

# USER MANUAL(Ver1.0)

## RADIA-G

### Rapid Diagnosis System



# RADIA-G



Thank you for purchasing RADIA-G.

This user manual contains all the information you need to use the device. Please read the manual carefully before use.

If you have any questions about the device, please contact the manufacturer, BK Electronics.

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# RADIA-G Introduction

## Intended use

RADIA-G (In vitro Diagnostic Medical Device) is a medical device that measures rapid test kits (lateral flow immunoassays) and is used in hospitals and clinical laboratories for in vitro diagnosis. The fast and precise scanning allows the detection of quantitative results depending on the rapid test and/or the configuration of the device.

## Device Description

RADIA-G can be used by placing rapid test kit on the cassette tray, inserting it into the device and selecting the measuring function on the touchscreen. After the LEDs in the optical section emit light, images are taken with the embedded camera and measured based on the strength of each of the inspection and control lines to determine the presence of the disease to be diagnosed.

## Transportation & Storage

- Ensure that the rapid test kit and the device are free of dust, dirt or any other particle that could interfere with the device performance.
- Protect the device from high humidity and contact with liquids. Recommended storage conditions are as follows:
  - Temperature: -10 to 60°C, Humidity: 15 to 75%
- Do not place heavy objects on the device.
- Do not expose the device to direct sunlight.
- Be sure to unplug the device before moving it.
- Do not tilt the device while it is being operated.

## Operating conditions

To ensure the correct functioning of RADIA-G, observe the following:

- Only operate the device in acceptable environmental conditions.
  - Temperature: 5~40°C, Humidity: 15~75%
  - Within the above range, acceptable temperature ranges depend on reagents.
- Place the device on a flat surface to operate.
- Do not use the device near strong electric field radiation.
- Do not block the vent of the device.
- If the device suddenly malfunctions, disconnect the adaptor from the outlet.

# RADIA-G Introduction

## **Cleaning and Maintenance**

- Do not clean the device with powerful or corrosive cleaning agents.
- Wipe the device with a soft, dry cloth.
- Always turn off the device before cleaning.

## **Precautions for Use**

Carefully read and observe the instructions in the user manual and how to use the device and controls.

Only use the rapid test kits provided by RADIA-G as an in vitro diagnostic instrument. Using different rapid test kits may result in inaccurate results.

When connecting the power supply, make sure that the input voltage matches the used voltage.

To operate the 'on' and 'off' power switch, set a suitable distance between the device and the wall.

Do not insert any metal objects into RADIA-G. Electrical shock, harm and damage to the device may occur.

Be sure to turn off the power switch before unplugging the power cord.

Be sure to use the adaptor provided.

Take care not to pinch your fingers when inserting the rapid test kit.

Do not operate the device in wet conditions.

Wear gloves when using the device to prevent cross-contamination.

Improper use and management can damage the device and result in inaccurate reading of the rapid test kits.

# RADIA-G Introduction

## System Components

When unpacking, make sure the device and components are not damaged.

Product	Rapid Test Kit analyzer
Model	RADIA-G
DC Power Supply	Input : 100-240V 50~60Hz, 0.5A Output : DC 12V 2A
Power Consumption	MAX 15W
Display	7"Color TFT LCD(800*480)
Display Controls	Graphic User Interface
Electrical Class	CLASS 2
Electrical Type	TYPE B
Size	204mm × 185mm × 142mm



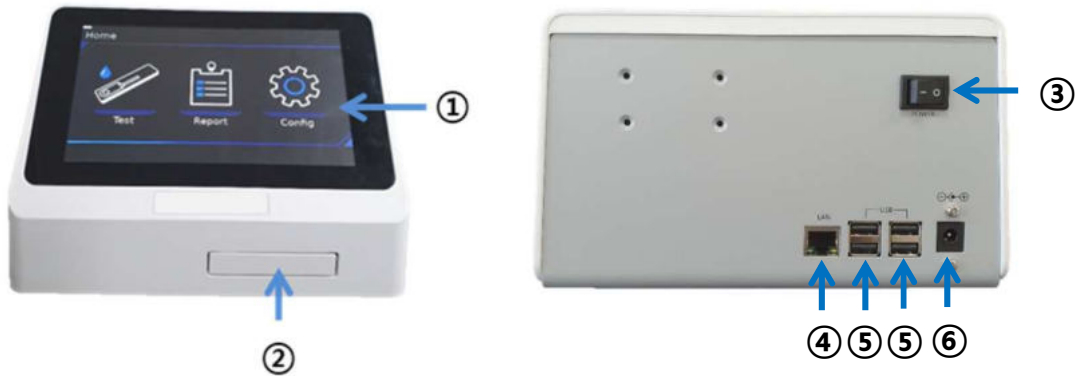
Exterior (Analyzer)



Adaptor

# RADIA-G Introduction

## Exterior description



No.	Name	Function
①	LCD touchscreen	Displays the device operation and measurement results
②	Cassette tray	The slot where rapid test kit is inserted into the device
③	Power switch	Switches the device power on/off
④	LAN port	Port for internet connection
⑤	USB port	Port for connecting with USB, keyboard, barcode scanner and printer
⑥	Power supply terminal	Connects power supply adaptor to the device

# RADIA-G Introduction




## Basic menu structure





# RADIA-G Introduction

## RADIA-G contents of the package

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# RADIA-G Introduction


## Installing and preparing RADIA-G

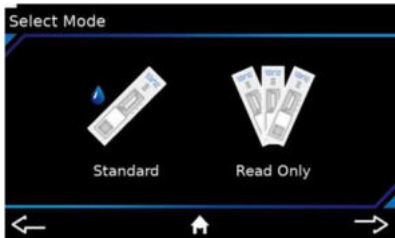
1. Connect the AC/DC adaptor jack.
  - 1) Check if the surface is flat and dry before placing the device.
  - 2) Connect the DC power cord to the power port on the back of the device. Connect the country specific AC/DC adaptor power cord into an available electrical outlet.
  - 3) Once the connection is complete and the power switch is turned on, the device can be used.

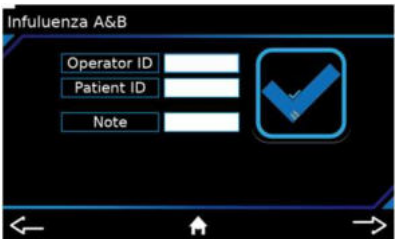
## Operating RADIA-G

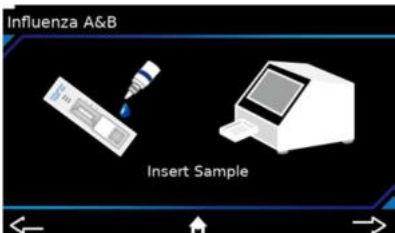
### 1. Standard mode

This is the most convenient mode for reading samples from a single patient.

- 1)  Select 'Test' on the main screen (Home).


The Home screen displays three main icons: 'Test' (a test strip), 'Report' (a clipboard), and 'Config' (a gear). The 'Test' icon is highlighted with a blue glow.
- 2)  Select 'Standard' from the 'Select mode' screen.

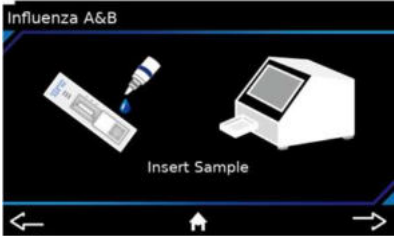
The Select Mode screen shows two options: 'Standard' (represented by a single test strip) and 'Read Only' (represented by multiple test strips). The 'Standard' option is highlighted with a blue glow.
- 3)  Enter Operator ID, Patient ID, and Note.  
(The user ID can be deleted later from 'Settings > User')


The Influenza A&B screen features three input fields: 'Operator ID', 'Patient ID', and 'Note'. A large blue checkmark icon is visible on the right side of the screen.
- 4)  Drop the sample to be analyzed into the rapid test kit.

The Influenza A&B screen shows a test strip being inserted into a device. The text 'Insert Sample' is displayed at the bottom of the screen.

# RADIA-G Installation and Analysis

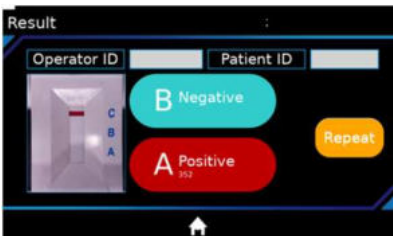
- 5)  Gently push on the cassette tray, remove it from the device and place the rapid test kit on the cassette tray.

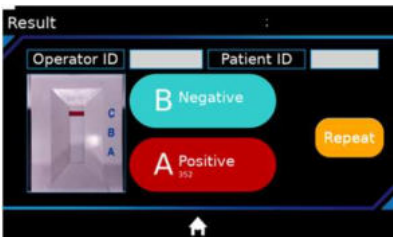




- 6)  Push the cassette tray back into the device and the time display will appear on the screen. Analysis will begin.

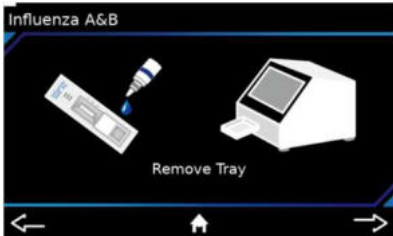


(Do not disconnect power or remove the cassette tray while the test is in progress.)

- 7)  The device automatically analyzes the test results. When the analysis is complete, the results are displayed with the test name. (Positive is displayed in red with the quantitative value while negative is displayed in blue with quantitative value)



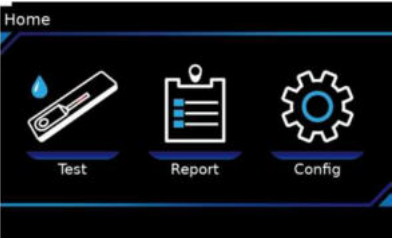
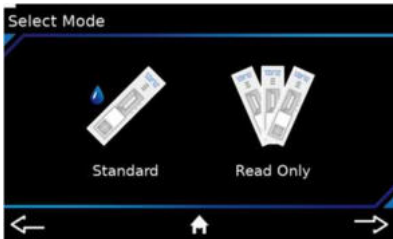
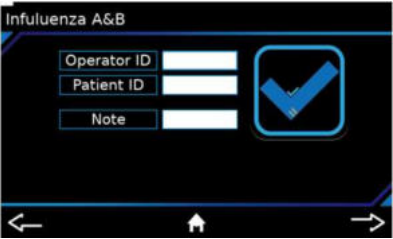
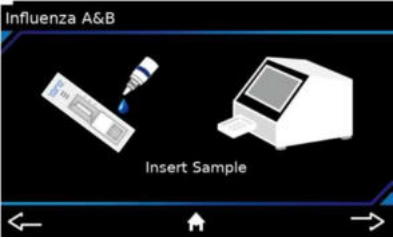

- 8)  Open the cassette tray, take out the measured rapid test kit, and press the home button  to go to the main screen.



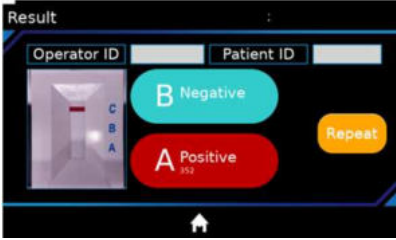
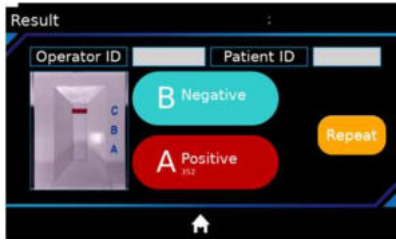
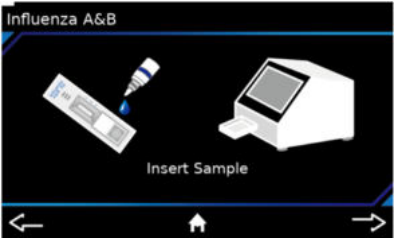
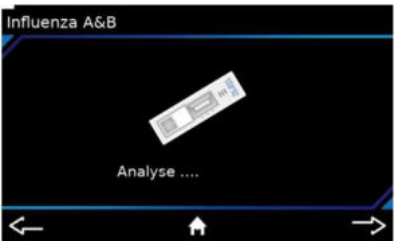
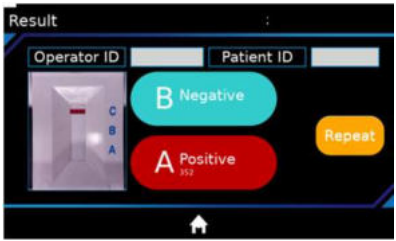
# RADIA-G Installation and Analysis

## 2. Read-only Mode

The device can read samples from multiple patients consecutively quickly. This mode is convenient for analyzing multiple test kits at once.

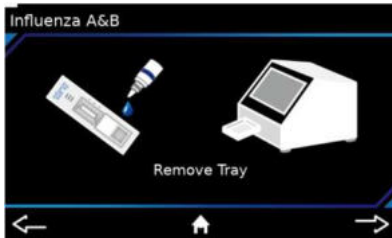
- 1)  Select "Test" from the main page (Home)
- 2)  Select 'Read only' mode
- 3)  Enter Operator ID, Patient ID (you can delete the user input from 'Settings > User').
- 4)  Insert the rapid test kit with sample.
- 5)  The analysis starts automatically when the cassette tray is pushed back into the insert.


# RADIA-G Installation and Analysis

- 6)  The device automatically analyzes the test results. When the analysis is complete, the results are displayed with the test name. (Positive is displayed in red with the quantitative value while negative is displayed in blue with quantitative value)
- 7)  Remove the cassette tray after analysis and select 'Repeat' to analyze the next rapid test kit.
- 8)  Insert the cassette tray with the subsequent rapid test kit.
- 9)  Analysis will begin automatically by pushing the cassette tray into the insert
- 10)  The device automatically analyzes the test results. When the analysis is complete, the results are displayed with the test name. (Positive is displayed in red with the quantitative value while negative is displayed in blue with quantitative value)

# RADIA-G Installation and Analysis

11)



Repeat step 8 if any other rapid test kit needs to be analyzed, then press the Home button  to go to the main screen.

# RADIA-G Setting

## Device Configuration

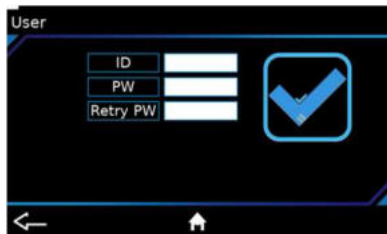
### 1. Data management

1)



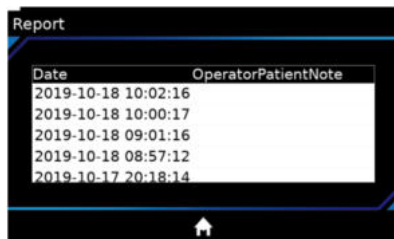
Select 'Report' on the main screen (Home).

2)



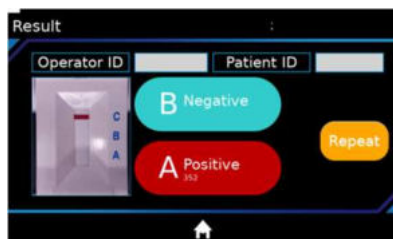
Enter User ID and password


3)



Select the date and time of the performed analysis to check the result

4)




After checking the result, select Home button  to move to the main screen.

# RADIA-G Setting

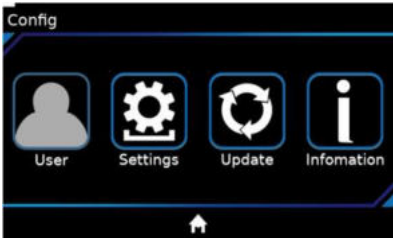
## 2. 'Config' Mode




### (1) 'User' Settings

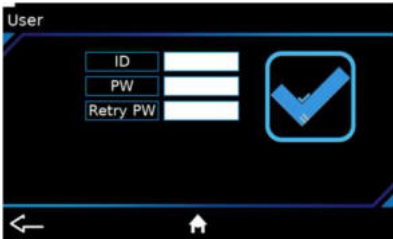
- 1)  Select 'Config' on the main screen (Home).



- 2)  Select 'User' option.



- 3)  Enter ID and password, press Apply button  to save the data, then press Home button  to go the main page.



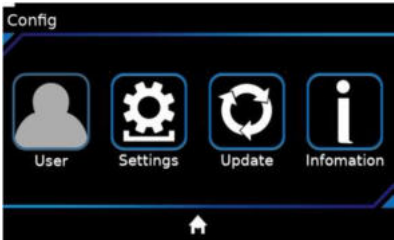
### (2) 'Settings' Mode

#### 1) Date/Time Settings

- ①  Select 'Config' from the Home page

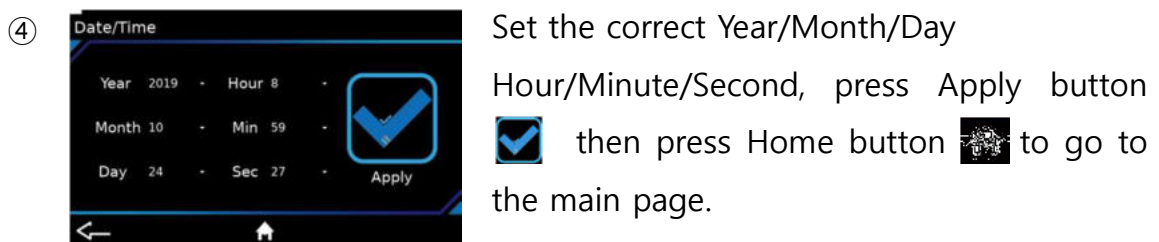


- ②  Select 'Settings' option

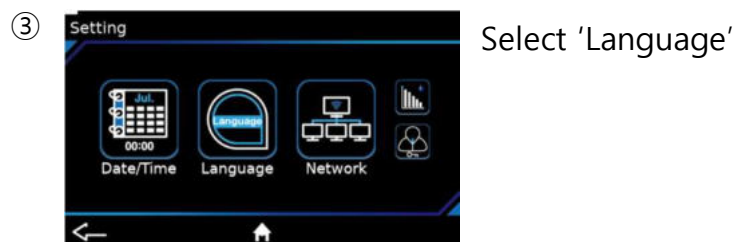
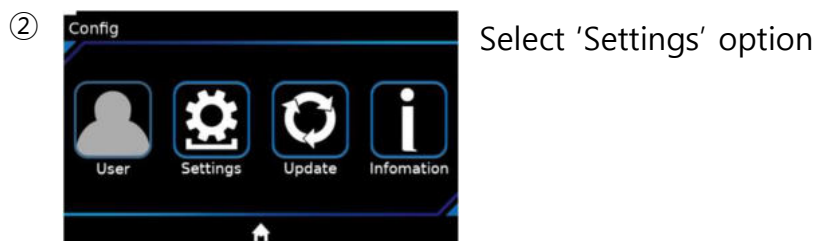
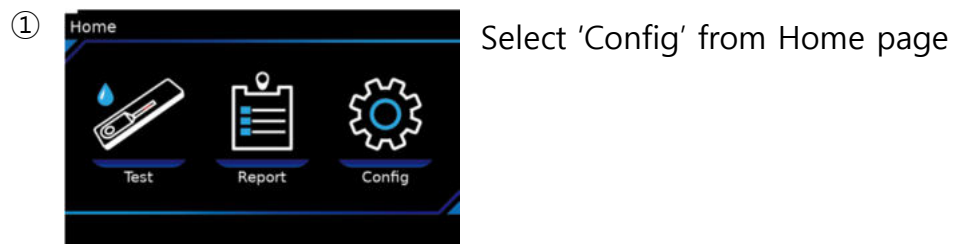





# RADIA-G Setting



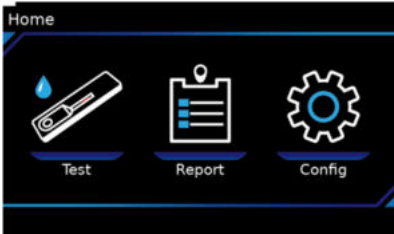
## 2) Language Settings

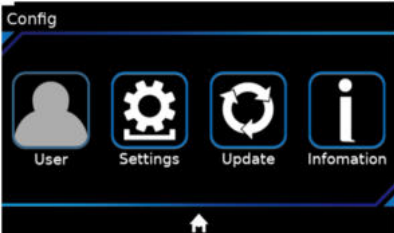


# RADIA-G Setting

- ④  Set up the main language (English)

## 3) Network Settings

- ①  Select 'Config' from Home page


- ②  Select 'Settings' option

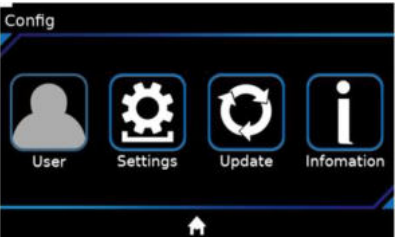
- ③  Select 'Network'



- ④  Set up your network environment, press Apply button  save and press Home button  to go to the main page.

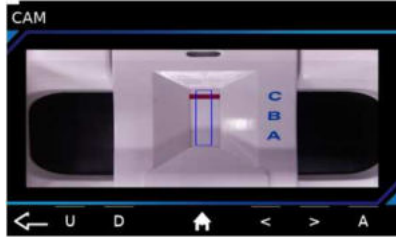

# RADIA-G Setting

## 4) Camera Settings

①  Select 'Config' from main page (Home)

②  Select 'Settings' option

③  Select CAM button  on the right side of the screen

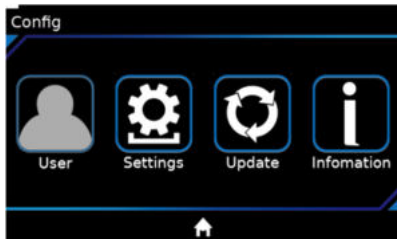
④  You can change the camera range by pressing up (U), down (D), left (<), and right (>), and save changes by pressing apply button  on the bottom of the screen. To obtain accurate result, make sure camera range is set correctly. The blue rectangle must be at the center and cross the C-line.


## 5) Supervisor Settings

①  Select 'Config' from the main page (Home)

# RADIA-G Setting

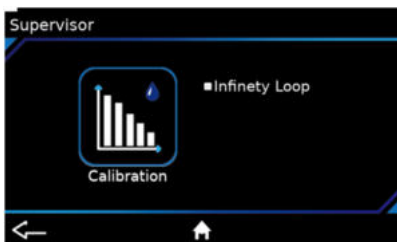
- ② Select 'Settings' option



- ③ Select supervisor button  on the right side of the screen



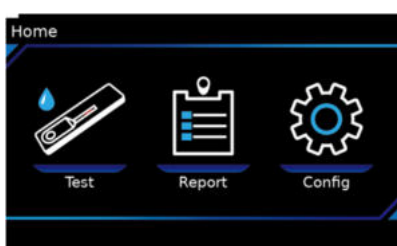
- ④ Select 'Calibration'



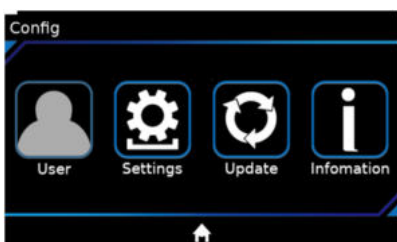
## (3) 'Update' Mode

### 1) Software Settings

- ① Select 'Config' from the main page (Home)

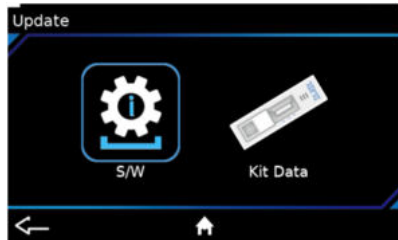


- ② Select 'Update' option



# RADIA-G Setting

③

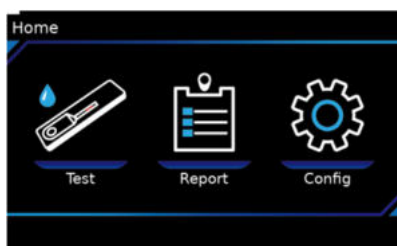


You can check and update software and kit data

(4) 'Information' Mode

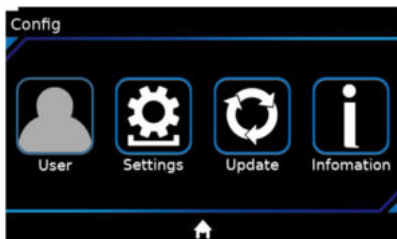
1) Software version check

①



Select 'Config' from the main page (Home)

②



Select 'Information' option

③



Software version will appear on the screen.

Problem	Solution
The power does not turn on	Check the device and power adaptor connections. Check the power ON/OFF button.
Screen page is blank	Check the power button is ON.
Network connection does not work	Reconnect the reader and the external device. If the problem persists, contact BK Electronics.
Camera position is incorrect	Reset the camera's measurement range.

\* If any of the above problems persist, contact the manufacturer.

## **Warranty**

The RADIA-G warranty period is one year from the date of purchase and includes free replacement or repair of any parts found to be defective if the device fails to operate properly due to material or manufacturing defects.

This warranty does not extend to the devices which have received normal wear and tear, or devices which have been damaged in an accident (including by acts of nature), tampered, abused, improperly installed or altered. This warranty applies only to the first purchaser of the device.

## **Return Policy**

Please contact the manufacturer before returning the device and you will be instructed on how to return it. Devices returned without manufacturer's approval will not be accepted.

Manufacturer: BK Electronics

Manufacturing declaration number: JSN19-1386

Address: 88 Kei Tower, Anyang, Republic of Korea

Phone number: 031-463-0334

HOME PAGE: [www.bkec.co.kr](http://www.bkec.co.kr)

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