K8S-LA

(Salmon)

Motherboard

Contents

K8S-LA specifications summary

CPU	Socket 754 for AMD Athlon® 64 processor with HyperTransport support
Chipset	SiS760 SiS964
Front Side Bus (FSB)	1600 MT/s @ 800 MHz
Memory	2 x 184-pin DDR DIMM sockets support unbuffered non-ECC 2 GB 400/333/266 MHz DDR SDRAM memory modules
Expansion slots	3 x PCI slots 1 x AGP slot
Storage	2 x Ultra DMA 100/66/33 2 x Serial ATA
Audio	Realtek® ALC658C 6-channel CODEC
LAN	Realtek® RTL8201CL LAN PHY Fast Ethernet LAN controller
IEEE 1394	VIA VT6307 supports two IEEE 1394a ports
PC health monitoring	ASUS A8000 for CPU/Chassis fan control and CPU temperature monitoring
BIOS features	4 Mb LPC EEPROM Award BIOS with enhanced ACPI, DMI, Green, and PnP Features Plus
Form factor	Micro-ATX form factor: 9.6 in x 9.6 in
Rear panel	1 x PS/2 mouse port 1 x Parallel port 1 x IEEE 1394a port 1 x LAN (RJ-45) port 6-channel audio ports 4 x USB 2.0 ports 1 x VGA port 1 x Serial port 1 x PS/2 keyboard port

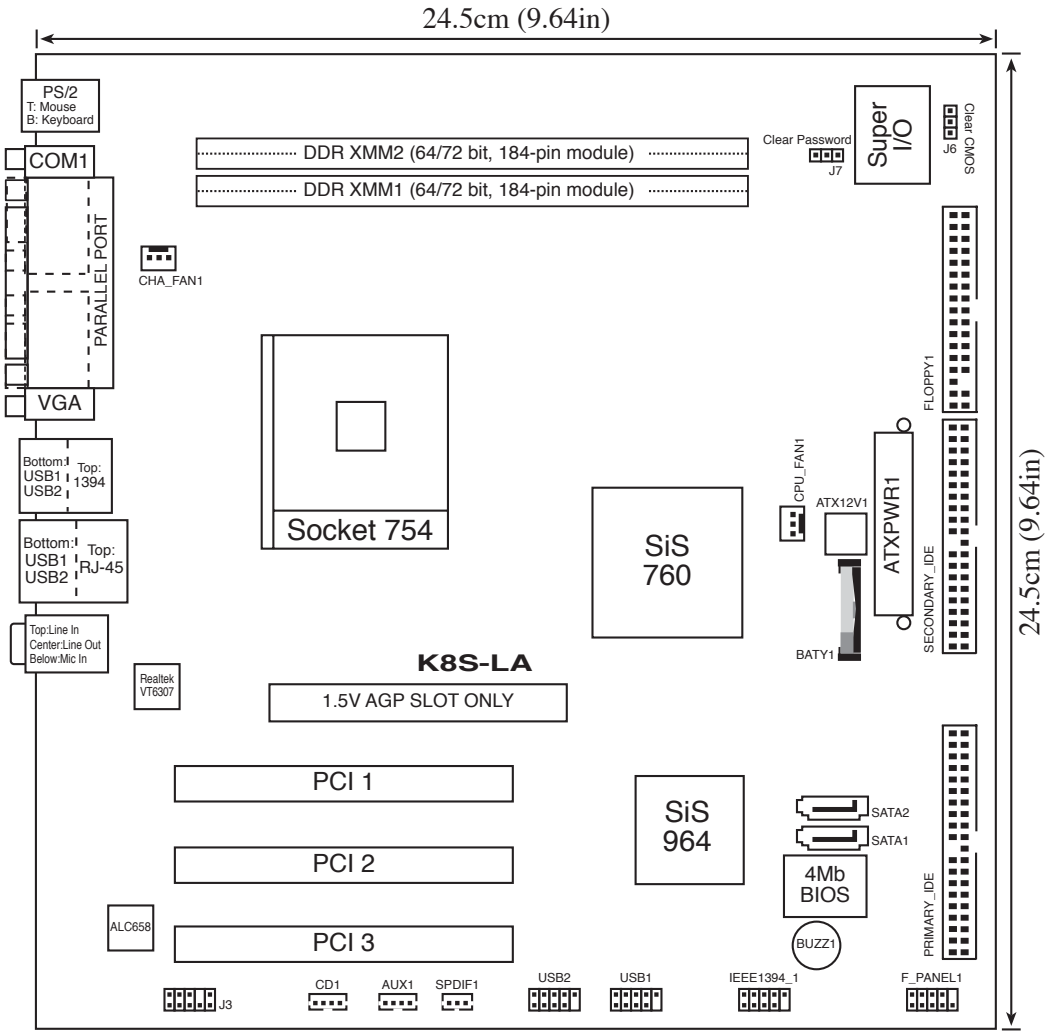
(continued on the next page)

K8S-LA specifications summary

Internal connectors	1 x Floppy disk drive connector 2 x IDE connectors 1 x 20-pin ATX power connector 1 x 4-pin ATX 12V power connector 2 x Serial ATA connectors 1 x IEEE 1394a connector 2 x USB 2.0 connectors support for four additional USB 2.0 ports 1 x CPU fan connector 1 x Chassis fan connector 1 x CD in connector 1 x AUX connector 1 x SPDIF out connector 1 x Front panel audio connector System panel connector

** Specifications are subject to change without notice*

1. Motherboard layout



2. Central Processing Unit (CPU)

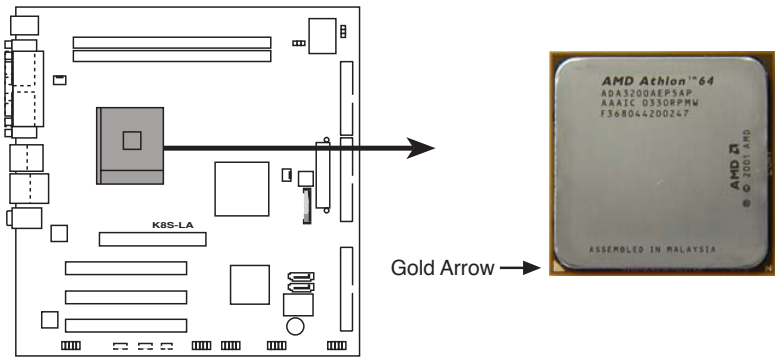
The motherboard comes with a surface mount 754-pin Zero Insertion Force (ZIF) socket designed for the AMD Athlon™ 64 processor. Take note of the marked corner (with gold triangle) on the CPU. This mark should match a specific corner on the socket to ensure correct installation.

Incorrect installation of the CPU into the socket may bend the pins and severely damage the CPU!

2.1 Installing the CPU

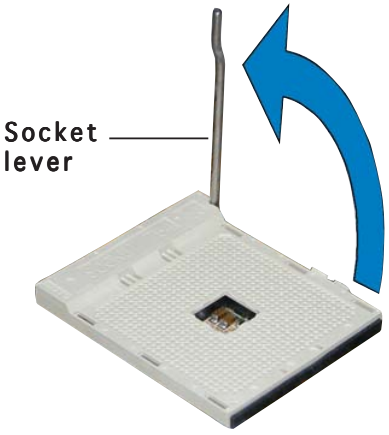
Follow these steps to install a CPU.

1. Locate the 754-pin ZIF socket on the motherboard.



K8S-LA CPU Socket 754

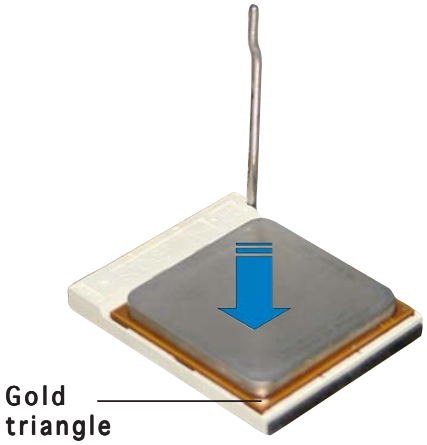
2. Unlock the socket by pressing the lever sideways, then lift it up to a 90°-100° angle.



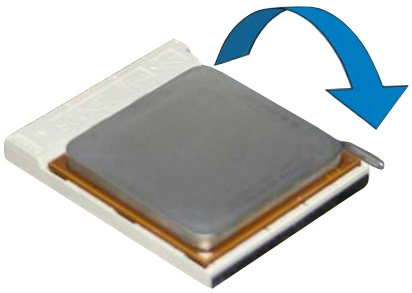
Make sure that the socket lever is lifted up to 90°-100° angle, otherwise the CPU does not fit in completely.

3. Position the CPU above the socket such that the CPU corner with the gold triangle matches the socket corner with a small triangle.

4. Carefully insert the CPU into the socket until it fits in place.



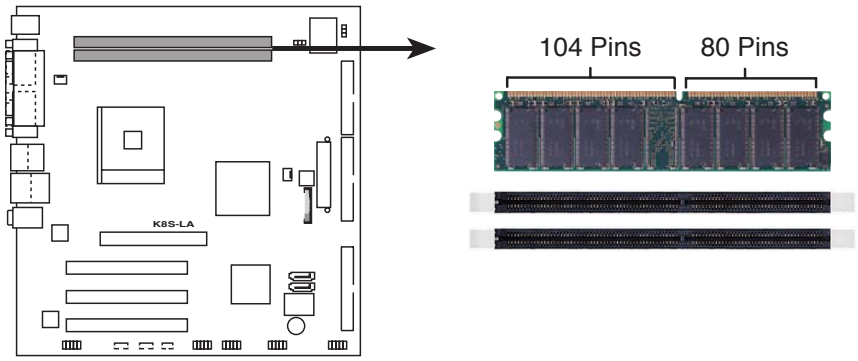
5. When the CPU is in place, push down the socket lever to secure the CPU. The lever clicks on the side tab to indicate that it is locked.
6. Install a CPU heatsink and fan following the instructions that came with the heatsink package.
7. Connect the CPU fan cable to the CPU_FAN connector on the motherboard.



3. System memory

The motherboard comes with two Double Data Rate (DDR) Dual Inline Memory Module (DIMM) sockets. These sockets support up to 2 GB system memory using 184-pin unbuffered non-ECC PC3200/PC2700/PC2100/ PC1600 double-sided DDR DIMMs.

The following figure illustrates the location of the DDR DIMM sockets.



K8S-LA 184-pin DDR DIMM sockets

Memory configurations

You can install 128 MB, 256 MB, 512 MB, and 1 GB DDR DIMMs into the DIMM sockets using the memory configurations in this section.

A DDR DIMM is keyed with a notch so that it fits in only one direction. DO NOT force a DIMM into a socket to avoid damaging the DIMM.

Recommended memory configurations

		Sockets	
Mode		XMM1	XMM2
Single-channel	(1)	Installed	—
	(2)	—	Installed
	(3)*	Installed	Installed

**** Use only identical DDR DIMM pairs.***

Memory frequency/CPU FSB synchronization

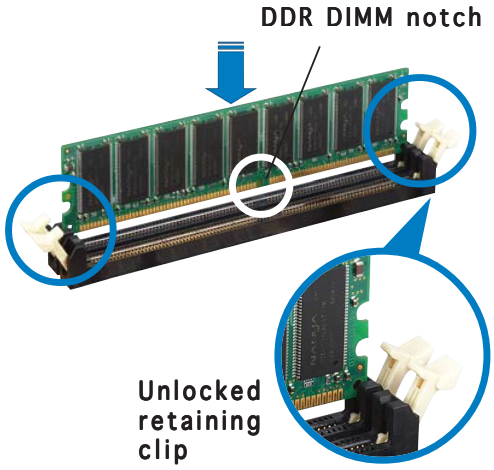
CPU FSB	DDR DIMM Type	Memory Frequency
1600 MT/s @ 800 MHz FSB	PC3200/PC2700/PC2100	400/333/266 MHz

Installing a DIMM

Make sure to unplug the power supply before adding or removing DIMMs or other system components. Failure to do so can cause severe damage to both the motherboard and the components.

Follow these steps to install a DIMM.

1. Unlock a DIMM socket by pressing the retaining clips outward.
2. Align a DIMM on the socket such that the notch on the DIMM matches the break on the socket.
3. Firmly insert the DIMM into the socket until the retaining clips snap back in place and the DIMM is properly seated.



4. Expansion slots

The motherboard has one PCI Express and three PCI slots.

To install and configure an expansion card:

1. Install an expansion card following the instructions that came with the chassis.
2. Turn on the system and change the necessary BIOS settings, if any.
3. Assign an IRQ to the card. Refer to the tables below.
4. Install the drivers and/or software applications for the expansion card according to the card documentation.

Standard interrupt assignments

IRQ	Priority	Standard Function
0	1	System Timer
1	2	Keyboard Controller
2	N/A	Programmable Interrupt
3*	11	Communications Port (COM2)
4*	12	Communications Port (COM1)
5*	13	Sound Card (sometimes LPT2)
6	14	Floppy Disk Controller
7*	15	Printer Port (LPT1)
8	3	System CMOS/Real Time Clock
9*	4	ACPI Mode when used
10*	5	IRQ Holder for PCI Steering
11*	6	IRQ Holder for PCI Steering
12*	7	PS/2 Compatible Mouse Port
13	8	Numeric Data Processor
14*	9	Primary IDE Channel
15*	10	Secondary IDE Channel

* These IRQs are usually available for ISA or PCI devices.

IRQ assignments for this motherboard

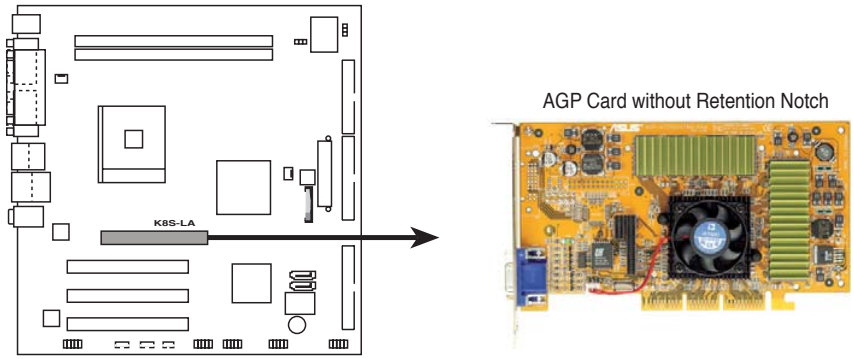
	A	B	C	D	E	F
PCI slot 1	shared	—	—	—	—	—
PCI slot 2	—	used	—	—	—	—
PCI slot 3	—	—	used	—	—	—
AGP slot	shared	—	—	—	—	—
Onboard VT6307 1394a controller	shared	—	—	—	—	—

When using PCI cards on shared slots, ensure that the drivers support "Share IRQ" or that the cards do not need IRQ assignments. Otherwise, conflicts will arise between the two PCI groups, making the system unstable and the card inoperable.

AGP slot

This motherboard has an Accelerated Graphics Port (AGP) slot that supports +1.5V AGP cards. When you buy an AGP card, make sure that you ask for one with +1.5V specification. Note the notches on the card golden fingers to ensure that they fit the AGP slot on your motherboard.

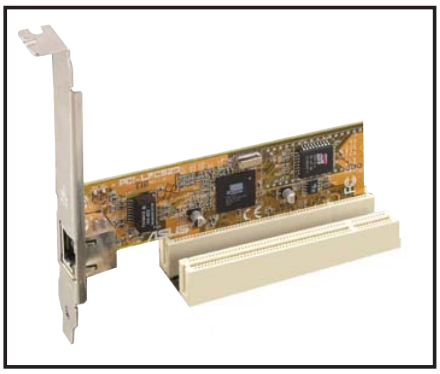
Install only 1.5V AGP cards on this motherboard!



K8S-LA Accelerated Graphics Port (AGP)

PCI slots

There are three 32-bit PCI slots on this motherboard. The slots support PCI cards such as a LAN card, SCSI card, USB card, and other cards that comply with PCI specifications.



5. Jumpers

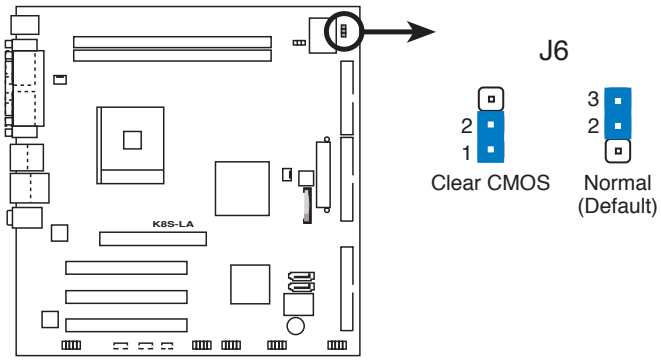
Clear RTC RAM (3-pin J6)

This jumper allows you to clear the Real Time Clock (RTC) RAM in CMOS. You can clear the CMOS memory of date, time, and system setup parameters by erasing the CMOS RTC RAM data. The onboard button cell battery powers the RAM data in CMOS, which include system setup information such as system passwords.

To erase the RTC RAM:

1. Turn OFF the computer and unplug the power cord.
2. Move the jumper cap from pins 2-3 (Normal) to pins 1-2 (Clear CMOS). Keep the cap on pins 2-3 for about 5~10 seconds, then move the cap back to pins 2-3.
3. Plug the power cord and turn ON the computer.
4. Hold down the <F1> key during the boot process and enter BIOS setup to re-enter data.

Except when clearing the RTC RAM, never remove the cap from the default position. Removing the cap will cause system boot failure!



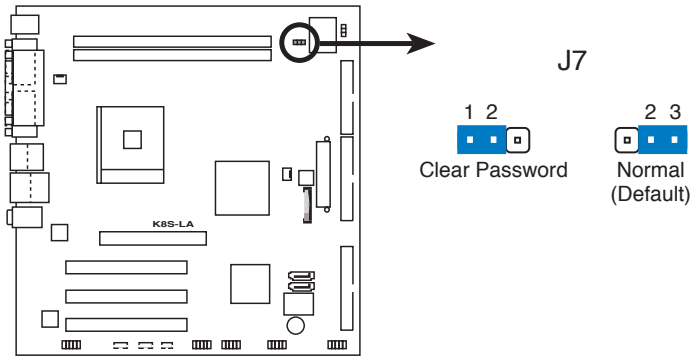
K8S-LA Clear RTC RAM setting

Clear password (3-pin J7)

This jumper allows you to clear the password if you forgot your password.

To erase the password:

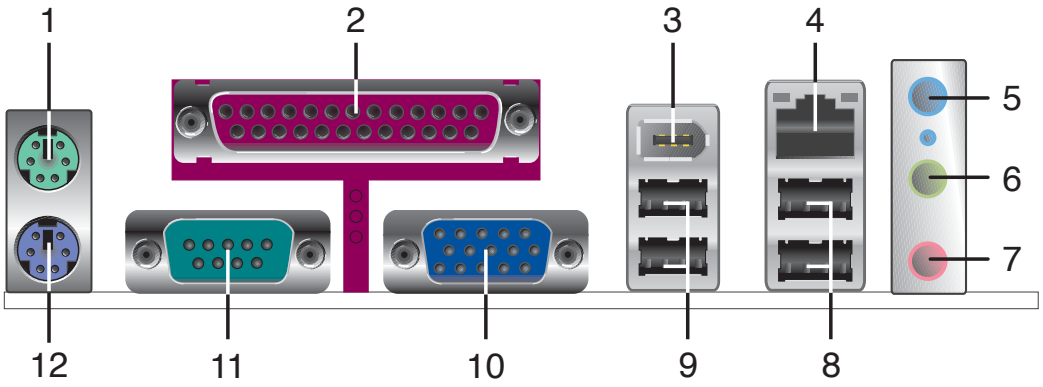
1. Turn OFF the computer and unplug the power cord.
2. Move the jumper cap from pins 2-3 (Normal) to pins 1-2 (Clear Password).
3. Plug the power cord and turn ON the computer.
4. As soon as you see the HP logo, turn OFF the computer.
5. Move the jumper cap from pins 1-2 to pins 2-3.
6. Hold down the <F1> key during the boot process and enter BIOS setup to verify that the password has been cleared.



K8S-LA Clear password setting

6. Connectors

6.1 Rear panel connectors



1. **PS/2 mouse port (green).** This port is for a PS/2 mouse.
2. **Parallel port.** This 25-pin port connects a parallel printer, a scanner, or other devices.
3. **IEEE 1394a port.** This 6-pin IEEE 1394a port provides high-speed connectivity for audio/video devices, storage peripherals, PCs, or portable devices.
4. **LAN (RJ-45) port.** This port allows Gigabit connection to a Local Area Network (LAN) through a network hub.
5. **Line In port (light blue).** This port connects a tape, CD, DVD player or other audio sources.
6. **Line Out port (lime).** This port connects a headphone or a speaker. In 4-channel or 6-channel mode, the function of this port becomes Front Speaker Out.
7. **Microphone port (pink).** This port connects a microphone.

Audio 2, 4, or 6-channel configuration

	Headset/ 2-channel	4-channel	6-channel
Light Blue	Line In	Line In	Line In
Lime	Line Out	Front Speaker Out	Front Speaker Out
Pink	Mic In	Mic In	Mic In

8. **USB 2.0 ports 3 and 4.** These two 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices.
9. **USB 2.0 ports 1 and 2.** These two 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices.
10. **Video Graphics Adapter port.** This 15-pin port is for a VGA monitor or other VGA-compatible devices.
11. **Serial port**. This 9-pin COM1 port is for pointing devices or other serial devices.
12. **PS/2 keyboard port (purple).** This port is for a PS/2 keyboard.

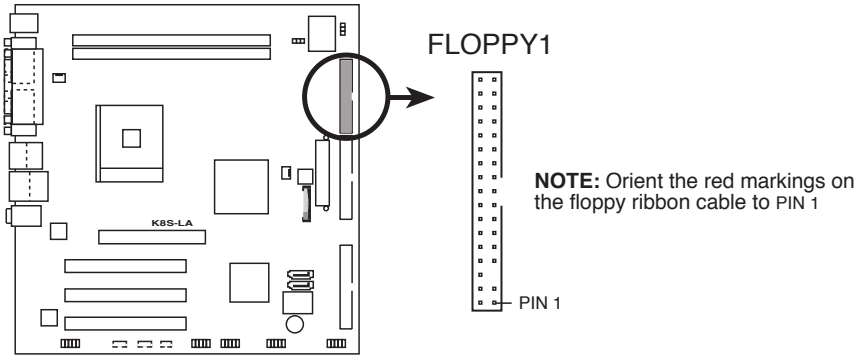
6.2 Internal connectors

This section describes and illustrates the internal connectors on the motherboard.

1. Floppy disk drive connector (34-1 pin FLOPPY1)

This connector is for the provided floppy disk drive (FDD) signal cable. Insert one end of the cable to this connector, then connect the other end to the signal connector at the back of the floppy disk drive.

Pin 5 on the connector is removed to prevent incorrect cable connection when using a FDD cable with a covered Pin 5.

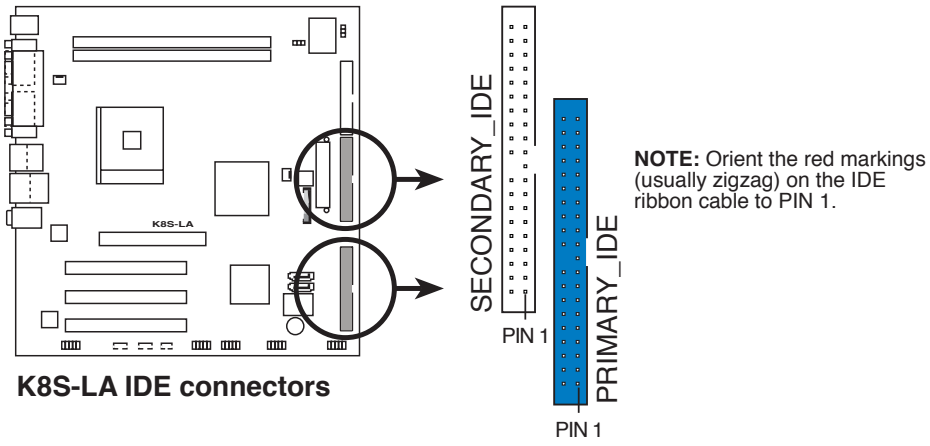


K8S-LA Floppy disk drive connector

2. IDE connectors (40-1 pin PRIMARY_IDE, SECONDARY_IDE)

These connectors are for Ultra DMA 100/66 signal cables. The Ultra DMA 100/66 signal cable has three connectors: a blue connector for the primary IDE connector on the motherboard, a black connector for an Ultra DMA 100/66 IDE slave device (optical drive/hard disk drive), and a gray connector for an Ultra DMA 100/66 IDE master device (hard disk drive). If you install two hard disk drives, you must configure the second drive as a slave device by setting its jumper accordingly. Refer to the hard disk documentation for the jumper settings.

- Pin 20 on the IDE connector is removed to match the covered hole on the Ultra DMA cable connector. This prevents incorrect insertion when you connect the IDE cable.
- Use the 80-conductor IDE cable for Ultra DMA 100/66 IDE devices.

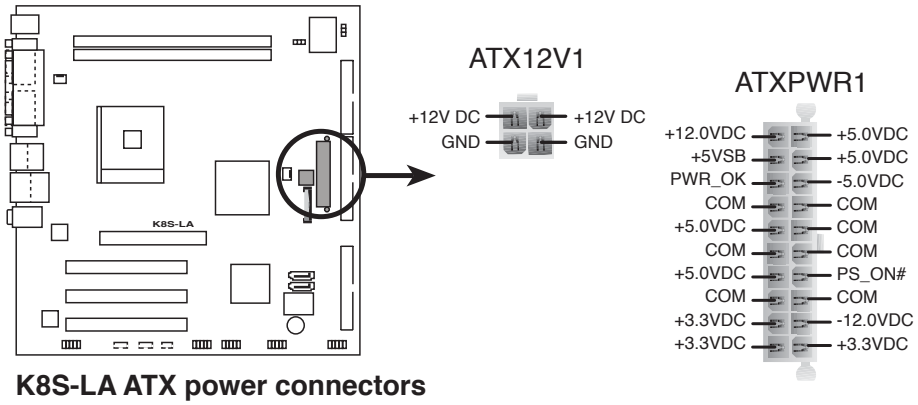


K8S-LA IDE connectors

3. ATX power connectors (20-pin ATXPWR1, 4-pin ATX12V1)

These connectors are for ATX power supply plugs. The power supply plugs are designed to fit these connectors in only one orientation. Find the proper orientation and push down firmly until the connectors completely fit.

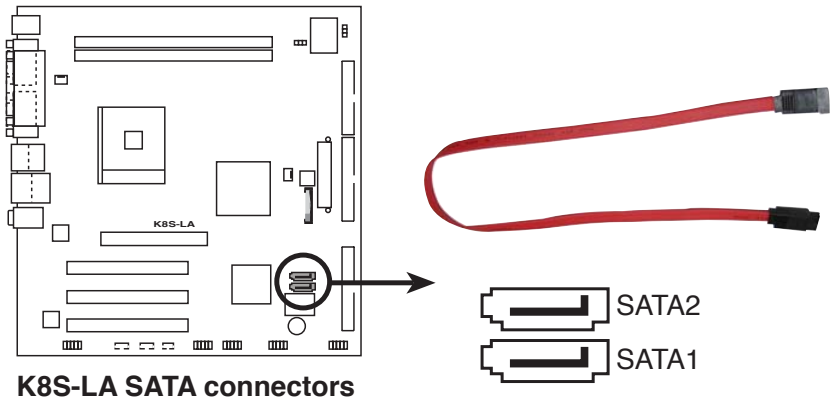
- Do not forget to connect the 4-pin ATX +12 V power plug; otherwise, the system will not boot up.
- Make sure that your ATX 12V power supply can provide 8A on the +12V lead and at least 1A on the +5-volt standby lead (+5VSB). The minimum recommended wattage is 230W, or 300W for a fully configured system. The system can become unstable and might experience difficulty powering up if the power supply is inadequate.
- You must install a PSU with a higher power rating if you intend to install additional devices.



K8S-LA ATX power connectors

4. Serial ATA connectors (7-pin SATA1 [black], SATA2 [white])

These connectors are for the Serial ATA signal cables for Serial ATA hard disk drives.



K8S-LA SATA connectors

Important notes on Serial ATA

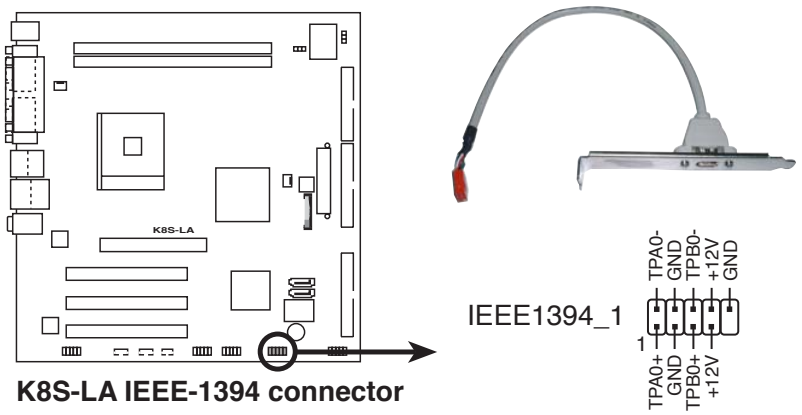
- You must install Windows® 2000 Service Pack 4 or the Windows® XP Service Pack 1 before using Serial ATA hard disk drives.
- When using the connectors in **Standard IDE** mode, connect the primary (boot) hard disk drive to the SATA1 connector. Refer to the table below for the recommended SATA hard disk drive connections.

Serial ATA hard disk drive connection

Connector	Color	Setting	Use
SATA1	Black	Master	Boot disk
SATA2	White	Slave	Data disk

5. IEEE 1394a connector (10-1 pin IE1394_1)

This connector is for an IEEE 1394a port. Connect the IEEE 1394a module cable to this connector, then install the module to a slot opening at the back of the system chassis.

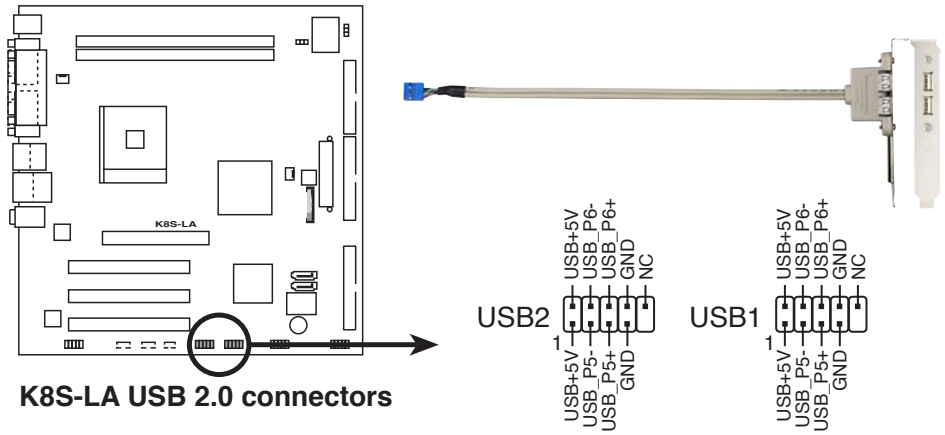


K8S-LA IEEE-1394 connector

NEVER connect a **USB cable** to the IEEE 1394a connector. Doing so will damage the motherboard!

6. USB connectors (10-1 pin USB1, USB2)

These connectors are for USB 2.0 ports. Connect the USB/GAME module cable to any of these connectors, then install the module to a slot opening at the back of the system chassis. These USB connectors comply with USB 2.0 specification that supports up to 480 Mbps connection speed.



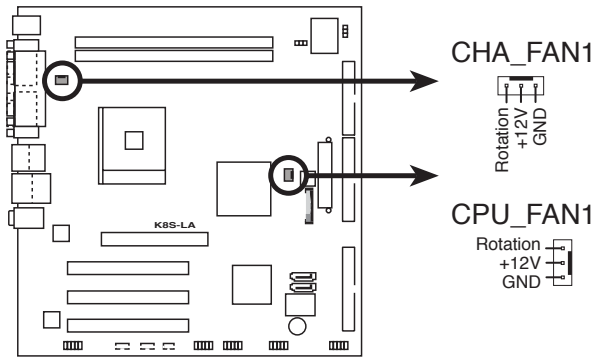
K8S-LA USB 2.0 connectors

Never connect a **1394 cable** to the USB connectors. Doing so will damage the motherboard!

7 CPU and Chassis Fan connectors (3-pin CHA_FAN1, CPU_FAN1)

The fan connectors support cooling fans of 350 mA ~ 2000 mA (24 W max.) or a total of 1 A ~ 3.48 A (41.76 W max.) at +12V. Connect the fan cables to the fan connectors on the motherboard, making sure that the black wire of each cable matches the ground pin of the connector.

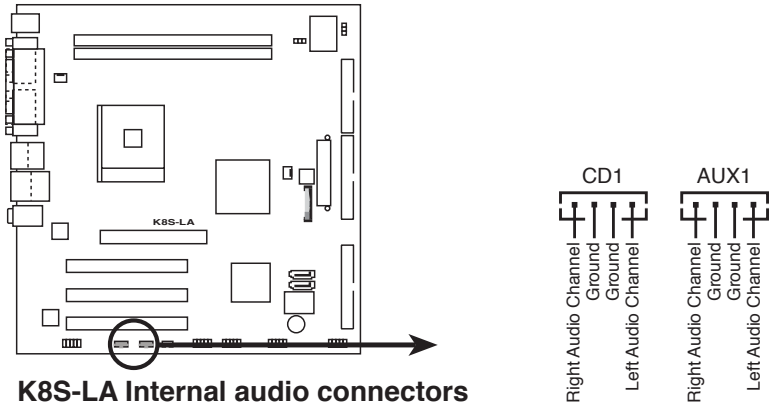
Do not forget to connect the fan cables to the fan connectors. Insufficient air flow inside the system may damage the motherboard components. These are not jumpers! Do not place jumper caps on the fan connectors!



K8S-LA Fan connectors

8. Internal audio connectors (4-pin CD1, AUX1)

These connectors allow you to receive stereo audio input from sound sources such as a CD-ROM, TV tuner, or MPEG card.

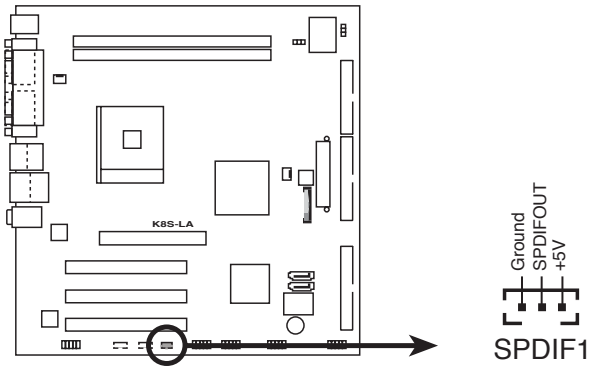


K8S-LA Internal audio connectors

9. Digital audio connector (4-1 pin SPDIF1)

This connector is for a Sony/Philips Digital Interface (S/PDIF) port. Connect the S/PDIF module cable to this connector, then install the module to a slot opening at the back of the system chassis.

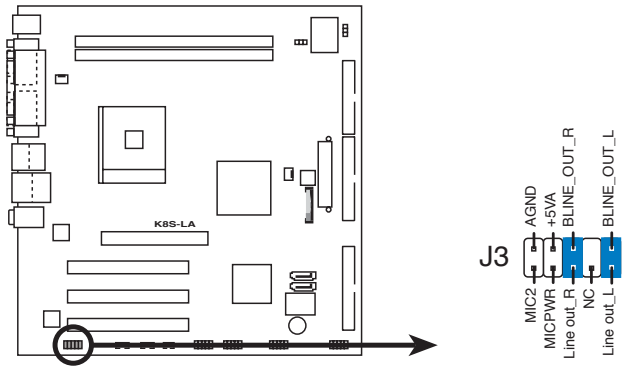
The S/PDIF module is purchased separately.



K8S-LA Digital audio connector

10. Front panel audio connector (10-1 pin J3)

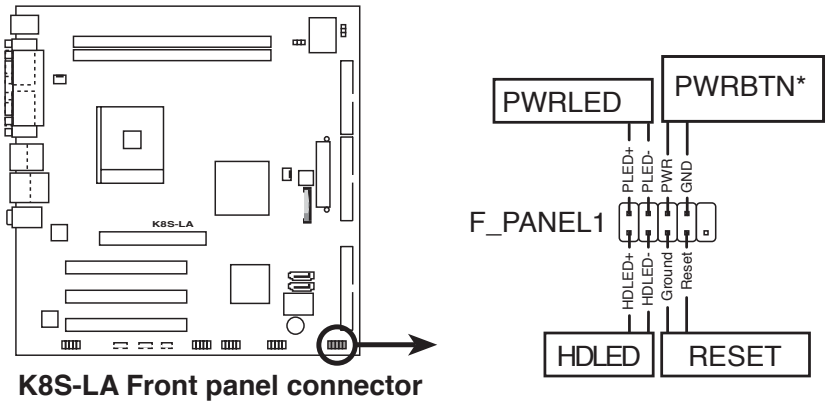
This connector is for a chassis-mounted front panel audio I/O module that supports AC'97 audio standard.



K8S-LA Front panel audio connector

11. System panel connector (10-pin F_PANEL1)

This connector supports several chassis-mounted functions.



K8S-LA Front panel connector

- **System power LED (2-pin PWRLED)**
  This connector is for the system power LED. Connect the chassis power LED cable to this connector. The system power LED lights up when you turn on the system power, and blinks when the system is in sleep mode.
- **Hard disk drive activity LED (2-pin HDLED)**
  This connector is for the HDD Activity LED. Connect the HDD Activity LED cable to this connector. The IDE LED lights up or flashes when data is read from or written to the HDD.
- **ATX power button/soft-off button (2-pin PWRBTN)**
  This connector is for the system power button. Pressing the power button turns the system on or puts the system in sleep or soft-off mode depending on the BIOS settings. Pressing the power switch for more than four seconds while the system is ON turns the system OFF.
- **Reset button (2-pin RESET)**
  This connector is for the chassis-mounted reset button for system reboot without turning off the system power.