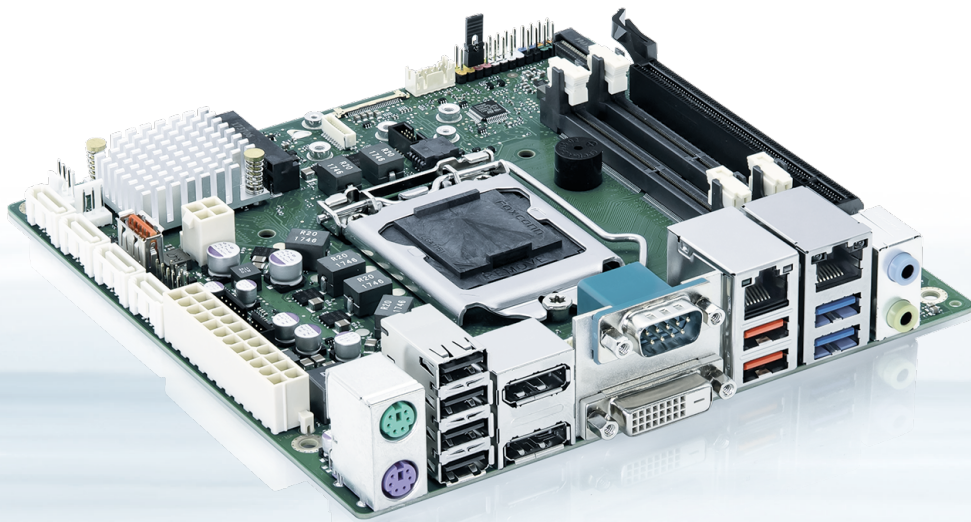


D3633-S mITX

Industrial Series



Intel® Q370 Express Chipset and Intel® 8th/9th Gen Core™ i3/i5/i7/i9 Processors

- ▶ cTDP – Easy & flexible reduction of CPU TDP
- ▶ Supporting Intel® AMT 12.0 / vPro
- ▶ Dual Channel LVDS & eDP
- ▶ M.2 SSD & Mini-PCIe Socket onboard
- ▶ ATX PSU or Single 12 V Supply

POSSIBILITIES START HERE



D3633-S mITX

Industrial Series

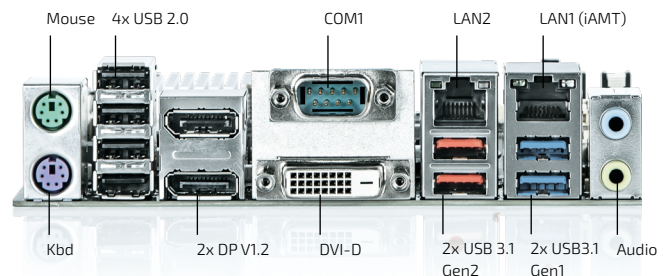
The Motherboard D3633-S mITX offers the perfectly right-sized solution for all industrial needs and supports the powerful Intel® Core™ i9/i7/i5/i3 (8th/9th Gen) and the Intel® Pentium®/Intel® Celeron® processor series. It is equipped with the highly performant Intel® Q370 Express Chipset and guarantees highest

functionality on a small-sized surface with Intel® AMT 12.0 and vPro support, 2x Intel® GbE LAN and BIOS configurable PCI Express® Lane. It is designed and approved for enhanced operating temperature range up to 60 °C and for 24/7 continuous operation.

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 3.1 Gen1, 2x USB 3.1 Gen2, 1x USB 3.1 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



TECHNICAL INFORMATION

SYSTEM	PROCESSOR	Intel® Core™ i9/i7/i5/i3 (8th/9th Gen) processor series Intel® Pentium®/Intel® Celeron® processor series Socket LGA1151 – up to 95 W TDP Intel® Q370 Chipset DDR4-2666, Dual Channel 2 SO DIMM sockets, up to 64 GByte memory
VIDEO	GRAPHICS	Intel® UHD Graphics, DX12
AUDIO	AUDIO CODEC AUDIO INTERFACE	Realtek ALC671 5.1-channel, High Definition Audio Codec
NETWORK CONNECTION	ETHERNET	Intel i219LM & i210AT with 10/100/1000 MBit/s, AMT 12.0 / vPro 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 SERIAL PORT OTHER I/Os	4x USB 2.0, 2x USB 2.0 (by header), 2x USB 3.1 Gen1, 2x USB 3.1 Gen1 (by header), 2x USB 3.1 Gen2, 1x USB 3.1 Gen2 stick socket 1x RS232, 1x RS232/422/485 (by header) GPIO (by header)
STORAGE & EXPANSION	SATA PCIe/PCI SLOTS	4x Serial ATA III 600 Interface (up to 6GBit/s), NCQ, AHCI, RAID 0/1/5/10, 1x M.2 PCIe (2242/2260/2280), 1x Mini PCIe (halfsize/fullsize) PCIe x16: 1x Gen3, Support for lane split (8+8 or 8+4+4)
POWER	CONNECTOR INPUT VOLTAGE	ATX Power Supply ATX (Multirail) or Single 12 V
FIRMWARE	BIOS WATCHDOG REAL TIME CLOCK TPM	AMI Aptio 5.x (UEFI) BIOS modified and adapted by Fujitsu Technology Solutions; 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, Wake on time from S5. HW Watchdog support & BIOS integrated HW Diagnostic Tool. No legacy OS support, no MBR installation (UEFI only due to Intel restrictions) 3-Level Watchdog (BIOS/BIOS Post/OW HW) Integrated TPM V2.0 (Infineon; TCG compliant)

► TECHNICAL INFORMATION

SYSTEM CONTROL	FP HEADER	1x Header for Reset button, HDD LED & Internal Speaker, Power button, Power LED
	SECURITY	Recovery BIOS, System and BIOS Password, Boot Sequence Control, Serial- / USB- Port Access Protection, Write Protection for Flash BIOS, EraseDisk (BIOS Feature), TPM V2.0 (Infineon; TCG compliant)
COOLING	FAN	2x PWM fan (CPU/System)
SOFTWARE	OS SUPPORT	MS Windows 10, MS Windows 11 * Linux-64
MECHANICAL	DIMENSIONS (L x W)	Mini-ITX: 6.7" x 6.7" (170 x 170 mm)
CERTIFICATION	EMC & SAFETY	FCC-B verified cTÜVus acc. IEC62368-1, CE Class B, UKCA

*) MS Windows 11 "runnable", but not validated by Kontron

► POWER SUPPLY REQUIREMENTS

SOURCE*	VOLTAGE	MIN. PS LOAD	MAX. VOLTAGE TOLERANCE	MOTHERBOARD CAPACITIVE LOAD	MOTHERBOARD MAX. CURRENT
Main Power Supply (Multi Rail)	+ 12 V	0.05 A	± 5 %	1.300 µF	10 A / 18 A**
	- 12 V	0 A		-	Not used
	+ 5 V	0.2 A	± 5 %	900 µF	4.5 A
	+ 3.3 V	0 A	± 5 %	350 µF	0.5 A
	+ 5 Vaux	0 A	+ 5 % / - 3 %	330 µF	2.5 A
Single 12 V DC	+ 12 V	0 A	± 5 %	1.300 µF	11 A / 19 A***

*) ATX PSU (multi rail) or single 12 V DC Supply

**) Processor 95 W TDP: Max. Cont. Current = 10 A; max. Surge Current = 16 A (< 100 sec) / 18 A (< 10 ms)

Processor 65 W TDP: Max. Cont. Current = 7 A; max. Surge Current = 14 A (< 100 sec) / 18 A (< 10 ms)

Processor 35 W TDP: Max. Cont. Current = 4 A; max. Surge Current = 10 A (< 100 sec) / 14 A (< 10 ms)

***) Max. load for single 12 V DC supply: approx. +1 A compared to multi rail supply

► TECHNICAL INFORMATION

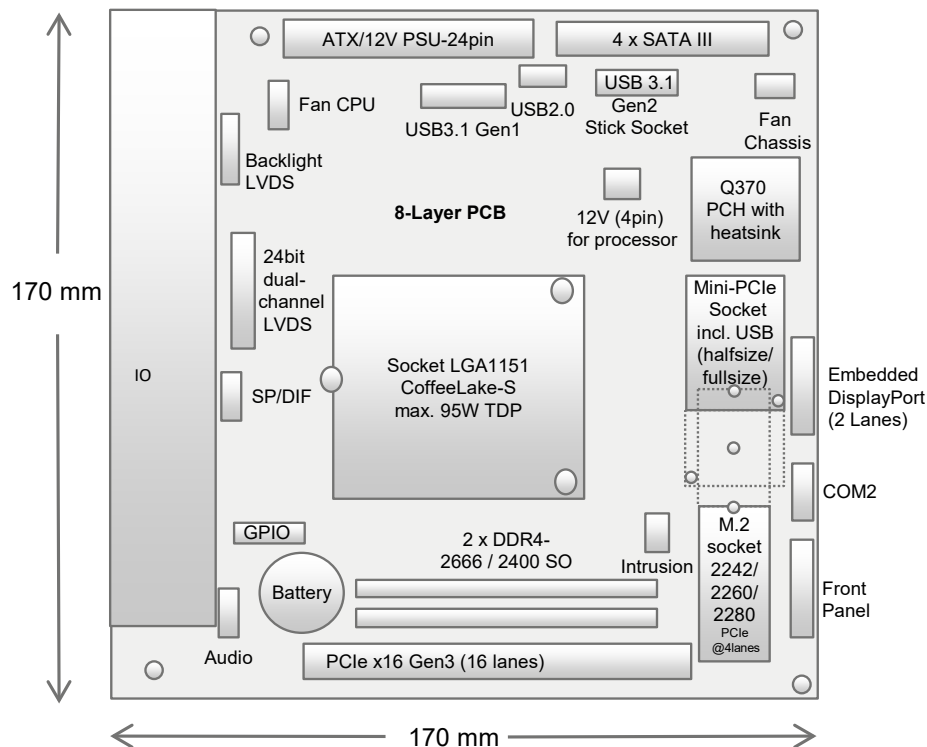
FEATURES	Chipset Board Size VGA / DVI-I / DVI-D / DP V1.2 / 2nd DP V1.2 / LVDS / eDP/Buzzer / int. Speaker Support / 5.1 Multichannel Audio Dual LAN Gbit / 100 Mbit / 10 Mbit / WoL / LAN Boot / Teaming iAMT 12.0 vPro / Intel Standard Manageability / DASH V1.1 SATA / SATA-RAID / eSATA-Support / mSATA / M.2 SSD (PCIe) USB 2.0 / USB 3.1 (gen1) / USB 3.1 (gen2) FAN monitored & controlled PSU / CPU / AUX1 / AUX2 TEMP monitored CPU / onboard sensors / external sensor	iQ370 Mini-ITX - / - / + / + / + / + / + + / + / + + / + / + / + / + / + + / + / - + / + / + / - / + + / + / + - / + / + / - + / + / -
SPECIAL FEATURES	Silent Fan / System Guard / cTDP Recovery BIOS / Desk Update / Multi Boot HDD Password / EraseDisk / TPM V2.0 BIOS POST- / BIOS Boot- / 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)*	+ / + / + + / + / + + / + / + + / + / + + + + / - 0 °C – 60 °C
INTERNAL CONNECTORS	SO DIMM Sockets (DDR4 2666) PCI Express® x16 (Gen3) / Support for lane split (8+8 or 8+4+4) mSATA / Mini PCI Express® Slot (halfsize / fullsize, incl.USB 2.0) SATA-600 / M.2 SSD 2280 (supports 2280/2260/2242, Key-M, PCIe/NVME) S/PDIF (digital Audio) OUT / IN Front Panel Audio (9-Pin, HD Audio) USB 2.0 / USB 3.1 (Gen1) / USB 3.1 (Gen2) / USB 3.1 (Gen2) Stick** Serial (COM2, RS-232 / RS-422 / RS-485) / Parallel Port Connector LVDS / LVDS Backlight (PWM controlled) / Embedded DisplayPort FAN PSU / CPU / AUX1 / AUX2 Intrusion (Case Open) / GPIO (8Bit) / SMBus (Case Temp.) Front Panel (Power Switch, Reset Switch, LEDs, Intel 10 pin compatible) ATX Power Supply (24 pin + 4 pin) / single 12 V PSU***	2 1 / + - / 1 4 / 1 1 / 0 1 1 / 1 / - / 1 1 / - 1 / 1 / 1 0 / 1 / 1 / 0 1 / 1 / - 1 1 / 1
EXTERNAL CONNECTORS	VGA Sub D / DVI-I / DVI-D / DisplayPort V1.2 Audio Mic. In / Line in / Line out (or driver configuration) LAN (RJ-45) PS/2 Mouse / Keyboard USB 2.0 / USB 3.1 Gen1 / USB 3.1 Gen2 Serial (COM1, RS232)	- / - / 1 / 2 - / 1 / 1 2 1 / 1 4 / 2 / 2 1

*) Forced cooling required, see technical documentation for detailed requirements

**) Each internal USB connector (pin header) provides two USB ports (except for USB stick socket)

***) Alternatives: Powered by ATX (multi rail) PSU or single 12 V DC

► CONNECTOR / SOCKET DIAGRAM



► ORDERING INFORMATION

ARTICLE	PART NO.	DESCRIPTION
D3633-S mITX	F5120-V166	Intel® 8th/9th Gen Core™ Processor Series, Intel® Q370 Chipset, Realtek Audio Codec
D3633-S mITX (w/o LVDS Support & w/o Audio Support)	F5120-V1664	Intel® 8th/9th Gen Core™ Processor Series, Intel® Q370 Chipset LVDS electronics, audio electronics & related connectors removed; additional plastic clips to cover audio holes in I/O shield
ACCESSORIES		
M.2 ADAPTER BOARD	F5000-M003	D3436-S = Adapter for Mini PCIe to M.2 Wi-Fi modules
SERIAL PORT CABLE	F5000-K010	Fullsize slot bracket
RISERCARD	F5000-R006	1x PCIe x4 (D3318-A)
CHASSIS KIT	F5000-J003	SMARTCASE™ S720

► GLOBAL HEADQUARTERS

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