华北工控
NORCO

SOMB-073

QSEVEN Carrier Board

User Manual V1.0

用户手册
USER'Manual

Content

Chapter 1. Product Introduction

Chapter 1 Product Introduction

1.1 Product Specification

Standard Structure

●QSEVEN Carrier Board

●Conforms to MINI-ITX specification with a dimension of 170mm×170mm

Storage

●2* standard SATA interfaces

●1*SDIO port compatible with MMC

Display Interface

●1*standard DB15 VGA port with resolution up to 1280×1024@85Hz

●1*2×10Pin supporting 24/18bit LVDS interface with resolution up to 1280×768@60Hz

I/0

●Adopt Winbond W83627DHG-P I/O chip

●2*COM with COM1 supporting RS232 and COM2 supporting RS-232/422/485

●1set standard double layer PS2 KB&MS connector

●1*2×5Pin，8Bits GPIO port

USB

●6*USB2.0

●2 group double layer standard USB port

●1*2x5Pin interface, able to converted to 2*standard USB ports

LAN

●Adopt RTL8211CL+RTL8111D chip

●2*standard RJ45 ports

Audio Interface

●Adopt ALC887 chip

●Standard tri-layer AUDIO interface supporting MIC-IN, LINE-IN, LINE-OUT

Expansions

●1*PCIE_×1

●1*MINI-PCIE

Power Supply

●+12V Single Power Supply

Environment

●Operating Temperature:

-40℃-80℃（Industrial grade）

0℃-60℃（commercial grade）

●Storage Temperature: -40℃-85℃

●Operating Humidity: 0-95% relative humidity, no-condensing

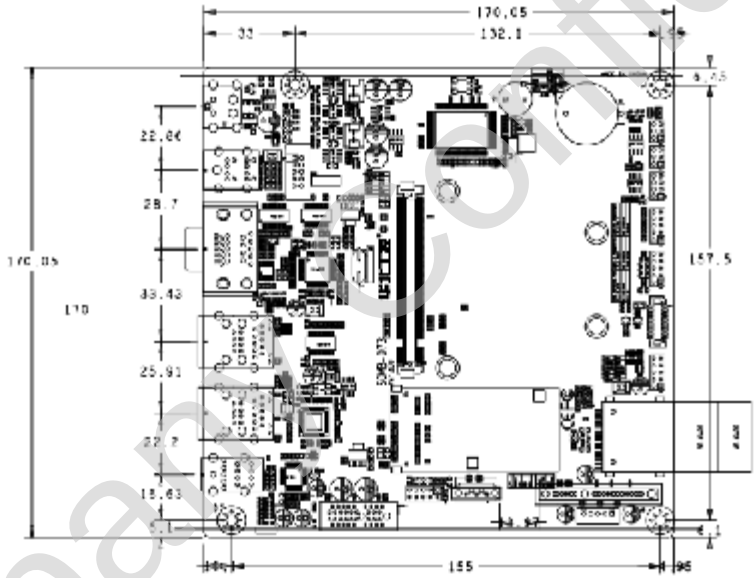
Chapter 2. Interfac
Instruction

Chapter 2 Interface Instruction

2.1 Interface Location and Dimension Diagram

The following picture is the interface index for SOMB-073. When you install this device, please consult it and read the following instruction. During the installation, please care for some devices, as the improper installation of some components will lead to system failure.

Remark: During installation, in order to protect the parts of motherboard, please wear your antistatic gloves.



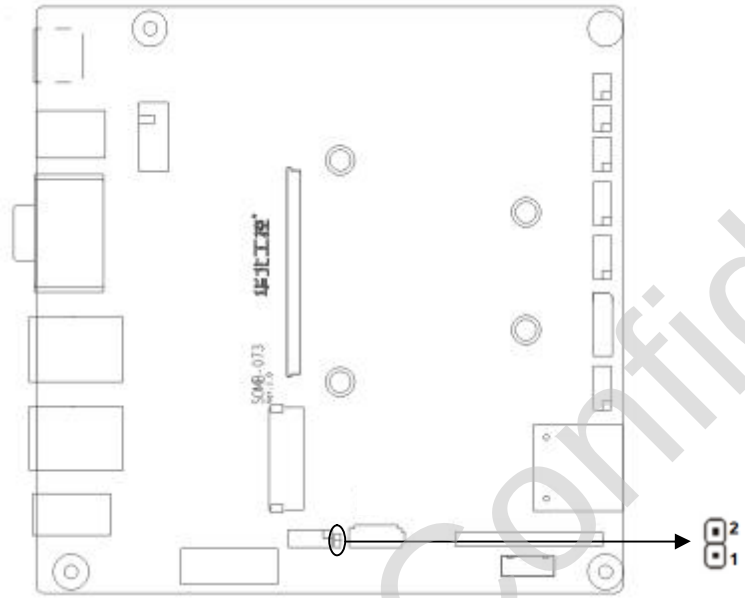
2.2 Jumper Setting

Please config the jumpers accordingly before installing hardware devices

Note: How to identify jumper and PIN1 of interface

Please observe the word mark of plug socket, it will use “1” or bold line or triangular symbols; and please look at the back of PCB,each of interface weld spot has a squar point, that is PIN 1; The pin1 of all jumpers will have a white arrow.

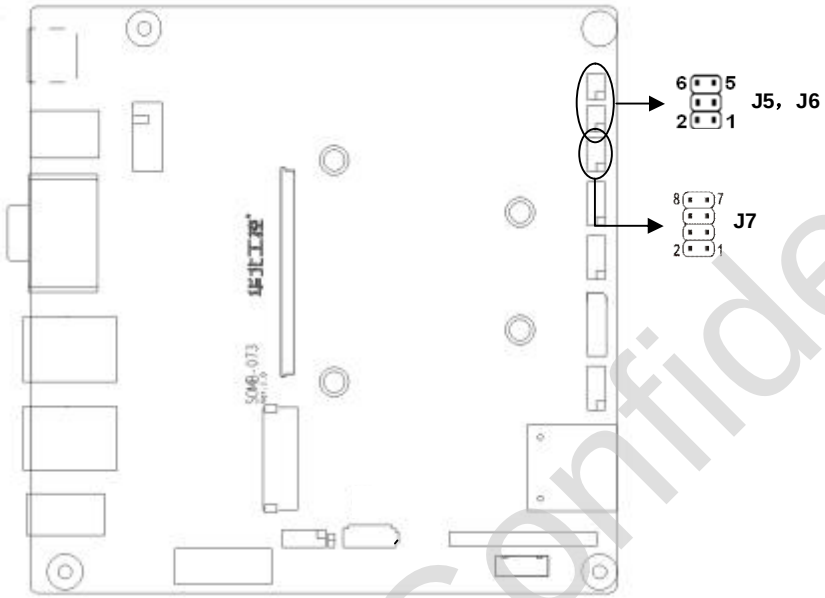
2.2.1 Start Upon Power-on Hardware Switch（JAT)



JAT	Power Mode
Close	Self-start upon power on
Open	Non self-start upon power on

2.2.2 COM2 Jumper Setting（J5, J6, J7）

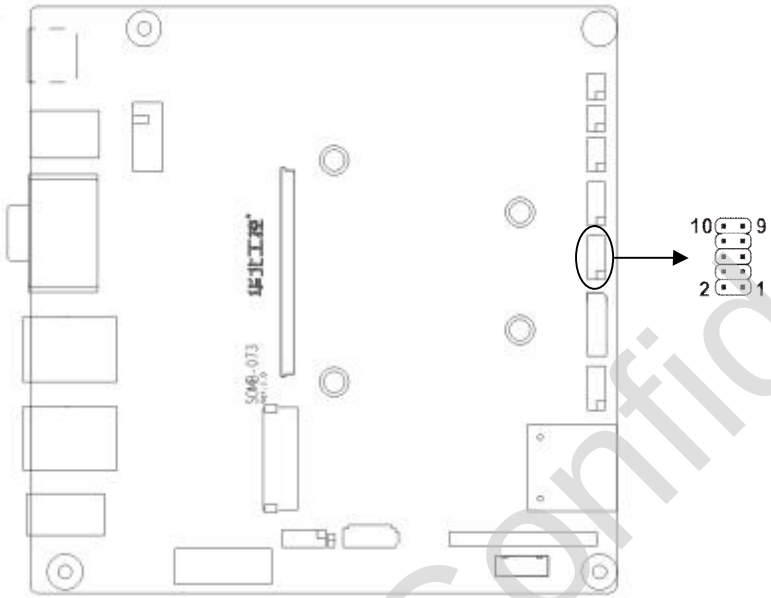
J5，J6，J7 are used to config the transmission mode of COM2. COM2 supports RS232/RS422/RS485. Users can config this port based on the actual needs.



COM2 RS232		COM2 RS422		COM2 RS485	
J5	3-5 4-6	J5	1-3 2-4	J5	1-3 2-4
J6	3-5 4-6	J6	1-3 2-4	J6	1-3 2-4
J7	1-2	J7	3-4	J7	5-6 7-8

2.2.3 LVDS Voltage Jumper Setting（JLVDS）

Before usint the chosen LVDS, please make clear of its rated voltage for operating. Thenyou can choose the voltage for chosen LVDS via JLVDS jumper setting.



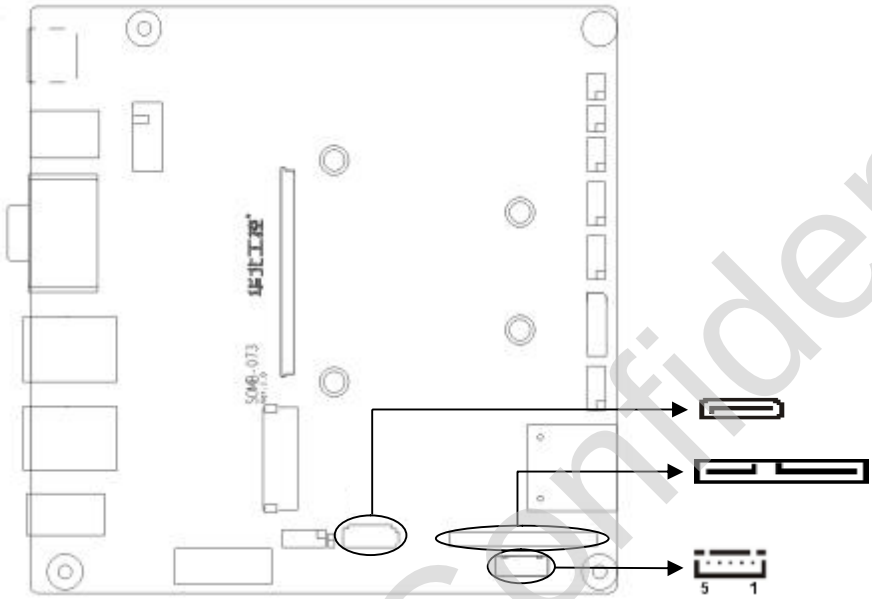
Pin	Signal Name
2-4	3.3V
4-6	5V

2.3 Interface Specification

⚠ **Before connecting external interface, please read this manual carefully, it will protect motherboard from damage**

2.3.1 SATA Interface（SATA1, SATA2, JSATA）

2*standard SATA interfaces.SATA1 is the 7+15Pin interface. JSATA is the power supply connector for SATA2.



SATA1：

Pin	Signal Name	Pin	Signal Name
1	GND	P4	GND
2	SATA_TX_P0	P5	GND
3	SATA_TX_N0	P6	GND
4	GND	P7	VCC
5	SATA_RX_N0	P8	VCC
6	SATA_RX_P0	P9	VCC
7	GND	P10	GND
8	NC	P11	GND
9	GND	P12	GND
10	NC	P13	+12V
P1	VCC3	P14	+12V
P2	VCC3	P15	+12V
P3	VCC3		

SATA2：

Pin	Signal Name
1	GND

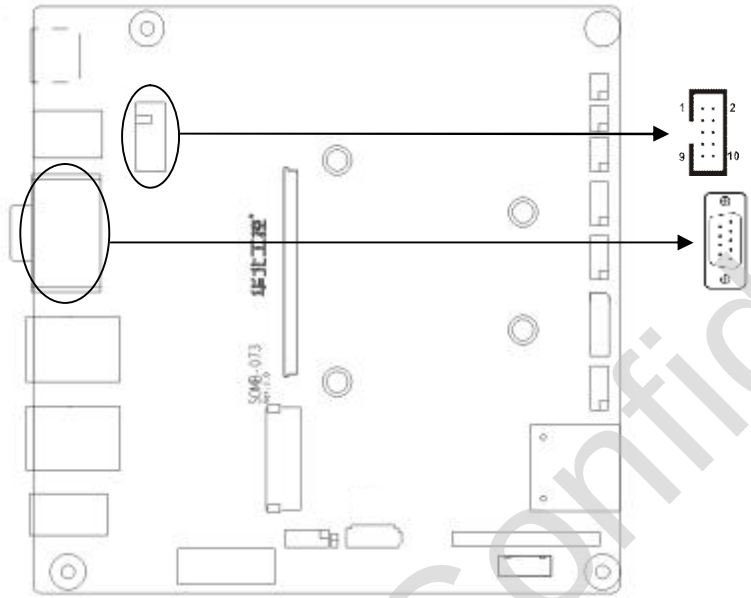
2	TX+
3	TX-
4	GND
5	RX-
6	RX+
7	GND

JSATA：

Pin	Signal Name
1	+12V
2	GND
3	VCC
4	GND
5	VCC3

2.3.2 Serial Ports（COM1, COM2）

Board provides 2* serial ports. COM1 adopts the standard DB9 interface. COM2 adopts 2×5Pin interface. These serial ports need to be converted to DB9 port via a convert cable , so as to connect external devices. Both COM1 and COM2 support RS232 transmission mode and COM2 also supports RS422/485. Users are able to choose the transmission mode for COM2 via jumper setting. Please refer to Chapter 2 -2.2 " COM2 setting".



COM1：

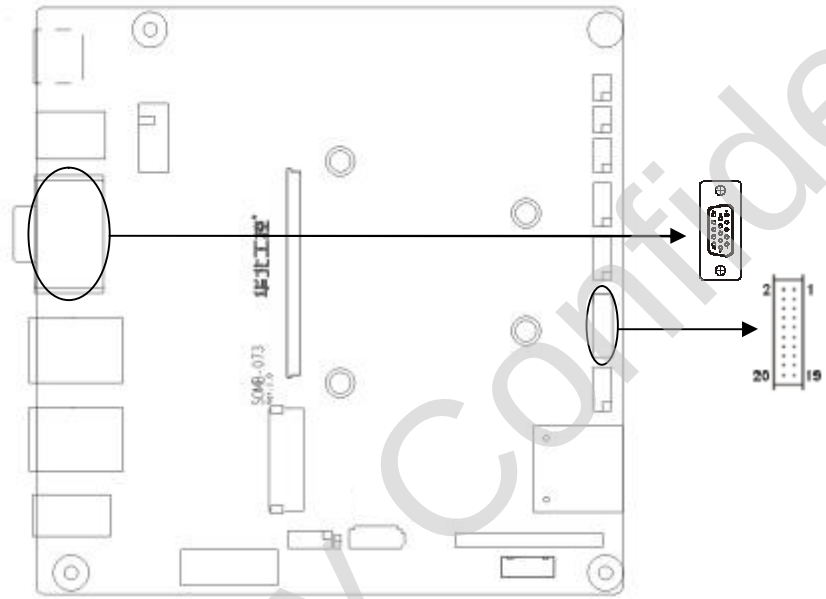
Pin	Signal Name
1	DCD
2	RXD
3	TXD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI

COM2：

Signal Name	Pin		Signal Name
DCD	1	2	DSR
RX	3	4	RTS
TX	5	6	CTS
DTR	7	8	RI
GND	9	10	GND

2.3.3 Display Interface (VGA，LVDS）

Onboard provides one standard VGA interface and one 20Pin LVDS interface（supporting 18/24bi with resolution up to 1280×768@60Hz）。



VGA：

Pin	Signal Name	Pin	Signal Name	Pin	Signal Name
1	RED	6	GND	11	NC
2	GREEN	7	GND	12	SDA
3	BLUE	8	GND	13	HSYNC
4	NC	9	+5V	14	VSYNC
5	GND	10	GND	15	5VDDCK

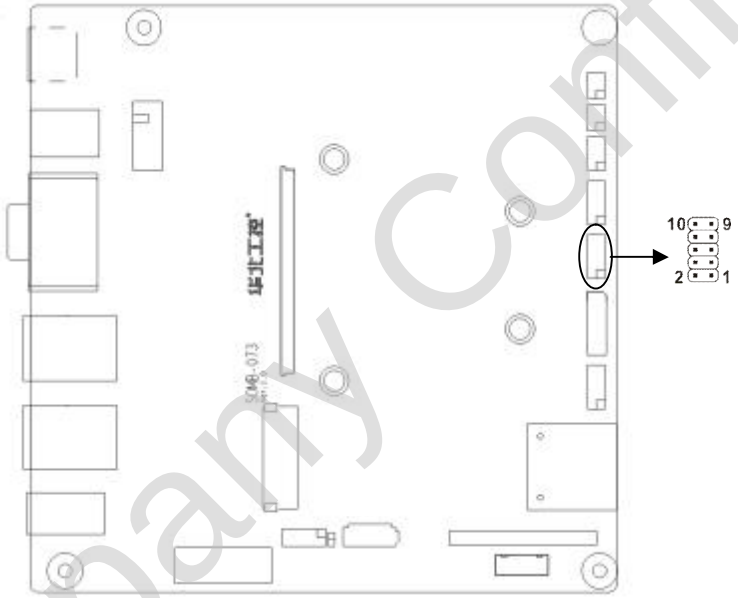
LVDS：

Signal Name	Pin		Signal Name
VCC	1	2	VCC
GND	3	4	GND
LVDS_D0-	5	6	DDC_DATA

LVDS_D0+	7	8	DDC_CLK
GND	9	10	GND
LVDS_D1-	11	12	LVDS _CLK-
LVDS_D1+	13	14	LVDS _CLK+
GND	15	16	GND
LVDS_D2-	17	18	LVDS_D3- / NC
LVDS_D2+	19	20	LVDS_D3+ /NC

2.3.4 LVDS Backlight Control（JLVDS）

JLVDS is used to adjust the brightness of LVDS backlight panel.

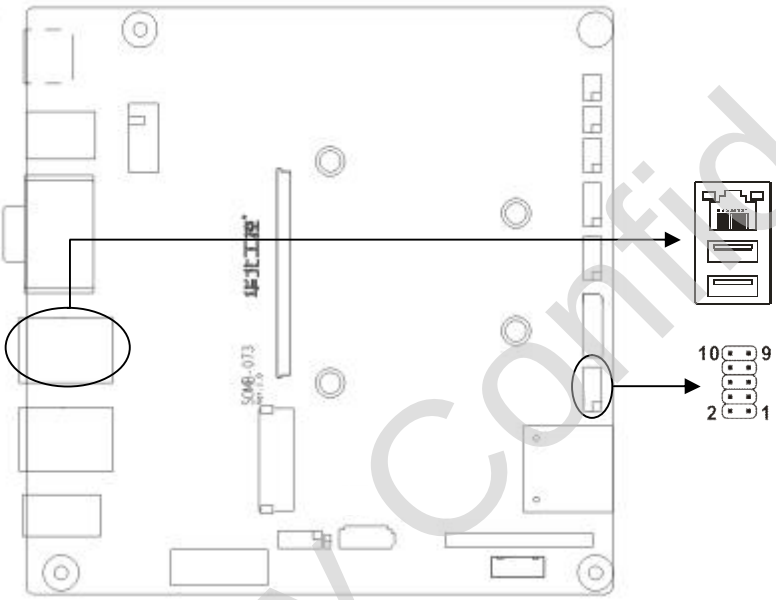


JLVDS：

Pin	Signal Name
1	+12V
3	L-BKLT_EN
5	GND
7	L-BKLTCLT
9	VCC

2.3.5 USB Ports（USB, USB45）

Board provides 6 USB ports, including 2 group double-layer standard USB ports and one 2×5Pin USB port.



USB：

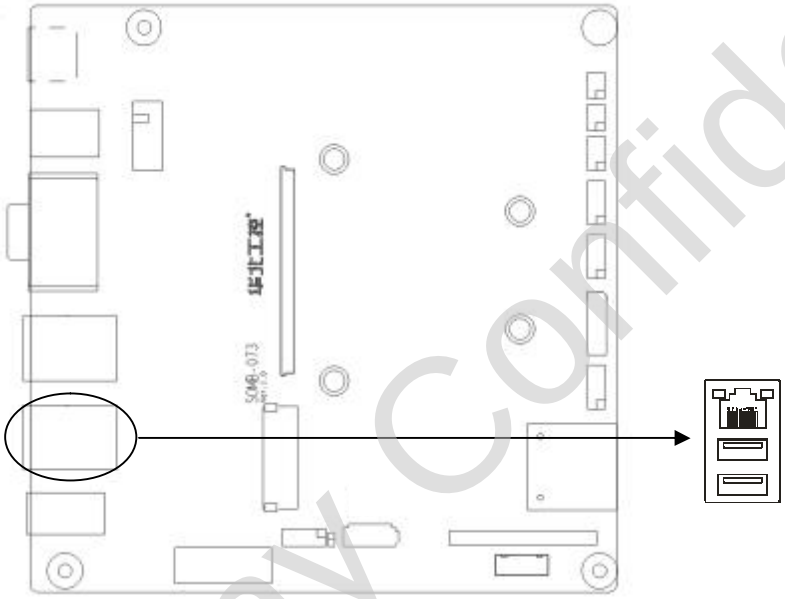
Pin	Signal Name
1	+5V
2	USB DATA-
3	USB DATA+
4	GND

USB45：

Signal Name	Pin		Signal Name
VCC	1	2	GND
USBD4+	3	4	GND
USBD4-	5	6	USBD5+
GND	7	8	USBD5-
GND	9	10	VCC

2.3.6 Network Interface（LAN）

Board provides 2*RJ 45. Both sides of RJ-45 Ethernet port will have one LED indicator. The yellow on indicates the status of data transmission, while the green one indicates network connection status.

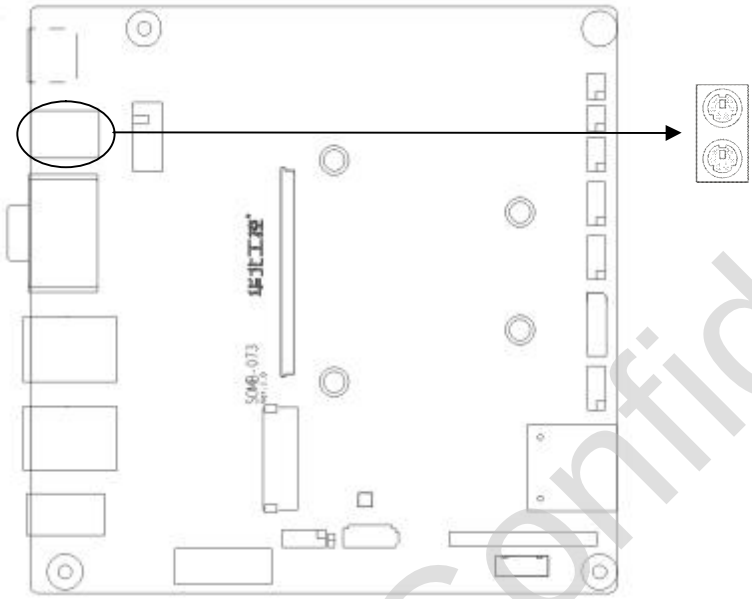


RJ45 PORT LED Status

LILED(GREEN)	Function	ACTLED(YELLOW)	Function
ON	Effective	ON	Data transmitting
OFF	Ineffective/close	OFF	No data

2.3.7 Keyboard and Mouse Connector（PS2）

Board provides one double-layer PS2 KB/MS connector. Users can plug the keyboard and mouse into corresponding connectors（GREEN for the mouse connector, PURPLE for the keyboard connector）.



MS：

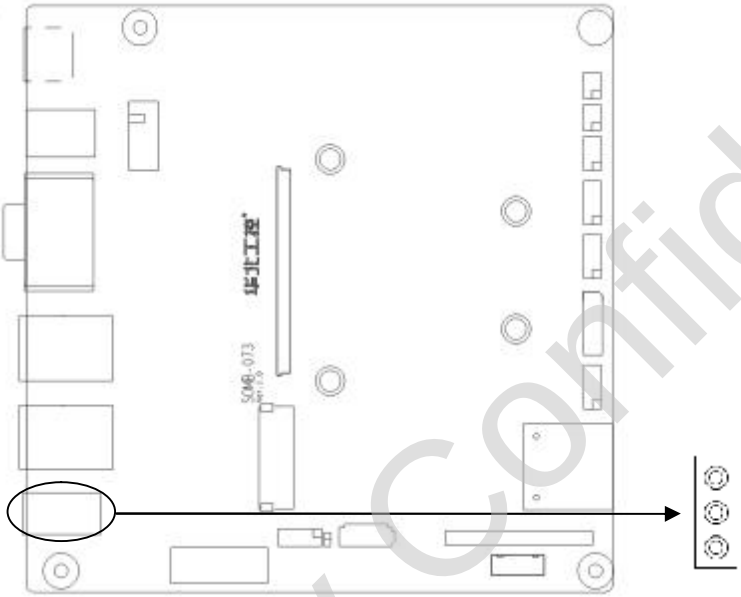
Pin	Signal Name
1	+5V
2	GND
3	NC
4	MS_DAT A
5	MS_CLK
6	NC

KB：

Pin	Signal Name
1	+5V
2	GND
3	NC
4	KB_DATA
5	KB_CLK
6	NC

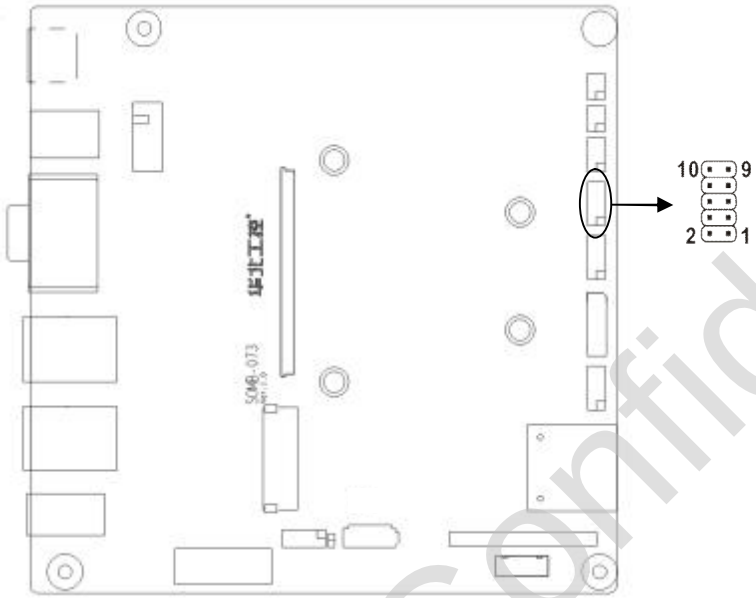
2.3.8 Audio Interface (AUDIO)

Board provides one group triple-layer AUDIO interface, supporting LINE-OUT（GREEN）, LINE-IN（BLUE）and MIC-IN（PINK）.



2.3.9 GPIO Connector（JGP）

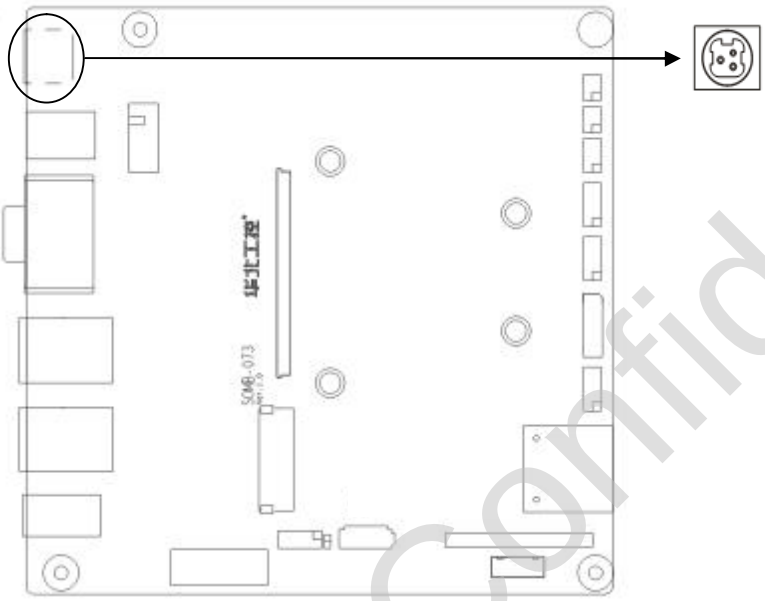
It provides I/O expansions. When the micro-controller or the chipset doesn't have enough I/O, or system needs to adopt remote serial communication and control, GPIO can help provide extended control and monitoring functions.



JGP：

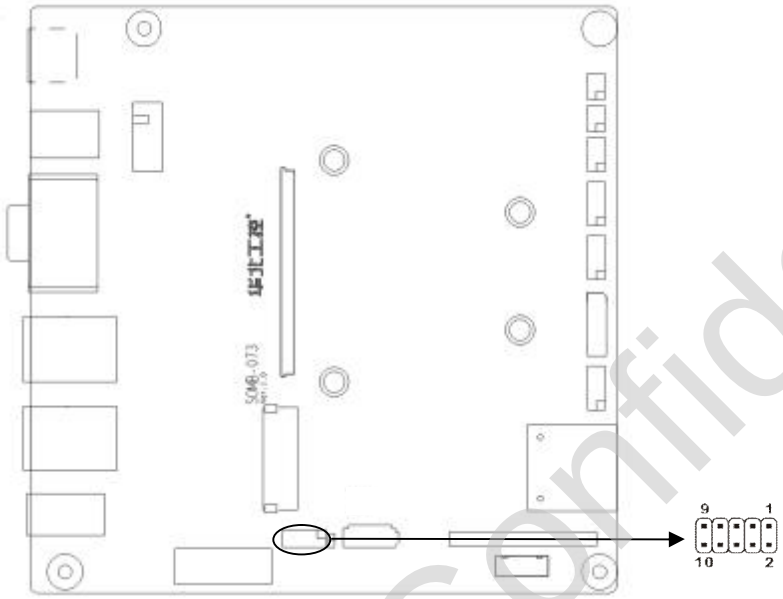
Signal Name	Pin		Signal Name
GP30	1	2	VCC
GP31	3	4	GP34
GP32	5	6	GP35
GP33	7	8	GP36
GND	9	10	GP37

2.3.10 Power Interface（DC_JACK)



2.3.11 Front Panel Connector（JFP）

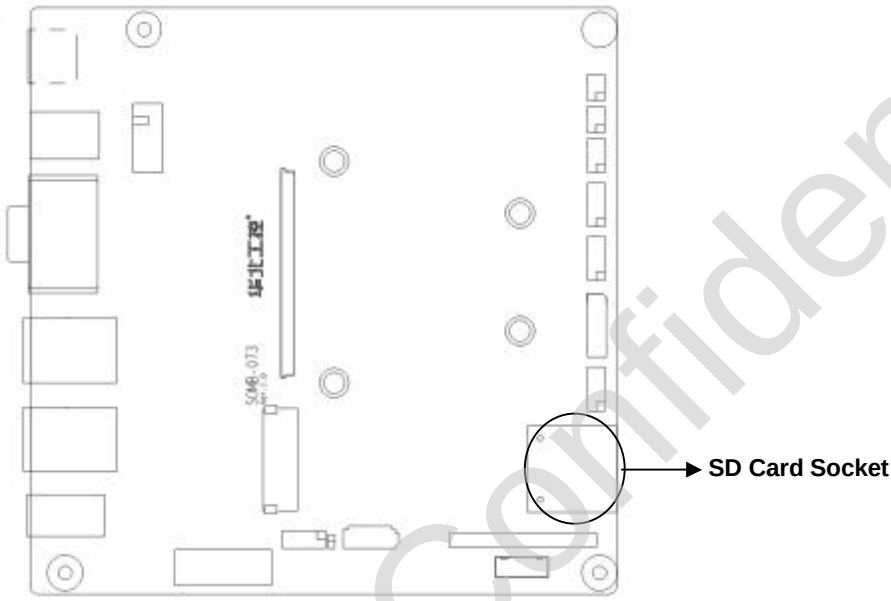
JFP is used to connect the function buttons and LED indicators on the front panel.



JFP：

Signal Name	Pin		Signal Name
PWR_LED+	1	2	GND
HDD_LED+	3	4	HDD_LED-
VCC	5	6	SPK-
RSTBTN-	7	8	GND
POWERSW+	9	10	GND

2.3.12 SD Card Socket



2.3.13 PCIE_X1 Port

Board provides one PCIE_X1 port , which is able to connect expansion devices.

2.3.14 MiniPCIE Port（MINI_PCIE)

Onboard provides one standard MINI_PCIE port，Users can use this port to expand the Mini PCIE devices.

华北工控
NORCO

敬请参阅

http://www.norco.com.cn

本手册所提供信息可不经事先通知进行变更

华北工控对所述信息保留解释权