

IMP-3836-E

Mini-PC based on Mini-ITX

w. Direct Single 12V PSU ("DC In") Option



Mini-ITX Motherboard

with

Industrial grade chassis for Mini-ITX motherboard

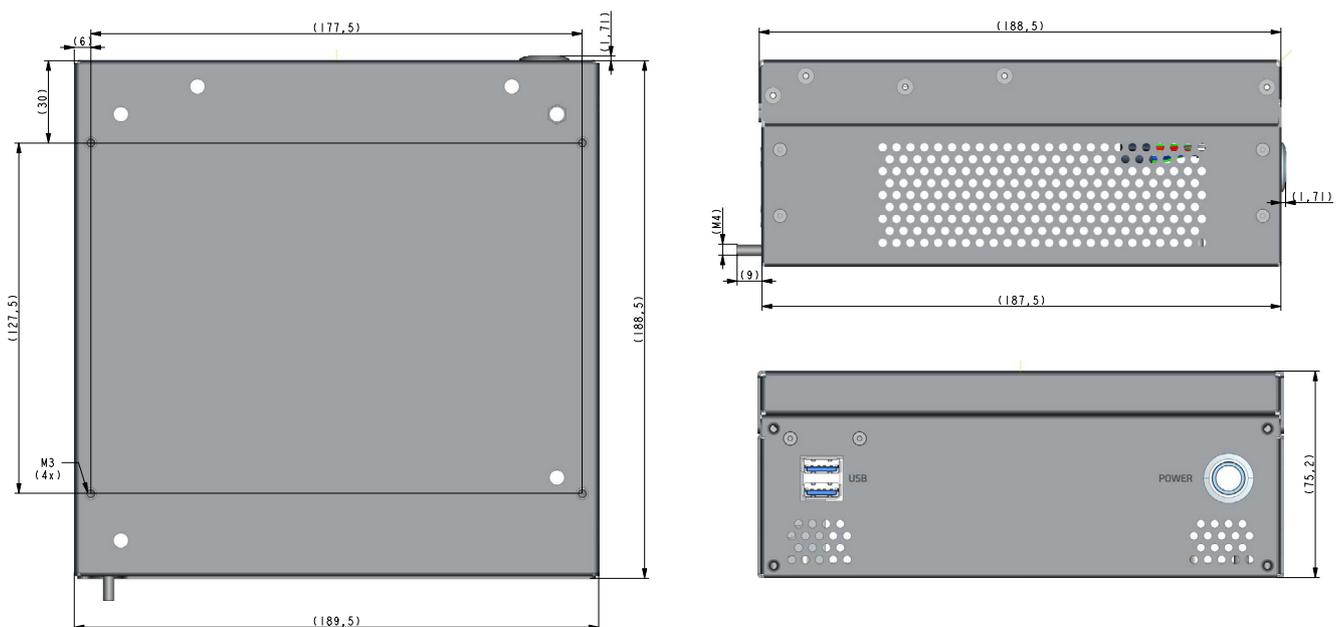
- Compact Design (190 x 75.2 x 189 mm)
- Dual Front USB Type-A connectors
- Active cooling up to 35W TDP
- Drive bay for 2x 2.5" SSD
- Optional/Removable Front Panel mounting option

Technical Information

CHASSIS DATA	DIMENSIONS COLOUR WEIGHT	190 x 75.2 x 189* mm (W x H x D) black ~ 1 kg
SUPPORTED MOTHERBOARDS		D3713-V/R, D3723-R, K3831-H, K3836-Q/R, K3931-N, K4031-H, K4131-P
ENVIRONMENTAL CONDITIONS	OPERATING TEMPERATURE	Passive heatsink (fanless): -40 °C ... +40 °C (max. 15W TDP. Depends on cooling solution)**
REQUIREMENTS FOR AC ADAPTER	HUMIDITY	Active heatsink (with Fan): -40 °C ... +45 °C (max. 35 W TDP)**
	DC OUTPUT	5 % - 85 % relative humidity (non-condensing) Chassis DC-IN option: 12V (12.5A max. / 150W max.)
APPROVALS & CERTIFICATIONS	DC OUTPUT PLUG	IO-Shield DC-IN option: Check datasheet of related motherboard. Ø 2.5 mm/5.5 mm
	EMC	Validated according CE Class B, Industrial Immunity (EN 61000-6-2) approved, Safety Testreport according IEC62368-1
PACKAGE CONTENT	SAFETY	
		Chassis bottom/top cover incl. 2x 2.5" drive holder Dual front USB 3.2 Gen1 wire harness Industrial grade Power Button with LED DC input connector with internal cabling for ATX Multirail connector for 12V-DCIN option (K3836-Q/R). 2x SATA Power connector on internal cabling. Motherboard mounting screws
CHASSIS FEATURES	THEFT PROTECTION	Kensington lock support Screw-on DC-In connector
	MOUNTING OPTIONS	WLAN antenna via (RP-) SMA connector (2x on left side) Aperture for additional COM port or Phoenix power connector (DB9 size) 2.5" Drive (HDD/SSD) Optional/removable Front Panel

*) 197 mm with grounding bolt
**) Chassis ambient temperatur

Chassis Dimensions



Chassis Front View

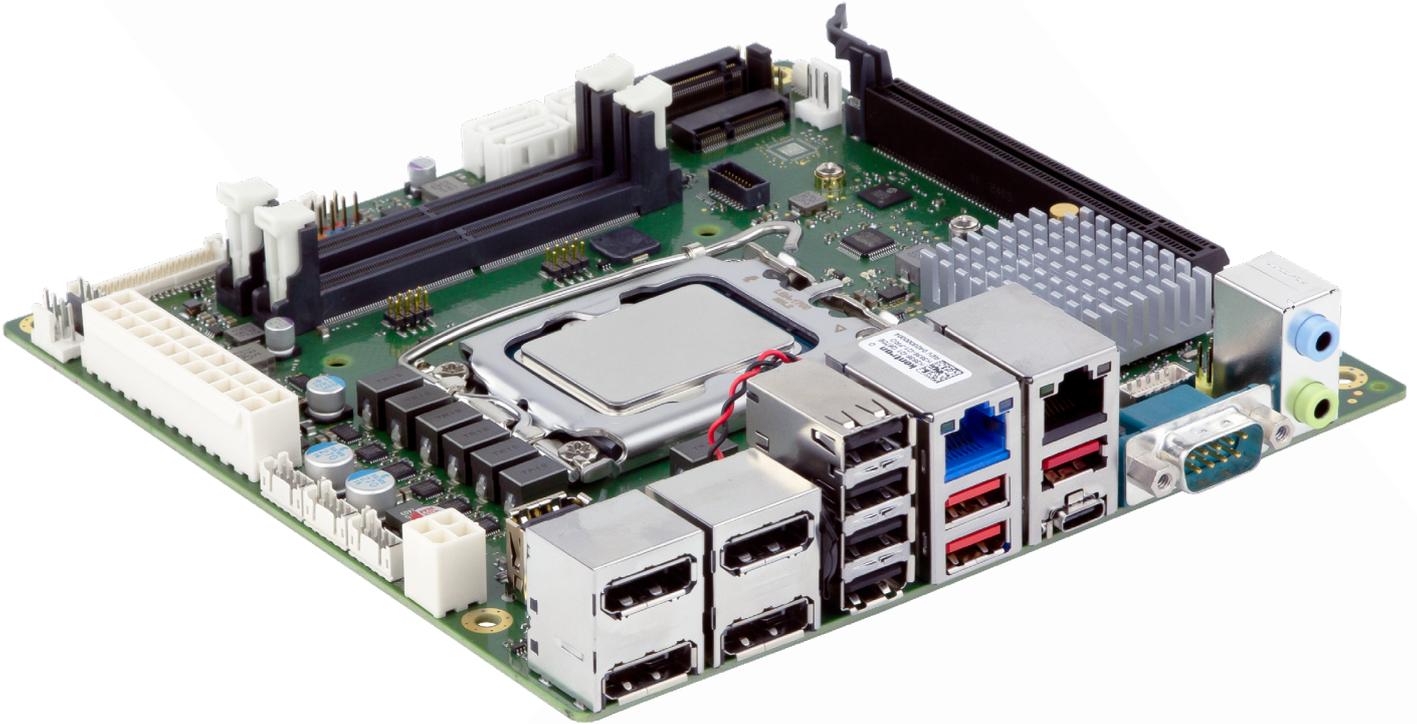
Chassis prepared for optional features



Chassis Side/Rear View

Chassis prepared for optional features





Intel® Q670/R680E Chipset and Intel® Core™ Processors (14th Gen/Series 2)

- ▶ Latest DDR5 memory technology for best-in-class system performance
- ▶ Intel® UHD Graphics 7xx driven by Xe Architecture; DPP-, eDP-, and LVDS- support
- ▶ Dual LAN 1GbE/2.5GbE incl. Teaming and TSN support
- ▶ M.2 Key-M & Key-E; Powerful USB 3.2 Gen2
- ▶ Combined ATX Standard PSU or Single 12V Supply

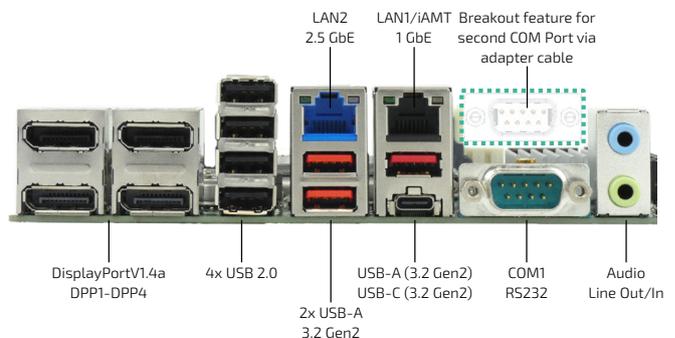
K3836-Q/R mITX Industrial Series

The K3836 mITX motherboard is the successor to the prosperous D3633-S. It combines the proven functionality of its popular forerunner with the latest Intel® Core™ processor generation and latest standards. Developed and produced in Germany, this motherboard offers two configuration options: The K3836-R is equipped with the high-performance Intel® R680E chipset with ECC support for mission-critical applications. The K3836-Q has

the equally powerful Q670 chipset onboard. Unleash unparalleled connectivity with the K3836, featuring 2x Intel® LAN (1x 2.5 GbE), PCIe x16 Gen5, multiple USB ports, M.2 or Display Ports supporting graphics up to 8K resolutions and much more. It is particularly reliable thanks to 24/7 continuous operation at temperatures up to 60° C. Therefore, it can be used for various applications in the fields of industry, medicine, infotainment and more.

- Intel® Core™ processor series (12th/13th/14th Gen./Series 2)
- 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)
- 4x SATA 6G incl. RAID support
- BIOS-POST/-Boot & OS – HW Watchdog onboard



Technical Information

SYSTEM	PROCESSOR	Intel® Core™ processor series i9/i7/i5/i3 (12th, 13th, 14th gen) Intel® Core™ Processors Series 2 (Bartlett Lake-S ⁶) Intel® Pentium®/Intel® Celeron® processor series Socket LGA1700, max. 65 W TDP (For details on supported processors please refer to Kontron FTP Server) K3836-Q: Intel® Q670 K3836-R: Intel® R680E
	CHIPSET	K3836-Q: Intel® Q670 K3836-R: Intel® R680E
	MEMORY	2 SODIMM Sockets DDR5-4800/5600 ¹ , max. 96 GByte, Dual Channel unbuffered
	MEMORY ECC SUPPORT	ECC supported by K3836-R with R680E only
VIDEO	GRAPHICS	Intel® UHD Graphics 7xx (depends on installed processor), 4x DisplayPort™ V1.4a up to 8K; 1x Embedded DP (eDP V1.4b up to 4K resolution) 1x Dual Channel LVDS (24 bit) Following max. display combinations are supported ² : 4x DP, 3x DP + eDP, 3x DP + LVDS
AUDIO	AUDIO CODEC AUDIO INTERFACE	Realtek ALC256 High Definition Stereo Audio Codec ³
NETWORK CONNECTION	ETHERNET 1	Intel® i219LM with 10/100/1000 MBit/s, iAMT features, Wake-on-LAN (WoL) by interesting Packets, Link Status Change and Magic Packet™, PXE Support, BIOS MAC Address Display, Teaming Support
	ETHERNET 2	Intel® i226LM with 10/100/1000/2500 MBit/s, TSN Support, Wake-on-LAN (WoL) by interesting Packets, Link Status Change and Magic Packet™, PXE Support, BIOS MAC Address Display, Teaming Support
PERIPHERAL CONNECTION	USB	Rear I/O: 3x USB 3.2 Gen2 (Type-A), 1x USB 3.2 Gen 2 (Type-C), 4x USB 2.0 (Type-A) Internal: 2x USB 3.2 Gen2 (Key-B header), 2x USB 2.0 (by header), 1x USB 2.0 Stick socket
	SERIAL PORT OTHER I/Os	1x RS232/422/485, 3x RS232 (1x rear I/O, 3x by headers) ⁴ 8 Bit GPIO (Input/Output); WLAN LED support, WLAN enable/disable support 3.3 V/5 V/12 V supply voltage output; SMBus controller PCA9554A
STORAGE & EXPANSION	SATA M.2 PCIe/NVME M.2 WIRELESS PCIe/PCI SLOTS	4x Serial ATA III 600 Interface (up to 6GBit/s), NCQ, AHCI, RAID 0/1/5/10 1x M.2 2242/2280 (Key-M, PCIe/NVME SSD modules) 1x M.2 2230 (Key-E, WLAN/Bluetooth modules, PCIe + USB) PCIe x16: 1x 16 lanes, Gen5 ⁵ , Support for lane split (x16 or x8+x8)

¹⁾ Support for DDR5-5600 requires Intel® Core™ i7 or i9 processor (13th gen) and single rank SO-DIMM modules

²⁾ Simultaneous use of LVDS and eDP is not supported.

³⁾ 5.1 surround sound is supported via DisplayPort or S/PDIF

⁴⁾ COM1 (Rear I/O), COM3 and COM4 (by header): Full RS232 feature support
COM2 (by header): RS232/RS422/RS485 feature support

⁵⁾ PCIe x16 slot: Gen5 ready

⁶⁾ BIOS revision R2.20.0 or later is required to support Intel Bartlett Lake-S processors.

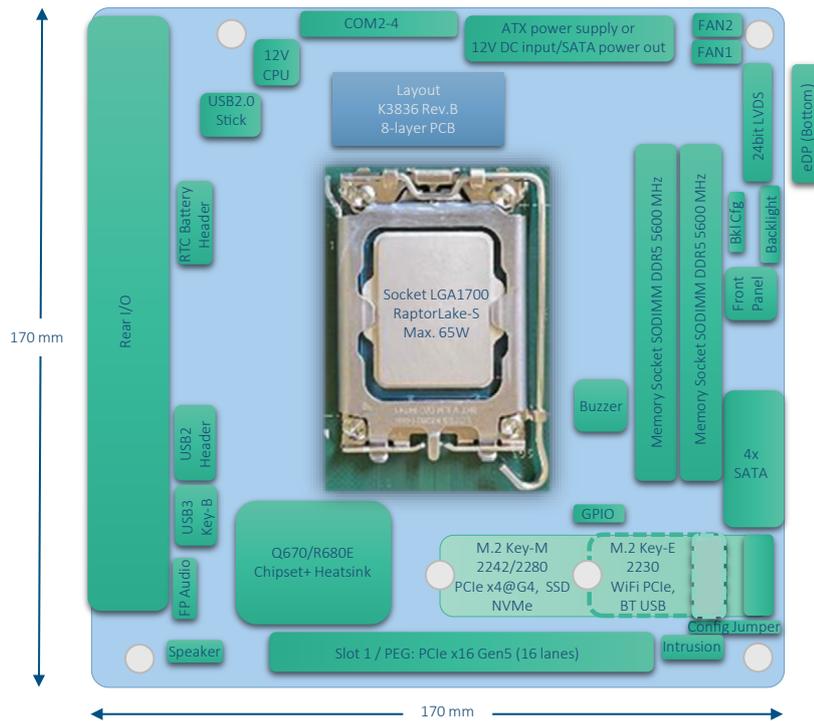
POWER	INPUT VOLTAGE CONNECTOR	Dual supply option: Single 12 V PSU ("DC In") or Standard ATX Multirail PSU 24-pin ATX socket plus 4-pin socket for CPU
FIRMWARE	BIOS	AMI Aptio 5.x (UEFI) BIOS modified and adapted by Kontron; Recovery BIOS, SM-BIOS (DMI), BIOS and CPU Microcode Update, Quick Boot, Logo Boot, Quiet Boot, Plug & Play, Automatic DRAM and PCIe Configuration, BIOS Support for S.M.A.R.T., Advanced Power Management, ACPI S3/S4, Modern Standby S0ix, Wake on time from S5. No legacy OS support, no MBR installation (UEFI only) BIOS POST-/BIOS BOOT-/OS-HW Watchdog Integrated TPM V2.0 (Intel® integrated)
SYSTEM CONTROL	WATCHDOG REAL TIME CLOCK TPM	
SOFTWARE	FP HEADER SECURITY	1x Intel compliant header for Power and Reset button, Power LED and HDD LED Recovery BIOS, System and BIOS Password, Boot Sequence Control, Serial/USB- Port Access Protection, Write Protection for Flash BIOS, EraseDisk (BIOS Feature), Trusted Platform Module (TPM)
MECHANICAL	DIMENSIONS (L x W)	Mini-ITX: 6.7" x 6.7" (170 x 170 mm)
ENVIRONMENTAL	OPERATION TEMPERATURE	0 °C - 60 °C
CERTIFICATION	EMC & SAFETY	cTÜVus acc. IEC62368-1, CE Class B incl. Industrial Immunity, UKCA, FCC-B verified
SOFTWARE	OS SUPPORT	MS Windows® 10, MS Windows® 10 IoT (LTSC), MS Windows® 11, MS Windows® 11 IoT (LTSC), Linux 64 Verified with MS Windows® Server 2022 and 2025 ¹⁾ No legacy OS support, no MBR installation (UEFI only)

¹⁾ MS Windows Server 2022 requires Intel® Raptor Lake-S Refresh P-Core only CPU and R680 chipset
MS Windows Server 2025 requires Intel® Bartlett Lake 12P CPU and R680E chipset

Power Supply Requirements

SOURCE	VOLTAGE	MIN. PS LOAD	MAX. VOLTAGE TOLERANCE	MOTHERBOARD CAPACITIVE LOAD	MOTHERBOARD MAX. CURRENT (continuous)*
Main Power Supply (Multirail PSU)	+ 12 V	0.05 A	± 5 %	1.900 µF	10 A
	- 12 V	n.a.	n.a.	-	Not used
	+ 5 V	0.2 A	± 5 %	1800 µF	4.5 A
	+ 3.3 V	0 A	± 5 %	500 µF	0.5 A
	+ 5 Vaux	0 A	± 5 %	1800 µF	2.5 A
Single 12V DC	+ 12 V	0 A	± 5 %	1.900 µF	13 A

*) Max. motherboard input current incl. processor and DRAM memory. Additional power for drives, USB devices, PCIe cards, eDP etc. is not included!
Note: BIOS provides option to reduce CPU TDP/Turbo power in order to use PSU with limited loadability.
Processor 65 W TDP: Max. Cont. Current < 13 A; max. Surge Current = 19 A (full Turbo Mode)
Processor 35 W TDP: Max. Cont. Current < 8 A; max. Surge Current = 13 A (full Turbo Mode)



Technical Details

FEATURES	Board Size / Chipset VGA / DVI / DP / LVDS / eDP Stereo Audio / 5.1 Multichannel Audio / Front Panel Audio Buzzer / int Speaker Support Mono / Stereo GbE LAN / 2.5GbE LAN / Dual 2.5GbE LAN WoL / LAN Boot / Teaming / TSN Intel® Standard Manageability / iAMT / vPro SATA / SATA RAID / M.2 SSD (NVME) / NVME RAID USB 2.0 / USB 3.2 Gen1 / USB 3.2 Gen2 / USB 3.2 Type-C FAN controlled & monitored CPU / AUX1 / AUX2 / AUX3 TEMP monitored CPU / Onboard Sensors / External Sensor	Mini-ITX / Q670 or R680E - / - / + / + / + + / - / + + / - / + + / + / - + / + / + / + + / + / - + / + / + / + + / - / + / + + / + / - / - + / + / -
SPECIAL FEATURES	Silent Fan / System Guard / cTDP Recovery BIOS / Flash Update / Multi Boot HDD Password / EraseDisk / TPM V2.0 BIOS POST Watchdog / BIOS Boot Watchdog / OS HW Watchdog Logo Boot Option High Efficiency Core Voltage Regulator Design Operating Mode 24-7 / 8-5 (hrs per day - days per week) Motherboard operating temperature range (chassis inside) ¹	+ / + / + + / + / + + / + / + + / + / + + + + / - 0 °C – 60 °C
INTERNAL CONNECTORS	SODIMM Sockets (DDR5-4800/5600) / ECC-Support PCI Express® x16: 16 lanes - Gen5 / Support for lane split (x16 or x8+x8) SATA-600 / M.2 Key-M (NVME SSD) / M.2 Key-B M.2 2230 (Key-E, PCIe & USB2.0 for WLAN/Bluetooth) S/PDIF (digital Audio) OUT / IN Front Panel Audio (9-Pin, HD Audio) USB 2.0 / USB 3.2 (Gen2) / USB 2.0 Stick / USB 3.2 (Gen2) Stick ³ Fan CPU / AUX1 / AUX2 / AUX3 Intrusion (Case Open) / GPIO (8 Bit) / SM-Bus (Case Temp.) Serial Port Header ⁴ / Parallel Port Header / PS2 Header Front Panel (Power Switch, Reset Switch, LEDs, Intel 10 pin compatible) SATA Drive Power Connector Multirail PSU (24 pin + 4 pin) / Single 12V PSU / ATX12VO	2 / (+) ² 1 / + 4 / 1 / - 1 1 / - 1 2 / 2 / 1 / 0 1 / 1 / - / - 1 / 1 / 1 3 / - / - 1 Via ATX connector (Single 12V mode) + / + / -
EXTERNAL CONNECTORS	VGA Sub D* / DVI-I / DVI-D / DisplayPort V1.4a Audio Mic. In / Line in / Line out (or driver configuration) LAN (RJ-45) PS/2 Mouse / Keyboard USB 2.0 / USB 3.2 (Gen1) / USB 3.2 (Gen2) Serial (COM1, RS-232) Parallel (EPP/ECP)	- / - / - / 4 - / 1 / 1 2 - / - 4 / 0 / 4 1 -

¹) Forced cooling required, see technical documentation for details
²) ECC support only with R680E chipset on K3836-R
³) Each internal USB connector (pin header) provides two USB ports (except for USB stick socket)
⁴) COM2 with RS232/RS422/RS485 support, COM3+COM4 with RS232 support

Ordering Information

Accessories

RISERCARD		1x PCIe x4 (D3318-A)
INTERNAL SERIAL CABLE		400 mm; fullsize slot bracket
SLIM HEATSINK LGA1700 65W		Active cooler with backplate for Intel® LGA1700 socket CPU up to 65W TDP
M.2 KEY-E/A SATA ADDON		K1201-A; AddOn for M.2 Key-E/A slot to provide two SATA 6G ports.
INTERNAL USB KEY-B TO IDC20 HEADER CABLE		Adapter cable for USB Key-B header to provide standard IDC20 USB3 frontpanel header.

Your Contact

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