# What do I need?

If you can't update firmware from the web interface of your DPT-Board, or if you have lost all access to your device via WiFi or ethernet you can follow this guide to recover from this situation using TFTP firmware upload. You will need:

- A DPT-Board (off course)
- A micro-USB cable
- 1 ehternet cable
- A USB-to-Serial adapter

Connecting

You must connect an ethernet cable between the **LAN** port of the DPT-Board and the ethernet port on you computer. Than you must connect the USB-to-Serial adapter to the **RX**, **TX** and **GND** connections of the board. Be sure to connect **TX** to **RX** and vice versa, otherwise it won't work.
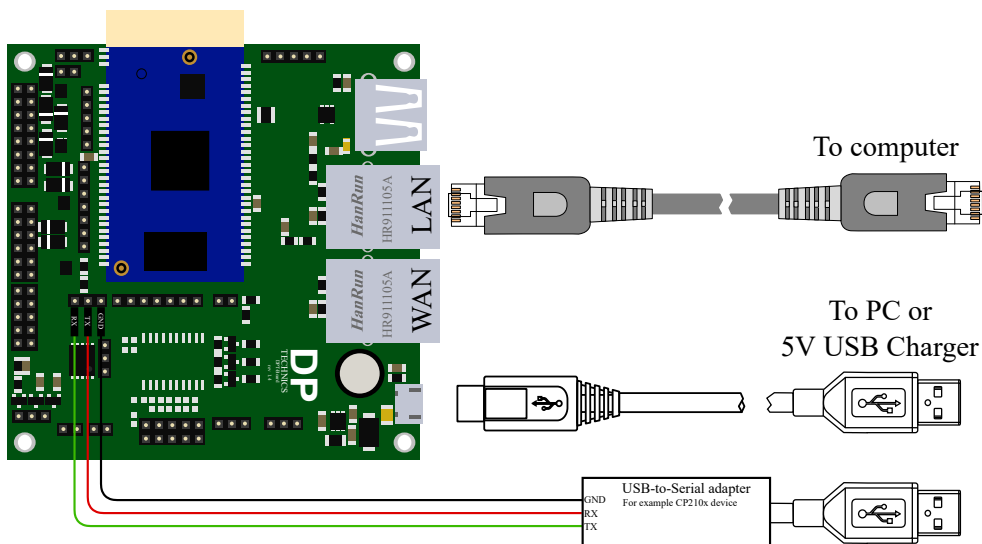
Do not yet connect your board to the power supply, you must first prepare some software.

Preparing the software

The TFTPD upload software

To upload the firmware to the DPT-Board you will need a TFTP-server. In this guide we will use the TFTPD32 software by Ph. Jounin. It is easy to use and very reliable.

Proceed and download the 'tftpd32 standard edition (installer)' software from the TFTPD32 website. You can install it onto your PC.

The serial terminal software

To get the board into TFTP mode you need a 'serial terminal' program. We will use PuTTY for this purpose. There is no need for an install of this software, just download putty.exe and you can execute it immediately.

# The firmware image

You also need the software to flash into your DPT-Board. You can find the latest version of the DPT-Board-OS on http://firmware.dptechnics.com/dptv1/. Select the highest number for the latest version and download `openwrt-ar71xx-generic-dpt-module-squashfs-factory.bin` .

Starting TFTPD32

Before starting TFTPD32 you must assign a **static IP-address** to the network adapter you use to connect to your DPT-Board. To do this on windows 7/8 please follow these steps:

1. Right click onto the network icon at the right-bottom corner of your screen and select 'Open Network and Sharing Center'.
2. In the left panel, click onto 'Change adapter settings'.
3. Right-click the correct adapter (normally called 'Ethernet') and select 'Properties'.
4. Double click onto 'Internet Protocol Version 4 (TCP/IPv4).
5. Enter `192.168.1.2` into 'IP address' and `255.255.255.0` into 'Subnet mask'.
6. Click 'Ok' to accept the new settings.
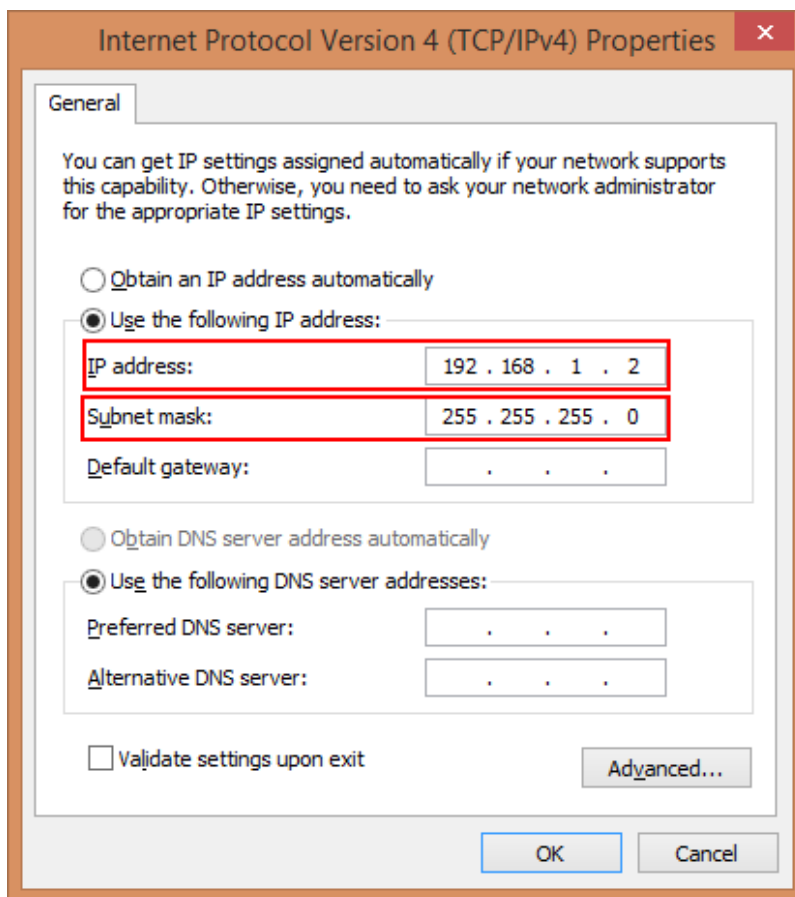
Go ahead and start TFTPD32, you should see a screen similar to this one:
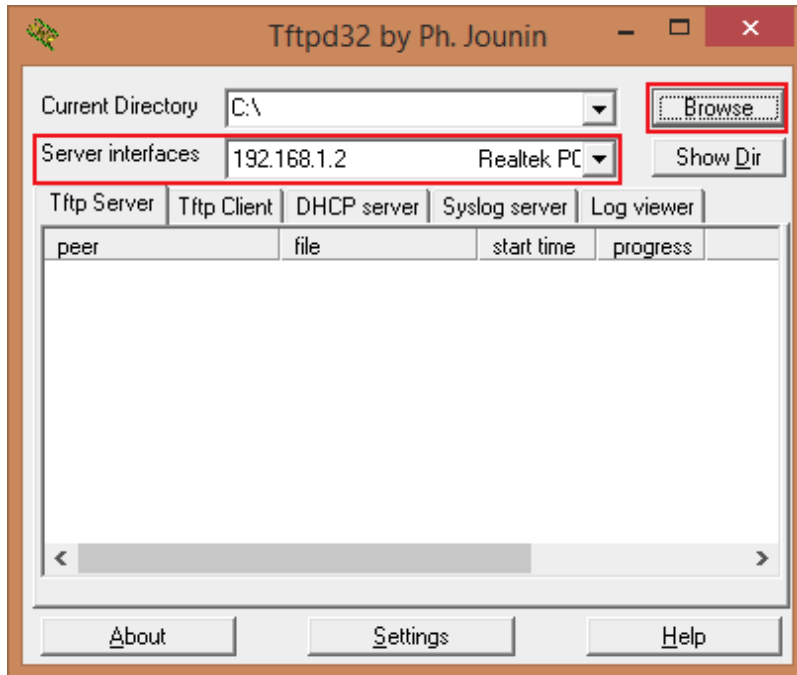
Now make sure you do the following steps:

- Click 'Browse' and select the folder where you saved the `openwrt-ar71xx-generic-dpt-module-squashfs-factory.bin` file.
- Select the network adapter with address `192.168.1.2` in the 'Server interfaces' dropdown list.

If your PC asks a permission to add a firewall exception, be sure to allow it. It is recommended to turn of your firewall entirely during the process to prevent any errors on this side.

Starting PuTTY

Now you are ready to open PuTTY and give in the following settings:

- Host Name (or IP address): this is the name of the COM port your USB-to-Serial adapter uses. You can find this in 'Device Manager', in this guide the adapter is at `COM3` .
- Connection type: choose for 'Serial'
- Speed: if you have one of the first DPT-Boards this must be set to 115200, if you have a newer DPT-Board this must be set to 19200. Either way you can't break anything by setting a wrong value here. You can detect a wrong speed setting if the screen is full of garbage. If you encounter this, just change de speed setting.
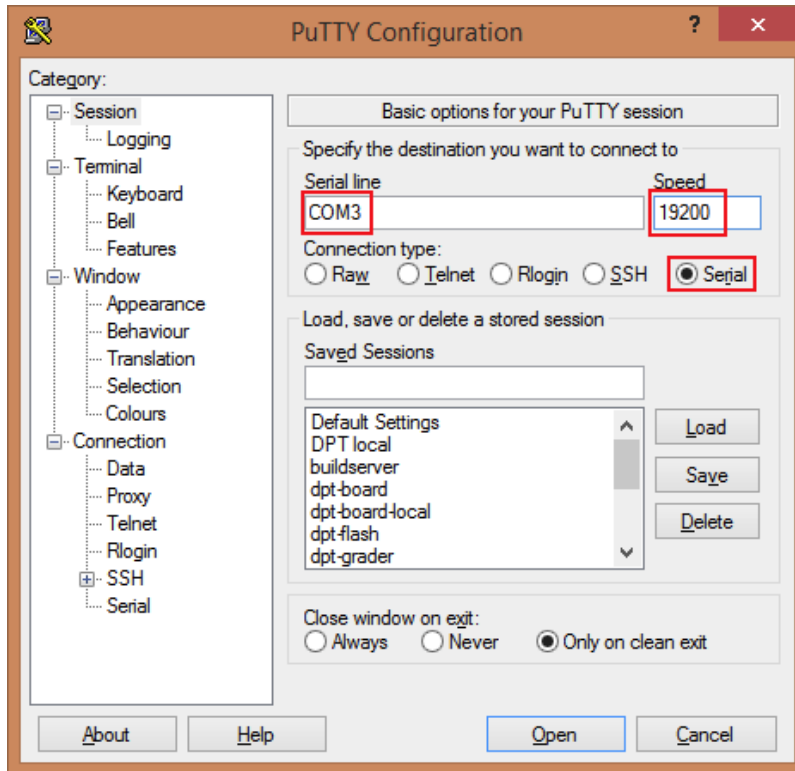
You can now click the 'Open' button.

Start the recovery

Now connect your DPT-Board to it's power supply. You should now see some text in the PuTTY window. You must immediately press a key to stop the boot process and enter the U-Boot bootloader. At this stage you should see a screen very similar to the picture:
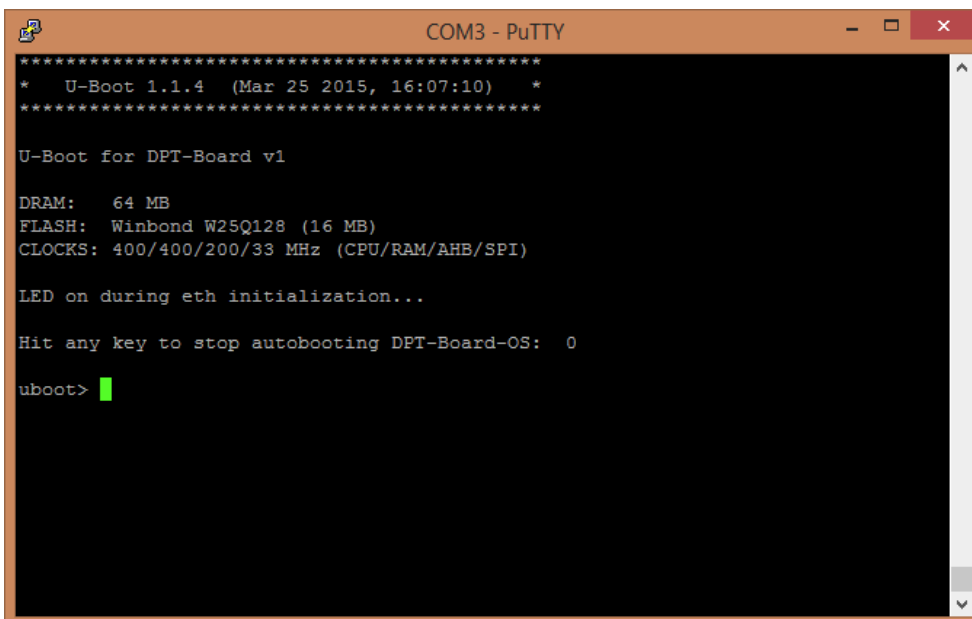
Now issue the following commands, make sure you make no typing mistakes as this can break your device:

1. `uboot> tftp 0x80060000 openwrt-ar71xx-generic-dpt-module-squashfs-factory.bin`

2. `uboot> erase 0x9F020000 +0xFC0000`
3. `uboot> cp.b 0x80060000 0x9F020000 0xFC0000`
4. `uboot> reset`

That's it! If all went well, your DPT-Board is now recovered and working as if it came from the factory.