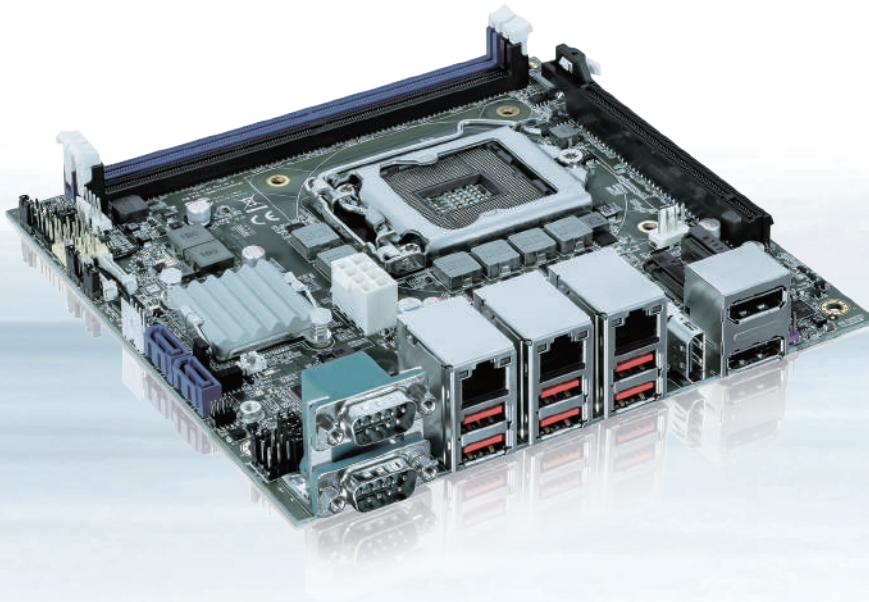


mITX-CFL-S

BOTH CORE™ & XEON® MODELS AVAILABLE



MINI-ITX INDUSTRIAL MOTHERBOARD WITH INTEL® COFFEE LAKE S-SERIES AND XEON E-SERIES PROCESSORS

- ▶ 1x eDP, 1x HDMI, 2x DP for display output
- ▶ 3x GbE LAN for Ethernet
- ▶ Up to 6x USB 3.1, up to 4x USB 3.0, 4x USB 2.0, 4x RS232/422/485, 1x 8-bit DIO
- ▶ 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

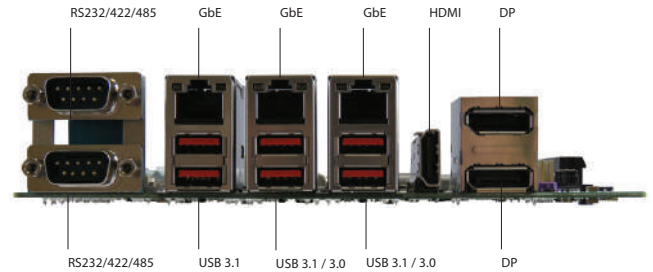
MINI-ITX INDUSTRIAL MOTHERBOARD WITH INTEL® COFFEE LAKE S-SERIES AND XEON E-SERIES PROCESSORS

mITX-CFL-S is a Mini-ITX industrial motherboard equipped with two types of derived models based on Core™ i and Xeon® E 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.

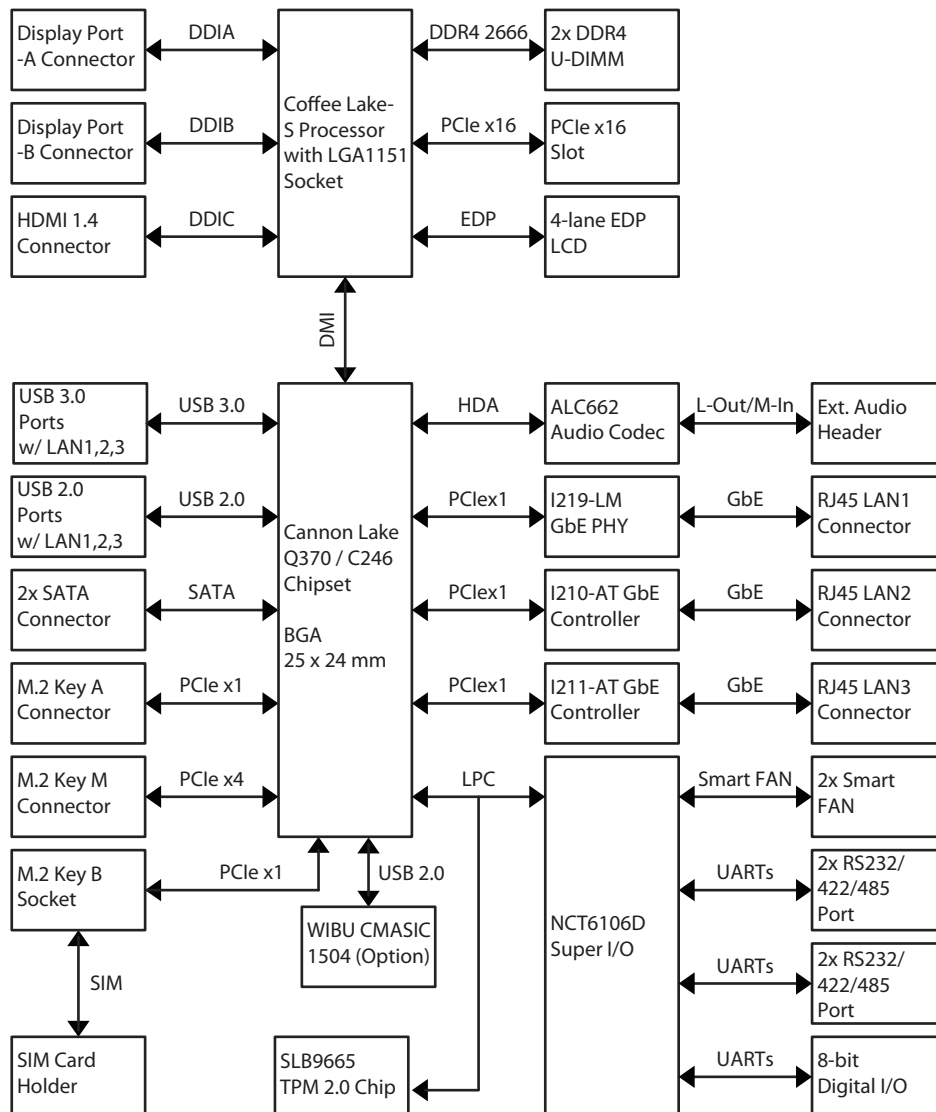
In addition to a variety of peripheral interfaces, mITX-CFL-S has two SATA 3.0 sockets, one PCIe x16 slot, one M.2 Key M socket, one M.2 Key A socket and one M.2 Key B socket for great storage and expansion possibilities.

PRODUCT HIGHLIGHTS

- ▶ Intel® Coffee Lake S-Series Processors, Core™ i and Xeon® E
- ▶ Intel® C246 / Q370 Chipset
- ▶ 2x DDR4 U-DIMM memory socket (ECC support)
- ▶ 1x eDP, 1x HDMI, 2x DP for video output
- ▶ 3x GbE LAN for Ethernet
- ▶ Up to 6x USB 3.1, up to 4x USB 3.0, 4x USB 2.0 for USB device connection
- ▶ 4x RS232/422/485, 2x RS232 for serial device connection
- ▶ 1x 8-bit DIO for device / signal control
- ▶ 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
- ▶ TPM 2.0 support



BLOCK DIAGRAM



► TECHNICAL INFORMATION

SYSTEM	<p>PROCESSOR</p> <p>CHIPSET</p> <p>MEMORY</p>	<p>Intel® 8th Generation Core™ I CPUs (LGA1151 socket, TDP 35W/65W/95W)</p> <p>Intel® 8th Generation Xeon® E CPUs (LGA1151 socket, TDP 65W/80W/95W)</p> <p>Intel® C246</p> <p>Intel® Q370</p> <p>2x DDR4 2400/2666 U-DIMM (ECC support)</p>
VIDEO	<p>GRAPHICS</p> <p>DISPLAY INTERFACE</p> <p>MULTIPLE DISPLAY</p>	<p>Intel® UHD Graphics P630 (Xeon® E CPU)</p> <p>Intel® UHD Graphics 630 (Core™ I CPU)</p> <p>1x eDP 1.4 (4096 x 2304 @ 60 Hz)</p> <p>1x HDMI 1.4 (on rear, 4096 x 2160 @ 24 Hz / 2560 x 1600 @ 60 Hz)</p> <p>2x DP (on rear, 4096 x 2304 @ 60 Hz)</p> <p>Triple</p>
AUDIO	AUDIO CODEC AUDIO INTERFACE	<p>Realtek ALC662</p> <p>1x Line-out (by header)</p> <p>1x Mic-in (by header)</p> <p>1x S/PDIF (by header)</p>
NETWORK CONNECTION	ETHERNET	3x GbE LAN (RJ45 on rear, 1x Intel® I219-LM, 1x Intel® I210-AT, 1x Intel® I211-AT)
PERIPHERAL CONNECTION	<p>USB</p> <p>SERIAL PORT</p> <p>OTHER I/Os</p>	<p>6x USB 3.1 (Type A on rear)</p> <p>4x USB 2.0 (by header)</p> <p>4x RS232/422/485 (DB9 on rear with 5 V / 12 V power output support, 2x by header)</p> <p>1x 8-bit DIO (by wafer)</p>
STORAGE & EXPANSION		<p>2x SATA 3.0</p> <p>1x PCIe x16</p> <p>1x M.2 Key M (type 2280, mixed w/ PCIe4)</p> <p>1x M.2 Key A (type 2230, mixed w/ PCIe1 & USB 2.0)</p> <p>1x M.2 Key B (type 2242, mixed w/ SATA 3.0 & USB 2.0)</p> <p>1x SIM Card Cage (by wafer)</p>
POWER	CONNECTOR INPUT VOLTAGE	<p>1x 2x4-pin ATX connector</p> <p>DC +12 V</p>
FIRMWARE	<p>BIOS</p> <p>WATCHDOG</p> <p>H/W MONITOR</p> <p>REAL TIME CLOCK</p> <p>TPM</p>	<p>AMI uEFI BIOS w/ 128 Mb SPI Flash</p> <p>Programmable WDT to generate system reset event</p> <p>Input & Core Voltages, CPU & System Temperatures</p> <p>Chipset integrated RTC</p> <p>Supported (Infineon SLB9665 TPM 2.0)</p>
SYSTEM CONTROL & MONITORING	FP HEADER	<p>1x Header for Reset button, HDD LED & External Speaker</p> <p>1x Header for Power button, Power LED & SM bus</p> <p>1x Header for M.2 Key M activity LED</p> <p>1x Header for M.2 Key A activity LED</p> <p>1x Header for M.2 Key B activity LED</p>
COOLING	FAN	<p>1x Wafer for CPU Smart Fan</p> <p>1x Wafer for System Smart Fan</p>
SOFTWARE	OS SUPPORT	<p>Windows 10 (Core™ I CPU)</p> <p>Windows Server (Xeon® E CPU)</p> <p>Linux(Core™ I CPU)</p>
MECHANICAL	DIMENSIONS (L x W)	Mini-ITX (170 mm x 170 mm / 6.70" x 6.70")
ENVIRONMENTAL	<p>OPERATION TEMPERATURE</p> <p>STORAGE TEMPERATURE</p> <p>HUMIDITY</p>	<p>0 °C ~ 60 °C / 32 °F ~ 140 °F (Standard)</p> <p>-20 °C ~ 70 °C / -4 °F ~ 158 °F (Extended)</p> <p>-20 °C ~ 80 °C / -4 °F ~ 176 °F (Standard)</p> <p>-40 °C ~ 85 °C / -40 °F ~ 185 °F (Extended)</p> <p>0 % ~ 95 %</p>
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
USB 2.0 CABLE*	0C504000000110L	2.54mm 2x5P to 2xUSB connectors, L=340 mm
COM PORT CABLE*	0C5020000005130L	D-SUB 9P (male) to 1x10P 1.25pitch , L=350 mm
DIO CABLE*	0C5020000003360L	1x10P 1.25pitch , L=200 mm
SATA CABLE W/ POWER*	0C5020000005260L	2.54pitch 1x4P to 1.27 pitch 1x15P, L=460 mm
SATA CABLE*	0C5020000004240L	With lock 1.27pitch 1x7P, L=460 mm
3G MINI SIM CARD HOLDER KIT*	0ZHK12003GSIM003	W/ SIM card holder x1, 3G SIM card cable x1
AUDIO CABLE*		
DC JACK CABLE*		
I/O SHIELD		

(* : Optional)

► GLOBAL HEADQUARTERS

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