ETX-N270 COMs

Low-power, high-performance ETX Computer-on-Modules featuring the 1.6GHz Intel Atom N270 CPU

◆ ETX 3.0 compliant

◆ Low power, high-performance, rugged

◆ Based on the 1.6GHz Intel Atom processor

◆ SO-DIMM socket supports up to 2GB DDR2 SDRAM

◆ Hi-res CRT, dual-channel 18-bit LVDS, and SDVO video

◆ SATA, IDE, USB 2.0, serial, AC'97 audio

◆ 10/100Mbps Ethernet LAN

◆ Dual expansion buses: 32-bit PCI and 16-bit ISA

◆ -20°C to +71°C (-2°F to +160°F) or -40°C to +85°C (-40°F to +185°F) operating temperature

Ideal for Embedded Applications

Diamond's ETX-N270 computer-on-modules (COMs) are compact, low-power, and powerful embedded computing cores suitable for powering a wide range of embedded applications. To support real-world applications subject to temperature extremes, the modules are rated for operation over an enhanced temperature range.

Reduce Development Costs

By plugging these high-quality, plug-and-play COMs into standard or custom application baseboards, OEMs can reduce development costs, minimize design risks, and shorten time-to-revenue while benefiting from the latest embedded technologies. The ETX-N270 is also available pre-integrated in our Pluto Embedded-Ready Subsystem.

Highly Integrated Module

The ETX-N270 integrates a complete set of PC-compatible functions, including a high performance, low-power Intel Atom processor and up to 2GB of high-speed system memory.

In addition, the module also provides interface controllers for high-resolution CRT and LVDS-interfaced displays, 10/100Mbps Ethernet, and both SATA and IDE storage devices, as well as USB 2.0, serial, parallel, audio, and PS/2 ports.

Maximum Application Flexibility

For maximum application flexibility, the ETX-N270 can be interfaced to application-specific circuitry via both 32-bit PCI and 16-bit ISA expansion buses.

Block Diagram
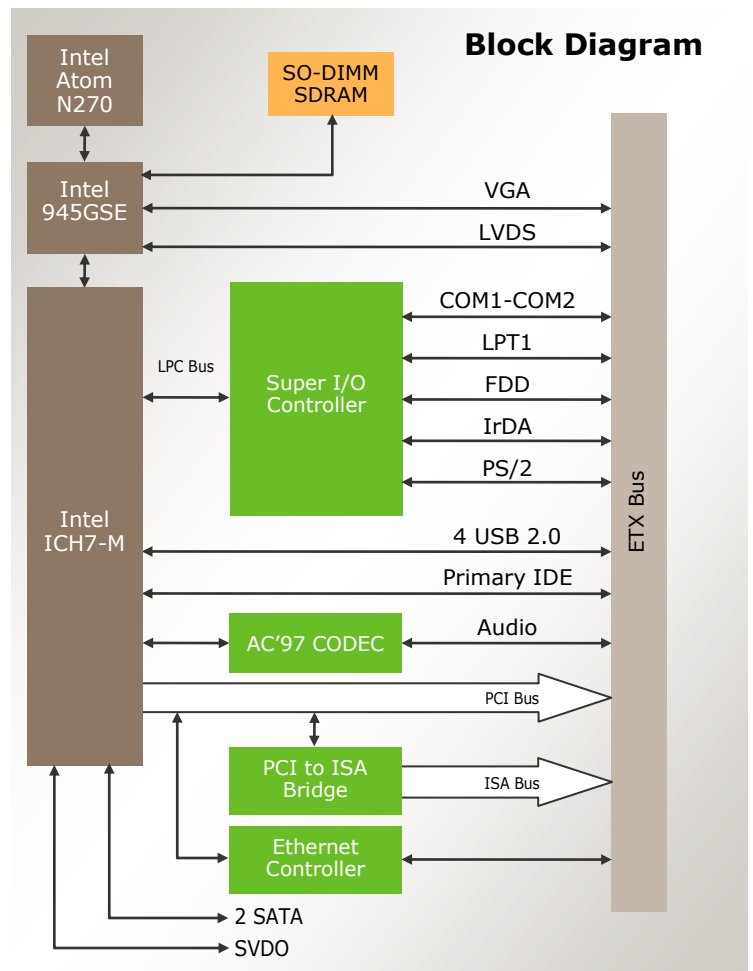
ETX-N270 Series COMs

Specifications

Processor	Intel Atom N270 at 1.6GHz
Chipset	Intel 945GSE with Intel ICH7M
Front side bus	533MHz
L2 cache	512KB
Memory	200-pin SO-DIMM socket support up to 2GB DDR2 SDRAM
BIOS	Phoenix Award PnP
Graphics	Intel GMA950 graphics core Up to 2048 x 1536 resolution RGB CRT output Dual channel 18-bit LVDS output SDVO interface (VGA, DVI, LVDS, TV out) Supports dual independent displays
Audio	AC'97 CODEC (Realtek ALC655) Mic in, line in/out
USB ports	4 USB 2.0
Serial ports	2 COM ports with logic-level signaling
Networking	10/100Base-T Ethernet (Realtek 8103EL)
Mass storage	2 SATA ports with 150MB/s data rate 1 IDE port, supports 2 devices
Parallel/Floppy	SPP/EPP/ECP or floppy (shared interface)
Keyboard/Mouse	PS/2 keyboard and mouse ports (USB keyboard and mouse also supported)
Other	SMBus, IrDA serial interfaces; PC speaker interface; watchdog timer
Expansion buses	32-bit PCI bus (4 PCI masters) 16-bit ISA bus
Form-factor	ETX 3.0 compliant 4.5 x 3.7 in. (114 x 95 mm)
Supply voltage	+5VDC
Power consumption	9W idle, 13W loaded
Operating temperature	-20°C to +71°C (-2°F to +160°F) or -40°C to +85°C (-40°F to +185°F)
Humidity	0 to 90% non-condensing
Weight	2.8oz / 79g
RoHS	Compliant

## ETX COM Development Systems

In addition to the ETX-N270 COMs themselves, Diamond offers pre-integrated development kits based on generic or application-oriented ETX baseboards. This increases project efficiency and reduces risks by providing a known good environment for rapid application development.

To simplify the development process, these kits' ETX baseboards each provide I/O connectors for quick and easy access to nearly all system interfaces, a CompactFlash socket, and modular PC/104-*Plus* expansion. They also come with SO-DIMM memory, an extensive set of interface cables, and full documentation and software.

In addition to these features, the Pluto ETX form-factor baseboard adds two serial ports, RS-232/422/485 buffering, digital I/O, a second Ethernet LAN interface, and digital I/O. Alternately, the Neptune EPIC form-factor baseboard adds four serial ports, RS-232/422/485 buffering, a gigabit Ethernet LAN interface, a wide-input (5V/7-28V) DC-to-DC power supply, and an industry-leading data acquisition subsystem option.

ETX form-factor baseboard
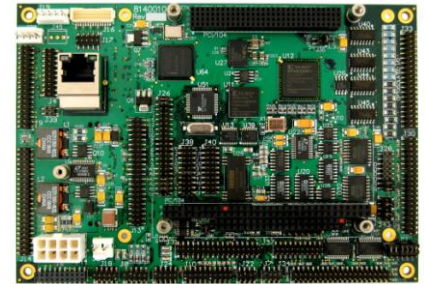
EPIC form-factor baseboard

Software Support

The ETX-N270 Series COMs are compatible with Windows XP and Linux 2.6 operating systems. Contact Diamond for information regarding support for other operating systems.

Custom Baseboard Designs

Through more than 20 years of experience producing industry-leading data acquisition I/O on PC/104 and PC/104-*Plus* modules and single-board computers, Diamond has developed an extensive library of analog, digital, and I/O interface technology. This expertise is now available in the form of application-specific baseboards tuned to fit precise customer requirements, coupled with ETX COMs that implement the processing power needed to drive the application.

Ordering Information

ETX-N270XT-1600	ETX COM with Intel 1.6GHz Atom N270 CPU, -40°C to +85°C
ETX-N270RK-1600	ETX COM with Intel 1.6GHz Atom N270 CPU, -20°C to +71°C
MEM-2048-05	2GB DDR2 SDRAM SO-DIMM module
MEM-1024-05	1GB DDR2 SDRAM SO-DIMM module
6884011	ETX COM heatsink for ETX-N270 COM
6884012	ETX COM heatspreader for ETX-N270 COM
DK-NN270RK	Neptune N270 Development Kit: includes ETX-N270RK-1600, MEM-1024-05, 6884012, Neptune baseboard with all features, cable kit, panel I/O board, drivers for Linux and Windows, and documentation
DK-PN270RK	Pluto N270 Development Kit: includes ETX-N270RK-1600, MEM-1024-05, 6884012, Pluto baseboard, cable kit, drivers for Linux and Windows, and documentation