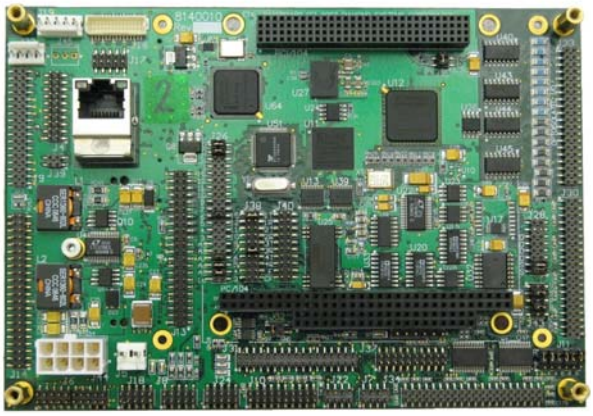
NEPTUNE

HIGHLY INTEGRATED EMBEDDED SBC WITH USER-SELECTABLE ETX CPU PROCESSOR CORE



- Highest level of integration in a single board computer: Replaces 6 individual boards
- ETX CPU core provides flexibility in price/performance, reduces cost and protects against obsolescence
- Choice of AMD LX800 up to Intel Core 2 Duo processors with 512MB to 2GB system memory
- Best-in-class analog data acquisition with autocalibration and software support
- 5V, 7-28V DC/DC power supply for easier system integration
- EPIC format with PC/104-*Plus* expansion provides compact size with flexibility

DESCRIPTION

Neptune introduces a new concept in small form factor embedded SBCs. The CPU core consists of an ETX module which mounts on the bottom side of the baseboard for improved thermal management. This technique provides more room on the top for I/O features. The result is an efficient, cost-effective, reliable and compact embedded SBC rich in I/O and other user benefits. Neptune is the first 6-in-1 embedded SBC integrating processor, system I/O, data acquisition and even a DC/DC power supply onto a single board in the compact EPIC format.

You can select from a wide range of ETX CPU modules from a world-class supplier to tailor Neptune's price and performance to you application and budget. A PC/104-Plus expansion connector enables you to add still more I/O or features if needed, and the built in 5V or 7-28V input DC/DC power supply provides flexibility in integrating the SBC with your system power supply. These features give Neptune an unsurpassed level of value and flexibility in a small form factor embedded SBC.

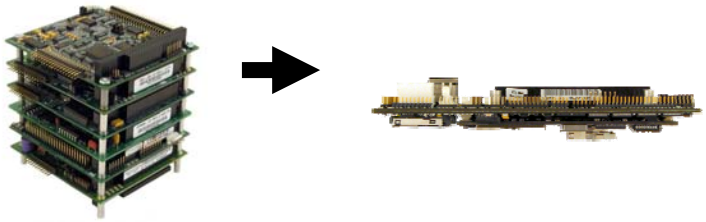
DATA ACQUISITION

Neptune includes Diamond Systems' top-of-the-line data acquisition circuitry with the industry's widest set of I/O features:

- 32 analog inputs, 16-bit A/D, 250KHz sample rate
- 4 analog outputs, 12-bit D/A
- 24 digital I/O
- 8 opto-isolated digital inputs
- 8 opto-isolated digital outputs
- 2 counter/timers for A/D sample rate control
- Universal Driver software support for C programming under Windows and Linux

Integrates the functions of 6 boards into 1!

- CPU
- Data Acquisition
- Opto-isolated Digital I/O
- Multiprotocol Serial Ports
- Gigabit Ethernet
- DC/DC Power Supply



BENEFITS OF 6-in-1 INTEGRATION

LESS SPACE: Smaller and thinner than a stack of PC/104 boards

LOWER COST: An integrated solution eliminates extra PCBs and connectors to lower the unit cost

HIGHER RELIABILITY: Less interconnects and components, resulting in higher reliability

MORE RUGGED: The flatter profile and reduction in connectors makes Neptune far more rugged in mobile applications

SINGLE VENDOR: Purchasing and stocking are easier with a single board

SAVES TIME: Assembly effort is dramatically reduced, shortening your total system integration time

BENEFITS OF AN ETX PROCSSOR CORE

Choice of Price/Performance

Neptune is available with a low power AMD LX800 up to an Intel Atom N270 so you can obtain exactly the performance and price point you need.

Protection from Obsolescence

Easily switch processor modules in case of processor end of life.

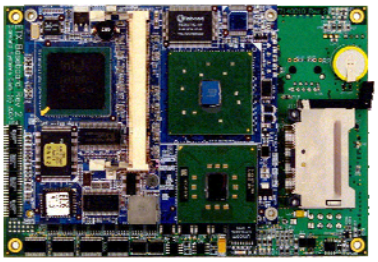
Easy Upgrade

ETX CPUs are interchangeable, allowing you to easily upgrade your system with minimal or no redesign.

Low Cost

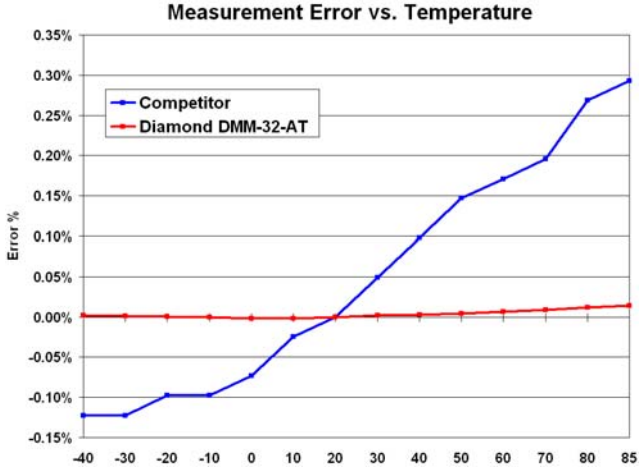
ETX modules cost less than their equivalent single board computer, resulting in a lower total cost for Neptune.

Underside of Neptune showing ETX CPU module



AUTOCALIBRATION FOR BEST MEASUREMENT ACCURACY

Diamond Systems' top-performing autocalibration circuitry enables you to calibrate the analog circuits under software control at any time, maintaining best accuracy under any conditions. Temperature and time dependent measurement drift is eliminated, as the SBC can be calibrated as often as desired in just a few seconds to ensure accurate readings in all environmental conditions.



THERMAL MANAGEMENT

Neptune places the processor on the bottom side of the baseboard. An integrated heat spreader makes thermal contact with the heat generating components on the ETX CPU module and provides a flat surface on the bottom side for mating to the system enclosure. This technique provides for efficient removal of heat from the CPU without the need for a fan.

ETX CPU MODULE OPTIONS

Processor	0/+60°C	-30/+85°C
AMD LX800 500MHz	Yes	Yes
Intel Pentium M 1.4GHz	Yes	Yes
Intel Atom N270 1.6GHz	Yes	Yes

SYSTEM I/O FEATURES

All Neptune models include the following standard CPU I/O features in addition to the data acquisition and DC/DC power supply.

Serial Ports	2 RS-232, 4 RS-232/422/485
USB	4 ports, 1.1 or 2.0 depending on ETX module
PS/2	Keyboard and mouse interfaces
Ethernet	1 10/100Mbps from ETX module 1 Gigabit Ethernet using Intel 82541 and on-board RJ-45 jack
Parallel and Floppy	User selectable through ETX module configuration
Audio	AC'97 (Mic in, Line in, Line out)
IDE	1 44-pin connector for solid state flashdisk 1 44-pin connector for hard disk interface
CompactFlash	1 socket for Type I/II device
VGA, LCD	Performance depends on ETX module

ACCESSORIES

Panel I/O Board

The panel I/O board plugs onto the front row of pin headers to provide cable-free access to the standard system I/O: serial ports, USB, Ethernet, PS/2, VGA and power input. The panel I/O board is designed to work with the Triton enclosure as a complete enclosure system, or in a standalone configuration.

Cable Kit

A cable kit provides cables for all the I/O features on Neptune including those on the panel I/O board. All cables are available separately as well.

Memory

Neptune uses DDR SODIMM modules with capacities ranging from 512MG to 1GB depending on the choice of ETX CPU module.

Development Kits

A quick start Development Kit includes everything you need to get started with your application development including:

- Neptune SBC with ETX CPU module of your choice
- 1GB of SODIMM RAM installed
- Heat spreader installed
- 128MB flashdisk module with embedded Linux
- Panel I/O board
- Cable Kit
- AC power adapter
- Fast Start Guide and software on CD

OPERATING SYSTEM SUPPORT

Neptune supports the following operating systems:

Windows XP/XPe, Windows CE, Linux

Optional upon request: VxWorks, QNX

ORDERING INFORMATION

Part Number	Description
NPT-LX8A-512A	Neptune SBC, 500MHz LX800 CPU, 512MB RAM, on-board data acquisition
NPT-LX8A-512N	Neptune SBC, 500MHz LX800 CPU, 512MB RAM, no data acquisition
NPT-LX8A-1GA	Neptune SBC, 500MHz LX800 CPU, 1GB RAM, on-board data acquisition
NPT-LX8A-1GN	Neptune SBC, 500MHz LX800 CPU, 1GB RAM, no data acquisition
NPT-PM14-512A	Neptune SBC, 1.4GHz Pentium M CPU, 512MB RAM, on-board data acquisition
NPT-PM14-512N	Neptune SBC, 1.4GHz Pentium M CPU, 512MB RAM, no data acquisition
NPT-PM14-1GA	Neptune SBC, 1.4GHz Pentium M CPU, 1GB RAM, on-board data acquisition
NPT-PM14-1GN	Neptune SBC, 1.4GHz Pentium M CPU, 1GB RAM, no data acquisition
DK-NPTLX8-01	Neptune LX800 Development Kit: SBC with data acquisition, cable, flashdisk with Linux, documentation & software CD
DK-NPTPM14-01	Neptune Pentium M Development Kit: SBC with data acquisition, cable, flashdisk with Linux, documentation & software CD
DK-LNX-NPT	Neptune Linux Development Kit with 512MB flashdisk
C-NPT-KIT	Neptune Cable Kit
TRI-NPT-KIT	Triton EPIC Enclosure Kit including Neptune Panel I/O Board and Cable Kit
TRI-NPT-K	Triton EPIC Enclosure for Neptune
PNL-NPT-KIT	Neptune Panel I/O Board Kit including cables
PNL-NPT-01	Neptune Panel I/O Board

FOR MORE INFORMATION

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