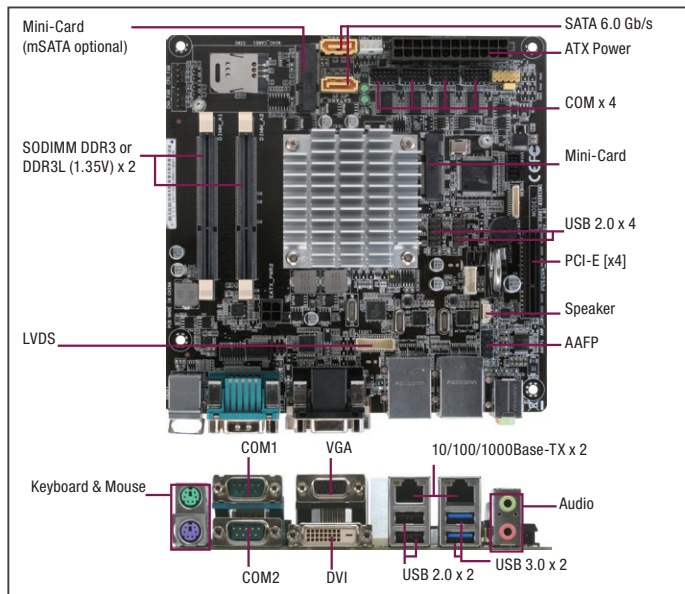


Mini-ITX Embedded Motherboard with AMD 1st Generation APU Processor SoC, USB x 8 and SATA 3 x 2



Specifications

System	
Processor	AMD 1st generation APU SoC (FT3 BGA Package), Quad (2 GHz, 1.5 GHz), Dual (1.6 GHz, 1.0 GHz)
Chipset	—
Memory	SODIMM x 2, max. 16GB, DDR3L (1.35V)/DDR3 (1.5V) 1600 MHz /1333 MHz, Non-ECC, un-buffered memory, Single channel memory architecture
Graphics	Sea Islands Family (Integrated)
I/O Chipset	Fintek F81866D-1
Ethernet	Realtek PCIe Gb LAN 8111F x 2
Audio	Realtek® ALC887 with Amplifier
TPM	Infineon SLB9635 TT 1.2 (default: No)
Expansion Slots	PCIe [x4] x 1, Full-size Mini-Card (PCIe + USB + mSATA) + SIM Card (mSATA optional) x 1, Half-size Mini-Card (PCIe + USB) x 1
BIOS	64Mbit Flash ROM, AMI BIOS
H/W Monitor	Temperature Monitor on CPU/System, Voltage Monitor on Vcore/5V/3.3V/12V, Fan Monitor on CPU/Chassis
WatchDog Timer	1~255 steps by software program
Smart Fan Control	CPU Fan/ Chassis Fan
Wake On LAN/ PXE	Yes (WOL/PXE)
Power State	S3, S4, S5
Graphics	
Graphics Chipset	Sea Islands Family (Integrated)
Graphics Multi Display	VGA+LVDS, VGA+DVI, LVDS+DVI
VGA	Up to 1920 x 1200 @60 Hz
DVI	Up to 1920 x 1200 @60 Hz
HDMI	—
Display Port	—
LVDS	Up to 1920 x 1080 @60Hz, Dual Channel 18/24 bit (via CH7511)
eDP	—
Backlight Control	Voltage/PWM
Environment & Power & ME	
Battery	Lithium battery
Power Requirement	ATX
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C)
Storage Temperature	-40°F ~185°F (-40°C ~85°C)
Operating Humidity	0% ~ 90% R/H, non-condensing
Certificate	CE & FCC
Form Factor	Mini-ITX: 6.7" x 6.7" (170mm x 170mm)
Weight	1.1 lb (0.5 Kg)
MTBF (Hours)	140,000

Features

- AMD 1st Generation APU Processor SoC
- DDR3 1600 MHz SODIMM x 2, Up to 16 GB
- Realtek 8111F, Gigabit Ethernet x 2
- Dual Independent Display: VGA, DVI-D, LVDS
- USB 3.0 x 2 and SATA 6.0 Gb/s x 2
- Rich Expansion: PCI-E[x4] x 1, Mini-Card x 2



Rear Panel I/O Ports

USB	USB 3.0 x 2, USB 2.0 x 2
Display I/O	VGA x 1, DVI-D x 1
Audio I/O	Mic-in x 1, Line-out x 1
LAN I/O	LAN (RJ-45) port x 2
Serial Port	COM (RS-232/422/485) x 1, COM (RS-232) x 1
PS/2 Port	PS/2 x 2
Others	—

Internal I/O Connectors

Storage	SATA connectors x 2, SATA power connector x 1, Mini-Card slot (half size) x 1, Mini-Card slot (full size) x 1
USB	USB 2.0 connectors support additional 4 USB ports (2.54mm) x 2
Display I/O	LVDS connector x 1, LVDS 3V /5V jumper x 1, LCD DC / PWM mode jumper x 1, LCD backlight connector (inverter) x 1, LCD backlight 12V /5V jumper x 1
Audio I/O	Speaker x 1
Serial Port	COM header x 4 (RS-232)
PS/2 Port	—
Parallel Port	—
DIO	DIO x 1
FAN	CPU Fan connector x 1, Chassis Fan connector x 1
Power	24-pin ATX connector x 1, 4-pin ATX connector x 1, AT/ATX mode select jumper x 1
Others	SIM Card Socket x 1, Front Panel connector x 1, onboard buzzer x 1, CMOS jumper x 1
OS	
OS Support	Windows® XP 32 / 64-bit, Windows® 7 32 / 64-bit, Windows® 8, Linux Fedora

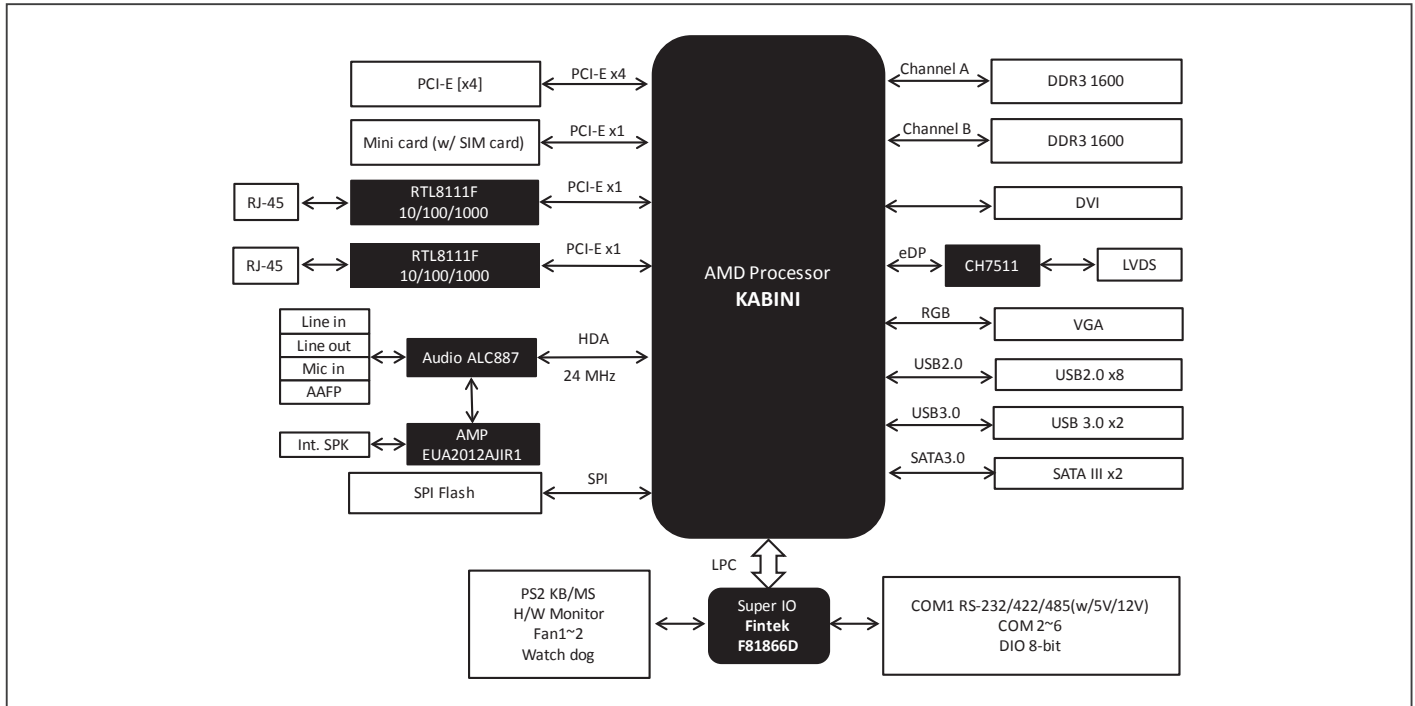
Packing List

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

Optional Accessories

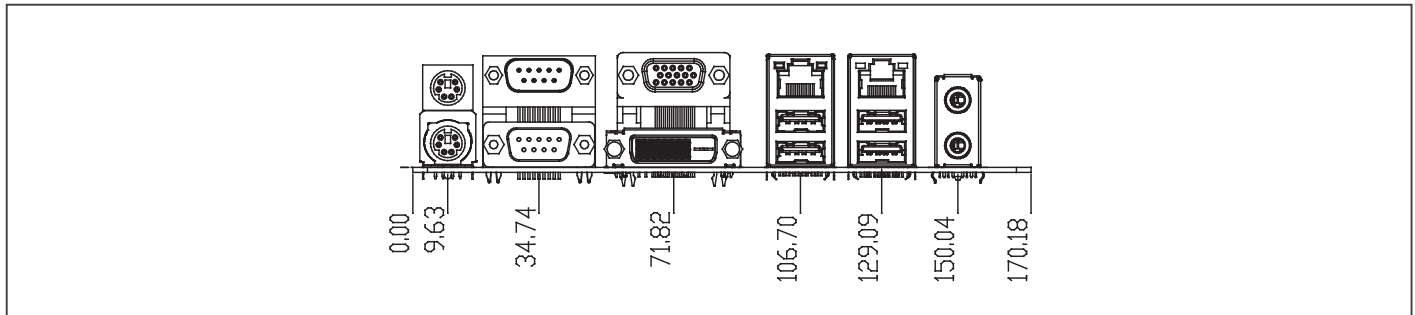
Part Number	Description
1709100330	USB 2.0 Cable (9P, 330MM, p=2.54mm, w/ bracket)
1701100206	COM Port Cable
170910020K	USB 2.0 Cable (9P, 200MM, p=2.54mm, w/o bracket)

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 x 2	Fan	VGA, DVI, LVDS	SATA3 x 2	18/24-bit Dual-channel	GbE x 2	USB 2.0 x 6, USB 3.0 x 2	5	1	PCIe [x4] x 1, Mini-Card x 2 (PCIe[x1] and USB)	ATX	—	32°F ~ 140°F (0°C ~ 60°C)
EMB-KB1-A10-217	GX-217GA	SODIMM x 2	Fanless	VGA, DVI, LVDS	SATA3 x 2	18/24-bit Dual-channel	GbE x 2	USB 2.0 x 6, USB 3.0 x 2	5	1	PCIe [x4] x 1, Mini-Card x 2 (PCIe[x1] and USB)	ATX	—	32°F ~ 140°F (0°C ~ 60°C)