CardioPet ECG Device and CardioPet Software

User Guides

IDEXX

Contents

CardioPet ECG Device

User Guide

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Connecting batteries and cable

To insert batteries into the CardioPet* ECG Device and connect the cables:

1. Insert two AA batteries (included) into the back of the device.

    WARNING: Never use rechargeable batteries. They may cause a fire hazard. Always use nonrechargeable alkaline batteries.

2. Attach a clip to each of the four cables.

3. Plug the single end of the cable into the CardioPet device, aligning the arrow with the triangle on the back of the device, as shown below.

    Note: To disconnect the cable, pull the **outer** cylinder of the connector to release the lock.

Turning the device on/off

- To turn on the CardioPet device, press the power button ⏻.

    The power light on the right side of the device will illuminate.

- To turn off the device, press the power button again.

    Note: The device will turn off automatically after 5 minutes of inactivity.

CardioPet device lights and what they mean

The Bluetooth* light to the left of the power button will illuminate when the CardioPet device is streaming to a designated device in the CardioPet app or software.

ECG is streaming

Power button is on
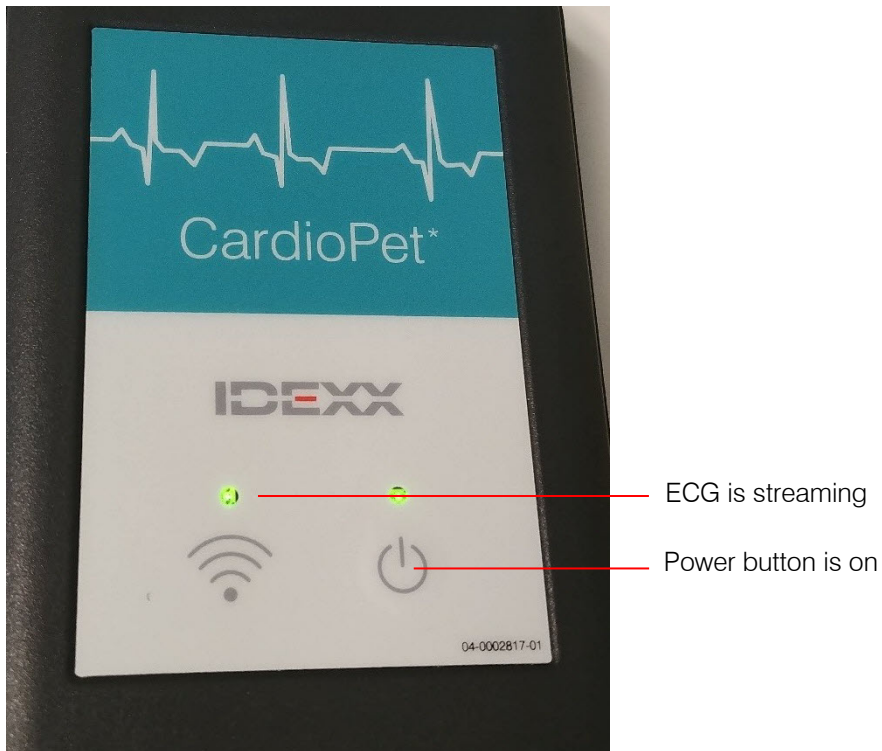
Preparing the patient and attaching clips

To prepare the patient and attach clips:

1. Place the animal on a padded surface in right-lateral recumbency.

   Note: The patient can also stand upright or be in sternal position; however, be sure to note these positions in the patient history when you submit the case.

2. Liberally apply alcohol to each limb, 1"–2" below the elbows and knees.

3. Attach the CardioPet* Comfort Clips, being sure to part the fur for good skin contact.

   Black: Left front leg   Red: Left rear leg

   White: Right front leg   Green: Right rear leg

IMPORTANT: Make sure that the patient's limbs, the cables, and the clips do not touch one other or touch metal. For more information, review or print this poster that explains how to prepare a patient for an electrocardiogram (ECG).

To attach clips for a chest lead ECG:

A chest lead may be helpful if the P-waves are indistinct in lead II.

1. Place all clips as described in the previous section, **except** the black clip.

2. Place the black clip on the **left** side of the chest between the fourth and fifth ribs, wherever the heartbeat is strongest with touch or auscultation.

   When you record an ECG with the clips in this position, lead I will appear as the chest lead.

3. Add "Chest lead included" in the patient history when you submit the case on vetmedstat.com.

Maintenance and specifications

Cleaning and maintaining the CardioPet device

Clean the exterior of the device using a paper towel moistened with isopropyl alcohol.

Replacing and recycling batteries

- The CardioPet device uses two AA alkaline (nonrechargeable) batteries.
- Remove the batteries if the device will not be used for an extended period of time.
- To monitor battery status, note the battery indicator in the CardioPet software menu bar:

   Battery life is adequate   Battery change is needed

-

  This symbol is placed in accordance with the European Union Directive 2002/96 on Waste Electrical and Electronic Equipment (the WEEE Directive). If disposed of within the European Union, this product should be treated and recycled in accordance with the laws of your jurisdiction implementing the WEEE Directive. For additional information, visit idexx.com/weee.

Specifications

CardioPet device:

- Sampling rate: 500 Hz each channel
- Signal frequency range: 0.05 Hz to 100 Hz[†]
- Filter type: Digital
- Channels: 2 according to 3 or 6 vectors
- Operating range: Approximately 100 m (clear range)
- Operating temperature: 8°C to 45°C (46°F to 113°F)
- Ambient relative humidity: 25% to 80% without condensation
- Atmospheric pressure: 700 hPa to 1070 hPa

[†]The frequency range refers to the CardioPet device. The resulting frequency range depends on the specific filters implemented in the software.

Batteries:

Chemistry: Alkaline (zinc-carbon dry cell)

Type: AA

Rechargeable: No

Weight: 23 g

CardioPet Software for Windows PC

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Installing the CardioPet software and establishing a Bluetooth connection

IMPORTANT: This section applies only to systems that are not integrated with the IDEXX-PACS* Imaging Software or IDEXX Web PACS* software. Contact IDEXX Telemedicine Consultants at 1-800-726-1212 for additional information about integration.

Minimum PC requirements

- Device ports: USB 2.0 or later
- Operating system: Windows* 7, Windows* 8, or Windows* 10 (32- or 64-bit)
- RAM: 4 GB
- Hard drive: 100 GB
- Internet connection

Installing the CardioPet software

1. Download and install the CardioPet* ECG Device software from idexx.com/telemedicineresources. For assistance, contact IDEXX Telemedicine Consultants at 1-800-726-1212 or email telemedicinesupport@idexx.com.

    Note: Some computers require administrative rights for downloading software. If you receive an error when downloading the CardioPet software, contact your practice's system administrator or IT person for assistance.

2. When asked to specify your clinic ID, enter the Account Number from your IDEXX billing statements, as shown below. The Account Number consists of numbers only.

Pairing the CardioPet device with the CardioPet software

Pairing establishes wireless communication between the CardioPet device and the software. In most cases, you will need to pair the device only once.

Note: The device can connect to only **one** instance of the CardioPet software at a time. Close any other open CardioPet applications (including the CardioPet app on a mobile device, if using).

First, check for wireless capability on your computer:

1. In the taskbar (usually in the lower right corner of the monitor), click the **up arrow** to display hidden icons, and then look for the presence of the **Bluetooth*** icon.
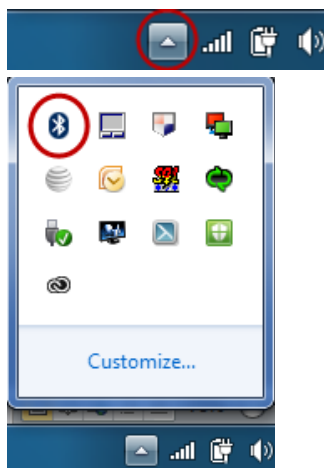
Alternatively, check your computer's Device Manager for **Bluetooth** or **Bluetooth Radios**.
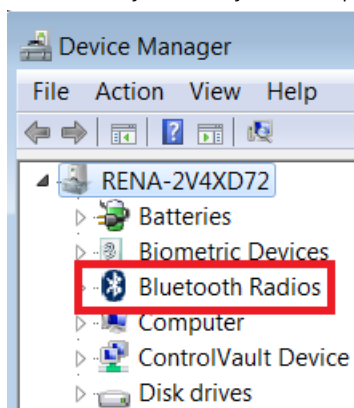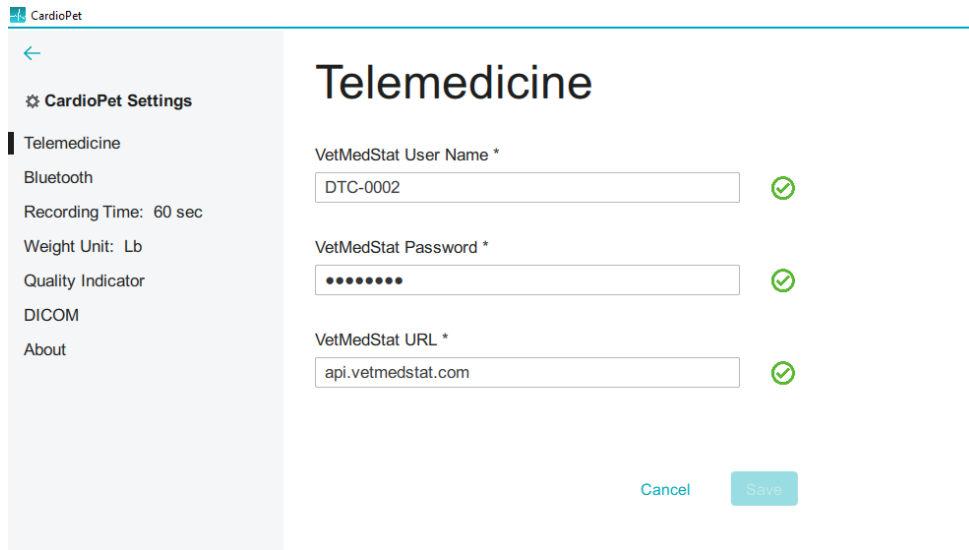
2. If the icon or radios option is **not** present, follow the instructions in the package you received from IDEXX to install the Bluetooth adapter and appropriate ASUS* drivers before continuing.

IMPORTANT: If the adapter is needed, it must remain connected to your computer at all times. Removing the adapter may result in your CardioPet device becoming unpaired from the CardioPet software.
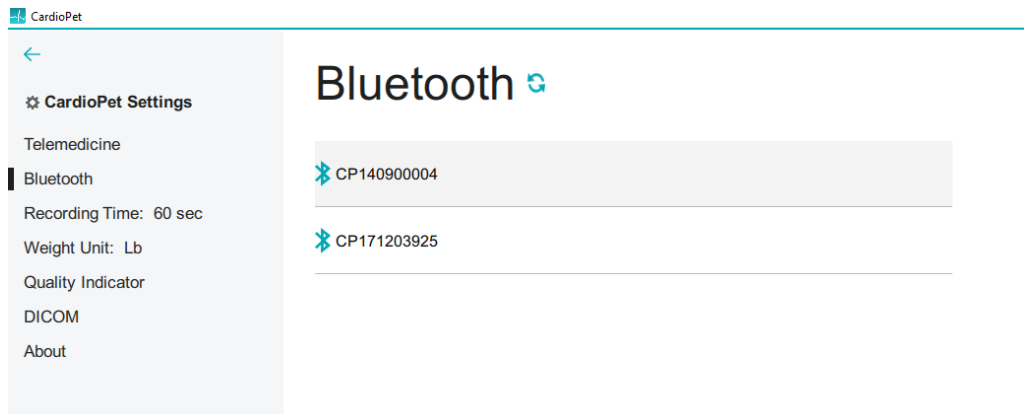
Second, pair the CardioPet device with the CardioPet software:

1. Start the CardioPet software, and then select **Settings** in the top left corner.
2. Select **Telemedicine**.

3. Complete the **VetMedStat User Name** and **VetMedStat Password** fields, using your practice's VetMedStat* account information. The account name is three letters followed by four numbers. The password is case sensitive.
4. Enter the VetMedStat URL: https://api.vetmedstat.com/vmsintegrations/vmstms.asmx.
5. Press the **Power** button ⏻ on the front of the CardioPet device.
6. Under CardioPet Settings in the top left corner, click **Bluetooth**.

7. If no device is listed in the Bluetooth section, tap **Refresh** (assuming Bluetooth technology is enabled).
8. Select the device name that starts with the letters **CP** and matches the serial number on the back of the device. Refreshing may take a few minutes the first time.

9. Enter these settings:

Recording Time: Select the recording duration you prefer (30 or 60 seconds).

Weight Unit: Select the weight units you prefer (Kg or Lb).

Quality Indicator Species Selection: Select **Always Ask Species** unless all ECGs will be performed on just one of the listed species. This feature will prompt a request for species before each ECG, which allows CardioPet to record the best possible ECG.

10. Tap **the back arrow** at the top left side to exit Settings.

Note: In Settings, you can select **About** to find the CardioPet version, Terms of Use, and Privacy Policy.

Entering ECG viewer settings
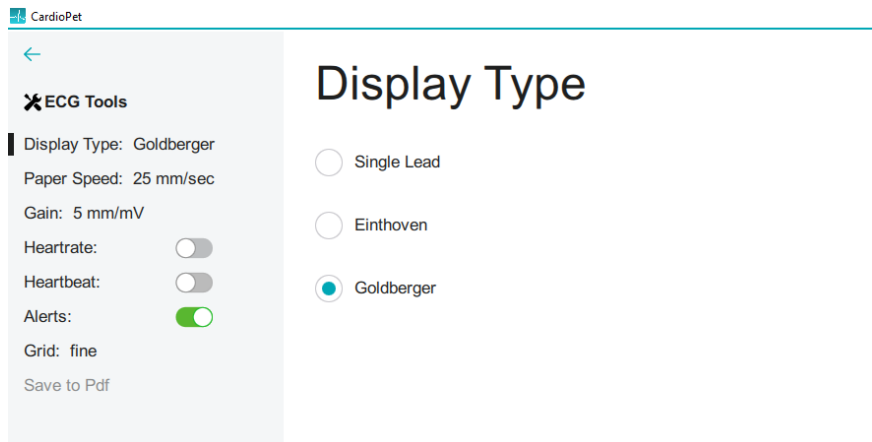
1. To access the ECG Viewer Settings screen, click **ECG Tools** at the top left side of the CardioPet app. These settings apply to how the ECG is viewed onscreen and do not impact the saved ECG file.
2. Set the following items to your viewing preferences:
   - **Display Type**: Select from Single Lead, Einthoven (3 leads), or Goldberger (6 leads)
   - **Paper Speed**: Scroll to see all speed options and select the desired setting (50 mm/sec is recommended).
   - **Gain**: Select from 2.5 mm/mV, 5 mm/mV, or 10 mm/mV (recommended)
   - **Show Heartrate**: When this feature is turned on, the CardioPet app shows a calculation of the patient's heart rate in the top left corner of the app.
   - **Play Heartbeat**: When this feature is turned on, the CardioPet app makes an audible beep to the rhythm of the heart rate.
   - **Grid**: Choose between fine, medium, coarse, or no gridlines behind the ECG tracing in the app.
3. Click the back arrow at the top left side of the screen.

Working with ECGs in the CardioPet app

Streaming and recording an ECG

1. Open the CardioPet app .

2. Turn on the CardioPet device.
   When the wireless communication light turns on, the ECG starts streaming automatically in the CardioPet app.

3. Click **New ECG** in top left corner of screen.

4. If prompted, select the patient's species.
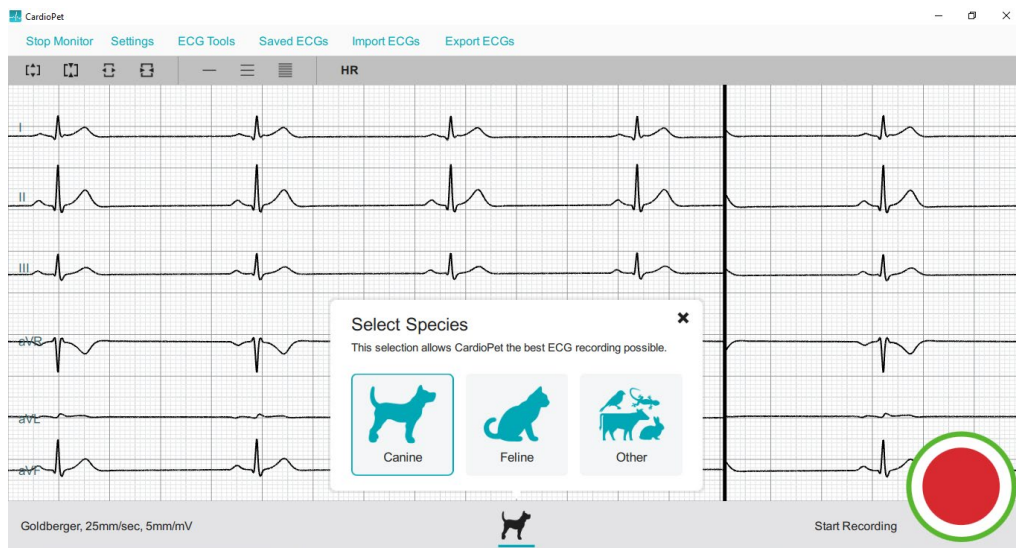
5. Prepare the patient. See "Preparing the patient and attaching clips" for additional details.

6. When the ECG tracing is diagnostic, tap **Start Recording** at the bottom right of the screen. See "Diagnostic ECG checklist" for more information.

   TIP: On CardioPet device models 02 and newer, you can also lightly depress the power button on the CardioPet device to start recording.

The livestream and recording stop automatically once the app records the ECG for 30 or 60 seconds (depending on your setting).
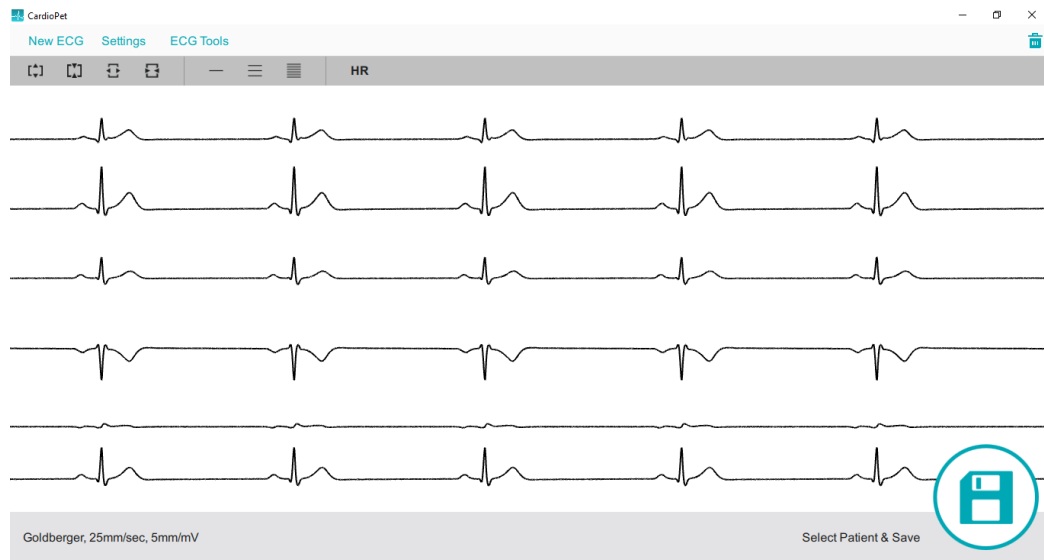
7. To turn off the CardioPet device, press and hold the power button for about 5 seconds; the device will also turn off automatically after 5 minutes of inactivity.

    Note: The ECG must be at least 20 seconds long. If the Recording ■ icon is tapped while recording is in progress, you may receive a Short ECG warning.

    TIP: To discard a recorded ECG, click **Delete** in the top right corner of the screen.

Selecting the patient and saving the ECG

1. At the bottom right side of the CardioPet app, click **Select Patient & Save**. The Local Patients window opens.
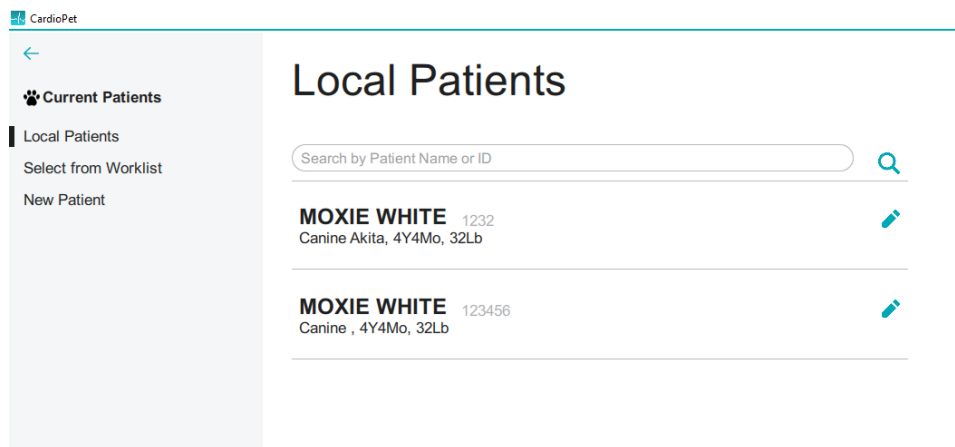
2. Assign the ECG to an existing patient or to a new patient as follows:
    - **Existing patient**: Tap the patient name in the Local Patients list, and tap **Save** in the Confirm Patient window.
    - **New patient**: Click **New Patient** in the left panel of the Local Patients window and complete all fields. **TIP:** Entering the date of birth in the Birthday field calculates the patient age and vice versa.

3. (Optional) To record an additional ECG, tap **New ECG** in the upper left corner of the screen.
    Notes:
    - Patient ID must be unique.
    - Using the patient ID from your practice management system is recommended. Be sure to check with your practice management system provider to determine whether a patient ID is in use. Settings may need to be configured to display hidden IDs.
    - If your practice management system does not provide a patient ID, you can add a letter, a number, or the patient's name to the client ID to create a unique patient ID.

Submitting an ECG to VetMedStat

1. To locate a previously recorded ECG, tap **Saved ECGs** at the top left of the CardioPet app main screen.
2. Tap the desired ECG in the Recent ECGs list, and then tap **Close**.
3. When the desired ECG is visible on the screen, tap **Start a Telemedicine Case** at the bottom right side of the app.

4. In the Upload window, select one of the following:
   - **Finish Now**: To open vetmedstat.com, where you can complete the case immediately.
   - **Finish Later**: To upload the ECG without opening vetmedstat.com. You must log on to vetmedstat.com later to complete the case. Use this option if there is a case already started with other image files.
   - **Cancel**: Closes the window.

TIP: If there is no internet connection available when you tap an Upload option, a No Network error message opens. Tap **OK** to queue the request for automatic retry at a later time.

No Network

There is currently no network available Shall I queue your request and automatically retry at a later time?

Click OK to If I shall queue your request.

Cancel	OK

CardioPet App for Android Mobile Device

User guide

Contents

Minimum requirements

IMPORTANT: This section applies only to systems that are **not** integrated with the IDEXX-PACS* Imaging Software or IDEXX Web PACS* software. Contact IDEXX Telemedicine Consultants at **1-800-726-1212** for additional information about integration.

- The tablet's Android* operating system must be version 7.1 or later.

- **IMPORTANT:** Although the CardioPet* App for Android* Mobile Device should be compatible with Android-based tablets, **we cannot guarantee compatibility with every Android device**. Please contact IDEXX Telemedicine Consultants to validate compatibility.

- If this is a new Android device, follow the instructions that came with the device to complete its initial setup before proceeding.

- An internet connection is needed for installing the app, uploading an ECG file from the CardioPet app to vetmedstat.com, and submitting a case directly on vetmedstat.com.

- A Google* account is needed to download apps from the Google Play* store.

Installing the CardioPet app and establishing a Bluetooth connection

Preparing the tablet

1. On the tablet, go to the device settings (usually accessed by tapping).
2. Verify that Wi-Fi is enabled and connected.
3. Update the screen timeout to **30 minutes** (or your preferred time, but more than 1 minute).
4. Confirm that the date, time, and time zone are set accurately for your location.
5. Verify that the Bluetooth* connection is turned on.

Installing the CardioPet app

1. Tap the **Google Play** icon**.**
2. Search for **IDEXX CardioPet**, and then choose **Install**.
3. Agree to the **Terms of Service** and **Privacy Policy**.
4. Open the CardioPet app when the installation is complete.

Pairing the CardioPet ECG Device and configuring settings

IMPORTANT: Only one instance of the software or app can be used at a time; close all other open CardioPet applications including the CardioPet software on a Windows* PC.

To pair the CardioPet* ECG Device with the CardioPet app:

1. Turn on the Android tablet and tap to start the CardioPet App.
2. Turn on the CardioPet device.
3. Tap **Settings** at the top left side of the CardioPet app.
4. Tap in each of the following fields, and then update the information as needed:

Telemedicine

a. **VMS User Name** and **VMS Password**: Enter your practice's VetMedStat* account information. The account name is three letters followed by four numbers. The password is case sensitive.

b. **VMS URL**: api.vetmedstat.com (leave as is; do not change)

Note: Red check marks turn green when the Android device is connected to the internet and the VMS user name and password are entered correctly. For assistance, email teledmedicinesupport@idexx.com or call **1-800-726-1212**.

Bluetooth

a. If no device is listed in the Bluetooth section, tap **Refresh (**assuming Bluetooth technology is enabled).

b. Select the device name that starts with the letters **CP** and matches the serial number on the back of the device. Refreshing may take a few minutes the first time.

c. Provide permission for Bluetooth technology to pair with the tablet, if prompted.

d. If prompted to enter the Bluetooth Pairing Request PIN, enter **3001**.
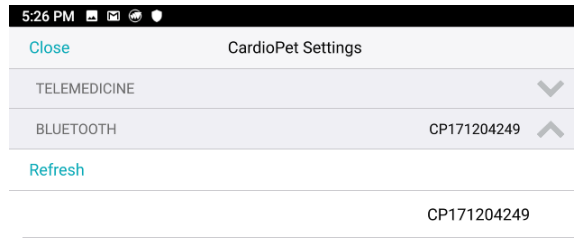
General

a. **Recording Time**: Select the recording duration you prefer (30 or 60 seconds).

b. **Weight Unit**: Select the weight units you prefer (Kg or Lb).

c. **Quality Indicator Species Selection**: Select **Always Ask Species** unless all ECGs will be performed on just one of the listed species. This feature will prompt a request for species before each ECG, which allows CardioPet to record the best possible ECG.

5. Tap **Close** at the top left side to exit Settings.

Note: In Settings, you can go to About to find the CardioPet version, Terms of Use, and Privacy Policy.

Entering ECG viewer settings

1. To access the ECG Viewer Settings screen, tap **Settings** ⚙ at the bottom left side of the CardioPet app. These settings apply to how the ECG is viewed on the Android's screen and do not impact the saved ECG file.

Close	ECG Viewer Settings
Display Type	Goldberger ∨
Paper Speed	50 mm/sec ∨
Gain	5 mm/mV ∨
Show Heartrate	◯
Play Heartbeat	◯
Grid	none ∨

2. Set the following items to your viewing preferences:
   - **Display Type**: Select from Single Lead, Einthoven (3 leads), or Goldberger (6 leads)
   - **Paper Speed**: Scroll to see all speed options and select the desired setting (50mm/sec is recommended).
   - **Gain**: Select from 2.5 mm/mV, 5 mm/mV, or 10 mm/mV (recommended).
   - **Show Heartrate**: When this feature is turned on, the CardioPet app shows a calculation of the patient's heart rate in the top left corner of the app.
   - **Play Heartbeat**: When this feature is turned on, the CardioPet app makes an audible beep to the rhythm of the heart rate.
   - **Grid**: Choose between fine, medium, coarse, or no gridlines behind the ECG tracing in the app.
3. Tap **Close** at the top left side of the screen.

Working with ECGs in the CardioPet app

Streaming and recording an ECG

1. Open the CardioPet app ⚡ on the Android tablet.
2. Turn on the CardioPet device.
   When the wireless communication light turns on, the ECG starts streaming automatically in the CardioPet app. (The Android tablet's Bluetooth setting must be **On.**)

   Note: The first time an Android tablet is used with the CardioPet device, the device may need to be paired through the CardioPet app settings.
3. If prompted, select the patient's species.
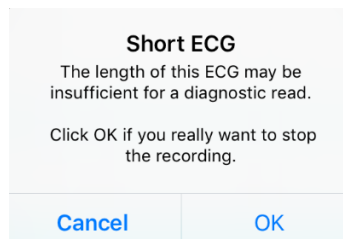4. Prepare the patient. See "Preparing the Patient" for additional details.

   When the ECG tracing is diagnostic, tap **Start Recording** 🔴 at the bottom right of the screen. See "Diagnostic ECG checklist" for more information.
   TIP: On device models 02 and newer, you can also lightly depress the power button on the CardioPet device to start recording.

   The livestream and recording stop automatically once the app records the ECG for 30 or 60 seconds (depending on your setting).
5. To turn off the CardioPet device, press and hold the power button for about 5 seconds; the device will also turn off automatically after 5 minutes of inactivity.

   Note: The ECG must be at least 20 seconds long. If the **Recording** ⬛ icon is tapped while recording is in progress, you may receive a Short ECG warning:

   Short ECG
   The length of this ECG may be insufficient for a diagnostic read.

   Click OK if you really want to stop the recording.

   Cancel   OK

   TIP: To discard a recorded ECG, tap **Delete** 🗑 in the top right corner of the screen.

Selecting the patient and saving the ECG

1. At the bottom right side of the CardioPet app, tap **Select Patient & Save** 🏥. The Local Patients window opens.
2. Assign the ECG to an existing patient or to a new patient as follows:
   - **Existing patient**: Tap the patient name in the Local Patients list, and tap **Save** in the Confirm Patient window.

   - **New patient**: Tap ⊕ at the top right of the Local Patients window and complete all fields.
     TIP: Entering the date of birth in the **Birthday** field calculates the patient age and vice versa.

3. (Optional) To record an additional ECG, tap **Live ECG** in the upper left corner of the screen.

- Patient ID must be unique. Using the patient ID from your practice management system is recommended. Be sure to check with your practice management system provider to determine whether a patient ID is in use. Settings may need to be configured to display hidden IDs.

- If your practice management system does **not** provide a patient ID, you can add a letter, a number, or the patient's name to the client ID to create a unique patient ID.

Add Patient window

Cancel	Add Patient		Save
Patient Name*	Sampson		
Patient ID*	76543		
First Name	Tamara		
Last Name*	Darling		
Species		Feline	∨
Breed		Domestic Shorthair	∨
Gender		Male	∨
Weight		11	lbs
Birthday		04/2015	
Age	Y	4	M 1

Confirm Patient window

Cancel	Confirm Patient	Save
Patient Name		Sampson
Patient ID		7654321
Client		Tamara Darling
Species		Feline
Breed		Domestic Shorthair
Gender		Male
Age		4Y1Mo
Weight		11Lb

Submitting an ECG to VetMedStat

1. To locate a previously recorded ECG, tap **ECGs** at the top right of the CardioPet app main screen.
2. Tap the desired ECG in the Recent ECGs list, and then tap **Close**.
3. When the desired ECG is visible on the screen, tap **Start a Telemedicine Case** at the bottom right side of the app.
4. In the Upload window, select one of the following:

- **Finish Now**: To open vetmedstat.com, where you can complete the case immediately.
- **Finish Later**: To upload the ECG without opening vetmedstat.com. You must log on to vetmedstat.com later to complete the case. Use this option if there is a case already started with other image files.
- **Cancel**: Closes the window.

TIP: If there is no internet connection available when you tap an Upload option, a No Network error message opens. Tap **OK** to queue the request for automatic retry at a later time.

CardioPet App for Apple iPad

User Guide

Contents

Minimum requirements

IMPORTANT: This section applies only to systems that are not integrated with the IDEXX-PACS* Imaging Software or IDEXX Web PACS* software. Contact IDEXX Telemedicine Consultants at 1-800-726-1212 for additional information about integration.

- The CardioPet* ECG Device must be **model 04** or later.
- An internet connection is needed for installing the app, uploading an ECG file from the CardioPet* iOS App to vetmedstat.com, and submitting a case directly on vetmedstat.com from the iOS* device.
- To download the CardioPet app from the App Store*, an Apple* ID is required.
- Your Apple* iPad* must have iOS* 11 or later.
- **IMPORTANT:** Although the CardioPet App should be compatible with iPad devices, **we cannot guarantee compatibility** with **every iOS device**. Please contact IDEXX Telemedicine Consultants to validate compatibility.

Use the following resources to help identify your iPad model: Apple* support or the Apple check-coverage page (checkcoverage.apple.com/)

Note: The CardioPet software cannot be used with an iPhone*.

Checking compatibility

There are two ways to check whether the CardioPet app will work on your iPad:

- Refer to the CardioPet app Information box. It should say "Works on this iPad**."**

  To view the Information box: Open the App Store on the iPad and search for **IDEXX CardioPet.** Tap on the app and scroll to **Information** to view compatibility.
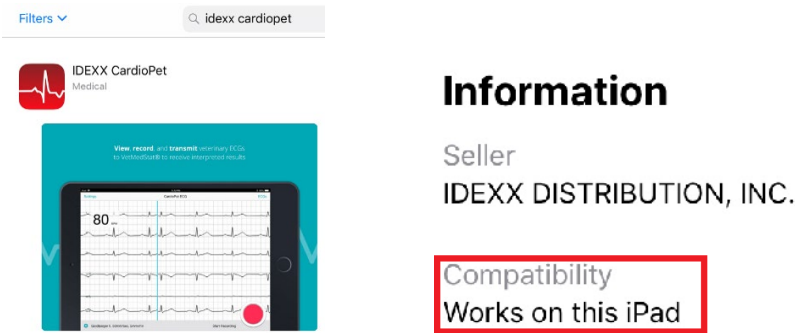
- Try to download the CardioPet app from the App Store. If the iPad and iOS versions are **not** compatible with the app, the app will not download successfully, and you may see error messages like these:
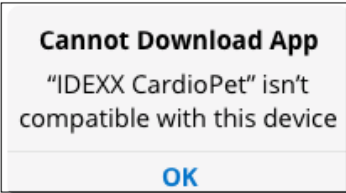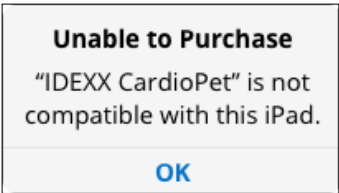
Configuring general iPad settings

IMPORTANT: If the iPad is new, first follow the instructions that came with the device to complete its initial setup, and then proceed with the steps below.

1. To access the iPad settings, tap **Settings** ⚙ on the tablet screen.
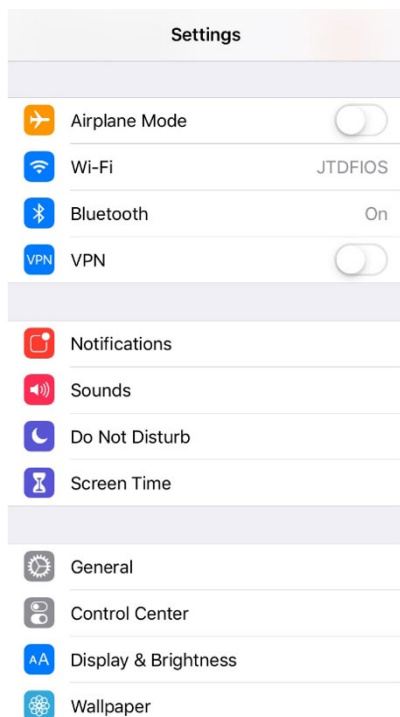
2. In the Wi-Fi setting, verify that Wi-Fi is enabled and connected to a strong internet signal.

   An internet connection is needed for installing the CardioPet app, uploading an ECG file from the CardioPet app to vetmedstat.com, and submitting a case to vetmedstat.com directly from the iOS device.

3. Connect Bluetooth* technology to the CardioPet device as follows:

   a. Turn on the CardioPet device.

   b. In the iPad Settings, tap **Bluetooth** and ensure it is set to **On.**

   c. Select the device name that starts with the letters **CP**.
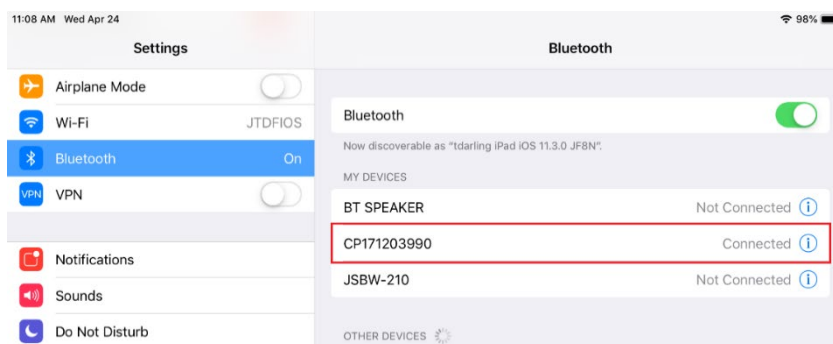
d. Once the CP device appears under **My Devices**, turn off the CardioPet device by holding down the power button for about 5 seconds.

Important: If the CardioPet device will be paired with multiple devices, then Bluetooth technology should be disabled (turned off) on any iPad **not** currently being used with the CardioPet device. The CardioPet device can be used with only **one** Bluetooth-enabled device at a time.

4. Specify general settings

a. **Software Update**: Check to see whether a software update is available; if it is, install it now. Updates often include important defect corrections and enhancements. Not having the most current iOS version may affect your CardioPet user experience.

b. **Date & Time**: Confirm that the date, time, and time zone are set accurately for your location.
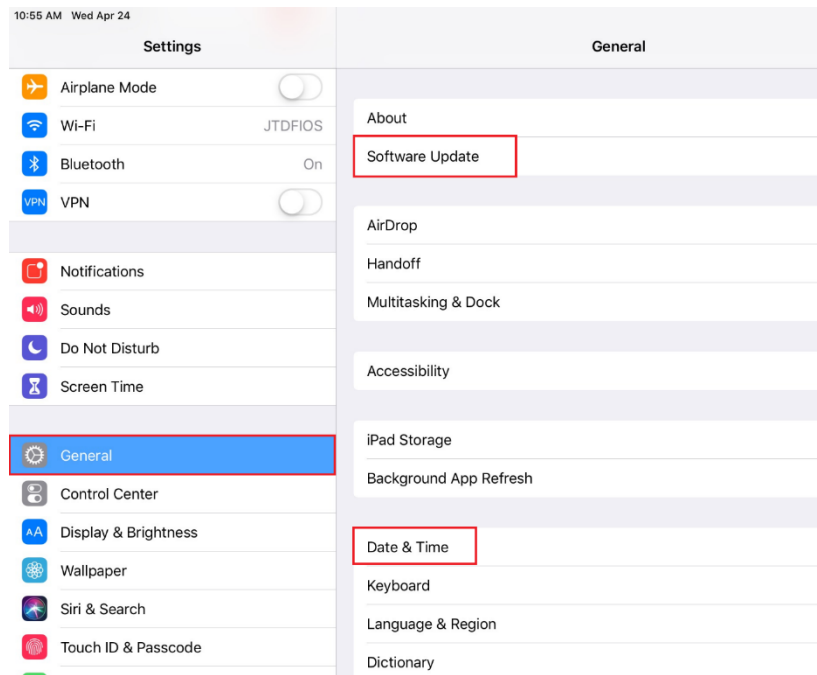
Installing the CardioPet app and configuring app settings

1. Open the App Store on the iPad, and search for **IDEXX CardioPet**.
2. Select the **CardioPet** app in the search results, and then tap **GET**.
3. When the installation is complete, tap **OPEN**.
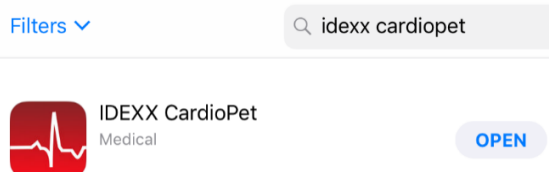
4. Tap **Accept** to accept the Terms of Service and Privacy Policy.
5. Tap **Settings** at the top left side of the IDEXX CardioPet app.
6. Tap in each of the following fields, and then update the information as needed:
   - Telemedicine
     - **VMS User Name** and **VMS Password**: Enter your practice's VetMedStat* account information. The account name is three letters followed by four numbers. The password is case sensitive. For assistance, email teledmedicinesupport@idexx.com or call 1-800-726-1212.
     - **VMS URL**: api.vetmedstat.com
   - General
     - **Time**: Select the recording duration you prefer (30 or 60 seconds).
     - **Weight Unit**: Select the weight units you prefer (Kg or Lb).
   - Quality Indicator Species Selection: Select **Always Ask Species** unless all ECGs will be performed on just one of the listed species. This feature will prompt a request for species before each ECG, which allows CardioPet to record the best possible ECG.

   Note: Red checkmarks turn green if the iPad is connected to the internet and the VMS username, password, and VMS URL are entered correctly.

7. Tap **Close** at the top left side to exit Settings.

   Note: In Settings, you can go to **About** to find the CardioPet version, Terms of Use, and Privacy Policy.

Configuring ECG viewer settings

1. To access the ECG Viewer Settings screen, tap **Settings** ⚙ at the bottom left side of the CardioPet app. These settings apply to how the ECG is viewed on the iPad screen and do not impact the saved ECG file.
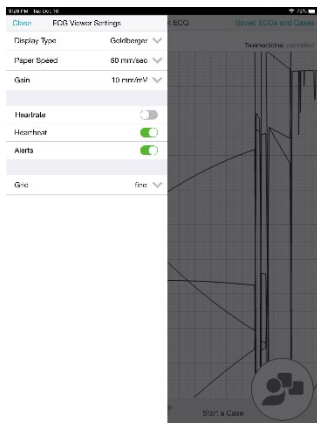
2. Set the following items to your viewing preferences:

    - **Display Type**: Select from Single Lead, Einthoven (3 leads), or Goldberger (6 leads)
    - **Paper Speed**: Scroll to see all speed options and select the desired setting (50mm/sec is recommended).
    - **Gain**: Select from 2.5 mm/mV, 5 mm/mV, or 10 mm/mV (recommended).
    - **Heartrate:** When this feature is turned on, the CardioPet app shows a calculation of the patient's heart rate in the top left corner of the app.
    - **Heartbeat**: When this feature is turned on, the CardioPet app makes an audible beep to the rhythm of the heart rate.
    - **Alerts**: When this feature is turned on, the CardioPet app provides alerts.
    - **Grid**: Choose between fine, medium, coarse, or no gridlines behind the ECG tracing in the app.
3. Tap **Close** at the top left side of the screen.

Working with ECGs in the CardioPet app

Streaming and recording an ECG

1. Open the CardioPet app on the iPad.
2. Turn on the CardioPet device.
   When the wireless communication light turns on, the ECG starts streaming automatically in the CardioPet app. (The iPad Bluetooth setting must be **On.**)

   Note: The first time an iPad is used with the CardioPet device, the device must be paired with Bluetooth technology on the iPad.
3. If prompted, select the patient's species.
4. Prepare the patient. See "Preparing the Patient" for additional details.
5. When the ECG tracing is diagnostic, tap **Start Recording** at the bottom right of the screen. See "Diagnostic ECG checklist" for more information.
   TIP: You can also lightly depress the power button on the CardioPet device to start recording.

   The livestream and recording stop automatically once the app records the ECG for 30 or 60 seconds (depending on your setting).
6. To turn off the CardioPet device, press and hold the power button for about 5 seconds; the device will also turn off automatically after 5 minutes of inactivity.

   Note: The ECG must be at least 20 seconds long. If the **Recording** icon is tapped while recording is in progress, you may receive a Short ECG warning:

   Short ECG
   The length of this ECG may be insufficient for a diagnostic read.

   Click OK if you really want to stop the recording.

   Cancel   OK

   TIP: To discard a recorded ECG, tap **Delete** in the top right corner of the screen.

Selecting the patient and saving the ECG

1. At the bottom right side of the CardioPet app, tap **Select Patient & Save** . The Local Patients window opens.
2. Assign the ECG to an existing patient or to a new patient as follows:
   - **Existing patient**: Tap the patient name in the Local Patients list, and tap **Save** in the Confirm Patient window.
   - **New patient:** Tap at the top right of the Local Patients window and complete all fields.
     TIP: Entering the date of birth in the **Birthday** field calculates the patient age and vice versa.
3. (Optional) To record an additional ECG, tap **Live ECG** in the upper left corner of the screen.

   Notes:
   - Patient ID must be unique.
   - Using the patient ID from your practice management system is recommended. Be sure to check with your practice management system provider to determine whether a patient ID is in use. Settings may need to be configured to display hidden IDs.

- If your practice management system does **not** provide a patient ID, you can add a letter, a number, or the patient's name to the client ID to create a unique patient ID.

Add Patient window

Cancel	Add Patient	Save
Patient Name*	Sampson	
Patient ID*	76543	
First Name	Tamara	
Last Name*	Darling	
Species		Feline ⌄
Breed		Domestic Shorthair ⌄
Gender		Male ⌄
Weight		11 lbs
Birthday		04/2015
Age	Y 4	M 1

Confirm Patient window

Cancel	Confirm Patient	Save
Patient Name		Sampson
Patient ID		7654321
Client		Tamara Darling
Species		Feline
Breed		Domestic Shorthair
Gender		Male
Age		4Y1Mo
Weight		11Lb

Submitting an ECG to VetMedStat

1. To locate a previously recorded ECG, tap **ECGs** at the top right of the CardioPet app main screen. Tap the desired ECG in the Recent ECGs list, and then tap **Close**.

2. When the desired ECG is visible on the screen, tap **Start a Telemedicine Case** at the bottom right side of the app.

3. In the Upload window, select one of the following:

   - **Finish Now**: To open vetmedstat.com, where you can complete the case immediately.
   - **Finish Later**: To upload the ECG without opening vetmedstat.com. You must log on to vetmedstat.com later to complete the case. Use this option if there is a case already started with other image files.
   - **Cancel**: Closes the window.

   TIP: If there is no internet connection available when you tap an Upload option, a No Network error message opens. Tap **OK** to queue the request for automatic retry at a later time.

   No Network
   There is currently no network available
   Shall I queue your request and
   automatically retry at a later time?

Integrating the CardioPet App with IDEXX Web PACS or IDEXX-PACS

User Guide

Integrating the CardioPet application with IDEXX Web PACS or IDEXX-PACS

Integrating a CardioPet application with the IDEXX Web PACS* software or the IDEXX-PACS* Imaging Software lets you keep ECGs, radiographs, and other digital images together in the same patient record in IDEXX-PACS. You can then submit the images to IDEXX Telemedicine Consultants (vetmedstat.com) as a single case.

Integration requirements:

- A CardioPet application installed on an eligible Windows* PC, Android* mobile device, or iPad* tablet
- IDEXX-PACS software version 4.2.1 or later, and/or an IDEXX Web PACS subscription

Contact IDEXX Telemedicine Consultants at 1-800-726-1212 for additional information and/or to schedule a remote session with a representative who will help you set up the integration.

Sending ECGs to IDEXX Web PACS or IDEXX-PACS software

For instructions on sending ECGs to IDEXX Web PACS or IDEXX-PACS software, please refer to the document provided to you during your integration setup.

Submitting a case from within the IDEXX Web PACS or IDEXX-PACS software

Refer to your IDEXX Web PACS or IDEXX-PACS online help for instructions on submitting cases to IDEXX Telemedicine Consultants (vetmedstat.com) from within the software. You can include radiographs, ultrasounds, and ECGs in a single submission.

IMPORTANT: For cardiology services, send only cardiac-specific images. If you include images for other areas of study, you must also select an applicable **Radiology** or **Dental** service.

ECG Quality and Troubleshooting

User Guide

Contents

Examples of diagnostic ECGs
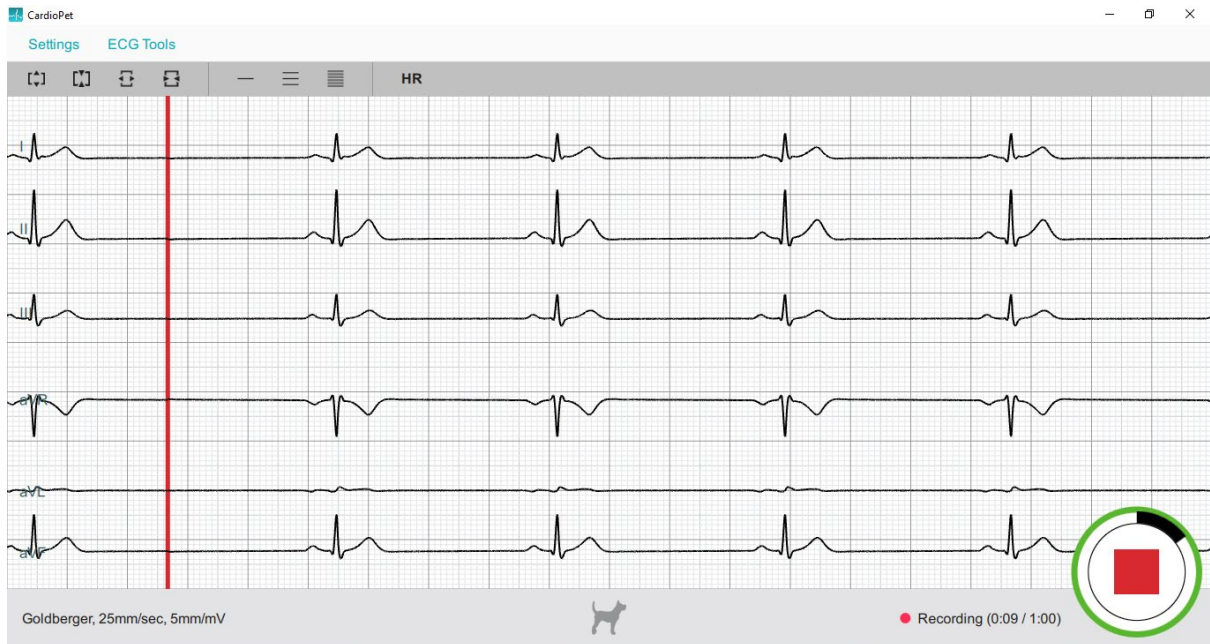
Diagnostic canine ECG
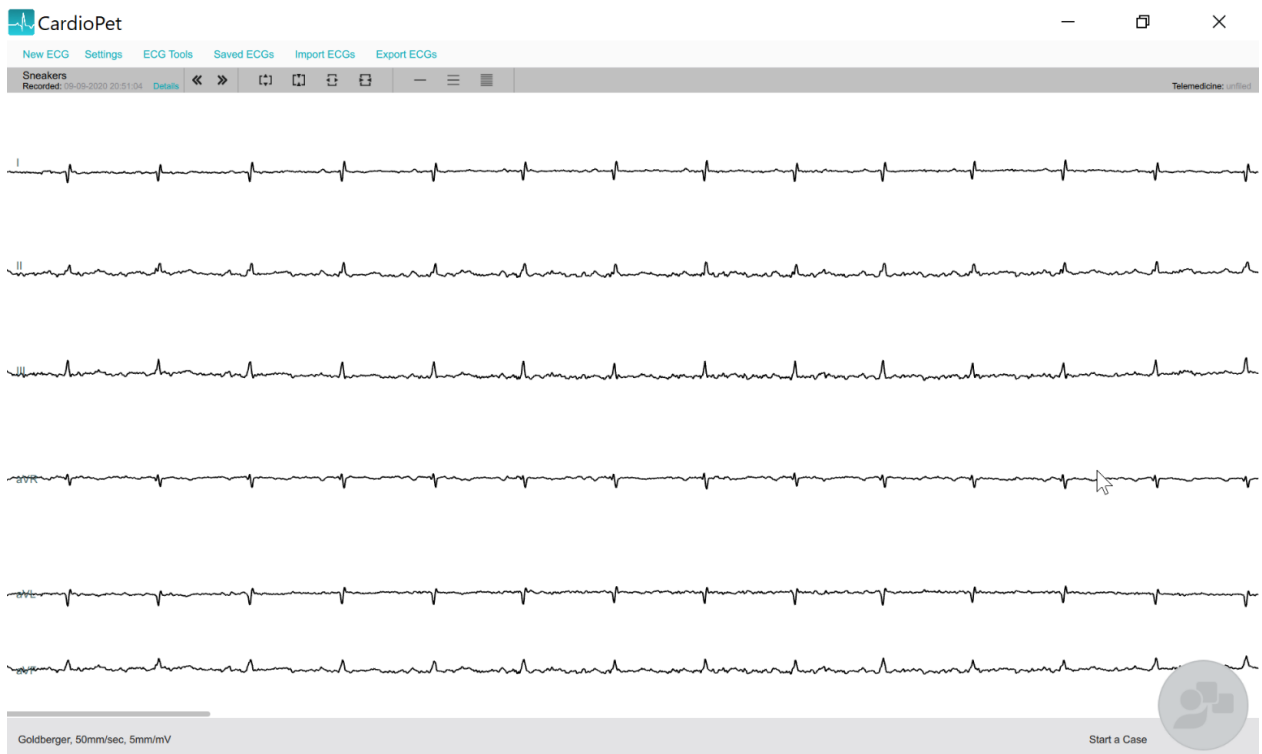
Diagnostic feline ECG

ECG Quality Indicator tool

The newest versions of the ECG software/app include an ECG Quality Indicator tool that provides real-time feedback on ECG quality and lead placement. The Quality Indicator changes the color of any potentially affected leads yellow and provides additional troubleshooting information.

If you have completed all troubleshooting steps and continue to receive the Quality Indicator error, you may close the alert and continue recording.

For more troubleshooting information, review the following:

ECG Interference

1:34 PM   Wed Sep 18   13%

Settings   CardioPet ECG   Saved ECGs and Cases

⚠ ECG Interference   ❓   ✖

92 BPM

Close   ECG Interference

Possible ECG Interference Issue
Uh-oh! Something looks funny. Please ensure that:
- The clips are not touching each other or metal
- The device is away from other electronic equipment and metal surfaces
- The patient is not moving, panting or purring

If you've double checked everything and are still seeing this messages, you can close this box to record and submit the ECG Or, if you'd like help troubleshooting please call technical support at **1-800-726-1212.**

Goldberger, 50mm/sec, 10mm/mV   Start Recording

Diagnostic ECG checklist

It is important that tracings submitted to our cardiology team are diagnostic. This means that:

- The P-waves are visible and distinct from motion artifact in lead II. The P-wave may be very small or invisible on leads I and III, especially in feline ECGs.
- The P-wave (if visible):
  - is positive (points upward) in leads I, II, and III.
  - is negative (points downward) in lead AVR.
  - may be either positive or negative in leads AVL and AVF.
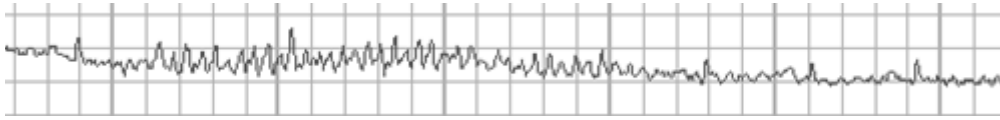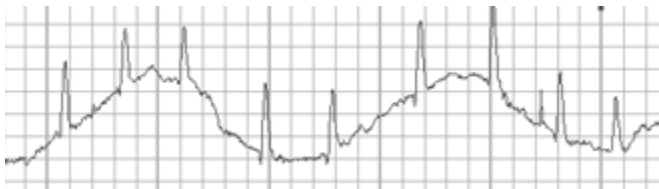- The ECG baseline is generally level.

P-wave

Baseline
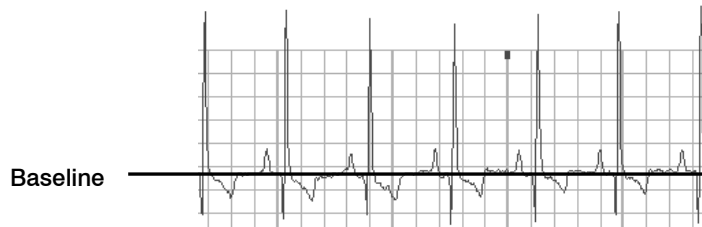
Troubleshooting ECGs

Indistinct P-waves and movement artifact

P-waves may be "washed out" by artifacts caused by panting, shaking, and vocalizing.

**Feline ECG with indistinct P-waves caused by purring**

Canine ECG with respiratory (panting) artifact

To reduce movement artifact:

- Move clips below the knees and elbows.
- Distract the patient by tapping gently on the nose or offering a treat out of a closed hand.
- Apply gentle pressure to the chest and/or legs.
- Reposition the patient (if patient is standing, place in right-lateral position, or the reverse).
- Record a chest lead to distinguish P-waves from movement artifacts.
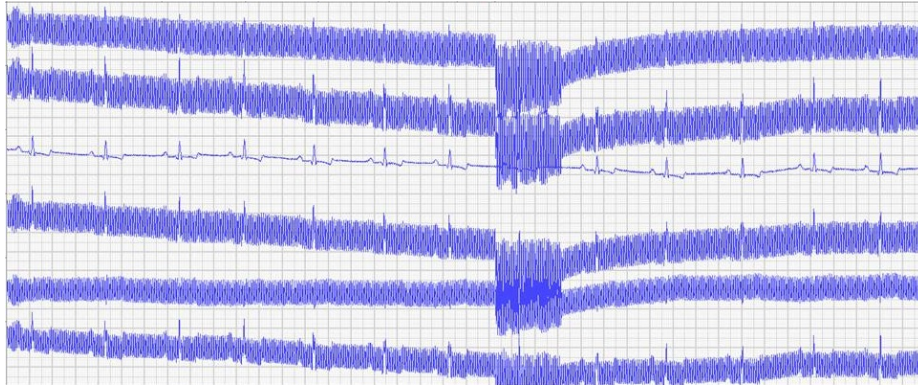
Flat lines or indistinct complexes

Make sure clips have sufficient skin contact and alcohol saturation for conduction.
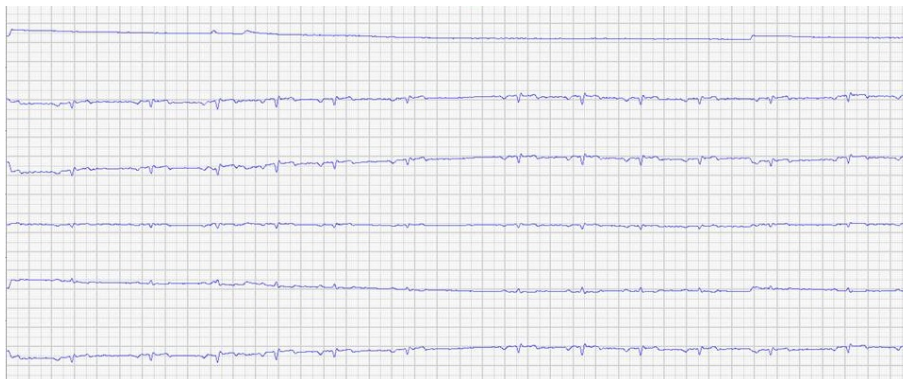
Flat lines and indistinct complexes

Blurry lines

Make sure clips are secure and have sufficient alcohol saturation for conduction.

Blurry lines

Small or absent P-waves

Record a chest lead if P-waves are small, inconsistent, or absent. See "Positioning clips for a chest lead," for more information.

Inverted P-waves

If the P-wave is not positive in leads I, II, and III, or negative in lead AVR, ensure the leads are correctly plugged into the CardioPet* ECG Device and the clips are attached to the correct legs. See "Connecting the batteries and cables" and "Preparing the patient" for more information.

Vertical red bar in the ECG tracing

A vertical red bar in the ECG tracing indicates a data integrity error. For example, the patient may be out of the device's transmission range. Try moving the device closer. Remove any obstacles between the device and the software.

Crowded or overlapping complexes

Gain may be too high or feed too slow. Try a gain of 10 mm/mV and a feed of 50 mm/s. See "Adjusting the ECG display" in the section for the computer or tablet you are using.

ECG tracing is not visible in the software

Windows* PC:

- Check that the wireless communication light is illuminated on the CardioPet device. If it is not, try restarting the device.
- In Bluetooth* settings, remove the CardioPet device and then add it again. The pairing code is 3001.
- Make sure the correct serial number is in the CardioPet software (**Settings > ECG Options**).
- Restart the computer.
- If necessary, uninstall and reinstall the CardioPet software.

Android* or iOS* device:

- Try enabling the connection to the CardioPet device again. Refer to the instructions in the section for your tablet type.

Additional troubleshooting tips

Case is not visible in vetmedstat.com

If the case was uploaded from a Windows PC:

- In the CardioPet software, select **Settings > Telemedicine**. Under **VetMedStat Account,** verify that the VetMedStat* user name and password are correct.
- Verify that your PC has an Internet connection.

If the case was uploaded from an Android or an iOS device:

- Hold down the ***Menu button**, and then tap **Settings** . Verify that the VetMedStat account number and password are correct and that the domain is **api.vetmedstat.com**.
- Verify that the device is connected to a Wi-Fi network with internet access.

If you need help…

If you need help installing or using the CardioPet* software, CardioPet* app, or the CardioPet* ECG Device:

- Contact IDEXX Telemedicine Consultants at **1-800-726-1212**.
- Visit idexx.com/telemedicineresources.
- Email telemedicinesupport@idexx.com.

IDEXX Laboratories, Inc.
One IDEXX Drive, Westbrook, Maine 04092 USA
1-207-556-0300 or 1-800-548-6733