

ConBee II – ZigBee USB Gateway

User Manual



The universal Zigbee USB gateway

- Unites Zigbee devices of many vendors
- A cloud free solution
- strong signal range via power-amplifier
- works with popular Home Automation Systems

Technical specification

Name	Description
Rated voltage	DC 5,0 V
Transmission power	max. 10 mW
Signal range	200 m in free line of sight
Radio frequency	2.4 GHz
Radio standard	IEEE 820.15.4 / Zigbee
Flash memory	256 kByte
Storage temperature	-20 °C bis 55 °C
Operating temperature	-20 °C bis 55 °C
Operating systems	Microsoft Windows 7 / 10, Ubuntu, Raspbian, Docker
Dimensions	60 mm × 18 mm × 9 mm

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Installation

The deCONZ application is a tool to configure, control and monitor Zigbee networks with the ConBee II.

The following sections describe the installation steps of deCONZ for various platforms.

Supported platforms

- [Raspbian](#)
- [Ubuntu](#)
- [Docker](#)
- [Windows 7](#)
- [Windows 10](#)

Connection

To ensure a strong radio signal, the use of a USB extension cable is recommended.

Helps in following situations:

- Interference with housing and peripherals

- Devices are not controllable
- Problems when pairing new devices
- Low signal range

Raspbian

Supported Raspberry Pi models and distributions

- Raspberry Pi 1, 2B, 3B and 3B+
- Raspbian Jessie
- Raspbian Stretch

Note

The following steps describe the manual installation of deCONZ. Alternatively a preinstalled [SD-card image](#) can be used.

Installation

1. Set user USB access rights

```
sudo gpasswd -a $USER dialout
```

Note: Changes to access rights only become active after logging out and in or after a restart.

2. Import Phoscon public key
3.

```
wget -O - http://phoscon.de/apt/deconz.pub.key | \
sudo apt-key add -
```
4. Configure the APT repository for deCONZ

Stable

```
sudo sh -c "echo 'deb http://phoscon.de/apt/deconz \
$(lsb_release -cs) main' > \
/etc/apt/sources.list.d/deconz.list"
```

Beta (alternative)

```
sudo sh -c "echo 'deb http://phoscon.de/apt/deconz \
$(lsb_release -cs)-beta main' > \
/etc/apt/sources.list.d/deconz.list"
```

5. Update APT package list

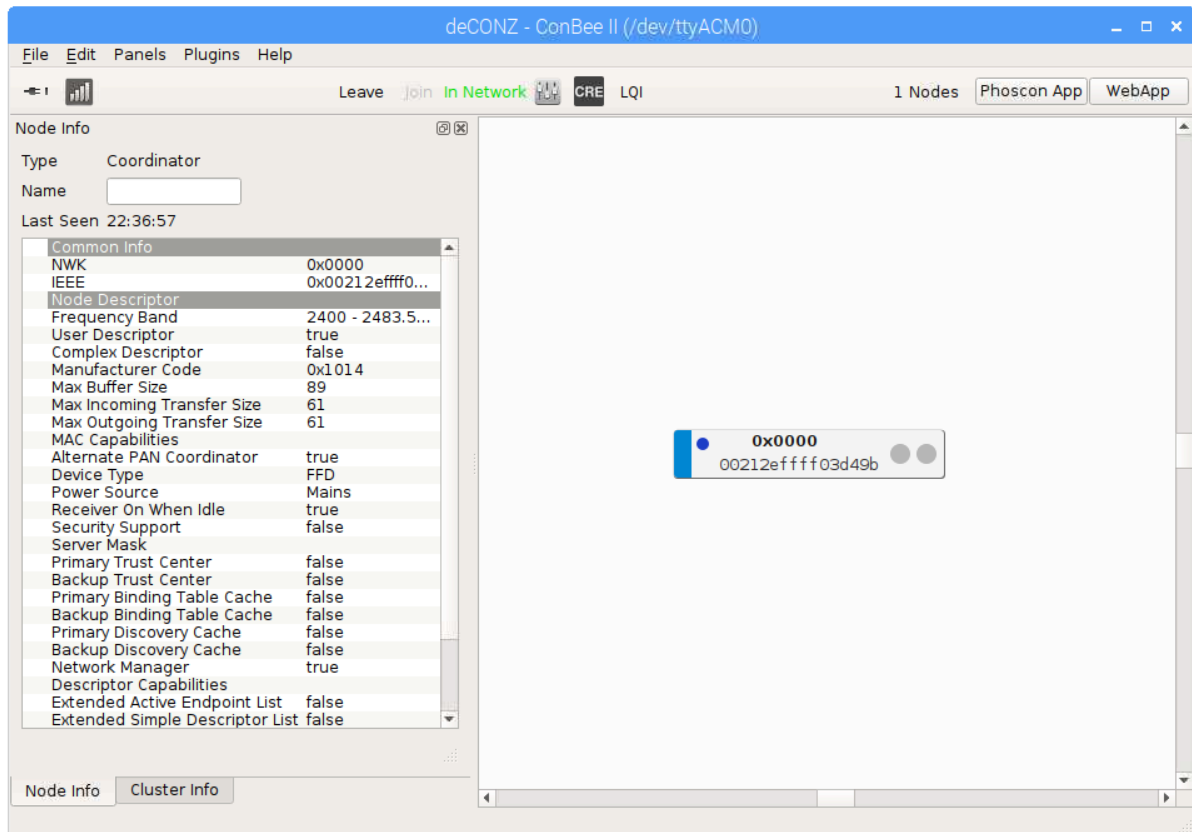
```
sudo apt update
```

6. Install deCONZ

```
sudo apt install deconz
```

After the installation deCONZ can be started via the application menu.

Menu > Programming > deCONZ



Now the first Zigbee devices can be paired via the Phoscon App. Further information can be found in the [Phoscon App documentation](#).

Ubuntu

Supported Ubuntu versions

- Ubuntu 16.04 LTS 64-Bit
- Ubuntu 18.04 LTS 64-Bit

Installation

1. Set user USB access rights

```
sudo gpasswd -a $USER dialout
```

Note: Changes to access rights only become active after logging out and in or after a restart.

2. Import Phoscon public key

3. `wget -O - http://phoscon.de/apt/deconz.pub.key | \`

```
sudo apt-key add -
```

4. Configure the APT repository for deCONZ

Stable

```
sudo sh -c "echo 'deb [arch=amd64] http://phoscon.de/apt/deconz \
$(lsb_release -cs) main' > \
/etc/apt/sources.list.d/deconz.list"
```

Beta (alternative)

```
sudo sh -c "echo 'deb [arch=amd64] http://phoscon.de/apt/deconz \
$(lsb_release -cs)-beta main' > \
/etc/apt/sources.list.d/deconz.list"
```

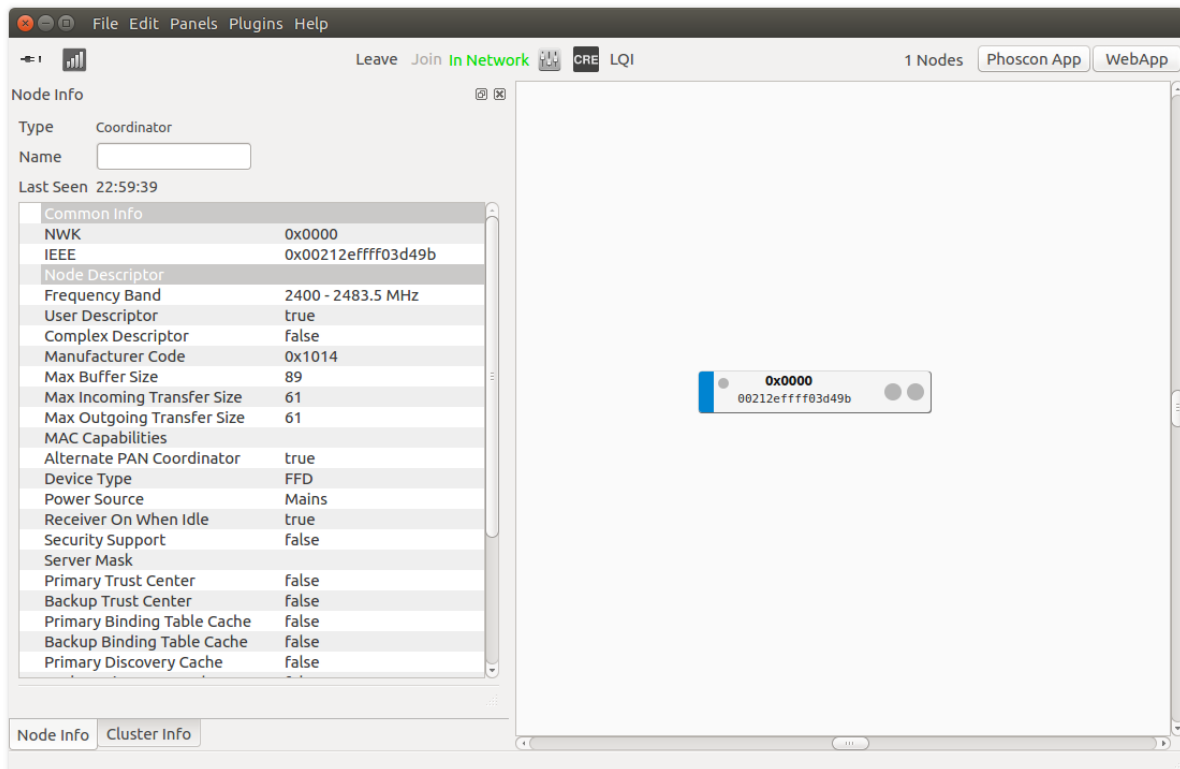
4. Update APT package list

```
sudo apt update
```

5. Install deCONZ

```
sudo apt install deconz
```

After the installation deCONZ can be started via the application menu.



Now the first Zigbee devices can be paired via the Phoscon App. Further information can be found in the [Phoscon App documentation](#).

Docker

Supported host systems

- Linux x86_64/amd64
- Linux armv7 (e.g. Raspberry Pi)

To run deCONZ in a Docker container, we recommend the Docker image **marthoc/deconz**, which is maintained by the community. This image supports on `amd64` and `armhf` platforms.

<https://hub.docker.com/r/marthoc/deconz>

Installation

The following steps describe how to start the deCONZ container on a Linux host system.

1. Set user USB access rights

```
sudo gpasswd -a $USER dialout
```

Note: Changes to access rights only become active after logging out and in or after a restart.

2. Create directory for persistent configuration

```
mkdir -p ~/.local/share/dresden-elektronik/deCONZ
```

3. Start deCONZ Docker container

```
4. docker run -d \
5.     --name=deconz \
6.     --net=host \
7.     --restart=always \
8.     -v /etc/localtime:/etc/localtime:ro \
9.     -v ~/.local/share/dresden-
elektronik/deCONZ:/root/.local/share/dresden-elektronik/deCONZ \
10.    --device=/dev/ttyACM0 \
    marthoc/deconz
```

With this configuration deCONZ runs in a Docker container on port 80.

Now the first Zigbee devices can be paired via the Phoscon App. Further information can be found in the [Phoscon App documentation](#).

A description of all available parameters as well as the use of Docker-Compose and VNC to access the deCONZ GUI can be found in the [Container Documentation](#).

Windows 10 installation

1. Download deCONZ software

<https://www.dresden-elektronik.de/deconz/win/>

2. Install USB driver

The drivers are installed automatically after connecting the ConBee II. If necessary, the drivers are downloaded from the Internet.

Windows 7 installation

1. Download deCONZ software

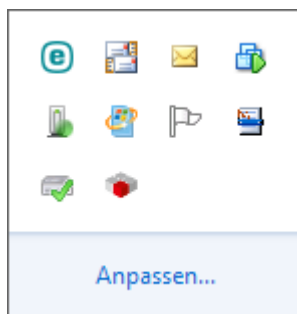
<https://www.dresden-elektronik.de/deconz/win/>

2. Download and extract the driver ZIP file

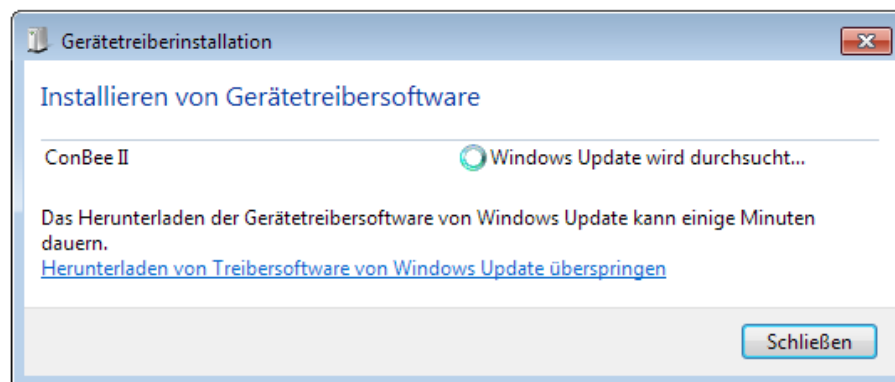
[ConBee II USB Driver V1_00.zip](#)

3. Manual driver installation

After plugging in the ConBee II, Windows automatically starts the search for a suitable driver.

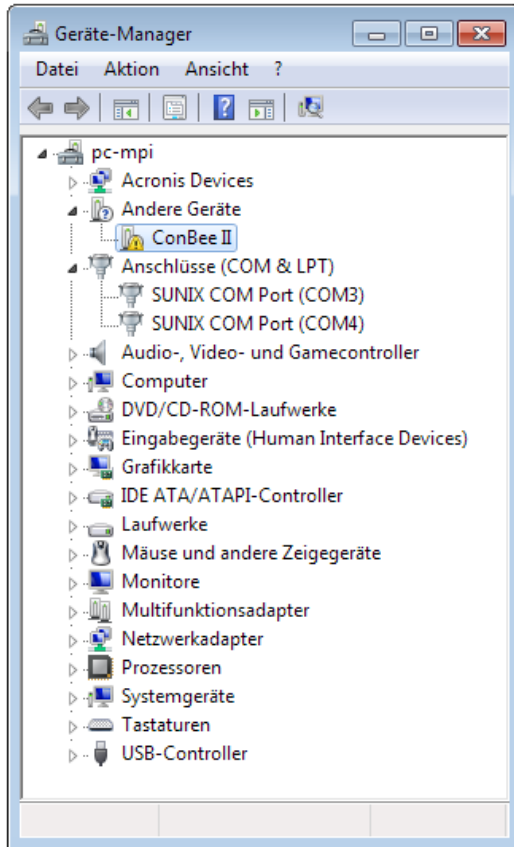


4. Select Skip Windows Update driver software download.

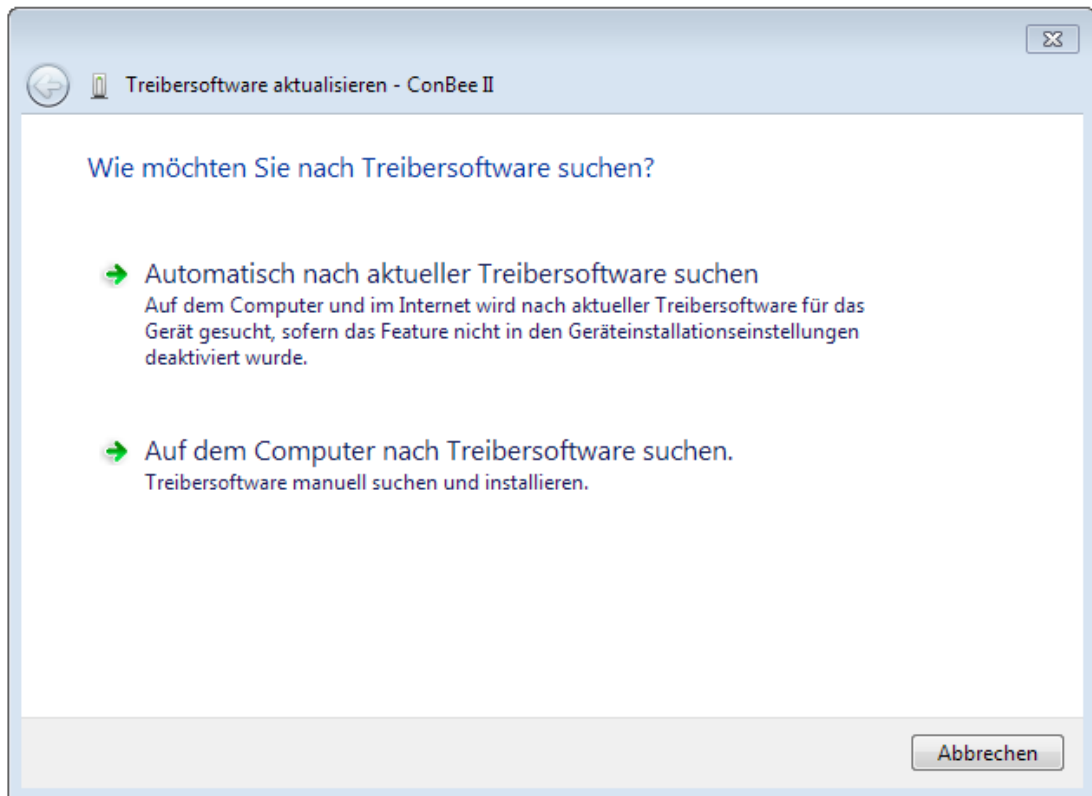


5. Open Device Manager

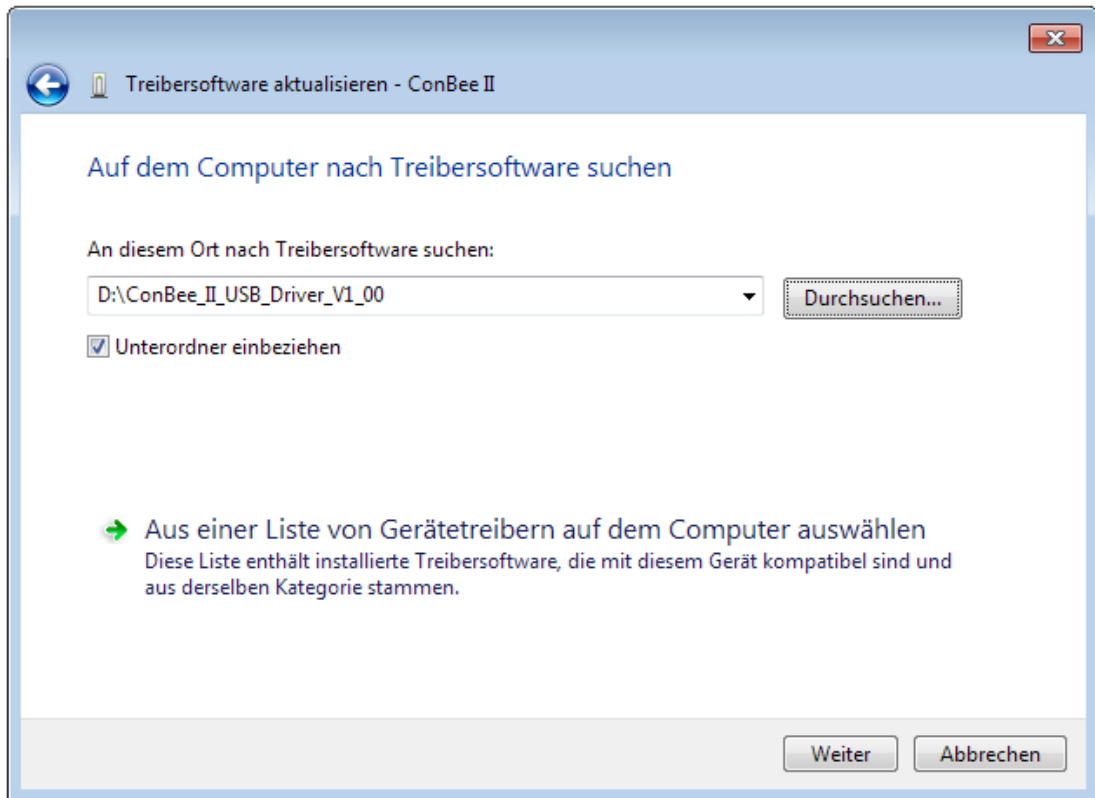
Enter the key combination <Win> + <Pause> and select Device Manager in the dialog that appears.



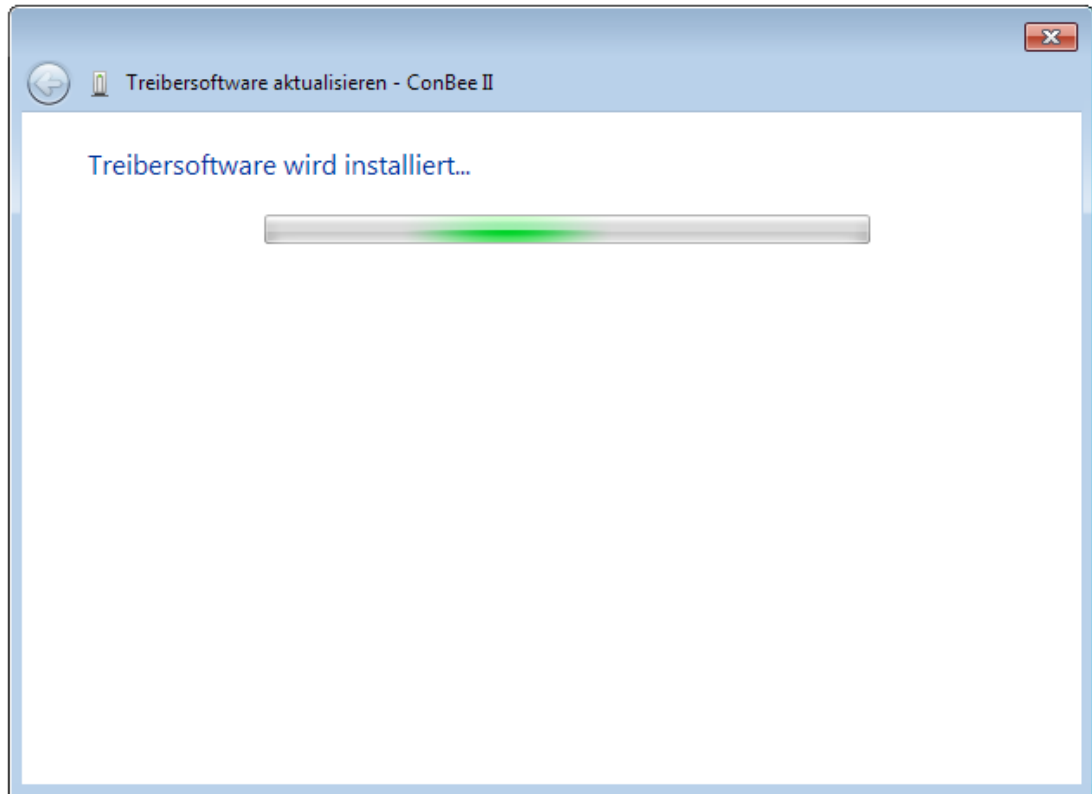
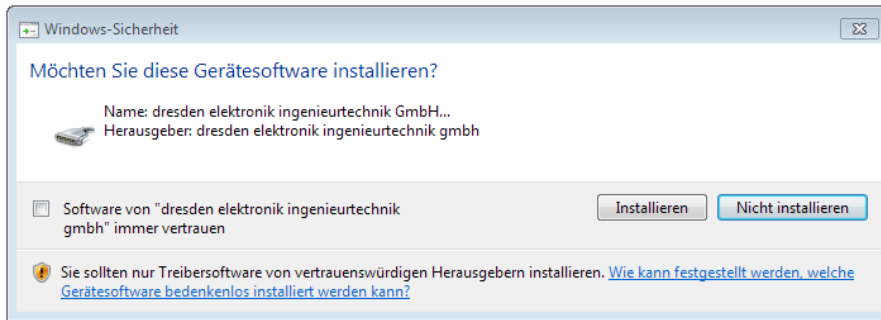
6. Right click on ConBee II and select Update driver in the context menu.

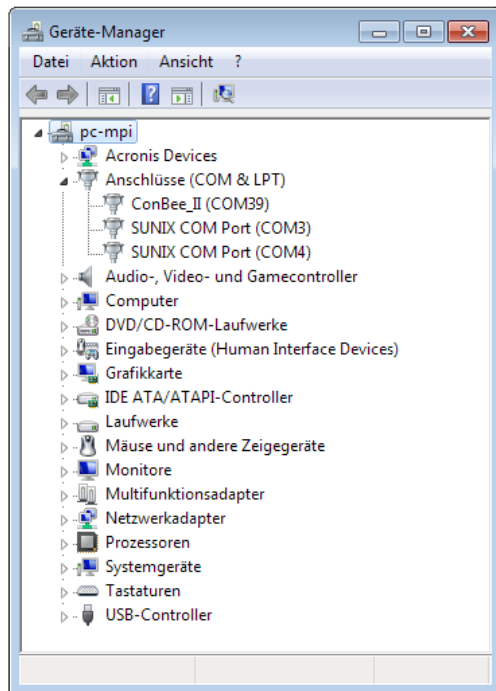
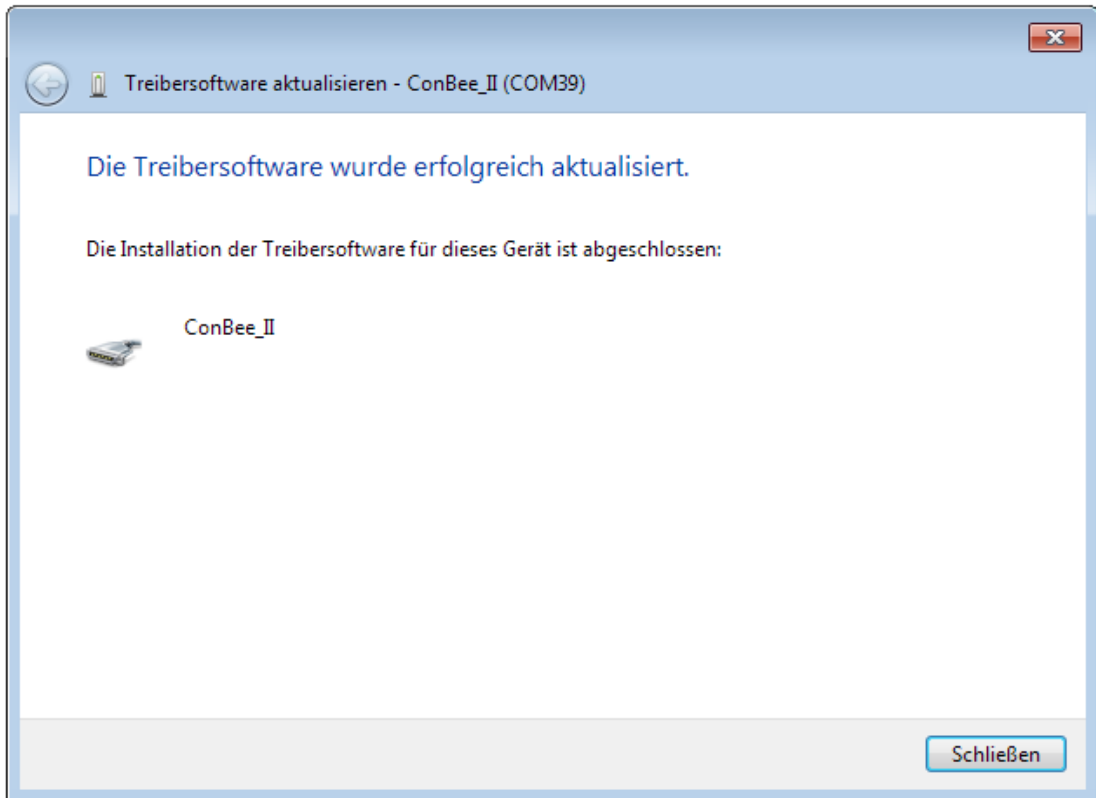


7. Select the option Search for driver software on the computer.



8. Select the directory with the extracted drivers and follow the instructions.





Radio certification

United States (FCC)

FCC ID: XVV-CONBEE2

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment.

Modifications not expressly approved by this company could void the user's authority to operate this equipment (FCC section 15.21).

Innovation, Science and Economic Development (ISED) Canada

IC: 8720A-CONBEE2

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

1. L'appareil ne doit pas produire de brouillage.
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This equipment complies with radio frequency exposure limits set forth by ISED Canada for an uncontrolled environment.

Cet équipement est conforme aux limites d'exposition aux radiofréquences définies par ISDE Canada pour un environnement non contrôlé.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

European Union (RED)

The ConBee II is compliant for use in European Union countries.

Hereby, dresden elektronik ingenieurtechnik gmbh declares that the radio equipment type ConBee II is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: https://phoscon.de/downloads/CE-ConBee_II.pdf

If the USB Dongle is incorporated into a product, the manufacturer must ensure compliance of the final product to the European harmonized EMC and low-voltage/safety standards. A Declaration of Conformity must be issued for each of these standards and kept on file as described in Annex II of the RED Directive.

The manufacturer must maintain a copy of the USB Dongle documentation and ensure the final product does not exceed the specified power ratings, antenna specifications, and/or installation requirements as specified in the user manual. If any of these specifications are exceeded in the final product, a submission must be made to a notified body for compliance testing to all required standards.

Ordering Information

Name	Order No.
ConBee II	BN-600107