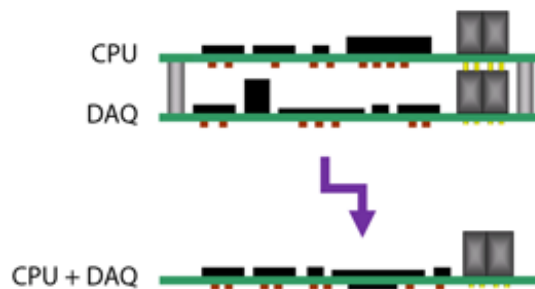


Think Diamond for
2-in-1 SBCs



Why buy two separate computer boards when you can get everything you need in one?

A 2-in-1 SBC combines the standard CPU + system I/O of a traditional single-board computer with a full-fledged data acquisition subsystem to provide double density in the space of a single board. This helps to reduce the size and weight of your embedded system and usually provides cost savings as well.



Benefits of 2-in-1 SBCs:



- ◆ **Size and weight reduction** – the single board is thinner than 2 individual boards, and the elimination of the extra PCB and bus connectors significantly reduces the weight. This is extremely valuable for mobile, robotics, and other applications.
- ◆ **Increased reliability** – Elimination of extraneous connectors and bus interface components improves MTBF of the overall system.
- ◆ **Increased ruggedness** – reduction in size, weight, and interconnects drives up resistance to shock and vibration.
- ◆ **Simplified purchasing and logistics** – Your

2-in-1 SBCs from Diamond Systems

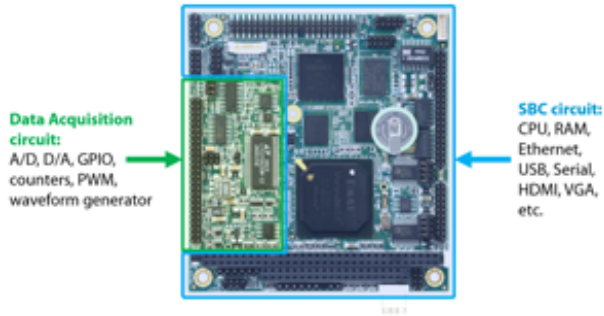
SATURN 



- ◆ Rugged PCIe/104-expandable SBC
- ◆ "Apollo Lake" E3940 quad core 1.6GHz CPU, up to 8GB ECC RAM

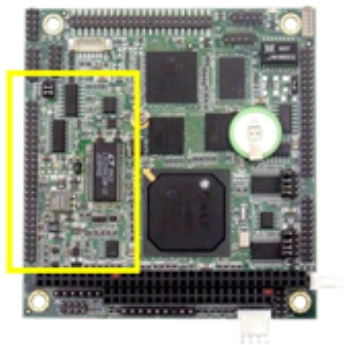
purchasing department only has to buy one product from one vendor, your stockroom saves space, and your assembly effort is reduced.

- ◆ **Simplified support** – compatibility between the two functions (SBC + I/O) is guaranteed, and a single vendor provides all the support, simplifying and improving design-in and support efforts.



Custom SBCs Made Easy:

The PCB area dedicated to the data acquisition circuit also presents a unique opportunity for those interested in a custom SBC. This area can be used to implement your own custom I/O circuit, while retaining the proven SBC circuit on the rest of the board. By eliminating the processor design effort, the total development time, cost, and risk are greatly reduced, and you obtain a perfect fit solution with the optimum size and features for your application.



Standard model 2-in-1 SBC



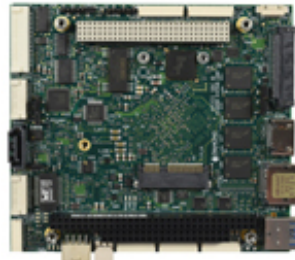
- ◆ Rugged design with latching I/O connectors, thicker PCB, bottom heat spreader, and -40/+85°C
- ◆ Full autocalibrating data acquisition circuit

ATHENA IV NEW!



- ◆ PC/104-expandable COM-based SBC for long life applications
- ◆ "Apollo Lake" E3940 and "Bay Trail" E3845 processors with 4GB RAM
- ◆ Full autocalibrating data acquisition circuit
- ◆ -40/+85°C

ARIES

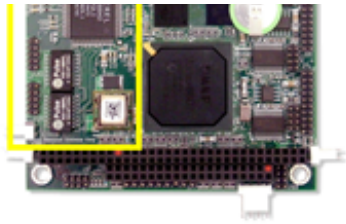


- ◆ Rugged PC/104-Plus expandable (PCI + ISA) SBC
- ◆ "Bay Trail" E3845 quad core 1.91GHz processor and 4GB RAM
- ◆ Rugged design with latching I/O connectors, thicker PCB, bottom heat spreader, and -40/+85°C
- ◆ Full autocalibrating data acquisition circuit

ZETA



◆ Full autocalibrating data acquisition circuit



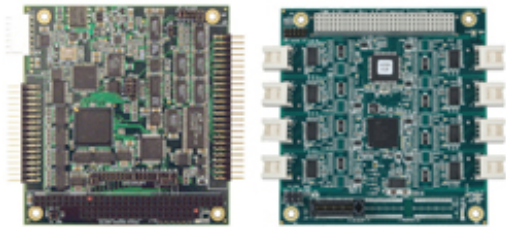
Custom SBC with
Integrated Ethernet switch

[CONTACT US](#)

Need even more I/O?

Diamond Systems has an extensive line of add-on I/O modules to run on our embedded SBCs. Choose from minicard and PC/104 form factors, and select from analog, digital, serial port, and CAN I/O.

PC/104 and PCIe/104 modules



Analog I/O: Up to 32 channels A/D, up to 250K samples/sec, up to 16 channels D/A, 16-bit resolution, autocalibration, high accuracy, **Universal Driver** programming library support with GUI control panel

Digital IO: Up to 96 lines, 3.3V/5V compatibility, pull-up/down resistors, counter/timers, PWM, **Universal Driver** programming library support

Serial ports: 4 or 8 serial ports with RS-232/422/485 operation, software and/or jumper configuration, industry standard UARTS and drivers, optional opto-isolation

CAN ports: 2 or 4 CAN 2.0 ports with isolation, Linux / Windows drivers and GUI

- ◆ Ultra-small COM-based SBC
- ◆ Type 10 COM Express with "Apollo Lake" E3940/N4200 CPU
- ◆ 55x84mm / 2.2x3.3" compact size
- ◆ Integrated analog and digital I/O
- ◆ -40/+85°C

HELIOS



- ◆ Low-cost, low-power Vortex86DX 486-class CPU at 800MHz
- ◆ Full autocalibrating data acquisition circuit
- ◆ PC/104 I/O expansion
- ◆ True PC/104-sized board
- ◆ -40/+85°C

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HELIX



- ◆ Low-cost, low-power Vortex86DX3 3rd generation 486-class CPU at 1GHz
- ◆ Integrated analog and digital I/O
- ◆ PC/104 I/O expansion
- ◆ 4" x 4" form factor
- ◆ -40/+85°C

control panel

MiniCards



Diamond's minicards offer wide temperature performance and latching I/O connectors for use in rugged applications. Universal Driver programming library support is available for analog and digital I/O modules to simplify programming effort.

- ◆ Analog I/O
- ◆ Digital I/O
- ◆ Serial ports
- ◆ Opto-isolated serial ports
- ◆ Ethernet
- ◆ CAN with isolation and driver support

Diamond Systems is the pioneer of small form factor, rugged x86 COM-based SBCs with integrated data acquisition. Our products are used around the world in military, medical, industrial, and transportation applications where small size, ruggedness, I/O, and long lifetime are requirements.

Additional products are available with ARM and Nvidia Jetson modules!

[LEARN MORE](#)



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