



KONICA MINOLTA

DIRECT DIGITIZER

AeroDR SYSTEM

AeroDR Portable RF Unit

Operation Manual



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EN 10

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Introduction

Introduction

The Direct Digitizer AeroDR SYSTEM picks up an X-ray image of human body using the X-ray planar detector, and enters digital output signals into the image processing device. The system then acquires this image as diagnostic image data using the digital image acquisition device, and transfers the image data to the filing system, the printer, the image display unit and others. Especially, the AeroDR Portable RF Unit can be combined with a X-ray device, and used as a portable radiography unit anywhere inside hospital facilities.

Note that the Direct Digitizer AeroDR SYSTEM can be used for radiography diagnosis, but not for mammography.

The AeroDR Detector, AeroDR Interface Unit, AeroDR Battery Charger, and the DIRECT DIGITIZER CS-7 or Image-Pilot (hereafter referred to as the image processing controller), which controls the receiving, processing, and output of image data of this device, are required for the operation of AeroDR Portable RF Unit. For the operation of the image processing controller, refer to the "Operation Manual" of the image processing controller.

This Operation Manual describes the basic functions of AeroDR Portable RF Unit so that you or the operator of this unit can understand the basic unit functions. When you use the AeroDR Portable RF Unit for the first time, be sure to read this manual and start the actual operation. Also, after you have read this manual, keep this manual close to the AeroDR Portable RF Unit and use it as a guidebook to operate the AeroDR Portable RF Unit in the best conditions.

- * If the pages of the operation manual are smudged or illegible, replace it with a new one (Charged).
- * Illustrations of X-ray device included in this manual are an example.

CAUTION

- **The AeroDR Portable RF Unit can be used together with the AeroDR SYSTEM and AeroDR SYSTEM 2.**
- **This manual collectively refers to both the AeroDR SYSTEM and AeroDR SYSTEM 2 as the "AeroDR SYSTEM".**
- **Before using the AeroDR Portable RF Unit, carefully read the AeroDR SYSTEM/ AeroDR SYSTEM 2 Operation Manual and the image processing controller Operation Manual, and refer to the operation manuals for the AeroDR Access Point and any optional devices.**
- **In this manual, the AeroDR Interface Unit and the AeroDR Battery Charger are used in the examples. Replace the device names with the devices to be used.**

Summary of usability specifications (for IEC/EN 60601-1-6, IEC/EN 62366)

- 1) Medical purposes
 - Provision and reading of disease and injury diagnostic images.
- 2) Patient groups
 - No patient population exists who uses the device.
 - Patient population for the X-ray images read is not specified.
- 3) Parts of body or organizations to which the device is mounted or that interact with the device.
 - The AeroDR Portable RF Unit comes in contact with the skin of an operator.
- 4) Operating principle
 - The AeroDR Portable RF Unit is used together with the X-ray device which takes radiography. The built-in AeroDR Access Point (wireless communication device) communicates with the AeroDR Detector and image processing controller. Also, this point interfaces with the X-ray device.
 - AeroDR Detector forms the still images according to the X-ray energy passing through human and animal bodies; after digitizing the exposed image, it is transmitted to the image processing controller console via the AeroDR Portable RF Unit by wireless communication.
 - Connect the AeroDR Interface Unit to the AeroDR Detector using the AeroDR I/F Cable in order to recharge the AeroDR Detector and to register the AeroDR Detector used for the X-ray device.
 - The AeroDR Battery Charger is used to recharge the AeroDR Detector and to register the AeroDR Detector used for the X-ray device.
 - The image processing controller processes the image data into the diagnostic image, and then stores and outputs the images along with relevant patient information.
- 5) Significant physical characteristics
 - Refer to "7.1 Specifications".
- 6) Significant performance characteristics
 - Refer to "2.1 Overview of the AeroDR Portable RF Unit".
- 7) User of this device
 - No special training is required to use this device. The intended users of this device are as follows.
A professional in good health with specialist knowledge/qualifications who has fully understood the content of this document. (Such as a doctor or radiological technologist)

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Term description

The meanings of terms used in this operation manual are as follows:

Terms	Explanation
AeroDR Detector	Collective term referring to AeroDR 1417HQ, AeroDR 1417S, AeroDR 1717HQ, AeroDR 1012HQ, AeroDR 2 1417HQ, and AeroDR 2 1417S.
AeroDR Interface Unit	It supplies the electric power to the AeroDR Detector when the AeroDR I/F Cable is used. Also, it has the hub function.
AeroDR Battery Charger	It recharges the AeroDR Detector. Also, it has the registration function of AeroDR Detector.
AeroDR I/F Cable	It connects between the AeroDR Detector and AeroDR Interface Unit. Also, it has the charging and registration functions of the AeroDR Detector.
Image processing controller	The image processing workstation (CS-7 or ImagePilot) is referred to as the image processing controller.
Mount kit	This kit mounts the AeroDR Portable RF Unit, image processing controller and 17-inch monitor on the X-ray device.

Structure of pages

Example of page structure

(1) **1.1 • Operations on the AeroDR Portable RF Unit**

1.1.1 Preparation to take radiography

Prepare the AeroDR Portable RF Unit to take radiography according to the following procedure.

(2) **1 Register the AeroDR Detector on the image processing controller to be used for the X-ray device.**

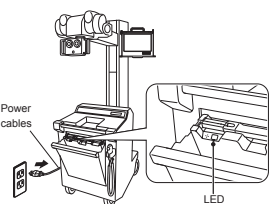
2 Register X-ray examination information on the image processing controller to be used for the X-ray device.

(4) **Reference**

- Regarding the operation of the image processing controller, refer to the "Operation Manual" of the image processing controller.

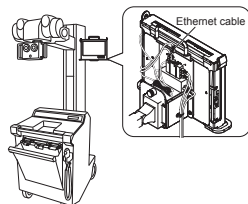
3 When charging the AeroDR Portable RF Unit and the image processing controller, remove the power cable from the receptacle and confirm that the AeroDR Portable RF Unit has shut down.

- Confirm that the LED of the AeroDR Portable RF Unit is turned OFF.



LED

4 Remove the Ethernet cable, which is connected to the hub on the registration side of the AeroDR Detector, from the hub on the X-ray device side.



Ethernet cable




(5) **IMPORTANT**

- Confirm that the AeroDR Portable Unit Battery and the image processing controller have recharged sufficiently.
- When using an image processing controller battery or 17-inch monitor, confirm that the battery have recharged sufficiently.

(3) **HINT**

- If you connect AeroDR Portable RF Unit and the image processing controller wirelessly, remove the Ethernet cable which is connected to the hub of the registration side of the AeroDR Detector from the image processing controller.

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Number	Item	Description	Icon
(1)	Item heading	Describes the titles of described content.	-
(2)	Operation procedure	The operating procedure is described in sequential numerical steps.	-
(3)	Hint	Describes important information.	 HINT
(4)	Reference	Describes reference items. Refer to these as necessary.	 Reference
(5)	Important items	Describes the important items for operation. Be sure to read them.	 IMPORTANT

Chapter 1

Safety Precautions & Warnings

This chapter describes precautions and warnings to ensure safe use of the AeroDR Portable RF Unit.

1.1 • Symbols relating to safety

1.1.1 Safety alert symbol



This is a "safety alert symbol". This symbol alerts you to matters and/or operation potentially hazardous to yourself and other people. Read these messages and follow the instructions carefully.

1.1.2 Warning notice (signal words)

Signal words indicate the degree of potential hazards in the use of the product.

Signal words include the following three types, which are used according to risk of damage caused by danger and the severity of damage.

DANGER

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It may also be used to indicate hazardous situation where only physical damage is likely to occur.

1.1.3 Description of graphic symbols



Indicates the Power On or Standby position.



Indicates that it is necessary to read the Operation Manual before use or operation of this device.



Indicates devices including radio frequency transmitters.



Indicates possibility of squeezing fingers in the moving part of the image processing controller.



Indicates possibility of squeezing fingers in the moving part of the image processing controller.



Indicates possibility of squeezing fingers in the moving part of the monitor fixture or image processing controller.



Indicates possibility of squeezing fingers in the moving part of the image processing controller fixture.



Indicates possibility of squeezing fingers.



Indicates that a load should not be placed on this device.



Indicates that items should not be placed on this device.



Indicates possibility of a foot coming into contact with this system.



This CE mark on this product indicates that this product is in conformity with the applicable requirements set out in the Directive 93/42/EEC (Medical Device Directive) and in Directive 2011/65/EU (RoHS Directive). EC Directive 93/42/EEC does not cover animal use.

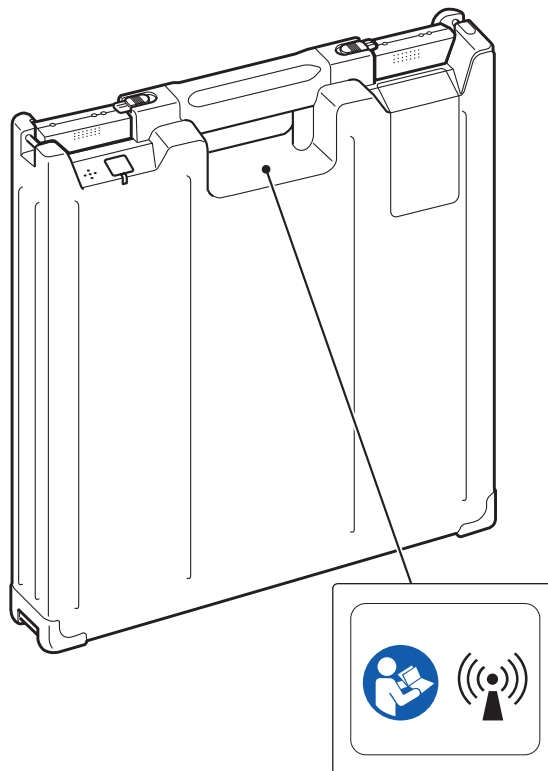
1.2 • Warning labels

Various warning labels are attached to the AeroDR Portable RF Unit and mount kits in locations shown below. Do not remove these labels from the AeroDR Portable RF Unit and mount kits.

Warning labels are there to make sure that the user recognizes potential hazards when operating the AeroDR Portable RF Unit and mount kits.

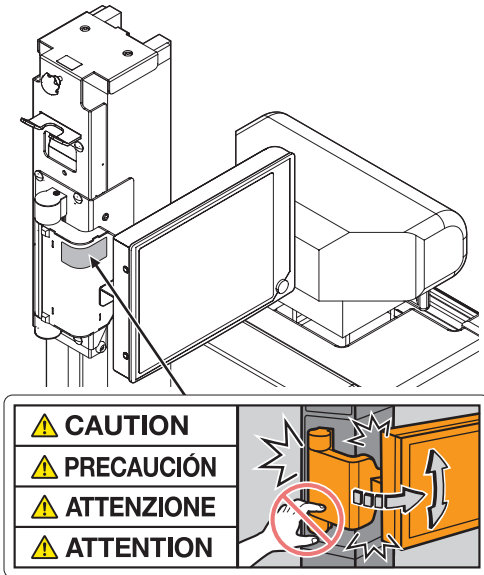
* If a warning label is too dirty or damaged to read, contact Konica Minolta technical representatives to have a new warning label attached, and redisplay by parts replacement. (There is a fee for this service.)

1.2.1 AeroDR Portable RF Unit

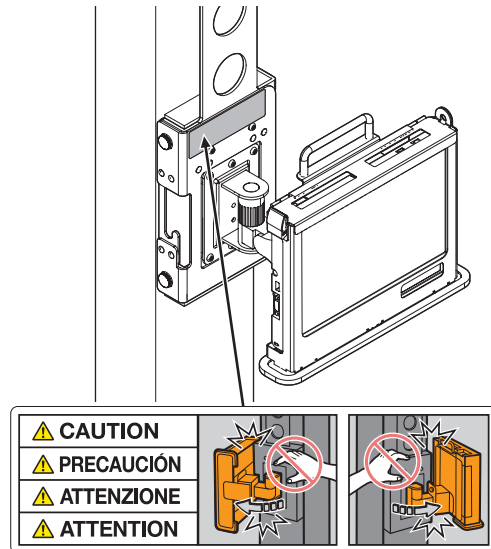


1.2.2 Mount kits

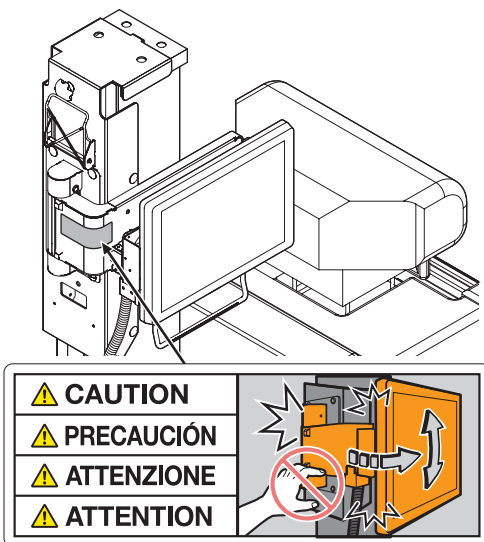
- AeroDR Portable CS7 17D Mount Kit G1/
AeroDR Portable CS7 12P Mount Kit Sh1/
AeroDR Portable CS7 17D Mount Kit Sh1



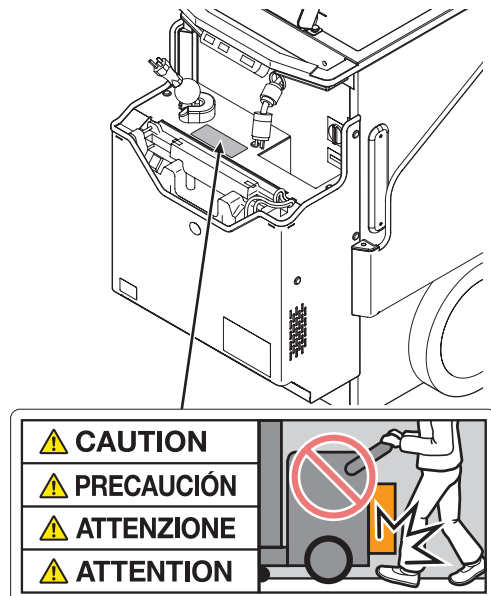
- AeroDR Portable CS7P Mount Kit G1



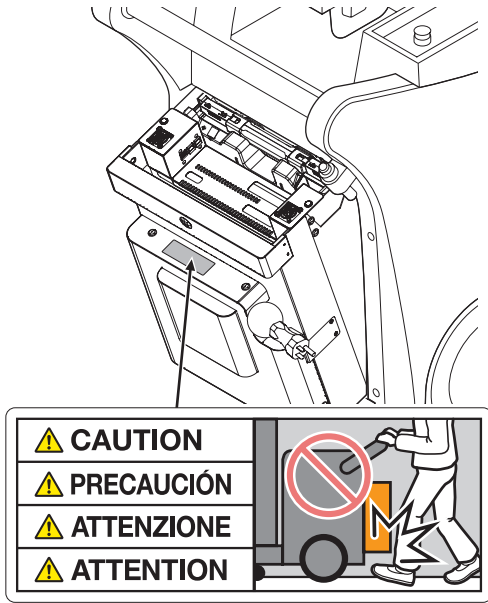
- AeroDR Portable 19PC Mount Kit G1/
AeroDR Portable 19PC MK-G-OP



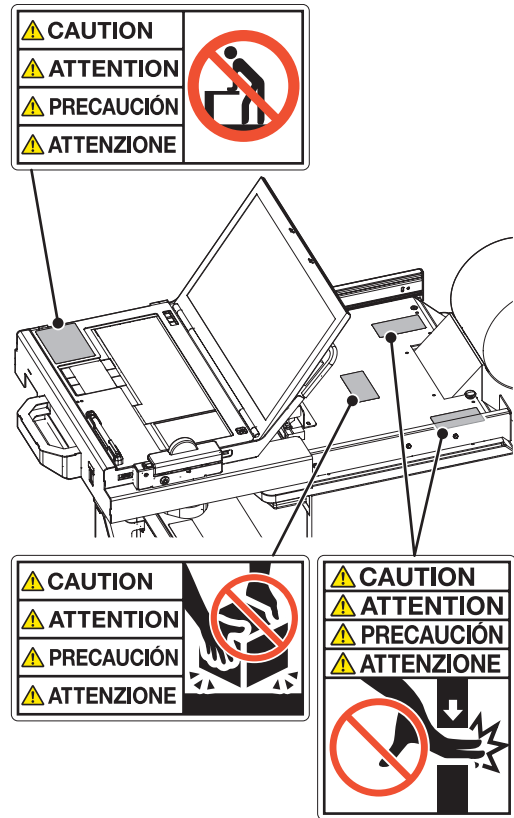
- AeroDR Portable Unit Mount Kit Si1D



● Accessories Cover 5



● AeroDR Portable CS7 17P Mount Kit Si1D



1.3 • Safety precautions

Read all safety precautions thoroughly before using the AeroDR Portable RF Unit.

Be sure to observe the safety precautions described in this section.



CAUTION

Before using the AeroDR Portable RF Unit, read the "Safety Warnings and Cautions" of the AeroDR SYSTEM/AeroDR SYSTEM 2 Operation Manual and be familiar with the unit handling precautions.

1.3.1 Precautions before usage



CAUTION

- The operator (hospital or clinic) is responsible to the usage and maintenance of the AeroDR Portable RF Unit. Any person other than the physician or other than certified person under law must not use this unit.
- The AeroDR Portable RF Unit is suitable to use outside of patient environment.
- Before using the AeroDR Portable RF Unit, check to see that the unit operates normally.
- If the AeroDR Portable RF Unit has failed, turn its power switch Off and place a warning tag showing the "Out of order" or others. Contact Konica Minolta technical representatives.
- As the AeroDR Portable RF Unit is not explosion-proof, do not use any flammable or an explosive gas near this unit.
- If you dispose the AeroDR Portable RF Unit, its accessories, options, consumables, storage media and their packing materials, follow the applicable Waste Management Law (the Waste Disposal and Public Cleaning Law) and ask an authorized industrial waste disposal contractor for their disposal. For the disposal method, follow the applicable regulations and rules of local government.



This symbol means: Do not dispose of this product together with your household waste!

Please refer to the information of your local community or contact our dealers regarding the proper handling of end-of-life electric and electronic equipments.

Recycling of this product will help to conserve natural resources and prevent potential negative consequences for the environment and human health caused by inappropriate waste handling.

1.3.2 Precautions for usage



WARNING

- Take the following notes when using the AeroDR Portable RF Unit:
 - Do not subject the unit to strong shocks or excessive loads by dropping and others.
 - Do not disassemble or modify the unit.
 - Do not attach a third-party device (except for those purchased from Konica Minolta) to this unit.
 - Do not turn the Power switch Off or unplug the power cable from the receptacle when the system is operating.
 - Take care not to drop the unit on the human body.
 - Do not use the unit when it is being charged or when the power cable is connected.
- If a smoke, smell, or noise is found on the unit, immediately turn the Power switch Off and unplug the power cable from the receptacle. Then, contact Konica Minolta technical representatives.
- Take the following notes to prevent a fire, electric shock, and electrical leakage:
 - Use the specified cables such as the power cable only.
 - Plug the power cable into the receptacle having the specified ratings.
 - Confirm that the power plug is properly connected to the wall outlet without any slack.
 - Use the power supply having the ground (GND) terminal.
 - Unplug the power cable from the receptacle if you do not use the unit for a long time.
 - The power cable and recharger unit contained in the accessory pack can be used for the AeroDR Portable RF Unit only. Do not use them for another purpose.
 - Take care not to drop the water and other liquids in the unit.
 - Take care not do drop or insert foreign materials such as metals and wires in the unit.
 - Do not handle the power plug with wet hands.
 - Take care to avoid contaminating the power plug with dust and others.
 - Do not use extension cables.
 - Do not use the star-burst connection of power cables.
 - Take care not to damage the power cable. Also, do not use the power cable if it is damaged.
 - Do not connect a metal wire or other conductors to the terminal of AeroDR Portable Unit Batteries.
 - Do not carry or store the AeroDR Portable Unit Batteries together with metallic items such as necklaces, hairpins, coins and keys.
- If the housing is deformed or cracked, stop using the unit immediately and contact Konica Minolta technical representatives.

 **WARNING**

- Register the AeroDR Detector using the AeroDR Interface Unit, AeroDR Interface Unit2, AeroDR Battery Charger or AeroDR Battery Charger2 which supports the image processing controller to be used and the AeroDR Portable RF Unit. If an incorrect device is registered, the AeroDR Detector may be selected from another CS-7.
- If the buzzer of AeroDR Portable RF Unit sounds (and the orange Power LED blinks), immediately stop the radiography and recharge the AeroDR Portable Unit Batteries.
- Do not leave the AeroDR Portable Unit Batteries in a high temperature such as direct sunlight or a vehicle parking under the hot sun. If done, the battery fluid may leak.
- The AeroDR Portable Unit Batteries are consumable parts. If the operation time of AeroDR Portable RF Unit has been shortened, replace the AeroDR Portable Unit Batteries with new ones.
- Take the following notes to prevent an overheating, an explosion, and a fire of AeroDR Portable Unit Batteries:
 - Keep the batteries away from a heat source such as a space heater.
 - Do not give a strong shock to the batteries by dropping them from height or others. Also, do not throw the batteries.
 - Do not point a nail into batteries, do not hammer the batteries, and do not step on the batteries.
 - Recharge the specified rechargeable batteries only.

 **CAUTION**

- Take the following notes when using the AeroDR Portable RF Unit:
 - Do not use devices that emit electromagnetic waves such as high-frequency therapy equipment, mobile phones, or pocket pagers, close to this unit.
 - Take note of the reception status for radios and TVs near this unit, since an interference may occur in them when this unit is in use.
 - Use under the specified environmental conditions. Failure to do so may result in degradation of performance or malfunction of this unit.
- When the AeroDR Portable RF Unit is being charged while stored in the X-ray device, do not move the X-ray device to another place.
- Take the following notes when handling the monitor or the mount kit of the image processing controller:
 - When moving the base, check to see that no person is around and move the base quietly.
 - When moving the X-ray device, retract and secure the arm of the monitor or the mount kit of the image processing controller.
 - Take care not to bump your head and body to the arm.

 **CAUTION**

- Take care as the monitor or the mount kit of the image processing controller also moves when you move the arm of X-ray device.
- Do not lean on the device, and do not press it with force.
- Take care that your fingers and cables are not caught in the arm of the monitor or the mount kit of the image processing controller.

1.3.3 Precautions regarding electromagnetic waves

● EMC Statement

The AeroDR Portable RF Unit (called This Device) has been tested and found to comply with the IEC 60601-1-2: 2007 Standard.

These limits are designed to provide reasonable protection against harmful interference in a typical medical installation. The device generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to other devices in its vicinity. However, there is no guarantee that interference will not occur in a particular installation.

Whether this device does cause harmful interference to other devices can be determined by turning this device off and on. If it causes harmful interference, the user is encouraged to try to correct the interference by 1 or more of the following measures:

- Reorient or relocate the receiving device.
- Increase the separation between the devices.
- Connect this device into a wall outlet on a circuit different from that to which the other devices are connected.
- Contact Konica Minolta technical representatives.

● **Supplementary information regarding IEC 60601-1-2: 2007**

- (1) Take precautions against this device especially regarding EMC. Install and put into service according to the electromagnetic compatibility (EMC) information provided in the manual (Table 1 - Table 4).
- (2) Do not use mobile phones or pocket pagers in the vicinity of this device. Use of mobile phones or pocket pagers near this device can cause errors in operation due to electromagnetic wave interference, so such devices should be turned off in the vicinity of this device.
- (3) Cable list
 - Power cable (1.8 m/3-Wire/Without shield; included in the recharger unit package.)
 - AeroDR Portable XG CBL
 - Various I/F Connection Cable
 - Various hand switch interface cables
 - Various hand switch cables
 - Ethernet cable (max 20 m/With shield)
- (4) The use of accessories, transducers and cables other than those sold by Konica Minolta, Inc. as internal components, may result in increased emissions or decreased electromagnetic immunity of this device.
- (5) Do not use this device adjacent to or stacked with other devices. If adjacent or stacked use is necessary, confirm normal operation in the configuration in which this device will be used. Normal operation has been checked when mounted on the X-ray device. For applicable X-ray devices, contact Konica Minolta technical representatives.
- (6) Specifications regarding RF transmitters frequency:
 - Frequency: 5150 to 5350 MHz, 5470 to 5850 MHz
 - Modulation: OFDM
 - Maximum effective radiation power: +15 dBm
 - This device may be interfered with by other devices that conform to CISPR emission requirements.

Table 1

Guidelines and manufacture's declaration - electromagnetic emissions		
This device is intended for use in the electromagnetic environment specified below. The customer or the user of this device should assure that it is used in such an environment.		
Emissions test	Compliance	Electromagnetic environment - guidelines
RF emissions CISPR 11	Group 1	The device uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class B	This device is suitable for use in all establishments including the following: Domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings for domestic purposes.
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Complies	

Table 2

Guidelines and manufacturer's declaration - electromagnetic immunity			
This device is intended for use in the electromagnetic environment specified below. The customer or the user of this device should assure that it is used in such an environment.			
Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidelines
Electrostatic discharge (ESD) IEC 61000-4-2	± 6 kV contact	± 6 kV contact	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%. Mains power quality should be that of a typical commercial or hospital environment.
	± 8 kV air	± 8 kV air	
Electrical fast transient/burst IEC 61000-4-4	± 2 kV for power supply lines	± 2 kV for power supply lines	Mains power quality should be that of a typical commercial or hospital environment.
	± 1 kV for input/output lines	± 1 kV for input/output lines	
Surge IEC 61000-4-5	± 1 kV differential mode	± 1 kV differential mode	Mains power quality should be that of a typical commercial or hospital environment.
	± 2 kV common mode	± 2 kV common mode	
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	<5% U_T (>95% dip in U_T) for 0.5 cycle	<5% U_T (>95% dip in U_T) for 0.5 cycle	Mains power quality should be that of a typical commercial or hospital environment. If the user of the device requires continued operation during power mains interruptions, it is recommended that the device be powered from an uninterrupted power supply or a battery.
	40% U_T (60% dip in U_T) for 5 cycles	40% U_T (60% dip in U_T) for 5 cycles	
	70% U_T (30% dip in U_T) for 25 cycles	70% U_T (30% dip in U_T) for 25 cycles	
	<5% U_T (<95% dip in U_T) for 5 sec	<5% U_T (<95% dip in U_T) for 5 sec	
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
[NOTE] U_T is the AC mains voltage prior to application of the test level.			

1.3 Safety precautions

Table 3


Guidelines and manufacturer's declaration - electromagnetic immunity			
This device is intended for use in the electromagnetic environment specified below. The customer or the user of this device should assure that it is used in such an environment.			
Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidelines
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz	[3] V	<p>Portable and mobile RF communications equipment should be used no closer to any part of this device, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.</p> <p>Recommended separation distance $d=[1.2] \sqrt{P}$ $d=[1.2] \sqrt{P}$ 80 MHz to 800 MHz $d=[2.3] \sqrt{P}$ 800 MHz to 2.5 GHz</p> <p>where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in meters (m).</p> <p>Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey^a, should be less than the compliance level in each frequency range^b.</p> <p>Interference may occur in the vicinity of equipment marked with the following symbol:</p> 
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2.5 GHz	[3] V/m	
<p>[NOTE] At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.</p> <p>[NOTE] These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.</p> <p>a Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which this device is used exceeds the applicable RF compliance level above, this device should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating this device.</p> <p>b Over the frequency range 150 kHz to 80 MHz, field strength should be less than [3] V/m.</p>			

Table 4

Recommended separation distance between portable and mobile RF communications equipment and the device			
This device is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of this device can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and this device as recommended below, according to the maximum output power of the communications equipment.			
Rated maximum output power of the transmitter W	Separation distance according to frequency of transmitter m		
	150 kHz to 80 MHz $d=[1.2] \sqrt{P}$	80 MHz to 800 MHz $d=[1.2] \sqrt{P}$	800 MHz to 2.5 GHz $d=[2.3] \sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	8
100	12	12	23
For transmitters rated at a maximum output power not listed above, the recommended separation distance d in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.			
[NOTE] At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.			
[NOTE] These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.			

1.3.4 Precautions regarding wireless communication

CAUTION

- The AeroDR Portable RF Unit has the built-in wireless LAN communication functions. You must follow the applicable laws and regulations of your country when using the AeroDR Portable RF Unit.
- Inappropriate use may interfere with the wireless communication. Also, if you modify the AeroDR Portable RF Unit, the approval by local radio law and the warranty become invalid.
- Do not use this unit in an aircraft as it may influence on the aviation system.
- As the AeroDR Portable RF Unit may affect the surrounding, turn the power supply of this unit Off when moving the X-ray device.

1.3.5 Precautions for installing, moving, and storing

CAUTION

- Because connections of the X-ray device can only be made by Konica Minolta or its designated contractors, contact Konica Minolta or its designated contractors.
- Contact Konica Minolta or dealers specified by Konica Minolta to install or move the AeroDR Portable RF Unit.
- Take the following notes when installing or storing the AeroDR Portable RF Unit:
 - Do not install or store in a location where it may be adversely affected by atmospheric pressure, temperature, humidity, ventilation, sunlight, dust, salt-air, or air containing sulfur.
 - Do not install or store in a location where it is not stable, ventilation is insufficient, the difference in light-dark is great, electromagnetic waves are generated, or where is subject to vibration or shock.
 - Do not install or store in a location where chemical agents are used or stored.
 - Do not install this device facing up or upside down.
- Connect the AeroDR Portable RF Unit to an X-ray device that conforms to IEC 60601 or to an equivalent standard.

1.3.6 Precautions regarding maintenance

WARNING

- Perform the maintenance and inspection periodically. In addition to the user periodical maintenance that needs to be performed, periodical maintenance by a service engineer is also required.
- If there are stains such as body fluids, clean and disinfect.

CAUTION

- Based on the warranty, the exchange of parts which have past (one year) for a term of a guarantee becomes handled as payment.
- Before cleaning or inspecting the AeroDR Portable RF Unit, always turn the Power switch Off and unplug the power cable from the receptacle.
- After you have finished the cleaning or inspection of this unit, plug the power cable into receptacle securely.
- Take the following notes when disinfecting the AeroDR Portable RF Unit:
 - Use ethanol for disinfection, isopropanol for disinfection, or commercial chlorine bleach, or 0.5% hypochlorite (10-fold dilution of household bleach) when disinfecting. However, bleach and hypochlorite are corrosive, so wash the bleach off well to avoid corrosion.
 - Dampen a lint-free, soft cloth with disinfecting solution, and use after wringing it thoroughly. Do not apply disinfecting solution onto cable connectors and LEDs when cleaning.
 - Disinfecting solution is a chemical agent, so follow the precautions of the manufacturer.
- Periodically check the mounting screws of the monitor or the mount kit of the image processing controller for looseness. Retighten the screws if loose. Also, if you are hard to hold the PC in the intended position due to the malfunction of the mount kit of the image processing controller, contact Konica Minolta technical representatives.
- When installing the CS-7 on the mount kit of the image processing controller, secure the CS-7 using a security wire. Also, make sure that the CS-7 has been secured to the mount kit of the image processing controller.
- If you do not use the AeroDR Portable RF Unit for a long time, remove the AeroDR Portable Unit Batteries from the unit.

1.3.7 Precautions on service life



CAUTION

Service life

Name	Service life
AeroDR Portable RF Unit	6 years

- The above service life is valid only if the product has been properly operated while following the precautions for use and performing the specified maintenance. (By self certification <our data>)
- The service life may differ depending on usage conditions and environment.
- Some component parts of this device are commercially available parts that have a short cycle of model changes; therefore, it might not be possible to supply service parts even within the service life. In addition, related component parts may need to be replaced to maintain compatibility at the time of model change.

Chapter 2

Product Overview

This chapter describes the overview of the AeroDR Portable RF Unit.

2.1 • Overview of the AeroDR Portable RF Unit

This section describes the functions of AeroDR Portable RF Unit and its system configuration.

2.1.1 Functions

The AeroDR Portable RF Unit allows X-ray radiography in any facility by combination of AeroDR Detector, image processing controller configuration, and X-ray device. Also, this unit receives an image data sent from the AeroDR Detector by using the built-in AeroDR Access Point and transfers it to the image processing controller. Also, this unit can be stored in the X-ray device and easily be transported. This unit interfaces with the X-ray device.

2.1.2 System configuration

The following shows the system configuration, cabling and operation examples.

Basic configuration example

Number	Name	Functions
(1)	AeroDR Portable RF Unit	Receives an image data from the AeroDR Detector and transfers it to the image processing controller. Also, this unit interfaces with the X-ray device.
(2)	AeroDR Portable Unit Battery	Two batteries are used in the AeroDR Portable RF Unit.
(3)	Mount kit *1	<ul style="list-style-type: none"> • This is the mounting shelf to store AeroDR Detector, AeroDR Portable RF Unit and others in the storage of X-ray device. • This kit mounts the image processing controller or 17-inch monitor on the X-ray device.
(4)	AeroDR Portable RF Kit *1/ AeroDR Portable XG CBL *1	Transfers a signal when using a X-ray device.

*1 Optional product.

Reference

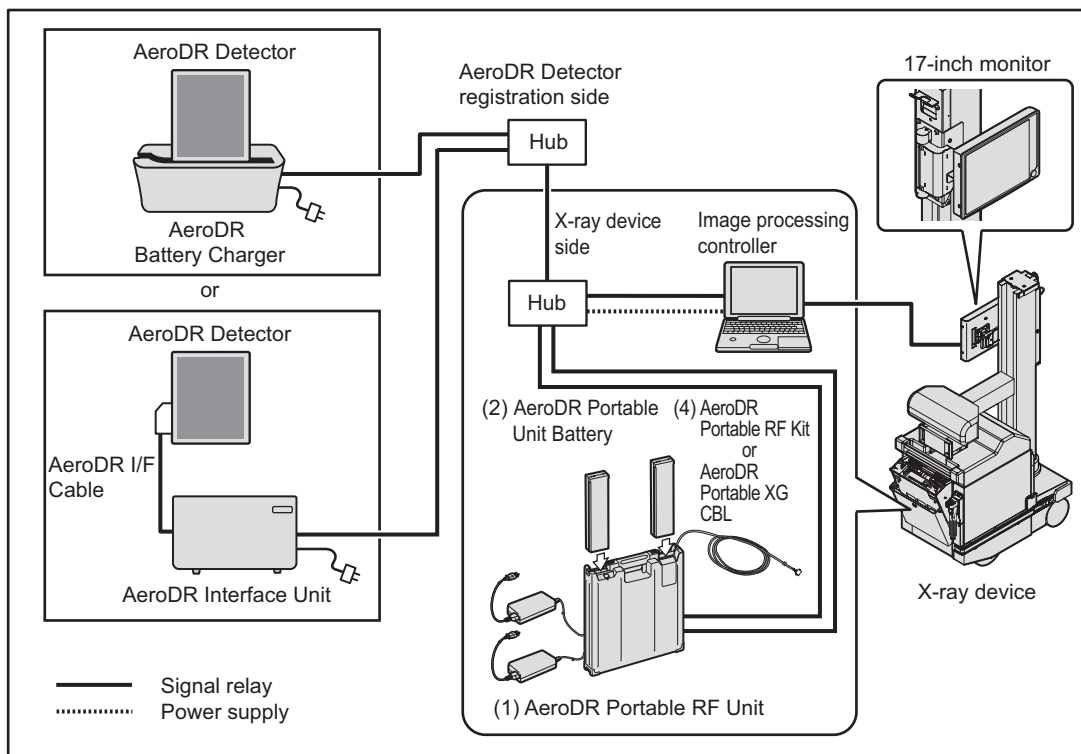
- For functions of the AeroDR Detector, AeroDR Interface Unit and others, refer to the "AeroDR SYSTEM/AeroDR SYSTEM 2 Operation Manual".

System cabling example of AeroDR Portable RF Unit

HINT

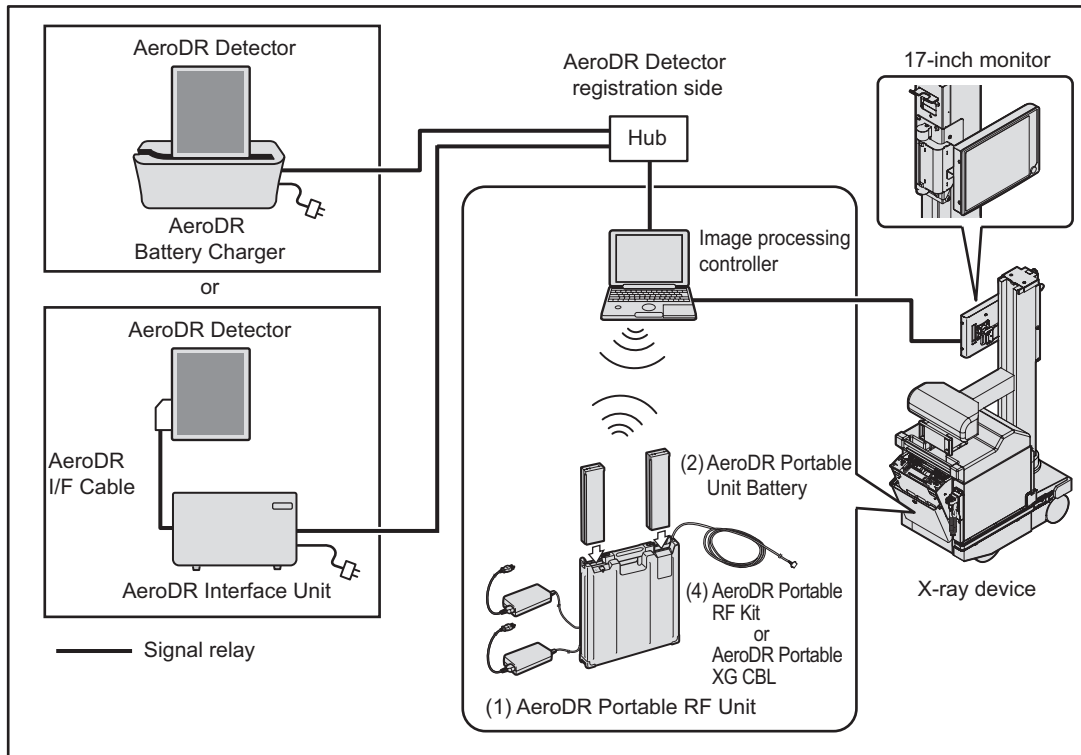
- An exposure switch may be available on the AeroDR Portable RF Kit.
- The method used to install the AeroDR Portable RF Unit may vary depending on the X-ray device. Install the AeroDR Portable RF Unit as advised by Konica Minolta or an authorized Konica Minolta technician.
- Depending on the image processing controller type, the battery may be loaded. When using a 17-inch monitor, load the battery.
- Depending on the image processing controller type, the UPS may be connected.
- Depending on the mount kit type, the image processing controller may be installed instead of the 17-inch monitor.

● **For a wired connection between the AeroDR Portable RF Unit and the image processing controller**



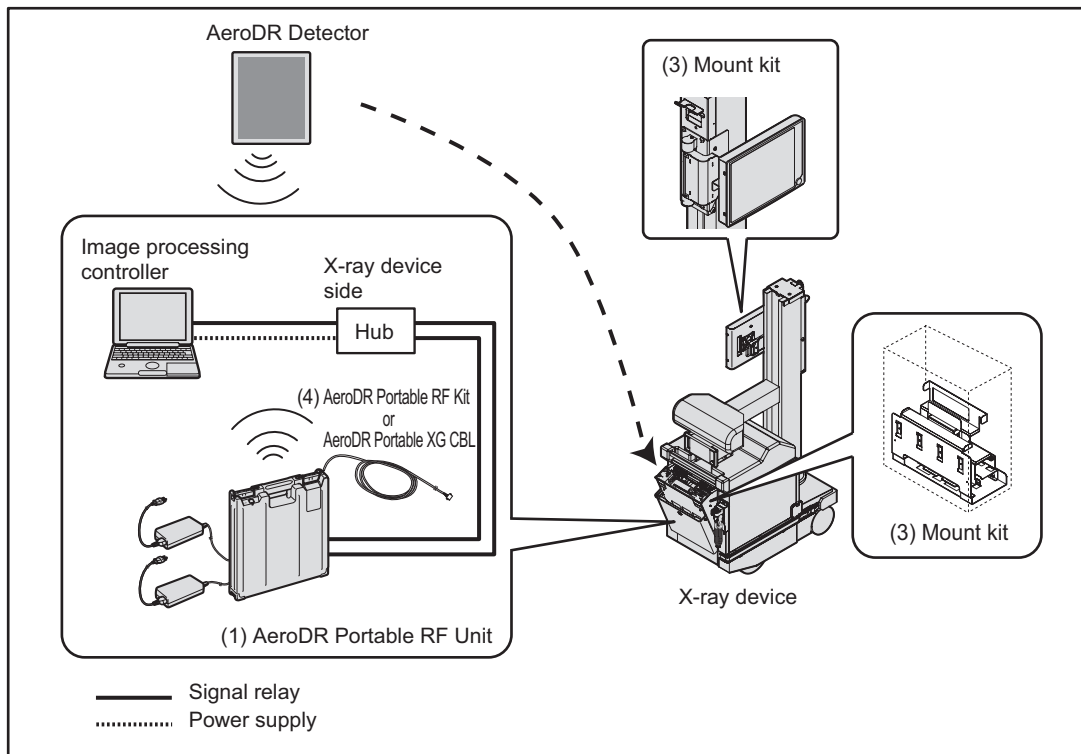
2.1 Overview of the AeroDR Portable RF Unit

- For a wireless connection between the AeroDR Portable RF Unit and the image processing controller

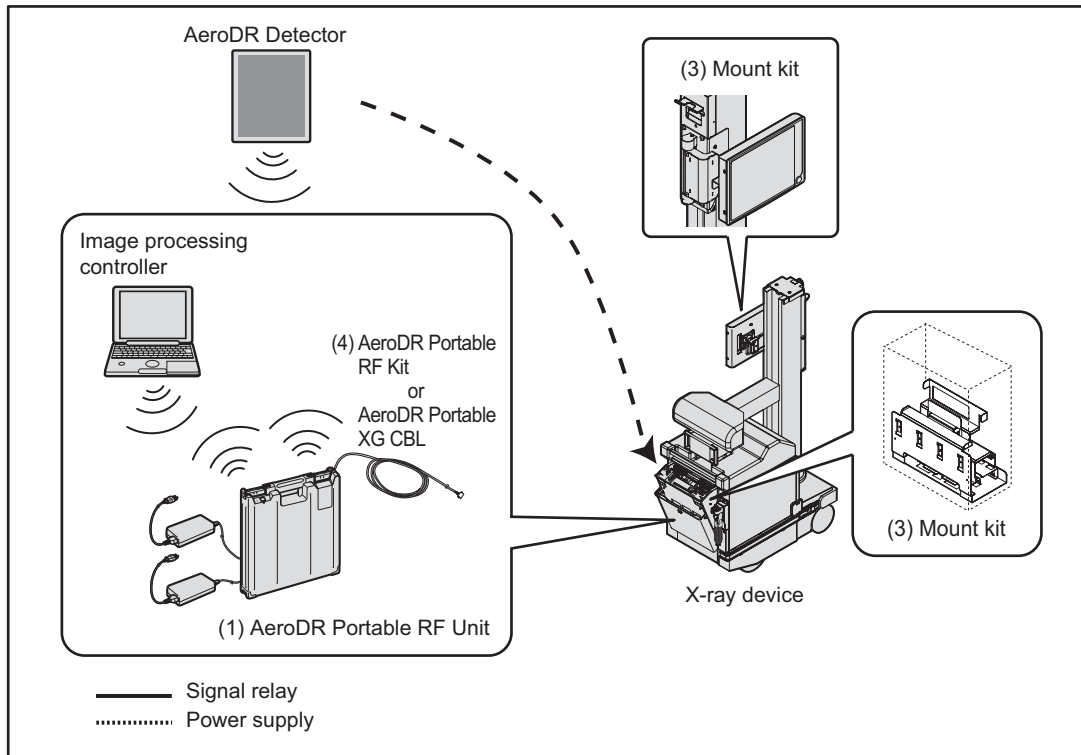


Operation example of AeroDR Portable RF Unit

- For a wired connection between the AeroDR Portable RF Unit and the image processing controller



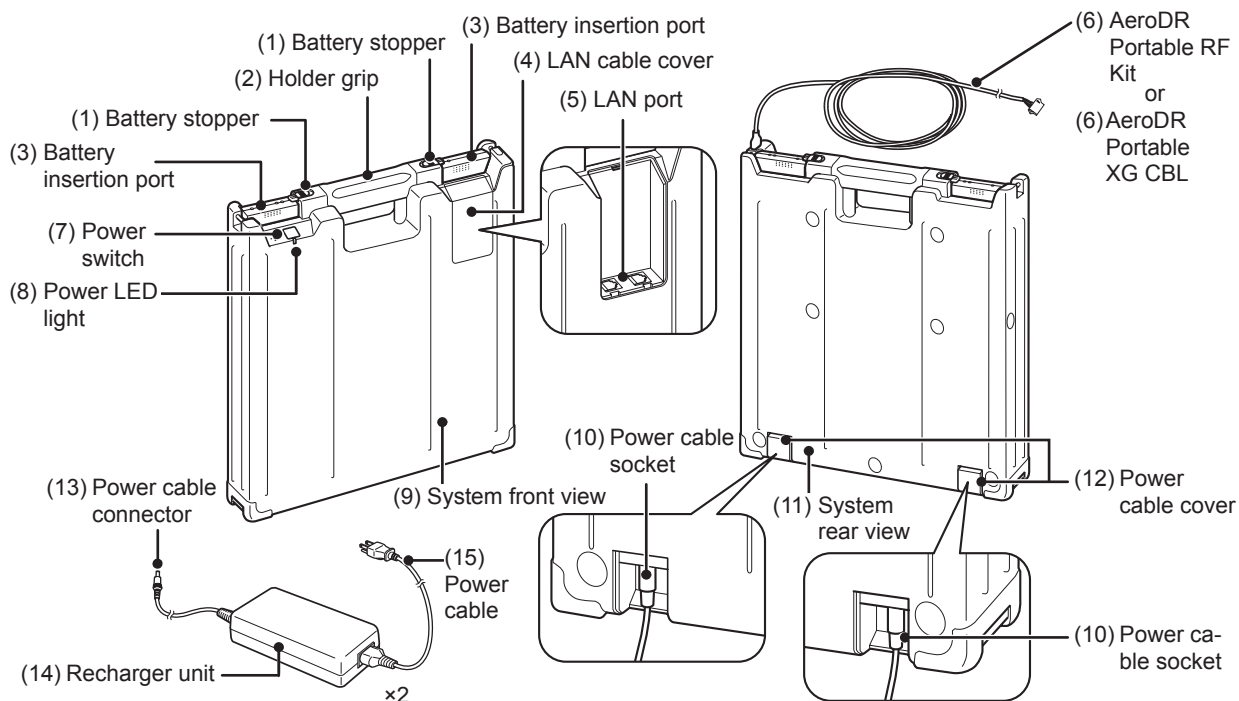
- For a wireless connection between the AeroDR Portable RF Unit and the image processing controller



2.2 • Component names and functions

2.2.1 AeroDR Portable RF Unit

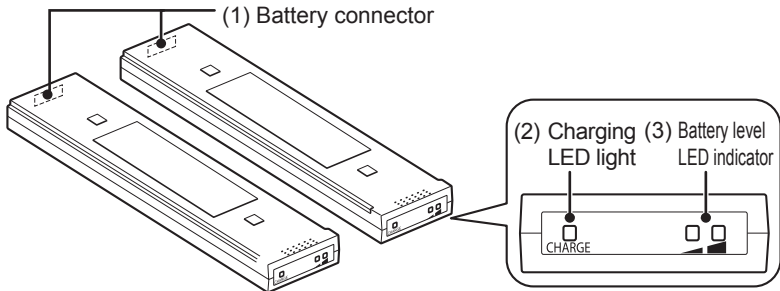
The component names and functions of the AeroDR Portable RF Unit are as follows.



Number	Name	Functions
(1)	Battery stopper	Locks and prevents the AeroDR Portable Unit Battery from falling.
(2)	Holder grip	This grip is used to carry the AeroDR Portable RF Unit.
(3)	Battery insertion port	AeroDR Portable Unit Battery loading port.
(4)	LAN cable cover	This is the Ethernet cable connector cover.
(5)	LAN port	The port for connecting the image processing controller through a wired connection. When using a wireless connection between the AeroDR Portable RF Unit and the image processing controller, the LAN port is connected via an ethernet cable.
(6)	AeroDR Portable RF Kit/ AeroDR Portable XG CBL	<ul style="list-style-type: none"> • Transfers a signal when using a X-ray device. • An exposure switch may be available on the AeroDR Portable RF Kit.
(7)	Power switch	Turns the power supply of AeroDR Portable RF Unit on and off.
(8)	Power LED light	Displays the Power On/Off status and the battery alarm of AeroDR Portable Unit Batteries. <div style="border: 1px solid black; padding: 2px; display: inline-block;"> Reference </div> <ul style="list-style-type: none"> • For the display patterns and status of the LEDs, refer to "Chapter 4 Status (LED) Display".
(9)	System front view	Protects the internal parts.
(10)	Power cable socket	This is the socket of the power cable connector.
(11)	System rear view	Protects the internal parts.
(12)	Power cable cover	This is the cover of the power cable connector.
(13)	Power cable connector	Plug into the power cable socket of AeroDR Portable RF Unit.
(14)	Recharger unit	Use to recharge the AeroDR Portable Unit Batteries.
(15)	Power cable	

2.2.2 AeroDR Portable Unit Battery

The component names and functions of the AeroDR Portable Unit Battery are as follows.



Number	Name	Functions
(1)	Battery connector	The connector port to AeroDR Portable RF Unit
(2)	Charging LED light	Indicates the AeroDR Portable Unit Battery recharging status. Reference • For the display patterns and status of the LEDs, see "Chapter 4 Status (LED) Display".
(3)	Battery level LED indicator	Indicates the voltage level of AeroDR Portable Unit Batteries. Reference • For the display patterns and status of the LEDs, see "Chapter 4 Status (LED) Display".

Chapter 3

General Operations

This chapter describes general operation methods
of the AeroDR Portable RF Unit.

3.1 • Startup and shutdown

Start up and shut down each system unit by the following operations.

IMPORTANT

- If you restart the image processing controller, also restart the AeroDR Portable RF Unit.

Reference

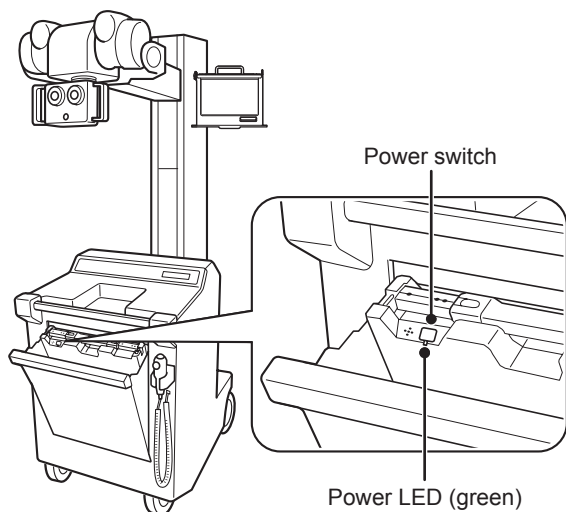
- Refer to the "Operation Manual" of the image processing controller regarding on/off for the image processing controller.

3.1.1 Startup of each system device

Start each system unit in the following procedure.

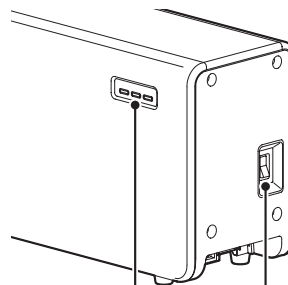
1 Start the AeroDR Portable RF Unit.

- Confirm that two AeroDR Portable Unit Batteries are mounted.
- Turn on the power switch of the AeroDR Portable RF Unit, and confirm that the Power LED (green) lights.

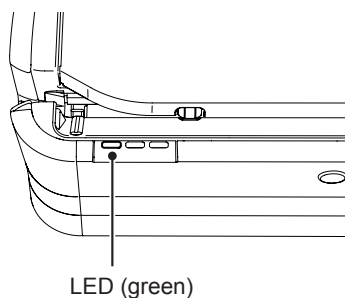


2 Start the AeroDR Interface Unit or AeroDR Battery Charger.

- Turn the power switch of the AeroDR Interface Unit on, and confirm that the LED (green) lights.



- When the power cable is connected to the wall outlet, power of the AeroDR Battery Charger is turned on. Confirm that the LED (green) is slowly flashing.

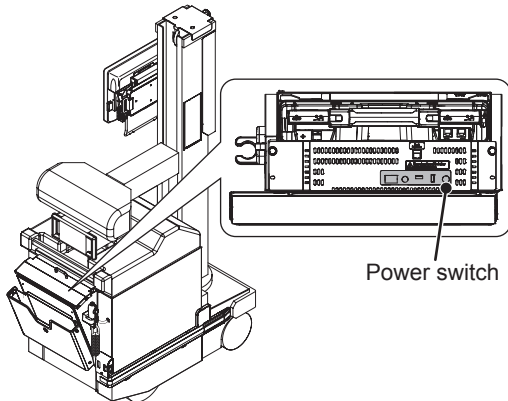


3 Start the image processing controller.

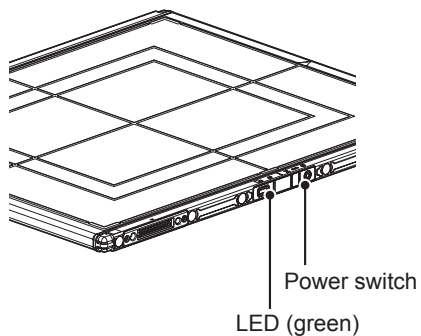
- Start the image processing controller by turning the power switch of the image processing controller on.

**HINT**

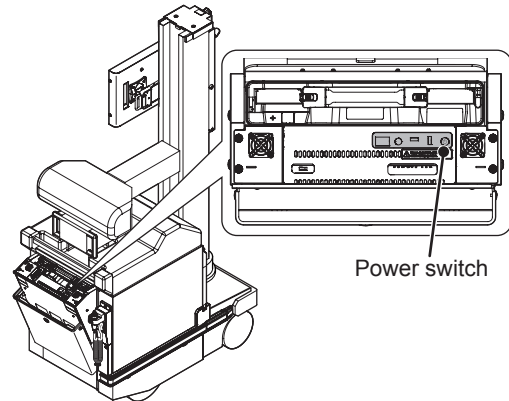
- When using a image processing controller battery, start up the image processing controller battery.
- Press and hold the power switch for 2 seconds or longer to start up the battery and confirm that the Power LED (green) lights.
- When the battery level is 10% or lower, the power LED (green) blinks.
- For the image processing controller battery, set voltage is first displayed for a few seconds after the start-up and then battery level is displayed.

**4 Start the AeroDR Detector.**

- If mounted on the AeroDR Battery Charger, remove the AeroDR Detector.
- Next, press the power switch of the AeroDR Detector for 2 seconds and turn it on, and confirm that the LED (green) is slowly flashing or lit.

**HINT**

- When using a 17-inch monitor, start up the battery for the monitor.
- Press and hold the power switch for 2 seconds or longer to start up the battery and confirm that the Power LED (green) lights.
- When the battery level is 10% or lower, the power LED (green) blinks.
- For the battery for 17-inch monitor, set voltage is first displayed for a few seconds after the startup and then battery level is displayed.

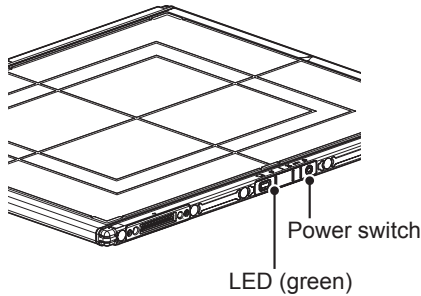
**5 Make sure that the power switch of X-ray device is On.****6 Confirm that the AeroDR Detector is ready for use on the image processing controller.**

3.1.2 Shutdown of each system device

Shut down each system unit in the following procedure.

1 Shut down the AeroDR Detector.

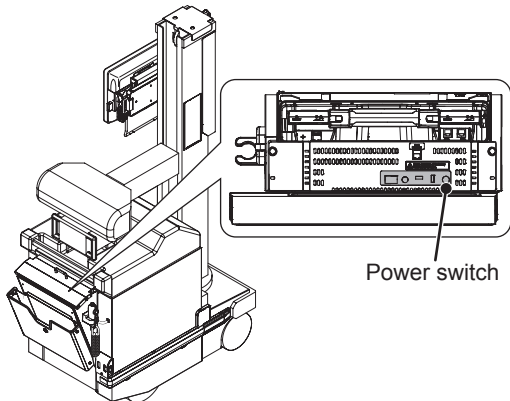
- Press the power switch of the AeroDR Detector for 5 seconds to turn it off, and confirm that the LED (green) is turned off.



2 Shut down the image processing controller.

HINT

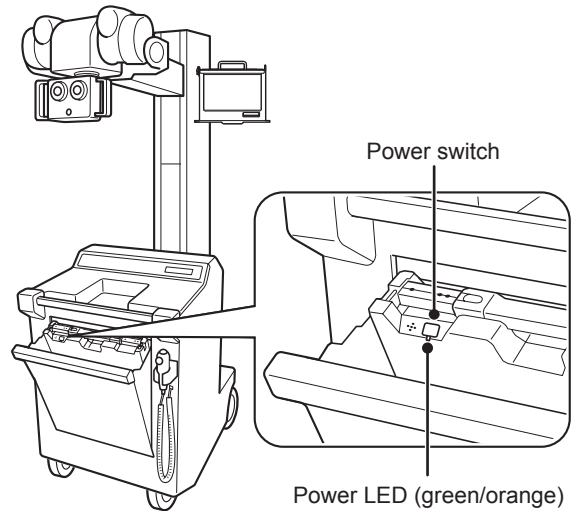
- When using a image processing controller battery, turn off the image processing controller battery.
- Press and hold the power switch for 2 seconds or longer to turn off the battery and confirm that the Power LED (green) turns off.



- Leave the UPS for the image processing controller turned on.
-

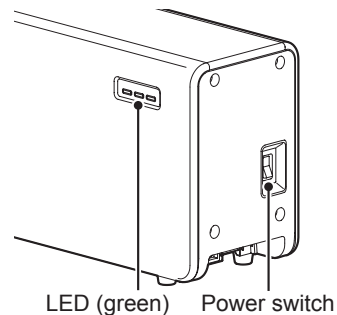
3 Shut down the AeroDR Portable RF Unit.

- Turn off the power switch of the AeroDR Portable RF Unit, and confirm that the Power LED (green/orange) is turned off.

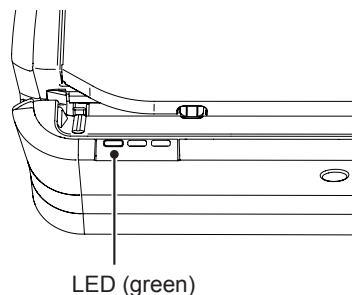


4 Shut down the AeroDR Interface Unit or AeroDR Battery Charger.

- Turn the power switch of the AeroDR Interface Unit off, and confirm that the LED (green) is turned off.



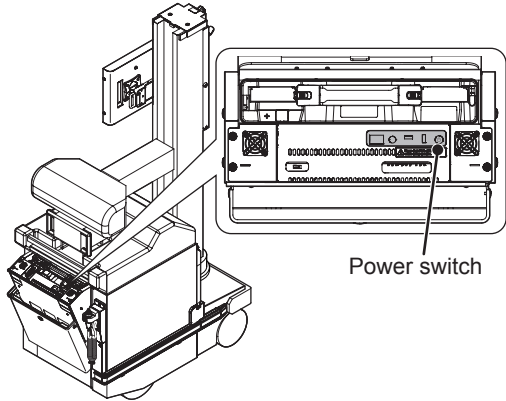
- When the power cable is removed from the wall outlet, the power of the AeroDR Battery Charger is turned off and the LED (green) is turned off.



5 Make sure that the power switch of X-ray device is Off.

HINT

- When a 17-inch monitor is used, turn off the battery for the monitor.
- Press and hold the power switch for 2 seconds or longer to turn off the battery and confirm that the Power LED (green) turns off.



3.2 • Operations on the AeroDR Portable RF Unit

3.2.1 Preparation to take radiography

Prepare the AeroDR Portable RF Unit to take radiography according to the following procedure.

1 Register the AeroDR Detector on the image processing controller to be used for the X-ray device.

Reference

- For the operation of the AeroDR Detector, see "AeroDR SYSTEM/AeroDR SYSTEM 2 Operation Manual".

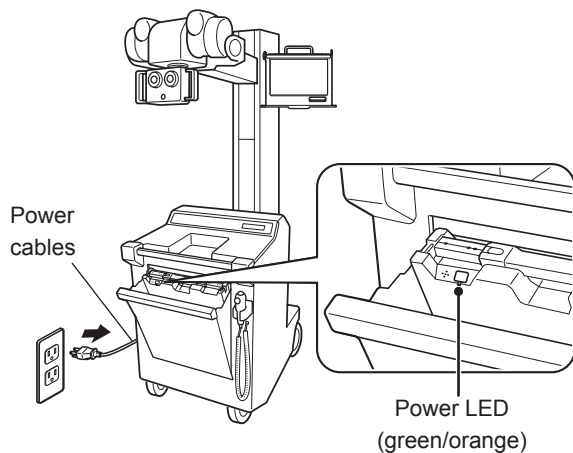
2 Register X-ray examination information on the image processing controller to be used for the X-ray device.

Reference

- Regarding the operation of the image processing controller, refer to the "Operation Manual" of the image processing controller.

3 When charging the AeroDR Portable RF Unit and the image processing controller, remove the power cable from the receptacle and confirm that the AeroDR Portable RF Unit has shut down.

- Confirm that the Power LED (green/orange) of the AeroDR Portable RF Unit is turned OFF.



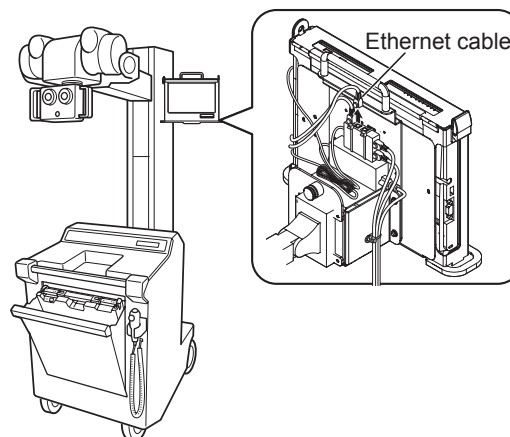
IMPORTANT

- Confirm that the AeroDR Portable Unit Battery and the image processing controller have recharged sufficiently.
- When using a image processing controller battery, confirm that the battery have recharged sufficiently.

HINT

- When the mount kit of the AeroDR Portable Unit is not used, store the two power cables of the AeroDR Portable RF Unit in the X-ray device.
- When the mount kit of the image processing controller is not used, remove the power cables from the image processing controller.
- The AeroDR Detector and the image processing controller may be left turned ON.

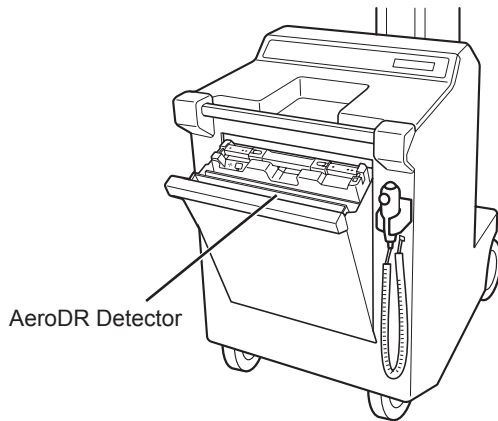
4 Remove the Ethernet cable, which is connected to the hub on the registration side of the AeroDR Detector, from the hub on the X-ray device side.



HINT

- If you connect AeroDR Portable RF Unit and the image processing controller wirelessly, remove the Ethernet cable which is connected to the hub of the registration side of the AeroDR Detector from the image processing controller.

5 Store the AeroDR Detector in the X-ray device.



HINT

- When the mount kit of the image processing controller is not used, store the image processing controller in the X-ray device.

.....

3.2.2 Exposure

Carry out radiography using the AeroDR Portable RF Unit according to the following procedure.

IMPORTANT

- Do not recharge the AeroDR Portable Unit Battery during exposure.
- When the battery level of the image processing controller battery is 20% or lower, recharge it before performing exposure.

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1 When the car arrives at the destination, take the AeroDR Detector out.

2 Turn the power switch of each equipment ON.

IMPORTANT

- After the AeroDR Portable RF Unit is turned ON, it may require approximately 1 minute for wireless connection.

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Reference

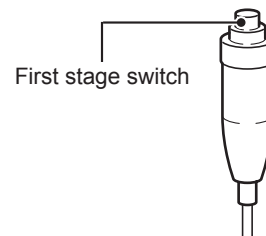
- For the startup of each system, refer to "3.1 Startup and shutdown".

.....

3 Check that each unit is ready to operate, and prepare to take radiography.

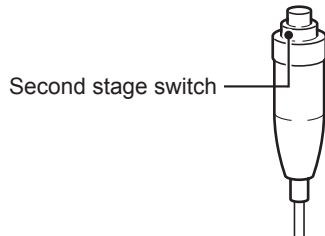
4 Push the exposure switch to the first stage.

- The exposure ready signal is sent to the X-ray device.



5 Push the exposure switch up to the second stage to perform exposure.

- Exposure is performed to produce X-ray images.
- When the exposure is completed, images are stored in the AeroDR Detector and will then be converted to digital data and sent to the image processing controller sequentially.



6 Check that the exposed image is displayed on the image processing controller.

IMPORTANT

- The AeroDR Detector is precision equipment, and therefore impact or vibration during radiography or image transfer may affect the image quality. Be careful when handling the AeroDR Detector during and just after radiography.

HINT

- If the AeroDR Detector remains unused for a long time (time can be set), it transitions to the sleep mode.
- When the image processing controller is ready to expose, it recovers from the sleep mode.

Reference

- Regarding the operation of the image processing controller, refer to the "Operation Manual" of the image processing controller.

7 When moving the AeroDR Portable RF Unit, turn the unit OFF because its wireless communication may affect the surrounding.

- Use the power switch to turn OFF the AeroDR Portable RF Unit and confirm that the Power LED (green/orange) is turned OFF.

3.2.3 Operations after radiography

After you finish taking radiography, follow the procedures below.

1 After you finish taking radiography, store the AeroDR Detector in the X-ray device.

2 Shut down the AeroDR Portable RF Unit.

- Turn the AeroDR Portable RF Unit OFF and confirm that the Power LED (green/orange) is turned OFF.

HINT

- The AeroDR Detector and the image processing controller may be left turned ON.

Reference

- For the shutdown of the AeroDR Portable RF Unit, refer to "3.1 Startup and shutdown".

3 Move the X-ray device.

4 Connect the Ethernet cable, which is connected to the hub on the registration side of the AeroDR Detector, to the hub on the X-ray device side.

HINT

- If you connect AeroDR Portable RF Unit and the image processing controller wirelessly, connect the Ethernet cable which is connected to the hub of the registration side of the AeroDR Detector to the image processing controller.

5 Output taken images from the image processing controller used for the X-ray device.

Reference

- Regarding the operation of the image processing controller, refer to the "Operation Manual" of the image processing controller.

6 Plug the power cables in a receptacle to recharge the AeroDR Portable RF Unit and the image processing controller.

HINT

- When the mount kit of the AeroDR Portable Unit is not used, plug the two power cables of the AeroDR Portable RF Unit in a receptacle.
 - When the mount kit of the image processing controller is not used, connect the power cables to the image processing controller.
-

7 Recharge the AeroDR Detector and the X-ray device.

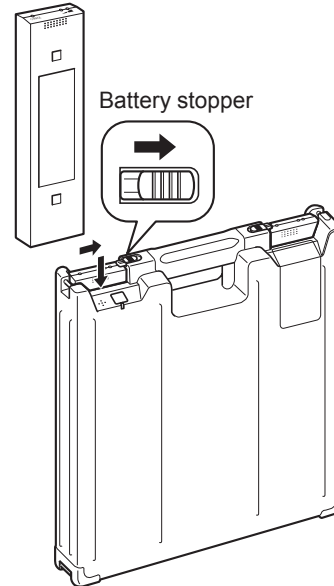
Reference

- For the operation of the AeroDR Detector, see "AeroDR SYSTEM/AeroDR SYSTEM 2 Operation Manual".
-

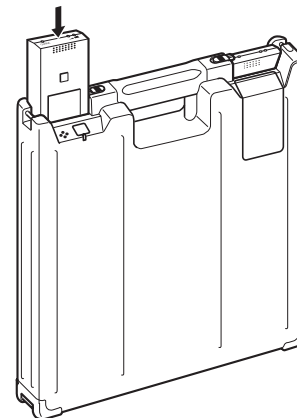
3.2.4 Mounting or dismounting the AeroDR Portable Unit Battery

● **Mounting**

1 Slide the battery stopper using the corner of the AeroDR Portable Unit Battery .

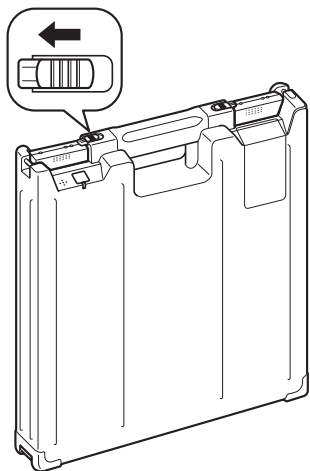


2 Carefully but fully insert the AeroDR Portable Unit Battery into the battery slot.



- 3 Make sure that the AeroDR Portable Unit Battery is locked and secured by the battery stopper.**

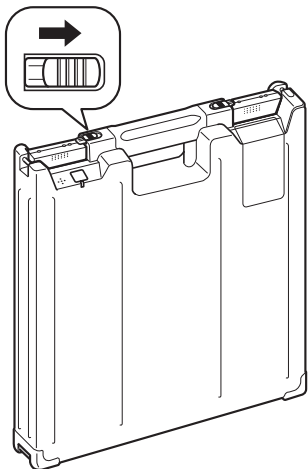
Battery stopper



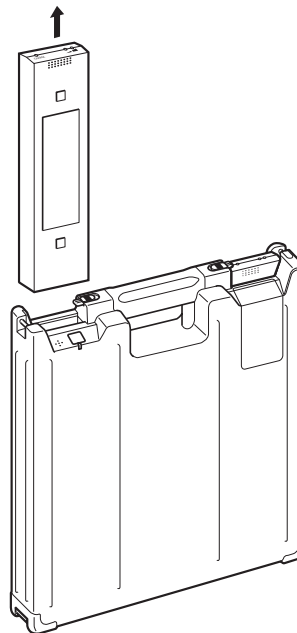
● **Dismounting**

- 1 Slide the battery stopper to release it.**

Battery stopper



- 2 Pull out the AeroDR Portable Unit Battery from the battery slot.**



HINT

- Mount or dismount the AeroDR Portable Unit Battery at the LAN cable cover side in the similar way.

.....

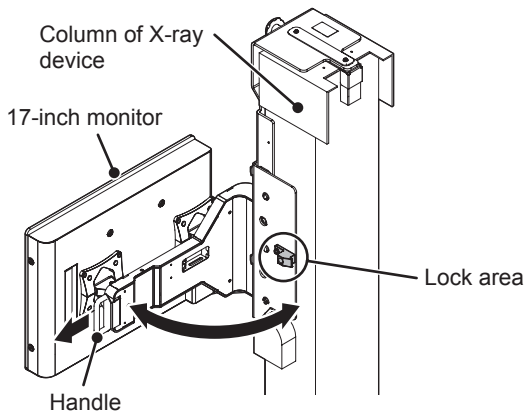
3.2.5 Operating a mount kit

IMPORTANT

- Do not forcefully spin the mount kit of the image processing controller or 17-inch monitor.
- Be careful not to pinch your fingers during operation.

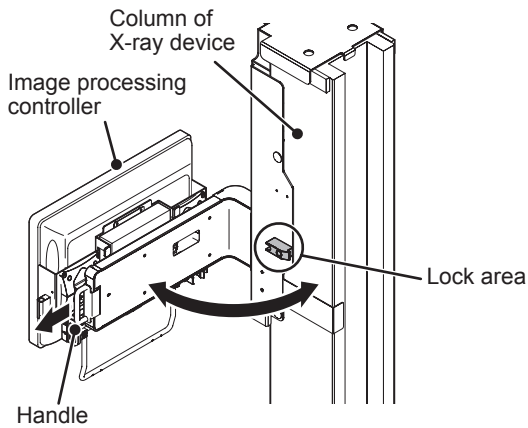
● **When the AeroDR Portable CS7 17D Mount Kit G1 or the AeroDR Portable CS7 17D Mount Kit Sh1 is used**

- If the 17-inch monitor is locked to the column of a X-ray device, pull the handle to release the lock before rotating the monitor.



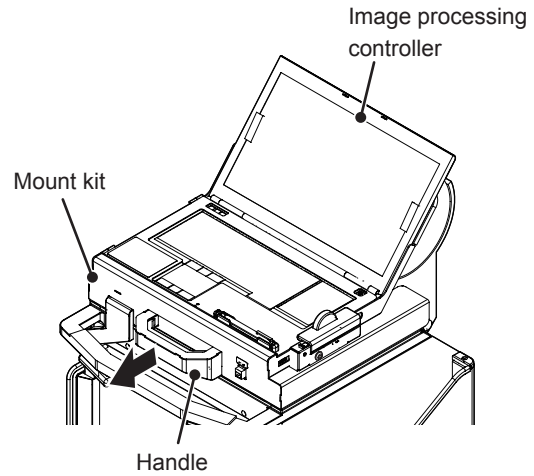
● **When the AeroDR Portable 19PC Mount Kit G1 or the AeroDR Portable 19PC MK-G-OP is used**

- If the image processing controller is locked to the column of a X-ray device, pull the handle to release the lock before rotating the image processing controller.

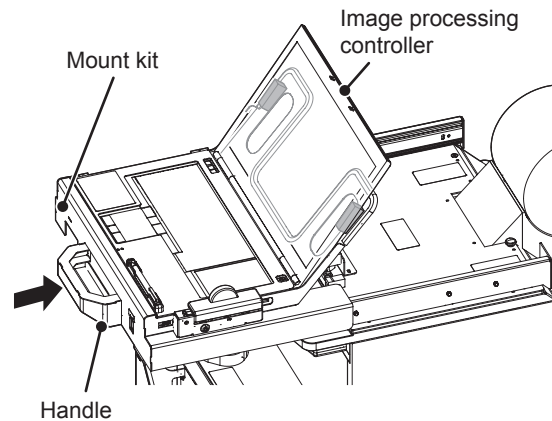


● **When the AeroDR Portable CS7 17P Mount Kit Si1D is used**

- Grasp the handle, release the lock, and then pull out the mount kit.

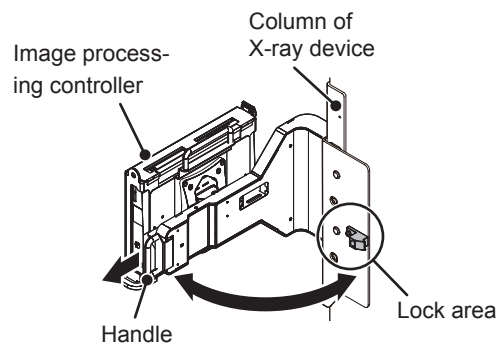


- Close the Mount kit by firmly pressing the handle area.



● **When the AeroDR Portable CS7 12P Mount Kit Sh1 is used**

- If the image processing controller is locked to the column of a X-ray device, pull the handle to release the lock before rotating the image processing controller.



3.2.6 Precautions of operations

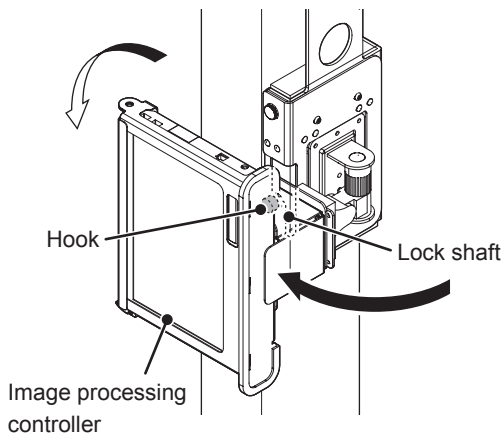
When transporting the X-ray device

IMPORTANT

- Turn off the AeroDR Portable RF Unit when transporting the X-ray device because it may affect the surroundings with radio transmissions.
 - Do not rotate the image processing controller and mount kit for 17-inch monitor swiftly.
-

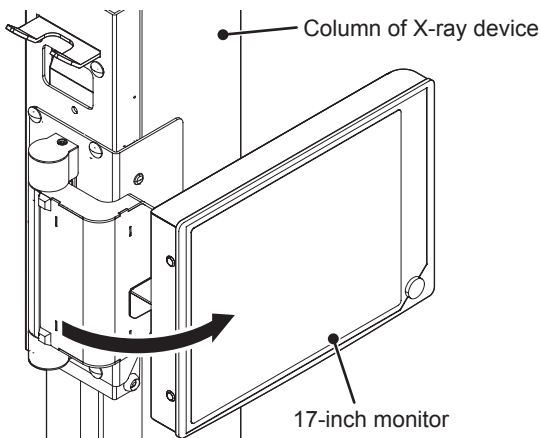
● **When the AeroDR Portable CS7P Mount Kit G1 is used**

- When transporting the X-ray device, fix the lock shaft to the hook.



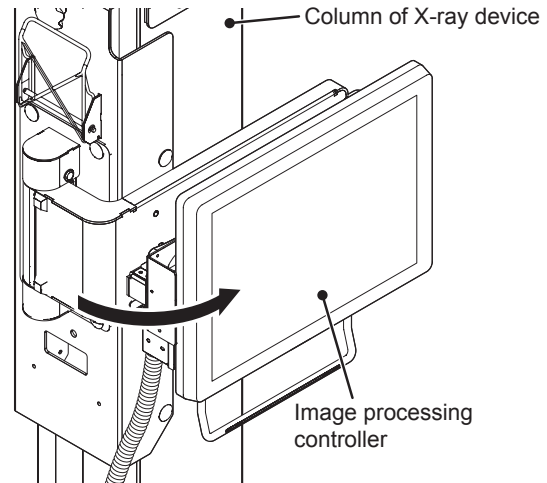
● **When the AeroDR Portable CS7 17D Mount Kit G1 or the AeroDR Portable CS7 17D Mount Kit Sh1 is used**

- When transporting the X-ray device, rotate and set the 17-inch monitor to the right of the column of the X-ray device.



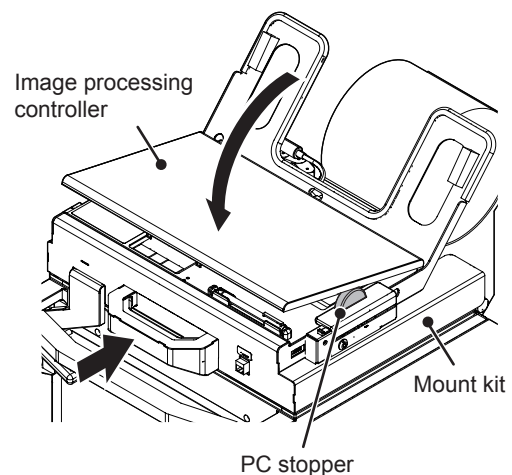
● **When the AeroDR Portable 19PC Mount Kit G1 or the AeroDR Portable 19PC MK-G-OP is used**

- When transporting the X-ray device, rotate and set the image processing controller to the right of the column of the X-ray device.



● **When the AeroDR Portable CS7 17P Mount Kit Si1D is used**

- When transporting the X-ray device, close the mount kit, and fasten it while it is locked into place.
- When transporting the X-ray device, close the LCD of the image processing controller to the PC stopper position.

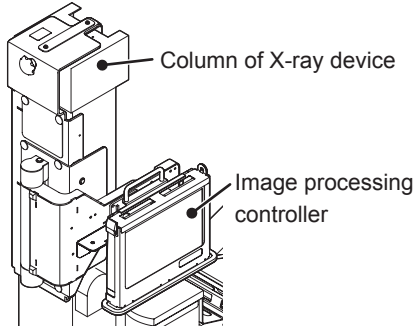


HINT

- The LCD of the image processing controller does not need to be fully closed.
-

● **When the AeroDR Portable CS7 12P Mount Kit Sh1 is used**

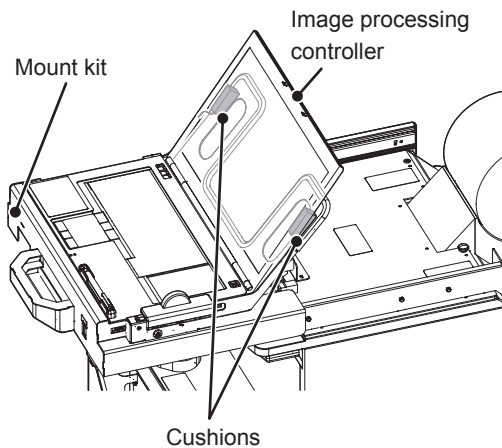
- When transporting the X-ray device, rotate and set the image processing controller to the right of the column of the X-ray device.



When taking radiography

● **When the AeroDR Portable CS7 17P Mount Kit Si1D is used**

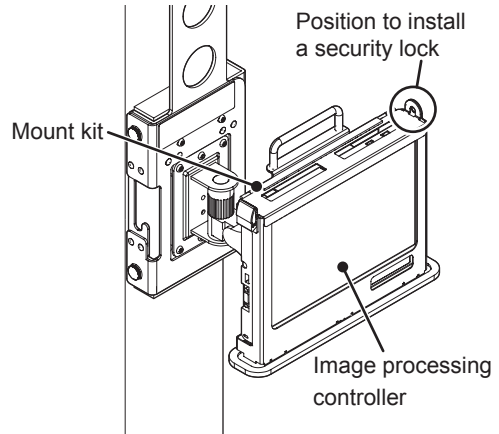
- When taking radiography, pull the mount kit all the way toward you, and fasten it while it is locked into place.
- Use the LCD of the image processing controller by opening it so that the rear touches the cushions.



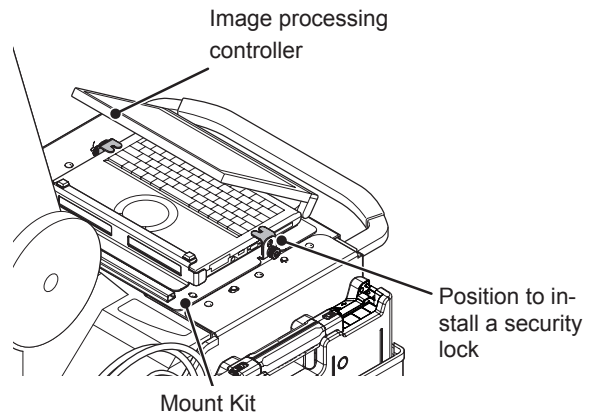
Protecting the image processing controller against theft

- Protect the image processing controller against theft using a commercial security lock.

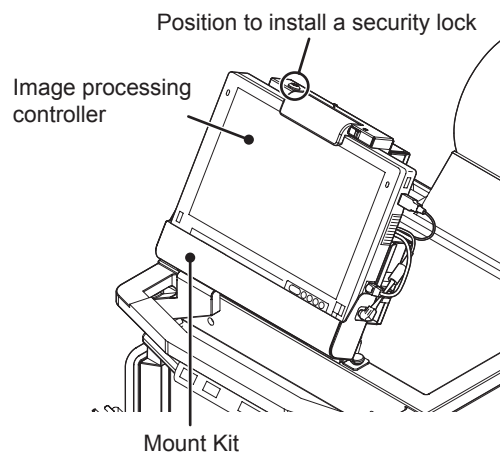
● **When the AeroDR Portable CS7P Mount Kit G1 is used**



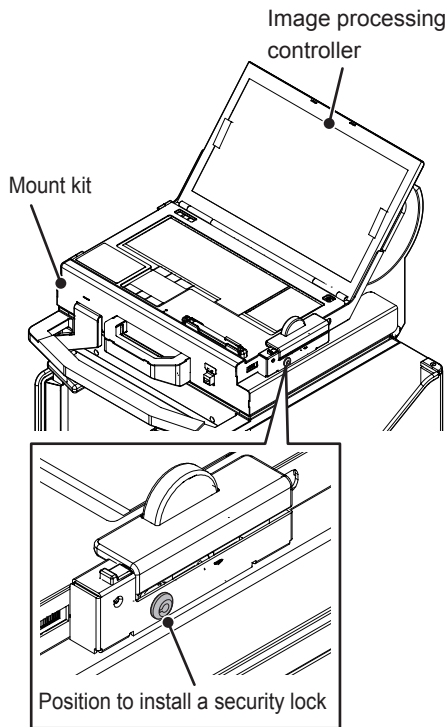
● **When the AeroDR Portable Unit Mount Kit Si1 is used**



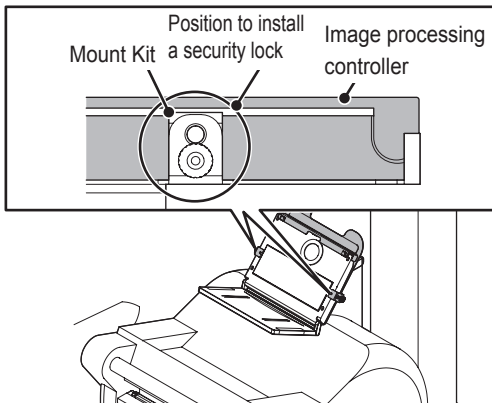
● **When the AeroDR Portable CS7P Mount Kit Si1D is used**



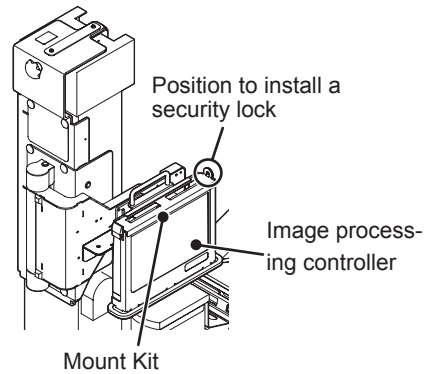
● When the AeroDR Portable CS7 17P Mount Kit Si1D is used



● When the AeroDR Portable CS7P Mount Kit Sh1/Sh2 is used



● When the AeroDR Portable CS7 12P Mount Kit Sh1 is used



Consumables

- Refer to each device's manual for information about periodic replacement parts and consumables for the image processing controller, battery for 17-inch monitor, UPS, etc.
- In particular, continued use of the battery may result in degradation and wear, and it may no longer exhibit proper functioning capabilities. For extended, safe use, it is necessary to replace parts which have become worn or degraded.

Other

● When the AeroDR Portable Unit Mount Kit G1D is used

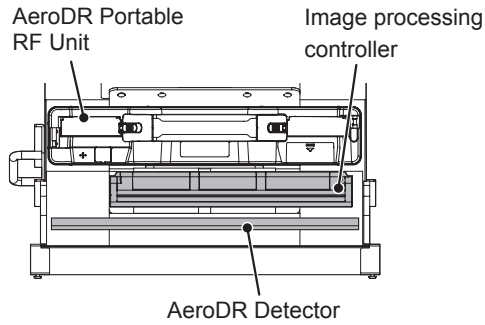
- Attach the Drip proof Cover G1 (option) to prevent the AeroDR Portable RF Unit or image processing controller from coming into contact with liquid.

IMPORTANT

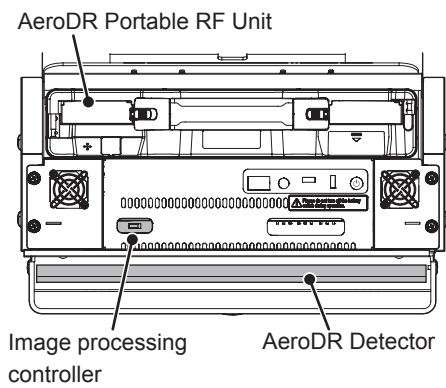
- The Drip proof Cover G1 will not completely prevent liquid penetration.

3.2.7 Storage method

- When the AeroDR Portable Unit Mount Kit G1 is used



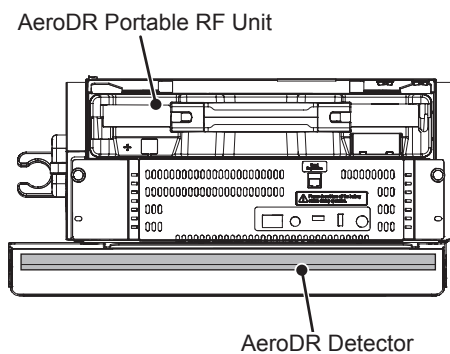
- When the AeroDR Portable Unit Mount Kit G1D is used



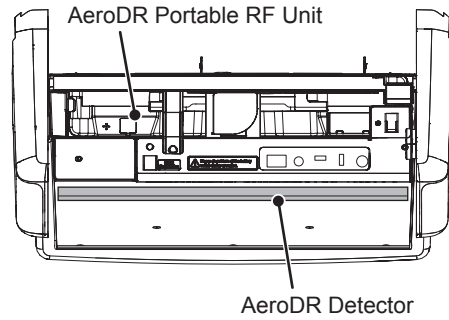
IMPORTANT

- Be careful that if the cover attached to the edge of the storage compartment of the Mount kit is damaged it may cause injury. For replacement of the cover, contact Konica Minolta technical representatives.

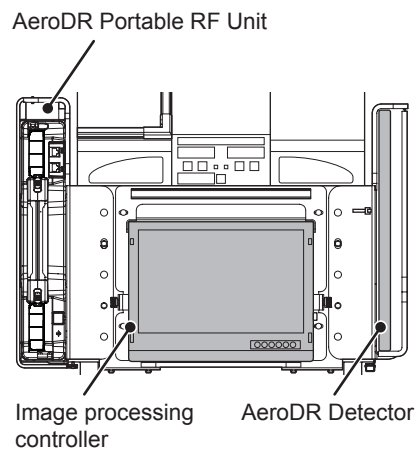
- When the AeroDR Portable 19PC Mount Kit G1 is used



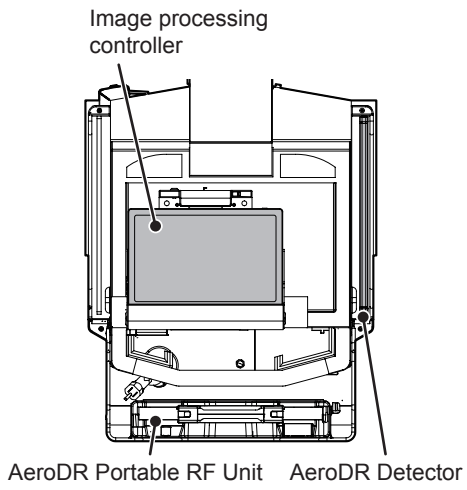
- When the AeroDR Portable 19PC MK-G-OP is used



- When the AeroDR Portable Unit Mount Kit Si1 is used



● When the AeroDR Portable Unit Mount Kit Si1D is used

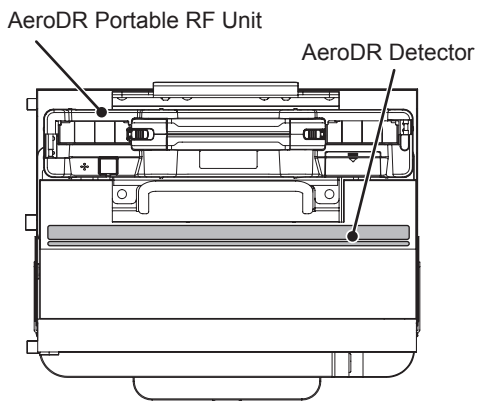


HINT

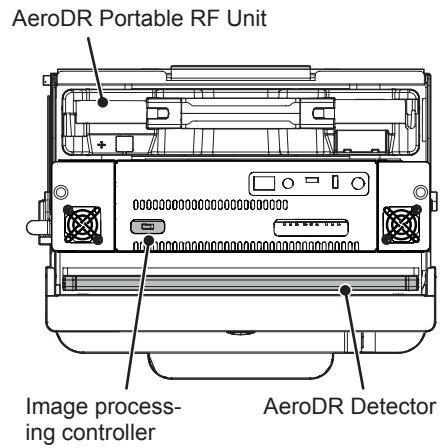
- AeroDR Detector can be stored in either left or right storage compartment.

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● When the AeroDR Portable Unit Mount Kit Sh1 is used



● When the AeroDR Portable Unit Mount Kit Sh4 is used



3.3 • Recharging of the AeroDR Portable Unit Battery

IMPORTANT

- Never carry out exposure while recharging the AeroDR Portable Unit Battery.
- The charge LED (blue) may blink unsteadily when charge is completed or power cable is disconnected; this is not a malfunction.

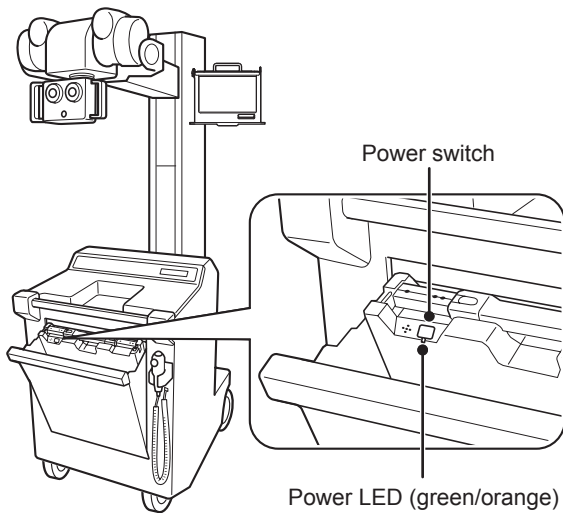
3.3.1 Recharging

Recharge the AeroDR Portable RF Unit in the following procedure.

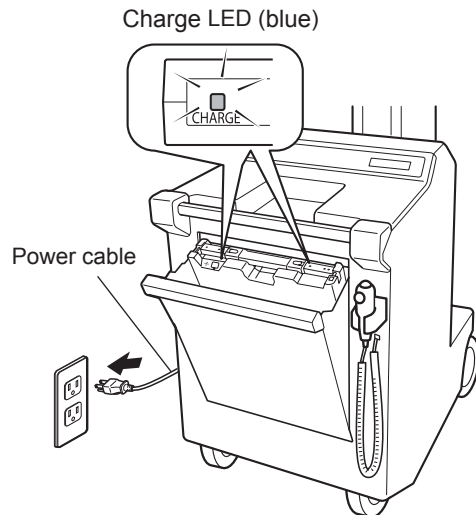
IMPORTANT

- Recharge the two batteries at the same time regardless of their battery voltage level.

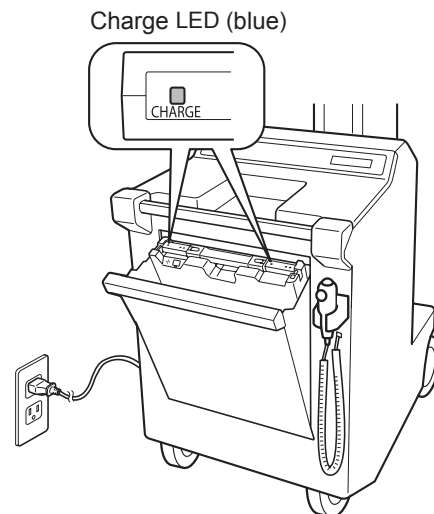
- 1 Turn OFF the AeroDR Portable RF Unit and confirm that the Power LED (green/orange) is turned OFF.**



- 2 Plug the power cable into the receptacle.**
 - When battery charging starts, the "blue" charge LED starts blinking on the top of battery.



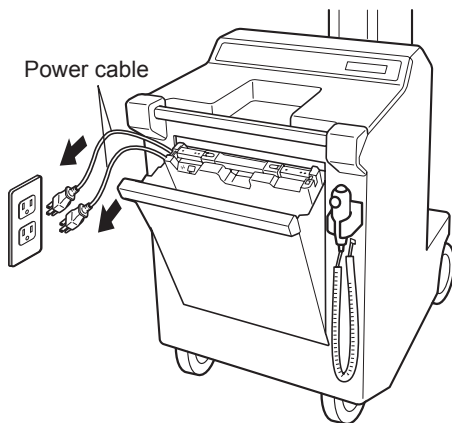
- 3 When the battery is fully recharged, the "blue" charge LED continues to light.**



4 Remove the power cables from the receptacle.

HINT

- When the mount kit of the AeroDR Portable Unit is not used, take the two power cables of the AeroDR Portable RF Unit out from the X-ray device and recharge them.



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3.3.2 Charging time guide

It takes approximately 5 hours to fully charge up AeroDR Portable Unit Batteries if they have been fully discharged.

HINT

- The charging time of AeroDR Portable Unit Batteries vary depending on the battery application environment and frequency of usage.

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3.3.3 Charging indication

The battery level LED indicator (green) changes according to the current level of the AeroDR Portable Unit Battery.

Battery level	LED display
30% to 100% battery level	Two LEDs light up.
10% to 30% battery level	One LED lights up.
0% to 10% battery level	LED goes out.

IMPORTANT

- When the AeroDR Portable Unit Batteries drop below the 10% voltage level, the buzzer sounds. At the same time, the orange Power LED starts to blink on the AeroDR Portable RF Unit.
- When you remove the AeroDR Portable Unit Batteries, the green battery level LED goes out.
- The indication of the green battery level LED lamps differs between the two AeroDR Portable Unit Batteries.

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Chapter 4




Status (LED) Display

This chapter describes the LED display patterns and the status of the respective devices.

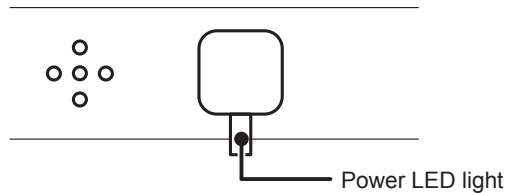
4.1 • LED display of respective devices

Status of the respective devices can be confirmed with LEDs.
Check the status of the respective devices, referring to the "LED display pattern".




LED display pattern

Notation	Display pattern
	Off
	Flashing
	On

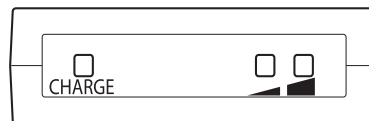
4.1.1 AeroDR Portable RF Unit






Power LED (green/orange)

Display pattern	Status
	Shutdown condition
	The level of AeroDR Portable Unit Batteries is lower than 10% (and the orange LED blinks).
	The system is operating or the level of AeroDR Portable Unit Batteries is 10% to 100% (and the green LED lights).



4.1.2 AeroDR Portable Unit Battery



CHARGE : CHARGE LED (blue)

Display pattern	Status
	Shutdown condition
	The battery is being charged.
	The battery has been charged.

▲ : Battery level LED (green)

Display pattern	Status
	The battery level is lower than 10 %, or no battery charge remaining.
	When two LEDs light up, the battery is 30% to 100% charged. When one LED lights up, the battery is 10% to 30% charged.

Chapter 5

Troubleshooting

This chapter describes problems that may occur and error codes that may be displayed, and how to resolve each of them.

5.1 • Various problems and countermeasures

If the following problems occur in the AeroDR Portable RF Unit, consult the respective references for countermeasures.

IMPORTANT

- After performing countermeasures, if the problem does not go away, contact Konica Minolta technical representatives.

HINT

- When an error message has been displayed in the image processing controller, check the error description and countermeasures listed in the "Operation Manual" of the image processing controller.

5.1.1 AeroDR Portable RF Unit

Status	Error description	Corrective actions
Power LED (green/orange) does not light.	AeroDR Portable Unit Batteries are not mounted.	Mount the fully charged AeroDR Portable Unit Batteries correctly.
	AeroDR Portable Unit Batteries are not mounted correctly.	
	AeroDR Portable Unit Batteries are fully discharged.	
Power LED (orange) is blinking. The buzzer continues to sound.	Battery voltage has dropped below 10% level.	Recharge the AeroDR Portable Unit Batteries.
Communication is not established between the image processing controller and AeroDR Detector.	If the image processing controller is connected with an Ethernet cable, the cable is not connected properly.	Make sure that the Ethernet cable is connected correctly.
	The image processing controller wire/wireless switch is not turned On.	Turn the image processing controller wire/wireless switch On.
	The power switch of AeroDR Portable RF Unit is not turned On.	Make sure that the power switch of AeroDR Portable RF Unit is On.
	An error occurred in the AeroDR Detector.	Restart the AeroDR Detector by referring to the "AeroDR SYSTEM/AeroDR SYSTEM 2 Operation Manual".
	Battery level of AeroDR Detector is insufficient.	Recharge the battery of AeroDR Detector by referring to the "AeroDR SYSTEM/AeroDR SYSTEM 2 Operation Manual".
Battery recharging does not start.	AeroDR Portable Unit Batteries are not mounted correctly.	Mount the AeroDR Portable Unit Batteries correctly.
Battery drops quickly even if AeroDR Portable Unit Batteries are recharged.	AeroDR Portable Unit Battery life is exhausted.	Replace the AeroDR Portable Unit Batteries with new ones.
Image display of the image processing controller is slow.	Wireless communication environment is poor if the image processing controller is used in wireless connection.	Improve the wireless communication environment by slightly enlarging the opening of X-ray device toward you or others during radiography. Or use the image processing controller in the wire connection.
No radiography starts when the Exposure switch is pressed.	Two AeroDR Portable Unit Batteries are not mounted.	Mount the two fully charged AeroDR Portable Unit Batteries.
	AeroDR Portable Unit Batteries are not mounted correctly.	Mount the fully charged AeroDR Portable Unit Batteries correctly.

Chapter 6

Maintenance

This chapter describes the items that require periodic maintenance.

6.1 • Maintenance and inspection items

This chapter describes the inspections and cleaning required in order to maintain the use of the AeroDR Portable RF Unit in an optimum condition.

6.1.1 Maintenance schedule

The maintenance and inspection items that the user should perform are as follows.

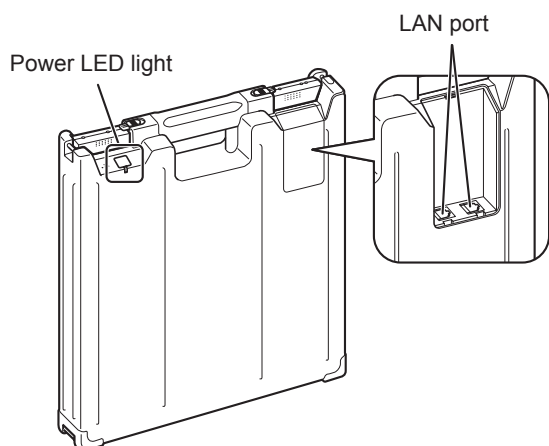
Maintenance task	Maintenance interval
Checking and cleaning the surface of the AeroDR Portable RF Unit	Weekly
Checking for external damage to the AeroDR Portable RF Unit	Weekly
Full charge of the AeroDR Portable Unit Battery	Monthly

- IMPORTANT**
- To ensure optimum use of the AeroDR Portable RF Unit, be sure to perform periodic maintenance.
 - The above task intervals are estimates and vary according to usage.
-

6.1.2 Cleaning

The cleaning method for each device is as follows.

- **AeroDR Portable RF Unit**
 - Clean dust on the insert table of the AeroDR Portable RF Unit with a soft cloth moistened with anhydrous alcohol or water.



- IMPORTANT**
- Be careful not to apply any cleaning chemical or liquid onto the Power LED and LAN port.
 - Do not clean with sharp or hard metal objects. If you cannot remove stains, contact Konica Minolta technical representatives.
-

- **Mount kit**
 - Clean dust on the mount kit with a soft cloth moistened with anhydrous alcohol or water.

- IMPORTANT**
- Do not use bleaching agents.
-

6.1.3 Periodical replacement parts

The approximate battery replacement cycle is follows.

Replacement parts	Estimated replacement
AeroDR Portable Unit Battery	2 years

- IMPORTANT**
- The replacement cycle depends on the frequency of battery operation and conditions.
 - Refer to each device's manual for information about periodic replacement parts and consumables for the image processing controller, battery for 17-inch monitor, UPS, etc.
 - In particular, continued use of the battery may result in degradation and wear, and it may no longer exhibit proper functioning capabilities. For extended, safe use, it is necessary to replace parts which have become worn or degraded.
-

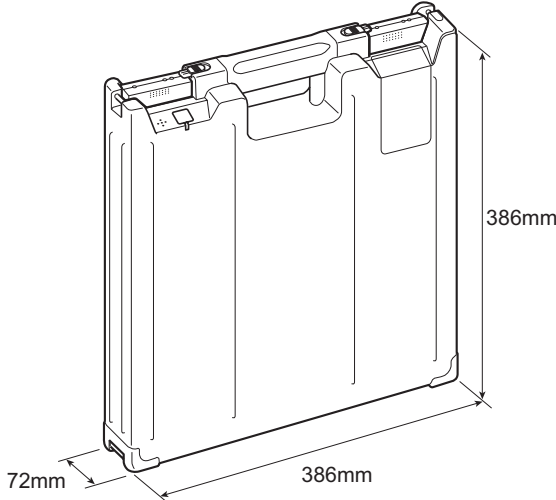
Chapter 7

Specifications

This chapter describes the specifications of each system device.

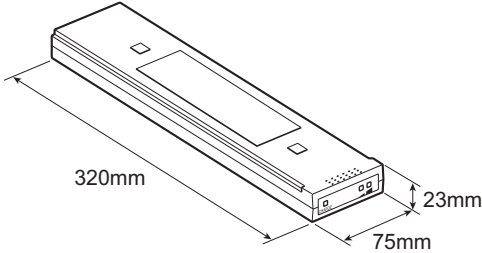
7.1 • Specifications

7.1.1 AeroDR Portable RF Unit

Item	Description
Product name	AeroDR Portable RF Unit
Power requirements	Normal operation: DC24.6±0.3V 4.0A direct current During charging: AC 100/110/115/120/200/220/230/240 VAC ±10%, single phase, 50/60 Hz
External dimensions	386(W)×72(D)×386(H)mm 
Weight	6.3 kg (Including two AeroDR Portable Unit Batteries)
Battery operating time	Approx. 11 hours
Battery Charger Specifications	Product Name: Battery Charger (Product Number: RPC Co.MDA10125202000) Dimensions: 140×62×35 mm (excluding cables) Weight: 300 g Safety Standards: UL1310, EN60355 INPUT: AC100 to 240 V 1.8 A(MAX.) 50/60 Hz OUTPUT: DC24.6V(MIN.) 2.0A



















- The described performance may change depending on the environment and frequency of use. (This is not a guarantee of performance.)
- The performance of battery is all performance after fully charged.

7.1.2 AeroDR Portable Unit Battery

Item	Description
Product name	AeroDR Portable Unit Battery
Power consumption	Approx. 60VA
External dimensions	75(W)×320(D)×23(H)mm 
Weight	760 g
Battery type	Lithium-ion batteries

- The AeroDR Portable RF Unit uses two batteries for the AeroDR Portable Unit.

7.1.3 General AeroDR Portable RF Unit

Item	Description					
Recommended storage and usage environment conditions	When operating	<table border="1"> <thead> <tr> <th>Temperature</th> <th>Humidity</th> </tr> </thead> <tbody> <tr> <td>10 to 30°C </td> <td>35 to 80% RH (ensure no water condensation) </td> </tr> </tbody> </table>	Temperature	Humidity	10 to 30°C 	35 to 80% RH (ensure no water condensation) 
	Temperature	Humidity				
	10 to 30°C 	35 to 80% RH (ensure no water condensation) 				
When not operating	<table border="1"> <thead> <tr> <th>Temperature</th> <th>Humidity</th> </tr> </thead> <tbody> <tr> <td>-10 to 40°C </td> <td>20 to 90% RH (ensure no water condensation) </td> </tr> </tbody> </table>	Temperature	Humidity	-10 to 40°C 	20 to 90% RH (ensure no water condensation) 	
Temperature	Humidity					
-10 to 40°C 	20 to 90% RH (ensure no water condensation) 					
In storage/transport	<table border="1"> <thead> <tr> <th>Temperature</th> <th>Humidity</th> </tr> </thead> <tbody> <tr> <td>-20 to 60°C^{*1} </td> <td>20 to 90% RH (ensure no water condensation) </td> </tr> </tbody> </table> <p>*1 However, performance warranty period when storing at 60°C is 6 months after packing.</p>	Temperature	Humidity	-20 to 60°C ^{*1} 	20 to 90% RH (ensure no water condensation) 	
Temperature	Humidity					
-20 to 60°C ^{*1} 	20 to 90% RH (ensure no water condensation) 					
Classification	Safety IEC60601-1 internal power supply					

7.1.4 Product configuration

This device must be configured as shown below.

● **EU and EFTA countries and Turkey**

Product Name	Component name in this manual	Component name in Label
AeroDR Portable	AeroDR Portable RF Unit	AeroDR Portable RF Unit
		AeroDR Portable Unit Battery

● **Cables and minor components**

Specific components described in operation manual of the specific components are not described in the following table.

Product Name	Component name in this manual	Component name in Label
AeroDR Portable	AeroDR Portable RF Kit	AeroDR Portable RF Kit G1
		AeroDR Portable RF Kit G1D
		AeroDR Portable RF Kit G2
		AeroDR Portable RF Kit Si1
		AeroDR Portable RF Kit Si1D
		AeroDR Portable RF Kit Sh1
		AeroDR Portable RF Kit Sh2
	I/F Connection Cable	AeroDR Portable XG Cable DC
		AeroDR PortableXGCBL PX20HF Plus
		AeroDR PortableXGCBL RJ-45

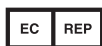
- The AeroDR Portable RF Kit and I/F Connection Cable may be subject to add/change without prior notice for improvements.



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