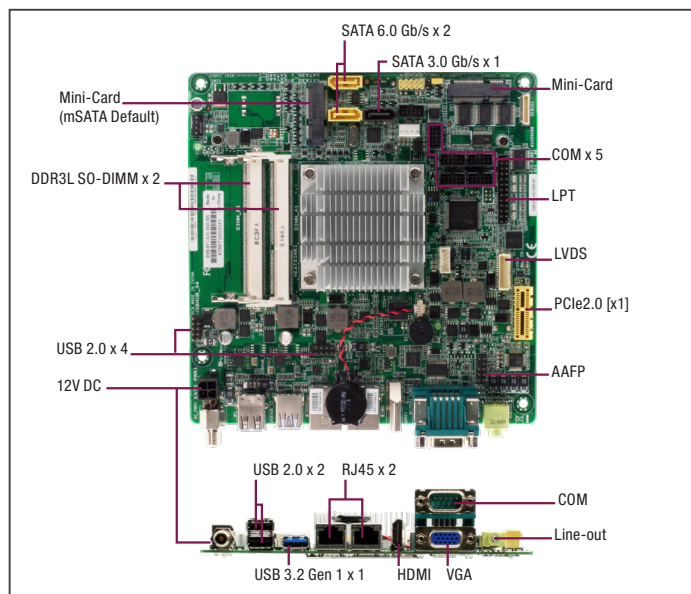


EMB-BT1

Mini-ITX Embedded Motherboard with Intel® Celeron® J1900/N2807/ Atom® E3845 Processor, SATA3 x 2, SATA2 x 2, USB x 8



Specifications

System	
Processor	Intel® Celeron® J1900 Processor (4C @ 2.00 GHz CPU, 688/854 MHz GFX, 10W TDP), Intel® Celeron® N2807 Processor (2C @ 1.58 GHz CPU, 313/750 MHz GFX, 4.3W TDP), Intel® Atom® E3845 Processor (4C @ 1.91 GHz CPU, 542/792 MHz GFX, 10W TDP)
Chipset	—
Memory	DDR3L 1333 MHz SODIMM x 2 up to 8 GB (for J1900 / E3845), DDR3L 1333 MHz SODIMM x 1 up to 4 GB (for N2807), Non-ECC, un-buffered memory, Dual-channel memory architecture flat type
I/O Chipset	Fintech 81866D
Ethernet	Realtek® PCIe Gb LAN 8111H x 2
Audio	Realtek® ALC897
TPM	Infineon SLB9635 TT 1.2 (default : No)
Expansion Slots	Full-size Mini-Card (mSATA default) (PCIe+USB optional) + SIM Card (default: No) x 1, Half-size Mini-Card (PCIe+USB) x 1, PCIe [x1] x 1
BIOS	64 M bit 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	Chassis Fan (fanless)
Wake On LAN/ PXE	Yes (WOL/PXE)
Power State	S3, S4, S5
Graphics	
Graphics Chipset	Intel® HD Graphics
Graphics Multi Display	VGA+LVDS, VGA+HDMI, LVDS+HDMI
VGA	Up to 1920 x 1200 @60 Hz
DVI	—
HDMI	Up to 1920 x 1200 @60 Hz
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	12VDC
Operating Temperature	32°F ~ 140°F (0 ~ 60°C) (Operational humidity: 60°C @ 90% RH Non-Condensing)
Storage Temperature	—
Certificate	CE & FCC
Form Factor	Mini-ITX 6.7" x 6.7" (170mm x 170mm)
Weight	1.1 lb (0.5 Kg)
MTBF (Hours)	111,131

Features

- Intel® Celeron® J1900/N2807/ Atom® E3845 Processor
- Dual Displays: VGA x 1, HDMI x 1, LVDS x 1
- Realtek 8111H, Gigabit Ethernet x 2
- SATA 6.0 Gb/s x 2, SATA 3.0 Gb/s x 2 (1 Colay with mSATA)
- USB 3.2 Gen 1 x 1, USB 2.0 x 7
- Full-size Mini-Card with mSATA x 1, Half-size Mini-Card x 1, PCI-E[x1] x 1
- 12V DC Power Input



Rear Panel I/O Ports

USB	USB 3.2 Gen 1 (5 Gbps)/2.0 x 1, USB 2.0 x 2
Display I/O	VGA x 1, HDMI x 1
Audio I/O	Line-out x 1
LAN I/O	LAN (RJ-45) port x 2
Serial Port	COM (RS-232) (optional) x 1
PS/2 Port	—
Others	DC port (12V) Screw type x 1

Internal I/O Connectors

Storage	SATA3 (6.0Gb/s) x 2, SATA2 (3.0Gb/s) x 2 (1 colay with mSATA), SATA power connector x 1, Full Size Mini-Card slot (mSATA) x 1
USB	USB 2.0 (2 x 5-pin, 2.54mm) x 2 ports support additional 4 USB, USB 2.0 (1x 5-pin, 2.0mm) x 1 port supports additional 1 USB
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	AAFP x 1
Serial Port	Box header for COM (RS-232) x 4, Box header for COM (RS-232/422/485) x 1
PS/2 Port	PS/2 Keyboard Mouse 6 PIN Connector x 1
Parallel Port	SPP/EPP Mode
DIO	DIO (4in/4out) x 1
FAN	Chassis Fan connector x 1
Power	12V AUX Power Connector x 1, AT/ATX mode select jumper (default : No) x 1
Others	Half-size Mini-Card (PCIe + USB) x 1, PCIe [x1] x 1, SIM Card Socket(default : No) x 1, LPT PIN header x 1, Front Panel connector x 1, CMOS jumper x 1
OS	
OS Support	Windows® 10 64-bit, Windows® 7 32/64-bit, Windows® 8.1 32/64-bit, Linux Fedora

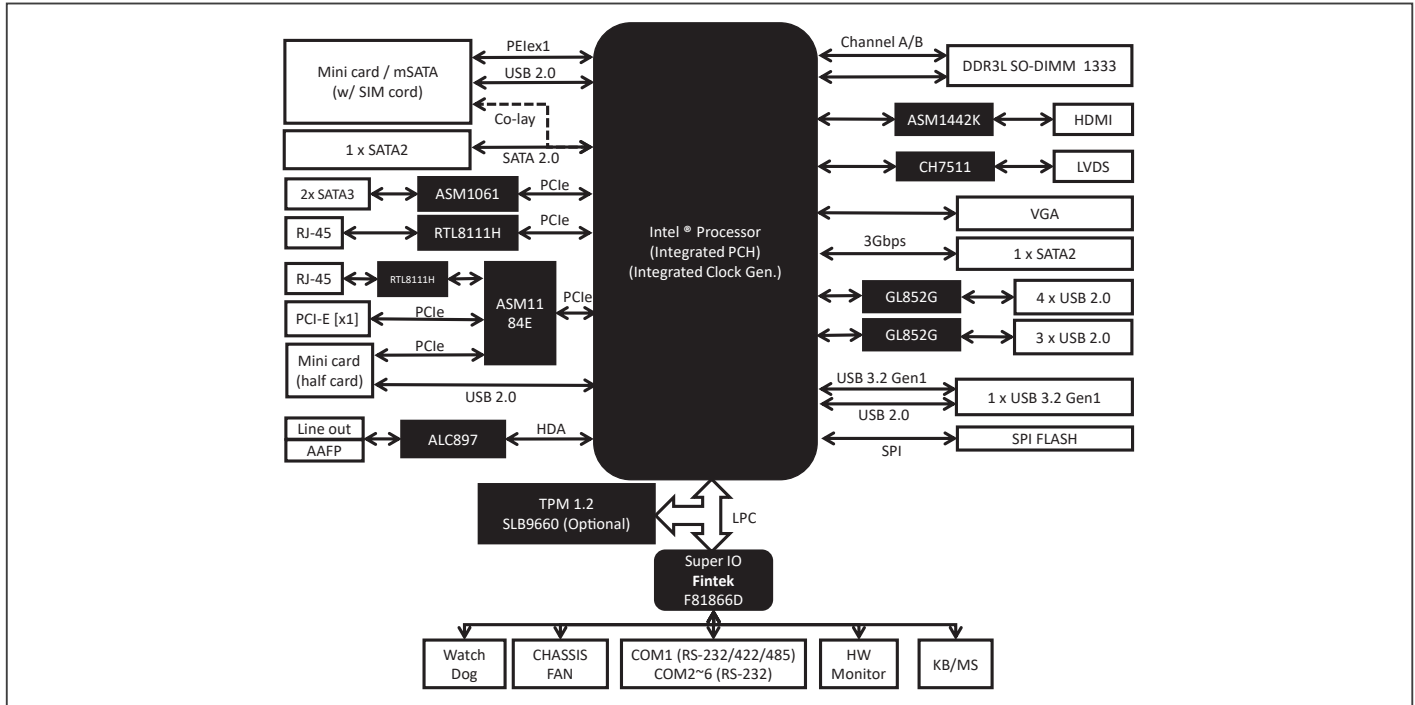
Packing List

- SATA Cable
- SATA Power Cable
- I/O Shield
- Heatsink
- EMB-BT1

Optional Accessories

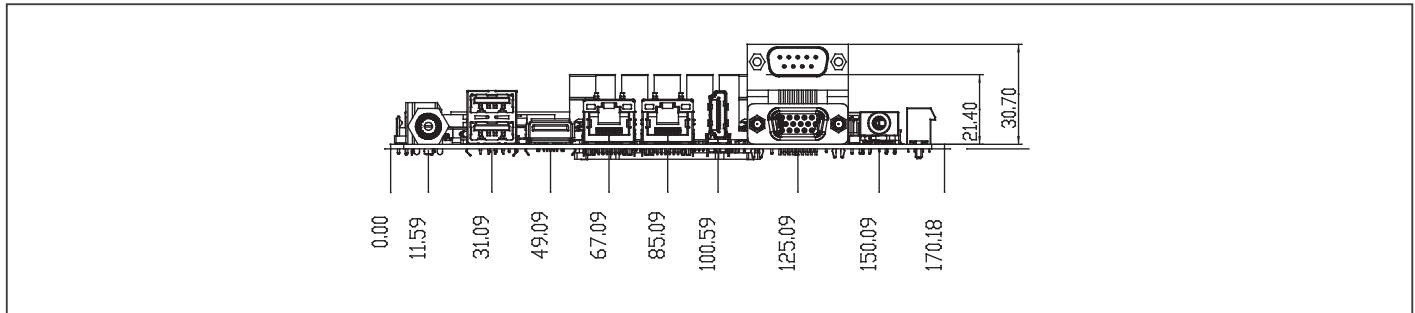
Part Number	Description
1709100330	USB 2.0 Cable (9P, 330MM, p=2.54mm, w/ bracket)
1709050201	USB 2.0 Cable (5P, 220MM, p=2.00mm)
1701260305	LPT Cable (25P, 270MM)
1701100206	COM Port Cable
1700060152	PS/2 Cable (6P, 150mm, p=2.00mm)
170910020K	USB 2.0 Cable (9P, 200MM, p=2.54mm, w/o bracket)
1702150300	SATA Power Cable 4P, 2.54mm
125590084A	Adapter 12V, 84W/N3

Block Diagram



Dimension

Unit: mm



Ordering Information

Part Number	CPU	RAM	Fan/ Fanless	Display	Storage	LVDS	LAN	USB	RS-232	RS-232/422/485	Expansion Slot	Power	TPM	Temp.
EMB-BT1-A31-1900-MSH	J1900	DDR3L-1333 x 2	Fanless	VGA, LVDS, HDMI	SATA2 x 1, SATA3 x 2, Full size Mini-Card x 1 (mSATA)	Dual Channel 18/24-bit	GbE x 2	USB 3.2 Gen 1 x 1, USB 2.0 x 7	5	1	PCIe [x1] x 1, Half-size Mini-Card x 1 (PCIe [x1] x 1 & USB)	12V DC	—	32°F ~ 140°F (0°C ~ 60°C)
EMB-BT1-A31-2807-MSH-1D	N2807	DDR3L-1066 x 1	Fanless	VGA, LVDS, HDMI	SATA2 x 1, SATA3 x 2, Full size Mini-Card x 1 (mSATA)	Dual Channel 18/24-bit	GbE x 2	USB 3.2 Gen 1 x 1, USB 2.0 x 7	5	1	PCIe [x1] x 1, half size Mini-Card x 1 (PCIe [x1] x 1 & USB)	12V DC	—	32°F ~ 140°F (0°C ~ 60°C)
EMB-BT1-A31-3845-MSH	E3845	DDR3L-1333 x 2	Fanless	VGA, LVDS, HDMI	SATA2 x 1, SATA3 x 2, Full size Mini-Card x 1 (mSATA)	Dual Channel 18/24-bit	GbE x 2	USB 3.2 Gen 1 x 1, USB 2.0 x 7	5	1	PCIe [x1] x 1, half size Mini-Card x 1 (PCIe [x1] x 1 & USB)	12V DC	—	32°F ~ 140°F (0°C ~ 60°C)