SonopTek

BFM-1 BACK FAT METER

OPERATORS' MANUAL

CONTENTS

1. INSTRUCTION.....1

2. FEATURES.....1

3. GETTING STARTED.....3

   3.1. UNPACKING.....3

   3.2. BUTTON FUNCTIONS AND SCAN POSITIONS.....4

   3.3. BLUETOOTH CONNECTION.....7

4. BACKFAT MEASURING.....8

   4.1. PREPARE MEASURING.....8

   4.2. MEASURE.....8

5. EAR TAG SCANNING.....11

6. BLUETOOTH.....12

7. MAINTANCE.....13

   7.1. CHARGING.....13

   7.2. BACK FAT METER CALIBRATION.....14

   7.3. CLEANING.....15

   7.4. STORAGE.....15

   7.5. MAINTENANCE.....15

1. Instruction

The BFM-1 Back Fat Meter uses pulsed ultrasound to measure the back fat depth of animal. The depth, the number of fat layer and M-Mode ultrasound image can be displayed automatically on the screen. The device is compact, lightweight and can be operated by single hand.

Ear Tag Reader function is built-in the device, which can recognize the tag number automatically.

All the data, getting from Back Fat Meter or Ear Tag Reader can be transmitted via Bluetooth module.

This manual is intended to provide a through overview of the BFM-1 Meter and should be carefully read before starting operating the device.

Thank you for your trust in us to provide for your Back Fat Meter needs.

2. Features

2.1. Intended Use

Back fat measurement

Animal Identification and Tracking Management

2.2. Physical characteristics

Size	170*85*70mm
Weight	208g

Screen	2.08 inches

2.3. Environmental

Operating Temperature Range	-10 to 50 °C
Storage Temperature Range	-20 to 65 °C
Humidity Max:	90%

2.4. Backfat Meter

Transducer	2.5MHz
Range	4-40mm
Layer	1, 2 or 3 layers
Mode	M-Mode

2.5. Build-in Ear Tag Reader

Standard:	ISO -11784/5, FDX-B
Frequency:	134.2 KHz
Reading range:	8CM

2.6. Electronic

Battery Capacity：	3000mAh
continuous working time：	16 hour
Communication mode:	Bluetooth Low Energy
Waterproof:	IPX3

3. Getting Started

FOR YOUR PROTECTION, please read these safety instructions completely before applying power to, or operating the system.

3.1. Unpacking

The BFM-1 Back Fat Meter is carefully packed to prevent damage during shipment. Before unpacking, please note any visible damage to the outside of the shipping containers.

Items should be checked in order to ensure that all ordered items have been received. The following table lists the items which should be received with each particular system.

ITEMS	INCLUDED
BFM-1 Back Fat Meter	√
Back Fat Meter Calibration Cylinder	√
USB Cable for Charging	√
BFM-1 Back Fat Meter Operators' Manual	√

Each item should be examined for any noticeable defects or damage that may have occurred during shipment although it is packed carefully. If any defect or damage exists, please contact to your local representative immediately to report the problem.

3.2. Button functions and scan positions

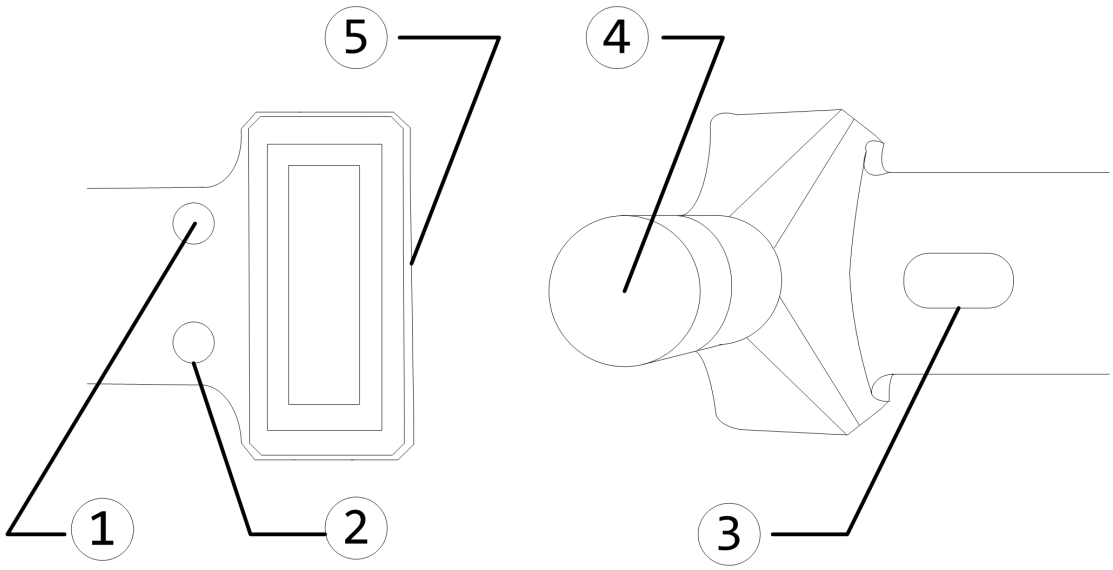


Figure 3-1 the button and scan position

-buttons:

①--- Set button

②--- Enter button

③---Power/Scan button

- scan positions

④---probe: back fat measuring position

⑤--Meter head: ear tag scanning position

3.2.1. Button functions

The handheld button is multifunctional. In different modes, it has different functions.

1) Power/Scan

Press the ‘Power/Scan’ button to power up the Meter, the name and the model of the device will be showed on the screen. After the Meter turned on, the Meter gets ready to measure.

The Meter can be turned off by hold down the ‘Power/Scan’ button for seconds.

You can scan by pressing the ‘Power/Scan’ button or quit the scanning operation by pressing the ‘Enter’ button.

The device will shut down automatically in 10 minutes, if you don’t use it.

2) General Setting

Press the ‘Set’ button to enter the menu setting interface, there are 6 options you can choose (form 3-1). Press the ‘Set ‘button to choose the option (mark >), press the ‘Enter’ button to enter and the ‘Power/Scan’ button to return to the previous menu.

Form 3- 1 menu setting

1	BACK FAT MODE:
You can press ‘Enter’ button to enter the back fat reading interface, and press ‘Power/Scan’ button to measure.	
2	EAR TAG MODE:
You can press ‘Enter’ button to enter the tag reading interface, and press ‘Power/Scan’ button to scan.	

3	BLUETOOTH:
There are 3 modes, 'EMU KEB STD','EMU KBD for iOS', and 'BLE PERIPHERAL'. You can press 'Set' button to select a new mode, then press 'Enter' button to choose the mode ,the device will indicate you 'Setting Bluetooth…' and **SHUT DOWN** for setting the parameter. when you restart the device ,there will be a mark'*'before the current setting mode. If you want to return, you can choose the forth option 'RETURN' by press the 'Enter' button.	
4	ABOUT:
Show the device information, including the SN and the version of the soft.	
5	SHUT DOWN:
Press the 'Enter' button to power off the device.	
6	RETURN:
Press the 'Enter' button to return the previous menu.	
Notes for Bluetooth: ● EMU KEB STD mode: shown the data from the Meter and the cursor will jump to the next line. ● EMU KBD for iOS mode: besides the functions of the EMU KEB STD, the keyboard will pop automatically for operator to add information. ● BLE PERIPHERAL mode: reserved for APP connection	

3.2.2. Scan positions

The positions measuring back fat and scanning ear tags are different. The probe is the place to measure back fat depth while the Meter head to scan ear tag. (see Figure3-1)

3.3. Bluetooth connection

You can choose any device which has Bluetooth and Virtual keyboard (like Notes,excel,word, etc) functions as your mobile terminal(like iPhone, iPad, etc)

Open the Bluetooth function of the mobile terminal, and then connect our device ‘Back Fat Meter’.

Open the notes(for example), create a new or open an existing note, the blinking cursor notice that the device is ready for receiving data from the Meter.

Note: If you cannot connect the device, first, you should check the device is not connected by other terminal, and then you should restart the Back Fat Meter, or reset the Bluetooth on the mobile terminal.

Note： If the mobile terminal displays the false data, you should make sure that your input method of your keyboard is English.

4. Backfat Measuring

4.1. Prepare Measuring

Before measuring, you should apply gel on the test site.

⚠Warning: Improper or less gel may lead to incorrect result or no reading as the ultrasound can't pass through air or air bubble.

4.2. Measuring

1) Press the 'Power/Scan' button to measure (see figure4-1).

Apply the probe to the test site, force out the air and air bubble between the probe and the test skin.

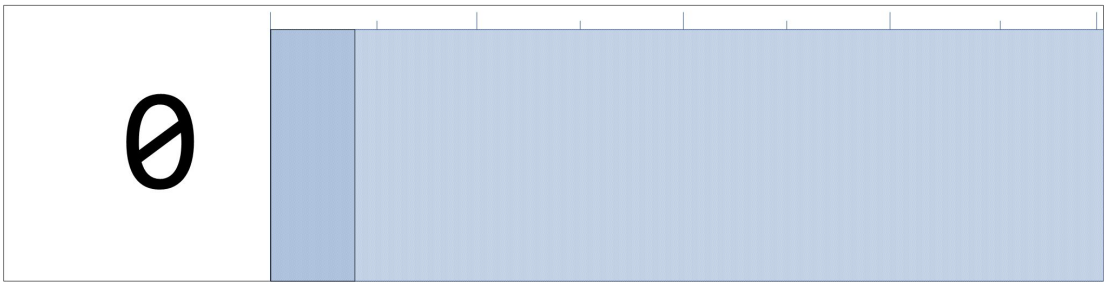


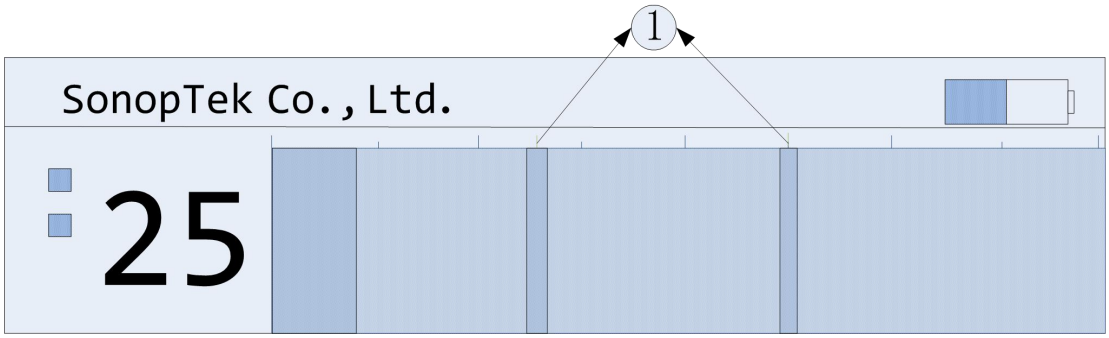
Figure 4-1 measure menu

⚠Warning: it should be confirmed that the probe is perpendicular to the test site to avoid incorrect result.

2) If there is no back fat reading in 20 seconds, the information will be shown on the screen (see figure 4-2). You can press the 'Power/Scan' button to measure again.

Figure 4-2 no back fat reading

3) If appropriate fat layers have been found, the maker lines will be flashing in the layer sites. You can judge to get the result by pressing ‘Enter‘ button or restart a new measurement by pressing ’Power/Scan’ button.



1 marker line

Fgure 4-3 fat layer marker line

4) If a reading obtained, the back fat depth and layers will be shown on the screen (see figure 4-4)

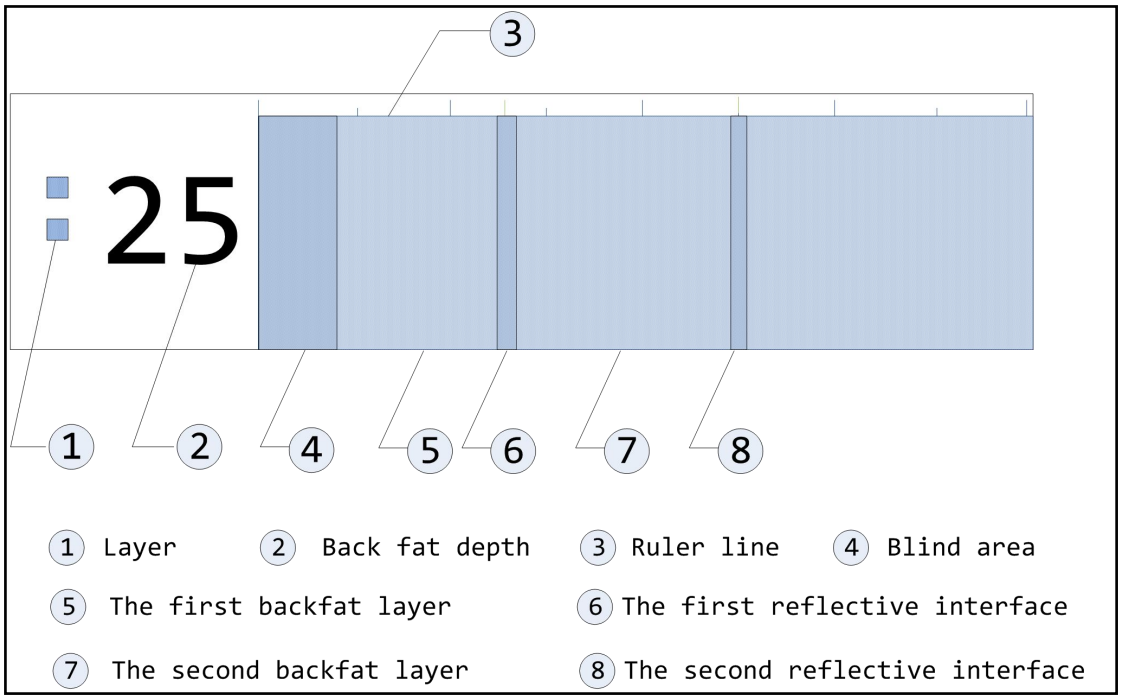


Figure 4-4 back fat depth and layers display

The device can measure 1, 2, or 3 layers. the example showed in figure 4-4 is a 2 layers back fat.

① Layer: One point indicates 1 layer, two points indicates 2 layers, three points indicates 3 layers back fat.

② back fat depth: The value is the total depth of the back fat.

③ Ruler line: The device measuring range is from 4 to 40mm.

④ Blind area: The single blind area is 4mm. The skin thickness will not be counted as 1 layer, unless it exceeds 4mm.Most animal skin thickness is not exceed 4 mm.

⑤⑦ the back fat: There are two layers measured on the image.

⑥⑧ the reflective interface: When the ultrasound meet different fat layer the reflective signal will be received and the tick mark is drawn on the ruler line.

5. Ear tag Scanning

1) Press the ‘Power/Scan’ button to scan (see figure5-1).

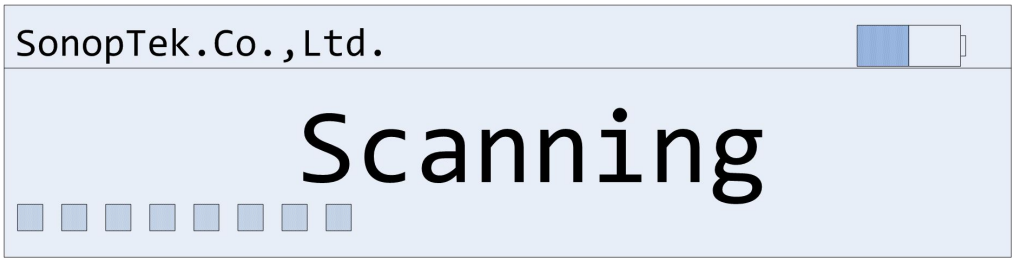


Figure 5-1 scanning

2) If there is no tag scanned in 10 seconds, the information will be shown on the screen(see figure 5-2). You can press the ‘Power/Scan’ button to scan again.

Figure5-2 No Tag

3) If a tag is scanned, the tag number will be shown on the screen (see figure 5-3).

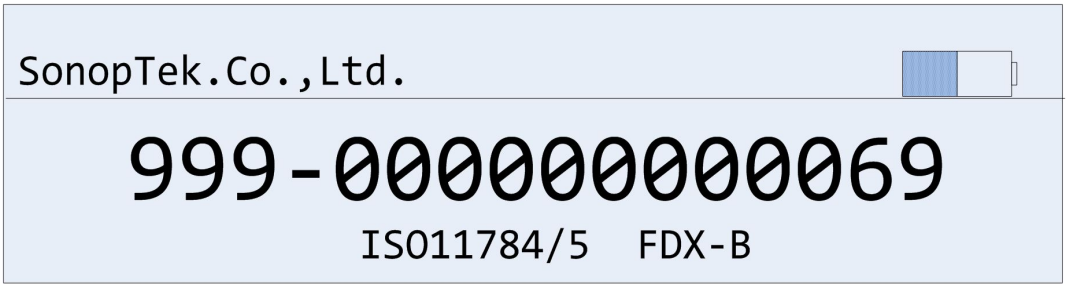


Figure 5-3 tag number displayed

6. Bluetooth

If the Bluetooth connection is well, the back fat depth or tag number will transmit to the mobile terminal automatically (see figure 6-1)

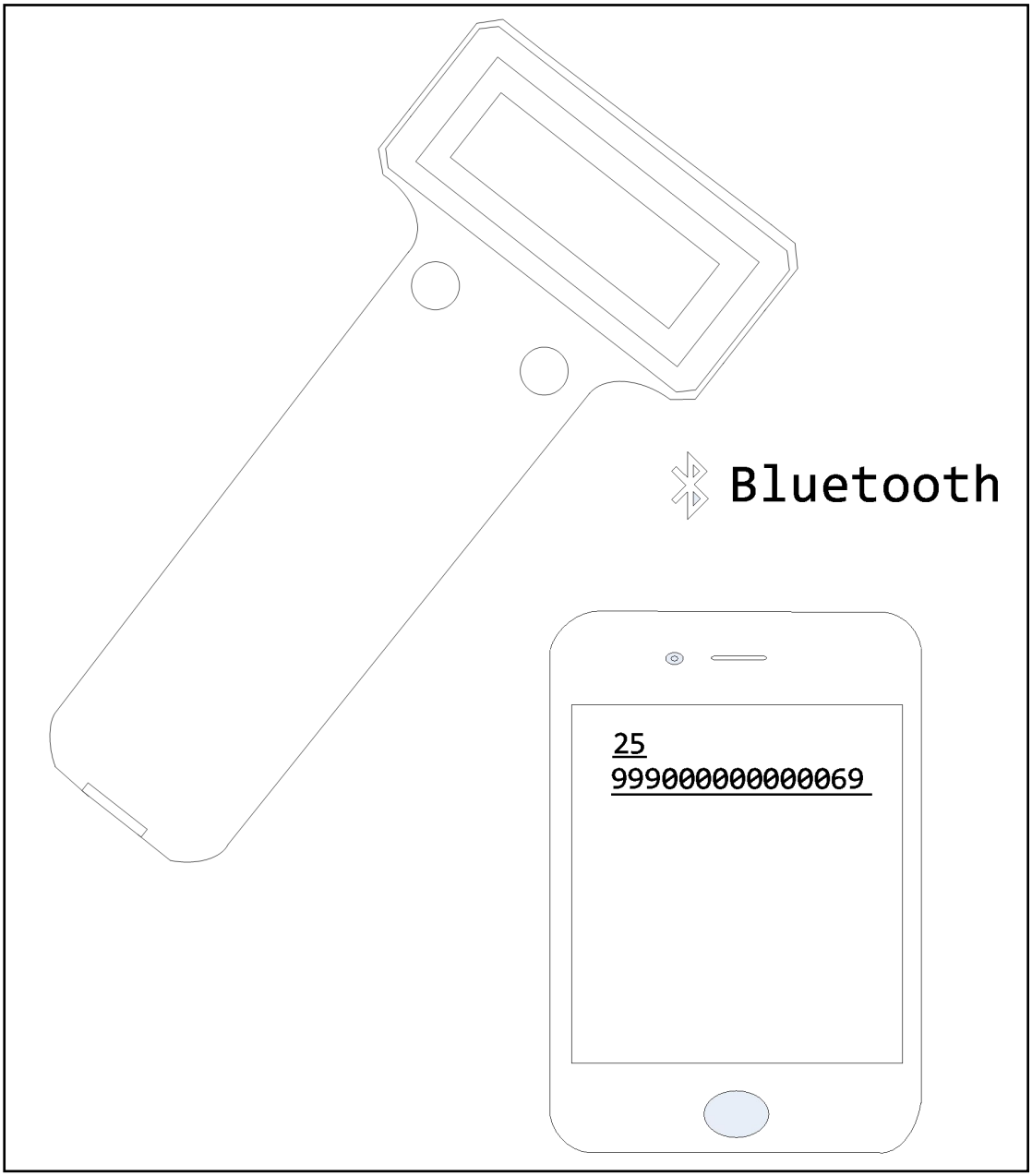


Figure 6-1 data transmission

7. Maintance

7.1. Charging

When battery goes down, it is necessary to recharge the Meter. Pull the insertion at the end of the device, and then connect the USB Charger and USB Cable with the Meter to charge the Meter as shown in figure 7-1. When in charging, the battery indicator light will be red, the flash sign will be blinking and the lighted battery bar indicates the capacity of the battery charged.

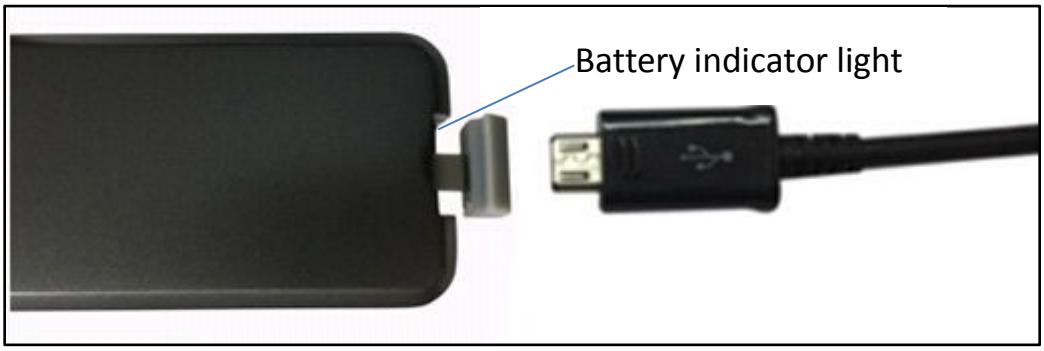


Figure 7-1 charge the Meter

After seconds, the screen will turn to sleeping mode.

To see the status of charging, you should press the 'Power/Scan' button.

If the battery indicator light turning off means the battery is fully charged. Unplug the USB cable and the insertion should be carefully plugged.

Note: When in charging, the device cannot be started up.

7.2. Back Fat Meter Calibration

It is recommended that the functionality of Back Fat Meter is verified by means of the calibration procedure prior to performing actual measurements. A plastic calibration cylinder is provided (see figure 7-2).

Figure 7-2 calibration cylinder

To perform the calibration procedure, follow the steps:

1) Enter the Back Fat Meter measuring menu;
2) Place enough gel on the probe or the calibration cylinder;
3) Place perpendicularly the probe onto the calibration cylinder;
4) Observe the measurement displayed on the screen, verify the value obtained is 25mm, 2 layers. If not repeat the calibration procedure by pressing the 'Power/Scan' button until an acceptable value is obtained.
5) If no proper reading can be obtained, contact your local representative for assistance.

7.3. Cleaning

Periodic cleaning of the Meter is required. The Meter can be cleaned by soft cloth or paper.

7.4. Storage

When not in use, it is recommended that the device should be put in the case. While stored the device should be protected from temperature extremes.

7.5. Maintenance

1) The BFM-1 Back Fat Meter need to be taken good care of during or after use.
2) Do NOT drop it from high level.
3) Prevent high pressure from the screen.
4) Regularly charge the battery.

Beijing SonopTek Co.,Ltd.

Address：Rm1504, Floor 15,Bldg 1,No.1 Shangdi 10th Street, Haidian District, Beijing 10085 P.R.CHINA

Tel：+86-10-59713135

Fax：+86-10-59713135

E-Mail:Info@sonicvet.com

www.sonicvet.com