

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

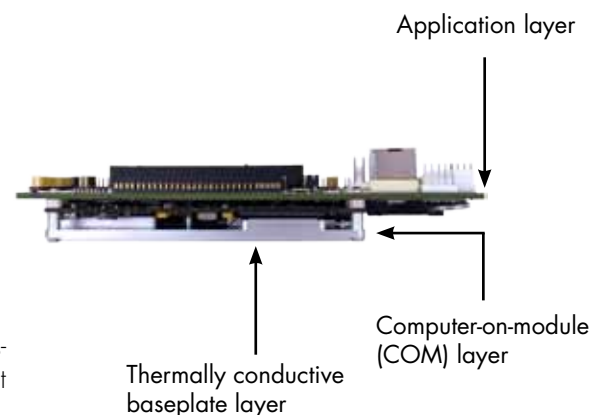
Complete Neptune Development Kits are available, with all the components you need to get started on your embedded design project. Each kit contains a Neptune ERS, cable kit, and software CD.

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 and CompactFlash
 - Quad USB 2.0
 - Four RS-232/422/485 and two RS-232 serial ports
 - CRT and LVDS 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



SPECIFICATIONS		ORDERING INFORMATION	
Processor	Choice of Intel 1.6GHz Atom N270, 1.6GHz Atom N450, or 1.66GHz Core Duo LV CPU	NPT-N450RK-1GAW	Neptune ERS, 1.6GHz Atom N450 CPU, 1GB RAM, DAQ, -40/+85, wide voltage input
Front side bus	Atom N450: 667MHz Atom N270: 533MHz Core Duo LV: 667MHz	NPT-N450RK-1GA5	Neptune ERS, 1.6GHz Atom N450 CPU, 1GB RAM, DAQ, -40/+85, +5V input
Memory	1GB or 2GB SO-DIMM DDR2 SDRAM	NPT-N450RK-2GAW	Neptune ERS, 1.6GHz Atom N450 CPU, 2GB RAM, DAQ, -40/+85, wide voltage input
Chipset	Atom N450: 945GSE with ICH8M Atom N270: 945GSE with ICH7M Core Duo LV: 945GME with ICH7M	NPT-N450RK-2GA5	Neptune ERS, 1.6GHz Atom N450 CPU, 2GB RAM, DAQ, -40/+85, +5V input
BIOS	Phoenix-Award BIOS	NPT-N270RK-1GAW	Neptune ERS, 1.6GHz Atom N270 CPU, 1GB RAM, DAQ, -20/+71, wide voltage input
Mass storage	2 SATA ports support 1 device each; 1 IDE port supports 2 IDE devices including on-board CompactFlash IDE Type II socket	NPT-N270RK-1GA5	Neptune ERS, 1.6GHz Atom N270 CPU, 1GB RAM, DAQ, -20/+71, +5V input
Serial ports	4 RS-232/422/485 ports (COM1-4) 2 RS-232 ports (COM5-6)	NPT-N270RK-2GAW	Neptune ERS, 1.6GHz Atom N270 CPU, 2GB RAM, DAQ, -20/+71, wide voltage input
USB ports	4 USB 2.0 ports	NPT-N270RK-2GA5	Neptune ERS, 1.6GHz Atom N270 CPU, 2GB RAM, DAQ, -20/+71, +5V input
Networking	1 10/100Base-T Ethernet from ETX CPU 1 Gigabit Ethernet from baseboard	NPT-N270XT-1GAW	Neptune ERS, 1.6GHz Atom N270 CPU, 1GB RAM, DAQ, -40/+85, wide voltage input
Display	LCD (LVDS) and VGA CRT	NPT-N270XT-1GA5	Neptune ERS, 1.6GHz Atom N270 CPU, 1GB RAM, DAQ, -40/+85, +5V input
Keyboard/Mouse	1 PS/2 keyboard and mouse	NPT-N270XT-2GAW	Neptune ERS, 1.6GHz Atom N270 CPU, 2GB RAM, DAQ, -40/+85, wide voltage input
Watchdog timer	Non-maskable interrupt or reset modes	NPT-N270XT-2GA5	Neptune ERS, 1.6GHz Atom N270 CPU, 2GB RAM, DAQ, -40/+85, +5V input
Other I/O	SMBus, IrDA interface	NPT-945CDL-1GA	Neptune ERS, 1.66GHz Core Duo LV CPU, 1GB RAM, data acquisition, -40/+85, wide voltage input
Audio	AC'97 audio CODEC; mic in, line in/out	NPT-945CDL-1GA5	Neptune ERS, 1.66GHz Core Duo LV CPU, 1GB RAM, data acquisition, -40/+85, +5V input
Expansion bus	PC/104-Plus (ISA & PCI) interface	NPT-945CDL-2GA	Neptune ERS, 1.66GHz Core Duo LV CPU, 2GB RAM, data acquisition, -40/+85, wide voltage input
Power supply	8-28V 40W DC/DC power supply on-board	NPT-945CDL-2GA5	Neptune ERS, 1.66GHz Core Duo LV CPU, 2GB RAM, data acquisition, -40/+85, +5V input
Power input	+5VDC +/- 5%	DK-NN450RK-W	Neptune N450 Development Kit: NPT-N450RK-1GAW, cables, flashdisk, AC adapter
Power consumption	NPT-N270RK-1GA5: 10.3W idle, 14.2W loaded NPT-945CDL-1GA: 14.2W idle, 23.5W loaded	DK-NN450RK-5	Neptune N450 Development Kit: NPT-N450RK-1GA5, cables, flashdisk, AC adapter
Operating temperature	NPT-N270RK-xGAy: -20°C to +71°C All other models: -40°C to +85°C	DK-NN270RK-W	Neptune N270 Development Kit: NPT-N270RK-1GAW, cables, flashdisk, AC adapter
Operating humidity	0 ~ 90% non-condensing	DK-NN270RK-5	Neptune N270 Development Kit: NPT-N270RK-1GA5, cables, flashdisk, AC adapter
Dimensions (L x W x H)	NPT-N450RK-xGAy: 4.5 x 6.5 x 1.77 in. (114 x 165 x 45 mm) NPT-N270xx-xGAy: 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)	DK-N945CDL-W	Neptune 945 Development Kit: NPT-945CDL-1GA, cables, flashdisk, AC adapter
Weight (with SO-DIMM)	NPT-N450RK-xGAy: 14.4 oz (411 g) NPT-N270xx-xGAy: 14.6 oz (414 g) NPT-945CDL-xGA: 22 oz (624 g)	DK-N945CDL-5	Neptune 945 Development Kit: NPT-945CDL-1GA5, cables, flashdisk, AC adapter
RoHS	Compliant		

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