

# ROCK-301

## Fanless IP65 System with 13th Gen. Intel® Core™ for Mission-Critical Applications



### Features

- 13th Gen. Intel® core-i CPU up to i7
- Fanless Operating Temperature -40 ~71°C
- IP65 Enclosures for Water/Dust-proof
- High Speed DDR5 8GB RAM, NVMe 64GB SSD and USB 4
- M.2 2280 for Storage/AI expansion
- MIL-STD810H and E-Mark Compliances
- Off-the-Self I/O Module Expansion
- 3 Years Warranty and 10 Years Longevity

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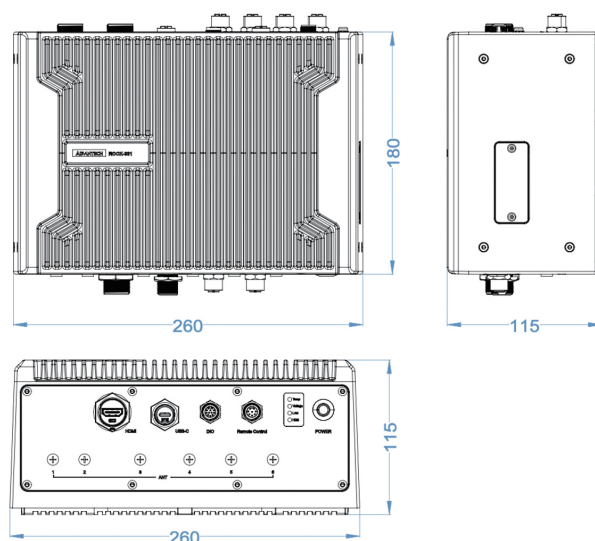
### Specifications

| ROCK-301-V701DA1         |                                  |                                                                                                                                                                                                                 |
|--------------------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Processor                | CPU                              | 13th Gen Intel i7-1365URE (Raptor lake-U)                                                                                                                                                                       |
|                          | P-code Base/ Turbo Frequency     | 1.7/4.9 GHz                                                                                                                                                                                                     |
|                          | E-code Base/ Turbo Frequency     | 1.7/3.7 GHz                                                                                                                                                                                                     |
|                          | Core                             | 10C (2P+8E)                                                                                                                                                                                                     |
|                          | Cache                            | 12M                                                                                                                                                                                                             |
| Memory                   | Technology                       | DDR5, 4800 MT/S, non-ECC                                                                                                                                                                                        |
|                          | Socket                           | 1x 8GB DDR5 RAM<br>1x SO-DIMM<br>The total memory capacity is up to 64GB (option)                                                                                                                               |
| Graphics                 | Controller                       | Intel® Iris® Xe Graphics/UHD Graphics Architecture                                                                                                                                                              |
|                          | Max Graphic Frequency            | 1.3GHz                                                                                                                                                                                                          |
|                          | 3D graphic HW acceleration       | DX12, Open GL 4.6, Vulkan 1.2                                                                                                                                                                                   |
|                          | HW Acceleration                  | OneVPL                                                                                                                                                                                                          |
| Audio                    | Encode/Decode                    | H.2641/AVC. H.265/HEVC                                                                                                                                                                                          |
|                          | In/Out/Mic-in                    | None                                                                                                                                                                                                            |
| TPM                      | TPM                              | TPM 2.0                                                                                                                                                                                                         |
| Watchdog Timer           | Watchdog                         | 255-level timer interval setup by software                                                                                                                                                                      |
| I/O Interface (external) | Display                          | 2x M25 HDMI Type A, resolution up to 4096x 2160 48-60Hz with 8 kV/15 kV ESD protection<br>1x M12 X-code Speed: 10/ 100/ 1000M / 2.5G with 8 kV/15 kV ESD protection                                             |
|                          | Ethernet                         | 4x M12 X-code 10/100 Mbps PoE (IEEE802.3af, maximum power output of 60W) with 8 kV/15 kV ESD protection<br>* Alternatively, it can achieve speeds of up to 10/100/1000 Mbps when using only 1x M12 x-code port. |
|                          | Serial                           | 1x M12 A-code RS-232/422/485 with 8 kV/15 kV ESD protection                                                                                                                                                     |
|                          | USB                              | 1x M25 USB 3.0/2.0 Type A<br>1x M20 USB 4.0 type C with 8 kV/15 kV ESD protection                                                                                                                               |
|                          | Button                           | 1x Power ON/OFF button ON: green (s0), OFF: red (s5)                                                                                                                                                            |
|                          | LED                              | 4x LED Temperature (Red), Voltage (Red), 4G/5G (Green), storage (Green).                                                                                                                                        |
|                          | Remote Control (Engineering Use) | 1x M12 A-code<br>Power ON/OFF, Power ON LED light (5V), Reset, DC-out 12V/1A                                                                                                                                    |
|                          | DIO (Engineering Use)            | 1x M12 A-code 4DI, 4DO with 8 kV/15 kV ESD protection                                                                                                                                                           |
|                          | CANbus (Engineering Use)         | 1x M12 A-code CANbus 2.0 A/B with 8 kV/15 kV ESD protection                                                                                                                                                     |
|                          | Antenna Point                    | 6                                                                                                                                                                                                               |
|                          | Shielding Grounding              | 1x screw point                                                                                                                                                                                                  |
|                          | SIM                              | 1x Nano-SIM reader                                                                                                                                                                                              |
| I/O Interface (side)     | Battery                          | 1x Holder (CR2032)                                                                                                                                                                                              |
|                          | Reset BIOS Settings              | 1x Button                                                                                                                                                                                                       |
| I/O Interface (internal) | Storage                          | NVMe 64GB onboard                                                                                                                                                                                               |
|                          | SATA                             | 1x SATA and power for 2.5" SSD/HDD (option)                                                                                                                                                                     |
|                          | mPCIe                            | 1x Full-size mPCIe/mSATA (PCIe, USB, SATA)                                                                                                                                                                      |
|                          | M.2                              | 1x M.2 B key 3042/3052 (PCIe, USB)<br>1x M.2 M key 2280 (PCIe)                                                                                                                                                  |
|                          | Modular I/O Expansion            | 1                                                                                                                                                                                                               |

## Specifications (Cont.)

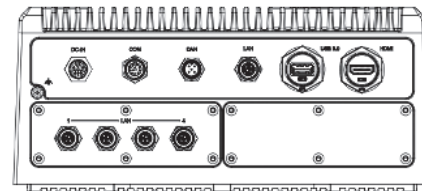
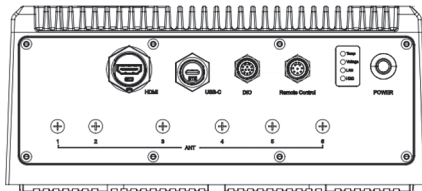
|              |                                  |                                                                                                                                                                    |
|--------------|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Software     | Microsoft Windows                | Windows 10, 11                                                                                                                                                     |
|              | Linux                            | Ubuntu 22.04 LTS                                                                                                                                                   |
| Power        | Input voltage                    | 1x M12 L-code Nominal inputs 12V/ 24V (input range 9 to 36V, default 12V)                                                                                          |
|              | Vehicle Ignition                 | Support power ignition selected by hardware jump or software control Ignition delay timer from 30s to 240s                                                         |
|              | Protection                       | Over Voltage Protection: 38.5V<br>Over Current Protection: 30A<br>ESD Protection: with 8k contact/ 15kV air ESD protection<br>Surge Protection: 1kV (line to line) |
|              | Consumption                      | N/A                                                                                                                                                                |
| Environment* | IP Class (Solid Particle)        | IP class 6X (operating with protected mating interfaces against water and dust incursion)                                                                          |
|              | IP Class (Water)                 | IP class X5 (operating with protected mating interfaces against water and dust incursion)                                                                          |
|              | Operating Temperature - Military | MIL-STD-810H Method 514.8, -40~71 °C/ -40~159.8°F (with extended temperature peripherals)                                                                          |
|              | Storage Temperature - Military   | MIL-STD-810H Method 514.8, -40 ~ 85 °C/ -40~185 °F                                                                                                                 |
|              | Storage Humidity                 | IEC 60068, 95% @ 40 °C (non-condensing)                                                                                                                            |
|              | Vibration - Military             | MIL-STD-810H Method 514.8 (vertical 3.98 Grms)                                                                                                                     |
|              | Vibration - Vehicle              | EN 60721-3-5 (5M3, 10~200Hz, 3 m2/S3)                                                                                                                              |
|              | Shock - Military                 | MIL-STD-810H Method 516.8 (40 Grms)                                                                                                                                |
|              | Shock - Vehicle                  | EN60721-3-5 Class 5M3 (100G, 6ms)                                                                                                                                  |
|              | Shock - Electronic               | IEC 60068-2-27 (with a total maximum power output of PoE restricted to 30W)                                                                                        |
| EMC*         | Electronic                       | IEC CE/FCC class A                                                                                                                                                 |
|              | Industry                         | EN61000-6-4, EN61000-6-2                                                                                                                                           |
|              | Military                         | MIL-STD-461 (compliance)                                                                                                                                           |
|              | Vehicle                          | ISO7637-2                                                                                                                                                          |
| Safety*      | Vehicle                          | E-Mark (13)                                                                                                                                                        |
|              | Electronic                       | CB, UL                                                                                                                                                             |
| Mechanical*  | Enclosure                        | Fanless system                                                                                                                                                     |
|              | Construction                     | Aluminum housing, Black                                                                                                                                            |
|              | Mounting                         | Wall-mount by mounting bracket (option)                                                                                                                            |
|              | Side Panel Heat Sink             | Yes (option)                                                                                                                                                       |
| Other        | Dimensions (W x H x D)           | 285 x 180 x 115 mm/ 11.22 x 7.08 x 4.52 inch with side panel heat sink<br>260 x 180 x 115 mm/ 10.23 x 7.08 x 4.52 inch                                             |
|              | MTBF                             | N/A                                                                                                                                                                |
|              | Warranty                         | 3 years                                                                                                                                                            |
|              | Production                       | Made in Taiwan                                                                                                                                                     |
| Weight       |                                  | 5.66 kg (withou wall mount)                                                                                                                                        |

## Dimensions



Unit: mm

## External I/O Mechanical Layout/Drawing



## Ordering Information

| Part Number      | CPU                | RAM/RAM Socket                | NVMe SSD | GbE                                       | Modular I/O Expansion | Side Panel Heat Sink | Power Input                   | Operating Temperature       |
|------------------|--------------------|-------------------------------|----------|-------------------------------------------|-----------------------|----------------------|-------------------------------|-----------------------------|
| ROCK-301-V701DA1 | i7-1365URE 4.9 GHz | 1x 8GB DDR5 RAM<br>1x SO-DIMM | 64 GB    | 1x 2.5 GbE<br>4x 10/100 Mbps<br>(PoE 60W) | 1                     | Yes                  | Nominal 12/ 24V<br>(9 to 36V) | -40-71 °C<br>(-40-159.8 °F) |

## Packing List

| Description                          | QTY |
|--------------------------------------|-----|
| ROCK-301                             | 1   |
| Screws (for M.2, mPCIe installation) | 5   |
| Wall mount kit                       | 1   |

## Customer Support Services

| Part Number       | Description                                          |
|-------------------|------------------------------------------------------|
| Extended warranty | 1-to-3 year extended warranty service                |
| Conformal coating | Services for moisture, dust and corrosion resistance |

## Optional Items

| Part Number       | Description                                     |
|-------------------|-------------------------------------------------|
| 96PSA-A230W24P4-3 | ADP A/D 100-240V 230W 24V C14 TERMINAL BLOCK 4P |
| 1700034872-01     | M12-RJ45 cable for LAN 10/100Mbps               |
| 1700035017-01     | M12-DB9 cable for CAN port                      |
| 1700035018-01     | M12-DB9 cable for COM port                      |
| 1700035019-01     | M12-terminal 10pin cable for GPIO port          |
| 1700035020-01     | M12-terminal *2 5pin cable for remote control   |
| 1700033565-01     | M12-terminal 6pin cable for power input         |
| 1652001524        | Terminal block 5pin for M12-terminal 6pin cable |

## Embedded OS

| Part Number    | Description                              |
|----------------|------------------------------------------|
| 20706WX1ES0118 | Microsoft Windows 10 IoT 2021 image (EL) |
| 20706WX1HS0118 | Microsoft Windows 10 IoT 2021 image (HL) |
| 20706WX1VS0118 | Microsoft Windows 10 IoT 2021 image (VL) |
| N/A            | Microsoft Windows 11 image               |
| N/A            | Ubuntu Linux 22.04 LTS image             |