Important!

Please read the information in the section "Unpacking / Startup", before unpacking any further.

SHARP SL-C750 SL-C760/SL-C860

Linux
Personal Mobile Tool

Table of contents

Welcome

Thank You for buying the SHARP SL-C750 / SL-C760 / SL-C860.

This device is not sold officially out of Japan. It is a Japanese device with English user interface and English keyboard.

If You are mainly interested in a calendar, addressbook, etc., You are perhaps better off with a simple organizer.

But if an English environment does not scare You, and You are looking for a mobile Linux system with excellent performance, You have made the right choice.

Each device is tested and localised by us in English in most aspects, before it is shipped. So You can start at once, without navigating through Kanji characters.

The Zaurus will start in Japanese after a hard-reset. But do not be afraid, the steps for localisation are described on page 16.

Please note that SHARP Electronics Europe does not support this device.

For further information, links and questions visit us in the internet at http://www.trisoft.de.

The largest german-speaking (sorry) Zaurus-Community is to be found at http://www.z-portal.info. Tons of english information is available at http://externe.net/zaurus/forum/

In case of technical problems, You can reach us via electronic mail: zaurus@trisoft.de or via telephone: +49 511 94294 0

Credits:

This english version of the SL-C750/SL-C760/SL-C860 quickstart guide was made by the team of Werner Heuser / Xtops.de, Berlin.

Trademarks:

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Linux is a registered trademark of Linus Torvalds.
QT and QTopia are trademarks of Trolltech Inc.

All other products, brand names or in this manual mentioned company names are property and trademark of the particular companies.

Zaurus models SL-C750 und SL-C760/860

This manual covers the models SHARP Zaurus SL-C750, SL-C760 and SL-C860.

The essential difference between the C750 and the C760/860 is the bigger battery and the increased amount of Flash memory (64 MB) in the model SL-C760/860. Since all models, apart from the colour of their cover (SL-C750: black, SL-C760: white, SL-C860: "champagne silver"), are mostly identical, the differences will be explained at the appropriate places in this manual.

Comparison SL-C750 / SL-C760 / SL-C860

Attribute	SL-C750	SL-C760 / SL-C860
OS	Linux OpenPDA	
CPU	Intel Xscale PXA255 400 MHz	
Memory	**64 MB Flash** 64 MB SDRAM	**128 MB Flash** 64 MB SDRAM
Display	SHARP CG Silicon 640x480	
Ports	SHARP I/O-Port, Infrarer, Headphone-out, Power supply	
Cardslots	1 x SD, 1 x CompactFlash	
Battery (included)	**3,7V LiIon EA-BL06 950mAh**	**3,7V LiIon EA-BL08 1700mAh**
Battery (optional)	**3,7V LiIon EA-BL08K 1700mAh**	**3,7V LiIon EA-BL06 950mAh**
Power consumption	2.7 W	
Display cover	Black	SL-C760: white SL-C860: silver
Dimensions	**120 x 83 x 18,6 mm**	**12 x 83 x 23,2 mm**
Weight	appr. 225 g	appr. 250 g

Unpacking

The package should contain the following items:

Quantity	SL-C750	SL-C760 / SL-C860
1	SL-C750	SL-C760 / SL-C860
1	Battery EA-BL06 (well hidden beneath the USB-cable)	Battery EA-BL08 and cover for optional EA-BL06 also hidden beneath the cable
1	USB cable	
1	Zaurus software CD	
1	Manual (Japanese)	
1	This short manual (already found)	

The Zaurus should contain:

|		
1	Stylus
1	Cover for CF-Slot (right side)
1	Cover for I/O-Port (left side)

Startup

Insert the battery (SL-C750)

On the bottom of the Zaurus (also see page) is the switch for the interlock of the battery compartment. Unlock the compartment by sliding the switch to the right and take off the cover of the compartment.

Insert the battery, so that its white, triangular arrow covers the triangle to be seen in the compartment. Close the cover and slide the switch back to the left.

Please read the following section, if the optional battery EA-BL08K (default for SL-C760 and SL-C860) is used.
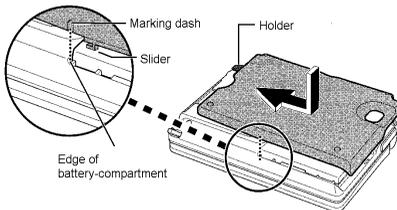
Insert the battery (SL-C760 / SL-C860)
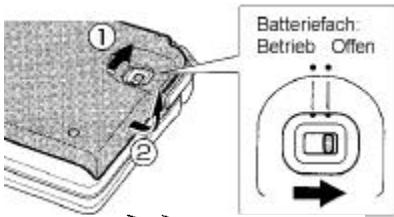
Unlock the lower cover by sliding the the switch for the interlock of the battery compartment (1) to the right. Detach the cover in direction (2).
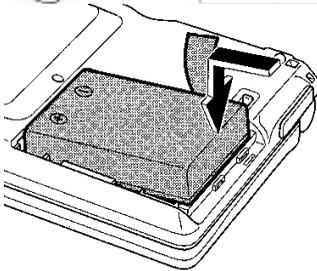
Insert the battery as shown in the picture. For the battery to fit tightly, press in direction of the arrow on the end leading to the border of the enclosure.

Put the cover for the battery compartment back onto the device. There is a marking dash at the border for orientation which should be aligned to the border of the compartment.

Charging the battery

You should now connect the power supply with the Zaurus (the AC-in is located on the backside of the device).

The Zarurs will be charged and in the upper left corner should glow a yellow charging LED.

Please charge the Zaurus for some time, before turning it on.

Open and Turn Over Display
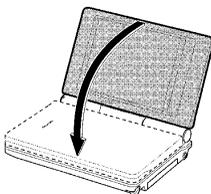
The display can be opened and turned nearly horizontal to the keyboard. There it snaps into the maximal possible position.

When opened, the display can also be turned clock-wise and turned over back onto the keyboard:

To turn the display, grab it left and right. Don't twist it on the top !
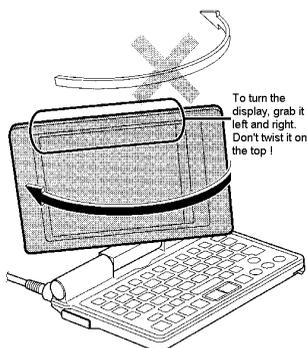
Attention: NEVER turn the display using violence or in opposite to the designated direction. Such damages (Zaurus in two parts) are **not** warranted.

Please touch the device at both sides when the display is turned. Do not touch it at the upper border.
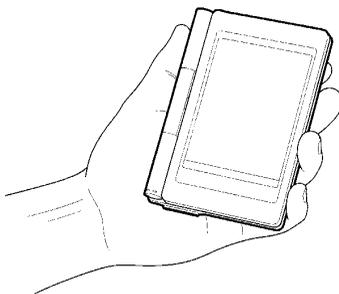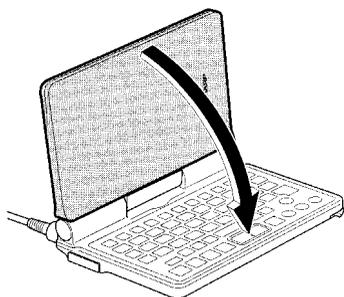
Ports / Controls
Bottom
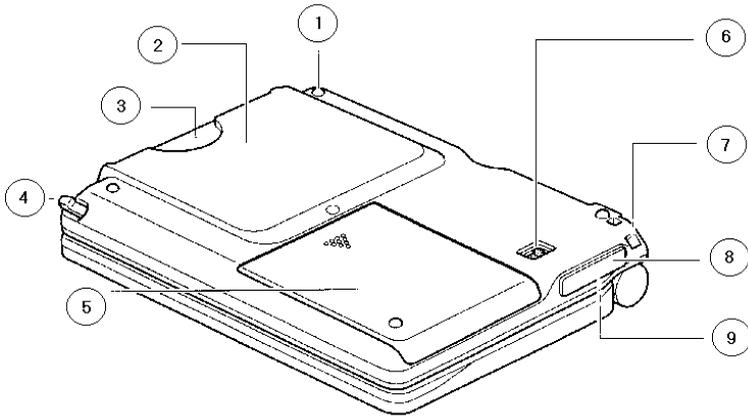
1: Lug for fastening the Zaurus (for instance a chain)

2: Slot for CompactFlash cards

3: Cover for CompactFlash slot

4: Stylus

5: Cover for battery compartment

6: Switch for inter-/unlocking the compartment

7: Yet another lug for fastening the Zaurus

8: Cover for I/O-Ports

9: I/O-Port (see next page)

The serial and USB cables can be used at this port.

Cables approved by TRIsoft for SL-C750/SL-C760/SL-C860:

- SHARP CE-170TS serial cable
- TRIsoft ZBPDB9M serial cable (plug)
- TRIsoft ZBPDB9F serial cable (jack)
- Serial IO ZThinCable (serial)
- SHARP CE-UC1 USB cable (included)
- TRIsoft ZBPUSB USB cable with charging function
- Serial IO ZThinUSB cable with charging function
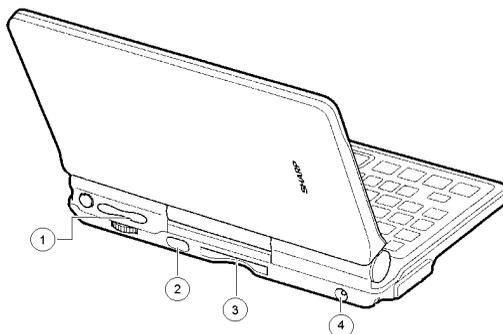
Device backside

1.   Controls for One-Handed Use

2.   Infrared

3.   Slot for SD cards

4.   Hookup for power supply (5V)

Attention : Only the original power supply from SHARP, model EA-70S, is approved by us. The usage of third-party power supplies can possibly destroy the charging electronics of the Zaurus. "Cheap" power supplies often provide 6V instead of the printed 5V.

One-Handed Use
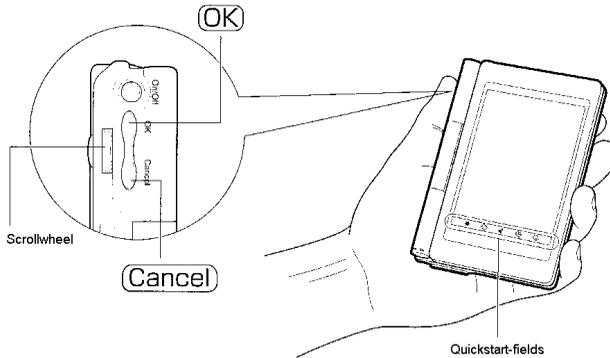
The controls at the left side offer a fast and convenient navigation, if the display is turned over, onto the keyboard.

Options in the user interface can be chosen by the scroll wheel and they can be confirmed or cancelled with the compensator.

The quickstart fields at the lower border allow to start often used applications with just a little tip.

Keyboard functions

The two Japanese keys are redefined to "Ctrl" and "Alt" with the help of the applet KeyHelper:

This applet can be found in the internet at http://yakty.s31.xrea.com/linuzau/ .
Unfortunately, the help texts are currently only available in Japanese. Key codes can be read or existing mappings can be checked with the applet KeyHelper Control.
The key mappings are stored in the files /home/zaurus/Settings/ (keyhelper\.conf|keyhelper\.xml).

Umlauts / Euro

You can access the German umlauts and the Euro-currency symbol via the onscreen-keyboard, handwriting and directly over the keyboard (thanks to the KeyHelper applet).

A special "thank you" goes to "biggel" of the Z-Portal (www.z-portal.info), who wrote the needed mappings in the KeyHelper-XML-file.

Additional to the violet printed keyboard-functions, there are the following combinations:

"FN" + "A" gives : ä   "FN" + "Shift" + "A" gives : Ä

"FN" + "O" gives : ö   "FN" + "Shift" + "O" gives : Ö

"FN" + "U" gives : ü   "FN" + "Shift" + "U" gives : Ü

"FN" + "S" gives : ß   "FN" + "Shift" + "E" gives : €

"FN" + "N" gives : {   "FN" + "M" gives : }

The "Shift"-key is in this configuration "sticky". That means you can press "Shift" alone and the next pressed key will react as pressed with "Shift".

Please note:

Umlauts, Euro- and other special characters are not implemented in all charsets. If you see only black bordered boxes instead, then you may look on "LCFONT". Choose "Helvetica" f.e. and all characters are displayed correct.

Software for SL-5500(G)

Most applications offered for SL-5500(G) can be run on SL-C750/SL-C760/SL-C860 without problems.

The SL-C series recognises these, switches the display to portrait and doubles the output pixels. The application will then be shown optimally, because the SL-C series uses 4 times the resolution of the old device (640x480 instead of 320x240).

Applications which require keyboard input might be better displayed without that switch. Therefore, tip the application's icon with the stylus a little longer and uncheck the option "Display with magnified screen".

Software installation (Windows)

USB-Driver

In case the Zaurus-CD tries to autostart when it is put into the drive, please interrupt that at once. Apart from the fact, that Your Windows probably cannot display Japanese characters correctly, the installation of the offered software there is not necessarily needed.

The USB driver must be installed in the device manager, so that Windows is able to recognise the Zaurus.

It can be found on the CD in the directory <drive>:\USBdrivers\Network.

There should be a new network adapter "SL Series Ver3 (NDIS 5)" in the network configuration after successful installation.

The Zaurus runs a Samba server for communication purposes which answers at 192.168.128.201. Thus, files can be easily exchanged with the Zaurus via the Neighbourhood.

IntelliSync

Use the current release of IntelliSync to synchronise with the Windows PC.

It is important to use the English version (currently "Zaurus Manager 3.1") which was developped for model SL-5600. It can be found in the internet at http://community.zaurus.com/project/showfiles.php?group_id=5   filename "5500v31u.zip". The file contains the whole Update CD, adding up to 44 MB. The download of IntelliSync on www.myzaurus.com which is incompatible to the SL-C series.

Only the directory "PCSOFT" is needed from the downloaded file, in which the setup can be called directly. This will install IntelliSync which features the possibility to synchronise

with Microsoft Outlook and the "Zaurus File Transfer". Files can be exchanged between Zaurus and PC conveniently with that feature.

Note: The site "community.zaurus.com" is actually (March 2004) not available. You may use as alternative download "pcsoft.zip" from www.trisoft.de/download.

Communication via Neighbourhood

Files can be exchanged easily between Windows via the Neighbourhood and the Zaurus which runs the Samba server.

Access as USB-Mass Storage (SL-C860)

The SL-C860 provides a new setting for the PC-Link. Now You can choose between "PC-Link Setting" and "Storage" Mode. Choosing "Storage" it is possible to grant access to a CF or SD card. The Zaurus communicates to the PC as a USB mass storage device like a USB-stick or a digital camera. With this feature it is easy to transfer files between a card inserted in the Zaurus and a PC without install any driver first.

Telnet-Access

The telnet service is opened for configuration purposes and hardcore-users. Reach the Zaurus through USB via telnet to the IP address 192.168.129.201.

The username for telnet logins is "zaurus", without password.

There is not FTP server installed by default!

Annotations about Software

Applications

<u>MoviePlayer</u>

The movie player is only designed to play .asf-files, encoded with MPEG4 Video V1. For smooth playback of "regular" .mpeg- and .avi-files, we recommend tkcVideo from TheKompany. In our opinion, it is a rewarding purchase, although it is payware (19.95 US$).

To convert movies in the Zaurus-friendly format you find a lot of information at: http://www.double.co.nz/zaurus/

Localisation after reset

The Zaurus will start in Japanese after a hard-reset. The last status would be restored in a flash, if there were a backup on a memory card.

The data would be lost, if there were no backup. But a "Localisation-Backup" can be downloaded from our website http://www.trisoft.de and copied onto a memory card.

A recent backup must simply be read back via "Restore". The difficulty lies in the recognition of the correct icons to click, wherefore a step-by-step manual with pictures is following:

Reset (Flashmenu)

To reach the flash menu, the following steps are necessary:

- Turn off the Zaurus, pull out the USB cable or other power supplies.
- Unlock the battery compartment and take out the battery.
- Wait for approx. 5 seconds.
- Reinsert the battery, close the cover and turn the switch back to "Betrieb".
- Connect USB cable or power supply and wait until the yellow charging LED lights up.
- Hold the "OK" key on the keyboard and turn on the device with the button "On/Off".
- The flash menu appears in Japanese:
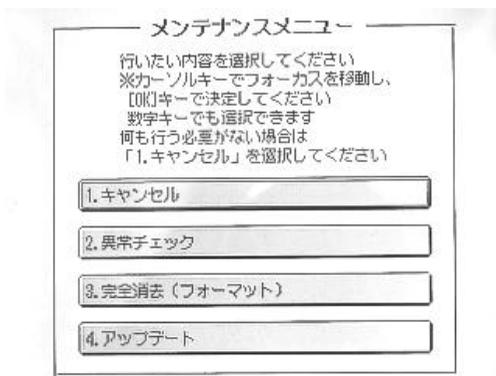
The 4 shown menu points mean (from top to bottom):

- Cancel (quit flash menu and boot normally)
- Execute FSCK (filesystem check)
- Reset (reset factory defaults)
- Flash / Update

Choose the third option to reset. There is a dialog which asks if You are really sure which should be acknowledged with the button "Y" (left).

First start

A nice, red logo from SHARP appears and the Zaurus is reset.

After a minute, the well-known "CG Silicon / Zaurus" screen is visible, which means that there is another exciting minute to wait.

Next, there is a writing, saying "Zaurus", and two lines of Japanese text. Translated they would mean something like "Take the stylus und press the display, so that we can see, if it works".

So, just do it.

Now, the "QT"-QTopia logo is displayed and the user is asked to calibrate the display by tipping its center.
Do one tip in the lower left, lower right, upper right, upper left and in the center.

Afterwards the dialog for Date/Time is presented and the process continues in Japanese:

Confirm with "OK" (upper right).

Skip the next dialog with "OK", too.

Now the QTopia desktop should be visible, advance directly to restore:

Run restore

Insert a CompactFlash or SD card which contains the desired backup into the Zaurus.

Note: A backup image is downloadable from our website http://www.trisoft.de, if needed. Use **only** the matching backup for your Zaurus. Please **don't** try to restore a 750 backup in a SL-C760/860 (renaming the backup set) or vice versa.

Please activate the tab with the wrench in the upper bar:

There select the green icon which represents a sheet of paper with two horizontal arrows:

Now it is nearly done, the "Backup/Restore" dialog should be visible:

The upper selection handles "Backup", the lower "Restore". Therefore, set the blue sphere in front of the second line:
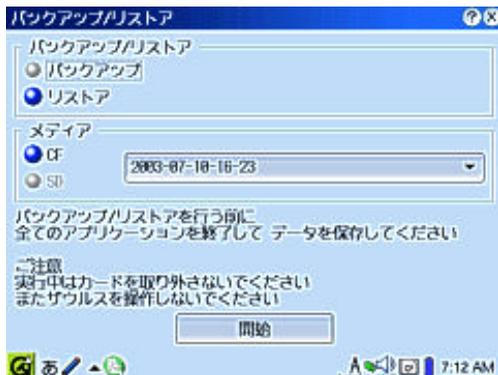
The frame below selects the source of the backup (CompactFlash or SD).

Push the middle button at the bottom, when the desired backup can be seen in the selection to the right. Another dialog appears and asks for confirmation (Yes, You are sure). Click the left button and the time of Kanji on the Zaurus will be over for the time being.

While restoring the backup, the "CG-Silicon" screen appears for a moment, then a progress bar, which hopefully will reach 100%.

Afterwards the Zaurus restarts and it is done!

Umlauts / Diacritics / Euro

These charachters are reached by activating the screen keyboard in the lower left corner of the task bar.

The screen keyboard is german, including all desired characters (diacritics, euro).

On the "real" keyboard are, left from the dash, two Japanese keys. The key next to the dash switches from the **original state of the keyboard to kanji**:

号　　漢字　　@　　　音訓

ナ　｜全/半｜　｜ー｜　｜前候補
ら　　　　　　　　　　Space/変換｜

↑
Toggle ASCII / Kanji
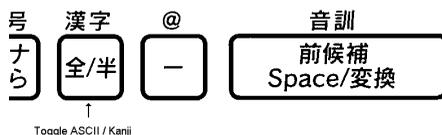
So, if there are only red blocks to be seen when using the keyboard, do not despair. Hit the key left from the dash once and the normal keys are back again.

During the localisation of SL-C750/760/860, the kanji applet was deleted. The two forementioned keys have the function "Ctrl" and "Alt" in the factory defaults (also see keyboard functions, page 12).

Japanese Leftovers

Addressbook

Unfortunately, the addressbook does not sort alphabetically, rather in Japanese notation. Selecting the "AB" tab in the addressbook will sort all entries alphabetically. The ToDo list and the addressbook contain unreadable categories (boxes).

This information is sadly hard-coded, so we could not help it, yet.

If You have any ideas, or if we have overlooked something, please send us an electronic mail to: zaurus@trisoft.de .

Network-Wizard

The "Wizard"-button for automated network installation displays only boxes. This wizard is not useful outside japan, because the wizard installas japanese services like "Sharp Space Town".

To install a network service, please press the "New"-button which opens the neccessary dialogs.

Diag / service menu

Like all Zauri, the SL-C series has a diagnostic mode, too. Normally, that mode is not necessary, but for the sake of completeness, the diagnose functions are explained here.

Attention :
It is possible to delete the Flash ROM of the Zaurus completely in the service menu (NAND FLASH FULL ERASE). The Zaurus would be **transformed into a noble paperweight, without any function**, if this was done. The guarantee would become invalid and the device would possibly be a total loss.

Once again, Attention:
Apart from the key combination "DM", explained later, there exists another combination "D+" which causes a reaction by the Zaurus. There are no exciting functions to discover, besides from operating modes You do not really want (except for the Command-line, see page 25).

Accessing the service menu:

Set the battery switch to "Offen" and wait a couple of seconds. Connect the Zaurus to a power source (USB cable or power supply), hold down the keys "D" and "M" and switch back to "Betrieb".

Hereupon, the Zaurus shows the first page of the service menu in the format portrait:

Navigation within the menu is possible with the stylus, the arrow keys or the scroll wheel.

A function is selected by "OK" and getting back from anywhere is accomplished by pressing "Cancel".

Note: If the above mentioned method won't work for You, please try the following: Remove the battery and all power sources from the device and wait appr. 30 seconds. Then press and hold the "D" + "M" keys, plug in the power supply and switch the battery switch to the "Betrieb" position.

Quit service menu:

There are two possibilities to quit the service menu:

Possibility 1 (brute force):

Turn off the Zaurus, open the battery compartment and take out the battery. Wait for 10 seconds, insert the battery and close the compartment.

Turning the Zaurus on invokes the regular boot process.

Possibility 2 (elegant):

Select the option "EXTRA MENÜ" on the third page of the menu and there select "RESET". The Zaurus leaves the service mode and reboots regularly.

Attention: The option immediately above "RESET" is "NAND FLASH ERASE". Double-check before pressing "OK"!

Backup with service menu:

If You are asking Yourself, why we mention the service menu although we discourage its usage, well, here is the explanation:

The service mode makes it possible to create a 1:1 backup (NAND backup) of the whole ROM, resp. to restore a backup. This is the last straw, if the ROM was modified or a ROM was used which was not really mature.

If this has just happened and You are looking into this manual, but now: Don't Panic! We offer a recent NAND backup in condititon upon delivery for download on our server.

A CompactFlash card with at least 70 MB free space (SL-C750) or 134 MB for the SL-C760/860 is needed to create a backup. The backup is that huge, because a complete image, without any compression, including administrative information, will be built.

Call the third page of the service menu.

Select the first option "NAND Flash Back Up" and press "OK".

The backup will start, if there is a CompactFlash card with enough free space in the slot. A file with the name "systc750.dbk" for the SL-C750 or "systc760.dbk" / "systc860dbk" for SL-C760 / SL-C860 will be created.

Restore with service menu:

The restore function, named "NAND Flash Restore", is to be found on the third page of the service menu as well.

A CompactFlash card with a valid file "systc750.dbk" / "systc760.dbk" / "systc860.dbk" is needed. Such an image can also be found on our website, if there is no other backup at hand.

After pressing "OK", a valid .dbk-file is searched and written into the Flash memory.

Attention (1):
It is imperative to use a power source (USB cable or power supply) to run the restore process.

Attention (2):
Never ever try to restore a NAND-Backup from a different model (f.e. a 750 backup in a SL-C760/860). Only the restore of the appropriate backup set will result in a working Zaurus.

Boot to command-line

In addition to the Diag / Service menu (see page 22) there is a boot option for the "classic" Login-Prompt. This may be useful for emergency recovery.

The procedure is similar to the Diag / Service mode instead you have to press the keys "DB". So, here we go:

- Flip the battery switch to "Offen" and pull the battery out
- wait appr. 1 minute
- Re-insert the battery
- Hold "D" + "B" keys pressed and flip the switch back to "Betrieb"
- Continue holding "D" + "B" pressed and power the Zaurus on

Now You should see the white bootscreen with the red SHARP-Logo. But this time the screen should scroll up, revealing the following lines:

```
INIT: version 2.78 booting
modprobe: Can't locate module devinfo
INIT: Entering runlevel: 5

INIT: Sending processes the TERM signal

Embedix 2.0  |  Linux for Embedded Devices

zaurus login :
```

You may now login as "zaurus" or "root". In this mode the Zaurus won't react on the power switch, so You're unable to turn the device off. End the session with "reboot" to boot back to the QTopia desktop.

Note:
We encountered Zauris which needed up to 1 hour without battery to accept the "DB"-trick. If Your Zaurus won't react as described below, don't worry and try it again with a longer "batteryless" time.

Helpful links:

www.trisoft.de   Our homepage with information about and
                                  downloads for the SHARP Zaurus series

www.xtops.de   Homepage of Xtops / Berlin. Specialists for Li-
                                  nux on mobile computers.

Zaurus portals

www.z-portal.info   Largest german-speaking Zaurus-Community

www.zaurus.de   SHARP Germany's homepage for the Zauru

www.myzaurus.com   SHARP USA's homepage for the Zaurus

Software

www.killefiz.de/zaurus   The Zaurus-Software-index with hundreds of
                                  applications for all Zaurus models. This should
                                  be the first try when You look for software.

yakty.s31.xrea.com/linuzau/   Author of the KeyHelper applet for redefining
                                  the Zaurus keys (Japanese)

www.double.co.nz/zaurus/   Manual for transcoding videos into the format
                                  of the Zaurus MoviePlayer

Accessories for Your Zaurus

There is a big supply of accessories for Your Zaurus to extend its application. The following list does not claim to be complete. But all listed articles are tested by us and thus work smoothly with Your device:

SHARP accessories

EA-70S	Power supply 5V
CE-170TS	serial cable for PC
CE-BC21	Battery charger for EA-BL06
EA-BL06	LiIon battery 3.7V, 950 mAh
EA-BL08K	LiIon battery 3.7V, 1800 mAh. This item contains a black bottom cover for use in SL-C750
CE-AG06	CompactFlash camera card
CE-RH1	Stereo-headset and remote control for the MP-3 player
CE-VK1	Mono-microphone and mono-headset **Discontinued in May 2004**
ZPEN	Extra stylus

Third party accessories

BIL-10BT	CompactFlash 10 BaseT network adaptor
BIL-M56G	CompactFlash 56K analog modem
BIL-GPS	CompactFlash GPS-module
LPWLANCF	CompactFlash WLan adaptor by Buffalo
SMC-2642WEU	CompactFlash WLan adaptor by SMC
16SDW00	CompactFlash WLan adaptor by SanDisk **Discontinued in March 2004**
MHPower	Zaurus car adaptor by Serial IO

Samsung Powerpack	LiIon battery pack 5 V, 3600 mAh complete set: battery, AC adapt., connection cable, hip-bag **Discontinued in June 2004**
SL-C7CASEBL	PielFrama leathercase for models SL-C700 and SL-C750
SL-C8CASELBL	PielFrama leathercase for models SL-C760 and SL-C860
ZBLUE Single	Bluetooth-module for usage on the SHARP I/O-Port. Connects a Zaurus via Bluetooth-mobilephone to the internet.
ZBLUE Kit	Like ZBLUE Single but with additional Bluetooth-USB module. Enables wireless data transfer to a PC.
ZThinUSB	Serial IO USB-cable with charging function
ZThinCable	Serial IO serial cable
ZBPUSB	USB-cable with charging function
ZBPDB9M	serial cable (plug)
ZBPDB9F	serial cable (jack)
ZXGACF	I/O-Data XGA-card in CF format. With ZXGACF it's possible to present up to SVGA-images with the Zaurus. Includes an I/R remote control in creditcard size.

Declaration of conformity

The company

> ///TRIsoft
> Fischer & Stephan OHG
> Rathausplatz 4
>
> D - 30966 Hemmingen

explains in sole liability, that the product

SHARP SL-C750 / SHARP SL-C760 / SHARP SL-C860

which is referred to in this declaration, conforms to the following norms and directives:

EMV-Richtlinie 89/336/EWG, modified by RL 92/31/EWG and RL 93/68/EWG.

EN 61000-6-3	EN 55022: 1998+A1 2000	Funkstöreigenschaften
	EN 55014	diskont. Störungen
	EN 61000-3-2	Oberschwingungen
	EN 61000-3-3	Flicker
EN 61000-6-1	EN 55024: 1998+A1: 2001	Störfestigkeitseigenschaften
	EN 61000-4-2	ESD
	EN 61000-4-3	HF-Feld
	EN 61000-4-4	Burst
	EN 61000-4-5	Surge
	EN 61000-4-6	HF-Injekt.
	EN 61000-4-8	Magnetfeld
	EN 61000-4-11	Dips + Variation

We keep the required documentation ready for insight.

Hemmingen, den 8.7.2003   Marc Stephan + Robert Fischer

Notes about the operational environment:
The aforementioned norms define limiting values for the appliance in living, working and business areas, whereby the usage of the device is designed for these areas.

All these areas of appliance are connected to the public low voltage supply. The usage in an environment with a stronger electromagnetic disturbance, as, for instance, a typically industrial environment, can lead to problems with an unsufficient interference resistance of the product.