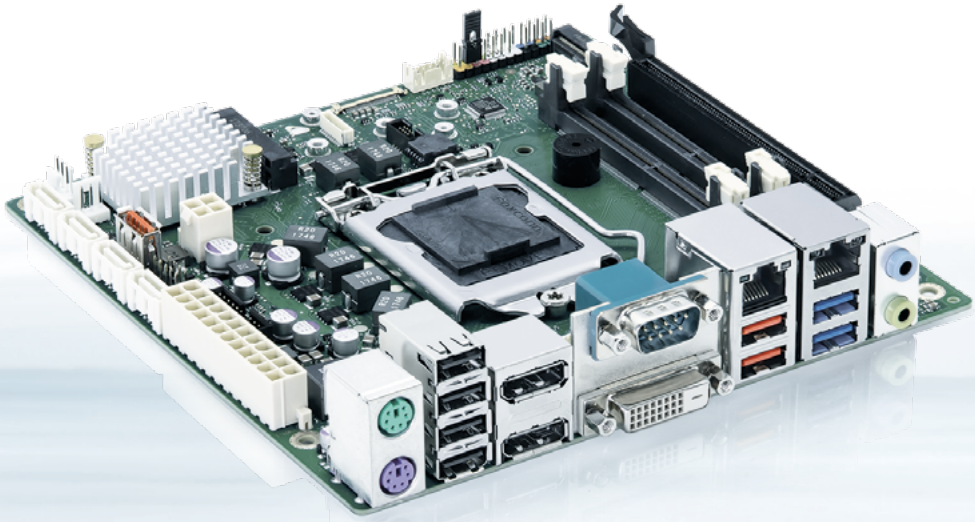
D3633-S mITX

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 kontron S&T Group

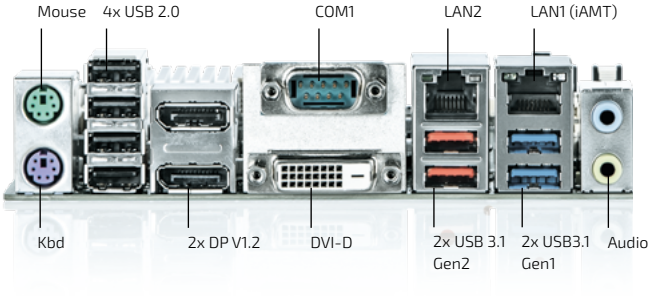
D3633-S mITX

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
	CHIPSET	Intel® Q370 Chipset
	MEMORY	DDR4-2666, Dual Channel 2 SO DIMM sockets, up to 64 GByte memory
VIDEO	GRAPHICS	Intel® UHD Graphics, DX12
AUDIO	AUDIO CODEC	Realtek ALC671
	AUDIO INTERFACE	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	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
	SERIAL PORT	1x RS232, 1x RS232/422/485 (by header)
	OTHER I/Os	GPIO (by header)
STORAGE & EXPANSION	SATA	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/PCI SLOTS	PCIe x16: 1x Gen3, Support for lane split (8+8 or 8+4+4)
POWER	CONNECTOR	ATX Power Supply
	INPUT VOLTAGE	ATX (Multirail) or Single 12 V
FIRMWARE	BIOS	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)
	WATCHDOG	3-Level Watchdog (BIOS/BIOS Post/OW HW)
	REAL TIME CLOCK	Integrated
	TPM	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 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

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***

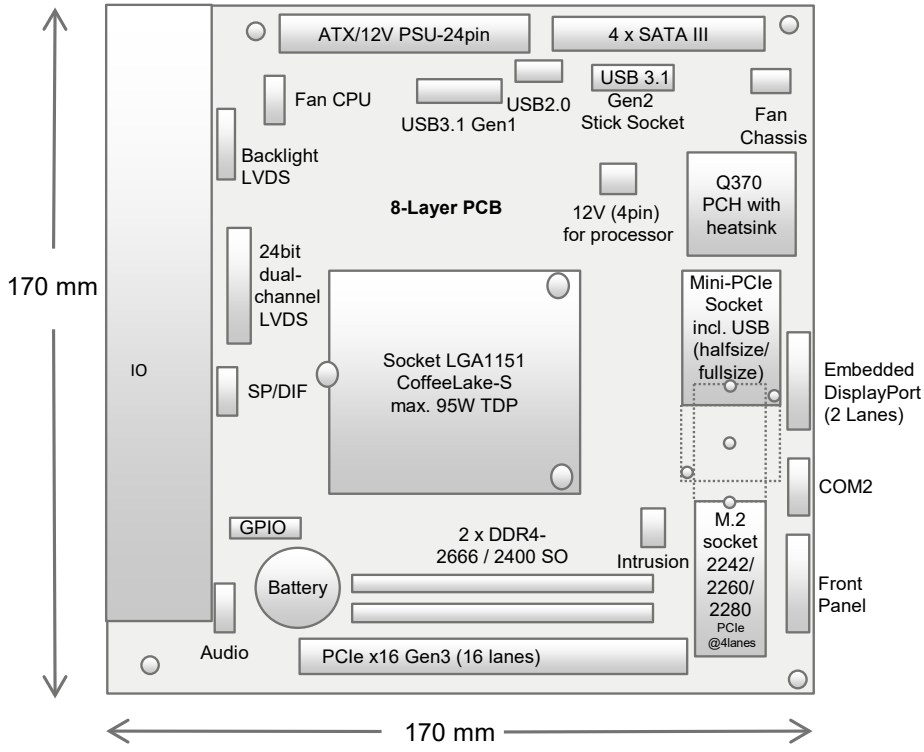
*) ATX PSU (multi rail) or single 12 V DC Supply
**) Processor 95 W TDP: Max. Cont. Current = 10 A; max. Surge Current = 16 A (< 100 sec) / 18 A (< 10 ms)
Processor 65 W TDP: Max. Cont. Current = 7 A; max. Surge Current = 14 A (< 100 sec) / 18 A (< 10 ms)
Processor 35 W TDP: Max. Cont. Current = 4 A; 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	iQ370
	Board Size	Mini-ITX
	VGA / DVI-I / DVI-D / DP V1.2 / 2nd DP V1.2 / LVDS / eDPBuzzer / 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	+ / + / -
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)	2
	PCI Express® x16 (Gen3) / Support for lane split (8+8 or 8+4+4)	1 / +
	mSATA / Mini PCI Express® Slot (halfsize / fullsize, incl.USB 2.0)	- / 1
	SATA-600 / M.2 SSD 2280 (supports 2280/2260/2242, Key-M, PCIe/NVME)	4 / 1
	S/PDIF (digital Audio) OUT / IN	1 / 0
	Front Panel Audio (9-Pin, HD Audio)	1
	USB 2.0 / USB 3.1 (Gen1) / USB 3.1 (Gen2) / USB 3.1 (Gen2) Stick**	1 / 1 / - / 1
	Serial (COM2, RS-232 / RS-422 / RS-485) / Parallel Port Connector	1 / -
	LVDS / LVDS Backlight (PWM controlled) / Embedded DisplayPort	1 / 1 / 1
	FAN PSU / CPU / AUX1 / AUX2	0 / 1 / 1 / 0
	Intrusion (Case Open) / GPIO (8Bit) / SMBus (Case Temp.)	1 / 1 / -
	Front Panel (Power Switch, Reset Switch, LEDs, Intel 10 pin compatible)	1
	ATX Power Supply (24 pin + 4 pin) / single 12 V PSU***	1 / 1
EXTERNAL CONNECTORS	VGA Sub D / DVI-I / DVI-D / DisplayPort V1.2	- / - / 1 / 2
	Audio Mic. In / Line in / Line out (or driver configuration)	- / 1 / 1
	LAN (RJ-45)	2
	PS/2 Mouse / Keyboard	1 / 1
	USB 2.0 / USB 3.1 Gen1 / USB 3.1 Gen2	4 / 2 / 2
	Serial (COM1, RS232)	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-SmITX	F5120-V166	Intel® 8th/9th Gen Core™ Processor Series, Intel® Q370 Chipset
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

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