

# DS-054

Modern AI-ready PCs, combining  
high-performance AMD Ryzen™  
8000-series Zen CPU cores



## Introduction

DS-054 is designed for modern AI-ready PCs, combining high-performance Zen CPU cores with integrated RDNA graphics and built-in AI acceleration. They deliver strong compute performance, efficient power management, and enhanced AI capabilities for productivity, multimedia, and edge applications.

## Specifications

|                          |                            | DS-0540B-U0A1E                                                                          | DS-0540B-U1A1E                                                      |
|--------------------------|----------------------------|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| Processor                | Processor                  | AMD R8640 (6 Cores/ 12 Threads)                                                         | AMD R8840 (8 Cores/ 16 Threads)                                     |
|                          | Chipset                    | Integrated in SOC                                                                       |                                                                     |
|                          | BIOS                       | AMI uEFI 256 Mbit                                                                       |                                                                     |
| Memory                   | Technology                 | DDR5 5600 MHz                                                                           |                                                                     |
|                          | Max. Capacity              | 96GB (48GB per SO-DIMM)                                                                 |                                                                     |
|                          | Socket                     | 2 x 260-pin SODIMM                                                                      |                                                                     |
| CPU TDP                  |                            | 28W                                                                                     | 28W                                                                 |
| Thermal Solution         |                            | Smart-Fan                                                                               | Smart-Fan                                                           |
| Display                  | Graphics Engine            | AMD Radeon (8 GPU Compute Units)                                                        | AMD Radeon (12 GPU Compute Units)                                   |
|                          | Output (HDMI EDID support) | 1 x HDMI 2.1 (FRL, up to 8K) and 3 x HDMI 2.1 (TMDS, up to 4K@60Hz)                     | 1 x HDMI 2.1 (FRL, up to 8K) and 3 x HDMI 2.1 (TMDS, up to 4K@60Hz) |
|                          | Resolution                 | FRL, up to 8K and TMDS, up to 4K@60Hz                                                   |                                                                     |
| Ethernet                 | Controller                 | Intel I210: 10/100/1000 Mbps LAN, supporting Wake-on-LAN and OOB management via EdgeBMC |                                                                     |
|                          | Interface                  | Intel I226: 10/100/1000/2500 Mbps LAN, supporting Wake-on-LAN                           |                                                                     |
|                          | Connector                  | Gigabit LAN Controller                                                                  |                                                                     |
| I/O Interfaces           | Audio                      | 2 x RJ-45                                                                               |                                                                     |
|                          | USB                        | Realtek ALC888S, High Definition Audio 3.5mm Audio jack sense (Line or Mic-in)          |                                                                     |
|                          | Serial Port                | 1 x USB 3.2 Gen1, 2 x USB2.0, 1 x USB-C (support 1x 20Gbps, DP ALT mode, 15W)           |                                                                     |
|                          | EDID                       | 1 x RS-232 (support High speed COM)                                                     |                                                                     |
|                          | LED Indicators             | 1 x EDID_CLR button                                                                     |                                                                     |
|                          | Remote Switch              | 1 x Power, 1 x Storage Access                                                           |                                                                     |
| Expansion                | M.2                        | 1x (Reset, Power on, Ground, and Watchdog output signal)                                |                                                                     |
| Storage                  | M.2                        | 2 x 2230 E Key PCIe Gen3; USB 2.0 for WiFi/Bluetooth or Hailo module                    |                                                                     |
|                          | M.2                        | 1 x 2280 M Key PCIe Gen3 (X2) (BOM option) for Hailo module                             |                                                                     |
| Power Requirement        | Power Management           | 1 x 2242 M Key PCIe Gen4 (X4) for NVMe                                                  |                                                                     |
|                          | Input Voltage              | ACPI 3.0                                                                                |                                                                     |
| Trusted Platform Module  | TPM2.0                     | 12-24V (ATX/AT mode)                                                                    |                                                                     |
|                          | Interval                   | fTPM 2.0, Default                                                                       |                                                                     |
| Watchdog Timer           | Output                     | TPM 2.0 (NPCT764AAEYX), BOM option by project support                                   |                                                                     |
|                          | Interval                   | Interrupt, system reset                                                                 |                                                                     |
| Physical Characteristics | Mounting                   | 255-level timer interval, setup by software                                             |                                                                     |
|                          | Dimensions (W x D x H)     | Wall Mount                                                                              |                                                                     |
|                          | Weight                     | 180 x 177 x 23 mm                                                                       |                                                                     |
| Environment              | Operating Temperature      | 0.9 kg (1.98 lb)                                                                        |                                                                     |
|                          | Relative Humidity          | 0 ~ 40° C (32 ~ 104F) with 0.7 m/s airflow                                              |                                                                     |
| Software Support         | Operating System           | 95% @ 40° C (non-condensing), operating                                                 |                                                                     |
|                          | Linux                      | DeviceOn/Edge BMC/SUSI                                                                  |                                                                     |
| Certifications           | EMC                        | Win11LTSC x64                                                                           |                                                                     |
|                          | Safety                     | ubuntu 24.04                                                                            |                                                                     |
|                          |                            | CE, FCC Class B, CCC, BSMI, UKCA                                                        |                                                                     |
|                          |                            | UL, CB, CCC, BSMI, UKCA (No RED certification)                                          |                                                                     |

## Features

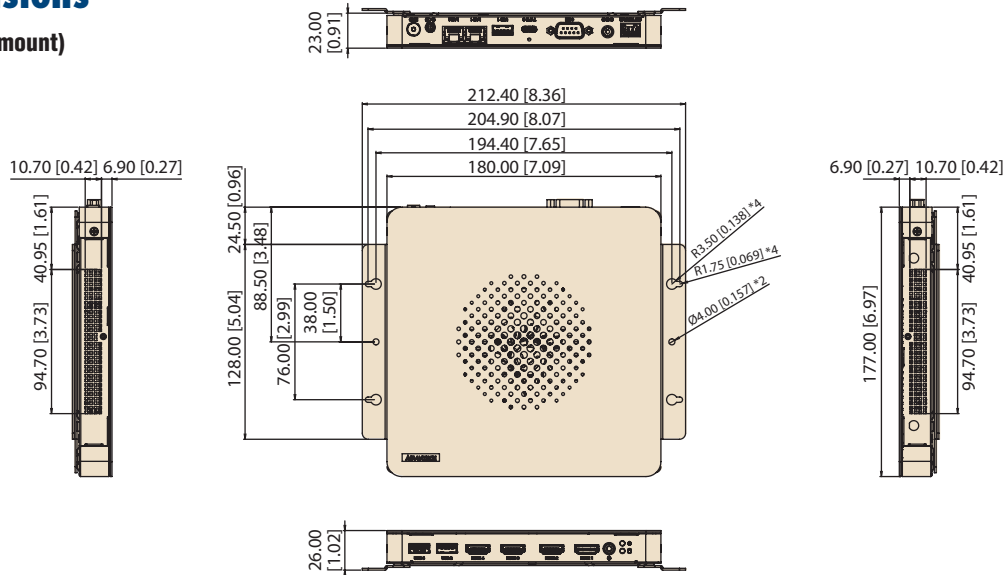
- AMD Ryzen™ Embedded 8000 (Zen 4), up to 8C/16T
- RDNA 3 GPU + XDNA NPU, up to 16 TOPS AI performance
- 23mm ultra-slim design for space-limited deployment
- Quad HDMI (1×8K + 3×4K) display support
- DeviceOn / SignageCMS for remote management and control
- OOB remote management & EDID support
- fTPM onboard, optional TPM 2.0

McAfee Acronis WISE-PaaS/SignageCMS WISE-DeviceOn

## Dimensions

(with wall mount)

Unit: mm [inch]



## Front View



## Rear View



## Ordering Information

| Part Number    | Description                                           |
|----------------|-------------------------------------------------------|
| DS-0540B-U0A1E | AMD R8640, 4xHDMI, 2xLAN, EDID, OOB, RC, barebone     |
| DS-0540B-U1A1E | AMD R8840, 4xHDMI, 2xLAN, EDID, OOB, RC, barebone     |
| DS-0540B-U0A1U | AMD R8640, 4xHDMI, 2xLAN, EDID, OOB, RC, barebone MIT |
| DS-0540B-U1A1U | AMD R8840, 4xHDMI, 2xLAN, EDID, OOB, RC, barebone MIT |

## Packing List

| Part Number      | Description                        |
|------------------|------------------------------------|
| -                | 1 x DS-054                         |
| XDS-FSP090-DBBN3 | 1 x 19V 90W power adapter          |
| 1960057740T002   | 2 x Wall Mount brackets and screws |

## Optional Items

| Part Number       | Description                                   |
|-------------------|-----------------------------------------------|
| 96PSA-A84W12V1-4  | 12V power adapter                             |
| 96DL-FSP090-AAAN3 | 24V power adapter                             |
| EWM-W179M201E     | IEEE 802.11ax (2.4GHz+5GHz+6GHz)+BT 5.3, 2T2R |
| 1751000648-01     | RF Cable SMA/F-R MHF4L/113 BLK L100mm         |
| 1751000635-01     | RF Cable SMA/F-R MHF4L/113 BLK L200mm         |
| AIW-512-I         | 2 x WiFi 6E Dipole ANTENNA                    |

## RAM & Storage

| Part Number         | Description                                     |
|---------------------|-------------------------------------------------|
| SQR-SD5N8G5K6HNGAG  | SODIMM DDR5 5600 8GB 1Gx16 (0-95°C) Hynix       |
| SQR-SD5N16G5K6HNGAG | SODIMM DDR5 5600 16GB 2Gx8 (0-95°C) Hynix       |
| SMI-SD5V8GN56-CC    | Semi Ind D5 SO DIMM 5600 8GB 1Gx16 (0-85°C)     |
| SMI-SD5V16GN56-CB   | Semi Ind D5 SO DIMM 5600 16GB 1Gx8 (0-85°C)     |
| SQF-C4MV2-128GDEDC  | QF M.2 2242 720-D 128G 3D TLC BiCS5 (0-70°C)    |
| SQF-C4MV2-256GDEDC  | SQF M.2 2242 720-D 256G 3D TLC BiCS5 (0-70°C)   |
| SQF-C4MV2-256GDEFM  | SQF M.2 2242 730-D 256G 3D TLC BiCS5 (-20-85°C) |

## Embedded OS

| Part Number    | Description                             |
|----------------|-----------------------------------------|
| 20706WLH1S0141 | Win11 LTSC Highend 64b 24H2 ENU         |
| 20706WLV1S0141 | Win11 LTSC Value 64b 24H2 ENU           |
| 20706WLE1S0141 | Win11 LTSC Entry 64b 24H2 ENU           |
| 20706U24HS0023 | img UbtPro-H DS-054 64b 24.04 ENU_20511 |
| 20706U24VS0026 | img UbtPro-V DS-054 64b 24.04 ENU_20511 |
| 20706U24ES0022 | img UbtPro-E DS-054 64b 24.04 ENU_20511 |

## Power Cord

| Part Number   | Description                       |
|---------------|-----------------------------------|
| 1700001524    | 3-pin power cord (US)             |
| 170203183C    | 3-pin power cord (EU)             |
| 170203180A-01 | 3-pin power cord (UK)             |
| 1700008921    | 3-pin power cord with PSE (Japan) |
| 1700019146    | 3-pin power cord (CCC)            |
| 1700018553    | 3-pin power cord (AU)             |
| 1700024849-01 | 3-pin power cord (TW)             |