

# ALTAIR™ SBC



## COM Express™ SBC with Intel Atom™ E-Series CPU



### Highly Integrated SBC

Altair is a high performance, highly integrated small form factor single board computer in the COM Express form factor. Altair incorporates a wealth of standard PC-style I/O plus on-board digital I/O. It accepts both EMX and PCIe MiniCard add-on I/O modules.

### High Performance, Low Power Advantage

The SBC's Intel Atom E-Series CPU offers an excellent balance of performance, power consumption, and cost, making Altair an ideal choice for a wide variety of high-performance embedded computing applications.

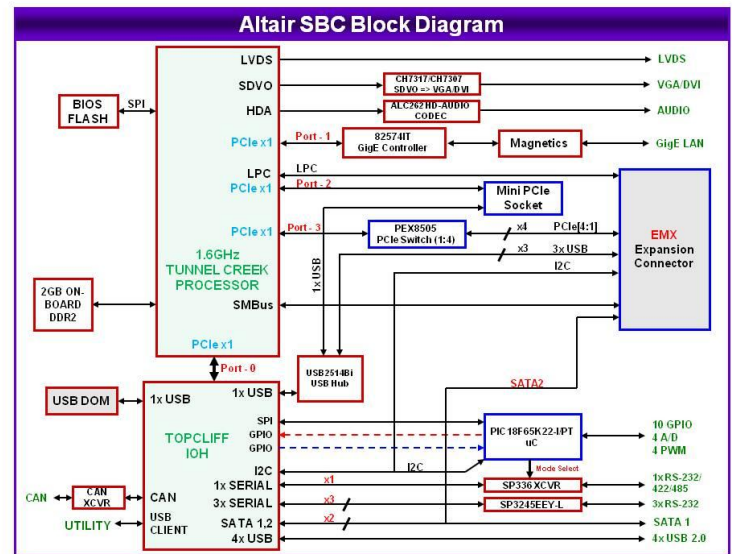
### Optimized for Real World Applications

Altair was designed to meet the needs of real-world applications. The SBC integrates an optimal selection of features for its size, power, and cost budgets, yielding maximum functionality and performance within a compact SBC. Latest generation connectivity such as SATA, Gigabit Ethernet, and PCI Express ensures long lifetime and top performance. EMX and PCIe MiniCard expandability provides access to current and future high-speed I/O.

### Intelligent Thermal Solution

The heat-generating CPU and chipset are located on the bottom side of the SBC, and a conduction cooled bottom-mounted heatspreader dissipates heat efficiently to the system enclosure. This configuration leaves the SBC's top side free for easy access to memory, on-board I/O, and expansion sockets.

- ◆ Compact, low-power, high-performance, stackable SBC
- ◆ Intel Atom E-series CPU at 1.6GHz
- ◆ 1GB or 2GB soldered DDR2 DRAM
- ◆ Comprehensive set of I/O interfaces:
  - 4 USB 2.0 ports
  - 1 RS-232/422/485 serial port
  - 3 RS-232 serial ports
  - 1 Gigabit Ethernet port
  - 1 SATA port
  - 1 CAN port
  - LVDS and VGA display interfaces (DVI optional)
  - USB keyboard and mouse support
  - High definition audio
- ◆ System controller with:
  - 10 programmable GPIO lines
  - 4 pulse width modulators
  - Wake on timer & MTBF counter
  - Programmable watchdog timer
- ◆ Socket for USB flashdisk up to 8GB
- ◆ COM Express form factor (125mm x 95mm)
- ◆ System expansion flexibility
  - EMX stackable I/O
  - PCIe MiniCard socket
- ◆ -40°C to +85°C operating temperature



## Specifications

<b>Processor</b>	Intel Atom E680T at 1.6GHz (also available with 1.3GHz E660T or 600MHz E620T CPUs)
<b>Cooling</b>	Heatspreader, fanless
<b>Memory</b>	1GB or 2GB soldered DDR2 DRAM on-board
<b>Display options</b>	LVDS flat panel & VGA interfaces Optional DVI
<b>LVDS backlight power</b>	+5V or +12V jumper selectable
<b>USB ports</b>	4 USB 2.0
<b>Serial ports</b>	1 RS-232/422/485; 3 RS-232
<b>Networking</b>	1 Gigabit Ethernet
<b>Mass storage</b>	1 SATA port Support for USB flashdisk up to 8GB
<b>CAN</b>	1 CAN port
<b>Keyboard/Mouse</b>	USB
<b>System Controller</b>	10 GPIO, 4 PWM, A/D, wake on timer
<b>Watchdog Timer</b>	Programmable
<b>Audio</b>	ALC262 Codec HD audio with Stereo line-in, line-out, microphone
<b>Expansion buses</b>	EMX stackable I/O 1 PCIe MiniCard socket
<b>Input power</b>	5VDC ±5%
<b>Power consumption</b>	15W maximum
<b>Operating temp.</b>	-40°C to +85°C (-40°F to +185°F)
<b>Dimensions</b>	4.92" x 3.74" (125mm x 95mm)
<b>Weight</b>	10.8oz (306.2) with heat spreader
<b>RoHS</b>	Compliant

## Key Features

Altair is a rugged, COM Express form factor single board computer (SBC) based on the Intel Atom E-Series CPU family.

The SBC supports 1GB or 2GB of DDR2 DRAM soldered on-board and provides high-resolution LVDS and VGA graphics interfaces. Additional I/O ports include SATA, USB, serial, digital I/O, CAN, and Gigabit Ethernet. Flexible system expansion is based on stackable EMX modules, and a PCIe MiniCard socket. A socket is also provided for an on-board USB flashdisk up to 8GB.

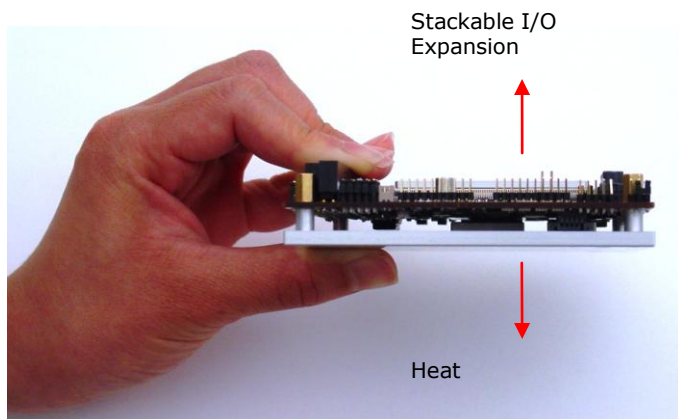
Altair's power-efficient design leverages Intel's ultra-low-power (Queensbay) silicon platform, consisting of the Atom E680T (Tunnel Creek) processor and EG20T chipset (Topcliff). These ICs are positioned on the bottom of the board, resulting in easy and efficient heat removal via a heatspreader for wide-temperature, fanless operation.

## Software Support

Altair is compatible with Linux, Windows Embedded Standard 7, and Windows Embedded CE. All necessary drivers are provided with the product.

## Development Kit

The Altair Development Kit (DK-ALT-LNX) provides all the components you need for fast and efficient embedded development. The kit includes an Altair SBC, USB flashdisk with Linux pre-loaded, cable kit, power adapter cable, and software CD.



The Altair SBC's bottom mounted heat spreader leaves the entire top side free, enabling installation of add-on I/O modules.

## Ordering Information

<b>ALT1600-2G-XT</b>	Altair SBC, 1.6GHz Atom E680T CPU, 2GB DDR2 DRAM on-board
<b>ALT1600-1G-XT</b>	Altair SBC, 1.6GHz Atom E680T CPU, 1GB DDR2 DRAM on-board
<b>ALT1300-2G-XT</b>	Altair SBC, 1GHz Atom E660T CPU, 2GB DDR2 DRAM on-board (special order option)
<b>ALT1300-1G-XT</b>	Altair SBC, 1GHz Atom E660T CPU, 1GB DDR2 DRAM on-board (special order option)
<b>ALT600-2G-XT</b>	Altair SBC, 600MHz Atom E620T CPU, 2GB DDR2 DRAM on-board (special order option)
<b>ALT600-1G-XT</b>	Altair SBC, 600MHz Atom E620T CPU, 1GB DDR2 DRAM on-board (special order option)
<b>FDU-1G-XT</b>	1GB USB flashdisk
<b>FDU-2G-XT</b>	2GB USB flashdisk
<b>FDU-4G-XT</b>	4GB USB flashdisk
<b>FDU-8G-XT</b>	8GB USB flashdisk
<b>DK-ALT-LNX</b>	Altair Development Kit with ALT1600-1G-XT SBC, USB flashdisk, cables and Linux software
<b>DK-ALT-WE7</b>	Altair Development Kit with ALT1600-1G-XT SBC, USB flashdisk, cables and WE7 software
<b>SDK-ALT-LNX</b>	Altair Linux Software Development Kit
<b>SDK-ALT-WE7</b>	Altair Windows Embedded 7 Software Development Kit
<b>C-ALT-KIT</b>	Altair Cable Kit for all on-board I/O