

MA20-R6800 Series

Intel® R680E chipset supports LGA 1700 socket for 14th/13th/12th Generation Core™ i9/i7/i5/i3 Pentium® Processor (Raptor Lake-S/Alder Lake-S)

Features

1. Intel® 14th/13th/12th LGA1700 Socket Processor (Max. 125W TDPs under 240A)
2. Intel® R680E Chipset
3. 4* DDR5 5600MHz/4800MHz UDIMM up to 128GB
4. 3* 10/100/1000/ 2500 Base-TX Ethernet Ports
5. 1* HDMI, 1* DP, 1* VGA
6. 6* COM (COM1/2 support RS232/422/485)
7. 7* USB3.2 Gen.2, 2* USB3.2 Gen.1, 3* USB2.0
8. 2* PCIe Gen.4 x16 (for 1* PCIe x16 or 2* PCIe x8), 2* PCIe Gen.4 x4, 2* PCIe Gen.3 x1, 1* PCI
9. 4* M.2 slots (2* M-key, 1* E-key, 1* B-key)
10. 4* SATAIII (6Gb/s) support RAID 0,1,5,10
11. Support JetBIOS SW back up tool and JetBIOS HW recovery tool for BIOS recovering
12. Support Onboard TPM2.0 (MA20-R6802 only)



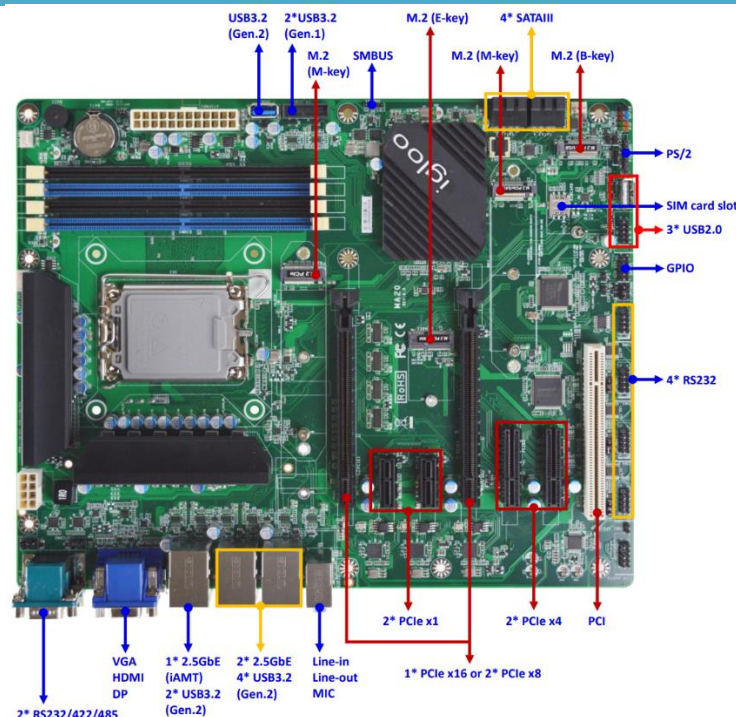
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Overview

The MA20-R6800 Series is ATX form factor board with LGA1700 socket for Intel® 14th/13th/12th generation Core i9/i7/i5/i3 Pentium Processor. The board supports four DDR5 UDIMM 5600MHz/4800MHz memory, up to 128GB. Featuring the integrated Intel® Ethernet controller, the MA20-R6800 Series offers three 10/100/1000/2500 Base-TX Ethernet devices for network transmission. Four SATAIII (6Gb/s) interface and two M.2 M-key (2242/2280) support NVMe offer storage devices. One M.2 E-key (2230) support CNVi, one M.2 B-key (3042/3052) support 4G/5G module, seven USB3.2 Gen.2 ports, two USB3.2 Gen.1 port, three USB2.0 ports and six COM ports provide versatile expansion. The two PCIe x16 slots, two PCIe x4 slots, two PCIe x1 slots and one PCI slot provides different type expansion choice. The MA20-R6800 Series offers one HDMI2.0 port, one VGA port and one DP1.4 port which can support 3 independent displays.

Application: Edge Computing/ Digital Signage/ Industrial PCs/ Factory Automation/ Public Sector/ Digital Security/ Surveillance application

I/O Diagram



Specifications

Model	- MA20-R6800 - MA20-R6802 (onboard TPM2.0)
Form Factor	ATX (305 * 244mm)
Processor System	- Intel® 14th/13th/12th (Raptor Lake-S/Alder Lake-S) LGA1700 Socket Core i9/i7/i5/i3/Pentium Processor (Max. 125W TDPs under 240A) - Intel® R680E Express Chipset - AMI 256Mb Flash ROM BIOS <i>*Support recover crashed BIOS data tool by a USB flash pen driver:</i> - Using JetBIOS SW back up tool with any external USB ports - Using JetBIOS HW recovery tool with specific USB port (internal USB2)
Memory	14th/13th CPU support 4* ECC Dual CH DDR5 5600MHz UDIMM up to 128GB 12th CPU support 4* ECC Dual CH DDR5 4800MHz UDIMM up to 128GB
Storage	4* SATAIII (6 Gb/s) support RAID 0, 1, 5, 10 1* M.2 M-Key (2242/2280, PCIe Gen.4 x4 interface) support NVMe 1* M.2 M-Key (2242/2280, PCIe Gen.4 x4/SATA interface) support NVMe
Expansion	1* M.2 E-Key (2230, PCIe Gen.3 x1/USB2.0 interface) support CNVi 1*M.2 B-Key (3042/3052, PCIe Gen.3 x1/USB3.2 Gen.2/USB2.0 interface) support 4G/5G Module 2* PCIe Gen.4 x16 (PCIe1 and PCIe3 total support 1* PCIe Gen.4 x16 or 2* PCIe Gen.4 x8) <i>*Signal detect automatically.</i> 2* PCIe Gen.4 x4 2* PCIe Gen.3 x1 1* PCI
Ethernet	1* Intel® i225-LM 2.5GbE 2* Intel® i225-V 2.5GbE
Graphics	- Intel® UHD Graphics, shared memory 1* DP 1.4a (Max Resolution: 4096x2304@60Hz) 1* HDMI 2.0b (Max Resolution: 4096x2160@60Hz) 1* VGA (Max Resolution: 1920x1080@60Hz) - Support Triple Displays
Audio	HD audio: Realtek ALC888S
Watchdog Timer	- From Super I/O to drag RESETCON# 256 segments (10sec ~ 255min)
Internal I/O	2* USB3.2 (Gen.1) 1* USB3.2 (Gen.2) type-A vertical 2* USB2.0 1* USB2.0 type-A vertical 4* SATAIII 4* RS232 (COM3/4 support 5V/12V TTL) 1* M.2 M-Key (2242/2280, PCIe Gen.4 x4 interface) support NVMe 1* M.2 M-Key (2242/2280, PCIe Gen.4 x4/SATA interface) support NVMe 1* M.2 E-Key (2230, PCIe Gen.3 x1/USB2.0 interface) support CNVi 1*M.2 B-key (3042/3052, PCIe Gen.3 x1/USB3.2 Gen.2/USB2.0 interface) support 4G/5G Module 1* nano SIM card slot 1* PS/2 1* GPIO (8 bit) 1* Chassis intrusion 1* Audio Header 1* SMBUS 1* AT mode - Support onboard TPM2.0 (MA20-R6802)
External I/O	1* HDMI 1* DP 1* VGA 3* 2.5GbE RJ45 6* USB3.2 (Gen.2) 2* COM (RS232/422/485) support 5V/12V TTL - Line-in, Line-out, MIC
Power	ATX PWR (8+24 pin), AT/ATX Supported - AT: Directly PWR on as Power input ready - ATX: Press Button to PWR on after Power input ready
Compliance	CE, FCC, LVD, RoHS, REACH
Temperature	- Operating Temperature: 0 ~ 60° C (with 0.7 m/s air flow) - Storage Temperature: -20 ~ 85° C - Humidity: 10% ~ 90% RH @40°C (non-condensing)
OS Support	UEFI Win10 64-bit (Build 10.0.19044.1288), Win 10 IoT Enterprise 64-bit LTSC 2019 (Build 17763.107), Win 10 IoT Enterprise 64-bit LTSC 2021 (Build 19044.1288), UEFI Win 11 64-bit (Build 22000.318), UEFI Win 11 IoT Enterprise (Build 22621.1), CentOS 7 (Version 7), CentOS 8 (Version 8-latest), CentOS 9 (Version 9), Debian 11 (Version 11.4), Fedora-LXDE (Version 36-1.5), Fedora Workstation (Version 36-1.5), Fedora Server (Version 36-1.5), OpenSUSE (Version 15.4), OpenBSD (Version 7.1), Ubuntu

	Standard / LTS (Version 22.04), Ubuntu Server (Version 22.04), Vmware ESXi (Version 8).
Warranty	• 2 Years limited warranty

* Specifications subject to change without notice, not responsible for typographical errors. Does not include HDD or OS

Standard Accessories

Part Number	Description
MA20-R6800 Series	MA20-R6800 Series M/B
F04-MB-093-F	MA20 I/O shield
G01-COM9-30A-1F	2* COM cable
G01-SATA3-BL-1F	2* SATA cable

Mechanical Drawings (Unit=mm)

