



EAGLEEYE SENSE USER MANUAL

CONTENT

FCC STATEMENT	2
WARNING	2
INTRODUCTION	3
1. BASIC INFORMATION AND PRODUCT WORKING PRINCIPLE	3
1.1 Basic Information	3
1.2 Working Principle	3
2. TECHNICAL SPECIFICATIONS.....	4
3. DESIGN AND FEATURES	4
4. TAG	6
5. FWUPDATE APPLICATION.....	7
5.1 Installation of CP210x USB to UART Bridge Virtual COM Port (VCP) Driver.....	7
5.2 FwUpdate Application	7

FCC STATEMENT

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment should be installed and operated with a minimum distance of 20mm between the radiator and your body.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

WARNING

- The covers of these devices should not be opened except by authorized personnel.
- In case of any problem, Wipelot technical service team should be contacted.
- The steps in this document should be followed and no other action should be taken.
- Get help from Wipelot technical staff for installation as a project.

INTRODUCTION

This document contains the system test information of EagleEye Sense to help operating the device and to inform about the conditions that must be considered while using the unit.

1. BASIC INFORMATION AND PRODUCT WORKING PRINCIPLE

1.1 Basic Information

EagleEye Sense, which is the Wipelot Anchor, is the reader and transmitter unit of the Wipelot RTLS – IoT System. It redirects the data received from the tags in the coverage area to the remote port.

It allows to measure the Wipelot Tag's distance with sub-meter accuracy. Using this distance information, Wipelot RTLS system generates location information.

It scans the environment and communicates with the tags automatically.

The remote embedded software update feature ensures compatibility with future new developments.

1.2 Working Principle

The device is powered via the USB port.

Step 1) Insert the Device to the USB port of the computer, the device will receive automatic power. And for communication, perform the operations contained in Section 5.1.

Step 2) For the devices to work, they must communicate with Wipelot tags. The device's red LED starts to blink when it communicates with the tag.

Step 3) When the device accesses the Remote port (server), the green LED will start to light continuously. Before accessing the Remote port, the green LED blinks.

2. TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS	
Communication Frequency	2.4 GHz UWB Channel 3 (4.5 GHz, Bandwidth = 500 MHz)
Antenna Type	2.4 GHz → RF ANT 2.4 GHz Flat Patch Antenna UWB → UWB Chip Antenna
RF Power	2.4 GHz → 0 - 18 dBm UWB → -41.3dBm/MHz
Protocol	IEEE 802.15.4 IEEE 802.15.4 a
Encryption	128bit AES (Optional)
Locationing Method	TOF, RSSI
Distance	30 m diameter
Signal Capacity	100 signals per second
Firmware Update	Remote
Communication Interface	USB
Power Supply	5V DC from USB
Power Consumption	5V, max 400 mA
Dimensions (W x L x H)	67 x 53 x 12 mm
Weight	50 g
Operating Temperature	0°C - 60°C
Material	ABS
Certification	CE (EN 301 489-1, EN 302 065 RF, EN 300 328 RF, EN 62368-1)

3. DESIGN AND FEATURES

There are Wipelot logo and the red and green LED notification lights at the front of the device. The Notification lights stay under the surface and are not visible when the device is turned off. On the back side, there is a label containing only the information of this device.

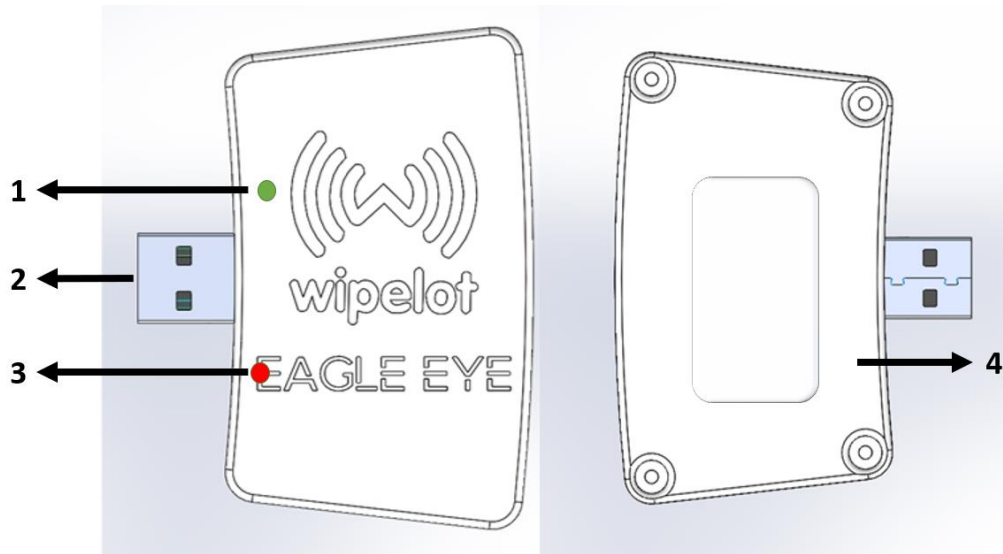


Figure 1

- 1 **GREEN LED** --- Continuously flashing LED light indicates that communication with the remote port has been established. If the LED is blinking, then it is not communicating with the Remote port.
- 2 **USB** --- USB is used for powering the EagleEye and for transmitting and exchanging data
- 3 **RED LED** --- When it blinks intermittently, it means that the device is communicating with UWB and receiving distance information.
- 4 **LABELS** --- They contain information about the device's model, serial number and anchor ID number.

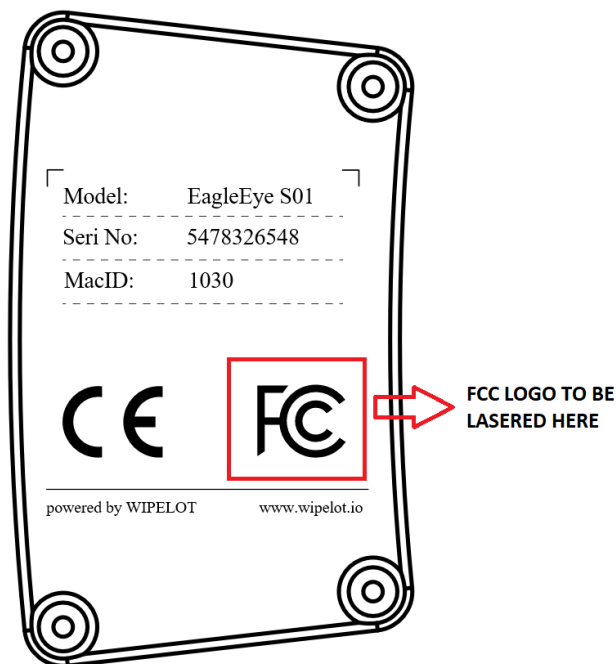


Figure 2

4. TAG



Figure 3

There are 2 LEDs, red and green, and two buttons, orange and blue, on the tag.

To turn on the device, hold down the blue button for 5 seconds. When the device is turned on, the two LEDs light up and the tag vibrates once.

When the device is on, a blink of Green LED means that it is TWR.

When the battery falls below 3500 millivolts, the red LED starts blinking. When it falls below 3400 millivolts, the device automatically shuts down.

In order to charge the device, the charging station must be placed on the surface with the arrow mark so that the LEDs point in the direction of the arrow. Also, it is necessary to plug in the adapter of the charging station. If the battery voltage falls below 3500 millivolts (LED turns red), insert the battery into the charger.

The listening mode is active for the first 30 seconds when the device is plugged for charging. Therefore, after the red LED blinks for 30 seconds, the device stops listening and the red LED lights up steadily.



Figure 4

To turn off the tag, hold down the blue button for 6 seconds, the green LED lights up continuously while the blue button is pressed. At the end of the 6th second, the red LED blinks and the tag vibrates once, immediately after this action, the blue button is pressed 6 times repeatedly.

5. FWUPDATE APPLICATION

5.1 Installation of CP210x USB to UART Bridge Virtual COM Port (VCP) Driver

From the files sent by Wipelot downloadable from <https://bit.ly/3LzZrsM>, the CP210x_Universal_Windows_Driver folder must be extracted to an available folder, i.e., desktop. In the Device Manager under Ports (COM & LPT1) tab right-click 'COM10' (COM number may differ) and select 'Update Driver', then click 'Browse my computer for driver software' and select extracted folder. Drivers will be installed.

5.2 FwUpdate Application

FwUpdate Application is an interface developed by Wipelot engineers to read the data incoming to anchor. This application is not used for production environments. From the files sent by Wipelot downloadable from <https://bit.ly/3LzZrsM>, the FwUpdate folder must be extracted to an available folder, i.e., desktop, and the file named FwUpdate in the folder must

be opened by double clicking on it. The Program does not require any downloads. By double-clicking FwUpdate.exe, the program will be executed. Under the 'Serial Port' tab select Com Port as COM10 (COM number may differ) and Baud Rate as 230400. Then tick 'New' and 'Service' in the below sections and 'Mobil' in the Filter section. Finally click 'Open' and the tags will appear on the screen. The distance data is displayed on the screen with an interval of 1 seconds.

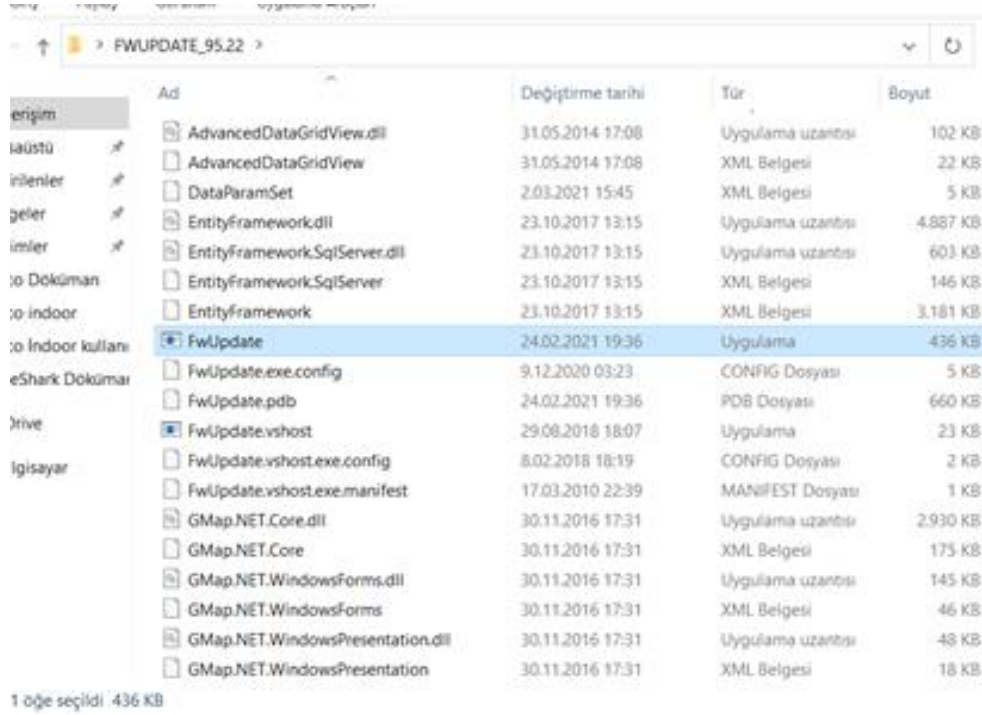


Figure 5

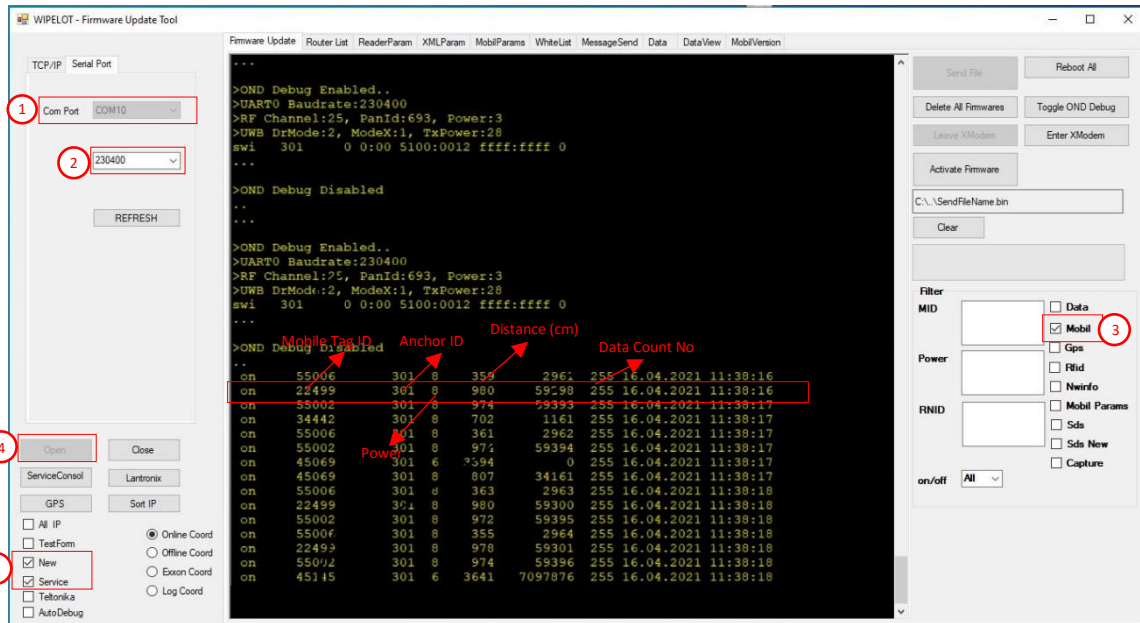


Figure 6

If there are more than one mobile tags in the environment, this section is normally used to filter by typing the Mobile ID in the filter field in the lower-right pane of the screen.

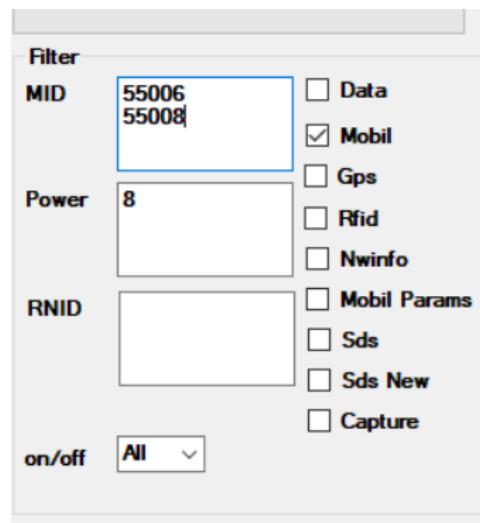


Figure 7

After these operations, the installation will be completed. The device can be used.

We have prepared our features that we have added to our code as video to try the channel switching event on the device. You can access the video from this link. <https://bit.ly/3LzZrsM>