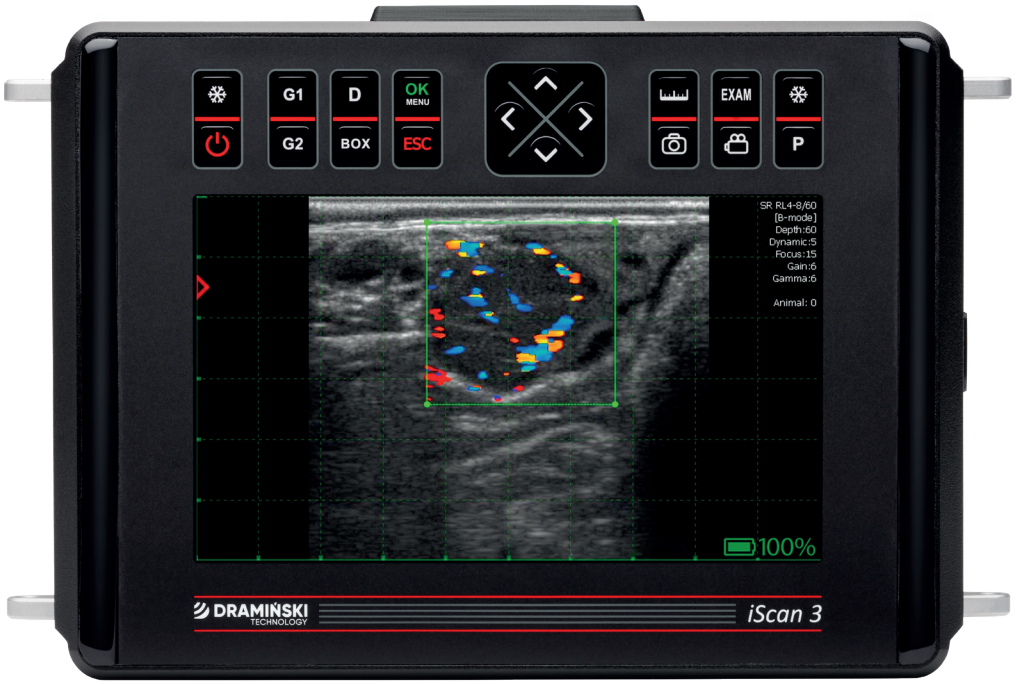
DRAMIŃSKI
TECHNOLOGY

iScan 3



USER MANUAL

www.draminski.com

ISO 9001 | CE

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Declaration of conformity can be obtained from our Sales Department:
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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. will be glad to receive your feedback regarding the device and this manual. Please call the number: **+48 89 675 26 00**
or send an e-mail to: ultrasound@draminski.com

Prepared by DRAMIŃSKI S.A.

Content

1. Introduction

1.1. Information about user manual

Individual chapters of the manual describe construction and accessories, as well as preparation for work, functions and operation of the iScan 3 ultrasound scanner.

In no way this manual will substitute even a basic ultrasonography course. It is recommended that the user of the device attend an ultrasonography course organized by the authorized training unit.

1.2. Warnings and comments used in this user manual

Due to the need of emphasizing important content in this manual, the following ways of highlighting are used:

Warning! - when it is necessary to draw special attention due to safety of the patient or the user of the device.

Attention! – when it is necessary to draw attention due to protection of the device against damage or due to its proper operation.

Bold text – to draw attention to more important parts in the manual or to make them more distinct or visible.

Descriptions of the schemes and figures – to make recognition of some details easier.

Symbols used in the user manual do not fully inform about the safety instructions and that is why it is important to read the instructions (Chapter 2) and follow them!

Symbols used in the manual:

[text] – means name of a button

<x.x.x> – link to Chapter x.x.x

1.3. Brief information on ultrasound examination

Ultrasound devices are widely used in medicine. Particularly useful and commonly used is the method of real-time imaging which enables two-dimension graphic presentation of a tissue cross-section in the 256 greyscale, the so called B-Mode (Brightness Mode). Additionally, Color Doppler ultrasonography used to evaluate the vascular flows is becoming more and more significant.

Diagnostic effectiveness of ultrasonography is considered to be high, but effects of working with this method are significantly impacted by the quality of the device, individual experience, the user's individual knowledge, as well as observing the ultrasound scanning standards and familiarization with the user manual.

1.4. Basic information about the iScan 3 ultrasound scanner

iScan 3 is a portable ultrasound scanner for veterinary use. It is a all-in-one system, with built in screen, port for multiple kind of probes and efficient battery pack. Its features include B-mode imaging, Colour Doppler and wireless connectivity with external devices.

iScan 3 is designed for assessment of internal organs, monitoring of pathology progression and treatment, as well as ultrasound guided procedures. Its main applications, among others, are:

- examination of reproductive tract on animals,
- assessment of corpus luteum perfusion,
- examination of organs in abdominal cavity,
- examination of musculoskeletal system,
- examination of lungs.

2. User's safety

Warning! - The user's and the patient's safety depends on observing the below mentioned instructions!

1. DRAMIŃSKI iScan 3 should be used for diagnostic purpose and by the trained staff only – veterinarians proficient in ultrasound diagnostics.
2. It is necessary to disinfect the probe before each use. Other elements of the ultrasound scanner should be disinfected in reasonable situations in which they could have a contact with infectious substances.
3. It is forbidden to use the ultrasound scanner with high frequency (HF) devices at the same time.
4. The ultrasound scanner cannot be used for transesophageal echocardiography (TEE) examinations.
5. In the places where explosive and anaesthetic gases are used the use of the ultrasound scanner is prohibited for safety reasons.
6. The device is suitable indoor use.
7. It is recommended the user of the ultrasound scanner perform regular technical inspections every two years at the manufacturer's facility or approved service point. It will guarantee the highest level of safety of the patients.
8. It is forbidden to carry out ultrasound diagnostics when carrying out defibrillation.
9. It is forbidden to disassembly the device, repair and adjust it by the user except for the procedures stated in this manual.
10. It is recommended the users of ultrasound scanner check before the examination the condition of the probe, cable and the connector. Do not use the probe if any of these elements is damaged.
11. If mechanical damages of the probe, cable or connector are noticed it is necessary to send the device to the service point authorised by DRAMINSKI.
12. Even though the ultrasound scanner has a strong construction in order to avoid mechanical damages it is recommended to follow the instructions presented in this manual.
13. Exposing this device to strong solar radiation should be avoided. Regarding working, storage and transport conditions, it is advised to follow the instructions on the labels of the device and its parts.
14. It is forbidden to modify the device by the user.
15. DRAMIŃSKI iScan 3 is an electric device which can be a source of electromagnetic radiation.
16. Other electric devices can interfere with iScan 3's work. User can see disturbances on an image in shape of bright lines when working in strong electromagnetic field. In such case it is recommended to limit the number of other electric devices working nearby.
17. When its service life expires in order to avoid risk to the environment, the device and the accessories should be disposed of by specially trained units according to the applicable regulations or sent back to the manufacturer.
18. The device is equipped with overheating protection. If the processor reaches its limit temperature, the device will automatically turn off. In such situation it is recommended to place the ultrasound scanner in a safe and cool place and wait for it to cool down.

3. The list of DRAMIŃSKI iScan 3 ultrasound scanner elements

#	Name and description	Quantity
1	iScan 3 ultrasound scanner body	1
2	Ultrasound probe	1*
3	Battery	1
4	Charger	1
5	Suspenders	1
6	User manual	1
7	Transport case	1

*probe type to be chosen during order.

4. Construction of DRAMIŃSKI iScan 3 ultrasound scanner

The device consist of:

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

4.1. Body of the scanner

Body of the iScan 3 is made of aluminum. The display is covered with protective film integrated with splash-proof membrane keyboard. On the right side of the scanner there is a USB-C port with rubber cap. On the rear wall of the body, there are ventilation inlets and outlets, probe port with a slide and the battery contacts with the locking system.

Warning!
It is forbidden to connect any peripherals to the USB connectors during an ultrasound examination!

Attention!
The ultrasound scanner has a strong construction, however it should be operated and transported with due care in order not to expose the device to strong impacts to avoid potential damage.
Protect the device from foreign objects getting inside the casing through the ventilation holes.

4.2. Ultrasound probe

List of DRAMIŃSKI ultrasound probes compatible with iScan 3:

LINEAR 8 MHz 40 mm

MICROCONVEX 6,5 MHz R11 mm

CONVEX 5,0 MHz R50 mm

RECTAL LINEAR 7,0 MHz 60 mm

RECTAL CONVEX 5,0 MHz R60 mm

Protection levels for the probes:

- IPX1 for socket, cable and housing,

- IPX7 for head of the probe.

Attention!
It is possible to use other types of electronic probes. Users interested in other types of ultrasound probes should contact the manufacturer of the DRAMIŃSKI iScan 3 ultrasound scanner.

4.3. Battery

Warning!

The battery can be charged only with the charger supplied by the manufacturer.

The ultrasound scanner is powered by a rechargeable Li-Ion battery. The battery has an internal thermal fuse protecting it against overheating during charging.

The battery casing has a socket to connect the charger cable and special contacts to be connected to the ultrasound scanner.

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

Battery

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

Safety measures for handling a Li-Ion battery pack:

- Never dismantle the battery pack which forms an integrated unit.
- Never short-circuit contacts in the battery pack casing using metal items.
- Do not throw battery packs into the fire nor heat them up.
- Never expose the battery packs to mechanical impact. Do not throw them.
- If you notice electrolyte leakage, stop using the battery pack immediately.
- Never allow liquid to penetrate the battery pack, it may cause a sudden temperature rise and a danger.
- Battery packs should not be left in high ambient temperature, for example, inside a car directly exposed to sunlight, or near a source of heat. Failure to follow these principles can cause leakage of electrolyte from the battery and its damage or shorten its service life.
- The battery should be charged in ambient temperature of 0°C to 40°C. Charging the battery in different ambient temperature can be dangerous and result in permanent damage to the battery pack.
- If there are problems with charging after a long service period (approx. 500 cycles), the battery pack needs to be replaced with a new one.
- The used battery pack should be recycled in accordance with the applicable legislation.

5. Getting started

5.1. Charging the batteries

iScan 3 is powered by a Li-Ion 14.4 V 6.8 Ah battery.

Charging duration: 4 hours.

Operating time: up to 4,5 hours when fully charged.

Charger

Mascot charger, type 2440, is intended only to charge the batteries of the iScan 3 ultrasound scanner.

Charger

It is adopted to the mains 110-240 V / 60 Hz.

A colour diode indicates the battery charging level. The red colour means that the battery is discharged, the green colour means that the battery is charged.

Warning! it is forbidden to perform any unauthorised repair of the charger nor dismantle the device.

User safety and reliability of the device require that the charger not be used in humid and wet places.

Before you start using the charger, always check if its main components, including the cables, are not damaged.

Attention! If any damage is detected, disconnect the device from the mains immediately and replace the damaged part with a new one, by contacting an authorised service centre.

In order to charge the battery:

1. Disconnect the battery from the ultrasound scanner.
2. Connect the charger cable to the socket in the battery.
3. Connect the charger to the mains.
4. When the diode changes its colour from red, via orange, yellow into green — your battery is properly and fully charged.
5. Disconnect the battery from the charger.
6. Disconnect the charger from the mains.

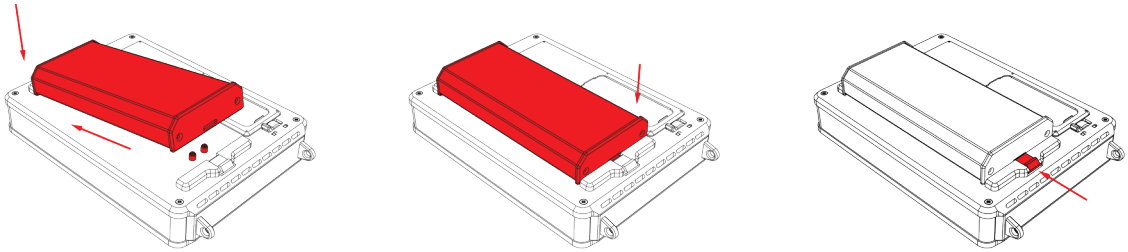
When the green diode of the charger starts flashing, it means that the battery is charged and the charger is in stand-by mode.

5.2. How to connect the batteries to the ultrasound scanner

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

Before connecting, make sure that the contacts of the ultrasound scanner and the battery are dry.

In order to connect the battery, follow the figure below:



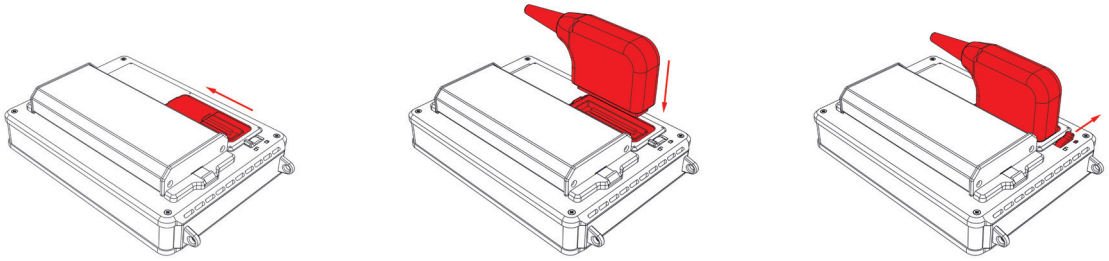
Connecting the battery

5.3. Connecting and disconnecting a probe

Attention! It is recommended to connect the probe when the ultrasound scanner is turned off.

1. Open the probe socket slide.
2. Connect the plug into the socket as indicated on the label.
3. Move the socket lock to the "locked" position.

In order to disconnect the probe, follow the above procedure in the reverse order.



Connecting the probe

5.4. Attaching the suspenders

Attach 3 snap hooks to the fair-leads of the ultrasound scanner — two at the top and one at the bottom. (Fig.) Place the suspenders around your neck and arm. Secure the fourth snap hook. Adjust the length of the suspenders.

Sequence of attaching the suspenders

Correctly secured suspenders (short straps at the bottom)

5.5. How to turn the ultrasound scanner on

In order to turn on the ultrasound scanner:

1. Attach the battery.
2. Connect the probe.
3. Press the On / Off button and wait for approx. 20 seconds.
4. When the image from the probe appears on the screen, the scanner is ready for work.
5. Apply ultrasonic gel on patient's body and preform examination.

5.6. Basic operation

5.6.1. Choosing Exam Preset

EXAM –> ⌄ / ⌃ –> OK MENU

5.6.2. Gain adjustment

Overall gain – changes brightness in whole imaging sector

G1 –> ⌄ / ⌃ –> OK MENU

Far field gain – changes brightness in far field, deeper.

G2 –> ⌄ / ⌃ –> OK MENU

5.6.3. Depth adjustment

› – to increase the depth of scanning (scanning mode only)

‹ – to decrease the depth of scanning (scanning mode only)

5.6.4. Focus adjustment

⌄ – to increase the depth of focusing (scanning mode only)

⌃ – to decrease the depth of focusing (scanning mode only)

5.6.5. Distance measurement

❄ –> ⎓ –> use arrows to set 1st cursor –> OK MENU –> use arrows to set 2nd cursor –> OK MENU

Result is displayed on the left side of the screen.

5.6.6. Follicle measurement

 –> 2 x  –>  Follicle –>  –> use arrows to set the cursor in the centre of the follicle –>  –> use arrows to set the shape and threshold –> 

Result is displayed in upper left corner of the screen.

5.6.7. Saving image / cine loop

Save without the annotation

 –> 2 x  / 

Save and write annotation

 –> 2 x  /  –> 

Save with the annotation from the list

 –> 2 x  /  –> 

5.6.8. Doppler mode

Save without the annotation

 – turn on Color Doppler –>  – turn off Color Doppler

5.6.9. Color Box size and position

 –> use arrows to adjust size –>  –> use arrows to change position –>  – to apply adjustments.

5.6.10. Reviewing the cine loop

 –> File ->  Load –>  –> use arrows to choose the file –>  –>  /  to review frame by frame forward and backward or  /  to play the cine loop forward or backward.

 – go back to scanning mode.

6. How to end operation of the ultrasound scanner

6.1. How to turn the ultrasound scanner off

In order to turn the ultrasound scanner off, press and hold the On / Off button for approx. 2 seconds.

6.2. Cleaning and disinfection

Remember to clean and disinfect the ultrasound scanner after finishing work with it. Clean it with a wet cloth or paper towel.

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.

Warning! Use alcohol-free agents.

Attention! Never wash the ultrasound scanner under running water!

Attention! Ensure that the probe socket and battery contacts do not get wet! Prevent water from penetrating the ultrasound scanner through ventilation slots!

In order to clean the ultrasound scanner:

1. Turn off the device.
2. Disconnect the battery.
3. Disconnect the probe and close the socket slide.
4. Put the protecting plugs into the data transmission socket.
5. Wipe the battery, the probe and the ultrasound scanner with a wet cloth or a paper towel.
6. Wipe all elements dry.
7. For disinfection, use an appropriate agent intended for disinfecting surfaces of medical and veterinary products. Follow the instructions on the packaging.
8. Disinfect the battery and transducer using moistened paper towels 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.

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 resolution but weaker penetration. The lower the frequency, the lower resolution but better penetration.

OK MENU –> Settings –> MHz –> OK MENU –> ^ / v to set the value –> OK MENU

7.1.2. Dynamic

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

OK MENU –> Settings –> Dynamic –> OK MENU –> ^ / v to set the value –> OK MENU

7.1.3. Gamma

Gamma defines the way grey scale is displayed.

OK MENU –> Settings –> Gamma –> OK MENU –> ^ / v to set the value –> OK MENU

7.1.4. Swap L – R

Align the indicator side on an image with the one on the probe.

OK MENU –> Settings –> Swap L - R –> OK MENU –> ^ / v to set the value –> OK MENU

7.1.5. LuciD

LuciD is image enhancement solution. It makes image smoother with sharp edges and improves contrast.

OK MENU –> Settings –> LuciD On/Off –> OK MENU –> ^ / v to set the value –> OK MENU

7.2. Doppler Mode

The Color Doppler functions allow viewing a blood flow in a real time together with B Mode image in the background. The blood flow is coded by the color depending on its direction. The red color corresponds to the stream flowing to the head of the probe. Blue color means the reverse direction.

7.2.1. Starting Color Doppler imaging D

Remember that examination conditions have great influence on results. Weak contact of the probe with body will affect the Color Doppler sensitivity.

Before starting Doppler function you should find the clearest image of the organ in B-Mode, showing the examined structure in the center of an image.

D –> turns Doppler On or Off.

7.2.2. Resizing and repositioning of color box

BOX –> use ^ / v to adjust the height and > / < to adjust the width of the box –> BOX –> use ^ / v and > / < to change the position of the box –> BOX to apply the changes.

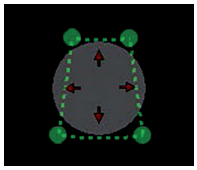


Fig. Color box in resizing and repositioning mode.

7.2.3. Setting parameters for Doppler mode

Parameters are available for change only when Doppler mode is turned on.

7.2.3.1. [PRF] – Pulse Repetition Frequency

The PRF setting depends on the speed of the flow. In order to depict fast flows you should set a higher PRF value. When the PRF increases the black and white image refresh rate also increases.

In order to depict the blood which flows with a slow speed you should set a lower PRF value. The refresh rate in this case decreases – black-and-white refresh rate can also decrease.

Thus, when you examine small vessels with low flow rates you should minimize the PRF value. Otherwise it will not be possible to depict the flow in these vessels.

OK MENU –> Doppler –> PRF –> OK MENU –> use arrows to set the value –> OK MENU

7.2.3.2. [MHz] – Doppler Frequency

It is set alike to the frequency of the black-and-white image. The deeper the examined structure is the lower frequency you should set.

Attention! Doppler frequency settings do not influence on probe frequency settings in B mode.

OK MENU –> Doppler –> MHz –> OK MENU –> use arrows to set the value –> OK MENU

7.2.3.3. Doppler Gain

Color gain is used to adjust the amount of color displayed inside the vessel. One should increase the color gain when does not see the color inside the Doppler box or when vessels are not filled enough with color pixels. If there is too much of color, and it is outside of the borders of the vessel, or one see a lot of chaotic color speckles on the image, they should decrease the Color Gain.

OK MENU –> Doppler –> Doppler Gain –> OK MENU –> use arrows to set the value –> OK MENU

7.2.3.4. Wall Filter

This is a high pass filter which removes the artifacts caused by tissue movement. One should increase its value when sees big color flashes when animal moves or breaths quickly.

Attention! High values of the Wall Filter may cause that the low velocity blood flow will be removed from an image.

OK MENU –> Doppler –> Wall Filter –> OK MENU –> use arrows to set the value –> OK MENU

8. Measurements

8.1. Measurements

The ultrasound scanner has tools to measure: distance, diameter of a follicle, ellipse area, backfat, embryo biometry. User can also use 1cm grid for quick assessment of the size of examined structures.

Default measurement is the Distance. By pressing once, you activate the default measurement. If you press twice, you open the Measurement Menu. If you choose other type of measurement from the menu, it will be automatically saved as a default one, and will be activated by single press on button from now on.

Results are displayed on the left side of the screen.

8.1.1. Distance

Distance measurement is presented in mm.

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

Each distance measurement has a sequential number.

–> –> use arrows to set 1st cursor –> –> use arrows to set 2nd cursor –>

8.1.2. Follicle diameter

Follicle diameter is detecting the borders of a follicle around the measurement cursor.

Diameter presented in mm.

Each distance measurement has a sequential number.

–> x 2–> Follicle –> –> use arrows to set cursor –> –> use / to adjust shape if needed –> use / to adjust the size if needed –>

8.1.3. Ellipse area

The result is presented in cm^2.

–> x 2–> Ellipse area –> –> use arrows to set 1st cursor –> –> use arrows to set 2nd cursor (these points set the length of the ellipse) –> –> use arrows to set 3rd cursor (this sets the width of the ellipse) –>

8.1.4. Grid

User can display 1 cm grid over the image for screening size assessment of the structures.

x 2–> Grid On/Off –> –> use arrows to turn the grid on or off.

8.2. Measurement edition

User can edit the measurement.

After the measurement is done –> –> Edit –> use arrows to move the cursor close to the measuring point you want to move (when you apply you will edit the point which is closer to the cursor) –> –> use the arrows to edit the place of the measuring point –>

8.3. Deleting measurements

System allows to delete all the measurements which are displayed on the screen. You can not delete measurements one by one.

–> Clear –>

8.4. Age of foetus

Use the Obstetrics measurements to assess the age of foetus.

–> x 2–> Obstetrics –> choose the measurement from the list –> –> use arrows to set 1st cursork –> –> use arrows to set 2nd cursor

User can choose from:

Cow BPD (Biparietal Diameter) at age of ~ 65 – 200 days,
Cow CRL (Crown-Rump Length) at age ~ 30 – 80 days,
Equine BPD (Biparietal Diameter) at age ~ 100 - 330 days,
Equine ED (Eye Diameter) at age ~ 86 – 318 (65 – 356) days,
Equine VD (Vesicle Diameter) at age ~ 13 – 45 days,
Lama BPD (Biparietal Diameter) at age of ~ 75 - 240 days,
Sheep CRL (Crown Rump Length) at age of ~ 30 – 70 days,
Sow CRL (Crown Rump Length) at age of ~ 20 – 50 days.

8.5. Animal counting

Animal counting is unique function which allows you to count the examined animals.

Information about the number of examined animals is displayed below the settings, on the right side of the screen, for example: Animal: 0.

After examination of each animal press P to increase the number.

The number resets each time you turn off the iScan 3.

You may reset the Animal count by yourself:

x 2–> Animal Counting –> Reset.

If you made a mistake, you can decrease the number of animals:

x 2–> Animal Counting –> Decrease.

8.6. Flow Area.

The measurement is available in Doppler Mode.

It calculates live the ratio of area of color pixels to area of black and white pixels inside the color box. This helps indirectly to assess the level of vascularization of an organ.

–> Doppler –> Flow Area –> 

When the measurement is on, the value is presented live on the right side of the screen in %.

9. Images and cine loops

This function allows saving the images and cine loops with the description to internal memory of the device.

Attention! Remember to export saved images and cine loops to external memory and clear the device's memory systematically.

9.1. Saving the image

9.1.1. To save the image without the description

–> x 2

9.1.2. To save the image with the description

–> –> G1 – use arrows and OK MENU to enter the description –> G2

9.1.3. To save image with the description from the list

Attention! By default the list of descriptions is empty. One can add the description to the list manually, or import it from USB memory. See point <9. 3.>.

–> –> G2 –> use arrows to choose the description –> OK MENU

9.2. Saving the Cine loop

After you freeze the image, you can save retrospective cine loop. The length of the cine loop can be set between 64 and 512 frames or 5 and 20 seconds.

9.2.1. To save the cine without the description

–> x 2

9.2.2. To save the cine with the description

–> –> G1 – use arrows and OK MENU to enter the description –> G2

9.2.3. To save cine with the description from the list

Attention! By default the list of descriptions is empty. One can add the description to the list manually, or import it from USB memory. See point <9. 3. >

–> –> G2 –> use arrows to choose the description –> OK MENU

9.2.4. Saving the Cine loop recorded forward

Attention! Cine length recorded forward depends on the value selected in the system settings (see point <11.5.3.7.>).

9.3. Description list

One can create or import the list of descriptions for images and cine loops.

9.3.1. Adding the description manually

 –>  /  –> G2 –> G2 –> add new description –> use arrows to enter the description –> 

9.3.2. Importing the description list from the USB drive

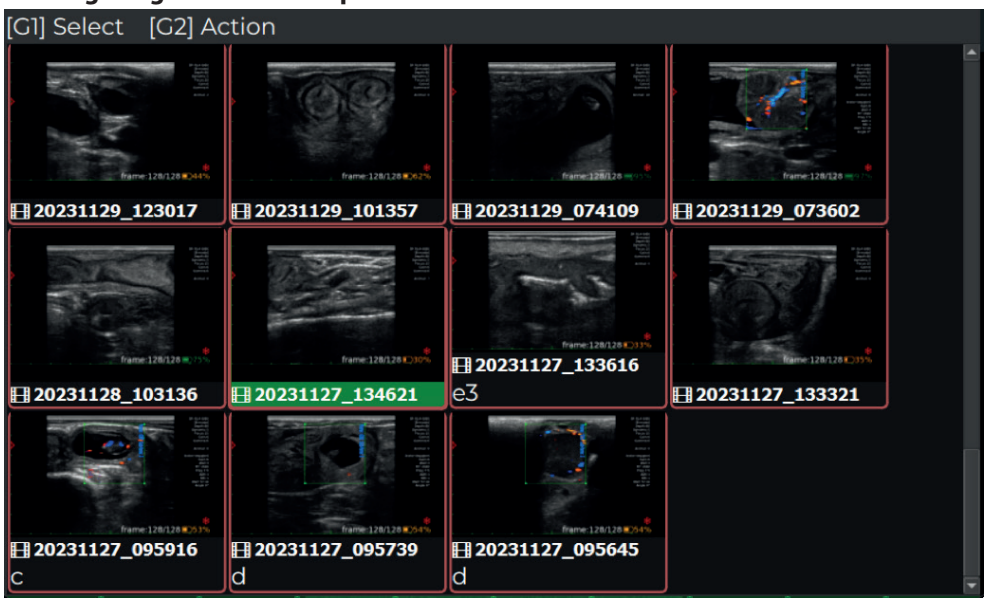
Create the annotation.txt file on the USB drive –> in the file, create a list of descriptions. Each description should appear on the next line –> save the file –> connect the USB drive to the iScan 3 –>  –>  /  –> G2 –> G2 –> load description list from USB –> 

9.4. File name format

Name of the file can be created according to time it was saved or time and description, if it was added while saving.

 –> System –> File name format –> use arrows to choose: TIME / TIME _DESCRIPTION

9.5. Reviewing images and cine loops



One can review images and cine loops stored in internal memory of iScan 3.

OK MENU –> Load –> use arrows to pick the file which you want to display –> OK MENU

The file name is based on the date and time it was saved. One can change it to time + description. See <9.4.>

Cine loops are marked with symbol.

Images and cine loops database.

If you loaded cine loop, press and hold / to play the cine loop forward or backwards and / to review the cine loop frame by frame.

9.6. Data export

9.6.1. USB external memory

Connect the USB drive to the iScan 3.

OK MENU –> Load –> use arrows to choose the files –> G1 to select the file –> G2 –> Export USB.

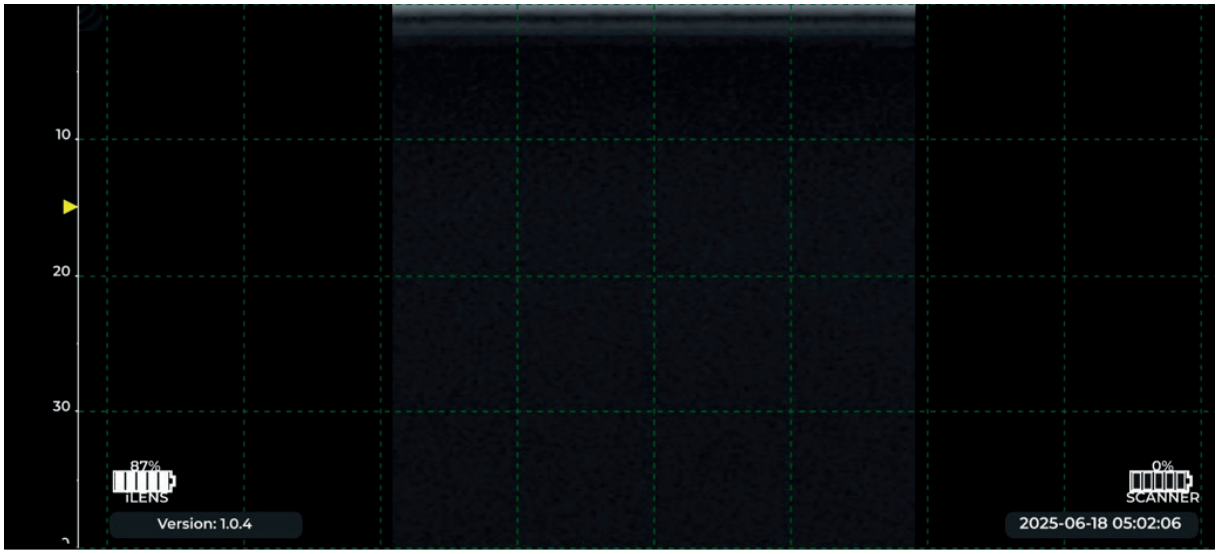
Data is exported to USB:\iscan 3.

Export files are .png for images and .mp4 for cine loops.

9.6.2. Mobile device

One need Draminski iScan App to be able to export date to the mobile device. Draminski iScan App is available for Android devices. One can find it in Google Play store.

Before exporting data to mobile device, one has to pair the iScan 3 and mobile device.



OK MENU –> System –> Networks –> Access point –> ON –> symbol in right bottom corner of the screen means the iScan 3 is ready for connection.

OK MENU –> System –> Mobile App –> Pair mode –> Turn on the Draminski iScan App on your mobile device –> when asked, choose Draminski_iS3_XXXXX network –> mobile device should pair with the iScan 3 immediately –> main window of the scanner should be displayed.

From now one the mobile device will connect to iScan 3 automatically each time when the access point is turned on and the iScan app is running on the device.

In order to export data to mobile device:

OK MENU –> Load –> use arrows to choose the files –> G1 to select the file –> G2 –> Export to mobile.

When the process is finished, one will find the data in Internal Memory\DCIM\iScan\date_time.

9.7. Deleting data

OK MENU –> Load –> use arrows to choose the files –> G1 to select the file –> G2 –> Remove –> G1.

10. Exam presets

List of exam presets depends on the probe type.

To choose exam preset:

EXAM –> ⌄ / ⌃ –> OK MENU

10.1. Saving new preset

Adjust the image the way you like –> OK MENU –> Exam preset –> Save new preset –> use arrows to enter the preset name –> G2

10.2. Updating preset

To update preset one has to turn on the preset first.

Turn on the preset –> adjust the image the way you like –> OK MENU –> Exam preset –> Update preset –> G1

10.3. Deleting preset

OK MENU –> Exam preset –> Delete presets –> use › to select the presets –> OK MENU –> G1

11. System settings

11.1. Date and Time

OK MENU –> System –> Date and Time –> OK MENU –> ⌄ / ⌃ to set the value –> › / ‹ to change parameter –> OK MENU

11.2. Brightness

OK MENU –> System –> Brightness –> OK MENU –> ⌄ / ⌃ to set the brightness of the screen.

11.3. Sun mode

Sun mode increases G1 and G2 by 2 levels and display brightness to maximum. When the Sun Mode is turned on, one cannot adjust Display Brightness.

OK MENU –> System –> Sun Mode –> OK MENU –> ⌄ / ⌃ to turn On and Off.

11.4. Auto power off

One can choose between: disabled, 5, 10, 15, 30 and 60 minutes. If the user does not press any key within the indicated time, the system will turn off automatically.

OK MENU –> System –> Auto power off –> OK MENU –> ⌄ / ⌃ to set the value.

11.5. Network

There are two modes of Network in iScan 3: WiFi and Access Point.

11.5.1. WiFi

iScan 3 can connect to existing wireless network, for example in order to download software update.

OK MENU –> System –> Network –> WiFi –> Connect –> choose the network –> use arrows to enter the password if needed –> OK MENU –> ESC

When the iScan 3 connects to WiFi network, the network symbol  is displayed in right bottom corner of the screen.

To disconnect form WiFi network:

OK MENU –> System –> Network –> WiFi –> Disconnect –> OK MENU

To check connection status:

OK MENU –> System –> Network –> WiFi –> Connect info

11.5.2. Access Point

iScan 3 can share wireless network as an access point, for example in order to stream the image to external devices.

OK MENU –> System –> Network –> AP –> ON

When the Access point is on the antenna symbol  is displayed in right bottom corner of the screen.

To turn the Access point OFF: OK MENU –> System –> Network –> Access point –> OFF.

To check Access point status: OK MENU –> System –> Network –> Access point –> Status

11.5.3. Mobile App

This setting allows for mobile app settings management and update.

11.5.3.1. Update iLens

Use this option in order to send update file to the connected device iLens glasses.

Turn iScan3 ON –> update iScan 3 ultrasound scanner (see point <11.5.3.9.>) -> pair the device with the iScan3 (see point <11.5.3.4.2.>) -> OK MENU –> System –> Mobile App –> Update iLens.

11.5.3.2. App serwer

Turn this function ON if you want to start streaming the image to any mobile device as mobile phone or iLens.

OK MENU –> System –> Mobile App –> App serwer

11.5.3.3. Hi Resolution

Increase the resolution of streamed image. Can cause transmission disturbances.

OK MENU –> System –> Mobile App –> Hi Resolution

11.5.3.4. Pair mode

Pairing is mandatory if one wants to display live image from the scanner on an external device.

11.5.3.4.1 Pairing the mobile device with the iScan 3

Turn iScan 3 ON: OK MENU –> System –> Network –> Access point –> ON –> OK MENU –> System -> Mobile App -> Pair mode.

Launch Draminski iScan App on mobile device –> choose iS3_XXXX network.

Wait until the image shows on mobile device.

Pair mode will disable automatically.

11.5.3.4.2 Pairing the iLens glasses with the iScan 3

Turn iScan 3 ON -> Turn iLens ON -> iScan 3: OK MENU –> System -> Network -> Access point -> ON –> OK MENU –> System -> Mobile App -> Pair mode.

Wait until the image shows on iLens glasses.

Pair mode will disable automatically.

11.5.3.5. Language

One can choose between: English, Polish, French, Spanish, German and Italian.

OK MENU –> System –> Language –> choose the language –> OK MENU

11.5.3.6. File name format

One can decide if files will be saved with name created from time and date or time, date and description.

OK MENU –> System –> File name format –> use arrows to choose the value –> OK MENU

11.5.3.7. Cine length

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

OK MENU –> System –> Cine length –> use arrows to choose the value –> OK MENU

11.5.3.8. Factory settings

If system does not work properly, one may need to restore Factory Settings.

OK MENU –> System –> Factory settings –> OK MENU

11.5.3.9. Update

Software updates are free of charge. In order to check the software update availability contact your sales representative.

11.5.3.9.1. Update by USB

Download file: http://update.draminski.com/iScan3/iscan3_update.7z –> save the file on USB memory (root folder) –> turn iScan 3 ON and connect the USB memory –> update process will start automatically –> confirm with OK MENU –> disconnect the USB memory after system boots up.

11.5.3.9.2. Update by Internet

Connect iScan 3 with WiFi network <11.5.1.>.

OK MENU –> System –> Update –> by Internet –> confirm with OK MENU

12. Specification

Application	Ultrasound diagnostics of animals: Diagnostics of reproductive system Confirmation and monitoring of pregnancy Ultrasound examination of lungs, digestive system, urinary tract, musculoskeletal system. Measurement of backfat thickness
Image modes	B Mode Colour Doppler
Grayscale	256 shades
Gamma	10 settings
Image management	Freezing the image Dimensioning Saving to internal memory Exporting to external storage device Transmitting to mobile device
Measurements	Distance, follicle diameter, ellipse area, grid, obstetrics (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 Mobile device with Android
Display screen	7.0" diagonal IPS LCD LED 800 x 480 px
Probe	Electronic, broadband, interchangeable. Głowica 156 – Convex 5MHz R50 Głowica 181 – Microconvex 6,5 MHz R11 Głowica 196 – Linear abdominal 8MHz L40 Głowica 212 – Convex rectal 5MHz R60 Głowica 223 – Linear rectal 7MHz L60
Keyboard	Membrane, water resistant
Connectivity	USB WiFi
Power supply	Li-ion, 14.4 V, 6.8 Ah
Power consumption of the device	~ 20 W
Continuous operation when the battery is fully charged	Up to 4 hours 30 min.
Charging of the battery pack	4 hours
Battery charge indicator	Automatic — graphic indicator
Dimensions	27 x 18 x 7 cm (LxWxH)
Weight of the device	2.6 kg including the probe and the battery
Weight of the battery	0.54 kg
Protection class	IP32 (protection against item larger than 2.5 mm, protection against water dripping at the maximum of 15°).
Operating temperature	From 0°C to +40°C
Recommended storage temperature	From 0°C to +40°C

13. Transportation of the device

It is recommended to transport the device in the provided transport case.

It is recommended to connect the battery to the scanner for transportation.

14. 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 Gels should NOT contain any of the following ingredients, which have the potential to damage the probe.

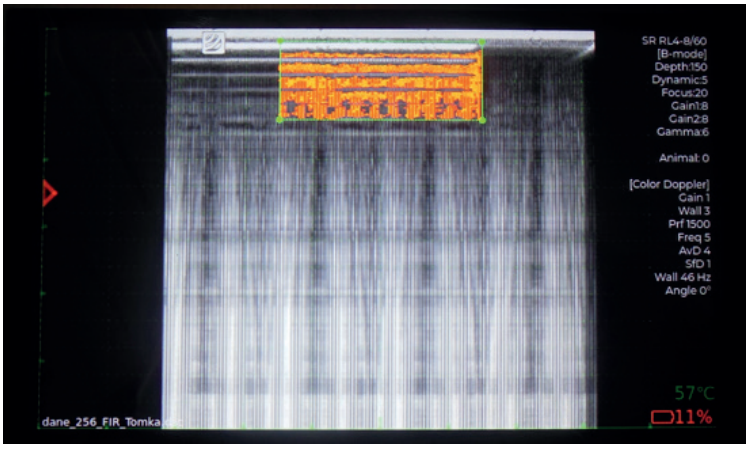
- Olive oil
- Methyl or ethyl parabens (para hydroxybenzoic acid)
- Dimethyl silicone
- Iodine
- Lotions
- Lanolin
- Aloe Vera
- Mineral oils
- Methanol, ethanol, isopropanol, or any other alcohol-based gels

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

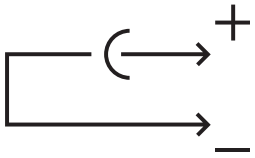
1. To arrange the cable of the probe properly. Improper placing or excessive bending of the cable can cause damage to the wire.
2. To put the probe in the case properly. To avoid squeezing the cable with the cover of the case, as it may cut the wire.
3. To store the probe properly and safely.
4. The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

Attention! If the storage temperature happens to fall below 5°C, it is necessary to warm the probe up before turning on the device. Using the ultrasound scanner in extreme temperatures alternatively is unfavourable and can lead to damages.

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 (see the figure below). In such a case, the examination should be stopped immediately.

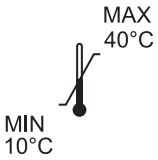
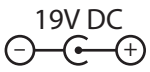


14.1. Troubleshooting

Symptoms of improper operation of the device	Causes / Verification
The device does not turn on	1. Check if the battery is properly attached. 2. Check if the battery is charged. 3. Check if the device operates with another battery for iScan 3, if available.
The system does not recognise the connected probe.	1. Check if the probe connector is correctly connected to the socket. 2. Check if the probe lock lever is in fully "locked" position. 3. Check pins of the probe connector and of the socket. 4. If dirty, clean them with compressed air or soft copper brush. When cleaning the pins with the brush, move it only in parallel to the pin direction, from its base to the tip.
The image is disturbed	1. Check if the ultrasound scanner is not located near other devices emitting electromagnetic field. 2. Check if the probe cable has no mechanical damage.
The image is too bright or too dark	1. Check the settings of brightness, gain, gamma and MHz. 2. Restore the factory settings.
No charging indication on the battery charger	1. Check if the charger is properly connected to the mains. 2. Check the power supply in the mains.
After connecting the discharged battery to the battery charger, the LED of the charger is green but the battery is not charging	1. Check if the connector on the battery side is not reversely connected to the charger cable. Orientation of the symbols on the connector and on the cable should correspond with the figure below.  2. Check if the charger plug is correctly connected to 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: **ultrasound@draminski.com**

15. Symbols and marks used on the labels

CE	CE means that the product complies with the valid Directives.
	Attention, familiarize yourself with the user manual
	Warnings regarding user safety
 2024	Date of production
 DRAMIŃSKI	Producer name and address
	Dispose of separately from other domestic wastes in accordance with Directive of the EU Committee UE 93/86/EEC or local regulations.
IP32	Level of casing resistance to external factors – penetration of solid bodies and dust, level of water resistance.
SN–	Serial number
	Storage temperature
	Careful, fragile
	BF type for parts applied directly to the patient's body. B – body, F – Floating applied part.
	For inhouse use only
	Information about voltage and polarity of the AC Adaptor
	Information about the correct direction of the connector fitting in the probe port

16. Revision history

Version No.	Changes made
iScan3_1.0_20240515	Creation of instructions
iScan3_EN_1.1_20240820	Supplementation of information in chapters on ultrasound functions. Graphics update.
iScan3_EN_1.2_20241021	Update of information in chapter 14. Operational and technical notes.
iScan3_EN_1.3_20241126	Added information about Power consumption.

17. 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 for the device has 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 Ząbruk, 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 Dramiński Company immediately of any suspected fault.

To make a complaint on account of warranty the user should show:

1. The product
2. A copy of the purchasing document which states the name and address of the seller, date and place of purchase, kind of product and series number of the product.

The warrant is:

DRAMIŃSKI S.A.
Wiktora Steffena 21, 11-036 Ząbruk, Poland
Phone: +48 89 675 26 00
e-mail: serwis@draminski.com
www.draminski.com

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TECHNOLOGY

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