

# Table of Contents

**SECTION 1: GENERAL INTRODUCTION**

**SECTION 2: MAIN TECHNICAL INDEX**

**SECTION 3: COMPONENTS**

**SECTION 4: LCD SCREEN DISPLAY**

**SECTION 5: OPERATION**

**SECTION 6: SAFETY PRECAUTIONS**

**SECTION 7: TROUBLESHOOTING GUIDE**

**SECTION 8: MAINTENANCE & SERVICE**

**SECTION 9: CLEANING AND DISINFECTION**

**SECTION 10: STORAGE AND SHIPPING CONDITIONS**

**SECTION 11: PACKING LIST**

## **SECTION 1: GENERAL INTRODUCTION**

### **I. CONTACT INFORMATION**

Apex Locator iFinder is manufactured by:

DENJOY DENTAL CO., LTD

Address: 4<sup>th</sup> Floor, A3 Building, Lugu International Industry Park,  
No. 229 Tongzipo Road West, Changsha City, P. R. China 410205

Website: [www.denjoy.cn](http://www.denjoy.cn)

E-mail: [denjoy@denjoy.cn](mailto:denjoy@denjoy.cn)

Manufacturing:

Company name: DENJOY DENTAL CO., LTD

Address: 4<sup>th</sup> Floor, A3 Building, Lugu International Industry Park,  
No. 229 Tongzipo Road West, Changsha City, P. R. China 410205

Authorized European Representative:

Company name: SPETECHCULAR LTD

Address: 16, Quainton Close, Cambridge, CB5 8LR. UK

**Please contact local sales distributor from whom you purchase this unit for user's record and further after-sale service.**

## II. PRODUCT DESCRIPTION

Apex locator iFinder is our latest model with touch-screen LCD used for determining the position of apex of root canal with the up-to-date technology multi-frequency operation system.

### Distinctive Features:

- High-precision Touch-Screen LCD
- Image save function with Micro-SD memory card (TF card 2G)
- It is equip with separate calibrator test instrument which can check the operation of control part and spare parts of apex locator when apex locator doesn't measure well.
- Touch-screen key and traditional button control both available

### Other Features:

- 4.3 inch large color screen with real-time graphic of root canals
- Foldable design to create more choices for view angle
- Up-to-date multi-frequency operating system
- Rechargeable, do not need prepare extra battery.

## III. SYMBOL DESCRIPTIONS

The following symbols may appear in this manual, on the label, or on it's accessories. Some of the symbols represent standards and compliances associated with the Apex Locator and its use.



Caution: Consult accompanying documents



Authorized Representative in the European Community



CE Mark: conforms to essential requirements of the Medical Device Directive 93/42/EEC.



Date of manufacture.



Manufacturer



Specifies serial number



Type BF applied part



Direct current



Sterilizable up to the temperature specified at most



The device should not be used after the end of the shown or the day



DISPOSAL: Do not dispose this product as unsorted municipal waste. Collection of such waste separately for special treatment is necessary.



alert indicator displayed on the LCD screen

**SECTION 2: MAIN TECHNICAL INDEX**

1. Maximum valid values of amplitude  
Valid values of amplitude between file holder and stainless electrode hook is  $\leq 130\text{mV}$
2. AC Adapter: Input voltage: 100-240V 50/60Hz 0.25A  
Output voltage: 5V 1A  
Battery: 3.7V 2200mAh
3. Display mode: 4.3 inch TFT 480\*272 color screen
4. Dimensions: 132\*120\*31mm
5. Weight: about 500g
6. Classification: Internally powered equipment,
7. Degree of protection against electric shock



---Type BF applied part

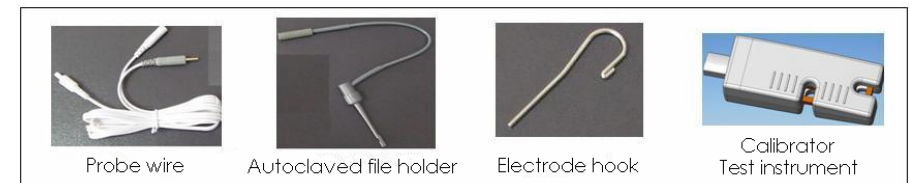
8. Operation mode: Continuous

**SECTION 3: COMPONENTS**



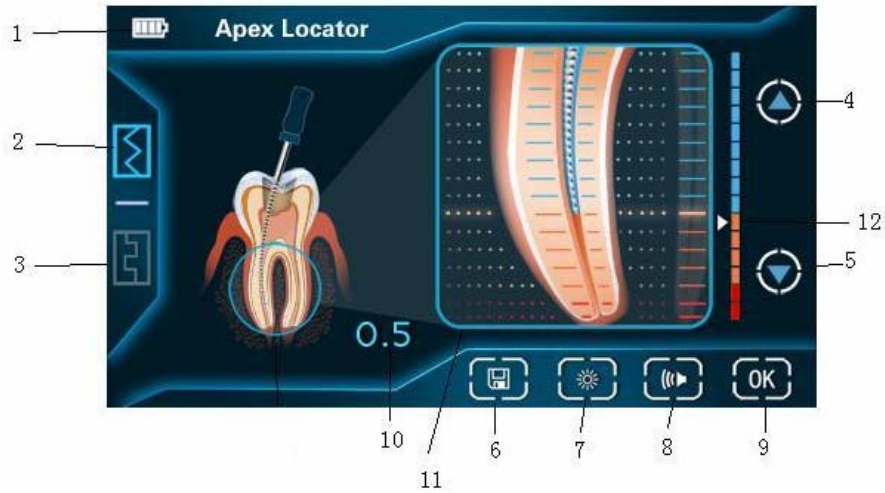
- |                      |                      |
|----------------------|----------------------|
| 1. Power on/off      | 2. TF card socket    |
| 3. Probe wire socket | 4. AC adapter socket |
| 5. Mode key          | 6. Up key            |
| 7. Down key          | 8. Save key          |

**Main Accessories:**



SECTION 4: LCD SCREEN DISPLAY

I. APEX LOCATOR INTERFACE



- 1. Battery sign
- 2. Main interface
- 3. Self-calibration interface
- 4. Up key for length adjuster of apical constriction
- 5. Down key for length adjuster of apical constriction
- 6. Save key
- 7. Brightness control key
- 8. Sound adjuster
- 9. Enter (Confirmation OK) key
- 10. Length between top of file and the apex of root canal
- 11. Scale displaying the magnified apex area
- 12. Apical Area Adjustment cursor

a, Save key

On the **Main Interface**, after insert the TF card, touch save key, as shown in **Figure 1**, it means save successfully. Otherwise, If no TF card inserted or something wrong with TF card, as shown in **Figure 2**, it means save unsuccessfully. Please note: no operation for 3 seconds, it will automatically return to **Main Interface**.

Figure 1

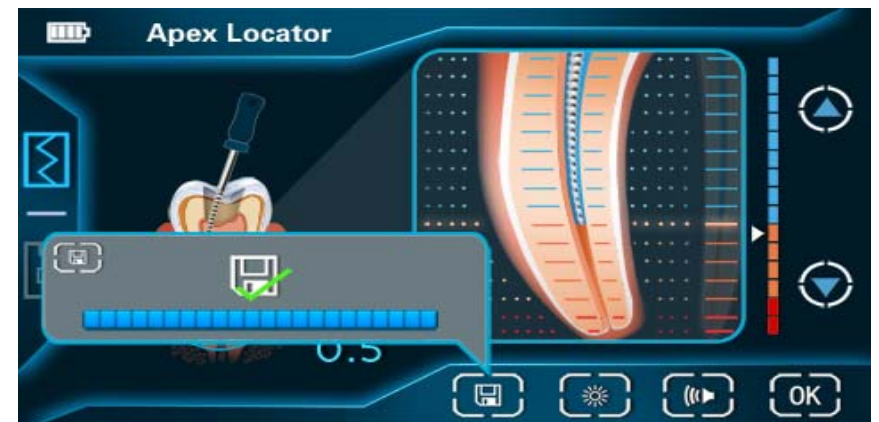


Figure 2



### b, Brightness control key

On the **Main Interface**, user can adjust the 4 level brightness of the screen by touching the brightness control key. After adjustment, touch the enter key, as shown in **Figure 3**, it means set successfully. Please note, no operation for 10 seconds, it will automatically return to **Main Interface**..

Figure 3

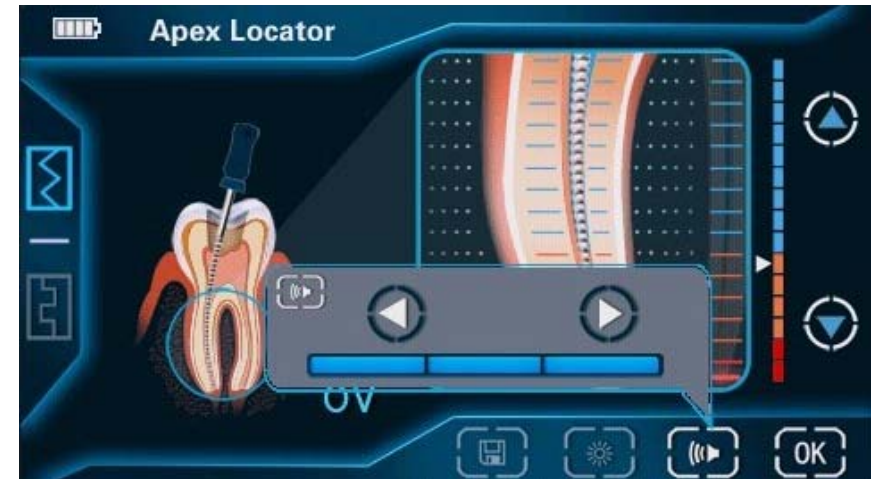


### c, Sound adjuster

On the **Main Interface**, touch sound adjuster, user can select required volume level, after adjustment, touch enter key, if as shown in **Figure 4**, it means set up successfully.

Please note, no operation for 10 seconds, it will automatically return to **Main Interface**.

Figure 4



### d, Up/Down key for length adjuster of apical constriction

On the **Main Interface**, user can touch up/down key for length adjuster of apical constriction to adjust the apical area.

### e, Battery sign

The symbol lies on the top left corner of the screen.



Full charge



When it is flashed, please charge immediately.



Battery is charging.



II. SELF CALIBRATION INTERFACE



MARK 1. Calibration key for control part

MARK 2. Calibration key for accessories (probe wire, file holder and hooks)

a. Calibration key for control part

On the **self-calibration interface**, insert the calibrator test instrument into matching socket, touch **calibration key for control part (MARK 1)**, if as shown in Figure 5, it means self-checking successfully. Otherwise, if as shown in Figure 6, it means self-checking unsuccessfully.

Figure 5

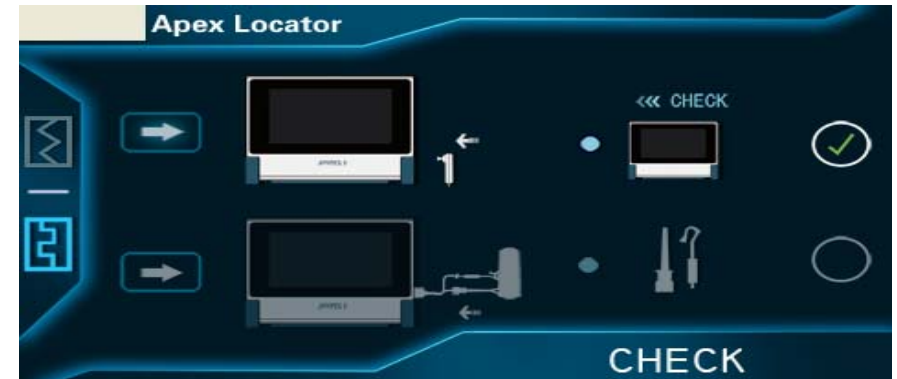
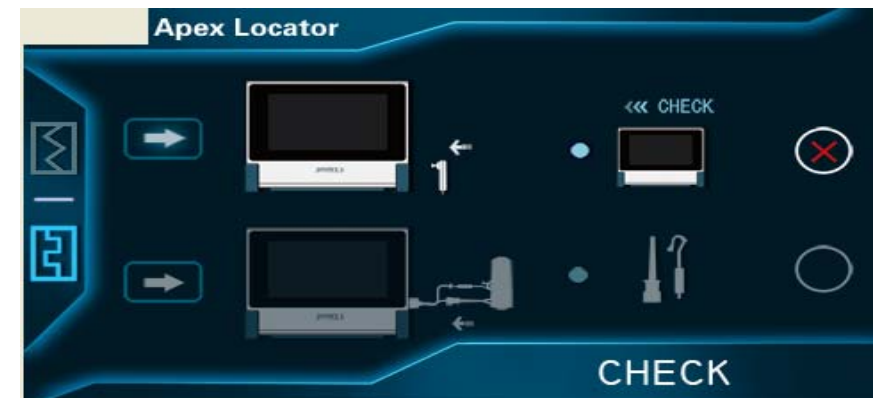


Figure 6



b. Calibration key for accessories (probe wire, file holder and hooks)

On the **self-calibration interface**, insert the probe wire into matching socket, connect calibrator test instrument with file holder and electrode hook, touch **Calibration key for accessories (MARK 2)**, if as shown in Figure 7, it means self-checking successfully. Otherwise, if as shown in Figure 8, it means self-checking unsuccessfully.

Figure 7

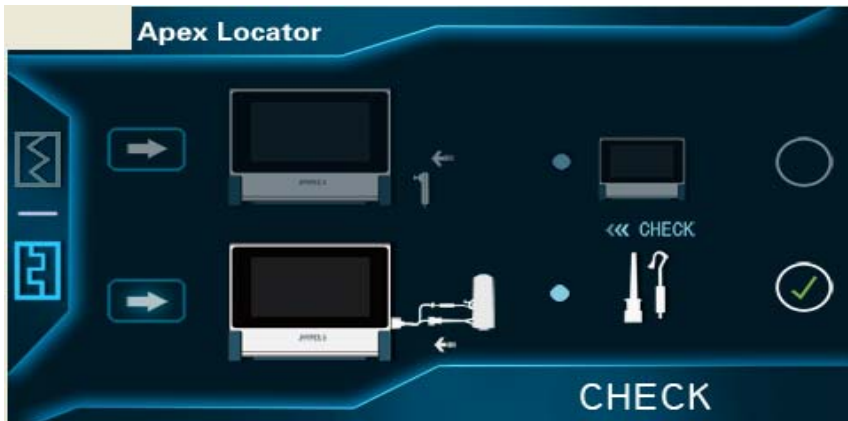
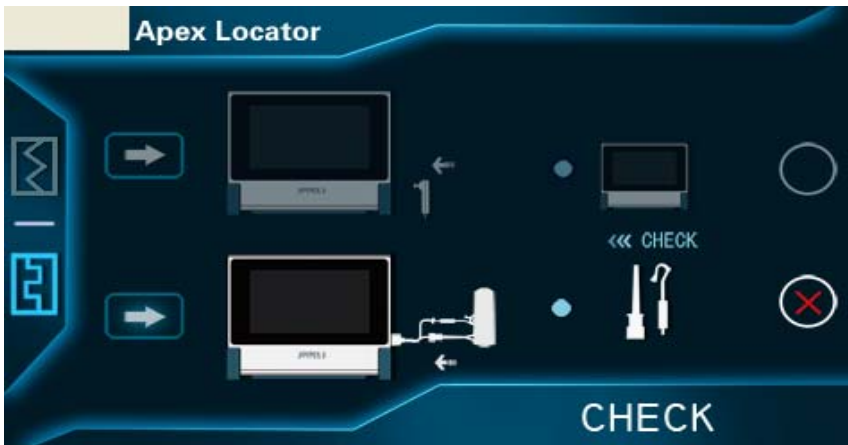


Figure 8



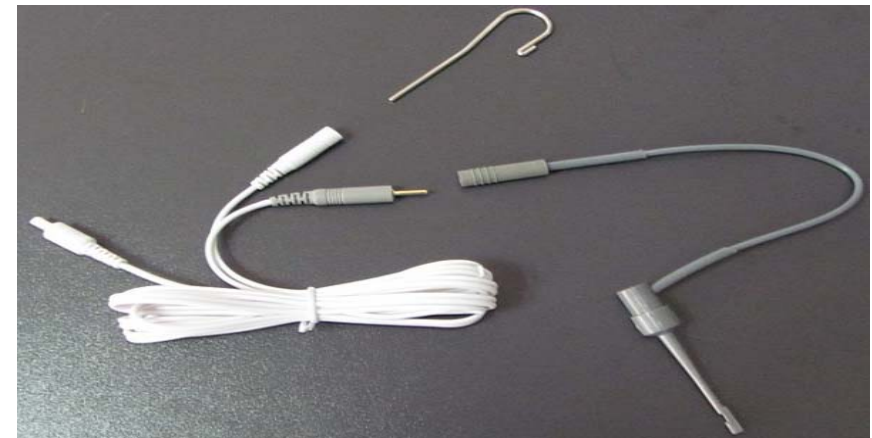
**SECTION 5: OPERATION**

Touch-screen key and traditional button control are both available!

1. The plug of the probe wire should be completely inserted into the socket on the right side of the control part.

Note: Do not pull out the probe wire by taking the wire instead of catching hold of the plug to avoid breaking down the probe wire.

2. Please connect file holder to probe wire and insert the stainless electrode hook into the socket.



3. Extended pressing power on/off button,

Note: Extended pressing power on/off button for 2 seconds to turn on/off the device.

4. Clip the metal part of the endodontic file with the holder, then insert the file into the teeth.

5. Hang the stainless hook up at any side of the suffer's mouth, insert the file into the teeth, when the endodontic file reaches the position which the number indicated in the color screen is 0.5mm. Then please fasten the file with the rubber positioning ring on the reference point of the tooth crest. And this means that the file has reached the position

of the apical constriction. (Generally we suggest to use 0.5 for measurement the length of root canal).

Note: Please do not make the measurement when in charge.

#### 6. Deciding the working length of root canal

Measure the distance from the bottom of rubber positioning ring to the tip of the file until the figure indicated 0.5. So the length of root canal need to minus 0.5~1.0mm is the most suitable working length of root canal.

The working length of root canal varies from different shapes of teeth and root canal.

7. After operation, please pull out the probe wire and switch off the instrument. If the dentists forgot to switch off the instrument, the instrument will automatically shut down.

## SECTION 6: SAFETY PRECAUTIONS



### CAUTIONS:

- a. Before operation, you have to read user manual carefully.
- b. Like all of the other electric facilities, this machine has an electromagnetism disturbance. When there is a patient who is now using the cardiac pacemaker, or there is an electronic operation, please don't put the machine around. The cardiac pacemaker sufferer, viz. the serious cardiac pulse abnormality sufferer, is forbidden to use this machine.
- c. Please put in the battery before use. Make sure that the power of the battery is in sufficient supply to guarantee the correct

measurement result.

When change the battery, do not mix the old battery with the new one and mix the alkali battery with the manganic one.

Please take off the battery in the event of longtime nonuse or long-distance transit.

d. Please use the file with the resin handle rather than metal one. Even when using the file with the resin handle, please notice that the fingers should be avoided touching the metal part of the file.

e. Please clip the upper portion of the file rather than the down portion with the holder, other wise, the metal part of the holder and the resin part of the file would be damaged. The damaged holder will affect the measure result.

f. When the file accidentally touches the inner part of the root-canal, the reading of scale will get a bit abnormality, then will get right automatically a few seconds later.

g. The device is not suitable for use in the presence of flammable anesthetic mixtures with air or with oxygen or nitrous oxide.

h. The enclosure of the main body of device is not designed to give any protection against ingress of water. Please keep the device away from any harmful ingress of water.

### For ACCURATE MARESUREMENT:

- Make sure that stainless hook entirely contact patient's mouth mucosa
- Check all connections
- Make sure that when the device is switched on, the device can



complete self-checking procedure automatically and successfully.

When following situations appear, please use paper point part to make root canal dry to increase accuracy of measurement.

- It will cause bad electrical conduction between root canal and metal or dental crown if overfull liquid.

### Other problems need to check:

- Make sure that endodontic file was getting through the top hole of the root canal, the loose file will lead to measure incorrectly.
- If the diameter of apical is more than 0.4mm, it will affect the accuracy
- Complicated root canal environment also will affect the accuracy
- Make sure that the battery is not too low, or it will lead to faulty measurements
- Avoiding endodontic file and probe contacting metal prosthesis, or it will form the earth current and lead to inaccurate indicating root tip.
- If the root canal is too dry, please inject the NaOCl into the apical foramen.

## SECTION 7: TROUBLESHOOTING GUIDE

**Question:** After switch on the machine, the LCD screen has no reaction.

**Answer:**

- a. Check that the machine if it need to be changed.

**Question:** No alert

**Answer:**

- a. Check the alert adjustor button of panel on top of unit.
- b. The file has not reached the point less than 2mm at which the machine will give an alert.

**Question:** NO changes or incorrect reading on the LCD screen

**Answer:**

- a. Do not clip the file with the holder firstly and switch on the machine secondly.
- b. Remember to hang the stainless hook up at any side of the sufferer's mouth.
- c. Check probe wire connections both at unit and at AC outlet to be sure they are properly seated.
- d. The metal part of the file holder may be polluted or corroded

## SECTION 8: MAINTENANCE & SERVICE

### I.MAINTENANCE

#### Warranty

The device is maintained free of charge and doesn't require any routine maintenance within warranty period.

This instrument described below has been fully inspected and confronts to the current products specification.

Do not modify and disassemble the device.

This instrument is guaranteed for its designated use, against original

defects in materials and workmanship for a period of 12 months from date of purchase. Products warranty or service will not be extended if (1) the product is repaired, modified, misused, disassembled, or using the parts are not provided by the manufacturer, (2) The serial number of the product is defaced or missing.

**Please contact local sales distributor from whom you purchase this unit for user's record and further after-sale service.**

1) Please keep the machine under the environment without X-ray or sunlight. The temperature outside could be  $-10\text{ }^{\circ}\text{C} \sim 55\text{ }^{\circ}\text{C}$ , humidity range under 90%, Atmospheric pressure: 80 – 106 Kpa.

2) When the machine has stopped use for 6 months, please recharge the battery for 5 minutes for restart the battery. If the machine does not get into use for very long time, please recharge battery 5 minutes each 3 months.

3) The machine has the life span for 5 years.

## SECTION 9: CLEANING AND DISINFECTION

### MAIN BODY CLEANING INSTRUCTION

When the surface of main body is polluted, please rub the surface with dry soft cloth ONLY.

#### REMARKS:

Any liquid lotion like ethanol, banana oil and light oil are not allowed.

### PROBE WIRE CLEANING INSTRUCTION

Please wipe the probe wire with the soft cloth stained with ethanol and reuse it after it is completely dry.

## ELECTRODE HOOK AND FILE HOLDER DISINFECTION INSTRUCTION

The front part of the file holder, which is easily get polluted with rubbish and liquid medicine, should be disinfected by the ethanol.

**Stainless electrode hook and file holder should be disinfected at temperature  $121\text{ }^{\circ}\text{C}$  for 20 minutes and disinfection by autoclave is preferred.**

## SECTION 10: STORAGE AND SHIPPING CONDITIONS

Ambient temperature:  $-10\text{ }^{\circ}\text{C} \sim 50\text{ }^{\circ}\text{C}$

Relative humidity range:  $\leq 80\%$

Atmospheric pressure: 50KPa~ 106KPa

Equipment is not suitable for storage in the presence of sunlight, rain, dust, corrosive gasoline and volatile without poor ventilation.

Transportation is applicable to all common methods.

## SECTION 11: PACKING LIST

iFinder Control Part	1pc		
Probe Wire	1pc	File Holder	2pcs
Stainless Hook	4pcs	Calibrator Test Instrument	1pc
User's Manual	1pc		

### WARRANTY REGISTRATION FORM

Item Name: \_\_\_\_\_

Model Name: \_\_\_\_\_

Serial No.: \_\_\_\_\_

Date of Purchase: \_\_\_\_\_

Name: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Phone: \_\_\_\_\_

Email: \_\_\_\_\_

Name of Distributor: \_\_\_\_\_

Authorized Distributors: \_\_\_\_\_

Stamp and Signature