

# **INNOLUX**

**Flat Panel Sensors**

**RIC 35G**

**RIC 43G**

**RIC 35C**

**RIC 43C**

**RIC 24C**

## **Operation Manual**

**1st Edition : March 2017**

**For Safe Operation**

**System  
Configuration  
(Product Overview)**

**Basic Operation**

**Daily Inspection and  
Maintenance**

**Appendix**

**Maintenance and  
Inspection**

This Operation Manual describes details on how to operate the flat panel sensor and cautions to be observed when operating it.

After reading this manual, store it nearby the flat panel sensor so that you can see it whenever necessary.

**INNOLUX Corporation**



# Introduction

The indirect-conversion flat panel sensor is a device which acquires a general radiograph. The flat panel sensor is a component of RIC.

Available flat panel sensor is RIC 35G/RIC 43G/RIC 35C/RIC 43C/RIC 24C.

RIC 35G, RIC 43G, RIC 35C, RIC 43C and RIC 24C:

Wireless communication mode or wired communication mode is available. When used in wireless communication mode, an access point and battery pack (optional) are required.

Each flat panel sensor complies with IEC 62220-1 (MEDICAL ELECTRICAL EQUIPMENT - CHARACTERISTICS OF DIGITAL X-RAY IMAGING DEVICES - ) as a general X-ray radiography equipment.

The detector of flat panel sensors features 150 micron pixel pitch, a wide 16-bit dynamic range and exposure times up to 3.8 seconds.

This Operation Manual includes descriptions of matters necessary when using the flat panel sensor such as the equipment overview, operation procedures and precautions to observe, as well as daily inspections and maintenance.

Accompanying documents were originally drafted in the English language.

***Installation may only be conducted by authorized service personnel.***



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This system is classified as a medical device under EC Directive 93/42/EEC.

***Process waste correctly, as stipulated by local law or any regulations that apply.***

**Caution : Rx Only in the United States** (Federal law restricts this device to sale by or on the order of a physician.)

## **Open-Source Software Contained in This Product**

This product contains third party's software that is made available as open source software or free software.

This software is provided "as is" with no warranty of any kind as to its merchantability or fitness for any particular purpose.

For the information on open source software contained in this product, please see the attached DVD. Source codes for certain type of open source software used in this product are available at delivery cost. If you would like to receive such source codes, please contact INNOLUX dealer or the service representatives at the agency from which you purchased this product. (Please be noted that any inquiries concerning the contents of source codes should be directed to original licensors of open source software.)

**Note :** INNOLUX has successfully performed verification and validation testing on all third party software and has confirmed its suitability to be used in this system.

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# Chapter 1 For Safe Operation

## 1.1 Safety

Before using the flat panel sensor, read this section thoroughly to ensure that you use the product properly.

### Electric Shock Warnings and Cautions



#### WARNING

This product is internal power supply equipment.

To avoid electric shocks, users should always take the following precautions:

- Do not open any covers when it is not necessary.
- Install the equipment in a location where it will not be exposed to water.



#### WARNING

Do not install the battery pack with dew condensation on the flat panel sensor. Otherwise, fire or electric shock may result.



#### WARNING

Do not use the equipment in a location where metal particles could come into the equipment. This may cause an electric shock.



#### WARNING

Do not disassemble or remodel the equipment. Otherwise, fire or electric shock may result. Keep away from the parts inside the product, which may cause electric shock. If you touch them accidentally, death or severe injury may result.



#### WARNING

Do not hit or drop the flat panel sensor or subject it to severe shock. Otherwise, the flat panel sensor may be damaged. If the damaged flat panel sensor is used, fire or electric shock may result. In addition, do not apply strong pressure onto the flat panel sensor. If applied, the flat panel sensor deforms and the waterproof function may be compromised.



#### WARNING/AVERTISSEMENT

Do not use the flat panel sensor without the battery packs. If the battery packs are not attached, an electric shock may result.

N'utilisez pas le détecteur à panneau plat sans les batteries. Si les batteries ne sont pas connectées, un choc électrique risque de se produire.



#### WARNING

Make sure to use the optional parts and accessories recommended by INNOLUX Corporation. Failure to use the optional parts and accessories recommended by INNOLUX Corporation may result in damage to the flat panel sensor and/or electric shock and injury.

For details on the precautions for using the optional parts and accessories recommended by INNOLUX Corporation, see the Operation Manual for the optional parts and accessories.



## CAUTIONS

Keep the flat panel sensor away from patient's body fluids, chemicals, water, etc. Otherwise, it may become damaged, causing fire or electric shock. If necessary, protect the flat panel sensor by covering it with a disposable bag.

## Explosion Warnings



### WARNING

Because the flat panel sensor is not explosion-proof, do not use combustible and explosive gases near the flat panel sensor.



### WARNING

Flammable gasses may stay in the room after disinfection. If you turn the system on just after disinfection, ensure that the room is well ventilated before powering on the system.

## Warnings for Abnormalities



### WARNING

If any of the following occurs, immediately remove the battery pack, and then contact our official dealer or INNOLUX Representative.

- When smoke, strange odor, or abnormal sound is present.
- When a foreign object (such as a metal object) or liquid enters the product.
- When the equipment is dropped or hit and is damaged.

## Avertissements relatifs aux anomalies



### AVERTISSEMENT

Si l'une des conditions répertoriées ci-après se produit, retirez immédiatement la batterie, puis contactez notre revendeur agréé ou notre représentant INNOLUX.

- En cas de présence de fumée, d'une odeur étrange ou d'un bruit anormal.
- En cas de pénétration d'un corps étranger (comme un objet métallique) ou d'un liquide dans le produit.
- En cas d'endommagement de l'équipement suite à une chute ou à un impact.

## Installation Precautions



### CAUTIONS

Do not install the equipment in a location with the following conditions.

- Where the temperature changes sharply.
- Close to heat sources such as a heater.
- Where the equipment may be exposed to water due to water leakage or ingress.
- Where corrosive gas may be generated.
- Where there is excessive dust.
- Where the equipment is subject to frequent or excessive vibration/shock.
- Where the equipment is exposed to direct sunlight.
- Where there is no ventilator.



## CAUTIONS

Use the flat panel sensor on a flat place. Otherwise, the flat panel sensor may fall down, causing damage to the flat panel sensor or personal injury.



## CAUTIONS

For veterinary or mobile applications, contact our official dealer or INNOLUX Representative.



## CAUTIONS

When the devices are used outdoors in wireless communication mode, contact our official dealer or INNOLUX Representative.



## CAUTIONS/ATTENTION

Do not place any object in a place where removal of the power cable is prevented.

Ne placez aucun objet à un emplacement gênant le débranchement du câble d'alimentation.



## CAUTIONS

To ensure optimal image quality, it is recommended that you do not use the flat panel sensor near devices (motor, transformer, switching supply, etc.) that generate electromagnetic noise.

# Connection Instructions



## WARNING

Make sure that the devices to be connected to the flat panel sensor are authorized for connection.



## WARNING

When the flat panel sensor is used in wired communication mode, connect it only to the devices specified by our official dealer or INNOLUX Representative.

# System Isolation Instructions



## WARNING

To ensure complete system isolation, never install any unauthorized accessories or other such items. When it is necessary to install authorized accessories or optional items, contact our official dealer or INNOLUX Representative.



## WARNING

Keep equipment other than those used for patients out of their reach to ensure appropriate system isolation.



## WARNING

In normal use, have a patient take a proper positioning for exposure. The operator should operate the system in a place where safety from radiation is ensured. The operator should also make sure before exposure that no one but the patient is in the exposure area and the operating area of the system.

## Software Precautions



### CAUTIONS

Do not install additional software to the system. Do not uninstall any of the software preinstalled in the system.

The system is preinstalled with the appropriate software. If other software is installed or if the existing software is uninstalled, various operational errors may result.

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For Safe Operation

## Disinfection Instructions



### WARNING

Confirm that the respiratory density of disinfectant including solvent is under legal regulation. Certain disinfectants may damage health. When using a disinfectant, follow instructions supplied by the manufacturers.



### WARNING

Do not use the following disinfectants at the time of disinfection. Doing so may damage the flat panel sensor and quality, performance and safety of the flat panel sensor cannot be assured.

- Chloric disinfectant which is strongly corrosive to metals and rubber parts.
- Disinfectant whose uses on metals, plastics, and coating are forbidden according to the instructions supplied with the disinfectant.
- Formalin gas and disinfectant sprays that may get inside the flat panel sensor.

Disinfectant ethanol is recommended for disinfection. Carefully read the instructions and cautions supplied with the disinfectant before use.

For details on the disinfectant, contact a INNOLUX dealer or the service representatives at the agency from which you purchased the disinfectant.



### CAUTIONS

If flat panel sensor is not disinfected, it may lead secondary infection.

Be sure to disinfect with ethanol after use.



### CAUTIONS

Clean the sensor unit of the flat panel sensor with ethanol for disinfection, etc. for each patient to prevent infection.

## Precautions for Charging the Battery Pack



### CAUTIONS

- Use the battery charger recommended by INNOLUX Corporation. For details on operations, refer to the instruction manual for the battery charger.
- Do not charge the battery pack near fire or under strong sunshine. If the built-in protection mechanisms are activated by a high temperature, the battery pack cannot be charged. Also, if the built-in protection mechanisms are damaged, the battery pack may be charged with extremely high current and voltage, and abnormal chemical reactions may occur inside the battery pack, causing it to overheat, emit smoke, explode or ignite.
- To charge the battery pack, be sure to use the designated battery charger and to observe the charging conditions specified by INNOLUX Corporation. If the battery pack is charged in other conditions (temperature or voltage/current higher than specified, remodeled battery charger, etc.), the battery pack may be overcharged or charged with extremely high current, and abnormal chemical reactions may occur inside the battery pack, causing it to overheat, emit smoke, explode or ignite.

- Immediately stop charging the battery pack, if charging is not completed within the specified time. Otherwise, the battery pack may overheat, emit smoke, explode or ignite.
- Do not use the flat panel sensor near the power cable.
- Do not use a faulty or broken battery charger or AC adapter.

## Battery Pack Instructions



### WARNING

- Battery pack requires regular checkup and replacement. Battery capacity begins to wane after a period of time.
- If this equipment is not in use for while, store it with the battery pack removed. Not removing the battery pack may cause malfunction.



### CAUTIONS

Observe the following precautions when using the battery pack (optional).

- The battery pack is used with the flat panel sensor. Do not use them in other combinations.
- Charge the battery pack only with the designated battery charger. If the battery pack is charged under the charging conditions (voltage, current and charging method) different from those specified by INNOLUX Corporation, the battery pack may emit smoke, ignite, explode or leak fluid.
- Store the battery pack in a cool and dark place. Recharge the stored battery pack every six months or every year. Otherwise a decrease in battery capacity or other problems may result.
- Do not leave the removed battery pack in the car or other places exposed to high temperature. If the battery pack is used or stored in a place where it is exposed to high temperature, the battery pack may emit smoke, ignite, explode or leak fluid.
- Use or store the battery pack only in the environmental conditions specified by INNOLUX Corporation. If the battery pack is used or stored in a place where it is exposed to high temperature, the battery pack may emit smoke, ignite, explode or leak fluid.
- When disposing of the battery pack, consult our official dealer or INNOLUX Representative.
- Do not disassemble or remodel the battery pack. The battery pack is equipped with built-in safety and protection mechanisms. If they are damaged, the battery pack may overheat, emit smoke, explode or ignite.
- Be careful not to drop the battery pack. The patient may be injured.
- Do not touch the terminal of the battery pack directly. There is a risk of electric shock.
- Do not connect the positive (+) and negative (-) terminals with a wire or any metal object. Do not carry or store the battery pack together with metal objects such as necklaces or hairpins. Otherwise, the battery pack may short-circuit and overcurrent may flow, causing the battery pack to overheat, emit smoke, explode or ignite. Metal objects such as necklaces or hairpins may also become hot.
- Do not throw the battery pack into fire or expose it to excessive heat. Otherwise, its insulator may melt, its gas release vent or safety mechanisms may be damaged, and/or its electrolyte may catch fire, causing the battery pack to overheat, emit smoke, explode or ignite.
- Do not use or leave the battery pack in a place where it is exposed to high temperature (80°C or higher), such as fire or a heater. If the resin separator is damaged due to heat, the battery pack may short-circuit, causing it to overheat, emit smoke, explode or ignite.
- Do not immerse the battery pack in water or seawater, and do not allow it to become wet. If the built-in protection mechanisms are damaged, the battery pack may overheat, emit smoke, explode or ignite.
- Do not pierce the battery pack with a nail, hit it with a hammer, or step on it. Otherwise, the battery pack may be damaged or deformed and short-circuit, causing it to overheat, emit smoke, explode or ignite.
- Do not subject the battery pack to strong impact or throw it. If the built-in protection mechanisms are damaged, the battery pack may be charged with extremely high current and voltage, and abnormal chemical reactions may occur inside the battery pack, causing it to overheat, emit smoke, explode or ignite.

- Do not use an apparently damaged or deformed battery pack. Otherwise, the battery pack may overheat, emit smoke, explode or ignite.
- Do not solder the battery pack directly. Otherwise, its insulator may melt, or its gas release vent or safety mechanisms may be damaged, causing the battery pack to overheat, emit smoke, explode or ignite.
- Do not reverse the positive (+) and negative (-) terminals. Otherwise, the battery pack may be reverse-charged during charging. As a result, abnormal chemical reactions may occur inside the battery pack, or extremely high current may flow during discharging, causing it to overheat, emit smoke, explode or ignite.
- The battery pack has a predetermined polarity. If you cannot connect the battery pack to the battery charger or other equipment, do not connect the battery pack forcefully. Make sure that the terminals are correctly oriented. If the battery pack is connected in reverse, it will be reverse-charged, and abnormal chemical reactions may occur inside the battery pack, causing it to overheat, emit smoke, explode or ignite.
- Do not connect the battery pack to an electrical outlet or cigarette lighter socket in a car. Overcurrent may flow to the battery pack due to high voltage applied, causing the battery pack to overheat, emit smoke, explode or ignite.
- Do not use the battery pack for equipment other than those specified. Otherwise, the guaranteed performance will be reduced and/or the service life will be shortened. Depending on the equipment to which the battery pack is connected, extremely high current may flow, causing the battery pack to be damaged, overheat, emit smoke, explode or ignite.
- If the electrolyte leaked from the battery pack enters the eyes, do not rub them. Wash the eyes immediately with clean water such as tap water, and consult a doctor. Otherwise, eye injury may result.
- Do not use the battery pack in combination with a primary battery such as a dry battery or other battery of a different capacity, type and/or brand. Otherwise, the battery pack may be overcharged during charging, and abnormal chemical reactions may occur inside the battery pack, causing it to overheat, emit smoke, explode or ignite.
- Do not put the battery pack in a microwave oven or high-pressure container. Otherwise, the battery pack may be rapidly heated or damaged, causing it to overheat, emit smoke, explode or ignite.
- If the battery pack leaks or emits an unusual odor, remove it from fire immediately. Otherwise, the leaked electrolyte may catch fire, causing the battery pack to overheat, emit smoke, explode or ignite.
- If you notice an unusual odor, heat, discoloration, deformation or any other abnormality during use, charging or storage, remove the battery pack from the equipment or battery charger, and stop using it. Otherwise, the battery pack may overheat, emit smoke, explode or ignite.
- Do not use the battery pack exposed to a strong magnetic field of an MRI system, etc.
- Do not use the battery pack immersed in liquid.

## Other Warnings and Cautions



### WARNING

No modification of this equipment is allowed.



### CAUTIONS

Install the system in accordance with what is provided by IEC 60601-1:2005 + A1:2012 Chapter 16. Contact our official dealer or INNOLUX Representative for installation (except the flat panel sensor) of the system.



### CAUTIONS

Do not hit or drop the flat panel sensor. Otherwise, injury or damage to images, etc. may result.



## CAUTIONS

Be sure to inspect the system periodically.

To assure optimum performance of the flat panel sensor, it is necessary to systematically perform maintenance and inspection. For information on maintenance and inspection, contact our official dealer or INNOLUX Representative.



## CAUTIONS

Do not perform maintenance and inspection while the equipment is used for a patient.



## CAUTIONS

The institution where the equipment is installed is responsible for its use and maintenance. In addition, this equipment should not be used by persons other than doctors or suitably trained staff.



## CAUTIONS

Be careful not to expose the flat panel sensor to X-ray without a subject.



## CAUTIONS

Although the flat panel sensor conforms to IPX3, no warranty is given as to the prevention of water intrusion in the flat panel sensor. If the flat panel sensor is splashed with water, wipe off moisture and ensure that the flat panel sensor is completely dry before use.

## Contraindications and Prohibitions

No contraindications present.

## Classification

- According to the type of protection against electrical shock  
Internal power supply equipment
- According to the degree of protection against electrical shock  
Type B applied part
- According to the degree of protection against harmful ingress of water  
IP00 (The flat panel sensor conforms to IPX3)
- According to the degree of safety of application in the presence of a flammable anesthetics mixture with air or with oxygen or nitrous oxide.  
Equipment not suitable for use in the presence of a flammable anesthetics mixture with air or with oxygen or nitrous oxide.
- According to the mode of operation  
CONTINUOUS OPERATION

# 1.2 Electromagnetic Compatibility (EMC)

## 1.2.1 RIC

This equipment has been tested and found to comply with the limits for medical devices to the IEC 60601-1-2 (EN 60601-1-2), Medical Device Directive 93/42/EEC.

These limits are designed to provide reasonable protection against harmful interference in a typical medical installation.

This equipment 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 the vicinity.

However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to other devices, which can be determined by tuning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving device.
- Increase the separation between the equipment.
- Connect the equipment into an outlet on a circuit different from that to which the other device(s) are connected.

If the problem cannot be solved with the above measures, stop using this equipment and consult the manufacturer, our official dealer or INNOLUX Representative for help.



### WARNING

- Do not place devices generating electromagnetic wave near this equipment.
- If a device(s) other than those specified is connected, predetermined EMC performance cannot be guaranteed.

## Further Information for IEC 60601-1-2 (EN 60601-1-2)

- Medical electrical equipment needs special precautions regarding EMC and needs to be installed and put into service according to the EMC information provided in the accompanying documents.
- Portable and mobile RF communications equipment can affect medical electrical equipment.
- Information regarding the cable affecting EMC is as follows.

Name	Connected Device	Maximum Length	General Specification
Network Cable	Between the RICMP and the RICMC	20m (65.6 ft)	Cat5e or more, UTP type and straight cable
	Between the RICPB and the Image processing unit *	2m (6.56 ft)	

\* When the distance between the RICPB and the RICMC is 2 meters or more, install a commercially available HUB. In that case, use a cable with a maximum length of 2 meters between the RICPB and HUB, and a cable with a maximum length of 20 meters between HUB and the RICMC.

- The use of accessories, transducers and cables other than those specified, with the exception of transducers and cables sold by INNOLUX Corporation as replacement parts for internal components, may result in increased emissions or decreased immunity of the RIC.
- The RIC should not be used adjacent to or stacked with other equipment.  
If adjacent or stacked use is necessary, the RIC should be observed to verify normal operation in the configuration in which it will be used.
- Basic performance of the equipment and the system  
After image data are acquired from the flat panel sensor, data correction is performed by the control cabinet, and the image is saved in and displayed on the image processing unit.
- Test items (Tables 1 to 4)

**Table 1**

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

**Table 2**

<b>Guidance and manufacturer's declaration - electromagnetic immunity</b>			
The RIC is intended for use in the electromagnetic environment specified below. The customer or the user of the RIC should assure that they are used in such an environment.			
<b>Immunity test</b>	<b>IEC 60601-1-2 test level</b>	<b>Compliance level</b>	<b>Electromagnetic environment - guidance</b>
Electrostatic discharge (ESD) IEC 61000-4-2	±6kV contact ±8kV air	±6kV contact ±8kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/burst IEC 61000-4-4	±2kV for power supply lines ±1kV for input/output lines	±2kV for power supply lines ±1kV for input/output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1kV line(s) to line(s) ±2kV line(s) to earth	±1kV line(s) to line(s) ±2kV line(s) to earth	Mains power quality should be that of a typical commercial or hospital environment.
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 40% $U_T$ (60% dip in $U_T$ ) for 5 cycles 70% $U_T$ (30% dip in $U_T$ ) for 25 cycles <5% $U_T$ (>95% dip in $U_T$ ) for 5 s	<5% $U_T$ (>95% dip in $U_T$ ) for 0.5 cycle 40% $U_T$ (60% dip in $U_T$ ) for 5 cycles 70% $U_T$ (30% dip in $U_T$ ) for 25 cycles <5% $U_T$ (>95% dip in $U_T$ ) for 5 s	Mains power quality should be that of a typical commercial or hospital environment. If the user of the RIC requires continued operation during power mains interruptions, it is recommended that the RIC be powered from an uninterruptible power supply or a battery.
Power frequency (50/60Hz) 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 a.c. mains voltage prior to application of the test level.			

**Table 3**

<b>Guidance and manufacturer's declaration - electromagnetic immunity</b>			
The RIC is intended for use in the electromagnetic environment specified below. The customer or the user of the RIC should assure that they are used in such an environment.			
<b>Immunity test</b>	<b>IEC 60601-1-2 test level</b>	<b>Compliance level</b>	<b>Electromagnetic environment - guidance</b>
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz	3 Vrms	Portable and mobile RF communications equipment should be used no closer to any part of the RIC, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2.5 GHz	3 V/m	<p>Recommended separation distance  <math>d = 1.2\sqrt{P}</math>  <math>d = 1.2\sqrt{P}</math> 80 MHz to 800 MHz  <math>d = 2.3\sqrt{P}</math> 800 MHz to 2.5 GHz</p> <p>where <math>P</math> is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and <math>d</math> is the recommended separation distance in metres (m).</p> <p>Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey,<sup>a</sup> should be less than the compliance level in each frequency range.<sup>b</sup></p> <p>Interference may occur in the vicinity of equipment marked with the following symbol:</p> 
<p>NOTE 1: At 80 MHz and 800 MHz, the higher frequency range applies.</p> <p>NOTE 2: 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 strength 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 the RIC is used exceeds the applicable RF compliance, the RIC should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the RIC.</p> <p>b Over the frequency range 150 kHz to 80 MHz, field strength should be less than 3 V/m.</p>			

**Table 4**

<b>Recommended separation distances between Portable and mobile RF communications equipment and the RIC</b>			
<b>Rated maximum output power of transmitter</b> W	<b>Separation distance according to frequency of transmitter</b> 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	7.3
100	12	12	23

For transmitters rated at a maximum output power not listed above, the recommended separation distance  $d$  in metres (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.

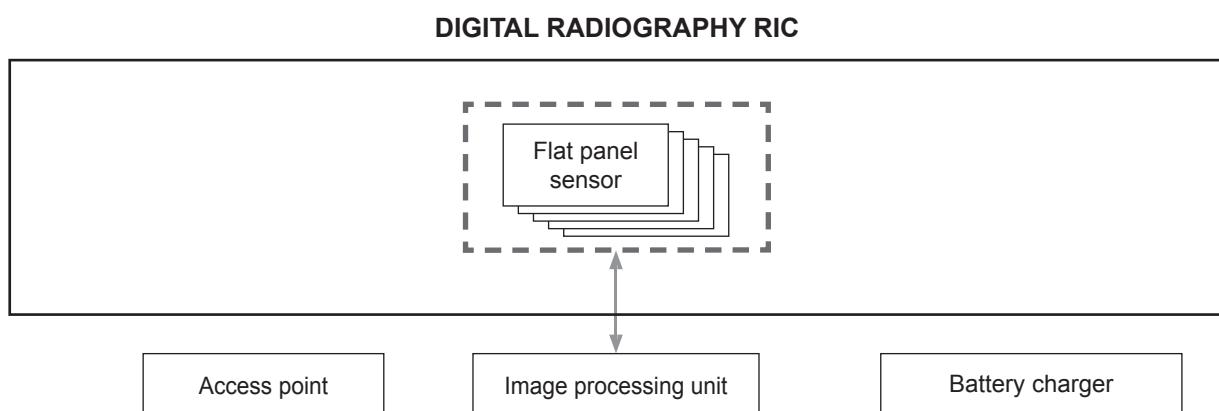
NOTE 1: At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE 2: These guidelines may not apply in all situations.  
Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

# Chapter 2 System Configuration (Product Overview)

## 2.1 Flat Panel Sensor

### 2.1.1 System Configuration



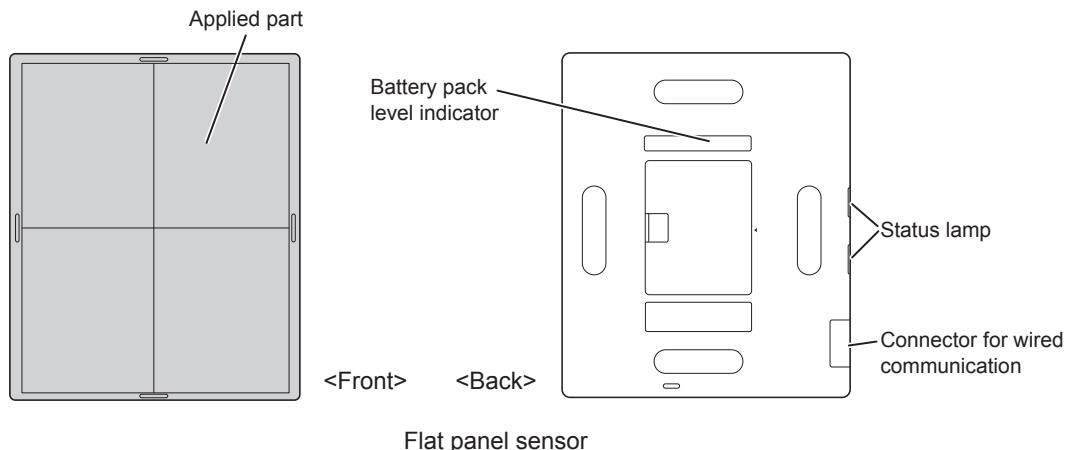
- The products in [ ] can be installed in patient environment.
- Up to five flat panel sensors can be connected.
- The RICMC is installed on the image processing unit.

For the image collecting console, see the System Operation Manual.

## 2.2 Names and the Functions

Names and the functions of the flat panel sensor are described below.

\* Exposure plane is shown in this figure.



Name	Description
Flat panel sensor	The RIC 35G and RIC 43G incorporate a GOS indirect panel. The RIC 35C, RIC 43C and RIC 24C incorporate a CsI indirect panel.
 Battery pack level indicator	
Connector for wired communication	Only the dedicated power supply unit specified by our official dealer or INNOLUX Representative can be connected.

Name	Description						
Status lamp	Indicates the equipment status by LEDs.						
READY 	<table border="1"> <tr> <td>On</td><td>Exposure possible</td></tr> <tr> <td>Blinks for 1.0 second</td><td>During exposure sequence</td></tr> <tr> <td>Off</td><td>Not ready</td></tr> </table>	On	Exposure possible	Blinks for 1.0 second	During exposure sequence	Off	Not ready
On	Exposure possible						
Blinks for 1.0 second	During exposure sequence						
Off	Not ready						
POWER 	<table border="1"> <tr> <td>On</td><td>Power ON</td></tr> <tr> <td>Off</td><td>Power OFF</td></tr> </table>	On	Power ON	Off	Power OFF		
On	Power ON						
Off	Power OFF						
(The power on/off state of the flat panel sensor is displayed.).							
ERROR 	<table border="1"> <tr> <td>Blinks for 1.0 second</td><td>Error occurred</td></tr> <tr> <td>Off</td><td>Normal</td></tr> </table>	Blinks for 1.0 second	Error occurred	Off	Normal		
Blinks for 1.0 second	Error occurred						
Off	Normal						
LINK 	<table border="1"> <tr> <td>On</td><td>Connected</td></tr> <tr> <td>Off</td><td>Communication not possible.</td></tr> </table>	On	Connected	Off	Communication not possible.		
On	Connected						
Off	Communication not possible.						

\* When the battery pack is not attached, all LEDs are off.



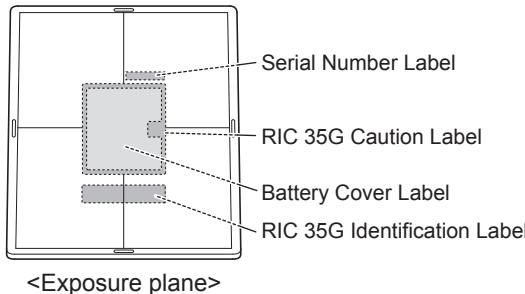
For details on the battery pack level indicator, see "3.1.6 Lamp Indications on the Flat Panel Sensor".

## 2.3 Locations of Labels and Signs

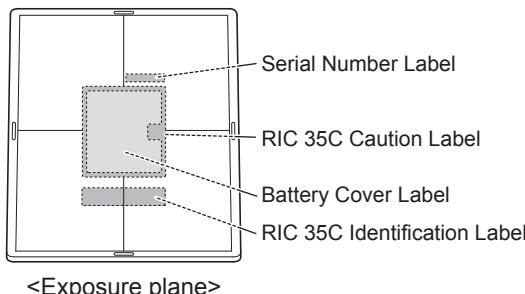
Locations of labels and signs affixed to each flat panel sensor, and the relevant safety signs are shown below.

### 2.3.1 Locations of Labels

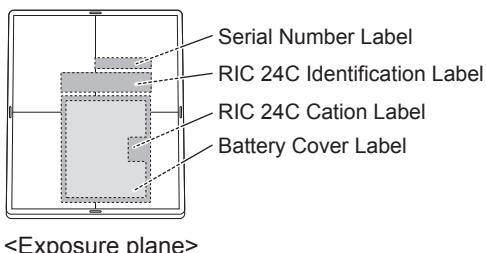
Flat panel sensor (RIC 35G)



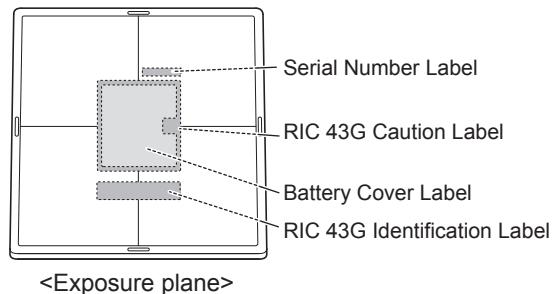
Flat panel sensor (RIC 35C)



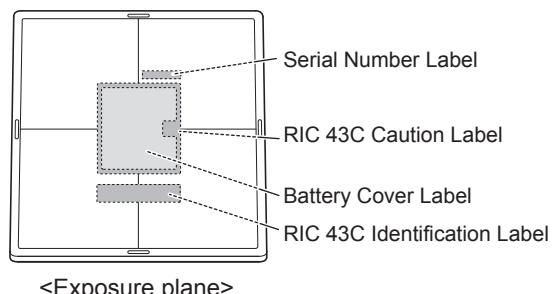
Flat panel sensor (RIC 24C)



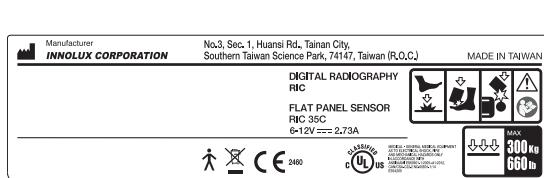
Flat panel sensor (RIC 43G)



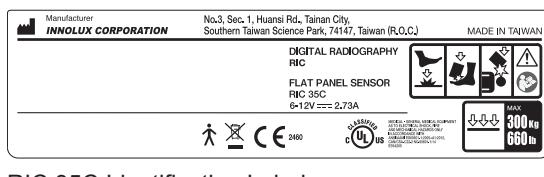
Flat panel sensor (RIC 43C)



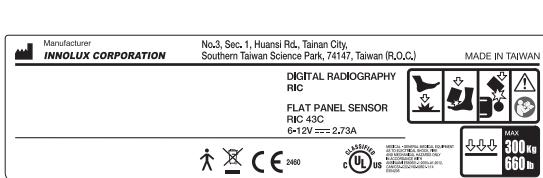
RIC 35G Identification Label



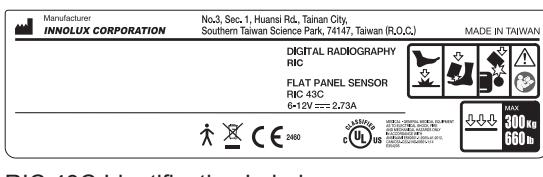
RIC 35C Identification Label



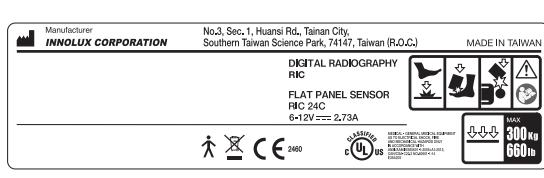
RIC 43G Identification Label

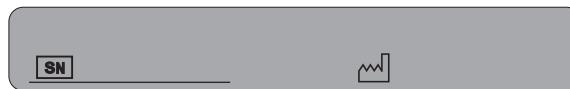


RIC 43C Identification Label

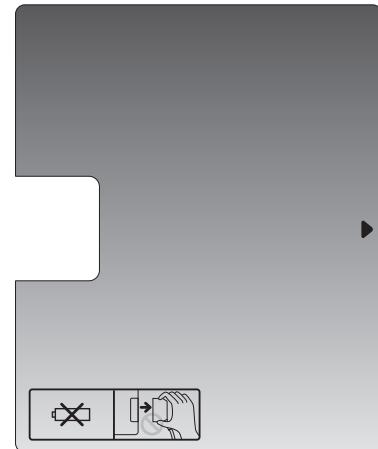


RIC 24C Identification Label

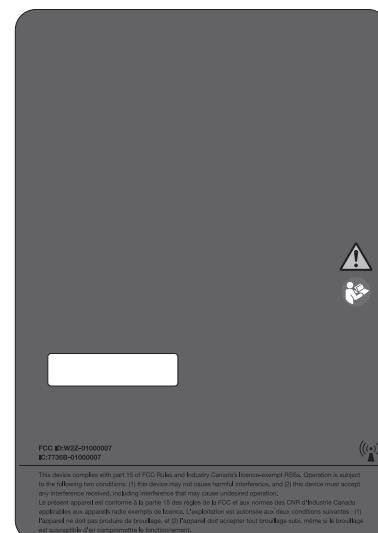




Serial Number Label

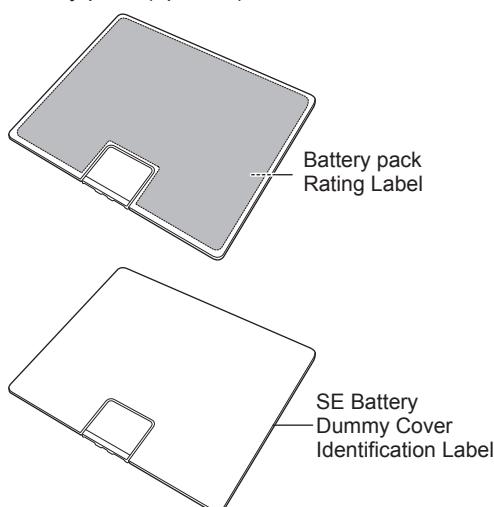
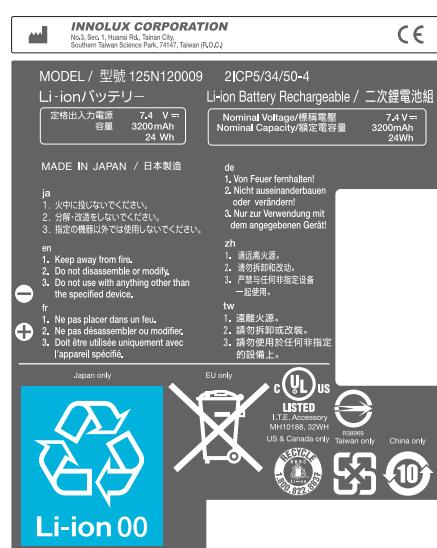


Battery Cover Label

RIC 35G/RIC 43G/RIC 35C/RIC 43C  
Caution Label

RIC 24C Caution Label

Battery pack (optional)

INNOLUX CORPORATION  
7201B000WT000SE Battery Dummy Cover  
Identification LabelBattery Pack Rating Label  
\* The label varies, depending on the battery pack.

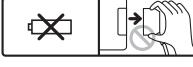
## 2.3.2 Safety and Other Symbols

The following safety symbols are used in the labels or on its body.

Symbol	Description
 2460	CE marking
	Protective earth (ground)
	Direct current
	This symbol indicates that the equipment is a Type B Applied Part.
	Ready (To indicate the machine is ready for operation.)
	Electric energy
	General mandatory action sign
	<p>This symbol indicates that this product is not to be disposed of with your household waste, according to the WEEE Directive (2002/96/EC) and your national law. This product should be handed over to a designated collection point.</p> <p>Improper handling of this type of waste could have a possible negative impact on the environment and human health due to potentially hazardous substances that are generally associated with EEE.</p> <p>At the same time, your cooperation in the correct disposal of this product will contribute to the effective usage of natural resources.</p> <p>For more information about waste, please contact our official dealer or INNOLUX Representative.</p>
	Year of manufacture
	Caution for local load / Do not drop the flat panel sensor to the user/patient
	Entire surface load
	This symbol includes RF transmitters or indicates equipment that intentionally applies RF electromagnetic energy for diagnosis or treatment.
	Refer to Instruction Manual/Booklet
	<p>This symbol indicates that the part is not a battery.</p> <p>This symbol instructs the user not to disconnect the SE cable during use.</p>

### 2.3.3 Symboles de sécurité et autres

Les symboles de sécurité suivants sont utilisés sur les étiquettes ou sur le corps de l'équipement.

Symbol	Description
	Marquage CE
	Protection via mise à la terre (masse)
	courant continu
	Ce symbole indique que l'équipement est une pièce appliquée de type B.
	Prêt (Pour indiquer que la machine est prête à être utilisée.)
	Énergie électrique
	Symbol général d'action obligatoire
	<p>Ce symbole indique que ce produit ne doit pas être mis au rebut avec les déchets ménagers, conformément à la directive DEEE (2002/96/CE) et à la législation nationale en vigueur. Ce produit doit être remis à un centre de collecte approprié.</p> <p>Une manipulation incorrecte de ce type de déchet peut avoir un impact négatif sur l'environnement et sur la santé humaine, en raison des substances potentiellement dangereuses généralement associées aux EEE. Votre coopération pour la mise au rebut correcte de ce produit contribuera en outre à une utilisation efficace des ressources naturelles.</p> <p>Pour en savoir plus sur les déchets, contactez notre revendeur agréé ou notre représentant INNOLUX.</p>
	Année de fabrication
	Attention relative à une charge placée de façon localisée / Ne faites pas tomber le détecteur à panneau plat sur l'utilisateur/le patient
	Charge sur l'intégralité de la surface
	Ce symbole inclut les émetteurs RF ou indique un équipement émettant intentionnellement de l'énergie électromagnétique RF à des fins de diagnostic ou de traitement.
	Consultez le mode d'emploi
	<p>Ce symbole indique que la pièce n'est pas une batterie.</p> <p>Ce symbole indique à l'utilisateur de ne pas débrancher le câble de branchement d'abonné pendant l'utilisation.</p>

# Chapter 3 Basic Operation

## 3.1 Preparing the Flat Panel Sensor

This section describes how to prepare the flat panel sensor.

### 3.1.1 Type of Flat Panel Sensor

RIC 35G, RIC 43G, RIC 35C, RIC 43C, RIC 24C

The battery pack (optional) is required when the flat panel sensor is used in wireless communication mode.

### 3.1.2 Number of the Connectable Flat Panel Sensors

To enable the flat panel sensor, its ID needs to be registered in advance by our official dealer or INNOLUX Representative.

Up to a hundred flat panel sensors can be registered.

Up to five flat panel sensors can be connected.

### 3.1.3 Inserting/Removing the Flat Panel Sensor into/from the Radiographic Examination Stand

Follow the procedure below to insert/remove the flat panel sensor into/from the radiographic examination stand.

▶ For details, see the Operation Manual for the radiographic examination stand



#### CAUTIONS

For the positioning at the time of inserting/removing the flat panel sensor, see the Operation Manual for the radiographic examination stand.



#### CAUTIONS

Make sure that the flat panel sensor is installed in the radiographic examination stand securely.



#### CAUTIONS

Be careful not to have your fingers caught when inserting/removing the flat panel sensor into/from the radiographic examination stand.



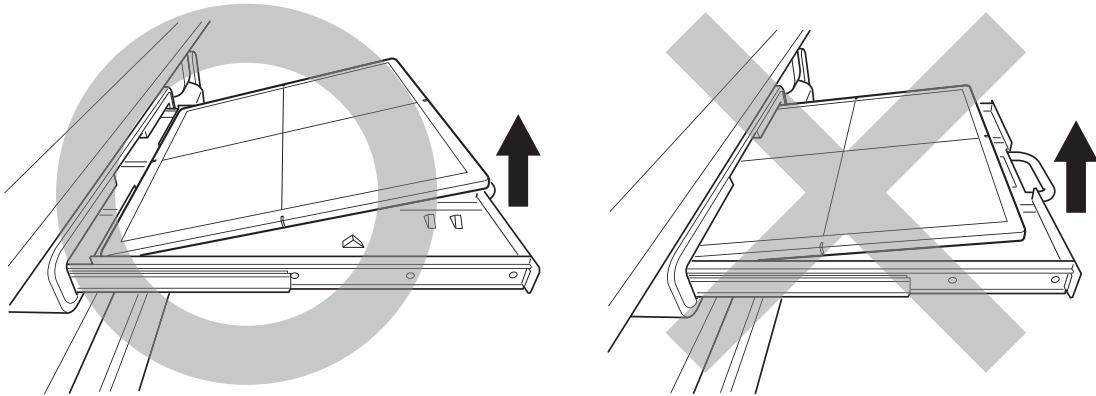
#### CAUTIONS

When pulling out/pushing in the tray of the radiographic examination stand after setting the flat panel sensor on it, be careful not to drop the flat panel sensor or damage the tray.



## CAUTIONS

Before inserting/removing the flat panel sensor into/from the radiographic examination stand, pull out the tray completely. Otherwise, the flat panel sensor may be damaged.



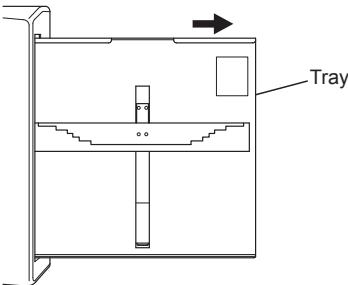
### [1] Upright type



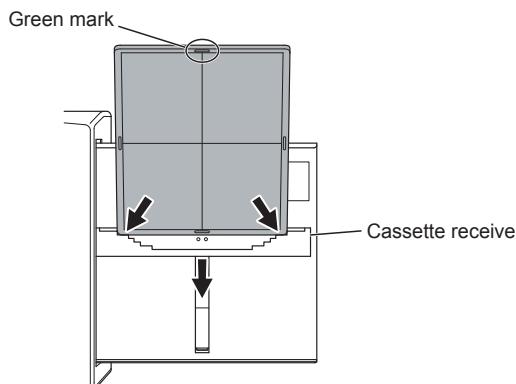
## CAUTIONS

When inserting the flat panel sensor into the radiographic examination stand, direct the exposure plane toward the X-ray tube.

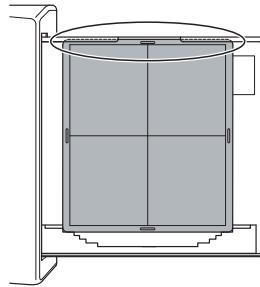
#### 1 Pull out the tray.



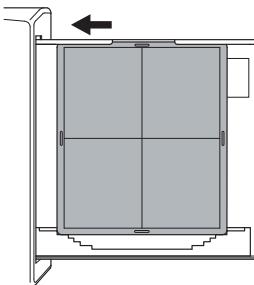
#### 2 Insert the flat panel sensor into the cassette receive with the green mark of the flat panel sensor up, and then move it downwards.



#### 3 Set the flat panel sensor to the upper part of the tray.



#### 4 Push the tray back into place after setting the flat panel sensor.



#### 5 Remove the flat panel sensor after use.

Pull out the tray, push the cassette receive downwards, and then remove the flat panel sensor. Push the tray back into place.

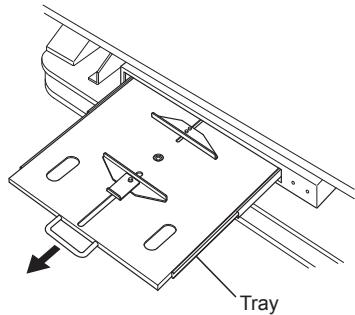
## [2] Bed type



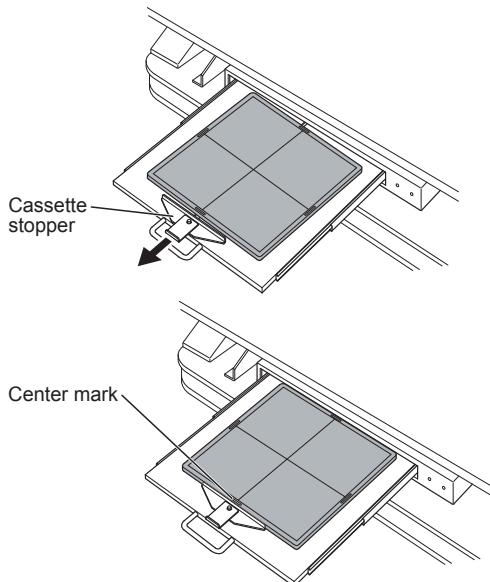
### CAUTIONS

When inserting the flat panel sensor to the radiographic examination stand, direct the exposure plane upwards.

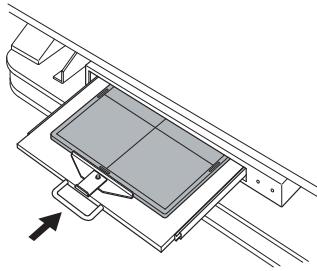
#### 1 Pull out the tray by using the handle.



#### 2 Pull the cassette stopper, and set the flat panel sensor so that its center mark is aligned with the center of the stopper.



#### 3 Push the tray back into place by using the handle after setting the flat panel sensor.



#### 4 Remove the flat panel sensor after use.

Hold the handle and pull out the tray. Remove the flat panel sensor while pulling the cassette stopper, and then push the tray back into place.

### 3.1.4 Charging the Battery Pack for the Flat Panel Sensor

Use the battery charger recommended by INNOLUX Corporation.

For details on operations, refer to the instruction manual for the battery charger.

### 3.1.5 Installing/Removing the Battery Pack for the Flat Panel Sensor

Follow the procedure below to install/remove the battery pack for the flat panel sensor.



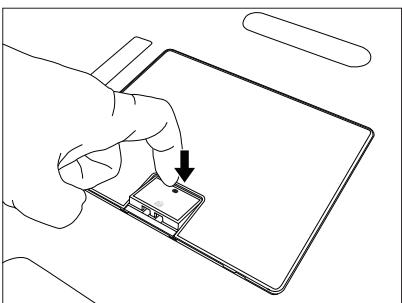
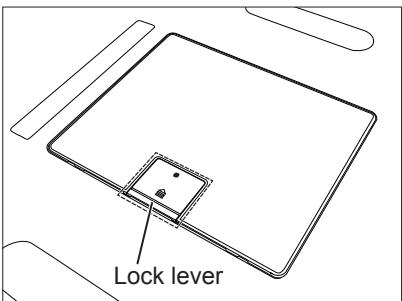
When installing/removing the battery pack, place the flat panel sensor on a flat place.



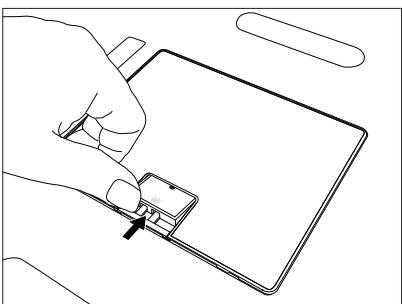
Do not remove the battery pack until a processed image appears in the window of the image processing unit after the exposure.

#### 1 Remove the battery cover.

Place the flat panel sensor with the back side facing upward and press the “●” portion of the lock lever.



Slide the lock lever in the direction of the arrow to remove the battery cover.



#### 2 Install the battery pack.

Slide the battery pack along the dent of the battery section of the flat panel sensor toward the connector terminal. Align the guide mark of the battery pack with that of the flat panel sensor, and push the battery pack in to install it.

Make sure that battery pack is securely installed.



When installing the battery pack, do not press the lock lever.



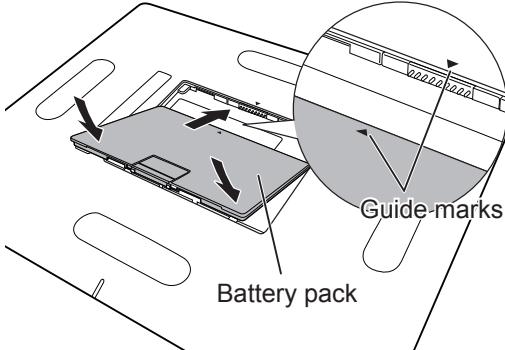
Pushing the battery pack in with the guide marks misaligned may damage the connector terminal.



When attaching the battery pack, make sure that the waterproof packing attached to the connector terminal of the flat panel sensor is aligned properly.



When the battery pack is installed in the flat panel sensor, the power is automatically turned on.

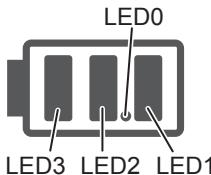


- To remove the battery pack, perform the same procedure as Step 1 (removing the battery cover).
- To install the battery cover, perform the same procedure as Step 2 (installing the battery pack).

### 3.1.6 Lamp Indications on the Flat Panel Sensor

This section explains the indications of the battery pack level indicator. For other lamp indications, see “2.2 Names and the Functions”.

■ Battery pack level indicator



(When the battery pack is being charged)

Fully charged, available time of the flat panel sensor: LED1, 2, 3: Lit in green  
More than 3 hours

Available time of the flat panel sensor: LED3: Blinking in green, LED1, 2: Lit in green  
60 minutes or more

Available time of the flat panel sensor: LED2: Blinking in green, LED1: Lit in green  
30 minutes or more but less than 60 minutes

Available time of the flat panel sensor: LED1: Blinking in green  
Less than 30 minutes

(When the battery pack is not charged)

Available time of the flat panel sensor: LED1, 2, 3: Lit in green  
60 minutes or more

Available time of the flat panel sensor: LED1, 2: Lit in green  
20 minutes or more but less than 60 minutes

Available time of the flat panel sensor: LED1: Lit in green  
Less than 20 minutes

Available time of the flat panel sensor: LED0: Lit in orange  
10 minutes or less

## 3.2 Starting Up and Shutting Down the Flat Panel Sensor

This section explains how to start up and shut down the Flat Panel Sensor.

### 3.2.1 Starting Up

#### 1 Attach a fully charged battery pack to the flat panel sensor.

The POWER status lamp on the flat panel sensor is lit in blue.



Start up the flat panel sensor with the initial settings properly made by our official dealer or INNOLUX Representative.

3

### 3.2.2 Performing an Exposure

#### 1 When performing an exposure, make sure that the READY status lamp on the flat panel sensor is lit.

### 3.2.3 Shutting Down

#### 1 Remove the battery pack from the flat panel sensor and set the battery pack in the battery charger.

The POWER status lamp on the flat panel sensor is lit.

# Chapter 4 Daily Inspection and Maintenance

## 4.1 Daily User Inspection and Maintenance

During maintenance and inspection, strictly observe precautions contained in "Chapter 1 For Safe Operation" in this manual for you to use the flat panel sensor under best conditions.

### 4.1.1 Periodical Inspection

#### Inspection Every Three Months

Once every three months, remove any dirt or dust accumulated in each part of the equipment using a vacuum cleaner or air duster, clean each part with a slightly moistened soft cloth and then wipe off any moisture with a dry cloth.

▶ See "2.2 Names and the Functions" (page 2-2).



#### CAUTIONS

Be sure to turn off the power before cleaning each part of the device.

No.	Unit
1	Flat panel sensor



#### CAUTIONS

Ensure sufficient space when cleaning the equipment on a table, etc.



# Appendix A Specifications

## A.1 Specifications

Specifications of the flat panel sensor are shown below.

### A.1.1 Reduced Equivalent (Flat Panel Sensor)

Peak reduced equivalent on the front panel of the flat panel sensor: 0.5 mmAI

### A.1.2 Power Supply Conditions

Rated voltage : 6-12V ===

Input current : 2.73A

### A.1.3 Environmental Conditions

#### (1) Operating Conditions

Temperature : 15°C (15%RH) - 30°C (80%RH)

Humidity : 15%RH (15°C) - 80%RH (30°C) (no dew condensation)

Atmospheric pressure : 700hPa - 1060hPa

#### (2) Non-operating Conditions

(Environmental conditions under which power can be supplied)

Temperature : 5°C - 35°C

Humidity : 10%RH - 80%RH (no dew condensation)

Atmospheric pressure : 700hPa - 1060hPa

#### (3) Storage Conditions

Temperature : -30°C - 50°C

Humidity : 10%RH - 90%RH (no dew condensation)

Atmospheric pressure : 700hPa - 1060hPa



#### CAUTIONS

When the flat panel sensor is used in high temperature condition for long period of time, it may cause image artifacts and/or failure of the device.

## A.1.4 Image Performance

Each flat panel sensor complies with IEC 62220-1 (MEDICAL ELECTRICAL EQUIPMENT - CHARACTERISTICS OF DIGITAL X-RAY IMAGING DEVICES - ) as a general X-ray radiography equipment.

To ensure optimal image quality, it is recommended that you do not use the flat panel sensor near devices (motor, transformer, switching supply, etc.) that generate electromagnetic noise.

## A.1.5 Load Restriction

Entire surface load :

RIC 35G, RIC 43G, RIC 35C, RIC 43C, RIC 24C :

300kg (661.5 lb)

Local load :

RIC 35G, RIC 43G, RIC 35C, RIC 43C, RIC 24C :

120kg (264.6 lb) / ø40mm (1.6in.) (Based on INNOLUX measurement specifications)



### CAUTIONS

**Do not apply an excessive force to the exposure plane.**

**The sensor inside the flat panel sensor may be damaged, and it may not be possible to make an exposure properly.**

## A.1.6 Radio Waves

The flat panel sensor uses the following types of radio waves.

	Flat panel sensor
Wireless specification	IEEE802.11n
Transmit frequency	5.2, 5.3, 5.6, 5.8, 2.4 GHz
Modulation	OFDM
Frequency tolerance	±20 ppm
Data transfer rate	35 Mbps
Transfer power	17 dBm or less



### CAUTIONS

- **Transmit frequencies available vary, depending on the country.**
- **Radio waves available outdoors vary, depending on the country where the system is used.**
- **When the RIC and any other wireless equipment are operating on the same frequency channel in a hospital, it may take time to show an image on the image processing unit monitor.**

## A.2 External View and Weight

The external view and weight of the each flat panel sensor are shown below.



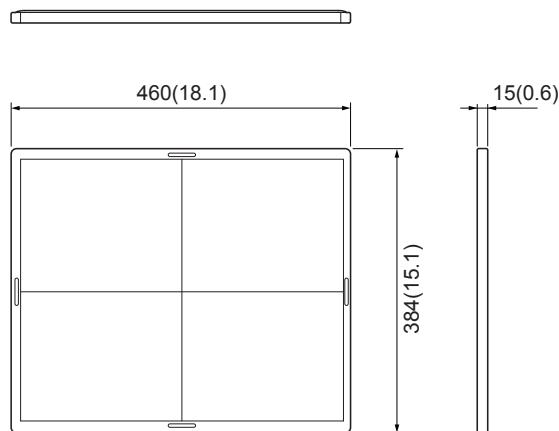
Specifications, dimensions and weight are subject to change for improvement without prior notice.

### A.2.1 Flat Panel Sensor

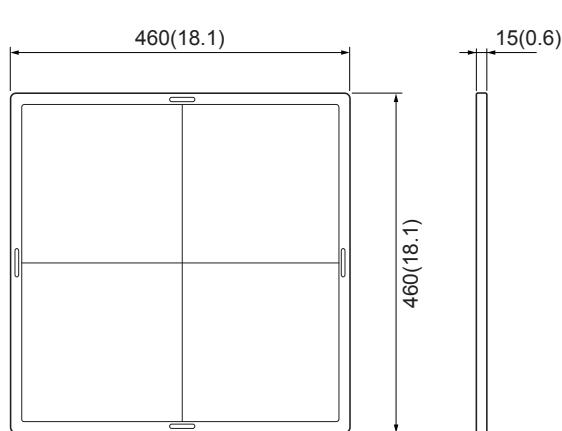
	Width (mm(in.))	Depth (mm(in.))	Height (mm(in.))	Weight (kg(lb))
Flat panel sensor (RIC 35G)	460(18.1)	384(15.1)	15(0.6)	2.95(6.5)* <sup>1</sup>
Flat panel sensor (RIC 43G)	460(18.1)	460(18.1)	15(0.6)	3.65(8.0)* <sup>1</sup>
Flat panel sensor (RIC 35C)	460(18.1)	384(15.1)	15(0.6)	2.95(6.5)* <sup>1</sup>
Flat panel sensor (RIC 43C)	460(18.1)	460(18.1)	15(0.6)	3.65(8.0)* <sup>1</sup>
Flat panel sensor (RIC 24C)	328(13.0)	268(10.6)	15(0.6)	1.5(3.3)* <sup>1</sup>

\*1 The weight of the battery pack is included.

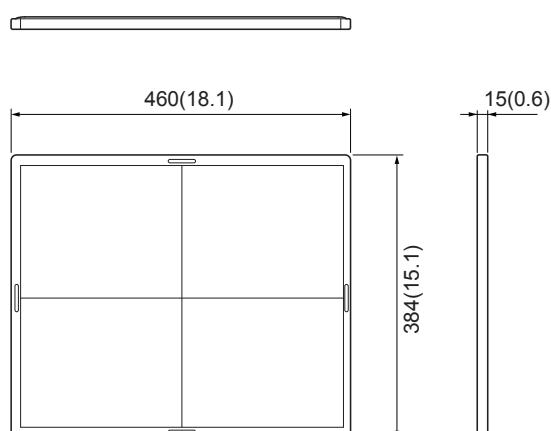
Unit: mm(in.)



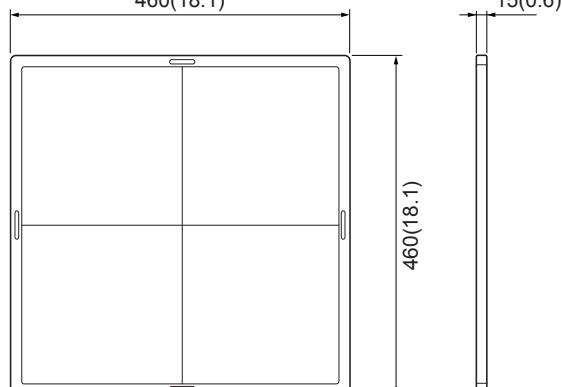
Flat panel sensor (RIC 35G)



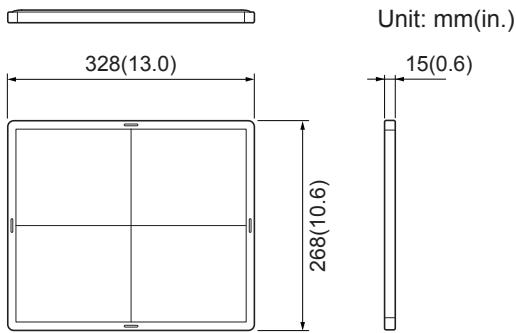
Flat panel sensor (RIC 43G)



Flat panel sensor (RIC 35C)



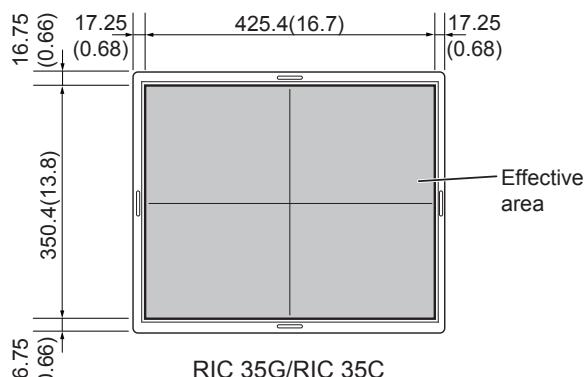
Flat panel sensor (RIC 43C)



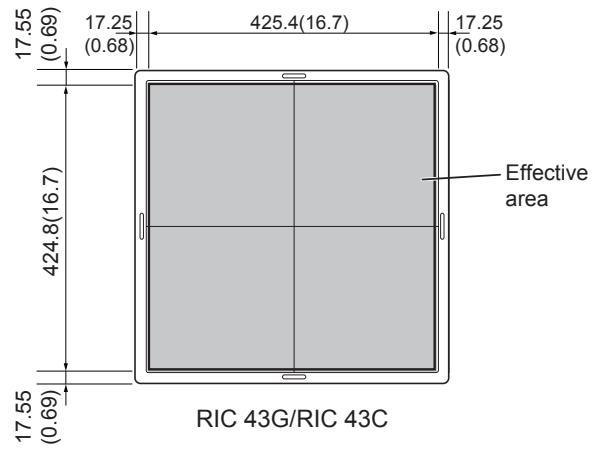
Flat panel sensor (RIC 24C)



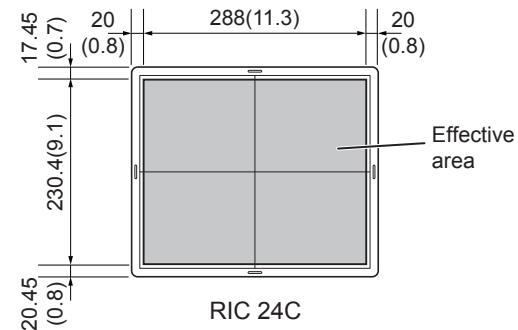
The effective area of the flat panel sensor is as shown in the figure below.



RIC 35G/RIC 35C



RIC 43G/RIC 43C



RIC 24C

# Appendix O Use of Optional Items

## O.1 Optional Items

Name	Description
Battery pack	A battery pack for the flat panel sensor. ● For precautions, charging and installing/removing, see pages 1-4, 1-5, 1-6, 3-3 and 3-4.



# Maintenance and Inspection

## 1 Maintenance and Inspection Items Assigned to Specified Dealer

For periodical inspection of the equipment and necessary arrangements, consult our official dealer or local representative.

### Periodical Maintenance

Make sure that the periodical maintenance and inspection assigned to our official dealer or INNOLUX Representative are performed as specified.

Maintenance and Inspection Items Assigned to Specified Dealer

Periodical Maintenance and Inspection Items	Period
Checking of the image	Every year
Checking of the operation record by referring to the error log	Every year
Checking of the flat panel sensor	Every 2 years

\* It is recommended that the battery pack be replaced, if the battery storage capacity becomes lower than 60%.

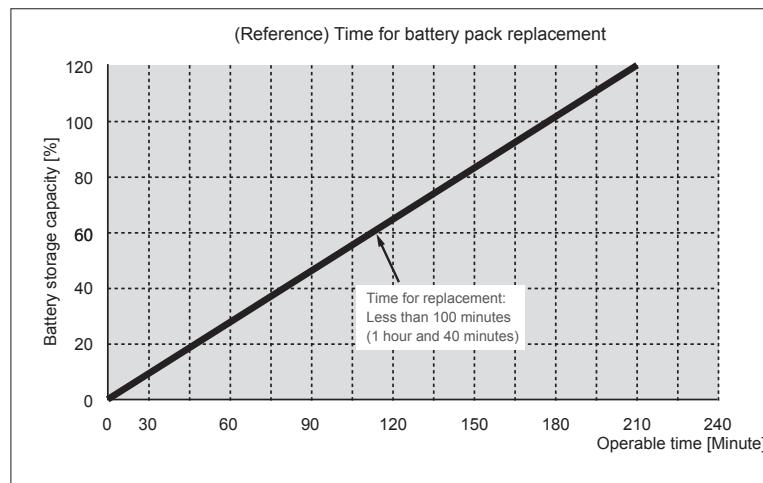
The battery pack should be replaced when the operable time is less than the following.

- RIC 35G/RIC 43G/RIC 35C/RIC 43C/RIC 24C :

100 minutes (1 hour and 40 minutes)

\* Refer to the operable time displayed on the image processing unit when the battery pack is fully charged and no exposure menu is registered.

\* Depending on the usage environment, etc., the displayed time is slightly different from the actual operable time.



The cycles of periodical maintenance and inspection and of parts replacement differ depending on the usage and the daily operation time.

For details, contact our official dealer or INNOLUX Representative.

# Radio frequency (RF) compliance information

## Compliance with Part 15 of FCC Rules and Industry Canada licence-exempt RSS standard(s).

This device complies with Part 15 of FCC Rules and Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Le présent appareil est conforme à la partie 15 des règles de la FCC et aux normes des CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'appareil doit accepter tout brouillage subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

### FCC CAUTION

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

The available scientific evidence does not show that any health problems are associated with using low power wireless devices. There is no proof, however, that these low power wireless devices are absolutely safe. Low power Wireless devices emit low levels of radio frequency energy (RF) in the microwave range while being used. Whereas high levels of RF can produce health effects (by heating tissue), exposure of low-level RF that does not produce heating effects causes no known adverse health effects. Many studies of low-level RF exposures have not found any biological effects. Some studies have suggested that some biological effects might occur, but such findings have not been confirmed by additional research. RIC 35G/RIC 43G/RIC 35C/RIC 43C/RIC 24C has been tested and found to comply with FCC/IC radiation exposure limits set forth for an uncontrolled environment and meets the FCC radio frequency (RF) Exposure Guidelines and RSS-102 of the IC radio frequency (RF) Exposure rules.

Les connaissances scientifiques dont nous disposons n'ont mis en évidence aucun problème de santé associé à l'usage des appareils sans fil à faible puissance. Nous ne sommes cependant pas en mesure de prouver que ces appareils sans fil à faible puissance sont entièrement sans danger. Les appareils sans fil à faible puissance émettent une énergie fréquence radioélectrique (RF) très faible dans le spectre des micro-ondes lorsqu'ils sont utilisés. Alors qu'une dose élevée de RF peut avoir des effets sur la santé (en chauffant les tissus), l'exposition à de faibles RF qui ne produisent pas de chaleur n'a pas de mauvais effets connus sur la santé. De nombreuses études ont été menées sur les expositions aux RF faibles et n'ont découvert aucun effet biologique. Certaines études ont suggéré qu'il pouvait y avoir certains effets biologiques, mais ces résultats n'ont pas été confirmés par des recherches supplémentaires. RIC 35G/RIC 43G/RIC 35C/RIC 43C/RIC 24C a été testé et jugé conforme aux limites d'exposition aux rayonnements énoncées pour un environnement non contrôlé et respecte les règles les radioélectriques (RF) de la FCC lignes directrices d'exposition et d'exposition aux fréquences radioélectriques (RF) CNR-102 de l'IC.

Compliance with FCC requirement 15.407(c) and IC requirement RSS-210 A9.4.4 Data transmission is always initiated by software, which is passed down through the MAC, through the digital and analog baseband, and finally to the RF chip. Several special packets are initiated by the MAC. These are the only ways the digital baseband portion will turn on the RF transmitter, which it then turns off at the end of the packet. Therefore, the transmitter will be on only while one of the aforementioned packets is being transmitted. In other words, this device automatically discontinues transmission in case of either absence of information to transmit or operational failure.

Conformité à la norme CNR-210 A9.4.4 La transmission des données est toujours initiée par le logiciel, puis les données sont transmises par l'intermédiaire du MAC, par la bande de base numérique et analogique et, enfin, à la puce RF. Plusieurs paquets spéciaux sont initiés par le MAC. Ce sont les seuls moyens pour qu'une partie de la bande de base numérique active l'émetteur RF, puis désactive celui-ci à la fin du paquet. En conséquence, l'émetteur reste uniquement activé lors de la transmission d'un des paquets susmentionnés. En d'autres termes, ce dispositif interrompt automatiquement toute transmission en cas d'absence d'information à transmettre ou de défaillance.

Radio waves in the 5.2GHz and 5.3GHz frequency bands can be used indoors only.

Les bandes de fréquences 5.2GHz et 5.3GHz ne peuvent être utilisées qu'en intérieur.

High-power radars are allocated as primary users (i.e. priority users) of the bands 5250-5350 MHz and 5650-5850 MHz and that these radars could cause interference and/or damage to LE-LAN devices.

Les radars de haute puissance sont designes comme utilisateurs principaux (c'est-a dire utilisateurs prioritaires) pour les bandes 5250-5350 MHz et 5650-5850 MHz, et que ces radars peuvent provoquer du brouillage et/ou des dommages aux dispositifs LAN-EL.

Frequency Tolerance :  $\pm 20\text{ppm}$

(This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.)

# Compliance with 2014/53/EU

Manufacturer's Name: INNOLUX Corporation  
Manufacturer's Address: No.3, Sec. 1, Huansi Rd., Tainan City, Southern Taiwan Science Park, 74147, Taiwan (R.O.C.)

declares that the product:

Model Number: RIC 35G, RIC 43G, RIC 35C, RIC 43C, RIC 24C

The product complies with the requirements of the RE Directive 2014/53/EU.

The shipment schedule country is as follows.

AT	BE	BG	CH	CY
CZ	DE	DK	EE	ES
FI	FR	GB	GR	HR
HU	IE	IS	IT	LI
LT	LU	LV	MK	MT
NL	NO	PL	PT	RO
SE	SI	SK	TR	

[BG] Bulgarian	С настоящето, INNOLUX, декларира, че RIC 35G, RIC 43G, RIC 35C, RIC 43C, RIC 24C е в съответствие със съществените изисквания и другите приложими разпоредби на Директива 2014/53/EU.
[CS] Czech	INNOLUX tímto prohlašuje, že RIC 35G, RIC 43G, RIC 35C, RIC 43C, RIC 24C splňuje základní požadavky a všechna příslušná ustanovení Směrnice 2014/53/EU.
[DA] Danish	Undertegnede INNOLUX erklærer herved, at følgende udstyr RIC 35G, RIC 43G, RIC 35C, RIC 43C, RIC 24C overholder de væsentlige krav og øvrige relevante krav i direktiv 2014/53/EU.
[DE] German	Hiermit erklärt INNOLUX, dass sich das Gerät RIC 35G, RIC 43G, RIC 35C, RIC 43C, RIC 24C in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 2014/53/EU befindet.
[EN] English	Hereby, INNOLUX, declares that this RIC 35G, RIC 43G, RIC 35C, RIC 43C, RIC 24C is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU.
[ES] Spanish	Por la presente, INNOLUX, declara que este RIC 35G, RIC 43G, RIC 35C, RIC 43C, RIC 24C cumple con los requisitos esenciales y otras exigencias relevantes de la Directiva 2014/53/UE.
[ET] Estonian	Käesolevaga kinnitab INNOLUX seadme RIC 35G, RIC 43G, RIC 35C, RIC 43C, RIC 24C vastavust direktiivi 2014/53/EL põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
[FI] Finish	INNOLUX vakuuttaa täten että RIC 35G, RIC 43G, RIC 35C, RIC 43C, RIC 24C tyyppinen laite on direktiivin 2014/53/EU oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.

[FR] French	Par la présente, INNOLUX déclare que l'appareil RIC 35G, RIC 43G, RIC 35C, RIC 43C, RIC 24C est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 2014/53/UE.
[EL] Greek	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ Ο ΚΑΤΑΣΚΕΥΑΣΤΗΣ INNOLUX ΔΗΛΩΝΕΙ ΟΤΙ RIC 35G, RIC 43G, RIC 35C, RIC 43C, RIC 24C ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 2014/53/ΕΕ
[HU] Hungarian	A INNOLUX ezzennel kijelenti, hogy a RIC 35G, RIC 43G, RIC 35C, RIC 43C, RIC 24C típusú beren-dezés teljesíti az alapvető követelményeket és más 2014/53/EU irányelvben meghatározott vonatkozó rendelkezéseket.
[HR] Croatian	Ovime, INNOLUX, potvrđuje da je RIC 35G, RIC 43G, RIC 35C, RIC 43C, RIC 24C u sukladnost sa osnovnim zahtjevima i drugim važnim odredbama Direktive 2014/53/EU.
[IS] Icelandic	Hér með lýsir INNOLUX yfir því að RIC 35G, RIC 43G, RIC 35C, RIC 43C, RIC 24C er í samræmi við grunnkröfur og aðrar kröfur, sem gerðar eru í tilskipun 2014/53/EU
[IT] Italian	Con la presente INNOLUX dichiara che questo RIC 35G, RIC 43G, RIC 35C, RIC 43C, RIC 24C è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabiliti dalla direttiva 2014/53/UE.
[LV] Latvian	Ar šo INNOLUX deklarē, ka RIC 35G, RIC 43G, RIC 35C, RIC 43C, RIC 24C atbilst Direktīvas 2014/53/ES būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
[LT] Lithuanian	Šiuo INNOLUX deklaruoja, kad šis RIC 35G, RIC 43G, RIC 35C, RIC 43C, RIC 24C atitinka esminius reikalavimus ir kitas 2014/53/ES Direktyvos nuostatas
[MK] Macedonian	INNOLUX, изјавува дека овој RIC 35G, RIC 43G, RIC 35C, RIC 43C, RIC 24C е во согласност со суштинските барања и други релевантни одредби на Директивата 2014/53/EU.
[MT] Maltese	Hawnhekk, INNOLUX, jiddikjara li dan RIC 35G, RIC 43G, RIC 35C, RIC 43C, RIC 24C jikkonforma mal-ħtiġiġiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 2014/53/UE.
[NL] Dutch	Hierbij verklaart INNOLUX dat het toestel I RIC 35G, RIC 43G, RIC 35C, RIC 43C, RIC 24C in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 2014/53/EU.
[NO] Norwegian	INNOLUX erklærer herved at utstyret RIC 35G, RIC 43G, RIC 35C, RIC 43C, RIC 24C er i samsvar med de grunnleggende krav og øvrige relevante krav i direktiv 2014/53/EU.
[PL] Polish	Niniejszym INNOLUX deklaruje że RIC 35G, RIC 43G, RIC 35C, RIC 43C, RIC 24C jest zgodny z zasadniczymi wymaganiami i innymi właściwymi postanowieniami Dyrektywy 2014/53/UE.
[PT] Portuguese	Eu, INNOLUX, declaro que o RIC 35G, RIC 43G, RIC 35C, RIC 43C, RIC 24C cumpre os requisitos essenciais e outras provisões relevantes da Directiva 2014/53/UE.
[RO] Romanian	Prin prezenta, INNOLUX, declară că aparatul RIC 35G, RIC 43G, RIC 35C, RIC 43C, RIC 24C este în conformitate cu cerințele esențiale și cu alte prevederi pertinente ale Directivei 2014/53/UE.
[SK] Slovak	INNOLUX týmto vyhlasuje, že RIC 35G, RIC 43G, RIC 35C, RIC 43C, RIC 24C spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 2014/53/EÚ.

[SL] Slovenian	INNOLUX izjavlja, da je ta RIC 35G, RIC 43G, RIC 35C, RIC 43C, RIC 24C v skladu z bistvenimi zahtevami in drugimi relevantnimi določili direktive 2014/53/EU.
[SV] Swedish	Härmed intygar INNOLUX, att denna RIC 35G, RIC 43G, RIC 35C, RIC 43C, RIC 24C är förenligt med de grundläggande kraven och andra relevanta bestämmelser i direktivet 2014/53/EU.
[TR] Turkish	İşbu belge ile INNOLUX, bu RIC 35G, RIC 43G, RIC 35C, RIC 43C, RIC 24C ürününün 2014/53/AB sayılı Yönetge'nin temel şartlarıyla ve diğer ilgili hükümleriyle uyumlu olduğunu beyan eder.

Innolux

## EC Declaration of Conformity

Manufacturer : Innolux Corporation  
Address :

Product : RIC 35G, RIC 35C,  
RIC 43G, RIC 43C,  
RIC 24C

Model No. : RIC 35G, RIC 35C,  
RIC 43G, RIC 43C,  
RIC 24C

Applicable Product Units : Serial No. \*\*\*0001 or later  
Control Software: 0X0221 or later

We, Innolux Corporation, herewith declare under our sole responsibility that the product(s) identified in this declaration conforms to the provisions of the following Directive and Standards.

Directive :  
RE Directive: 2014/53/EU

Standards :  
SAR EN 62311:2008  
Radio EN 300 328 V1.9.1  
EN 301 893 V1.8.1  
EMC EN 301 489-1 V1.9.2  
EN 301 489-17 V2.2.1  
Safety EN 60601-1:2006/A1:2013

Place and Date of issue Signature :  
[Area], Twian Name :  
[date] Function :

Innolux Corporation

# INNOLUX

 Manufacturer :

## INNOLUX Corporation

No.3, Sec. 1, Huansi Rd., Tainan City, Southern Taiwan Science Park,  
74147, Taiwan (R.O.C.)



EC REP European Authorized Representative:

**INNOLUX Optoelectronics Europe B.V.**

Jupiterstraat 106, 2132 HE Hoofddorp, The Netherlands

EU Importer

**INNOLUX Optoelectronics Europe B.V.**

Jupiterstraat 106, 2132 HE Hoofddorp, The Netherlands