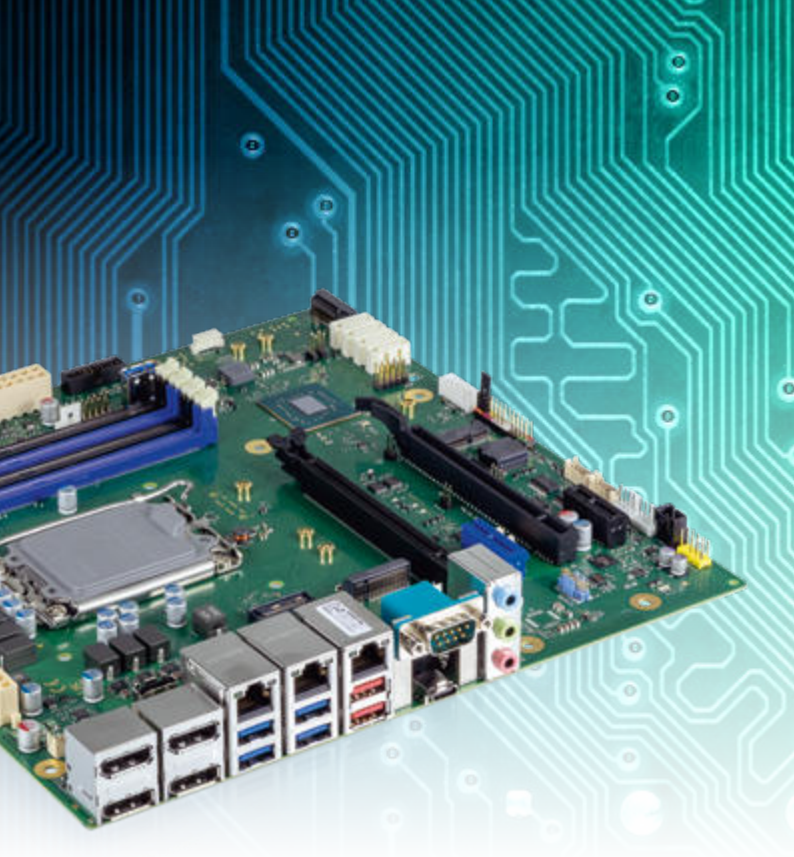




➤ Motherboards Product Facts

Quality made in Germany

➤ Kontron Motherboard Team

Sales, R&D, Product Management, Technical Support,
Test, Marketing



➤ A strong partner worldwide

Motherboards by Kontron

Kontron offers a comprehensive portfolio of high quality, long-term available and competitive motherboards – designed and made in Germany. The comprehensive line-up, from compact Mini-STX up to full-sized ATX form factor fulfills most different requirements for various applications from diverse vertical markets like Industrial Automation, POS/POI, KIOSK, Digital Signage, Medical, Casino Gaming, Video Surveillance or Transportation.

Kontron motherboards support latest processors and chipset platforms and utilize advanced technology components. They are designed for continuous operation (24/7) in an extended temperature range and on high system load. Kontron motherboards are specified for a temperature range between 0 °C and max. 60 °C and come up with an availability of up to 7 years from the release date, based on embedded key components. In addition, a corresponding portfolio on chassis kit solutions (SMARTCASE™), add on cards and related 3rd party accessories is also available. Furthermore, Kontron offers many value-added services like detailed documentation, a professional life-cycle management and customizing tools.

➤ Motherboards Overview

Kontron's wide product range helps you to meet today's requirements. The products offer highest reliability, security and ease of use of features. Motherboards from Kontron are designed to fulfill customer needs.

In order to have the perfect solutions for all clients, Kontron features two motherboard families:



➤ Extended Lifecycle Series Semi-industrial Features



- D3674-B Thin mITX
- K3842-Q1 & K3842-Q2 μ ATX
- K3843-B & K3843-B2 μ ATX
- K3921-H mSTX

➤ Industrial Motherboard Series Special Features for Industrial Needs



AMD

- D3713-V/R mITX
- D3714-V/R mSTX
- D3723-R mITX
- D3724-R mSTX

Intel®

- D3633-S mITX
- D3634-S mITX
- D3641-S μ ATX
- D3646-S ATX
- K3831-H Thin mITX
- K3832-Q mITX
- K3833-Q mITX
- K3836-Q/R mITX
- K3841-Q μ ATX
- K3851-R ATX
- K3921-N mSTX
- K3931-N mITX
- K4021-U mSTX

➤ Industrial Server Class Series Server Management Features



- K9051-C



➤ Motherboards

Designed and made in Germany

Highest quality through German engineering and production

The design quality benefits from more than 30 years of experience in the development of motherboards. Comprehensive product validation and test as well as a modern manufacturing of the boards guarantee reliable function under all operating conditions.

Comprehensive feature and tool set

Kontron provides unique features and tools, which enables our partners and customers to modify, adjust, test and produce their systems independent of the manufacturer.

Excellent technical support

Our professional technical support team has direct access to experts in hardware and BIOS development as well as on-site production and is always happy to assist our customers and partners.

Strict lifecycle management and reliable product maintenance

To ensure the highest possible revision stability, changes are only made when it is absolutely necessary. In this case, changes are communicated to customers at an early stage via a strict lifecycle management process.

Beneficial total-cost-of-ownership

Kontron's customers benefit from short lead-times, least field failure rates and low transportation costs within the EU.





Characteristic features

- Video Surveillance
- Medical Systems
- Webhosting
- CAD Workstations
- Vending/POS/ATM/KIOSK/Ticketing & Digital Signage

■ product launch ■ standard lifecycle ■ end of life standard lifecycle

D3674-B Thin mITX

Technical Information



Product Highlights

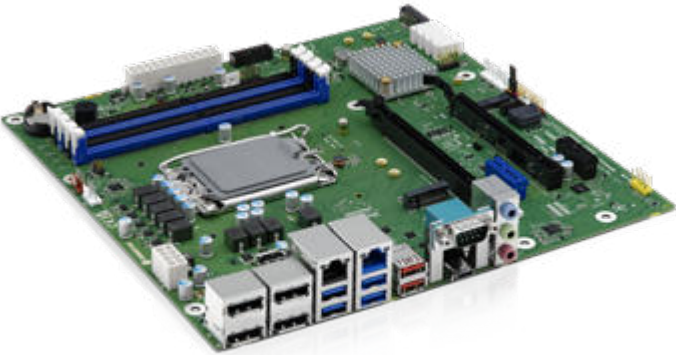
- Intel® 8th/9th Gen Core™ i Processor Series
- DDR4 2666 SDRAM memory capacity up to 32GB
- cTDP – Easy & flexible reduction of CPU TDP
- Intel® HD Graphics (DX12, integrated in Processor)
- HDMI V1.4, DP V1.2 and Dual Channel LVDS support
- 8 Bit GPIO & multichannel Audio onboard
- USB 2.0 and USB 3.2 Gen1 onboard
- Onboard support for M.2 SSD (PCIe x4 based M.2 2280)
- Onboard support for M.2 WLAN/Bluetooth (M.2 2230)
- Realtek GbE LAN onboard
- Intel® integrated TPM V2.0 onboard
- Dual-Range DC Power Supply 12 V/19-24 V
- HW Watchdog onboard
- Motherboard operating temperature range (chassis inside)
10 °C - 50 °C

BASEBOARD	DIMENSIONS CHIPSET	6.7" x 6.7" (170 x 170 mm) Intel® H310
CPU SUPPORT	PROCESSOR PROCESSOR SOCKET MAX. PROCESSOR POWER CONSUMPTION (TDP) CPU TDP LIMITING OPTION HIGH EFFICIENCY CORE VOLTAGE REGULATOR	Intel® Core™ 8th/9th Gen Processor Series Intel® LGA1151 65 W yes yes
MEMORY	MAX. CAPACITY NUMBER OF SOCKETS RAM SPEED	32 GByte 2 DDR4 2400/2666
GRAPHICS	ONBOARD GRAPHICS GRAPHICS INTERFACES	Intel® UHD Graphics; DX 12 1x HDMI V1.4, 1x DP V1.2
ETHERNET	ONBOARD LAN CONTROLLER IAMT/VPRO	1x Realtek RTL 8111G -/ -
AUDIO	TYPE ONBOARD CONTROLLER BUZZER/SPEAKER S/PDIF HEADER	5.1 Multich. Realtek ALC255 -/yes (Stereo) -
EXTENSION SLOTS	PCIe X16/X8/X4/X1/PCI MINI-PCIe/MSATA M.2 SSD (PCIe AND/OR SATA) M.2 WLAN (KEY-E)	-/-/-/-/- 1x M.2 Key-M Socket (2280) for PCIe based M.2 Modules (4 lanes) yes
INTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1 USB PORTS 2.0/STICK SOCKET SATA PORTS/SATA RAID COM PORT INT. HEADER PARALLEL PORT INT. HEADER	-/2 (pin header) 3 (2 x pin header)/- 2/- 1 -
EXTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1 USB 3.2 GEN2 TYPE C USB PORTS 2.0 COM PORTS	-/2 - 2 -
POWER SUPPLY OPTIONS	EXTERNAL SUPPLY INTERNAL SUPPLY	19-24 V 12 V or 19-24 V
ENVIRONMENTAL	OPERATION TEMPERATURE	10 °C - 50 °C
MISCELLANEOUS	FAN SPEED CUSTOMIZING TPM V2.0 CHASSIS INTRUSION SUPPORT HW WATCHDOG MISCELLANEOUS	yes yes (Intel®) yes yes Onboard LVDS 24bit, M.2 (WLAN/Bluetooth) Key E M.2 SSD - PCIe Key M, GPIO (8Bit) Dual-Range DC Power Supply 12 V/19-24 V

Extended Lifecycle Motherboards

K3842-Q1 & K3842-Q2 µATX

Technical Information



Product Highlights

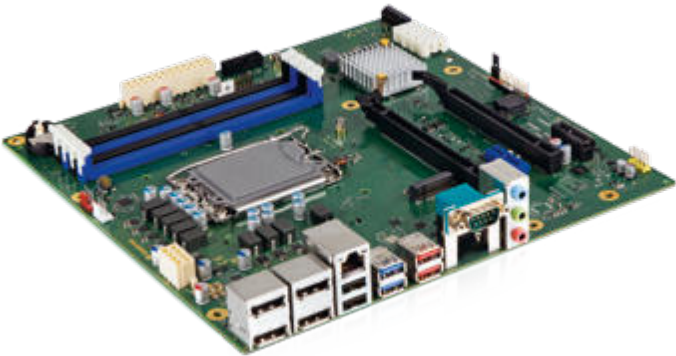
- Intel® Core™ Processor Series (12th/13th/14th Gen)
- DDR5 4800 UDIMM, max. 128 GByte
- cTDP – Easy & flexible reduction of CPU TDP
- Supporting Intel® AMT 16.0
- PCI Express® x16 (Gen5 @ CPU, Gen4 @ PCH)
- 1x Intel® GbE LAN, 1x Intel® 2.5GbE LAN (Only K3842-Q2)
- Intel® UHD Graphics 7xx driven by X^e Architecture;
4x DisplayPort V1.4a up to 8K
- Intel® High Definition 5.1 Audio; Intel® integrated TPM V2.0
- 1x COM port
- 3x USB 3.2 Gen 2, 6x USB 3.2 Gen1, 2x USB 2.0,
1x USB 2.0 stick socket
- 4x SATA 6G incl. RAID support
- 2x M.2 2230/2242/2280 (Key-M, PCIe/NVME SSD modules),
incl. NVME RAID support
- M.2 2230 (Key-E, WLAN/Bluetooth modules,
incl. CNVi support)
- BIOS-POST/-Boot & OS – HW Watchdog onboard

BASEBOARD	DIMENSIONS CHIPSET	9.6" x 9.6" (243.8 x 243.8 mm) Intel® Q670
CPU SUPPORT	PROCESSOR PROCESSOR SOCKET MAX. PROCESSOR POWER CONSUMPTION (TDP) CPU TDP LIMITING OPTION HIGH EFFICIENCY CORE VOLTAGE REGULATOR	Intel® Core™ Processor Series (12th/13th/14th Gen) Intel® LGA1700 125 W yes yes
MEMORY	MAX. CAPACITY NUMBER OF SOCKETS RAM SPEED	128 GByte 4 DDR5 4800 non-ECC
GRAPHICS	ONBOARD GRAPHICS GRAPHICS INTERFACES	Intel® UHD Graphics 7xx driven by X ^e Architecture 4x DP V1.4a up to 8K
ETHERNET	ONBOARD LAN CONTROLLER IAMT/VPRO	K3842-Q1: 1x Intel® i219LM K3842-Q2: 1x Intel® i219LM & 1x Intel® i226LM yes/-
AUDIO	TYPE ONBOARD CONTROLLER BUZZER/SPEAKER S/PDIF HEADER	5.1 Multich. Tempo Semiconductor 92HD91B yes/yes yes
EXTENSION SLOTS	PCI _E X16/X8/X4/X1/PCI MINI-PCI _e /MSATA M.2 SSD (PCI _e AND/OR SATA) M.2 WLAN (KEY-E)	2/-/-/2/- -/- 2x M.2 2230/2242/2280 (Key-M, PCI _e /NVME SSD modules), incl. NVME RAID 1x incl. CNVi
INTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1 USB PORTS 2.0/STICK SOCKET SATA PORTS/SATA RAID COM PORT INT. HEADER PARALLEL PORT INT. HEADER	-/2 (pin header) 2 (pin header)/1 4/yes - -
EXTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1/ USB 3.2 GEN2 TYPE C USB PORTS 2.0 COM PORTS	2/4/ 1 - 1
POWER SUPPLY OPTIONS	EXTERNAL SUPPLY INTERNAL SUPPLY	- ATX PSU (Multirail)
ENVIRONMENTAL	OPERATION TEMPERATURE	10 °C - 50 °C
MISCELLANEOUS	FAN SPEED CUSTOMIZING TPM V2.0 CHASSIS INTRUSION SUPPORT HW WATCHDOG MISCELLANEOUS	yes yes (Intel®) + TPM Socket yes yes -

Extended Lifecycle Motherboards

K3843-B1 & K3843-B2 μATX

Technical Information



Product Highlights

- Intel® Core™ Processor Series (12th/13th/14th Gen)
- DDR5 4800 UDIMM, max. 128 GByte
- cTDP – Easy & flexible reduction of CPU TDP
- PCI Express® x16 (Gen5 @ CPU, Gen4 @ PCH)
- 1x Intel® GbE LAN
- Intel® UHD Graphics 7xx driven by X^e Architecture;
Up to 4x DisplayPort V1.4a (up to 8K)
- Intel® High Definition Stereo Audio; Intel® integrated TPM V2.0
- 1x COM port
- 2x USB 3.2 Gen 2, 4x USB 3.2 Gen1, 4x USB 2.0
- Up to 4x SATA 6G incl. RAID support
- Up to 2x M.2 2280 (Key-M, PCIe/NVME SSD modules)

BASEBOARD	DIMENSIONS CHIPSET	9.6" x 9.6" (243.8 x 243.8 mm) Intel® B660
CPU SUPPORT	PROCESSOR PROCESSOR SOCKET MAX. PROCESSOR POWER CONSUMPTION (TDP) CPU TDP LIMITING OPTION HIGH EFFICIENCY CORE VOLTAGE REGULATOR	Intel® Core™ Processor Series (12th/13th/14th Gen) Intel® LGA1700 125 W yes yes
MEMORY	MAX. CAPACITY NUMBER OF SOCKETS RAM SPEED	128 GByte K3843-B1: 4 K3843-B2: 2 DDR5 4800 non-ECC
GRAPHICS	ONBOARD GRAPHICS GRAPHICS INTERFACES	Intel® UHD Graphics 7xx driven by X ^e Architecture K3843-B1: 4x DP V1.4a up to 8K K3843-B2: 2x DP V1.4a up to 8K
ETHERNET	ONBOARD LAN CONTROLLER IAMT/VPRO	1x Intel® i219LM -/-
AUDIO	TYPE ONBOARD CONTROLLER BUZZER/SPEAKER S/PDIF HEADER	Stereo Tempo Semiconductor 92HD91B yes/yes -
EXTENSION SLOTS	PCI _E X16/X8/X4/X1/PCI MINI-PCI _E /MSATA M.2 SSD (PCI _E AND/OR SATA) M.2 WLAN (KEY-E)	2/-/-/(2*)/- -/– K3843-B1: 2x M.2 2280 (Key-M, PCI _E /NVME SSD modules) K3843-B2: 1x M.2 2280 (Key-M, PCI _E /NVME SSD modules) -
INTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1 USB PORTS 2.0/STICK SOCKET SATA PORTS/SATA RAID COM PORT INT. HEADER PARALLEL PORT INT. HEADER	-/2 (pin header) 2 (pin header)/- K3843-B1: 4; K3843-B2: 2/yes - -
EXTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1 USB 3.2 GEN2 TYPE C USB PORTS 2.0 COM PORTS	2/2 - 2 1
POWER SUPPLY OPTIONS	EXTERNAL SUPPLY INTERNAL SUPPLY	- ATX PSU (Multirail)
ENVIRONMENTAL MISCELLANEOUS	OPERATION TEMPERATURE FAN SPEED CUSTOMIZING TPM V2.0 CHASSIS INTRUSION SUPPORT HW WATCHDOG MISCELLANEOUS	10 °C - 50 °C yes yes (Intel®) yes - -

*Only on K3843-B1

Extended Lifecycle Motherboards

K3921-H mSTX

Technical Information



Product Highlights

- Intel® Processor N100 & Intel® Core™ i3-N305
- DDR5-4800 SODIMM, max 32 GByte
- Intel® UHD Gen12 Graphics (within SoC)
- 2x DisplayPort V1.4a + USB Type-C Alt mode (DPoC)
- eDP V1.4b
- HD Audio onboard
- 3x USB 2.0, 3x USB 3.2 Gen1, 2x USB 3.2 Gen2
- 1x USB 3.2 Gen1 (Front Type-C) with DP Alt mode
- 1x Realtek GbE LAN
- 1x SATA 6G
- 1x M.2 2230/2242/2280 (Key-M, PCIe x1 Gen3 NVMe SSD + SATA SSD)
- 1x M.2 2230 (Key-E, WLAN/Bluetooth modules, PCIe and CNVi support)
- Intel® integrated TPM V2.0
- 1x RS-232 support onboard
- DualRange internal/external DC input (12V / 19-28V), PowerDelivery Sink Mode (20V DC-In via USB-C)

BASEBOARD	DIMENSIONS	5.5" x 5.8" (140 x 148 mm)
CPU SUPPORT	CHIPSET	Intel® Alder Lake N SoC
	PROCESSOR	H1: Quad-Core N100 (0.8 GHz, up to 3.4 GHz @6 W) H6: Octa-Core i3 N305 (1.0 GHz up to 3.8 GHz @15 W) FCBGAI264 H1: 6W H6: 9/15W
	PROCESSOR SOCKET	
	MAX. PROCESSOR	
	POWER CONSUMPTION (TDP)	
	CPU TDP LIMITING OPTION	-
	HIGH EFFICIENCY CORE	yes
	VOLTAGE REGULATOR	
MEMORY	MAX. CAPACITY	32 GByte
	NUMBER OF SOCKETS	1
	RAM SPEED	DDR5 4800
GRAPHICS	ONBOARD GRAPHICS	Intel® UHD Graphics 7xx driven by X® Architecture up to 3x DP (1x via USB Type-C), 1x eDP @ 4 lanes
	GRAPHICS INTERFACES	
ETHERNET	ONBOARD LAN CONTROLLER	1x Realtek RTL8111H
	IAMT/VPRO	-/-
AUDIO	TYPE	Stereo
	ONBOARD CONTROLLER	Realtek ALC256
	BUZZER/SPEAKER	yes/yes
	S/PDIF HEADER	yes
EXTENSION SLOTS	PCIe X16/X8/X4/X1/PCI	-/-/-/-/-
	MINI-PCIe/MSATA	-/-
	M.2 SSD (PCIe AND/OR SATA)	1x M.2 2230/2242/2280 (Key-M, 1x PCIe Gen3 + SATA, NVMe + SATA SSD)
	M.2 WLAN (KEY-E)	1x M.2 2230 (Key-E, WLAN PCIe and CNVi)
INTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1	-/-
	USB PORTS 2.0/STICK SOCKET	3 (pin headers)/-
	SATA PORTS/SATA RAID	1/-
	COM PORT INT. HEADER	1
	PARALLEL PORT INT. HEADER	-
EXTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1	2/3
	USB 3.2 GEN1 TYPE C	1
	USB PORTS 2.0	-
	COM PORTS	-
POWER SUPPLY OPTIONS	EXTERNAL SUPPLY	12 V/19-28 V
	INTERNAL SUPPLY	
ENVIRONMENTAL	OPERATION TEMPERATURE	0 °C - 50 °C
MISCELLANEOUS	FAN SPEED CUSTOMIZING	yes
	TPM V2.0	yes (Intel®)
	CHASSIS INTRUSION SUPPORT	yes
	HW WATCHDOG	yes
	MISCELLANEOUS	MS Windows 11 USB-C with DP Alt. Mode and PowerDelivery Sink



Motherboards of the Industrial Series are designed for long-term, continuous operations (24/7) in an extended temperature range and high system load. Industrial motherboards are specified for a temperature range between 0 °C and 60 °C.

In addition to long-term availability Industrial Series motherboards offer a multitude of add-on functions and services. They combine the product maturity and production quality of high volume manufacturing base with the special requirements of industrial applications. Additionally, motherboards of the Industrial Series come with special hardware and service features and extensive software tools.

- › Industrial Automation
- › Medical Equipment
- › Digital Signage
- › Gaming / Gambling
- › Vending / POS / ATM / Kiosk / Ticketing
- › Video Surveillance

2024				2025				2026				2027					2028				INTEL® PROCESSORS		
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		Q1	Q2	Q3	Q4	Size	Name	Chipset
														eol							mITX	D3633-S	Intel® Q370
														eol							mITX	D3634-S	Intel® H310
												eol	lpp								µATX	D3641-S	Intel® C246
												eol	lpp								ATX	D3646-S	Intel® C246
pl																					Thin mITX	K3831-H	Intel® H610
																					mITX	K3832-Q	Intel® Q670E
																					mITX	K3833-Q	Intel® Q670E
				pl																	mITX	K3836-Q/R	Intel® Q670/R680E
																					µATX	K3841-Q	Intel® Q670E
																					ATX	K3851-R	Intel® R680E
																					mSTX	K3921-N	Intel® AlderLake-N
																					mITX	K3931-N	Intel® AlderLake-N
						pl															mSTX	K4021-U	Intel® Meteor Lake U SoC

 product launch
  standard lifecycle
  end of life standard lifecycle
  Longevity Plus Program (LPP) period
  End of Longevity Plus Program period (LPP-EoL)

➤ Socketed Motherboards -
What is Next?



9th Gen Intel® Core™ i Processor Technology Intel® Core™ Processor Technology (12th/13th/14th Gen)

D3633-S 
mITX, 65 W TDP Support, Q370

K3836-Q/R
mITX, 65 W TDP Support, Q670/R680E



D3641-S 
µATX, 85 W TDP Support, C246

K3841-Q
µATX, 125 W TDP Support, Q670E



D3642-B/D3644-B 
µATX, 85 W TDP Support, Q370/C246

K3842-Q
µATX, 125 W TDP Support, Q670



D3643-H 
µATX, 85 W TDP Support, B360

K3843-B
µATX, 125 W TDP Support, B660



D3646-S/D3598-B/G 
ATX, 85 W/165 W TDP Support, C246/C422/X299

K3851-R
ATX, 125 W TDP Support, R680E



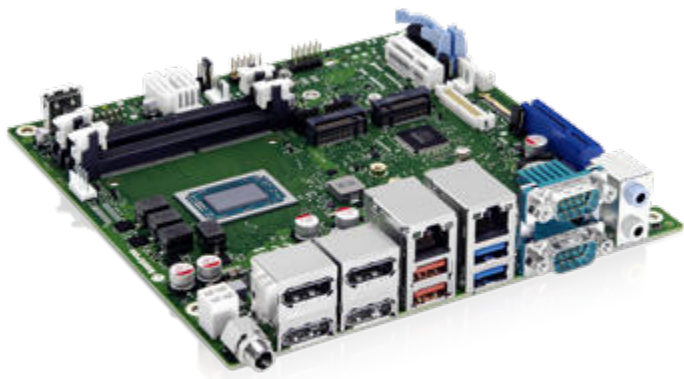
D3674-B 
Thin Mini-ITX, 85 W TDP Support, H310

K3831-H
Thin Mini-ITX, 65 W TDP Support, H610

Industrial Motherboards

D3713-V/R mITX

Technical Information



Product Highlights



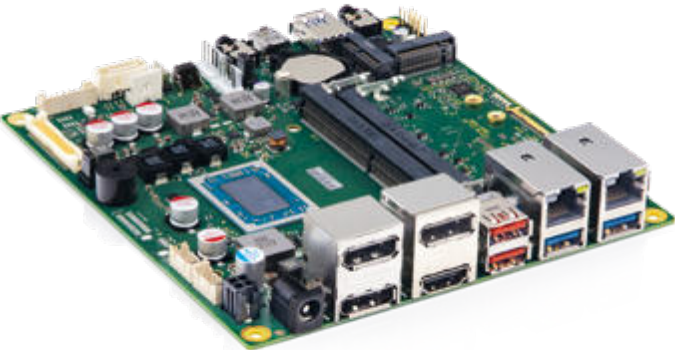
- AMD Radeon™ Vega Graphics (within SoC)
- Up to 4x DisplayPort V1.4
- Dual Channel LVDS (24Bit) and eDP V1.3 (4k) onboard
- PCI Express® x4 (Gen3)
- 8 Bit GPIO & HD Audio onboard
- USB 2.0 and USB 3.2 (Gen1/Gen2) onboard
- 2x SATA III; USB Stick Socket
- Onboard support for 1x M.2 SSD (Key-M: 2230/2242/2280)
- Onboard support for 1x M.2 (Key-B: 2242/3052/2260/2280)
- Onboard support for 1x Mini-PCIe (halfsize/fullsize)
- Dual GbE LAN onboard incl. Teaming Support
- AMD integrated TPM V2.0 onboard & socket for optional TPM Module
- WideRange internal/external DC Input (8 V - 34 V)
- HW Watchdog onboard
- RS-232/485/422 support onboard

BASEBOARD	DIMENSIONS CHIPSET	6.7" x 6.7" (170 x 170 mm) AMD Ryzen™ Embedded V1000/ R1000 Series SoC
CPU SUPPORT	PROCESSOR	R1: R1102G Dual-Core 1.2/2.6 GHz R2: R1305G Dual-Core 1.5/2.8 GHz R4: R1606G Dual-Core 2.6/3.5 GHz V1: V1202B Dual-Core 2.3/3.2 GHz V2: V1605B Quad-Core 2.0/3.6 GHz V4: V1807B Quad-Core 3.35/3.8 GHz
	PROCESSOR SOCKET MAX. PROCESSOR POWER CONSUMPTION (TDP)	AMD FP5 R1: 6 W TDP R2: 8 W/10 W TDP R4: 12 W/15 W/25 W TDP V1: 12 W/15 W/25 W TDP V2: 12 W/15 W/25 W TDP V4: 35 W/45 W/54 W TDP
	CPU TDP LIMITING OPTION HIGH EFFICIENCY CORE VOLTAGE REGULATOR	yes yes
MEMORY	MAX. CAPACITY NUMBER OF SOCKETS RAM SPEED	32 GByte 2 DDR4 2400/3200 ECC Option
GRAPHICS	ONBOARD GRAPHICS	AMD Radeon™ Vega Graphics (within SoC)
	GRAPHICS INTERFACES	up to 4x DP V1.4, 1x eDP V1.4 @ 4 lanes, 1x LVDS
ETHERNET	ONBOARD LAN CONTROLLER	1x Intel® i210AT 1x Realtek RTL8111H
	IAMT/VPRO	-/-
AUDIO	TYPE ONBOARD CONTROLLER BUZZER/SPEAKER S/PDIF HEADER	Stereo Realtek ALC256 yes/yes yes
EXTENSION SLOTS	PCIE X16/X8/X4/X1/PCI MINI-PCIe/MSATA M.2 SSD (PCIe AND/OR SATA)	-/-/1/-/- yes/- 1x M.2 Key-M (2230/2242/2280; PCIe x4) R-Series: M.2 Key-M socket shared with PCIe x4 slot (M.2 or PCIe slot usable; BIOS Setup option) 1x M.2 Key-B (2242/3052/2260/2280; SATA or PCIe) -
	M.2 WLAN (KEY-E)	-
INTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1 USB PORTS 2.0/STICK SOCKET SATA PORTS/SATA RAID COM PORT INT. HEADER PARALLEL PORT INT. HEADER	-/2 (pin header) 2 (pin header)/1 2/- 2 2 -
EXTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1 USB 3.2 GEN2 TYPE C USB PORTS 2.0 COM PORTS	2/2 - - 2
POWER SUPPLY OPTIONS	EXTERNAL SUPPLY INTERNAL SUPPLY	8 V - 34 V
ENVIRONMENTAL	OPERATION TEMPERATURE	-10 °C to +60 °C
MISCELLANEOUS	FAN SPEED CUSTOMIZING TPM V2.0 CHASSIS INTRUSION SUPPORT HW WATCHDOG MISCELLANEOUS	yes yes (AMD); Infineon module yes yes No Legacy OS Support 1x COM incl. RS-232/-422/-485 Support; GPIO

Industrial Motherboards

D3714-V/R mSTX

Technical Information



Product Highlights



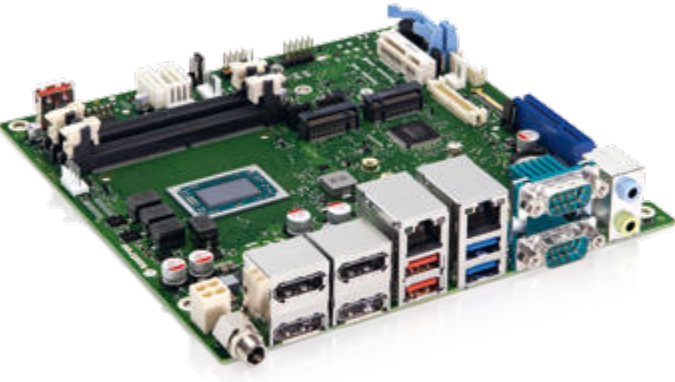
- AMD Radeon™ Vega Graphics (within SoC)
- Up to 3x DisplayPort V1.4 plus HDMI V2.0b
- Dual Channel LVDS (24Bit) and eDP V1.3 (4k) onboard
- 8 Bit GPIO & HD Audio onboard
- USB 2.0 and USB 3.2 (Gen1/Gen2) onboard
- 1x SATA III onboard
- Onboard support for 1x M.2 SSD (Key-M: 2230/2242/2280)
- Onboard support for 1x M.2 WLAN/Bluetooth (Key-E: 2230)
- Dual GbE LAN onboard incl. Teaming Support
- AMD integrated TPM V2.0 onboard
- Auto Dual Range internal/external DC Input (12 V or 19-28 V)
- HW Watchdog onboard
- RS-232/485/422 support onboard

BASEBOARD	DIMENSIONS CHIPSET	5.5" x 5.8" (140 x 148 mm) AMD Ryzen™ Embedded V1000/ R1000 Series SoC
CPU SUPPORT	PROCESSOR	R1: R1102G Dual-Core 1.2/2.6 GHz R2: R1305G Dual-Core 1.5/2.8 GHz V2: V1605B Quad-Core 2.0/3.6 GHz
	PROCESSOR SOCKET	AMD FP5
	MAX. PROCESSOR POWER CONSUMPTION (TDP)	R1: 6 W TDP R2: 8 W/10 W TDP V2: 12 W/15 W/25 W TDP
	CPU TDP LIMITING OPTION HIGH EFFICIENCY CORE VOLTAGE REGULATOR	yes yes
MEMORY	MAX. CAPACITY NUMBER OF SOCKETS RAM SPEED	32 GByte 2 DDR4 2400 ECC Option
GRAPHICS	ONBOARD GRAPHICS	AMD Radeon™ Vega Graphics (within SoC)
	GRAPHICS INTERFACES	up to 3x DP V1.4, 1x HDMI V2.0b, 1x eDP V1.4 @ 4 lanes, 1x LVDS
ETHERNET	ONBOARD LAN CONTROLLER	1x Intel® i210AT 1x Realtek RTL8111H
	IAMT/VPRO	-/-
AUDIO	TYPE ONBOARD CONTROLLER BUZZER/SPEAKER S/PDIF HEADER	Stereo Realtek ALC256 yes/yes -
EXTENSION SLOTS	PCIE X16/X8/X4/X1/PCI MINI-PCIe/MSATA M.2 SSD (PCIe AND/OR SATA) M.2 WLAN (KEY-E)	-/-/-/-/- -/- 1x M.2 Key-M (2230/2242/2280; PCIe x4) 1x M.2 WLAN/Bluetooth (Key-E: 2230, supports PCIe x1/ Gen3 + USB 2.0)
	INTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1 USB PORTS 2.0/STICK SOCKET SATA PORTS/SATA RAID COM PORT INT. HEADER PARALLEL PORT INT. HEADER
	EXTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1 USB 3.2 GEN2 TYPE C USB PORTS 2.0 COM PORTS
	POWER SUPPLY OPTIONS	EXTERNAL SUPPLY INTERNAL SUPPLY
ENVIRONMENTAL MISCELLANEOUS	OPERATION TEMPERATURE	12 V or 19 - 28 V (Auto Dual Range)
	FAN SPEED CUSTOMIZING	-10 °C to +60 °C
	TPM V2.0	yes yes (AMD integrated)
	CHASSIS INTRUSION SUPPORT	-
	HW WATCHDOG	yes
	MISCELLANEOUS	No Legacy OS Support 1x COM incl. RS-232/-422/-485 Support; GPIO

Industrial Motherboards

D3723-R mITX

Technical Information



Product Highlights



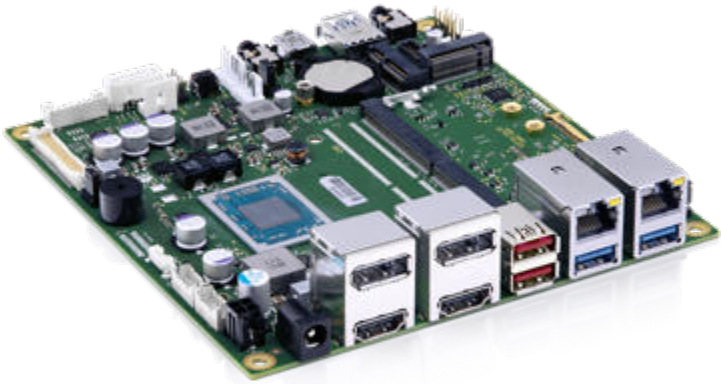
- AMD Radeon™ Vega Graphics (within SoC)
- Up to 4x DisplayPort V1.4
- Dual Channel LVDS (24Bit) and eDP V1.3 (4k) onboard
- PCI Express® x4 (Gen3)
- 8 Bit GPIO & HD Audio onboard
- USB 2.0 and USB 3.2 (Gen1/Gen2) onboard
- 2x SATA III; USB Stick Socket
- Onboard support for 1x M.2 SSD (Key-M: 2230/2242/2280)
- Onboard support for 1x M.2 (Key-B: 2242/3052/2260/2280)
- Onboard support for 1x Mini-PCIe (halfsize/fullsize)
- Dual GbE LAN onboard incl. Teaming Support
- AMD integrated TPM V2.0 onboard & socket for optional TPM Module
- WideRange internal/external DC Input (8 V - 34 V)
- HW Watchdog onboard
- RS-232/485/422 support onboard
- Windows 11 support

BASEBOARD	DIMENSIONS CHIPSET	6.7" x 6.7" (170 x 170 mm) AMD Embedded Ryzen™ R2000 Series SoC (Zen+ Core)
CPU SUPPORT	PROCESSOR	R1: R2312 Dual-Core 2.7/3.5 GHz R2: R2314 Quad-Core 2.1/3.5 GHz R3: R2514 Quad-Core 2.1/3.7 GHz R4: R2544 Quad-Core 3.35/3.7 GHz
	PROCESSOR SOCKET MAX. PROCESSOR POWER CONSUMPTION (TDP)	AMD FP5 R1: 12 W/15 W/25 W TDP R2: 12 W/15 W/25 W/35 W TDP R3: 12 W/15 W/25 W/35 W TDP R4: 35 W/45 W/54 W TDP
	CPU TDP LIMITING OPTION HIGH EFFICIENCY CORE VOLTAGE REGULATOR	yes yes
MEMORY	MAX. CAPACITY NUMBER OF SOCKETS RAM SPEED	32 GByte 2 DDR4 2400/2666/3200 ECC Option
GRAPHICS	ONBOARD GRAPHICS	AMD Radeon™ Vega Graphics (within SoC)
	GRAPHICS INTERFACES	up to 4x DP V1.4, 1x eDP @ 4 lanes, 1x LVDS
ETHERNET	ONBOARD LAN CONTROLLER	1x Intel® i210AT 1x Realtek RTL8111H
AUDIO	IAMT/VPRO	-/-
	TYPE ONBOARD CONTROLLER BUZZER/SPEAKER S/PDIF HEADER	Stereo Realtek ALC256 yes/yes yes
EXTENSION SLOTS	PCIe X16/X8/X4/X1/PCI MINI-PCIe/MSATA M.2 SSD (PCIe AND/OR SATA)	-/-/1/-/- yes/- 1 x M.2 Key-M (PCIe x4) R1: M.2 Key-M socket shared with PCIe x4 slot (M.2 or PCIe slot usable; BIOS Setup option) 1 x M.2 Key-B (SATA or PCIe)
	M.2 WLAN (KEY-E)	-
INTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1 USB PORTS 2.0/STICK SOCKET SATA PORTS/SATA RAID COM PORT INT. HEADER PARALLEL PORT INT. HEADER	-/2 (pin header) 2 (pin header)/1 2/- 2 -
EXTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1 USB 3.2 GEN2 TYPE C USB PORTS 2.0 COM PORTS	2/2 - - 2
POWER SUPPLY OPTIONS	EXTERNAL SUPPLY INTERNAL SUPPLY	8 V - 34 V
ENVIRONMENTAL	OPERATION TEMPERATURE	-10 °C to +60 °C
MISCELLANEOUS	FAN SPEED CUSTOMIZING TPM V2.0 CHASSIS INTRUSION SUPPORT HW WATCHDOG MISCELLANEOUS	yes yes (AMD integrated) yes yes MS Windows 11 No Legacy OS Support 4x COM (1x incl. RS-232/-422/-485 Support), GPIO

Industrial Motherboards

D3724-R mSTX

Technical Information



Product Highlights



- AMD Radeon™ Vega Graphics (within SoC)
- Up to 3x DisplayPort V1.4 plus HDMI V2.0b
- Dual Channel LVDS (24Bit) and eDP V1.3 (4k) onboard
- 8 Bit GPIO & HD Audio onboard
- USB 2.0 and USB 3.2 (Gen1/Gen2) onboard
- 1x SATA III onboard
- Onboard support for 1x M.2 SSD (Key-M: 2230/2242/2280)
- Onboard support for 1x M.2 WLAN/Bluetooth (Key-E: 2230)
- Dual GbE LAN onboard incl. Teaming Support
- AMD integrated TPM V2.0 onboard
- Auto Dual Range internal/external DC Input (12 V or 19-28 V)
- HW Watchdog onboard
- RS-232/485/422 support onboard

BASEBOARD	DIMENSIONS CHIPSET	5.5" x 5.8" (140 x 148 mm) AMD Embedded Ryzen™ R2000 Series SoC (Zen+ Core)
CPU SUPPORT	PROCESSOR PROCESSOR SOCKET MAX. PROCESSOR POWER CONSUMPTION (TDP) CPU TDP LIMITING OPTION HIGH EFFICIENCY CORE VOLTAGE REGULATOR	R1: R2312 Dual-Core 2.7/3.5 GHz R2: R2314 Quad-Core 2.1/3.5 GHz R3: R2514 Quad-Core 2.1/3.7 GHz AMD FP5 12 W/15 W/25 W yes yes
MEMORY	MAX. CAPACITY NUMBER OF SOCKETS RAM SPEED	32 GByte 2 DDR4 2400/2666 ECC Option
GRAPHICS	ONBOARD GRAPHICS GRAPHICS INTERFACES	AMD Radeon™ Vega Graphics (within SoC) up to 3x DP V1.4, 1x HDMI V2.0b, 1x eDP V1.4, 1x LVDS
ETHERNET	ONBOARD LAN CONTROLLER IAMT/VPRO	1x Intel® i210AT 1x Realtek RTL8111H -/-
AUDIO	TYPE ONBOARD CONTROLLER BUZZER/SPEAKER S/PDIF HEADER	Stereo Realtek ALC256 yes/yes -
EXTENSION SLOTS	PCIE X16/X8/X4/X1/PCI MINI-PCIe/MSATA M.2 SSD (PCIe AND/OR SATA) M.2 WLAN (KEY-E)	-/-/-/-/- -/- 1x M.2 PCIe x4 (Key-M: 2230/2242/2280) 1x M.2 WLAN/Bluetooth (Key-E: 2230, supports PCIe x1/ Gen3 + USB 2.0)
INTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1 USB PORTS 2.0/STICK SOCKET SATA PORTS/SATA RAID COM PORT INT. HEADER PARALLEL PORT INT. HEADER	-/- 2 (pin header)/- 1/- 2 2 -
EXTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1 USB 3.2 GEN1 TYPE C USB PORTS 2.0 COM PORTS	2/3 1 - -
POWER SUPPLY OPTIONS	EXTERNAL SUPPLY INTERNAL SUPPLY	12 V / 19 - 28 V
ENVIRONMENTAL	OPERATION TEMPERATURE	-10 °C to +60 °C
MISCELLANEOUS	FAN SPEED CUSTOMIZING TPM V2.0 CHASSIS INTRUSION SUPPORT HW WATCHDOG MISCELLANEOUS	yes yes (AMD integrated) - yes MS Windows 11 No Legacy OS Support 2x COM (1x incl. RS-232/-422/-485 Support) GPIO

Industrial Motherboards

D3633-S mITX

Technical Information



Product Highlights

- Intel® 8th/9th Gen Core™ Processor Series
- DDR4 2666 SDRAM, max. 64 GByte
- cTDP – Easy & flexible reduction of CPU TDP
- Supporting Intel® AMT 12.0/vPro
- PCI Express® x16 (Gen.3)
- 2x Intel® GbE LAN (incl. Teaming)
- Intel® UHD Graphics (DX12)
- 1x DVI-D, 2x DP V1.2, eDP V1.4 and Dual Channel LVDS
- Intel® High Definition 5.1 Audio; Infineon TPM V2.0
- 8 Bit GPIO; 2x COM port (incl. RS-422/RS-485 support)
- 6x USB 2.0, 4x USB 3.2 Gen1, 2x USB 3.2 Gen2, 1x USB 3.2 Gen2 stick socket
- 4x SATA-III incl. RAID support & M.2 (PCIe-based SSD modules 2242, 2260, or 2280)
- Mini-PCIe socket (halfsize/fullsize support)
- Dual Power Supply (ATX compliant or single 12 V DC)
- BIOS-POST/-Boot & OS – HW Watchdog onboard

BASEBOARD	DIMENSIONS CHIPSET	6.7" x 6.7" (170 x 170 mm) Intel® Q370
CPU SUPPORT	PROCESSOR PROCESSOR SOCKET MAX. PROCESSOR POWER CONSUMPTION (TDP) CPU TDP LIMITING OPTION HIGH EFFICIENCY CORE VOLTAGE REGULATOR	Intel® Core™ 8th/9th Gen. Processor Series Intel® LGA1151 95 W yes yes
MEMORY	MAX. CAPACITY NUMBER OF SOCKETS RAM SPEED	64 GByte 2 DDR4 2400/2666
GRAPHICS	ONBOARD GRAPHICS GRAPHICS INTERFACES	Intel® UHD Graphics; DX 12 1x DVI-D, 2x DP V1.2, 1x LVDS, 1x eDP V1.4 @ 2 lanes
ETHERNET	ONBOARD LAN CONTROLLER IAMT/vPRO	1x Intel® i219LM 1x Intel® i210AT yes/yes
AUDIO	TYPE ONBOARD CONTROLLER BUZZER/SPEAKER S/PDIF HEADER	5.1 Multich. Realtek ALC671 yes/yes yes
EXTENSION SLOTS	PCIe X16/X8/X4/X1/PCI MINI-PCIe/MSATA M.2 SSD (PCIe AND/OR SATA) M.2 WLAN (KEY-E)	1/-/-/-/- yes/- 1x M.2 Key-M Socket (2242/2260/2280) for PCIe (4 lanes) based M.2 Modules -
INTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1 USB PORTS 2.0/STICK SOCKET SATA PORTS/SATA RAID COM PORT INT. HEADER PARALLEL PORT INT. HEADER	-/2 (pin header) 2 (pin header)/1 (3.2 Gen2) 4/yes 1 -
EXTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1 USB 3.2 GEN2 TYPE C USB PORTS 2.0 COM PORTS	2/2 - 4 1
POWER SUPPLY OPTIONS	EXTERNAL SUPPLY INTERNAL SUPPLY	- ATX PSU (Multirail) or single 12 V
ENVIRONMENTAL	OPERATION TEMPERATURE	0 °C - 60 °C
MISCELLANEOUS	FAN SPEED CUSTOMIZING TPM V2.0 CHASSIS INTRUSION SUPPORT HW WATCHDOG MISCELLANEOUS	yes yes (Infineon) yes yes Onboard LVDS 24bit & eDP Mini-PCIe (Halfsize/Fullsize Support) & M.2 SSD (PCIe), GPIO (8Bit) COM: RS-232/-422/-485 Supported

Industrial Motherboards

D3634-S mITX

Technical Information



Product Highlights

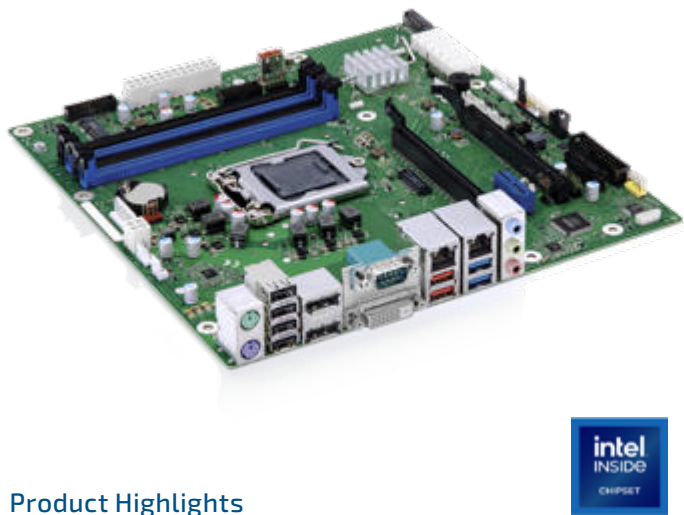
- Intel® 8th/9th Gen Core™ Processor Series
- DDR4 2666 SDRAM, max. 64 GByte
- cTDP – Easy & flexible reduction of CPU TDP
- PCI Express® x16 (Gen.3)
- 2x Intel® GbE LAN (incl. Teaming)
- Intel® UHD Graphics (DX12)
- 1x DVI-D, 1x DP V1.2, eDP V1.4 and Dual Channel LVDS
- Intel® High Definition 5.1 Audio; Intel® integrated TPM V2.0
- 8 Bit GPIO; 2 x COM port (incl. RS-422/RS-485 support)
- 5x USB 2.0, 4x USB 3.2 Gen1
- 4x SATA-III & M.2
(PCIe-based SSD modules 2242, 2260, or 2280)
- Mini-PCIe socket (halfsize/fullsize support)
- Dual Power Supply (ATX compliant or single 12V DC)
- BIOS-POST/-Boot & OS – HW Watchdog onboard

BASEBOARD	DIMENSIONS CHIPSET	6.7" x 6.7" (170 x 170 mm) Intel® H310
CPU SUPPORT	PROCESSOR PROCESSOR SOCKET MAX. PROCESSOR POWER CONSUMPTION (TDP) CPU TDP LIMITING OPTION HIGH EFFICIENCY CORE VOLTAGE REGULATOR	Intel® Core™ 8th/9th Gen. Processor Series Intel® LGA1151 95 W yes yes
MEMORY	MAX. CAPACITY NUMBER OF SOCKETS RAM SPEED	32 GByte 2 DDR4 2400/2666
GRAPHICS	ONBOARD GRAPHICS GRAPHICS INTERFACES	Intel® UHD Graphics; DX 12 1x DVI-D, 1x DP V1.2, 1x LVDS, 1x eDP V1.4 @ 2 lanes
ETHERNET	ONBOARD LAN CONTROLLER IAMT/VPRO	1x Intel® i219LM 1x Intel® i210AT -/-
AUDIO	TYPE ONBOARD CONTROLLER BUZZER/SPEAKER S/PDIF HEADER	5.1 Multich. Realtek ALC671 yes/yes yes
EXTENSION SLOTS	PCIe X16/X8/X4/X1/PCI MINI-PCIe/MSATA M.2 SSD (PCIe AND/OR SATA) M.2 WLAN (KEY-E)	1/-/-/-/- yes/- 1x M.2 Key-M Socket (2242/2260/2280) for PCIe (2 lanes) based M.2 Modules -
INTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1 USB PORTS 2.0/STICK SOCKET SATA PORTS/SATA RAID COM PORT INT. HEADER PARALLEL PORT INT. HEADER	-/2 (pin header) 2 (pin header)/- 4/- 1 -
EXTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1 USB 3.2 GEN2 TYPE C USB PORTS 2.0 COM PORTS	-/2 - 3 1
POWER SUPPLY OPTIONS	EXTERNAL SUPPLY INTERNAL SUPPLY	- ATX PSU (Multirail) or single 12 V
ENVIRONMENTAL	OPERATION TEMPERATURE	0 °C - 60 °C
MISCELLANEOUS	FAN SPEED CUSTOMIZING TPM V2.0 CHASSIS INTRUSION SUPPORT HW WATCHDOG MISCELLANEOUS	yes yes (Intel®) yes yes Onboard LVDS 24bit & eDP Mini-PCIe (Halfsize/Fullsize Support) & M.2 SSD (PCIe), GPIO (8Bit) COM: RS-232/-422/-485 Supported

Industrial Motherboards

D3641-S µATX

Technical Information



Product Highlights

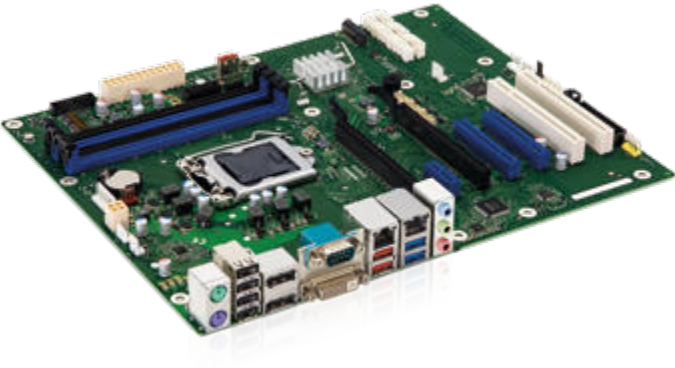
- Intel® 8th/9th Gen Core™ & Intel® Xeon® Processor Series
- DDR4 2666 SDRAM, max. 64 GByte
- cTDP – Easy & flexible reduction of CPU TDP
- Supporting Intel® AMT 12.0/vPro
- PCI Express® x16 (Gen.3)
- 2x Intel® GbE LAN (incl. Teaming)
- Intel® UHD Graphics (DX12); 1x DVI-D, 2x DP V1.2
- Intel® High Definition 5.1 Audio; Infineon TPM V2.0
- 8 Bit GPIO; 4x COM ports
- 6x USB 2.0, 4x USB 3.2 Gen1, 2x USB 3.2 Gen2, 1x USB 3.2 Gen2 stick socket
- 6x SATA 6G incl. RAID support, parallel port (internal pin header)
- M.2 2280 (PCIe-based SSD modules)
- M.2 2230 (WLAN/Bluetooth modules)
- BIOS-POST/-Boot & OS – HW Watchdog onboard

BASEBOARD	DIMENSIONS CHIPSET	9.6" x 9.6" (243.8 x 243.8 mm) Intel® C246
CPU SUPPORT	PROCESSOR PROCESSOR SOCKET MAX. PROCESSOR POWER CONSUMPTION (TDP) CPU TDP LIMITING OPTION HIGH EFFICIENCY CORE VOLTAGE REGULATOR	Intel® Core™ 8th/9th Gen & Xeon® Processor Series Intel® LGA1151 95 W yes yes
MEMORY	MAX. CAPACITY NUMBER OF SOCKETS RAM SPEED	64 GByte 4 DDR4 2400/2666 ECC support
GRAPHICS	ONBOARD GRAPHICS GRAPHICS INTERFACES	Intel® UHD Graphics; DX 12 1x DVI-D, 2x DP V1.2, Optional VGA-Ext. D3653
ETHERNET	ONBOARD LAN CONTROLLER IAMT/vPRO	1x Intel® i219LM 1x Intel® i210AT yes/yes
AUDIO	TYPE ONBOARD CONTROLLER BUZZER/SPEAKER S/PDIF HEADER	5.1 Multich. Realtek ALC671 yes/yes yes
EXTENSION SLOTS	PCIe X16/X8/X4/X1/PCI MINI-PCIe/MSATA M.2 SSD (PCIe AND/OR SATA) M.2 WLAN (KEY-E)	2/-/-/2/- - 1x M.2 Key-M Socket (2280) for PCIe (4 lanes) based M.2 Modules yes
INTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1 USB PORTS 2.0/STICK SOCKET SATA PORTS/SATA RAID COM PORT INT. HEADER PARALLEL PORT INT. HEADER	-/2 (pin header) 2 (pin header)/1 (3.2 Gen2) 6/yes 3 yes
EXTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1 USB 3.2 GEN2 TYPE C USB PORTS 2.0 COM PORTS	2/2 - 4 1
POWER SUPPLY OPTIONS	EXTERNAL SUPPLY INTERNAL SUPPLY	- ATX PSU (Multirail)
ENVIRONMENTAL MISCELLANEOUS	OPERATION TEMPERATURE FAN SPEED CUSTOMIZING TPM V2.0 CHASSIS INTRUSION SUPPORT HW WATCHDOG MISCELLANEOUS	0 °C - 60 °C yes yes (Infineon) yes yes GPIO (8Bit)

Industrial Motherboards

D3646-S ATX

Technical Information



Product Highlights

- Intel® 8th/9th Gen Core™ & Intel® Xeon® Processor Series
- DDR4 2666 SDRAM, max. 64 GByte
- cTDP – Easy & flexible reduction of CPU TDP
- Supporting Intel® AMT 12.0/vPro
- PCI Express® x16 (Gen.3) & 2x PCI (32 Bit/33 MHz Rev. 2.3)
- 2x Intel® GbE LAN (incl. Teaming)
- Intel® UHD Graphics (DX12); 1x DVI-D, 2x DP V1.2
- Intel® High Definition 5.1 Audio; Infineon TPM V2.0
- 8 Bit GPIO; 4x COM ports, HW watchdog
- 6x USB 2.0, 4x USB 3.2 Gen1, 2x USB 3.2 Gen2, 1x USB 3.2 Gen2 stick socket
- 6x SATA 6G incl. RAID support, parallel port (internal pin header)
- M.2 2280 (PCIe-based SSD modules)
- M.2 2230 (WLAN/Bluetooth modules)
- BIOS-POST/-Boot & OS – HW Watchdog onboard

BASEBOARD	DIMENSIONS CHIPSET	9.6" x 12" (243.8 x 304.8 mm) Intel® C246
CPU SUPPORT	PROCESSOR PROCESSOR SOCKET MAX. PROCESSOR POWER CONSUMPTION (TDP) CPU TDP LIMITING OPTION HIGH EFFICIENCY CORE VOLTAGE REGULATOR	Intel® Core™ 8th/9th Gen & Xeon® Processor Series Intel® LGA1151 95 W yes yes
MEMORY	MAX. CAPACITY NUMBER OF SOCKETS RAM SPEED	64 GByte 4 DDR4 2400/2666 ECC support
GRAPHICS	ONBOARD GRAPHICS GRAPHICS INTERFACES	Intel® UHD Graphics; DX 12 1x DVI-D, 2x DP V1.2, Optional VGA-Ext. D3653
ETHERNET	ONBOARD LAN CONTROLLER IAMT/vPRO	1x Intel® i219LM 1x Intel® i210AT yes/yes
AUDIO	TYPE ONBOARD CONTROLLER BUZZER/SPEAKER S/PDIF HEADER	5.1 Multich. Realtek ALC671 yes/yes yes
EXTENSION SLOTS	PCIe X16/X8/X4/X1/PCI MINI-PCIe/MSATA M.2 SSD (PCIe AND/OR SATA) M.2 WLAN (KEY-E)	2/2/- /-1/2 - 1x M.2 Key-M Socket (2280) for PCIe (4 lanes) based M.2 Modules yes
INTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1 USB PORTS 2.0/STICK SOCKET SATA PORTS/SATA RAID COM PORT INT. HEADER PARALLEL PORT INT. HEADER	-/2 (pin header) 2 (pin header)/1 (3.2 Gen2) 6/yes 3 yes
EXTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1 USB 3.2 GEN2 TYPE C USB PORTS 2.0 COM PORTS	2/2 - 4 1
POWER SUPPLY OPTIONS	EXTERNAL SUPPLY INTERNAL SUPPLY	- ATX PSU (Multirail)
ENVIRONMENTAL MISCELLANEOUS	OPERATION TEMPERATURE FAN SPEED CUSTOMIZING TPM V2.0 CHASSIS INTRUSION SUPPORT HW WATCHDOG MISCELLANEOUS	0 °C - 60 °C yes yes (Infineon) yes yes GPIO (8Bit)

Industrial Motherboards

K3831-H Thin mITX

Technical Information



Product Highlights

- Intel® Core™ Processor Series (12th/13th/14th Gen)
- DDR5-5600 SODIMM, max. 64 GByte
- cTDP – Easy & flexible reduction of CPU TDP
- Intel® UHD Graphics 7xx driven by Xe Architecture
- HDMI 2.0b, DP V1.4a and USB Type-C Alt mode (DPoC) Dual Channel LVDS support
- 8 Bit GPIO & multichannel Audio onboard
- USB 2.0, USB 3.2 Gen1 and USB 3.2 Gen2 onboard
- Onboard support for M.2 SSD (PCIe x4 Gen 4 based M.2 2242)
- Onboard support for M.2 WLAN/Bluetooth (M.2 2230)
- 1x Intel® GbE LAN, 1x Realtek GbE LAN
- Intel® integrated TPM V2.0 onboard
- Dual-Range DC Power Supply 12 V/19-24 V
- HW Watchdog onboard

BASEBOARD	DIMENSIONS CHIPSET	6.7" x 6.7" (170 x 170 mm) Intel® H610 Chipset
CPU SUPPORT	PROCESSOR PROCESSOR SOCKET MAX. PROCESSOR POWER CONSUMPTION (TDP) CPU TDP LIMITING OPTION HIGH EFFICIENCY CORE VOLTAGE REGULATOR	Intel® Core™ Processor Series (12th/13th/14th Gen) LGA 1700 65 W TDP yes yes
MEMORY	MAX. CAPACITY NUMBER OF SOCKETS RAM SPEED	64 GByte 2 DDR5 5600
GRAPHICS	ONBOARD GRAPHICS GRAPHICS INTERFACES	Intel® UHD Graphics 7xx driven by X ^e Architecture 1x DP V1.4a, 1x HDMI V2.0b, 1x DP via USB Type-C, 1x Dual-Channel (24Bit) LVDS
ETHERNET	ONBOARD LAN CONTROLLER IAMT/VPRO	1x Realtek RTL8111H 1x Intel® i219LM -/-
AUDIO	TYPE ONBOARD CONTROLLER BUZZER/SPEAKER S/PDIF HEADER	Stereo Realtek ALC256 yes/yes -
EXTENSION SLOTS	PCIe X16/X8/X4/X1/PCI MINI-PCIe/MSATA M.2 SSD (PCIe AND/OR SATA) M.2 WLAN (KEY-E)	-/-/-/-/- -/– 1x M.2 2242 (Key-M, Gen 4, PCIe/ NVME SSD modules) 1x M.2 2230 (Key-E, WLAN/ Bluetooth modules, incl. CNVi support)
INTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1 USB PORTS 2.0/STICK SOCKET SATA PORTS/SATA RAID COM PORT INT. HEADER PARALLEL PORT INT. HEADER	-/2 (pin header) 3 (pin headers)/– 2/– 1 –
EXTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1 USB 3.2 GEN2 TYPE C USB PORTS 2.0 COM PORTS	1/– 1 2 –
POWER SUPPLY OPTIONS	EXTERNAL SUPPLY INTERNAL SUPPLY	19-24 V 12 V/19-24 V
ENVIRONMENTAL MISCELLANEOUS	OPERATION TEMPERATURE FAN SPEED CUSTOMIZING TPM V2.0 CHASSIS INTRUSION SUPPORT HW WATCHDOG MISCELLANEOUS	0 °C – 60 °C yes yes (Intel®) yes yes MS Windows 11 GPIO (8 Bit) Thin design

Industrial Motherboards

K3832-Q mITX

Technical Information



Product Highlights

- Intel® Core™ Processor Series (12th/13th/14th Gen)
- DDR5-4800/5600 SODIMM, max. 64 GByte
- cTDP – Easy & flexible reduction of CPU TDP
- Supporting Intel® iAMT features and Intel® Time Coordinated Computing (TCC)
- PCI Express® x16 (Gen5)
- 1x Intel® GbE LAN, 1x 2.5GbE incl. Teaming and TSN
- Intel® UHD Graphics 7xx driven by X® Architecture; 2x DisplayPort V1.4a up to 8K; 1x Dual Channel LVDS; 1x eDP V1.4b
- Intel® High Definition Stereo Audio; Intel® integrated TPM V2.0
- 8 Bit GPIO; 2x COM port
- 4x USB 3.2 Gen 2, 4x USB 3.2 Gen1, 2x USB 2.0
- 1x M.2 2242 (Key-M, PCIe/NVME SSD modules)
- M.2 2230 (Key-E, WLAN/Bluetooth modules, incl. CNVi support)
- BIOS-POST/-Boot & OS – HW Watchdog onboard

BASEBOARD	DIMENSIONS CHIPSET	6.7" x 6.7" (170 x 170 mm) Intel® Q670E
CPU SUPPORT	PROCESSOR PROCESSOR SOCKET MAX. PROCESSOR POWER CONSUMPTION (TDP) CPU TDP LIMITING OPTION HIGH EFFICIENCY CORE VOLTAGE REGULATOR	Intel® Core™Processor Series (12th/13th/14th Gen) Intel® LGA1700 65 W TDP yes yes
MEMORY	MAX. CAPACITY NUMBER OF SOCKETS RAM SPEED	64 GByte 2 DDR5 4800/5600
GRAPHICS	ONBOARD GRAPHICS GRAPHICS INTERFACES	Intel® UHD Graphics 7xx driven by X® Architecture 2x DP V1.4 up to 8K, 1x eDP V1.4b @4K, 1x Dual-Channel (24Bit) LVDS @Full HD
ETHERNET	ONBOARD LAN CONTROLLER IAMT/VPRO	1x Intel® i219LM 1x Intel® i226LM yes/-
AUDIO	TYPE ONBOARD CONTROLLER BUZZER/SPEAKER S/PDIF HEADER	Stereo Tempo Semiconductor 92HD91B yes/yes -
EXTENSION SLOTS	PCIe X16/X8/X4/X1/PCI MINI-PCIe/MSATA M.2 SSD (PCIe AND/OR SATA) M.2 WLAN (KEY-E)	1/-/-/-/- -/- 1x M.2 2242 (Key-M, PCIe/NVME SSD modules) 1x M.2 2230 (Key-E incl. CNVi)
INTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1 USB PORTS 2.0/STICK SOCKET SATA PORTS/SATA RAID COM PORT INT. HEADER PARALLEL PORT INT. HEADER	-/2 (pin header) 2/- -/- 2 -
EXTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1 USB 3.2 GEN2 TYPE C USB PORTS 2.0 COM PORTS	3/2 1 2 -
POWER SUPPLY OPTIONS	EXTERNAL SUPPLY INTERNAL SUPPLY	- Dual supply option: Single 12 V PSU ("DC In") or ATX 12V0 (Intel®-compliant) PSU; 10-pin socket plus 4-pin socket (12 V CPU power connector)
ENVIRONMENTAL	OPERATION TEMPERATURE	0 °C - 60 °C
MISCELLANEOUS	FAN SPEED CUSTOMIZING TPM V2.0 CHASSIS INTRUSION SUPPORT HW WATCHDOG MISCELLANEOUS	yes yes (Intel®) - yes GPIO (8Bit)

Industrial Motherboards

K3833-Q mITX

Technical Information



Product Highlights

- Intel® Core™ Processor Series (12th/13th/14th Gen)
- DDR5-4800/5600 SODIMM, max. 64 GByte
- cTDP – Easy & flexible reduction of CPU TDP
- Supporting Intel® iAMT features and Intel® Time Coordinated Computing (TCC)
- PCI Express® x16 (Gen5)
- 1x Intel® GbE LAN, 1x 2.5GbE incl. Teaming and TSN
- Intel® UHD Graphics 7xx driven by X® Architecture; 4x DisplayPort V1.4a up to 8K; 1x eDP V1.4b
- Intel® High Definition 5.1 Audio; Intel® integrated TPM V2.0
- 8 Bit GPIO; 1x COM port
- 4x USB 3.2 Gen 2, 4x USB 3.2 Gen1, 2x USB 2.0
- 2x SATA 6G incl. RAID support
- 1x M.2 2242 (Key-M, PCIe/NVME SSD modules)
- M.2 2230 (Key-E, WLAN/Bluetooth modules, incl. CNVi support)
- BIOS-POST/-Boot & OS – HW Watchdog onboard

BASEBOARD	DIMENSIONS CHIPSET	6.7" x 6.7" (170 x 170 mm) Intel® Q670E
CPU SUPPORT	PROCESSOR PROCESSOR SOCKET MAX. PROCESSOR POWER CONSUMPTION (TDP) CPU TDP LIMITING OPTION HIGH EFFICIENCY CORE VOLTAGE REGULATOR	Intel® Core™ Processor Series (12th/13th/14th Gen) Intel® LGA1700 65 W TDP yes yes
MEMORY	MAX. CAPACITY NUMBER OF SOCKETS RAM SPEED	64 GByte 2 DDR5 4800/5600
GRAPHICS	ONBOARD GRAPHICS GRAPHICS INTERFACES	Intel® UHD Graphics 7xx driven by X® Architecture 4x DP V1.4a up to 8K, 1x eDP V1.4b @4K
ETHERNET	ONBOARD LAN CONTROLLER IAMT/VPRO	1x Intel® i219LM 1x Intel® i226LM yes/-
AUDIO	TYPE ONBOARD CONTROLLER BUZZER/SPEAKER S/PDIF HEADER	5.1 Multich. Tempo Semiconductor 92HD91B yes/yes yes
EXTENSION SLOTS	PCIe X16/X8/X4/X1/PCI MINI-PCIe/MSATA M.2 SSD (PCIe AND/OR SATA) M.2 WLAN (KEY-E)	1/-/-/-/- -/- 1x M.2 2242 (Key-M, PCIe/NVME SSD modules) 1x M.2 2230 (Key-E incl. CNVi)
INTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1 USB PORTS 2.0/STICK SOCKET SATA PORTS/SATA RAID COM PORT INT. HEADER PARALLEL PORT INT. HEADER	-/2 (pin header) -/- 2/yes 1 -
EXTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1 USB 3.2 GEN2 TYPE C USB PORTS 2.0 COM PORTS	3/2 1 2 -
POWER SUPPLY OPTIONS	EXTERNAL SUPPLY INTERNAL SUPPLY	- ATX PSU (Multirail); 24-pin socket plus 4-pin socket (12 V CPU power connector)
ENVIRONMENTAL	OPERATION TEMPERATURE	0 °C - 60 °C
MISCELLANEOUS	FAN SPEED CUSTOMIZING TPM V2.0 CHASSIS INTRUSION SUPPORT HW WATCHDOG MISCELLANEOUS	yes yes (Intel®) yes yes GPIO (8Bit)

Industrial Motherboards

K3836-Q/R mITX

Technical Information



Product Highlights

- Intel® Core™ processor series (12th, 13th, 14th gen)
- DDR5-4800/5600 SODIMM, max. 96 GByte
- ECC Support with R680E chipset
- cTDP – Easy & flexible reduction of CPU TDP
- Supporting Intel® iAMT features and Intel® Time Coordinated Computing (TCC)
- PCI Express® x16 (Gen5 prepared)
- 1x Intel® GbE LAN, 1x 2.5GbE incl. Teaming and TSN
- Intel® UHD Graphics 7xx driven by Xe Architecture;
- 4x DisplayPort V1.4a up to 8K; 1x eDP V1.4b @4K; 1x Dual Channel LVDS
- HD Audio onboard
- Intel® integrated TPM V2.0
- 8 Bit GPIO; 4x COM port
- 6x USB 3.2 Gen 2, 7x USB 2.0
- 1x M.2 2242/2280 (Key-M, PCIe/NVME SSD modules)
- M.2 2230 (Key-E, WLAN/Bluetooth modules)
- BIOS-POST/-Boot & OS – HW Watchdog onboard

BASEBOARD	DIMENSIONS CHIPSET	6.7" x 6.7" (170 x 170 mm) K3836-Q: Intel® Q670 K3836-R: Intel® R680E
CPU SUPPORT	PROCESSOR PROCESSOR SOCKET MAX. PROCESSOR POWER CONSUMPTION (TDP) CPU TDP LIMITING OPTION HIGH EFFICIENCY CORE VOLTAGE REGULATOR	Intel® Core™ Processor Series (12th/13th/14th Gen) Intel® LGA1700 65 W TDP yes yes
MEMORY	MAX. CAPACITY NUMBER OF SOCKETS RAM SPEED	96 GByte 2 DDR5 4800/5600* K3836-R: ECC Support
GRAPHICS	ONBOARD GRAPHICS GRAPHICS INTERFACES	Intel® UHD Graphics 7xx driven by Xe Architecture 4x DP V1.4a up to 8K, 1x eDP V1.4b @4K, 1x Dual Channel LVDS
ETHERNET	ONBOARD LAN CONTROLLER IAMT/VPRO	1x Intel® i219LM 1x Intel® i226LM yes/-
AUDIO	TYPE ONBOARD CONTROLLER BUZZER/SPEAKER S/PDIF HEADER	Stereo Realtek ALC256 yes/yes yes
EXTENSION SLOTS	PCIe X16/X8/X4/X1/PCI MINI-PCIe/MSATA M.2 SSD (PCIe AND/OR SATA) M.2 WLAN (KEY-E)	1**/-/-/-/- -/- 1x M.2 2242/2280 (Key-M, PCIe/NVME SSD modules) 1x M.2 2230 (Key-E, WLAN/ Bluetooth modules, PCIe + USB)
INTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1 USB PORTS 2.0/STICK SOCKET SATA PORTS/SATA RAID COM PORT INT. HEADER PARALLEL PORT INT. HEADER	2 (pin header)/- 2 (pin header)/1 4/yes 3 -
EXTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1 USB 3.2 GEN2 TYPE C USB PORTS 2.0 COM PORTS	3/- 1 4 1
POWER SUPPLY OPTIONS	EXTERNAL SUPPLY INTERNAL SUPPLY	- Dual supply option: Single 12 V PSU ("DC In") or Standard ATX Multirail PSU; 24-pin ATX socket plus 4-pin socket for CPU
ENVIRONMENTAL	OPERATION TEMPERATURE	0 °C - 60 °C
MISCELLANEOUS	FAN SPEED CUSTOMIZING TPM V2.0 CHASSIS INTRUSION SUPPORT HW WATCHDOG MISCELLANEOUS	yes yes (Intel®) yes yes GPIO (8Bit)

* Support for DDR5-5600 requires Intel® Core™ i7 or i9 processor (13th/14th Gen) and single rank SO-DIMM modules

** Support for Lane Split (x16 or x4+x4)

Industrial Motherboards

K3841-Q μATX

Technical Information



Product Highlights

- Intel® Core™ Processor Series (12th/13th/14th Gen)
- DDR5 4800 UDIMM, max. 128 GByte
- cTDP – Easy & flexible reduction of CPU TDP
- Supporting Intel® AMT 16.0 and Intel® Time Coordinated Computing (TCC)
- PCI Express® x16 (Gen5 @ CPU, Gen4 @ PCH)
- 1x Intel® GbE LAN, 2x 2.5GbE incl. Teaming and TSN
- Intel® UHD Graphics 7xx driven by X® Architecture; 4x DisplayPort V1.4a up to 8K
- Intel® High Definition 5.1 Audio; Intel® integrated TPM V2.0
- 8 Bit GPIO; 4x COM ports
- 3x USB 3.2 Gen 2, 6x USB 3.2 Gen1, 2x USB 2.0, 1x USB 3.2 Gen2 stick socket, 1x USB 2.0 stick socket
- 4x SATA 6G incl. RAID support
- 2x M.2 2230/2242/2280 (Key-M, PCIe/NVME SSD modules), incl. NVME RAID support
- M.2 2230 (Key-E, WLAN/Bluetooth modules, incl. CNVi support)
- BIOS-POST/-Boot & OS – HW Watchdog onboard

BASEBOARD	DIMENSIONS CHIPSET	9.6" x 9.6" (243.8 x 243.8 mm) Intel® Q670E
CPU SUPPORT	PROCESSOR PROCESSOR SOCKET MAX. PROCESSOR POWER CONSUMPTION (TDP) CPU TDP LIMITING OPTION HIGH EFFICIENCY CORE VOLTAGE REGULATOR	Intel® Core™ Processor Series (12th/13th/14th Gen) Intel® LGA1700 125 W yes yes
MEMORY	MAX. CAPACITY NUMBER OF SOCKETS RAM SPEED	128 GByte 4 DDR5 4800 non-ECC
GRAPHICS	ONBOARD GRAPHICS GRAPHICS INTERFACES	Intel® UHD Graphics 7xx driven by X® Architecture 4x DP V1.4a up to 8K
ETHERNET	ONBOARD LAN CONTROLLER IAMT/VPRO	1x Intel® i219LM 2x Intel® i226LM yes/-
AUDIO	TYPE ONBOARD CONTROLLER BUZZER/SPEAKER S/PDIF HEADER	5.1 Multich. Tempo Semiconductor 92HD91B yes/yes yes
EXTENSION SLOTS	PCIe X16/X8/X4/X1/PCI MINI-PCIe/MSATA M.2 SSD (PCIe AND/OR SATA) M.2 WLAN (KEY-E)	2/-/-/2/- -/- 2x M.2 2230/2242/2280 (Key-M, PCIe/NVME SSD modules), incl. NVME RAID 1x incl. CNVi
INTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1 USB PORTS 2.0/STICK SOCKET SATA PORTS/SATA RAID COM PORT INT. HEADER PARALLEL PORT INT. HEADER	-/2 (pin header) 2 (pin header)/2 (2.0/3.2 Gen2) 4/yes 3 -
EXTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1 USB 3.2 GEN2 TYPE C USB PORTS 2.0 COM PORTS	2/4 1 - 1
POWER SUPPLY OPTIONS	EXTERNAL SUPPLY INTERNAL SUPPLY	- ATX PSU (Multirail)
ENVIRONMENTAL MISCELLANEOUS	OPERATION TEMPERATURE FAN SPEED CUSTOMIZING TPM V2.0 CHASSIS INTRUSION SUPPORT HW WATCHDOG MISCELLANEOUS	0 °C - 60 °C yes yes (Intel®) + TPM Socket yes yes GPIO (8Bit)

Industrial Motherboards

K3851-R ATX

Technical Information



Product Highlights

- Intel® Core™ Processor Series (12th/13th/14th Gen)
- DDR5 4800 UDIMM, max. 128 GByte, ECC support
- cTDP – Easy & flexible reduction of CPU TDP
- Supporting Intel® AMT 16.0 and Intel® Time Coordinated Computing (TCC)
- PCI Express® x16 (Gen5 @ CPU, Gen4 @ PCH)
- 1x Intel® GbE LAN, 2x 2.5GbE incl. Teaming and TSN
- Intel® UHD Graphics 7xx driven by X^e Architecture; 4x DisplayPort V1.4a up to 8K
- Intel® High Definition 5.1 Audio; Intel® integrated TPM V2.0
- 8 Bit GPIO; 4x COM ports
- 3x USB 3.2 Gen 2, 6x USB 3.2 Gen1, 2x USB 2.0, 1x USB 3.2 Gen2 stick socket, 1x USB 2.0 stick socket
- 4x SATA 6G incl. RAID support
- 2x M.2 2230/2242/2280 (Key-M, PCIe/NVME SSD modules), incl. NVME RAID support
- M.2 2230 (Key-E, WLAN/Bluetooth modules, incl. CNVi support)
- PCI Slot (32 Bit)
- BIOS-POST/-Boot & OS – HW Watchdog onboard

BASEBOARD	DIMENSIONS CHIPSET	9.6" x 12" (243.8 x 304.8 mm) Intel® R680E
CPU SUPPORT	PROCESSOR PROCESSOR SOCKET MAX. PROCESSOR POWER CONSUMPTION (TDP) CPU TDP LIMITING OPTION HIGH EFFICIENCY CORE VOLTAGE REGULATOR	Intel® Core™ Processor Series (12th/13th/14th Gen) Intel® LGA1700 125 W TDP yes yes
MEMORY	MAX. CAPACITY NUMBER OF SOCKETS RAM SPEED	128 GByte 4 DDR5 4800 ECC Option
GRAPHICS	ONBOARD GRAPHICS GRAPHICS INTERFACES	Intel® UHD Graphics 7xx driven by X ^e Architecture 4x DP V1.4a up to 8K, Optional VGA-Ext. D3653
ETHERNET	ONBOARD LAN CONTROLLER IAMT/VPRO	1x Intel® i219LM 2x Intel® i226LM yes/-
AUDIO	TYPE ONBOARD CONTROLLER BUZZER/SPEAKER S/PDIF HEADER	5.1 Multich. Tempo Semiconductor 92HD91B yes/yes yes
EXTENSION SLOTS	PCIe X16/X8/X4/X1/PCI MINI-PCIe/MSATA M.2 SSD (PCIe AND/OR SATA) M.2 WLAN (KEY-E)	2/2/-/2/1 -/- 2x M.2 2230/2242/2280 (Key-M, PCIe/NVME SSD modules), incl. NVME RAID 1x incl. CNVi
INTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1 USB PORTS 2.0/STICK SOCKET SATA PORTS/SATA RAID COM PORT INT. HEADER PARALLEL PORT INT. HEADER	-/1 2 (pin header)/2 (2.0/3.2 Gen2) 4/yes 3 -
EXTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1 USB 3.2 GEN2 TYPE C USB PORTS 2.0 COM PORTS	2/4 1 - 1
POWER SUPPLY OPTIONS	EXTERNAL SUPPLY INTERNAL SUPPLY	- ATX PSU (Multirail)
ENVIRONMENTAL MISCELLANEOUS	OPERATION TEMPERATURE FAN SPEED CUSTOMIZING TPM V2.0 CHASSIS INTRUSION SUPPORT HW WATCHDOG MISCELLANEOUS	0 °C - 60 °C yes yes (Intel®) + TPM Socket yes yes GPIO (8 Bit); PCI Slot

Industrial Motherboards

K3921-N mSTX

Technical Information



Product Highlights

- Intel® Core™ i3/Intel® Processors N Series
- DDR5-4800 SODIMM, max 32 GByte
- Intel® UHD Gen12 Graphics (within SoC)
- 2x DisplayPort V1.4a + USB Type-C Alt mode (DPoC)
- Dual Channel LVDS (24 bit) and eDP V1.4b
- 8 Bit GPIO & HD Audio onboard
- 3x USB 2.0, 3x USB 3.2 Gen1, 2x USB 3.2 Gen2
- 1x USB 3.2 Gen1 (Front Type-C) with DP Alt mode
- 1x Realtek GbE LAN, 1x 2.5GbE incl. Teaming
- 1x SATA 6G
- 1x M.2 2230/2242/2280 (Key-M, PCIe x2 Gen3/NVMe SSD modules)
- 1x M.2 2230 (Key-E, WLAN/Bluetooth modules, PCIe and CNVi support)
- Intel® integrated TPM V2.0
- 2x RS-232 support onboard (1x incl. RS485/422)
- HW Watchdog onboard
- DualRange internal/external DC input (12V / 19-28V) PowerDelivery Sink Mode (20V DC-In via USB-C)

BASEBOARD	DIMENSIONS	5.5" x 5.8" (140 x 148 mm)
CPU SUPPORT	CHIPSET	Intel® Alder Lake N SoC
	PROCESSOR	N6: Octa-Core i3-N305 (1.0 GHz, up to 3.8 GHz @9 W; 1.8 GHz, up to 3.8 GHz @15 W) N4: Quad-Core N200 (1.0 GHz, up to 3.7 GHz @6 W) N2: Quad-Core N97 (2.0 GHz, up to 3.6 GHz @12 W) N1: Dual-Core N50 (1.0 GHz, up to 3.4 GHz @6 W) FCBGA1264
	PROCESSOR SOCKET	
	MAX. PROCESSOR POWER CONSUMPTION (TDP)	N6: 9 W / 15 W N1, N4: 6 W N2: 12 W
	CPU TDP LIMITING OPTION	yes
	HIGH EFFICIENCY CORE	yes
	VOLTAGE REGULATOR	
MEMORY	MAX. CAPACITY	32 GByte
	NUMBER OF SOCKETS	1
	RAM SPEED	DDR5 4800
GRAPHICS	ONBOARD GRAPHICS	Intel® UHD Graphics 7xx driven by X ^e Architecture
	GRAPHICS INTERFACES	up to 3x DP (1x via USB Type-C), 1x Dual-Channel LVDS, 1x eDP @ 4 lanes
ETHERNET	ONBOARD LAN CONTROLLER	1x Realtek RTL8111H 1x Realtek RTL8125BG-CG
	IAMT/VPRO	-/-
	TYPE	Stereo
	ONBOARD CONTROLLER	Realtek ALC256
	BUZZER/SPEAKER	yes/yes
	S/PDIF HEADER	yes
	PCIE X16/X8/X4/X1/PCI	-/-/-/-/-
	MINI-PCle/MSATA	-/-
	M.2 SSD	1x M.2 2230/2242/2280
	(PCIe AND/OR SATA)	(Key-M, 2x PCIe Gen3, NVMe)
	M.2 WLAN (KEY-E)	1x M.2 2230 (Key-E, WLAN PCIe and CNVi)
INTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1	-/-
	USB PORTS 2.0/STICK SOCKET	3 (pin headers)/-
	SATA PORTS/SATA RAID	1/-
	COM PORT INT. HEADER	2
	PARALLEL PORT INT. HEADER	-
EXTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1	2/3
	USB 3.2 GEN1 TYPE C	1
	USB PORTS 2.0	-
	COM PORTS	-
POWER SUPPLY OPTIONS	EXTERNAL SUPPLY	12 V/19-28 V
	INTERNAL SUPPLY	
ENVIRONMENTAL	OPERATION TEMPERATURE	0 °C - 60 °C
MISCELLANEOUS	FAN SPEED CUSTOMIZING	yes
	TPM V2.0	yes (Intel®)
	CHASSIS INTRUSION SUPPORT	yes
	HW WATCHDOG	yes
	MISCELLANEOUS	MS Windows 11, 2x COM (1x incl. RS-232/-422/-485 Support)
		USB-C with DP Alt. Mode and PowerDelivery Sink

Industrial Motherboards

K3931-N mITX

Technical Information



Product Highlights

- Intel® Core™ i3 processors & Intel® Processors N Series (Alder Lake N)
- DDR5-4800 SODIMM, max 32 GByte
- Gen12 UHD Graphics - driven bei X^e architecture
- Up to 3x DisplayPort V1.4a
- Dual Channel LVDS (24 bit) and eDP V1.4b
- PCI Express® x1 (Gen3, mechanical x4)
- 8 Bit GPIO & HD Audio onboard
- 4x USB 2.0, 4x USB 3.2 Gen1, 3x USB 3.2 Gen2
- Internal USB3 Key-A for USB-C extension cable
- Internal USB2 Stick socket
- 1x Realtek GbE LAN, 1x Intel® 2.5GbE incl. Teaming
- 1x SATA 6G
- 1x M.2 2230/2242/2280 (Key-M, PCIe x1 Gen3/NVMe SSD modules)
- 1x M.2 2242/2280 (Key-B, PCIe x1 Gen3/SATA SSD modules)
- 1x M.2 2230 (Key-E, WLAN/Bluetooth modules, CNVi support only)
- Intel® integrated iTPM V2.0
- Up to 4x RS-232 support onboard (1x with RS485/422 optional)
- HW Watchdog onboard
- WideRange internal/external DC input (8 V – 34 V)

BASEBOARD	DIMENSIONS	6.7" x 6.7" (170 x 170 mm)
CPU SUPPORT	CHIPSET	Intel® Alder Lake-N SoC
	PROCESSOR	N6: Octa-Core i3-N305 (1.0 GHz, up to 3.8 GHz @9 W; 1.8 GHz, up to 3.8 GHz @15 W) N4: Quad-Core N200 (1.0 GHz, up to 3.7 GHz @6 W) N2: Quad-Core N97 (2.0 GHz, up to 3.6 GHz @12 W) N1: Dual-Core N50 (1.0 GHz, up to 3.4 GHz @6 W) FCBGA1264 N6: 9 W/15 W N1, N4: 6 W N2: 12 W
	PROCESSOR SOCKET	
	MAX. PROCESSOR POWER CONSUMPTION (TDP)	
	CPU TDP LIMITING OPTION	yes
	HIGH EFFICIENCY CORE VOLTAGE REGULATOR	yes
MEMORY	MAX. CAPACITY	32 GByte
	NUMBER OF SOCKETS	1
	RAM SPEED	DDR5 4800
GRAPHICS	ONBOARD GRAPHICS	Intel® Gen12 UHD Graphics
	GRAPHICS INTERFACES	3x DP, 1x Dual-Channel LVDS, 1x eDP @ 4 lanes
ETHERNET	ONBOARD LAN CONTROLLER	1x Intel® i226 1x Realtek RTL8111H
	IAMT/VPRO	-/-
AUDIO	TYPE	Stereo
	ONBOARD CONTROLLER	Realtek ALC256
	BUZZER/SPEAKER	yes/yes
	S/PDIF HEADER	yes
EXTENSION SLOTS	PCIe X16/X8/X4/X1/PCI	-/-/1/-/-
	MINI-PCIe/MSATA	-/-
	M.2 SSD	1x M.2 2230/2242/2280 (Key-M, 2x PCIe, NVMe)
	(PCIe AND/OR SATA)	1x M.2 2242/2280 (Key-B, 1x PCIe, SATA)
	M.2 WLAN (KEY-E)	1x M.2 Key-E (CNVi, USB)
INTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1	1 (pin header)/2 (pin header)
	USB PORTS 2.0/STICK SOCKET	3 (pin headers)/1
	SATA PORTS/SATA RAID	1/-
	COM PORT INT. HEADER	2
	PARALLEL PORT INT. HEADER	-
EXTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1	2/2
	USB 3.2 GEN2 TYPE C	-
	USB PORTS 2.0	-
	COM PORTS	2
POWER SUPPLY OPTIONS	EXTERNAL SUPPLY	8 V – 34 V
	INTERNAL SUPPLY	
ENVIRONMENTAL	OPERATION TEMPERATURE	0 °C – 60 °C
MISCELLANEOUS	FAN SPEED CUSTOMIZING	yes
	TPM V2.0	yes (Intel®)
	CHASSIS INTRUSION SUPPORT	yes
	HW WATCHDOG	yes
	MISCELLANEOUS	MS Windows 11, No Legacy OS Support, 4x COM (1x incl. RS-232/-422/-485 Support, 1x ccTalk), GPIO

Industrial Motherboards

K4021-U mSTX

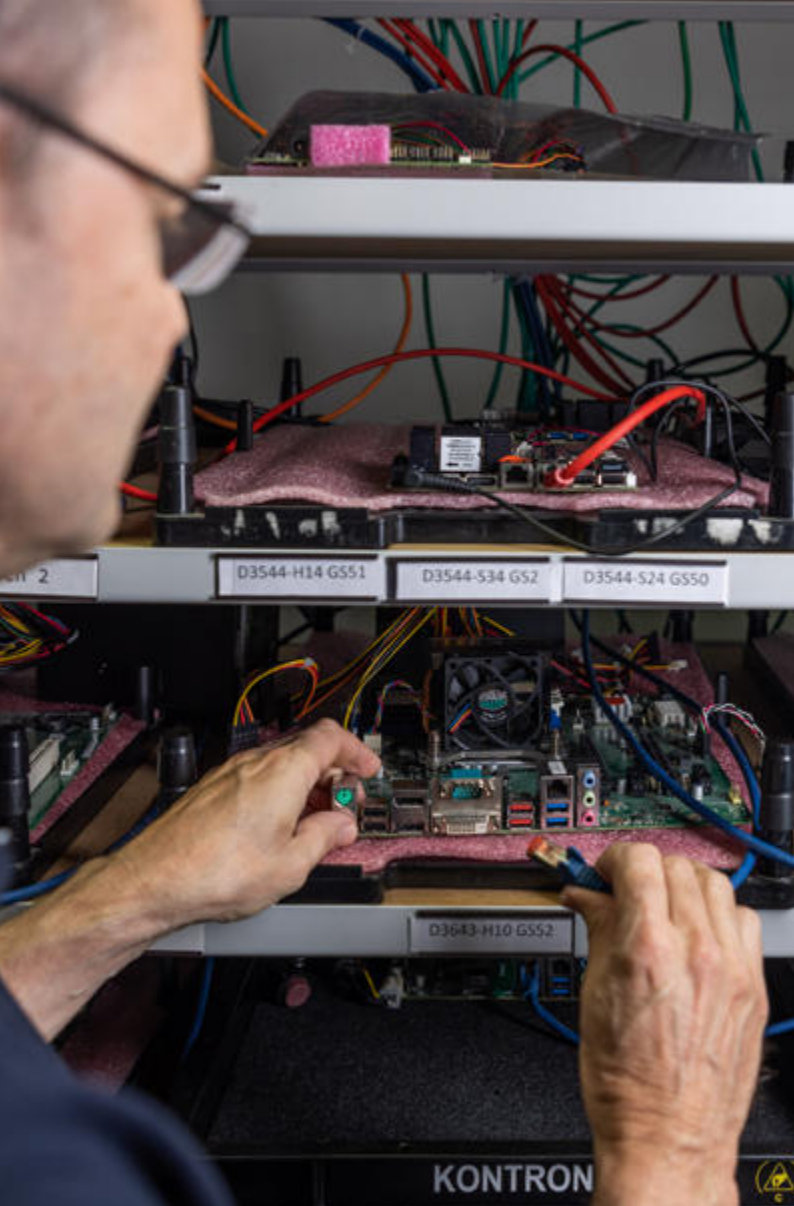
Technical Information



Product Highlights

- Intel® Core™ Ultra Processors
- DDR5-5600 SODIMM, max 96 GByte
- Intel® Graphics @ MTL-U, Xe LPG (within SoC)
- 2x DisplayPort V1.4a
- Dual Channel LVDS (24 bit) and eDP V1.4b
- 8 Bit GPIO & HD Audio onboard
- 4x USB3.2 Gen2
- 1x USB Type-C with DP Alt mode
- 1x USB Type-C with Thunderbolt™ 4 / USB4 Support
- 1x Intel® i219LM (with iAMT support) GbE LAN,
- 1x Realtek RTL8126 5GbE incl. Teaming
- 2x SATA 6G
- 2x M.2 Key-M 2230/2242/(2280) (PCIe x4/Gen4, NVMe SSD modules)
- 1x M.2 Key-B 2242 (PCIe x2/USB2)
- 1x M.2 Key-E 2230 (WLAN/Bluetooth modules, PCIe/USB/CNVio)
- Intel® integrated iTPM V2.0
- 2x RS-232 support onboard
- HW Watchdog onboard
- WideRange internal/external DC input 9-24V
- PowerDelivery Sink Mode (20V DC-In via Rear USB-C)

BASEBOARD	DIMENSIONS	5.5" x 5.8" (140 x 148 mm)
CPU SUPPORT	CHIPSET	Intel® Meteor Lake U SoC
	PROCESSOR	Intel® Core™ Ultra 7 155U Intel® Core™ Ultra 5 125U
	PROCESSOR SOCKET	U Type 3
	MAX. PROCESSOR POWER CONSUMPTION (TDP)	15W
	CPU TDP LIMITING OPTION	yes
	HIGH EFFICIENCY CORE VOLTAGE REGULATOR	yes
MEMORY	MAX. CAPACITY	96 GByte
	NUMBER OF SOCKETS	2
	RAM SPEED	DDR5 5600
GRAPHICS	ONBOARD GRAPHICS	Intel® Graphics driven by Intel® Xe with up to 8 Xe-cores
	GRAPHICS INTERFACES	1x Thunderbolt™ 4 (DP2.1 up to UHBR20 8K), 2x DP V1.4a up to 8K, 1x USB-C with DPoC /Alternate Mode up to 8K 1x eDP V1.4b up to 5K 1x Dual-Channel LVDS
ETHERNET	ONBOARD LAN CONTROLLER	1x Realtek RTL8126 1x Intel® i219LM
	IAMT/VPRO	yes/-
AUDIO	TYPE	Stereo
	ONBOARD CONTROLLER	Realtek ALC256
	BUZZER/SPEAKER	yes/yes
	S/PDIF HEADER	yes
EXTENSION SLOTS	PCIe X16/X8/X4/X1/PCI MINI-PCIe/MSATA	-/-/-/-/-/-
	M.2 SSD (PCIe AND/OR SATA)	-/-
	M.2 WLAN (KEY-E)	1x M.2 2230/2242/2280 (Key-M, PCIe x4/Gen4/NVMe SSD modules) 1x M.2 2230/2242 (Key-M, PCIe x4/Gen4/NVMe SSD modules) 1x M.2 2242 (Key-B PCIe x2/USB2) 1x M.2 2230 (Key-E, WLAN/Bluetooth modules, PCIe/USB/CNVio)
INTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1	-/-
	USB PORTS 2.0/STICK SOCKET	4 (by header)/-
	SATA PORTS/SATA RAID	2/yes
	COM PORT INT. HEADER	2
	PARALLEL PORT INT. HEADER	-
EXTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1	4/-
	USB 3.2 GEN2 TYPE C	1
	TB4/USB4 TYPE C	1
	USB PORTS 2.0	-
	COM PORTS	-
POWER SUPPLY OPTIONS	EXTERNAL SUPPLY	9 V - 24 V
	INTERNAL SUPPLY	SATA Drive Power Connector (5 V/12 V) / DC-In Connector 9-24V (4 pin)
ENVIRONMENTAL	OPERATION TEMPERATURE	0 °C - 60 °C
MISCELLANEOUS	FAN SPEED CUSTOMIZING	yes
	TPM V2.0	yes (Intel®)
	CHASSIS INTRUSION SUPPORT	yes
	HW WATCHDOG	yes
	MISCELLANEOUS	GPIO (8Bit)



Industrial Server Class Series

Motherboards of the Server Class Series benefits from the long experience of Server & Industrial Design capabilities. These products are designed and equipped to master the challenges of everyday life in the data center, midmarket or other demanding environments.

Characteristic features

Server Class Motherboards are designed for continuous (24/7) operation and advanced temperature ranges up to 60°C. The implementation of common server management features is flavored by the industrial series. Due to the generic design approach these products are applicable in various markets:

- › Datacenter
- › Medical
- › Industrial Automation
- › Communication
- › Video Surveillance

2024				2025				2026				2027					2028				INTEL® PROCESSORS			
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		Q1	Q2	Q3	Q4	Size	Name	Chipset	
																						ATX	K9051-C741	Intel® C741 Chipset

Industrial Server Class

K9051-C741 ATX

Technical Information



Product Highlights

- › Intel® 4th/5th Generation Xeon® scalable processor
- › Intel® C741 Chipset
- › 8x DDR5 5600 MT/s RDIMM Independent Channels
- › 3x PCIe Gen5 x16 slots and 2 x PCIe Gen5 x8 slots
- › 2x 10GBASE-T RJ45 Ethernet ports
- › 6x SATA 6G incl. RAID support
- › 4x Type A connectors USB 3.2 Gen1 (5Gbps)
- › DisplayPort connector via AST2600 video output
- › Discrete Infineon TPM version 2.0

BASEBOARD	DIMENSIONS CHIPSET	9.6" x 12" (243.8 x 304.8 mm) Intel® C741
CPU SUPPORT	PROCESSOR PROCESSOR SOCKET MAX. PROCESSOR POWER CONSUMPTION (TDP) CPU TDP LIMITING OPTION HIGH EFFICIENCY CORE VOLTAGE REGULATOR	Intel® 4th/5th Generation Xeon® SP Intel® LGA4677 350 W yes yes
MEMORY	MAX. CAPACITY NUMBER OF SOCKETS RAM SPEED	768 GByte 8 DDR5 5600
GRAPHICS	ONBOARD GRAPHICS GRAPHICS INTERFACES	ASPEED AS2600 1 DP 1.1a/1920x1200 32bpp@60Hz
ETHERNET	ONBOARD LAN CONTROLLER IAMT/VPRO	2x Intel® X710 -/-
AUDIO	TYPE ONBOARD CONTROLLER BUZZER/SPEAKER S/PDIF HEADER	via accessory: 8-Channel (HD) via accessory: Tempo Semi- conductor 92HD68D yes/yes -
EXTENSION SLOTS	PCIe X16/X8/X4/X1/PCI MINI-PCIe/MSATA M.2 SSD (PCIe AND/OR SATA) M.2 WLAN (KEY-E)	3/2/-/-/- -/- 2x M.2 2280/2242 (Key-M, PCIe/NVMe Gen5 x4 SSD modules), Intel VMD NVMe RAID 0/1 (license required) -
INTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1 USB PORTS 2.0/STICK SOCKET SATA PORTS/SATA RAID COM PORT INT. HEADER PARALLEL PORT INT. HEADER	-/2 (by header) 2 (by header)/- 6/yes - -
EXTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1 USB 3.2 GEN2 TYPE C USB PORTS 2.0 COM PORTS	-/4 - - 1
POWER SUPPLY OPTIONS	EXTERNAL SUPPLY INTERNAL SUPPLY	- ATX PSU (Multirail); 24-pin socket, 2x8-pin for CPU, 1x6-pin socket for PCIe cards
ENVIRONMENTAL MISCELLANEOUS	OPERATION TEMPERATURE FAN SPEED CUSTOMIZING TPM V2.0 CHASSIS INTRUSION SUPPORT HW WATCHDOG MISCELLANEOUS	0 °C - 60 °C yes yes (Infineon) yes yes (BMC) ID LED User programmable Application Ready LED Slot Bifurcation Supports up to 6 Fans Supports 2 external temperature sensors



➤ SMARTCASE™ Family

Besides the industrial motherboard portfolio we provide the small and stylish SMARTCASE™ solutions. Approved for EMC according to CE and FCC/B, the chassis family is applicable in different areas with high demands, e.g. industry or digital signage. It's a modularized, compact and flexible IPC chassis family. In addition, they are thermally approved up to 45 °C and integrate a 2.5" drive bay for HDD/SDD with cooler as well as further expansion options such as graphics cards or Bluetooth/WiFi.

SMARTCASE™ solutions are applicable in many branches:

- Digital Signage
- Gambling
- Vending/POS/ATM/Kiosk/Ticketing
- Industrial Automation





Product Highlights

- Ultra-Compact Design
- 36 x 147 x 165 mm
- Front & Rear USB
- Horizontal or Vertical Operation
- VESA- and Wall Mount Option

CHASSIS DATA	FORMFACTOR DIMENSIONS	Mini-STX 36 x 147 x 165 mm (W x H x D) 0.87 l
	COLOUR WEIGHT	black ~ 0.4 kg
CPU SUPPORT	PROCESSOR SOCKET	Intel® BGA
SUPPORTED MOTHERBOARDS		K3921-N, K3921-H
ENVIRONMENTAL CONDITIONS	OPERATING TEMPERATURE	Passive Cooling (fanless)*: -10°C ... +35°C (max. 12W TDP) -10°C ... +45°C (max. 10W TDP, vertical position) Active Cooling (with Fan): -10°C ... +45°C (up to 15W TDP)
	HUMIDITY	5 % - 85 %
CHASSIS/ SYSTEM FAN SPECIFICATION	MTBF OPERATING TEMPERATURE	no chassis fan -
REQUIREMENTS FOR AC ADAPTER	DC INPUT	12 V or 19-28 V (5 A max./65 W max.)
	DC PLUG	Ø 2.5 mm/5.5 mm
APPROVALS & CERTIFICATIONS	CE CLASS B (VERIFIED) INDUSTRIAL IMMUNITY FCC CLASS B (VERIFIED)	yes yes yes
CHASSIS FEATURES	THEFT PROTECTION MOUNTING OPTIONS	Kensington lock support Intrusion Support Integrated WLAN antennas Wall Mount VESA Kit DC-in holder Cooling solution Rear COM port (incl. RS-232, RS-422, RS-485)

* Limited cooling performance in horizontal operating mode; possible system performance reduction.
Vertical operating position recommended for most favorable cooling & system performance



Product Highlights

- Ultra-Compact Design
- Perfect fit for mini-STX motherboard D3714-V/R and D3724-R
- Small Size (36 x 147 x 165 mm)
- Front & Rear USB
- Horizontal or Vertical Operation
- VESA- and Wall Mount Option

CHASSIS DATA	FORMFACTOR DIMENSIONS	Mini-STX 36 x 147 x 165 mm (W x H x D)
	COLOUR WEIGHT	0.87 l black ~ 0.4 kg
CPU SUPPORT	PROCESSOR SOCKET	AMD® BGA
SUPPORTED MOTHERBOARDS		D3714-R, D3714-V, D3724-R
ENVIRONMENTAL CONDITIONS	OPERATING TEMPERATURE	Passive heatsink (fanless): -10 °C ... +40°C (max. 10W TDP, vertical position) Active heatsink (with Fan): -10 °C ... +40°C (up to 25W TDP)
	HUMIDITY	5 % - 85 %
CHASSIS/ SYSTEM FAN SPECIFICATION	MTBF OPERATING TEMPERATURE	no chassis fan -
REQUIREMENTS FOR AC ADAPTER	DC INPUT DC PLUG	12 V +/-10 %/19-28 V +10 %/-15 % Ø 2.5 mm/5.5 mm
APPROVALS & CERTIFICATIONS	CE CLASS B (VERIFIED) INDUSTRIAL IMMUNITY FCC CLASS B (VERIFIED)	yes yes yes
CHASSIS FEATURES	THEFT PROTECTION MOUNTING OPTIONS	Kensington lock support Internal WLAN antenna kit (2 antennas - integrated in chassis front) Wall Mount VESA Kit DC-in holder Rear COM port* (incl. RS-232, RS-422, RS-485)

* Available for motherboard versions up to 3 rear graphics ports only



Product Highlights

- Mini-ITX Chassis for industrial applications, digital signage, etc.
- Perfect fit for mini-ITX motherboard D3633-S & D3634-S
- 12 V DC in, lockable, max. 60 W (System)/35 W (CPU TDP)
- Fully CE and FCC/B approved on system level
- Thermally approved up to 45 °C
- HDD/system fan (4 pin PWM), HDD SATA and power cable included
- Intrusion switch and Kensington lock
- Small size (250 x 52 x 191 mm)
- Usable in horizontal and vertical mode
- High expandability within a small-sized box:
Intel® CPU/PCIe riser card/mSATA/miniPCIe/
M.2 (SSD)/2.5" drive bay

CHASSIS DATA	FORMFACTOR DIMENSIONS	Mini-ITX 250 x 52 x 191 mm (W x H x D) 2.48 l black ~ 1 kg
CPU SUPPORT	PROCESSOR SOCKET	Intel® LGA
SUPPORTED MOTHERBOARDS		D3633-S, D3634-S
ENVIRONMENTAL CONDITIONS	OPERATING TEMPERATURE HUMIDITY	0 °C – 45 °C* 5 % - 85 %
CHASSIS/ SYSTEM FAN SPECIFICATION	MTBF OPERATING TEMPERATURE	70.000 hours @ 40 °C PWM (4 pin), 40 x 40 x 10 mm 900 – 5.000 rpm (nominal) Two ball bearing
REQUIREMENTS FOR AC ADAPTER	DC INPUT DC PLUG	12 V +/-5 % 5.5 x 2.5 x 12 mm Lockable DC Plug (optional)
APPROVALS & CERTIFICATIONS	CE CLASS B (VERIFIED) INDUSTRIAL IMMUNITY FCC CLASS B (VERIFIED)	yes yes yes
CHASSIS FEATURES	THEFT PROTECTION	Two front USB ports Kensington lock support Mechanical lock for DC-In connector Intrusion Support
	MOUNTING OPTIONS	WLAN antenna via (RP-) SMA connector PCIe riser (PCIe x4, low profile) Additional serial port 2.5" Drive

*Chassis ambient temperature; upper limit depends on system configuration



Product Highlights

- Compact Design with Dual Front USB 3.2 Gen1
- Perfect fit for mini-ITX motherboards K3931-N & D3723-R
- Low Profile Extension Slot
- Option for Internal 65W PSU Module
- Horizontal and Vertical Stand plus Wall Mount Bracket
- Option for rear USB-C 3.2 Gen2 extension
- Thermally approved up to 45 °C
- Small size (250 x 52 x 191 mm)
- High expandability within a small-sized box:
Intel® CPU/PCIe riser card/mSATA/miniPCIe/
M.2 (SSD)/2.5" drive bay

CHASSIS DATA	FORMFACTOR DIMENSIONS	Mini-ITX 250 x 52 x 191 mm (W x H x D) 2.48 l black ~ 1 kg
CPU SUPPORT	COLOUR WEIGHT	
SUPPORTED MOTHERBOARDS	PROCESSOR SOCKET	Intel® BGA or AMD BGA
ENVIRONMENTAL CONDITIONS		K3931-Nx, D3713-V/R, D3723-R
	OPERATING TEMPERATURE	Passive heatsink (fanless): -10 °C ... +35 °C (max. 15 W TDP, vertical/horizontal position)* -10 °C ... +40 °C (max. 12 W TDP, vertical position only)* Active heatsink (with Fan): -10 °C ... +45 °C (max. 35 W TDP, vertical/horizontal position)* 5 % - 85 %
	HUMIDITY	
CHASSIS/ SYSTEM FAN SPECIFICATION	MTBF OPERATING TEMPERATURE	70.000 hours @ 40 °C PWM (4 pin), 40 x 40 x 10 mm 900 - 5.000 rpm (nominal) Two ball bearing
REQUIREMENTS FOR AC ADAPTER	DC INPUT DC PLUG	8 V-34 V (5 A max./65 W max.) Ø 2.5 mm/5.5 mm
APPROVALS & CERTIFICATIONS	CE CLASS B (VERIFIED) INDUSTRIAL IMMUNITY FCC CLASS B (VERIFIED)	yes yes yes
CHASSIS FEATURES	THEFT PROTECTION	Two front USB ports Kensington lock support Mechanical lock for DC-In connector Intrusion Support WLAN antenna via (RP-) SMA connector PCIe riser (PCIe x4, low profile)
	MOUNTING OPTIONS	Two rear COM ports (COM3, COM4) 2.5" Drive (HDD/SSD) Rear USB-C 3.2 Gen2 extension

* Chassis ambient temperature; upper limit depends on system configuration

Accessories

Important parts for more functionality

CABLE

	DRIVE POWER CABLE provides power for SATA HDD and SATA slimline DVD	Compatibility all mSTX & mITX models
	SERIAL PORT CABLE	refer to data sheet
	USB-C CABLE	refer to data sheet

COOLING SOLUTIONS

	ACTIVE COOLER (alu cooler, 4 pin PWM fan)	Compatibility D3674-B mITX (@35 W TDP) D3633-S mITX (@35 W TDP) D3634-S mITX (@35 W TDP) D3713-V/R mITX D3723-R mITX D3714-V/R mSTX D3724-R mSTX K383x mITX K384x µATX K3851-R ATX K3921-N/-H mSTX K3931-N mITX
	PASSIVE HEATSINK (alu heatsink)	D3713-V/R mITX D3723-R mITX D3714-V/R mSTX K3921-N/-H mSTX K3931-N mITX

RISER CARDS

	1X PCIe RISER CARD D3318-A 1 PCIe Slot	Compatibility D3713-V/R mITX D3723-R mITX K3931-N mITX D3633-S mITX D3634-S mITX suitable for SMARTCASE™ S7xx Series
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GRAPHICS

	DISPLAY PORT TO HDMI ADAPTER	Compatibility all models with a free DP interface
	DISPLAY PORT TO DVI ADAPTER for usage of DVI monitor on Display Port output	all models with DP

OTHER

	D3627-A TPM-Upgrade-Modul	Compatibility D3713-V/R mITX D3723-R mITX
	D3352-A1x	All motherboards providing a PCIe x8 or x16 slot (≥ 4 lanes)
	D3436-S Adapter for Mini PCIe to M.2 Wi-Fi modules	All industrial models with a fullsize Mini PCIe socket
	19 V AC ADAPTER 65 W	D3674-B mITX D3654-B mSTX D3664-B mSTX D3713-V/R mITX D3723-R mITX K3921-N/-H mSTX K3931-N mITX D3714-V/R mSTX D3724-R mSTX
	20 V AC ADAPTER 120 W	D3713-V/R mITX D3723-R mITX K3921-N/-H mSTX K3931-N mITX
	12 V INTEGRATED POWER SUPPLY 65 W	D3633-S mITX D3634-S mITX D3713-V/R mITX D3723-R mITX K3931-N mITX
	BATTERY ADAPTER for CR2032	All motherboards supporting onboard CR2032 battery via socket, except for D3714, D3724 & K3921 series
	M.2 KEY-E/A SATA ADDON	K383x mITX K3841 µATX K3851-R ATX K3921-N/H mSTX

*Example photo. Further cables and cooling solutions available