

# LeSONO LX Series Probe

## Trouble Shooting Guide

V1.0



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# Hardware

## RW1001 - Can't power on

- (1) Press and hold the button about 3 seconds until the indicator light turns **blue**.



- (2) If pressing and holding the button does not turn on the device, please press the button once to check the battery indicator level, then place the device on the wireless charging pad while it is powered off. Ensure the battery indicator light is **flashing**, and continue charging until the light **turns off**.



## RW1002 - Indicator lights

For the probe's indicator lights, please refer to following table:

	Color	Display	Meaning
Power and Freeze / Scan button	Blue	Solid	System connected
Power and Freeze / Scan button	Blue	Flashing	System ready
Battery level indicator	Orange	Solid or Flash	<p><b>Battery discharge:</b></p> <p>0 light: <math>0\% \leq</math> battery level <math>&lt; 2\%</math>            1 light: <math>2\% \leq</math> battery level <math>&lt; 25\%</math>            2 lights: <math>25\% \leq</math> battery level <math>&lt; 50\%</math>            3 lights: <math>50\% \leq</math> battery level <math>&lt; 75\%</math>            4 lights: <math>75\% \leq</math> battery level <math>\leq 100\%</math></p> <p><b>Battery charging:</b></p> <p>0 light: fully charged            1 light flash: <math>0\% \leq</math> battery level <math>&lt; 25\%</math>            1 light stable with 1 light flash: <math>25\% \leq</math> battery level <math>&lt; 50\%</math>            2 lights stable with 1 light flash: <math>50\% \leq</math> battery level <math>&lt; 75\%</math>            3 lights stable with 1 light flash: <math>75\% \leq</math> battery level <math>&lt; 100\%</math></p>

If the probe is already in a low battery state, it may not be able to shut down normally. Please connect the probe to the charger first, and confirm the light is stable before shutting down.

If the charging LED does not light up, it may be due to an early firmware version. In some cases, when the battery level is extremely low, the LED may not respond. **Please follow the steps below to resolve the issue:**

1. **Update the firmware** to the latest version. The update is available through the app.
2. If the battery has been **fully drained due to long-term storage**, ensure the probe is properly connected and is receiving power while charging.
3. **Press and hold the power button for 15 seconds** to reset the LED indicator.

## RW1003 - Temperature rising of probe

If you find that the temperature of the probe increases abnormally, please contact the Customer Service Center.

### Standard of Thermal safety

#### - Thermal safety standard

Probe - **42 degrees** Celsius (IEC 60601-1 11.1)

Device case - **48 degrees** Celsius (IEC 60601-1 11.1)

## RW1004 - Charging and estimated charging time

The LeSONO handheld ultrasound LX series features a built-in **3000mAh lithium-polymer battery**. A completely empty battery takes about **2.5 hours** to fully charge. Once charged, it can be used for around **2 to 3 hours** of normal scanning. (NOTE: The above claim is based on the usage hour of the Linear probe under **FPS = Power saver**. Under normal use, it can last for almost **3 hours**)

Please use a charger with the correct specifications when using 15W Qi wireless charging to ensure proper performance and safety.

## RW1005 - Probe's power saving mode

- **During scanning:** After being idle for a couple of seconds during scan mode, the screen will freeze automatically (The device will not shut down automatically under scanning mode). The idle time can be set in the App while scanning:

Scanning page → Adv. Settings → **Freeze Timer** => to set screen freeze time

- **Power on while not scanning (probe disconnected or connected on homepage):** it will automatically shut down after being idle for **15 minutes**.

## RW1006 - Battery maintenance

The LX series use Lithium-polymer battery. Here are some tips for maintain the battery's life:

- Keep the battery at room temperature.
- Allow partial discharges and avoid full ones (usually).
- Avoid completely discharging lithium-polymer batteries.

## RW1007 - Freeze button abnormality

When clicking the freeze button cannot enter the pause state under scan mode, please restart the probe and the App.

If you still can't enter the pause state, please contact the Customer Service Center.

## RW1008 - Appearance defect

If there are defects in the appearance of your new product, such as collision scratches or peeling rubber, please contact the Customer Service Center. Note that any **artificial damage**, such as appearance damage caused by improper operation or internal moisture and water intrusion causing rust and short circuit of the product circuit board, is **not covered** under the warranty. In such cases, you can contact the Customer Service Center for paid maintenance services.

## RW1009 - About splash, water, and dust resistance

The LX series are splash, water, and dust resistant and were tested under controlled laboratory conditions with a rating of IP68 under IEC standard 60529. Splash, water, and dust resistance are not permanent conditions. Resistance might decrease as a result of normal wear. Do not attempt to charge a wet probe; refer to the user guide for cleaning and drying instructions. Liquid damage is not covered under warranty.

- (1) What should I do if my probe of the LX series gets wet?  
→ If your probe of the LX series comes into contact with liquids, follow these steps:
  1. Wipe the probe with a soft, lint-free cloth to remove excess liquid.
  2. If exposed to liquids other than water, rinse the affected area with clean water and dry thoroughly.
  3. Allow the probe to air dry completely before storing or using it again.
  
- (2) Can I submerge the LX probe in water?  
→ The LX series is IP68-rated. However, it is not designed for prolonged immersion or high-pressure water exposure.
  
- (3) Can I use high-temperature sterilization methods on the probe of the LX series?  
→ No, avoid exposing the probe to autoclaving, high-temperature sterilization, or strong chemical disinfectants that are not recommended in the user manual.
  
- (4) Can I use the probe while wet?  
→ For optimal performance and longevity, ensure the probe is fully dry before use. If moisture remains on the probe, gently wipe it off before scanning.

For further details on cleaning and disinfection, refer to the user manual of the LX series.

# LeSONO App

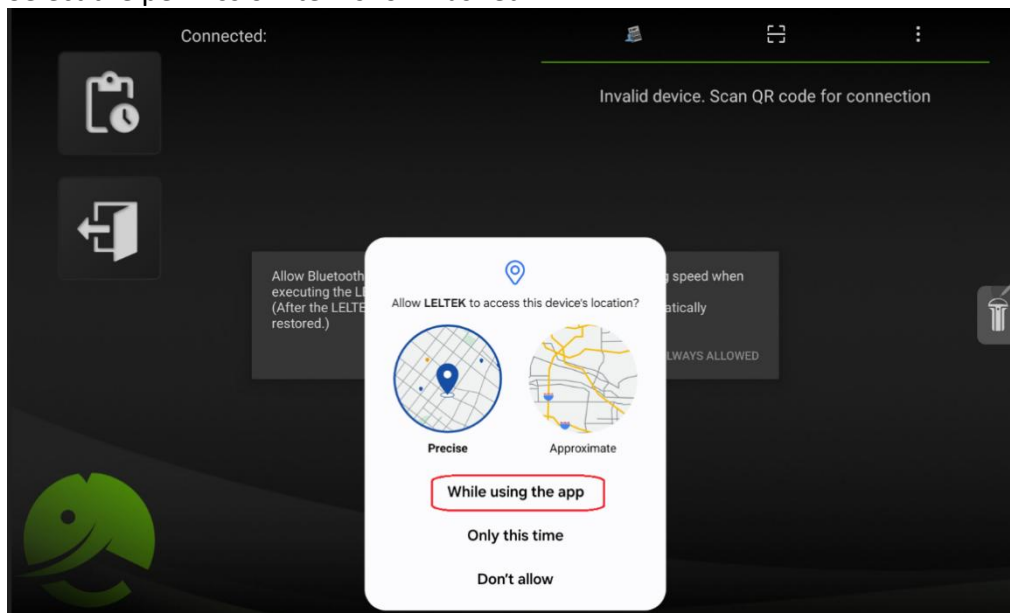
## RW2001 - Failed to connect with the mobile device

### (1) Hardware check

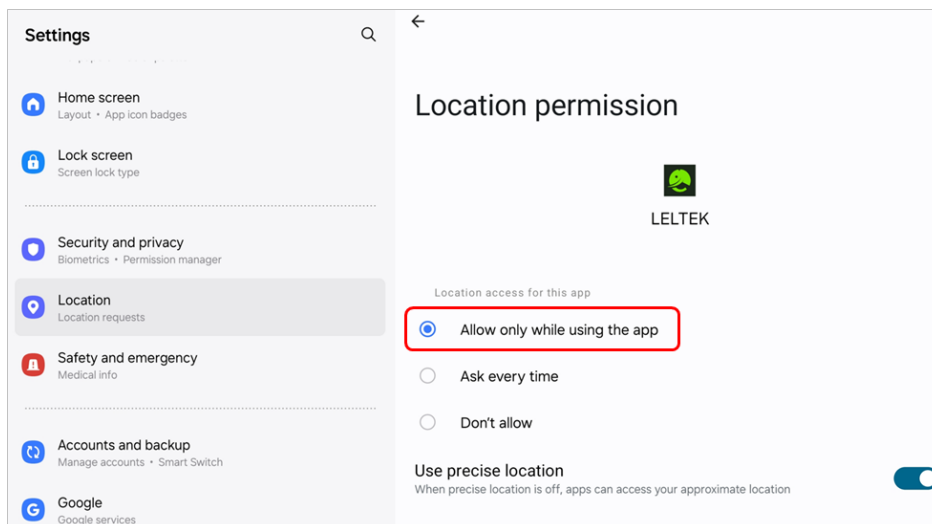
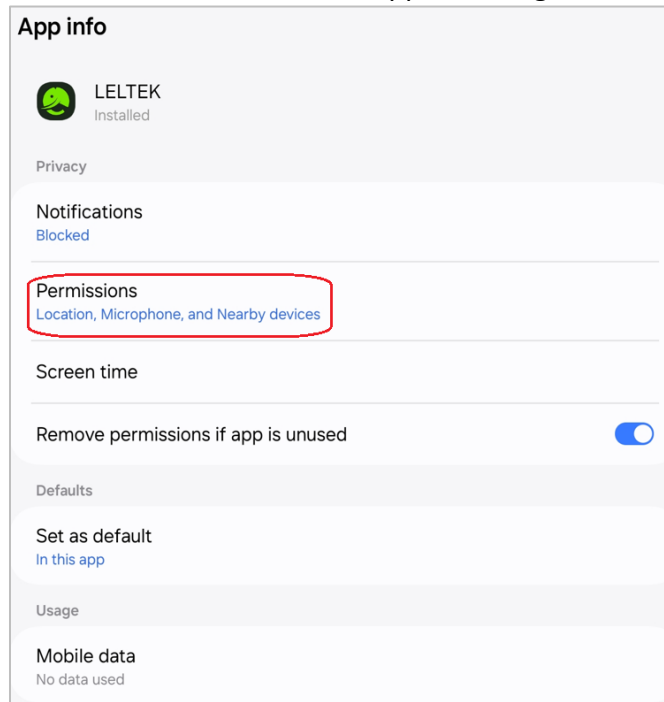
Please ensure the device is **turned on** correctly and the indicator light is **blue and flashing**. If the indicator light is not blue, contact the Customer Service Center.

### (2) Software check

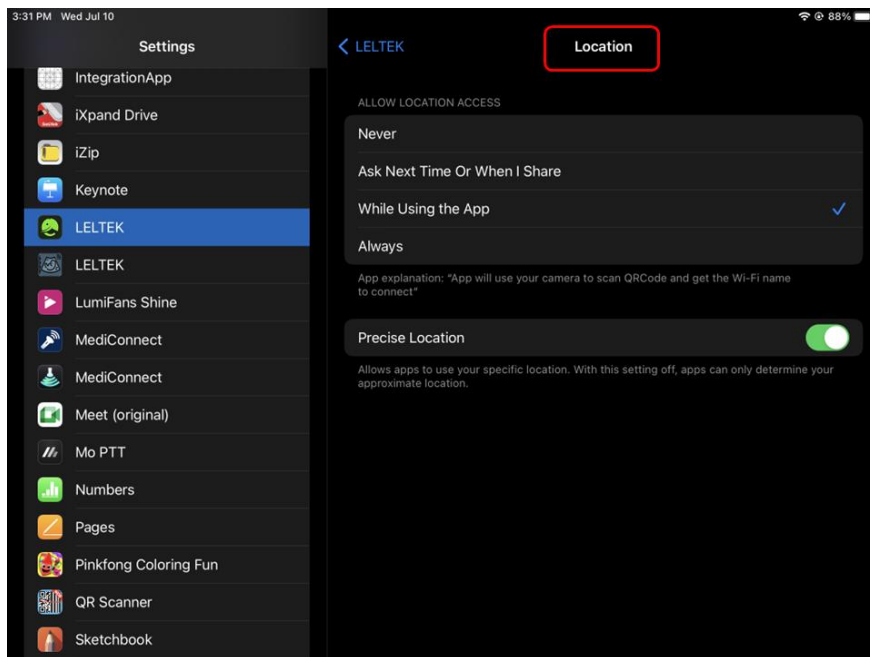
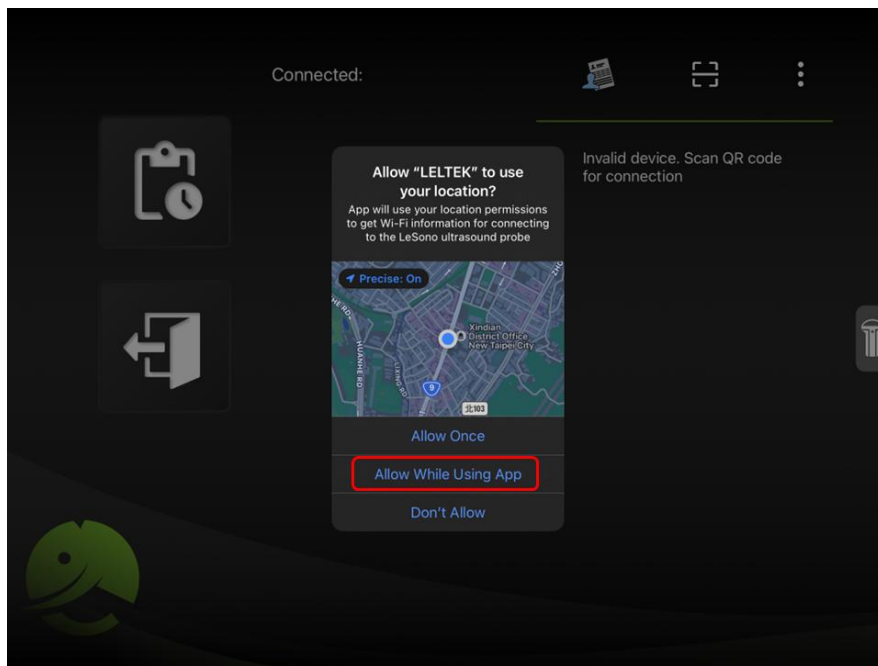
1. Check if the Wi-Fi of the mobile device is **turned on**.
2. Check if the probe light is “**blue**” and “**Steady**” before running the App. If so, the probe may be connected by another mobile device. Please confirm the **probe’s occupancy** issue first.
3. Check if the **software permissions** are set correctly when the App first launches. Select the permission item shown as red.

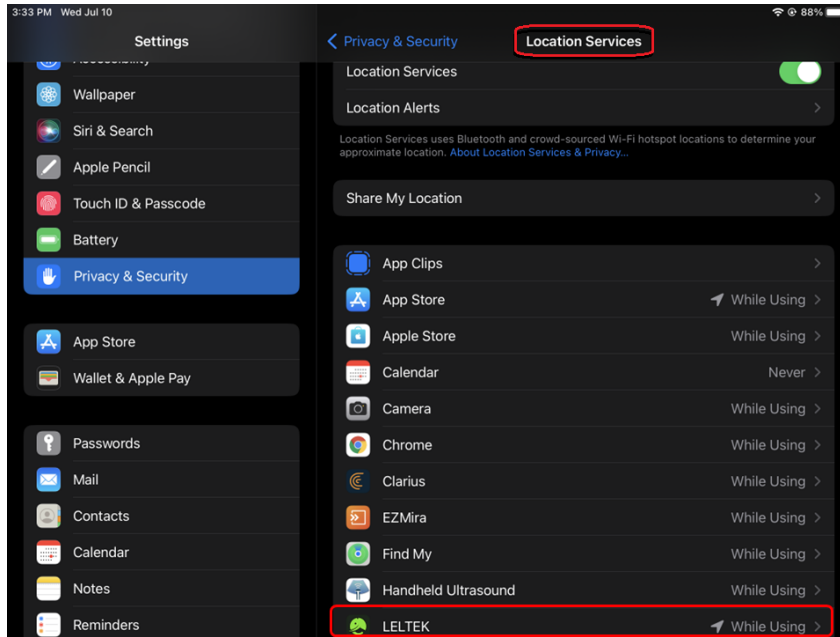


4. For Android devices, check if the App shows correct permission setting. If not, please turn on Location Permissions of LELTEK app in Settings.



For iOS devices, with the similar setting for the permission.





### (3) Mobile devices model check

When using our ultrasound device with most Android devices, compatibility is generally smooth. However, there are a few devices, specifically **OPPO**, **Vivo**, **realme** or **Lenovo**, that require a slightly different approach for connection and disconnection.

Below are the procedures:

**Step 1 - Generate Password:** Use an Android tablet to enter engineering mode and obtain the password.

**Step 2 - Connecting:** Enter the Wi-Fi settings and input the password associated with the respective SSID to confirm the connection.

**Step 3 - Disconnecting the probe and the device:** When it comes to disconnection, the user will need to connect their device to an alternative Wi-Fi network. Switching to another Wi-Fi network will allow the handheld ultrasound device to be safely disconnected from the device.

## RW2002 - Cannot find the App on AppStore/Google Play

Please make sure that your mobile devices to fit the **minimum requirement** for running this App. If it does not fit the minimum requirement, you will not be able to find the App on AppStore/Google Play.

Below are the minimum requirement/recommended spec for your mobile devices:

### - Recommended Android and iOS version

#### A. Apple

- i. **Minimum device spec**
  1. iOS 13 or above
  2. iPhone 7 or above
  3. iPad 5 or above
  4. Mac book (M-series chip)
- ii. **Hardware spec**
  1. ROM: > 1G
  2. Wi-Fi: At least 802.11 b/g
- iii. **Recommendation**
  1. iPhone 11 or above
  2. iPad 9<sup>th</sup> Gen
  3. iPad Pro
- iv. **Not supported devices**
  1. iPad1 ~ iPad4
  2. iPad mini 1

#### B. Android

- i. **Minimum device spec**
  1. Android 7.0 or above
- ii. **Hardware spec**
  1. CPU: > 1.5G/Snapdragon 650 or above
  2. RAM: > 2.0G or above
  3. ROM: > 5G
  4. Wi-Fi: At least 802.11 b/g
  5. 64-bit ARM processors (Does not support 32-bit ARM processors)
- iii. **Recommendation**
  1. Samsung Galaxy Tab S7FE or above

## C. Windows

### i. **Minimum device spec**

1. Windows 10 1803 or above
2. Microsoft Office 2010 or above

### ii. **Hardware spec**

1. CPU: > 1.6G
2. RAM: > 8.0G (64 bits) or above
3. Storage: > 32GB (64 bits)
4. Wi-Fi: At least 802.11 b/g, 2.4G Wi-Fi support
5. USB support

### iii. **Recommendation**

1. Intel core i5-8265U/ AMD Ryzen 5 2500U (Minimum)
2. Intel core i7-10850H/AMD Ryzen 7 4700U (Recommended)

## RW2004 - Using Apple MacBook to use LeSONO App

The LeSONO App can be run on M-series (M1 chip or above) MacBook. Below are the running procedures:

- Enable usage for MacBook in the App and connect to the probe

**Run App on MAC M-series device** **LELTEK**

**Step 1**  
1. Tap [more] icon  
2. Tap [Settings]

**Step 2**  
Turn on [Select to run App on MAC-M series device]

**Step 3**  
Tap SSID of probe in Wi-Fi list to connect it  
If you don't have the password, please contact us to get it.

**Sep 4**  
Go back to App and tap [Connect Probe]

- Find the images exported to the MacBook

**Step 1**  
1. Turn on [Finder]  
2. Enter <username> folder

**Step 2**  
1. Press command + shift + . to show hidden files.  
2. Enter [Library] folder

**Step 3**  
Enter [Containers] folder

**Step 4**  
Enter [LELTEK] folder

**Step 5**  
Enter [Data] folder

**Step 6**  
Enter [Documents] folder to find the images exported

**- Create shortcut for the image exported folder**



**RW2005 - How to record PW mode sound**

The heartbeat sound (in PW mode) cannot be directly recorded via LeSONO app due to the OS authorization being limited.

We would recommend using another method, for example, the usage of iOS inherent recording (which can be found in a shortcut) or an Android recording app to record the sound.

**RW2006 - How to know the Wi-Fi password of the probe**

If you want to use Apple MacBook or some specific Android device for using LeSONO probe. You might need the Wi-Fi password to connect it first.

Below are the procedures:

**Step 1** - Check if the SSID on the QR code of the probe is the same as seen in the device's Wi-Fi list.

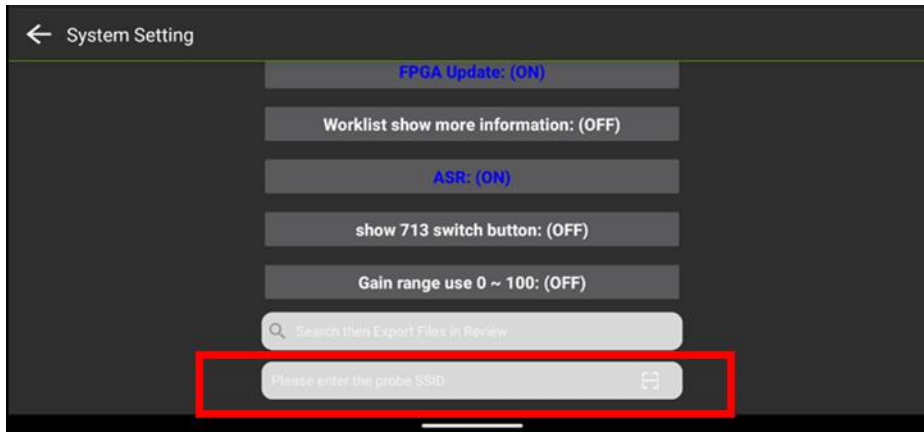
**Step 2** - Turn on the LELTEK app.

**Step 3** - Tap the logo on the left bottom quickly until pop-up a window to enter the password.



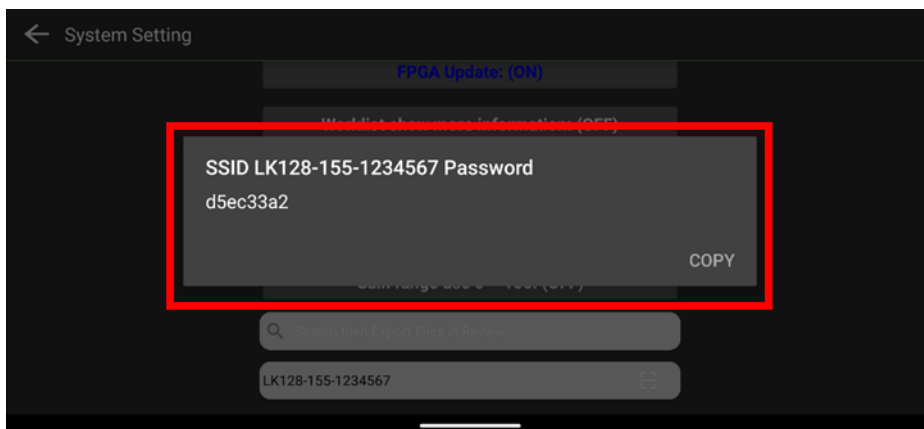
**Step 4** - Enter the password "leltek888" to enter the engineering mode.

**Step 5** - Find "Please enter probe SSID"



**Step 6** - Enter the probe SSID or scan the QR code with the camera.

**Step 7** - It will show the Wi-Fi password of the SSID.



**Step 8** - Copy the password and go to the Wi-Fi list of the device.

**Step 9** - Find and select the probe in the Wi-Fi list, entering the password to connect it.

**Step 10** - Back to the LELTEK app and tap "Connect" to start the exam scanning.

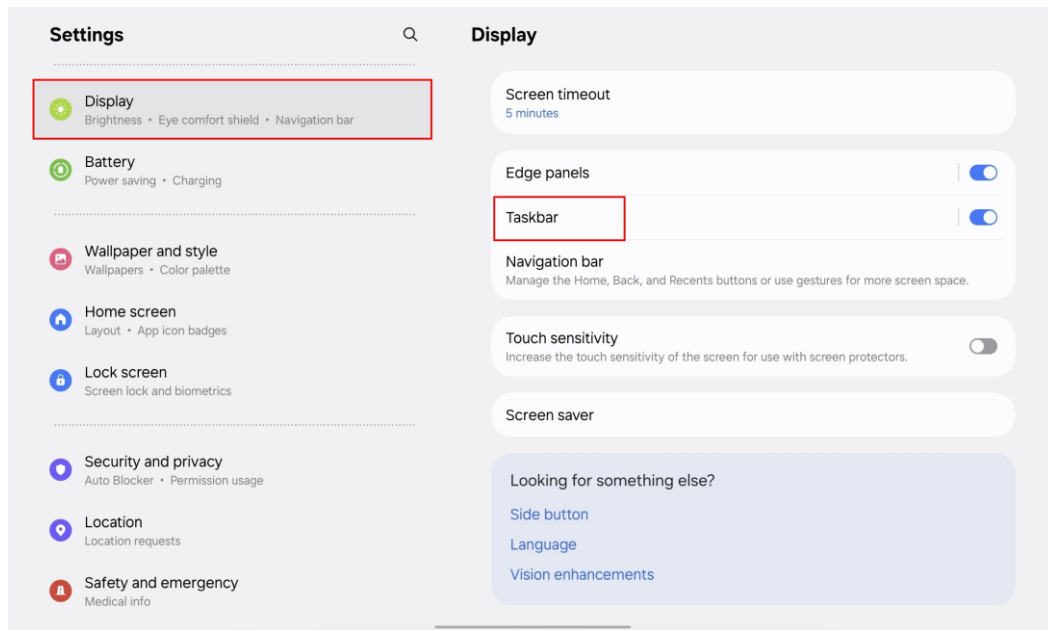
## RW2007 - How to Prevent the Taskbar from Blocking the App

On some Samsung tablets, the taskbar (navigation bar) may overlap with the **LeSONO** app interface, making it difficult to select the **Preset** button or other items located at the bottom of the screen.

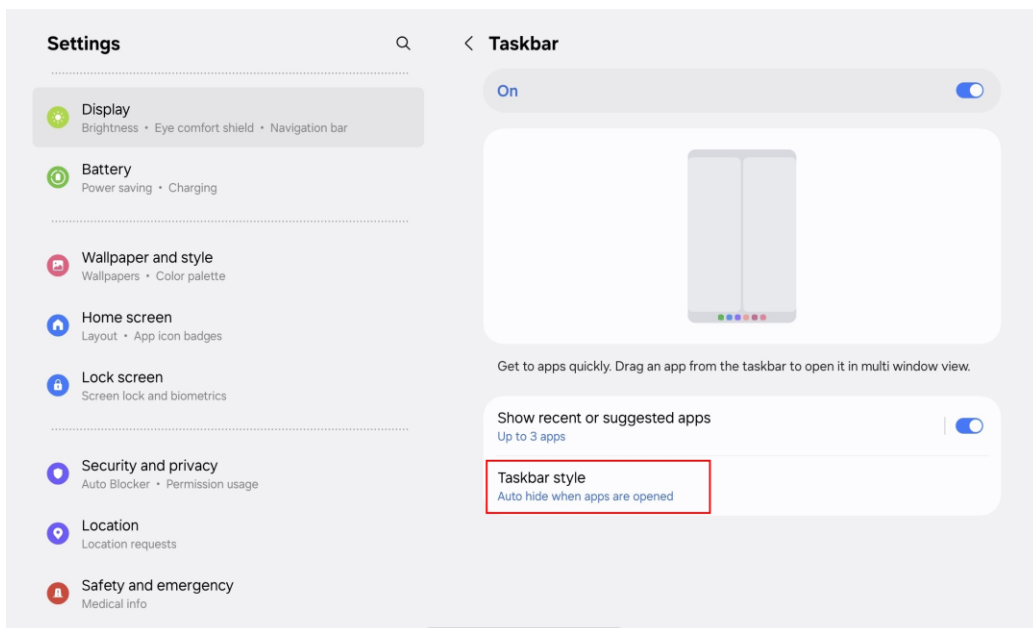
To prevent the taskbar from blocking the app interface, please enable the **Auto-hide** function in the tablet's settings.

Follow the steps below:

### Step 1 - Go to Settings → Display → Taskbar

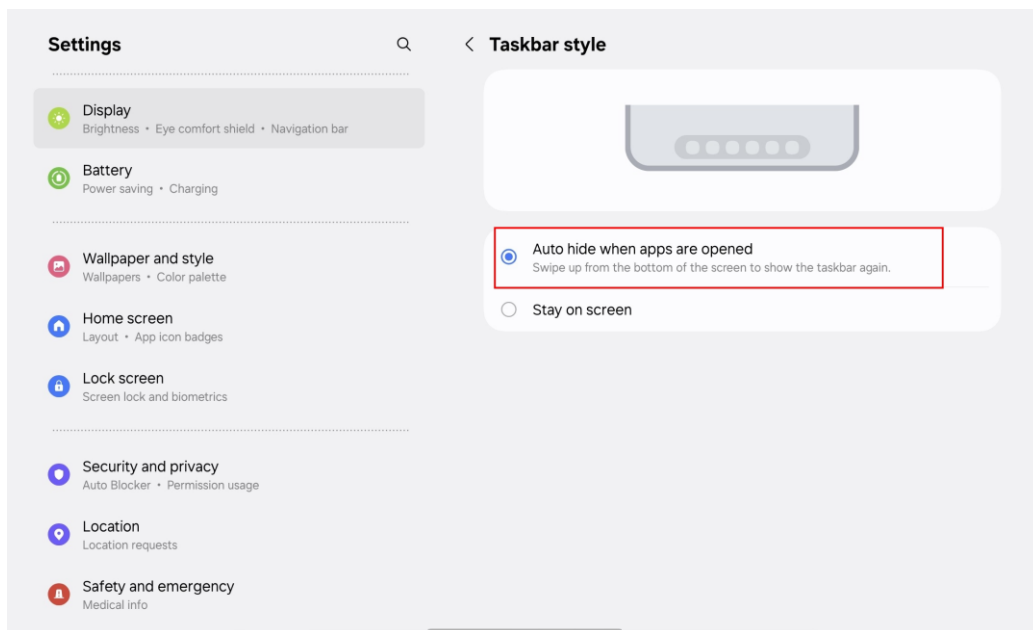


### Step 2 - Find Taskbar style



### Step 3 - Turn on **Auto hide when apps are opened**

Once enabled, the taskbar will automatically hide when the LeSONO app is opened, ensuring full visibility of all controls.



## Connection

### RW3001 - Discontinuous images in scanning

The LX series uses Wi-Fi for data transmission, and will automatically detect and select the best Wi-Fi channel when it's turned on.

When it is found that the picture is stalling, it may conflict with other Wi-Fi devices in the environment, or the mobile device itself runs too many applications.

Try to close the other apps in the device's background, restart the probe, and connect it.

Overloading Apps or low battery may also cause the picture to get stuck, please check the battery level or close other apps in the mobile devices to improve the situation.

## RW3002 - Laggy image updating or images get frozen

### (1) Wireless interference

The LX series uses Wi-Fi for data transmission, and will automatically detect and select the best Wi-Fi channel when it's turned on at the initial state. However, if the Wi-Fi environment changes a lot, it is possible to encounter strong wireless interference.

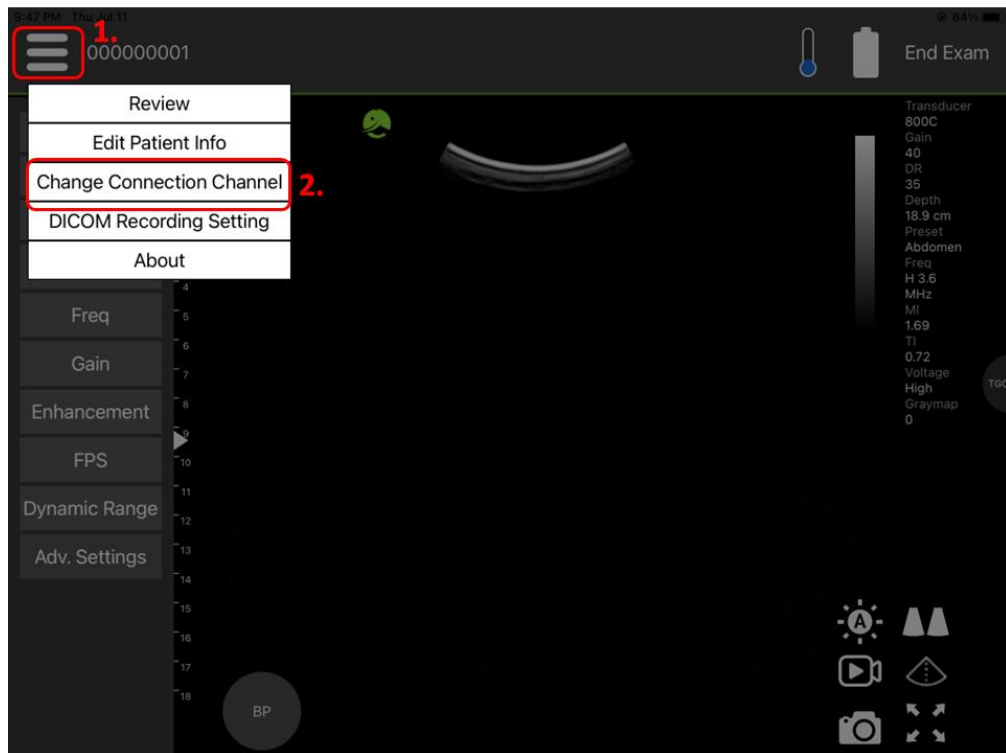
In this situation, the image framerate will become very low or even stop to update images on mobile devices.

To solve this issue, the App provides a way to **change the Wi-Fi channel** to avoid the interference causing the laggy images.

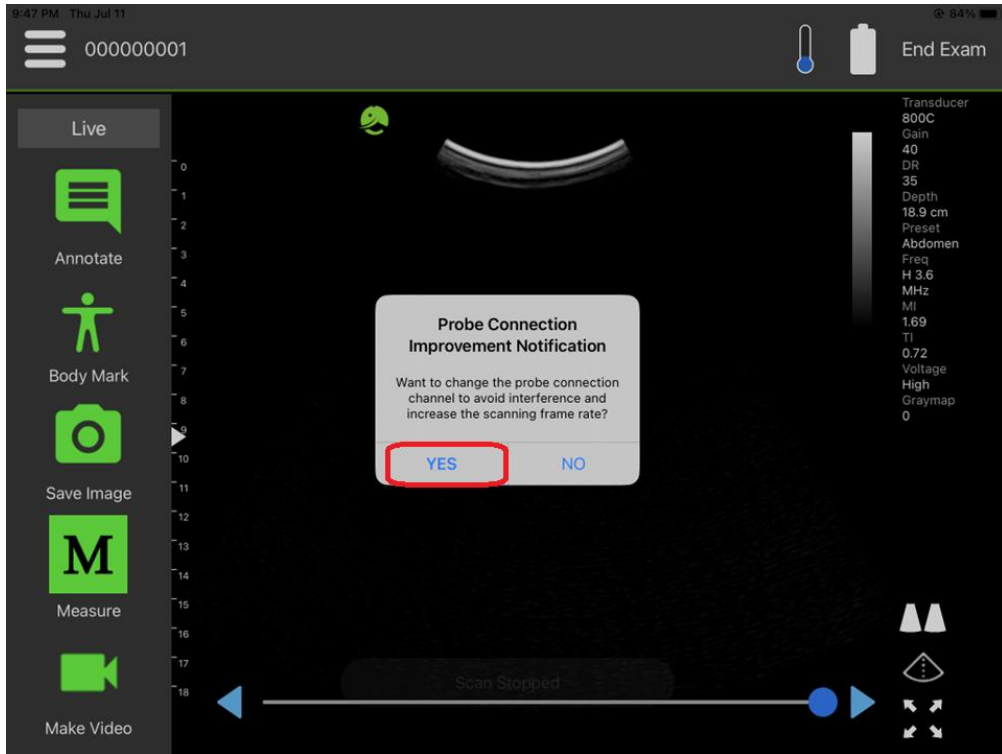
Here are the procedures to change the Wi-Fi channel of the probe:

Step 1: Menu → **Change Connection Channel**

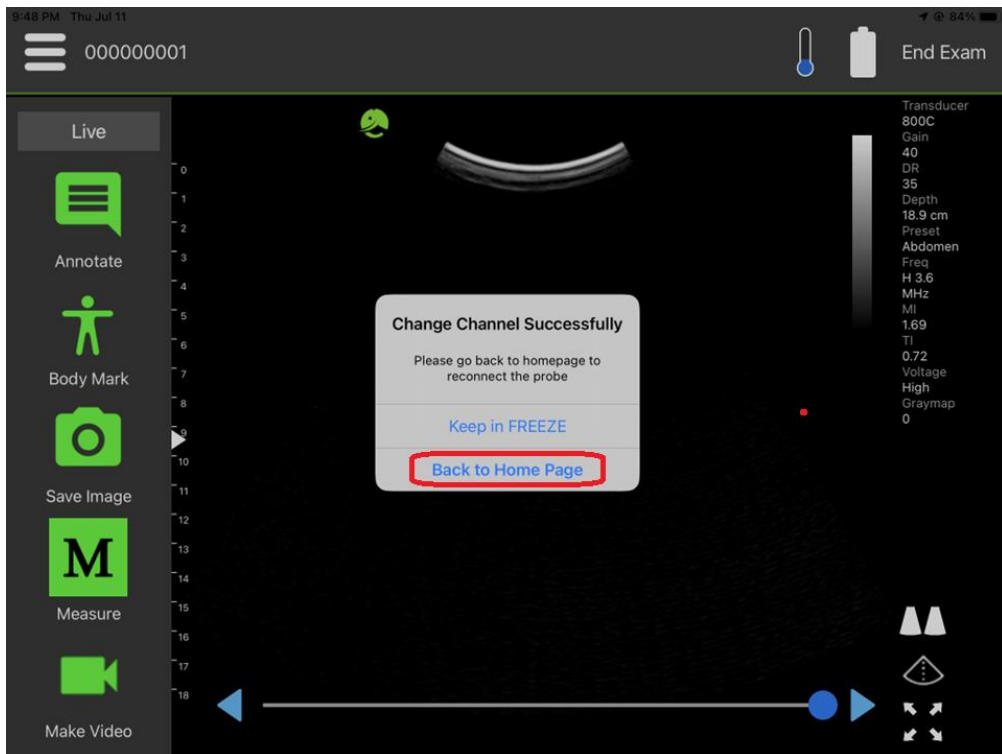
Step 2: Confirm the **change of Wi-Fi channel operation**

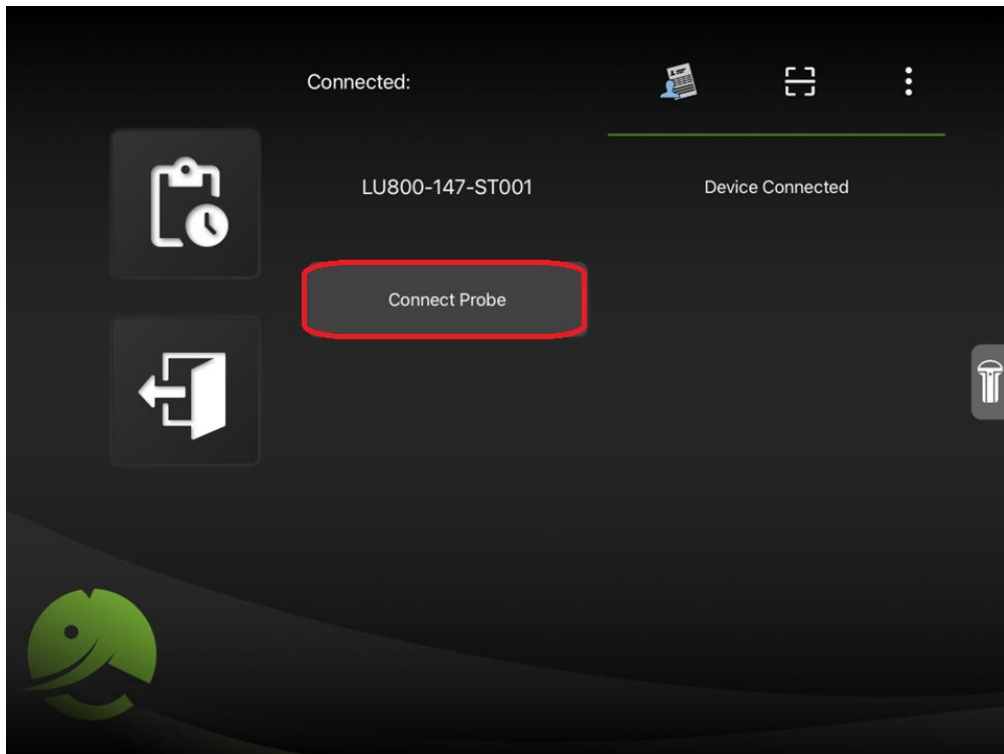


**Step 3:** Click **“Connect Probe”** and it will connect with the changed Wi-Fi channel



**Step 4:** Click **“Back to Home Page”** to reconnect the probe with changed Wi-Fi channel





(2) FPS fluctuations during use

To enhance probe endurance and prevent overheating caused by rapid temperature increases, the system automatically adjusts the FPS based on the probe's temperature and the FPS settings configured in the app.

If you notice unexpected FPS adjustments, allow the probe to cool down.

## Image Quality

### **RW4001 - Vague screen image**

Be sure to use qualified Ultrasound gel as a transmission medium. Modifying the default value of different body parts is recommended to achieve better detection.

### **RW4002 - No image or abnormal display after connected**

When the LX series is connected normally but without an ultrasonic image on screen or abnormal lines on the image, please check if there's **electromagnetic interference (e.g.: other Wi-Fi signals)** around and restart the LX series.

After operation of the above, if the situation remains, please contact the Customer Service Center.

### **RW4003 - App has been enabled but could not display an image**

It should do repower on the device (transducer) and reconnect the device (transducer) via Wi-Fi then re-enable App.

# Annex1

## Cleaning & Disinfecting

Follow the procedures in the order they are described in this guide, without skipping steps:

- (1) Turn off the probe before cleaning it.
- (2) To be ensured that all the coupling gel and other visible substances from the probe is removed by wiping with a clean paper towel. If necessary, to remove material dried to the surface, the cloth can be moistened with lukewarm water.
- (3) It shall inspect the probe's lens and casing after each use. To check out any damage that would allow liquid to enter the probe. If the user found a probe damage, the probe shall not be placed into any liquid (e.g., for disinfection) and shall not be used until it has been inspected and repaired/replaced by Leltek or a local distributor for service.

Recommendations for disinfecting the ultrasound probe (After cleaning):

- (1) Spray **70%** Isopropyl Alcohol onto the surface of probe head.
- (2) Repeat step one for **two or three times**.
- (3) Wipe out the disinfectant with a clean paper towel.

# Annex2

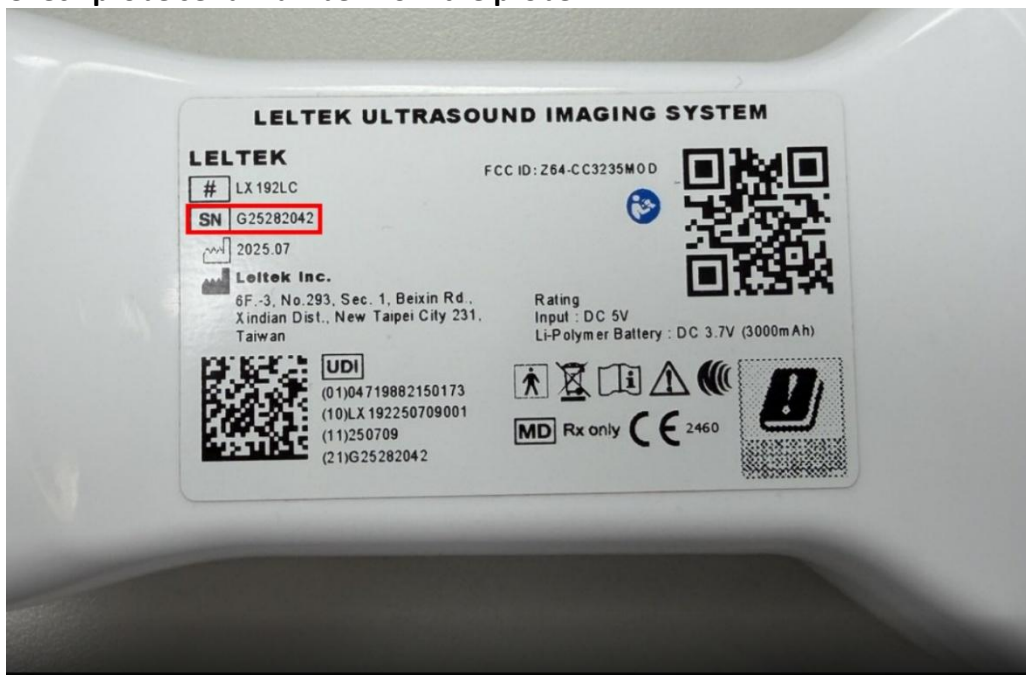
## Get Your Probe Info for Repairment

Please fill in the [RMA form](#) and provide us the info as the following table:

Info	Example
Product REF. Number	LX192LC
Probe Serial Number	G25282042
Phone/Tablet Model Name	Samsung S7
Operating System Version	Android 13.0
Leltek App Version	1.25.2.3
Description of Product Issue	Hardware Issue
Description of product Issue	Image Issue
Please provide the screenshot or image of the problem for our record.	

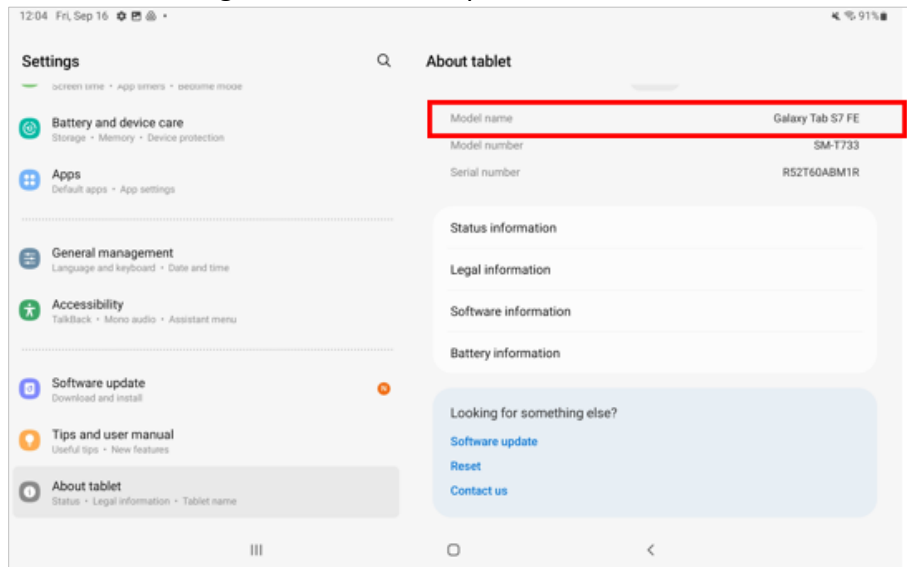
Follow the procedures in the order they are described in this guide, without skipping steps:

(1) **Check probe serial number from the probe**

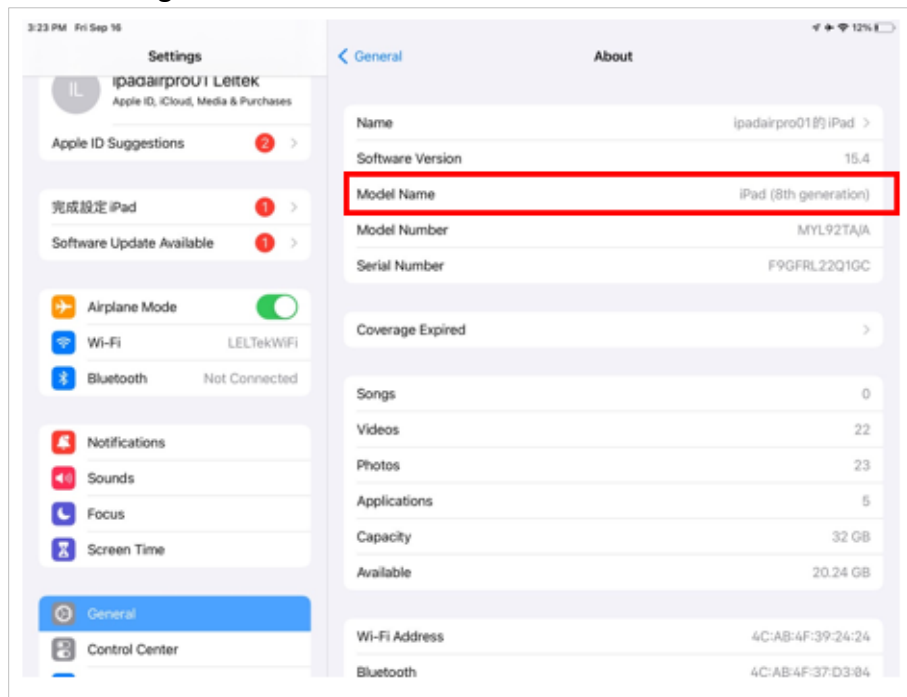


(2) **Check phone/tablet model name**

- Android: Settings → About tablet/phone → **Model name**

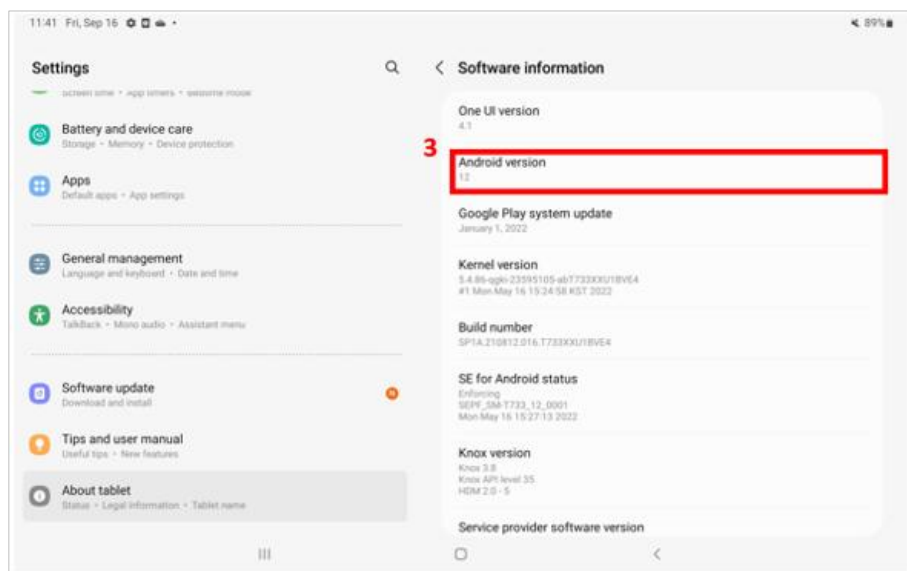
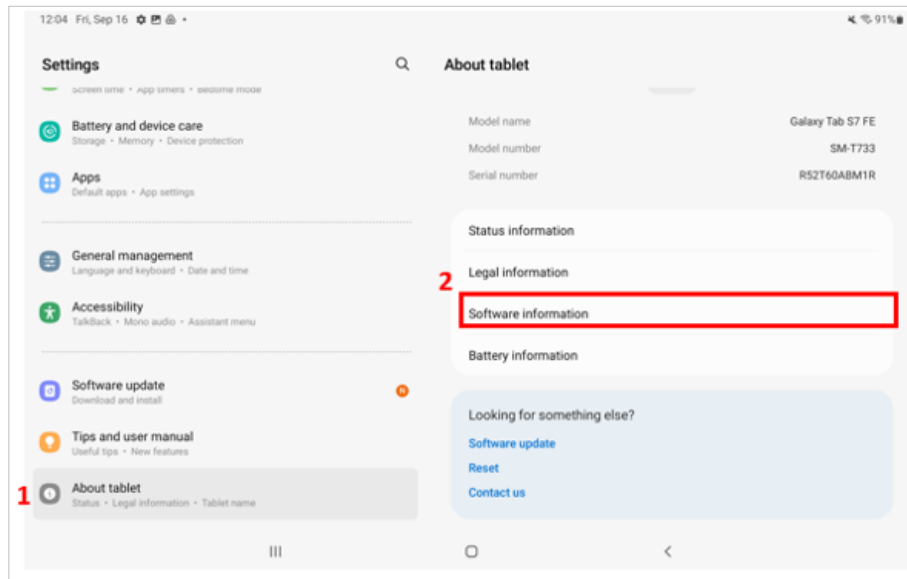


- iOS: Settings → General → About → **Model name**

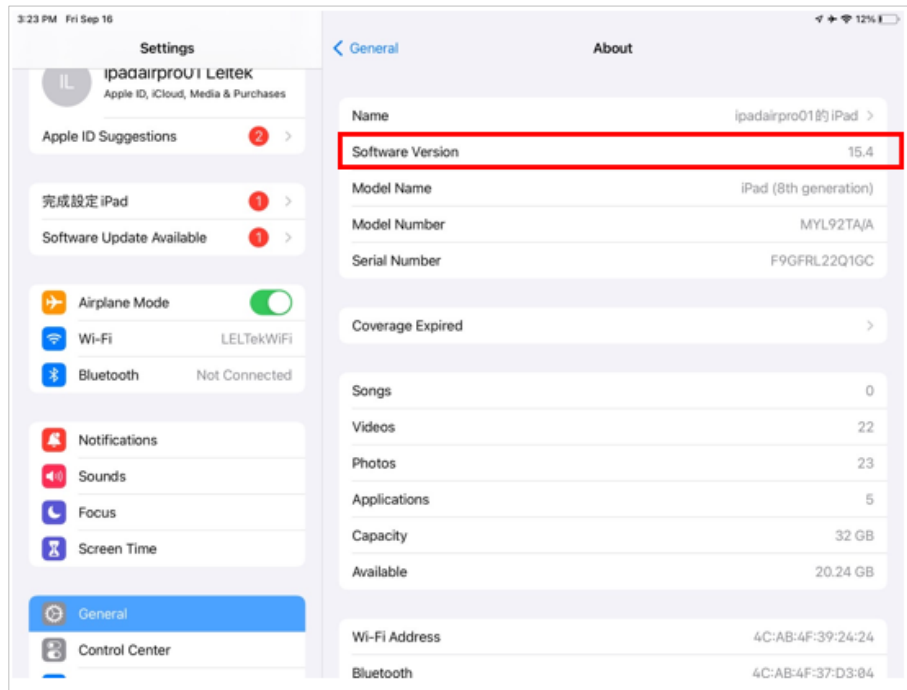


(3) **Check the operating system version**

- Android: Settings → About tablet/phone → Software information → **Android version**

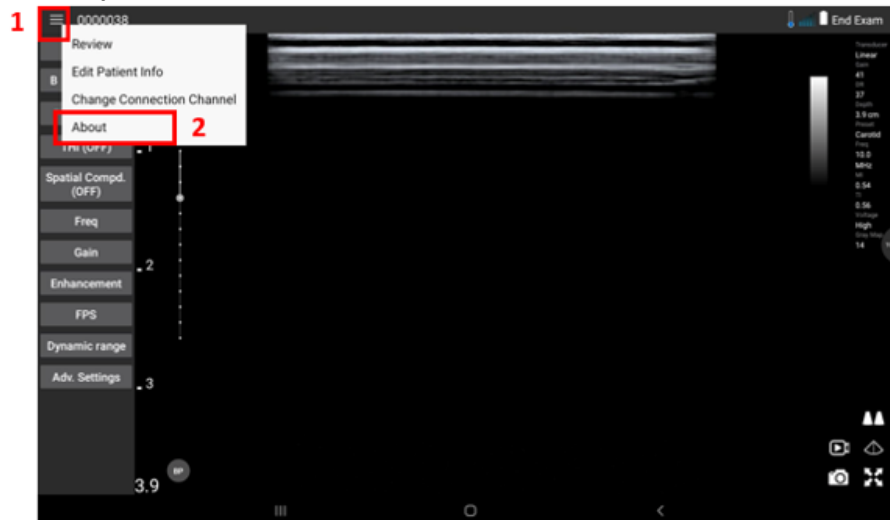


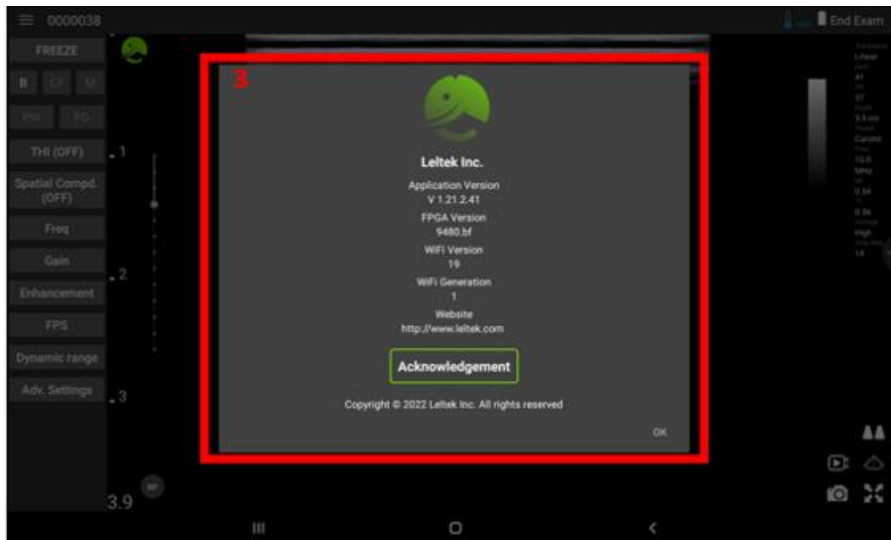
- iOS: Settings → General → About → **Software version**



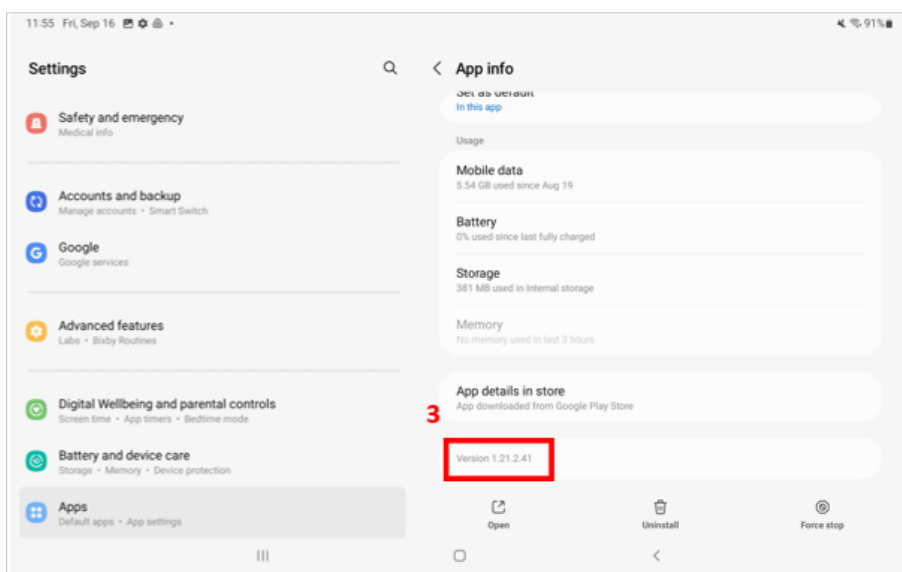
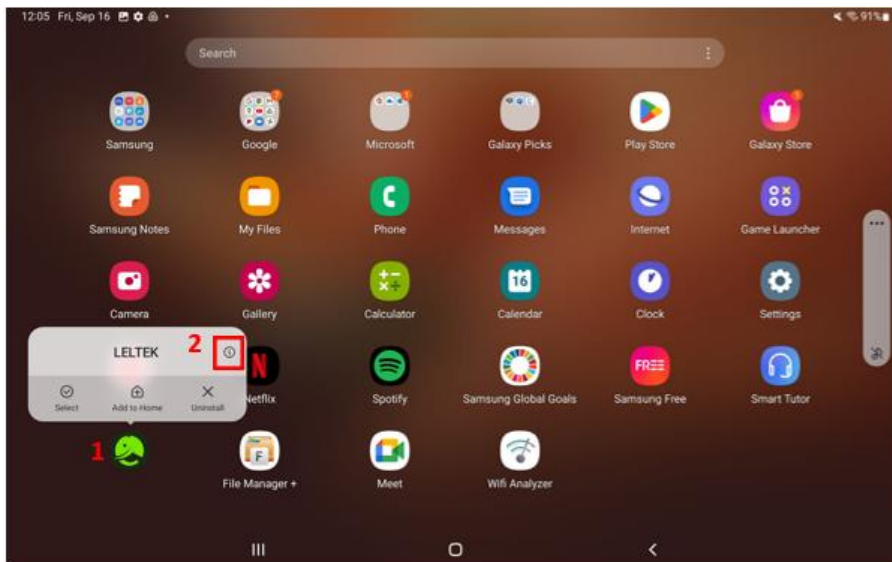
(4) **Check Leltek App Version (if probe is connected)**

- Menu (upper left) → About → All the version info will show (**FPGA & WIFI version**)





- (5) **Check Leltek App Version (if probe is not successfully connected)**  
- Android: Press on App for a while> info> **App Version**



- iOS: App store → Search "Leltek" & enter → **Software version**

