

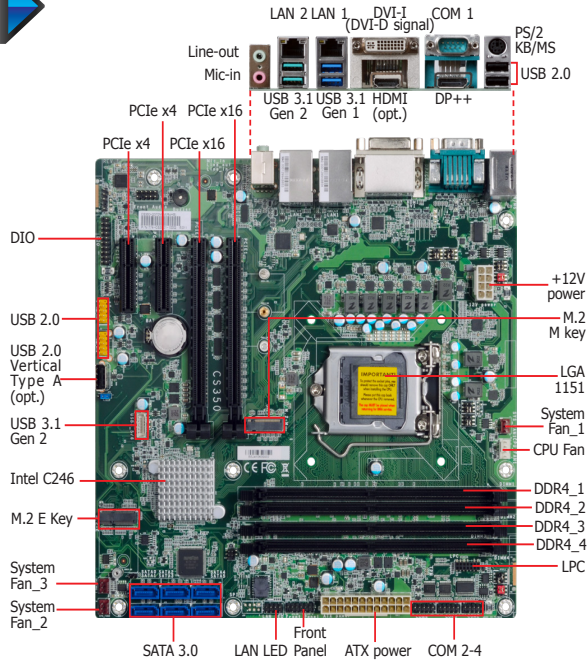


**9th/8th Gen Intel® Core™ Processor
microATX**



CS350-C246

Workstation



► **Features**

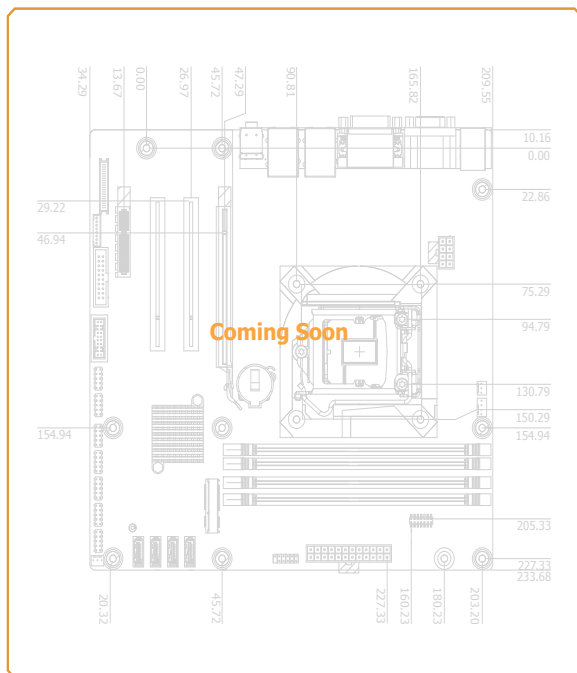
- 4 DDR4 ECC/Non-ECC DIMM up to 128GB
- Three display ports: DVI-D, DP++, DP++ (Opt.:HDMI 1.4b) Supports triple independent displays
- DP++ resolution up to 4096x2160 @ 60Hz
DVI-D resolution up to 1920x1200 @ 60Hz
- Multiple expansion: 2 PCIe x16 (1 x16 or 2 x8 signal), 2 PCIe x4, 1 M.2 E key, 1 M.2 M key (support Optane Memory)
- Rich I/O: 2 Intel GbE, 4 COM, 2 USB 3.1 Gen 2, 4 USB 3.1 Gen 1, 6 USB 2.0



► **Ordering Information**

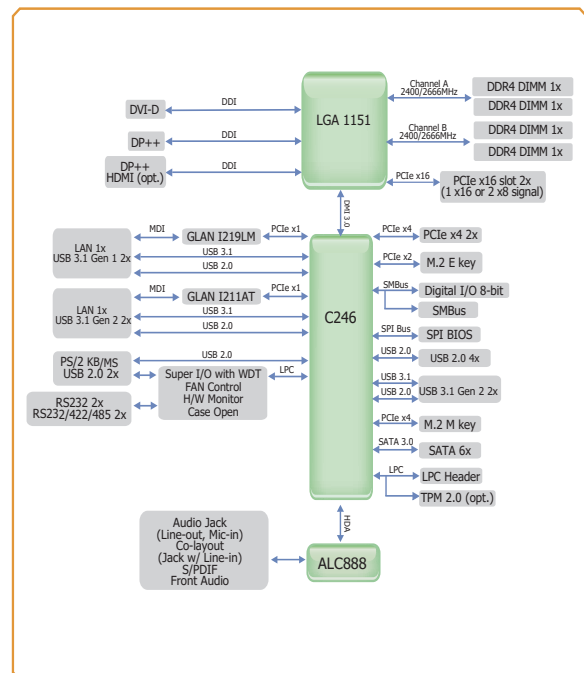
Model Name	P/N	Memory	GbE	RS-232/422/485	RS-232	USB 3.1 Gen 2	USB 3.1 Gen 1	USB 2.0	Power	Thermal	Temp.
CS350-C246NRM	770-CS3501-000G	4 DIMM	2	2	2	4	2	6	24-pin ATX/8-pin ATX 12V	Active	-5 to 65°C

► **Mechanical Drawing**



Coming Soon

► **Block Diagram**





Specifications

SYSTEM	Processor	8th Generation Intel® Core™/Pentium®/Celeron® LGA 1151 Socket Processors: Intel® Xeon® E-2176G (6 Cores, 12M Cache, up to 4.7 GHz); 80W Intel® Xeon® E-2124G (4 Cores, 8M Cache, up to 4.5 GHz); 71W 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, 3.1 GHz); 54W Intel® Celeron® G4900T (2 Cores, 2M Cache, 2.9 GHz); 35W 9th Generation Intel® Core™ 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 DIMM up to 128GB	Dual Channel DDR4 2400/2666 MHz (ECC/non-ECC support)
	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	2 x DP++ (1 DP++ colay HDMI 1.4b, MOQ required) 1 x DVI-I (DVI-D signal)	DVI-D: resolution up to 1920x1200 @ 60Hz DP++: resolution up to 4096x2106 @ 60Hz
	Triple Displays	DVI-D + DP++ + DP++	
EXPANSION	Interface	2 x PCIe x16 (Gen 3) (1 x16 signals or 2 x8 signals) 2 x PCIe x4 (Gen 3) 1 x M.2 2230 E key (PCIe x2/USB2.0/intel CNVi support) 1 x M.2 2242/2260/2280 M key (PCIe Gen3 x 4 NVMe)	
AUDIO	Audio Codec	Realtek ALC888	
ETHERNET	Controller	1 x Intel® i219LM PCIe (10/100/1000Mbps) 1 x Intel® i211AT PCIe (10/100/1000Mbps) with iAMT 12.0 (only Xeon, Core i7/i5 support iAMT)	
REAR I/O	Ethernet	2 x GbE (RJ-45)	
	USB	2 x USB 3.1 Gen 2 2 x USB 3.1 Gen 1	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 DVI-I (DVI-D signal)	2 x DP++
	Audio	1 x Line-out 1 x Mic-in	1 x Line-in (colay, opt., MOQ required)
	INTERNAL I/O	Serial	1 x RS-232/422/485 (RS-232 w/ power) (2.54mm pitch)
USB		2 x USB 3.1 Gen 2 4 x USB 2.0 (2.54mm pitch) (1 x USB 2.0 colay vertical Type A) (opt., MOQ required)	
Audio		1 x S/PDIF, 1 x Front Audio Header	
SATA		6 x SATA 3.0 (up to 6Gb/s) RAID 0/1/5/10	
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 sec/min	
SECURITY	TPM	Infineon TPM 2.0 (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: Ubuntu 18.04
ENVIRONMENT	Temperature	Operating: -10 to 70°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	microATX form factor	244mm (9.6") x 244mm (9.6")
	Height	PCB: TBD	Top Side: TBD, Bottom Side: TBD
CERTIFICATIONS	CE, FCC, RoHS		

Packing List

• 1 CS350-C246 motherboard	
• 1 COM port cable (W/Bracket, Length: 300mm, 2 x COM ports)	A81-015026-023G
• 1 Serial ATA data cable (W/LOCK, Length: 500mm)	332-553001-005G
• 1 I/O shield	TBD

Optional Items

• USB 2.0 port cable (Length: 350/398mm)	A81-001066-016G
• USB3.1 Gen2 port cable (Length: 350mm)	A81-001075-017G
• COM port cable (Length: 300mm, 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
• DP to HDMI Dongle	612-D2H13M-000G

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