

ITA-2230 Series Intel® Core™ i7 Fanless 2U Rackmount System with 3 ITAM Slots Startup Manual

Packing List

Before installing the board, please ensure that the following items have been shipped:

- 1 x ITA-2230 Series IPC
- 1 x ITA-2230 Accessory Box
- 1 x ITA-2230 Warranty Card

If any of the above items are missing or damaged, please contact your distributor or sales representative immediately.

Note: Adobe Acrobat Reader is required to view PDF files. Adobe Acrobat Reader can be downloaded at www.adobe.com/Prodindex/acrobat/readstep2.html (Acrobat is a trademark of Adobe).

Specifications

Standard Function

- Chip & Chipset:** Intel Core™ i7-3555LE processor and HM76 Chipset
- BIOS:** AMI SPI 64 Mb
- Memory:** Onboard DDR3 1600 up to 4GB
- Display:**
Intel HD4000, Frequency 550MHz,
Share system memory up to 512MB SDRAM
- Dual display mode:**
Resolution of single display up to 2048 x 1536,
1 x VGA, 1 x HDMI, 1 x eDP (Optional)
- Storage:**
- 1 x 3.5" HDD or 2 x 2.5" HDD
- 1 x Full Size mSATA
- Expansion slot:**
- 3 x ITAM slot
- 1 x PC104+
- 1 x Mini PCIe slot

For more information about this or other Advantech products, please visit our website at

<http://www.advantech.com>

<http://www.advantech.com/epc>

For technical support and services, please visit our support website at:

<http://support.advantech.com>

This manual is for the ITA-2230 Series.

Part No. 200K223010

1st Edition,

Printed in China

December 2014

Specifications (Cont.)

System Specifications

- Ethernet:** 2 x 10/100/1000M Ethernet
- USB:** 4 USB 3.0, 4 USB 2.0
- VGA:** 1 VGA
- HDMI:** 1 HDMI
- Serial port:** 2 DB9 ports, support RS-232/422/485
- Digital I/O:** 1 x 8-ch TTL GPIO
- Audio:** 1 Speaker Out (support 2x4W Amp), 1 Mic-in
- ITAM module (optional):** ITAM modules can be optional inserted into three ITAM slots to make LAN or COM ports up to 24 additional ports for expansion needs.

Mechanical and Environment

- Dimensions (W x H x D):** 483 x 88 x 325 mm
- Voltage input:** AC 100-240 or DC 110V
- Working temperature:**
- 0 ~ 40° C (32 ~ 104° F, with HDD)
- 25 ~ 60° C (-13 ~ 140° F, with SSD)
- Weight:**
- Single Power: 7.7 kg
- Dual Power: 8 kg

Jumpers and Connectors

Jumper/Connector Setting

The board has a number of jumpers and connectors that allow you to configure your system to suit your application. The table below lists the function of each of the jumpers and connectors.

| Name / Function | |
|-----------------|--|
| JCMOS1 | Clear CMOS setting |
| PSON1 | Power on mode setting |
| VCC_GPIO1 | GPIO voltage setting |
| VIO1 | PC/104-Plus Connector VI/O Voltage setting |
| COM 1~2 | Serial ports |
| HDMI | HDMI connector |
| VGA 1 | VGA connector |
| USB 1~2 | USB3.0 connector |
| USB 3~6 | USB2.0 connector |
| DIO | Digital I/O |
| Audio | Audio in |

Jumpers and Connectors (Cont.)

JCMOS1: Clear CMOS Setting

| Pins | Setting |
|------|--------------------|
| 1-2 | Default* |
| 2-3 | Clear CMOS setting |

*Default setting



Default



Clear CMOS

PSON1: Power On Mode Setting

| Pins | Setting |
|------|-----------|
| 1-2 | AT mode |
| 2-3 | ATX mode* |

*Default setting



AT Mode



ATX Mode

VCC_GPIO1: GPIO Voltage Setting

| Pins | Setting |
|------|-------------------|
| 1-2 | +V5_SB |
| 2-4 | Normal(+V3.3_SB)* |
| 3-5 | +V5 |
| 4-6 | +V3.3 |

*Default setting



VIO1: PCI VIO Voltage Setting

| Pins | Setting |
|------|--------------|
| 1-6 | +3.3V |
| 4-9 | Normal(+5V)* |

*Default setting



COM 1~2: Serial Ports

| | RS232 | RS422 | RS485 |
|------|-------------|-------------|-------------|
| Pins | Signal Name | Signal Name | Signal Name |
| 1 | DCD | Tx- | DATA- |
| 2 | RxD | Tx+ | DATA+ |
| 3 | TxD | Rx+ | NC |

| | | | |
|---|-----|-----|-----|
| 4 | DTR | Rx- | NC |
| 5 | GND | GND | GND |
| 6 | DSR | NC | NC |
| 7 | RTS | NC | NC |
| 8 | CTS | NC | NC |
| 9 | RI | NC | NC |



HDMI

| Pins | Signal Name | Pins | Signal Name |
|------|-------------------|------|-------------------|
| 1 | TMDS Data2+ | 11 | TMDS Clock Shield |
| 2 | TMDS Data2 Shield | 12 | TMDS Clock- |
| 3 | TMDS Data2- | 13 | CEC |
| 4 | TMDS Data1+ | 14 | Reserved |
| 5 | TMDS Data1 Shield | 15 | SCL |
| 6 | TMDS Data1- | 16 | SDA |
| 7 | TMDS Data0+ | 17 | DDC/CEC Ground |
| 8 | TMDS Data0 Shield | 18 | +5V Power |
| 9 | TMDS Data0- | 19 | Hot plug Detect |
| 10 | TMDS Clock+ | | |



VGA 1: VGA

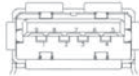
| Pins | Signal Name | Pins | Signal Name |
|------|--------------|------|-------------|
| 1 | Red(Red) | 9 | +5V |
| 2 | Green(Green) | 10 | GND |
| 3 | Blue(Blue) | 11 | NC |
| 4 | NC | 12 | DDC-DATA |
| 5 | GND | 13 | H-SYNC |
| 6 | GND | 14 | V-SYNC |
| 7 | GND | 15 | DDC-CLK |
| 8 | GND | | |



Jumpers and Connectors (Cont.)

USB 1~2: USB3.0 A Type

| Pins | Signal Name | Pins | Signal Name |
|------|-------------|------|-------------|
| 1 | VBUS | 6 | StdA_SSRX+ |
| 2 | D- | 7 | GND_DRAIN |
| 3 | D+ | 8 | StdA_SSTX- |
| 4 | GND | 9 | StdA_SSTX+ |
| 5 | StdA_SSRX- | | |



USB 3~6: USB2.0

| Pins | Setting |
|------|-----------|
| 1 | +V5(VCC) |
| 2 | USB DATA- |
| 3 | USB DATA+ |
| 4 | GND |



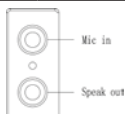
DIO: Digit Connector

| Pins | Signal Name | Pins | Signal Name |
|------|-------------|------|-------------|
| 1 | GPIO0 | 6 | GPIO4 |
| 2 | GPIO1 | 7 | GPIO5 |
| 3 | GPIO2 | 8 | GPIO6 |
| 4 | GPIO3 | 9 | GPIO7 |
| 5 | GND | | |



Audio: Audio In

| Pins | Signal Name | Pins | Signal Name |
|------|-------------|------|-------------|
| 1 | AUD_GND | 6 | LOUT_L |
| 2 | MIC1_L | 7 | LOUT_JD |
| 3 | MIC_JD | 8 | AUD_GND |
| 4 | AUD_GND | 9 | LOUT_R |
| 5 | MIC_R | | |



Power Connector Definition

The IPC has a 3-channel Terminal Block power input connector which provides AC 100~240V or 110V DC voltage to the board. The definition is as below:

Phoenix Connector DC-In:

Pin Definition:

| | |
|------|-----|
| Pin1 | GND |
| Pin2 | N |
| Pin3 | L |



AC/DC Power Input Connector

Ethernet LED Definition

The system has 2 RJ45 connectors with LEDs showing network status.

LAN1~LAN2:

LED Status:

| | |
|------------|----------------------------------|
| 1000M | Green (top left LED) |
| 100M | Orange (top left LED) |
| 10M | No lights |
| Connection | Green flickering (top right LED) |



RJ45 Connector

Indicator LED Color Definition

The system has 3 indicator LEDs at bottom left with LEDs showing network status.

LED Color Status

| | |
|--------------------|--------|
| Storage device LED | Orange |
| Power LED | Green |
| Warning LED | Red |

The system has 3 indicator LEDs at right ahead with LEDs showing network status.

LED Color Status

| | |
|--------------------|--------|
| Storage device LED | Orange |
| Power LED | Green |
| Warning LED | Red |

COM LED Definition

The system has 2 COM connectors with LEDs showing network status.

Jumpers and Connectors (Cont.)

COM1~2:

LED Status:

| | |
|------------|----------|
| TX Active | Green |
| TX No Data | No light |
| RX Active | Orange |
| RX No Data | No light |

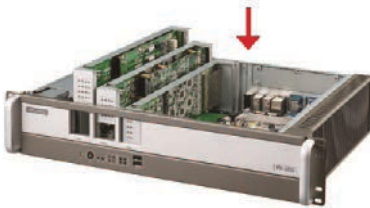
Safety Precaution - Static Electricity

Follow these simple precautions to protect yourself from harm and the products from damage.

1. To avoid electrical shock, always disconnect the power from the PC chassis before working on the device.
2. Disconnect the power before adjusting the configuration. A sudden rush of power when connecting a jumper or installing a card can damage sensitive electronic components.
3. Always disconnect the power cord from the chassis when making adjustments. Do not connect when the power is on. A sudden rush of power can damage sensitive electronic components. Only experienced electronics personnel should open the chassis. Always ground yourself to remove any static electric charge before touching the motherboard, backplane, or add-on cards. Modern electronic devices are very sensitive to static electric charges. Use a grounding wrist strap at all times. Place all electronic components on a static-dissipative surface or in a static shielded bag.

ITAM Installation Instructions

1. Open ITA-22 series system chassis cover.
2. Following Pic shown below to insert ITAM Module.
 - a. Then fix the module front part into chassis front panel.
 - b. Check whether the interface of ITAM Module is parallel with ITAM slot on the backplane.
 - c. Check whether the rivet of the module is fully inserted in.
3. Fix ITAM Module upon ITA-22 series system with screws in front and rear both side.



Safety Instructions

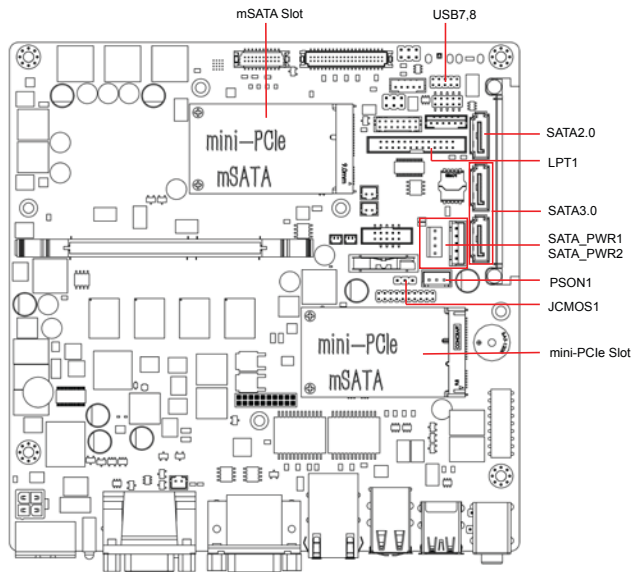
1. Read these safety instructions carefully.
2. Retain this startup manual for future reference.
3. Disconnect the equipment from all AC outlets before cleaning. Do not use liquid or spray detergents for cleaning.
4. For pluggable equipment, the power outlet must be located near the equipment and easily accessible.
5. Protect the equipment from humidity.
6. Position the equipment on a reliable surface during installation. Dropping or letting the equipment fall can cause damage.
7. Ensure the power supply voltage is correct before connecting the equipment to a power outlet.
8. Position the power cord away from high-traffic areas. Do not place anything over the power cord.
9. All cautions and warnings on the equipment should be noted.
10. If unused for a long time, disconnect the equipment from the power source to avoid damage from transient overvoltages.
11. Never pour liquid into the equipment openings. This can cause fire or electrical shock.
12. Never open the equipment. For safety reasons, the equipment should only be opened by qualified service personnel.
13. If any of the following occurs, have the equipment checked by service personnel:
 - The power cord or plug is damaged.
 - Liquid has penetrated into the equipment.
 - The equipment has been exposed to moisture.
 - The equipment is malfunctioning, or does not operate according to the user manual.
 - The equipment has been dropped or damaged.
 - The equipment shows obvious signs of breakage.
14. Do not leave this equipment in an environment with a storage temperature of below -25 °C (-13 °F) or above 60 °C (140 °F). This may damage the equipment. The equipment should be kept in a controlled environment.
15. There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer, and discard used batteries according to the manufacturer's instructions.
16. This equipment has been tested and found to comply with the requirements for a Class A digital device. Operation of this equipment in a residential area is likely to cause harmful interference to radio communications; in such events, users are required to correct this interference.
17. This equipment is sold without a power cord. Users are advised to purchase a CCC-certified power cord.

The sound pressure level at the operator's position does not exceed 70 dB (A) as per the IEC 704-1:1982 specifications.

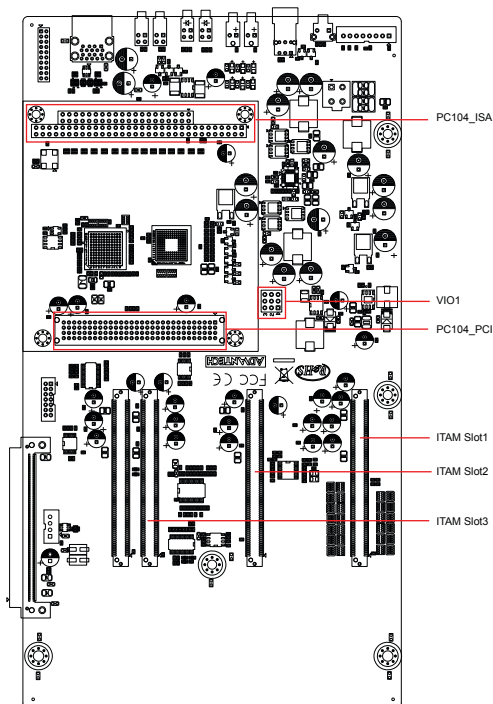
DISCLAIMER: These instructions are provided according to the IEC 704-1 standard. Advantech disclaims all responsibility for the accuracy of all statements contained herein.

Board Jumper Setting Drawing

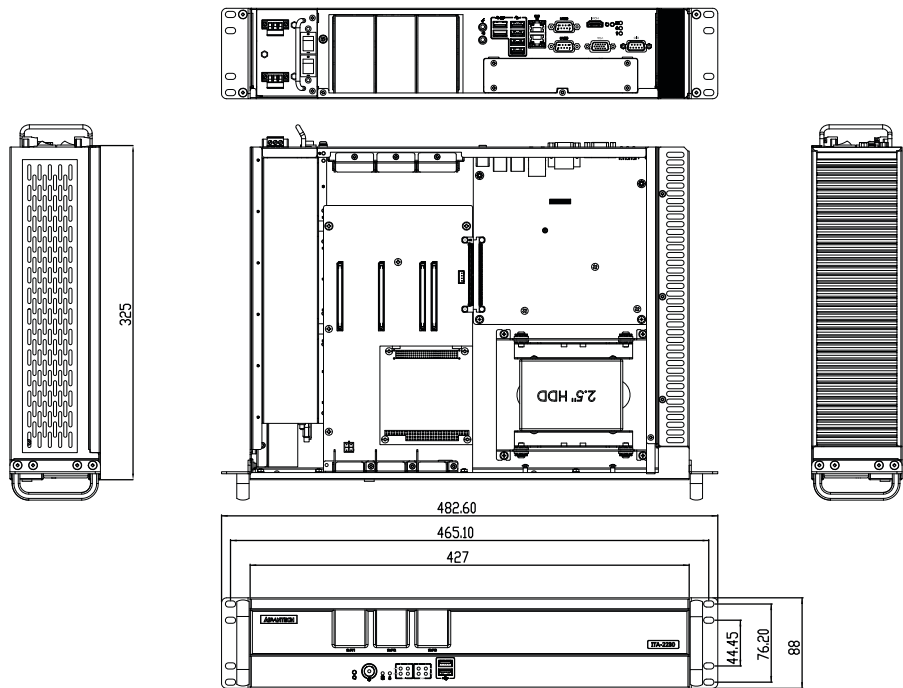
Mainboard Jumpers and Connectors Location



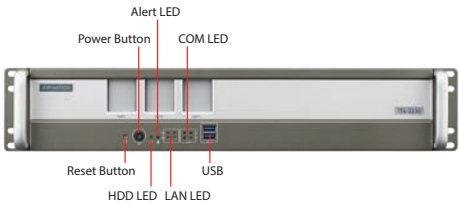
Backplane Jumpers and Connectors Location



System Diagram



Front Panel View



Rear IO View

