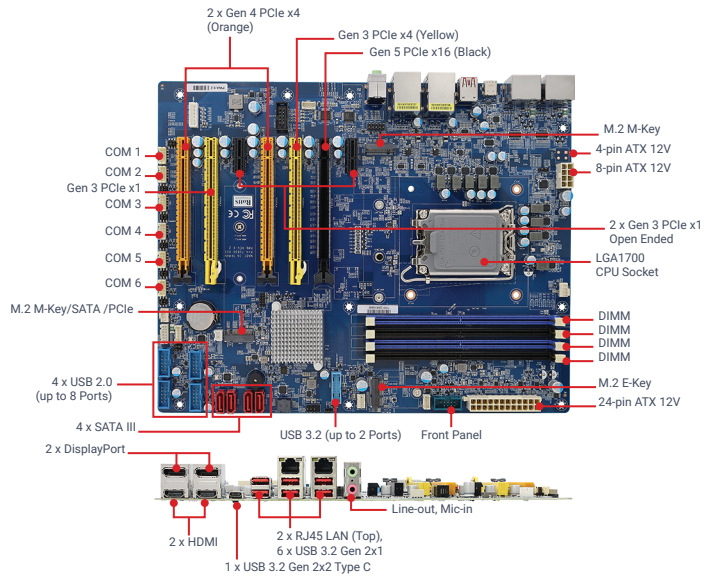




BC680R

Intel® R680E ATX Motherboard supports Intel® Core™ processors (Series 2), and 12th/13th/14th Gen Intel® Core™ i 9/7/5/3 Processor



Features

- LGA 1700 socket supports Intel® Core™ processors (Series 2), codenamed Bartlett Lake
- 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
- 4 x DIMM up to 128GB Max Dual Channel DDR5 4400MHz with ECC Support
- 2 x Intel® I225-LM 2.5GbE
- 1 x Gen 5 PCIe x16, 2 x Gen 4 PCIe x4, 1 x Gen 3 PCIe x4, 1 x Gen3 PCIe x1, 2 x Gen 3 PCIe x1 Open End
- 2 x M.2 M-Key NVMe, 1 x M.2 E-Key supports CNVi
- TPM 2.0, Intel® AMT 16
- x8 Gen4 DMI
- Supports 4 Independent Display: 2 x HDMI, 2 x DP++
- 6 x COM, 4 x SATA III
- 8 x USB 3.2 Gen 2, 8 x USB 2.0, 1 x USB 3.2 Gen 2x2 Type-C
- I²C, SMBus, PS/2, 8-bit GPIO
- Supports Win 10, Win 11, Linux

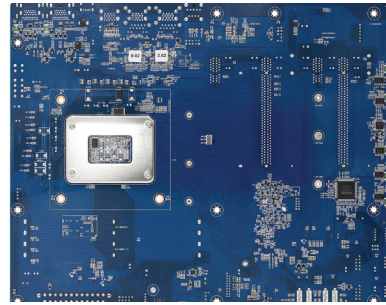
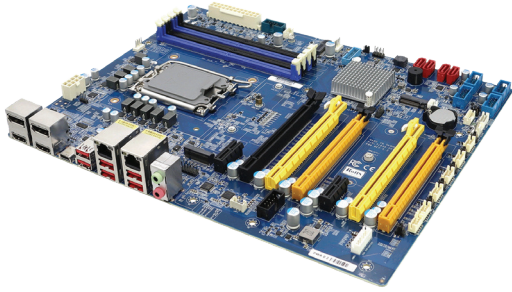
SPECIFICATIONS

System	
Processor	LGA1700 socket now extends support to Intel® Core™ Series 2 processors, formerly codenamed Bartlett Lake, via BIOS update LGA1700 Socket supports 12th Gen Alder Lake/ 13th Gen Raptor Lake/ 14th Gen Raptor Lake Refresh Intel® Core™ i 9/7/5/3, Pentium, Celeron Processor up to 16 Cores 24 Threads Hybrid
Chipset	Intel® R680E PCH
Memory	4 x DIMM slots support Dual Channel DDR5 memory speed up to 4400MHz with UDIMM, up to 128GB, with ECC support
DMI	x8 Gen4 DMI
BIOS	AMI® 256Mb SPI BIOS
Audio Codec	Realtek HD Audio Codec
Expansion	1 x Gen 5 PCIe x16 (x16 Physical Black) 2 x Gen 4 PCIe x4 (x16 Physical Orange) 1 x Gen 3 PCIe x4 (x16 Physical Yellow) 1 x Gen 3 PCIe x1 (x16 Physical Yellow) 2 x Gen 3 PCIe x1 Open Ended 1 x M.2 M-Key 2242/2280/22110 NVMe (PCIe x4 + SATA III) 1 x M.2 M-Key 2242/2280/22110 NVMe (PCIe x4 Only) 1 x M.2 E-Key 2230 with CNVi Support (PCIe x1 + USB 2.0)
Watchdog Timer	Reset: 1 sec. ~ 255min. and 1sec. or 1min./step
H/W Status Monitor	Monitoring System Temperature, Voltage, with Auto Throttling Control
TPM	TPM 2.0
Supported OS	Windows 10, Windows 11, Linux
Graphics	
Graphics Engine	Intel® Integrated UHD Graphic with Xe Architecture (CPU Dependent)
Interface	2 x HDMI 2.0b 4K@60Hz 2 x Dual Mode DisplayPort 1.4a 4K@60Hz
Multi-Display	Supports 4 Independent Displays

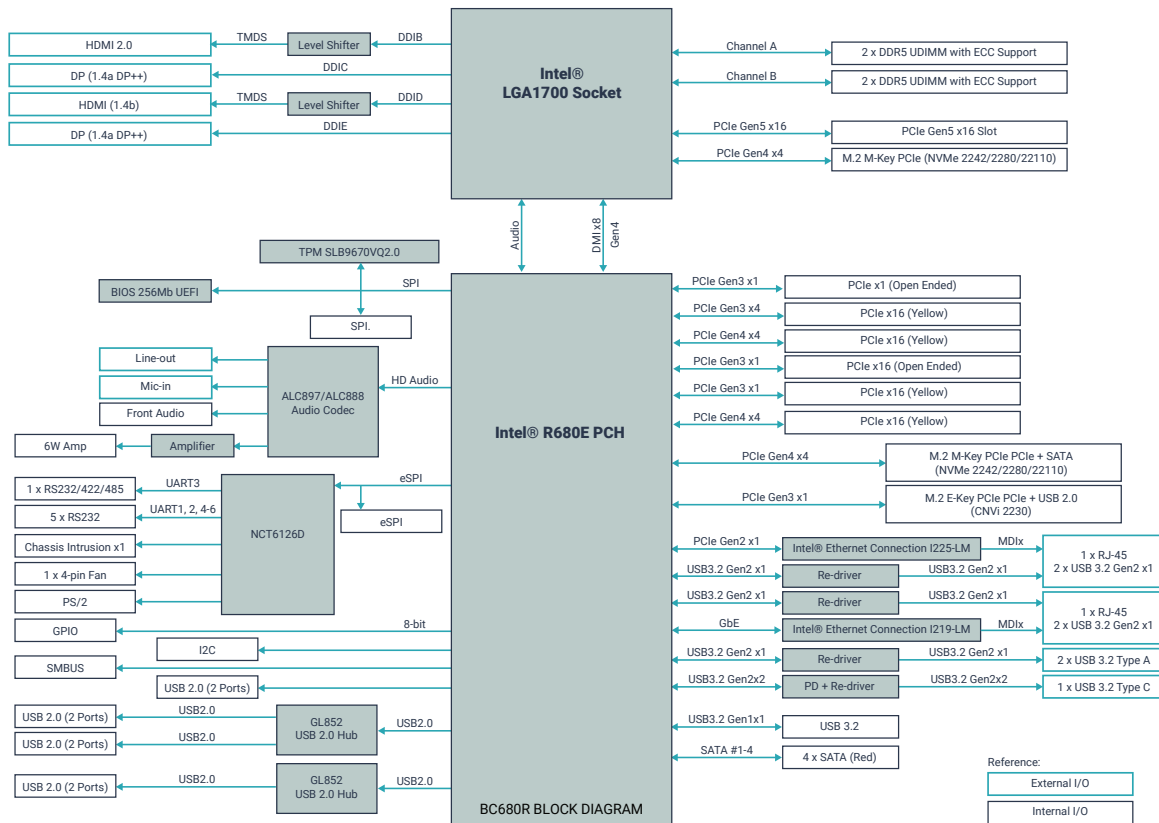
Ethernet / LAN	
Controller	2 x Intel® Ethernet Controller I225-LM (2.5GbE)
Connector	2 x RJ-45 LAN
External I/O Ports	
Display	2 x HDMI, 2 x DP++
USB	6 x USB 3.2 Gen 2x1, 1 x USB 3.2 Gen 2x2 Type-C
LAN	2 x RJ-45 LAN
Audio	Line-out, Mic-in
Internal I/O Connectors	
USB	4 x USB 2.0 Headers (8 Ports), 1 x USB 3.2 Gen 2 (2 Ports)
COM	5 x RS-232 Headers, 1 x RS-232/422/485 Header
SATA	4 x SATA III
PS/2	1 x PS/2
MIO	I ² C, SMBus, SPI, Front Audio, Front Panel, 8-bit GPIO
Mechanical, Power, and Environment	
Power Type	AT/ATX
Connector	1 x 24-pin ATX Connector
Operating Temp	0 ~ 60°C (32 ~ 140°F)
Storage Temp	-20°C ~ 80°C (-4°F ~ 176°F)
OP Humidity	5% ~ 90% Relative Humidity, Non-condensing
Certification	CE, FCC Class B, RoHS Compliant
Form Factor	ATX
Dimensions	12" x 9.6" (305 x 244mm)
Weight	approx 1.85 lbs (0.84 kg)

* All product specifications and images are subject to change without notice. Last update: 09/17/2025

SPECIFICATIONS / ADDITIONAL PRODUCT PHOTOS



BLOCK DIAGRAM



ORDERING INFORMATION

Model Name	CPU/CPU Socket	Description
BC680R	1 x LGA 1700 Socket	ATX Motherboard, Intel® R680EPCH
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 BC680R Motherboard
- ✓ 1 x I/O Shield

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Titanium



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Your Go-To Partner for Industrial Computing Design



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