TuxMobil: Linux with Laptops, Notebooks, PDAs, Mobile Phones and Portable Computers

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Tips and Tricks for Internal Modems in Li and NoteBooks

Xtops.DE (En)

Laptops, Notebooks an with pre-installed

Linux, Laptops, PDAs

See also the Linux survey of laptop with internal modems .

Chipsets

For a general survey see the Modem Chipsets Index

Modems Based on the Lucent Modem Chip Set

Recently a binary driver for the devices based on the Lucent chipset becar Linmodems.Org

Mwave ACP Modem

This is a set of Linux drivers for the ACP modem (Mwave) , a WinModem. It is comp
kernel module and a user level application. Together these components support dir
public switched telephone networks (PSTNs) and support selected world wide cou
provides support for the IBM ThinkPad 600E (600, 770). The modem also supp
communications port interface (ttySx) and is compatible with the Hayes AT Command

Conexant/Rockwell Modem

This modem (aka Rockwell modem) is used in e.g. some models of the SONY VAIO ser
binary driver from MBSI .

Conexant/Rockwell modem HOWTO

Intel/Ambient

For the modem made by Ambient, you may find a binary driver from Intel .

SIS630(S)

This Linux driver Archived . supports all laptops, using the SIS630(S) chipset: Gericom C
Baycom Worldbook II, Sager … (in fact these are laptops manufactured by Cl
2200C/2700C).

ESS

See ESS Modem Mini FAQ .

Smartlink/HAMR

A binary driver for the Smart Link Software Modem (HAMR) may be found here and h

PCTEL

Look at the Unofficial PCTEL Compatibility Database. And see the PCTEL modem on Linux page.

Internal PCMCIA Modems

Internal PCMCIA modems usually work with Linux. But there are no guarantees. And some are so called PCMCIA WinModems. Look here for a driver of Lucent based WinModems.

On this page you'll find Linux drivers and documentation for so called Winmodems with Lucent Apollo (ISA) and Mars (PCI) chipsets. Lucent AMR modems are not supported by this driver. The core communications code of these kits is the property of Agere Systems, Inc. (formerly known as Microelectronics Group of Lucent Technologies). The open source parts were modified to implement some additional features. [I didn't investigate the difference to the above mentioned site, yet WH]

Unsupported Internal Modems

Some **internal modems** will NOT work with Linux , if the laptop has an **unsupported WinModem** or **SoftModem** . This is caused by non-standard hardware.

Quotation from the Kernel-FAQ: 'Why aren't WinModems supported? (REG, quoting Edward S. Marshall) The problem is the lack of specifications for this hardware. Most companies producing so-called *WinModems* refuse to provide specifications which would allow non-Microsoft operating systems to use them. The basic issue is that they don't work like a traditional modem; they don't have a DSP, and make the CPU do all the work. Hence, you can't talk to them like a traditional modem, and you -need- to run the modem driver as a realtime task, or you'll have serious data loss issues under any kind of load. They're simply a poor design.'"

A quotation from WinModem are not Modems :'It has been pointed out to me that the name "Winmodem" is a registered trademark of U.S. Robotics and, subsequent to their merger, 3Com. I'm sure that they are proud of this fact ;) In any case, when I refer to Winmodems, please read it as "Winmodems(TM), host-based modems, HCF-modems, HSP-modems, [soft-modems] and all similar modem-like hardware." '.

From <discuss at linmodems.org>, <LeRoutier at wanadoo.fr> wrote: "While surfing, i found a site where we can download a DDK for WinModems . It's available under Win32 and Linux (yes, you read

well). . Look carefully at it, it should contain great info about WinModem internals I hope it helped. If not, sorry ."

External Modems

As a last resort you may use an external modem.

- external PCMCIA card modem, which usually work fine with Linux. See PCMCIA card survey (by types)
- external serial modem, which usually work fine with Linux
- external USB modems (I'm not sure about Linux support, you may have a look at my page about Laptops with USB Ports)."

Hardware Check

What Kind of Modem Is Used In My Laptop? How to check it.

Information Retrieval: The Usual Way - By Linux Means

- Don't forget to check the BIOS for the right settings first.
- Note: Sometimes (or maybe always) you have to disable your internal modem in the BIOS, if you want to use a PCMCIA card modem (and maybe an external modem).
- Check the specs of your laptop.
- Check the PCI devices with cat /proc/pci, example output from Fujitsu 770TX:

```
Bus  0, device  16, function  0:
Communication controller: Lucent (ex-AT&T) Microelectronics L [..]
  Medium devsel.  Fast back-to-back capable.  IRQ 11.  [..]
  Non-prefetchable 32 bit memory at 0xfedffc00 [0xfedffc00].
  I/O at 0xf4e8 [0xf4e9].
  I/O at 0xf000 [0xf001].
```

- Check the kernel messages with dmesg for serial or PCMCIA devices.
- You may use the ATI3 command in HyperTerminal from Windows9x/NT

```
ATI3      LT V.90 Data+Fax Modem Version 5.54
```

- Use one of the new ltmodem drivers.

If you have an internal PCMCIA modem check the output of cardctl ident.

There might be other ways to get information about the internal modem.

If you need to get information about an unknown device you may look up the mapping of FCC IDs↗ by the U.S. government. In the database of PCI manufacturer and device IDs (lspci) or in the database of PnP device IDs (pnpdump).

Information Retrieval: The Hard Way

The following is a courtesy by Roger J. Allen <rja_at_sis.rpslmc.edu> :

I purchased a refurbished Compaq Armada SB (AR SB 5233/32/4.0/DMT), and it came with an internal modem. Compaq calls it a "Compaq Armada 1500 Series 560CL Telephony Modem". The Compaq software that claims to upgrade it to V.90 calls it a "Compaq Armada Controllerless Integrated Modem Deliverable". After the upgrade, the modem firmware is version 1.6.19, and the Compaq Diagnostics displays "UNIMODEM1D905A3B". The word WinModem did not show up anywhere. Of course, RedHat 6.0 will not recognize it.

On the bottom of the computer, there was a sticker added with:

```
COMPAQ COMPUTER CORPORATION
MODEM MANUFACTURED IN TAIWAN
SERIES NC1000
COMPLIES WITH PART 68.FCC RULES.
FCC REGISTRATION NUMBER:
CNTTAI-32206-DT-E
REN: 0.6
LOAD NUMBER: 0.6
JTM APPROVAL NUMBER:
DAFH/36A/1097/S
```

```
307363-001  CY  S59
```

on that sticker was a Industry Canada sticker with:

```
780 8534 A
```

I purchased a T-8 Torx screw driver to look at the board, and I hope to find a replacement modem that I can use with Linux.

Here is info that was on the modem.

A sticker had:

```
Compaq
Series NC1000
See Manual
Complies with Canadian
ICES-003 Class B.
FCC    UL
Tested To Comply With FCC Standards
FOR HOME OR OFFICE USES
307362-002     S59
```

Another sticker with a barcode of:

```
310V23000050767
```

below an etched:

```
80-310V230-3
```

A bigger barcode sticker on the Lucent chip had:

```
REPLACE WITH COMPAQ SPARE
SPS: 255245-001
```

The Lucent chip had:

```
LUCENT
1643
T48PCH 12
9806S 3256540
C 95 LUCENT
```

Lots of small stickers all over it. Almost a fire hazard!

```
"REV V1.00"  "159" "E01" "307" "H"
```

A silver oval thing had

```
"H22.118C8"
```

on it.

A small chip had:

```
1034AH
9749H
1479974
```

If there is any tool that you would like for me to run to squeeze more info out of it, let me know.

Other Resources

- LinModem-HOWTO⬈ by Sean Walbran in SGML format.
  LinModem-HOWTO⬈ by Sean Walbran in HTML format.
- LTModem diagnostic tool and driver by Richard ⬈.
- LucentPCI (binary only) driver, for PCI driven internal modems, see Linux WinModem Support⬈.
- Linux WinModem Support⬈ by Russel Nelson: "A lot of people claim that a Winmodem has no place in a Linux box. I disagree. There are many applications for a Winmodem if you stop thinking of it as a modem, and start thinking of it as a telephone interface:...". Contains a **Survey of Modem Chipsets** and provides a **Mailing List**
- WinModem are not Modems⬈ "The purpose of this page is to identify consumer-grade modems systematically and to note compatibility with Linux as reported by you, the users." Contains a **FAQ**, and a **Linux/Modem Compatibility Knowledge Base** and a **Survey of Modem Chipsets**
- Windows System Internals
- Hardware-HOWTO⬈.
- Reports on Lucent PCI modems by Richard Nelson, Richard Caldwell and Ed Schulz (Lucent) at Allin Cottrell .
- ltmodem.tgz ⬈
- Modem-HOWTO
- Newsgroups: comp.os.linux.hardware, comp.os.linux.portable, comp.os.linux.setup
- Debian Package: pctel-kernel-2.2.16-driver
- pctel ⬈ - driver for kernel 2.4.x, should support Via, Asus, CM8x, SiS, PCT and AMR based modems. And unsupported HSP driver.

Credits

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- Masanori Kuwahara <mkuwahar at leland.Stanford.EDU>
- Mike Sullivan <sullivam at us.ibm.com>

- Jason Uppenborn <jasonu at canada.com>

Xtops.DE (en)   **Laptops, Notebooks an
                                     with pre-installed**

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