

# ETX-945 Series

## COMPUTER-ON-MODULE CORES FOR CUSTOM EMBEDDED SYSTEMS



- ETX 3.0 compliant
- High performance, low power, rugged
- Available with Intel® Core 2 Duo, Core Duo, or Celeron M CPUs in standard, LV, and ULV technologies
- SO-DIMM socket supports up to 2GB DDR2 SDRAM
- Hi-res CRT and dual-channel 24-bit LVDS video
- SATA, IDE, USB 2.0, serial, AC97 audio
- 10/100 Mbps Ethernet LAN
- Dual expansion buses: 32-bit PCI and 16-bit ISA
- -40°C to +85°C extended operating temperature

### DESCRIPTION

Diamond's ETX-945 Series computer-on-modules (COMs) are compact embedded computing cores suitable for powering a wide range of embedded applications. By plugging these powerful 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.

Each Diamond ETX-945 Series COM integrates a complete set of PC-compatible functions, including a high-performance, low-power Intel processor and up to 1GB of high-speed DDR2 system DRAM.

In addition to these core computing functions, the modules also provide 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, audio, serial, parallel, and PS/2 ports.

For maximum application flexibility, all of Diamond's ETX-945 Series ETX COMs can be interfaced to application-specific circuitry via both 32-bit PCI and 16-bit ISA expansion buses. To support applications which are subject to temperature extremes, the modules also feature an extended operating temperature range of -40°C to +85°C.

The ETX-945 Series supports Windows XP and Linux operating systems.

<b>Processor</b>	Intel Core 2 Duo, Core Duo or Celeron M in standard, LV, or ULV technologies
<b>Chipset</b>	Intel 945GME with Intel ICH7M
<b>Front Side Bus</b>	533MHz or 667MHz, CPU dependent
<b>L2 Cache</b>	Up to 4MB, CPU dependent
<b>System Memory</b>	200-pin SO-DIMM socket for up to 2GB DDR2 SDRAM (400/533/667MHz)
<b>BIOS</b>	Phoenix Award PnP
<b>Graphics</b>	Intel GMA950 graphics core Up to 2048x1536 resolution RGB CRT output Dual channel 24-bit LVDS output Supports dual independent displays
<b>Audio</b>	AC'97 CODEC (Realtek ALC655) Mic in, line in/out
<b>USB Ports</b>	4 USB 2.0 ports
<b>Serial Ports</b>	2 COM ports with logic-level signaling
<b>Networking</b>	10/100Base-T Ethernet (Intel 82562)
<b>Mass Storage</b>	2 SATA ports with 150MB/s data rate 1 PATA port; supports 2 IDE devices
<b>Parallel/Floppy</b>	SPP/EPP/ECP or floppy (shared interface)
<b>Keyboard/Mouse</b>	PS/2 keyboard and mouse ports (USB keyboard/mouse also supported)
<b>Other</b>	SMBus, I2C, IrDA serial interfaces; PC speaker interface; watchdog timer
<b>Expansion Buses</b>	32-bit PCI bus (4 PCI masters) 16-bit ISA bus
<b>Dimensions</b>	4.5" x 3.7" (114mm x 95mm)
<b>Weight</b>	2.8oz (79g)
<b>Power Consumption</b>	CPU dependent (see table on next page)
<b>Operating Temp</b>	-40°C to +85°C
<b>Humidity</b>	0 to 90% non-condensing
<b>Form Factor</b>	ETX 3.0 Compliant
<b>RoHS</b>	Compliant

## ETX COM DEVELOPMENT SYSTEMS

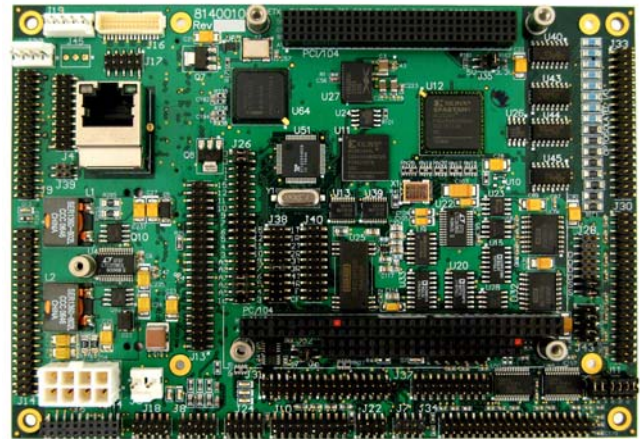
In addition to the ETX-945 COMs themselves, Diamond offers pre-integrated development kits based on generic or application-oriented ETX baseboards. The baseboards provide I/O connectors for quick and easy access to nearly all system interfaces, plus additional serial and digital I/O ports, a second Ethernet interface, 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. The EPIC form-factor Neptune baseboard also adds an industry-leading data acquisition interface.



*ETX (above) and EPIC (below) form-factor baseboards*

## 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 implement the processing power needed to drive the application.



## DEVELOPMENT & MANUFACTURING SERVICES

To further assist OEMs using our ETX-COM products, Diamond also offers the following value-added development and manufacturing services:

- Custom application baseboard design
- Operating system and device drivers
- BIOS customization and support
- Burn-in and screening
- Conformal coating
- Extended temperature testing
- Full systems integration
- Program management

## ORDERING INFORMATION

Part Number	Description	CPU Style	FSB Rate	L2 Cache	Power Consumption	
					Idle	Heavily Loaded
ETX-945-T7400	* ETX COM with Intel 2.16GHz Core 2 Duo CPU	Socketed	667MHz	4MB	12W	41W
ETX-945-L7400	* ETX COM with Intel 1.5GHz Core 2 Duo LV CPU	Soldered	667MHz	4MB	12W	24W
ETX-945-U7500	* ETX COM with Intel 1.06GHz Core 2 Duo ULV CPU	Soldered	533MHz	2MB	12W	17W
ETX-945-L2400	ETX COM with Intel 1.66GHz Core Duo LV CPU	Soldered	667MHz	2MB	12W	22W
ETX-945-U2500	* ETX COM with Intel 1.2GHz Core Duo ULV CPU	Soldered	533MHz	2MB	12W	16W
ETX-945-CM423	* ETX COM with Intel 1.06GHz Celeron M ULV CPU	Soldered	533MHz	1MB	12W	13W

\* Note: These models are special order only.

Accessory Part Number	Description
MEM-2048-05	2GB DDR2 SDRAM SO-DIMM module
MEM-1024-05	1GB DDR2 SDRAM SO-DIMM module
6884020	ETX COM heat spreader for ETX-945 soldered-on CPUs
6884022	ETX COM heatsink with fan for ETX-945 soldered-on CPUs
6884024	ETX COM heatsink with fan for ETX-945 CPUs in socket
DK-N945CDL	Neptune 945 Development Kit
DK-P945	Pluto 945 Development Kit