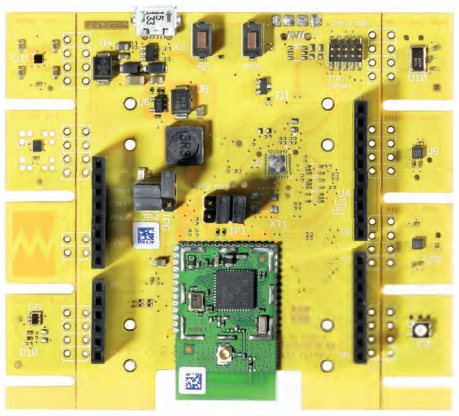
KIT CONTENTS: phyNODE®



Bluetooth 4.0 / 4.1 Dongle

Texas Instruments

XDS Debugger

Micro-USB Cable

CR2032 Battery

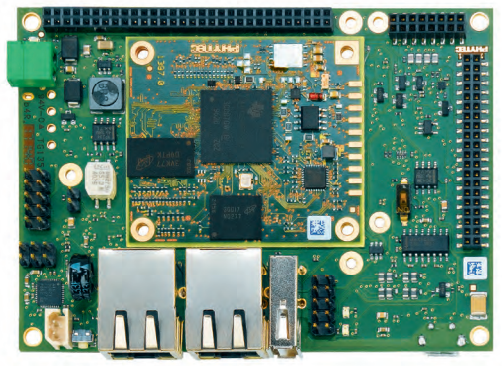
ADDITIONAL EQUIPMENT REQUIRED:

Linux host computer or virtual machine.

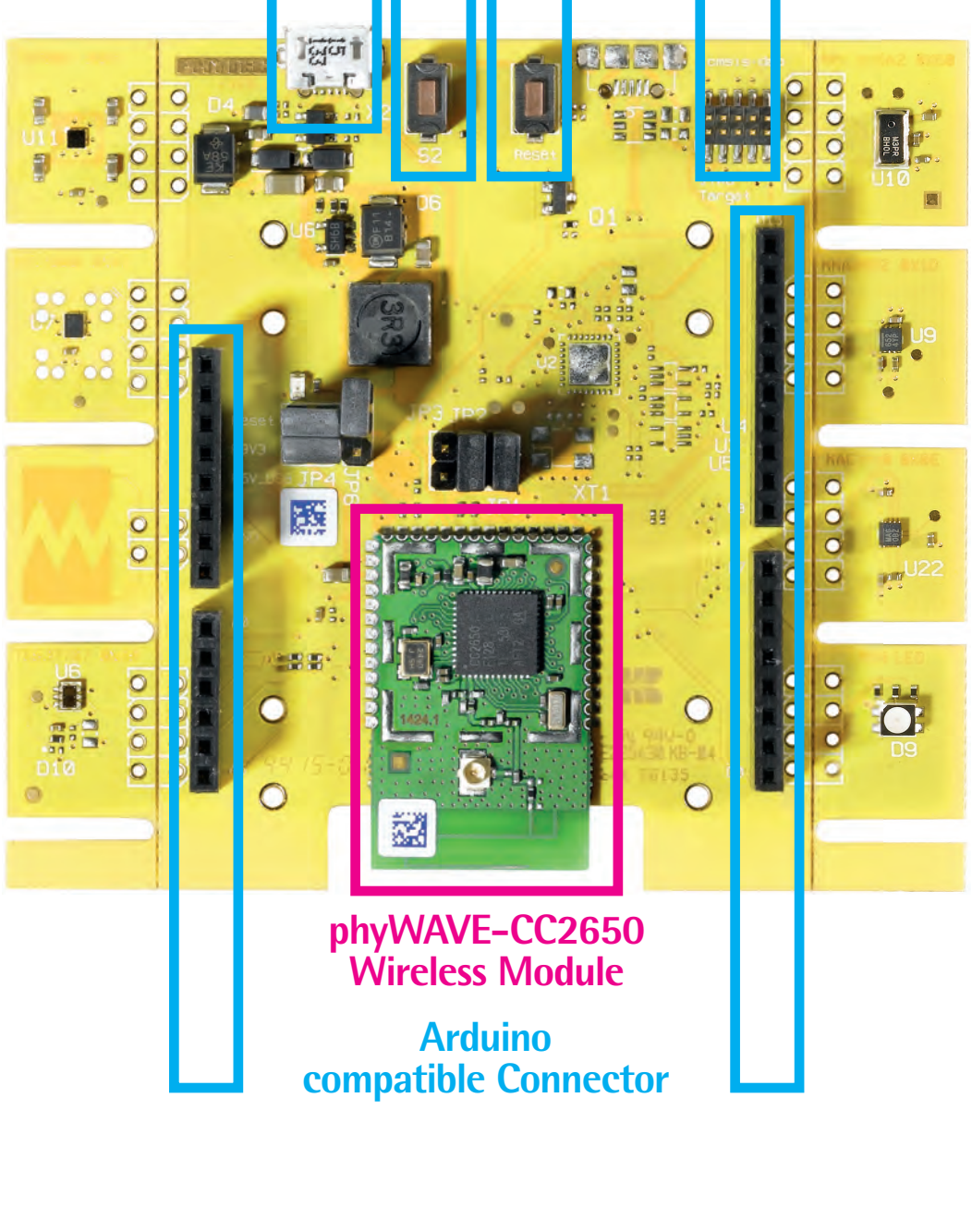
OPTIONAL ACCESSORIES:

phyBOARD®-Wega AM335x

To be used to interface with the phyNODE via BLE instead of a desktop PC.



iOS minimal app available in source code.



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L-816e_1

Quick Start Guide

IoT-Enablement-Kit 2

Get your wireless sensor IoT-Kit powered up and running in just a few simple steps.

1) Preparing the Hardware

1. Check the kit content (see overview overleaf).

Preparing the phyNODE®

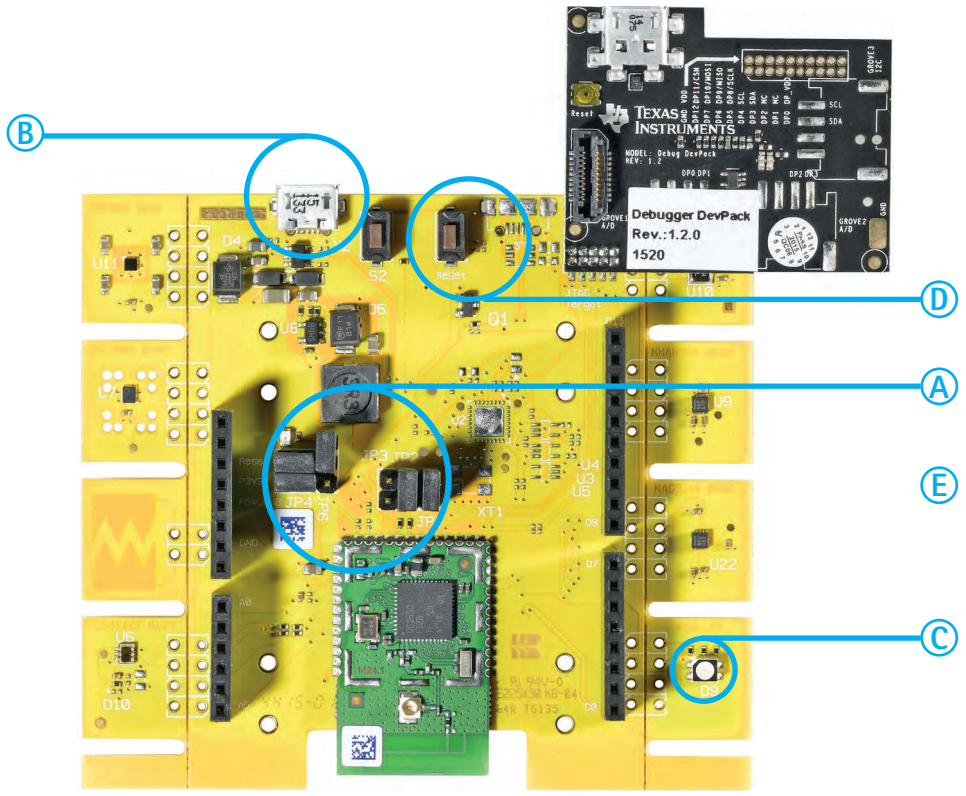
2. Ensure that the removable jumpers **JP1** to **JP5** are in the same position as shown **(A)**.
3. Use the USB cable to connect the phyNODE at the USB connector **(B)** with your host computer. The RGB LED **D9** **(C)** will flash shortly in different colors.

Preparing the Host Computer

We assume that you have a Linux based host PC running. The following steps have been tested with Ubuntu 14.04 LTS 64 Bit version. If you do not have a Linux based host PC, you can set up your system in a virtual machine as described in the online documentation of the phyNODE board **(N)**.

4. Boot up your Linux-based Host Computer or start the virtual machine.
5. Insert the BLE USB dongle into a free USB port of your host computer.
6. Open a terminal on your host PC.
7. For Ubuntu / Debian based host PCs install the following packages:
   `:$ sudo apt-get install git python build-essential libglib2.0-dev libdbus-1-dev`
8. Download the repository that contains the firmware and demonstration software:
   `:$ git clone git://git.phytec.de/ble-cc26xx`
9. Navigate to the folder that contains the Python test script and build the Python test environment.
   `:$ cd ble-cc26xx/ble_host_sw/bluepy/bluepy`
   `:$ make`

Now you are ready to establish a radio link between phyNODE and your host computer.



2) Getting Connected

1. Press **Reset** **(D)** on the phyNODE. The phyNODE board is now in advertising mode and announces its device address.
2. Executing the following command:
   `:$ sudo hcitool lescan`
   The output shows the 6 Byte unique device address of the phyNODE board **(K)**.
   Remember the device address, e.g.: 68:C9:0B:05:59:8C
3. To receive an overview of all possible script options execute the Python script with the option -h:
   `:$ python phyWaveBLE.py -h` **(I)**
4. Execute the Pyhton script with the option --all and the specific device address you received in step 2:
   `:$ python phyWaveBLE.py --all 68:C9:0B:05:59:8C`
   The output will show all possible sensor data. All values will be periodically updated **(L)**.

You are now connected to the phyNODE.

```
   :~/test$ sudo hcitool lescan
LE Scan ...
68:C9:0B:05:59:8C (unknown)
68:C9:0B:05:59:8C CC2650 PhyWAVE
```

(K)

```
 :~/git/ble-cc26xx/ble_host_sw/bluepy/bluepy$ python phyWaveBLE.py -h
usage: phyWaveBLE.py [-h] [-n COUNT] [-t T] [-T] [-A] [-H] [-O] [-P] [-R] [-G]
                     [-Y] [-B] [-M] [-C] [-W] [-L] [-K] [--all]
                     host

positional arguments:
  host                  MAC of BT device

optional arguments:
  -h, --help            show this help message and exit
  -n COUNT              Number of times to loop data
  -t T                  time between polling
  -T, --temperature
  -A, --accelerometer
  -H, --humidity
  -O, --magnetometer
  -P, --barometer
  -R, --REDled
  -G, --GREENled
  -Y, --YELLOWled
  -B, --BLUEled
  -M, --MAGENTAled
  -C, --CYANled
  -W, --WHITEled
  -L, --color
  -K, --keypress
  --all
```

(I)

```
   :~/test$ python phyWaveBLE.py --all 68:C9:0B:05:59:8C
Connecting to 68:C9:0B:05:59:8C
RED led ON
Green led ON
Yellow led ON
Blue led ON
Magenta led ON
Cyan led ON
White led ON
('Temp: ', (25.1875, 18.140838025128573))
('Humidity: ', (22.63790771484374, 57.4307861328125))
('Barometer: ', (99834, 24))
('Accelerometer: ', (-16.25, 1.0, 261.0))
('Magnetometer: ', (-0.91552734375, -2.655029296875, -18.9208984375))
('color: ', (16346, 6504, 6537, 5401))
```

(L)

Your possible next steps

A detailed manual explaining the hardware, firmware development, application development for Linux and mobile devices and many other things is available at our webpage at ***www.phytec.de.*** *Navigate to:*
(N) *Produkte -> Internet of Things / Evaluierungskit -> IoT-Enablement-Kit 2 / Dokumentation*

Enjoy!