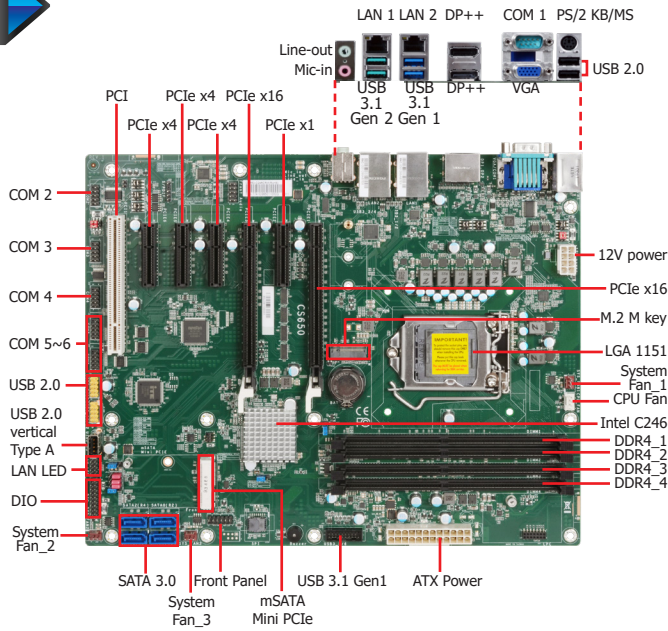




CS650-C246

Workstation

C246

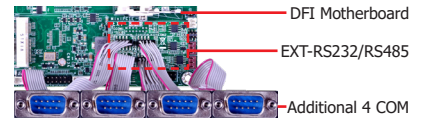


Features

- 4 DDR4 ECC/Non-ECC DIMM up to 128GB
- 3 independent displays: VGA + DP++ + DP++
- DP++ resolution up to 4096x2160 @ 60Hz
- Multiple expansion: 2 PCIe x16 (1 x16 signal or 2 x8 signals), 3 PCIe x4, 1 PCIe x1, 1 PCI, 1 Full-sized Mini PCIe, 1 M.2 M key
- Rich I/O: 2 Intel GbE, 6 COM, 2 USB 3.1 Gen 2, 4 USB 3.1 Gen 1, 6 USB 2.0



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



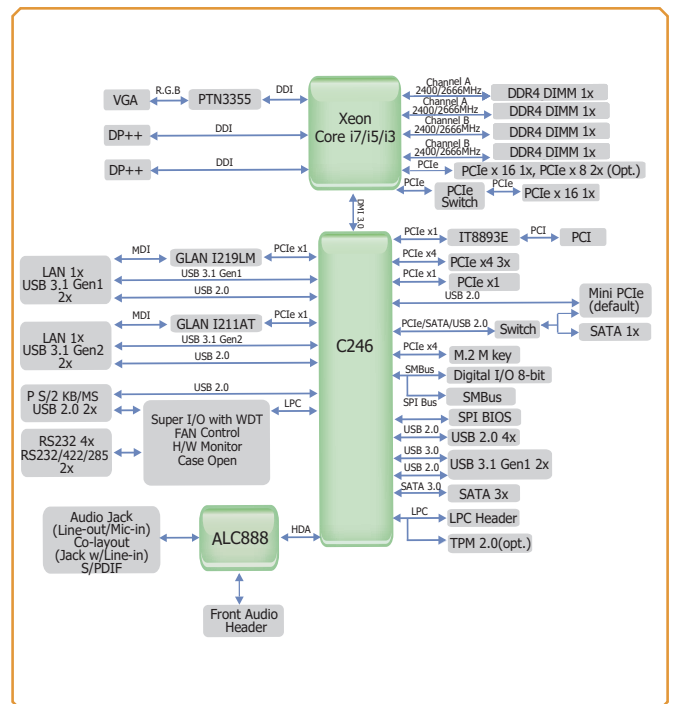
Ordering Information

Model Name	P/N	Memory	GbE	RS-232/422/485	RS-232	USB3.1 Gen 2	USB3.1 Gen 1	USB 2.0	Power	Thermal Temp.
CS650-C246CRM	770-CS6501-000G	4 DIMM	2	2	4	2	4	6	24-pin ATX	Active -10 to 70°C

Mechanical Drawing



Block Diagram



Specifications

SYSTEM	Processor	8th Generation Intel® Xeon®/Core™/Pentium®/Celeron® Processors, LGA 1151 Socket, TDP up to 95W and the following 9th Generation Intel® Core™ Processors: 9th Generation Intel® LGA 1151 Socket Processors Intel® Xeon® E-2278GE (8 Cores, 16M Cache, up to 4.7 GHz); 80W Intel® Xeon® E-2278GEL (8 Cores, 16M Cache, up to 3.9 GHz); 35W Intel® Xeon® E-2226GE (6 Cores, 12M Cache, up to 4.6 GHz); 80W Intel® Core™ i9-9900K (8 Cores, 16M Cache, up to 5.0 GHz); 95W Intel® Core™ i7-9700K (8 Cores, 12M Cache, up to 4.9 GHz); 95W Intel® Core™ i7-9700E (8 Cores, 12M Cache, up to 4.4 GHz); 65W Intel® Core™ i7-9700TE (8 Cores, 12M Cache, up to 3.8 GHz); 35W Intel® Core™ i5-9500E (6 Cores, 9M Cache, up to 4.2 GHz); 65W Intel® Core™ i5-9500TE (6 Cores, 9M Cache, up to 3.6 GHz); 35W Intel® Core™ i3-9100E (4 Cores, 6M Cache, 3.7 GHz); 65W Intel® Core™ i3-9100TE (4 Cores, 6M Cache, to 3.2 GHz); 35W
	Chipset	Intel® C246 Chipset
	Memory	Four 288-pin Non-ECC DIMM up to 128GB Dual Channel DDR4 2400/2666MHz (Core™ i5/i7 only support non-ECC)
	BIOS	AMI SPI 128Mbit
	Controller	Intel® HD Gen 9 Graphics
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 VGA: resolution up to 1920x1200 @ 60Hz 2 x DP++ DP++: resolution up to 4096x2160 @ 60Hz
	Triple Displays	VGA + DP++ + DP++
	Interface	2 x PCIe x16 (Gen 3) (1 x16 signal or 2 x8 signals) 3 x PCIe x4 (Gen 3) 1 x PCIe x1 (Gen 3) 1 x PCI 1 x Full-sized Mini PCIe (PCIe/SATA/USB2.0), share with SATA 3(R5) 1 x M.2 2242/2260/2280 M key (PCIe Gen3 x4 NVMe)
EXPANSION	Audio Codec	Realtek ALC888
AUDIO	Controller	1 x Intel® I211AT PCIe (10/100/1000Mbps) 1 x Intel® I219LM PCIe with iAMT12.0 (10/100/1000Mbps) (only Xeon, Core i7/i5 supports iAMT)
ETHERNET	Ethernet	2 x GbE (RJ-45)
	USB	2 x USB 3.1 Gen2 2 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 2 x DP++
	Audio	1 x Line-out, 1 x Mic-in, 1 x Line-in (opt., MOQ required)
	INTERNAL I/O	Serial
	USB	2 x USB 3.1 Gen 1 (2.00mm pitch) 4 x USB 2.0 (2.54mm pitch) (1 x USB 2.0 colay vertical Type A) (opt., MOQ required)
	Audio	1 x Front Audio Header 1 x S/PDIF
	SATA	4 x SATA 3.0 (up to 6Gb/s, SATA 3(R5) shared with mini PCIe (SATA), default at mini PCIe) RAID 0/1/5/10
	DIO	1 x 8-bit DIO
	LPC	1 x LPC (supports LPC EXT-RS232/RS485 module)
	SMBus	1 x SMBus
WATCHDOG TIMER	Output & Interval	System Reset, Programmable via Software from 1 to 255 Seconds
SECURITY	TPM	Infineon TPM2.0 (opt., MOQ required)

Packing List

• 1 CS650-C246 motherboard	
• 1 COM port cables (Length: 400mm, 2 x COM ports)	A81-015026-023G
• 1 Serial ATA data cable (Length: 500mm)	332-553001-005G
• 1 I/O shield	A49-CS6310-000G
• 1 mini PCIe screw	A32-112016-041G
• 1 QR	TBD

Optional Items

• USB 2.0 port cable (Length: 350mm)	A81-001066-016G
• USB 3.1 Gen1 port cable (Length: 320mm)	A81-001052-023G
• COM port cable (Length: 400mm, 2 x COM ports)	A81-015026-023G
• Serial ATA data cable (Length: 500mm, W/LOCK)	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
• LPC EXT-RS232 module (4 x RS232 ports)	770-EXTRS1-000G
• LPC EXT-RS485 module (4 x RS485 ports)	770-EXTRS1-100G
• DP to HDMI dongle	612-D2H13M-000G