

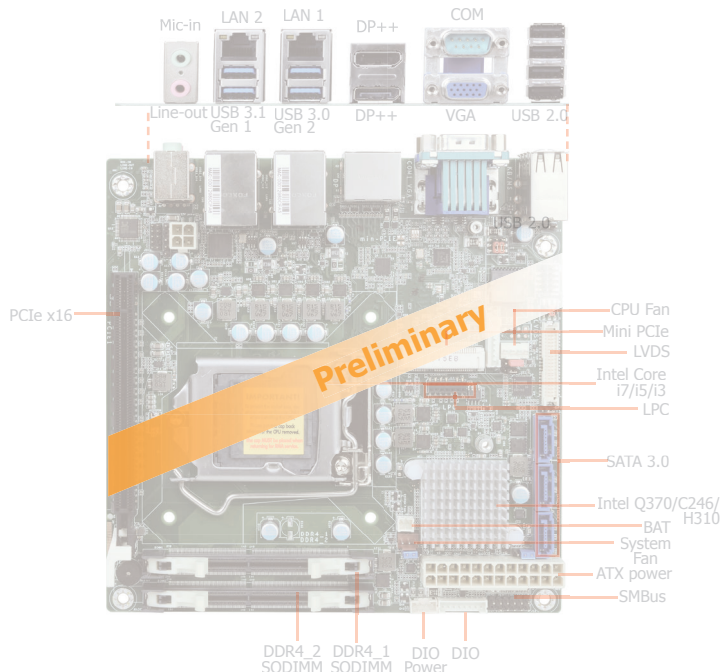
# CS101

## -Q370/C246

## Desktop

## Features

- **2 DDR4 2666MHz SODIMM up to 32GB**
- **Three independent displays:  
LVDS + HDMI + DP++**
- **DP++ resolution supports up to 4096x2304 @ 60Hz**
- **Multiple Expansions:  
1 PCIe x4 Gen 3, 1 Full-size Mini PCIe, 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 2, 4 USB 2.0**

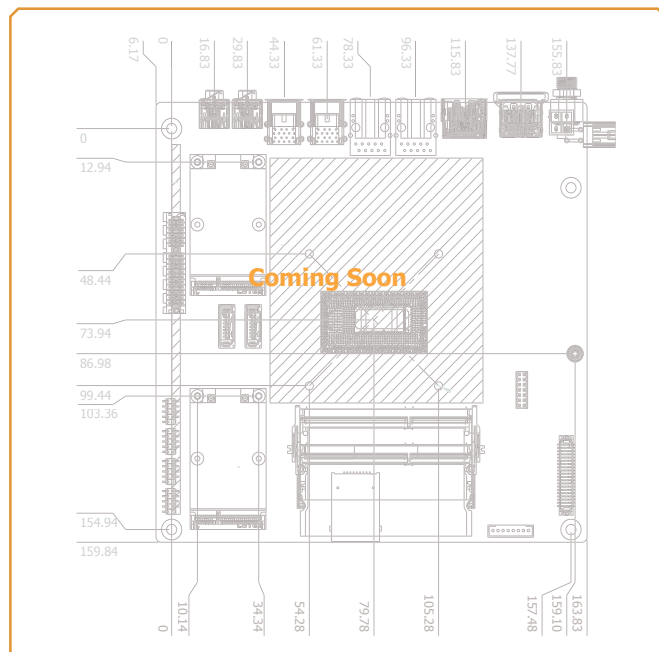


## Ordering Information

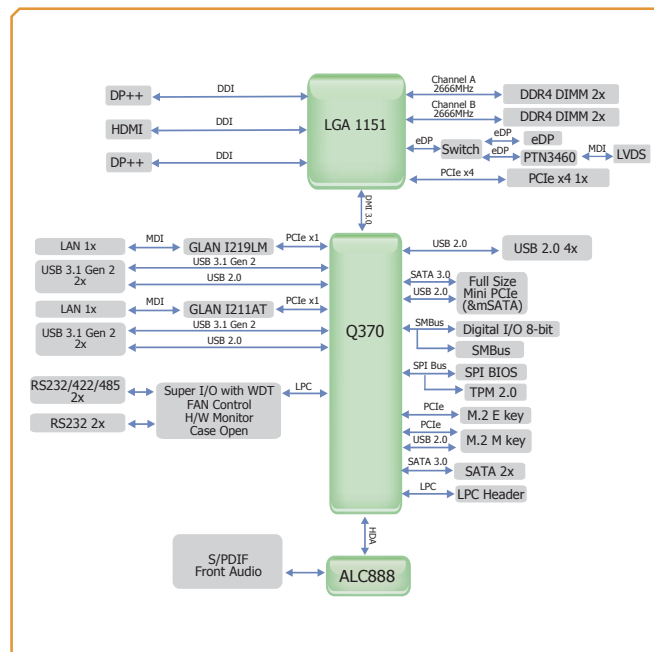
| Model Name | P/N | Memory   | LVDS/<br>eDP | HDMI/DP++ | GbE | RS-232 | RS-232/422/485 | USB 3.1 Gen 2 | USB 2.0 | SATA<br>3.0 | TPM | Power  | Temp.     |
|------------|-----|----------|--------------|-----------|-----|--------|----------------|---------------|---------|-------------|-----|--------|-----------|
| CS101-Q370 | TBD | 2 SODIMM | LVDS         | DP++      | 2   | 2      | 2              | 4             | 4       | 2           | 2.0 | 12V DC | 0 to 60°C |
| CS101-C246 | TBD | 2 SODIMM | LVDS         | DP++      | 2   | 2      | 2              | 4             | 4       | 2           | 2.0 | 12V DC | 0 to 60°C |

Note: If you would like to have the CPU configuration which is not listed on our ordering, please contact our sales representative.

## Mechanical Drawing



### Block Diagram



## Specifications

|                       |                              |                                                                                                                                                                                                                                                                                   |                                                                                                                                                                          |
|-----------------------|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SYSTEM</b>         | <b>Processor</b>             | 8th Generation Intel® Core™ Processors, LGA 1151 Socket, TDP up to 80W<br>Intel® Xeon E-2176G Processor<br>Intel® Core™ i7-8700 Processor<br>Intel® Core™ i5-8500 Processor<br>Intel® Core™ i3-8100 Processor<br>Intel® Pentium G5400 Processor<br>Intel® Celeron G4900 Processor |                                                                                                                                                                          |
|                       | <b>Memory</b>                | Two 260-pin SODIMM up to 32GB                                                                                                                                                                                                                                                     | Dual Channel DDR4 2666MHz (C246 support ECC)                                                                                                                             |
|                       | <b>Chipset</b>               | Intel® Q370/C246 Chipset                                                                                                                                                                                                                                                          |                                                                                                                                                                          |
|                       | <b>BIOS</b>                  | AMI SPI 128Mbit                                                                                                                                                                                                                                                                   |                                                                                                                                                                          |
|                       | <b>Controller</b>            | Intel® UHD Graphics 630 (only Pentium G5400, Celeron G4900 support 610 )                                                                                                                                                                                                          |                                                                                                                                                                          |
| <b>GRAPHICS</b>       | <b>Feature</b>               | OpenGL 4.4, DirectX 12, OpenCL 2.1<br>HW Decode: AVC/H.264, MPEG2, VC1/WMV9, JPEG/MJPEG, HEVC/H265, VP8, VP9<br>HW Encode: AVC/H.264, MPEG2, JPEG, HEVC/H265, VP8, VP9                                                                                                            |                                                                                                                                                                          |
|                       | <b>Display</b>               | 1 x LVDS/eDP (eDP available upon request)<br>1 x HDMI<br>2 x DP++                                                                                                                                                                                                                 | LVDS: resolution up to 1920x1200 @ 60Hz<br>eDP: resolution up to 4096x2304 @ 60Hz<br>HDMI: resolution up to 4096x2160 @ 60Hz<br>DP1.2: resolution up to 4096x2304 @ 60Hz |
|                       | <b>Dual/Triple Displays</b>  | DP+HDMI+LVDS/eDP<br>DP+DP+HDMI<br>DP+DP+LVDS/eDP                                                                                                                                                                                                                                  |                                                                                                                                                                          |
|                       | <b>Interface</b>             | 1 x PCIe x4 (Gen 3)<br>1 x Full-size Mini PCIe (colay mSATA)<br>1 x M.2 2280 M Key for storage (PCIe)<br>1 x M.2 2230 E Key for BT/Wifi (USB/PCIe)                                                                                                                                |                                                                                                                                                                          |
| <b>AUDIO</b>          | <b>Audio Codec</b>           | Realtek ALC888S-VD2-GR                                                                                                                                                                                                                                                            |                                                                                                                                                                          |
| <b>ETHERNET</b>       | <b>Controller</b>            | 1 x Intel® I219LM PHY, 1 x Intel® I211AT 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 Type A Connector                                                                                                                                                                                                                                                 |                                                                                                                                                                          |
|                       | <b>Display</b>               | 1 x HDMI<br>2 x DP++                                                                                                                                                                                                                                                              |                                                                                                                                                                          |
| <b>INTERNAL I/O</b>   | <b>Serial</b>                | 2 x RS-232/422/485 (2.0mm pitch)<br>2 x RS-232 (RS-232 w/ power)(2.0mm pitch)                                                                                                                                                                                                     |                                                                                                                                                                          |
|                       | <b>Display</b>               | 1 x LVDS Connector<br>1 x eDP (available upon request)                                                                                                                                                                                                                            |                                                                                                                                                                          |
|                       | <b>Audio</b>                 | 1 x Front Audio                                                                                                                                                                                                                                                                   |                                                                                                                                                                          |
|                       | <b>SATA</b>                  | 2 x SATA 3.0 (up to 6Gb/s)<br>1 x SATA Power                                                                                                                                                                                                                                      |                                                                                                                                                                          |
|                       | <b>DIO</b>                   | 1 x 8-bit DIO                                                                                                                                                                                                                                                                     |                                                                                                                                                                          |
|                       | <b>SMBus</b>                 | 1 x SMBus                                                                                                                                                                                                                                                                         |                                                                                                                                                                          |
|                       | <b>USB</b>                   | 4 x USB 2.0                                                                                                                                                                                                                                                                       |                                                                                                                                                                          |
| <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, dTPM 2.0 (opt.)                                                                                                                                                                                                                                                         |                                                                                                                                                                          |
| <b>POWER</b>          | <b>Type</b>                  | 12V DC-in                                                                                                                                                                                                                                                                         |                                                                                                                                                                          |
|                       | <b>Connector</b>             | DC jack colay 4 pins power connector (opt.)                                                                                                                                                                                                                                       |                                                                                                                                                                          |
|                       | <b>RTC Battery</b>           | CR2032 Coin Cell                                                                                                                                                                                                                                                                  |                                                                                                                                                                          |
|                       | <b>Consumption</b>           | TBD                                                                                                                                                                                                                                                                               |                                                                                                                                                                          |
| <b>OS SUPPORT</b>     | <b>Microsoft/Linux</b>       | Windows 10 IoT Enterprise 64-bit                                                                                                                                                                                                                                                  | Linux: Ubuntu 18.04                                                                                                                                                      |
| <b>ENVIRONMENT</b>    | <b>Temperature</b>           | Operating: 0 to 60°C                                                                                                                                                                                                                                                              | Storage: -40 to 85°C                                                                                                                                                     |
|                       | <b>Humidity</b>              | Operating: 5 to 90% RH                                                                                                                                                                                                                                                            | Storage: 5 to 90% RH                                                                                                                                                     |
|                       | <b>MTBF</b>                  | TBD                                                                                                                                                                                                                                                                               |                                                                                                                                                                          |
|                       | <b>Dimensions</b>            | Mini-ITX Form Factor                                                                                                                                                                                                                                                              | 170mm (6.7") x 170mm (6.7")                                                                                                                                              |
| <b>MECHANICAL</b>     | <b>Height</b>                | PCB: 1.6mm                                                                                                                                                                                                                                                                        | Top Side: 20mm, Bottom Side: 3mm                                                                                                                                         |

## Packing List

|                                                      |                 |
|------------------------------------------------------|-----------------|
| • 1 CS101 motherboard                                |                 |
| • 1 Serial ATA data with power cable (Length: 300mm) | A81-002013-000G |
| • 1 I/O shield                                       | TBD             |

## Optional Items

|                                                    |                 |
|----------------------------------------------------|-----------------|
| • USB 2.0 port cable (Length: 200mm)               | 332-753059-000G |
| • COM port cable (Length: 250mm, 1 x COM ports)    | A81-015011-001G |
| • Serial ATA data with power cable (Length: 300mm) | A81-002013-000G |