

mITX-CFL-S

BOTH CORE™ & XEON® MODELS AVAILABLE



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.

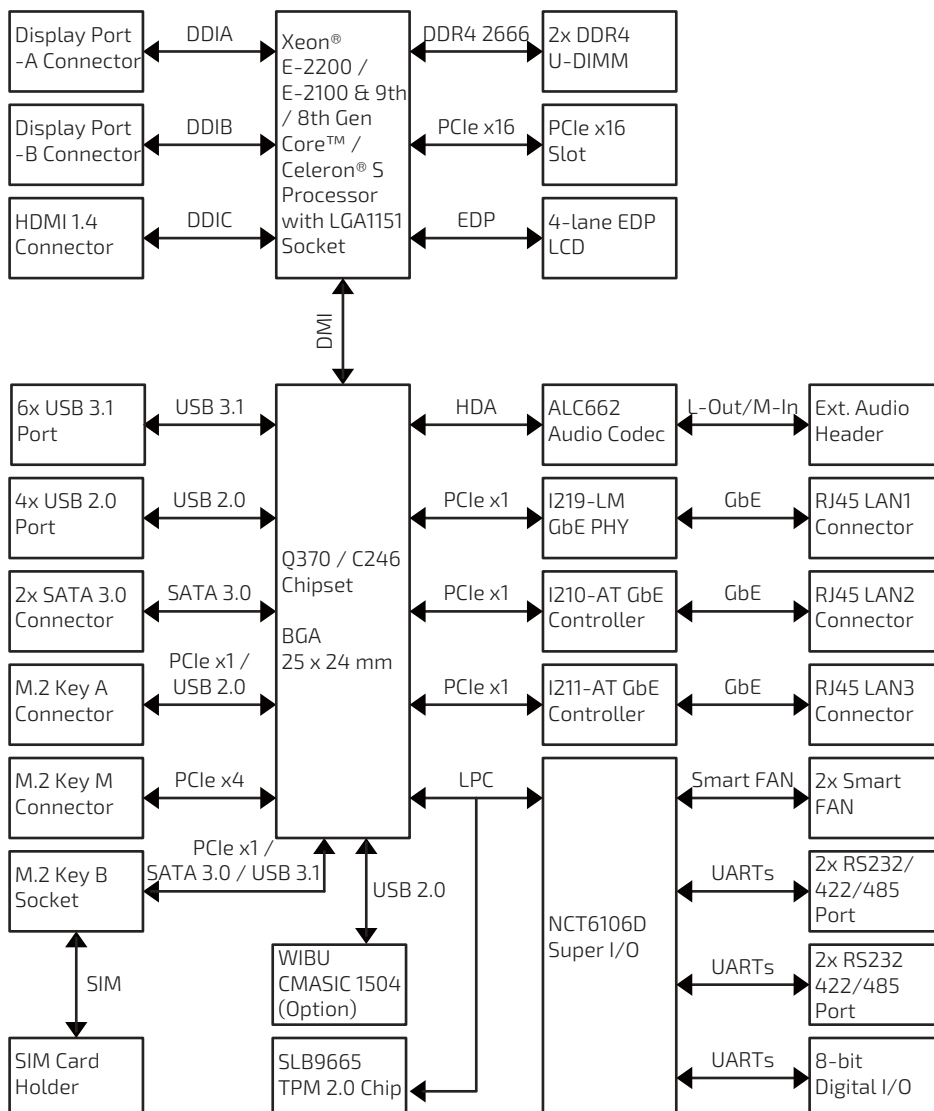
In addition to a variety of peripheral interfaces, mITX-CFL-S has two SATA 3.0 sockets, one PCIe x16 slot, one M.2 Key M socket, one M.2 Key A socket and one M.2 Key B socket for great storage and expansion possibilities.

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

SYSTEM	PROCESSOR CHIPSET MEMORY	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)
VIDEO	GRAPHICS DISPLAY INTERFACE MULTIPLE DISPLAY	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
AUDIO	AUDIO CODEC AUDIO INTERFACE	Realtek ALC662 1x Line-out (by header) 1x Mic-in (by header) 1x S/PDIF (by header)
NETWORK CONNECTION	ETHERNET	3x GbE LAN (RJ45 on rear, 1x Intel® I219-LM, 1x Intel® I210-AT, 1x Intel® I211-AT)
PERIPHERAL CONNECTION	USB SERIAL PORT OTHER I/Os	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)
STORAGE & EXPANSION		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
POWER	CONNECTOR INPUT VOLTAGE	1x 2x4-pin ATX connector DC +12 V
FIRMWARE	BIOS WATCHDOG H/W MONITOR REAL TIME CLOCK TPM	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)
SYSTEM CONTROL & MONITORING	FP HEADER	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
COOLING	FAN	1x Wafer for CPU Smart Fan 1x Wafer for System Smart Fan
SOFTWARE	OS SUPPORT	Windows 10 (Core™ / Celeron® CPU) Windows Server (Xeon® CPU)
MECHANICAL	DIMENSIONS (L x W)	Mini-ITX (170 mm x 170 mm / 6.70" x 6.70")
ENVIRONMENTAL	OPERATION TEMPERATURE STORAGE TEMPERATURE HUMIDITY	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%
CERTIFICATION	EMC & SAFETY	CE, FCC Class A

► ORDERING INFORMATION

ARTICLE	DESCRIPTION
mITX-CFL-S-C246	Intel® C246 Chipset, Operation Temperature: 0°C ~ 60°C
mITX-CFL-S-Q370	Intel® Q370 Chipset, Operation Temperature: 0°C ~ 60°C
mITX-CFL-S-C246-ET	Intel® C246 Chipset, Operation Temperature: -20°C ~ 70°C

ACCESSORIES

ARTICLE	PART NO.	DESCRIPTION
I/O SHIELD	0F0000000000900L	Sus 340 Stainless Steel, T = 0.2 mm
USB 2.0 CABLE*	0C5040000000110L	2.54 mm 2x5P to 2x USB connectors, L = 340 mm
COM PORT CABLE*	0C50200000005130L	D-SUB 9P (male) to 1x10P 1.25 pitch, L = 350 mm
DIO CABLE*	0C50200000003360L	1x10P 1.25 pitch, L = 200 mm
SATA POWER CABLE*	0C50200000005260L	2.54 pitch 1x4P to 1.27 pitch 1x15P, L= 460 mm
SATA CABLE*	0C50200000004240L	With lock 1.27 pitch 1x7P, L = 460 mm
AUDIO CABLE*	0C50200000005530L	A2546H-2x6P (DP2.54) to PJ-2509CTPC-5-L x2 (Audio Jack w/ detect pin), L = 400 mm
DC JACK CABLE*	0C5029003000130L	ATX 2x2P 4.2 pitch to DC Jack, L = 300 mm

(* : Optional)