

Notes for use of the 3G router with iBOX

and ultra low power application

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www.ekopower.nl

1. Proramming the GPRS/3G router

Take out the iBOX with router from the cabinet (if installed in cabinet) by shifting the iBOX upwards and place it back after configuration of the router. See also the connection details of the router at page 5.

Prepare: use sim for 3G/GPRS, disable pin code of sim (using a mobile telephone) and put sim in slot .

If the sim has fixed (static) ip address write it down (eg 194.122.171.132)

Connect antenna and connect power supply, so the router is switched on constantly:

- if supplied with ultra low power switch, connect the wire (+of router) which is connected at point 17 to iBOX (temporary) at point 19, the the router is powered constantly and check the power supply is applied to the iBOX (- at nr 18, + 9-12 V DC at nr 19)
- if supplied without low power switch for router connect the power using the supplied adaptor.

Note if the sim has no static ip address the webserver of the iBOX system is not available via the wireless connection, but it can send files to the server!

If static ip address is enabled the webserver is also remote available!

Step 1 Connect the router via ethernet cable to ethernet port of computer

Step 2 Type in your browser the (default) ip address of the router: <http://192.168.0.1>

And login with

login username: **admin**

password: **admin01**

Step 3 Choose configuration : AUTO, connection parameters, **ask your provider** and enter:

- Authentication method :CHAP or PAP (available from your provider, or just try the options)

- APN data (available from your provider)

e.g.: APN: internet, user name KPN, password: abcd

- Press Apply NOTE: - when the 3G network is often overloaded you may choose 2G in the setup

If you have a sim card **without** fixed ip address Press reboot and reconnect power of the router.

You are ready now: iBOX will send files only. The router can now be connected to internet.

Check the status menu and check internet connection with a PC (connect via ethernet cable) and browser and restart the PC.

If you have a sim card **with fixed ip number go on with next step 4**

Teltonika router -- Mobile Network Settings - Microsoft Internet Explorer

Address <http://192.168.0.1/page.cgi?page=connection>

QUICK SETUP
STATUS
CONFIGURATION
VPN
ADMIN
TOOLS

Mobile Network Settings
Network Settings
Wireless Settings
Dynamic DNS Settings
Port Forwarding
Services

LOGOUT
REBOOT

Apply page changes Apply

Connection parameters

Authentication method: CHAP

APN: internet

User Name: KPN

Password:

Warning: It is strongly recommended to use SIM card with PIN disabled (leave PIN input box empty). Otherwise, if the entered PIN will be wrong, the SIM card will be locked.

PIN: _____

Enable Manual DNS:

DNS server 1: _____ (Format x.x.x.x)

DNS server 2: _____ (Format x.x.x.x)

Done Internet

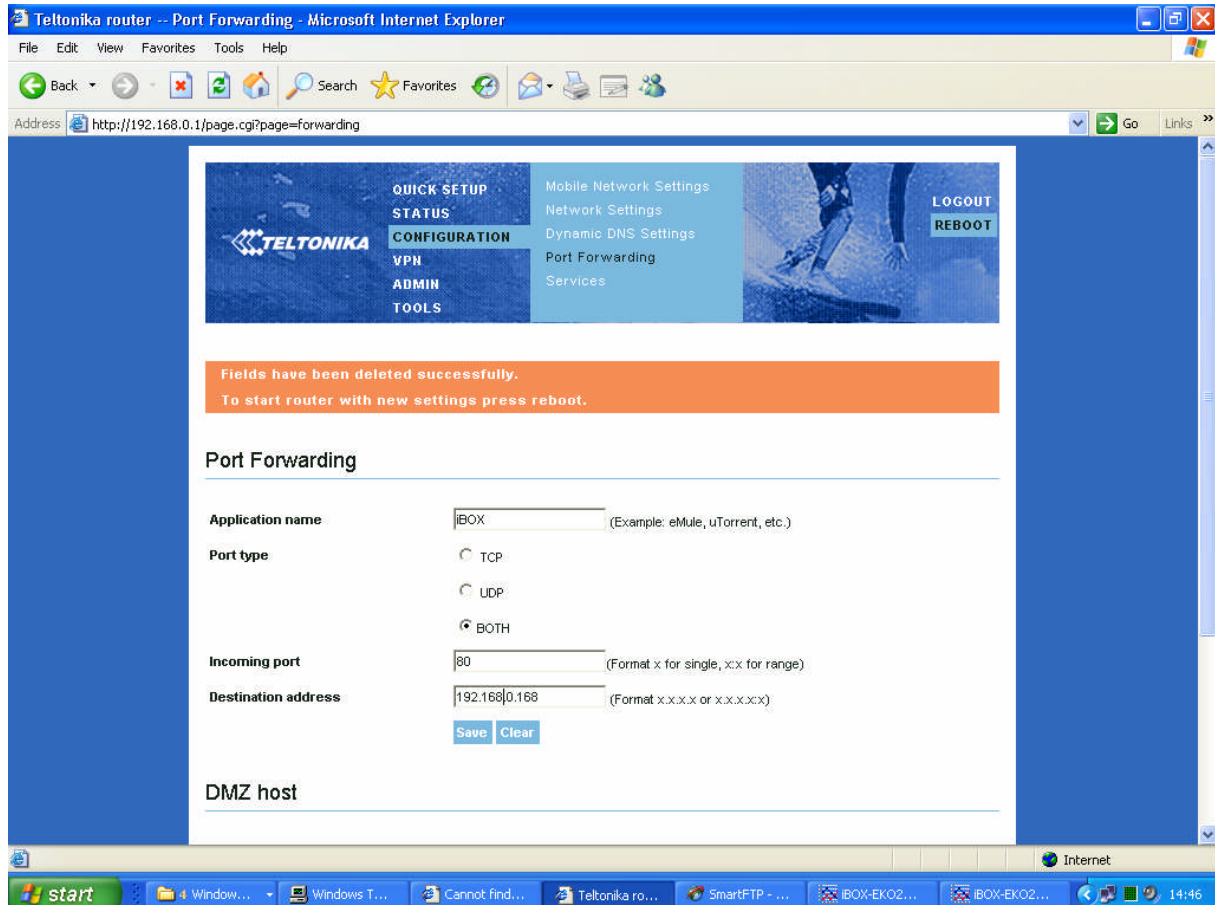
start | \\Ekopower-peter\0... | Google - Microsoft I... | Teltonika router -- ... | Google - Microsoft I... | Google - Microsoft I... | 11:26

Step 4 Enter port forwarding from outside ip adress to iBOX for using webserver remote (only for sim with fixed ip address)

In order to access the webserver of the iBOX at remote location, some settings must be entered.

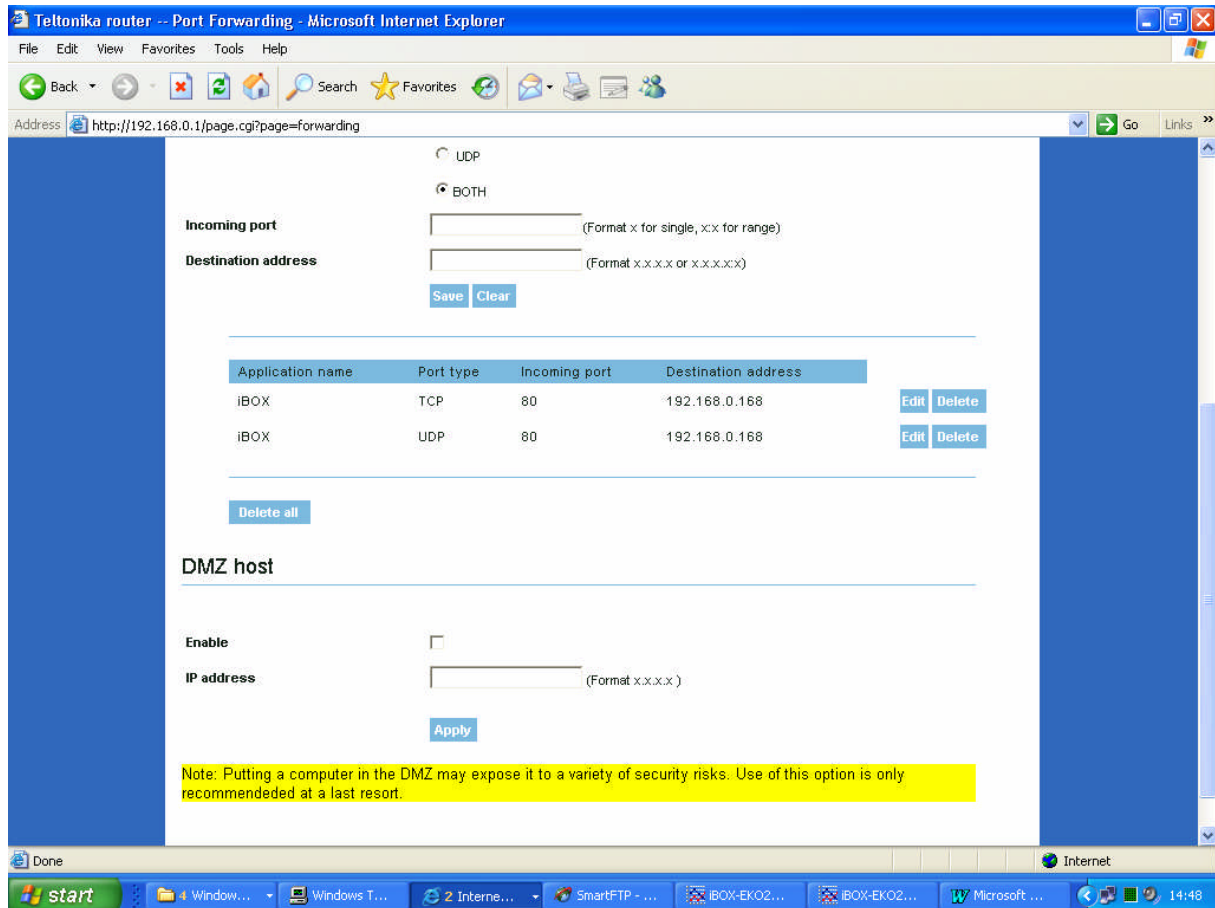
The fixed ip address of the sim card will be the ip address for your browser.

This nummber will be forwarded in the router to the ip address of the iBOX for port 80 (http)



For example ip address if iBOX is 192.168.0.168 (via port 80 for http : webserver)

And press save.



Do not forget to boot using the menu ! Then disconnect and connect power again.

Now the system is looking for network and you should be able to access websites via the wireless router!

Eg if outside ip address of sim card is eg : 194.122.171.132 then you can reach the webserver **remote** from the PC using http://194.122.171.132 (via port 80 for http)

If the sim has no static (fixed) ip address it will be a one way communication: the iBOX with router will send datafiles to the specified server (refer to settings in iBOX) , but the embedded webserver of the iBOX is not available in that case.

Note the default ip address of the 3G router is 192.168.0.1 which is the range for iBOX with eg 192.168.0.168!

The first 3 numbers must be equal, the last number should be in range of 2...254, which is the ip address of the iBOX (also adjustable, refer to manual of iBOX and [control software](#) version 7).

To restore factory settings press reset button 15v seconds, with router powered
This will take some minutes!

>>> TIP: when the network is not stable you may enable the ping reboot of the router

IMPORTANT:

- if supplied with ultra low power switch, connect the wire (+of router) temporary at point 19 to iBOX (instead normal at point 17), so the router is powered constantly during programming but in normal operation (when connected again at point 17) the router is **only powered when required (during sending files)**
- Check the power supply is applied to the iBOX (- at nr 18, + 9-12 V DC at nr 19)

Status: OK	
Logger Code: 187	Logger Description: demo op hooldnet
Number of Channels: 2	Sample Interval: 3 Second(s)
Date On Logger: 24.08.09	Record Interval: After 20 Sample(s)
Time On Logger: 11:28:29	Sample Delay: Enabled
Card Size: 121 Mb	FTP Server IP Address: 0.0.0.0
Loggings Since Reset: 2607	FTP Interval (Current): 0 Samples
Logging Time Left: 1815 Day(s)	FTP Interval (Data): 0 Loggings
System Power: Ok	FTP Directory (Current):
Power Voltage: 5.00 V	FTP Directory (Data):
Switch1: ON Switch2: ON Switch3: ON	Firmware Version: 7.0.4-5

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Example main menu of webserver of iBOX

2 Settings of iBOX

When a (wireless) Router (or WiFi Bridge) is used for ultra low power application at remote site you can adjust (in advance) some parameters by preparing the SD card (see [software manual](#) version 7):

- > Wait time is the time the system wait for a response from the network (usual value 2 minutes)
- > Keep alive time is the time the system is available for contact eg for contacting the webserver, see also the notes below:

- for iBOX: the Ultra Low Power version (ULP) is available (version 7 and higher) and with an energy saving switch for switching the router (eg 12 V DC) on only during communication so it can operate with a battery or small solar power supply at remote sites.
- When a GPRS/3G router is used an ultra low power wireless system is possible, ideal for remote sites. The router will switch automatically on when the iBOX want to send data (at adjustable intervals).
- When you use a wireless router we recommend to use a sim card with static (fixed) ip number, so you can make direct contact with the webserver for reading values and changing parameters (see also manual of iBOX) during the adjustable keep-alive time)

NOTE: when the iBOX is supplied in ultra low power mode you can make **only** direct contact with the iBOX when you connect the Ethernet cable first to the (at least one minute unpowered) iBOX and then connect the power supply to the iBOX (contact enabled during 5 minutes, then the system returns to low power mode)

Low power mode is also enabled again after you disconnect and connect the power of the iBOX is again and carried out *without* Ethernet cable connected!

HINT: if you add a **network switch** to the router and connect the iBOX to it you can access the webserver via a connected PC (restart PC!) Note that the ip address of the iBOX must be in the range of your router, eg:
Ip address of iBOX : 192.168.0.112 and Ip address of Router : 192.168.0.1

The gateway address is equal to the ip address of your router
You can change the IP address of the iBOX by using the control software and prepare the SD card with this new settings!
You can also connect eg an additional ip camera to the network switch!

The iBOX and 3G router system can be supplied programmed & ready for use (entered by Ekopower).
We recommend that you save the original configuration file separately for backup.
You have to change the preset server settings for your own server!
Succes with your system! The EKOPOWER support team.

ANNEX: connection details of wireless GPRS/3G router

Figure 1. Router back panel view.

- 1 and 3 Wireless LAN (WiFi) antenna connection (only active if ordered with WiFi).
- GPRS antenna connection (included)



Figure 2. Router front panel view.

1. 3G LED. A solid constant light indicates proper connection of the 3G router to wireless network.
2. Reset button.
3. Ethernet socket.
4. Ethernet LED. A solid light indicates proper connection of the Ethernet. A blinking light indicates data transfer.
5. Power LED. A solid light indicates a proper connection to the power supply.
6. SIM card socket.
7. Power supply adapter socket.

