

MS-iCraft Z790 WIFI

Manual

VER:A0

Edited on: October 19th, 2022
Editing Department: Technology Department

Chapter 1 Motherboard Configuration Diagram



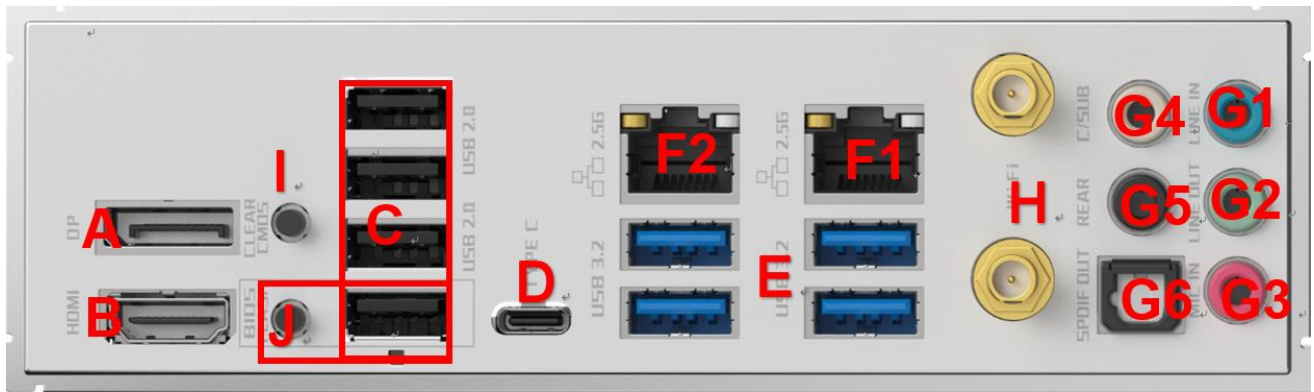
(This picture is for reference only, some details will be designed and adjusted according to the actual situation, please refer to the actual product, our company reserves the right of interpretation)

Chapter 2 Specifications

2.1 Motherboard Hardware Specifications

Motherboard size	ATX(248*305mm)
CPU	Support LGA1700 slot Intel 12th and 13th processors TDP: Unlimited power consumption
Chipset	Intel® Z790 Express Chipset
Memory	4*DIMM DDR5 memory slots Up to 256GB in total Supports dual-channel memory technology Support 4800/OC memory frequency (2, 4 slots are recommended for memory overclocking, 1, 3 slots can only be up to 4000)
Display	Based on the display function with integrated graphics processor, using shared display memory technology 1*HDMI2.0 interface, supports up to 4096x2160@60Hz resolution (supports HDCP2.2) 1*DP1.4 interface, up to 4096x2160@60Hz resolution
Extension ports	1*PCIEX16 5.0 slot 2*PCIEX4 3.0 slots 1*PCIEX1 3.0 slot Support AMD and NVIDIA discrete graphics, DG1 discrete graphics Support PCIe resizable bar technology (requires simultaneous support of CPU and graphics card)
Audio	Integrated REALTEK ALC1220 sound card chip Support simultaneous output of front and rear channels (need to be set in the high-definition audio controller) Rear audio interface: 1*rear onboard LINE IN interface, 1*rear onboard LINE OUT interface, one rear onboard MIC_IN microphone interface, 1*C/SUB subwoofer interface, 1*REAR rear surround sound channel, 1*SPDIF OUT optical audio output interface. F_AUDIO pins: 1*group of front microphone pins, 1*group of front audio output pins (the 2 pins are the F_Audio pin group) 1*set of 4pin speaker SPEAKER pins
Network	Integrated REALTEK8125B network card chip (2.5Gpbs) 2*onboard RJ45 ports Wake-on-LAN support

	Support PXE diskless, UEFI diskless boot
Storage	<p>1* M2.A slot (only supports 2242/2260/2280/22110 PCIE X4/X2 channel SSD)</p> <p>1* M2.B slot (only supports 2242/2260/2280/22110 PCIE X4/X2 channel SSD)</p> <p>1* M2.C slot (only supports 2242/2260/2280/22110 PCIE X4/X2 channel SSD)</p> <p>1* M2.D slot (supports 2242/2260/2280/22110 PCIE X4/X2 channel SSD and SATA channel SSD)</p> <p>4* SATA3.0 ports</p>
USB	<p>Rear on-board rear interface: 4 USB 3.2 GEN2 interfaces, 4 USB 2.0 interfaces, 1 Type-C USB 3.2 GEN2 * 2 interface</p> <p>Front panel internal pins: 2 sets (3) of USB2.0 pins, 1 set (2) of USB3.2 GEN1 pins, 1 Type-C USB3.2 GEN2 * 2 interface</p>
On-board socket	<p>1*24PIN motherboard ATX power supply interface</p> <p>2*8PIN motherboard ATX 12V power supply interface, 12V input</p> <p>1*COM_A pin</p> <p>5*sets of SYS_FAN pins, 1*set of CPU_FAN pins (both support smart fan adjustment)</p> <p>1*rear CLEAR_CMOS button</p> <p>1*RGB_BTN button</p> <p>1*POWER_BTN button</p> <p>1*RESET_BTN button</p> <p>1*rear BIOS FLASH button</p> <p>1*TPM pin (supports programming at the same time)</p> <p>2*3PIN 5V RGB light pins</p> <p>1*4PIN 12V RGB light pin</p> <p>1*set of chassis front control panel pins (F_PANEL)</p> <p>1*set of 3pin CHASSIS tips</p>
Hardware monitoring	<p>Voltage monitoring</p> <p>temperature monitoring</p> <p>Fan monitoring</p> <p>Smart fan speed control (supported by the motherboard, and fan support is also required for smart fan speed control)</p>
Operating system	<p>Support Windows10 64bit, Windows11 64bit</p> <p>Support Ubuntu 64bit</p>
ESD protection	<p>Air discharge \pm 8KV Level C</p> <p>\pm 6KV Class B</p> <p>Contact discharge \pm 6KV Level C</p> <p>\pm 3KV Class B</p> <p>*Test under the condition that the whole machine is well grounded</p>



A: DP interface

DP1.4 interface, up to 4096x2160@60Hz resolution, used to connect to the DP display interface.

B: HDMI interface

HDMI2.0 interface, up to 4096x2160@60Hz resolution (support HDCP2.2), used to connect HDMI display interface.

I: CLEAR_CMOS button

To clear the motherboard CMOS information, please confirm that the AC power is disconnected before operation, and long press the button for 8 seconds to clear the motherboard CMOS information.

J: BIOS_FLASH button

To update the motherboard BIOS offline, use it with the bottom port of USB C. Before operation, please connect the ATX24PIN port, copy the creative.rom file to the root directory of the U disk formatted as FAT32, and insert the U disk into the bottom port of USB C. Long press the BIOS_FLASH button, the RGB lights of the motherboard radiator will flash, and the BIOS will be automatically updated. Do not unplug the USB flash drive or disconnect the AC power supply during the BIOS update, otherwise the motherboard BIOS will not light up abnormally.

C: USB2.0 interface

The maximum support theoretical 480Mb speed transmission, backward compatible with USB1.1 standard, used to connect USB TYPE A devices.

D: TYPE-C interface

The highest theoretical 20Gb speed transmission is supported, which is used to connect TYPE-C devices.


E: USB3.2 GEN2 interface

It supports up to theoretical 10Gb transmission speed, and is backward compatible with the USB1.1 standard for connecting USB TYPE A devices.

F1: RJ45 interface


The network cable interface is used to access the network cable to connect the host system to the

network, with a maximum bandwidth of 2.5Mbps.

<p>Connection bandwidth indicator lights</p>  <p>Running lights</p> <p>Network socket</p>	Connection bandwidth indicator light		Running lights	
	Bandwidth	Light status	No data transfer	Extinguish
	No connection	Extinguish	Data transmission	Flicker
	10Mbps	Extinguish		
	100Mbps	Steady green		
	1000Mbps	Steady Orange		
2500Mbps	Steady Orange			

F2: RJ45 interface

The network cable interface is used to access the network cable to connect the host system to the network, with a maximum bandwidth of 2.5Mbps.

<p>Connection bandwidth indicator lights</p>  <p>Running lights</p> <p>Network socket</p>	Connection bandwidth indicator light		Running lights	
	Bandwidth	Light status	No data transfer	Extinguish
	No connection	Extinguish	Data transmission	Flicker
	10Mbps	Extinguish		
	100Mbps	Steady green		
	1000Mbps	Steady Orange		
2500Mbps	Steady Orange			

H: WIFI antenna interface

The motherboard has a built-in Intel AX211 wireless network card module. Connect the provided magnetic antenna connector to the WIFI interface, and install the network card driver and Bluetooth driver of the WIFI network card to use it normally.

G1: Audio-in port (blue)

Used to receive audio input devices, such as mobile phone audio input.

G2: Audio-out interface (light green)

Used to access audio output devices, such as headphones, speakers and other external devices.

G3: Audio-microphone jack (pink)

Used to access audio input devices, such as microphones and other radio equipment.

G4: C/SUB interface (yellow)

The center subwoofer interface for connecting to the audio.

G5: REAR interface (black)

Surround back channel connector for accessing audio.

G6: SPDIF OUT interface (black)

For SPDIF OUT optical audio output audio equipment.



MS-iCraft Z790 WIFI

使用手册

VER:A0



SHANGKE GROUP

编辑时间：2022 年 10 月 19 日

编辑部门：商科集团技术部

第一章 主板配置图



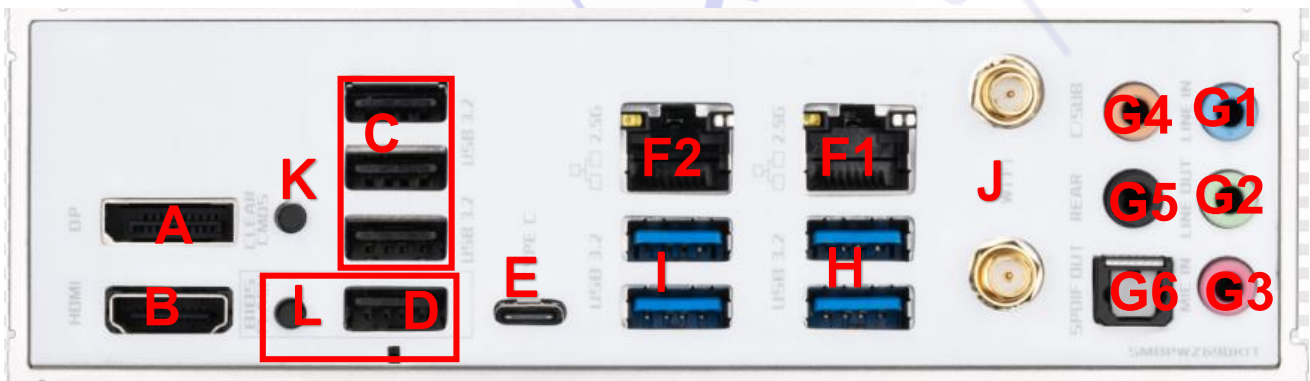
(此图仅供参考，部分细节会根据实际情况设计调整，请以实物为准，我司保留解释权)

第二章 规格

2.1、主板硬件规格

主板尺寸	ATX (248*305mm)
CPU	支持 LGA1700 插槽 第 12 代处理器, 13 代处理器 TDP: 不限功耗
芯片组	Intel®Z790 高速芯片组
内存	4 个 DIMM DDR5 内存槽 最高支持共 128GB 支持双通道内存技术 支持 4800/OC Memeroy 内存频率(内存超频建议使用 2、4 插槽, 1、3 插槽最高只能 4000)
显示	基于具备集成显卡处理器的显示功能, 采用共享显示内存技术 1 个 HDMI2.0 接口, 最高支持 4096x2160@60Hz 分辨率 (支持 HDCP2. 2) 1 个 DP1. 4 接口, 最高支持 7680x4320 @30Hz 分辨率
扩展接口	1 个 PCIEX16 5.0 插槽 2 个 PCIEX4 3.0 插槽 2 个 PCIEX1 3.0 插槽 支持 AMD 和 NVidia 独立显卡、DG1 独立显卡 支持 PCIe resizable bar 技术 (需 CPU 和显卡同步支持)
音频	集成 REALTEK ALC1220 声卡芯片 支持前后声道同时输出 (需要高清音频控制器中设置) 后置音频接口: 1 个后置板载 LINE IN 接口, 1 个后置板载 LINE OUT 接口, 一个后置板载 MIC_IN 麦克风接口, 1 个 C/SUB 重低音接口, 1 个 REAR 后置环绕声道, 1 个 SPDIF OUT 光纤音频输出接口。 F_AUDIO 插针: 1 组前置麦克风插针, 1 组前置音频输出插针 (此 2 个插针为 F_Audio 插针组) 1 组 4pin 喇叭 SPEAKER 插针
网络	集成 REALTEK8125BG 网卡芯片 (2. 5Gpbs) 2 个板载 RJ45 接口 支持网络唤醒 支持 PXE 无盘、UEFI 无盘引导
存储	1 个 M2. A 插槽 (仅支持 2242/2260/2280 PCIE X4/X2 通道 SSD) 1 个 M2. B 插槽 (仅支持 2242/2260/2280/22110 PCIE X4/X2 通道 SSD) 1 个 M2. C 插槽 (仅支持 2242/2260/2280/22110 PCIE X4/X2 通道 SSD) 1 个 M2. D 插槽 (支持 2242/2260/2280/22110 PCIE X4/X2 通道 SSD 和 SATA 通道 SSD) 4 个 SATA3. 0 接口
USB	后置板载后置接口: 4 个 USB3. 2 GEN2 接口, 4 个 USB2. 0 接口, 1 个 Type-C USB3. 2 GEN2*2 接口 前置板内插针: 2 组 (3 个) USB2. 0 插针, 1 组 (2 个) USB3. 2 GEN1 插针, 1 个 Type-C USB3. 2 GEN2*2 接口

板内插座	1 个 24PIN 主板 ATX 供电接口 2 个 8PIN 主板 ATX 12V 供电接口, 12V 输入 1 个 COM_A 插针 5 组 SYS_FAN 插针、1 组 CPU_FAN 插针 (都支持智能风扇调节) 1 个后置 CLEAR_CMOS 按钮 1 个 RGB_BTN 按钮 1 个 POWER_BTN 按钮 1 个 RESET_BTN 按钮 1 个 BIOS_FLASH 按钮 1 个 TPM 插针 2 个 3PIN 5V 的 RGB 灯插针 1 个 4PIN 12V 的 RGB 灯插针 1 组机箱前置控制面板插针 (F_PANEL) 1 组 3pin CHASSIS 提示插针
硬件监控	电压监测 温度监测 风扇监测 智能风扇控速 (主板已作支持, 智能风扇控速也需风扇支持)
操作系统	支持 Windows10 64bit, Windows11 64bit 支持 Ubuntu 64bit
ESD 防护	空气放电 ± 8KV C 级 ± 6KV B 级 接触放电 ± 6KV C 级 ± 3KV B 级 *整机接地良好的情况下测试



A:

DP 接口

DP1.4 接口, 最高支持 7680x4320 @30Hz 分辨率, 用于连接 DP 显示器接口。

B:HDMI 接口

HDMI2.0 接口, 最高支持 4096x2160@60Hz 分辨率 (支持 HDCP2.2), 用于连接 HDMI 显示器接口。

K: CLEAR_CMOS 按钮

清除主板 CMOS 信息使用, 操作前请确认已断开 AC 电源, 长按该按钮 8 秒钟完成清除主板 CMOS 信息。

L: BIOS_FLASH 按钮

离线更新主板 BIOS 配合 USB D 接口使用, 操作前, 请接通 ATX24PIN 接口, 将 creative.rom 文件拷贝到格式化为 FAT32 的 U 盘根目录下, 将 U 盘插入 USB D 接口处, 长按 BIOS_FLASH 按钮, 主板散热器的 RGB 灯闪烁开始自动更新 BIOS, 更新 BIOS 途中不能拔掉 U 盘或断开 AC 电源, 否则会导致主板 BIOS 异常不亮机。

C: USB2.0 接口

最高支持理论 60MB/s 速度传输, 可向下兼容 USB1.1 标准, 用于连接 USB TYPE A 设备。

D: USB2.0 接口

最高支持理论 60MB/S 速度传输, 可向下兼容 USB1.1 标准, 用于连接 USB TYPE A 设备。

E: TYPE-C 接口

最高支持理论 20Gb 速度传输, 用于连接 TYPE-C 设备。

I: USB3.2 GEN2 接口

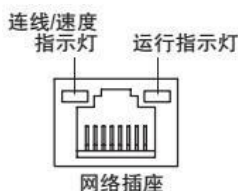
最高支持理论 10Gb 速度传输, 可向下兼容 USB1.1 标准, 用于连接 USB TYPE A 设备。

H: USB3.2 GEN2 接口

最高支持理论 10Gb 速度传输, 可向下兼容 USB1.1 标准, 用于连接 USB TYPE A 设备。

F1: RJ45 接口

网线接口, 用于接入网线将主机系统连接到网络, 最高带宽 2500Mbps。

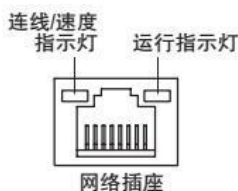


连接带宽指示灯	
带宽	灯状态
无连接	灭
10Mbps	绿色常亮
100Mbps	绿色常亮
1000Mbps	绿色常亮
2500Mbps	橙色常亮

运行指示灯	
无数据传输	灭
数据传输中	闪烁

F2: RJ45 接口

网线接口, 用于接入网线将主机系统连接到网络, 最高带宽 2500Mbps。



连接带宽指示灯	
带宽	灯状态
无连接	灭
10Mbps	绿色常亮
100Mbps	绿色常亮
1000Mbps	绿色常亮
2500Mbps	橙色常亮

运行指示灯	
无数据传输	灭
数据传输中	闪烁

J: WIFI 天线接口

主板内置有 Intel AX211 无线网卡模块，将赠送的磁吸天线接头接到该 WIFI 接口上，安装上 WIFI 网卡的网卡驱动和蓝牙驱动便可正常使用。

G1: Audio-in 接口 (蓝色)

用于接收音频输入设备，如手机音频输入。

G2: Audio-out 接口 (浅绿色)

用于接入音频输出设备，如耳机、音箱等外放设备。

G3: Audio-麦克风接口 (粉红色)

用于接入音频输入设备，如麦克风等收音设备。

G4: C/SUB-重低音接口 (黄色)

板载声卡支持 5.1 或 7.1 声道时的重低音设备接入口。

G5: REAR-后置环绕声道接口 (黑色)

板载声卡支持 5.1 或 7.1 声道时，插入后置环绕左右声道的设备接入口。

G6: SPDIF OUT-索尼飞利浦数字音频输出接口 (光纤口)

用于接入支持光纤输出的数字音频播放输出。