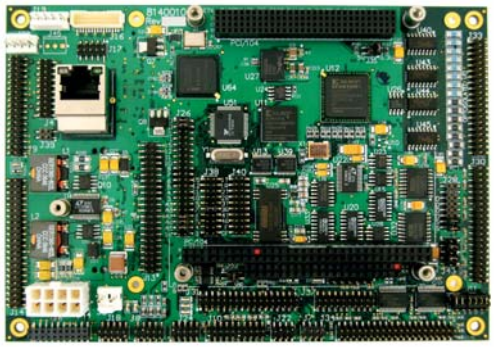
Neptune™ SBC

EPIC® form-factor Embedded-Ready Subsystem with interchangeable ETX CPUs, integrated data acquisition, and PC/104-*Plus*™ expansion



Highly Integrated Embedded-Ready Subsystem (ERS)

Neptune integrates an I/O application layer, COM layer, and thermal layer into a compact, EPIC form-factor board-level subsystem.

Price/Performance Advantage

Neptune's configurable ETX COM CPU core allows you to match a Neptune ERS to the precise price/performance needs of your application.

Access to the Latest Technology

Neptune's ETX-based design provides you with access to the latest CPU and I/O technology while protecting your investment from CPU obsolescence via plug compatible ETX CPU modules.

Fast Time-to-Market

Neptune is a fully operational, off-the-shelf subsystem ready for deployment in your application. No custom baseboard development is necessary.

Development Kit

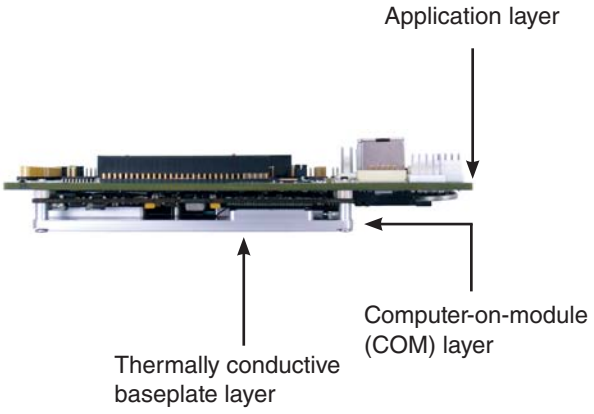
Complete Neptune Development Kits are available, with all the components you need to get started on your embedded design project. Each kit contains a Neptune ERS, cable kit, and software CD.

Software Support

Neptune runs Linux and Windows XP™ and XP Embedded. Diamond's industry-leading Universal Driver software is also included at no extra charge. It provides a C programming library for the integrated data acquisition circuit, and demo programs to assist in rapid application development.

Key Features

- Integrates the functions of six PC/104 modules within the compact EPIC form-factor
- ETX COM CPU core provides price/performance flexibility, reduces costs, and protects against product obsolescence
- Choice of Intel© Atom™ or Core Duo™ LV CPUs
- Provides I/O connectors for a wide range of interfaces:
  - 10/100Mbps and Gigabit Ethernet LAN
  - IDE, SATA, CompactFlash, and floppy drives
  - Quad USB 2.0
  - Two RS-232/422/485 serial ports
  - CRT, LVDS, and TV video output
  - PS/2 keyboard and mouse
- On-board 40W 8-28V DC/DC power supply
- Optional on-board data acquisition subsystem features multiplexed 32 channel 16-bit A/D with autocalibration, four 12-bit D/A, 24 digital I/O, 8 optoisolated inputs and outputs, and two counter/timers
- Operating temperature of -40°C to +85°C or -20°C to +71°C, ETX COM model dependent
- Expands via stackable PC/104-*Plus* (ISA & PCI) modules



NEPTUNE SBC: EPIC-sized Embedded-Ready Subsystem

SPECIFICATIONS

Processor	Choice of 1.6GHz Intel Atom N270 or 1.66GHz Core Duo LV CPU
Front side bus	Atom N270: 533MHz Core Duo LV: 667MHz
Memory	1GB or 2GB SO-DIMM DDR2 SDRAM
Chipset	Atom N270: 945GSE with ICH7M Core Duo LV: 945GME with ICH7M
BIOS	Phoenix-Award BIOS
Mass storage	2 SATA ports support 1 device each; 1 IDE port supports 2 IDE devices including on-board CompactFlash IDE Type II socket
Serial ports	4 RS-232/422/485 ports (COM1-4) 2 RS-232 ports (COM5-6)
USB ports	4 USB 2.0 ports
Networking	1 10/100Base-T Ethernet from ETX CPU 1 Gigabit Ethernet from baseboard
Display	LCD (LDVS), VGA CRT, and TV output
Keyboard/Mouse	1 PS/2 keyboard and mouse
Watchdog timer	Non-maskable interrupt or reset modes
Other I/O	SMBus, IrDA interface
Audio	AC'97 audio CODEC; mic in, line in/out
Expansion bus	PC/104-*Plus* (ISA & PCI) interface
Power supply	8-28V 40W DC/DC power supply on-board
Power input	+5VDC +/- 5%
Power consumption	NPT-N270-1GA: 10.3W idle, 14.2W loaded NPT-945CDL-1GA: 14.2W idle, 23.5W loaded
Operating temperature	NPT-N270-xGA: -20°C to +71°C NPT-945CDL-xGA: -40°C to +85°C
Operating humidity	0 ~ 90% non-condensing
Dimensions (L x W x H)	NPT-N270-xGA: 4.5 x 6.5 x 1.77 in. (114 x 165 x 45 mm) NPT-945CDL-xGA: 4.5 x 6.5 x 2.24 in. (114 x 165 x 57 mm)
Weight (with SO-DIMM)	NPT-N270-xGA: 14.6 oz (414 g) NPT-945CDL-xGA: 22 oz (624 g)
RoHS	Compliant

ORDERING INFORMATION

NPT-N270-2GA	Neptune ERS, 1.6GHz Atom N270 CPU, 2GB SO-DIMM SDRAM, DAQ, heatspreader
NPT-N270-2GN	Neptune ERS, 1.6GHz Atom N270 CPU, 2GB SO-DIMM SDRAM, no DAQ, heatspreader
NPT-N270-1GA	Neptune ERS, 1.6GHz Atom N270 CPU, 1GB SO-DIMM SDRAM, DAQ, heatspreader
NPT-N270-1GN	Neptune ERS, 1.6GHz Atom N270 CPU, 1GB SO-DIMM SDRAM, no DAQ, heatspreader
NPT-945CDL-2GA	Neptune ERS, 1.66GHz Core Duo LV CPU, 2GB SO-DIMM SDRAM, DAQ, heatspreader
NPT-945CDL-2GN	Neptune ERS, 1.66GHz Core Duo LV CPU, 2GB SO-DIMM SDRAM, no DAQ, heatspreader
NPT-945CDL-1GA	Neptune ERS, 1.66GHz Core Duo LV CPU, 1GB SO-DIMM SDRAM, DAQ, heatspreader
NPT-945CDL-1GN	Neptune ERS, 1.66GHz Core Duo LV CPU, 1GB SO-DIMM SDRAM, no DAQ, heatspreader
DK-NN270	Neptune 270 Development Kit: NPT-N270-1GA, cable kit, OS drivers
DK-N945CDL	Neptune 270 Development Kit: NPT-945CDL-1GA, cable kit, OS drivers
C-NPT-KIT	Neptune Cable Kit for all on-board I/O

Block Diagram