

Soap Dispenser Controller with RFID & LORA

Notes for Hardware Testing

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# Preface

We sent approximately 70 pieces of the PCB back. Most of these have a higher serial number. Therefore we assume that it is a problem in the production process. We assume that soldering parameters have drifted from the start of production.

We guess that the solder joints underneath the MCU can cause problems.

Question: Can the test points and connectors be used for JTAG analysis?

## Test Procedures @ iDTRONIC

Test Connection

Connect to the serial interface with the HyperTerminal. Try to read out the serial number. The syntax is:

SERIALNR

The PCB should reply with:

SERIALNR: <serialnumber>

In case no serial number has been configured so far, the output may be empty.

Configure the serial number.

The syntax is:

SERIALNR <serialnumber>

The PCB should reply with:

SERIALNR: <serialnumber>

The “:” (colon) will show you, that this is a reply from the PCB.

## Notes

We will try to get the latest schematics and PCB layout.

# Introduction

## Hardware Tools Needed

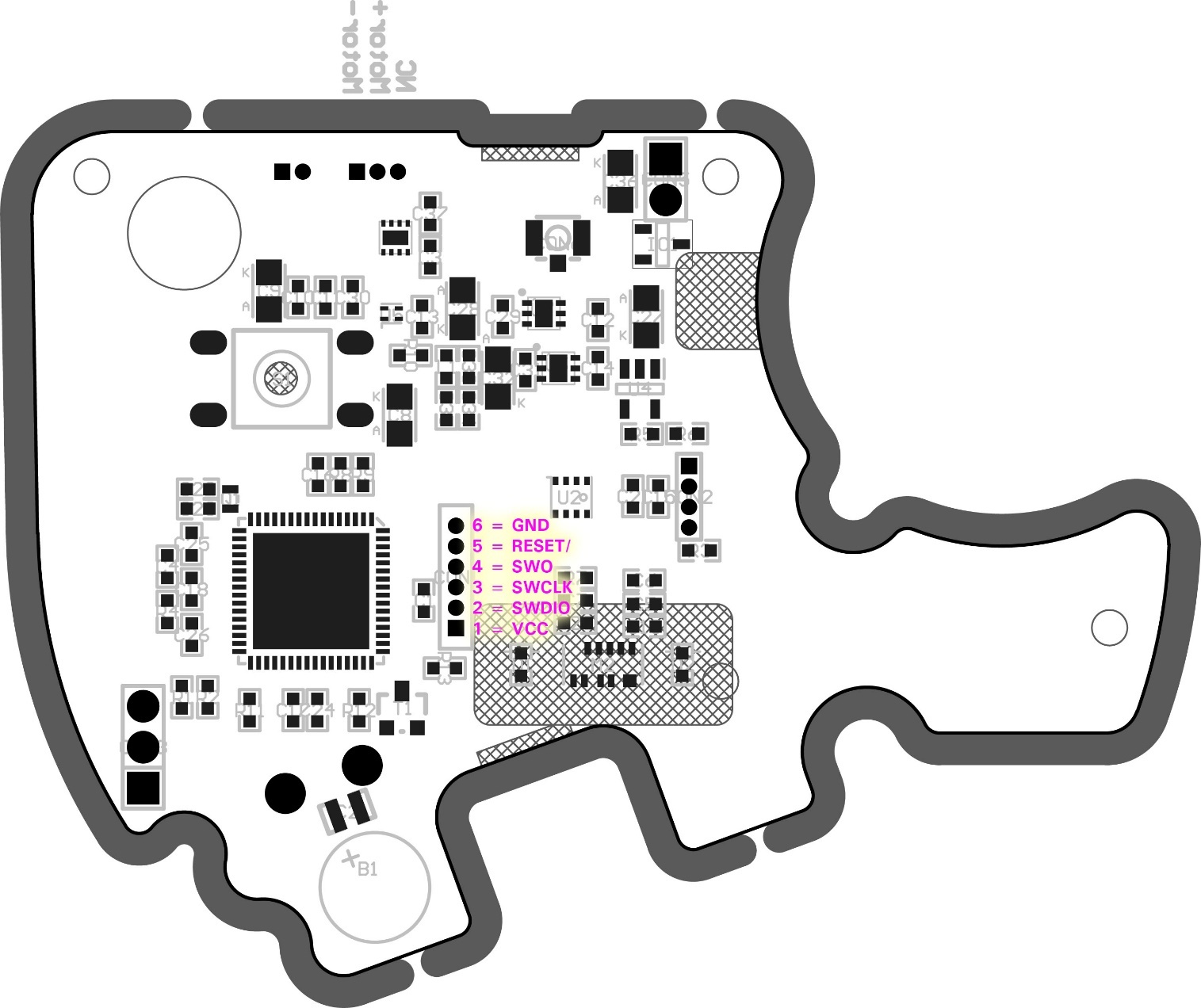
* USB-TTL-Adapter that can supply 5 Vdc

## Software Tools Needed

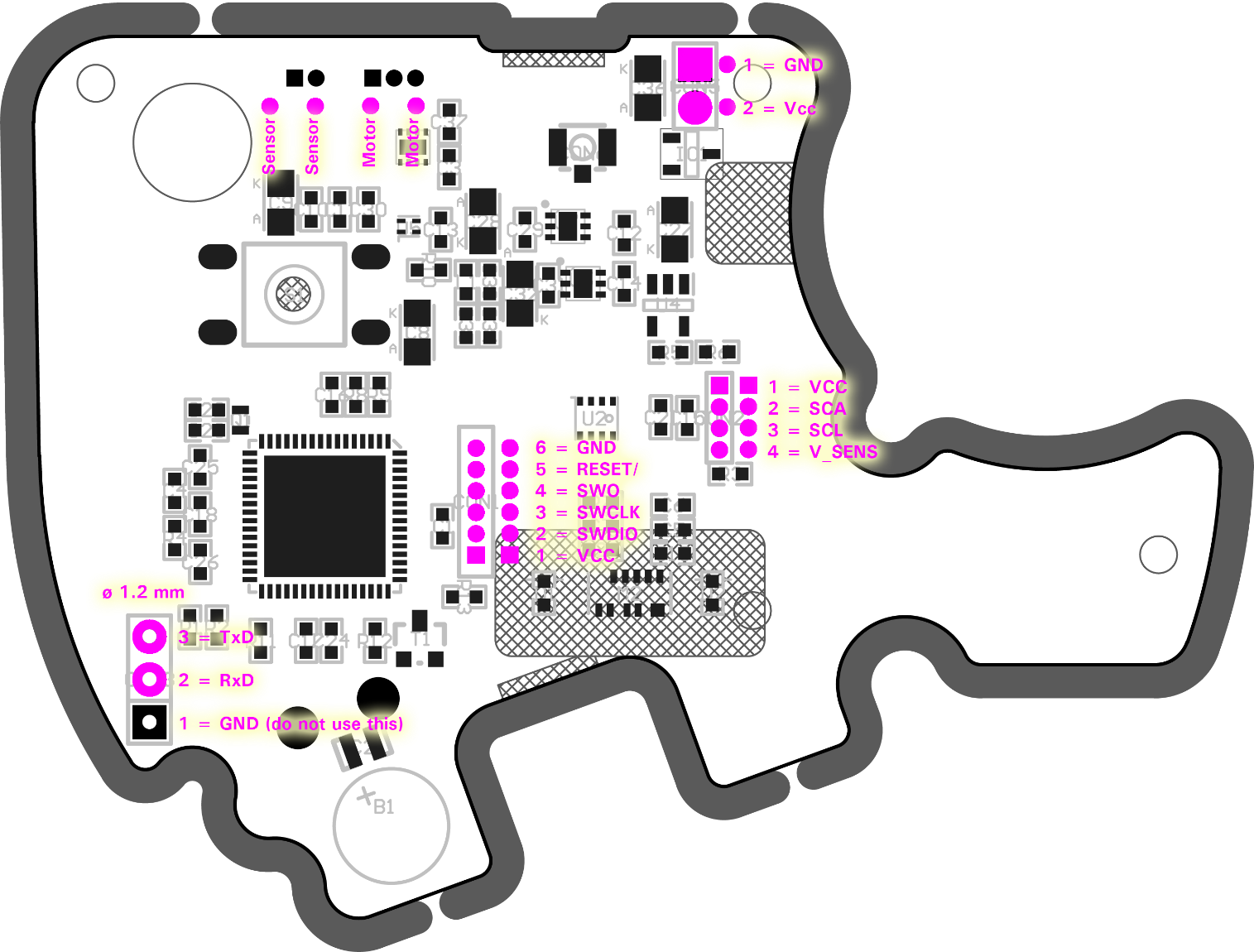
* HyperTerminal (older version)

# Hardware Information

## Pinout of SWD interface on PCB



## Pinout of Serial Interface and other Connectors and Test Pins on PCB



Do not use the GND pin close to TxD/RxD for a serial connection.

Please use the GND pin close to VCC supply.

Serial Interface Communication Parameters

|  |  |
| --- | --- |
| Name | Value |
| Baud Rate | 115200 bps |
| Data Bits | 8 |
| Stopp Bits | 1 |
| Parity | None |
| Flow Control | None |

# Test Communication with HyperTerminal

## Preface

The serial interface on the PCB gets its clock from an internal RC-Oscillator. This Oscillator is not very precise.

The old HyperTerminal allows to set character and line delays. This is a workaround the imprecise clock of the serial interface on the PCB.

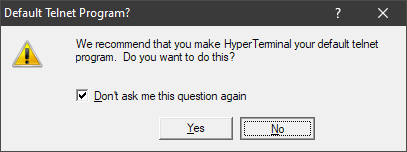
## Installation of HyperTerminal

If you already have the HyperTerminal on your PC, do nothing.

If HyperTerminal is not on your PC, please install “htpe63.exe” in this data package.

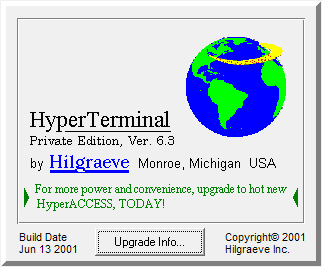
## Configuration of the HyperTerminal Session

The first time HyperTerminal starts, it will nag you with this question:

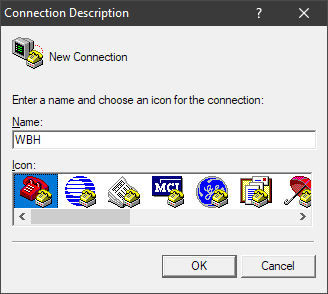


I recommend to checkmark “Don’t ask me this question again” and confirm with [ No ].

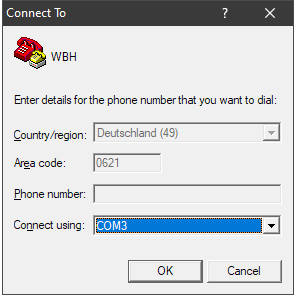
After the start info…



…the software wants to be configured first.

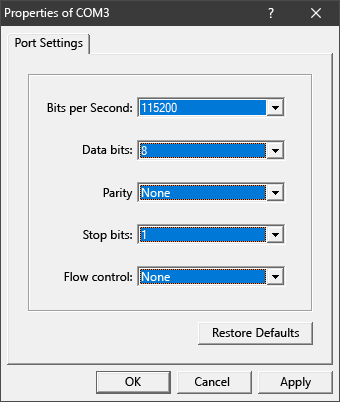


The Name is only for your information.

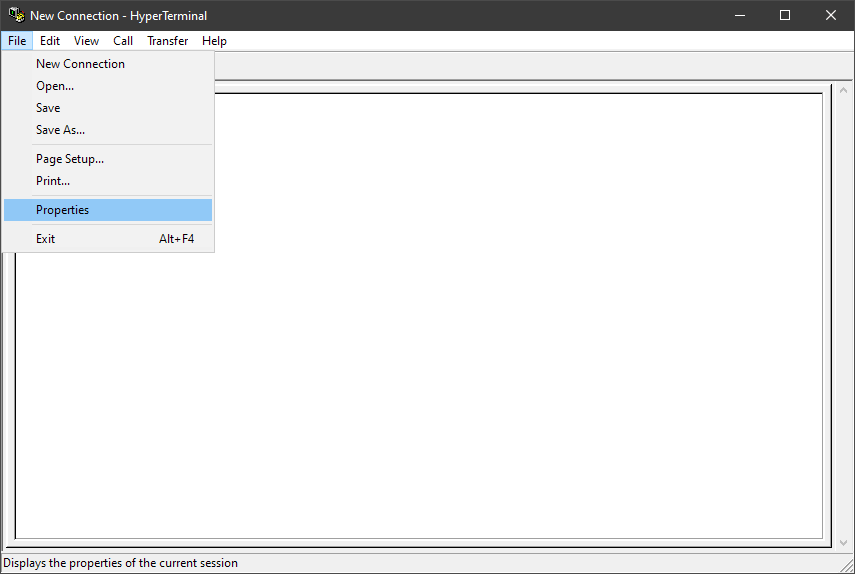


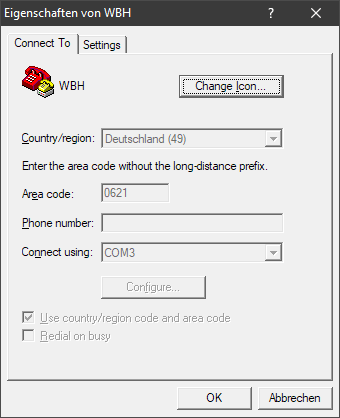
At the pull-down menue “Connect using” select the COM port where the USB-TTL-Adapter is installed.

Now configure the correct communication parameters:

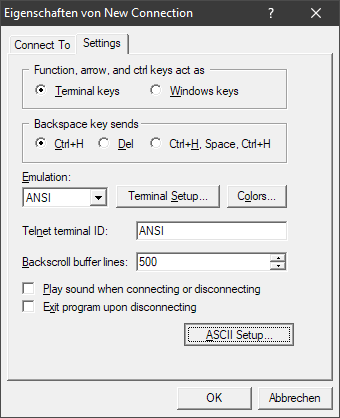


Now you are back at the main screen. Please continue to configure the terminal parameters:



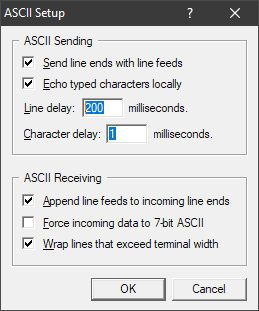


Now go directly to the second tab “Settings”:



Set Emulation to ANSI. You can set the Telnet terminal ID to ANSI, too.

Finally click on [ ASCII Setup ].



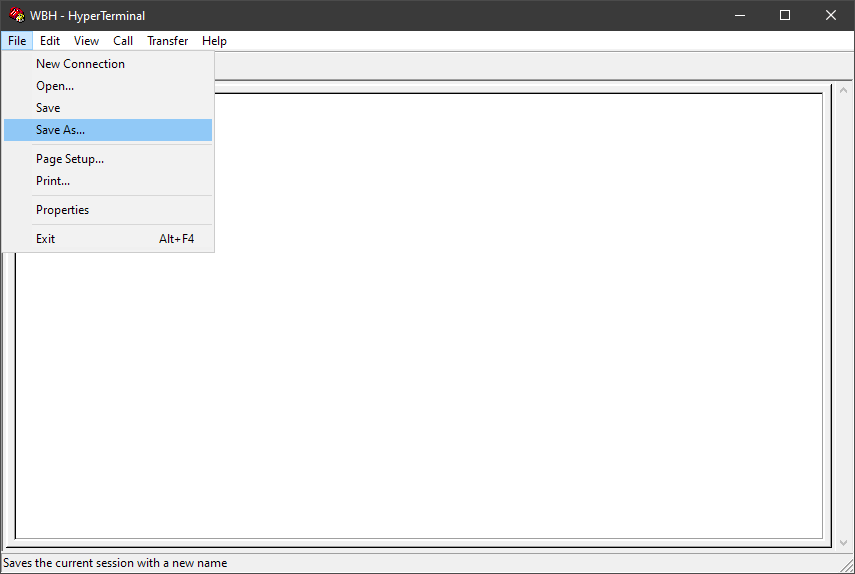
Important Settings

* “Send line ends with line feeds”
* Line delay (this gives the low-power MCU time to process each line before the next command is received)
* Character delay (this copes with the imprecise interface clock on the PCB)

Convenience Settings

* “Echo typed characters locally” (without this you will not see, what you are typing)
* “Append line feeds to incoming line ends” (this will give a structure of all the lines in the terminal window)

DO NOT FORGET to save these settings for re-use:



# Revision History

|  |  |  |
| --- | --- | --- |
| Date | Version | Description |
| 2022-03-30 | 0.1 | Initial Draft |
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