

TouchFly

# TouchFly Product Specification

## Motherboard Series

CX10U01 Intel I5-10210U

V1.1

# Chapter One

## Product Description

### 1.1 Application scenario:

- ◆Advertising machine ◆Digital signage ◆Intelligent self-service terminal
- ◆Smart retail terminal ◆O2O smart equipment ◆Industrial smart automation equipment

### 1.2 Function introduction:

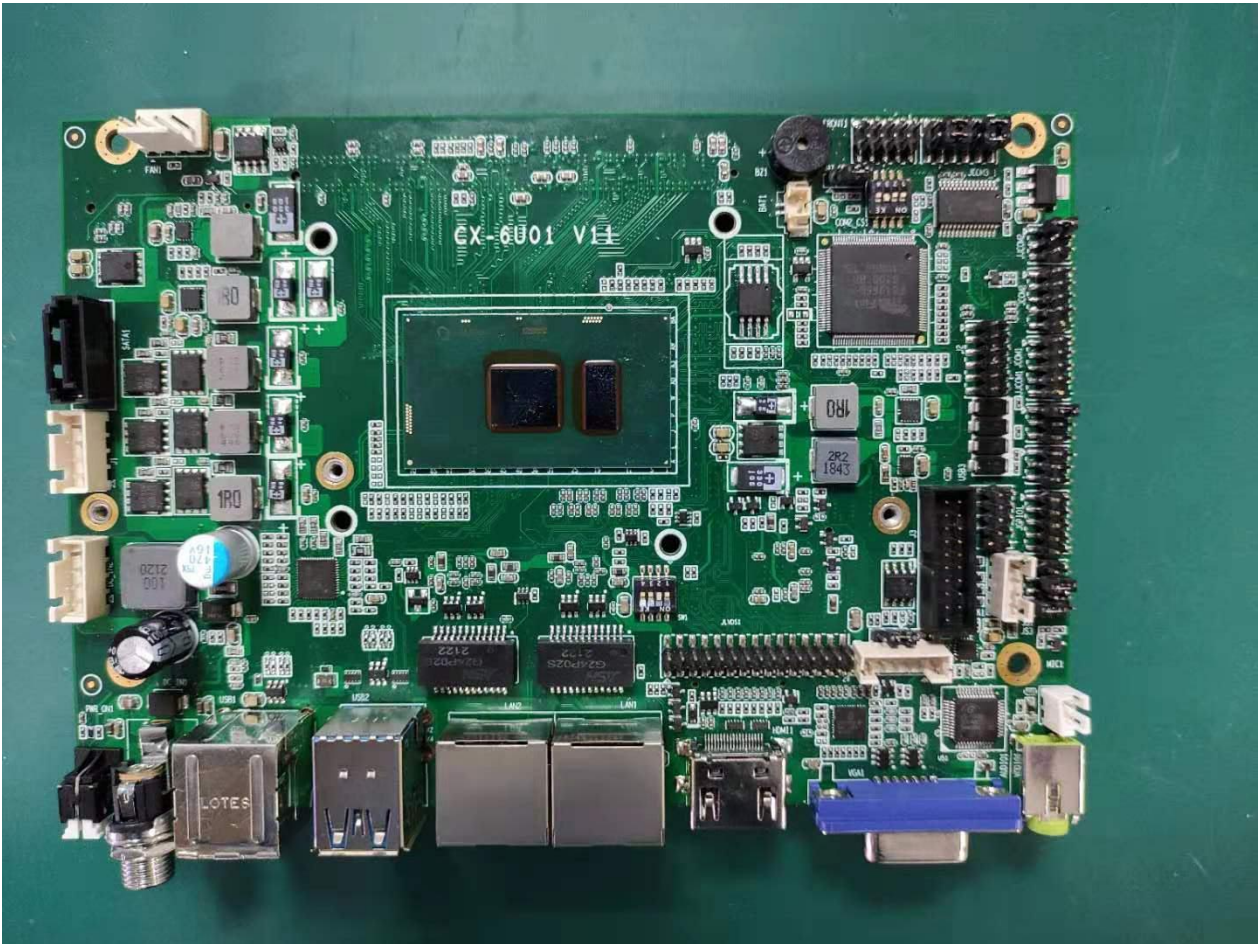
CX-10U01 V12 motherboard adopts Intel I5 series, which is a high-speed motherboard with silent fan. Mainly used in the fields of finance, retail, medical, all-in-one, advertising players, industrial computers, etc.

### 1.3 Function features:

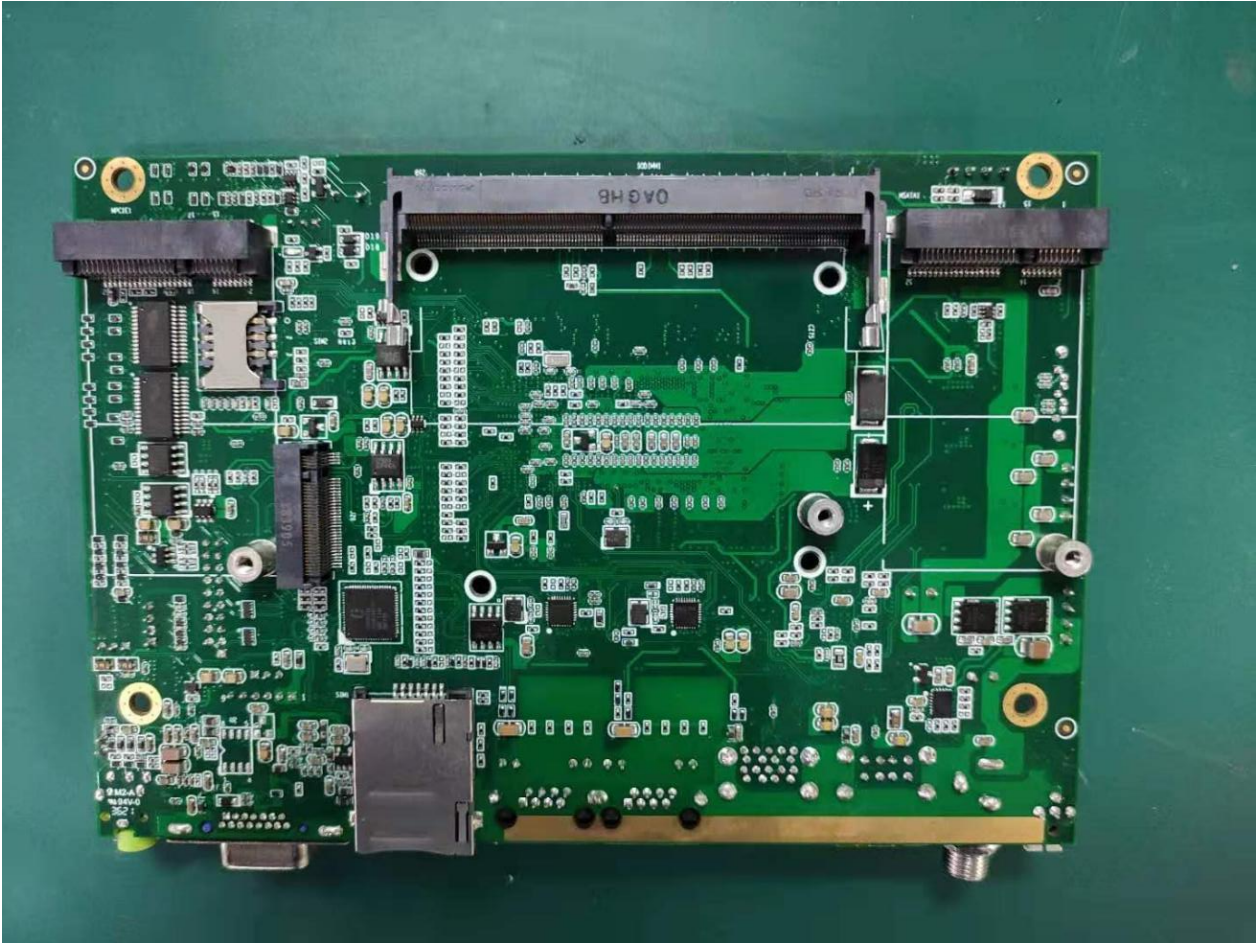
- ◆Intel I5-10210U, main frequency 1.6GHZ adopts Intel Bay trail SOC chipset
- ◆Support DDR4 low voltage 1.2V memory, up to 64GB
- ◆Support wide voltage 12V-36V input, DC female head inner diameter 2.5MM
- ◆Onboard VGA/HDMI interface, LVDS interface; support dual-screen display
- ◆Onboard 2\*COM (standard RS232) port; 1\*RS485 and 1\*RS422 interconvertible; 4\*RS232 COM ports.
- ◆Onboard MiniPCIE, supports WIFI/3G; 1\*MSATA supports SATA SSD hard drives; 1\*M.2 supports M.2 2280 hard drives
- ◆Rich expansion interfaces: 8\*USB interfaces (2\*USB3.0 standard sockets, 2\*USB2.0 standard sockets, 2\*USB3.0 terminal interfaces, 2\*USB2.0 terminal interfaces); 4\*RS232 serial ports; 1\*RS422/RS485 ; 4\*GPIO (TTL) output, 4\*GPIO (TTL) input, which can meet the requirements of various peripherals on the market.

**Schematic diagram of motherboard frontside and backside interfaces:**

frontside / backside:







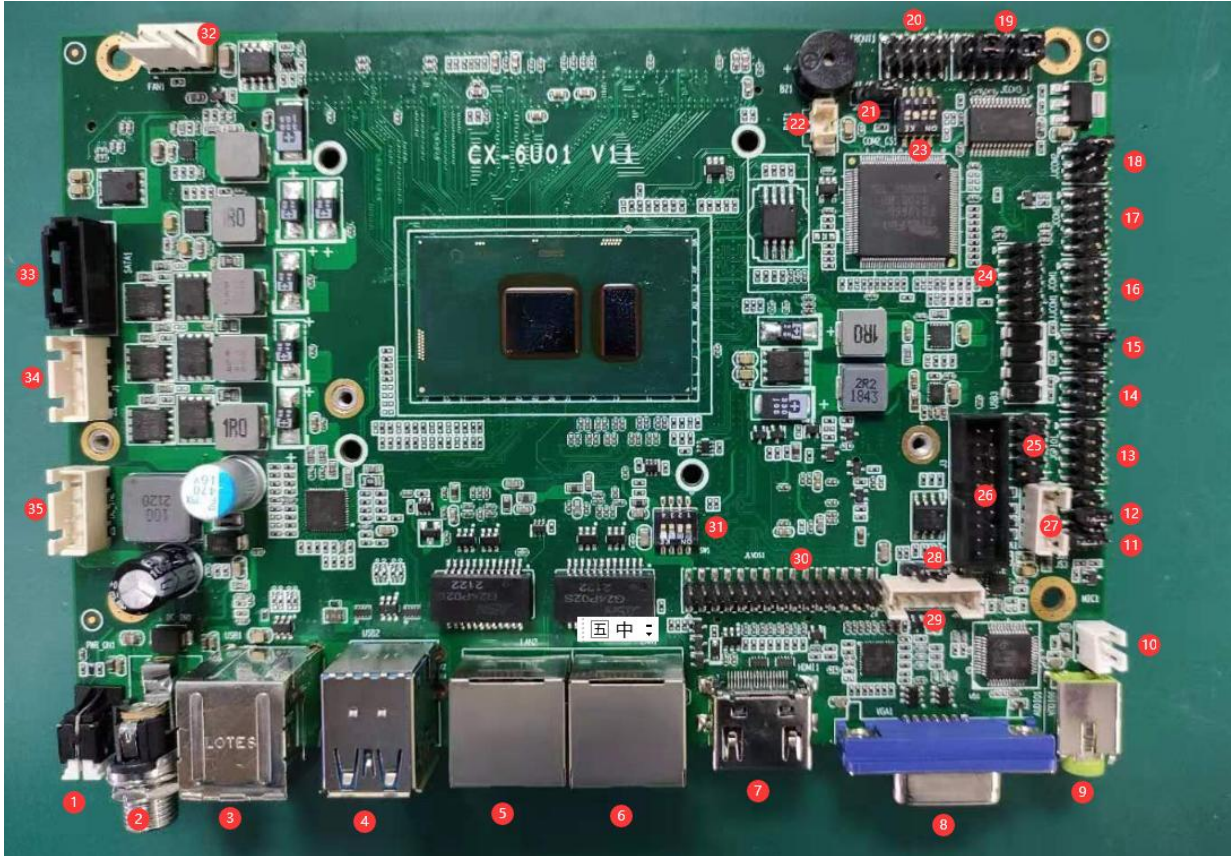
## Basic Function List

Components	Parameter/Specification
<b>CPU</b>	◆CX-I5 (10210U) Base frequency: 1.6GHZ,Burst frequency: 4.2GHZ,quad-core8threads,Intel Bay trail SOC
<b>Memory</b>	Support DDR4-2133, 2 * SO-DIMM Slot, Up to 64GB
<b>SATA</b>	1 * SATA3.0 + 1 * mSATA + 1*M.2
<b>FAN</b>	Silent fan
<b>OS Support</b>	Win10 Professional Edition/Win10 Enterprise Edition/win10 Home Edition/Win11 Professional Edition/Windows Server 2019/2016  Ubuntu16.04.7/Ubuntu18.04.6/Ubuntu20.04.3/Ubuntu22.04  Centos7.4/Centos7.8/Centos7.9/Redhat7.4/Debian11.4
<b>USB2.0</b>	4*(External port*2,internal port*2)
<b>USB3.0</b>	4*(External port*2,internal port*2)
<b>GPIO</b>	Eight Pins
<b>232</b>	6*(a RS232/RS422/RS485 switchable port)
<b>422</b>	1* RS232/RS422/RS485 switchable port
<b>485</b>	1* RS232/RS422/RS485 switchable port
<b>WIFI、 BT</b>	Supported(dual-frequency WIFI with BT)
<b>3G/4G</b>	Supported
<b>Ethernet</b>	2 * Realtek PCI-E NIC RTL8111H for 1000Mbps

<b>Audio</b>	USB Voice Chip,HS-100B,LQFP-48(7x7mm)2CH DAC with Headphone amplifier Compliant with USB 2.0 Full Speed Operation
<b>LVDS</b>	Supported
<b>EDP</b>	Supported(diff-version)
<b>MIPI</b>	Not supported
<b>HDMI</b>	1080P@120Hz,4kx2k@60Hz
<b>Timing Turn on/off</b>	Supported (Automatic boot when power connected)
<b>DC</b>	5525 screw with wild range power input(12V~36V)
<b>ESD</b>	8KV contacted,15KV air
<b>Dimensions</b>	160*110mm
<b>Operating Temperature</b>	-20~70°C

# Chapter One:Interface definition and configuration instructions

## 3.1 Interface serial number identification



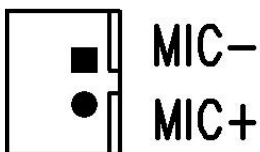
## 3.2 Interface serial number description

1. POWER KEY	21.AT/ATX optional
2.DC input	22.RTC terminal
3.USB 2.0 socket	23.RS232/RS422/RS485Encoder
4.USB 3.0 socket	24.Debug interface
5.RJ45 LAN (1000M)	25.USB 2.0 terminal
6.RJ45 LAN(1000M)	26.USB 3.0 terminal

7. HDMI video output	27.Speaker terminal
8.VGA video output	28.Dimming method selection
9.AUDIO socket	29.Backlight interface
10. MIC terminal	30.LVDS interface
11.GPIO Power selection	31.LVDS Encoder
12.LVDS Power selection	32.Fan interface
13.GPIO interface (TTL)	33.SATA
14.RS232/RS422/RS485terminal	34.SATA power
15.COM1 Voltage selection	35.Power input port
16.COM1 (full signal RS232)	36.SIM1
17.COM2 (full signal RS232)	37.MSATA
18.COM2 Voltage selection	38.Memory slot
19.4*RS232 COM Ports	39.MiniPCIE (3G/4G/WiFi)
20.Front Jumper	40.SIM2
	41.M.2 interface 2280

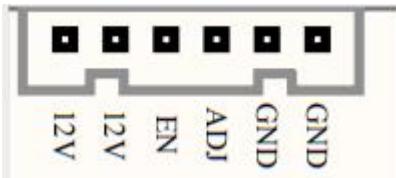
### 3.3Interface terminal definition description

#### 3.3.1 MIC





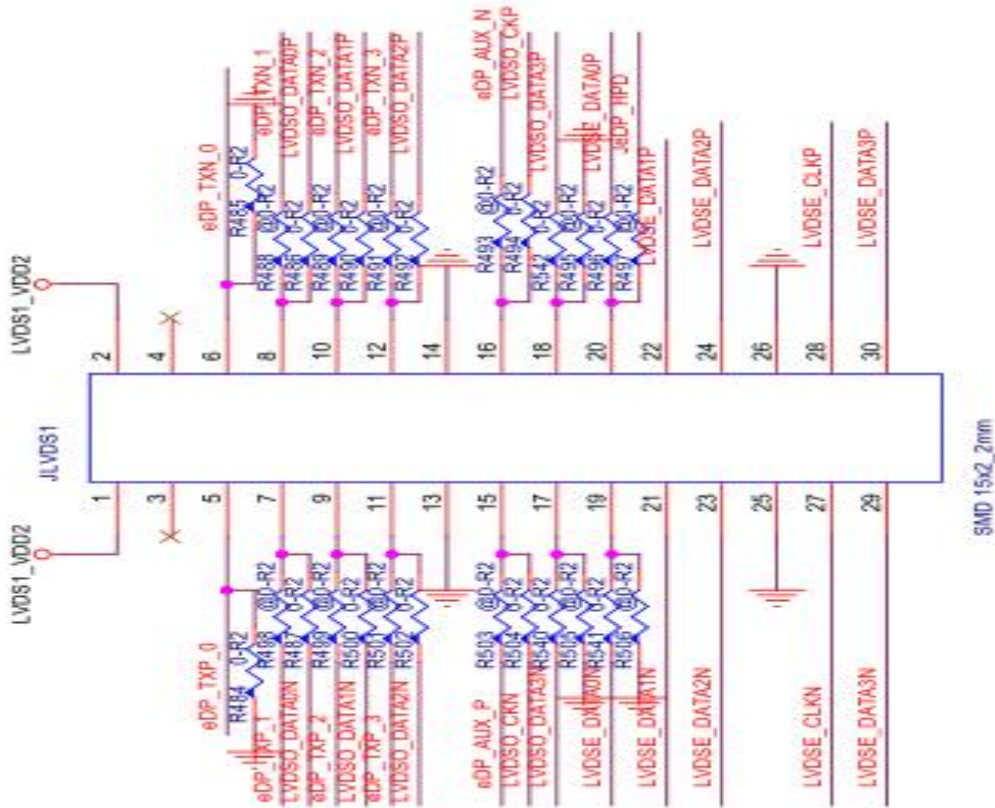
### 3.3.2 Backlight interface



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### 3.3.3 LVDS interface

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### LVDS Definition of resolution dial code

- 0-0000-1024\*600-1CH/18bit
- 1-0001-1024\*768-1CH/18bit
- 2-0010-800\*600-1CH/18bit
- 3-0011-1280\*800-1CH/18bit
- 4-0100-1920\*1080-2CH/24bit special mode
- 5-0101-1680\*1050-2CH/24bit
- 6-0110-800\*600-1CH/24bit
- 7-0111-1024\*768-1CH/24bit
- 8-1000-1024\*600-1CH/24bit
  
- 9-1001-1280\*800-1CH/24bit

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- 10-1010-1920\*1080-2CH/18bit
- 11-1011-1366\*768-1CH/24bit
- 12-1100-1920\*1200-2CH/24bit
- 13-1101-1280\*1024-2CH/24bit
- 14-1110-1440\*900-2CH/24bit    15-1111-1920\*1080-2CH/24bit

**0000-1111 a total of 16 bits correspond to the code switch 4 3 2 1**

### 3.3.4 Dimming method selection

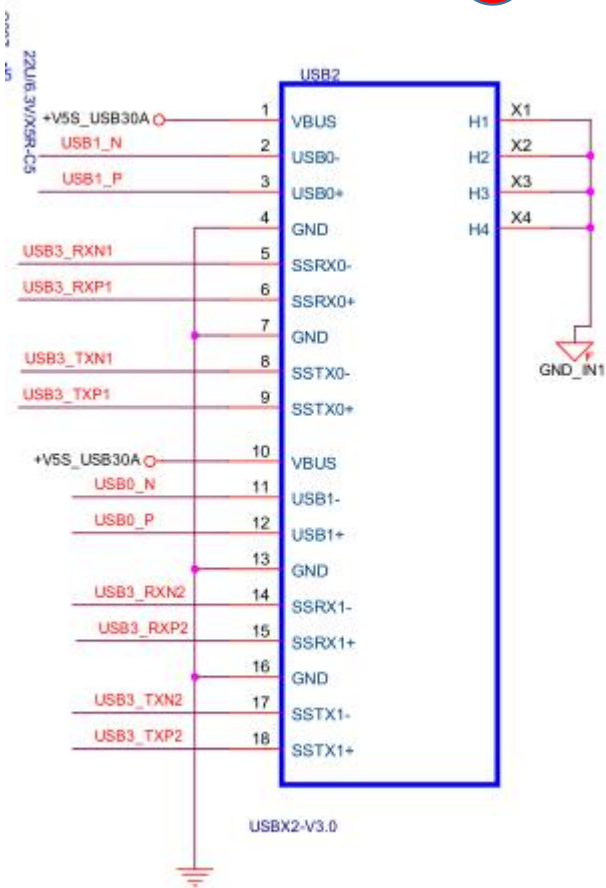
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Default is PWM mode

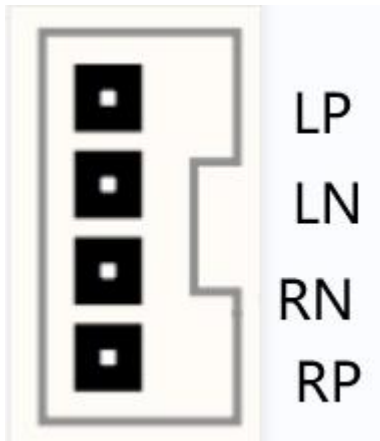
### 3.3.5 USB 3.0 terminal

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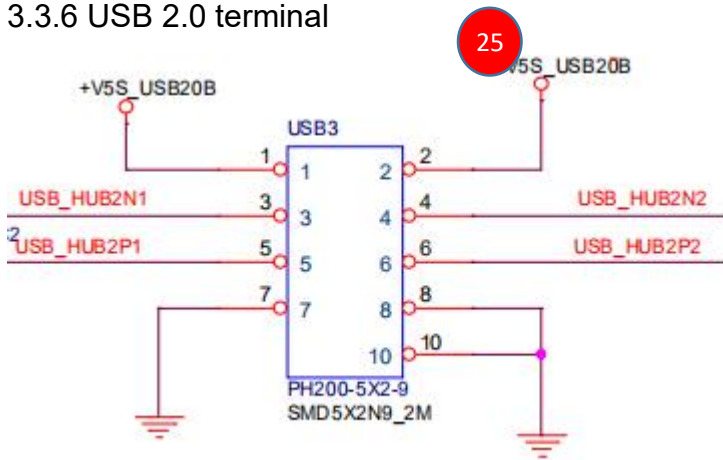


### 3.3.6 Speaker terminal

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### 3.3.6 USB 2.0 terminal



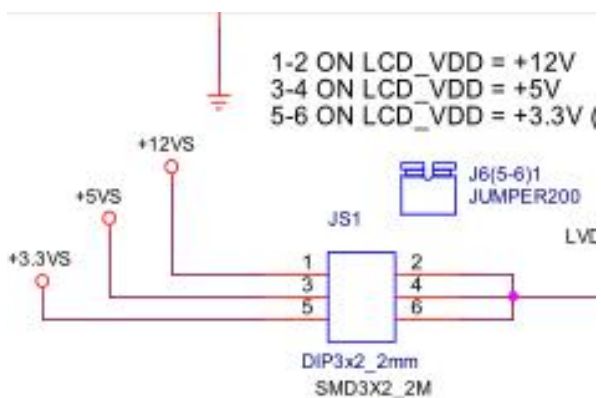
### 3.3.7 GPIO Power selection



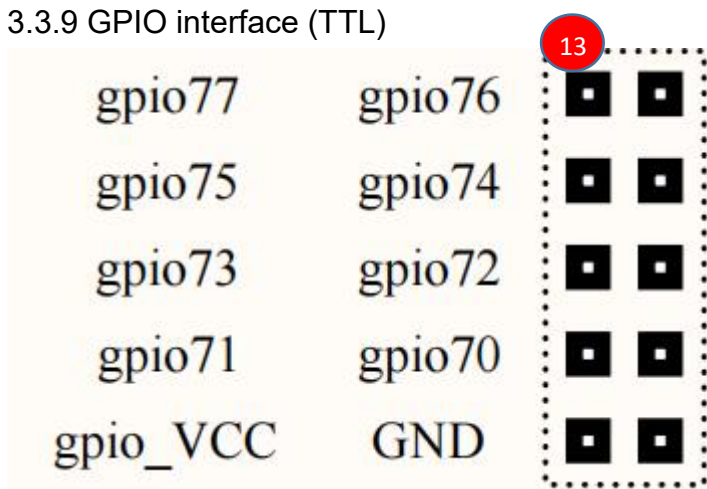
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### 3.3.8 LVDS Power supply options

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### 3.3.9 GPIO interface (TTL)



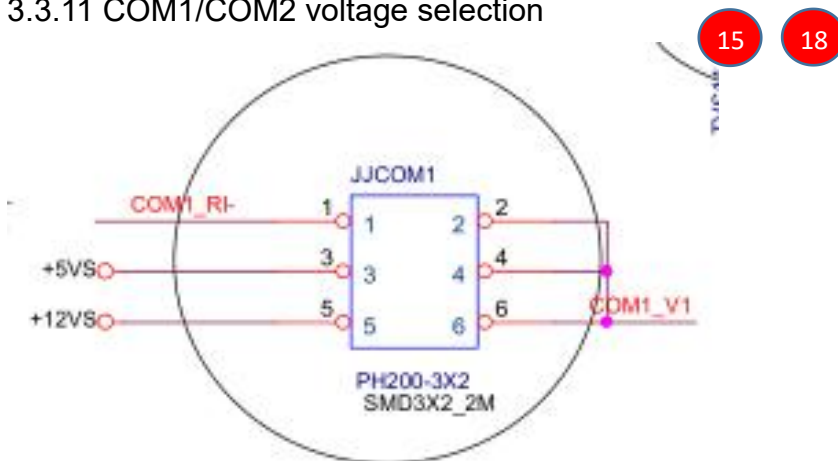
Under the main BIOS interface, select the F81866/F81966 super IO menu under the advanced interface;

The information for setting IO is as follows:

(000F)		Yes	Default		
(00A3)	GPIO Modules Mode Settings	Yes	Default		
(00A4)	GPIO 70 Controller	Yes	Default	Input	Input
(00A5)	GPIO 71 Controller	Yes	Default	Input	Input
(00A6)	GPIO 72 Controller	Yes	Default	Input	Input
(00A7)	GPIO 73 Controller	Yes	Default	Input	Input
(00A8)	GPIO 74 Controller	Yes	Default	Output High	Output High
(00A9)	GPIO 75 Controller	Yes	Default	Output High	Output High
(00AA)	GPIO 76 Controller	Yes	Default	Output High	Output High
(00AB)	GPIO 77 Controller	Yes	Default	Output High	Output High
(000F)		Yes	Default		

Program writing: GPIO70-77 control register address is 0xA03, 8-bit status value corresponds to GPIO (xxxx xxxx); read during input, write during output;

### 3.3.11 COM1/COM2 voltage selection

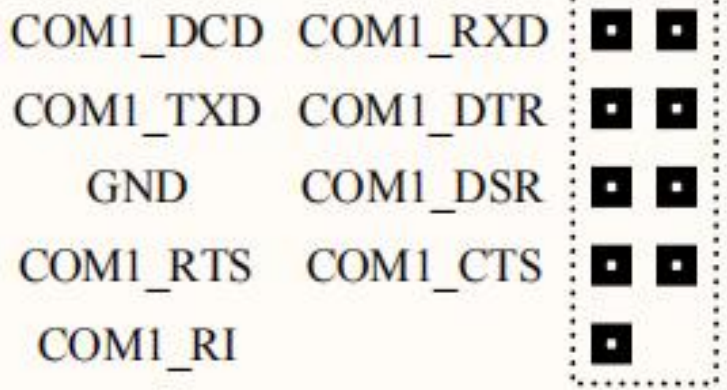


3-4 output: 5V

5-6 output: 12V

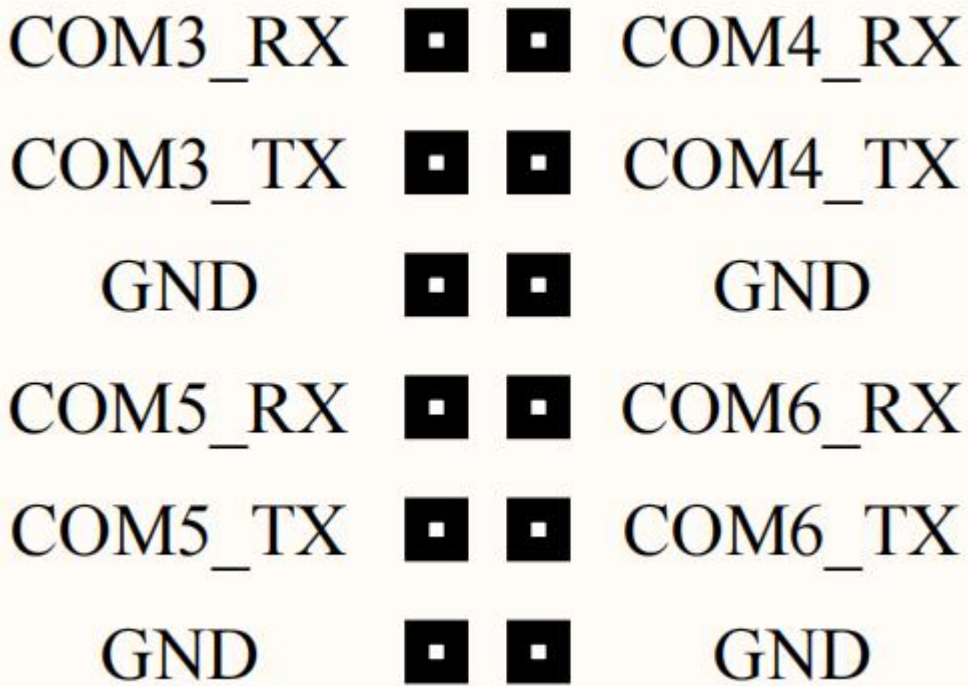
### 3.3.12 COM1/COM2 (full signal RS232) Interface definition





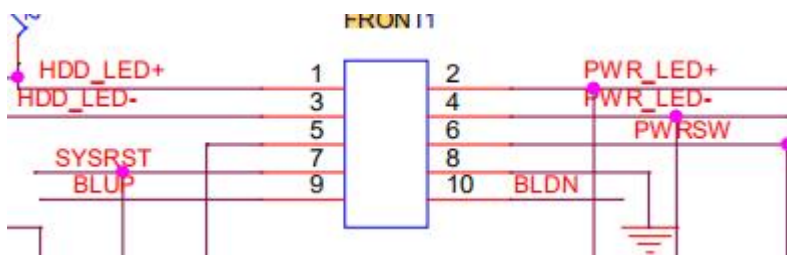
3.3.13 4\*RS23 COM

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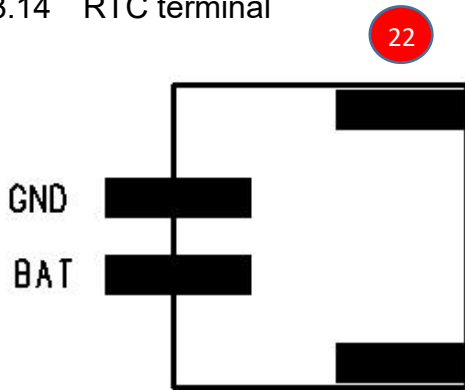
3.3.13 FRONT Jumper Interface definition

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### 3.3.14 RTC terminal



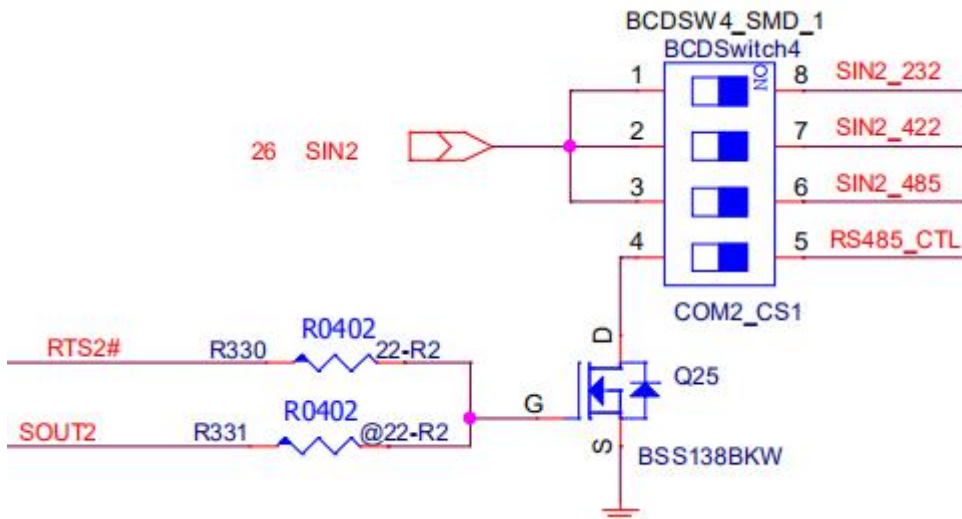
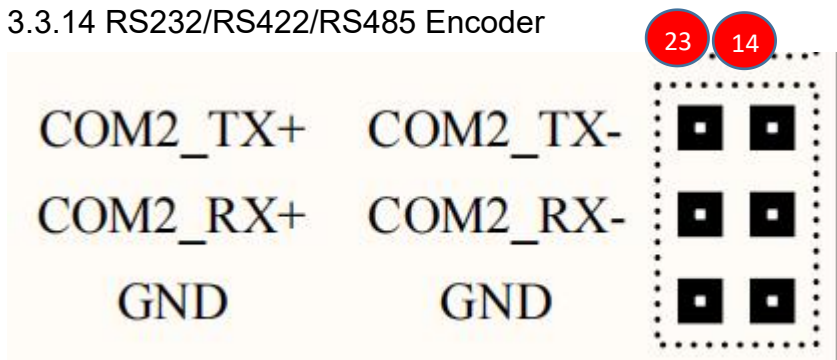
### 3.3.15 AT/ATX optional



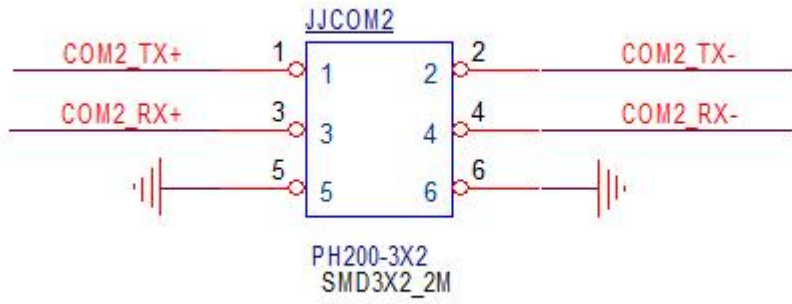
AT Mode: Power on does not automatically start the computer.

ATX Mode: Power on automatically starts the computer.

### 3.3.14 RS232/RS422/RS485 Encoder



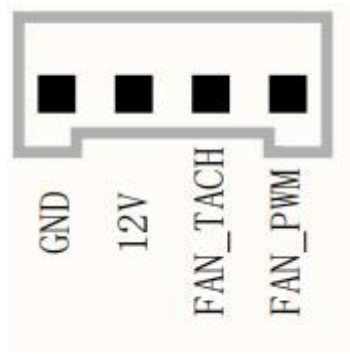
- 1 ON COM2 Select 232
- 2 ON COM2 Select 422
- 3 4 ON COM2 Select 485



RS422 mode: COM2\_TX+ 、 COM2\_TX- 、 COM2\_RX+、 COM2\_RX-  
 RS485 mode: RS485+COM2\_TX+、 RS485-COM2\_TX-

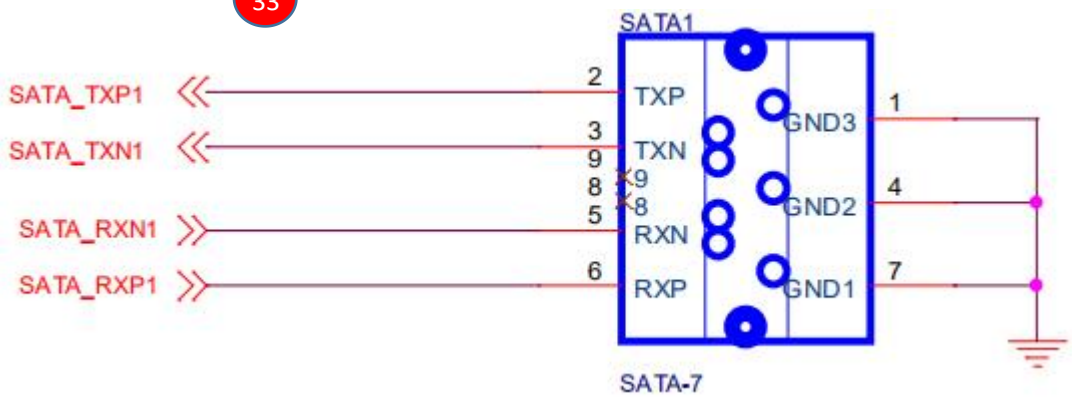
3.3.15 fan interface

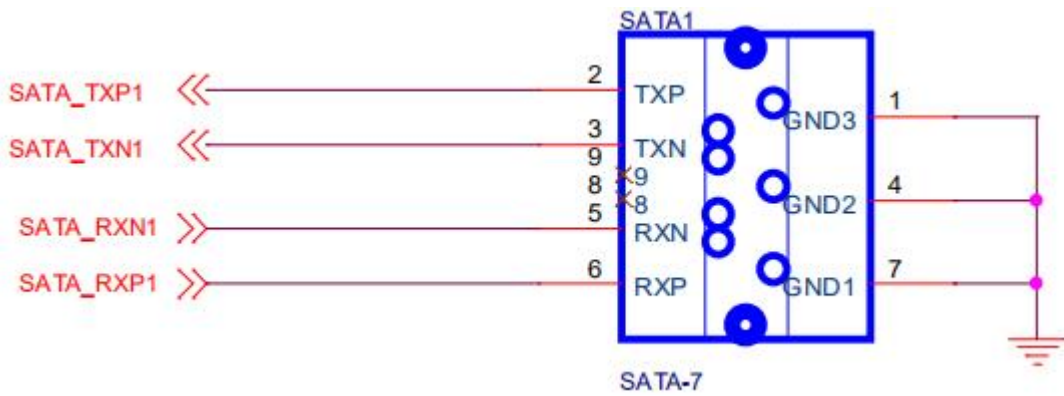
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3.3.15 SATA

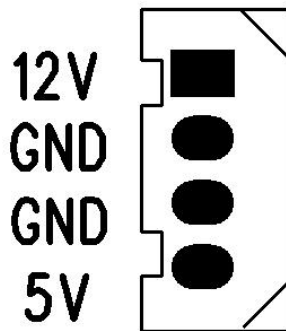
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3.3.15 SATA POWER interface definition

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3.3.16 Power input interface definition

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