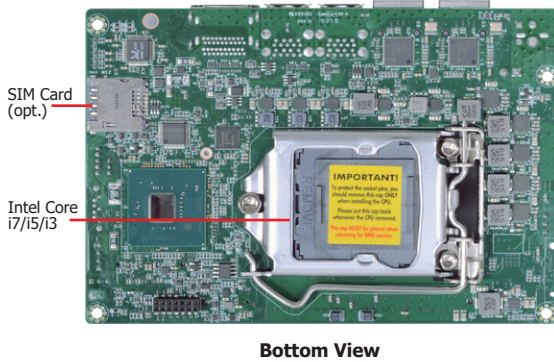
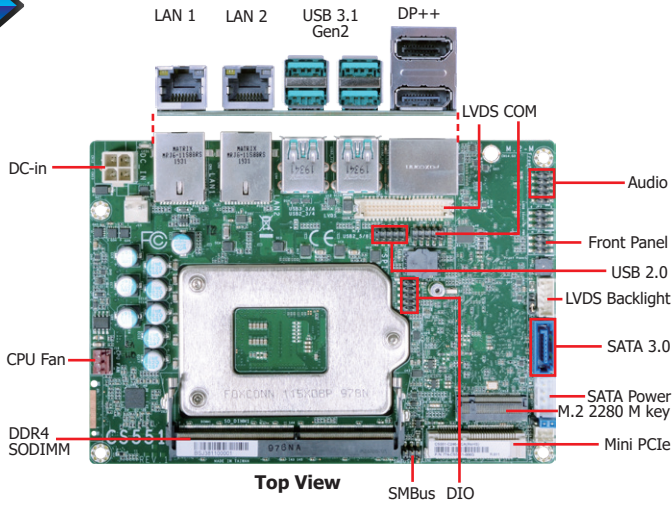




# CS551

C246/  
Q370/H310

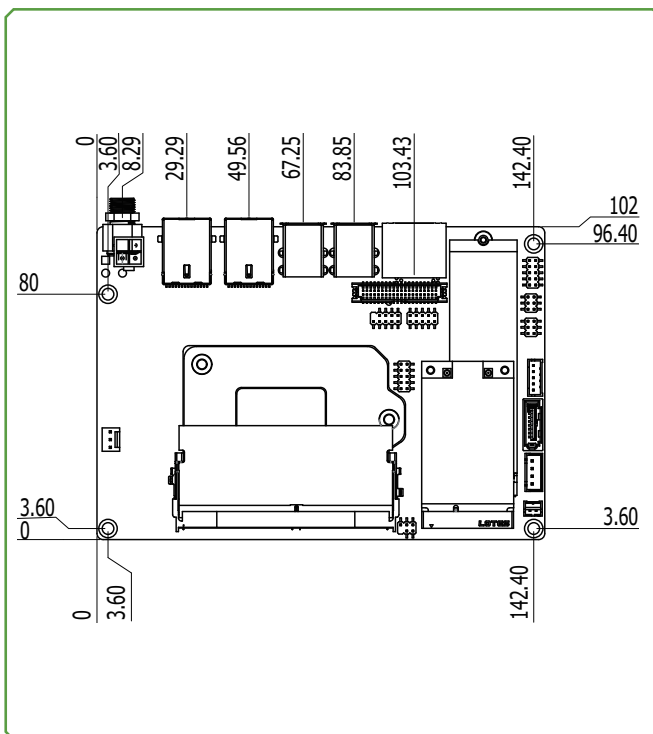


## Features

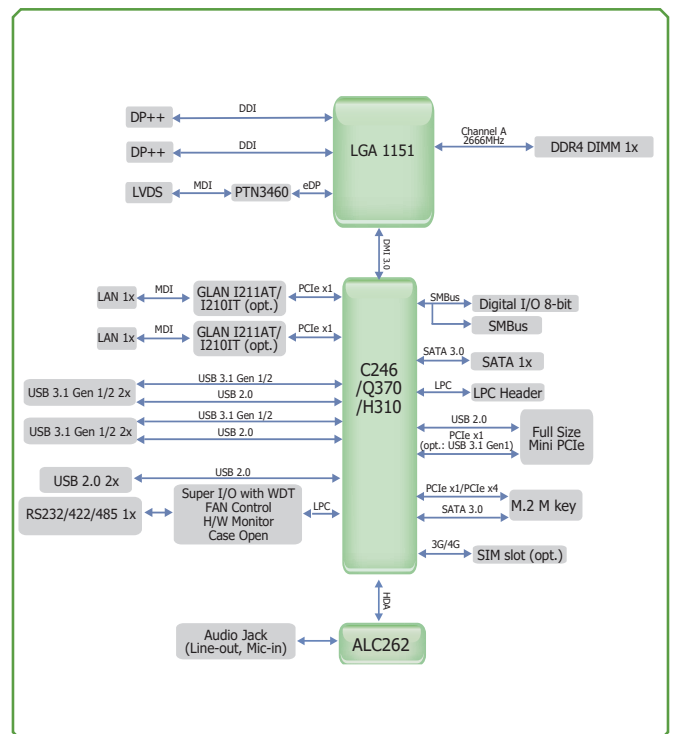
- 1 DDR4 SODIMM up to 32GB
- Three independent displays: LVDS + DP++ + DP++
- DP++ resolution up to 4096x2304 @ 60Hz
- Multiple expansion: 1 M.2 M Key, 1 Mini PCIe
- Rich I/O: 2 Intel GbE, 4 USB 3.1, 2 USB 2.0



## Mechanical Drawing



## Block Diagram



## Specifications

<b>SYSTEM</b>	<b>Processor</b>	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® Celeron® 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)	
	<b>Memory</b>	One 260-pin SODIMM up to 32GB Single Channel DDR4 2666MHz	C246 with ECC Support: Intel® Core i3-8100T/9100TE/Pentium G5400T/Pentium G4900T
	<b>BIOS</b>	AMI SPI 128Mbit	
<b>GRAPHICS</b>	<b>Controller</b>	Intel® UHD 630 Graphics GT Series	
	<b>Feature</b>	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	
	<b>Display</b>	1 x LVDS 2 x DP++	LVDS: resolution up to 1920x1200 @ 60Hz DP++: resolution up to 4096x2304 @ 60Hz
	<b>Triple Displays</b>	LVDS + DP++ + DP++	
<b>EXPANSION</b>	<b>Interface</b>	1 x Full-size Mini PCIe (PCIe x1 up to Gen3/USB 2.0) (C246/Q370 opt.: USB 3.1 Gen1/USB 2.0) 1 x M.2 2280 M key (C246/Q370: NVMe PCIe x4/SATA 3.0; H310: NVMe PCIe x1/SATA 3.0) 1 x SIM slot (opt. for 3G/4G module)	
<b>AUDIO</b>	<b>Audio Codec</b>	Realtek ALC262	
<b>ETHERNET</b>	<b>Controller</b>	Intel® I211AT PCIe (10/100/1000Mbps) or Intel® I210IT PCIe (10/100/1000Mbps)	
<b>REAR I/O</b>	<b>Ethernet</b>	2 x GbE (RJ-45)	
	<b>USB</b>	4 x USB 3.1 Gen2 (C246/Q370) or Gen1 (H310)	
	<b>Display</b>	2 x DP++	
<b>INTERNAL I/O</b>	<b>Serial</b>	1 x RS-232/422/485 (2.0mm pitch)	
	<b>USB</b>	2 x USB 2.0 (2.0mm pitch)	
	<b>Display</b>	1 x LVDS LCD Panel Connector	1 x LVDS Backlight
	<b>Audio</b>	1 x Audio (Line-out/Mic-in)	
	<b>SATA</b>	1 x SATA 3.0 (up to 6Gb/s)	1 x SATA Power
	<b>DIO</b>	1 x 8-bit DIO	
	<b>Heater</b>	1 x heater 12V header (wide temp. only)	
	<b>SMBus</b>	1 x SMBus	
<b>WATCHDOG TIMER</b>	<b>Output &amp; Interval</b>	System Reset, Programmable via Software from 1 to 255 Seconds	
<b>SECURITY</b>	<b>TPM</b>	fTPM 2.0	
<b>POWER</b>	<b>Type</b>	12VDC	
	<b>Connector</b>	Vertical Type Connector (4-pin) (default)	DC Jack (available upon request)
	<b>Consumption</b>	Typical: i7-8700T: 12V @ 0.86A (10.32Watt) Max: i7-8700T: 12V @ 5.38A (64.56Watt)	
	<b>RTC Battery</b>	CR2032 Coin Cell	
<b>OS SUPPORT</b>	<b>Microsoft</b>	Windows 10 IoT Enterprise 64-bit RS5	
	<b>Linux</b>	Linux	
<b>ENVIRONMENT</b>	<b>Temperature</b>	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: A heater/polyfilm is recommended for motherboard warm up at -30°C. Storage: -40 to 85°C	
	<b>Humidity</b>	Operating: 5 to 90% RH	Storage: 5 to 90% RH
	<b>MTBF</b>	CS551-H310-BCA: 740,203 hrs @ 25°C; 462,070 hrs @ 45°C; 305,215 hrs @ 60°C; 227,949 hrs @ 70°C CS551-H310-ECA: 742,388 hrs @ 25°C; 464,078 hrs @ 45°C; 306,773 hrs @ 60°C; 229,188 hrs @ 70°C Calculation Model: Telcordia Issue 4 Environment: GB, GC - Ground Benign, Controlled	
<b>MECHANICAL</b>	<b>Dimensions</b>	3.5" SBC Form Factor	146mm (5.75") x 102mm (4.02")
	<b>Height</b>	PCB: 1.6mm	Top Side: 25.27mm, Bottom Side: 7.68 mm
<b>CERTIFICATIONS</b>	CE, FCC, RoHS, UKCA		

## Ordering Information

Model Name	P/N	Memory	GbE	RS-232/422/485	USB 3.1 Gen2	USB 3.1 Gen1	USB 2.0	Power	Temp.
CS551-C246-BCA	770-CS5511-000G	1 SODIMM	2	1	4	0	2	12V	-5 to 65°C
CS551-H310-BCA	770-CS5511-100G	1 SODIMM	2	1	0	4	2	12V	-5 to 65°C
CS551-Q370-BCA	770-CS5511-200G	1 SODIMM	2	1	4	0	2	12V	-5 to 65°C
CS551-C246-ECA	770-CS5511-300G	1 SODIMM	2	1	4	0	2	12V	-30 to 80°C
CS551-H310-ECA	770-CS5511-400G	1 SODIMM	2	1	0	4	2	12V	-30 to 80°C
CS551-Q370-ECA	770-CS5511-500G	1 SODIMM	2	1	4	0	2	12V	-30 to 80°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 (Height: 43.2mm)	A71-001302-030G

## Optional Items

• USB port cable (Length: 200mm)	A81-001032-016G
• Power adapter (100W, 12V, TDP 35W)	671-110006-100G
• Power adapter (60W, 12V, DC Jack, TDP 15W)	671-106012-000G
• 4 pin to DC jack cable (Length: 100mm)	A81-004051-016G
• Audio cable (Length: 160mm)	A81-022007-016G
• Cooler fan (Height: 34.6mm)	A71-101303-010G
• Heater	612-KP4040-000G