

# AIR-055

## AI Inference System Based on Qualcomm® Dragonwing IQ9075M



### Features

- Compact and high performance Edge AI box up to 100 TOPS AI computing
- Qualcomm® Dragonwing IQ9075M built-in
- 12-24V wide power and -20-55 °C wide temp. supported
- Multiple IO ports: 2 x 2.5G LAN, 1x DIO(DB9), 3x COM, 2x CANFD, 2x USB 3.2 type A and 2x USB type C, 2x USB 2.0 type A
- Support various expansions 1x M.2 M-key 2280(PCIE x4), 1x M.2 E-key2230(PCIE x2/USB2.0) and 1x M.2 B-key 3052(USB 3.2 Gen1)

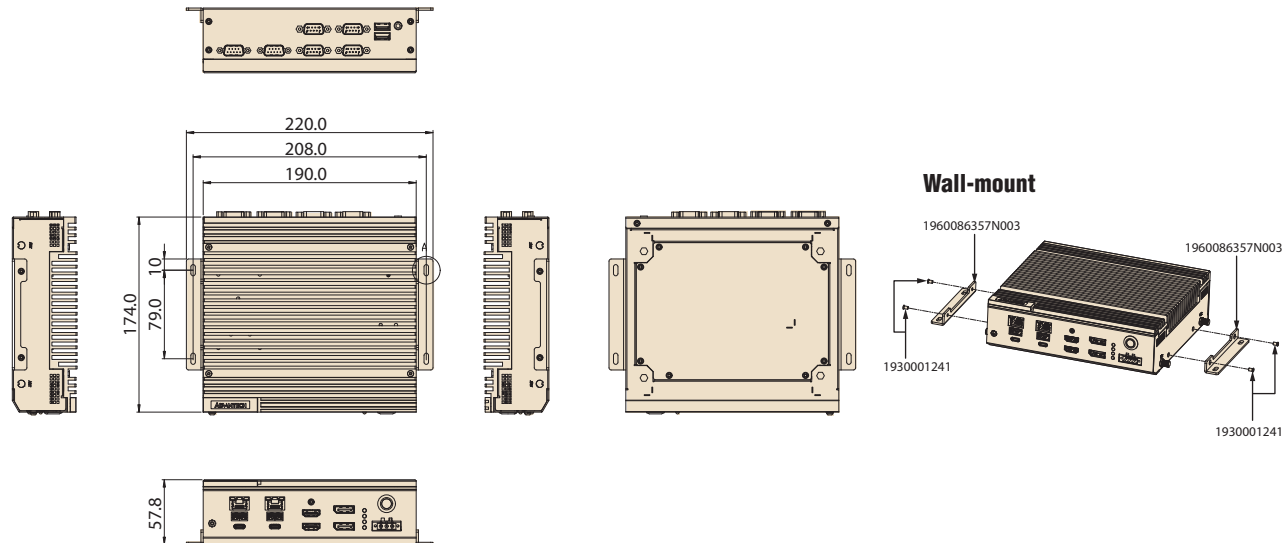
### Specifications

| Model             |                               | AIR-055D-U2A1U  | AIR-055D-U2A1 |
|-------------------|-------------------------------|---|---------------|
| Processor Module  | Qualcomm® Dragonwing Series   | IQ-9075M  |               |
|                   | CPU                           | Qualcomm® Kryo Gen 6 CPU built on Arm v8.2 Cortex technology 2.36 GHz                     |               |
|                   | GPU                           | Adreno 663 GPU support safe GPGPU compute up to 800Mhz                                    |               |
|                   | AI Performance Reference      | Up to 100 dense / 200 sparse INT8 TOPS  |               |
| Ethernet          | Memory                        | 36GB 96bit LPDDR5 DRAM  |               |
|                   | Interface                     | 2x RJ-45  |               |
|                   | PHY                           | Realtek RTL8221D  |               |
|                   | Speed                         | 2.5 Gigabit Ethernet (10/100/1000/2500 Mbps, optional PoE support)                        |               |
| Display           | HDMI                          | 2x HDMI 1.4 (Max. resolution 3840 x 2160 @ 30Hz)  |               |
|                   | DP                            | 2x DP 1.4 (Max. resolution 3840 x 2160 @ 60Hz)  |               |
| IO Ports          | USB                           | 1x USB 3.2 Gen2 Type A*<br>1x USB 3.2 Gen1 Type A<br>2x USB 3.2 Gen1 Type C<br>2x USB 2.0 |               |
|                   | CANFD                         | 2x DB9  |               |
|                   | DIO                           | 1x 8 bit (DB9)  |               |
|                   | COM                           | 3 x RS-232/RS-422/RS-485  |               |
|                   | Audio                         | 3.5mm Headphone out/MIC Combo Jack  |               |
| Expansion         | M.2                           | 1x M.2 3052 B Key(USB 3.2 Gen1), 1x M.2 2230 E Key(PCIE x2/USB2.0)                        |               |
| Others            | TPM                           | TPM2.0  |               |
| Storage           | M.2 M Key                     | 1 x M.2 2280 M Key(PCIE x4)   |               |
|                   | 128GB UFS3.1                  | on board (default)  |               |
| Power Consumption | Typical (OS idle mode)        |   |               |
|                   | Max. (Full loading)           |   |               |
| Power Requirement | Power Supply voltage          | 12-24V DC-IN, Power adaptor 150W  |               |
|                   | Power Type                    | ATX/AT mode, ATX default  |               |
| Environment       | Operational Temperature       | -20 ~ 55°C with non-POE<br>-20 ~ 40°C with POE  |               |
|                   | Operating Humidity            | 95% @ 40 °C (non-condensing)  |               |
|                   | Vibration                     | 3 Grms @ 5 ~ 500 Hz, random, 1 hr/axis  |               |
| Mechanical        | Dimensions (W x D x H) Weight | 190 x 174 x 57.8 mm   |               |
|                   | Weight                        | 1.9 kg  |               |
|                   | Mounting Support              | Wall mounting   |               |
| Operating System  | Linux                         | Ubuntu 24.04  |               |
| Software Support  | Software API                  | Edge AI SDK compatible  |               |
| Certifications    | EMC/Safety                    | CE/FCC Class B, CB, UL, CCC and BSMI (No RED Certificate)                                 |               |

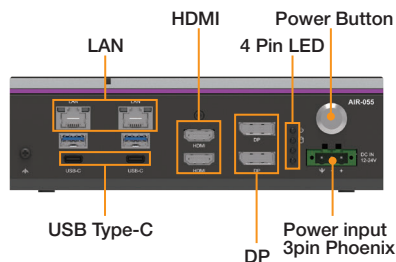
\*Not only USB function but also Download Mode Support

## Dimensions

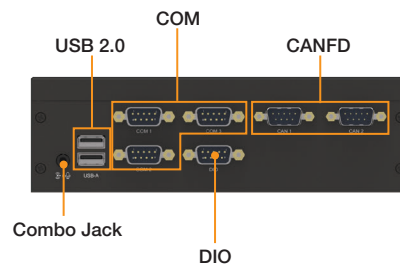
Unit: mm [inch]



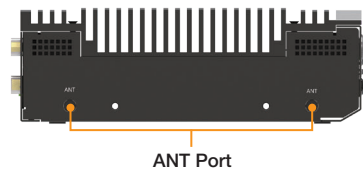
## Front I/O



## Rear I/O



## Side I/O



## Ordering Information

| Part No.       | Thermal solution | Processor Module | Qualcomm Module Memory | Storage      | DP | HDMI | GbE | USB | CANFD | RS-232/422/485 | GPIO | Power input | Operating Temperature | Made in |
|----------------|------------------|------------------|------------------------|--------------|----|------|-----|-----|-------|----------------|------|-------------|-----------------------|---------|
| AIR-055D-U2A1U | Fanless          | IQ-9075M         | 36GB LPDDR5            | 128GB UFS3.1 | 2  | 2    | 2   | 6   | 2     | 3              | 1    | 12-24Vdc    | -20-60 °C             | Taiwan  |
| AIR-055D-U2A1  | Fanless          | IQ-9075M         | 36GB LPDDR5            | 128GB UFS3.1 | 2  | 2    | 2   | 6   | 2     | 3              | 1    | 12-24Vdc    | -20-60 °C             | China   |

\*The system OS will be pre-installed in a 128GB UFS3.1 (on board).

## Packing List

| Part Number    | Description  | Quantity |
|----------------|--|----------|
| AIR-055        | Qualcomm AI Inference System   | 1        |
| 1652004519     | Phoenix connector counterpart  | 1        |
| -              | Simplified Chinese User Manual   | 1        |
| 1960086357N003 | Wall Mount Kit for AIR-055   | 2        |
| -              | Thermal-Pad kit (1x M.2 M-key 2280, 1x M.2 E-key 2230 and 1x M.2 B-key 3052) | 1        |

## Optional

| Part Number       | Description                                     |
|-------------------|---|
| 96PSA-A150W24T2-4 | Power Adapter 24V 150W                          |
| 1702002600        | Power Cord UL 3P 10A 125V 183cm (US)            |
| 1702002605        | Power Cord EU 3P 10A 250V 183cm (EU)            |
| 1702031801-11     | Power Cord BSI 3P 10A 250V 183cm (UK)           |
| 1700000237        | Power Cord PSE 3P 12A 125V 183cm (Japan)        |
| 1700013977        | Power Cord CCC 3P 10A 250V 200cm 90°(China)     |
| MIOE-PSE-DPA1     | MIOE-PSE POE module                             |
| 1970006345T001    | POE thermal kit for AIR-055                     |
| AIW-170BQ-001     | Qualcomm Wifi6E M.2 2230 E-Key                  |
| 1751000622-01     | 1x Cable Ant. L150mm for WIFI                   |
| 1751000651-01     | 1x Antenna for WIFI                             |
| AIW-356DQ-E01     | Qualcomm 5G M.2 3052 B-Key                      |
| 1751000625-01     | 1x Cable Ant. L150mm for 5G                     |
| 1750009372-01     | 1x Antenna for 5G                               |
| 1700028870-01     | F Cable 2x5P-2.0/D-SUB 9P(M) 25CM (debug cable) |

Note: If Wi-Fi/5G module is required, the package must include the module, antenna, and antenna cable  
 Note: If LAN1 and LAN2 need PoE function, please order MIOE-PSE and 1970006345T001

Advantech SUSI is a device management and system monitoring suite for hardware configuration, control, and status monitoring.

SUSI information: <https://github.com/ADVANTECH-Corp/SUSI>

## Inference Kit | Production-Ready AI Inference on Edge Devices

**Provides a unified and hardware-aligned runtime for deploying and validating AI inference on edge devices**

It simplifies integration across CPUs, GPUs, and AI accelerators while enabling performance benchmarking and compatibility verification on target hardware. Designed for production use, Inference Kit helps hardware partners ensure stable, scalable, and repeatable AI deployment across product lines.



The banner features the ADANTECH logo in the top left. The main title 'EdgeAI SDK Inference Kit' is prominently displayed in the upper right. Below the title, a blue bar contains the text 'Streamlined Edge Inference'. A list of four key features is provided: 'Ready-to-Run Inference Runtime', 'Accelerator-Aware Optimization', 'Stable Edge Production Stack', and 'Unified Inference Interfaces'. The background includes a screenshot of the EdgeAI SDK monitoring dashboard, a glowing blue brain icon, and three images illustrating edge AI applications: a factory floor, a road with vehicle detection, and a warehouse.

### Benefits and Features



#### Unified Inference Runtime

- Consistent inference across CPUs, GPUs, and accelerators
- Vendor-optimized runtime integration
- Built-in UniInfra acceleration framework
- Optimized inference pipelines and runtime efficiency



#### Hardware Validation

- Benchmarking on target devices
- OS and accelerator compatibility validation
- Performance and stability verification



#### Production-Ready Deployment

- Stable, long-running inference operation
- System monitoring and observability support
- Designed for scalable edge deployment



#### Global Customer Support

- System reliability certification
- Inference computing enablement
- Edge-to-cloud scalability collaboration

