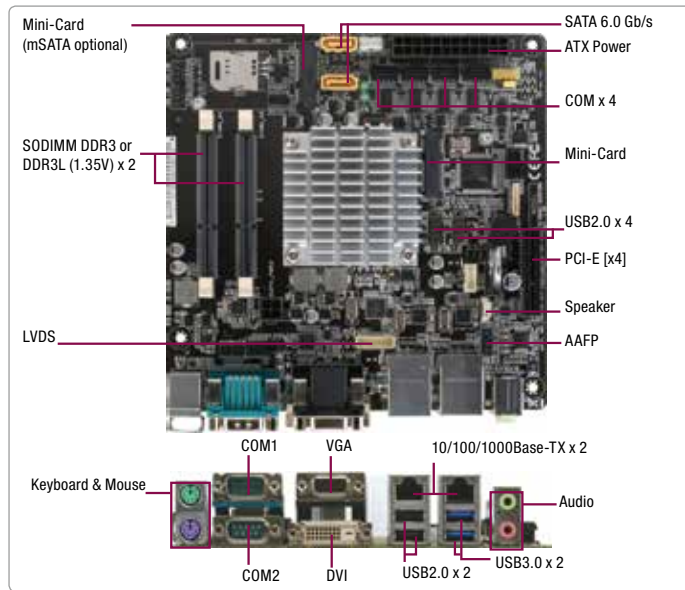


EMB-KB1

Mini-ITX Embedded Motherboard with AMD 1st Generation APU SoC Processor, USB x 8 and SATA 3 x 2



Features

- AMD 1st Generation APU SoC Processor
- DDR3 1600 MHz SODIMM x 2, Up to 16 GB
- Realtek 8111F, Gigabit Ethernet x 2
- Dual Independent Display: VGA, DVI-D, LVDS
- USB3.0 x 2 and SATA 6.0 Gb/s x 2
- Rich Expansion: PCI-E[x4] x 1, Mini-Card x 2



Specifications

System	
Form Factor	Mini-ITX
Processor	AMD 1st generation APU SoC (FT3 BGA Package) GX-420CA Quad (2 GHz, 1.5 GHz), GX-217GA Dual (1.6 GHz, 1.0 GHz)
Memory	DDR3L (1.35V) / DDR3 (1.5V) 1600 MHz/1333 MHz x SODIMM x 2, up to 16 GB, Non-ECC, un-buffered memory
Chipset	—
I/O Chipset	Fintek F81866D-I
Ethernet	Realtek 8111F, Gigabit Ethernet x 2
Audio	Realtek® ALC887 with Amplifier
BIOS	64Mb Flash ROM, AMI BIOS
Wake On LAN/PXE	Yes (WOL / PXE)
Watchdog Timer	1~255 steps programmable
TPM	—
H/W Monitor	Temperature Monitor on CPU/System, Voltage Monitor on Vcore/5V/3.3V/12V, Fan Monitor on CPU/Chassis
Expansion Slots	PCI-E[x 4] x 1, Full-size Mini-Card (PCI-E + USB) + SIM Card (mSATA optional), Half-size Mini-Card (PCI-E + USB) x 1
Battery	Lithium battery
Power Requirement	ATX
Power Consumption	AMD GX-420CA, DDR3L 1600 8 GB, SODIMM x 2, ATX 20.44W
Board Size	6.7" x 6.7" (170mm x 170mm)
Gross Weight	1.1 lb (0.5 kg)
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C)
Operating Humidity	0%~90% R/H, non-condensing
Smart Fan Control	CPU Fan/ Chassis Fan
Power State	S3, S4, S5
Power Requirement	ATX
Power Compliance	Compliant with EuP/ErP
Certificate	CE & FCC
MTBF (Hours)	—
Display	
Graphics Engine	Integrated in Sea Islands Family
Display	LVDS x 1, VGA x 1, DVI x 1
VGA	Up to 1920 x 1200 @60 Hz
DVI	Up to 1920 x 1200 @60 Hz
HDMI	—
LVDS	Up to 1920 x 1080 @60 Hz, Dual-Channel 18/24-bit (via CH7511)
eDP	—
DP	—
Backlight Control	Voltage / PWM

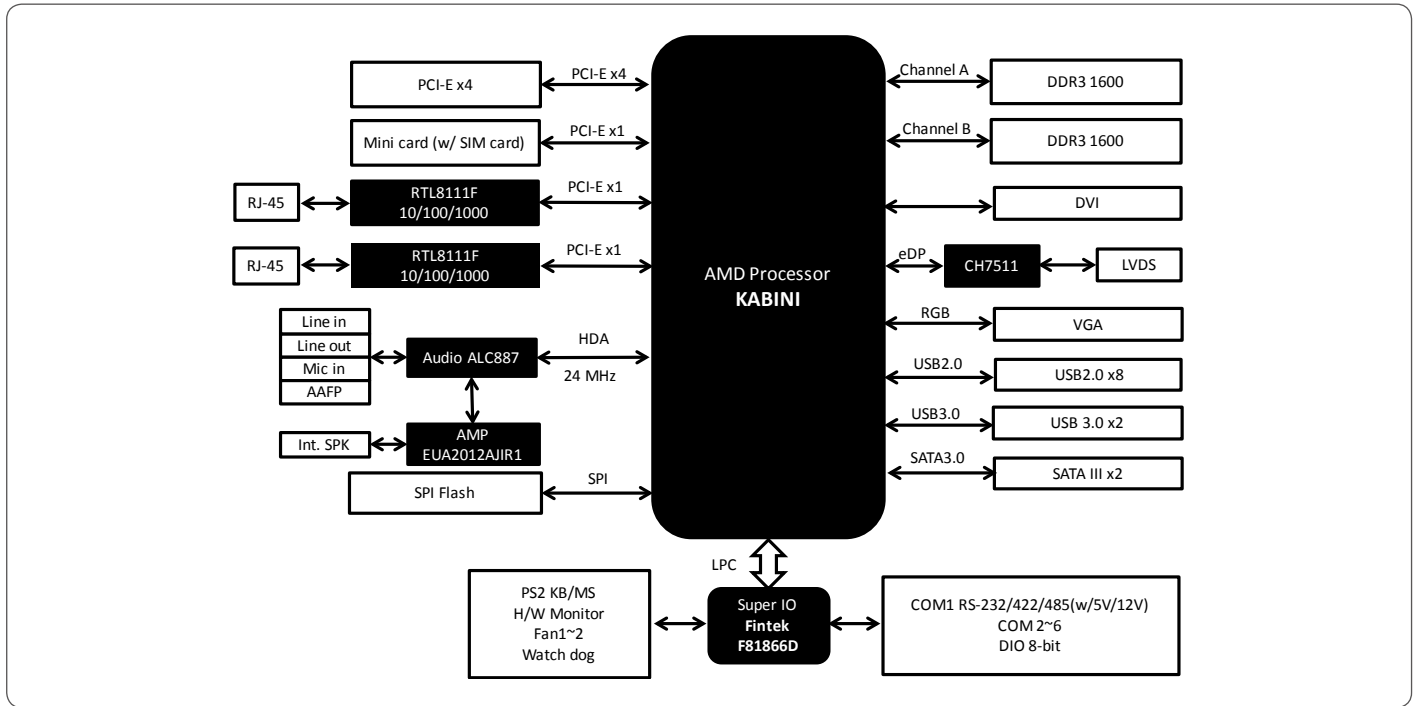
I/O	
Storage	SATA 6.0 Gb/s x 2, SATA power connector x 1
USB	USB 2.0 x 6 (2 ports on rear panel, 4 ports on mid-board p=2.54mm) USB 3.0 x 2 (2 ports on back panel)
Audio I/O	Mic-in, Line-out & internal audio for 2W speaker
LAN I/O	RJ-45 x 2
Serial Port	RS-232 x 5, RS-232/422/485 x 1 supports 5V/12V/RI option
Parallel Port	—
PS/2 Port	PS/2 x 1 for keyboard/Mouse
DIO	8-bit Programmable Digital I/O interface (4-in /4-out)
FAN	CPU Fan connector x 1 (4-pin) Chassis Fan connector x 1 (4-pin)

Packing List

- SATA Cable
- I/O Shield
- Product CD
- Heatsink for EMB-KB1-A10-217
- CPU Cooler for EMB-KB1-A10-420
- EMB-KB1

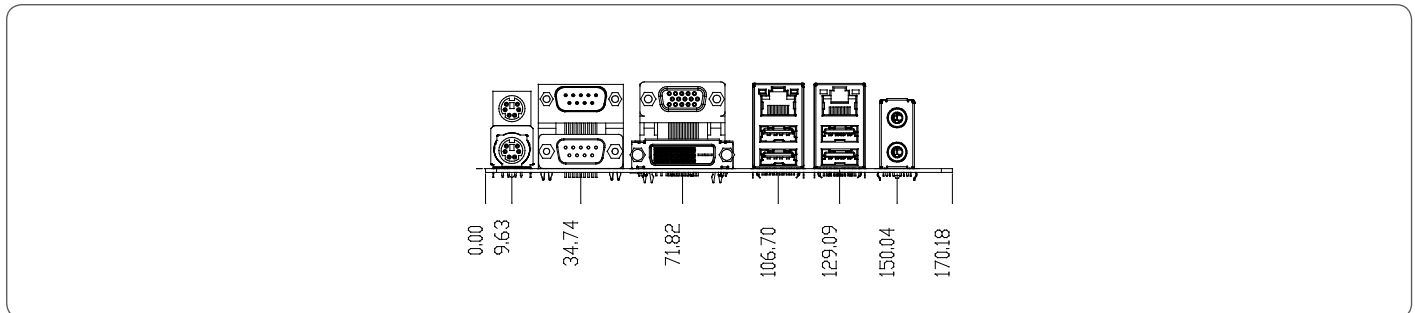
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Block Diagram



Dimension

Unit: mm



Order Information

Part Number	CPU	RAM	Fan/Fanless	Display	Storage	LVDS	LAN	USB	RS-232	RS-232/422/485	Expansion Slot	Power	TPM	Temp.
EMB-KB1-A10-420	GX-420CA	SODIMM	Fan	VGA, DVI, LVDS	SATA3 x 2	18/24b, 2CH	GbE x 2	USB 2.0 x 6, USB 3.0 x 2	5	1	PCI-E[x4] x 1, Mini-Card x 2 (PCI-E[x1] and USB)	ATX	No	0~60°C
EMB-KB1-A10-217	GX-217GA	SODIMM	Fanless	VGA, DVI, LVDS	SATA3 x 2	18/24b, 2CH	GbE x 2	USB 2.0 x 6, USB 3.0 x 2	5	1	PCI-E[x4] x 1, Mini-Card x 2 (PCI-E[x1] and USB)	ATX	No	0~60°C

Optional Accessories

- **1709100330**
USB 2.0 Cable (9P, 330MM, p=2.54mm, w/bracket)
- **170910020K**
USB 2.0 cable (9P, 200MM, p=2.54mm, w/o bracket)
- **1701100206**
COM Cable (200MM, p=2.00mm)