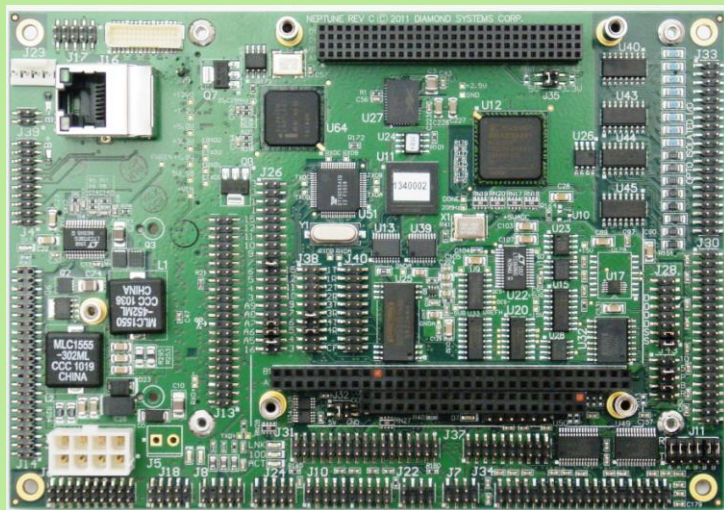


NEPTUNE EPIC SBCs



EPIC SBCs with Interchangeable CPUs,
integrated data acquisition, and PC/104-Plus expansion



Highly Integrated SBC

Neptune integrates an I/O application layer, COM layer, and thermal layer into a compact, EPIC form-factor single board computer. The SBC family offers a configurable ETX COM CPU core that allows you to match a Neptune SBC to the precise price/performance needs of your application and integrates the functionality of six PC/104 modules into a single SBC.

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.

Rugged Design

Neptune SBCs feature an operating temperature of -40°C to +85°C, rugged DDR3 SDRAM, and a high tolerance for shock and vibration, making it an ideal choice for vehicle, outdoor and harsh environment applications.

The processor is located on the bottom side with a conduction cooling heat spreader to efficiently transfer the heat away from the SBC.

Software Support

Neptune runs Linux, Windows® XP and Windows Embedded Standard. All OS drivers are shipped with the product. Diamond's Universal Driver software provides a C programming library for the integrated data acquisition circuit.

CPU FEATURES

- ◆ Interchangeable ETX CPU core module provides price/performance flexibility and protects against product obsolescence
- ◆ Choice of CPUs:
 - 1.91GHz Intel Atom E3845 quad core
 - 1.65GHz AMD Fusion G-T56N
 - 1.0GHz AMD Fusion G-T40N
- ◆ Supports up to 8GB DDR3 SO-DIMM SDRAM

I/O FEATURES

- ◆ Integrates the functions of 6 PC/104 modules into a compact EPIC SBC
- ◆ 1 10/100Mbps and 1 Gigabit Ethernet LAN
- ◆ 4 USB 2.0 ports
- ◆ 2 SATA ports
- ◆ 1 IDE port
- ◆ 4 RS-232/422/485 port
- ◆ 2 RS-232 ports
- ◆ LVDS LCD support
- ◆ VGA output
- ◆ AC'97 audio
- ◆ PS/2 keyboard & mouse
- ◆ Watchdog timer
- ◆ On-board CompactFlash socket
- ◆ PC/104-Plus expansion (ISA + PCI)

OPTIONAL DATA ACQUISITION FEATURES

- ◆ Multiplexed 32 channel 16/bit A/D with Autocalibration
- ◆ 4 channel 12-bit D/A
- ◆ 24 digital I/O lines
- ◆ 8 opto-isolated digital inputs
- ◆ 8 opto-isolated digital outputs
- ◆ 2 counter / timers

GENERAL

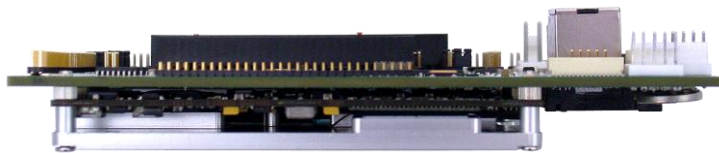
- ◆ ETX COM mounted on the bottom improves thermal management and increases space for I/O functions and connectors on top
- ◆ On-board 40W 8-28V DC/DC power supply
- ◆ EPIC form factor: 4.5" x 6.5" (114mm x 165mm)
- ◆ -40°C to +85°C or -20°F to +71°F operating temperature (model dependent)

Specifications

Processor	1.91GHz Intel Atom E3845 quad core, 1.65GHz AMD Fusion G-T56N or 1.0GHz AMD Fusion G-T40N CPU
Cooling	Heat spreader
Memory	Supports up to 8GB DDR3 SO-DIMM SDRAM
BIOS	UEFI or Insyde BIOS, model dependent
Display	LVDS LCD VGA CRT
USB ports	4 USB 2.0
Serial ports	4 RS-232/422/485 ports (COM1 – 4) 2 RS-232 ports (COM5 – 6)
Networking	1 10/100Base-T Ethernet from ETX CPU 1 Gigabit Ethernet from baseboard 2 SATA ports support 1 device each
Mass storage	1 IDE port supports 2 IDE devices including CompactFlash IDE Type II socket
Keyboard/Mouse	PS/2
Audio	AC'97 audio CODEC; mic in, line in/out
Analog input	32 16-bit inputs
Sample rate	250KHz maximum
Analog output	4 12-bit D/A
Digital I/O	24 DIO lines; 3.3V/5V compatible
Optoisolated DIO	8 inputs and 8 outputs; 3-24V range
Counter / timers	2 programmable counter/timers
Watchdog timer	Non-maskable interrupt or reset modes
Other I/O	SMBus, IrDA interface
I/O expansion	PC/104-Plus (ISA + PCI) interface
Input power	+5VDC +/-5% or 40W 8-28V DC-to-DC power supply
Power consumption	NPT-E3845-xG: 14.7W typical NPT-E3825-xG: 11.8W typical NPT-T40N-xG: 11W typical NPT-T56N-xG: 16.1W typical
Operating temp	-20°C to +71°C (-4°F to +160°F) or -40°C to +85°C (-40°F to +185°F) model dependent
Operating humidity	0-90% non-condensing
Shock & Vibration	MIL-STD-202G compatible
Dimensions	4.5" x 6.5" x 1.77" (114mm x 165mm x 32mm)
Weight	14.6 oz (414g) with heatspreader and SO-DIMM
RoHS	Compliant

Ordering Information

NPT-E3845XT-4GAW	Neptune SBC, 1.91GHz Intel E3845 quad core CPU, 4GB SO-DIMM SDRAM, data acquisition, wide voltage input, -40°C to +85°C
NPT-E3845XT-4GA5	Neptune SBC, 1.91GHz Intel E3845 quad core CPU, 4GB SO-DIMM SDRAM, data acquisition, +5V input, -40°C to +85°C
NPT-E3845XT-8GAW	Neptune SBC, 1.91GHz Intel E3845 quad core CPU, 8GB SO-DIMM SDRAM, data acquisition, wide voltage input, -40°C to +85°C
NPT-E3845XT-8GA5	Neptune SBC, 1.91GHz Intel E3845 quad core CPU, 8GB SO-DIMM SDRAM, data acquisition, +5V input, -40°C to +85°C
NPT-T56N-4GAW	Neptune SBC, 1.65GHz AMD Fusion G-T56N CPU, 4GB SO-DIMM SDRAM, data acquisition, wide voltage input, -20°C to +71°C
NPT-T56N-4GA5	Neptune SBC, 1.65GHz AMD Fusion G-T56N CPU, 4GB SO-DIMM SDRAM, data acquisition, +5V input, -20°C to +71°C
NPT-T56N-2GAW	Neptune SBC, 1.65GHz AMD Fusion G-T56N CPU, 2GB SO-DIMM SDRAM, data acquisition, wide voltage input, -20°C to +71°C
NPT-T56N-2GA5	Neptune SBC, 1.65GHz AMD Fusion G-T56N CPU, 2GB SO-DIMM SDRAM, data acquisition, +5V input, -20°C to +71°C
NPT-T40N-4GAW	Neptune SBC, 1.0GHz AMD Fusion G-T40N CPU, 4GB SO-DIMM SDRAM, data acquisition, wide voltage input, -20°C to +71°C
NPT-T40N-4GA5	Neptune SBC, 1.0GHz AMD Fusion G-T40N CPU, 4GB SO-DIMM SDRAM, data acquisition, +5V input, -20°C to +71°C
NPT-T40N-2GAW	Neptune SBC, 1.0GHz AMD Fusion G-T40N CPU, 2GB SO-DIMM SDRAM, data acquisition, wide voltage input, -20°C to +71°C
NPT-T40N-2GA5	Neptune SBC, 1.0GHz AMD Fusion G-T40N CPU, 2GB SO-DIMM SDRAM, data acquisition, +5V input, -20°C to +71°C
C-NPT-KIT	Neptune Cable Kit for most on-board I/O



Neptune SBC side view

