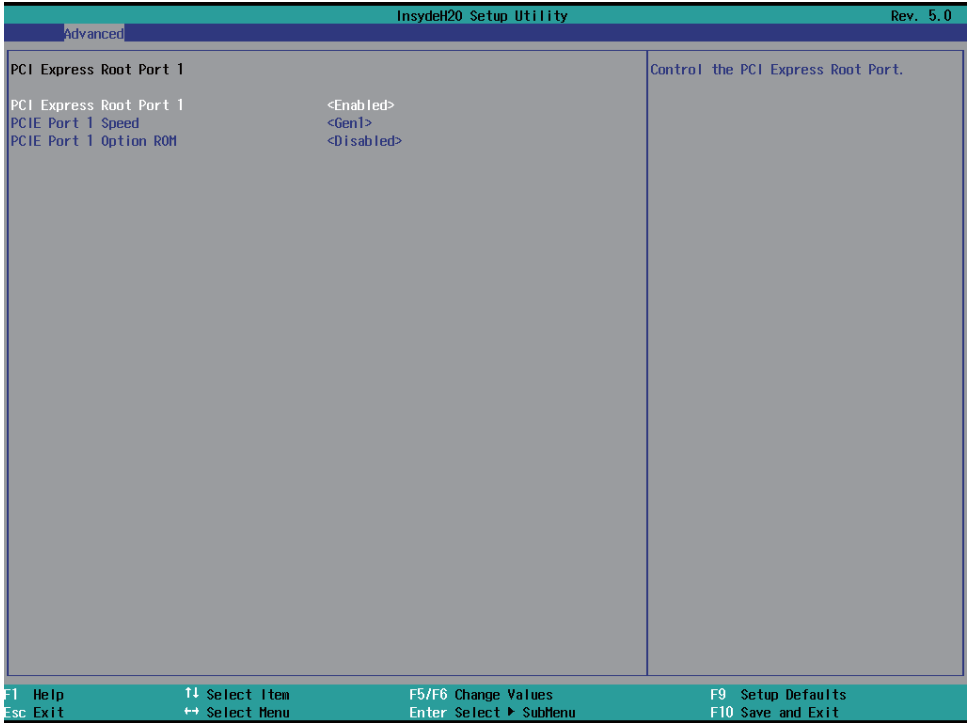
Select Power-on state for Numlock, default is <ON>

## 4-6-2 PCI Express Configuration



PCIe 1/2/3/4 configuration settings

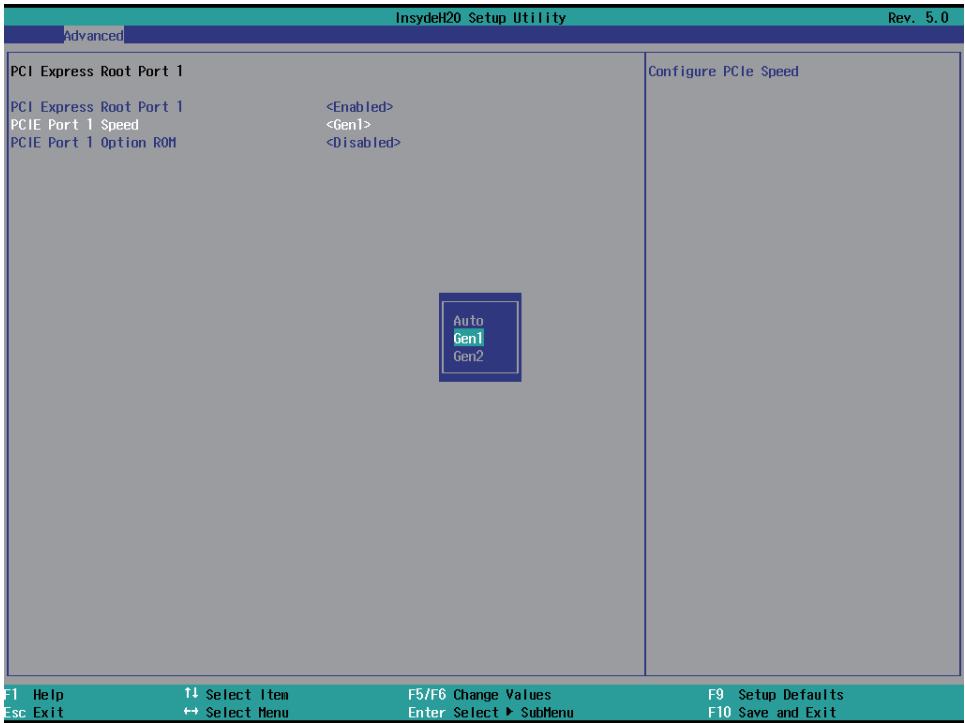
## 4-6-2-1 ► PCI Express Root Port 1/2/3/4



### Control the PCI Express Root Port.

The optional settings are: Enabled(default), Disabled.

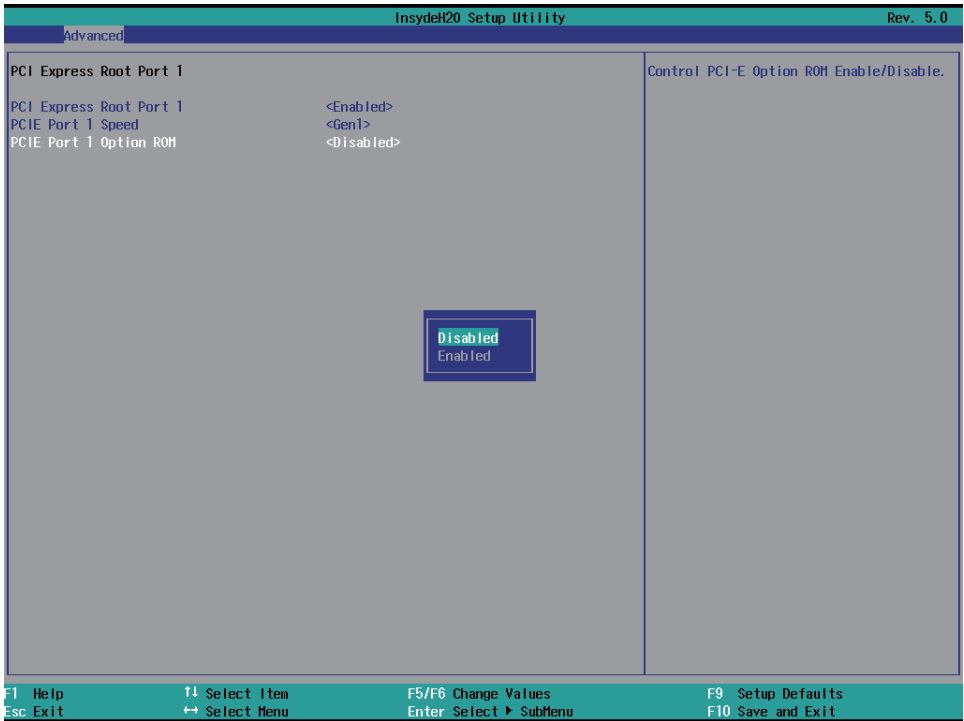
## 4-6-2-2 ► PCIe Port 1/2/3/4 Speed



### Select PCI Express port speed.

The optional settings are: Gen1(default), Gen2

## 4-6-2-3 ► PCIE Port 1/2/3/4 Option ROM

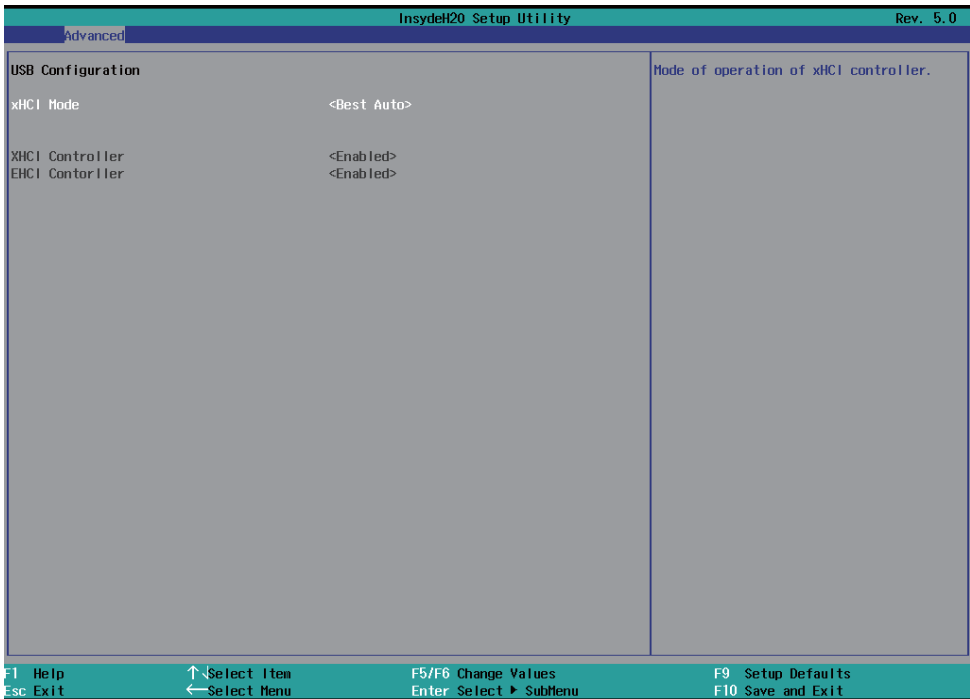


### Select PCIE TXE ROM support

The optional settings are: Disabled(default), Enabled



## 4-6-3 USB Configuration



### XHCI Mode

Mode of operation of xHCI controller.

The optional settings are: Best Auto(default), Enabled, Disabled.

## 4-6-4 Video Configuration

Advanced InsydeH20 Setup Utility Rev. 5.0

**Video Configuration**

Logo & SCU Resolution <1024 x 768>

Configure CRT as <CRT>

Configure DDII as <eDP>

Configure eDP Panel Number as <1024 x 768 18bit>

LFP EDID Support <Enabled>

Aperture Size <256MB>

IGD - DVMT Pre-Allocated <64M>

IGD - DVMT Total Gfx Mem <256M>

Select Hardware CRT configuration

F1 Help    ↑ Select Item    F5/F6 Change Values    F9 Setup Defaults  
Esc Exit    ← Select Menu    Enter Select ► Submenu    F10 Save and Exit

### Logo & SCU Resolution / Configure eDP Panel Number as

These two options are synchronized with the hardware DIP resolution setting.

The Panel resolution supported are below:

- 640 x 480 18bit
- 800 x 600 18bit
- 1024 x 768 18bit (default)
- 800 x 480 18bit
- 1024 x 600 18bit
- 1280 x 800 18bit
- 1366 x 768 18bit
- 800 x 600 24bit
- 1024 x 768 24bit
- 1280 x 800 24bit
- 1366 x 768 24bit
- 1280 x 1024 48bit
- 1440 x 900 48bit
- 1600 x 1200 48bit
- 1920 x 1080 48bit

---

### **Configure CRT as**

Enable or disable CRT function.

The optional settings are: CRT(default) or Default or No Device

### **Configure DDI1 as**

Enable or disable LVDS function. eDP means enable LVDS function.

The optional settings are: eDP(default) or disabled

### **Aperture Size**

The optional settings are: 128MB, 256MB(default), 512MB.

### **IGD - DVMT Pre-Allocated**

Use this item to select DVMT 5.0 pre-allocated (fixed) graphics memory size used by the internal graphics device.

The optional settings are:

64(default)/96/128/160/192/224/256/288/320/352/384/416/448/480/512MB

### **IGD - DVMT Total Gfx Mem**

Use this item to select DVMT 5.0 total graphics memory size used by the internal graphics device.

The optional settings are:128M, 256M(default), MAX

## 4-6-5 Thermal Configuration

Advanced		InsydeH20 Setup Utility		Rev. 5.0	
<b>Thermal Configuration Parameters</b>			This value controls the temperature of the ACPI Critical Trip Point - the point in which the OS will shut the system off.  NOTE: 100C is the Plan Of Record (POR) for all Intel mobile processors.		
Critical Trip Point	<110 °C>				
Passive Trip Point	<105 °C>				
F1 Help			↑↓ Select Item	F5/F6 Change Values	F9 Setup Defaults
Esc Exit			←→ Select Menu	Enter Select ► SubMenu	F10 Save and Exit

### Thermal Configuration Parameters

This Value controls the temperature of the ACPI Critical Trip Point, the point in which the OS will shutdown the system.

Critical Trip point is the shutdown temperature, the default value is 110°

The CPU frequency will auto reduce when cpu temperature arrived to passive Trip point.

The default of the passive trip point is 105°

## 4-6-6 SATA Configuration

InsydeH20 Setup Utility		Rev. 5.0
Advanced		
SATA Controller	<Enabled>	DISABLED: Disables SATA Controller. ENABLED: Enables SATA Controller.
Chipset SATA Mode	<IDE>	
SATA Speed	<Gen2>	
IDE Mode	<Native IDE>	
SATA Port 0 Connected to an ODD	<Enabled>	
SATA Port 1 Connected to an ODD	<Enabled>	
Serial ATA Port 0	[Not Installed]	
Serial ATA Port 1	[Not Installed]	
F1 Help      ↑ Select Item      F5/F6 Change Values      F9 Setup Defaults		
Esc Exit      ↔ Select Menu      Enter Select ▸ SubMenu      F10 Save and Exit		

### SATA Controller

Use this item to Enable or Disable SATA Device.

The optional settings are: Enabled(default) or Disabled

### Chipset SATA Mode

Determine how SATA controller(s) operate.

The optional settings are: IDE Mode(default), AHCI Mode.

### SATA Speed

Indicates the maximum speed the SATA controller can support.

The optional settings: Gen1, Gen2(default).

### IDE Mode

Legacy IDE or Native IDE MODE,

The optional settings: Legacy IDE or Native IDE(default)

### SATA Port 0 Connected to an ODD

Use this item to Enable or Disable SATA Port0 ODD function

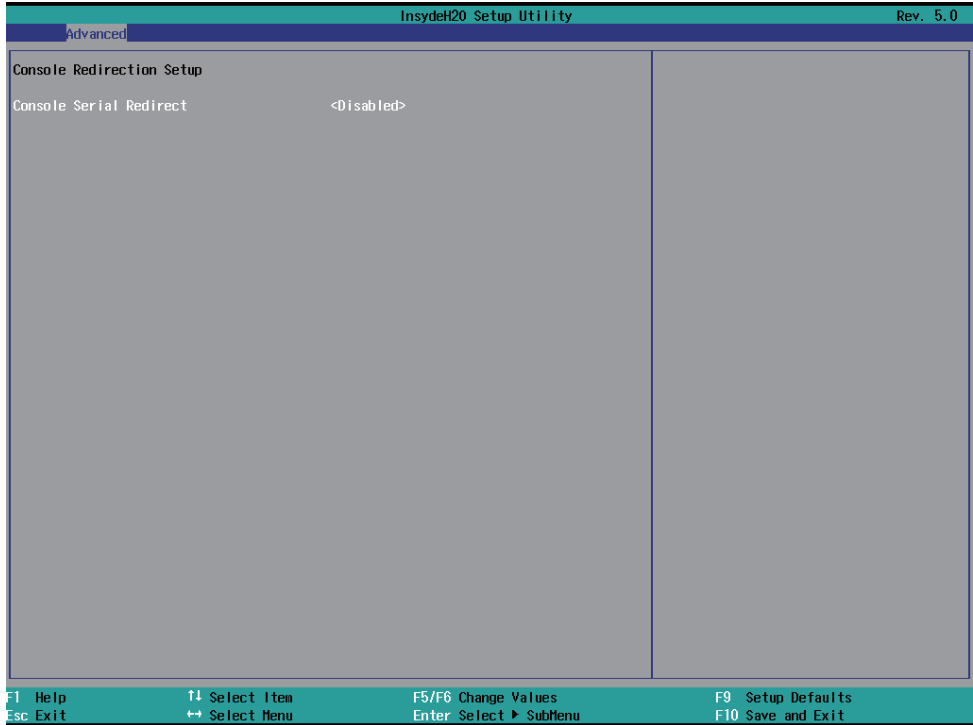
The optional settings are: Enabled(default) or Disable

## SATA Port 1 Connected to an ODD

Use this item to Enable or Disable SATA Port1 ODD function

The optional settings are: Enabled(default) or Disable

## 4-6-7 Console Redirection



### Console Serial Redirect

Use this item to enable or disable Console Redirection.

The optional settings are: Enabled, Disabled(default).

### Text Mode Resolution

The optional settings are: Force 80x25

Force 80x24(DEL FIRST ROW) (default)

Force 80x24(DEL LAST ROW)

### Baud Rate

The optional settings are: 115200(default) , 57600 , 38400 , 19200 , 9600 , 4800 , 2400 , 1200

### Data Bits

The optional settings are: 8 Bits(default) , 7 Bits

### Parity

The optional settings are: None(default) , Even , Odd

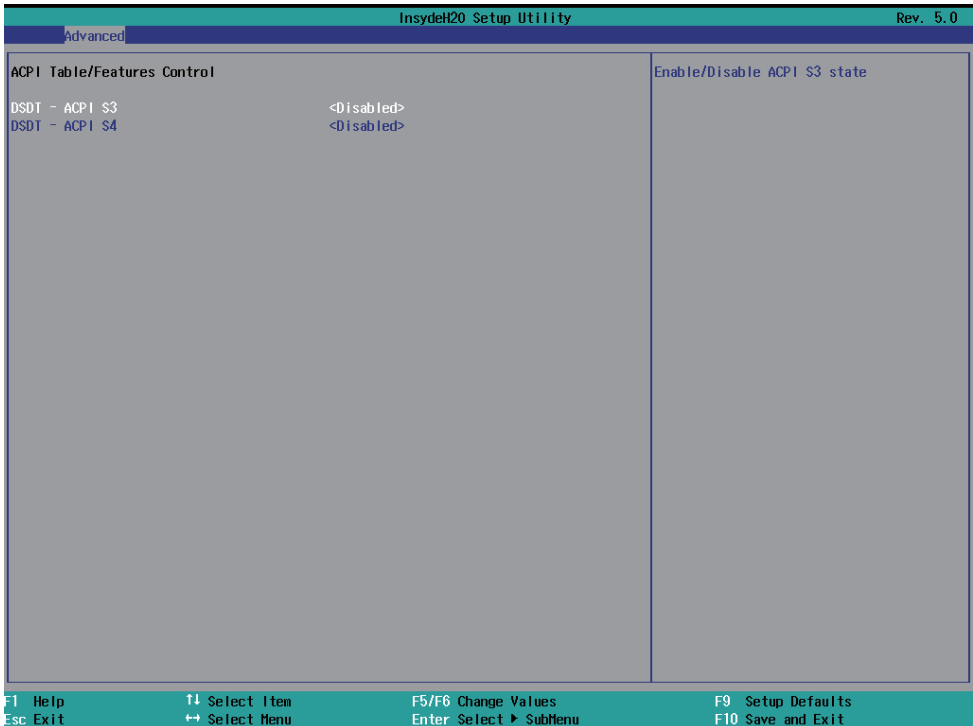
## Stop Bits

The optional settings are: 1 Bit(default) , 2 Bits

## Flow Control

The optional settings are: None(default) , RTS/CTS , XON/XOFF

## 4-6-8 ACPI Table/Fetures Control



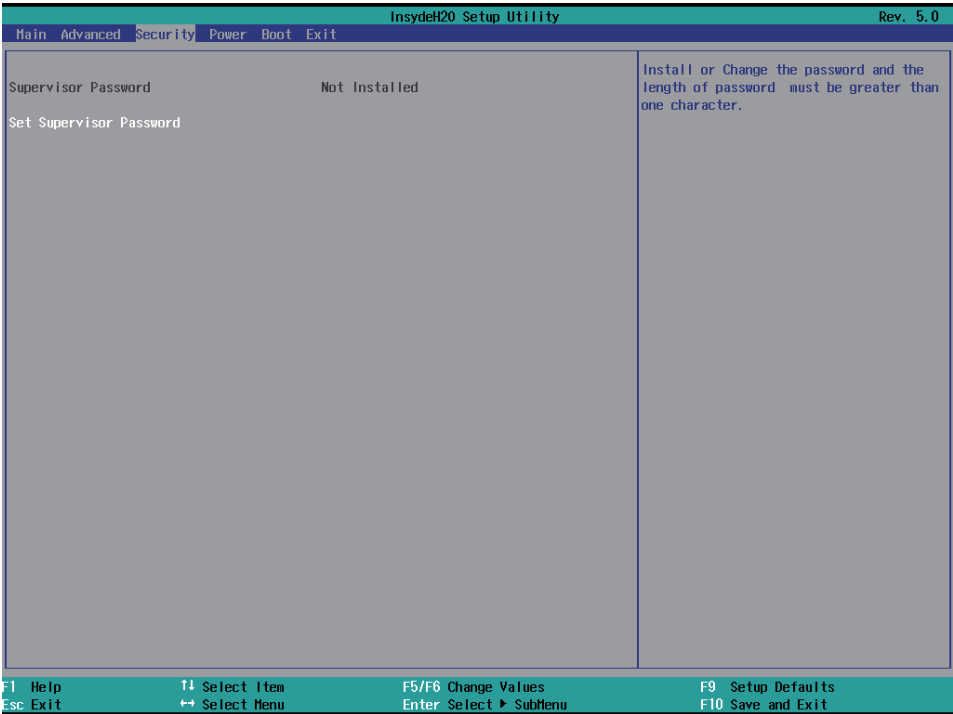
### ACPI Table/Features Control

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

The optional settings: DSDT - ACPI S3 (Suspend to RAM), Enabled or Disabled(default)

DSDT - ACPI S4 (Suspend to Disk), Enabled or Disabled(default)

## 4-7 Security



### Supervisor Password

To set up an Supervisor password

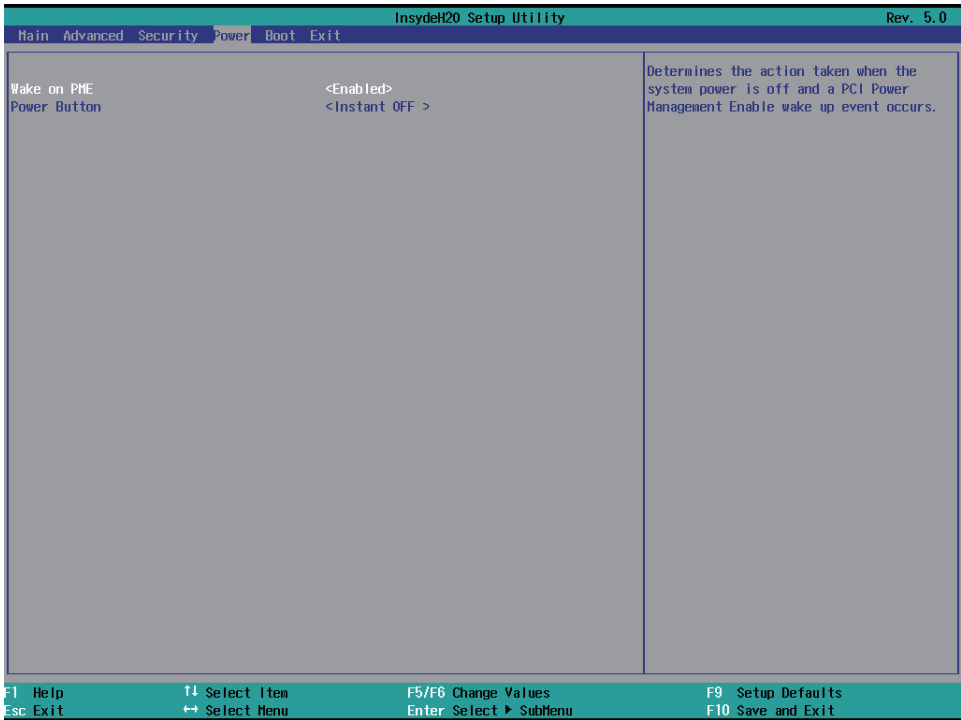
1. Select Supervisor Password.

The screen then pops up an Create New Password dialog.

2. Enter your desired password that is no less than 3 characters and no more than 10 characters.
3. Hit [Enter] key to submit.



## 4-8 Power



### Wake on PME

Determines the action taken when the system power is off and the PCI power management Enable wake up event occurs.

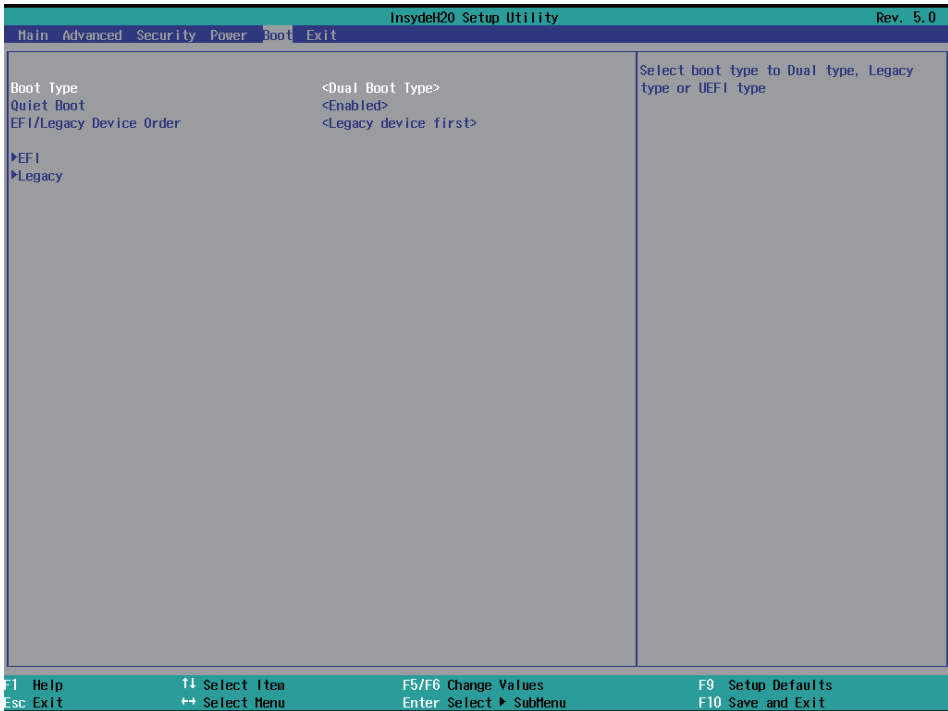
The optional settings: Enabled, Disabled(default)

### Power Button

Instant OFF(default) : The system will be turn off directly when push the power button.

Delay 4 sec : The system will be turn off when push the power button for 4 sec.

## 4-9 Boot



### Boot type

Select boot type for Dual type ,Legacy boot type or UEFI boot type, default is Dual boot type

### Quiet Boot

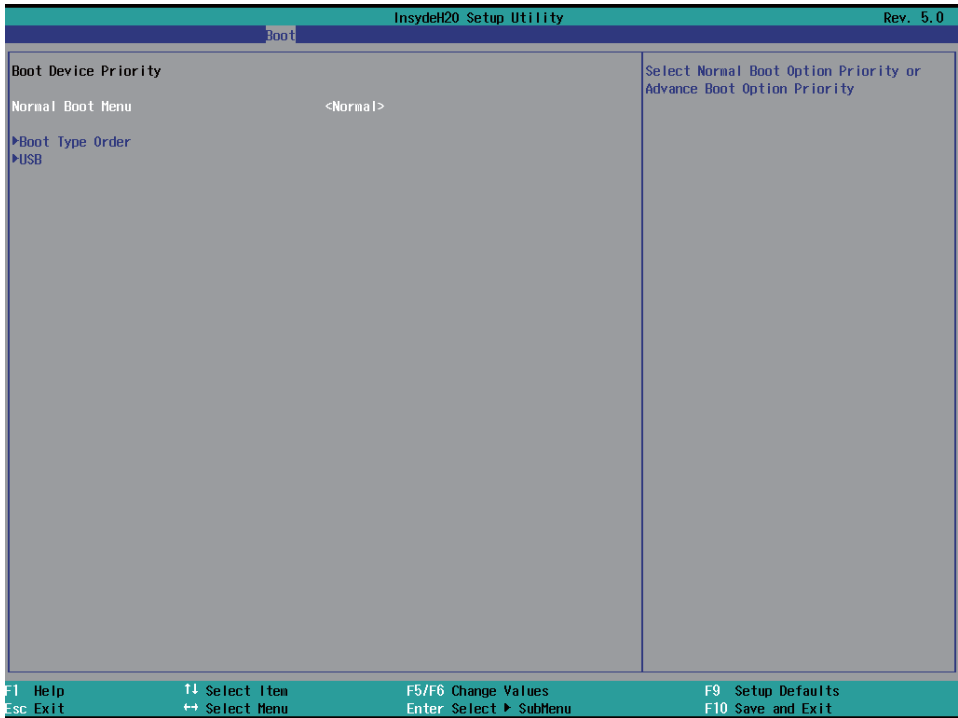
The optional settings are: Enabled(default), Disabled.

### EFI / Legacy Device order

Determine EFI device first or legacy device first.

The optional settings: EFI device first, Legacy device first(default), smart mode

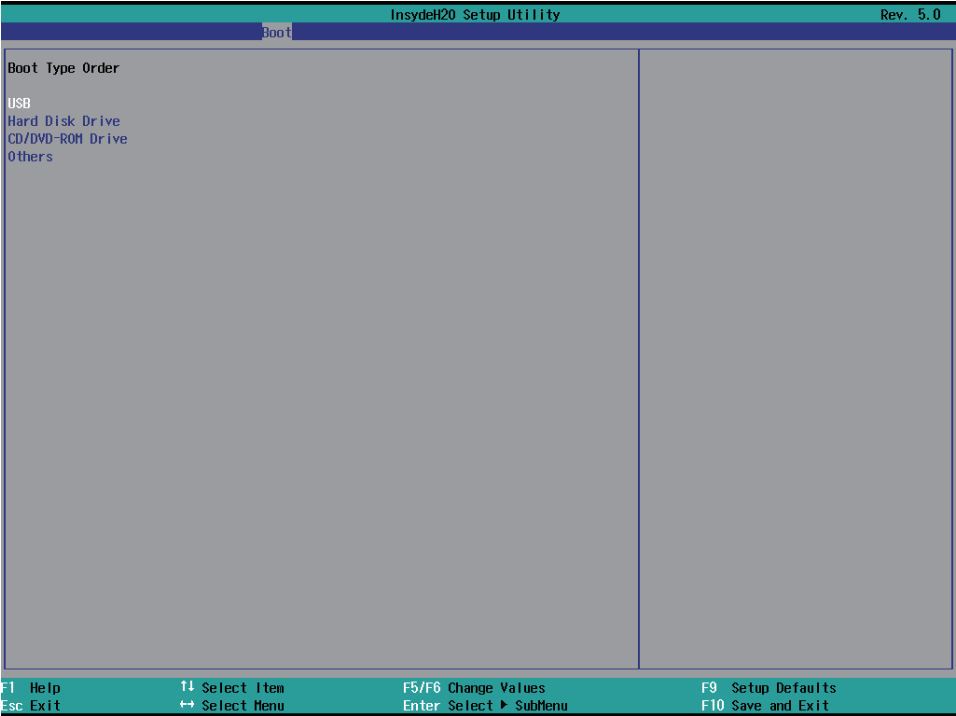
## 4-9-1 Legacy



### Normal Boot Menu

Select Normal Boot option priority or Advance Boot option priority.

The optional settings: Normal(default), Advance

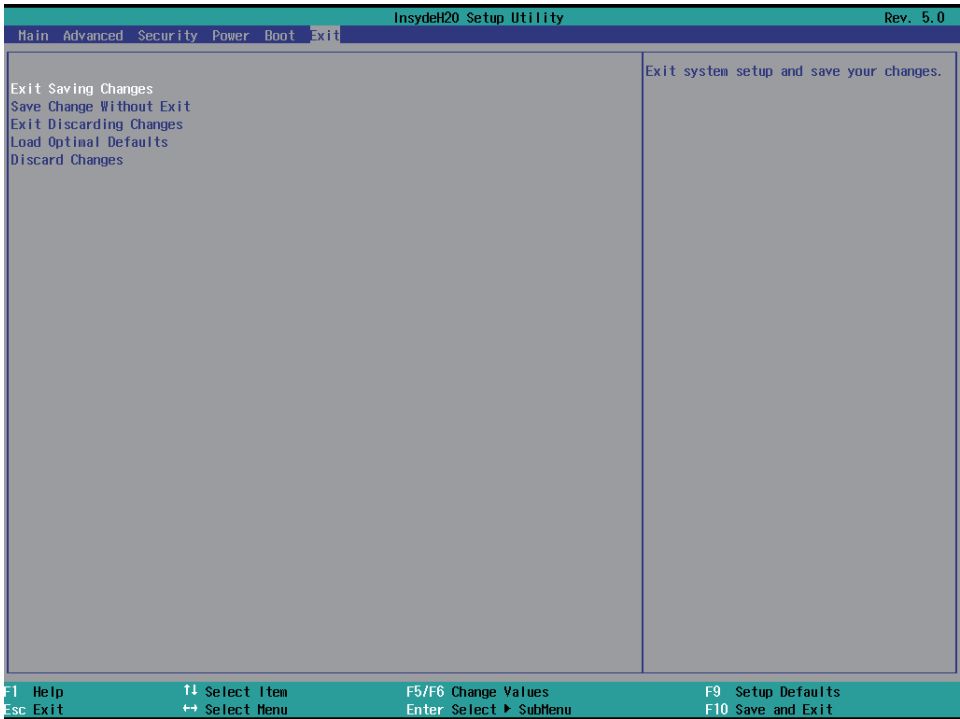


## Boot Type Order

Setting the boot type priority.

The default settings is 1.USB drive 2.Hard Disk Drive 3.CD/DVD ROM drive 4.Others

## 4-10 EXIT



### Exit Saving Changes

This item allows user to reset the system after saving the changes.

### Save Change Without Exit

This item allows user to saving the changes but doesn't restart.

### Exit Discard Changes

This item allows user restart the system but no saving the changes

### Load Optimal Default

Use this item to restore the optimal default for all the setup options.

### Discare Changes

Use this item to cancel all the setup options.

---

## 4-11 Device Manager

Please press the key F10 when bootup to go into the Device Manager menu



### Serial Port 1/2 Configuration

Please refer section 4-11-1

### Serial Port 3/4/5/6 Configuration

Please refer section 4-11-2

## 4-11-1 SIO FINTEK81801U

SIO FINTEK81801U		
Serial Port 1	<Enable>	Configure Serial port using options : [Disable] No Configuration [Enable] User Configuration [Auto] EFI/OS chooses configuration
Base I/O Address	<3F8>	
Interrupt	<IR04>	
Serial Mode	<RS232 driver>	
Serial Port 2	<Enable>	
Base I/O Address	<2F8>	
Interrupt	<IRQ3>	
Serial Mode	<RS232 driver>	
Power Fail	<Keep State>	
Hardware Monitor		

↑↓-Move Highlight	F9-Reset to Defaults <Enter>=Select Entry	F10-Save Esc=Discard Changes
-------------------	--	---------------------------------

### Serial Port 1/2

Use this item to enable or disable serial port (COM1 or COM2).  
The optional settings are: Enabled(default), Disabled.

### Serial Port 1 Base IO Address / Interrupt / Serial Mode

Use this item to select an optimal setting for super IO device.

The optional settings are:

IO=3F8h; IRQ=4 (default)

IO=3E8h; IRQ=3,4

IO=2E8h; IRQ=3,4

IO=2F8h; IRQ=3,4

### Serial Port 2 Base IO Address / Interrupt / Serial Mode

Use this item to select an optimal setting for super IO device.

The optional settings are:

IO=2F8h; IRQ=3(default)

IO=2E8h; IRQ=3,4

IO=3E8h; IRQ=3,4

IO=3F8h; IRQ=3,4

## Serial Mode

RS232 driver(default) : When hardware select to RS232 or RS422 mode, please enter to RS232 driver.

RS485 driver : When hardware select to RS485 mode, please enter to RS485 driver. It is the auto flow function for RS485.

## Power Failure

This item specifies whether your system will reboot after a power failure or interrupt occurs.

[Keep state] Restores the system to the status before power failure or interrupt occurred. (default)

[Always on] Leaves the computer in the power on state.

[Always off] Leaves the computer in the power off state.

## Hardware Monitor

Hardware Monitor	
Hardware Monitor	
<b>Voltage</b>	
VCC3	3.392 V
VCORE	0.792 V
VGFX	0.856 V
<b>Temperature</b>	
CPU (°C/°F)	52°C/125°F
System (°C/°F)	50°C/122°F
<b>Fan Speed</b>	
FAN SPEED	0 RPM

Press [Enter] to view PC health status.

This section shows the status of your CPU, Fan, and overall system.

This is only available when there is Hardware Monitor function onboard.



## 4-11-2 SIO FINTEK81216D/DG

SIO FINTEK81216D/DG		
<b>Serial Port 3</b>	<b>&lt;Enable&gt;</b>	Configure Serial port using options : [Disable] No Configuration [Enable] User Configuration [Auto] EFI/OS chooses configuration
Base I/O Address	<3E8>	
Interrupt	<IRQ10>	
Serial Mode	<RS232 driver>	
<b>Serial Port 4</b>	<b>&lt;Enable&gt;</b>	
Base I/O Address	<2E8>	
Interrupt	<IRQ10>	
Serial Mode	<RS232 driver>	
<b>Serial Port 5</b>	<b>&lt;Enable&gt;</b>	
Base I/O Address	<4F8>	
Interrupt	<IRQ10>	
Serial Mode	<RS232 driver>	
<b>Serial Port 6</b>	<b>&lt;Enable&gt;</b>	
Base I/O Address	<4E8>	
Interrupt	<IRQ10>	
Serial Mode	<RS232 driver>	

↑↓=Move Highlight	F9=Reset to Defaults <Enter>=Select Entry	F10=Save Esc=Discard Changes
-------------------	--	---------------------------------

### Serial Port 3/4/5/6

Use this item to enable or disable serial port (COM3,COM4,COM 5,COM 6).

The optional settings are: Enabled(default), Disabled.

### Serial Port 3 Base IO Address / Interrupt / Serial Mode

Use this item to select an optimal setting for super IO device.

The optional settings are:

IO=3E8h; IRQ=10 (default)

IO=2F8h; IRQ=3,4,5,6,7,10,11

IO=2E8h; IRQ=3,4,5,6,7,10,11

IO=3F8h; IRQ=3,4,5,6,7,10,11

IO=4F8h; IRQ=3,4,5,6,7,10,11

IO=4E8h; IRQ=3,4,5,6,7,10,11

---

### **Serial Port 4 Base IO Address / Interrupt / Serial Mode**

Use this item to select an optimal setting for super IO device.

The optional settings are:

IO=2E8h; IRQ=10(default)  
IO=2F8h; IRQ=3,4,5,6,7,10,11  
IO=3F8h; IRQ=3,4,5,6,7,10,11  
IO=3E8h; IRQ=3,4,5,6,7,10,11  
IO=4F8h; IRQ=3,4,5,6,7,10,11  
IO=4E8h; IRQ=3,4,5,6,7,10,11

### **Serial Port 5 Base IO Address / Interrupt / Serial Mode**

Use this item to select an optimal setting for super IO device.

The optional settings are:

IO=4F8h; IRQ=10(default)  
IO=2F8h; IRQ=3,4,5,6,7,10,11  
IO=2E8h; IRQ=3,4,5,6,7,10,11  
IO=3F8h; IRQ=3,4,5,6,7,10,11  
IO=3E8h; IRQ=3,4,5,6,7,10,11  
IO=4E8h; IRQ=3,4,5,6,7,10,11

### **Serial Port 6 Base IO Address / Interrupt / Serial Mode**

Use this item to select an optimal setting for super IO device.

The optional settings are:

IO=4E8h; IRQ=10(default)  
IO=2F8h; IRQ=3,4,5,6,7,10,11  
IO=2E8h; IRQ=3,4,5,6,7,10,11  
IO=3F8h; IRQ=3,4,5,6,7,10,11  
IO=3E8h; IRQ=3,4,5,6,7,10,11  
IO=4F8h; IRQ=3,4,5,6,7,10,11

### **Serial Mode**

RS232 driver(default) : When hardware select to RS232 or RS422 mode, please enter to RS232 driver.

RS485 driver : When hardware select to RS485 mode, please enter to RS485 driver. It is the auto flow function for RS485.

---

# Chapter-5

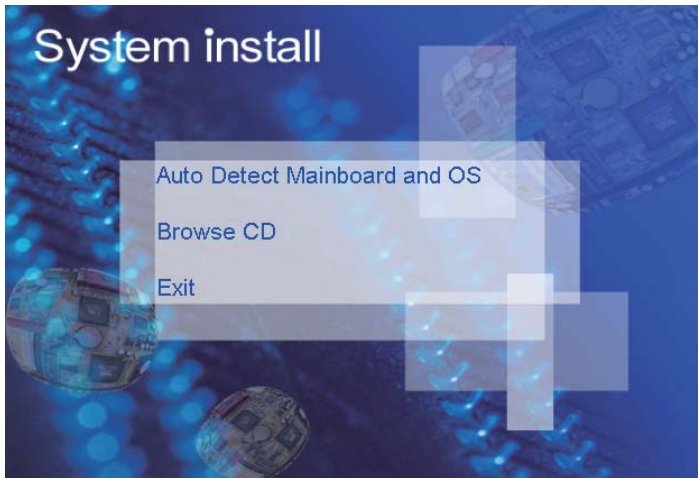
## DRIVER INSTALLATION

There is a system installation DVD in the package. This DVD does not only include all the drivers you need but also some other free application programs and utility programs.

In addition, this DVD also includes an auto detect software telling you which hardware is installed and which driver is needed so that your system can function properly. We call this auto detect software SYSTEM INSTALL.

### **SYSTEM INSTALL Supports Windows 7(32bit/64bit) / Windows 8/8.1(32bit/64bit)**

Insert the DVD into your DVD-ROM drive and the SYSTEM INSTALL menu should appear as below. If the menu does not appear, double-click MY COMPUTER and double-click DVD-ROM drive or click START, click RUN, and type X:\SETUP.EXE (assuming your DVD-ROM drive is X).



### **Make your selection from SYSTEM INSTALL menu:**

- 1 . Auto Detect Main board and OS to AUTOMATIC DRIVER INSTALLATION menu
- 2 . Browse DVD to view the contents of the DVD
3. Exit to exit SYSTEM INSTALL menu

## AUTOMATIC DRIVER INSTALLATION menu

### *Bay Trail for Windows 8.1 (x64)*

- |             |        |
|-------------|--------|
| 1. INF      | 4. LAN |
| 2. VGA      | 5. TXE |
| 3. HD Audio | 6. MBI |

[Back to previous page](#)

- |              |  |
|--------------|--|
| 1. INF       | Install Intel Baytrail chipset driver              |
| 2. VGA       | Install onboard VGA driver                         |
| 3. Serial IO | Install Serial IO driver (FOR Win 7 only)          |
| 4. xHCI      | Install Intel USB 3.0 xHCI driver (FOR Win 7 only) |
| 5. HD Audio  | Install HD Audio Codec driver                      |
| 6. MBI       | Install MBI driver (FOR Win 8/8.1 only)            |
| 7. LAN       | To the LAN driver Readme file                      |
| 8. TXE Patch | Install Intel TXE patch (FOR Win 7 only)           |
| 9. TXE       | Install Intel TXE driver                           |

Each selection is illustrated below:

## 5-1 INF Install Intel Baytrail Chipset Driver (example for WIN8 64bit)

### *Bay Trail for Windows 8.1 (x64)*

- |             |        |
|-------------|--------|
| 1. INF      | 4. LAN |
| 2. VGA      | 5. TXE |
| 3. HD Audio | 6. MBI |

Back to previous page

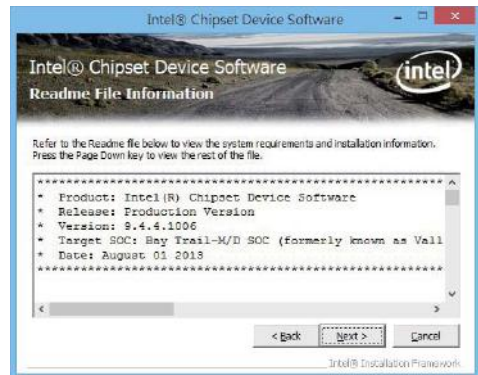


1. At the "AUTOMATIC DRIVER INSTALLATION menu" screen, click "INF".

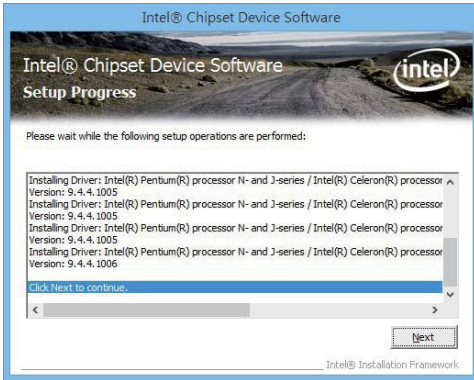
2. At the "Intel® Chipset Device Software" screen, click "Next".



3. At the "License Agreement" screen, click "Yes"



4. At the "Readme File Information" screen, Click "Next".



5. Click "Next"



6. Click "Finish" to restart computer

**NOTE: SYSTEM INSTALL will auto detect file path**

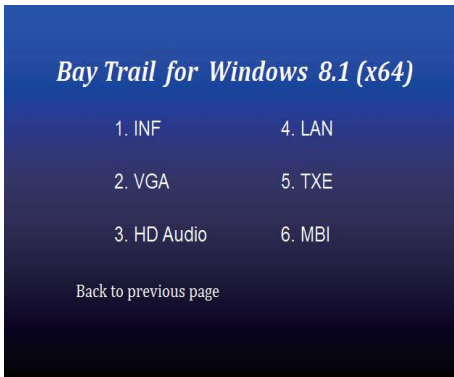
**For Windows 7 64/32-bit,**

**X:\driver\INTEL\BAY\INF\WIN7\infinst\_autol.exe**

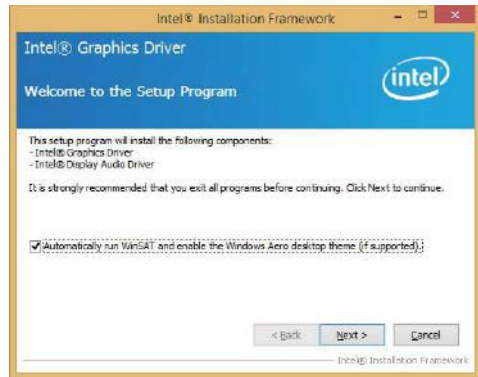
**For Windows 8 / 8.1 32/64-bit**

**X:\driver\INTEL\BAY\INF\WIN\_8\_64\infinst\_autol.exe**

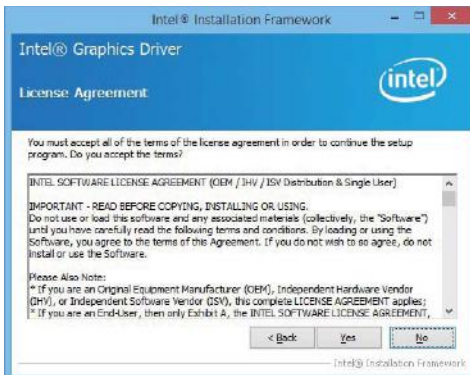
## 5-2 VGA Install Intel Baytrail VGA Driver (example for WIN8 64bit)



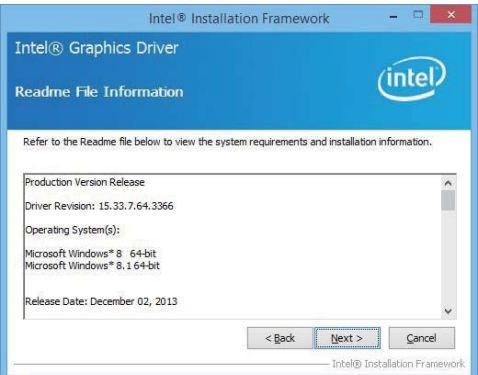
1. At the "AUTOMATIC DRIVER INSTALLATION menu"screen, click "VGA".



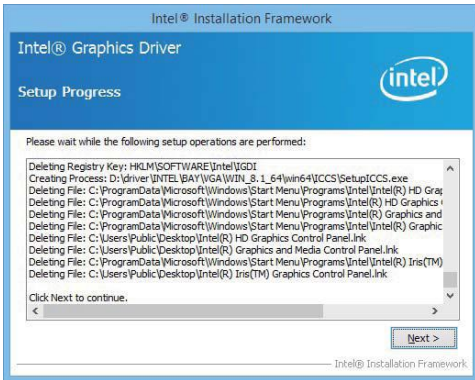
2. At the "Welcome to the Setup Program screen, Click "Next".



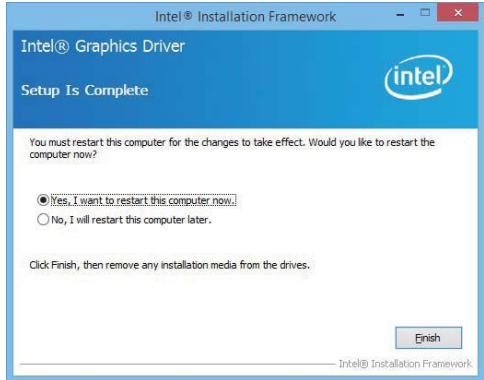
3. At the "License Agreement" screen, Click "Yes"



4. At the "Readme File Information" screen, Click "Next"



5. At the "Setup Progress" screen,  
Click "Next".



6. Click "Finish" to restart computer

**NOTE: SYSTEM INSTALL will auto detect file path**

**For Windows 7 32-bit,**

**X:\driver\INTEL\BAY\VGA\WIN\_7\_32\Setup.exe**

**For Windows 7 64-bit**

**X:\driver\INTEL\BAY\VGA\WIN\_7\_64\Setup.exe**

**For Windows 8 / Windows 8.1 32-bit**

**X:\driver\INTEL\BAY\VGA\WIN\_8\_32\Setup.exe**

**For Windows 8 / Windows 8.1 64-bit**

**X:\driver\INTEL\BAY\VGA\WIN\_8\_64\Setup.exe**



## 5-3 Serial IO Install Driver Baytrail Serial IO Driver (FOR Windows 7 only)

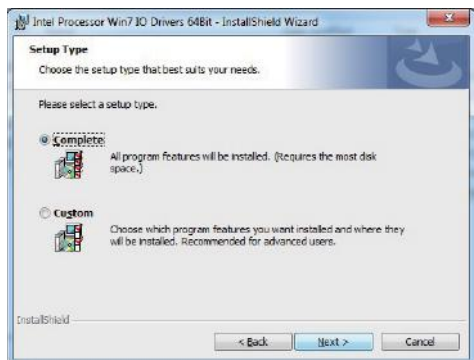


1. At the "AUTOMATIC DRIVER INSTALLATION menu" screen, click "Serial IO".

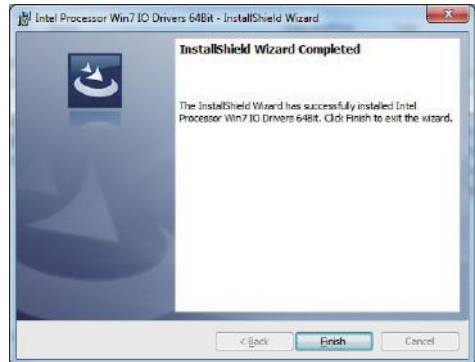
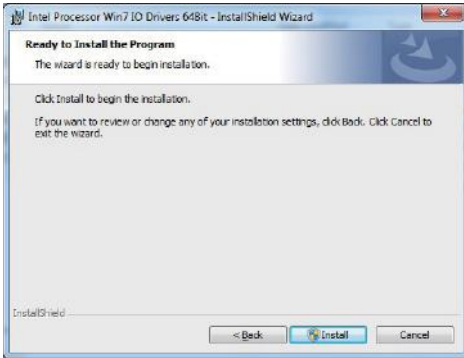
2. At the "Welcome to the Setup Program screen, Click "Next".



3. At the "License Agreement" screen, Click "Yes"



4. At the "Setup type" screen, select "complete" and Click "Next".



5. At the "Ready to install the program" screen, Click "Install"
6. Click "Finish" and restart computer

**NOTE: SYSTEM INSTALL will auto detect file path**

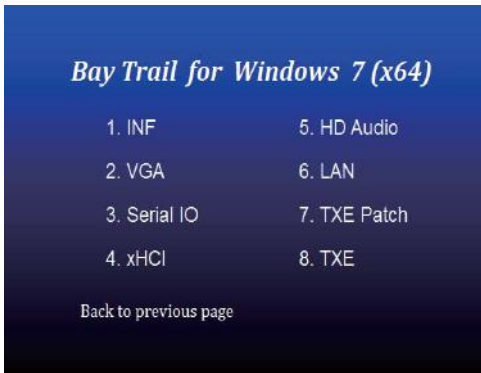
**For Windows 7 32-bit,**

**X:\driver\INTEL\BAY\SERIALIOWIN7\_32Bit.msi**

**For Windows 7 64-bit**

**X:\driver\INTEL\BAY\SERIALIOWin7\_64Bit.msi**

## 5-4 xHCI Install Intel USB 3.0 xHCI Driver (FOR Windows 7 only)



1. At the "AUTOMATIC DRIVER INSTALLATION menu" screen, click "xHCI".

2. At the "Welcome to the Setup Program screen, Click "Next".



3. At the "License Agreement" screen, Click "Yes".



4. At the "Readme File Information" screen, Click "Next".



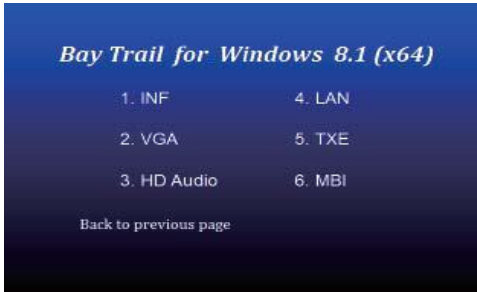
5. At the "Setup Progress" screen, Click "Next". 6. Click "Finish" to restart computer

**NOTE: SYSTEM INSTALL will auto detect file path**

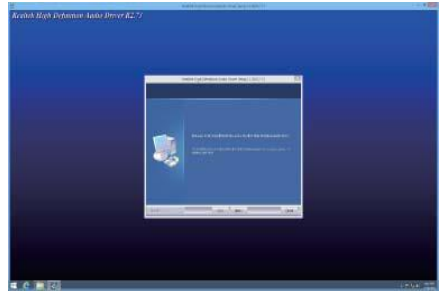
**For Windows 7 32 / 64-bit,**

**X:\driver\INTEL\BAY\XHCI\Driver\_Installer\Setup.exe**

## 5-5 HD Audio Install High Definition Audio Driver (example for WIN8 64bit)



1. At the "AUTOMATIC DRIVER INSTALLATION menu", click "HD Audio"



2. Click "Next".



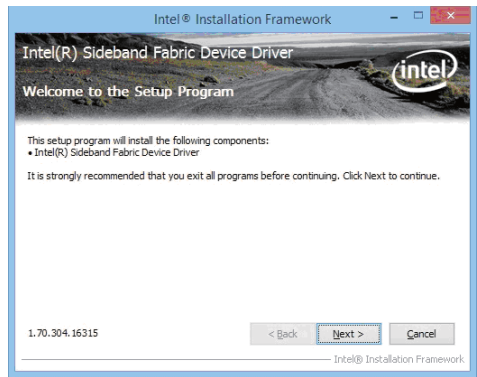
3. Click "Finish" to restart computer

**NOTE: SYSTEM INSTALL will auto detect file path**  
For Windows 7 32 / 64-bit, Windows 8/8.1 32 / 64-bit  
X:\driver\INTEL\BAY\SOUND\Win7\_Win8\_Win81\_R273.exe

## 5-6 MBI Install Intel MBI Driver (FOR Win 8/8.1 only)



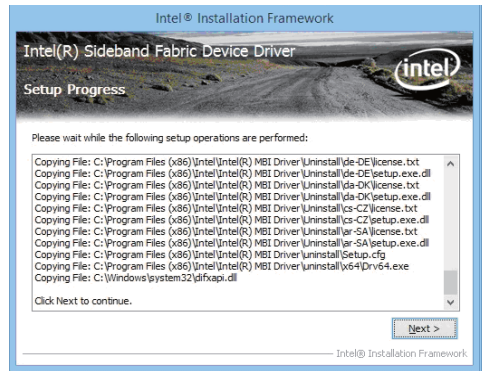
1. At the "AUTOMATIC DRIVER INSTALLATION menu", click "HD Audio".



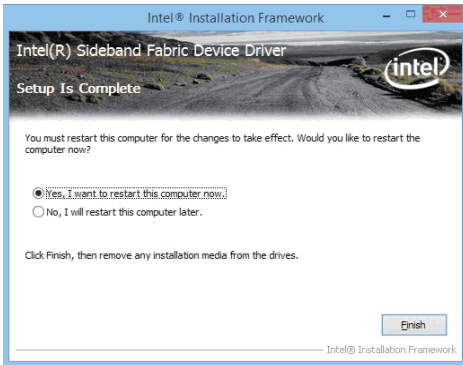
2. At the "Welcome to the Setup Program screen, Click "Next".



3. At the "License Agreement" screen, Click "Yes".



4. At the "Setup Progress" screen, Click "Next".

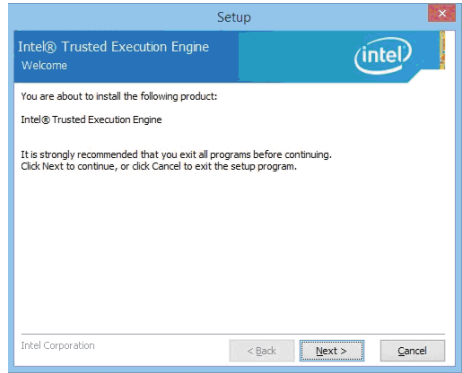


5. Click "Finish" to restart computer

**NOTE: SYSTEM INSTALL will auto detect file path  
For Windows 8/8.1 32 / 64-bit,  
X:\driver\INTEL\BAY\MBI\Setup.exe**

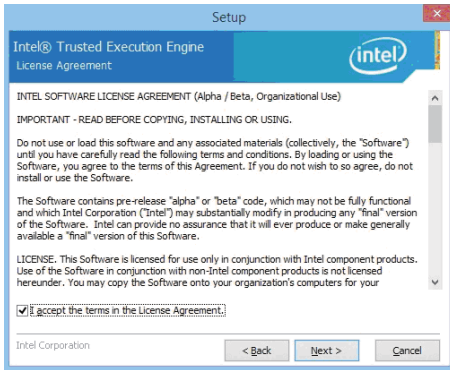
## 5-7 TXE Install Intel TXE driver

### 5-7-1 TXE Install for WIN8/WIN8.1

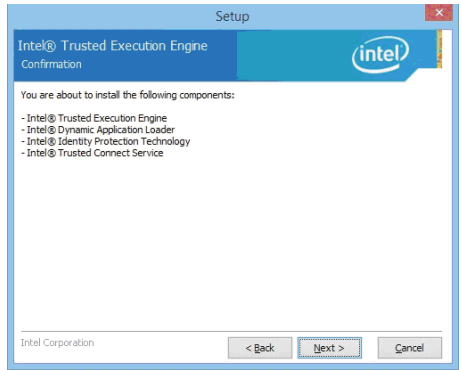


1. At the "AUTOMATIC DRIVER INSTALLATION menu", click "TXE".

2. At the "Setup" screen, Click "Next".

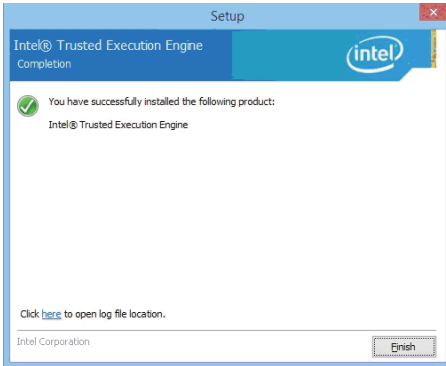


3. At the "License Agreement" screen, Click "Yes".



4. Click "Next".





5. Click "Finish" & restart computer

**NOTE: SYSTEM INSTALL will auto detect file path**

**For Windows 8 32 / 64-bit,**

**X:\driver\INTEL\BAY\TXE\WIN\_8\SetupTXE.exe**

**For Windows 8.1 32 / 64-bit,**

**X:\driver\INTEL\BAY\TXE\WIN\_8.1\SetupTXE.exe**

## 5-7-2 TXE Install for WIN7

Please install PXE Patch first.



1. At the "AUTOMATIC DRIVER INSTALLATION menu", click "TXE Patch".



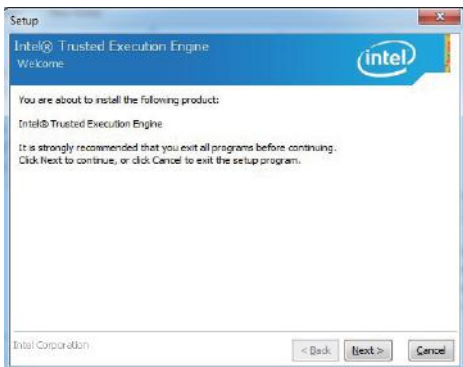
2. At the "Windows Update" screen, Click "Yes".



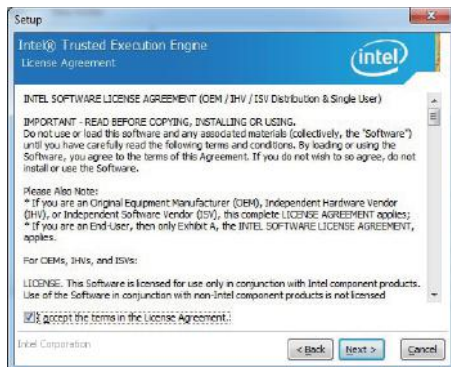
3. Click "Finish" & restart computer



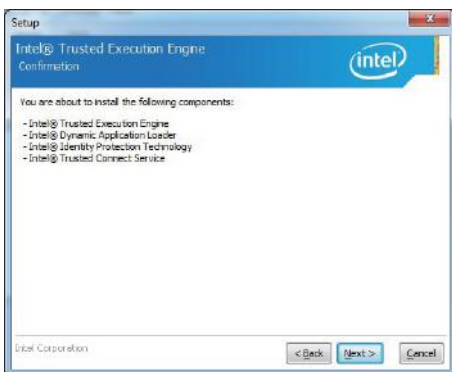
4. At the "AUTOMATIC DRIVER INSTALLATION menu", click "TXE "



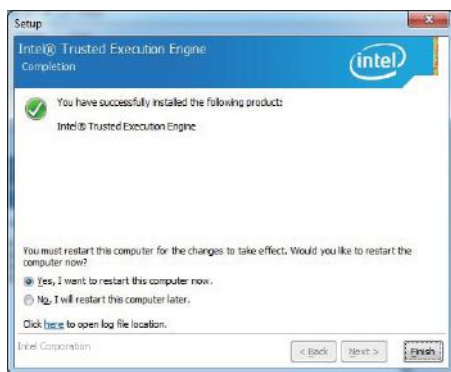
5. At the "TXE Setup" screen, Click "Next".



6. At the "License Agreement" screen, Click "Yes".



7. Click "Next".



8. Click "Finish" & restart computer

**NOTE: SYSTEM INSTALL will auto detect file path**

**For Windows 7 32 / 64-bit,**

**TXE Patch**

**X:\driver\INTEL\BAY\TXE\WIN\_7\kmdf-1.11-Win-6.1-x86.msu**

**X:\driver\INTEL\BAY\TXE\WIN\_7\kmdf-1.11-Win-6.1-x64.msu**

**TXE**

**X:\driver\INTEL\BAY\TXE\WIN\_7\SetupTXE.exe**

**X:\driver\INTEL\BAY\TXE\WIN\_7\SetupTXE.exe**

---

## 5-8 How to update Insyde BIOS

Under DOS Mode

STEP 1. Prepare a bootable disc.

(Storage device could be USB FDD or USB pen drive.)

STEP 2. Copy utility program and latest BIOS to your bootable disc.

You may download it from our website.

STEP 4. (Here take 3I380C as an example, please enter your motherboard's name)

Insert your bootable disc into X: (X could be C:, A: or others.

It depends on which type of storage device you use. )

Start the computer and type

```
X:\H2OFFT-D.EXE 3I380CA2.ROM -BIOS -ALL
```

3I380CA2.ROM is the file name of the latest BIOS.

It may be 3I380CA1.ROM or 3I380CA2.ROM, etc.

Please leave one space between .ROM & -BIOS -ALL

By Bay Trail series mainboard, please type

```
X:\H2OFFT-D.EXE 3I380CA2.ROM -BIOS -ALL
```

```
-BIOS : Flash BIOS region
```

```
-ALL : Flash all
```

STEP 5. Press ENTER and the BIOS will be updated,

Computer will restart automatically.

## Appendix A: Power Consumption Test

### Condition ( 3I380A/CW--E3815 )

Item	Spec
CPU	Atom E3815 1.46 Ghz
Memory	DDR3L 1066 2GB
Operating System	Windows 7 / SP1
Test Program	3D Mark 06
HDD 2.5" SATA	Slim Type HDD
mSATA	32GB

### Test Result for reference only !

Hard Disk		Power off	Start up		Operation Maximum	Shut down Maximum	In Put Voltage
			Maximum	Stable			
3I380A	Slim Type HDD	0.10A	0.74A	0.49A	0.88A	0.64A	12V
	mSATA	0.09A	0.63A	0.43A	0.71A	0.52A	12V
3I380CW	Slim Type HDD	0.16A	1.24A	0.90A	1.48A	1.14A	9V
		0.18A	0.95A	0.86A	1.05A	0.88A	12V
		0.14A	0.53A	0.38A	0.57A	0.49A	24V
		0.14A	0.43A	0.32A	0.48A	0.40A	32V
		0.14A	0.40A	0.31A	0.44A	0.37A	36V
	mSATA	0.16A	1.08A	0.81A	1.19A	0.94A	9V
		0.17A	0.85A	0.67A	0.93A	0.74A	12V
		0.14A	0.47A	0.38A	0.51A	0.41A	24V
		0.14A	0.39A	0.32A	0.42A	0.34A	32V
		0.14A	0.36A	0.30A	0.39A	0.31A	36V

**The power consumption depends on your device choice!**

### Condition ( 3I380A/CW--E3845 )

Item	Spec
CPU	Atom E3845 1.91 Ghz
Memory	DDR3L 1333 4GB
Operating System	Windows 7 / SP1
Test Program	3D Mark 06
HDD 2.5" SATA	Slim Type HDD
mSATA	32GB

### Test Result for reference only !

Hard Disk		Power off	Start up		Operation Maximum	Shut down Maximum	In Put Voltage
			Maximum	Stable			
3I380A	Slim Type HDD	0.09A	0.87A	0.53A	1.01A	0.70A	12V
	mSATA	0.09A	0.74A	0.46A	0.93A	0.57A	12V
3I380CW	Slim Type HDD	0.16A	1.34A	0.93A	1.65A	1.21A	9V
		0.18A	1.08A	0.74A	1.26A	0.96A	12V
		0.14A	0.58A	0.41A	0.68A	0.53A	24V
		0.14A	0.47A	0.34A	0.58A	0.43A	32V
		0.14A	0.43A	0.32A	0.49A	0.40A	36V
	mSATA	0.16A	1.18A	0.75A	1.45A	0.91A	9V
		0.18A	0.95A	0.63A	1.13A	0.77A	12V
		0.14A	0.51A	0.36A	0.60A	0.44A	24V
		0.14A	0.42A	0.30A	0.48A	0.36A	32V
		0.14A	0.39A	0.30A	0.46A	0.34A	36V

**The power consumption depends on your device choice!**

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## Appendix B: Resolution list

640 x 480 x ( 256 / 16bit / 32bit )
800 x 600 x ( 256 / 16bit / 32bit )
1024 x 768 x ( 256 / 16bit / 32bit )
1152 x 864 x ( 256 / 16bit / 32bit )
1280 x 600 x ( 256 / 16bit / 32bit )
1280 x 720 x ( 256 / 16bit / 32bit )
1280 x 768 x ( 256 / 16bit / 32bit )
1280 x 800 x ( 256 / 16bit / 32bit )
1280 x 960 x ( 256 / 16bit / 32bit )
1280 x 1024 x ( 256 / 16bit / 32bit )
1400 x 1050 x ( 256 / 16bit / 32bit )
1440 x 900 x ( 256 / 16bit / 32bit )
1600 x 900 x ( 256 / 16bit / 32bit )
1600 x 1200 x ( 256 / 16bit / 32bit )
1680 x 1050 x ( 256 / 16bit / 32bit )
1920 x 1080 x ( 256 / 16bit / 32bit )
1920 x 1200 x ( 256 / 16bit / 32bit )

# Appendix C: CPC-Car Power Control

## Introduction:

CPC is designed specifically for the car, with the over-current protection.

Acceptable input 9V ~ 36V wide voltage input, and can prevent momentary surge caused by excessive input voltage causes damage to the motherboard parts protection mechanisms, and there are, input power protection device to prevent reverse the negative.

CPC can be set when the output power or when to turn off the power when the car is started and shut down time, and when the car out of battery power will be automatically cut off the output power to protect the battery. When not in use the current consumption of approximately <2mA to protect the vehicle battery will not be too much load current of the battery is dead

## Operation

There are two modes operating: Auto Mode and Manual Mode.

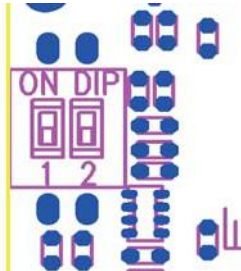
The default setting is "Auto Mode"

## For OEM CPC function only

### CPC-Car Power Control

SC1 CPC & Control mode switch.

SC1: Board Top view



<b>ON</b>  <b>1 2</b>		1		2	
		CPC function		Mode select	
Up	CPC Enabled	Up	Auto		
Down	CPC Disabled	Down	Manual		

- Note: 1.If CPC was disabled which have not under low voltage protection and timing delay function and power output continually until the out of car battery.  
 2. In Auto Mode. Can't setting OS Delay off timer.  
 3. Default, CPC function enabled, Mode is Auto  
 4. It need reset power when switch setting finish.  
 5. default setting 1 - 2 ON



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## **Auto Mode**

### **Provides power:**

When Key is inserted into the ACC stalls, CPC default through (Delay Main Power On setting within) delay 20 seconds before providing power to the motherboard

### **Boot-Up :**

CPC provides power to the motherboard, the power will be executed.

### **The shutdown :**

When Key switch back to the OFF position, CPC default (set value of the OS Delay Off) at 5 minutes after the motherboard through the shutdown.

**Note:** Do When using CPC OS Delay off, use the system to do OS update!

### **Turn off the main power supply:**

After the motherboard shutdown, CPC default ( set value of the Main Power Off delay ) by five seconds after the main power board off!

### **Power saving mode:**

If you close more than 10 minutes, CPC will enter power-saving mode.

Then the total current consumption <2mA, in order to protect the car battery .

### **When the battery voltage is low :**

When the battery does not have enough electricity for 10 minutes,

CPC will immediately turn off the power to the motherboard, To protect the battery.

By default, When CPC will wait Key switch back to the OFF position, the battery will start to detect, and in factory mode, low battery detection protection is not turned on!

## **Manual mode:**

### **When you start :**

When Key is inserted into the ACC stalls, CPC default through ( Delay Main Power On setting within ) delay 20 seconds before providing power to the motherboard!

### **Boot-Up :**

CPC provides power to the motherboard, the then need to manually press the PW switch to start the M / B.

### **The shutdown :**

When Key switch back to OFF position, the need to manually press the PW switch to close the M / B, under normal circumstances, CPC does not automatically turn off M / B, unless there is a detected low battery voltage conditions.

### **Turn off the main power supply:**

After the M / B shutdown, CPC default ( set value of the Main Power Off delay ) by 5 seconds after the main power supply / B off !

### **Power saving mode:**

If you close more than 10 minutes, CPC will enter power-saving mode.  
Then the total current consumption <2mA, in order to protect the car battery.

### **When the battery voltage is low :**

When the battery does not have enough electricity for 10 minutes, CPC will immediately turn off the power to the motherboard, To protect the battery.

By default , When CPC will wait Key switch back to the OFF position, the battery will start to detect, and in factory mode, low battery detection protection is not turned on!

**Note:** Manual mode is not OS Delay off the set !

## **Delay Time and Under Voltage Level setting explain**

### **Delay Main Power On:**

When plug-in the key and turn to ACC mode, CPC will delay few seconds then output +12V!  
There are 14 options for this delay time setting: 0sec, 5sec, 10sec, 15sec, 20sec, 30sec, 45sec, 1min, 3min, 5min, 10min, 15min, 30min, 45min Default setting is "20 sec"

**Note:** Recommends user to ignite /start the car during this delay time.

**Please turn the ignition back to OFF mode, when the users are not able to start the car in the delay time or not able to ignite it properly.**

**System will offer next run delay time (default 20 seconds) again.**

### **OS Delay Off:**

When ignition is at OFF mode, CPC will turn off the MB via PW cable in the setting time.  
There are 18 options as OS delay off setting: 0sec, 5sec, 10sec, 15sec, 20sec, 30sec, 45sec, 1min, 3min, 5min, 10min, 15min, 30min, 45min, 1hour, 2hour, 3hour, ∞.  
The default setting is 5 minutes.

**Note:** 1. This delay time is only workable under "AUTO mode"

2. The recommend delay time should be longer than the MB turn off time.

If the MB is not able to shut down properly within 10 minutes, PW201 will auto switch off the MB after 10 minutes.

3. ""∞""setting is only available after user starts the "Under voltage" function.

4. Please avoid updating the OS when you turn off the MB. This could cause OS not able to boot the system next time.

### **Main Power Off delay:**

When the MB is shutdown, CPC will cut off power output after a few seconds.  
There are 17 options for the delay time: 0sec, 5sec, 10sec, 15sec, 20sec, 30sec, 45sec, 1min, 3min, 5min, 10min, 15min, 30min, 45min, 1hour, 2hour, and 3hour.  
The default setting is 5 sec.

**Note:** We recommend 5 seconds delay time here if uses don't have to need to execute other functions after shut down the MB.

### **Battery Low Voltage Level setting:**

When the battery voltage is lower than the setting voltage, the system will define it as "Under voltage".

The below list with the options of battery levels user may choose depend on its 12V or 24V battery.

Level	12V Battery	24V Battery
1	11.75V	23.75V
2	11.50V	23.50V
3	11.25V	23.25V
4	11.00V	23.00V
5	10.75V	22.75V
6	10.50V	22.50V
7	10.25V	22.25V
8	10.00V	22.00V
9	9.75V	21.75V
10	9.50V	21.50V
11	9.25V	21.25V
12	9.00V	21.00V

**Note:** 1. "Under voltage"function is not active under the default setting.

2. "Under voltage"function could be active when the ignition is at ACC or key plug-out.

3. When the battery is "Under voltage"-CPC constantly monitors the setting low voltage of battery 10 times / 10 minutes; CPC will set out the alarm via CPC AP. After 10 minutes, CPC will turn off the MB & cut off the power output and hold the status.CPC will only output +12V power when the Key is back to ignition at ACC mode.

4. Please check if your car battery is 12V or 24 before starting the "Under Voltage" feature.

Otherwise, "Under voltage" function is not workable at wrong battery setting.

5. The default "Under voltage" is 10.5V for +12V battery; 22.5V for +24V battery

### **Auto mode:**

Simply speaking, Auto Mode means CPC will decide when to turn on / off the MB; there is no need of additional power switch.

### **Manual mode:**

Simply speaking, manual Mode means User can decide when to turn on / off the MB; the additional power switch is necessary.

## Car Power Control (CPC) LED behavior.

CPC provides an on-board LED to show the current situation.

LED	Function	Active
Green	CPC Status indicator	
	Delay Main Power On	ON:0.3sec,OFF:1sec
	OS Delay Off	ON:0.3sec x2, OFF:1sec
	Main Power Off delay	ON:1sec, OFF:1sec
	Battery Low Voltage	ON:0.3sec, OFF:0.3sec

CPC LED, is being implemented various stages of delay, LED will be action! When finished LED would not operate!

## Car Power Control (CPC) application Introduction

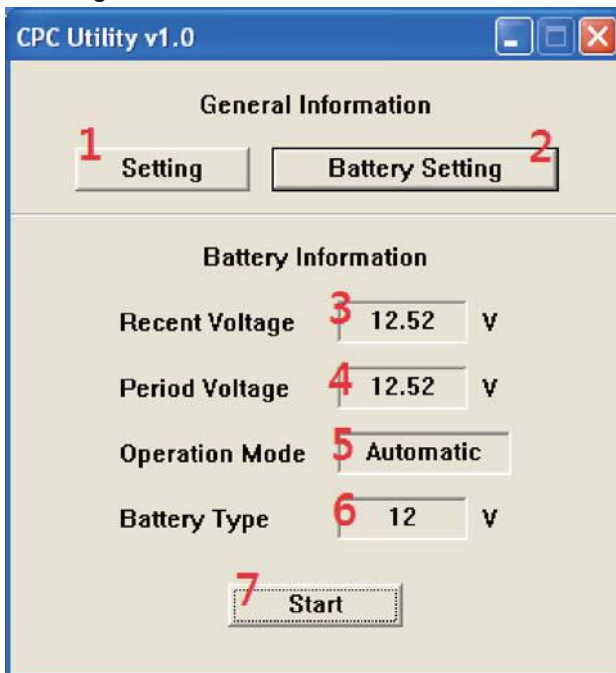
### About CPC info on LEX WiKi:

Users can download the CPC AP form LEX WiKi- CPC AP can set the delay time and start the "Under Voltage" protection.

The CPC AP introduction from LEX WiKi:

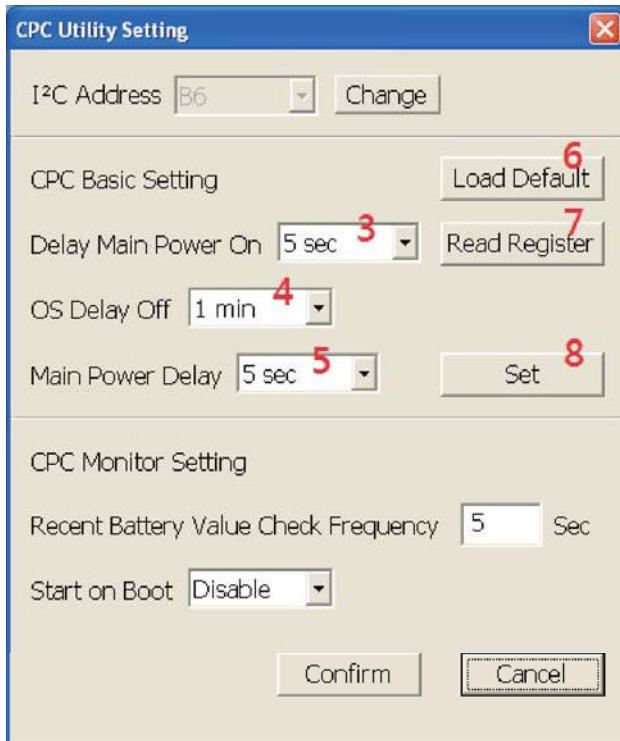
[http://tprd.info/lexwiki/index.php/CPC\\_Utility\\_under\\_Windows](http://tprd.info/lexwiki/index.php/CPC_Utility_under_Windows)

Main Page:



- Number 1: Delay time setting & interval setting of checking battery capacity.
- Number 2: Options about battery "Under voltage" setting.
- Number 3: Show the recent /current battery voltage according to the interval time you set under the previous "Setting" option.
- Number 4: This item is only workable after setting the "Under Voltage" protection. The voltage value here is the voltage that MCU detects very minute.
- Number 5: The operating Mode you used.
- Number 6: The battery type currently you used with: 12V or 24V.
- Number 7: To "Start" monitoring the battery capacity!

**Setting Page:**



**I²C Address Default is "B6".**

Press the submit button when finish selecting I²C address, then CPC Basic Setting section and CPC Monitor Setting section will be enable to set.

**3. Delay Main Power On**

Set the delay time which CPC turn on the computer. There are 14 options for this delay time setting: 0sec, 5sec, 10sec, 15sec, 20sec, 30sec, 45sec, 1min, 3min, 5min, 10min, 15min, 30min, 45min. default setting is "20 sec"

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#### 4. OS Delay Off

Set delay time which CPC turn off the computer. There are 18 options as OS delay off setting: 0sec, 5sec, 10sec, 15sec, 20sec, 30sec, 45sec, 1min, 3min, 5min, 10min, 15min, 30min, 45min, 1hour, 2hour, 3hour, ∞. The default setting is 5 minutes.

**NOTE:**

1. This delay time is only workable under "AUTO mode"
2. "∞" setting is only available after user starts the "Under voltage" function.

#### 5. Main Power Delay

Set delay time of cutting off the power output after computer is turned off. There are 17 options as OS delay off setting: 0sec, 5sec, 10sec, 15sec, 20sec, 30sec, 45sec, 1min, 3min, 5min, 10min, 15min, 30min, 45min, 1hour, 2hour and 3hour. default setting is "5 sec"

#### Load Default Button

Press this button will load default value of CPC basic setting section.  
\* In CPC basic setting section, the initial value is read from users.

#### Read Register Button

Press this button will read the current value set from user.

#### Set Button

Press this button to set when finish selecting what you want to set in CPC basic setting section.

#### Recent Battery Value Check Frequency:

Set the time interval of checking the battery capacity ( from 5 sec to 60 sec )

**Note:** User "MUST" set this checking interval in advance. Otherwise, it will pop up the error message while pressing the "Start" button in Main Page.

#### Start On Boot:

Monitor the battery capacity when user boot the system.

## Battery Setting Page:

**Battery Under Voltage Setting**

Disable Battery Low Voltage Detect

Battery Type: 12 V Change

Battery Low Voltage: 11.75 V

ACC Active: Key-In Triggered

Under Voltage Warning: Disable

Read Register Confirm Cancel

### Disable Battery Low Voltage Detect:

This button is to close the battery low voltage protection function.

The default setting is to click this item (Disable ULV)

If select this option, you don't have to set other things in the battery setting window. Besides, Period Voltage and Battery Type are also be hidden in main window when starting to monitor.

### Battery Low Voltage:

Set a voltage value as low voltage criteria. If the period voltage value CPC detected is smaller than this criteria ten times, computer will be turned off.

#### For 12V Battery:

11.75V, 11.50V, 11.25V, 11.00V, 10.75V, 10.50V, 10.25V, 10.00V, 9.75V, 9.50V, 9.25V, 9.00V. Default setting: 10.50V

#### For 24V Battery:

23.75V, 23.50V, 23.25V, 23.00V, 22.75V, 22.50V, 22.25V, 22.00V, 21.75V, 21.50V, 21.25V, 21.00V. Default setting: 22.50V

- 
- Battery Low Voltage:** To start the under voltage protection, set the under voltage value & monitor the under voltage status.  
Key-In: To start monitoring the battery under voltage while Key-in  
Key-out: To start monitoring the battery under voltage while Key-out
- ACC Active Triggered:** Choose if it pop-up the alarm window when the battery is under voltage.
- Read Register:** Read the setting of battery under voltage protection in MCU.
- Confir m:** Write the above setting into MCU.