Nyos Evo Quick Start Guide

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About this document

Overview and Purpose

This document describes how to use the Option XYfi (engineering name 'Nyos Evo') during testing. The first 3 parts explain how to install the drivers and make the different driver interfaces visible in the device manager, so that AT commands can be send. The 4th part explains how to use the web browser, to control settings of the WLAN access point (hotspot). For some tests it might be required that the device has some 'client' functions, e.g. switch WLAN on/off, change data rates or channel. These items are explained in the last part.

Confidentiality

Version History

Date	Version	Author(s)	Revision(s)	Remarks
June 16, 2011	v01	E. Vanderoey		Initial version
June 17, 2011	v02	E. Vanderoey	J. Willems	Added hot-spot configuration
June 22, 2011	v03	E. Vanderoey	J. Willems	Added network hotfix and WLAN control
July 14, 2011	v04	E. Vanderoey		Added controlling the WLAN transmitter
July 27, 2011	v05	E. Vanderoey		Added use of the XYfi with a battery pack

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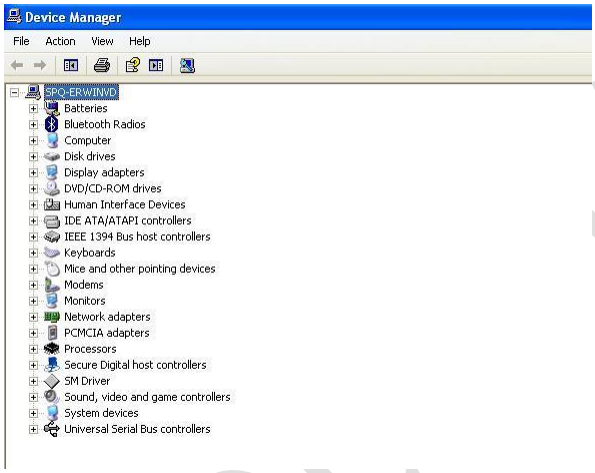
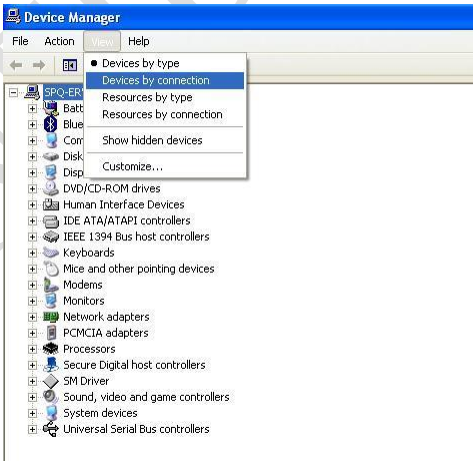
1 DRIVER INSTALLATION

This part will explain how to install the drivers, chapter 3 will explain how to make them visible in the device manager. The initial version of this document is based on driver version 6.0.9.2, but in the future this driver version can increase.
To install the drivers follow the steps explained below.

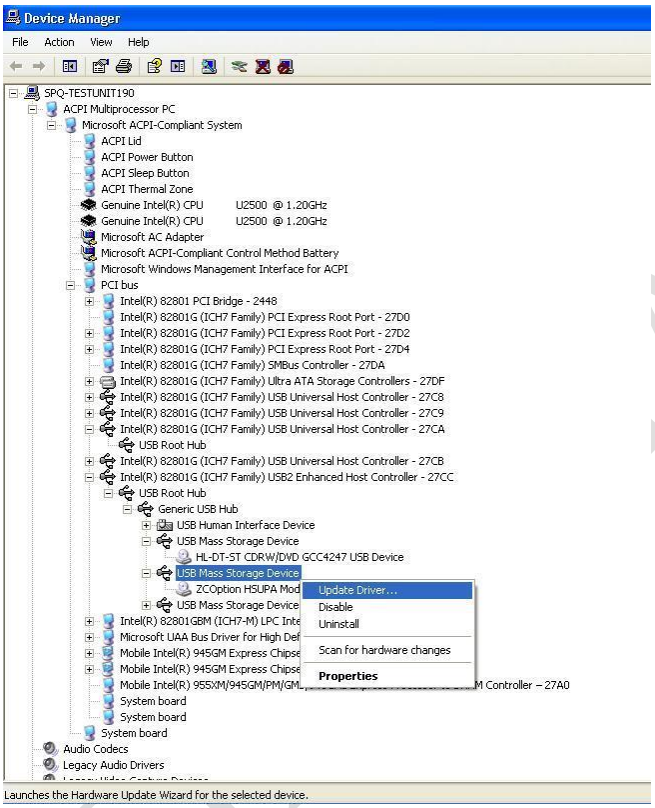
a. Go to Control Panel → System → Hardware → Device Manager.



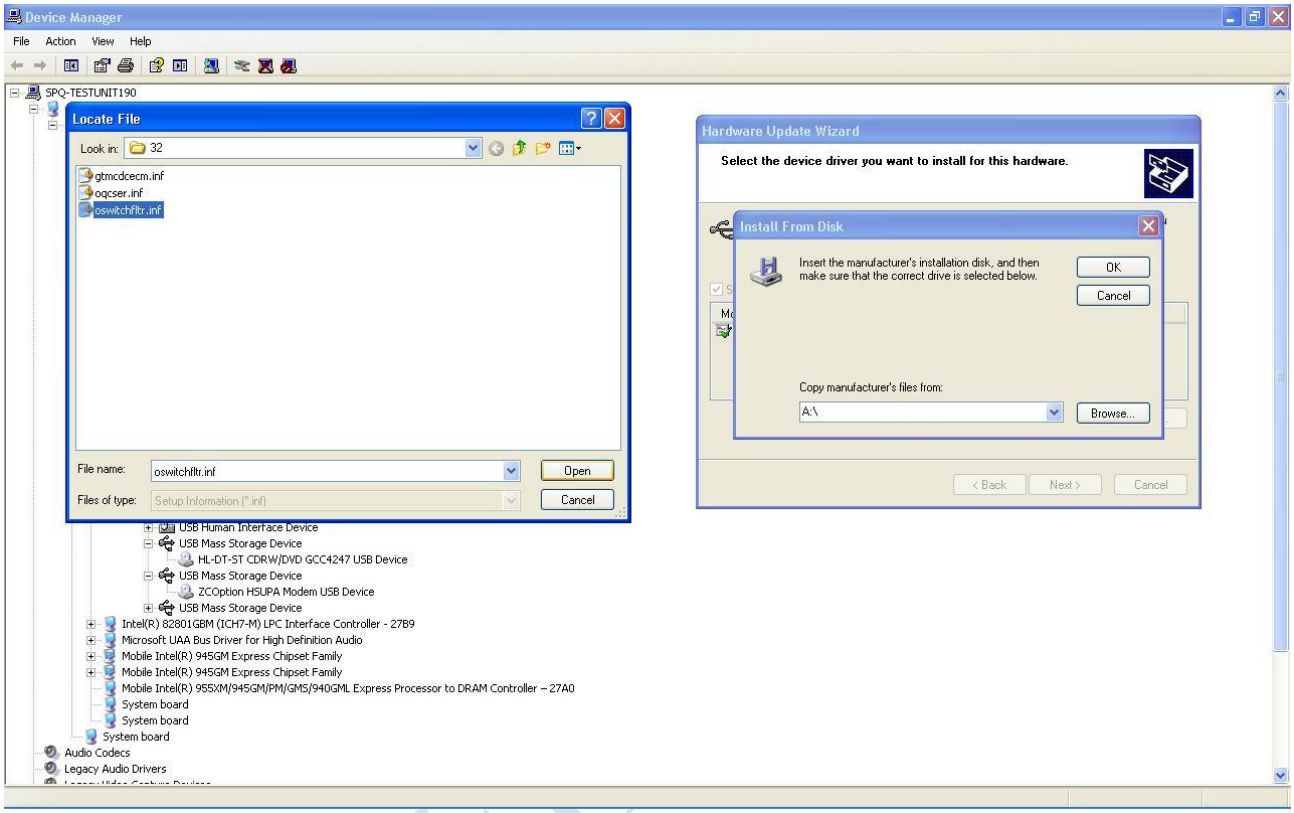
b. Click on “Devices by connection” in the menu “View”.



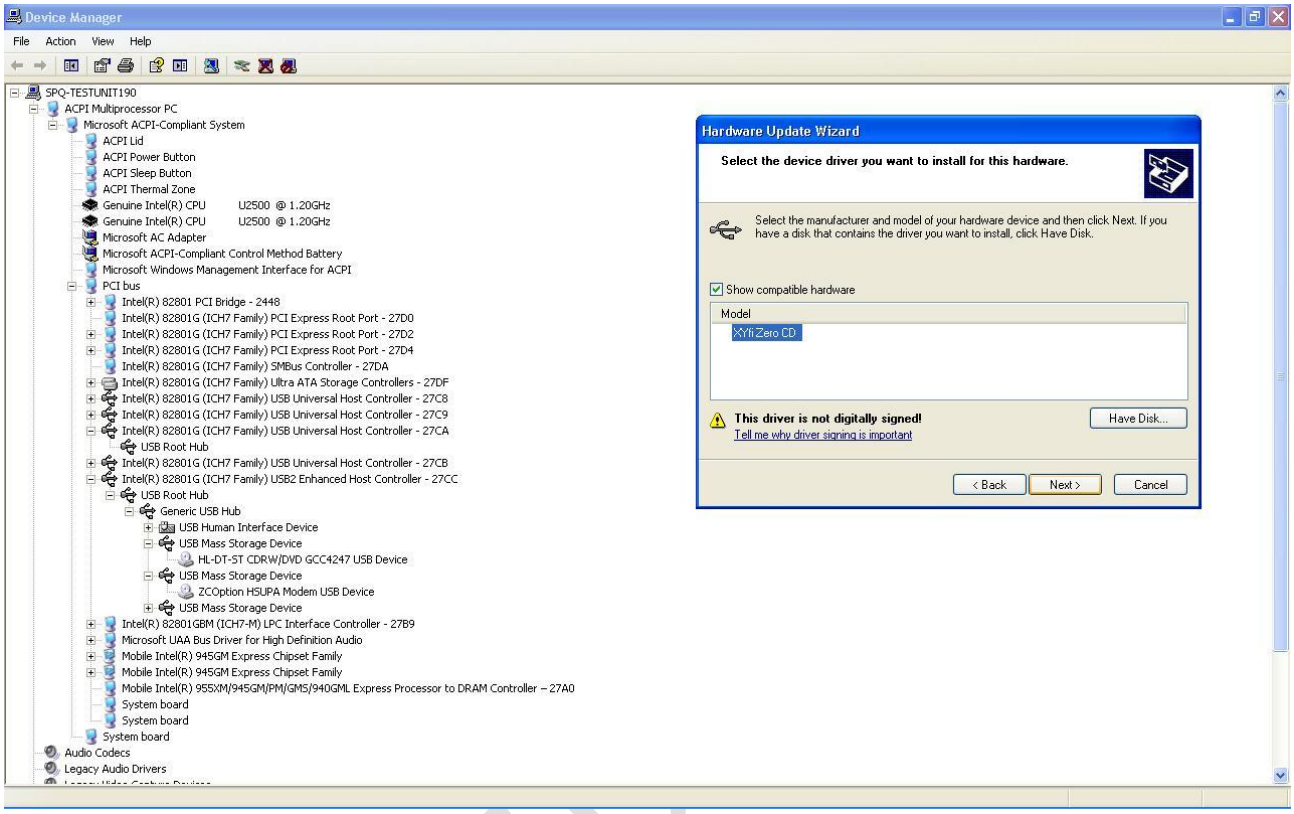
c. In the list you can find “ZCOption HSUPA Modem” (see picture).
Right click on “USB Mass Storage Device” and select “Update Driver…”.
Make sure you right click “USB Mass Storage Device” and NOT “ZCOption HSUPA Modem”.



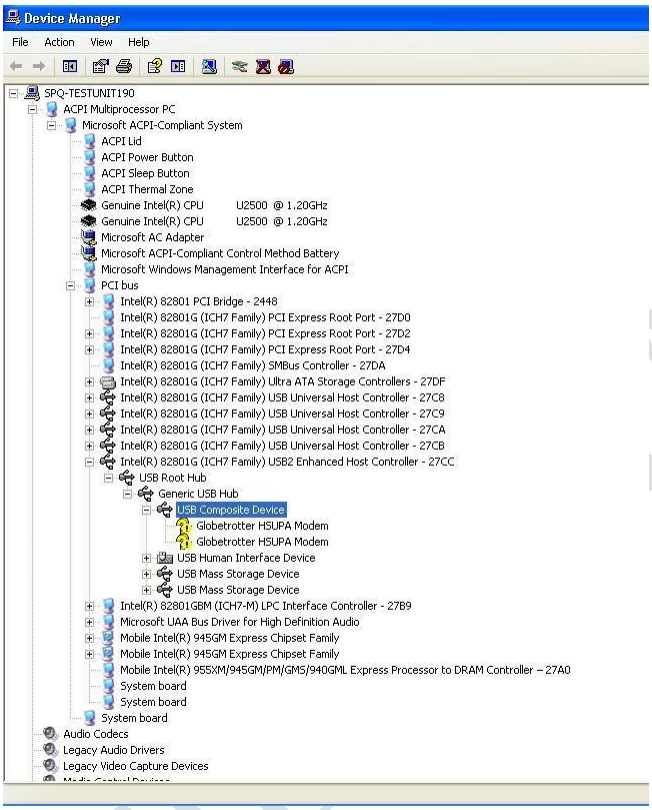
d. At the “Hardware Update Wizard” select consecutively “No, not this time” → “Install from a list or specific location” → “Don’t search. I will choose the driver to install” → “Have Disk”.
Then browse to the location with the drivers (6.0.9.2) and select “oswitchfltr.inf”.



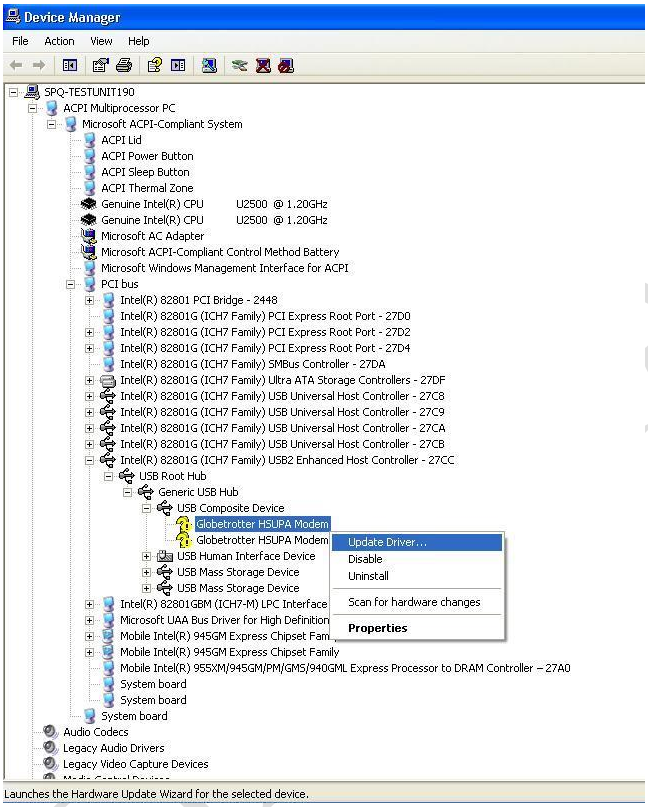
e. You can now install 'XYfi Zero CD'. After this select "Next" → "Continue Anyway" → Finish.



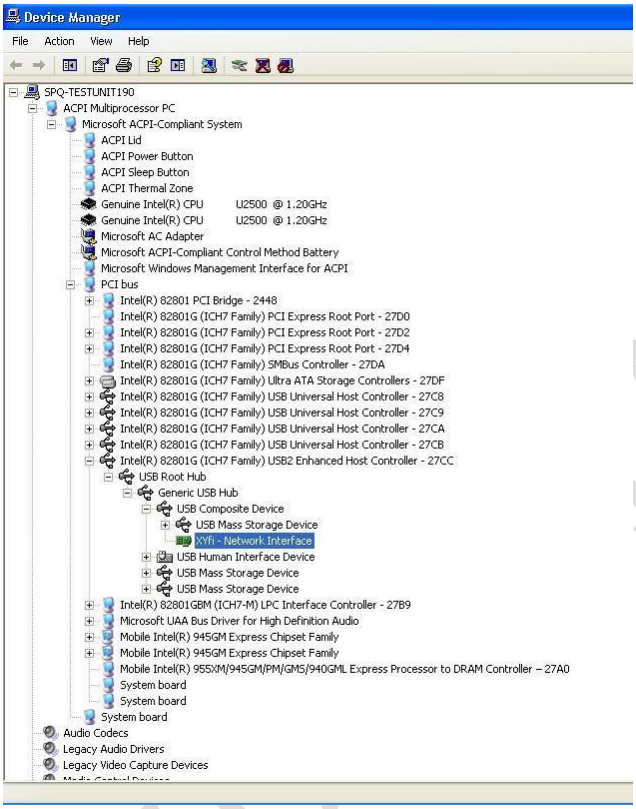
f. Two “Globetrotter HSUPA Modem” items should be visible.
If this is not the case, remove the device and re-insert.



g. Right click on “Globetrotter HSUPA Modem” and select “Update Driver…”. Select consecutively “No, not this time” → “Install from a list of specific location”. Browse to the location of the drivers and press “Next”.



h. The drivers are now installed



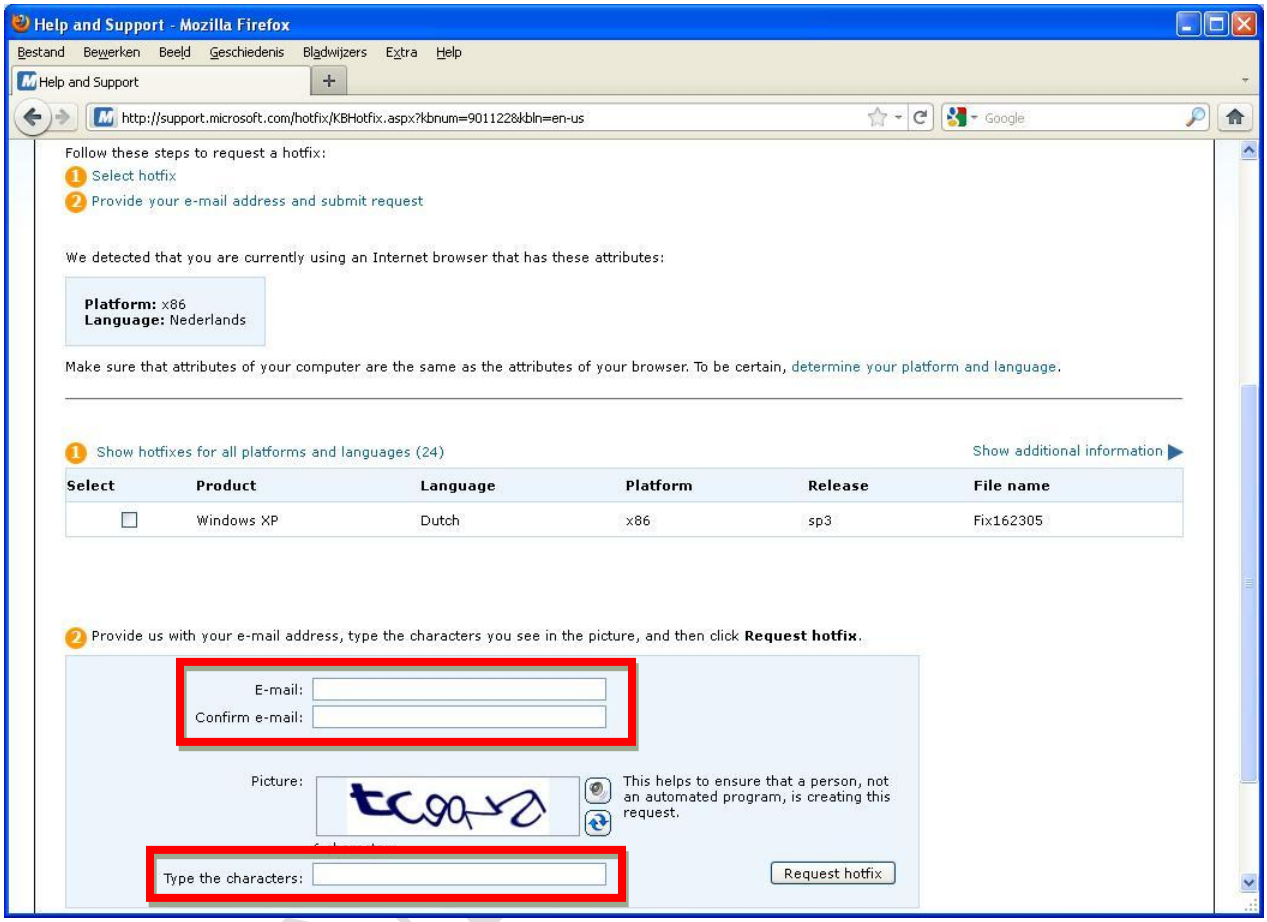
2 NETWORK INTERFACE HOTFIX

Sometimes, after installation of the drivers, the device manager shows an exclamation mark next to the “XYfi – Network Interface”. If the device mentions a code 10 error, there is a hotfix available for download to correct this. The problem can occur when you install the drivers on Windows XP with Service Pack 2.

a. Open your internet explorer and go to: http://support.microsoft.com/kb/901122/en-us

b. Click on “View and request hotfix downloads”.

c. By step 1, check the hotfix with filename “Fix162305”.
By step 2, enter your mail and the security code.
Click “Request hotfix”.



d. Microsoft will send an e-mail to the given address.
At the bottom of the mail, there is a link to the executable of the hotfix.

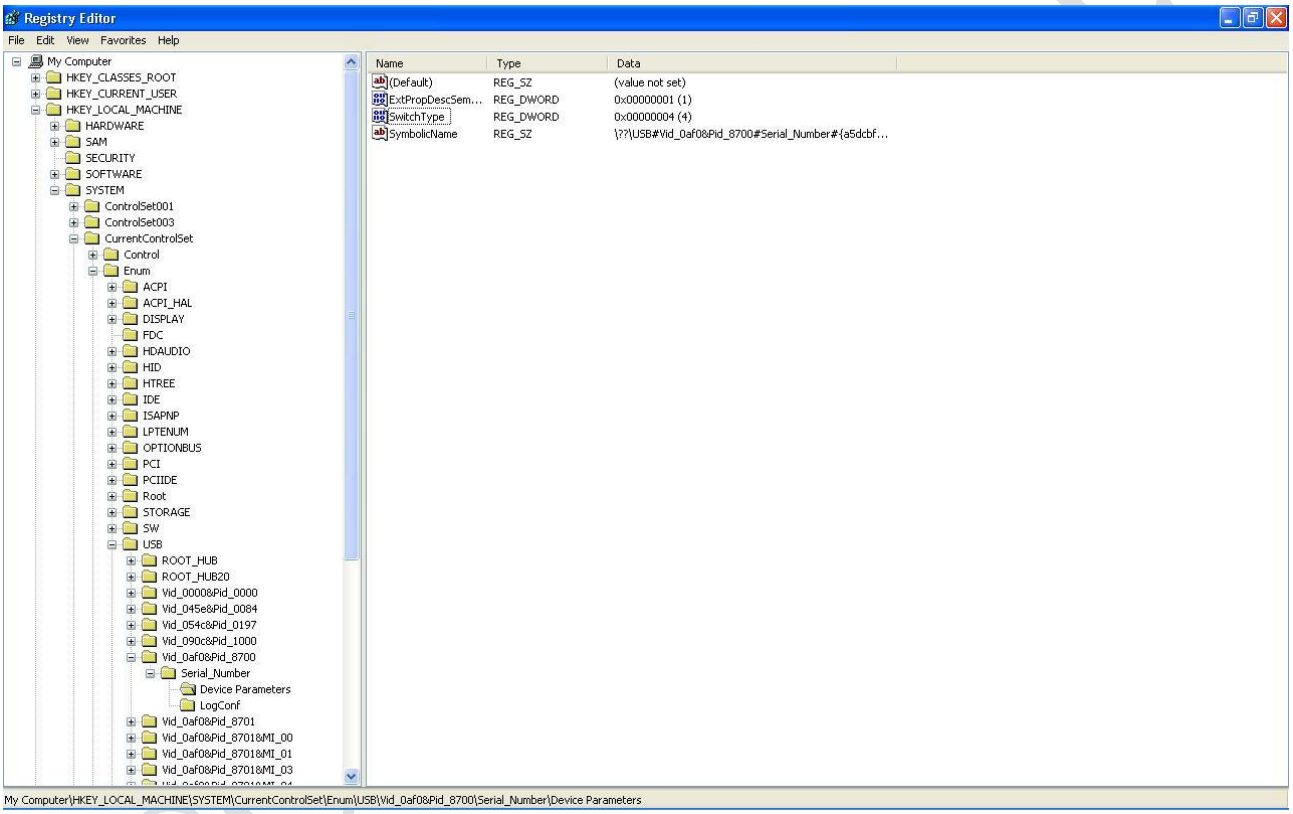
e. Install the hotfix.

3 MAKING THE SERIAL INTERFACE PORTS VISIBLE

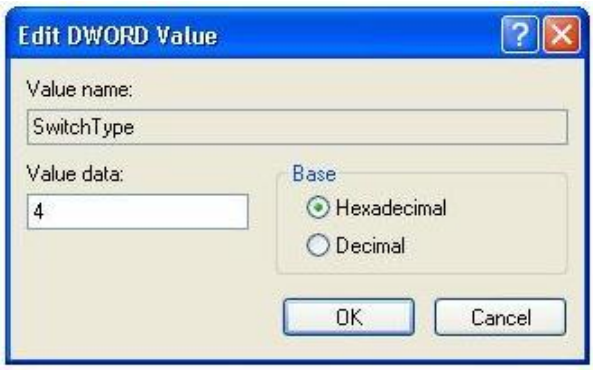
When the Nyos Evo is inserted in a host, the device manager will not show the application, diagnostics, or any other interface. Since driver interfaces will be required for sending AT commands or logging via QXDM, this needs to be configured on the host device used for testing.
Follow the steps below to make the drivers visible.

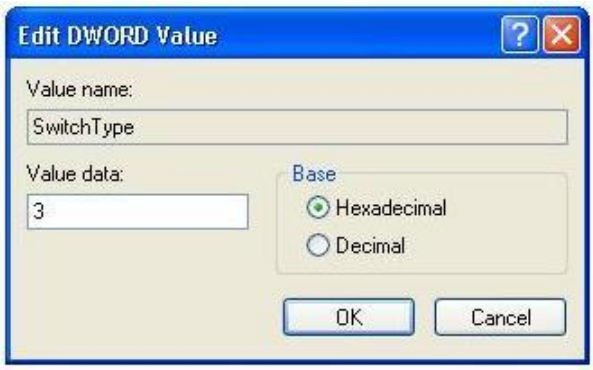
a. Go to “Start” → “Run…” → Type “regedit” and press “OK”.

b. Open, on the left, the folder: [HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Enum\USB\Vid_0af0&Pid_8700\Serial_Number\Device Parameters]



c. Double click on “SwitchType” and change the value from “4” to “3”.

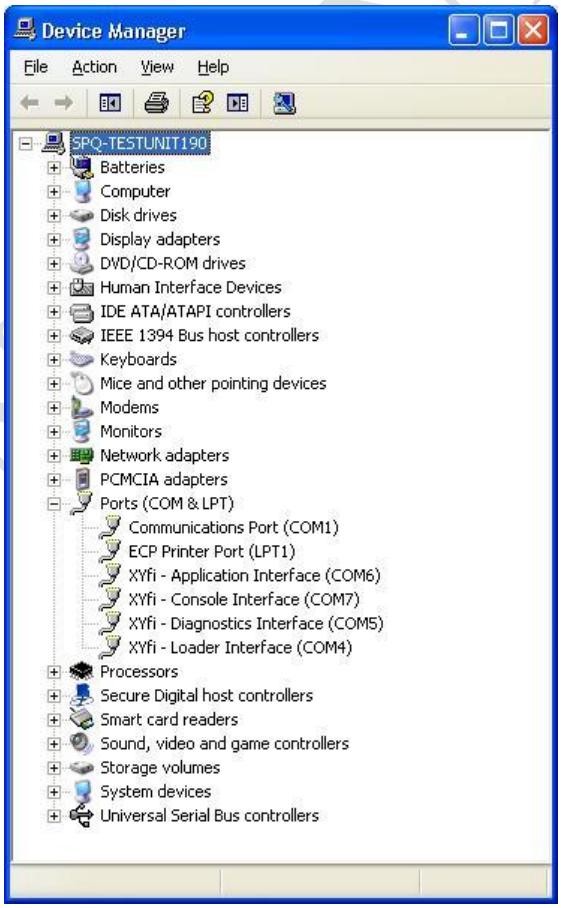




d. Re-insert the device, the other interfaces will be enumerated now.

e. Install the remaining drivers for the other device interfaces, using the 6.0.9.2 package.

f. The interface ports will now be visible.

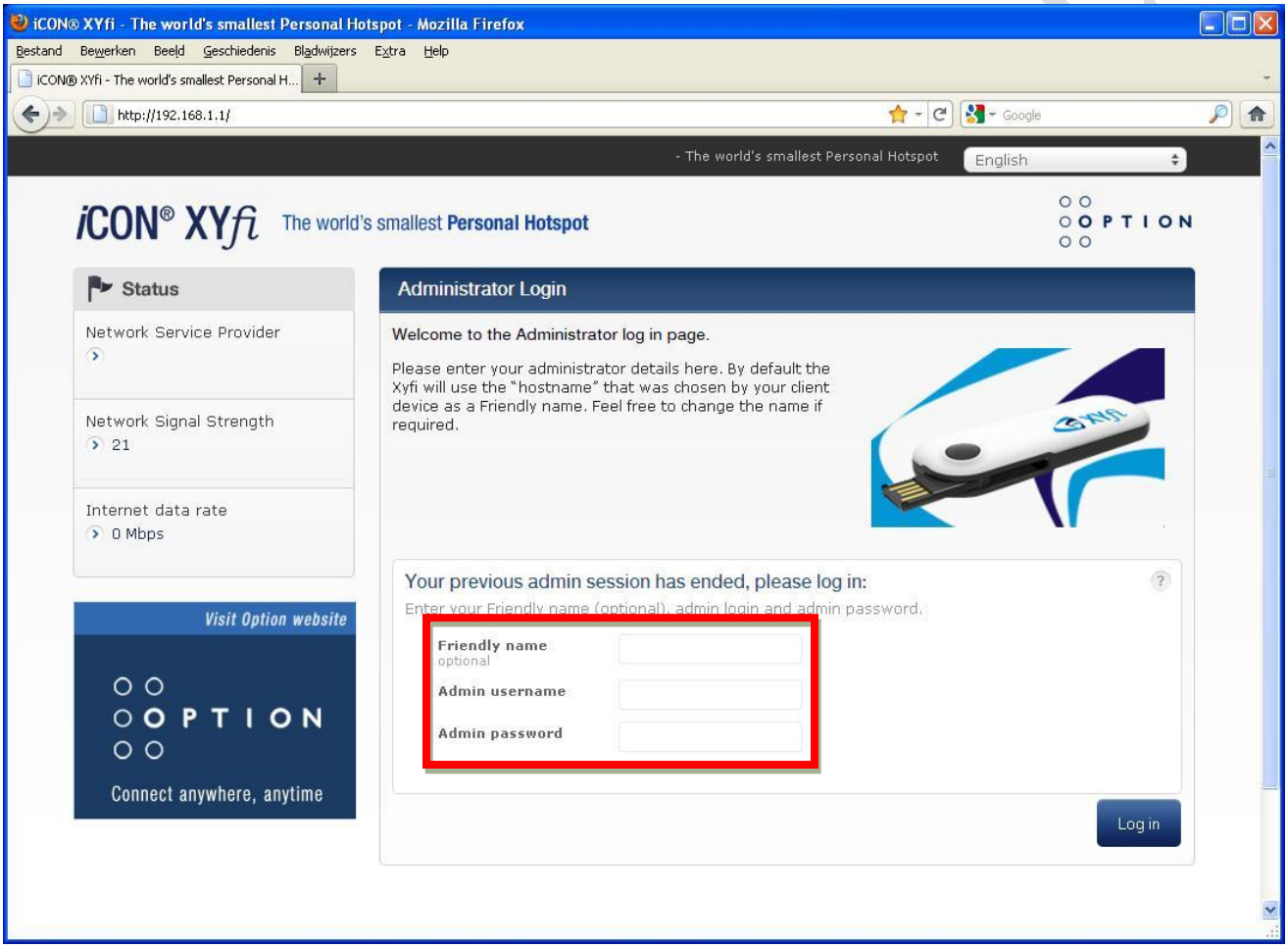


4 CONFIGURING THE WI-FI HOTSPOT

a. Open an internet explorer.

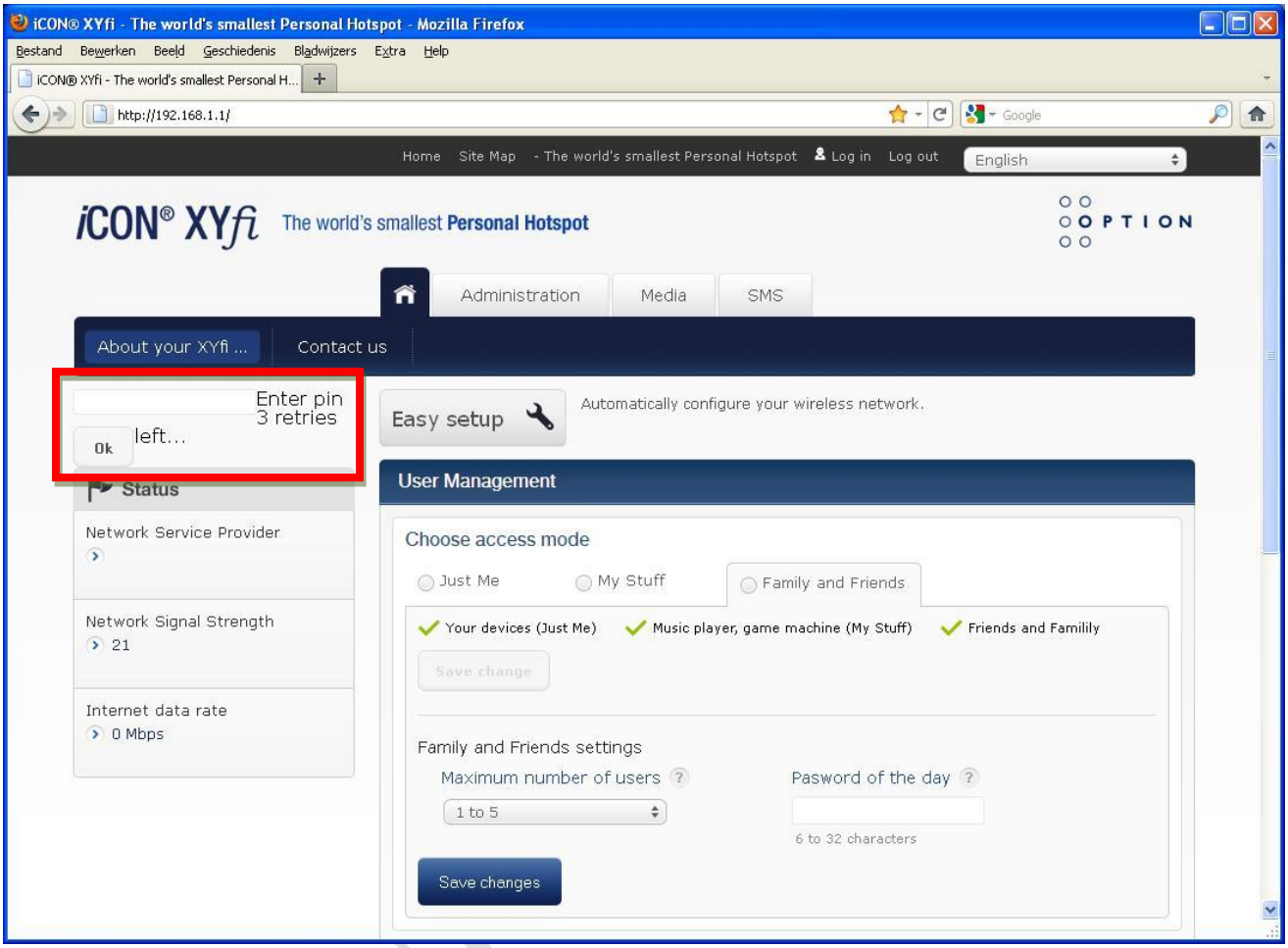
b. In the address bar, type http://192.168.1.1 and press enter.

c. The login data:
- Friendly name: test
- Admin username: test
- Admin password: test$test

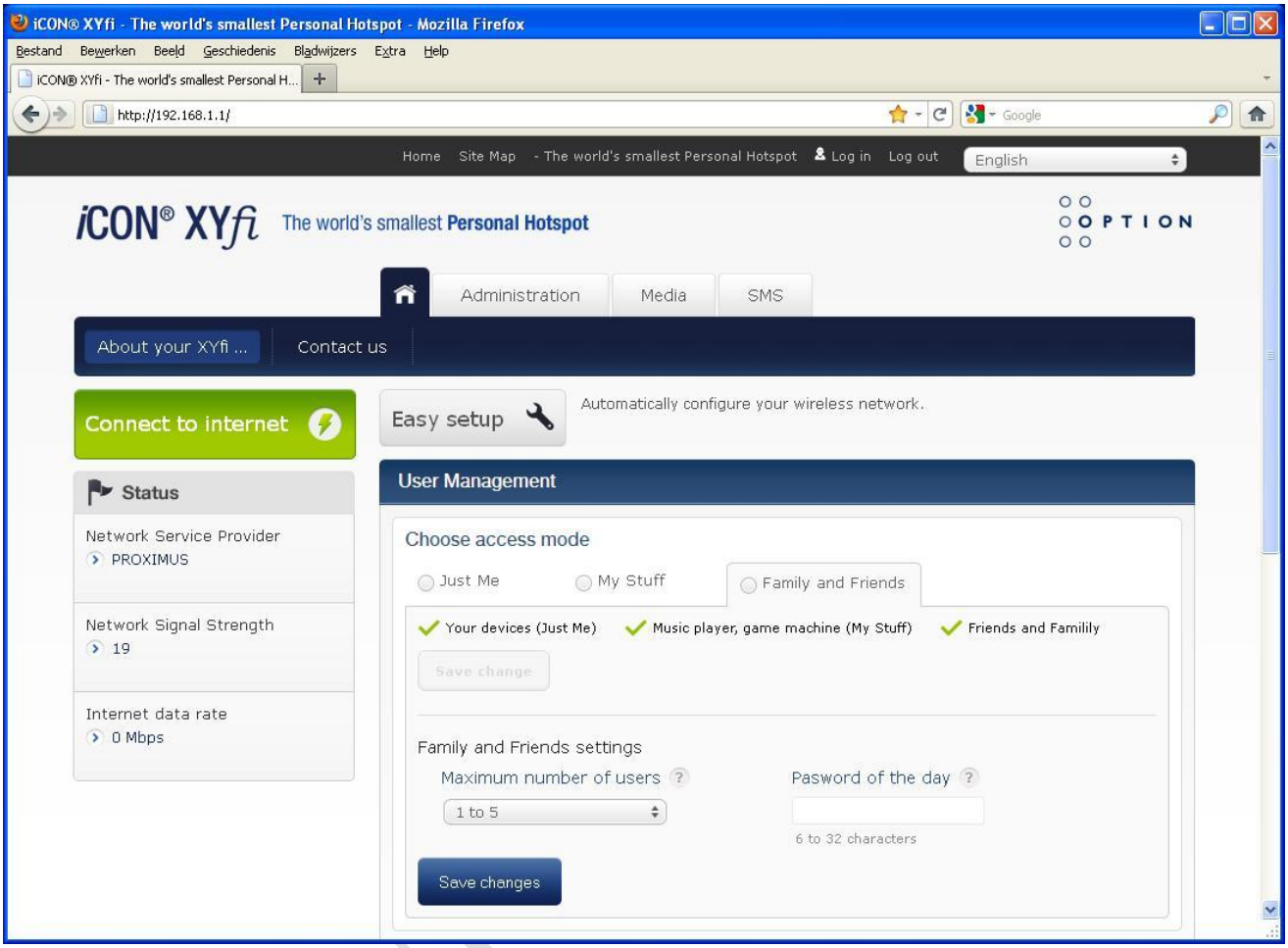


d. Press “Log in”.

e. On the left side, enter the PIN of your SIM card and press “Ok”.

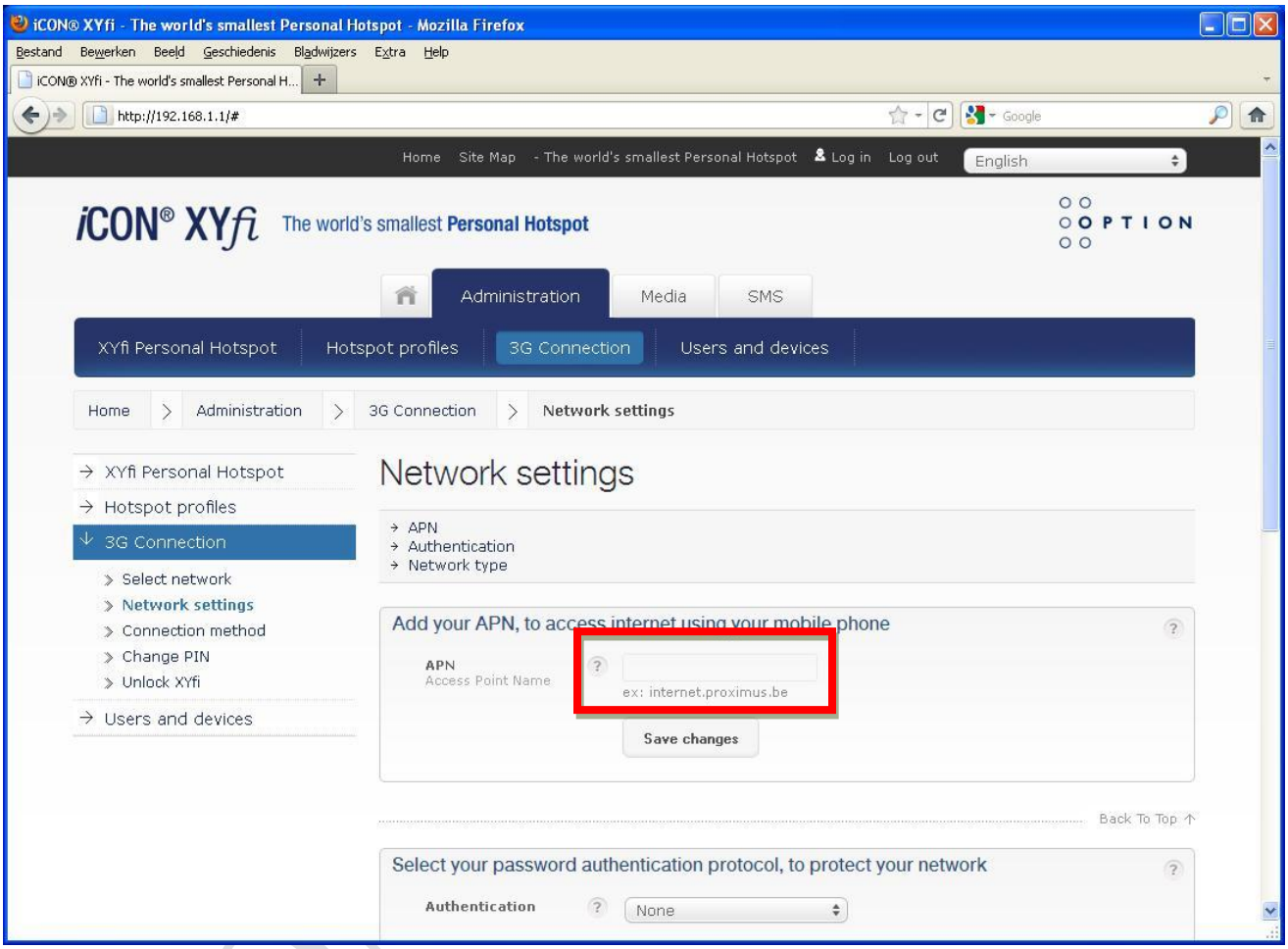


f. The name of the network service provider and a button “Connect to internet” will appear.



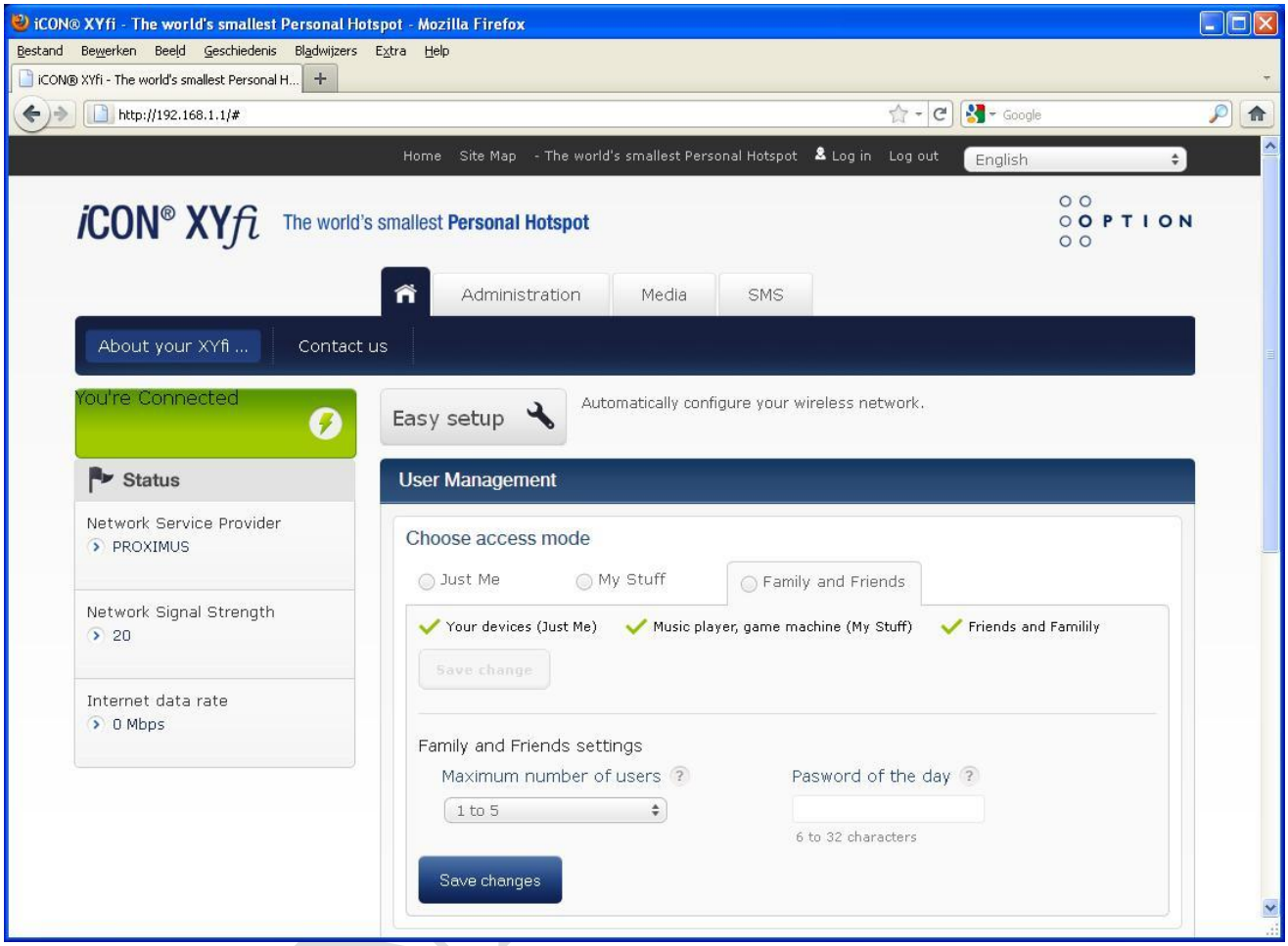
g. Now, press on the tab “Administration” and next “3G connection” (under the tab “Administration”). On the left, click on “Network settings”.

h. Fill in the name of the APN of your provider and click “Save changes”.

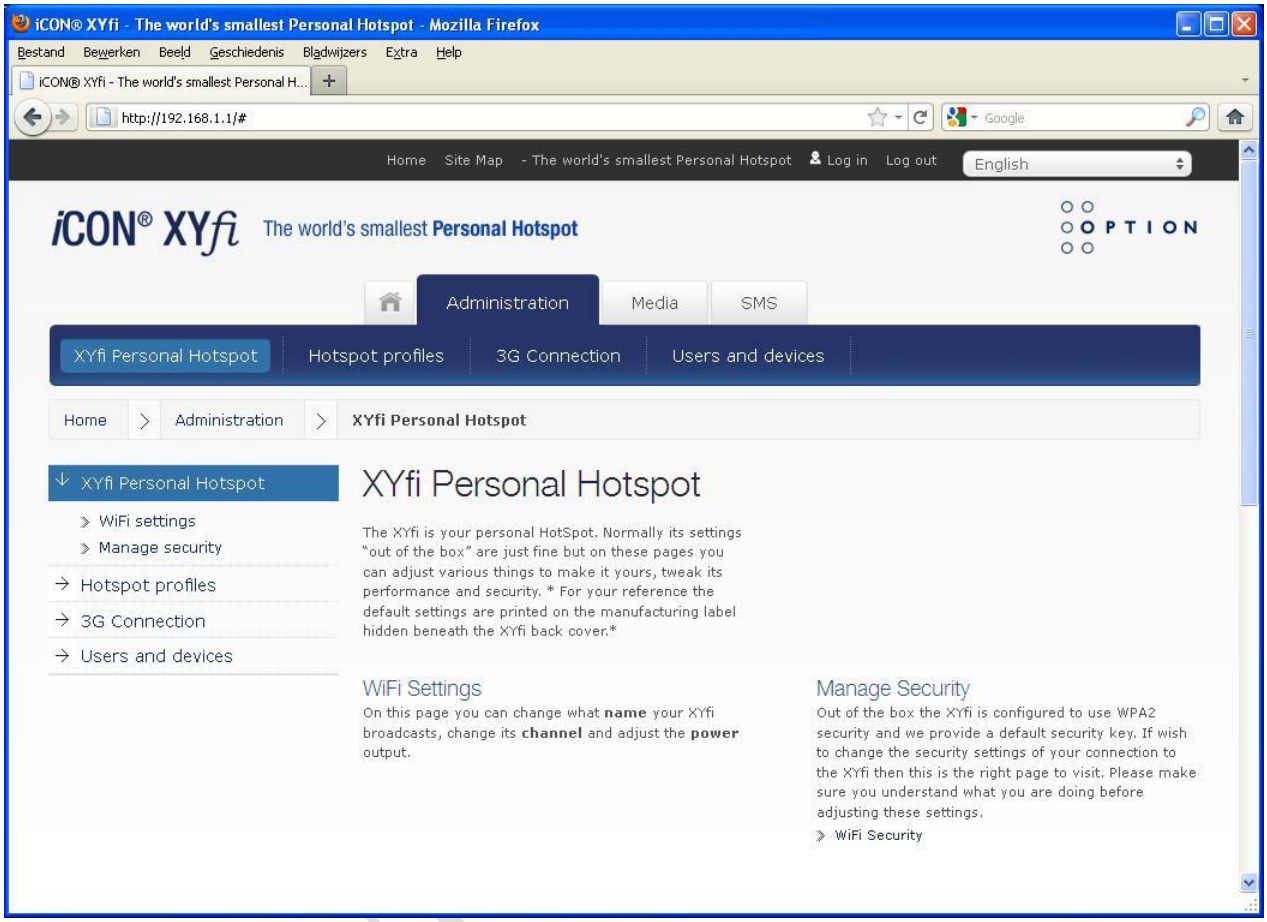


i. Press on the tab “Home” (the one with the image of a house).

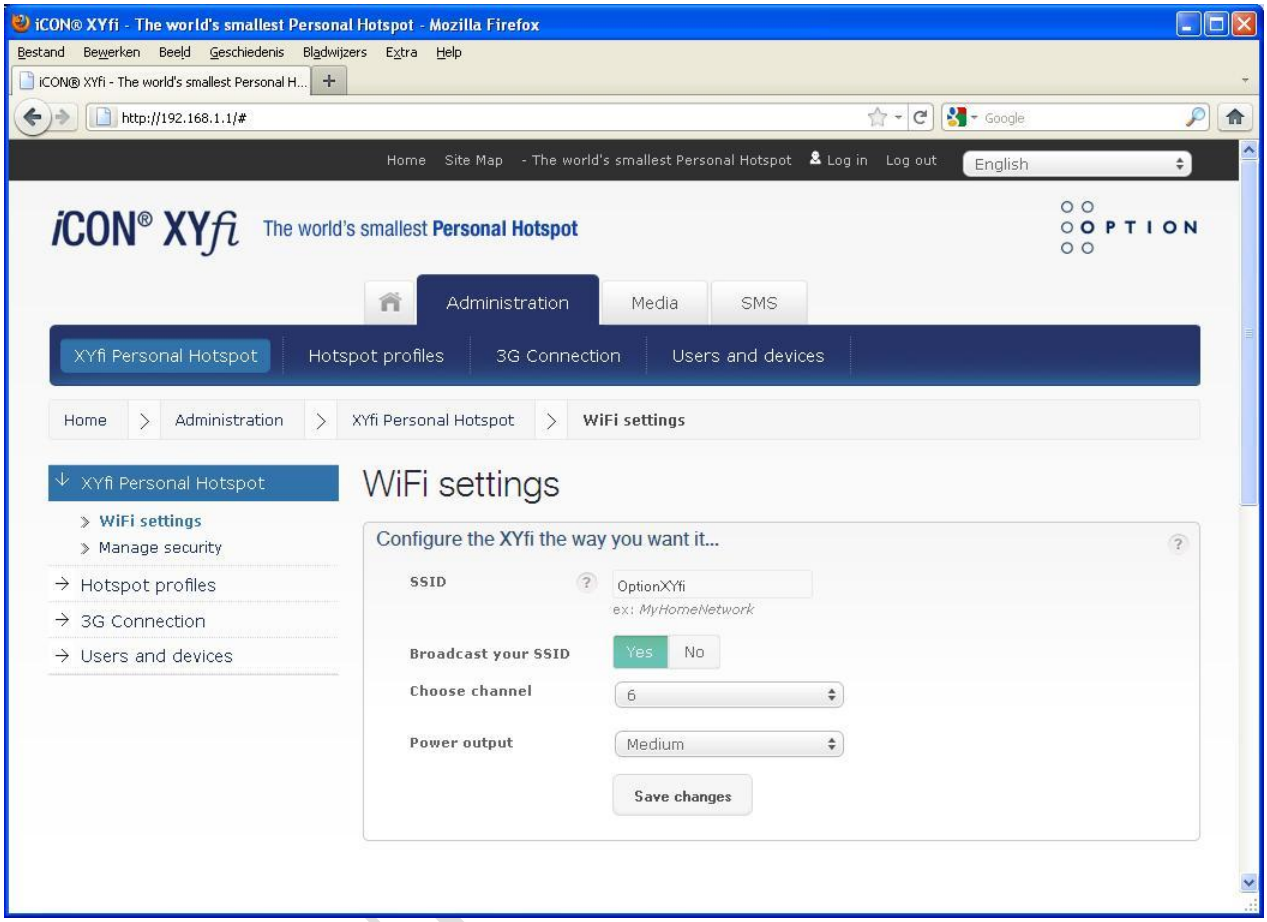
j. Click on the button “Connect to internet”.
A message will appear that “You’re Connected”.



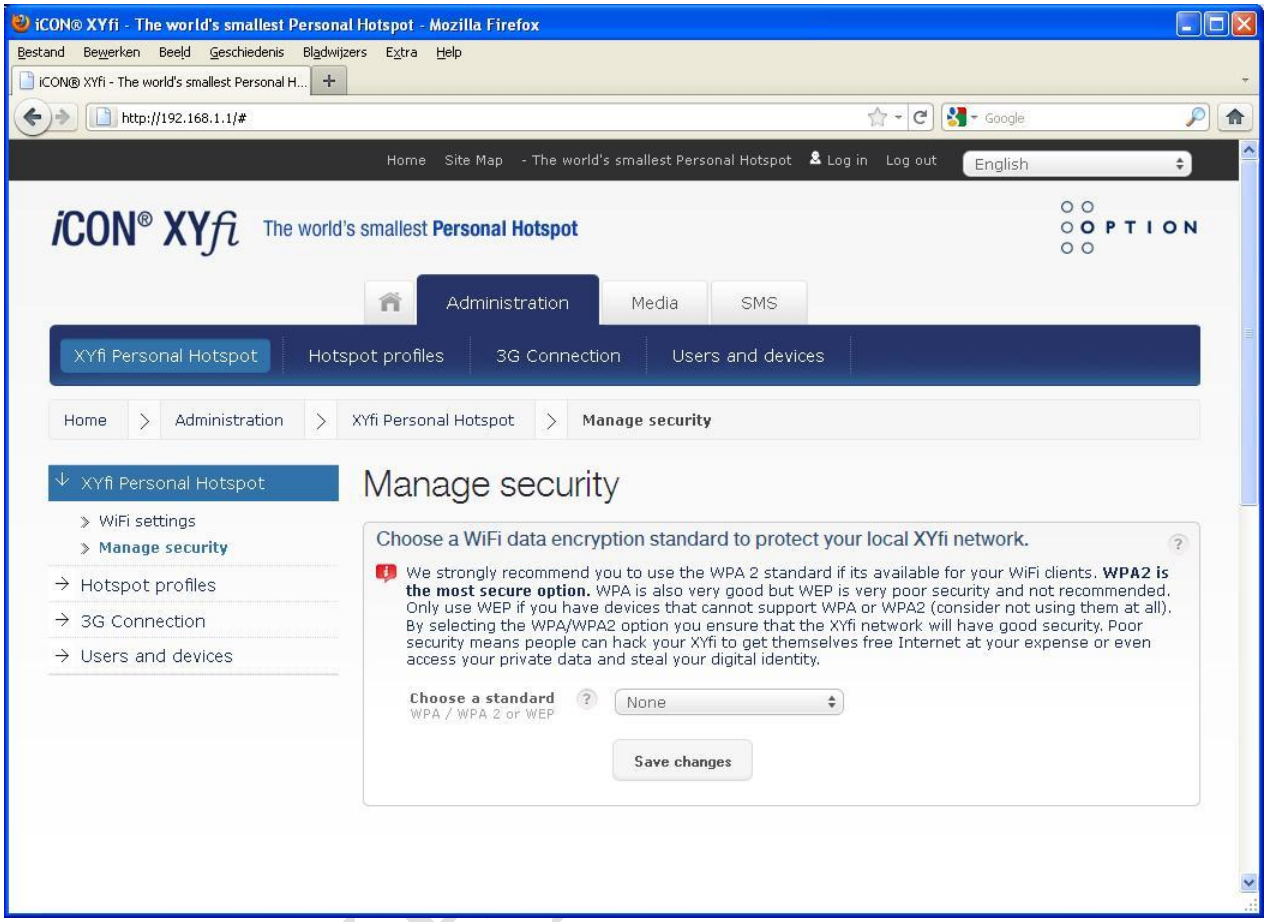
k. Go back to the tab “Administration” and choose “XYfi Personal Hotspot”. Here you can configure your own personal hotspot.



I. By “WiFi settings” you can enter a name that you want to give to your hotspot and if you want to broadcast it or not.



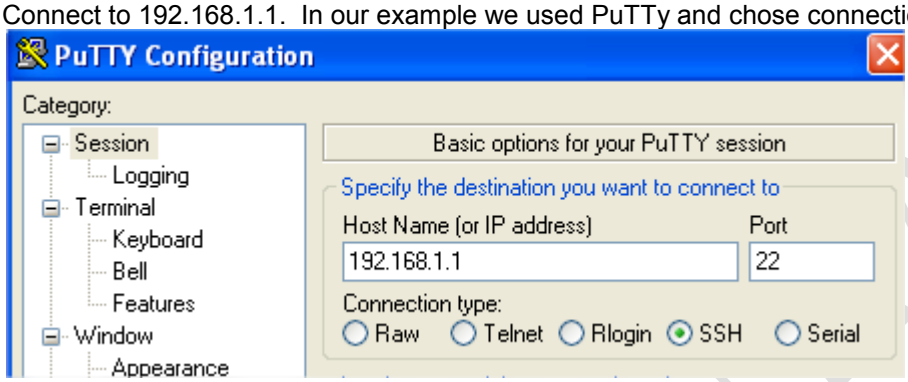
m. By “Manage security” you can choose the standard you want for security. (WEP & WPA/WPA2)



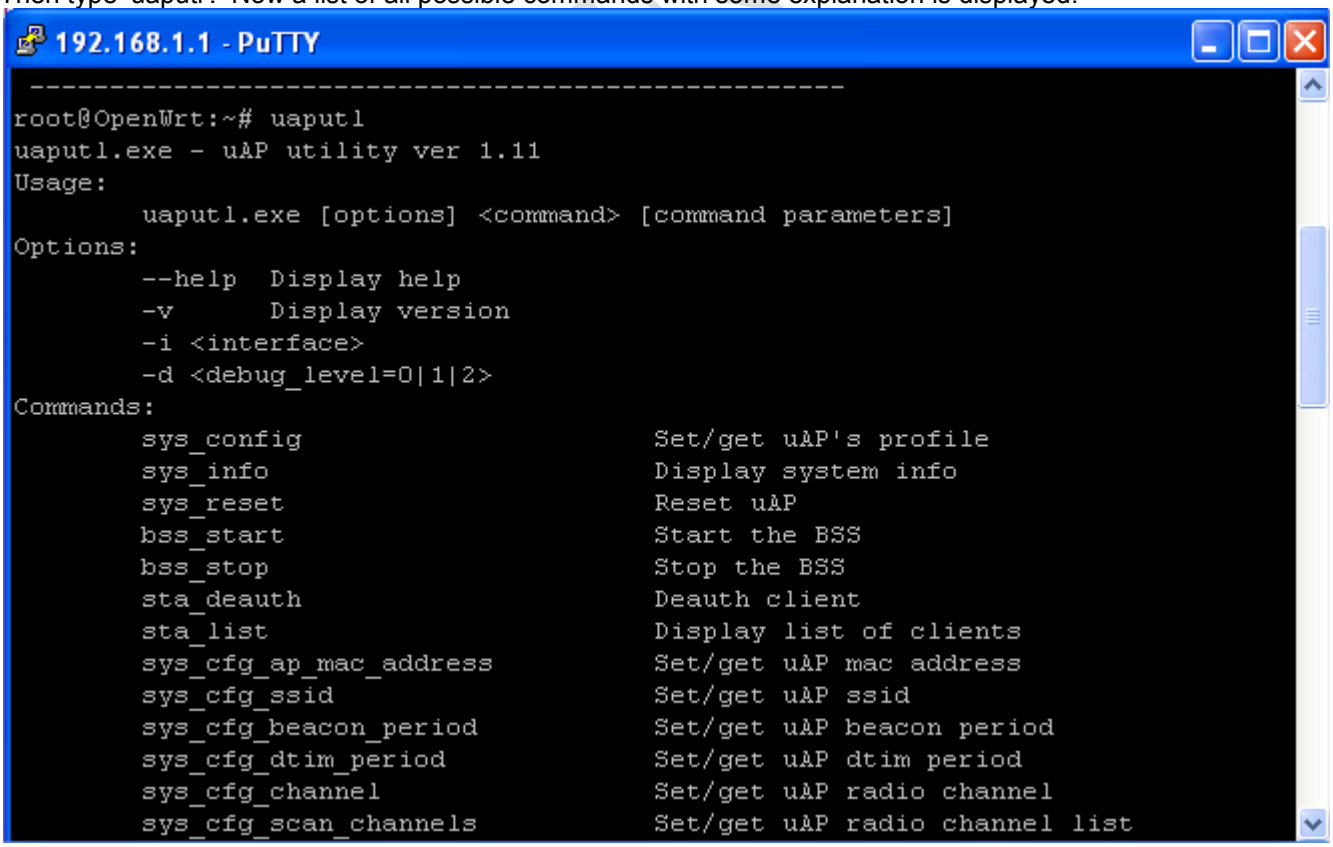
5 OTHER WLAN FUNCTIONS

In the first phase it's not possible yet to use the Nyos Evo as WiFi client. For some testing it might be required to switch the wireless LAN on/off, or to change the channel or data rates. How to do this is explained in the next steps:

a. Download a telnet/SSH client. We used PuTTy (freely available) for this document.
b. Plug in the Nyos Evo and wait until the WLAN connection is established.
c. Connect to 192.168.1.1. In our example we used PuTTy and chose connection type 'SSH'.



d. Login as 'root', password 'a'.
e. Then type 'uaputl'. Now a list of all possible commands with some explanation is displayed:



f. When making changes to the settings it's best to stop the WLAN device, with the command
uaputl bss_stop
This command can thus be used to stop the WLAN transmission.

g. Some basic commands to change different settings are listed here. Typing the command below followed by –help will display more information about the command.

sys_cfg_channel

uaputl sys_cfg_channel
Can be used to read out the current channel
uaputl sys_cfg_channel 1
To change channel to 1.

sys_cfg_tx_data_rate

uaputl sys_cfg_tx_data_rate
to see the current data rate

uaputl sys_cfg_tx_data_rate --help
to get an overview of the different possible data rates

uaputl sys_cfg_tx_data_rate 11
to set the current data rate to 5.5Mbps (=500Kbps * 11)

h. After the settings have been configured, don't forget to start the WLAN chip again.
uaputl bss_start

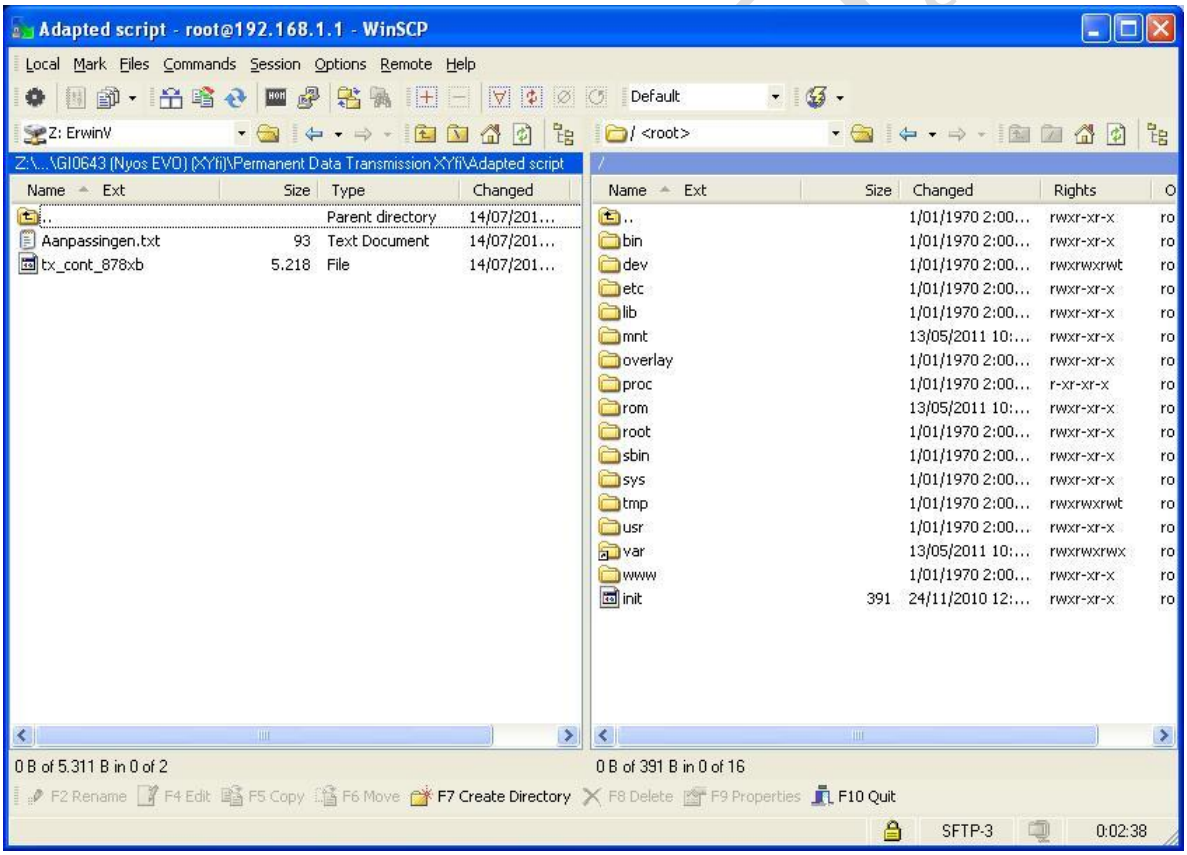
6 CONTROLLING THE WLAN TRANSMITTER

a. When we want to directly control the WLAN transmitter, we have to upload a script to the XYfi. To put files on the device, you need some special software. In this case, we use WinSCP. You can download it from www.winscp.net.

b. Start WinSCP and fill in:
   - **Host name: 192.168.1.1**
   - **User name: root**
   - **Password: a**

   Click on "Login".

c. Go to the root of the device, so you can see the directories in the right window, like on the screenshot below.
   In the left window, browse to the file you want to copy to the device. (tx_cont_878xb)



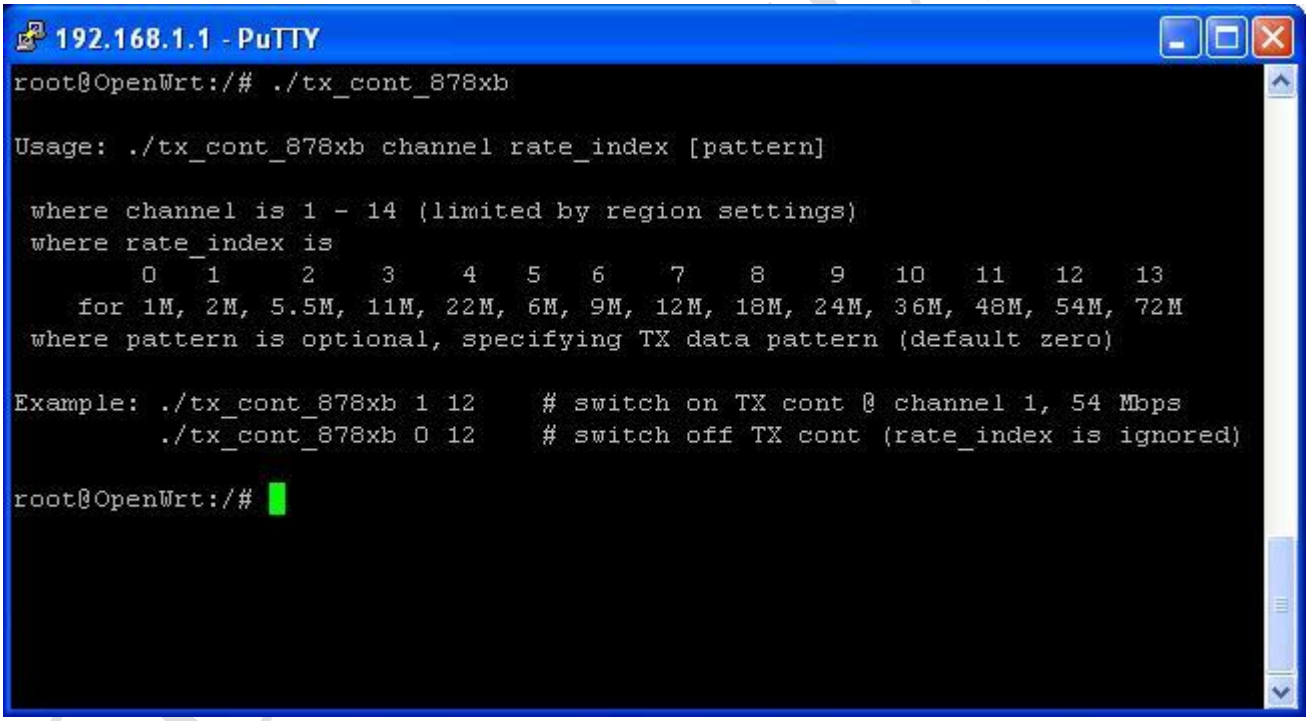
d. Click on the file and drag it from the left to the right window.
You get a dialog box. Click “copy” and the file will be placed on the XYfi.
Note: if you remove the device from the computer, the file will be erased!!!

e. Go to “Session” in the menu and choose “Disconnect”.
Note: otherwise it’s not possible to login with Putty.

f. Run Putty and login as done in chapter 5, step a to d.

g. Use the following commands:
cd ..
chmod +x tx_cont_878xb
The script is now ready to be used.

h. To see the possible parameters, run the script by using “./tx_cont_878b”



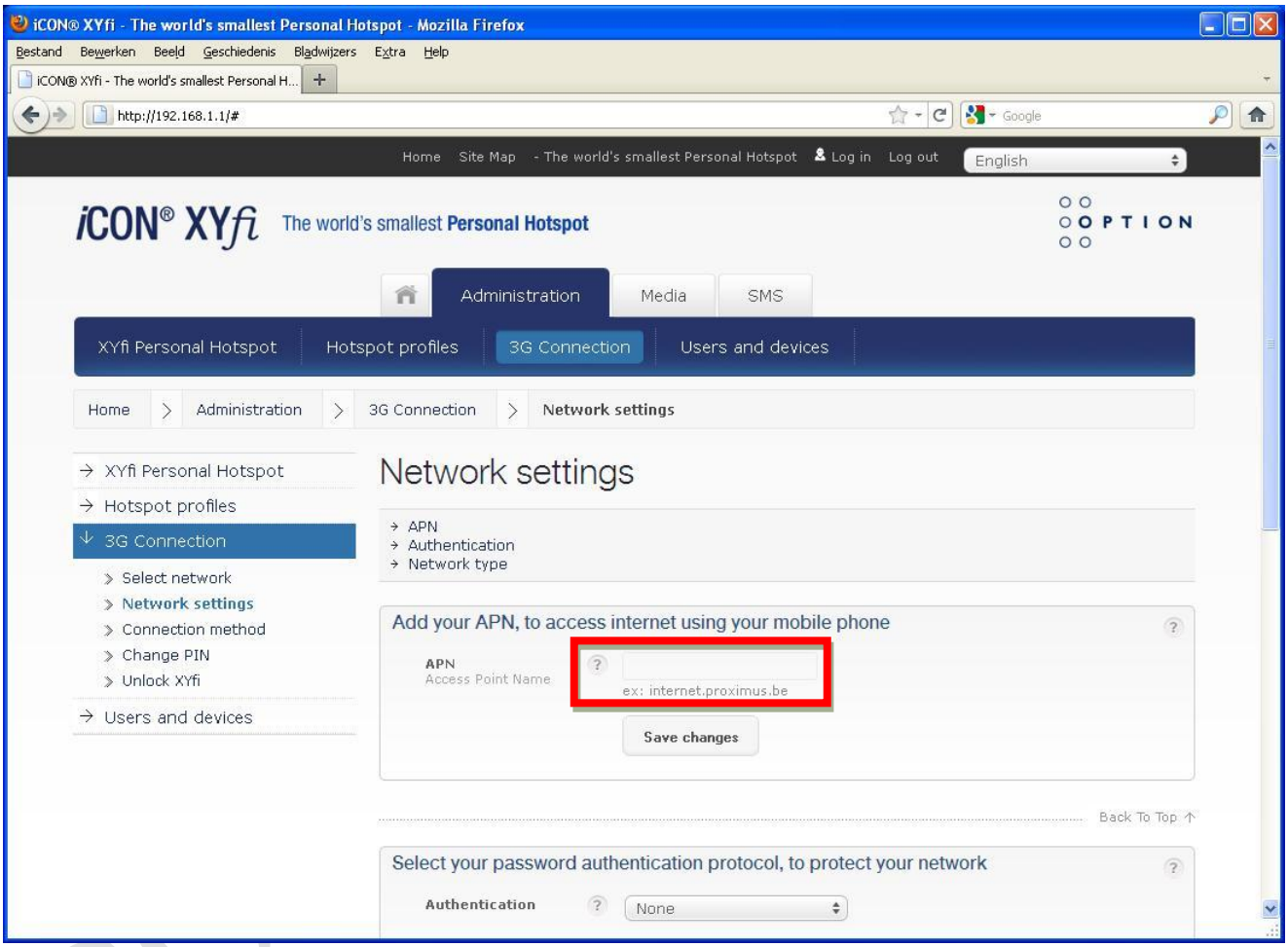
i. To configure the WLAN transmitter, use the script with the desired parameters.
./tx_cont_878xb “channel” “data rate”
Note: the data rate is represented by the number above it.

Example:
./tx_cont_878xb 4 9 : transmit on channel 4 with a data rate of 24 Mbps.
./tx_cont_878xb 12 3 : transmit on channel 12 with a data rate of 11 Mbps.

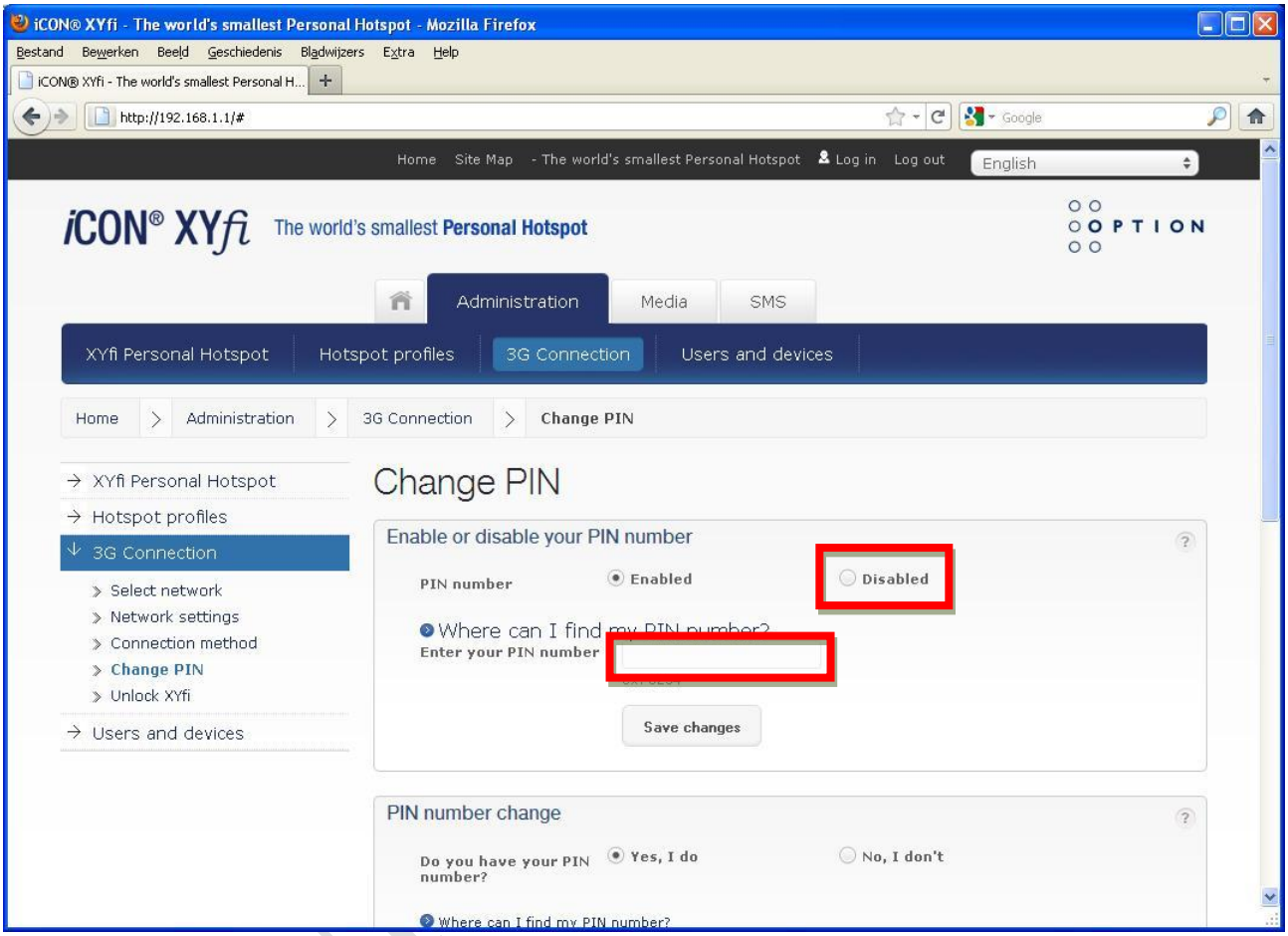
7 USE OF THE XYFI WITH A BATTERY PACK

a. Access the web interface of the device as shown in chapter 4.

b. Be sure to fill in the right APN. (Administration → 3G Connection → Network Settings)



c. Disable the PIN. (Administration → 3G Connection → Change PIN)
Check "Disabled", enter the PIN and save the changes.



d. Set connection method to “Always connected”. (Administration → 3G Connection → Connection method)