



Intraoral Digital Impression Instrument  
Instruction for Use

MODEL: PANDA smart p, PANDA smart y



Ziyang Freqty Medical Equipment Co., Ltd.





**FREQTY**

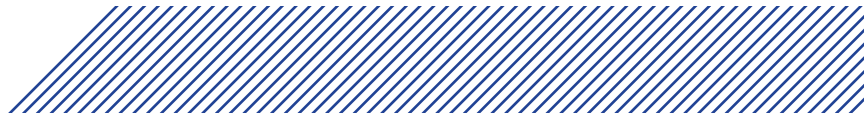
*Panda*   
*Scanner*

# CONTENTS



- 1. General Information ..... 1
- 2. Product Information ..... 2
- 3. Product Composition ..... 3
- 4. Main Dimension ..... 4
- 5. Intended Use and Contraindication ..... 5
  - 5.1 Intended Use ..... 5
  - 5.2 Users ..... 5
  - 5.3 Contraindication ..... 6
- 6. Environmental Requirements ..... 7
- 7. Working Power Requirements ..... 8
- 8. Safety Information ..... 8
  - 8.1 Prerequisites ..... 8
  - 8.2 Mechanical Hazards ..... 11
  - 8.3 Explosion Hazards ..... 12
  - 8.4 Electrical Safety ..... 12
  - 8.5 Eye Safety ..... 14
  - 8.6 Cautions ..... 16

9. Product Hardware Installation Instructions .....	17
10. Product Software Description .....	19
10.1 Software Operation Configuration Requirements .....	19
10.2 Software Basic Information .....	20
10.3 Software Installation Method .....	21
10.4 Main Software Interface .....	21
11. Application Method .....	22
11.1 Operating Steps .....	22
11.2 Scan Technique .....	23
11.3 Calibration .....	24
12. Care and Maintenance Methods .....	25
13. Service Life .....	28
14. Parts List .....	28
15. Revision History .....	29
16. Legend of Labels and Symbols .....	29
17. Other Contents .....	32
17.1 Liability of the Manufacturer .....	32
17.2 Warranty Description .....	32
18. About EMC Descriptions and Risk Warning .....	34
19. Customer Support .....	46



# 1. General Information



## CAUTION

Be sure to observe all warnings!

Please observe all safety information and warnings to prevent personal injury material damage or damage to your instrument. Safety information and warnings are highlighted in this IFU, using the words WRNING, CAUTION.

The symbols used in this document imply the following:



## WARNING

Warnings regarding situations where a risk of injury to person exists if the information is not observed.



## CAUTION

Safety information where hazards such as: loss of data, invalidation of warranty or service contract, risk of property damage, damage to the instrument exist if the information is not observed.

## 2. Product Information

Product Name	Intraoral Digital Impression Instrument
Model <sup>1</sup>	PANDA smart p, PANDA smart y When described as PANDA smart, it refers to the above two models.
Manufacturer Name	Ziyang Freqty Medical Equipment Co.,Ltd.
Manufacturer Address	Floor 2-3, unit 7, building 3, No. 222, West Section 3, outer ring road, Yanjiang District, Ziyang City, 641300,Sichuan Province,P.R. China
Manufacturer Contact	Tel: +86-028-26577388   E-mail <sup>2</sup> : sales@freqty.com,support@freqty.com
Classification	Neither class I or class II equipment, DC 5V supplied by computer through USB. The APPLIED PARTS is classified as TYPE B. IPX0.

<sup>1</sup> PANDA smart p shell is spray painting process, and PANDA smart y shell is anodized oxidation process, there is no other difference between the two models.

<sup>2</sup> Product consultation: sales@freqty.com. After-sales service: support@freqty.com

### 3. Product Composition

The product is composed of the probe, the calibrator, scanner head, the probe bracket and the supporting software (release version:P5V1) .

The scanner head is applied part.

The structure of PANDA smart is showed as below Fig.1

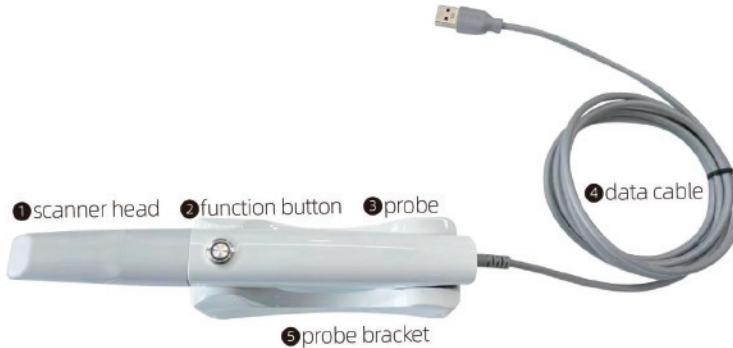


Fig.1 structure of PANDA smart





## 4. Main Dimension

Total size	221mm (L) *27mm (W) * 25mm (H)
Size of scanner head	83mm (L) *19 mm(W) *14mm (H) window:18*16mm

## 5. Intended Use and Contraindication

### 5.1 Intended Use

This product uses the optical scanning method to obtain the three-dimensional shape feature data of the surfaces of teeth, gums and other tissue. It outputs the three-dimensional digital impression data which can be used in the CAD / CAM denture design and processing.



#### WARNING

Unintended use of instrument can results in physical injury to patients, operators and damage to the product.

### 5.2 Users

Dental professionals such as trained physicians, physician assistants, technicians, etc.

### 5.3 Contraindication

Patients with the following contraindications are not suitable for intraoral digital impressions. These contraindications include but are not limited to:

1. Patients have oral mucosal disease; patients have mental illness; patients have Parkinson's disease; patients have ADHD (Attention Deficit and Hyperactivity Disorder); patients have epilepsy.
2. If the patient's teeth have very severe black smoke stains that interfere with optical scanning, the smoke stain area can be sprayed with powder for optical enhancement..When optically enhanced powder spraying is required, patients suffering from diseases that cannot accept powder spraying are contraindications, mainly including but not limited to: allergy or multiple drug allergies, severe respiratory diseases and asthma patients, etc.
3. It should not be used on patients who have or have had photobiological reactions (including those with excessive sun exposure or porphyria) or who have been treated with photosensitive drugs (including methoxsalen or chlortetracycline).

## 6. Environmental Requirements

Operating conditions					
Temperature	5°C ~ 30°C	Relative Humidity	≤80%	Atmospheric Pressure	700hPa ~ 1060hPa
Operating Environment	Home healthcare environment and professional healthcare facility environment. Indoor operation, prevent direct sunlight and strong lights, and keep away from electromagnetic sources, cold and heat sources, and vibration sources				
Transport conditions					
Temperature	-10°C~55°C	Relative Humidity	≤93%	Atmospheric Pressure	700hPa ~ 1060hPa
Storage conditions					
Temperature	-10°C~55°C	Relative Humidity	≤93%		
Atmospheric Pressure	700hPa ~ 1060hPa Well-ventilated, non-corrosive gas chamber. Prevent moisture, corrosion, avoid direct sunlight.				

## 7. Working Power Requirements

- Powered by USB3.0 port of computer: 5V, 0.9A

## 8. Safety Information

### 8.1 Prerequisites



#### CAUTION

Read all instructions carefully including all warnings and cautions. You must comply with the warnings in the IFU to prevent injury to persons and damage to Intraoral Digital Impression Instrument(hereinafter referred to as instrument). Proper functionality and safety can only be guaranteed if the safety precautions in this IFU and on the instrument are observed.

#### Preventive inspection before use of the instrument



#### CAUTION

Please examine the instrument for any mechanical damage on:

- All enclosures
- All cables

Safety can only be guaranteed if NO DAMAGE on the instrument is observed.

## Modification



### WARNING

No modification of this instrument is allowed.

## Approved software only



### CAUTION

Install only approved software to prevent interference with the runtime reliability of the instrument and programs within it.

## Proper training



### CAUTION

Before you attempt to use the device with patients.

- You should be trained to use the device or have read and understood all sections of this specification describing correct operation.
- You should also be thoroughly familiar with the safe operation of the device as described in this documentation.

## In case of instrument failure



### WARNING

If at any time the instrument malfunctions, or if you suspect in any way that the instrument is not working correctly:

- Remove the instrument from contact with the patient.
- Unplug the probe and make sure it cannot be used before it is checked.
- Contact your reseller.
- DO NOT attempt to open any covers on the instrument.

## 8.2 Mechanical Hazards

### Dropped or damaged instrument



#### WARNING

If you drop a scanner head on the floor, you **MUST** dispose of it immediately and **NOT** use the same scanner head again for scanning.

There is high risk that the mirror in the scanner head has become dislodged and can fall out.



#### CAUTION

If the probe body is dropped or bumped it should immediately be calibrated before further use. If calibration fails, please contact your technical service provider. See instructions on Calibrating the instrument.



## 8.3 Explosion Hazards

### Environment



#### WARNING

The product is not designed to be used in environments that are potentially explosive such as in close proximity to flammable liquids or gases or in oxygen-enriched atmospheres.

## 8.4 Electrical Safety

### The power interface



#### CAUTION

Only be connected to the USB interface of UL/CSA 60950-1 certified computer equipment.  
Please contact the manufacturer when the data cable used for power supply needs to be replaced. Do not replace it by yourself.

## Electrical shock



### WARNING

There is a risk of electrical if you attempt to access the inside of any part of the instrument. Only authorized and qualified service personnel may access the inside of any part of the instrument.

## Stress on cables



### CAUTION

All externally connected cables must never be subjected to pulling stress.

## Spilled Liquids



### WARNING

Do not bring liquids such as beverages near the instrument.  
Do not spill liquids on the instrument.

## Disconnected from mains



### WARNING

There is no power ON/OFF switch on the instrument therefore the only reliable means to disconnect the device from mains is unplug the data cable used for power supply. Do not position the instrument so that it is difficult to unplug the data cable.

## 8.5 Eye Safety

Visible laser.



### WARNING

Do not look into the visible laser beam in the process of use, and prohibit the beam of the scan window (laser window) from directly hitting the operator and the patient's eyes.

The laser wavelengths used by the product are 450nm and 520nm, the emission duration are 2.36ms and 2.62ms, the repetition frequency is 15Hz, and the maximum power is less than 100 $\mu$ W. The warning label related laser product has been affixed to the external surface of the product which can be clearly seen. After use, please place the probe on the probe bracket with the scanning window facing down.



**WARNING**

The patient should wear goggles before starting scanning.

The requirements for goggles are as follows: protection wavelength 200–540nm, OD4+ (transmittance of 0.01%), visible light transmittance of 60%. Goggles should be kept properly after use, for example, put them in a glasses case.



**CAUTION**

The use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.



**CAUTION**

The use of optical instruments with this product will increase eye hazard.

## 8.6 Cautions

This product is an optical scanning instrument, during the use of the product must not be vigorously collision.

Please take good care of the calibrator in the product. Once the calibrator is stained, the performance of the product will be degraded

This product meets the requirements for electromagnetic compatibility of medical devices in use, but it is not recommended to use it in environments with strong magnetic fields, strong switches and strong light sources, otherwise it may affect the performance of the product.

This product can only be connected to the USB port of a computer device that is UL/CSA 60950-1 certified.

After the product is used at the end of its life, the product should be disposed of in accordance with the requirements of local laws and regulations, or contacted by the manufacturer for recycling and centralized disposal in accordance with local laws and regulations.

## 9. Product Hardware Installation Instructions



This product is a precision optical instrument. Manufacturers and distributors shall not be liable for the loss of product safety and reliability and performance if the operator do not operate in accordance with the instructions, or if they do not use the product in a collision and fall due to improper use. After falling, please check the product function and calibrate the product with a calibrator. If the calibration fails, please contact the manufacturer for repair.

When the device is stopped, the probe should be placed on the probe bracket located on a horizontal table to avoid falling and causing damage due to improper placement.

### Installation step:

- ① Connect the data cable to the computer USB port, and the function button is lit up.
- ② Run the scanning software and scan according to the requirements of the scanning operation. During normal scanning, light is projected from the scanning window.
- ③ After scanning, the data cable should be unplugged to disconnect the device.

Note: When the instrument is working, the power of the heating element on the scanning head is 0.35w.

## 10. Product Software Description

### 10.1 Software Operation Configuration Requirements

This product can only be used by installing software on the computer. The requirement for the recommended configuration of computer hardware is no less than the following configuration:

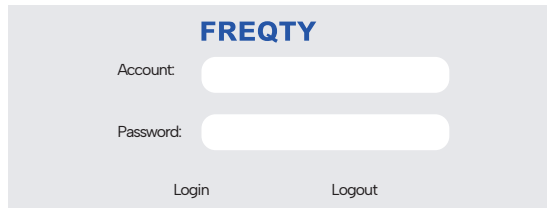
CPU	Intel i7-8700(3.2GHz)and above
GPU	NVIDIA GTX1060 (6G) and above
Memory	DDR2400 16G and above
Hard disk	Solid state drive SSD 120G and above
Display	Resolution 1920×1080 and above



## 10.2 Software Basic Information

Software Name	Intraoral Digital Impression Instrument Scan Software(PANDA SCANNER)
Release Version	P5V1
Software Security Level	A

Network security: User access control can choose to use user name and password for identity authentication. The user type is ordinary user. Ordinary users can use the instrument normally and view data results. The login interface is shown in the Fig.2 below:



The image shows a login interface for 'FREQTY'. At the top center, the word 'FREQTY' is displayed in a bold, blue, sans-serif font. Below this, there are two rows of input fields. The first row is labeled 'Account:' on the left and has a white, rounded rectangular input box. The second row is labeled 'Password:' on the left and has a similar white, rounded rectangular input box. At the bottom of the interface, there are two buttons: 'Login' on the left and 'Logout' on the right, both in a small, dark font.

Fig.2 Login interface

Data saving format: standard STL, PLY format and PTY format defined by our company.

## 10.3 Software Installation Method

The File name format of installation file in the Accompanying USB Flash Drive is PANDAP5V1 X.X.X XXX. Full. exe. The installation steps are as follows.

- 1 Double-click to open the installation file;
- 2 Carefully read the license agreement and choose to agree;
- 3 Click next according to the prompts;
- 4 The uninstallation is completed, select "Yes" to continue the installation<sup>3</sup>;
- 5 Finished.

The installation steps can be found in the Instrument Software Operation Manua.

## 10.4 Main Software Interface

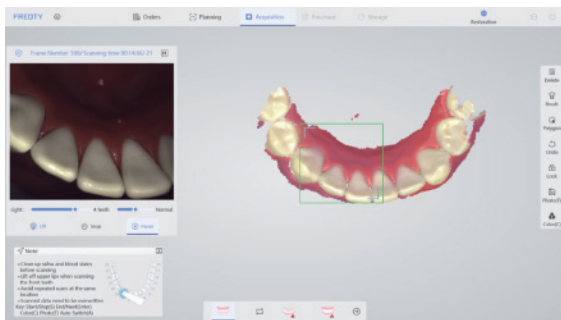


Fig.3 Main interface

The specific method of use of the software is provided by the company with training materials and operation manuals.

<sup>3</sup> If the user has not installed the company's software, this interface will not appear.

## II. Application Method

### II.1 Operating Steps

Follow the instructions for Product Hardware Installation in Chapter 9.

Open the software and scan after the startup is complete.

Click the button to start the machine after power-on; Click the button to start scanning after startup, click the button again to pause scanning, double-click the button to switch the color of the data model, and hold down the button for three seconds to end scanning.

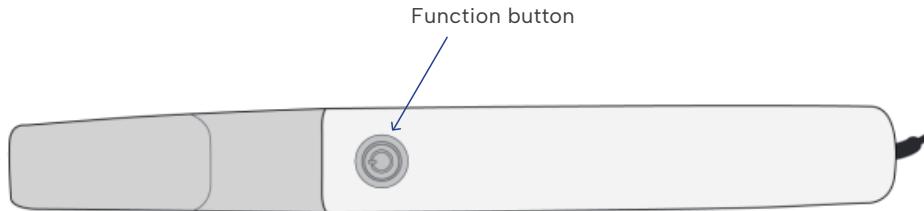


Fig.4 Probe platform

## 11.2 Scan Technique

Hold the probe body in the same way as a pen while scanning, Due to the limitation of the actual space in the mouth, it is necessary to ensure that the head window of the probe is as close to the tooth surface as possible (it is recommended to keep it within 2mm) for scanning, and the operation mode of suddenly far and suddenly near should be avoided.

Axial drag of the probe was the main scanning method, and radial drag of the probe was used in the scanning of the front teeth and occlusion points. Start scanning from the end teeth, first scan the occlusal data, then scan part of the buccal and lingual data, and drag from occlusal to mesial to scan the next tooth, and follow the same operation to complete the frame scan of the posterior tooth area. When entering the lingual surface of the anterior tooth area, drag the probe radial direction left and right to scan the lingual surface and incisal data, and then scan part of the labial surface data after the lingual surface is completed.

### T.3 Calibration

According to the usage, it is recommended to use the calibrator to calibrate the product once a week. The product has not been used for three months, it is recommended to calibrate before use. When the device is impacted, or the product is moved or vibrated greatly, or in order to maintain the accuracy of the scanning accuracy, the scanner needs to be calibrated. Refer to "Operation Manual" for the calibration method.



#### CAUTION

The calibrator of the product should be properly kept. Once the calibrator is defaced, the performance of the product will be degraded.



## 12. Care and Maintenance Methods

The product is not expected to have long and frequent oral contact with patients. The scanner head must be cleaned and sterilized between patients to avoid cross contamination. It is recommended to sterilize the scanner head by means of moist heat steam sterilization (121 °C, 15 min or 134 °C, 6 min).



### WARNING

In order to ensure the normal performance of the product, it is recommended that the times of repeated sterilization of the scanner head shall not more than 50.

The scanner head should be replaced when the appearance is damaged or sterilized for 50 times. The scanner head can be purchased separately from the seller or manufacturer.

### Recommended sterilization method:

- Clean the scanner head with soapy water and a soft brush, then place it under running water for rinsing.
- Wipe the water stain on the surface of the scanner head with medical gauze and wipe it thoroughly with absolute alcohol. Pay special attention to whether there are stains or water stains on the head mirror. If there is, use another medical gauze to draw the absolute alcohol and carefully wipe the head mirror. The sample was allowed to stand for two minutes after wiping.

- Place the scanner head which had been cleaned into 90\* 260mm Self-sealing sterilization pouch (materials: Medical high-temperature dialysis paper and medical CPP/PET complex film) and seal the sterilization pouch. Then place the packaged scanner head into sterilizing instrument tray.
- Place the sterilizing instrument tray into a small pressure steam sterilizer and set the sterilization parameters according to the instructions of the small steam sterilizer: temperature 121 ° C, 15 min, or temperature 134 ° C, 6 min.

Keep the outside of the product clean.

If the reflector of the scanner head is stained, users can dip the degreasing cotton into a small amount of anhydrous alcohol (99.9%), and then gently wipe the reflective surface, rotating from the center to the periphery. If the reflector is scratched, it needs to be replaced.

In the course of instrument, software errors and warnings can be self-healed by the software. Serious problems may require shutting down the software and restarting. General hardware errors can be restored by turning off the power and then turning the power back on. If something cannot be recovered, contact the manufacturer or the seller.

The maintenance personnel must take laser protective measures during the inspection process, such as wearing goggles.



**WARNING**

During the inspection, ensure that there is no person in the direction of laser irradiation.

Replacement instrument parts must be obtained from the manufacturer or manufacturer approved dealer.



**CAUTION**

The parts that not supplied by the manufacturer may reduce the accuracy and safety of the instrument.

Disclaimer: We can provide the necessary information for maintenance instrument to the users with corresponding maintenance qualifications.



**CAUTION**

The instrument shall not to be services or maintained in use with a patient.



## 13. Service Life

Expected service life: 8 years.



### CAUTION

Over period of use, the degradation of the product's main electronic and optical components may reduce product performance.

## 14. Parts List

Parts Name	Quantity
Probe	1
Probe bracket	1
Calibrator	1
Calibrator cable	1
Scanner head	6
IFU	1
Qualified label	1
Warranty card	1
Protective Casing	1
USB flash disk	1

## 15. Revision History

Edition	Date
A.00	2023.05.22
A.01	2023.12.06

## 16. Legend of Labels and Symbols



Caution



General Warning



Type B Application Part



Refer to instruction  
manual/ booklet



EU Authorized  
Representative



Serial Number



The device should be sent to the special agencies according to local regulations for separate collection after its useful life.



CE marking in conformity with Regulation (EU) 2017/745



Indicates a medical device that needs to be protected from moisture.



Humidity Limitation



Aperture label  
Labelling position: close to the scanner head



Laser parameters and standards.  
Labelling position: close to the Aperture label



Identification label  
Labelling position: on the data cable



Atmospheric Pressure  
Limitation



Temperature Limit



Manufacturer  
Information



Date of Manufacture



Medical Device



Function button



## 17. Other Contents

### 17.1 Liability of the Manufacturer

The installation, adjustment, modification, and repair of this product are performed by persons or organizations approved by the manufacturer or distributor. And the manufacturer must be able to ensure the safety of the product in accordance with the electrical, environmental, storage, maintenance, and operation requirements of the manual. Responsibility for reliability and performance.

### 17.2 Warranty Description

The warranty period for this product is two years, calculated from the date of sale (according to the date of sales invoice).

One of the following cases the company provides free maintenance:

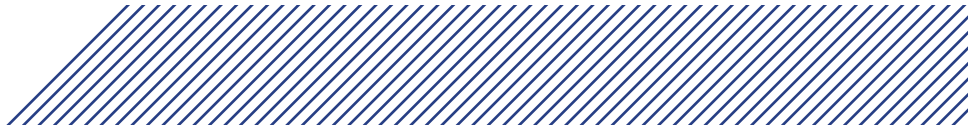
- (1) Non-user subjective destruction within the warranty period, product failure caused only by product quality;
- (2) Product failure caused by force majeure (such as earthquake, flood, typhoon, etc.) during the warranty period.

One of the following cases the company provides paid maintenance:

- (1) Failure of the product due to non-subjective damage by the user during the warranty period;
- (2) Failure of the product after the warranty period but within the service period.

We no longer provides maintenance in one of the following situations:

- (1) The product has been used for more than 8 years;
- (2) Product failure caused by subjective destruction of users



## 18. About EMC Descriptions and Risk Warning

This product has passed the electromagnetic compatibility test and meets the requirements of EN 60601-1-2 Medical electrical equipment—Part 1-2: General requirements for basic safety and essential performance—Collateral Standard: Electromagnetic disturbances – Requirements and tests.

The following application requirements shall be strictly observed during use, otherwise it may cause electromagnetic interference to other devices or reduce the anti-electromagnetic interference capability of the therapeutic device, or even lose the basic performance.

This product belongs to the Group 1 Class B equipment specified in IEC/CISPR 11, non-permanent installation equipment, non-living support equipment, and belongs to equipment that is expected to be directly connected to the public power grid.



### WARNING

Portable RF communications equipment(including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm(12inches) to any part of the product including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result.

The cable information of this product is as shown in the following table. If there is a fault in the connection cable, please contact our company for maintenance or replacement. Other-wise it may cause excessive electromagnetic interference. If there is something wrong with this product, please contact our company promptly. Do not repair or replace the components yourself, or it may cause excessive electromagnetic interference.

No.	Name	Cable length (m)	Whether the cable is shielded	Remarks
1	Data cable	1.85	Yes	\
1	Data cable of calibrator	0.5	Yes	\





#### WARNING

The use of accessories or cables outside of the regulations together with equipment and systems may result in increased emissions or reduced immunity of the equipment or system..



#### WARNING

This product should not be used near or stacked with other devices. If it must be used close to or stacked, it should be observed and verified to work properly under its configuration.

#### Pass and Fail Criteria

During and after the immunity tests, each function worked as intended, such as parameter, as per IFU.

#### Work mode

scanning mode and calibrating mode.

## Trouble Shooting

Issue	Solution
No image display in 2D image area	<ul style="list-style-type: none"><li>- Make sure the device's USB interface is properly connected to the computer's USB 3.0 interface.</li><li>- Restart the software and scanning device to check if the image can be displayed normally.</li></ul>
2D image flicker	<ul style="list-style-type: none"><li>- Check if the modulator is connected properly.</li><li>- Replace the USB port of the device with the computer.</li><li>- Connect your computer to the Internet.</li></ul>

Issue	Solution
<p>Scans are easily interrupted and not smooth</p>	<ul style="list-style-type: none"> <li>- Inappropriate scan brightness. For plaster model scanning, choose 1/2, for resin model scanning, choose 3, for the intraoral scanning, choose 4, 5 is suitable for patients with darker teeth in the mouth.</li> <li>- During scanning, confirm that A above the image area is blue. If it is black, use the keyboard A key to switch.</li> <li>- Standardize scanning methods. Ensure coverage of scanned data with existing data.</li> </ul>
<p>Out-sync of data between 2D and 3D</p>	<ul style="list-style-type: none"> <li>- Confirm whether the computer configuration meets the requirements (higher than or equal to our recommended configuration).</li> <li>- Delays caused by too many scans (single jaw scans should be completed within 3 minutes).</li> <li>- Uninstall antivirus software or add scanning software to the whitelist of antivirus software.</li> <li>- Check the status of windows update. If the update is in progress or has failed, please restart the computer after the update is completed before using the scanning software.</li> </ul>

Issue	Solution
<p>Difficulty for scan relocation</p>	<ul style="list-style-type: none"> <li>- Ensure that the scanning direction is consistent with the previous scanning when repositioning</li> <li>- Avoid long scans.</li> </ul>
<p>No 3D data when scanning</p>	<p>Recalibration</p>
<p>Abnormal interrupt during scanning</p>	<ul style="list-style-type: none"> <li>- Check the status of windows update. If the update is in progress or has failed, please restart the computer after the update is completed before using the scanning software.</li> <li>- Check whether the remaining storage space of drive C is sufficient.</li> <li>- Turn off or uninstall anti-virus software.</li> </ul>

This product declarations to meet  
Table 1, Table 2, Table 3 and Table 4 of Contents.

Table 1

Manufacturer's Declaration - Electromagnetic Emissions	
The product intended for use in the electromagnetic environment specified below. The customers or users should ensure that it is used in such an environment.	
Emission measurement	Conformity
RF emission CISPR 11	Group 1
RF emission CISPR 11	Class B
Harmonic emission IEC 61000-3-2	Not applicable
voltage fluctuations / flicker emission IEC 61000-3-3	Not applicable

## Table 2

### Manufacturer's Declaration - Electromagnetic Immunity

The product intended for use in the electromagnetic environment specified below.  
The customers or users should ensure that it is used in such an environment.

Immunity Test	IEC 60601 Test Level Guidelines	Compliance Level
electrostatic discharge IEC 61000-4-2	Contact:± 8 kV. Air:± 2kV, ±4kV, ±8kV, ± 15 kV	Contact:± 8 kV. Air:± 2kV, ±4kV, ±8kV, ± 15 kV.
Radiated RF EM fields IEC 61000-4-3	3 V/m 80 MHz – 2,7 GHz 80 % AM at 1 kHz	3 V/m 80 MHz – 2,7 GHz 80 % AM at 1 kHz
Electrical fast transientburst IEC 61000-4-4	± 2 kV for power supply lines.	N/A
Surge IEC 61000-4-5	± 1 kV line(s) to line(s). ± 2 kV line(s) to earth.	N/A
Conducted RF IEC 61000-4-6	3 Vrms: 0,15 MHz – 80 MHz 6 Vrms: in ISM and amateur radio bands between 0,15 MHz and 80 MHz 80 % AM at 1 kHz	N/A
Power frequency magnetic field (50Hz and 60Hz)IEC 61000-4-8	30A/m.	30A/m.
Power input line voltage dips, short interruptions and voltage variations IEC 61000-4-1	0% U <sub>r</sub> , 0,5 cycle At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315° 0% U <sub>r</sub> , 1 cycle and 70%U <sub>r</sub> ,25/30 cycles Single phase:at 0° 0% U <sub>r</sub> , 250/300 cycles	N/A

### Table 3

#### Manufacturer's declaration-electromagnetic immunity

Test specifications for ENCLOSURE PORT IMMUNITY to RF wireless communications equipment

The PANDA smart is intended for use in the electromagnetic environment specified below.  
The customer or the user of the PANDA smart should assure that it is used in such an environment.

Test Frequency (MHz)	Band <sup>a)</sup> (MHz)	Service <sup>a)</sup>	Modulation <sup>b)</sup>	Maximum Power (W)	Distance (m)	Immunity Test Level (V/m)	Compliance Level (V/m)
385	380-390	TETRA 400	Pulse modulation <sup>b)</sup> 18 Hz	1,8	0,3	27	27
450	430-470	GMRS 460, FRS 460	FM <sup>c)</sup> ±5 kHz deviation 1 kHz sine	2	0,3	28	28
710	704-787	LTE Band 13, 17	Pulse modulation <sup>b)</sup> 217 Hz	0,2	0,3	9	9
745							
780							
810	800-960	GSM 800/900, TETRA 800, iDEN 820, CDMA 850, LTE Band 5	Pulse modulation <sup>b)</sup> 18Hz	2	0,3	28	28
870							
930							

Test Frequency (MHz)	Band <sup>a)</sup> (MHz)	Service <sup>a)</sup>	Modulation <sup>b)</sup>	Maximum Power (W)	Distance (m)	Immunity Test Level (V/m)	Compliance Level (V/m) (For professional healthcare)
1720	1700-1990	GSM 1800; CDMA 1900; GSM 1900; DECT; LTE Band 1, 3, 4, 25; UMTS	Pulse modulation <sup>b)</sup> 217 Hz	2	0,3	28	28
1845							
1970							
2450	2400-2570	Bluetooth, WLAN, 802.11 b/g/n, RFID 2450, LTE Band 7	Pulse modulation <sup>b)</sup> 217 Hz	2	0,3	28	28
5240	5100-5800	WLAN 802.11 a/n	Pulse modulation <sup>b)</sup> 217 Hz	0,2	0,3	9	9
5500							
5785							

NOTE: If necessary to achieve the IMMUNITY TEST LEVEL, the distance between the transmitting antenna and the ME EQUIPMENT or ME SYSTEM may be reduced to 1 m. The 1 m test distance is permitted by IEC 61000-4-3.

a) For some services, only the uplink frequencies are included.

b) The carrier shall be modulated using a 50 % duty cycle square wave signal.

c) As an alternative to FM modulation, 50 % pulse modulation at 18 Hz may be used because while it does not represent actual modulation, it would be worst case.



**Table 4**

**Manufacturer's declaration-electromagnetic immunity**

Test specifications for ENCLOSURE PORT IMMUNITY to proximity magnetic fields

The product intended for use in the electromagnetic environment specified below. The customers or users should ensure that it is used in such an environment.

Test Frequency	Modulation	IMMUNITY TEST LEVEL (A/m)
30 kHz	CW	8
1 34,2 kHz	Pulse modulation <sup>b)</sup> 2,1 kHz	65 <sup>c)</sup>
1 3,56 MHz	Pulse modulation <sup>b)</sup> 50 kHz	7,5 <sup>c)</sup>

a) This test is applicable only to ME EQUIPMENT and ME SYSTEMS intended for use in the HOME HEALTHCARE ENVIRONMENT .

b) The carrier shall be modulated using a 50 % duty cycle square wave signal.

c) r.m.s., before modulation is applied.

## Manufacturer Information



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## 19. Customer Support

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