2I847H

Intel Ivy Bridge Celeron 1047UE
(processor + Panther Point (PCH)HM76,
Wafer I/O Connector board /
Industrial design / On board Memory

All-In-One

Intel Mobile Ivy Bridge Celeron 1047UE 1.4GHz CPU , (i3/i7 processor)

Wafer Connector, 2 x PCIe mini slots ,

VGA, LVDS, Touch Screen

Audio, LAN, SATA, USB, COM

NO. 2I847H_V0.1
Release date: May. 15. 2014

Contents

2I847H

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User Manual edition 0.1, May. 15. 2014

Warning !

1. Battery
   Batteries on board are consumables.
   The life time of them are not guaranteed.

2. Fless 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.

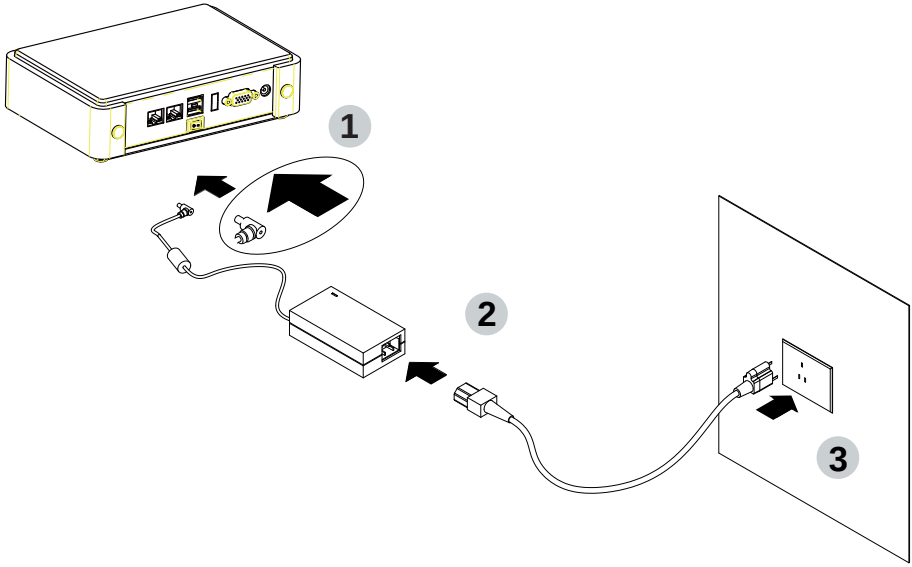
✱ Hardware Notice Guide

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 form 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-Fair" 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.

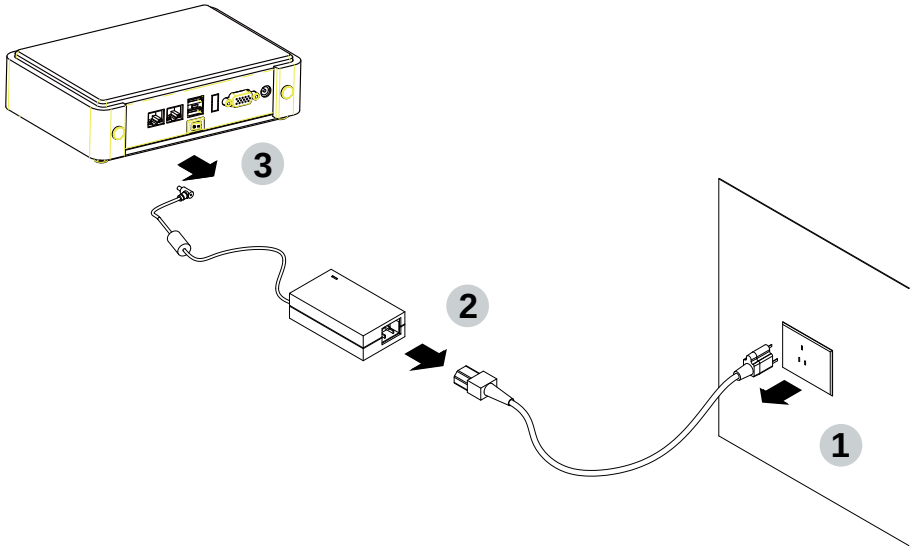
Remark 1:
Always insert/unplug the DC-in horizontally & directly to/from the motherboard. DO NOT twist, it is designed to fit snugly.
Moreover, erratic pull / push action might cause an unpredictable damage to the component & system unit.

Photo 1

Insert



Unplug



Chapter-1

General Information

The 2I847H Series is a compact and high performance 2.5" embedded motherboard that features Intel® Ivy Bridge 1047UE/i7 ultra-low voltage processor paired with HM76 chipset and 4GB DDR3 onboard.

High-performance and low power consumption communication platform, the embedded motherboard of 2I847H is specially designed for advanced embedded panel PC, thin client or digital signage applications where the economical use of power is in high demand. Also, there is a sizable on board DDR3 memory from 2I847H motherboard which will provide more stability to the system.

The 2I847H integrates with Intel® HD graphics engine to support DX11, DX10.1, DX10, DX9, CRT/DVI/HDMI 1.3a and 18/24Bits single/dual channel LVDS. Besides, 2I847H comes with one Intel Gigabit LAN which supports Jumbo Frame for seamless broadband connectivity. With the Wake-On LAN function in AMI UEFI BIOS, it is perfect control board for networking devices.

Moreover, the 2I847H supports a wide range of I/O options including one SATA port, one USB 3.0 port, three USB 2.0 ports, two RS-232/422/485 ports, and two PCIe Mini cards. The 2I847H is designed to combine all necessary input and output affects interfaces, which makes it to be ideal full featured 2.5" embedded motherboard for the demand of panel PC, thin client or digital signage applications.

1-1 Major Feature

1. Intel® Celeron® Processor 1047UE (2M Cache, 1.40 GHz) /

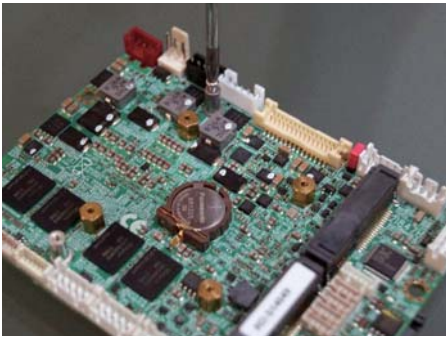
   Intel® Core™ i7-3517UE Processor (4M Cache, up to 2.80 GHz) with integrated GPU
2. Intel® HM76 Express Chipset
3. On board DDR3 4GB
4. Support DX11, DX10.1, DX10, DX9, and OGL 3.0
5. Two PCIe mini cards; one supports mSATA
6. Support two channel HD audio
7. Support 1 x USB 3.0 and 3 x USB 2.0 wafer
8. Intel Gigabit Ethernet
9. Support 2 x RS232/RS422/RS485
10. Support DIO and WDT
11. 18/24bit LVDS Interface on board
12. USB interface touch screen controller, support 4-, 5-, 8- wire Analog Resistive touch screen, Resolution is up to 2048 x 2048
13. DC +12V input
14. Compact PCB Dimension: 102 x 73 mm (2.5 inch)

1-2 Specification

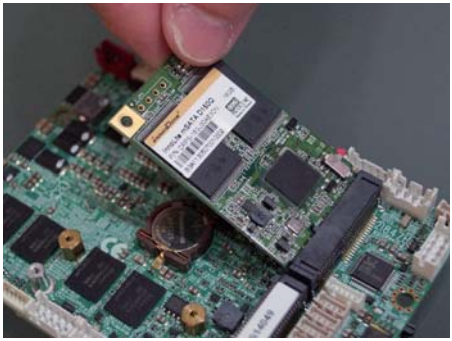
1. **CPU:** Intel® Celeron® Processor 1047UE (2M Cache, 1.40 GHz) /
   Intel® Core™ i7-3517UE Processor (4M Cache, up to 2.80 GHz)
2. **Chipset:** Intel® Panther Point HM76
3. **Memory:** On board DDR3 4GB
4. **Graphics:** Intel® Ivy Bridge 1047UE/i7 Integrated Graphics Processor
5. **SIO and UARTs:** Fintek F71869A and F81216AD I/O chipset
6. **SATA:** One SATA port
7. **LAN:** Intel 82579LM Gigabit Ethernet PHY
8. **Serial Port:** 2 x RS232/422/485
9. **USB:** 1 x USB 3.0 and 3 x USB 2.0 wafer
10. **Sound:** Intel HD Audio Two channel sound
11. **LVDS:** support 18/24Bits single / dual channel
12. **WDT / DIO:** Hardware watch dog timer support, 0~255 sec programmable
    Hardware digital Input & Output, 4 x DI / 4 x DO
13. **Touch screen (optional):** USB interface touch screen controller,
    support 4-, 5-, 8- wire Analog resistive touch screen
14. **Expansion interface:** 2 x PCIe Mini cards (for PCIe x1 and USB interface;
    the other for PCIe x1 or mSATA (Auto Detect)and USB interface)
15. **BIOS:** AMI UEFI BIOS
16. **Dimension:** 102 x 73 mm (2.5 inch)
19. **Power:** DC +12V input

1-3 Directions for installing the Mini Card

1. Unscrew the screw on the board

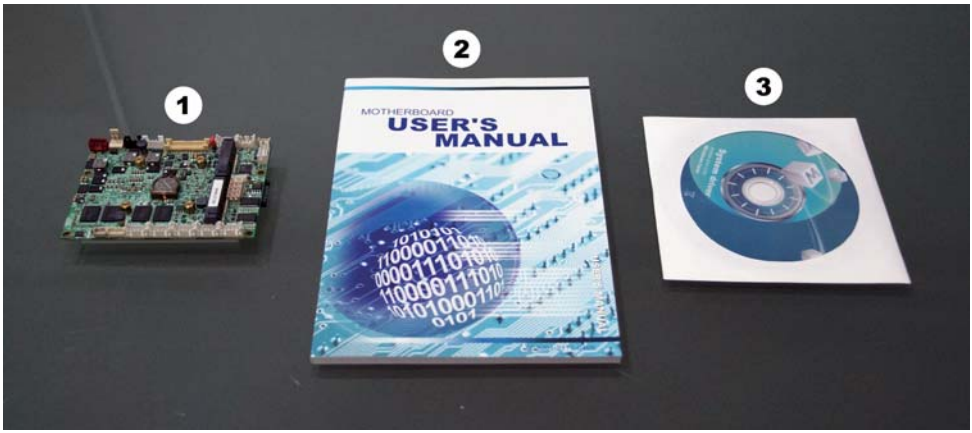


2. Plug in the Mini Card in a 45 angle



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

1-4 Packing List



	Material Code	Description	Detail Specification	Quantit
1	7G1901-1373001-0	MB-2I847H-C3C4-H4-001	LF,2I847H-C3C4-H4,Rev.:001	1
2	6G8001-2184-0400	Manual	LF,M/B,2I847H	1
3	6G8006-2346-0100	LEX Product Driver DVD	LF,DVD Ver.02, Φ=12cm	1

*The packing list above is for the users who purchase single motherboard. The users who purchase the board with chassis may refer to the packing list in the Assembly Guide.

Please contact with your dealer if any of these items is missing or damaged on delivery. And please keep all parts of the delivery package with packing materials in case if you need to deliver or store the product in the future.

Chapter-2

Hardware Installation

2-1 Unpacking Precaution

This chapter provides the information how to install the hardware of 2I847H.
Please follow section 1-4, 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-IN12 V 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 2I847H.
   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 2I847H 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.

2-2 Unpacking checkup

First of all, please follow all necessary steps of section 2-1 to protect 2I847H from electricity discharge. With reference to section 1-4 please check the delivery package again with following steps:

1. Unpack the 2I847H 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.

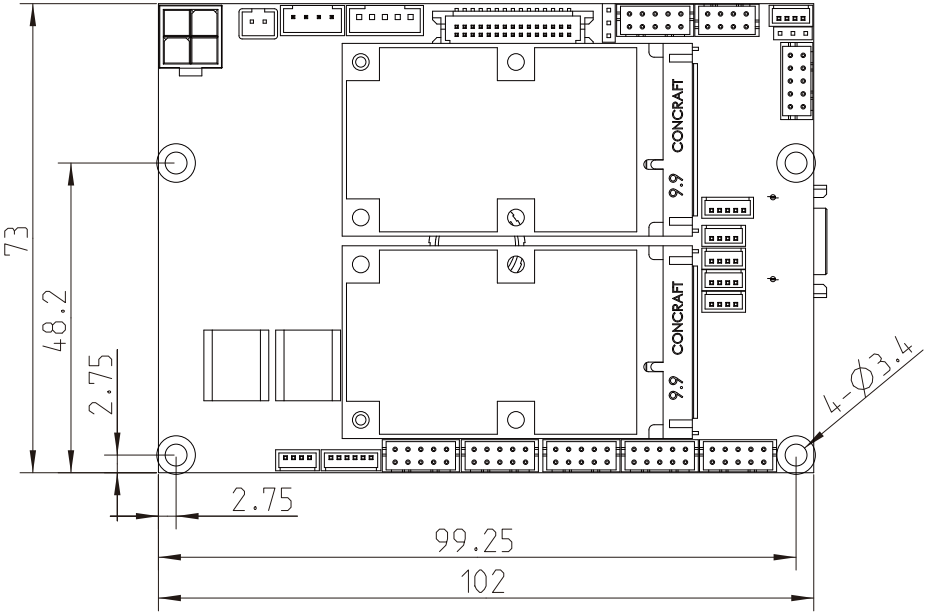
3. Is there any visible damage on the board?
   DO NOT CONTINUE TO INSTALL THIS BOARD!CONTACT
   THE DEALER YOU PURCHASED THIS BOARD FROM, IMMEDIATELY.

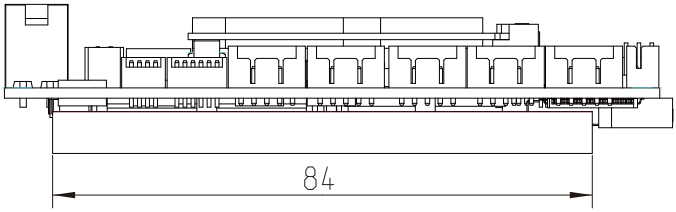
4. Check your optional parts (i.e. DDR, CF etc.), all necessary jumpers setting to jumper pin-set, and CMOS setup correctly.
   Please also refer to all information of jumper settings in this manual.

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.

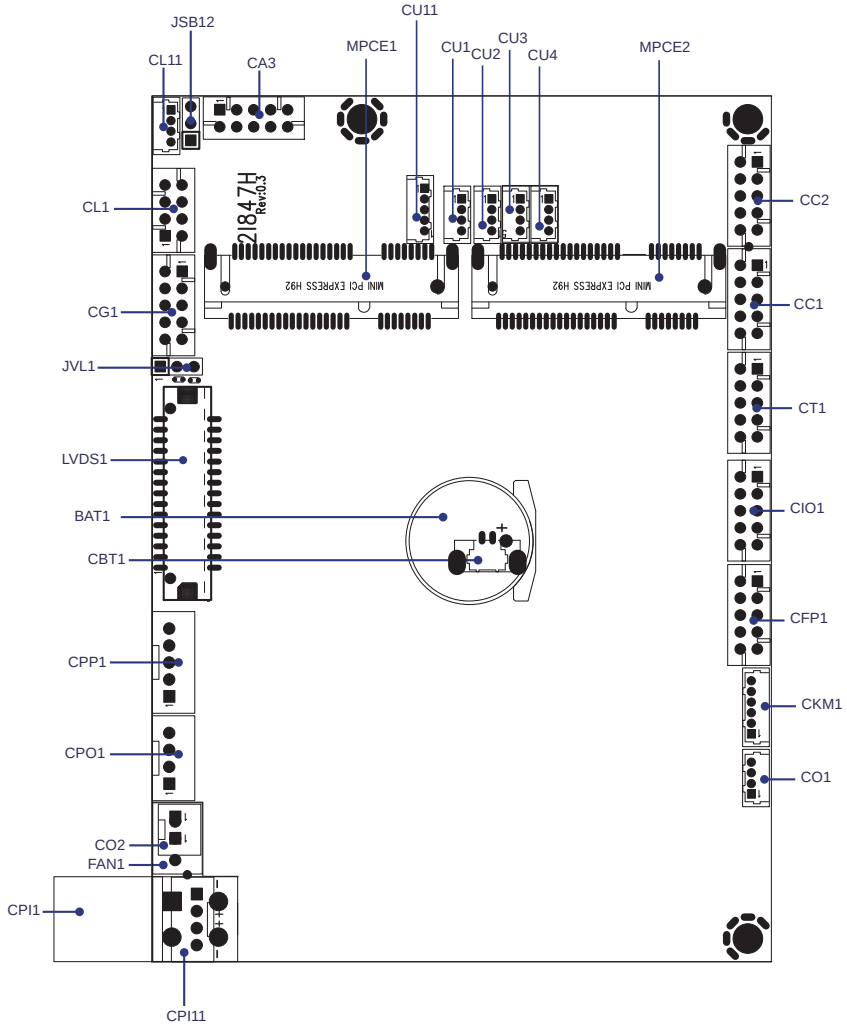
6. Please keep all necessary manual and driver disc in a good condition for future re-installation if you change your Operating System.

2-3 Dimension-2I847H

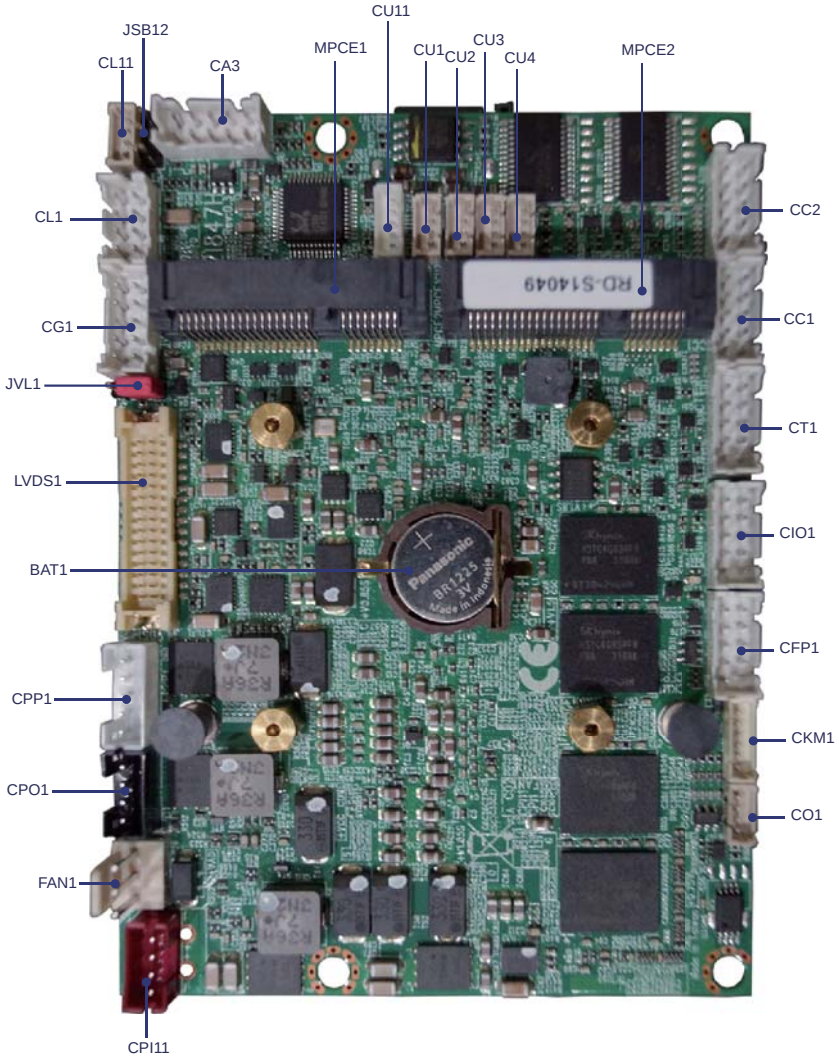




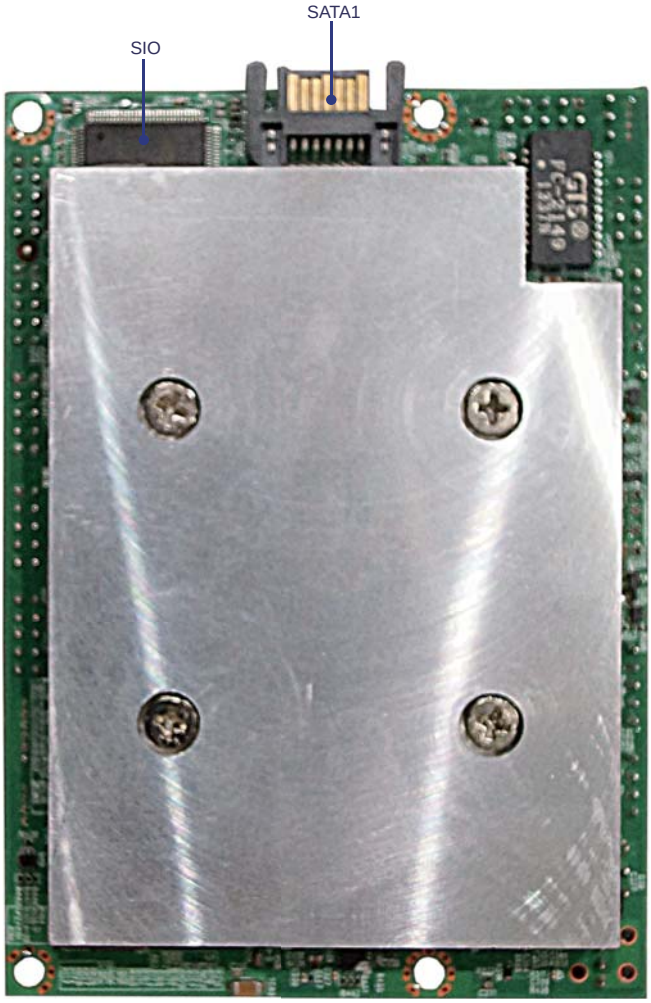
2-4 Layout-2I847H



2-5 Diagram- 2I847H



2-5-1 Bottom Side Diagram- 2I847H



2-6 List of Jumpers

JSB12: CMOS and ME RTC clear select
JVL1: LCD Panel power select

2-7 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.

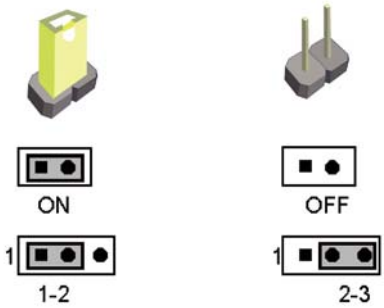


Figure 2.2

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 .

JSB12: CMOS & ME RTC Data Clear

A battery must be used to retain the motherboard configuration in CMOS RAM.

Close Pin1 and pin 2 of JSB12 to store the CMOS data.

Close Pin2 and pin 3 of JSB12 to store the Me data.

To clear the CMOS,follow the procedures below:

1. Turn off the system and unplug teh AC power
2. Remove DC 12V power cable from DC 12V power connector
3. Locate JSB12 and close pin 1-2 for few seconds
4. Return to default setting by openning pin 1-2
5. Connect DC 12V power cable back to DC 12V Power connector

To clear the ME RTC Data,follow the procedures below:

1. Turn off the system and unplug teh AC power
2. Remove DC 12V power cable from DC 12V power connector
3. Locate JSB12 and close pin 2-3 for few seconds
4. Return to default setting by openning pin 2-3
5. Connect DC 12V power cable back to DC 12V Power connector

JSB12	Description
1-2	CMOS data clear
2-3	ME RTC data clear

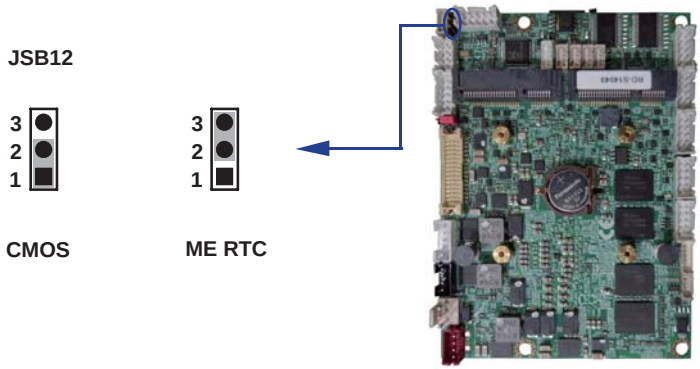
Note: Jumper free is default

Note: Do not clear CMOS and ME unless

1. Troubleshooting

2. Forget password

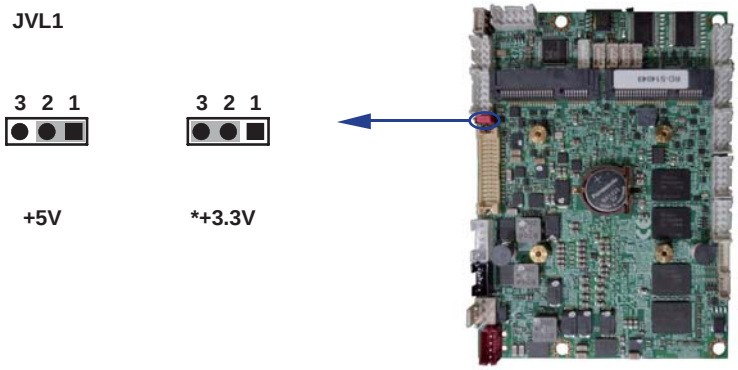
3. You fail over-clocking system



2-9 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

CPI1: DC-In 2x2 pin (4pin ATX power 4.20mm) Wafer connector(option)

CPI11: DC-In 1x4pin(2.0mm) Wafer connector

BAT1: 3V CMOS Battery hold 2pin(CR1225)

CBT1: 3V COMS Battery connector 2 pin (1.25mm) Wafer (option)

CPO1: +12V/+5V power output 4 pin (2.0mm) Wafer

CFP1: FP port 2x5 pin (2.0mm) Wafer

CG1: VGA port 2x5 pin (2.0mm) Wafer

LVDS1: LVDS 18/24Bits 2x15 pin (1.25mm) connector

CPP1: Panel inverter power connector 1x5 pin (2.0mm) Wafer

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

CA3: Line-out/Line-in/Mic-in 2x5 pin (2.0mm) Wafer

CC1: COM1 2x5 pin (2.0mm) Wafer

CC2: COM2 2x5 pin (2.0mm) Wafer

CIO1: One DIO 2x5 pin (2.0mm) Wafer

CO1: I^2C 1x4pin (1.25mm) Wafer

CKM1: PS2 KB/MS 1x6pin(1.25mm) Wafer

CL1: LAN port 2x4pin (2.0mm) Wafer

CL11: LAN LED 1X4 (1.25mm) Wafer

CU1: USB1 port 4pin(1.25mm) Wafer

CU11: USB1 port 1x5in(1.25mm) Wafer

CU2: USB2 port 1x4pin(1.25mm) Wafer

CU3: USB3 port 1x4pin(1.25mm) Wafer

CU4: USB4 port 1x4pin(1.25mm) Wafer

SATA1: One SATA connector 7pin

MPCE1/2: Two Mini card socket 52pin

3-2 DC -IN power connector

● **CPI1: DC 12V-in Internal connector (4pin ATX power 4.20mm) wafer(option)**

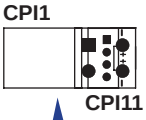
PIN NO.	Description
1,2	GND
3,4	+12V DC-IN

Note: Very important check DC-in Voltage

● **CPI11: DC 12V-in 1x4pin(2.0mm) Wafer Internal connector**

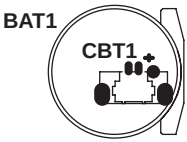
PIN NO.	Description
1	GND
2	DC-IN(12V)
3	DC-IN(12V)
4	GND

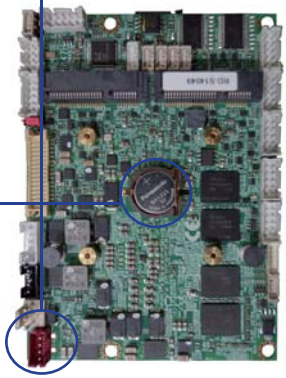
Note: Very important check DC-in Voltage



3-3 CMOS Battery in

● **BAT1: 3V Battery holder 2pin**
BAT1: Battery use type Li 3V / 45mA (CR1225)





● **CBT1 : Battery in wafer 2pin(1.25mm)**

PIN NO.	Description
1	Battery in (GND)
2	Battery in (+3V)

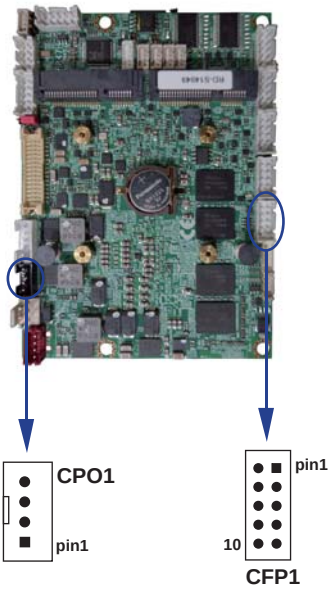
Note: CBT1 for BOM option.share BAT1

3-4 DC Power output

- **DC +5/+12V Voltage output connector**
  CPO1: +12V/+5V DC voltage output 4pin (2.0mm) Wafer

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

* Note: Attention! Check Device Power in spec



3-5 Front Panel control

- **CFP1 FP connector (2x5pin 2.0mm 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+

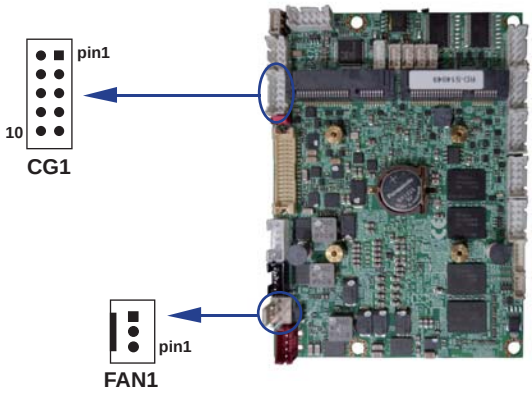
* Note: Note: CFP1 power button function same as SWP1

3-6 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



3-7 VGA port Connector

● **CG1: VGA 2x5pin 2.0mm wafer connector**

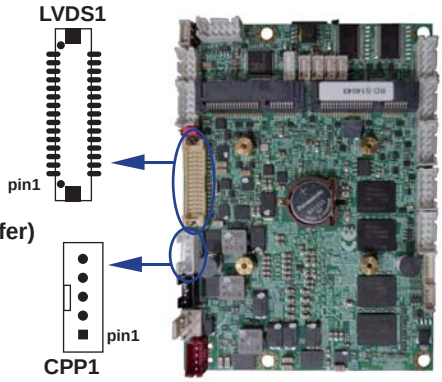
PIN NO.	Description	PIN NO.	Description
1	BLUE	2	GND
3	GND	4	DDC CLOCK
5	GREEN	6	V-SYNC
7	GND	8	H-SYNC
9	RED	10	DDC DATA

3-8 LVDS Connector

● **LVDS1: 18/24bits LVDS interface (2x15pin 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 Voltage select



3-9 Panel backlight power

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

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

Note: 1. Attention ! Check Device Power in spec
2. Pin 3 backlight dimming control .
provided 200Hz / 275Hz / 380Hz / 20 KHz/25KHz and
adjust PWM duty cycle by software program .
3. PWM duty cycle 100 % is Hi level +3.3V by power on default.
4. Pin 4 Backlight enable output, Hi enable (+3.3V), Low disable (0V)
5. Pin 5 Backlight enable output, Hi enable (+5V), Low disable (0V)

3-10 Touch screen device

- CT1: Touch screen (2x5 pin 2.0mm wafer) Default use USB6 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	NC

Note: For eight wire type cable Pin 3 and Pin4 need short.

- **For 4- wire type pin define**

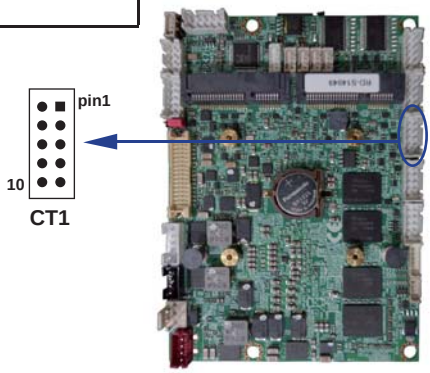
PIN NO.	Description	PIN NO.	Description
1	Bottom	2	N/A
3	N/A	4	Top
5	Right	6	N/A
7	Left	8	N/A
9	GND	10	NC

Note: For four wire type cable Pin 3 and Pin4 need short.

- **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	NC

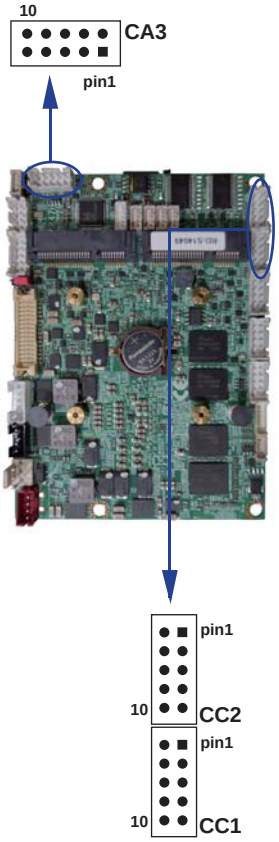
Note; 1. Touch controller use USB port 8



3-11 Audio port

- **CA3: Audio port (2x5pin 2.0mm Wafer)**

PIN NO.	Description	PIN NO.	Description
1	Line-out-R	2	MIC-IN
3	Line-in-R	4	GND
5	GND	6	SPDIF-OUT
7	Line-in-L	8	+5V
9	Line-out-L	10	MIC-IN



3-12 I/O port

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

  CC1: COM1 CC2: COM2

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. ALL COM wafer 2.0mm connector pin 10 provide +5V

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

  CC1: COM1 CC2: COM2

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. Default BOM set to RS232 Mode
2. Option RS485 function for OEM BOM request
3. BIOS need setting to RS485 mode

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

CC1: COM1 CC2: COM2

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

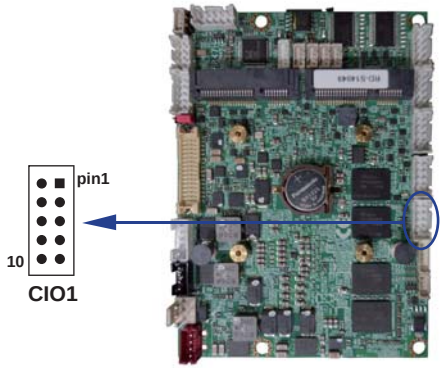
Note: 1. Default BOM set to RS232 Mode
2. Option RS422 function for OEM BOM request
3. BIOS need setting to RS485 mode
4. ALL COM port wafer 2.0mm connector pin 10 provide +5V

3-13 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. All DI-0~3 external pull Hi 10KΩ to +V5S
2. If want connect to out side device,
suggest use Isolator component like photo coupler or Relay
3. All pin can porting to DI function but need provide push pull VIL +0.8 , VIH +2V
4. All pin can porting to DO function , pin need define to push pull or OD
5. ALL Signal pin are 5V Tolerance



- **WDT For F75111N I^2C 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: Please refer to “Manual” for sample code for detail description

3-13-1 IO Device:F75111 under DOS

The Sample code source you can download from

Source file: F75111_Dos_Src.rar http://tprd.info/lexwiki/index.php/IO_Device:F75111_under_DOS

Binary file: F75111_Dos_Bin.rar

USERNAME & PASSWORD: sf

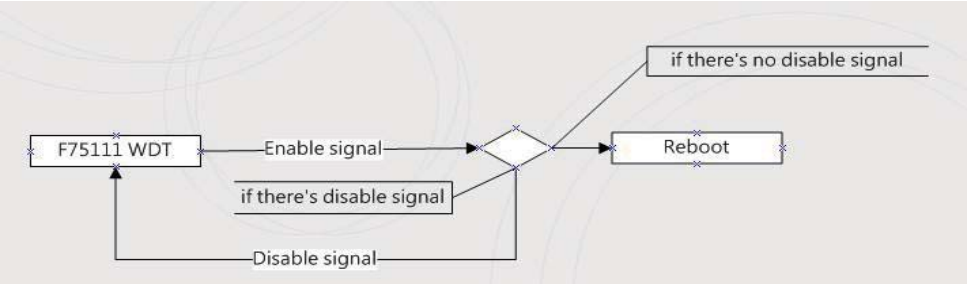
How to use this Demo Application

1.Boot Ms-Dos Operating System

2.execute "75WDT.EXE" binary file

3.Input 1 to Enable WDT timer or input 0 to Disable it.

4.input numbers of second for chip countdown and Reset Computer



Introduction

How to use this Demo Application

```
WriteI2CByte(I2CADDR, CONFIG, 0x03);//Set Watch Dog Timer function
WriteI2CByte(I2CADDR, WDT_TIMER, timer);//Set Watch Dog Timer range from 0-255.
WriteI2CByte(I2CADDR, WDT_TIMER_CTL, 0x73);//Enable Watch Dog Timer in second and pulse mode
```

How to use this Demo Application

```
WriteI2CByte(I2CADDR, WDT_TIMER_CTL, 0x00);
```

How to use this Demo Application

```
void pause(int time)
  {
    asm mov ah,0h;    //Ah = 00 Read System Time Counter
    asm int 1ah;      //read time from Time Counter and store it in DX register
    asm add dx,time;
    asm mov bx,dx;
    label:
    asm int 1ah;
    asm cmp bx,dx;
    asm jne label;
  }
```

3-13-2 IO Device: F75111 under Windows

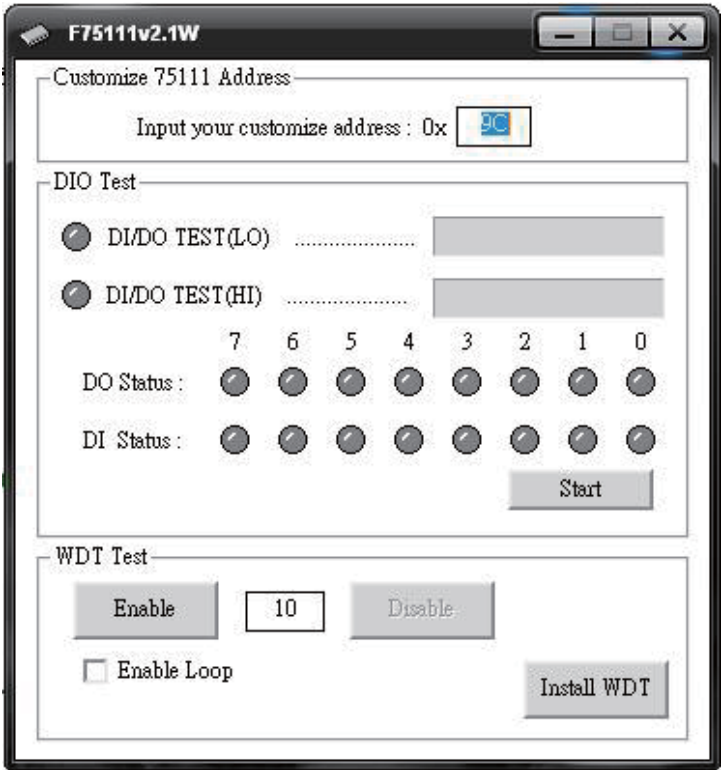
The Sample code source you can download from

Source file: F75111_DIOSrc.rar http://tprd.info/lexwiki/index.php/IO_Device:F75111

Binary file: F75111_DemoBin.rar

USERNAME & PASSWORD: sf

How to use this Demo Application



1. Press the "Start" button to test DIO function

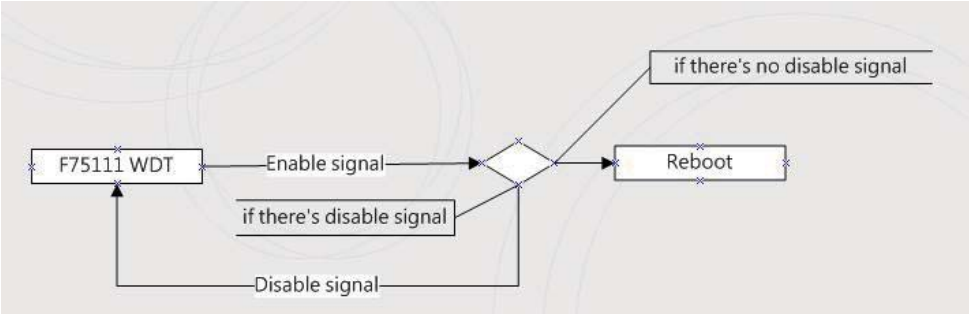
2. Press the "Enable" button to test WDT function

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 & 0x80 )? byteValue + 0x08 : byteValue;
    byteData = (byteData & 0x40 )? byteValue + 0x10 : byteValue;
    byteData = (byteData & 0x20 )? byteValue + 0x20 : byteValue;
    byteData = (byteData & 0x10 )? 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
}
```

3-13-3 IO Device: F75111 VB6 under Windows

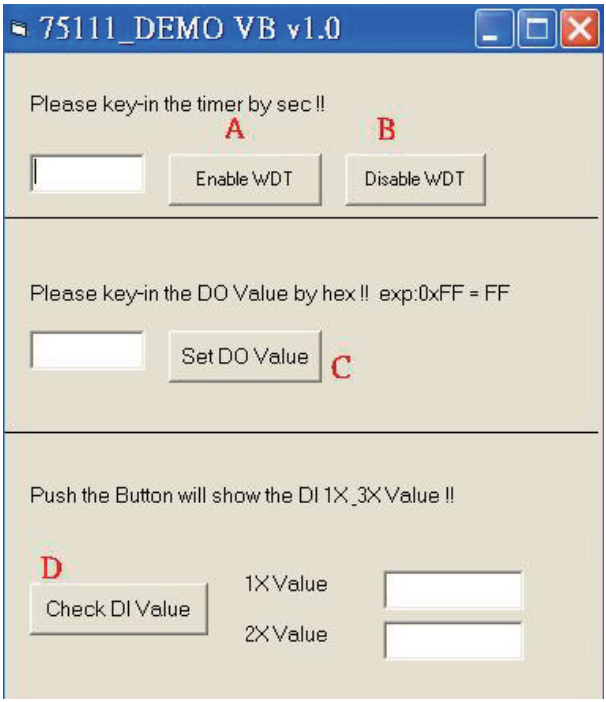
The Sample code source you can download from

Source file: 75111_VB_v10.rar http://tprd.info/lexwiki/index.php/IO_Device:F75111_VB6

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 WriteI2CByte(&H3, &H3)
Call WriteI2CByte(&H37, timer)
Call WriteI2CByte(&H36, &H73)

   End Function
```

Function DisableWDT

```
Function DisableWDT()

Call WriteI2CByte(&H36, &H0)

   End Function
```

Function SetDOValue

```
Function SetDOValue(dovalue As Integer)

Call WriteI2CByte(&H23, &H0)
Call WriteI2CByte(&H20, &HFF)
Call WriteI2CByte(&H2B, &HFF)
Call WriteI2CByte(&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 ReadI2CByte(&H12, GPIO1X)
Call ReadI2CByte(&H42, GPIO3X)

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

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

End Function
```

3-13-4 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

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"

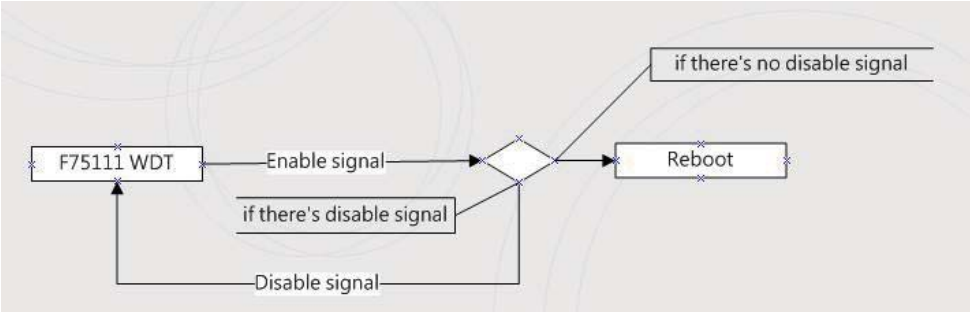
1.cd F75111

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 & 0x0FF);
}
```

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 & 0x80 )? byteValue + 0x08 : byteValue;
    byteData = (byteData & 0x40 )? byteValue + 0x10 : byteValue;
    byteData = (byteData & 0x20 )? byteValue + 0x20 : byteValue;
    byteData = (byteData & 0x10 )? 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
}
```

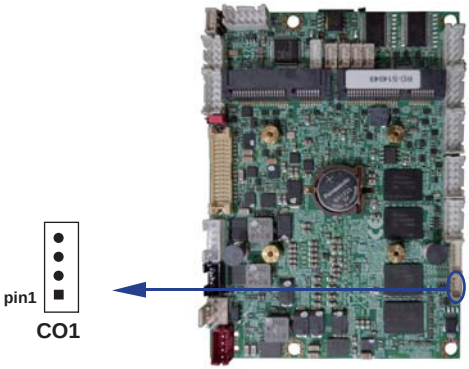
Disable WatchDog

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

3-14 I^2C Bus

● **CO1: I^2C Bus 4pin (1.25mm)Wafer**

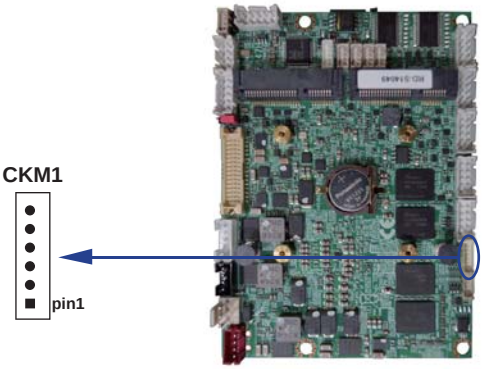
PIN NO.	Description
1	+3.3V
2	GND
3	I^2C Clock
4	I^2C DATA



3-15 PS2 Keyboard / Mouse connector

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

PIN NO.	Description
1	+5V
2	Keyboard Data
3	Keyboard Clock
4	GND
5	Mouse DATA
6	Mouse Clock



3-16 LAN port

● CL1 : LAN1 port Giga /100Mb(2x4pin 2.0mm wafer)

PIN NO.	Description	PIN NO.	Description
1	TR0-/TX-	2	TR0+/TX+
3	TR2+/NC	4	TR1+/RX+
5	TR1-/RX-	6	TR2-/NC
7	TR3-/NC	8	TR3+/NC

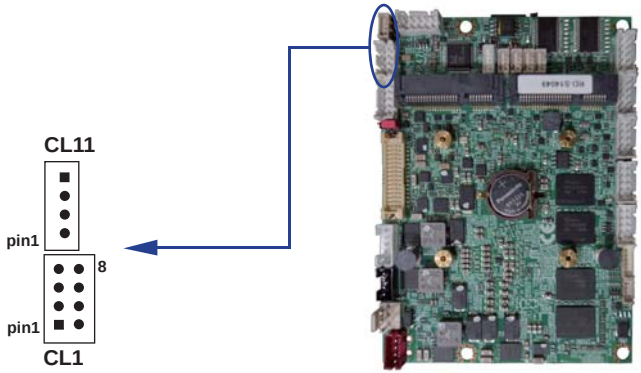
● RJ45 jack to CL1 wafer

RJ45 PIN	CL1 PIN	Description	RJ45 PIN	CL1 PIN	Description
1	2	TR0+/TX+	5	6	TR2-/NC
2	1	TR0-/TX-	6	5	TR1-/RX-
3	4	TR1+/RX+	7	8	TR3+/NC
4	3	TR2+/NC	8	7	TR3-/NC

Note: 1. CL1 pin connector to RJ45 describer table
2. RJ45 PIN to CL1 cable check table
3. Can use CL001 connector board to RJ45 connector

● CL11: LAN1 LED indicator (1X4pin 1.25mm Wafer)

PIN NO.	Description
1	+3.3V
2	Speed 10M
3	Speed 100M
4	Speed 1000M



3-17 USB port

- **Internal USB connector (4pin 1.25mm Wafer)**

  CU1/CU2: USB 1/2 ports

  CU3/CU4: USB 3/4 ports

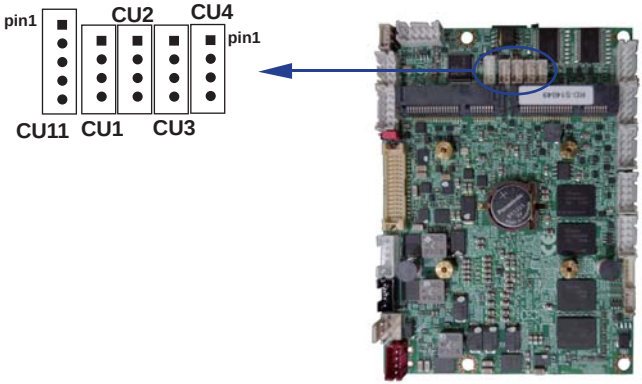
PIN NO.	Description
1	+5V
2	USB DATA -
3	USB DATA +
4	GND

- **CU1/CU11: USB2.0/3.0 port (1x4pin + 1x5pin 1.25mm Wafer)**

PIN NO.	CU3/CU4(1x4pin 1.25mm)	PIN NO.	CU31/CU41(1x5pin 1.25mm)
1	+5V	1	USB3.0 TX+
2	USB 2.0 D-	2	USB3.0 TX-
3	USB 2.0 D+	3	GND
4	GND	4	USB3.0 RX+
		5	USB3.0 RX-

Note: 1. Can use CU001 connector Board to USB 3.0 Type A

2. USB2.0/3.0 Keyboard and Mouse use CU1/CU11 can pitch Some OS install And wake up Keyboard and Mouse can't work issue

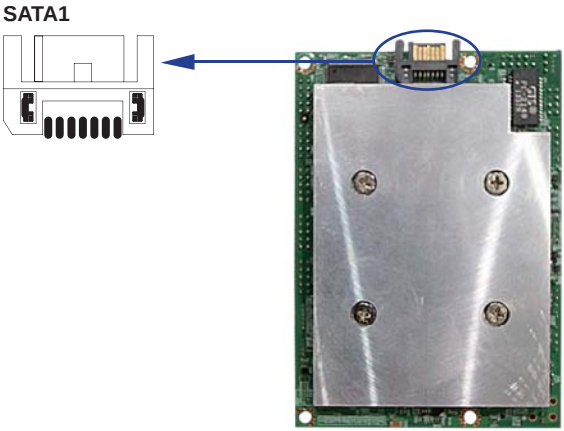


3-18 SATA port

● **SATA1: SATA connector (7pin wafer)**

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

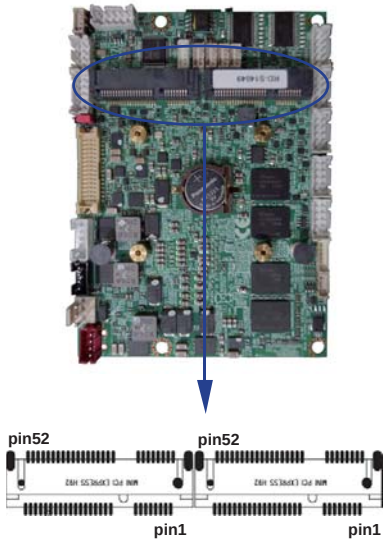
Note: CPO1 provide SATA HDD power.



3-19 Mini card

- **MPCE1: Full size mini card (Mini card socket 52pin)**
  MPCE2: Full size mini card (Mini card socket 52pin)

PIN NO.	Description	PIN NO.	Description
1	NC (Wake up)	2	+3.3V
3	NC	4	GND
5	NC	6	+1.5V
7	NC (CLKREQ-)	8	NC
9	GND	10	NC
11	PCIe-CLK-	12	NC
13	PCIe-CLK+	14	NC
15	GND	16	NC
KEY	KEY	KEY	KEY
17	NC	18	GND
19	NC	20	NC
21	GND	22	PRST-
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	GND	44	NC
45	NC	46	NC
47	NC	48	+1.5V
49	NC	50	GND
51	NC (mSATA detect)	52	+3.3V



Note: 1. MPCE1: Default support USB / PCIe interface
2. MPCE2: Default support USB / PCIe interface / mSATA 3.0(auto detect)

Chapter-4

Introduction of BIOS

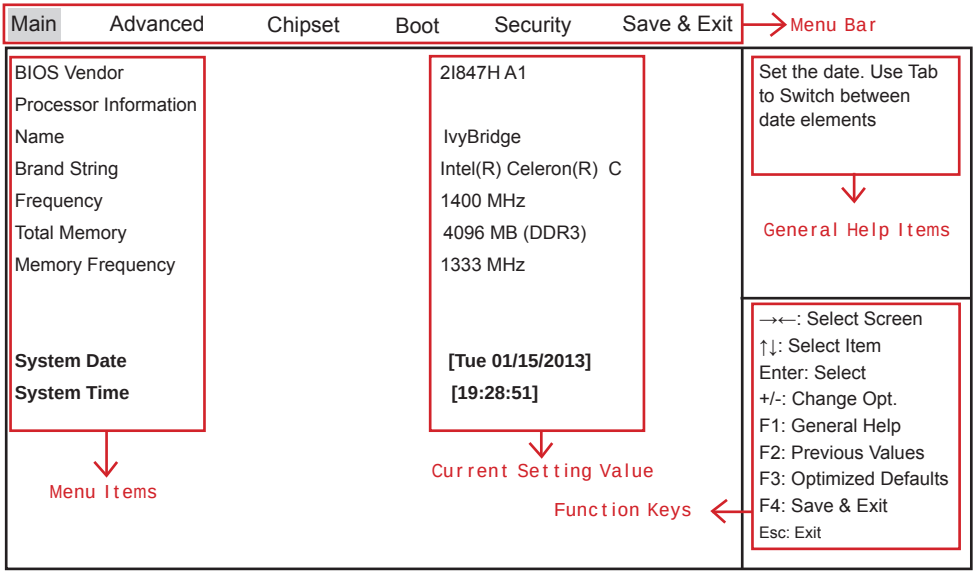
The BIOS is a program located in the Flash Memory on the motherboard. This program is a bridge between motherboard and operating system. When you start the computer, the BIOS program gains control. The BIOS first operates an auto-diagnostic test called POST (Power on Self Test) for all the necessary 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.

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. You may also restart the system by simultaneously pressing <Ctrl>, <Alt> and <Delete> keys.

4-2 BIOS Menu Screen

The following diagram show a general BIOS menu screen



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4-3 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 <+>/<–> keys when you want to modify the BIOS parameters for the active option.
- [F1]: General help.
- [F2]: Previous value.
- [F3]: Optimized defaults.
- [F4]: Save & Reset.
- Press <Esc> to quit the BIOS Setup.

4-4 Getting Help

Main Menu

The on-line description of the highlighted setup function is displayed at the top right corner the screen.

Status Page Setup Menu/Option Page Setup Menu

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

4-5 Menu Bars

There are six menu bars on top of BIOS screen:

Main To change system basic configuration
Advanced To change system advanced configuration
Chipset To change chipset configuration
Boot To change boot settings
Security Password settings
Save & 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.

4-6 Main

Main Advanced Chipset Boot Security Save & Exit

BIOS Vendor	2I847H A1	Set the date. Use Tab to Switch between date elements.
Processor Information		
Name	IvyBridge	
Brand String	Intel(R) Celeron(R) C	
Frequency	1400 MHz	
Total Memory	4096 MB (DDR3)	
Memory Frequency	1600 MHz	
System Date	**[Tue 01/15/2013]**	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit Esc: Exit
System Time	**[19:28:51]**	

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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.

4-7 Advanced

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

►ACPI Settings ►S5 RTC Wake Settings ►CPU Configuration ►SATA Configuration ►USB Configuration ►SMART Settings ►F71869 Super IO Configuration ►F71869 H/W Monitor ►Serial Port Console Redirection ►Network Stack	System ACPI Parameters. →←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit Esc: Exit

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ACPI Settings

Please refer section 4-7-1

S5 RTC Wake Setting

Please refer section 4-7-2

CPU Configuration

Please refer section 4-7-3

SATA Configuration

Please refer section 4-7-4

USB Configuration

Please refer section 4-7-5

SMART Settings

Please refer section 4-7-6

F71869 Super IO Configuration

Please refer section 4-7-7

F71869 H/W Monitor

Please refer section 4-7-8

Serial Port Console Redirection

Please refer section 4-7-9

Network Stack

Please refer section 4-7-10

4-7-1 ACPI Settings

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

ACPI Settings		Enables or Disables BIOS ACPI Auto Configuration.
Enable ACPI AUTO Configuration	**[Disabled]**	
Enable Hibernation	**[Enabled]**	
ACPI Sleep State	**[S1 only(CPU Stop C..)]**	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit Esc: Exit

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Enable ACPI Auto Configuration

This item allows you to Enabled/Disabled the Advanced Configuration and Power Management (ACPI).

Enable Hibernation

This item allows you to Enabled/Disabled the Hibernate feature.

ACPI Sleep State

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

The optional settings: Suspend Disabled / S1 only(CPU Stop Clock) / S3 only(Suspend to RAM) / Both S1 and S3 available for OS choose from.

4-7-2 S5 RTC Wake Settings

Main Advanced Chipset Boot Security Save & Exit

Wake system with Fixed Time	**[Disabled]**	Enable or disable System wake
Wake system with Dynamic Time	**[Disabled]**	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit Esc: Exit

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Wake system with Fixed Time

Use this item to Enable or Disable system wake on alarm event. When set as Enabled, system will wake on the hour/min/sec specified.

Wake system with Dynamic Time

Use this item to Enable or Disable system wake on alarm event. When set as Enabled, system will wake on the current time + Increase minute(s).

4-7-3 CPU Configuration

Main Advanced Chipset Boot Security Save & Exit

CPU Configuration		Nunber of cores to enable in each processor package.
Intel(R) Celeron(R) CPU 1047UE @ 1.40GHz		
CPU Signature	306a9	
Microcode Path	10	
Max CPU Speed	1400 MHz	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit Esc: Exit
Min CPU Speed	800 MHZ	
CPU Speed	1400 MHZ	
Processor Cores	2	
Intel HT Technology	Not Supported	
Intel VT-x Technology	Supported	
Intel SMX Technology	Not Supported	
64-bit	Supported	
L1 Data Cache	32 KB x 2	
L1 Code Cache	32 KB x 2	
L2 Cache	256 KB x 2	
L3 Cache	2048 KB	
Active Processor Cores	**[All]**	
Execute Disable Bit	**[Enabled]**	
Intel Virtualization Technology	**[Disabled]**	

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Active Processor Cores

Use this item to select number of cores to enable in each processor package.

Execute Disable Bit

XP can prevent certain classes of malicious buffer overflow attacks when combined with a supporting OS (Windows Server 2003 SP1, Windows XP SP2, SuSE Linux 9.2, RedHat Enterprise 3 Update 3.)
The optional settings are: Disabled, Enabled.

Intel Virtualization Technology

When set as Enabled, a VHM can utilize the additional hardware capabilities provided by Vanderpool Technology.
The optional settings: Enabled, Disabled.

4-7-4 SATA Configuration

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

SATA Controller(s)	**[Enabled]**	Enable or disable SATA Device.
SATA Mode Selection	**[IDE]**	
		→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit Esc: Exit

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SATA Controller(s)

Use this item to Enable or Disable SATA Device.

SATA Mode Selection

Determine how SATA controller(s) operate.
The optional settings are: IDE Mode, AHCI Mode.

4-7-4-1 SATA Mode Selection - AHCI Mode

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

SATA Controller(s)	**[Enabled]**	Enable or disable SATA Device.
SATA Mode Selection	**[AHCI]**	
SATA Controller Speed	**[Gen3]**	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit Esc: Exit

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SATA Controller Speed

Indicates the maximum speed the SATA controller can support.

The optional settings: Gen1, Gen2, Gen3.

4-7-5 USB Configuration

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

USB Configuration		Enables Legacy USB support AUTO option disables legacy support if no USB devices are connected. Disable option will keep USB devices available only for EFI applications.
USB Devices: 1 Keyboard, 2 Mice, 2 Hubs		
Legacy USB Support	**[Enabled]**	
USB3.0 Support	**[Enabled]**	
XHCI Hand-off	**[Enabled]**	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit Esc: Exit
EHCI Hand-off	**[Disabled]**	

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Legacy USB Support

Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. Disable option will keep USB devices available only for EFI applications.

USB3.0 Support

Use this item to turn on/off USB3.0 Controller support.

The optional settings are: Enabled, Disabled.

XHCI Hand-off

This is a workaround for OSes without XHCI handoff support.
The XHCI ownership change should be claimed by XHCI driver.
The optional settings are: Enabled, Disabled..

EHCI Hand-off

This is a workaround for OSes without EHCI handoff support.
The EHCI ownership change should be claimed by EHCI driver.
The optional settings are: Enabled, Disabled.

4-7-6 SMART Settings

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

Smart Settings		Run SMART Self Test on all HDDs during POST.
Smart Self Test	**[Disabled]**	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit Esc: Exit

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SMART Self Test

Run Smart Self Test on all HDDs during POST.
The optional settings are: Disabled, Enabled.

4-7-7 F71869 Super IO Configuration

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

F71869 Super IO Configuration		Set Parameters of Serial Port 1(COMA)
F71869 Super IO Chip	F71869	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit Esc: Exit
►Serial Port 1 Configuration		
►Serial Port 2 Configuration		
Power Failure	**[Keep last state]**	

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Serial Port 1 Configuration

Please refer section 4-7-7-1

Serial Port 2 Configuration

Please refer section 4-7-7-1

Power Failure

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

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

[Bypass mode] Restores the system to the bypass mode.

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

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

4-7-7-1 Serial Port 1 Configuration

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

Serial Port 1 Configuration		Enable or Disable Serial Port (COM)
Serial Port	**[Enabled]**	
Device Settings	IO=3F8h; IRQ=4;	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit Esc: Exit
Change Settings	**[AUTO]**	
COM1 422/485 control flow	**[Disabled]**	

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Serial Port

Use this item to enable or disable serial port (COM).

The optional settings are: Enabled, Disabled.

Device Settings

Serial Port 1 IO=3F8h; IRQ=4;

Change Settings

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

The optional settings are:

AUTO

IO=3F8h; IRQ=4;

IO=3F8h; IRQ=3,4,5,6,7,10,11,12;

IO=2F8h; IRQ=3,4,5,6,7,10,11,12;

IO=3E8h; IRQ=3,4,5,6,7,10,11,12;

IO=2E8h; IRQ=3,4,5,6,7,10,11,12;

COM1 422/485 control flow

Use this item to enable or disable serial port Auto flow (COM).

The optional settings are: Enabled, Disabled.

4-7-7-2 Serial Port 2 Configuration

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

Serial Port 2 Configuration		Enable or Disable Serial Port (COM)
Serial Port	**[Enabled]**	
Device Settings	IO=2F8h; IRQ=3;	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit Esc: Exit
Change Settings	**[AUTO]**	
COM2 422/485 control flow	**[Disabled]**	

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Serial Port

Use this item to enable or disable serial port (COM).

The optional settings are: Enabled, Disabled.

Device Settings

Serial Port 2 IO=2F8h; IRQ=3;

Change Settings

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

The optional settings are:

AUTO

IO=2F8h; IRQ=3;

IO=3F8h; IRQ=3,4,5,6,7,10,11,12;

IO=2F8h; IRQ=3,4,5,6,7,10,11,12;

IO=3E8h; IRQ=3,4,5,6,7,10,11,12;

IO=2E8h; IRQ=3,4,5,6,7,10,11,12;

COM2 422/485 control flow

Use this item to enable or disable serial port Auto flow (COM).

The optional settings are: Enabled, Disabled.

4-7-8 F17869 H/W Monitor

F17869 H/W Monitor

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.

4-7-9 Serial Port Console Redirection

Main Advanced Chipset Boot Security Save & Exit

Console Redirection	**[Disabled]**	Console Redirection Enable or Disable.
►Console Redirection Settings		→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit Esc: Exit

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Console Redirection

Use this item to enable or disable Console Redirection.

The optional settings are: Enabled, Disabled.

4-7-10 Network Stack

Main Advanced Chipset Boot Security Save & Exit

Network stack	**[Disabled Link]**	Enable/Disable UEFI network stack.
		→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit Esc: Exit

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Network Stack

Enable/Disable UEFI network stack.

The optional settings are: Disable Link, Enable.

4-8 Chipset

Main Advanced Chipset Boot Security Save & Exit

►PCH-IO Configuration ►System Agent (SA) Configuration	PCH Parameters →←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit Esc: Exit

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PCH-IO Configuration

Please refer section 4-8-1

System Agent (SA) Configuration

Please refer section 4-8-2

4-8-1 PCH-IO Configuration

Main Advanced Chipset Boot Security Save & Exit

Intel PCH SKU Name	HM76	PCI Express Configuration settings
Intel PCH Rev ID	04/C1	
►PCI Express Configuration		→←: Select Screen
►USB Configuration		↑↓: Select Item
►PCH Azalia Configuration		Enter: Select
		+/-: Change Opt.
Wake on LAN	**[Disabled]**	F1: General Help
		F2: Previous Values
		F3: Optimized Defaults
		F4: Save & Exit
		Esc: Exit

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PCI Express Configuration

Please refer section 4-8-1-1

USB Configuration

Please refer section 4-8-1-2

PCH Azalia Configuration

Please refer section 4-8-1-3

Wake on LAN

Use this item to enable or disable integrated LAN to wake the system.

4-8-1-1 PCI Express Configuration

Main Advanced Chipset Boot Security Save & Exit

PCI Express Configuration	PCI Express Configuration settings
►Mini PCIe 1 ►Mini PCIe 2	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit Esc: Exit

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Mini PCIe 1

Please refer section 4-8-1-1-1

Mini PCIe 2

Please refer section 4-8-1-1-1

4-8-1-1-1 Mini PCIe 1/2

Main Advanced Chipset Boot Security Save & Exit

PCI Express Root Port 3/4	**[Enabled]**	Enable or disable PCI Express Unsupported Request Reporting.
PCIe Speed	**[Gen1]**	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit Esc: Exit

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PCI Express Root Port 3/4

Control the PCI Express Root Port.

The optional settings are: Enabled, Disabled.

PCIe Speed

Select PCI Express port speed.

The optional settings are: Auto, Gen1, Gen2.

4-8-1-2 USB Configuration

Main Advanced Chipset Boot Security Save & Exit

USB Configuration		Enable or disable XHCI Pre-Boot Driver support.
XHCI Pre-Boot Driver	**[Enabled]**	
xHCI Mode	**[Disabled]**	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit Esc: Exit
EHCI1	**[Enabled]**	
EHCI2	**[Enabled]**	
USB Ports Per-Port Disable Control	[**Disabled]**	

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XHCI Pre-Boot Driver

Use this item to enable or disable XHCI Pre-Boot Driver Support.

xHCI Mode

Mode of operation of xHCI controller.

The optional settings are: SamrtAuto, Auto, Enabled, Disabled.

Please refer section 4-8-1-2-1

EHCI1/ EHCI2

Use this item to enable or disable USB EHCI (USB 2.0) support.

One EHCI controller must always be enabled.

The optional settings are: Enabled, Disabled.

USB Port Pre-Port Disable Control

Use this item to control each of the USB ports (0~13) disabling.

The optional settings are: Disabled, Enabled.

4-8-1-2-1 xHCI Mode

Main Advanced Chipset Boot Security Save & Exit

USB Configuration		Enable or disable XHCI Pre-Boot Driver support.
XHCI Pre-Boot Driver	**[Enabled]**	
xHCI Mode	**[Smart Auto]**	
HS Port #1 Switchable	**[Enabled]**	
HS Port #2 Switchable	**[Enabled]**	
HS Port #3 Switchable	**[Enabled]**	
HS Port #4 Switchable	**[Enabled]**	
xHCI Streams	**[Enabled]**	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit Esc: Exit
EHCI1	**[Enabled]**	
EHCI2	**[Enabled]**	
USB Ports Per-Port Disable Control	**[Disabled]**	

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HS Port #1 Switchable

HS Port #2 Switchable

HS Port #3 Switchable

HS Port #4 Switchable

Always for HS port switching between xHCI and EHCI. If disabled, port is routed to EHCI.
If HS port is routed to xHCI, the corresponding SS port is enabled.
The optional settings are: Disabled, Enabled.

xHCI Streams

Use this item to enable or disable xHCI Maximum Primary Stream Array Size.
The optional settings are: Disabled, Enabled.

4-8-1-3 PCH Azalia Configuration

Main Advanced Chipset Boot Security Save & Exit

PCH Azalia Congiguration		Control Detection of the Azalia device. Disabled = Azalia will be unconditionally disabled Enabled = Azalia will be unconditionally Enabled Auto = Azalia will be enabled if present, disabled otherwise.
Azalia	**[Auto]**	
Azalia Docking Support	**[Disabled]**	
		→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit Esc: Exit

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Azalia

Use this item to enable, disable or auto control detection of the Azalia device.

Azalia Dcoking Support

Use this item to enable or disable Audio Controller of Azalia Docking.

4-8-2 System Agent (SA) Configuration

Main Advanced Chipset Boot Security Save & Exit

System Agent Bridge Name	IvyBridge	Config Graphics Settings.
System Agent RC Version	1.2.0.0	
►Graphics Configuration		→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit Esc: Exit

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Graphics Configuration

Please refer section 4-8-2-1

4-8-2-1 Graphics Configuration

Main Advanced Chipset Boot Security Save & Exit

Graphics Configuration		Graphics turbo IMON current values supported (14-31)
IGFX VBIOS Version	2170	
IGfx Frequency	350 MHz	
Graphics Turbo IMON Current	31	
Aperture Size	**[256MB]**	→←: Select Screen
DVMT Pre-Allocated	**[64M]**	↑↓: Select Item
DVMT Total Gfx Mem	**[256M]**	Enter: Select
►LCD Control		+/-: Change Opt.
		F1: General Help
		F2: Previous Values
		F3: Optimized Defaults
		F4: Save & Exit
		Esc: Exit

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Graphics Turbo IMON Current

Graphics turbo IMON current values supported (14-31)

Aperture Size

The optional settings are: 128MB,256MB,512MB

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: 32/64/96/128/160/192/224/256/288/320/352/384/416/448/480/512/1024M

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, MAX.

LCD Control

Please refer section 4-8-2-1-1

4-8-2-1-1 LCD Control

Main Advanced Chipset Boot Security Save & Exit

Graphics Configuration		Select the Video Device which will be activated during POST. This has no effect if external graphics present. Secondary boot display selection will appear based on your selection. VGA modes will be supported only on primary display
Primary IGFX Boot Display	**[CRT]**	
Secondary IGFX Boot Display	**[LVDS]**	
LCD Panel Type	**[1024x768 LVDS1]**	
Panel Color Depth	**[18 Bit]**	
		→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit Esc: Exit

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Primary IGFX Boot Display

Select the Video Device which will be activated during POST. This has no effect if external graphics present. Secondary boot display selection will appear based on your selection. VGA modes will be supported only on primary display.

The optional settings are: VBIOS Default, CRT, LVDS.

Secondary IGFX Boot Display

The optional settings are: Disabled, CRT , LVDS.

LCD Panel Type

This item allows you to select the panel resolution

1. VBIOS Default
2. 1024 X 600 LVDS
3. 800 X 600 LVDS
4. 1024 X 768 LVDS1
5. 1280 X 1024 LVDS
6. 1440 X 1050 (RB) LVDS1
7. 1440 X 1050 LVDS2
8. 1600 X 1200 LVDS
9. 1366 X 768 LVDS
10. 1680 X 1050 LVDS
11. 1920 X 1200 LVDS
12. 1440 X 900 LVDS
13. 1600 X 900 LVDS
14. 1024 X 768 LVDS2
15. 1280 X 800 LVDS
16. 1920 X 1080 LVDS
17. 2048 X 1536 LVDS

Panel Color Depth

Use this item to select the LFP Panel Color Depth 18Bit or 24Bit.

4-9 Boot

Main Advanced Chipset Boot Security Save & Exit

Boot Configuration		Select the keyboard NumLock state.
Bootup NumLock State	**[On]**	
Quiet Boot	**[Enabled]**	→←: Select Screen
CSM16 Module Version	07.69	↑↓: Select Item
GateA20 Active	**[Upon Request]**	Enter: Select
		+/-: Change Opt.
Boot Option Priorities		F1: General Help
		F2: Previous Values
►CSM parameters		F3: Optimized Defaults
		F4: Save & Exit
		Esc: Exit

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Bootup NumLock State

Use this item to select keyboard NumLock State.

The optional settings are: On, Off.

Quiet Boot

The optional settings are: Enabled, Disabled.

Gate A20 Active

UPON REQUEST- GA20 can be disabled using BIOS services.

ALWAYS- do not allow disabling GA20.

CSM parameters

Please refer section 4-9-1

4-9-1 CSM parameters

Main Advanced Chipset Boot Security Save & Exit

Boot option filter	**[Legacy only]**	This option controls what devices system can boot to
Launch PXE OpROM policy	**[Do not launch]**	
		→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit Esc: Exit

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Boot option filter

This option controls what devices system can boot to.

The optional settings are: UEFI and Legacy, legacy only, UEFI only.

Launch PXE OpROM policy

This option controls the execution of UEFI and Legacy PXE OpROM.

The optional settings are: Do not launch, UEFI only, Legacy only.

4-10 Security

Main Advanced Chipset Boot Security Save & Exit

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

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Administrator Password & User Password

To set up an administrator password:

1. Select Administrator 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 20 characters.
3. Hit [Enter] key to submit.

4-11 Save & Exit

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

Save Changes and Reset Restore Defaults Boot Override	Reset the system after saving the changes. →←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit Esc: Exit

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Save Changes and Reset

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

Restore Defaults

Use this item to restore /load default values for all the setup options.

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.

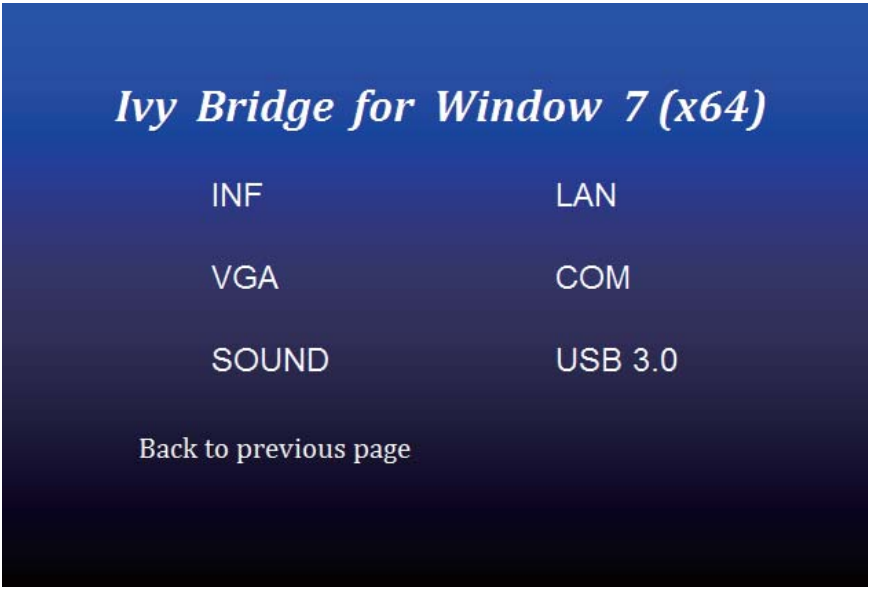
SYSTEM INSTALL Supports Windows XP/Windows 7/Windows 8/8.1

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



1. INF install Intel Ivy Bridge chipset driver
2. VGA install onboard VGA driver
3. SOUND install VIA HD Audio Codec driver
4. LAN to the LAN driver Readme file
5. COM to the COM driver Readme file
6. USB 3.0 install Intel USB 3.0 extensible Host Controller driver

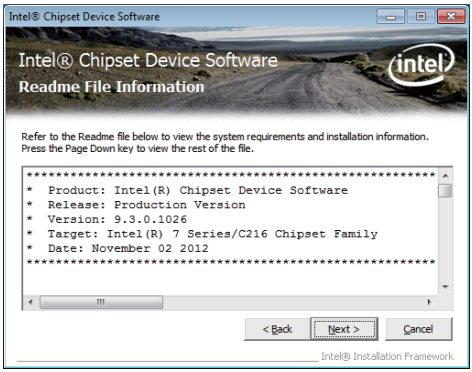
Each selection is illustrated below:

5-1 INF Install Intel Ivy Bridge Chipset Driver

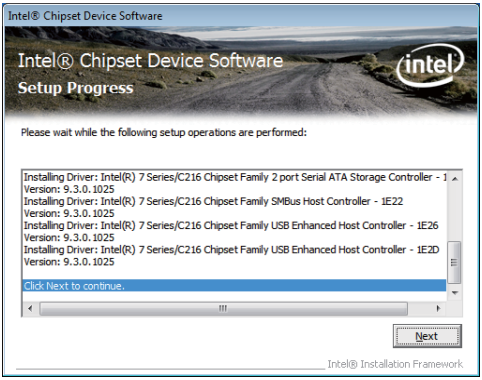
1. At the "AUTOMATIC DRIVER INSTALLATION menu" screen, click "INF".

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

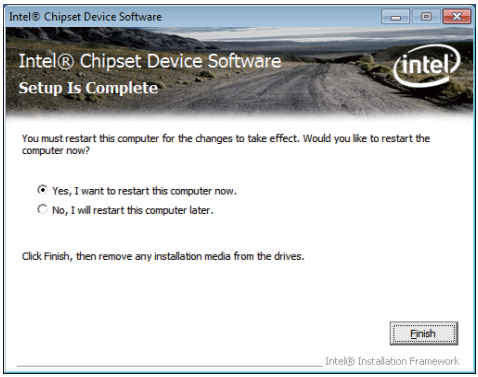
3. At the "License Agreement" screen,click "Yes"



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

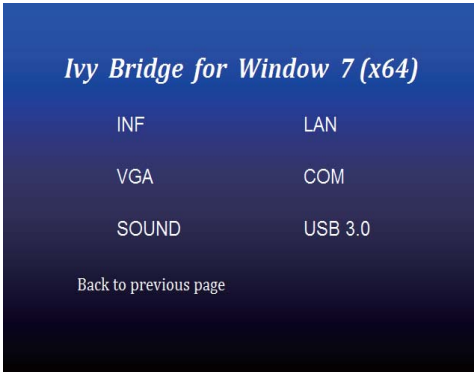
For Windows XP 64/32-bit, Windows 7 64/32-bit and windows 8 64/32-bit

X:\driver\INTEL\IVY_SAN\inf\infinst_autol.exe

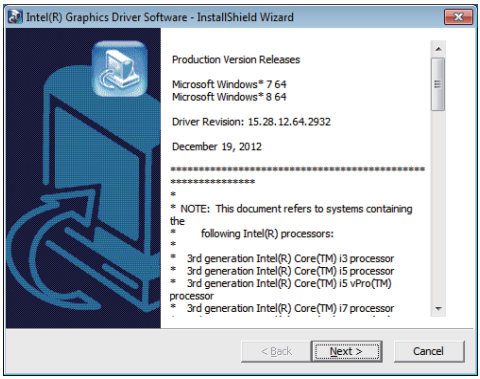
For Windows 8.1 64/32-bit

X:\driver\INTEL\IVY_SAN\inf\WIN8.1\Setup.exe

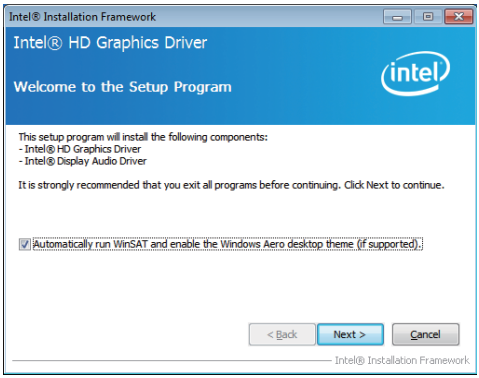
5-2 VGA Install Intel Ivy Bridge VGA Driver



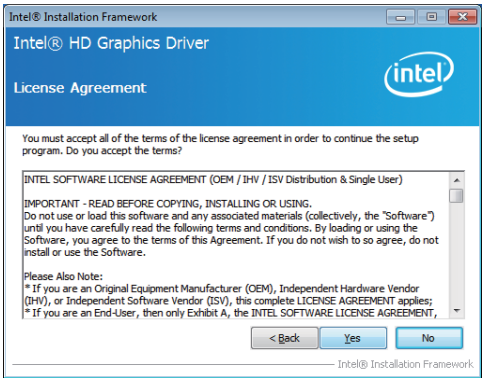
1. At the"AUTOMATIC DRIVER INSTALLATION menu"screen, click "VGA".



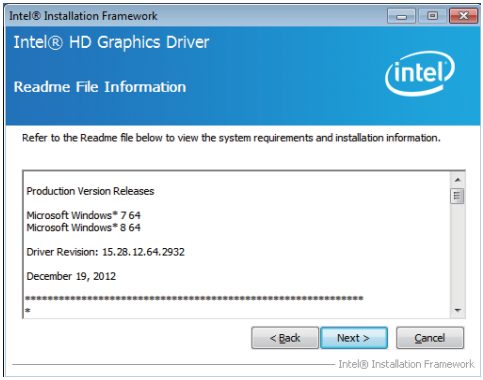
2. At the "Intel® HD Graphics Driver" screen, Click "Next".



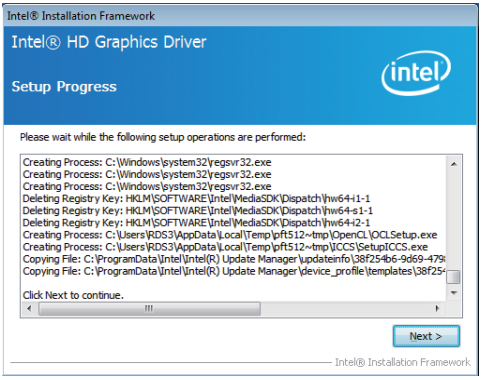
3. At the "Welcome to the Setup Program" screen, Click "Next".



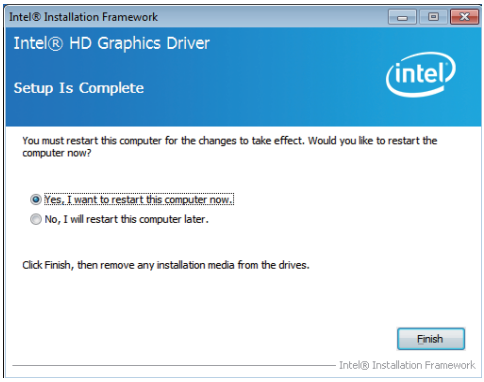
4. At the "License Agreement" screen, Click "Yes".



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



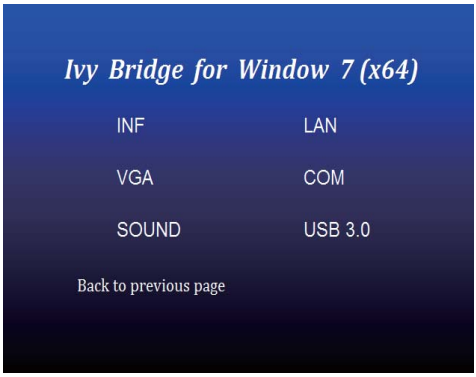
6. At the "Setup Progress" screen, Click "Next".



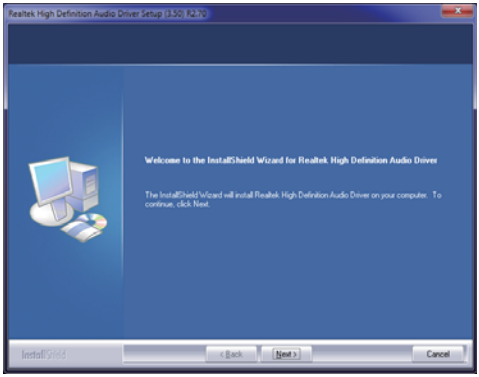
7. Click "Finish" to restart computer

NOTE: SYSTEM INSTALL will auto detect file path
For Windows XP 64bit
X:\driver\INTEL\IVY_SAN\vga\winxp64\winxp64_145110.exe
For Windows XP 32bit
X:\driver\INTEL\IVY_SAN\vga\winxp\winxp_145110.exe
For Windows 7 64bit and Windows 8 64bit
X:\driver\INTEL\IVY_SAN\vga\ WIN_7_8_64\ win64_152812.exe
For Windows 7 32bit and Windows 8 32bit
X:\driver\INTEL\IVY_SAN\vga\ WIN_7_8_32\ win32_152812.exe
For Windows 8.1 64bit
X:\driver\INTEL\IVY_SAN\vga\WIN8.1\IVY\x64\ Setup.exe
For Windows 8.1 32bit
X:\driver\INTEL\IVY_SAN\vga\WIN8.1\IVY\x86\Setup.exe

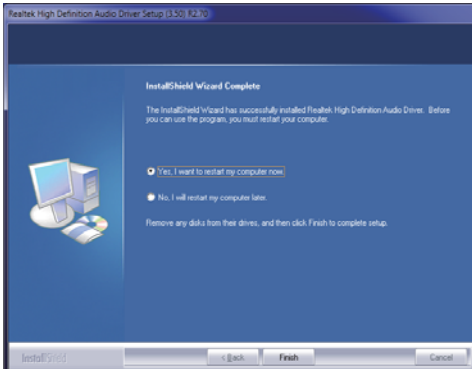
5-3 SOUND Install Realtek High Definition Audio Driver



1. At the "AUTOMATIC DRIVER INSTALLATION menu" screen, Click "SOUND".



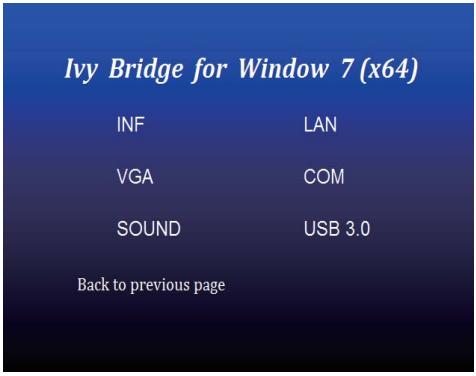
2. Click "Next".



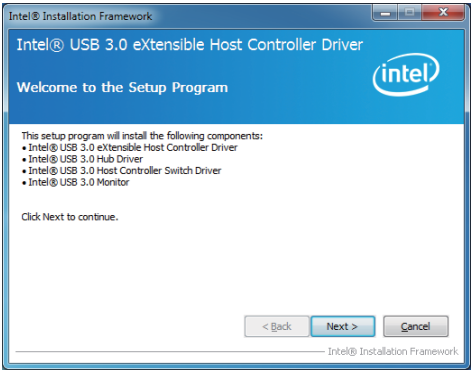
3. Click "Finish" to restart computer

NOTE: SYSTEM INSTALL will auto detect file path
For Windows XP 32/64 bit
X:\driver\INTEL\IVY_SAN\SOUND\WDM_R270.exe
For Windows 7 32/64 bit and Windows 8 32/64 bit
X:\driver\INTEL\IVY_SAN\SOUND\Vista_Win7_Win8_R270.exe
For Windows 8.1 32bit
X:\driver\INTEL\IVY_SAN\SOUND\Win8.1\32bit_Win7_Win8_Win81_R273.exe
For Windows 8.1 64bit
X:\driver\INTEL\IVY_SAN\SOUND\Win8.1\64bit_Win7_Win8_Win81_R273.exe

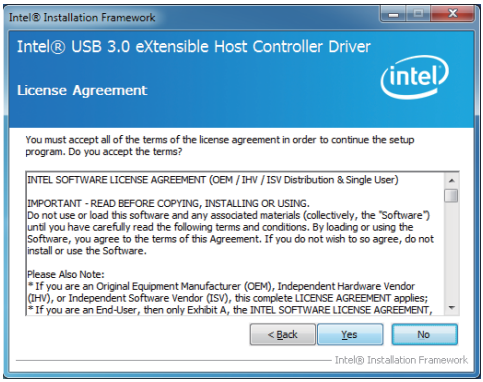
5-4 USB 3.0 Install Intel USB 3.0 extensible Host Controller Driver



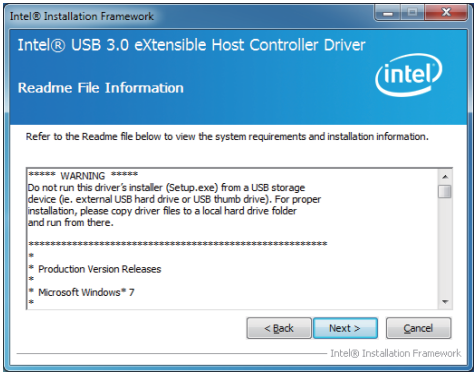
1. At the"AUTOMATIC DRIVER INSTALLATION menu" screen, Click "USB 3.0



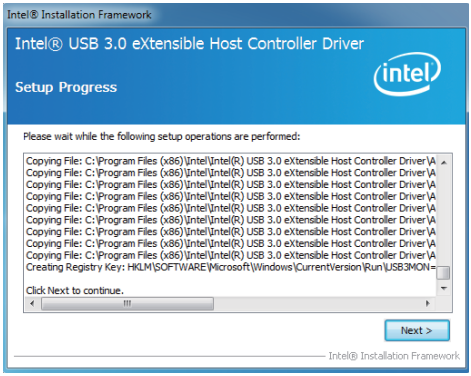
2. At the "Intel® USB 3.0 extensible Host Controller Driver" screen, Click" Next.



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



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



Setup Progress

Please wait while the following setup operations are performed:

```
Copying File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Controller Driver\A
Copying File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Controller Driver\A
Copying File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Controller Driver\A
Copying File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Controller Driver\A
Copying File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Controller Driver\A
Copying File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Controller Driver\A
Copying File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Controller Driver\A
Copying File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Controller Driver\A
Copying File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Controller Driver\A
Creating Registry Key: HKLM\SOFTWARE\Microsoft\Windows\CurrentVersion\Run\USB3MON=

Click Next to continue.
```

5. Click "Next".

Setup Is Complete

You must restart this computer for the changes to take effect. Would you like to restart the computer now?

● Yes, I want to restart this computer now.

○ No, I will restart this computer later.

Click Finish, then remove any installation media from the drives.

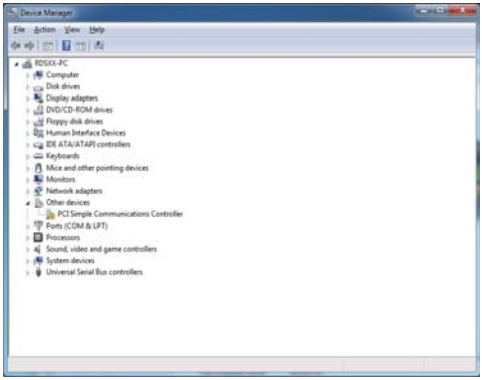
6. Click "Finish" to restart computer

NOTE: The path of the file

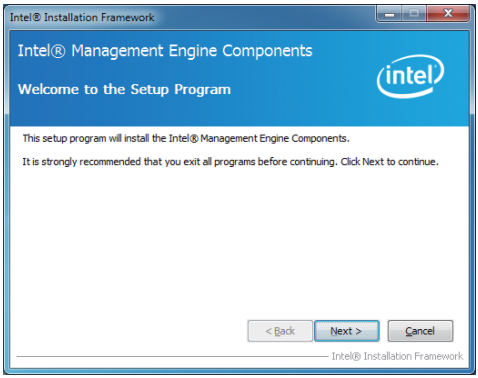
For Windows 7 32/64-bit

X:\driver\INTEL\IVY_SAN\USB3_0\INTEL\Setup.exe

5-5 ME Install Intel Management Engine Interface Driver



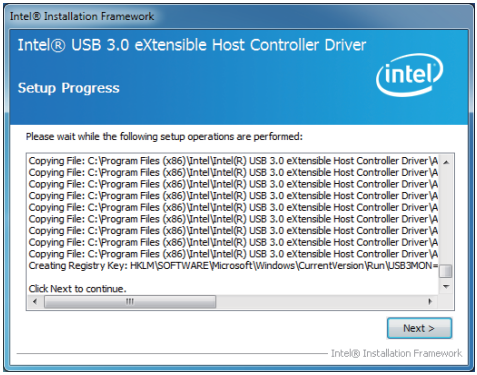
1. Plaese Check Device Manager
"PCI Simple Communications Controllers"



This setup program will install the Intel® Management Engine Components.

It is strongly recommended that you exit all programs before continuing. Click Next to continue.

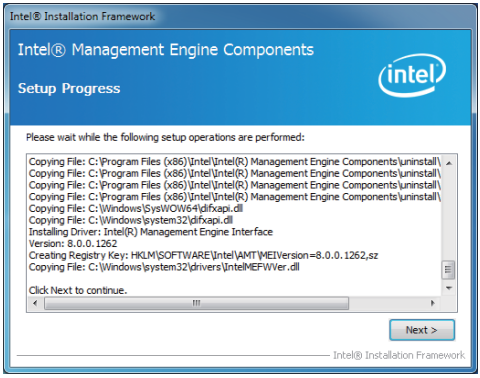
2. At the "Intel® Management Engine
Components" screen, Click" Next".



Please wait while the following setup operations are performed:

```
Copying File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Controller Driver\A
Copying File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Controller Driver\A
Copying File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Controller Driver\A
Copying File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Controller Driver\A
Copying File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Controller Driver\A
Copying File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Controller Driver\A
Copying File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Controller Driver\A
Copying File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Controller Driver\A
Copying File: C:\Program Files (x86)\Intel\Intel(R) USB 3.0 eXtensible Host Controller Driver\A
Creating Registry Key: HKLM\SOFTWARE\Microsoft\Windows\CurrentVersion\Run\USB3MON=

Click Next to continue.
```



Please wait while the following setup operations are performed:

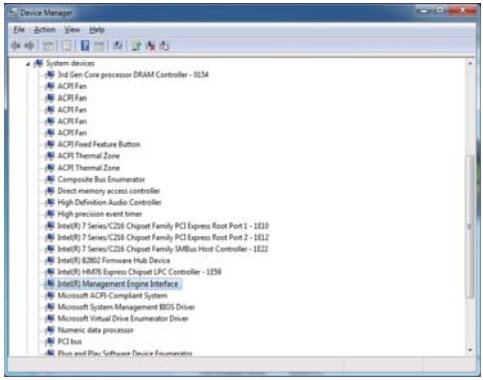
```
Copying File: C:\Program Files (x86)\Intel\Intel(R) Management Engine Components\uninstall\
Copying File: C:\Program Files (x86)\Intel\Intel(R) Management Engine Components\uninstall\
Copying File: C:\Program Files (x86)\Intel\Intel(R) Management Engine Components\uninstall\
Copying File: C:\Program Files (x86)\Intel\Intel(R) Management Engine Components\uninstall\
Copying File: C:\Windows\SysWOW64\difxapi.dll
Copying File: C:\Windows\system32\difxapi.dll
Installing Driver: Intel(R) Management Engine Interface
Version: 8.0.0.1262
Creating Registry Key: HKLM\SOFTWARE\Intel\AMT\MEIVersion=8.0.0.1262,sz
Copying File: C:\Windows\system32\drivers\IntelMEFWVer.dll

Click Next to continue.
```

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

4. Click "Next".

5. Click "Finish".

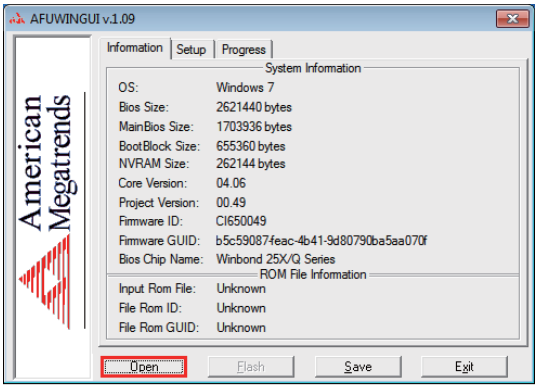


6. Plaese Check Device Manager
"PCI Simple Communications Controllers"

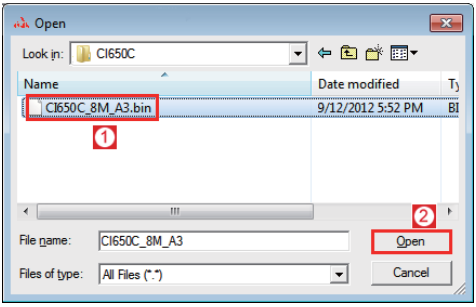
NOTE: The path of the file
For Windows XP 32/64 bit and Windows 7 32/64-bit
X:\driver\INTEL\ME TOOL\MEI-Only Installer\MEISetup.exe

5-6 How to update AMI BIOS

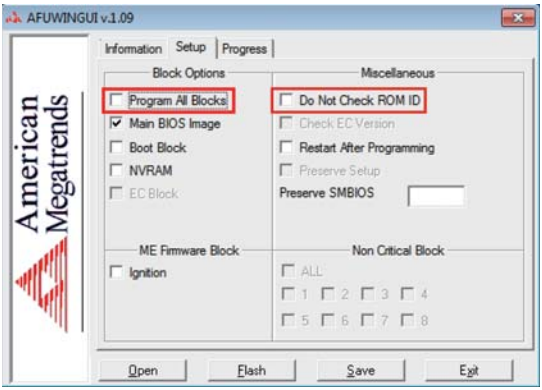
Step 1. To run afuwingui.exe then click "Open"



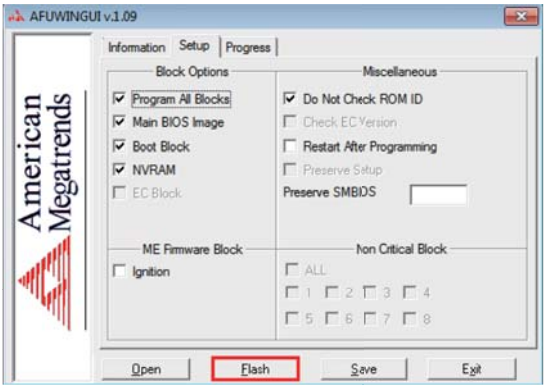
Step 2. Click the new version BIOS (download from the website)



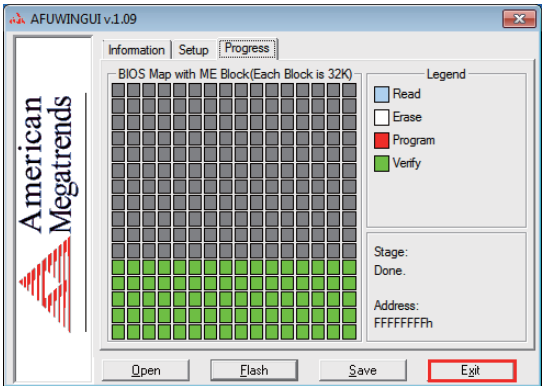
Step 3. Choose "ProgramAll Blocks" and "Do Not Check ROM ID"



Step 4. Click "Flash"



Step 5. Click "Exit" and restart computer.



Appendix A: Power Consumption Test

Condition

Item	Spec
CPU	Intel Ivy Bridge 1047UE 1.4 Ghz
SDRAM	DDR3 1333 / 2GB
Operating System	Windows 7 / SP1
Test Program	3D Mark Vantage
LVDS Panel	Auo 17"
HDD 3.5" SATA	Standard HDD
HDD 2.5" SATA	Slim Type HDD
mSATA	16GB

Test Result for reference only !

Hard Disk	Power off	Start up		Operation Maximum	Shut down Maximum	In Put Voltage
		Maximum	Stable			
Standard HDD	0.02A	3.7A	3.08A	4.25A	3.47A	12V
Slim Type HDD	0.02A	3.09A	2.72A	3.52A	2.95A	12V
mSATA	0.02A	2.9A	2.53A	3.55A	2.9A	12V

The power consumption depends on your device choice!

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)