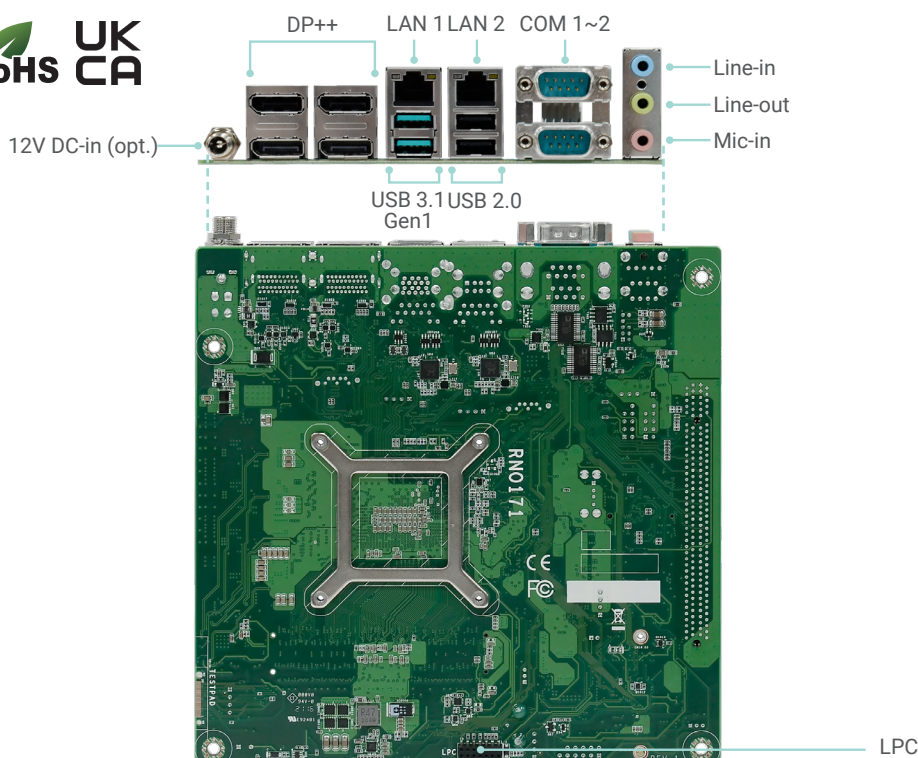
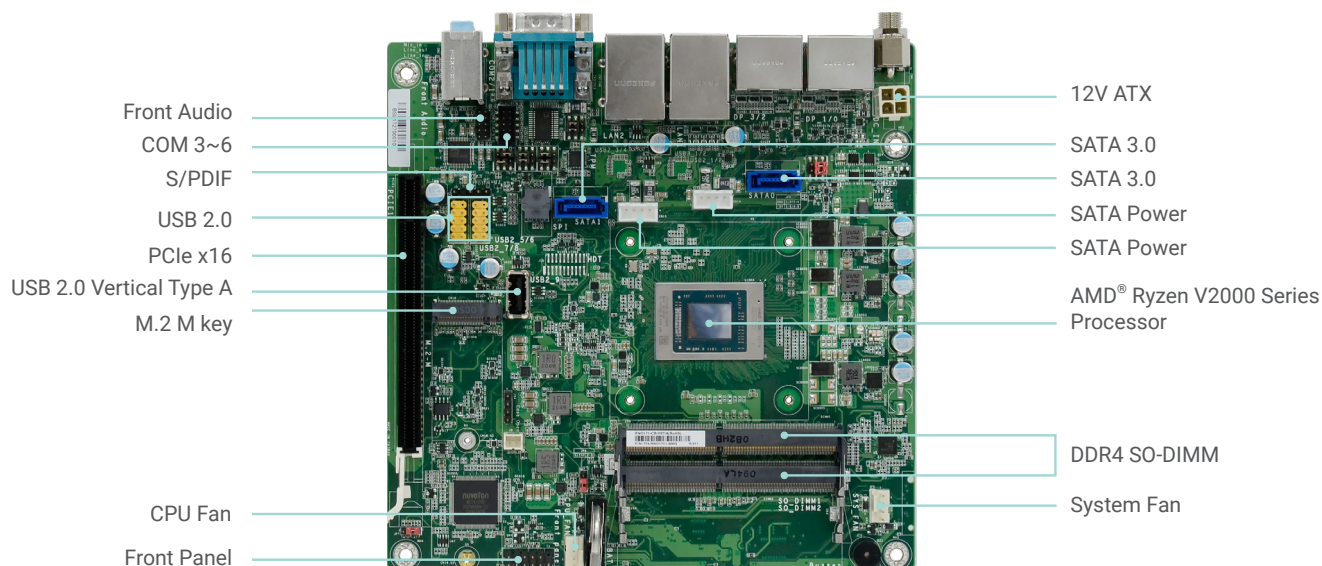


# RNO171

AMD® Ryzen™ V2000 Series  
mini-ITX



Bottom View



Top View

## KEY FEATURES



### DDR4

2 DDR4 SODIMM up to 64GB



### 4K High Resolution

Supports 4K/ 2K resolution



### 4 Independent Displays

4 x DP++



### Expansion

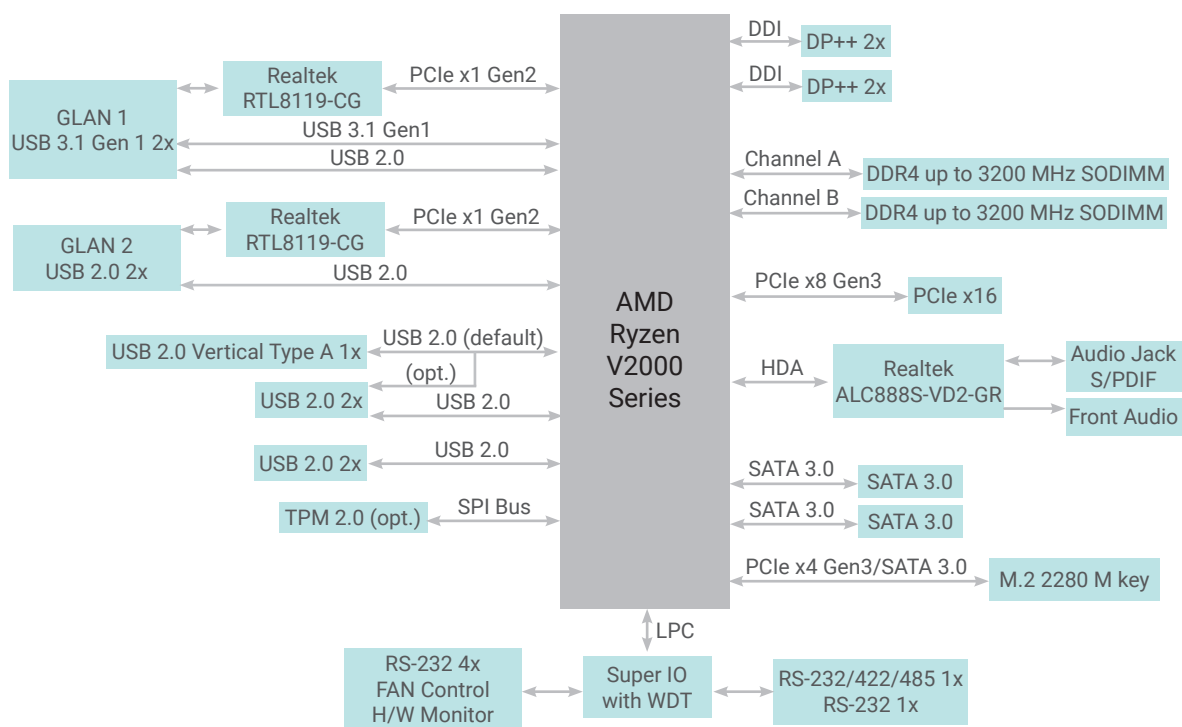
1 M.2 M Key,  
1 PCIe x16 (x8 signal)



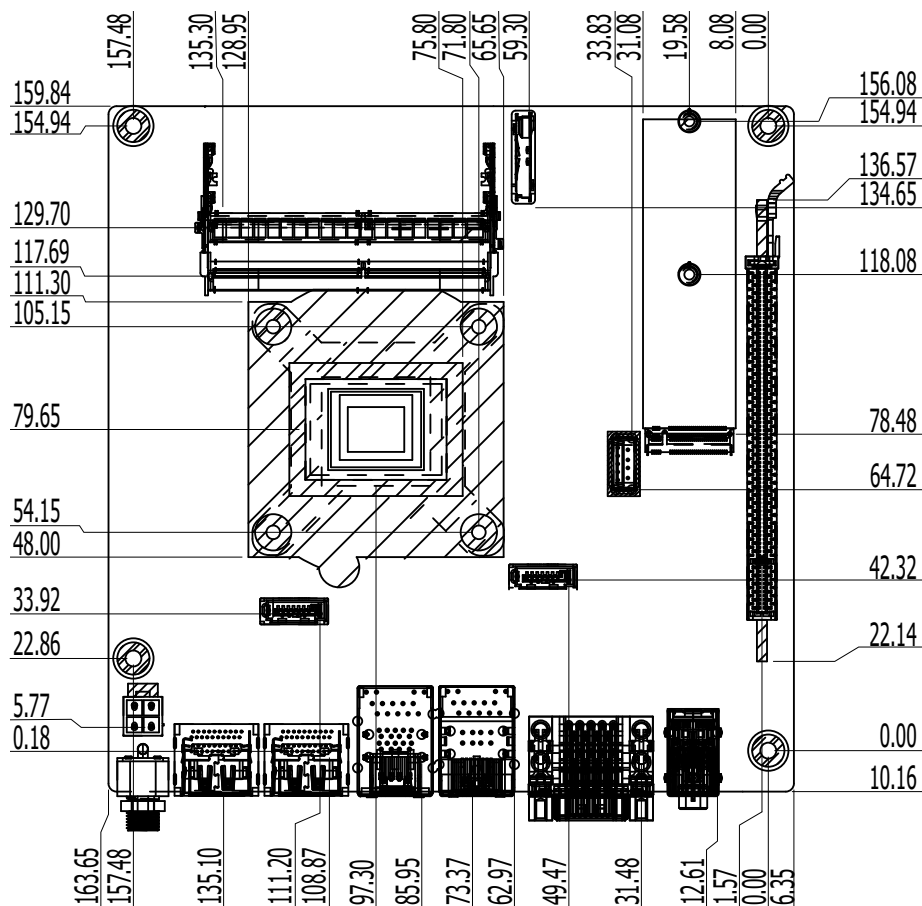
### Rich I/O

2 GbE, 6 COM,  
2 USB 3.1 Gen1,  
7 USB 2.0, 2 SATA 3.0

## BLOCK DIAGRAM



## MECHANICAL DRAWING



## SPECIFICATION

|                              |                   |                                                                                                                                                                                                                                                                                                                                |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|
| SYSTEM                       | Processor         | AMD® Ryzen™ V2000 Series Processors, BGA V2748<br>AMD® Ryzen™ V2748, 8C/16T, 4MB Cache, 7 CU, 2.9GHz (4.25GHz),45W<br>AMD® Ryzen™ V2546, 6C/12T, 3MB Cache, 6 CU, 3.0GHz (3.95GHz),45W<br>AMD® Ryzen™ V2718, 8C/16T, 4MB Cache, 7 CU, 1.7GHz (4.15GHz),15W<br>AMD® Ryzen™ V2516, 6C/12T, 3MB Cache, 6 CU, 2.1GHz (3.95GHz),15W |  |  |  |  |  |  |  |  |  |  |
|                              | Memory            | Two 260-pin SODIMM up to 64GB<br>Dual channel DDR4 up to 3200MHz (ECC/ non ECC support)                                                                                                                                                                                                                                        |  |  |  |  |  |  |  |  |  |  |
|                              | BIOS              | AMI BIOS                                                                                                                                                                                                                                                                                                                       |  |  |  |  |  |  |  |  |  |  |
| GRAPHICS                     | Controller        | AMD® Radeon™ VEGA7 Graphics                                                                                                                                                                                                                                                                                                    |  |  |  |  |  |  |  |  |  |  |
|                              | Feature           | OpenGL 4.6, 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           | 4 x DP++ DP++: resolution up to 4096x2160 @ 60Hz                                                                                                                                                                                                                                                                               |  |  |  |  |  |  |  |  |  |  |
| EXPANSION                    | Interface         | 1 x PCIe x16 (x8 Gen3)<br>1 x M.2 2280 M Key (SATA 3.0/ PCIe x4) (support 2242 by BOM opt.)                                                                                                                                                                                                                                    |  |  |  |  |  |  |  |  |  |  |
| AUDIO                        | Audio Codec       | Realtek ALC888S-VD2-GR                                                                                                                                                                                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |
| ETHERNET                     | Controller        | 2 x Realtek RTL8119-CG (10/100/1000Mbps)                                                                                                                                                                                                                                                                                       |  |  |  |  |  |  |  |  |  |  |
| REAR I/O                     | Ethernet          | 2 x GbE (RJ-45)                                                                                                                                                                                                                                                                                                                |  |  |  |  |  |  |  |  |  |  |
|                              | USB               | 2 x USB 3.1 Gen1<br>2 x USB 2.0                                                                                                                                                                                                                                                                                                |  |  |  |  |  |  |  |  |  |  |
|                              | Display           | 4 x DP++                                                                                                                                                                                                                                                                                                                       |  |  |  |  |  |  |  |  |  |  |
|                              | Audio             | 1 x Mic-in<br>1 x Line-in<br>1 x Line-out                                                                                                                                                                                                                                                                                      |  |  |  |  |  |  |  |  |  |  |
|                              | Serial            | 1 x RS-232/422/485 (DB-9)<br>1 x RS-232 (DB-9)                                                                                                                                                                                                                                                                                 |  |  |  |  |  |  |  |  |  |  |
|                              |                   |                                                                                                                                                                                                                                                                                                                                |  |  |  |  |  |  |  |  |  |  |
| INTERNAL I/O                 | Serial            | 4 x RS-232 (2.0mm pitch) (TX/RX signal only)                                                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |  |
|                              | USB               | 3 x USB 2.0 (2.54mm pitch) + 1 x USB 2.0 Vertical Type A (default) or<br>4 x USB 2.0 (2.54mm pitch) (opt.)                                                                                                                                                                                                                     |  |  |  |  |  |  |  |  |  |  |
|                              | Audio             | 1 x S/PDIF<br>1 x Audio (Mic-in/Line-out)                                                                                                                                                                                                                                                                                      |  |  |  |  |  |  |  |  |  |  |
|                              | SATA              | 2 x SATA 3.0 (up to 6GB/s) (with 7-pin VCC support)<br>2 x SATA Power                                                                                                                                                                                                                                                          |  |  |  |  |  |  |  |  |  |  |
| WATCHDOG TIMER               | Output & Interval | System Reset, Programmable via Software from 1 to 255 Seconds                                                                                                                                                                                                                                                                  |  |  |  |  |  |  |  |  |  |  |
| SECURITY                     | TPM               | TPM2.0 (opt.)                                                                                                                                                                                                                                                                                                                  |  |  |  |  |  |  |  |  |  |  |
| POWER                        | Type              | Single 12V +/-5% DC                                                                                                                                                                                                                                                                                                            |  |  |  |  |  |  |  |  |  |  |
|                              | Connector         | Straight Type Connector (4-pin)<br>DC-in Jack (available upon request)<br>Right Angle Connector (4-pin) (available upon request)                                                                                                                                                                                               |  |  |  |  |  |  |  |  |  |  |
|                              | Consumption       | Idle: V2748: 12V @ 0.23A (2.76W)<br>Max: V2748: 12V @ 2.6A (31.20W)                                                                                                                                                                                                                                                            |  |  |  |  |  |  |  |  |  |  |
|                              | RTC Battery       | CR2032 Coin Cell                                                                                                                                                                                                                                                                                                               |  |  |  |  |  |  |  |  |  |  |
| OS SUPPORT                   | Microsoft         | Windows 10                                                                                                                                                                                                                                                                                                                     |  |  |  |  |  |  |  |  |  |  |
|                              | Linux             | Linux                                                                                                                                                                                                                                                                                                                          |  |  |  |  |  |  |  |  |  |  |
| ENVIRONMENT                  | Temperature       | Operating: -5 to 65°C Storage: -40 to 85°C                                                                                                                                                                                                                                                                                     |  |  |  |  |  |  |  |  |  |  |
|                              | Humidity          | Operating: 10 to 90% RH Storage: 10 to 90% RH                                                                                                                                                                                                                                                                                  |  |  |  |  |  |  |  |  |  |  |
|                              | MTBF              | RNO171-CB-V2748: 360,622 hrs @ 25°C; 147,282 hrs @ 45°C; 65,054 hrs @ 60°C;<br>Calculation model: Telcordia Issue 4<br>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: 37.7mm, Bottom Side: 4.3mm                                                                                                                                                                                                                                                                                |  |  |  |  |  |  |  |  |  |  |
| STANDARDS AND CERTIFICATIONS | Certification     | CE, FCC, RoHS, UKCA                                                                                                                                                                                                                                                                                                            |  |  |  |  |  |  |  |  |  |  |

## ORDERING INFORMATION

| Model Name      | P/N              | Processor | Memory   | GbE | DP++ | RS-232/422/485 | RS-232 | USB 3.1 Gen1 | USB 2.0 | Power  | Thermal | Temp.      |
|-----------------|------------------|-----------|----------|-----|------|----------------|--------|--------------|---------|--------|---------|------------|
| RNO171-CB-V2748 | 770-RNO1711-000G | V2748     | 2 SODIMM | 2   | 4    | 1              | 5      | 2            | 7       | 12V DC | Active  | -5 to 65°C |
| RNO171-CB-V2546 | 770-RNO1711-100G | V2546     | 2 SODIMM | 2   | 4    | 1              | 5      | 2            | 7       | 12V DC | Active  | -5 to 65°C |
| RNO171-CB-V2718 | 770-RNO1711-200G | V2718     | 2 SODIMM | 2   | 4    | 1              | 5      | 2            | 7       | 12V DC | Active  | -5 to 65°C |
| RNO171-CB-V2516 | 770-RNO1711-300G | V2516     | 2 SODIMM | 2   | 4    | 1              | 5      | 2            | 7       | 12V DC | Active  | -5 to 65°C |

## PACKING LIST

|                                 |                 |
|---------------------------------|-----------------|
| 1 RNO171 motherboard            |                 |
| 1 I/O shield                    | A49-GH1710-000G |
| 1 Cooler (For 25W, height:35mm) | A71-108114-010G |
| (For 54W, height:47mm)          | A71-108113-000G |

## OPTIONAL ITEMS

|                                |                 |
|--------------------------------|-----------------|
| SATA signal and power cable    | A81-002013-000G |
| USB port cable (Length: 200mm) | 332-253010-026G |
| COM port cable (Length: 300m)  | A81-015041-018G |