

User's Manual

FEBC-3112

FEBC-3112

- 1、 Aluminum case , Fanless design;
- 2、 Intel® Celeron® N2807/J1900;
- 3、 1xDDR3L-1333 SODIMM ,max 4GB;
- 4、 1xmSATA,1x3.5inch HDD or 1x2.5inch HDD;
- 5、 1xminiPCIe with SIM card support 3G;
- 6、 DC 12V-24V Wide voltage input ;
- 6、 VGA&HDMI display;
- 7、 4COM/8DIO;
- 8、 2×Intel I210IT Gigabit Ethernet ;
- 9、 Anti-vibration design。
- 10、 built-in USB for softdog

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Version Note

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5	A1.4	Add installation	20150722	Wei Li

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1. Collect all the information about the problem encountered. (For example, CPU speed, JHC products used, other hardware and software used, etc.) Note anything abnormal and list any onscreen messages you get when the problem occurs.
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5. Write the RMA number visibly on the outside of the package and ship it prepaid to your dealer.

Declaration of Conformity

CE

This product has passed the CE test for environmental specifications when shielded cables are used for external wiring. We recommend the use of shielded cables. This kind of cable is available from JHC. Please contact your local supplier for ordering information. Test conditions for passing included the equipment being operated within an industrial enclosure. In order to protect the product from being damaged by ESD (Electrostatic Discharge) and EMI leakage, we strongly recommend the use of CE-compliant industrial enclosure products.

FCC Class A

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Technical Support and Assistance

- Step 1. Visit the JHC web site at www.jhctech.com.cn where you can find the latest information about the product.
- Step 2. Contact your distributor, sales representative, or JHC's customer service center for technical support if you need additional assistance. Please have the following information ready before you call:
- Product name and serial number
 - Description of your peripheral attachments
 - Description of your software (operating system, version, application software, etc.)
 - A complete description of the problem
 - The exact wording of any error messages

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CHAPTER

1



General Information

1.1 Introduction

FEBC-3112 is an intelligent, fanless embedded system powered by Intel Celeron N2807/J1900 high performance processor with multiple I/O interface and 3.5inch HDD driver bay or 2.5inch HDD driver bay.

FEBC-3112 offers 1xVGA, 1xHDMI interface, 2xGiga Lan ports, 1xUSB3.0 ports, 2xUSB2.0 ports (4xUSB2.0 ports for S001), Audio(S001 only), 4xCOM ports, 1xMini PCIe socket with SIM holder; The FEBC-3112 supports 3.5inch or 2.5inch SATA HDD driver bay, 1xmSATA for storage options.

1.2 Features

Key features

- 1、Aluminum case , Fanless design;
- 2、Intel® Celeron® N2807/J1900;
- 3、1xDDR3L-1333 SODIMM ,max 4GB;
- 4、1xmSATA, 1x3.5inch or 2.5inch SATA HDD, up to 4TB;
- 5、1xmini PCIe with SIM card support 3G;
- 6、DC 12V~24V Wide voltage input;
- 6、VGA&HDMI display;
- 7、4COM/8DIO;
- 8、2×Intel I210IT Gigabit Ethernet ;
- 9、Anti-vibration design;
- 10、Audio (S001 only)。

1.3 Specifications

1.3.1 General

CPU: Intel® Celeron® N2807 (Intel Bay Trail-M) 1.58GHz up to 2.16GHz

Intel® Celeron® J1900 (Intel Bay Trail-D) 2GHz up to 2.41GHz

BIOS: Insyde BIOS

System Memory: Up to 4G DDR3L 1333MHz SODIMM

Watchdog Timer: 255-level interval timer, setup by software

Serial Ports:— 2x RS-232, 2 x RS-232/422/485

DIO:— 8 bit DIO

AUDIO: —S001:Realtek ALC888, Line-out and Mic-in jack

USB:

— S002: 2 x USB 2.0 compliant Ports (one built-in USB for softdog) , 1xUSB3.0 compliant port.

— S001: 4 x USB 2.0 compliant Ports (one built-in USB for softdog) , 1xUSB3.0 compliant port.

Expansion Interface: Support up to 1 x full size Mini-PCIe

Storage:

— Supports 1 xmSATA

- SATA: Support `1 x 3.5inch or 2.5inch SATAII HDD

1.3.2 Display

Chipset: Intel HD Graphics;

Display Memory: Shared system memory

VGA Resolution: Supports up to 2560 x 1600

1.3.3 Ethernet

Chipset: 2xIntel WGI210IT Gigabit Ethernet

Speed: 10/100/1000 Mbps

Interface: Up to 2 x RJ45

1.3.4 Power Consumption

Input Voltage: DC 12~24V

Power Adapter: AC to DC 12 V/5 A, 60 W

1.3.5 Power Requirement

System power:

- Minimum power input: DC 12 V /3 A

1.4 Environmental Specifications

Operating temperature: -20 ~ 70° C (With extended temperature mSATA devices) & -10 ~ 50° C (With standard temperature mSATA&HDD devices)

Relative humidity: 95% @ 40°C (non-condensing)

Storage temperature: -40 ~ 85°C (-40 ~ 185°F)

Vibration loading during operation:

- With SSD/mSATA: 3 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis

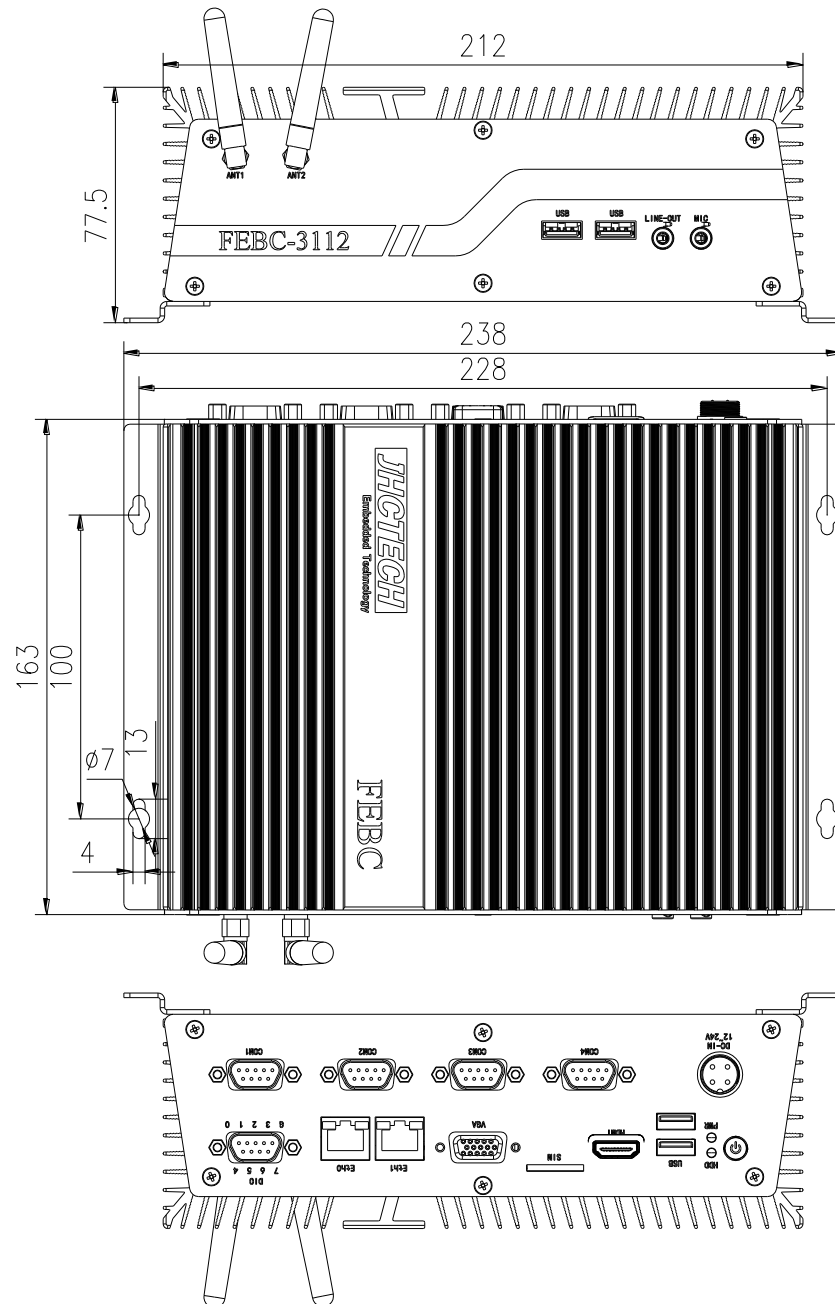
Shock during operation:

- With SSD/mSATA: 30 G, IEC 60068-2-64, half sine, 11 ms duration

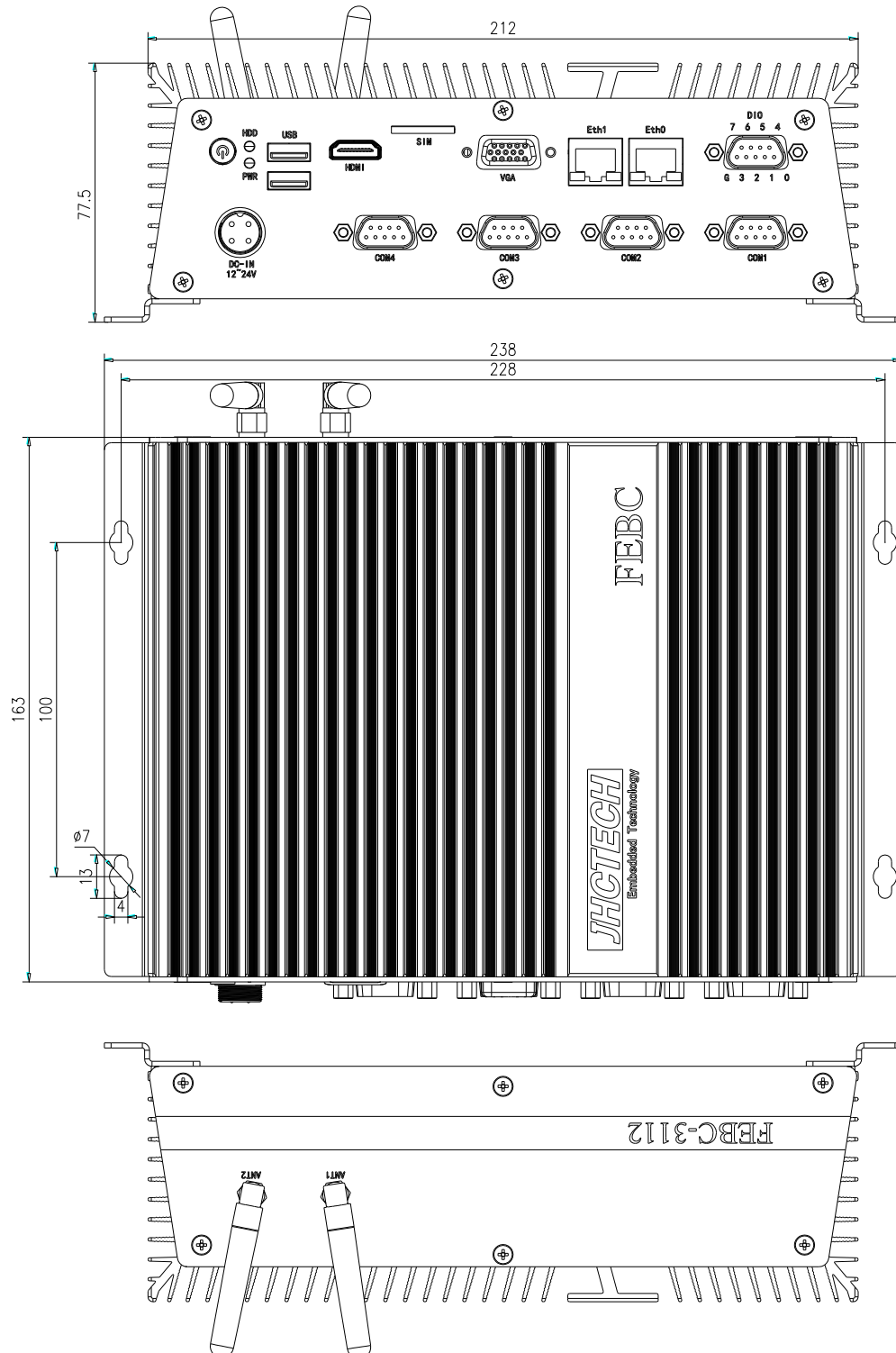
EMC: CE, FCC Class A

1.5 Mechanical Specifications

FEBC-3112-S001 Dimensions:



FEBC-3112-S002 Dimensions:



CHAPTER

2



Hardware Installation

2.1 Introduction

The following sections show the internal jumper settings and the external connectors and pin assignments for applications.

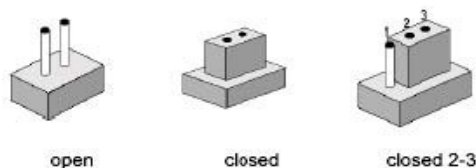
2.2 Jumpers and connectors

The FEBC-3112 Embedded Box Computer consists of an JHC SBC (Single Board Computer) board that is housed in an aluminum plate chassis. Your HDD and SDRAM, are all readily accessible by removing the aluminum bottom cover. Any maintenance or hardware upgrades can be easily completed after removing the bottom cover.

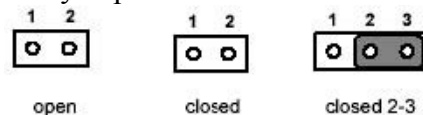
Warning: Do not remove any mechanical parts until you have verified that no power is flowing within the Embedded Box Computer. Power must be switched off and the power cord must be unplugged.

2.2.1 Setting Jumpers

You can configure your FEBC-3112 to match the needs of your application by setting the jumpers. A jumper is the simplest kind of electrical switch. It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To —close“ a jumper, you connect the pins with the clip. To —open“ a jumper you remove the clip. Sometimes a jumper will have three pins, labeled 1, 2, and 3. In this case, you would connect either pins 1 and 2 or pins 2 and 3.



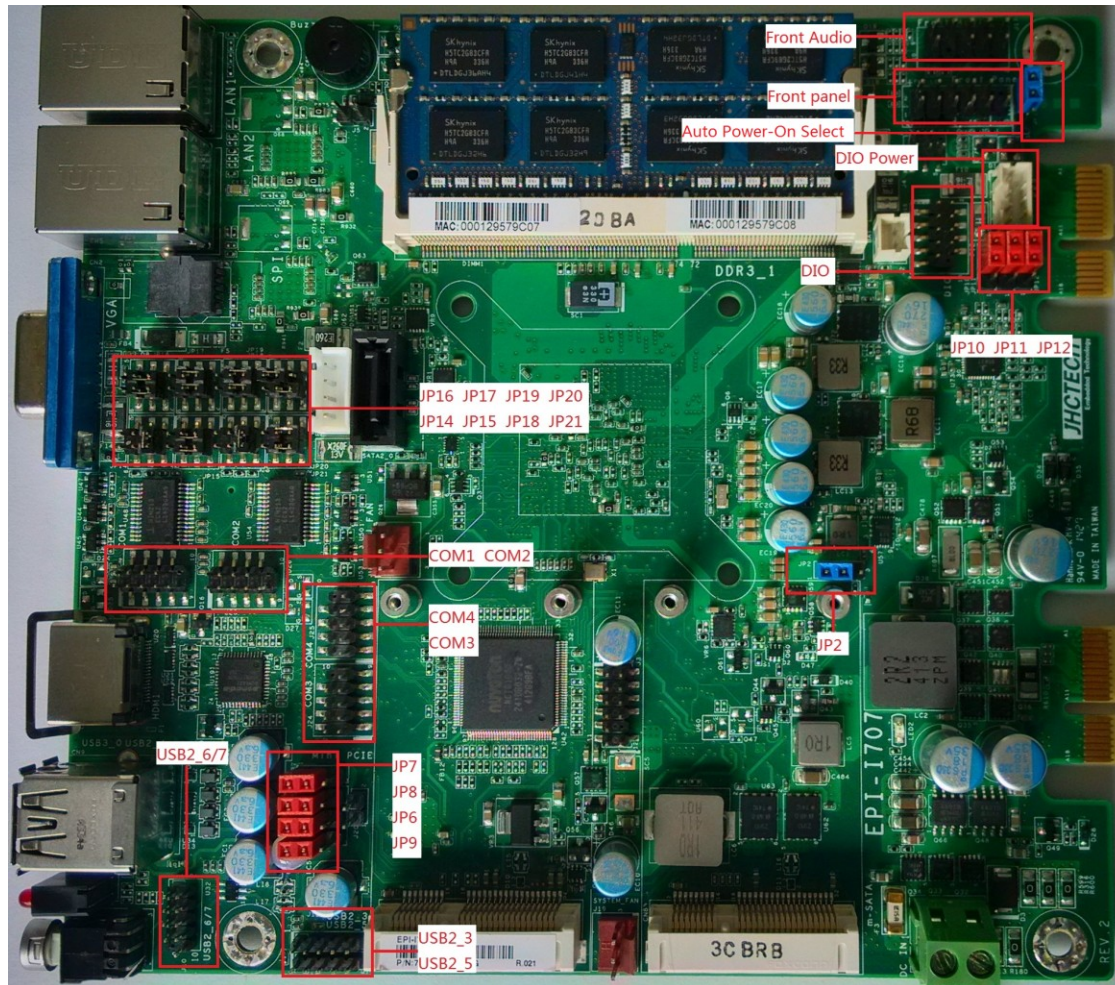
The jumper settings are schematically depicted in this manual as follows:



A pair of needle-nose pliers may be helpful when working with jumpers. If you have any doubts about the best hardware configuration for your application, contact your local distributor or sales representative before you make any changes.

2.3 Jumper Location

The FEBC-3112 Embedded Box Computer has a number of jumpers inside the chassis that allows you to configure your system to suit your application. The table below lists the functions of the various jumpers. The table below shows the function of each of the board's jumpers:



Jumpers

Jumper	Name	Description
JP2	CMOS RAM Clear Function Setting	3-Pin Block
JP6	USB power select	3-Pin Block
JP7	USB power select	3-Pin Block
JP8	USB power select	3-Pin Block
JP9	USB power select	3-Pin Block
JP10	DIO power Select	3-Pin Block
JP11	DIO 4-7 output state	3-Pin Block
JP12	DIO 0-3 output state	3-Pin Block
JP14	COM1 RS232/422/485 select	6-Pin Block
JP15		6-Pin Block
JP17		6-Pin Block

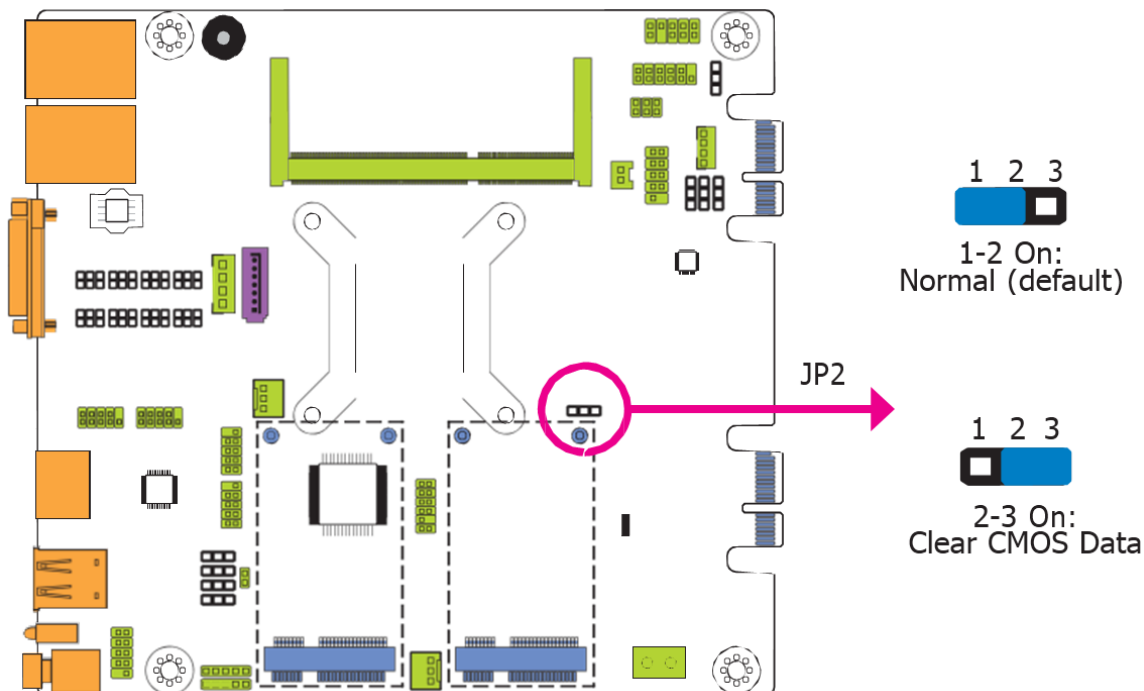
Connectors

Connector	Na	Description
JP16	COM1 RS232/power select	3-pin Block
JP18	COM2 RS232/422/485 select	6-pin Block
JP19		6-pin Block
JP21		6-pin Block
JP20	COM4 RS232/power select	6-pin Block
Auto Power-On Select	Auto Power-On Select	3-pin Block

Headers

Header	Name	Description
Front Audio	Front panel audio header	9-pin block
Front Panel	Front Panel header	11-pin block
USB2_3 USB2_5	USB header	5-pin block
USB2_6/7	USB header	9-pin block
COM1/COM2 /	Serial port headers	9-pin block
DIO Power	DIO Power header	4-Pin block

2.3.1 JP2: Clear CMOS



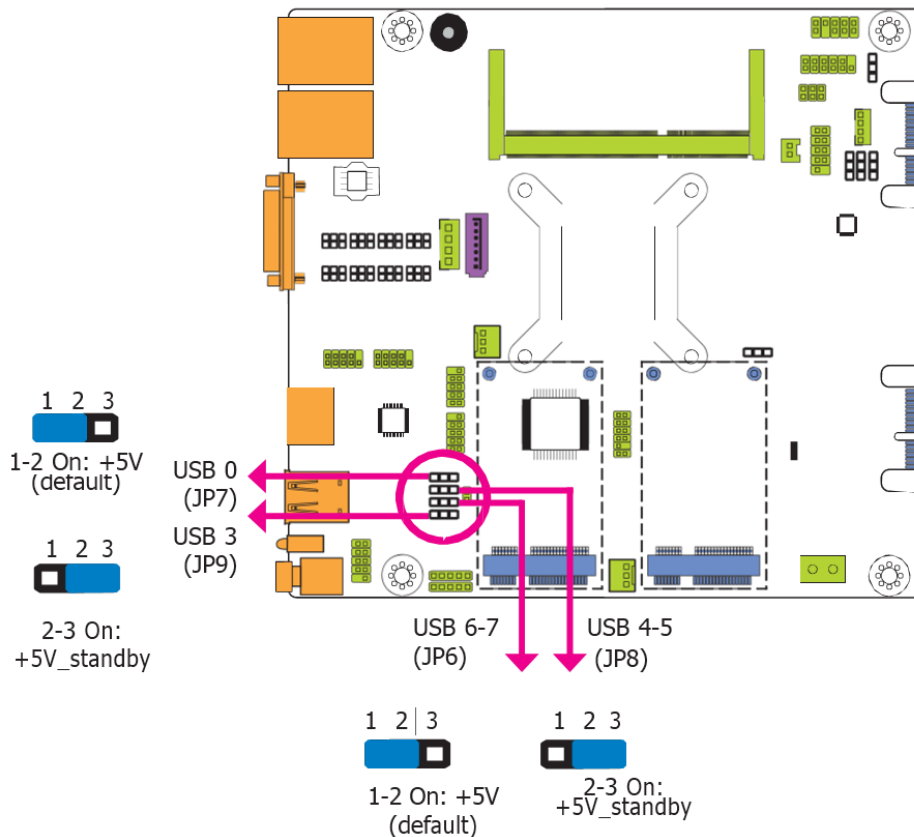
If you encounter the following,

- CMOS data becomes corrupted.
- You forgot the supervisor or user password.

you can reconfigure the system with the default values stored in the ROM BIOS. To load the default values stored in the ROM BIOS, please follow the steps below.

1. Power-off the system and unplug the power cord.
2. Set JP2 pins 2 and 3 to On. Wait for a few seconds and set JP2 back to its default setting, pins 1 and 2 On.
3. Now plug the power cord and power-on the system.

2.3.2 JP6/7/8/9 USB Power Select



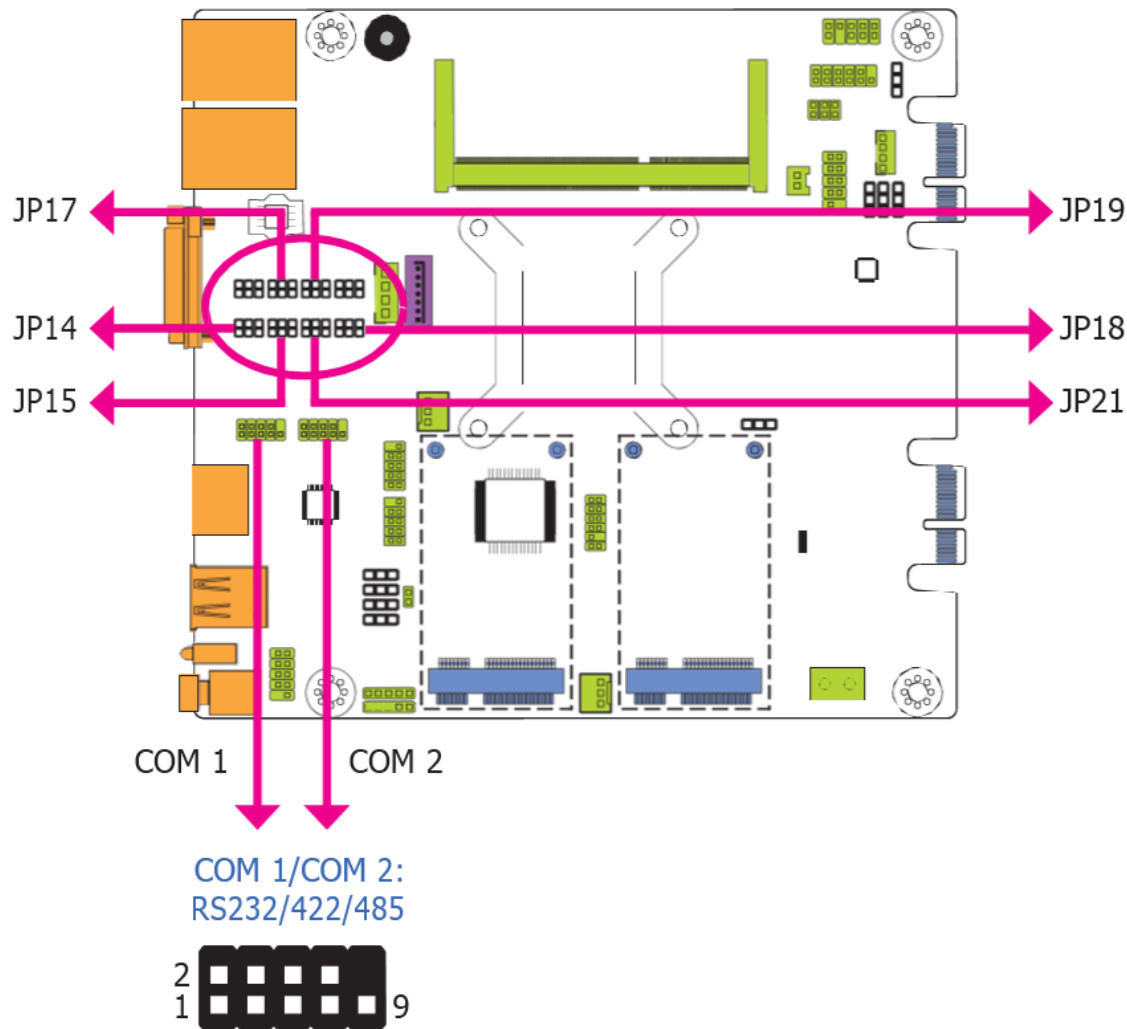
JP6, JP7, JP8 and JP9 are used to select the power of the USB ports. Selecting +5V_standby will allow you to use a USB device to wake up the system.



Important:

If you are using the Wake-On-USB Keyboard/Mouse function for 2 USB ports, the +5V_standby power source of your power supply must support $\geq 1.5A$. For 3 or more USB ports, the +5V_standby power source of your power supply must support $\geq 2A$.

2.3.3 COM 1/COM 2 RS232/422/485 Select

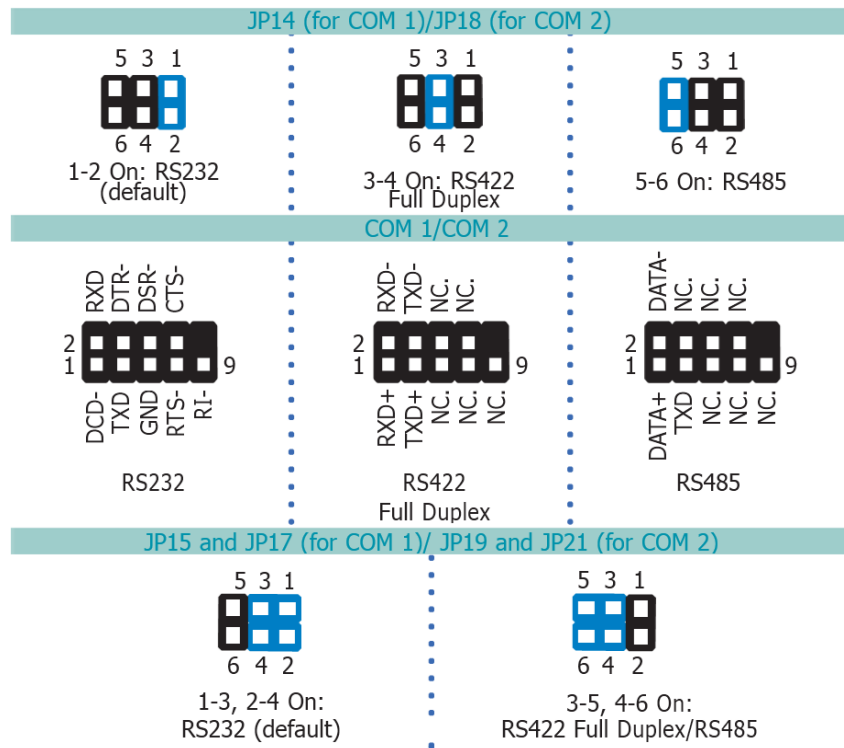


These jumpers allow you to configure the Serial COM ports to RS232, RS422 (Full Duplex) or RS485. JP14, JP15 and JP17 are used to configure the Serial COM port 1. JP18, JP19 and JP21 are used to configure the Serial COM port 2. The pin functions of Serial COM ports 1 and 2 will vary according to these jumpers' setting.

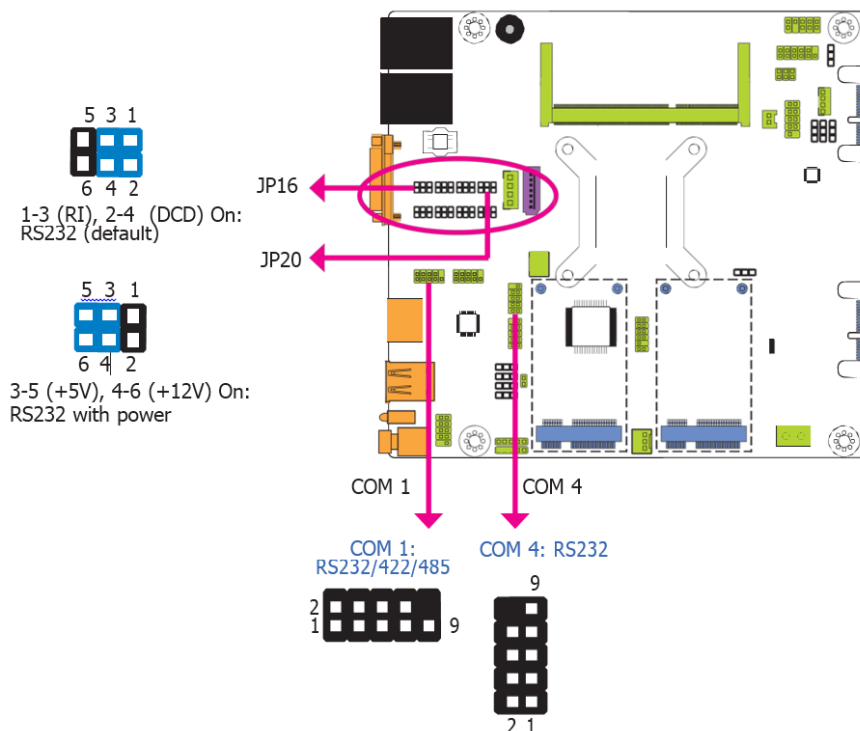


Note:

When COM 1 RS232/422/485 is selected, JP15 and JP17 must be set in accordance to JP14. And when COM 2 RS232/422/485 is selected, JP19 and JP21 must be set in accordance to JP18.



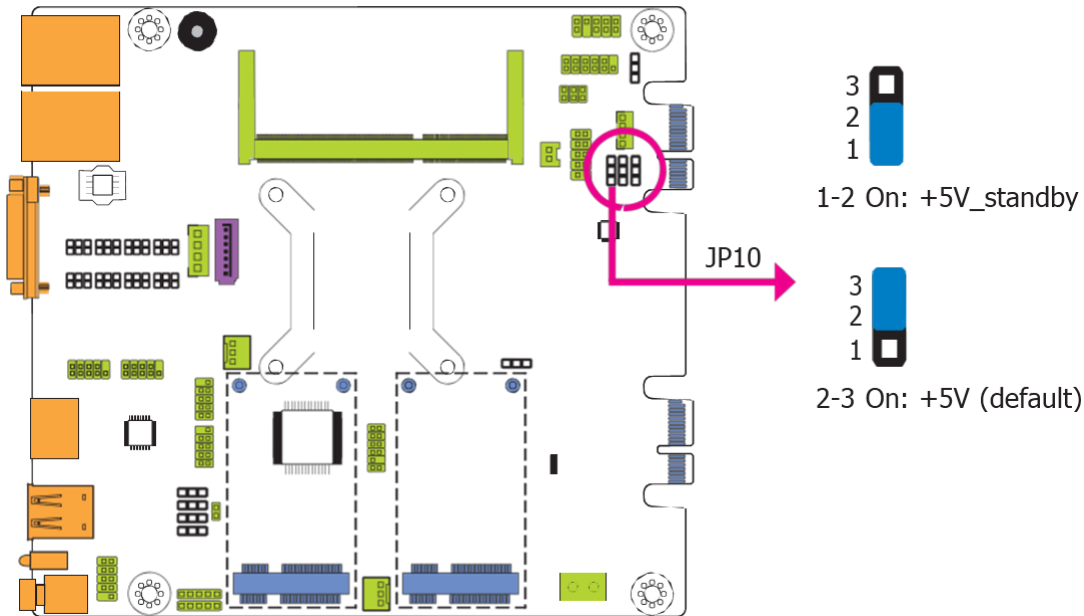
2.3.4 COM 1/COM 4 RS232/Power Select



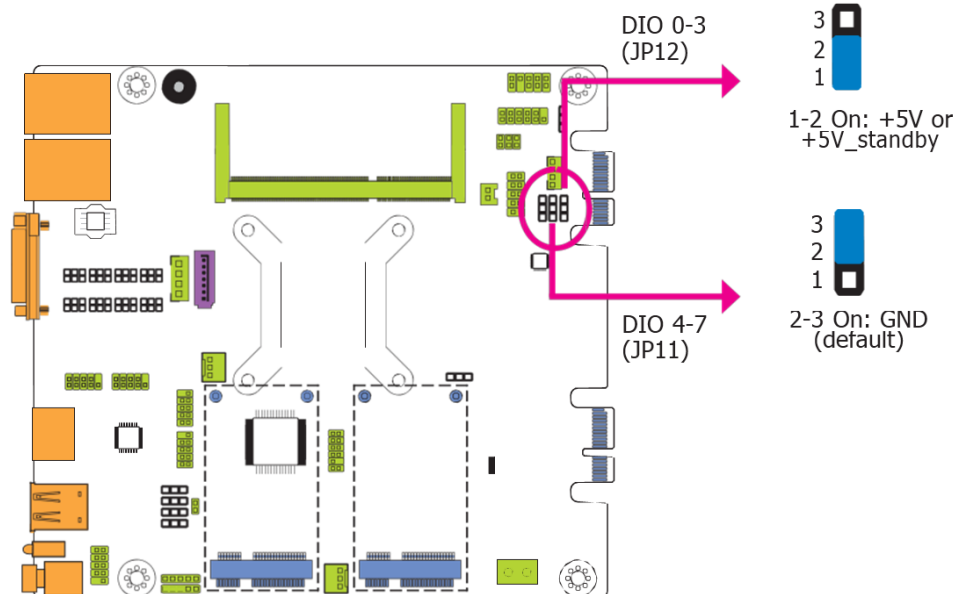
JP16 (for COM 1) and JP20 (for COM 4) are used to configure the Serial COM ports to pure RS232 or RS232 with power.

2.3.5 Digital I/O Power Select

JP10 is used to select the power of DIO (Digital I/O) signal.

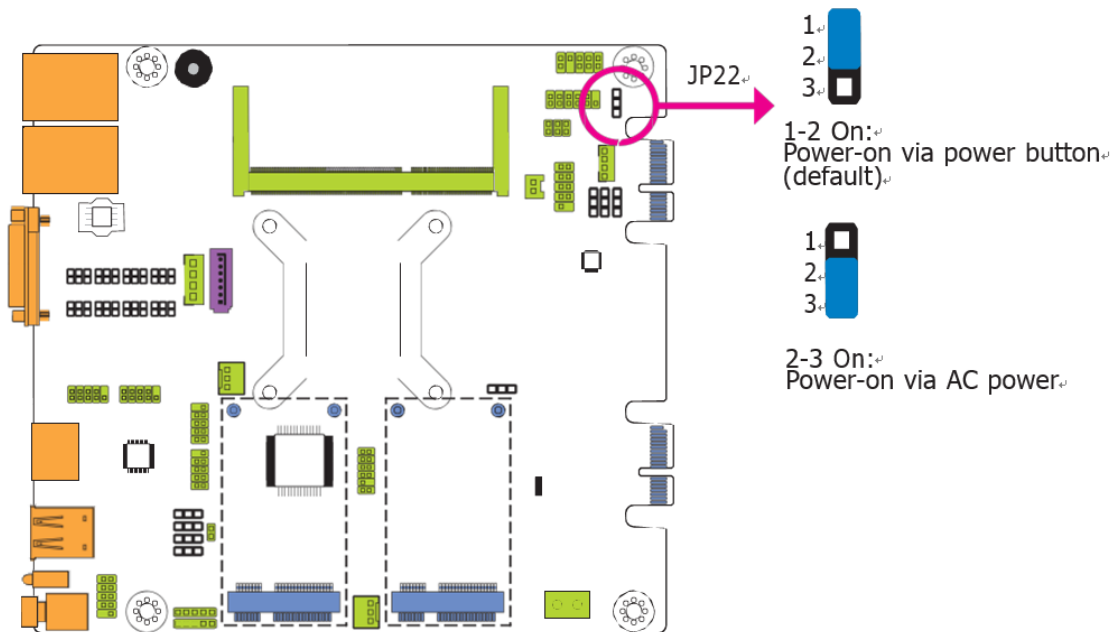


2.3.6 Digital I/O Output State



Based on the power level of DIO (Digital I/O) selected on JP10, JP12 (DIO pin 0-3) and JP11 (DIO pin 4-7) are used to select the state of DIO output: pull high or pull low. When selecting pull high, the power selection will be the same as JP10's setting.

2.3.7 Auto Power-on Select



JP22 is used to select the method of powering on the system. If you want the system to power-on whenever AC power comes in, set JP22 pins 2 and 3 to On. If you want to use the power button, set pins 1 and 2 to On.

When using the JP22 “Power On” feature to power the system back on after a power failure occurs, the system may not power on if the power lost is resumed within 5 seconds (power flicker).

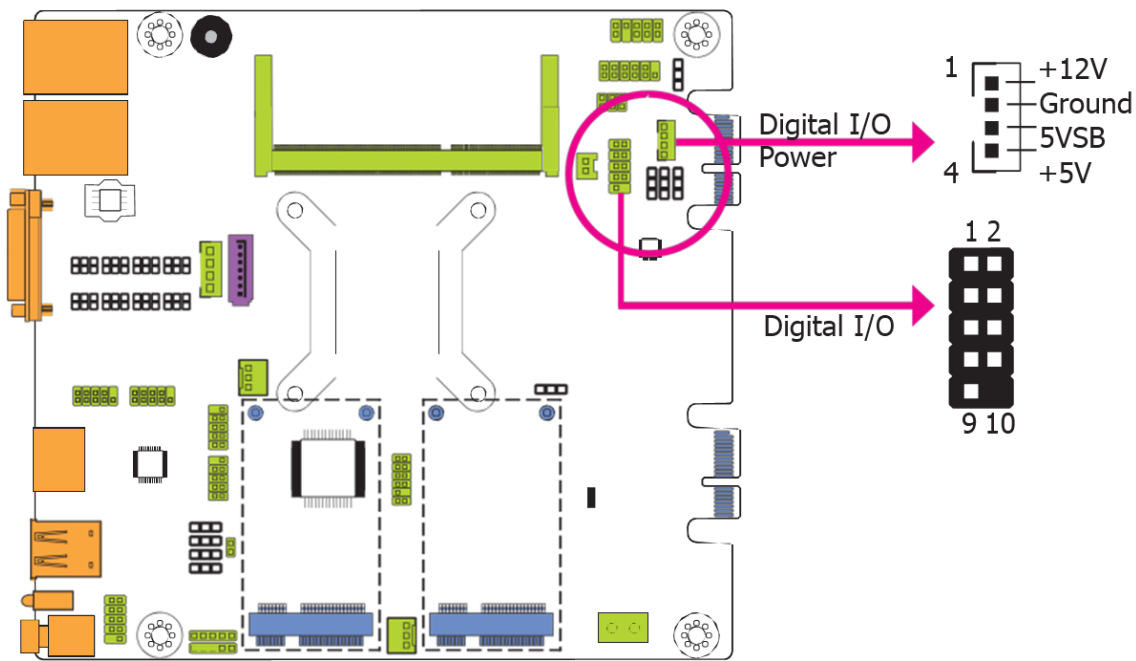
2.3.8 Digital I/O Connectors

Digital I/O Connector

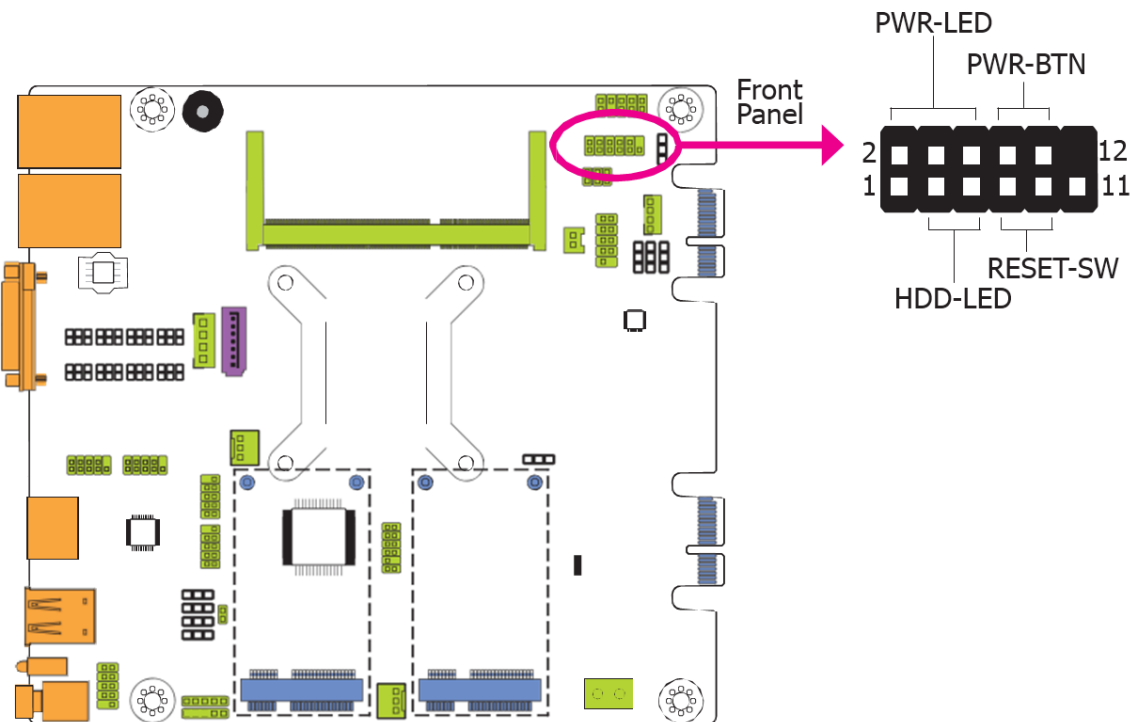
Digital I/O Power Connector

The 8-bit Digital I/O connector provides powering-on function to external devices that are connected to the connector.

Pins	Function	Pins	Function
1	DIO0	2	DIO1
3	DIO2	4	DIO3
5	GND	6	DIO4
7	DIO5	8	DIO6
9	DIO7		



2.3.9 Front Panel Connector



HDD-LED - HDD LED

This LED will light when the hard drive is being accessed.

RESET-SW - Reset Switch

This switch allows you to reboot without having to power off the system.

PWR-BTN - Power Switch

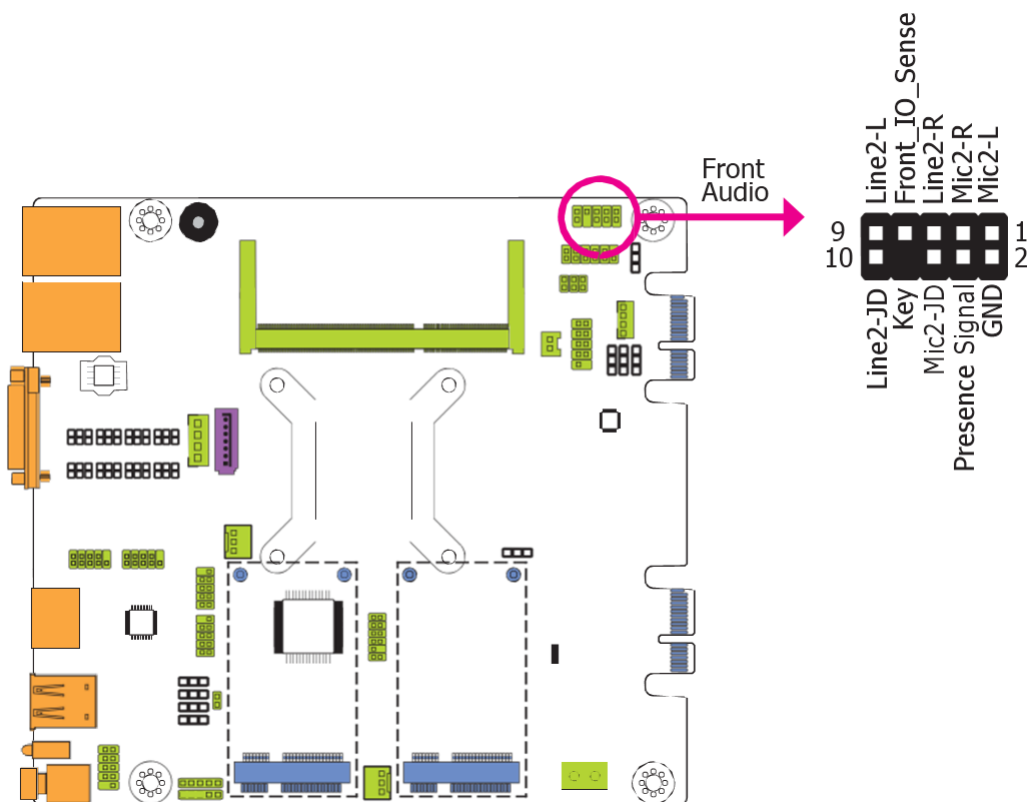
This switch is used to power on or off the system.

PWR-LED - Power/Standby LED

When the system's power is on, this LED will light. When the system is in the S1 (POS - Power On Suspend) state, it will blink every second. When the system is in the S3 (STR - Suspend To RAM) state, it will blink every 4 seconds.

	Pin	Pin Assignment		Pin	Pin Assignment
HDD-LED	3	HDD Power	PWR-LED	2	LED Power
	5	Signal		4	LED Power
RESET-SW	7	Ground	PWR-BTN	6	Signal
	9	RST Signal		8	Ground
	11	N.C.		10	Signal

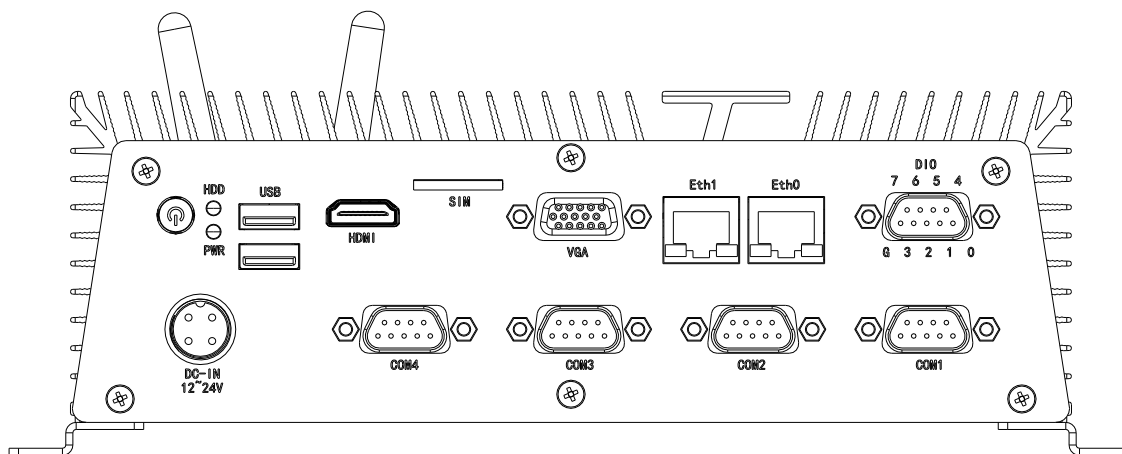
2.3.10 Front Audio Connector



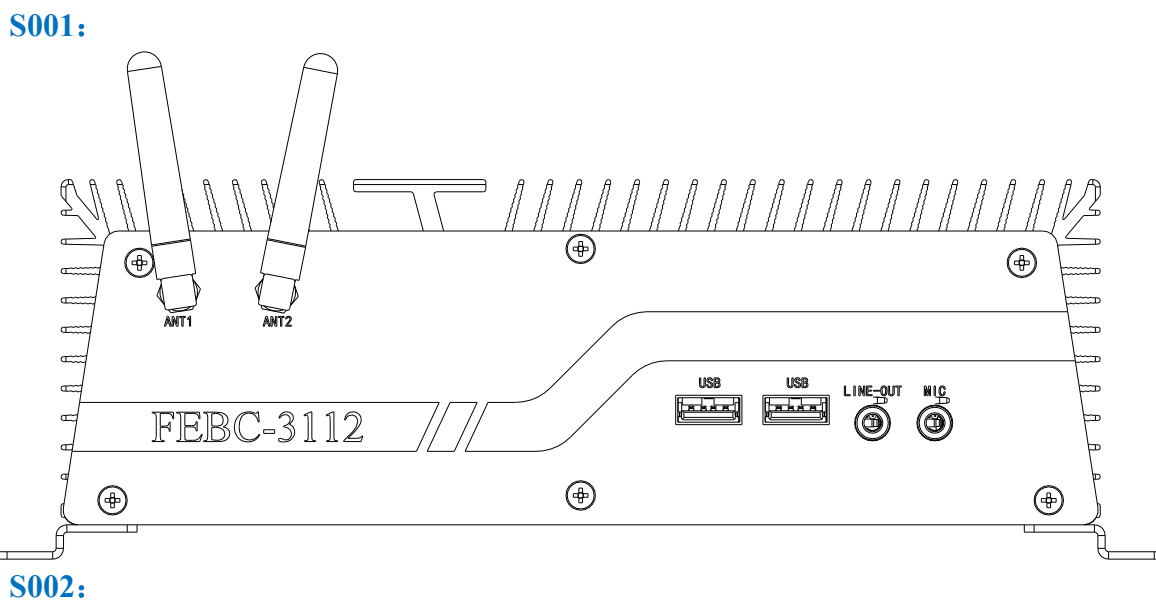
The front audio connector allows you to connect to the second line-out and mic-in jacks that are at the front panel of your system.

2.4 I/O indication

Rear view



Front view



2.4.1 Ethernet Connector (LAN)

The FEBC-3112 is equipped with two Intel WGI210IT for 10/100/1000Mbps Ethernet controllers. The Ethernet port provides a standard RJ-45 jack connector with LED indicators on the front side to show its Active/Link status (Green LED) and Speed status (white LED). Table 2.2 for pin assignments

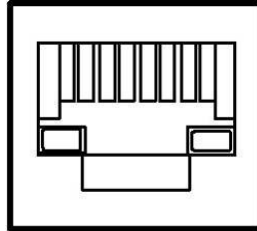


Figure 2.4 Ethernet Connector

Table 2.2: RJ-45 Connector pin assignments	
Pin	10/100/1000BaseT Signal Name
1	TX+(10/100), BI_DA+(GHz)
2	TX-(10/100), BI_DA-(GHz)
3	RX+(10/100), BI_DB+(GHz)
4	BI_DC+(GHz)
5	BI_DC-(GHz)
6	RX-(10/100), BI_DB-(GHz)
7	BI_DD+(GHz)
8	BI_DD-(GHz)

Note: NC represents —No Connection—

2.4.2 Power Input Connector (DC-IN)

The FEBC-3112 comes with a 4-pole DIN-jack that 12V~24V external power input. Please refer to Table 2.3 for their pin assignments.

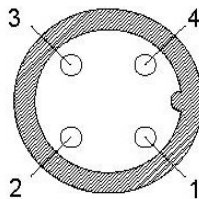


Figure 2.5 4-pole DC DIN-Jack

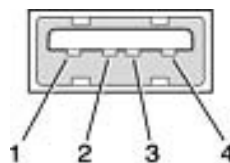
Table 2.3: Power Connector Pin Assignments

Pin	Signal Name
1	+12~24V DC-IN
2	+12~24V DC-IN
3	GND
4	GND

2.4.3 USB 2.0 Connector

The FEBC-3112 can support up to five USB-interface connectors. By default it provides two USB-interface connectors located on the front metal faceplate, and an additional three USB-interface connectors can be supported through adding the Dual-USB Cable-Bracket. These USB-interface connectors give complete Plug & Play and hot swap capability for up to 127 external devices. The USB interface complies with USB UHCI, Rev. 2.0 compliance. The USB interface can be disabled in the system BIOS setup.

The USB-interface connector is used for connecting any device that conforms to the USB interface. Many recent digital devices conform to this standard. The USB interface supports Plug and Play, which enables you to connect or disconnect a device whenever you want, without turning off the computer.


Figure 2.6 USB connector
Table 2.4: USB Connector

Pin	Signal name
1	VCC
2	USB_P0
3	USB_P0+
4	GND

2.4.4 COM1/COM2 Connector

The FEBC-3112 provides two D-sub 9-pin connector, which offers two RS-232/422/485 serial communication interface port of COM1 and COM2. The default setting of COM1/2 is RS-232. Please refer to Table 2.5 for their pin assignments and jumper settings for setting up RS-422 and RS-485.

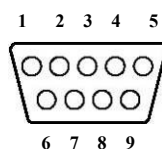

Figure 2.7: COM 1/COM2 Connector

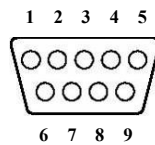
Table 2.5: COM1~2 Serial Port Pin Assignments

	RS-232	RS-422	RS-485
Pin	Signal Name	Signal Name	Signal Name
1	DCD	Rx+	DATA+
2	RxD	Rx-	DATA-
3	TxD	Tx+	NC
4	DTR	Tx-	NC
5	GND	GND	GND
6	DSR	NC	NC
7	RTS	NC	NC
8	CTS	NC	NC
9	RI	NC	NC

Note: NC represents —No Connection—

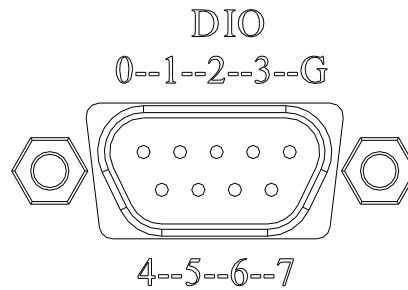
2.4.5 COM3/COM4 Connector

The FEBC-3112 provides two RS-232 ports by two D-sub 9-pin connectors. Please refer to Table 2.6 for their pin assignments.


Figure 2.8: COM3, COM4 Connector
Table 2.6: COM3~4 Serial Port Pin Assignments

Pin	Signal Name
1	DCD
2	RxD
3	TxD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI

2.4.6 DIO Connector



Digital I/O Connector

Pin	NO.	Pin	NO.
1	DIO0	6	DIO4
2	DIO1	7	DIO5
3	DIO2	8	DIO6
4	DIO3	9	DIO7
5	DIO_GND		

2.5 Installation

Use the cross screwdriver, demount the screws on mounting bracket and the bottom cover as below:

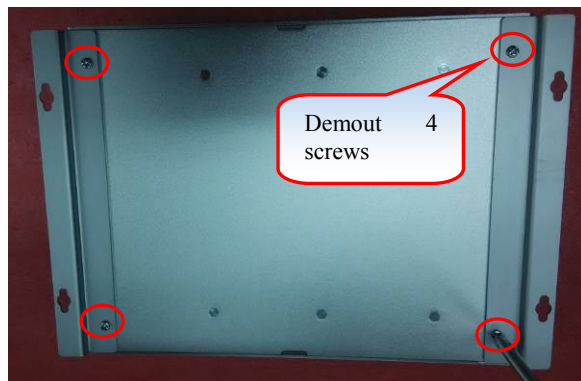


Figure 2.10

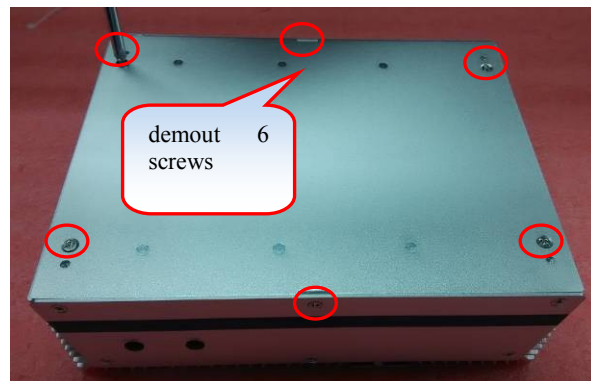


Figure 2.11

2.5.1 HDD/SSD Installation

a) Fix the HDD/SSD on the mounting bracket with 6 screws (M3x5mm).



Figure 2.12

Notice:

1. Hard disk interface direction as it is shown
2. The hard disk and the hard drive bracket mounting direction as it is shown



Figure 2.13

Notice:

- 1.tools: cross screwdriver
- 2.Spec: Cross round head screws
#6-32×5mm

b) Take one hard disk heat conduction paste(thick:1.5mm) , and paste it on the hard disk correctly as below .

Then insert 6 shockproof rubber rings into the mounting bracket hole.

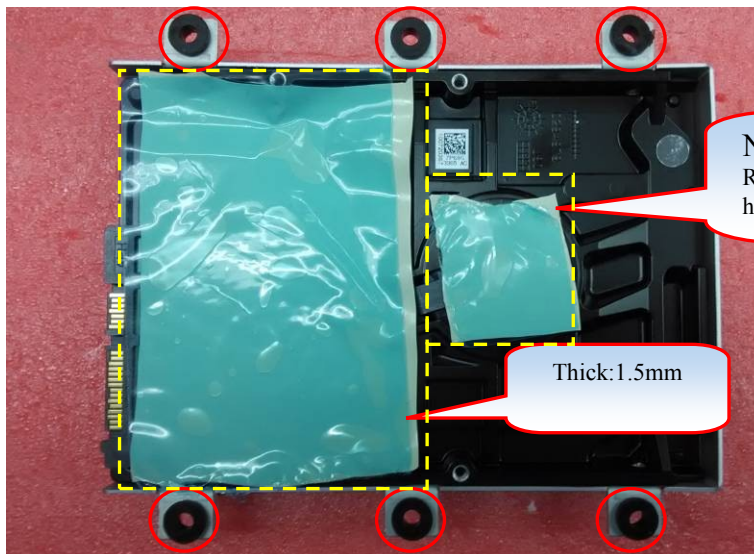


Figure 2.14

Notice:

Remove the surface film before using the heat conduction paste

Thick:1.5mm

c) Fix mounting bracket to the bottom cover



Notice:

tools: cross screwdriver

screw: Cross pan head screws

M3×5mm(with shim)

Hard disk interface direction as shown in
Figure2.15

Figure 2.15

d) Insert the hard disk drive cable into hard drive



Notice:

Insert the cable as it is shown in
the figure 2.16

Figure 2.16

2.5.2 Memory chip Installation & Replacement

Insert a memory chip at a 30 degree angle into the main board memory slot, as shown in Figure.

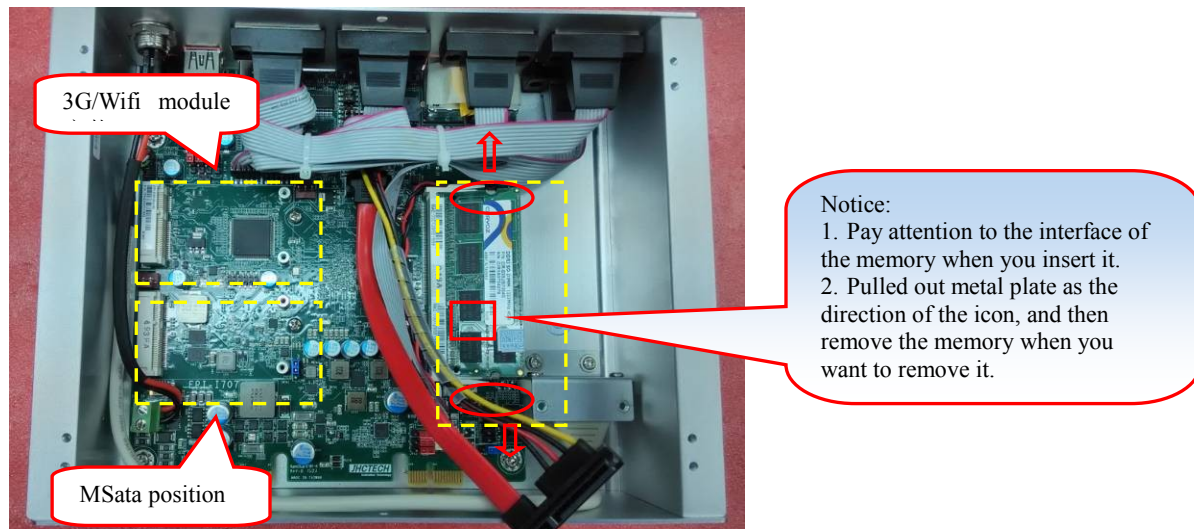


Figure 2.17

2.5.3 MSATA Installation & Replacement

Take a MSATA, insert it into the main board as below.



Figure 2.18

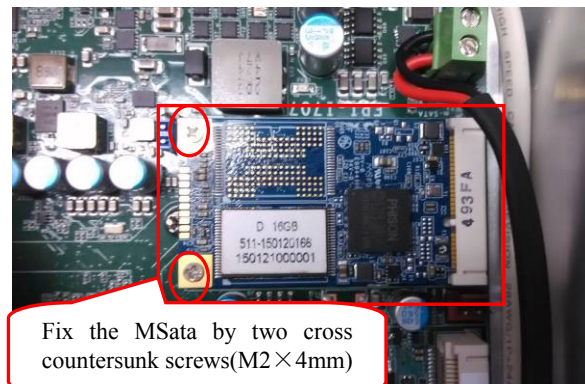


Figure 2.19

2.5.4 3G/WIFI module Installation & Replacement

a) Take a 3G/WIFI module, insert it into the main board as below.



Figure 2.20

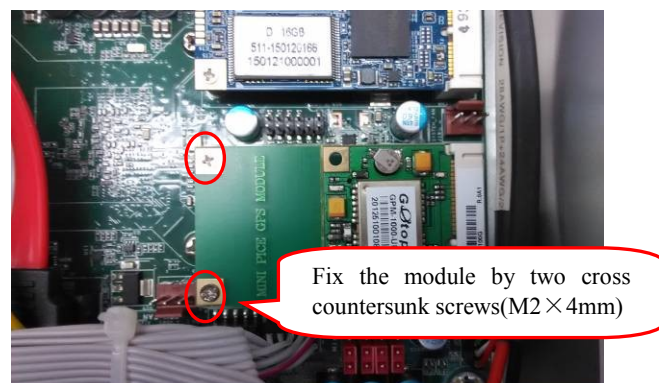


Figure 2.21

b) Installation the WIFI antenna as below:

Notice: Before installation, please remove a rubber plug on the side panel. Demount Nut / flat washer / spring washer of WIFI antenna.

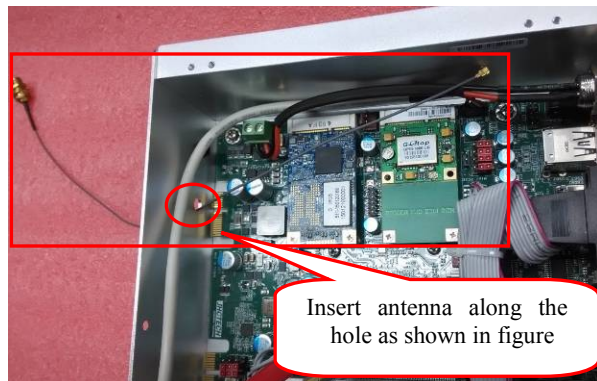


Figure 2.22

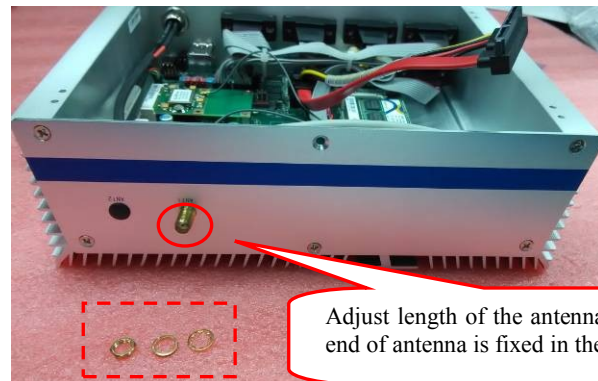


Figure 2.23

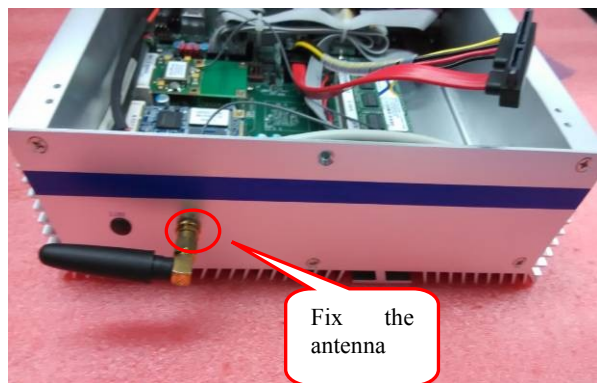


Figure 2.24

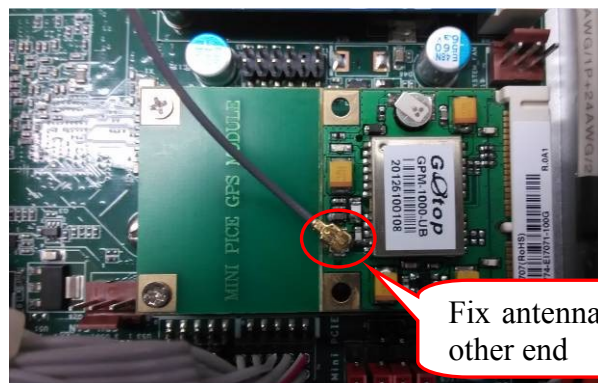


Figure 2.25

2.5.5 Fix the bottom cover and the mounting bracket

Use the cross screwdriver to fix the bottom cover and the mounting bracket as shown in figure.

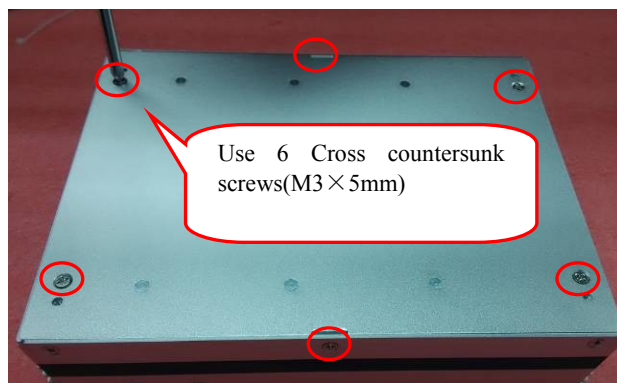


Figure 2.26

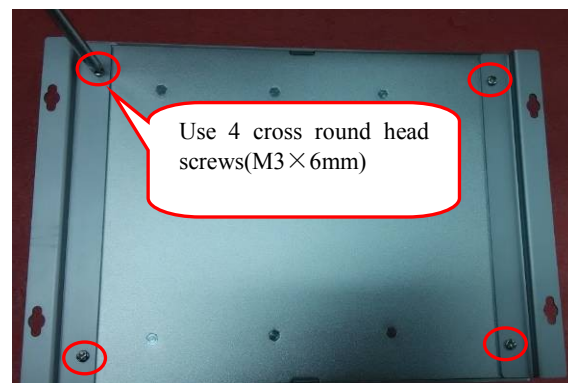


Figure 2.27

CHAPTER

3



BIOS Setup

Overview

The BIOS ROM stores the BIOS setup data. Even when the CMOS battery fails, the setup data still retains in the BIOS ROM. It is possible that the CMOS battery will fail causing CMOS data loss. If this happens, you need to enter the BIOS setup to modify the correct system time which is counted by the RTC clock and recorded in CMOS.

Default Configuration

Most of the configuration settings are either predefined according to the Load Optimal Defaults settings which are stored in the BIOS or are automatically detected and configured without requiring any actions. There are a few settings that you may need to change depending on your system configuration.

Entering the BIOS Setup Utility

The BIOS Setup Utility can only be operated from the keyboard and all commands are keyboard commands. The commands are available at the right side of each setup screen.

The BIOS Setup Utility does not require an operating system to run. After you power up the system, the BIOS message appears on the screen and the memory count begins. After the memory test, the message “Press DEL to run setup” will appear on the screen. If the message disappears before you respond, restart the system or press the “Reset” button. You may also restart the system by pressing the <Ctrl> <Alt> and keys simultaneously.

Legends

Keys	Function
Right and Left	Moves the highlight left or right to select a menu.
Up and Down	Moves the highlight up or down between submenu or fields.
<Esc>	Exit to the BIOS Setup Utility.
+ (plus key)	Scrolls forward through the values or options of the highlighted
- (minus key)	Scrolls backward through the values or options of the highlighted
Tab	Select a field.
<F1>	Displays general help
<F9>	Optimized defaults
<F10>	Saves and resets the setup program.
<Enter>	Press <Enter> to enter the highlighted submenu.

Scroll Bar

When a scroll bar appears to the right of the setup screen, it indicates that there are more available fields not shown on the screen. Use the up and down arrow keys to scroll through all the available fields.

Submenu

When “ ” appears on the left of a particular field, it indicates that a submenu which contains additional options are available for that field. To display the submenu, move the highlight to that field and press <Enter>.

Insyde BIOS Setup Utility

3.1 Main

The Main menu is the first screen that you will see when you enter the BIOS Setup Utility.

InsydeH20 Setup Utility			Rev. 5.0		
Main	Advanced	Security	Power	Boot	Exit
Project Name		EPI-I707V1.21T		This is the help for the hour, minute, second field. Valid range is from 0 to 23, 0 to 59, 0 to 59. INCREASE/REDUCE: +/-.	
Manufacturer Name		JHCTECH			
Build Date		07/10/2014			
BuildTime		15:00:00			
Platform Firmware Information					
VLV SOC		0E (C0 Stepping)			
MRC Version		0.98			
PUNIT FW		0x11			
EC FW		1.1 (2014/06/05)			
PMC FW Patch		0x4_31			
TXE FW Version		1.1.0.1113			
IGD VBIOS Version		1015			
Microcode Revision		813			
CPU Flavor		VLV Mobile (3)			
Board ID		BALEY BAY (20)			
Fab ID		FAB3 (03)			
Processor Type		Intel(R) Celeron(R) CPU N2807 @1.58GHz			
System Bus Speed		83 MHz			
System Memory Speed		1333 MHz			
Cache RAM		1024 KB			
Total Memory		4096 MB			
Channel A - SODIMM 0		4096 MB			
Language		<English>			
System Time		[15:58:13]			
System Date		[07/17/2014]			
F1 Help	↑↓ Select Item	F5/F6 Change Values		F9 Setup Defaults	
Esc Exit	←→ Select Menu	Enter Select ► SubMenu		F10 Save and Exit	

System Time

The time format is <hour>, <minute>, <second>. The time is based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00. Hour displays hours from 00 to 23. Minute displays minutes from 00 to 59. Second displays seconds from 00 to 59.

System Date

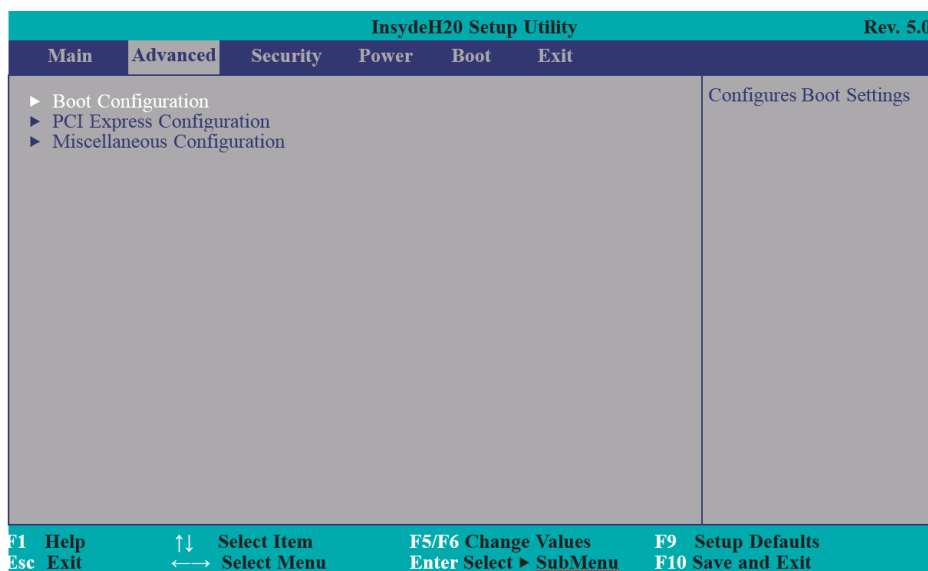
The date format is <day>, <month>, <date>, <year>. Day displays a day, from Sun- day to Saturday. Month displays the month, from January to December. Date displays the date, from 1 to 31. Year displays the year, from 1980 to 2099.

3.2 Advanced

The Advanced menu allows you to configure your system for basic operation. Some entries are defaults required by the system board, while others, if enabled, will improve the performance of your system or let you set some features according to your preference.

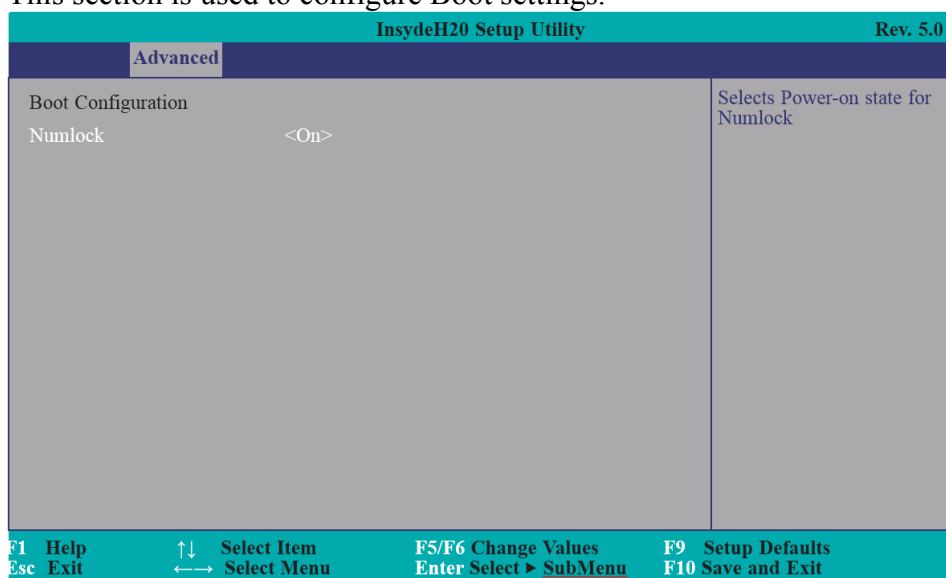

Important:

Setting incorrect field values may cause the system to malfunction.



3.2.1 Boot Configuration

This section is used to configure Boot settings.

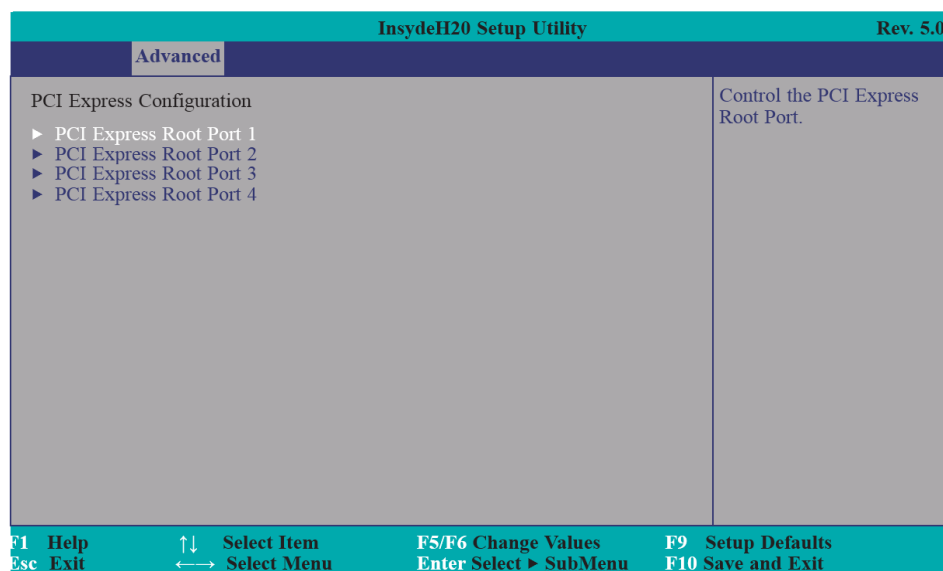


Numlock

Select the Numlock state: Power-on or Power-off.

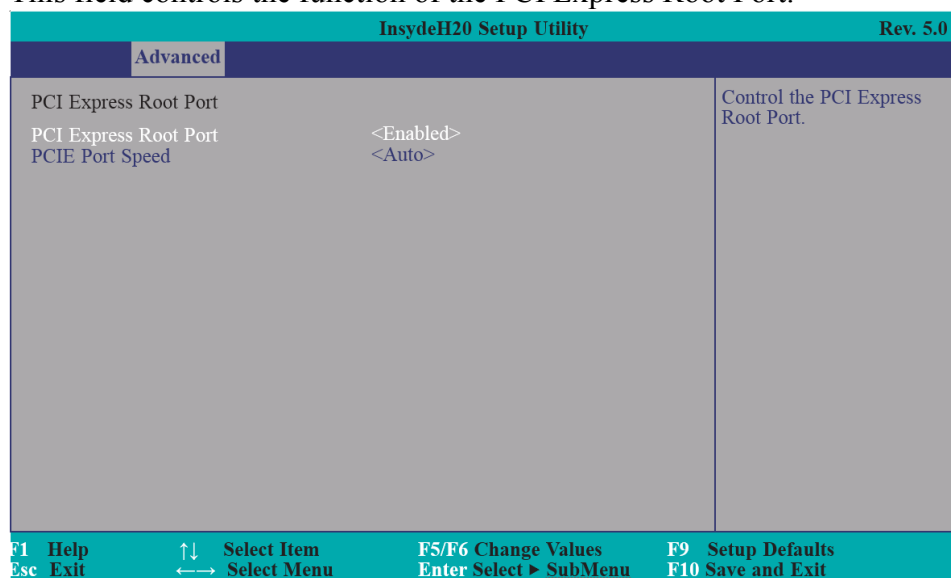
3.2.2 PCI Express Configuration

This section configures settings relevant to PCI Express root ports.



PCI Express Root Port 1 to PCI Express Root Port 4

This field controls the function of the PCI Express Root Port.



PCI Express Root Port

This field is used to enable or disable the PCI Express Root Port.

PCIE Port Speed

Select the speed of the PCI Express Root Port: Auto, Gen1 or Gen2.

3.2.3 Miscellaneous Configuration

This section enables or disables Misc. features.

InsydeH20 Setup Utility		Rev. 5.0
Advanced		
Miscellaneous Configuration State After G3	<Always Power on>	Specify what state to go to when power is re-applied after a power failure (G3 state).
F1 Help ↑↓ Select Item F5/F6 Change Values F9 Setup Defaults Esc Exit ←→ Select Menu Enter Select ► SubMenu F10 Save and Exit		

State After G3

Specify what state to go to when the power is re-applied after a power failure occurs. (G3 state)

Always Power On

When power returns after an AC power failure, the system will automatically power-on.

Always Power Off

When power returns after an AC power failure, the system's power is off. You must press the Power button to power-on the system.

Last State

When power returns after an AC power failure, the system will return to the state where you left off before power failure occurs. If the system's power is off when AC power failure occurs, it will remain off when power returns. If the system's power is on when AC power failure occurs, the system will power-on when power returns.

3.3 Security

InsydeH20 Setup Utility				Rev. 5.0	
Main	Advanced	Security	Power	Boot	Exit
Set Supervisor Password			Install or change the password and the length of password must be greater than one character.		
<div> Set Supervisor Password Please type in your new password [] Please confirm your new password [] </div>					
F1 Help Esc Exit	↑↓ Select Item ←→ Select Menu	F5/F6 Change Values Enter Select ► SubMenu	F9 Setup Defaults F10 Save and Exit		

3.3.1 Set Supervisor Password

Set the supervisor's password and the length of the password must be greater than one character.

3.4 Power

InsydeH20 Setup Utility				Rev. 5.0	
Main	Advanced	Security	Power	Boot	Exit
► Advanced CPU Control			These items control various CPU parameters.		
F1 Help Esc Exit	↑↓ Select Item ←→ Select Menu	F5/F6 Change Values Enter Select ► SubMenu	F9 Setup Defaults F10 Save and Exit		

3.4.1 Advanced CPU Control

This section controls various CPU parameters.

InsydeH20 Setup Utility		Rev. 5.0
Power		
Advanced CPU Control		Enable processor Turbo Mode (requires EMTTM enabled too).
Turbo Mode	<Auto>	
F1 Help ↑↓ Select Item F5/F6 Change Values F9 Setup Defaults Esc Exit ←→ Select Menu Enter Select ► SubMenu F10 Save and Exit		

Turbo Mode

Enable the processor turbo mode and it also requires EMTTM enabled.

3.5 Boot

InsydeH20 Setup Utility		Rev. 5.0
Main	Advanced	Security
Power	Boot	Exit
Boot Type	<Dual Boot Type>	Select boot type to Dual type, Legacy type or UEFI type.
Network Stack	<Disabled>	
PXE Boot capability	<Disabled>	
ACPI Selection	<Acpi 5.0>	
USB Boot	<Enabled>	
EFI/Legacy Device Order	<EFI device first>	
Timeout	[3]	
Automatic Failover	<Enabled>	
►Legacy		
F1 Help ↑↓ Select Item F5/F6 Change Values F9 Setup Defaults Esc Exit ←→ Select Menu Enter Select ► SubMenu F10 Save and Exit		

Boot Type

Select the boot type. The options are Dual Boot Type, Legacy Boot Type or UEFI Boot Type.

Network Stack

Enable or disable the Network Stack supporting Windows 8 BitLocker Unlock, UEFI IPv4/IPv6 PXE, and Legacy PXE OpROM.

USB Boot

Enable or disable the booting for USB boot devices.

EFI/Legacy Device Order

Determines the boot order: EFI device first, Legacy device first or Smart Mode.

Timeout

The number of seconds that the firmware will wait before booting the original default boot selection.

Automatic Failover

Enabled

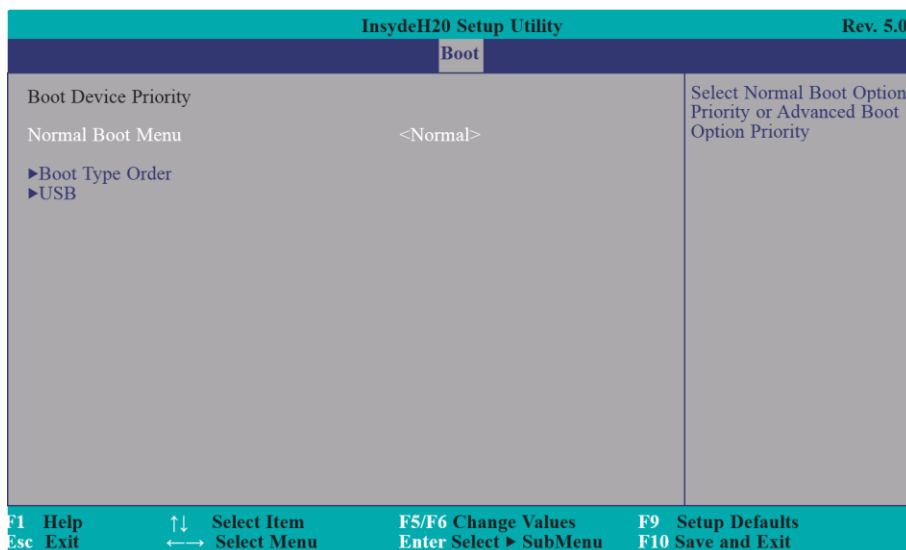
If the boot for the default device fails, it will directly try to boot the next device.

Disabled

If the boot for the default device fails, it will pop the warning message then going the firmware UI.

3.5.1 Legacy

The section configures settings relevant to the Legacy boot order.

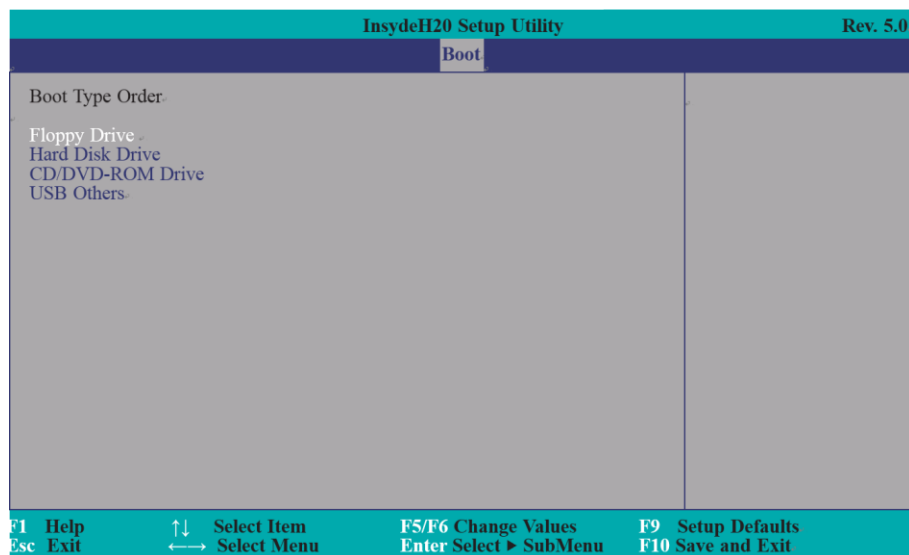


Normal Boot Menu

Select the boot menu: Normal Boot Option Priority or Advanced Boot Option Priority.

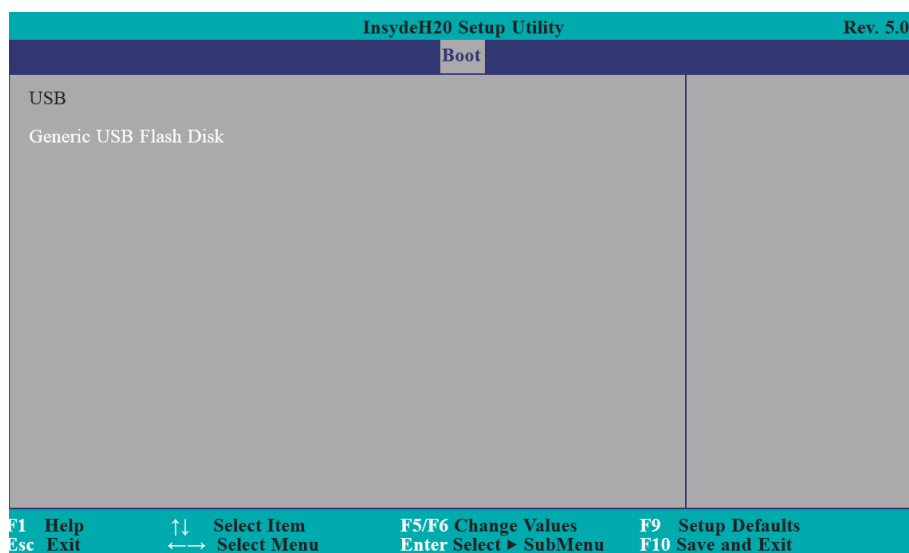
Boot Type Order

This field is used to change the boot type order.

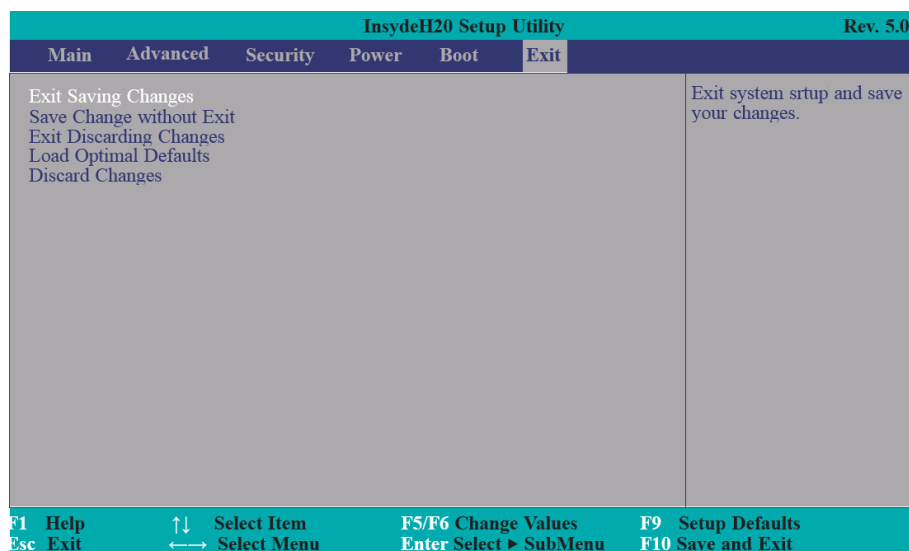


USB

This field is used to enable or disable the booting for USB boot devices.



3.6 Exit



Exit Saving Changes

Select this field and then press <Enter> to exit the system setup and save your changes.

Save Change without Exit

Select this field and then press <Enter> to save your changes without exiting the system.

Exit Discarding Changes

Select this field and then press <Enter> to exit the system setup without saving your changes.

Load Optimal Defaults

Select this field and then press <Enter> to load optimal defaults.

Discard Changes

Select this field and then press <Enter> to discard changes.

CHAPTER

4



Driver Installation

The FEBC-3112 comes with a CD-ROM that contains all drivers and utilities that meet your needs.

4.1 Follow the sequence below to install the drivers:

Step 1 – Install Chipset Driver

Step 2 – Install VGA Driver

Step 3 – Install LAN Driver

Step 4 – Install Audio Driver

Please read instructions below for further detailed installations.

4.2 Installation:

Insert the FEBC-3112 CD-ROM into the CD-ROM drive. And install the drivers from Step 1 to Step 4 in order.

Step 1 – Install Chipset Driver

1. Click on the Step 1 - Intel Chipset Software Installation Utility folder and double click on the `infinst_autol.exe`
2. Follow the instructions that the window shows
3. The system will help you install the driver automatically

Step 2 – Install VGA Driver

1. Click on the Step 2 - Intel Graphics Media Accelerator Driver Production Version folder and select the OS folder your system is
2. Double click on the `Setup.exe` file located in each OS folder
3. Follow the instructions that the window shows
4. The system will help you install the driver automatically

Step 3 –Install LAN Driver

1. Click on the Step 3 - Realtek folder and select the OS folder
2. Double click on the `Setup.exe` file
3. Follow the instructions that the window shows
4. The system will help you install the driver automatically

Step 4 –Install Audio Driver

1. Click on the Step 4 - Realtek HD Audio Codec folder and select the OS folder your system is
2. Double click on `Setup.exe` file located in each OS folder
3. Follow the instructions that the window shows
4. The system will help you install the driver automatically

APPENDIX

A



Watchdog Sample Code

; Software programming example:

;(1) Enter Super IO Configuration mode

MOV DX,4EH
MOV AL,87H
OUT DX,AL
OUT DX,AL

;(2) Configuration Logical Device 8, register CRF0/CRF1 (WDT Control/WDT timer)

MOV DX,4EH ;Ready to Program
MOV AL,07H Logical Device
MOV DX,4EH
MOV FH,08H ;Select Logical Device 8
MOV AL,08H
MOV DX,4EH
MOV EH,0FH ;Select watchdog timer
MOV AL,0FH register
MOV DX,4EH
MOV FH,01H ;Set watchdog timer
MOV AL,0FH value
MOV DX,4EH
MOV EH,0FH ;Select watchdog Control
MOV AL,0FH Register
MOV DX,4EH
MOV FH,0FH ;Set Watchdog Control
MOV AL,0FH Value

;(1) Exit extended function mode

MOV DX,4EH
MOV AL,AAH
OUT DX,AL