

Conduction Cooled Single Board Computer in EMX Basic Form-Factor features Intel Atom E680T CPU

Altair SBC features new EMX™ industry standard for stackable I/O

Nuremberg, Germany — February 29, 2012 — Diamond Systems, a leading global supplier of compact, rugged, embedded computing solutions for real-world applications in a broad range of markets, today unveiled Altair, a rugged EMX Basic single board computer (SBC) based on the Intel Atom E680T CPU running at 1.6GHz, featuring dual Gigabit Ethernet ports, 4 serial ports, and 4 USB 2.0 ports. Altair is also the first SBC to implement the new EmbeddedXpress™ (EMX) stackable I/O standard, the next step in I/O connectivity for small form factor embedded computing.



Altair 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, and dual Gigabit Ethernet. Flexible system expansion is based on stackable EMX modules, and a PCIe MiniCard socket. A socket is also provided for an optional on-board USB flashdisk of 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 chipset (Topcliff). 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 on-board I/O and expansion sockets.

Altair's key features and functions are tabulated below.

Key Features and Functions

- Compact, low power EMX Basic form-factor SBC
- 1.6GHz Intel Atom E680T CPU
- 1GB or 2GB soldered-on DDR2 DRAM
- 1 Gigabit Ethernet port
- 4 USB 2.0 ports
- 3 RS-232 serial ports
- 1 RS-232/422/485 serial port
- 1 CAN port
- VGA CRT and LVDS LCD display
- USB keyboard and mouse
- System controller with 10 GPIO lines, 4 PWM, A/D
- Socket for USB flashdisk up to 8GB
- Rugged design: -40°C to +85°C operating temperature and memory soldered on board
- EMX stackable I/O expansion
- PCIe MiniCard socket
- EMX Basic form-factor:
(4.92 x 3.74 in. / 125 x 95mm)

Altair's rugged features include a wide temperature operating range of -40°C to +85°C, soldered-on memory, plus dedicated locations on the PCB to replace configuration jumpers with 0-ohm resistors for resistance to shock and vibration. Conformal coating is also available as an added cost option.

EmbeddedXpress is a new industry standard form-factor for embedded computers that defines a more efficient stackable I/O expansion. The EMX standard enables flexibility, scalability, and increased longevity in the final product by providing interchangeable processor modules.

“EMX represents a significant advancement in embedded computing,” says Jonathan Miller, President of Diamond Systems. “It offers many design and implementation advantages to both vendors and customers over existing form factors on the market today.”

Pricing and Availability

The Altair COM Express single board computer is shipping in Q2 2012. Single unit pricing starts at US\$795. A development kit is also available, DK-ALT1600-01, containing an Altair SBC, USB flashdisk with Linux pre-loaded, cable kit, and power adapter. Contact Diamond Systems for quantity pricing and special-order options.

About Diamond Systems

Founded in 1989 and based in Mountain View, California, Diamond Systems Corporation is a leading global provider of compact, rugged, board- and system-level real world embedded computing solutions to companies in a broad range of markets, including transportation, energy, aerospace, defense, manufacturing, medical, and research. The company is renowned as an innovator of embedded I/O standards and technologies; it originated the FeaturePak I/O modules standard, was an early adopter of PC/104 module technology, and holds a patent for a unique analog I/O autocalibration technique.

Diamond’s extensive product line includes compact, highly integrated single-board computers (SBCs); an extensive line of expansion modules for analog and digital I/O, wired and wireless communications, GPS, solid-state disk, and power supply functions; and complete system-level solutions. In support of performance-critical embedded application requirements, these products are engineered to operate reliably over wide operating temperature ranges, such as -40°C to $+85^{\circ}\text{C}$, and at high levels of shock and vibration. Additionally, the company offers a comprehensive hardware, software, and system integration and customization services.

For further information, please visit www.diamondsystems.com or call +1-800-367-2104.

MEDIA RESOURCES

- [Altair webpage](#)
- [Altair datasheet](#) (pdf)
- [Altair photo](#) (jpg)
- [EMX standard webpage](#)

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