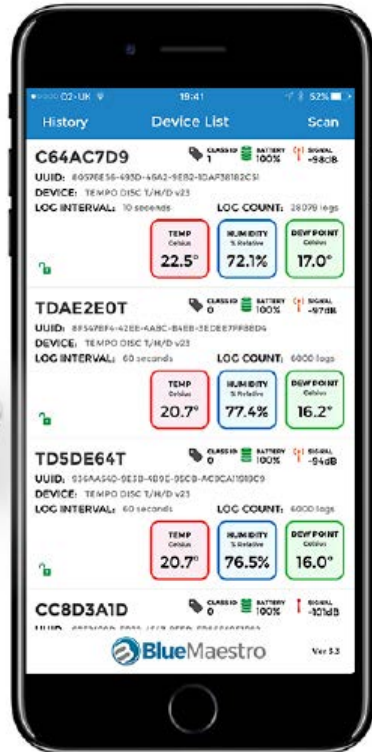




Bluetooth Sensors and Data Loggers

Resolving Connection Issues



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1. Introduction

From time to time you may experience a problem in scanning or connecting to your Blue Maestro Bluetooth sensor beacon and data logger ("**Device**") with your smartphone or tablet. This can be frustrating but thankfully the problem is often easily fixed.

This booklet looks at the common reasons and how you can fix them.

1.1 How they arise

Blue Maestro's Devices use a connection protocol called the Nordic UART Service, or NUS for short. This has been developed by Nordic Semiconductor. It complies with the Bluetooth SIG's standards, has been thoroughly tested and is used in millions of devices around the world. It is an extremely reliable method of connection.

The problem arises with the Bluetooth stack (or internal code) of smartphones. Certain Android models in particular are known to have issues and certain versions of the Android Operating System are known to also cause problems.

iOS devices are also known to have issues, but generally not as bad.

Thankfully the problems are often temporary and there are steps to fix them.

We look firstly at iOS and then Android. Finally we look at settings in the Blue Maestro Device that can result in it not being detected or not being able to be connected to by a smartphone.

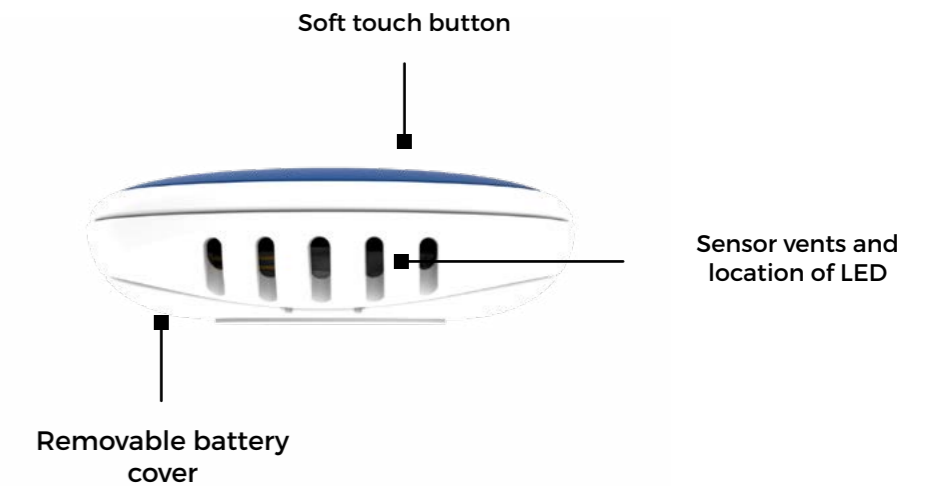
2. Before you begin

Before turning to your smartphone, there are some basic things that need to be checked with the Blue Maestro Device. Is the Device on? Is the Device within range? Have you downloaded the correct Blue Maestro app?

2.1 Is the Device on?

The Device can be turned on by pressing the coloured top surface. The LED indicator should blink 3 times if it is being turned on from off, or once if the Device is already on. For the waterproof version of Tempo Disc the LED is located next to a bubble on the side of the Device. It can be difficult to see the LED in bright light, so find a dark area or cup your hand well over the Device to ensure you can see the LED.

If you do not see an LED blink at all and your smartphone is not able to detect the Device, this suggests the battery of the Device may need to be changed or there is a physical issue with the Device. We suggest making sure you don't see the LED before attempting to change the battery, since the LED can be easily missed, especially in bright light.



2.2 Is the Device in range?

The range of the Device is indicated by its signal strength. This is expressed in negative dB and the greater the number, the closer the Device is. So for example -30dB is physically closer than -90dB, which is a lesser number.

The antenna of the Blue Maestro Device is a tuned chip antenna, and it transmits quite well. However some smartphones do not have an optimised Bluetooth antenna and so do not transmit as well as the Blue Maestro Device. This becomes an issue when trying to change a setting on the Blue Maestro Device since the smartphone is not able to transmit the message as far so it can be detected by the Device if it is some distance away. This means the smartphone can see the Blue Maestro Device but the Blue Maestro Device cannot see the smartphone.

This is resolved by getting physically closer to the Device when downloading data and issuing commands.

2.3 Download the correct Blue Maestro app?

From time to time, Blue Maestro may have more than one app appearing in the app store. Ensure you have the correct app for your Device since not all Devices are compatible with all apps. The best way to ensure you have the correct app is to follow the links on the support pages for your Blue Maestro product on www.blumaestro.com.

3. IOS connection issues

IOS connection issues generally arise when trying to download data or issue a command to the Device. There are two things to try when this occurs

3.1 Restart your smartphone/tablet


Generally simply restarting the iOS smartphone/tablet will be enough to fix most iOS Bluetooth issues. To do this press and hold the Top (or Side) button until the slider appears.

Drag the slider to turn your smartphone/tablet completely off.

After the smartphone/tablet turns off, press and hold the Top (or Side) button again until you see the Apple logo.

3.2 Is Bluetooth on?

Check your smartphone's/tablet's Bluetooth is on by swiping up from the bottom edge of the screen. On iPhone X, swipe down from the upper-right corner of the screen. On iPad, you can also double-click the Home Button.

From there tap the  icon. If this is dim (i.e., Bluetooth is off) you won't be able to connect to the device. Tap it to turn it on.

3.3 Delete and reinstall the app

The Blue Maestro app requires a user to authorise the use of Bluetooth and Location services to run properly. Location services are necessary for Bluetooth beacon functionality. Often people will not authorise these things over privacy concerns. Generally if a user does not authorise them the app should not start, but if it does, this will create a problem.

Therefore we suggest that if none of the steps have worked, delete the app, reinstall it and this time make sure to authorise Bluetooth and location services if asked.

4. Android connection issues

Android connection issues tend to be more numerous. This is because of the different smartphone/tablet manufacturers and there being more versions of the Android operating system.

Most issues will involve either the inability to see any Device while scanning and/or the inability to download data or change a setting in the Device.

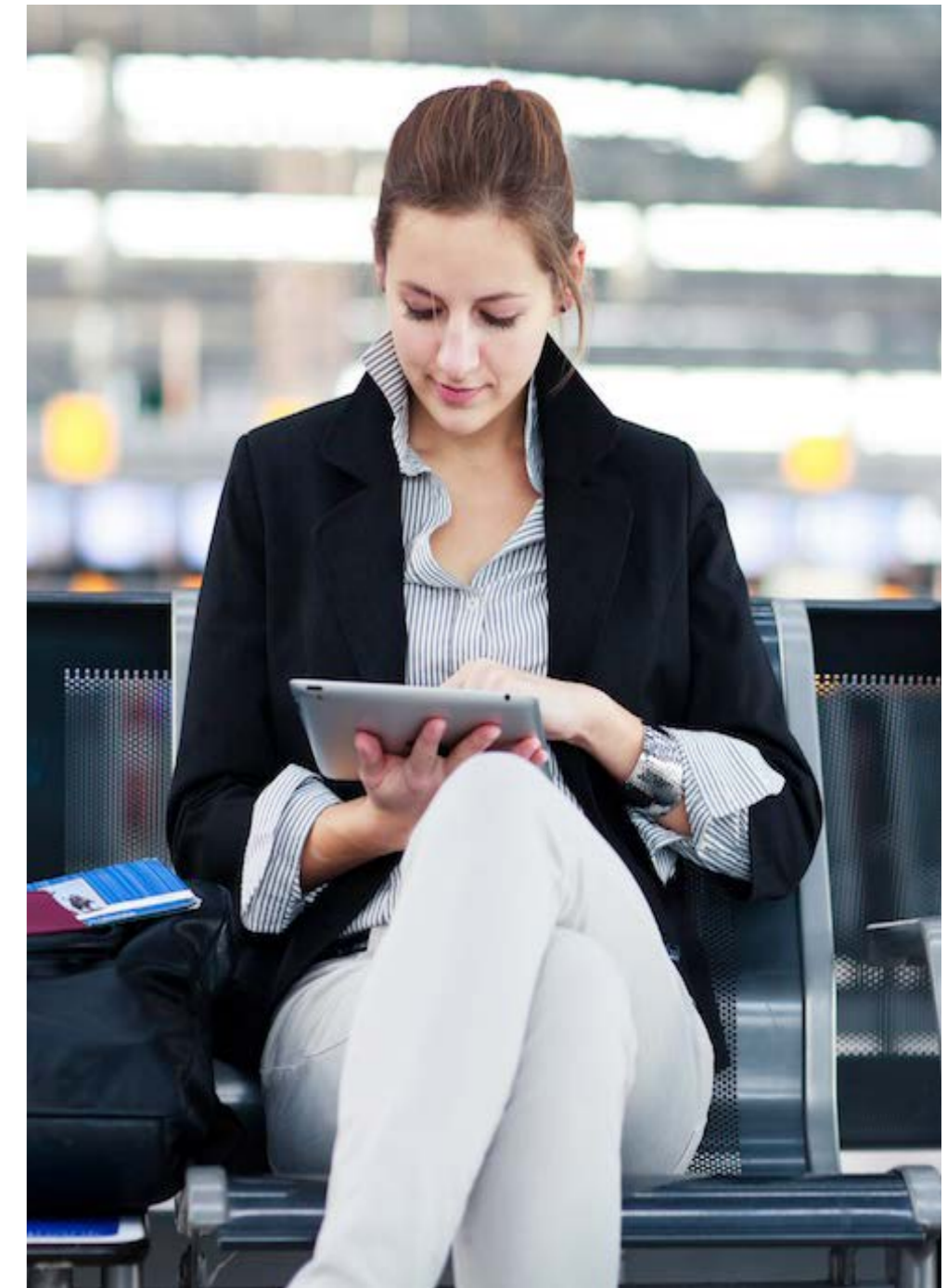
4.1 Restart your phone

The easiest way to clear most Android Bluetooth issues is to reboot your smartphone/tablet by pressing down on the suspend button and holding it down for several seconds. The suspend button is usually on the right side of the smartphone/tablet just next to the volume buttons.

After a few seconds, a menu should appear with the "Power Off" option. If you have the latest version of the Android operating system, you may have other options including "Restart". It's best to choose Restart if it is available, but if not, don't worry. The only real difference between Power Off and Restart is the need to press down the suspend button again after the screen goes dark.

You may need to hold this button down for three to five seconds before the smartphone/tablet powers back on.

This ought to fix most Bluetooth connection issues. If it doesn't read on for more things you can try.



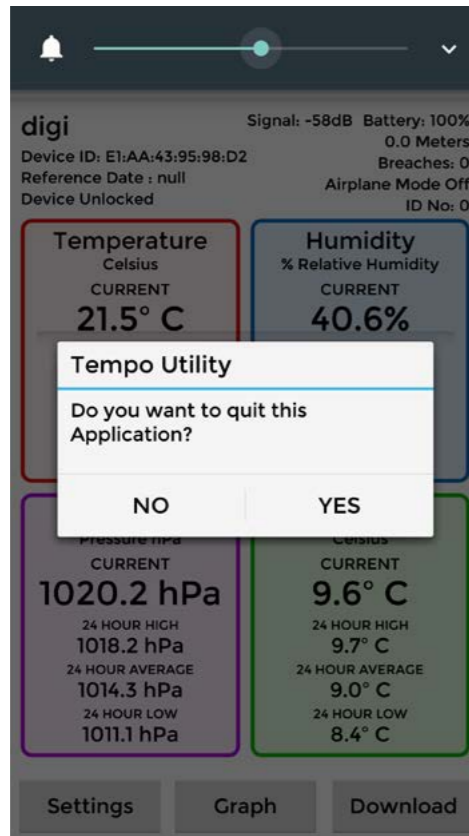
4.2 Turn off Bluetooth and stop any other Bluetooth apps

First quit the Blue Maestro app. It is important that you quit entirely, not just minimise the app since this means the app is still running in the background. The best way to do this is to use the right button beside the home button and then confirm you want to quit (see image below).

Next go to Settings>Apps. This will include a list of all your apps running on the phone. Make sure that all apps that may be using Bluetooth are stopped. Do this by selecting the app and then selecting "Force Stop". If any Blue Maestro app appears, ensure that it too is forced to stop.

Next go to Settings>Bluetooth. Toggle the switch so that Bluetooth is switched off. Do not switch it back on yet. We are going to let the app switch it on as this will cause the app to know it is a fresh Bluetooth process running.

Open the Blue Maestro app, this should ask whether you want to switch Bluetooth on. Select yes. Bluetooth will automatically be switched on and this should clear any issues you were facing.



4.3 Delete and reinstall the Blue Maestro app

If the previous two steps didn't work, delete the Blue Maestro app in its entirety and follow the next steps. Sometimes there might be an issue with things like the database in the app that could be causing a problem, especially if you have upgraded the app from a previous version.

Once you have deleted the app, go to Settings>Storage>Apps. Scroll down to find the Blue Maestro app. Select it and then tap "Clear Data". This will delete the database associated with the app. Don't worry if you don't see the app on this list after deleting the app, it just means the data associated with the app was deleted at the same time.

Next reinstall the Blue Maestro app.

4.4 Some Android smartphones and operating systems

If none of the above steps helped, read on to the next section to ensure your Device does not have a setting changed that prevents connection (such as it being locked, in airplane mode, etc.)

If at the end of all this you still have problems contact Blue Maestro Support with details of your smartphone and operating system. They may be able to assist.

We are aware of certain models of Android smartphone running certain versions of Android to have particularly poor Bluetooth connectivity. One example is the Nexus 5X, Nexus 6P, Pixel, Pixel XL, Pixel 2 and Pixel 2XL running Android 8.0 and Android 8.1 Oreo. See [here](#) for more details. The models affected will change over time, and models affected today may be patched in further releases of Android. However for some smartphones, none of the steps may help and there will be little we can do. But as we say, definitely get in touch with Blue Maestro Support if you are continuing to be affected having tried the steps above.

5. Settings in your Device

Finally, it is necessary to check that your Device's settings to ensure they are not causing your connection issues. This is relevant for both iOS and Android. We cover this last since Users are generally aware of settings they have applied to the Device, so it generally isn't caused by these. However there are occasions where a User has accidentally changed a setting, or changed a setting without fully understanding it, or even that someone else has changed a setting, so it does arise from time to time.

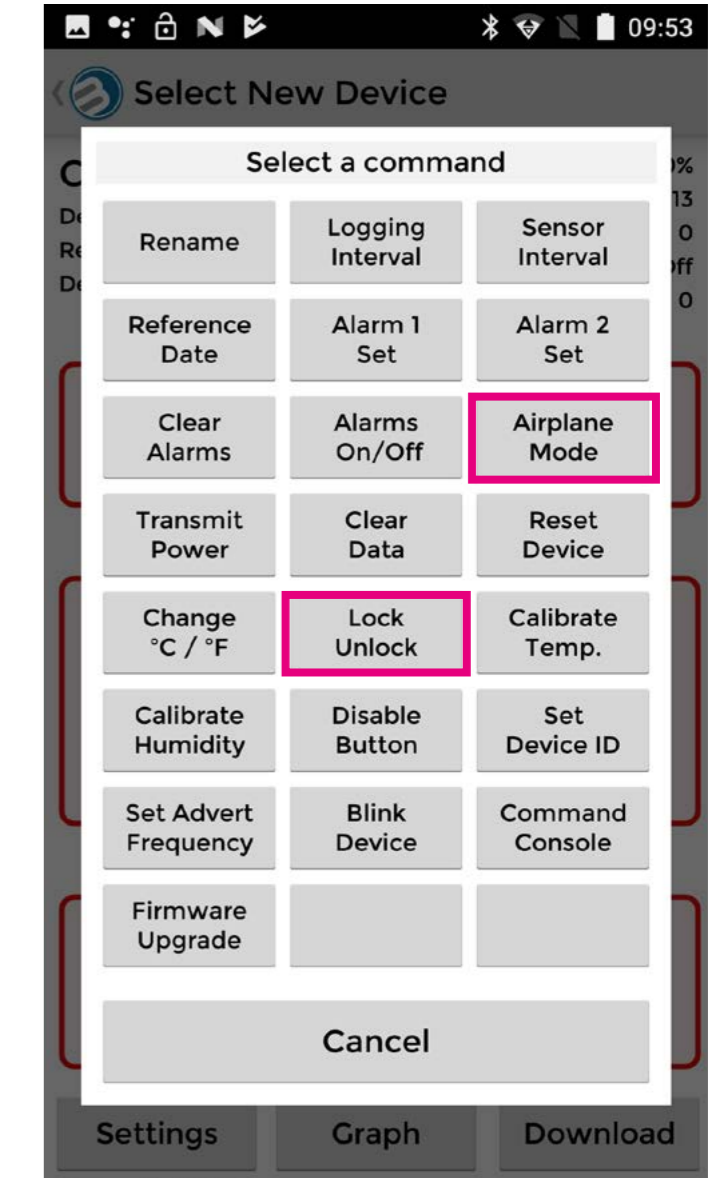
5.1 Airplane Mode

Airplane mode will cause the Device to stop advertising after 60 seconds. A button push will cause the Device to start advertising, but only for 60 seconds. Once taken out of airplane mode the Device will advertise as normal.

The implications are that if the Device does not advertise, it cannot be connected to easily. So if the Device is in airplane mode, first take it out of airplane mode before attempting to download or change any of the other settings.

5.2 Lock/Unlock

This setting locks the Device so that no download or settings can be changed. Whether your Device is locked or Unlocked should be shown on the Details screen for the particular Device. If it says "Locked" or there is a red padlock then you will need to unlock the Device before changing a setting or downloading data.



6. Tried everything, what next?

If you have tried everything and you still don't have any luck, contact Blue Maestro Support - support@bluemaestro.com - with details of your smartphone and operating system. If nothing can be done then we are happy to provide a refund. After all if you bought the Device and can't use it on your smartphone, then it is effectively useless and we understand that. But do get in touch with us first, since we may have a solution not included in this guide because it's new or something like that.

Thank you and we hope you have found this useful and it fixed your problems.