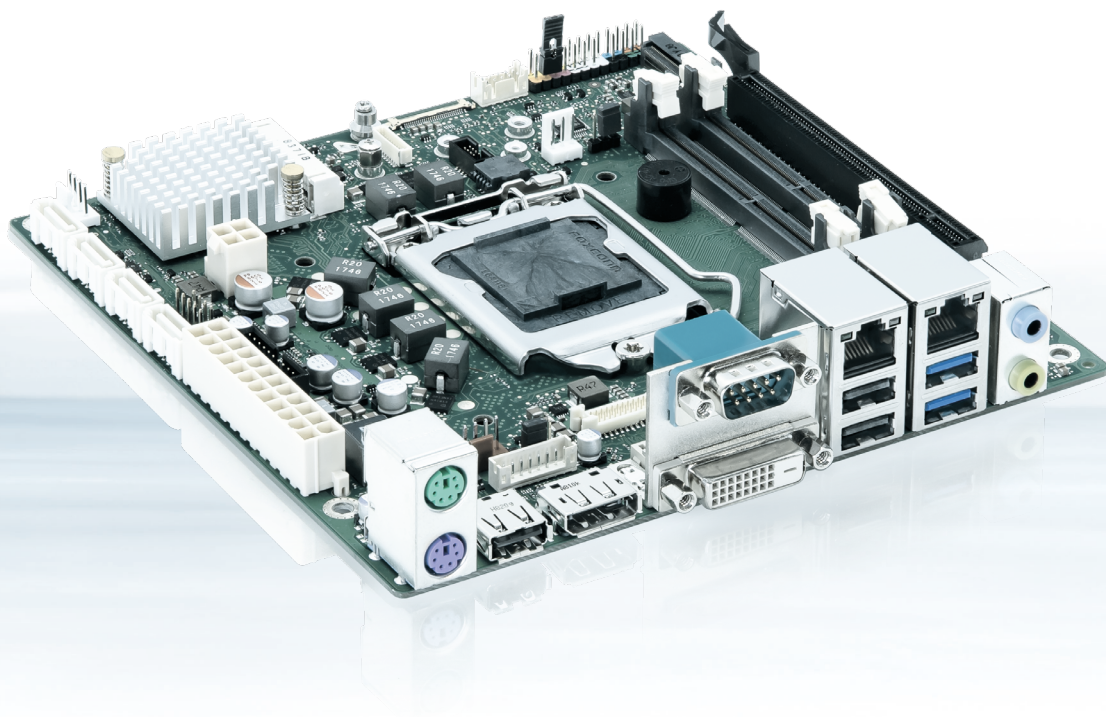


D3634-S mITX

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

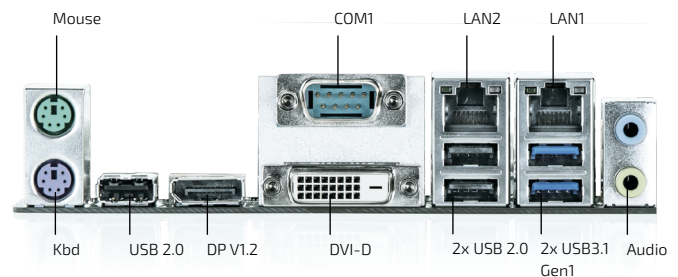
The Motherboard D3634-S mITX is an extraordinary smart solution for industrial needs. It is equipped with the cost-optimized Intel® H310 Express Chipset. This motherboard supports the Intel® Core™ i9/i7/i5/i3 (8th/9th Gen) and the Intel® Pentium® /

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 Intel® H310 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 or Tempo Semiconductor 92HD91B* 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 SERIAL PORT OTHER I/Os	3x USB 2.0, 2x USB 2.0 (by header), 2x USB 3.1 Gen1, 2x USB 3.1 Gen1 (by header) 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, 1x M.2 PCIe (2242/2260/2280), 1x Mini PCIe (halfsize/fullsize) PCIe x16: 1x Gen3
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/OS HW) Integrated Intel® integrated TPM V2.0

*) 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 SECURITY	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
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

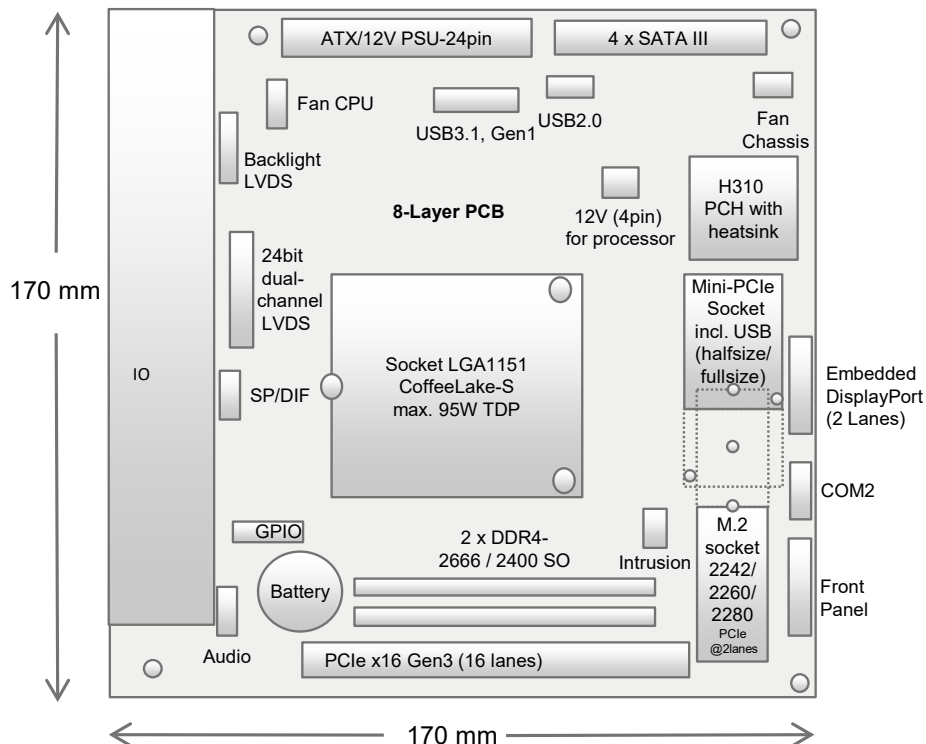
FEATURES	Chipset Board Size VGA / DVI-I / DVI-D / DP V1.2 / 2nd DP V1.2 / LVDS / eDP Buzzer / int. Speaker Support / 5.1 Multichannel Audio Dual LAN Gbit / 100 Mbit / 10 Mbit / WoL / LAN Boot / Teaming iAMT 12.0 vPro / Intel Standard Manageability / DASH V1.1 SATA / SATA-RAID / eSATA-Support / mSATA / 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	iH310 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 (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***	2 1 / - - / 1 4 / 1 1 / 0 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 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)	- / - / 1 / 1 - / 1 / 1 2 1 / 1 3 / 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
D3634-S MITX	F5120-V217	Intel® 8th/9th Gen Core™ Processor Series, Intel® H310 Chipset, Tempo Audio Codec
D3634-S mITX	F5120-V167	Intel® 8th/9th Gen Core™ Processor Series, Intel® H310 Chipset, Realtek Audio Codec
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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