

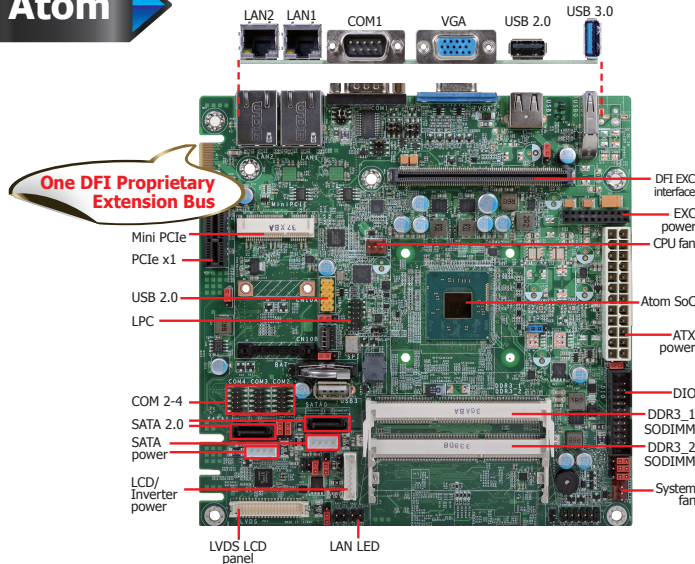


**Intel® Atom™ E3800 Series  
Mini-ITX**

**BT160**

Atom

Atom



**Features**

|                 |   |
|-----------------|---|
| MEMORY          | 2 DDR3L SODIMM up to 8GB (-E45/-E27/-E26/-J00/-N30)<br>1 DDR3L SODIMM up to 4GB (-E25/-E15) |
| EXPANSION       | 1 PCIe x1<br>1 Mini PCIe<br>1 DFI Proprietary Extension Bus<br>1 DFI EXC interface          |
| DISPLAY OUTPUTS | 1 VGA, 1 LVDS   |
| LAN             | 2 LAN   |
| COM             | 4 COM   |
| USB             | 4 USB: 1 USB 3.0, 3 USB 2.0   |
| STORAGE         | 2 SATA 2.0  |
| DIO             | 8-bit DIO   |



**3 Modules for Additional COM/Parallel Ports (via the LPC connector)**

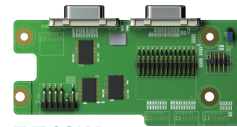


**EXT-6C1PR**

- 6 COM
- 1 Parallel

**EXT-4C1PR**

- 4 COM
- 1 Parallel



**EXT-2C1PR**

- 2 COM
- 1 Parallel

Note: To support the additional COM/Parallel ports, please contact your sales representative for the LPC module and its BIOS.

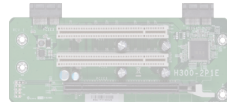
**5 Riser Cards for DFI Proprietary Extension Bus**



**H Series:**



- 3 PCI

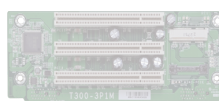


- 1 PCIe x16 (x1 signal)



- 1 PCIe x8 (x1 signal)

**T Series:**

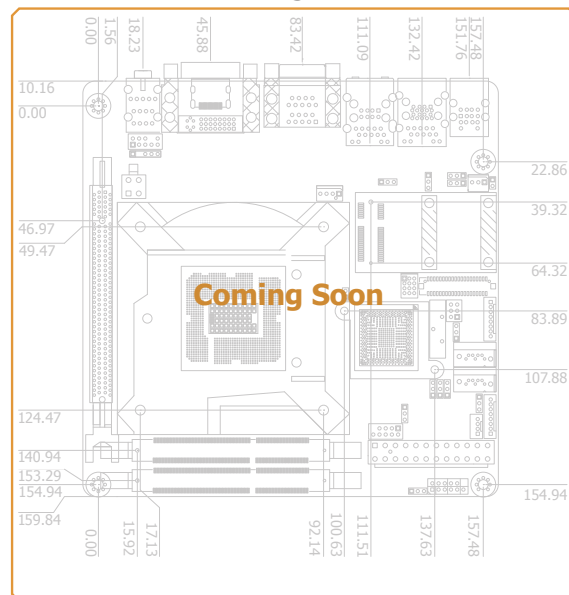


- 3 PCI

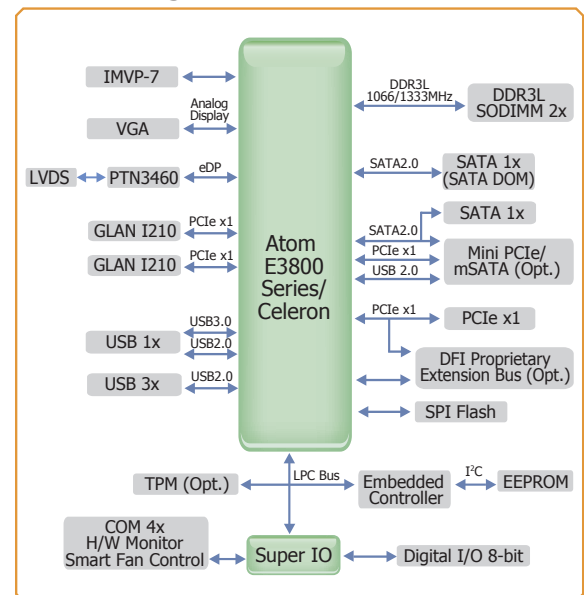


- 1 PCIe x16 (x1 signal)

**Mechanical Drawing**



**Block Diagram**





**Intel® Atom™ E3800 Series  
Mini-ITX**

**BT160**

**► Specifications**

**PROCESSOR**

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

**SYSTEM MEMORY**

- Supports DDR3L 1333MHz (-E45/-E27/-J00/-N30)
- Supports DDR3L 1066MHz (-E26/-E25/-E15)
- Two 204-pin DDR3L SODIMM sockets (-E45/-E27/-E26/-J00/-N30)
  - 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
- 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 and PCIe signals
  - Supports mSATA (optional)
  - Supports full size Mini PCIe card
- 1 DFI Proprietary Extension Bus for PCIe/PCI expansion
- 1 DFI EXC interface for I/O expansion
  - 1 PCIe x1
  - 1 DDI
  - 1 High Definition Audio
  - 2 Serial ports
  - 1 PS/2 keyboard/mouse
  - 2 USB 2.0
  - 1 USB HSIC
  - 1 SMBus
  - 1 LPC

**ONBOARD GRAPHICS FEATURES**

- Intel® HD Graphics
- Display ports: VGA and LVDS
- VGA: 24-bit, resolution up to 2560x1600 @ 60Hz
- LVDS: NXP PTN3460, 24-bit, dual channel, resolution up to 1920x1200 @ 60Hz
- Supports hardware acceleration for DirectX 11, OCL 1.2, OGL 3.2, H.264, MPEG2, MVC, VC-1, WMV9 and VP8

**ONBOARD LAN FEATURES**

- 2 Intel® I210 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
  - One multiplexed with mSATA (Mini PCIe)
- Integrated Advanced Host Controller Interface (AHCI) controller

**REAR PANEL I/O PORTS**

- 1 DB-9 RS232 serial port
- 1 DB-15 VGA port
- 2 RJ45 LAN ports
- 1 USB 2.0 port
- 1 USB 3.0 port

**► Ordering Information**

| Model Name   |   |          | Processors  |
|--------------|---|----------|---|
| <b>BT160</b> | - | <b>N</b> | - <b>E45</b>  |
|              |   |          | E45: Intel® Atom™ E3845, Quad Core, 2M Cache, 1.91GHz, 10W<br>E27: Intel® Atom™ E3827, Dual Core, 1M Cache, 1.75GHz, 8W<br>E26: Intel® Atom™ E3826, Dual Core, 1M Cache, 1.46GHz, 7W<br>E25: Intel® Atom™ E3825, Dual Core, 1M Cache, 1.33GHz, 6W<br>E15: Intel® Atom™ E3815, Single Core, 0.5M Cache, 1.46GHz, 5W<br>J00: Intel® Celeron® J1900, Quad Core, 2M Cache, up to 2.42GHz, 10W<br>N30: Intel® Celeron® N2930, Quad Core, 2M Cache, up to 2.16GHz, 7.5W |

**► Packing List**

- 1 BT160 motherboard
- 1 Serial ATA data cable
- 1 I/O shield
- 1 DVD
- 1 QR (Quick Reference)

**I/O CONNECTORS**

- 1 connector for 2 external USB 2.0 ports
- 3 connectors for 3 external serial ports
  - 1 RS422/485 (RS232 and/or power)
  - 2 RS232
- 1 LVDS LCD panel connector
- 1 LCD/inverter power connector
- 1 8-bit DIO connector
- 1 LPC connector
- 2 LAN LED connectors
- 2 Serial ATA connectors
- 2 Serial ATA power connectors
- 1 24-pin ATX power connector
- 1 front panel connector
- 1 chassis intrusion connector
- 2 fan connectors

**TRUSTED PLATFORM MODULE (TPM) - optional**

- 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

**BIOS**

- AMI BIOS
- 64Mbit SPI BIOS

**ENERGY EFFICIENT DESIGN**

- Supports ErP Lot6 power saving (optional)
- Supports ACPI
- System Power Management
- Wake-On-Events include:
  - Wake-On-PS/2 KB/Mouse (optional)
  - Wake-On-USB KB/Mouse (optional)
  - 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**

- TBD

**OS SUPPORT**

- TBD

**TEMPERATURE**

- Operating: 0°C to 60°C
- Storage: -20°C to 85°C

**HUMIDITY**

- 5% to 95%

**DIMENSIONS**

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

**► Optional Items**

- USB port cable
- Serial ATA data cable
- I/O shield
- 1 LPC module kit (COM/Parallel extension module)

## Assured Systems

Assured Systems is a leading technology company with over 1,500 regular clients in 80 countries, deploying over 85,000 systems to a diverse customer base in 12 years of business. We offer high-quality and innovative rugged computing, display, networking and data collection solutions to the embedded, industrial, and digital-out-of-home market sectors.

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