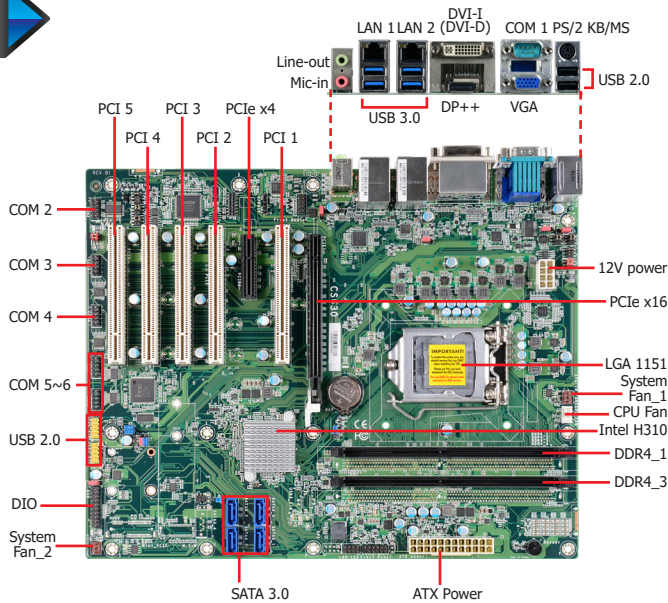


## CS630-H310

Desktop

### Features

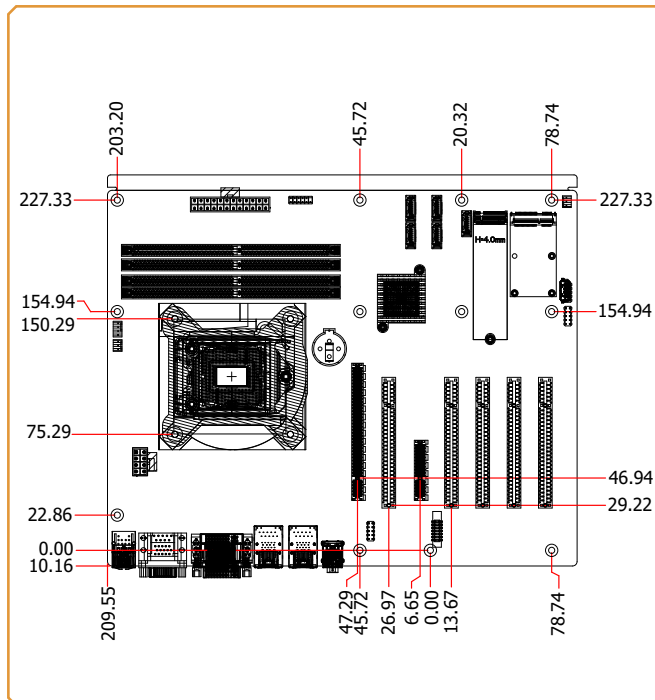
- 2 DDR4 DIMM up to 64GB
- Three display ports: VGA, DVI-D, DP++  
Supports two independent displays
- DVI-D: resolution up to 1920x1200 @ 60Hz  
DP++ resolution up to 4096x2160 @ 60Hz
- Multiple expansion:  
1 PCIe x16 (Gen 3), 1 PCIe x4 (Gen 2), 5 PCI,  
1 M.2 M key (SATA)
- Rich I/O: 2 Intel GbE, 6 COM, 4 USB 3.1 Gen1, 6 USB 2.0



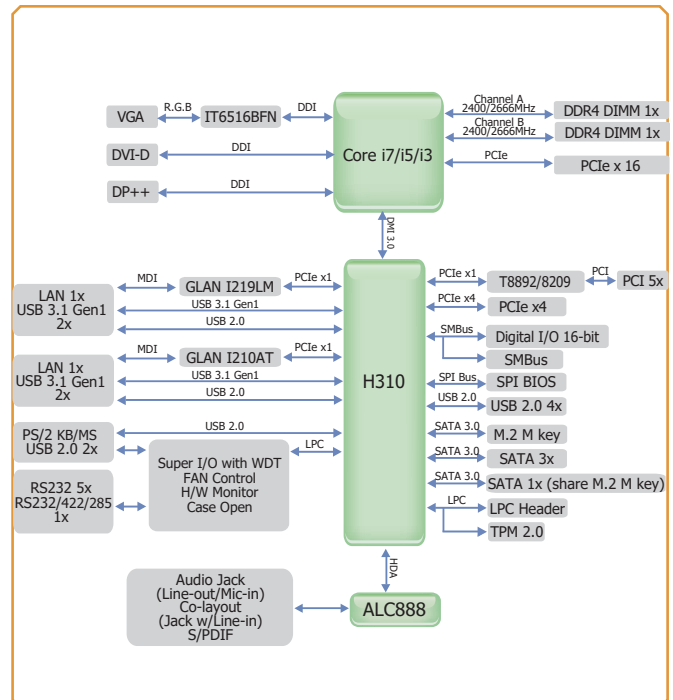
### Ordering Information

| Model Name  | P/N             | Memory      | GbE | RS-232/422/485 | RS-232 | USB 3.1 Gen 1 | USB 2.0 | PCI BRIDGE | M.2 M-key | DIO        | TPM 2.0 | Power      | Temp.      |
|-------------|-----------------|-------------|-----|----------------|--------|---------------|---------|------------|-----------|------------|---------|------------|------------|
| CS630-H310C | 770-CS6305-000G | 2 DDR4 DIMM | 2   | 2              | 4      | 4             | 6       | T8892/8209 | SATA      | 16-bit DIO | -       | 24-pin ATX | -5 to 65°C |
| CS630-H310C | 770-CS6305-200G | 2 DDR4 DIMM | 2   | 2              | 4      | 4             | 6       | T8892/8209 | SATA      | 16-bit DIO | 1       | 24-pin ATX | -5 to 65°C |

### Mechanical Drawing



### Block Diagram



## Specifications

|                |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                               |
|----------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| SYSTEM         | Processor         | 8th Generation Intel® Core™ /Pentium®/Celeron® LGA 1151 Socket Processors, TDP support up to 95W:<br>Intel® Core™ i7-8700 (6 Cores, 12M Cache, up to 4.6 GHz); 65W<br>Intel® Core™ i7-8700T (6 Cores, 12M Cache, up to 4.0 GHz); 35W<br>Intel® Core™ i5-8500 (6 Cores, 9M Cache, up to 4.1 GHz); 65W<br>Intel® Core™ i5-8500T (6 Cores, 9M Cache, up to 3.5 GHz); 35W<br>Intel® Core™ i3-8100 (4 Cores, 6M Cache, 3.6 GHz); 65W<br>Intel® Core™ i3-8100T (4 Cores, 6M Cache, to 3.1 GHz); 35W<br>Intel® Pentium® G5400 (2 Cores, 4M Cache, 3.7 GHz); 58W<br>Intel® Pentium® G5400T (2 Cores, 4M Cache, 3.1 GHz); 35W<br>Intel® Celeron® G4900 (2 Cores, 2M Cache, 3.1 GHz); 54W<br>Intel® Celeron® G4900T (2 Cores, 2M Cache, 2.9 GHz); 35W<br><br>9th Generation Intel® Core™ LGA 1151 Socket Processors, TDP support up to 95W:<br>Intel® Core™ i7-9700E (8 Cores, 12M Cache, up to 4.4 GHz); 65W<br>Intel® Core™ i7-9700TE (8 Cores, 12M Cache, up to 3.8 GHz); 35W<br>Intel® Core™ i5-9500E (6 Cores, 9M Cache, up to 4.2 GHz); 65W<br>Intel® Core™ i5-9500TE (6 Cores, 9M Cache, up to 3.6 GHz); 35W<br>Intel® Core™ i3-9100E (4 Cores, 6M Cache, 3.7 GHz); 65W<br>Intel® Core™ i3-9100TE (4 Cores, 6M Cache, to 3.2 GHz); 35W |                                                                                                                               |
|                | Chipset           | Intel® H310 Chipset                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                               |
|                | Memory            | Two 288-pin DIMM up to 64GB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Dual Channel DDR4 2400/2666MHz                                                                                                |
|                | BIOS              | AMI SPI 128Mbit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                               |
| GRAPHICS       | Controller        | Intel® HD Gen 9 Graphics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                               |
|                | Feature           | OpenGL 5.0, DirectX 12, OpenCL 2.1<br>HW Decode: AVC/H.264, MPEG2, VC1/WMV9, JPEG/MJPEG, HEVC/H265, VP8, VP9<br>HW Encode: MPEG2, AVC/H264, JPEG, HEVC/H265, VP8, VP9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                               |
|                | Display           | 1 x VGA<br>1 x DVI-I (DVI-D signal)<br>1 x DP++                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | VGA: resolution up to 1920x1200 @ 60Hz<br>DVI-D: resolution up to 1920x1200 @ 60Hz<br>DP++: resolution up to 4096x2160 @ 60Hz |
|                | Dual Displays     | VGA + DVI-D / VGA + DP++ / DP++ + DVI-D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                               |
| EXPANSION      | Interface         | 1 x PCIe x16 (Gen 3)<br>1 x PCIe x4 (Gen 2)<br>5 x PCI (use IT8892+IT8209)<br>1 x M.2 2260/2280 M key (SATA)(share SATA#3 port)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                               |
|                | Audio Codec       | Realtek ALC888                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                               |
|                | Controller        | 1 x Intel® I210AT PCIe (10/100/1000Mbps)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1 x Intel® I219V Lan Phy (10/100/1000Mbps)                                                                                    |
|                | Ethernet          | 2 x GbE (RJ-45)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                               |
| REAR I/O       | USB               | 4 x USB 3.1 (Gen1)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 2 x USB 2.0                                                                                                                   |
|                | Serial            | 1 RS-232/422/485 (RS-232 w/power) (DB-9)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                               |
|                | PS/2              | 1 x PS/2 (mini-DIN-6)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                               |
|                | Display           | 1 x VGA<br>1 x DP++                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1 x DVI-I (DVI-D signal)                                                                                                      |
| INTERNAL I/O   | Audio             | 1 x Line-out, 1 x Mic-in, 1 x Line-in (opt., MOQ required)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                               |
|                | Serial            | 1 x RS-232/422/485 (RS-232 w/ power) (2.54mm pitch)<br>4 x RS-232 (2.54mm pitch)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                               |
|                | USB               | 4 x USB 2.0 (2.54mm pitch)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                               |
|                | Audio             | 1 x S/PDIF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1 x Front Audio Header                                                                                                        |
|                | SATA              | 3 x SATA 3.0 (up to 6Gb/s)<br>1 x SATA 3.0 (up to 6Gb/s)(share M.2 M-key SATA)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                               |
|                | DIO               | 1 x 16-bit DIO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                               |
|                | LPC               | 1 x LPC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                               |
|                | SMBus             | 1 x SMBus                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                               |
| WATCHDOG TIMER | Output & Interval | System Reset, Programmable via Software from 1 to 255 Seconds                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                               |
| SECURITY       | TPM               | TPM 2.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                               |
| POWER          | Type              | ATX                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                               |
|                | Connector         | 8-pin ATX 12V power                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 24-pin ATX power                                                                                                              |
|                | Consumption       | Typical: i7-8700K: 3.3V @ 0.19A (0.627Watt); 5V @ 0.5A (2.5Watt); 12V @ 0.37A (4.44Watt)<br>Max.: i7-8700K: 3.3V @ 0.24A (0.792Watt); 5V @ 1.03A (5.15Watt); 12V @ 13.02A (156.24Watt)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                               |
|                | RTC Battery       | CR2032 Coin Cell                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                               |
| OS SUPPORT     |                   | Windows 10 IoT Enterprise 64-bit<br>Windows 11 GAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Linux                                                                                                                         |
| ENVIRONMENT    | Temperature       | Operating: 0 to 60°C<br>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              | 551,561 hrs @ 25°C; 313,962 hrs @ 45°C ; 196,617 hrs @ 60°C<br>Calculation Model: Telcordia Issue 4<br>Environment: GB, GC - Ground Benign, Controlled                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                               |
| MECHANICAL     | Dimensions        | ATX Form Factor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 305mm (12") x 244mm (9.6")                                                                                                    |
|                | Height            | PCB: 1.6mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Top Side: 31.47mm Bottom Side: 4.4mm                                                                                          |
| CERTIFICATIONS |                   | CE, FCC, RoHS, KC, UKCA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                               |



**Packing List**

|                                                                  |                 |
|------------------------------------------------------------------|-----------------|
| • 1 CS630-H310 motherboard                                       |                 |
| • 1 COM port cables<br>(W/Bracket, Length: 300mm, 2 x COM ports) | A81-015026-023G |
| • 1 Serial ATA data cable (Length: 500mm)                        | 332-553001-005G |
| • 1 I/O shield                                                   | A49-KD6000-000G |

**Optional Items**

|                                                            |                 |
|------------------------------------------------------------|-----------------|
| • USB 2.0 port cable (Length: 350mm)                       | A81-001066-016G |
| • USB 3.1 Gen2 port cable (Length: 300mm)                  | A81-001075-017G |
| • D-SUB cable<br>(W/Bracket, Length: 300mm, 2 x COM ports) | A81-015026-023G |
| • Serial ATA data cable (W/Lock, Length: 500mm)            | 332-553001-005G |
| • Serial ATA data cable (W/Lock, Length: 500mm, 90D)       | A81-002128-017G |
| • Thermal solution (For 35W, Height: 37.3mm)               | A71-101107-000G |
| • Thermal solution (For 65W, Height: 74.47mm)              | A71-101158-000G |
| • Thermal solution (For 95W, Height: 77.2mm)               | 761-103001-000G |
| • DP to HDMI dongle                                        | 612-D2H13M-000G |