



KEY FEATURES

- AMD EPYC™ 4005/4004 and AMD Ryzen™ 9000/8000/7000 Series Processors with B650 Chipset
- 4 x 288-pin ECC/non-ECC U-DIMM DDR5 5600 MHz, up to 256GB (64GB per DIMM)
- 1 x PCIe x16 (Gen5), 2 x PCIe x4 (Gen4), 7 x USB 3.2 Gen2, 6 x USB 2.0, 1 x M.2 Key M, 1 x M.2 Key E, 2 x COM, 2 x SATA3
- 1 x Realtek 1 Gigabit LAN, 4 x Intel® 2.5 Gigabit LAN
- Supports Quad display, 2 x HDMI 2.0, 1 x VGA, 1 x LVDS or eDP (BOM option)
- TPM 2.0 onboard IC
- Supports DASH, RAID 0/1
- ATX PWR

SPECIFICATIONS

Form Factor

Dimensions	Micro-ATX (9.6-in x 9.6-in x 1.58-in, 24.4 cm x 24.4 cm x 4.02 cm)
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Processor System

CPU	Supports AMD EPYC™ 4005/4004 and AMD Ryzen™ 9000/8000/7000 Series Desktop Processors, up to 170W
Chipset	AMD B650
Socket	AM5
BIOS	AMI SPI 256 Mbit

Memory

Technology	Dual Channel ECC/non-ECC DDR5 5600 MHz
Capacity	256 GB (64 GB per DIMM)
Socket	4 x 288-pin Long-DIMM

Graphics

Controller	AMD RDNA™ 2 Architecture
HDMI	HDMI 2.0 Max resolution up to 4096x2160@60Hz
VGA	Max resolution up to 1920x1080@60Hz
LVDS	Dual channel 24 bit up to 1920x1200@60Hz (Connector shared with eDP) (BOM option)
eDP	Max resolution up to 1920x1200@60Hz (Connector shared with LVDS) (BOM option)
MultiDisplay	Quad Display

Expansion Slot

PCIe	1 x PCIe x16 (Gen5, Support riser card x8/x8) 2 x PCIe x4 (Gen4)
M.2	1 x M.2 (Key E, 2230) with PCIe Gen4 x1 and USB 2.0 for Wireless

Audio

Interface	Realtek ALC897, High Definition Audio. Line-out, Mic-in, Line-in
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Ethernet

Controller/ Speed	LAN1: Intel® I226V with 10/100/1000/2500 Mbps LAN2: Intel® I226V with 10/100/1000/2500 Mbps LAN3: Intel® I226V with 10/100/1000/2500 Mbps LAN4: Intel® I226V with 10/100/1000/2500 Mbps LAN5: Realtek RTL8111FP with 10/100/1000 Mbps
Connector	5 x RJ-45

Rear I/O

HDMI	2 x HDMI 2.0
VGA	1
Ethernet	1 x 1 Gigabit LAN 4 x 2.5 Gigabit LAN
USB	6 x USB 3.2 Gen2
Audio	3 (Mic-in, Line-in, Line-out)
COM	COM1 (RS-232/422/485)

Internal Connector

USB	1 x USB 3.2 Gen2 (Type-C Header) 6 x USB 2.0 (3 x 2.54 pitch header, 1 x USB 2.0 Type-A vertical con)
COM	COM2 (RS-232/TTL5V/ ccTALK)
LVDS	1 (Optional, Connector with LVDS/eDP signal, switch by BIOS)

Storage

M.2	1 x M.2 (Key M, 2230/2280/3042) with PCIe Gen4 x4, SATA3 and USB 2.0 for SSD
SATA	2 x SATA3 (6Gb/s) (1 x shared with Key M)
RAID	Intel® SATA RAID 0/1

Security

TPM	TPM 2.0 onboard IC
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Watchdog Timer

Output	From Super I/O to drag RESETCON#
Interval	256 Segments, 0, 1, 2, ...,255sec

Power Requirements

Input PWR	ATX PWR (24+8-pin)
Power On	AT/ATX Supported - AT : Directly PWR on as power input ready - ATX : Press button to PWR on after power input ready

Environment

Operating Temp	-20°C ~ 60°C
Storage Temp	-40° C ~ 85° C
Operating Humidity	5% ~ 90%
Storage Humidity	5% ~ 90%