Procelerant™

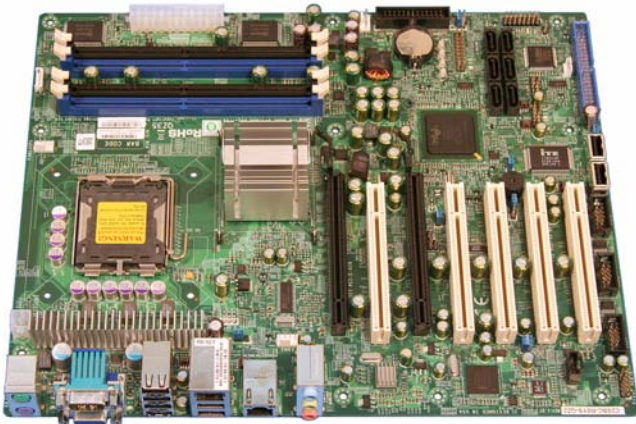## Q35 ATX MOTHERBOARD
QUICK START GUIDE

Endura QZ35Q

This information is provided to help system designers quickly configure, install, and operate a RadiSys QZ35Q ATX motherboard. Refer to the *Endura Q35 Motherboard Product Manual* for more detailed information.

Important precautions

WARNING!

When installing the motherboard into a chassis or performing upgrades:

- Always disconnect the power cord and plug before assembling or upgrading. Parts on the motherboard can remain powered even when the power supply is switched off unless the power cord is disconnected.
- Route wiring away from sharp edges, heat sources and cooling fans.
- Pay attention to the thermal requirements as stated in the sections that follow. This motherboard requires suitable airflow to maintain an ambient temperature within the operating range.
- When installing expansion cards, pay attention to the maximum loads as stated. Use UL-approved peripheral cards only.
- There is a risk of explosion if the battery is replaced with an incorrect type. Dispose of used batteries according to the manufacturer's instructions. Refer to the *Endura Q35 Motherboard Product Manual* for further information.

Electrostatic discharge

WARNING!

- This product contains static-sensitive components. Use the electrostatic discharge (ESD) procedures described at www.radisys.com/esd when you work with the motherboard.
- Wear a grounded wrist strap at a grounded work area when you touch or come in contact with the motherboard.
- Keep the motherboard in its ESD shielding bag until a step instructs you to remove it.
- Failure to employ adequate anti-static measures can cause irreparable damage to the motherboard and other hardware components.

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Quick Start

To install and operate your motherboard, do the following:

- Install the motherboard into a suitable chassis.
- Attach all necessary components and peripheral devices to the appropriate headers and connectors on the board.
- Power on the system.
- Run the BIOS setup utility if you need to change any settings. To start the BIOS setup utility, press the Delete key when prompted during system startup.
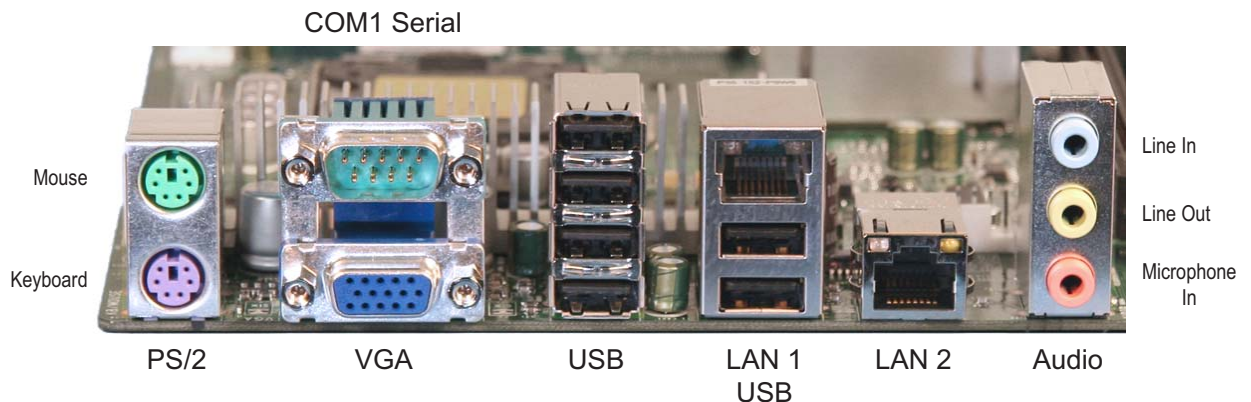
Attaching components and devices

See *Figure 2, "Motherboard layout: top view"* on page 3 for the location of components and connectors on the motherboard. Refer to the *Endura Q35 Motherboard Product Manual* for further information on interfaces and supported devices.

Attaching devices to the rear I/O panel

The I/O ports are color-coded in conformance with the PC 99 specification, and are designed to accept standard cables. If necessary, refer to the product manual for the pin definitions of each connector.
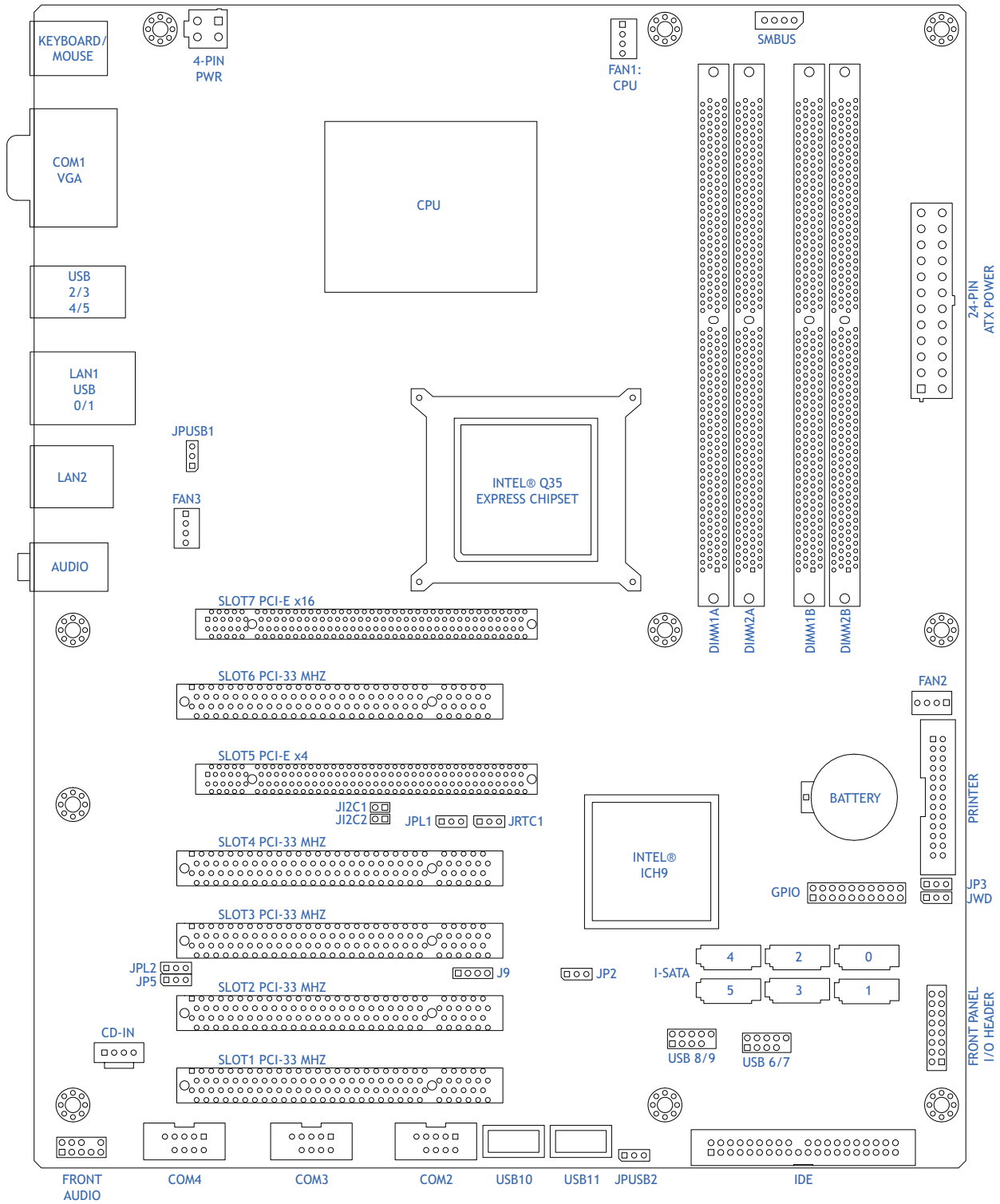
Figure 1. Rear I/O panel

Video devices

The motherboard can be used with the following video devices:

1. VGA monitor, connected to the rear I/O panel VGA port
2. PCI Express x16 graphics cards[1]
3. Media expansion cards

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[1]   A second PCI Express x16 card can be used in the PCI Express x4 slot, but will have a reduced bandwidth.

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Figure 2. Motherboard layout: top view

KEYBOARD/ MOUSE

4-PIN PWR

SMBUS

FAN1: CPU

COM1 VGA

CPU

24-PIN ATX POWER

USB 2/3 4/5

LAN1 USB 0/1

JPUSB1

INTEL® Q35 EXPRESS CHIPSET

LAN2

FAN3

AUDIO

SLOT7 PCI-E x16

DIMM1A DIMM2A DIMM1B DIMM2B

SLOT6 PCI-33 MHZ

FAN2

SLOT5 PCI-E x4

JI2C1 JI2C2 JPL1 JRTC1

PRINTER

BATTERY

SLOT4 PCI-33 MHZ

INTEL® ICH9

SLOT3 PCI-33 MHZ

GPIO JP3 JWD

JPL2 JP5 J9 JP2 I-SATA

SLOT2 PCI-33 MHZ

4 2 0

5 3 1

CD-IN

USB 8/9 USB 6/7

SLOT1 PCI-33 MHZ

FRONT PANEL I/O HEADER

FRONT AUDIO COM4 COM3 COM2 USB10 USB11 JPUSB2 IDE

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Power supply

The QZ35Q ATX motherboard requires a 12V ATX power supply. Although most power supplies generally meet the specifications required by the CPU, some are inadequate. Make sure that the power supply you select can provide a 2-Amp current supply on a 5V standby rail.

It is strongly recommended that you use a high-quality power supply that meets 12V ATX power supply specification 1.1 or above. It is also required that the 12V 4-pin power connection (J41) be used for high-load configurations. In areas where power transmissions are present, you may choose to install a line filter to shield the computer from noise. It is recommended that you also install a power surge protector to help avoid problems caused by power surges.

Connecting the power supply

1. Ensure that the AC power cord is disconnected.
2. Attach the 24-pin main power supply connector to the 24-pin ATX power connector on the motherboard (J40).
3. Insert the 4-pin power supply into the 4-pin ATX 12V connector (J41).
4. Connect the AC power cord.

Processor support

The motherboard supports the following Intel® embedded processors.

- Intel Core™ 2 Duo E6400
- Intel Core 2 Duo E4300
- Intel Pentium® Dual-Core E2160
- Intel Celeron® 440

If a processor you are interested in is not mentioned in this list, refer to the *Procelerant Endura Q35 ATX Motherboard Tested Processors List* on the RadiSys Web site for the latest information.

CPU and active heatsink Installation

Refer to the installation instructions accompanying the processor, or visit the Intel web site to view the *Boxed Intel® Processors in the 775-land Package - Integration Video*.

If you purchase a CPU without active heatsink, make sure that you use only an Intel-certified, multi-directional heatsink and fan.
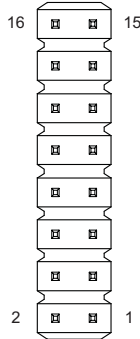
WARNING!

Be careful not to bend the pins when installing or removing the CPU. This is a common cause of system failure. To avoid bending the pins, handle the CPU with extreme care and insert it straight down into the CPU socket. When removing the CPU, pull it straight up out of the socket.

System memory

The motherboard provides four DIMM memory sockets. It supports up to 8 GB of unbuffered non-ECC DDR2 677/800 MHz in 4 DIMMs. Refer to the Endura QZ35Q downloads page on the RadiSys Web site for a list of tested memory modules for this motherboard.

Front panel I/O header

The front panel I/O header (JF1) is located by the edge of the motherboard, near the IDE and SATA connectors. This header contains pins for various buttons and indicators that are typically on the front of the chassis.

PIN#	Description	PIN#	Description	Wiring Notes
16	Power LED	15	LED_Anode+	Connect pins 15 and 16 to the power LED
14	HDD LED	13	LED_Anode+	Connect pins 13 and 14 to the hard disk drive (HDD) LED to display disk activity
12	NIC1 LED	11	LED_Anode+	Connect pins 11 and 12 to the NIC1 LED to display network activity
10	NIC2 LED	9	LED_Anode+	Connect pins 9 and 10 to the NIC2 LED to display network activity
8	OH/Fan fail LED	7	LED_Anode+	Connect pins 7 and 8 to the overheat/fan failure LED
6	–	5	–	Not connected
4	Ground	3	Reset button	Connect pins 3 and 4 to the hardware reset button
2	Ground	1	Power button	Connect pins 1 and 2 to the power button

Jumpers

You may notice jumpers installed in various locations on the motherboard. The factory settings should work for most applications, and will only need to be changed in rare circumstances. Refer to the *Procelerant Endura Q35 Motherboard Product Manual* for further information.

Configuring BIOS settings

Most of BIOS configurations are handled by the BIOS setup utility, which stores configuration settings in non-volatile flash memory.

It is a good idea to check the BIOS settings before installing the operating system to make sure the default settings are appropriate for devices you have installed. To enter the BIOS setup utility, press the Delete key during system startup. After installing the operating system, you may also want to change the boot order in the BIOS, so that the hard disk is checked first.

If problems are encountered during system startup, error messages may be displayed on the monitor. You may also want to use a diagnostic card that reads POST codes to determine where the system encountered problems.

For further information, refer to the *Procelerant Endura Q35 Motherboard Product Manual* and BIOS setup utility screen help.

Installing the operating system and device drivers

This motherboard has been tested with the following operating systems. Note that some devices drivers may not yet be available.

- Microsoft® Windows Vista® Premium
- Microsoft Windows® XP Professional, SP2
- Windows XP Embedded, SP2
- Red Hat® Enterprise Linux® 4.0 AS
- Novell® SUSE® Linux Professional 10.0
- Knoppix Linux 5.0.1
- Sun™ Solaris™ 10 Update 4

1. Install the operating system using a bootable CD-ROM. Follow the installation instructions provided with the operating system.

2. Download the drivers for the required operating system from the RadiSys Web site. These are available on the downloads page for the Q35 motherboard. For detailed instructions on installing each driver, refer to the *Procelerant Endura Q35 Motherboard Driver Installation Guide*.

Where to get more product information

For additional product information, visit the motherboard product pages on the RadiSys Web site at www.radisys.com for access to datasheets, product documentation, BIOS releases, and drivers.