



# *iScan*

**portable diagnostic ultrasound scanner  
with an electronic probe**



**instruction manual**

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## I. INTRODUCTION

We are giving you the iScan ultrasound scanner, which is designed for field veterinarians and specialists dealing with reproduction of large animals.

**iScan** provides an excellent and clear image, which makes the diagnosis much easier. Durable and robust housing makes it possible for the **iScan** to be used in the harshest conditions. The ultrasound scanner is very light and handy, which makes working with it very easy and convenient.

**iScan** functions together with an electronic linear probe for rectal examination, fixed permanently to the device. It is designed mainly for diagnostics in the reproduction of mares and cows. Moreover, it can be used to examine horses' tendons and eyeballs and in case of every examination, where the electronic linear probe can be used.

Read this instruction manual carefully before starting the ultrasound scanner. It will guarantee safe usage and long, reliable functioning of the device.

Placing the **CE** mark informs that the iScan ultrasound scanner fulfils the general requirements concerning basic safety for electric equipment and basic requirements of the EU directives:

- Electromagnetic compatibility directive (89/336/EEC directive)
- Low voltage directive (2006/95/EC directive).

On the basis of successfully conducted research, it can be stated that the device does not emit radiation which can have a negative influence on the operator, even in case of implanted active or inactive medical device.

Declaration of the device's conformity is available in the Dрамиński company's seat at Owocowa 17, 10-840 Olsztyn.

## II. EQUIPMENT

Item	Name and description	Standard	Prestige
1	Housing with the LCD and LED screens and membrane keyboard	1	1
2	Electronic linear probe, rectal, fixed permanently	1	1
3	Carrying belt	2	2
4	External Li-ion power package 14,1V / 3,1Ah	1	2
5	Special charger for the battery pack with cables	1	1
6	USB cable for image transmission	1	1
7	Software for image and cine loops saving on the PC	1	1
8	Transport case with foam insulation	1	1
9	Sun protector for screen	-	1
10	Gel distance cap (stand off) for probe	optional	optional
11	Goggles	optional	optional

## III. CONSTRUCTION

The device comprises of three main elements:

1. Housing with membrane keyboard, 5" screen with LED illumination and port for communication with a PC.
2. Ultrasound probe.
3. External package of rechargeable batteries.

**Housing** is made of high-quality aluminium, has an increased level of protection – IP65. On the upper side of the housing there is a port (closed with a cap) for image transmission through the USB port to a PC and permanently fixed socket of the probe cable (Photo 1a). The version with goggles (Photo 1b) has two sockets on the upper side (both closed with caps):

- 5-pin socket for pictures and cine-loops transfer to an external device, e.g. PC, Mac,
- 12-pin socket for plugging in the goggles.



Photo 1a. Probe cable socket. PC transmission port



Photo 1b. Version with goggles. 5-pin socket for data transfer to a PC and 12-pin socket for goggles

Housing is equipped with 4 – point system of straps to mount the carrying belt (to hang the device on the user’s neck).

Front panel – in addition to monitor screen LCD LED type – is equipped with membrane keyboard with buttons to adjust parameters and settings.

**Batteries** of Li-ion type – specially configured, make an enclosed package with its own thermal fuse, protecting from overheating during charging.

In the package’s housing there is a charging socket and special openings with the ultrasound scanner. During operation the package is mounted with a special strap at the bottom of the device. (Photo. 3).

Battery life cycle is estimated at 500 charging cycles. Thanks to the use of advanced high-capacity batteries it is possible to achieve the working time of even up to 5 hours. The charger (Photo 4) is used to charge batteries. (use only original charger) with terminals for electric connection



Photo 2. Battery



Photo 3. Strap and terminals for battery



Photo 4. Charger

**Probe** (head) is designed mainly for rectal examinations of cows and mares, tendon and ophthalmological examinations.

iScan cooperates with a broadband probe (4-9 MHz) with main frequency of 7.5 MHz and with working width of 60mm.



Photo 5. Electronic linear probe 7.5 MHz

## Goggles additional accessory (optional)

Professional goggles are an optional solution used while working in full sun or bright places.

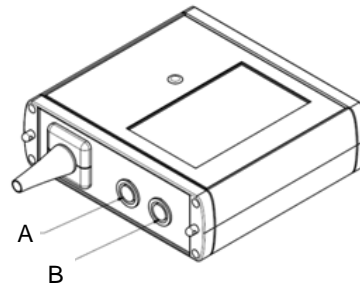
### 1. Construction



**Pic. 1.**

The goggles are powered from DVI socket which is located on the side of the scanner.

A – 12 pin socket  
B – 5 pin socket



**Pic. 2.**

### 2. Preparation for work

Before turning iScan on, unscrew the cap from top B socket (see pic. 2.). Next connect the goggle cable and screw the connector. Note you may turn the scanner on.

To turn on the goggles press OK button for 3 seconds. „GOGGLE VGA ON!!!” message will appear. Next the main display of the scanner will automatically turn off to save the battery.

**Remember that you do not have to switch the display between goggles and the scanner every time when you turn on scanner. It remembers last setting all the time.**

To switch back to the main display press and hold OK button for 4 seconds. Then you can disconnect goggles from the scanner.

### 3. Wearing the goggles

For your comfort and safety fit the goggles on your head before you start to work.

If goggles do not fit right, tighten or loosen a head strap. Check your adjustments every time you wear your goggles.

### 4. Angle adjustment

Double hinge between display unit and top bar allows you to adjust angle and distance between viewfinders and your eyes.

Caution! Be careful when using your goggles! They may obstruct your view!


### 4. Maintenance


Remember to clean your goggles using cleaning wipes every time after work.

**Caution! For cleaning the viewfinders use soft cloth only!**

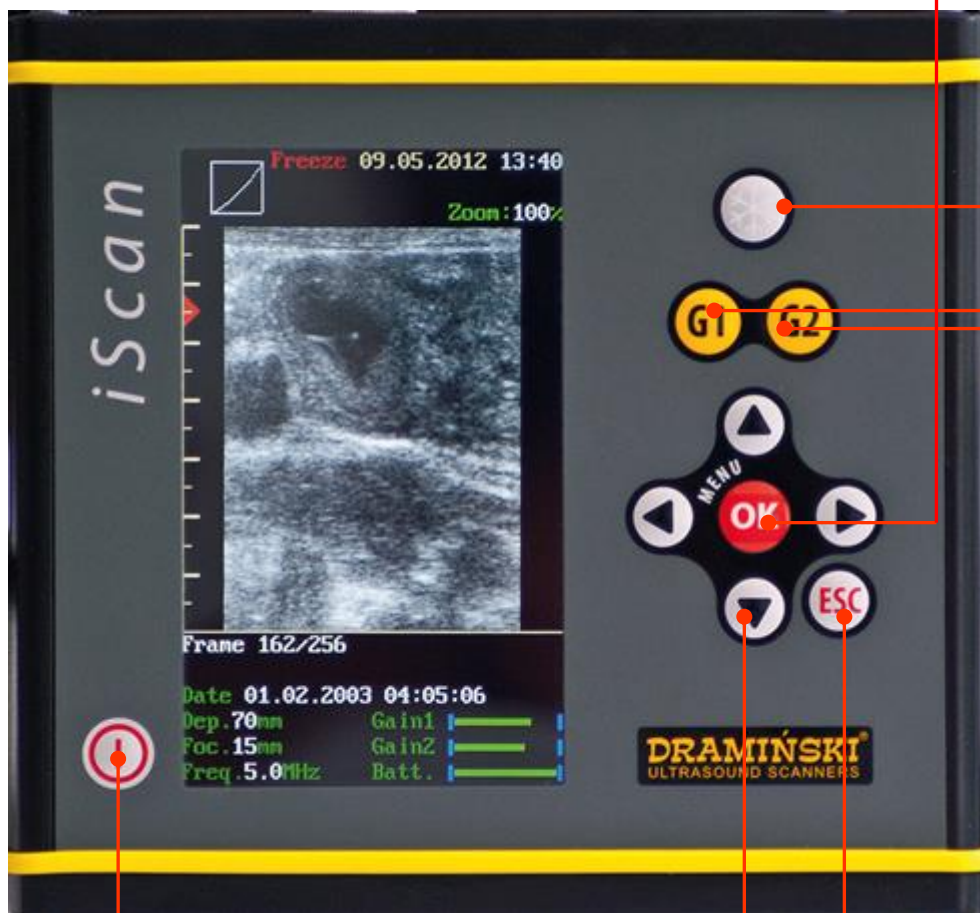
#### IV. FUNCTION KEYS DESCRIPTION (Right hand keyboard)

1. Image freeze
2. Rescan
3. Turning the device off (after pressing and holding the button)

G1 +  = signal amplification adjustment in the closer field

G2 +  = signal amplification adjustment in the further field


1. Opening of menu and accepting chosen option, confirming settings
2. Confirming marker position when measuring




On/off switch


Exit menu

Navigation keys:

 = scrolling through menu and set of parameter values

 = „Cineloop” function automatic rewind/fast-forward of image. After image freezing.

 = „Cineloop” function manual advance frame by frame. After image freezing.


 = setting markers when measuring, enter name and number of the animal during saving the images and Cine


 = setting focus marker at the optimal depth

 = setting scanning range (from 33 mm to 120 mm)

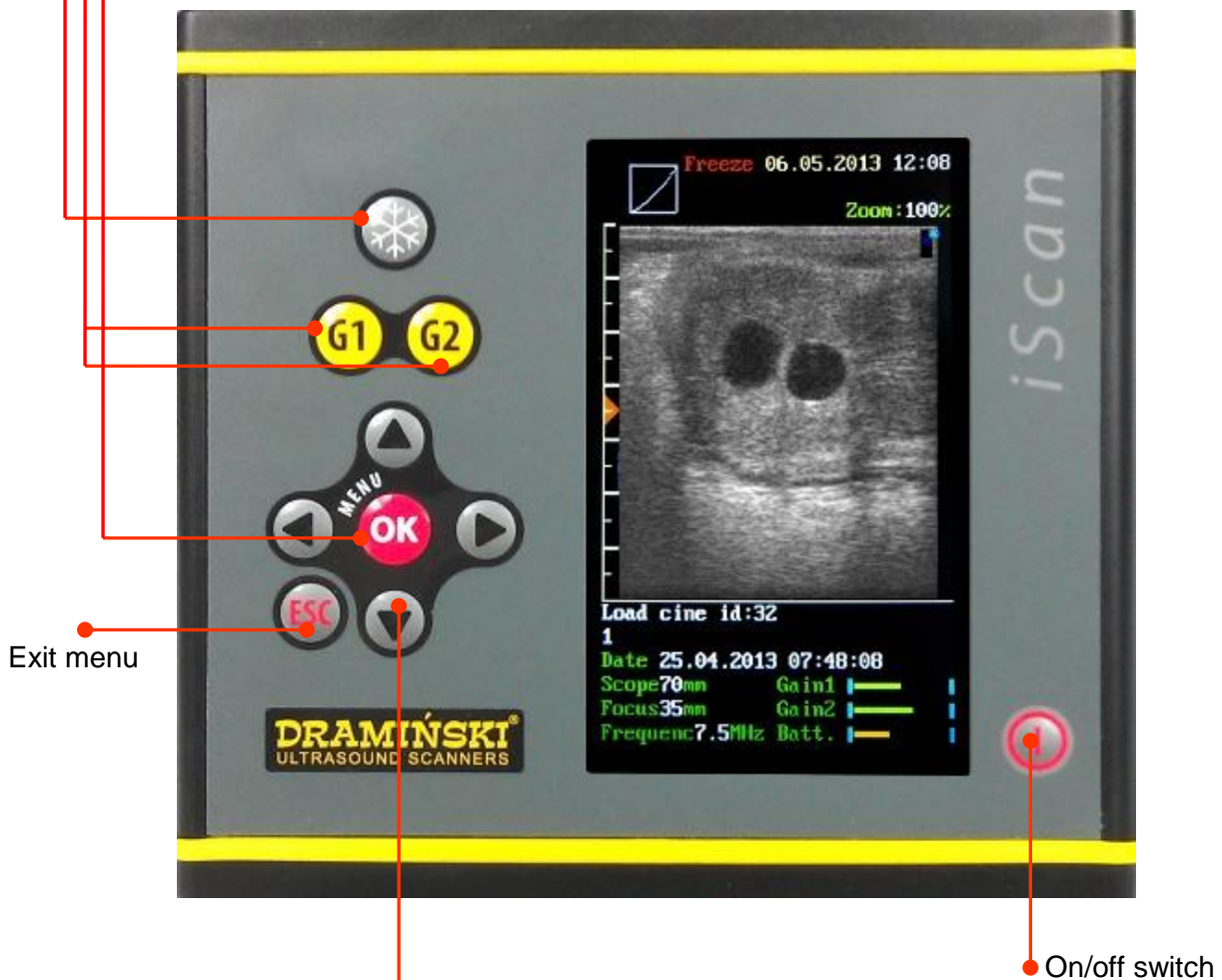
## V. FUNCTION KEYS DESCRIPTION (Left hand keyboard)

1. Image freeze
2. Rescan
3. Turning the device off (after pressing and holding the button)

G1 +  = signal amplification adjustment in the closer field

G2 +  = signal amplification adjustment in the further field


1. Opening of menu and accepting chosen option, confirming settings
2. Confirming marker position when measuring




Exit menu


On/off switch

Navigation keys:

 = scrolling through menu and set of parameter values

 = „Cineloop” function automatic rewind/fast-forward of image. After image freezing.

 = „Cineloop” function manual advance frame by frame. After image freezing.

 = setting markers when measuring, enter name and number of the animal during saving the images and Cine

 = setting focus marker at the optimal depth

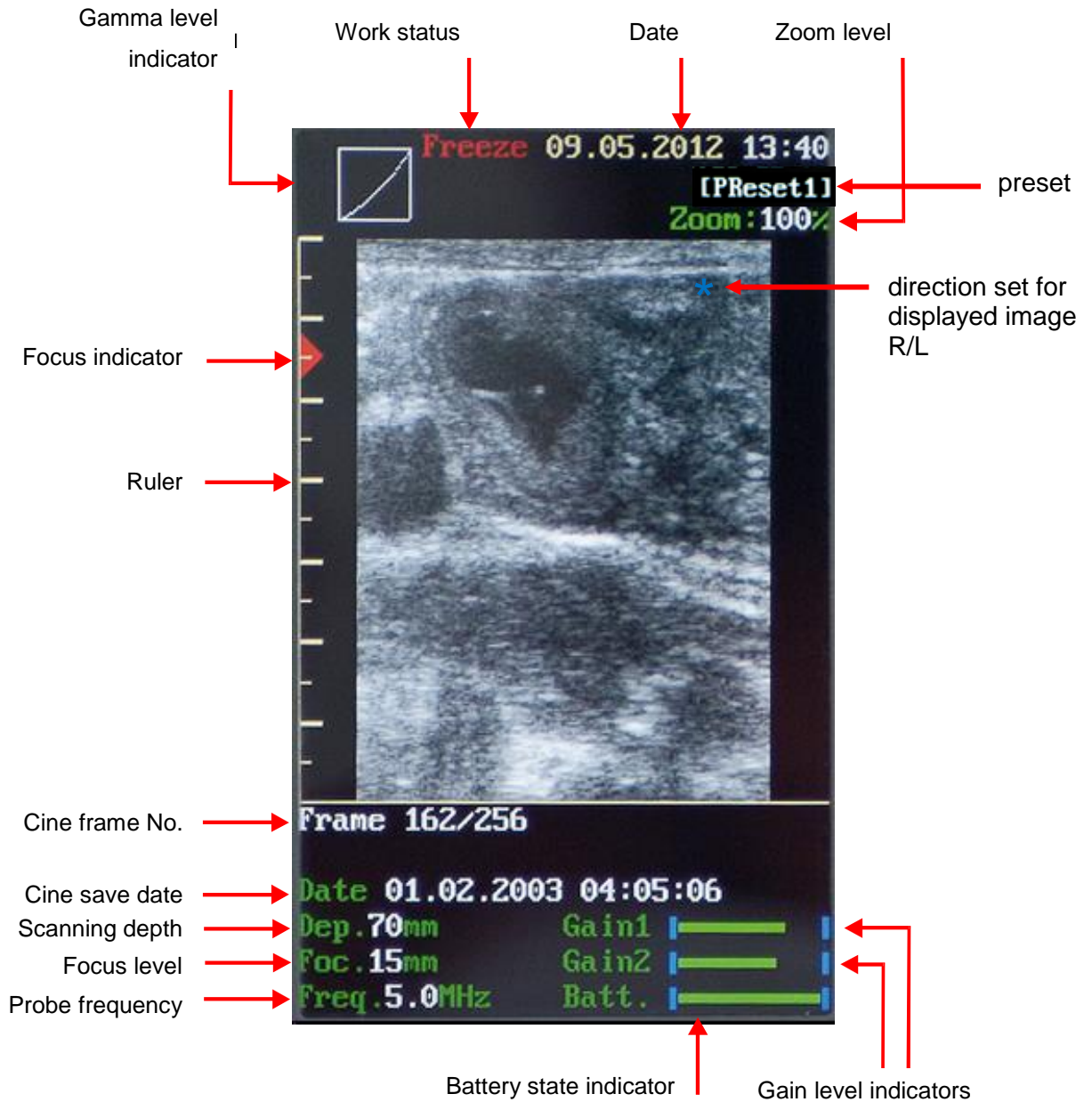
 = setting scanning range (from 33 mm to 120 mm)



## SCREEN APPEARANCE

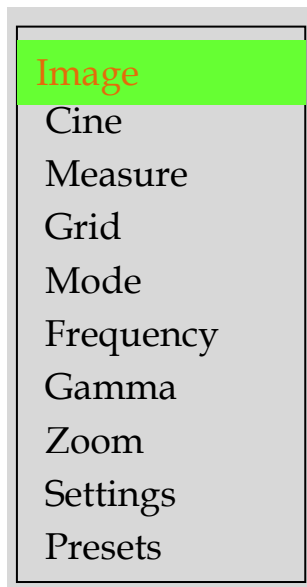
### Messages and information

Exemplary screenshot from the *iScan* with loaded cine with messages and displayed pieces of information:



## VI. MENU STRUCTURE

Easy to use and clear menu allows the user to use the following options:




### Rules of scrolling through the Menu

- The **iScan** menu has 2 levels:

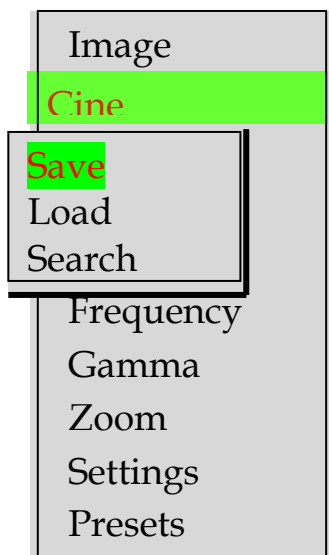
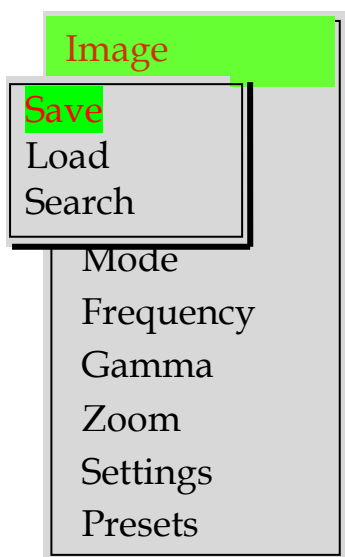
level I – main menu options

level II – submenu options (presentation shown on diagrams in chapter VI)

- In order to go from option to option in menu you can use navigation buttons ; chosen option will be marked with a green background.
- To confirm chosen menu option use the „**OK**” button
- To exit chosen menu option use the „**ESC**” button

**In some options in the upper or the lower part of the screen there will be displayed red hints, as to which buttons should be used to set or change the chosen parameter.**

## MENU STRUCTURE



## Menu options:

**Image.** Option to save images to memory, to show them on screen - load.

### **1. Save.** Option to save images.

After freezing the image you can save it in the device's memory under consecutive index number from 1 to 200. Under the saved image a message with suggested index number appears. It is possible to add description under the image (please check the menu: Settings - Saving option). Saving will take place after confirmation of the index number with the OK button. Suggested index number is always the consecutive one. Time of saving one image equals ca. 1 second.

### **2. Load.** Option of opening saved images.

After choosing this menu option with the OK button, there always appears the last saved image. In the lower part of the screen the index of image loaded from memory is visible. Using  $\blacktriangleleft$  keys you can change image number which results in an automatic load of consecutive images.

### **3. Search.** An option of searching saved image by its name.

After choosing this menu option you have a possibility for fast finding an image by its name.

Press "Search" button, use arrows  $\blacktriangleleft$  to put the name of the image you are looking for, moving between fields can be done by pressing  $\blacktriangleleft$   $\blacktriangleright$  buttons. Press OK and the image will appear on the display.

**Cine.** Option of saving video sequences to memory, to show them on screen - load.

### **1. Save Cine.** Option of saving Cine loop.

After freezing the image you can save to memory the sequence of 256 frames (ca. 20 seconds of cine loop) under consecutive index number from 1 to 50. Under saved image sequence a message with suggested index number appears. It is possible to add description under the CineLoop (please check the menu: Settings - Saving option). Saving will take place after confirmation of the index number with the OK button. Suggested index number is always the consecutive one. Time of saving one image equals ca. 1 second .

### **2. Load Cine.** Option of opening saved image sequence.

After choosing this menu option with the OK button, there always appears the last saved Cine sequence. In the lower part of the screen there is an index visible. Using  $\blacktriangleleft$  keys you can change image number which enables the view of the first frame of saved sequence. Pressing OK results in loading of chosen Cine loop. Loading time equals ca. 10 seconds. After loading the frame sequence you can rewind/fast-forward them and stop on any frame by using  $\blacktriangleleft$   $\blacktriangleright$  (frame by frame) and  $\blacktriangleleft$

keys (play video).

**3.Search.** An option of searching saved cine loop by its name.

**Measurements.** Option of measuring objects on frozen image.

After choosing this menu option a white marker appears on the image, which can be moved with navigation buttons:  $\blacklozenge$  and  $\blacktriangleright$ . Marker placement is confirmed with the OK button. After confirming the position, it changes its colour to green and a second marker appears, so you can measure distance between them. After pressing the OK button a new cursor appears and you can measure distance between another set of cursors.

The user can make 4 measures on one image. Each measurement is marked with a different colour. In the lower part of image there are shown values in mm for each distance measurement.

In addition, when pressing G1 button you can save measured image to memory. By pressing G2 open the menu with advanced measurements and age tables included. The message about G1 and G2 key functions is displayed at the bottom of the screen.

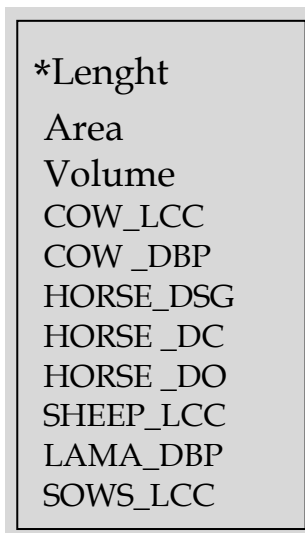
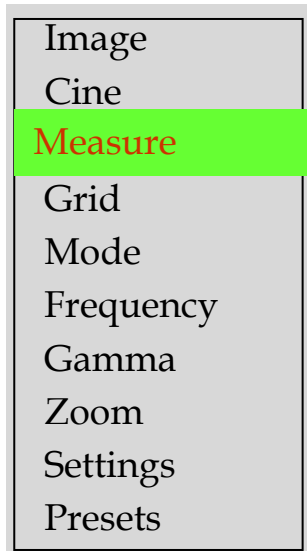
**Advanced measurements.** – an option to take precise measurements of the test object and to determine the age of the fetus.

After entering the Measurements option and pressing G2 button, an advanced measurement menu is displayed. Select options with  $\blacklozenge$  arrow buttons. The selected mode is marked with an asterisk.

**Area** – measuring the surface area of an object requires taking two measurements (length and width). At the bottom of the image a message is displayed with the measurement result expressed in  $\text{mm}^2$ . The surface area is always calculated based on the last two measurements.

**Volume** – measuring the volume of the object requires taking 3 measurements (height, width and depth of the object). At the bottom of the image a message is displayed with the measurement result expressed in  $\text{mm}^3$ . The volume of corpus luteum is calculated based on 3 measurements and translated into the actual result with the use of a special rate.


In the Advanced Measurements option it is possible to determine the age of fetus based on precise measurements. The age of the fetus is displayed at the bottom of the image and expressed in days.

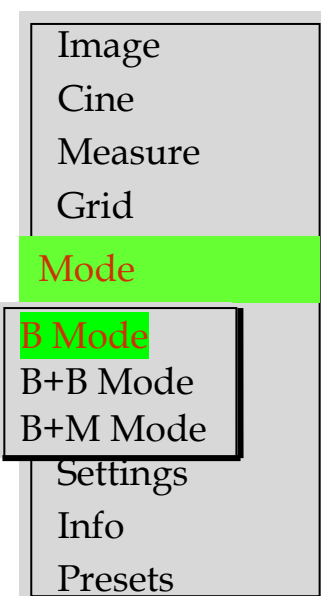


Species	Method abbr.	Measured dimension	Fetus age range
cow	LCC	Skull-tail length	From 30 to 80 days
	DBP	Ear-to-ear head diameter	From 65 to 200 days
sheep	LCC	Skull-tail length	From 30 to 70 days
horse	DSG	Fetus bag size	From 9 to 45 days
	DC	Head diameter	From 90 to 200 days
	DO	Eye diameter	From 90 to 330 days
llama	DBP	Ear-to-ear head diameter	From 75 to 240 days
sow	LCC	Skull-tail length	From 20 to 50 days

The table shows a programme for obstetric calculation available in the device

**Grid.** Option of approximate dimensioning with help of line placed on the image grid.

After choosing this menu option it is possible to turn the grid or viewfinder on and turn off this option with navigation buttons: . **Grid** is scaled automatically along with the scanning depth change. The grid has resolution of 0.5 cm for 33 mm and 40 mm depth, in other cases resolution equals 1 cm. **Viewfinder.** Option of approximate dimensioning with help placed on the image scale with the resolution of 1mm



**Mode.** Option of showing image in the live mode.

1. **B Mode (Single)** Shows single image in full screen.
2. **B+B Mode (Double)** Shows simultaneously two images on the screen. One is frozen, second one is active. It enables juxtaposition of two examined objects, image by image, for comparison. After pressing the Freeze button in this option, an active image stops and by using ESC button it can be moved to the left side of the screen. Pressing the Freeze button again will activate the image on the right hand side of the screen.
3. **B+M Mode** Two images are displayed simultaneously on the screen. One of the images is a B Mode presentation, and the other shows changes of the B Mode image as a function of time.

Image  
Cine  
Measure  
Grid  
Mode  
Frequency  
Gamma  
Zoom

Settings

Switch L-R

Brightness LCD  
Date, Time  
Language  
Erase memory  
Factory Settings  
Auto shutdown  
Sound  
Save option

**Frequency.** Option of changing signal frequency from head in order to optimise the image.

Option enables filtering of frequency generated from a broadband head, in range from 4MHz to 9MHz. Frequency value is shown under the image in the lower part of the screen. The higher the frequency, the shorter the wave, so scanning is shallower.

**Gamma.** Option of image change in scope of greyscale in order to optimise the image on 8 levels (0-7).

This option enables a change of image properties in scope of contrast and brightness – gamma correction. In the upper part of the screen there is a graphic form of a gamma curve. Gamma level can be changed with ◀ buttons.

**Zoom.** Option of enlarging image.

With this option you can enlarge the shown image from 100% to 120%, 140%, 160%. To adjust zoom you can use ◀ buttons and confirm with the OK button. This option works both with image freeze and in real time.

**Settings.** Options for changes of system settings and memory clearing.

**Switch L-R.** Option of reversing image from head to the left or the right side.

After choosing this option the user can change the shown image to side reflecting the anatomical structure of the animal. It is important in the case of rectal examination by left-handed or right-handed users.

Marking \* on the screen shows the actual image setting and indicates the end of the probe.

**Brightness.** Option of adjusting brightness level of the LCD monitor.

After choosing this option you can change brightness of the monitor in range value of 1 to 15.

**Date, Time.** Option of setting date and clock.

In the lower part of the screen a message with proper fields to set Year / Month, day and Hour / Minute appears. Settings are done with ◀ buttons, whereas moving between fields can be done by pressing ▶ buttons. Correctly set date and time are confirmed with the OK button.

**Language.** Option of setting language version of the system.

After choosing this option a window with a language table to choose from appears (on the Polish market the only available version is Polish).

After choosing the language and pressing the OK button the

system automatically changes into the chosen language version.

**Erase memory.** Option of erasing saved images from memory.

After choosing this option the system shows a message with question „erase memory” 3 times. This activity erases the device’s memory completely and causes a loss of saved images.

**Factory settings.** Option of restoring factory settings.

After confirming this option system shows a message: „**To restore Factory settings, Press OK**”. After pressing OK the system will turn off and after rebooting switches to factory settings. This option should be used only in the case of device working in an improper way.

**Auto shutdown.** Option of setting for automatic shut off the device.

You can choose the time after which the device is shut down since you last pressed the keyboard, e.g. 2, 5, 10, 20, 30 minutes or - - - - the device does not turn off automatically.

This option helps to save battery.

**Sound.** This option enables to turn ON or OFF the sound of the buttons.

**Save option.** This option enables to turn ON or OFF the image description (name and number of the animal) while saving the image to the memory.

After choosing this option a message " Enable desc." will appear. The user can choose YES or NO using navigation buttons. If the user change this setting to YES, then describing of the image will be possible (during saving them to the memory) with digits and letters using navigation buttons ◀ ◆ ▶.

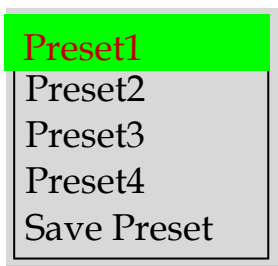
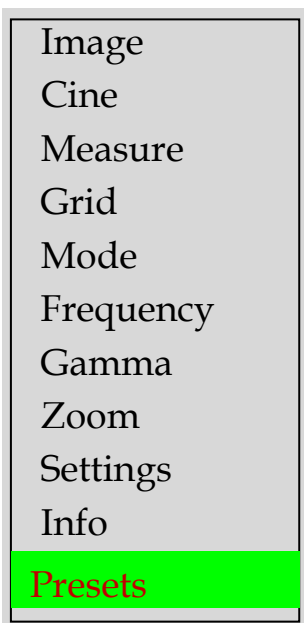
**Changing the description.** The user can change or add the description under image/CineLoop, which was saved to the memory and then load. After loading the image/CineLoop please press G1 or G2 button to activate description field. To finish editing please press OK. button.

**Information.** Option presenting factory data of the system-data for service purposes only.









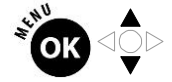

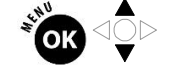
**Presets.** An option which allows the user to save the optimum device settings.

The user can save the most appropriate settings in the device's memory. To do this, select the Presets option from the menu, then Save Preset and confirm with OK button and with the use of arrows, ◆ then ◀ ▶ name the setting and confirm with OK button. The name of the currently used preset will appear at the top of the screen.

After turning the ultrasound scanner off and then restarting it, the selected preset does not change. Every modification of parameter results in exiting the preset and the preset name will not be displayed.



## VII. MOST COMMONLY USED FUNCTIONS during an examination

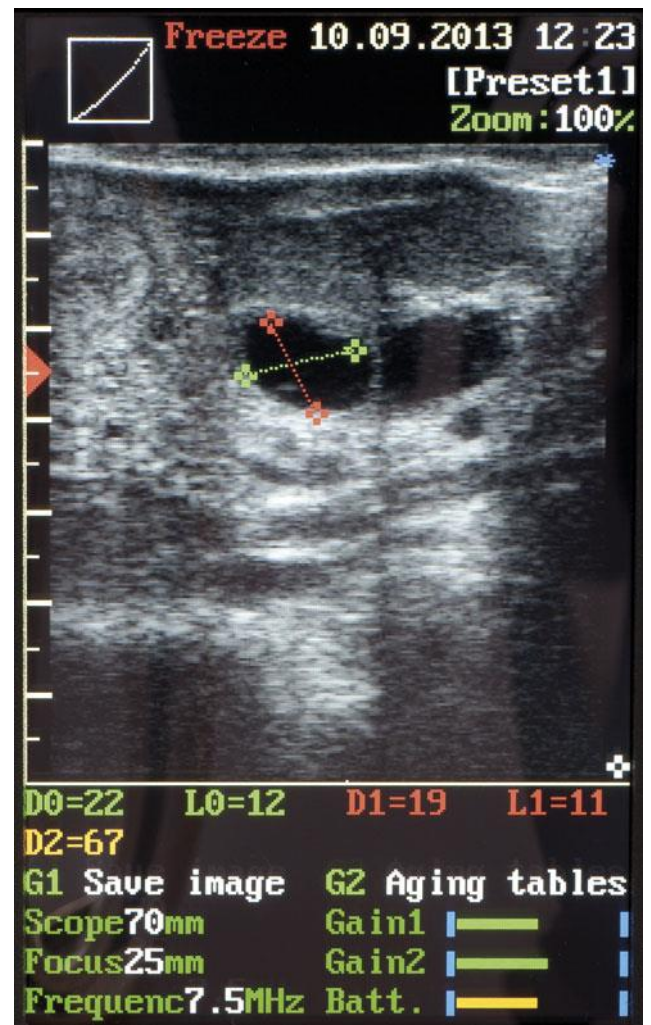
Image freezing		After pressing this button the image is frozen and in the upper part of the screen appears the message "Frozen". After longer hold the device turns off.
Measuring		<b>MENU / MEASURE.</b> After freezing the image can be measured by using cursors (markers). You confirm the marker position with the OK button.
Amplification adjustment		Signal amplification adjustment. Gain 1 button = amplification in the closer field. After pressing G1 the level is adjusted with navigational buttons $\blacktriangleleft$ $\blacktriangleright$ which are active for 2 seconds. Gain 2 button = amplification in the further field. After pressing G2 the level is adjusted with navigational buttons $\blacktriangleleft$ $\blacktriangleright$ which are active for 2 seconds
Change of penetration depth		Penetration range is adjusted with navigational buttons $\blacktriangleleft$ $\blacktriangleright$ These parameters are adjusted in order to gain optimal image quality, depending on examination type and examination conditions.
Focus		Settings of manual focus are adjusted with navigational buttons. On the left side of screen near the ruler icon there is a red triangle, which can be moved with navigational buttons $\blacktriangleleft$ $\blacktriangleright$ at the image height, which we want to sharpen. This function is designed to sharpen the image of the examined object as best as possible. Information about set focus value is shown at the bottom of the screen.
Filtering signal from converters		<b>MENU / FREQUENCY</b> Possibility of probe signal filtering with navigational buttons $\blacktriangleleft$ $\blacktriangleright$ . Adjustment in the range of between 4MHz to 9 MHz
Cineloop		Function allowing to replay maximum of 256 last frames since the moment of image freezing. Using navigational buttons $\blacktriangleleft$ $\blacktriangleright$ you can manually move consecutive sequences of the conducted examination frame by frame or by using $\blacktriangleleft$ $\blacktriangleright$ buttons you can automatically replay cine loop forwards/backwards
Zoom		<b>MENU / ZOOM.</b> Function of percentage increase of image from 100% to 120%, 140%, 160%.
B+B Mode		<b>MENU / MODE.</b> Division of the screen into two sections (dual display mode) enabling viewing or comparing the frozen image with the one being actually scanned.
Saving images and Cine		<b>MENU / IMAGE or CINE.</b> Function enables quick saving of image or cine loop 256 frames to memory.
GAMMA		<b>MENU / GAMMA.</b> Function enables adjustment of brightness and contrast levels in order to optimise image during examination.



## MEASURING WITH CURSORS

### Distance, depth

1. After freezing the image you should press "OK" to open a dialogue window of the main menu.
2. Out of the shown options you have to confirm the "Measurements" position with the "OK" button.
3. A marker (cursor) appears in the middle of the screen. Simultaneously, below the image actual state of the measured parameter are shown e.g.: depth  $D0=22$  mm, which means a distance of cursor from the probe's front of 22 mm.
4. Using navigational buttons ◀ ▶ you should set a marker in the chosen position on the screen and confirm its position by pressing OK – a new green marker appears and simultaneously under the image there will be a message about measuring state, distance between cursors, e.g.  $L0=12$ mm. This result will be saved after confirming with the OK button.
5. Using navigational buttons again you should set another marker in the chosen position on the screen and confirm with OK. Simultaneously in the measuring message there will be the actual distance between positions of consecutive couple of markers e.g.:  $L1=11$  mm shown.
6. Measuring operation can be conducted for 4 pairs of cursors, by conducting in sequence the above described activities. Further measuring results are presented below the image and they are colour-coded for better identification.



## VIII. PREPARATION TO WORK

In order to prepare the *iScan* ultrasound scanner to work you should conduct some basic activities:

1. Take the ultrasound scanner with mounted battery pack out of the case
2. Put around your neck and adjust length of the carrying belt
3. Turn on the power and check battery state on the graphic indicator
4. Unscrew slightly about 0,5 to 1 turn the connector cap
5. Ultrasound scanner is ready to work

## IX. EXAMINATION OF ANIMALS

Before starting the work you should prepare the device and accessories.

1. Turn on the power and check the charge level of batteries.
2. Sometimes to conduct an examination you will need a special gel (we recommend using gels designed especially for ultrasound examination, the best are the ones with special certificates allowing them to be used).

Images acquired during examination are influenced by a series of factors, among other things, such as the place of applying the head, penetration plane (namely means of putting the head) and examiner's experience.

3. During the examination the keyboard is used to set the best working parameters in given conditions. The device "remembers" last used settings. To achieve the optimal image of the examined object you should use possibilities of amplification adjustment, gamma level, scanning depth, focus adjustment, head frequency adjustment.
4. Take special care during examination of animals.

## X. CHARGING BATTERIES

**Li-ion battery is a multiple-charging pack. Life span of the battery depends on the ways of its usage. It is for the best if it works in full cycles i.e. full charge – complete discharge.**

Dramiński *iScan* has a graphic indicator of battery condition in the lower part of the screen. Shortening and change of colour of battery condition indicator, from green to yellow, informs about battery discharge in ca. 1 hour 45 minutes. If the scanner is left turned on, then a deep discharge of pack will take place and device will eventually turn off.

To charge the battery pack you should conduct a series of activities according to the following sequence:

- a) turn the ultrasound scanner's power off (ON/OFF),
- b) connect charger's cable to the socket in the pack,
- c) connect charger to the wall plug 230 V / 50 Hz,

- d) watch the diode in charger – change in colour from red to green means proper and full charge.

Charging a completely discharged battery takes ca. 2 hours 30 minutes. After fully charging the battery the charger automatically stops charging.

 **Warning**

It is forbidden to conduct repair of the charger by the user and device disassembly by unauthorized personnel.

The battery for the device should be charged only with a charger designed for it.

Do not use the charger in damp or wet places. It may result in damage of the device.

Before using the charger always make sure that its main elements are not damaged.

In case of finding any damages, immediately disconnect the device from power source and replace the faulty element with a new one.

#### **Precautions when using Li-Ion battery pack**

- Do not disassemble battery packs that make an integrated whole.
- Do not throw battery packs into fire and heat them.
- Do not exert physical force on packs or throw them.
- In situation when an electrolyte discharge from pack can be observed, you should immediately cease using it.
- Do not allow to let the liquid enter the pack's inside, which may result in sudden temperature rise of battery and danger of electric shock.
- Do not leave the battery pack in high ambient temperature e.g. inside the car directly in the sunlight, near heat sources. Not observing these rules may result in an electrolyte leakage from the battery and its damage or shortening its life span.
- The battery should be charged in an ambient temperature between 0 °C and 40 °C. Charging battery in the ambient temperature different than set range may result in danger and permanent damage to the pack.
- In the case of problems with charging after long time of usage (ca. 500 cycles) you should replace the battery pack with a new one.
- Used battery packs should be subject to recycling according to relevant regulations.

## XI. DEVICE AND PROBE MAINTENANCE

Device is especially designed to work in harsh conditions, where during usage it can get significantly dirty. The *iScan* ultrasound scanner should be cleaned with a wet cloth soaked with a delicate detergent solution directly after use. Before wet cleaning the battery pack should be disconnected from the device, because of its not waterproof housing. While cleaning, the USB socket should be closed with the cap attached to the housing.

### Caution!

There is a special micro-valve implemented inside the USB connector for pressure compensation. The connector cap shall be slightly loosen while transport or during normal operation (unscrewed about 0.5 to 1 turn). This way the pressure will automatically compensate inside the scanner. The cap shall be tightened while washing the scanner or while the device may be at risk of the direct contact with water.

After wet cleaning the scanner should be wiped dry and packed into the transport case. The USB port cap shall be loosen prior to placing the scanner inside the case.

Probe can be cleaned with running (not hot) water or immersed in water with an addition of detergent or properly dissolved disinfectant.

**Do not use highly concentrated agents and scrubbing agents. During cleaning, always protect contacts and sockets from moisture.**

**Protect the probe head against mechanical damage.**

**It is necessary to protect the head of the probe and the cable against physical damage.**

### Remember:

- To put the cable properly. Improper placement and twisting of the cable leads to its damage.
- To put the probe and the cable properly in the case. Avoid squeezing of the cable by the case's cover. It may cut the wire.
- To keep the probe in a proper and safe place.

## XII. OPERATION NOTES

Signs of unusual behaviour of device	Checking actions
Lack of power – the device does not turn on	Check if the pack is properly connected or the cleanliness of contacts. You can also check proper operation with a different pack or check the battery level with the charger.
Image too bright or too dark	Check amplification and GAMMA level adjustments
Lack of charging indicator in charger	Check cable connections Check power network
Short work time on battery	1. Battery not charged 2. Low ambient temperature 3. Battery is exhausted (normal sign, resulting from the battery's construction)

If none of the basic actions helps, please contact our service at the DRAMIŃSKI Company, tel. 0-89 527-11-30 or e-mail: usgvvet@draminski.com

### XIII. TECHNICAL DATA

image presentation (projection) mode	B Mode – live imaging, B+M Mode (2B Mode - Dual Mode Display),
probe frequency and type	<ul style="list-style-type: none"> <li>• electronic linear 7.5 MHz (from 4 to 9MHz)</li> </ul>
scanning range	<ul style="list-style-type: none"> <li>• from 3,3 cm to 12 cm (for linear probe, rectal use)</li> </ul>
screen	<ul style="list-style-type: none"> <li>• LCD, LED screen, 5.0" diagonal</li> </ul>
function control	<ul style="list-style-type: none"> <li>• membrane keyboard</li> </ul>
Cineloop (image sequence)	<ul style="list-style-type: none"> <li>• 256 frames ( ca. 20 seconds )</li> </ul>
image memory	<ul style="list-style-type: none"> <li>• 200 images with date, index No. and description</li> </ul>
Cine memory	<ul style="list-style-type: none"> <li>• 50 cine loops with date, index No. and description</li> </ul>
transmission to the computer	<ul style="list-style-type: none"> <li>• through the USB port</li> </ul>
power source	<ul style="list-style-type: none"> <li>• Li-ion battery pack, 14.1 V, 3.1Ah</li> </ul>
continuous work time	<ul style="list-style-type: none"> <li>• up to 5 hrs – on one fully charged pack</li> </ul>
pack charging time	<ul style="list-style-type: none"> <li>• 2 hrs 30 min</li> </ul>
battery low indicator	<ul style="list-style-type: none"> <li>• automatic – graphic indicator</li> </ul>
external dimensions	<ul style="list-style-type: none"> <li>• length 17.0 cm, width 17.0 cm, height 6.0 cm</li> </ul>
device weight	<ul style="list-style-type: none"> <li>• 1720 g including probe</li> </ul>
battery weight	<ul style="list-style-type: none"> <li>• 280 g</li> </ul>
working temperature	<ul style="list-style-type: none"> <li>• - 10°C to + 40°C</li> </ul>
storage temperature	<ul style="list-style-type: none"> <li>• 0°C to + 45°C</li> </ul>

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**Important!** If there was a situation that the ultrasound scanner was stored in a temperature below 5°C before turning it on it should be warmed up. Using the **iScan** ultrasound scanner alternatively in extremely high or low temperatures is not recommended and may lead to its damage.

#### **XIV. GUARANTEE**

The manufacturer issues a 24-month guarantee to the purchaser for a fault-free work of the product, used according to the included instructions.

The battery has a 6 - month guarantee.

In the case of defect, not caused by the user, the manufacturer is obliged to repair the provided product in a period not longer than 14 working days, counting from the day of device's transfer to the service centre (ul. Owocowa 17, 10-860 Olsztyn) and returning a functioning device to the user at the manufacturer's expense.

Guarantee does not include mechanical damage, damage resulting from improper use, storage and repairs made on one's own.

Guarantee is based on the proof of purchase (invoice). In order to file a complaint you should inform the Dramiński company concerning the suspected defect in a reasonable period from finding the suspected defect of the Product, in every case not later than before the expiration of the Guarantee Period.

**In order to file a complaint by way of Guarantee you should present:**

1. Product
2. Copy of proof of purchase, clearly stating the name and address of the seller, date and place of purchase, product type and product's serial number.

**Guarantor is the DRAMIŃSKI Company**

ul. Owocowa 17, 10-860 Olsztyn  
tel. 89 527 11 30, fax 89 527 84 44  
e-mail: [serwis@draminski.com](mailto:serwis@draminski.com)  
[www.draminski.pl](http://www.draminski.pl)

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Software installation manual and image  
transmission to the PC



*iScan*

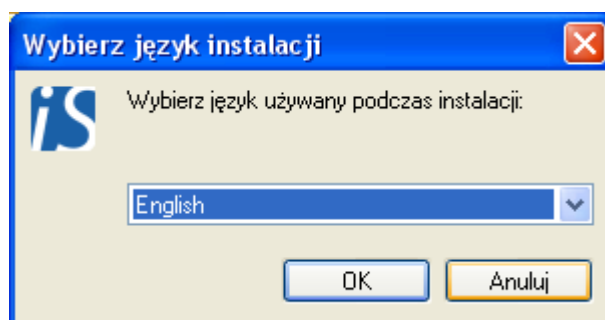
## 1. Software installation

Software is designed to transfer images and cine loops from the scanner's memory to the computer through the USB port.

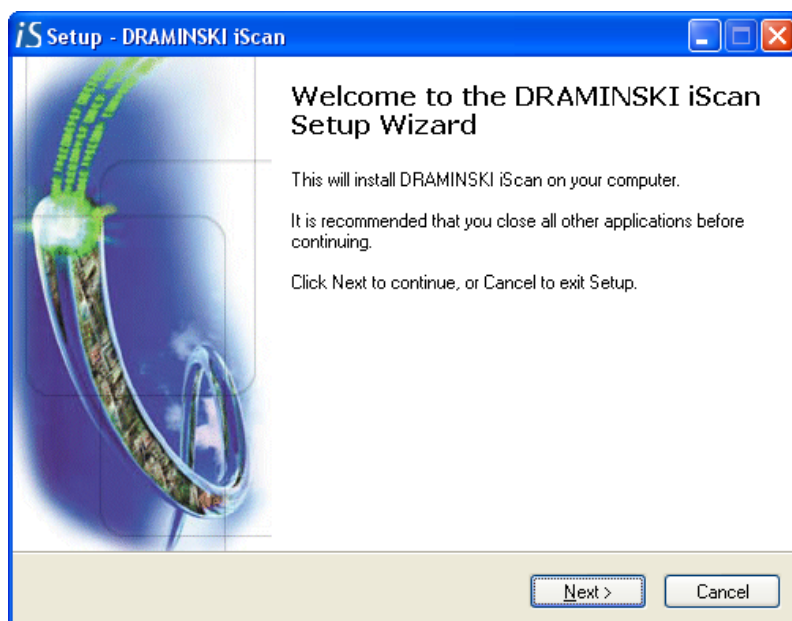
**Important!!! Before connecting the iScan to the computer, install software first.**

Run installation programme (setup.exe) from the CD attached to the device. The programme will guide you through the software installation process.

After starting the programme a window with installation language choice appears.



Confirm choice with OK.

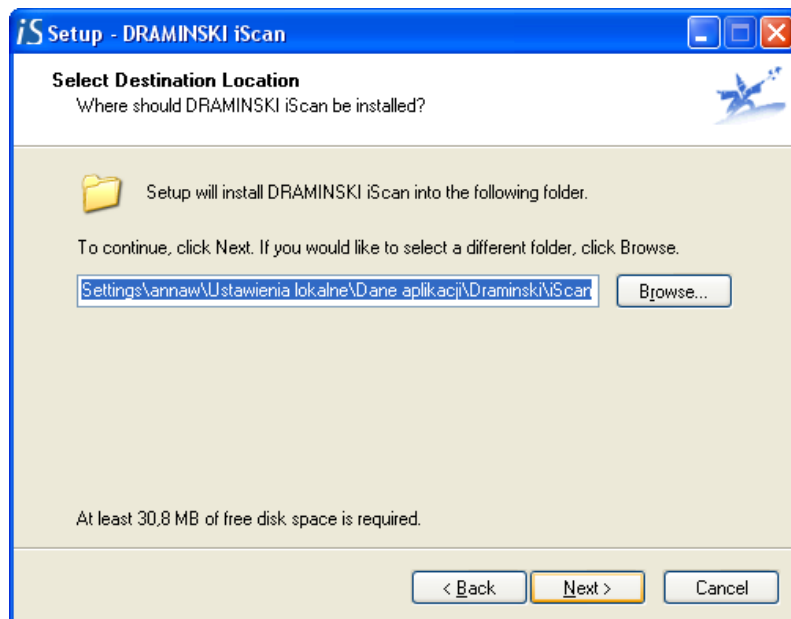


Choose "Next" to continue

Next window allows us to choose a folder on the drive, where the software will be installed.

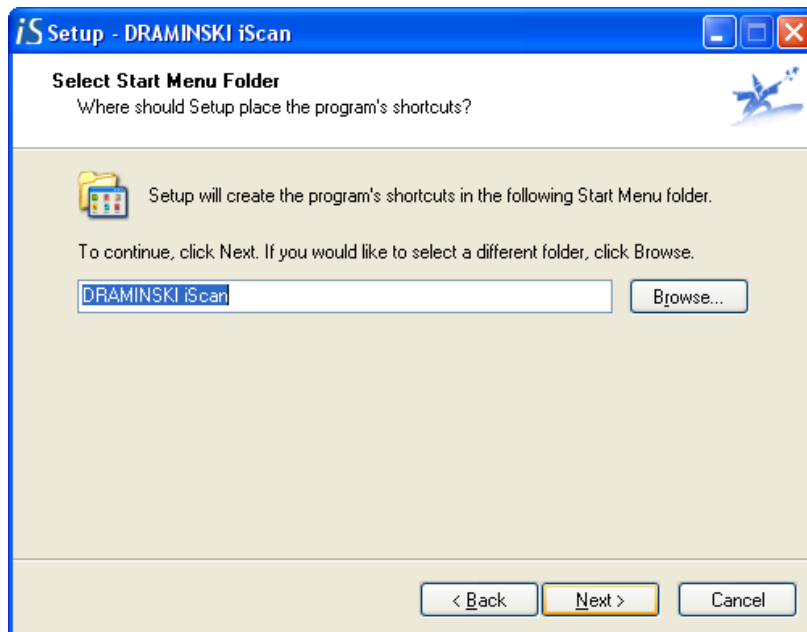


**Important!!!** Remember in which folder the programme was installed, because during installation of drivers for the USB port there will be a need to provide a path to the driver folder. Driver folder can be found in the „DRIVER” file.



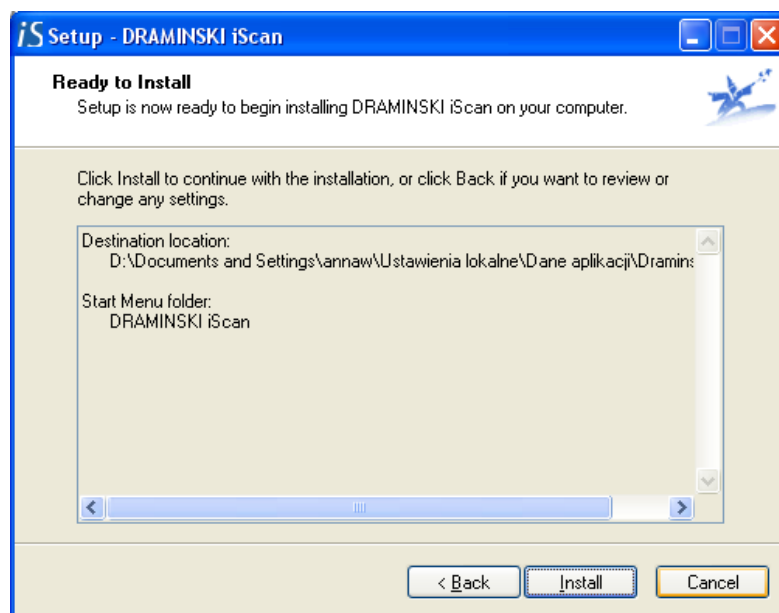
Choose “Next” to continue

You have to choose a folder, in which the programme shortcut will be placed. It can be found later for example by means of command:  
START \ PROGRAMS\ DRAMIŃSKI iScan cine +



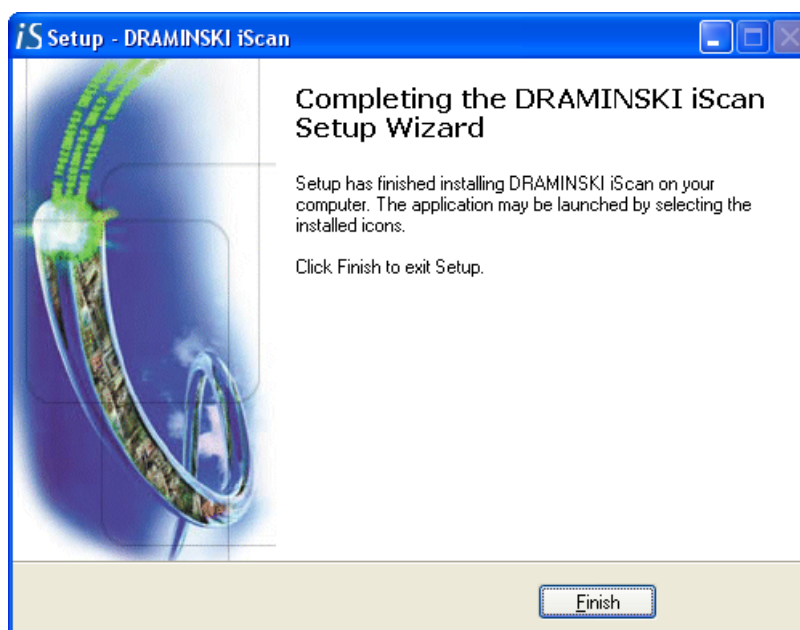
Choose “Next” to continue

Programme informs us that it is ready to be installed in the place chosen by us.



Choose "Install" to continue

Installation programme informs about the proper course of installation.



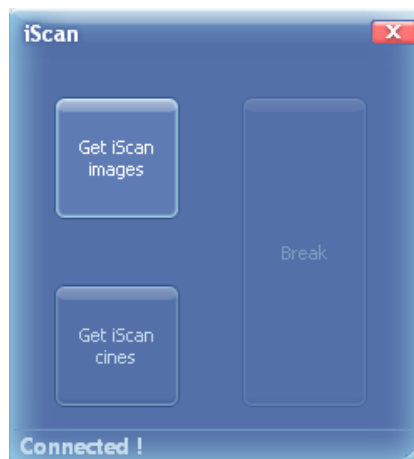
Choose "Finish" to successfully finish the installation

After installation of iScan cine+ data transmission programme the computer needs to be restarted.

## 2. Transmitting images or cine loop to computer

To begin transmitting images to the computer, following actions need to be performed:

1. Connect transmission cable to the socket (6 pin) at the top of the iScan housing, the second end to the computer – USB port.
2. Turn the ultrasound scanner on. Open iScan cine+ programme and a window will appear:

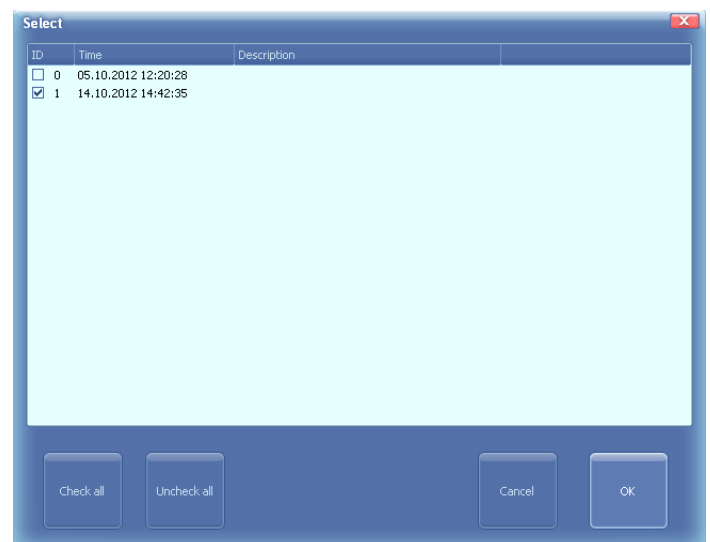
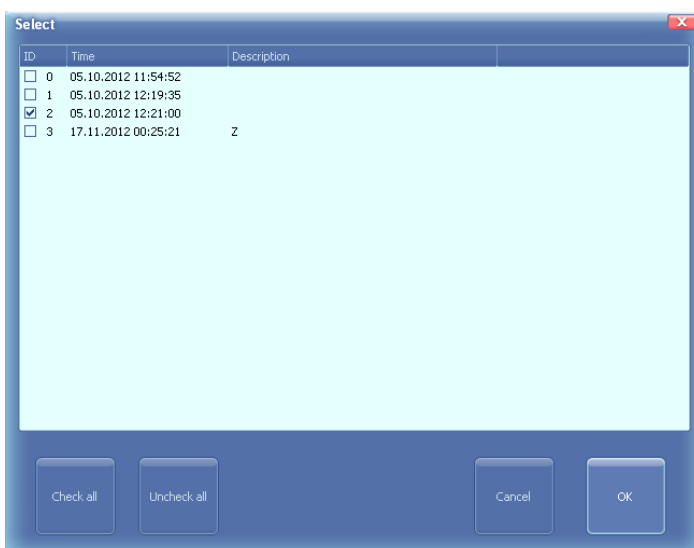


Press "Get iScan images" to transmit images  
Press "Get iScan cines" to transmit cine loop

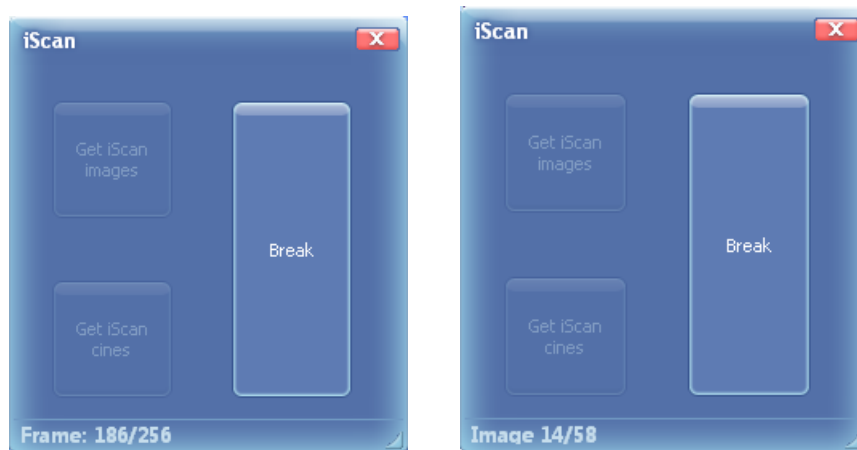
3. On the computer's screen a window appears with a possibility to choose a place to download images to the computer.

After choosing the folder, confirm with OK.

4. List of all images and cine loops saved in scanner's memory will be displayed on computer screen. If you want to download only particular videos or pictures from the list, untick the unwanted ones. Images are saved in the chosen folder in BMP format (bitmap), cineloop are saved in avi format.

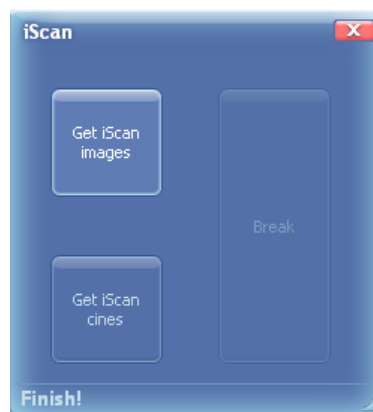


When saving, the ultrasound monitor displays information about transmission progress



To stop transmission click the “Break” button on the computer screen.

A window with message “Finish” on the computer’s screen appears to confirm successful action .



Images and cine loops can be deleted from ultrasound scanner’s memory by entering the menu: Settings/ Erase memory

Go for it!

## SYMBOLS AND MARKINGS USED ON LABELS



CE marking confirming the manufacturer's declaration of conformity with the UE directives for the product



Caution, read the instruction manual carefully



Product manufacturer's name and address



Recycle separately with other household waste according to the Commission's Directive UE 93/86/EEC or local regulations.

IPX5

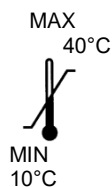
Water-resistance. **Resistance to water stream projected at all angles at a flow rate of 12.5 litres per minute.**

IPX7

Probe's water-resistance. **Resistance to water immersion up to 30 minutes at a depth of 1 metre.**

SN-

Serial number of the product used for identification



Product's storage temperature

**Manufacturer:**



[www.draminski.com](http://www.draminski.com)

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