

3I385AW/CW

**Intel Bay Trail E3845 / J1900 (Quad Core) CPU,
DDR3L 1333 MT/s, 2 x LAN / DVI / VGA / USB / COM / PCIe mini card**

All-In-One

**Intel Bay Trail E3845 (1.91 GHZ) or J1900 (2.0 GHZ) CPU,
2 x Intel GbE LAN, 2 x PCIe mini card slots, VGA, DVI, SATA,
4 x USB 3.0, 1 x USB 2.0, 6 x COM, Wide Range DC-IN, LVDS,
Touch Screen**

NO. 3I385AW/CW

Release date: July 20th 2017

Contents

3I385AW/CW	
Warning!.....	1
Hardware Notice Guide	2
CHAPTER 1 GENERAL INFORMATION	4
1-1 MAJOR FEATURE.....	5
1-2 SPECIFICATION	6
1-3 INSTALLING THE SO-DIMM	7
1-3-1 REMOVING THE SO-DIMM	9
1-4 DIRECTIONS FOR INSTALLING THE MINI PCI-e CARD (FULL SIZE)	10
1-5 PACKING LIST	11
CHAPTER 2 HARDWARE INSTALLATION	12
2-1 UNPACKING PRECAUTION	12
2-2 UNPACKING CHECKUP	13
2-3 DIMENSION-3I385AW/CW-TOP	14
2-4 LAYOUT-3I385AW/CW-FUNCTION MAP-TOP	15
2-4-1 LAYOUT-3I385AW/CW-FUNCTION MAP-BOT	16
2-5 FUNCTION MAP-3I385AW/CW	17
2-6 CONNECTOR MAP-3I385AW/CW-TOP	18
2-6-1 CONNECTOR MAP-3I385AW/CW-BOT	19
2-7 DIAGRAM-3I385AW/CW-TOP.....	20
2-7-1 DIAGRAM-3I385AW/CW-BOT.....	21
2-8 INSTALL MEMORY	22
2-9 LIST OF JUMPERS	23
2-10 JUMPER SETTING DESCRIPTION	23
2-11 JSB1: CMOS DATA CLEAR	24
2-12 JVL1: LVDS PANEL POWER SELECT.....	25
2-13 JVC1/JVC3 COM1/3 PORT PIN9 SELECT RI SIGNAL OR VOLTAGE SOURCE.....	25
CHAPTER 3 CONNECTION	26
3-1 LIST OF CONNECTORS.....	26
3-2 CMOS BATTERY CONNECTOR	27
3-3 CBAT1: CMOS BATTERY IN 1x2PIN (1.25mm) WAFER	28
3-4 AUDIO INTERFACE	29
3-5 DVI-D/VGA DISPLAY INTERFACE	30
3-6 COM INTERFACE	31
3-6-1 CCD12 UP: COM1 DB9 CONNECTOR	31
3-6-2 CCD12 DOWN: COM2 DB9 CONNECTOR	31
3-6-3 CCD34 UP: COM4 DB9 CONNECTOR	32
3-6-2 CCD34 DOWN: COM4 DB9 CONNECTOR	34
3-6-5 COM5/COM6 2x5 PIN (2.0mm) WAFER	34

3-7 CFP1 FRONT PANEL CONNECTOR 2x5PIN (2.0mm) WAFER	35
3-8 DIGITAL INPUT / OUTPUT / WATCH DOG TIME	36
3-8-1 IO DEVICE: F75111 UNDER DOS	37
3-8-2 IO DEVICE: F75111 UNDER WINDOWS	39
3-8-3 IO DEVICE: F75111 VB6 UNDER WINDOWS	45
3-8-4 IO DEVICE: F75111 UNDER LINUX.....	49
3-9 RJ45 & USB3.0 / 2.0 INTERFACE	54
3-10 I ² C Bus INTERFACE	55
3-11 DC POWER INPUT	55
3-12 USB INTERFACE	56
3-13 SATA INTERFACE	57
3-14 SIM1: SIM CARD SOCKET	57
3-15 LVDS1: LVDS INTERFACE 2x15 PIN (1.25mm) WAFER.....	58
3-15-1 LVDS PANEL RESOLUTION TABLE LIST	59
3-16 TOUCH SCREEN DEVICE	60
3-17 CPP1: PANEL INVERTER POWER 1x5 PIN (2.0mm) WAFER	61
3-18 CKM1: PS2 KEYBOARD & MOUSE 1x6 PIN (1.25mm) WAFER	61
3-19 MODULE SOCKET	62
CHAPTER 4 INTRODUCTION OF BIOS	62
4-1 ENTER SETUP	63
4-2 BIOS MENU SCREEN & FUNCTION KEYS	64
4-3 GETTING HELP	65
4-4 MENU BARS	65
4-5 MAIN	66
4-6 ADVANCED	67
4-6-1 BOOT CONFIGURATION	67
4-6-2 PCI EXPRESS CONFIGURATION	68
4-6-2-1 HD-AUDIO CONFIGURATION	69
4-6-3 VIDEO CONFIGURATION	71
4-6-4 THERMAL CONFIGURATION.....	72
4-6-5 SATACONFIGURATION	73
4-6-6 ACPI TABLE/FEATURES CONTROL	74
4-7 SECURITY	75
4-8 POWER	76
4-9 BOOT	77
4-9-1 LEGACY	77
4-9-2 BOOT TYPE ORDER	78
4-10 EXIT	79
4-11 DEVICE MANAGER	80
4-11-1 SIO FINTEK8180U	81
4-11-2 HARDWARE MONITOR	82

4-11-3 SIO FINTEK81216D/DG	83
CHAPTER 5 DRIVER INSTALLATION	84
5-1 INF INSTALL INTEL BAYTRAIL CHIPSET DRIVER (EXAMPLE FOR WIN8 64bit)	87
5-2 VGA INSTALL INTEL BAYTRAIL VGA DRIVER (EXAMPLE FOR WIN8 64bit)	88
5-3 SERIAL IO INSTALL DRIVER BAYTRAIL SERIAL IO DRIVER (FOR WIN 7 ONLY)	90
5-4 xHCI INSTALL INTEL USB 3.0 xHCI DRIVER (FOR Windows 7 ONLY)	91
5-5 HD AUDIO INSTALL HIGH DEFINITION AUDIO DRIVER (EXAMPLE FOR WIN8 64bit)	93
5-6 MBIINSTALL INTEL MBI DRIVER (FOR Win 8/8.1 ONLY)	94
5-7 TXE INSTALL INTEL TXE DRIVER	96
5-7-1 TXE INSTALL FOR WIN8/WIN8.1	96
5-7-2 TXE INSTALL FOR WIN7	97
5-8 HOW TO UPDATE INSYDE BIOS	100
APPENDIX A: POWER CONSUMPTION TEST	101
APPENDIX B: RESOLUTION LIST	102

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User Manual edition 0.1, JUL. 28. 2017

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 from the motherboard will VOID the warranty of the motherboard.
9. Before you install/remove any components or even make any jumper setting on the motherboard, please make sure to disconnect the power supply first.
(follow the aforementioned instruction guide)
10. "POWERON after PWR-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.

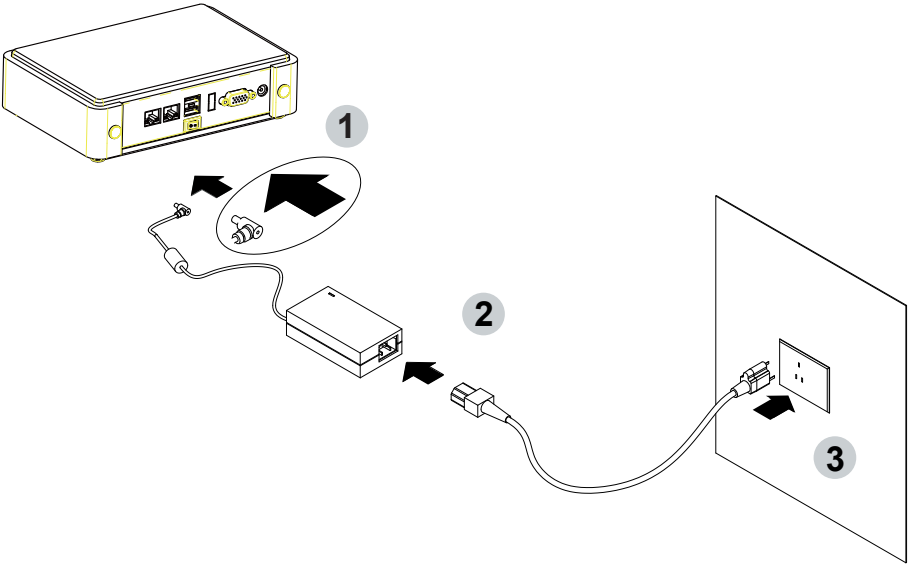
Remark 1:

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

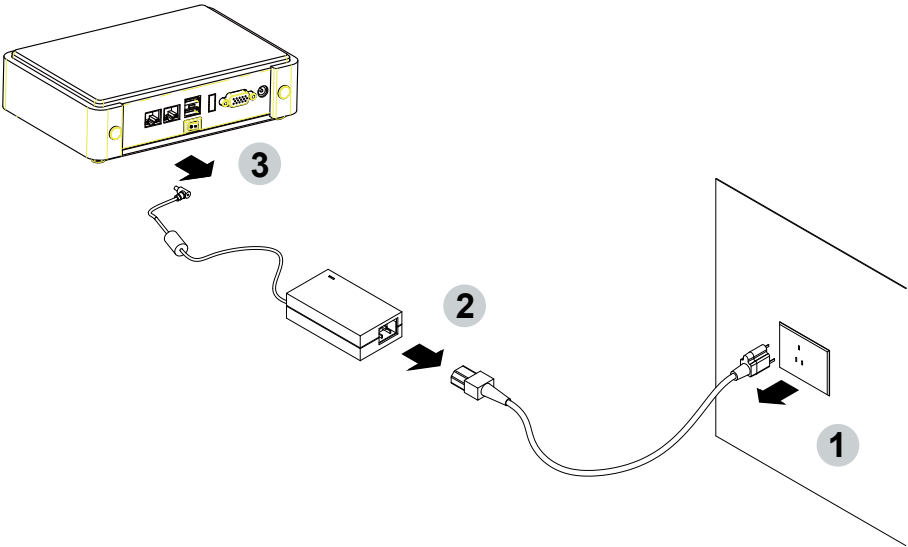
Moreover, erratic pull/push action might cause an unpredictable damage to the component & system unit.

Photo 1

Insert



Unplug



Chapter-1

General Information

The 3I385AW/CW is a 3.5-inch compact embedded system board that features Intel® Atom™ Bay Trail-I processor E3845 & Bay Trail-D J1900 on-board SoC and one SO-DIMM socket DDR3L 1333MT/s up to 8GB. The integrated 3.5-inch embedded board is highly expandable and customizable. 3I385AW/CW comes two Intel Giga LAN with Wake-On LAN and the PXE function, four serial ports RS232/RS485/RS422 jumper free auto switch by BIOS settings and up to 6 RS232. It supports 4 ports of USB 3.0 and 1 ports USB 2.0. The expandable interfaces include 1 full-size PCIe Mini card for PCIe x 1 or mSATA (auto-detection) and USB interface, and 1 full-size PCIe Mini card for PCIe x 1 and USB interface. A SIM card socket on board for expand 3G/4G module for communication.

The embedded motherboard 3I385AW/CW is specially designed expend more IO by dual type connectors which makes it to be ideal stable, wireless, anti-vibration for transportation and mobile applications. Wide-Range Voltage DC in (9~36V) designed for widely varying input voltage requirement. This integrated platform offers superb performance and PC specification in the industry. Additionally, Its compact and fanless design makes it perfect for use in space constricting environments.

3I385CW supports 1 LVDS interface for LCD Panel and 1 panel inverter power for Panel dimming control. It suitable for ALL-IN ONE Panel PC, POS Kiosk and automation control systems

The All-In-One motherboard 3I385AW/CW is fully compatible with industry standards, plus technical enhancements and thousands of software applications developed for IBM PC/AT compatible computers. These control logic provides high-speed performance for the most advanced multi user and multitasking applications available today.

Please kindly contact LEX (info@lex.com.tw) if you have any further query or want to get the detail information.

1-1 Major Feature

1. Intel® ATOMTM E3845 1.91GHz (Quad core), Intel® Celeron® Processor J1900 2.0GHz/2.42GHz, (Quad core)
2. Bay Trail-I E3845 Graphics speed: 542MHz/792MHz (Turbo), Bay Trail-D J1900G raphics speed: 688MHz/854MHz (Turbo) Support 1 DVI 1.2 2048 x 1080, 1 VGA up to 1920 x 1200
3. 1 SO-DIMM socket for DDR3L SDRAM up to 8GB, data transfer rate of 1333MT/s
4. Support 2 x 10/100/1000 Mbps Intel LAN port.
5. Support 4 x RS232 auto switch to RS485/RS422 by BIOS, 2 port RS232 internal
6. 4 x type A USB 3.0 external, 1 x USB 2.0 internal
7. Support extended 1 x full-size Mini PCIe card for PCIe x 1, mSATA and USB interface, 1 x full-size Mini PCIe card for PCIe x 1 and USB interface
8. 1 SIM card socket pair with MPCE2
9. Support 1 SATA port
10. Hardware digital Input & Output, 8 x DI/8 x DO, Hardware Watch Dog Timer, 0~255 sec programmable
11. Wide Range DC IN range from +9 to +36V, typical is +12/24V
12. PCB Dimension: 146 x 102 mm

1-2 Specification

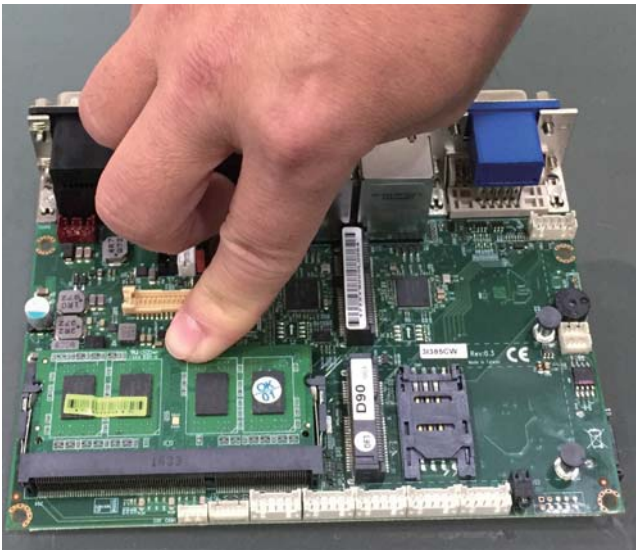
1. **SOC:** Intel® ATOM™ E3845 1.91GHz (Quad core), Intel® Celeron® Processor J1900 2.0GHz/2.42GHz, (Quad core)
2. **Memory:** 1 SO-DIMM socket for DDR3L SDRAM up to 8GB, data transfer rate of 1333MT/s
3. **Graphics:** Bay Trail-I E3845 Graphics speed: 542MHz/792MHz (Turbo), Bay Trail-D J1900 Graphics speed: 688MHz/854MHz (Turbo)
4. **SATA:** One SATA ports 2.0 Data transfer rates up to 3.0 GB/s (300 MB/s), One mini card socket for mSATA Data transfer rates up to 3.0 GB/s (300 MB/s)
5. **LAN:** Intel I211-AT LAN chipset for J1900, I210-IT for E3845
6. **I/O Chip:** F81801U I/O chipset for 2 serial ports and second I/O chipset for 4 RS232
7. **USB:** 4 type A USB 3.0 connector onboard, 1 USB 2.0 (internal)
8. **Sound:** N/A
9. **WDT/DIO:** Hardware digital Input & Output, 8 x DI/8 x DO (Option)/Hardware Watch Dog Timer, 0~255 sec programmable
10. **Expansion interface:** one full-size PCIe Mini card for PCIe x 1, mSATA and USB interface, one full-size Mini PCIe card for PCIe x 1 and USB interface
11. **SIM:** 1 socket pair with MPCE2
12. **BIOS:** Insyde UEFI BIOS
13. **Dimension:** 146 x 102 mm
14. **Power:** DC IN +9V~+36V

1-3 Installing the SO-DIMM

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



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

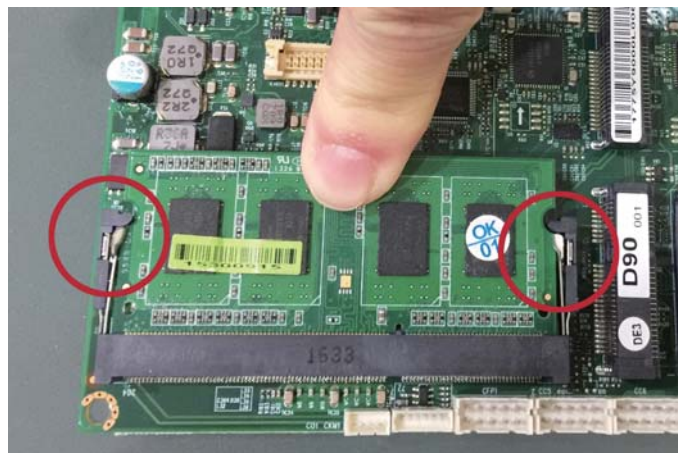


Notices:

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

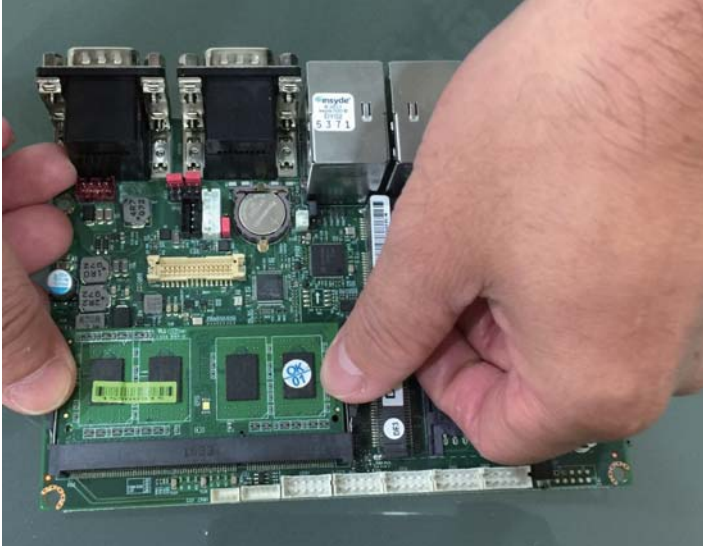


2. Make sure the retaining clips (on two sides of the slot) lock onto the notches of the card firmly.

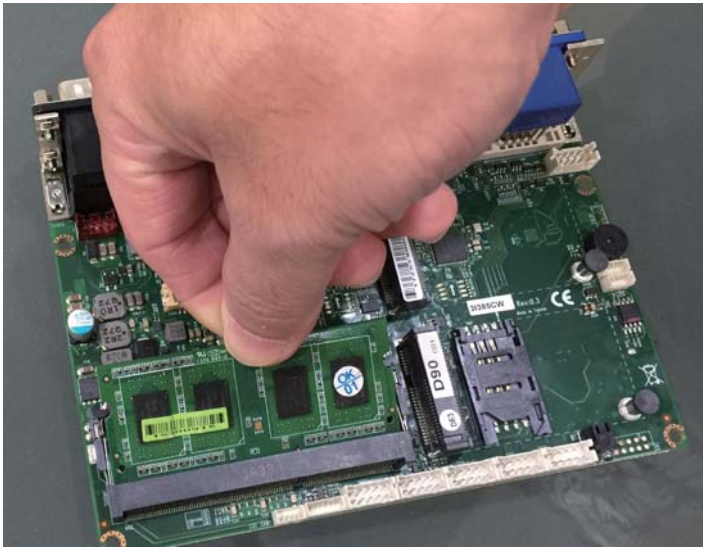


1-3-1.1 Removing the SO-DIMM

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



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



1-4 Directions for installing the Mini PCI-e Card (Full Size)

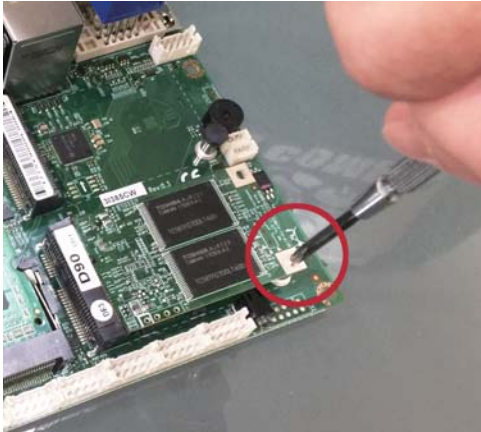
1. Unscrew the screw on the board



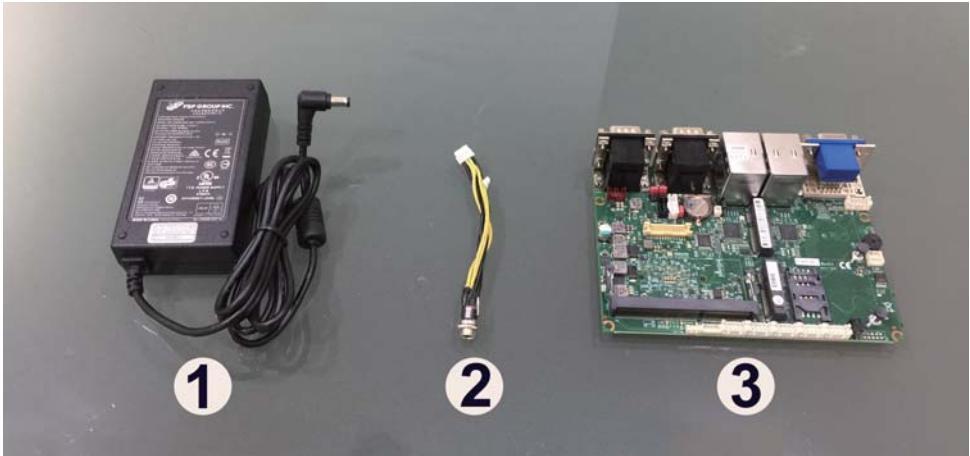
2. Plug in the Mini Card in a 45 angle



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



1-5 Packing List



	Material Code	Description	Detail Specification	Quantit
1	6G5212-0620-0100	■60W Power Adapter, 12V/5A, 2.5Ø	LF, L Type, FSP060-DIBAN2, FSP	1
2	6G6003-7350-0100	Power Cable	LF, 2.0 2*4/DC JK, L=9cm	1
3	7G1901-1687001-0	MB-3I385AW-I40-001	LF, 3I385AW-I40, Rev.: 001	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 3I385AW/CW. Please follow section 1-5, 2-1 and 2-2 to check the delivery package and unpack carefully. Please follow the jumper setting procedure.

NOTE!

1. Do not touch the board or any other sensitive components without all necessary anti-static protection.
2. Please pay attention to the voltage limitation of DC-IN12V 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:

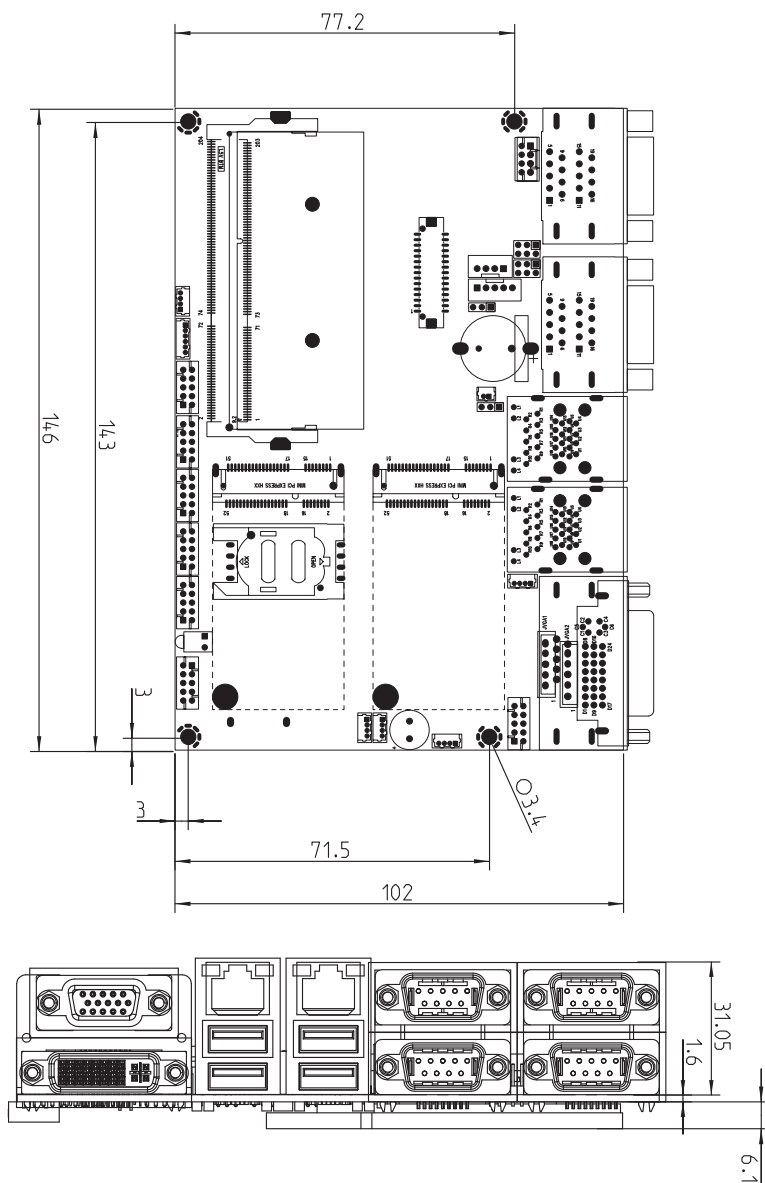
1. Ground yourself by a grounded wrist strap at all times when you handle the 3I385AW/CW.
Well secure the ALLIGATOR clip of the strap to the end of the shielded wire lead from a grounded object. Please put on and connect the strap before handling the 3I385AW/CW for harmlessly discharge any static electricity through the strap.
2. Please use anti-static pad to put any components, parts, or tools on the pad whenever you work on them outside the computer. You may also use the anti-static bag instead of the pad. Please ask your local supplier for necessary parts on anti-static requirement.
3. Do not plug any connector or set any jumper when the power is on.

2-2 Unpacking checkup

First of all, please follow all necessary steps of section 2-1 to protect 3I385AW/CW from electricity discharge. With reference to section 1-5 please check the delivery package again with following steps:

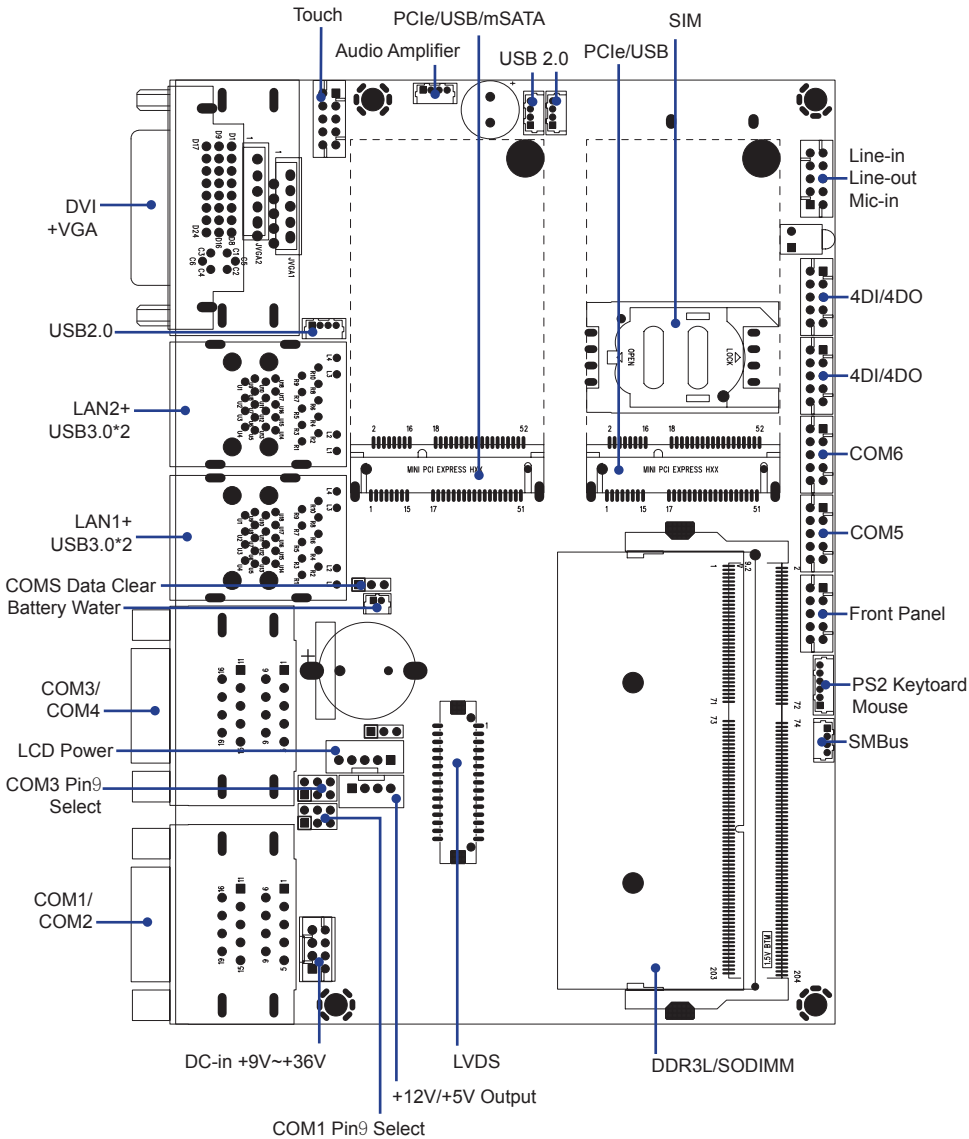
1. Unpack the 3I385AW/CW board and keep all packing material, manual and driver disc etc, do not dispose !
2. Is there any components lose or drops from the board?
DO NOT CONTINUE TO INSTALL THIS BOARD!
CONTACT THE DEALER YOU PURCHASED THIS BOARD FROM, IMMEDIATELY.
3. Is there any visible damage on the board?
DO NOT CONTINUE TO INSTALL THIS BOARD!CONTACT THE DEALER YOU PURCHASED THIS BOARD FROM, IMMEDIATELY.
4. Check your optional parts (i.e. DDR, CF etc.), all necessary jumpers setting to jumper pin-set, and CMOS setup correctly.
Please also refer to all information of jumper settings in this manual.
5. Check your external devices (i.e. Add-On-Card, Driver Type etc.) for complete add-in or connection and CMOS setup correctly.
Please also refer to all information of connector connection in this manual.
6. Please keep all necessary manual and driver disc in a good condition for future re-installation if you change your Operating System.

TOP



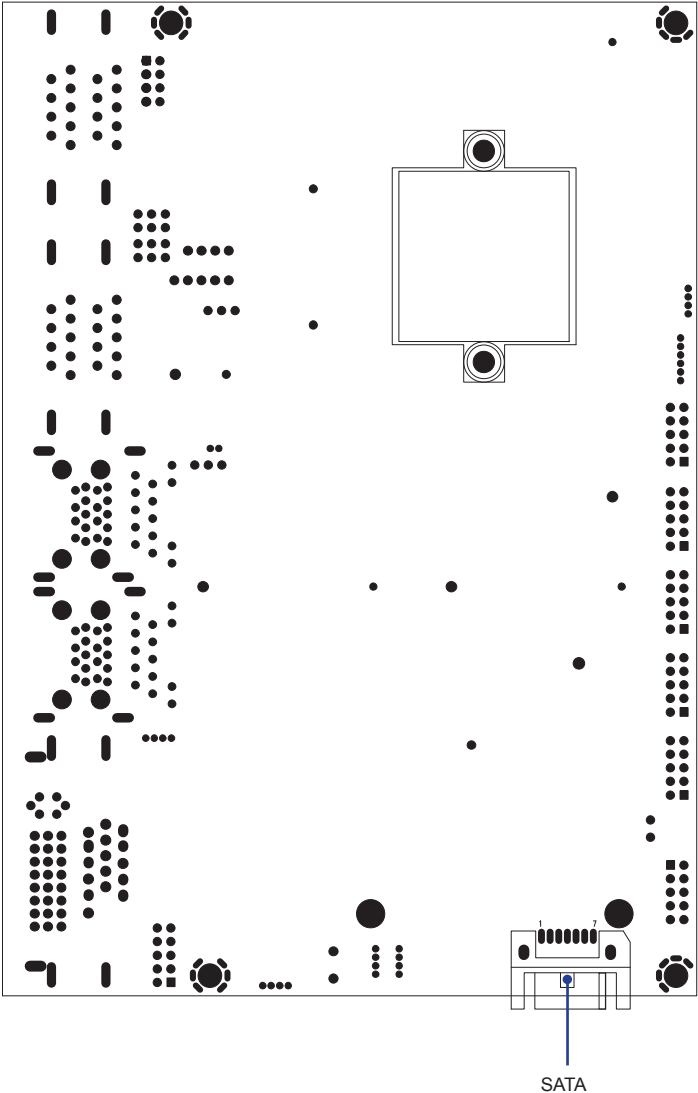
2-4 Layout-3I385AW/CW-Function Map

TOP

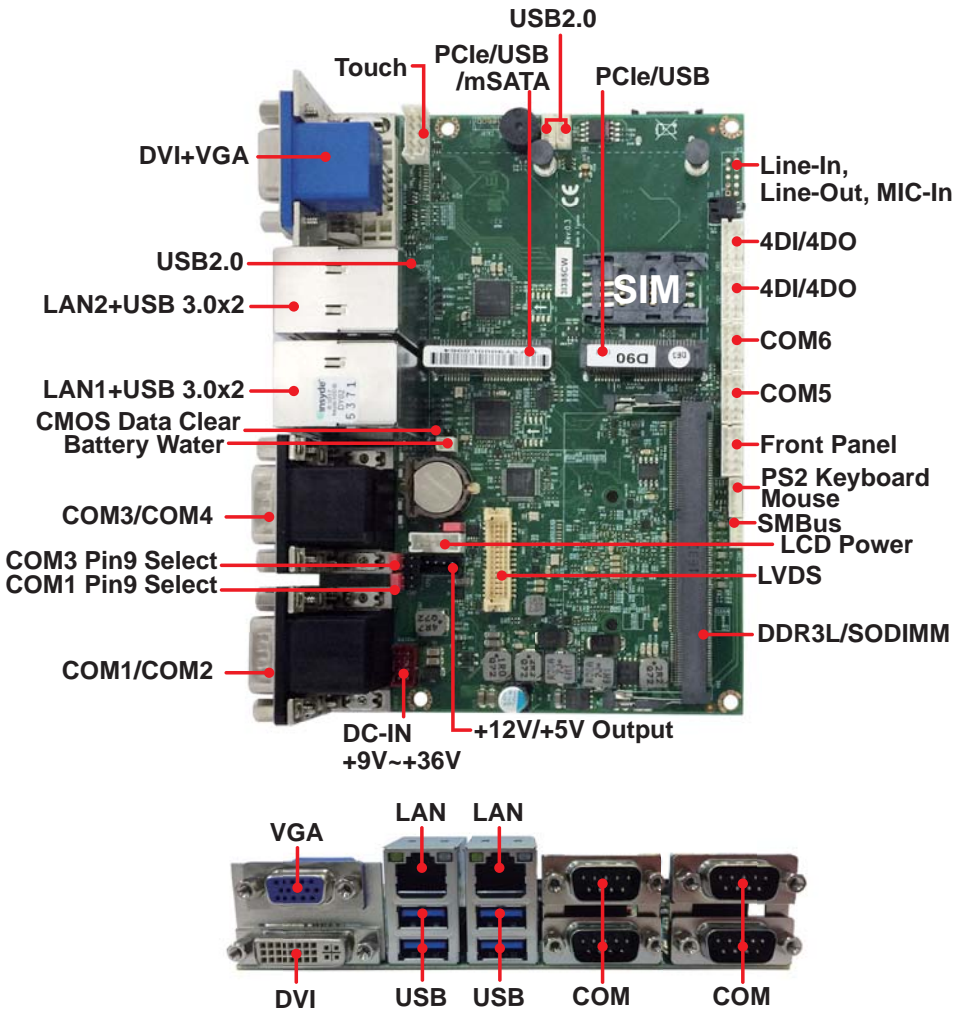


2-4-1 Layout-3I385AW/CW-Function Map

BOT

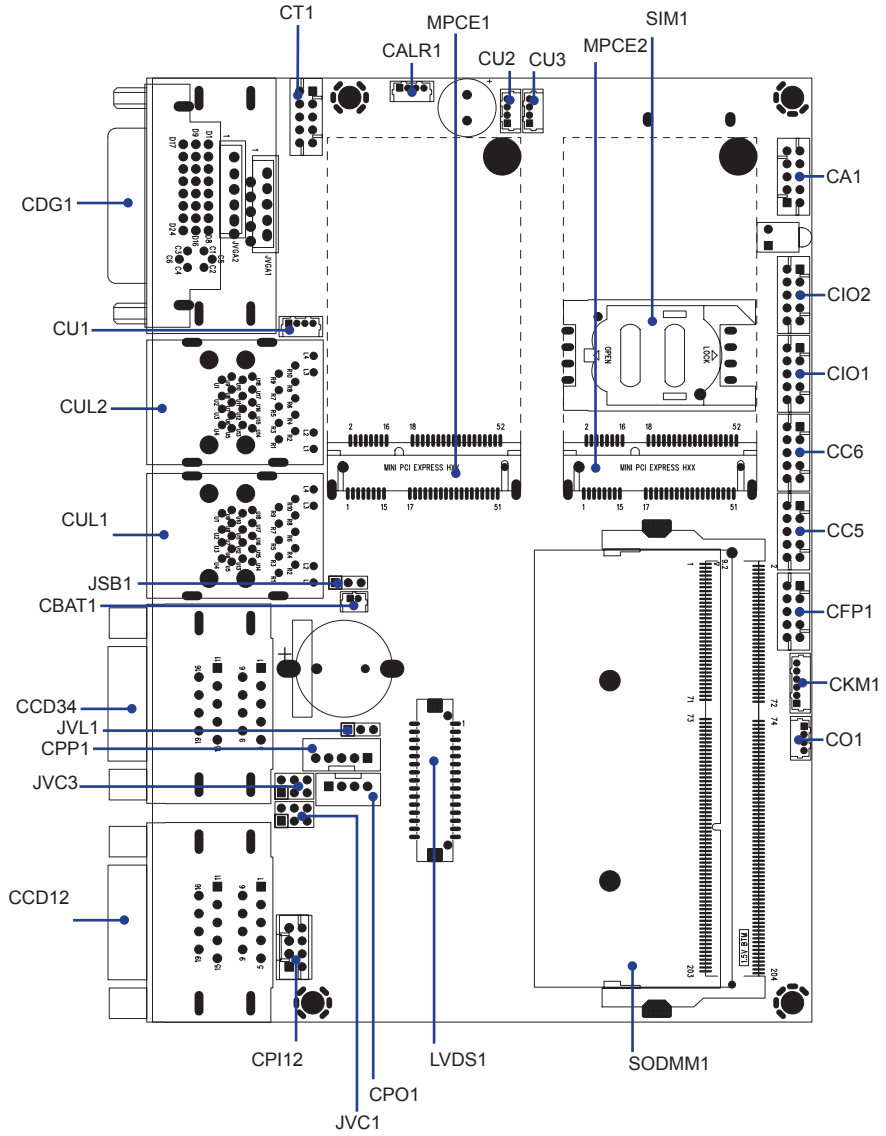


2-5 Function Map-3I385AW/CW



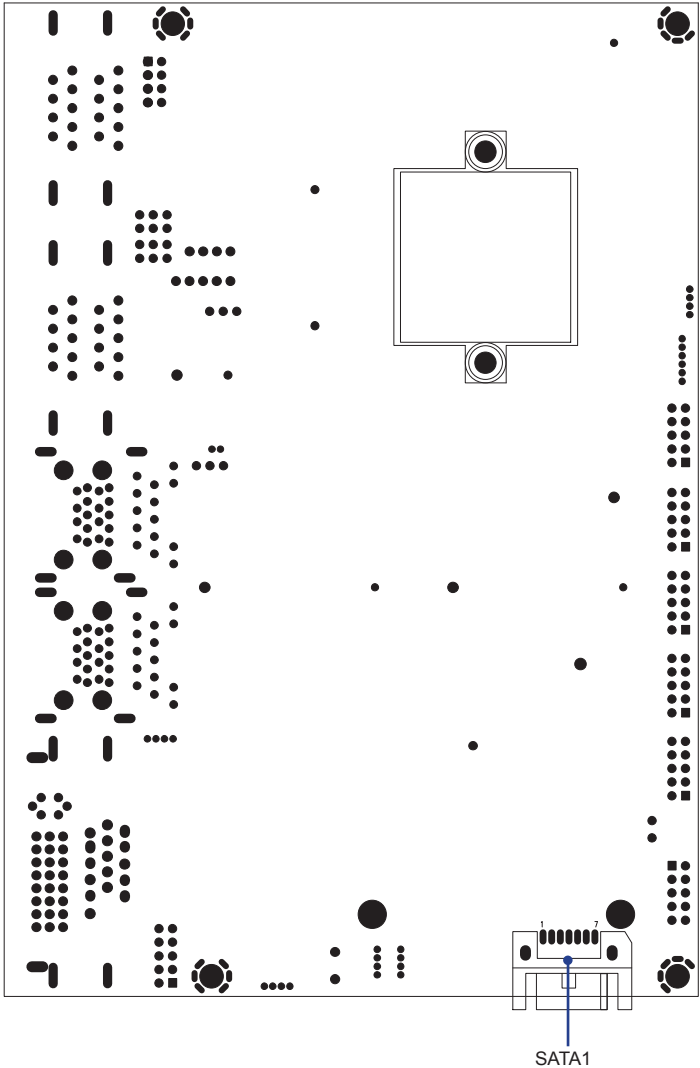
2-6 Connector MAP-3I385AW/CW

TOP



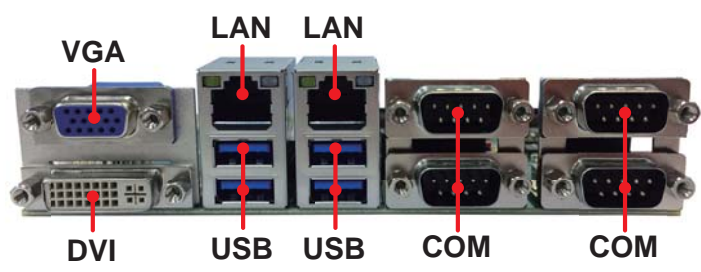
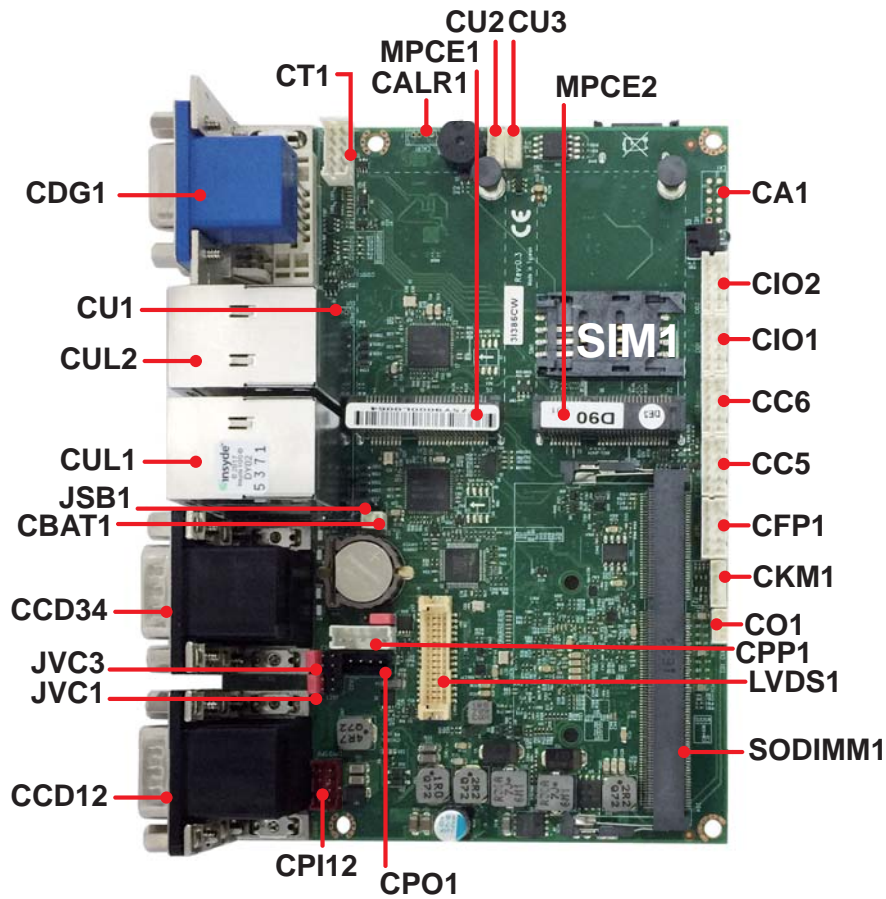
2-6-1 Connector MAP-3I385AW/CW

BOT



2-7 Diagram- 3I385AW/CW

TOP



2-7-1 Diagram- 3I385AW/CW

BOT



2-8 Install Memory

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

Valid Memory Configurations

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

DS: Double Sided DIMM

SS: Single Sided DIMM

NOTE!

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

Please refer to page 9 for installation of memory module.

2-9 List of Jumpers

1-1 JSB1: CMOS DATA Clear

1-2 JVL1: LVDS Panel power select

1-3 JVC1/JVC3 COM1/3 port pin9 select RI signal or Voltage source

2-10 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.

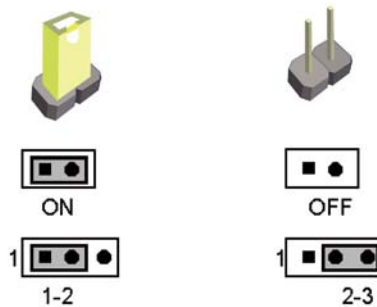


Figure 2.2

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 .

2-11 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 teh AC power
- 2. Remove DC IN power cable from DC IN power connector
- 3. Locate JSB1 and close pin 1-2 for few seconds
- 4. Return to default setting by Close pin 1-2
- 5. Connect DC IN power cable back to DC IN Power connector

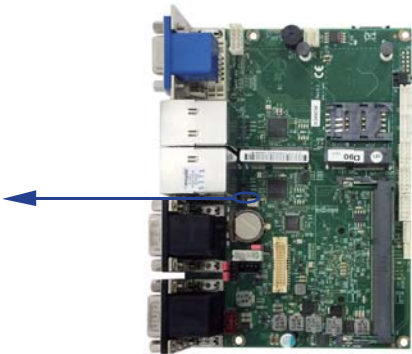
JSB1	DESCRIPTION
*1-2	Normal set
2-3	CMOS data clear

Note: Normal work is open jumper

Note: Do not clear CMOS unless

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

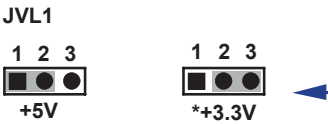
JSB1



2-12 JVL1: LVDS Panel power select

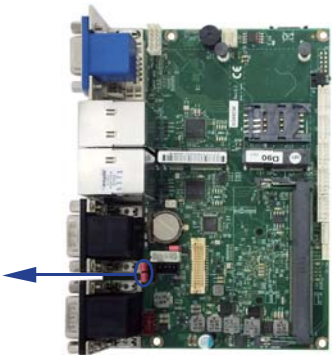
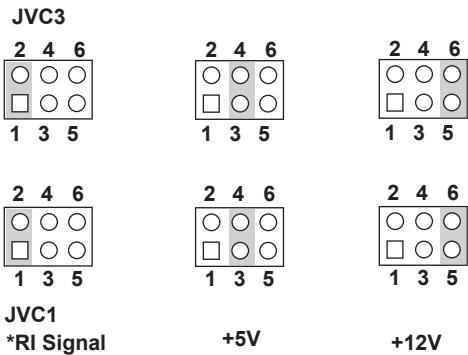
JVL1	DESCRIPTION
1-2	+5V
*2-3	+3.3V

Note: Attention! Check Panel Power in spec



2-13 JVC1/JVC3 COM1/3 port pin9 select RI signal or Voltage source

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



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

BAT1:	Li 3V battery holder
CBAT1:	CMOS Battery in 1x2 pin (1.25mm) wafer
CA1:	Line-out/Line-in/MIC-in 2x5 pin (2.0mm) wafer
CALR1:	Amplifier Line-out Right/Left channel 1x4pin (1.25mm) wafer
CDG1 :	DVI +VGA DB15 connector
CCD12 :	COM1/2 Dual DB9 connector
CCD34:	COM3/4 Dual DB9 connector
CC5:	COM5 2x5 pin (2.0mm) wafer
CC6:	COM6 2x5 pin (2.0mm) wafer
CFP1:	Front Panel connector 2x5 pin (2.0mm) wafer
CIO1:	First DIO 2x5 pin (2.0mm) wafer
CIO2:	Second DIO 2x5 pin (2.0mm) wafer
CUL1 :	LAN port 1 RJ45 + USB3.0 Type A x 2 Connector
CUL2 :	LAN port 1 RJ45 + USB3.0 Type A x 2 Connector
CO1:	I2C Bus 1x4 pin (1.25mm) wafer
CPI12:	DC 12V-IN 2x4 pin (2.0mm) Red wafer
CPI1:	DC 12V-IN 1x4 pin (2.0mm) Red wafer (option)
CPO1:	+12V/+5V power output 1x4 pin (2.0mm) Black wafer
CU1:	USB 2.0 port 1x4 pin (1.25mm) wafer -- share Touch function
CU2:	USB 2.0 port 1x4 pin (1.25mm) wafer -- share MPEC1
CU3:	USB 2.0 port 1x4 pin (1.25mm) wafer -- share MPEC2
SATA1:	SATA connector 7pin.
SIM1:	SIM socket.
SODIM1:	DDR3L SO-DIMM socket 204pin.
LVDS1:	LVDS 2x15 pin (1.25mm) wafer
CPP1:	Panel inverter power 1x5 pin (2.0mm) wafer
CT1:	Touch screen device 2x5 pin (2.00mm) wafer-- share USB2.0 function
CKM1:	PS2 Keyboard/Mouse 1x6pin (1.25mm) wafer
MPCE1:	Full size mini card port 1 sockets 52pin
MPCE2:	Full size mini card port 2 sockets 52pin

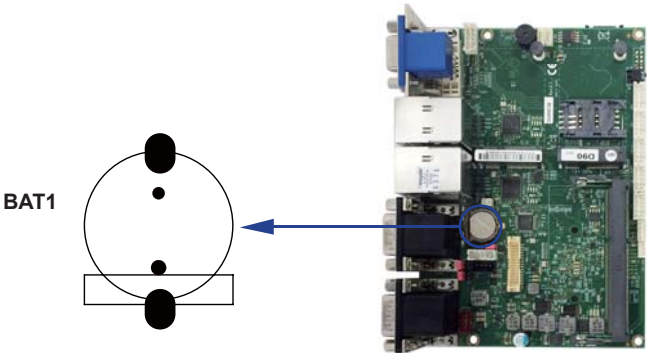
3-2 CMOS battery connector

- BAT1: Battery use type Li 3V/48mA (BR1225)

PIN NO.	DESCRIPTION
1	+VRTC 3.3V
2	GND

Note :

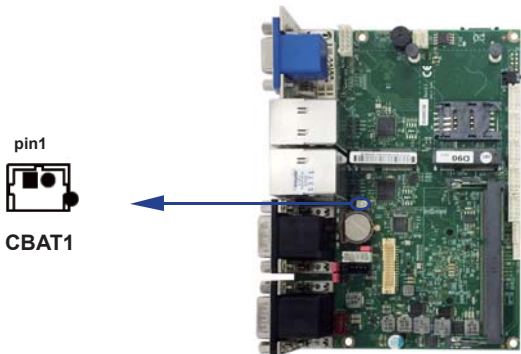
- 1.When board without Adaptor plug in, this board power RTC consumption 2.7uA
- 2.If adaptor always plug in RTC power consumption 0.1uA



3-3 CBAT1: CMOS Battery in 1x2pin (1.25mm) wafer

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

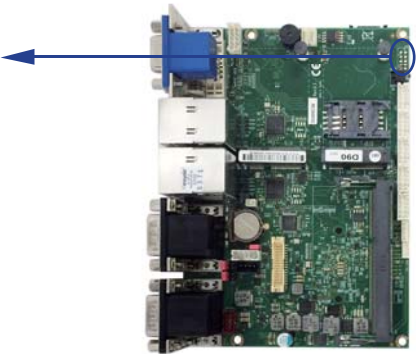
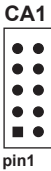
NOTE: CBAT1 for external connector can extend battery capacity.



3-4 Audio interface

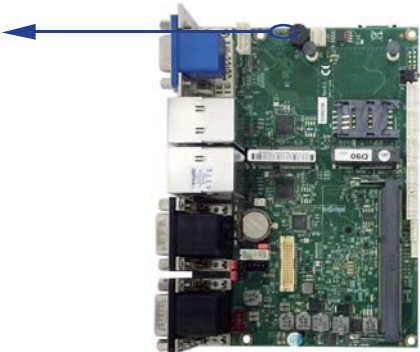
- CA1: Line-out/Line-in/MIC-in 2x5 pin (2.0mm) wafer

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



- CALR1: Amplifier Line-out Right & Left channel 1x4 pin (1.25mm) wafer

PIN NO.	DESCRIPTION
1	Left+
2	Left-
3	Right-
4	Right+



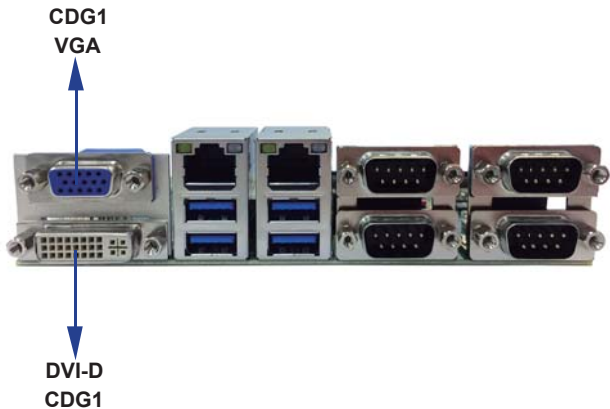
3-5 DVI-D/VGA Display Interface

● CDG1: DVI 12bit connector down side (DB Connector)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	Data 2-	9	Data 1-	17	Data 0-
2	Data 2+	10	Data 1+	18	Data 0+
3	GND	11	GND	19	GND
4	NC	12	NC	20	NC
5	NC	13	NC	21	NC
6	I2C-CLK	14	+5V	22	GND
7	I2C-DATA	15	GND	23	CLK+
8	NC	16	DVI-DETECT	24	CLK-

● CDG1: VGA DB15 Connector Up side (D-SUB 15PIN)

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



3-6 COM Interface

3-6-1 CCD12 UP: COM1 DB9 Connector

• RS232 Mode

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

Note: The pin9 RI can be modify to Power to supply device. The power voltage can be set +12V or +5V. The RI change Voltage function set by JVC1. Default is RI signal.

• RS485 Mode

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

Note: The COM1 mode decides from BIOS Setup selected.

• RS422 Mode

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

Note: The COM1 mode decides from BIOS Setup selected.

3-6-2 CCD12 DOWN: COM2 DB9 Connector

• RS232 Mode

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

Note: The pin9 RI can be modify to Power to supply device. The power voltage can be set +12V or +5V. The RI change Voltage function set by BOM Control. Default is RI signal.

• RS485 Mode

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

Note: The COM2 mode decides from BIOS setup selected.

• RS422 Mode

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

Note: The COM2 mode decides from BIOS Setup selected.

3-6-3 CCD34 UP: COM4 DB9 Connector

• RS232 Mode

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

Note: The pin9 RI can be modify to Power to supply device. The power voltage can be set +12V or +5V. The RI change Voltage function set by JVC3. Default is RI signal.

• RS485 Mode

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

Note: The COM3 mode decides from BIOS setup selected.

• RS422 Mode

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

Note: The COM3 mode decides from BIOS setup selected.

3-6-4 CCD34 DOWN: COM4 DB9 Connector

● RS232 Mode

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

Note: The pin9 RI can be modify to Power to supply device. The power voltage can be set +12V or +5V. The RI change Voltage function set by BOM control.Default is RI signal.

● RS485 Mode

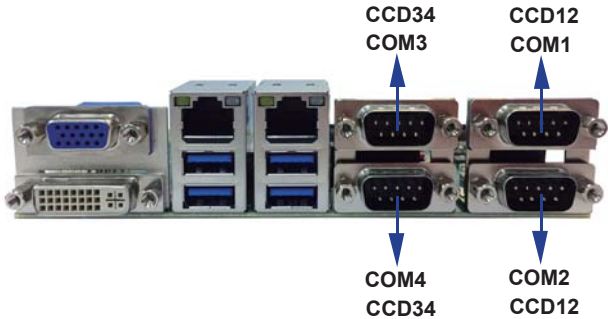
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	Data-	6	NC
2	Data+	7	NC
3	NC	8	NC
4	NC	9	NC
5	GND		

Note: The COM4 mode decides from BIOS setup selected.

● RS422 Mode

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

Note: The COM4 mode decides from BIOS setup selected.



3-6-5 CC5: COM5/CC6: COM6 2x5 pin (2.0mm) wafer

● RS232 Mode

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

Note: COM 5/6 Default RS232, RS485/RS422 by BOM control.

● RS485 Mode

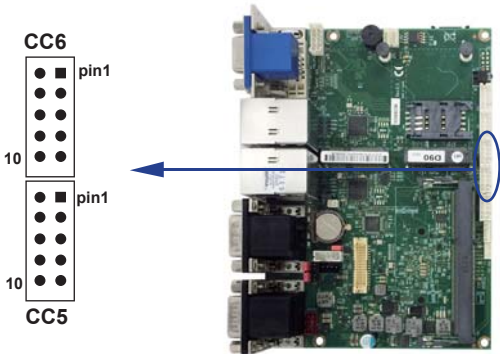
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DCD-	6	NC
2	RXD+	7	NC
3	NC	8	NC
4	NC	9	NC
5	GND		

Note: COM 5/6 Default RS232, RS485/RS422 by BOM control.

● RS422 Mode

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

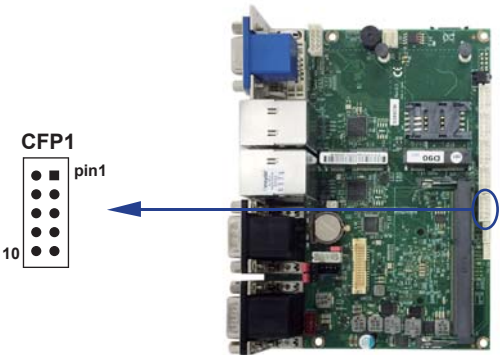
Note: COM 5/6 Default RS232, RS485/RS422 by BOM control.



3-7 CFP1 Front Panel connector 2x5pin (2.0mm) wafer

● RS232 Mode

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+



3-8 Digital Input / Output / Watch Dog Time

● 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

● CIO2: DIO 4--7 (2 x 5pin 2.0mm wafer)

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

Note :

- 1. DI pin default pull up 10KΩ to +5V
- 2. If use need isolate circuit to control external device
- 3. F75111N-1 I²C bus address 0x9c

● For F75111N I C watch dog timer device:

DC spec:

Input low Voltage (VIL)\+0.8 Max

Input High Voltage (VIH): +2V Min

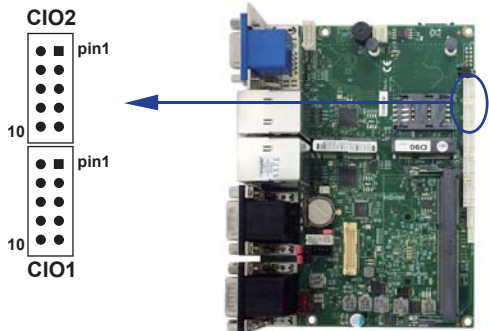
Output low Current (IOL): 10mA (Min) VOL=0.4V

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

Watch Dog Time value 0~255 sec

The system will be issued reset. When WDT is enable the hardware start down counter to zero. The reset timer have 10~20% tolerance upon the Temperature.

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



3-8-1 IO Device: F75111 under DOS

The Sample code source you can download from

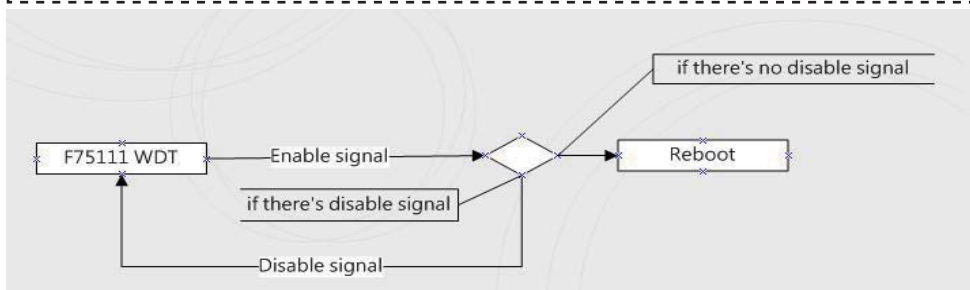
Source file: F75111_Dos_Src.rar http://tprd.info/lexwiki/index.php/IO_Device:F75111_under_DOS

Binary file: F75111_Dos_Bin.rar

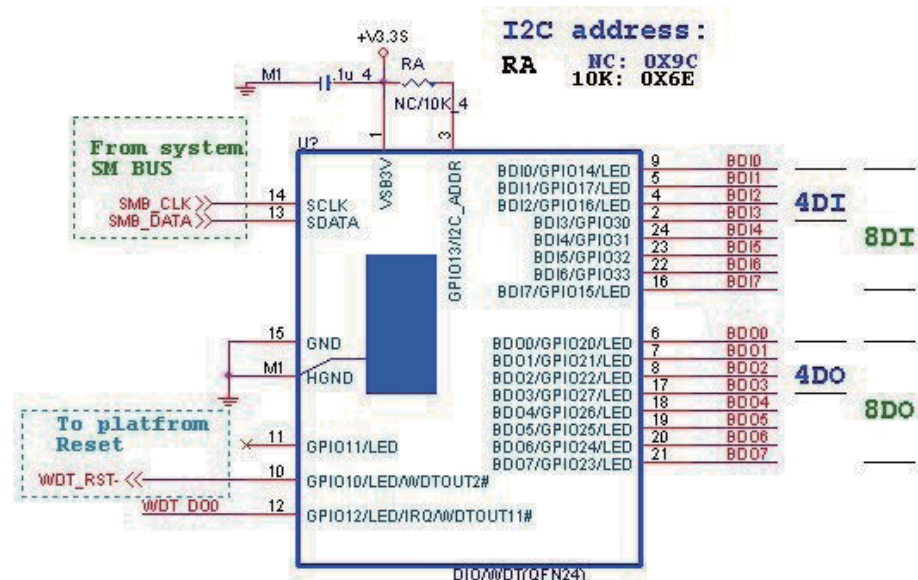
USERNAME & PASSWORD: sf

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



F75111 Layout Picture



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;
}
```

3-8-2 IO Device: F75111 under Windows

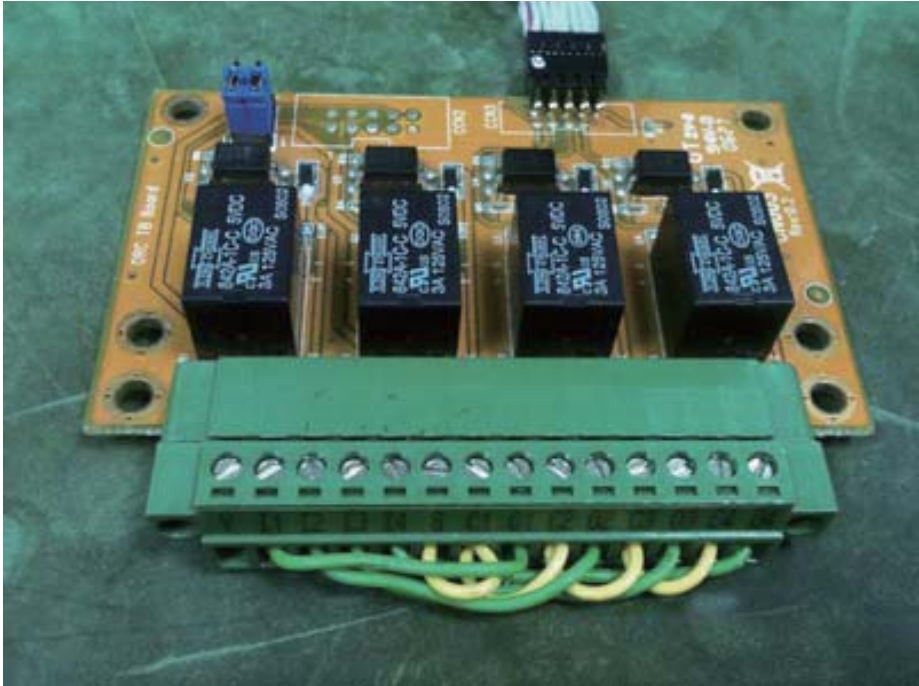
The Sample code source you can download from

Source file: F75111_DIO_Src_v2.8W(32bit).zip http://tprd.info/lexwiki/index.php/IO_Device:F75111

Binary file: F75111_DIO_Bin_v2.8W(32bit).zip

USERNAME & PASSWORD: sf

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



How to use this Demo Application

one F75111

two F75111

Customize 75111 Address

Input your customize address1 : 9C

Input your customize address2 :

DIO Test

☒ DI/DO1 TEST(HI) []

☒ DI/DO1 TEST(LO) []

☐ DI/DO2 TEST(HI) []

☐ DI/DO2 TEST(LO) []

7 6 5 4 3 2 1 0

DO1 Status : [] [] [] [] [] [] [] []

DI1 Status : [] [] [] [] [] [] [] []

DO2 Status : [] [] [] [] [] [] [] []

DI2 Status : [] [] [] [] [] [] [] []

Start

WDT Test

Enable 10 Disable

☐ Enable Loop

Install WDT

Customize 75111 Address

Input your customize address1 : 0x []

Input your customize address2 : 0x 6E

DIO Test

☒ DI/DO1 TEST(HI) []

☒ DI/DO1 TEST(LO) []

☒ DI/DO2 TEST(HI) []

☒ DI/DO2 TEST(LO) []

7 6 5 4 3 2 1 0

DO1 Status : [] [] [] [] [] [] [] []

DI1 Status : [] [] [] [] [] [] [] []

DO2 Status : [] [] [] [] [] [] [] []

DI2 Status : [] [] [] [] [] [] [] []

Start

WDT Test



Enable 10 Disable

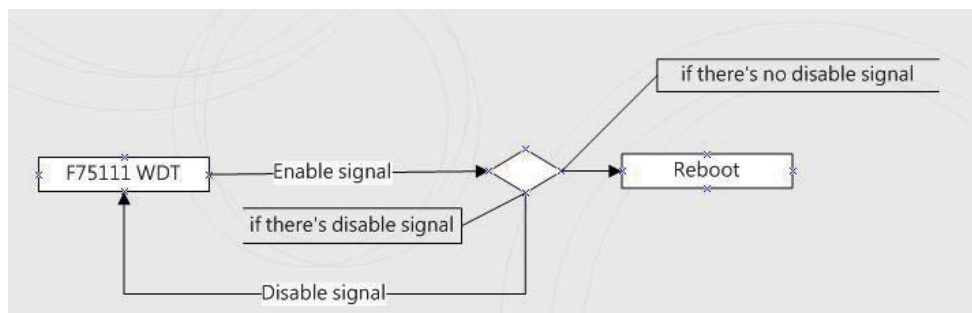
☐ Enable Loop

Install WDT

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.

WARNING: win7 system architecture, use the system administrator to open DIO utility

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 



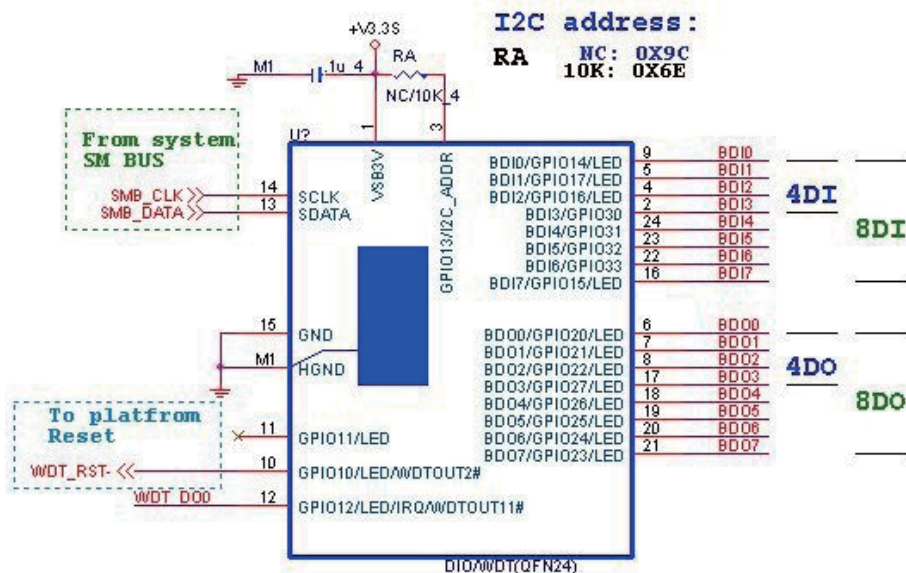
p.s.

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

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()
  
```

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.
}
```

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
}
```

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.
//-----
#define WDT_TIMER_RANGE            0x37 // 0-255 (second or minute program by WDT_UNIT)
#define WDT_CONFIGURATION          0x36 // Configure WDT Function
#define WDT_TIMEOUT_FLAG           0x40 // When watchdog timeout.this bit will be set to 1.
#define WDT_ENABLE                 0x20 // Enable watchdog timer
#define WDT_PULSE                  0x10 // Configure WDT output mode
// 0:Level Mode
// 1:Pulse Mode
#define WDT_UNIT                   0x08 // Watchdog unit select.
// 0:Select second.
// 1:Select minute.
#define WDT_LEVEL                  0x04 // When select level output mode:
// 0:Level low
// 1:Level high
#define WDT_PSWIDTH_1MS            0x00 // When select Pulse mode: 1 ms.
#define WDT_PSWIDTH_20MS           0x01 // When select Pulse mode: 20 ms.
#define WDT_PSWIDTH_100MS          0x02 // When select Pulse mode: 100 ms.
#define WDT_PSWIDTH_4000MS         0x03 // When select Pulse mode: 4 s.

```

3-8-3 IO Device: F75111 VB6 under Windows

The Sample code source you can download from

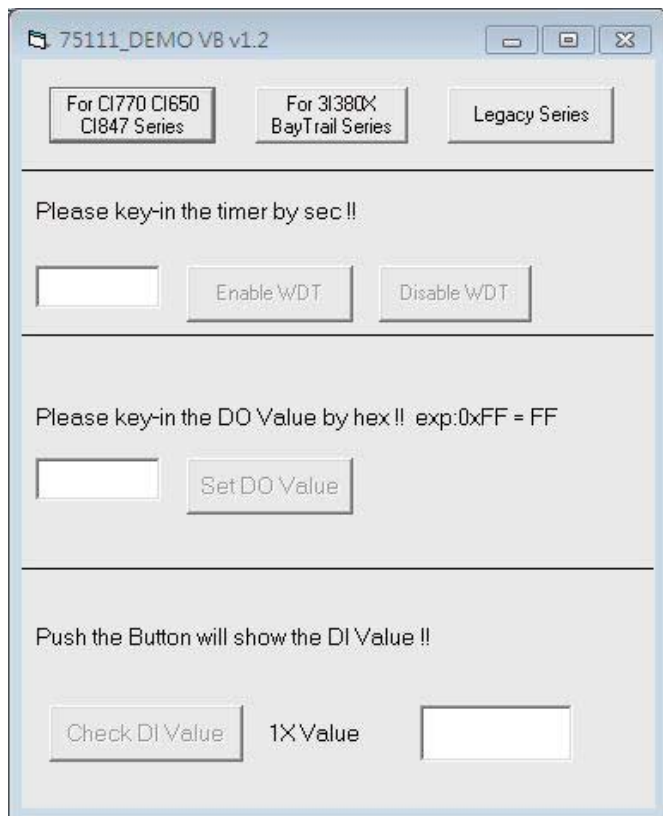
Source file: 75111_VB_v1.2.rar

http://tprd.info/lexwiki/index.php/IO_Device:F75111_VB6

Binary file: 75111_VB_Src1.2.rar

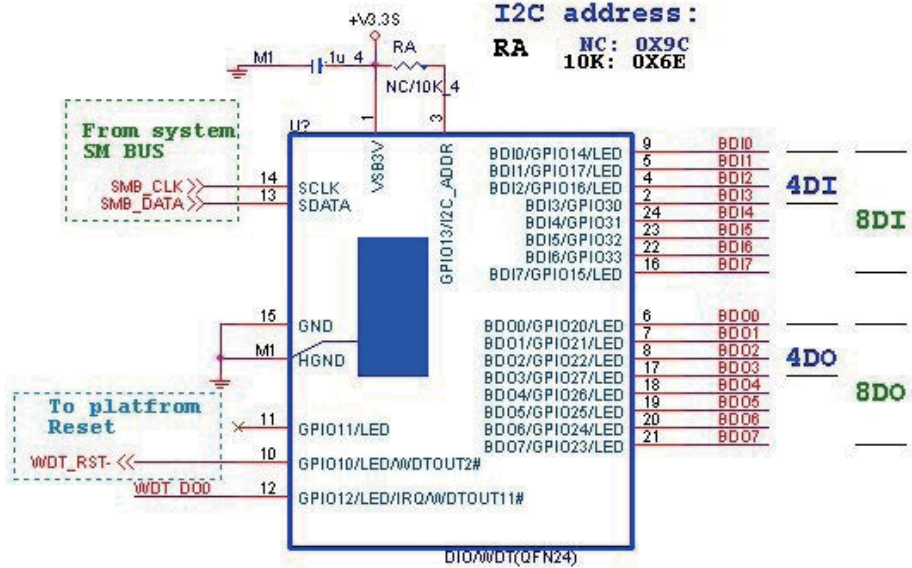
USERNAME & PASSWORD: sf

How to use this Demo Application



- A Function - Choose your motherboard model
- B Function - Enable WDT timer ,Key-in the value by seconds then system will reboot after value which you key-in in left text box !!
- C Function - Disable WDT timer ,Push down the button then WDT timer value will be clear !!
- D Function - Set DO Value ,Key-in the DO value by hex then push the button !!
- E Function - Check DI Value ,The right side two text box will display DI 1X & 2X Value when you push down the button!!

F75111 Layout Picture



SDK Function Introduction

Function EnableWDT

Function EnableWDT(timer As Integer)

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

End Function

Function DisableWDT

Function DisableWDT()

Call Writel2CByte(&H36, &H0)

End Function

Function SetDOValue

```
Function SetDOValue(dovalue As Integer)
```

```
Dim Data As Integer
```

```
Dim Value As Integer
```

```
Data = 0
```

```
Value = dovalue
```

```
If (Value And &H1) <> 0 Then
```

```
    Data = Data + &H1
```

```
End If
```

```
If (Value And &H2) <> 0 Then
```

```
    Data = Data + &H2
```

```
End If
```

```
If (Value And &H4) <> 0 Then
```

```
    Data = Data + &H4
```

```
End If
```

```
If (Value And &H80) <> 0 Then
```

```
    Data = Data + &H8
```

```
End If
```

```
If (Value And &H40) <> 0 Then
```

```
    Data = Data + &H10
```

```
End If
```

```
If (Value And &H20) <> 0 Then
```

```
    Data = Data + &H20
```

```
End If
```

```
If (Value And &H10) <> 0 Then
```

```
    Data = Data + &H40
```

```
End If
```

```
If (Value And &H8) <> 0 Then
```

```
    Data = Data + &H80
```

```
End If
```

```
Call WriteI2CByte(&H23, &H0)
```

```
Call WriteI2CByte(&H20, &HFF)
```

```
Call WriteI2CByte(&H2B, &HFF)
```

```
Call WriteI2CByte(&H21, Data)
```

```
End Function
```

Function CheckDIValue

```
Function CheckDIValue()  
Dim GPIO1X As Integer  
Dim GPIO3X As Integer  
Dim DI1Xhex As String  
Dim DI3Xhex As String  
  
Dim Data As Long  
  
Data = 0  
  
Call ReadI2CByte(&H12, GPIO1X)  
Call ReadI2CByte(&H42, GPIO3X)  
  
GPIO1X = GPIO1X And &HF0  
GPIO3X = GPIO3X And &HF  
  
If (GPIO1X And &H10) <> 0 Then  
    Data = Data + &H1  
End If  
  
If (GPIO1X And &H80) <> 0 Then  
    Data = Data + &H2  
End If  
  
If (GPIO1X And &H40) <> 0 Then  
    Data = Data + &H4  
End If  
  
If (GPIO3X And &H1) <> 0 Then  
    Data = Data + &H8  
End If  
  
If (GPIO3X And &H2) <> 0 Then  
    Data = Data + &H10  
End If  
  
If (GPIO3X And &H4) <> 0 Then  
    Data = Data + &H20  
End If  
  
If (GPIO3X And &H8) <> 0 Then  
    Data = Data + &H40  
End If  
  
If (GPIO1X And &H20) <> 0 Then  
    Data = Data + &H80  
End If  
  
DI1Xhex = Hex(Data)  
  
Text3.Text = "0x" + DI1Xhex  
  
End Function
```

3-8-4 IO Device: F75111 under linux

The Sample code source you can download from

Source file: F75111v2.4L_SRC.tar.gz http://tprd.info/lexwiki/index.php/IO_Device:F75111_under_linux

Binary file: F75111v2.4L_BIN.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

F75111v2.3L

Customize F75111 Address : 0x

DIO Test

DI / DO Test (Low)

DI / DO Test (High)

7 6 5 4 3 2 1 0

DO Status ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

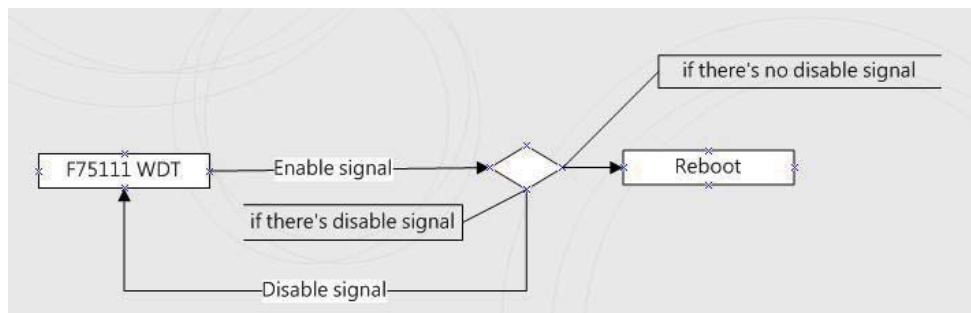
DI Status ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

WDT Test

☐ Enable Loop Test

WDT Stand by

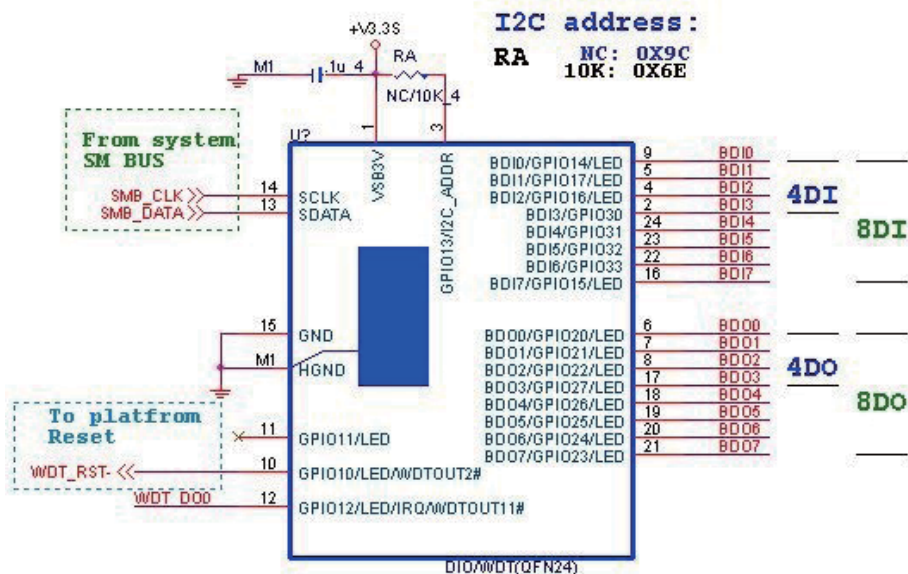
1. Press the "Start" button to test DIO function
2. Press the "Enable" button to test WDT function
3. Press the "Disable" button to disable WDT
4. Check the "Enable Loop" box and press "Enable" to do WDT loop test
5. Press "Install" to set the system to autorun this application when booting, press "Uninstall"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

F75111 Layout Picture



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
}
```

```

//-----
#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 GPIO2X_OUTPUT_DRIVING          0x2B // Select GPIO2X Output Mode or Input Mode
//-----
#define WDT_TIMER_RANGE                0x37 // 0-255 (second or minute program by WDT_UNIT)
//-----
#define WDT_CONFIGURATION              0x36 // Configure WDT Function
#define WDT_TIMEOUT_FLAG               0x40 // When watchdog timeout,this bit will be set to 1.
#define WDT_ENABLE                     0x20 // Enable watchdog timer
#define WDT_PULSE                      0x10 // Configure WDT output mode
//                                     // 0:Level Mode
//                                     // 1:Pulse Mode
#define WDT_UNIT                      0x08 // Watchdog unit select.
//                                     // 0:Select second.
//                                     // 1:Select minute.
#define WDT_LEVEL                     0x04 // When select level output mode:
//                                     // 0:Level low
//                                     // 1:Level high
#define WDT_PSWIDTH_1MS               0x00 // When select Pulse mode: 1 ms.
#define WDT_PSWIDTH_20MS              0x01 // When select Pulse mode: 20 ms.
#define WDT_PSWIDTH_100MS             0x02 // When select Pulse mode: 100 ms.
#define WDT_PSWIDTH_4000MS            0x03 // When select Pulse mode: 4 s.
//-----
typedef struct F75111_Address
{
    BYTE bAddress;
}F75111_Address;
F75111_Address m_F75111;

bool F75111_Init();
BYTE F75111_GetDigitalInput ();
void F75111_SetDigitalOutput(BYTE byteValue);

BYTE F75111_GetWDTMode();
void F75111_SetWDTMode(BYTE dwvalue);

void F75111_SetWDTEnable (BYTE byteTimer);
void F75111_SetWDTDisable ();







```

3-9 RJ45 & USB3.0/2.0 interface

● CUL1 / CUL2: RJ45 LAN1 Connector (Up)

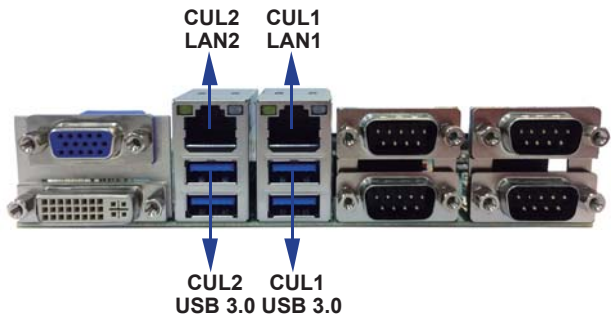
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	MDI0+	5	MDI2-
2	MDI0-	6	MDI1-
3	MDI1+	7	MDI3+
4	MDI2+	8	MDI3-

● RJ45 LAN Connector---LED define Giga/100/10MB Connector

Speed	10 Mbps		100 Mbps		1000 Mbps	
Indicate	Link LED	Active LED	Link LED	Active LED	Link LED	Active LED
Light						

● CUL1 / CUL2: USB3.0 Port 1/2/3/4 Connector (Down)

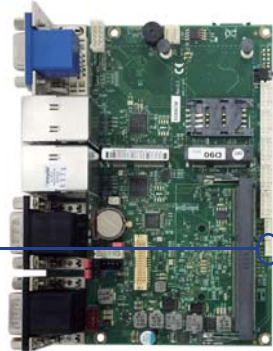
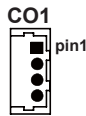
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VBUS	5	SS_RX-
2	D-	6	SS_RX+
3	D+	7	GND
4	GND	8	SS_TX-
		9	SS_TX+



3-10 I²C Bus Interface

- CO1: I²C Bus 1x4 pin (1.25mm) wafer

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



3-11 DC power input

- CPI12: DC Power input 2x4 pin (2.0mm) Red wafer

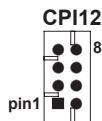
PIN NO	DESCRIPTION
1,2,7,8	GND
3,4,5,6	DC-IN

Note: Very important check DC-in Voltage.

- CPI1: DC Power input 1x4 pin (2.0mm) Red wafer (option)

PIN NO	DESCRIPTION
1,4	GND
2,3	DC-IN

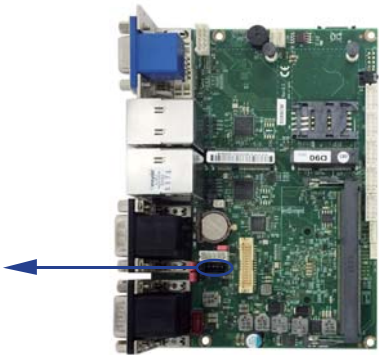
Note: Very important check DC-in Voltage.



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

PIN NO	DESCRIPTION
1	+5V
2	GND
3	GND
4	+12V

Note: Attention! Check Device Power in spec

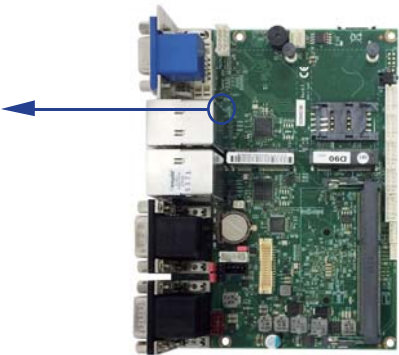
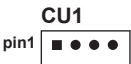


3-12 USB Interface

● **CU1/CU2/CU3: USB2.0 1x4 pin (1.25mm)**

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

Note: CU1 share Touch Function
CU2 share MPEC1 USB
CU3 share MPCE2 USB



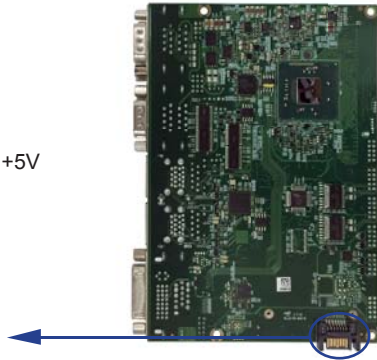
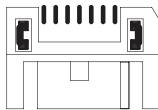
3-13 SATA interface

● **SATA1: SATA port 1x7pin Connector**

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

Note: CPO1 provide SATA HDD power +12V, GND, +5V

SATA1



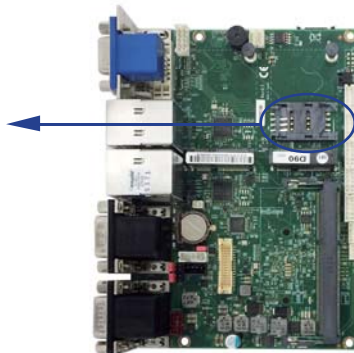
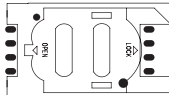
3-14 SIM1: SIM Card socket

● **SIM card socket pin define is 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	GND

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

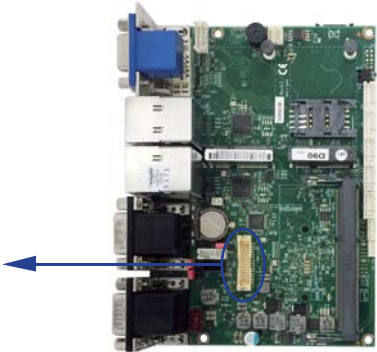
SIM1



3-15 LVDS1: LVDS Interface 2x15 pin (1.25mm) wafer

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

- Note: 1. LVDS interface support 18/24bits two channel.
2. JVL1: LVDS panel +5V/+3.3V (default) Voltage select.
3. LVDS1 PIN 1 for panel backlight dimming control.
4. Pin 1 back light dimming control. Provided 200Hz/275Hz/380Hz/20KHz/25KHz/100Hz and adjust PWM duty cycle by software program.



3-15-1 LVDS Panel resolution table list

Item	Resolution	Channel	bits
1	640 x 480	1	18
2	800 x 600	1	18
3	1024 x 768	1	18
4	800 x 480	1	18
5	1024 x 600	1	18
6	1280 x 800	1	18
7	1366 x 768	1	18
8	800 x 600	1	24
9	1024 x 768	1	24
10	1280 x 800	1	24
11	1366 x 768	1	24
12	1280 x 1024	2	24
13	1440 x 900	2	24
14	1600 x 1200	2	24
15	1920 x 1080	2	24

The item 3 is default resolution.

3-16 Touch screen device

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

● For 8-wire type pin define

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

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

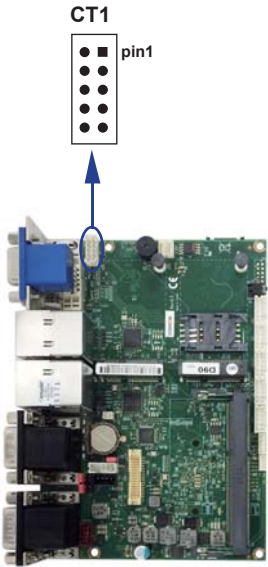
● For 4-wire type pin define

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

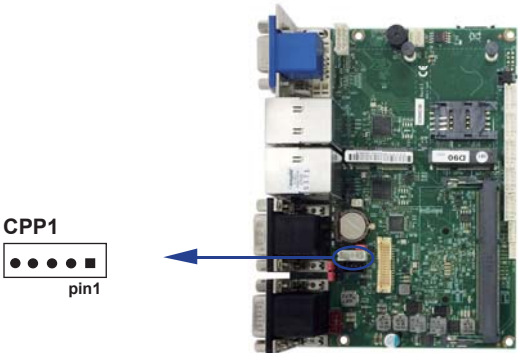
PIN NO.	Description	PIN NO.	Description
1	UR(H)	2	N/A
3	Sense	4	UL(Y)
5	LR(X)	6	N/A
7	LL(L)	8	N/A
9	GND	10	NC



3-17 CPP1: Panel inverter power 1x5 pin (2.0mm) wafer

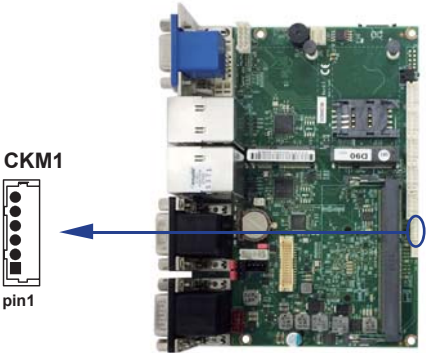
PIN NO.	DESCRIPTION
1	+12V
2	GND
3	PWM dimming
4	ENBKL (3.3V)
5	ENBKL (5V)

- Note: 1. CPP1 PIN 3 and LVDS1 PIN1 is same signal.
2. Pin 3 back light dimming controls, provided 200Hz/275Hz/380Hz/20KHz/25KHz/100Hz and adjust PWM duty cycle by software program.



3-18 CKM1: PS2 Keyboard & Mouse 1x6 pin (1.25mm) wafer

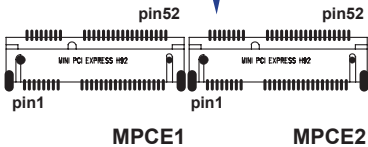
PIN NO.	DESCRIPTION
1	+5V
2	KB/DAT
3	KB/CLK
4	GND
5	MS/DAT
6	MS/CLK



3-19 Module socket

• MPCE 1/2 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	SIM Power
9	GND	10	SIM Data
11	PCIe-CLK-	12	SIM CLK
13	PCIe-CLK+	14	SIM Reset
15	GND	16	SIM RFU
KEY			
17	NC	18	GND
19	NC	20	NC
21	GND	22	Reset
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	mSATA/PCIe detect	52	+3.3V



- Note:
- 1. MPCE1 Pin51 mSATA/PCIe auto detect function, but MPCE2 PCIe only.
 - 2. Pin8~Pin16 SIM signal only for MPCE2

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 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

InsydeH20 Setup Utility				Rev. 5.0																																																							
Main	Advanced	Security	Power	Boot	Exit																																																						
<table><tr><td>BIOS Version</td><td>3I385CW D1</td><td colspan="4"></td></tr><tr><td>Build Date</td><td>12/14/2016</td><td colspan="4"></td></tr><tr><td>Build Time</td><td>15:34:19</td><td colspan="4"></td></tr><tr><td>Processor Type</td><td>Intel(R) Celeron(R) CPU J1900 @ 1.99GHz</td><td colspan="4"></td></tr><tr><td>System Memory Speed</td><td>1333 MHz</td><td colspan="4"></td></tr><tr><td>Cache RAM</td><td>2048 KB</td><td colspan="4"></td></tr><tr><td>Total Memory</td><td>2048 MB</td><td colspan="4"></td></tr><tr><td>System Time</td><td>[00:00:00]</td><td colspan="4"></td></tr><tr><td>System Date</td><td>[01/01/2016]</td><td colspan="4"></td></tr></table>						BIOS Version	3I385CW D1					Build Date	12/14/2016					Build Time	15:34:19					Processor Type	Intel(R) Celeron(R) CPU J1900 @ 1.99GHz					System Memory Speed	1333 MHz					Cache RAM	2048 KB					Total Memory	2048 MB					System Time	[00:00:00]					System Date	[01/01/2016]				
BIOS Version	3I385CW D1																																																										
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System Time	[00:00:00]																																																										
System Date	[01/01/2016]																																																										
F1 Help	↑ ↓ Select	F5/F6 Change Values	F9 Setup Defaults																																																								
Esc Exit	← Select Menu	Enter Select ► SubMenu	F10 Save and Exit																																																								

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

InsydeH20 Setup Utility

Rev. 5.0

MainAdvancedSecurityPowerBootExit

[General Help]

The Setup Utility is a ROM-based configuration utility that displays the system’s configuration status and provides users with a tool to set their system parameters. Setting incorrect values may cause system boot failure:

Load setup default values to recover

<Left/Right> Select Screen

<Up/Down> Select Item

<Enter> Select or Enter SubMenu

<F9> Load Setup Default

<F10> Save and Exit

<ESC> Exit Setup

<F1> key displays General Help(This Screen)

Push Enter/ESC -- Levave

Push PageUp -- previous

Push PageDown -- Next Page

F1 Help↑ ↓ SelectF5/F6 Change ValuesF9 Setup Defaults

Esc Exit← Select MenuEnter Select ► SubMenuF10 Save and Exit

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

InsydeH20 Setup Utility					Rev. 5.0																		
Main	Advanced	Security	Power	Boot	Exit																		
<table><tr><td>BIOS Version</td><td>3I385CW D1</td></tr><tr><td>Build Date</td><td>12/14/2016</td></tr><tr><td>Build Time</td><td>15:34:19</td></tr><tr><td>Processor Type</td><td>Intel(R) Celeron(R) CPU J1900 @ 1.99GHz</td></tr><tr><td>System Memory Speed</td><td>1333 MHz</td></tr><tr><td>Cache RAM</td><td>2048 KB</td></tr><tr><td>Total Memory</td><td>2048 MB</td></tr><tr><td>System Time</td><td>[00:00:00]</td></tr><tr><td>System Date</td><td>[01/01/2016]</td></tr></table>					BIOS Version	3I385CW D1	Build Date	12/14/2016	Build Time	15:34:19	Processor Type	Intel(R) Celeron(R) CPU J1900 @ 1.99GHz	System Memory Speed	1333 MHz	Cache RAM	2048 KB	Total Memory	2048 MB	System Time	[00:00:00]	System Date	[01/01/2016]	
BIOS Version	3I385CW D1																						
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System Memory Speed	1333 MHz																						
Cache RAM	2048 KB																						
Total Memory	2048 MB																						
System Time	[00:00:00]																						
System Date	[01/01/2016]																						
F1 Help	↑ ↓ Select	F5/F6 Change Values	F9 Setup Defaults																				
Esc Exit	← Select Menu	Enter Select ► SubMenu	F10 Save and Exit																				

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

InsydeH20 Setup UtilityRev. 5.0

MainAdvanceSecurityPowerBootExit

► Boot Configuration

► PCI Express Configuration

► Video Configuration

► Thermal Configuration

► SATA Configuration

► ACPI Table/Features Control

Configures Boot Settings

F1 Help↑ ↓ SelectF5/F6 Change ValuesF9 Setup Defaults

Esc Exit← Select MenuEnter Select ► SubMenuF10 Save and Exit

Boot Configuration
Please refer section 4-6-1

PCI Express Configuration
Please refer section 4-6-2

Video Configuration
Please refer section 4-6-3

Thermal Configuration
Please refer section 4-6-4

SATA Configuration
Please refer section 4-6-5

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

4-6-1 Boot Configuration

InsydeH20 Setup Utility		Rev. 5.0
Advance		
<div>Boot Configuration</div> <div>Numlock <On></div>		<div>Selects Power-on state For Numlock</div>
F1 Help	↑ ↓ Select	F5/F6 Change Values
Esc Exit	← Select Menu	Enter Select ► SubMenu
		F9 Setup Defaults
		F10 Save and Exit

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

4-6-2 PCI Express Configuration

InsydeH20 Setup Utility		Rev. 5.0
Advance		
<div>PCI Express Configuration</div> <div>► PCE Express Root Port 1 ► PCE Express Root Port 2 ► PCE Express Root Port 3 ► PCE Express Root Port 4</div>		<div>Control the PCI Express Root Port.</div>
F1 Help	↑ ↓ Select	F5/F6 Change Values
Esc Exit	← Select Menu	Enter Select ► SubMenu
		F9 Setup Defaults
		F10 Save and Exit

PCIe 1/2/3/4 configuration settings

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

InsydeH20 Setup Utility		Rev. 5.0	
Advance			
<div>PCI Express Root Port 1</div> <div>PCE Express Root Port 1 <Enable></div> <div>PCIE Port 1 Speed <Gen1></div> <div>PCIE Port 1 Option ROM <Disabled></div>		<div>Control the PCI Express Root Port.</div>	
F1 Help	↑ ↓ Select	F5/F6 Change Values	F9 Setup Defaults
Esc Exit	← Select Menu	Enter Select ► SubMenu	F10 Save and Exit

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 PXE ROM support
The optional settings are: Disabled (default), Enabled

4-6-3 Video Configuration

InsydeH20 Setup Utility		Rev. 5.0
Advance		
Vedio Configuration Configure CRT as <Enabled> Configure DDI0 as <DVI> Configure DDI1 as <LVDS> Configure LVDS Panel Number as <1024 x 768 18bit> Aperture Size <256MB> IGD – DVMT Pre-Allocated <64M> IGD – DVMT Total Gfx Mem <256M>		Select Hardware CRT Configuration.
F1 Help	↑ ↓ Select	F5/F6 Change Values
Esc Exit	← Select Menu	Enter Select ► SubMenu
		F9 Setup Defaults
		F10 Save and Exit

Configure CRT as
Enable or disable CRT function.
The optional settings are: Enabled (default) or disabled.

Configure DDI0 as
Enable or disable DVI function.
The optional settings are: DVI (default) or disabled.

Configure DDI1 as (3I385AW not support)
Enable or disable LVDS function.
The optional settings are: LVDS (default) or disabled.

Configure LVDS Panel Number as (3I385AW not support)
The Panel resolution supported are below:
640 x 480 18bit
800 x 600 18bit
1024 x 768 18bit
800 x 480 18bit
1024 x 600 18bit

1280 x 800 18bit
1366 x 768 18bit
800 x 600 24bit
1024 x 768 24bit
1280 x 800 24bit
1366 x 768 24bit
1280 x 1024 24bit
1400 x 900 24bit
1600 x 1200 24bit
1920 x 1080 24bit

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

4-6-4 Thermal Configuration

InsydeH20 Setup Utility

Rev. 5.0

Advance

Thermal Configuration Parameters

Critical Trip Point

Passive Trip Point

<110 °C>

<105 °C>

This value controls the temperature of The ACPI Critical Trip Point – the point in Which the OS will Shut the system off.

NOTE: 100C is the Plan of Record (POR)

For all Intel mobile procesors.

F1 Help

Esc Exit

↑ ↓ Select

← Select Menu

F5/F6 Change Values

Enter Select ► SubMenu

F9 Setup Defaults

F10 Save and Exit

Thermal Configuration Parameters

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

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

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

The default of the passive trip point is 105°

4-6-5 SATA Configuration

InsydeH20 Setup Utility		Rev. 5.0
Advance		
<div>SATA Configuration</div> <div><div>SATA Controller</div><div>Chipset SATA Mode</div><div>SATA Speed</div><div>IDE Mode</div><div>SATA Port 0 Connected to an ODD</div><div>SATA Port 1 Connected to an ODD</div><div><div>► Serial ATA Port 0</div><div>► Serial ATA Port 1</div></div></div> <div><div><Enabled></div><div><IDE></div><div><Gen1></div><div><Native IDE></div><div><Enabled></div><div><Enabled></div><div>[Not Installed]</div><div>[Not Installed]</div></div>		<div>DISABLED: Disables SATA Controller.</div> <div>ENABLED: Enables SATA Controller.</div>
F1 Help	↑ ↓ Select	F5/F6 Change Values
Esc Exit	← Select Menu	Enter Select ► SubMenu
		F9 Setup Defaults
		F10 Save and Exit

SATA Controller
Use this item to Enable or Disable SATA Device.
The optional settings are: Enabled (default) or Disabled

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

SATA Speed
Indicates the maximum speed the SATA controller can support.
The optional settings: Gen1, Gen2 (default).

IDE Mode
Legacy IDE or Native IDE MODE,
The optional settings: Legacy IDE or Native IDE (default)

SATA Port 0 Connected to an ODD
Use this item to Enable or Disable SATA Port0 ODD function
The optional settings are: Enabled (default) or Disable

SATA Port 1 Connected to an ODD
Use this item to Enable or Disable SATA Port1 ODD function
The optional settings are: Enabled (default) or Disable

4-6-6 ACPI Table/Features Control

InsydeH20 Setup Utility		Rev. 5.0
Advance		
ACPI Table/Features Control		Enable/Disable ACPI S3 State
DSDT – ACPI S3 <Disabled>		
F1 Help	↑ ↓ Select	F5/F6 Change Values
Esc Exit	← Select Menu	Enter Select ► SubMenu
		F9 Setup Defaults
		F10 Save and Exit

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

InsydeH20 Setup Utility					Rev. 5.0
Main	Advanced	Security	Power	Boot	Exit
Supervisor Password		Not Install		Install or Change the password and the length of password must be greater than one character.	
Set Supervisor Password					
F1 Help	↑ ↓ Select	F5/F6 Change Values		F9 Setup Defaults	
Esc Exit	← Select Menu	Enter Select ► SubMenu		F10 Save and Exit	

- 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

InsydeH20 Setup Utility					Rev. 5.0
Main	Advanced	Security	Power	Boot	Exit
<div>Wake on LAN<Disabled></div> <div>Wake on USB<Disabled></div> <div>Power Button<Instant OFF></div>				<div>Determines the action take when the system power is off and a PCI Power Management Enable wake up event occurs.</div>	
F1 Help	↑ ↓ Select	F5/F6 Change Values		F9	Setup Defaults
Esc Exit	← Select Menu	Enter Select ► SubMenu		F10	Save and Exit

Wake on LAN

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

The optional settings: Disabled (default), S3, S5, S3/S5

Wake on USB

The optional settings: Disabled (default), S3

Power Button

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

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

4-9 Boot

InsydeH20 Setup Utility					Rev. 5.0
Main	Advanced	Security	Power	Boot	Exit
<div>Boot Type<Dual Boot Type></div> <div>Quiet Boot<Enabled></div> <div>EFI/Legacy Device Order<Legacy device first></div> <div>►EFI</div> <div>►Legacy</div>				<div>Select boot type to Dual type, Legacy type or UEFI type.</div>	
F1 Help	↑ ↓ Select	F5/F6 Change Values		F9	Setup Defaults
Esc Exit	← Select Menu	Enter Select ► SubMenu		F10	Save and Exit

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

InsydeH20 Setup Utility		Rev. 5.0	
Boot			
<div>Boot Device Priority</div> <div>Normal Boot Menu</div> <div><Normal></div> <div>▶ Boot Type Order</div> <div>▶ USB</div>		<div>Select Normal Boot Option Priority or Advance Boot Option Priority.</div>	
F1 Help	↑ ↓ Select	F5/F6 Change Values	F9 Setup Defaults
Esc Exit	← Select Menu	Enter Select ▶ SubMenu	F10 Save and Exit

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

InsydeH20 Setup Utility		Rev. 5.0	
Boot			
<div>Boot Type Order</div> <div>USB</div> <div>Hard Disk Drive</div> <div>CD/DVD-ROM Drive</div> <div>Others</div>			
F1 Help	↑ ↓ Select	F5/F6 Change Values	F9 Setup Defaults
Esc Exit	← Select Menu	Enter Select ▶ SubMenu	F10 Save and Exit

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

InsydeH20 Setup Utility

Rev. 5.0

MainAdvancedSecurityPowerBootExit

Exit Saving Changes
Save Change Without Exit
Exit Discarding Changes
Load Optimal Defaults
Discard Changes

Exit system setup and
save your changes.

F1 Help

↑ ↓ Select

F5/F6 Change Values

F9 Setup Defaults

Esc Exit

← Select Menu

Enter Select ► SubMenu

F10 Save and 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 Configuration
Please refer section 4-11-1

Serial Port 3/4/5/6 Configuration
Please refer section 4-11-3

4-11-1 SIO FINTEK81801U

SIO FINTEK81801U		
Serial Port 1	<Enable>	Configure Serial port using options : [Disable] No configuration [Enable] User configuration
Base I/O Address	<3F8>	
Interrupt	<IRQ4>	
Serial Mode	<RS232 driver>	
Serial Port 2	<Enable>	
Base I/O Address	<2F8>	
Interrupt	<IRQ3>	
Serial Mode	<RS232 driver>	
Power Fail	<Keep State>	
Hardware Monitor		

F9=Reset to Defaults

↑ ↓ =Move Highlight <Enter>=Select Entry Esc=Discard Changes

Serial Port 1/2
Use this item to enable or disable serial port (COM1 or COM2).
The optional settings are: Enabled (default), Disabled.

Serial Port 1 Base IO Address/Interrupt/Serial Mode
Use this item to select an optimal setting for super IO device.
The optional settings are:
IO=3F8h ; IRQ=4 (default)
IO=3E8h ; IRQ=3, 4
IO=2E8h ; IRQ=3, 4
IO=2F8h ; IRQ=3, 4

Serial Port 2 Base IO Address/Interrupt/Serial Mode
Use this item to select an optimal setting for super IO device.
The optional settings are:
IO=2F8h ; IRQ=3 (default)
IO=2E8h ; IRQ=3, 4
IO=3E8h ; IRQ=3, 4
IO=3F8h ; IRQ=3, 4

Serial Mode
RS232 driver (default): When hardware select to RS232 or RS422 mode, please enter to RS232 driver.
RS485 driver: When hardware select to RS485 mode, please enter to RS485 driver. It is the auto flow function for RS485.

Power Failure
This item specifies whether your system will reboot after a power failure or interrupt occurs.
[Keep state] Restores the system to the status before power failure or interrupt occurred. (default)
[Always on] Leaves the computer in the power on state.
[Always off] Leaves the computer in the power off state.

4-11-2 Hardware Monitor

Hardware Monitor

Hardware Monitor

Voltage

VCC3	3.344 V
VCORE	0.560 V
VGFX	0.920 V

Temperature

CPU (°C / °F)	77	°C/170°F
System (°C / °F)	55°C/131°F	

Press [Enter] to view PC health status.
This section shows the status of your CPU, Fan, and overall system.
This is only available when there is Hardware Monitor function onboard.

4-11-3 SIO FINTEK81216D/DG

SIO FINTEK81216D/DG		
Serial Port 3	<Enable>	Configure Serial port using options : [Disable] No configuration [Enable] User configuration
Base I/O Address	<3E8>	
Interrupt	<IRQ10>	
Serial Mode	<RS232 driver>	
Sharing Mode	<PCI>	
Serial Port 4	<Enable>	
Base I/O Address	<2E8>	
Interrupt	<IRQ10>	
Serial Mode	<RS232 driver>	
Sharing Mode	<PCI>	
Serial Port 5	<Enable>	
Base I/O Address	<4F8>	
Interrupt	<IRQ10>	
Serial Mode	<RS232 driver>	
Sharing Mode	<PCI>	
Serial Port 6	<Enable>	
Base I/O Address	<4E8>	
Interrupt	<IRQ10>	
Serial Mode	<RS232 driver>	
Sharing Mode	<PCI>	

F9=Reset to Defaults

↑ ↓ =Move Highlight <Enter>=Select Entry Esc=Discard Changes

Serial Port 3/4/5/6
Use this item to enable or disable serial port (COM3. COM4. COM5. COM6)
The optional settings are: Enabled (default), Disabled.

Serial Port 3 Base IO Address / Interrupt / Serial Mode

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

The optional settings are:

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

Serial Port 4 Base IO Address / Interrupt / Serial Mode

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

The optional settings are:

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

Serial Port 5 Base IO Address / Interrupt / Serial Mode

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

The optional settings are:

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

Serial Port 6 Base IO Address / Interrupt / Serial Mode

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

The optional settings are:

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

Serial Mode

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

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

Serial Port 5/6 select RS232 or RS422 need BOM control & OEM BIOS

Chapter-5

DRIVER INSTALLATION

There is a system installation DVD in the package. This DVD does not only include all the drivers you need but also some other free application programs and utility programs. In addition, this DVD also includes an auto detect software telling you which hardware is installed and which driver is needed so that your system can function properly. We call this auto detect software SYSTEM INSTALL.

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

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



Make your selection from SYSTEM INSTALL menu:

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

AUTOMATIC DRIVER INSTALLATION menu

Bay Trail for Windows 8.1 (x64)

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

[Back to previous page](#)

Bay Trail for Windows 7 (x64)

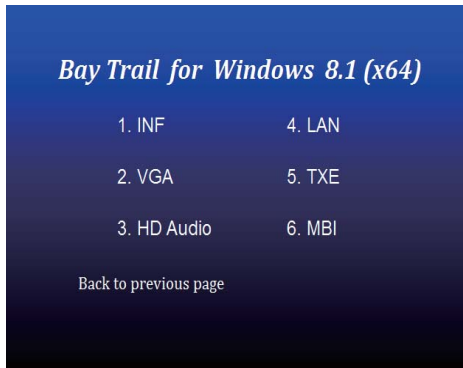
- | | |
|--------------|--------------|
| 1. INF | 5. HD Audio |
| 2. VGA | 6. LAN |
| 3. Serial IO | 7. TXE Patch |
| 4. xHCI | 8. TXE |

[Back to previous page](#)

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

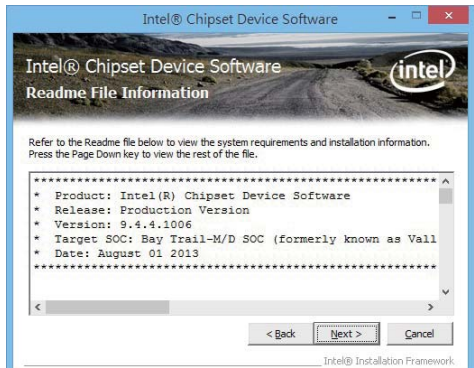
Each selection is illustrated below:

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



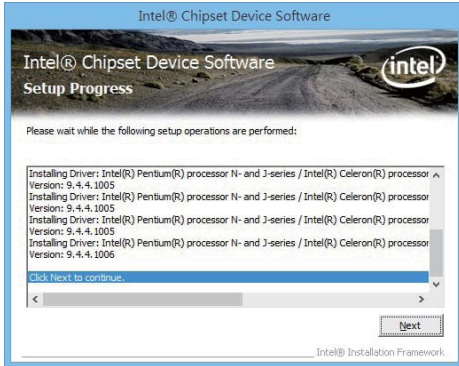
1. At the "AUTOMATIC DRIVER INSTALLATION menu"screen, click "INF".

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



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

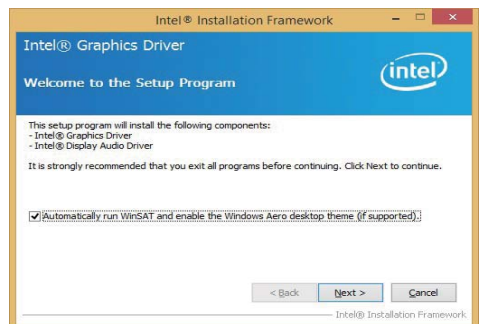
4. At the "Readme File Information" screen, click "Next".



5. Click "Next" 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

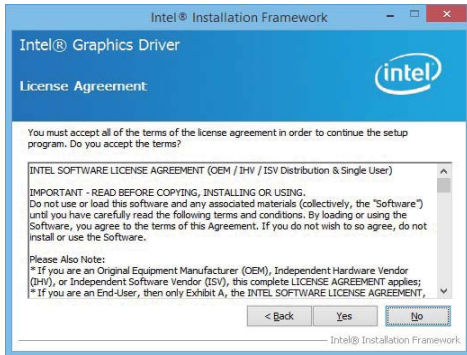
6. Click "Finish" & restart computer.

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

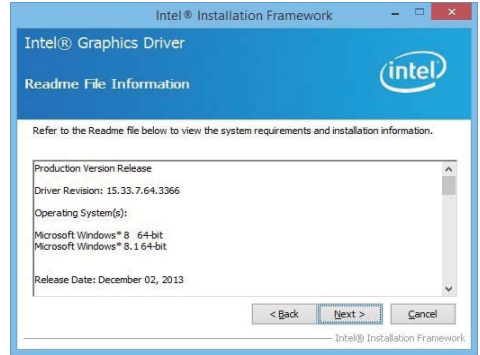


1. At the "AUTOMATIC DRIVER INSTALLATION menu" screen, click "VGA".

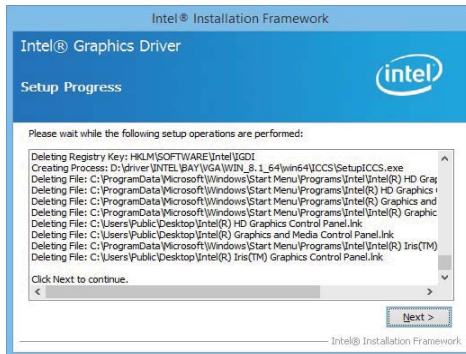
2. At the "Welcome to the Setup Program screen, Click "Next".



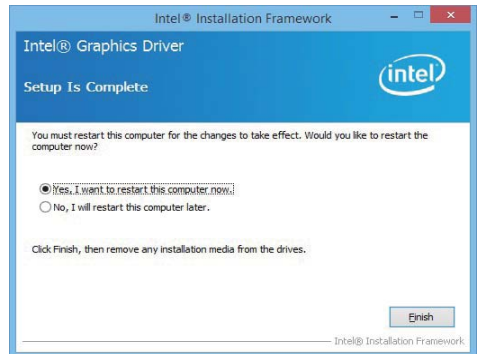
3. At the "License Agreement" screen, Click "Yes"



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



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



6. Click "Finish" to restart computer

NOTE: SYSTEM INSTALL will auto detect file path

For Windows 7 32-bit,

X:\driver\INTEL\BAY\VGA\WIN_7_32\Setup.exe

For Windows 7 64-bit

X:\driver\INTEL\BAY\VGA\WIN_7_64\Setup.exe

For Windows 8 / Windows 8.1 32-bit

X:\driver\INTEL\BAY\VGA\WIN_8_32\Setup.exe

For Windows 8 / Windows 8.1 64-bit

X:\driver\INTEL\BAY\VGA\WIN_8_64\Setup.exe

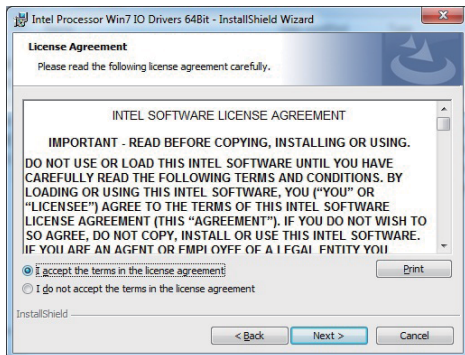
5-3 Serial IO Install Driver Baytrail Serial IO Driver (FOR Windows 7 only)



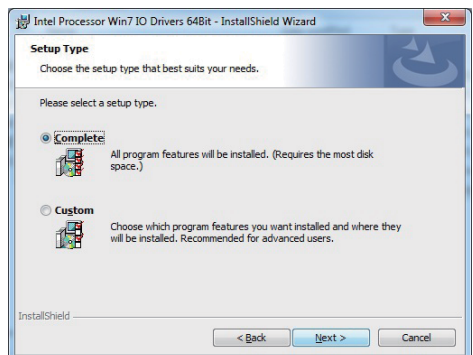
1. At the "AUTOMATIC DRIVER INSTALLATION menu" screen, click "Serial IO".



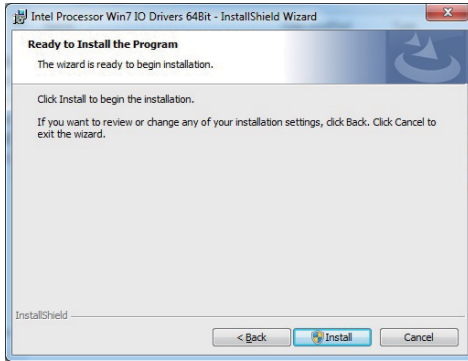
2. At the "Welcome to the Setup Program screen, Click "Next".



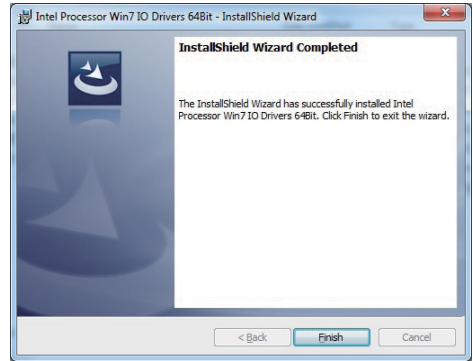
3. At the "License Agreement" screen, Click "Yes"



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



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



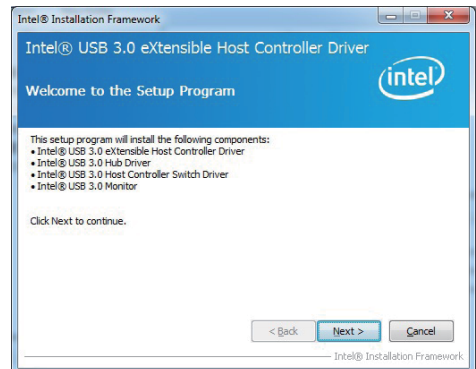
6. Click "Finish" and restart computer

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



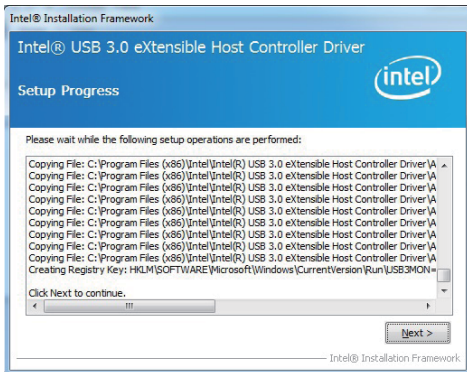
2. At the "Welcome to the Setup Program screen, Click "Next".



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



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



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



6. Click "Finish" to restart computer

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

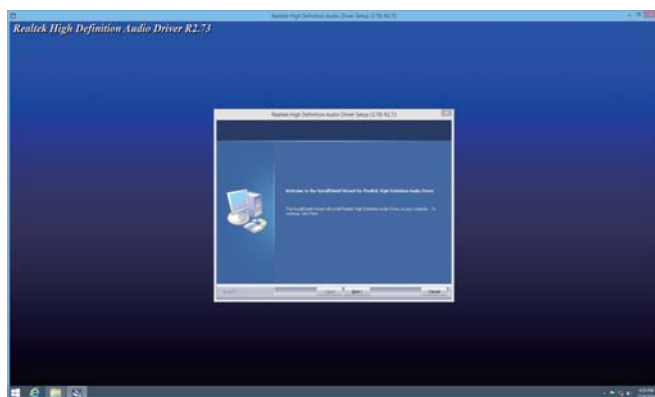
5-5 HD Audio Install High Definition Audio Driver (example for WIN8 64bit)

Bay Trail for Windows 8.1 (x64)

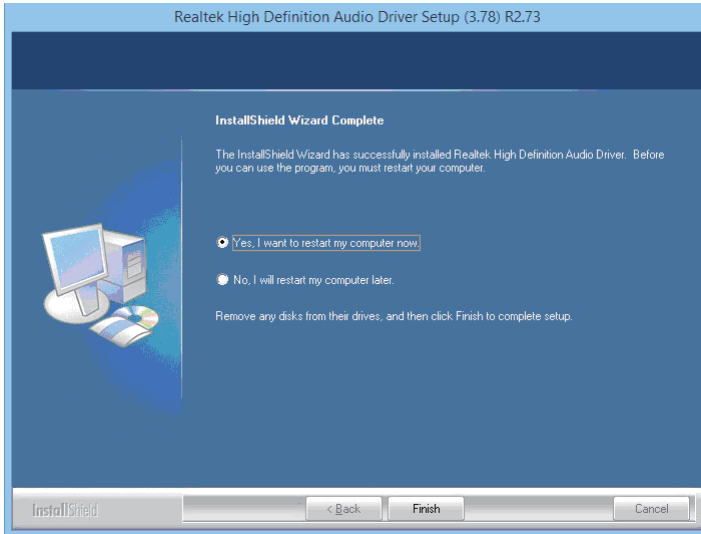
- | | |
|-------------|--------|
| 1. INF | 4. LAN |
| 2. VGA | 5. TXE |
| 3. HD Audio | 6. MBI |

Back to previous page

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



2. Click "Next".



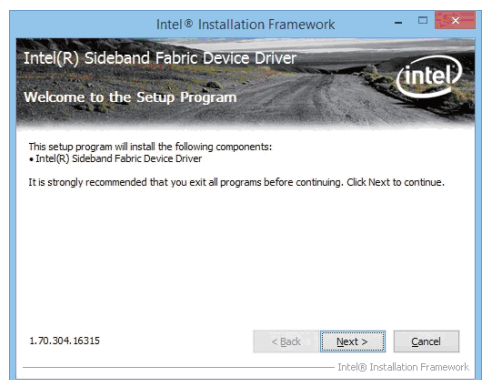
3. Click "Finish" to restart computer

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

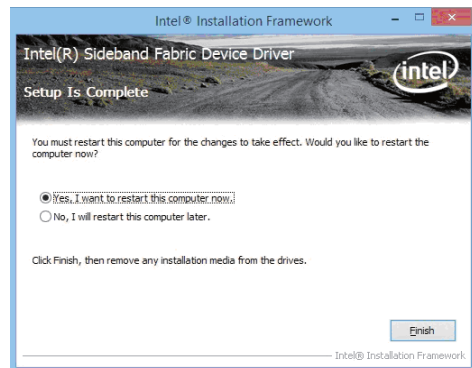
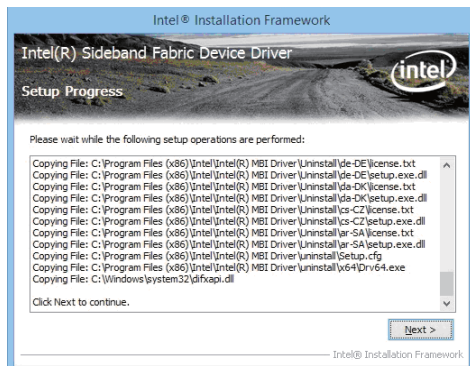
5-6 MBI Install Intel MBI Driver (FOR Win 8/8.1 only)



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



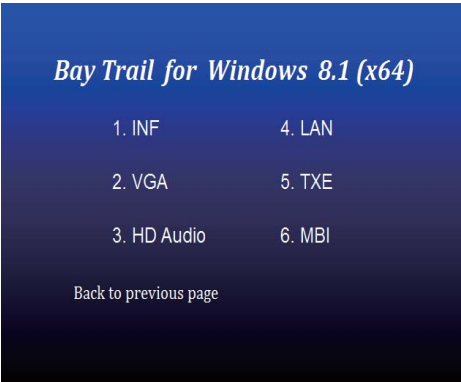
2. At the "Welcome to the Setup Program screen, Click "Next".



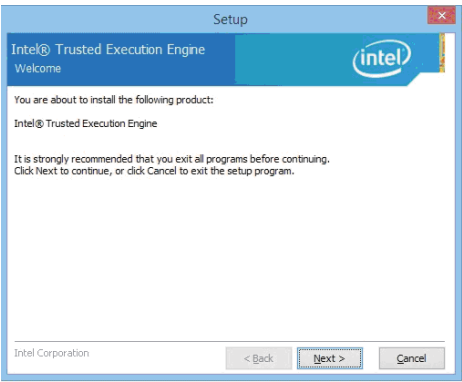
NOTE: SYSTEM INSTALL will auto detect file path For Windows 8/8.1 32 / 64-bit,
X:\driver\INTEL\BAY\MB\Setup.exe

5-7 TXE Install Intel TXE driver

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



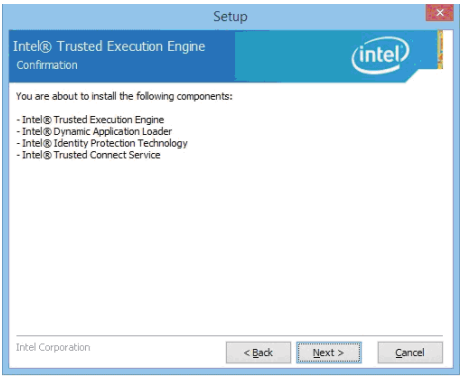
1. At the "AUTOMATIC DRIVER INSTALLATION menu", click "TXE"



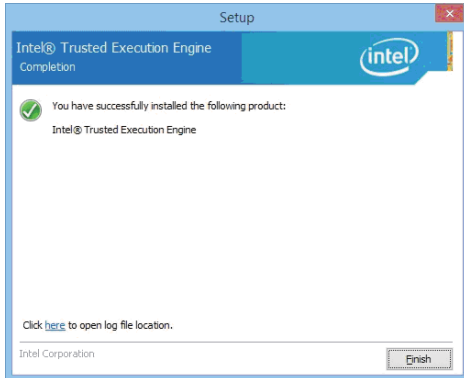
2. At the "Setup" screen, Click "Next".



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



4. Click "Next".



5. Click "Finish" & restart computer

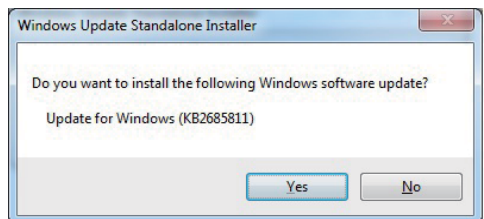
NOTE: SYSTEM INSTALL will auto detect file path For Windows 8 32 / 64-bit,
 X:\driver\INTEL\BAY\TXE\WIN_8\SetupTXE.exe
 For Windows 8.1 32 / 64-bit,
 X:\driver\INTEL\BAY\TXE\WIN_8.1\SetupTXE.exe

5-7-2 TXE Install for WIN7

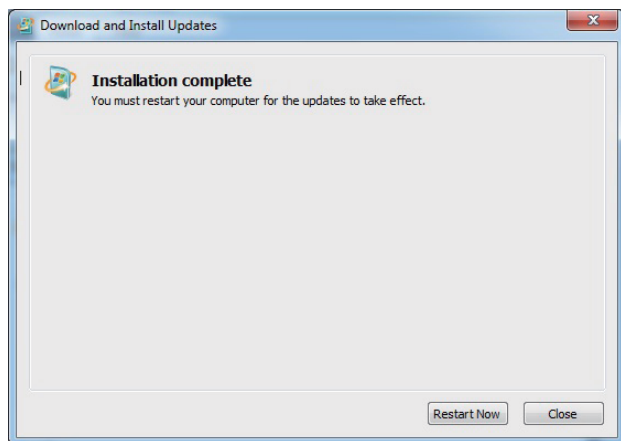
Please install TXE Patch first.



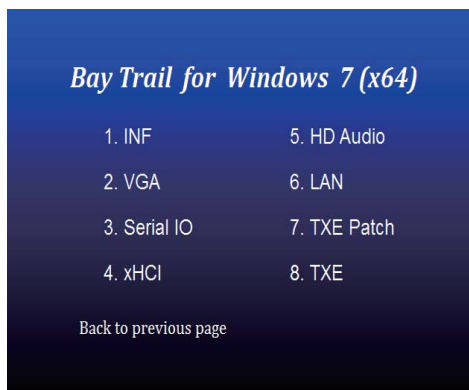
1. At the "AUTOMATIC DRIVER INSTALLATION menu" click "TXE Patch"



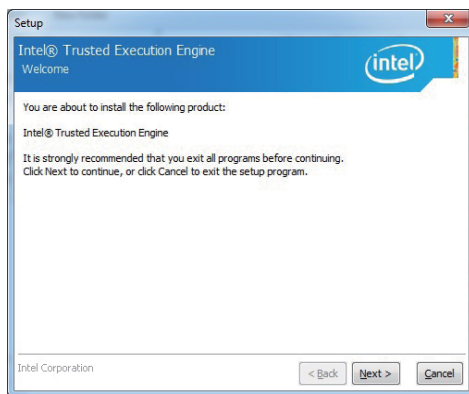
2. At the "Windows Update" screen, Click "Yes".



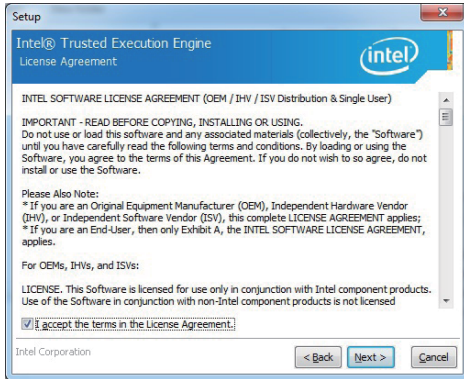
3. Click "Finish" & restart computer



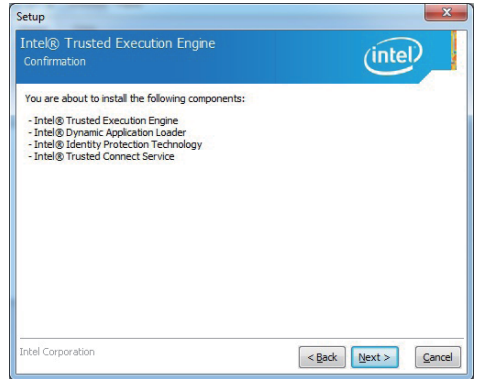
4. At the "AUTOMATIC DRIVER INSTALLATION menu", click "TXE "



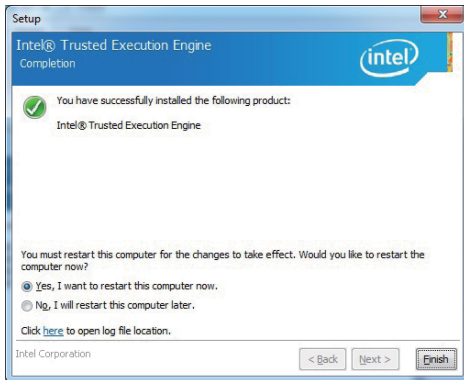
5. At the "TXE Setup" screen, Click "Next".



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 3I385AW/CW 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 3I385AW/CW.ROM -BIOS -ALL

3I385AW/CW. ROM is the file name of the latest BIOS.

It may be 3I385AW/CW.ROM or 3I385AW/CW.ROM, etc.

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

By Bay Trail series mainboard, please type

X:\: H2OFFT-D.EXE 3I385AW/CW.ROM -BIOS -ALL

-BIOS : Flash BIOS region

-ALL : Flash all

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

3I385AW

Appendix A: Power Consumption Test

Condition

Item	Spec
CPU	Intel Atom E3845 1.91Ghz / Celeron J1900 1.99Ghz
Memory	DDR3L 1600 8GB
Operating System	Windows 7 / SP1
Test Program	3D Mark 06
HDD 2.5" SATA	Slim Type HDD
mSATA	32GB

Test Result for reference only !

Hard Disk	Processor	Power off	Start up		Operation Maximum	Shutdown Maximum	In Put Voltage
			Maximum	Stable			
Slim Type HDD	E3845	0.15A	1.13A	0.73A	1.47A	0.97A	12V
		0.10A	0.60A	0.39A	0.75A	0.49A	24V
	J1900	0.14A	1.11A	0.71A	1.46A	0.97A	12V
		0.10A	0.59A	0.37A	0.78A	0.48A	24V
mSATA	E3845	0.15A	1.02A	0.72A	1.20A	0.90A	12V
		0.10A	0.55A	0.37A	0.63A	0.46A	24V
	J1900	0.14A	1.06A	0.66A	1.27A	0.90A	12V
		0.10A	0.56A	0.35A	0.65A	0.48A	24V

The power consumption depends on your device choice!

3I385CW

Appendix A: Power Consumption Test

Condition

Item	Spec
CPU	Intel Atom E3845 1.91Ghz / Celeron J1900 1.99Ghz
Memory	DDR3L 1600 8GB
Operating System	Windows 7 / SP1
Test Program	3D Mark 06
HDD 2.5" SATA	Slim Type HDD
mSATA	32GB

Test Result for reference only !

Hard Disk	Processor	Power off	Start up		Operation Maximum	Shutdown Maximum	In Put Voltage
			Maximum	Stable			
Slim Type HDD	E3845	0.15A	1.15A	0.75A	1.32A	0.97A	12V
		0.10A	0.60A	0.39A	0.68A	0.49A	24V
	J1900	0.14A	1.08A	0.70A	1.46A	0.95A	12V
		0.10A	0.57A	0.38A	0.73A	0.49A	24V
mSATA	E3845	0.15A	1.03A	0.69A	1.23A	0.88A	12V
		0.10A	0.54A	0.37A	0.63A	0.47A	24V
	J1900	0.14A	1.01A	0.66A	1.30A	0.86A	12V
		0.10A	0.54A	0.36A	0.66A	0.47A	24V

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)