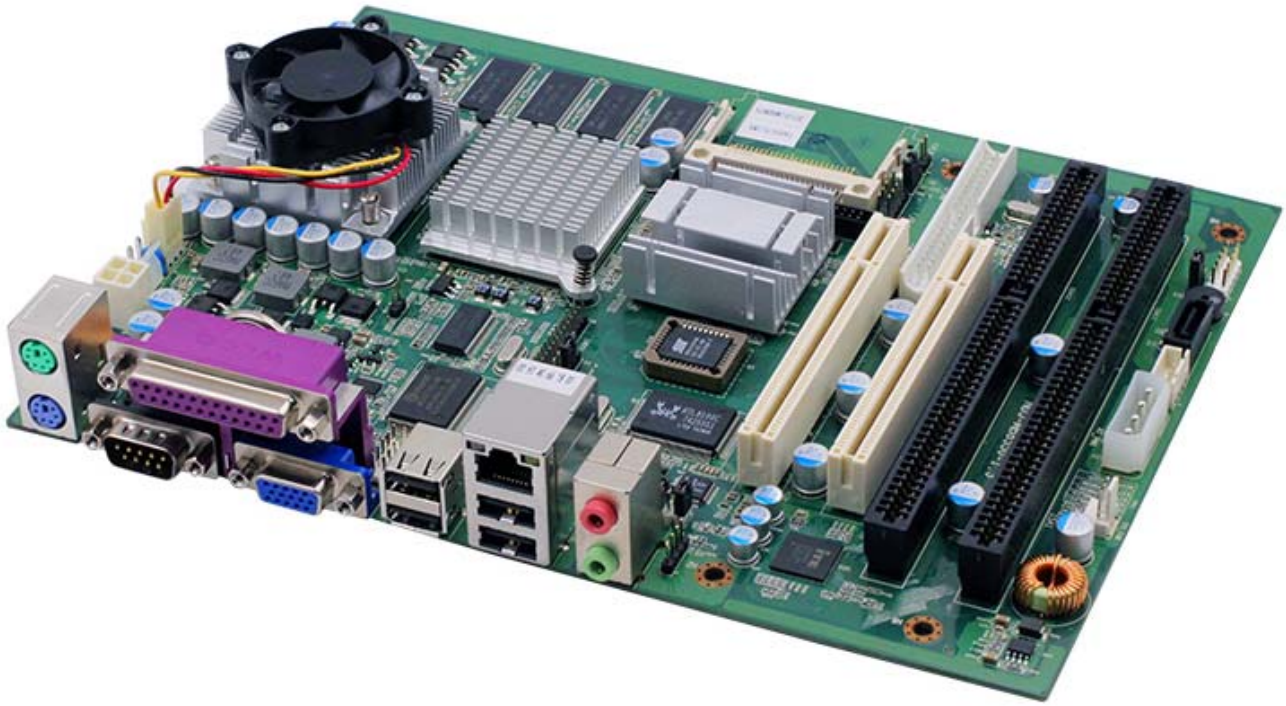
ISA855 Motherboard

（PCB Rev:1.00）
Manual Version 1.00
2012.03.16



1 Introduction

The ISA855 is a low-power, single 12V power board with an Intel 855GM chipset with the following key features.
1.1 Key features
1.1.1 CPU: Celeron M or Pentium M, FPGA479 or board.
1.1.2 memory, onboard 512MB or 256MB.
1.1.3 Northbridge is available at Intel 855GM/852GM, and Southbridge ICH4M/ICH4.
1.1.4 The chipset integrates the VGA card (CRT DB15 interface).
1.1.5 Supports storage for CF, IDE-44, IDE-40, SATA multiple interfaces.
1.1.6 Supports 2 RS232 serial ports.
1.1.7 supports 1 x 100M LAN.
1.1.8 supports 6 USB ports.
1.1.9 Support for AC97.
1.1.10 Support parallel.
1.1.11 Support s/2.
1.1.12 Supports dual-channel 24-bit LVDS screens (options).

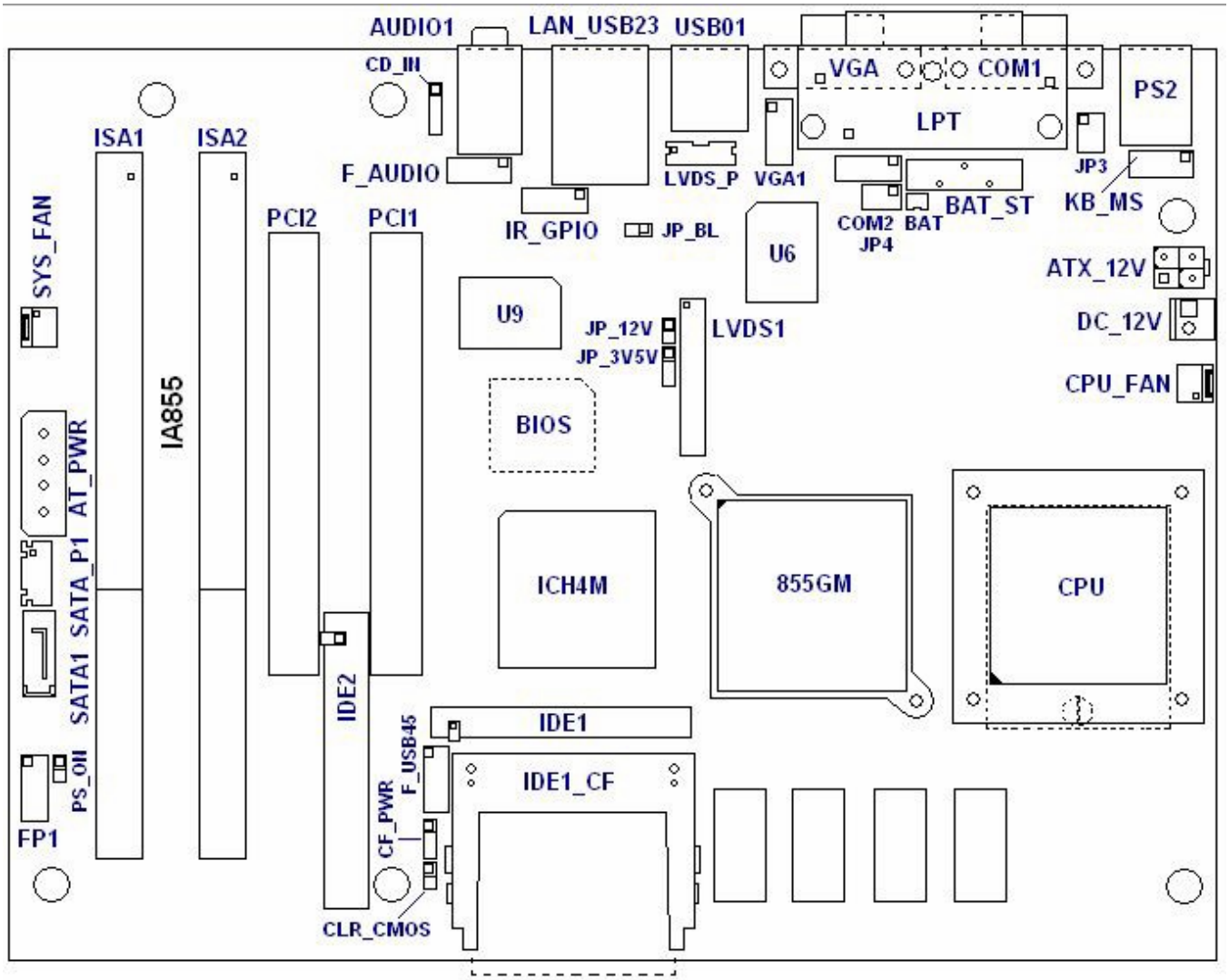
1.2 Power
Single input DC power supply, DC12V(+/-5%), which can be ATX switch mode or automatic boot mode.
Input power supply voltage directly affects 12V of power supply output from motherboard, and the input voltage deviation is large, which will endanger the hard disk and plug-in card that take electricity from motherboard.

1.3 Structure
240 x 180 mm

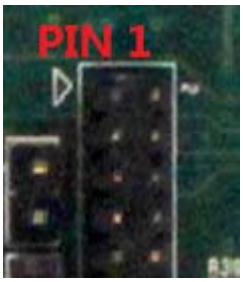
1.4 Working environment
Motherboard operating temperature: -10C to +60C
Motherboard storage temperature: -40C to +85C

2 ISA855 Front Interface Layout

The TOP layer layout is shown in the following image.



Note: The interface in the figure, Triangle to the pin is Pin 1.
Refer to t the following picture

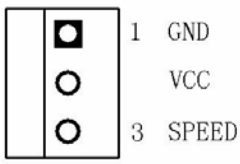


2.1 ATX_12V 和 DC_12V

All are the motherboard DC12V power input interface, optional one interface as input power.
The ATX-12V interface is the ATX12V definition of a standard ATX power supply, and the DC-12V interface Pin1 is 12V power.
This product is special design, input power supply counter-motherboard can be automatically protected, but can not protect high voltage.

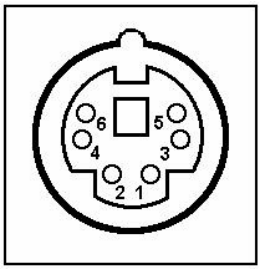
2.2 CPU_FAN、SYS_FAN

All are FAN interfaces that support a maximum current of 0.3A, as defined below.

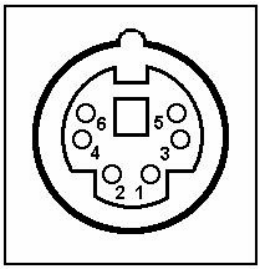


2.3 PS2 and KB_MS interface

PS/2 is standard mini DIN double socket with PS/2 Mouse interface on top and Keyboard interface on lower level
The definition is as follows:



PS/2 Moue



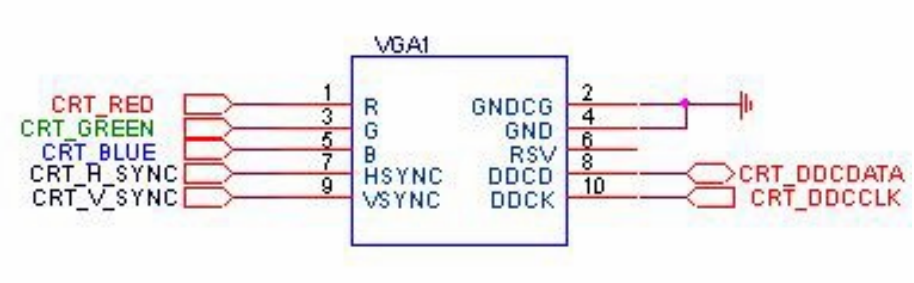
PS/2 Keyboard

Up	Signal
1	Mouse Data
3	Ground
4	5V
5	Mouse Clock
2, 6	NC
Down	Signal
1	Keyboard Data
3	Ground
4	5V
5	Keyboard Clock
2, 6	NC

KB-MS is the 2x5-2.54mm pin interface of PS/MS, which is parallel to PS/2 and cannot be plugged into the PS/2 device at the same time.

2.4 VGA and VGA1

The VGA is the display standard DB15F RGB interface.
VGA1 is a 2x5-2.54mm pin interface that cannot be connected at the same time.



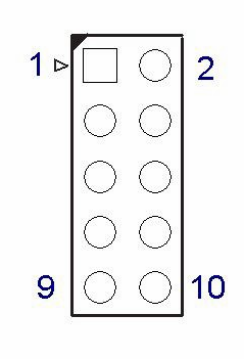
2.5 COM1 and JP3

COM1 is the standard DB9M RS232 serial port, and the Pin9 is available in RI, +5V and +12V.
JP3 selects as com1 and JP4 selects as com2 the Pin9 definition as following:

JP3、JP4	function
1-2	DB9M Pin9 as RI-signal（default）。
3-4	DB9M Pin9 as +5V power。
5-6	DB9M Pin9 as +12V power。

2.6 COM2 and JP4

COM2 is RS232 2x5_2.54mm pin interface，definition as following:



Pins	Signal
	COM3
	RS-232
1	DCD
2	RXD
3	TXD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	JP4 optional
10	NC

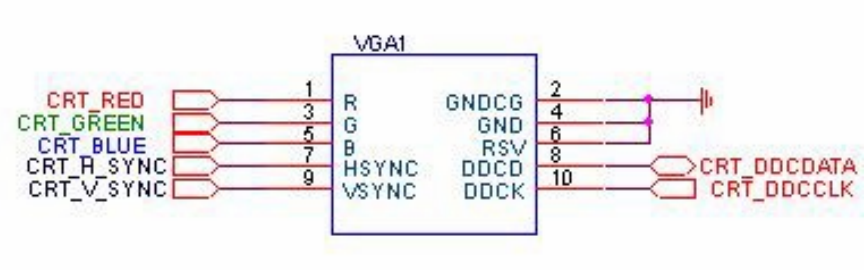
JP4 selected as COM2 the Pin9 definition refer to 2.5。

2.7 LPT

LPT is the standard DB25 parallel interface that can be used directly to LPT devices.

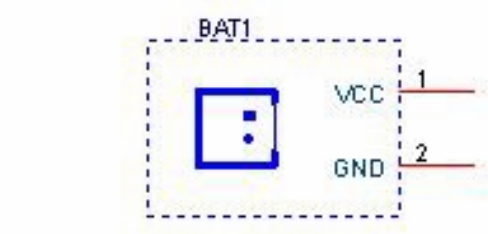
2.8 VGA and VGA1

The VGA is the standard CRT display output interface, the DB15F interface.
VGA1 is a 2x5, 2mm pin interface that cannot be connected at the same time.



2.9 BAT_ST and BAT

BAT-ST is a universal battery holder with direct battery insertion (type 2032). BAT is the Wafer battery connector for easy battery replacement.
CJT A1251WV-2P interface or It is compatible with interfaces.



2.10 USB01

USB01 is a standard USB Type A interface that supports two USB 2.0 devices.

2.11 LAN_USB23

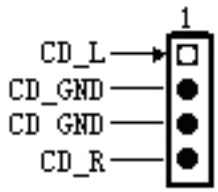
2 USB and 10/100M LAN standard RJ45 combination interface, the master chip is Realtek RTL8100C. Below the RJ45 are 2 USB 2.0 A Type connectors.

2.12 AUDIO1

Standard audio interface with LINE-OUT audio output and MIC-IN audio input.

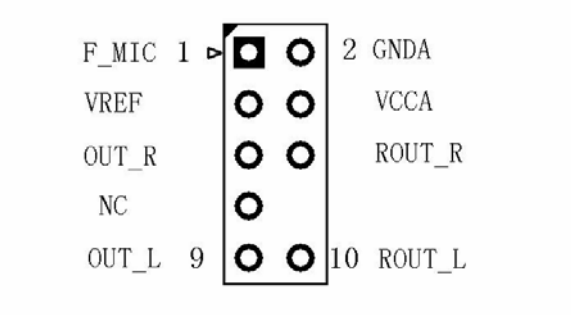
2.13 CD_IN （optional）

CD-IN signal interface, with 1x4-2.54mm pin, optional interface.



2.14 F_AUDIO

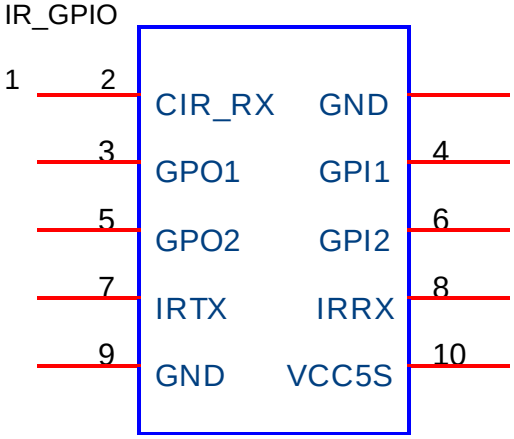
Audio connection pin for 2x5-2.54mm pin, user-made with dedicated audio transfer cable with motherboard to connect the audio device
Pin1 to 4 is the front panel MIC interface, and Pin5, 9 is the front panel headset or speaker to play sound.
If the front panel headset or speaker is not connected, the jumper cap is shorted with the Pin 5, 6 and Pin9 and 10 respectively.
Note: Some batch products, in response to customer requirements, front and rear panel severance, do not need to add jumpers.



2.15 IR_GPIO

The motherboard reserves four GPIO and IR interfaces for user selection, as defined below.
Pin1 is a CIR-RX backup signal ;Pin10 is 5V Standby power;
Pin1, 9 is the ground; Pin7, 8 is infrared to send and receive signals;
Pin3 (GPO1), from ICH4/4M GPO25;
Pin5 (GPO2), from ICH4/4M GPO27;
Pin4 (GPI1), from ICH4/4M GPI18;
Pin6 (GPI2), from ICH4/4M GPI25;

IR_GPIO



Header_2X5
HEADER2X5_100_TH

2.16 LVDS_P and JP_BL（optional）

JP-BL is the LVDS backlight brightness adjustment method to select jumpers:
"Closed" means DC mode (default setting);
"On" indicates the PWM mode.
The LVDS-P is the LVDS screen backlit panel interface, with CJT A2001WR-6P-1 connectors or other compatible connectors, with pins defined below.

LVDS_P	LVDS_P definition
1	Ground
2	Ground
3	Backlight brightness control
4	Backlit plate on
5	12V
6	12V

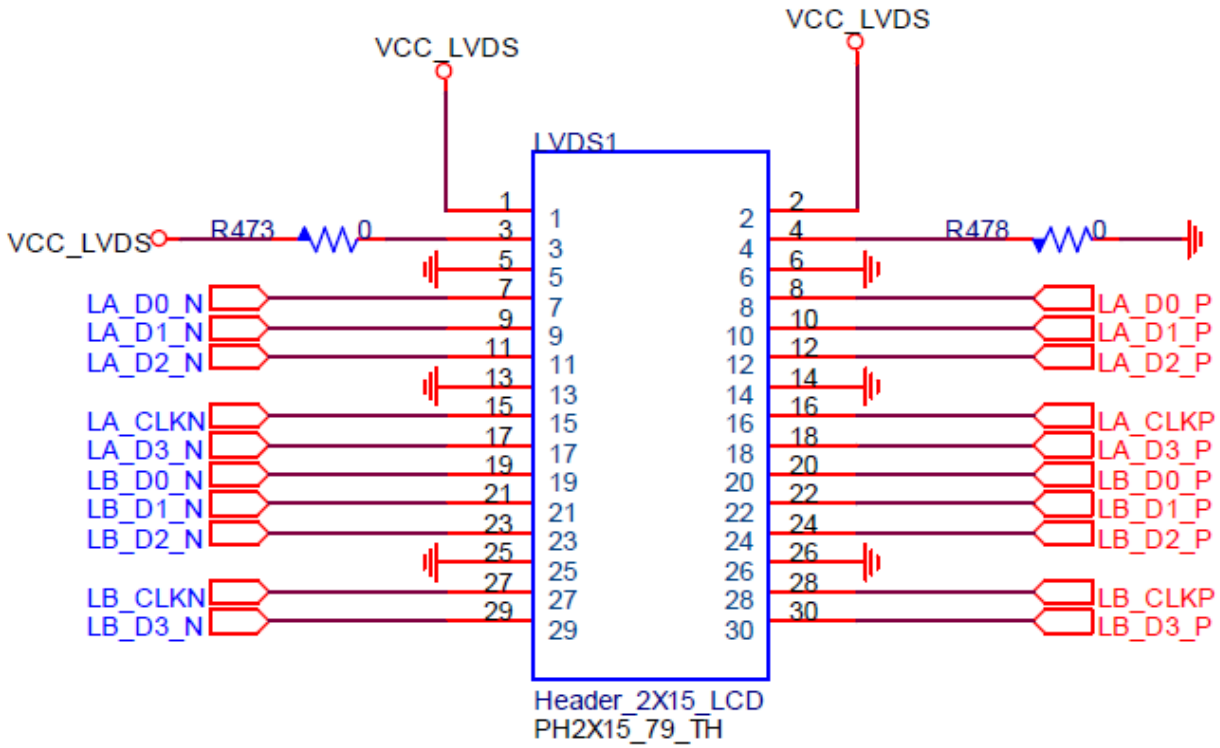
2.17 JP_3V5V 与 JP_12V（optional）

LVDS screen power selection jumper with 1x3 and 1x2 pin interfaces

Jump cap (only one on)	VCC_LVDS voltage
JP_3V5V （1-2）	3.3V（default）
JP_3V5V （2-3）	5V
JP_12V （Close）	12V

2.18 LVDS1（optional）

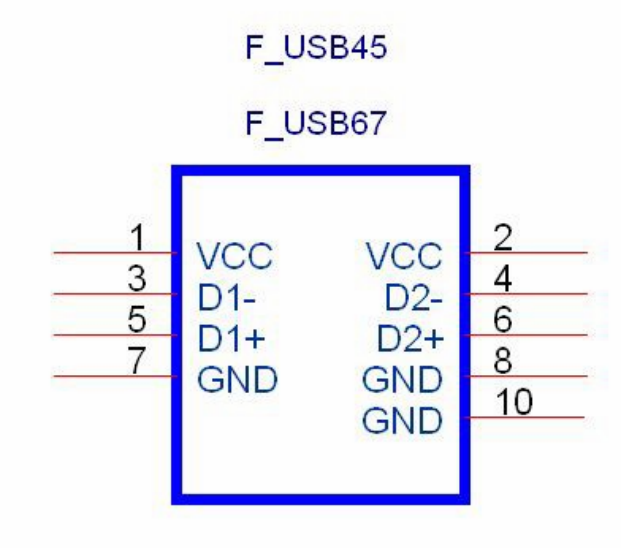
The two-channel LVDS (48-bit) interface is defined as follows, and a single-channel LVDS screen does not require an LB group signal to be connected.
The LVDS screen power selection see 2.17 items.



Note: Whether the support for the 48-bit screen is determined by the actual hardware and the BIOS.

2.19 F_USB45

USB pin connector, support for USB 1.0/1.1/2.0 devices.
The 2x5-2.54mm pin interface is defined as follows.



2.20 CLR-CMOS

the pin used for clearing CMOS, the normal operation is OPEN state.

2.21 IDE1

IDE1 is a standard IDE-44 socket, and when the IDE1-CF socket is not plugged in, the IDE-44 can be connected to two IDE sets
when CF plugs in a device, the IDE-44 can only be connected to one IDE device and must be set up from Slave.

2.22 IDE1-CF

IDE1-CF is the standard CF card holder on IDE1 Bus, supporting Type I ,Type II model CF cards. When you insert a CF card, CF is the Master device.

2.23 CF_PWR（optional）

The CF card power source selection is determined by the jumper CF-PWR, and some of the boards have fixed the CF card supply voltage, and no longer add a jumper.

CF_PWR	CF work voltage
1-2	3.3V（default）
2-3	5V

2.24 IDE2

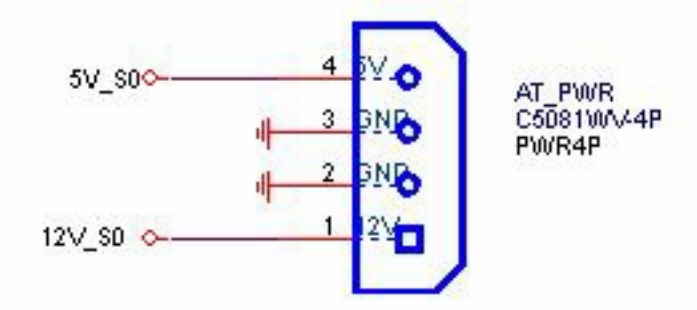
DE2 is the standard IDE 40 Pin interface with 3.5" HDD and 5.25" CD-ROM and up to Two IDE devices. When SATA1 is plugged in, IDE2 can plug only one IDE device and must be set in Master.

2.25 SATA1

Standard SATA hard drive interface.

2.26 AT_PWR

The at-PWR motherboard output power interface provides power to the hard disk, as defined below.

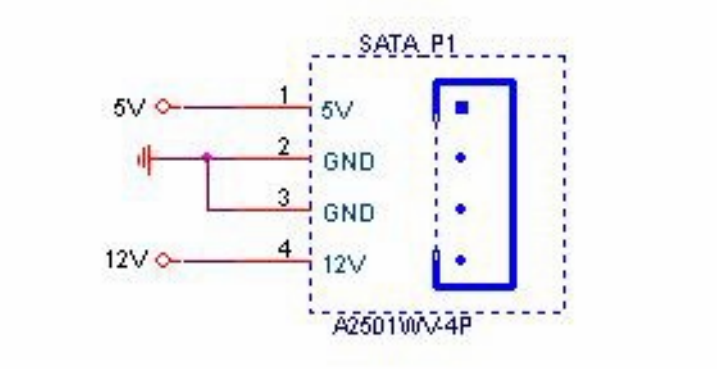


2.27 SATA_P1

The mainboard power supplier interface which can be supplied to the hard disk, as set in the following diagram.

Available for CJT A2501WV-4P devices or other compatible devices.

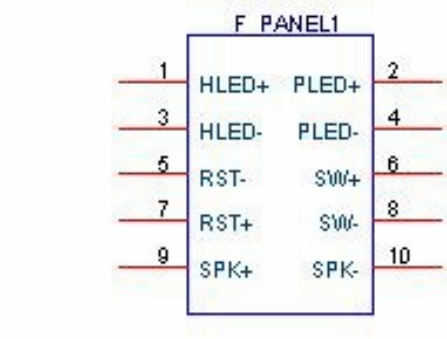
The definition is as follows.



2.28 FP1

Front panel control interface, with 2x5-2.54mm pin, integrated HDD-LED, PWR-LED, power on Switch, reset switch, SPEAKER function.

The pins are defined below.



FP1	definition
1，3	The hard drive read and write indicator positive and negative signal pins.
2，4	The main power LED is positive and negative signal pins.
5，7	The motherboard reset signal positive and negative signal pins.
6，8	The motherboard switcher signal is positive and negative signal pins.
9，10	The backup buzzer interface.

2.29 PS_ON

AT power on mode select jumper, select Close, the DC power on, the motherboard on power.

PS_ON	boot mode selection
Close	AT power Power-on mode
Open	ATX Power-on mode

2.30 PCI1、PCI2

Standard PCI Slot, supporting PCI Spec 2.20.

2.31 ISA1、ISA2

Standard ISA Slot, is not supported for ISA graphics cards.

2.32 BIOS（U5）

The PLCC32 package BIOS is available, and some products bios are attached directly to the motherboard.

2.33 CPU（U2）

With the FPGA479 CPU socket, some of the product CPUs are attached directly to the motherboard.