RadiSys®

Embedded Motherboards

# Endura EM440 ATX
# Rev. B

# *QuickStart Guide*

***The following information is provided to help you begin using your RadiSys EM440 ATX motherboard as quickly as possible.***

The RadiSys EM440 is an ATX-family motherboard that meets the ATX form factor specification. It is based around an Intel Celeron or Pentium III socket 370 processor and an Intel 440BX chipset.

## *PSU*

It is recommended that an ATX style 'soft-switched' power supply be used to power the board. A 'hard-switched' power supply will also work as long as it has the facility of providing 3.3V. Beware that some power management features will not be supported using 'hard-switched' PSU's as they do not have a $5V_{SBY}$ output.

## *CPU*

The motherboard supports Socket 370 PGA Celeron® and FC-PGA Pentium® III processors operating at 66MHz and 100MHz FSB (Front Side Bus). Processors from 300MHz upto 850MHz are currently supported. Processor core multipliers and voltages are set automatically by the processor, which eliminates the need for any CPU speed jumpers. For proper cooling of the processor an active (fan) heat sink is recommended and a connector (J13) is provided for this.

## *RAM*

Two 168-pin DIMM sockets are fitted to the motherboard which accept 64-bit wide unbuffered PC-100 SDRAM modules with Serial Presence Detect (SPD), providing a maximum capacity of 512MB.
The EM440 motherboard does support 72-bit wide ECC memory. When using ECC modules enable ECC mode using the BIOS setup facility during startup.

## *Hardware*

The current hardware revision 01(Rev B) does not have an operational USB interface, this has been fixed in revision 02(Rev C) and later.

## *BIOS*

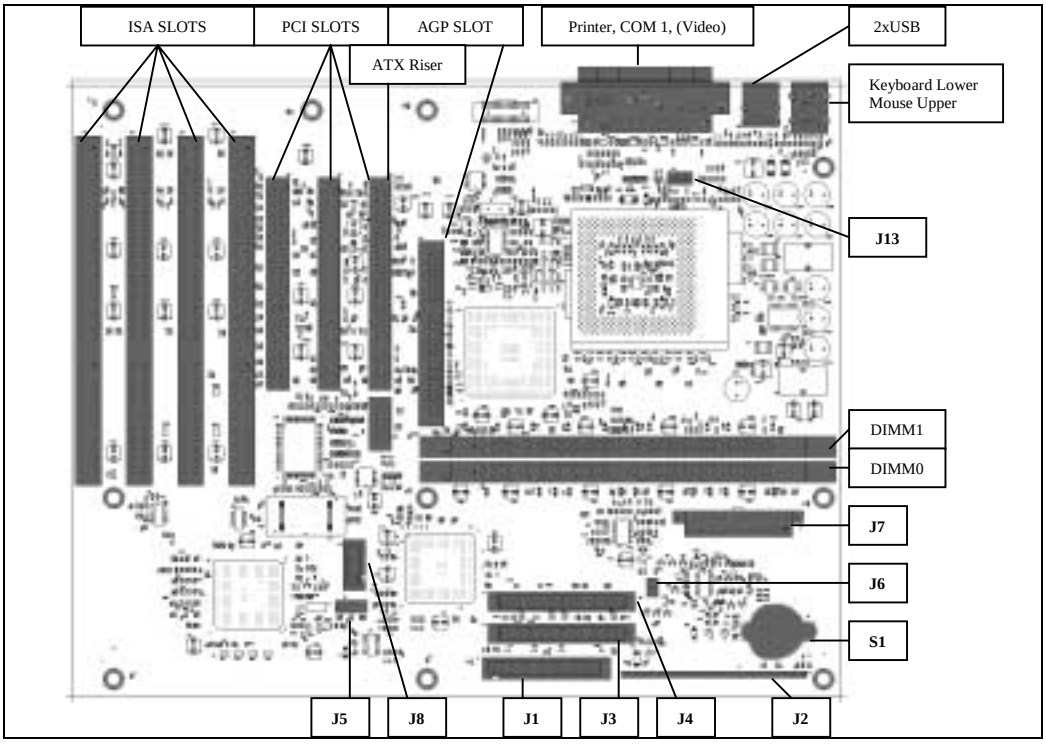
Configuration of the motherboard, in the majority of cases, is achieved through BIOS settings. Please note that the BIOS is currently in its early stages of development and sample boards may be supplied with a pre-release BIOS in which not all options/settings are available. BIOS updates will be made available for download during the course of the BIOS development and will be in the downoad library on the Radisys web site www.radisys.com. See the Motherboard section under Intel CPU Platforms.

## *Drivers*

The currently validated software drivers for the Video device on the motherboard, for Windows9x, WindowsNT and Windows2000 operating systems, are posted in the downoad library on the Radisys web site www.radisys.com. See the Motherboard section under Intel CPU Platforms.

## *Motherboard Connectors*

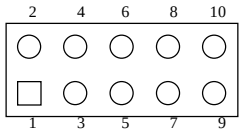
The following diagram shows the location of the motherboard connectors.




| | |
|---|---|
| J1 | Floppy Diskette Connector |
| J2 | Front Panel Header |
| J3 | Primary IDE Connector |
| J4 | Secondary IDE Connector |
| J5 | BIOS Recovery Jumper |
| J6 | Hard/Soft Switch PSU selection |
| J7 | ATX Power Connector |
| J8 | Serial Port COM2 Header |
| J13 | Processor Fan (+12V) |
| S1 | CR2032 Battery |

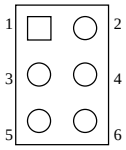
## *Connector Pin Outs*

**BIOS Recovery Jumper (J5)**
The BIOS recovery jumper block allows the EM440 BIOS flash device to be unprotected so that new BIOS code can be written during re-flash updates.




| Description | Pins to Link |
|---|---|
| Normal | None |
| BIOS Recovery | 3-8 & 5-6 |
| Post Loop | 9-10 |

**Hard/Soft Switch PSU jumper (J6)**
The EM440 can be configured for hard or soft switch power supplies.




| PSU Mode | Pins to Link |
|---|---|
| Hard Switch | 1-3 & 5-6 |
| Soft Switch | 1-2 & 4-6 (Default) |

**Front Panel Connector (J2)**
The front panel connector has positions for LEDs, switches, speaker and chassis fan

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| Pin No. | Description | Pin No. | Description | Pin No. | Description |
|---|---|---|---|---|---|
| 1 | GND (0V) | 11 | HD LED PWR | 21 | NC |
| 2 | Chassis FAN +12V | 12 | ~HD ACTIVITY LED | 22 | Key |
| 3 | GND (0V) | 13 | GND (0V) | 23 | NC |
| 4 | GND (0V) | 14 | HD LED PWR | 24 | NC |
| 5 | ~RESET SWITCH | 15 | POWER SWITCH | 25 | Key |
| 6 | NC | 16 | GND (0V) | 26 | Speaker O/P |
| 7 | POWER LED(+5V) | 17 | NC | 27 | Speaker O/P |
| 8 | POWER LED(+5V) | 18 | NC | 28 | Key |
| 9 | GND (0V) | 19 | NC | 29 | GND (0V) |
| 10 | GND (0V) | 20 | Key | | |