RCB610

Preliminary

schematic diagram
only for reference

Main Features

- 14th Generation Intel® Core™ I Processors
- 1 x VGA and 1 x HDMI Display ports
- 2 x SO-DIMM DDR5 with non-ECC 5600MHz up to 64GB
- 3 x Intel® GbE LAN ports
- 7 x USB 3.2 (Gen1), 4 x USB 2.0
- 2 x RS232 and 2 x RS232/422/485

- 1 x SATA 3.0 port
- 1 x MXM slot support PCIe x 8
- 1 x M.2 Key B + 1 x M.2 key M
- Onboard TPM
- Support 0~60 °C extended operating temperature
- 24V DC input

Product Overview

RCB610 is equipped with Meteor Lake 14th generation Intel® Core™ I processor, with high-performance AI computing capabilities, High-performance architecture x86-64 for ROS development and visual recognition applications.

The I/O of various devices can be connected to various devices. Supports real-time I/O for environmental sensors (LAN, USB, GPIO, COM).

Instant messaging software communicates between software components and devices.

RCB610 has rich IO interfaces, which can easily meet the diversified needs of robots, instead of being limited to simple handling robots AMR is suitable for application services in different fields of various industrial enterprises, various manufacturing industries, building parks, medical institutions, e-commerce logistics related industrial services.

The introduction of AMR can not only greatly improve work efficiency and reduce the fixed cost of operating personnel!

It also conforms to current affairs applications such as "assisted labor-saving handling", "human-machine collaborative operation", "AMR/AGV", "IoT Internet of Things concept" and "epidemic

Specifications

CPU Support
- 14th Generation Intel® Core™ I Processors Intel® 14th Generation Core™ i7 SoC.
- Ultra 7 processor 165H (16C, 1.4GHz, up to 5GHz, TDP 28W)

Main Memory
- DDR5-5600 SO-DIMM sockets supported Dual Channel, Max. 64GB.

Display Option
- 1 x VGA (resolution up to 1920x1080@60Hz).
- 1 x HDMI 1.4b (resolution up to 4096x2304@60Hz)
- Tip: Multiple display : (VGA+HDMI).

System
- 7 x USB3.2 (Gen1), 4 x USB2.0.
- 2 x RS232, 2 x RS232/485/422
- Realtek HDA Codec.
- 1 x Front panel header, 16 bit digital I/O(8In/8Out), 2 x DI/DO

- WDT, SMBus, Onboard TPM.
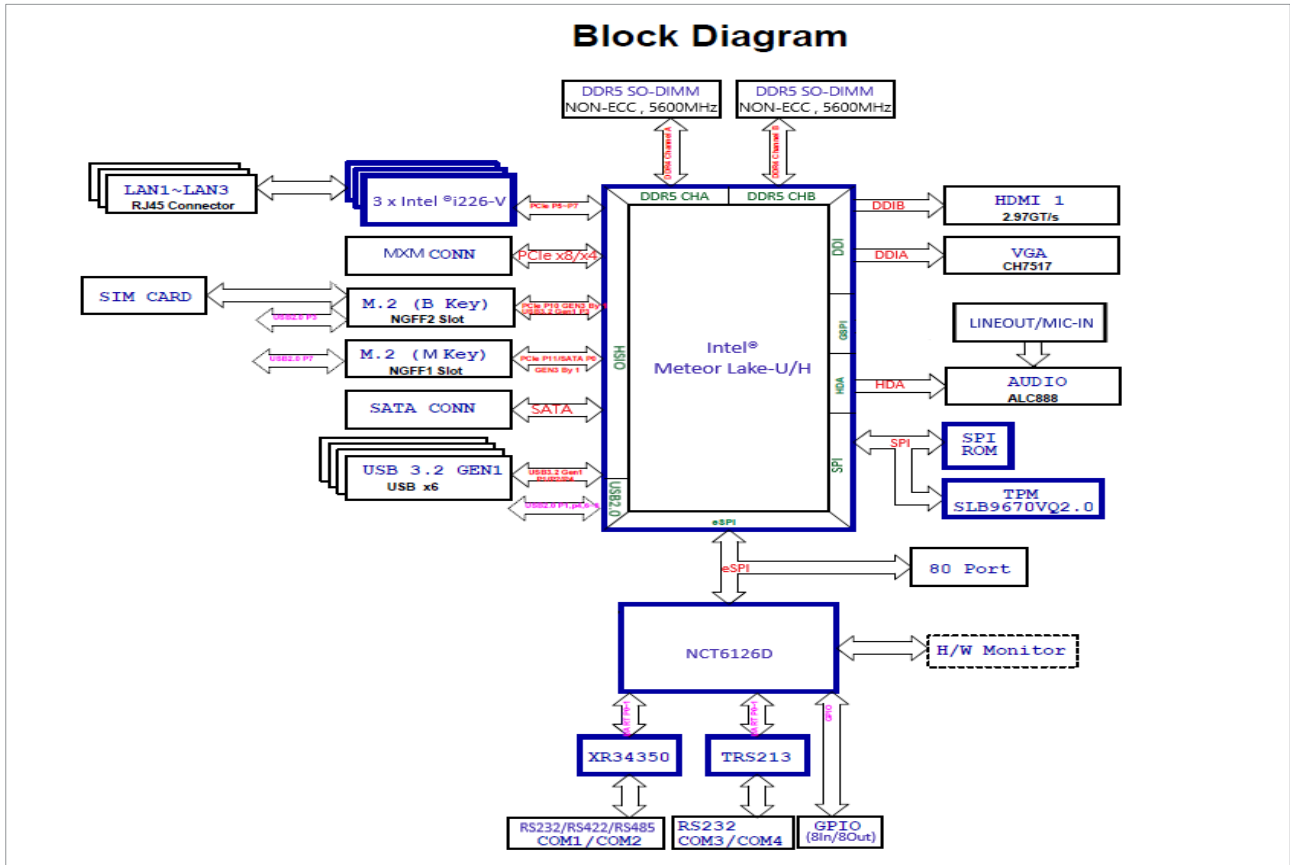- 1 x Fan connector.

Storage
- 1 x SATA 3.0, 1 x SATA power connector (+5V).
- 1 x M.2 2242/2280 M-key (support SATA/PCIe).

Expansion Slot
- 1 x MXM Slot(support PCIe x 8).
- 1 x M.2 3052/3042 key B(for LTE 5G),(USB3.2 (Gen1)/PCIe) with Nano-SIM.

Rear I/O
- 6 x USB3.2 (Gen1).
- 1 x VGA, 1 x HDMI1.4b.
- 2 x DB9 (by COM 1,2).
- 3 x GbE LAN
- 1 x 2 ports HD Audio Jack (Mic-in, Line-out).

Block Diagram

Internal I/O

- 2 x USB2.0 (Pin Header).
- 4 x serial ports:
  > 2 x RS232 (by COM 3,4)
  > 2 x RS232/485/422 (by COM1,2)
- 1 x Front panel header, 1 x 16 bit digital I/O(8In/8Out), 2 x DI/ DO, WDT, SM bus.
- HA Audio:
  > 1 x Speaker out, 1 x Line-Out, 1 x MIC-In
- 1 x 4Pin DC In (+24V).

Power Requirement

- 1 x 4-pin (2x2) ATX Power connector.
  – Input power DC 12V or 24V Only (Auto Detect).
- Support both AT and ATX power supply mode.

Dimension

- 6.7"x6.7" (170mm x 170 mm).

Environment

- Board level operation temperature: 0°C to 60°C
- Storage temperature: -40°C to 85°C
- Relative humidity:
  – 10% to 95% (operating, non-condensing)
  – 5% to 95% (non-operating, non-condensing)

Certifications

- CE/FCC Class A & **IEC 61326-3-1.**

Support OS

- Windows 10 (64bit).
- Ubuntu 18.04.05/Kernel 5.4

Ordering Information

- **RCB610 (P/N:** 10J200RCB16X0 **)**
  Mini-ITX, 14th Generation Intel® Core™ I Processors , 2 x DDR5 SO-DIMM, 1 x VGA , 1x HDMI , 7 x USB3.2 (Gen1), 4 x USB2.0, 3 x GbE LAN, 1 x SATA, 2 x RS232, 2 x RS232/422/485, 16bit GPIO, 2 x DI/DO, WDT, SMBus, 1 x M.2 Key B, 1 x M.2 key M , Onboard TPM, 24V DC.

Packing List

- 1 RCB610 MB
- 1 SATA Cable
- 1 SATA PWR Cable
- 2 COM port Cable

Optional Accessories

- **POWER ADAPTER (**P/N: 7400120026X00)
  POWER ADAPTER FSP:FSP120-AAAN3(9NA1206609) 120W 24V/5A, W/3PIN PHOENIX CONTACT
- **DC POWER CABLE (**P/N: 603POW0391X00**)**
  POWER CABLE ST:ST-1906022 ATX 2x2P PIT:4.2mm TO TERMINAL BLOCKS 3P PIT:5.08mm L=230mm
- **CPU cooler (**P/N: TBD**)**