

WK310CA Motherboard

(PCB Rev:1.00)

Manual Version 1.00

2020.05.12

1 Introduction

Wk310ca is our company's 10 * 10CM industrial mainboard, which adopts Intel's 8th generation mobile whiskey lake-u single chip CPU with the following main features.

1.1 main characteristics

1.1.1 the CPU board supports 8th generation mobile whiskey lake-u single chip CPU

1.1.2 two DDR4 SODIMM 260 sockets, with a maximum capacity of 32GB DDR4 memory, 2133 / 2400mhz.

1.1.3 on board 2 Intel i211 / i210 gigabit network cards.

1.1.4 on board HDA ALC662, providing 3.5mm aperture phone jack to support MIC/LINE-OUT

1.1.5 one mini PCIe with one micro SIM card slot.

1.1.6 one NGFF, support SATA signal 2242 M2 hard or PCIE X2 NVME (choose one of two options)

1.1.7 provide a serial port RS232 / TTL pins interface.

1.1.8 one SATA 3.0 hard disk interface.

1.1.9 two USB 3.1 interfaces (Gen2), four USB2.0 interfaces (pin arrangement)

1.1.10 support HDMI 2.0 output, support 4K@60Hz Display.

1.1.11 support Mini dp1.4 (support DP + +) output, support 4K4K@60Hz display

1.1.12 one 3-pin fan interface.

1.1.13 1 infrared receiving port

1.1.14 one LPC extension pin interface

1.2 Power

DC power supply with 12-19V wide voltage supply

Supports power-on auto-power-on function, jumper selection.

1.3 Structure

100 x 100 mm

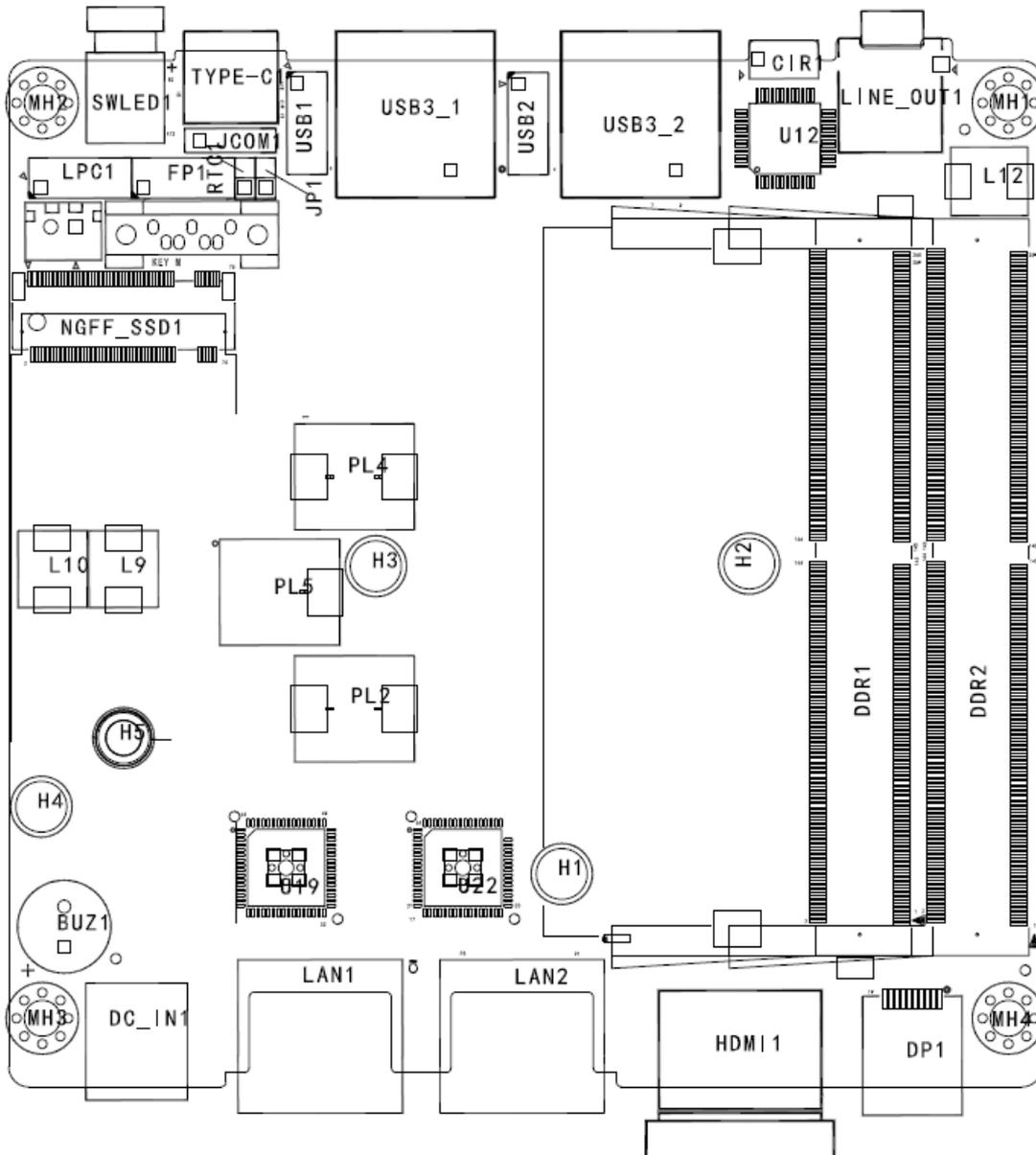
1.4 Work environment

Motherboard operating temperature: -20C to .60C

Motherboard storage temperature: -40C to .85C

2 WK310 CA Front interface layout

Top layer layout as shown in the image below



Note: Interface in the figure, square pin for Pin 1.

Motherboard interface brief instructions

2.1 DC_IN1

DC_IN1 standard DC-JACK port, center post 2.5mm

2.2 HDMI1

HDMI1 standard HDMI output interface

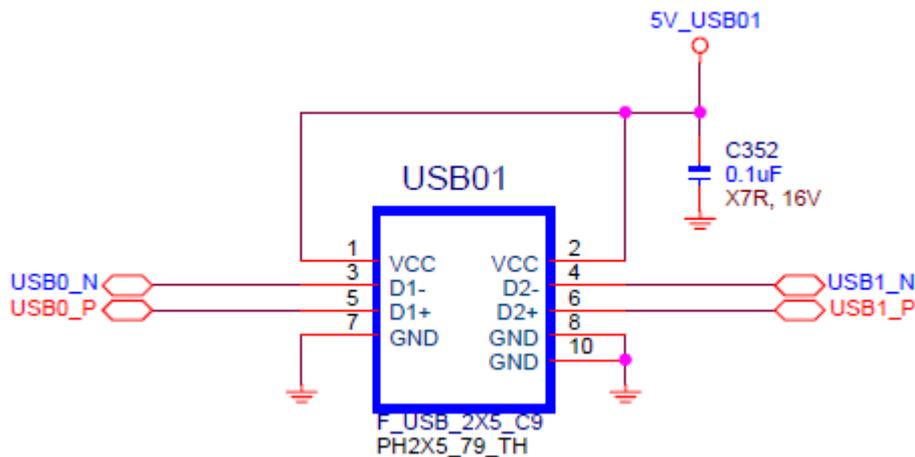
2.3 DP1

DP1 is the Mini DP output interface

2.4 USB30, USB31, USB01

4 standard USB 3.0 interfaces, 4 USB3.0 devices and compatible with USB 1.0/1.1/2.0 devices

USB01 is USB 2.0, with 2x5, 2mm pins, defined as follows:

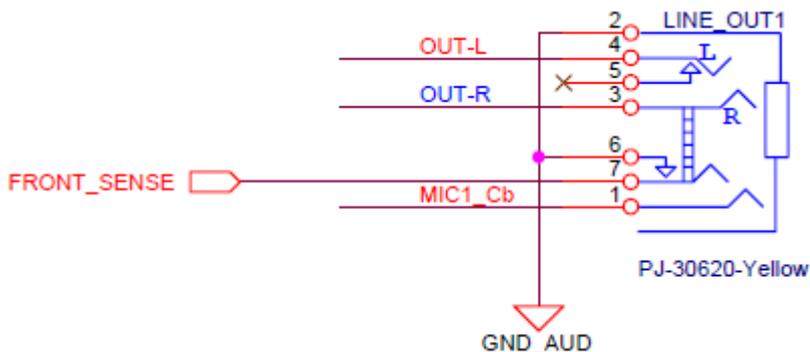


2.5 LAN1, LAN2

10/100/1000 M LAN standard RJ45 interface with Intel I211/I210 master chips.

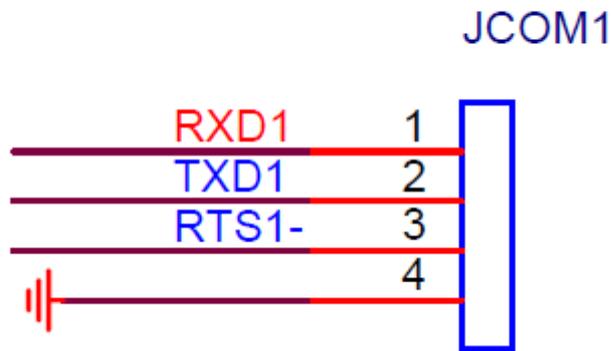
2.6 LINE_OUT1

Phone jack with 3.5mm aperture, SUPPORTS MIC and LINE-OUT, and the interface is designed in accordance with The CTIA international standards, as defined as follows:



2.7 JCOM1

RSR232 pin interface with 1x4, 2mm pin (can select serial TTL level)

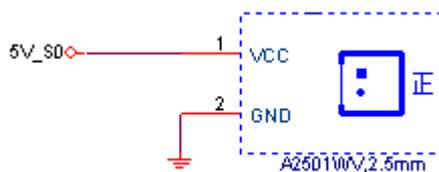


2.8 SATA1

Standard SATA device interface, SATA 3.0 and below.

2.9 HD_P1

1 SATA device power interface using CJT A2501WV-2P or other compatible component. The definition is similar to the following figure.



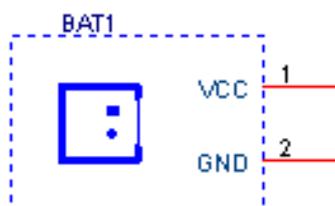
2.10 RTC1

THE RTC1 is an RTC zero jumper with 1x2 and 2mm jumpers.

RTC1	function
Close	Clear RTC CMOS
Open	Default setting

2.11 BAT1

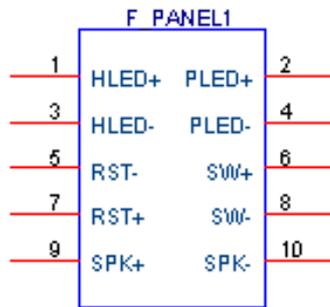
Battery interface for replacement easily. Use CJT A1251WV-2P interface or other compatible interface.



2.12 FP1

Motherboard interface brief instructions

Control panel with interface 2x5, 2mm pin, integrated HDD_LED, PWR_LED, power-on switch, reset switch, SPEAKER function. The pins are defined as follows.



F_PANEL1	definition
1, 3	The hard drive read and write light, they are positive and negative.
2, 4	The main power LED positive and negative signal pins.
5, 7	The motherboard resets the positive and negative signal pins.
6, 8	The motherboard switch ON/OFF signal positive and negative signal pins.
9, 10	Spare buzzer interface.

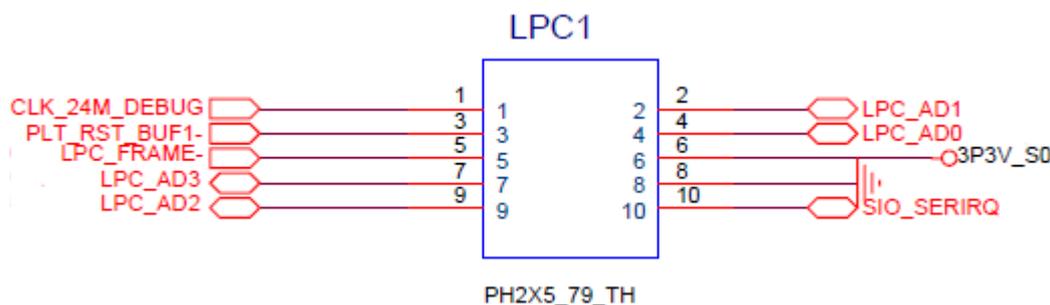
2.13 JP2

AT Power ON/OFF mode Select jumper, when you select Close, the DC power is powered on and the motherboard is powered on.

PS_ON	Mode select
Close	AT Power on mode
Open	ATX Power on mode

2.14 LPC1

LPC pin extension interface, using 2x5, 2mm pin, defined as follows:



2.15 MPCIE1

Motherboard interface brief instructions

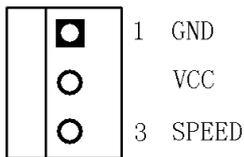
MPCIE1 是标准 Mini-PCIE 卡座，可插全长卡。半长卡 Mini-PCIE 卡，须接加长卡固定。
The MPCIE1 is a standard Mini-PCIE holder with a full-length, half-length mini-PCIE card must be fixed with an extended card.

2.16 SIM1

On-board Micro SIM holder with 3G/4G Micro SIM card (Module support for mini-PCIE card holder required)

2.17 CPU_FAN1

Fan interface supports 5V fans, using PWM manual, automatically adjusts the fan speed, the maximum current 0.3A, defined as follows:



CPU fan interface, supports automatic speed adjustment. The maximum fan voltage is equal to the input supply voltage, and when the input supply voltage is high, please select the right fan.

3 Back interface layout

Motherboard interface brief instructions

The back of the motherboard is laid out as shown in the figure below.

