UP4DAR and static IP

This manual is a translation of the German manual to set a static IP address for the UP4DAR, written by DL3OCK (original at http://forum.up4dar.de/board1-up4dar-deutsch/board13-up4dar-allgemein/11-umschaltung-zwischen-dhcp-und-betrieb-mit-statischer-ip/).

Usually the UP4DAR-board is connected to the internet/LAN via DHCP but under some special conditions it can be useful to set a static IP-address within the UP4DAR.

For example we have a LAN with the following settings:

IP- range: 192.168.12.0/24
netmask: 255.255.255.0
gateway: 192.168.12.1
broadcast: 192.168.12.255

In your LAN router you have set a range for DHCP addresses, for example the address range 192.168.12.**20** up to 192.168.12.**200.** So you can use the address ranges 192.168.12.1-19 and 192.168.12.201-254 for other purposes like a static IP for a device.

When you now connect a „normal" UP4DAR to a free port of you router, it will get an address from the DHCP-pool, in the configurator debug screen below you can see **MYIP=192.168.12.115**.
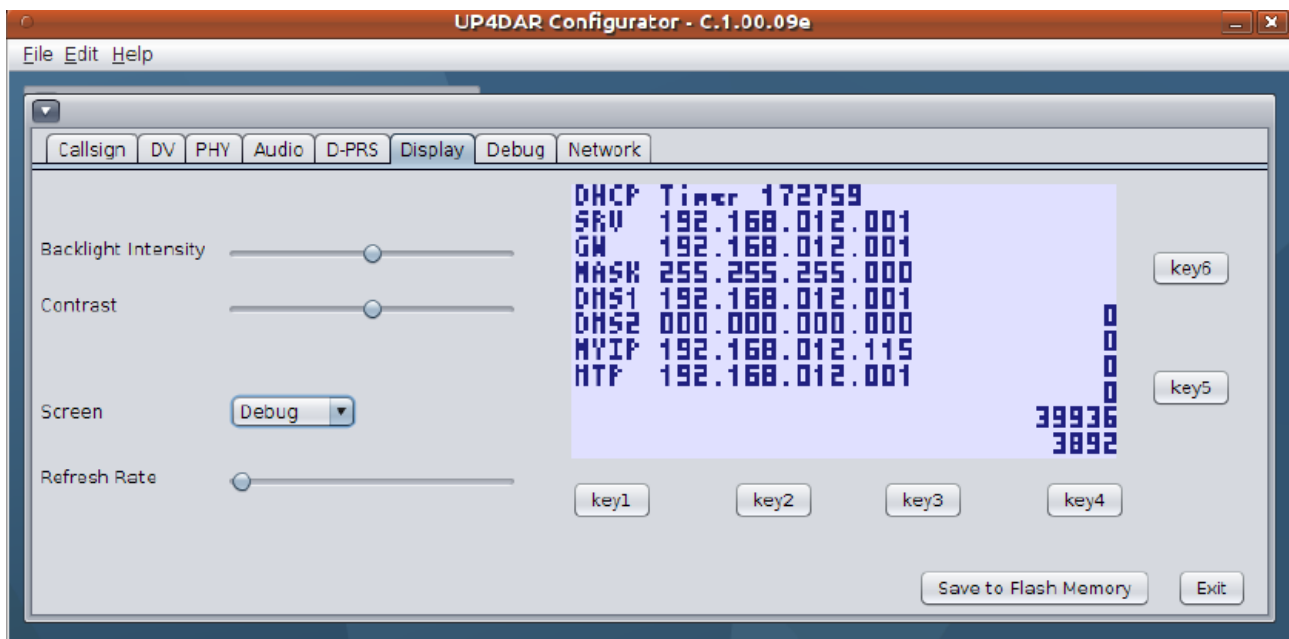

Image 1: debug screen UP4DAR configurator with IP **192.168.12.115** (by DL3OCK)

Please note, that for NTP-requests no external NTP-server is stored but the gateway (192.168.012.001). So it is necessary that the used router can handle NTP-requests if you want a correct time shown on your UP4DAR-display. And you have to enable in the network settings of the UP4DAR „**enable NTP**":
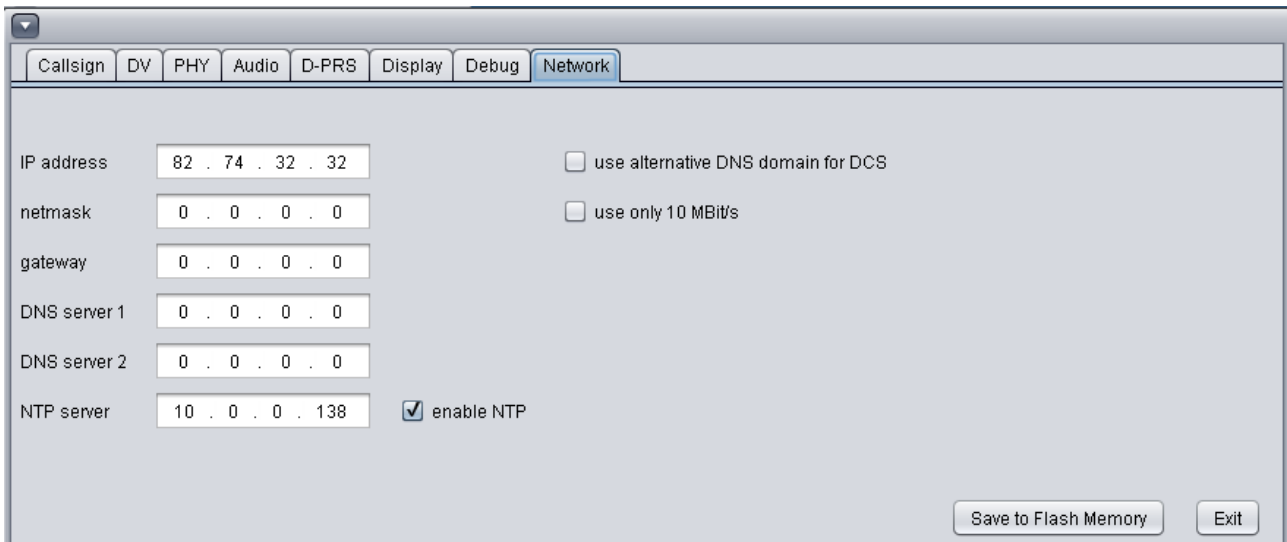
Image 2: NTP-server enabled

Normally you get in contact with the connected UP4DAR via the UP4DAR configurator with a double click on the desktop icon.

Another access method would be the start up of the configurator via the command shell. Under windows you use the MS-DOS-windows, in windows the console. The command structure is identical under windows and Linux.

You change on the shell in the directory, in which the configurator (means the file UP4DAR_Configurator.jar) is stored and enter the following command:

java jar
UP4DAR_Configurator.jar

What happens next? To connect via configurator to the UP4DAR, the configurator has to know the individual password of the UP4DAR-board, which the configurator sends to the UP4DAR with each connection starting.

You can find the individual password in the debug screen of the register, field **„SNMP Community String"**:
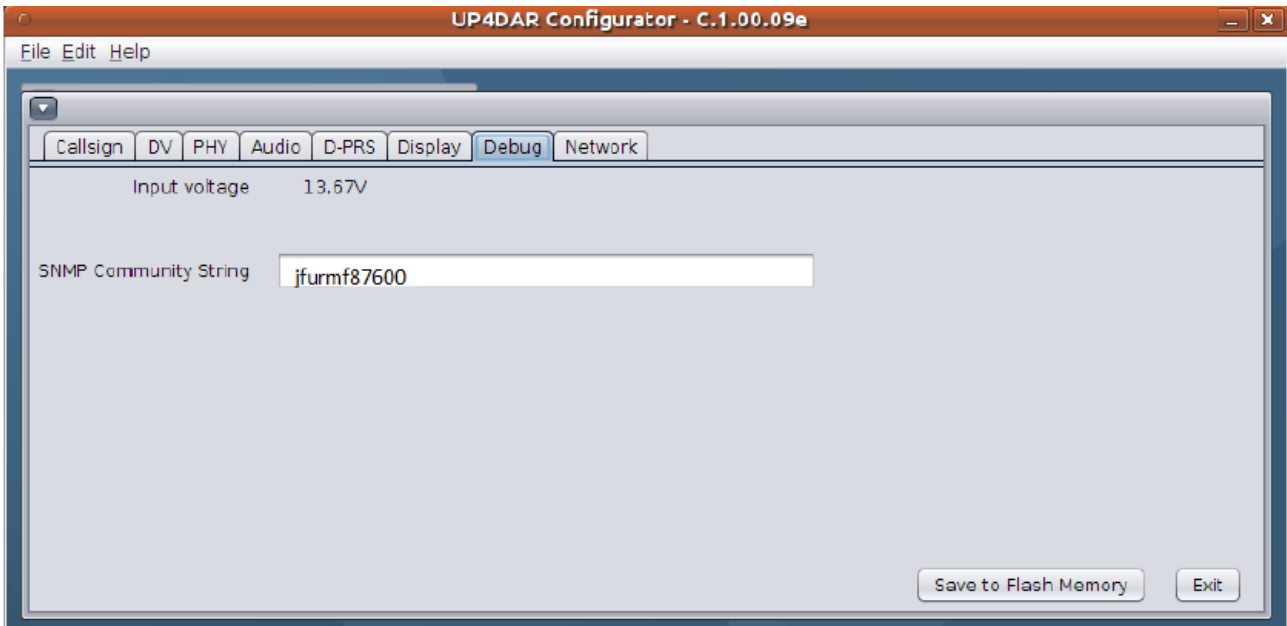
Image 3: SNMP community string in the configurator (by DL3OCK)

Never entered this password before? Yes, in DHCP-modus the UP4DAR-board broadcasts the string in the whole LAN.

If we set a static IP address we have to be aware that we then must manually transmit the password-string to connect the configurator to the UP4DAR. So please write down the snmp string of your UP4DAR now.

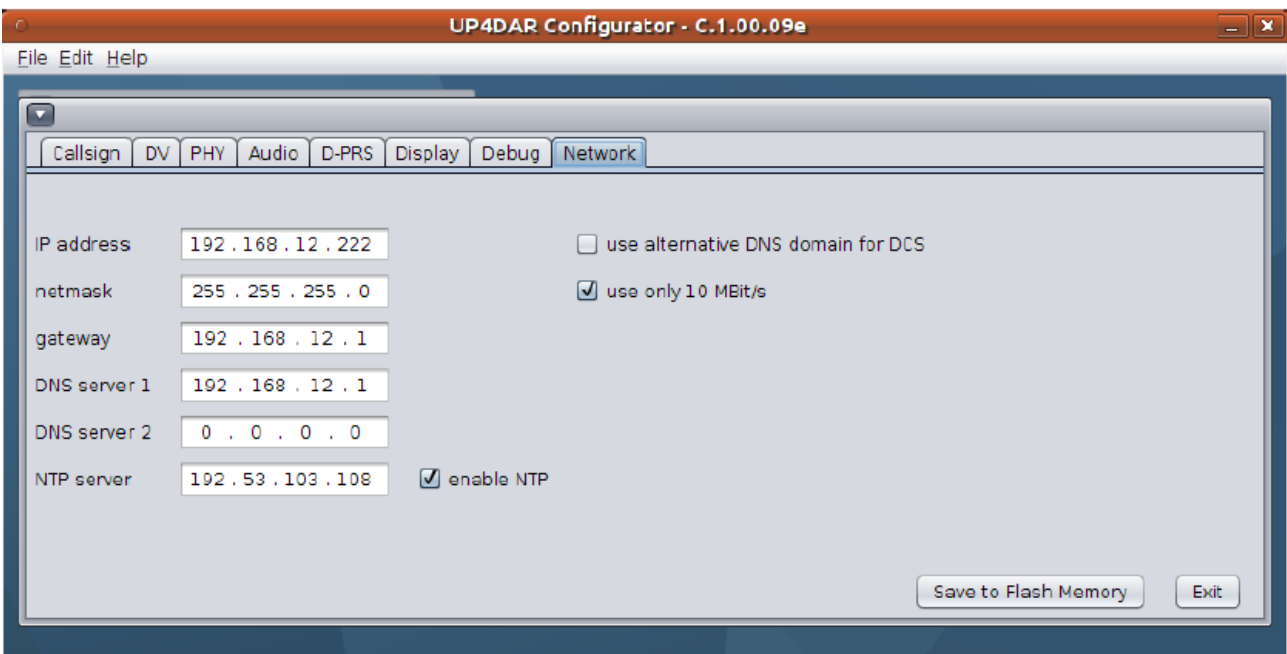First of all we enter the network settings into the configurator:

Image 4: network settings for static IP mode (by DL3OCK)

In the settings shown in the screenshot above the board has the static IP address 192.168.12.**222,** which is without the DHCP range to avoid address conflicts.

Furthermore a „real" NTP-server is entered, the time server of the Physikalisch Technischen Bundesanstalt in Braunschweig (*ptbtime1.ptb.de = 192.53.103.108*). So the NTP requests are independent from the used router in your LAN.

After entering all the network settings you have to click on „**save to flash memory**" to store the settings also after a reboot.

Attention: Only entering a static IP address is not enough, we have now to switch the UP4DAR board to static IP-mode.

How do we get the UP4DAR into static IP-mode now? We connect with the configurator to the UP4DAR. Then we push the upper right button „key4" ***ON THE UP4DAR (not the configurator!)*** for apprx. 10 seconds until we hear a confirmation sound. Then we release the button „key4"

The connection mode is now switched from DHCP to static IP but we are still connected to the board. The next step is to save this setting with the „**save to flash memory**"-key. Otherwise the UP4DAR would after a reboot be in DHCP-mode again. We can now close the configurator and switch off and on the UP4DAR-board. We are now in static IP-mode.

In static IP-mode the UP4DAR-board is NOT broadcasting its snmp-string (You remember: the password to connect the configurator to the board). So we cannot connect to the UP4DAR with a simple click on the desktop icon! We have to use the command line.

For the in this manual configured and used UP4DAR the complete command line would be:

java jar
UP4DAR_Configurator.jar 192.168.12.222 jfurmf87600 161

You see we have to enter three more parameters:
1) the (static) IP address of the UP4DAR-board
2) the SNMP community string aka password-string
3) the port number

Success – the configurator pops up again and we can access the UP4DAR and check the settings there in the debug screen:
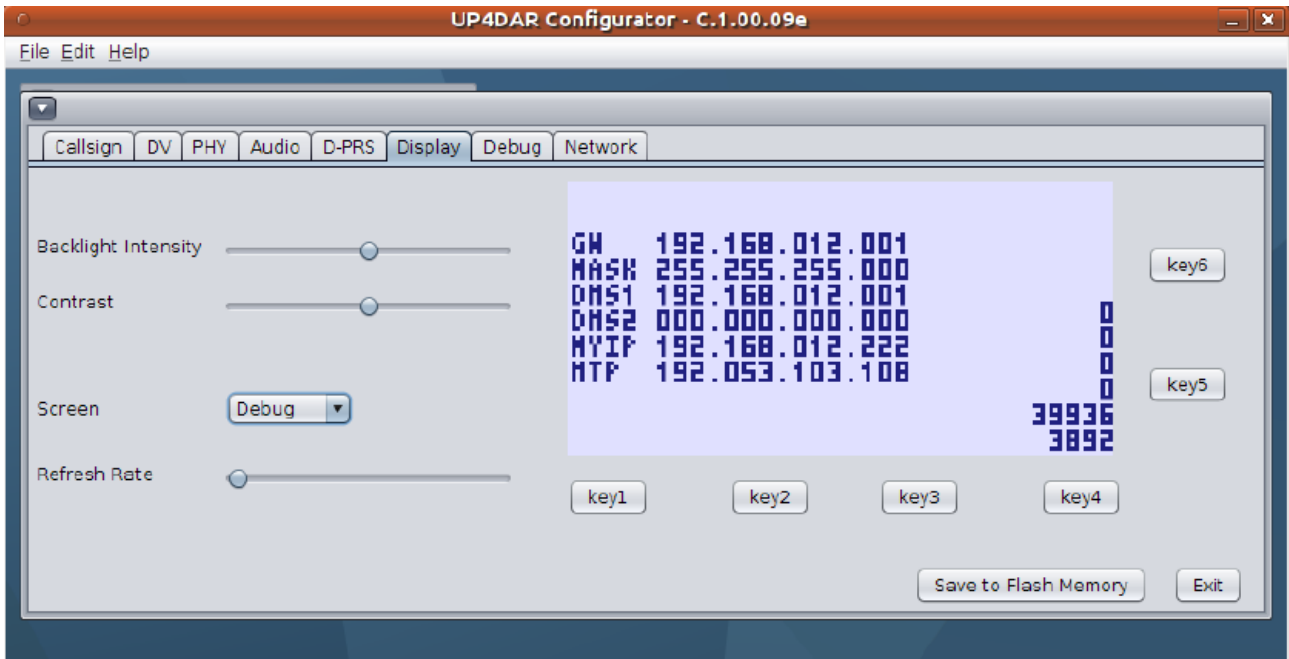
Image 5: debug screen static IP address (by DL3OCK)

Please note in the screenshot above that there is – compared to image 1 – no DHCP timer in the first line of the display. The confirmation that the UP4DAR is in static IP-mode.

If you want you can add a port forwarding rule for port 161 in your router then the UP4DAR-board could also be accessed via internet.

If you want to switch back to DHCP-mode we push the „key4" on the board again for 10 seconds until we hear a confirmation sound. Then we have to push „save to flash memory" again in the configurator.

As already mentioned the switching between the two modes can only be done with the "key4" on the UP4DAR-board and not via connected configurator.

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