

# ➤ Motherboards Product Facts

Quality made in Germany

**kontron**

## ➤ 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:

## ➤ The Extended Lifecycle Series Semi-industrial Features

- D3598-B ATX
- D3598-G ATX
- D3642-B µATX
- D3644-B µATX
- D3654-B mSTX
- D3664-B mSTX
- D3674-B Thin mITX
- K3842-Q1 & K3842-Q2 µATX
- K3843-B µATX

## ➤ The Industrial Motherboard Series Special Features for Industrial Needs

### AMD

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

### Intel®

- D3543-S mITX
- D3544-S mSTX
- D3633-S mITX
- D3634-S mITX
- D3641-S µATX
- D3646-S ATX
- K3832-Q mITX
- K3833-Q mITX
- K3841-Q µATX
- K3851-R ATX
- K3931-N mITX





## ➤ 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.

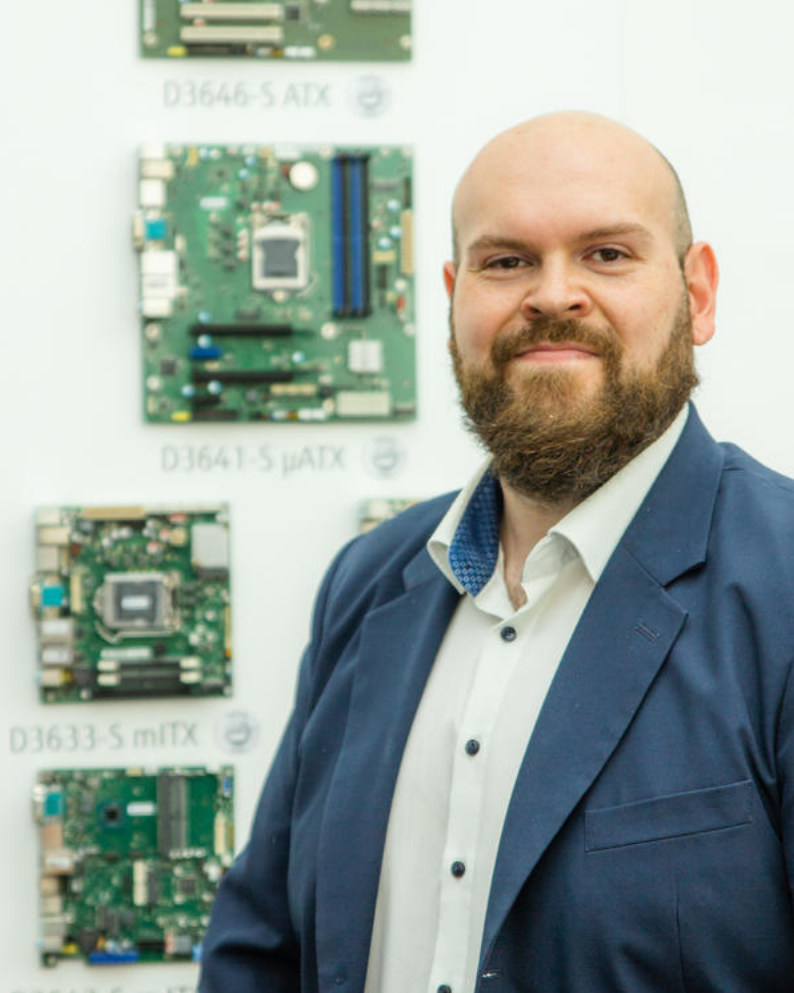
### Strict lifecycle management and reliable product maintenance

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.





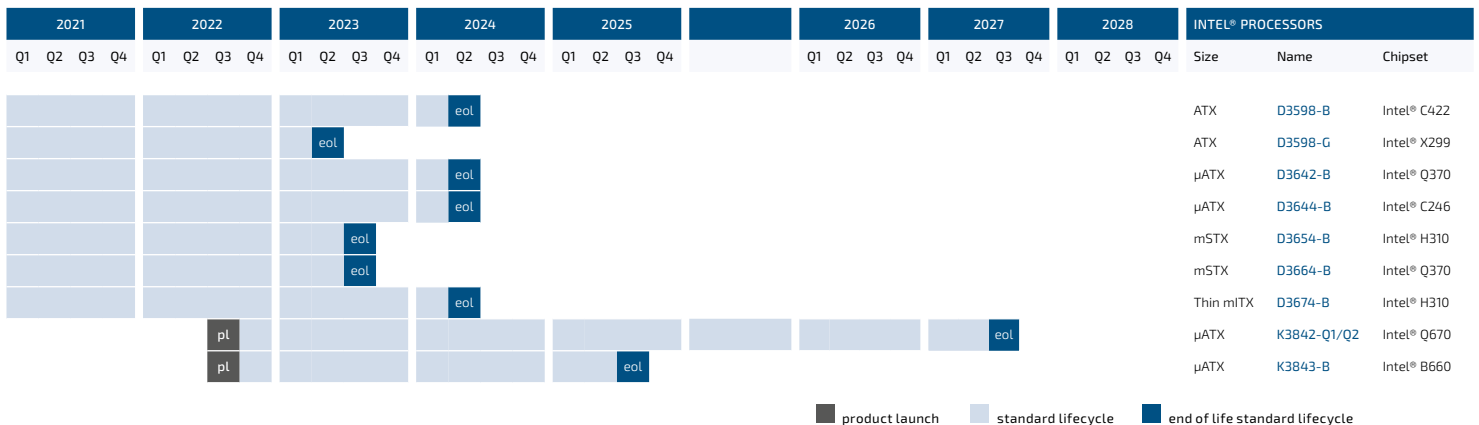
## ➤ The Extended Lifecycle Series

The standard lifecycle of desktop motherboards is 12 months to a maximum of 18 months. Taking into consideration the enormous expense necessary for certification and engineering, that time frame is too narrow for many commercial applications. To solve this problem, Kontron offers selected semi-industrial motherboards for an extended lifecycle with min. 36 months.

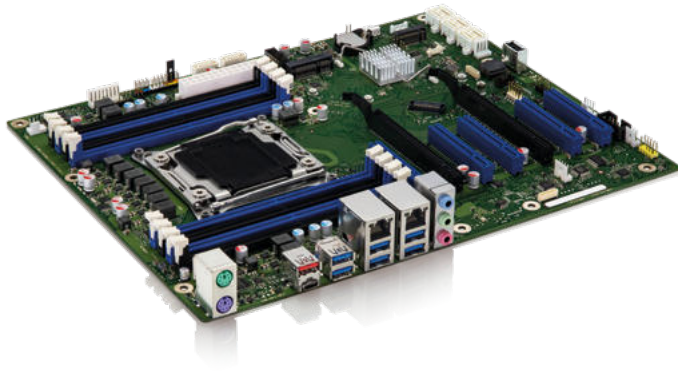
### Characteristic features

Motherboards of the Extended Lifecycle Series are designed for long-term, continuous operations (24/7) in advanced temperature environments. Nevertheless, these products will cover fast moving technology trends to be applicable in many vertical markets:

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



## D3598-B ATX

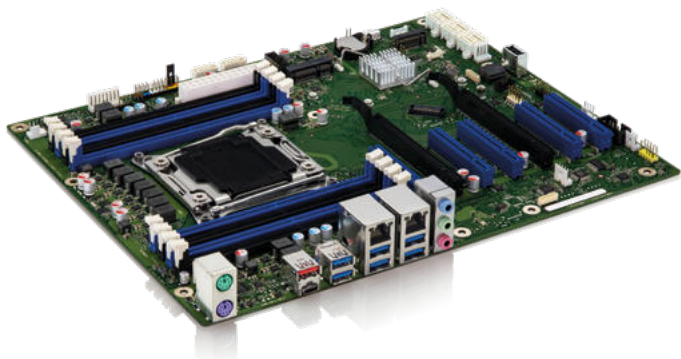


### Product Highlights

- Intel® Xeon® Processor W21xx/W22xx
- DDR4 2666 SDRAM Memory, max. 512 GByte
- Mini-PCIe socket incl. USB
- 7x PCIe generation 3 onboard
- 5.1 multichannel audio onboard
- USB 3.1 Gen2, USB 3.1 Gen1 and USB 2.0
- USB 3.1 Gen2 Type C
- Dual Intel® GbE LAN supporting iAMT/vPro & Teaming
- 8x Serial ATA III incl. RAID onboard
- Trusted Platform Modul (Infineon) V2.0 onboard
- BIOS-POST/-Boot & OS - HW Watchdog onboard
- M.2 SSD 2280 socket (PCIe, for NVMe modules)
- Socket for optional Intel® VROC HW License Key (NVMe SSD RAID)

### Technical Information

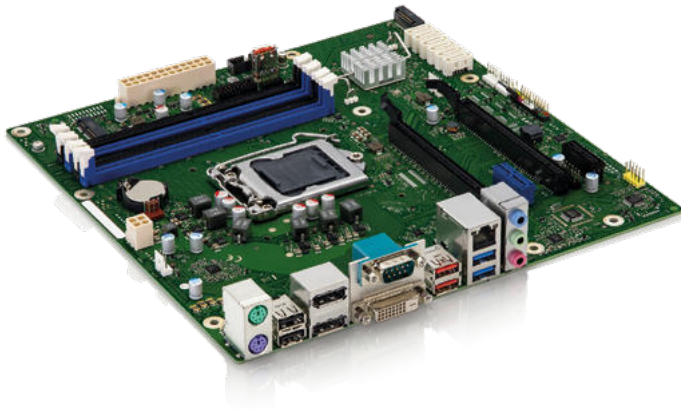
<b>BASEBOARD</b>	<b>DIMENSIONS</b> <b>CHIPSET</b>	9.6" x 12" (243.8 x 304.8 mm) Intel® C422
<b>CPU SUPPORT</b>	<b>PROCESSOR</b>  <b>PROCESSOR SOCKET</b> <b>MAX. PROCESSOR POWER CONSUMPTION (TDP)</b> <b>CPU TDP LIMITING OPTION</b> <b>HIGH EFFICIENCY CORE VOLTAGE REGULATOR</b>	Intel® Xeon® W-21xx/-22xx Processors Future Intel® Xeon® W Processors Intel® LGA2066 165 W - yes
<b>MEMORY</b>	<b>MAX. CAPACITY/NUMBER OF SOCKETS</b> <b>RAM SPEED</b>	512 GByte/8 ECC Support DDR4 2666/2933 SDRAM (Quad Channel)
<b>GRAPHICS</b>	<b>ONBOARD GRAPHICS</b> <b>GRAPHICS INTERFACES</b>	- -
<b>ETHERNET</b>	<b>ONBOARD LAN CONTROLLER</b>  <b>IAMT/VPRO</b>	1x Intel® i219LM 1x Intel® i210AT yes/-
<b>AUDIO</b>	<b>TYPE</b> <b>ONBOARD CONTROLLER</b> <b>BUZZER/SPEAKER</b> <b>S/PDIF HEADER</b>	5.1 Multich. Realtek ALC671 yes/yes -
<b>EXTENSION SLOTS</b>	<b>PCIe X16/X8/X4/X1/PCI</b> <b>MINI-PCIe/MSATA</b> <b>M.2 SSD</b> <b>(PCIe AND/OR SATA)</b> <b>M.2 WLAN (KEY-E)</b>	2/5/-/-/- yes/- PCIe @ 4lanes; Key-M (2280) -
<b>EXTERNAL/INTERNAL CONNECTORS</b>	<b>USB PORTS 3.1 GEN2/3.1 GEN1</b> <b>USB PORTS 2.0/STICK SOCKET</b> <b>SATA PORTS/SATA RAID</b> <b>COM PORT INT. HEADER/EXT. PARALLEL PORT INT. HEADER</b>	2/10 2/yes 8/yes 1/- -
<b>POWER SUPPLY OPTIONS</b>	<b>EXTERNAL SUPPLY</b> <b>INTERNAL SUPPLY</b>	- ATX PSU
<b>ENVIRONMENTAL</b>	<b>OPERATION TEMPERATURE</b>	10 °C - 50 °C
<b>MISCELLANEOUS</b>	<b>FAN SPEED CUSTOMIZING</b> <b>TPM V2.0</b> <b>CHASSIS INTRUSION SUPPORT</b> <b>HW WATCHDOG</b> <b>MISCELLANEOUS</b>	yes yes (Infineon) yes yes Intel® VROC Support USB 3.1 Gen2 Type-C, Win7 & Win10 Support 2x PCIe x16 (@16 Lanes) 1x USB Type-C (Rear)



### Product Highlights

- Intel® Core™ i7-78xxX/-98xxX Processors
- Intel® Core™ i9-79xxX/- 98xxX/- 99xxX/- 109xxX Processors
- DDR4 2666/2933 SDRAM Memory, max. 256 GByte
- Mini-PCIe socket incl. USB 2.0
- 7x PCIe generation 3 onboard
- 5.1 multichannel audio onboard
- USB 3.1 Gen2, USB 3.1 Gen1 and USB 2.0
- USB 3.1 Gen2 Type C
- Dual Intel® GbE LAN incl. Teaming support
- 8x Serial ATA III incl. RAID onboard
- Trusted Platform Modul (Infineon) V2.0 onboard
- BIOS-POST/-Boot & OS - HW Watchdog onboard
- M.2 SSD 2280 socket (PCIe, for NVMe modules)
- Intel® VROC (Virtual RAID on CPU) supported

BASEBOARD	DIMENSIONS CHIPSET	9.6" x 12" (243.8 x 304.8 mm) Intel® X299
CPU SUPPORT	PROCESSOR  PROCESSOR SOCKET MAX. PROCESSOR POWER CONSUMPTION (TDP) CPU TDP LIMITING OPTION HIGH EFFICIENCY CORE VOLTAGE REGULATOR	Intel® Core™ i7-78xxX/-98xxX processors Intel® Core™ i9-79xxX/-98xxX/ -99xxX/-109xxX Processors Future Intel® Core™ X-Series Processors Intel® LGA2066 165 W  - yes
MEMORY	MAX. CAPACITY/ NUMBER OF SOCKETS RAM SPEED	128 GByte/8  DDR4 2666/2933 SDRAM (Quad Channel)
GRAPHICS	ONBOARD GRAPHICS GRAPHICS INTERFACES	- -
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 -
EXTENSION SLOTS	PCIe X16/X8/X4/X1/PCI MINI-PCIe/MSATA M.2 SSD (PCIe AND/OR SATA) M.2 WLAN (KEY-E)	2/5/-/-/- yes/- PCIe @ 4lanes; Key-M (2280) -
EXTERNAL/ INTERNAL CONNECTORS	USB PORTS 3.1 GEN2/3.1 GEN1 USB PORTS 2.0/STICK SOCKET SATA PORTS/SATA RAID COM PORT INT. HEADER/EXT. PARALLEL PORT INT. HEADER	2/10 2/yes 8/yes 1/- -
POWER SUPPLY OPTIONS	EXTERNAL SUPPLY INTERNAL SUPPLY	- ATX PSU
ENVIRONMENTAL	OPERATION TEMPERATURE	10 °C - 50 °C
MISCELLANEOUS	FAN SPEED CUSTOMIZING TPM V2.0 CHASSIS INTRUSION SUPPORT HW WATCHDOG MISCELLANEOUS	yes yes (Infineon) yes yes Intel® VROC Support USB 3.1 Gen2 Type-C, Win10 Support 2x PCIe x16 (@16 Lanes) 1x USB Type-C (Rear)

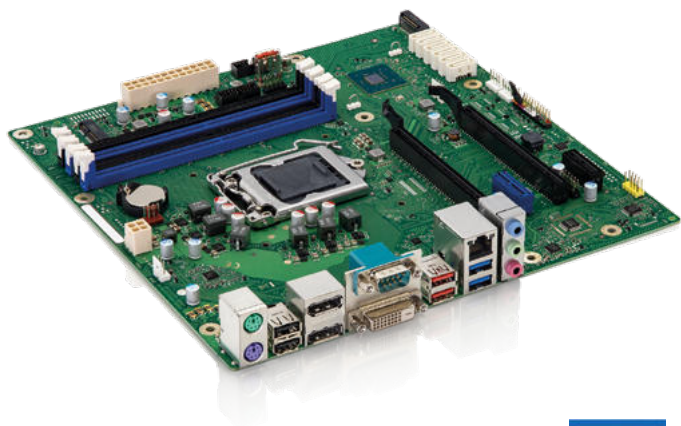


### Product Highlights

- 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)
- Intel® GbE LAN
- Intel® UHD Graphics (DX12)
- 1x DVI-D, 2x DP V1.2
- Intel® High Definition 5.1 Audio; Infineon TPM V2.0
- 1x COM port
- 4x USB 2.0, 6x USB 3.2 Gen1, 2x USB 3.2 Gen2, 1x USB 3.2 Gen2 stick socket
- 6x SATA 6G incl. RAID support
- M.2 2280 (PCIe-based SSD modules)
- M.2 2230 (WLAN/Bluetooth modules)
- BIOS-POST/-Boot & OS – HW Watchdog onboard

<b>BASEBOARD</b>	<b>DIMENSIONS</b> <b>CHIPSET</b>	9.6" x 9.6" (243.8 x 243.8 mm) Intel® Q370
<b>CPU SUPPORT</b>	<b>PROCESSOR</b>  <b>PROCESSOR SOCKET</b> <b>MAX. PROCESSOR POWER CONSUMPTION (TDP)</b> <b>CPU TDP LIMITING OPTION</b> <b>HIGH EFFICIENCY CORE VOLTAGE REGULATOR</b>	Intel® Core™ 8th/9th Gen Processor Series Intel® LGA1151 95 W  yes yes
<b>MEMORY</b>	<b>MAX. CAPACITY/ NUMBER OF SOCKETS</b> <b>RAM SPEED</b>	64 GByte/4  DDR4 2400/2666
<b>GRAPHICS</b>	<b>ONBOARD GRAPHICS</b> <b>GRAPHICS INTERFACES</b>	Intel® UHD Graphics; DX 12 DVI-D/2x DP V.1.2 Optional VGA-Ext. D3653
<b>ETHERNET</b>	<b>ONBOARD LAN CONTROLLER</b> <b>IAMT/VPRO</b>	1x Intel® i219LM yes/yes
<b>AUDIO</b>	<b>TYPE</b> <b>ONBOARD CONTROLLER</b> <b>BUZZER/SPEAKER</b> <b>S/PDIF HEADER</b>	5.1 Multich. Realtek ALC671 -/yes -
<b>EXTENSION SLOTS</b>	<b>PCIe X16/X8/X4/X1/PCI MINI-PCIe/MSATA</b> <b>M.2 SSD (PCIe AND/OR SATA)</b> <b>M.2 WLAN (KEY-E)</b>	2/-/-/2/- - 1x M.2 Key-M Socket (2280) for PCIe (4 lanes) based M.2 Modules yes
<b>INTERNAL CONNECTORS</b>	<b>USB PORTS 3.2 GEN2/3.2 GEN1</b> <b>USB PORTS 2.0/STICK SOCKET</b> <b>SATA PORTS/SATA RAID</b> <b>COM PORT INT. HEADER</b> <b>PARALLEL PORT INT. HEADER</b>	-/4 (2 x pin header) 2 (pin header)/1 (3.2 Gen2) 6/yes - -
<b>EXTERNAL CONNECTORS</b>	<b>USB PORTS 3.2 GEN2/3.2 GEN1</b> <b>3.2 GEN2 TYPE C</b> <b>USB PORTS 2.0</b> <b>COM PORTS</b>	2/2 - 2 1
<b>POWER SUPPLY OPTIONS</b>	<b>EXTERNAL SUPPLY</b> <b>INTERNAL SUPPLY</b>	- ATX PSU (Multirail)
<b>ENVIRONMENTAL</b>	<b>OPERATION TEMPERATURE</b>	10 °C - 50 °C
<b>MISCELLANEOUS</b>	<b>FAN SPEED CUSTOMIZING</b> <b>TPM V2.0</b> <b>CHASSIS INTRUSION SUPPORT</b> <b>HW WATCHDOG</b> <b>MISCELLANEOUS</b>	yes yes (Infineon) yes yes -





### 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)
- Intel® GbE LAN
- Intel® UHD Graphics (DX12); 1x DVI-D, 2x DP V1.2
- Intel® High Definition 5.1 Audio; Infineon TPM V2.0
- 1x COM port
- 4x USB 2.0, 6x USB 3.2 Gen1, 2x USB 3.2 Gen2, 1x USB 3.2 Gen2 stick socket
- 6x SATA 6G incl. RAID support
- 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 DVI-D/2x DP V1.2 Optional VGA-Ext. D3453
ETHERNET	ONBOARD LAN CONTROLLER IAMT/VPRO	1x Intel® i219LM yes/yes
AUDIO	TYPE ONBOARD CONTROLLER BUZZER/SPEAKER S/PDIF HEADER	5.1 Multich. Realtek ALC671 -/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	-/4 (2 x pin header) 2 (pin header)/1 (3.2 Gen2) 6/yes - -
EXTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1/ 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	OPERATION TEMPERATURE	10 °C - 50 °C
MISCELLANEOUS	FAN SPEED CUSTOMIZING TPM V2.0 CHASSIS INTRUSION SUPPORT HW WATCHDOG MISCELLANEOUS	yes yes (Infineon) yes yes -



### Product Highlights

- Intel® 8th/9th Gen Core™ Processor Series
- DDR4 2666, SDRAM, max. 32 GByte
- cTDP – Easy & flexible reduction of CPU TDP
- Intel® HD Graphics (DX12, integrated in Processor)
- HDMI V1.4 and DP V1.2
- Stereo 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
- DC Power Supply 19 V
- HW Watchdog onboard

<b>BASEBOARD</b>	<b>DIMENSIONS</b> <b>CHIPSET</b>	5.5" x 5.8" (140 x 148 mm) Intel® H310
<b>CPU SUPPORT</b>	<b>PROCESSOR</b>  <b>PROCESSOR SOCKET</b> <b>MAX. PROCESSOR POWER CONSUMPTION (TDP)</b> <b>CPU TDP LIMITING OPTION</b> <b>HIGH EFFICIENCY CORE VOLTAGE REGULATOR</b>	Intel® Core™ 8th/9th Gen Processor Series Intel® LGA1151 65 W  yes yes
<b>MEMORY</b>	<b>MAX. CAPACITY/ NUMBER OF SOCKETS</b> <b>RAM SPEED</b>	32 GByte SO/2  DDR4 2400/2666
<b>GRAPHICS</b>	<b>ONBOARD GRAPHICS</b> <b>GRAPHICS INTERFACES</b>	Intel® UHD Graphics; DX 12 HDMI V 1.4/DP V 1.2
<b>ETHERNET</b>	<b>ONBOARD LAN CONTROLLER</b> <b>IAMT/VPRO</b>	1x Realtek RTL 8111E -/-
<b>AUDIO</b>	<b>TYPE</b> <b>ONBOARD CONTROLLER</b> <b>BUZZER/SPEAKER</b> <b>S/PDIF HEADER</b>	Stereo Realtek ALC671 -/yes -
<b>EXTENSION SLOTS</b>	<b>PCIe X16/X8/X4/X1/PCI</b> <b>MINI-PCIe/MSATA</b> <b>M.2 SSD</b> <b>(PCIe AND/OR SATA)</b> <b>M.2 WLAN (KEY-E)</b>	-/-/-/-/-  1x M.2 Key-M Socket (2280) for PCIe based M.2 Modules (4 lanes) yes
<b>INTERNAL CONNECTORS</b>	<b>USB PORTS 3.2 GEN2/3.2 GEN1</b> <b>USB PORTS 2.0/STICK SOCKET</b> <b>SATA PORTS/SATA RAID</b> <b>COM PORT INT. HEADER</b> <b>PARALLEL PORT INT. HEADER</b>	-/- 2 (pin header)/- 1/- - -
<b>EXTERNAL CONNECTORS</b>	<b>USB PORTS 3.2 GEN2/3.2 GEN1</b> <b>3.2 GEN2 TYPE C</b> <b>USB PORTS 2.0</b> <b>COM PORTS</b>	-/3 1 2 -
<b>POWER SUPPLY OPTIONS</b>	<b>EXTERNAL SUPPLY</b> <b>INTERNAL SUPPLY</b>	19 V -
<b>ENVIRONMENTAL</b>	<b>OPERATION TEMPERATURE</b>	10 °C – 50 °C
<b>MISCELLANEOUS</b>	<b>FAN SPEED CUSTOMIZING</b> <b>TPM V2.0</b> <b>CHASSIS INTRUSION SUPPORT</b> <b>HW WATCHDOG</b> <b>MISCELLANEOUS</b>	yes yes (Intel®) - yes 19 V DC Power Supply 1 x USB Type-C (Front)



## Product Highlights

- Intel® 8th/9th Gen Core™ Processor Series
- DDR4 2666 SDRAM, max. 32 GByte
- cTDP – Easy & flexible reduction of CPU TDP
- Supporting Intel® AMT 12.0
- Intel® HD Graphics (DX12, integrated in Processor)
- HDMI V1.4 and DP V1.2
- Stereo Audio onboard
- USB 2.0, USB3.2 Gen1/Gen2 onboard & USB Type-C (DP Alt Mode)
- Onboard support for M.2 SSD (PCIe x4 based M.2 2280)
- Onboard support for M.2 WLAN/Bluetooth (M.2 2230)
- Intel® GbE LAN onboard
- Intel® integrated TPM V2.0 onboard
- DC Power Supply 19 V
- HW Watchdog onboard

<b>BASEBOARD</b>	<b>DIMENSIONS</b> <b>CHIPSET</b>	5.5" x 5.8" (140 x 148 mm) Intel® Q370
<b>CPU SUPPORT</b>	<b>PROCESSOR</b>  <b>PROCESSOR SOCKET</b> <b>MAX. PROCESSOR POWER CONSUMPTION (TDP)</b> <b>CPU TDP LIMITING OPTION</b> <b>HIGH EFFICIENCY CORE VOLTAGE REGULATOR</b>	Intel® Core™ 8th/9th Gen Processor Series Intel® LGA1151 65 W  yes yes
<b>MEMORY</b>	<b>MAX. CAPACITY/ NUMBER OF SOCKETS</b> <b>RAM SPEED</b>	32 GByte SO/2  DDR4 2400/2666
<b>GRAPHICS</b>	<b>ONBOARD GRAPHICS</b> <b>GRAPHICS INTERFACES</b>	Intel® UHD Graphics; DX 12 HDMI V 1.4/DP V 1.2 /USB 3.1 Gen2 Type-C (DP Alt Mode)
<b>ETHERNET</b>	<b>ONBOARD LAN CONTROLLER</b> <b>IAMT/VPRO</b>	1x Intel® i219LM yes/yes
<b>AUDIO</b>	<b>TYPE</b> <b>ONBOARD CONTROLLER</b> <b>BUZZER/SPEAKER</b> <b>S/PDIF HEADER</b>	Stereo Realtek ALC671 -/yes -
<b>EXTENSION SLOTS</b>	<b>PCIe X16/X8/X4/X1/PCI</b> <b>MINI-PCIe/MSATA</b> <b>M.2 SSD</b> <b>(PCIe AND/OR SATA)</b> <b>M.2 WLAN (KEY-E)</b>	-/-/-/-/-  1x M.2 Key-M Socket (2280) for PCIe based M.2 Modules (4 lanes) yes
<b>INTERNAL CONNECTORS</b>	<b>USB PORTS 3.2 GEN2/3.2 GEN1</b> <b>USB PORTS 2.0/STICK SOCKET</b> <b>SATA PORTS/SATA RAID</b> <b>COM PORT INT. HEADER</b> <b>PARALLEL PORT INT. HEADER</b>	-/- 2 (pin header)/- 1/- - -
<b>EXTERNAL CONNECTORS</b>	<b>USB PORTS 3.2 GEN2/3.2 GEN1</b> <b>3.2 GEN2 TYPE C</b> <b>USB PORTS 2.0</b> <b>COM PORTS</b>	2/3 1 - -
<b>POWER SUPPLY OPTIONS</b>	<b>EXTERNAL SUPPLY</b> <b>INTERNAL SUPPLY</b>	19 V -
<b>ENVIRONMENTAL</b>	<b>OPERATION TEMPERATURE</b>	10 °C - 50 °C
<b>MISCELLANEOUS</b>	<b>FAN SPEED CUSTOMIZING</b> <b>TPM V2.0</b> <b>CHASSIS INTRUSION SUPPORT</b> <b>HW WATCHDOG</b> <b>MISCELLANEOUS</b>	yes yes (Intel®) - yes 19 V DC Power Supply 1x USB Type-C (front) 1x USB Type-C (Rear, incl. DP Alt Mode)

# D3674-B Thin mITX



## Product Highlights

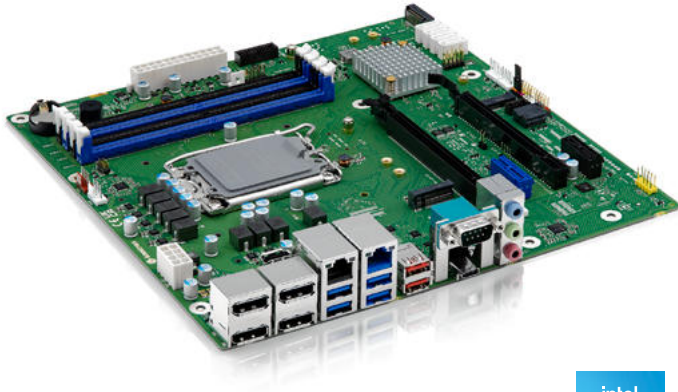
- ▶ Intel® 8th/9th Gen Core™ i Processor series
- ▶ DDR4 2666 SDRAM memory capacity up to 32GB
- ▶ cTDP – Easy & flexible reduction of CPU TDP
- ▶ Intel® HD Graphics (DX12, integrated in Processor)
- ▶ HDMI V1.4, DP V1.2 and Dual Channel LVDS support
- ▶ 8 Bit GPIO & multichannel Audio onboard
- ▶ USB 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

<b>BASEBOARD</b>	<b>DIMENSIONS</b> <b>CHIPSET</b>	6.7" x 6.7" (170 x 170 mm) Intel® H310
<b>CPU SUPPORT</b>	<b>PROCESSOR</b>  <b>PROCESSOR SOCKET</b> <b>MAX. PROCESSOR POWER CONSUMPTION (TDP)</b> <b>CPU TDP LIMITING OPTION</b> <b>HIGH EFFICIENCY CORE VOLTAGE REGULATOR</b>	Intel® Core™ 8th/9th Gen Processor Series Intel® LGA1151 65 W  yes yes
<b>MEMORY</b>	<b>MAX. CAPACITY/ NUMBER OF SOCKETS</b> <b>RAM SPEED</b>	32 GByte SO/2  DDR4 2400/2666
<b>GRAPHICS</b>	<b>ONBOARD GRAPHICS</b> <b>GRAPHICS INTERFACES</b>	Intel® UHD Graphics; DX 12 HDMI V 1.4/DP V 1.2
<b>ETHERNET</b>	<b>ONBOARD LAN CONTROLLER</b> <b>IAMT/VPRO</b>	1x Realtek RTL 8111G -/-
<b>AUDIO</b>	<b>TYPE</b> <b>ONBOARD CONTROLLER</b> <b>BUZZER/SPEAKER</b> <b>S/PDIF HEADER</b>	5.1 Multich. Realtek ALC255 -/yes (Stereo) -
<b>EXTENSION SLOTS</b>	<b>PCIe X16/X8/X4/X1/PCI</b> <b>MINI-PCIe/MSATA</b> <b>M.2 SSD (PCIe AND/OR SATA)</b> <b>M.2 WLAN (KEY-E)</b>	-/-/-/-/-  1x M.2 Key-M Socket (2280) for PCIe based M.2 Modules (4 lanes) yes
<b>INTERNAL CONNECTORS</b>	<b>USB PORTS 3.2 GEN2/3.2 GEN1</b> <b>USB PORTS 2.0/STICK SOCKET</b> <b>SATA PORTS/SATA RAID</b> <b>COM PORT INT. HEADER</b> <b>PARALLEL PORT INT. HEADER</b>	-/2 (pin header) 3 (2 x pin header)/- 2/- 1 -
<b>EXTERNAL CONNECTORS</b>	<b>USB PORTS 3.2 GEN2/3.2 GEN1</b> <b>3.2 GEN2 TYPE C</b> <b>USB PORTS 2.0</b> <b>COM PORTS</b>	-/2 - 2 -
<b>POWER SUPPLY OPTIONS</b>	<b>EXTERNAL SUPPLY</b> <b>INTERNAL SUPPLY</b>	19-24 V 12 V or 19-24 V
<b>ENVIRONMENTAL</b>	<b>OPERATION TEMPERATURE</b>	10 °C - 50 °C
<b>MISCELLANEOUS</b>	<b>FAN SPEED CUSTOMIZING</b> <b>TPM V2.0</b> <b>CHASSIS INTRUSION SUPPORT</b> <b>HW WATCHDOG</b> <b>MISCELLANEOUS</b>	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 $\mu$ ATX

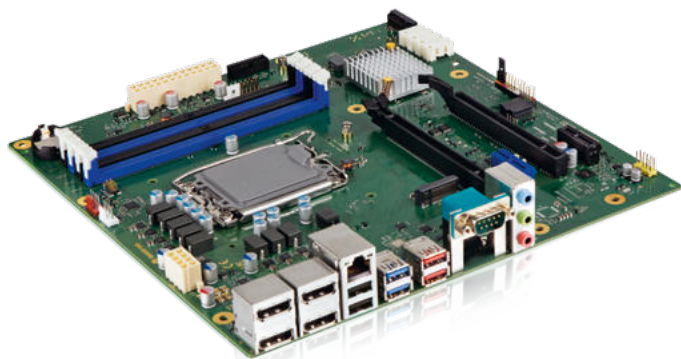
### Technical Information



### Product Highlights

- Intel® 12th/13th Gen Core™ Processor Series
- 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<sup>e</sup> 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

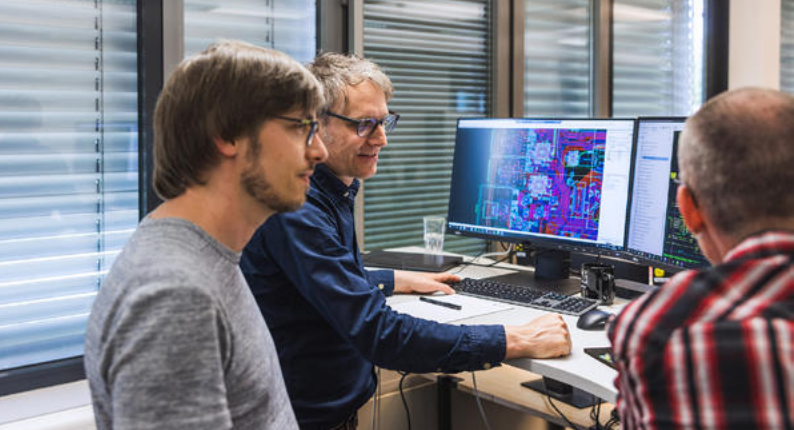
<b>BASEBOARD</b>	<b>DIMENSIONS</b> <b>CHIPSET</b>	9.6" x 9.6" (243.8 x 243.8 mm) Intel® Q670
<b>CPU SUPPORT</b>	<b>PROCESSOR</b>  <b>PROCESSOR SOCKET</b> <b>MAX. PROCESSOR POWER CONSUMPTION (TDP)</b> <b>CPU TDP LIMITING OPTION</b> <b>HIGH EFFICIENCY CORE VOLTAGE REGULATOR</b>	Intel® Core™ 12th/13th Gen Processor Series Intel® LGA1700 125 W  yes yes
<b>MEMORY</b>	<b>MAX. CAPACITY/ NUMBER OF SOCKETS</b> <b>RAM SPEED</b>	128 GByte/4  DDR5 4800 non-ECC
<b>GRAPHICS</b>	<b>ONBOARD GRAPHICS</b>  <b>GRAPHICS INTERFACES</b>	Intel® UHD Graphics 7xx driven by X <sup>e</sup> Architecture 4x DisplayPort V1.4a up to 8K
<b>ETHERNET</b>	<b>ONBOARD LAN CONTROLLER</b>  <b>IAMT/VPRO</b>	K3842-Q1: 1x Intel® i219LM K3842-Q2: 1x Intel® i219LM & 1x Intel® i225LM yes/-
<b>AUDIO</b>	<b>TYPE</b> <b>ONBOARD CONTROLLER</b> <b>BUZZER/SPEAKER</b> <b>S/PDIF HEADER</b>	5.1 Multich. Tempo Semiconductor 92HD91B yes/yes yes
<b>EXTENSION SLOTS</b>	<b>PCI E X16/X8/X4/X1/PCI MINI-PCIe/MSATA</b> <b>M.2 SSD (PCIe AND/OR SATA)</b>  <b>M.2 WLAN (KEY-E)</b>	2 (16 Lanes/4 Lanes)/-/2/- -/- 2x M.2 2230/2242/2280 (Key-M, PCIe/NVME SSD modules), incl. NVME RAID 1x incl. CNVi
<b>INTERNAL CONNECTORS</b>	<b>USB PORTS 3.2 GEN2/3.2 GEN1</b> <b>USB PORTS 2.0/STICK SOCKET</b> <b>SATA PORTS/SATA RAID</b> <b>COM PORT INT. HEADER</b> <b>PARALLEL PORT INT. HEADER</b>	-/2 (pin header) 2 (pin header)/1 4/yes - -
<b>EXTERNAL CONNECTORS</b>	<b>USB PORTS 3.2 GEN2/3.2 GEN1/ 3.2 GEN2 TYPE C</b> <b>USB PORTS 2.0</b> <b>COM PORTS</b>	2/4/ 1 - 1
<b>POWER SUPPLY OPTIONS</b>	<b>EXTERNAL SUPPLY</b> <b>INTERNAL SUPPLY</b>	- ATX PSU (Multirail)
<b>ENVIRONMENTAL</b>	<b>OPERATION TEMPERATURE</b>	10 °C – 50 °C



### Product Highlights

- Intel® 12th/13th Gen Core™ Processor Series
- 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<sup>e</sup> Architecture; 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
- 4x SATA 6G incl. RAID support
- 2x M.2 2280 (Key-M, PCIe/NVME SSD modules)

<b>BASEBOARD</b>	<b>DIMENSIONS</b> <b>CHIPSET</b>	9.6" x 9.6" (243.8 x 243.8 mm) Intel® B660
<b>CPU SUPPORT</b>	<b>PROCESSOR</b>  <b>PROCESSOR SOCKET</b> <b>MAX. PROCESSOR POWER CONSUMPTION (TDP)</b> <b>CPU TDP LIMITING OPTION</b> <b>HIGH EFFICIENCY CORE VOLTAGE REGULATOR</b>	Intel® Core™ 12th/13th Gen Processor Series Intel® LGA1700 125 W  yes yes
<b>MEMORY</b>	<b>MAX. CAPACITY/ NUMBER OF SOCKETS</b> <b>RAM SPEED</b>	128 GByte/4  DDR5 4800 non-ECC
<b>GRAPHICS</b>	<b>ONBOARD GRAPHICS</b>  <b>GRAPHICS INTERFACES</b>	Intel® UHD Graphics 7xx driven by X <sup>e</sup> Architecture 4x DisplayPort V1.4a up to 8K
<b>ETHERNET</b>	<b>ONBOARD LAN CONTROLLER</b> <b>IAMT/VPRO</b>	1x Intel® i219LM -/-
<b>AUDIO</b>	<b>TYPE</b> <b>ONBOARD CONTROLLER</b> <b>BUZZER/SPEAKER</b> <b>S/PDIF HEADER</b>	Stereo Tempo Semiconductor 92HD91B yes/yes -
<b>EXTENSION SLOTS</b>	<b>PCI E X16/X8/X4/X1/PCI</b> <b>MINI-PCIe/MSATA</b> <b>M.2 SSD</b> <b>(PCIe AND/OR SATA)</b> <b>M.2 WLAN (KEY-E)</b>	2 (16 Lanes/1 Lane)/-/-/2/- -/- 2x M.2 2280 (Key-M, PCIe/NVME SSD modules) -
<b>INTERNAL CONNECTORS</b>	<b>USB PORTS 3.2 GEN2/3.2 GEN1</b> <b>USB PORTS 2.0/STICK SOCKET</b> <b>SATA PORTS/SATA RAID</b> <b>COM PORT INT. HEADER</b> <b>PARALLEL PORT INT. HEADER</b>	-/2 (pin header) 2 (pin header)/- 4/yes - -
<b>EXTERNAL CONNECTORS</b>	<b>USB PORTS 3.2 GEN2/3.2 GEN1</b> <b>3.2 GEN2 TYPE C</b> <b>USB PORTS 2.0</b> <b>COM PORTS</b>	2/2 - 2 1
<b>POWER SUPPLY OPTIONS</b>	<b>EXTERNAL SUPPLY</b> <b>INTERNAL SUPPLY</b>	- ATX PSU (Multirail)
<b>ENVIRONMENTAL</b>	<b>OPERATION TEMPERATURE</b>	10 °C - 50 °C
<b>MISCELLANEOUS</b>	<b>FAN SPEED CUSTOMIZING</b> <b>TPM V2.0</b> <b>CHASSIS INTRUSION SUPPORT</b> <b>HW WATCHDOG</b> <b>MISCELLANEOUS</b>	yes yes (Intel®) yes - -



## ➤ The Industrial Series

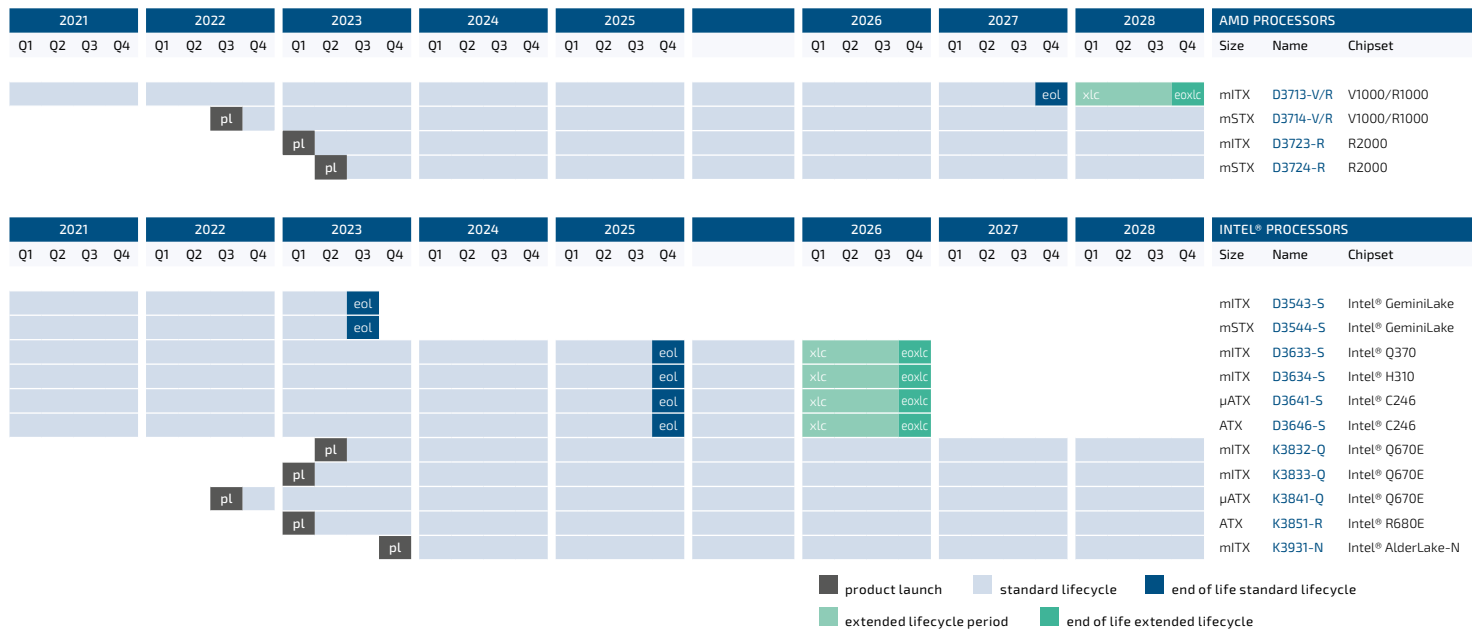
### Characteristic features

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.

Kontron motherboards of the Industrial Series are applicable in many branches:

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

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.



## Socketed Motherboards - What is Next?

intel®



### 9th GEN INTEL® CORE i PROCESSOR TECHNOLOGY

D3633-S

mini-ITX, 65 W TDP Support, Q370

D3641-S

µATX, 85 W TDP Support, C246

D3642-B/D3644-B

µATX, 85 W TDP Support, Q370/C246

D3643-H

µATX, 85 W TDP Support, B360

D3646-S/D3598-B/G

ATX, 85 W/165 W TDP Support, C246/C422/X299

D3674-B

Thin Mini-ITX, 85 W TDP Support, H310

### 12th/13th GEN INTEL® CORE™ i PROCESSOR TECHNOLOGY

K3833-Q/K3832-Q

mini-ITX, 65 W TDP Support, Q670E

K3841-Q

µATX, 125 W TDP Support, Q670E

K3842-Q

µATX, 125 W TDP Support, Q670

K3843-B

µATX, 125 W TDP Support, B660

K3851-R

ATX, 125 W TDP Support, R680E

K3831-H

Thin Mini-ITX, 65 W TDP Support, H610

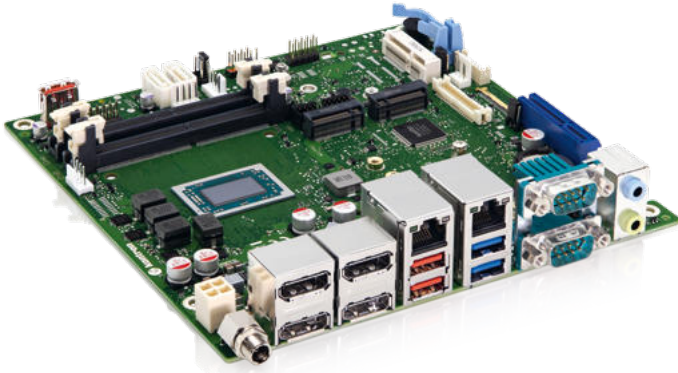




# Industrial Motherboards

## 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

<b>BASEBOARD</b>	<b>DIMENSIONS</b> <b>CHIPSET</b>	6.7" x 6.7" (170 x 170 mm) AMD Ryzen™ Embedded V1000/ R1000 Series SoC
<b>CPU SUPPORT</b>	<b>PROCESSOR</b>	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
	<b>PROCESSOR SOCKET</b> <b>MAX. PROCESSOR</b> <b>POWER CONSUMPTION (TDP)</b>	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
	<b>CPU TDP LIMITING OPTION</b> <b>HIGH EFFICIENCY CORE</b> <b>VOLTAGE REGULATOR</b>	yes yes
<b>MEMORY</b>	<b>MAX. CAPACITY/ NUMBER OF SOCKETS</b> <b>RAM SPEED</b>	32 GByte/2  DDR4 2400/3200 ECC Option
<b>GRAPHICS</b>	<b>ONBOARD GRAPHICS</b>  <b>GRAPHICS INTERFACES</b>	AMD Radeon™ Vega Graphics (within SoC) up to 4x DP V1.4/ 1x eDP V1.4 @ 4 lanes/1x LVDS
<b>ETHERNET</b>	<b>ONBOARD LAN CONTROLLER</b>  <b>IAMT/VPRO</b>	1x Intel® i210AT 1x Realtek RTL8111H -/-
<b>AUDIO</b>	<b>TYPE</b> <b>ONBOARD CONTROLLER</b> <b>BUZZER/SPEAKER</b> <b>S/PDIF HEADER</b>	Stereo Realtek ALC256 yes/yes yes
<b>EXTENSION SLOTS</b>	<b>PCIe X16/X8/X4/X1/PCI</b> <b>MINI-PCIe/MSATA</b> <b>M.2 SSD</b> <b>(PCIe AND/OR SATA)</b>	-/-/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)
	<b>M.2 WLAN (KEY-E)</b>	-
<b>INTERNAL CONNECTORS</b>	<b>USB PORTS 3.2 GEN2/3.2 GEN1</b> <b>USB PORTS 2.0/STICK SOCKET</b> <b>SATA PORTS/SATA RAID</b> <b>COM PORT INT. HEADER</b> <b>PARALLEL PORT INT. HEADER</b>	-/2 (pin header) 2 (pin header)/1 2/- 2 -
<b>EXTERNAL CONNECTORS</b>	<b>USB PORTS 3.2 GEN2/3.2 GEN1</b> <b>3.2 GEN2 TYPE C</b> <b>USB PORTS 2.0</b> <b>COM PORTS</b>	2/2 - - 2
<b>POWER SUPPLY OPTIONS</b>	<b>EXTERNAL SUPPLY</b> <b>INTERNAL SUPPLY</b>	8 V - 34 V
<b>ENVIRONMENTAL</b>	<b>OPERATION TEMPERATURE</b>	-10 °C to +60 °C
<b>MISCELLANEOUS</b>	<b>FAN SPEED CUSTOMIZING</b> <b>TPM V2.0</b> <b>CHASSIS INTRUSION SUPPORT</b> <b>HW WATCHDOG</b> <b>MISCELLANEOUS</b>	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

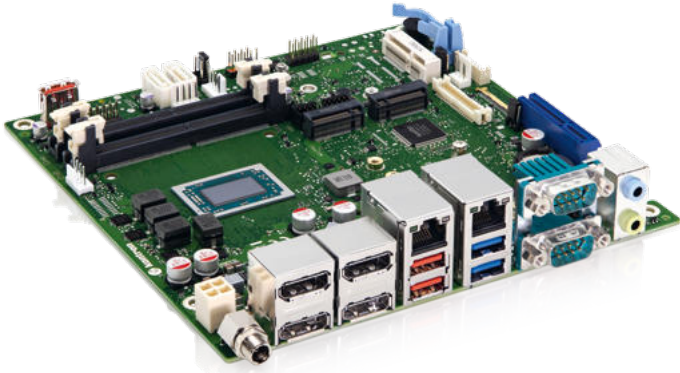


### Product Highlights



- 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  PROCESSOR SOCKET MAX. PROCESSOR POWER CONSUMPTION (TDP)  CPU TDP LIMITING OPTION HIGH EFFICIENCY CORE VOLTAGE REGULATOR	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 AMD FP5 R1: 6 W TDP R2: 8 W/10 W TDP V2: 12 W/15 W/25 W TDP yes yes
MEMORY	MAX. CAPACITY/ NUMBER OF SOCKETS RAM SPEED	32 GByte/2  DDR4 2400 ECC Option
GRAPHICS	ONBOARD GRAPHICS  GRAPHICS INTERFACES	AMD Radeon™ Vega Graphics (within SoC) up to 3x DP V1.4/HDMI V2.0b/ 1x eDP V1.4 @ 4 lanes/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 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	-/- 2 (pin header)/- 1/- 2 -
EXTERNAL CONNECTORS	USB PORTS 3.2 GEN2/3.2 GEN1 3.2 GEN1 TYPE C USB PORTS 2.0 COM PORTS	2/3 1 - -
POWER SUPPLY OPTIONS	EXTERNAL SUPPLY INTERNAL SUPPLY	12 V or 19 - 28 V (Auto Dual Range)
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 No Legacy OS Support 1x COM incl. RS-232/-422/-485 Support; GPIO

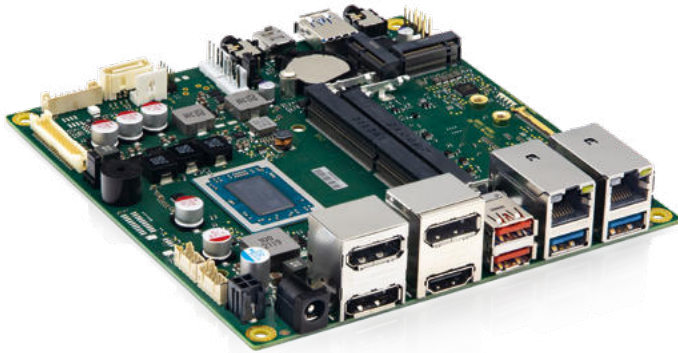


### Product Highlights



- 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

<b>BASEBOARD</b>	<b>DIMENSIONS CHIPSET</b>	6.7" x 6.7" (170 x 170 mm) AMD Embedded Ryzen™ R2000 Series SoC (Zen+ Core)
<b>CPU SUPPORT</b>	<b>PROCESSOR</b>  <b>PROCESSOR SOCKET MAX. PROCESSOR POWER CONSUMPTION (TDP)</b>  <b>CPU TDP LIMITING OPTION HIGH EFFICIENCY CORE VOLTAGE REGULATOR</b>	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 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 yes yes
<b>MEMORY</b>	<b>MAX. CAPACITY/ NUMBER OF SOCKETS RAM SPEED</b>	32 GByte/2  DDR4 2400/2666/3200 ECC Option
<b>GRAPHICS</b>	<b>ONBOARD GRAPHICS GRAPHICS INTERFACES</b>	AMD Radeon™ Vega Graphics (within SoC) up to 4x DP V1.4/ 1x eDP @ 4 lanes/1x LVDS
<b>ETHERNET</b>	<b>ONBOARD LAN CONTROLLER IAMT/VPRO</b>	1x Intel® i210AT 1x Realtek RTL8111H -/-
<b>AUDIO</b>	<b>TYPE ONBOARD CONTROLLER BUZZER/SPEAKER S/PDIF HEADER</b>	Stereo Realtek ALC256 yes/yes yes
<b>EXTENSION SLOTS</b>	<b>PCIe X16/X8/X4/X1/PCI MINI-PCIe/MSATA M.2 SSD (PCIe AND/OR SATA)</b>  <b>M.2 WLAN (KEY-E)</b>	-/-/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) -
<b>INTERNAL CONNECTORS</b>	<b>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</b>	-/2 (pin header) 2 (pin header)/1 2/- 2 -
<b>EXTERNAL CONNECTORS</b>	<b>USB PORTS 3.2 GEN2/3.2 GEN1 3.2 GEN2 TYPE C USB PORTS 2.0 COM PORTS</b>	2/2 - - 2
<b>POWER SUPPLY OPTIONS</b>	<b>EXTERNAL SUPPLY INTERNAL SUPPLY</b>	8 V - 34 V
<b>ENVIRONMENTAL</b>	<b>OPERATION TEMPERATURE</b>	-10 °C to +60 °C
<b>MISCELLANEOUS</b>	<b>FAN SPEED CUSTOMIZING TPM V2.0 CHASSIS INTRUSION SUPPORT HW WATCHDOG MISCELLANEOUS</b>	yes yes (AMD integrated) yes yes yes MS Windows 11 No Legacy OS Support 4x COM (1x incl. RS-232/-422/-485 Support), GPIO



## 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

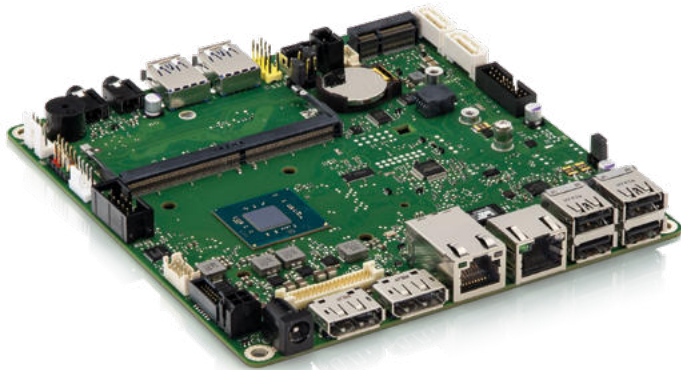
<b>BASEBOARD</b>	<b>DIMENSIONS</b> <b>CHIPSET</b>	5.5" x 5.8" (140 x 148 mm) AMD Embedded Ryzen™ R2000 Series SoC (Zen+ Core)
<b>CPU SUPPORT</b>	<b>PROCESSOR</b>  <b>PROCESSOR SOCKET</b> <b>MAX. PROCESSOR POWER CONSUMPTION (TDP)</b> <b>CPU TDP LIMITING OPTION</b> <b>HIGH EFFICIENCY CORE VOLTAGE REGULATOR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



### Product Highlights

- Intel® Celeron® Processor J4005/J4105 & Intel® Pentium® Silver Processor J5005
- DDR4 2400 SDRAM, max. 24 GByte
- Intel® UHD Graphics 600/605 (within SoC)
- 2x DisplayPort V1.2a
- Dual Channel LVDS (24Bit) and eDP V1.4 onboard
- 8 Bit GPIO & HD Audio onboard
- USB 2.0 and USB 3.2 (gen1) onboard
- 2x SATA III
- Onboard support for M.2 SSD (SATA/PCIe)
- Onboard support for M.2 WLAN/Bluetooth module
- Onboard support for Mini-PCIe
- Dual GbE LAN onboard
- Intel® integrated TPM V2.0 onboard
- WideRange internal/external DC Input (8 V - 36 V)
- HW Watchdog onboard
- RS-232/485/422 support onboard

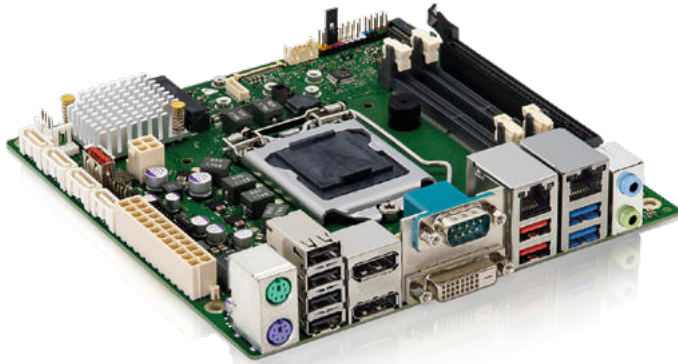
<b>BASEBOARD</b>	<b>DIMENSIONS</b> <b>CHIPSET</b>	6.7" x 6.7" (170 x 170 mm) Intel® Embedded SoC
<b>CPU SUPPORT</b>	<b>PROCESSOR</b>	S1: Dual-Core J4005 SoC (2.70 GHz/10W) S2: Quad-Core J4105 SoC (2.50 GHz/10W) S3: Quad-Core J5005 SoC (2.80 GHz/10W) - 10 W - yes
	<b>PROCESSOR SOCKET</b> <b>MAX. PROCESSOR POWER CONSUMPTION (TDP)</b> <b>CPU TDP LIMITING OPTION</b> <b>HIGH EFFICIENCY CORE VOLTAGE REGULATOR</b>	- 10 W - yes
<b>MEMORY</b>	<b>MAX. CAPACITY/NUMBER OF SOCKETS</b> <b>RAM SPEED</b>	24 GByte SO/2 DDR4 2400
<b>GRAPHICS</b>	<b>ONBOARD GRAPHICS</b>	S1: Intel® UHD Graphics 600 S2: Intel® UHD Graphics 600 S3: Intel® UHD Graphics 605
	<b>GRAPHICS INTERFACES</b>	2x DP V 1.2; LVDS; eDP V 1.4
<b>ETHERNET</b>	<b>ONBOARD LAN CONTROLLER</b>	1x Intel® i210AT 1x Realtek RTL8111G
	<b>IAMT/VPRO</b>	-/-
<b>AUDIO</b>	<b>TYPE</b> <b>ONBOARD CONTROLLER</b> <b>BUZZER/SPEAKER</b> <b>S/PDIF HEADER</b>	5.1 Multich. Realtek ALC671 yes/- yes
<b>EXTENSION SLOTS</b>	<b>PCIe X16/X8/X4/X1/PCI</b> <b>MINI-PCIe/MSATA</b> <b>M.2 SSD (PCIe AND/OR SATA)</b> <b>M.2 WLAN (KEY-E)</b>	-/-/1 /-/- yes/- PCIe (1 Lane) & SATA; Key-B (2242/2260/2280) yes
<b>INTERNAL CONNECTORS</b>	<b>USB PORTS 3.2 GEN2/3.2 GEN1</b> <b>USB PORTS 2.0/STICK SOCKET</b> <b>SATA PORTS/SATA RAID</b> <b>COM PORT INT. HEADER</b> <b>PARALLEL PORT INT. HEADER</b>	-/2 (pin header) 2 (pin header)/1 2/- 2 yes
<b>EXTERNAL CONNECTORS</b>	<b>USB PORTS 3.2 GEN2/3.2 GEN1</b> <b>3.2 GEN2 TYPE C</b> <b>USB PORTS 2.0</b> <b>COM PORTS</b>	-/2 - 2 2
<b>POWER SUPPLY OPTIONS</b>	<b>EXTERNAL SUPPLY</b> <b>INTERNAL SUPPLY</b>	8 V - 36 V
<b>ENVIRONMENTAL</b>	<b>OPERATION TEMPERATURE</b>	0 °C - 60 °C



## Product Highlights

- Intel® Celeron® Processor J4005/J4105 & Intel® Pentium® Silver Processor J5005
- DDR4 2400 SDRAM, max. 16 GByte
- Intel® UHD Graphics 600/605 (within SoC)
- 2x DisplayPort V1.2a
- Dual Channel LVDS (24Bit) and eDP V1.4 onboard
- 8 Bit GPIO & HD Audio onboard
- USB 2.0 and USB 3.2 (gen1) onboard
- 2x SATA III
- Onboard support for M.2 SSD (SATA/PCIe)
- Onboard support for M.2 WLAN/Bluetooth module
- Dual GbE LAN onboard
- Intel® integrated TPM V2.0 onboard
- WideRange internal/external DC Input (8 V-24 V)
- HW Watchdog onboard
- RS-232/485/422 support onboard

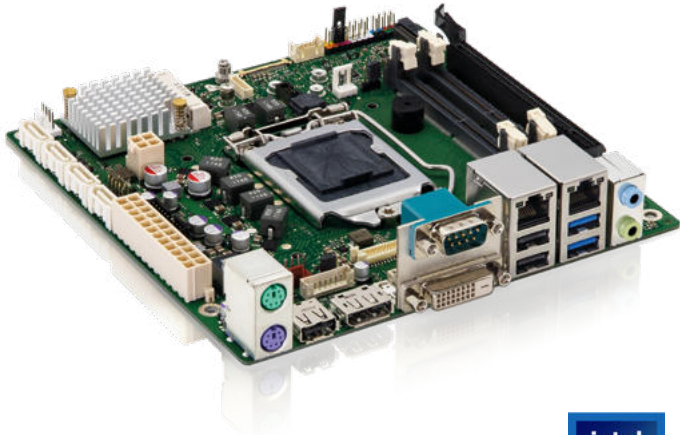
<b>BASEBOARD</b>	<b>DIMENSIONS CHIPSET</b>	5.5" x 5.8" (140 x 148 mm) Intel® Embedded SoC
<b>CPU SUPPORT</b>	<b>PROCESSOR</b>	S1: Dual-Core J4005 SoC (2.70 GHz/10W) S2: Quad-Core J4105 SoC (2.50 GHz/10W) S3: Quad-Core J5005 SoC (2.80 GHz/10W) - 10 W - yes
<b>MEMORY</b>	<b>PROCESSOR SOCKET MAX. PROCESSOR POWER CONSUMPTION (TDP) CPU TDP LIMITING OPTION HIGH EFFICIENCY CORE VOLTAGE REGULATOR</b>	16 GByte SO/1 DDR4 2400
<b>GRAPHICS</b>	<b>ONBOARD GRAPHICS</b>	S1: Intel® UHD Graphics 600 S2: Intel® UHD Graphics 600 S3: Intel® UHD Graphics 605
<b>ETHERNET</b>	<b>GRAPHICS INTERFACES</b>	2x DP V 1.2; LVDS; eDP V 1.4
<b>AUDIO</b>	<b>ONBOARD LAN CONTROLLER</b>	1x Intel® i210AT 1x Realtek RTL8111G -/-
<b>EXTENSION SLOTS</b>	<b>IAMT/VPRO</b>	5.1 Multich. Realtek ALC671 yes/- yes
<b>INTERNAL CONNECTORS</b>	<b>TYPE ONBOARD CONTROLLER BUZZER/SPEAKER S/PDIF HEADER</b>	PCIE X16/X8/X4/X1/PCI MINI-PCIe/MSATA M.2 SSD (PCIe AND/OR SATA) M.2 WLAN (KEY-E)
<b>EXTERNAL CONNECTORS</b>	<b>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</b>	-/-/-/-/- -/- PCIe (1 lane) & SATA; Key-B (2242/2260/2280) yes
<b>POWER SUPPLY OPTIONS</b>	<b>INTERNAL SUPPLY</b>	-/2 (pin header) 1 (pin header)/- 2/- 2 -
<b>ENVIRONMENTAL</b>	<b>EXTERNAL SUPPLY</b>	8 V - 24 V
<b>MISCELLANEOUS</b>	<b>OPERATION TEMPERATURE</b>	0 °C - 60 °C
	<b>FAN SPEED CUSTOMIZING TPM V2.0 CHASSIS INTRUSION SUPPORT HW WATCHDOG MISCELLANEOUS</b>	yes yes (Intel®) yes yes No legacy OS Support 1x COM incl. RS-232/-422/-485 Support; GPIO



### 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

<b>BASEBOARD</b>	<b>DIMENSIONS</b> <b>CHIPSET</b>	6.7" x 6.7" (170 x 170 mm) Intel® Q370
<b>CPU SUPPORT</b>	<b>PROCESSOR</b>  <b>PROCESSOR SOCKET</b> <b>MAX. PROCESSOR POWER CONSUMPTION (TDP)</b> <b>CPU TDP LIMITING OPTION</b> <b>HIGH EFFICIENCY CORE VOLTAGE REGULATOR</b>	Intel® Core™ 8th/9th Gen. Processor Series Intel® LGA1151 95 W  yes yes
<b>MEMORY</b>	<b>MAX. CAPACITY/ NUMBER OF SOCKETS</b> <b>RAM SPEED</b>	64 GByte SO/2  DDR4 2400/2666
<b>GRAPHICS</b>	<b>ONBOARD GRAPHICS</b> <b>GRAPHICS INTERFACES</b>	Intel® UHD Graphics; DX 12 DVI-D/2x DP (V 1.2)/LVDS/eDP V 1.4 (2 Lanes Supported)
<b>ETHERNET</b>	<b>ONBOARD LAN CONTROLLER</b>  <b>IAMT/vPRO</b>	1x Intel® i219LM 1x Intel® i210AT yes/yes
<b>AUDIO</b>	<b>TYPE</b> <b>ONBOARD CONTROLLER</b> <b>BUZZER/SPEAKER</b> <b>S/PDIF HEADER</b>	5.1 Multich. Realtek ALC671 yes/yes yes
<b>EXTENSION SLOTS</b>	<b>PCIe X16/X8/X4/X1/PCI</b> <b>MINI-PCIe/MSATA</b> <b>M.2 SSD</b> <b>(PCIe AND/OR SATA)</b>  <b>M.2 WLAN (KEY-E)</b>	1/-/-/-/- yes/- 1x M.2 Key-M Socket (2242/2260/2280) for PCIe (4 lanes) based M.2 Modules -
<b>INTERNAL CONNECTORS</b>	<b>USB PORTS 3.2 GEN2/3.2 GEN1</b> <b>USB PORTS 2.0/STICK SOCKET</b> <b>SATA PORTS/SATA RAID</b> <b>COM PORT INT. HEADER</b> <b>PARALLEL PORT INT. HEADER</b>	-/2 (pin header) 2 (pin header)/1 (3.2 Gen2) 4/yes 1 -
<b>EXTERNAL CONNECTORS</b>	<b>USB PORTS 3.2 GEN2/3.2 GEN1</b> <b>3.2 GEN2 TYPE C</b> <b>USB PORTS 2.0</b> <b>COM PORTS</b>	2/2 - 4 1
<b>POWER SUPPLY OPTIONS</b>	<b>EXTERNAL SUPPLY</b> <b>INTERNAL SUPPLY</b>	- ATX PSU (Multirail) or single 12 V
<b>ENVIRONMENTAL</b>	<b>OPERATION TEMPERATURE</b>	0 °C - 60 °C
<b>MISCELLANEOUS</b>	<b>FAN SPEED CUSTOMIZING</b> <b>TPM V2.0</b> <b>CHASSIS INTRUSION SUPPORT</b> <b>HW WATCHDOG</b> <b>MISCELLANEOUS</b>	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

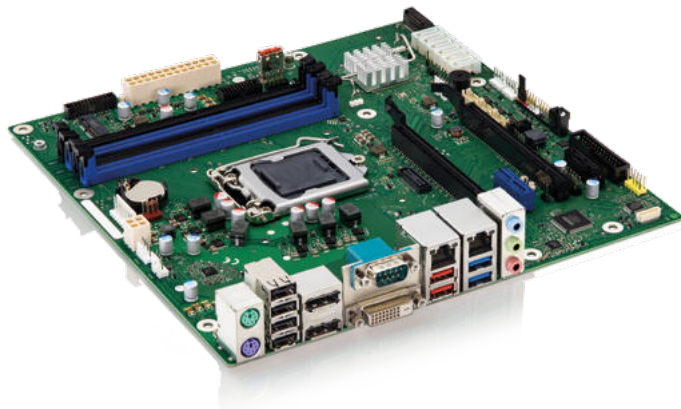


## Product Highlights

- 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

<b>BASEBOARD</b>	<b>DIMENSIONS</b> <b>CHIPSET</b>	6.7" x 6.7" (170 x 170 mm) Intel® H310
<b>CPU SUPPORT</b>	<b>PROCESSOR</b>  <b>PROCESSOR SOCKET</b> <b>MAX. PROCESSOR POWER CONSUMPTION (TDP)</b> <b>CPU TDP LIMITING OPTION</b> <b>HIGH EFFICIENCY CORE VOLTAGE REGULATOR</b>	Intel® Core™ 8th/9th Gen. Processor Series Intel® LGA1151 95 W  yes yes
<b>MEMORY</b>	<b>MAX. CAPACITY/ NUMBER OF SOCKETS</b> <b>RAM SPEED</b>	32 GByte SO/2  DDR4 2400/2666
<b>GRAPHICS</b>	<b>ONBOARD GRAPHICS</b> <b>GRAPHICS INTERFACES</b>	Intel® UHD Graphics; DX 12 DVI-D/DP (V 1.2)/LVDS/eDP V 1.4 (2 Lanes Supported)
<b>ETHERNET</b>	<b>ONBOARD LAN CONTROLLER</b>  <b>IAMT/VPRO</b>	1x Intel® i219LM 1x Intel® i210AT -/-
<b>AUDIO</b>	<b>TYPE</b> <b>ONBOARD CONTROLLER</b> <b>BUZZER/SPEAKER</b> <b>S/PDIF HEADER</b>	5.1 Multich. Realtek ALC671 yes/yes yes
<b>EXTENSION SLOTS</b>	<b>PCIe X16/X8/X4/X1/PCI MINI-PCIe/MSATA</b> <b>M.2 SSD (PCIe AND/OR SATA)</b>  <b>M.2 WLAN (KEY-E)</b>	1/-/-/-/- yes/- 1x M.2 Key-M Socket (2242/2260/2280) for PCIe (2 lanes) based M.2 Modules -
<b>INTERNAL CONNECTORS</b>	<b>USB PORTS 3.2 GEN2/3.2 GEN1</b> <b>USB PORTS 2.0/STICK SOCKET</b> <b>SATA PORTS/SATA RAID</b> <b>COM PORT INT. HEADER</b> <b>PARALLEL PORT INT. HEADER</b>	-/2 (pin header) 2 (pin header)/- 4/- 1 -
<b>EXTERNAL CONNECTORS</b>	<b>USB PORTS 3.2 GEN2/3.2 GEN1</b> <b>3.2 GEN2 TYPE C</b> <b>USB PORTS 2.0</b> <b>COM PORTS</b>	-/2 - 3 1
<b>POWER SUPPLY OPTIONS</b>	<b>EXTERNAL SUPPLY</b> <b>INTERNAL SUPPLY</b>	- ATX PSU (Multirail) or single 12 V
<b>ENVIRONMENTAL</b>	<b>OPERATION TEMPERATURE</b>	0 °C - 60 °C
<b>MISCELLANEOUS</b>	<b>FAN SPEED CUSTOMIZING</b> <b>TPM V2.0</b> <b>CHASSIS INTRUSION SUPPORT</b> <b>HW WATCHDOG</b> <b>MISCELLANEOUS</b>	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

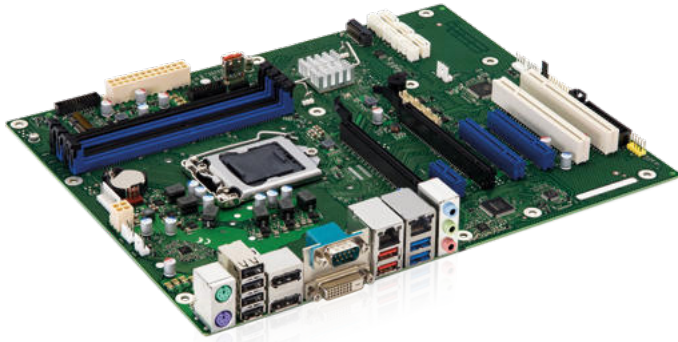




### Product Highlights

- 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

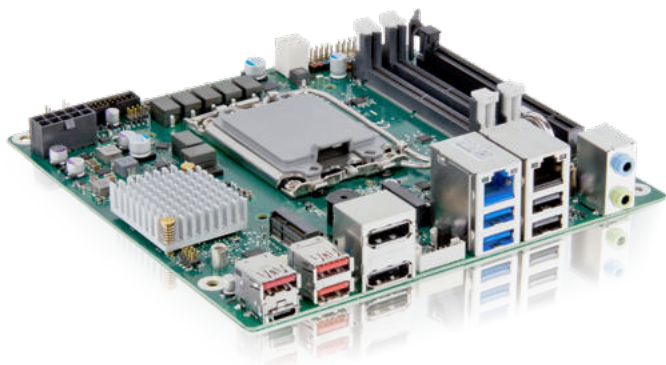
<b>BASEBOARD</b>	<b>DIMENSIONS</b> <b>CHIPSET</b>	9.6" x 9.6" (243.8 x 243.8 mm) Intel® C246
<b>CPU SUPPORT</b>	<b>PROCESSOR</b>  <b>PROCESSOR SOCKET</b> <b>MAX. PROCESSOR POWER CONSUMPTION (TDP)</b> <b>CPU TDP LIMITING OPTION</b> <b>HIGH EFFICIENCY CORE VOLTAGE REGULATOR</b>	Intel® Core™ 8th/9th Gen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



## 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

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



## Product Highlights

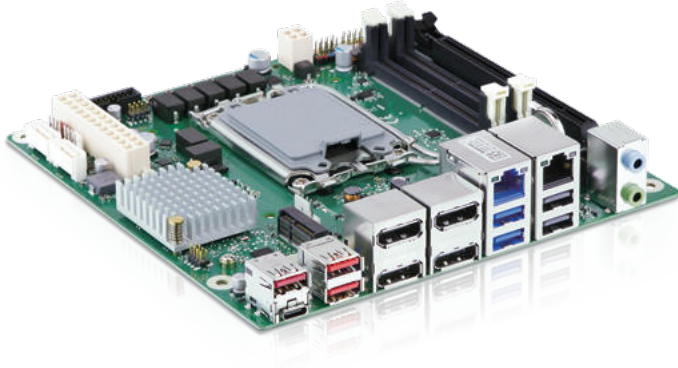
- Intel® 12th/13th Gen Core™ Processor Series
- DDR5-4800/5600 SODIMM, max. 64 GByte
- cTDP – Easy & flexible reduction of CPU TDP
- Supporting Intel® iAMT features and Intel® Time Coordinated Computing (TCC)
- PCI Express® x16 (Gen5)
- 1x Intel® GbE LAN, 1x 2.5GbE incl. Teaming and TSN
- Intel® UHD Graphics 7xx driven by X<sup>e</sup> 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

<b>BASEBOARD</b>	<b>DIMENSIONS</b> <b>CHIPSET</b>	6.7" x 6.7" (170 x 170 mm) Intel® Q670E
<b>CPU SUPPORT</b>	<b>PROCESSOR</b>  <b>PROCESSOR SOCKET</b> <b>MAX. PROCESSOR POWER CONSUMPTION (TDP)</b> <b>CPU TDP LIMITING OPTION</b> <b>HIGH EFFICIENCY CORE VOLTAGE REGULATOR</b>	Intel® Core™ 12th/13th Gen Processor Series Intel® LGA1700 65 W TDP  yes yes
<b>MEMORY</b>	<b>MAX. CAPACITY/</b> <b>NUMBER OF SOCKETS</b> <b>RAM SPEED</b>	64 GByte/2  DDR5 4800/5600
<b>GRAPHICS</b>	<b>ONBOARD GRAPHICS</b>  <b>GRAPHICS INTERFACES</b>	Intel® UHD Graphics 7xx driven by X <sup>e</sup> Architecture 2x DisplayPort V1.4a up to 8K; 1x eDP V1.4b @4K; 1x Dual Channel (24Bit) LVDS @Full HD
<b>ETHERNET</b>	<b>ONBOARD LAN CONTROLLER</b>  <b>IAMT/VPRO</b>	1x Intel® i219LM 1x Intel® i226LM yes/-
<b>AUDIO</b>	<b>TYPE</b> <b>ONBOARD CONTROLLER</b> <b>BUZZER/SPEAKER</b> <b>S/PDIF HEADER</b>	Stereo Tempo Semiconductor 92HD91B yes/yes -
<b>EXTENSION SLOTS</b>	<b>PCI E X16/X8/X4/X1/PCI</b> <b>MINI-PCI E/MSATA</b> <b>M.2 SSD</b> <b>(PCIe AND/OR SATA)</b> <b>M.2 WLAN (KEY-E)</b>	1 (16 Lanes)/-/-/-/- -/- 1x M.2 2242 (Key-M, PCIe/NVME SSD modules) 1x M.2 2230 (Key-E incl. CNVi)
<b>INTERNAL CONNECTORS</b>	<b>USB PORTS 3.2 GEN2/3.2 GEN1</b> <b>USB PORTS 2.0/STICK SOCKET</b> <b>SATA PORTS/SATA RAID</b> <b>COM PORT INT. HEADER</b> <b>PARALLEL PORT INT. HEADER</b>	-/2 (pin header) -/- -/- 2 -
<b>EXTERNAL CONNECTORS</b>	<b>USB PORTS 3.2 GEN2/3.2 GEN1</b> <b>3.2 GEN2 TYPE C</b> <b>USB PORTS 2.0</b> <b>COM PORTS</b>	3/2 1 2 -
<b>POWER SUPPLY OPTIONS</b>	<b>EXTERNAL SUPPLY</b> <b>INTERNAL SUPPLY</b>	- 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)
<b>ENVIRONMENTAL</b>	<b>OPERATION TEMPERATURE</b>	0 °C - 60 °C
<b>MISCELLANEOUS</b>	<b>FAN SPEED CUSTOMIZING</b> <b>TPM V2.0</b> <b>CHASSIS INTRUSION SUPPORT</b> <b>HW WATCHDOG</b> <b>MISCELLANEOUS</b>	yes yes (Intel®) - yes GPIO (8Bit)

# Industrial Motherboards

## K3833-Q mITX

### Technical Information



### Product Highlights

- ▶ Intel® 12th/13th Gen Core™ Processor Series
- ▶ 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<sup>e</sup> 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

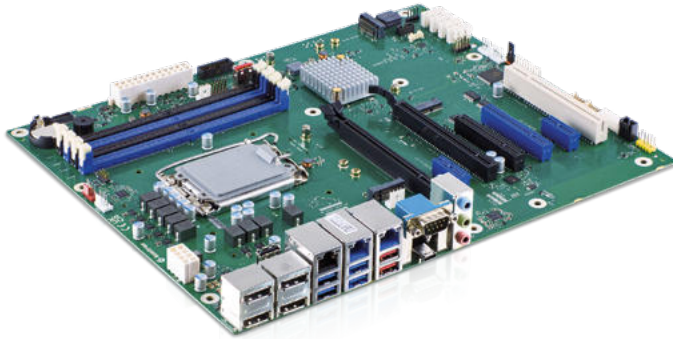
<b>BASEBOARD</b>	<b>DIMENSIONS</b> <b>CHIPSET</b>	6.7" x 6.7" (170 x 170 mm) Intel® Q670E
<b>CPU SUPPORT</b>	<b>PROCESSOR</b>  <b>PROCESSOR SOCKET</b> <b>MAX. PROCESSOR POWER CONSUMPTION (TDP)</b> <b>CPU TDP LIMITING OPTION</b> <b>HIGH EFFICIENCY CORE VOLTAGE REGULATOR</b>	Intel® Core™ 12th/13th Gen Processor Series Intel® LGA1700 65 W TDP  yes yes
<b>MEMORY</b>	<b>MAX. CAPACITY/ NUMBER OF SOCKETS</b> <b>RAM SPEED</b>	64 GByte/2  DDR5 4800/5600
<b>GRAPHICS</b>	<b>ONBOARD GRAPHICS</b>  <b>GRAPHICS INTERFACES</b>	Intel® UHD Graphics 7xx driven by X <sup>e</sup> Architecture 4x DisplayPort V1.4a up to 8K; 1x eDP V1.4b @4K
<b>ETHERNET</b>	<b>ONBOARD LAN CONTROLLER</b>  <b>IAMT/VPRO</b>	1x Intel® i219LM 1x Intel® i226LM yes/-
<b>AUDIO</b>	<b>TYPE</b> <b>ONBOARD CONTROLLER</b> <b>BUZZER/SPEAKER</b> <b>S/PDIF HEADER</b>	5.1 Multich. Tempo Semiconductor 92HD91B yes/yes yes
<b>EXTENSION SLOTS</b>	<b>PCIe X16/X8/X4/X1/PCI</b> <b>MINI-PCIe/MSATA</b> <b>M.2 SSD</b> <b>(PCIe AND/OR SATA)</b> <b>M.2 WLAN (KEY-E)</b>	1 (16 Lanes)/-/-/-/- -/- 1x M.2 2242 (Key-M, PCIe/NVME SSD modules) 1x M.2 2230 (Key-E incl. CNVi)
<b>INTERNAL CONNECTORS</b>	<b>USB PORTS 3.2 GEN2/3.2 GEN1</b> <b>USB PORTS 2.0/STICK SOCKET</b> <b>SATA PORTS/SATA RAID</b> <b>COM PORT INT. HEADER</b> <b>PARALLEL PORT INT. HEADER</b>	-/2 (pin header) -/- 2/yes 1 -
<b>EXTERNAL CONNECTORS</b>	<b>USB PORTS 3.2 GEN2/3.2 GEN1</b> <b>3.2 GEN2 TYPE C</b> <b>USB PORTS 2.0</b> <b>COM PORTS</b>	3/2 1 2 -
<b>POWER SUPPLY OPTIONS</b>	<b>EXTERNAL SUPPLY</b> <b>INTERNAL SUPPLY</b>	- ATX PSU (Multirail); 24-pin socket plus 4-pin socket (12V CPU power connector)
<b>ENVIRONMENTAL</b>	<b>OPERATION TEMPERATURE</b>	0 °C - 60 °C
<b>MISCELLANEOUS</b>	<b>FAN SPEED CUSTOMIZING</b> <b>TPM V2.0</b> <b>CHASSIS INTRUSION SUPPORT</b> <b>HW WATCHDOG</b> <b>MISCELLANEOUS</b>	yes yes (Intel®) yes yes GPIO (8Bit)



### Product Highlights

- Intel® 12th/13th Gen Core™ Processor Series
- 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<sup>e</sup> 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

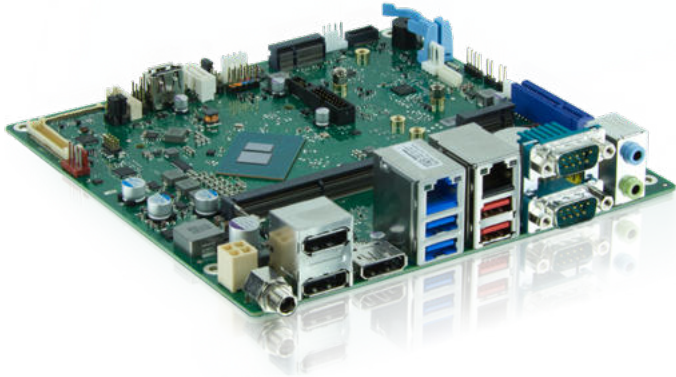
<b>BASEBOARD</b>	<b>DIMENSIONS</b> <b>CHIPSET</b>	9.6" x 9.6" (243.8 x 243.8 mm) Intel® Q670E
<b>CPU SUPPORT</b>	<b>PROCESSOR</b>  <b>PROCESSOR SOCKET</b> <b>MAX. PROCESSOR POWER CONSUMPTION (TDP)</b> <b>CPU TDP LIMITING OPTION</b> <b>HIGH EFFICIENCY CORE VOLTAGE REGULATOR</b>	Intel® Core™ 12th/13th Gen. Processor Series Intel® LGA1700 125 W  yes yes
<b>MEMORY</b>	<b>MAX. CAPACITY/ NUMBER OF SOCKETS</b> <b>RAM SPEED</b>	128 GByte/4  DDR5 4800 non-ECC
<b>GRAPHICS</b>	<b>ONBOARD GRAPHICS</b>  <b>GRAPHICS INTERFACES</b>	Intel® UHD Graphics 7xx driven by X <sup>e</sup> Architecture 4x DisplayPort V1.4ak up to 8K
<b>ETHERNET</b>	<b>ONBOARD LAN CONTROLLER</b>  <b>IAMT/VPRO</b>	1x Intel® i219LM 2x Intel® i225LM yes/-
<b>AUDIO</b>	<b>TYPE</b> <b>ONBOARD CONTROLLER</b> <b>BUZZER/SPEAKER</b> <b>S/PDIF HEADER</b>	5.1 Multich. Tempo Semiconductor 92HD91B yes/yes yes
<b>EXTENSION SLOTS</b>	<b>PCIe X16/X8/X4/X1/PCI MINI-PCIe/MSATA</b> <b>M.2 SSD (PCIe AND/OR SATA)</b>  <b>M.2 WLAN (KEY-E)</b>	2 (16 Lanes/4 Lanes)/-/-/2/-/-/- 2x M.2 2230/2242/2280 (Key-M, PCIe/NVME SSD modules), incl. NVME RAID 1x incl. CNVi
<b>INTERNAL CONNECTORS</b>	<b>USB PORTS 3.2 GEN2/3.2 GEN1</b> <b>USB PORTS 2.0/STICK SOCKET</b> <b>SATA PORTS/SATA RAID</b> <b>COM PORT INT. HEADER</b> <b>PARALLEL PORT INT. HEADER</b>	-/2 (pin header) 2 (pin header)/2 (2.0/3.2 Gen2) 4/yes 3 -
<b>EXTERNAL CONNECTORS</b>	<b>USB PORTS 3.2 GEN2/3.2 GEN1</b> <b>3.2 GEN2 TYPE C</b> <b>USB PORTS 2.0</b> <b>COM PORTS</b>	2/4 1 - 1
<b>POWER SUPPLY OPTIONS</b>	<b>EXTERNAL SUPPLY</b> <b>INTERNAL SUPPLY</b>	- ATX PSU (Multirail)
<b>ENVIRONMENTAL</b>	<b>OPERATION TEMPERATURE</b>	0 °C - 60 °C
<b>MISCELLANEOUS</b>	<b>FAN SPEED CUSTOMIZING</b> <b>TPM V2.0</b> <b>CHASSIS INTRUSION SUPPORT</b> <b>HW WATCHDOG</b> <b>MISCELLANEOUS</b>	yes yes (Intel®) + TPM Socket yes yes GPIO (8Bit)



### Product Highlights

- Intel® 12th/13th Gen Core™ Processor Series
- 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<sup>e</sup> 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

<b>BASEBOARD</b>	<b>DIMENSIONS</b> <b>CHIPSET</b>	9.6" x 12" (243.8 x 304.8 mm) Intel® R680E
<b>CPU SUPPORT</b>	<b>PROCESSOR</b>  <b>PROCESSOR SOCKET</b> <b>MAX. PROCESSOR POWER CONSUMPTION (TDP)</b> <b>CPU TDP LIMITING OPTION</b> <b>HIGH EFFICIENCY CORE VOLTAGE REGULATOR</b>	Intel® Core™ 12th/13th Gen Processor Series Intel® LGA1700 125 W TDP  yes yes
<b>MEMORY</b>	<b>MAX. CAPACITY/ NUMBER OF SOCKETS</b> <b>RAM SPEED</b>	128 GByte/4  DDR5 4800 ECC Option
<b>GRAPHICS</b>	<b>ONBOARD GRAPHICS</b>  <b>GRAPHICS INTERFACES</b>	Intel® UHD Graphics 7xx driven by X <sup>e</sup> Architecture 4x DisplayPort V1.4a up to 8K Optional VGA-Extension D3653
<b>ETHERNET</b>	<b>ONBOARD LAN CONTROLLER</b>  <b>IAMT/VPRO</b>	1x Intel® i219LM 2x Intel® i225LM yes/-
<b>AUDIO</b>	<b>TYPE</b> <b>ONBOARD CONTROLLER</b> <b>BUZZER/SPEAKER</b> <b>S/PDIF HEADER</b>	5.1 Multich. Tempo Semiconductor 92HD91B yes/yes yes
<b>EXTENSION SLOTS</b>	<b>PCIe X16/X8/X4/X1/PCI</b> <b>MINI-PCIe/MSATA</b> <b>M.2 SSD (PCIe AND/OR SATA)</b>  <b>M.2 WLAN (KEY-E)</b>	2 (16 Lanes/4 Lanes)/2/-/2/1 -/- 2x M.2 2230/2242/2280 (Key-M, PCIe/NVME SSD modules), incl. NVME RAID 1x incl. CNVi
<b>INTERNAL CONNECTORS</b>	<b>USB PORTS 3.2 GEN2/3.2 GEN1</b> <b>USB PORTS 2.0/STICK SOCKET</b> <b>SATA PORTS/SATA RAID</b> <b>COM PORT INT. HEADER</b> <b>PARALLEL PORT INT. HEADER</b>	-/1 1/2 (2.0/3.2 Gen2) 4/yes 3 -
<b>EXTERNAL CONNECTORS</b>	<b>USB PORTS 3.2 GEN2/3.2 GEN1</b> <b>3.2 GEN2 TYPE C</b> <b>USB PORTS 2.0</b> <b>COM PORTS</b>	2/4 1 - 1
<b>POWER SUPPLY OPTIONS</b>	<b>EXTERNAL SUPPLY</b> <b>INTERNAL SUPPLY</b>	- ATX PSU (Multirail)
<b>ENVIRONMENTAL</b>	<b>OPERATION TEMPERATURE</b>	0 °C - 60 °C
<b>MISCELLANEOUS</b>	<b>FAN SPEED CUSTOMIZING</b> <b>TPM V2.0</b> <b>CHASSIS INTRUSION SUPPORT</b> <b>HW WATCHDOG</b> <b>MISCELLANEOUS</b>	yes yes (Intel®) + TPM Socket yes yes yes GPIO (8 Bit); PCI Slot



### 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<sup>e</sup> 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)

<b>BASEBOARD</b>	<b>DIMENSIONS</b> <b>CHIPSET</b>	6.7" x 6.7" (170 x 170 mm) Intel® Alder Lake-N SoC
<b>CPU SUPPORT</b>	<b>PROCESSOR</b>	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 N6 only yes
	<b>PROCESSOR SOCKET</b> <b>MAX. PROCESSOR</b> <b>POWER CONSUMPTION (TDP)</b>	
	<b>CPU TDP LIMITING OPTION</b> <b>HIGH EFFICIENCY CORE</b> <b>VOLTAGE REGULATOR</b>	
<b>MEMORY</b>	<b>MAX. CAPACITY/ NUMBER OF SOCKETS</b> <b>RAM SPEED</b>	32 GByte/1  DDR5 4800
<b>GRAPHICS</b>	<b>ONBOARD GRAPHICS</b> <b>GRAPHICS INTERFACES</b>	Intel® Gen12 UHD Graphics 3x DisplayPort, Dual Channel LVDS, eDP (4Lanes 40pin))
<b>ETHERNET</b>	<b>ONBOARD LAN CONTROLLER</b>	1x Intel® i226 1x Realtek RTL8111H
	<b>IAMT/VPRO</b>	-/-
<b>AUDIO</b>	<b>TYPE</b> <b>ONBOARD CONTROLLER</b> <b>BUZZER/SPEAKER</b> <b>S/PDIF HEADER</b>	Stereo Realtek ALC256 yes/yes yes
<b>EXTENSION SLOTS</b>	<b>PCIe X16/X8/X4/X1/PCI</b> <b>MINI-PCIe/MSATA</b> <b>M.2 SSD</b> <b>(PCIe AND/OR SATA)</b>	-/-/1 (1 lane)/-/- -/- 1x M.2 2230/2242/2280 (Key-M, 2x PCIe, NVMe) 1x M.2 2242/2280 (Key-B, 1x PCIe, SATA) 1x M.2 Key-E (CNVi, USB)
	<b>M.2 WLAN (KEY-E)</b>	
<b>INTERNAL CONNECTORS</b>	<b>USB PORTS 3.2 GEN2/3.2 GEN1</b> <b>USB PORTS 2.0/STICK SOCKET</b> <b>SATA PORTS/SATA RAID</b> <b>COM PORT INT. HEADER</b> <b>PARALLEL PORT INT. HEADER</b>	1 (pin header)/2 (pin header) 3 (pin headers)/1 1/- 2 -
<b>EXTERNAL CONNECTORS</b>	<b>USB PORTS 3.2 GEN2/3.2 GEN1</b> <b>3.2 GEN2 TYPE C</b> <b>USB PORTS 2.0</b> <b>COM PORTS</b>	2/2 - - 2
<b>POWER SUPPLY OPTIONS</b>	<b>EXTERNAL SUPPLY</b> <b>INTERNAL SUPPLY</b>	8 V - 34 V
<b>ENVIRONMENTAL</b> <b>MISCELLANEOUS</b>	<b>OPERATION TEMPERATURE</b> <b>FAN SPEED CUSTOMIZING</b> <b>TPM V2.0</b> <b>CHASSIS INTRUSION SUPPORT</b> <b>HW WATCHDOG</b> <b>MISCELLANEOUS</b>	0 °C - 60 °C yes yes (Intel®) yes yes MS Windows 11, No Legacy OS Support, 4x COM (1x incl. RS-232/-422/-485 Support, 1x cTalk), GPIO



## ▶ 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

- Highly convenient tiny industrial Box
- Perfect fit for mini-STX motherboard D3544-S
- Small Size (36 x 146,9 x 164 mm)
- Support for fanless operation
- Comprehensive certification and test reports on system level (e.g. CE, climatics)
- Stand for vertical/horizontal positioning
- VESA mounting
- Wall mount brackets
- Comprehensive accessories (optional):
  - Antennas for inside front bezel
  - Speaker for inside front bezel
  - Cable for USB-Type C

<b>CHASSIS DATA</b>	<b>FORMFACTOR DIMENSIONS</b>	Mini-STX 36 x 147 x 165 mm (W x H x D) 0.87 l black ~ 0.4 kg
<b>CPU SUPPORT</b>	<b>PROCESSOR SOCKET</b>	Intel® BGA
<b>SUPPORTED MOTHERBOARDS</b>		D3544-S1, D3544-S2, D3544-S3
<b>ENVIRONMENTAL CONDITIONS</b>	<b>OPERATING TEMPERATURE</b>	Passive heatsink (fanless): 0 °C - 40 °C* Active heatsink (with Fan): 0 °C - 50 °C*
	<b>HUMIDITY</b>	5 % - 85 %
<b>CHASSIS/ SYSTEM FAN SPECIFICATION</b>	<b>MTBF</b>	-
	<b>OPERATING TEMPERATURE</b>	-
<b>REQUIREMENTS FOR AC ADAPTER</b>	<b>DC INPUT</b>	8-24 V +/- 5 %
	<b>DC PLUG</b>	Ø 2.5 mm/5.5 mm
<b>APPROVALS &amp; CERTIFICATIONS</b>	<b>CE CLASS B INDUSTRIAL IMMUNITY</b>	yes
	<b>FCC CLASS B (VERIFIED)</b>	yes
<b>CHASSIS FEATURES</b>	<b>EMC THEFT PROTECTION</b>	Kensington lock support
	<b>MOUNTING OPTIONS</b>	Internal WLAN antenna kit (2 antennas - integrated in chassis front) Rear COM port (incl. RS-232, RS-422, RS-485) Rear USB Type-C connector (USB 3.1 gen1) Wall Mount Kit, VESA Kit, DC-In Holder

\*Chassis ambient temperature; upper limit depends on system configuration



### 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

<b>CHASSIS DATA</b>	<b>FORMFACTOR DIMENSIONS</b>	Mini-STX 36 x 147 x 165 mm (W x H x D) 0.87 L black ~ 0.4 kg
<b>CPU SUPPORT</b>	<b>PROCESSOR SOCKET</b>	AMD® BGA
<b>SUPPORTED MOTHERBOARDS</b>		D3714-R, D3724-R, D3714-V
<b>ENVIRONMENTAL CONDITIONS</b>	<b>OPERATING TEMPERATURE HUMIDITY</b>	-10 °C ... +40 °C* 5 % - 85 %
<b>CHASSIS/ SYSTEM FAN SPECIFICATION</b>	<b>MTBF OPERATING TEMPERATURE</b>	no chassis fan Passive heatsink (fanless): -10 °C ... +40 °C (max. 10 W TDP, vertical position) Active heatsink (with Fan): -10 °C ... +40 °C (up to 25 W TDP)
<b>REQUIREMENTS FOR AC ADAPTER</b>	<b>DC INPUT DC PLUG</b>	12 V +/-10 %/19-28 V +/-10 %/-15 % Ø 2.5 mm/5.5 mm
<b>APPROVALS &amp; CERTIFICATIONS</b>	<b>CE CLASS B INDUSTRIAL IMMUNITY FCC CLASS B (VERIFIED)</b>	yes yes yes
<b>CHASSIS FEATURES</b>	<b>EMC THEFT PROTECTION MOUNTING OPTIONS</b>	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)

\*Chassis ambient temperature; upper limit depends on system configuration



### Product Highlights

- Highly convenient tiny industrial Box
- Perfect fit for mini-STX motherboard D3654-B & D3664-B
- Small Size (36 x 146,9 x 164 mm)
- Comprehensive certification and test reports on system level (e.g. CE, climatics)
- Stand for vertical/horizontal positioning
- VESA mounting
- Wall mount brackets
- Antennas for inside front bezel

<b>CHASSIS DATA</b>	<b>FORMFACTOR DIMENSIONS</b>	Mini-STX 36 x 147 x 165 mm (W x H x D) 0,87 l black ~ 0.4 kg
<b>CPU SUPPORT</b>	<b>PROCESSOR SOCKET</b>	Intel® LGA
<b>SUPPORTED MOTHERBOARDS</b>		D3654-B, D3664-B
<b>ENVIRONMENTAL CONDITIONS</b>	<b>OPERATING TEMPERATURE HUMIDITY</b>	0 °C - 40 °C* 5 % - 85 %
<b>CHASSIS/ SYSTEM FAN SPECIFICATION</b>	<b>MTBF OPERATING TEMPERATURE</b>	- -
<b>REQUIREMENTS FOR AC ADAPTER</b>	<b>DC INPUT DC PLUG</b>	19 V +10 %/-15 % Ø 2.5 mm/5.5 mm
<b>APPROVALS &amp; CERTIFICATIONS</b>	<b>CE CLASS B INDUSTRIAL IMMUNITY FCC CLASS B (VERIFIED)</b>	yes yes yes
<b>CHASSIS FEATURES</b>	<b>EMC THEFT PROTECTION MOUNTING OPTIONS</b>	Kensington lock support Internal WLAN antenna kit (2 antennas - integrated in chassis front) Wall Mount, VESA Kit, DC-in holder

\*Chassis ambient temperature; upper limit depends on system configuration



### Product Highlights

- Highly flexible Industrial Box
- Perfect fit for mini-ITX motherboard D3543-S
- Small Size (250 x 52 x 191 mm)
- Large expandability for
  - 2.5" hard disc drive (SSD/HDD)
  - Low profile PCI/PCIe card
  - graphics card
- Support for fanless operation
- Comprehensive certification and test reports on system level (e.g. CE, climatics)
- Stand for vertical/horizontal positioning
- Wall mount brackets

<b>CHASSIS DATA</b>	<b>FORMFACTOR DIMENSIONS</b>	Mini-ITX 250 x 52 x 191 mm (W x H x D) 2.48 l satin black ~ 1 kg
<b>CPU SUPPORT</b>	<b>PROCESSOR SOCKET</b>	Intel® BGA
<b>SUPPORTED MOTHERBOARDS</b>		D3543-S1, D3543-S2, D3543-S3
<b>ENVIRONMENTAL CONDITIONS</b>	<b>OPERATING TEMPERATURE</b>	Passive heatsink (fanless): 0 °C – 35 °C* Active heatsink (with Fan): 0 °C – 50 °C* <b>HUMIDITY</b> 5 % - 85 %
<b>CHASSIS/ SYSTEM FAN SPECIFICATION</b>	<b>MTBF OPERATING TEMPERATURE</b>	70.000 hours @ 40 °C PWM (4 pin), 40 x 40 x 10mm 900 – 5.000 rpm (nominal) Two ball bearing
<b>REQUIREMENTS FOR AC ADAPTER</b>	<b>DC INPUT DC PLUG</b>	8-24 V +/- 5 % Ø 2.5 mm/5.5 mm
<b>APPROVALS &amp; CERTIFICATIONS</b>	<b>CE CLASS B INDUSTRIAL IMMUNITY FCC CLASS B (VERIFIED)</b>	yes yes yes
<b>CHASSIS FEATURES</b>	<b>EMC THEFT PROTECTION</b>	Two front USB ports Kensington lock support Mechanical lock for DC-In connector Intrusion Support <b>MOUNTING OPTIONS</b> WLAN antenna via (RP-) SMA connector PCIe riser (PCIe x4, low profile) Two rear COM ports (COM3, COM4); one port incl. RS-232, RS-422, RS-485

\*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 motherboard D3713-V/R & D3723-R
- 250 x 52 x 191 mm
- Low Profile Extension Slot
- Option for Internal 65W PSU Module
- Horizontal and Vertical Stand plus Wall Mount Bracket

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

\*Chassis ambient temperature; upper limit depends on system configuration



### 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	<b>FORMFACTOR DIMENSIONS</b>  <b>COLOUR WEIGHT</b>	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	<b>OPERATING TEMPERATURE HUMIDITY</b>	0 °C – 45 °C* 5 % - 85 %
CHASSIS/SYSTEM FAN SPECIFICATION	<b>MTBF OPERATING TEMPERATURE</b>	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	<b>DC INPUT DC PLUG</b>	12 V +/- 5 % 5.5 x 2.5 x 12 mm Lockable DC Plug (optional)
APPROVALS & CERTIFICATIONS	<b>CE CLASS B INDUSTRIAL IMMUNITY FCC CLASS B (VERIFIED)</b>	yes yes yes
CHASSIS FEATURES	<b>EMC THEFT PROTECTION</b>  <b>MOUNTING OPTIONS</b>	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) 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 motherboard K3931-N
- 250 x 52 x 191 mm
- 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

<b>CHASSIS DATA</b>	<b>FORMFACTOR DIMENSIONS</b>	Mini-ITX 250 x 52 x 191 mm (W x H x D) 2.48 l satin black ~ 1 kg
<b>CPU SUPPORT</b>	<b>PROCESSOR SOCKET</b>	Intel® BGA
<b>SUPPORTED MOTHERBOARDS</b>		K3931-N
<b>ENVIRONMENTAL CONDITIONS</b>	<b>OPERATING TEMPERATURE HUMIDITY</b>	0 °C – 40 °C* 5 % - 85 %
<b>CHASSIS/ SYSTEM FAN SPECIFICATION</b>	<b>MTBF OPERATING TEMPERATURE</b>	70.000 hours @ 40 °C PWM (4 pin), 40 x 40 x 10 mm 900 – 5.000 rpm (nominal) Two ball bearing
<b>REQUIREMENTS FOR AC ADAPTER</b>	<b>DC INPUT DC PLUG</b>	8 V-34 V (5 A max./65 W max.) Ø 2.5 mm/5.5 mm
<b>APPROVALS &amp; CERTIFICATIONS</b>	<b>CE CLASS B INDUSTRIAL IMMUNITY FCC CLASS B (VERIFIED)</b>	yes yes yes
<b>CHASSIS FEATURES</b>	<b>EMC THEFT PROTECTION</b>	Two front USB ports Kensington lock support Mechanical lock for DC-In connector Intrusion Support
	<b>MOUNTING OPTIONS</b>	WLAN antenna via (RP-) SMA connector PCIe riser (PCIe x4, low profile) 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

**SERIAL PORT CABLE**

#### Compatibility

all mSTX & mITX models

refer to data sheet

### COOLING SOLUTIONS



**ACTIVE COOLER**  
(alu cooler, 4 pin PWM fan)



**PASSIVE HEATSINK**  
(alu heatsink)

#### Compatibility

D3543-S1/S2/S3 mITX  
D3544-S1/S2/S3 mSTX  
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

D3543-S1/S2/S3 mITX  
D3544-S1/S2/S3 mSTX  
D3713-V/R mITX  
D3723-R mITX  
D3714-V/R mSTX

### 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  
D3543-S mITX  
suitable for SMARTCASE™ S7xx Series

### GRAPHICS



**DISPLAY PORT TO DVI ADAPTER**  
for usage of DVI monitor on Display Port output

#### Compatibility

all models with DP



**D3653-A VGA ADDON CARD**

D3642-B µATX  
D3644-B µATX  
D3641-S µATX  
D3646-S ATX  
K3851-R ATX

### OTHER



**D3627-A**  
TPM-Upgrade-Modul

#### Compatibility

D3713-V/R mITX  
D3723-R mITX

**D3352-A2x**  
M.2 Upgrade Module

D3598-B/G ATX

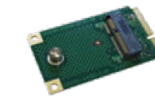
**D3352-A1x**

All motherboards providing a PCIe x8 or x16 slot (≥ 4 lanes)



**19 V AC ADAPTER**  
65 W

D3543-S mITX  
D3544-S mSTX  
D3674-B mITX  
D3654-B mSTX  
D3664-B mSTX  
D3713-V/R mITX  
D3723-R mITX  
K3931-N mITX  
D3714-V/R mSTX  
D3724-R mSTX



**D3436-S**  
Adapter for Mini PCIe to M.2 Wi-Fi modules

All industrial models with a fullsize Mini PCIe socket



**20 V AC ADAPTER**  
120 W

D3713-V/R mITX  
D3723-R mITX  
K3931-N mITX



**12 V INTEGRATED POWER SUPPLY**  
65 W

D3543-S mITX  
D3633-S mITX  
D3634-S mITX  
D3713-V/R mITX  
D3723-R mITX  
K3931-N mITX





## About Kontron

Kontron is a global leader in IoT/Embedded Computing Technology (ECT) and offers individual solutions in the areas of Internet of Things (IoT) and Industry 4.0 through a combined portfolio of hardware, software and services. With its standard and customized products based on highly reliable state-of-the-art technologies, Kontron provides secure and innovative applications for a wide variety of industries. As a result, customers benefit from accelerated time-to-market, lower total cost of ownership, extended product lifecycles and the best fully integrated applications.

For more information, please visit: [www.kontron.com](http://www.kontron.com)

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