FALCOM
WIRELESS COMMUNICATIONS GMBH

Setup LINUX

for

FALCOM modem devices

Version: 2.0.0; Modified: Friday 20 November 2009

Version history:

This table provides a summary of the document revisions.

Version	Author	Changes	Modified
2.0.0	F. Beqiri	- This document contents is now adapted for all FALCOM GSM modems.	20/11/2009
1.0.3	F. Beqiri	- Additional known problems added - see chapter 3, point 2	01/04/2008
1.0.2	F. Beqiri	- To use TWIST-USB, do the same steps used for SAMBA55 – See chapter 1.1.1.	10/09/2007
1.0.1	F. Beqiri	- The parameter ***<internet>*** in the **AT+CGDCON** command must be enclosed in quotation marks. - Added chapter 2.1.1 - provides information about PIN secured phone cards.	19/06/2007
1.0.0	F. Beqiri	- Initial version	30/11/2006

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Cautions

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Note

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1 Setup LINUX for FALCOM modem devices

1.1 Affected devices

- ✔ ***FALCOM SAMBA55 with FALCOM branding***
- ✔ ***FALCOM SAMBA75***
- ✔ ***FALCOM SAMBA3G***
- ✔ ***FALCOM SAMBA HSPA***
- ✔ ***FALCOM MAMBO2***

1.2 System requirements

- *modern Linux with current Kernel (e.g. `Ubuntu 9.10 or Debian 5`)*
- *enabled UDEV system (default on most current Linux distributions)*
- *installed basic Linux tools (`bash`, `echo`, `grep`, `cat`)*
- *installed UDEV administration tool (called `udevadm`)*

1.3 Setup the system

Before connecting any FALCOM device perform these steps:

- *disconnect every FALCOM device from the computer,*
- *download the falcom UDEV rules and helper-script from the FALCOM support area on www.falcom.de to a local folder,*
- *open an administrator terminal,*
- *unzip the "`falcom-udev-rules-2.0.1.tar.bz2`" and follow the installation steps in the README, which is inside the archive file,*
- *after performing all these steps your system is ready for handling FALCOM modem devices,*
- *all device nodes are linked to the sub-folder "`/dev/falcom/`" and named using the scheme: DEVICETYPE-IMEI (e.g. the full file path to the device node for a MAMBO2 is "`/dev/falcom/MAMBO2-123456789012345`)".*

1.4 User access rights

All new device nodes have the owner "root" and the group "`dialout`", so make sure the user who will access the devices is member of the group "`dialout`". For security reasons, read and write access is disabled for all other users who are not member of "`dialout`".

1.5 Creating a network connection

1.5.1 Network-Manager

With 3G capable devices you can use the Network-Manager tool, which is part of most modern Linux distributions, to create a new mobile wideband connection.

1.5.2 gnome-ppp, kppp, wvdial

wvdial-based software like gnome-ppp and kppp can also use the device nodes inside "/dev/falcom/". For more details, read the documentation provided by your favourite modem dialer program.

1.5.3 FALCOM Workbench

All devices inside "/dev/falcom/" are automatically available in the port plugin of the FALCOM Workbench, no further configuration is necessary.

1.6 Known Problems

1. ***The device is not recognised:***
   - ✗ *multiple causes are possible for this problem*
   - ✗ *first check if the device is connected correctly and the LEDs are flashing*
   - ✗ *watch the folder "/dev/" and check if a new device-node is created after connecting the device to the computer (these nodes are called ttyACM or ttyUSB, depeding on the device type)*
   - ✗ *check if the USB cabel is OK by using an alternative cable*
   - ✗ *some of the cheaper USB hubs are having problems handling the devices correctly, try to connect the device directly to an USB port (without any cables or hubs)*
2. ***Wrong route:***

   On some strange provider-SAMBA-device combinations, you may got a wrong entry in the Linux kernel routing table, e.g.:

   ```
   root@linux:~/# route
   ```

   will output something similar to:

Destination	Gateway	Genmask	Flags	Metric	Ref	Use Iface
10.0.0.1	*	255.255.255.255	UH	0	0	0 ppp0
loopback	*	255.0.0.0	U	0	0	0 lo
default	10.0.0.1	0.0.0.0	UG	0	0	0 ppp0

Table 2: Kernel IP routing table

   Where the first entry (10.0.0.1) is the wrong route entry. You can easily solve the problem, if you manually deleting and re-adding the route, like this:
   Deleting route:

   ```
   root@linux:~/# route del 10.0.0.1
   ```

   Re-adding route:

   ```
   root@linux:~/# route add -h xxx.xxx.xxx.xxx ppp0
   ```

   Where **xxx.xxx.xxx.xxx** *is the correct route's IP-address (e.g. 192.168.254.254 or 10.0.254.254).*

   The route table should now look similar to this:

   ```
   root@linux:~/# route
   ```

Destination	Gateway	Genmask	Flags	Metric	Ref	Use Iface
192.168.254.254	*	255.255.255.255	UH	0	0	0 ppp0
loopback	*	255.0.0.0	U	0	0	0 lo
default	10.0.0.1	0.0.0.0	UG	0	0	0 ppp0

Table 3: Kernel IP routing table

3. Modem disabled by USB hub:

There are two options causing this behaviour.
The Samba 75 needs a specific amount of power. If you are using an under-powered USB interface Linux will disable that port to prevent hardware damage. This is often the case if you are using a laptop or similar devices. You can fix this problem by using an additional external USB hub with extra power supply.
*If you see a message in the system log file (command: '**dmesg'**) similar to:*

```
usb 2-1: new full speed USB device using uhci_hcd and address 67
usb 2-1: configuration #1 chosen from 1 choice
cdc_acm 2-1:1.0: ttyACM1: USB ACM device
hub 2-0:1.0: port 1 disabled by hub (EMI?), re-enabling...
usb 2-1: USB disconnect, address 67
```

then the problem is caused by a bug in the Linux kernel. This bug is fixed in Linux >= 2.6.25. You can check the version you are using by opening a terminal and enter:

```
cat /proc/version
```