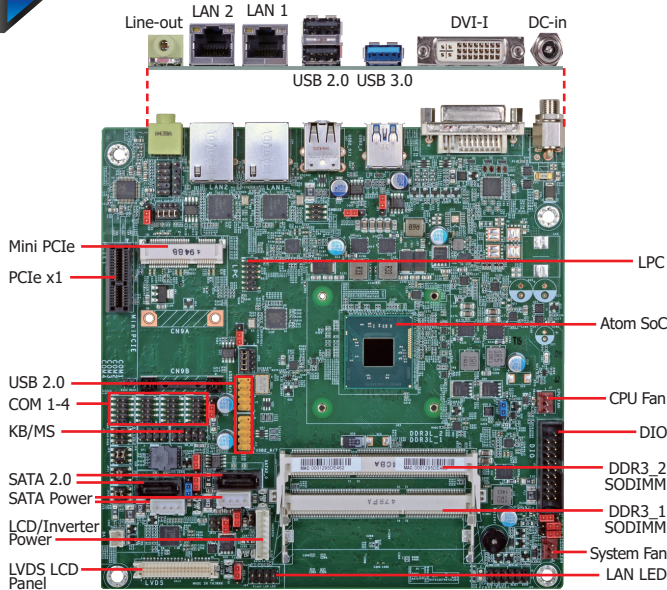




# BT101/BT103

Atom



\* The photos above refer to BT101.

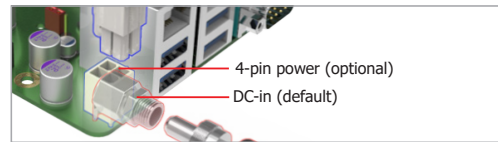
Model Name	Power
BT101	12V DC-in
BT103	19~24V DC-in

## Features

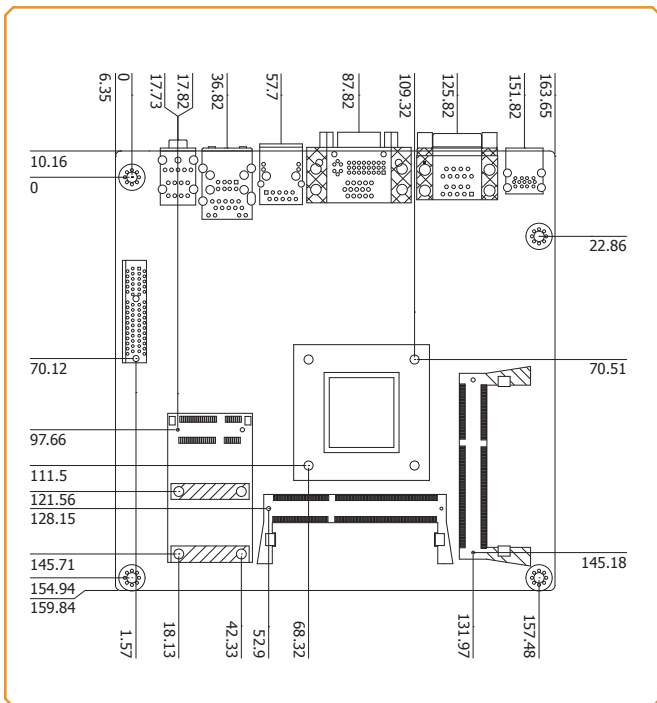
MEMORY	2 DDR3L SODIMM up to 8GB (-E45/-E26/-J00) 1 DDR3L SODIMM up to 4GB (-E25/-E15)
EXPANSION	1 PCIe x1 1 Mini PCIe 1 SIM (Optional)
DISPLAY OUTPUTS	1 DVI-I, 1 LVDS
LAN	2 LAN
COM	4 COM
USB	7 USB: 1 USB 3.0, 6 USB 2.0
STORAGE	2 SATA 2.0 or 1 SATA 2.0, 1 mSATA
DIO	8-bit DIO



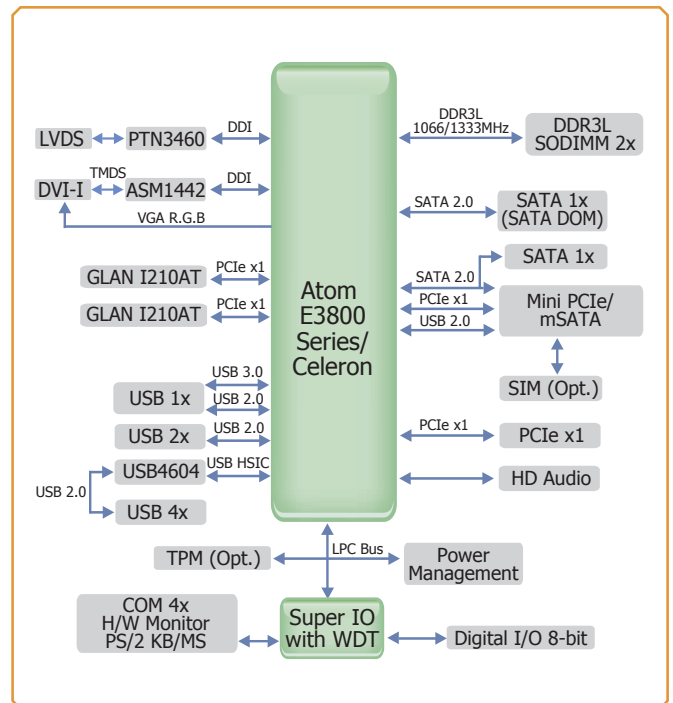
## Power Connector



## Mechanical Drawing



## Block Diagram



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

### PROCESSOR

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

### 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 (available upon request)

### 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

### TRUSTED PLATFORM MODULE (TPM)\*

- Provides a Trusted PC for secure transactions
- Provides software license protection, enforcement and password protection

### WATCHDOG TIMER

- Watchdog timeout programmable via software from 1 to 255 seconds

### REAR PANEL I/O PORTS

- 1 12V (BT101) or 19~24V (BT103) 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

### BIOS

- AMI BIOS: 64Mbit SPI BIOS

### 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

- BT101-BN-E45: 13.20W with E3845 at 1.91GHz and 2x 4GB DDR3L SODIMM
- BT103-BN-E45: 13.68W 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)

Note: Windows 10 will be available upon request. Please contact DFI for more information.

### 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%

### MTBF

- BT101: 210,778 hrs @ 25°C; 210,778 hrs @ 45°C; 126,141 hrs @ 60°C
- BT103: 342,883 hrs @ 25°C; 196,927 hrs @ 45°C; 118,814 hrs @ 60°C
  - Calculation model: Telcordia Issue 2
  - Environment: GB, GC – Ground Benign, Controlled

### DIMENSIONS

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

### CERTIFICATION

- CE, FCC Class B, RoHS, UL

**Ordering Information**

Model Name	Part Number	Processor	Memory	RS232	RS232/ 422/485	Power	Thermal	Temperature
<b>BT101-TN-E45</b>	<b>770-BT1011-900G</b>	Intel® Atom™ E3845, Quad Core, 2M Cache, 1.91GHz, 10W	2 SODIMM	3	1	12V DC-in	Fanless	-40°C to 85°C
<b>BT101-BN-E15</b>	<b>770-BT1011-A00G</b>	Intel® Atom™ E3815, Single Core, 0.5M Cache, 1.46GHz, 5W	1 SODIMM	3	1	12V DC-in	Fanless	0°C to 60°C
<b>BT101-BN-J00</b>	<b>770-BT1011-C00G</b>	Intel® Celeron® J1900, Quad Core, 2M Cache, 2GHz (2.42GHz), 10W	2 SODIMM	3	1	12V DC-in	Fanless	0°C to 60°C
<b>BT101-BN-E26</b>	<b>770-BT1011-D00G</b>	Intel® Atom™ E3826, Dual Core, 1M Cache, 1.46GHz, 7W	2 SODIMM	3	1	12V DC-in	Fanless	0°C to 60°C
<b>BT101-BN-E45</b>	<b>770-BT1011-F00G</b>	Intel® Atom™ E3845, Quad Core, 2M Cache, 1.91GHz, 10W	2 SODIMM	3	1	12V DC-in	Fanless	0°C to 60°C
<b>BT103-BN-J00</b>	<b>770-BT1031-900G</b>	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
<b>BT103-BN-E15</b>	<b>770-BT1031-A00G</b>	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
<b>BT103-TN-E45</b>	<b>770-BT1031-C00G</b>	Intel® Atom™ E3845, Quad Core, 2M Cache, 1.91GHz, 10W	2 SODIMM	3	1	19~24V DC-in	Fanless	-40°C to 85°C
<b>BT103-BN-E45</b>	<b>770-BT1031-D00G</b>	Intel® Atom™ E3845, Quad Core, 2M Cache, 1.91GHz, 10W	2 SODIMM	3	1	19~24V DC-in	Fanless	0°C to 60°C
<b>BT103-BN-E25</b>	<b>770-BT1031-E00G</b>	Intel® Atom™ E3825, Dual Core, 1M Cache, 1.33GHz, 6W	2 SODIMM	3	1	19~24V DC-in	Fanless	0°C to 60°C

**Packing List**

• 1 BT101/BT103 motherboard
• 1 Serial ATA data with power cable: A81-002013-000G
• 1 Heat sink: A71-010026-000G

**Optional Items**

• USB port cable: 332-253010-026G
• COM port cable: A81-015011-001G
• Serial ATA data with power cable: A81-002013-000G
• Power adapter (100W, 12V, Level 6) : 671-110002-100G (BT101)
• Power adapter (120W, 19V, Level 6) : 671-110003-100G (BT103)
• I/O Shield: A49-BT1011-000G