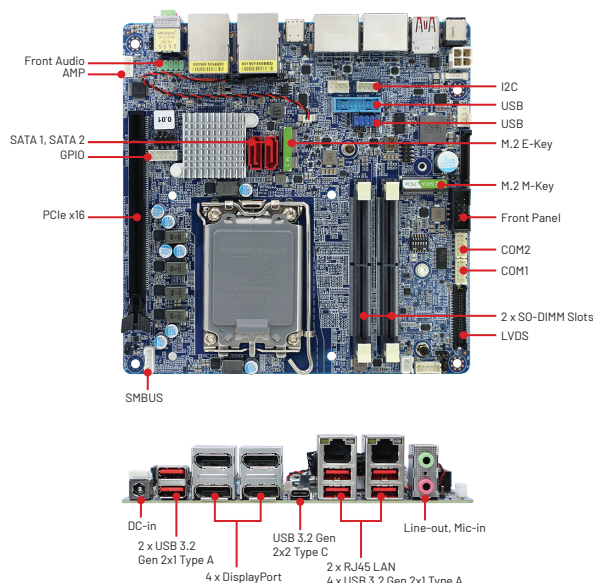


MX680RD

Intel® R680E Mini-ITX Motherboard supports
12th/13th/14th Gen Intel® Core™ i 9/7/5/3 Processor,
DC Power



SPECIFICATIONS

System	
Processor	LGA 1700 socket supports 12th Gen Alder Lake/ 13th Gen Raptor Lake/ 14th Gen Raptor Lake Refresh Intel® Core™ i 9/7/5/3, Pentium, Celeron Processors. TDP up to 65W. Up to 16 Cores 24 Threads Hybrid
Chipset	Intel® R680E PCH
Memory	2 x SO-DIMM sockets support Dual Channel DDR5 4800MHz up to 64GB with ECC support
BIOS	AMI uEFI BIOS, 256Mb SPI Flash ROM
I/O Chipset	Nuvoton® NCT6126D
Expansion	1 x Gen 5 PCIe x16 2 x M.2 M-Key 2242/2280 NVMe (PCIe x4 + SATA III) 1 x M.2 E-Key 2230 with CNVi Support (PCIe x1 + USB 2.0)
TPM	TPM 2.0
H/W Monitor	Yes
Watchdog Timer	1 Sec ~ 255 Sec
Supported OS	Windows 10, Windows 11, Linux
Graphics	
Chipset	Intel® Integrated UHD Graphic with Xe Architecture (CPU Dependent)
Resolution	4 x Dual Mode DisplayPort 1.2a 4K@60Hz 18/24-bits Dual Channel LVDS, optional eDP
Multi-Display	Supports 4 Independent Displays
Ethernet / LAN	
Controller	LAN 1: Intel® I225-LM 2.5 Gigabit Ethernet Controller LAN 2: Intel® I225-LM 2.5 Gigabit Ethernet Controller
Interface	2 x 10/100/1000/2.5G Base-Tx GbE Compatible
Connector	2 x RJ45 LAN
Audio	
Audio Codec	Realtek HD Audio Codec
Interface	1 x Line-out, 1 x Mic-in

Features

- LGA 1700 socket supports 12th/13th/14th Gen Intel® Core™ i 9/7/5/3 Processor, codenamed Alder Lake/Raptor Lake/Raptor Lake Refresh
- Intel® Integrated UHD Graphic with Xe Architecture (CPU Dependent)
- Intel® R680E PCH, x8 Gen4 DMI
- 2 x SO-DIMM sockets support DDR5 4800MHz up to 64GB with ECC support
- Gen 5 PCIe x16, M.2 NVMe and CNVi
- TPM 2.0
- Intel® Active Management Technology 16, Intel® ME 16
- 2 x 2.5 GbE LAN
- 4 x DP++ 1.2a 4k support 4 Independent Displays
- 8 x USB 3.2 Gen 1x1, 1 x USB 3.2 Gen 2x2 Type C, 2 x USB 2.0
- 2 x COM, 2 x SATA III, I²C, SMBus, SPI
- 12V-24V Wide Range DC-In

External I/O Ports

Display	4 x DP++
USB	6 x USB 3.2 Gen 2x1 Type-A 1 x USB 3.2 Gen 2x2 Type-C
LAN	2 x RJ45 LAN
Audio	Line-out, Mic-in
Power Input	DC-in

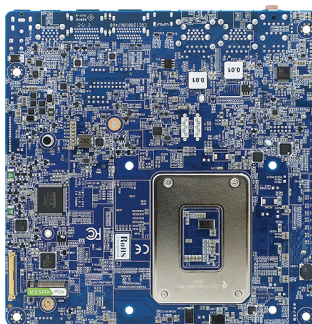
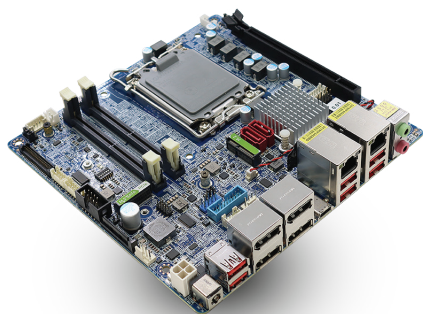
Internal I/O Connectors

Display	1 x LVDS Header 1 x eDP Header (Optional)
USB	1 x USB 3.2 Gen 2x1 Header (2 Ports) 2 x USB 2.0 Headers (4 Ports)
COM/Serial Port	1 x RS-232 Header with Voltage Selection 1 x RS-232/422/485 Headers with Voltage Selection
SATA	2 x SATA III Connectors
Additional I/O	1 x 8-bits GPIO Header, 1 x SPI Header, 1 x I²C Header, 1 x SMBus Header, 1 x Front Audio Header, 1 x Amplifier Header (3W Per Channel Amplifier), 1 x Front Panel Header

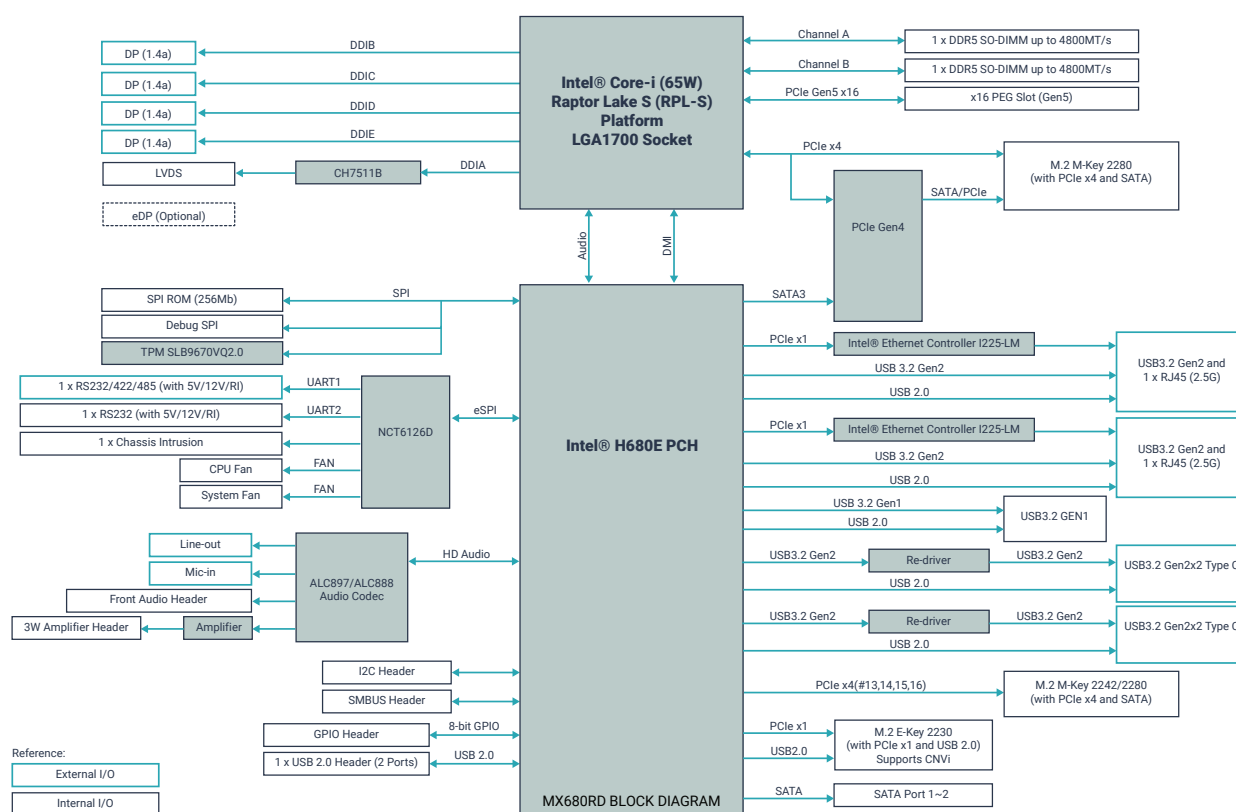
Mechanical, Power, and Environment

Power	12V-24V Wide Range DC-In
Operating Temp	0°C to 60°C (32°F ~ 140°F)
Storage Temp	-20°C ~ 80°C (-4°F ~ 176°F)
OP Humidity	5% ~ 90% Relative Humidity, Non-condensing
Certification / Compliance	FCC Class B/CE RoHS Compliant
Form Factor	Mini ITX
Dimensions	6.7" x 6.7" (170mm x 170mm)
Weight	0.88 lbs (0.4 KG)

SPECIFICATIONS / ADDITIONAL PRODUCT PHOTOS



BLOCK DIAGRAM



ORDERING INFORMATION

Model Name	CPU/CPU Socket	Memory / Storage	LAN	Low Profile I/O	Power Input
MX680RD	LGA 1700	2 x SO-DIMM DDR5	2 x 2.5GbE	n/a	12V-24V
Model Name	Description				
183000000006	2.00mm pitch 12" length serial cable				
182437200040	2.54mm pitch 14" length dual port USB 2.0 cable w/ full height bracket				
182000000073	2.00mm pitch 19.7" length dual port serial cable w/ full height bracket				

PACKING LIST

- ✓ 1 x MX680RD Motherboard
- ✓ 1 x SATA Power Cable for Two Devices
- ✓ 1 x I/O Shield

intel
partner
Titanium



BCM Advanced Research

Tailored Hardware Solutions, Delivered with Excellence:
Your Go-To Partner for Industrial Computing Design



BCMSales@bcmcom.com
www.bcmcom.com



11 Chrysler
Irvine, CA 92618 USA

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[BCM Advanced Research:](#)

[MX680RD](#)