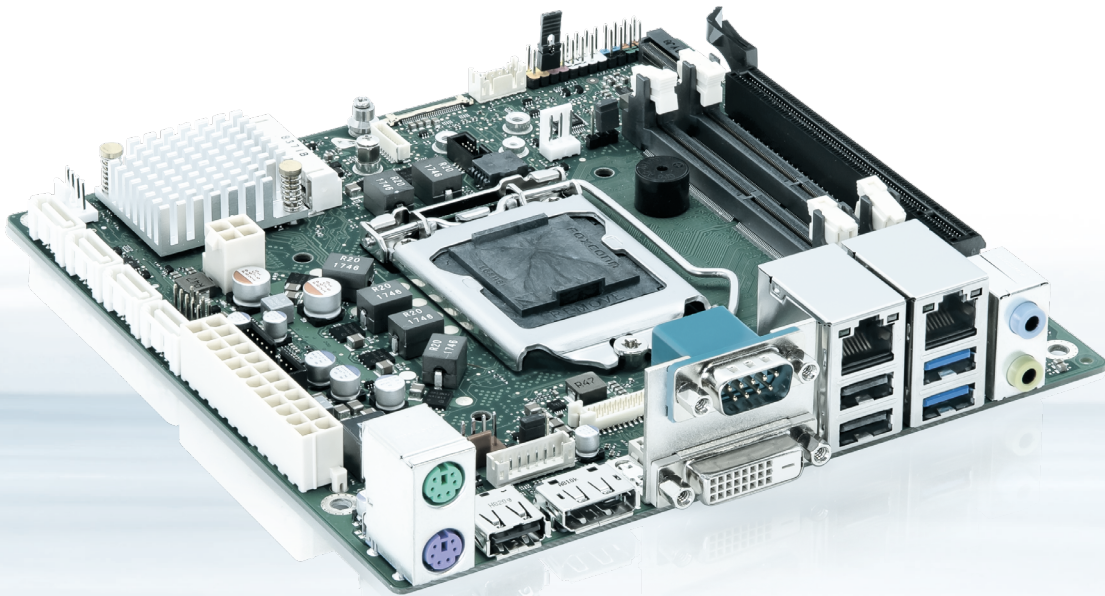


D3634-S mITX

Industrial Series



Intel® H310 Express Chipset and Intel® 8th/9th Gen Core™ i3/i5/i7/i9 Processors

- ▶ cTDP – Easy & flexible reduction of CPU TDP
- ▶ Cost-effective iH310 Industrial Platform
- ▶ Dual channel LVDS & eDP
- ▶ M.2 SSD & Mini-PCIe Socket
- ▶ ATX PSU or Single 12 V Supply

POSSIBILITIES START HERE



D3634-S mITX

Industrial Series

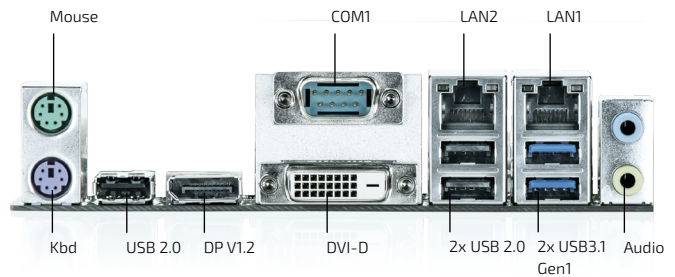
The Motherboard D3634-S mITX is an extraordinary smart solution for industrial needs. It is equipped with the cost-optimized Intel® H310 Express Chipset. This motherboard supports the Intel® Core™ i9/i7/i5/i3 (8th/9th Gen) and the Intel® Pentium® /

Intel® Celeron® processor series up to 95 W TDP. It also features 2x LAN and eDP and 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
- ▶ 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 3.1 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



▶ TECHNICAL INFORMATION

SYSTEM	PROCESSOR	Intel® Core™ i9 / i7 / i5 / i3 (8th/9th Gen) processor series Intel® Pentium®/Intel® Celeron® processor series Socket LGA1151, max. 95 W TDP
	CHIPSET	Intel® H310 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 or Tempo Semiconductor 92HD91B*
	AUDIO INTERFACE	5.1-channel**, High Definition Audio Codec
NETWORK CONNECTION	ETHERNET	Intel® i219LM & i210AT with 10/100/1000 MBit/s, Wake-on-LAN (WoL) by interesting Packets, Link Status Change and Magic Packet™, PXE Support, BIOS MAC Address Display, Teaming Support
PERIPHERAL CONNECTION	USB	3x USB 2.0, 2x USB 2.0 (by header), 2x USB 3.1 Gen1, 2x USB 3.1 Gen1 (by header)
	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,
	PCIe/PCI SLOTS	1x M.2 PCIe (2242/2260/2280), 1x Mini PCIe (halfsize/fullsize) PCIe x16: 1x Gen3
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) 3-level Watchdog (BIOS/BIOS Post/OS HW)
	WATCHDOG	Integrated
	REAL TIME CLOCK	Intel® integrated TPM V2.0
	TPM	

*) Depends on motherboard version

***) Tempo Audio Codec: 5.1 surround sound is possible via digital output ports like S/PDIF or DisplayPort only; no "analog" 5.1 sound support

▶ TECHNICAL INFORMATION

SYSTEM CONTROL	FP HEADER	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), Intel integrated TPM V2.0
	SECURITY	
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	<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 & controlled PSU / CPU / AUX1 / AUX2 TEMP monitored CPU / onboard sensors / external sensor</p>	<p>iH310 Mini-ITX - / - / + / + / - / + / + + / + / + + / + / + / + / + / + - / - / - + / - / + / - / + + / + / - - / + / + / - + / + / -</p>
SPECIAL FEATURES	<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>
INTERNAL CONNECTORS	<p>SO DIMM Sockets (DDR4 2666) PCI Express x16 (Gen2) / 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 Frontpanel Audio (9-Pin, HD Audio) USB 2.0 / USB 3.1 (Gen1) / USB 3.1 (Gen2) / USB Stick Socket** 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 0 / 1 / 1 / 0 1 / 1 / - 1 1 / 1</p>
EXTERNAL CONNECTORS	<p>VGA Sub D / DVI-I / DVI-D / DisplayPort V1.2 D3634-S 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 / 1 - / 1 / 1 2 1 / 1 3 / 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

