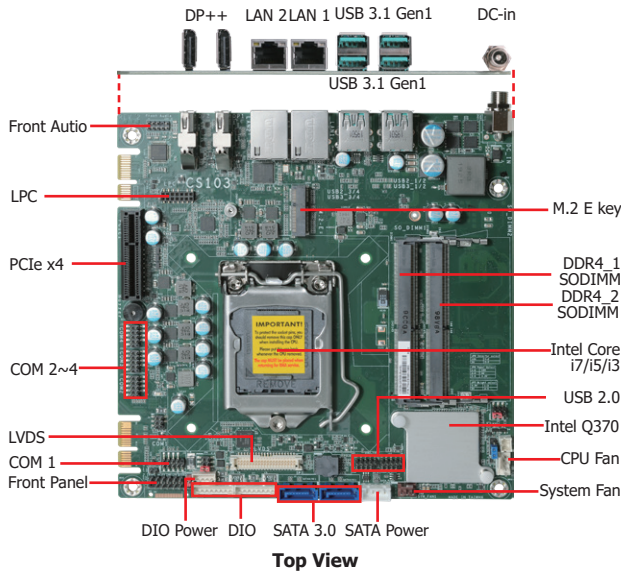


CS103-H310

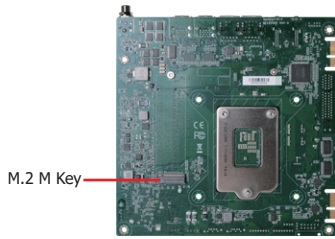
Desktop

Features

- 2 DDR4 2666MHz SODIMM up to 32GB
- Dual independent displays: LVDS + DP++, DP++ + DP++
- DP++ resolution supports up to 4096x2304 @ 60Hz
- Multiple Expansions: 1 PCIe x4 Gen 3, 1 M.2 2280 M Key, 1 M.2 2230 E Key
- Storage: 2 SATA 3.0
- Rich I/O: 2 Intel GbE, 4 COM, 4 USB 3.1 Gen 1, 4 USB 2.0



Top View



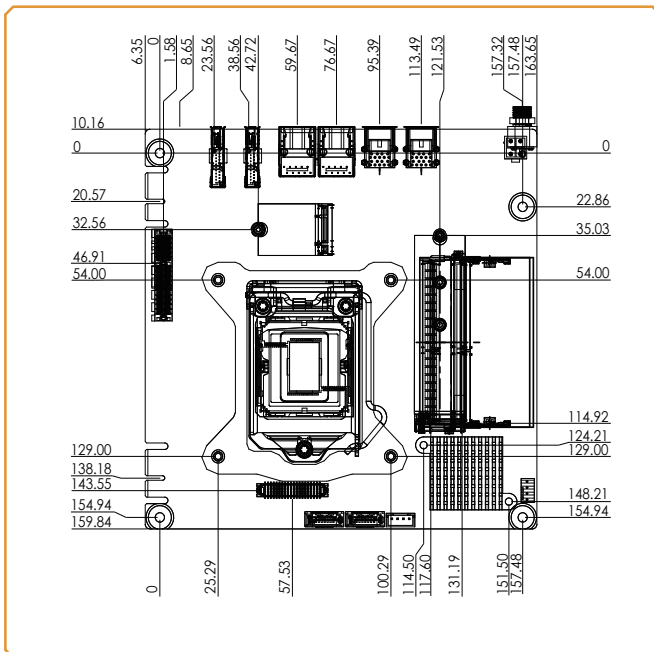
Bottom View

*The photos above refer to C103-Q370.

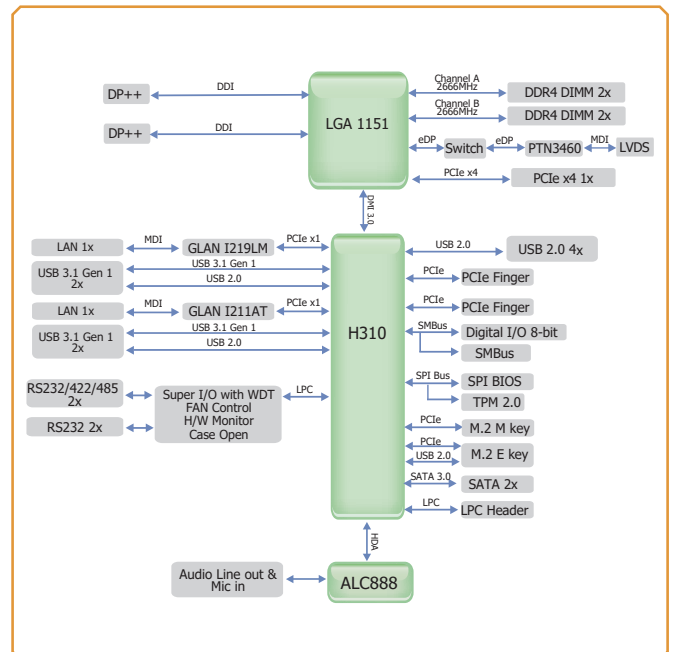
Ordering Information

| Model Name | P/N | Memory | LVDS | DP++ | GbE | RS-232 | RS-232/422/485 | USB 3.1 Gen 1 | USB 2.0 | SATA 3.0 | TPM | Power | Temp. |
|------------|-----------------|----------|------|------|-----|--------|----------------|---------------|---------|----------|-----|----------|-----------|
| CS103-H310 | 770-CS1031-000G | 2 SODIMM | 1 | 2 | 2 | 2 | 2 | 4 | 4 | 2 | 2.0 | 9-36V DC | 0 to 60°C |

Mechanical Drawing



Block Diagram



Specifications

| | | | |
|-----------------------|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| SYSTEM | Processor | 9th Generation Intel® Core™ Processors, LGA 1151 Socket Intel® Core i7-9700TE Processor (Core 8; Max speed 3.8GHz; TDP 35W) Intel® Core i5-9500E Processor (Core 6; Max speed 4.2GHz; TDP 65W) Intel® Core i5-9500TE Processor (Core 6; Max speed 3.6GHz; TDP 35W) Intel® Core i3-9100E Processor (Core 4; Max speed 3.7GHz; TDP 65W) Intel® Core i3-9100TE Processor (Core 4; Max speed 3.2GHz; TDP 35W) 8th Generation Intel® Core™ Processors, LGA 1151 Socket Intel® Core™ i7-8700 Processor (Core 6; Max speed 4.6GHz; TDP 65W) Intel® Core™ i7-8700T Processor (Core 6; Max speed 4.0GHz; TDP 35W) Intel® Core™ i5-8500 Processor (Core 6; Max speed 4.1GHz; TDP 65W) Intel® Core™ i5-8500T Processor (Core 6; Max speed 3.5GHz; TDP 35W) Intel® Core™ i3-8100 Processor (Core 4; Max speed 3.6GHz; TDP 65W) Intel® Core™ i3-8100T Processor (Core 4; Max speed 3.1GHz; TDP 35W) Intel® Pentium G5400 Processor (Core 2; Max speed 3.7GHz; TDP 58W) Intel® Celeron G4900 Processor (Core 2; Max speed 3.1GHz; TDP 54W) Intel® Celeron G4900T Processor (Core 2; Max speed 2.9GHz; TDP 35W) | |
| | Memory | Two 260-pin SODIMM up to 32GB | Dual Channel DDR4 2666MHz |
| | Chipset | Intel® H310 Chipset | |
| | BIOS | AMI SPI 128Mbit | |
| | GRAPHICS | Controller | Intel® UHD Graphics 630 (only Pentium G5400, Celeron G4900 support 610) |
| | Feature | OpenGL 4.5, DirectX 12, OpenCL 2.1 HW Decode: AVC/H.264, MPEG2, VC1/WMV9, JPEG/MJPEG, HEVC/H265, VP8, VP9 HW Encode: AVC/H.264, MPEG2, JPEG, HEVC/H265, VP8, VP9 | |
| | Display | 1 x LVDS 2 x DP++ | LVDS: resolution up to 1920x1200 @ 60Hz DP1.2: resolution up to 4096x2304 @ 60Hz |
| | Dual Displays | DP++ + LVDS, DP++ + DP++ | |
| EXPANSION | Interface | 1 x PCIe x4 (Gen 3) 2 x DFI proprietary extension bus for PCIe/PCI expansion 1 x M.2 2230 E Key (USB/PCIe) 1 x M.2 2280 M Key (PCIe Gen2 x1) | |
| AUDIO | Audio Codec | Realtek ALC888S-VD2-GR | |
| ETHERNET | Controller | 1 x Intel® I219LM PHY (10/100/1000Mbps) 1 x Intel® I211AT PCIe (10/100/1000Mbps) | |
| REAR I/O | Ethernet | 2 x GbE (RJ-45) | |
| | USB | 4 x USB3.1 Gen1 | |
| | Display | 2 x DP++ | |
| INTERNAL I/O | Serial | 2 x RS-232/422/485 (2.0mm pitch) 2 x RS-232 (2.0mm pitch) | |
| | Display | 1 x LVDS Connector | |
| | USB | 4 x USB 2.0 (2.0mm pitch) | |
| | Audio | 1 x Front Audio (2.0mm pitch) | |
| | SATA | 2 x SATA 3.0 (up to 6Gb/s) 1 x SATA Power | |
| | DIO | 1 x 8-bit DIO | |
| | SMBus | 1 x SMBus | |
| | LPC | 1 x LPC | |
| WATCHDOG TIMER | Output & Interval | System Reset, Programmable via Software from 1 to 255 Seconds | |
| SECURITY | TPM | dTPM 2.0 | |
| POWER | Type | 9-36V DC-in | |
| | Connector | DC-in Jack Right Angle Connector (4-pin) (available upon request) Straight Type Connector (4-pin) (available upon request) | |
| | RTC Battery | CR2032 Coin Cell | |
| | Consumption | Idle: i7-8700 65W: 19V @ 0.61A (11.59W) Max: i7-8700 65W: 19V @ 5.74A (109.06W) | |
| OS SUPPORT | Microsoft/Linux | Windows 10 IoT Enterprise 64-bit | Linux |
| ENVIRONMENT | Temperature | Operating: -10 to 70°C | Storage: -40 to 85°C |
| | Humidity | Operating: 5 to 90% RH | Storage: 5 to 90% RH |
| | MTBF | 607,574 hrs @ 25°C; 361,791 hrs @ 45°C; 234,097 hrs @ 60°C; 173,560 hrs @ 70°C Calculation model: Telcordia Issue 4 Environment: GB, GC – Ground Benign, Controlled | |
| | MECHANICAL | Dimensions | Mini-ITX Form Factor 170mm (6.7") x 170mm (6.7") |
| | Height | PCB: 1.6mm Top Side: 20mm, Bottom Side: 3mm | |
| CERTIFICATION | CE, FCC, RoHS | | |

Packing List

| | |
|------------------------------------------------------|-----------------|
| • 1 CS103 motherboard | |
| • 1 Serial ATA data with power cable (Length: 300mm) | A81-002013-000G |
| • 1 COM port cable (Length: 250mm, 1 x COM ports) | A81-015011-001G |

Optional Items

| | |
|----------------------------------------------------|-----------------|
| • USB 2.0 port cable (Length: 200mm) | A81-001032-016G |
| • COM port cable (Length: 250mm, 1 x COM ports) | A81-015011-001G |
| • Serial ATA data with power cable (Length: 300mm) | A81-002013-000G |
| • Serial ATA power cable | A81-002044-016G |
| • I/O shield | A49-CS1031-000G |
| • I/O shield (Thin Type) | A49-CS1031-100G |
| • Thermal solution (For 35W, Height: 37.3mm) | A71-103004-000G |
| • Thermal solution (For 65W, Height: 72.8mm) | 552-200049-000G |