DRAMIŃSKI
TECHNOLOGY

airScan
pro



USER GUIDE

CE

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Declaration of conformity
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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.

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1. Introduction

1.1. Information about the user guide

The individual sections of the user guide describe design, accessories of the device, preparing it to operation, functions and use of the airScan pro ultrasound scanner.



Reading the content of the user guide does not substitute even basic ultrasonography training. We recommend the user to take an authorised ultrasound training.

1.2. Warnings, comments and symbols used in the user guide

This user guide uses the following distinguishing signs to emphasise important information:



Warning! – Pay particular attention to safety of the patient or of the device use.

Caution! – Pay attention to the safety of the device or its proper operation.

Bold text – To draw attention to important fragments in the user guide or to make the information clearer and more legible.

Descriptions of diagrams and figures – to make details more visible.

The symbols used in the user guide do not provide complete information about safety instructions. Therefore, the safety instructions (section 2) must be read first and followed!

Symbols used in the text:

[Text] – means the name of the ultrasound scanner key

<x.x.x> – reference to section x.x.x

1.3. Brief information about ultrasonography

Ultrasound apparatus is widely used in medicine. Particularly useful and commonly applied is real-time imaging, which allows for two-dimensional graphical representation of tissue cross-sections in 256 grayscale levels, known as B-Mode (Brightness-Mode). Additionally, colour Doppler ultrasound, used for vascular flow assessment, is gaining increasing diagnostic importance.

The diagnostic effectiveness of ultrasound is rated highly; however, the quality of the equipment, the individual experience and knowledge of the user, adherence to ultrasound examination standards, and familiarity with this user guide significantly impact the outcome of the procedure.

1.4. Introductory information about the airScan pro ultrasound scanner and its use

airScan pro is a portable veterinary ultrasound scanner with a modular design. This means that for full functionality, it requires an external device, such as a smartphone, tablet, or goggles, equipped with their own computing unit, with which the airScan pro connects wirelessly. The ultrasound scanner functions can be controlled via the built-in keyboard or through an app. The image displayed in the app can be presented in B-Mode, Power Doppler, or Colour Doppler modes. The user has access to tools, such as measurements and data recording. The ultrasound device is equipped with a permanently attached linear rectal probe. This ensures seamless operation in livestock facilities and challenging field conditions. The primary applications include:

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

2. Safe use



Warning! – User and patient safety depends on the compliance with the following guidelines!

1. DRAMIŃSKI airScan pro is a device that should be used for diagnostic purposes only by qualified personnel – a veterinarian trained in ultrasound diagnostics.
2. It is required to disinfect the probe before each use. Other parts of the ultrasound scanner should be disinfected when necessary, particularly if they may have come into contact with infectious substances.
3. The ultrasound scanner cannot be used simultaneously with other high frequency devices.
4. The ultrasound scanner must not be used for transoesophageal examinations.
5. For safety reasons, the use of the ultrasound scanner is strictly prohibited in areas where explosive and anaesthetic gases are used.
6. The device is intended for indoor use only.
7. The users of the ultrasound scanner are recommended to have regular technical inspections performed by the manufacturer every two years. This will contribute to ensuring the highest safety of patient safety.
8. Ultrasound diagnostics must not be conducted during defibrillation.
9. It is forbidden to dismantle the device and perform repairs and adjustments on one's own, except the activities described in the user guide.
10. The users of the ultrasound scanner are recommended to regularly check the probe cable and head against mechanical damage.
11. If mechanical damage of the probe, cable or strain reliefs is identified, the device needs to be sent to the service centre.
12. The ultrasound scanner has a sturdy design, however, in order to avoid mechanical damage, please, follow the instructions specified in this section of the user guide.
13. Avoid exposure of the device to strong sunlight. It is recommended to observe the temperature specified on the labels of the device and its components.
14. The user is forbidden to introduce any modifications to the device.
15. DRAMIŃSKI airScan pro is an electric device that can be the source of electromagnetic radiation.
16. The operation of the airScan pro ultrasound device may be disrupted by other electrical devices. Users may observe interference in the form of bright lines on the image when operating in a strong electromagnetic field. In such cases, it is recommended to limit the number of other electrical devices operating nearby.

17. When the device and its accessories reach their lifetime, in order to avoid the risk for the environment, they should be disposed of by specially trained entities in accordance with the applicable legislation, or returned to the manufacturer.
18. The device is equipped with overheating protection. If the processor reaches its maximum temperature threshold, the device will automatically shut down. In such a case, it is recommended to place the ultrasound scanner in a safe and cool location and wait for it to cool down.

3. List of components of airScan pro ultrasound scanner

Item	Name and description	Quantity
1	The airScan pro ultrasound scanner with probe	1
2	External battery	2
3	Charger	1
4	USB cable	1
5	User guide	1
6	Transport case	1

4. Construction of the DRAMIŃSKI airScan pro ultrasound scanner

The device is constructed of:

1. Camera body with permanently mounted ultrasound probe
2. Battery

4.1. Camera body

The body of the airScan pro is made of aluminium. On the front panel, there is a membrane keyboard with power and battery charge status LEDs, as well as a Wi-Fi antenna. At the top of the casing, a cable-mounted ultrasound probe is installed. At the base, there is a socket for screwing in a ball joint mount. On the back panel, there is a system for connecting the battery.



Caution!

The ultrasound scanner has a sturdy design. However, during use and transportation, caution is necessary in order not to subject the device to strong shocks and impacts. This will help prevent potential damage.

4.2. Ultrasound probe

The device is permanently equipped with a 128-component linear rectal probe operating at 7 MHz with a probe head length of approximately 60 mm. The probe cable is fitted with an easy-to-clean cover and flexible strain reliefs to protect it from bending at critical points.

4.3. Battery



Warning!

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

The ultrasound scanner is powered by a 3.7 V, 3000 mAh rechargeable lithium polymer 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 mounted on the back panel of the ultrasound scanner.

Safety measures for handling a lithium polymer 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.
- 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.
- 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.
- 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. How to charge the batteries

The airScan pro is powered by a 3.7 V 3000 mAh lithium polymer battery.

Charging duration: 2 hours.

Operating time: up to 2 hours when fully charged.

5.1.1. Charger

A Quick Charge charger, with an output of 5V/3A, is recommended to charge the batteries. Note that in order to achieve the above charging time, you must use a cable capable of conducting a minimum of 3A. Using a charger or cable with lower parameters may significantly extend the battery charging time. It is recommended to use the charger and cable provided with the airScan pro.



Warning! Warning! – It is forbidden to perform any unauthorised repair of the charger nor to 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.

Caution! Do not connect the charging cable to the battery socket if it is dirty or wet. Make sure the socket is clean and dry before charging.

Caution! 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:

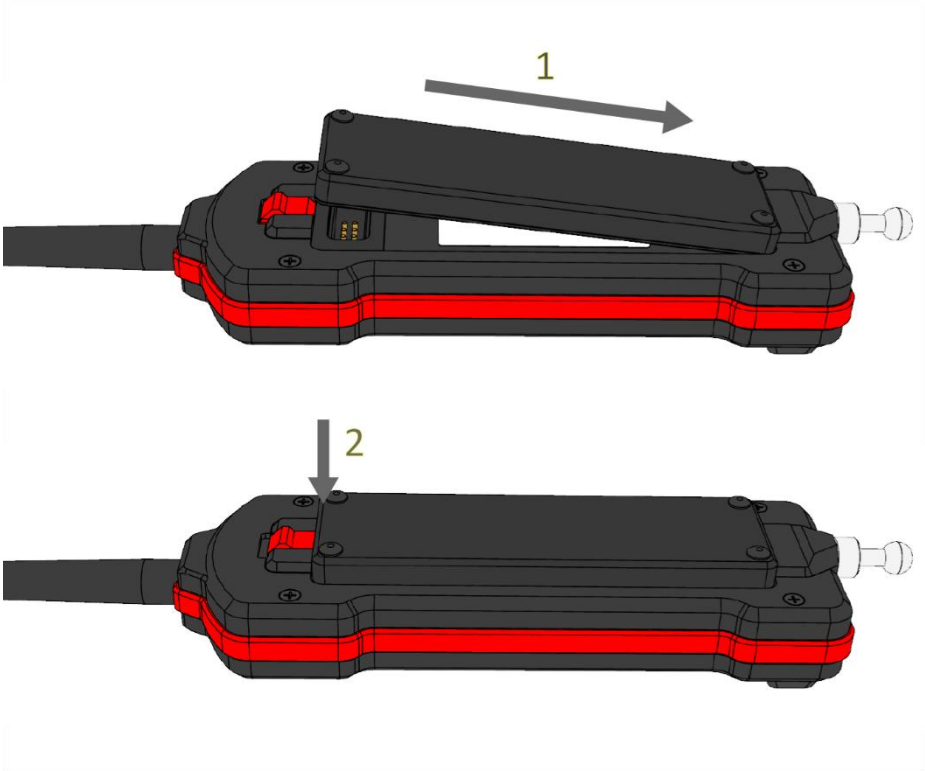
1. Connect the charger cable to the socket in the battery.
2. Connect the charger to the mains.
3. Wait 5 seconds and observe the LED built in the battery.
    - Flashing LED – the battery is charging.
    - Solid LED – the battery is fully charged.
    - No LED activity – the battery is damaged.
4. Disconnect the battery from the charger.
5. Disconnect the charger from the mains.

5.2. How to connect the batteries to the ultrasound scanner

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

Caution! 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:



Caution! After connecting the battery, all charge status LEDs will light up for about 1 second. This does not indicate that the battery is fully charged.

To check the battery level, briefly press the power button 

.

5.3. Attaching to the belt

1. Adjust the ultrasound mounting system to your preferred belt side.
2. Put on the belt, ensuring the mounting system opening faces upwards.
3. Adjust the belt circumference using the buckles.
4. Secure the loose belt ends with elastic bands.
5. Insert the ball mount into the mounting system until you hear a click.
6. Ensure that the ultrasound scanner will not detach unintentionally from the mounting system.

5.4. Turning on the ultrasound scanner and connecting to a mobile device

Each time a new mobile device is used, the QR code of the ultrasound scanner must be scanned to add it to the device list. The iLens goggles automatically connect to any airScan pro nearby.

To turn on the ultrasound scanner and connect to the mobile device:

1. Connect the battery to the ultrasound scanner.
2. Make sure it is charged by briefly pressing the Power/Freeze button. Four LEDs indicate a fully charged battery.

3. Press and hold the power button until the power LED lights up.
4. Launch the airScan app on your mobile device.
   A. If using a smartphone or tablet, open the QR code scanner and scan the QR code on the ultrasound casing. The app will automatically detect and start connecting.
   B. If you are using iLens, turn on the goggles and wait for the app to load. The iLens scans networks nearby. Once the airScan pro is detected, the goggles will connect to it automatically. Depending on the number of available networks, this can take up to several minutes.
5. The appearance of the ultrasound probe image on the screen indicates readiness for operation.

For subsequent connections with the same mobile device, simply select it from the list.

5.5. Basic operations – quick start

Regardless of whether the user operates with a phone, tablet, or iLens goggles, the device can be controlled using the ultrasound scanner keyboard.

In the case of using a mobile device with a touchscreen display, ultrasound scanner control is possible via the buttons on the user control panel.

5.5.1. Preset selection

Using the keyboard



Using the touchscreen panel, press 

.

5.5.2. Gain adjustment

Using the keyboard, adjust the overall gain – changing the brightness of the entire image sector



Using the touchscreen panel, swipe horizontally across the image sector. Swiping right increases the gain level, swiping left decreases the gain level.

Using the touchscreen panel, adjust the TGC (zone gain) – tap the TGC key, located on the right side of the screen. Adjust the gain levels from top to bottom of the screen.

5.5.3. Scanning depth adjustment

Using the keyboard

 – increase scanning depth (only in scanning mode)

 – decrease scanning depth (only in scanning mode)

Using the touchscreen panel, swipe vertically across the image sector.

5.5.4. Distance measurement

 ->  ->  -> DISTANCE ->  -> use the arrows to position both markers ->  -> use the arrows to position the first marker ->  -> use the arrows to position the second marker -> 

Using the touchscreen panel  ->  -> move the measurement points with your finger, one by one.

The result is displayed on the left side of the screen.

5.5.5. Saving images

Using the keyboard

 ->  -> 

Using the touchscreen panel  -> 

5.5.6. Saving cine loop

 ->  -> use the arrows  /  to set the cine loop duration -> 

Use the touchscreen panel  ->  -> by dragging the blue marker along the timeline to set the cine duration -> Confirm.

5.5.7. Doppler mode

Using the keyboard



Using the panel, press 

.

5.5.8. Changing Doppler frame position

Using the keyboard

Use the arrows  to adjust the position of the Doppler frame.

Using the touchscreen panel, drag the frame by its centre, to the desired place.

5.5.9. Resizing the Doppler frame

Possible with the use of a touchscreen panel. Drag any corner of the frame and adjust the size vertically and horizontally.

5.5.10. Checking battery level when the ultrasound device is off



- brief pressing

6. How to end operation of the ultrasound scanner

6.1. How to turn the ultrasound scanner off

To turn ultrasound scanner off, press and hold the power button 

until the power LED goes out.

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.

Caution! During decontamination, the personnel performing these activities should be wearing protective clothing.

Caution! 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 and the surface of the casing.

Warning! Use alcohol-free agents.

Caution! Never wash the ultrasound scanner under running water!

Caution! Remember not to make the battery contacts wet!

In order to clean the ultrasound scanner:

1. Turn off the device.
2. Disconnect the battery.
3. Wipe the battery, the probe and the ultrasound scanner with a wet cloth or a paper towel.
4. Wipe all elements dry.
5. For disinfection, use a proper agent intended for disinfection of surfaces of medical and veterinary devices. Follow the instructions on the label.
6. Disinfect the battery and the probe using a damp paper towel or tissues.
7. Let the ultrasound scanner, probe and battery dry in a safe place.

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

Caution! 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. Other features

7.1. Mode B settings

7.1.1. Multi Focus

This setting allows for image focusing at two depths, ensuring sharp imaging in both the near and far field. A natural consequence of this function is a reduction in the frame rate (frames per second).

Selecting the Multi Focus option enables dual-focus imaging. To disable it, select Multi Focus function again.

7.1.1.1. Multi Focus Depth

The user can define the depth of the first focus point in relation to the second focus point. The default setting is 50%, meaning if the second focus point is set at 40 mm, the first will be at 20 mm. Similarly, if the second focus is at 50 mm, the first will be at 25 mm.

To adjust the focal depth, select Multi Focus Depth, and set the desired value. Confirm with the button OK MENU or close with the X button.

7.1.2. Frequency

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

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

To adjust the frequency, select Freq, and set the desired value. Confirm with the button OK MENU or close with the X button.

7.1.3. Harmonics

Harmonics help reduce noise and improve image resolution. However, the harmonic signal strength is lower, resulting in reduced image brightness.

To enable harmonics, select THI.

To adjust the frequency value use Freq.

To disable harmonics, select THI again.

7.1.4. Compound imaging

This function sends multiple ultrasound beams at different angles, which are then combined into a single frame. This reduces shadowing at structure boundaries. A natural effect is a reduced frame rate (frames per second).

To enable cross-beam ultrasound, select Spatial compd.

7.1.5. LuciD

LuciD is a system that enhances image quality. It makes the image smoother, with sharper edges and improved contrast.

To adjust image enhancement, select LuciD, and set the desired value. Confirm with the button OK MENU or close with the X button.

7.1.6. FPS

This function allows limiting the frame rate (frames per second) to save energy.

Power Saver setting – lowest frame rate (frames per second), maximum energy saving.

Balanced setting – compromise between frame rate (frames per second) and energy consumption.

High Performance setting – highest frame rate (frames per second) and highest energy consumption.

To adjust the frame rate (frames per second), select FPS, and set the desired value. Confirm with the button OK MENU or close with the X button.

7.1.7. Tonal dynamics

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

To adjust the contrast, select dynamic range, and set the desired value. Confirm with the button OK MENU or close with the X button.

7.1.8. Grey map

Changing the grey map modifies the grayscale tones of the displayed image.

To adjust the grey map, go to Adv. Settings, select Grey map, and set the desired value. Confirm with the button OK MENU or close with the X button.

7.1.9. Left/right swap

Adjust the image so that the marker on the screen corresponds to the marker position on the probe.

To adjust the marker position, go to Adv. Settings and select L/R. The marker will be transferred to the other side, and the image will be reflected.

7.1.10. Automatic brightness adjustment

This function automatically adjusts image brightness to the area being scanned. This function is not available for keyboard control.

To enable press .

7.1.11. Split window (B+B mode)

This mode allows for comparison of symmetrical organs or current and previous scans.

To enable press . The image will be active in the right window.

To transfer the image from the left window: Freeze -> .

To load an image from memory into the left window, press  and select the file from the appropriate location.

To export both window images, press .

To temporarily expand the right window to full screen, press .

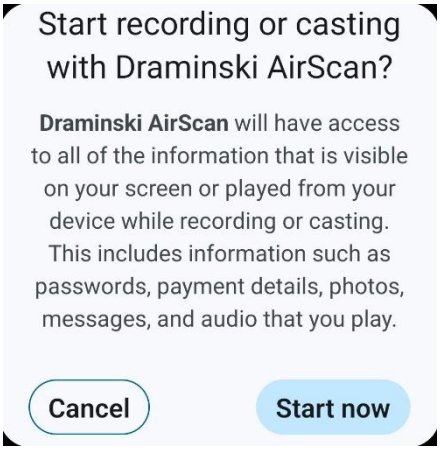
To return to single-window mode, press .

7.1.12. Screenshot capture

The user can capture a screenshot as a single image or video. Anything that is currently displayed on the screen will be saved on the image – if you are using a cell phone, these could be fragments of text messages or notifications, for example.

To save the image, press .

To start recording the screen, press  and confirm the message:



To stop recording, press .

7.2. Doppler mode

The Colour Doppler function visualises vascular flow in real time over a B-mode image. Blood flow is colour-coded according to direction. The red colour corresponds to the stream flowing to the probe head. The blue colour indicates the opposite direction.

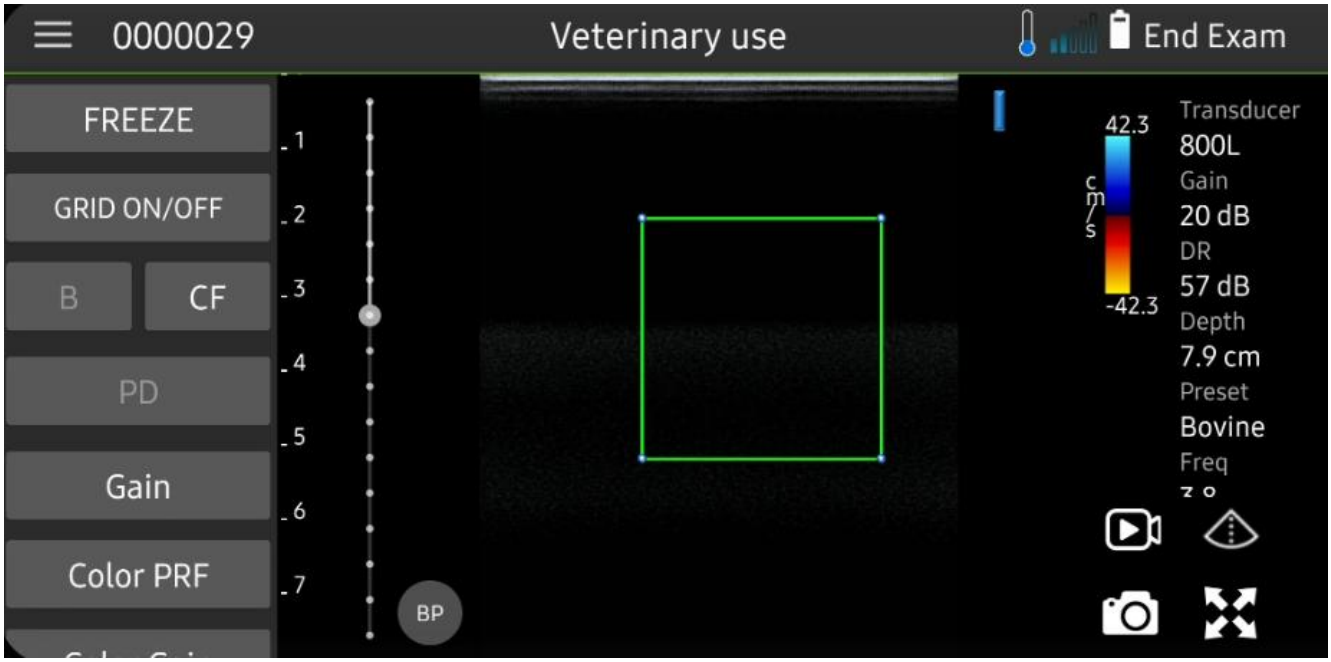
The Power Doppler function allows the flow to be visualised using a single colour, without specifying the direction.

7.2.1. Colour Doppler (CF) and Power Doppler (PD) imaging

Remember that the scanning conditions significantly affect imaging results. Poor contact between the probe and the patient's body may impact Colour Doppler sensitivity.

Before enabling Doppler mode, ensure the organ is clearly visualised in B-mode and centred in the image.

To enable Colour Doppler mode, press CF. To enable Power Doppler, press PD.



Window in CF mode (Colour Doppler)

7.2.2. Adjusting the size and position of the Doppler frame

To adjust the position of the Doppler frame on a mobile device, grab the centre and drag. To adjust the size, grab the corner and drag.

Using the ultrasound scanner keypad, the position of the frame can be adjusted using the arrows.

7.2.3. Parameter settings for Colour Doppler (CF) and Power Doppler (PD) modes

The adjustment of parameters is possible when Doppler mode is enabled.

7.2.3.1. Colour PRF – Pulse Repetition Frequency

The PRF setting determines the scale of flow velocity that can be visualised in red and blue. To visualise fast flows, set the PRF value high. As PRF increases, the image refreshing rate increases.

To visualise blood flowing at a lower speed, set a lower PRF value. At the same time, the image refreshing time will increase – the black-and-white image smoothness may decrease.

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

To adjust PRF, select Colour PRF function, and set the desired value. Confirm with the button OK MENU or close with the X button.

7.2.3.2. Colour gain

Colour gain is used to adjust the amount of colour displayed within the vessel.
Increase the colour gain if no colour is visible in the Doppler frame or if the vessels are not sufficiently filled with colour pixels.
If there is too much colour, causing it to “spill” outside the vessel walls or if many chaotic, colourful speckles appear, decrease the colour gain.

To adjust the gain, select the Colour PRF function, and set the desired value. Confirm with the button OK MENU or close with the X button.

7.2.3.3. Doppler frame steering angle

This function allows the beam to be tilted from vertical if it is directed at the vessel at a perpendicular angle (in such a case, visualising blood flow within the vessel may be difficult).

To adjust the beam angle, select the Steering Angle function, and set the desired value. Confirm with the button OK MENU or close with the X button.

7.2.3.4. Colour Wall Filter

High-pass filter. Increasing the value means that the colour caused by tissue motion will not be displayed – reduction of motion artefacts. It should be increased when large, flashes of colour are seen during the animal's movements or rapid breathing.

Caution! High filter settings may simultaneously filter out data from slow blood flow.

To adjust the filter setting, select the Colour Wall Filter function, and set the desired value. Confirm with the button OK MENU or close with the X button.

7.2.3.5. Colour threshold

This setting removes lower flow values, thus cutting off darker colour shades.

To adjust the cut-off threshold, select the Colour Threshold function, and set the desired value. Confirm with the button OK MENU or close with the X button.

8. Image management

8.1. Dimensioning M Measure

The ultrasound scanner has a tool for taking measurements: length and determining the age of the foetus. The user can also use a grid for quick assessment of the size of examined structures.

8.1.1. Distance

The distance measurement is expressed in mm.

Each distance measurement has a sequential number.

FREEZE -> M Measure -> Distance

Slide the two measurement points with your finger.

The result is displayed on the right side of the screen.

8.1.2. Foetal age

Use obstetric measurements to assess the foetal age.

❄ -> ⌴ x 2-> Foetal age table -> select a measurement from the list -> OK MENU -> use the arrows to position the first marker -> OK MENU -> use the arrows to position the second marker

The user has a choice:

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

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

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

Equine ED (Eye Diameter) – Diameter of the eyeball at ~ 86–318 (65–356) days of gestation

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

Lama BPD (Biparietal Diameter) – Biparietal measurement at ~ 75–240 days of gestation

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

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

8.1.3. Grid

The user can superimpose a grid on the image with a scale every 1 cm to allow an approximate assessment of the size of the structures.

To enable the grid, select the GRID ON/OFF function in the main menu.

8.2. Annotations

After freezing the image, select the Annotate function to add a description on the image. Use the keyboard to enter a description and confirm with the Done button. Move the description with your finger to the appropriate location.

8.3. Body marker

This function allows adding an icon indicating the examined area to the saved image.

After freezing the image, use the Body Mark function and select a marker. Move the marker to the appropriate location.

9. Image and video loop database

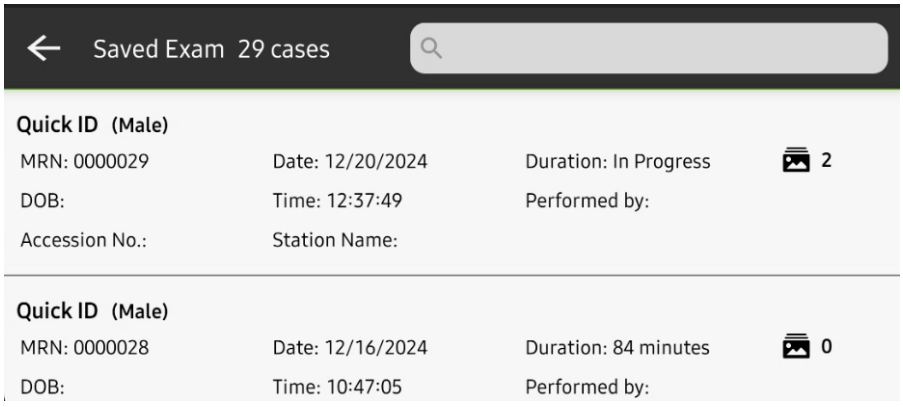
This function allows loading images and video loops with annotations from the internal memory of the camera.

Caution! Remember to systematically backup saved images and loops to external media and clean the camera's memory.

9.1. Loading images and loops

The database can be accessed from the position of the app's start window.

Select Review . A list of examinations will appear on the screen, displaying patient data, examination date, and the number of files in the directory.



Click on the desired folder and select the image you want to display on the screen.

9.2. Data export

Open the patient folder as described above.

In the upper right corner of the screen, press  and select Export File.

Select the files you want to export and use the two available options:

 - share (allows you to share a file via instant messaging or email)

 - export (allows you to export images and loops from the app to a folder in the mobile device's memory).

10. Presets

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

To select a preset using the keyboard



Using the touchscreen panel, press 

.

10.1. Saving a new preset

Adjust the image settings to your preference. Use 

, and then press “+”. Enter the name of the new preset and confirm.

11. Technical specification

Purpose	Ultrasound diagnostics of animals: Diagnostics of reproductive system Confirmation and monitoring of pregnancy Ultrasound examination of the lungs, digestive system Measurement of backfat thickness
Imaging modes	B Mode Colour Doppler Power Doppler
Grayscale	256 shades
Grey maps	30 settings
Image management	Freezing the image Dimensioning Annotations Examination markers Saving to internal memory Exporting to external storage device
Measurements	Distance, 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
Image and video loop memory	Dependent on mobile device
Image display	Android or iOS mobile device iLens Goggles
Probe	Electronic, broadband, permanently mounted. Linear rectal 7 MHz L60 Convex rectal 5 MHz R60
Keyboard	Membrane, water resistant
Connectivity	WiFi
Power supply	Li-Po 3.7 V 3000 mAh
Continuous operation when the battery is fully charged	Up to 2 hours
Charging of the battery pack	2 hours
Battery charge indicator	Automatic – graphic indicator in the app Manual – LEDs on the membrane keypad of the device
Dimensions	27 x 18 x 7 cm (LxWxH)
Weight of the device	0.6 kg with probe and battery
Weight of the battery	0.1 kg
Protection class	IP65
Operating temperature	From 0°C to +40°C
Recommended storage temperature	From 5°C to +40°C

Caution! 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.

12. 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 ultrasound scanner during transport.

13. 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.

Caution! Ultrasound gel should not contain any of the following ingredients, as they can damage the probe:

- Olive oil
- Methylparabens or ethylparabens (parahydroxybenzoic acid)
- Dimethyl Silicone
- Iodine
- Lotions
- Lanolin
- Aloe vera
- Mineral oils
- Methanol, ethanol, isopropanol or 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 arrangement or excessive bending of the cable can cause damage to the wire.
2. To place 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.

Caution! Portable RF communication equipment (including peripherals such as antenna cables and external antennas) should not be used closer than 30 cm (12 inches) to any part of the ultrasound scanner, including cables specified by the manufacturer. Otherwise, the performance of this equipment may be impaired.

Caution! Ultrasound scanner is a device sensitive to magnetic fields. If, during the test, the user sees interference on the screen of the mobile device in the form of moving or static horizontal, oblique or vertical lines or dots, change the test location to one where the interference will stop.

The airScan pro is designed for use in the electromagnetic environment specified below.

The customer or user of the equipment should ensure that they are used in such an environment.

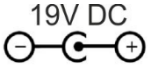
Immunity test	**IEC 60601 test level**	**Compliance level**	**Electromagnetic environment – guidance**
Carried RF IEC 61000-4-6	3 Vrms: 0.15 MHz – 80 MHz 6 Vrms: in the ISM and amateur radio bands between 0.15 MHz and 80 MHz	3 Vrms: 0.15 MHz – 80 MHz 0.15MHz – 80MHz 6 Vrms: in the ISM and amateur radio bands between 0.15 MHz and 80 MHz	Portable and mobile radio communication equipment should not be used at a distance shorter from any part of the equipment including cables than the recommended separation distance calculated on the basis of the equation appropriate to the frequency of the transmitter.
IEC RF radiation	80% AM at 1 kHz 10 V/m 80 MHz – 2.7 GHz 80% AM at 1 kHz	80% AM at 1 kHz 10 V/m 80 MHz – 2.7 GHz 80% AM at 1 kHz	Recommended separation distance: d = 1.2√P d = 1.2√P 80MHz to 800 MHz d = 2.3√P 800MHz to 2.7 GHz Where P is the maximum output power of the transmitter in watts (W) according to the transmitter manufacturer, and d is the recommended separation distance in meters (m). Interference may occur in the vicinity of devices marked with the following symbol: 

Proximity magnetic field IEC 61000-4-39	8 A/m at 30 KHz 65 A/m at 134.2 KHz 7.5 A/m at 13.56 MHz	8 A/m at 30 KHz 65 A/m at 134.2 KHz 7.5 A/m at 13.56 MHz	
NOTE 1 At 80 MHz and 800 MHz, the higher frequency range applies. NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.			

13.1. 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 airScan pro, if available.
Ultrasound scanner won't connect to mobile device or goggles.	1. Make sure the device's battery is fully charged. A low state of charge can make it difficult to connect. 2. Make sure that there are not many WiFi networks in the place where you are conducting your examination. If the channel on which the target connection is set is occupied by other devices, an automatic attempt will be made to change the channel to another one. This may take a few minutes.
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 mobile device display brightness, gain, grey map and MHz. 2. Enable preset.
No charging indication on the battery.	1. Check if the charger is properly connected to the mains. 2. Check the power supply in the mains.
The battery works too short.	1. The battery was not charged. 2. Low ambient temperature. 3. The battery is worn out.

14. Symbols and markings on labels

CE	CE marking which indicates conformity of the product with Directives in force.
	Note, read the user guide.
	Warnings about hazards which concern user safety.
 2024	Date of manufacture of the product
 DRAMIŃSKI	Name of the product's manufacturer and its address
	Dispose of separated with other household waste in accordance with the 93/86/EEC Commission Directive or local regulations.
IP65	The level of resistance of the housing to external factors – the ingress of solid foreign bodies and dust, and the degree of protection against water.
SN-	Product serial number for identification purposes
MAX 40°C  MIN 10°C	Product storage temperature
	Take care, fragile
	For internal use only
	Information about the voltage and polarity of the power supply

15. Versions of the instructions

Version No	Changes made
airScan_pro-EN-1.1_20250305	Creation the English version of the user guide

16. Warranty

The manufacturer gives a 12-month warranty and guarantees trouble-free operation of the device used in accordance with this user guide.

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

In case of a technical defect, which was not caused by the user, the manufacturer is obliged to repair the delivered device within no more than 14 business days from the date of delivery of the device to the service centre (ul. Wiktora Steffena 21, 11-036 Sząbruk, Poland) and send back the operational device to the user at the manufacturer's cost.

The warranty does not cover mechanical damage, damage caused by improper use, storage and self-made repairs.

The warranty is honoured on the basis of a proof of purchase (invoice). In order to claim under this warranty, notify Dramiński about the alleged defect immediately after its occurrence.

In order to submit a warranty claim, you need to provide:

1. The device.

2. The copy of the purchase document which determines the name and address of the seller, date and place of the purchase, type of the product and the serial number of the product.

The warranty is provided by:

DRAMIŃSKI S.A.

ul. Wiktora Steffena 21

11-036 Sząbruk, Poland

e-mail: serwis@draminski.com

www.draminski.com

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