

Figure 5-24

#### 5.4.3 Diagnostic & Records

- To access Diagnostic & Records, tap the corresponding icon on the main screen. This section allows user to test the Hub & VibraLink Solo connection to ensure proper communication. User can also check the Test Reading for real-time sensor data, such as frequency and temperature. Additionally, the Records option provides access to past diagnostic logs and performance data. Use these tools to monitor and troubleshoot the node's operation effectively.

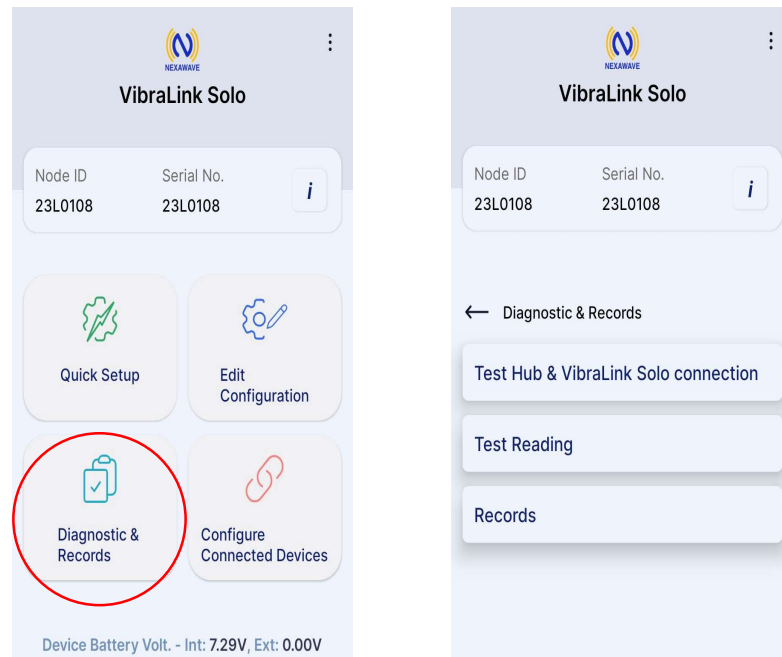


Figure 5-25

- To begin testing the connection between the **VibraLink Solo** and **Hub**, tap on **Test Hub & VibraLink Solo Connection** under the **Diagnostic & Records** section. This will initiate the test process to check the connection between the two devices. Once you tap Start Test, the system will test the connection between the VibraLink Solo and the Hub. The RSSI, dBm, and  $\mu\text{W}$  values for both the VibraLink Solo and the Hub will be displayed. The Test Packet Status will show the real-time progress of the test, including the number of packets received and the pass/fail status.
- If the test is successful, you will see a GOOD to Go! message. If the test fails, you can tap Test Again to retry the process. To stop the test at any time, tap Stop Test.

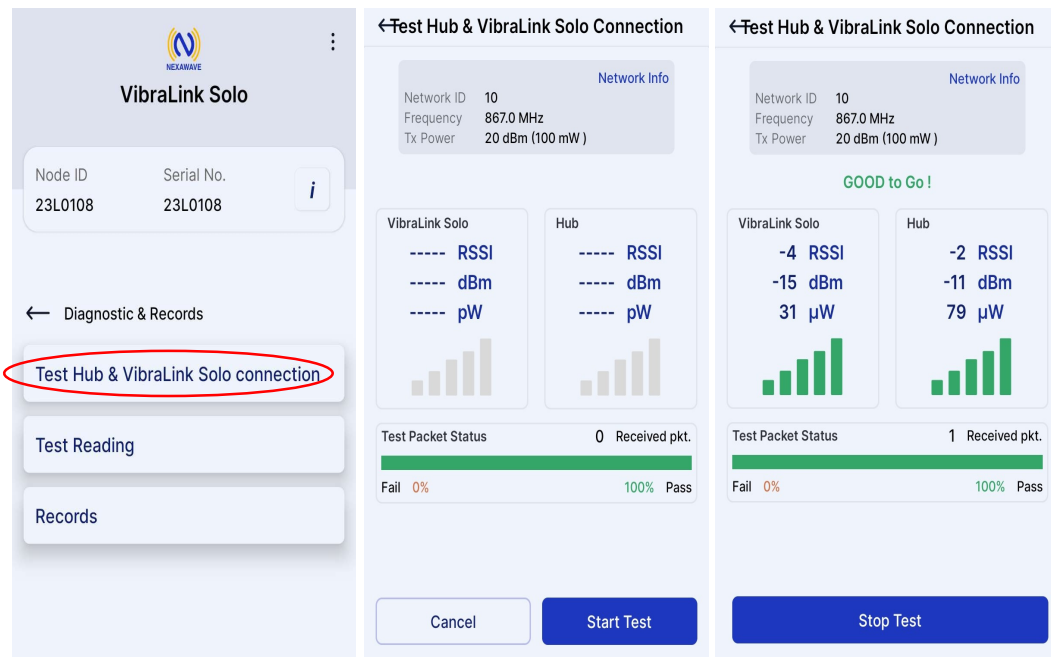


Figure 5-26

- To begin the **Test Reading** process on the VibraLink Solo, start by navigating to the **Diagnostic & Records** section from the main screen of the app. Once there, tap on **Test Reading** to open the test parameters. The **Test Reading** screen will display information such as **Frequency (Hz)**, **Temperature (°C)**, **Noise (Max 1 Hz)**, and other relevant readings. These values will update with the current data being monitored by the device.
- If you wish to take a new reading, simply tap on the **"Take Reading"** button. This will capture the latest values for frequency, temperature, and any noise associated with the device. If you need to stop the test at any time, you can press the **"Stop Reading"** button.
- For users looking for additional configurations, the **"Advance Settings"** button allows for more customization. Once you have completed the reading and confirmed the data, you can save it by tapping **"Save"**.

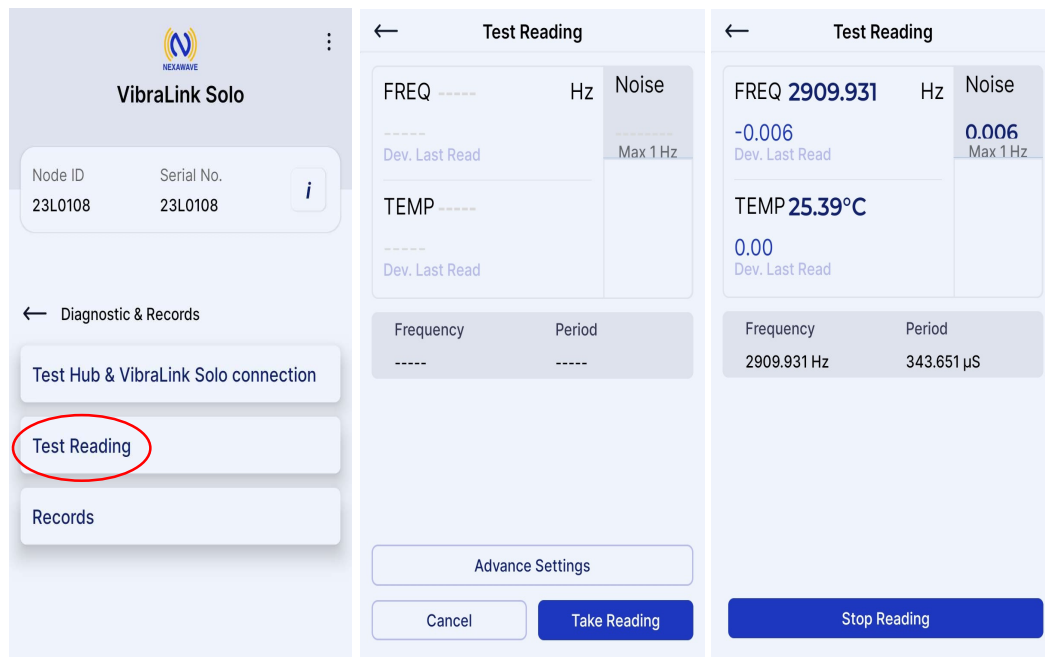


Figure 5-27

- For the **Records** section after clicking the "Records" button, you will see the "Download" tab in the application. Under this tab, you'll be able to view the number of records available for download and upload. The number of records since the last download and the number since the last upload will be displayed as indicated in the image.
- You can use the **Refresh** button to update the displayed data.
- To download the available records, click the **Download Records** button located at the bottom of the screen. This will initiate the download process for the stored records.

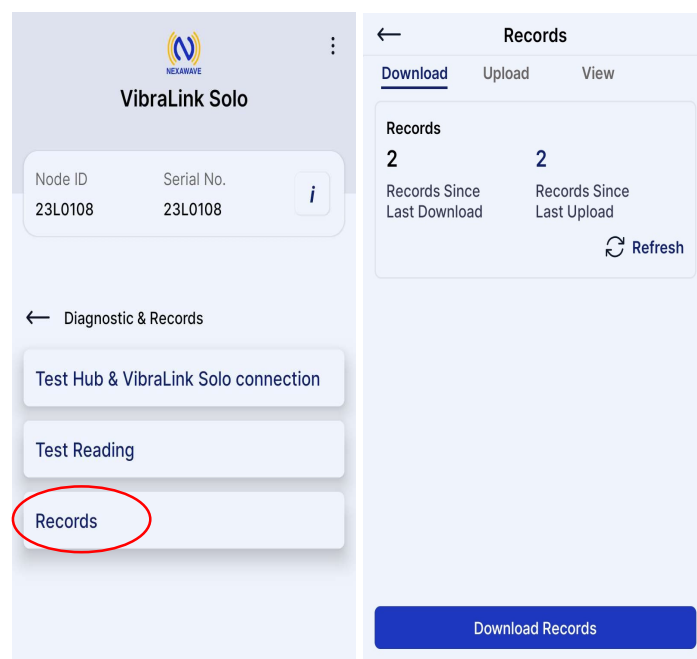


Figure 5-28

- To upload records, go to the **Records** section on the VibraLink Solo app and tap the **Upload** tab. Enter the **Server IP Address**, **Port**, **Username**, and **Password** in the **Server Settings** section. Then, select the files you want to upload from the **Select Files** section. Tap **Proceed** to start the upload, and wait for the confirmation message. You can choose to save the settings or cancel the process at any time.

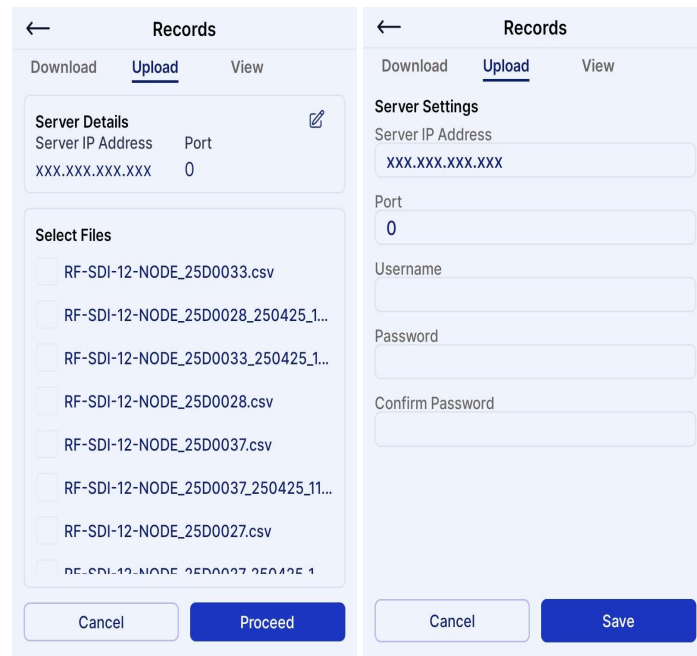


Figure 5-29

- The "View" section of the VibraLink Solo interface allows users to access and visualize the recorded data from the device. It provides a detailed overview of the data within a specific date and time range, allowing users to track parameters like frequency (Hz) and battery voltage (BATTV). The data is presented in a table format, where each entry shows the exact time and corresponding values for the selected parameter. Additionally, users can view the data graphically, with the option to display it over the selected time range, providing a clear visual representation of the readings. This feature enables easy analysis of trends and fluctuations in the monitored data. Users can also refresh the data view to ensure they are seeing the most up-to-date information.

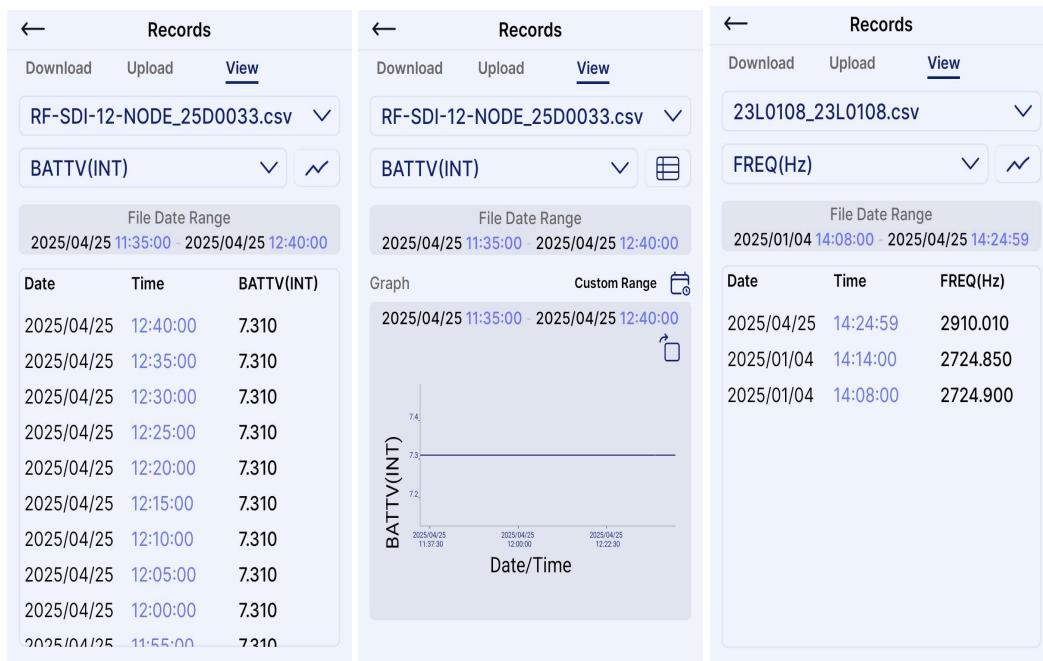


Figure 5-30

#### 5.4.4 Configure Connected Devices

- The "Configure Connected Devices" section of the VibraLink Solo app allows users to manage and configure devices connected to the system. The map view in this section provides a visual representation of the device's location, helping users quickly identify where each device is located. In the next screen, users can select a specific device, such as 23L0108, 24E0072, or 23K0065, from a list of available devices. This feature facilitates easy management of multiple devices, ensuring smooth operation and connectivity. The option to "View on map" provides an intuitive interface for tracking and configuring the devices as needed, ensuring they are properly set up for data collection and monitoring.

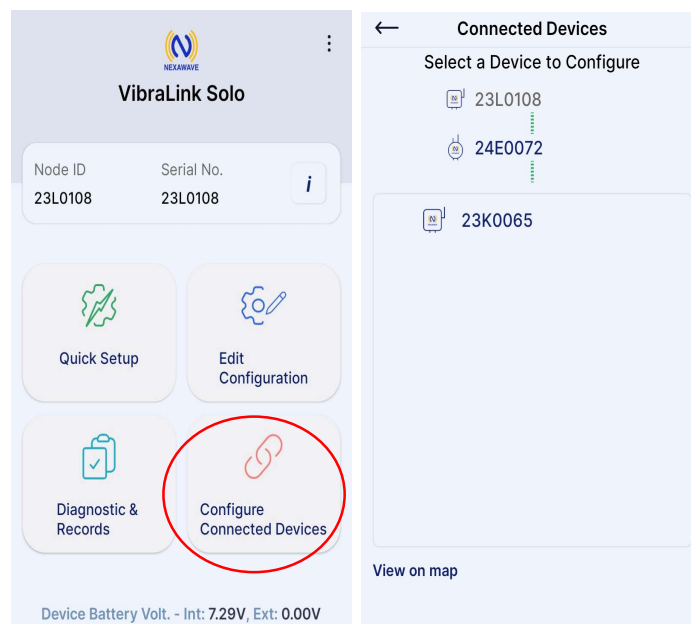


Figure 5-31

- After selecting the "HUB" device from the connected devices list, users can view its information and access "System Setup" to configure logging parameters, device date and time synchronization, and optionally erase the gateway memory, which permanently deletes stored records and settings. Changes are applied by tapping "Save," and users can return to the device list via "Back to Connected Devices," providing comprehensive control over the Hub's operation.

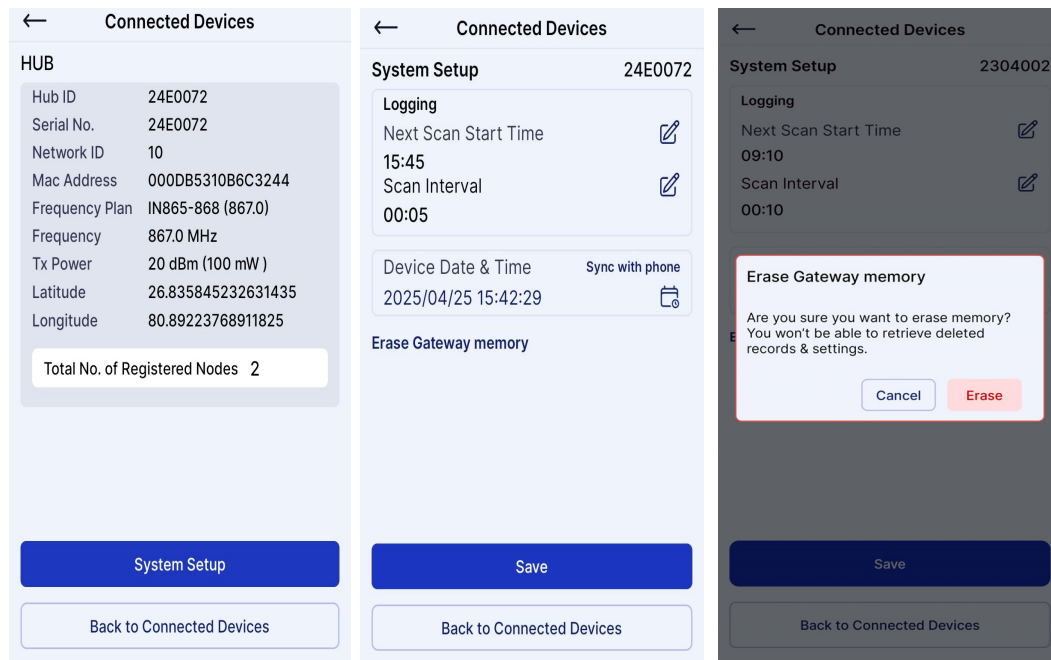


Figure 5-32

#### Re-configuration other nodes in the same network via Node:

- In the **Connected Devices** section of the VibraLink app, users can configure and manage other nodes connected within the same network. To configure a different node, simply choose the desired node from the list of connected devices. Once selected, you will see a dropdown menu where you can choose the **Chat Duration** for the session. This option allows you to select a duration ranging from 1 to 5 minutes, depending on your preference. After selecting the duration, click on the **Get Appointment** tab to establish a live connection with the chosen node. This will initiate a real-time session, and the **Appointment Status** will show as **Booked** with a countdown timer indicating the remaining time before the session starts.

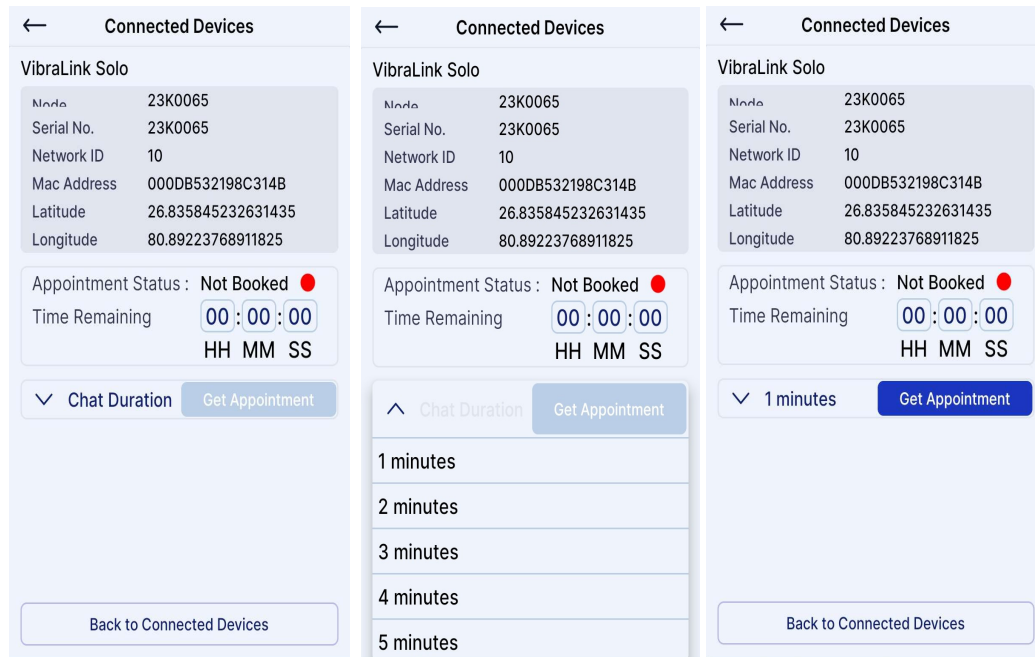


Figure 5-33

- A notification will appear stating **"Getting appointment from Node..."** while the connection is being established. Upon successful connection, the **Appointment Status** will change to **Connected**, and a countdown for **Time Remaining** will begin. During the session, the user can perform various actions such as viewing the **Node Battery Voltage**, checking **Node Records**, adjusting the **Node Date/Time**, or modifying the **Node Scan Interval**. If necessary, the user can cancel the appointment at any time by clicking the **Cancel Appointment** button.

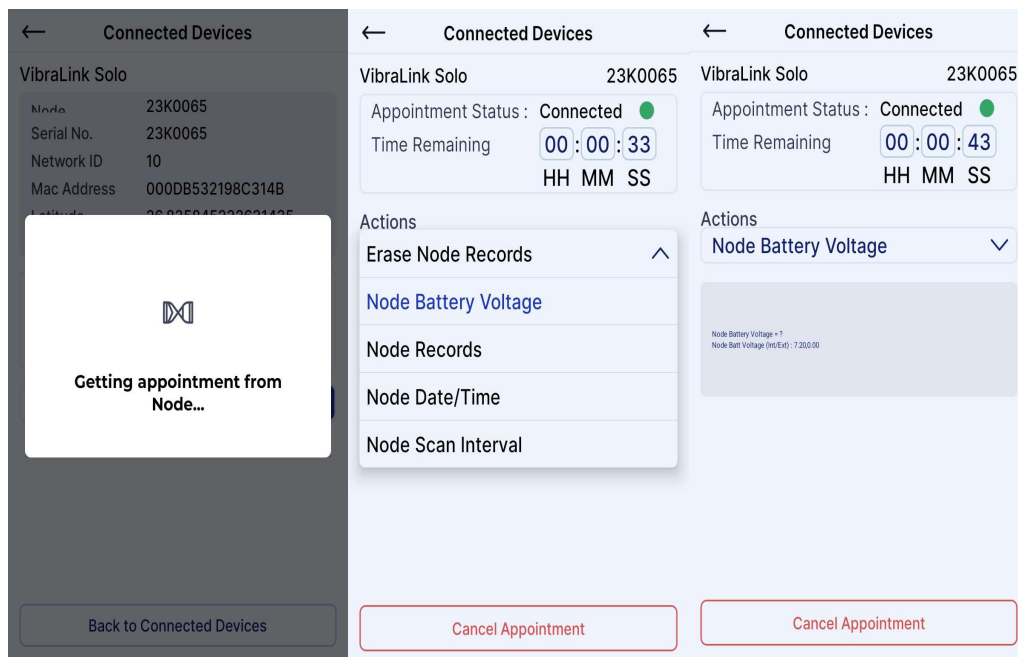


Figure 5-34



## 6 INSTALLATION PROCEDURE FOR NODE

Sites being different from each other must be properly surveyed to determine the best place for mounting the nodes and Gateway. Generally, the Gateway should be in line of sight of all the nodes. To achieve better coverage/transmission of data, it is recommended to mount the vibrating wire node as high as practicably possible at site. The nodes come with mounting accessories suitable for wall mounting or mast/pole mounting, depending on the type of order placed.

### 6.1 Wall mounting

- The Nodes can be directly fixed to a flat surface using four screws. The node enclosure has mounting holes for fixing it on any place surface.

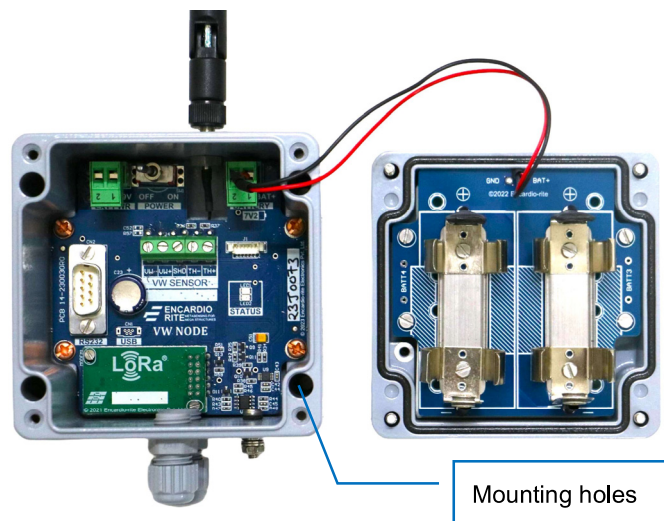


Figure 6-1

- Mark the locations of four mounting holes.
- Ensure that the position of the holes is aligned correctly, using a spirit level.
- Drill holes depending on the mounting fasteners being used for fixing the Node (supplied with the Node).
- Fix the Node on the surface using fasteners.

**NOTE:** Installation may have to be improvised or tailor-made depending upon site conditions, like using cable ties

### 6.2 Mast mounting

Mounting the Node on a tall mast is a good solution to achieve better height. Ample precautions must, however, be taken for the protection of the equipment.

The type of mast to be used for such an application depends on the site location.

- A mast can be a small pole mounted to the roof of any structure or portable cabin available at the site (with required permissions).
- In an open field or hilly region application, a mast can be a pole installed in the ground with a strong foundation. If required, it can be supported with guy wires.

The height of Node mounting needs to be carefully planned to be in line with Gateway's sight, but not too high to attract lighting.



Once the mast is ready, the Node can be fixed on it using suitable brackets, clamps, and fixing plate. If required, a suitable protection box can be provided. A typical installation photograph is shown below for reference. A protection box may be provided, depending on site requirements.

**NOTE:** Mast, mounting accessories, protection cover, and necessary civil works are in the Client's scope.

## 7 TROUBLESHOOTING

---

### 7.1 Unable to connect Node with FTDI-OTG Cable

- RS232 interface connector may be loose.
- Check the interface cable's connector for damage.
- RS232 interface cable may be broken.
- Node battery may be discharged.
- Remove the batteries, wait for 30 seconds and then mount the batteries. Now try to connect.

### 7.2 Unable to communicate with Gateway

- Check the antenna for loose connection.
- Antenna to RF modem connecting cable may be damage.
- Antenna itself may be damaged try with another antenna
- Node battery may be discharged.

## 8 SAFETY AND WARNINGS

---

### 8.1 Operation Safety

- Before taking any action, please read the user's manual carefully,.
- Ensure that all the procedures and installations are correctly carried out.
- The case and mountings should be grounded, where practicable.
- This product has been designed to meet a certain water-proof level. However, it becomes vulnerable to water ingress when the lid screws are not tightened properly, or if the cable gland has not been sealed properly.
- This product must not be disassembled under any circumstances. If done, it will void the warranty and may leave the product in a dangerous state.

### 8.2 Battery caution & warning

- To install the battery into a holder, please follow the "+" (positive) and "-" (negative) signs carefully. Wrong orientation of a battery could potential cause unit damage.
- If battery is incorrectly replaced, there may be danger of explosion.
- Use only with the type recommended by the manufacturer. Observe any warnings specified by the battery manufacturer.
- The battery has a relatively high capacity, so please take special care during storage and usage.
- When disposing of the batteries please contact your local authorities or dealer and ask for the correct method of disposal.
- When disconnecting the battery, please take special care not to apply excessive force, otherwise the battery holder and the nearby circuitry can get damaged.

If the above safety precaution and warnings are not followed, the manufacturer cannot be held responsible for any damage and injury caused to he users.

## Warning Radiation exposure

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

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.

Note: 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.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator& your body.