



DroneScout Bridge - Manual

March 2026 - version 1.5

Remote ID for drones



The latest version of this manual is located here:

https://download.bluemark.io/ds_bridge.pdf



Intended audience: users of the DroneScout Bridge devices: ds100/ds101/ds100 retail/ds110 retail/ds110/ds111

Disclaimer: we are not responsible or liable for errors or incomplete information in this document.

Version history

version	date	description
1.0	November 2024	● Initial release
1.1	January 2025	● Added information about ds100 retail
1.2	July 2025	● Updated quick start ● updated configuration with latest firmware
1.3	September 2025	● Added information about DroneScout pro app for Android, iOS and iPad
1.4	October 2025	● Added information about triple-band ds110 retail
1.5	March 2026	● Updated configuration with latest firmware - flashing LED - external buzzer - ds110/ds111 products ● added power consumption data



QUICK START

What is DroneScout Bridge?

DroneScout Bridge is a small drone Remote ID receiver that works with iOS, Android, and drone detection platforms. Most consumer drones (e.g. DJI) use signals -*WLAN Beacon* or *Bluetooth Long Range*- that smartphones cannot detect on their own. Bridge makes these signals visible and significantly extends detection range.

Getting Started

1. Power Up

- Connect Bridge to any USB power source.
- A solid blue LED means it's powered and ready.
- Position the antenna vertically for optimal performance.

2. Download the App

- Search *DroneScout pro* in the Apple App Store or Google Play or visit <https://dronescout.co/app/>
- You can also use other apps like *OpenDroneID OSM* (Android) and *DroneScanner* app (Android/iOS).



3. Start Detecting Drones

- No pairing or connection needed. Bridge acts as a wireless relay.
 - Simply open the app to view nearby drones.
 - Bridge will be detected by the app as *DroneScout Bridge* device.
 - The blue LED of the Bridge will flash when a drone is detected.
-

Advanced Configuration / Firmware Updates

To configure advanced settings, see the remainder of this manual (section 1.4 and Chapter 2).

Configuration

See Chapter 2 of this manual (optional). Most users only need the default settings and configuration is not needed.

Detect drones with RemoteID/DRI EU: drones C1+

up to 2 km power by USB-C

iPhone | iPad
Android
Free app



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1 INTRODUCTION

Thank you for purchasing and using DroneScout products!

The latest version of this user manual may be downloaded at the following link:

https://download.bluemark.io/ds_bridge.pdf

(Direct/Broadcast) Remote Identification (Remote ID) adds “beacon” capability to drones to broadcast basic information of airborne drones, such as the operator's registration number, drone serial number and current position. The EU and USA have rules that make Remote ID mandatory for drones over 250 grams weight. The beacon information can be used by general public, law enforcement and drones to give better situation awareness of the airspace around them.

BlueMark Innovations BV offers Remote ID transponders and receivers. DroneScout Bridge is a small device that can receive RemoteID signals. It can output this information using Bluetooth, so your favorite RemoteID app on your smartphone can receive those. Not only can you increase the detection range, but also most smartphones don't support receiving popular RemoteID signal methods such as WLAN Beacon. DroneScout Bridge will make those drones visible. The product can also output the detected drones on a serial interface (UART, MAVLink protocol). See <https://dronescout.co> for more information about our products.

DroneScout Bridge has at this moment 6 family members. The **ds10x** family detects RemoteID in the 2.4 GHz, where as the **ds11x**, is triple band. Detects RemoteID I the 2.4, 5 and 5.8 GHz.

2.4 GHz models

- ds100 retail – the retail version with plastic enclosure, USB cable and large external antenna
- ds100 – PCB version only version with a small antenna
- ds101 – PCB version with an internal antenna

Triple band models (2.4, 5 and 5.8 GHz)

- ds110 retail – the retail version with plastic enclosure, USB cable and large external antenna
- ds110 – PCB version only version with a small antenna
- ds111 – PCB version with an internal antenna

1.1 Audience

This document is intended for users that want to use the *DroneScout Bridge*. This can be users that want to use it to enhance RemoteID detection on their smartphones, or users that want to install the product on their drone and connect it to their flight controller to detect nearby drones. Finally, DroneScout bridge can also be used by DIY enthusiasts or system integrators that want to add RemoteID detection to their product/project.

1.2 Specifications

DroneScout bridge consists of an embedded system with a Bluetooth and WLAN radio interface to receive Remote ID signals.



Regulation

The DroneScout bridge is able to receive DRI/B-RID signals according to these technical standards:

region		
EU	ASD-STAN FprEN-4709-002:2023 (E) (Part 002: Direct Remote Identification)	June 2023
USA	ASTM, International (ASTM) F3586-22, with additions	July 2022

Key specifications

ds100 retail/ds100/ds101 specifications

- **Compliant with international regulations**
 - EU ASD-STAN DIN EN 4709-002:2023
 - USA ASTM Remote ID Standard ASTM F3411-22a-RID-B/ F3586-22
- Support for popular Remote ID transmission protocols:
 - BLE legacy
 - BLE long range
 - WLAN NaN 2.4 GHz (enabled in firmware September 2025)
 - WLAN Beacon 2.4 GHz
- Frequency bands
 - 2.4 GHz
- Detection range up to 2 km¹
 - Omni-directional antenna (IPEX3) with 3 dBi gain (ds100).
 - Omni-directional antenna (RP-SMA) with 5 dBi gain (ds100 retail).
 - On-board PCB antenna with 3 dBi gain (ds101), detection range up to 1 km
- Connectors
 - USB-C
 - 2x JST SH connector 4-pin (3.3V Logic levels – ESD-protected)
- MAVLink protocol 2
 - ADS-B vehicle messages
 - OpenDronelD messages
- LEDs
 - 1x status LED
- Power
 - USB-C
 - 5 -15 V (JST SH connector)
 - power consumption (average): ~ 480 mW @ 5V
 - reverse polarity protection
 - voltage peak protection
- Dimensions (l x w x h):
 - 42 x 14 x 4 mm (ds100)
 - 65 x 18 x 13 mm (ds100 retail, excluding antenna and connector)
 - 105 x 18 x 13 mm (ds100 retail, angled antenna, antenna 135 mm high)
 - 46 x 14 x 4 mm (ds101)



¹ The detection range depends on several factors such as the receiver antenna gain, transmission protocol, weather conditions, flying height, receiver height line of sight etc. Non-compliant RemotelD transponders have typically much less detection range.



- Operating temperature
 - -20°C to +85°C
- Weight:
 - 3.5 gram (ds100)
 - 26.4 gram (ds100 retail)
 - 2.5 gram (ds101)
- Mounting
 - M2 mounting hole (ds100/ds101)



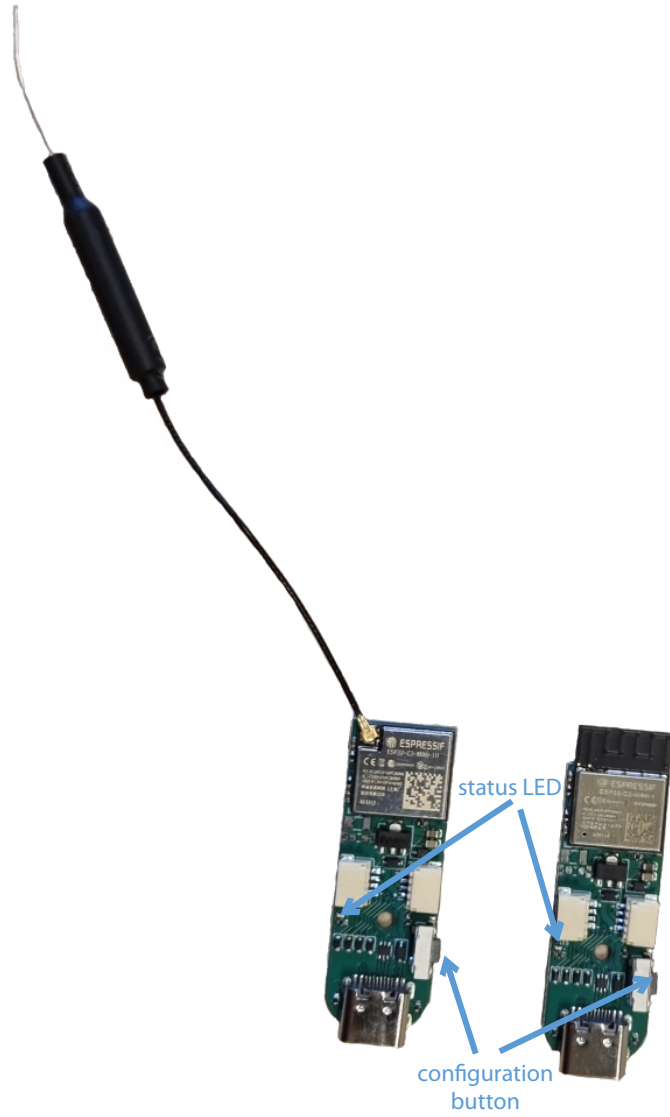


Figure 1 - DroneScout Bridge ds100 (left) and ds101 (right), ds100 retail (bottom)





- **Compliant with international regulations**
 - EU ASD-STAN DIN EN 4709-002:2023
 - USA ASTM Remote ID Standard ASTM F3411-22a-RID-B/ F3586-22
- Support for popular Remote ID transmission protocols:
 - BLE legacy
 - BLE long range
 - WLAN NaN
 - WLAN Beacon
- Frequency bands
 - 2.4 GHz
 - 5 and 5.8 GHz
- Detection range up to 2 km²
 - Omni-directional antenna (IPEX3) with 3 dBi gain (ds110).
 - Omni-directional antenna (RP-SMA) with 5 dBi gain (ds110 retail).
 - On-board PCB antenna with 3 dBi gain (ds111), detection range up to 1 km
- Connectors
 - USB-C
 - 2x JST SH connector 4-pin (3.3V Logic levels – ESD-protected)
- MAVLink protocol 2
 - ADS-B vehicle messages
 - OpenDroneID messages
- LEDs
 - 1x status LED
- Power
 - USB-C
 - 5 -15 V (JST SH connector)
 - power consumption (average): ~ 580 mW @ 5V
 - reverse polarity protection
 - voltage peak protection
- Dimensions (l x w x h):
 - 47 x 20.5 x 4 mm (ds110)
 - 71 x 24 x 13 mm (ds110 retail, excluding antenna and connector)
 - 111 x 24 x 13 mm (ds110 retail, angled antenna, antenna 135 mm high)
 - 53 x 20.5 x 4 mm (ds111)
- Operating temperature
 - -40°C to +85°C
- Weight:
 - 6 gram (ds110)
 - 32 gram (ds110 retail)
 - 4.5 gram (ds111)
- Mounting
 - M2 mounting hole (ds110/ds111)

² The detection range depends on several factors such as the receiver antenna gain, transmission protocol, weather conditions, flying height, receiver height line of sight etc. Non-compliant RemoteID transponders have typically much less detection range.



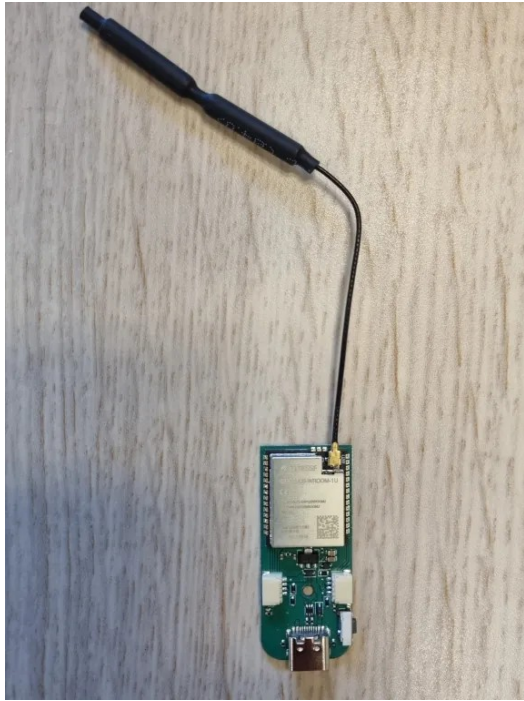


Figure 2 - DroneScout Bridge ds110 (left) and ds111 (right), ds110 retail (bottom)



1.3 What's in the Box

For the ds100 retail/ds110 retail, the following package contents should be present:

- 1x ds100/ds110 retail including 5 dBi RP-SMA antenna
- 1x quick manual
- 1x USB-A to USB-A/C cable

The following package contents should be present of the PCB versions: ds100/ds101/ds110/ds111:

- 1x DroneScout Bridge PCB including external IPEX3 WLAN/Bluetooth antenna (ds100/ds110). Other models (ds101/ds111) have an on-board antenna.

1.4 Installation

All DroneScout Bridge devices operate the same way. The only differences are the antenna and with/without enclosure. DroneScout Bridge has several operation modes:

- wireless relay (default)
- receiver
- receiver USB

Regular users power the Bridge using USB and use wireless relay mode. Other connection options are for advanced users!

wireless relay mode

In this mode, the DroneScout bridge will receive RemotelyID signals and will rebroadcast them (wireless relay) in a format that the smartphone can detect. The transmit power is low (-24 dBm), range is less than 25 meters.

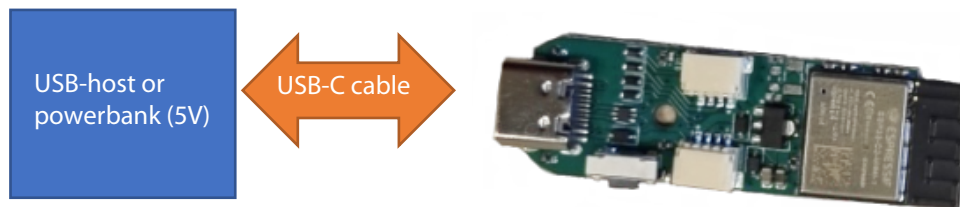


Figure 3 - Connect an USB-C cable to DroneScout Bridge to power the device.

Connect a USB-C cable to the DroneScout Bridge and power it by an USB power bank, your phone or other USB host device. Once it receives, power, a blue LED will be on.

receiver mode

In this mode, the DroneScout bridge will receive RemotelyID signals and will output this information on the *UART OUT* interface. Connect the DroneScout Bridge using the *UART OUT* connector to the flight controller. On the back each pin is described. The default baud rate is 115200 and it uses MAVLink version 2 messages. The device can output signals using ADSB vehicle messages (https://mavlink.io/en/messages/common.html#ADSB_VEHICLE) or OpenDroneID message pack format (https://mavlink.io/en/messages/common.html#OPEN_DRONE_ID_MESSAGE_PACK). A blue LED will be on if the device has power.



Wiring

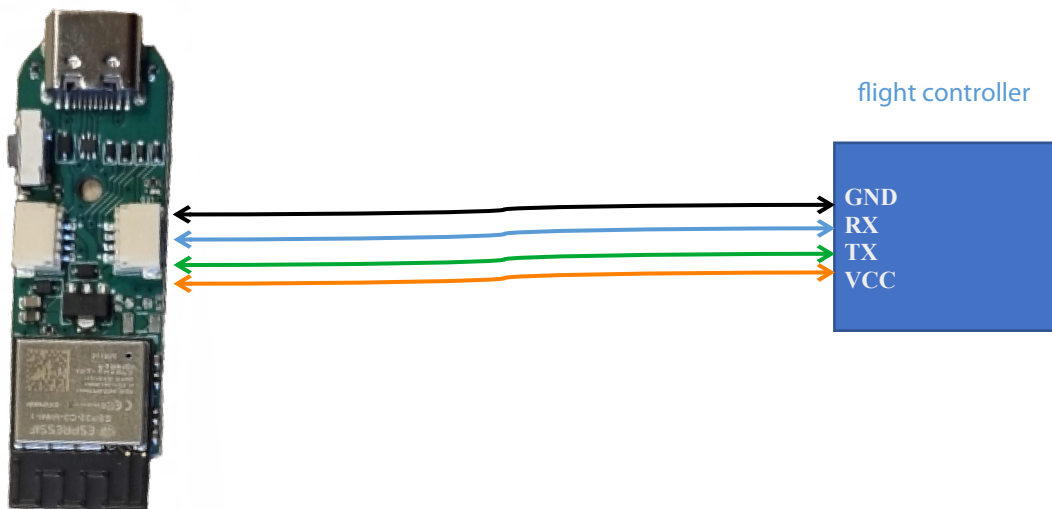


Figure 4 - Connect a 4-pin JST-SH between flight controller and DroneScout Bridge using this wiring scheme

receiver USB mode

In this mode, the DroneScout bridge will receive RemoteID signals and will output this information using the *USB-C* interface. The USB host device will detect a serial interface, typically `/dev/ttyACM0`. The baud rate is 115200 and it uses MAVLink version 2 messages. The device can output signals using ADSB vehicle messages (https://mavlink.io/en/messages/common.html#ADSB_VEHICLE) or OpenDroneID message pack format (https://mavlink.io/en/messages/common.html#OPEN_DRONE_ID_MESSAGE_PACK). A blue LED will be on if the device has power.

Note: due a hardware limitation, receiver USB mode can only output information to the USB host device.

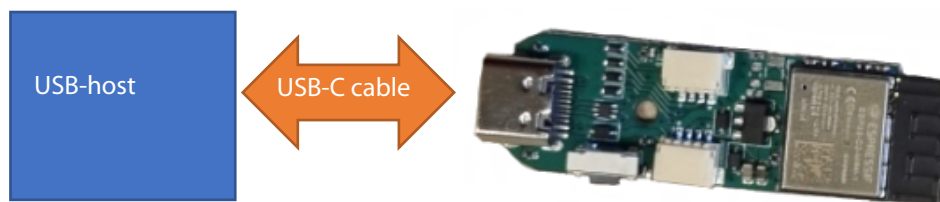


Figure 5 - Connect a USB-C cable to DroneScout Bridge to power and receive RemoteID messages

multiple cascaded DroneScout Bridge devices

DroneScout Bridge devices can be connected in the receiver and receiver USB mode. Multiple DroneScout Bridge devices can increase the RemoteID detection performance. For instance by configuring one device to Bluetooth detection, the other one to WLAN detection at channel 6 etc. Connect a 4-pin JST-SH cable between the *OUT UART* port of device #1 and *IN UART port* of device #2. Device #2 will receive the RemoteID detection data from device #1 and will forward it to the *OUT UART* port (or USB-C)

To be extended.



Example source code

To receive and display MAVLink messages of DroneScout Bridge, we provide source code (C and Python).

<https://github.com/BluemarkInnovations/RemotelD-DroneScout-Bridge-C>

<https://github.com/BluemarkInnovations/RemotelD-DroneScout-Bridge-Python>

Antenna

- Install the external ds100, ds110, ds100 retail and ds110 antenna vertical (+/- 15 degrees) for optimal performance.
- Install the ds101/ds111 with internal antenna in the horizontal plane.
- The antennas should not be obstructed by nearby metal objects.

ds1x0 vs ds1x1 antenna.

The onboard antenna of the ds101/ds111 is not omni-directional if it is operated stand-alone. At certain angles, the detection range (gain) is much less. See this document for the ds101/ds11 antenna diagram <https://www.ti.com/lit/an/swra117d/swra117d.pdf> The document also states that if such antenna device is connected to a device (like laptop), the antenna pattern will be different (more omni-directional).

On the other hand, the ds100/ds110 antenna is omni-directional by design.

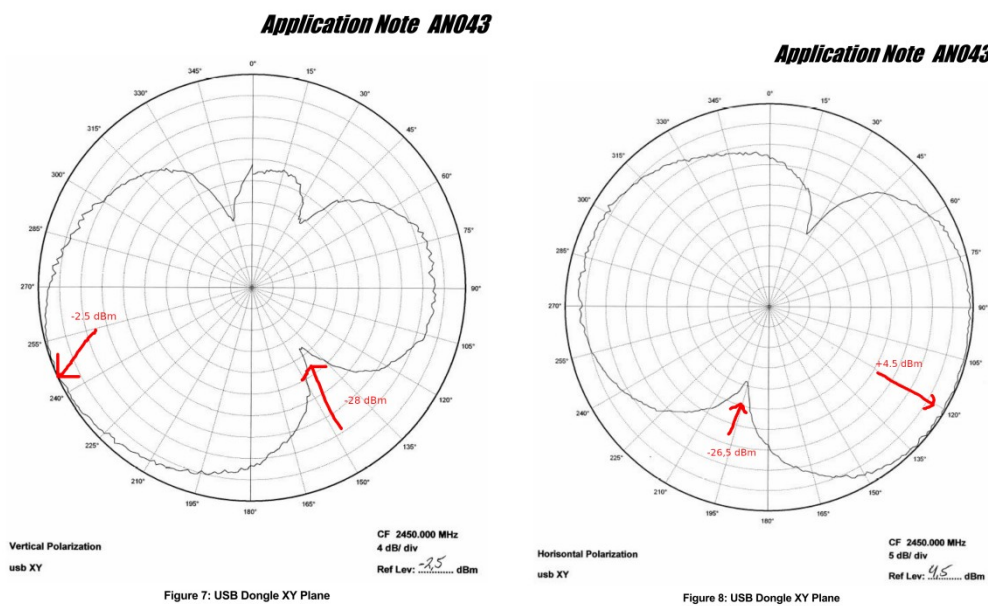


Figure 6 - Antenna pattern of the ds101 (stand-alone setup) source: <https://www.ti.com/lit/an/swra117d/swra117d.pdf>

1.5 Using DroneScout Bridge

- Install the device using section 1.4
- Wait for the **blue LED** to be permanently on.
- DroneScout Bridge detects nearby RemotelD devices. (Default configuration.)
- In firmware version 20260302-2144 and higher the blue LED will flash when a drone is detected.



If you use DroneScout Bridge as wireless relay, please use our DroneScout pro app (Android, iOS, iPad). See section 1.6 for an overview of Android/iOS apps that can be used for RemoteID detection.

If you are connecting it to a flight controller and use ADSB vehicle output format, see this ArduPilot page: <https://ardupilot.org/copter/docs/common-ads-b-receiver.html> and this PX4 page: https://docs.px4.io/main/en/peripherals/adsb_flarm.html

to be extended.

Status LED

The blue LED can have the following states:

- permanent on: detects nearby RemoteID signals
- blue LED will flash (activity) when a drone is detected in firmware version 20260302-2144 and higher the blue LED will flash
- slowly flashing: the device is in configuration mode (see the next Chapter)

1.6 Android/iOS app

Android

You can use our free DroneScout pro app (Android, iOS, iPad): <https://dronescout.co/app/>

Alternatives are the OpenDroneID OSM Android app to view the Remote ID signals: https://play.google.com/store/apps/details?id=org.opendroneid.android_osm

Or the Drone Scanner Android app:

<https://play.google.com/store/apps/details?id=cz.dronetag.dronesscanner>

iOS

You can use our free DroneScout pro app (Android, iOS, iPad): <https://dronescout.co/app/>

Or use Drone Scanner app that is also available for iOS. <https://apps.apple.com/gb/app/drone-scanner/id1644548782>

1.7 Open Drone ID

DroneScout Bridge uses the Open Drone ID framework to receive and wireless relay Remote ID signals. The framework can be found on this page: <https://www.opendroneid.org/>

1.8 External buzzer and digital output (GPIO)

In firmware 20260329-1805 and higher, you can attach an external passive buzzer to the UART IN port. Bridge can generate a sound/alarm when a drone is detected. See also Chapter 3 configuration/tab Buzzer for configuring the buzzer. In this section, we described how you can connect an external buzzer.



- We sell a passive Buzzer with UART-in connector add-on. Just plug it in the UART-in port and configure it in the configuration pages.
- You can also make your own buzzer. You need a 4-pin JST SH cable (single ended). A passive buzzer (operating sound frequency 4 kHz) that works with 3.3V signals and a resistor of 220 ohm. The resistor is need to limit the output current of the bridge. A too high current can permanently damage the Bridge! Of course, higher resistor values will limit the current and sound level of the buzzer. A 220 ohm resistor value is a good trade-off.
- Besides the buzzer sound, there is also a wire that indicates when a drone is detected. For the passive buzzer, the UART in TX wire is used. The digital GPIO signal is the UART IN RX line is used. Behavior: 1 (3.3V) – if no drone is detected. 0 (0 V) if a drone is detected. If the buzzer behavior is set to “always” the GPIO output signal is 0 V until the drone is not detected anymore. If the buzzer is set to “new”, the GPIO signal is only for the first 5 seconds 0 V when a new drone has been detected.

Wiring

The UART in port has 5V, RX, TX, GND where 5V is closest to the USB connector. The UART IN connector is on the side of the side button as shown below. Make sure you connect the wires to the + and – of the passive buzzer correctly! Reverse polarity/connection can damage the buzzer.

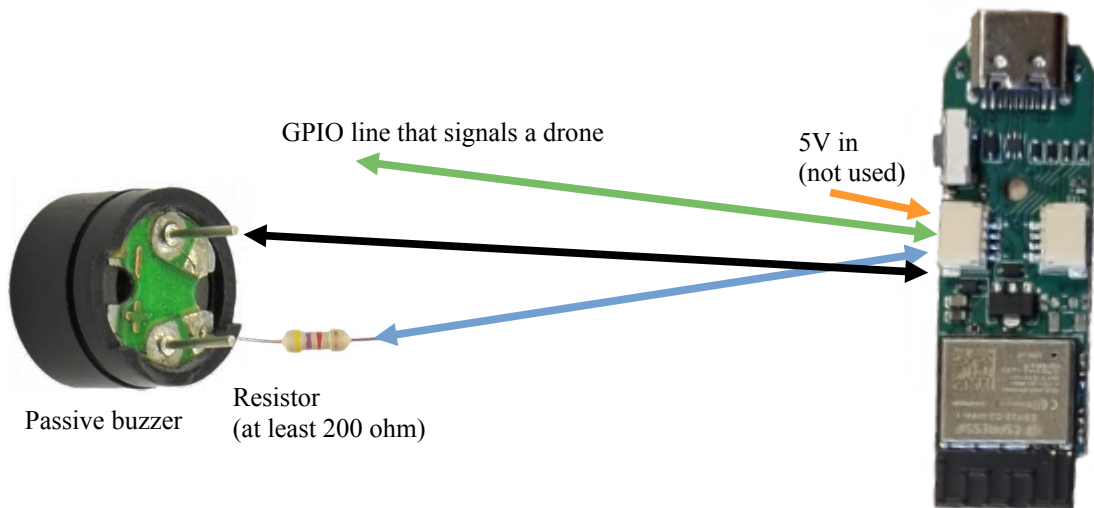


Figure 6 – passive buzzer wiring



2 CONFIGURATION

DroneScout Bridge devices be configured via a web-interface. To activate the configuration mode follow these steps:

- Power on the DroneScout Bridge (*blue* LED is on).
- Press the configuration button, the *blue* LED is slowly flashing.
- Connect to *DroneScout_Bridge* WLAN network (no password needed)
- Point your browser to <http://192.168.50.1>

New settings will only be applied if the Save button is pressed!

Configuration mode will be exited, by pressing the button again. The *blue* configuration LED is now permanently on. The device is now in normal operation mode again.



configuration web-page

2.1 Configuration page

After connecting to <http://192.168.50.1> the page(s) in Figure 7 to Figure 10 appears. Since firmware version 20260302-2144, use a tabbed configured pages.

The configuration page is divided in these tabs:

- *general*: select the operation mode: wireless relay (default), receiver or receiver USB
- *reception*: settings related to reception of RemoteliD signals. Advanced settings, most users need factory default settings.
- *reception*: if you do not use the Bridge in relay mode, but use UART, you can set baud rate and swap RX/TX lines in this section. Advanced settings.
- *buzzer*: in firmware 20260329-1805 (and higher), it is possible to attach an external buzzer. It will give an alarm when a drone is detected. In this section you can configure the buzzer.
- *firmware*: go to this tab if you want to upgrade firmware

It has several settings.

Tab General

- *mode*: select the operation mode: wireless relay (default), receiver or receiver USB
- *Relay ping* and *Relay ping label*. In firmware version 20250618-1131 and later, a new feature called Relay ping was introduced. With this feature enabled, the bridge device is visible in RemoteliD apps as "DroneScout Bridge" drone. This is useful to know if a Bridge device is nearby and/or switch on. *Relay ping label* allows you to set a custom label. In firmware 20260329-1805 you can control the transmit power of the relayed drone signals. This can be useful if the relay signal is too weak (due to noise or distance between Bridge and your mobile device.)
- Blacklist serial number: typically your own UAV also transmits RemoteliD signals. Enter the RemoteliD Serial Number to remove these signals from the output.

self ID message and RemoteliD compliance basic checks

When the "*Insert self ID message*" is ticked, DroneScout Bridge will insert a SelfID message in wireless bridge mode.



Messages can be:

DS WIFI B <RSSI> dBm addon

DS WIFI B <RSSI> dBm drone

Here, <RSSI> means the detected signal strength of the RemotelD signal by DroneScout Bridge. In the USA newly produced drones should return the value "drone" and RemotelD add-on devices "add-on". For other regions, there is not such difference. Here, a newly produced drone can also be classified as add-on device. If the signal is WLAN Beacon, the self message contains *WiFi B*. If it is Bluetooth Long Range, it will be *BT5* instead. *DS* means DroneScout Bridge to indicate the signal is wireless relayed.

If the RemotelD signals has not a GNSS fix, the SelfID message will be *DS WIFI B <RSSI> grounded*

10x RemotelD compliance basic checks

DroneScout Bridge will perform basic checks on the detected RemotelD signal to check if the signal complies to the RemotelD standards. Note, this is a beta-function. RemotelD technical standards and compliance documents contains more than 50 pages with a lot of requirements. DroneScout Bridge will only check the signal (bit stream) for *10 items*. To be more specific: BMG0090, BMG0100, BMG0190, BMG0200, BB50010, BB50030 of ASTM F3411-22a. Basically, is the Serial Number compliant, does the signal have both drone and pilot location and in the European region, does the operatorID meet the basic requirements?

It means that if DroneScout Bridge detects no errors, the device can still be non-compliant.

On the other hand, if DroneScout Bridge detects compliance errors, very likely the drone/add-on is non-compliant. We use the word "very likely" here, because our firmware may have bugs for assessing compliance. In doubt, contact the reseller or manufacturer of the RemotelD equipment (add-on/drone). They need to be able to show certificates of external audits that proof compliance.

If a RemotelD signal has RemotelD errors, the self-ID message will be:

non-compl <errors> DS WIB <RSSI>

where errors is the number of detected errors and RSSI the signal strength of the RemotelD signal.

Blue LED behavior

The final setting on the general page is the Flash LED drone. Introduced in firmware 20260302-2144

- *Flash LED drone*: if ticked, the blue LED will flash (activity) when a drone is detected.



DroneScout Bridge

firmware: 20260323-1626

← firmware version

Serial Number: 123AA

← serial number

General

Reception

UART

Buzzer

Firmware

operation

mode:

Note: Set the mode to wireless relay, if you want to use bridge with the DroneScout pro app or other RemoteID app.

Configure what DroneScout Bridge should do. Receive RemoteID signals and rebroadcast them as Bluetooth legacy signals (wireless relay; default). Receive RemoteID signals and output them using UART (receiver) to the OUT connector. Or output it to the USB serial interface (receiver USB).

relay ping:

If enabled **and** if wireless relay mode is selected, the DroneScout Bridge will broadcast every 10 seconds a RemoteID message with the content "DroneScout Bridge" to let apps know that a Bridge device is nearby.

Relay ping label:

The RemoteID message that relay ping will use. Default it is "DroneScout Bridge"

Relay transmit power:

Advanced setting. Set the Bluetooth relay transmission power. Most users keep this value at -24 dBm. Set it to a higher value if you cannot pick up Bridge signals, because there are too many 2.4 GHz signals nearby. Also, a higher value will increase the range where mobile devices can receive Bridge signals.

Blacklist serial number:

Enter a serial number to blacklist it from the detection results. This is useful to suppress the RemoteID transmissions of your own drone.

Insert self ID message:

Advanced setting: if enabled, the device will insert/override (in wireless relay mode only) a so-called RemoteID self ID message for the detected RemoteID signal to indicate that the RemoteID signal is retransmitted.

Flash LED drone:

Advanced setting: if enabled, the blue LED of the Bridge will flash (on/off/on etc) when RemoteID signals are detected.

Save

To factory defaults

Figure 7 - configuration page – general tab



Tab Reception

- *RemotelD type*: select which RemotelD technologies you want to receive: Bluetooth, WLAN or all (default, Bluetooth and WLAN)
- *WLAN scanning strategy*: RemotelD signals are typically broadcast on channel 6, but the standard (and some drones) use other channels in the 2.4 GHz. As there is one radio that can listen only to one WLAN channel, a scanning strategy is needed. All 2.4 GHz channels, scans all WLAN channels regardless if a RemotelD signal is found. In the strategy balanced (default), the device will scan/hop all channels. However, if a RID signal is found, it will allocate most radio time (70%) to track that RID signal and the other time it will scan other channels and technologies for other RID signals/drones. Follow mode, is similar to balanced, only in this case, it will only track the RID signal and won't dedicate time to scan/hop to other technologies/ channels. Follow mode will give more detections of the found/tracked RID signal as it dedicates all radio time to detect this signal. The data refresh rate in the "all 2.4 GHz channels" will be typically low, every 5 to 10 seconds as you won't receive the RemotelD signal when the device is tuned to other channels. The strategy balanced will typically give every 1 to 2 seconds new data if a drone with RemotelD is within range.
- *WLAN channel scanning range*: different regions in the world allow a different set of WLAN channels in the 2.4 GHz. In the USA, only channel 1 to 11 is allowed. In Europe channel 13 is allowed too and in Japan channel 14. Select start WLAN channel and stop channel. Default it is channel 1 to 11. If you only want to scan a particular channel, set start and stop both to that channel. For instance both to 6, in order to scan only to WLAN channel 6.
- *Insert self ID message*: this setting only works in wireless relay mode. In this mode, the DroneScout Bridge will insert/broadcast an extra selfID message with information about the detection signal: RSSI, transmission mode. You will see this information in the RemotelD app of your phone.
- *Bluetooth legacy detection*: Bluetooth legacy is an optional/extra mode in the RemotelD. Most smartphones can only receive this mode. Bluetooth Long Range has a larger communication range. Untick this setting, to disable Bluetooth legacy detection
- **ds110 triple-band settings** The ds110 has two additional settings. There is the WLAN scanning band option. Here, you can select 2.4 + 5 GHz (default), 2.4 only or 5 GHz only. Also, there is an additional option WLAN 5 GHz channel scanning range. Here you can select the WLAN start and stop channel. Note that drones should officially broadcast in the 5.8 GHz band (and not the lower 5 GHz frequencies).



DroneScout Bridge

firmware: 20260323-1626
Serial Number: 123AA

General	Reception	UART	Buzzer	Firmware
---------	-----------	------	--------	----------

reception

RemotelD type:

Configure what RemoteID signals DroneScout Bridge should receive. Most users want to receive all possible signals (Bluetooth, WLAN).

WLAN scanning strategy:

Configure the WLAN scanning strategy. All 2.4 GHz channels means that the device will continuously hop to a different channel. In balanced mode, the device will scan/hop all channels. If a RemoteID signal is found, it will allocate most radio time (70%) to track that RemoteID signal and the other time it will scan other channels and technologies for other RemoteID signals/drones. Follow mode, is similar to balanced, only in this case, it will only track the RemoteID signal and won't dedicate time to scan/hop to other technologies/channels. Follow mode will give more detections of the found/tracked RemoteID signal as it dedicates all radio time to detect this signal.

WLAN scanning bands:

← ds11x setting

Configure which bands should be scanned; default setting 2.4 + 5 GHz.

WLAN 2.4 GHz channel scanning range

start:

stop:

Advanced setting: configure the range of 2.4 GHz WLAN channels that will be scanned.

WLAN 5 GHz channel scanning range

start:

← ds11x setting

stop:

Advanced setting: configure the range of 5 GHz WLAN channels that will be scanned.

Bluetooth legacy detection:

Advanced setting: if enabled, the device will also listen for Bluetooth legacy messages. (Most smartphones can already detect RemoteID messages in Bluetooth legacy format.)

Save

To factory defaults

Figure 8- configuration page – reception tab



Tab UART

These settings only apply if the device is in receiver or receiver USB mode.

- *Message type*: select the MAVLink output format. DroneScout Bridge can output data using the ADSB_VEHICLE message or using OPEN_DRONE_ID_MESSAGE_PACK.
- *Mavlink System Id*: Enter the MAVLink System ID, default 254. Only change if you connect it to a flight controller and need advanced configuration. DroneScout Bridge uses component ID: MAV_COMP_ID_ODID_TXRX_1
- Introduced in firmware 20260302-2144 you can swap the RX/TX line of the UART out and in port.
- Finally the baud rate allows you to configure the baud rate of the UART IN/OUT port.

DroneScout Bridge

firmware: 20260323-1626
Serial Number: 123AA

General	Reception	UART	Buzzer	Firmware
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This page describes settings for the UART IN/OUT port.

output

Message:

If the receiver is in UART mode (receiver/receiver USB) (and not wireless relay mode), it will output RemoteID detections on a serial interface. This setting determines if the output should be MAVLink OpenDroneID message pack format or MAVLink ADS-B format instead.

MAVLink System Id:

Enter the MAVLink System Id, default 254. DroneScout Bridge uses 115200 baud rate.

Swap RX/TX lines UART in:

Advanced setting: if enabled, the TX/RX lines of the UART in port will be swapped. This may be useful if you do not have a cross cable.

Swap RX/TX lines UART out:

Advanced setting: if enabled, the TX/RX lines of the UART out port will be swapped. This may be useful if you do not have a cross cable.

Baud rate:

Set the baud rate for UART communication with host (USB and UART in/out)

Figure 9 - configuration page – UART tab



Tab Buzzer

In firmware version 20260329-1805 the Buzzer tab is introduced. These settings only apply if you connect a passive Buzzer to the UART IN port!

- *Enable*: if on is selected the buzzer will generate an alarm when a drone is detected.
- *Behavior*: there are two options: new and always. If set to always, the buzzer will make sound when a drone is detected (continuously). If set to new, the buzzer will only generate an alarm for the first 5 seconds that a **new** drone is detected. Drones not detected for over 30 minutes are considered as new again.

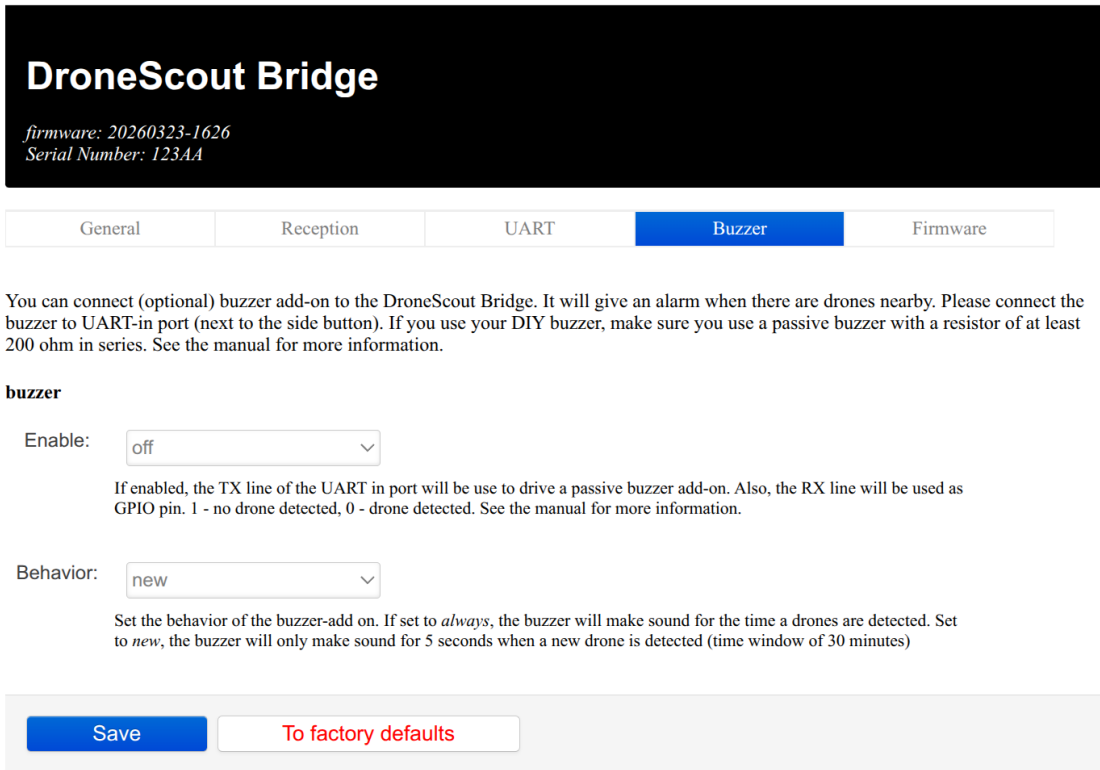


Figure 10 - configuration page – buzzer tab



3 FIRMWARE

In the firmware tab, you can upgrade the firmware of the DroneScout Bridge.

Firmware files can be found here: <https://dronescout.co/downloads/>

ds100/ds101/ds100 retail

History: https://download.bluemark.io/dronescout_bridge_history.txt

Direct link to latest firmware: <https://download.bluemark.io/dronescout/ds100.bin>

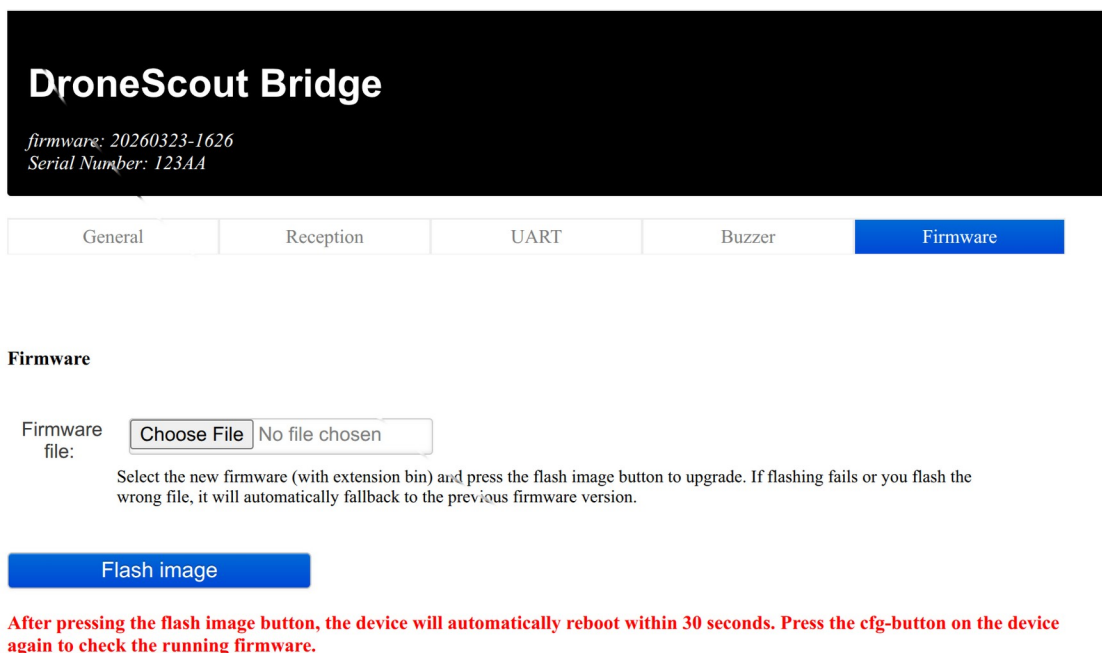
ds110/ds111/ds110retail

History: https://download.bluemark.io/dronescout_bridge_triple_band_history.txt

Direct link to latest firmware: <https://download.bluemark.io/dronescout/ds110.bin>

Upload the file and press Flash image to upload new firmware. Upgrading firmware has been tested with Chrome and Firefox. If upgrade fails, please try again or try another browser. Also make sure you use the correct firmware.

Note: do not try to flash firmware using the USB interface, it will permanently brick your DroneScout bridge device (because it uses encrypted flash with additional security measures).



DroneScout Bridge

firmware: 20260323-1626
Serial Number: 123AA

General	Reception	UART	Buzzer	Firmware
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Firmware

Firmware file: No file chosen

Select the new firmware (with extension bin) and press the flash image button to upgrade. If flashing fails or you flash the wrong file, it will automatically fallback to the previous firmware version.

After pressing the flash image button, the device will automatically reboot within 30 seconds. Press the cfg-button on the device again to check the running firmware.

Figure 11 - Firmware upgrade page



4 TROUBLESHOOTING

My phone does not detect the Bridge

Make sure the blue LED is on. Also, upgrade the Bridge firmware to the latest firmware and use factory default settings (Press the “to factory defaults” button). In some environments with a lot of nearby 2.4 GHz, the Bluetooth relay signal can be too weak. Or your mobile devices are too far away from the Bridge. In 20260329-1805 you can increase the relay transmit power to a higher value.

If I use the USB-A to USB-C adapter, DroneScout Bridge does not get power

There are multiple USB versions and connectors. Smartphones typically require USB3.0 cables to power devices like the bridge.

How can I increase the detection range?

The short answer is to use a better antenna for the ds100/ds100/ds110 retail. The antenna of the ds100 has 3 dBi gain (ds100/ds110 retail 5 dBi). Antennas with better gain will increase the detection range. As a rule of thumb, an increase of 6 dBi in gain will double the detection range.

My drone is not detected?

This can have different causes. If you are located in a country where RemoteID is not mandated, drones will not emit RemoteID. **Also DJI drones only emit RemoteID signals when it is airborne!** In addition, DJI drones (and other brands) use the drone location to determine if RemoteID broadcasts should be enabled. In addition, the drone could not broadcast any RemoteID signals at all. For instance, in the EU legacy drones don't need to broadcast this signal, if they fly outside urban areas. Drones with weight less than 250 gram typically don't have this RemoteID requirement. Also, DroneScout Bridge ds100/ds101 support only detection of RemoteID signals in the 2.4 GHz band. Some drone manufacturers like Skydio use the 5 GHz band for RemoteID signals. DJI drones typically broadcast signals in the 2.4 GHz, but in some (less common) cases, it can broadcast in the 5 GHz. Use the triple-band ds110 bridge to detect such drones.

The blue LED is off or flashing

In the latest firmware, a flashing blue LED, means that a drone is being detected. Also, it could mean that the bridge does not get sufficient power. If the bridge does not get power, please try a different USB cable (and different device like a laptop or power bank to power the bridge.)

Smartphones and power banks provide sufficient power. However if you use the bridge in an embedded solution, the power supply may not be powerful enough and the bridge won't boot. Also, if the power supply is too weak, in that case the LED will flicker. Solution: use a better power supply. In addition, make sure the configuration button is not pressed when the device boots up; it would prevent starting the firmware. Finally, if the configuration button is pressed during normal operation, it will go to configuration mode. Press it again to exit to normal mode.

My problem is not listed

Contact us for assistance (Chapter 7).



5 POWER CONSUMPTION PROFILE

In this section, the typical power consumption is shown for the DroneScout Bridge devices. Figure 11 shows the typical power consumption for the ds10x Bridge devices (2.4 GHz). The average power consumption is ~ 480 mW. In Figure 12, the typical power consumption for the triple band ds11x Bridge devices are shown. The average power consumption is ~ 580 mW.

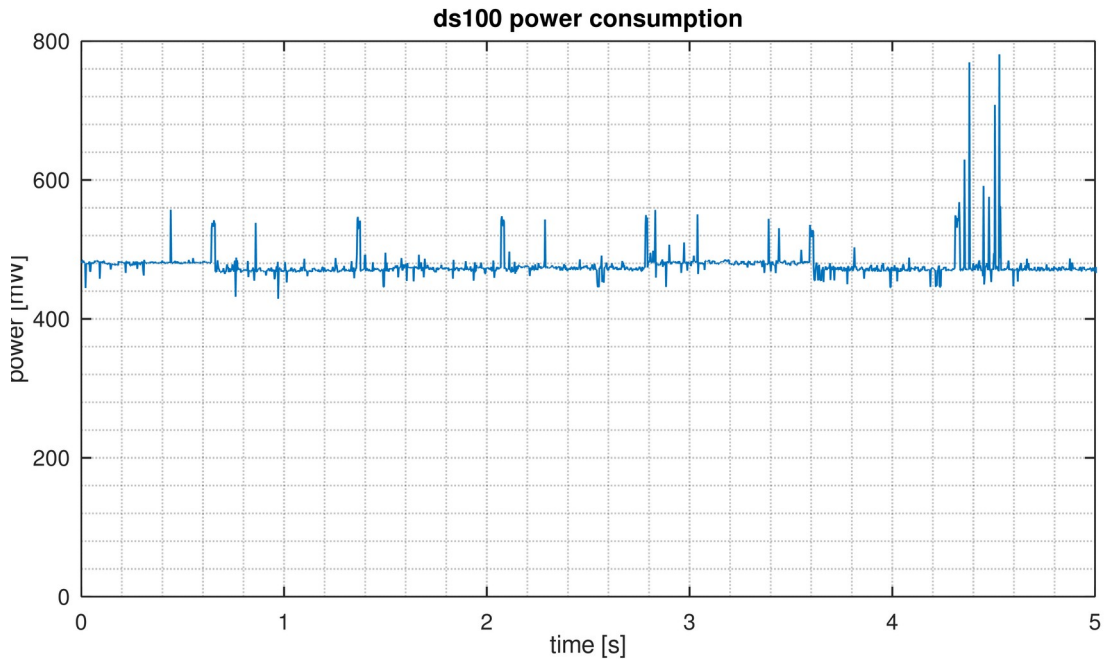


Figure 11 – Bridge ds10x power consumption graph

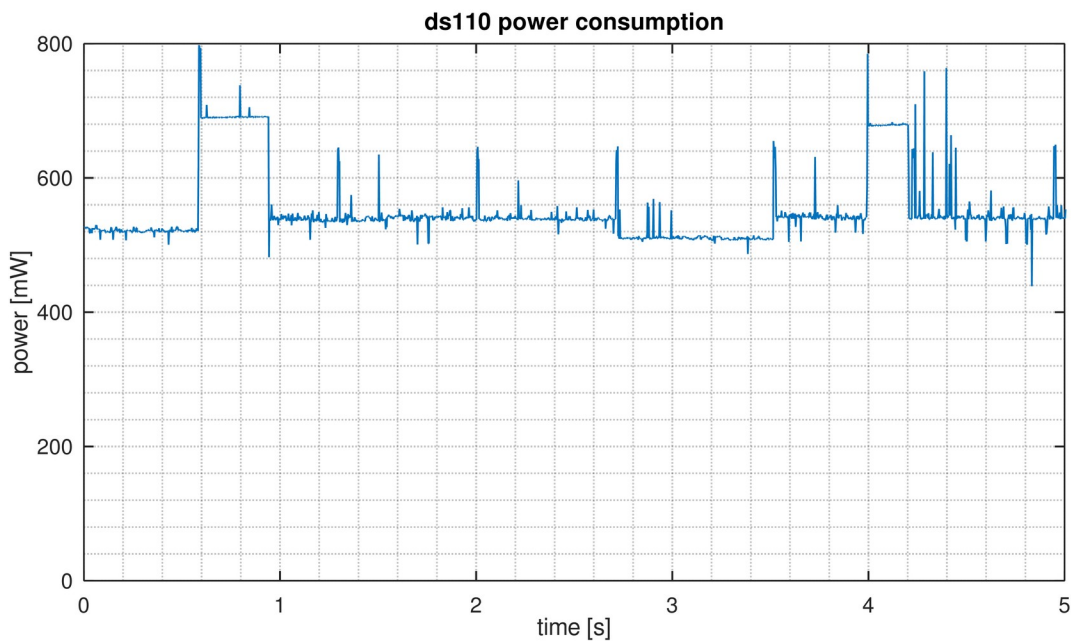


Figure 12 – Triple band Bridge ds11x power consumption graph



6 WARRANTY

The product has a two-year warranty period, starting at the date of receiving the product. Outside warranty are issues like crash damage, improper use, (extreme) weather conditions that damages the product. The product is eligible for future firmware updates as described in the section 2.2 firmware.

Warranty Service

Please email or call us first with a description of the problem. Typically, the customer is responsible for transportation costs to our office. For post-warranty cases contact us too; we will try to do our best to find a solution.



7 MORE INFORMATION

If you need more information, please contact us at info@bluemark.io or by phone: +31 53 711 2104.

All contact information can be found at the *DroneScout* contact page:
<https://dronescout.co/contact/>

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