

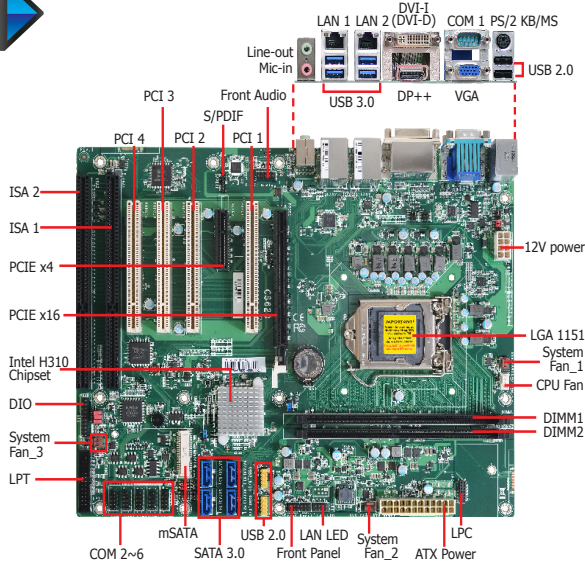


**9th/8th Gen Intel® Core™ Processor
ATX**



CS620-H310

Desktop



Features

- **2 DDR4 DIMM up to 64GB**
- **Dual independent displays:
VGA + DVI-D / VGA + DP++ / DP++ + DVI-D**
- **VGA: resolution up to 1920x1200 @ 60Hz
DVI-D: resolution up to 1920x1200 @ 60Hz
DP++ resolution up to 4096x2160 @ 60Hz**
- **Multiple expansion:
1 PCIe x16 (Gen 3), 1 PCIe x4 (Gen 2), 4 PCI, 2 ISA**
- **Rich I/O: 2 Intel GbE, 6 COM, 4 USB 3.1 Gen1, 6 USB 2.0**

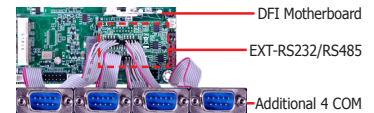


**2 Extension Modules for Additional 4 COM Ports
(via the LPC connector)**



EXT-RS232
- 4 RS232

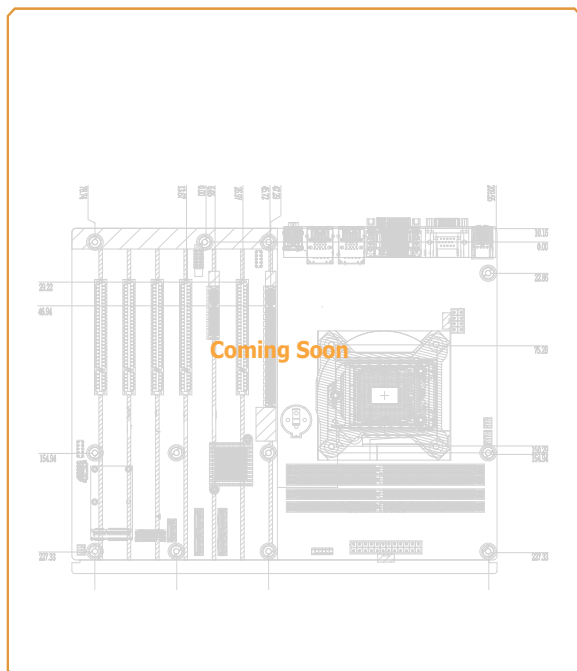
EXT-RS485
- 4 RS485



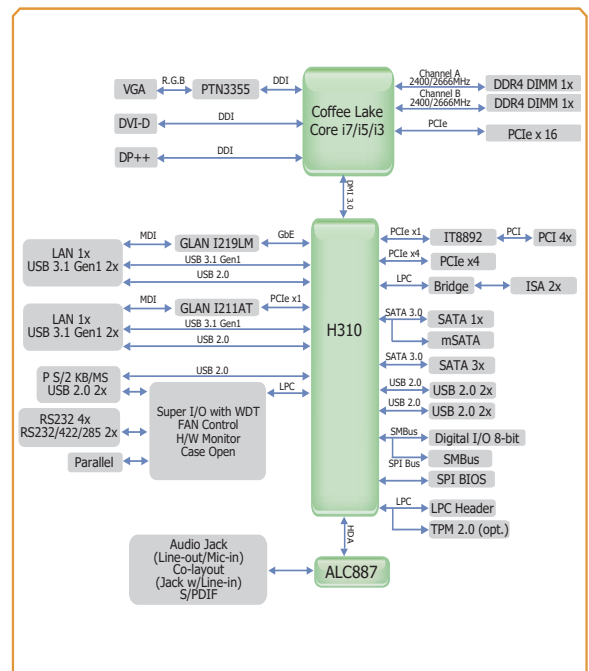
Ordering Information

Model Name	P/N	Memory	GbE	RS-232/422/485	RS-232	USB 3.1 Gen 1	USB 2.0	Power	Thermal	Temp.
CS620-H310C	770-CS6201-000G	2 DDR4 DIMM	2	1	4	4	2	24-pin ATX	Active	-5 to 65°C

Mechanical Drawing



Block Diagram





Specifications

SYSTEM	Processor	8th Generation Intel® Core™ /Pentium®/Celeron® LGA 1151 Socket Processors: Intel® Core™ i7-8700K (6 Cores, 12M Cache, up to 4.7 GHz); 95W Intel® Core™ i7-8700 (6 Cores, 12M Cache, up to 4.6 GHz); 65W Intel® Core™ i7-8700T (6 Cores, 12M Cache, up to 4.0 GHz); 35W Intel® Core™ i5-8500 (6 Cores, 9M Cache, up to 4.1 GHz); 65W Intel® Core™ i5-8500T (6 Cores, 9M Cache, up to 3.5 GHz); 35W Intel® Core™ i3-8100 (4 Cores, 6M Cache, 3.6 GHz); 65W Intel® Core™ i3-8100T (4 Cores, 6M Cache, to 3.1 GHz); 35W Intel® Pentium® G5400 (2 Cores, 4M Cache, 3.7 GHz); 58W Intel® Pentium® G5400T (2 Cores, 4M Cache, 3.1 GHz); 35W Intel® Celeron® G4900 (2 Cores, 2M Cache, 2.9 GHz); 54W Intel® Celeron® G4900T (2 Cores, 2M Cache, 2.9 GHz); 35W 9th Generation Intel® Core™ LGA 1151 Socket Processors: Intel® Core™ i9-9900K (8 Cores, 12M Cache, up to 3.8 GHz); 95W Intel® Core™ i7-9700K (8 Cores, 12M Cache, up to 3.8 GHz); 95W Intel® Core™ i7-9700E (8 Cores, 12M Cache, up to 3.8 GHz); 65W Intel® Core™ i7-9700TE (8 Cores, 12M Cache, up to 3.8 GHz); 65W Intel® Core™ i5-9500E (6 Cores, 9M Cache, up to 4.2 GHz); 65W Intel® Core™ i5-9500TE (6 Cores, 9M Cache, up to 4.2 GHz); 65W Intel® Core™ i3-9100E (4 Cores, 6M Cache, to 3.2 GHz); 65W Intel® Core™ i3-9100TE (4 Cores, 6M Cache, to 3.2 GHz); 65W	
	Chipset	Intel® H310 Chipset	
	Memory	Two 288-pin UDIMM up to 64GB (non-ECC support) Dual Channel DDR4 2400/2666MHz	
	BIOS	AMI SPI 128Mbit	
GRAPHICS	Controller	Intel® HD Gen 9 Graphics	
	Feature	OpenGL 5.0, DirectX 12, OpenCL 2.1 HW Decode: AVC/H.264, MPEG2, VC1/WMV9, JPEG/MJPEG, HEVC/H265, VP8, VP9 HW Encode: MPEG2, AVC/H264, JPEG, HEVC/H265, VP8, VP9	
	Display	1 x VGA 1 x DVI-I (DVI-D signal) 1 x DP++	VGA: resolution up to 1920x1200 @ 60Hz DVI-D: resolution up to 1920x1200 @ 60Hz DP++: resolution up to 4096x2160 @ 60Hz
	Dual Displays	VGA + DVI-D / VGA + DP++ / DP++ + DVI-D	
EXPANSION	Interface	1 x PCIe x16 (Gen 3) 1 x PCIe x4 (Gen 2)	4 x PCI 2 x ISA (under development)
AUDIO	Audio Codec	Realtek ALC887	
ETHERNET	Controller	1 x Intel® I211AT PCIe (10/100/1000Mbps)	1 x Intel® I219V Lan Phy (10/100/1000Mbps)
REAR I/O	Ethernet	2 x GbE (RJ-45)	
	USB	4 x USB 3.1 (Gen1) 2 x USB 2.0	
	Serial	1 x RS-232/422/485 (RS-232 w/power) (DB-9)	
	PS/2	1 x PS/2 (mini-DIN-6)	
	Display	1 x VGA 1 x DVI-I (DVI-D signal) 1 x DP++	
	Audio	1 x Mic-in, 1 x Line-out (colay Line-in as opt., MOQ required)	
INTERNAL I/O	Serial	1 x RS-232/422/485 (RS-232 w/ power) (2.54mm pitch) 4 x RS-232 (2.54mm pitch)	
	USB	4 x USB 2.0 (2.54mm pitch) (one header colay USB 3.0 vertical Type A as opt., MOQ required)	
	Display	1 x Parallel	
	Audio	1 x S/PDIF 1 x Front Audio Header	
	SATA	4 x SATA 3.0 (up to 6Gb/s) 1 x mSATA shared with SATA	
	DIO	1 x 8-bit DIO	
	LPC	1 x LPC	
	SMBus	1 x SMBus	
WATCHDOG TIMER	Output & Interval	System Reset, Programmable via Software from 1 to 255 Seconds	
SECURITY	TPM	TPM2.0 (opt., MOQ required)	
POWER	Type	ATX	
	Connector	8-pin ATX 12V power	24-pin ATX power
	Consumption	TBD	
	RTC Battery	CR2032 Coin Cell	
OS SUPPORT		Windows 10 IoT Enterprise 64-bit Linux <i>Note: Please note that ISA function may be subject to OS or driver supported by ISA device. Please contact DFI for more information.</i>	
ENVIRONMENT	Temperature	Operating: -5 to 65°C Storage: -30 to 60°C with RTC Battery; -40 to 85°C without RTC Battery	
	Humidity	Operating: 5 to 90% RH Storage: 5 to 90% RH	
	MTBF	TBD	
MECHANICAL	Dimensions	ATX Form Factor 305mm (12") x 244mm (9.6")	
	Height	PCB: 1.6mm Top Side: TBD Bottom Side: TBD	
CERTIFICATIONS		CE, FCC Class B	

Packing List

• 1 CS620-H310 motherboard	
• 1 COM port cables (W/Bracket, Length: 300mm, 2 x COM ports)	A81-015026-023G
• 1 Serial ATA data cable (Length: 500mm)	332-553001-005G
• 1 I/O shield	A49-KD6000-000G
• 1 mSATA screw	A32-112016-041G

Optional Items

• USB 2.0 port cable (Length: 350mm)	A81-001066-016G
• D-SUB cable (W/Bracket, Length: 300mm, 2 x COM ports)	A81-015026-023G
• Serial ATA data cable (W/Lock, Length: 500mm)	332-553001-005G
• Thermal solution (For 35W, Height: 37.3mm)	A71-101107-000G
• Thermal solution (For 65W, Height: 72.8mm)	552-200049-000G
• Thermal solution (For 95W, Height: 69.3mm)	761-103001-000G
• DP to HDMI dongle	612-D2H13M-000G
• LPC EXT-RS232 module (4 x RS232 ports)	770-EXTRS1-000G
• LPC EXT-RS485 module (4 x RS485 ports)	770-EXTRS1-100G

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