sentrax

BLE (RSSI) Based Locator and Gateway Provides Proximity Location Tracking

VERSION 1.0

ZENIX LEN Configuration Guide

Contents

1. Introduction

1.1. Accessory List

1) 12V - 2A Power Supply
2) Ethernet Cable - Blue/Grey color (POE)
3) Mounting Screws - Mount product to wall
4) External Antenna

1.2. Hardware Description

1) Gateway Status LED
2) Gateway Power LED
3) POE Port
4) Reset Button
5) DC 12V IN

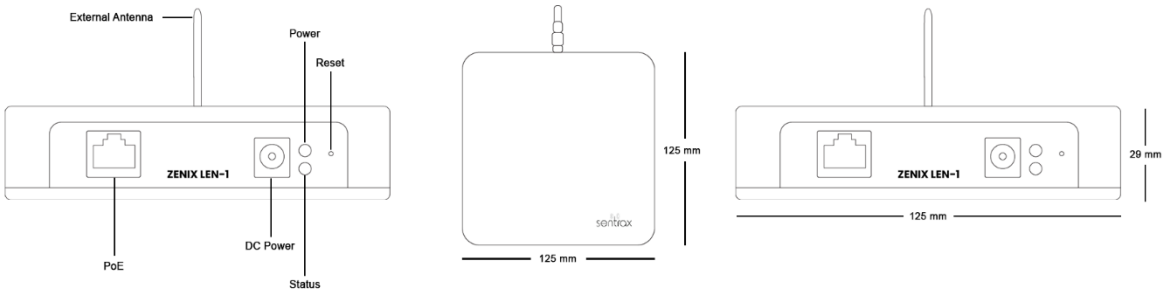

Figure 1: ZENIX LEN Diagram

1.3. Required Software

Below are the software names with links:

Software Name	Version	Download link
MQTT Fx	Any	MQTT Fx Software
Advance IP Scanner	Any	https://www.advanced-ip-scanner.com/

2. Hardware Network Installation

2.1. Power using 12 V Adapter

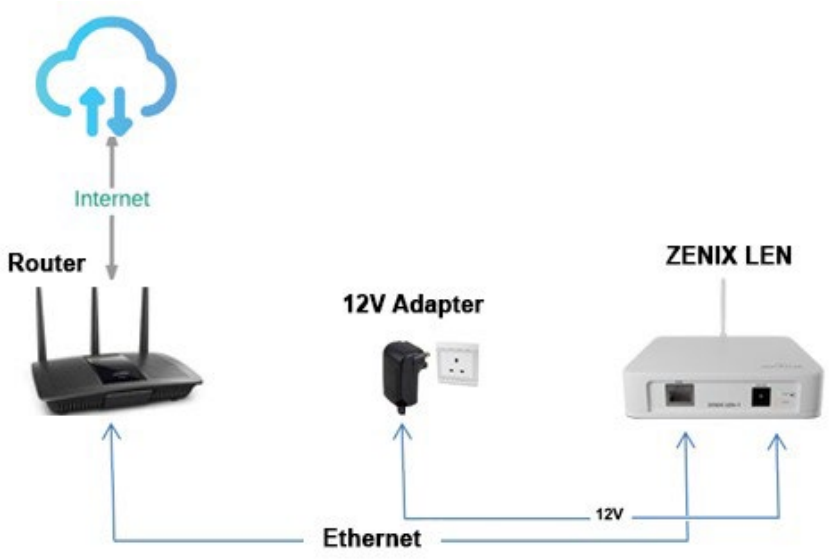

Figure 1: ZENIX LEN Wiring using LAN and Power 12V

2.2. POE Injector

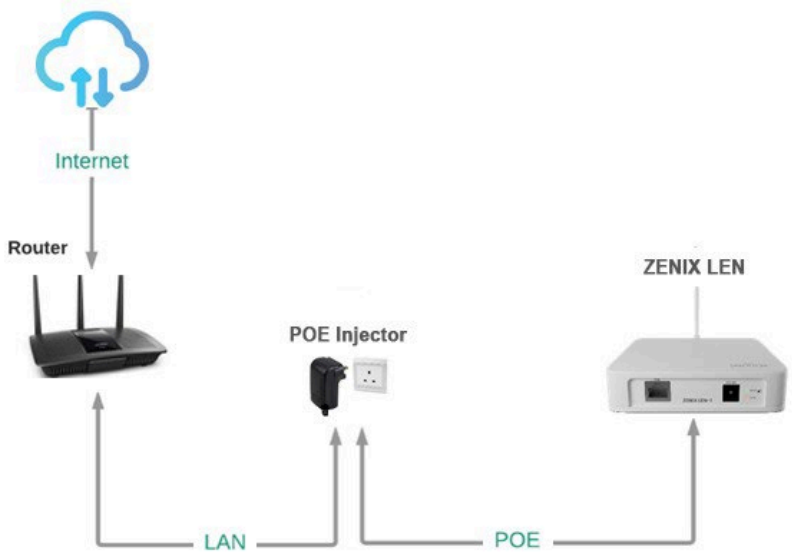

Figure 3: ZENIX LEN Wiring using POE Adapter

2.3. POE Switch

Always use a Gigabit PoE switch compliant with the IEEE 802.3af standard.

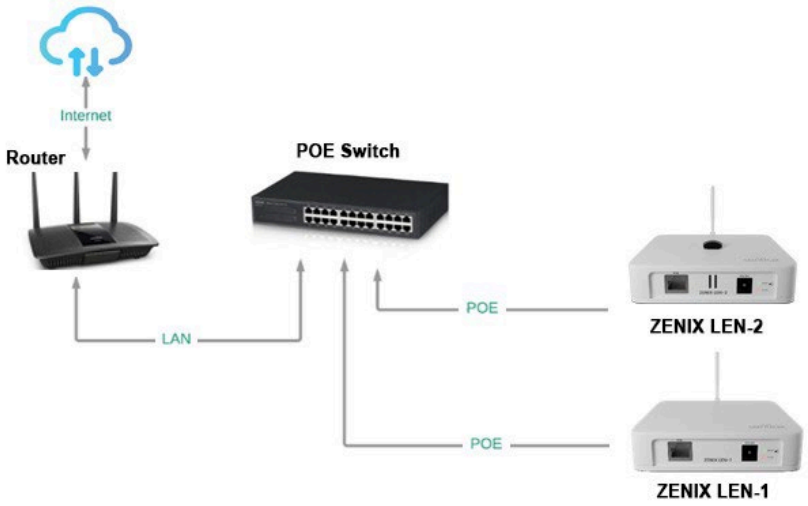

Figure 4: ZENIX LEN Wiring using Gigabit POE Switch

3. Device Status

Once the ZENIX LEN is powered on, the Power LED will light up, indicating the device is booting. wait 1 to 2 minutes for the boot process to be completed. The device's status can then be identified based on the status LED on the ZENIX LEN Scanner.

The status of the ZENIX LEN can be determined by observing the status LED as below:

Status LED (Green LED)	Rate	Description
OFF	OFF	System booting Up
Blinking	3s (ON), 3s (OFF)	Connecting to Internet
ON	ON	Connected

4. ZENIX LEN Configuration

4.1. Finding ZENIX LEN IP Address

- Note down your ZENIX LEN MAC Address. The MAC Address of ZENIX LEN is written at the back of the device

Figure 5: MAC Address

- Open Advanced IP Scanner Software.
- Click on the Scan Button.

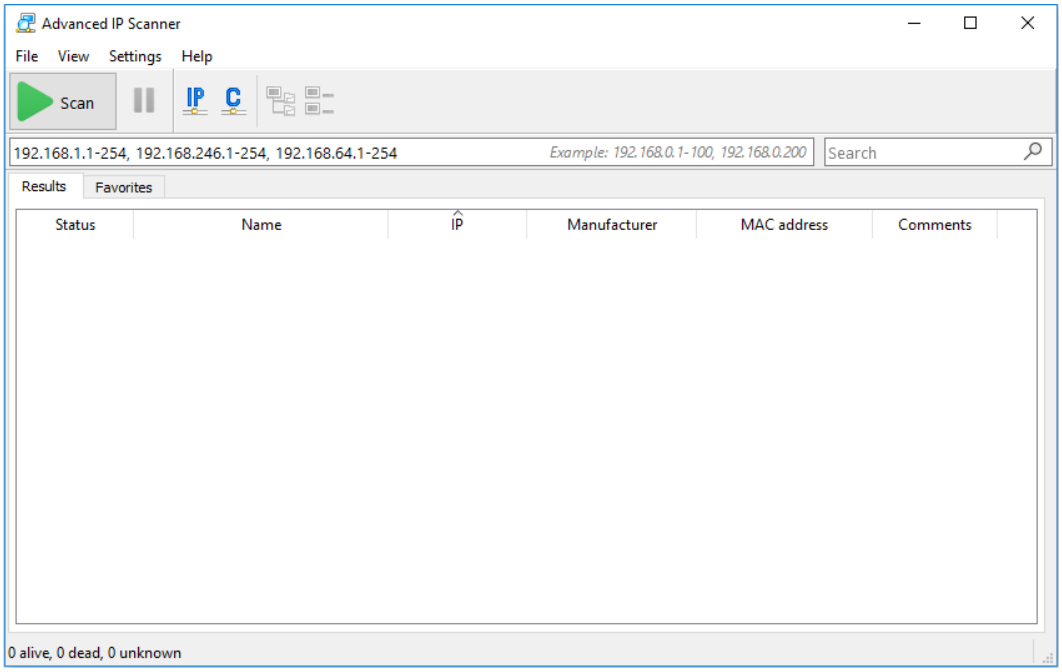

Figure 6: Advance IP Scanner Home Screen

- Upon a successful scan, locate your ZENIX LEN IP Address corresponding to your MAC Address.

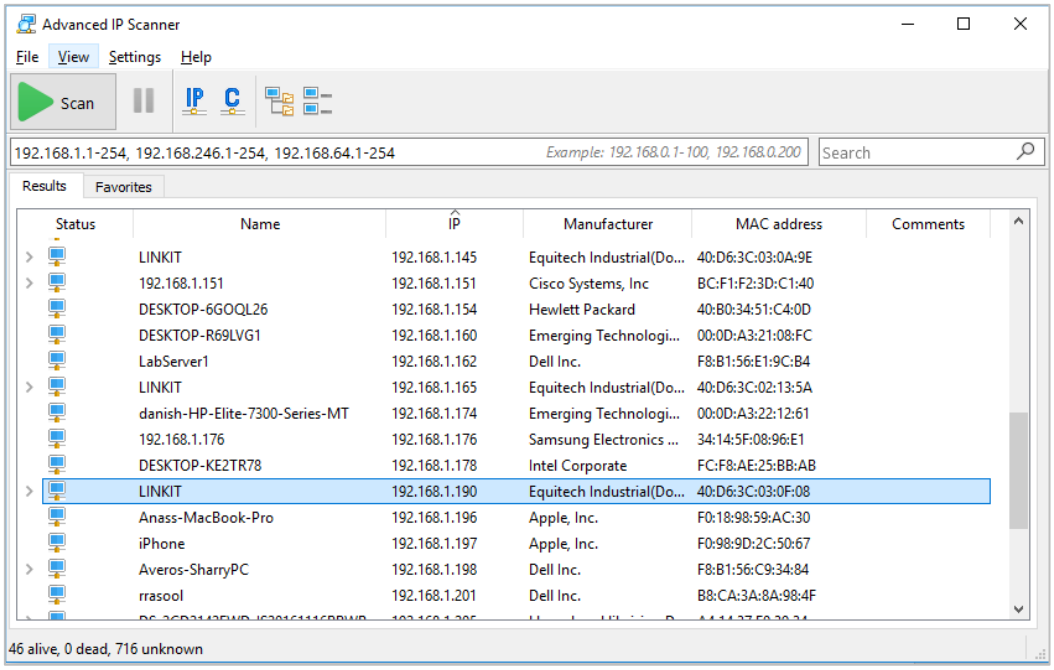

Figure 7: IP Address using Advance IP Scanner

- Access the **ZENIX LEN** Configuration page by entering the IP address into your browser. This action will redirect you to the device's Admin login page.

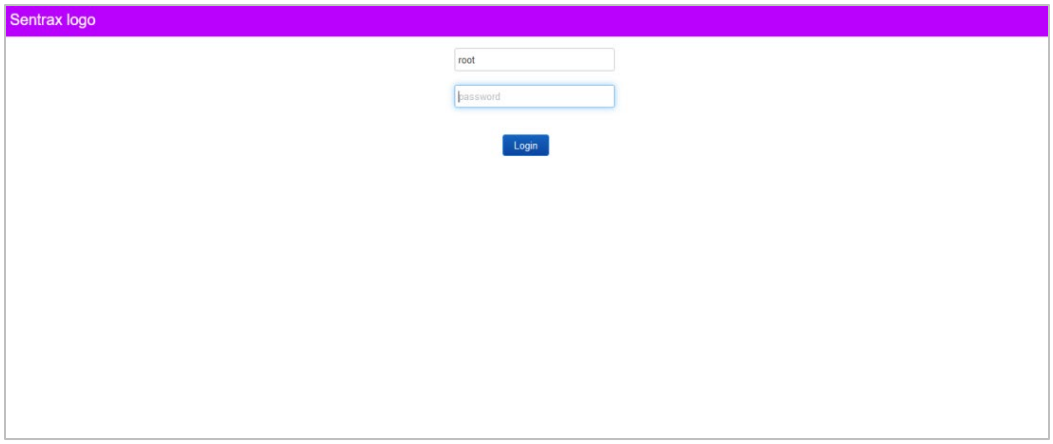

Figure 8: ZENIX LEN Admin Page

Enter the password (SentraxGateway1234) and click "Login". You will be directed to the Home Page as illustrated in the image below.

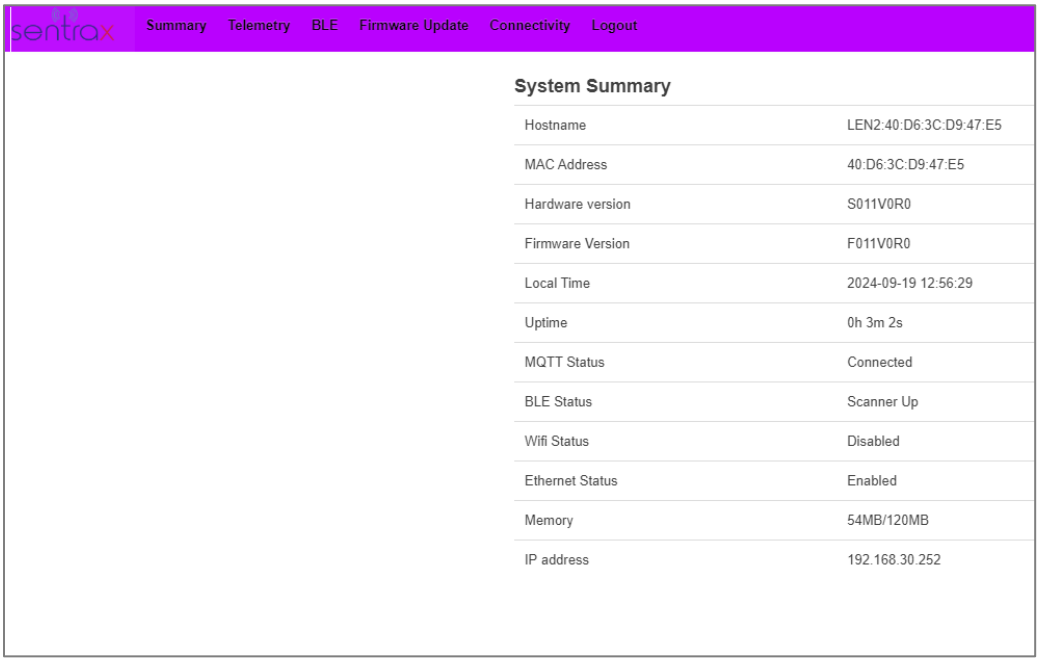

Figure 9: System Summary

4.2. Firmware Update

Automatic Update:

The main page provides information on the current firmware version installed. Refer to the image below to identify the current firmware version displayed on the main page.

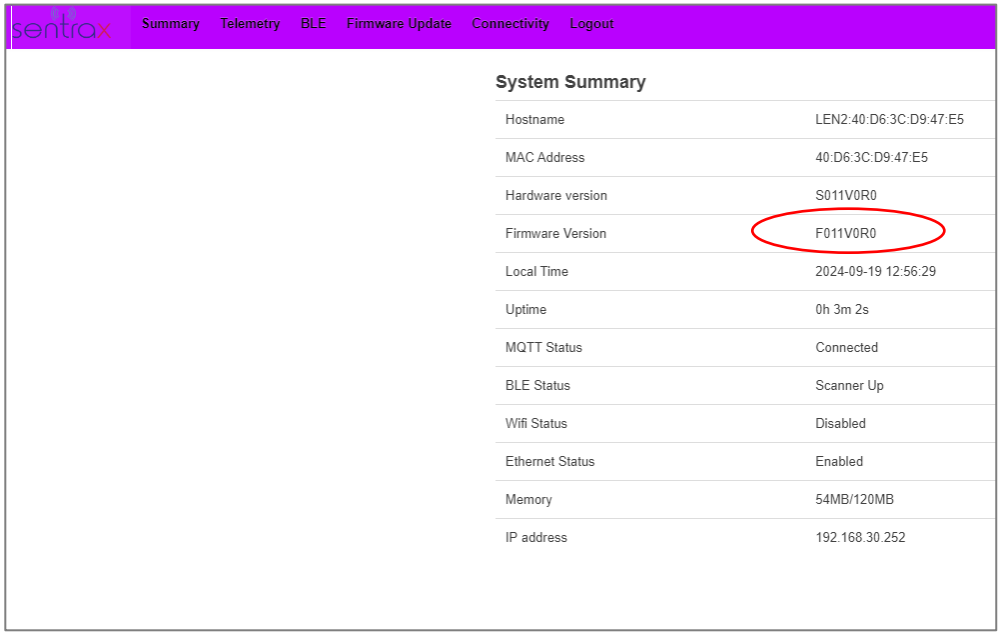

Figure 10: Firmware Version Update

Click on Firmware Update from the Main Menu to navigate to the firmware update page. If a new firmware update is available, the button will be visible as shown in the above image. Click this button to initiate the firmware update.

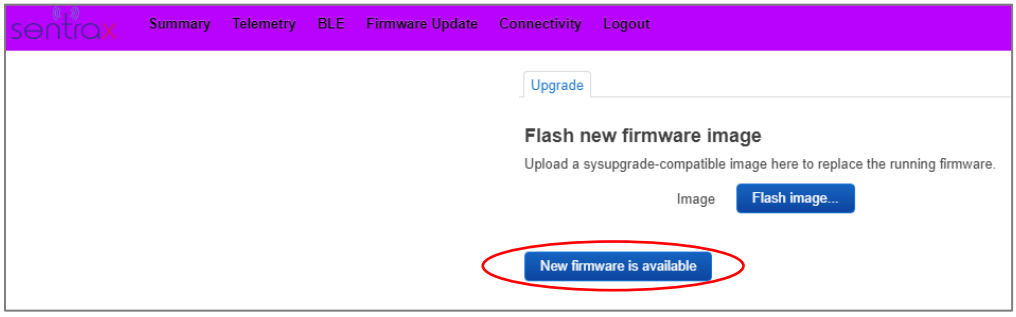

Figure 11: New Firmware is available

The update may take between 15 to 20 minutes to complete depending upon the internet speed.

Important note: It is recommended to have a stable internet connection and stable power-supply during the update procedure.

After 15 minutes, refresh the firmware update tab and you will be directed to Login-in page. Re-enter your login credentials and navigate back to the firmware update tab.

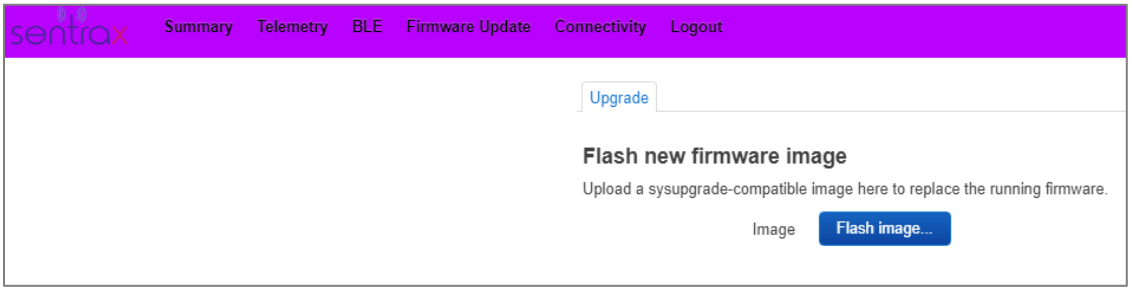

Figure 12: Flash New firmware image

After a successful update, the "New firmware is available" button will disappear as shown in the above image. If the page shows problems in loading after refreshing, please wait for a few additional minutes and then try again.

Verify the updated firmware version on the home page. Reboot the device by unplugging and re plugging in the power supply (optional).

Manual Update:

To manually update by uploading the firmware file, kindly reach out to sales@sentrax.com to obtain the latest firmware file and a comprehensive guide on the manual firmware upload process.

Note:

Kindly uncheck all the messages displayed at the time of firmware update as seen in the image below.

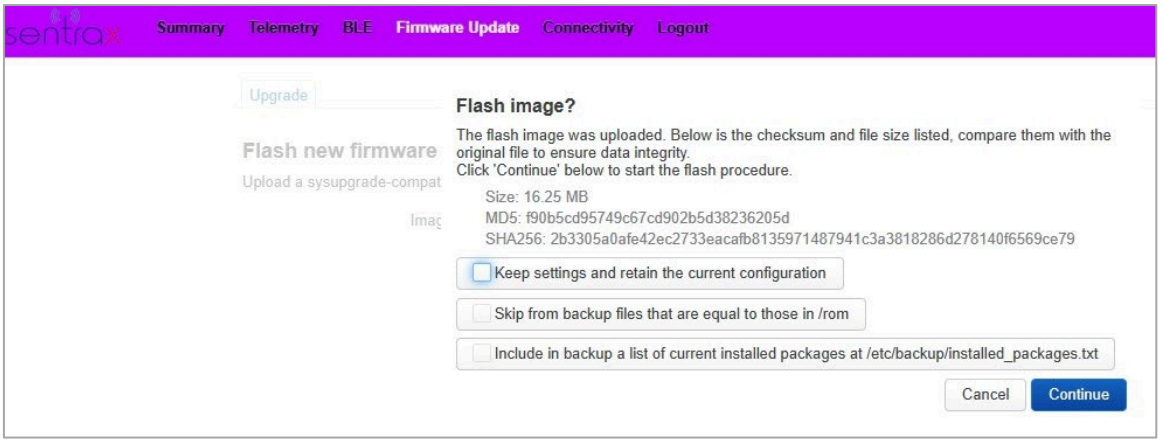

Figure: 13

4.3. MQTT Configuration

After Login, Click on **Telemetry** from the options on the top to change the following setting as per your requirements:

- **MQTT Server:** Address of MQTT server
- **Client Id:** Device Floor ID.
- **MQTT Username:** Username of MQTT server. If the MQTT server does not have a username leave it blank.
- **MQTT Password:** Password of MQTT server. If the MQTT server does not have a password leave it blank. **MQTT Topic:** Topic on which data will be posted
- **Data Posting Rate:** Interval between two consecutive data
- **Data Alive Ping:** Device Alive message rate

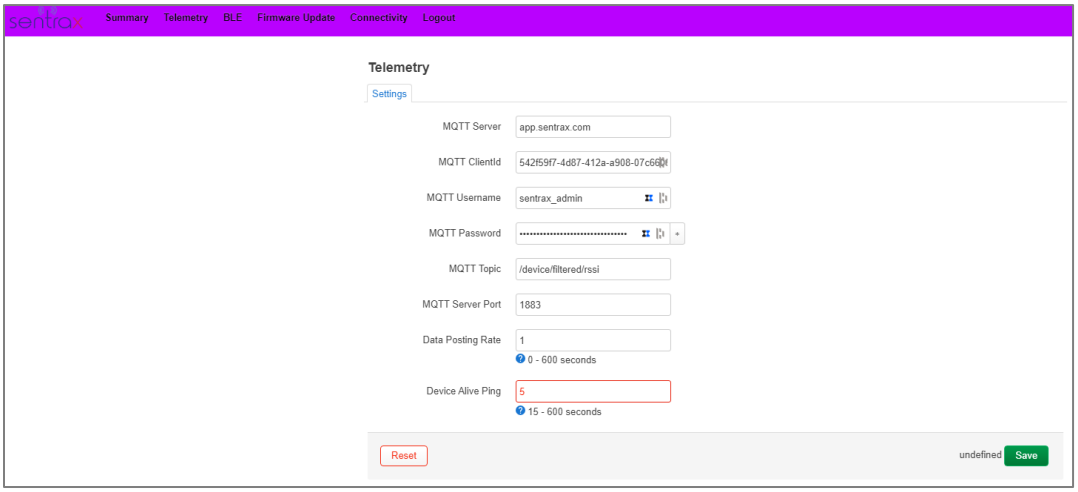

Figure 14: MQTT Configurations

4.4. BLE Configuration

Click on **BLE** tab from the taskbar to change the following BLE setting as per your requirements:

- **Scan Window:** The duration during which the device listens for advertising packets from other BLE devices.
- **Scan Interval:** The total time between the start of one scan window and the start of the next, including the listening and idle time.
- **Antenna**: You can choose between an internal or external antenna based on your BLE range requirements. By default, the internal antenna is selected in the LEN device.

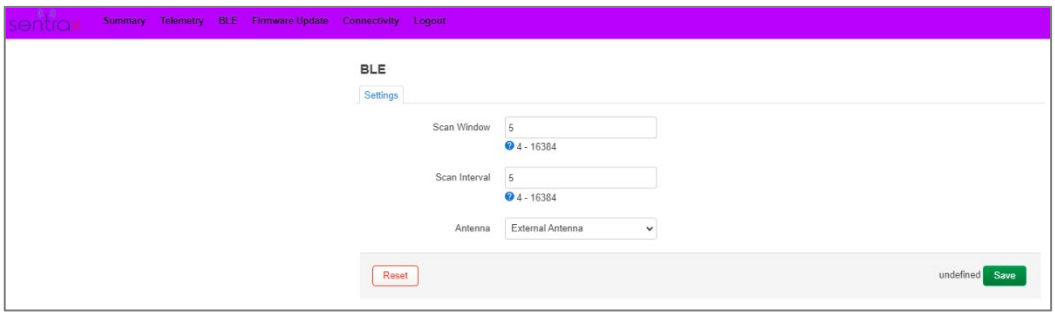

Figure 15: Filtering Configuration

4.5. Wi-Fi Connectivity - Preparation Steps

Power the ZENIX LEN using the provided 12V power adapter. Please wait until the LEN access point is visible. The format of this access point will be 'LEN2_' followed by the last 6 digits of the MAC address. For more clarity, refer to Figure-15.

Figure-16: Wi-Fi Connectivity

Connect your Windows laptop to the LEN access point using the following password:
Password: 12345678

After a successful connection, enter '192.168.1.1' in the web browser. Use the default login credentials (Password: SentraxGateway1234) to access the configuration page. Navigate the 'Connectivity' option; refer to Figure-16 for further clarity.

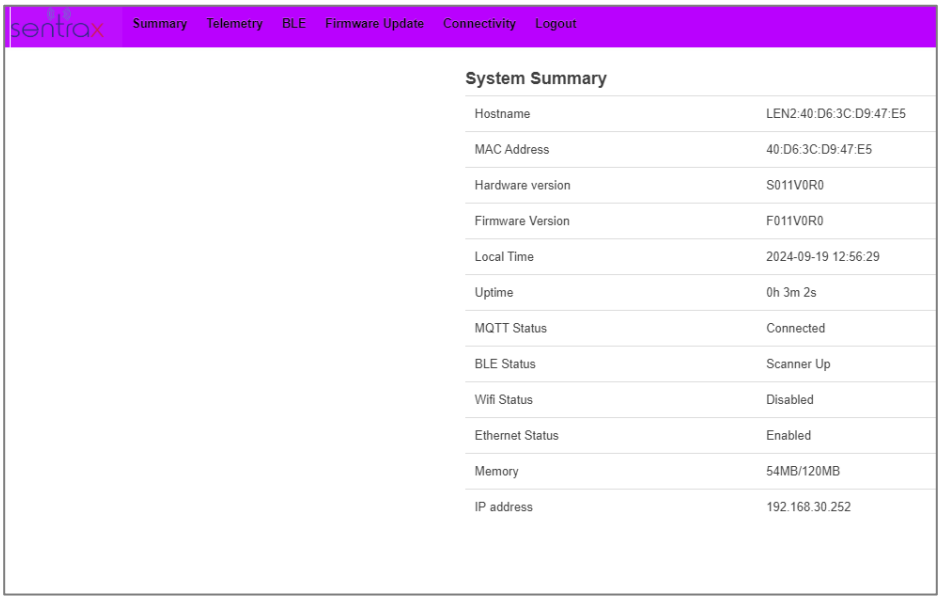

Figure-17

Navigate to the 'Connectivity' tab for network connectivity and configuration; refer to Figure-17 for additional clarity.

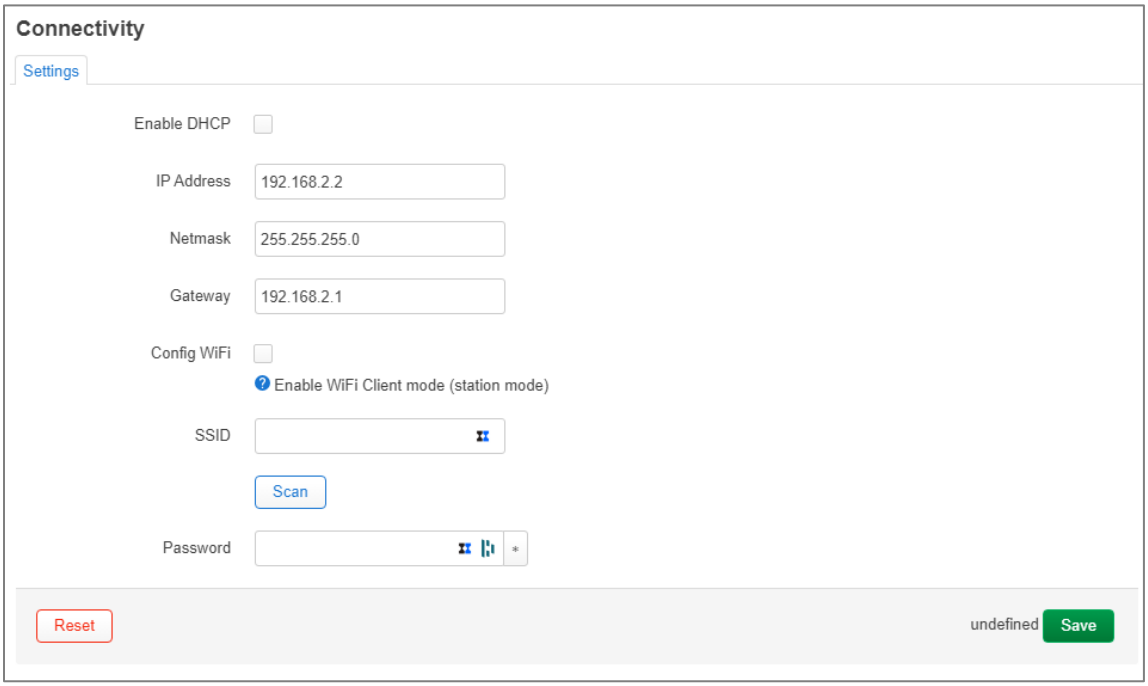

Figure-18

First, enable the 'Config Wi-Fi' checkbox, and then perform a 'Scan' for available networks. Connect with a Wi-Fi network of your choice using its credentials and then 'Save' the configuration settings. For further clarity, refer to Figure-18.

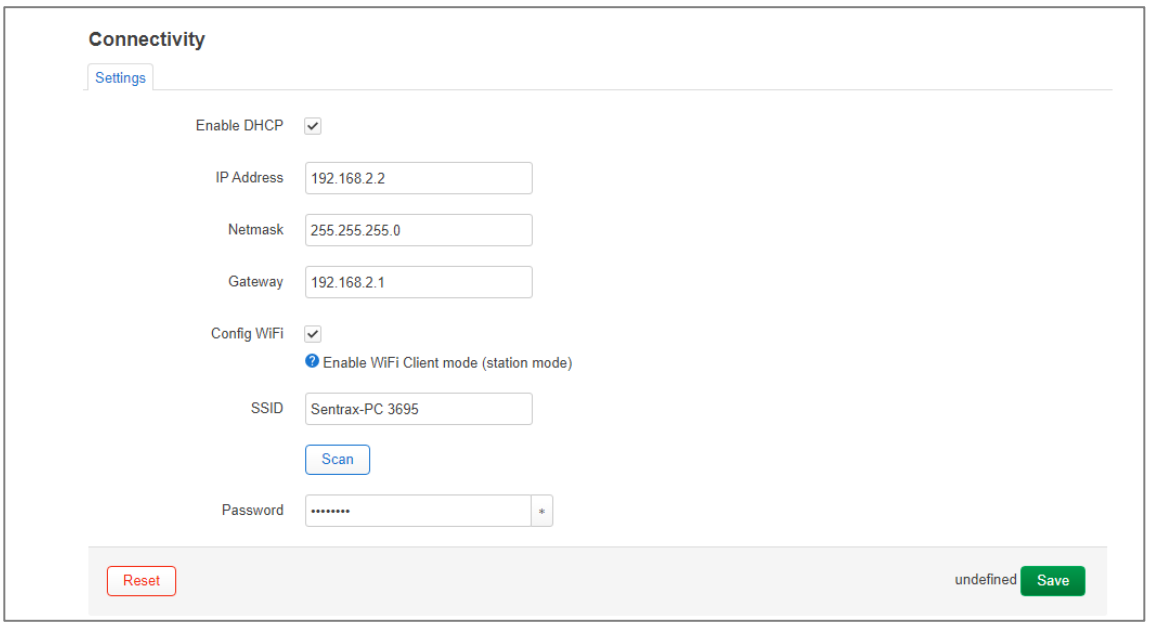

Figure: -19

Wait for a few minutes to allow device to connect to the Wi-Fi, then open 'Advanced IP Scanner' and run scan to find the IP address assigned to the device.

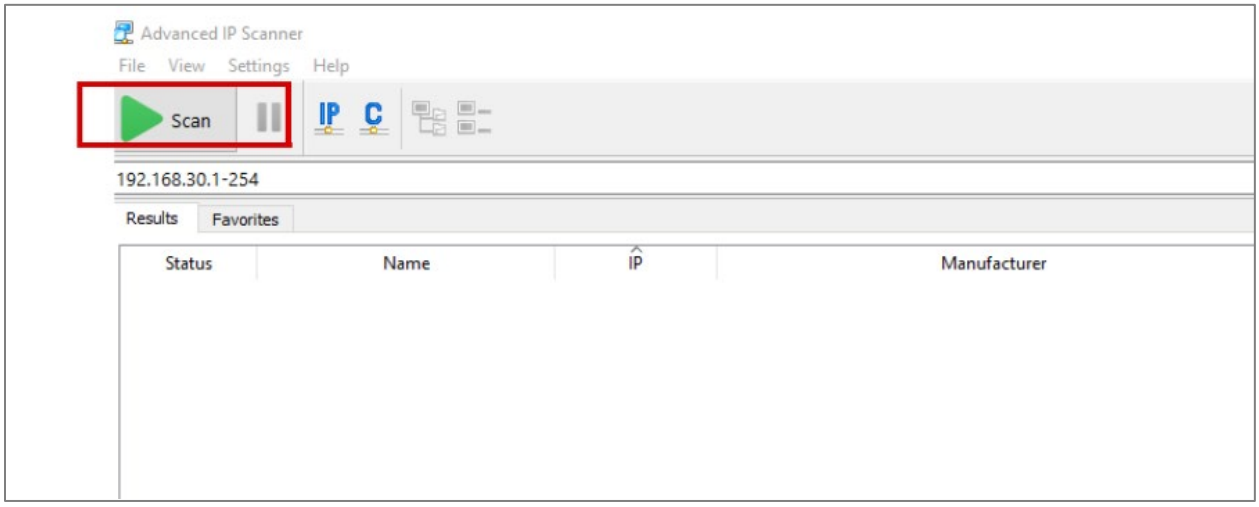

Figure: 20

Pls note that when the device is connected to Wi-Fi, the last two characters of the MAC address are decremented by 1, e.g. if the original MAC Address is 40:D6:3C:D9:47:E5, it will be changed to 40:D6:3C:D9:47:E4.

After the scanning period has elapsed, Enter the updated MAC address in the search bar on the top right-hand side and find the IP assigned to the device as shown in the image below.

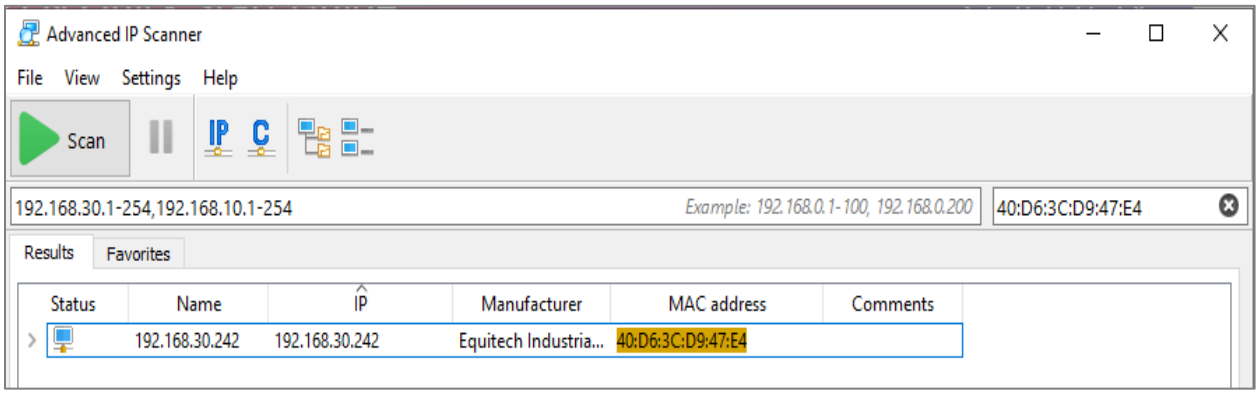

Figure 21

Access the **ZENIX LEN** Configuration page by entering the IP address into your browser. This action will redirect you to the device's Admin login page, where you can configure device.

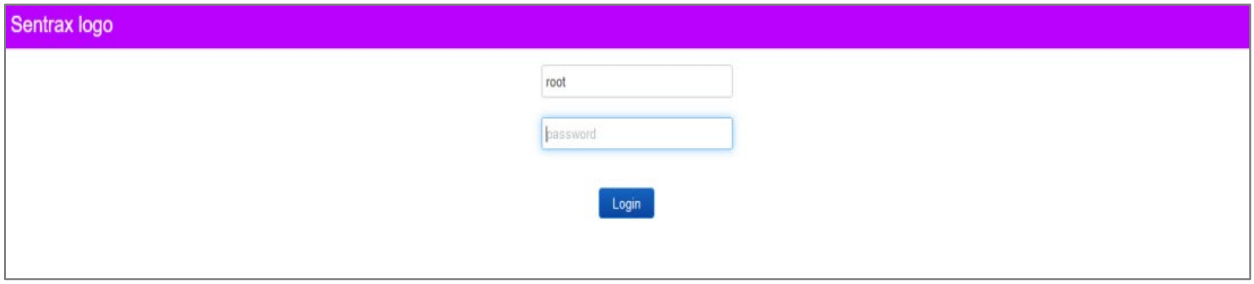

Figure 22

Note: *The priority network for LEN will always be Ethernet. In the absence of Ethernet availability, if the device Wi-Fi settings were configured, LEN will automatically switch to Wi-Fi.*

5. Data Packet

The packet format for the beacon stream received by ZENIX LEN Gateway through MQTT is in

following format:

Packet Body (JSON):

```
{
  "mac" : "40D63CD947E5",
  "v" : "F011V0R1",
  "beacon_data" : [ {
    "beacon_mac" : "C5C3896FF283",
    "pdu_data" : [ "19020106020A001216ABFE40000A0B520001C5C3896FF283300BB7", "0D0C09426561636F6E582050726FB8" ]
  }, {
    "beacon_mac" : "18E82948F51E",
    "pdu_data" : [ "1A0201061106E568F2C45FE5DEA0104CD81AC81A4E05040855434BB3", "1209162A2518E82948F51D07161820C0A81E02B3",
"1A0201061106E568F2C45FE5DEA0104CD81AC81A4E05040855434BB6", "1209162A2518E82948F51D07161820C0A81E02B6",
"1A0201061106E568F2C45FE5DEA0104CD81AC81A4E05040855434BB3", "1A0201061106E568F2C45FE5DEA0104CD81AC81A4E05040855434BB6",
"1209162A2518E82948F51D07161820C0A81E02B7" ]
  }, {
    "beacon_mac" : "3867D8F2E913",
    "pdu_data" : [ "1F1E16F3FE4A172351595A4B1132C2E6C7B62900BC3951380E82E7E797BEE5BBC3",
"1F1E16F3FE4A172351595A4B1132C2E6C7B62900BC3951380E82E7E797BEE5BBB7", "1F1E16F3FE4A172351595A4B1132C2E6C7B62900BC3951380E82E7E797BEE5BBC3",
"1F1E16F3FE4A172351595A4B1132C2E6C7B62900BC3951380E82E7E797BEE5BBC3", "00C3" ]
  }, {
    "beacon_mac" : "EE34764DE88E",
    "pdu_data" : [ "1F1EFF410BEE34764DE88E2110000004A022960000000000000000F0000000BA",
"1E0201061AFF4C000215DC59C0F2FCAE0F11EEF5E5060242AC120BB80BC9C4B5", "1E0201061AFF4C000215DC59C0F2FCAE0F11EEF5E5060242AC120BB80BC9C4BA" ]
  }, {
    "beacon_mac" : "D4A44DD43654",
    "pdu_data" : [ "1F1EFF410BD4A44DD436542110000004A022960000000000000F000F0000000B0",
"1E0201061AFF4C0002151615E74FF4E1024884F5D10BA0BEC18C0BB80BB9C4B9", "1E0201061AFF4C0002151615E74FF4E1024884F5D10BA0BEC18C0BB80BB9C4B1" ]
  }, {
    "beacon_mac" : "F2525C789DCE",
    "pdu_data" : [ "19020106020A001216ABFE40000A0B780001F2525C789DCE300BBB", "0D0C09426561636F6E582050726FBB" ]
  }, {
    "beacon_mac" : "C3AB9A29EB55",
    "pdu_data" : [ "1E0201061AFF4C00021556EF1F00D8A84D5C8B371E20375F2AE807D007D9C5C0",
"1E020A001A16ABFE50C50A56EF1F00D8A84D5C8B371E20375F2AE807D007D9C2" ]
  } ]
}
```


Below are the parameter definitions for the data packet mentioned above.

Parameter	Value	Info
mac	XXXXXXXXXXXX	Gateway MAC Address
v	F000V0.0.0	Firmware Version of Gateway
beacon_data	{...}	Beacon data Information
Beacon_mac	XXXXXXXXXXXX	Beacon Mac Address
pdu_data	[XXX…,XXX…]	Pdu Data from different data packets of the Beacon

Note:

The PDU data sent from the beacons can be easily parsed using different data packets decoders like ibeacon, eddystone UID, TLM and sbeacon decoders. Kindly reach out to sales@sentrax.com if you have any issues regarding pdu data parsing.

Disclaimer:

This guide is intended for informational purposes only. If in doubt at any stage of the installation or operation of the locator/gateway always consult Sentrax's authorized dealer, distributor, or get in touch directly with Sentrax GmbH.

Given that Sentrax will continuously improve and develop the product, changes may be made to the information in this manual at any time without any obligation to notify any person of any such revisions or changes. Sentrax will make all possible efforts to secure the accuracy and integrity of this manual.

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