CC2652P2 TCP ZigBee Coordinator V0.2

- 2.4 GHz CC2652P ZigBee-coordinator with Ethernet connection using USR-K6 (Serial TCP server)
- ZigBee-coordinator firmware based on Z-Stack 3.x (Koenkk)
- Latest version of Texas-Instruments ZigBee CC2652P Cortex-M4F microcontroller with integrated power amplifier (+20dBm)
- Developed from an idea of Matthias Kleine from haus-automatisierung.com

Figure 1- Circuit board without housing

1 Commissioning

1. Mount antenna
2. Establish network connection
3. Connect micro USB power supply (5v/500mA)
4. Read DHCP IP address in router

There is no power LED. The LEDs of the network port light up according to the activity.
The two LEDs on the board (LED1 green, LED2 red) signal the function of the Z-Stack firmware.

2 Configuration io.broker

After installing the Zigbee adapter under "Adapter", it must first be configured under "Instances". In the "Settings" under "COM Port Name" the IP of the CC2652P2 TCP ZigBee Coordinator is entered in the form `tcp://ip-cc2652-tcp:20108`.

`TI Z-Stack/CCxxxx` must be selected as "Type".

After saving and restarting the adapter, the ZigBee coordinator is available. This can be checked in the log with the following message.

```
Coordinator firmware version: {"type": "zStack3x0",
"meta":{"transportrev":2, "product":1, "majorrel":2, "minorrel":7,
"maintrel":1, "revision":20220103}}
```

When pairing is active, the green LED on the coordinator lights up.

For further configuration, see https://github.com/ioBroker/ioBroker.zigbee or at https://www.youtube.com/watch?v=Uz26JzOJVTc.

3 Configuration zigbee2mqtt

In the file `data/configuration.yaml` the "connection" of the ZigBee coordinator must be set. Instead of the serial device the TCP connection to the IP of the CC2652P2 TCP Zigbee coordinator is stored.

```
serial:
  port: 'tcp://ip-cc2652-tcp:20108'
```

When pairing is active, the green LED on the coordinator lights up.

4 Firmware Update (Advanced)

The following options are available for updating the firmware of the CC2652 module.
The required Z-Stack firmware can be downloaded from https://github.com/Koenkk/Z-Stack-firmware/tree/master/coordinator/Z-Stack_3.x.0/bin.
The hex file from `CC1352P2_CC2652P_launchpad_*.zip` is used.

4.1 JTAG

A JTAG debugger (for example JLink) can be connected to the 2x5 header on the top (`JTAG for CC2652P`) for firmware update. Settings for flashing in the respective software: `CC2652R1F`, `JTAG@4000kHz`.

4.2 Via network with ZigStar GW Multitool

Download ZigStarGW-MT from https://github.com/xyzroe/ZigStarGW-MT.

Open the housing of the CC2652P2 TCP Zigbee Coordinator and start the CC2652P2 module in the bootloader. To do this, hold the flash button and briefly press the reset button while holding the flash button. Afterwards release the flash button.

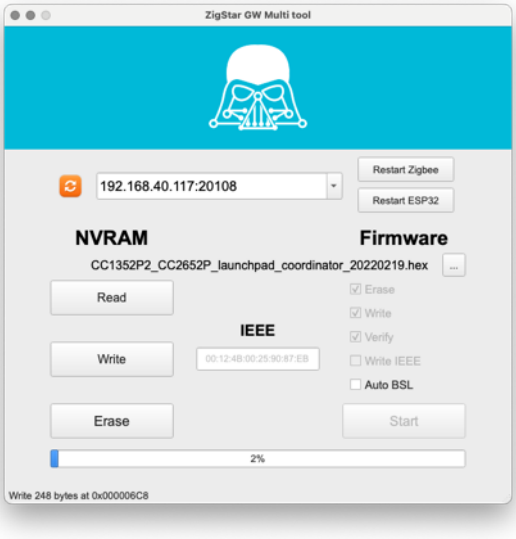

Figure 2 - Setting ZigStarGW-MT

Enter IP of the coordinator in the multitool with port, example `192.168.40.117:20108`.
Select Erase, Write, and Verify options.
Deselect Auto BSL. Select the Z-Stack firmware `CC1352P2_CC2652P_launchpad_coordinator_xxx.hex` via "Select File ..." and press "Start".

After a successful update, briefly disconnect the coordinator from the power supply and reconnect it to restart it.

5 Configuration Ethernet module (USR-K6)

The Ethernet module is configured with DHCP and as serial TCP server on port 20108. This setting can be adjusted in the web interface of the USR-K6. To do this, call up the IP of the module in the browser and log in (user/password: admin/admin).

There a fixed IP can be assigned and the desired mode for the serial transmission can be set.
With the key USR-RST (hold for 5s) the Ethernet module can be reset to the factory state. Afterwards it is reachable on the IP `192.168.0.7` and must be reconfigured for the use as TCP server.

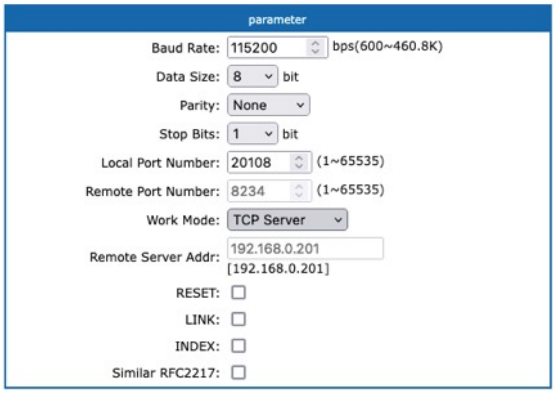

Figure 3 - Configuration USR-K6 under "Serial Port

6 Intended use

This module is designed to provide a ZigBee interface (coordinator) via Ethernet.
Only the specified intended use is permissible. Any other use will void the warranty and exclude liability.

7 Safety instructions

Keep the module away from heat and solar radiation. Avoid contact with dust and the influence of liquids. Only use the module indoors. Protect the module from electrostatic discharge.

8 Technical data

Short description:	CC2652P TCP V0.2, Art. No. 90810		**Dimension:**	Housing 44 x 66 x 24mm
Supply voltage:	5V Micro USB, max 200mA		**Weight:**	48g incl. housing, without antenna
Ambient temperature:	+5 to +45°C		**Standard:**	IEEE 802.15.4 (ZigBee Coordinator)

Open source project: Support via support@codm.de, no phone support!

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