



Features:

- 1 to 2 DDR3L SODIMM up to 4 to 8GB
- DVI-I + LVDS
- DP++ resolution up to 1920x1080 @ 60Hz
- Slot expansion: 1 PCIe x1, 1 Mini-PCIe and 1 SIM card socket
- Rich I/O: 2 Intel GbE, 4 COM, 2 USB 3.0, 7 USB 2.0
- 12V or 19-24V DC input
- Small form factor
- Supports mSATA & Mini-PCIe cards



DDR3L



Wide Temperature



mSATA



USB 3.0



DC-in



3G

Product available until Q4 2020

Specification

PROCESSOR

Intel® Atom™/Intel® Celeron® processors
BGA 1170 packaging technology
22nm process technology
Please refer to the Ordering Information below

BIOS

AMI BIOS
- 64Mbit SPI BIOS

SYSTEM MEMORY

Two 204-pin DDR3L SODIMM sockets (-E45/-E26/-J00)
- up to 8GB system memory
- dual channel memory interface
One 204-pin DDR3L SODIMM socket (-E25/-E15)
- up to 4GB system memory
- single channel memory interface
Supports DDR3L 1333MHz (-E45/-J00)
Supports DDR3L 1066MHz (-E26/-E25/-E15)
DRAM device technologies: 1Gb, 2Gb and 4Gb DDR3L DRAM technologies are supported for x8 and x16 devices, unbuffered, non-ECC

EXPANSION SLOTS

1 PCIe x1 slot
1 Mini PCIe slot
- Supports USB, PCIe and 3G signals
- Supports mSATA
- Supports half size or full size Mini PCIe card
1 SIM card socket

ONBOARD GRAPHICS FEATURES

Intel® HD Graphics
Display ports: DVI-I and LVDS
DVI-I: 24-bit, resolution up to 1920x1080 @ 60Hz
LVDS: NXP PTN3460, 24-bit, dual channel, resolution up to 1920x1200 @ 60Hz
Supports hardware acceleration for DirectX 11, OCL 1.2, OGL 4.0, H.264, MPEG2, MVC, VC-1, WMV9 and VP8 (supported version dependent on OS)

ONBOARD AUDIO FEATURES

Realtek ALC888 5.1-channel High Definition Audio
S/PDIF audio interface

ONBOARD LAN FEATURES

2 Intel® I210AT PCI Express Gigabit Ethernet controllers
Integrated 10/100/1000 transceiver
Fully compliant with IEEE 802.3, IEEE 802.3u, IEEE 802.3ab

SERIAL ATA INTERFACE

2 SATA 2.0 ports with data transfer rate up to 3Gb/s
- SATA port 0 provides adequate space for SATA DOM
- SATA port 1 multiplexed with mSATA (Mini PCIe)
Integrated Advanced Host Controller Interface (AHCI) controller

REAR PANEL I/O PORTS

1 12V (MBU4015) or 19-24V (MBU4016) DC-in jack or 4-pin power connector*
1 DVI-I port
2 RJ45 LAN ports
2 USB 2.0 ports
1 USB 3.0 port
Line-out jack

I/O CONNECTORS

2 connectors for 4 external USB 2.0 ports
4 connectors for 4 external serial ports (2.0mm pitch)
- 1 RS232/422/485 (RS232 and/or power)
- 3 RS232
1 LVDS LCD panel connector
1 LCD/inverter power connector
1 8-bit DIO and/or power connector
1 front audio connector for line-out and mic-in jacks
1 S/PDIF connector
1 PS/2 connector for keyboard/mouse port
1 LPC connector
1 SMBus connector
1 SPI connector*
1 LAN LED connector
2 Serial ATA connectors
2 Serial ATA power connectors
1 front panel connector
1 chassis intrusion connector
2 fan connectors

ENERGY EFFICIENT DESIGN

Supports ERP Lot6 power saving*
Supports ACPI System Power Management
Wake-On-Events include:
- Wake-On-USB/PS/2 KB/Mouse*
- Wake-On-LAN
- RTC timer to power-on the system
AC power failure recovery

DAMAGE FREE INTELLIGENCE

Monitors CPU/system temperature and overheat alarm
Monitors VCore/12V/5V/DDR voltages and failure alarm
Monitors CPU/system fan speed and failure alarm
Read back capability that displays temperature, voltage and fan speed

POWER CONSUMPTION

MBU4015-BN-E45: 13.20W with E3845 at 1.91GHz and 2x 4GB DDR3L SODIMM

OS SUPPORT

- Windows 7 Ultimate x86 & SP1 (32-bit)
- Windows 7 Ultimate x64 & SP1 (64-bit)
- Windows 8.1 Enterprise x86 (32-bit)
- Windows 8.1 Enterprise x64 (64-bit)
- Windows 8.1 Embedded Pro x86 (32-bit)
- Windows 8.1 Embedded Pro x64 (64-bit)

TEMPERATURE

- Operating: 0°C to 60°C - Celeron (Fanless)
- : -20°C to 70°C - Atom (Fanless with air flow)
- : -40°C to 85°C - Atom (Fanless with air flow)
- Storage: -40°C to 85°C

HUMIDITY

- 5% to 90%

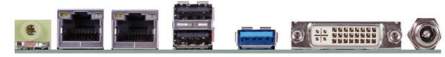
DIMENSIONS

- Mini-ITX form factor
- 170mm (6.7") x 170mm (6.7")

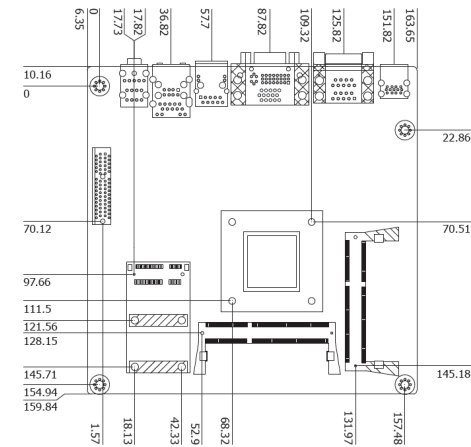
CERTIFICATION

- CE, FCC Class B, RoHS, UL

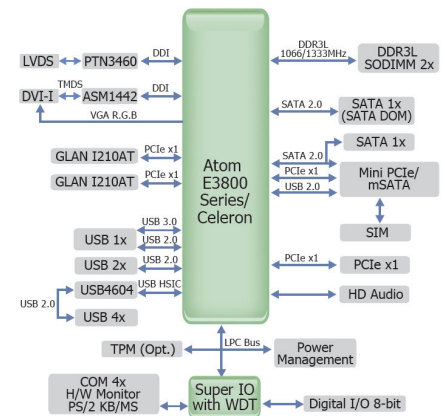
Rear I/O



Mechanical Drawing



Block Diagram



Power Connector



ORDERING INFORMATION

Model Name	Processor	Memory	RS232	RS232/422/485	Power	Thermal	Temperature
MBU4015-BN-E15	Intel® Atom™ E3815, Single Core, 0.5M Cache, 1.46GHz, 5W	1 SODIMM	3	1	12V DC-in	Fanless	0°C to 60°C
MBU4015-BN-E26	Intel® Atom™ E3826, Dual Core, 1M Cache, 1.46GHz, 7W	2 SODIMM	3	1	12V DC-in	Fanless	0°C to 60°C
MBU4015-BN-E45	Intel® Atom™ E3845, Quad Core, 2M Cache, 1.91GHz, 10W	2 SODIMM	3	1	12V DC-in	Fanless	0°C to 60°C
MBU4015-BN-J00	Intel® Celeron® J1900, Quad Core, 2M Cache, 2GHz (2.42GHz), 10W	2 SODIMM	3	1	12V DC-in	Fanless	0°C to 60°C
MBU4015-TN-E45	Intel® Atom™ E3845, Quad Core, 2M Cache, 1.91GHz, 10W	2 SODIMM	3	1	12V DC-in	Fanless	-40°C to 85°C
MBU4016-BN-E15	Intel® Atom™ E3815, Single Core, 0.5M Cache, 1.46GHz, 5W	1 SODIMM	3	1	19-24V DC-in	Fanless	0°C to 60°C
MBU4016-BN-E25	Intel® Atom™ E3825, Dual Core, 1M Cache, 1.33GHz, 6W	2 SODIMM	3	1	19-24V DC-in	Fanless	0°C to 60°C
MBU4016-BN-E45	Intel® Atom™ E3845, Quad Core, 2M Cache, 1.91GHz, 10W	2 SODIMM	3	1	19-24V DC-in	Fanless	0°C to 60°C
MBU4016-BN-J00	Intel® Celeron® J1900, Quad Core, 2M Cache, 2GHz (2.42GHz), 10W	2 SODIMM	3	1	19-24V DC-in	Fanless	0°C to 60°C
MBU4016-TN-E45	Intel® Atom™ E3845, Quad Core, 2M Cache, 1.91GHz, 10W	2 SODIMM	3	1	19-24V DC-in	Fanless	-40°C to 85°C

* Optional and is not supported in standard model. Please contact your sales representative for more information.

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