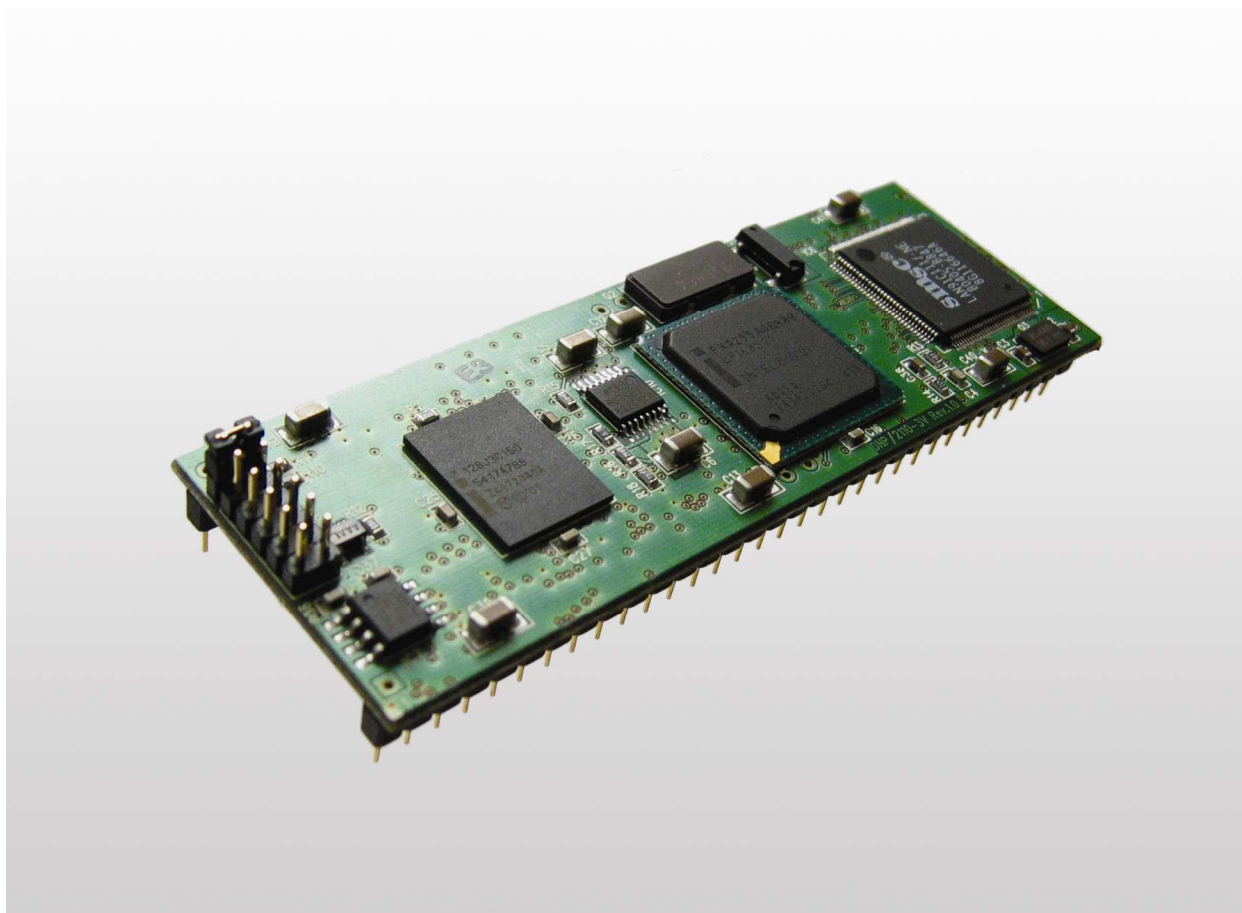# DIL/NetPC DNP/2110
Board Revision 1.0

Installing a PPP Connection
User Manual

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For further information regarding our products please visit us at www.ssv-embedded.de

CONTENT

1 INTRODUCTION

This document describes how to install a PPP (point-to-point) connection for the DNP/2110 on a Windows-PC. For further information about the individual components of this product you may follow the links from our website at http://www.dilnetpc.com.

Our website contains a lot of technical information, which will be updated in regular periods.

1.1 Hardware Requirements

The following hardware is needed to install a PPP connection on the DNP/2110:

- One PC with Windows XP and two unused COM ports

- One Evaluation Board (e.g. EVA6) with mounted DNP/2110 and two COM ports

- One plug-in power supply (5 VDC)

- Two null modem cables

1.2 Software Requirements

To install a PPP connection on the DNP/2110 you need the **dnp2110-flashinstall.tar.gz**. You find this file on your Starter Kit CD-ROM in the directory `CD:\linux\ppp`.

2 PREPARATIONS

2.1 Serial Links between Evaluation Board and PC

Setup the serial links between the Evaluation Board and your PC. Use the null modem cables for these connections.

The first serial link is for communication between the DNP/2110 and your PC via HyperTerminal. Connect one end of **null modem cable #1** with the **COM1** port of your PC and the other end with the **COM1** port of the Evaluation Board.
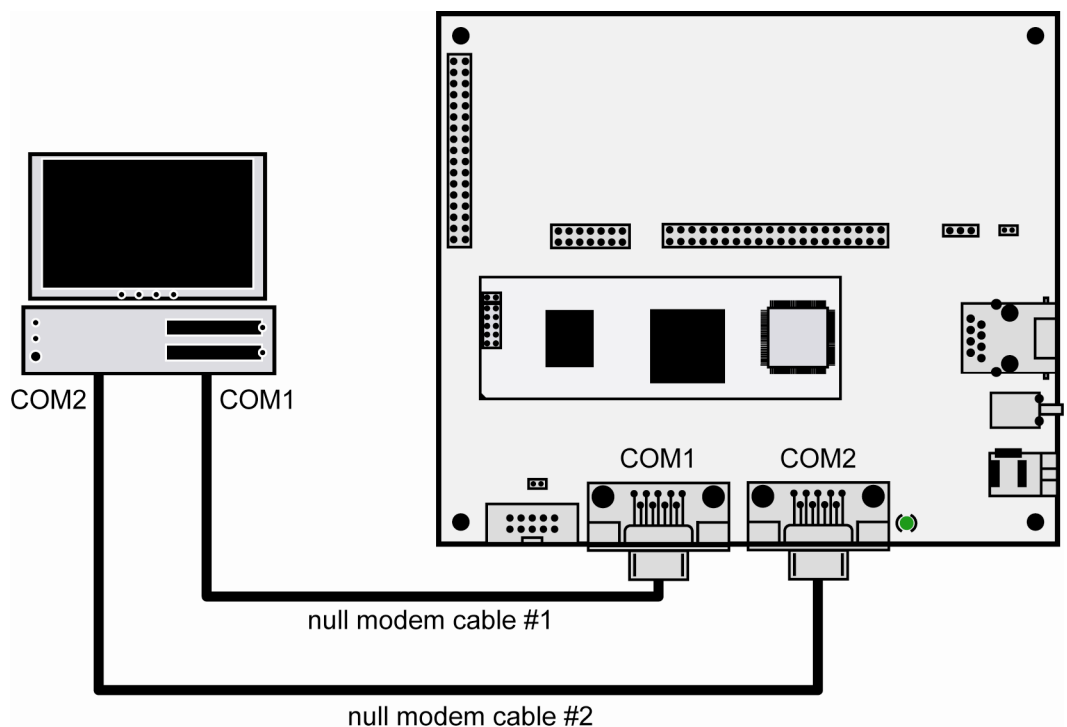
Figure 1: Serial links between Evaluation Board and PC

The second serial link creates the PPP connection between the DNP/2110 and your PC. Connect one end of **null modem cable #2** with the **COM2** port of your PC and the other end with the **COM2** port of the Evaluation Board.

Please make sure that the PC COM ports support 115.200 bps and are unused.

2.2   Connecting Power Supply

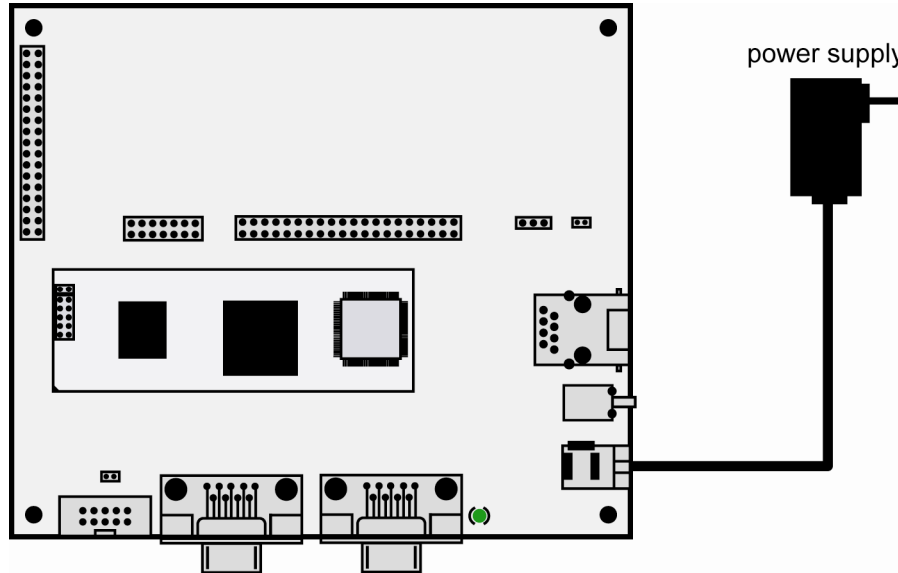Connect a 5 VDC power supply with a 5.5 mm x 2.5 mm jack plug with the Evaluation Board.

Figure 2:   Power supply for the Evaluation Board

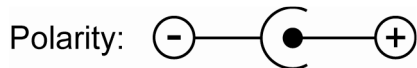Please pay attention to the polarity of the power connector: **the + pole is in the center!**

Figure 3:   Polarity of the power connector

2.3   Configuring HyperTerminal

Run HyperTerminal on your PC. Enter a name for the new connection. In the next dialog select **COM1** for the connection.

Figure 4:   Direct connection setup with HyperTerminal

Now change the connection parameters to the values of table 1. Make sure, that you use the **COM1** port of your PC and that it supports 115.200 bps.

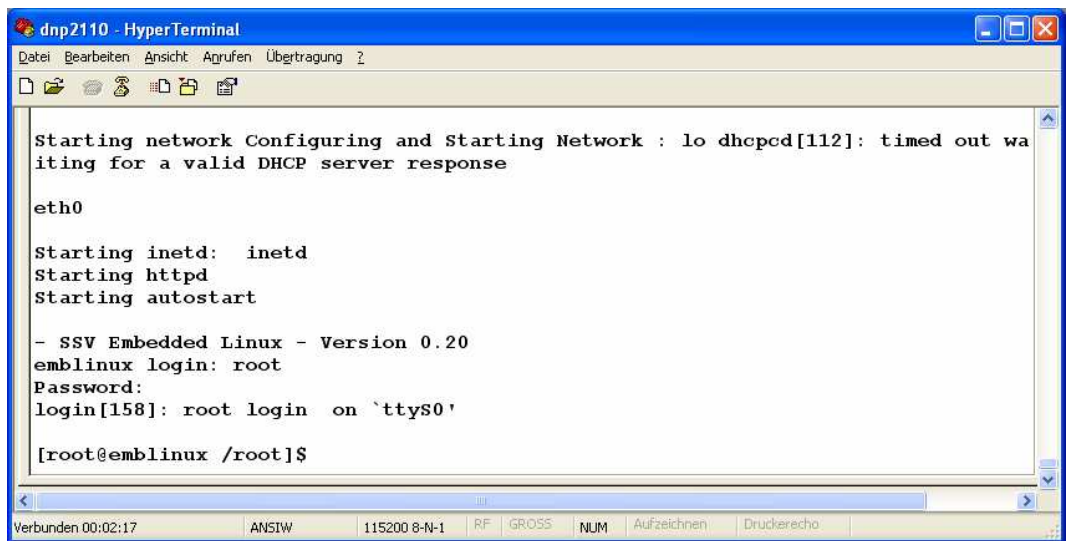**Figure 5:   Parameter setup with HyperTerminal**

Parameter	Value
Speed	115.200 bps
Data Bits	8
Parity	None
Stop Bits	1
Protocol	No (Xon/Xoff, RTS/CTS or similar)

Table 1:   Setup parameters for HyperTerminal

3   INSTALLING THE PPP CONNECTION

3.1   Uploading the PPP Files on the DNP/2110

Start the HyperTerminal connection you created in chapter 2.3. If you have not powered up the Evaluation Board so far, please do it now. Wait until the Linux boot process finishes (this may take a few seconds). You will see the Linux login prompt. Enter the user name **root** and hit Return if Linux asks for a password.
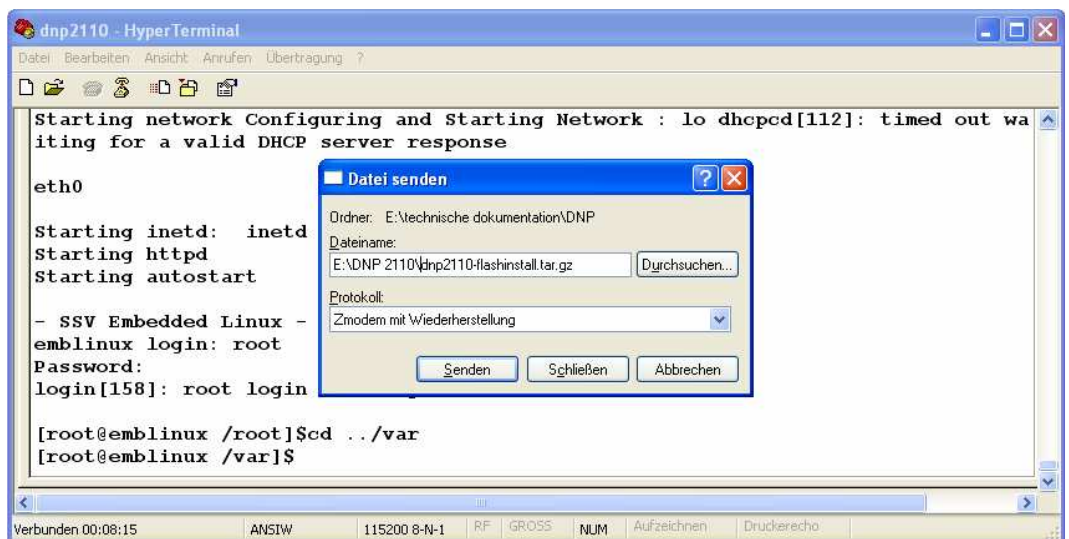
Figure 6: DNP/2110 boot messages and login prompt

Now change to the directory var with the command cd ../var.
Open **Transfer > Send file…** from the menu bar and select the file **dnp2110-flashinstall.tar.gz** from the Starter Kit CD-ROM. Choose **Zmodem with Crash Recovery** as protocol and send the file.

Figure 7: Transferring the dnp2110-flashinstall.tar.gz to the DNP/2110

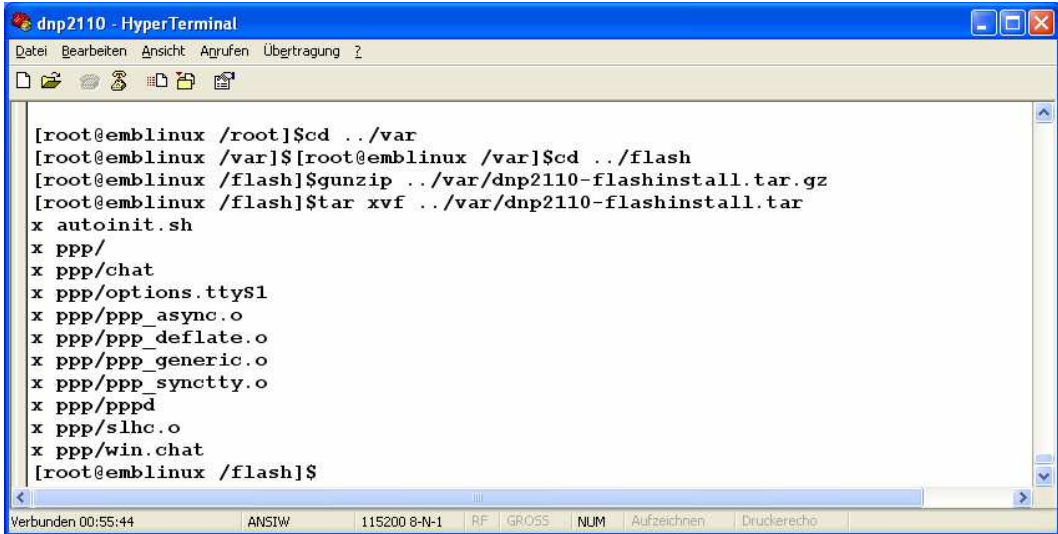## 3.2   Installing the PPP Files on the DNP/2110

Unzip the file **dnp2110-flashinstall.tar.gz** into the directory `flash`. Change to that directory with the command `cd ../flash`.

To unzip the file, enter the following command:
`tar xzvf ../var/dnp2110-flashinstall.tar.gz`.

If Linux prompts that the z-flag is unknown, unzip the file with these commands:
1. `gunzip ../var/dnp2110-flashinstall.tar.gz`
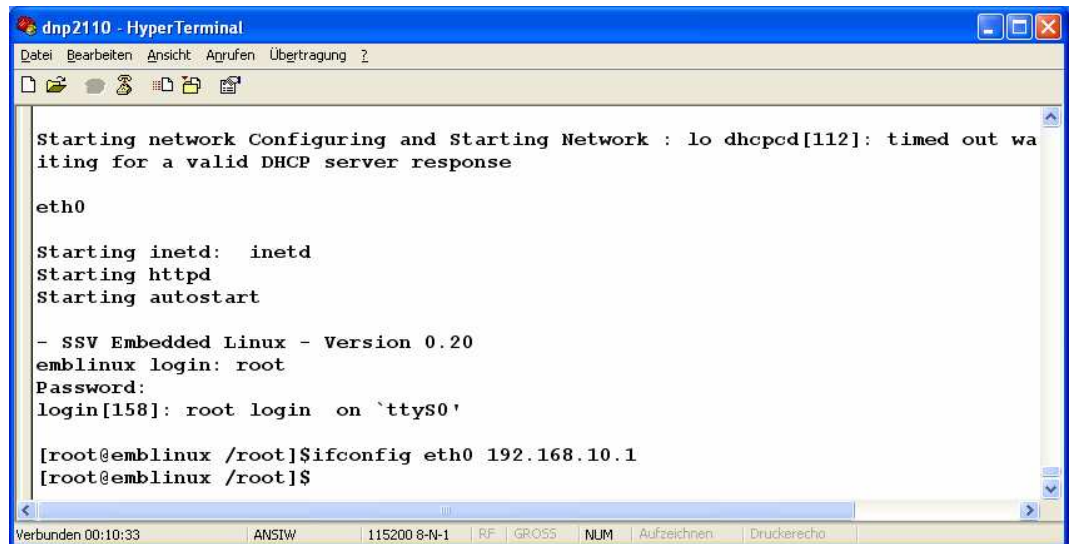2. `tar xvf ../var/dnp2110-flashinstall.tar`

Figure 8:   Unzipping the file dnp2110-flashinstall.tar.gz into the flash directory

Now reset the DNP/2110 to complete the installation.

3.3 Changing the IP Address on the DNP/2110

Open HyperTerminal and login as **root**.

Enter the following command to change the IP address on the DNP/2110:
`ifconfig eth0 192.168.10.1.`

Figure 9: **Changing the IP address on the DNP/2110**

You can view the changed IP address by entering the following command:
`ifconfig –a.`

Figure 10: Checking the IP address on the DNP/2110

3.4 Creating the PPP Connection on the Windows PC

Open the **Control Panel** and select **Network Connections**. Click on **Create a new connection**. The **New Connection Wizard** opens. Click on **Next**.

Figure 11: New Connection Wizard

In the following dialog select **Set up an advanced connection** and click on **Next**.
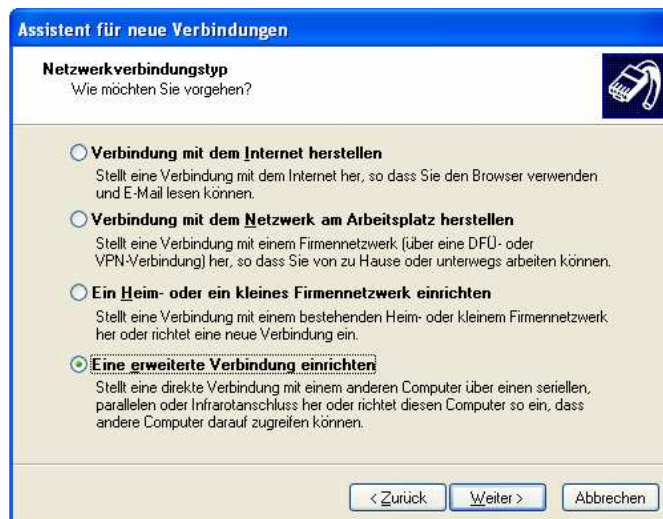

Figure 12: Selecting a network connection type

Select **Connect directly to another computer** and click on **Next**.

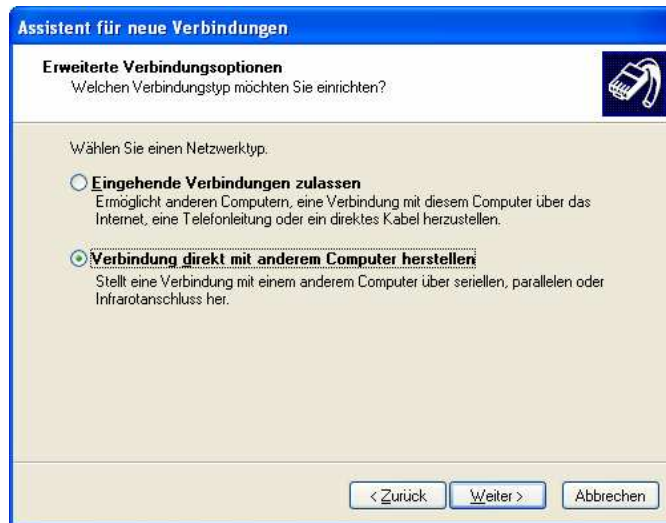**Figure 13: Selecting the advanced connection options**

In the next dialog select **Guest** and click on **Next**.

Figure 14: Selecting guest

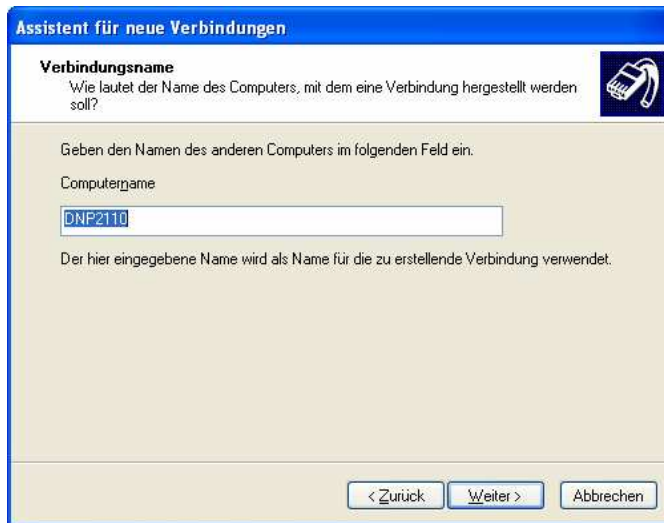Enter a name for the new connection, e.g. "DNP2110" and click on **Next**.

Figure 15: Entering a connection name

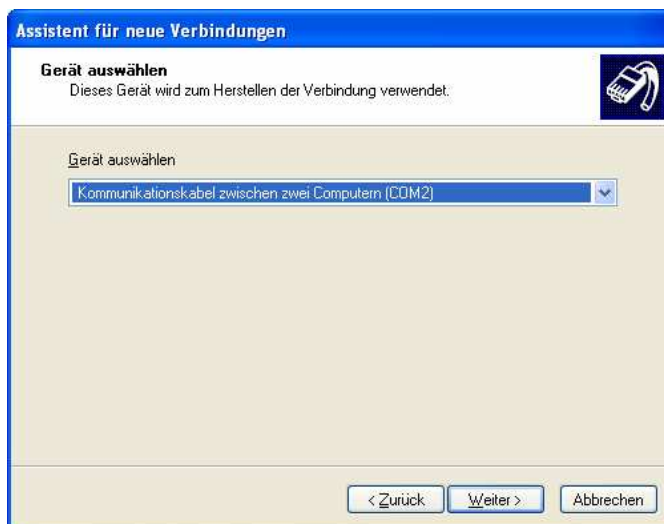Select **COM2** as device to make the connection and click on **Next**.

Figure 16: Selecting COM2 to make the connection

Click on **Finish** to complete the New Connection Wizard.

Figure 17: Completing the New Connection Wizard

3.5　　　Configuring the PPP Connection on the Windows PC

Open the **Control Panel** and select **Network Connections**. Double click on the new created connection, e.g. "DNP2110" and click on **Properties**.

Figure 18: Connection dialog

In the following dialog select the tab **General** and click on **Configure…** . Select **115.200 bps** as maximum speed and click on **OK**.
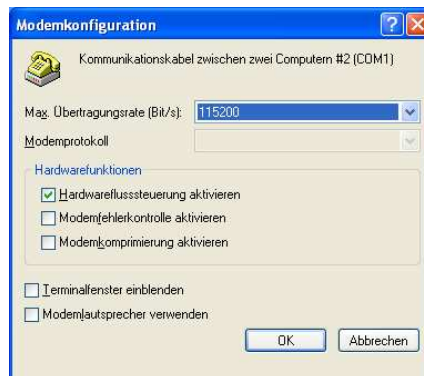

Figure 19: Modem configuration

Open the tab **Networking**, select **Internet Protocol (TCP/IP)** from the list and click on **Properties**.

In the following dialog select **Use the following IP address** and enter **192.168.11.1**. Click on **OK** to close the dialog. Click again on **OK** to finish the configuration.
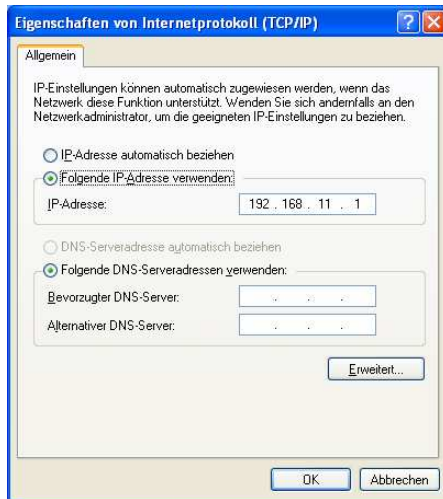

Figure 20: Changing the IP address of the PPP connection on the Windows PC

3.6   Testing the PPP Connection

In HyperTerminal enter the following command to start the PPP connection on the DNP/2110:
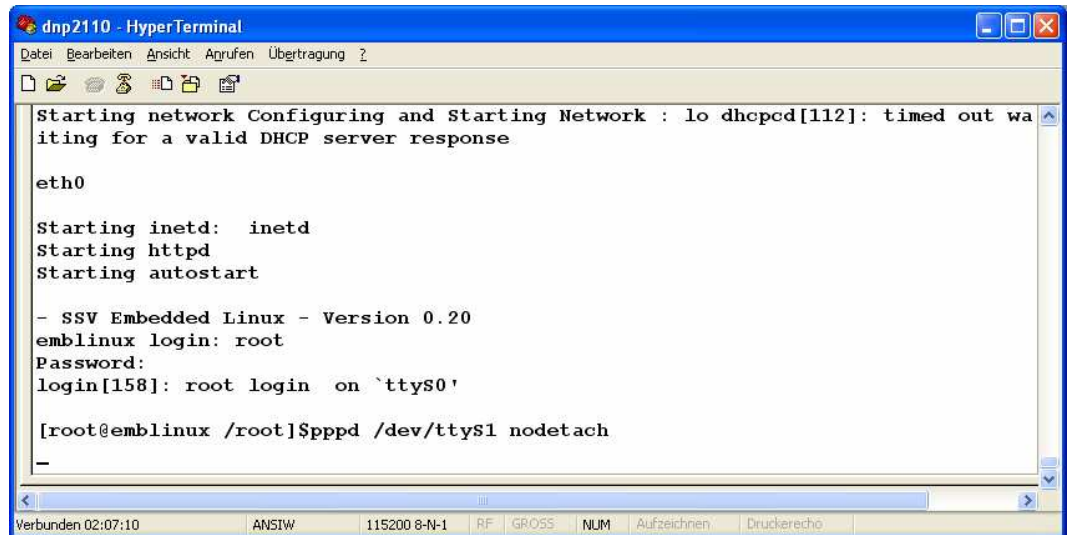
`pppd /dev/ttyS1 nodetach`.

Figure 21: Starting the PPP connection on the DNP/2110

Open the new created PPP connection on the PC and click on **Connect**. You do not have to enter a user name or password.

Figure 22: Starting the PPP connection on the Windows PC

In HyperTerminal you will see the PPP messages shown in the figure below.
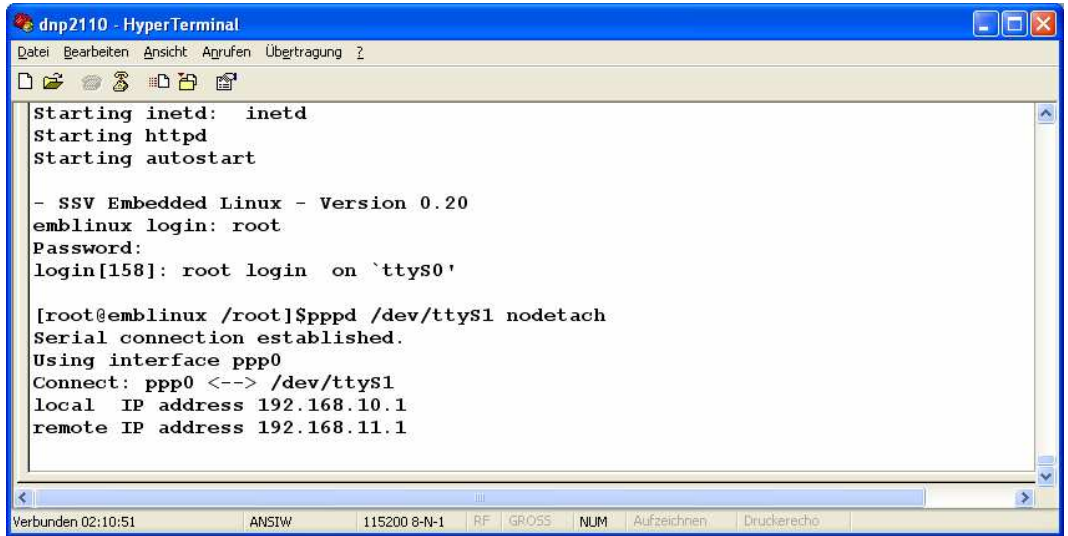

Figure 23: PPP connection messages on the DNP/2110

To test the connection open your browser and enter the IP address of the DNP/2110 (192.168.10.1) in the address bar. You will see a web page from the DNP/2110 web server.
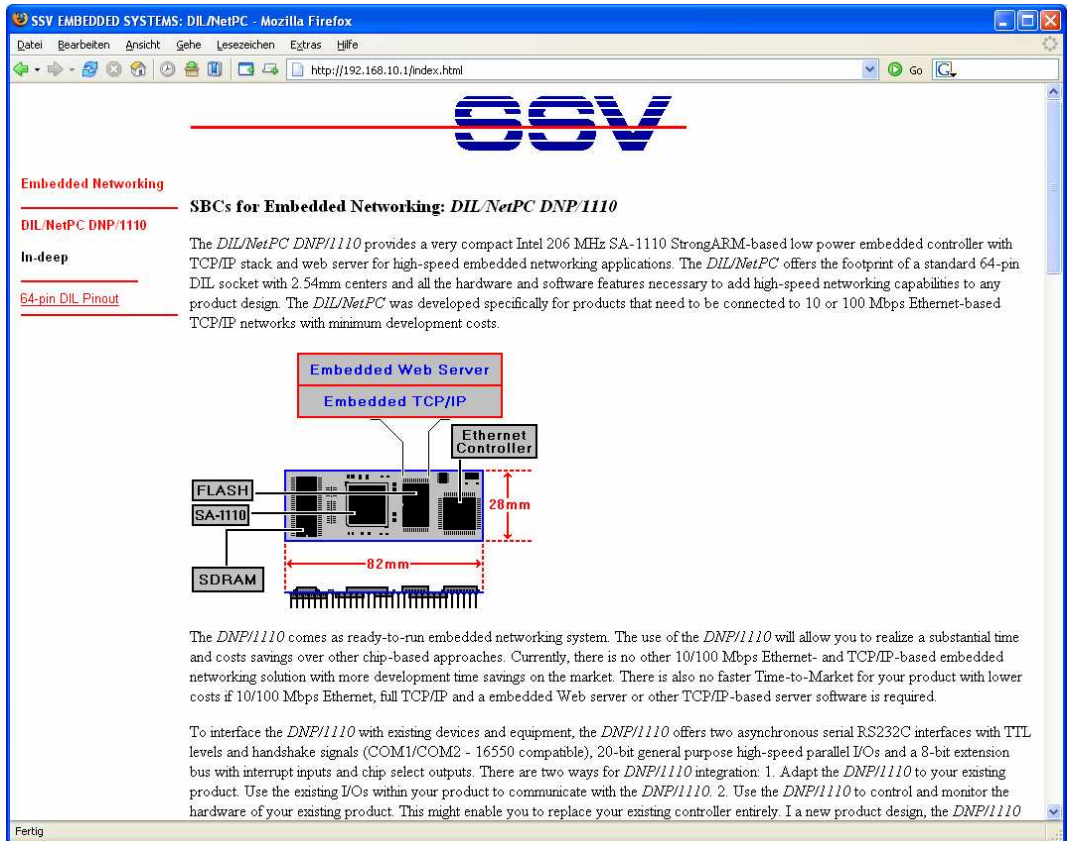

Figure 24: Web page from the DNP/2110 web server

That's all.

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