2I382DW

Intel Bay Trail Quad Core / Dual Core CPU,
On Board DDR3L, 3 x Intel LAN / USB / VGA / COM

All-In-One

Intel Bay Trail-I D J1900, 2.0 GHz

VGA, PCIe mini card, M.2, 1 x Nano SIM

1 x RS232 / 422 / 485 (Phoenix isolated)

3 x GbE, 4 x USB, 1 x RS232 / 422 / 485 (DB9)

CAUTION

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.
DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS

NO. 2I382DW
Release date: Jun. 04. 2020

Contents

2I382DW

User Manual edition 0.1, Jun. 04. 2020

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.

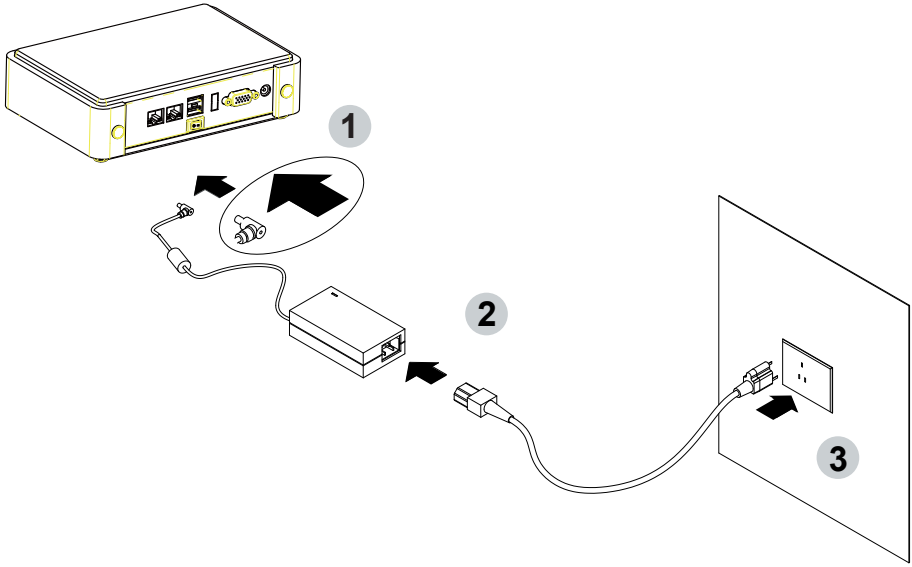
✱ Hardware Notice Guide

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 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-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.

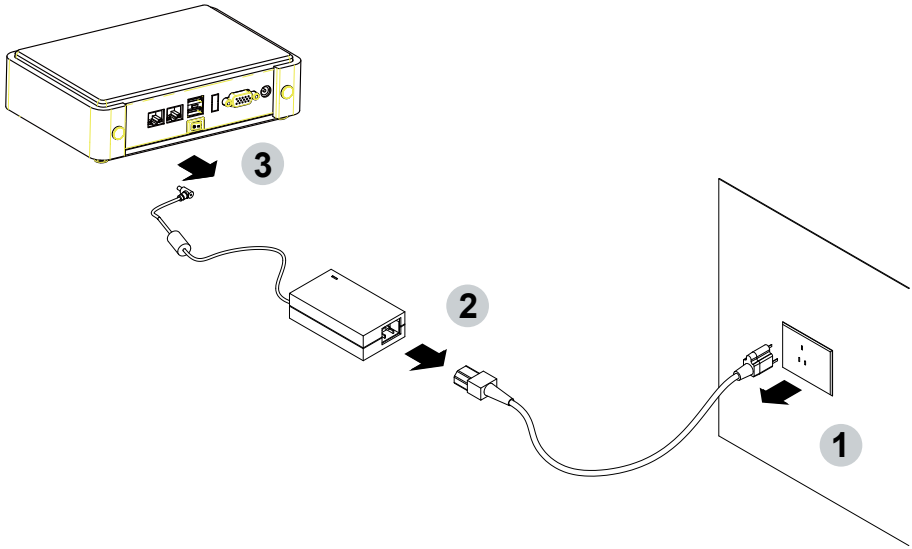
Remark 1:
Always insert / unplug the DC-in horizontally & directly to / from the motherboard. DO NOT twist, it is designed to fit snugly.
Moreover, erratic pull / push action might cause an unpredictable damage to the component & system unit.

Photo 1

Insert



Unplug



Chapter-1

General Information

The 2I382DW SBC with built-in 3 x Intel Giga LAN ports, 1 USB 3.0 & 3 USB 2.0 ports as an economic and flexible hardware platform for industrial communication solution. A reliable and efficient communication network which connects all the components of the factory to work together effectively plays an important role of success industrial automation.

LEX 2I382DW provides customers a robust, wide range power input and compact computing system with an industrial design and built-in I/O to handle diverse applications.

2I382DW is specially designed for advanced embedded VPN or firewall applications where the economical use of power is in high demand.

2I382DW supports with 3 Intel I211-AT (I210-IT) LAN chipset for PCIe x 1 V2.1 interface with 10 / 100 / 1000 Mbps 1 USB 3.0, 3 USB 2.0 and also offers two COM ports auto selected RS232 / 485 / 422 by BIOS setting, 1 is DB9 and 1 is phoenix connector.

2I382DW integrates 1 PCIe mini card for mSATA / PCIe / USB device and 1 M.2 (B key 2242) SATA interface for storage.

1-1 Major Feature

1. Intel Bay-Trail J1900 2.00GHz SOC (Quad core)
2. Intel Bay-Trail Integrated Graphics chipset, J1900 688 MHz to 854MHz render clock frequency
3. On board DDR3L SDRAM 2GB Memory, data transfer rate of 1333MT/s
4. Support 3 x 10 / 100 / 1000 Mbps Intel LAN ports
5. Support 2 x RS232 / 485 / 422 selected by BIOS, 1 x USB3.0 and 3 x USB 2.0
6. Support extended 1 x Mini PCIe card for mSATA / PCIe / USB device,
   1 x M.2 (B key 2242) SATA interface for storage
7. On board DC +12V ~ 36V
8. PCB Dimension: 102.35 x 81.25 mm
9. Support VGA display

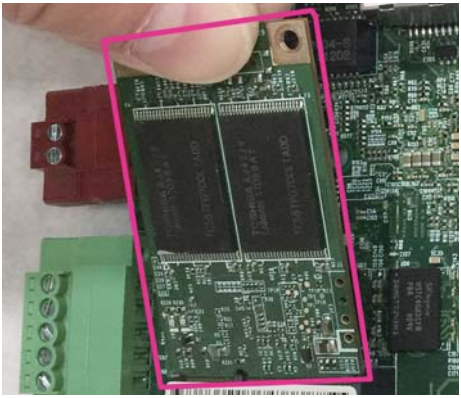
1-2 Specification

1. **SOC:** Intel Bay-Trail J1900 2.00GHz (Qaud core)
2. **Memory:** DDR3L SDRAM 2GB Memory, data transfer rate of 1333MT/s
3. **Graphics:** Intel Bay-Trail Integrated Graphics chipset, J1900 688 MHz to 854MHz render clock frequency
4. **I/O Chip:** F81801U I/O chipset for 2 ports RS232 / 485 / 422 auto selected
5. 3 Intel I210-IT LAN chipset or Intel I211-AT LAN chipset (Option) with 10 / 100 / 1000 Mbps for PCIe x 1 V2.1 interface
6. 1 type A USB 3.0 and 3 USB 2.0 connector onboard
7. **Expansion interface:** one full size PCIe Mini card for mSATA / PCIe / USB, 1 M.2 connector for B key 2242
8. Power button & power + HDD LED on board
9. **BIOS:** Insyde UEFI BIOS
10. **Dimension:** 102.35 x 81.25 mm
11. **Power:** On board DC +12V ~ 36V

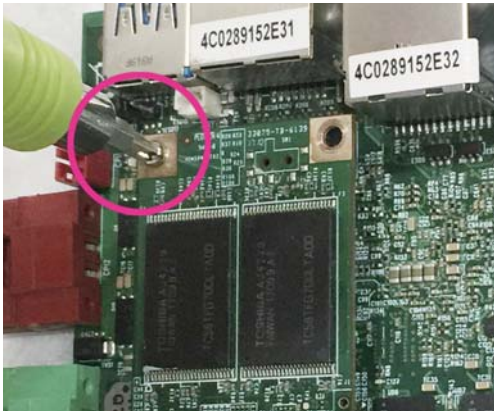
1-3 Installing the Mini PCI-e Card (Full Size)

1. Unscrew the screw on the board

2. Plug in the Mini Card in a 45 angle

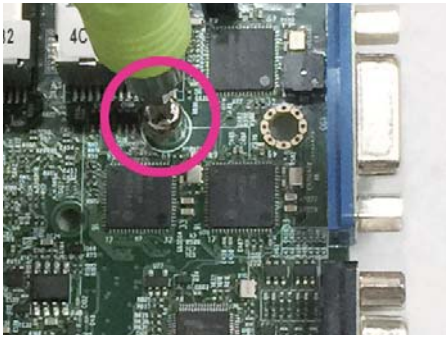


3. Gently push down the Mini Card and screw the screw back.



1-4 Directions for installing the M.2 B Key Mini Card

1. Unscrew the screw on the board

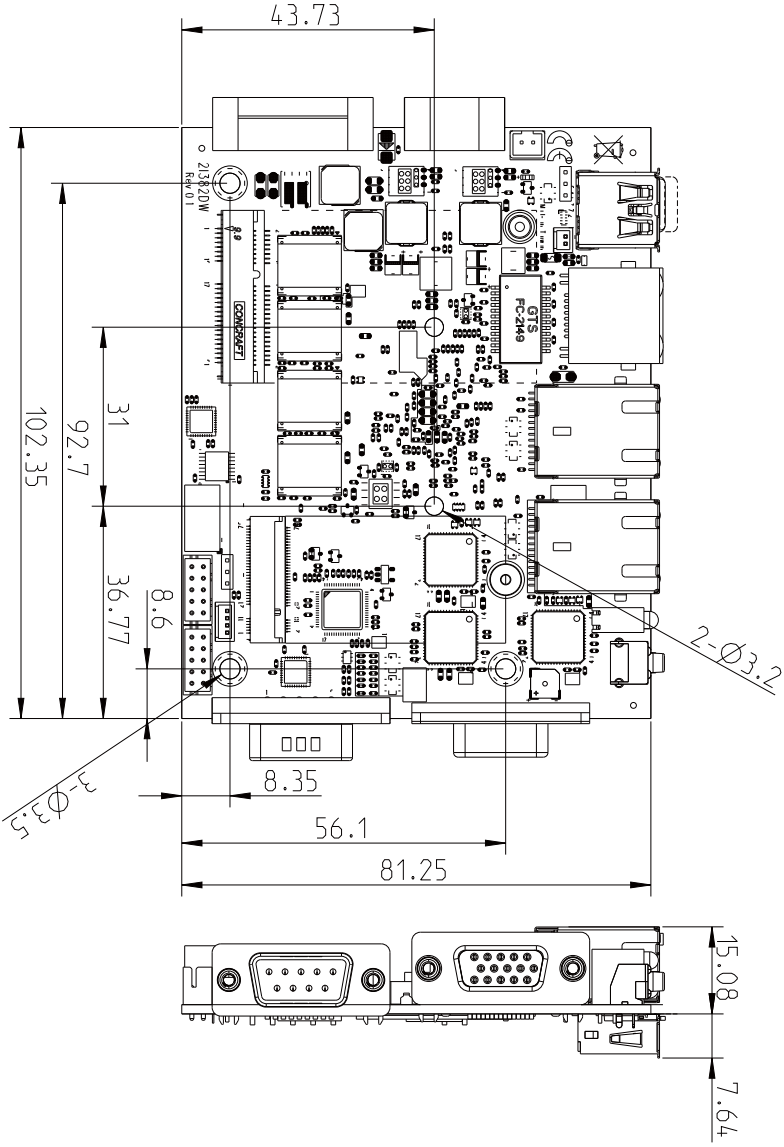


2. Plug in the Mini Card in a 45 angle

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

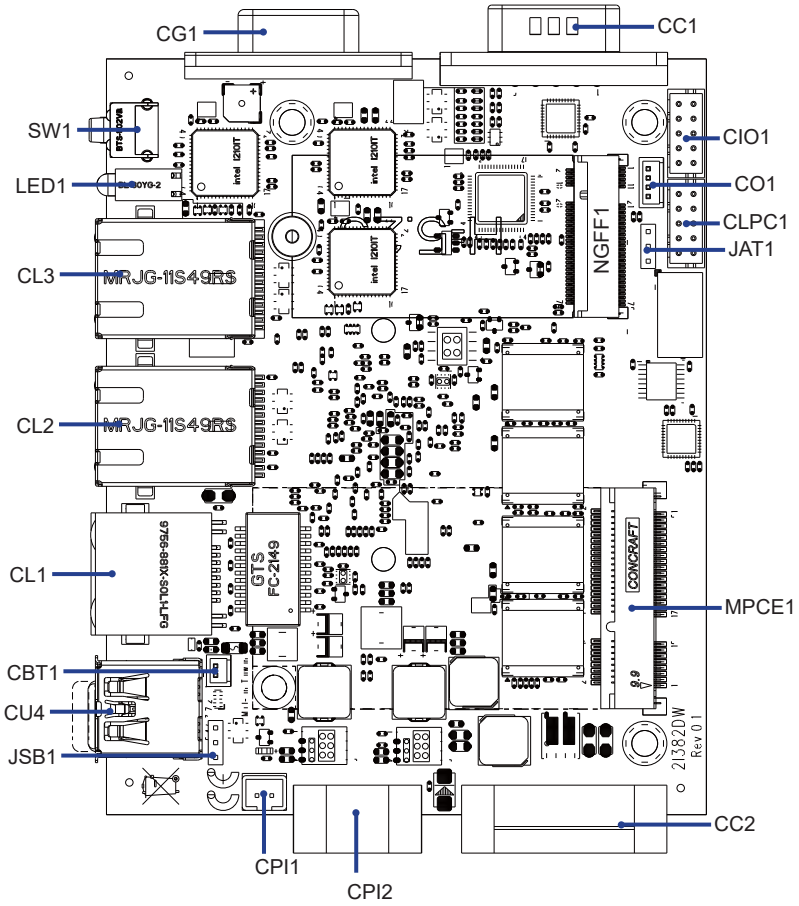
Chapter-2

2-1 Dimension-2I382DW



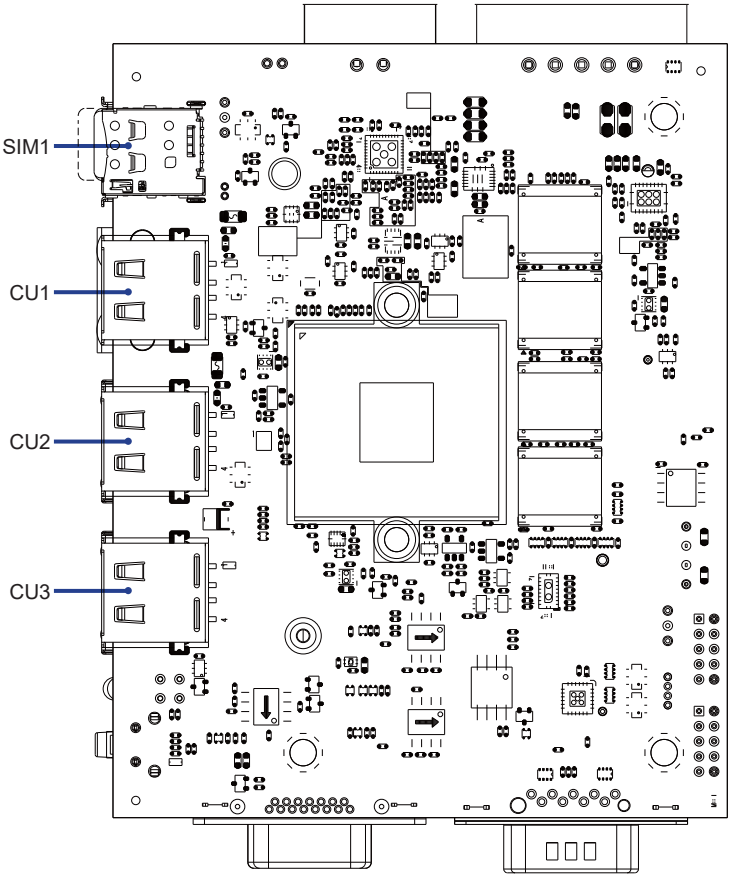
2-2 Layout-2I382DW-Connector and Jumper

TOP



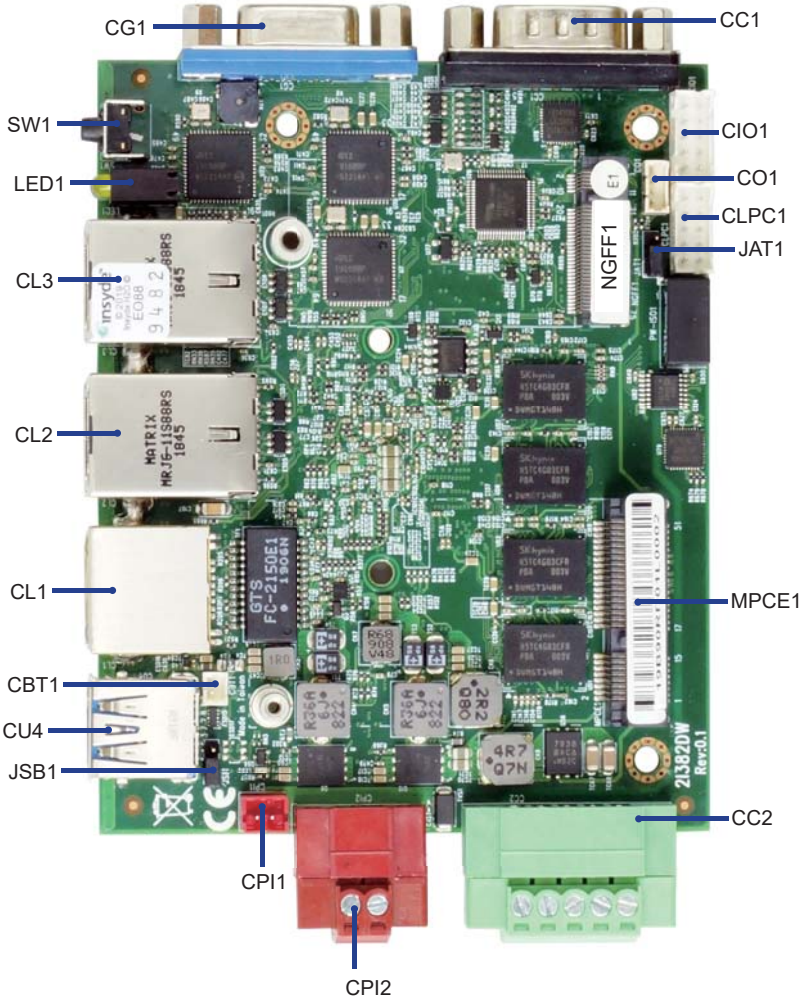
2-2-1 Layout-2I382DW-Connector and Jumper

BOT



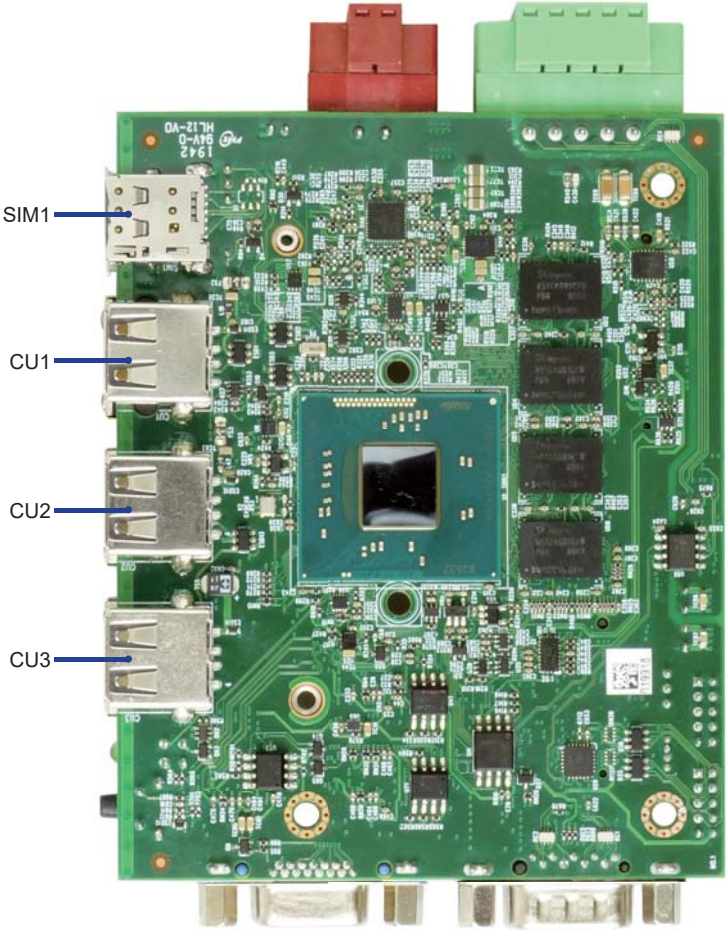
2-2-2 Diagram- 2I382DW

TOP



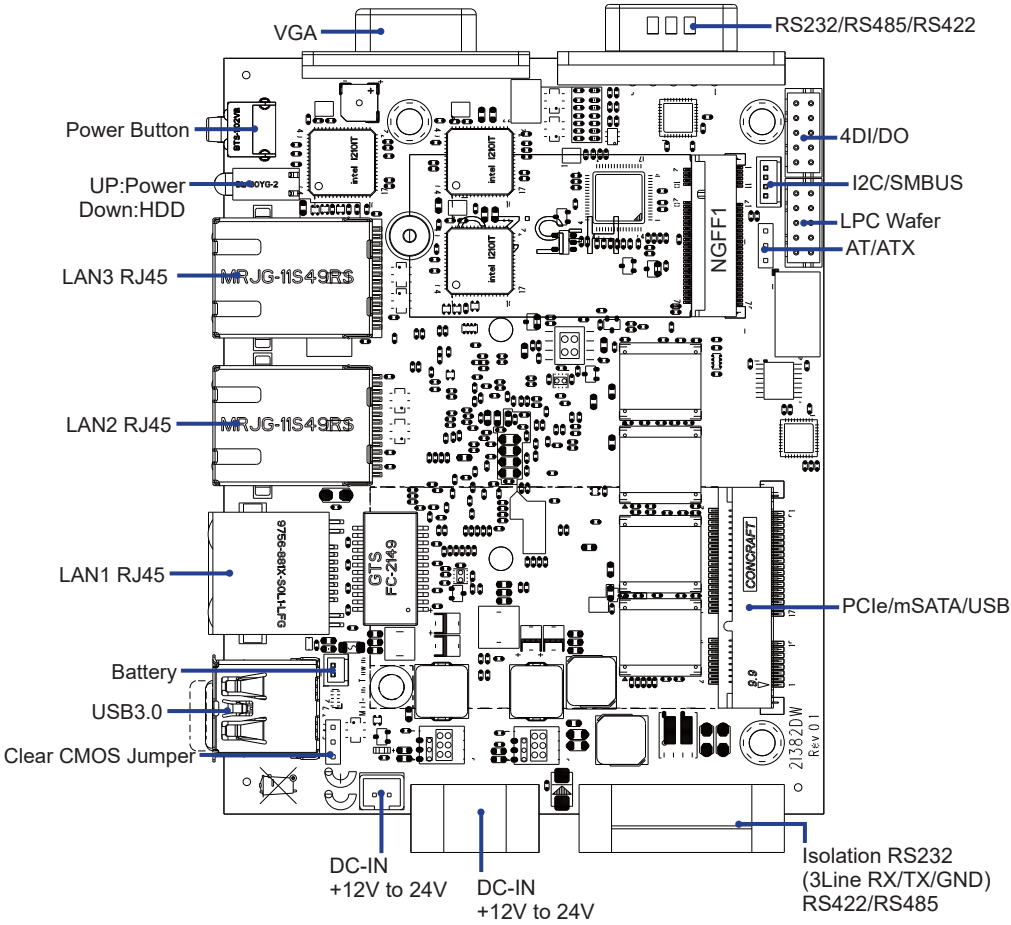
2-2-3 Diagram- 2I382DW

BOT



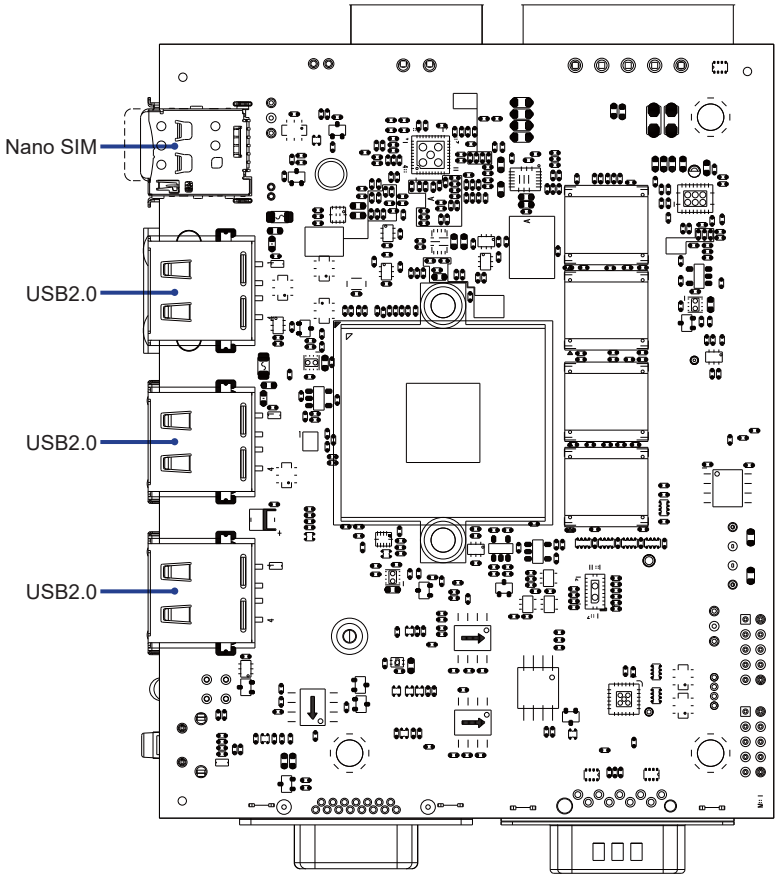
2-3 LAYOUT-2I382DW-FUNCTION MAP

TOP

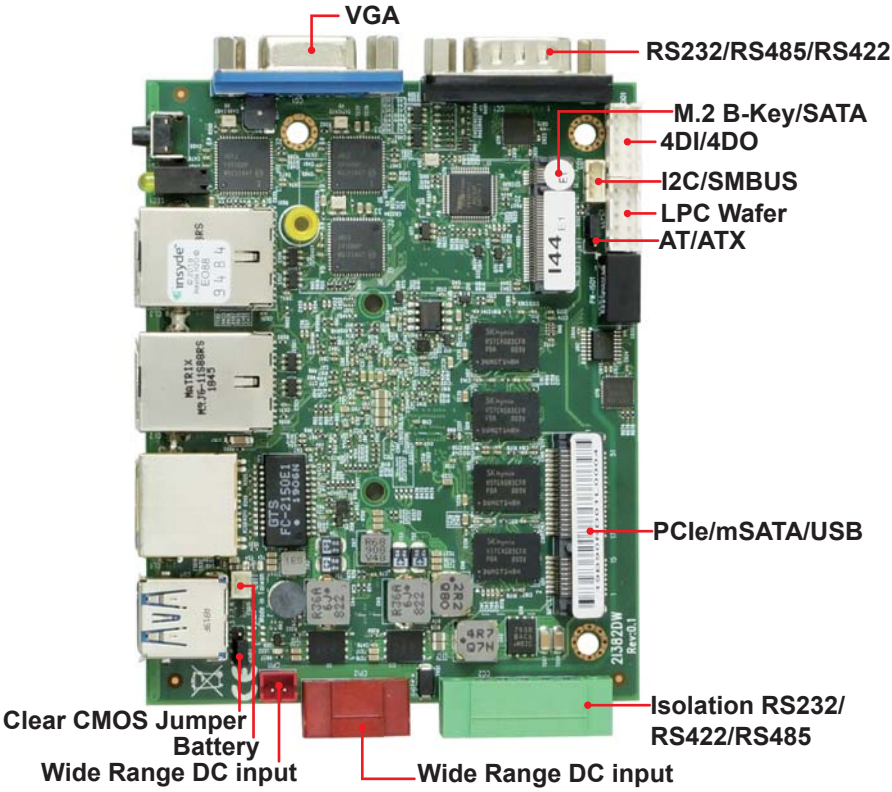


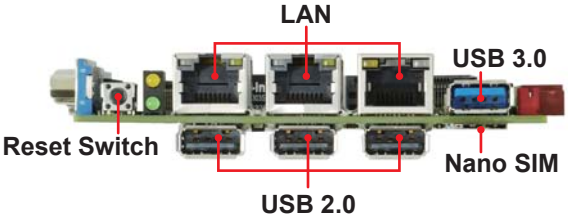
2-3-1 LAYOUT-2I382DW-FUNCTION MAP

BOT



2-3-2 Function MAP- 2I382DW





2-4 List of Jumpers

JSB1: CMOS DATA Clear

JAT1: AT / ATX Power type select

2-5 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.

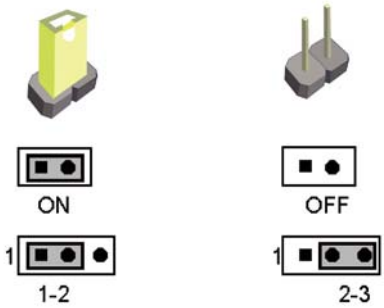


Figure 2.2

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 .

2-6 JSB1: CMOS DATA Clear

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. Make sure there is no AC & DC power connect to the system or MB.
3. Close pin 2-3 of JSB1 for a few seconds.
4. Return to default setting by close pin 1-2
5. Connect DC IN power cable back to DC IN Power connector

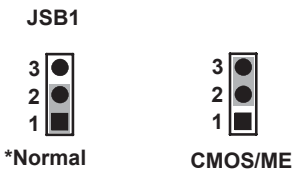
JSB1	DESCRIPTION
*1-2	Normal set
2-3	CMOS data clear

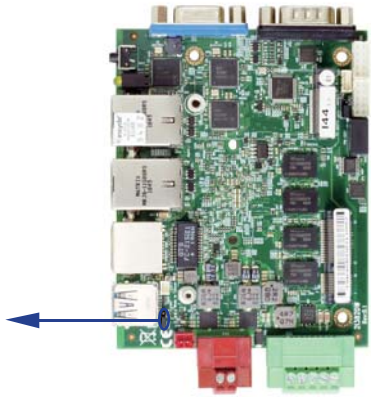
Note: Do not clear CMOS unless

1. Troubleshooting

2. Forget password

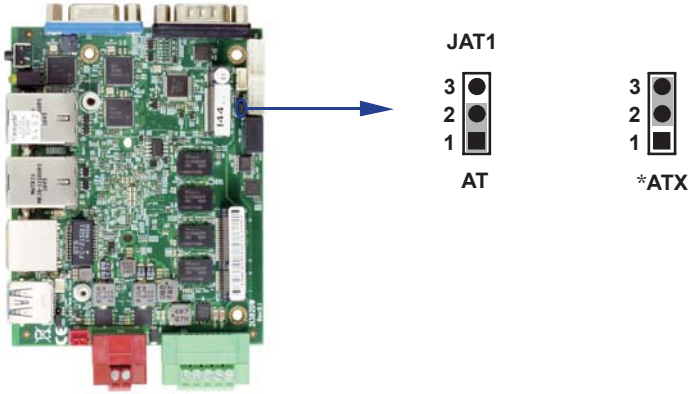
3. You fail over-clocking system





2-7 JAT1: AT / ATX Power type select

JAT1	DESCRIPTION
1-2	AT power mode
*2-3	ATX power mode



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.

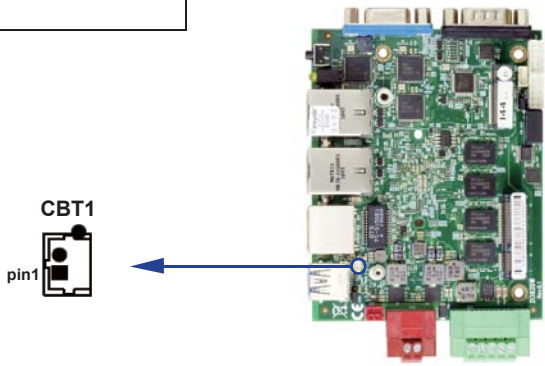
3-1 List of Connectors

CBT1:	Li 3V battery 2 pin (1.25mm) wafer
CPI1:	+12V power input 2 pin (2.0mm) wafer Red.
CPI2:	+12V power input TB Connector 2 pin (3.5mm) Red
CG1:	VGA D-SUB 15 pin connector
CC1:	COM1 D-SUB 9 pin connector
CC2:	COM2 TB Connector 5 pin (3.5mm)
CU1,CU2,CU3:	USB2.0 Type A Connector
CU4:	USB3.0 Type A Connector
CL1,CL2,CL3:	RJ45 LAN Connector
CL11:	LAN 2x4 pin (2.0mm) wafer (option)
CIO1:	DIO 2x5 pin (2.0mm) wafer
CO1:	SMBus 1x4 pin (1.25mm) wafer
CLPC1:	for LPC signal 2x5 pin wafer (2.0mm)
MPCE1:	Full size mini card port 1 sockets 52 pin
NGFF1:	PCIe M.2 B key slot 2242
SIM1:	Nano SIM card socket (option)

3-2 CMOS battery connector

• CBT1: 3V Battery 2 pin (1.25mm) wafer

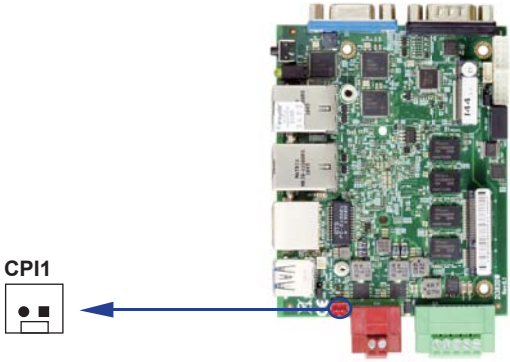
PIN NO.	DESCRIPTION
1	GND
2	VBAT



3-3 CPI1: DC Power input (2 pin 2.0mm Wafer) (Red)

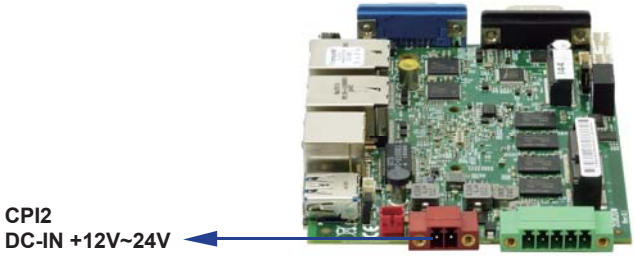
PIN NO.	DESCRIPTION
1	DC-IN (12V to 24V)
2	GND

Note: Very important check Dc-in Voltage



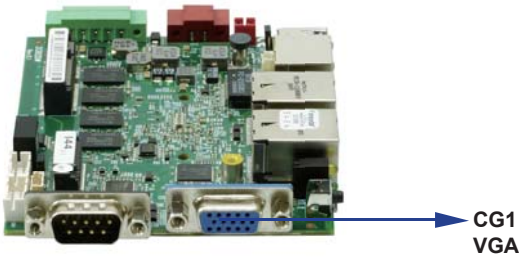
3-3-1 CPI2: DC Power input (TB 2 pin 3.5mm) (Red)

PIN NO.	DESCRIPTION
1	GND
2	DC-IN (12V to 24V)



3-4 CG1: VGA D-SUB 15 pin connector

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



3-5 COM port connector

• CC1: Default support RS232 Mode COM1 conector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DCD	6	DSR
2	RXD	7	RTS
3	TXD	8	CTS
4	DTR	9	RI
5	GND		

• CC1: RS485 Mode COM1 conector (D-SUB 9 pin)

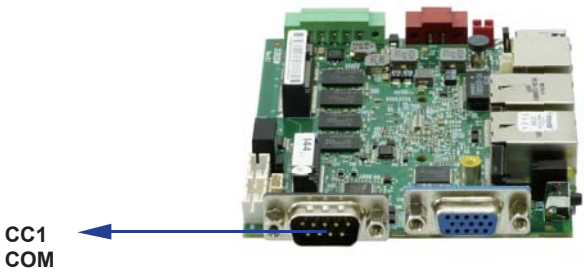
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	RS485 Data+	6	NC
2	RS485 Data-	7	NC
3	NC	8	NC
4	NC	9	NC
5	GND		

Note: 1. BIOS need setting to RS485 mode

• CC1: RS422 Mode COM1 conector (D-SUB 9 pin)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	RS422 TX-	6	NC
2	RS422 TX+	7	NC
3	RS422 RX+	8	NC
4	RS422 RX-	9	NC
5	GND		

Note: 1. BIOS need setting to RS422 mode



• CC2: Default support RS232 To Isolator RS232 TX / RX / GND TB 5 Pin conector

PIN NO.	DESCRIPTION
1	NC
2	ISO_RXD+
3	GND
4	ISO_TXD+
5	NC

• CC2: RS485 To Isolator RS485 TB 5 Pin conector

PIN NO.	DESCRIPTION
1	RS485_DATA-
2	RS485_DATA+
3	GND
4	NC
5	NC

Note: 1. BIOS need setting to RS485 mode

• CC2: RS422 To Isolator RS485 TB 5 Pin conector

PIN NO.	DESCRIPTION
1	RS422_TX-
2	RS422_TX+
3	GND
4	RS422_RX+
5	RS422_RX-

Note: 1. BIOS need setting to RS422 mode

CC2
Isolation RS232
(3Line RX / TX / GND)
RS422 / RS485

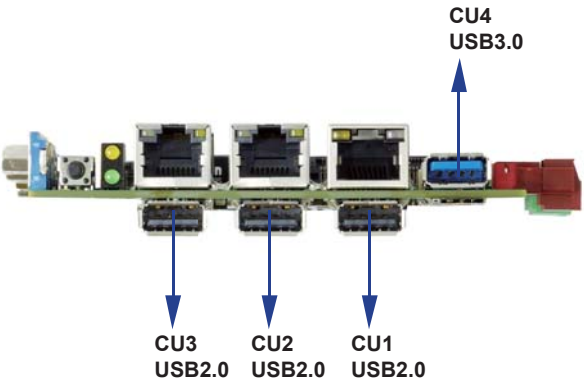
3-6 CU1 / CU2 / CU3: USB2.0 Type A Connector

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

3-7 CU4: USB3.0 / 2.0 Type A Connector (USB2.0 Option)

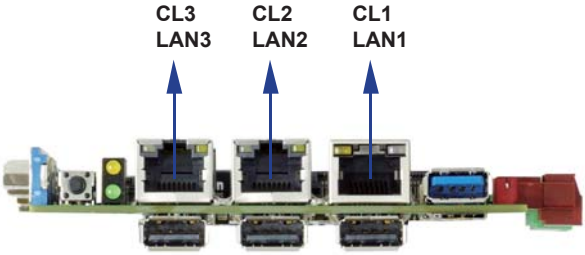
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
		1	USB3.0 TX+
1	+5V		
2	USB 2.0 D-	2	USB3.0 TX-
		3	GND
3	USB 2.0 D+	4	USB3.0 RX+
4	GND		
		5	USB3.0 RX-

Note: USB 2.0 share MPCE1.



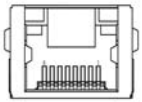
3-8 CL1 / CL2 / CL3: RJ45 LAN Connector

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

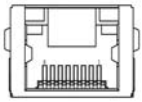


3-8-1 RJ45 LAN LED Behavior

- CL1 RJ45 LAN Connector---LED define Giga / 100MB Connector

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

- CL2 / CL3 RJ45 LAN Connector---LED define Giga / 100MB Connector

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

3-8-2 CL11 LAN signal out (2x4 pin 2.0 Wafer) (option)

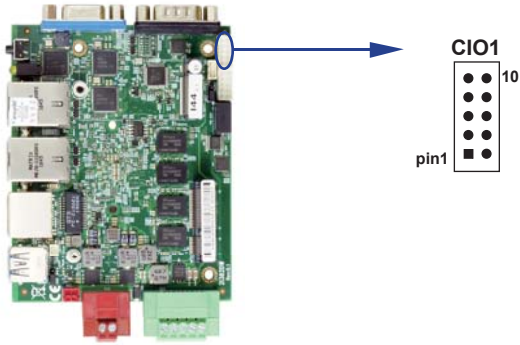
PIN NO.	Signal	PIN NO.	Signal
1	TR0-	5	TR1-
2	TR0+	6	TR2+
3	TR2+	7	TR3-
4	TR1+	8	TR3+

3-9 Digital Input / Output / Watch Dog Time

- **CIO1 DIO 0—3 (2x5 pin 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 I2C bus address 0x9c
4. Mating connector: JST B10B-PHDSS or compatible
5. Cable housing: JST PHDR-10VS or compatible



- **For F75111N I^{2}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) VOL=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 CIO Utility

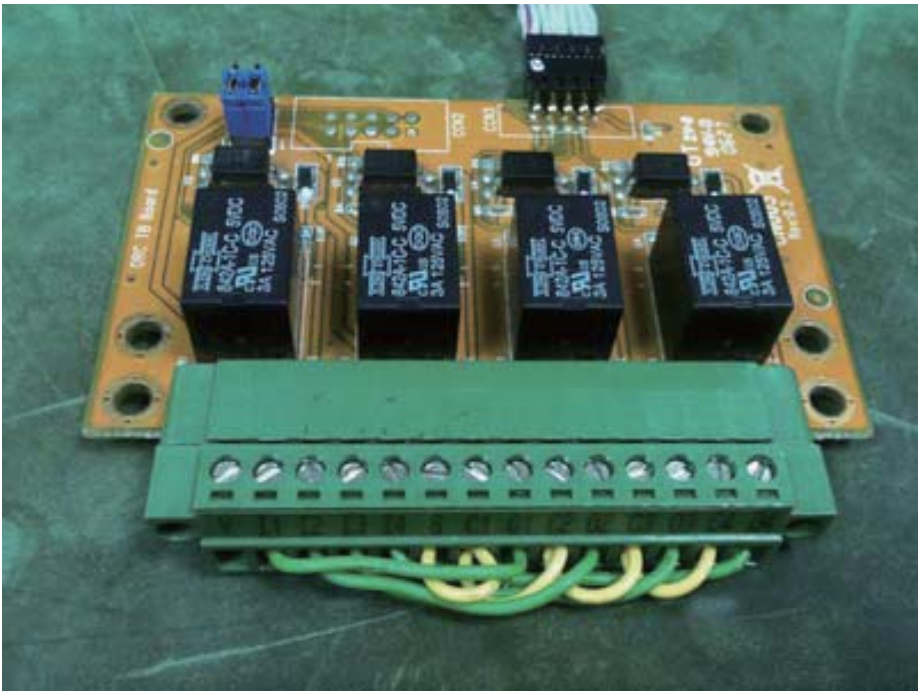
The Sample code source you can download from

Source file: CIO_Utility_Src_v3.0.5_w.zip http://tprd.info/lexwiki/index.php/IO_Device:F75111_CIO_Utility

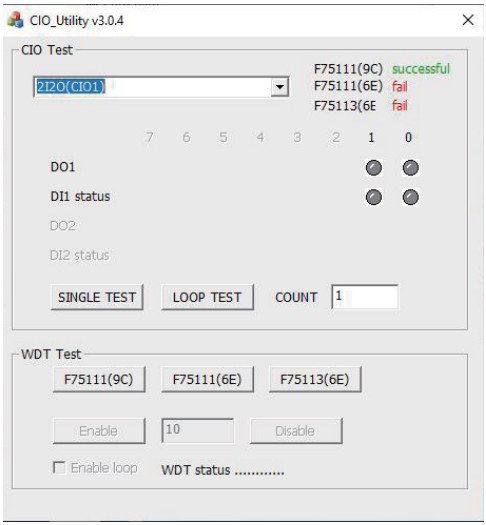
Binary file: CIO_Utility_Bin_v3.0.5_x32_w.zip CIO_Utility_Bin_v3.0.5_x64_w.zip

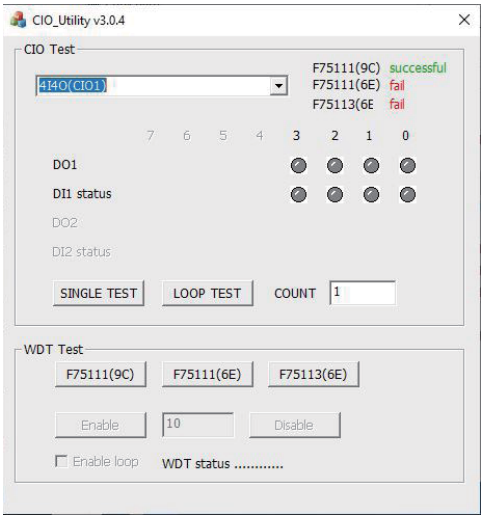
F75113 DLL : F75113.dll

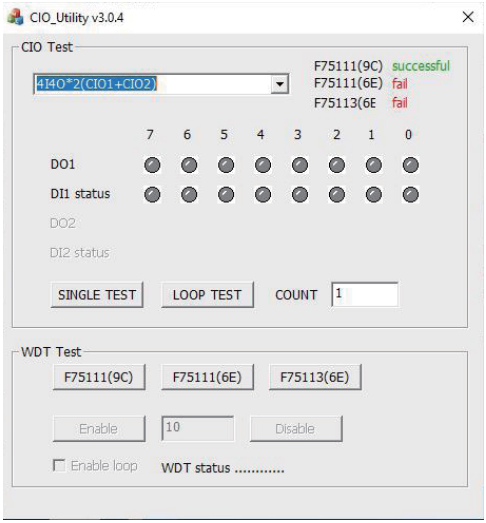
We do the demo test with a test tool which DIx connect to DOx with Relay.

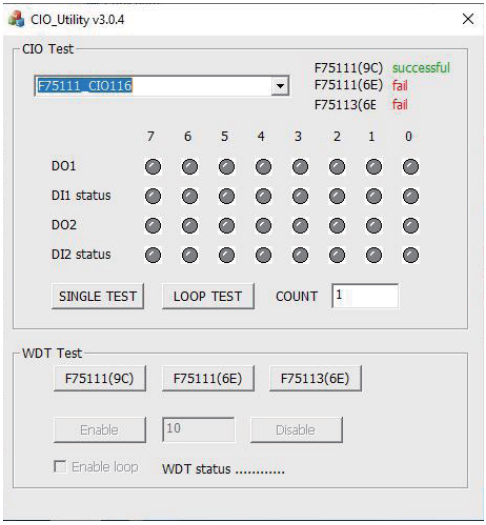


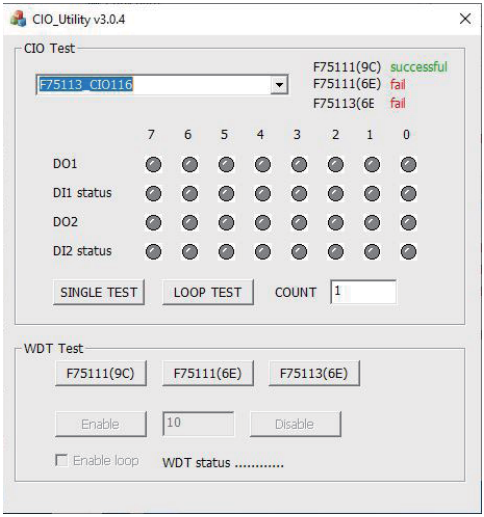
How to use this Demo Application

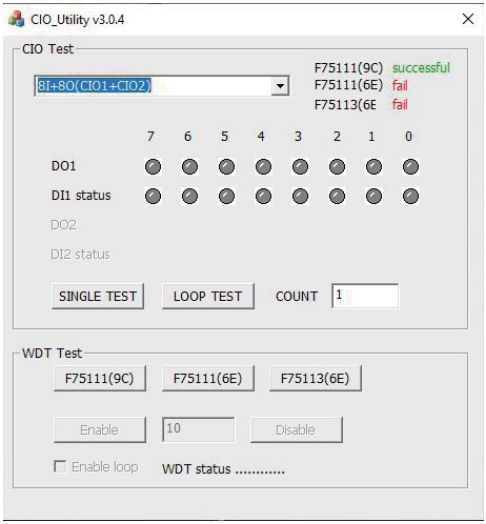








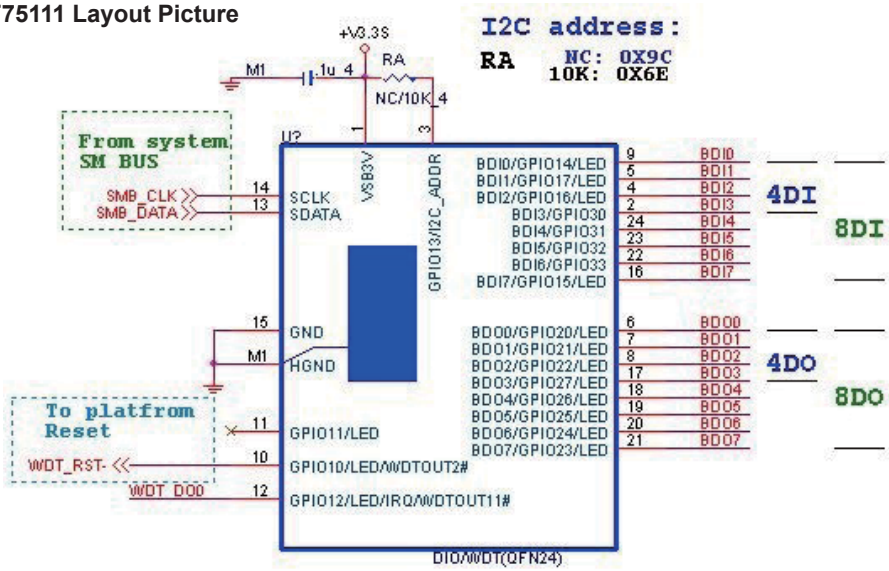




Attention Please:You must be install vcredist_x86.exe when first time you run the F75111_DIO.exe DEMO AP,The vcredist_x86.exe include all required DLL file.

1. Press the select your test "2i2o"，"4i4o"，"4i4o*2"，"F75111CIO116"，"F75113CIO116"，"8i+8o"
2. start test，select single mode or looptest

F75111 Layout Picture



Introduction F75111

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()

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,Level 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.
}
```

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;
}
```

define F75111 pin in F75111.h

```
//-----------------------------------------------------------------------------------------------------------------------------------------------------
#define   F75111_INTERNAL_ADDR              0x9C  //  OnBoard  F75111 Chipset
#define   F75111_EXTERNAL_ADDR              0x6E  //  External F75111 Chipset
//-----------------------------------------------------------------------------------------------------------------------------------------------------
#define   F75111_CONFIGURATION              0x03  //  Configure GPIO13 to WDT2 Function
//-----------------------------------------------------------------------------------------------------------------------------------------------------
#define   GPIO1X_CONTROL_MODE               0x10  //  Select Output Mode or Input Mode
#define   GPIO2X_CONTROL_MODE               0x20  //  Select GPIO2X Output Mode or Input Mode
#define   GPIO3X_CONTROL_MODE               0x40  //  Select GPIO3X Output Mode or Input Mode
//-----------------------------------------------------------------------------------------------------------------------------------------------------
#define   GPIO1X_INPUT_DATA                 0x12  //  GPIO1X Input
#define   GPIO3X_INPUT_DATA                 0x42  //  GPIO3X Input
//-----------------------------------------------------------------------------------------------------------------------------------------------------
#define   GPIO2X_OUTPUT_DATA                0x21  //  GPIO2X Output
//-----------------------------------------------------------------------------------------------------------------------------------------------------
#define   GPIO1X_PULSE_CONTROL              0x13  //  GPIO1x Level/Pulse Control Register
                                                  //  0:Level Mode
                                                  //  1:Pulse Mode
#define   GPIO1X_PULSE_WIDTH_CONTROL        0x14  //  GPIO1x Pulse Width Control Register
#define   GP1_PSWIDTH_500US                 0x00  //  When select Pulse mode:     500       us.
#define   GP1_PSWIDTH_1MS                   0x01  //  When select Pulse mode:     1         ms.
#define   GP1_PSWIDTH_20MS                  0x02  //  When select Pulse mode:     20        ms.
#define   GP1_PSWIDTH_100MS                 0x03  //  When select Pulse mode:     100       ms.
//-----------------------------------------------------------------------------------------------------------------------------------------------------
#define   GPIO2X_PULSE_CONTROL              0x23  //  GPIO2x Level/Pulse Control Register
                                                  //  0:Level Mode
                                                  //  1:Pulse Mode
#define   GPIO2X_PULSE_WIDTH_CONTROL        0x24  //  GPIO2x Pulse Width Control Register
#define   GP2_PSWIDTH_500US                 0x00  //  When select Pulse mode:     500       us.
#define   GP2_PSWIDTH_1MS                   0x01  //  When select Pulse mode:     1         ms.
#define   GP2_PSWIDTH_20MS                  0x02  //  When select Pulse mode:     20        ms.
#define   GP2_PSWIDTH_100MS                 0x03  //  When select Pulse mode:     100       ms.
//-----------------------------------------------------------------------------------------------------------------------------------------------------
#define   GPIO3X_PULSE_CONTROL              0x43  //  GPIO3x Level/Pulse Control Register
                                                  //  0:Level Mode
                                                  //  1:Pulse Mode
#define   GPIO3X_Output_Data                0x41  //  GPIO3x Output Data Register
#define   GPIO3X_PULSE_WIDTH_CONTROL        0x44  //  GPIO3x Pulse Width Control Register
#define   GP3_PSWIDTH_500US                 0x00  //  When select Pulse mode:     500       us.
#define   GP3_PSWIDTH_1MS                   0x01  //  When select Pulse mode:     1         ms.
#define   GP3_PSWIDTH_20MS                  0x02  //  When select Pulse mode:     20        ms.
#define   GP3_PSWIDTH_100MS                 0x03  //  When select Pulse mode:     100       ms.
//-----------------------------------------------------------------------------------------------------------------------------------------------------
```

3-9-2 IO Device:F75111 CIO Utility CIO116

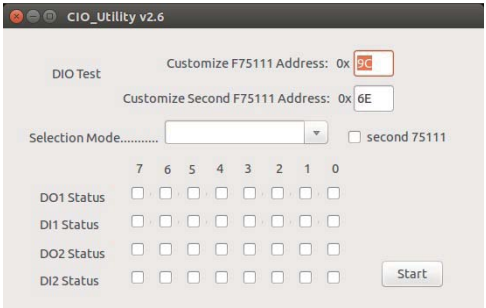
The Sample code source you can download from

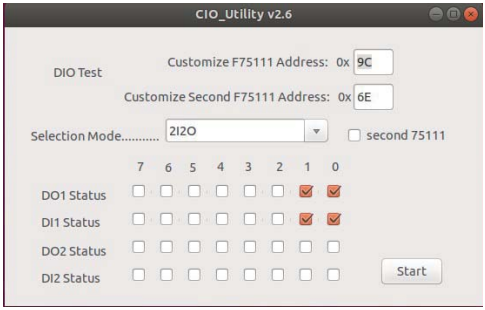
Source file: CIO_Utility_Src_v3.0.3.tar.gz

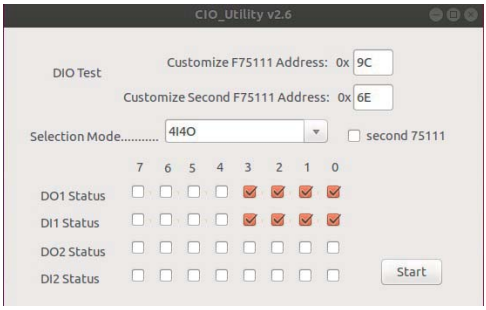
Binary file: CIO_Utility_Bin_v3.0.3_x32.tar.gz CIO_Utility_Bin_v3.0.3_x64.tar.gz

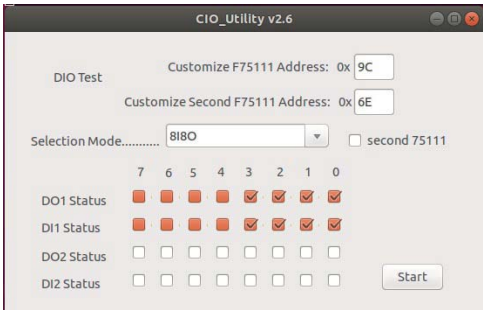
http://tprd.info/lexwiki/index.php/IO_Device:F75111_CIO_Utility_CIO116

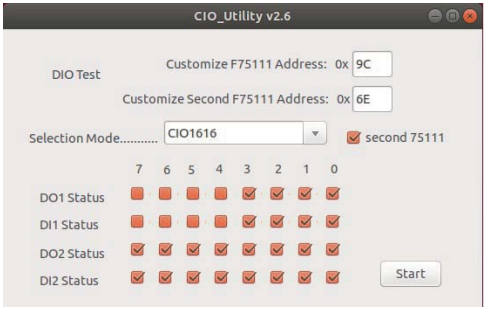
How to use this Demo Application







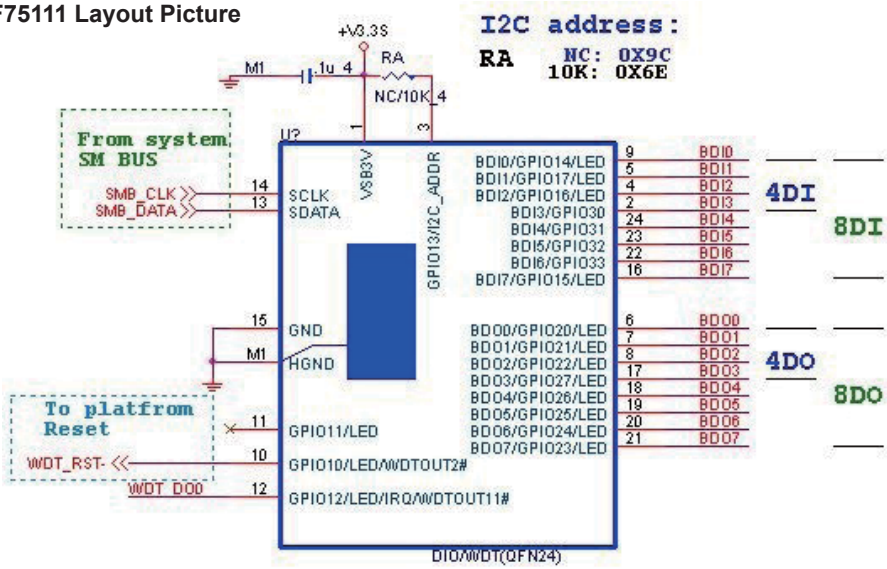




**Before executing the program began, Please switch to the highest authority , continued second F75111 ,chmod 777 and root: **

1. Press the select your test "2i2o","4i4o","8i8o","CIO1616"
2. If you test CIO1616 checkbutton second 75111
3. start button，select single mode or looptest

F75111 Layout Picture



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()

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.
}
```

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;
}
```

define F75111 pin in F75111.h

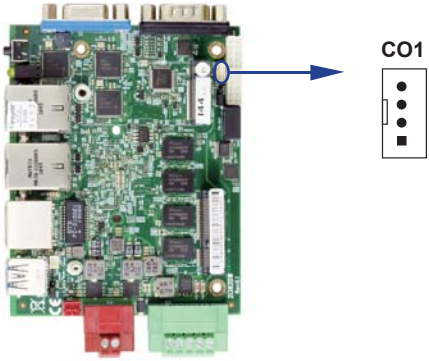
```
//-----------------------------------------------------------------------------------------------------------
#define   F75111_INTERNAL_ADDR          0x9C  //  OnBoard  F75111 Chipset
#define   F75111_EXTERNAL_ADDR          0x6E  //  External F75111 Chipset
//-----------------------------------------------------------------------------------------------------------
#define   F75111_CONFIGURATION          0x03  //  Configure GPIO13 to WDT2 Function
//-----------------------------------------------------------------------------------------------------------
#define   GPIO1X_CONTROL_MODE           0x10  //  Select Output Mode or Input Mode
#define   GPIO2X_CONTROL_MODE           0x20  //  Select GPIO2X Output Mode or Input Mode
#define   GPIO3X_CONTROL_MODE           0x40  //  Select GPIO3X Output Mode or Input Mode
//-----------------------------------------------------------------------------------------------------------
#define   GPIO1X_INPUT_DATA             0x12  //  GPIO1X Input
#define   GPIO3X_INPUT_DATA             0x42  //  GPIO3X Input
//-----------------------------------------------------------------------------------------------------------
#define   GPIO2X_OUTPUT_DATA            0x21  //  GPIO2X Output
//-----------------------------------------------------------------------------------------------------------
#define   GPIO1X_PULSE_CONTROL          0x13  //  GPIO1x Level/Pulse Control Register
                                                //  0:Level Mode
                                                //  1:Pulse Mode
#define   GPIO1X_PULSE_WIDTH_CONTROL    0x14  //  GPIO1x Pulse Width Control Register
#define   GP1_PSWIDTH_500US             0x00  //  When select Pulse mode:   500          us.
#define   GP1_PSWIDTH_1MS               0x01  //  When select Pulse mode:   1   ms.
#define   GP1_PSWIDTH_20MS              0x02  //  When select Pulse mode:   20 ms.
#define   GP1_PSWIDTH_100MS             0x03  //  When select Pulse mode:   100          ms.
//-----------------------------------------------------------------------------------------------------------
#define   GPIO2X_PULSE_CONTROL          0x23  //  GPIO2x Level/Pulse Control Register
                                                //  0:Level Mode
                                                //  1:Pulse Mode
#define   GPIO2X_PULSE_WIDTH_CONTROL    0x24  //  GPIO2x Pulse Width Control Register
#define   GP2_PSWIDTH_500US             0x00  //  When select Pulse mode:   500          us.
#define   GP2_PSWIDTH_1MS               0x01  //  When select Pulse mode:   1   ms.
#define   GP2_PSWIDTH_20MS              0x02  //  When select Pulse mode:   20 ms.
#define   GP2_PSWIDTH_100MS             0x03  //  When select Pulse mode:   100          ms.
//-----------------------------------------------------------------------------------------------------------
#define   GPIO3X_PULSE_CONTROL          0x43  //  GPIO3x Level/Pulse Control Register
                                                //  0:Level Mode
                                                //  1:Pulse Mode
#define   GPIO3X_Output_Data            0x41  //  GPIO3x Output Data Register
#define   GPIO3X_PULSE_WIDTH_CONTROL    0x44  //  GPIO3x Pulse Width Control Register
#define   GP3_PSWIDTH_500US             0x00  //  When select Pulse mode:   500          us.
#define   GP3_PSWIDTH_1MS               0x01  //  When select Pulse mode:   1   ms.
#define   GP3_PSWIDTH_20MS              0x02  //  When select Pulse mode:   20 ms.
#define   GP3_PSWIDTH_100MS             0x03  //  When select Pulse mode:   100          ms.
//-----------------------------------------------------------------------------------------------------------
```

3-10 SMBus Interface

• CO1: SMBus 4 pin (1x4 pin 1.25mm Wafer)

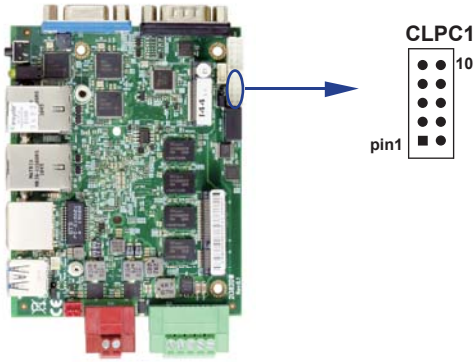
PIN NO.	DESCRIPTION
1	+3.3V
2	GND
3	SMBus Clock
4	MBus DATA

Note:
1. Mating connector: MOLEX 53047-0410 or compatible
2. Cable housing: MOLEX 51021-0400 or compatible



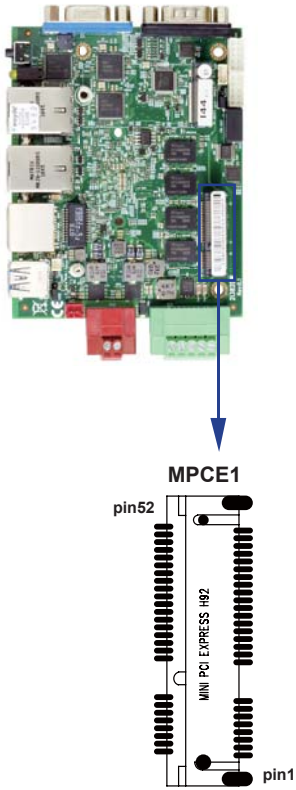
3-11 CLPC1: for LPC signal 2x5 pin wafer (2.0mm)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	AD3	2	CLK
3	AD2	4	FRAME
5	AD1	6	RESET
7	AD0	8	SERIAL IRQ
9	GND	10	+3.3V



3-12 PCI Express Mini card

PIN NO.	Description	PIN NO.	Description
1	NC	2	+3.3V
3	NC	4	GND
5	NC	6	+1.5V
7	NC	8	UIM_PWR
9	GND	10	UIM_DATA
11	PCIe-CLK-	12	UIM_CLK
13	PCIe-CLK+	14	UIM_RESET
15	GND	16	UIM_VPP
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 USB Share CU4
2. MPCE1 Pin 8, 10, 12, 14, 16 for SIM1 card reader use.

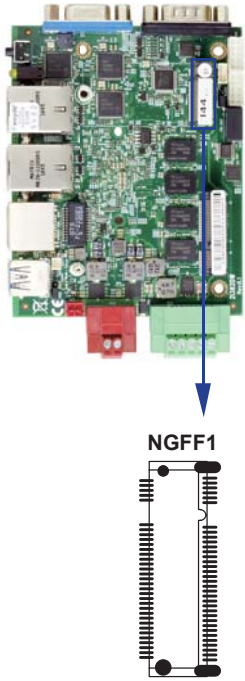
3-13 SIM1: Nano SIM Card Push-Push (option)
Follow ISO 7816-2 Smart Card Standard.

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC	5	GND
2	RST	6	VPP
3	CLK	7	DATA
4	NC	8	NC

3-14 PCI Express M.2 B key Mini card

- NGFF1: Support SATA-based SSD Interface (Mini card socket 75 pin)
  NGFF1: size 2242

PIN NO.	Description	PIN NO.	Description
1	GND	2	+3.3V
3	GND	4	+3.3V
5	NC	6	NC
7	NC	8	NC
9	NC	10	NC
11	NC		
B KEY			
21	GND	20	NC
23	NC	22	NC
25	NC	24	NC
27	GND	26	NC
29	NC	28	NC
31	NC	30	NC
33	GND	32	NC
35	NC	34	NC
37	NC	36	NC
39	GND	38	DEVSLP
41	mSATA-RX+	40	NC
43	mSATA-RX-	42	NC
45	GND	44	NC
47	mSATA-TX-	46	NC
49	mSATA-TX+	48	NC
51	GND	50	NC
53	NC	52	NC
55	NC	54	NC
57	GND	56	NC
59	NC	58	NC
61	NC	60	NC
63	NC	62	NC
65	NC	64	NC
67	NC	66	NC
69	GND	68	NC
71	GND	70	+3.3V
73	GND	72	+3.3V
75	GND	74	+3.3V



Chapter-4

Introduction of BIOS

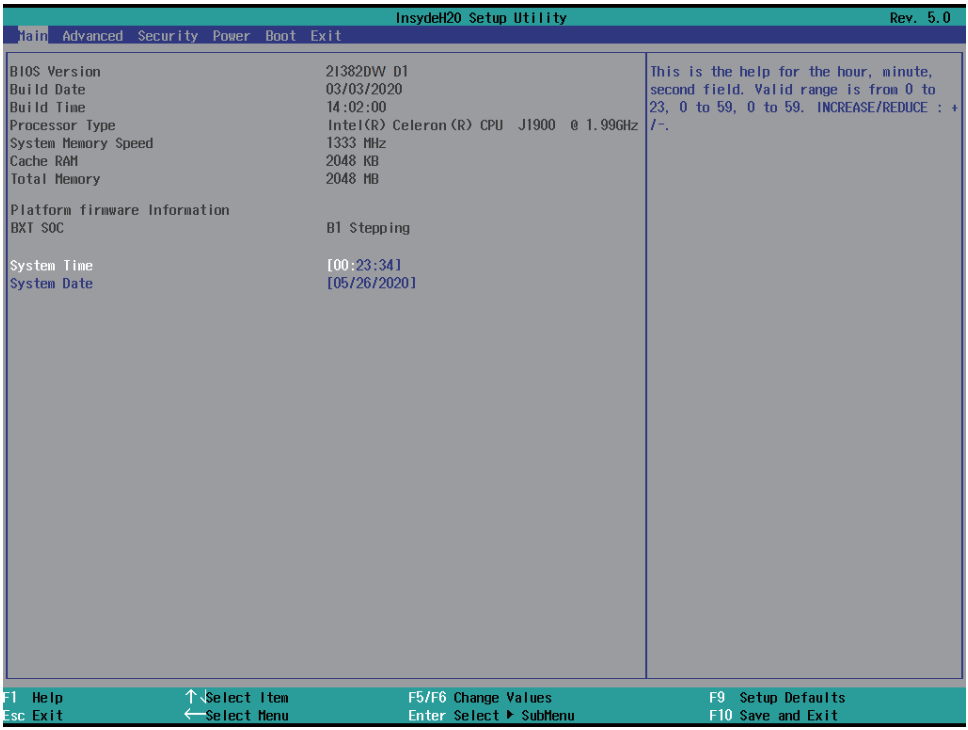
The BIOS is a program located in the Flash Memory on the motherboard.
This program is a bridge between motherboard and operating system.
When you start the computer, the BIOS program gains control.
The BIOS first operates an auto-diagnostic test called POST (Power on Self Test) for all the necessary 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 pressing the "RESET" button on the system case. You may also restart the system by simultaneously pressing <Ctrl>, <Alt> and <Delete> keys.

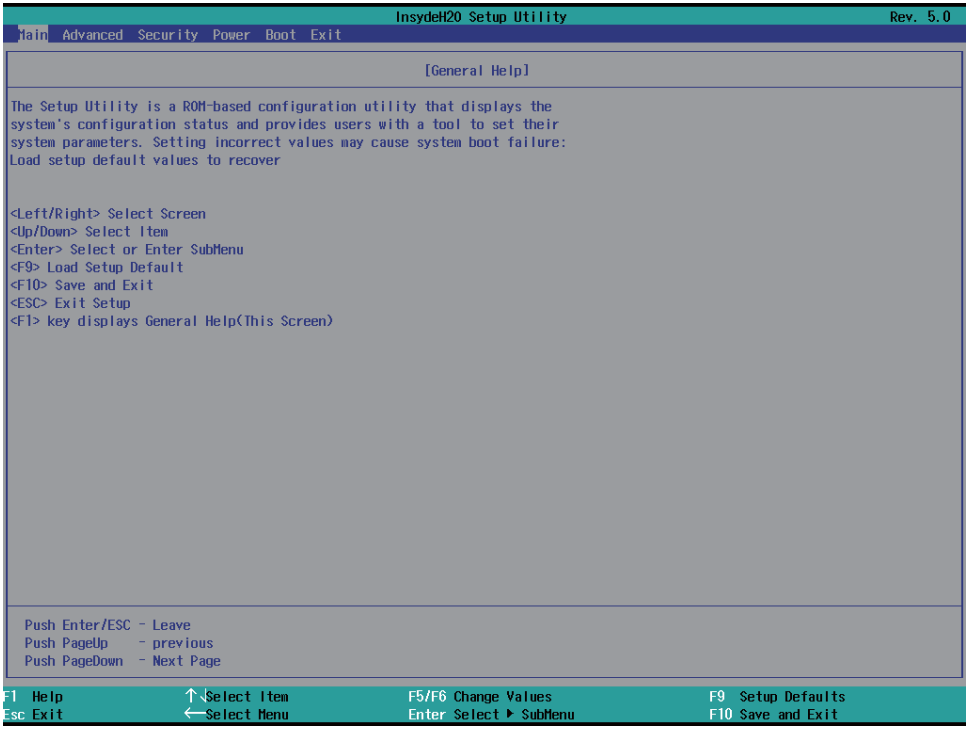
4-2 BIOS Menu Screen & Function Keys



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

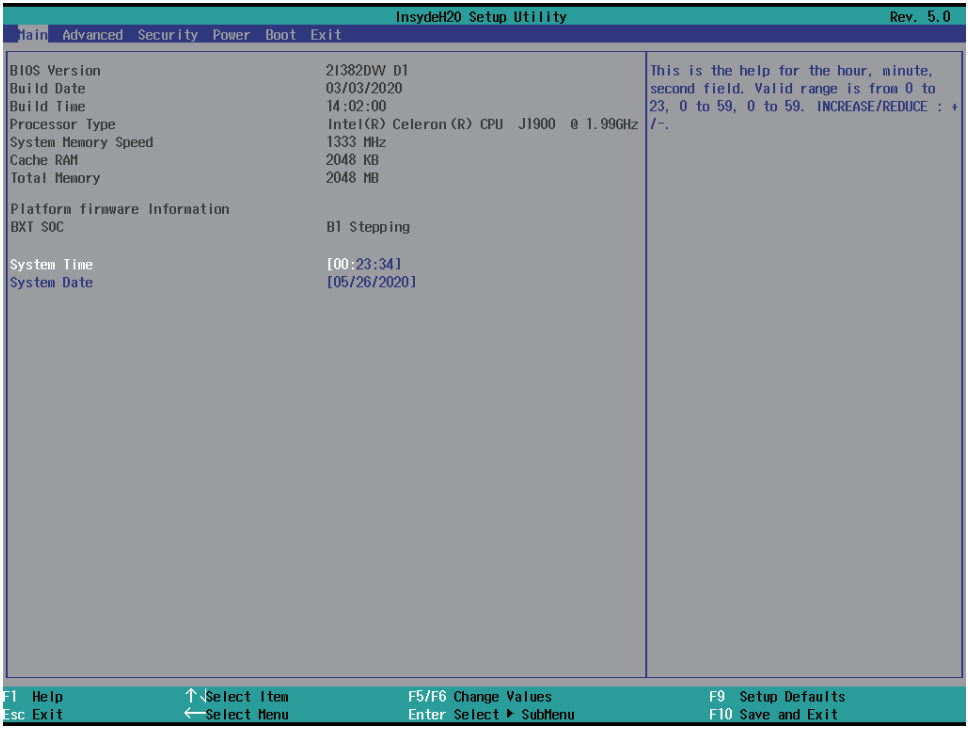
Power PME & Power button settings

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.

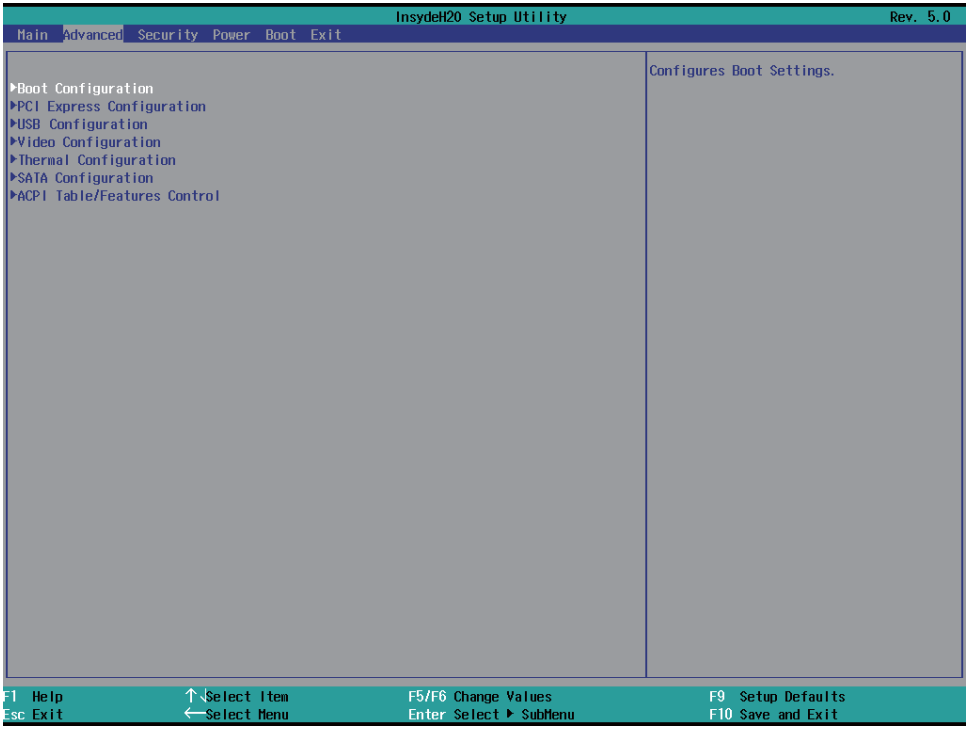
System Date

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

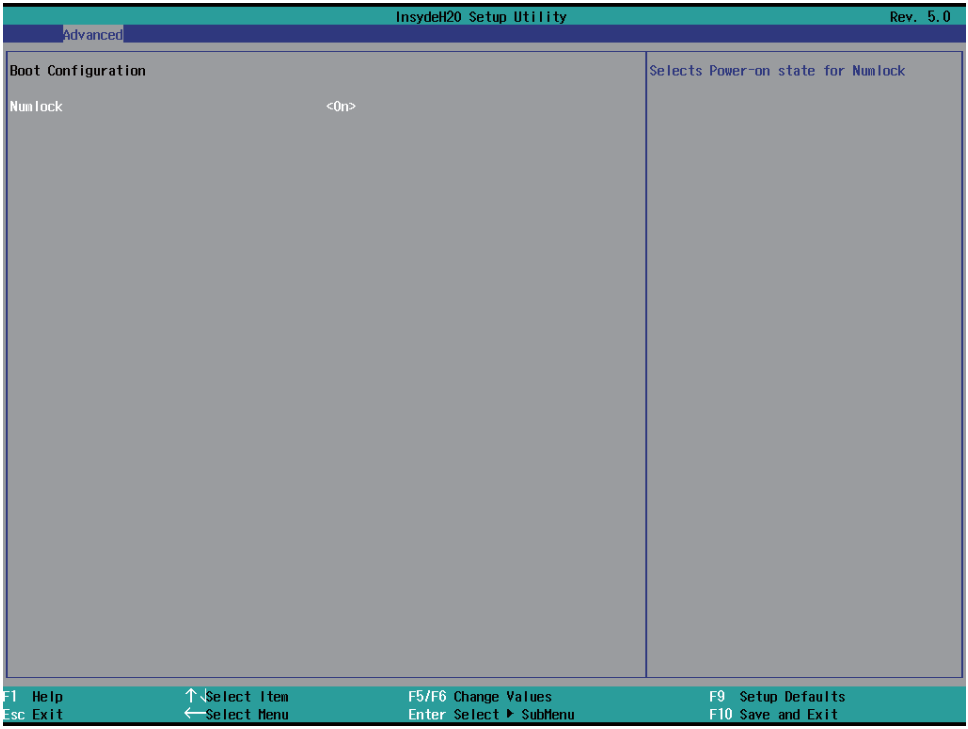
Video Configuration
Please refer section 4-6-4

Thermal Configuration
Please refer section 4-6-5

SATA Configuration
Please refer section 4-6-6

ACPI Table / Features Control
Please refer section 4-6-7

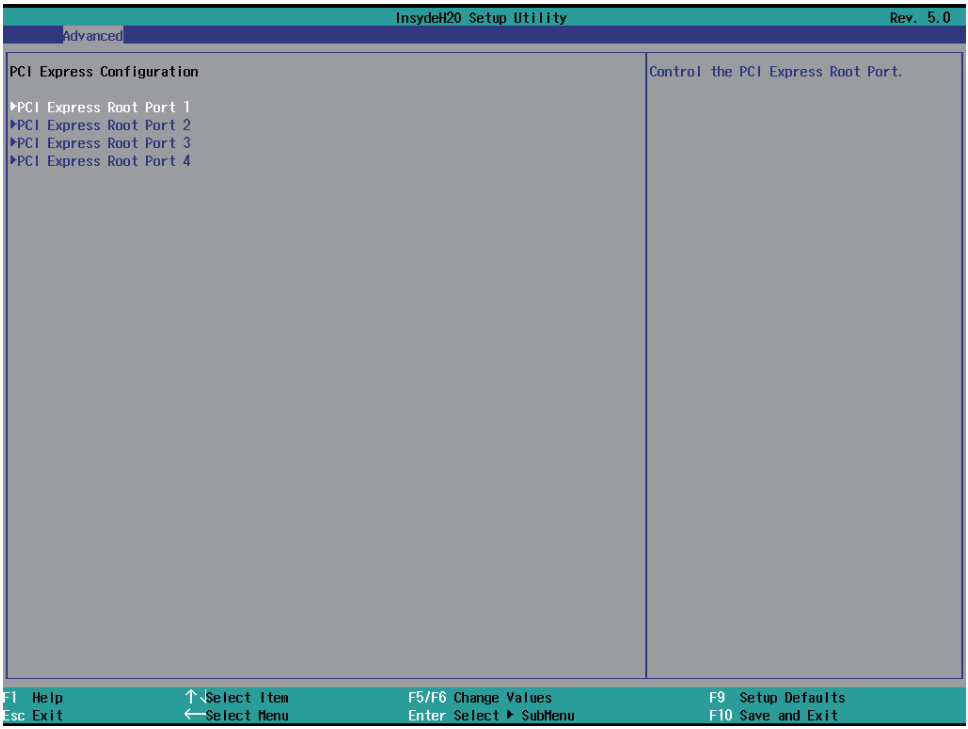
4-6-1 Boot Configuration



Numlock

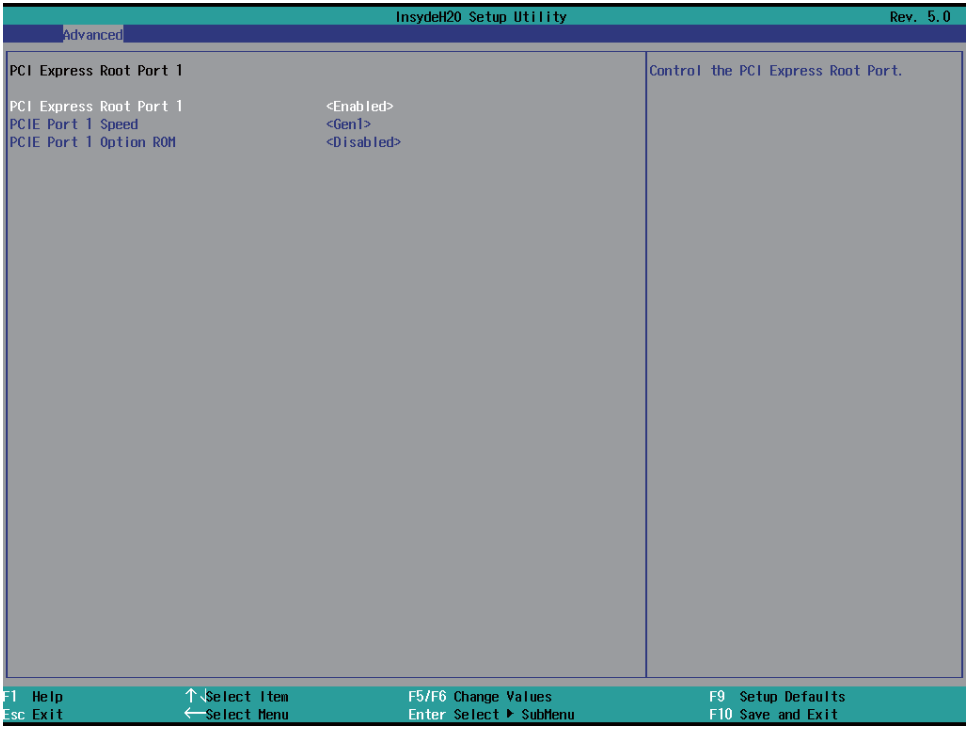
Select Power-on state for Numlock, default is <ON>

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.

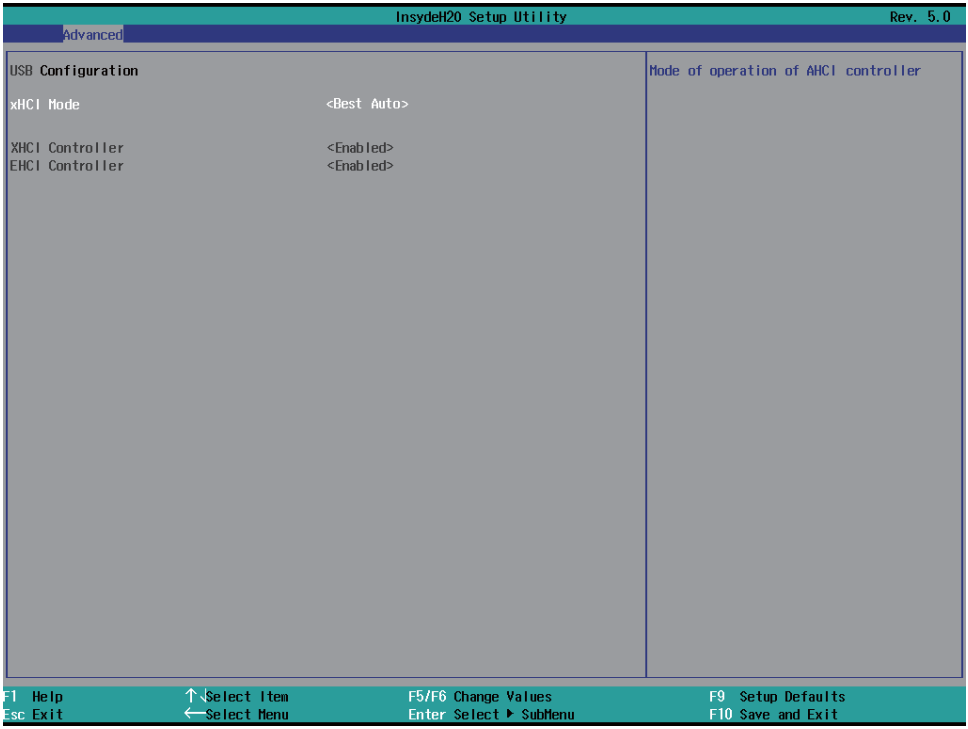
Select PCI Express port speed.

The optional settings are: Gen1 (default), Gen2

Select PCIE TXE ROM support

The optional settings are: Disabled (default), Enabled

4-6-3 USB Configuration

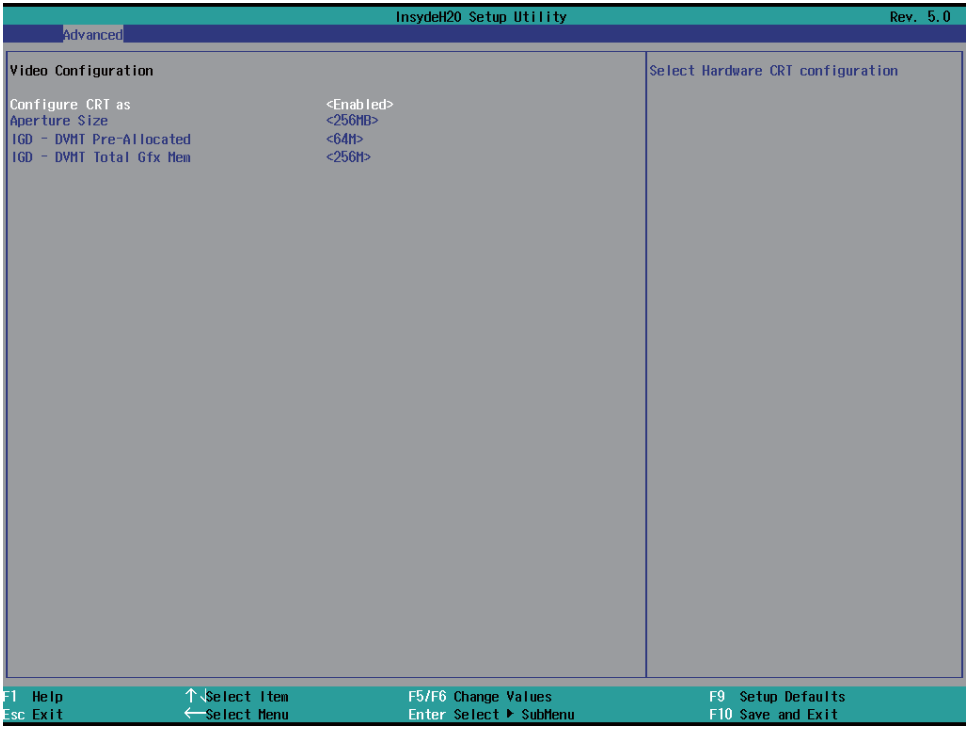


XHCI Mode

TMode of operation of xHCI controller.

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

4-6-4 Video Configuration



Configure CRT as

Enable or disable CRT function.

The optional settings are: Enabled (default) or disabled.

Aperture Size

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

IGD - DVMT Pre-Allocated

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

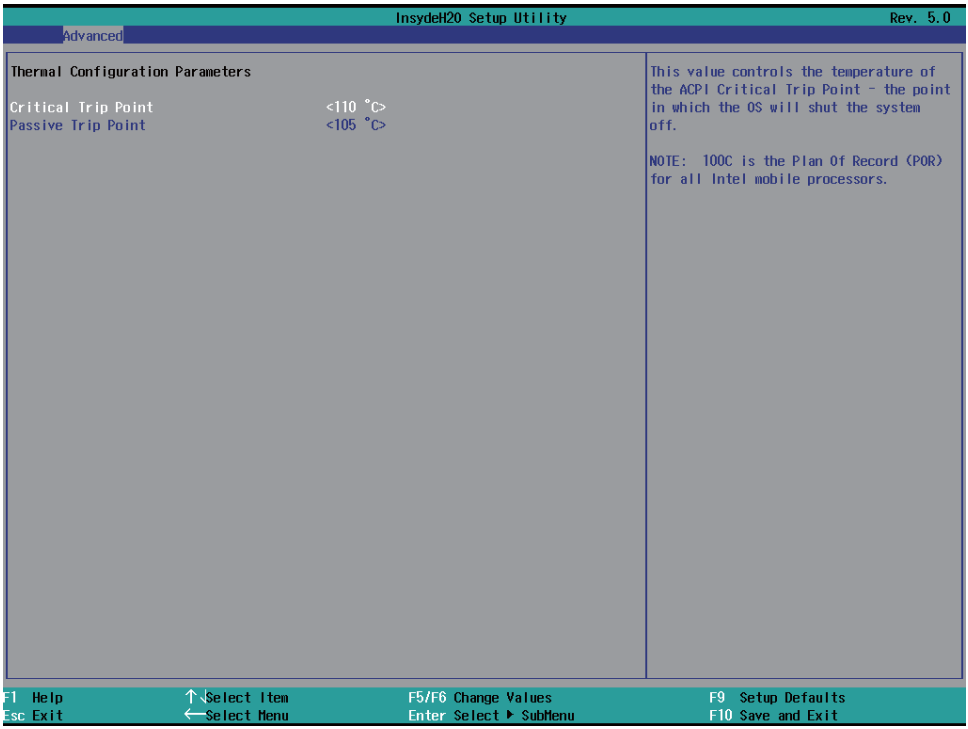
The optional settings are: 64 (default) / 128 / 256 / 512MB

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



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 Configuration                                  DISABLED: Disables SATA Controller.
                                                    ENABLED: Enables SATA Controller.
SATA Controller                        <Enabled>
Chipset SATA Mode                      <IDE>
SATA Speed                             <Gen1>
  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 (default), Gen2

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

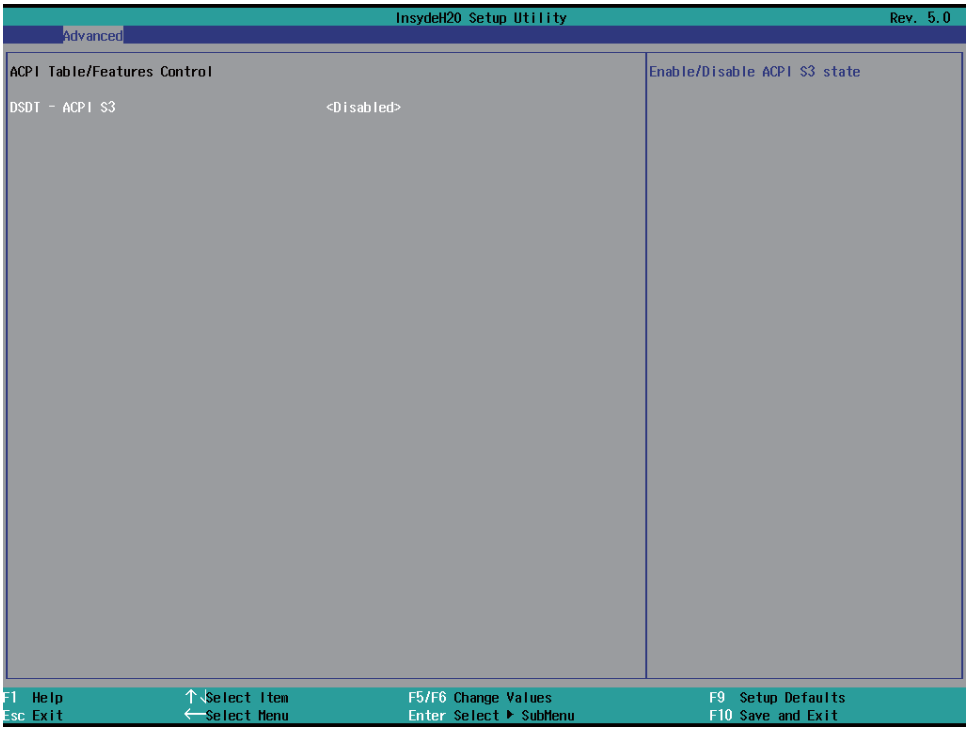
The optional settings are: Enabled (default) or Disable

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 ACPI Table / Features Control

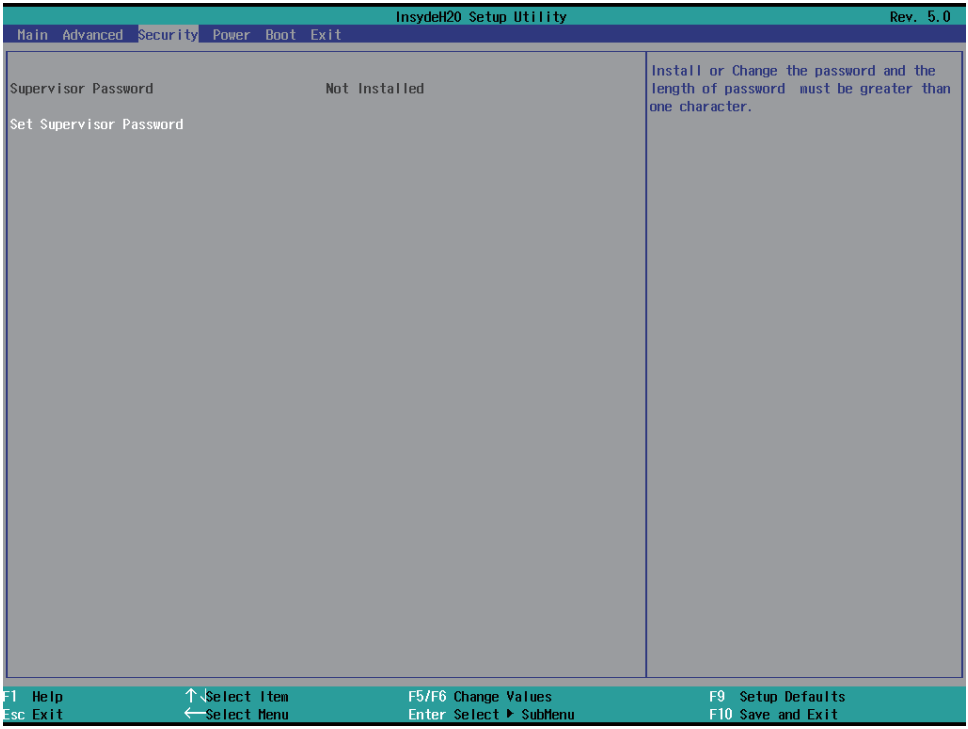


ACPI Table / Features Control

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)

4-7 Security

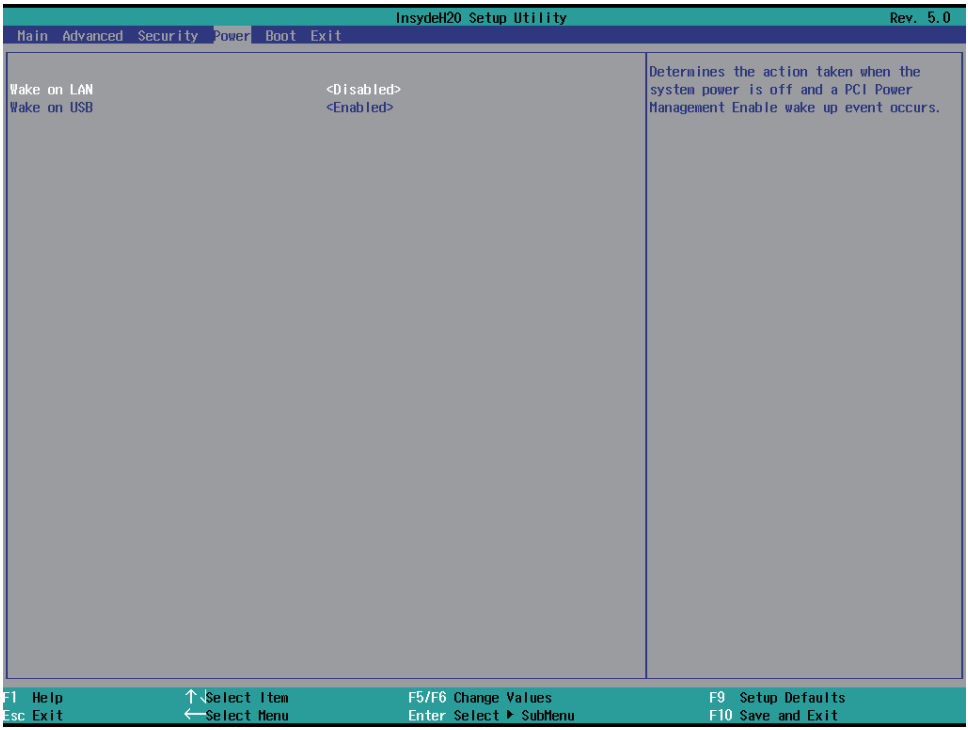


Supervisor Password

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



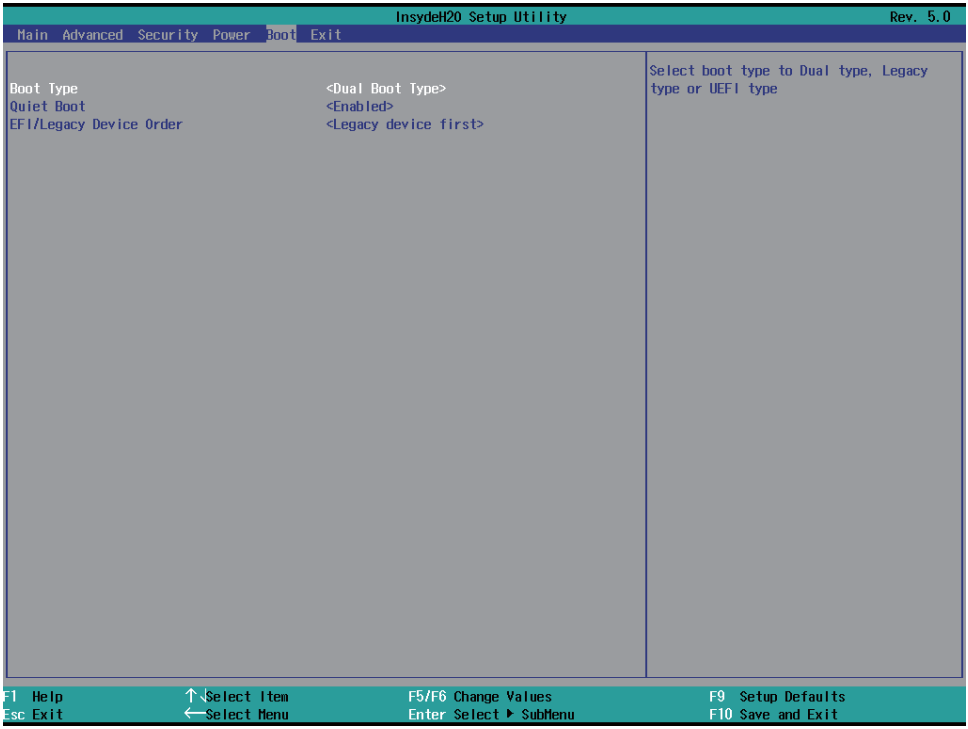
Wake on LAN

Wake On LAN from LAN1 when system in S3 or S5 state or both.
The optional settings: S3, S5, S3 / S5, Disabled (default)

Wake on USB

Wake On USB form mouse or keyboard when system in S3 state.
The optional settings: S3, Disabled (default)

4-9 Boot

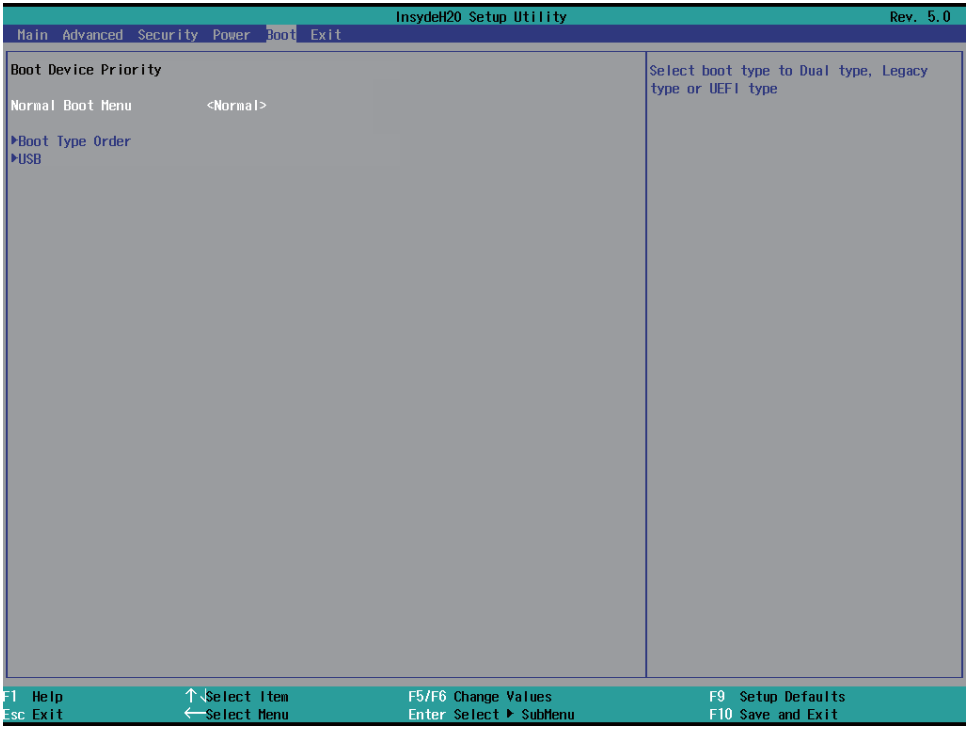


Boot type
Select boot type for Dual type, Legacy boot type or UEFI boot type, default is Dual boot type

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

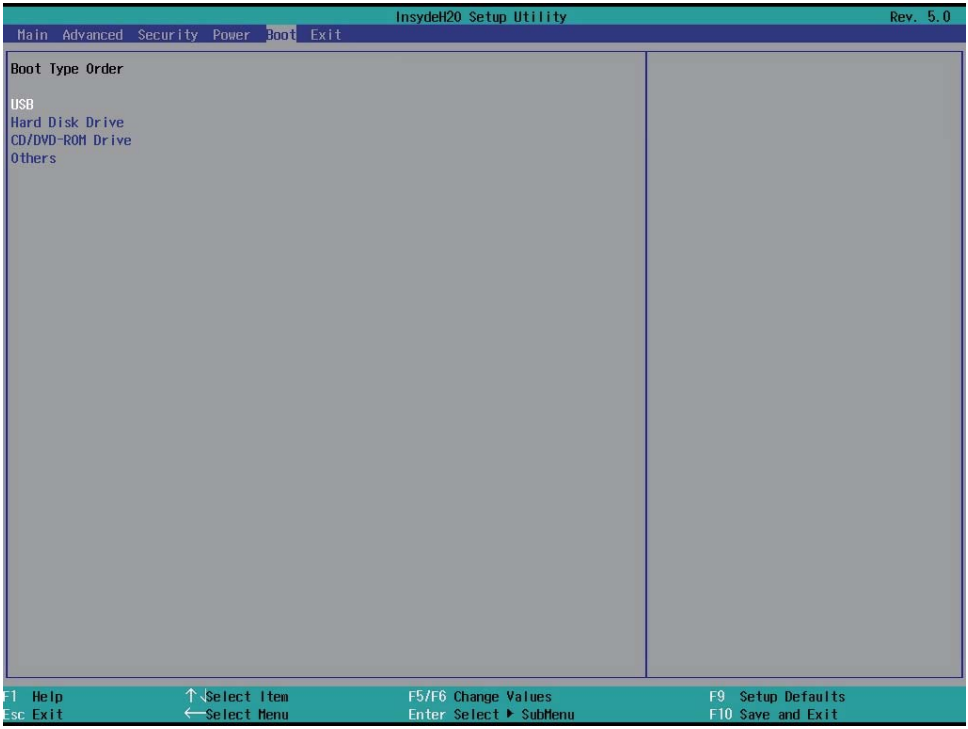


Normal Boot Menu

Select Normal Boot option priority or Advance Boot option priority.

The optional settings: Normal (default), Advance

4-9-2 Boot Type Order

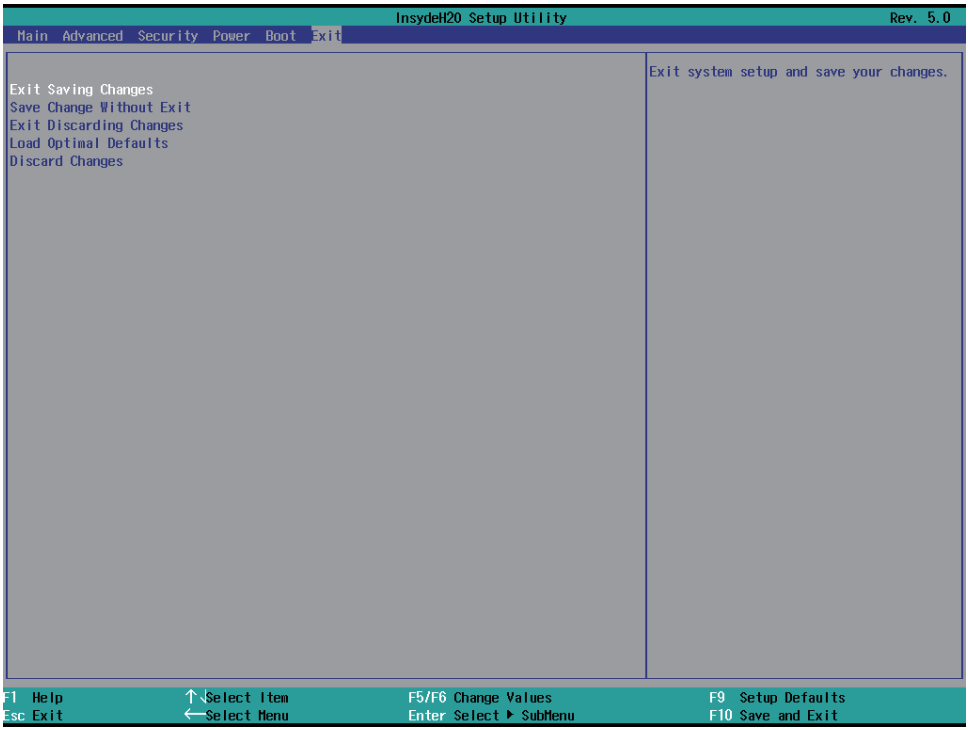


Boot Type Order

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.

Discard Changes

Use this item to cancel all the setup options.

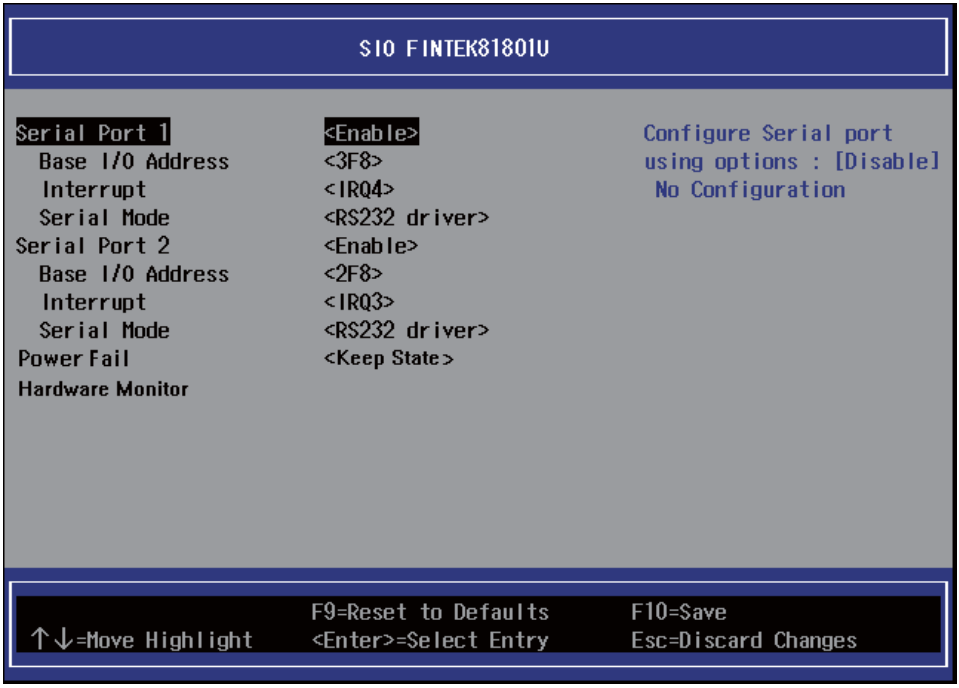
4-11 Device Manager

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

Serial Port 1 / 2 / 3 / 4 Configuration

Please refer section 4-11-1

4-11-1 SIO FINTEK F81801U



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)

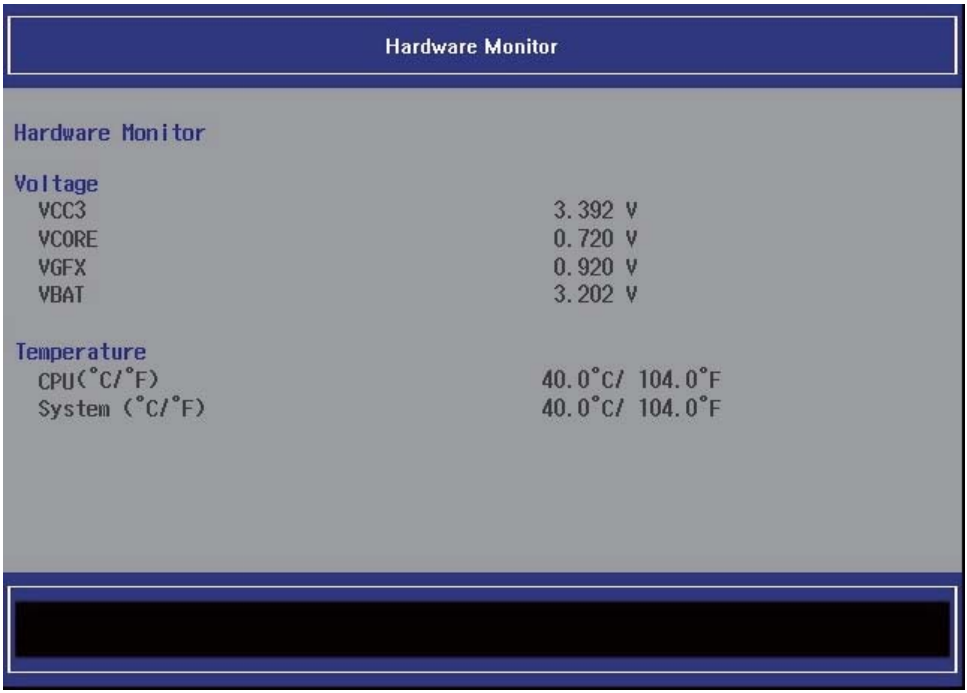
IO=2E8h; IRQ=3,4

IO=3E8h; IRQ=3,4
IO=3F8h; IRQ=3,4

Power Fail

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



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.

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:

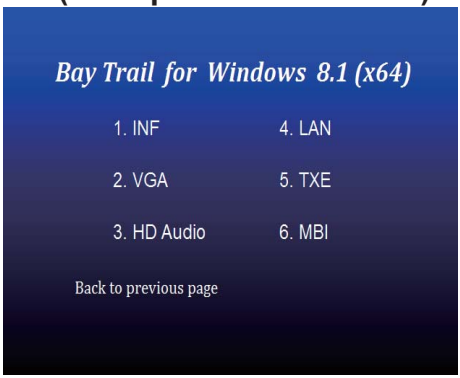
1. Auto Detect Main board and OS to AUTOMATIC DRIVER INSTALLATION menu
2. Browse DVD to view the contents of the DVD
3. Exit to exit SYSTEM INSTALL menu

AUTOMATIC DRIVER INSTALLATION menu

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)



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"."Next".

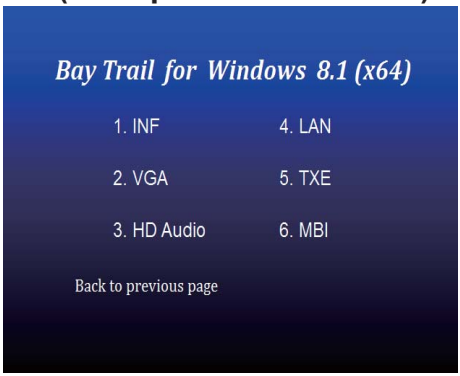
4. At the "Readme File Information" screen, click.

5. Click "Next".

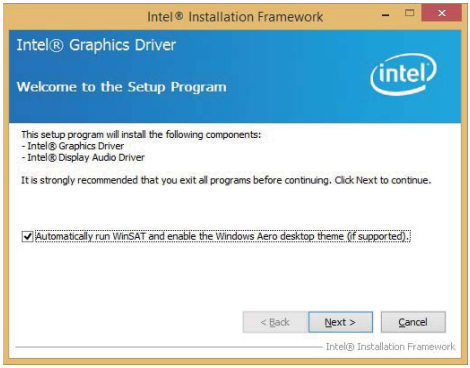
6. Click "Finish" & restart computer.

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)



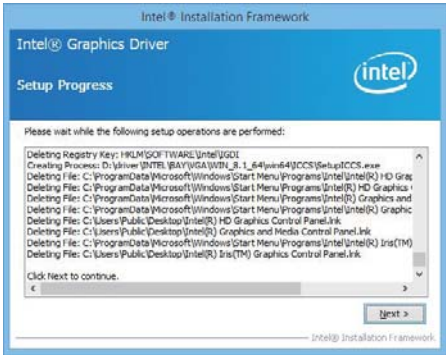
1. At the "AUTOMATIC DRIVER INSTALLATION menu" screen, click "VGA".



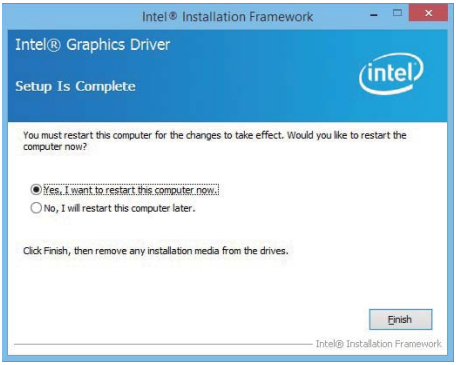
2. At the "Welcome to the Setup Programscreen, Click "Next".

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

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



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



6. Click "Finish" to restart computer.

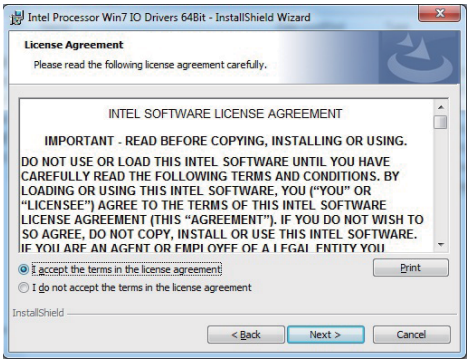
NOTE: SYSTEM INSTALL will auto detect file path
For Windows 7 32-bit,
X:\driver\INTEL\BAY\VGA\WIN_7_32\Setup.exe

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

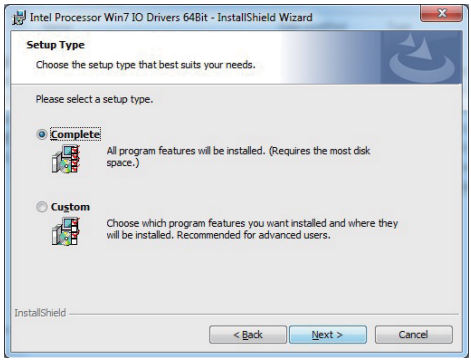
5-3 Serial IO Install Driver Baytrail Serial IO Driver (FOR Windows 7 only)

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

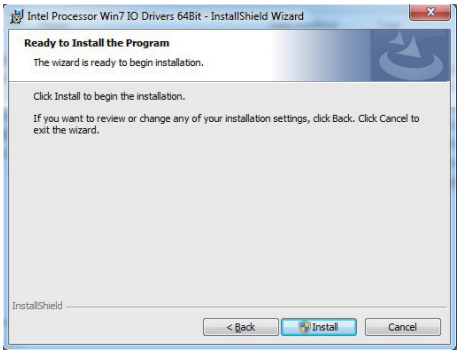
2. At the "Welcome to the Setup Program screen, Click "Next".



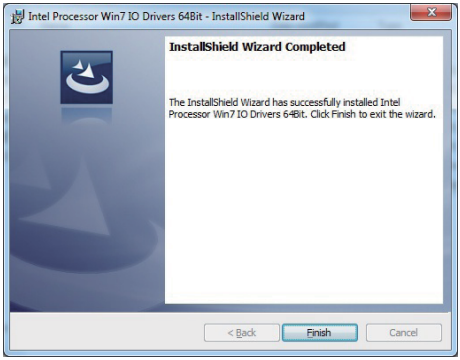
3. At the "License Agreement" screen, Click "Yes" "Next".



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



5. At the "Ready to install the program" screen, Click "Install".

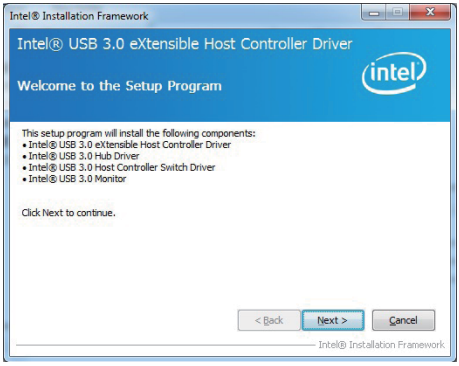


6. Click "Finish" and restart computer.

NOTE: SYSTEM INSTALL will auto detect file path
For Windows 7 32-bit,
X:\driver\INTEL\BAY\SERIALIO\WIN7_32Bit.msi
For Windows 7 64-bit
X:\driver\INTEL\BAY\SERIALIO\Win7_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".



This setup program will install the following components:
- Intel® USB 3.0 eXtensible Host Controller Driver
- Intel® USB 3.0 Hub Driver
- Intel® USB 3.0 Host Controller Switch Driver
- Intel® USB 3.0 Monitor

Click Next to continue.

2. At the "Welcome to the Setup Programscreen, Click "Next".

You must accept all of the terms of the license agreement in order to continue the setup program. Do you accept the terms?

INTEL SOFTWARE LICENSE AGREEMENT (OEM / IHV / ISV Distribution & Single User)

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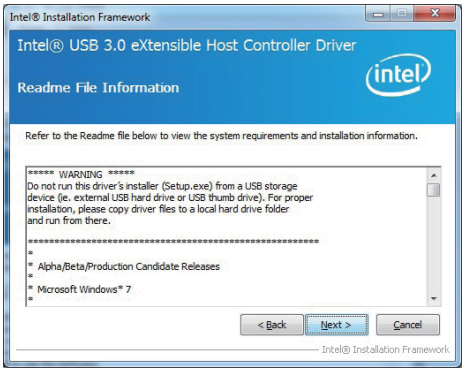
Do not use or load this software and any associated materials (collectively, the "Software") until you have carefully read the following terms and conditions. By loading or using the Software, you agree to the terms of this Agreement. If you do not wish to so agree, do not install or use the Software.

Please Also Note:
* If you are an Original Equipment Manufacturer (OEM), Independent Hardware Vendor (IHV), or Independent Software Vendor (ISV), this complete LICENSE AGREEMENT applies;
* If you are an End-User, then only Exhibit A, the INTEL SOFTWARE LICENSE AGREEMENT,

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

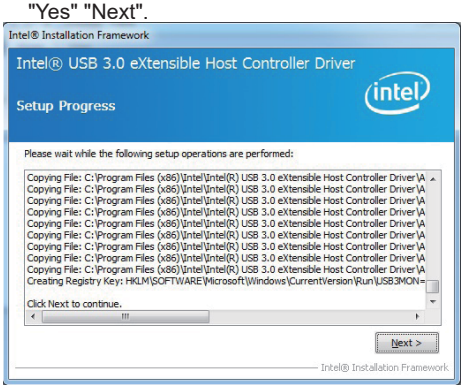


Refer to the Readme file below to view the system requirements and installation information.

```
***** WARNING *****
Do not run this driver's installer (Setup.exe) from a USB storage
device (ie. external USB hard drive or USB thumb drive). For proper
installation, please copy driver files to a local hard drive folder
and run from there.

**************************************************************
*
* Alpha/Beta/Production Candidate Releases
*
* Microsoft Windows* 7
*
```

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

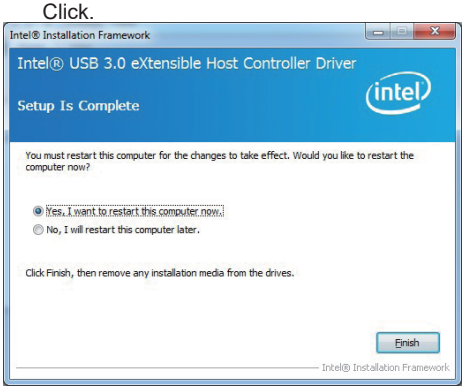


Please wait while the following setup operations are performed:

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



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.

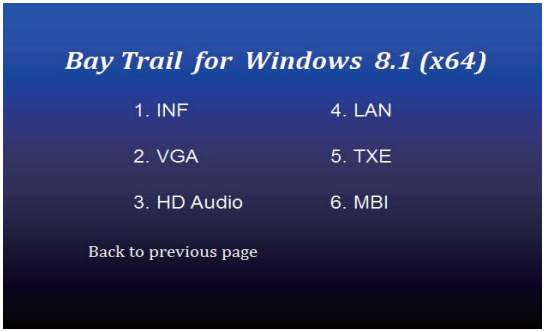
○ No, I will restart this computer later.

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

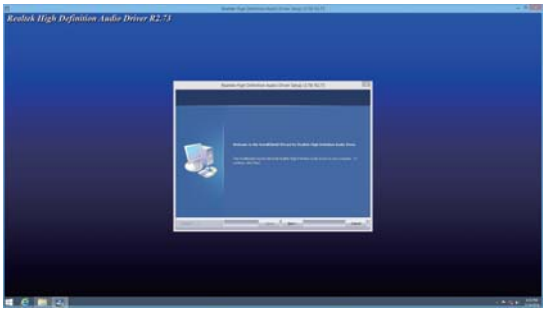
6. Click "Finish" to restart computer.

NOTE: SYSTEM INSTALL will auto detect file path
For Windows 7 32 / 64-bit,
X:\driver\INTEL\BAY\XHCI\Driver_Installer\Setup.exe

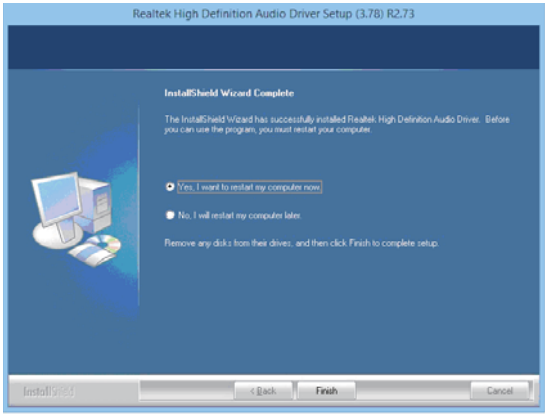
5-5 HD Audio Install High Definition Audio Driver (example for WIN8 64bit)



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



2. Click "Next".

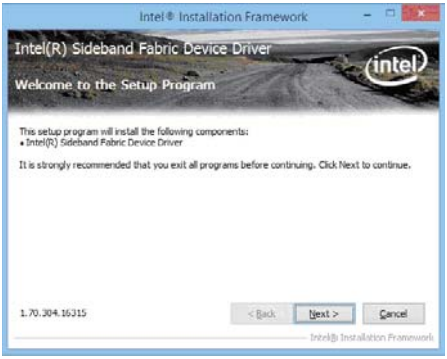


3. Click "Finish" to restart computer

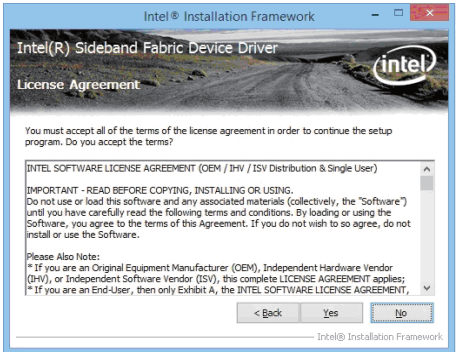
NOTE: SYSTEM INSTALL will auto detect file path
For Windows 7 32 / 64-bit, Windows 8/8.1 32 / 64-bit
X:\driver\INTEL\BAY\SOUND\Win7_Win8_Win81_R273.exe

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

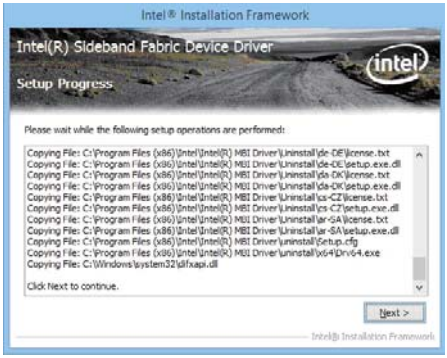
1. At the "AUTOMATIC DRIVER INSTALLATION menu", click "HD Audio".



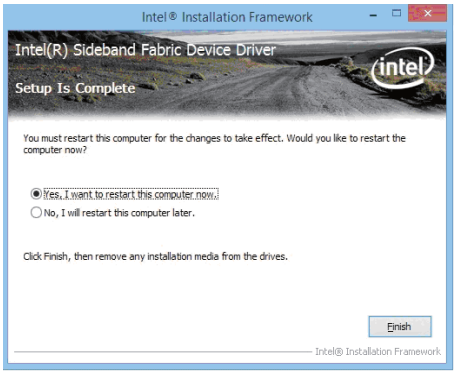
2. At the "Welcome to the Setup Programscreen, Click "Next".



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



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

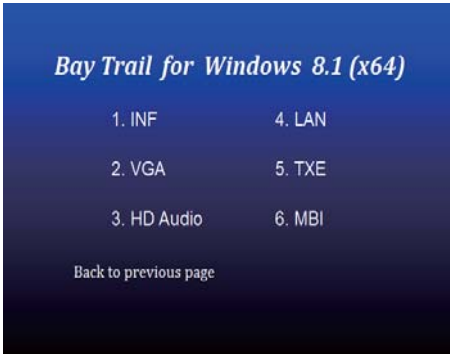


5. Click "Finish" to restart computer.

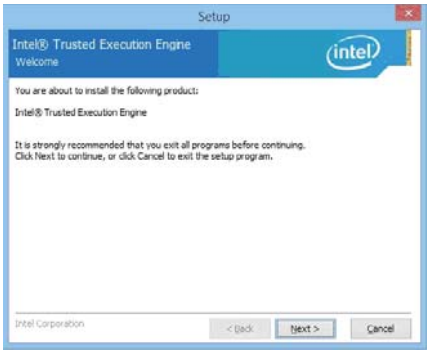
NOTE: SYSTEM INSTALL will auto detect file path
For Windows 8/8.1 32 / 64-bit,
X:\driver\INTEL\BAY\MBI\Setup.exe

5-7 TXE Install Intel TXE driver

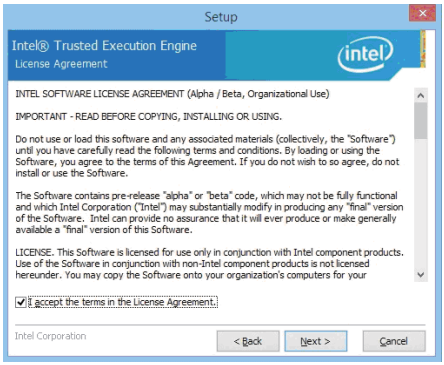
5-7-1 TXE Install for WIN8 / WIN8.1



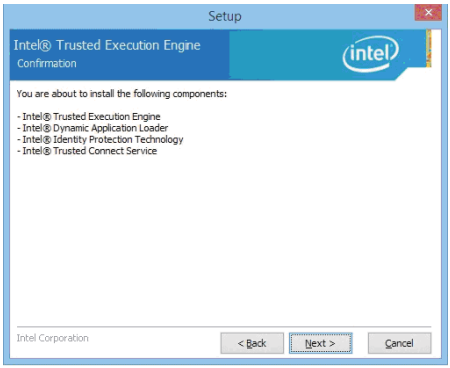
1. At the "AUTOMATIC DRIVER INSTALLATION menu", click "TXE".



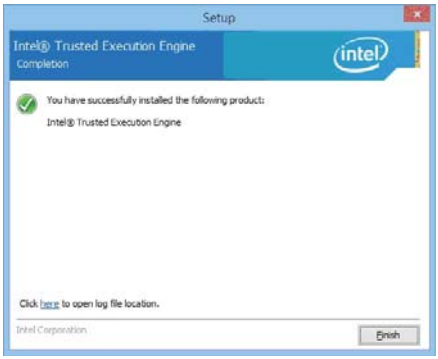
2. At the "Setup" screen, Click "Next".



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



4. Click "Next".

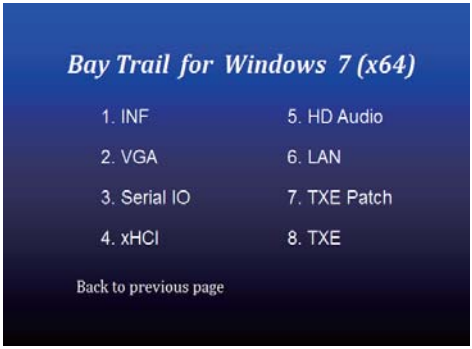


5. Click "Finish" to restart computer.

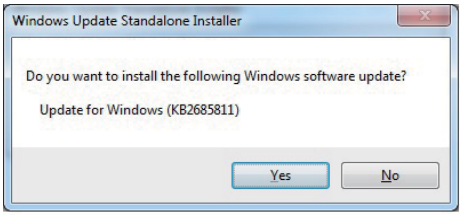
NOTE: SYSTEM INSTALL will auto detect file path
For Windows 8 32 / 64-bit,
X:\driver\INTEL\BAY\TXE\WIN_8\SetupTXE.exe
For Windows 8.1 32 / 64-bit,
X:\driver\INTEL\BAY\TXE\WIN_8.1\SetupTXE.exe

5-7-2 TXE Install for WIN7

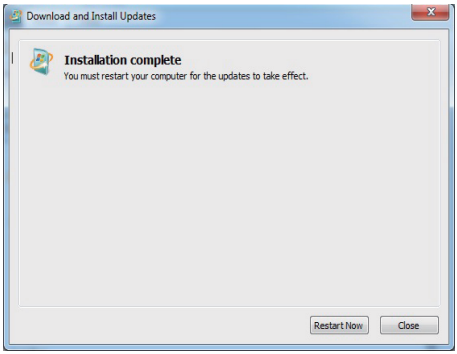
Please install PXE Patch first.



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

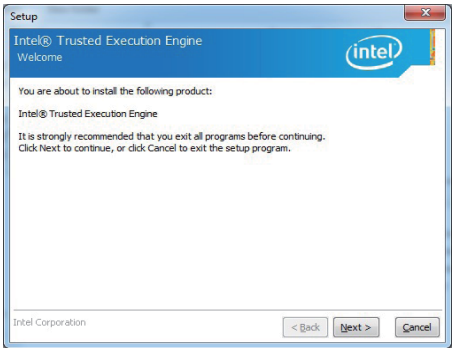


2. At the "Windows Update" screen, Click "Yes".

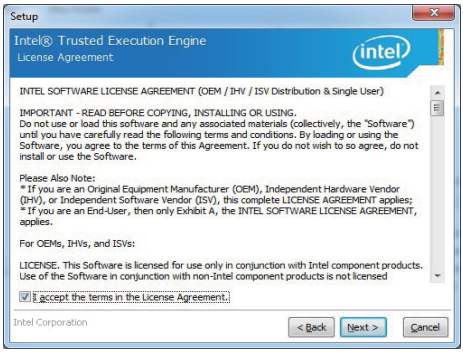


3. Click "Finish" & restart computer.

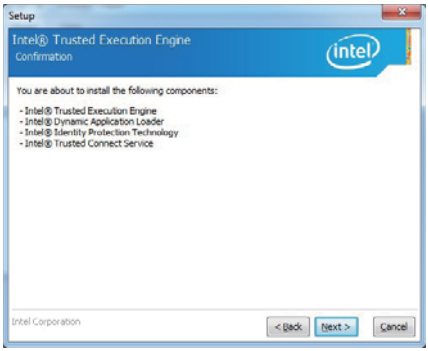
4. At the "AUTOMATIC DRIVER INSTALLATION menu", click "TXE "



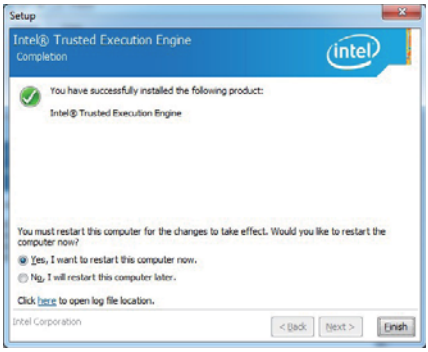
5. At the "TXE Setup" screen, Click "Next".



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 to your bootable disc. You may download it from our website.

STEP 3. Copy the latest BIOS for your LEX motherboard from our website to your bootable disc.

STEP 4. (Here take 2I382DW 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 2I382DWA1.BIN-BIOS-ALL

-BIOS : Flash BIOS region

-ALL : Flash all

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

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)