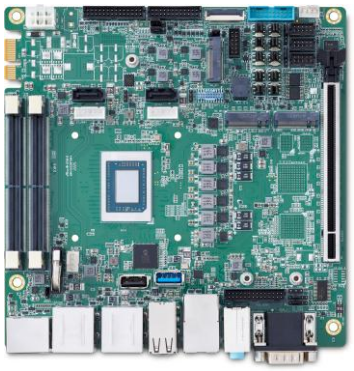
AmITX-RZ-G-E8K

Mini-ITX Embedded Board with AMD® Ryzen™ Embedded 8000 APU





Features

- AMD® Ryzen™ Embedded 8000 Series processors
- Dual SODIMM sockets supporting up to 128GB DDR5 memory
- Flexible Expansion: PCIe Gen4 x8 (via x16 slot), dual M.2 2280 (M-key), and M.2 2242 (B-key)
- Quad independent DisplayPort 1.4a outputs (HBR2), 7.1-channel audio, and ccTalk-enabled serial ports
- High-precision RTC (optional)
- GFEC (Golden Finger Edge Connection) with optional NVM

Ordering Information

AmITX-RZ-G-E8K/8845HS	Mini-ITX gaming MB with AMD Ryzen™ 7 Embedded 8845HS processor
AmITX-RZ-G-E8K/8840U	Mini-ITX gaming MB with AMD Ryzen™ 7 Embedded 8840U processor
AmITX-RZ-G-E8K/8645HS	Mini-ITX gaming MB with AMD Ryzen™ 5 Embedded 8645HS processor
AmITX-RZ-G-E8K/8640U	Mini-ITX gaming MB with AMD Ryzen™ 5 Embedded 8640U processor

Optional Accessories

30-20876-1000	COM Port Cable, 1 Port, 25cm
30-21597-1000-A0	USB 3.2 Gen 1 CABLE 2x10 (2.0mm) to USB3.2 Gen 1 Type-A (F) x2, L=150±10mm
32-20668-0000-A0	APU/CPU Cooler, H=49mm, 15-54W

Packing List

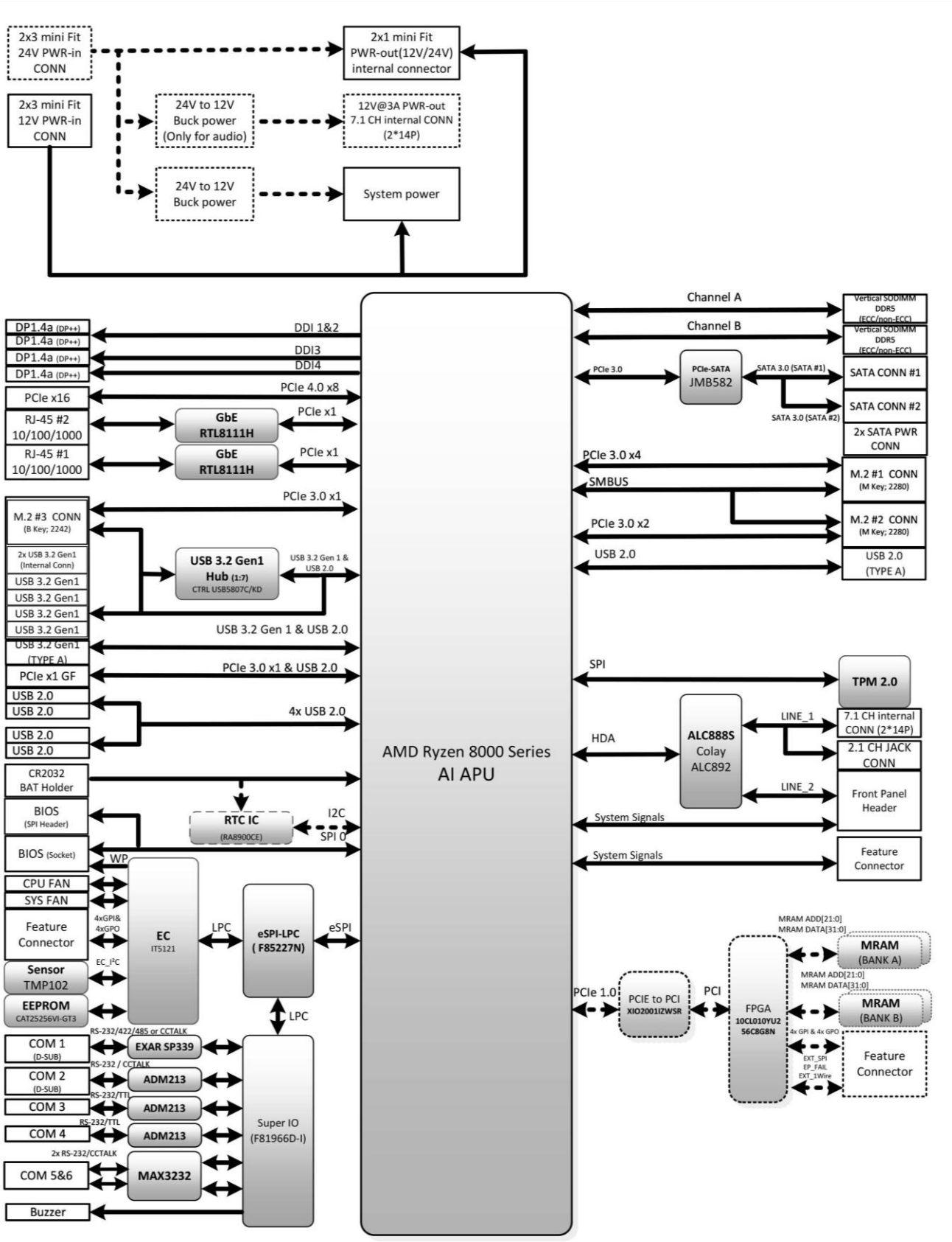
34-25335-0000-A0	Rear I/O Shield
30-20875-0000	SATA Dual Power Cable
30-10057-0600	SATA Cable
30-22315-0000-A0	MB Power Cable

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Specifications

Model Name	AmITX-RZ-G-E8K
Processor & System	
APU	AMD® Ryzen™ Embedded 8000 Series 8845HS: 8C/16T, 3.8 GHz (up to 5.1 GHz), 45W 8645HS: 6C/12T, 4.3 GHz (up to 5.0 GHz), 45W (Main SKU) 8840U: 8C/16T, 3.3 GHz (up to 5.1 GHz), 28W 8640U: 6C/12T, 3.5 GHz (up to 4.9 GHz), 28W
Memory	Dual-channel DDR5-5600 (ECC/Non-ECC), up to 128GB via dual SODIMM
BIOS	AMI EFI BIOS (32 MB SPI), Onboard SPI socket + external SPI header for BIOS module board (optional), Customized secure BIOS support & Precision RTC (optional),
TPM 2.0	Infineon SLB 9672
Embedded Controller	Voltage & temperature monitoring, Smart fan control, System logging & diagnostics, I²C interface, Watchdog timer
Debug Header	30-pin multipurpose flat cable connector. Use in combination with DB-30 debug module providing BIOS POST code LEDs, EC access, SPI BIOS flashing, power test points, debug LED
I/O Interface	
Expansion Slots	1× PCIe Gen4 x16 slot (x8 signal) 1× PCIe Gen3 x1 + USB 2.0 (Golden Finger) 2× M.2 2280 (M-key, NVMe, PCIe 3.0 x4/x2) 1× M.2 2242 (B-key, PCIe 3.0 x1 + USB 2.0)
Serial ATA	2× SATA 6 Gbps (configurable power via pin 7) 2× SATA power connectors
USB	• Rear I/O: 4× USB 3.2 Gen1, 4× USB 2.0 • Internal: 2× USB 3.2 Gen1 header • Vertical connector: USB 2.0 + USB 3.2 Gen1 (dongle-ready)
Serial Ports	**Rear:** • 1x RS-232/422/485/ccTalk • 1x RS-232/ccTalk **Internal:** • 2x RS-232/TTL • 2x RS-232/ccTalk
Digital I/O	8 GPIO on internal feature connector
Audio	
Audio Codec	Realtek® ALC888S
Interfaces	**Rear:** 2.1-channel audio (3 jacks) **Internal:** 7.1-channel + S/PDIF
Display	
Graphics Core	RDNA3 integrated graphics (up to 6 WGPs)
Display Port	4× DisplayPort 1.4a (HBR2, DP++)
Ethernet	
Controller/Interface	2× Realtek RTL8111H GbE (PCIe x1)
Wake-on-LAN:	Supported
Power	
Input	+12V ±5% (internal header)
Output	Fan & SATA power headers
Mechanical and Environmental	
Form Factor	Mini-ITX (170 x 170mm)
Operating Temperature	0°C to 60°C
Certifications	CE, FCC Class A
Humidity	95% RH @ 40°C (non-condensing)

Functional Diagram



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