

KOSMOS

Digi Hardware Setup Guide

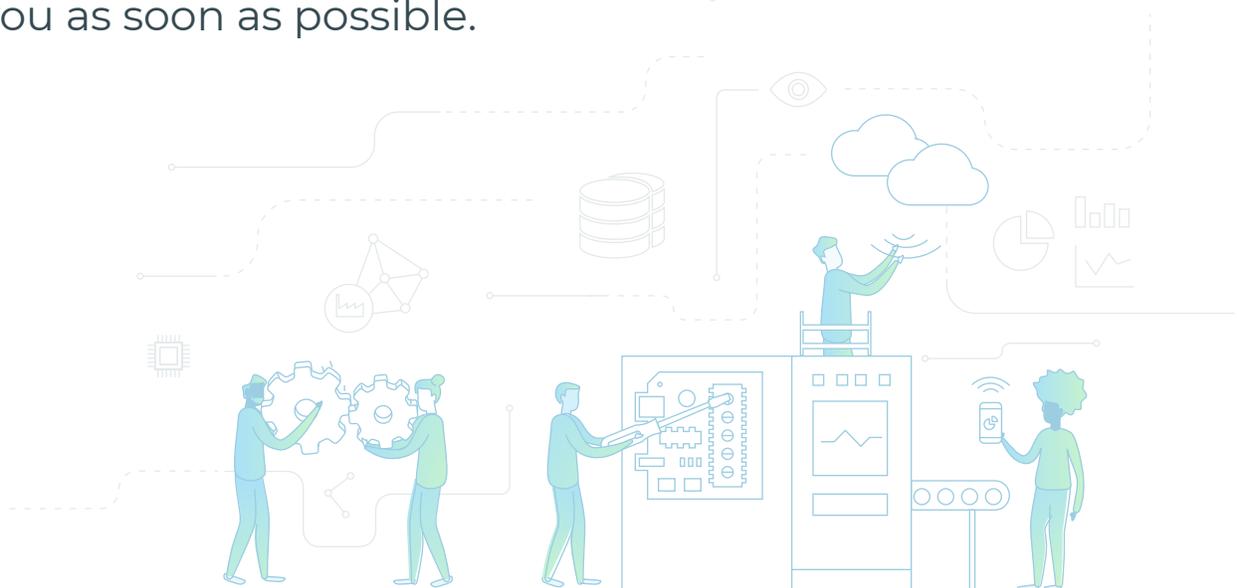
What will this guide teach me?

 25 minutes

This guide contains step-by-step instructions on how to set up the **Digi XBee Smart Plug** to connect to the Kosmos industrial IoT platform.

Once you've finished these steps, you'll be ready to start gaining valuable insights from your sensors & actuators using Kosmos' dashboards, alerts, controls, and more.

For questions about setting up your Kosmos IoT System, please email support@temboo.com and we'll get back to you as soon as possible.



What You'll Need



Kosmos Gateway
(Raspberry Pi Model 3 B+)



Digi XBee
Smart Plug



Digi XBee3 Pro
2.4 GHz XB3-24Z8PT



Raspberry Pi 5V 2.5A
Power Adapter



Ethernet Cable



Digi XBee Grove
Development Board



Micro SD Card
(8+GB, U3 Speed)



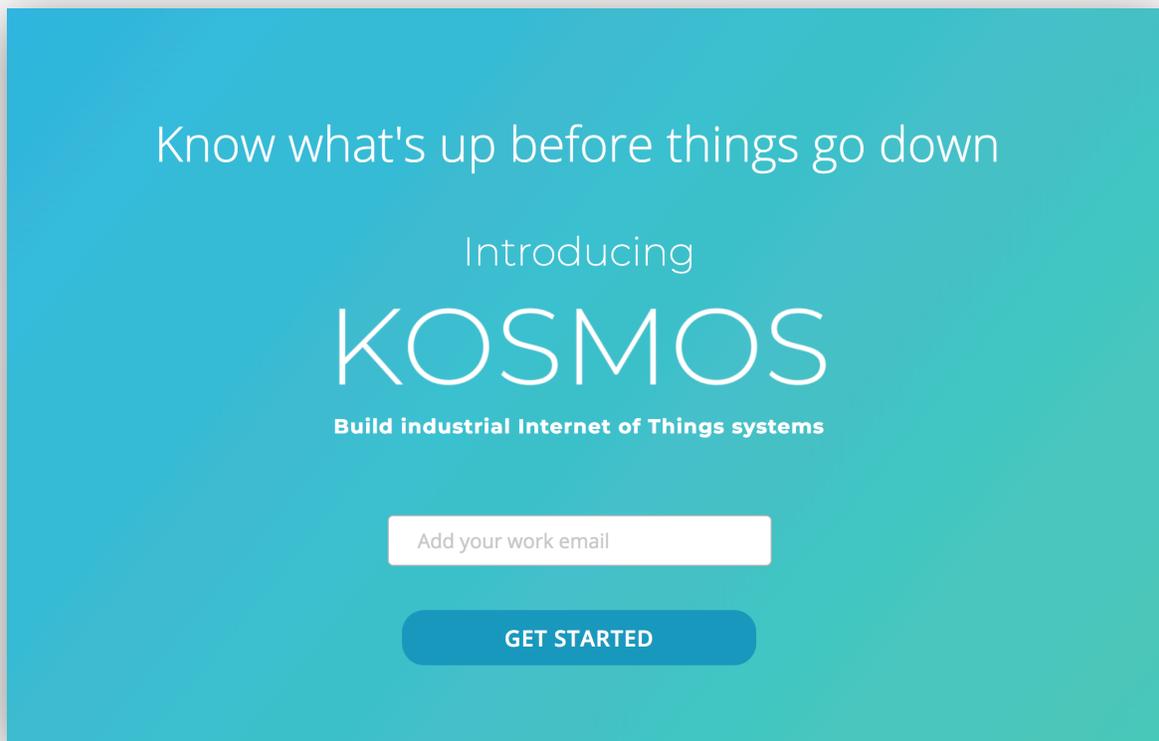
USB Micro SD
Card Reader



USB Flash Drive

Before You Get Started

Before moving on to the next steps in this guide, please make sure that you've created your Temboo account and generated your Kosmos application files for your chosen hardware. If you haven't, head to temboo.com and complete those steps now!



Configure The Digi Smart Plug

- 1 Open up the smart plug by removing the rubber sticky pads from the screw holes on the back of the plug, removing the screws, and separating the case.
- 2 Remove the XBee chip from the smart plug and insert it into a Grove dev board (or other compatible board).
- 3 Install and launch [XCTU](#) - this is a software application that you will use to configure your Digi smart plug to connect to the Kosmos gateway.
- 4 Connect the Grove dev board to your computer and then use XCTU to connect to the Xbee chip.
- 5 Use XCTU to install the firmware support on the Xbee chip by using the **Install legacy firmware package** option.
- 6 Enter configuration mode by clicking the gear icon on the top right of XCTU and then load the configuration contained in [this .xpro file](#).
- 7 Write the updated settings to the Xbee chip and then disconnect the Grove dev board from your computer.
- 8 Close out of XCTU, remove the Xbee chip from the Grove dev board, return it the Digi smart plug, and reassemble the plug's casing.

Gateway Application Setup

- 1 First, install Etcher so that you can copy the Kosmos gateway application to your micro SD card:
<https://www.etcher.io>
- 2 Insert your micro SD card into your USB SD card reader and connect the card reader to your computer.
- 3 Open Etcher and flash the Kosmos gateway **.xz** file onto your micro SD card (you previously downloaded this file while creating your Kosmos application).

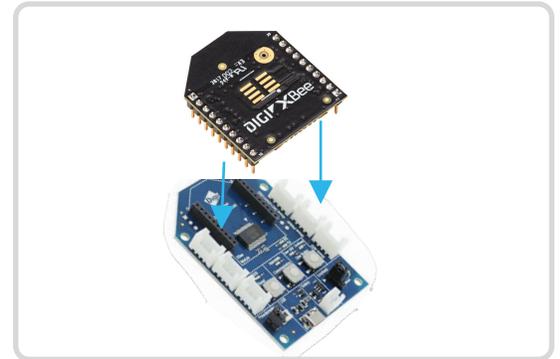


Kosmos Gateway Hardware Setup

1

Connect XBee Chip To The Grove Dev Board

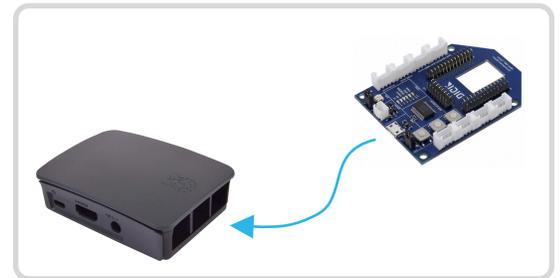
Connect the Xbee Pro chip to the Grove dev board by placing the chip's pins into the inputs on the dev board.



2

Connect Grove Board to The Gateway

Use a micro USB cable to connect the Grove dev board to the gateway.



3

Insert SD Card

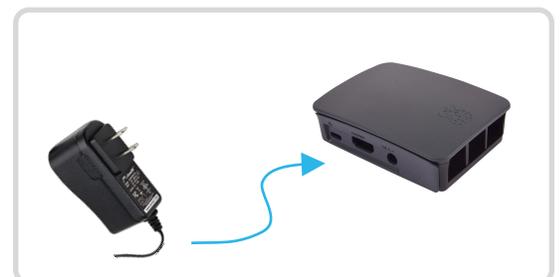
Insert the micro SD card into the underside of the gateway (the metal contacts slide in face up).



4

Power Up The Gateway

Connect the 5V 2.5A power adapter to your Kosmos gateway. Then, plug the adapter into a power outlet.



Gateway Hardware Setup (Cont)

5

Connect Ethernet Cable

Use the ethernet cable to connect your Kosmos gateway to an ethernet outlet.

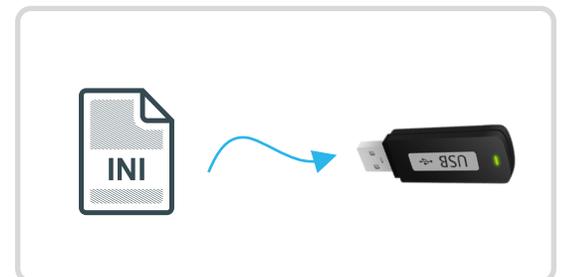
See instructions later in this guide if you want to connect your gateway via WiFi.



6

Prepare USB Drive

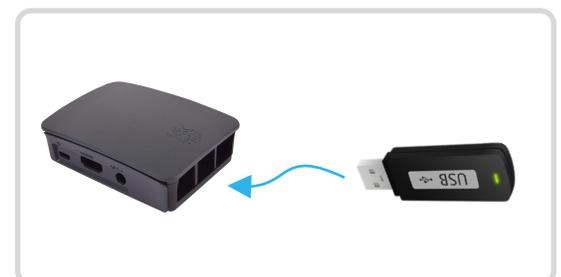
Copy the Kosmos config file `temboo_kosmos_config.ini` onto your USB drive.



7

Insert USB Drive

Insert the USB thumb drive into any available USB port on your Kosmos gateway.



Power Up The Digi Smart Plug

1

Reset The Smart Plug

Hold down the reset button on the bottom right side of the plug while you plug it into a wall outlet.

You will hear a click once you release the button, indicating that the device has been reset.



2

Confirm The Plug Has Connected To Gateway

The Outlet LED turns on as a solid yellow when user AC socket is powered. The Associate LED turns on as a solid green when external power is supplied.

Once the two LEDs are on, plug in a lamp (or other device) into the smart plug so that you can turn it on and off via the Kosmos website.

The smart plug should connect to the gateway in ~30 seconds.



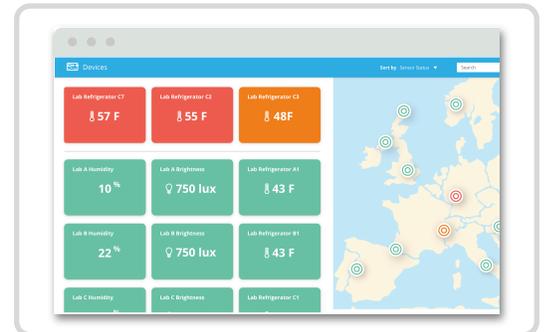
View Your Kosmos Sensor Data

1

Visit Your Dashboard

Log into your Kosmos account and navigate to the dashboard:

<https://temboo.com/devices>



2

Monitor Gateway Status

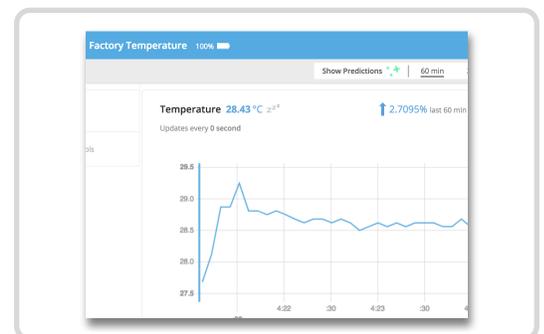
When the gateway connects, a green dot will appear beside the name of your Kosmos application. The gateway takes ~90 seconds to connect.



3

View Sensor Data

Click into your application and then click on your sensor. You should see the first data point in your graph.



Connect Your Gateway Via WiFi (Optional)



We recommend using ethernet to connect your gateway to the Kosmos web dashboard.

- ✓ Fastest setup time
- ✓ Most reliable connection



To use WiFi to connect your Kosmos gateway to the internet, first remove the USB thumb drive from your gateway and plug it into your computer.



Locate the **temboo_kosmos_config.ini** file on the USB thumb drive and open it with your favorite text editor.



Add the details of the WiFi network that you want your gateway to connect to (see lines 14 & 15 in the screenshot below), and then save your config file.



Eject the USB drive from your computer and insert it back into your Kosmos gateway. Remove the gateway's power supply and reconnect it. Your Kosmos gateway will power back up and connect via WiFi.

```
kosmos_gateway_config.ini
1 [credentials]
2 account_name = my-kosmos-account
3 appkey_name = myIndustrialIoTApp
4 appkey_value = WBnnvr12Mu5tlw123uZwaF12vpF1EZj
5
6 [cloud_connection]
7 gateway_id = my_gateway
8 auth_type = standard
9 port = 9009
10 websocket_version = 1
11 ws_url = wss://kosmos.temboo.com
12
13 [wifi]
14 ssid = myWifiNetwork
15 password = my-wifi-password
```

Troubleshooting Tips

Problem	Solution
Gateway isn't powering up.	When your gateway is powered on you'll see a red LED (solid) and green LED (blinking) inside the case. If you don't see those lights, check that the power supply is securely attached at both ends, and that the wall outlet you are using is active.
Your gateway doesn't appear online in your Kosmos dashboard.	Make sure that you've waited at least 10 minutes after powering on your gateway and that all the hardware is connected as described in this guide. If the gateway is still offline after 10 minutes, try restarting the gateway to connect to Kosmos.
Your graphs have no data.	Wait at least 10 minutes after powering up your gateway for data to arrive in your graphs. If you still don't see data, double-check that the power supply for your sensors (adapter or batteries) is working correctly. Press the reset button on the sensor and refresh the browser in which you are viewing the sensor graph.

Questions?
support@temboo.com

