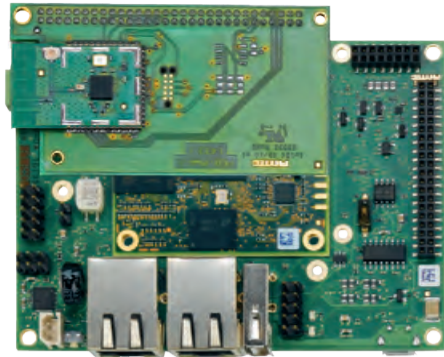


**KIT CONTENTS: phyGATE®**

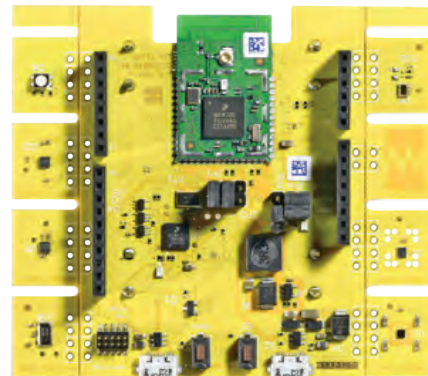
phyBOARD-Wega AM335x with phyWAVE-CC2520 RF module mounted on Expansion Board



- RGB-LED
- Magnetometer  
MAG3110FCR1
- Accelerometer  
MMA8652FC
- Pressure Sensor  
MPL3115A2

**phyNODE®**

phyWAVE-A-Evaluation Board populated with phyWAVE-KW2xD RF module



- Color Light Sensor  
TCS37727
- Capacitive Button
- Humidity  
HDC1000
- IR- Thermopile Sensor  
TMP006

**OPTIONAL ACCESSORIES:**

HDMI Adapter (PEB-AV-01)



RS-232 and CAN Adapter



Evaluation Module (PEB-EVAL-01)



Power Module 12 V-24 V (PEB-POW-01)



**ADDITIONAL EQUIPMENT REQUIRED:**

Power Adapter 5 V



Ethernet Cable



USB Cable



2-pin PHOENIX



SD Card – pre-inserted in the microSD card slot of the phyBOARD-Wega



**Expansion Connector**

3x Serial (TTL level), I<sup>2</sup>C, SPI, USB Host, 4x GPIO  
4x Analog in, Control, MMC, JTAG

**A / V Connector 2**

I<sup>2</sup>S, Touch, I<sup>2</sup>C, Control

Power LED

D58

Power

optionally  
12 V - 24 V Version



X72

X67

CAN

X65

JP3

Line in/out

X73

Backup

C339

Speaker Connector

X55

Reset

S2

DHCP Server

X17

DHCP Client

X16

USB Host

X15

UART1 RS-232

X66

D7  
D8

Boot Mode

S4

USB OTG

X42

microSD

X11

underside

**PHYTEC**



**Germany**  
PHYTEC Messtechnik GmbH  
Robert-Koch-Straße 39  
D-55129 Mainz  
Phone: +49 6131 9221-32  
Fax: +49 6131 9221-33  
www.phytec.de  
www.phytec.eu

**France**  
PHYTEC France SARL  
17, place Saint-Etienne  
F-72140 Sillé-le-Guillaume  
Phone: +33 2 43 29 22 33  
Fax: +33 2 43 29 22 34  
www.phytec.fr

**USA**  
PHYTEC America LLC  
203 Parfitt Way SW  
Bainbridge Island, WA 98110  
Phone: +1 206 780-9047  
Fax: +1 206 780-9135  
www.phytec.com

**India**  
PHYTEC Embedded Pvt. Ltd.  
#16/9C, 3rd Main, 3rd Floor,  
8th Block, Opp. Police Station  
Koramangala, Bangalore-560095  
Phone: +91-80-40867046/48  
www.phytec.in

**China**  
PHYTEC Information Technology Co. Ltd.  
Suite 2611, Floor 26, Anlian Plaza,  
4018 Jin Tian Road, Futian District,  
Shenzhen, CHINA 518026  
Phone: +86-755-3395-5875  
www.phytec.cn

L-810e\_3

**Quick Start Guide**

# IoT-Enablement-Kit 1

Get your IoT-Enablement-Kit 1 powered up and connected in just a few simple steps.

## 1) Preparing the Hardware

1. Check the kit content (see overview overleaf).
2. Have your additional equipment needed (5 V power adapter and Ethernet cable) at hand.

### Preparing the phyNODE®

3. Ensure that the removable jumpers JP1 to JP6 are in the same position as shown (A).
4. Use the USB cable to connect the phyNODE at the USB connector (B) left of the Reset button (H) with an USB power source (your Laptop, or an appropriate power adapter). The RGB LED D9 (C) will flash shortly and the red power LED (D), as well as the green DebuggerStatus LED (E) will light up.

### Preparing the phyGATE®

5. Ensure that the included SD card is inserted in the microSD card slot at X11 on the underside of the phyBOARD-Wega.
6. Power-up phyBOARD-Wega. Connect the 2-pin PHOENIX connector (included) to a 5 V (±5 %) DC power supply. Please note the polarity of the connector (G)!
7. Turn your power supply on and plug the 2-pin PHOENIX connector into the green jack of your kit. The Power LED (D) will light up.

Now you are ready to establish a radio link between phyGATE and phyNODE.

## 2) Getting Connected

1. After the phyGATE has finished booting the Linux system, the preinstalled demo application sets up the communication path and sends multicast commands to toggle the RGB LEDs D9 (C) of all nearby phyNODE boards.

## 3) Exploring the World of IoT

### Starting Node-Red in your Web Browser

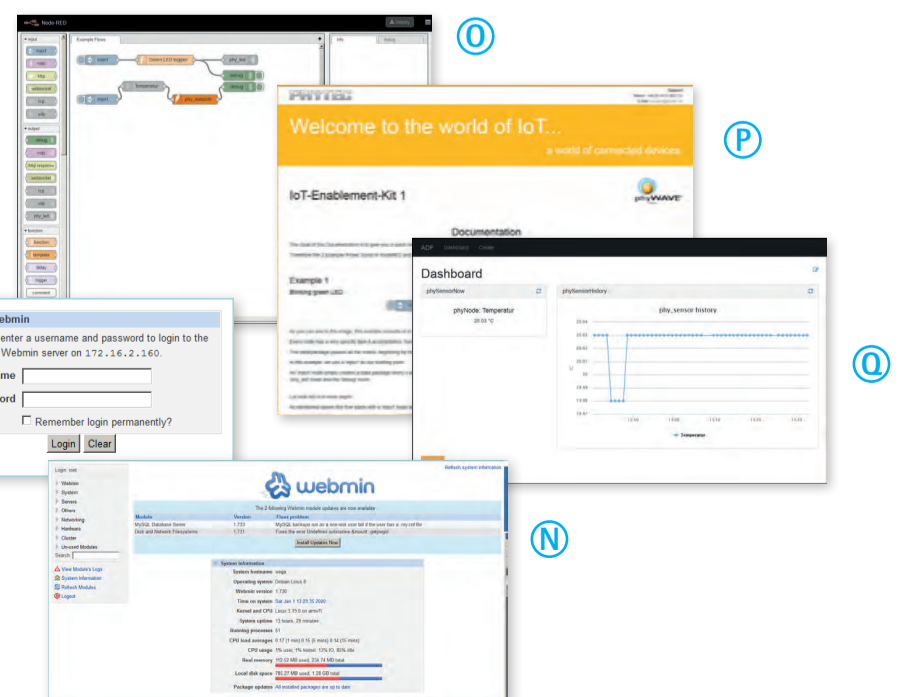
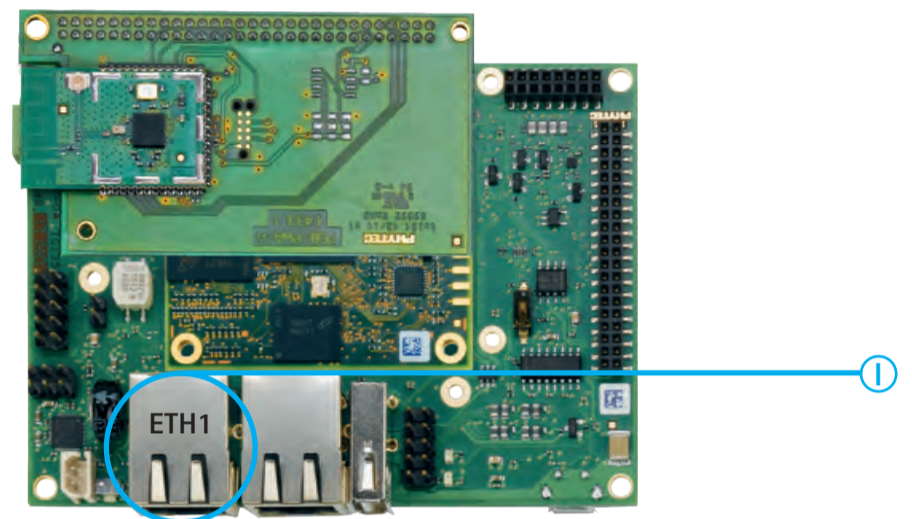
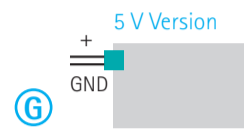
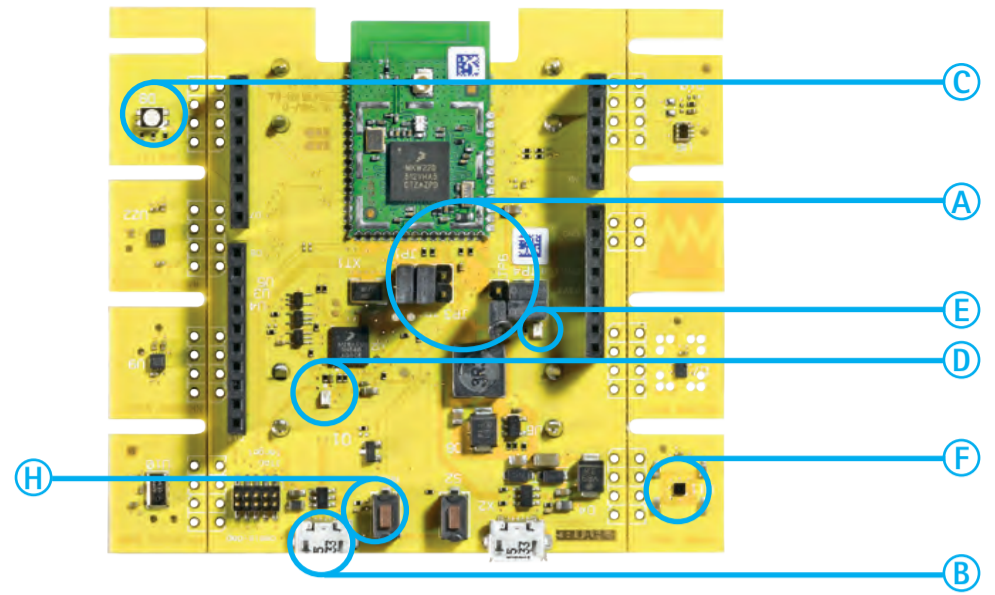
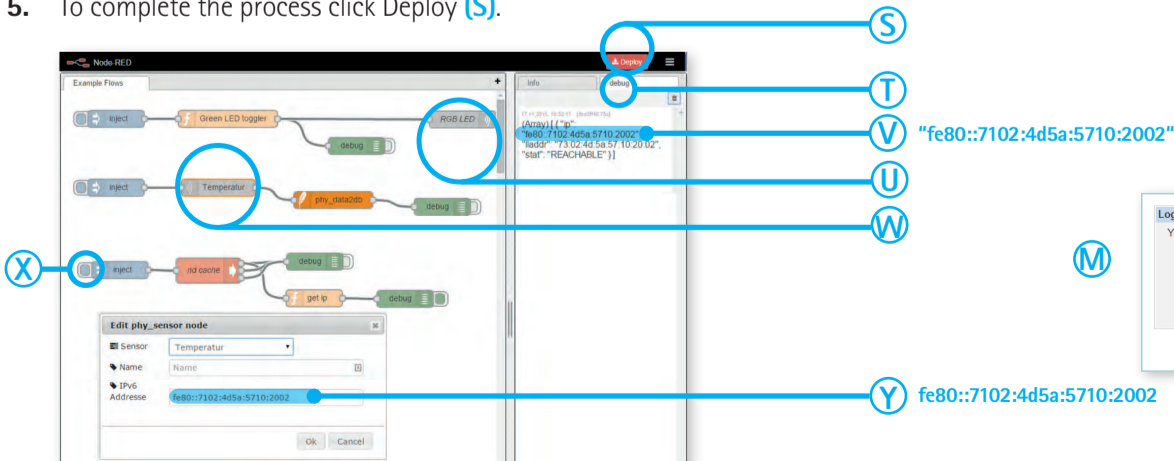
We recommend disconnecting your host-PC from any other network, because a peer-to-peer connection from your PC to the phyGATE will be established.

1. Connect your preferred Ethernet interface on your PC with RJ45 connector X17 (eth1) on the phyGATE using a standard Ethernet cable (I).
2. ETH1 is configured as DHCP server. Thus ensure that DHCP for your PC's Ethernet interface is enabled, i.e. allow obtaining an IP address automatically. Your setup should now be similar to the setup shown at the right side (J).
3. Start the web browser on your PC.
4. Enter the IP address 172.29.6.1 in the address bar (K).  
The „Welcome Page“ of Phytex's World of IoT shows up. You will see four buttons (L):
  - **Settings** opens the login page of Webmin (M). To login type **root** for Username and **wega** as Password. Now you are able to get information about the system and to configure the network (N).
  - **Node-RED** takes you to the Editor UI of Node-RED (O), a visual tool for wiring the Internet of Things. In the workarea you will see the flow of the demo application.
  - **Documentation** will lead you to additional information (P).
  - **Visualization** brings up a dashboard with graphical elements (e.g. charts) (Q) displaying the data received from the phyNODE's sensors. The demo application displays the data of the temperature sensor.

### Configuring Node-Red with individual IP Addresses

The following steps are necessary to configure the individual address of your phyNODE hardware, especially if you have more than one phyNODE.

1. Click on the bottom inject node (X) to get the list of available phyNODES in the debug tab (V).
2. Copy the IP address of the phyNODE (W) from the debug tab (T).
3. Double-click on the Temperatur node and insert the IP address (W) (Y) and click OK.
4. Repeat step 3 for the RGB LED node (U) (Y).
5. To complete the process click Deploy (S).



For further documentation please visit our website at [www.phytex.de](http://www.phytex.de) and navigate to: Produkte->Internet of Things/Evaluierungskit->IoT-Enablement-Kit 1->Dokumentation

Enjoy!

