

VetiPad M1/VetiPad M1 Plus

Veterinary Digital Detector and Imaging System

Operator's Manual



©2025 Shenzhen Mindray Animal Medical Technology Co., Ltd. All Rights Reserved.

For this Operator's Manual, the issue date is 2025-06.

IMPORTANT!

The system is veterinary use only.

Intellectual Property Statement

Shenzhen Mindray Animal Medical Technology Co., Ltd. (hereinafter called Mindray Animal Medical) owns the intellectual property rights to this product and this manual. This manual may refer to information protected by copyright or patents and does not convey any license under the patent rights or copyright of Mindray Animal Medical, or of others.

Mindray Animal Medical intends to maintain the contents of this manual as confidential information. Disclosure of the information in this manual in any manner whatsoever without the written permission of Mindray Animal Medical is strictly forbidden.

Release, amendment, reproduction, distribution, rental, adaptation, translation or any other derivative work of this manual in any manner whatsoever without the written permission of Mindray Animal Medical is strictly forbidden.

mindray, is the trademark of SHENZHEN MINDRAY BIO-MEDICAL ELECTRONICS CO., LTD. in China and other countries. All other trademarks that appear in this manual are used only for informational or editorial purposes. They are the property of their respective owners.

Responsibility on the Manufacturer Party

Contents of this manual are subject to change without prior notice.

All information contained in this manual is believed to be correct. Mindray Animal Medical shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of this manual.

Mindray Animal Medical is responsible for the effects on safety, reliability and performance of this product, only if:

- all installation operations, expansions, changes, modifications and repairs of this product are conducted by Mindray Animal Medical authorized personnel;
- the electrical installation of the relevant room complies with the applicable national and local requirements; and
- the product is used in accordance with the instructions for use.

NOTE:

This equipment must be operated by skilled/trained clinical professionals.

 WARNING

It is important for the hospital or organization that employs this equipment to carry out a reasonable service/maintenance plan. Neglect of this may result in machine breakdown or personal injury.

Warranty

THIS WARRANTY IS EXCLUSIVE AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.

Exemptions

Mindray Animal Medical's obligation or liability under this warranty does not include any transportation or other charges or liability for direct, indirect or consequential damages or delay resulting from the improper use or application of the product or the use of parts or accessories not approved by Mindray Animal Medical or repairs by people other than Mindray Animal Medical authorized personnel.

This warranty shall not extend to:

- Malfunction or damage caused by improper use or man-made failure.
- Malfunction or damage caused by unstable or out-of-range power input.
- Malfunction or damage caused by force majeure such as fire and earthquake.
- Malfunction or damage caused by improper operation or repair by unqualified or unauthorized service people.
- Malfunction of the instrument or part whose serial number is not legible enough.
- Others not caused by instrument or part itself.

Important Information

- It is the customer's responsibility to maintain and manage the system after delivery.
- The warranty does not cover the following items, even during the warranty period:
 - Damage or loss due to misuse or abuse.
 - Damage or loss caused by Acts of God such as fires, earthquakes, floods, lightning, etc.
 - Damage or loss caused by failure to meet the specified conditions for this system, such as inadequate power supply, improper installation or environmental conditions.
 - Damage or loss due to use of the system outside the region where the system was originally sold.
 - Damage or loss involving the system purchased from a source other than Mindray Animal Medical or its authorized agents.

- This system shall not be used by persons other than fully qualified and certified medical personnel.
- DO NOT make changes or modifications to the software or hardware of this system.
- In no event shall Mindray Animal Medical be liable for problems, damage, or loss caused by relocation, modification, or repair performed by personnel other than those designated by Mindray Animal Medical.
- The purpose of this system is to provide physicians with data for clinical diagnosis. The physician is responsible for the results of diagnostic procedures. Mindray Animal Medical shall not be liable for the results of diagnostic procedures.
- Important data must be backed up on external memory media.
- Mindray Animal Medical shall not be liable for loss of data stored in the memory of this system caused by operator error or accidents.
- This manual contains warnings regarding foreseeable potential dangers, but you shall also be continuously alert to dangers other than those indicated. Mindray Animal Medical shall not be liable for damage or loss resulting from negligence or ignorance of the precautions and operating instructions described in this operator's manual.
- If a new manager takes over this system, be sure to hand over this operator's manual to the new manager.

About This Manual

This operator's manual describes the operating procedures for this system. To ensure safe and correct operation, carefully read and understand the manual before operating the system.

NOTE:

- If you find that the contents of the multi-language manuals are NOT consistent with the system or the English manuals, refer **ONLY** to the corresponding English manuals.
 - The accompanying manuals may vary depending on the specific system you purchased. Please refer to the packing list.
-

Meaning of Signal Words

In this manual, the signal words  **DANGER**,  **WARNING**,  **CAUTION**, **NOTE** and **TIP** are used regarding safety and other important instructions. The signal words and their meanings are defined as follows. Please understand their meanings clearly before reading this manual.

Signal word	Meaning
 DANGER	Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury.
 WARNING	Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury.
 CAUTION	Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury.
NOTE	Indicates a potentially hazardous situation that, if not avoided, may result in property damage.

Signal word	Meaning
<i>TIP</i>	Important information that helps you to use the system more effectively.

Software Interfaces in this Manual

Depending on the software version, preset settings and optional configuration, the actual interfaces may be different from those in this manual.

Conventions

In this manual, the following conventions are used to describe the buttons on the control panel, items in the menus, buttons in the dialog boxes and some basic operations:

- <Buttons>: angular brackets indicate buttons, knobs and other controls on the control panel.
- [Items in menu or buttons in dialog box]: square brackets indicate items in menus or buttons in dialog boxes.
- Select [Items or Buttons]: click the item or button in dialog boxes by using the left mouse button.
- [Items in menu] > [Items in submenu]: select a submenu item following the path.

Operator's Manuals

The content of the operator manual, such as screens, menus or descriptions, may be different from what you see in your system. The content varies depending on the software version, options and configuration of the system.

Contents

1 Important Information	1 - 1
1.1 Safety Precautions	1 - 1
1.2 Usage and Maintenance of the FPD	1 - 3
1.2.1 Precautions on detector usage	1 - 3
1.2.2 Precautions on detector storage	1 - 5
1.2.3 Precautions on detector cleaning and maintenance	1 - 5
1.3 Parts that can be used within animal environment	1 - 6
2 System Overview	2 - 1
2.1 Intended Use	2 - 1
2.2 Safety Classification	2 - 1
2.3 Power Supply Box	2 - 2
2.4 Router Panel	2 - 2
2.5 Flat Panel Detector	2 - 3
2.5.1 Parts and Names	2 - 3
2.5.2 OLED Status Indicator	2 - 3
2.5.3 Battery Status Indicator	2 - 4
2.6 Operator Console Control Software Overview	2 - 4
2.6.1 System Status Icons	2 - 5
2.6.2 Registration Management Screen	2 - 6
2.6.3 Exposure Exam Screen	2 - 7
2.6.4 History Exam Screen	2 - 8
2.6.5 Image Print Management Screen	2 - 9
2.6.6 Report Management Screen	2 - 10
2.7 Adjust the Exposure Parameters	2 - 10
2.8 Symbols and Warning Labels	2 - 11
3 System Preparation	3 - 1
3.1 Internal Power Supply of Wireless FPD	3 - 1
3.1.1 Installing and Removing the Battery	3 - 3
3.1.2 Charging the FPD Battery	3 - 4
3.2 Login	3 - 5
4 Setup	4 - 1
4.1 System Setup	4 - 1
4.1.1 Setting the System Language	4 - 1
4.1.2 Equipment Configurations	4 - 1
4.1.3 User Management	4 - 2
4.1.4 Option Configuration and Authorization	4 - 3

4.1.5 Detector Calibration	4 - 3
4.1.6 Exam Information Display Configurations	4 - 5
4.1.7 Register Management Settings	4 - 5
4.1.8 Exam Configurations	4 - 6
4.1.9 DICOM Image Printing Configuration	4 - 7
4.1.10 Help Manual	4 - 8
4.1.11 Log and Configuration Maintenance	4 - 8
4.1.12 Statistic	4 - 8
4.1.13 Parameter Manager	4 - 9
4.1.14 Prepay Installment	4 - 10
4.1.15 Report Configurations	4 - 10
4.1.16 Lock Equipment	4 - 12
4.2 System Date and Time Setup	4 - 12
4.3 Network Setup	4 - 12
4.4 Disk Space Configuration	4 - 12
4.5 DICOM Setup	4 - 13
4.5.1 DICOM Local Preset	4 - 13
4.5.2 DICOM Worklist Preset	4 - 13
4.5.3 DICOM Print Preset	4 - 14
4.5.4 DICOM Storage Preset	4 - 16
4.5.5 MPPS Preset	4 - 17
4.5.6 DICOM SC Preset	4 - 18
4.5.7 DICOM Q/R Preset	4 - 18
4.6 Screen Brightness Management	4 - 18
4.7 System Information	4 - 18
5 Starting an Exam	5 - 1
5.1 Registration Management	5 - 1
5.1.1 Local registration	5 - 1
5.1.2 Registration Information Management	5 - 2
5.1.3 Animal Information Query	5 - 3
5.2 Exposure	5 - 3
6 Image Browsing and Processing	6 - 1
6.1 Image Display	6 - 1
6.2 Thumbnail	6 - 1
6.3 Image Operation	6 - 1
6.4 Annotation	6 - 4
6.4.1 Position Identification	6 - 4
6.4.2 Text Annotation	6 - 5
6.4.3 Arrow Annotation	6 - 6
6.5 Measurements	6 - 6
6.5.1 Basic Operations and Buttons	6 - 7
6.5.2 Measurement Menu	6 - 7
6.5.3 Measurement Caliper	6 - 9
6.5.4 Results Window	6 - 9
6.5.5 Routine Measurements	6 - 9
6.5.6 Application Measurements	6 - 11

6.6 Image Postprocessing	6 - 20
6.7 Image Stitching	6 - 24
6.7.1 Starting Stitching Management	6 - 25
6.8 Image Confirmation	6 - 27
7 Animal Data Management	7 - 1
7.1 Searching an Animal	7 - 1
7.2 Animal Data View and Management	7 - 2
7.3 Image Compare	7 - 2
7.4 Sending Animal data	7 - 3
7.5 u-Link (applicable for CE region only)	7 - 4
7.6 Recycle Bin	7 - 4
7.7 Image Print	7 - 4
7.7.1 Thumbnail Area Operations	7 - 4
7.7.2 Image Adjustment	7 - 5
7.7.3 Print Typesetting	7 - 5
7.7.4 Setting the Print Parameter	7 - 6
7.7.5 Print	7 - 7
7.8 Animal Task Management	7 - 7
7.9 DICOM Task Management	7 - 7
8 Report Management	8 - 1
8.1 Select a Report	8 - 1
8.2 Edit a Report	8 - 1
8.2.1 Adding Images	8 - 1
8.2.2 Adding Diagnosis Description	8 - 2
8.2.3 Setting Positive/Negative	8 - 2
8.3 Save a Report	8 - 2
8.4 Preview a Report	8 - 3
8.5 Print a Report	8 - 3
8.6 Deleting a Report	8 - 3
8.7 Knowledge Base Management	8 - 3
8.7.1 Adding a Knowledge Base	8 - 4
8.7.2 Modifying a Template	8 - 4
8.7.3 Saving Report Contents to a Template	8 - 4
8.7.4 Adjusting Contents	8 - 5
9 System Maintenance	9 - 1
9.1 Operator's Tasks	9 - 1
9.2 Service Tasks	9 - 2
10 System Specifications	10 - 1
10.1 Operating Environment	10 - 1
10.2 Technical Specifications	10 - 1
10.2.1 Environmental Conditions	10 - 1
10.2.2 Power supply	10 - 2
10.2.3 Flat panel detector	10 - 2
11 Guidance and Manufacturer's Declaration	11 - 1

11.1 EMC	11 - 1
11.2 Radio Management Compliance	11 - 9
11.3 Cable Information	11 - 10
11.4 FCC Warning	11 - 10
11.5 IC Warning	11 - 11
12 Declaration of Conformity	12 - 1

1 Important Information

1.1 Safety Precautions

Please observe the following precautions to ensure animal and operator's safety when using this system.

DANGER

Do not operate this system in an atmosphere containing flammable gases or liquids such as anesthetic gases, hydrogen, and ethanol, because there is danger of explosion.

WARNING

- **Contraindication:** Pregnant animal should avoid the examination by this system as much as possible. If there is any justified reason for them to conduct the examination, take protective actions as much as possible.
- **Target users:** This system is only intended for use by radiography specialists who have been trained by Mindray Animal Medical or the agent and have read through the operator's manual.
- **Intended use environment:** The main application site is medical institutions.
- **The service personnel not trained and authorized by Mindray Animal Medical are prohibited from opening the enclosure or panel of the equipment; otherwise, short circuit or electric shock may occur.**
- **The service personnel not trained and authorized by Mindray Animal Medical are prohibited from replacing all fuses in this system; otherwise, short circuit or electric shock may occur.**
- **To ensure system safety, do not connect a portable multi-jack socket to the system.**
- **The system can only be connected to a power grid with protective grounding; otherwise, electric shock may occur.**
- **Do not use this system with a high-frequency electrosurgical unit (ESU), high-frequency treatment equipment, or defibrillator; otherwise, the animal may suffer electric shock.**
- **To ensure system safety, do not use other peripherals or accessories than those provided or designated by Mindray Animal Medical.**
- **Signal output and input can only be connected to specified devices.**
- **It is not allowed for the operator to have contact with other animals and the electronic parts (such as the input/output terminal of the signal) of other devices that are connected to the system. Otherwise, it may produce the electrical shock to the animal.**
- **The system uses a leakage circuit breaker as the mains power breaker. Before maintaining or repairing the equipment, cut off the power supply of the entire system.**

- Do not install irrelevant software on this system; otherwise, it may cause the system's breakdown and data loss.
 - Do not enable the sleep mode when entering the Windows operation screen.
 - Direct contact between the animal body and the detector is prohibited. Do not use a defibrillator while using the detector.
-

CAUTION

- Check that this equipment operates properly before using the system.
 - Keep away from venous catheters, urethral catheters, and other catheters connected to the animal while using the system.
 - This manual does not describe clinical inspection techniques. Operators must select the proper inspection technique based on their professional knowledge and clinical experience.
 - When using iodine-containing contrast medium, strictly observe the instructions of the product.
 - The image acquisition workstation monitor of the system can be used only during operation. Clinical image diagnosis must be completed by using a professional medical diagnostic display to guarantee imaging performance.
 - Periodically maintain the equipment during the service life. When the service life ends, stop using the equipment.
 - Turn off the input power switch before cleaning this equipment to avoid electric shock.
 - If you want to connect the power plug of this equipment and that of the external device connected to this equipment to a socket, ensure that the socket is a wall socket with protective grounding and meets the requirements of the rated power identification plate. Use of a multi-functional socket may affect grounding and make the leakage current exceed the safety limit. Be sure to use the power cable delivered with the system.
 - Do not connect and disconnect the system peripherals in the electrified state. This operation can only be performed by professional personnel.
 - Do not use a USB memory device (e.g., a USB flash drive, removable hard disk) which has unsafe data. Otherwise, system damage may result.
 - Radio waves can cause the system to work abnormally.
 - If this system is used near radio transmitting equipment, radio waves may interfere with the normal operation of the system. Do not use or take any devices transmitting RF signals (such as cellular phones, transceivers and radio controlled products) in the room placing the system.
 - If any equipment that may generate radio waves is near the system, immediately shut down the equipment to ensure normal operation of the system.
 - If the mains supply is unstable and may affect the proper operation of the system, it is recommended to use an uninterruptible power supply.
 - Adjust the size of the beam limiting device before pressing the Prep/ Expose button, to protect the animal from absorbing excessive X-ray radiation.
 - Data may be lost if the system is powered off or encounters abnormal power failure during image acquisition.
 - Always keep the system dry. Avoid transporting this system quickly from a cold place to a warm place; otherwise condensation or water droplets may form allowing a short circuit and possible electric shock.
-

NOTE:

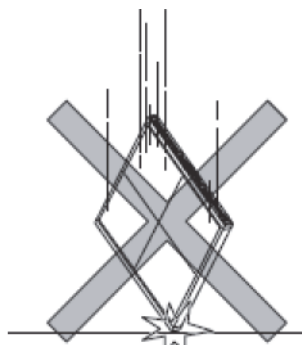
- The system is not waterproof. Avoid water splash on the surface of the equipment or water ingress inside the equipment. In the case of water splash, consult the Customer Service Department or your local distributor.
 - Do not turn off the system power supply when data is being printed, saved, and transmitted; otherwise, the operation cannot be completed properly and file information may be lost
 - Do not shut down the system forcibly; otherwise, the disk data may be corrupted or the system may malfunction.
 - You should properly back up the system to a secure external storage media, including system configuration, settings and animal data. Data stored to the system's hard drive may be lost due to system failure, improper operation or accident.
 - While the system is running, the operator should keep all the moving parts of the system and the animal within his/her field of view and pay consistent attention.
 - Keep the body parts of the animal away from the moving assemblies of the system to avoid animal injury resulting from system movement.
 - Keep venous catheters, urethral catheters, and other catheters connected to the animal away from moving devices.
 - Disinfect and clean the components in contact with the animal before using the system.
 - Check the system clock of the system periodically, to ensure the accurate examination time of the animal.
 - Anti-virus and virus-killing software must be installed on the system before network connection to prevent virus attacks.
 - To dispose of the system or any part, contact the Customer Service Department or your local distributor. The manufacturer is not responsible for any system content or accessories that have been discarded improperly.
 - Contact the Customer Service Department or your local distributor to provide the circuit diagram, component list, legends, and calibration rules if necessary.
-

1.2 Usage and Maintenance of the FPD

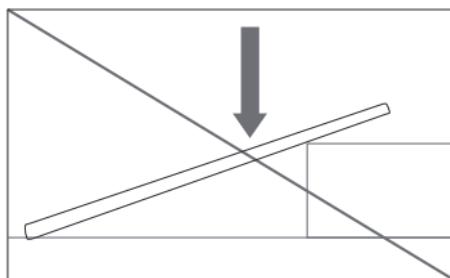
1.2.1 Precautions on detector usage

 WARNING

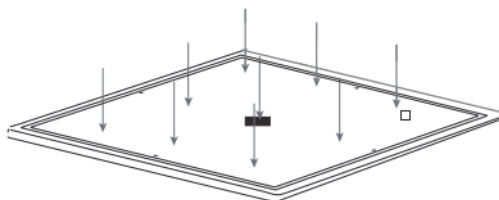
- **Observe the temperature and relative humidity standards during operation, transportation, and storage. If the specified range is exceeded, the FPD performance may degrade or the detector may be damaged. Portable FPDs may cause discomfort in animals.**
- **The edges of the FPD are smooth. Hold the detector with both hands and handle with care. Avoid collision, slipping, vibration, and falling, in which case the detector may be damaged or cause injury.**
- **When using, installing, and uninstalling the detector, hold it with both hands to prevent it from falling.**



- When the portal FPD is not in use, place it on a support (optional), tray, or in a secure container. Do not place the detector in an edge location, or lean it against a wall or bed; otherwise, it may slip.
- Before exposure
 - Condensation on the FPD may affect its operation quality.
 - Condensation may form when the room is suddenly heated in a cold environment. In this case, wait until the condensation disappears. Then, perform exposure.
 - When using air conditioning, increase or reduce the temperature gradually to avoid temperature difference between the room and detector; otherwise, condensation may occur.
 - When condensation forms on the FPD, do not power on the detector. Otherwise, a fire or electric shock may occur.
- During exposure
 - Do not apply excessive weight to the detector. Otherwise, it may be damaged.
 - Exposure must be performed with the detector and animal imaging in static state. Otherwise, performance may degrade.
- The detector must be used on a flat surface to avoid detector warpage. Otherwise, it may be damaged.



- When load is distributed evenly, the load on the detector cannot exceed 200 kg.



- Avoid local load. If local load occurs on $\Phi 40$ mm boards, ensure that the load does not exceed 100 kg.
- If a cable is used, connect the cable to the correct connector; otherwise, the detector may be faulty or damaged.

- FPD cables (if any) are not hot-pluggable. Do not touch connectors and plugs with wet hands during connection and disconnection; otherwise, electric shock may occur, resulting in serious injury.
- If cables are used, insert the FPD into another pallet of the wall stand, and put the cable into the slot to avoid damage.
- Do not pull cables (if any) with force. If cables are entangled, do not pull the main body of the FPD with force. Otherwise, the cables may be damaged, causing a fire or electric shock.
- The equipment or system may still be affected by interferences of other devices even when those devices meet the emission requirements specified by the national standards corresponding to International Special Committee on Radio Interference (CISPR).
- The detector must be connected to an internal power supply if the external protective conducting wires are incorrectly installed or incompletely deployed.

1.2.2 Precautions on detector storage

WARNING

- Observe the temperature and relative humidity standards listed in 10.2 during storage. If the specified range is exceeded, the FPD performance may degrade or the detector may be damaged. Portable FPDs may cause discomfort in animals.
 - Do not install the detector in the following environments; otherwise, the detector may be faulty, fall down, or cause a fire or injury.
 - Near water facilities
 - Under direct sunlight
 - Near air conditioners or ventilation products
 - Near thermal sources, such as heaters
 - Places prone to vibration
 - Unstable places
 - Dusty places
 - Salty or sulphuric environment
 - High temperature or humidity
 - Freezing or condensation
 - Keep the FPD away from combustible or corrosive gases.
 - Keep the detector away from objects that may generate electromagnetic interferences.
-

1.2.3 Precautions on detector cleaning and maintenance

WARNING

- Observe the temperature and relative humidity standards stated in this manual during cleaning. If the specified range is exceeded, the FPD performance may degrade or the detector may be damaged. Portable FPDs may cause discomfort in animals.
- Do not immerse the detector in liquids, or splash liquids (such as blood, body fluid, and cleaning solution) on the detector surface. It is recommended that the detector be protected by disposable coverage. In the case that the detector comes into contact with liquids, wipe the detector with soft cloth. Power off the detector before wiping.
- Before cleaning the detector, power off the detector and related devices.
Clean the detector surface with soft cloth soaked with diluted alcohol. Do not use other chemicals, solvents, detergents, cleaning solution, bleaching agents, or disinfectants. The

duration of wiping does not exceed 3 minutes, and let the detector dry for at least 60 seconds before two cleaning periods.

- **Do not disassemble or modify the detector; otherwise, a fire or electric shock may occur.**
-

1.3 Parts that can be used within animal environment

- Components that can be used in the animal environment include:
 - Flat panel detector
 - Power supply box
- Parts that need to be used outside the animal environment include:
Router

2 System Overview

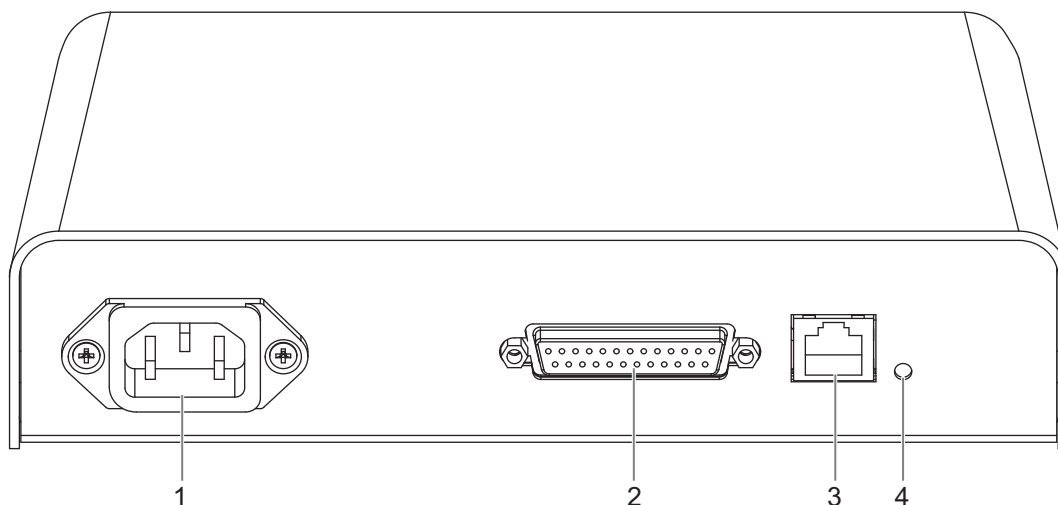
2.1 Intended Use

It is clinically indicated for digital radiography of the chest, abdomen, bone and soft tissue for animals.

2.2 Safety Classification

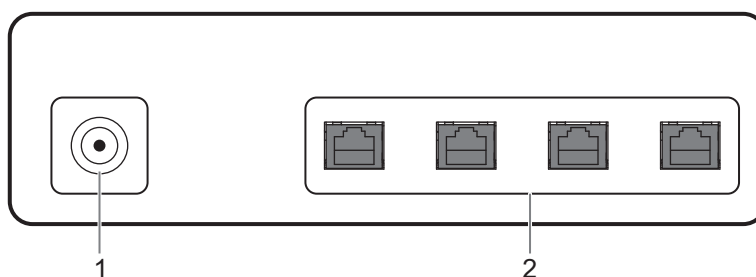
Basis of Classification	Type
According to the type of protection against electric shock	Class I
According to the degree of protection against electric shock	Type B applied part
According to the degree of protection against harmful ingress of water	The degree of protection of Flat panel detectors is IP54, and other degrees stand for common type equipment (enclosed type equipment that does not prevent ingress of liquids).
According to the recommended disinfection and sterilization method	/
According to the degree of safety of application in the presence of a FLAMMABLE ANESTHETIC MIXTURE WITH AIR or WITH OXYGEN OR NITROUS OXIDE	EQUIPMENT not suitable for use in the presence of a FLAMMABLE ANESTHETIC MIXTURE WITH AIR or WITH OXYGEN OR NITROUS OXIDE
According to the operation mode	The equipment works in continuous operation
Whether the equipment has the application part that protects against defibrillation release effect	The equipment has no application part that protects against defibrillation discharge effect.
According to the installation and use	Non-permanently installed equipment

2.3 Power Supply Box



No.	Name	Description
1.	Power inlet	AC power inlet
2.	DB25 port	Supplies power for the flat panel detector
3.	Network port	Reserved
4.	Power indicator	Lights at AC supply

2.4 Router Panel



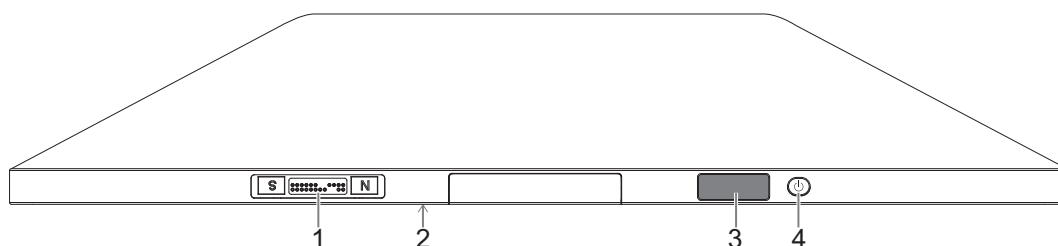
No.	Name	Description
1.	Power inlet	Used for connecting with the power cord of router
2.	LAN ports	Used for connecting image acquisition workstation

NOTE:

The router should be installed by authorized engineers. Do not plug or unplug the network cable.

2.5 Flat Panel Detector

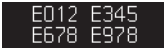
2.5.1 Parts and Names



No.	Name	Description
1.	Connection socket	Connects to an external power supply and a communication device through cables.
2.	Battery pack	Powers the wireless FPD.
3.	OLED screen	Displays the real-time status of the FPD.
4.	Power ON/OFF button	Press and hold this button for 3 seconds in the power-off state to power on the device. Press and hold this button for 3 seconds in the power-on state to power off the device.

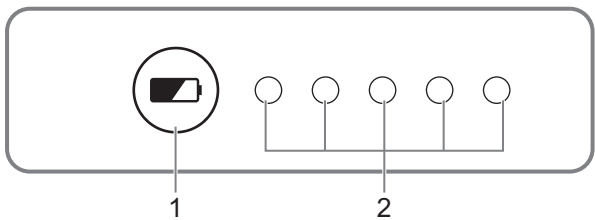
2.5.2 OLED Status Indicator

Icon	Description
	The device works normally.
	The device encounters an error.
	Status of the cable connection to the power supply when no battery is inserted.
	Battery level. The battery bar changes from the empty to the full state during charging.
	Communication is interrupted.
	Communicate has been established.

Icon	Description
	The device is busy.
	The device is being powered on. The white part of the progress bar advances from left to right.
	The device is being powered off. The white part of the progress bar advances from right to left.
	Error code. A question mark and the error code is displayed in turn.
	A connection has been established, but the device encounters an error.
	The device is being powered on.
	The wireless FPD has no battery inserted and is connected to a power supply through a cable. Communication has been established and the device works normally.

2.5.3 Battery Status Indicator

The battery level is displayed on the battery.



No.	Name	Description
1.	Power button	Used for checking the battery power status.
2.	Capacity indicators	Indicates the power of the battery. - The battery level is zero:  - The battery level is full: 

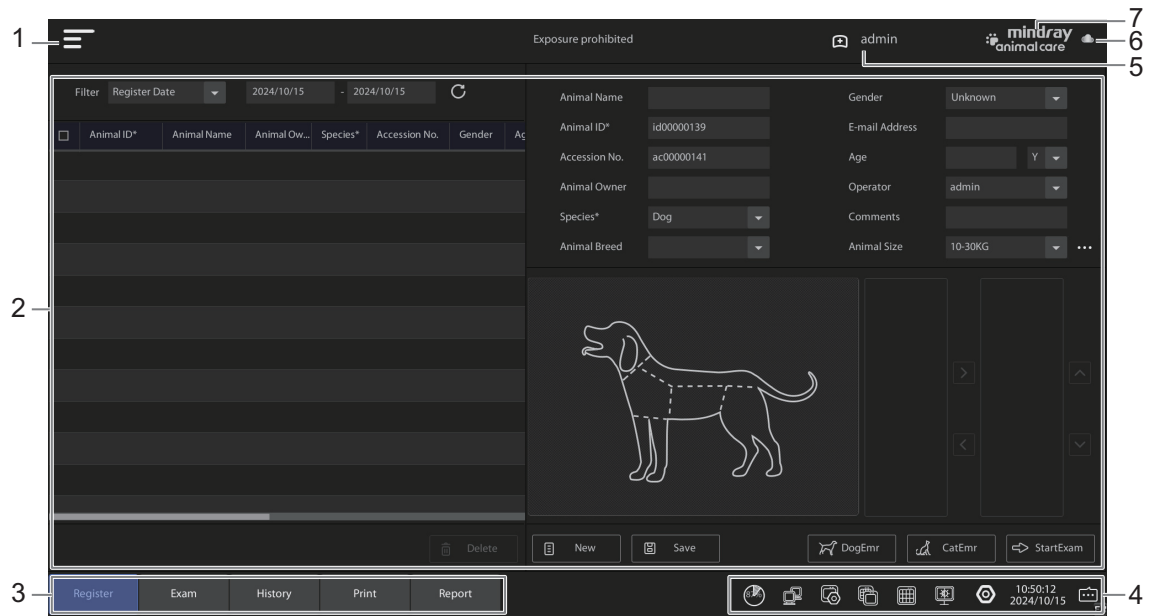
2.6 Operator Console Control Software Overview

By default, the system enters the registration management screen after software login. The [Register] button is in selected state, as shown in Figure 2-1.

Operate with the keyboard and mouse:

- Select to select tabs, parameters, and set the parameter values.
- Use the keyboard to input text information or parameter values.

Figure 2-1 Startup Initial Screen - Register



No.	Name	Description
1.	Setup button	Enter/exit setup screen.
2.	Animal registration management area	View the Worklist registered animals and local registered animals.
3.	Exam process icons area	Select to enter the corresponding function screen.
4.	System status icons area	Displays the system status icons.
5.	Login account	Displays the current login account.
6.	u-Link	Enter the u-Link setup screen.
7.	System information button	View the system information.

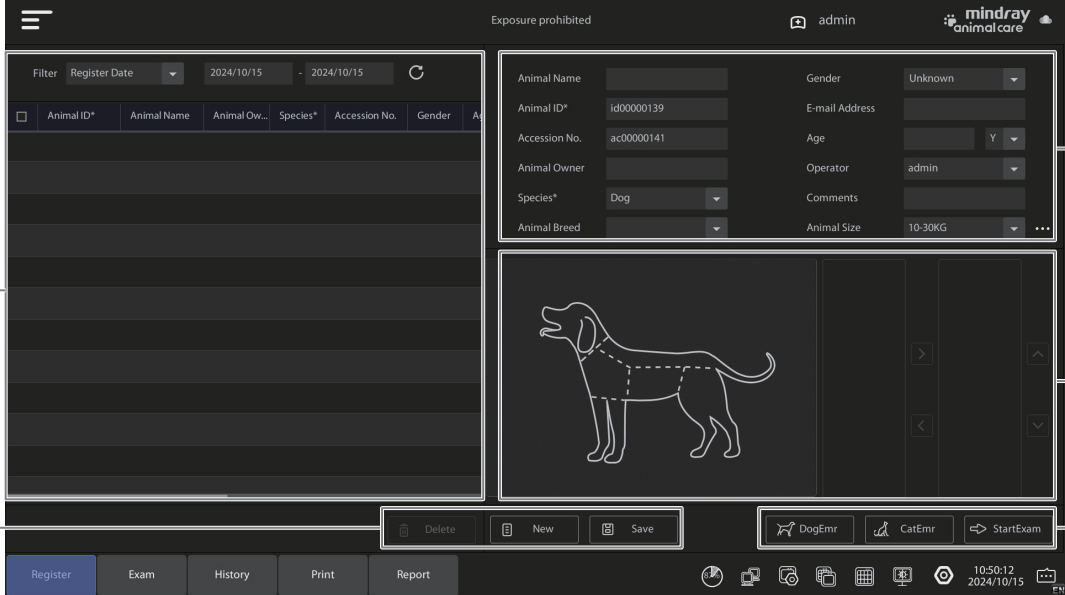
2.6.1 System Status Icons

Icon	Description
	Indicates a high-voltage generator. Select to view details about the high-voltage generator.
	Indicates the charge/discharge status of the FPD battery.

Icon	Description
	Indicates the connection status of the FPD. Select to view details about the FPD.
	Indicates storage space. Select to enter the disk space configuration screen.
	Indicates the network connection status. Select to view and set network connection.
	Select to enter DICOM settings, including local, Worklist, print, storage, and so on.
	Indicates the task manager. Select to view the current system tasks.
	Indicates the DICOM task manager. Select to review the DICOM task status and redo the task.
	Select to enter the screen brightness adjustment screen to adjust the screen brightness.
	Select to hide/show the system icons.
	Select to view the operation information notification.
h:m:s YYYY/MM/DD	Displays the current system time.

2.6.2 Registration Management Screen

Figure 2-2 Register



1

2

3

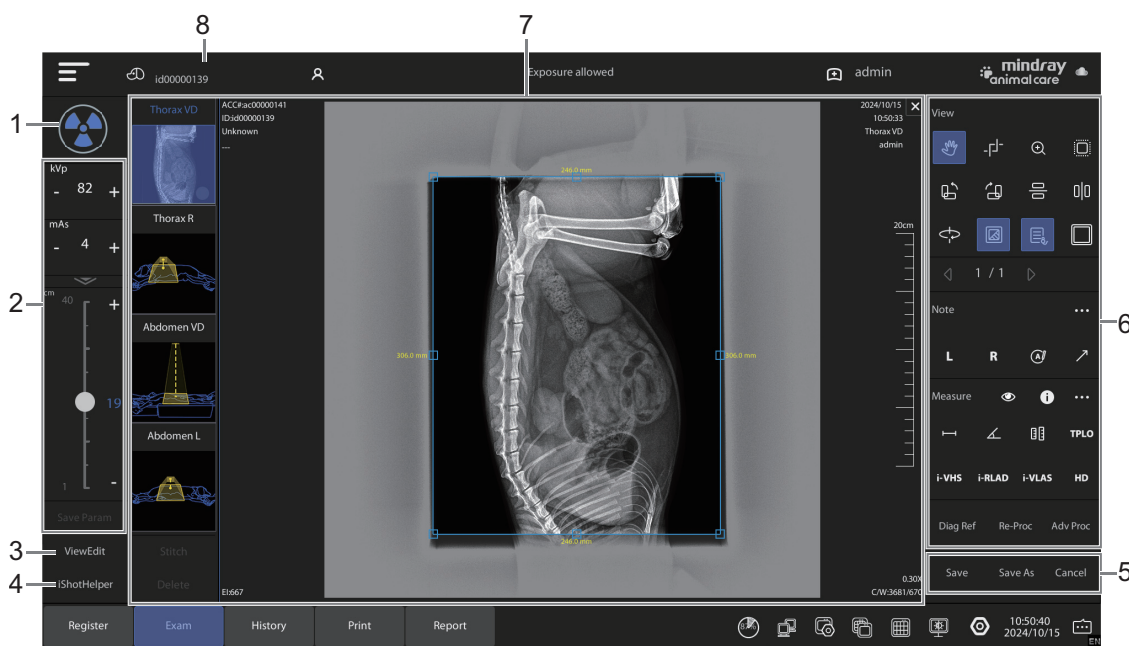
4

5

No.	Name	Description
1.	Registered animal list area	Displays the registered animals.
2.	Animal edit buttons	Add, delete, and modify animal registration information.
3.	Exam buttons	Enter the “Exam” screen. When a large number of animals need to be examined or treated, which requires quick input of animal information, you can use the emergency call registration function to register an animal.
4.	Examined body part setting area	Select the body parts of the current animal to be radiographed from the examined body part list.
5.	Animal information registration area	Input basic animal information.

2.6.3 Exposure Exam Screen

Figure 2-3 Exam

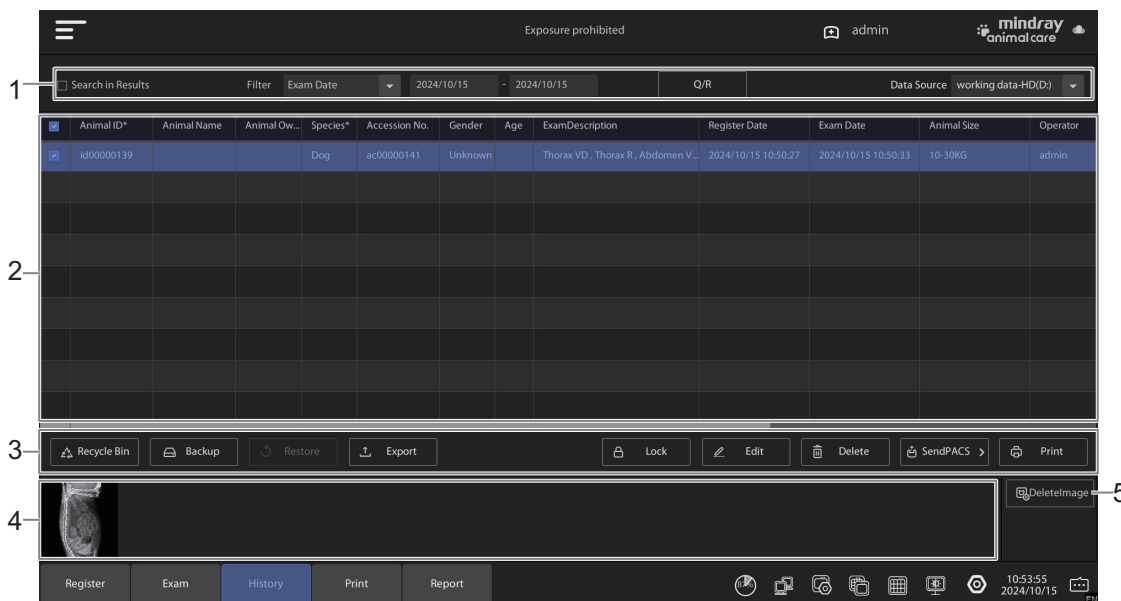


No.	Name	Description
1.	Exposure icon	Indicates the exposure status.
2.	Exposure parameter adjustment area	Displays the corresponding radiographed body part parameters. You can save the adjusted exposure parameters to the current body thickness.

No.	Name	Description
3.	ViewEdit button	Edit the radiographed body parts to be exposed.
4.	iShotHelper button	View the diagrams of the animal positioning.
5.	Image confirmation area	Image operation confirmation buttons.
6.	Image operation area	Adjust image, add comments, measure, and so on.
7.	Image display area	- Displays the selected radiographed body parts and thumbnails. - Displays the acquired images and exposure parameters. A proportional scale is displayed on each image to reflect the size proportion between the display image and the actual image. The scale marks are adjusted in real time as the image is zoomed in and out, to reflect proportional changes. - Displays the diagrams of the animal positioning.
8.	Animal information area	Displays the current animal information.

2.6.4 History Exam Screen

Figure 2-4 History

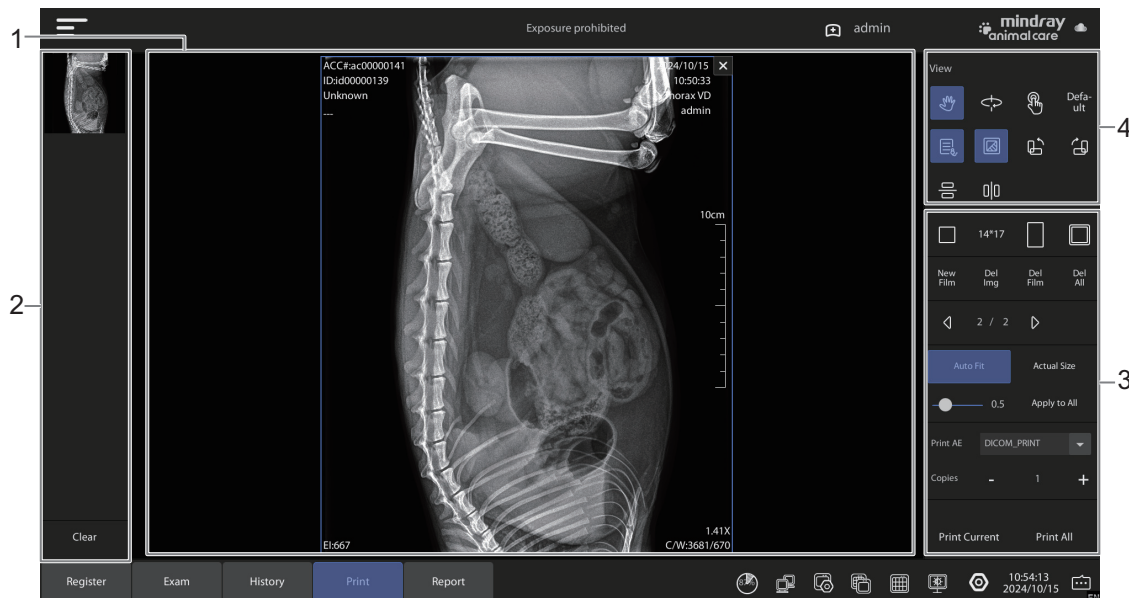


No.	Name	Description
1.	Animal information query area	Query and display animal information.
2.	Animal exam list	Display the search results in the animal exam list based on the entered content.
3.	Animal information editing buttons	Edit the selected animal information.

No.	Name	Description
4.	Thumbnail display area	Displays the thumbnail of the selected history animal exam.
5.	Image delete button	Delete the image of a selected animal record.

2.6.5 Image Print Management Screen

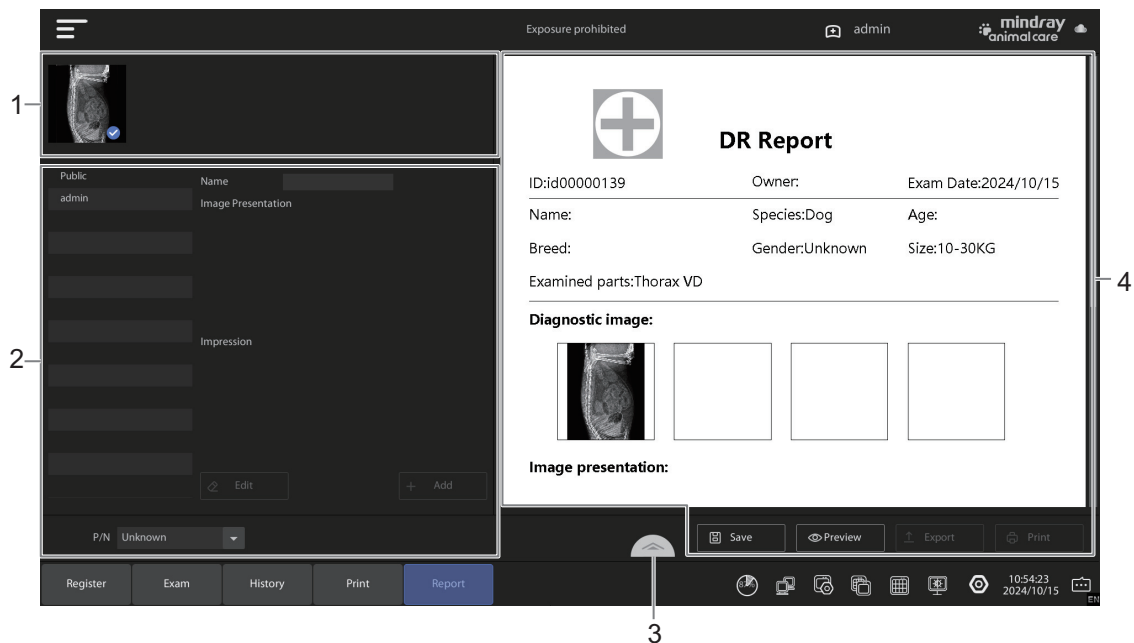
Figure 2-5 Print



No.	Name	Description
1.	Printed image preview area	View the selected image.
2.	Thumbnail display area	Displays the thumbnails of the current exam. Select [Clear] to clear the image in the thumbnail display area.
3.	Print operation area	Set the print property and print operation.
4.	Image adjustment area	Adjust the selected image.

2.6.6 Report Management Screen

Figure 2-6 Report



No.	Name	Description
1.	Thumbnail display area	Displays the thumbnails of the current exam.
2.	Library area	View the description of each symptom in the library.
3.	History report button	View the history report list. The selected report is displayed by default.
4.	Report editing area	Edit the selected report.

2.7 Adjust the Exposure Parameters

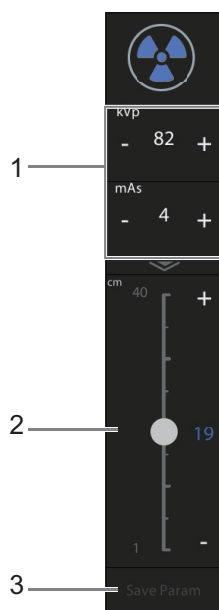
NOTE:

- Adjust exposure parameters correctly based on the animal's body type.
- Do not perform exposure until proper exposure parameters are selected for the animal.

The system sets default parameters for each radiographed body part. You can set the high-voltage generator according to the recommended exposure parameters.

You can adjust the exposure parameters in the exposure parameter setup area of the “Exam” screen, as shown in Figure 2-7.

Figure 2-7 Exposure Parameter Panel



No.	Name	Description
1.	Exposure parameters area	Adjust the following exposure parameters: kV (X-ray tube voltage), mA (X-ray tube current), ms (exposure time), mAs (exposure value). Select [+] / [-] to adjust the parameter value.
2.	Body thickness parameter	Indicates the maximum distance between the front and rear surface of the body. Select [+] / [-] or drag the slider to adjust the thickness. Select  to expand the body thickness panel.
3.	Parameter save button	Save the modified exposure parameters as recommended for the current body thickness.

2.8 Symbols and Warning Labels

The symbols and warning labels of this system in order to call your attention to potential hazards.

Their meanings are explained as follows:

Symbol	Description
	Refer to instruction manual/booklet

Symbol	Description
	TYPE B APPLIED PART
	AC (Alternating current)
	Stand-by
	Protective earth (ground)
	Serial number
	Date of manufacture
	Manufacturer
	CE marking
	UKCA marking
	MR Unsafe – the product is not intended to be used within magnetic resonance (MR) environment.
Rx Only	Caution: Federal Law restricts this device to sale by or on the order of a veterinarian.
	NRTL certification marking
	Temperature limit
	Humidity limitation
	Atmospheric pressure limitation

Symbol	Description
	The following definition of the WEEE label applies to EU member states only: the use of this symbol indicates that waste electrical and electronic equipment must not be disposed of as unsorted municipal waste and must be collected separately. By ensuring that this product is disposed of correctly, you will help prevent bringing potential negative consequences to the environment and human health. For more detailed information with regard to returning and recycling this product, consult the distributor from whom you purchased the product.
IP54	Dust-protected.Protected against splashing water
	Handle with care
100 kg 	The maximum load bearing capacity of this device cannot exceed 100 kg.

3 System Preparation

3.1 Internal Power Supply of Wireless FPD

WARNING

- **Do not disassemble the battery without authorization.**
The battery provides an internal protective mechanism and circuit to prevent dangers. Improper disassembly may affect the protective function and may cause battery overheating, smoking, deformation, or burning.
- **Short circuit is prohibited.**
Do not connect the anode and cathode of the battery with metals. Do not store or transfer the battery together with metals. If the battery is short-circuited, high current may pass through the battery, which may damage the battery.
- **Do not heat or burn the battery.**
Heating and burning may cause the battery isolator to melt, loss of the safety function, or electrolyte burning. Excessive heat may cause battery overheating, smoking, deformation, or burning.
- **Do not use the battery near a thermal source.**
Keep the batteries away from fire and other heat sources. Excessive heat may cause battery short-circuit, overheating, smoking, deformation, or burning.
- **Do not wet the battery. Do not put the battery into water. Otherwise, it may cause loss of the internal protective circuit function of the battery and abnormal chemical reactions, as well as battery overheating, smoking, deformation, or burning.**
- **Do not charge the battery near a fire source or under direct sunlight.**
Otherwise, it may cause loss of the internal protective circuit function of the battery and abnormal chemical reactions, as well as battery overheating, smoking, deformation, or burning.
- **Do not destroy the battery.**
Do not cut the battery with metal materials. Do not hammer or knock on the battery, or destroy the battery by other means. It may cause battery overheating, smoking, deformation, or burning, and even danger.
- **Do not use the battery with other batteries.**
Do not use the battery with other types of primary or secondary battery. It may cause battery overheating, smoking, deformation, or burning due to abnormal charging and discharging.
- **Do not place the battery in a microwave oven or other pressurized containers.**
Instantaneous heating or structural damage may cause battery overheating, smoking, deformation, or burning.
- **Abnormal battery usage is prohibited.**

If the battery smells peculiarly, deforms, discolors, or twists, keep the battery away from the equipment and discard the battery. Use of a malfunctional battery may cause battery overheat, smoking, deformation, or burning.

- If the equipment is not used for a long time, check the battery periodically to verify whether the battery level is sufficient. Otherwise, the battery may be damaged permanently. If the battery is faulty during periodic checking, contact Mindray Animal Medical to replace the battery.
 - **Battery maintenance:**
To ensure the battery service life, it is recommended that a complete charge and discharge cycle be performed on the battery every three months.
 - If the system is not used for a long time and the battery is stored outside the system, check the battery performance periodically.
 - Before installing or removing the battery, ensure that the FPD is powered off, disconnect the cable from the detector, and take out the detector from the assembly. Do not install and remove the battery when the detector is powered on or when the cable is connected to the detector.
 - The battery is inside the device. Only the manufacturer technical professionals or engineers authorized by the manufacturer following training can perform battery installation and uninstallation.
 - If you need to change the battery or buy a new one, contact the Customer Service Department or your local distributor.
 - The replacement of lithium batteries by inadequately trained personnel could result in a HAZARD (such as excessive temperatures, fire or explosion).
 - The lithium-ion battery has a service life of five years. Replace your battery when it reaches the end of its service life.
-

NOTE:

- Make sure that only the specified battery is used.
- The battery can be charged with high current in the power-off state. It is recommended that the battery be charged under this condition to reduce the charging duration.
- Shut down the equipment when the system is not used for a long time (for example, during transportation and storage). Do not enter the dormant state; otherwise, the battery electricity may be deleted, causing permanent damage on the battery.
- Carefully read the labels on the battery surface before using the battery.
- When using the battery for the first time, if you find that the battery is dirty or smells peculiarly, do not use the battery.
- When the battery is in use, keep it away from heat sources and high voltage, and do not knock on the battery.
- Do not use the battery under strong sunlight; otherwise, it may cause battery overheat, deformation, and smoking, or reduce its performance.
- Keep the battery out of the reach of children. Prevent children from taking out and playing with the battery.
- When the battery electricity is depleted, recharge it immediately if the situation permits it so that the battery is restored to a certain level of electricity. Otherwise, the battery performance may deteriorate.
- When the batteries will not be used for 10 days or over, take them out of the system and store the batteries with caution. Wrap the battery with non-conducting materials to avoid direct contact

between the battery and metals, which may damage the battery. Store the battery in a cool and dry place.

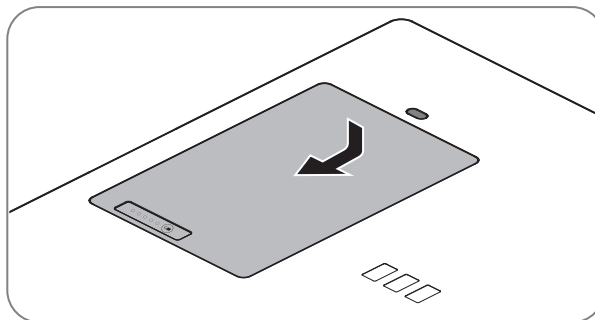
3.1.1 Installing and Removing the Battery

The battery is located in the slot at the bottom of the detector and can be inserted or removed when the detector is powered off and disconnected from the cable.

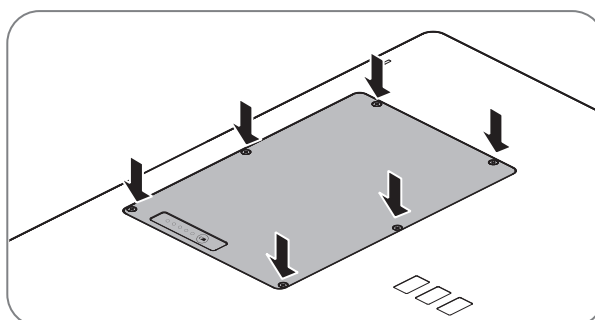
To install a battery

Perform the following procedure:

1. Ensure that the system is powered off and the cable is disconnected from the flat panel detector.
2. Place the detector flat on a table, with its bottom facing upward.
3. Install a battery in the rectangular groove at the bottom of the detector. (Place the battery into the groove in the correct direction. An incorrect direction will cause failure to install the battery in the groove.)
 - For a button-locked FPD battery, tilt and insert the lithium battery in the corresponding groove and press the battery down slightly. The battery is locked in place when a click sound is generated.



- For screw-locked FPD, put the lithium battery into the corresponding groove obliquely and press it down slightly, and then fasten six M2.5x4 thin screws.



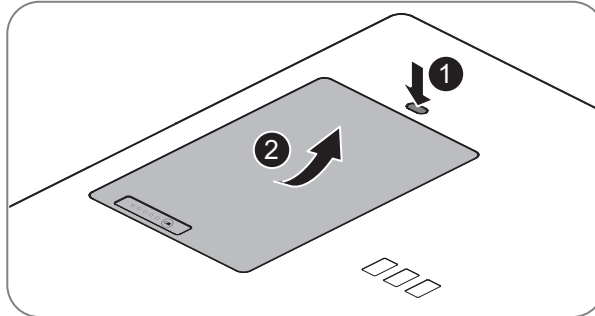
To remove the battery from the portable detector

Perform the following procedure:

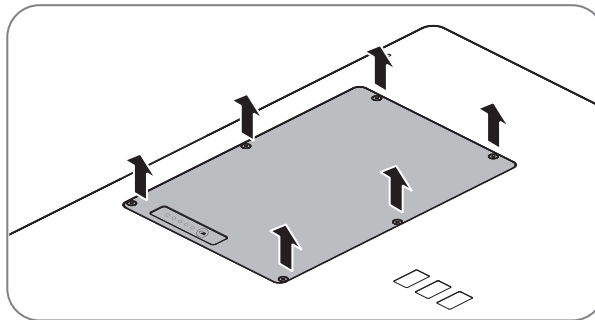
1. Ensure that the system is powered off and the cable is disconnected from the flat panel detector.

2. Place the detector flat on a table, with its bottom facing upward.

- For button-locked FPD battery, press the battery eject button (❶), and then pull the battery out along the direction of arrow (❷).



- For screw-locked FPD battery, unscrew six M2.5x4 thin screws, and then gently pull the battery out.

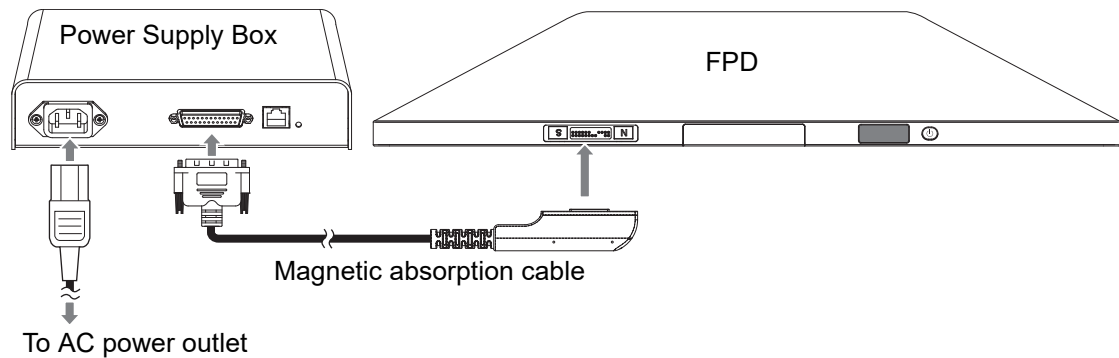


3.1.2 Charging the FPD Battery

NOTE:

- You must use the specified Power Supply Box.
 - Do not use this Power Supply Box in the conditions other than those specified.
 - Charge the battery of wireless FPD every day to ensure that it is fully charged.
 - The internal power supply of wireless FPD is a consumable part. The service life of the internal power supply gradually reduces with repeated charging/discharging and time. In this case, you are advised to use a new battery.
-

Perform the following procedure:



1. Connect the FPD to the Power Supply Box using the magnetic absorption cable.
2. Plug the power cable in the socket of the Power Supply Box.
3. Plug the other end power plug into an appropriate outlet. The grounding terminal should be connected with a power grounding cable to ensure that protective grounding works normally.

The battery inside FPD is in the charging status. The charging time of the battery from capacity 0 to 100% takes less than 3 hours.

3.2 Login

The login screen is displayed after system startup.

To ensure security, the operator must perform identity authentication before accessing the control software system of the operator console.

To log onto the system

Perform the following procedure:

1. Enter the correct user name and password on the login screen.
The password is case-sensitive. Specific characters of the password are not displayed during input.
The user name, password, and permissions are allocated by the system administrator.
2. Select  (Login) to enter the registration management screen of the operator console control software.

To change users

Perform the following procedure:

1. Select  button.
2. Enter the user name and password.
Select  to return the current login account.
3. Select  (Login) to enter the registration management screen of the operator console control software.

To lock the system

Perform the following procedure:

1. Select  (Setup) in the upper left corner of the screen to enter the system setup screen.
2. Select [Lock Equipment] and the system is locked.

You must log on before using the system.

To log out the system

Perform the following procedure:

1. Select  (Setup) in the upper left corner of the screen to enter the system setup screen.
2. Select [Exit System] and the logout system screen is displayed:
 - [Shut down]: shut down the workstation computer.
 - [Logout]: close the operator console control software and enter the Windows operating system screen.
 - [Cancel]: return to the control software screen of the operator console.