

CW-J6-2L2C VER1.1

User Manual

■ To assist you in using the motherboard, please carefully read the [User Manual]. For product-related information, please read this safety guide carefully.

Product version identification

You can find the version of this motherboard marked [VER:X.X] on the motherboard. X.X is a number, for example, the mark [VER1.0], which means the version of this motherboard is 1.0. When you want to update the BIOS, driver or refer to other technical information of the motherboard, please pay attention to the product version mark.

Safety Instructions

1. Before using this product, please thoroughly read the user manual.
2. Uninstalled boards should be stored in anti-static protective bags.
3. Before removing the board from the anti-static bag, ground yourself by touching a grounded metal object for a few seconds to release any static electricity from your body.
4. When handling the board, wear anti-static gloves and avoid touching the circuitry, handling it by the edges only.
5. To avoid electric shock or damage, always turn off the power before inserting, removing, or reconfiguring the board.
6. Turn off the power before moving the board or the entire machine.
7. Ensure the power is turned off before adding or removing any boards from the system.
8. Turn off the power before connecting or disconnecting any devices.
9. To avoid damage from frequent power cycling, wait at least 30 seconds after shutting down before restarting the system.

Ordering Information

No.	Model	CPU	Cores	Frequency	Memory	HDMI	DP	LAN	USB	PS2	LPT	COM/485	POWER
1	CW-J6-2L2C VER1.1	J6412	4	2.0G	DDR4	2	1	3	8	/	/	2 / 1	12V

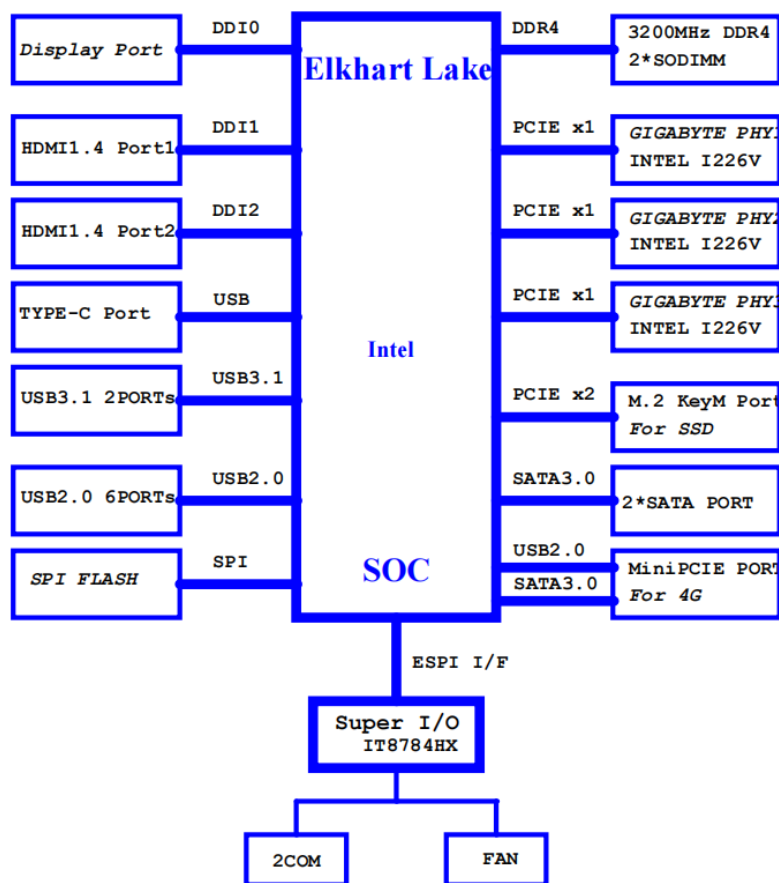
一、Product Overview

The NUC62D is a NANO-series motherboard that supports the full range of Intel® Elkhart Lake CPUs. It can be widely used in digital signage, mini PCs, medical devices, industrial control, financial equipment, cloud terminals, and more.

Main Features of CW-J6-2L2C Motherboard:

1. Integrated Intel® Celeron J6412 2.0 GHz quad-core processor, compatible with the entire Intel® Elkhart Lake CPU series.
2. 2* SODIMM slots supporting 3200MHz DDR4 memory, with a maximum capacity of 16GB.
3. 1* DP port and 2* HDMI 4K 60Hz display ports, supporting both synchronous and asynchronous dual display.
4. Supports 3 i226 gigabit Ethernet ports.
5. Supports 1 Mini-PCIe (Msata/4G) and 1 M.2 Key-M 2280 PCIe SSD.
6. 2 USB 3.1 ports and 6 USB 2.0 ports.
7. Default support for 2 RS232 serial ports (which can be adjusted to support 2 RS485 ports).
8. Fanless design, suitable for dustproof and moisture-resistant closed systems.
9. Supports -20° C to 60° C wide temperature operation.
10. Switchable AT and ATX modes, powered by a 12V DC power supply.

二、Mainboard Frame Diagram



Note: COM1 can support RS232/485, Option

三、Motherboard Specifications

Category	Description
Processor	Integrated Intel® Celeron J6412 2.0 GHz quad-core processor (TDP 10W), compatible with the entire Elkhart Lake CPU series
Memory	1* SODIMM slot supports dual-channel 3200MHz DDR4 memory, maximum support 32GB (default)
Display	Integrated Intel® UHD Graphics 10th generation
	1* DP1.4 port and 2* HDMI 4K 60Hz ports
	Support DP, HDMI synchronous/asynchronous dual display
Network	3* Intel 226 Gigabit network card (2 networks optional), supports wake-on-LAN/PXE.
Storage	2* 7pin SATA 3.0 hard drive ports , transmission rate up to 6Gbps (SATA1 and Msata are optional)
	1* M.2 Key-M slot, supports 2280 SATA SSD
Audio	Onboard ALC897 7.1-channel high-fidelity audio controller, supports MIC/Line-out
Expansion	1* Mini-PCIe slot supports MSATA/4G modules (MSATA and SATA1 selectable)
Rear I/O	2* HDMI 2.0 display ports
	1* DP1.4 display port
	1* SIM card slot
	3* RJ-45 gigabit Ethernet ports (LAN3 can be used as USB5)
	1* standard 3.5mm audio jack (supports Line-out and MIC)
	1* 12V DC power input port
Front I/O	2* USB 3.1 ports
	2* USB 2.0 ports
	2* DB9 RS232 serial ports (COM1 and COM2 adjustable to support RS485)
	1* hard drive LED
	1* power LED button
Internal I/O	1* TPM 2.0 connector 2*6Pin
	2* USB 2.0 connectors 2*5Pin
	1* COM port 2*5Pin (To multiplex signals with JCOM2, the hardware needs to be adjusted when selecting pin headers)
	1* ATX power connector 1*4Pin
	1* hard drive power connector 1*4Pin
Cooling	Back-mounted CPU Fanless design, supports 1* 4pin CPU fan connector

BIOS	128Mb Flash ROM
Watchdog	Support hardware reset function (256 levels, 0~255 seconds)
Operating System	Windows 10/Windows 11/Linux
Power Supply	12V DC power input
Operating Temperature	-10℃~60℃
Storage Temperature	-20℃~70℃
Humidity	5%-95% relative humidity, non-condensing
Size	120mm x 120mm

四、Motherboard Installation



Safety Notice:

- Do not remove or tamper with the motherboard's serial number or warranty sticker, as it may affect the warranty period.
- Turn off the power and disconnect the power cord before installing or removing the motherboard or other hardware components.
- Ensure connectors and sockets are firmly attached when installing other hardware to the motherboard.
- Avoid touching the metallic parts of the motherboard to prevent short circuits.
- When handling the motherboard, CPU, or memory, wear an anti-static wristband, or make sure to touch a grounded metal object before handling to eliminate static electricity.
- Before turning on the power, ensure that the voltage of the power supply matches the standard voltage for your region.
- Ensure that all hardware components and power cables are correctly connected before powering on the system.
- Avoid placing screws on the motherboard circuitry to prevent damage or malfunction.
- Ensure there are no stray screws or metal objects on the motherboard or inside the chassis.
- Do not place the computer on an unstable surface.
- Avoid placing the computer in high-temperature environments.

Memory Installation

This motherboard provides one 260-pin DDR4 SO-DIMM memory slot.

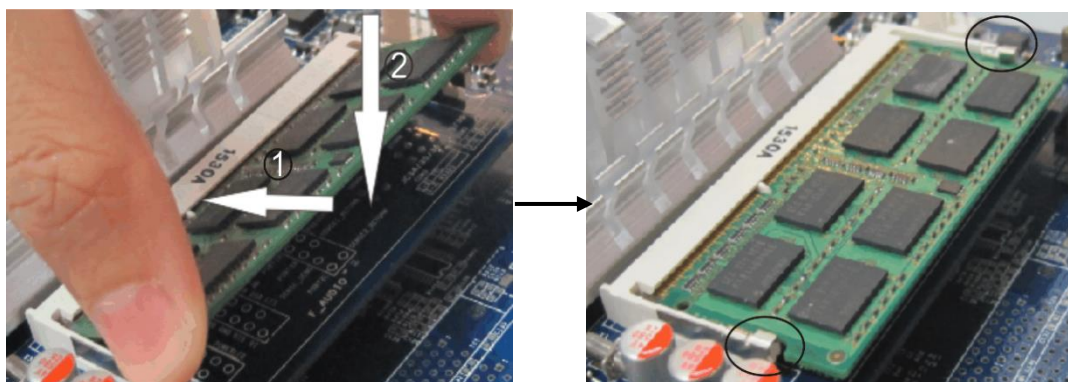
Before starting the memory installation, please note the following:

- 1、Ensure the memory you purchased is compatible with the specifications supported by this motherboard.
- 2、Before installing or removing the memory, make sure the computer's power is turned off to avoid damage.
- 3、The memory has a key notch to prevent incorrect installation. If the memory doesn't fit into the slot, check the direction and orientation, and adjust accordingly.

Installing Memory:

- 1、Before installing or removing memory, first power off the computer and disconnect the AC power cord.
- 2、Hold the memory module carefully by its edges, avoiding contact with the metallic connectors.
- 3、Align the memory module's gold contacts with the slot, ensuring the key notch matches the slot's raised area.
- 4、Insert the memory module into the slot at an angle of about 30 degrees, then press it down until you hear a "click" sound, indicating that the memory has been successfully installed.
(Note: Be careful with the pressure applied to avoid damaging the memory module.)
- 5、To remove the memory module, push the latches on both sides of the DIMM slot outward, then carefully lift the module out.

The installation diagram is for reference only:

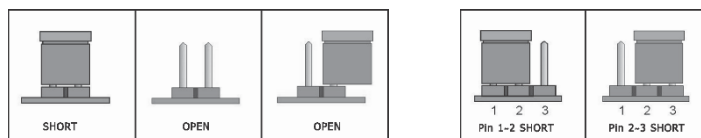


五、Jumpers Settings

Jumper Instructions

2-pin connector: Inserting the jumper cap on the two pins closes (short-circuits) the connection.

3-pin connector: The jumper cap can be placed on pins 1-2 or pins 2-3 to close the connection (short-circuit).



How to Identify Pin 1 of a Jumper?

- 1、Look closely at the motherboard. Any pins labeled with "1" or marked with a thick white line indicate pin 1.
- 2、Check the soldering pads on the back of the board; typically, a square pad indicates the first pin.

Clear CMOS Jumper: This motherboard provides a 1*3-pin clear CMOS jumper. The CMOS stores system settings powered by a button cell battery. Clearing the CMOS will permanently erase previous system configurations and restore the original (factory) system settings.

The steps are as follows:

- (1) Turn off the computer and disconnect the power.
- (2) Short the JBAT1 pins 2-3 for about 5 seconds.
- (3) Reconnect the power and start the computer.
- (4) During boot, follow the on-screen prompts to enter the BIOS setup and reload the default optimal settings.

(5) Save the settings and exit.

The pin definitions are as follows:

Pin Definitions for JBAT1:

Corresponding Function	JBAT1 Setting
Normal Operation	1-2Pin
Clear CMOS Restores BIOS to factory settings	2-3Pin

Power-On Function Jump Pin: The motherboard has a 1*3-pin AT-ATX1 jumper that controls whether the computer automatically powers on when power is applied.

Pin Definitions for AT-ATX1:

Corresponding Function	AT-ATX1 Setting
Disable Auto Power On	1-2Pin (default)
Enable Auto Power On	2-3Pin

六、Pin Definitions

1、The motherboard provides two standard DB9 serial interfaces and one internal 2*5-pin COM connector. Through hardware adjustments, two RS485 ports can be supported. The RS232 pinout definitions for COM1 and COM2 are as follows:

PIN	Signal Name	PIN	Signal Name
1	DCD (A)	2	RXD (B)
3	TXD	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI	10	NC

Note: For RS485 support, hardware adjustment is required. Please contact sales if needed.

2、The motherboard supports 2 USB 3.0 ports and 6 USB 2.0 ports. It also provides one internal 2*5-pin USB 2.0 connector. The pin definitions for the F_USB1 connector are as follows:

PIN	Signal Name	PIN	Signal Name
1	+5V	2	+5V
3	Data0-	4	Data1-
5	Data0+	6	Data1+
7	GND	8	GND
9		10	GND

3、This motherboard provides two 1*4-pin red SATA power connectors. The pin definitions for JSPWR1 are as follows:

PIN	Signal Name
1	+12V
2	GND
3	GND
4	+5V

Warning: Ensure that the first pin of JSATA_PWR1 is correctly identified to avoid damaging the

hard drive. Use only the power cables provided by the manufacturer.

4、The motherboard provides one 1*4-pin fan connector. The pin definitions for CPUFAN1 are as follows:

PIN	Signal Name
1	GND
2	+12V
3	DET
4	PWM

Note:

DET: Outputs the fan speed pulse.

PWM: Controls the fan speed using PWM.

5、The motherboard includes a 1*4-pin DC power connector (DC_IN2). The pin definitions for DC_IN2 are as follows:

PIN	Signal Name
1	+12V
2	+12V
3	GND
4	GND

6、An internal 2*6-pin TPM 2.0 connector is also available on this motherboard. The pin definitions for TPM1 are as follows:

PIN	Signal Name	PIN	Signal Name
1	SPI POWER	2	SPI CS#
3	SPI MISO	4	SPI MOSI
5	NC	6	SPI CLK
7	GND	8	SPI RESET
9	NC		
11	NC	12	SPI IRQ