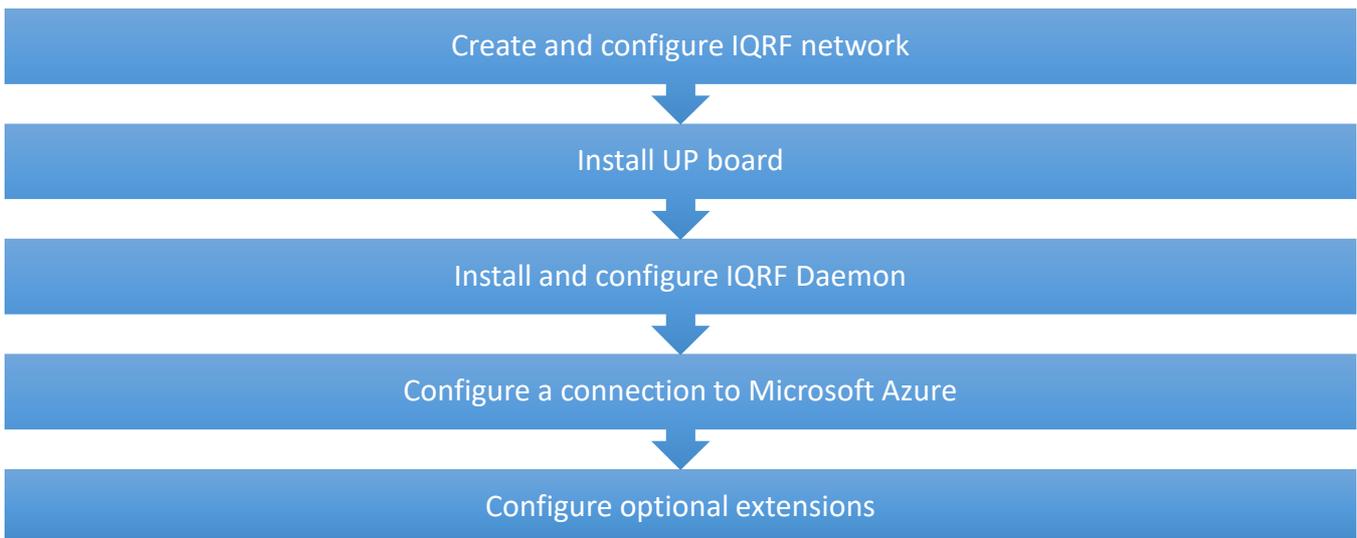
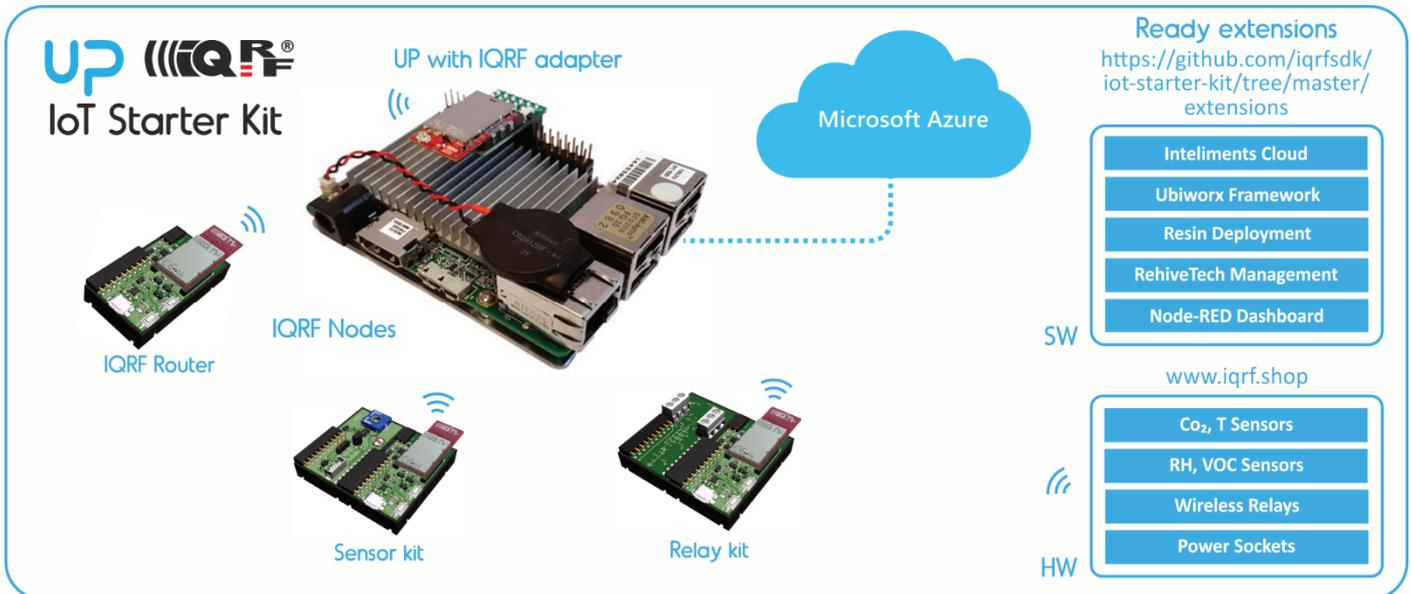


## IoT Start Kit User Guide



### Sources

- **Tutorial videos** on YouTube <https://www.youtube.com/playlist?list=PLEQy1I01En98-Q68fH50l-yjt0eV48zKU>
- **IQRF technology** website: <http://www.iqrf.org>
- **IQRF SDK Github repository**: <https://github.com/iqrfsdk/iot-starter-kit>
- **Product page**: <http://www.iqrfalliance.org/product/iot-starter-kit>

### 1. Create and configure IQRF network

Open the DS-IOT-01 set which is the part of your IoT Starter Kit.

- Download **Startup package** containing IQRF IDE application and all needed files: <http://www.iqrf.org/support/how-to-start>.
- Watch **tutorial videos** about **IQRF** to simplify building your basic IQRF network.
  - **How to upgrade IQRF OS**
  - **How to make a network with IQRF OS 4.0**

- **Build your IQRF network** consisting of one IQRF coordinator and three IQRF nodes. The first node serves for sensor data receiving, the second node serves for relays control and the third node serves as an IQRF router for IQRF network extension.
- Watch **tutorial** video about Custom DPA Handlers.
  - **Custom DPA Handlers for IoT Starter Kit**
- Use these special **Custom DPA Handler** files to customize a behavior of IQRF transceivers (the first one for sensor kit to receive sensor data, the second one for relay control).
- Watch **tutorial** video about Macros.
  - **Macros for IoT Starter Kit**
- Use **macros** for the IoT Starter Kit for reading sensor data from the sensor kit (temperature, light intensity, voltage) and switching relays on/off.
- **Test** if you receive sensor data from the sensor kit and control relays on the relay kit.
- After UP board installation and IQRF Daemon configuration use **UDP** channel to connect IQRF IDE to UP board. The gateway must be in the accessible network from your computer. Fill in the IP address of the gateway and select *User gateway* in IQRF IDE. Then check if the communication is functional – refresh the network information of the coordinator and send some DPA command from the terminal.
  - **How to connect IQRF IDE through UDP to UP**

## 2. Install UP board

Follow the instructions on <https://github.com/iqrfsdk/iot-starter-kit/tree/master/core/aaeon.com> to install Ubilinux.

Connect IQRF adapter centrally on the UP board pins and put in the IQRF transceiver which is the IQRF network coordinator.



## 3. Install and configure IQRF Daemon

- Follow the actual instructions here: <https://github.com/iqrfsdk/iqrf-daemon>.
- Watch tutorial video about installing and configuring IQRF Daemon.
  - **IQRF Daemon for IoT Starter Kit**

## 4. Configure a connection to Microsoft Azure

- Login to the Microsoft Azure (portal.azure.com) with already created e-mail account.
- *Note: you have to enter your credit card information to receive 1-year developer subscription worth 25\$ per month for free.*
- You, as a developer, can create one free IoT Hub.
- Watch videos about configuring and setting all needed services.
  - **How to control IQRF network through Microsoft Azure**
  - **How to process data from IQRF network in Microsoft Azure**
- Advanced data processing is possible with using other advanced tools in Microsoft Azure cloud.

## 5. Configure optional extensions

<https://github.com/iqrfsdk/iot-starter-kit/tree/master/extensions>