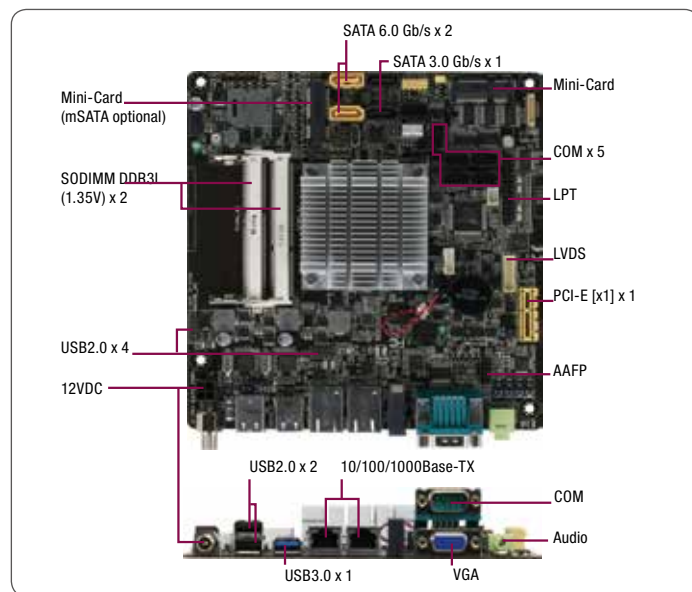


EMB-BT1

Thin Mini-ITX Embedded Motherboard with Intel® Atom™ J1900/N2807/E3845/E3825 Processor, SATA3 x 2, SATA2 x 1, USB x 8



Features

- Intel® Atom™ J1900/N2807/E3845/E3825 Processor
- Dual Displays: VGA x 1, HDMI x 1, LVDS x 1
- Realtek 8111G, Gigabit Ethernet x 2
- SATA 6.0 Gb/s x 2, SATA 3.0 Gb/s x 1
- USB 3.0 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



Specifications

| System | |
|-----------------------|--|
| Form Factor | Mini-ITX |
| Processor | Intel® Atom™ J1900 Processor (4C @ 2.00 GHz CPU, 688/854 MHz GFX, 10W TDP) Intel® Atom™ 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) Intel® Atom™ E3825 Processor (2C @ 1.33 GHz CPU, 533 MHz GFX, 6W TDP) |
| 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), DDR3L 1066 GHz SODIMM x 1 up to 4 GB (for E3825), Non-ECC, un-buffered memory, Dual-channel memory architecture flat type |
| Chipset | — |
| I/O Chipset | Fintech 81866D |
| Ethernet | Realtek 8111G, Gigabit Ethernet x 2 |
| Audio | Realtek® ALC887 |
| BIOS | 64Mb Flash ROM, AMI BIOS |
| Wake On LAN/PXE | Yes (WOL/PXE) |
| Watchdog Timer | 1~255 steps programmable |
| TPM | Infineon SLB9635 TT 1.2 (optional) |
| H/W Monitor | Temperature Monitor on CPU/System, Voltage Monitor on Vcore/5V/3.3V/12V, Fan Monitor on CPU/Chassis |
| Expansion Slots | Full-size Mini-Card (mSATA default) (SIM Card or PCI-E optional) x 1, Half-size Mini-Card (PCI-E +USB) x 1, PCI-E[x1] x 1 |
| Battery | Lithium battery |
| Power Requirement | 12VDC |
| Power Consumption | — |
| 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% RH, non-condensing |
| Smart Fan Control | Chassis Fan (fanless) |
| Power State | S3, S4, S5 |
| Power Requirement | 12V DC |
| Power Compliance | Compliant with EuP / ErP |
| Certificate | CE & FCC |
| MTBF (Hours) | 100,000 |
| Mechanical | |
| Graphics Engine | Intel® HD Graphics |
| Display | LVDS x 1, VGA x 1, HDMI x 1 |
| VGA | Up to 1920 x 1200 @60 Hz |
| DVI | — |
| HDMI | Up to 1920 x 1200 @60 Hz |
| LVDS | Up to 1920 x 1080 @60 Hz, Dual-Channel 18/24-bit (via CH7511) |
| eDP | — |
| DP | — |
| Backlight Control | Voltage/ PWM |

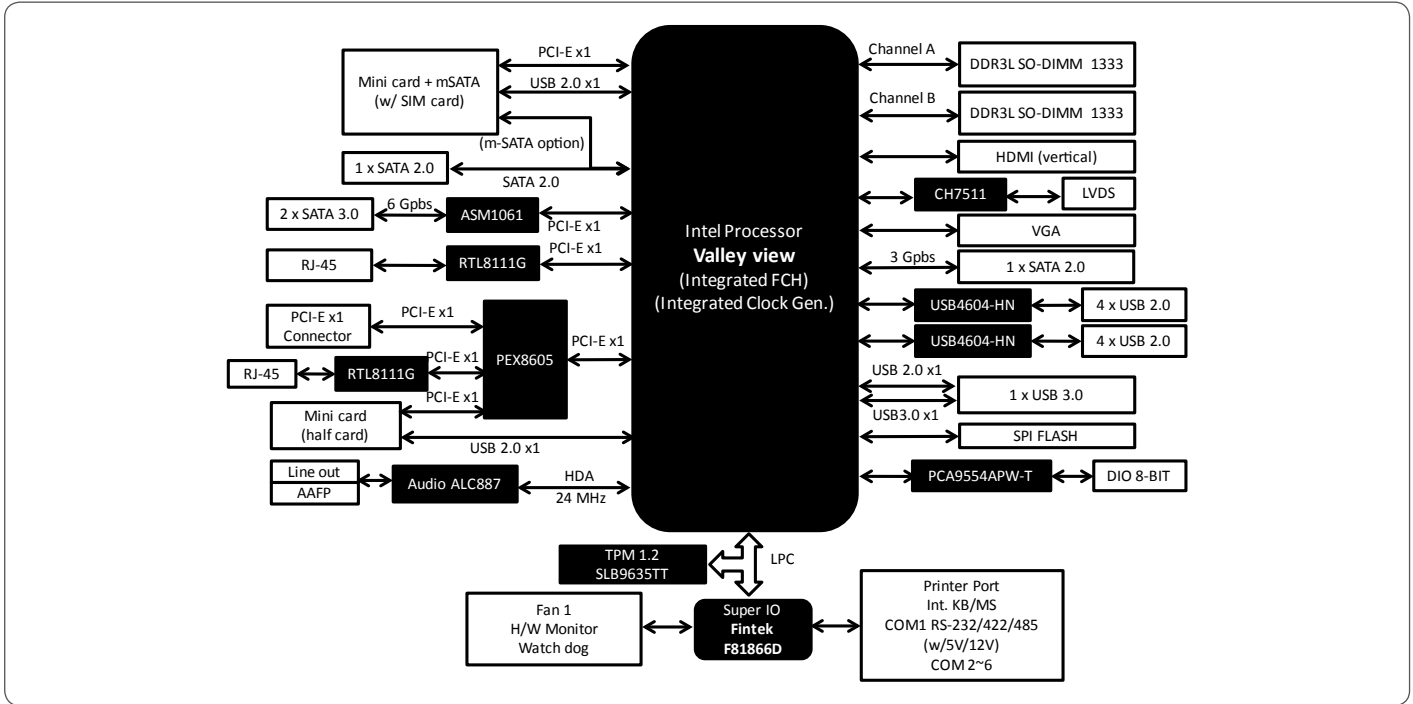
| I/O | |
|---------------|---|
| Storage | SATA 6.0 Gb/s x 2, SATA 3.0 Gb/s x 1, SATA power connector x 1 |
| USB | USB 2.0 x 7 (2 ports on rear panel, 5 ports on mid-board), USB 3.0 x 1 (1 port on rear panel) |
| Audio I/O | Mic-in, Line-out |
| LAN I/O | RJ-45 x 2 |
| Serial Port | RS-232 x 5, RS-232/422/485 x 1 support optional 5V/12V/RI (COM1) |
| Parallel Port | SPP/EPP Mode |
| PS/2 Port | PS/2 x 1 for keyboard / Mouse |
| DIO | 8-bit Programmable Digital I/O interface (4-in/4-out) |
| FAN | Chassis Fan connector x 1 (4-pin) |

Packing List

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

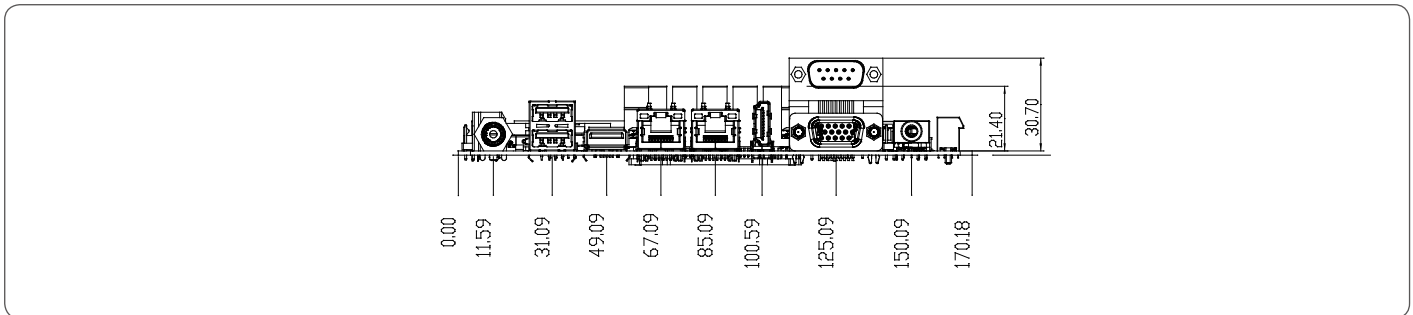
EMB-BT1

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-BT1-A21-1900-MS | J1900 C0 | DDR3L-1333 x 2 | Fanless | VGA, LVDS, HDMI | SATA2 x 1, SATA3 x 2, Full size, Mini-Card x 1 (mSATA) | Daul Channel 18/24-bit | GbE x 2 | USB3.0 x 1, USB2.0 x 7 | 5 | 1 | PCIe x 1, Half-size Mini-Card x 1 (PCIe x 1 & USB) | 12VDC | No | 0°C~60°C |
| EMB-BT1-A21-2807-MS | N2807 C0 | DDR3L-1333 x 1 | Fanless | VGA, LVDS, HDMI | SATA2 x 1, SATA3 x 2, Full size, Mini-Card x 1 (mSATA) | Daul Channel 18/24-bit | GbE x 2 | USB3.0 x 1, USB2.0 x 7 | 5 | 1 | PCIe x 1, Half-size Mini-Card x 1 (PCIe x 1 & USB) | 12VDC | No | 0°C~60°C |
| EMB-BT1-A21-3845-MS | E3845 D0 | DDR3L-1333 x 2 | Fanless | VGA, LVDS, HDMI | SATA2 x 1, SATA3 x 2, Full size, Mini-Card x 1 (mSATA) | Daul Channel 18/24-bit | GbE x 2 | USB3.0 x 1, USB2.0 x 7 | 5 | 1 | PCIe x 1, Half-size Mini-Card x 1 (PCIe x 1 & USB) | 12VDC | No | 0°C~60°C |
| EMB-BT1-A21-3825-MS | E3825 D0 | DDR3L-1066 x 1 | Fanless | VGA, LVDS, HDMI | SATA2 x 1, SATA3 x 2, Full size, Mini-Card x 1 (mSATA) | Daul Channel 18/24-bit | GbE x 2 | USB3.0 x 1, USB2.0 x 7 | 5 | 1 | PCIe x 1, Half-size Mini-Card x 1 (PCIe x 1 & USB) | 12VDC | No | 0°C~60°C |

Optional Accessories

- **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)
- **1757306007**
Lockable Adapter 60W
- **1757908403**
Lockable Adapter 84W
- **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)