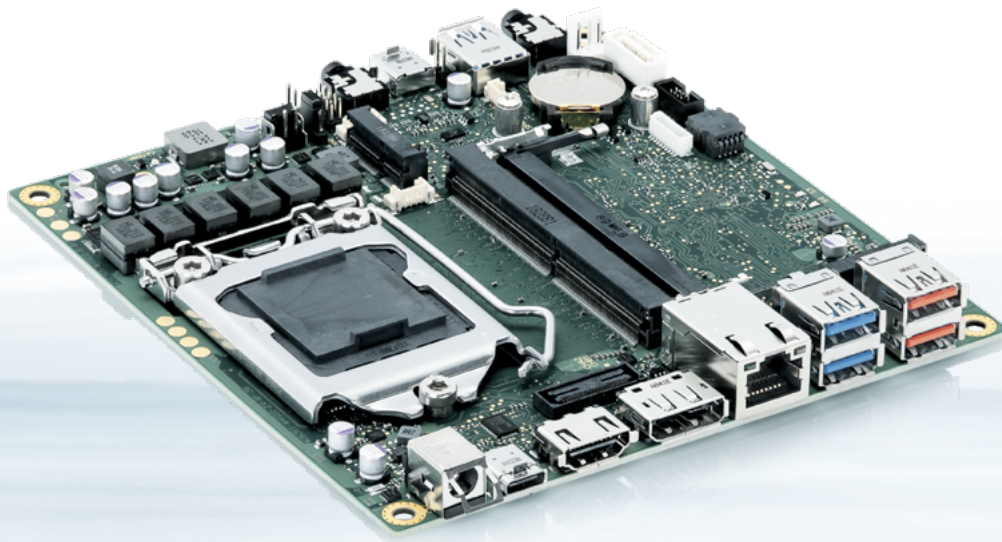# D3664-B mSTX
## Extended Lifecycle Series

▼



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

▶ cTDP – Easy & flexible reduction of CPU TDP
▶ Ultra-small Platform supporting Intel® AMT 12.0
▶ HDMI V1.4 and DP V1.2
▶ M.2 SSD & M.2 WLAN Slots onboard
▶ Powerful USB 3.1 Gen2

POSSIBILITIES START HERE
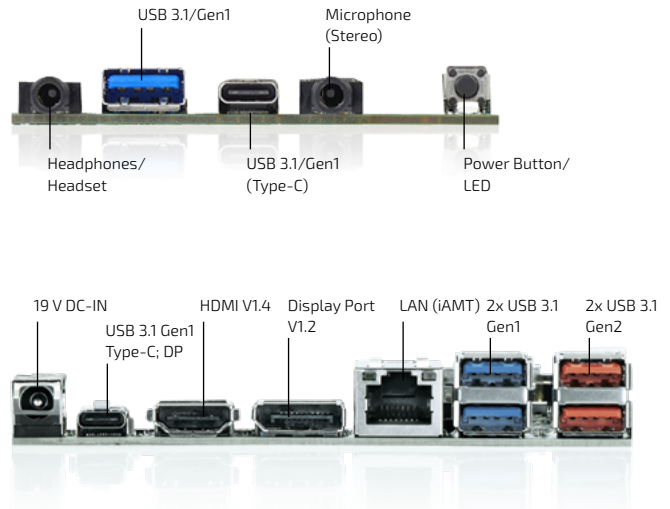
**kontron**
S&T Group

# D3664-B mSTX
## Extended Lifecycle Series

The Motherboard D3664-B comes in Mini-STX format und features the powerful Intel® Q370 express chipset as well as DDR4-2666 SDRAM Memory and Intel® 8th/9th Gen Core™ i9/i7/i5/i3 processor series. The motherboard has been designed for 24/7 operation at temperatures of up to 50 °C and is ideal for complex applications with semi-industrial needs and compact applications like POS.

Besides a variety of connectivity options and interfaces like USB 3.1 Gen2, SATA III for SSDs and HDDs as well as HDMI and DisplayPort 1.2 the motherboard offers a wide range of special features like highly efficient power supply and three-stage hardware watchdog.

## ▶ PRODUCT HIGHLIGHTS

- ▸ Intel® 8th/9th Gen Core™ Processor Series
- ▸ DDR4-2666 SDRAM, max. 32 GByte
- ▸ cTDP – Easy & flexible reduction of CPU TDP
- ▸ Supporting Intel® AMT 12.0
- ▸ Intel® HD Graphics (DX12, integrated in processor)
- ▸ HDMI V1.4 and DP V1.2
- ▸ Stereo Audio onboard
- ▸ USB 2.0, USB3.1 Gen1/Gen2 onboard & USB Type-C (DP Alt Mode)
- ▸ Onboard support for M.2 SSD (PCIe x4 based M.2 2280)
- ▸ Onboard support for M.2 WLAN/Bluetooth (M.2 2230)
- ▸ Intel® GbE LAN onboard
- ▸ Intel integrated TPM V2.0 onboard
- ▸ DC Power Supply 19 V
- ▸ HW Watchdog onboard

USB 3.1/Gen1 — Microphone (Stereo) — Headphones/Headset — USB 3.1/Gen1 (Type-C) — Power Button/LED

19 V DC-IN — USB 3.1 Gen1 Type-C; DP — HDMI V1.4 — Display Port V1.2 — LAN (iAMT) — 2x USB 3.1 Gen1 — 2x USB 3.1 Gen2

## ▶ TECHNICAL INFORMATION

| SYSTEM | PROCESSOR | Intel® Core™ i9/i7/i5/i3 (8th/9th Gen) processor series<br>Intel® Pentium®/Intel® Celeron® processor series<br>Socket LGA1151 – up to 65 W TDP |
| --- | --- | --- |
| | CHIPSET<br>MEMORY | Intel® Q370 Chipset<br>DDR4-2666, Dual Channel<br>2 SO-DIMM sockets, up to 32 GByte memory |
| VIDEO | GRAPHICS | Intel® HD Graphics (depends on installed processor), DX12 |
| AUDIO | AUDIO CODEC<br>AUDIO INTERFACE | Realtek ALC671<br>stereo, High Definition Audio Codec |
| NETWORK CONNECTION | ETHERNET | Intel® i219LM with 10/100/1000 MBit/s, iAMT12<br>Wake-on-LAN (WoL) by interesting Packets, Link Status Change and Magic Packet™, PXE support, BIOS MAC Address Display |
| PERIPHERAL CONNECTION | USB | 3x USB 3.1 Gen1, 2x USB 3.1 Gen1 Type C, 2x USB 3.1 Gen2, 2x USB 2.0 (by header) |
| STORAGE & EXPANSION | SATA | 1x Serial ATA III 600 Interface (up to 6GBit/s), NCQ, AHCI,<br>1x M.2 PCIe (2280, Key-M), 1x M.2 Key-E (2230) |
| POWER | CONNECTOR<br>INPUT VOLTAGE | External DC-in<br>19 V |
| FIRMWARE | BIOS | AMI Aptio 5.x (UEFI) BIOS<br>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 Configuration, BIOS Support for S.M.A.R.T., Advanced Power Management, ACPI S3/S4, Wake on time from S5. Boot support for M.2 SSD (PCIe x4-based M.2, NVME) BIOS integrated HW Diagnostic Tool, Watchdog Support<br>No legacy OS support, no MBR installation |
| | WATCHDOG<br>REAL TIME CLOCK<br>TPM | 3 level Watchdog (BIOS/BIOS Post/OS HW)<br>integrated<br>Intel® integrated TPM V2.0 |

# ► TECHNICAL INFORMATION

| SYSTEM CONTROL | FP HEADER SECURITY | 1x Header for HDD LED & External Speaker, Power button, Power LED Recovery BIOS, System and BIOS Password, Boot Sequence Control, USB- Port Access Protection, Write Protection for Flash BIOS, EraseDisk (BIOS Feature), Intel integrated TPM V2.0 |
|---|---|---|
| COOLING | FAN | 2x PWM fan (CPU/System); 5 V fan supply, specific connector |
| SOFTWARE | OS SUPPORT | MS Windows 10<br>Linux-64 |
| MECHANICAL | DIMENSIONS (L x W) | Mini-STX: 5.5" x 5.8" (140 x 148 mm) |
| CERTIFICATION | EMC & SAFETY | FCC-B verified<br>cTÜVus acc. IEC62368-1 (upon request); CE Class B |

# ► POWER SUPPLY REQUIREMENTS

| SOURCE* | VOLTAGE | MIN. PS LOAD | MAX. VOLTAGE TOLERANCE | MAX. MOTHERBOARD INPUT POWER |
|---|---|---|---|---|
| External DC-In connector | 19 V | 0 A | +10% / -15% | max. 5 A<br>max. 95 W* |

*) See TechNotes document for details

# ► TECHNICAL INFORMATION

| FEATURES | | iQ370 |
|---|---|---|
| | Chipset | iQ370 |
| | Board Size | Mini-STX |
| | DP V1.2 / 2nd DP V1.2 / LVDS / HDMI 1.4 / eDP / USB-C (DP V1.2) | + / - / - / + / - / + |
| | Buzzer / int. Speaker Support (mono) / Stereo Audio | - / + / + |
| | LAN Gbit / 100 Mbit / 10 Mbit / WoL / LAN Boot | + / + / + / + / + |
| | iAMT 12.0 / vPro / Intel Standard Manageability / DASH V1.1 | + / +* /- / - |
| | 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 | + / + / + |
| | Logo Boot Option | + |
| | High Efficiency Core Voltage Regulator Design | + |
| | BIOS POST- / BIOS Boot- / OS- HW Watchdog | + / + / + |
| | Operating Mode 24-7 / 8-5 (hrs per day - days per week) | + / - |
| | Motherboard operating temperature range (chassis inside)** | 10 °C – 50 °C |
| INTERNAL CONNECTORS | SO DIMM Sockets (DDR4-2666) | 2 |
| | SATA-600 / mSATA / M.2 SSD 2280 (Key-M, PCIe/NVME) | 1 / - / 1 |
| | M.2 2230 (Key-E, PCIe & USB2.0 for WLAN/Bluetooth) | 1 |
| | Front Panel Audio (9-Pin, HD Audio) | - |
| | USB 2.0 channels / USB 3.1 Gen1 / USB 3.1 Gen2 / USB Stick | 2 / - / - / - |
| | Serial (COM1, RS232)/ Parallel Port Connector | - / - |
| | LVDS / LVDS Backlight / Embedded DisplayPort | - / - / - |
| | FAN PSU / CPU (PWM) / AUX1 (PWM) / AUX2*** | 0 / 1 / 1 / 0 |
| | Intrusion (Case Open) / GPIO (8Bit) / SMBus (Case Temp.) | - / - / - |
| | Internal Mono Speaker header / DMIC header (digital microphone) | 1 / - |
| | Front Panel (Power, LEDs, Intel 10 pin header, 2mm pitch)**** | 1 |
| | Onboard 3-pin SATA Drive Power Connector (5 V) | 1 |
| | Onboard (internal) DC-In Connector | - |
| EXTERNAL CONNECTORS | DVI-I / DVI-D / DisplayPort V1.2 / HDMI V1.4***** | - / - / 1 / 1 |
| | Audio Stereo Mic. In / Headphones (Headset) [Front Connectors] | 1 / 1 |
| | LAN (RJ-45) | 1 |
| | PS/2 Mouse / Keyboard | - / - |
| | USB 2.0 / USB 3.1 Gen1 / USB 3.1 Gen2 / USB 3.1 Gen1-Type C (DP)****** | 0 / 2 / 2 / 1 |
| | USB 3.1 Gen1 / USB 3.1 Gen1-Type C [Front Connectors] | 1 / 1 |
| | DC-In connector (external input) 19 V @ 5 A max. | 1 |

*) TXT (Trusted Execution Technology) not supported!
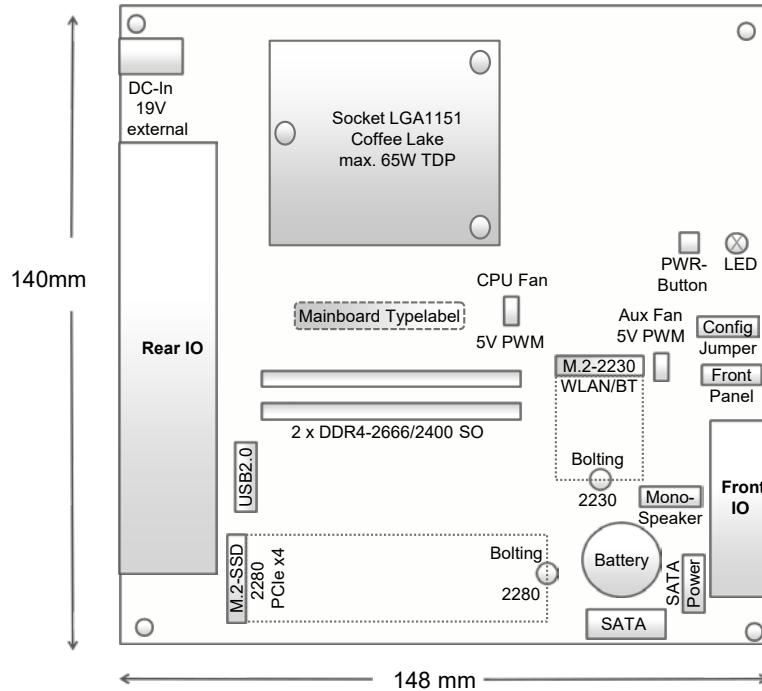**) Forced cooling required, see technical documentation for details
***) PWM Fans; specific fan connector required; 5V operating voltage!
****) RESET feature not supported!
*****) Mainboard is prepared to support HDMI-CEC via 3rd party CEC module (appropriate cabling required)
******) Supports DisplayPort - Alternate Mode

Connector / Socket Diagram showing: DC-In 19V external, Rear IO, Socket LGA1151 Coffee Lake max. 65W TDP, PWR-Button, LED, CPU Fan 5V PWM, Mainboard Typelabel, Aux Fan 5V PWM, Config Jumper, M.2-2230 WLAN/BT, Front Panel, USB2.0, 2 x DDR4-2666/2400 SO, Bolting 2230, Mono-Speaker, Front IO, M.2-SSD 2280 PCIe x4, Bolting 2280, Battery, SATA Power, SATA. Dimensions: 140mm (height), 148 mm (width)

## ▶ ORDERING INFORMATION

| ARTICLE | PART NO. | DESCRIPTION |
|---|---|---|
| D3654-B mSTX | F5120-V175 | Intel® 8th/9th Gen Core™ Processor Series, Intel® Q370 Chipset |
| **ACCESSORIES** | | |
| CHASSIS KIT INCL. COOLING SOLUTION | F5000-J010 | SMARTCASE™ S520 |
| HEATSINK | F5000-C012 | Specific heatpipe-cooler with fan for SMARTCASE™ S520 |
| AC ADAPTER 19 V | F5000-P006 | 19 V/3.4 A, 65 W |
| VESA MOUNT KIT | F5000-X002 | Suitable for SMARTCASE™ S500, S520 |
| INTERNAL SPEAKER KIT | F5000-K009 | Mono Speaker + Mounting Rubber |
| WALL MOUNT BRACKETS | F5000-X001 | Suitable for SMARTCASE™ S500, S520, 2x Brackets per chassis incl. screws |
| DC-IN CONNECTOR LOCK | F5000-X003 | Suitable for SMARTCASE™ S500, S520 |
| DUAL WLAN ANTENNA KIT | F5000-W002 | M.2 2230 WLAN module Intel® 9260 NON VPRO, left (grey)/right (black) Antenna (incl. cable) |
| SATA DATA/POWER CABLE | F5000-K012 | For optional 2.5" drive |

## ▶ GLOBAL HEADQUARTERS

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