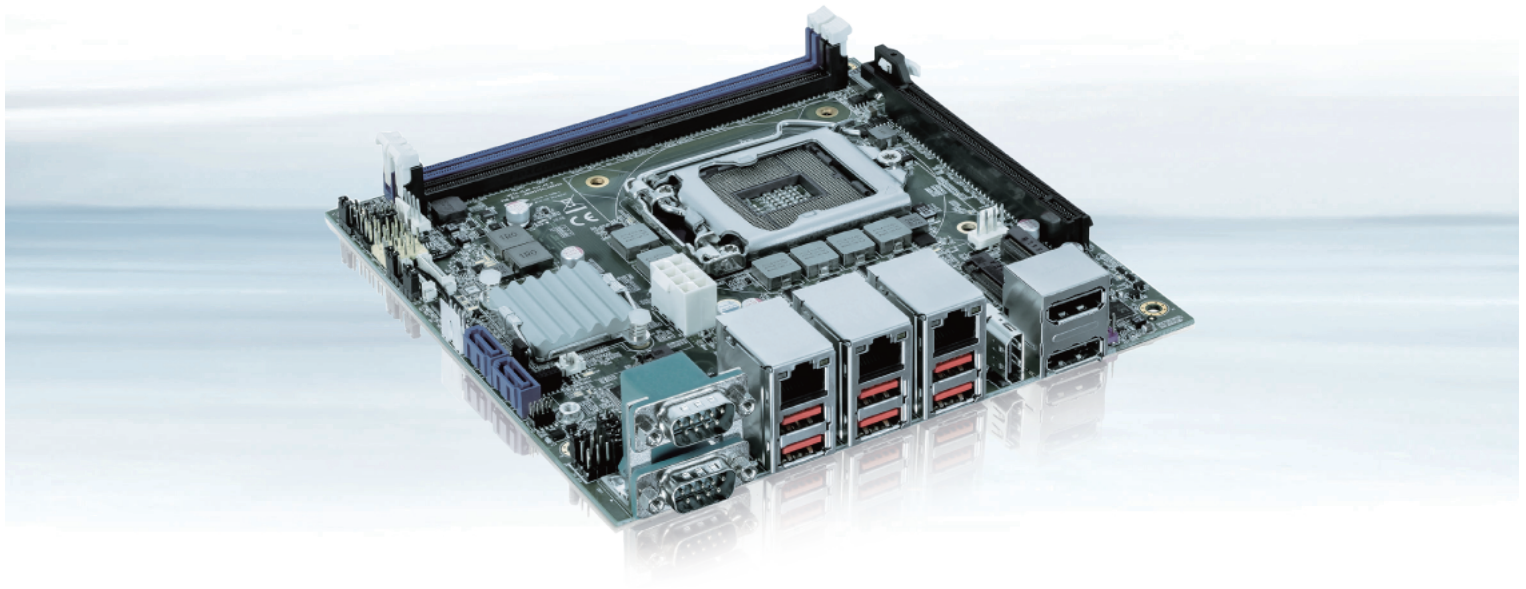


mITX-CFL-S

BOTH CORE™ & XEON® MODELS AVAILABLE



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

- ▶ 1x eDP, 2x DP, 1x HDMI for triple display support
- ▶ 3x GbE LAN for Ethernet
- ▶ 2x USB 3.2 Gen 2, 4x USB 3.2 Gen 1, 4x USB 2.0, 4x RS232/422/485, 8x DIO for peripherals
- ▶ 2x SATA 3.0 for storage
- ▶ 1x PCIe x16, 1x M.2 Key A, 1x M.2 Key B, 1x M.2 Key M for SSD & expansion

mITX-CFL-S

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

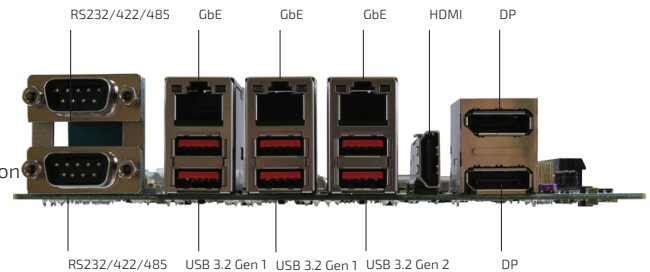
mITX-CFL-S is a Mini-ITX industrial motherboard equipped with Intel® Xeon® E-2200 / E-2100 Series and 9th / 8th Generation Core™ / Celeron® S-Series Processors. There are two types of derived models based on Core™ and Xeon® processors respectively, making it suitable for enhanced embedded applications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

transcode and edge computing / IoT segments.

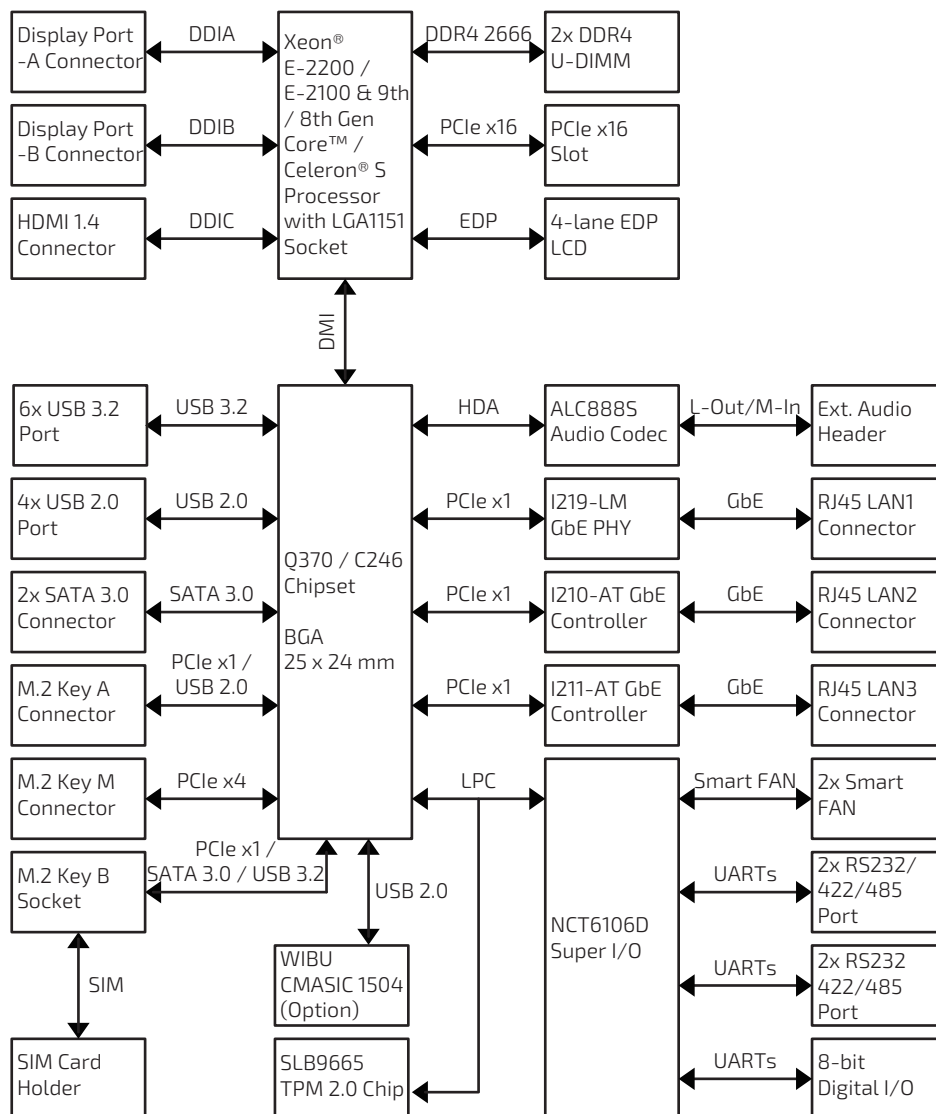
In addition to a variety of peripheral interfaces, mITX-CFL-S has two SATA 3.0 sockets, one PCIe x16 slot, one M.2 Key M socket, one M.2 Key A socket and one M.2 Key B socket for great storage and expansion possibilities.

▶ 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
- ▶ 2x USB 3.2 Gen 2, 4x USB 3.2 Gen 1, 4x USB 2.0 for USB device connection
- ▶ 4x RS232/422/485 for serial device connection
- ▶ 8x DIO for device / signal control
- ▶ 2x SATA 3.0 for storage (RAID 0/1 support)
- ▶ 1x PCIe x16, 1x M.2 Key A, 1x M.2 Key B, 1x M.2 Key M for SSD & expansion
- ▶ TPM 2.0 support



▶ BLOCK DIAGRAM



► TECHNICAL INFORMATION

SYSTEM	PROCESSOR	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)
	CHIPSET	Intel® C246 (Xeon®, Core™ & Celeron® CPU) Intel® Q370 (Core™ & Celeron® CPU)
	MEMORY	2x DDR4 2400/2666 U-DIMM (ECC support)
VIDEO	GRAPHICS	Intel® UHD Graphics P630 (Xeon® CPU) Intel® UHD Graphics 630 (Core™ CPU) Intel® UHD Graphics 610 (Celeron® CPU)
	DISPLAY INTERFACE	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)
	MULTIPLE DISPLAY	Triple
AUDIO	AUDIO CODEC	Realtek ALC888S
	AUDIO INTERFACE	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	2x USB 3.2 Gen 2 (Type A on rear) 4x USB 3.2 Gen 1 (Type A on rear) 4x USB 2.0 (by header)
	SERIAL PORT	4x RS232/422/485 (2x DB9 on rear with 5 V / 12 V support, 2x by header)
	OTHER I/Os	8x DIO (by wafer)
STORAGE & EXPANSION	SATA	2x SATA 3.0 (RAID 0/1 support)
	PCI EXPRESS	1x PCIe x16
	M.2	1x M.2 Key A (Type 2230, w/ PCIe x1 / USB 2.0) 1x M.2 Key B (Type 2242, w/ PCIe x1 / SATA 3.0 / USB 3.2 / UIM) 1x M.2 Key M (Type 2280, w/ PCIe x4)
	SIM CARD HOLDER	1x SIM Card Cage (Micro type)
POWER	INPUT VOLTAGE	DC +12 V
	CONNECTOR	1x 2x4-pin ATX connector
FIRMWARE	BIOS	AMI uEFI BIOS w/ 128 Mb SPI Flash
	WATCHDOG	Programmable WDT to generate system reset event
	H/W MONITOR	Input & Core Voltages, CPU & System Temperatures
	REAL TIME CLOCK	Chipset integrated RTC
	SECURITY	TPM 2.0 (Infineon SLB9665)
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	OPERATING TEMPERATURE	0 °C ~ 60 °C / 32 °F ~ 140 °F (Standard) -20 °C ~ -70 °C / -4 °F ~ 158 °F (Extended)
	STORAGE TEMPERATURE	-20 °C ~ 80 °C / -4 °F ~ 176 °F (Standard) -40 °C ~ 85 °C / -40 °F ~ 185 °F (Extended)
	HUMIDITY	0 % ~ 95 %
COMPLIANCE	EMC & SAFETY	CE Class A, FCC Class A, UL

▶ ORDERING INFORMATION

ARTICLE	ORDERING CODE*	DESCRIPTION
	EMEA / AMERICA	
miTX-CFL-S-0-C246	46015-0000-00-0	Intel® C246 Chipset, Operation Temperature: 0°C ~ 60°C
miTX-CFL-S-3-Q370	46016-0000-00-0	Intel® Q370 Chipset, Operation Temperature: 0°C ~ 60°C
miTX-CFL-S-0-C246-ET	46017-0000-00-0	Intel® C246 Chipset, Operation Temperature: -20°C ~ 70°C

(* For ordering code for APAC, contact your local account manager.)

ACCESSORIES

ARTICLE	ORDERING CODE		DESCRIPTION
	EMEA / AMERICA	APAC	
I/O SHIELD	TBD	0F000000000900L	Sus 304 Stainless Steel, T = 0.2 mm
USB 2.0 CABLE*	1064-2429	0C5020000005700L	2.54 mm 2x5P to 2x USB connectors, L = 250 mm
COM PORT CABLE*	1064-2427	0C5020000005130L	D-SUB 9P (male) to 1x10P 1.25 pitch, L = 350 mm
DIO CABLE*	1065-3137	0C5020000003360L	1x10P 1.25 pitch, L = 200 mm
SATA POWER CABLE*	1069-3058	0C5020000005260L	2.54 pitch 1x4P to 1.27 pitch 1x15P, L = 460 mm
SATA CABLE*	1064-2431	0C5020000004240L	With lock 1.27 pitch 1x7P, L = 460 mm
AUDIO CABLE*	1065-3141	0C5020000005530L	A2546H-2x6P (DP2.54) to 2x Audio Jack w/ detect pin, L = 400 mm
PHOENIX DC IN CABLE*	1065-3176	0C5020000005740L	C4255HF-2*4P (5557) 4.2 Pitch to 2EHDP-4P 1*4P 5.08 Pitch, L = 300 mm
ACTIVE COOLER*	TBD	0H05XX000002410L	90 x 90 x 64.3 mm, 6,800 RPM fan, w/ thermal pad, w/ bracket, Max. 65 W TDP

(*: Optional)

▶ GLOBAL HEADQUARTERS

Kontron Europe GmbH

Gutenbergstraße 2
 85737 Ismaning, Germany
 Tel.: + 49 821 4086-0
 Fax: + 49 821 4086-111
 info@kontron.com
www.kontron.com