



*iScan 2 **plus***



Instructions for Use (IFU)



Made by:

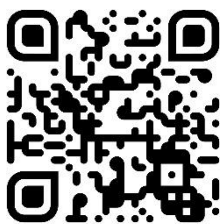
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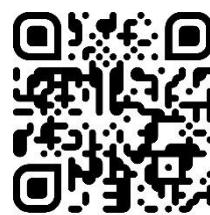
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We wish you and the users of the product a lot of success in taking care of your patients.

We are sure that with our product you will be able to provide good care for your patients.

DRAMIŃSKI S.A. would be delighted to receive any comments or feedback from its customers regarding the device and this manual.

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1. Introduction

1.1. Information about the user manual

In the individual chapters, the manual describes the design and accessories of the device, preparation for use, and the functions and operation of the iScan 2 plus ultrasound scanner.



Familiarising yourself with the contents of this manual is in no way a substitute for even a basic ultrasound training course. It is recommended that the user of the device undergoes appropriate training through authorised ultrasound courses.

1.2. Warnings, notes and symbols used in this manual

To highlight important information in this manual, the following methods of emphasis have been used:



Warning! – where special attention is required for the safety of the patient or the safe use of the device.

Attention! – where attention must be drawn to the protection of the device or its correct operation.

Bold text – to draw attention to key sections of the manual or to enhance its clarity and readability.

Captions for diagrams and illustrations – to help identify details.

The symbols used in this manual do not provide complete information on safety instructions; therefore, you must first read the safety instructions (Chapter 2) and follow them!

Symbols used in the text:

- <x.x.x> – a reference to chapter x.x.x
- ultrasound scanner button labels



1.3. A brief introduction to ultrasound

Ultrasound equipment is widely used in medicine. Real-time imaging is particularly useful and commonly employed; it enables two-dimensional graphical representation of tissue cross-sections in 256 shades of grey, in what is known as B-Mode (Brightness-Mode). In addition, Colour Doppler imaging, used to assess blood flow, is becoming increasingly important in diagnosis.

The diagnostic effectiveness of ultrasound is highly rated, but the results obtained using this method are greatly influenced by the quality of the equipment, the user's individual experience and knowledge, adherence to ultrasound examination standards, and familiarisation with this manual.

1.4. Introductory information on the iScan 2 plus ultrasound scanner

The iScan 2 plus is a portable ultrasound scanner for veterinary use. Everything is contained within a single device (an 'all-in-one' system), featuring a built-in screen, a permanently attached ultrasound transducer and a high-capacity external battery. Its features include B-Mode and Colour Doppler imaging, as well as wireless connectivity with external devices.

The iScan 2 plus is designed for the assessment of internal organs, monitoring the progression of pathological conditions, treatment, as well as procedures performed under ultrasound guidance. Its main applications include, amongst others:

- examination of the reproductive system in animals,
- assessment of blood flow in the corpus luteum,
- examination of abdominal organs,
- examination of the musculoskeletal system,
- examination of the lungs.

2. Safety



Warning! – The safety of the user and the patient depends on compliance with the following guidelines!

1. The DRAMIŃSKI iScan 2 plus is a device that should be used for diagnostic purposes exclusively by qualified personnel – a veterinary surgeon trained in ultrasound diagnostics.
2. It is essential to disinfect the transducer before each use. Other parts of the ultrasound scanner should be disinfected where justified, if they may have come into contact with infectious substances.
3. The ultrasound scanner must not be used simultaneously with any high-frequency techniques.
4. The ultrasound scanner must not be used for transoesophageal examinations.
5. In areas where explosive or anaesthetic gases are used, the use of the ultrasound scanner is prohibited for safety reasons.
6. The device is intended for indoor use only.
7. Users of the ultrasound scanner are advised to have regular technical inspections carried out by the manufacturer every two years. This will help to ensure the highest level of patient safety.
8. Ultrasound diagnostics must not be carried out whilst defibrillation is in progress.
9. It is prohibited to dismantle the device or carry out repairs or adjustments yourself, except for the procedures described in this manual.
10. Users of the ultrasound scanner are advised to periodically check the probe cable and connectors for any mechanical damage.
11. If any mechanical damage to the transducer, cable or connectors is found, the device must be sent for servicing.
12. Although the ultrasound scanner has an extremely robust design, the precautions set out in this manual must be followed to avoid mechanical damage.
13. Avoid exposing the device to strong sunlight; it is best to adhere to the temperature limits specified on the labels of the device and its components.
14. The user must not make any modifications to the device.
15. The DRAMIŃSKI iScan 2 plus is an electrical device which may be a source of electromagnetic radiation.
16. The operation of the iScan 2 plus ultrasound scanner may be disrupted by other electrical devices. The user may observe interference on the image in the form of bright lines when operating within a strong electromagnetic field. In such cases, it is recommended to minimise the number of other electrical devices operating nearby.

-
17. At the end of its service life, to avoid any risk to the environment, the device and its accessories should be disposed of by specially trained personnel in accordance with applicable regulations or returned to the manufacturer.
 18. The device is equipped with overheating protection. If the processor reaches its temperature limit, the device will switch off automatically. In this case, it is recommended that you place the ultrasound scanner in a safe and cool place and wait for it to cool down.

3. List of components for the iScan 2 plus ultrasound scanner

No.	Name and description	Quantity
1	iScan 2 plus ultrasound scanner	1
2	Permanently attached rectal ultrasound probe	1
3	External battery	1
4	Charger	1
5	Carry straps	1
6	User manual	1
7	Transport case	1

4. Construction of DRAMIŃSKI iScan 2 plus ultrasound scanner

The device consists of:

1. Body of the scanner
2. Ultrasound probe
3. Battery

4.1. Body of the scanner

The iScan 2 Plus body is made of aluminium. The hard, reinforced glass display minimises light reflections. The non-slip membrane keyboard ensures excellent ergonomics. At the top of the scanner are: a permanently attached probe cable connector and an integrated Wi-Fi antenna. On the rear of the scanner are the battery contacts with a locking mechanism. On the right-hand side of the scanner is a USB-C port with a rubber cap. The housing is fitted with a 4-point attachment system for a carrying strap (for hanging the device around the user's neck).



Warning!



During the examination, no peripheral devices may be connected to the ultrasound scanner via the USB port.

Keep the socket free from dirt and moisture. During the examination, it should be protected with a rubber cap.

Attention!

The ultrasound scanner is robustly built, however, care must be taken during use and transport to avoid subjecting the device to severe shocks or impacts. This will help prevent any damage.

4.2. Ultrasound probe

The transducer is permanently attached to the ultrasound scanner.

Transducers compatible with the iScan 2 plus ultrasound scanner:

- 7.0 MHz 64 mm RECTAL LINEAR PROBE

4.3. Battery

Warning!

The battery should only be charged using the charger supplied by the manufacturer.



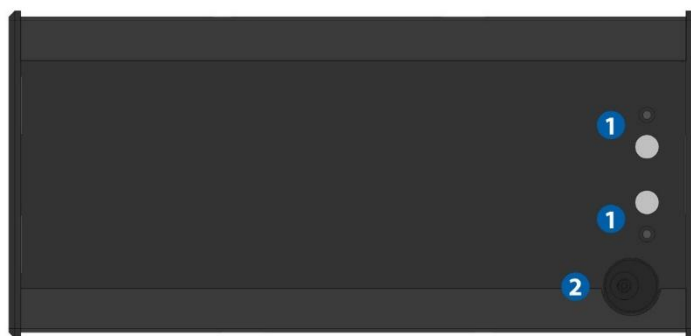
The ultrasound scanner is powered by a rechargeable Li-ion battery. The battery has an internal thermal fuse to protect it from overheating during charging.



The iScan 2 plus is powered by a 14.4 V 6.8 Ah Li-ion battery.
Charging time: 4 hours.
Operating time: up to 5 hours when fully charged.

The battery housing features a socket for connecting the charger cable and special contacts for electrical connection to the ultrasound scanner.

The battery is mounted at the bottom of the ultrasound scanner.



Battery

1. Contacts for ultrasound scanner connection
2. Charge cable socket

There is a battery charge indicator on the side of the housing.



Charge indicator

Safety measures for handling a lithium-ion battery pack:

- Do not dismantle battery packs that form an integrated unit.
- Do not short-circuit the contacts inside the pack casing with metal objects.
- Do not throw battery packs into a fire or heat them.
- Do not subject the packs to mechanical impact or throw them.
- If you notice any electrolyte leaking from a battery pack, stop using it immediately.
- Do not allow any liquid to enter the battery pack, as this may cause a sudden rise in battery temperature and pose a hazard.
- Do not leave the battery pack in high ambient temperatures, e.g. inside a car in direct sunlight or near sources of heat. Failure to follow these guidelines may result in electrolyte leakage from the battery, causing damage or reducing its service life.
- The battery should be charged at an ambient temperature between 0°C and 40°C. Charging the battery at an ambient temperature outside this range may pose a hazard and cause permanent damage to the pack.
- If charging problems occur after prolonged use (approx. 500 cycles), the battery pack should be replaced with a new one.
- A used battery pack must be recycled in accordance with current regulations.

4.4. Charger

The Mascot charger, type 2440, is intended solely for charging the batteries for the iScan 2 plus ultrasound scanner.



Charger

Suitable for mains power supply 110–240 V / 60 Hz.

A coloured LED indicates the battery's charge status. Red indicates that the battery is discharged, whilst green indicates that it is charged.

Warning! Unauthorised persons must not attempt to repair the charger or dismantle the device.

For the user's safety and to ensure the device's longevity, the charger must not be used in damp or wet conditions.

5. Preparing for use

5.1. Charging the batteries



Always check that the charger's main components, including the cables, are not damaged before using it.

Warning! If any fault is detected, immediately disconnect the device from the power supply and replace the damaged part with a new one by contacting an authorised service centre.

To charge the battery:

1. Disconnect the battery from the ultrasound scanner.
2. Connect the charger cable to the socket on the battery.
3. Plug the charger into the mains.
4. When the LED changes colour from red, through orange and yellow, to green, this indicates that the battery is fully charged.
5. Disconnect the battery from the charger.
6. Unplug the charger from the mains.

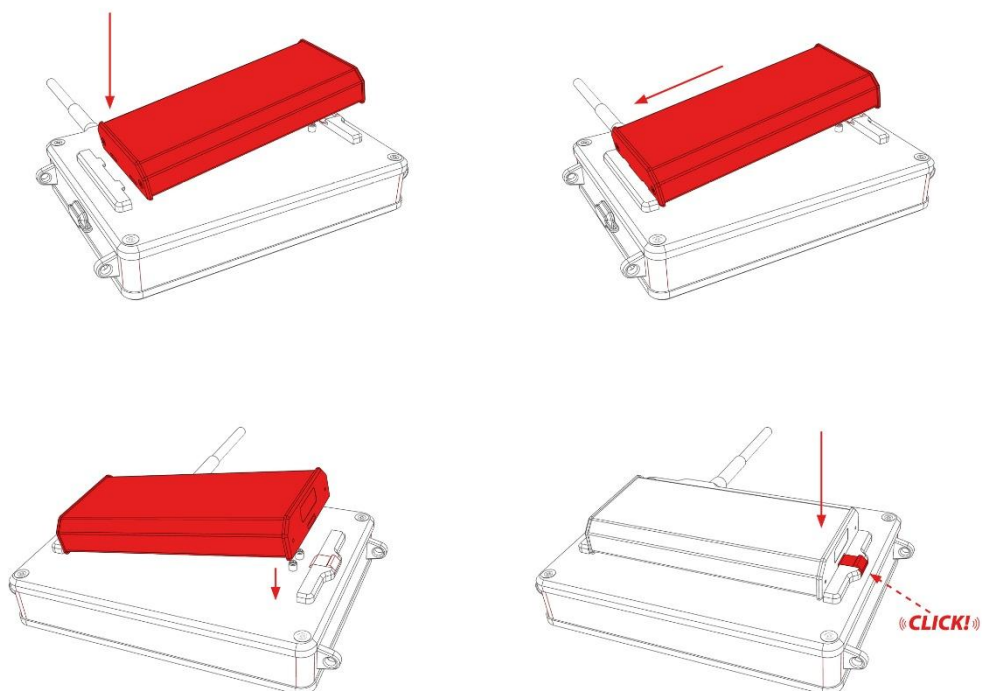
A flashing green LED on the charger indicates that the battery is fully charged and the charger has entered standby mode.

5.2. Connecting the battery to the ultrasound scanner

The battery is connected to the rear wall of the ultrasound scanner.

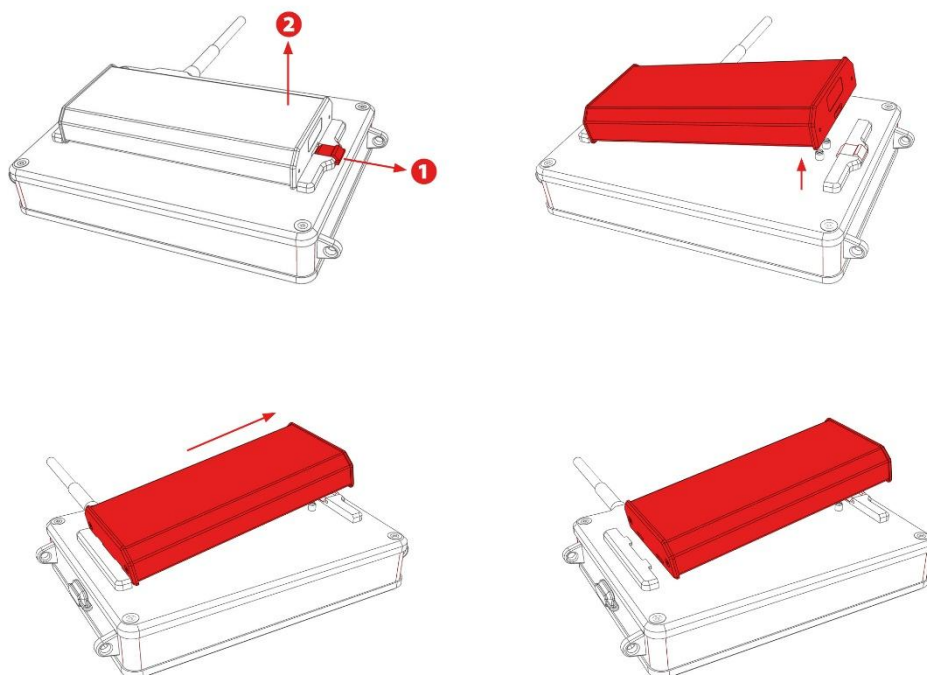
Before connecting, ensure that the contacts on the ultrasound scanner and the battery are dry.

To connect the battery, follow the diagram:



Connecting the battery

5.3. Disconnecting the battery from the ultrasound scanner



Disconnecting the battery

5.4. Attaching the carrying straps

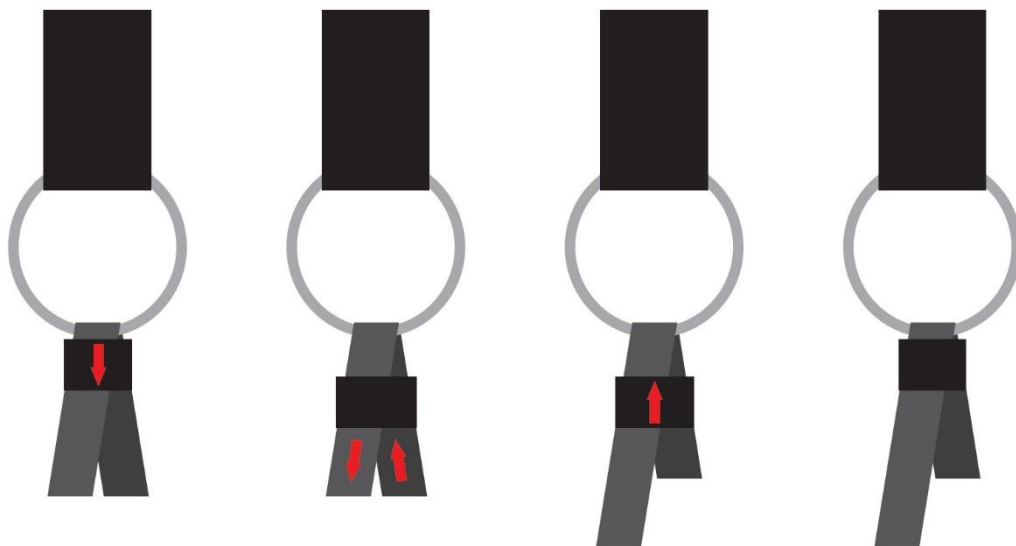
Fasten the 4 snap hooks on the harness to the fair-leads the ultrasound scanner. Place the carrying strap around your neck. Adjust the length of the strap using the two buckles – one on one side and the other on the other side.



Carry straps

5.5. Adjusting the carrying strap

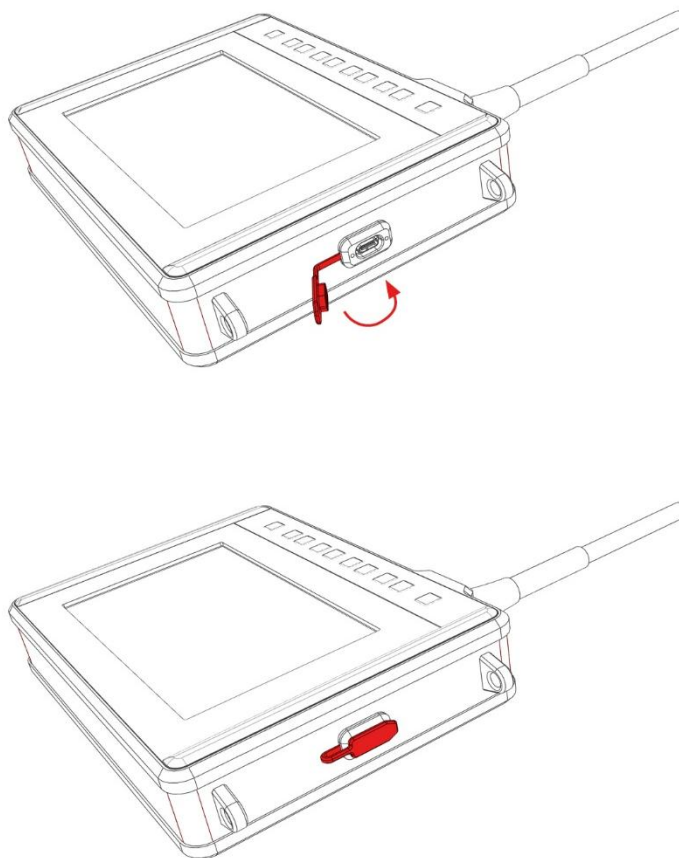
To adjust the height and angle at which the ultrasound scanner is suspended from the carrying strap, follow the diagrams below:



Adjusting the carrying straps

5.6. Securing the USB-C port

Insert the protective cap into the data port.



USB-C port protection

5.7. How to turn the ultrasound scanner on

In order to turn on the ultrasound scanner:

1. Attach the battery.
2. Press the  button and wait for approx. 20 seconds.
3. Once the image from the probe appears on the screen, the device is ready for use.
4. Apply ultrasound gel to the patient's body and carry out the scan.

5.8. Basic operations

5.8.1. Freezing the image and viewing the cine loop



– freeze



/ – to play the cine loop forwards or backwards



/ – to review forwards or backwards frame by frame



– return to scanning mode

5.8.2. Selecting a preset



-> Exam preset ->



select a preset ->



5.8.3. Gain adjustment

Overall gain – adjust the brightness of the entire imaging sector



->



/



->



Far-field gain – adjusting the brightness in the far field, deeper



->



/



->



5.8.3.1. Sun mode

Sun mode increases G1 and G2 by 2 levels and sets the display brightness to maximum. When Sun mode is enabled, the display brightness cannot be adjusted.



->



Quick access -> Sun mode ->



->



/



to turn on/off ->



5.8.4. Adjusting the scan depth



- increase scan depth (in scan mode only)



- reduction in scan depth (in scan mode only)

5.8.5. Focus adjustment



- increasing the beam depth of focus - focusing the beam deeper (in scan mode only)



- reducing the beam focus depth – focusing the beam shallower (in scan mode only)

5.8.6. Doppler mode



- enable Colour Doppler mode ->



- disable Colour Doppler mode

5.8.7. Doppler box – size and position



->



-> use the arrows to change the position ->



-> use the arrows to adjust the size ->



-> to resize and reposition again, press



5.8.8. Measurement



->



-> use the arrows to set the first marker ->



-> use the arrows to set the second marker ->



5.8.9. Image / cine loop recording

Save without adding a description



-> 2 x



/



Save with a description



->



/



->



to add a description -> use the arrow buttons to enter the description ->



Save with a description added from the list



->



/



->



to select a description from the list ->



/



select a description ->



5.8.10. Browsing the cine loop



-> Quick access ->



Database ->



-> use the arrows to select a file ->



->



/



to

review frame by frame forwards and backwards, or



/



to play a loop forwards or backwards

6. How to end operation of the ultrasound scanner

6.1. How to turn the ultrasound scanner off

To turn off the ultrasound scanner, press and hold  for approximately 2 seconds.

6.2. Cleaning and disinfection

Remember to clean and disinfect the ultrasound scanner after use.

Ensure that the data port is covered with a cap before cleaning the ultrasound scanner. See section <5.6.>.

Attention! While cleaning the personnel performing these tasks should wear protective clothing.

Attention! The ultrasound probe should be carefully disinfected after every use.



Warning! It is forbidden to use highly concentrated, aggressive and abrasive agents. Such agents can permanently damage the surface of the probe, the display screen and the casing. Do not use highly concentrated, corrosive or abrasive cleaning agents.

Warning! Use alcohol-free cleaning agents.

Attention! Do not clean the ultrasound scanner with pressurised water!

Attention! Ensure that the battery contacts and the USB-C socket do not get wet!

To clean the ultrasound scanner:

1. Turn off the device.
2. Disconnect the battery.
3. Insert the protective cap into the data port.
4. Rinse the probe and ultrasound scanner with water, avoiding direct water jets.
5. Wipe the transducer and the ultrasound scanner dry with a paper towel.
6. Clean the battery with a damp cloth or a damp paper towel, then wipe it dry.
7. For disinfection, use a suitable product intended for disinfecting the surfaces of medical and veterinary devices. Follow the instructions on the packaging.
8. Disinfect the battery and transducer using a damp paper towel or tissues.
9. Leave the ultrasound scanner, transducer and battery in a safe place to dry.

To disinfect the ultrasound scanner and its accessories, use the products intended for disinfection of medical devices which do not contain alcohol.

The carrying case should be cleaned externally with water and detergent. The foam insert should be vacuumed regularly and cleaned with water and a mild detergent. A disinfectant solution, e.g. Virkon S, may be used for disinfection. Before using the carrying case, make sure that the foam insert is completely dry.

Attention! The transport case has a vent valve to control the air pressure in the closed case. It is not moisture-permeable. Do not close a wet device in the case. If humidity accumulates in the case, we recommend using car desiccants available in stores and petrol stations.

6.3. Technical inspections

Remember to always check the ultrasound scanner, the battery, the probe and its cable for mechanical damage before starting to work. If you notice anything disturbing (for example, discontinuity of the cable), contact the service centre immediately.

The users of the ultrasound scanner are recommended to have regular technical inspections performed by the manufacturer every two years. It will guarantee the highest safety and durability.

7. Imaging modes

7.1. B-mode settings

7.1.1. Frequency

The higher the frequency, the higher the resolution, but the lower the penetration.

The lower the frequency, the lower the resolution, but the greater the penetration.

 -> Settings -> MHz ->  ->  /  set value -> 

7.1.2. Dynamic

The higher the dynamic range, the lower the image contrast. The lower the dynamic range, the higher the image contrast.

 -> Settings -> Dynamic ->  ->  /  set value -> 

7.1.3. Gamma

Adjusting the gamma changes the way the greyscale is displayed.

 -> Settings -> Gamma ->  ->  /  set value -> 

7.1.4. Swap left/right

Set the image display so that the mark on the screen corresponds to the side of the mark on the print head.

 -> Settings -> Swap L/R ->  ->  /  select the option -> 

7.1.5. LuciD

LuciD is an image enhancement system. It makes the image smoother, with sharp edges and improved contrast.

 -> Settings -> LuciD On/Off ->  ->  /  select an option -> 

7.2. Doppler Mode

The Colour Doppler function allows vascular flow to be visualised against a B-mode image in real time. Blood flow is colour-coded according to its direction. Red corresponds to flow towards the front of the transducer. Blue indicates the opposite direction.

7.2.1. Starting Colour Doppler imaging

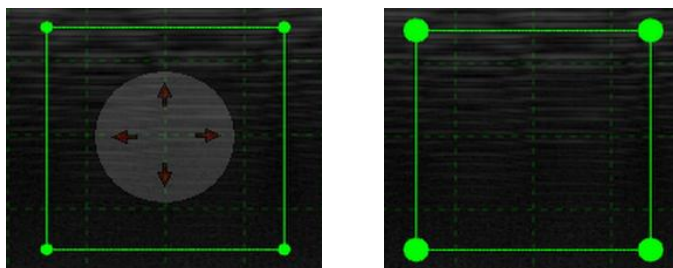
Please note that the conditions under which the examination is carried out have a significant impact on the results. Poor contact with the patient's body affects the sensitivity of Colour Doppler imaging.

Before activating the Doppler function, visualise the organ as clearly as possible in B-mode, ensuring the structure being examined is centred in the image.

D -> Turn Doppler on/off

7.2.2. Changing the size and position of the Doppler box

D -> **ESC** -> use the arrows to change the position -> **ESC** -> use **^** / **v** to adjust the size -> **OK MENU** to apply the changes -> to resize and reposition again, press **ESC**



Doppler box in position and size adjustment mode

Attention! The Doppler box can be lowered to a maximum of half the scan depth, but no deeper than 5 cm.

7.2.3. Setting parameters for Doppler mode

Parameters can be changed whilst Doppler mode is enabled.

7.2.3.1. PRF – Pulse Repetition Frequency

The PRF setting depends on the flow velocity. To visualise fast-flowing blood, set a high PRF value. As the PRF increases, so does the image refresh rate.

To visualise blood flowing at a slower speed, set a lower PRF value. At the same time, the image refresh time will increase – the smoothness of the black-and-white image may be reduced.

Therefore, when examining smaller vessels with slower blood flow, the PRF value should be minimised. Otherwise, it will not be possible to visualise the blood flow in these vessels.

OK MENU -> Doppler -> Prf -> **OK MENU** -> **^** / **v** set the value -> **OK MENU**

7.2.3.2. Doppler Gain

Colour gain is used to adjust the amount of colour displayed within a vessel.

You should increase the colour gain if you cannot see any colour in the Doppler box or if the vessels are not sufficiently filled with coloured pixels.

If there is too much colour and it is 'spilling' beyond the vessel wall, or if you see many chaotic, coloured spots, you should reduce the colour gain.

 ->  /  set the value -> 

7.2.3.3. Wall Filter

High-pass filter. Increasing this value prevents colours caused by tissue movement from being displayed – reducing motion artefacts. Increase this value if you see large, flickering colours during the animal's movements or rapid breathing.

Attention! High filter settings may also filter out data from slow blood flows.

 -> Doppler -> Wall Filter ->  ->  /  set the value -> 

8. Measurements

8.1. Measurements

The ultrasound scanner features a tool for taking measurements: distance, follicle diameter, and foetal biometry. The user can also use a grid to quickly assess the size of the structures being examined.

The default measurement is distance.

After freezing the image using the  button and pressing , you will activate the default measurement.

Pressing  opens the measurement Menu. If you select a different measurement type from the Menu, it will automatically be saved as the default and will be activated by a single press of the  button from now on.

Measurement results are displayed on the left-hand side of the screen.

8.1.1. Distance

Distance measurements are expressed in mm.

You can place up to 19 distance measurements on the image.

Each distance measurement is numbered sequentially.

 ->  -> use the arrows to set the first marker ->  -> use the arrows to set the second marker -> 

8.1.2. Follicle diameter

Follicle diameter involves detecting the boundaries of the follicle around the measurement marker.

Diameter presented in mm.

Each diameter measurement is assigned a sequential number.

 ->  -> Measure -> Follicle ->  -> use the arrows to position the marker ->  -> use  /  to adjust the shape if necessary -> use  /  to adjust the size if necessary -> 

8.1.3. Grid

The user can overlay a grid with 1 cm intervals onto the image to enable an approximate assessment of the size of structures.

In scan mode:  -> Quick access ->  Grid On/Off ->  ->  /  select the option
-> 

In freeze mode:  -> Measure -> Grid On/Off ->  ->  /  select the option -> 

8.2. Measurement edition

The user can edit measurements.

Once you have finished dimensioning ->  -> Measure -> Edit ->  -> use the arrows to move the marker to the point you wish to dimension (once confirmed, you will be able to edit the point closest to the marker) ->  -> use the arrows to edit the position of the measurement point -> 

8.3. Deleting measurements

The system allows you to delete all measurements currently displayed on the screen. You cannot delete measurements one by one.

 -> Measure -> Clear -> 

8.4. Age of foetus

Use obstetric measurements to estimate the foetal age.

 ->  ->  Foetal age tables ->  /  select measurement ->  -> use the arrows to set the first marker ->  -> use the arrows to set the second marker -> 

The user can choose between:

Cow BPD (Biparietal Diameter) – Biparietal measurement at ~ 65–200 days' gestation

Cow CRL (Crown-Rump Length) – Fetal body length at ~ 30–80 days' gestation

Equine BPD (Biparietal Diameter) – Biparietal measurement at ~ 100–330 days' gestation

Equine ED (Eye Diameter) – Eye diameter at ~ 86–318 days' gestation

Equine VD (Vesicle Diameter) – Measurement of the embryonic vesicle at ~ 13–45 days of gestation

Llama BPD (Biparietal Diameter) – Biparietal diameter measurement at ~ 75–240 days' gestation

Sheep CRL (Crown Rump Length) – Fetal body length at ~ 30–70 days of gestation

Sow CRL (Crown Rump Length) – Fetal body length at ~ 20–50 days of gestation

8.5. Flow Area

This measurement is available in Doppler mode.

It calculates in real time the ratio of the area of coloured pixels to the area of black and white pixels within the Doppler box. This helps to indirectly assess the level of vascularisation of the organ.

In scan mode:  -> Quick access ->  Flow Area ->  ->  /  select the option -> 

In freeze mode:  -> Measure ->  Flow Area ->  ->  /  select the option -> 

Once the measurement is activated, the value is displayed in real time on the right-hand side of the screen as a percentage (%).

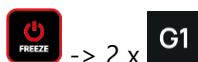
9. Images and cine loops

This function allows you to save images and cine loops with descriptions to the device's internal memory.

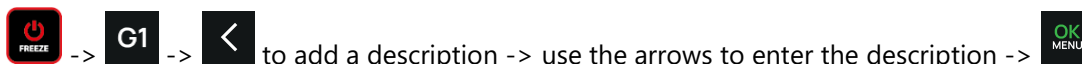
Attention! Remember to regularly transfer the saved images and cine loops to external storage media and clear the device's memory.

9.1. Saving an image

9.1.1. Saving an image without adding a description

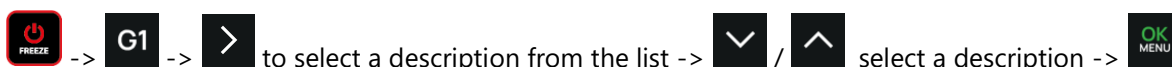


9.1.2. Saving an image with a description



9.1.3. Saving an image with a description from the list

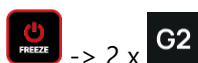
Attention! The default list of descriptions is empty. You can add a description to the list manually or import it from a USB stick. See section <9. 3.>.



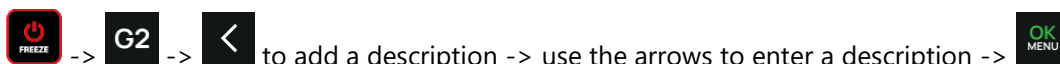
9.2. Saving a cine loop

Once you have frozen the image, you can save the recorded reverse cine loop. The cine loop length can be set between 64 and 512 frames or 5 and 20 seconds.

9.2.1. Saving a cine loop without adding a description

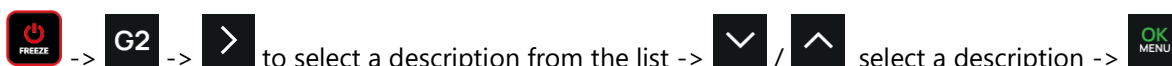


9.2.2. Saving a cine loop with a description



9.2.3. Recording a cine loop with a description from the list

Attention! The default list of descriptions is empty. You can add a description to the list manually or import it from a USB stick. See section <9. 3.>.



9.2.4. Saving a forward-recorded cine loop

Attention! The length of the forward-recording cine loop depends on the value selected in the settings (see section <11.5.>).



9.3. List of descriptions

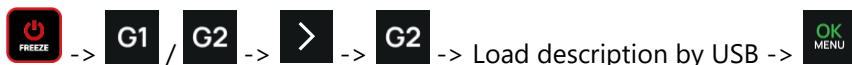
You can create or import a list of descriptions for images and cine loops.

9.3.1. Adding descriptions manually

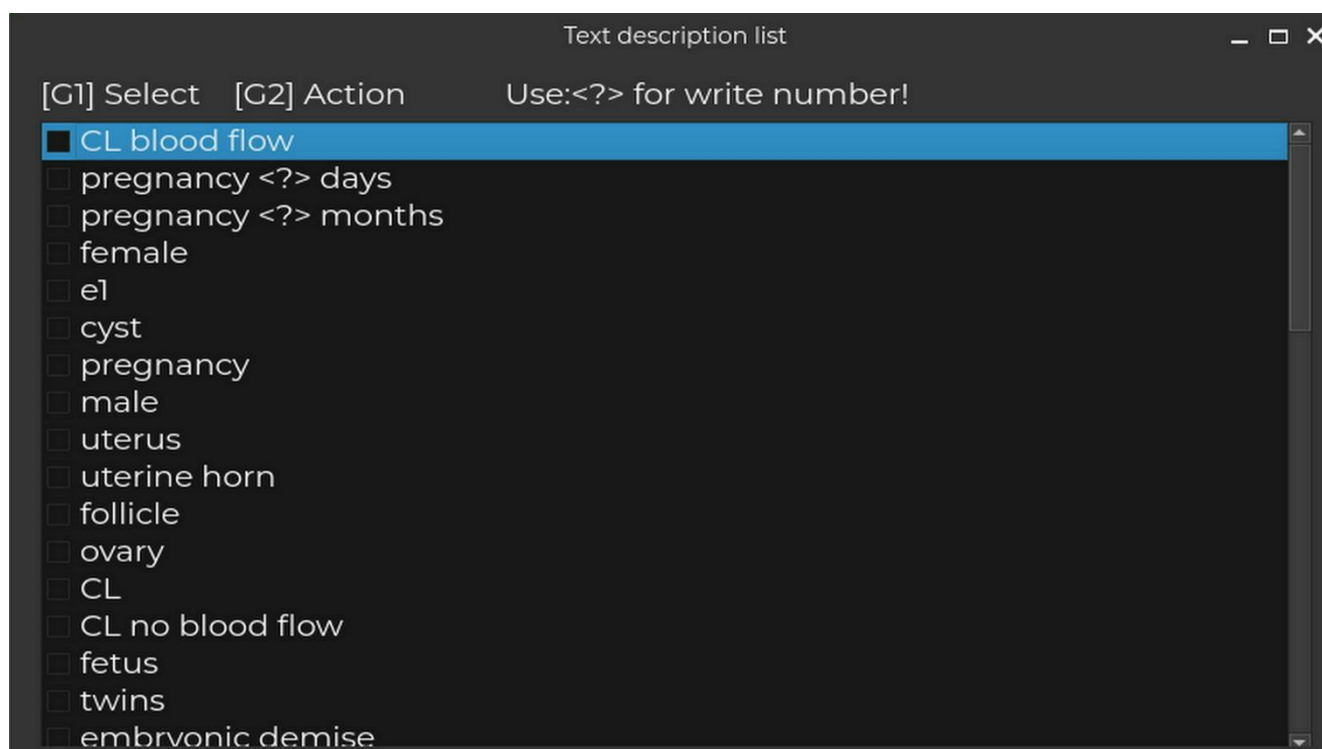


9.3.2. Importing a list of descriptions from a USB stick

Create a file called annotation.txt on the USB stick -> create a list of descriptions in the file. Each description should start on a new line -> save the file -> connect the USB stick to the iScan 2 plus:



You can create a description with a number selection field. To do this, use angle brackets, e.g.: "pregnancy <?> days".



List of descriptions

9.4. File name format for saving

The file name can be generated based on the time the file was saved, or based on the time and description if we added one whilst saving.

OK MENU -> System -> File name format -> OK MENU ->  /  select the option: TIME / TIME_DESCRIPTION -> OK MENU

9.5. Reviewing images and cine loops

You can view images and cine loops stored in the iScan 2 plus's internal memory.

OK MENU -> Quick access ->  Database -> OK MENU -> use the arrows to select the file you wish to view -> OK MENU

The file name is based on the date and time of recording. You can change the format of the file names. See section <9.4.>

Cine loops are marked with the symbol .



Image and cine loop database

If you have loaded a cine loop, press  /  to play the loop forwards or backwards, or  /  to view frame by frame forwards and backwards.

9.6. Data export

9.6.1. External USB storage

Connect the USB-C flash drive to the iScan 2 plus.

 -> Quick access ->  Database ->  -> use the arrows to choose a file ->  to select the file ->  -> Export USB -> 

The data is exported to USB:\iscan2plus.

Exported files are saved in .png format for images and .mp4 format for cine loops.

Attention! Using an unsuitable or incompatible USB flash drive may cause the export function to malfunction or result in data loss. Use USB flash drives formatted with the FAT32 file system and with a capacity of up to 32 GB.

9.6.2. Mobile devices

To export data to a mobile device, you'll need the Draminski *iScan* app , which is available for Android and iOS devices. You can find it on Google Play and the App Store.

Before exporting data to a mobile device, you must pair the iScan 2 plus with that device (see section <11.2.2.1.>). If the mobile device is not correctly paired with the ultrasound scanner, the export function will be unavailable.

To export data to a mobile device:

 -> Quick access ->  Database ->  -> use the arrows to choose a file ->  to select the file ->  -> Export to mobile -> 

Once the process is complete, the data will be located in: Internal storage\DCIM\iScan\date_time.

Attention! Failure to grant the Draminski *iScan* app the required permission to access the internal storage of the connected mobile device may cause problems with saving or exporting data.

9.7. Deleting data

 -> Quick access ->  Database ->  -> use the arrows to choose a file ->  to select the file ->  -> Remove -> 

10. Exam presets

The list of presets available during the scan depends on the type of probe connected.

To select a preset:

 -> Exam preset ->  /  select a preset -> 

10.1. Saving a new preset

Adjust the image to your liking ->  -> Exam preset -> Save new preset ->  -> use the arrows to enter a name for the preset -> 

10.2. Updating a preset

To update a preset, you must first enable that preset.

Activate the preset -> adjust the image to your liking ->  -> Exam preset -> Update preset ->  -> 

10.3. Deleting a preset

 -> Exam preset -> Delete presets ->  -> use  to select the presets ->  -> 

11. System settings

11.1. Network

There are two network modes available in iScan 2 plus: Wi-Fi and AP (Access Point).



Network mode selection window

11.1.1. Wi-Fi

The iScan 2 plus can connect to an available wireless network, for example to update the software.

 -> System -> Network ->  ->  to enable Wi-Fi

Once Wi-Fi is enabled, a list of available networks will be displayed. Each network's entry shows information about signal strength and frequency.

AP / OFF / WiFi		Connect	
			
SSID		MHz	Signal %
Home network		2412	44
PRIVATE NETWORK		2437	34

List of available networks

Use  /  to select a network ->  -> use the arrow buttons to enter the password, if necessary -> 

Once the iScan 2 plus connects to a Wi-Fi network, the  symbol will appear next to its name.

When you return to the main window, the  symbol will appear in the bottom right-hand corner of the display; this is shown in three colours indicating signal strength: red, orange and green.

To disconnect from the Wi-Fi network:

 -> System -> Network ->  ->  to disconnect -> 

To turn off Wi-Fi:

 -> System -> Network ->  ->  ->  to disable

Please note! Pressing  activates the network mode management field at the top of the screen, highlighting it in green, and allows you to change the network mode.

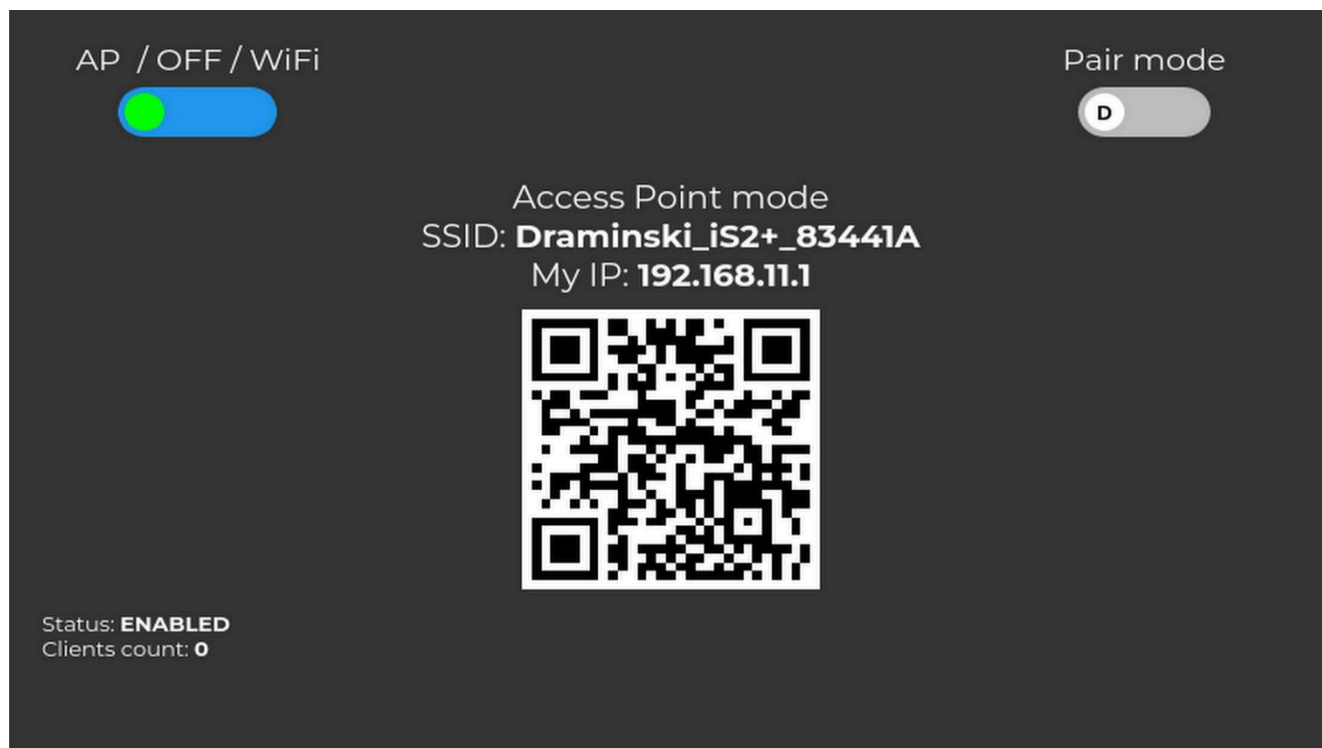
AP / OFF / WiFi		Connect	
			
SSID		MHz	Signal %
Home network		2412	44
PRIVATE NETWORK		2437	34

Active field for managing network modes

11.1.2. Access Point (AP)

The iScan 2 plus can share its wireless network with a device, acting as an access point, e.g. to stream image to external devices.

 -> System -> Network ->  ->  to enable AP



Active Access Point window

When the Access Point (AP) is enabled, upon returning to the main window, the  icon will appear in the bottom right-hand corner of the screen.

To disable the Access Point:

 -> System -> Network ->  -> 

Attention! Wireless transmission interference, excessive distance between devices, or loss of connection to the mobile device may cause delays, freezing, or loss of the wirelessly transmitted image.

11.2. Mobile App

This setting allows you to manage the mobile app's settings and update it from the ultrasound scanner.

11.2.1. High resolution

Increase the resolution of the transmitted image. This may cause transmission interference.

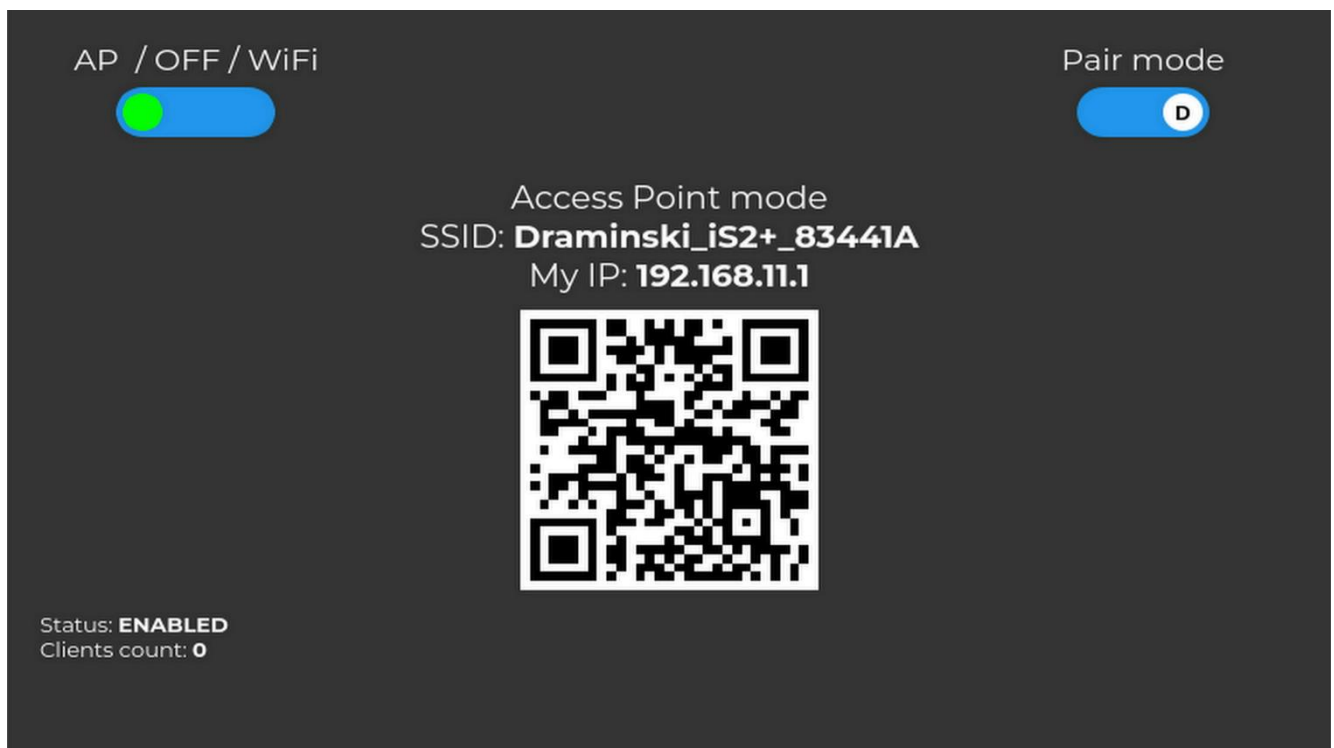


11.2.2. Pair mode

Pairing is required if you wish to display a live image from the ultrasound scanner on an external device.

11.2.2.1. Pairing a mobile device with the iScan 2 plus

Turn on the iScan 2 plus -> -> System -> Network -> -> to enable the AP (Access Point) -> to enable Pair mode



Window showing the active Access Point with Pairing Mode enabled

Launch the Draminski *iScan* app on your mobile device, select the Draminski_iS2+_XXXXXX network in your device's Wi-Fi settings, then return to the app.

Wait until the image is displayed on your mobile device.



The ultrasound scan window displayed in the Draminski iScan app on the mobile device

From now on, the mobile device will automatically connect to the iScan 2 plus ultrasound scanner every time the Access Point (AP) is switched on and the iScan app is running on the device.

Attention! Pairing mode will switch off automatically. Once you have pressed **D**, you have 30 seconds to connect your mobile device to the ultrasound scanner. If the main ultrasound scanner window does not appear in the app, you will need to re-enable pairing mode:

OK MENU -> System -> Mobile App -> Pair mode -> **OK MENU** or **OK MENU** -> System -> Network -> **OK MENU** -> **D**

11.2.2.2. Pairing iLens goggles with the iScan 2 plus

Turn on the iScan 2 plus -> Turn on the iLens goggles -> iScan 2 plus: **OK MENU** -> System -> Network -> **OK MENU** -> **<** to enable the AP (Access Point) -> **D** to enable Pairing Mode

Wait until the image appears on the goggles.

Attention! If the ultrasound scanner's network does not appear on the goggles' displays, briefly press the power button to put the goggles into standby mode, then press it again to refresh the list of nearby devices.

11.2.3. Update iLens

Use this option to send an update file to the connected iLens goggles.

Turn on the iScan 2 plus -> update the iScan 2 plus ultrasound scanner (see section <11.10.>) -> pair the goggles with the iScan 2 plus ultrasound scanner (see section <11.2.2.2.>) ->  -> System -> Mobile App -> Update iLens -> 

11.3. Brightness

 -> System -> Brightness ->  ->  /  to adjust the brightness -> 

11.4. File names for saving

You can choose whether files should be saved with a name based on the date and time, or the date, time and description.

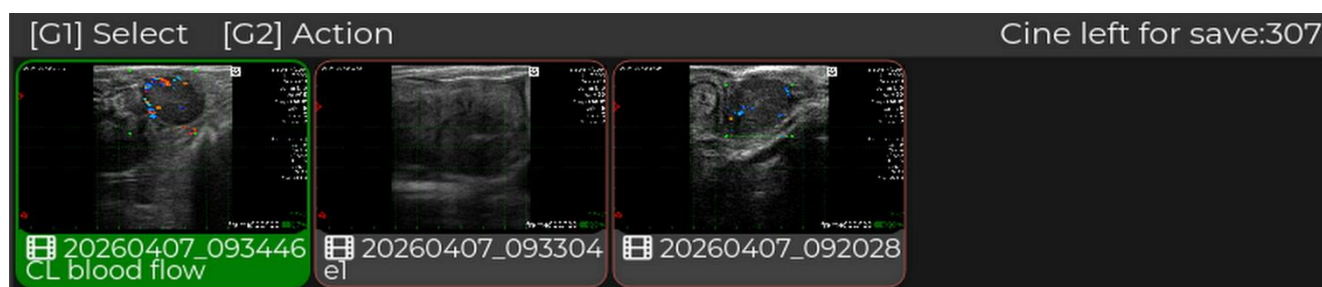
 -> System -> File name format ->  -> use the arrows to change the value -> 

11.5. Cine loop length

The length of the video loop (cine loop) can be set between 64 and 512 frames, or between 5 and 20 seconds.

 -> System -> Cine length ->  -> use the arrows to change the value -> 

Attention! The available storage space for files depends on the selected cine loop length. The number of cine loops that can be stored is displayed in the top right-hand corner of the screen when you access the database.



Database showing the number of cine loops that can be stored in memory

11.6. Automatic shut-off

You can choose between: off, 5, 10, 15, 30 and 60 minutes. If the user does not press any button within the specified time, the system will automatically switch off.

 -> System -> Auto power off ->  ->  /  to set the value -> 

11.7. Language

You can choose between the following languages: English, Polish, French, Spanish, German, Italian, Korean, Chinese.

 -> System -> Language ->  -> select language -> 

11.8. Date and time

 -> System -> Date and time ->  ->  /  to set the value ->  /  to change the setting
-> 

11.9. Factory settings

If the system is not working properly, it may be necessary to restore the factory settings.

 -> System -> Factory settings -> 

11.10. Update

Software updates are free of charge. To check for available software updates, please contact your sales representative.

11.10.1. Updating via USB

Download the file: http://update.draminski.com/iScan2plus/iscan2plus_update.7z -> save it to a USB stick (root folder) -> turn on the iScan 2 plus and connect the USB stick -> the update process will start automatically -> confirm by pressing  -> disconnect the USB stick once the system has booted up.

11.10.2. Updating via the Internet

Connect the iScan 2 plus to the Wi-Fi network <11.1.1.>.

 -> Help -> Update ->  -> By Internet -> confirm by pressing 

11.11. About the programme

You can check the software version, device specifications, available storage space and the FCC ID.

 -> Help -> About ->  ->  /  to switch between windows

12. Technical specifications

Application	Ultrasound diagnostics in animals: Reproductive system diagnostics Confirmation and monitoring of pregnancy Ultrasound examination of the lungs, digestive system, urinary tract and musculoskeletal system	
Imaging modes	B-mode Colour Doppler	
Grayscale	256 levels	
Gamma	10 settings	
Image management	Freeze the image Dimensioning Save to internal memory Export to external storage Transfer to a mobile device	
Measurements	Distance, follicle diameter (from a single measurement), grid, obstetric measurements (Cow CRL, Cow BPD, Equine BPD, Equine ED, Equine VD, Sheep CRL, Lama BPD, Sow CRL)	
Saving data to the memory	Image with measurements Cine loop (64, 128, 256, 512 frames or 5, 10, 15, 20 seconds)	
Image and cine loop memory	8 GB	
Image display	Screen Android mobile device iLens wireless goggles	
Display screen	7.0" diagonal IPS LCD LED 800 x 480 px	
Probe	Electronic, broadband, permanently attached:	
	7.0 MHz linear rectal probe (4 to 9 MHz) Active area = 64 mm 128 elements Range up to 15 cm	
Keyboard	Membrane, waterproof	
Connectivity	USB Wi-Fi	
Power supply	Li-ion, 14.4 V, 6.8 Ah	
Power consumption	~ 20 W	
Continuous operating time on a full charge	Up to 5 hours	
Battery charging time	4 hours	
Battery charge indicator	On the display – system graphic indicator On the battery – LED indicator	
Dimensions	22 x 16.5 x 7 cm (LxWxH)	
Weight of the device	2.3 kg including head and battery	
Weight of the battery	0.54 kg	
Protection class	IP64 (complete protection against dust ingress, protection against water splashes [10 l/min] falling on the housing from any direction)	
Operating temperature	From 0°C to +40°C	
Recommended storage temperature	From 0°C to +40°C	

13. Transport of the device

It is recommended that the device be transported in the provided transport case.

It is recommended that the battery be connected to the ultrasound scanner during transport.

14. Regulatory Information

14.1. Wireless Communication

The device uses Wi-Fi wireless communication in the 2.4 GHz and 5 GHz frequency bands.

Wi-Fi parameters:

- Frequency band: 2.4 GHz / 5 GHz
- RF output power: 14 dBm (2.4 GHz); 15 dBm (5 GHz, channels 36–140); 7 dBm (5 GHz, channels 149–165)

15. Operational and technical notes

It is necessary to shave fur and use ultrasound gel in order to carry out abdominal examination. Proper layer of the gel will definitely improve penetration of the ultrasound beam and will enable obtaining proper and legible images.

Attention! Ultrasound gel must not contain any of the following ingredients, as they may damage the transducer:

- Olive oil
- Methyl or ethyl parabens (para hydroxybenzoic acid)
- Dimethyl silicone
- Iodine
- Lotions
- Lanolin
- Aloe Vera
- Mineral oils
- Methanol, ethanol, isopropanol, or any other alcohol-based gels

During and after the examination, protect the head of the probe and the cable against mechanical damage. Remember:

1. To arrange the cable of the probe properly. Improper placing or excessive bending of the cable can cause damage to the wire.
2. To put the probe in the case properly. To avoid squeezing the cable with the cover of the case, as it may cut the wire.
3. To store the probe properly and safely.
4. The ultrasound scanner, probes and batteries should be stored in a dry place.

Attention! If the storage temperature has fallen below the recommended level, allow the device to warm up before switching it on. Using the ultrasound scanner alternately in extreme temperatures is detrimental and may cause damage.

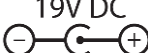
Attention! If the ultrasound scanner or the probe cable is exposed to a strong electromagnetic/electric field, strong interference may appear in the image, which may lead to an incorrect diagnosis. In such a case, the examination should be stopped immediately.

15.1. Troubleshooting

Symptoms of improper operation of the device	Causes / Verification
The device will not turn on	1. Check that the battery is properly attached. 2. Check that the battery is charged. 3. Check that it works with another iScan 2 plus battery, if available.
Image interference	1. Check that the ultrasound scanner is not located near a device emitting an electromagnetic field. 2. Check that the probe cable has not suffered any mechanical damage.
The image is too bright or too dark	1. Check the settings for display brightness, gain, gamma and MHz. 2. Restore factory settings.
No charging indicator on the battery charger	1. Check that the charger is properly connected to the mains. 2. Check the mains power supply.
After connecting the discharged battery to the battery charger, the LED of the charger is green but the battery is not charging	1. Check that the plug on the battery end has not been connected to the charger cable the wrong way round. The orientation of the symbols on the plug and on the cable should match those in the diagram below. 2. Check that the charger plug is properly inserted into the battery socket.
The battery works too short	1. The battery was not charged. 2. Low ambient temperature. 3. The battery is worn out.

If any of the basic activities do not help or other problems appear contact DRAMINSKI service,
call **+48 89 527 11 30** or e-mail: **sales@draminski.com**.

16. Symbols and marks used on the labels

	The CE marking indicating the product's compliance with applicable Directives
	Attention, familiarize yourself with the user manual
	Warnings regarding risks to user safety
	Date of manufacture
	Name and address of the product manufacturer
	Dispose of separately from other household waste in accordance with EU Commission Directive 93/86/EEC or local regulations
IP64	Enclosure protection rating against external factors – ingress of solid foreign bodies and dust, and degree of protection against water
SN-	Product serial number for identification purposes
MAX 40°C  MIN 0°C	Product storage temperature
	Handle with care – delicate product
	Type BF for parts in direct contact with the patient's body. B – body, F – Floating applied part
	For internal use only
19V DC 	Information on the power supply's voltage and polarity

17. Revision history

Version No.	Changes made
iScan2plus_EN_1.1_20261002	Manual creation

18. Warranty

The manufacturer hereby grants the buyer a 24-month warranty for a trouble-free operation of the product (body of scanner and probe) if it is used in accordance with the attached user manual.

The battery in the device is covered by a 6-month warranty.

In case of any failure occurring at no fault of the user, the manufacturer undertakes to repair the product not later than within working 14 days from the date of receiving the device at the service center (ul. Wiktora Steffena 21, 11-036 Sząbruk, Poland) and to return the device in good working order at the manufacturer's cost.

The warranty excludes mechanical damage, damage resulting from improper operation, storage and independent repairs.

The warranty is processed based on a proof of purchase (invoice). To make a complaint, the user should inform the Dрамиński Company immediately of any suspected fault.

To submit a warranty claim, the following steps must be taken:

1. Notify DRAMIŃSKI S.A. of the device malfunction immediately after it occurs.
2. Send the device to the Service Department (no later than before the warranty expiration date) or deliver it in person together with the proof of purchase, which should include the seller's and purchaser's details, the date and place of purchase, the device name, and its serial number.
3. A description of the malfunction must be enclosed with the device sent to the Service Department to ensure efficient diagnosis and repair of the damage:
 - Before shipping, the ultrasound device, carrying case, and all included accessories must be cleaned and disinfected (*in accordance with the Cleaning and Disinfection section),
 - Please pay particular attention when packaging the device to ensure that it is properly secured, as the manufacturer shall not be held liable for any damage incurred during transport.

The warrant is:

DRAMIŃSKI S.A.

Wiktora Steffena 21, 11-036 Sząbruk, Poland

Phone: +48 89 675 26 00

e-mail: serwis@draminski.com

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