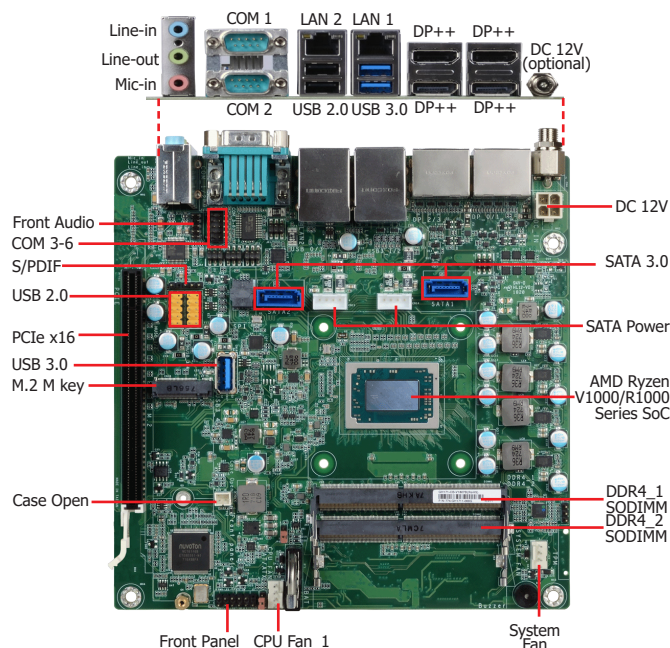




AMD® Ryzen™ V1000/R2000/R1000 Series Mini-ITX

GH171



Features

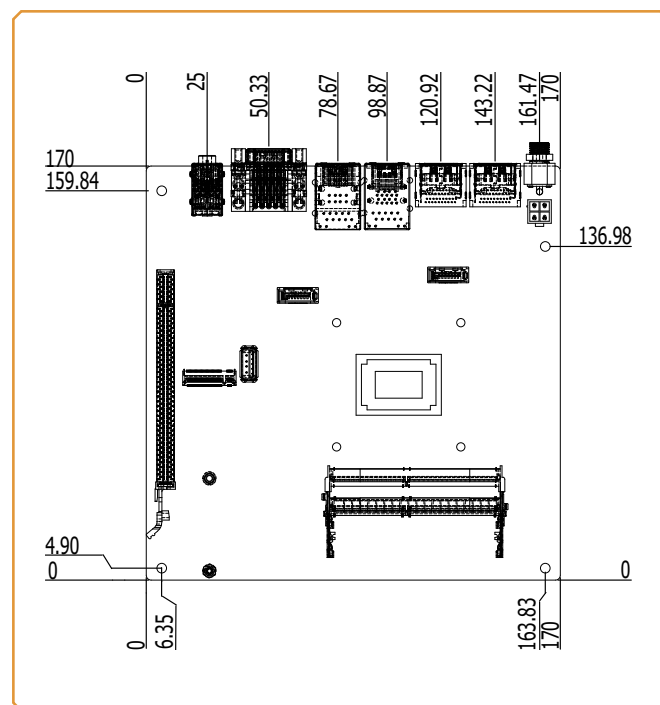
- 2 DDR4 SODIMM up to 32GB
- Four independent displays: DP++ + DP++ + DP++ + DP++
- DP++ resolution up to 4096x2160 @ 60Hz
- Expansion: 1 PCIe x16, 1 M.2 M Key
- Rich I/O: 2 GbE, 6 COM, 3 USB 3.0, 6 USB 2.0



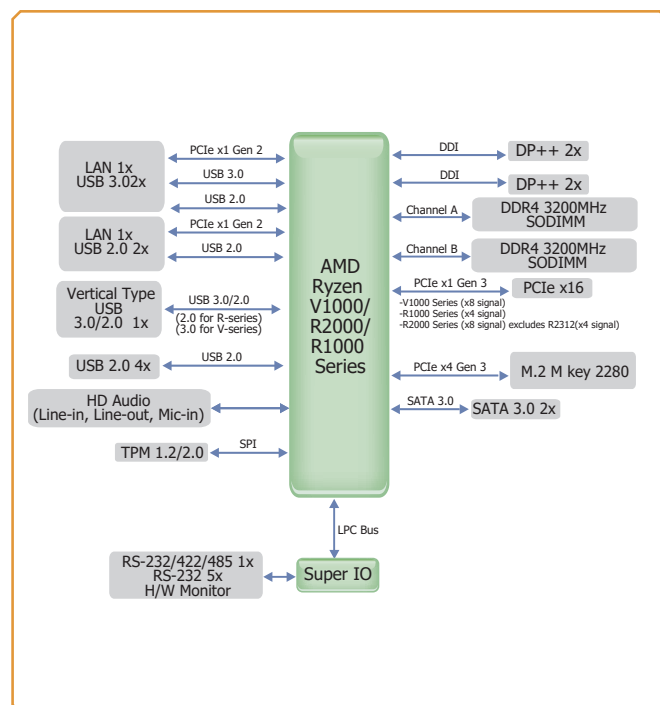
Ordering Information

Model Name	P/N	Processor	Memory	GbE	DP	COM	USB 3.0	USB 2.0	Power	Thermal	Temp.
GH171-V1807B	770-GH1712-000G	V1807B 35-54W	2 SODIMM	2	4	6	3	6	12V DC	Active	0 to 60°C
GH171-V1756B	770-GH1712-100G	V1756B 35-54W	2 SODIMM	2	4	6	3	6	12V DC	Active	0 to 60°C
GH171-V1202B	770-GH1712-200G	V1202B 12-25W	2 SODIMM	2	4	6	3	6	12V DC	Active	0 to 60°C
GH171-V1605B	770-GH1712-300G	V1605B 12-25W	2 SODIMM	2	4	6	3	6	12V DC	Active	0 to 60°C
GH171-R1505G	770-GH1712-400G	R1505G	2 SODIMM	2	4	6	3	6	12V DC	Active	0 to 60°C
GH171-R1606G	770-GH1712-500G	R1606G	2 SODIMM	2	4	6	3	6	12V DC	Active	0 to 60°C
GH171-R2312B	770-GH1712-600G	R2312 12~25W	2 SODIMM	2	4	6	3	6	12V DC	Active	0 to 60°C
GH171-R2314B	770-GH1712-700G	R2314 12~35W	2 SODIMM	2	4	6	3	6	12V DC	Active	0 to 60°C
GH171-R2514B	770-GH1712-800G	R2514 12~35W	2 SODIMM	2	4	6	3	6	12V DC	Active	0 to 60°C
GH171-R2544B	770-GH1712-900G	R2544 35~54W	2 SODIMM	2	4	6	3	6	12V DC	Active	0 to 60°C

Mechanical Drawing



Block Diagram



Specifications

SYSTEM	Processor	AMD® Ryzen™ Embedded V1807B, 4C/8T, 2MB Cache, 11 CU, 3.35GHz (3.8GHz), 45W (35~54W) AMD® Ryzen™ Embedded V1756B, 4C/8T, 2MB Cache, 8 CU, 3.25GHz (3.6GHz), 45W (35~54W) AMD® Ryzen™ Embedded V1605B, 4C/8T, 2MB Cache, 8 CU, 2.0GHz (3.6GHz), 15W (12~25W) AMD® Ryzen™ Embedded V1202B, 2C/4T, 1MB Cache, 3 CU, 2.3GHz (3.2GHz), 15W (12~25W) AMD® Ryzen™ Embedded R1606G, 2C/4T, 3 CU, 2.6GHz (3.5GHz), 15W AMD® Ryzen™ Embedded R1505G, 2C/4T, 3 CU, 2.4GHz (3.3GHz), 15W AMD® Ryzen™ Embedded R2312, 3C/4T, 2MB Cache, 3CU, 2.7GHz (3.5GHz), 12~25W AMD® Ryzen™ Embedded R2314, 6C/12T, 4MB Cache, 6 CU, 2.1GHz (3.5GHz), 12~35W AMD® Ryzen™ Embedded R2514, 6C/12T, 4MB Cache, 8 CU, 2.1GHz (3.7GHz), 12~35W AMD® Ryzen™ Embedded R2544, 4C/8T, 4MB Cache, 8 CU, 3.35GHz (3.7GHz), 35~54W	
	Memory	Two 260-pin SODIMM up to 32GB	Dual Channel DDR4 up to 3200MHz (ECC/non ECC support)
	BIOS	AMI BIOS	
	Controller	AMD® Radeon™ Vega Graphics	
GRAPHICS	Feature	OpenGL 4.5, DirectX 12, OpenCL 2.1 HW Decode: AVC/H.264, MPEG2, VC1/WMV9, JPEG/MJPEG, HEVC/H265, VP8, VP9 HW Encode: MPEG2, AVC/H264, JPEG, HEVC/H265, VP8, VP9	
	Display	4 x DP++	DP++: resolution up to 4096x2160 @ 60Hz
	Interface	1x PCIe x16 slot -V1000 Series (x8 signal) -R1000 Series (x4 signal) -R2000 Series (x8 signal) excludes R2312(x4 signal) 1 x M.2 2280 M Key (x4 signal with V1000 series, x2 signal with R1000 series) (support 2242 by BOM opt.)	
EXPANSION	Audio Codec	Realtek ALC887-VD2-CG	
ETHERNET	Controller	2 x Realtek RTL8111HN-CG (10/100/1000Mbps)	
REAR I/O	Ethernet	2 x GbE (RJ-45)	
	USB	2 x USB 3.0 2 x USB 2.0	
	Display	4 x DP++ (V1000 series) 3 x DP++ (R1000 series)	
	Audio	1 x Mic-in 1 x Line-in 1 x Line-out	
	Serial	1 x RS-232/422/485 (DB-9) 1 x RS-232 (DB-9)	
	Serial	4 x RS-232 (2.0mm pitch) (TX/RX signal only)	
INTERNAL I/O	USB	4 x USB 2.0 (2.54mm pitch) 1 x Vertical Type A USB 3.0 (V1000 series) 1 x Vertical Type A USB 2.0 (R1000 series)	
	Audio	1 x S/PDIF 1 x Audio (Mic-in/Line-out)	
	SATA	2 x SATA 3.0 (up to 6GB/s) (with 7-pin VCC support) 2 x SATA Power	
	Output & Interval	System Reset, Programmable via Software from 1 to 255 Seconds	
WATCHDOG TIMER	TPM	TPM2.0	
SECURITY	Type	Single 12V +/-5% DC	
POWER	Connector	Straight Type Connector (4-pin) DC-in Jack (available upon request) Right Angle Connector (4-pin) (available upon request)	
	Consumption	Idle: 1.2A@14.4W Max: 6.1A@73.4W	
	RTC Battery	CR2032 Coin Cell	
	Microsoft/Linux	Windows 10 Linux	
OS SUPPORT	Temperature	Operating: 0 to 60°C	Storage: -40 to 85°C
	Humidity	Operating: 10 to 90% RH	Storage: 10 to 90% RH
	MTBF	536,492 hrs @ 25°C 334,201 hrs @ 45°C 223,268 hrs @ 60°C	
MECHANICAL	Dimensions	Mini-ITX Form Factor	170mm (6.7") x 170mm (6.7")
	Height	PCB: 1.6mm	Top Side: 20mm, Bottom Side: 3mm
CERTIFICATION	CE, FCC, RoHS, UKCA		

Packing List

• 1 GH171 motherboard	
• 1 I/O shield	A49-GH1710-000G
• 1 Cooler (For 25W, height:35mm)	A71-108114-010G
(For 35W~54W, height:47mm)	A71-108113-000G

Optional Items

• SATA signal and power cable (Length: 300mm)	A81-002013-000G
• USB port cable (Length: 200mm)	332-253010-026G
• COM port cable (Length: 300m)	A81-015041-018G