

## **HOWTO–Use Elite's K7s5a mainboard under linux**

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# HOWTO–Use Elite's K7s5a mainboard under linux

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## 1. [Introduction](#)

I got the mainboard for christmas 2001, and after a little while, I understood that the new chipset sis735 was not handled by [mandrake](#) 8.0, [OSS](#) had drivers for it that worked but I didn't really want to pay for it, so I looked on alsa cvs and found that in their latest source they had something for the sis 7012, and also find later the drivers for the sensors.

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## 2. [The integrated sound board](#)

### 2.1 Getting the drivers

So we'll compile the latest sources from alsa, which should work for any other distrib as well... just the kernel source will change because mandrake uses specific patches You may get your kernel sources from your distribution or from <http://www.kernel.org> Here can be found Mandrake source for the kernel used in 8.0: <ftp://ftp.univ-savoie.fr/pub/Linux/Mandrake/8.0/i586/Mandrake/RPMS/kernel-source-2.4.3-20mdk.i586.rpm> and grab the tarball from alsa: <ftp://ftp.alsa-project.org/pub/driver/alsa-driver-0.9.0beta10.tar.bz2>

### 2.2 Installing them

Install your kernel sources, in my case:

```
rpm -ivh kernel-source-2.4.3-20mdk.i586.rpm
```

Then decompress alsa drivers:

```
bzip2 -d alsa-driver-0.9.0beta10.tar.bz2 && tar -xyf alsa-driver-0.9.0beta10.tar
```

Make them and install them and create the devices files:

```
cd alsa-driver-0.9.0beta10 && make install && ./snddevices
```

Edit /etc/modules.conf to set everything, and add to it the following lines:

```
alias char-major-116 snd
```

```
alias char-major-14 soundcore
```

```
alias sound-slot-0 snd-card-0
```

```
alias sound-service-0-0 snd-mixer-oss
```

```
alias sound-service-0-1 snd-seq-oss
```

```
alias sound-service-0-3 snd-pcm-oss
```

```
alias sound-service-0-8 snd-seq-oss
```

```
alias sound-service-0-12 snd-pcm-oss
```

```
alias snd-card-0 snd-card-intel8x0
```

---

## **3. The mainboard's sensors**

### **3.1 Getting the drivers**

Get the lm\_sensors 2.6.2 or more recent: [http://www.lm-sensors.nu/archive/lm\\_sensors-2.6.2.tar.gz](http://www.lm-sensors.nu/archive/lm_sensors-2.6.2.tar.gz) You'll need kernel source too in order to compile that one

### **3.2 Installing them**

```
tar -xvzf i2c-2.6.2.tar.gz
```

```
cd i2c-2.6.2
```

```
make && make install
```

Then there was a problem when making install for me, so if it doesn't work, just do the following:

```
cp kernel/i2c-core.o /lib/modules/`uname -r`/misc/i2c-core.o
```

```
cp kernel/i2c-proc.o /lib/modules/`uname -r`/misc/i2c-proc.o
```

Now let's copy the specific driver:

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```
cp kernel/chips/it87.o /lib/modules/`uname -r`/misc/it87.o
```

ok now

```
cp prog/sensors/sensors /usr/bin/sensors
```

---

Edit /etc/modules.conf and add to it the following lines:

```
alias char-major-89 i2c-dev
```

```
options it87 temp_type=0x31
```

now:

```
modprobe i2c-proc
```

```
modprobe it87
```

```
modprobe i2c-isa
```

```
sensors
```

should output you some data

now as root you should edit your /etc/sensors.conf search for that line: chip "it87-\*" and below you should be able to modify everything to get the right data, here is a copy of what i have in there: (please note that temp1 is trash and only temp2 and temp3 should be kept)

---

```
chip "it87-*"
```

```
# The values below have been tested on Asus CUSI, CUM motherboards.
```

```
# Voltage monitors as advised in the It8705 data sheet
```

```
label in0 "VCore"
```

```
label in1 "Vcc2.5v"
```

```
label in2 "Vcc5v"
```

```
label in3 "+5V"
```

```
label in4 "+12V"
```

```
label in5 "-12V"
```

```
label in6 "-5V"
```

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label in7 "SB 5V"

label in8 "V battery"

set in0\_min 1.5 \* 0.95

set in0\_max 1.5 \* 1.05

set in1\_min 2.4

set in1\_max 2.6

set in2\_min 3.3 \* 0.95

set in2\_max 3.3 \* 1.05

set in3\_min 5.0 \* 0.95

set in3\_max 5.0 \* 1.05

set in4\_min 12 \* 0.95

set in4\_max 12 \* 1.05

set in5\_min -12 \* 0.95

set in5\_max -12 \* 1.05

set in6\_min -5 \* 0.95

set in6\_max -5 \* 1.05

set in7\_min 5 \* 0.95

set in7\_max 5 \* 1.05

# vid not monitored by IT8705F

ignore vid

# For this family of chips the negative voltage equation is different from

# the lm78. The chip uses two external resistor for scaling but one is

# tied to a positive reference voltage. See ITE8705/12 datasheet (SIS950

# data sheet is wrong)

#  $V_s = (1 + R_{in}/R_f) * V_{in} - (R_{in}/R_f) * V_{ref}$ .

#  $V_{ref} = 4.096$  volts,  $V_{in}$  is voltage measured,  $V_s$  is actual voltage.

3. The mainboard's sensors

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```
compute in2 (1 + 1)*@ , @/(1 + 1)

compute in3 ((6.8/10)+1)*@ , @/((6.8/10)+1)

compute in4 ((30/10) +1)*@ , @/((30/10) +1)

# The next two are negative voltages (-12 and -5).

# The following formulas must be used. Unfortunately the datasheet
# does not give recommendations for Rin, Rf, but we can back into
# them based on a nominal +2V input to the chip, together with a 4.096V Vref.

# Formula:

# actual V = (Vmeasured * (1 + Rin/Rf)) - (Vref * (Rin/Rf))

# For -12V input use Rin/Rf = 6.68

# For -5V input use Rin/Rf = 3.33

# Then you can convert the forumula to a standard form like:

compute in5 (7.67 * @) - 27.36 , (@ + 27.36) / 7.67

compute in6 (4.33 * @) - 13.64 , (@ + 13.64) / 4.33

#

compute in7 ((6.8/10)+1)*@ , @/((6.8/10)+1)

# Temperature

label temp3 "Processor"

set temp3_over 40

set temp3_hyst 20

label temp2 "Mainboard"

set temp2_over 45

set temp2_hyst 25

ignore temp1

# Fans

label fan1 "Processor's Fan"
```

### 3. The mainboard's sensors

set fan1\_min 2000

ignore fan3

ignore fan2

---