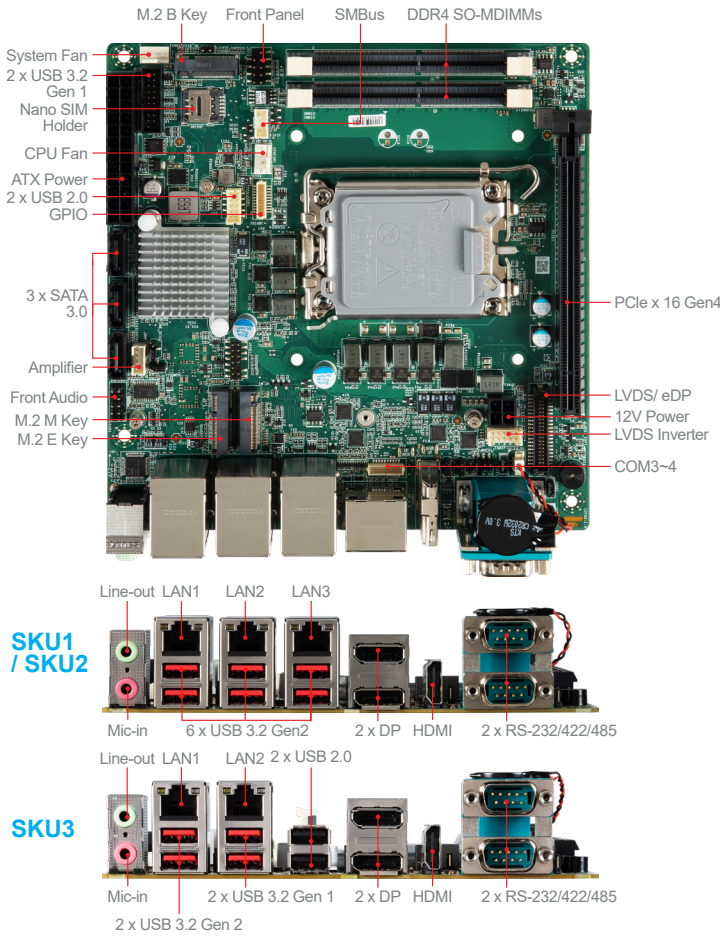


MS-CF02

Mini-ITX with 14th/13th/12th Gen Intel® Raptor Lake-S Refresh/Raptor Lake-S/Alder Lake-S, Core™ i9/i7/i5/i3, Pentium®, Celeron® Processor & Intel® R680E/Q670E/H610E for High-Performance Solution



Features

- Intel® 14th/13th/12th Gen Raptor Lake-S Refresh/Raptor Lake-S/Alder Lake-S Series with R680E/Q670E/H610E
- 2 DDR4 3200 MT/s ECC/non-ECC SODIMM slots up to 64GB
- Quadruple independent displays: 2DP, HDMI, LVDS/eDP
- 3/2 2.5GbE LAN with RJ-45
- 1 PCIe x16 (Gen 4) Slot, 1 M.2 E key (with CNVi), 1 M.2 B key (with SIM Holder) slots
- M.2 M key, 3 SATA 3.0 for storage
- SATA RAID 0/1/5
- 6 USB 3.2 Gen 2, 2 USB 3.2 Gen 1, 2 USB 2.0, 4 COM (4 RS-485), GPIO, Audio, System FAN
- Onboard TPM 2.0
- SMBus, iAMT 16.x
- ATX Power

Ordering Information

| Part Number | Description |
|--------------|--|
| 911-CF02-001 | MS-CF02/601-CF02-010/801-CF02-005 10 Intel Raptor Lake-S, R680E, 2*DDR4 SO DIMM, 1*HDMI, 2*DP, 1*eDP, 1*LVDS, 1*M.2 E key, 1*M.2 M key, 1*M.2 B key, 1*PCIe x16, 3*2.5GbE LAN, 3*SATA 3.0, 8*USB 3.2, 2*USB 2.0, 4*COM, TPM2.0, Mini-ITX |
| 911-CF02-002 | MS-CF02/601-CF02-020/801-CF02-006 10 OPT:A Intel Raptor Lake-S, H610E, 2*DDR4 SO DIMM, 1*HDMI, 2*DP, 1*eDP, 1*LVDS, 1*M.2 E key, 1*M.2 M key, 1*PCIe x16, 2*2.5GbE LAN, 3*SATA 3.0, 4*USB 3.2, 4*USB 2.0, 4*COM, TPM2.0, Mini-ITX |
| 911-CF02-003 | MS-CF02/601-CF02-030/801-CF02-007 10 OPT:B Intel Raptor Lake-S, Q670E, 2*DDR4 SO DIMM, 1*HDMI, 2*DP, 1*eDP, 1*LVDS, 1*M.2 E key, 1*M.2 M key, 1*M.2 B key, 1*PCIe x16, 3*2.5GbE LAN, 3*SATA 3.0, 8*USB 3.2, 2*USB 2.0, 4*COM, TPM2.0, Mini-ITX |

Packing List

| Part Number | Description | Quantity |
|-----------------|-----------------------------|----------|
| K1D-1008261-V03 | SATA Cable, 500mm | 1 |
| K14-3018004-V03 | COM Port Cable, 250mm | 1 |
| E21-CF02010-C22 | I/O Shielding (For SKU 1&2) | 1 |
| E21-CF02010-C22 | I/O Shielding (For SKU 3) | 1 |

Specifications

| | | SKU1 | SKU2 | SKU3 |
|---------------------------------|--|---|--|--------------|
| System Processor | CPU | 12th Gen Intel® Alder Lake-S i9/i7/i5/i3/Pentium®/Celeron® IOTG Series Processor, Max 65W 13th Gen Intel® Raptor Lake-S i9/i7/i5/i3/Pentium®/Celeron® IOTG Series Processor, Max 65W 14th Gen Intel® Raptor Lake-S Refresh i9/i7/i5/i3/Pentium®/Celeron® IOTG Series Processor, Max 65W | | |
| | Frequency | 1.6 GHz~5.1 GHz (Depends on CPU) | | |
| | L2 Cache | 2MB~30MB (Depends on CPU) | | |
| | CPU Type | Socket (LGA 1700) | | |
| | Chipset | Intel® R680E | Intel® Q670E | Intel® H610E |
| | BIOS | AMI UEFI | | |
| Memory | Technology | Dual-channel DDR4 (ECC/ non-ECC) 3200MT/s | | |
| | Max. Capacity | Up to 64GB | | |
| | Socket | 2 x 260-pin DDR4 SO-DIMMs | | |
| Graphic | Controller | Intel® UHD Graphics | | |
| | Graphic Memory | Depends on CPU | | |
| | LVDS | 1 x Dual channel 18/24-bit (Connector shared with eDP) | | |
| | eDP | 1 (Connector shared with LVDS) | | |
| | HDMI | 1 | | |
| | DisplayPort | 2 | | |
| | Multiple Display | 4 independent displays | 3 independent displays | |
| Display Interface | LVDS | up to 1920 x 1200@60Hz | | |
| | eDP | up to 4096 x 2304@60Hz | | |
| Ethernet | Controller | 3 x Intel® I225-LM 2.5GbE LAN | 2 x Intel® I225-V 2.5GbE LAN | |
| | Controller | Realtek® ALC897 Audio Codec (Co-lay ALC888S) | | |
| Audio Super I/O | Controller | Fintek F81966D-I | | |
| | Watchdog Timer | 256-level Watchdog Timer | | |
| H/W Monitor | Smart Fan | Yes | | |
| | TPM | Controller: Infineon® SLB 9670VQ2.0 | | |
| Expansion Slot | PCIe x16 | 1 x PCIe x16 (Gen 4) | | |
| | M.2 | 1 x M key (PCIe x4 NVMe), 2242/2280 | 1 x M key (PCIe x4 NVMe), 2242/2280 | |
| | | 1 x E key (PCIe x1, USB 2.0, CNVi), 2230 | 1 x E key (PCIe x1, USB 2.0, CNVi), 2230 | |
| Storage | SATA | 3 x SATA 3.0 (Support RAID 0/1/5) | 3 x SATA 3.0 (Support AHCI Mode) | |
| | USB | 6 x USB 3.2 Gen 2 (rear) | 2 x USB 3.2 Gen 2 (rear) | |
| 2 x USB 3.2 Gen 1 (internal) | | 2 x USB 3.2 Gen 1 (rear) | | |
| 2 x USB 2.0 (internal) | 2 x USB 2.0 (rear) | | 2 x USB 2.0 (internal) | |
| I/O Interface | Serial | 4 x COM ports | 4 x COM ports | |
| | | COM1: RS-232/422/485, RI/5V/12V, Auto-flow Control | COM1: RS-232/422/485, RI/5V/12V, Auto-flow Control | |
| | COM2~4: RS-232/422/485, 0V/5V/12V, Auto-flow Control | COM2: RS-232/422/485, 0V/5V/12V, Auto-flow Control | | |
| | COM3~4: RS-232, 0V/5V/12V (RS-232/422/485 by option) | COM3~4: RS-232, 0V/5V/12V (RS-232/422/485 by option) | | |
| Power Supply | GPIO | 16-bits (8 x GPI; 8 x GPO), 5V | | |
| | DC Input | N/A | | |
| | AC Input | ATX-Power 24P, 12V-4P | | |
| Environment | Operating Temperature | 0 ~ 60°C Note: Thermal Test w/ Airflow: 0.7m/s | | |
| | Operating Humidity | 10 ~ 90%, non-condensing | | |
| | Storage Temperature | -20 ~ 80°C | | |
| | Storage Humidity | 10 ~ 90%, non-condensing | | |
| Physical characteristics | Dimensions (WxDxH) | 170 x 170 mm (Mini-ITX) | | |
| | Weight | 0.43 Kg | 0.41 Kg | |
| Certification | EMC | CE, FCC Class B, BSMI, RCM, VCCI, UKCA | | |
| | OS Support | Windows 10 IoT Enterprise 2021 LTSC (64-bit) Windows 11 IoT Enterprise LTSC (64-bit) Linux (Support by request) | | |

Panel PC
Tablet PC
Industrial Computer
COM Express Board
Pico-ITX Board
3.5" Board
EPIC Board
Mini-ITX Board
Micro-ATX Board
ATX Board