

SI525AW

**4 x Video-In / Wide range DC-In /
2 x Mini PCI-e / 3G SIM socket**

3G SIM Card Reader socket

Intel Atom D525 1.8 GHz CPU, DDR3 800MHz, All-In-One

2 x PCIe mini card

PCI gold finger, 8 x USB, 2 x SATA, CF socket

Multi Video-In Board

NO. SI525AW

Release date: March . 1 . 2011

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SI525AW

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User Manual edition 0.1, March . 1 . 2011

Warning !

1. Battery

Battery on board is consumables. We doesn't guarantee the life time of it.

2. Fanless solution with HDD

Please be aware of specification & limitation for HDD when fanless solution is implemented.

3. We will not give further notification if there is any change about the product information and the manual.
4. SATA does not support Hot SWAP.
5. There would be $\pm 20\%$ difference of WDT at room temperature.
6. Please make sure the voltage specification meet the requirement of the equipment before plugging into the power.
7. SSD has 2 types, commercial grade and industrial grade, which provide different read/write speed, operation temperature and life cycle. Please contact sales for further information before ordering.
8. Caution ! Please notice that the heat dissipation problem could cause the MB system unstable. Please handle the heat dissipation properly when buying single MB.
9. Please avoid to approach the heat sink area and prevent being scalded when using the Fanless products.
10. If the users repair, modify or destroy any component of product unauthorized, We would not take responsibility or provide warranty.
11. DO NOT apply any other material onto the thermal pad in case reducing cooling performance.
12. It is important to install a System Fan toward the CPU to prevent the possibility of overheating / system hang up issues from D510 / D525 series of motherboard or else customer is required to have well cooling system to dissipate heat from CPU.

* Hardware Notice Guide

1. Before installing the power supply with this motherboard, please attach the 12V/DC (4 pin connector) of the adapter to motherboard first.
After that, plug the adapter power to AC outlet.
Always normally shut down the computer before you move the system unit or remove the power supply from the motherboard.
Please unplug the 12V/DC (4 pin connector) of the adapter from motherboard first.
Then unplug the adapter from the AC outlet.
Please refer to procedure from the photo 1
2. There will be high possibility to burn out the CPU if you change/ modify any parts of the CPU cooler.
3. 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 that is of ground connection or with metal surface if you don't have wrist strap.
4. Please be careful when you handle this product. Pay attention to & don't touch the sharp-pointed components at the bottom PCB .
5. Please pay attention to this: Remove or change any components from the motherboard will VOID the warranty of the motherboard you purchased .
6. Before you install/remove any components or make any jumper setting on the motherboard, please make sure to disconnect the power first.
(Please follow the instructions as of this guide)
7. Please only use single sided Mini PCI card, do not use the double sided Mini PCI card which is not suitable.
8. This does not support 16 bit mini PCI card
9. Please follow this instruction carefully when using the "POWERON after PWR-Fair" function.
When the DC power adaptor runs out of power, unplug it from the DC current;
when power returns plug it back in only after 5 seconds. If there is a power outage, unplug it from the AC current, when power returns plug it back in only after 30 seconds.
Otherwise it will cause system locking or serious damage.

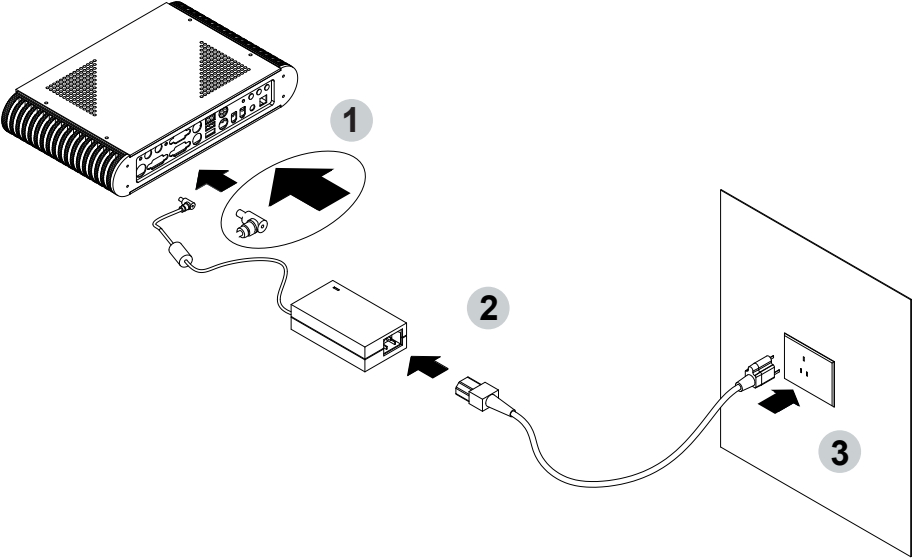
Remark 1:

Always insert/unplug the 12V/DC (4 pin connector) horizontally & directly from the motherboard.

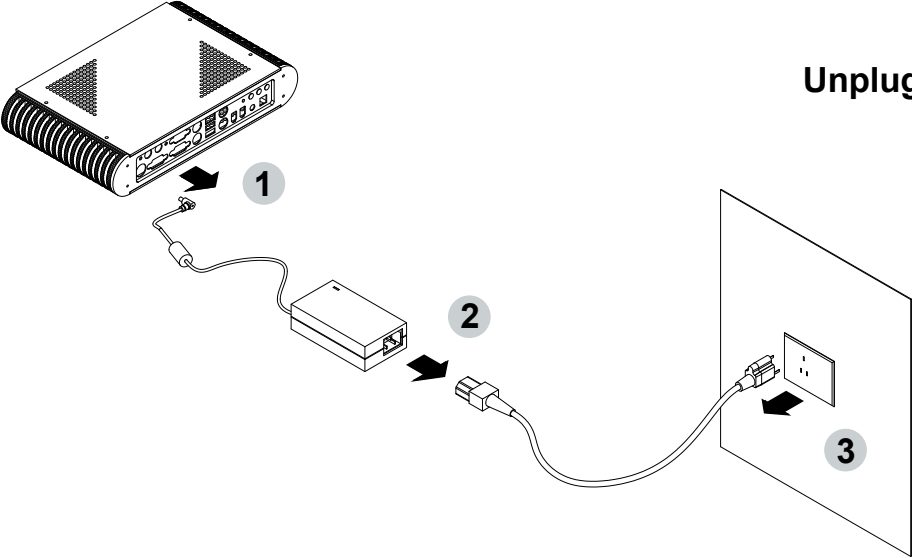
**DO NOT twist the 12V/DC (4 pin connector) gently, it is designed to fit snugly .
Moreover, erratic pull / push testing with the DC Jack might cause the unpredictable damage to the component & system unit.**

Photo 1

Insert



Unplug



Chapter-1

General Information

The SI525A is an All-In-One Surveillance control Board. The board's design combines all necessary input and output effects interfaces, which make itself an ideal all-in-one control board for sophisticated video surveillance applications.

SI525A is an integrated platform for a whole range of small form factor, low-power and highly reliable surveillance devices. SI525A's Intel Atom D525 chipset features excellent flexibility for developers of embedded applications by offering improved graphics and increased I/O bandwidth as well as remote asset management capabilities and improved storage speed and reliability.

SI525A has added a new feature of 3G wireless connectivity. It provides a 3G SIM card read slot for user to connect to 3G networks possibility. With the sizable memory bandwidth of DDR3 SODIMM which supports up to 4GB, and the high data transfer speeds of ATA/100, SI525A ensures the high performance levels required for today's widely adopted surveillance applications including embedded IA, VOD, VCR, DVR, Video Capture server, and security application.

SI525A is supported with one 10/100/1000 Ethernet for seamless broadband connectivity. SI525A is equipped with up to 4 x Conexant CX25878 Video Capture Chip on board, which could support 4 / 16 channels of Video Capture Function. SI525A integrate with expansion types of PCI gold finger and Mini PCI Card and 2 x PCI-e mini card sockets. In addition, with the 8 high-speed USB 2.0 version enhanced host controller interface, it ensures the outstanding performance level as well as the powerful and flexible expansion.

The SI525A All-In-One motherboard supports 1 x DDR3 SODIMM socket with total maximum of 4GB expandable memory or on board 1 GB DDR3 memory and 1 x SODIMM socket. The SI525A All-In-One motherboard is fully compatible with industry standards, plus technical enhancements, and thousands of software applications developed for IBM PC/AT compatible computers. The control logic provides high-speed performance for the most advanced multi user and multitasking applications available today.

1-1 Major Feature

1. Intel Atom D525 1.8 GHz CPU
2. Intel Pineview-D and ICH8M (82801HBM) chipset on board
3. Intel Luna Pier Refresh Pineview-D Integrated Graphics Engine
4. Support 1 / 4 Conexant CX25878 chips for 4 / 16 ports Video-In
5. On board DDR3 SDRAM 1GB and 1 x DDR3 SO-DIMM socket (total max. 2GB) or
1 x DDR3 SO-DIMM socket (max. 4GB)
6. On board SSD 2 / 4 / 8 GB (option)
7. Support 1 x 10/100/1000 Mbps Realtek LAN (Intel LAN for option)
8. Support 1 x Compact Flash Card Socket
9. Support 2 x SATA.
10. Support 2 x PCIe mini card for PCIe & USB interface (Note: -5V, -12V no support)
11. Onboard DC-IN +12V Power Supply or
Wide range DC-IN from +6V ~ +35V (option)
12. Compact PCB Dimension: 200 x 150 mm
13. 3G SIM card reader (for some 3G mini card use)
14. USB interface Touch screen controller, support 4-, 5-, 8- wire Analog Resistive touch screen,
Resolution is up to 2048 x 2048 (option)

1-2 Specification

1. **CPU:** Intel Atom D525 CPU
2. **ChipSet:** Intel Pineview-D and ICH8M (82801HBM) chipset on board
3. **Memory:** 1 x DDR3 SO-DIMM socket (max. 4GB) or
On board DDR3 SDRAM 1GB and 1 x DDR3 SO-DIMM socket (max. 2GB)
4. **VGA:** Intel Luna Pier Refresh Pineview-D Integrated Graphics Engine
5. **Video-In Chip:** 1 or 4 Conexant CX25878 chips on board for 4 / 16 Video-In
6. **SATA:** 2 x SATA ports
7. **NAND flash memory (Option):**
Support Compact Flash card type II for ATA interface, on board SSD 2/4/8 GB
8. **LAN:** 1 x Realtek RLT8111DL 10 / 100 / 1000 Mbps
10. **Serial Port:** 1 x RS232 + 1 x RS232 / 422 / 485 (4 x COM of RS232 or RS485 for option)
11. **USB:** 8 x USB 2.0 (2 external + 6 internal ports)
12. **Sound:** Intel HD audio specification Rev. 1.0 Compliant
13. **Audio Amplifier (option):** Two channels Audio Amplifier.
6-W / CH into an 8Ω load from 12-V supply. Up to 92% efficient, Class-D operation.
14. **WDT/DIO:** Hardware watch dog timer support, 0~255 sec programmable
Hardware digital Input & Output, 8 x DI / 8 x DO
15. **Expansion interface:** 2 x PCIe mini card for PCIe & USB interface
16. **BIOS:** Award BIOS version
17. **Dimension:** 200 x 150 mm
18. **Power:** On board DC 12V-In (12V +-5%) convert to +5V/+3V for system or
Wide range DC-IN from +6V ~ +35V (option)
19. **Power Consumption:** Please refer to page 80
20. **3G Wireless:** 3G SIM card reader
21. **LVDS (option):** 18 bit LVDS
22. **Touch function:** USB interface Touch screen controller,
support 4-, 5-, 8- wire Analog Resistive touch screen,
Resolution is up to 2048 x 2048 (option)

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.



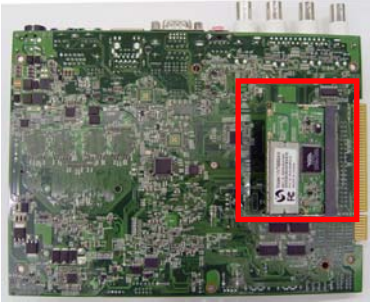
1-3-1.1 Removing the SO-DIMM

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.



1-5 Installing the Mini PCI card

1. Align the Mini PCI card with the connector at a 45 degree angle.

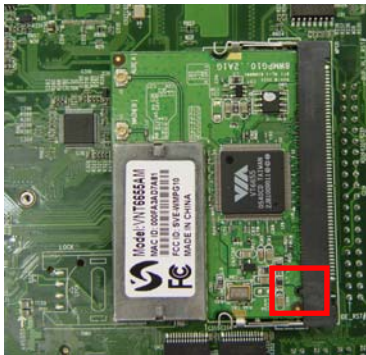


2. Press the Mini PCI into the connector until you hear a click.



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



1-5-1.1 Removing the Mini PCI card

1. Release the Mini PCI card by pulling outward the two retaining clips and the card pops up slightly.

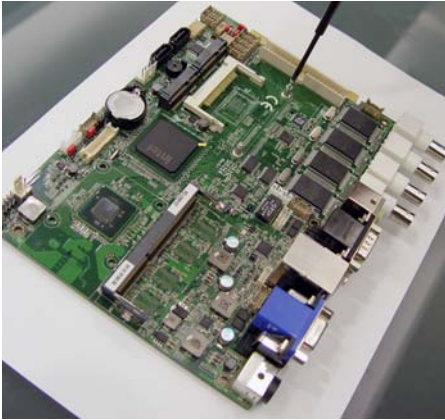


2. Lift the mini PCI card out of its connector carefully.

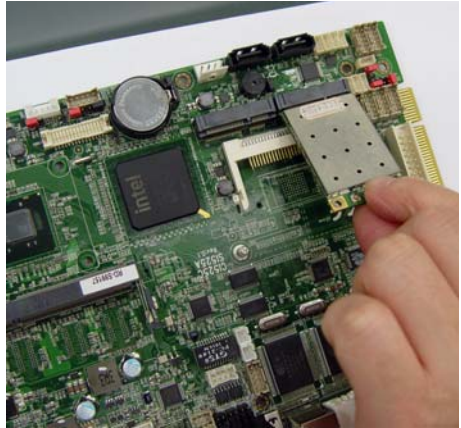


1-4 Directions for installing the Mini Card

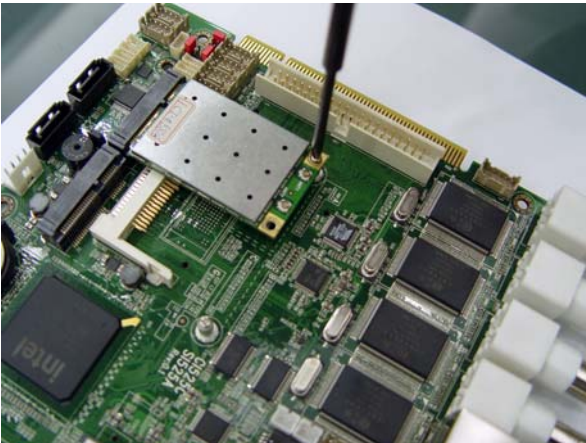
1. Unscrew the screw on the board



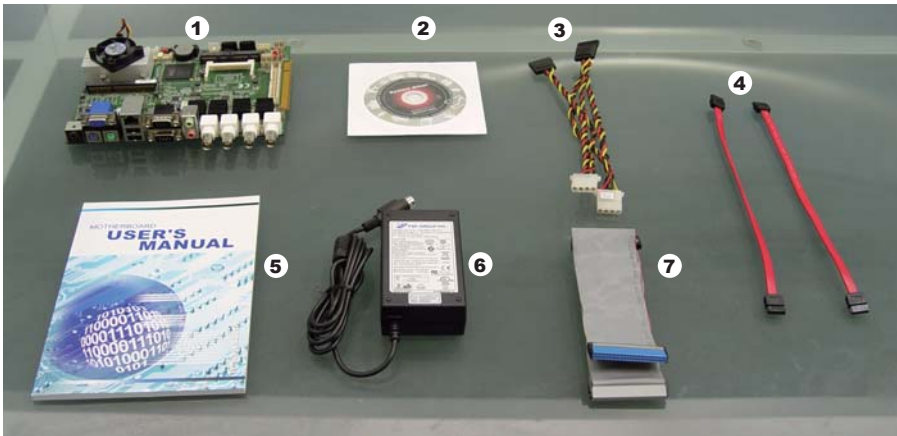
2. Plug in the Mini Card in a 45° angle



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



1-6 Packing List



- ① Mainboard
- ② Utility CD Disk
- ③ SATA Power Cable
- ④ SATA Data Cable
- ⑤ User's Manual
- ⑥ DC 12V Power Adapter (4P)
- ⑦ ATA 66 Flat Cable (2.54mm)

*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

This chapter provides the information how to install the hardware of SI525AW.

Please follow section 1-6, 2-1 and 2-2 to check the delivery package and unpack carefully. Please follow the jumper setting procedure.

2-1 Unpacking Precaution

The SI525AW board has been well packed with an anti-static bag to protect its sensitive components and circuitry from damage due to static electric discharge.

NOTE!

1. Do not touch the board or any other sensitive components without all necessary anti-static protection.
2. Please pay attention to the voltage limitation of DC-IN12 V \pm 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:

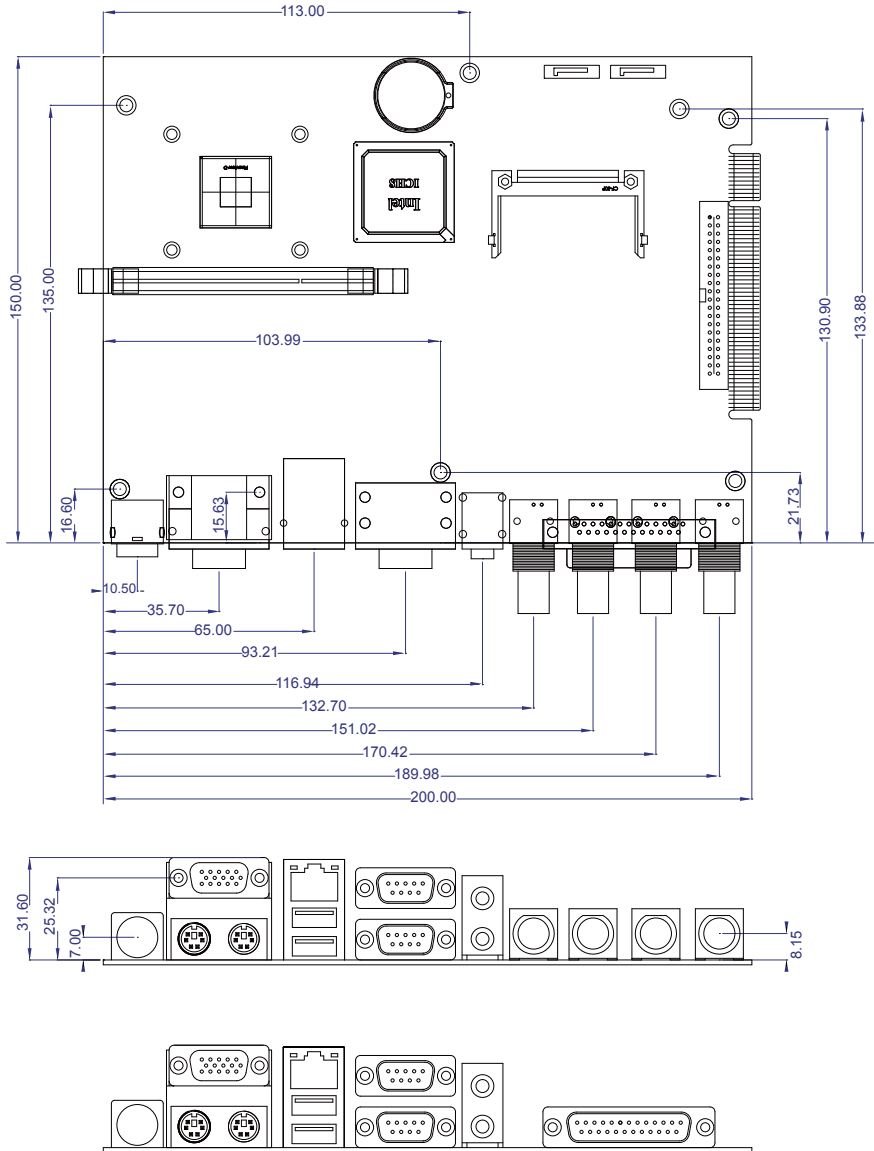
1. Ground yourself by a grounded wrist strap at all times when you handle the SI525AW.
Well secure the ALLIGATOR clip of the strap to the end of the shielded wire lead from a grounded object. Please put on and connect the strap before handling the SI525AW for harmlessly discharge any static electricity 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

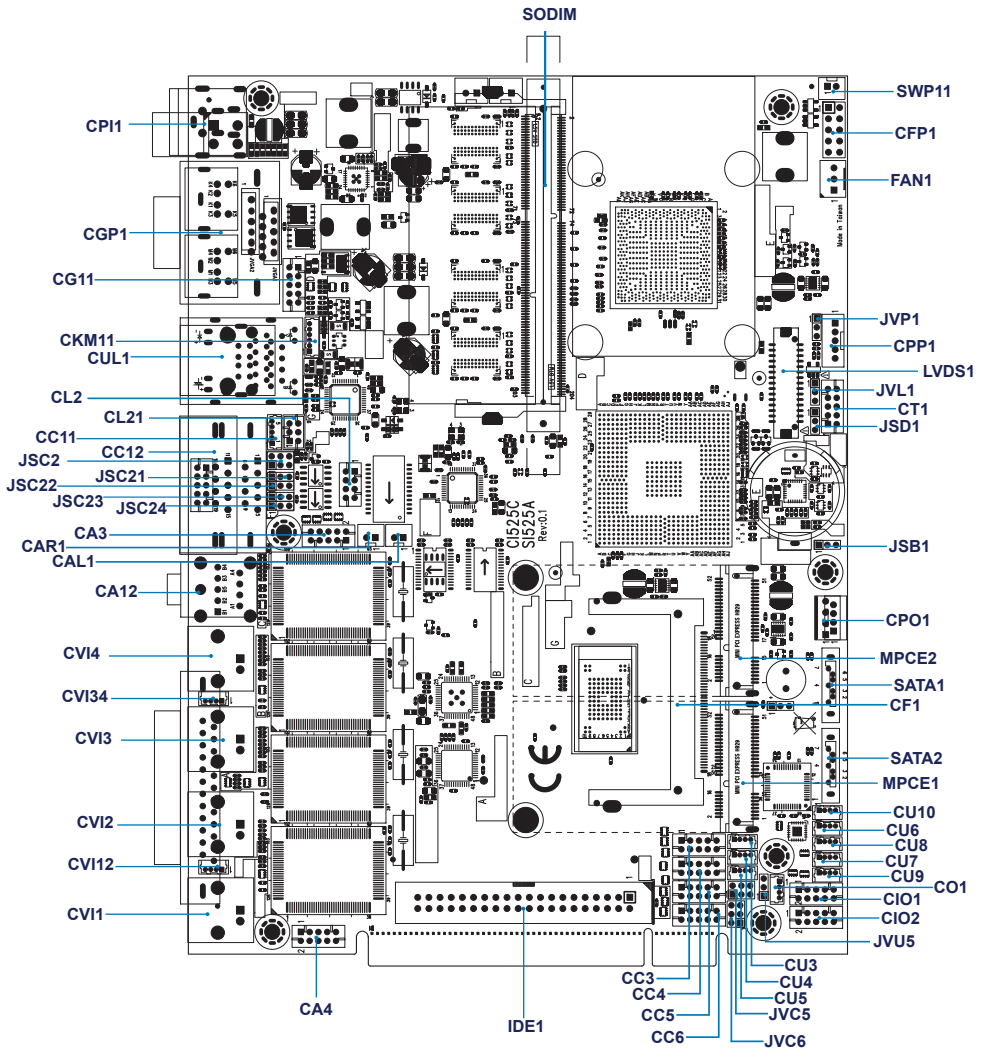
First of all, please follow all necessary steps of section 2-1 to protect SI525AW from electricity discharge. With reference to section 1-6, please check the delivery package again with following steps:

1. Unpack the SI525AW board and keep all packing material, manual and driver disc etc, do not dispose !
2. Is there any components lose or drops from the board? DO NOT CONTINUE TO INSTALL THIS BOARD! CONTACT THE DEALER YOU PURCHASED THIS BOARD FROM, IMMEDIATELY.
3. Is there any visible damage on the board? DO NOT CONTINUE TO INSTALL THIS BOARD!CONTACT THE DEALER YOU PURCHASED THIS BOARD FROM, IMMEDIATELY.
4. Check your optional parts (i.e. DDR, CF etc.), all necessary jumpers setting to jumper pin-set, and CMOS setup correctly.
Please also refer to all information of jumper settings in this manual.
5. Check your external devices (i.e. Add-On-Card, Driver Type etc.) for complete add-in or connection and CMOS setup correctly.
Please also refer to all information of connector connection in this manual.
6. Please keep all necessary manual and driver disc in a good condition for future re-installation if you change your Operating System.

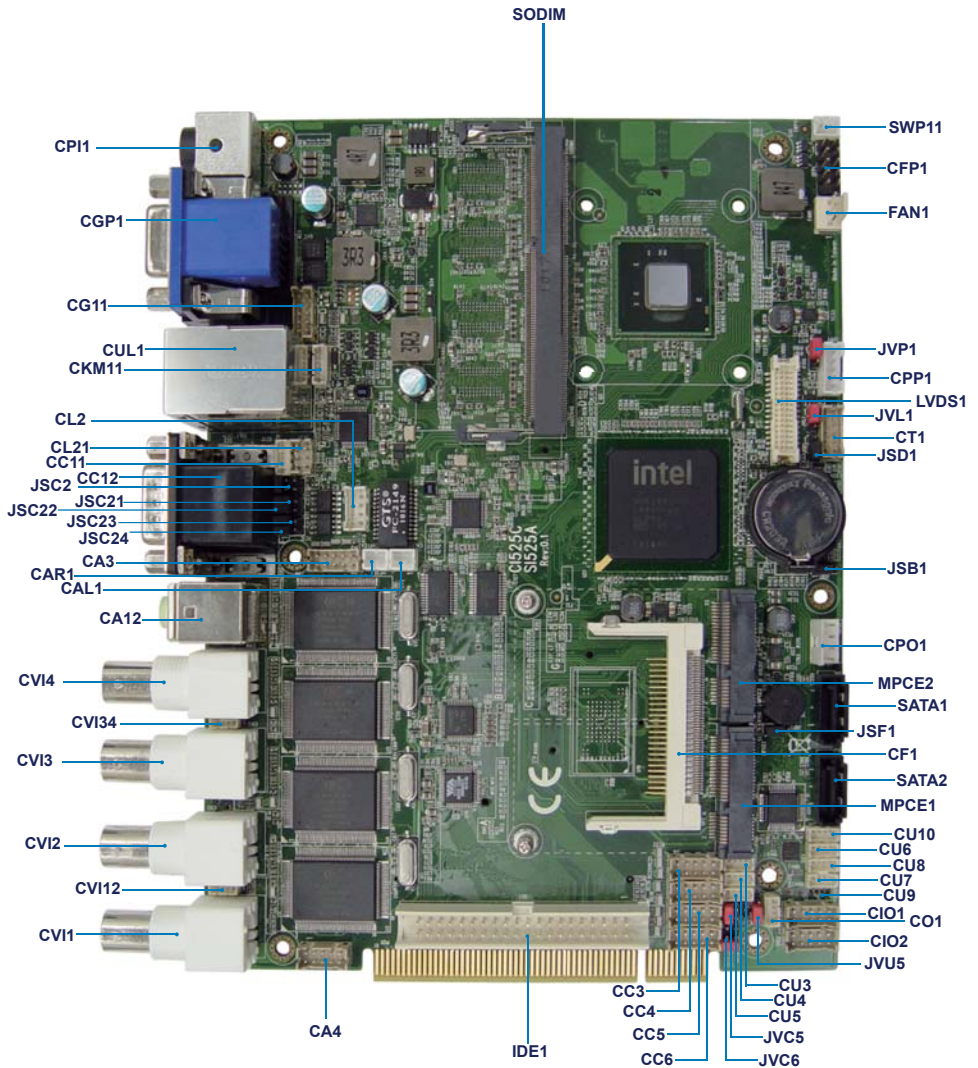
2-3 Dimension - SI525AW 200 x 150mm



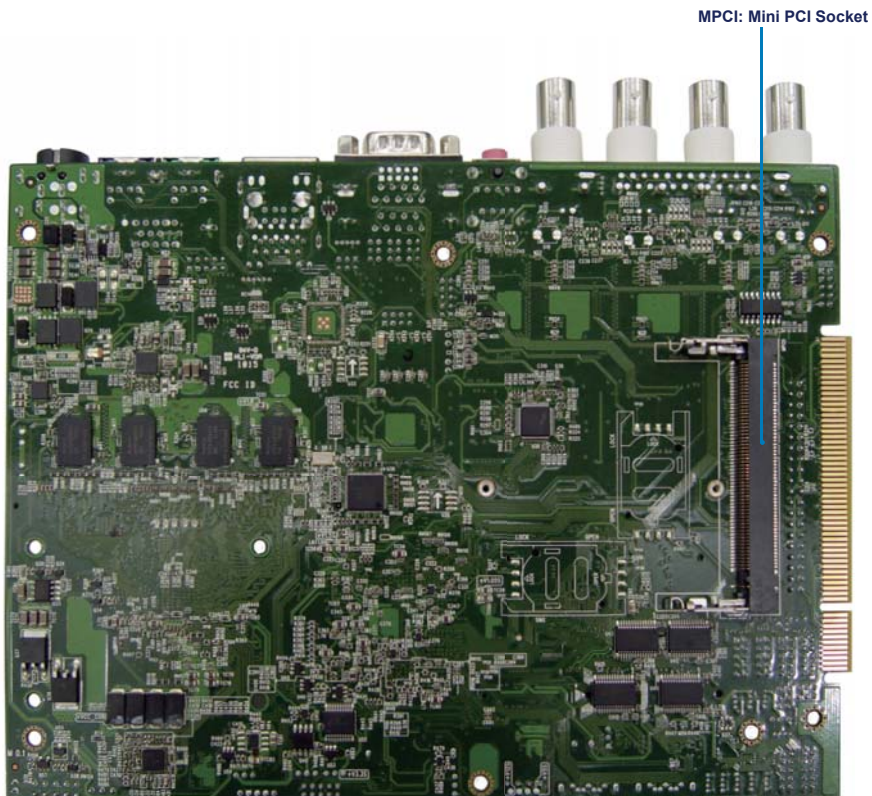
2-4 Layout - SI525AW



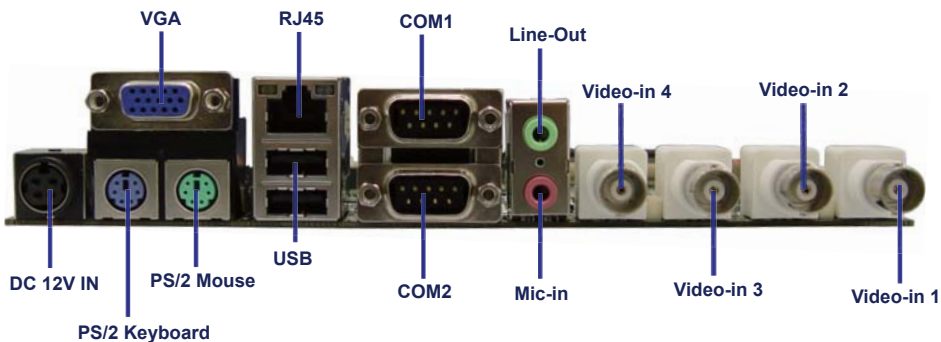
2-5 Diagram- SI525AW



2-5-1 Bottom Side Diagram



Back Panel



2-6 Install Memory

This motherboard provides one 204-pin Small Outline Dual In-line Memory Module (SODIMM) socket for memory expansion available maximum to of 2GB/4GB DDR3 SDRAM. (Please refer to page 7 for memory specification)
DDR3 clock supports: DDR3 800MT/S

Valid Memory Configurations

DIMM1	System Accept or Not	Total Memory
		Max.
DS/SS	Accept	4GB

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.

NOTE!

When you install SODIMM module fully into the SODIMM socket, the eject tab should be locked into the SODIMM module very firmly and fit into its indentation on both sides.

Please refer to page 7 for installation of memory module.

WARNING!

Once you hear " Beep Beep Beep" sounds after turning on the power , please check if the DRAM is installed properly or not.

2-7 List of Jumpers

JSB1: CMOS clear select

JSC2 / 21 / 22 / 23 / 24: COM2 RS232/RS422/RS485 select

JSD1 : DPC Duty select

JSF1: CF card master and slave select

JVC5: COM5 voltage select

JVC6: COM6 voltage select

JVL1: LCD Panel power select

JVP1: Panel Inverter power select

JVU5: USB5 voltage select

2-8 Jumper Setting Description

A jumper is ON as a closed circuit with a plastic cap covering two pins. A jumper is OFF as an open circuit without the plastic cap. Some jumpers have three pins, labeled 1, 2, and 3. You could connect either pin 1 and 2 or 2 and 3.

The below figure 2.2 shows the examples of different jumper settings in this manual.

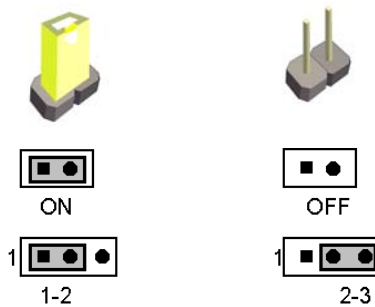


Figure 2.2

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

2-9 CMOS Data Set

A battery must be used to retain the motherboard configuration in CMOS RAM. Close pin 1 and pin 2 of JSB1 to store the CMOS data.

To clear the CMOS, follow the procedures below:

1. Turn off the system and unplug the AC power
2. Remove DC 12V power cable from DC 12V power connector
3. Locate JSB1 and close pin 2-3 for a few seconds
4. Return to its normal setting by shorting pin 1-2
5. Connect DC 12V power cable back to DC 12V power connector

Note: Do not clear CMOS unless

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

JSB1	Description
*1-2	*Normal Set
2-3	CMOS Data clear



JSB1



***Normal**



Clear Setting

2-10 JSF1 CF Card Master and Slave selection

If you use CF card and HDD together, please set CF as Master and HDD as Slave.

JSF1	Description
1-2	For CF Card Master
2-3	For CF Card Slave



JSF1



***Master**

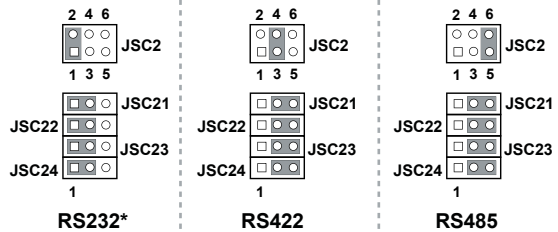
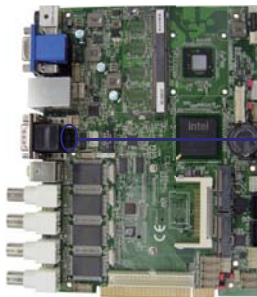


Slave

* We use to refer to as pin1

2-11 JSC2/21/22/23/24: COM2 RS232/RS422/RS485 select

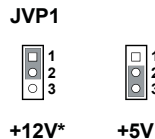
JSC2	JSC21	JSC22	JSC23	JSC24	Description
1-2*	1-2*	1-2*	1-2*	1-2*	RS232*
3-4	2-3	2-3	2-3	2-3	RS422
5-6	2-3	2-3	2-3	2-3	RS485



2-12 JVP1: LVDS panel Inverter power select (option)

JVP1	Description
1-2*	+12V*
2-3	+5V

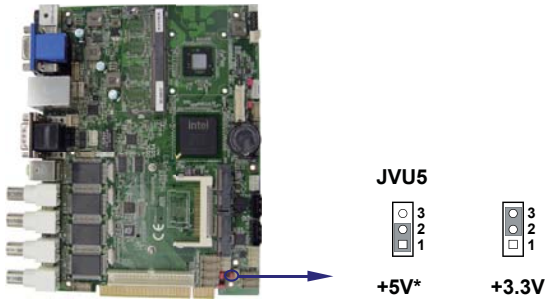
Note: Please be cautious about voltage setting.



2-13 JVu5: USB Port 5 Voltage select

JVu1	Description
1-2*	+5V*
2-3	+3.3V

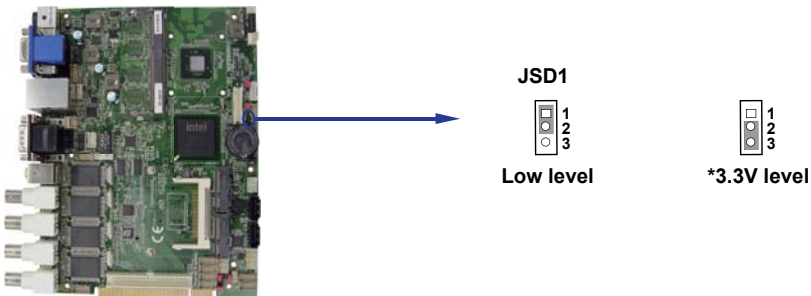
Note: Please be cautious about voltage setting.



2-14 JSD1: DPC Duty select (option)

JSD1	Description
1-2	Low 0% (Low level)
*2-3	Hi 100% (3.3V level)

Note: Please be cautious about voltage setting.

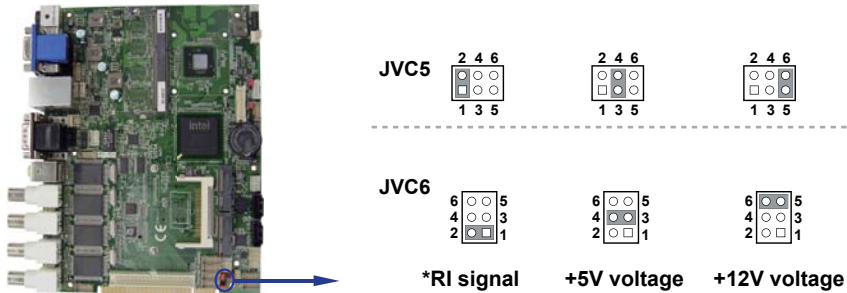


2-15 COM port pin9 select RI signal or Voltage source

JVC5: COM5 PIN9 select JVC6: COM6 PIN9 select

JVC5/JVC6	Description
*1-2	COM port pin9 use RI signal
3-4	COM port pin9 use +5V voltage
5-6	COM port pin9 use +12V voltage

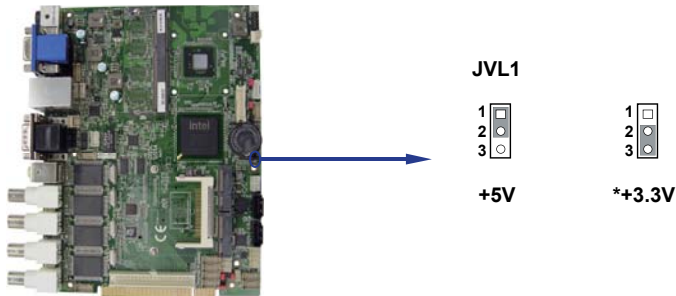
Note : 1. Note: Please be cautious about voltage setting.
 2. If want to use +5V/+12V need check system power design spec.



2-16 JVL1: LCD panel power select (option)

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

Note: Please be cautious about voltage setting.



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

CA12: Downside Mic-in and Upside Line-out (3.5mm) phone jack

CA3: Line-out/Line-in/Mic-in 2x5pin (2.0mm) Wafer

CAR1,CAL1: Two Channel Speak out ports 2pin (2.0mm) Wafer

CC12: Downside COM2 DB9 and Upside COM1 DB9 Connector

CC11: COM1 5pin (1.25mm) Wafer

CC21: COM2 2x5pin (2.0mm) Wafer

CC3: COM3 2x5pin (2.0mm) Wafer

CC4: COM4 2x5pin (2.0mm) Wafer

CC5: COM5 2x5pin (2.0mm) Wafer

CC6: COM6 2x5pin (2.0mm) Wafer

CF1: CF socket 50pin

IDE1: IDE 40pin (2.54mm) Connector

CFP1: FP ports 2x5pin (2.54mm) Wafer

SWP11: PB SW 2pin(2.0mm)Wafer

CGP1: Downside PS2 KB/MS Upside VGA DB15 Connector

CG11: VGA port 2x5pin (2.0mm) Wafer connector

CKM1: KB/MS ports 6pin (1.25mm) Wafer connector

CL2: LAN2 port 2x4pin (2.0mm) Wafer

CL21: LAN2 LED 2x3pin (2.0mm)Wafer

CIO1,CIO2: Two DIO 2x5pin (2.0mm) Wafer

CO1: I2C 4pin (1.25mm) Wafer

CPI1: DC -IN Power Jack

CPI11: DC-In 2x2pin (4.20mm) Wafer connector

CPO1: +12V/+5V power output 4pin (2.54mm) Wafer

LVDS1: LVDS 18 Bits 2x15pin (1.25mm) connector (option)

CPP1: Panel inverter power connector 5pin (2.0mm) Wafer

CT1: Touch screen device 2x5pin (2.0mm) Wafer

List of Connectors

CVI 1 / 2 / 3 / 4: Composite Video in BNC jack
CVI12: Composite Video in 4pin(1.25mm) wafer
CVI34: Composite Video in 4pin(1.25mm) wafer
CVI5: Composite Video in DB 25pin connector
CA4: CX25878 Mic in 2x5pin(2.0mm) wafer
CU3: USB 3 port 4pin(1.25mm) Wafer
CU4: USB 4 port 4pin(1.25mm) Wafer
CU5: USB 5 port 4pin(1.25mm) Wafer
CU6: USB 6 port 4pin(1.25mm) Wafer
CU7: USB 7 port 4pin(1.25mm) Wafer
CU8: USB 8 port 4pin(1.25mm) Wafer
CU9: USB 9 port 4pin(1.25mm) Wafer
CU10: USB 10 port 4pin(1.25mm) Wafer
CUL1: Down side USB 1/2 Type A and Up side LAN port RJ45
FAN1: CPU FAN 3pin Wafer
MPCE1 / 2: Two Mini card socket 52pin
SIM 1 / 2: Two SIM card socket (Option)
MPCI1: Mini PCI card socket 124pin
SATA1,SATA2: Two SATA connector 7pin
SODIMM: DDR3 SO-DIMM 204pin
BAT1: 3V Battery holder 2pin

3-2 Audio Port Connector

The SI525A has an on-board AC'97 3D sound interface. There are the connectors of LINE OUT, MIC-IN and Line-IN connectors.

The MIC-IN Jack and Line-IN header are for audio sound input. The LINE-OUT connector is a 4-pin Jack for audio sound output.

CA12: Down side Mic-in and Up side Line-out(3.5mm) phone jack

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

CAR1, CAL1: Two Channel Speak out ports 2pin (2.0mm) Wafer (option)

- **CA12: Up side Line-out (3.5mm phone jack)**

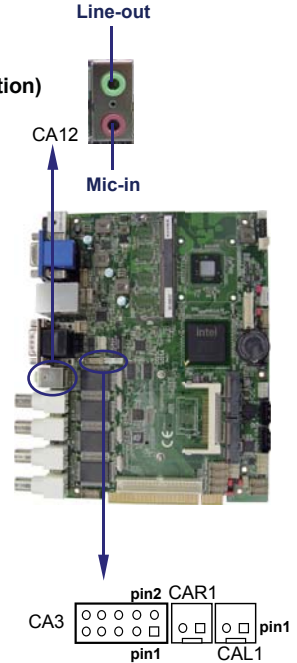
PIN NO.	1	2	3	4	5
Description	GND	Line-OUT-L	NC	NC	Line-OUT-R

- **CA12: Down side Mic-in (3.5mm phone jack)**

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

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

PIN NO.	Description	PIN NO.	Description
1	Line-out-R	2	MIN-IN
3	Line-in-R	4	GND
5	GND	6	GND
7	Line-in-L	8	NC
9	Line-out-L	10	MIN-IN



3-2-1 Audio Amplifier class D Two channel 6W/8Ω/ch (option)

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

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

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

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

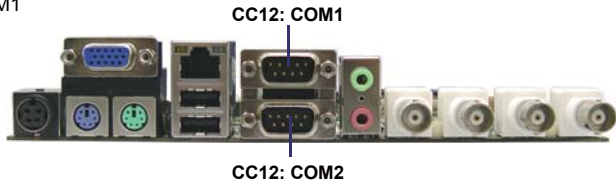
Note : Audio Amplifier is option function

3-3 COM Port Connector

- **CC12: RS232 Mode COM1/2 conector (D-SUB 9pin)**

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

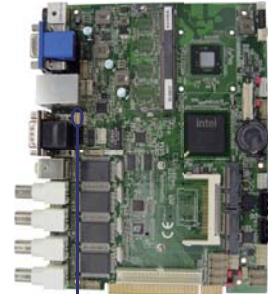
Note: Down side COM2 , Up side COM1



- **CC12: RS422 / RS485 for COM2 only (D-SUB 9pin)**

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

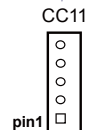
Note : 1.COM1 can support RS485 for OEM
 2. Refer to JSC2 / 21 / 22 / 23 / 24 setting



- **CC11: COM1 RS232 port (5pin 1.25mm Wafer)**

PIN NO	1	2	3	4	5
Description	+5V	GND	RTS	TX	RX

Note : 1. CC11(COM1) share with CC12 up side
 2. All signal are RS232 level .



3-3-1 Second IO for four COM ports(option)

- RS232 ports (2x5pin 2.0mm Wafer)

CC3: COM3 CC4: COM4 CC5: COM5 CC6: COM6

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

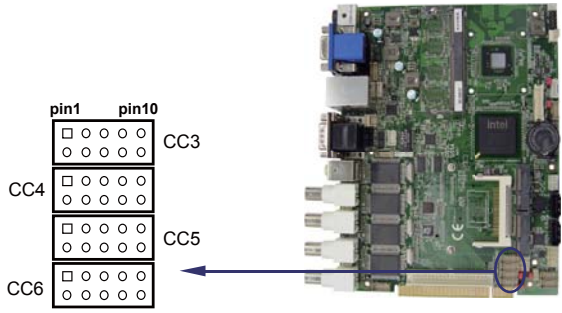
- Note: 1. Pin 9 RI and Voltage setting only for COM5/6 ports
 JVC5 for COM5 , JVC6 for COM6
 2. All CC3/4/5/6 wafer Connector pin 10 provide +5V
 3. Secondary I/O four com ports are option

- RS485 ports (2x5pin 2.0mm Wafer)

CC3: COM3 CC4: COM4 CC5: COM5 CC6: COM6

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

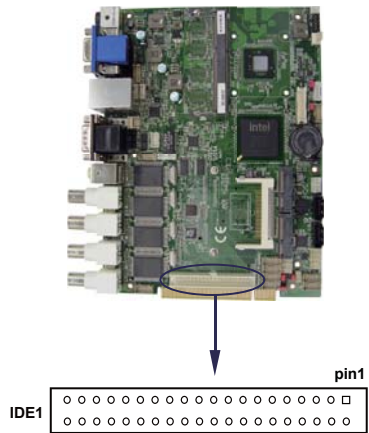
- Note : 1. Default BOM set to RS232 Mode
 2. RS485 function for OEM BOM request
 3. BIOS need setting to RS485 mode



3-4 IDE Connectors

IDE1: 40 pin (2.54mm box Header) Connector

PIN NO.	Description	PIN NO.	Description
1	RESET#	2	GND
3	DATA7	4	DATA8
5	DATA6	6	DATA9
7	DATA5	8	DATA10
9	DATA4	10	DATA11
11	DATA3	12	DATA12
13	DATA2	14	DATA13
15	DATA1	16	DATA14
17	DATA0	18	DATA15
19	GND	20	+5V
21	DREQ	22	GND
23	IOW#	24	GND
25	IOR#	26	GND
27	IORDY	28	PULL DOWN
29	DACK#	30	GND
31	IRQ15	32	NC
33	SA 1	34	ATA 33/66/100 CABLE SELECT
35	SA 0	36	SA 2
37	HD CS0#	38	HD CS1#
39	HD LED	40	GROUND



Note: 1.CF socket share to IDE and on board SSD

Note!

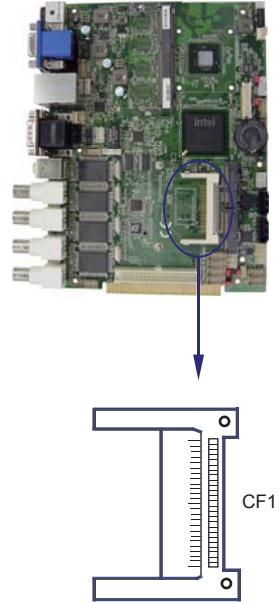
PIN 20 connector +5V of IDE 1 could provide the power of DOM.

3-5 CF Card Reader

SI525A configures Compact Flash Storage Card in IDE mode.
 It will use IDE channel when Compact Flash card is plugged in.
 This socket supports CF Card Type I/II socket spec.
 CF Socket 50pin----CF1

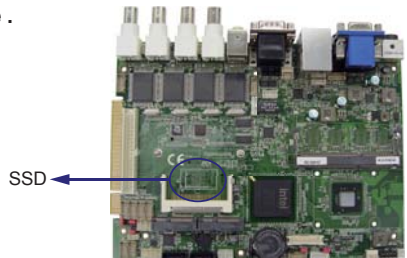
CF1: CF Socket For True IDE Mode (50pin CF Socket)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	26	GND(-CD1)
2	DATA3	27	DATA11
3	DATA4	28	DATA12
4	DATA5	29	DATA13
5	DATA6	30	DATA14
6	DATA7	31	DATA15
7	-CS0	32	-CS1
8	GND(A10)	33	GND(-VS1)
9	GND(-ATA_SEL)	34	-IOR
10	GND(A9)	35	-IOW
11	GND(A8)	36	-WE(PH)
12	GND(A7)	37	INTR
13	+5V	38	+5V
14	GND(A6)	39	-CSEL
15	GND (A5)	40	NC(-VS2)
16	GND (A4)	41	RESET
17	GND (A3)	42	IORDY
18	SDA2	43	DMAREG(-INPACK)
19	SDA1	44	DMAACK[-REG(PH)]
20	SDA0	45	-DASP
21	DATA0	46	-PDIAG
22	DATA1	47	DATA8
23	DATA2	48	DATA9



3-5-1 SSD use at PATA slave channel

- Note: 1. If SSD and CF card are using at same time . BIOS need to adjust to ATA 33 mode.
 2. SSD(master) and CF(slave) use at same time .



We strongly recommend that you do not use SSD and CF card at the same time since the controller of CF card keeps changing on the market and it could cause compatibility issue.

3-6 Front Panel Port

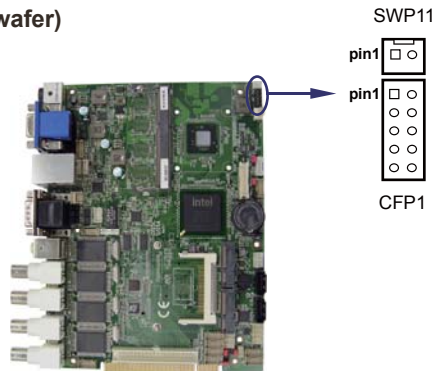
● **CFP1: FP connector (2x5pin 2.54mm wafer)**

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

Note : Share with SWP11

● **SWP11: PB connector (2pin 2.0mm wafer)**

PIN NO.	Description
1	Power button pin
2	Power button GND



3-7 VGA / PS2 Keyboard / PS2 Mouse port Connector

● **CGP1: Upside VGA Connector (DB15 pin)**

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



● **CG11: VGA 2x5pin 2.0mm wafer connector**

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

*Note : VGA signal CGP1 share with CG11

● **CGP1: Downside PS2 Keyboard Din connector**

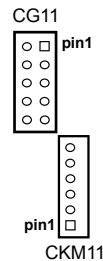
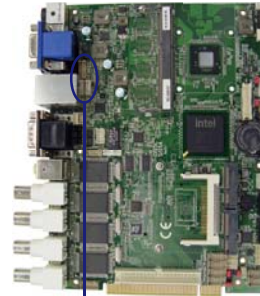
PIN NO.	Description
1	KB DATA
2	MS DATA
3	GND
4	+5V
5	KB CLOCK
6	MS CLOCK

● **CGP1: Downside PS2 Mouse Din Connector**

PIN NO.	Description
1	MS DATA
2	NC
3	GND
4	+5V
5	MS CLOCK
6	NC

● **CKM11: 6PIN(1.25mm Wafer connector)
Internal Keyboard / Mouse Connector**

PIN NO.	Description
1	+5V
2	KB DATA
3	KB CLOCK
4	GND
5	MS DATA
6	MS CLOCK



CGP1: PS2 Mouse

CGP1: PS2 Keyboard

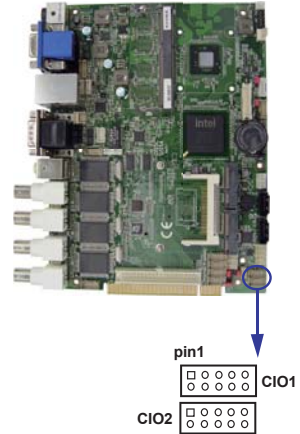
3-8 Digital Input / Output / Watch Dog Time

• 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 (2x5pin 2.0mm wafer)

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



For F75111N I2C watch dog timer device:

DC spec :

Input low Voltage (VIL):+0.8 Max ,

Input High Voltage(VIH) : +2V Min

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

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

Watch Dog Time value 0~255 sec

The system will be issued reset.

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

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

Note: Please refer to Page 34 for sample code for detail description

3-8-1 IO Device:F75111 under DOS

The Sample code source you can download from

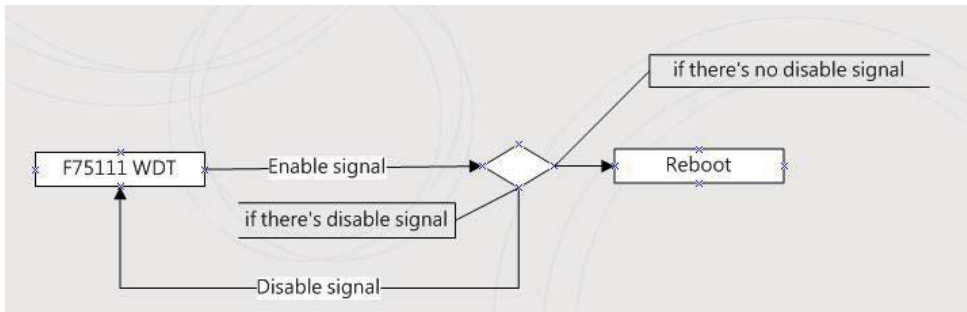
Source file: F75111_Dos_Src.rar https://tprd.info/lexwiki/index.php/IO_Device:F75111_under_DOS

Binary file: F75111_Dos_Bin.rar

USERNAME & PASSWORD: temp

How to use this Demo Application

- 1.Boot Ms-Dos Operating System
- 2.execute "75WDT.EXE" binary file
- 3.Input 1 to Enable WDT timer or input 0 to Disable it.
- 4.input numbers of second for chip countdown and Reset Computer



Introduction

Enable Watch Dog Timer

```
Writel2CByte(12CADDR, CONFIG, 0x03);//Set Watch Dog Timer function
Writel2CByte(12CADDR, WDT_TIMER, timer);//Set Watch Dog Timer range from 0-255.
Writel2CByte(12CADDR, WDT_TIMER_CTL, 0x73);//Enable Watch Dog Timer in second and pulse mode
```

Disable Watch Dog Timer

```
Writel2CByte(12CADDR, WDT_TIMER_CTL, 0x00);
```

Time Pause for mini seconds

```
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

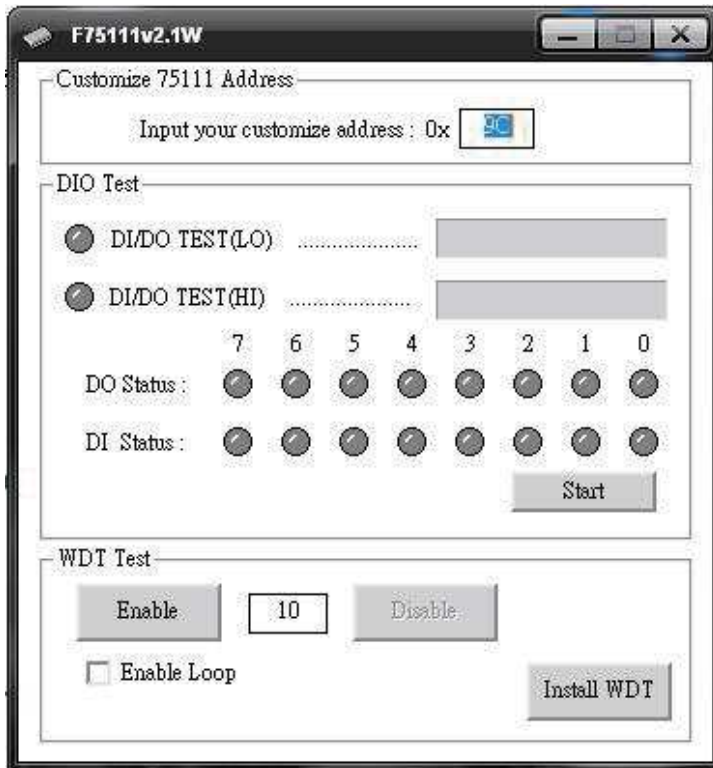
The Sample code source you can download from



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

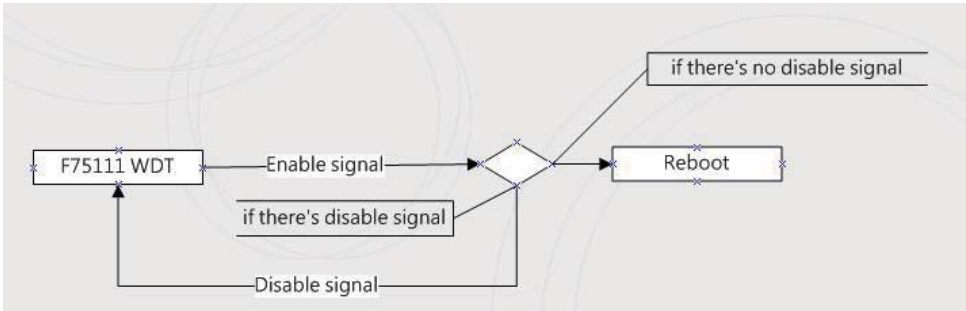
Binary file: F75111_DemoBin.rar

USERNAME & PASSWORD: temp

How to use this Demo Application



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



p.s.

f75111 send "F75111_SetWDTEnable(BYTE byteTimer)" including a parameter "timer",
 if there's no disable signal (F75111_SetWDTDisable()) to stop it before timer countdown to 0, System will reboot.
 if there's disable signal received, resent Enable WDT signal, for a loop to prevent from reboot

Introduction

Initial Internal F75111 port address (0x9c)

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

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

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

Enable/Disable WDT

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

PULSE mode

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

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

Initial internal F75111

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

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

Set output value

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

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

Get Input value

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

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

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

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

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

    return byteData;
}
}
```

Enable WatchDog

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

Disable WatchDog

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

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

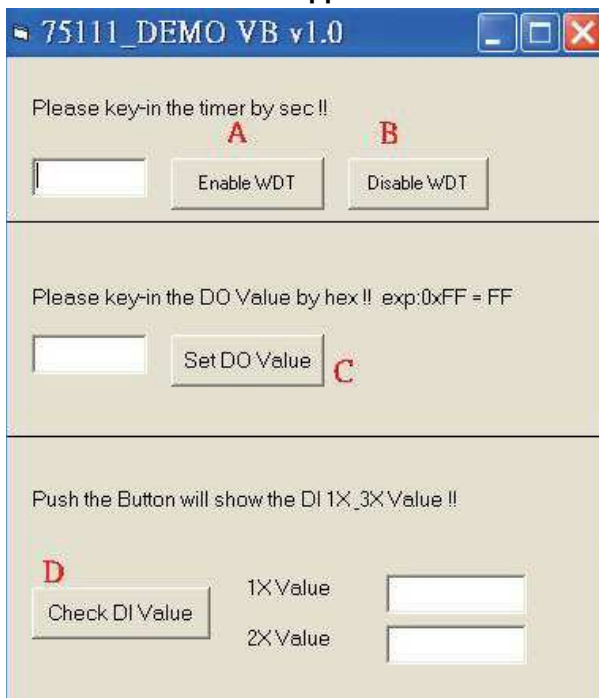
The Sample code source you can download from

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

Binary file: **75111_VB_Src.rar**

USERNAME & PASSWORD: temp

How to use this Demo Application



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

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

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

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

SDK Function Introduction

Function EnableWDT

Function EnableWDT(timer As Integer)

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

End Function

Function DisableWDT

Function DisableWDT()

Call Writel2CByte(&H36, &H0)

End Function

Function SetDOValue

Function SetDOValue(dovalue As Integer)

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

End Function

Function CheckDIValue

Function CheckDIValue()

Dim GPIO1X As Integer
Dim GPIO3X As Integer
Dim DI1Xhex As String
Dim DI3Xhex As String

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

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

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

End Function

3-8-4 IO Device: F75111 under linux

The Sample code source you can download from

Source file: F75111v2.0L.tar.gz https://tprd.info/lexwiki/index.php/IO_Device:F75111_under_linux

Binary file: F75111v2.0LBin.tar.gz

USERNAME & PASSWORD: temp

How to compile source code

1. Compile source code with Code::Blocks

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

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

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

2. Compile source code with "make"

1.cd F75111

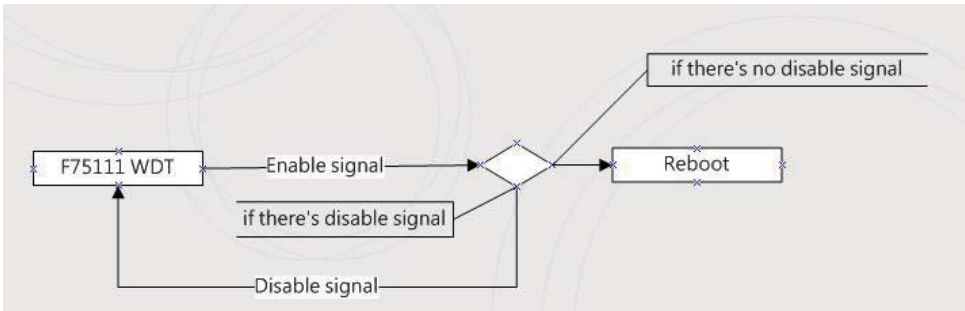
1.make

1.src/f75111 // execute the binary file

How to use this Demo Application



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



p.s.

f75111 send "F75111_SetWDTEnable(BYTE byteTimer)" including a parameter "timer",
 if there's no disable signal (F75111_SetWDTDisable()) to stop it before timer countdown to 0, System will reboot.
 if there's disable signal received, resent Enable WDT signal, for a loop to prevent from reboot

Introduction

IO function In file SMBus.c

```

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

```

BYTE SMBusIoRead(BYTE byteOffset)
{
  DWORD dwAddrVal;

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

Initial internal F75111

```

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

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

Set output value

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

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

Get Input value

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

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

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

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

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

    return byteData;
}
```

Enable WatchDog

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

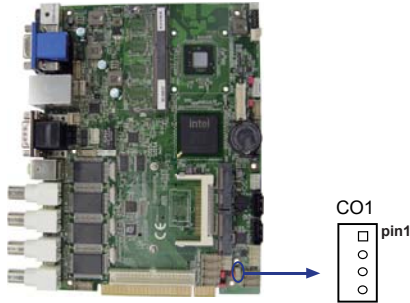
Disable WatchDog

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


3-9 I²C Interface

- CO1: I²C Bus 4pin (1.25mm)Wafer

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



3-10 DC IN power connector

- CPI1: DC in power Jack (4pin DIN jack)

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



Note:1. Please check DC-in range.

2. If model name is SI525AW can support wide range DC-in 6 ~ 35V±1V

- CPI11: DC-in Internal connector (4pin ATX power 4.20mm)

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

Note:1. Please check DC-in range.

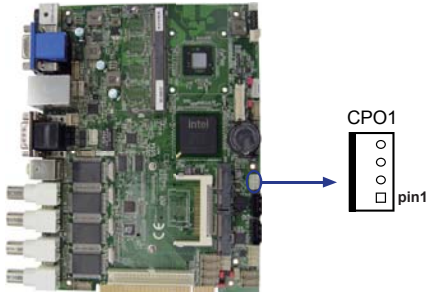
2. If model name is SI525AW can support wide range DC-in 6 ~ 35V±1V
- 3.CPI11 share with CPI1 position

3-11 DC +5 / +12V Voltage output connector

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

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

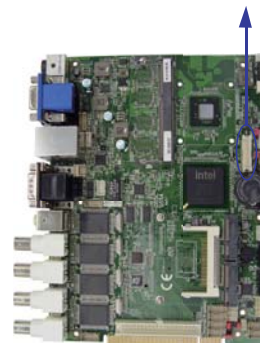
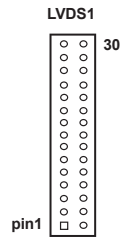
* Note : Attention ! Check Device Power in spec



3-12 LVDS / Panel power Interface (option)

● LVDS1: 18bits 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	SPDIFO	6	NC
7	NC	8	NC
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	SM CLOCK	24	NC
25	SM DATA	26	NC
27	DDC CLOCK	28	NC
29	DDC DATA	30	NC



Note : 1. Attention ! Check Device Power in spec

2. JVL1: LVDS panel +5V/+3.3V Voltage select

3. JSD1 : PWM duty cycle by first time define .

4. Pin 1 back light dimming control ,provided 200Hz / 275Hz / 380Hz / 20KHz /25KHz and adjust PWM duty cycle by software program .

5. This connector for option

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

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



Note : 1. Attention ! Check Device Power in spec

2. JVP1 Inverter Voltage select

3. PIN 3 default by JSD1 select

4. This connector for option

3-13 Touch screen device (Option)

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

Default use USB interface, can change COM interface, By OEM BOM .

● **For 8- wire type pin define**

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

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

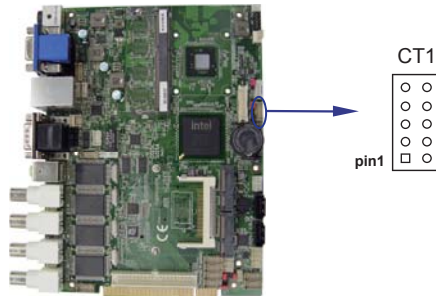
● **For 4- wire type pin define**

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	KEY

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	KEY



3-14 Video in for CX25878 PCI chipset

- CVI1 / 2 / 3 / 4: Video in BNC connector

4S model: One chipset support four ports BNC Connector

Connector no.	Description	CX25878	Pin/Name
CVI1	Composite Video in 1	U3	114/MUX0
CVI2	Composite Video in 2	U3	116/MUX1
CVI3	Composite Video in 3	U3	118/MUX2
CVI4	Composite Video in 4	U3	120/MUX3

4U model: Four chipset support four ports BNC Connector

Connector no.	Description	CX25878	Pin/Name
CVI1	Composite Video in 1	U3	114/MUX0
CVI2	Composite Video in 2	U4	114/MUX0
CVI3	Composite Video in 3	U5	114/MUX0
CVI4	Composite Video in 4	U6	114/MUX0



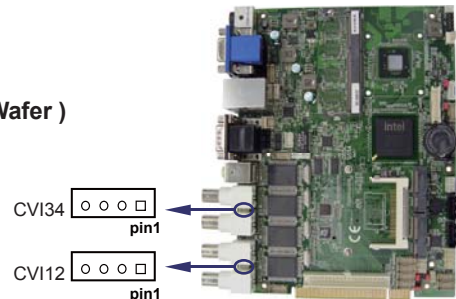
- CVI12 / 34: Video in 4pin (1.25mm) wafer

CVI12: Video in for internal use (1.25mm Wafer)

PIN NO.	Description
1	Composite Video in 1
2	GND
3	GND
4	Composite Video in 2

CVI34: Video in for internal use (1.25mm Wafer)

PIN NO.	Description
1	Composite Video in 3
2	GND
3	GND
4	Composite Video in 4



● **CVI5: Video in DB25pin connector (option)**

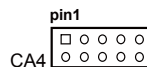
4H model: Four chipset support Sixteen ports from CVI5 D-SUB 25Pin to BNC Connector

PIN No.	Description	CX25878	Pin/Name	BNC No.
1	Composite Video in 1	U3	114/MUX0	1
4	Composite Video in 2	U3	116/MUX1	2
11	Composite Video in 3	U3	118/MUX2	3
23	Composite Video in 4	U3	120/MUX3	4
16	Composite Video in 5	U4	114/MUX0	5
5	Composite Video in 6	U4	116/MUX1	6
18	Composite Video in 7	U4	118/MUX2	7
19	Composite Video in 8	U4	120/MUX3	8
7	Composite Video in 9	U5	114/MUX0	9
20	Composite Video in 10	U5	116/MUX1	10
22	Composite Video in 11	U5	118/MUX2	11
21	Composite Video in 12	U5	120/MUX3	12
8	Composite Video in 13	U6	114/MUX0	13
10	Composite Video in 14	U6	116/MUX1	14
25	Composite Video in 15	U6	118/MUX2	15
12	Composite Video in 16	U6	120/MUX3	16

● **CA4: CX25878 Audio in 2x5pin(2.0mm)Header**

PIN NO.	Description	CX25878	Pin/Name
10 / 9	MIC-IN 1/MIC Voltage	U3	94/SML
8 / 7	MIC-IN 2/MIC Voltage	U4	94/SML
6 / 5	MIC-IN 3/MIC Voltage	U5	94/SML
4 / 3	MIC-IN 4/MIC Voltage	U6	94/SML
1 / 2	GND		

Note: CX25878 Mic-in function By software enable



3-15 Audio/Video in for TW6818 PCI chipset (TBD)

- CVI1 / 2 / 3 / 4: Video in BNC connector

4S model: One chipset support four ports BNC Connector

Connector no.	Description	TW6818	Pin/Name
CVI1	Composite Video in 1	U61	78/VIN1A
CVI2	Composite Video in 2	U61	86/VIN2A
CVI3	Composite Video in 3	U61	88/VIN3A
CVI4	Composite Video in 4	U61	96/VIN4A



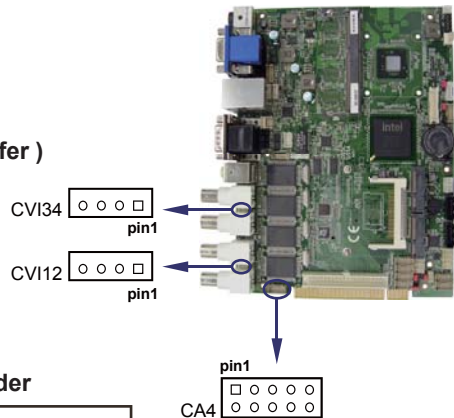
- CVI12 / 34: Video in 4pin (1.25mm) wafer

CVI12: Video in for internal use (1.25mm Wafer)

PIN NO.	Description
1	Composite Video in 1
2	GND
3	GND
4	Composite Video in 2

CVI34: Video in for internal use (1.25mm Wafer)

PIN NO.	Description
1	Composite Video in 3
2	GND
3	GND
4	Composite Video in 4



- CA4: TW6818 Audio in 2x5pin(2.0mm)Header

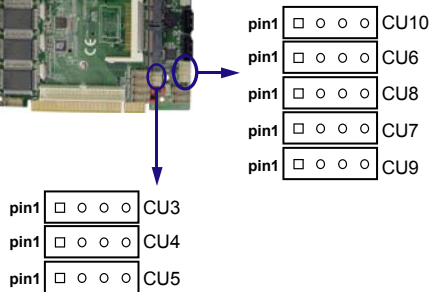
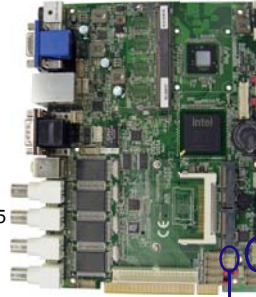
PIN NO.	Description	TW6818	Pin/Name
10 / 9	MIC-IN 1/MIC Voltage	U61	75/AIN1
8 / 7	MIC-IN 2/MIC Voltage	U61	74/AIN2
6 / 5	MIC-IN 3/MIC Voltage	U61	73/AIN3
4 / 3	MIC-IN 4/MIC Voltage	U61	72/AIN4
1 / 2	GND		

3-16 USB Port

- CU3:USB3, CU4:USB4, CU5:USB5, CU6:USB6, CU7:USB7, CU8:USB8, CU9:USB9, CU10:USB10

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

- Note :
1. Attention ! Check Device Power in spec
 2. CU5 PIN 1 +5V or +3.3V Voltage type select from JVVU5
 3. CU6 share with on board MPCE1 USB interface .
 4. CU9 share with on board Touch controller
 5. CU10 share with on board MPCE2 USB interface .



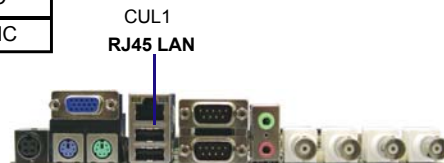
3-17 USB / LAN Port

- CUL1: Downside USB 1/2 ports (USB Type A connector)

PIN NO.	Description	PIN NO.	Description
1	+5V	5	+5V
2	DATA -	6	DATA -
3	DATA +	7	DATA +
4	GND	8	GND

- CUL1: LAN port Giga /100Mb(RJ45 Jack)

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



● **CL2: LAN 2 port Giga /100Mb(2x4pin 2.0mm wafer)**

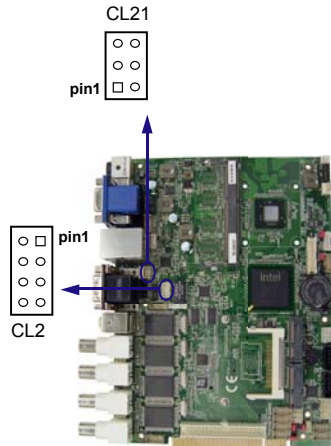
PIN NO.	Description	PIN NO.	Description
1	TR0- / TX+	2	TR0- / TX-
3	TR1+ / RX+	4	TR1+ / RX-
5	TR2+	6	TR2-
7	TR3+	8	TR3-

Note: 1. This LAN port for internal wafer connector only.
2. Use CN025 board can connector to outside RJ45 jack

● **CL21: LAN 2 port LED pin (2x3pin 2.0mm wafer)**

PIN NO.	Description	PIN NO.	Description
1	10Mb LED +	2	GND
3	100Mb LED +	4	Giga b LED+
5	10Mb LED -	6	NC

Note: This pin define for CN025 board LED pin define .



LAN LED

Intel 82583V

LAN LED

Speed	10 Mbps			100 Mbps			1000 Mbps		
	Back Side		Fornt Side	Back Side		Fornt Side	Back Side		Fornt Side
	Link Led	ACT Led	ACT Led	Link Led	ACT Led	ACT Led	Link Led	ACT Led	ACT Led
LAN light	Orange	Orange	Orange	Green	Orange	Orange	Red	Orange	Orange

Realtek RTL8111DL

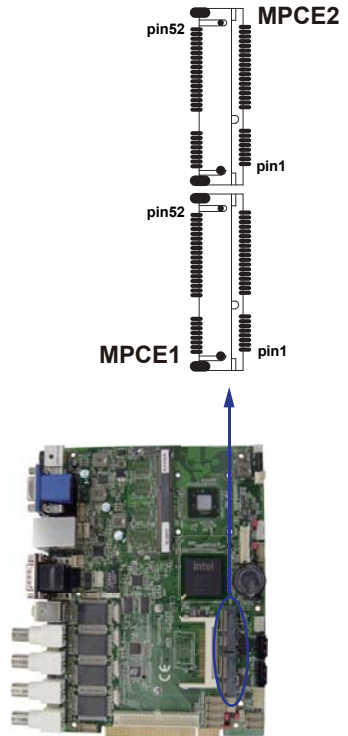
LAN LED

Speed	10 Mbps			100 Mbps			1000 Mbps		
	Back Side		Fornt Side	Back Side		Fornt Side	Back Side		Fornt Side
	Link Led	ACT Led	ACT Led	Link Led	ACT Led	ACT Led	Link Led	ACT Led	ACT Led
LAN light	Orange		Orange	Green		Orange	Red		Orange

3-18 Mini card

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

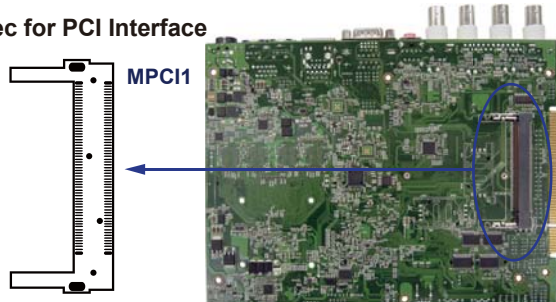
PIN NO.	Description	PIN NO.	Description
1	NC(Wake up)	2	+3.3V
3	NC	4	GND
5	NC	6	+1.5V
7	NC (CLKREQ-)	8	UIM_PWR
9	GND	10	UIM_DATA
11	PCIe-CLK-	12	UIM_CLK
13	PCIe-CLK+	14	UIM_RESET
15	GND	16	UIM_VPP
KEY	KEY	KEY	KEY
17	NC	18	GND
19	NC	20	NC
21	GND	22	PRST-
23	PCIe-RX -	24	+3.3V
25	PCIe-RX+	26	GND
27	GND	28	+1.5V
29	GND	30	SMB-CLK
31	PCIe-TX-	32	SMB-DATA
33	PCIe-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	SATA_TX+	46	NC
47	SATA_TX-	48	+1.5V
49	SATA_RX+	50	GND
51	SATA_RX-	52	+3.3V



- Note: 1. MPCE 1 / 2 provide UIM connector to SIM1/2 card socket for some 3G mini card
The function only by OEM BOM
2. MPCE 2 provide pin 45/47/49/51 special define for some mini card SATA SSD storage .
3. SATA port 3 interface share with PATA only use one .

3-19 Mini PCI card

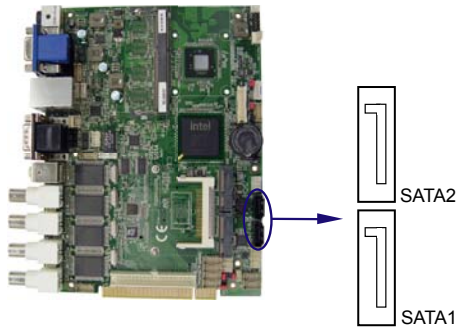
- **MPCI1: Support PCI 2.2/2.3 spec for PCI Interface (Mini PCI socket 124pin)**



3-20 Serial ATA

- **SATA1,SATA2: Two SATA connector (7pin wafer)**

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

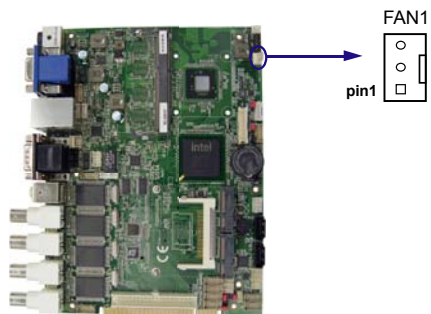


3-21 FAN connector

- **FAN1: CPU FAN connector(3pin 2.5mm wafer)**

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

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



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

4-2 Getting Help

Main Menu

The on-line description of the highlighted setup function is displayed at the bottom of the screen.

Status Page Setup Menu/ Option Page Setup Menu

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item.

To exit the Help Window, press <Esc>.

4-3 The Main Menu

Once you enter Award BIOS CMOS Setup Utility, the Main Menu will appear on the screen. The Main Menu has fourteen setup functions and two exit choices.

Use arrow keys to select among these items. Press <Enter> to accept or enter the sub-menu.

Phoenix-AwardBIOS CMOS Setup Utility

<ul style="list-style-type: none">▶ Standard CMOS Features▶ Advanced BIOS Features▶ Advanced Chipset Features▶ Integrated Peripherals▶ Power Management Setup▶ PnP/PCI Configurations	<ul style="list-style-type: none">▶ PC Health StatusLoad Optimized DefaultsSet Supervisor PasswordSet User PasswordSave & Exit SetupExit Without Saving
Esc : Quit	
F10 : Save & Exit Setup	
↑ ↓ → ← : Select Item	
Time, Date, Hard Disk Type...	

Standard CMOS Features

This Menu is for basic system configurations.

Advanced BIOS Features

This menu is to set the Advanced Features available in your system.

Advanced Chipset Features

This menu is to change the values in the chipset registers and optimize your system performance.

Integrated Peripherals

This menu is to specify your settings for integrated peripherals.

Power Management Setup

This menu is to specify your settings for power management.

PnP/PCI configurations

This entry appears if your system supports PnP/PCI.

PC Health Status

This entry shows your PC health status.

Load Optimized Defaults

Use this menu to load the BIOS default values for optimal system performances.

Set Supervisor/User Password

This menu is to set User and Supervisor Passwords.

Save & Exit Setup

Save CMOS values modified to CMOS and exit setup.

Exit Without Saving

Abandon all the CMOS values modified and exit setup.

4-4 Standard CMOS Features

The items in Standard CMOS Setup Menu are divided into several categories. Each category includes none, one or more than one setup items. Use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want to modify with this item.

Phoenix - AwardBIOS CMOS Setup Utility Standard CMOS Features

Date (mm:dd:yy)	Sat, Jun 1 2010	Item Help
Time (hh:mm:ss)	0 : 0 : 0	
▶ IDE Channel 0 Master	[None]	Menu Level >
▶ IDE Channel 0 Slave	[None]	
▶ IDE Channel 2 Master	[None]	Change the day, month,
▶ IDE Channel 2 Slave	[None]	year and century
▶ IDE Channel 3 Master	[None]	
▶ IDE Channel 3 Slave	[None]	
Video	[EGA/VGA]	
Halt On	[No Errors]	
Base Memory	640K	
Extended Memory	1038336K	
Total Memory	1039360K	
↑ ↓ → ← :Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help		
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

IDE Primary/Secondary Master/Slave

Press PgUp/<+> or PgDn/<-> to select Manual, None, Auto type. Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category. If your hard disk drive type is not matched or listed, you can use Manual to define your own drive type manually. If you select Manual, related information is asked to be entered to the following items. Enter the information directly from the keyboard. This information should be provided in the documentation from your hard disk vendor or the system manufacturer.

Video

The setting controls the type of video adapter used for the primary monitor of the system. Settings are: EGA/VGA (default), CGA 40, CGA 80 and Mono.

Halt On

The setting determines whether the system will stop if an error is detected at boot.

Settings are: All Errors:	The system stops when any error is detected.
No Errors (default):	The system doesn't stop for any detected error.
All, But Keyboard:	The system doesn't stop for a keyboard error.
All, But Diskette:	The system doesn't stop for a disk error.
All, But Disk/ Key:	The system doesn't stop for either a disk or a keyboard error.

4-5 Advanced BIOS Features

Phoenix - AwardBIOS CMOS Setup Utility Advanced BIOS Features

▶ Hard Disk Boot Priority	[Press Enter]	Item Help
▶ USB Boot Priority	[Press Enter]	
Virus Warning	[Disabled]	Menu Level >
Hyper-Threading Technology	[Enabled]	
Quick Power On Self Test	[Enabled]	
First Boot Device	[USB-FDD]	
Second Boot Device	[CDROM]	
Third Boot Device	[Hard Disk]	
Boot Other Device	[Enabled]	
Boot Up NumLock Status	[On]	
Gate A20 Option	[Fast]	
Typematic Rate Setting	[Disabled]	
xTypematic Rate (Chars/Sec)	6	
xTypematic Delay (Msec)	250	
OS Select For DRAM > 64MB	[Non-OS2]	
HDD S.M.A.R.T Capability	[Disabled]	
Full Screen LOGO Show	[Enabled]	
Small Logo<EPA> Show	[Disabled]	
↑ ↓ → ← : Move Enter : Select +/- / PU / PD : Value F10 : Save ESC : Exit F1 : General Help F5 : Previous Values F6 : Fail-Safe Defaults F7 : Optimized Defaults		

Hard Disk Boot Priority

Please refer section.

USB Boot Priority

Please refer section.

Virus Warning

The Virus Warning feature can help you protect IDE Hard Disk boot sector.

If this function is enabled, BIOS will show a warning message on screen and alarm beep when someone attempts to write data into this area without permission.

Disabled (default) No warning message appears when anything attempts to access the boot sector or hard disk partition table.

Enabled Activate automatically when the system boots up. The system will show the warning message if anything attempts to access the boot sector of hard disk partition table.

Hyper-Threading Technology

This item allows you to enable or disable Intel Hyper Threading technology.

Quick Power On Self Test

This category speeds up Power On Self Test (POST) after you power on the computer. If this is set to Enabled, BIOS will shorten or skip some check items during POST.

Enabled (default) Enable quick POST

Disabled Normal POST

First/Second/Third Boot Device

The BIOS attempts to load the operating system from the devices in the sequence selected in these items.

Settings are: LS120, Hard Disk, CDROM, USB-Device, ZIP100, USB-FDD, USB-ZIP, USB-CDROM, LAN and Disabled

Boot Other Device

Setting the option to Enabled allows the system to try to boot from other devices if the system fails to boot from the 1st/2nd/3rd boot device.

Boot Up NumLock Status

On (default) Keypad is numeric keys.

Off Keypad is arrow keys.

Gate A20 Option

Normal The A20 signal is controlled by keyboard controller or chipset hardware.

Fast (default) The A20 signal is controlled by port 92 or chipset specific method.

Typematic Rate Setting

Keystrokes repeat at a rate determined by the keyboard controller. When enabled, the typematic rate and typematic delay can be selected. The settings are: Enabled/Disabled.

Typematic Rate (Chars/Sec)

Sets the number of times a second to repeat a keystroke when you hold the key down.

Settings are: 6, 8, 10, 12, 15, 20, 24, and 30.

Typematic Delay (Msec)

Sets the delay time after the key is held down before it begins to repeat the keystroke.

Settings are 250, 500, 750, and 1000.

OS Select For DRAM > 64MB

Allows OS2 to be used with >64MB or DRAM. Settings are Non-OS/2 (default) and OS2. Set to OS/2 if using more than 64MB and running OS/2

4-5-1 Hard Disk Boot Priority

Phoenix - AwardBIOS CMOS Setup Utility

Hard Disk Boot Priority

1. Ch1 S. :xxx-xxxxx 2. Ch2 P. :xxx-xxxxx 3. Bootable Add-in Cards	Item Help
	Menu Level ►
↑ ↓ → ← :Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults	

Ch1 S/Ch2 P

It allows you to set the priority for hard disk boot. When you press enter, the selections shows the current hard disks used in your system

Bootable Add-in Cards

that is relevant to other boot sources media such as SCSI cards and LAN cards.

4-5-2 USB Boot Priority

Phoenix - AwardBIOS CMOS Setup Utility

USB Boot Priority

1. USB HDD0 : XXX-XXXXX 2. USB HDD1 : XXX-XXXXX	Item Help
	Menu Level ►
↑ ↓ → ← :Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults	

USB HDD0/USB HDD1

It allows you to set the priority for USB storage boot. When you press enter, the selections shows the current USB storage used in your system

4-6 Advanced Chipset Features

The Advanced Chipset Features Setup option is used to change the values of the chipset registers. These registers control most of the system options in the computer.

Phoenix-AwardBIOS CMOS Setup Utility
Advanced Chipset Features

System BIOS Cacheable [Enabled] ▶ PCI Express Root Port Func [Press Enter]	Item Help
	Menu Level ▶
↑ ↓ → ← :Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults	

System BIOS Cacheable

Selecting Enabled allows caching of the system BIOS ROM at F0000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

Settings are: Enabled (default) and Disabled.

PCI Express Root Port Func

Please refer to section

4-6-1 PCI Express Root Port Func

Phoenix-AwardBIOS CMOS Setup Utility
PCI Express Root Port Func

PCI Express Port 1 [Auto] PCI Express Port 2 [Auto] PCI Express Port 3 [Auto] PCI Express Port 4 [Auto] PCI Express Port 5 [Auto] PCI Express Port 6 [Auto] PCI-E Compliancy Mode [v1.0a]	Item Help
	Menu Level ▶
↑ ↓ → ← :Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults	

PCI Express Port 1/2/3/4/5/6

These items are Disabled. Enabled and Auto (default) for port 1 to port 6 of PCIe device.

Note: Port 1 to port 6 will all disables, if you select "Disable" on Port 1 item.

PCI-E Compliancy Mode

This item determines PCI Express bus in mode?

V1.0a (default) it's compliant PCI Express in v1.0a specification.

V1.0 it's compliant PCI Express in v1.0 specification.

4-7 Integrated Peripherals

Phoenix-AwardBIOS CMOS Setup Utility
Integrated Peripherals

▶ OnChip IDE Device [Press Enter]	Item Help
▶ Super IO Device [Press Enter]	Menu Level >
▶ USB Device Setting [Press Enter]	
↑ ↓ → ← :Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help	
F5:Previous Values F6: Fail-Safe Defaults F7:Optimized Defaults	

OnChip IDE Device Function

Please refer to section

Super IO Device Function

Please refer to section

USB Device Setting

Please refer to section

4-7-1 OnChip IDE Device Function

Phoenix-AwardBIOS CMOS Setup Utility
OnChip IDE Device

IDE HDD Block Mode [Enabled]	Item Help
IDE DMA transfer access [Disabled]	Menu Level >>
PATA DMA Mode [Auto]	
*** On-Chip Serial ATA Setting ***	
LEGACY Mode Support [Disabled]	
On-Chip Serial ATA [Enhanced Mode]	
*** On-Chip PATA Setting ***	
On-Chip Primary PCI IDE [Enabled]	
IDE Primary Master PIO [Auto]	
IDE Primary Slave PIO [Auto]	
IDE Primary Master UDMA [Auto]	
IDE Primary Slave UDMA [Auto]	
On-Chip Secondary PCI IDE [Enabled]	
IDE Secondary Master PIO [Auto]	
IDE Secondary Slave PIO [Auto]	
IDE Secondary Master UDMA [Auto]	
IDE Secondary Slave UDMA [Auto]	
↑ ↓ → ← :Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help	
F5:Previous Values F6: Fail-Safe Defaults F7:Optimized Defaults	

IDE HDD Block Mode

Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard drive supports block mode (most new drives do), select Enabled for automatic detection of the optimal number of block read/writes per sector the drive can support. The settings are: Disabled, Enabled (default).

PATA DMA Mode

Force IDE device to work in DMA33 or DMA66/100 mode.

Auto (Default) By system determine automatically.

DMA33 Work in DMA 33 mode.

DMA66/100 Work in DMA 66/100 mode.

Note: That is supported fastest speed by IDE device to determine in DMA66 or DMA100.

OnChip Serial SATA

That it has 4 choices as below:

Disabled Disable SATA Controller.

Combined Mode PATA and SATA are combined.
Max of 2 IDE drives in each channel.

Enhanced Mode (default) Enable both SATA and PATA.
Max of 6 IDE drives are supported.

SATA Only SATA is operating in legacy mode.

OnChip IDE Primary/Secondary

The integrated peripheral controller contains an IDE interface with support for two IDE channels.

Select Enabled to activate each channel separately.

Settings are: Enabled (default), Disabled.

Primary/Secondary Master/Slave PIO

The four IDE PIO (Programmed Input/Output) fields let you set a PIO mode (0-4) for each of the four IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device.

The settings are: Auto (default), Mode 0, Mode 1, Mode 2, Mode 3 and Mode 4.

Primary/Secondary Master/Slave UDMA

Ultra DMA/33 implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA driver (Windows 95 OSR2 or a third-party IDE bus master driver) You're your hard drive and your system software both support Ultra DMA/33 and Ultra DMA/66, select Auto to enable BIOS support.

Settings are: Auto(default) , Disabled.

4-7-2 Super IO Device

Phoenix-AwardBIOS CMOS Setup Utility
Super IO Device

Onboard Serial Port 1	[3F8/IRQ4]	Item Help
COM1 422/485 flow control	[Disabled]	
Onboard Serial Port 2	[2F8/IRQ3]	Menu Level >>
COM2 422/485 flow control	[Disabled]	
PWRON After PWR-Fail	[Former-Sts]	
↑ ↓ → ← :Move Enter:Select +/~/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6: Fail-Safe Defaults F7:Optimized Defaults		

Onboard Serial Port 1&2

Select an address and corresponding interrupt for the first and the second serial ports. Settings are: 3F8/IRQ4, 2E8/IRQ3, 3E8/IRQ4, 2F8/IRQ3, Disabled, Auto.

COM1/2 422/485 flow control

This item allows you to disable or enable RS422 or RS485 function on COM 1/2, if you need.

PWRON After PWR-fail

This item specifies whether your system will reboot after a power failure or interrupt occurs. Settings are: Off: Leaves the computer in the power off state.

On: Leaves the computer in the power on state.

Former-Sts: Restores the system to the status before power failure or interrupt occurred(Default).

4-7-3 USB Device Setting

Phoenix-AwardBIOS CMOS Setup Utility
USB Device Setting

USB 1.0 Controller	[Enabled]	Item Help
USB 2.0 Controller	[Enabled]	
USB Operation Mode	[High Speed]	Menu Level >>
USB Keyboard Function	[Enabled]	
USB Mouse Function	[Enabled]	
USB Storage Function	[Enabled]	
↑ ↓ → ← :Move Enter:Select +/~/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6: Fail-Safe Defaults F7:Optimized Defaults		

USB 1.0 Controller

Select Enabled if your system contains a Universal Serial Bus (USB) controller and you have a USB peripherals.

Settings are: Enabled (default), Disabled.

USB 2.0 Controller

Select Enabled if your system contains a Enhanced Serial Bus (USB) controller and you have a USB peripherals.

Settings are: Enabled (default), Disabled.

USB Operation Mode

High speed:

If USB device was high speed device, then it operated on high speed mode. If USB device was full/low speed device, then it operated on full/low speed mode.

Full/Low Speed:

All of USB device operated on full/low speed mode.

USB Keyboard Function/ USB MOUSE Function/USB Storage Function

Select Enabled if your system contains a Universal Serial Bus (USB) controller and you have a USB keyboard or USB mouse and USB storage.

Settings are: Enabled (default), Disabled.

4-8 Power Management Setup

The Power Management Setup allows you to configure your system to most effectively save energy saving while operating in a manner consistent with your own style of computer use.

Phoenix-AwardBIOS CMOS Setup Utility
Power Management Setup

<pre>▶ PCI Express PM Function [Press Enter] ACPI Function [Enabled] ACPI Suspend Type [S1(POS)] Power Management [User Define] Video Off Method [DFMS] Video Off In Suspend [Yes] MODEM Use IRQ [3] Suspend Mode [Disabled] HDD Power Down [Disabled] Soft-Off by PWR-BTTN [Instant-Off] Wake-Up by PCI card [Disabled] Power On by Ring [Disabled] * USB KB Wake-Up From S3 Disabled Resume by Alarm [Disabled] * Date(of Month) Alarm 0 * Time(hh:mm:ss) Alarm 0 : 0 : 0 ** Reload Global Timer Events ** Primary IDE 0 [Disabled] Primary IDE 1 [Disabled] Secondary IDE 0 [Disabled] Secondary IDE 1 [Disabled] FDD,COM,LPT Port [Disabled] PCI PIRQ[A-D]# [Disabled] HPET Support [Enabled] HPET Mode [32-bit mode]</pre>	<p>Item Help</p> <hr/> <p>Menu Level ></p>
<p>↑ ↓ → ← : Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6: Fail-Safe Defaults F7:Optimized Defaults</p>	

PCI Express PM Function

Please refer to section

ACPI Function

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

Settings are: Enabled (default) and Disabled.

Video Off Method

This determines the manner in which the monitor is blanked.

- DPMS** (default) Initial display power management signaling.
- Blank Screen** This option only writes blanks to the video buffer.
- V/H SYNC+Blank** This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.

Video Off in Suspend

This determines the manner in which the monitor is blanked.

- Yes** Video will off.
- No** Video always On.

MODEM Use IRQ

This determines the IRQ in which the MODEM can use.

The settings are: 3(default), 4, 5, 7, 9, 10, 11, NA.

Resume by Alarm

This function is for setting date and time for your computer to boot up. During Disabled, you cannot use this function. During Enabled, choose the Date and Time Alarm:

Date(of month) Alarm

You can choose which month the system will boot up. Set to 0, to boot every day.

Time(hh:mm:ss) Alarm

You can choose what hour, minute and second the system will boot up.

Note: If you have change the setting, you must let the system boot up until it goes to the operating system, before this function will work

4-9 PCI Express PM Function

Phoenix-AwardBIOS CMOS Setup Utility
PCI Express PM Function

▶ PCI Express PME [Disabled]	Item Help
	Menu Level ▶
↑ ↓ → ← : Move Enter : Select +/- /PU/PD : Value F10 : Save ESC : Exit F1 : General Help F5 : Previous Values F6 : Fail-Safe Defaults F7 : Optimized Defaults	

PCI Express PME

This item allows you to wake-up system, when PME event has presence.

4-10 PnP/PCI Configuration Setup

This section describes how to configure the PCI bus system. PCI, or Personal Computer Interconnect, is a system which allows I/O devices to operate at the speed the CPU itself keeps when CPU communicates with its own special components. This section covers some very technical items and we strongly recommended that only experienced users should make any change to the default settings.

Phoenix-AwardBIOS CMOS Setup Utility
PnP/PCI Configurations

Init Display First [PCI Slot]	Item Help
Reset Configuration Data [Disabled]	Menu Level ▶
Resources Controlled By [Auto(ESCD)]	
× IRQ Resources Press Enter	
PCI/VGA Palette Snoop [Disabled]	
↑ ↓ → ← : Move Enter : Select +/- /PU/PD : Value F10 : Save ESC : Exit F1 : General Help F5 : Previous Values F6 : Fail-Safe Defaults F7 : Optimized Defaults	

Reset Configuration Data

Normally, you leave this field Disabled. Select Enabled to reset Extended System Configuration

Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the operating system can not boot. The settings are: Enabled and Disabled.

Resource Controlled By

The Award Plug and Play BIOS can automatically configure all of the boot and Plug and Play compatible devices. However, this capability means absolutely nothing unless you are using a Plug and Play operating system such as Windows 95/98. If you set this field to "manual", choose a specific resource by going into each sub menu that follows this field (a sub menu is preceded by a ">").

Settings are: Auto(ESCD) (default) or Manual.

IRQ Resources

Please refer section.

PCI/VGA Palette Snoop

Leave this field at Disabled. The settings are Enabled or Disabled.

4-10-1 IRQ Resources

When resources are controlled manually, each system interrupt is assigned a type, depending on the type of device using the interrupt.

Phoenix-AwardBIOS CMOS Setup Utility IRQ Resources

IRQ-3 assigned to	[PCI Device]	Item Help
IRQ-4 assigned to	[PCI Device]	
IRQ-5 assigned to	[PCI Device]	
IRQ-7 assigned to	[PCI Device]	Menu Level ►
IRQ-9 assigned to	[PCI Device]	Legacy ISA for devices
IRQ-10 assigned to	[PCI Device]	compliant with the
IRQ-11 assigned to	[PCI Device]	original PC AT bus
IRQ-12 assigned to	[PCI Device]	specification, PCI/ISA
IRQ-14 assigned to	[PCI Device]	PnP for devices
IRQ-15 assigned to	[PCI Device]	compliant with the
		Plug and Play standard
		whether designed for
		PCI or ISA bus
		architecture.
↑ ↓:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help		
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

4-11 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.

Phoenix-AwardBIOS CMOS Setup Utility
PC Health Status

VCC3V	3.31V	Item Help
Vcore	1.15V	
Vin2	1.05V	Menu Level ▶
VBS3V	3.29V	
VBAT	3.07V	
CPU Temp.	63°C	
System Temp.	43°C	
Fan Speed.	5747 RPM	
↑ ↓ ← → :Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help		
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

Current CPU Temperature/Current System Temp Vcore/Vin2/VBS3V/VBAT

This will show the CPU/FAN/System voltage chart.

4-12 Load Optimized Defaults

When you press <Enter> on this item, you get a confirmation dialog box with a message similar to:

Load Optimized Defaults (Y/N)? N

Press <Y> to load the default values that are factory settings for optimal system operation performance.

4-13 Set Supervisor/ User Password

You can set supervisor password, user password, or both. The differences are:

Supervisor password: You can enter the setup menus and change the options.

User password: You can enter the setup menus but do not have the right to change the options. When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

ENTER PASSWORD:

Type the password, up to eight characters in length, and press <Enter>. The password typed will clear any previous password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection without entering password. To disable a password, just press <Enter> when you are prompted to enter the password. A message will confirm if you want to disable the password. Once the password is disabled, the system will boot and you can enter Setup menus freely.

PASSWORD DISABLED.

When a password has been enabled, you have to enter it every time before you enter the Setup. This prevents an unauthorized person from changing any part of your system configuration.

Chapter 5

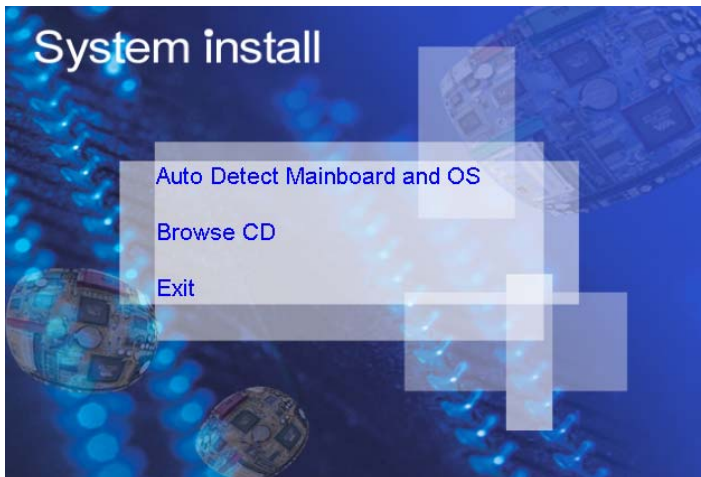
DRIVER INSTALLATION

There is a SYSTEM INSTALL CD disk in the package. This CD has all the drivers you need and some free application programs and utility programs. In addition, this CD also includes an auto-detect software which can tell you which hardware is installed and which driver is needed so that your system can function properly.

We call this auto detect software SYSTEM INSTALL.

SYSTEM INSTALL Supports WINDOWS XP/Vista/Win7

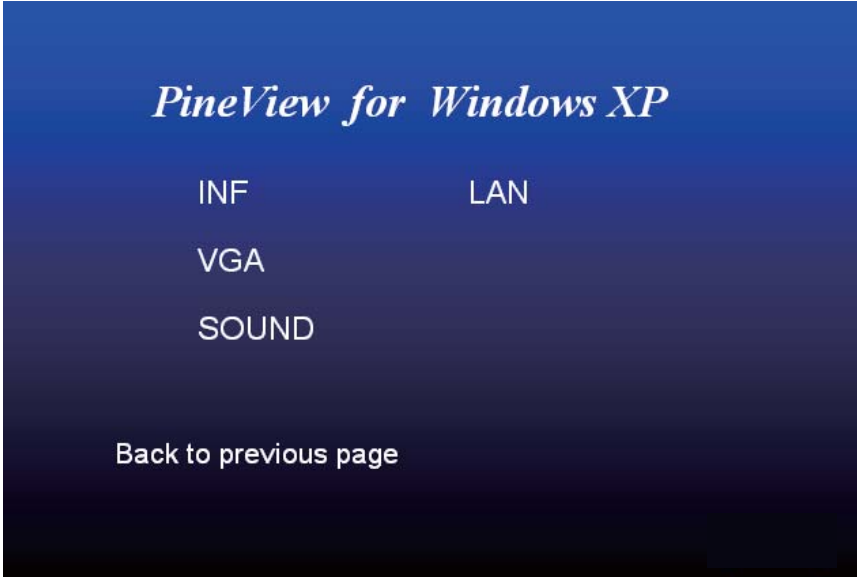
Insert the CD into your CD-ROM drive and the SYSTEM INSTALL Menu should appear as below. If the menu does not appear, double-click MY COMPUTER and double-click CD-ROM drive or click START, click RUN, and type X:\SETUP.EXE (assuming X is your CD-ROM drive).



From SYSTEM INSTALL MENU you may make 3 selections:

- 1 . Auto detect main board and OS Into auto install driver Menu
- 2 . Explore CD to explore the contents of the CD
- 3 . EXIT to exit from SYSTEM INSTALL menu

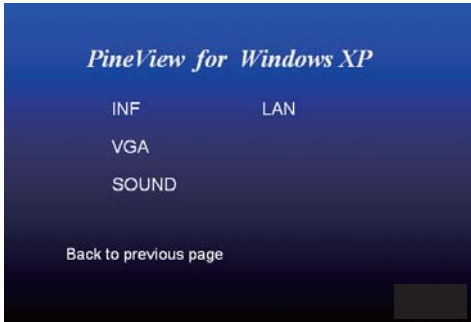
Auto install driver Menu



1. INF install Intel PineView chipset system driver
2. VGA install on-board VGA driver
3. SOUND install VIA HID Audio Codec Audio driver
4. DIRECTX install DirectX 9 driver
5. LAN to LAN install driver readme file

Each selection is illustrated as below:

5-1 INF Install INTEL PineView Chipset system driver



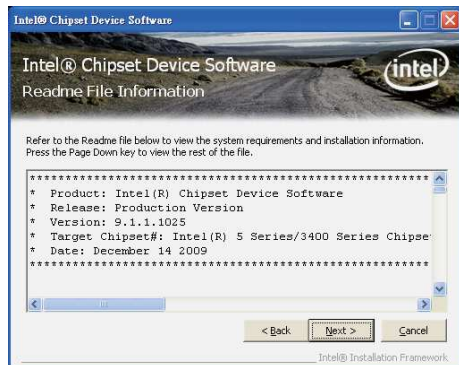
1. Click INF when System Install MENU appears.



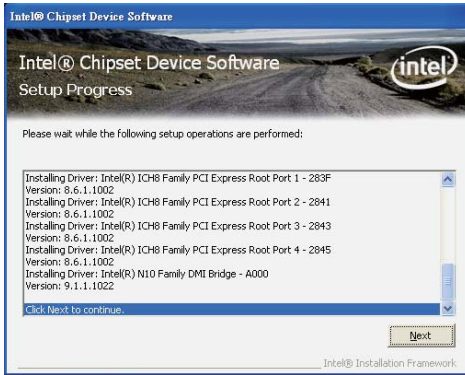
2. Click NEXT when Chipset Software Install Utility appears.



3. This license agreement appear, click Yes, the Click NEXT.



4. This is Readme information appear, Click NEXT.



5. Click NEXT.



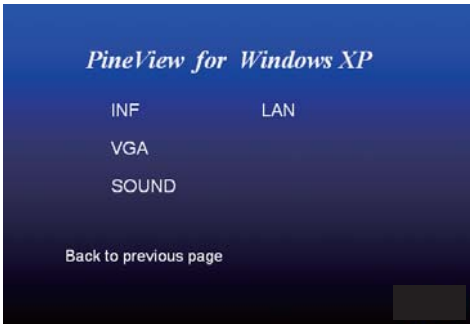
6. Click Finish to restart computer.

NOTE: SYSTEM INSTALL will auto detect file path

X:\driver\Intel\I945\INF\infinst911autol.exe

This driver supports WINDOWS XP32/XP64/Win7 32/Win7 64

5-2 VGA Install Intel PineView VGA Driver



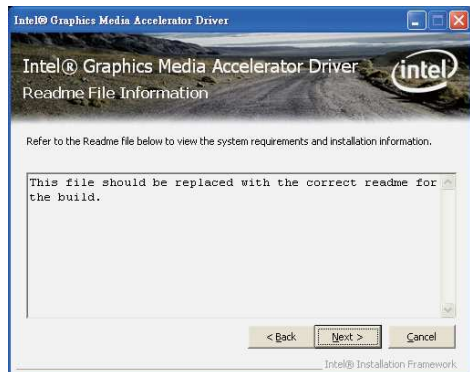
1. Click **VGA** when System Install MENU appears.



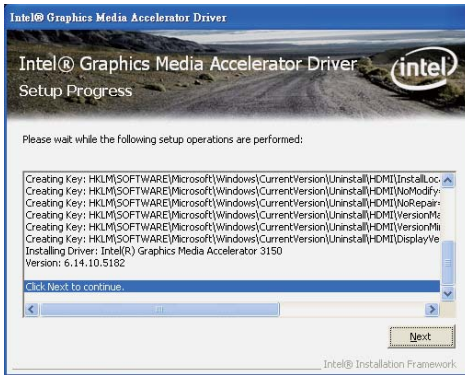
2. Click **NEXT** when Intel® Chipset Graphics Driver Software Setup appears.



3. Click **NEXT** when Intel® Graphics Media Accelerator Driver Software appear.



4. Click **YES**, This Announce CopyRight .



5. Click NEXT.



6. Click FINISH to Restart Computer.

NOTE: The path of the file

- For WINDOWS XP 32
X:\driver\Intel\ID510\VGA\winxp.exe
- For WINDOWS XP 64
X:\driver\Intel\ID510\VGA\winxp64.exe
- For WINDOWS 7 32
X:\driver\Intel\ID510\VGA\win7.exe
- For WINDOWS 7 64
X:\driver\Intel\ID510\VGA\winvista64.exe

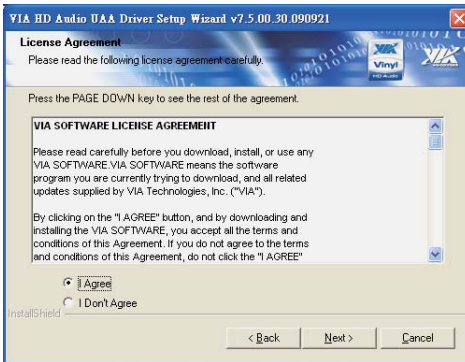
5-3 SOUND Install VIA HID Audio Codec Driver



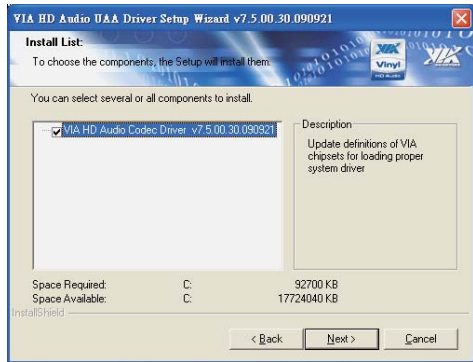
1. Click **SOUND** when System Install MENU appears.



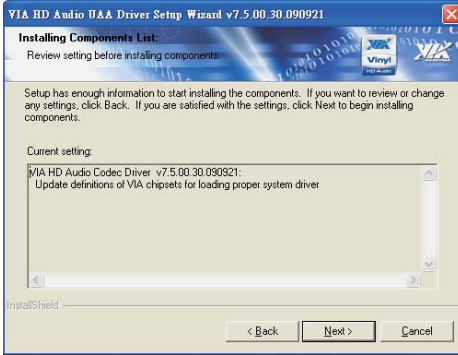
2. Click **Next** .



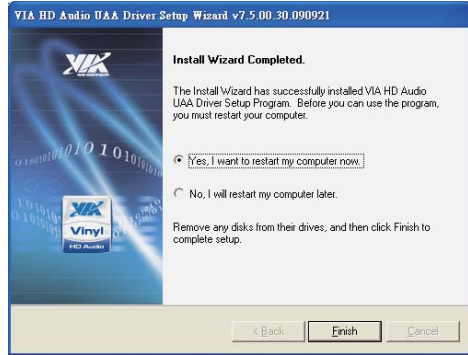
3. Click **Next** .



4. Click **Next** to begin installing driver. The program might be few minutes.



5. Click Next.



6. Click FINISH to Restart Computer.

NOTE: The path of the file

For XP 32/XP 64

X:\driver\INTEL\I945\SOUND\VIAHDAudV7500a_Setup.exe

For Win 7 32/Win7 64

X:\driver\INTEL\I945\SOUND\VIAHDAudV7500a_Setup.exe

5-4 HOW TO UPDATE BIOS

Under DOS Mode

STEP 1. Prepare a bootable disc.

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

STEP 2. Copy utility program to your bootable disc. You may copy it from DRIVER CD
X:\Dirver\bios\AWDFLASH.EXE or download it from our web site.

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

STEP 4. (Here take SI525A 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:\Awdflash SI525Axx.BIN /SN/PY/WB/CP/CD/CC/R

SI525Axxx.BIN is the file name of the latest BIOS.

It may be SI525AA1.BIN or SI525AA2.BIN, etc.

Please leave one space between .BIN & /SN/PY/WB/CP/CD/CC/R

By D525 series mainboard, pls type

X:\Awdflash SI525Axx.BIN /SN/PY/WB/CP/CD/CC/R

SN : don't save the current BIOS data

PY : renew the current BIOS data

WB : always programming Boot Block

CP : clear PnP(ESCD) data after programming

CD : clear DMI data after programming

CC : clear the current CMOS data

R : restart computer

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

Appendix A: Power Consumption Test

Condition

Item	Spec
CPU	Intel Atom D525 1.8Ghz
SDRAM	DDR3 800/1GB
Operating System	Windows XPP / SP3
Test Program	3D Mark 2001SE
HDD 3.5" SATA	Standard HDD
HDD 2.5" SATA	Slim Type HDD

Test Result for reference !

Hard Disk	Power off	Start up		Operation Maximum	Shut down Maximum	In Put Voltage
		Maximum	Stable			
Standard HDD	0.14A	5.17A	2.49A	2.86A	2.53A	9V
	0.12A	3.70A	1.81A	2.09A	1.89A	12V
	0.07A	1.77A	0.93A	1.05A	0.95A	24V
	0.06A	1.38A	0.71A	0.81A	0.74A	32V
Slim Type HDD	0.14A	2.34A	1.79A	2.17A	1.84A	9V
	0.12A	1.74A	1.37A	1.68A	1.41A	12V
	0.07A	0.89A	0.70A	0.85A	0.71A	24V
	0.06A	0.70A	0.55A	0.66A	0.57A	32V

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)

Appendix C: Memory combination for SI525AW

	DDR3 DRAM		Total Capacity
	On board	SODIMM	
1	1GB (128 x 8) x 8	—	1GB
2	—	1GB (128 x 8) x 8	1GB
3	1GB (128 x 8) x 8	1GB (128 x 8) x 8	2GB
4	2GB (256 x 8) x 8	—	2GB
5	—	2GB (128 x 8) x 16	2GB
6	2GB (256 x 8) x 8	1GB (128 x 8) x 8	3GB
7	—	4GB (256 x 8) x 16	4GB