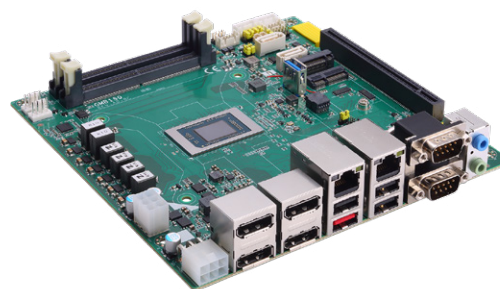
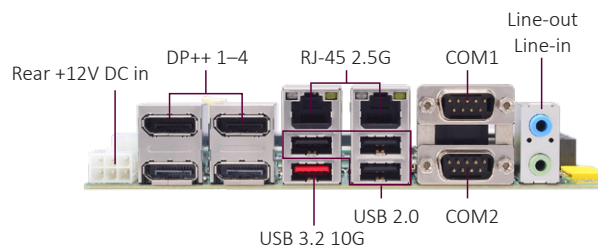
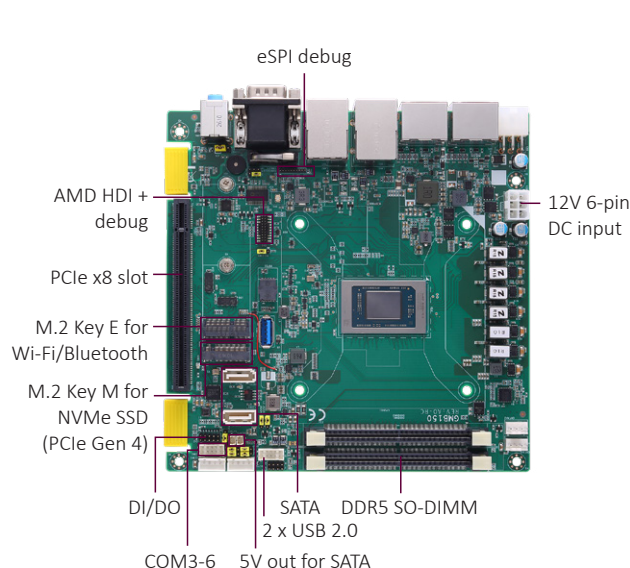


# GMB150

Mini-ITX Gaming Board with AMD Ryzen™ Embedded P100 Series  
AMD Radeon™ RDNA 3.5 Graphics, 4 DisplayPort++ 4K @ 120Hz, 2 GbE LAN, and HD Audio



▲ Side view

## Features

- High-performance AMD Embedded Platform with XDNA2 engine for AI Inferencing and extended
- Supports NVMe M.2 Key M storage and M.2 Key E expansion
- GLI verified TrustedBoot
- PCIe golden nger expansion for Gaming I/O Module
- Optional support 9-bit serial port for SAS 6.02
- Lifetime long-term supply

## Specifications

### Core System

|                |                                                                                                                                                                                                                                                                                                                                                                          |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU            | AMD Ryzen™ Embedded P100 Series SoC "Zen 5" APU, 28W (15W to 54W)<br>- P185, 12 Core (4 Classic / 8 Dense, 24MB, L3), 5.1 GHz<br>- P174, 10 Core (4 Classic / 6 Dense, 24MB, L3), 5.0 GHz<br>- P164, 8 Core (3 Classic / 5 Dense, 16MB, L3), 5.0 GHz<br>- P132, 6 Core (2 Classic / 4 Dense, 8MB, L3), 4.5 GHz<br>- P121, 4 Core (1 Classic / 3 Dense, 8MB, L3), 4.4 GHz |
| System Memory  | 2 x 262-pin DDR5-5600 SO-DIMM, up to 96GB, ECC Supported                                                                                                                                                                                                                                                                                                                 |
| BIOS           | AMI UEFI BIOS<br>Trusted Boot (BIOS Secure Boot) with Secure Hash and Public Key Algorithms                                                                                                                                                                                                                                                                              |
| Storage        | 1 x M.2 Key M (2280, PCIe x4) NVMe support<br>2 x SATA 3.0 (support pin-7 power SATA DOM)                                                                                                                                                                                                                                                                                |
| Watchdog Timer | 1 sec. to 255 min.                                                                                                                                                                                                                                                                                                                                                       |

## Specifications

|                                     |                                                                                                                                   |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Expansion Interface                 | 1 x PCIe x16 (PCIe x8 signal)<br>1 x M.2 Key E (2230, PCIe x1)<br>2 x PCIe golden finger expansion for Axiomtek Gaming I/O module |
| Battery Lithium                     | Lithium 3V/220mAH                                                                                                                 |
| Power Input                         | 6-pin connector, DC +12V                                                                                                          |
| Power Consumption (Max.)            | TBD                                                                                                                               |
| <b>Display</b>                      |                                                                                                                                   |
| Graphics                            | AMD high-performance RDNA™ 3.5 graphics                                                                                           |
| Display Interface                   | 4 x DP++, up to 4 independent 4K @ 120Hz displays                                                                                 |
| <b>I/O</b>                          |                                                                                                                                   |
| External                            | 1 x USB 3.2 Gen 1 x1 (Gbps)<br>3 x USB 2.0<br>2 x full RS-232 DB9 ports (COM1 supports RS-232/422/485)                            |
| Internal                            | 1 x USB 3.2 Gen 1 x1 (5 Gbps) Type-A<br>2 x USB 2.0 box header<br>4 x RS-232 box headers (2 support ccTalk, 2 support TTL)        |
| Audio                               | Realtek ALC888S, High Definition Audio (HD Audio)<br>3.5 mm audio jacks: Line-In, Line-Out                                        |
| Ethernet                            | 2 x GbE (1GbE default, 2.5GbE by option)                                                                                          |
| GPIO                                | 1 x 8-bit GPIO box header                                                                                                         |
| <b>Key Benefits</b>                 |                                                                                                                                   |
| TPM                                 | Onboard TPM 2.0 and fTPM supported<br>RSA2048 and AES256 hybrid encryption                                                        |
| Hardware Monitoring                 | CPU temperature<br>System temperature<br>System voltage<br>Smart fan speed control                                                |
| OS Support                          | Windows® 11 IoT Enterprise, Linux 26.04                                                                                           |
| Others                              | Optional SAS 6.02 COM port driver (via gaming I/O module)                                                                         |
| <b>Mechanical and Environmental</b> |                                                                                                                                   |
| Dimensions                          | 170 x 170 mm                                                                                                                      |
| Board Thickness                     | 1.6 mm                                                                                                                            |
| Operation Temperature               | 0°C to +60°C (+32°F to +140°F)                                                                                                    |
| Relative Humidity                   | 10% to 90% relative humidity, non-condensing                                                                                      |

## Ordering Information

|               |                                                                                                                                                                |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| GMB150-P185-S | Mini-ITX board with AMD Ryzen™ Embedded P185, 4 x DP++, 6 x COM, 7 x USB, 2 x GbE, Audio, PCIe x8 slot, PCI Express Mini Card slot, M.2 slot, and 12 VDC input |
| GMB150-P174-S | Mini-ITX board with AMD Ryzen™ Embedded P174, 4 x DP++, 6 x COM, 7 x USB, 2 x GbE, Audio, PCIe x8 slot, PCI Express Mini Card slot, M.2 slot, and 12 VDC input |
| GMB150-P164-S | Mini-ITX board with AMD Ryzen™ Embedded P164, 4 x DP++, 6 x COM, 7 x USB, 2 x GbE, Audio, PCIe x8 slot, PCI Express Mini Card slot, M.2 slot, and 12 VDC input |
| GMB150-P132-S | Mini-ITX board with AMD Ryzen™ Embedded P132, 4 x DP++, 6 x COM, 7 x USB, 2 x GbE, Audio, PCIe x8 slot, PCI Express Mini Card slot, M.2 slot, and 12 VDC input |
| GMB150-P121-S | Mini-ITX board with AMD Ryzen™ Embedded P121, 4 x DP++, 6 x COM, 7 x USB, 2 x GbE, Audio, PCIe x8 slot, PCI Express Mini Card slot, M.2 slot, and 12 VDC input |

## Packing List

|                           |                    |
|---------------------------|--------------------|
| I/O Bracket<br>(P/N: TBD) | GMB150 I/O bracket |
|---------------------------|--------------------|

# Block Diagram

