

Алматы (7273)495-231
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48

Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81
Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73

Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Саранск (8342)22-96-24
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35

Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
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Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

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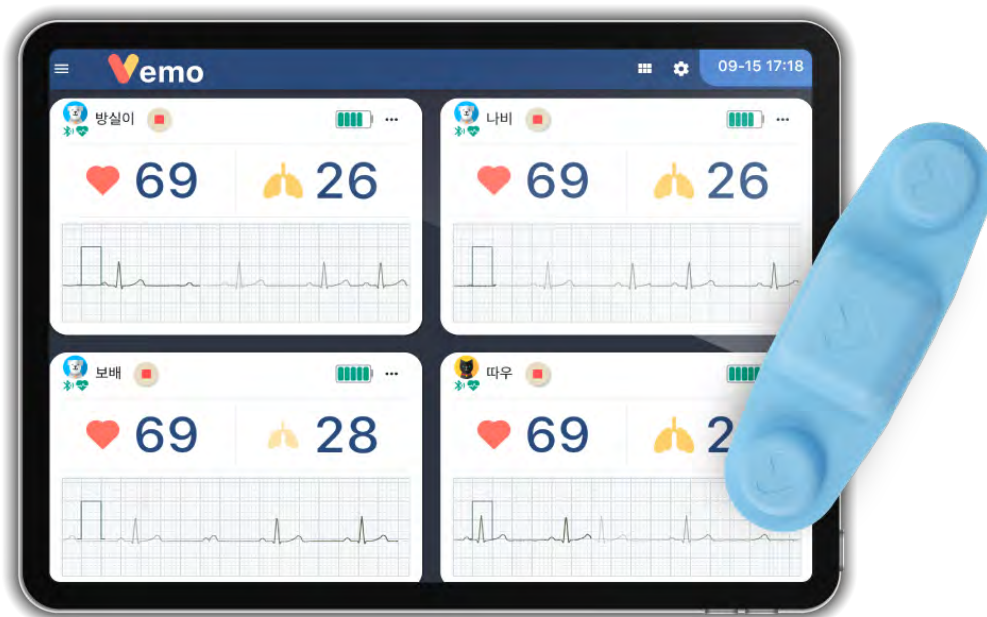
Казахстан +7(7172)727-132

Киргизия +996(312)96-26-47

bea@nt-rt.ru || <https://bionet.nt-rt.ru/>

VEMO

User Manual



<Warning>

This device is designed only for veterinary use and please refer to this manual before use.

VEMO User Manual

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Without any written approval or agreement, it is prohibited to use, reproduce any part of this manual in English or any other language except a brief review or brief excerpt for scientific paper.

Please carefully read this user manual before use Bionet device.

This monitoring system is designed for veterinary professional only and it is strictly prohibited to use for human medical purposes.

All copyrights related VEMO, VEMO app, VEMO-Link, VEMO Board are reserved by Bionet.

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Specification.....	오류! 책갈피가 정의되어 있지 않습니다.
의료기기 기술문서 기재사항.....	오류! 책갈피가 정의되어 있지 않습니다.

Warranty

This product was made by strictly controlled quality assurance procedure as well as testing protocol by Bionet. The warranty of this product is 1 year for main ECG sensor. Under warranty product can be replaced by Bionet's responsibility.

Please contact Bionet in case of warranty issue providing serial number, date of purchase, and a brief description of the reason for return.

Warning, Precaution, NOTE

- Please refer to the following definitions of Warning, Caution, Note.
- In case of claiming the warranty neglecting following definitions, Bionet/Sales representative/distributor or any authorized party of sales will not be responsible for any of case of service, warranty, and technical issues.

WARNING

"WARNING" is to prevent of critical injury, death or physical damage for the patient or users when this warning is neglected by users.

CAUTION

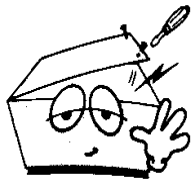
"CAUTION" is to prevent to cause any injuries or damage except death for the patients of users when this caution is neglected by users.

NOTE

"NOTE" is to notify the important points to users for installation, application or maintenance which are not dangerous or not causing injuries or damages.

Environmental Condition

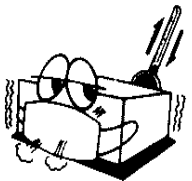
- Please avoid following conditions for using or storage.



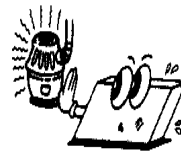
Do not disassemble the device. In case of such event, Bionet is not responsible for any service at all.



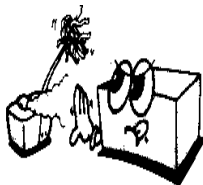
Do not place the device exposed to direct sunlight



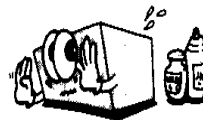
*Do not place where the temperature and humidity are extremely changed.
(Temperature 10°C~45°C / Humidity 10%~95%)*



Do not place near the heat or heating device.



Do not place with extremely high humidity or where the area has ventilation issue.



Do not place near chemical material nor explosive gas or material.

Storage & Logistic Condition	Condition of Use	Period of Use
Temperature : 10 ~ 50 °C	Temperature : 10 ~ 45 °C	ECG Sensor : Reusable
Humidity : 10 ~ 95 % (Non-Condensing)	Humidity : 10 ~ 95 % (Non-Condensing)	Adhesive : Disposable
Atmospheric Pressure : 700 ~ 1,060 hPa	Atmospheric Pressure : 700 ~ 1,060 hPa	Continuous Monitoring : Max. 3 Days

Electrical Caution for Safety

Check Before Use

- If the battery is charged.
- If the mobile device is charged and ready to use.
- If the ECG leads of VEMO are nominal. (if not, the noise can be caused.)
- If there are any damage of the device.
(In case of product damage found, patient skin can be injured in skin placement.)

Please stop using the device immediately and ask for replacing unit

NOTE
In case of using the device near electrical generator, X-ray, radio-frequency device or electric wired cable, unstable connection or erroneous result can be caused.

NOTE
VEMO is not diagnostic device nor S/W but monitoring device. It is recommended to the clinical ECG machine and consult with doctors for ECG diagnosis and interpretation.

WARNING
Please do not use this device near the same device. The devices can cause the error or inappropriate operation.

Intended Use

VEMO represents **VE**terinary **MO**onitor and it is multi-parameter heart rate meter.

This device is to monitor vital signs of Heart rate, Respiration and Beat per minute with alarm configuration to trigger visual and audible alarm when vital signs are detected out of alarm range.

This device requires VEMO app, VEMO-Link app, VEMO Board app to operate, configure and monitor

NOTE
VEMO hardware, screenshot and system component are used for example and actual material and display can be different in minor detail.

Functional Description

VEMO can monitor following parameters.

- **(HR) Heart rate**
- **(RESP) Respiration**
- **(ECG) Electrocardiography**

This device is designed for veterinary medicine professionals to diagnose and prescribe veterinary patient's medical care environment.

Application

VEMO is designed for recovery monitoring for veterinary medicine professionals for feline, canine or similar categorized pets.

1. General Information

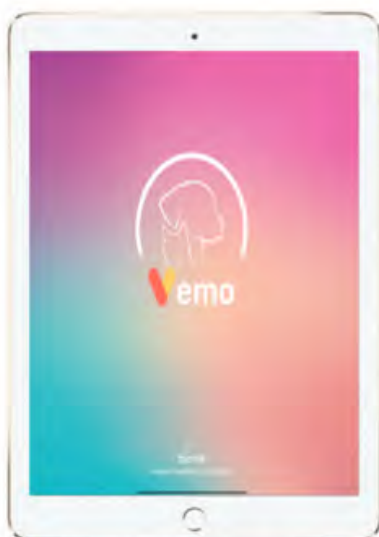
This device is a heart rate meter for veterinary use only.

After VEMO app installation on mobile device, VEMO can monitor 4 animal patients (recommended) and up to 6 animal patients.

In addition, VEMO-Link and VEMO-Board can monitor several centralized mobile data under same local network.

1-1 System Component

- VEMO Wireless, Wearable Sensor
- Adhesive
- Charger
- Smart Phone
- Tablet PC
- VEMO App



Tablet PC



Smart Phone



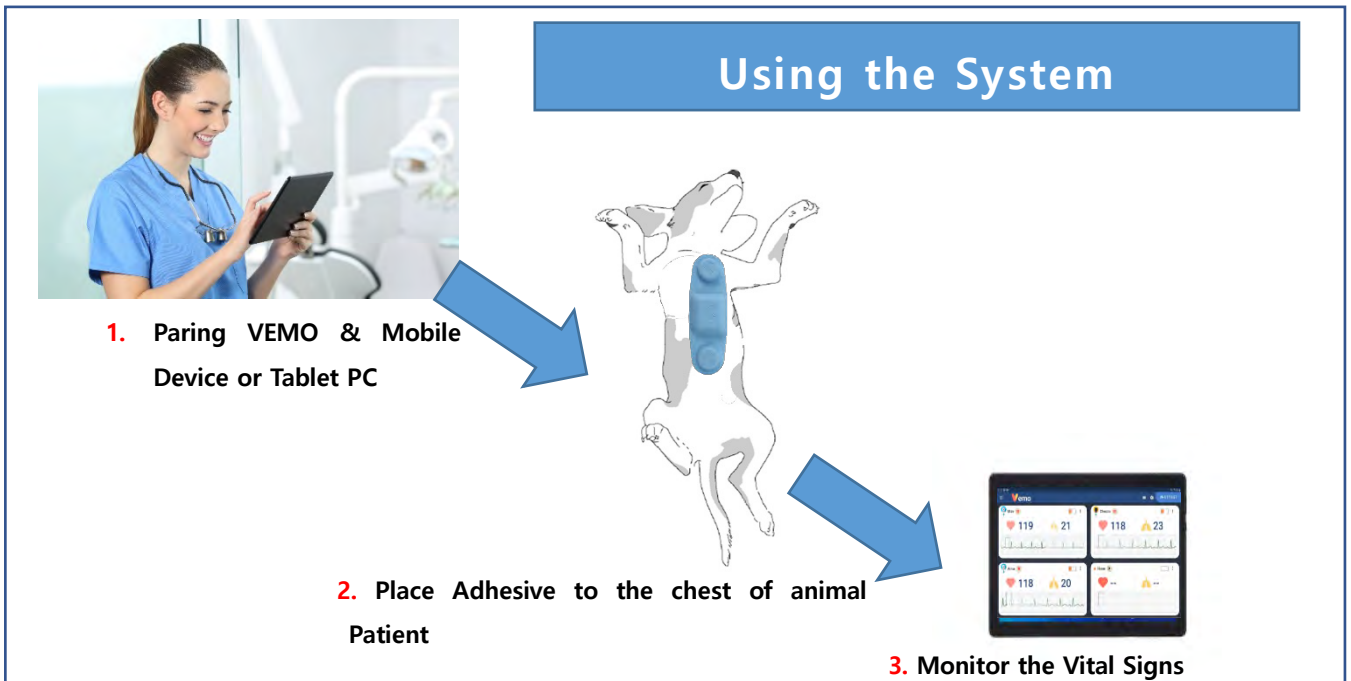
ECG Sensor & Charger



Adhesive

1-2 Product Component & Using the System

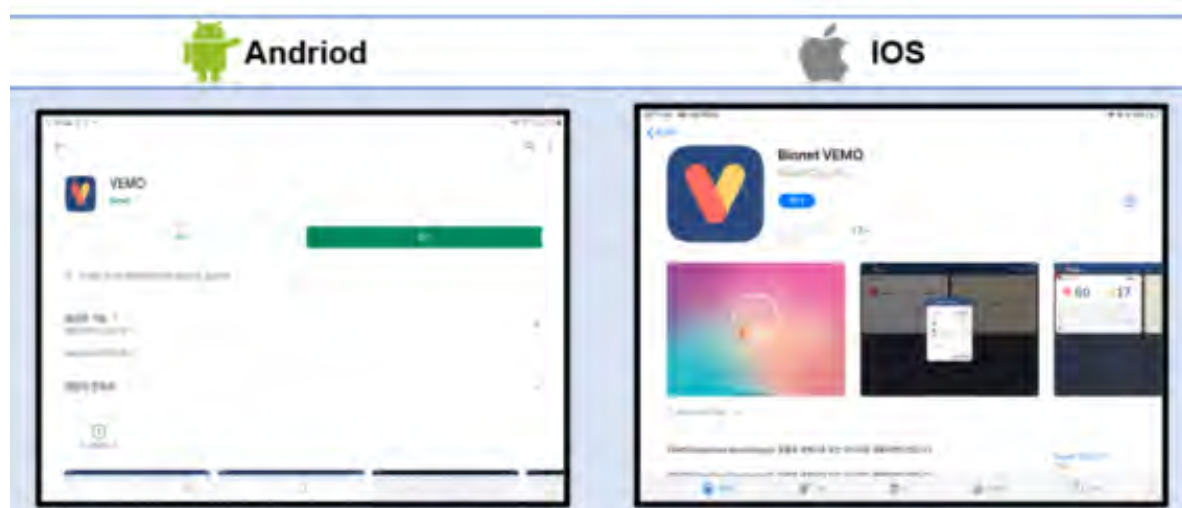
- | | |
|-----------------------------------|------|
| 1. VEMO Wireless, Wearable Sensor | 1 EA |
| 2. Hydrogel Adhesive | 8 EA |
| 3. Charging Cradle | 1 EA |
| 4. USB Charging Cable | 1 EA |



1-3 Starting VEMO & System Requirement





Download "Bionet VEMO" from app store



<Search "Bionet VEMO" and Install the App or program>

<Min. Recommended Specification>

	 Android	 iOS
Device Specification	Samsung Tablet A or more	iPad 6th Generation or more
Screen	8.4" or more	9.7" or more
Processor	Octa-Core 1.8 GHz	Quad-Core 2.34 GHz
RAM	3 GB	2 GB
Internal Storage	32 GB	32 GB
Expandable Storage	MicroSD 256GB	128GB
OS	Android 9	iOS 11.3
Wi-Fi	Yes	Yes
Bluetooth	Yes (4.0)	Yes (4.0)
Accelerometer	Yes	Yes

CAUTION

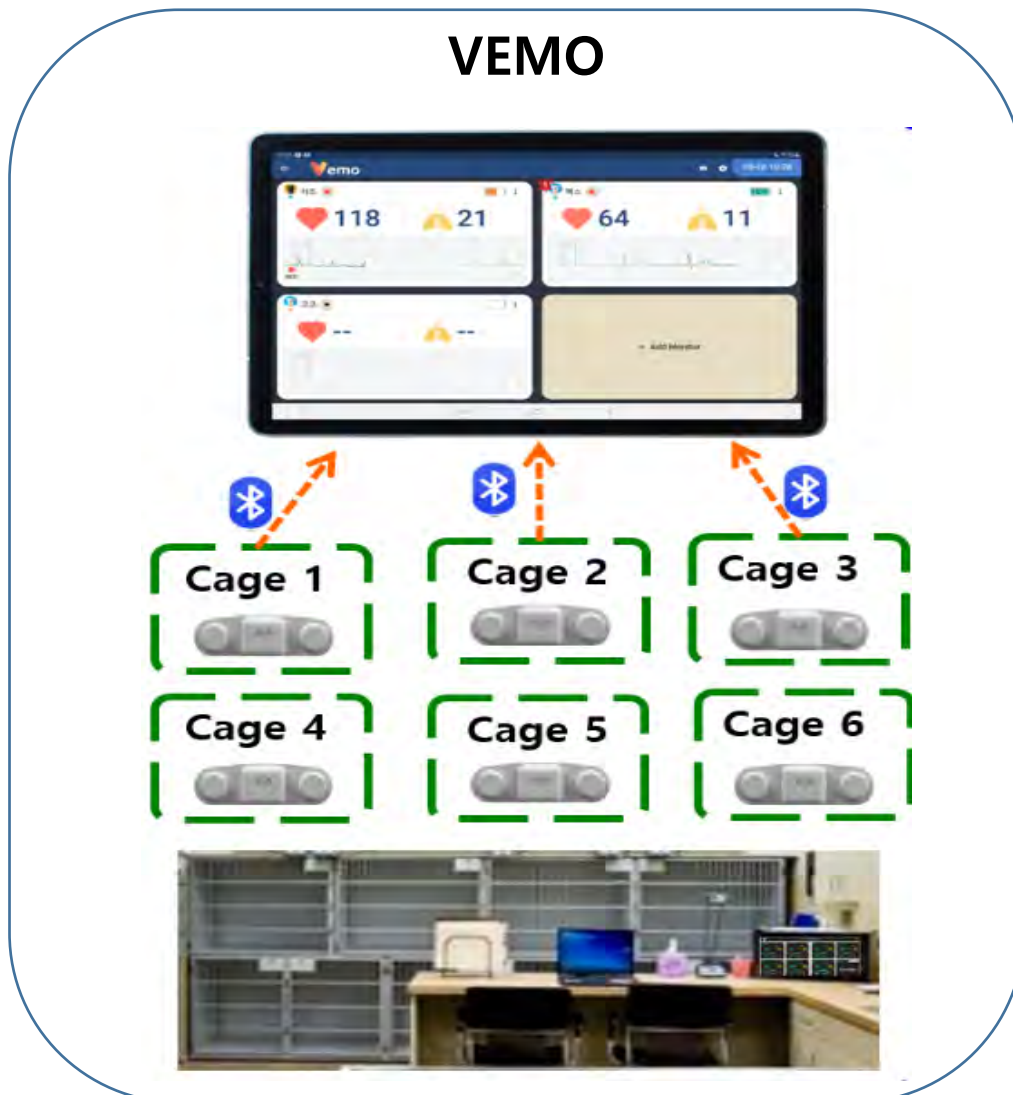
* Do not install "Bionet VEMO", "VEMO-Link", "VEMO-Board" at the same time at one single device of mobile phone or tablet PC. This can cause the error and accuracy problem for the device.

2. VEMO Application

2-1 General Information

VEMO app is the S/W program to monitor animal patient's real time vital signs of heart rate, respiration rate, and ECG based on bluetooth connectivity between VEMO sensor and tablet/mobile devices. With its alarm notification mode, VEMO has audible, visible alarm system to notify the alarm event to caregivers when vital signs are out of configured alarm range.

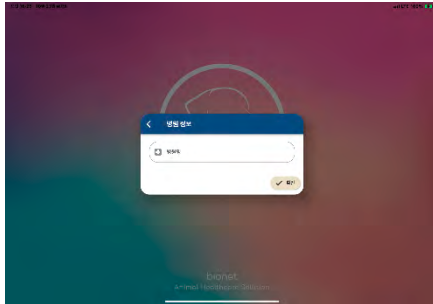
VEMO app can create vital chart of heart rate/respiration rate per minute and the maximum number of animal patients is up to 6 VEMO sensors and recommended number of connections is 4 VEMO sensors.



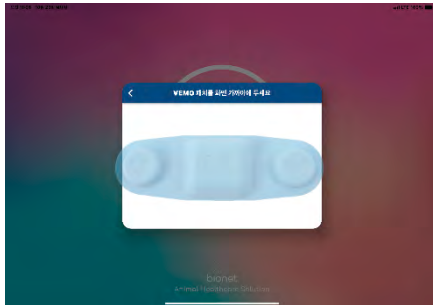
2-2 VEMO Application Authentication

After VEMO app is installed on mobile/tablet devices, authentication window appears on the screen to authorize to use all modes of program.

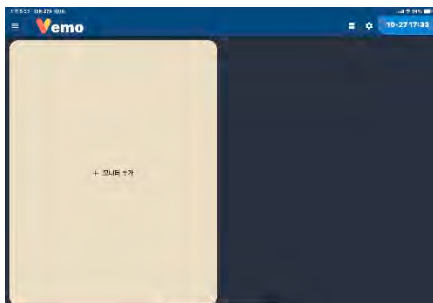
Please type the hospital name firstly and place the VEMO sensor to finalize the authentication



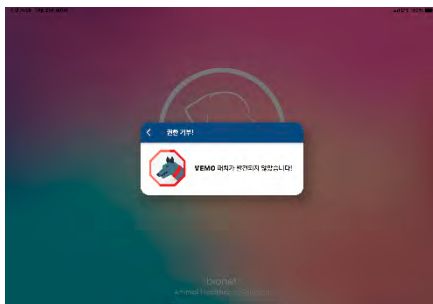
1. At the authentication window, type in the clinic's name



2. Place the VEMO sensor on the screen



3. When authentication is done, main display will appear



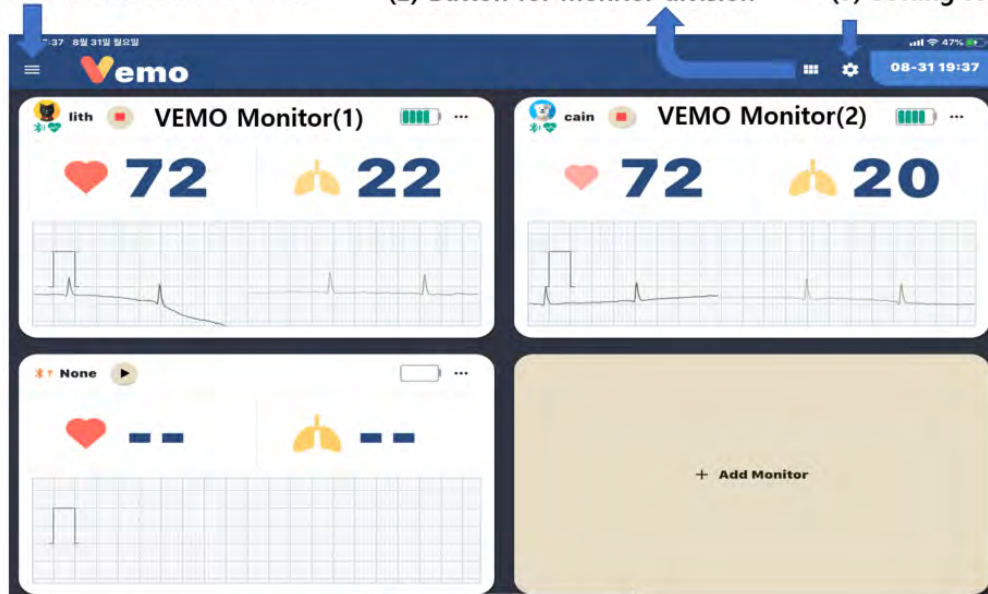
4. If VEMO app is not authorized, it will be unable to initiate

(In that case, please go back, pressing left-top button and try again)

2-3 Main Display Description

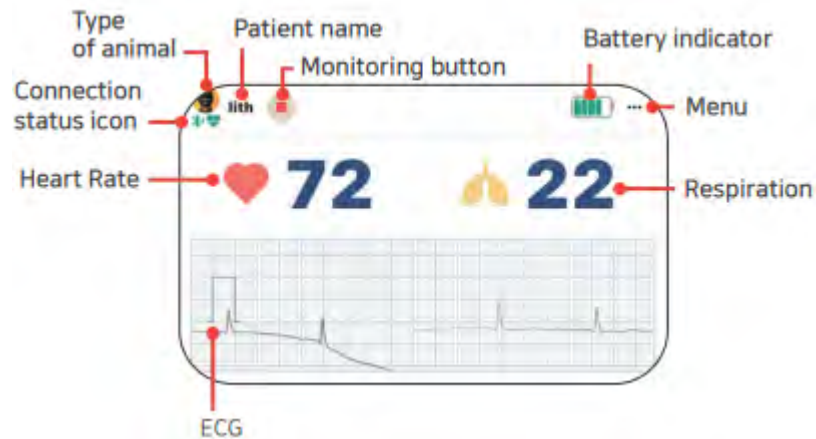
After install VEMO app, following main screen will appear followed by VEMO booting logo.

- (1) Menu for vital chart records (2) Button for monitor division (3) Setting for preference



1. Previously recorded pet patient data can be reviewed at vital chart menu.
2. The number of monitoring pet patient can be configured by 1×2 / 2×2 / 2×3 with display layout menu.
3. User can setup other preferences at Preference Menu like alarm, snooze, repeat alarm, vital chart interval.
4. Each VEMO sensor is to monitor one pet patient individually.

2-4 VEMO Application Monitoring Display Description



2-5 VEMO Wireless, Wearable Sensor

The VEMO sensor can monitor Heart Rate, Respiration Rate, and Electrocardiography.

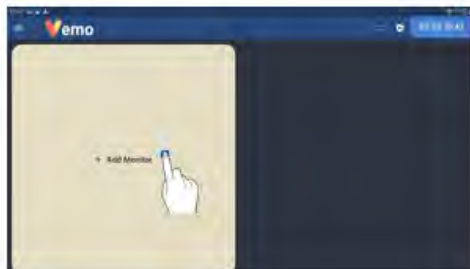
The maximum VEMO sensor monitoring is up to 6 animal patients.

With its alarm notification mode, VEMO has audible, visible alarm system to notify the alarm event to caregivers when vital signs are out of configured alarm range.

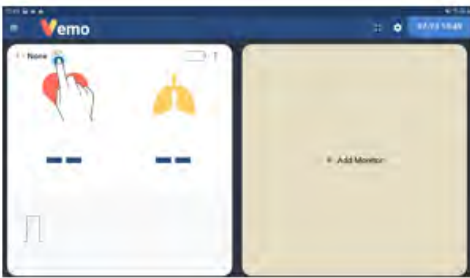
2-6 Paring VEMO

The VEMO sensor can connect the mobile/tablet devices with bluetooth pairing connection.

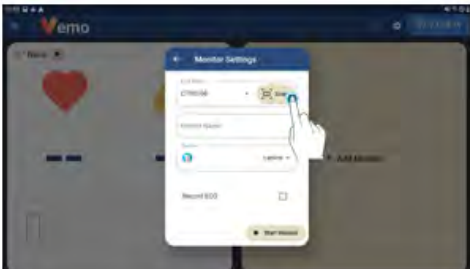
VEMO app can scan only the VEMO sensor with pairing connection interface.



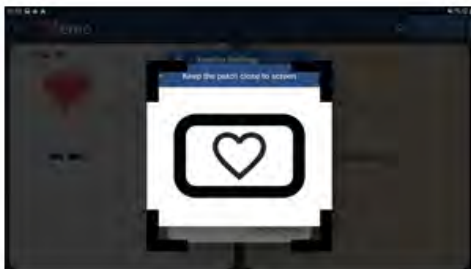
1. 1. Press "+Add Monitor" Button



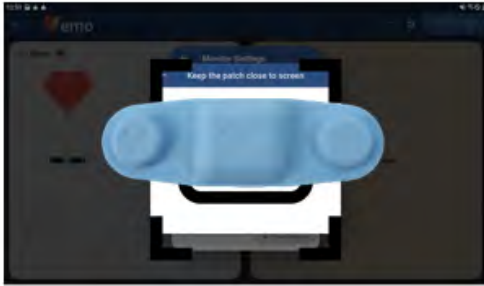
2. Press 



3. Press "Scan" Button



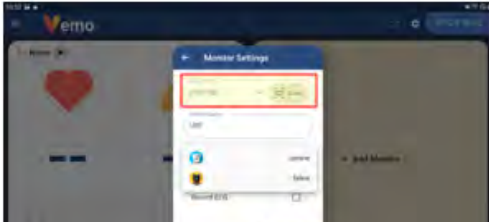
4. Heart icon will appear



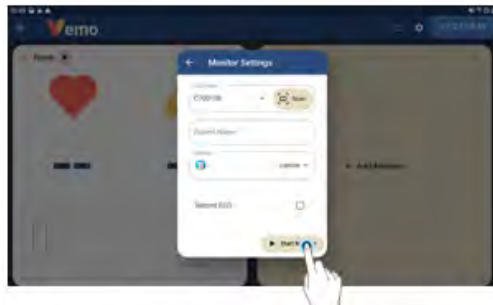
5. Place VEMO Sensor

✘ **CAUTION**

Several VEMO sensors around the mobile device can cause the pairing error



6. Check if the sensor serial number is registered successfully (Ex: C740135)



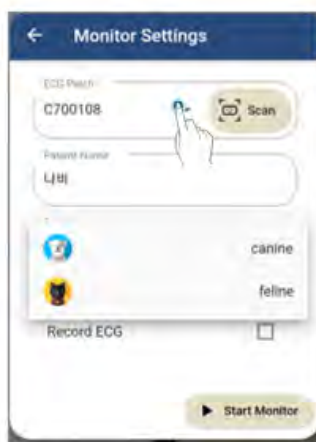
7. Select the type of animal and "Start Monitor" button

CAUTION
<ol style="list-style-type: none"> 1. Check the VEMO sensor serial number and one at "Monitor Settings" window. 2. DO NOT try to pair any other device except the VEMO sensor. 3. Locate the VEMO sensor and the mobile/tablet within 10m/ 32ft diameter range.

※ When "Scan" mode is not working well, try manually scanning and pairing to initiate VEMO app



1. Check the serial number at the back of the VEMO sensor. (Ex : C740135)



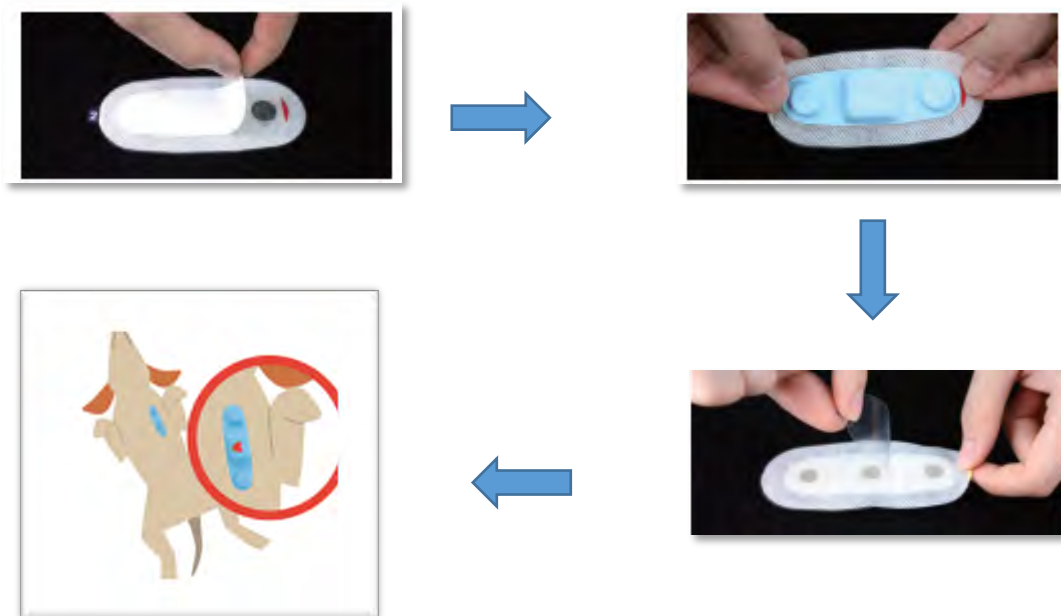
2. Press the arrow key to see the list of serial numbers



3. Find the matching serial number and select the serial number

2-7 Placement of the VEMO sensor

1. Shave the hairs at the contact point with the VEMO sensor.
 - **Clean the skin with alcohol gauze at ECG lead contact points.**
 - **Avoid wrinkled area and wipe out the alcohol with dried cotton towel.**
2. Take out the VEMO sensor from the charging cradle.
3. Peel out adhesive No.1 side.
4. Attach the VEMO sensor on the No.1 side
5. Peel out adhesive No.2 side and Place the VEMO sensor on the heart icon with 90 degrees clockwise.



※ When needed, ECG gel can be additionally applied where the VEMO sensor is placed

NOTE

- When ECG signal is not normal with noise or abnormal waveform, check the VEMO sensor placement and the skin contact point with the VEMO sensor.
- When adhesive part is weak not enough to hold the VEMO sensor attached, replace the adhesive.
- Only genuine Bionet hydrogel adhesive is validated to use with the VEMO sensor, and any other adhesive is not allowed to use with warranty waived.
- When adhesive is being used with sensitive skin for small animals, please remove the edge of the adhesive to minimize the adhesive contact point.

CAUTION

- ECG interpretation must be carried out under veterinary medicine professionals.
- DO NOT use electromagnetic related devices near the VEMO in order not to interfere Bluetooth connection for the VEMO sensor and mobile/tablet devices.
- DO NOT rely on the vital signs of the VEMO in case of animal patient with epilepsy.

2-8 How to Apply the VEMO Sensor

It is recommended to shave the part of skin where the VEMO sensor will contact directly to minimize the noise so that the VEMO sensor can detect the signal from the patient.

Please change the hydrogel adhesive in case of following cases:

- **Excessive noise of ECG signal**
- **Medicine immersion at dressing process**
- **Skin trouble at the contact point with VEMO sensor**

Make sure that adhesive contains hydrogel with good condition or dried.

If hydrogel adhesive is out of validity, DO NOT USE dried adhesive.

In case of high chances of water immersion, please use water-resistant tape equivalent to Steri-Drape surgical tape.

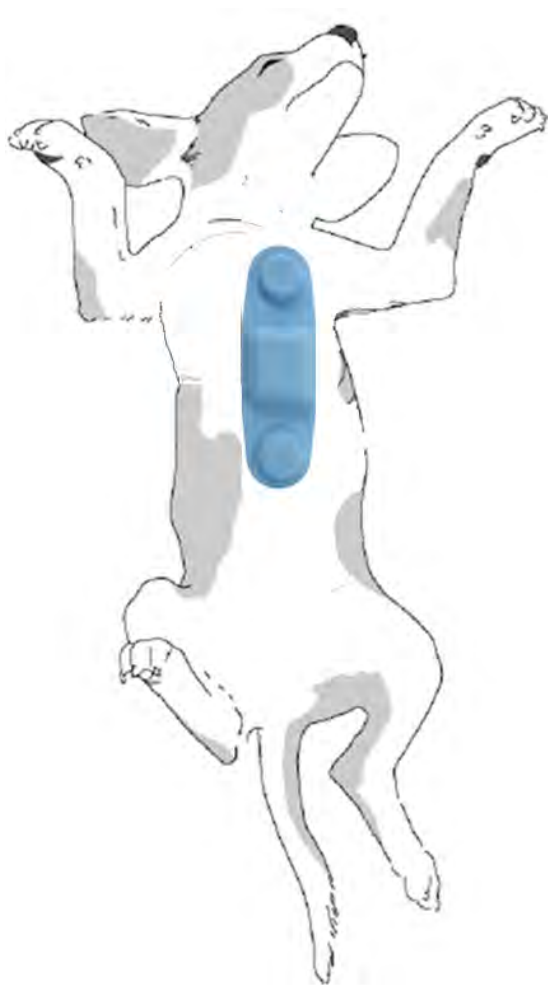
CAUTION

- Excessive dry condition of skin and hair can cause the signal quality of VEMO sensor.
- Beware of the potential allergy of VEMO sensor and hydrogel adhesive.
- In case of skin trouble found, remove VEMO sensor immediately.

Placing the electrode sensors

※ Please shave the animal patient's chest before applying the sensors.

- Shave the animal patient and sterilize the VEMO with 70% alcohol



[Pic. 1] Position of the ECG sensor to be attached



[Pic. 2] The angle of the ECG sensor to be attached

- The sensor should be applied on the middle of the chest.
- Attach the sensor as PIC 1.
- Place the ECG sensor with its heart icon rotated clockwise in 90 degrees.



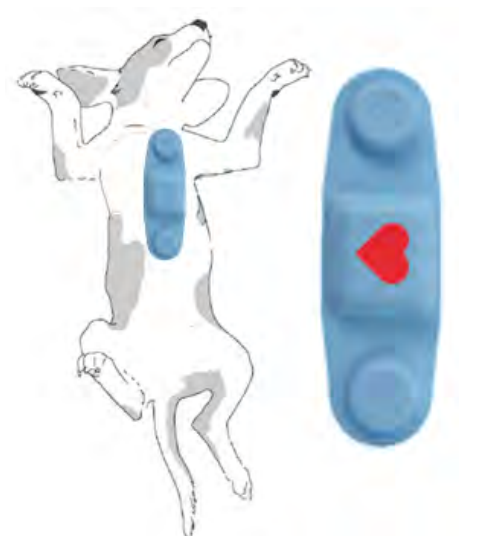
1. Peel out adhesive No.1



2. Attach the VEMO Sensor on the No.1 side



3. Peel out adhesive No.2

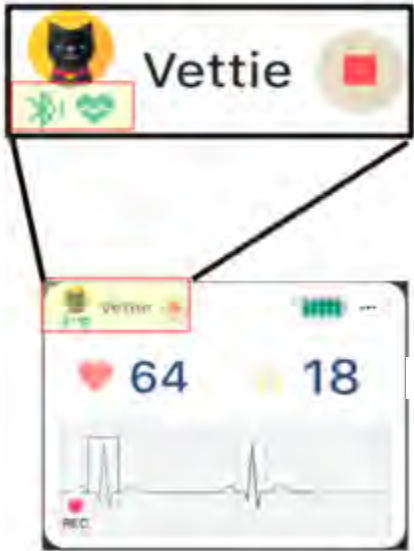


4. Place the VEMO sensor on the heart with its heart icon 90 degrees vertical and clockwise

2-9 Vital Signs Monitoring





After applying the VEMO sensor on the animal patient and successfully pairing with VEMO app, start viewing the vital signs display through the monitor.

(Check the connection status indicator and ECG lead status indicator.)





1. Check the serial number at the back of the VEMO sensor.

Pairing status icon


			
Connected	Disconnected	Waiting for Connection	Connection Error

ECG Lead icon

	
LEAD sensor connected	LEAD sensor not connected.

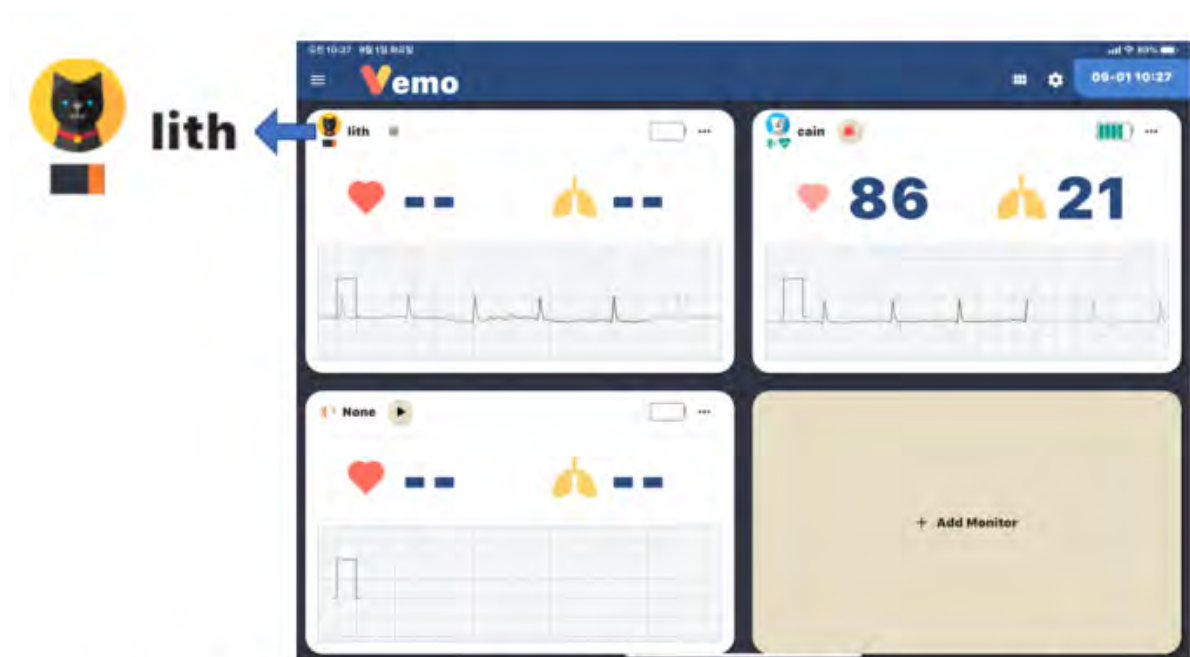
※ When the LEAD sensor is not properly attached,

- Check how the sensor is attached
- Check if the animal is properly shaved

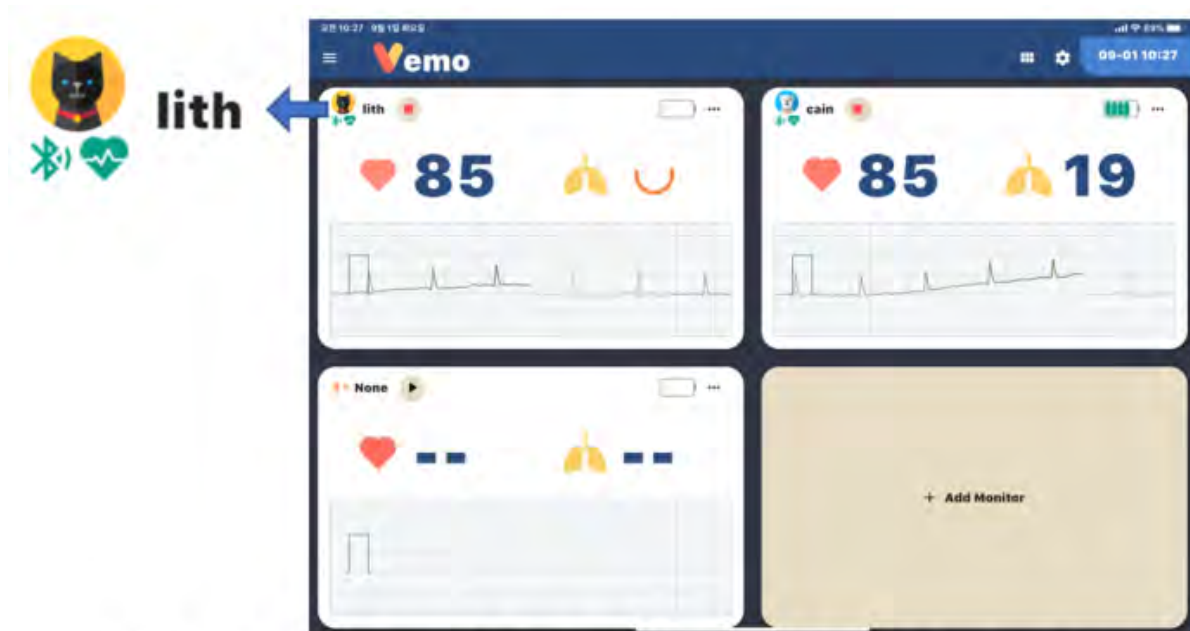


2. Now start monitoring the Vital Signs.

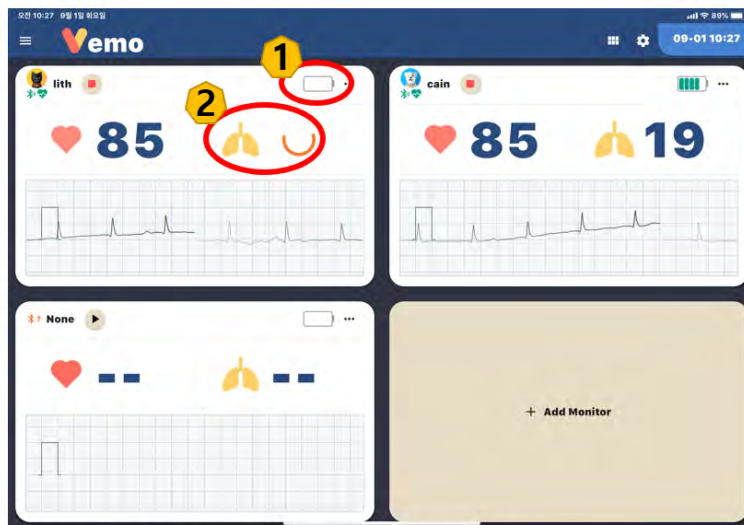
(Takes approximately 32 seconds for measuring Respiration Rate)



<Processing pairing and registration of the animal patient's information>



<Information registered and pairing completed>



(1) Updating battery status

(2) Takes approximately 32 seconds for measuring respiration rate



<Monitoring after sensor attached and pairing completed>

CAUTION

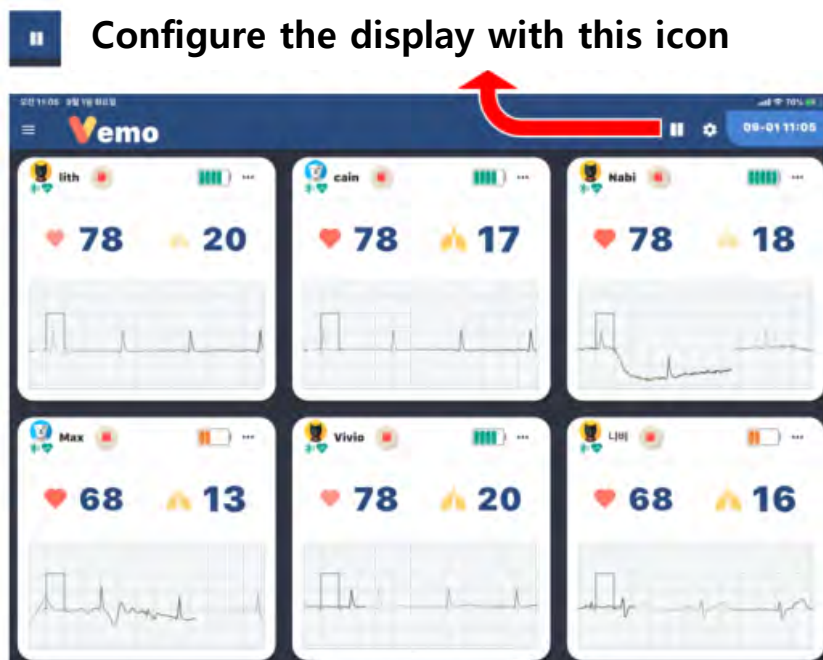
- VEMO's wireless, wearable sensor's BPM measurement range is between 40 to 300.
- For patients with above or below of this range should use an animal patient monitor.

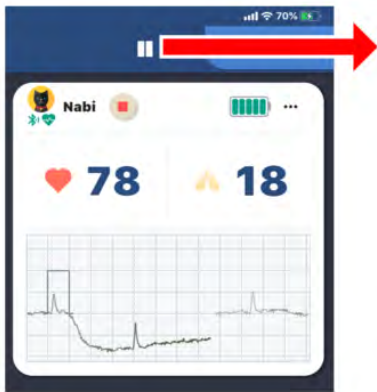
2-10. Configuring Display Layout

VEMO app provides monitoring animal patients up to 6 sensors. (4 sensors recommended). Additionally, the app can expand or divide the monitors up to 6 displays in one tablet.



<This is a screen monitoring with 6 sections. (6 units paired)>





→ 2 × 1 (2 Sections)



→ 2 × 2 (4 Sections)



→ 2 × 3 (6 Sections)

2 Sections → 4 Sections → 6 Sections → 2 Sections (Orderly Rotates)



→ 2 × 1 (2 Sections)



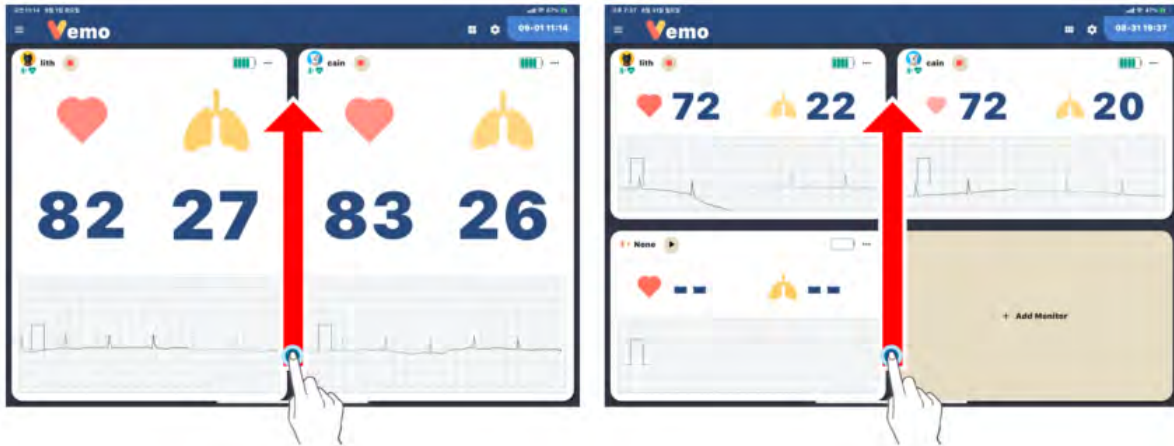
→ 2 × 2 (4 Sections)



→ 2 × 3 (6 Sections)

Scrolling Down the Screen

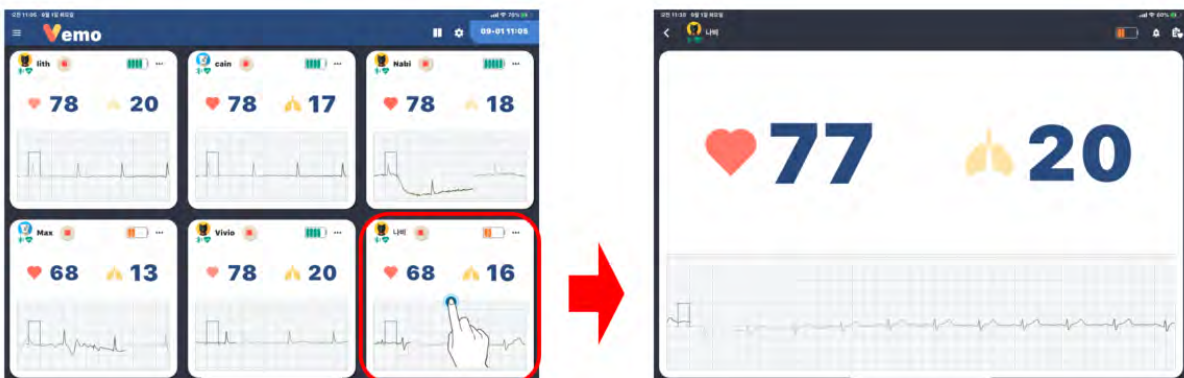
When the monitor is split into 2 sections or 4 sections, scroll down to view the other monitors.



Expanding the Screen

From the divided screen, extend the screen to view one monitor.

Tap the monitor to expand the screen.



<Choose and tap a monitor to expand>

2-11 Setting Up the Alarm

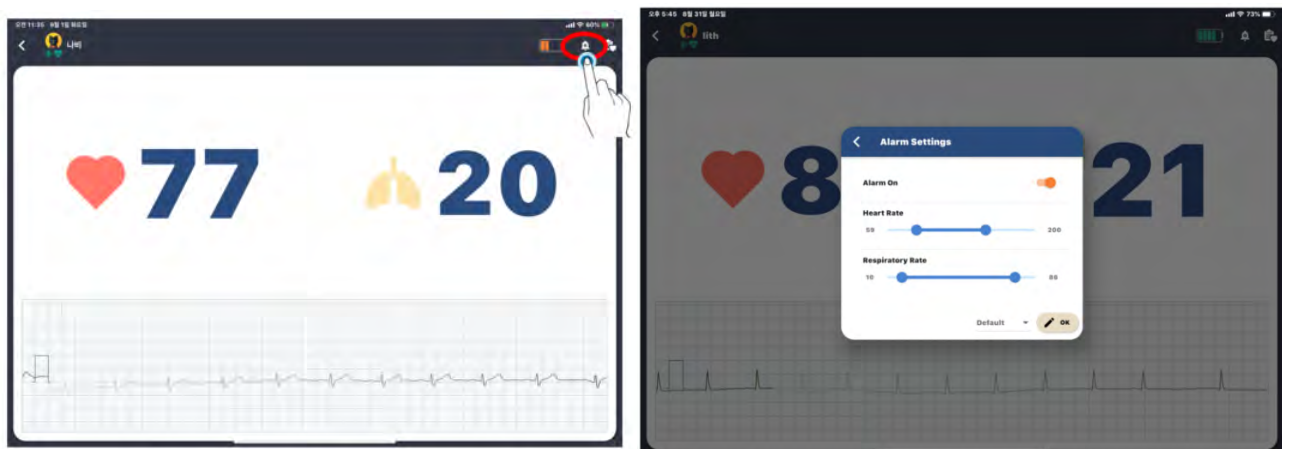
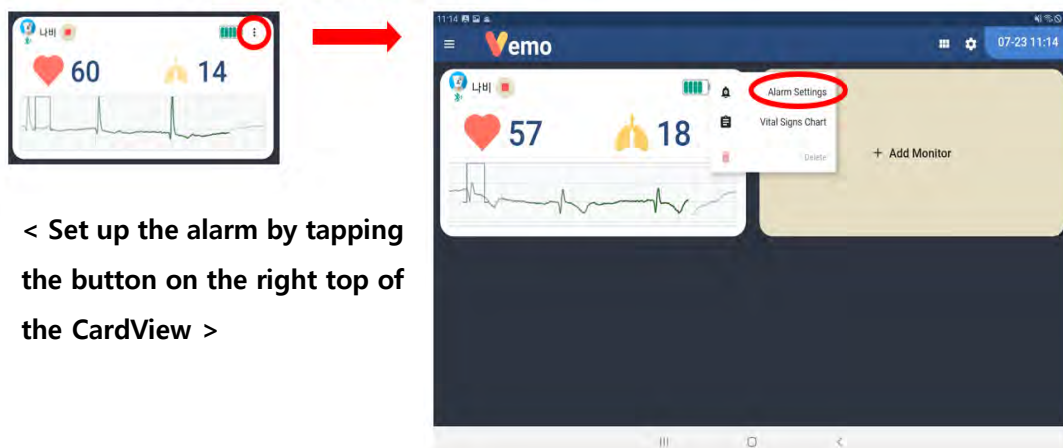
Outline

In the VEMO app, there is an alarm function to inform the heart rate and respiration rate of the animal patient.

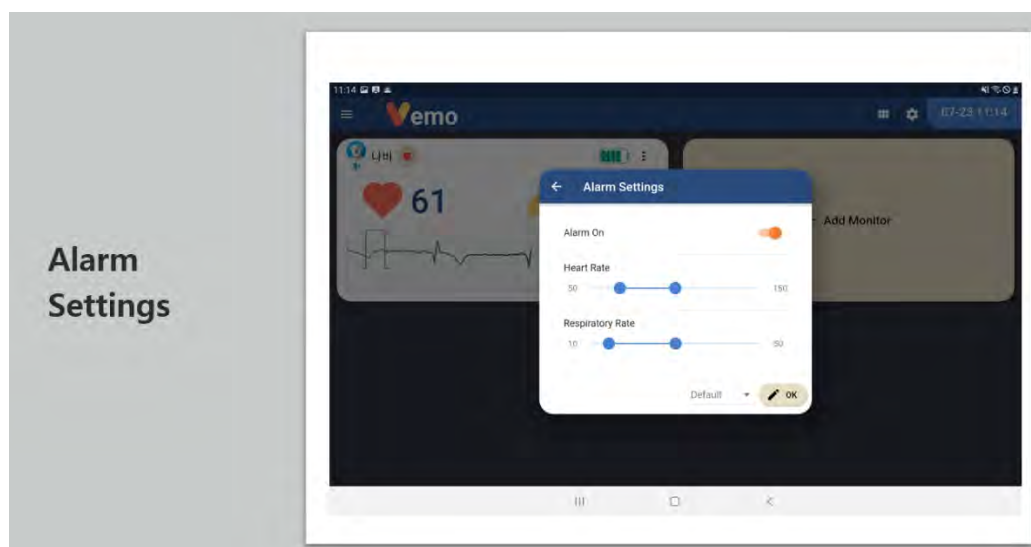
In the Alarm Setting menu, configure the type and range of HR and RR for each animal patient. When the measurement is above or below the limits or when the battery is low, the alarm will go off.

Alarm On/Off and Setting the Normal Range

In the monitoring display of the animal patient, tap the button on the top, right of the monitor and the Alarm Setting menu will appear.



<On top right of the "expanded view," tap the bell icon to set up the alarm>



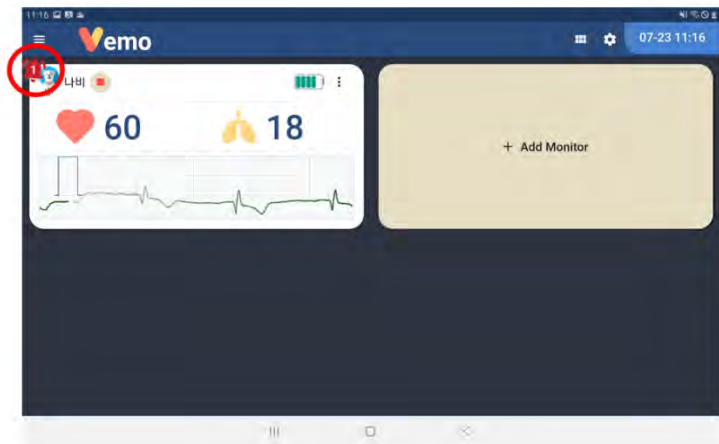
The following are the type of Alarm settings

- **Alarm On/Off**
- **Setting the range of Heart Rate**
- **Setting the range of Respiratory Rate**

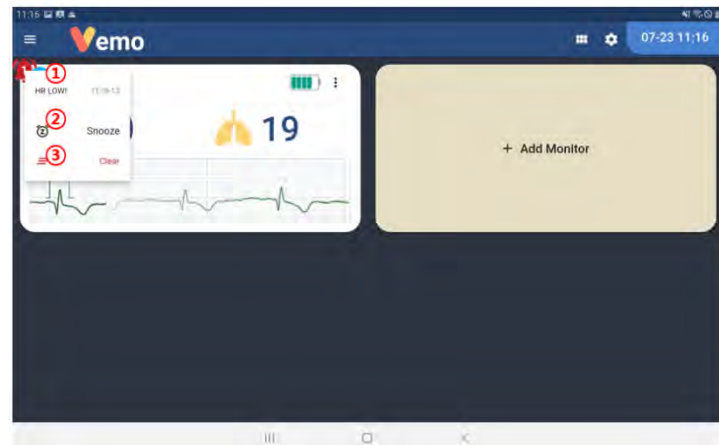
After setting the range, tap the OK button below to save the settings.

With the Default button next to the OK button, set the Canine or Feline's normal heart rate range and respiratory rate range.

When the rate is above or below the range, the bell alarm icon will appear on top of the screen



1. Description of the alarm
2. Alarm snooze
3. Delete Alarm

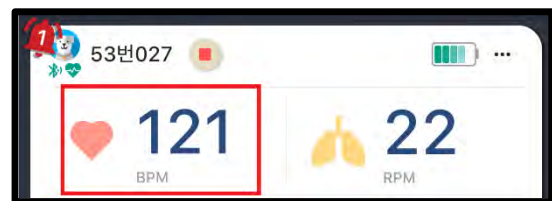
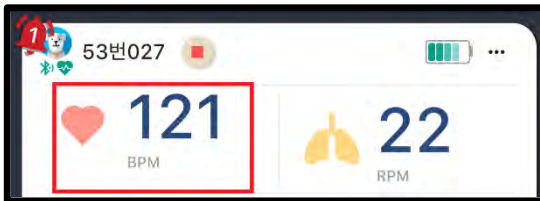


Alarm Sign of the Parameters

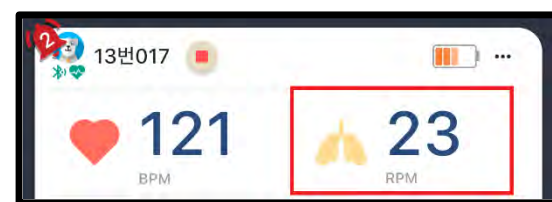
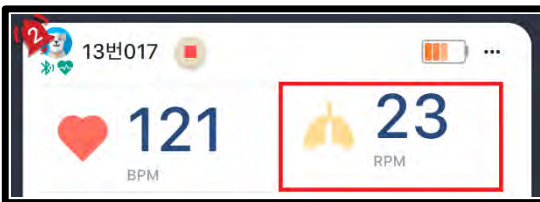
There are 3 types of alarm: HR, RR, battery

For all parameters, there will be a bell icon, and for each of the parameters, there will be an animated icon to inform the alarm.

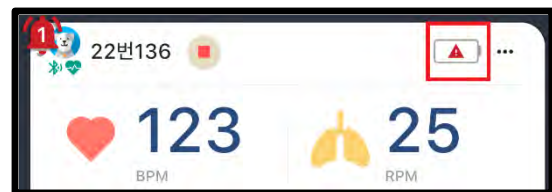
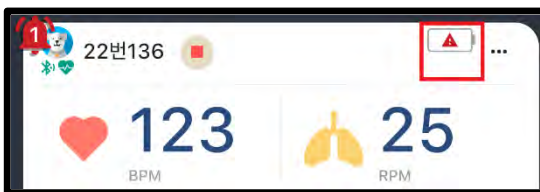
To indicate the cause of the alarm, the icon and value will shake as in the picture below:



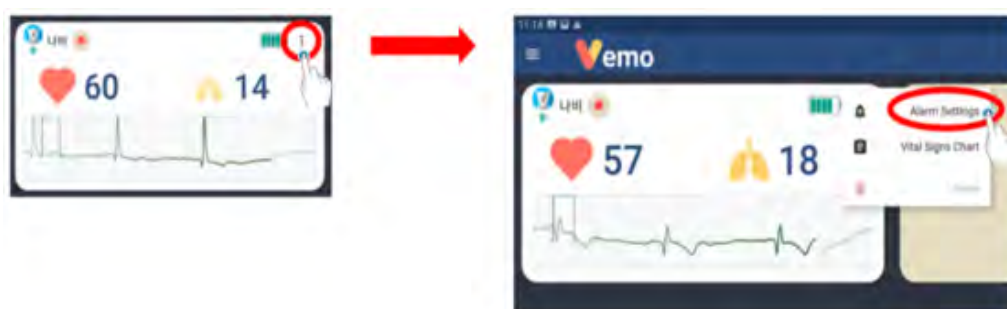
<Heart Rate Alarm>



<Respiration Alarm>



<Battery Alarm>



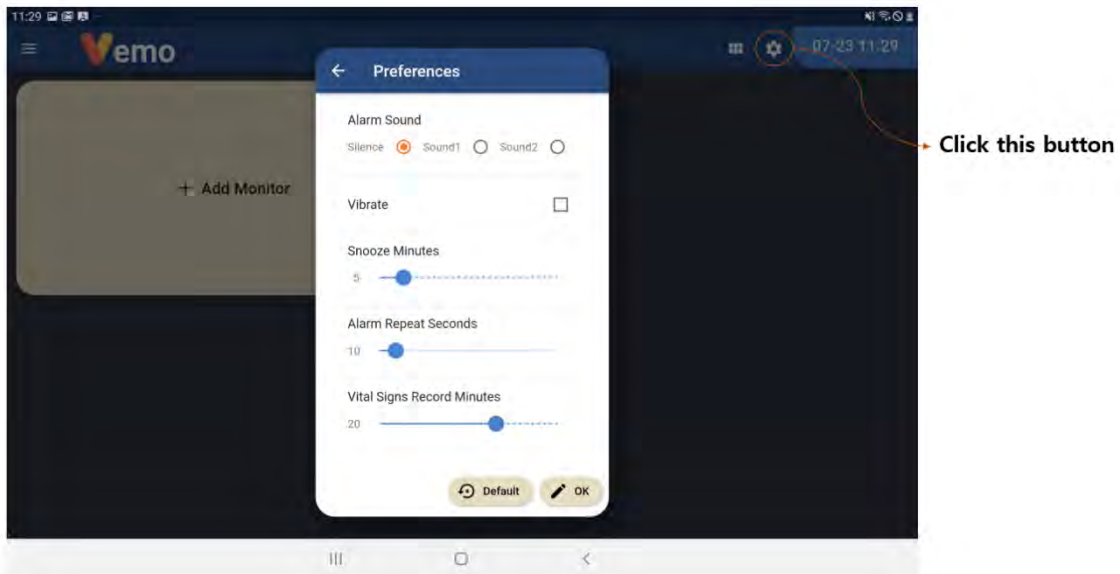
1. Click the 3 dots button on the top right screen and select Alarm Setting



2. Turn on/off the monitor's alarm
3. Adjust the HR and RR
4. If the measurement is out of range, the alarm will occur
5. Tap Default to go back to Default settings

How to Set Up the Alarm

To set up the alarm, tap the settings button on the top right of the main display

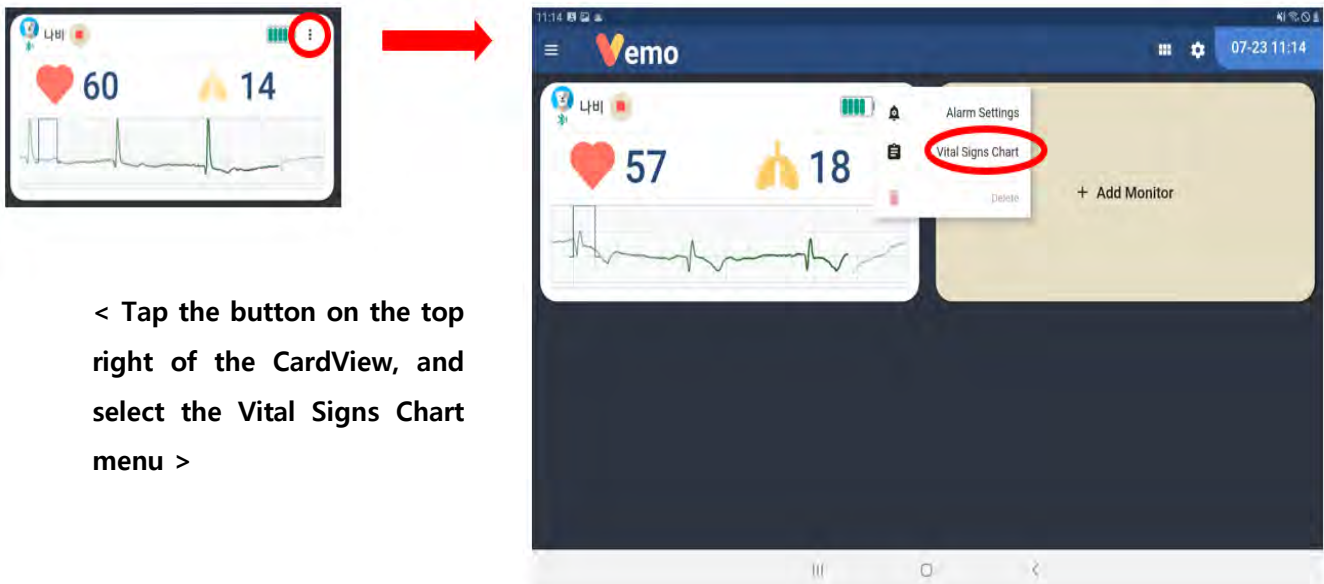


The following are the type of alarms:

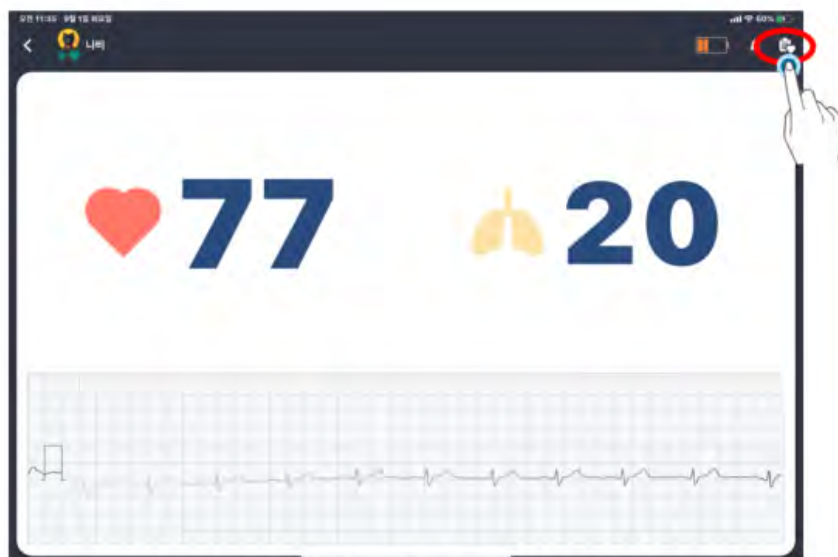
- **Alarm Sound:** Setting the sound of the alarm. (including mute)
- **Vibrate:** Activating the Vibration Mode when an alarm occurs.
- **Snooze Minutes:** Setting the time for SNOOZE.
- **Alarm Repeat Seconds:** Setting the time of repeat for the alarms.
- **Vital Signs Record Minutes:** Setting the (interval) record time on the Vital Chart.

2-12 Creating the Vital Signs Chart

The VEMO app provides the current HR, RR measurement values of the animal patient to be automatically saved in a graph and chart format.



< Tap the button on the top right of the CardView, and select the Vital Signs Chart menu >



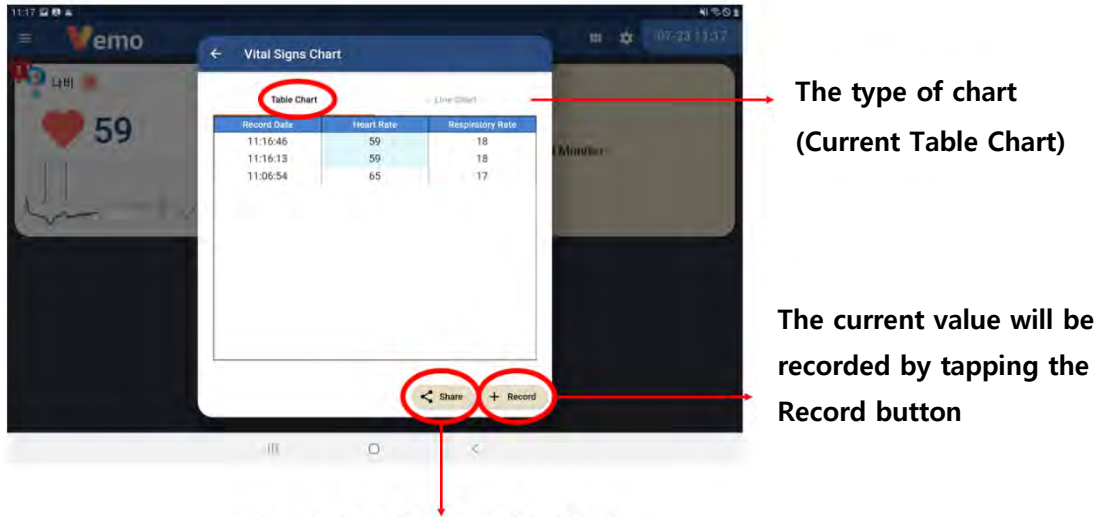
<In the extended screen, tap the chart icon on the top right side to view the chart>

Viewing the Table Chart

HR and RR will be recorded periodically according to the "Vital Signs Record Minutes" value that is set.

To the values that are out of range, it will be marked in red.

With the Record button below, record the current HR, RESP value to the chart.



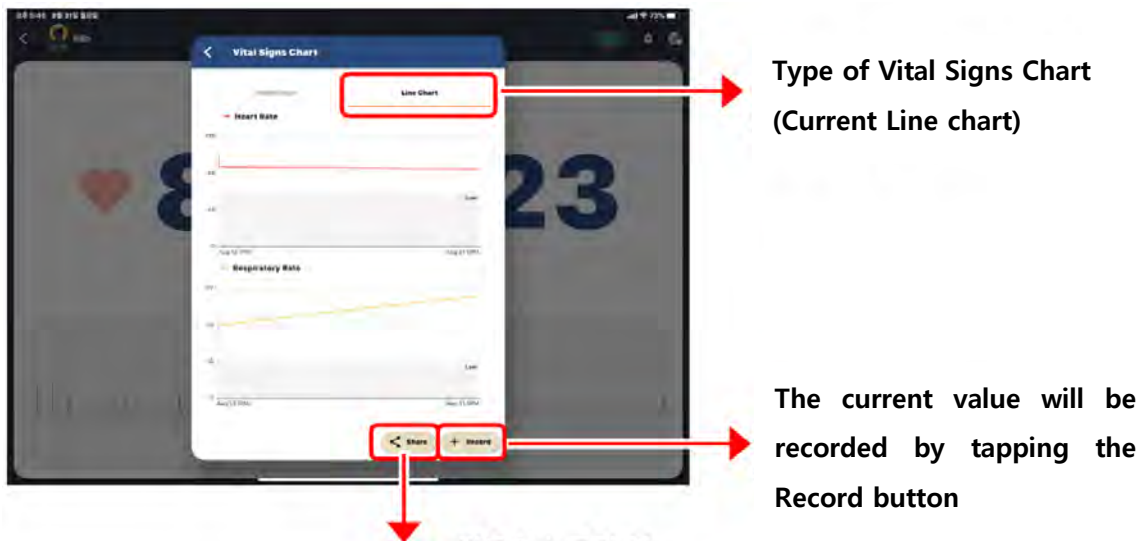
The type of chart
(Current Table Chart)

The current value will be recorded by tapping the Record button

Tap the Share button to share the chart above in PDF format

Viewing the Line Chart

Click on the Line Chart tab to change the Table chart values to a line graph and show the trend.



Type of Vital Signs Chart
(Current Line chart)

The current value will be recorded by tapping the Record button

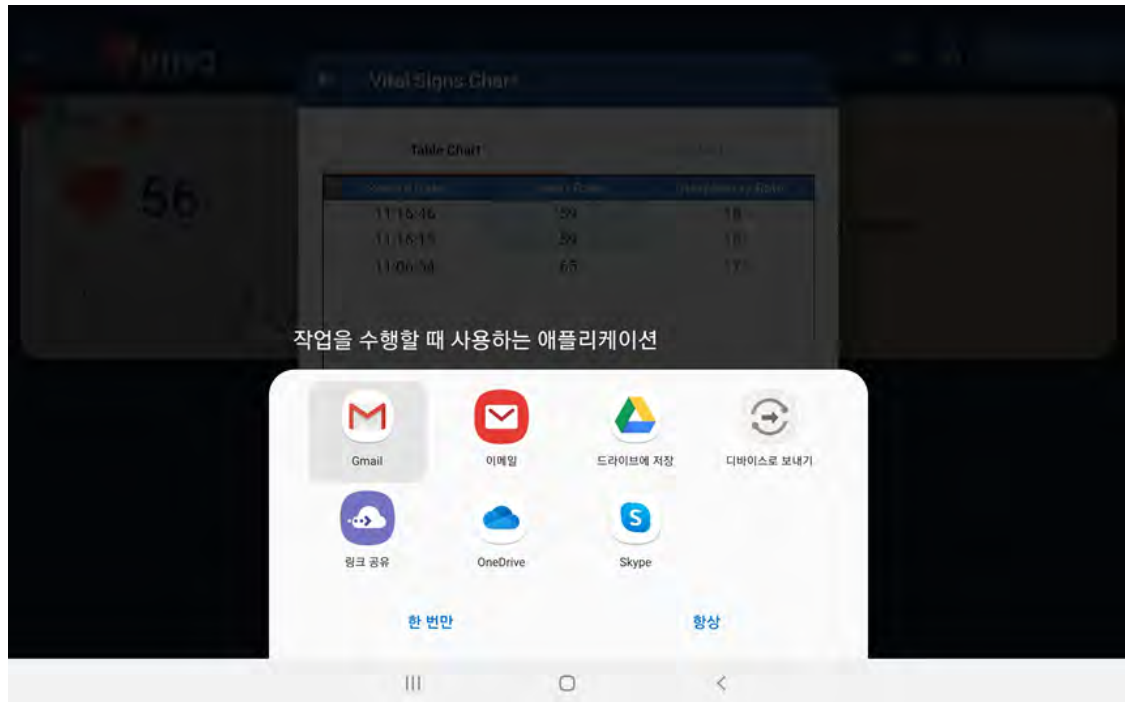
Tap the Share button to share the chart above in PDF format

Sharing the Chart PDF file

Tap the Share button on the bottom to share through email or Cloud storage and save on the device.

The file will be saved in PDF format.

Table chart can only be shared in PDF format

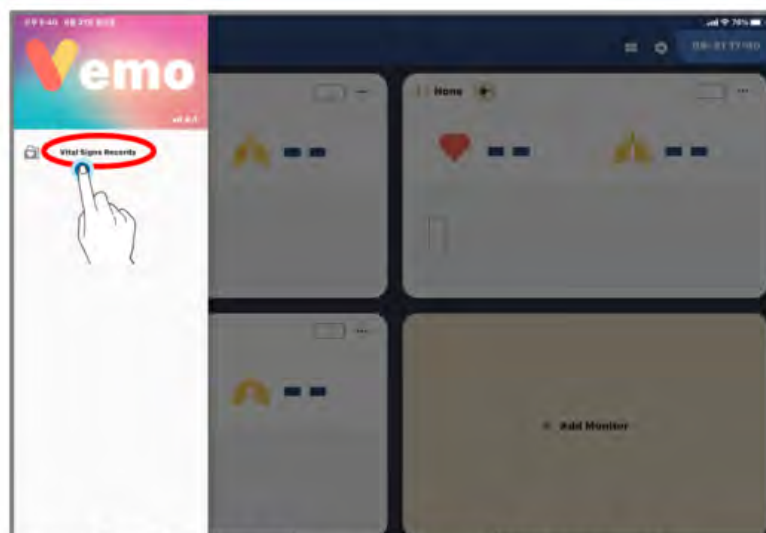


Reviewing the Animal Patient's Previous Chart

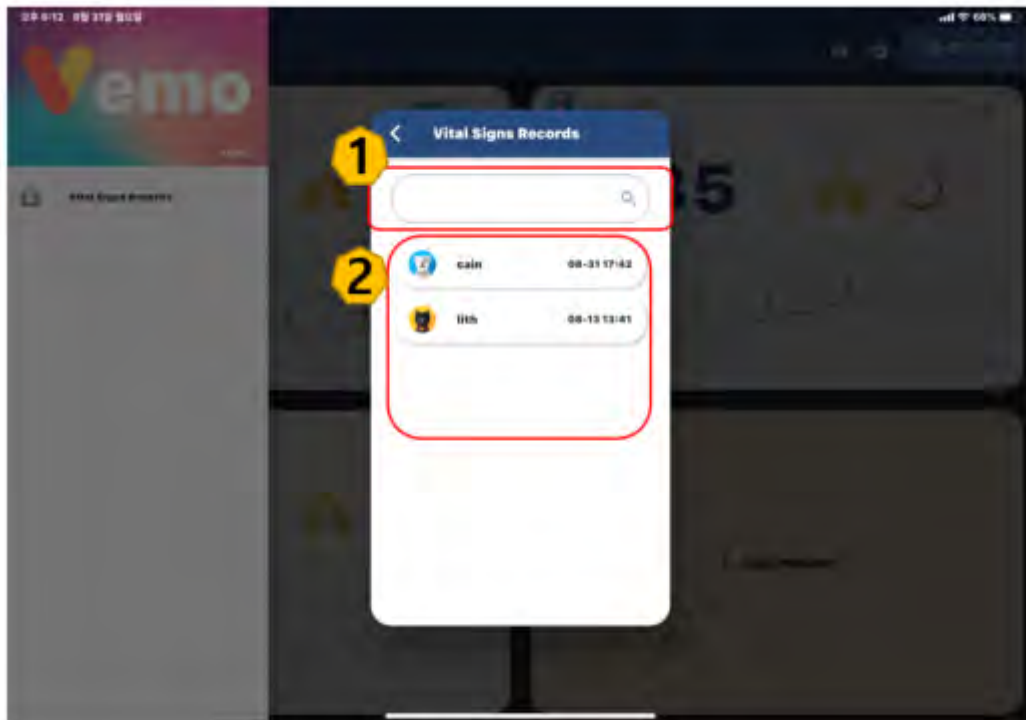
With the attached VEMO sensor and the monitoring display, review the past chart of an animal patient which is saved in the tablet's storage. The previous charts that were saved can also be shared in PDF format



< Tap the icon on the upper left of the screen >

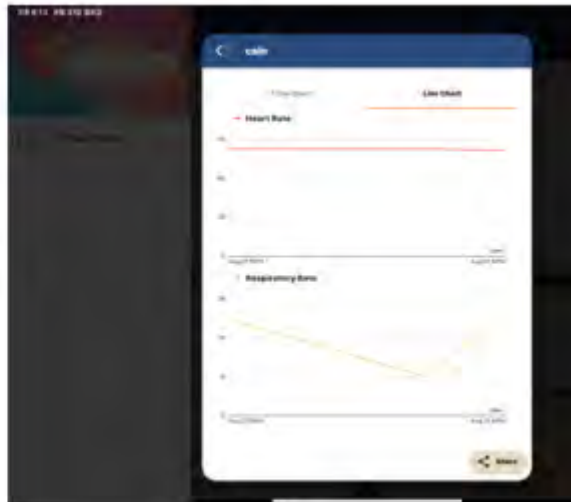


< Tap the Vital signs Records menu >



(1) Review the chart by searching the previous animal patient

(2) Review the chart by selecting from the list below



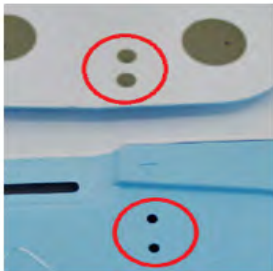
2-13 Charging the VEMO Wearable Patch

The VEMO wearable patch can be used after recharging.

When recharging, the charging cradle and USB charging cable is needed.

It can be charged by plugging into a powered USB port or a USB charger.

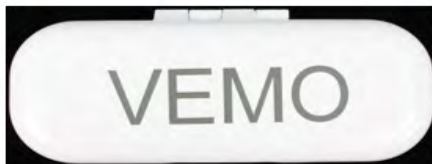
(Smartphone, Charger, PC)



1. After checking the charging terminal of the wireless, wearable sensor and the charging terminal of the charging cradle



2. Put the wireless, wearable sensor on the charging cradle



3. Close the charging cradle

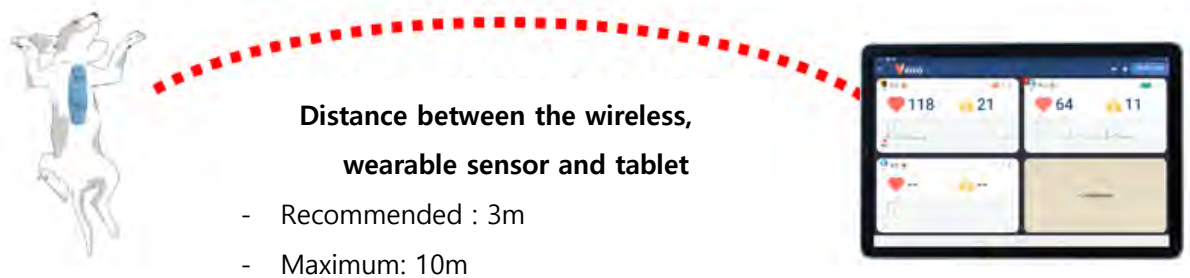


4. Charging starts when the USB charging cable is connected to the charging cradle

- Blue: Charging
- Green: Fully Charged

2-14. Recommendation of Using VEMO & Precautions

- (1) Pay attention to the distance between the VEMO wireless, wearable sensor and the tablet. Being Bluetooth -based, it is affected by interferences or distance. It is recommended to place it about 3m near the cage



- (2) When attaching the VEMO wireless, wearable patch, please use the VEMO adhesive patch.



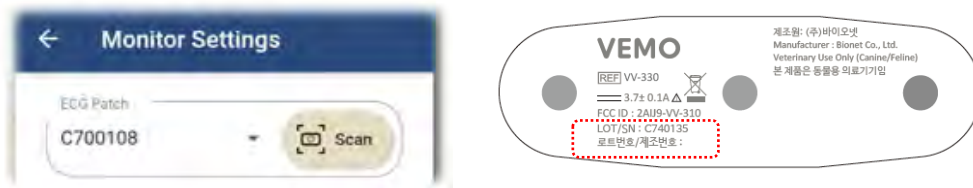
< When using VEMO wireless, wearable sensor, a VEMO specific hydrogel adhesive patch must be used >

- (3) Do not expose the VEMO wireless, wearable sensor to heat and electromagnetic.



< VEMO wireless, wearable sensors are sensitive to heat, strong electronics, and metal, so please do not place them around >

- (4) When pairing, be sure to check the serial number



< Be sure to check the serial number when pairing the wireless, wearable sensor >

- (5) When using a wireless, wearable sensor, check the status of the VEMO sensor

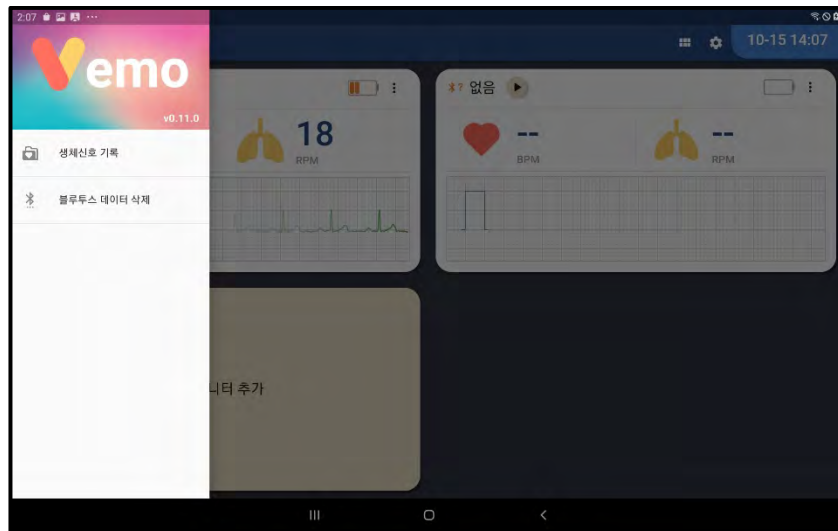


< After connecting the wireless, wearable sensor, check the pairing status, electrode status, and charging status >

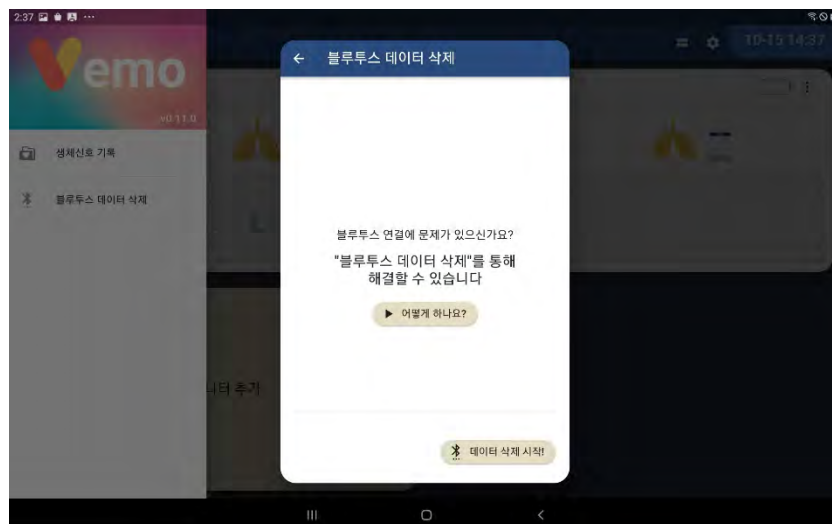
2-15. Recommendation of Using VEMO & Precautions

When using VEMO during bluetooth pairing does not work or connection intermittently gets cut off, deleting the Bluetooth data will solve the problem.

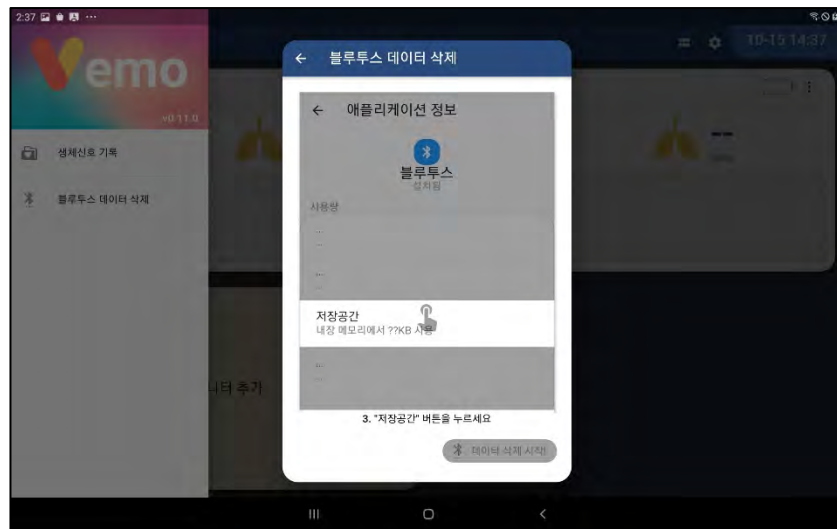
The VEMO app provides a guide on how to delete bluetooth data to the user, helping the user to resolve a Bluetooth error.



(1) Select the menu button on the top left and Click the Bluetooth Data Delete button



(2) Select the middle button "How To?" and the Bluetooth Data Delete Guide animation video will play



(3) After the guide animation is finished, click on the “Data Delete Start” button on the bottom



(4) On the guide, click [Storage] → [Delete Data] button and the Bluetooth data will be deleted. (After deleting, VEMO app automatically restarts)

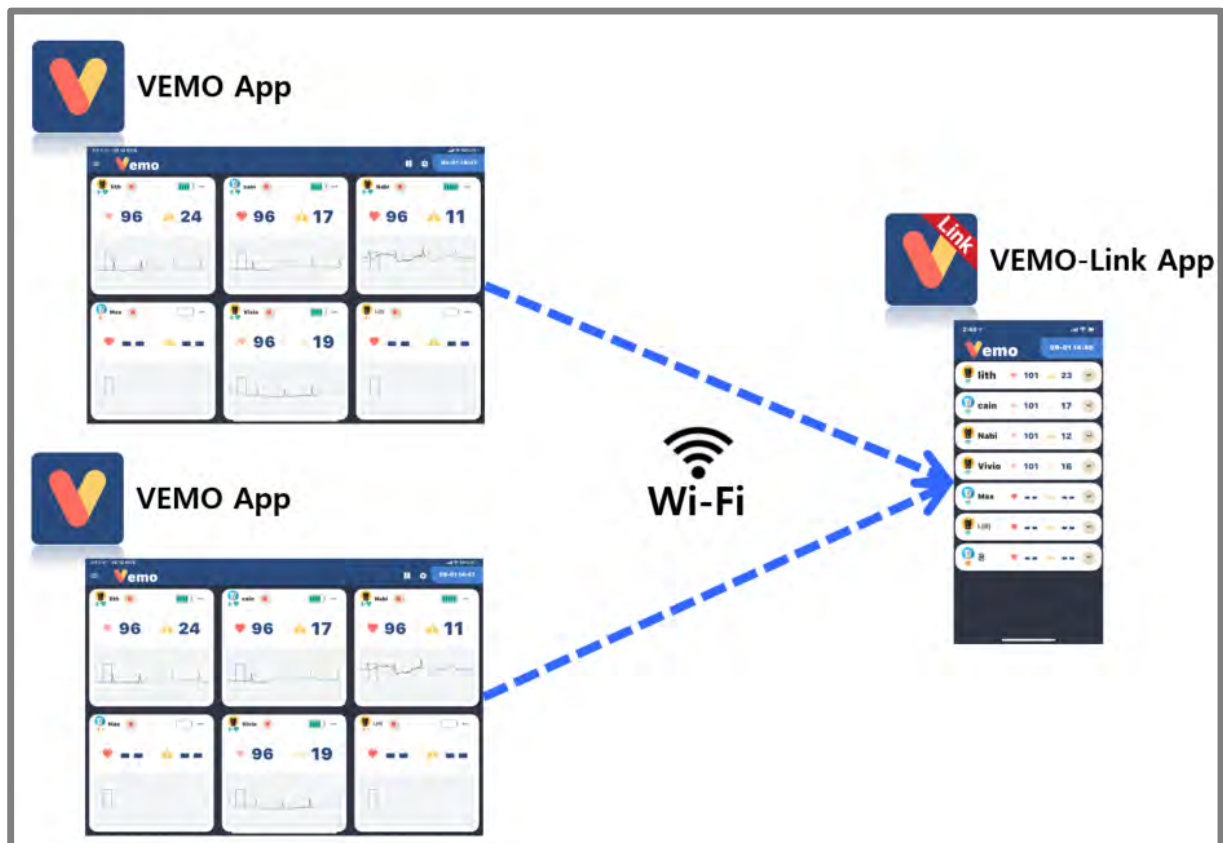
3. VEMO-Link

3-1 General Information

VEMO-Link App is an app to see the animal patient's data and alarm when downloaded on veterinarian or nurse's mobile device.

VEMO-Link receives data from VEMO via Wi-Fi and supports real-time monitoring as it is on the VEMO monitoring screen to the user. (Wi-Fi must use the clinic's internal network.)

It has an integrated monitoring function that receives data from multiple VEMO apps.

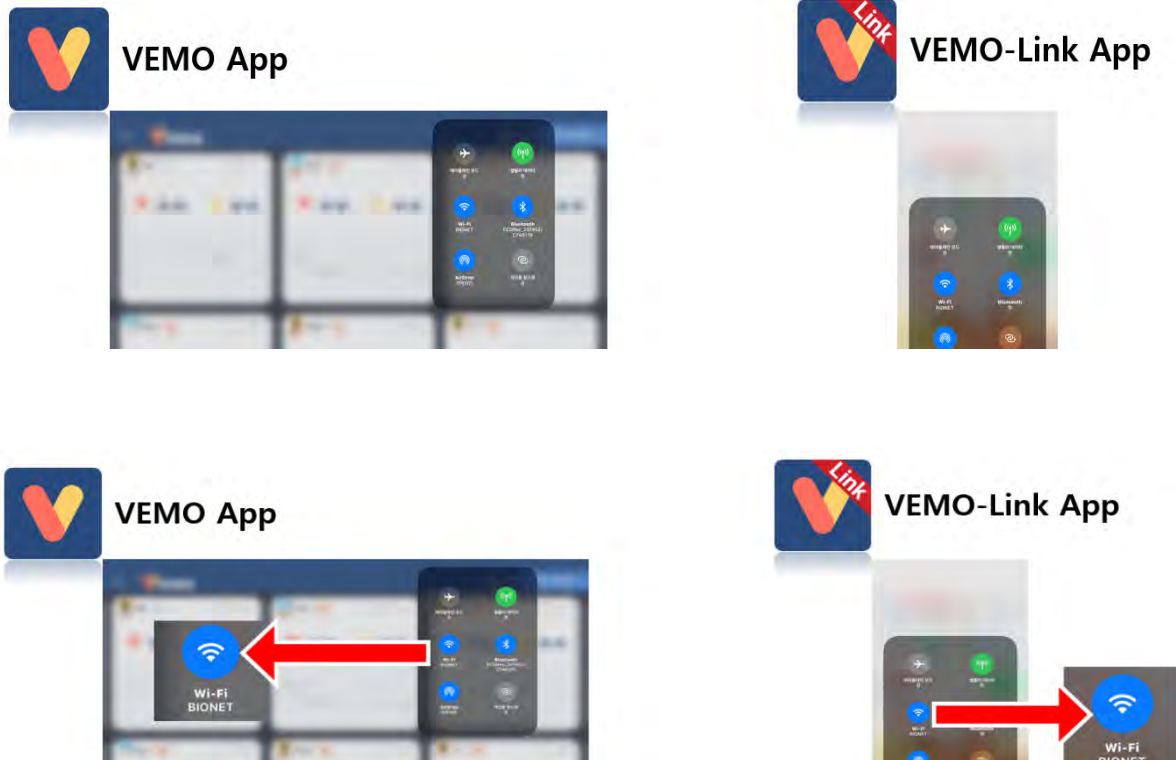


NOTE

Since VEMO-Link is optimized for smartphones, it is recommended to use a smartphone. (It can also be used on a tablet PC.)

3-2 Starting VEMO Link

After installing the VEMO-Link app, check the Wi-Fi connection of the tablet. Please connect the Wi-Fi of the tablet PC running the VEMO app first, and then connect the Wi-Fi of the mobile device running VEMO-Link to same Wi-Fi.



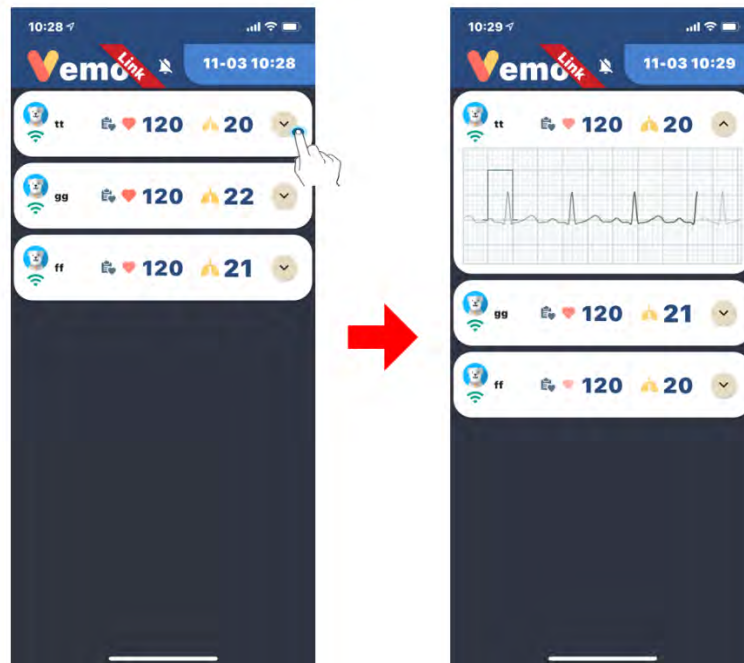
Connect the device of the VEMO app and the device of the VEMO Link app with the same Wi-Fi


WARNING

*If the Wi-Fi network is unstable, VEMO-Link monitoring may not be smooth. Please check the Wi-Fi network in the clinic.

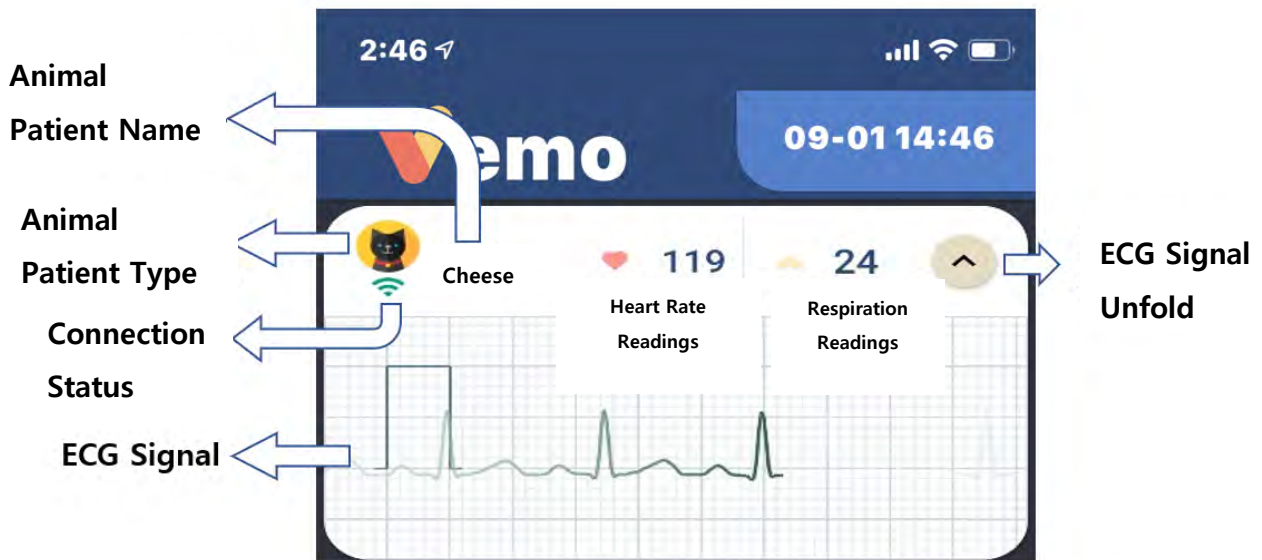
3-3. Monitoring VEMO-Link

Running the VEMO-Link app after connecting the mobile phone to the same Wi-Fi as VEMO, the list of animal patients being monitored is automatically registered to VEMO. When a new animal patient is added or existing animal patient is deleted, the addition/deletion is presented in VEMO-Link.



When [] icon is clicked on the animal patient list, ECG signal of animal patient can be checked

3-4. VEMO-Link Display Description

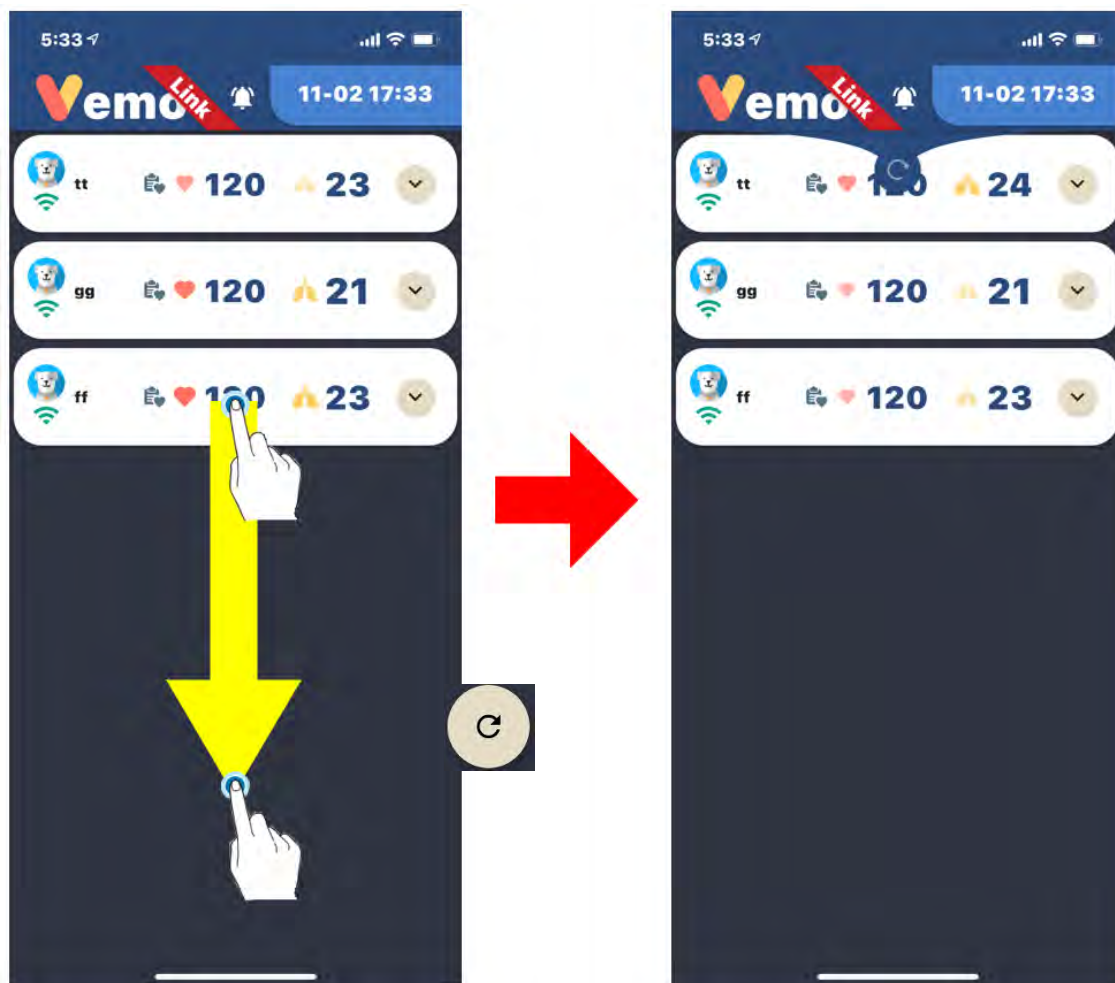


<Connection Icon Description>



REFERENCE

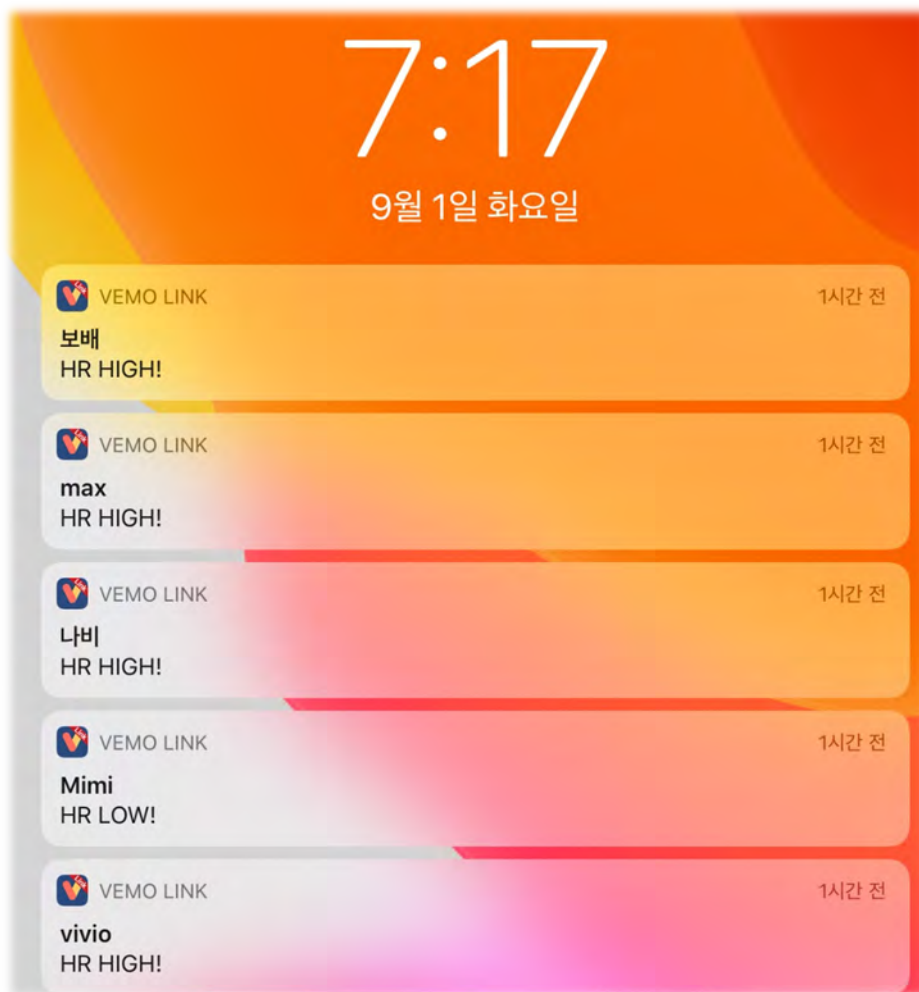
When changes are not reflected or reconnection is required due to network changes, please scroll down the list to refresh.



3-5. VEMO-Link Setting Up the Alarm

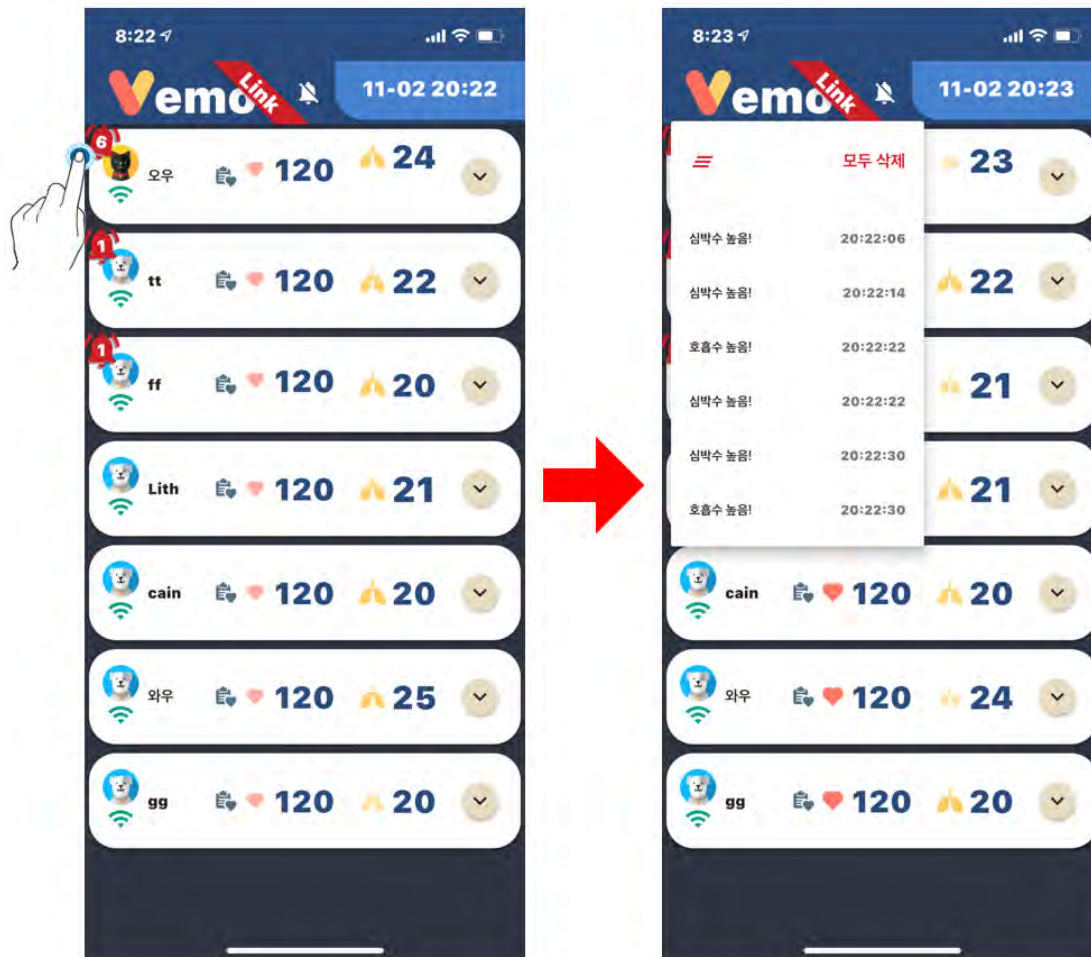
The alarm in VEMO-Link is designed to generate the same alarm when an alarm occurs in the VEMO app.

If you turn off the screen of the mobile device after running VEMO-Link, it generates an alarm through notification



<Notification Alarm>

In the VEMO-Link app, the type and number of alarms are indicated and delivered to the veterinarian as shown in the picture below.



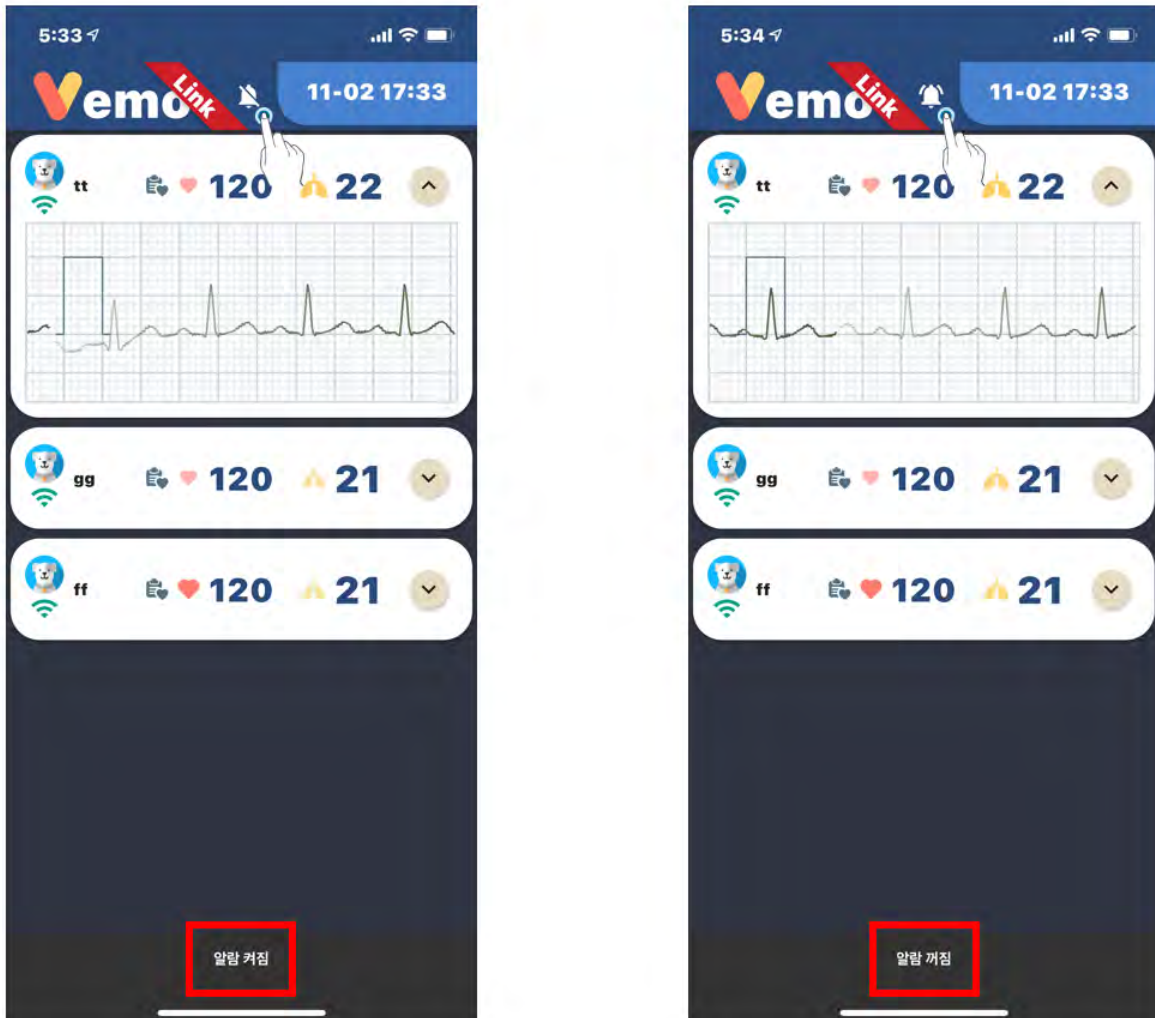
- Like VEMO, contents of the notification alarm is shown
- Contents of the alarm can be checked by touching the alarm icon in the upper left corner
- Alarm contents are displayed in descending order from the most recent alarm

REFERENCE

The sound of VEMO-Link's alarm will continue unless user clears the alarm. After checking the alarm on VEMO-Link, check the condition of the animal patient and clear the alarm on VEMO.

3-6. VEMO-Link Alarm On/Off

VEMO-Link provides a function to turn on/off the notification.



The alarm can be turned on/off by touching the bell icon on the top center of the VEMO-Link

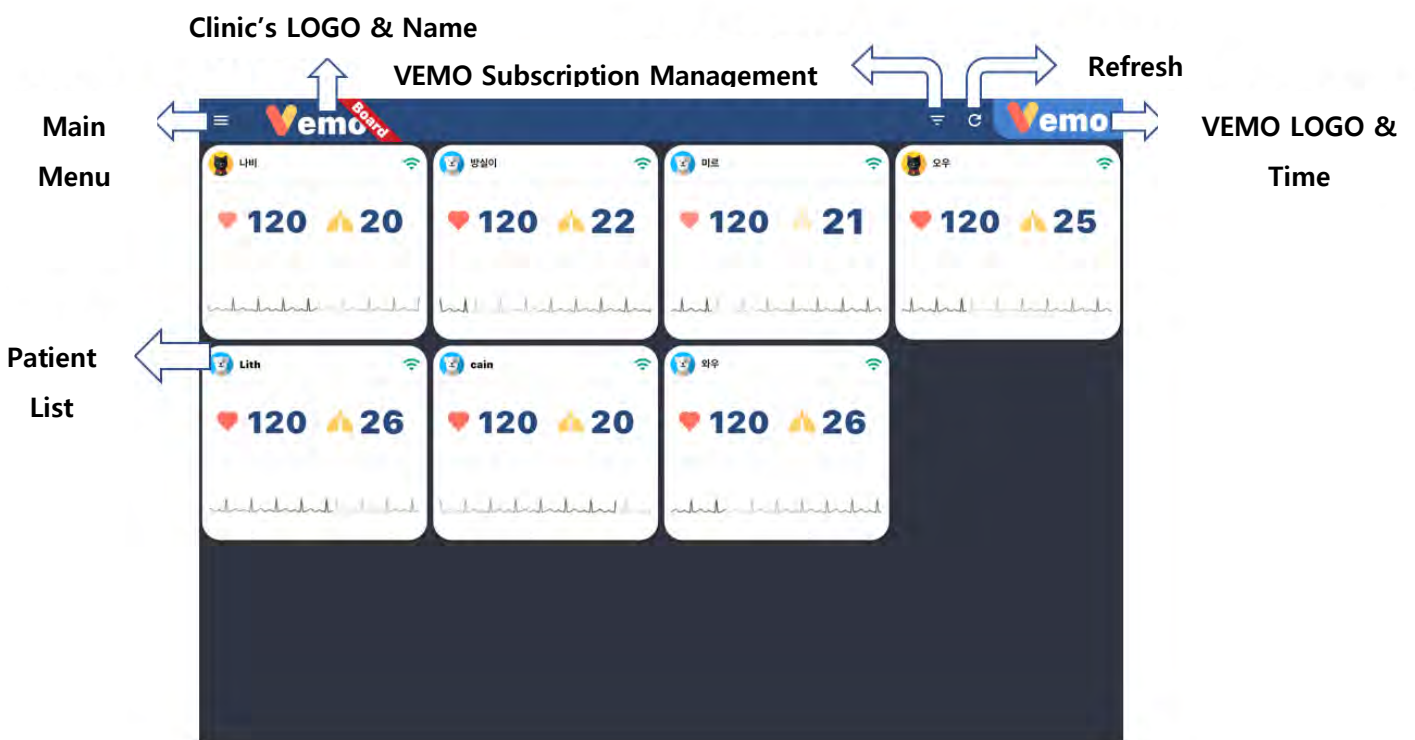
REFERENCE

If VEMO-Link alarm is turned off, VEMO alarm will not be received on the mobile device. If there is an animal patient who needs intensive monitoring, do not turn off the alarm.

4. VEMO-Board

4-1. General Information

VEMO-Board is an app for integrated monitoring by using HDMI to a large screen such as monitor or TV. It can show information boards and notification in lobbies, information desks, treatment rooms or stations.



<VEMO-Board Main Screen Settings>

4-2 Information Mode of VEMO-Board

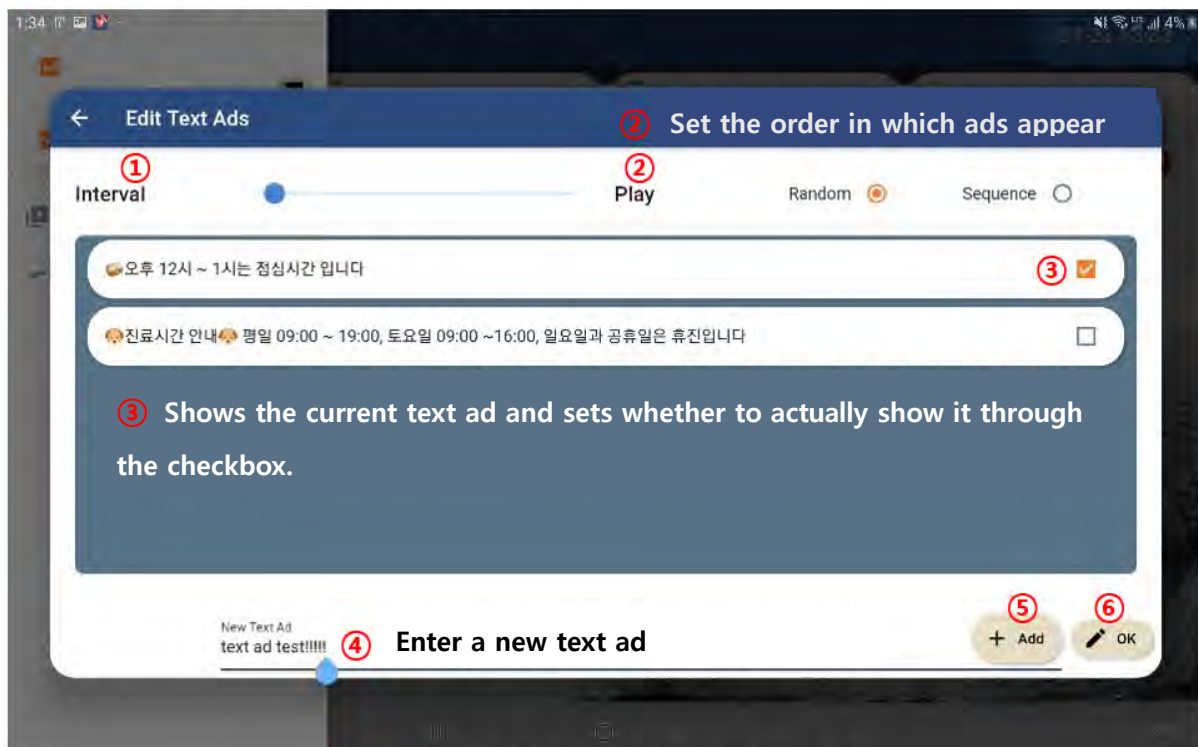
VEMO-Board provides functions for information boards or notifications. Images or videos for information boards or notifications can rotate on set time and displayed repeatedly. In addition, information board as texts and notifications can be shown on top of the main screen.

Images or videos that are saved in the tablet can used and additionally, images and videos from URL addresses can be loaded and displayed using URLs.

Efficiently post information boards and notifications by setting interval cycle and random sequential display.

4-3 Setting Up TEXT information & Notice

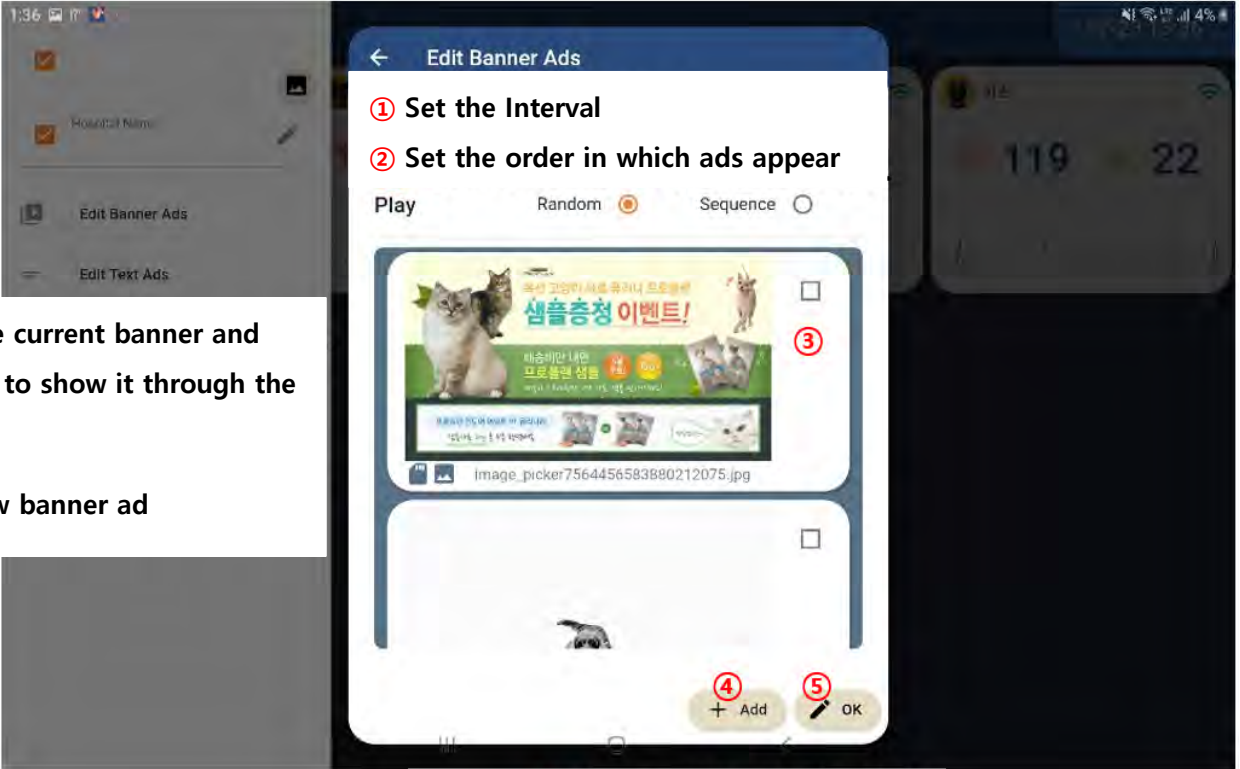
① Set the frequency of advertisements



⑤ Add a new text ad

⑥ Save after editing

4-4 Configuring Banner with Images & Videos



The screenshot shows the 'Edit Banner Ads' screen. At the top, there are three instructions: ① Set the Interval, ② Set the order in which ads appear, and ③ Shows the current banner and sets whether to show it through the checkbox. Below these instructions, there are three radio buttons for 'Play', 'Random' (selected), and 'Sequence'. A list of banners is shown, each with a checkbox (③) and a file name. At the bottom, there is an '+ Add' button (④) and an 'OK' button (⑤).

③ Shows the current banner and sets whether to show it through the checkbox

④ Add a new banner ad

⑤ Finish editing and save

REFERENCE

VEMO-Board can show image and video file URLs for information boards. URLs such as Youtube or similar streaming sites are not supported.

4-5 Setting Up Subscribed/Unsubscribed for Central Monitoring Tablet Data

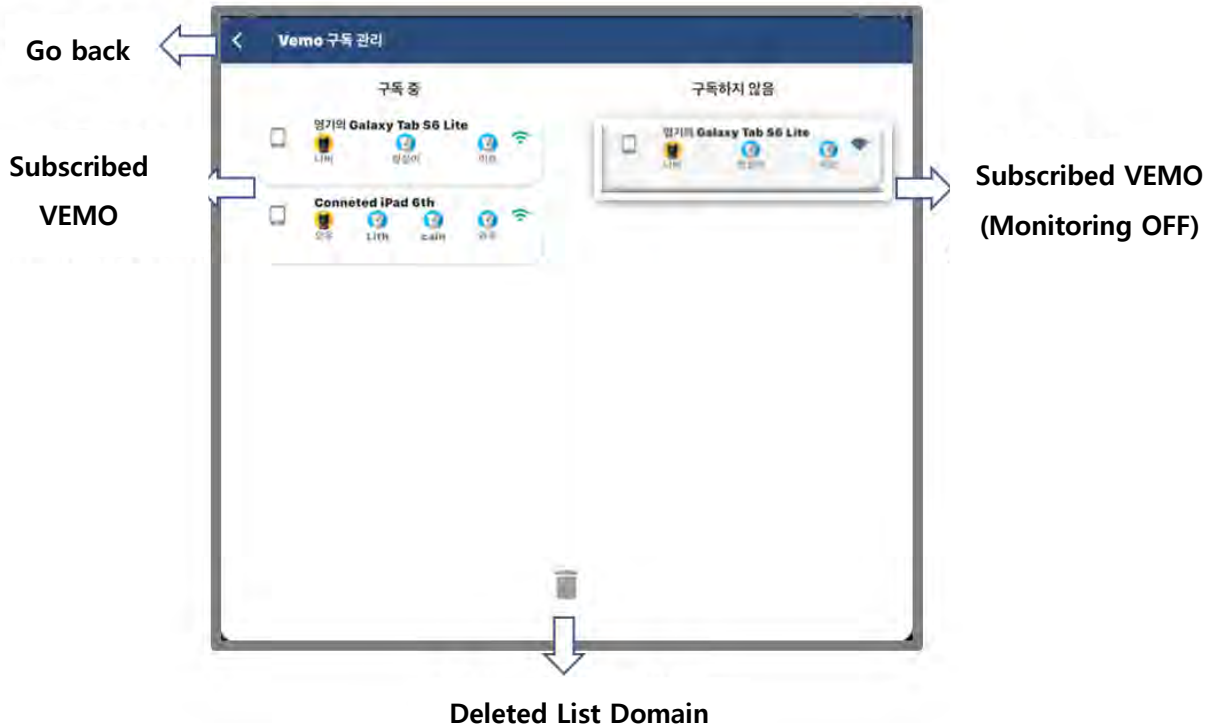
VEMO-Board can monitor up to 12 simultaneous monitors by interlocking with 3 sets of VEMOs connected to 4 monitors. Each VEMO is subscribed through Wi-Fi connection, and there is a subscription management function that can filter and monitor each VEMO.

Specific VEMOs provided efficient monitoring by filtering using the unsubscribe process.

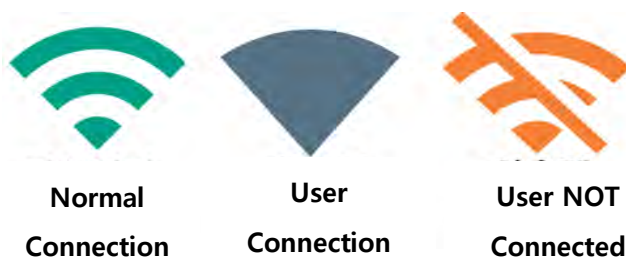


<Open the VEMO subscription management icon at the top right of the VEMO Board>

Subscription Management Description



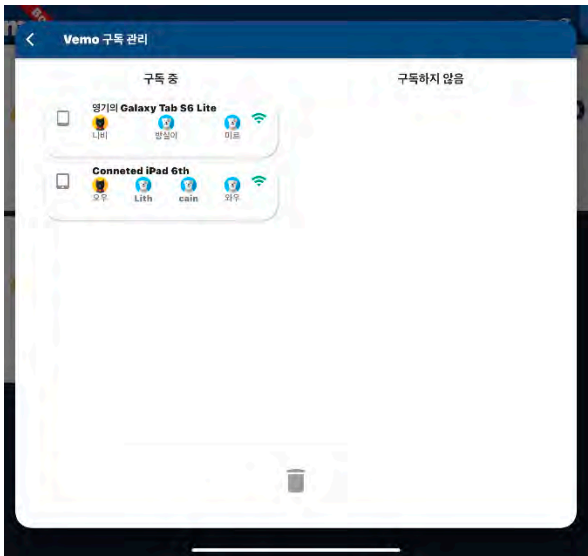
Connection Status Icon



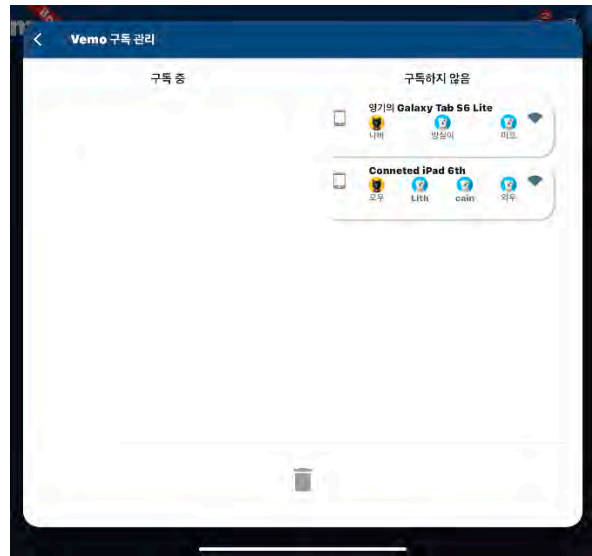
VEMO Settings Alarm



- In the subscription management window, list of Wi-Fi is shown
- The list shows the tablet PC's name, patient name, and paper
- Wi-Fi list content can be dragged to connect on the VEMO-Board



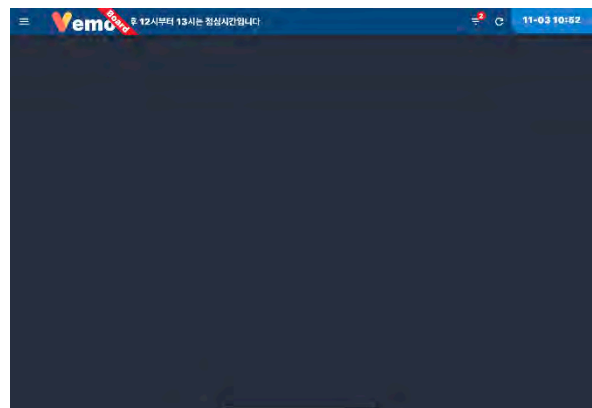
Set screen to monitor VEMO when subscribed



Set screen to monitor VEMO when not subscribed



Monitoring screen when subscribed



Monitoring screen when not subscribed

Cautions of Using VEMO

1. Any form of modification to VEMO device is prohibited.
2. Do not use the device on skin that is injured or irritated.
3. This device is non-sterile.
4. This device must be attached to the animal patient's chest.
5. Do not immerse this device in water. You can remove and reapply the VEMO sensor after showering or bathing.
6. Do not use this device with a pacemaker, defibrillator, or other implanted electronic device at the same time. When using a defibrillator, remove this device before use.
7. Do not use the VEMO sensor during magnetic resonance imaging (MRI).
8. The exposure of the device or its accessories to wireless communications capabilities may be disturbed by other devices operating at the same frequency.
9. Excessive body tissue, hair or dry skin can affect signal quality.
10. Do not bend or twist the VEMO sensor excessively.
11. If any skin abnormalities are found, remove the VEMO sensor immediately.
12. Users can only charge the VEMO sensor via the USB cable with the supplied charger. There are no user serviceable parts in this product.
13. Device performance may be degraded if one or more of the following occurs:
 - a) Operation and storage outside of the manufacturer's specified temperature and humidity ranges.
 - b) Mechanical shock (ex: drop)
14. For best results, it should be used with the adhesive patch provided with the VEMO sensor.
15. Check your device before each use. Do not use if the device is damaged. Continued use of a

damaged device can lead to inappropriate results.

16. If the device does not charge or the device does not work, contact an authorized maintenance person.
17. Be cautious of potential allergic reactions to the main material of the adhesive, silicone.
19. This device should be used with components recommended by the manufacturer.
20. When not in use, store the device in a dry room and protect it from extreme moisture, heat, lint, dust, and direct sunlight.
21. Do not place heavy objects on the charging cradle.
22. This device is not intended to measure and/or analyze St segments. The device does not analyze ECG traces or detect the presence of arrhythmia. This device monitors ECG waveforms.
23. If there is interference from other nearby equipment, follow the troubleshooting guide in the manual.
24. Do not run the VEMO app, VEMO-Link app, and VEMO-Board app at the same time. The performance and accuracy of the device may be impaired.
25. Do not use the ECG signal displayed on the VEMO app, VEMO-Link app, VEMO-Board for diagnostic purposes. If you need ECG diagnosis, please use the ECG equipment.

Cyber Security

1. Device Pairing: Check the LOT #/ SN returned from the VEMO sensor to the mobile app and see if matches the LOT #/SN printed on the back of the sensor. Do not connect the mobile app to an unknown device.
2. Do not connect unknown devices to this system.

Trouble Shooting

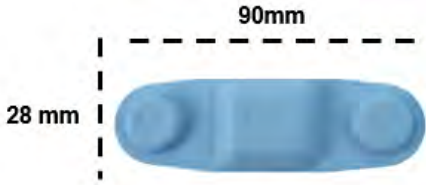
Bluetooth Connection

ECG Sensor not connected	(1) Close the VEMO app and run it again
ECG Sensor connected but no response	(2) Turn off and on the tablet PC's bluetooth
	(3) Check the serial number to see if other devices are paired

Alarm

Alarm does not go off.	(1) Check if the alarm sound is set to silence in the settings
	(2) Check the tablet's own media volume
	(3) Check if alarm is on in Alarm Settings
	(4) Check if the alarm range setting is correct

Specification

Form Factor	
Weight	7.5 g
Size (L × W × H, mm)	90 × 28 × 7.9
Data Streams	ECG, RR interval, Heart Rate, Respiratory Rate, 3-axis Accelerometer
Data Specification Sample Rate / Accuracy	<ul style="list-style-type: none"> - ECG : 128Hz, ADC Resolution : 16 bits - Heart Rate : 40 ~ 300 BPM - Accelerometer : 3-axis 5Hz, ADC Resolution 14 bits ± 4g - Respiratory : 5 ~ 25 BrPM ± 4 BrPM
Packet Transmission	Every 1 second
Network / Connection	BLE / Paired
Reusable / Rechargeable	Yes
Battery	72 hours with Full Battery Charged
Splash, Water, and Dust Resistant	IP25
Placement	On chest
SDK Platforms	iOS, Android, Linux/Raspberry PI

Bionet Co., Ltd

Model Name : VEMO

- ※ Thank you for purchasing VEMO
- ※ This product has passed through quality management and strict inspection
- ※ Compensation criteria for the repair, replacement, or refund of this product follow

'consumer damage compensation regulations' from Fair Trade Commission.

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