

# mITX-CFL-S

BOTH CORE™ & XEON® MODELS AVAILABLE

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## MINI-ITX INDUSTRIAL MOTHERBOARD WITH INTEL® XEON® E-2200 / E-2100 & 9TH / 8TH GEN CORE™ / CELERON® CPU

- ▶ 1x eDP, 1x HDMI, 2x DP for triple display support
- ▶ 3x GbE LAN for Ethernet
- ▶ 6x USB 3.1, 4x USB 2.0, 4x RS232/422/485, 8-bit DIO for peripheral connection
- ▶ 2x SATA 3.0 for storage
- ▶ 1x PCIe x16, 1x M.2 Key M, 1x M.2 Key A, 1x M.2 Key B for expansion

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## MINI-ITX INDUSTRIAL MOTHERBOARD WITH INTEL® XEON® E-2200 / E-2100 & 9TH / 8TH GEN CORE™ / CELERON® CPU

mITX-CFL-S is a Mini-ITX industrial motherboard equipped with Intel® Xeon® E-2200 / E-2100 Series and 9th / 8th Generation Core™ / Celeron® S-Series Processors. There are two types of derived models based on Core™ and Xeon® processors respectively, making it suitable for enhanced embedded applications in infotainment, industrial automation, process control, small business / storage server, entry / mobile / cloud workstation, media

transcode and edge computing / IoT segments.

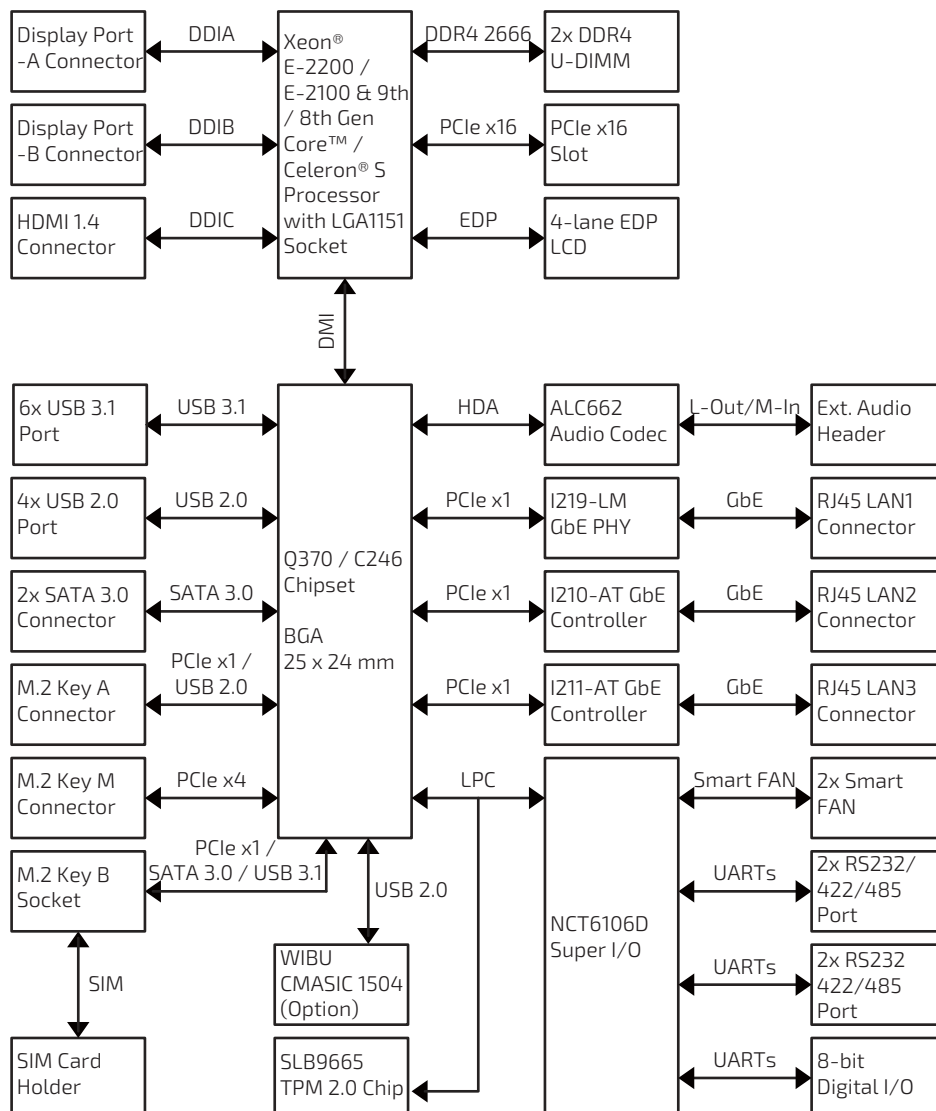
In addition to a variety of peripheral interfaces, mITX-CFL-S has two SATA 3.0 sockets, one PCIe x16 slot, one M.2 Key M socket, one M.2 Key A socket and one M.2 Key B socket for great storage and expansion possibilities.

### ▶ PRODUCT HIGHLIGHTS

- ▶ Intel® Xeon® E-2200 / E-2100 processors
- ▶ 9th / 8th Generation Intel® Core™ / Celeron® S-Series processors
- ▶ Intel® C246 / Q370 Chipset
- ▶ 2x DDR4 U-DIMM memory socket (ECC support)
- ▶ 1x eDP, 1x HDMI, 2x DP for triple display support
- ▶ 3x GbE LAN for Ethernet
- ▶ 6x USB 3.1, 4x USB 2.0 for USB device connection
- ▶ 4x RS232/422/485 for serial device connection
- ▶ 8-bit DIO for device / signal control
- ▶ 2x SATA 3.0 for storage (RAID 0/1 support)
- ▶ 1x PCIe x16, 1x M.2 Key M, 1x M.2 Key A, 1x M.2 Key B for expansion
- ▶ TPM 2.0 support



### ▶ BLOCK DIAGRAM



► TECHNICAL INFORMATION

<b>SYSTEM</b>	<b>PROCESSOR</b>  <b>CHIPSET</b>  <b>MEMORY</b>	Intel® Xeon® E-2200 Series (LGA1151 socket, up to 65 W TDP) Intel® Xeon® E-2100 Series (LGA1151 socket) 9th Generation Intel® Core™ S-Series (LGA1151 socket, up to 65 W TDP) 8th Generation Intel® Core™ S-Series (LGA1151 socket) 8th Generation Intel® Celeron® S-Series (LGA1151 socket) Intel® C246 (Xeon®, Core™ & Celeron® CPU) Intel® Q370 (Core™ & Celeron® CPU) 2x DDR4 2400/2666 U-DIMM (ECC support)
<b>VIDEO</b>	<b>GRAPHICS</b>  <b>DISPLAY INTERFACE</b>  <b>MULTIPLE DISPLAY</b>	Intel® UHD Graphics P630 (Xeon® CPU) Intel® UHD Graphics 630 (Core™ CPU) Intel® UHD Graphics 610 (Celeron® CPU) 1x eDP 1.4 (4096 x 2304 @ 60 Hz) 1x HDMI 1.4 (on rear, 4096 x 2160 @ 24 Hz / 2560 x 1600 @ 60 Hz) 2x DP (on rear, 4096 x 2304 @ 60 Hz) Triple
<b>AUDIO</b>	<b>AUDIO CODEC</b> <b>AUDIO INTERFACE</b>	Realtek ALC662 1x Line-out (by header) 1x Mic-in (by header) 1x S/PDIF (by header)
<b>NETWORK CONNECTION</b>	<b>ETHERNET</b>	3x GbE LAN (RJ45 on rear, 1x Intel® I219-LM, 1x Intel® I210-AT, 1x Intel® I211-AT)
<b>PERIPHERAL CONNECTION</b>	<b>USB</b>  <b>SERIAL PORT</b> <b>OTHER I/Os</b>	6x USB 3.1 (Type A on rear) 4x USB 2.0 (by header) 4x RS232/422/485 (2x DB9 on rear with 5 V / 12 V support, 2x by header) 1x 8-bit DIO (by wafer)
<b>STORAGE &amp; EXPANSION</b>		2x SATA 3.0 (RAID 0/1 support) 1x PCIe x16 1x M.2 Key M (type 2280, mixed w/ PCIe x4) 1x M.2 Key A (type 2230, mixed w/ PCIe x1 & USB 2.0) 1x M.2 Key B (type 2242, mixed w/ PCIe x1, SATA 3.0 & USB 3.1) 1x Micro SIM Card Cage
<b>POWER</b>	<b>CONNECTOR</b> <b>INPUT VOLTAGE</b>	1x 2x4-pin ATX connector DC +12 V
<b>FIRMWARE</b>	<b>BIOS</b> <b>WATCHDOG</b> <b>H/W MONITOR</b> <b>REAL TIME CLOCK</b> <b>TPM</b>	AMI uEFI BIOS w/ 128 Mb SPI Flash Programmable WDT to generate system reset event Input & Core Voltages, CPU & System Temperatures Chipset integrated RTC Supported (Infineon SLB9665 TPM 2.0)
<b>SYSTEM CONTROL &amp; MONITORING</b>	<b>FP HEADER</b>	1x Header for Reset button, HDD LED & External Speaker 1x Header for Power button, Power LED & SM bus 1x Header for M.2 Key M activity LED 1x Header for M.2 Key A activity LED 1x Header for M.2 Key B activity LED
<b>COOLING</b>	<b>FAN</b>	1x Wafer for CPU Smart Fan 1x Wafer for System Smart Fan
<b>SOFTWARE</b>	<b>OS SUPPORT</b>	Windows 10 (Core™ / Celeron® CPU) Windows Server (Xeon® CPU)
<b>MECHANICAL</b>	<b>DIMENSIONS (L x W)</b>	Mini-ITX (170 mm x 170 mm / 6.70" x 6.70")
<b>ENVIRONMENTAL</b>	<b>OPERATION TEMPERATURE</b>  <b>STORAGE TEMPERATURE</b>  <b>HUMIDITY</b>	0 °C ~ 60 °C / 32 °F ~ 140 °F (Standard) -20 °C ~ 70 °C / -4 °F ~ 158 °F (Extended) -20 °C ~ 80 °C / -4 °F ~ 176 °F (Standard) -40 °C ~ 85 °C / -40 °F ~ 185 °F (Extended) 0% ~ 95%
<b>CERTIFICATION</b>	<b>EMC &amp; SAFETY</b>	CE, FCC Class A