



Blackbird Hardware Troubleshooting Guide

In the following document you will find a step-by-step guide to troubleshooting the Blackbird IoT Hardware, Factbird. Follow this guide to

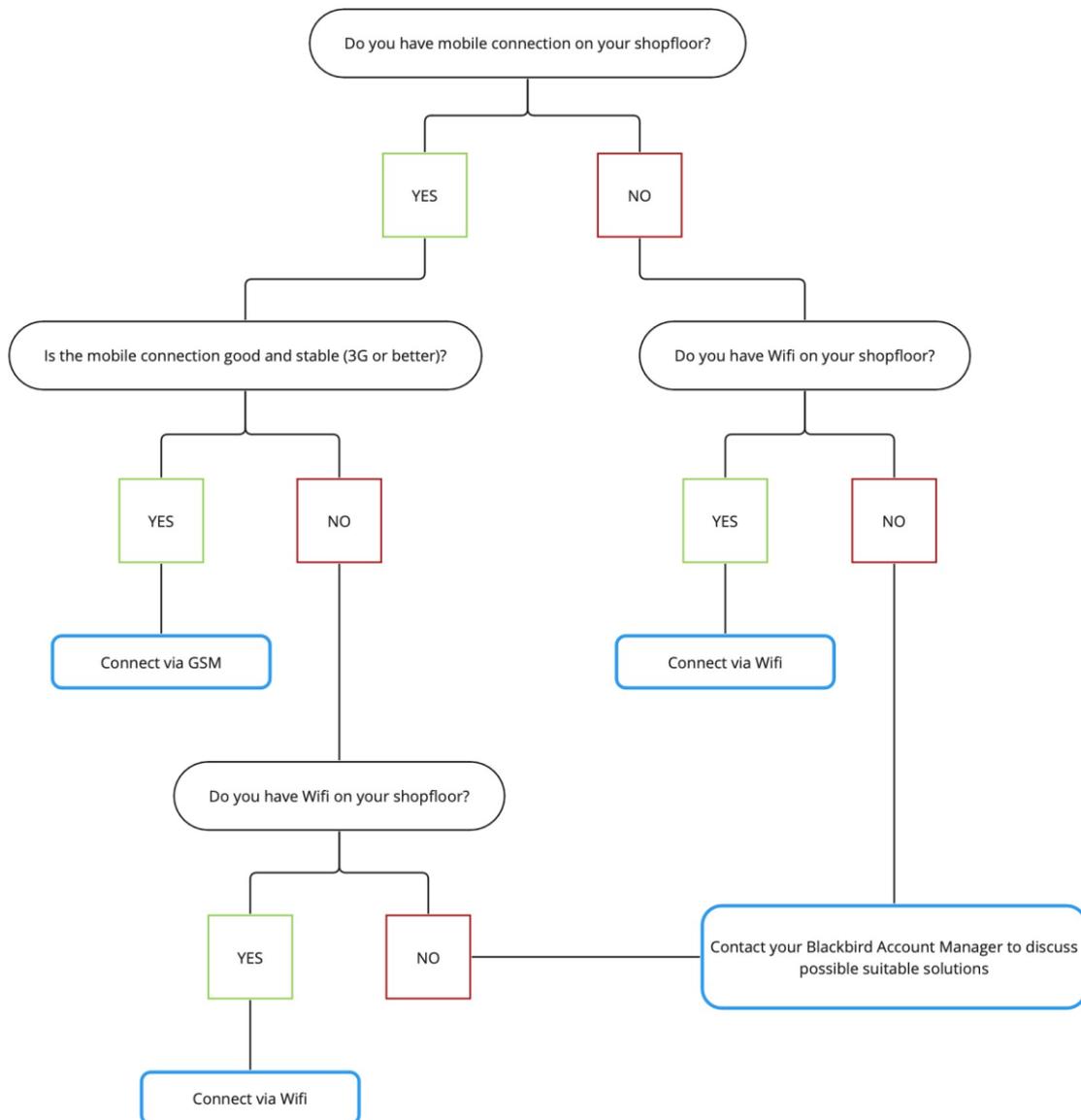
- prevent problems
- locate problems quickly
- fix problems yourself or provide technical support with the information they need to best assist you in solving the problem



Chapter 1: Problem prevention

In order to prevent connection problems of the Factbird hardware, it is crucial to choose the right connection option. You can choose between connection via the mobile network (GSM) or a WIFI connection.

The most important question generally is which of the two connections is actually available on your shop floor.

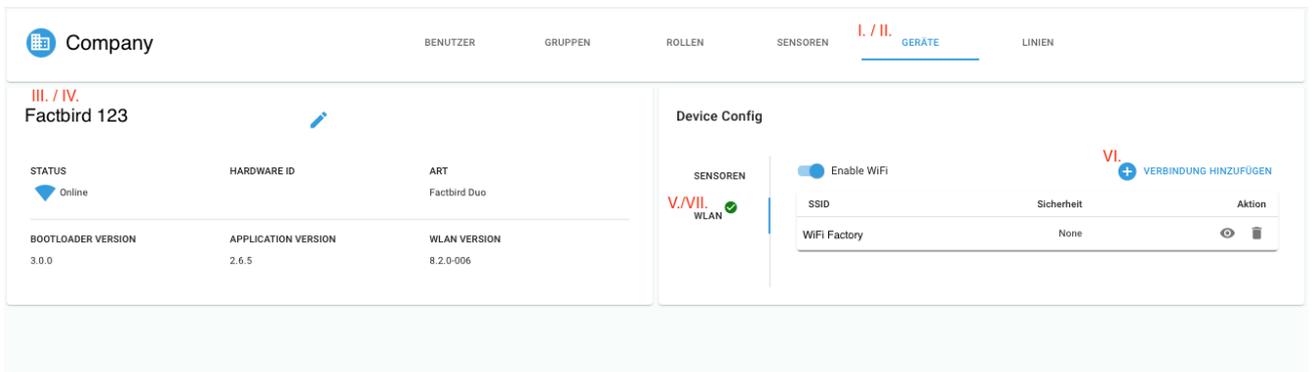




By default, the Factbird hardware runs on a mobile network basis. If you would like to establish a WIFI connection instead, you have to feed the relevant information into the system.

How do I set up a WiFi connection for a Factbird device?

- I. Navigate to the administration area in the Blackbird software
- II. Click on the "Devices" tab
- III. Enter the hardware ID of the relevant Factbird device
- IV. Then click on the row with the hardware ID
- V. On the right side you will find the tab "Wifi"
- VI. Click on "Add connection" and then enter the WIFI name and password.
- VII. The green tick that will appear shortly after indicates that the information has been successfully transferred to the device.



A successful device connection will be indicated by the status LED:

Color	Lamp	Explanation
green 	stable	Online via GSM
blue 	stable	Online via WIFI



Chapter 2: Problem location

In order to detect connection problems as quickly as possible, we recommend that you create **offline alerts** for all of your installed Factbirds.

The ideal time threshold to receive such an alarm should be set according to whether the device is connected via the SIM card or WIFI. We recommend the following limits:

- A. Connection via SIM: Offline period > 5 min
- B. Connection via WIFI: Offline period > 2 min

The reason for this is that the mobile network connection can occasionally be briefly interrupted. This is completely normal and should not be regarded as critical, since Factbird can buffer the data, including the time stamps, and the connection will also be restored by itself. However, such short connection losses should not occur with a WIFI connection.

In order to locate the critical device as quickly as possible, it makes sense to name the main sensor of the line as clearly as possible. The message will later show the sensor name and description, hence these two fields should ideally include the physical placement of the device and the hardware ID.

How do I create offline alerts?

- I. Open a line in Blackbird
- II. Open the main sensor settings
- III. Go to the Missing Data Alerts tab
- IV. Enter the desired offline threshold and, if necessary, a new notification threshold
- V. Add yourself or other colleagues as subscribers to the alert (email or phone number)



Chapter 3: Problem solving

If your Factbird device is not online (see status light in Chapter 1), the following table explains the meaning of the different status light stages and will help you determine how to proceed.

Color	Lamp	Explanation	Procedure
yellow 	stable	Default state Temporary hardware status when switching between other statuses. This can last up to 10 minutes.	1. Wait for the status LED to change color (do not unplug!)
red 	blinking	Offline	1. Check the general network availability (Network availability on your mobile phone / correct entry of the WIFI credentials) 2. Restart the device (Unplug for approx. 1 min) 3. If the status LED continues to flash red after this, contact the Blackbird support
green 	blinking	No GSM internet connection The SIM card is connected to a network, but has no internet reception	1. Contact the Blackbird support
pink 	blinking	OTA ongoing The firmware of the device is being updated over-the-air at the moment	2. Wait for the status LED to change color (do not unplug!)
blue 	blinking	No Wifi internet connection The Factbird device is connected to the router, but has no connection to the Internet	1. Verify internally that for each device - the domain of our endpoint is whitelisted - All necessary ports are opened More information can be found here: here: https://www.notion.so/blackbirdhq/Whitelist-domains-Ports-95839d0421c2478b9e450615976b65b3

If you **entered the WIFI credentials incorrectly** or if you want to switch back to a GSM connection, please delete the WIFI credentials you entered in Blackbird (bin symbol). The Factbird device will then try to connect to the GSM network. Afterwards, it can remain in this state or be reconnected to a WIFI.