

## **Highly Integrated EBX Single Board Computer features Intel Atom E680T CPU and on-board Data Acquisition**

### ***Hercules III Extends Life of Popular Embedded SBC Family***

#### **Mountain View, California — May 14, 2013 —**

Diamond Systems, a leading global supplier of compact, rugged, embedded computing solutions for real-world applications in a broad range of markets, today unveiled Hercules III, a rugged EBX single board computer (SBC) based on the Intel Atom E680T CPU running at 1.6GHz, and featuring 2 Gigabit Ethernet ports, 6 serial ports, and 5 USB 2.0 ports. Hercules III is the newest member of Diamond's 2-in-1 SBC products, combining a standard CPU board's features with industry leading data acquisition on a single board. This combination offers a highly integrated SBC in a more compact size with higher reliability, and at a lower cost.



Hercules III's power-efficient design leverages Intel's ultra-low-power (Queensbay) silicon platform, consisting of the Atom E680T (Tunnel Creek) processor and chipset (Topcliff). Hercules III supports 1GB or 2GB of onboard SDRAM and provides high-resolution LVDS and VGA graphics interfaces. Additional I/O ports include SATA, CANbus, USB, serial, digital I/O, and Gigabit Ethernet. Flexible system expansion is based on stackable PC/104-Plus (ISA + PCI) modules. mSATA, PCIe MiniCard, and GPS modem sockets are provided for optional on-board storage and I/O. Hercules III also provides a wide voltage power supply, accepting 7-40VDC input and producing 35W of available power for add-on boards or devices.

Hercules III's integrated data acquisition circuit includes 32 analog inputs with 16-bit A/D and 250KHz maximum sample rate, 4 12-bit analog outputs, 40 digital I/O lines, and two counter/timers. It uses an enhanced 2048-sample FIFO with programmable threshold for maximum flexibility and data reliability. The analog circuitry utilizes Diamond Systems' industry-leading Universal Driver software with autocalibration technology to calibrate A/D and D/A circuits. This provides analog I/O performance with the maximum possible accuracy over the full operating temperature range of the product.

"Hercules III is the third generation of our popular EBX SBC and demonstrates our continuing commitment and ability to provide high quality products and long term support to our customers." says Jonathan Miller, President of Diamond Systems. "Providing the same shape, features, and I/O connectors as Hercules II, and offering significantly enhanced performance while maintaining similar power consumption and price, the new Hercules III adds another

#### **Key Features and Functions**

- Compact, highly integrated EBX SBC
- 2-in-1 design (CPU + DAQ) reduces size and cost
- 1.6GHz Intel Atom E680T CPU
- 1GB or 2GB of rugged onboard SDRAM
- 2 Gigabit Ethernet ports
- 5 USB 2.0 ports; 1 CANbus port
- 4 RS-232/422/485; 2 RS-232 serial ports
- VGA CRT and LVDS LCD display
- 1 SATA port; 1 mSATA Disk Module interface
- PS/2 keyboard and mouse
- PCIe MiniCard and GPS modem sockets
- 40 programmable digital I/O lines
- Optional data acquisition circuitry featuring:
  - Multiplexed 32 channel 16-bit A/D
  - 250KHz maximum sample rate
  - 4 12-bit D/A channels
  - 2 counter / timers
  - 4 pulse width modulators
  - Autocalibration with Universal Driver software
- 7-40VDC wide voltage input DC/DC power supply
- -40°C to +85°C operating temperature
- PC/104-Plus (ISA + PCI) stackable I/O
- Dimensions: 4.175" x 4.475" (106mm x 114mm)
- Fully backward compatible with Hercules II SBC with almost 3 times the CPU performance

several years to the lifecycle of products that designed in our earlier generation boards, while requiring minimal redesign efforts by our customers.”

Hercules III’s rugged features include a wide temperature operating range of -40°C to +85°C, 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.

Hercules III is mechanically and functionally backward compatible with Diamond’s Hercules II SBC, while offering almost three times the performance, lower power consumption, and upgraded features. This compatibility extends the lifetime of existing Hercules II applications and demonstrates Diamond Systems’ commitment to long term support.

## Pricing and Availability

The Hercules III single board computer begins shipping in May, 2013. Single unit pricing starts at US\$1,225 for SBCs without data acquisition and US\$1,475 for SBCs with integrated data acquisition. A development kit is also available, DK-HRCE1600A-01, containing a Hercules III SBC with data acquisition, mSATA flashdisk with Linux pre-loaded, cable kit, and documentation. 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 and the RSODIMM™ rugged memory module 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°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](http://www.diamondsystems.com) or call +1-800-367-2104.

### MEDIA RESOURCES

- [Hercules III webpage](#)
- [Hercules III datasheet](#) (pdf)
- [Hercules III photo](#) (jpg)

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