


# DENTAL INSTANT CAMERA

## OPERATION MANUAL

## PREFACE

We much appreciate your kindly selection for our portable dental X-ray unit.please read the operation manual carefully before using,so that you could learn all the details about technical specification,installation, operating methods and maintenance.

Please connect with the dealer if you have any problem after reading the operation manual.

Thank you again.

## Equipment Maintenance

Because the equipment include the users operation and diagnosing patients,therefore must be maintained ,checked,diagnosed equipment maintenance every year,make sure the equipment safety.And this equipment involved in high voltage electrical control components,should check the safety of its insulation,grounding device reliability.

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# Chapter 1
# ABOUT THE SYMBOL

| Serial number | Symbol | Explain |
|---|---|---|
| 1 |  | High voltage |
| 2 |  | X-ray emitting |
| 3 |  | Caution |
| 4 |  | Power off |
| 5 |  | Power on |
| 6 |  | Ground wire connector |
| 7 |  | Fragile |
| 8 |  | Up sign |
| 9 |  | Max accumulation |
| 10 |  | Dryness |
| 11 |   | Dose permission sign |
| 12 |  | BF type |

# Chapter 2 INTRODUCTION

## 2.1 Charateristics and main use

This portable dental X-ray unit is high frequency machine.The body is small,light weight and nearly no radiation.It has excellent image quality,portable storage,save more space.It uses high frequency and DC international power supply.All of the components installed in the central PC board concentrated.Shock, set-up,electron tubes,all of them are insulation vacuum,sealed stereotype protection.There are also manual buttons installed on the surface of shell,as well as batteries and charges.This unit mainly suitable for oral pre-treatment for learning internal organizational structure,root canal therapy,dental implant and so on, is indispensable in daily life clinic equipment,especially for dental implant surgery.It also can connect with sensor,is great convenience.

## 2.2 Checking and Security

⚠ Caution:Please learn relative security measures and functions given in the file or on the unit.

- Operating the device in the designated order.
- Keep the device and the cone clean.
- Please use or operate the device and parts after taking a necessary periodic inspection.
- If you discover some difference in the sensor images even if you inspected its x-ray exposure time in the same way as before,then it means that the radiation of x-ray is abnormal,you must stop using it immediately and allow it to be inspected.
- Keep the device in the place where children are unable to touch.
- Don' t use or store near the place which is possible to fire.
- Don' t use or store where air pressure or temperature or moisture exceeds range.
- Keep good ventilation and avoid direct sunlight,protect against the eroding of dust and corrosive air.
- Don' t use or store near to chemicals or combustible gas.

# Chapter 3 SPECIFICATIONS

## 3.1 X-RAY CAMERA

| | | | |
|---|---|---|---|
| Tube voltage | 60 （ 70） kV | Tube current | 2.0（1.0，1.5，2.5）mA |
| Exposure time | 0. 1 ~ 2S | Frequency | 30kHz |
| Tube focus | 0.8*0.8（0.4*0.4） mm | Rated power | 120 VA |
| skin to cone | 130mm | Leak radiation | 0.005mgr |
| Battery | DC14.8V ， 1300mA | Charger | Input：AC100V-240V Output：DC16.8V |
| Image display | 4.0 inch touch screen | Resolution ratio | 400*800 |
| REM | 2G | ROM | 16G |
| Bluetooth | 5.0 TWO-WAY | WIFI | 2.5G/5G Dual frequency |
| USB | 2.0 OTG | Battery | DC-3.7V ， 1600mA |
| Net weight | 1.6kg | Machine size | 120*165*140mm |
| Gross weight | 3.0kg | Package size | 300*250*200mm |

## 3.1 X-RAY CAMERA

| | | | |
|---|---|---|---|
| MODEL | COX-2230 | COX-2635 | μm |
| Technology | CsI | CsI | pixels |
| Effective area size | 22.2*29.6mm | 26*35 mm | mm |
| Dimensions | 27.8*38.9*5mm | 32.3*44.3*5mm | bit |
| Digitalize | 16bit | 16bit | lp/mm |
| Resolution ratio | 20 lp/mm | 20 lp/mm | |
| Output * | USB2.0 | USB 2.0 | dB |
| Cable Length | 2m(Extendable) | 2m(Extendable) | e-/sec |
| Service temperature | 0~40 | 0~40 | ke- |
| Water proo | IP68 | IP68 | kRad |
| Support System | Win 7,8,10 and fit | Win 7,8,10 and fit | |

## Chapter 4 STRUCTURE




1- Exposure switch
2- Beam cone
3- Control panel
4- Charging hole
5- LCD screen
6- Indicate lights
7- X-ray Power switch
8- Adult/children selection
9- Film/sensor selection
10-Tooth position selection
11- Exposure time adjusted
12- image processor Power switch
13- image display screen

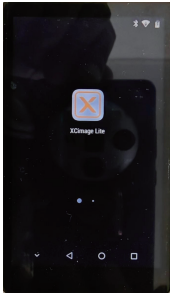


# Chapter 5 OPERATION

## 5.1 Turning on the device

- Press the X-ray unit power switch button for three seconds. kV and mA set value will appear on the LCD screen ,then enter standby mode, the buzzer sounds,then loosen finger.Exposure condition will be displayed on the screen.
- Press the image processor Power switch for three seconds. image display screen enter pattern shown.
- Swipe the screen up to enter the Android desktop.



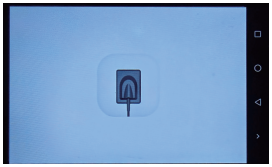

- Click the sensor icon to enter the sensor confirmation screen shown on the right.



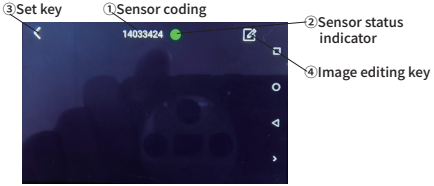




- Click OK to enter the sensor selection screen shown



- Click icon to enter the Sensor status screen screen shown below.



## 5.2 Setting exposure time

- Press the  Select tooth position.
- Press the “  ”to select film or sensor.
- Press the “  ”to select adult or child.
- Press the “  ” or “  ” to increase or reduce the exposure time for each step if necessary.
- The device will be turned off automatically if there is no any operation for 5 minutes.

## 5.3 Exposure time

| tooth position | | central incisors | canine | premolars | molars | occlusal |
|---|---|---|---|---|---|---|
| adult | film | 0.25 | 0.32 | 0.4 | 0.5 | 0.63 |
| | sensor | 0.2 | 0.25 | 0.32 | 0.4 | 0.5 |
| children | film | 0.16 | 0.2 | 0.25 | 0.32 | 0.4 |
| | sensor | 0.13 | 0.16 | 0.2 | 0.25 | 0.32 |

### 5.4 Place the film(or sensor)

- Put the sensor or a film in the mouth, keep film upright when select front tooth, horizontal when select back tooth.make the beam cone vertical to film or sensor.

### 5.5 Exposure

- Press hold the exposure button(until the end of the exposure),x-ray will be exposed as the setting time and blue LCD is dispaly “EXP” and the exposure LED be light.
- In the process of exposure,the buzzer sounds “Di Di” and the LCD turned to dispaly condition before exposure.and this condition will be memorized.

### 5.6 Turning off the device

- Pless the power switch button for two seconds and then loosen finger,the device will be turned off.

## 5.7 Charging battery

- High efficiency lithium battery enables you to irradiate x-ray more than 120 times after charging one time, and the battery are not easily to changed even for long-term use.
- Using only the authorized charger provided as an accessory when charging the battery.
- The image processor charger output： 5V ≧ 1A.
- The X-ray unit charger output： 16.8V ≧ 1A.

**as shown in the diagram**




OUTPUT:16.8V 1A
(Provided with the machine)

OUTPUT: 5V 1A
mobile phone charger,Self provided
not included with the machine

# Chapter 6
# WARNING AND NOTICE

## 6.1 Warning

- Warning About Using:
- Make sure the person who using this device is legally.
- If pregnant,ask a health professional before taking x-ray.
- An excessive exposure of radiation leaking may cause human body reaction lightly.
- Humidity conditions recommended for storage: 10-85%RH.
- Humidity conditions recommended for use:15-80%RH
- Optimal humidity range: 15-60%RH.
- Temperature conditions recommended for storage: 10-50°C.
- Temperature conditions recommended for use: 10-35°C.
- Optimal temperature range: 10-25°C.

## Other Warning:

- If any problem or error founded in the device,stop operating and then consult with the designated A/S center.
- Do not disassemble or modify the device.since it include generates x-rays,if not use properly,it may damage users or patients.

- Do not allow an unauthorizd person to use or repair it.
- The range of permissible voltage AC 100-240V,please use the charger within this range.
- There is a potential danger for an electrical shock if you connect the power plug to consent or remove it.
- Do not touch the device with your wet hand or make a physical contact with the conducting part.
- If use an unauthorized charger,battery may be damaged.
- If not be used for long time,need to charge the unit per month.
- Used battery should not be thrown away in trash,please put that in a recycling box or exclusive case.

### 6.2 Notice

- Once charging had finished (indicator of charger changes from red to green), disconnect the DC output connect from the charger and pull out the power cord and store it.
- Battery is a expendable supply and duration of a battery is shortened slowly after the first purchase.Please buy a new battery if duration decreases by a half when compared to the first use.Contact the A/S center for purchase inquiry.

## Chapter 7
## MAINTENANCE AND KEEPING

- Keep the device in the place where only authorized personal can reach.
- Please clean the device daily by cleaning clothes and must keep cone clean.
- Please do not remodel the device arbitrary.
- Recommend to check the device once a year at the designated A/S center for safe use.
- Please recharge the battery every three months when it not in use for long time.and keep it in store.
- Daily tests and annual maintenance.
- When turn on,please confirm error message is not display on the LCD screen.
- Please confirm whether buzzer sound is heard and “EXP” words on the LCD,and exposure LED could see normally at x-ray exposure.
- Every year for safe use.safety check-up is necessary.

## Chapter 8 PACKING LIST

| No. | Name | Piece |
|---|---|---|
| 1 | Main body | 1 |
| 2 | Sensor | 1 |
| 3 | X-ray unit Charger | 1 |
| 4 | U disk | 1 |
| 5 | Image display charging cable | 1 |
| 6 | Sensor conversion line | 1 |
| 7 | User manual | 1 |
| 8 | Battery maintenance instructions | 1 |
| 9 | Important Reminder | 1 |

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