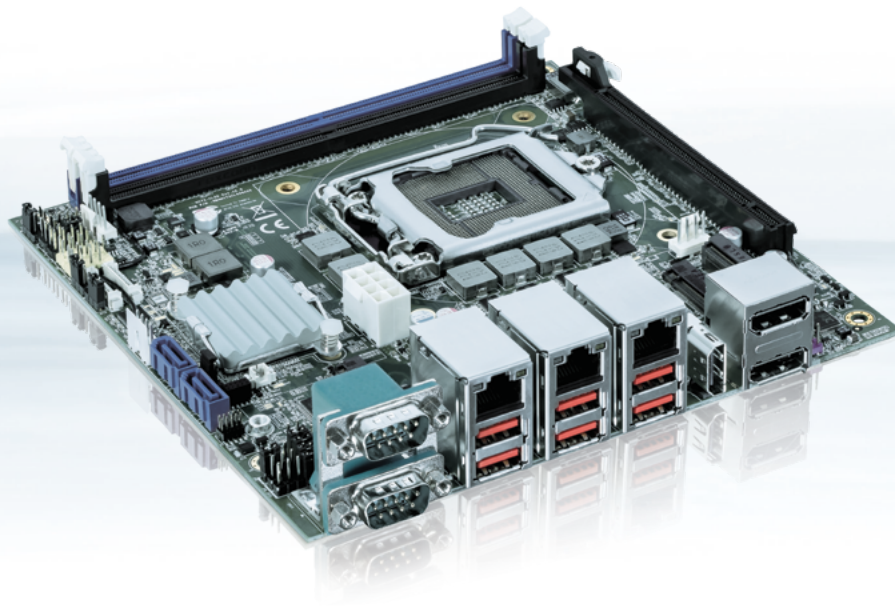


# mITX-CFL-S

Both Core™ & Xeon® Models available

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Product of  
Kontron Asia

## Mini-ITX Industrial Motherboard with Intel® Xeon® E-2200/E-2100 & 9th/8th GEN Core™/Celeron® CPU

- ▶ 1x eDP, 2x DP, 1x HDMI 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

POSSIBILITIES START HERE



# mITX-CFL-S

## Mini-ITX Industrial Motherboard with Intel® Xeon® E-2200/E-2100 & 9th/8th Gen Core™/Celeron® CPU

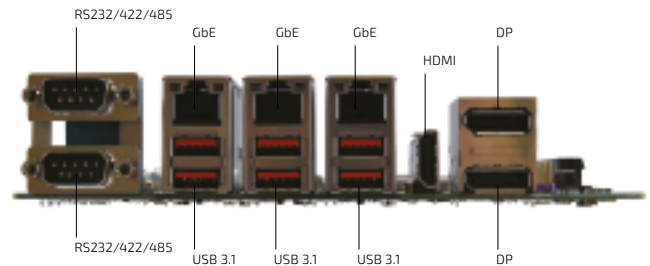
mITX-CFL-S is a Mini-ITX industrial motherboard equipped with Intel® Xeon® E-2200/E-2100 Series and 9th/8th Generation Core™/Celeron® S-Series Processors. There are two types of derived models based on Core™ and Xeon® processors respectively, making it suitable for enhanced embedded applications in infotainment,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

and edge computing/IoT segments.

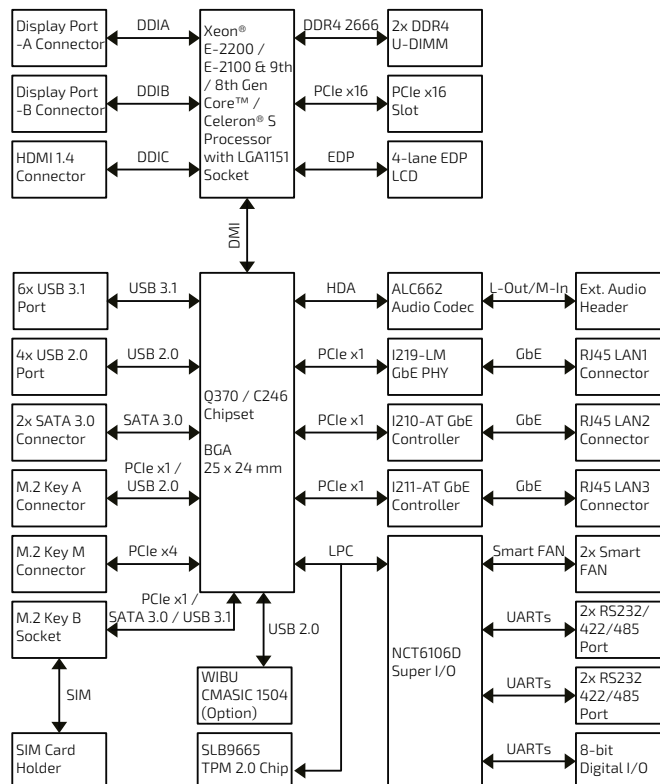
In addition to a variety of peripheral interfaces, mITX-CFL-S has two SATA 3.0 sockets, one PCIe x16 slot, one M.2 Key M socket, one M.2 Key A socket and one M.2 Key B socket for great storage and expansion possibilities.

### 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, 2x DP, 1x HDMI 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>	Intel® Xeon® E-2200 Series (LGA1151 socket, max. 35 W TDP for 8 Core CPU) Intel® Xeon® E-2100 Series (LGA1151 socket) 9th Gen Intel® Core™ S-Series (LGA1151 socket, max. 35 W TDP for 8 Core CPU) 8th Gen Intel® Core™ S-Series (LGA1151 socket) 8th Gen Intel® Celeron® S-Series (LGA1151 socket) Intel® C246 (Xeon®, Core™ & Celeron® CPU) Intel® Q370 (Core™ & Celeron® CPU)
	<b>CHIPSET</b>	
	<b>MEMORY</b>	2x DDR4 2400/2666 U-DIMM (ECC support)
<b>VIDEO</b>	<b>GRAPHICS</b>	Intel® UHD Graphics P630 (Xeon® CPU) Intel® UHD Graphics 630 (Core™ CPU) Intel® UHD Graphics 610 (Celeron® CPU)
	<b>DISPLAY INTERFACE</b>	1x eDP 1.4 (4096 x 2304 @ 60 Hz) 2x DP (on rear, 4096 x 2304 @ 60 Hz) 1x HDMI 1.4 (on rear, 4096 x 2160 @ 24 Hz/2560 x 1600 @ 60 Hz)
	<b>MULTIPLE DISPLAY</b>	Triple
<b>AUDIO</b>	<b>AUDIO CODEC</b>	Realtek ALC662
	<b>AUDIO INTERFACE</b>	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>	6x USB 3.1 (Type A on rear) 4x USB 2.0 (by header)
	<b>SERIAL PORT</b>	4x RS232/422/485 (2x DB9 on rear with 5 V/12 V support, 2x by header)
	<b>OTHER I/O</b>	1x 8-bit DIO (by wafer)
<b>STORAGE &amp; EXPANSION</b>	<b>SATA</b>	2x SATA 3.0 (RAID 0/1 support)
	<b>PCIe</b>	1x PCIe x16
	<b>M.2</b>	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)
	<b>SIM CARD HOLDER</b>	1x Micro SIM Card Cage
<b>POWER</b>	<b>INPUT VOLTAGE CONNECTOR</b>	DC +12 V 1x 2x4-pin ATX connector
<b>FIRMWARE</b>	<b>BIOS</b>	AMI uEFI BIOS w/ 128 Mb SPI Flash
	<b>WATCHDOG</b>	Programmable WDT to generate system reset event
	<b>H/W MONITOR</b>	Input & Core Voltages, CPU & System Temperatures
	<b>REAL TIME CLOCK</b>	Chipset integrated RTC
	<b>TPM</b>	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>DIMENSION (L x W)</b>	Mini-ITX (170 mm x 170 mm/6.70" x 6.70")
<b>ENVIRONMENTAL</b>	<b>OPERATION TEMPERATURE</b>	0 °C ~ 60 °C / 32 °F ~ 140 °F (Standard) -20 °C ~ 70 °C / -4 °F ~ 158 °F (Extended)
	<b>STORAGE TEMPERATURE</b>	-20 °C ~ 80 °C / -4 °F ~ 176 °F (Standard) -40 °C ~ 85 °C / -40 °F ~ 185 °F (Extended)
	<b>HUMIDITY</b>	0 % ~ 95 %
<b>CERTIFICATION</b>	<b>EMC &amp; SAFETY</b>	CE Class A, FCC Class A

## ▶ ORDERING INFORMATION

ARTICLE	PART NO.	DESCRIPTION
MITX-CFL-S-C246	46015-0000-00-0	Intel® C246 Chipset, Operation Temperature: 0 °C ~ 60 °C
MITX-CFL-S-Q370	46016-0000-00-0	Intel® Q370 Chipset, Operation Temperature: 0 °C ~ 60 °C
MITX-CFL-S-C246-ET	46017-0000-00-0	Intel® C246 Chipset, Operation Temperature: -20 °C ~ 70 °C

### ACCESSORIES

ARTICLE	PART NO.	DESCRIPTION
I/O SHIELD		Sus 340 Stainless Steel, T = 0.2 mm
USB 2.0 CABLE*	1064-2429	2.54 mm 2x 5P to 2x USB connectors, L = 340 mm
COM PORT CABLE*	1064-2427	D-SUB 9P (male) to 1x 10P 1.25 pitch, L = 350 mm
DIO CABLE*	1065-3137	1x 10P 1.25 pitch, L = 200 mm
SATA POWER CABLE*	1064-2430	2.54 pitch 1x 4P to 1.27 pitch 1x 15P, L = 460 mm
SATA CABLE*	1064-2431	With lock 1.27 pitch 1x7 P, L = 460 mm
AUDIO CABLE*	1065-3141	A2546H-2x 6P (DP2.54) to PJ-2509CTPC-5-L x2 (Audio Jack w/ detect pin), L = 400 mm
PHOENIX 4-PIN DC IN CABLE*		C4255HF-2*4P (5557) 4.2 Pitch to 2EHDP-4P 1*4P 5.08 Pitch, L = 300 mm

\*Optional

## ▶ GLOBAL HEADQUARTERS

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