D3598-B ATX
Extended Lifecycle Series

Intel® C422 Workstation chipset and Intel® Xeon® processors

- 2x PCIe x16
- Intel® VROC Support
- Dual LAN & Mini-PCIe
- HW Watchdog
- USB 3.1 Gen2 Type C
D3598-B ATX
Extended Lifecycle Series

The Extended Lifecycle Motherboard D3598-B ATX is the right choice for any demanding applications and needs. Featured by Intel® C422 Chipset, the D3598-B supports the Intel® Xeon® processors based on LGA2066. The perfect fit for any workstation and high performance computing will be realized with 7 PCIe connectors, Dual Intel® GbE LAN, Mini-Pcie and M.2 onboard capability as well as M.2 Riser to support two additional M.2 in RAID mode. The D3598-B fulfill the level of semi-industrial needs with 2x7 continuous operation up to 50 °C ambient temperature under heavy load (100 %) and prolonged lifecycle for min. 3 years.

### PRODUCT HIGHLIGHTS

- Intel® Xeon® processor W21xx/W22xx
- DDR4 2666 SDRAM Memory, max. 512 GByte
- Mini-Pcie socket incl. USB
- 7x PCIe generation 3 onboard
- S1 Multichannel audio onboard
- USB 3.1 Gen2, USB 3.1 Gen1 and USB 2.0
- USB 3.1 Gen2 Type C
- Dual Intel® GbE LAN supporting iAMT/vPro & Teaming
- 8x Serial GbE LAN onboard
- Trusted Platform Modul (Infineon) V2.0 onboard
- BIOS-POST/-Boot & OS - HW Watchdog onboard
- M.2 SSD 2280 socket (PCIe, for NVMe modules)
- Socket for optional Intel® VROC HW License Key (NVMe SSD RAID)

### TECHNICAL INFORMATION

| SYSTEM | PROCESSOR | Intel® Xeon® processor W21xx/W22xx
|        | Socket R4 (LGA2066), max. 165 W TDP, integrated Memory Controller (For details on supported processors please refer to our website) |
|        | CHIPSET MEMORY | Intel® C422 Workstation chipset
|        | 8 DIMM Sockets DDR4, max. 512 GByte, up to 4 channels |
|        | 8 GByte/16 GByte/32 GByte/64 GByte RDIMM Modules |
|        | DDR4 2133/2400/2666/2933 1.2 V, 288-pin, ECC |
|        | Max. supported memory and effective memory speed depends on installed processor |
| VIDEO | GRAPHICS | SLI-Certification for Nvidia Quadro cards |
| AUDIO | AUDIO CODEC | Realtek ALC671 |
|        | AUDIO INTERFACE | S1 Multichannel, High Definition Audio |
| NETWORK CONNECTION | ETHERNET | Intel® i219LM/Intel® i210 Ethernet Controller with 10/100/1000 MBit/s, iAMT/vPro |
|        | Wake-on-LAN (Wol) by interesting Packets, Link Status Change and Magic Packet™, PKE Support, BIOS MAC Address Display, Teaming Support |
| PERIPHERAL CONNECTION | USB | 2x USB 2.0 (by header), 6x USB 3.1 Gen1, 4x USB 3.1 Gen1 by header, 2x USB 3.1 Gen2 (ASMedia ASM1142) |
|        | 1x RS232 (by header) |
| STORAGE & EXPANSION | SATA / PCIe/PCI SLOTS | 8x SATA III 600 Interfaces (up to 6GBit/s, NCQ); AHCI; RAID 0/1/10PCIe x16: 2x 16 Lanes Gen3 |
|        | PCIe x8: 1x 8 Lanes, Gen3; 2x 4 Lanes, Gen3; 2x 1 Lane, Gen3 |
| POWER | CONNECTOR | 24 Pin Power Connector + 8 Pin (12 V) ATX Power Connector required |
|        | INPUT VOLTAGE | Support for Soft-Off Power Supplies; 12 V and 3.3 V Supply Voltage on PCIe Slots |
| 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, Quiet 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. |
|        | Full supervision of BIOS POST and Boot sequence |
|        | Trusted Platform Module TPM V2.0 (Infineon SLB9670; TCG compliant) |

www.kontron.com
## 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, Boot Sector Virus Warning
- Write Protection for Flash BIOS, EraseDisk (optional BIOS Feature),
- Infineon Trusted Platform Module (TPM V2.0)

### Security

**OS Support**
- MS Windows 7-64, MS Windows 10-64, Linux-64

### Mechanical

**Dimensions (L x W)**
- ATX: 12” x 9.6” (305 x 244 mm)

**Operating Temperature**
- 10 °C - 50 °C

### Environmental

**Certification**
- c TÜVus possible upon request, CE Class B, FCC-B verified

### Connector / Socket Diagram

**Slot Description**

- **Configuration**: CougarPoint-Industrial_V04
- **© 2010 FUJITSU8**

**SATA**
- Port #0/1
- Port #4/5
- Port #6/7

**4 x DDR4-2666 RDIMM ECC**

**PCIe**
- x16 Gen3 (16 lanes)
- CPU / Load max. 75W

**PCIe x8 Gen3 (8 lanes)**

**PCIe x8 Gen3 (4 lanes)**

**PCIe x8 Gen3 (1 lane)**

**PCIe x4**

**SSD M.2**
- 2280
- Mini PCIe
- halfsize
- fullsize

**ATX Connector (24 Pin)**

**USB 3.1 Gen1**

**USB 3.1 Gen2**

**Battery**

**Buzzer**

**TPM Socket**

**FAN 4**

**COM1**

**Intrusion**

**Audio Frontpanel**

**Slot**
- Slot: #7
- Slot: #6
- Slot: #5
- Slot: #4
- Slot: #3
- Slot: #2
- Slot: #1

**CPU**
- Intel Xeon® W-21xx
- Intel Xeon® W-22xx
- Socket R4
- LGA 2066

**PCH iC422**
- incl. heatsink

**TAR O Key Socket**

**FAN CPU**

**12V (8Pin)**
- for CPU and Slots

**PSU Control**

**FAN2**

**FAN3**

**USB 2.0 Stick Socket**

**USB 2.0**

**USB 3.1 Gen1**

**Frontpanel**

**I/O**

**D3598-B**

***(*)** 8 lanes with i9-109xxX processor only

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**Power Supply Requirements**

<table>
<thead>
<tr>
<th>Source</th>
<th>Voltage</th>
<th>Min. Ps Load</th>
<th>Max. Voltage Tolerance</th>
<th>Motherboard Capacitive Load</th>
<th>Motherboard Max. Current (continuous)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Power Supply</td>
<td>+ 12 Vcpu (Rail#2)</td>
<td>0.05 A*</td>
<td>± 5 %</td>
<td>1.000 µF</td>
<td>~45 A**, ***</td>
</tr>
<tr>
<td></td>
<td>+ 12 Vcpu (Rail#3)</td>
<td>0.05 A*</td>
<td>± 5 %</td>
<td>1.000 µF</td>
<td>~45 A**, ***</td>
</tr>
<tr>
<td></td>
<td>+ 12 Vcpu (Rail#1)</td>
<td>0.05 A*</td>
<td>± 5 %</td>
<td>1.000 µF</td>
<td>~45 A**, ***</td>
</tr>
<tr>
<td></td>
<td>- 12 V</td>
<td>0 A</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>+ 5 V</td>
<td>0.05 A</td>
<td>± 5 %</td>
<td>2.200 µF</td>
<td>~28 A***</td>
</tr>
<tr>
<td></td>
<td>+ 3.3 V</td>
<td>0.05 A</td>
<td>± 5 %</td>
<td>2.000 µF</td>
<td>~20 A***</td>
</tr>
<tr>
<td>Aux</td>
<td>+ 5 Vaux</td>
<td>0 A</td>
<td>± 5 % / - 3 %</td>
<td>2.200 µF</td>
<td>~2 A***</td>
</tr>
</tbody>
</table>

* Combined load for all 12 V Rails.
** Thereof processor peak current up to 32 A (<250 ms)
*** Depends on system configuration (Main focus: 12 V/3.3 V: PCIe Slots; 5 V: Memory/USB)
## TECHNICAL INFORMATION

### FEATURES

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board Size / Chipset</td>
<td>ATX / Intel® C422</td>
</tr>
<tr>
<td>Stereo Audio / 5.1 Multichannel Audio</td>
<td>- / +</td>
</tr>
<tr>
<td>Buzzer / int. Speaker Support</td>
<td>+ / +</td>
</tr>
<tr>
<td>Dual LAN Gbit / 100 Mbit / 10 Mbit</td>
<td>+ / + / + / + / +</td>
</tr>
<tr>
<td>DASH / Aol. / Boot / I/AMT 11.6 / vPro</td>
<td>- / - / + / + / +</td>
</tr>
<tr>
<td>SATA / SATA RAID / eSATA Support / M.2 (PCIe x4) / NVME RAID (VROC)*</td>
<td>+ / + / + / + / +</td>
</tr>
<tr>
<td>USB 2.0 / USB 3.1 Gen1 / USB 3.1 Gen2 / USB 3.1 Gen2 Type C</td>
<td>+ / + / + / + / +</td>
</tr>
<tr>
<td>FAN controlled &amp; monitored PSU** / CPU / AUX1 / AUX2 / AUX3</td>
<td>+ / + / + / + / +</td>
</tr>
<tr>
<td>TEMP monitored CPU / Onboard Sensors</td>
<td>+ / +</td>
</tr>
</tbody>
</table>

### SPECIAL FEATURES

- Silent Fan / System Guard
- Recovery BIOS / Desk Update / Multi Boot
- HDD Password / USB Security / EraseDisk
- Logo Boot Option
- BIOS POST- / BIOS Boot- / OS - HW Watchdog
- Operating Mode 24-7 / 8-5 (hrs per day - days per week)
- Mainboard operating temperature range (chassis inside)
  - 10 °C – 50 °C
- Support for additional M.2 SSD modules (via M.2 carrier board D3352)**

### INTERNAL CONNECTORS

- DIMM Sockets (DDR4 2666/2933 MHz)
- PCI Express® x16: 16lanes-gen3
- PCI Express® x8: 8 lanes-gen3 / 4 lanes-gen3 / 1 lane-gen3
- SATA (600) / SATA (300) / M.2 SSD
- S/PDIF / FireWire™ / Audio Input / Front Panel HD Audio (9-Pin)
- USB 2.0 channels / USB 3.1 Gen1 channels / USB 3.1 Gen2 channels
- socket for USB2.0 stick / USB 2.0 via Mini-PCIe socket
- Serial (FIFO, 16550 compatible) / SMBus Access
- FAN PSU** / CPU / AUX1 / AUX2 / AUX3
- Intrusion (Case Open)
- Parallel (EPP/ECP) Pin Connector
- Power 24 Pin (BTX) / Power 8 Pin (additional 12 V Supply)

### EXTERNAL CONNECTORS

- Graphics
- Audio Mic. In / Line in / Line out
- LAN (RJ-45) / PS/2 Mouse / PS/2 Keyboard
- FireWire™ / Serial (RS232) / Parallel (EPP/ECP)
- USB 2.0 / USB 3.1 Gen1 / USB 3.1 Gen2 Type A / USB 3.1 Gen2 Type C

### ORDERING INFORMATION

<table>
<thead>
<tr>
<th>Article</th>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>D3598-B ATX</td>
<td>F5110-V150</td>
<td>Intel® Xeon® W21xx/22xx, Intel® C422 Chipset</td>
</tr>
</tbody>
</table>

### ACCESSORIES

- M.2 ADAPTER BOARD: F5000-M003 - Adapter for Mini PCIe to M2 Wi-Fi modules
- SERIAL PORT CABLE: F5000-K005 - ATX Slotbracket
- M.2 CARRIER BOARD: F5000-M002 / F5000-M001
  - 2x M.2
  - 1x M.2

### GLOBAL HEADQUARTERS

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