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 and 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 (PCle 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

TECHNICAL INFORMATION

<table>
<thead>
<tr>
<th>SYSTEM</th>
<th>PROCESSOR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intel® Core™ i9/i7/i5/i3 (8th/9th Gen) processor series</td>
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<tr>
<td></td>
<td>Intel® Pentium®/Intel® Celeron® processor series</td>
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<tr>
<td></td>
<td>Socket LGA1151 – up to 65 W TDP</td>
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<tr>
<td></td>
<td>Intel® Q370 Chipset</td>
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<tr>
<td></td>
<td>DDR4-2666, Dual Channel</td>
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<tr>
<td></td>
<td>2x DIMM sockets, up to 32 GByte memory</td>
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</table>

<table>
<thead>
<tr>
<th>VIDEO</th>
<th>GRAPHICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUDIO CODEC</td>
<td>Intel® HD Graphics (depends on installed processor), DX12</td>
</tr>
<tr>
<td>AUDIO INTERFACE</td>
<td>Realtek ALC671 stereo, High Definition Audio Codec</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>NETWORK CONNECTION</th>
<th>ETHERNET</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intel® i219LM with 10/100/1000 MBit/s, iAMT12</td>
</tr>
<tr>
<td></td>
<td>Wake-on-LAN (Wol) by interesting Packets, Link Status Change and Magic Packet™, PKE support, BIOS MAC Address Display</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PERIPHERAL CONNECTION</th>
<th>USB</th>
</tr>
</thead>
<tbody>
<tr>
<td>3x USB 3.1 Gen1, 2x USB 3.1 Gen1 Type C, 2x USB 3.1 Gen2, 2x USB 2.0 (by header)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STORAGE &amp; EXPANSION</th>
<th>SATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1x Serial ATA III 600 Interface (up to 6GBit/s), NCQ, AHCI, 1x M.2 PCIe (2280), 1x M.2 Key-E (2230)</td>
<td></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>POWER</th>
<th>CONNECTOR</th>
</tr>
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<tbody>
<tr>
<td>INPUT VOLTAGE</td>
<td>External DC-in 19 V</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FIRMWARE</th>
<th>BIOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>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 &amp; 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 (PCle x4-based M.2, NVMe) BIOS integrated HW Diagnostic Tool, Watchdog Support</td>
<td></td>
</tr>
</tbody>
</table>

No legacy OS support, no MBR installation
3 level Watchdog (BIOS/Bios Post/OS HW) integrated
Intel® Integrated TPM V2.0
## TECHNICAL INFORMATION

### SYSTEM CONTROL
- **FP HEADER**: 1x Header for Reset button, HDD LED & External Speaker, Power button, Power LED
- **SECURITY**: Recovery BIOS, System and BIOS Password, Boot Sequence Control, USB- Port Access Protection, Boot Sector Virus Warning, Write Protection for Flash BIOS, EraseDisk (BIOS Feature), Intel integrated TPM V2.0

### COOLING
- **FAN**: 2x PWM fan (CPU/System); 5 V

### SOFTWARE
- **OS SUPPORT**: MS Windows 10
  - Linux-64

### MECHANICAL
- **DIMENSIONS (L x W)**: Mini-STX: 5.5” x 5.8” (140 x 148 mm)

### CERTIFICATION
- **EMC & SAFETY**: FCC-B verified
tcTÜVus acc. IEC62368-1 (upon request); CE Class B

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## POWER SUPPLY REQUIREMENTS

### SOURCE*
- **VOLTAGE**: 19 V
- **MIN. PS LOAD**: 0 A
- **MAX. VOLTAGE TOLERANCE**: +10% / -15%
- **MAX. MOTHERBOARD INPUT POWER**: max. 5 A
  - max. 95 W*
  
* See TechNotes document for details

> ***) TXT (Trusted Execution Technology) not supported!

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## TECHNICAL INFORMATION

### FEATURES
- **Chipset**: iQ370
- **Board Size**: Mini-STX
- **Board Size**: + / - / - / + / - / +
- **Input Power**: - / +
- **Operating Mode**: 10 °C – 50 °C

### 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**: +
- **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 / -
- **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**
  - Audio Stereo Mic. In / Headphones (Headset) [Front Connectors]: - / -
  - LAN (RJ-45): 1 / 1
  - PS/2 Mouse / Keyboard: 1
- **USB 2.0 / USB 3.1 Gen1 / USB 3.1 Gen2 / USB 3.1 Gen1-Type C (DP)**
  - Audio Stereo Mic. In / Headphones (Headset) [Front Connectors]: 0 / 2 / 2 / 1
  - LAN (RJ-45): 1 / 1
  - PS/2 Mouse / Keyboard: -

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*TXT (Trusted Execution Technology) not supported!
**FAN design 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

![Connector Diagram](image)

## ORDERING INFORMATION

<table>
<thead>
<tr>
<th>ARTICLE</th>
<th>PART NO.</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>D3664-B mSTX</td>
<td>F5120-V175</td>
<td>Intel® 8th/9th Gen Core™ Processor Series, Intel® Q370 Chipset</td>
</tr>
</tbody>
</table>

### ACCESSORIES

<table>
<thead>
<tr>
<th>CHASSIS KIT INCL. COOLING SOLUTION</th>
<th>F5000-B2</th>
<th>SMARTCASE™ SS20 Requires different rear chassis wall (K1056-B520) (= included in D3664-B delivery kit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC ADAPTER 19 V / 65 W</td>
<td>F5000-P3</td>
<td>(E623)</td>
</tr>
<tr>
<td>VESA MOUNT KIT</td>
<td>F5000-X2</td>
<td>Suitable for SMARTCASE™ SS00, SS20</td>
</tr>
<tr>
<td>MONO SPEAKER KIT</td>
<td>F5000-K9</td>
<td>For chassis kit</td>
</tr>
<tr>
<td>WALL MOUNT BRACKETS</td>
<td>F5000-X1</td>
<td>Suitable for SMARTCASE™ SS00, SS20</td>
</tr>
<tr>
<td>DC-IN CONNECTOR LOCK</td>
<td>F5000-X3</td>
<td>Suitable for SMARTCASE™ SS00, SS20</td>
</tr>
<tr>
<td>DUAL WLAN ANTENNA KIT</td>
<td>F5000-W2</td>
<td>Incl. M.2 WLAN Module</td>
</tr>
<tr>
<td>SATA DATA/POWER CABLE</td>
<td>F5000-KT2</td>
<td>For optional 2.5&quot; drive</td>
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