



<b>Model: SD890-680MS</b>	
processor	<b>Supports LGA1700 12th/13th Intel® Celeron/Pentium/Core™ i3/i5/i7/i9 processors, Note: Supports 125W cpus</b>
chipset	<b>Using Intel® W680 chipset,</b>
Internal memory	<b>2* DDR4 SODIMM slots, supporting a dual-channel memory of up to 3200MHz, 128GB, and ECC memory</b>
display	<b>Integrated Intel®HD Graphics core graphics card supports DirectX12.1,OpenGL4.5, and supports 4K display</b>
	<b>1 x VGA port, the maximum resolution is 1920X1200@60Hz</b>
	<b>2* HDM1.4 interface, support the highest resolution of 4096x2160@24Hz</b>
network	<b>1* I210AT Gigabit network adapter chip, supports network wake up /PXE function</b>
Store	<b>4* SATA3.0 hard disk port, transmission speed up to 6Gbps, support RAID 0,1,5,10</b>
	<b>1* MSATA slot, supporting Intel SSDs</b>
	<b>1 x M.2 slot, supporting the M.2 Key M 2280 NVME PCIE X4</b>

	standard SSD
Tone frequency	<b>Onboard ALC897 7.1+2 channel hi-fi audio controller with MIC/Line-out support</b>
Expansion slot	<b>1* PCIE3.0 X16 slot</b>
	1* PCIE 3.0 X1 slot
	2* PCIE 3.0 X4 slots
I/O ports on the backplane	<b>1* HD OUTPUT1.4 port</b>
	1* RJ45 Gigabit network port
	10* USB3.2 Gen 2x1 interface (10Gbps)
	1* Line-out(green),1*MICK(red)
Built-in I/O interface	<b>1* JVGA interface 1*12pin,</b>
	1* JHD OUTPUT port 2*8pin
	4* USB2.0 interface 2*5pin,
	2* RS232 serial port, supporting RS485/422
	1* Front panel audio port 2*5pin
	2* Front panel function buttons and indicator ports 2*5pin
	1* 24pin ATX power socket 2* 8pin ATX power socket
	1* PS/2 keyboard and mouse interface 1*6pin
	1* TPM port 2*6pin
	1* JHD OUTPUT port 2*8pin
	1* 120pin high-speed seat, including 6 PCIE,1 VGA,VCC and other signals, for the expansion of 1 VGA port,6 POE ports (W680MS-POE board)
	2* row pin, 2*10pin, for expansion 16 in 16 out GPIO(MS-GPIO small board)
Fan interface	<b>1*4pin CPU fan interface; 3*4pin system fan port</b>
BIOS	<b>128Mb Flash ROM</b>
Guard dog	<b>Support hardware reset function (256 level, 0~255 seconds)</b>
Operating system	<b>Windows 10/Windows 11/Linux</b>
Power supply type	<b>Powered by ATX 24Pin and 8pin power supplies</b>
Operating temperature	<b>0°C to 60°C</b>
Storage temperature	<b>-20°C to 70°C</b>

Working humidity	5%-95% relative humidity, no condensation
dimension	245mm * 245mm

