Stamp9G20

Quickstart Guide

Stamp9G20: Quickstart Guide

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1. Scope

This Quickstart Guide describes the first steps to get your Stamp9G20 Starterkit connected and running. It does not describe how to program your device or any other further steps. To do this turn to the Technical Reference and the Linux Guide of your Stamp9G20. After working through this guide you will be able to connect your Starterkit-board properly and you will see the login and boot-messages of your Stamp9G20.

Tip

You find the newest version of all documentation, downloads and a support forum on our support pages at *www.armbedded.eu*.

2. Starterkit Package Contents

The Starterkit contents are as followed:

- Stamp9G20

- Stamp Adaptor 2

- Panel-Card EVB

- Software CD (Documentation, U-Boot and GNU-Tools)

- MicroSD-Card with Rootfs

- Ethernet Cable (Patch and Crossover)

- Nullmodem Cable

- Power Supply Unit

- Serial Adaptor Cable

Note

As the rootfilesystem is on the MicroSD-Card, the Stamp9G20 alone is delivered without it. If you did not purchase a Starterkit, you can download the image on our support pages on *www.armbedded.eu* and either program it to flash or on an own MicroSD-Card.

3. Setting up the Hardware
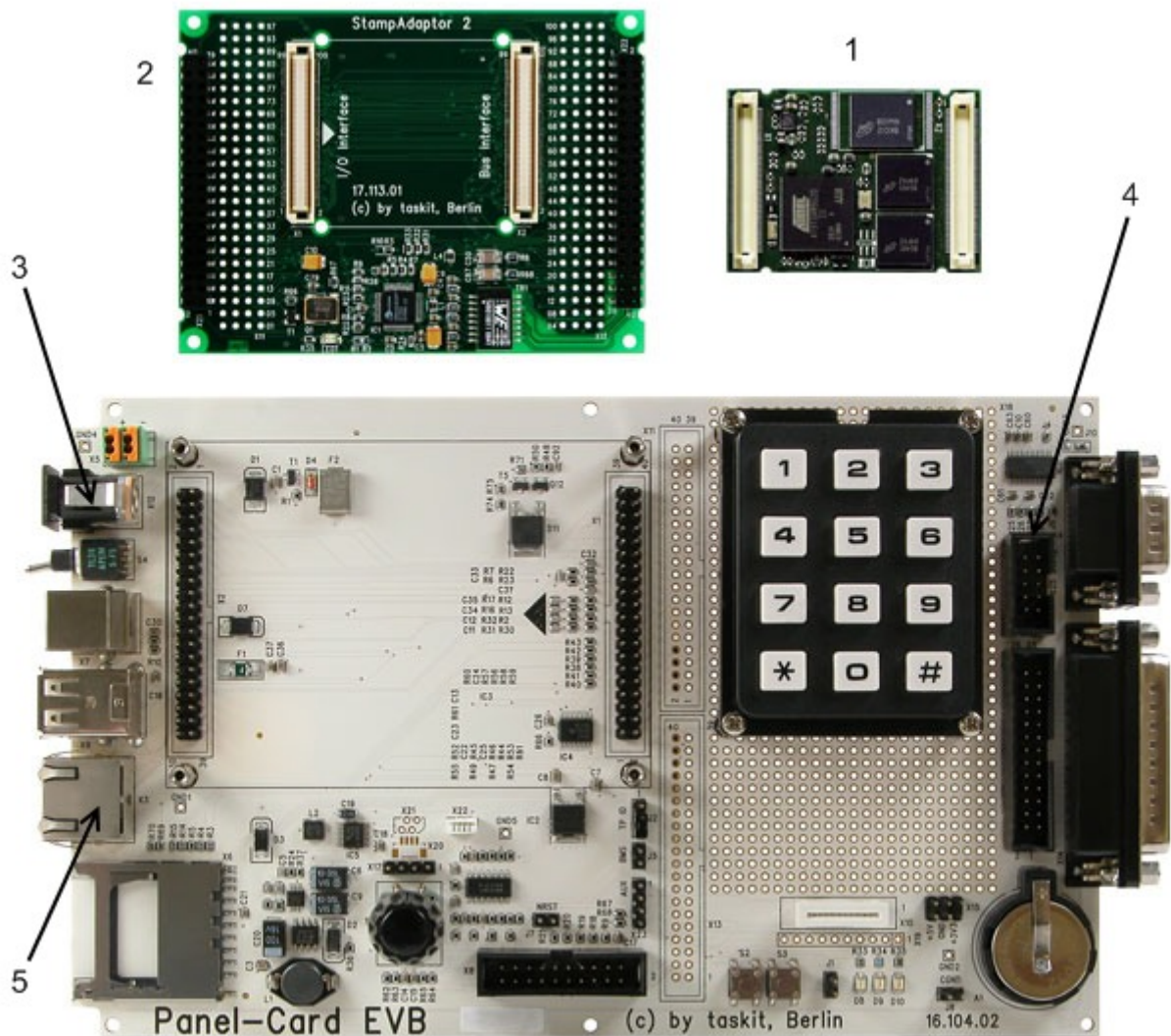
Figure 3.1. Starterkit Contents

Stamp Adaptor 2 (2) and Stamp9G20 (1) and EVB are already delivered mounted.

- Connect the serial adapter cable to X25 Debug (4).

- Connect the nullmodem cable with the serial adapter cable and a serial port of your PC.

- Connect an ethernetcable with the ethernet X3 (5).

- Connect the power supply unit with DC/IN X12 (3).

This concludes the hardware setup. Before you turn on the Stamp9G20 for the first time, start a terminal emulation program on the connected computer as described in the next chapter.

4. Terminal Connection

4.1. Setting up a Terminal Connection to a PC

To use Bootloader and Linux effectively as a development environment, you need terminal access via the serial port. Later, the system can be configured to start automatically, user interaction is no longer required. The standard way to create a serial port connection is to connect the target computer and development computer with a null modem cable and to run a terminal emulator on the development system.

As described below, you can use either a Linux computer or one running Windows.

4.1.1. Terminal Access under Linux

In the Linux environment, Kermit fulfils this software requirement. Although also often used for similar purposes, the Minicom terminal emulator should not be used, since there are many reported problems when working with the U-Boot boot loader. There are 2 Kermit packages in many Linux distributions. Of these, "gkermit" is only a command-line tool for implementing the Kermit FTP (File Transfer Protocol); the appropriate package is "ckermit". Under Debian GNU/Linux, you can install the package simply with:

```
apt-get install ckermit
```

The packet cKermit belongs to the non-free distribution tree. If the Apt-Packet Manager couldn't find the package, simply add non-free to the configuration file `/etc/apt/sources.list` for your Debian server and execute

```
apt-get update
```

Now the apt command should work successfully.

For configuration, it is a good idea to create the configuration file `.kermrc` in the home directory used by Kermit for initialisation. Use the following settings to interact with U-Boot:

```
# example ~/.kermrc
set line /dev/ttyS0
set speed 115200
set carrier-watch off
set handshake none
set flow-control none
robust
set file type bin
set file name lit
set rec pack 1000
set window 5
```

Normal users need to have read and write permissions for `/dev/ttyS0`. In most Linux distributions, this is not the case. Either put the user into the right group (on Debian systems this is *dialout*, may also be *uucp* on other systems) or run the following command as root:

```
chmod 666 /dev/ttyS0
```

Then you can restart Kermit:

```
kermit -c
```

Upon starting Linux on the target system, a console is available on the serial port.

4.1.2. Terminal Access under Windows

"Windows" operating systems generally offer HyperTerminal as a free terminal emulator, already included in the standard installation. You can execute HyperTerminal from Start → Programs → Accessories → Communication.
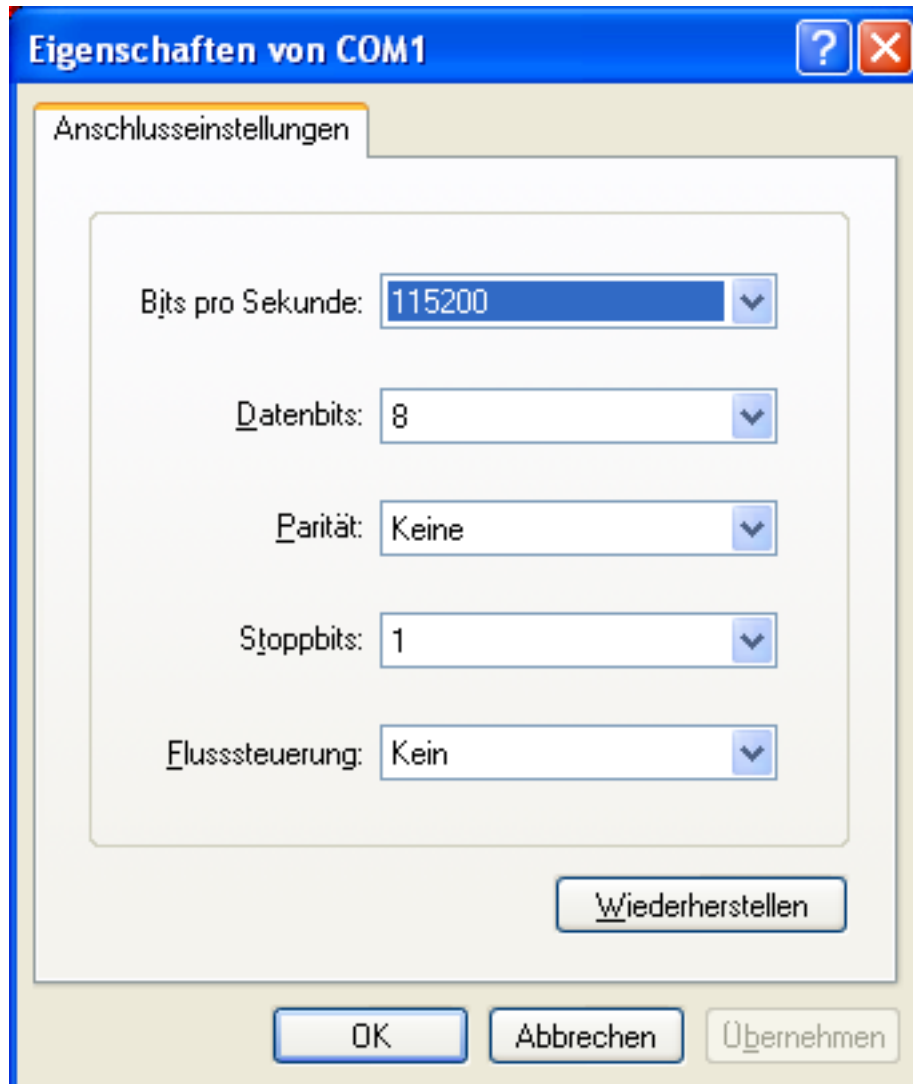
Figure 4.1. HyperTerminal Configuration Menu

After starting "HyperTerminal", enter any connection name and choose the COM port to be used. Then configure the interface for serial interaction, as shown in the screen shot (Kein(e) = None).

5. Booting the Stamp9G20

After starting the terminal emulation, turn on the device. The terminal window should now display messages from the U-Boot boot loader. If you press any key within the first 3 seconds, the Linux kernel does not boot automatically and the U-Boot entry screen appears.

After 3 seconds, the kernel is loaded from the Flash memory, and the root file system image (stored on MicroSD-Card or Flash memory) is mounted. After a few seconds, and after output of the kernel's boot messages, you are presented with the login prompt.

```
stamp9g20evb login:
```

In standard installations, only the superuser "root" has been created. Log in as "root" with the password "taskit". Now you are ready to test the applications already installed or to start your own applications. How this can be done is documented in the Linux Guide.