

MS-Terminator Z790M D5 ICE

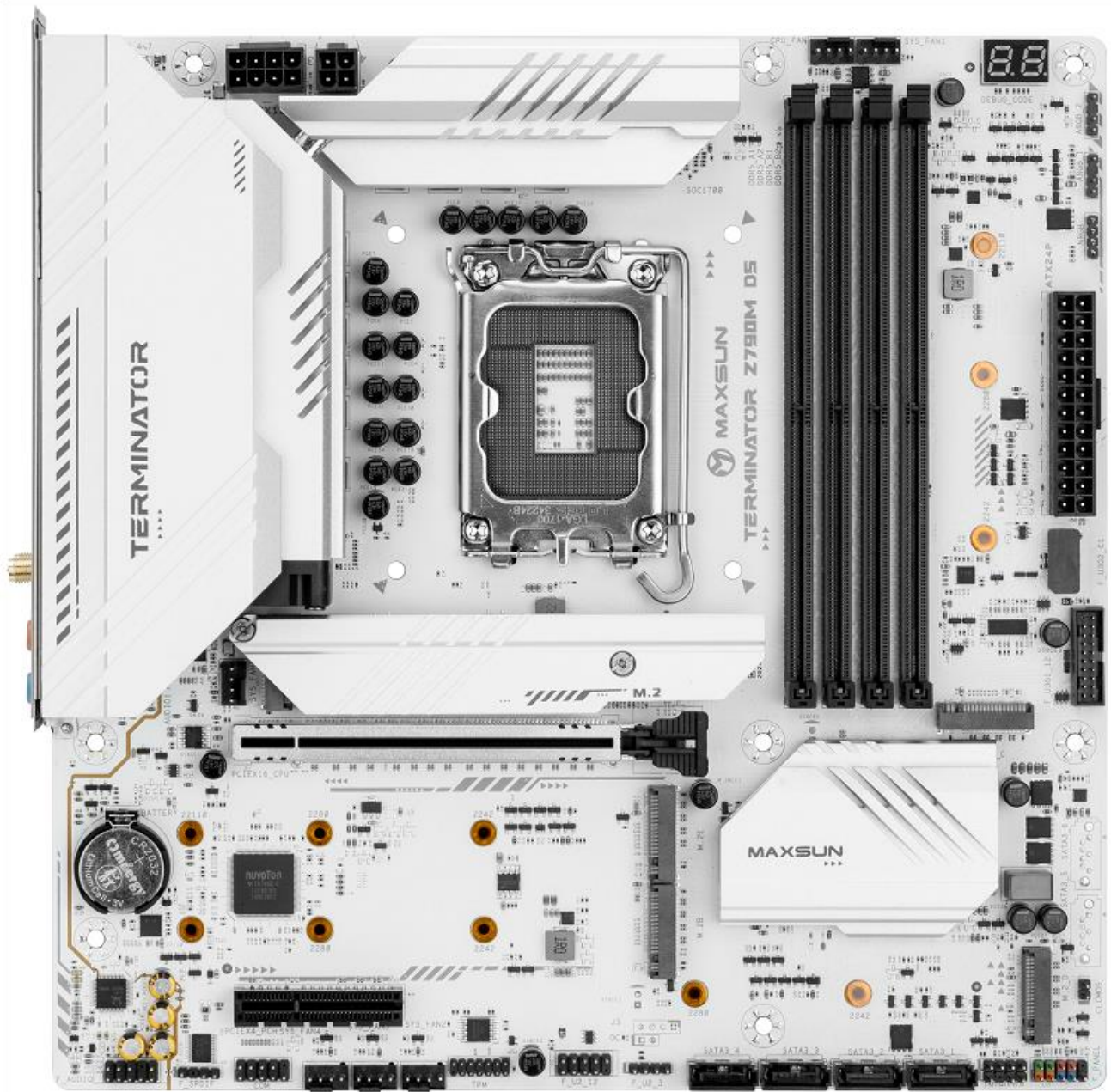
Manual

VER:A 0

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Editorial Department: Technology Department

Chapter I Motherboard configuration diagram



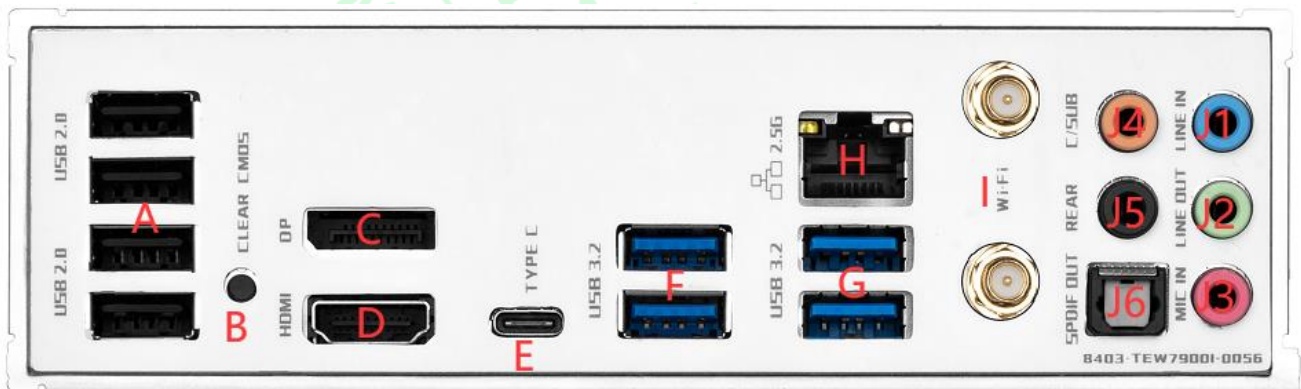
(This drawing is for reference only, and some details will be designed and adjusted according to the actual situation. Please take the physical object, and our company reserves the right of interpretation)

Chapter II Specifications

2.1 motherboard hardware specifications

Motherboard size	Micro ATX(225*225mm)
CPU	Support for LGA1700 slots The 12 th , 13 th and 14 th generation processors TDP: 251W
Chipset	Intel ® Z790 High-speed chipset
Memory	4x DIMM DDR5 memory slots (second and fourth slots) Maximum support in total is 128GB Support for dual-channel memory technology Support for 4800 / OC + memory frequency
Display	Based on the display function of the integrated graphics card processor, the shared display memory technology is adopted 1x HDMI 1.4 port, Up to 4096x2160@30Hz resolution support (with HDCP 2.2 support) 1x DP port, up to 4096x2160@60Hz resolution
Extended port	1x PCIE X16 5.0 slot 1x PCIE X4 3.0 slot Support for AMD and NVIDIA independent graphics cards
Audio	Integrated REALTEK ALC 897 sound card chip Supports simultaneous output of front and rear channels (required settings in HD audio controller) The rear is equipped with 6 audio ports: 1x rear-board LINE IN port, 1x rear-board LINE OUT port, 1x rear-board MIC_IN microphone port, 1x rear-board C/SUB port, 1x rear-board REAR port, and 1x rear-board SPDIF_OUT fiber port. F_AUDIO pin: 1x set of front microphone pins and 1x set of front audio output pins 1x 4-pin horn Buzzer pins
Network	Integrated REALTEK 8125BG card chip (10 / 100 / 1000 / 2500Mbit) 1x onboard RJ45 port Support network arousal Support PXE no disk, UEFI no disk guide 1x WIFI wireless network (Intel AX211)
Storage	5x M.2 slots (2242 / 2280 PCIE X4 / X2 channel SSD supported only) 4x SATA 3.0 ports
USB	On-board rear port: 4x USB 3.2 GEN 1 ports, 4x USB2.0 ports, and 1x Type-C (20Gbps) ports Plate insert: 1x group (2 double rows) USB2.0 pins, 1x group (single row) USB2.0 pin, 1x group (2 rows) USB 3.2 GEN 1 pin
Inside board socket	1x 24-PIN motherboard ATX power supply port 1x 8+4-PIN motherboard ATX 12V power supply port, 12V input, 5x sets of system fan pins and 1x group of CPU fan pins 1x group chassis front control panel pin (F_PANEL)

Hardware monitoring	Voltage monitoring temperature monitoring Fan monitoring Intelligent fan speed control (the main board has been supported, the intelligent fan speed control also needs fan support)
Operating system	Support for Windows 10 64bit, Windows 11 64bit Support for Ubuntu 64bit
ESD protect	Air discharge ± 8 KV Class C ± 6 KV of grade B Contact discharge is ± 6 KV Class C ± 3 KV Grade B * Test of the whole machine under good grounding
Other	1x debug digital display tube 2x 3-PIN support for 5V ARGB lamp pins 1x 4-PIN 12V NRGB lamp pin 1x 2-PIN CLR_ CMOS pin and rear 1x CLR_ CMOS button 1x TPM pin 1x COM_A Pin



A: Four-layer USB2.0 TYPE A port

Up to support USB 2.0 standard, downward compatible with USB1.1 standard. For connecting to the USB TYPE A devices.

B: CLR_CMOS push button

Clear the motherboard BIOS function setting and restore the motherboard BIOS default initialization settings.

C:DP port

Up to 4096x2160@60Hz resolution, can support both audio and video output.

D: HDMI port

Up to 4096x2160@30Hz resolution, can support both audio and video output.

E: Type-C port

Support up to 20Gbps speed of data transmission, does not support fast charging function, does not support display function.

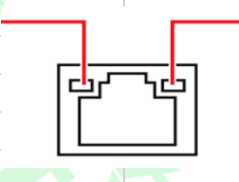
F: Double-layer USB3.2 GEN 1 port

Up to support theoretical 5Gb speed transmission, can be downward compatible with USB1.1, USB2.0 standards, used to connect USB TYPE A devices.

G: Double-layer USB3.2 GEN 1 port

Up to support theoretical 5Gb speed transmission, can be downward compatible with USB1.1, USB2.0 standards, used to connect USB TYPE A devices.

H: RJ45 network cable port for access network cable to connect the host system to the network with a maximum bandwidth of 2500M bps.

Activity Link LED			Speed LED	
Status	Description		Status	Description
Off	No link		Off	10Mbps connection
Yellow	Linked		Green	100Mbps connection
Blinking	Data activity		Orange	1000Mbps/2.5Gbps connection

I: WIFI antenna port

The WIFI port integrates an Intel AX211 wireless network card and Bluetooth device internally, and requires the corresponding driver to be used properly.

J 1: Audio-in port (blue)

For receiving audio input devices, such as mobile phone audio input.

J 2: Audio-out port (light green)

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

J 3: Audio-Microphone port (pink)

For accessing audio input devices, such as microphone and other radio devices.

J4: C/SUB-heavy bass, port (yellow)

The onboard sound card supports 5.1 or 7 channels.

J5: Rear surround channel port (Black)

When the onboard sound card supports 5.1 or 7 channels, insert the rear device inlet around the left and right channels.

J6: SPDIF OUT-Sony Philips Digital Audio Output (Fiber port)

To access a digital audio playback output that supports optical fiber output.

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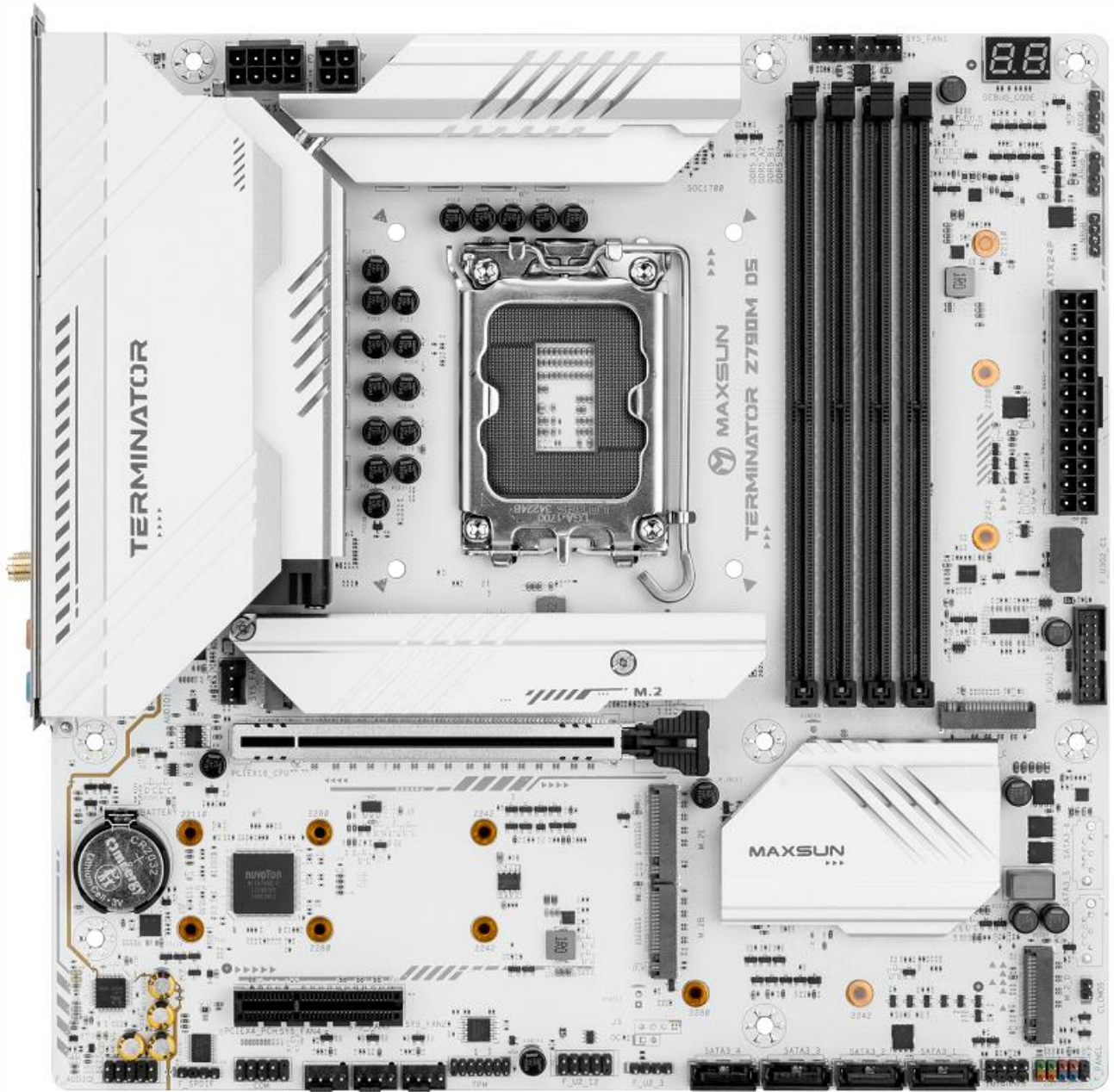
使用手册

VER:A0

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第一章 主板配置图



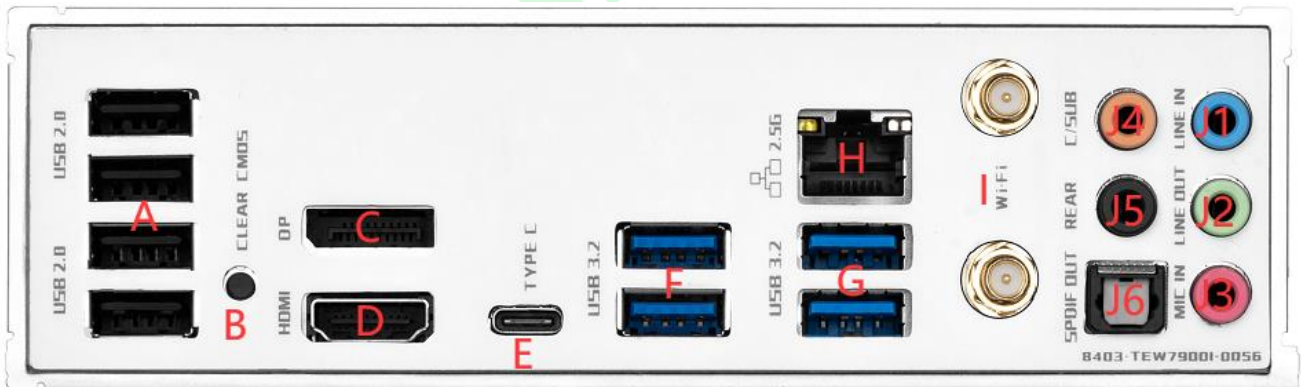
(此图仅供参考，部分细节会根据实际情况设计调整，请以实物为准，我司保留解释权)

第二章 规格

2.1、主板硬件规格

主板尺寸	MicroATX(225*225mm)
CPU	支持 LGA1700 插槽 第 12、13、14 代处理器 TDP: 251W
芯片组	Intel®Z790 高速芯片组
内存	4 个 DIMM DDR5 内存槽(请优先插第二、第四两条插槽) 最高支持共 128GB 支持双通道内存技术 支持 4800/OC+ 内存频率
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 HDMI1.4 接口, 最高支持 4096x2160@30Hz 分辨率 (支持 HDCP2.2) 1 个 DP 接口, 最高支持 4096x2160@60Hz 分辨率
扩展接口	1 个 PCIEX16 5.0 插槽 1 个 PCIEX4 3.0 插槽 支持 AMD 和 NVidia 独立显卡
音频	集成 REALTEK ALC897 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) 后置配备 6 个音频接口: 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 个后置板载 C/SUB 接口, 1 个后置板载 REAR 接口, 1 个后置板载 SPDIF_OUT 光纤接口。 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 Buzzer 插针
网络	集成 REALTEK8125BG 网卡芯片(10/100/1000/2500Mbit) 1 个板载 RJ45 接口 支持网络唤醒 支持 PXE 无盘、UEFI 无盘引导 1 个 WIFI 无线网络 (Intel AX211)
存储	5 个 M.2 插槽 (仅支持 2242/2280 PCIE X4/X2 通道 SSD) 4 个 SATA3.0 接口
USB	板载后置接口: 4 个 USB3.2 GEN1 接口, 4 个 USB2.0 接口, 1 个 Type-C (20Gbps) 接口 板内插针: 1 组 (2 双排) USB2.0 插针, 1 组 (单排) USB2.0 插针, 1 组 (2 个) USB3.2 GEN1 插针
板内插座	1 个 24PIN 主板 ATX 供电接口 1 个 8+4PIN 主板 ATX 12V 供电接口, 12V 输入, 5 组系统风扇插针、1 组 CPU 风扇插针 1 组机箱前置控制面板插针 (F_PANEL)
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
其他	一个 debug 数码显示管 2 个 3PIN 支持防呆 5V ARGB 灯插针 1 个 4PIN 12V NRGB 灯插针 2PIN CLR_CMOS 插针和后置 CLR_CMOS 按钮一个 TPM 插针 1 组 COM_A 插针 1 组



A: 四层 USB2.0 TYPE A 接口

最高支持 USB2.0 标准，可向下兼容 USB1.1 标准。用于连接 USB TYPE A 设备。

B: CLR_CMOS 按钮

一键清除主板 BIOS 功能设置，还原主板 BIOS 默认初始化设置。

C: DP 接口

最高支持 4096x2160@60Hz 分辨率，可支持声像同时输出。

D: HDMI 接口

最高支持 4096x2160@30Hz 分辨率，可支持声像同时输出。

E: Type-C 接口

最高支持 20Gbps 的数据传送速度，不支持快充功能，不支持显示功能。

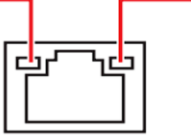
F: 双层 USB3.2 GEN1 接口

最高支持理论 5Gb 速度传输，可向下兼容 USB1.1、USB2.0 标准,用于连接 USB TYPE A 设备。

G: 双层 USB3.2 GEN1 接口

最高支持理论 5Gb 速度传输, 可向下兼容 USB1.1、USB2.0 标准,用于连接 USB TYPE A 设备。

H: RJ45 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。

运行指示灯			速度指示灯	
状态	描述		状态	描述
关闭	无链接	关闭	10Mbps 连接	
黄色	已链接	绿色	100Mbps 连接	
闪烁	数据传输	橙色	1000Mbps/2.5Gbps 连接	

I: WIFI 接口

WIFI 接口内部集成了 INTEL AX211 无线网卡和蓝牙设备, 需要正确安装相应的驱动程序才能正常使用。

J1: Audio-in 接口(蓝色)

用于接收音频输入设备, 如手机音频输入。

J2: 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。

J3: 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。

J4: 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。

J5: 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。

J6: 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。