

KOSMOS

Omron Hardware Setup Guide

What will this guide teach me?

 25 minutes

This guide contains step-by-step instructions on how to set up the **Omron 2JCIE-BL** environmental bluetooth multi sensor 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 sensor data using Kosmos' dashboards, alerts, 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+)



Omron 2JCIE-BL
Bluetooth Sensor



USB Flash Drive



Raspberry Pi 5V 2.5A
Power Adapter



Ethernet Cable



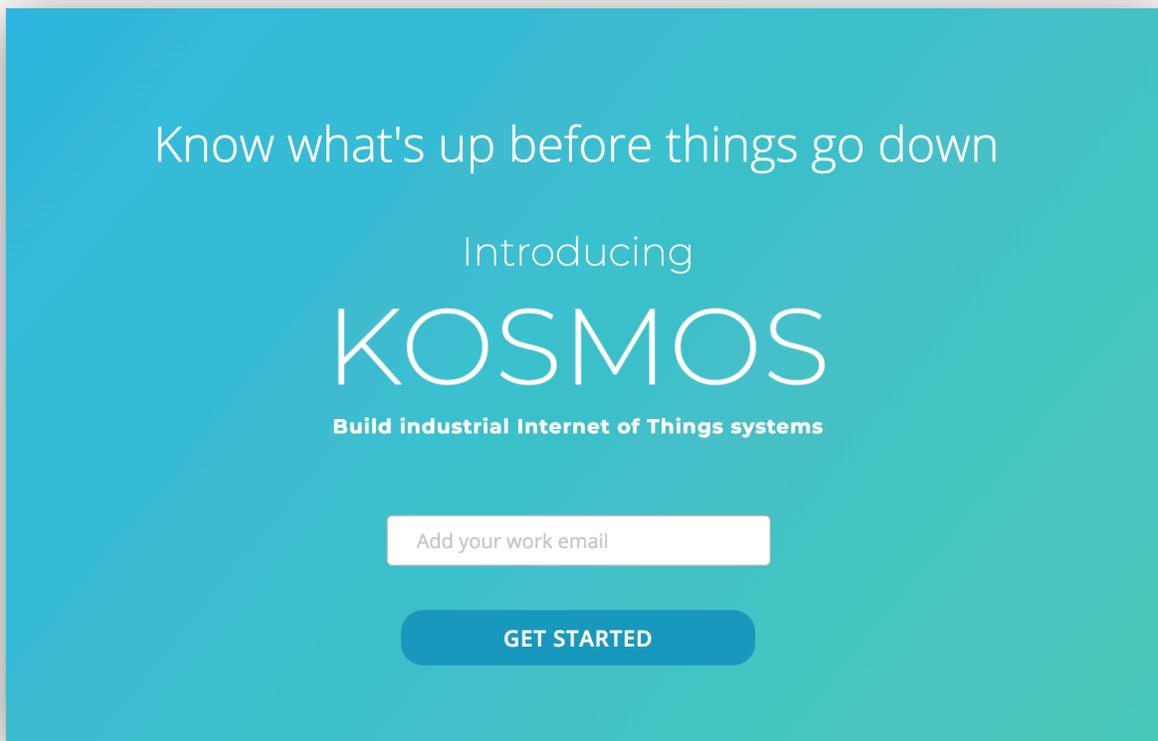
USB Micro SD
Card Reader



Micro SD Card
(8+GB, U3 Speed)

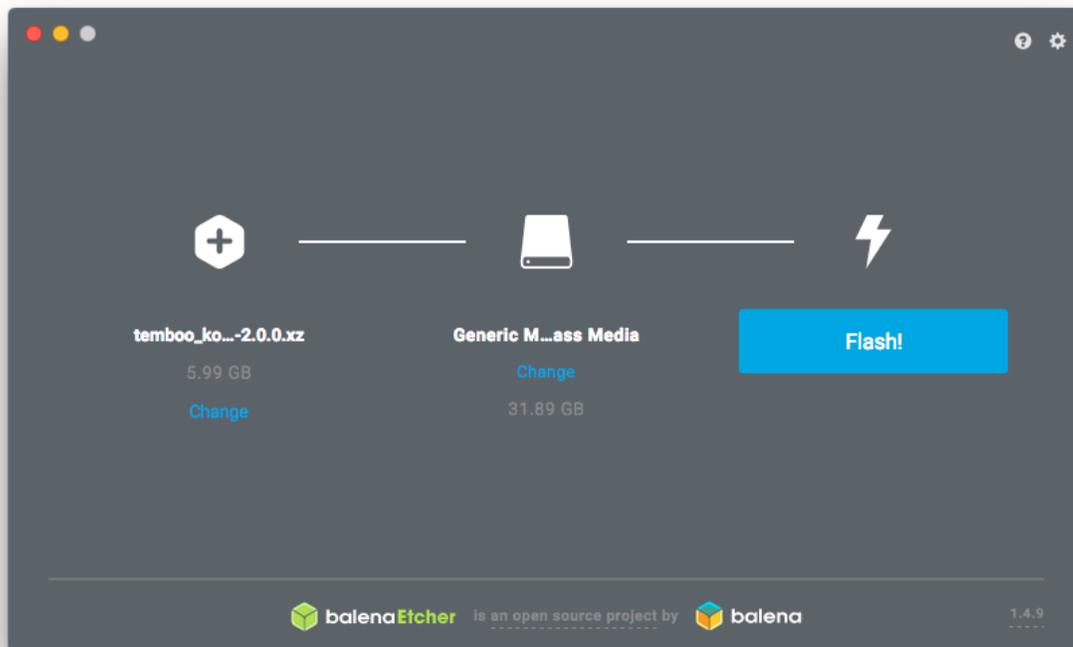
Before You Get Started

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!



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

Insert SD Card

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



2

Power Up The Gateway

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



3

Connect Ethernet Cable

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

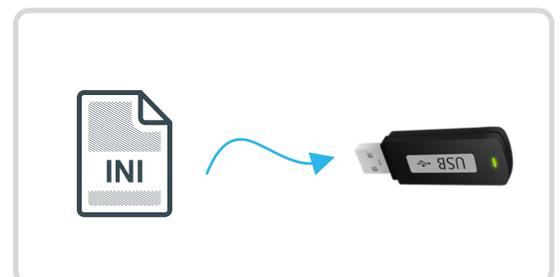
See instructions later in this guide if you want to connect your gateway via WiFi.



4

Prepare USB Drive

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

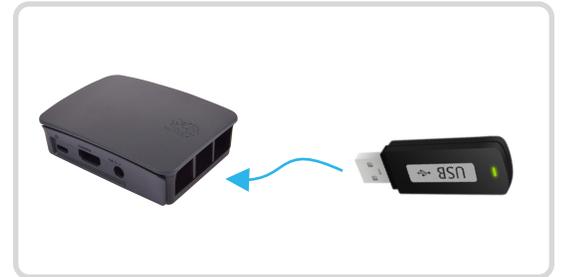


Gateway Hardware Setup (Cont)

5

Insert USB Drive

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



Configure The Omron Sensor

- 1** Download a Bluetooth Low-Energy tool like [Bluetility](#) (for MAC) or nRF Connect ([Android](#) and [iPhone](#)).
- 2** Use your chosen bluetooth tool to scan for bluetooth devices in your local area. The Omron sensor can be found under the device name **EnvSensor-BL01**. Select this device to view its services and characteristics.
- 3** Change the advertisement setting (characteristics **UUID: 0x3042**) by writing the value **0x02** to **byte 8**. This will enable the sensor to start broadcasting data to the Kosmos gateway.
- 4** Power cycle the Omron sensor by removing and re-inserting the battery. Scan for bluetooth devices again. To confirm that the settings have been changed, the device will now be found under the name **IM-BL01**.

Power Up The Omron Sensor

1

Power Up Omron 2JCIE-BL

Remove the battery cover from the back of the sensor and insert the 3 VDC coin cell lithium battery (CR2032).

After inserting the battery, the front LED will immediately light up for approximately one second and then turn off again.

Please allow up to 2 minutes for the sensor to connect to the Kosmos gateway.



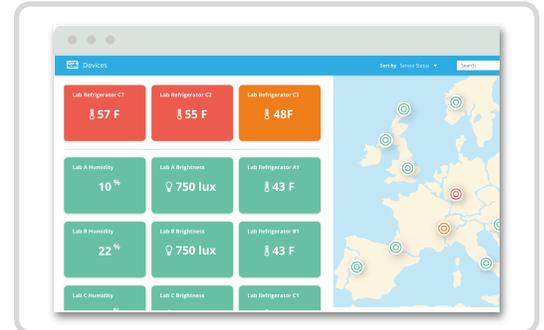
View Your Kosmos Sensor Data

1

Visit Your Dashboard

Log into your Kosmos account and navigate to the dashboard:

<https://temboo.com/devices>



2

Monitor Gateway Status

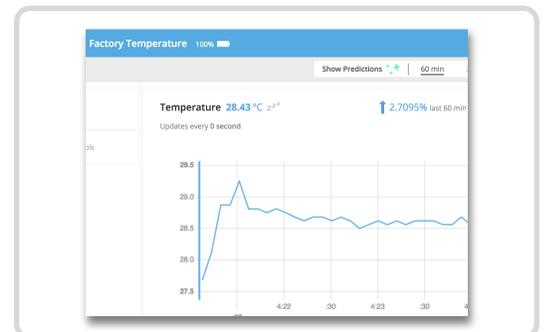
When the gateway connects, a green dot will appear beside the name of your Kosmos application. The gateway takes ~90 seconds to connect.



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

