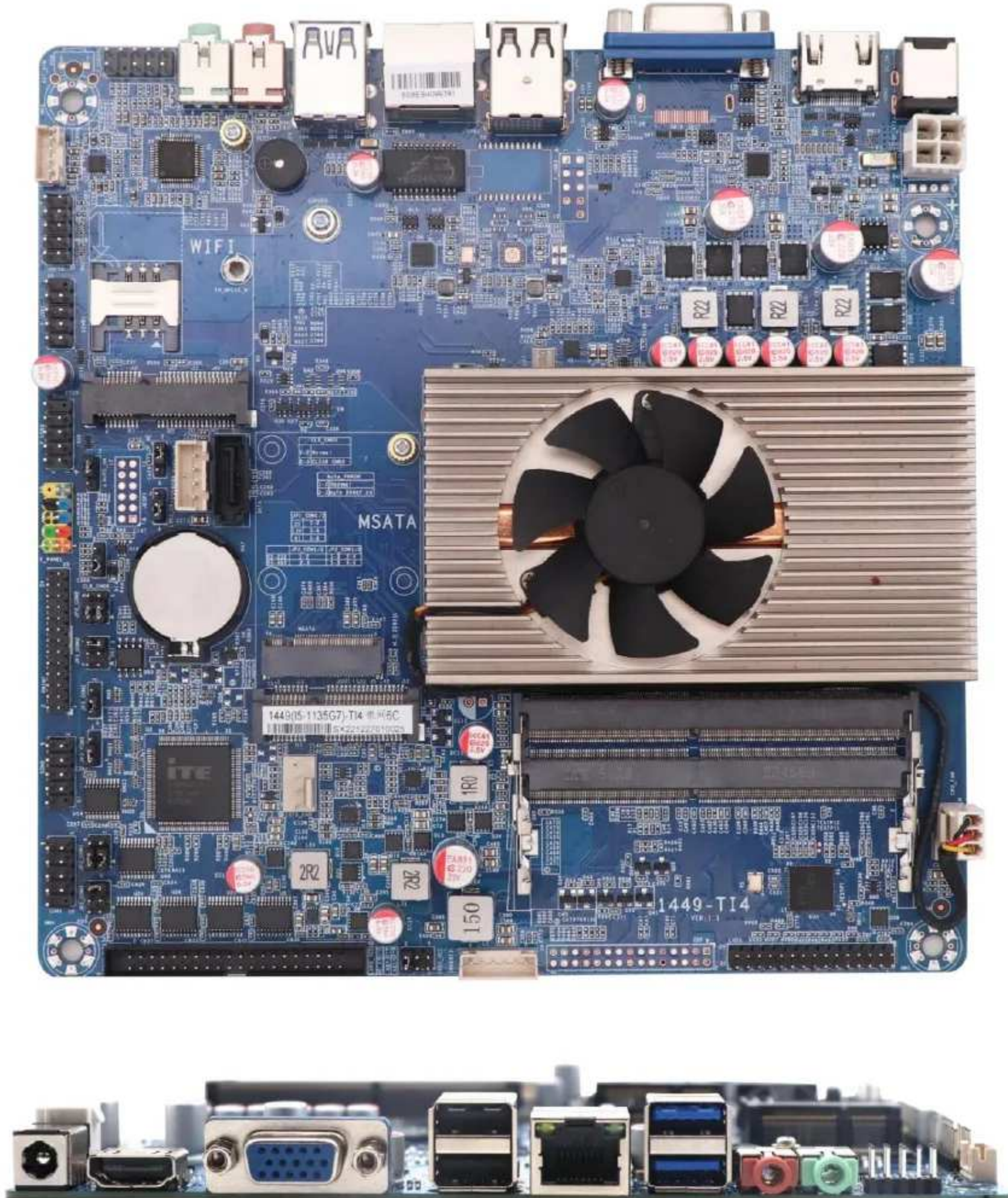
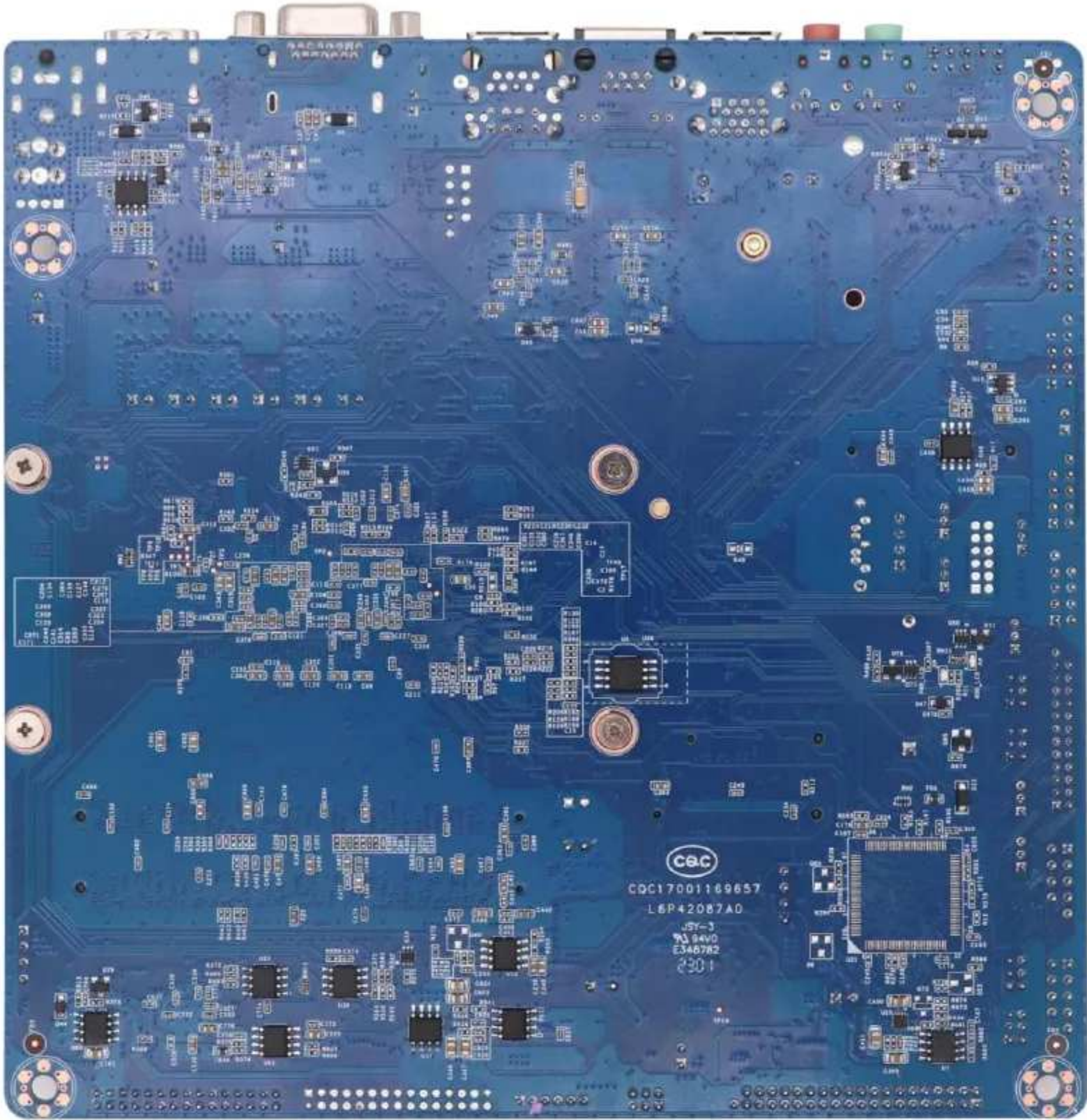


1449-T14 Motherboard

User Guide

SEE 1.1





The pictures are for reference only. Please refer to the actual product.

illustrate

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Part 1: Introduction

1.1 Before you start using

Thank you for choosing our product. Please read the product manual carefully before using the product.

• Motherboards that are not ready for installation should be kept in anti-static protective bags.

• Before taking the motherboard from the packaging bag, place your hands on a grounded metal object for a while to discharge static electricity from your body and hands.

• Before use, the motherboard should be placed on a stable surface.

• Please keep the motherboard dry. The opening slots of the heat sink are for ventilation to prevent the components inside the chassis from overheating. Do not cover such openings or clogged.

• Before connecting the motherboard to the power supply, please confirm the power supply voltage value.

• Please place the power cord where it will not be walked on, and do not pile any objects on the power cord.

• Before you need to connect or unplug any equipment, make sure all power cords have been unplugged beforehand.

• In order to avoid electric shock to the human body or damage to the product, the AC power must be turned off or the AC power supply must be turned off every time the machine or board is plugged in or reconfigured.

Unplug the AC power cord from the electrical outlet.

• Please heed all notes and warnings mentioned in the manual.

• To avoid unnecessary damage to the product caused by frequent power on and off, you should wait at least 30 seconds before powering on again.

• If any abnormality occurs during the use of the equipment, please find a professional to handle it.

• Please do not place or store this device in an environment where the temperature is higher than 70°C, otherwise it will cause damage to the device.

• How to identify the alarm sound: (A long beep indicates a system memory error; a short "beep" indicates a power-on sound).

• You can find the version "REV: XX" marked with this motherboard on the motherboard. Where XX is a number, such as "REV:1.0",

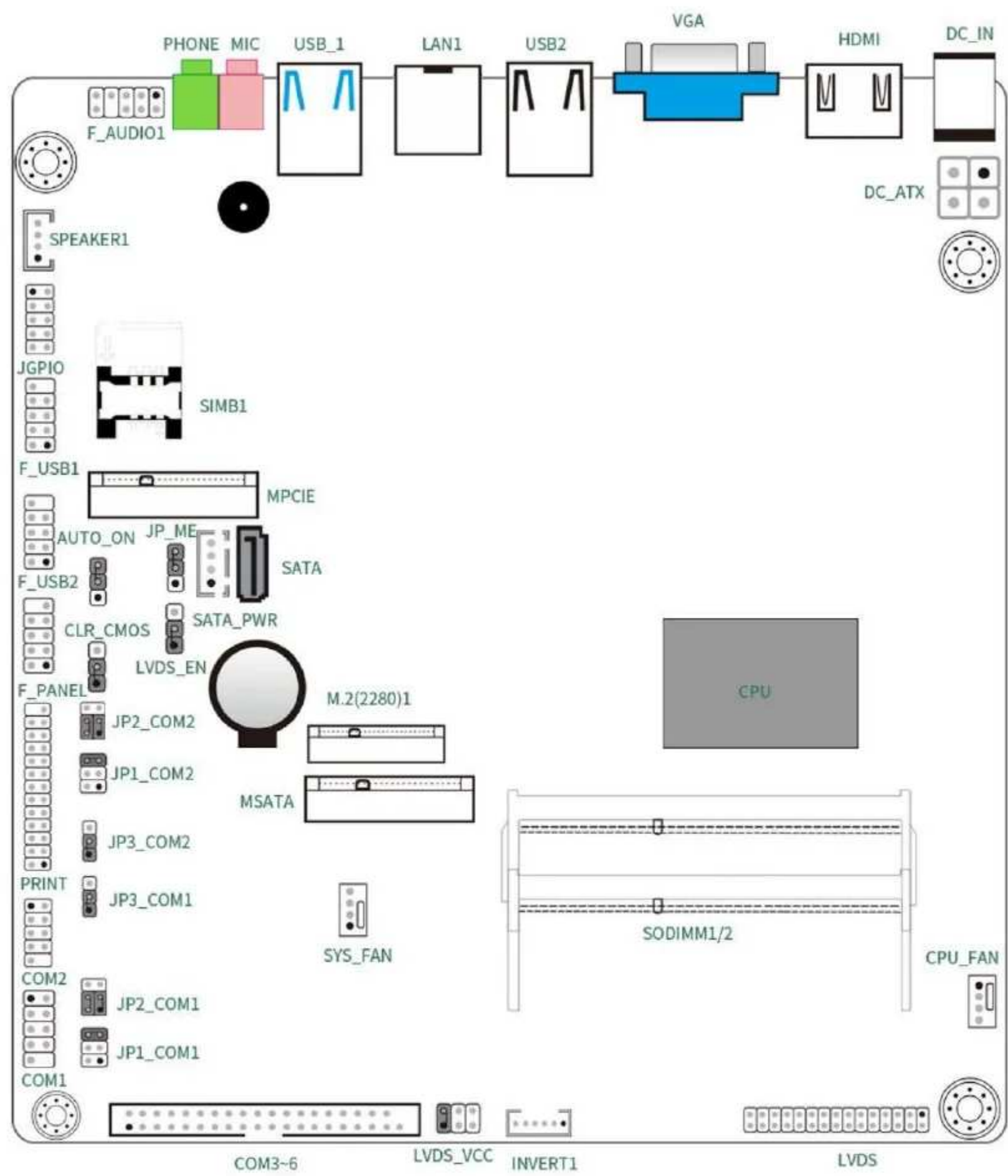
This means that the version of this motherboard is 1.0. When you want to update the motherboard's BIOS, drivers or refer to other technical data, please pay attention to the product

Version designation.

1.2 Motherboard specifications

System			
CPU	Onboard Intel® Core™ i5-1135G7 Processor, four cores and eight threads, maximum turbo frequency 4.20GHz, 8MB Intel® Smart Cache, TDP 28W processor.		
Memory	2 x DDR4 260PIN SO-DIMM slot (memory supports voltage 1.2V) Memory type DDR4-3200 Maximum support 64GB		
Storage function	1× SATA interface 1× M-SATA solid state drive interface 1× M.2 (2280) interface (only supports nVME mode)		
Expansion bus	1×MINI PCI-E interface		
Network function	onboard Realtek RTL8111H series Gigabit network card chip		
audio function	Onboard Realtek HD AUDIO CODEC supports 5.1 channels and supports HD Audio Support audio input and output		
Backboard I/O	1×DC_IN power interface 1× HDMI interface 1×VGA interface	1× double-layer USB3.0 interface 1× Double-layer USB2.0 interface 1× LAN interface	1×Mic (input) 1× PHONE (output)
Onboard I/O	1×DC power supply 4Pin interface 1×LVDS interface 1×EDP interface (optional) 1×LVDS_VCC power supply interface 1×Backlight power supply interface 1×printing interface	1×Front panel interface 2×COM interface(9pin) 1×2*20pinCOM interface (can 4 external COM interfaces) 1×7pin SATA connection 1×SATA power supply interface 1×JGPIO interface	2×USB pins (can connect 4 external USB2.0 interface) 1×Audio interface (F_AUDIO) 1×speaker socket (SPEKAER) 1×CPU fan power socket 1×SYS fan power socket 1×SIM card slot
Mechanical & Environmental			
Power supply	DC_IN 12V/19V	size	170mm x 170mm
Operating temperature	-20~55 ȳ	ambient temperature	5~90ȳ relative humidity, no condensation

1.3 Motherboard layout diagram



Note: Indicates the 1st PIN

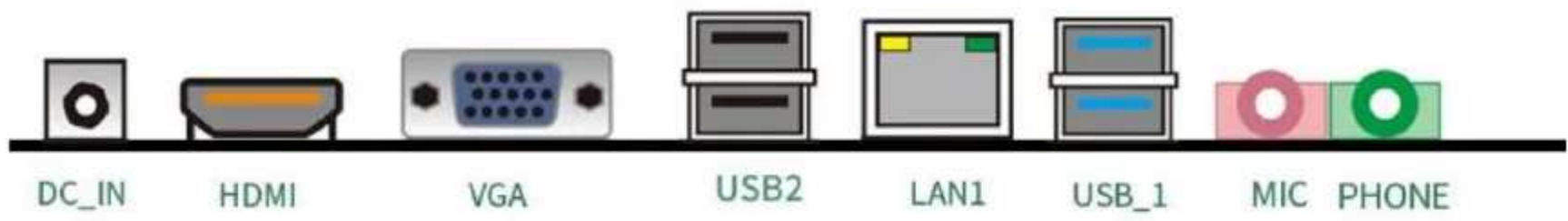
Motherboard pin description:

Observe the text mark next to the pin on the front of the motherboard. It will be represented by a triangle symbol, a bold line or "1", which is the first pin.

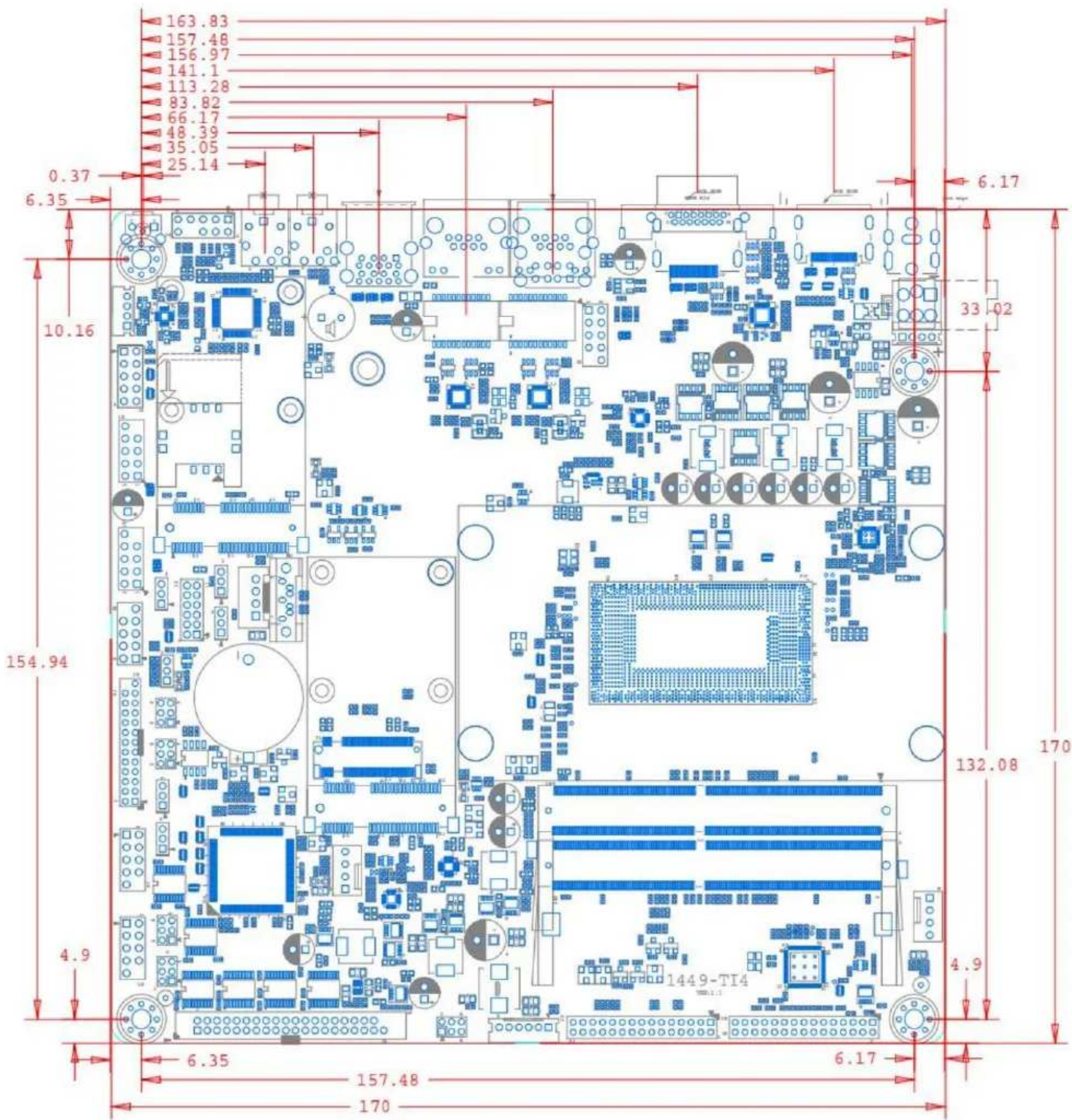
Look at the soldering pad on the back of the motherboard. The square soldering pad is the first pin. When plugging in the device and connecting cable, be careful to distinguish the first pin, otherwise the motherboard will be damaged.

and equipment.

1.4 Rear panel interface



1.5 Motherboard dimensions diagram



Part 2: Installation

Please follow the steps below to assemble your computer:

1. Refer to the user manual to adjust all Jumpers (jumper caps) on the motherboard correctly.
2. Install other expansion cards.
3. Connect all signal lines, cables, panel control lines and power supplies.
4. Start the computer and complete the BIOS program settings.

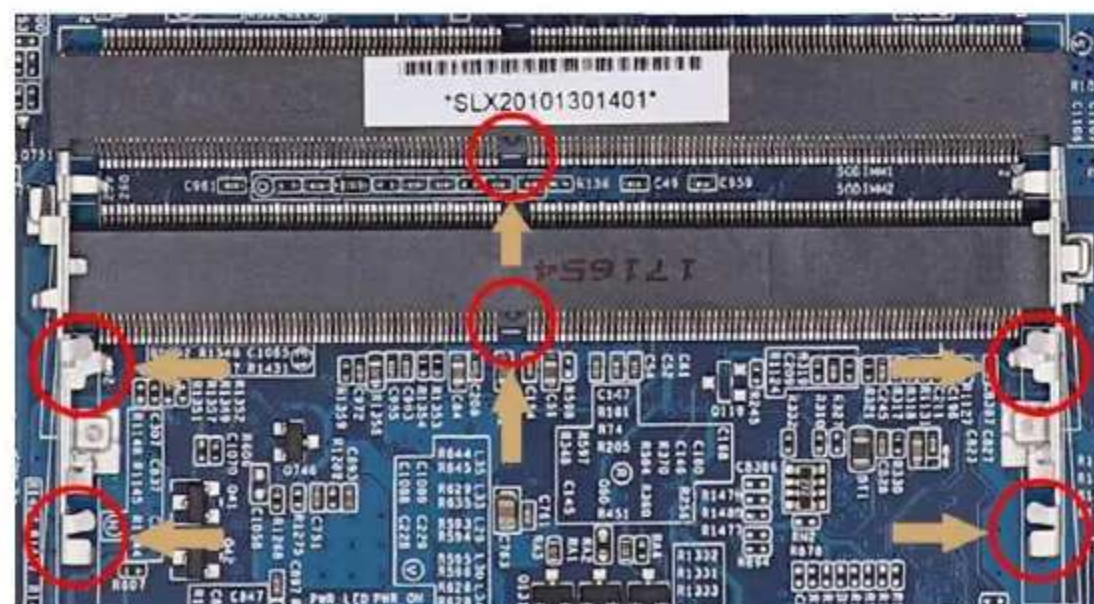
The key components of this motherboard are integrated circuits, and these components are easily damaged by static electricity. Therefore, please install the main

Before installing the board, please make the following preparations:

1. When holding the motherboard, hold the edge of the board and try not to touch the components and pins of plugs and sockets.
2. When touching integrated circuit components (such as CPU, RAM, etc.), it is best to wear anti-static bracelets/gloves.
3. Before the integrated circuit components are installed, the components need to be placed in an anti-static mat or anti-static bag.
4. After confirming that the power switch is in the off position, plug in the power plug again.

2.1 Memory installation

This motherboard is equipped with 2 SO-DIMM1/2 memory slots (DDR4). Please pay attention to the following two points when installing a memory module:



2.1.1 Memory installation

When installing memory, please gently hold both ends of the memory module with your thumb and index finger, align the memory socket and the anti-fool point on the slot, and insert it at an angle of 30 degrees.

Press down gently until you hear a "pop" sound and the memory module is inserted.

2.1.2 Memory removal

When removing the memory, use two fingers to push the latches at both ends of the slot outward, the memory will pop up, and then remove the memory.

2.2 Jumper function settings

Before installing hardware equipment, please set the corresponding jumpers according to your needs according to the table below.

Tip: How to identify the jumper and the first pin of the interface? Observe the text mark next to the plug and socket. There will be a triangle symbol or "1" or a bold line.

The bar indicates; look at the soldering pad on the back, the square soldering pad is pin 1, be careful to distinguish the first pin when plugging in the device and connecting cable, otherwise the motherboard will be damaged.

Notice:

You need to clear CMOS to solve the fault in the following situations: 1. When you forget the BIOS password. 2. The machine cannot start after overclocking fails.

hour.

2.2.1 CMOS content clear/keep settings (CLR_CMOS)

The CMOS is powered by an on-board coin cell battery. Clearing CMOS will permanently erase the previous system settings and set them to original (factory settings)

System settings.

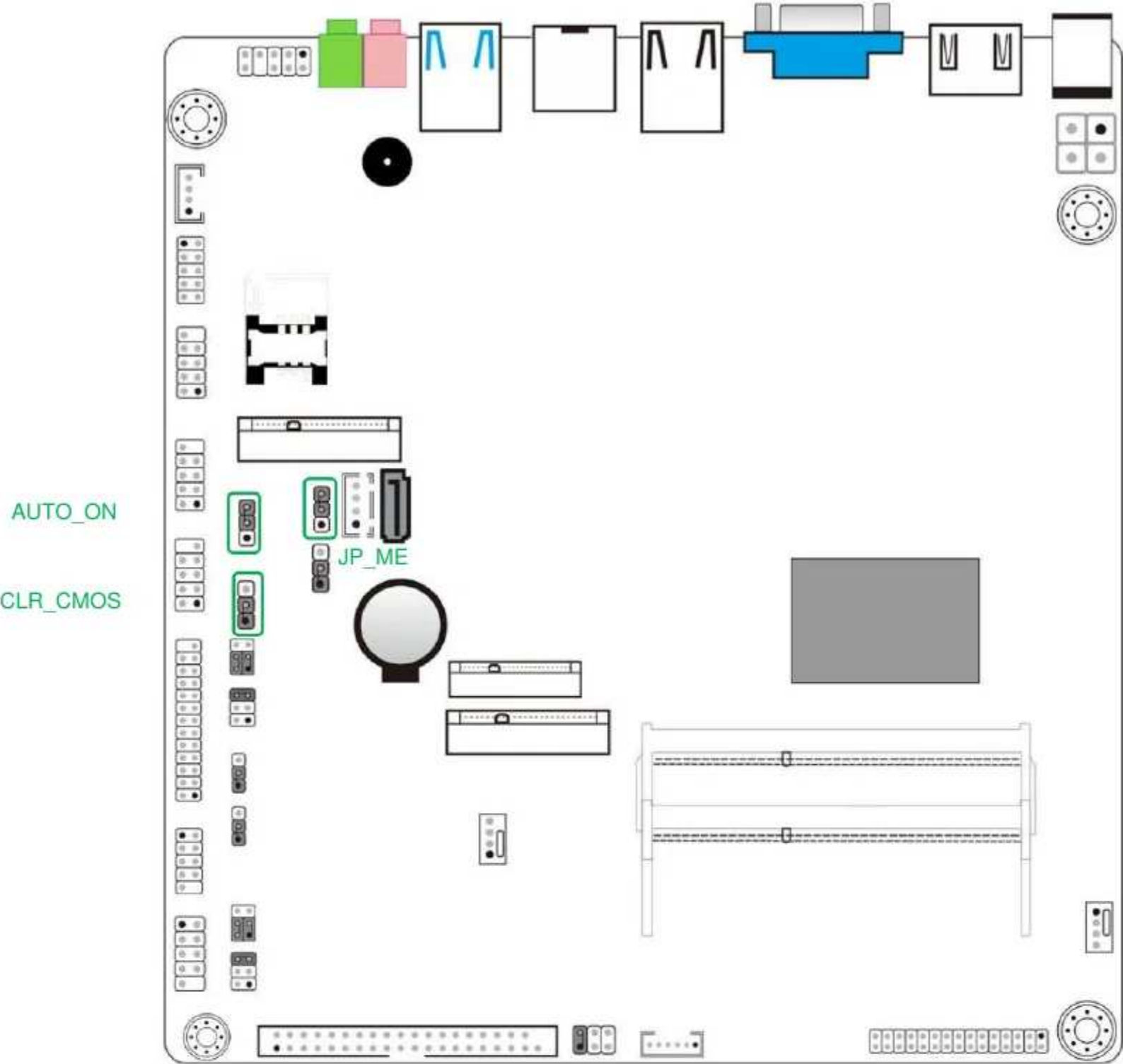
The steps are: (1) Turn off the computer and disconnect the power supply;

(2) Use a jumper cap to short-circuit the "CLR_CMOS" pin (2-3) for 5~6 seconds, and then return to (1-2);

(3) Turn on the computer and press the "Delete" key on the keyboard to enter the BIOS interface;

(4) Enter the BIOS interface and press the "F9" key - "Enter" to reload the optimal default value;

(5) Press F10 to save and exit settings.



CLR_CMOS (1×3-pin pitch 2.00mm)

PIN	definition
1-2	Normal working state (default)
2-3	Clear CMOS contents and set all BIOS to factory values

Note: Please do not clear CMOS when the computer is powered on to avoid damaging the motherboard!

2.2.2 AUTO_ON jumper setting (AUTO_ON)



AUTO_ON (1×3-pin pitch 2.00mm)

pin	definition
1-2	Automatically power on and start up
2-3	NORMAL (default)

2.2.3 ME write protection setting (JP_ME)



JP_ME (1×3 pin pitch 2.00mm)

pin	definition
1-2	closure
2-3	open (default)

2.3 Interface description

When connecting various external hardware devices, please pay attention to the following information:

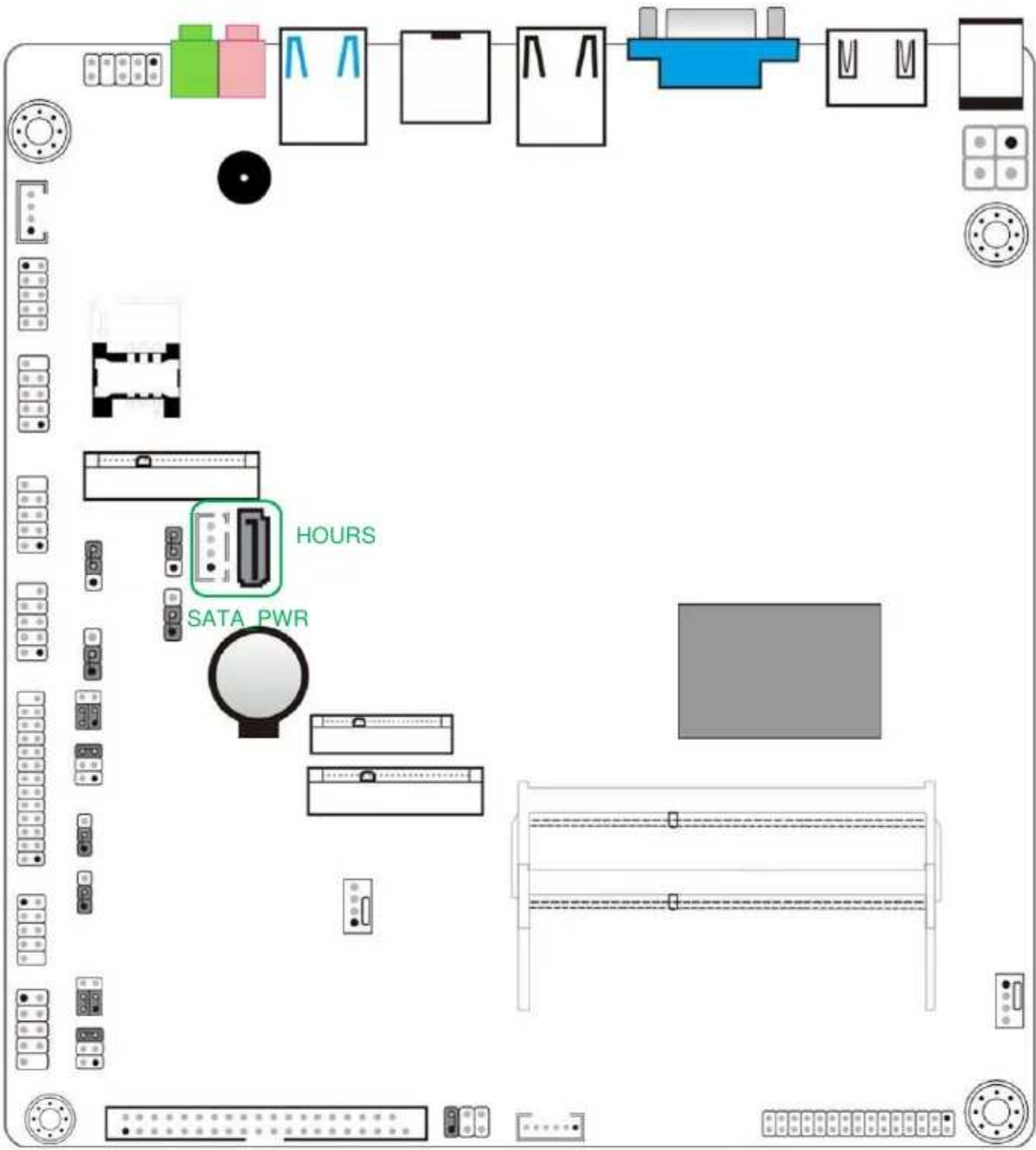
- Please first confirm that the specifications of the hardware device you are using match the socket to which you want to connect.
- Before installing various devices, be sure to turn off the power of the device and computer, and unplug the power cord from the socket to avoid causing damage to the device.

of damage.

- Before turning on the power after installing the device, please confirm again that the connector of the device is tightly connected to the socket.

2.3.1 SATA interface (SATA, SATA_PWR)

The board provides a 7-pin SATA interface and a 1×4-pin hard disk power supply voltage interface.



SATA_PWR (1×4-pin pitch 2.54mm with backrest)

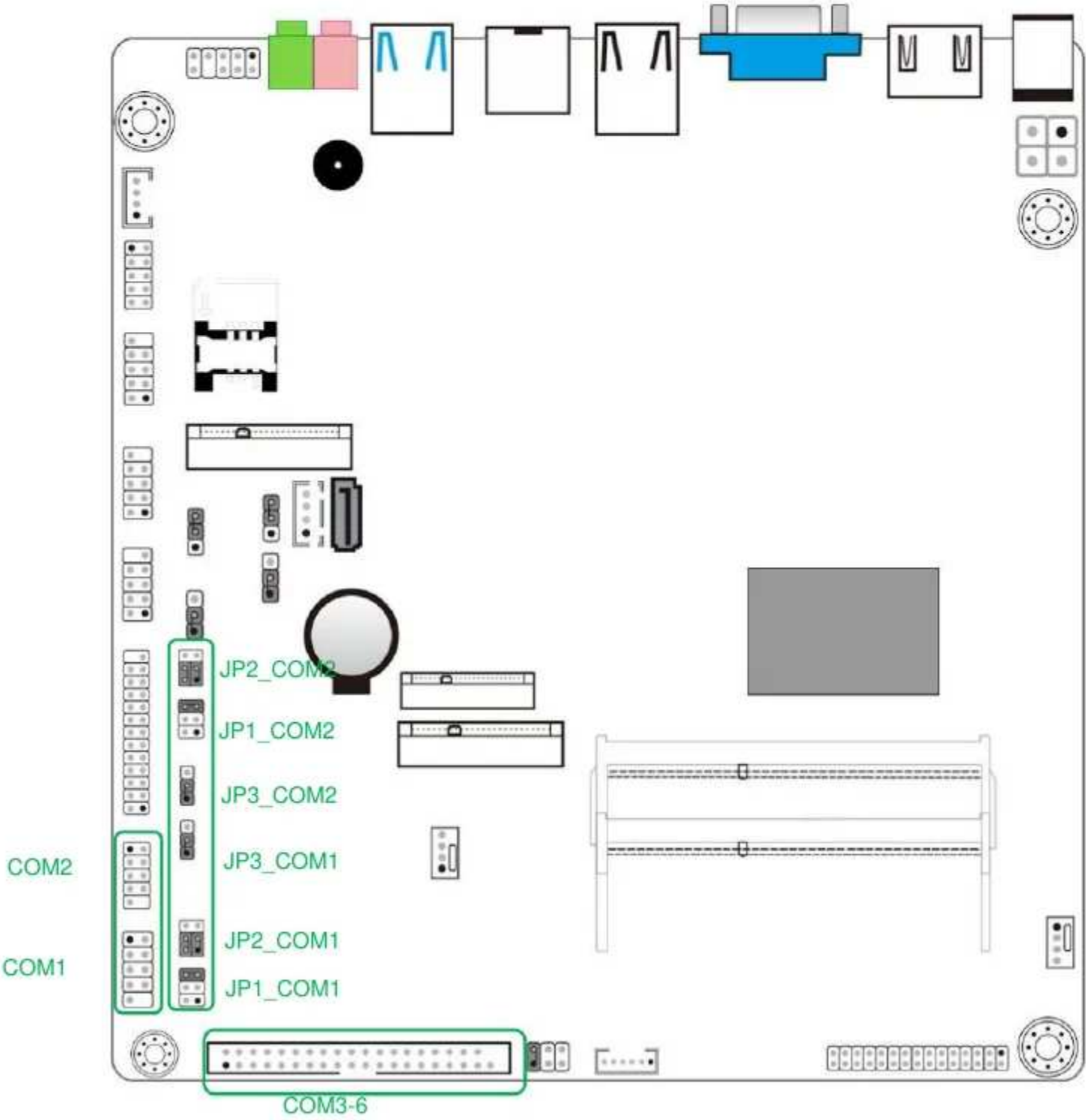
PIN	definition
1	+12V
2	GND
3	GND
4	+5V

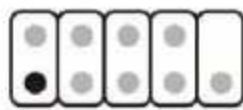
Tip: The 1st pin of the SATA_PWR hard disk power supply interface is +12V output, and the 4th pin is +5V output.

 HOURS	PIN	definition	PIN	definition
	1	GND	5	SATA_RXN
	2	SATA_TXP	6	SATA_RXP
	3	SATA_TXN	7	GND
	4	GND		

2.3.2 Serial port (COM1~COM6, JP1/2/3_COM1, JP1/2/3_COM2)

The motherboard can provide 6 COM serial interfaces, COM1 and COM2 are 9pin pins.





COM1, COM2 (2×5-pin pitch 2.54mm, 10th pin empty) RS232

PIN	definition	PIN	definition
1	DCD#	2	RXD
3	TXD	4	DTR#
5	GND	6	DSR#
7	RTS#	8	CTS#
9	RI#	10	N/A



COM1, COM2 (2×5-pin pitch 2.54mm, 10th pin empty) RS485

PIN	definition	PIN	definition
1	DATA-	2	DATA+
3	N/C	4	N/C
5	GND	6	N/C
7	N/C	8	N/C
9	N/C	10	N/C

COM3-6 (2x20-pin pitch 2.00mm, 40th pin, empty band outer surround)

	PIN	definition	PIN	definition
	1	DCD#	2	RXD
	3	TXD	4	DTR#
	5	GND	6	DSR#
	7	RTS#	8	CTS#
	9	RI#	10	N/A
	11	DCD#	12	RXD
	13	TXD	14	DTR#
	15	GND	16	DSR#
	17	RTS#	18	CTS#
	19	RI#	20	N/A
	21	DCD#	22	RXD
	23	TXD	24	DTR#
	25	GND	26	DSR#
	27	RTS#	28	CTS#
	29	RI#	30	N/A
	31	DCD#	32	RXD
	33	TXD	34	DTR#
	35	GND	36	DSR#
	37	RTS#	38	CTS#
	39	RI#	40	N/A



JP1_COM1, JP1_COM2 (2×3-pin pitch 2.00mm)

PIN	definition
1-2	+5V
3-4	+12V
5-6	RI (default)



JP2_COM1, JP2_COM2 (2×3-pin pitch 2.00mm)

definition	PIN
RS-232	1-3 2-4 (default)
RS-485	3-5 4-6

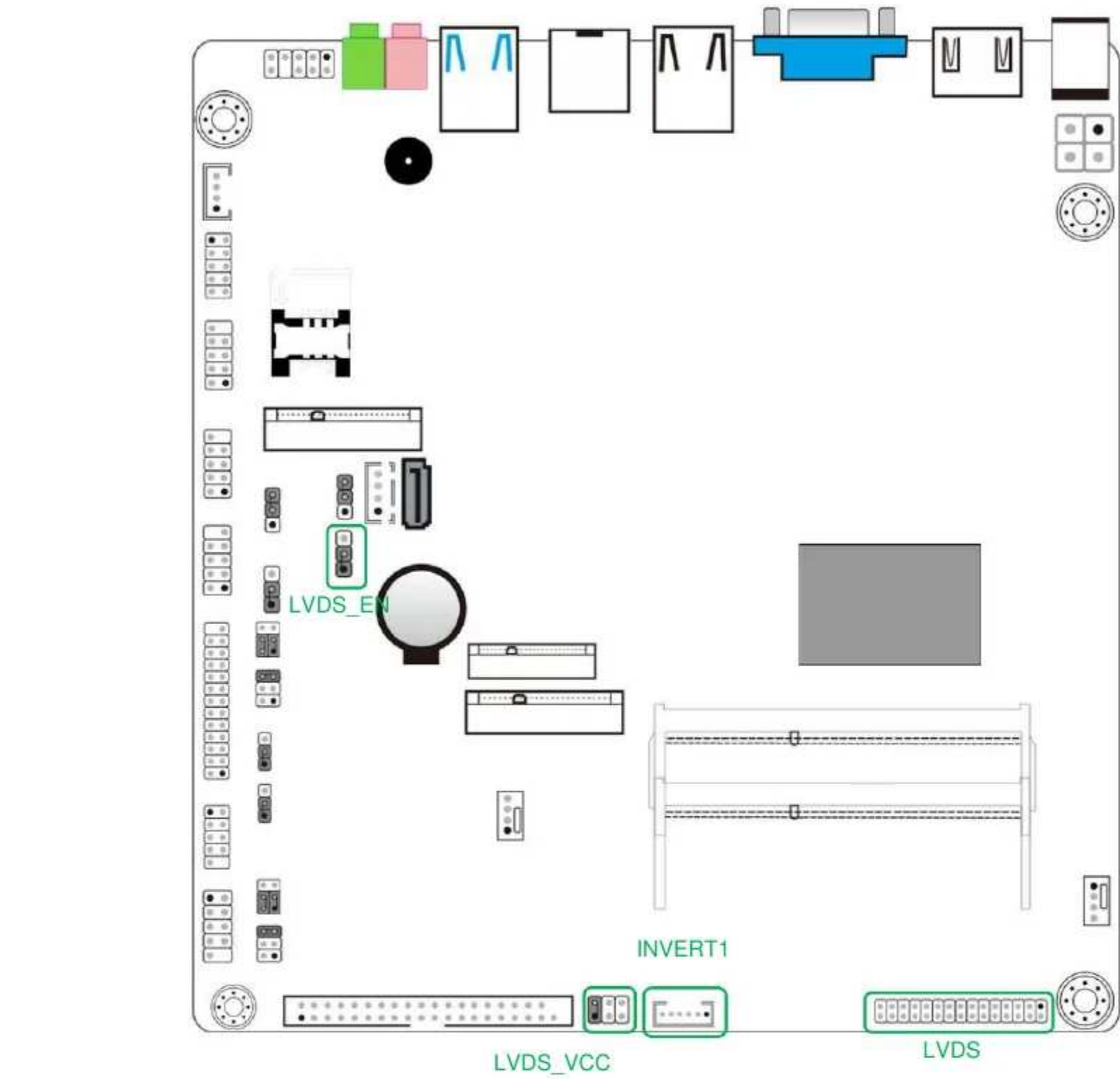


JP3_COM1, JP3_COM2 (1×3-pin pitch 2.00mm)

definition	PIN
RS-232	1-2 (default)
RS-485	2-3

2.3.4 Display interface (LVDS, LVDS_EN, LVDS_VCC, INVERT1)

The motherboard provides 1 LVDS slot, 1 LVDS power supply slot, and 1 LVDS backlight connector.



 LVDS_VCC (2x3-pin pitch 2.00mm)

PIN	definition
1-2	+3.3V (default setting)
3-4	+5V
5-6	+12V

Tip: The working voltage of LVDS screen supports 3.3V, 5V and 12V voltage output. The default is 3.3V. Please understand before using LVDS.

Set the required operating rated voltage.



LVDS_EN (2×3-pin pitch 2.00mm)

PIN	definition
1-2	OpenLVDS
2-3	Turn off LVDS

LVDS (2×15-pin pitch 2.00mm)



LVDS

PIN	definition	PIN	definition	PIN	definition
1	LCD_VCC	2	LCD_VCC	3	LCD_VCC
4	GND	5	GND	6	GND
7	LDC0N	8	LDC0P	9	LDC1N
10	LDC1P	11	LDC2N	12	LDC2P
13	GND	14	GND	15	CLK1N
16	CLK1P	17	LDC3N	18	LDC3P
19	LDC4N	20	LDC4P	21	LDC5N
22	LDC5P	23	LDC6N	24	LDC6P
25	GND	26	GND	27	CLK2N
28	CLK2P	29	LDC7N	30	LDC7P

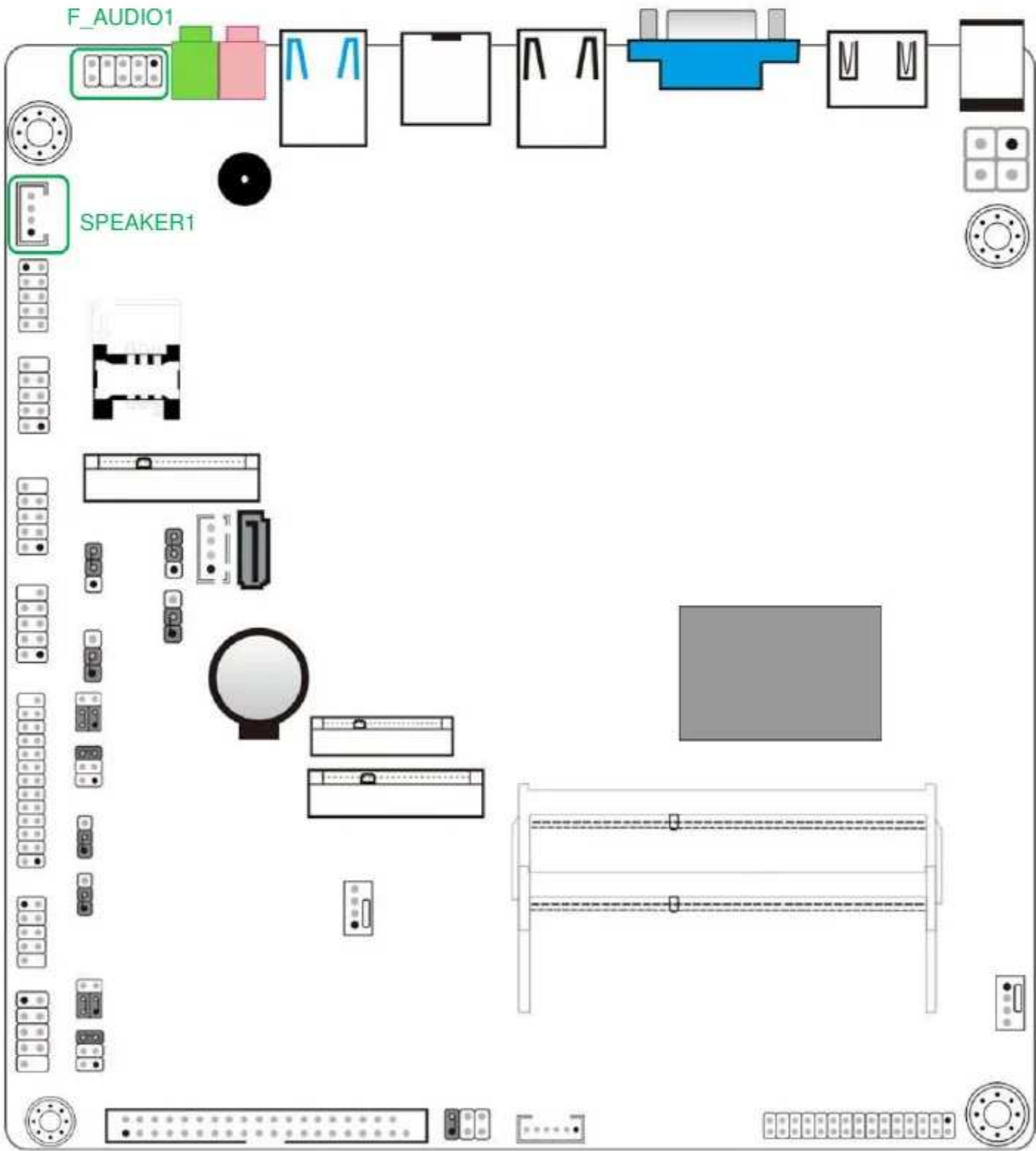


INVERT1 (1×6-pin pitch 2.00mm with outer surround)

PIN	definition
1	+12V
2	+12V
3	BACKLIGHT
4	BKLTCTL
5	GND
6	GND

2.3.5 Audio interface (F_AUDIO1, SPEAKER1)

The motherboard provides a front audio interface (F_AUDIO1) and a built-in speaker slot (SPEAKER1).





SPEAKER1 (1×4-pin pitch 2.00mm with outer surround)

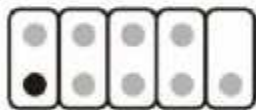
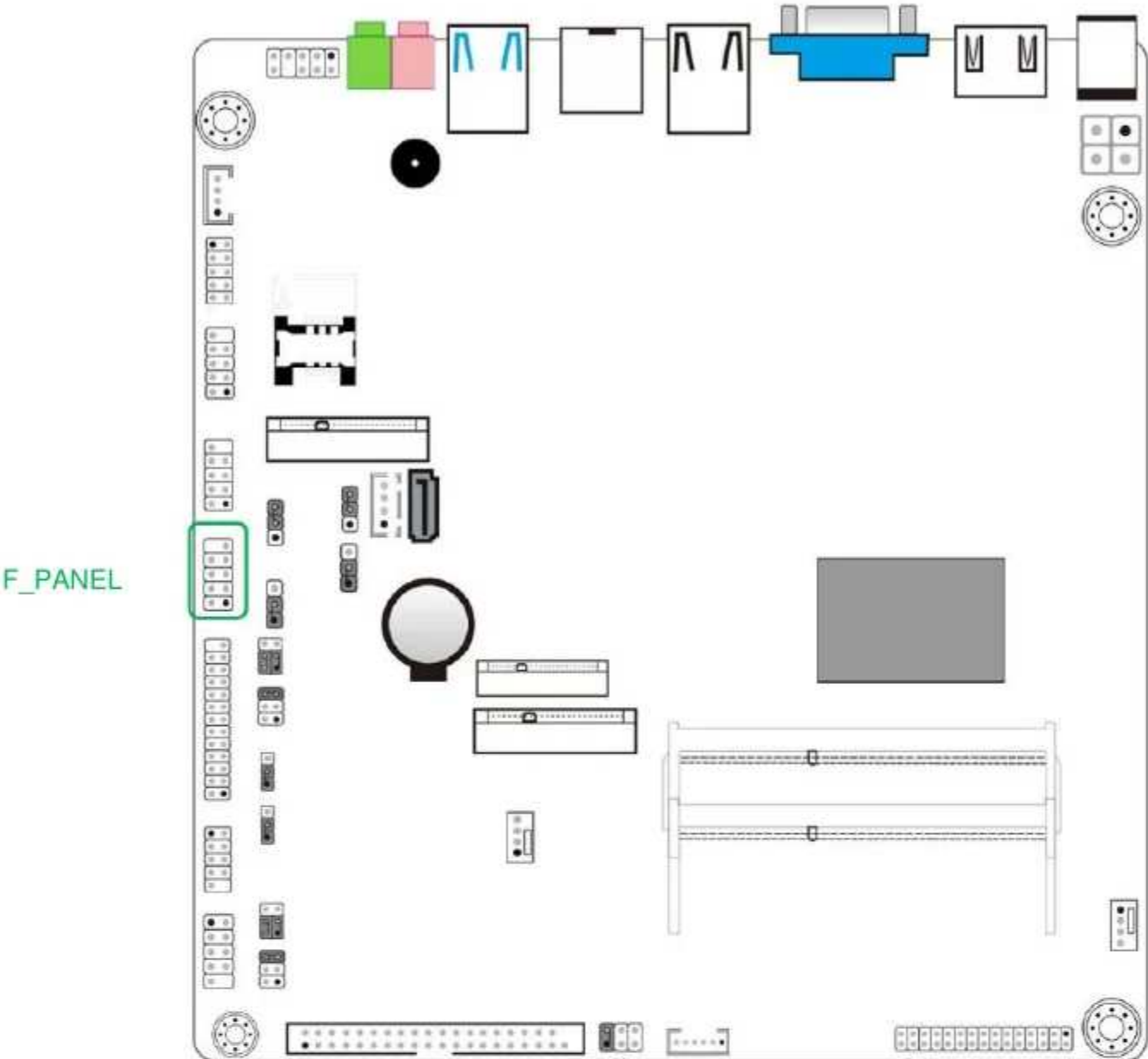
pin	definition
1	SPK_LN
2	SPK_LP
3	SPK_RN
4	SPK_RP

F_AUDIO1 (2×5-pin pitch 2.54mm, 8th pin empty)

 F_AUDIO1	PIN	definition	PIN	definition
	1	MIC2-R	2	GND
	3	MIC2-L	4	GND
	5	LINE2_R	6	MIC2_JD
	7	SENSEB	8	N/A
	9	LINE2_L	10	LINE2_JD

2.3.6 Front panel interface (F_PANEL)

The 9PIN header includes power on, reset, hard disk indicator lights, power indicator lights, and allows the user to connect the system's front panel switch functions.



F_PANEL (2×5-pin pitch 2.54mm, 10th pin empty)

PIN	definition	PIN	definition
1	HDD_LED +	2	PWR_LED+
3	HDD_LED -	4	GND
5	GND	6	GND
7	RESET	8	PWR_ON
9	GND	10	N/A

(1) Hard disk indicator light (pin 1 and 3 of HDD LED. Pin 1 is the positive pole of the LED). When the hard disk is performing read and write operations, the indicator light will flash.

Indicates that the hard disk is running.

(2) Power indicator light (Pin 2 and 4 POWERLED, pin 2 is the positive pole of the LED), when the system is powered on, the power indicator light is on;

When the system is powered off, the power indicator light goes out.

(3) Reset button (pins 5 and 7 RESET BUTTON) When the system fails and cannot continue to work, reset can make the system start working again.

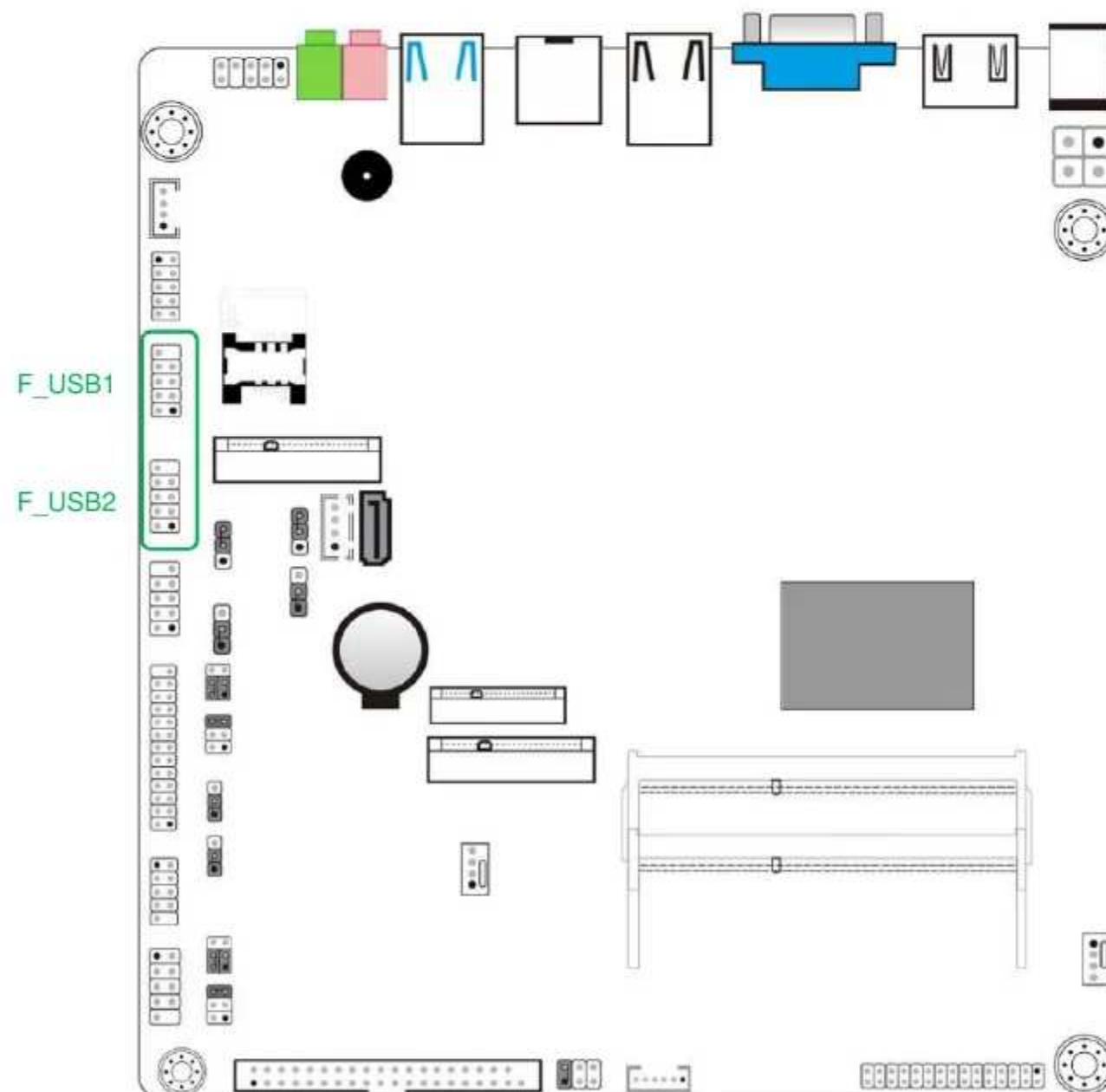
(4) Power switch control (pins 6 and 8 POWER BUTTON). These two pins are connected to the bounce switch on the front panel of the chassis. You can use

to switch the power on or off.

2.3.7 USB interface (F_USB1, F_USB2)

Before connecting the USB expansion shield, be sure to turn off the power of the computer and unplug the power cord from the socket to avoid damaging the USB expansion shield.

damage.





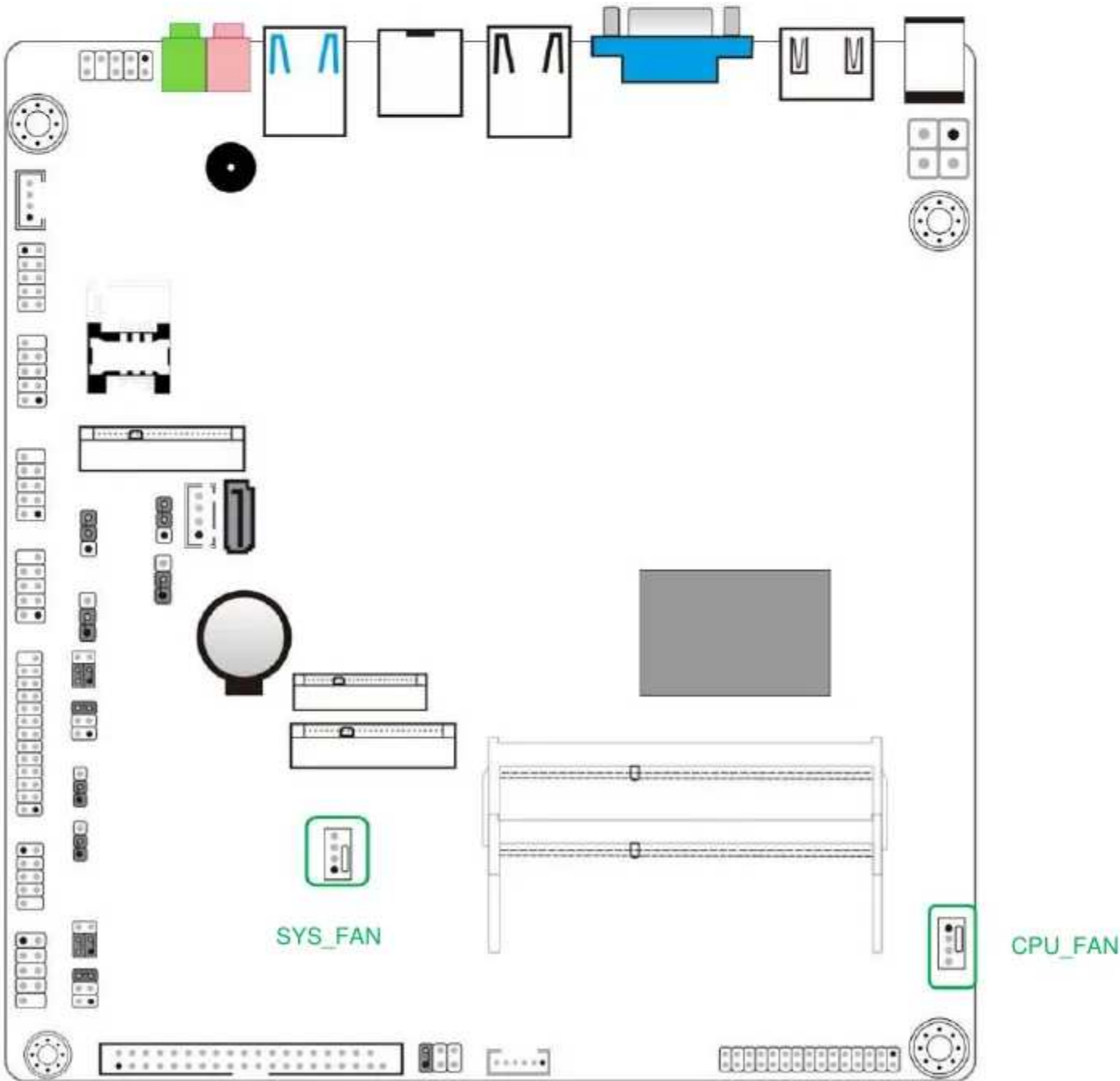
F_USB1, F_USB2, (2×5-pin pitch 2.54mm, 9th pin empty)

PIN	definition	PIN	definition
1	+5V	2	+5V
3	USB1_DATA-	4	USB2_DATA-
5	USB1_DATA+	6	USB2_DATA+
7	GND	8	GND
9	N/A	10	N/A

2.3.8 Fan interface (CPU_FAN, SYS_FAN)

The system cooling fan power socket of this motherboard is 1*4 pin, and the CPU cooling fan power socket is 1*4 pin. All power sockets have anti-fool features

Please pay attention to the direction when installing (the black wire is the ground wire).





CPU_FAN, SYS_FAN (1×4-pin pitch 2.54MM half back)

PIN	definition
1	GND
2	+12V
3	FAN_QUIET
4	FAN_PWM

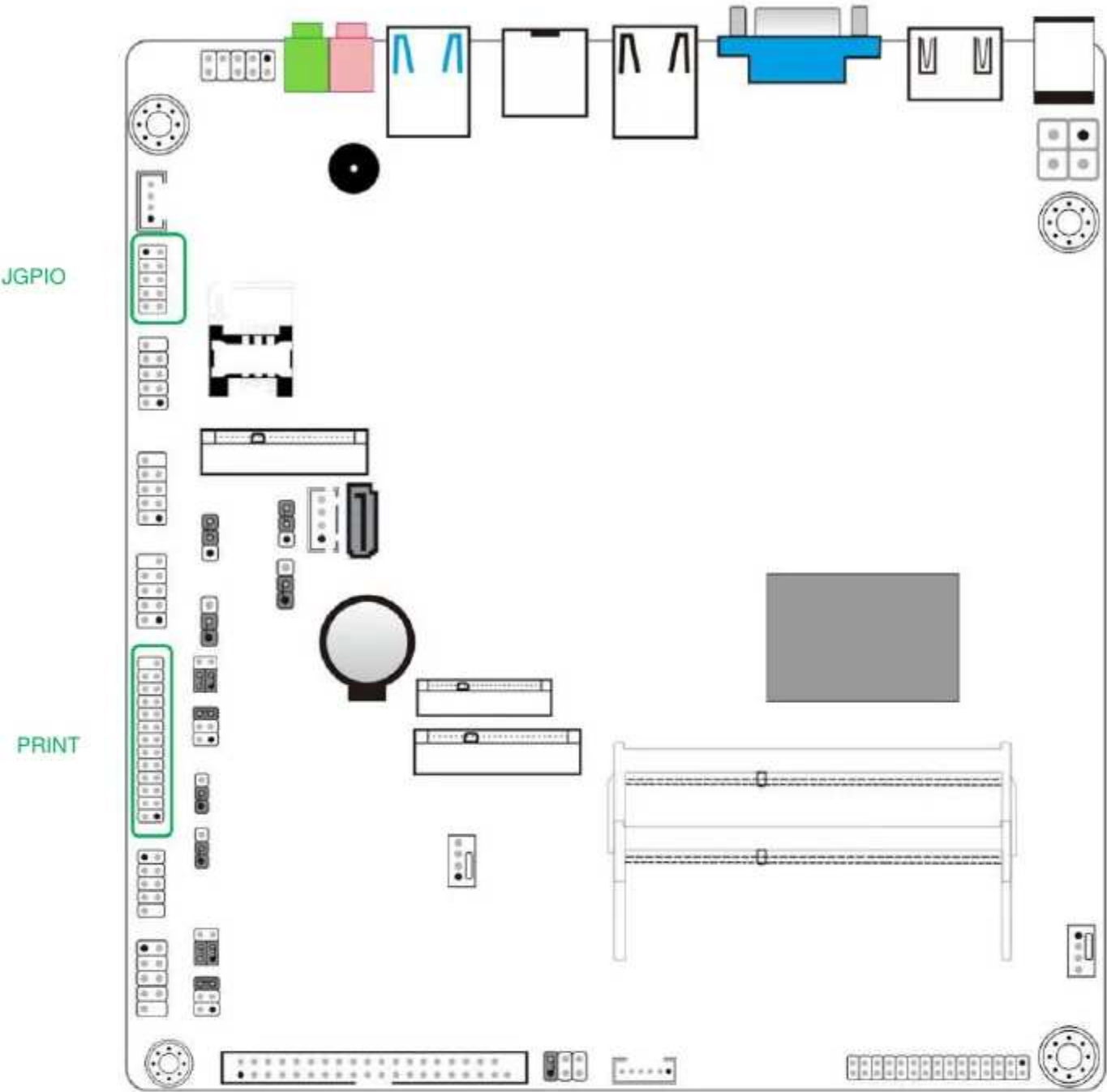
Be sure to connect the power socket of the cooling fan to prevent the CPU and system from being in an overheated working environment. If the temperature is too high, it may cause

The CPU is burned out or the system freezes.

These cooling fan power sockets are not jumpers. Do not place jumper caps on the pins.

2.3.9 Parallel port (PRINT)

The motherboard provides a PRINT printing interface.

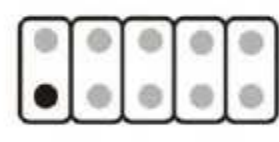


PRINT (2×13-pin pitch 2.54mm, 26th pin empty)

	PIN	definition	PIN	definition
	1	STB#	2	AFD#
	3	PD0	4	ERR#
	5	PD1	6	HEAT#
	7	PD2	8	MARL#

PRINT	9	PD3	10	GND
	11	PD4	12	GND
	13	PD5	14	GND
	15	PD6	16	GND
	17	PD7	18	GND
	19	ACK#	20	GND
	21	BUSY	22	GND
	23	ON	24	GND
	25	SLCT	26	N/A

2.3.10 Programmable input and output port (JGPIO)



JGPIO (2×5 pin pitch 2.54mm)

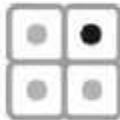
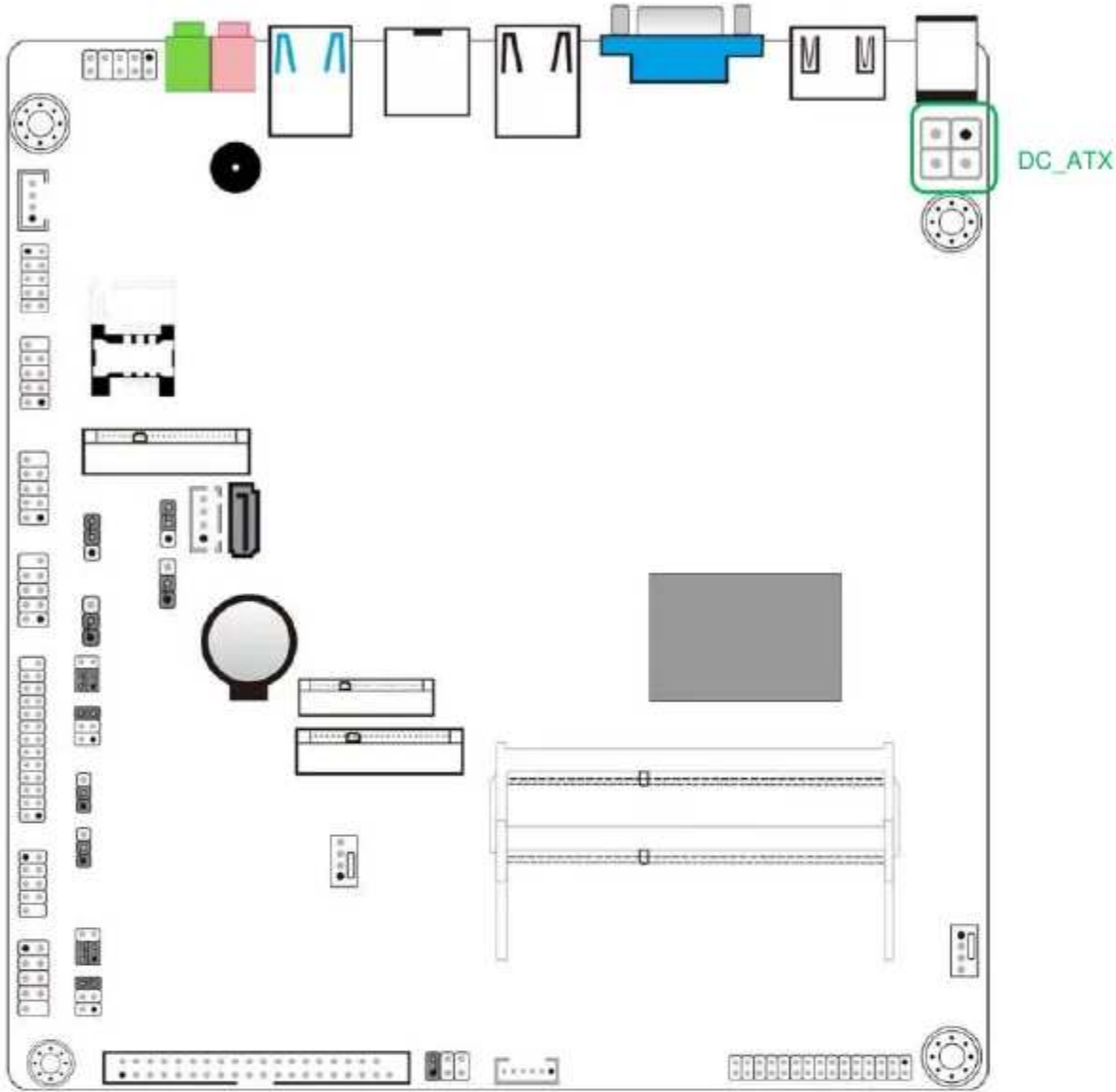
PIN	definition	PIN	definition
1	GND	2	VCC
3	GPO36	4	GPP_C8
5	GPO37	6	GPP_C9
7	GPO40	8	GPP_C10
9	GP54	10	GPP_C11

2.3.10 Power interface (DC power supply)

Through the power socket, the power supply can provide sufficient and stable power to all components on the motherboard. Before plugging into the power outlet, make sure

The power supply is turned off and all devices are installed correctly. The power socket has a fool-proof design. Just plug it in after confirming the correct direction.

Can.



DC_ATX (2×2-pin with transparent outer surround)

PIN	definition
1	GND
2	GND
3	+12V
4	+12V

Part 3: Common fault analysis and solutions

Common malfunctions	checking point
Does not turn on after power on	1. Please confirm whether the power cable is connected properly 2. Please confirm whether the power supply used meets the power supply requirements of the motherboard 3. Try to re-plug and unplug the memory module 4. Try to replace the memory module 5. Try to clear the motherboard CMOS according to the motherboard manual. 6. Please confirm whether there is an external card and whether it is normal after removing the external card.
VGA does not display after turning on the computer	1. Check whether the monitor is turned on 2. Check if the power cord is properly connected to the monitor and system unit 3. Check that the monitor cable is properly connected to the system unit and monitor 4. Check whether the display brightness control is set to dark state. You can increase the brightness through the brightness control. For more information, please refer to the Monitor operating instructions 5. The monitor is in "power saving" mode.
BIOS Setup settings cannot be saved	1. Please confirm whether the CMOS battery voltage is lower than 2.8V. If it is lower than 2.8V, please replace it with a new battery, reset and save. 2. The BIOS settings are incorrect. Adjust the time and date in the BIOS Setup according to the key (DEL) prompted on the startup screen.
Prompt cannot find bootable equipment	1. Please confirm whether the hard disk power cable and data cable are connected properly. 2. Please confirm whether the hard disk is physically damaged 3. Please confirm whether the operating system is properly installed on the hard disk.
Blue screen when entering the system or crash	1. Please confirm whether the memory module and external card are loose 2. Try to remove the newly installed hardware and uninstall the driver or software 3. Try to replace the memory
Slow entry into operating system	1. Try to use third-party software to check whether the hard disk has bad sectors. 2. Please confirm whether the remaining space of the partition where the system is located is too small. 3. Please confirm whether the CPU cooling fan is rotating normally.
System automatically restarts	1. Please confirm whether the CPU cooling fan is rotating normally 2. Please confirm whether the reset button of the industrial computer is accidentally triggered. 3. Please use anti-virus software to confirm whether the system is infected with viruses. 4. Please confirm whether the memory module and external card are loose 5. Please confirm whether the load capacity of the power supply used is sufficient. You can try to replace the power supply.
USB device cannot be detected	1. Please confirm whether the USB device requires separate power supply 2. Please confirm whether there is poor contact in the USB interface 3. Please confirm whether the USB controller is turned on in BIOS Setup.