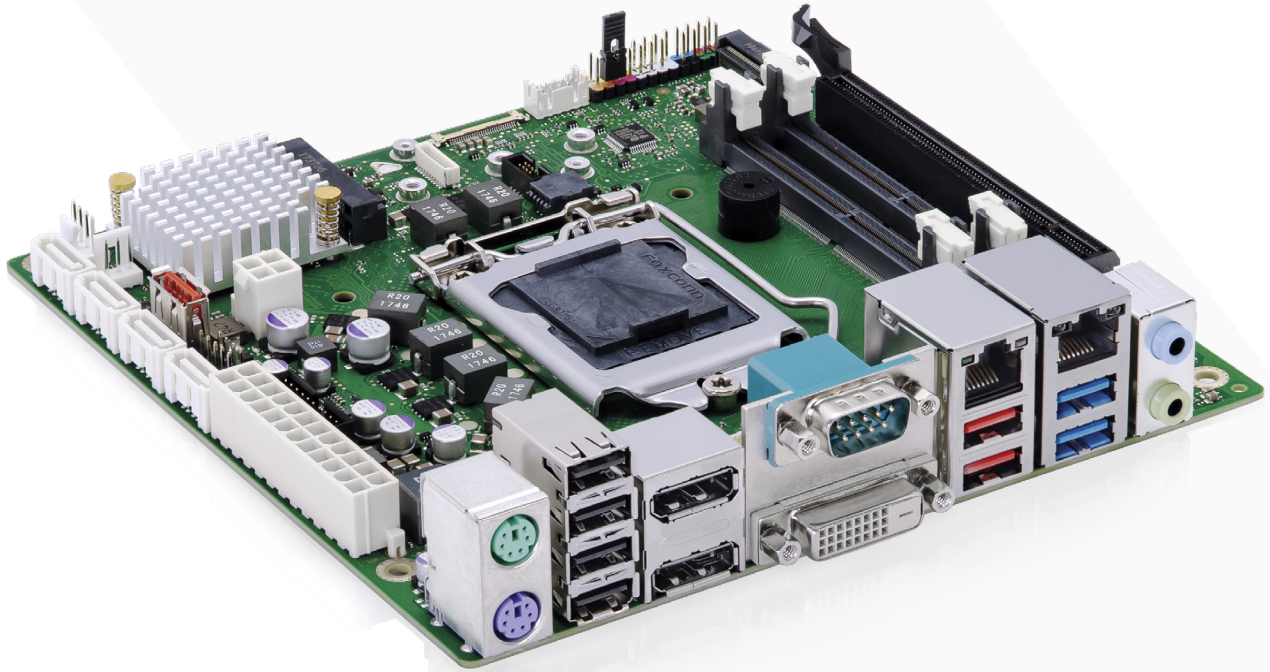


# D3633-S mITX

## 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

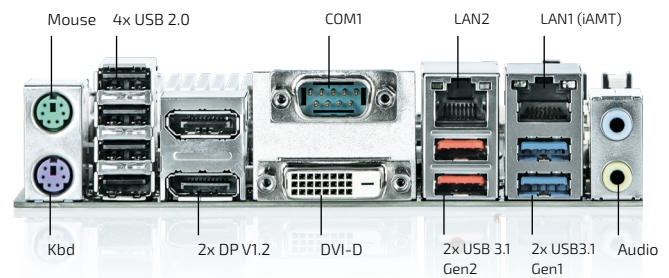
## D3633-S mITX Industrial Series

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.

- 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

<b>SYSTEM</b>	<b>PROCESSOR</b>	Intel® Core™ i9/i7/i5/i3 (8th/9th Gen) processor series Intel® Pentium®/Intel® Celeron® processor series
	<b>CHIPSET</b>	Socket LGA1151 – up to 95 W TDP
	<b>MEMORY</b>	Intel® Q370 Chipset DDR4-2666, Dual Channel 2 SO DIMM sockets, up to 64 GByte memory
<b>VIDEO</b>	<b>GRAPHICS</b>	Intel® UHD Graphics, DX12
<b>AUDIO</b>	<b>AUDIO CODEC</b>	Realtek ALC671
	<b>AUDIO INTERFACE</b>	5.1-channel, High Definition Audio Codec
<b>NETWORK CONNECTION</b>	<b>ETHERNET</b>	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
<b>PERIPHERAL CONNECTION</b>	<b>USB</b>	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
	<b>SERIAL PORT</b>	1x RS232, 1x RS232/422/485 (by header)
	<b>OTHER I/Os</b>	GPIO (by header)
<b>STORAGE &amp; EXPANSION</b>	<b>SATA</b>	4x Serial ATA III 600 Interface (up to 6Gbit/s), NCQ, AHCI, RAID 0/1/5/10,
	<b>PCIe/PCI SLOTS</b>	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)
<b>POWER</b>	<b>CONNECTOR</b>	ATX Power Supply
	<b>INPUT VOLTAGE</b>	ATX (Multirail) or Single 12 V
<b>FIRMWARE</b>	<b>BIOS</b>	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)
	<b>WATCHDOG</b>	
	<b>REAL TIME CLOCK</b>	
	<b>TPM</b>	

<b>SYSTEM CONTROL</b>	<b>FP HEADER</b>	1x Header for Reset button, HDD LED & Internal Speaker, Power button, Power LED 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)
	<b>SECURITY</b>	
<b>COOLING</b>	<b>FAN</b>	
<b>SOFTWARE</b>	<b>OS SUPPORT</b>	
<b>MECHANICAL</b>	<b>DIMENSIONS (L x W)</b>	
<b>CERTIFICATION</b>	<b>EMC &amp; SAFETY</b>	FCC-B verified cTUVus acc. IEC62368-1, CE Class B, UKCA
		2x PWM fan (CPU/System)
		MS Windows® 10, MS Windows® 11 * Linux-64
		Mini-ITX: 6.7" x 6.7" (170 x 170 mm)

\*) 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)

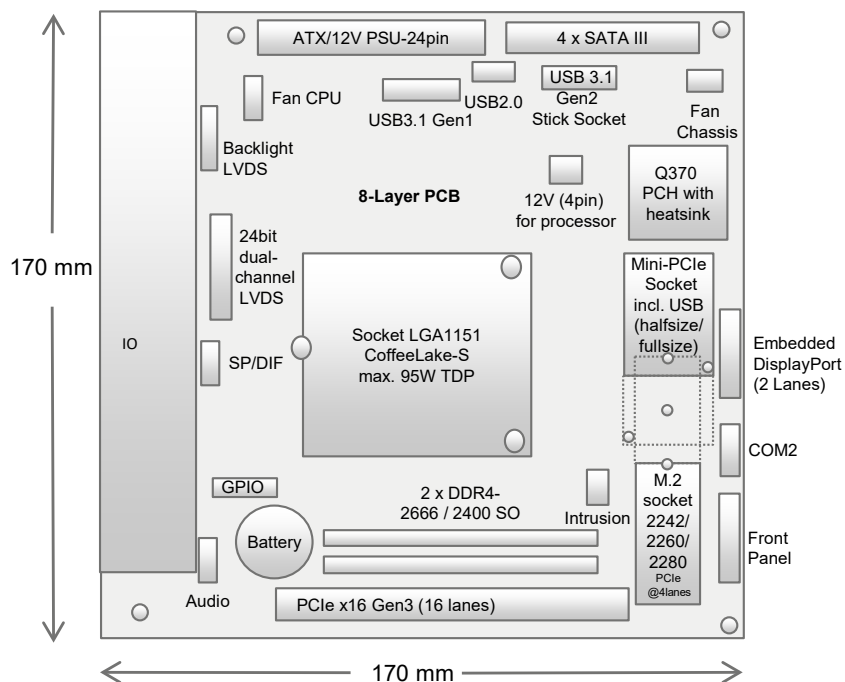
Processor 35 W TDP: Max. Cont. Current = 4 A; max. Surge Current = 10 A (< 100 sec) / 14 A (< 10 ms)

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

<b>FEATURES</b>	<p>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 &amp; controlled PSU / CPU / AUX1 / AUX2 TEMP monitored CPU / onboard sensors / external sensor</p>	<p>iQ370 Mini-ITX - / - / + / + / + / + / + + / + / + + / + / + / + / + / + + / + / - + / + / + / - / + + / + / + - / + / + / - + / + / -</p>
<b>SPECIAL FEATURES</b>	<p>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)*</p>	<p>+ / + / + + / + / + + / + / + + / + / + + + + / - 0 °C – 60 °C</p>
<b>INTERNAL CONNECTORS</b>	<p>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***</p>	<p>2 1 / + - / 1 4 / 1 1 / 0 1 1 1 / 1 / - / 1 1 / - 1 / 1 / 1 0 / 1 / 1 / 0 1 / 1 / - 1 1 / 1</p>
<b>EXTERNAL CONNECTORS</b>	<p>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)</p>	<p>- / - / 1 / 2 - / 1 / 1 2 1 / 1 4 / 2 / 2 1</p>

\*) 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



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	S26361-F5000-M003	D3436-S = Adapter for Mini PCIe to M.2 Wi-Fi modules
SERIAL PORT CABLE	S26361-F5000-K010	Fullsize slot bracket
RISERCARD	S26361-F5000-R006	1x PCIe x4 (D3318-A)
CHASSIS KIT	S26361-F5000-J003	SMARTCASE™ S720

## Global Headquarters

Kontron Europe GmbH

Gutenbergstraße 2  
 85737 Ismaning, Germany  
 Tel.: + 49 821 4086-0  
 info@kontron.com

www.kontron.com

