imv TECHNOLOGIES

Instruction manual

Easi-Scan:Go™

Easi-Scan:Go™ curve

Contents

Certification

Hereby, IMV Technologies UK Ltd., declares that the radio equipment type Easi-Scan:Go is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: https://www.imv-technologies.com

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation of the device.

If the user makes any modifications not expressly approved by the party responsible for compliance it could void the user's authority to operate the equipment.

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions: (1) This device may not cause interference; and (2) This device must accept any interference, including interference that may cause undesired operation of the device.

Cet équipement est conforme et se soustrait de Licence au Cahier des Charges sur les Normes Radioélectriques (RSS) d'Industrie Canada.

L'opération est soumise aux deux conditions suivantes:

1. Cet appareil ne cause pas d'interférence; et
2. Cet appareil accepte toute interférence, y compris les interférence pouvant provoquer un fonctionnement indésirable de l'appareil

Contains IC4511-WL18DBMOD

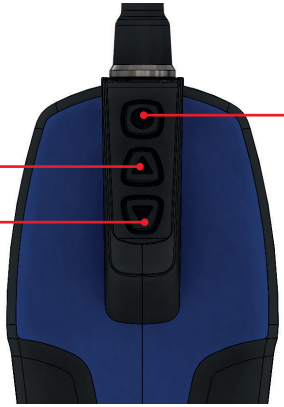
ANATEL
07346-19-09891

Agência Nacional de Telecomunicações

"Este equipamento nao tem o direito a proteção contra interferência prejudicial e nao pode causar interferência em sistemas devidamente autorizados."

Note: *All IMV Technologies products are for animal applications only. The product shall not be used outside its scope as declared by the manufacturer.*

1. Scanner menu



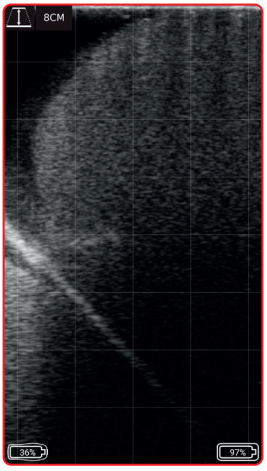
Up button
- Adjust gain.
- Save videos.

Down button
- Adjust depth.
- Save images.

Power button
- To switch on/off the scanner press and hold until it beeps.
- Short press to freeze the image.
- If on a congested Wi-Fi channel, double press to change channel when no viewing devices are connected.

1.1 Scanner menu

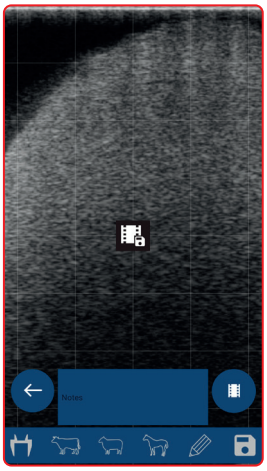
In live scanning pressing **"Up"** button will bring up the gain menu.



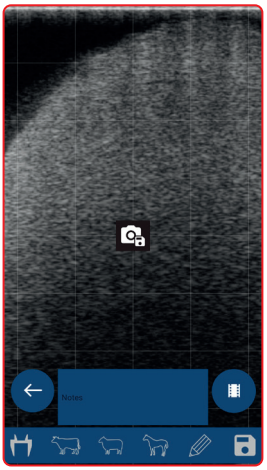
Pressing **"Down"** button will bring up depth menu.

Press up or down to bring up the menu, once a menu item is displayed, press down / up to cycle though the menu options, to select a menu item short press the power button.
If the selected item is depth or gain, you can now use the up or down buttons to change the value.
If the selected item is cfm enable / disable, a short press on this item will enable or disable cfm mode.
Note: with the cfm item selected the menu will not timeout. This allows a quick enable / disable of the cfm mode by short pressing the power button. To hide the menu simply press up or down until gain or depth is displayed and let the menu timeout.
.

1.2 Saving images and videos using the scanner buttons



Freeze the image using **"Power button"** Press **"Up"** will bring up **"Save Cine".**



Freeze the image using **"Power button"** Press **"Down"** will bring up **"Save Image".**

Short press the power button to freeze the image. The scanner now has access to the last 300 frames of ultrasound (10-12.5 seconds depending on the selected scan depth). Using the up or down key select save image or save cine, short press the power button to save, once saved the option will disappear. When using the BUG:Go viewing device the scanner can store a small number of cine loops and up to 100 images in its internal memory. these images are retained after power off and can be downloaded by the app at a later time. To download them simply turn on the scanner and connect the App only, the images and cine loops will automatically download to the app. When using an App as a viewing device the images and cine loops saved this way will transfer directly to the App and will not be saved in its internal memory.

2. LED sequence

Power LED	
Blue flashing	Scanner turning on
Blue	Scanner on and battery between 66–100% charge
Yellow	Scanner on and battery between 33–66% charge
Yellow flashing	Scanner on and battery between 0–33% charge
Wi-Fi LED	
Blue flashing	Scanner ready for smart device to connect, nothing connected
Blue	Smart device connected
Both LEDs	
Yellow flashing	Software updating

3. Activation

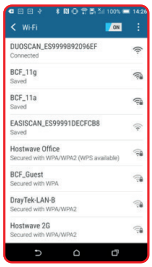
3.1 First time use

Download the IMV Go Scan app from Google Play or the App store.

You are likely to be prompted for a scanner software update on first time use. Please see Scanner Update section.

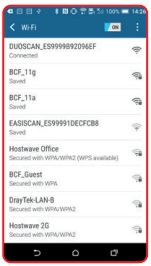
To activate the scanner, ensure that the scanner is charged and that you have a local Wi-Fi internet connection. This is only necessary the first time you connect the scanner.

1. Press "Power button" to switch on the scanner. Open app on the smart device. The app will request to connect to the scanner. Click OK.



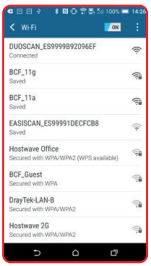
2. Select EASISCAN from the Wi-Fi page and return to the app. The app will get the serial number from the scanner.

3. App requests to connect to the internet. Click OK.



4. Select your local Wi-Fi network to connect to the internet.

5. App retrieves the license from IMV's license server and the app will request to connect back to the scanner.



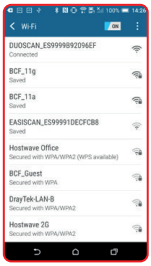
6. Select your EASISCAN from the Wi-Fi page and return to the app.

After a few seconds, the ultrasound image will appear. Touch anywhere on the screen to bring up the live scanning menu.

Note: *If the Wi-Fi LED is flashing on the scanner it is not connected to any smart device.*

3.2 Normal start up process

1. Switch on the scanner and wait until the Wi-Fi LED illuminates. Launch IMV Go Scan App. App requests to connect to scanner.



2. Select your EASISCAN from the Wi-Fi page. Return to the App.

3. It can take up to 10 seconds to connect and start receiving ultrasound. You are now ready to scan.

3.3 Scanner Updates

The app automatically checks the IMV licence server for scanner software updates when connected to Wi-Fi.

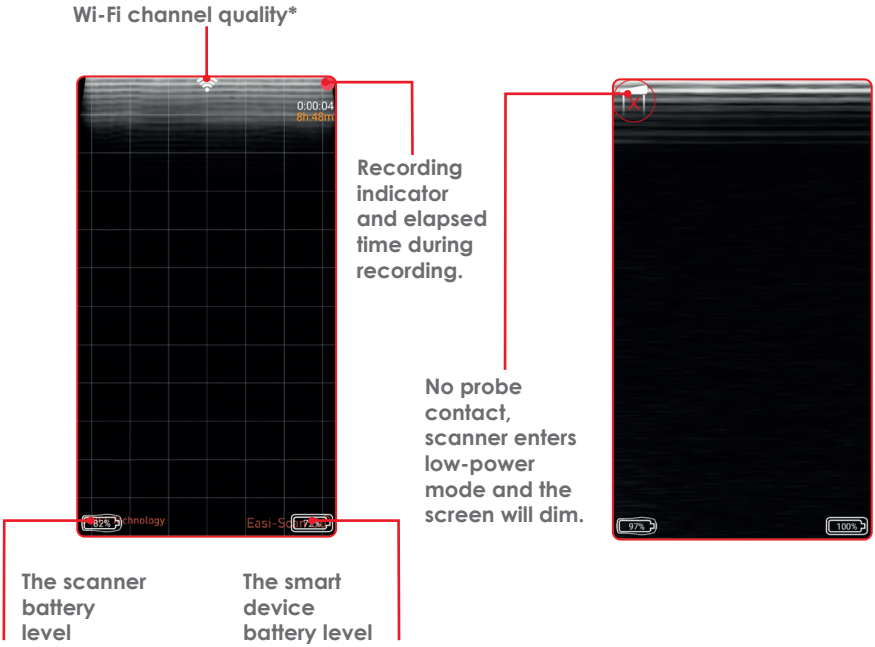
After connecting to an EASISCAN, you may be prompted to update the scanner software. The scanner will only update if the battery is above 50% charge.

Press OK or Cancel. Pressing OK will cause the scanner LEDs to flash yellow - the scanner will take roughly two minutes to update. Press cancel if you wish to update later.

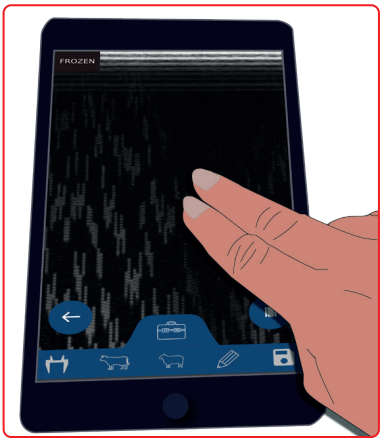
Once the update is finished the scanner will switch off. The scanner software version number can be checked in the User Settings section.

4. IMV Go Scan App

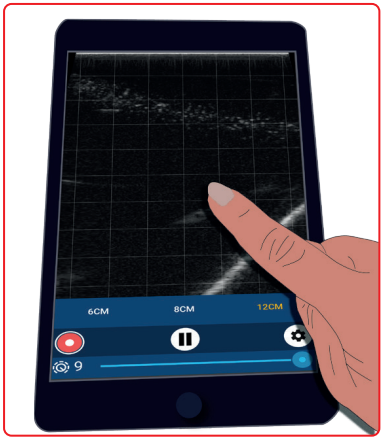
4.1 Live scanning



*Change the channel in Wi-Fi settings. No indicator: clear channel on the 5GHz band. This is the recommended state. White indicator: clear channel, but is on 2.4GHz band, it is more prone to interference. Orange/red indicator: channel has other networks or scanners on it. This is likely to cause interference issues.

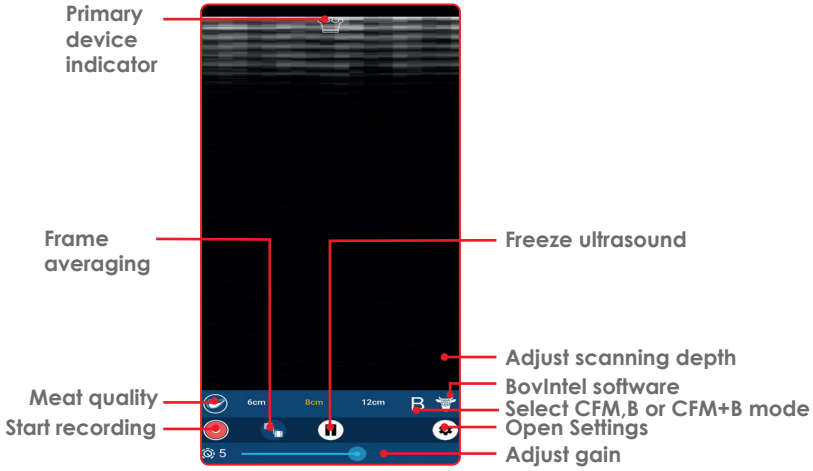


Touching the screen with two fingers simultaneously will freeze the image.



Touching the screen with one finger will open the main menu.

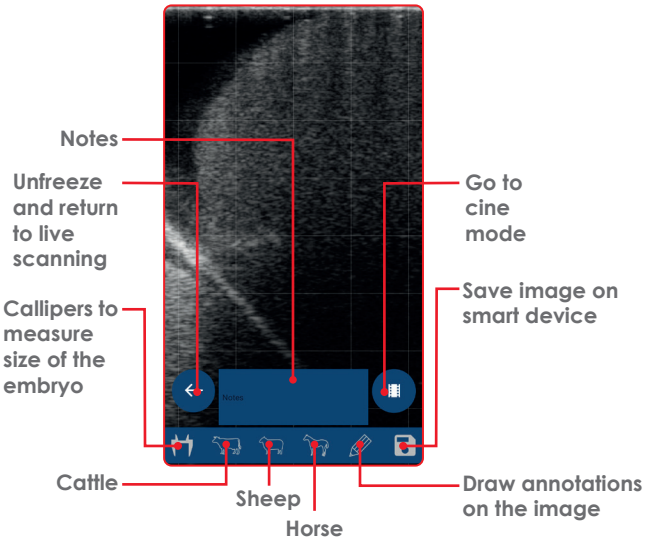
4.2 Main menu



To enable frame averaging, touch the icon. To change the number of frames being averaged, touch the icon (each touch increases the number of frames up to 4 then returns to 2). To disable frame averaging, long press the icon.

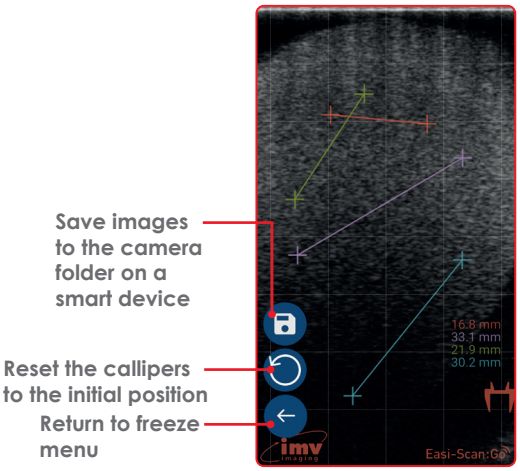
Frame averaging combines the current frame with the previous 2, 3 or 4 frames, this produces a smoother image with less noise, but at the cost of blurring when the probe is moving quickly.

4.2.1 Freeze menu



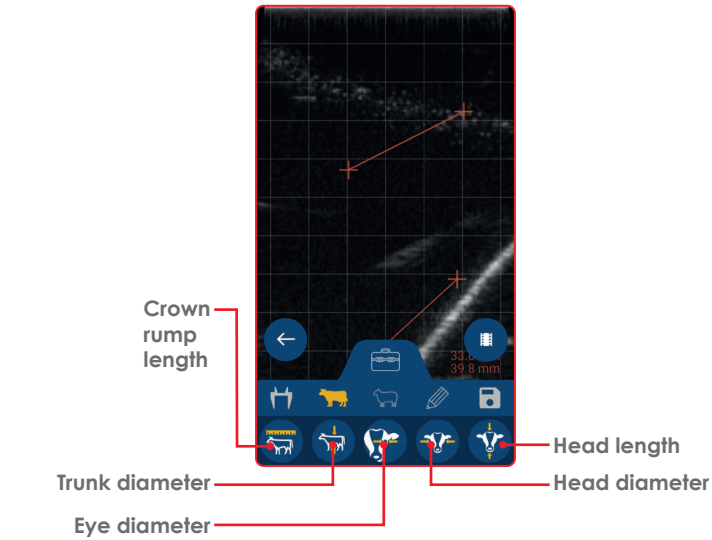
Note: *Touch in the text area to type, up to 4 lines of text may be entered and will appear as red text with may be dragged to a preferred location. This text will be present on any saved images.*

Callipers



Note: *Use your finger to move the cursors.*

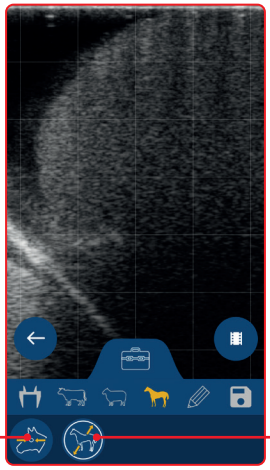
Cattle



Gestational measurements available:				
Crown-Rump length (distance from the top of the skull to the end of the body)	Trunk diameter (width of the ribcage at the widest part)	Eye diameter (diameter of the eye socket)	Head diameter, (width of the skull at the widest point)	Head length (distance from the top of the skull to the end of the nose)
14mm – 180mm, 33 – 76 days	14mm – 123mm, 53 – 133 days	3mm – 28mm, 62 – 241 days	14mm – 86mm, 55 - 135 days	21mm – 146mm, 56 – 134 days

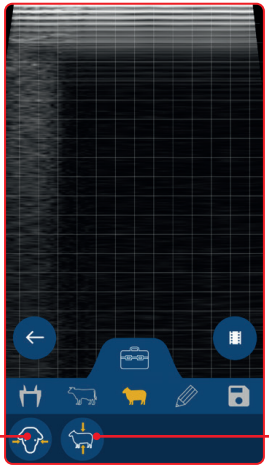
Horse

Gestational measurements available:	
Eye diameter (diameter of eye socket)	Equine Conceptus diameter (diameter of the embryo)
9mm - 35mm, 99 - 344 days	14mm - 75mm, 14 - 45 days



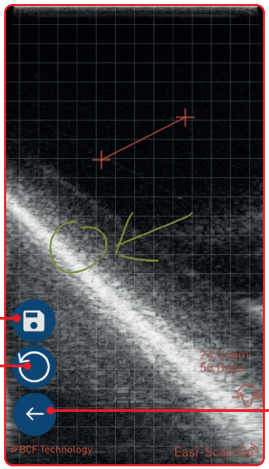
Sheep

Gestational measurements available:	
Head diameter (width of the skull at the widest point)	Trunk diameter (width of the ribcage at the widest part)
19mm – 66mm, 48 - 121 days	14mm – 101mm, 49 – 126 days

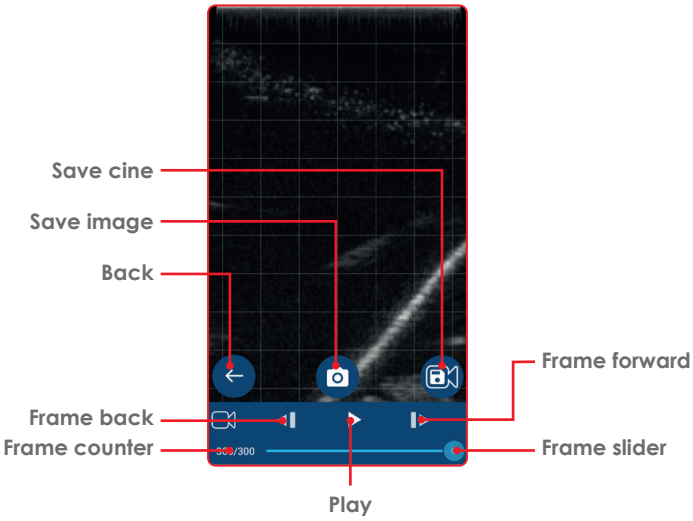


Freedraw

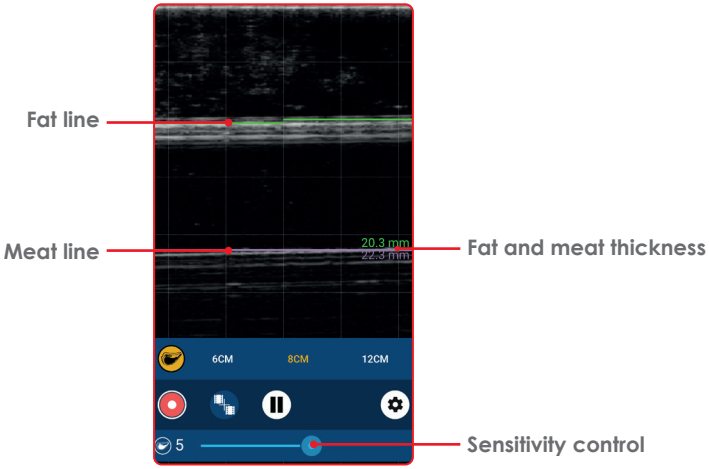
Touch and drag to draw on screen, can be used to make simple annotations or to highlight areas of interest. Any measurements placed on screen remain visible.



Cine mode



4.2.2 Meat Quality



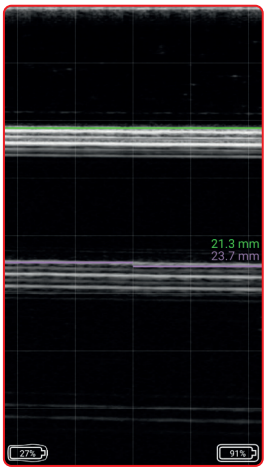
To enable meat quality, touch the icon, to disable, touch the icon again.

When in meat quality mode the app will automatically find the fat/muscle boundary and the reflection of the rib and draw horizontal lines at both interfaces.

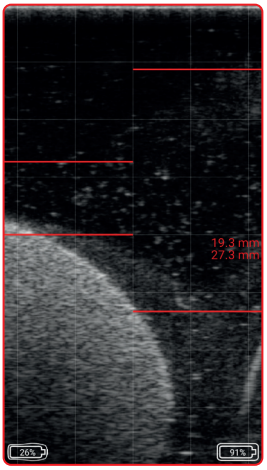
The gain control becomes a sensitivity control, with the sensitivity at minimum , the app looks for the strongest reflection, with the sensitivity at maximum, it uses a mixture of the average value and the maximum, which can compensate for a poor or noisy image.

The fat thickness is the distance from the probe face to the fat line and the meat thickness is the distance between the fat line and the rib line.

If the app considers the measurements to be good, then the fat line will be green and the rib line purple, if not, then the lines will be red.



Good measurement

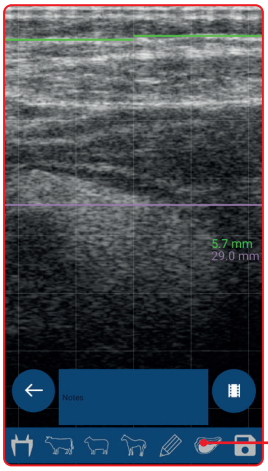


Bad measurement

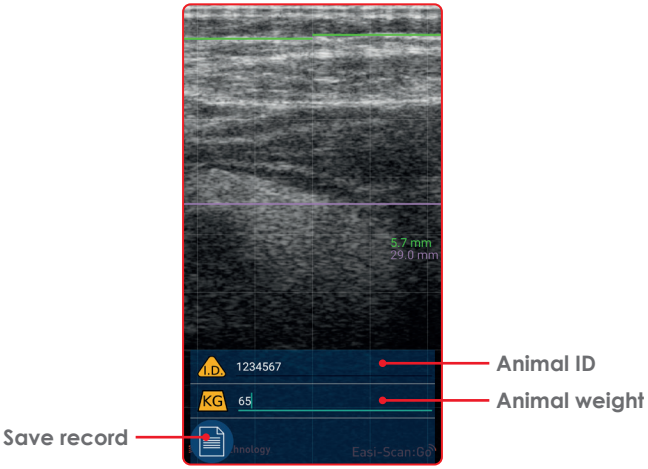
Recording meat quality measurements

In addition to live feedback, the app can also generate a record of the measurements as a csv file. Freeze the image, if necessary, use the cine loop controls to find the correct image.

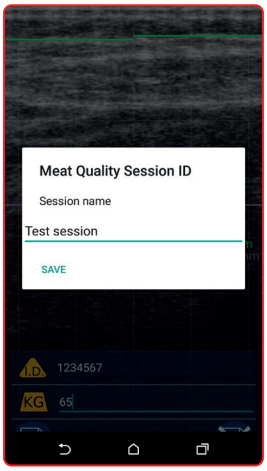
Note: *If the app considers the measurement to be bad (either line is red) then you cannot save the record.*



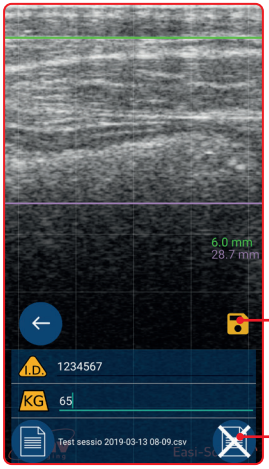
Touch the meat quality icon, here you can enter the animal I.D. and the weight of the animal.



Touch the file icon to save the information, if this is the first record of this session, you will be prompted to enter a filename, all further measurements will be stored in this same file.

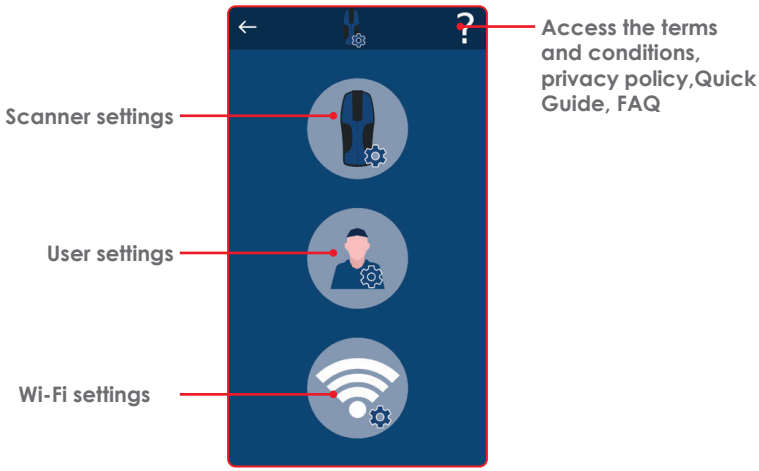


To end this session, touch the end session button, the next measurement you save will prompt for a new file name.

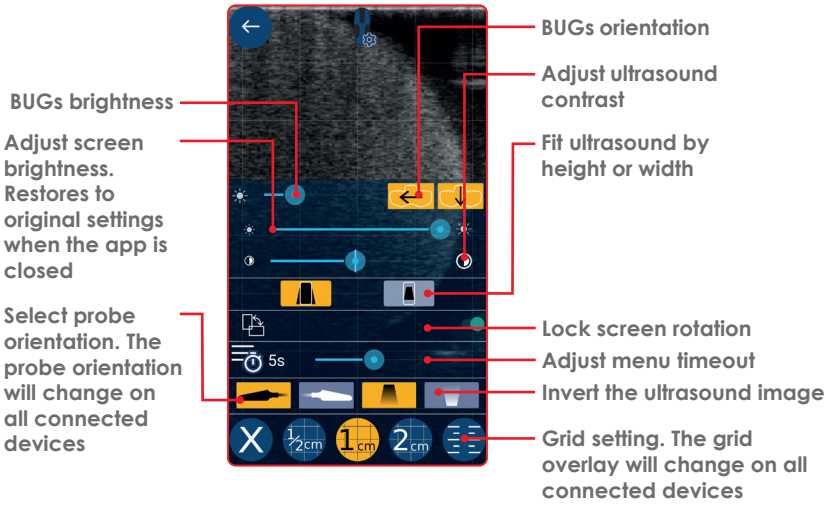


Each entry in the file will contain the animal id, weight, fat thickness, meat thickness, date and time, and the image reference for this measurement.
The data is saved in a directory called IMVMQ.

4.3 Settings

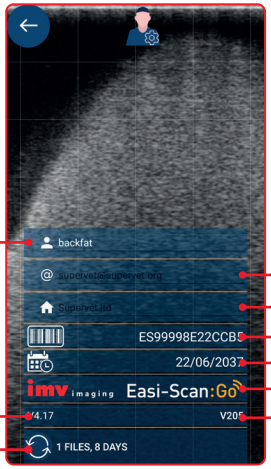


4.3.1 Scanner settings



Note: *Touching outside the menu area will return to live scanning.*

4.3.2 User settings



User name

Software version of app

Number of usage files on this device, when it was last synchronised with the server

User email

Practice or company name

Scanner serial number

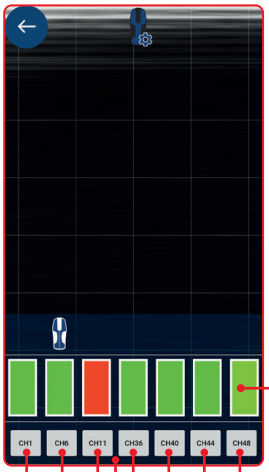
Licence expiry date

Type of scanner

Software version of scanner

4.3.3 Wi-Fi settings

Channels can be changed.



Yellow, orange, red are congested channels
Green are clear channels

2.4 GHz channels
Prone to interference

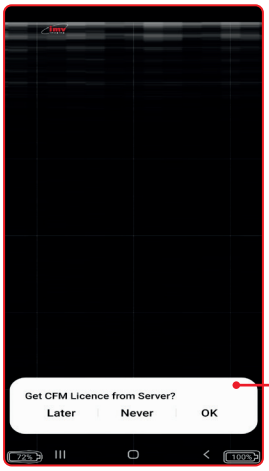
5GHz channels.
Best connection

Tap and select the channel

4.4 CFM

4.4.1 CFM Licensing

(Colour Flow Mode spectral)

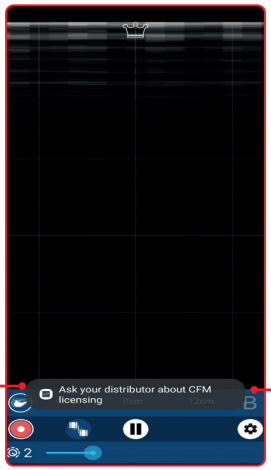


On first connection, if the scanner is CFM capable but not yet licensed, the following message will be shown.

Select “Later” and you will not be asked again for this scanning session.

Select “Never” and you will not be asked again unless you delete and re-install the app.

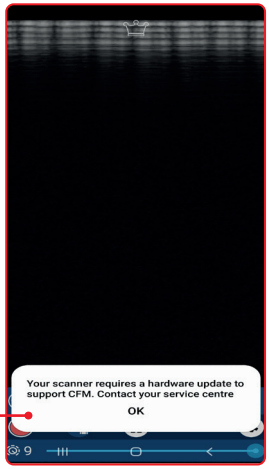
Select “OK” and you will be asked to connect to the internet to retrieve the CFM licence.



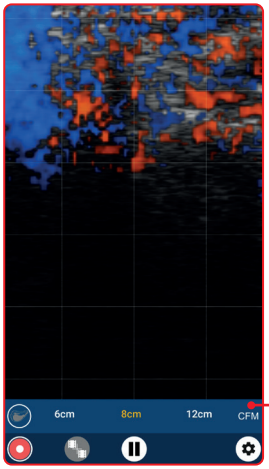
If the scanner is unlicensed, pressing the CFM button on the main menu will display this message.

Main menu B will be grade out.

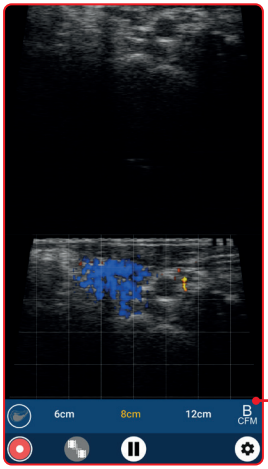
If the scanner also need to have hardware change to be compatible with the CFM mode, the message on the screen will appear. Sent your scanner to the service center for upgrade.



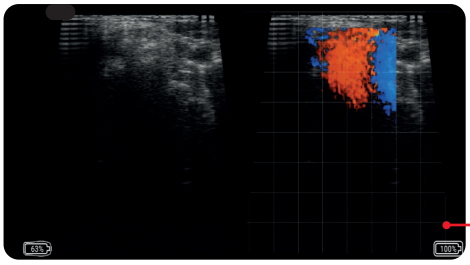
4.4.2 CFM operation (Colour Flow Mode Spectral)



The scanner has 3 modes of operation B Mode, CFM and B+CFM, pressing the CFM button will cycle through these modes. If CFM is enabled the main menu will have an additional gain control for CFM.



In B+CFM mode, both the normal B-Mode ultrasound and the CFM display are visible simultaneously.



Landscape view in B+CFM mode

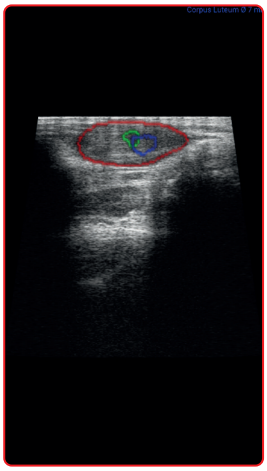
4.5 BovIntel

4.5.1 BovIntel overview

Bovintel adds machine learning to the Go-Scan app to identify reproductive features (ovary, follicle and corpus luteum) and to determine if a dominant follicle, follicular cyst or luteul cyst have been detected.

Bovintel requires a separate licence which may be purchased from IMV or your distributor.
To activate Bovintel, touch the Bovintel icon on the main menu.

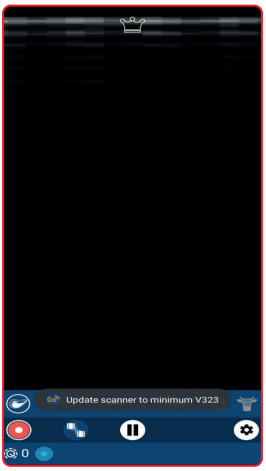
During scanning Go Scan will detect and outline the ovary, the follicles and corpus luteum as well as showing if the dominant follicle or any ovarian cysts are present.



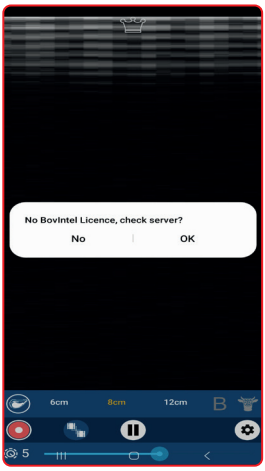
To adjust Bovintel settings refer to the Licence settings paragraph 4.5.2.

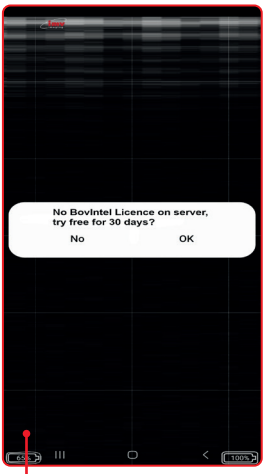
4.5.2 BovIntel Licensing

Connect to scanner, press bovintel button, if the scanner firmware is older than 323, this is shown, scanner needs to be updated first.



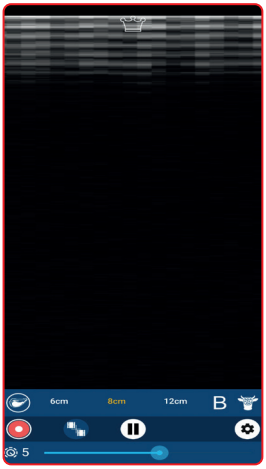
If scanner software is at least V323, this is displayed:



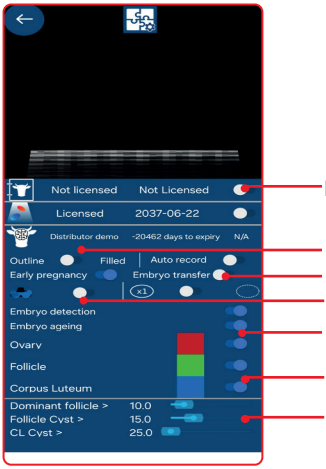


If there's no licence on the server and this scanner has never had a freemium licence, this is shown.

If there is a licence, the app will download it and request to connect to the scanner, then Bovintel will be available.



4.5.2 BovIntel Licensing settings



5. Usage files

The app will generate usage files.

Events logged:

- Images saved – time and date, scanner serial number and location (if permitted)
- Connecting to scanner
- Freeze and unfreeze
- Texts from Visits ToDo App
- Entering and exiting standby mode

Files can be uploaded to IMV's license server, www.licencing.bcftechnology.com.

- Automatically - if launching app when connected to Wi-Fi
- Manually – by clicking sync button
- Prompts – If there are more than 20 usage files to upload
- Our privacy policy can be viewed on our website or in the app

6. Factory reset

A scanner can be reset to factory firmware settings in the unlikely event the scanner fails. **With the scanner off, press and hold down Power and Down** until both LEDs glow yellow and release.

7. Charging

The battery can be charged in the charging dock, powered by a standard outlet. It can also be connected in the carry case for in-car charging.

LED sequence	
One blue flashing	Charging, charge level below 33%
First LED solid blue Second LED lashing blue	Charging, charge level below 66%
First and second LEDs solid blue, third LED flashing blue	Charging, charge level below 100%
All LEDs solid blue – fully charged.	Fully charged
All LEDs flashing yellow	Temperature is too high (more than 45 Celsius, 113 Fahrenheit) for safe charging
All LEDs flashing blue	Temperature is too low (less than 0 Celsius, 32 Fahrenheit) for safe charging.

A fully discharged battery should be fully charged within 5.5 hours. While in a good condition, the battery run time will be 5 hours (assuming 50% idle time between scans).

Scanner will enter low power mode when idle.

The Li-ion cells used in the battery pack do not suffer from the 'Memory effect'. For optimal battery longevity, avoid letting the battery run completely down and recharge at approximately 20 Celsius/68 Fahrenheit.

Electrical connection to the power pack is through the gold pads on battery and scanner. Power pack output is protected but care should be taken to prevent short circuiting the gold connector pins and pads.

Warning:
To reduce the risk of burns, fire, electric shock, or injury to persons an appliance should never be left unattended when plugged into mains or 12 V cigarette lighter.

8. Care & maintenance

8.1 Easi-Scan:Go & battery

Please note the following important points:

- The unit is not sealed against jets of water. Water will penetrate your scanner if it is hosed down or rinsed under a fast flowing tap.
- The unit is NOT corrosion proof and thus it should not be left wet.Take care to detach the external battery and ensure interconnect areas are dry also.

The battery charger and charging carry case are not waterproof – avoid getting them wet.

Probe

While every attempt has been made to make the probe as rugged as possible the crystal array remains vulnerable and should be protected from knocks. The probe has a protective sheath covering the length of cable subject to wear and flexing. Any damage to this sheath or the rest of the cable should be repaired before further use to prevent moisture ingress that will rapidly damage the probe. The probe should be checked regularly for such damage.

Cleaning

The scanner, battery and probe can be wiped down with an antibacterial wet wipe, reducing the need for drying. This prevents problems relating to corrosion following wash-down.

The scanner and power pack can also be cleaned using a cloth, soap and warm water. Sponging down or even brief, shallow submersion is less aggressive than rinsing or hosing down.

Warning: The scanner and power pack must not be stored damp – severe corrosion will result. Thoroughly dry the scanner before storage and charging. Take care to detach the external power pack and ensure interconnect areas are dry also.

Gels

Use only gels recommended by IMV Technologies. Do not store the probe in gel.

Storage

Clean and dry the probe head prior to storage in dry location. Do not store the transducer in gels or cleaning/disinfecting solutions. This will lead to premature deterioration of the probe.

Do not expose the transducer to materials containing the following agents:

- Acetone
- Methanol
- Mineral oil
- Iodine
- Freon
- Industrial cleaners
- Materials containing perfumes (lotions, gels, etc.)

Warning:
Never sterilize the transducer with autoclave, ultraviolet, gamma radiation, gas, steam or heat sterilization techniques. Severe damage will result.

9. Specifications

Size	19x8.3x6.2cm 7.5 x 3.25 x 2.4 in
Weight	800g/1.76lbs
Mechanical	Rugged Glass filled

Polypropylene casing with TPE over mould.

Scanner operating frequency bands: B1=2412MHz-2462MHz and B2=5150MHz-5250MHz

Maximum radio-frequency power transmitted in the frequency bands: 16.1dBm for B1 and 18dBm for B2.

CFM settings: 7.5Mhz,PRF1Khz, Wall Filter 200 Hz,

Box size 40 mm wide by 50mm deep

User Output

Scanner wireless link to compatible viewing device using IMV Sound-Link over standard WI-FI connection.

Image and video storage

Storage of images and cine loops limited only by available space on smart device linked with scanner.

Probe

Broadband straight linear or curve rectal
Active array length 64 mm
Frequency: linear 4.5 -8.5 MHz; curve 3 -7 MHz
User selectable depths of scan:
liner-6/8/12cm; curve-6/8/12/24 cm
128 element crystal array

Power and charging

Removable li-ion battery gives 5h runtime *
Battery charge time 5.5h. Only use IMV approved/supplied battery, 12V vehicle power supply, battery charger and DC power adapter.
ESG-CHARGER: Input: 12V, 2A / Output: 4.2V, 2A.
IMV Vehicle Power Outlet/Cigarette Plug Cable (Model: ACC-DC LEAD):12VDC, 2A Fused. Only to be used when charging from a vehicle supply.

Only replace fuse with 2A medium acting fuse rated to 125V, 10kA breaking capacity (F2A M125V).
DC power Adapter (XP Power, Model: VEP24US12): Input: 100-240VAC, 0.6A/Output: 12VDC, 2.0A
Battery (Model: ESG-BATT): 3.6Vdc, 6700mAhr.
Scanner will enter low power mode when idle.

Temperature range

Scanner: -10 Deg C to 45 Deg C *.
Battery Charge: 0 Deg C to 35 Deg C *
Battery Charger has under and over temperature protection and LED status indication.

Warning:
If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

* Best charged at 25 Deg C, frequent charging at 35 Deg C / 95 F may shorten battery lifetime.

Warranty

IMV Technologies warrants Easi-Scan:Go against defects in materials for 2 years from the date of purchase. IMV Technologies does not warrant against normal wear and tear.

Smart devices compatibility

Android:
Minimum version: Kit Kat (Android V4.4)
Minimum RAM: 2Gb
Minimum Processor: Quad-Core 1.8GHz
Recommended WiFi: 802.11 a/ac (5GHz band)
Apple:
Minimum version: iOS 8
Minimum iPhone version: iPhone 5s Minimum iPad version: iPad4

For further information and video manuals please visit **www.imv-technologies.com**

10. Service centres and Contact us

Your equipment should be returned periodically to a IMV service centre. Our qualified service engineers will use special test equipment to thoroughly check the instrument and advise of any work that appears to be necessary.
If your Easi-Scan requires servicing please contact an official authorised service center or the distributor in your country.

Easi-Scan:Go does not contain user serviceable parts. Servicing has to be done by IMV Technologies authorised service centers.

Specilised ultrasound scanners service centers and offices:

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16000 Angoulême, France

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france@imv-technologies.com
www.imv-technologies.fr

North America

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