9th/8th Gen Intel® Core™ 3.5" SBC

IoT Solutions Alliance

CS551

C246/ Q370/H310

Top View

Bottom View

Features

- 1 DDR4 SODIMM up to 32GB
- Three independent displays: LVDS + DP++ + DP++
- DP++ resolution up to 4096x2304 @ 60Hz
- Multiple expansion: 1 M.2 M Key, 1 Mini PCIe
- Rich I/O: 2 Intel GbE, 4 USB 3.1, 2 USB 2.0

Mechanical Drawing

Block Diagram

Specifications

SYSTEM	**Processor**	8th Gen Intel® Core™ Processors, LGA 1151 Socket Intel® Core i7-8700T Processor (6C/12T; Max speed 4.0 GHz; TDP 35W) Intel® Core i5-8500T Processor (6C/6T; Max speed 3.5GHz; TDP 35W) Intel® Core i3-8100T Processor (4C/4T; Max speed 3.1GHz; TDP 35W) Intel® Pentium G5400T Processor (2C/4T; Max speed 3.1GHz; TDP 35W) Intel® Pentium G4900T Processor (2C/2T; Max speed 2.9GHz; TDP 35W) 9th Gen Intel® Core™ Processors, LGA 1151 Socket Intel® Core i7-9700TE Processor (8C/8T; Max speed 3.6GHz; TDP 35W) Intel® Core i5-9500TE Processor (6C/6T; Max speed 3.6GHz; TDP 35W) Intel® Core i3-9100TE Processor (4C/4T; Max speed 3.2GHz; TDP 35W)	
	Memory	One 260-pin SODIMM up to 32GB Single Channel DDR4 2666MHz	C246 with ECC Support: Intel® Core i3-8100T/9100TE/Pentium G5400T/Pentium G4900T
	BIOS	AMI SPI 128Mbit	
GRAPHICS	**Controller**	Intel® UHD 630 Graphics GT Series	
	Feature	OpenGL 4.6, DirectX 12, OpenCL 2.1 HW Decode: AVC/H.264, MPEG2 (H.262), VC1, JPEG/MJPEG, HEVC/H.265, VP8, VP9, VP10 HW Encode: AVC/H.264, MPEG2 (H.262), JPEG/MJPEG, HEVC/H.265, VP8, VP9	
	Display	1 x LVDS 2 x DP++	LVDS: resolution up to 1920x1200 @ 60Hz DP++: resolution up to 4096x2304 @ 60Hz
	Triple Displays	LVDS + DP++ + DP++	
EXPANSION	**Interface**	1 x Full-size Mini PCIe (PCIe/USB 2.0, optional USB 3.1 Gen1/USB 2.0) 1 x M.2 2280 M key (C246/Q370: NVMe PCIe x4/SATA 3.0 or H310: NVMe PCIe x2, SATA 3.0) 1 x SIM slot (optional for 3G/4G module)	
AUDIO	**Audio Codec**	Realtek ALC262	
ETHERNET	**Controller**	Intel® I211AT PCIe (10/100/1000Mbps) or Intel® I210IT PCIe (10/100/1000Mbps)	
REAR I/O	**Ethernet**	2 x GbE (RJ-45)	
	USB	4 x USB 3.1 Gen2 (C246/Q370) or Gen1 (H310)	
	Display	2 x DP++	
INTERNAL I/O	**Serial**	1 x RS-232/422/485 (2.0mm pitch)	
	USB	2 x USB 2.0 (2.0mm pitch)	
	Display	1 x LVDS LCD Panel Connector	1 x LVDS Backlight
	Audio	1 x Audio (Line-out/Mic-in)	
	SATA	1 x SATA 3.0 (up to 6Gb/s)	1 x SATA Power
	DIO	1 x 8-bit DIO	
	Heater	1 x heater 12V header	Active under -10°C
	SMBus	1 x SMBus	
WATCHDOG TIMER	**Output & Interval**	System Reset, Programmable via Software from 1 to 255 Seconds	
SECURITY	**TPM**	fTPM 2.0	
POWER	**Type**	12VDC	
	Connector	Vertical Type Connector (4-pin) (default)	DC Jack (available upon request)
	Consumption	TBD	
	RTC Battery	CR2032 Coin Cell	
OS SUPPORT	**Microsoft**	Windows 10 IoT Enterprise 64-bit RS1/RS5	
	Linux	Linux	
ENVIRONMENT	**Temperature**	Operating: -5 to 65°C for 35W/100C CPU (fanless); 35W 100C, 82C CPU (fan) -30 to 80°C for 15W TDP down/100C CPU (fanless); 35W/100C CPU (fan) Note: -30°C can add heater/polyfilm for mother board warm up. Storage: -40 to 85°C	
	Humidity	Operating: 5 to 90% RH	Storage: 5 to 90% RH
	MTBF	TBD	
MECHANICAL	**Dimensions**	3.5" SBC Form Factor	146mm (5.75") x 102mm (4.02")
	Height	PCB: 1.6mm	Top Side: 16.3mm, Bottom Side: 4.0 mm
CERTIFICATIONS		CE, FCC, RoHS	

Ordering Information

Model Name	P/N	Memory	GbE	RS-232/422/485	USB 3.1 Gen2	USB 3.1 Gen1	USB 2.0	Power	Thermal	Temp.
CS551-C246-BCA	770-CS5511-000G	1 SODIMM	2	1	4	0	2	12V	Fanless	-5 to 65°C
CS551-H310-BCA	770-CS5511-100G	1 SODIMM	2	1	0	4	2	12V	Fanless	-5 to 65°C
CS551-Q370-BCA	770-CS5511-200G	1 SODIMM	2	1	4	0	2	12V	Fanless	-5 to 65°C

Packing List

• 1 CS551 board	
• 1 COM port cable (Length: 250mm, 1 x COM port)	332-753040-000G
• 1 Serial ATA data cable (Length: 500mm)	332-553001-005G
• 1 Serial ATA power cable (Length: 250mm)	A81-004041-016G
• 1 Heat sink	A71-001302-000G

Optional Items

• USB port cable (Length: 200mm)	A81-001032-016G
• Power adapter (60W, 12V)	671-106012-000G
• 4 pin to DC jack cable	A81-004051-016G
• Audio cable (Length: 160mm)	A81-022007-016G
• Cooler (fan)	A71-101303-000G

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