

**KODAK RVG 6500 System and KODAK RVG 6500  
IPS System**

User & Installation Guide

# Notice

The User & Installation Guide for the KODAK RVG 6500 (with or without IPS) System includes information on the installation of the device as well as its usage. We recommend that you thoroughly familiarize yourself with this Guide in order to make the most effective use of your system.

The KODAK RVG 6500 (with or without IPS) System, wireless digital intra-oral X-ray system, is intended to produce an image of the dental area at the direction of health care professionals of dento- maxillo-facial region of the human anatomy.

The KODAK RVG 6500 IPS System, in addition, provides the Intelligent Positioning System (IPS) to enable the dentist prior to acquisition to correctly align the X-ray beam to the RVG sensor.



**WARNING: We recommend that you consult the “Safety, Regulatory and the Technical Specification User Guide” before using the KODAK RVG 6500 (with or without IPS) Systems.**

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U.S. Federal law restricts this device to sale by or on the order of a dentist or physician.

This document is originally written in English.

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KODAK RVG 6500 (with or without IPS) System, complies with Directive 93/42/CEE relating to medical equipment.



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## Manufacturer



Carestream Health, Inc.  
150 Verona Street  
Rochester NY 14 608

## Authorized Representative in the European Community

**EC REP**

TROPHY

4, Rue F. Pelloutier, Croissy-Beaubourg  
77435 Marne la Vallée Cedex 2, France

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# 1 Conventions in This Guide

## Conventions in this Guide

The following special messages emphasize information or indicate potential risk to personnel or equipment:



**WARNING:** Warns you to avoid injury to yourself or others by following the safety instructions precisely.



**CAUTION:** Alerts you to a condition that might cause serious damage.



**Important:** Alerts you to a condition that might cause problems.



**Note:** Emphasizes important information.



**Tip:** Provides extra information and hints.



# 2 KODAK RVG 6500 With or Without IPS System Packaging

## KODAK RVG 6500 With or Without IPS System Description

The KODAK RVG 6500 with or without IPS System is available in 2 configurations:

- The KODAK RVG 6500 System  
**OR**
- The KODAK RVG 6500 Intelligent Positioning System (IPS) System

## Packaging of KODAK RVG 6500 System

The KODAK RVG 6500 System packaging is composed of the following boxes:

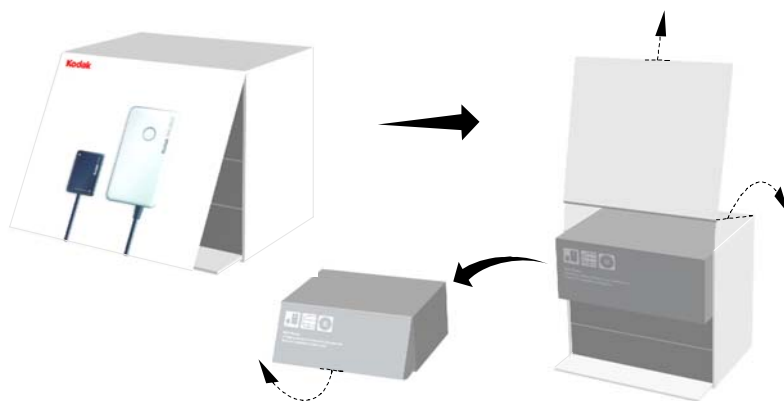
- The RVG sensor box
- The WiFi access point box
- The positioning kit box

## Packaging of KODAK RVG 6500 IPS System

The KODAK RVG 6500 IPS System packaging is composed of the following boxes:

- The RVG sensor box with IPS features
- The IPS aiming ring box
- The WiFi access point box
- The positioning kit box

## Opening the Boxes





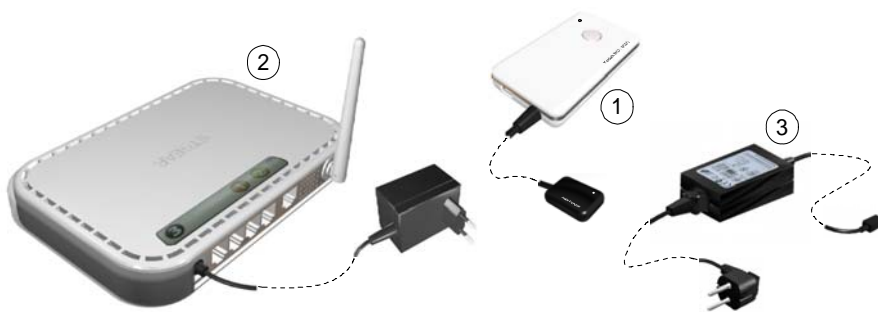


# 3 KODAK RVG 6500 Systems Overview

## KODAK RVG 6500 Systems Overview

- The KODAK RVG 6500 System  
OR
- The KODAK RVG 6500 Intelligent Positioning System (IPS) System

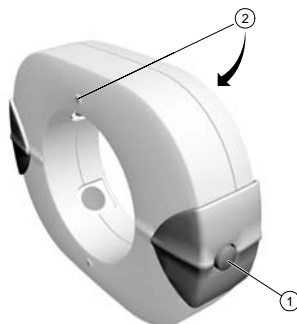
Figure 1 KODAK RVG 6500 System Components



- 1 The sensor and the control box
- 2 The WiFi access point
- 3 The medical power supply for the RVG system

The KODAK RVG 6500 IPS System is composed of all the KODAK RVG 6500 system components and the IPS aiming ring. The IPS aiming ring enables you prior to acquisition to dynamically and visually center and align the X-ray beam to the RVG sensor.

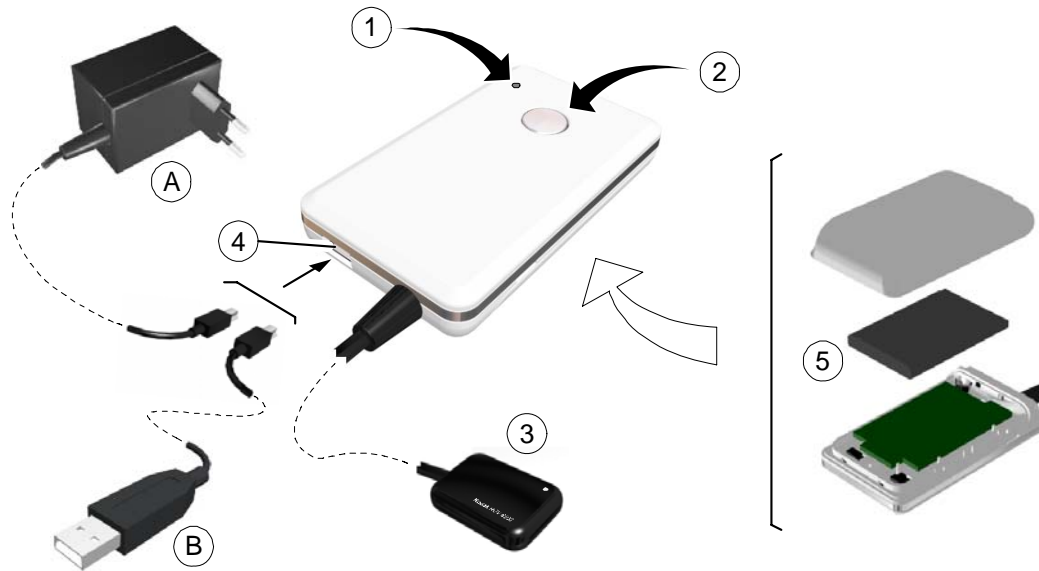
Figure 2 IPS Aiming Ring



- 1 ON/OFF button: A quick push on the ON/OFF button will light the front or back LED.
- 2 4 LEDS

## RVG Functional Components Overview

Figure 3 RVG Functional Components Overview



**1 Battery status indicator LED:**

- Not charged
- ⊙ Charging (blinking)
- Charged with charger connection
- OFF Charged without charger connection

**2 Sensor remote control button and the ON/OFF button:**

- OFF mode: Press 5 seconds to turn OFF
- ⊙
  - Connecting to WiFi AP (blinking): Press 2 seconds to turn ON
  - Transmitting acquired x-ray image (blinking)
- - Connected to WiFi AP
  - Standby mode
- - Ready for acquisition
  - RFID tag is identified
- Error mode

**3 Sensor**

**4 USB connector for battery charging**

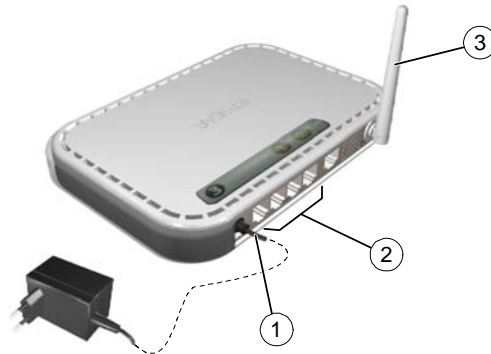
- (A) Medical charger
- (B) USB cable to charge with the computer

**5 Battery**

## WiFi Access Point Functional Components Overview

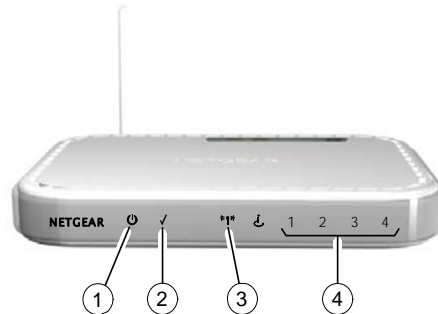
The WiFi access point is the wireless equivalent of the wired internal Local Area Network (LAN). The WiFi access point provides connectivity between the computer and the RVG sensor(s) enabling you to use the KODAK RVG 6500 within your practice area. See the manufacturer guide for any detailed information on the WiFi access point.

**Figure 4 WiFi AP Back Panel Overview**



- 1 Power adapter outlet.
- 2 4 local LAN 10/100 Mbps Ethernet ports for connecting the WiFi AP to the local computers.
- 3 Wireless antenna.

**Figure 5 WiFi Access Point Front Panel Overview**



- 1 Power indicator
- 2 Test indicator
- 3 Wireless transmission indicator
- 4 Local Area Network (LAN) indicator



# 4 Imaging Software Overview

## Computer System Requirements

Make sure that your computer is compatible with the computer system requirements detailed in *KODAK RVG 6500 System\_Regulatory User Guide (SM737)*, Chapter 3.



**Important:** It is **MANDATORY** to check that the computer system configuration is compatible with the computer system requirements for the KODAK RVG 6500 with or without IPS system software.



**Important:** The screen with the proper technical display characteristics for visualization of radiological images will avoid any diagnostic error.

## General Software Overview

The KODAK RVG 6500 with or without IPS intraoral imaging system operates with the following software:

- KODAK dental imaging software
- KODAK RVG 6500 systems software modules:
  - RVG acquisition interface
  - Intelligent Positioning System (IPS) interface (optional)

## KODAK Dental Imaging Software

The KODAK dental imaging software is a user-friendly working interface that was designed and developed specifically for radiological diagnosis. It is the common imaging platform for all our digital systems for dentistry.

The KODAK dental imaging software has the following features:

- Patient record management using **Patient Window** features.
- Extraoral and intraoral image management using **Imaging Window** features.

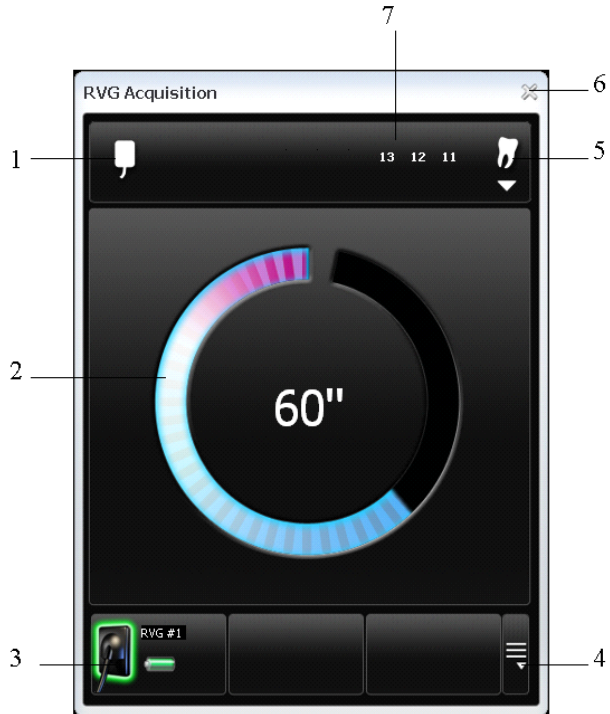


**Note:** For a complete information on how to use the KODAK Dental Imaging Software, click ? in the menu bar to access the online help, or see *SM691 KODAK Dental Imaging Software Quick Start Guide*.

## The RVG Acquisition Interface

The **RVG Acquisition** interface module is a user-friendly working interface that was designed and developed specifically for the KODAK RVG 6500 with or without IPS intraoral imaging system.

**Figure 6 RVG Acquisition Main Interface**




- 1 **Sensor orientation:** Pre-oriens how the x-ray image is displayed in the **Imaging Window**.
- 2 **Preview screen:**
  - Indicates the 90 second activation time for acquisition.
  - Displays the acquired x-ray image instantly after acquisition.
- 3 **Available sensor(s):** Displays maximum 3 sensors with their name, sensor status and battery status.
  - Blue: Sensor on standby
  - Green: Sensor ready for acquisition
  - Red: Error mode
- 4 **Sensor list:** Accesses the list of the sensors (see Figure 6).
- 5 **Dental arch interface:** Accesses the dental arch interface for tooth selection (see figure 7).
- 6 **Exit button:** Exits the **Acquisition Interface**.
- 7 **Tooth display:** Displays the selected tooth number.


**Figure 7 List of Available Sensors**





**The sensor name and battery status:**

 Battery status.



**The WiFi status:**



 WiFi transmission is available.


 WiFi transmission is available but not good.

 WiFi transmission is not available.

**The Sensor availability:**

 Sensor is connected to your computer and ready for use. Click  to disconnect.

 Sensor is not connected to your computer. Click  to connect.

 Refresh button refreshes the list of sensors visible in the computer.

**Figure 8 Dental Arch for Tooth Selection**



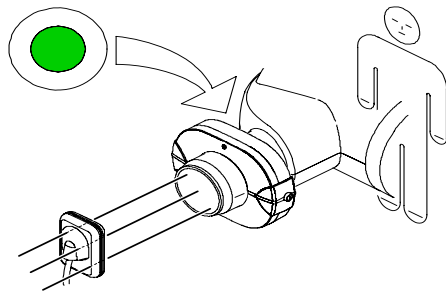
To select the desired tooth or teeth for acquisition, click on the tooth. The tooth number for acquisition is displayed as shown in the Figure 5.

## The IPS Aiming Ring Interface Overview

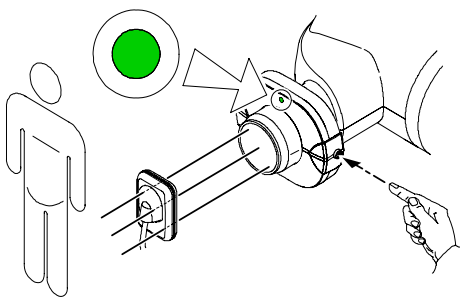
The IPS aiming ring interface is a user-friendly working interfaces that was designed and developed specifically for the KODAK RVG 6500 IPS System intraoral imaging system. It enables you prior to acquisition to dynamically and visually center the x-ray beam to the RVG sensor using the centering indicator.

### IPS Aiming Ring Interface and RVG Sensor Display

The IPS aiming ring interface displays the RVG sensor according to where you are positioned, that is, in front or behind the aiming ring. The operator where positioned (in front or behind) must always see the LED (front or back) of the aiming ring ON. A quick push on the ON/OFF button will light the front or the back LED.



- Operator is positioned behind the aiming ring.
- Back LED is ON.
- Sensor active side is displayed.



- Operator is positioned in front of the aiming ring.
- Front LED is ON.
- Sensor back side is displayed.



## IPS Aiming Ring Interface and RVG Sensor Centering

The IPS aiming ring interface enables you to correctly position the X-ray generator to the RVG sensor. The IPS interface enables you to manage the X-ray centering and the proper paralleling technique achievement.



### Sensor Display

- Sensor is not centered.
- Centering indicators are red.

### Result

- Sensor active surface not fully exposed to X-ray.
- Image will have a cone cut.
- Parallel technique not achieved.
- Image distortion.



### Sensor Display

- Sensor is centered.
- Centering indicators are red.

### Result

- Sensor active surface is fully exposed to X-ray;
- Image will have no cone cut.
- Parallel technique not achieved.
- Minimized risk of magnification and distortion.



### Sensor Display

- Sensor is centered.
- Centering indicators are green.

### Result

- Sensor active surface is fully exposed to X-ray;
- Image will have no cone cut.
- Parallel technique achieved\*.
- Minimized risk of magnification and distortion.



**Important:** \*The paralleling technique is achieved when the digital sensor plane is placed parallel to the real axis of the tooth in the patient's mouth. This correct positioning is under the operator's responsibility.



# 5

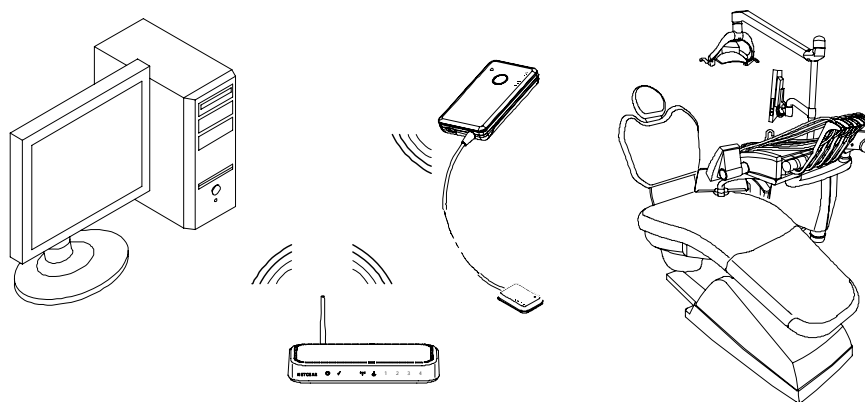
## Setting Up the KODAK RVG 6500 Systems



**Important:** Your computer must have an Ethernet board and be WiFi equipped before installing the KODAK RVG 6500 systems.

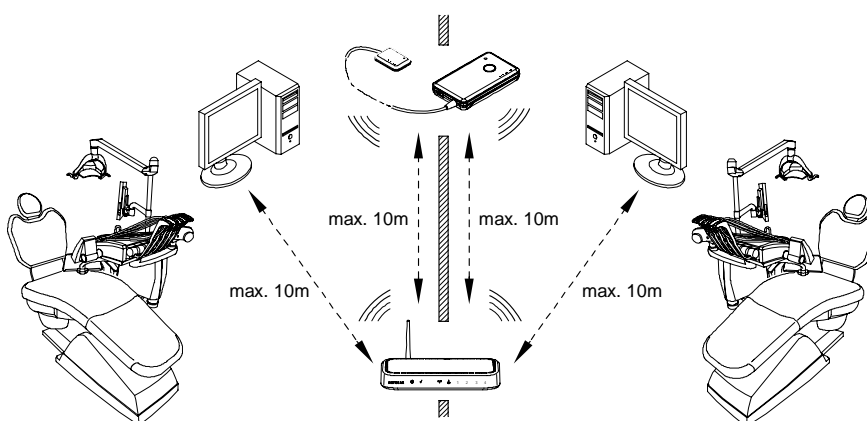
### KODAK RVG 6500 Systems Configuration Options

#### Option 1: Single RVG Sensor / Single PC / Single Access Point Configuration



- Single WiFi AP wired setup (see: For a first system configuration **“Installing the KODAK Dental Imaging Software”** . For reconfiguration **“Starting the Configuration Setup”** ).
- Direct RVG sensor connection to the PC (see **“Locking a Single RVG Sensor to the Computer.”** ).

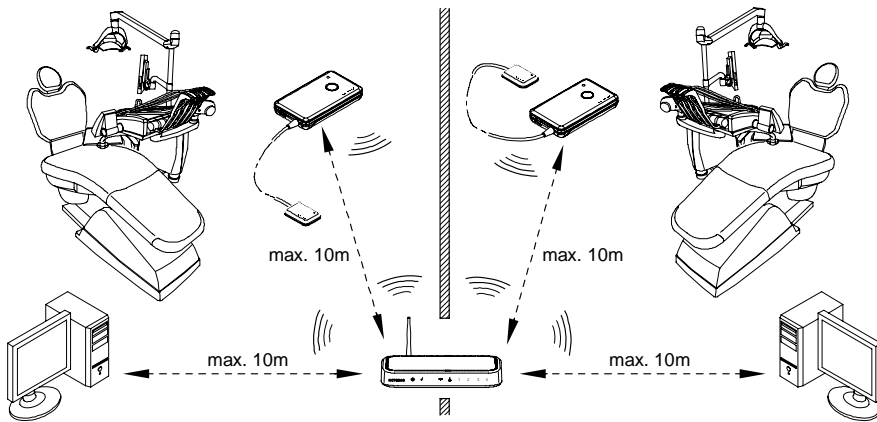
#### Option 2: Single RVG Sensor / Multi-PC / Single Access Point Configuration



- Single WiFi AP wireless setup (see: For a first system configuration **“Installing the KODAK Dental Imaging Software”** . For reconfiguration **“Starting the Configuration Setup”** ).
- RFID RVG sensor connection to multi-PCs (see **“Connecting an RVG RFID Sensor to the Computer”** ). This is a recommended configuration.

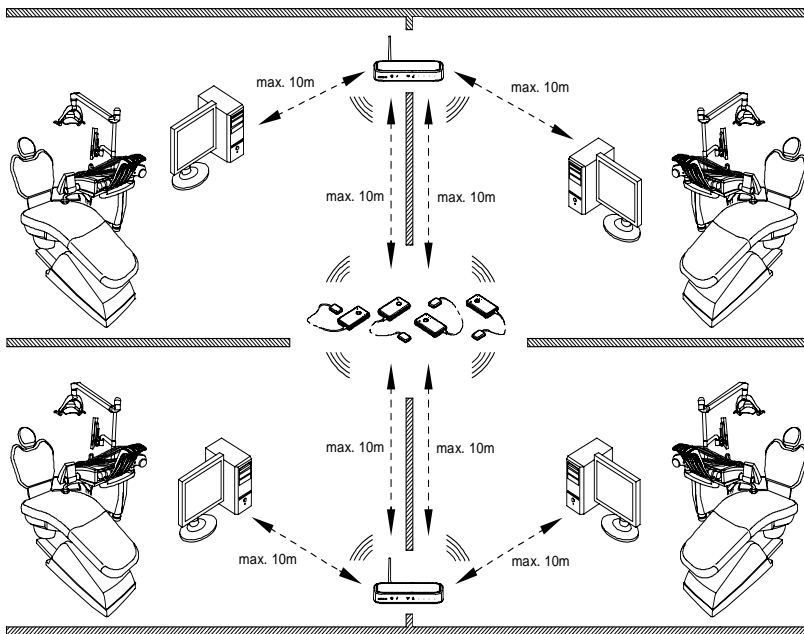
- **OR**
- Manual RVG sensor connection to multi-PCs (see **“Locking a Single RVG Sensor to the Computer.”**). This is a possible configuration but not recommended.

### Option 3: Multi-RVG Sensor / Multi-PC / Single Access Point Configuration



- Single WiFi AP wireless setup (see: For a first system configuration **“Installing the KODAK Dental Imaging Software”**. For reconfiguration **“Starting the Configuration Setup”**).
- RFID RVG sensor connection to multi-PCs (see **“Connecting an RVG RFID Sensor to the Computer”**). This is a recommended configuration.
- **OR**
- Manual RVG sensor connection to multi-PCs (see **“Locking Several Shared RVG Sensors to the Computer.”**). This is a possible configuration but not recommended.

### Option 4: Multi-RVG Sensor / Multi-PC / Multi-Access Point Configuration



- Multi-WiFi AP wireless setups (see: For a first system configuration **“Installing the KODAK Dental Imaging Software”**. For reconfiguration **“Starting the Configuration Setup”**).
- **Mandatory**, RFID RVG sensor connection to multi-PCs (see. **“Connecting an RVG RFID Sensor to the Computer”**).

## WiFi Access Point Setup Configurations

There are 2 WiFi access point setup configuration options:

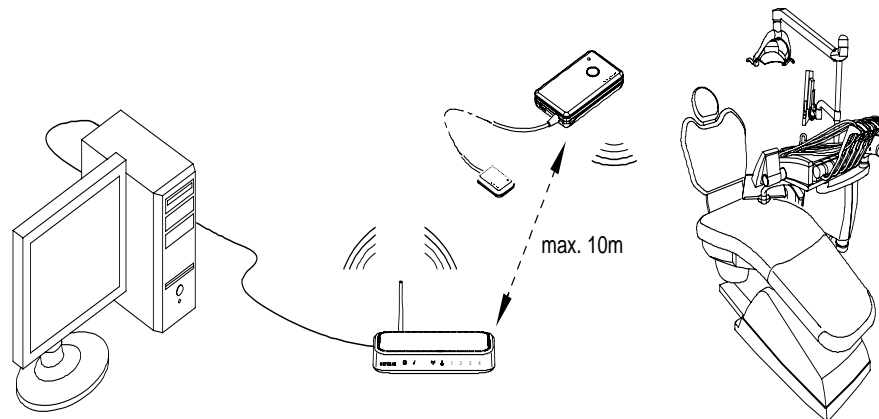
- The **wired** WiFi access point setup configuration (preferably “**Option 1: Single RVG Sensor / Single PC / Single Access Point Configuration**” )
- The **wireless** WiFi access point setup configuration

You must decide the KODAK RVG 6500 system configuration option before starting the WiFi setup. Once you have decided you will be guided by the setup software (see: For a first system configuration “**Installing the KODAK Dental Imaging Software**” . For reconfiguration “**Starting the Configuration Setup**” ).

### WiFi Access Point Wired Configuration Setup

You can choose to have a wired WiFi access point configuration. In this configuration setup, the WiFi access point is connected to a single computer through an Ethernet cable. Several sensors can be connected to the same access point and computer.

The transmission range between the WiFi access point and the RVG sensor is up to 10 meters.



### WiFi Access Point Wireless Configuring Setup

You can choose to have a wireless WiFi access point configuration. In this configuration setup, the computer is connected to the WiFi access point through a router, that is, through a dongle or a PCI card. In this configuration, several sensors can be connected to the same access point and shared between several computers and chairs.

For optimal WiFi access point wireless setup, follow these setup recommendations:

- Place the WiFi access point in a visible and high location (not on the floor).
- Place the WiFi access point in a central location for a multiple access point transmission.
- Avoid any barriers along the line of transmission, for example, armored wall and door, cabinets, effronteries and metal file cabinets.
- Install the WiFi access point at 1 meter distance from other appliances transmitting the same frequency range.
- Install the WiFi access point away from electrical equipment that also generates interferences.

In this configuration, the transmission range between WiFi access point and:

- The RVG sensor is up to 10 meters.
- The computer is up to 10 meters.

## Installing the KODAK Dental Imaging Software

Before installing the KODAK Dental Imaging Software, check that:

- The computer has all the PC system requirements
- You have the software DVD as of **version 6.12 or higher**

To install the KODAK Dental Imaging Software, follow these steps:

- 1 Insert the software DVD in the DVD-ROM drive of the computer.

Wait for the installation program to start. If the program does not start automatically, click **Start > Run** and enter **D:\setup.exe** if D is the letter for the DVD-ROM drive, or the letter of the relevant drive on the computer.

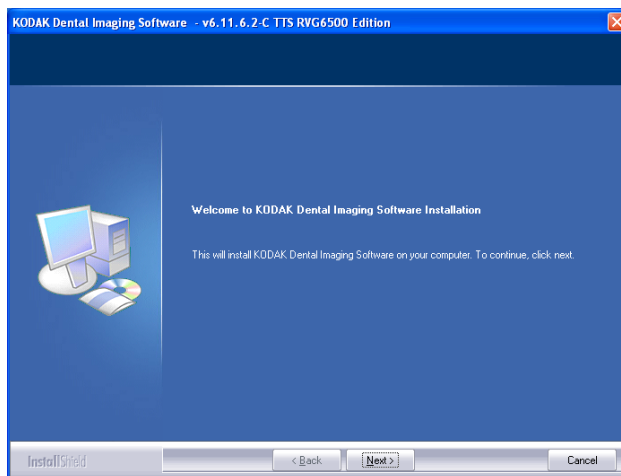
- 2 The **Choose Setup Language** dialog box is displayed. Select the installation language and click **OK**.



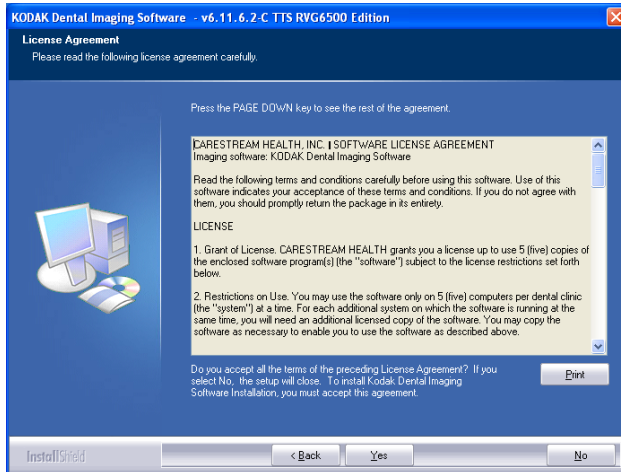
- 3 The **Kodak Dental Imaging Software** welcome page and the **InstallShield wizard** are displayed.



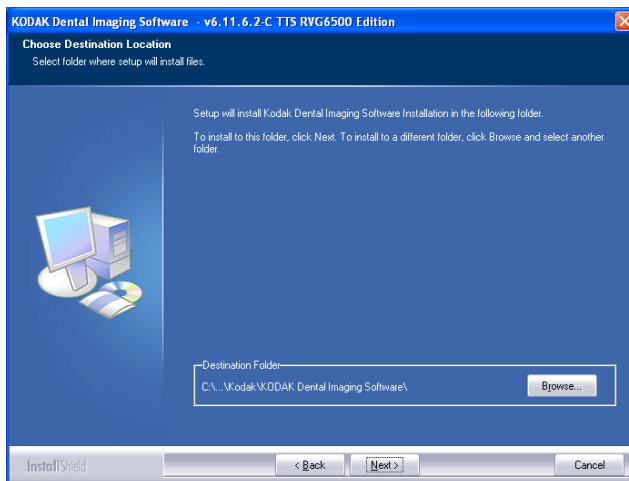
- 4 The **Welcome to KODAK Dental Imaging Software Installation** dialog box is displayed. Click **Next** to launch the installation.



- 5 The **License Agreement** dialog box is displayed. Accept and click **Yes**.

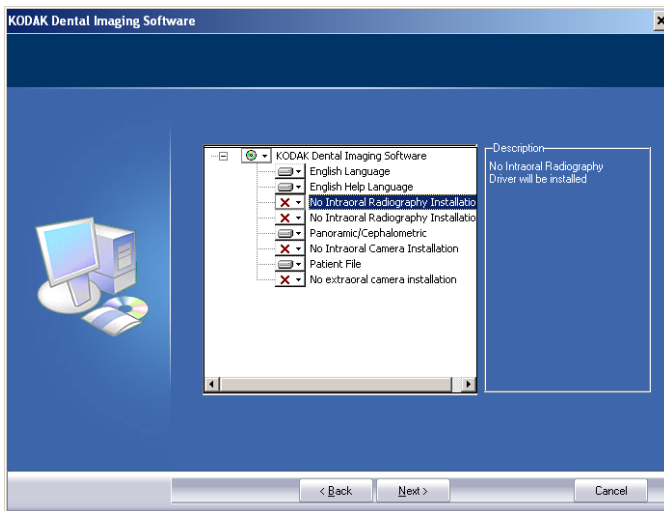


- 6 The **Choose Destination Location** dialog box is displayed. Click **Next** if you accept the default destination folder (c:\program files\Kodak\Kodak Dental Imaging Software) or browse to choose another destination folder.

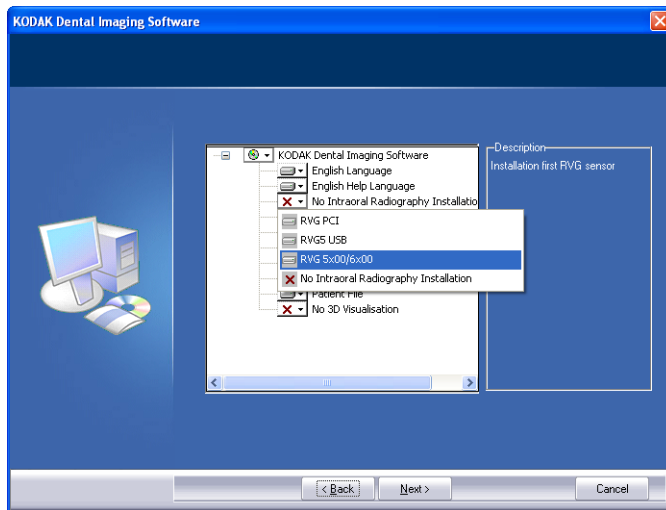


- 7 The **KODAK Dental Imaging Software** dialog box is displayed. The **Patient file** is selected by default but you must select the device.
- 8 To select the desired device, do the following:

Click on the drop-down list of **No Intraoral Radiography Installation**.

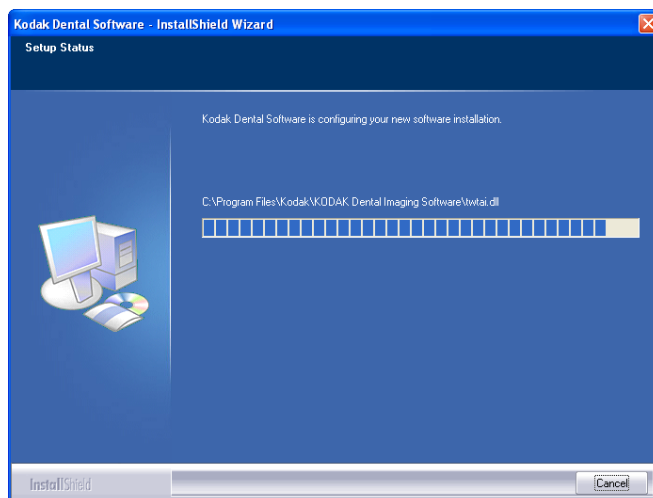


Select **RVG 5x00/6x00**.



Click **Next** to begin the installation.

The **InstallShield Wizard** is displayed. Let the installation process run automatically.





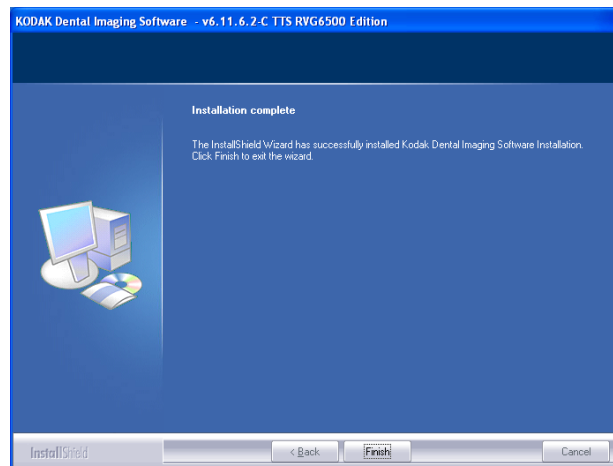
The **Kodak Patient file - InstallShield Wizard** is displayed while the patient files are installed on the hard drive.



The **Software Installation** dialog box is displayed while the installation process continues. Click **Continue Anyway** until the dialog box disappears.



9 The **Installation Complete** dialog box is displayed when the installation is finished. Click **Finish**.

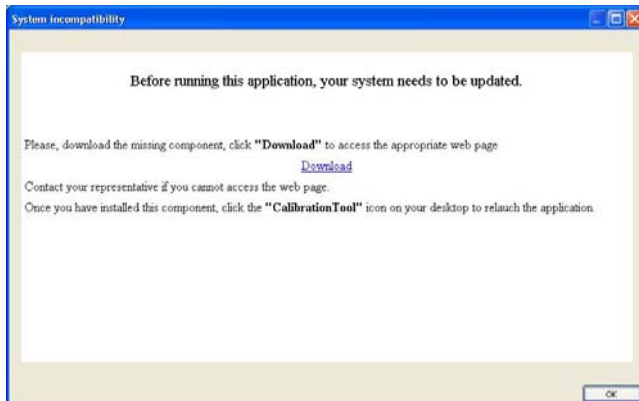


The **Kodak Dental Software** and **Calibration Tool** are installed on your desktop.


**If your computer operating system is not compatible with the system requirements follow the instructions below, otherwise go to step 13.**

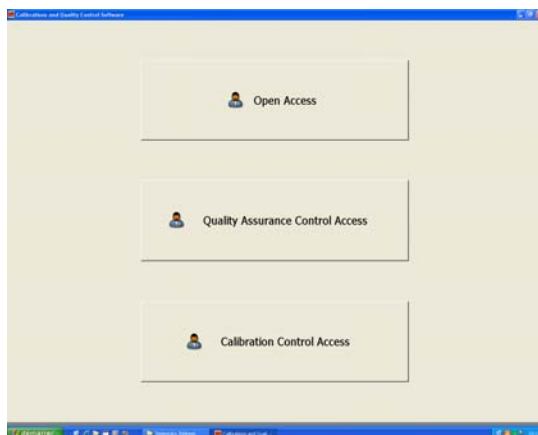
## If your PC operating system is not compatible with the system requirements

If your PC operating system is not compatible with the system requirements, the System incompatibility dialog box is displayed. Click Download, your application will close automatically.



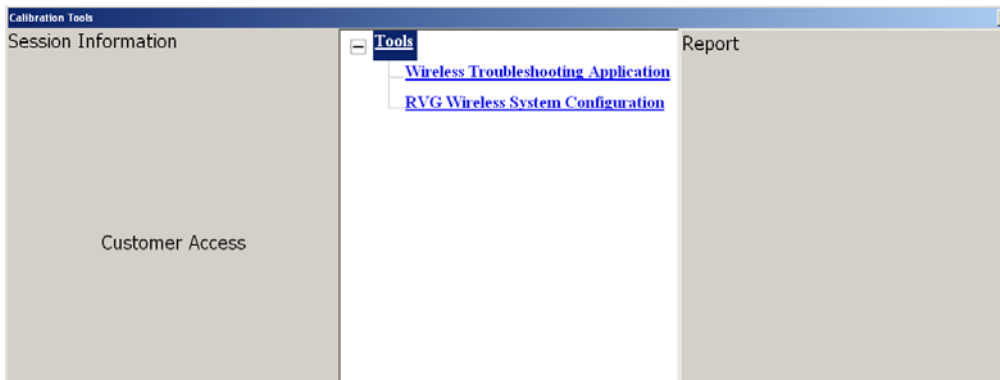
Follow the on-screen instructions to install the required "Windows Wireless component". Reboot your PC when the installation is completed.

- 10 Click  on your desktop. The **Calibration and Quality Control Software** window is displayed.



- 11 Click . The **Calibration Tools** window is displayed.

- 12 In the central pane, click **RVG Wireless System Configuration**, to access the “**Setting Up the WiFi AP**” window (see and follow step 10).

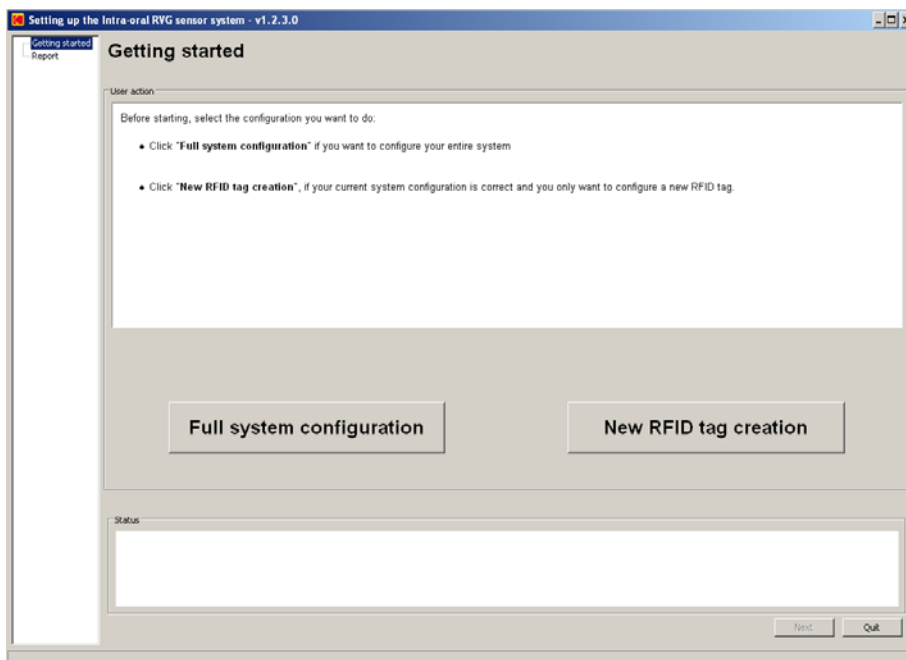


## Starting the Configuration Setup

- 13 Before the setting up of the KODAK RVG 6500 System procedures, have with you the:

SSID	Password
RVG8_NETWORK	7794AA6500EC239BFF4554DD80

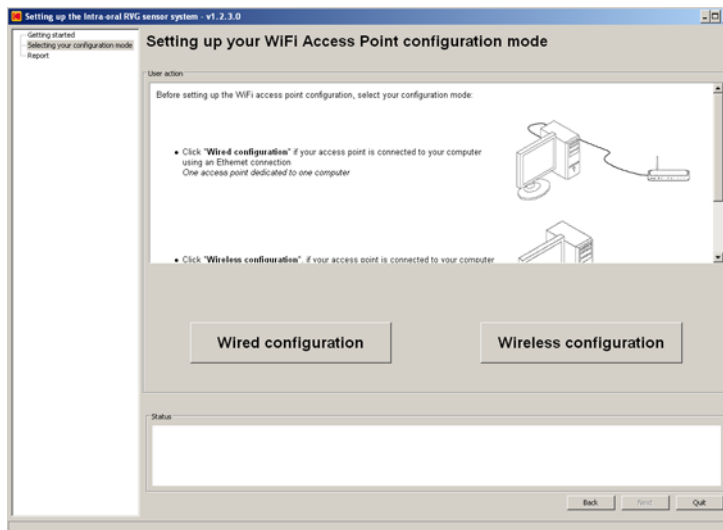
- 14 The “**Setting Up the Intra-oral RVG Sensor system**” window is automatically displayed.



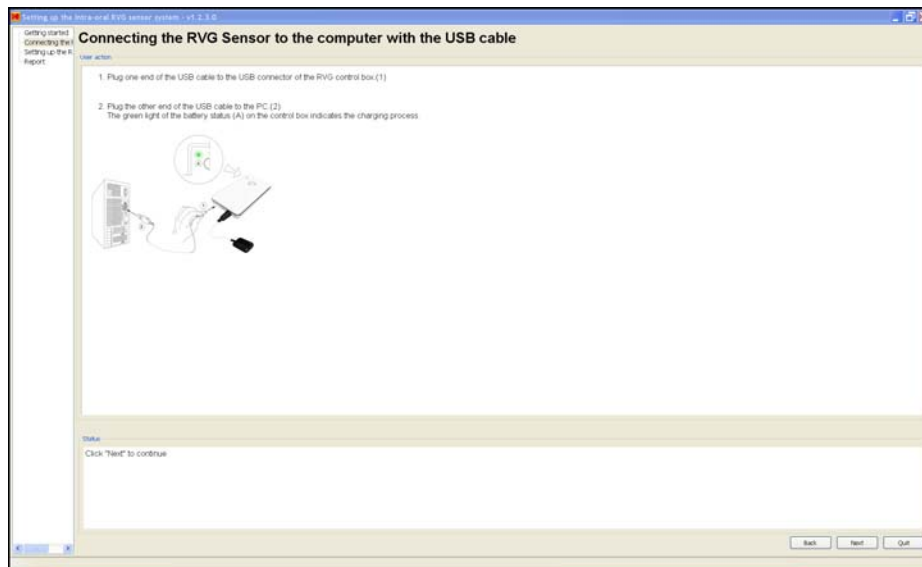
You have 2 setup options:

- **Full system configuration:** When you want to configure the entire system.
- **New RFID tag creation:** When your current system configuration is correct and you only want to configure a new RFID tag.

15 Click **Full system configuration** and follow the on-screen instructions to setup the RVG system



Click **New RFID tag creation** and follow the on-screen instructions to configure a new RFID tag.

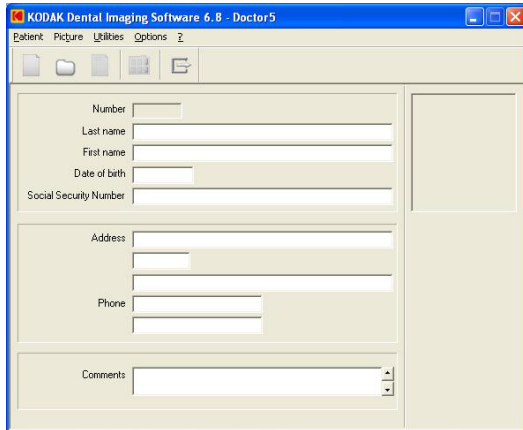


Once you have finished setting up the RVG system, you must register the KDIS Licence.

## Registering the KDIS Licence

To register the KDIS licence, follow these steps:

- 1 Double-click  to open the **Patient Window**.



KODAK Dental Imaging Software 6.8 - Doctor5

Number

Last name

First name

Date of birth


Social Security Number

Address

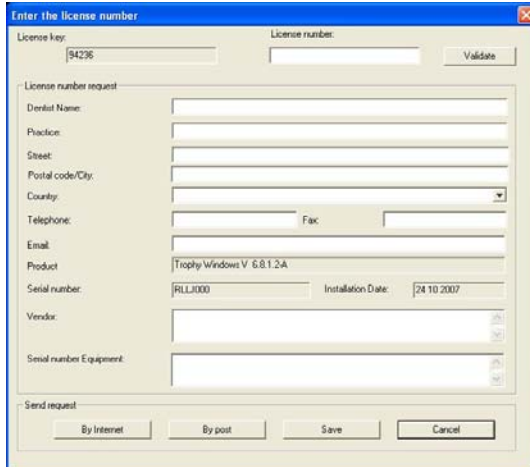
Phone

Comments

- 2 Create a patient record. From the toolbar, click  and enter the required patient information.

Click  to access the **Imaging Window**.

- 3 The **Enter the licence number** dialog box is displayed. Enter the licence number and click **Validate** if you have the licence number or click **Cancel** to continue.



Enter the license number

License key:  License number:

License number request

Dental Name:

Practice:

Street:

Postal code/City:

Country:

Telephone:  Fax:

Email:


Product: Trophy Windows V 6.8.1.2-A

Serial number: RLL1000 Installation Date: 24 10 2007

Vendor:

Serial number Equipment:

Send request

The  icon appears on the toolbar of the **Imaging Window**.

For the RVG Mobile Application installation (optional), see Chapter 7.

## Mounting the RVG Holders

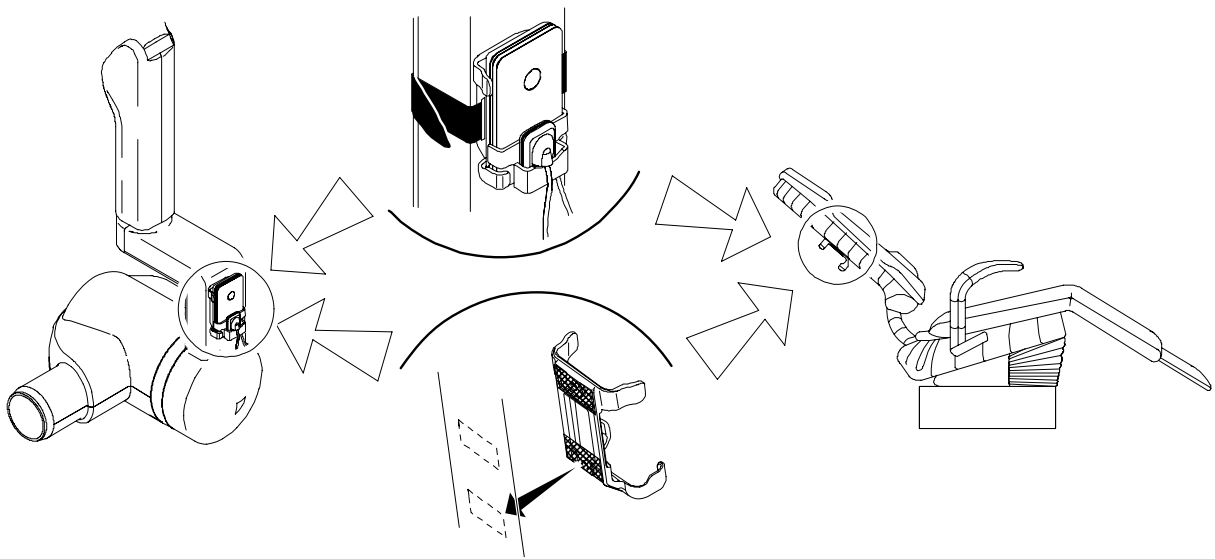
The RVG sensor and control box holders enable you to have them at reach to optimize your workflow. You need to install the RVG sensor and control box holders where it best suits your workflow, the X-ray generator arm, the chair, etc....

To mount the RVG sensor and control box holders, follow these steps:

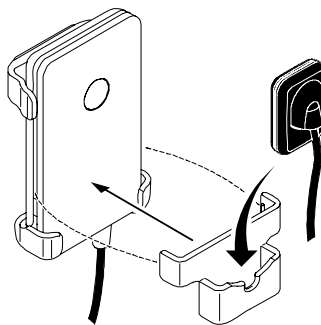
- 1 Attach the RVG control box holder with the double-face adhesive or the Velco strap supplied on the side of the X-ray generator arm.

You can also attach the RVG control box holder with the double-face adhesive or the Velco strap to the chair or any other flat surface close to the patient's chair.

The RVG control box holder can also be mounted on the wall with screws (not supplied).



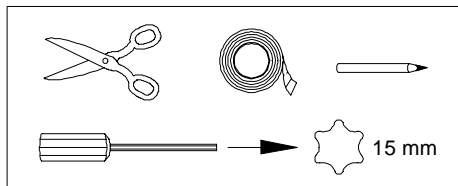
- 2 Clip the RVG sensor holder on the control box. Insert the RVG sensor in its holder.



## Mounting the IPS Aiming Ring on the X-Ray Generator

Before mounting the IPS aiming ring, make sure that:

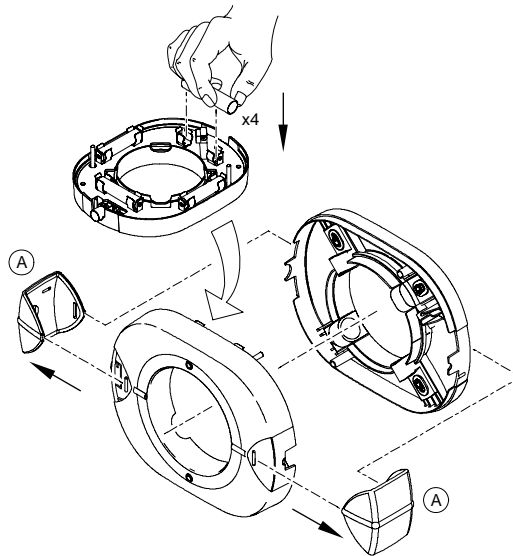
- You have the necessary tools:



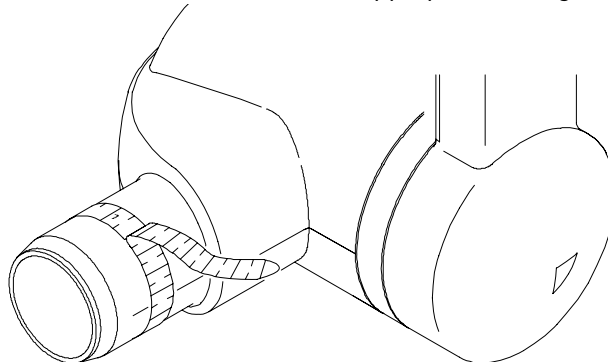
- You have cleaned the X-ray generator tube head with disposable cleaning wipes.
- You have asked the practitioner his preference for the position of the aiming ring on the X-ray tube head, with the ON/OFF button on the left or right side of the X-ray tube head.

To mount the IPS aiming ring on the X-ray generator tube head, follow these steps:

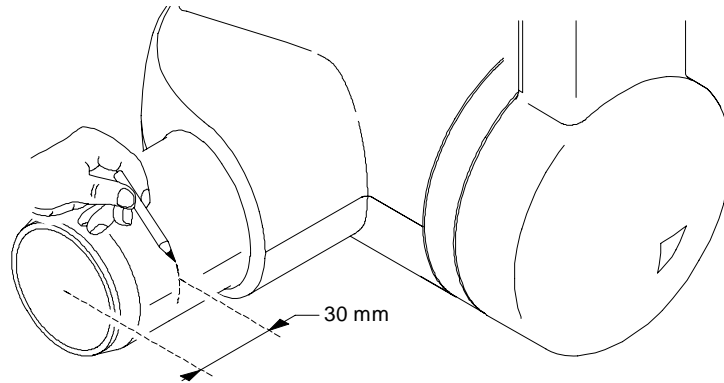
- 1 Remove the attachment brackets (A).
- 2 Remove the back cover.
- 3 Insert the 4 batteries on the board respecting the polarities.



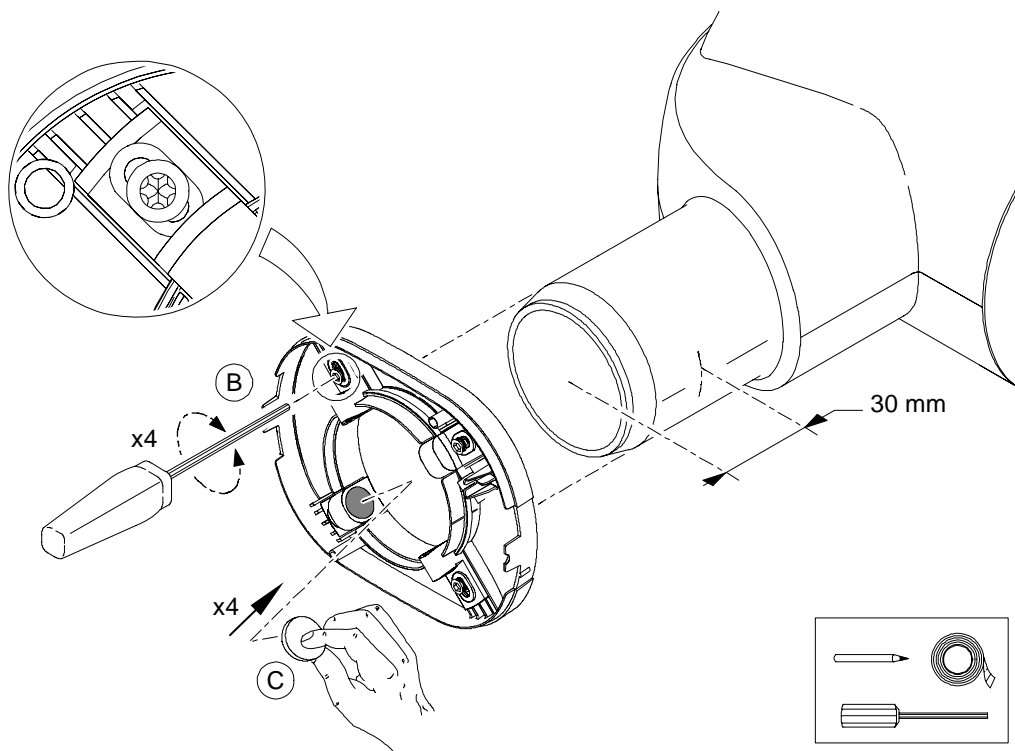
- 4 Measure the X-ray tube head diameter to select the appropriate aiming ring holding brackets.



- 5 Select the appropriate aiming ring holding brackets (B):
  - For a cone shape x-ray tube head (HY415).
  - For a cylindrical shape x-ray tube head with diameters from 55.5 mm to 65 mm (HY414).
  - For a cylindrical shape x-ray tube head with diameters from 64 mm to 70.1 mm (HY413) mounted on the ring.
- 6 Measure from the opening of the x-ray tube head 30mm. Mark the 30mm with a pencil on both sides of the x-ray tube head.

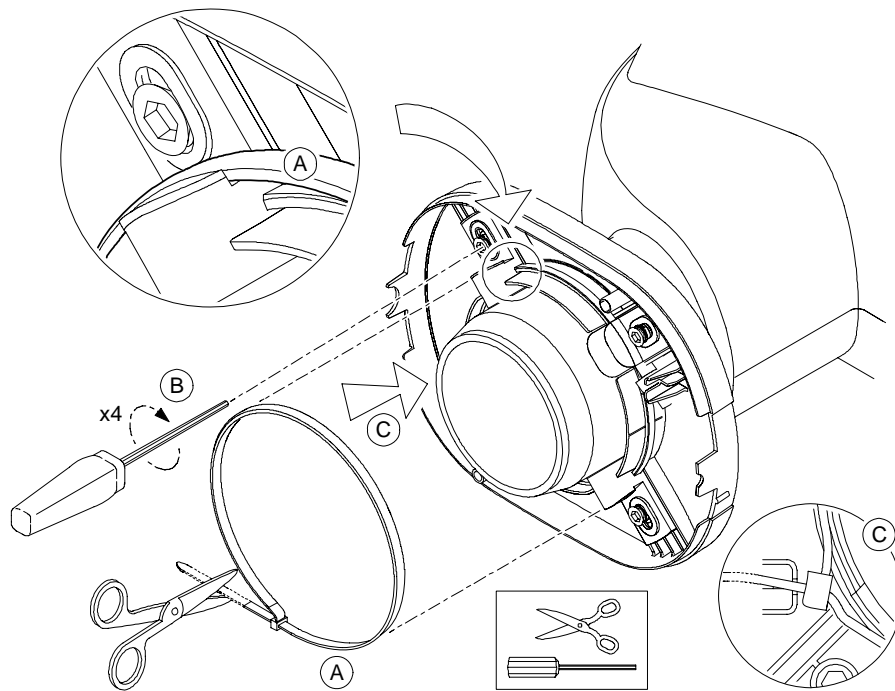


- 7 On the back cover, position the appropriate holding brackets (B) to adapt to the x-ray tube head diameter. Do not tighten the screws.
- 8 Stick the stickers on the back cover in the appropriate locations (C). Remove the protection on the stickers.
- 9 Using the 30mm marks, position the back cover on the x-ray tube head. Tighten the 4 screws.

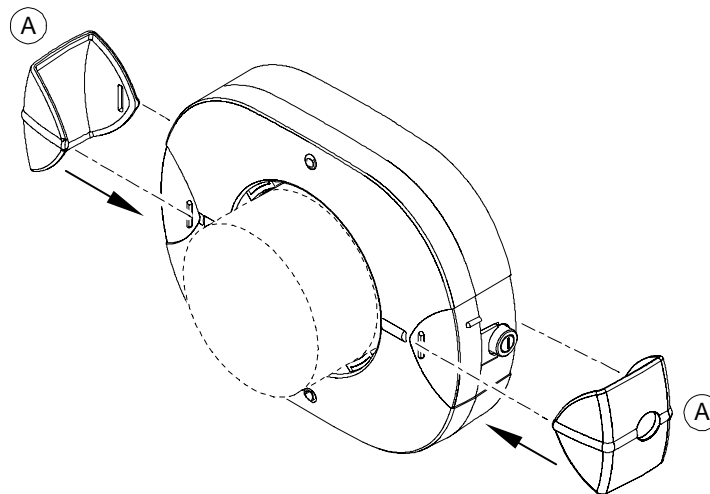




- 10 Place the cable tie (A) around the holding brackets (B), make a knot and place it in the cable tie holder (C). Pull to tighten and cut what exceeds the knot. Retighten the screws, if needed.



- 11 Position correctly the front cover with the board making sure that the ON/OFF button is on the appropriate place.



- 12 Position correctly the attachment brackets (A).
- 13 Press quickly the ON/OFF button to turn ON the IPS device and check that the front upper LED is lit.  
Press quickly the ON/OFF button to turn ON the back upper LED to check that it is lit.
- 14 Press and hold the ON/OFF button until all the LEDs are ON, then let go the ON/OFF button to turn OFF the IPS.  
The IPS aiming ring installation is finished.



# 6 Acquiring an Image With RFID

## Connecting an RVG Sensor to the Computer

You need to connect the selected RVG sensor to the computer where the acquired image must appear.



**Important:** You can use the RVG sensor to acquire an image while charging **ONLY** with the medical charger.

To connect an RVG sensor to your computer, follow these steps:

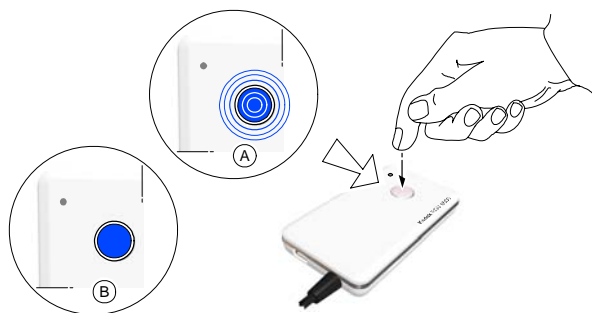
- 1 Press the remote control button of the RVG control box to turn ON the device.



- 2 Place the RVG sensor on the RFID tag . .



- 3 Press again the remote control button and wait for the blinking blue light (A) to become solid blue. (B) The sensor is connected to the WiFi access point and connected to the computer



- 4 Access the **Imaging Window**. Click  to access the **RVG Acquisition** interface.

You can also access the **RVG Acquisition** interface, doing the following:

- Press the remote control button of the selected RVG control box, or
- Press F2 on the computer key board.

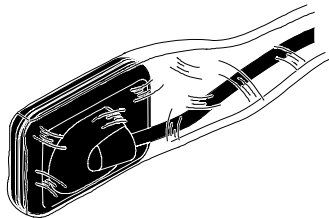
## Acquiring an Image with the RVG Sensor

To acquire an image with the RVG sensor, follow the instructions in the presented order.

### Preparing the RVG Sensor

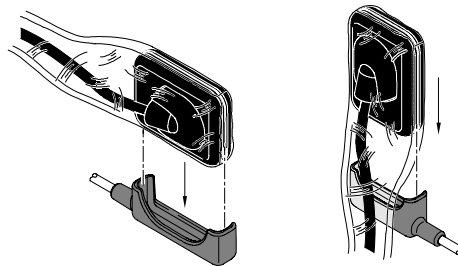
To prepare the selected RVG sensor, follow these steps:

- 1 Select an appropriate positioner for the region of interest and the sensor size.
- 2 Cover with a disposable hygienic sleeves specifically designed for each sensor size.



**Important: To prevent cross-contamination, use a new hygienic barrier for each new patient.**

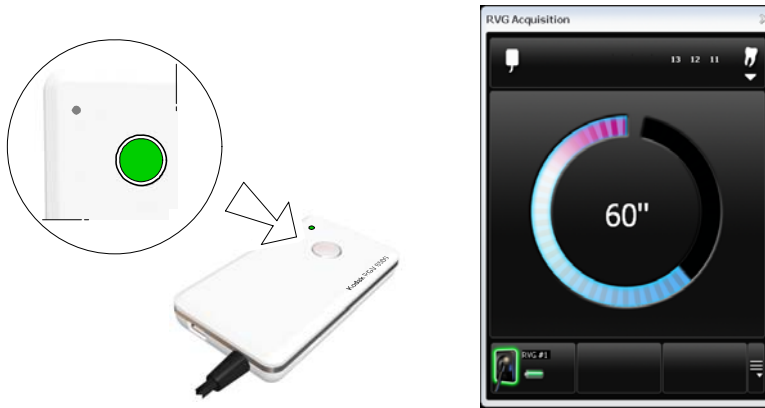
- 3 Place the protected RVG sensor in the sensor positioner's biteblock.



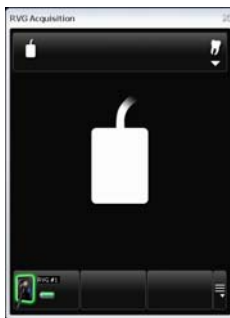
## Preparing the X-Ray Generator



To prepare the x-ray generator, follow these steps:

- 1 Press the remote control button of the selected RVG control box to access the **RVG Acquisition** interface.



**(Optional)** Press on the remote control button several times to pre-orient the sensor orientation. The acquired image is displayed with the last selected orientation on the **Imaging Window**.

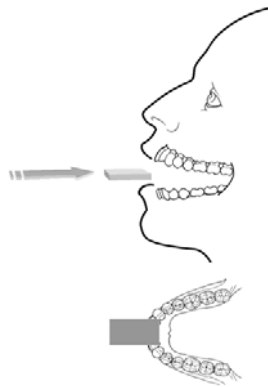


**(Optional)** Click  To select the tooth or teeth number. Click  to return to the **RVG Acquisition** interface. The selected tooth number is displayed on the **RVG Acquisition** interface.



- 2 Select the x-ray timing according to the region of interest and the patient type (follow the user instructions of your x-ray generator).

- 3 Insert the sensor holding it horizontally in the patient's mouth. Positioning in the patient's mouth depends on the region of interest.



- 4 Approach the x-ray generator tube head to the patient.

**(Optional) If you are using the IPS aiming ring system,** press the ON button. If you are in front of the aiming ring, make sure that the front LED is ON. If you are positioned in the back of the aiming ring, a quick press on the ON/OFF button will turn on the LED on the back.

- 5 Align the x-ray tube head with the patient's tooth and the sensor and make sure that the tube head is not shaking.

**(Optional) If you are using the IPS aiming ring system,** position the X-ray generator parallel to the active surface of the RVG sensor. When the RVG sensor is correctly centered in the ring the centring indicator becomes a green cross.



**Important: The IPS aiming ring turns off after 90 seconds.**

## Launching the X-Ray

To launch the x-ray, follow these steps:

- 1 Ask the patient to remain still.
- 2 Position yourself either 2 meters behind the x-ray generator or outside the door.
- 3 Keep visual contact with the patient during the x-ray.
- 4 Trigger the x-ray with the remote control of the x-ray generator.

The image appears in the preview screen of the **RVG Acquisition** interface. The light on the remote control button blinks blue indicating the image transmission.

When the acquisition ends, the **RVG Acquisition** interface disappears and the acquired image is displayed in the **Imaging Window**. The light on the remote control button becomes solid blue.

- 5 Check the image quality. If not satisfactory, redo the x-ray.
- 6 If satisfactory, remove the generator tube head.
- 7 Remove the RVG sensor from the patient's mouth. Remove the hygienic sensor protection.



**Important: DO NOT pull the sensor by its cable when you remove the hygienic protection.**





# 7 Acquiring an Image Without RFID

## Locking the RVG Sensor to the Computer

You need to lock the RVG sensor to the computer where the acquired image must appear.



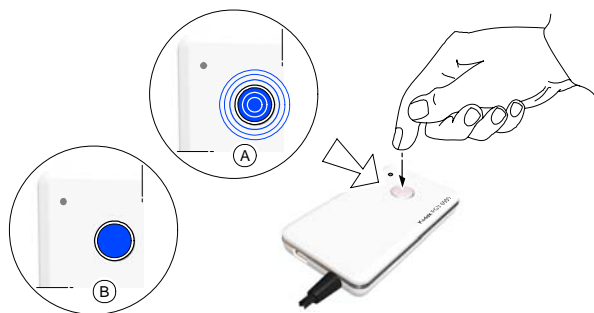
**Important:** You can use the RVG sensor to acquire an image while charging **ONLY** with the medical charger.

## Locking a Single RVG Sensor to the Computer

If you have a single RVG sensor, you need to **lock it only once to the computer** where the acquired image must appear.

To Lock the RVG sensor to your computer, follow these steps:


- 1 Press the remote control button of the RVG control box to turn **ON** the device. The blinking blue light indicates the sensor attempt to connect to the WiFi access point. Wait for the blinking blue light (A) to become solid blue. (B) The sensor is connected to the WiFi access point.







- 2 Access the **Imaging Window**. Click  to access the **RVG Acquisition** interface.

You can also access the **RVG Acquisition** interface, doing the following:

- Press the remote control button of the selected RVG control box, or
- Press F2 on the computer key board.

- In the **RVG Acquisition** interface, click  to access the RVG sensor list.



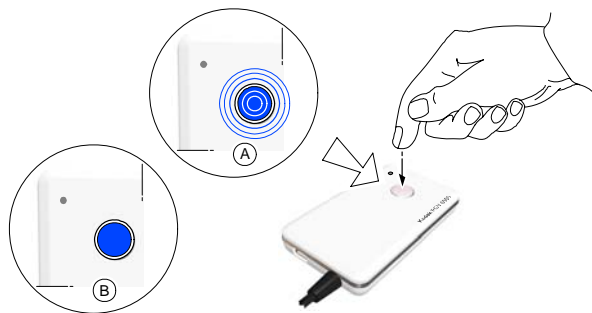
- Find the RVG sensor in the sensor list. The sensor is identified with .
- Click  to connect the sensor to your computer,  becomes .


## Locking Several Shared RVG Sensors to the Computer

If you have several shared RVG sensors, you need to lock the selected RVG sensor to the computer where the acquired image must appear.

To lock the selected RVG sensor to your computer, follow these steps:

- Press the remote control button of the RVG control box to turn ON the device. The blinking blue light indicates the sensor attempt to connect to the WiFi access point. Wait for the blinking blue light (A) to become solid blue (B). The sensor is connected to the WiFi access point. Access the



**Imaging Window.** Click  to access the **RVG Acquisition** interface.

- 2 In the **RVG Acquisition** interface, click  to access the RVG sensor list. If needed, click  to refresh the sensor list.



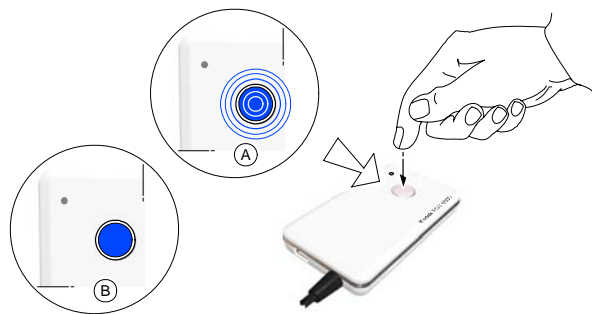
- 3 Find the selected RVG sensor in the sensor list:

If **Available** do the following:


Click **lock** to lock the sensor to your computer, **Available** becomes **Locked on MobileRVG Statio**.

If **Locked on MobileRVG Statio** do the following:

Click **unlock** to unlock from the computer it is locked to and **press quickly on the remote control button while the light is blink blue (A)**. If the unlocking was not executed you must redo the unlocking process.



Click **lock** to lock the sensor to your computer, **Available** becomes **Locked on MobileRVG Statio**.

- 4 Click  to return to the **RVG Acquisition** interface.

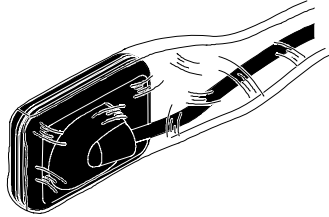
## Acquiring an Image with the RVG Sensor

To acquire an image with the RVG sensor, follow the instructions in the presented order.

### Preparing the RVG Sensor

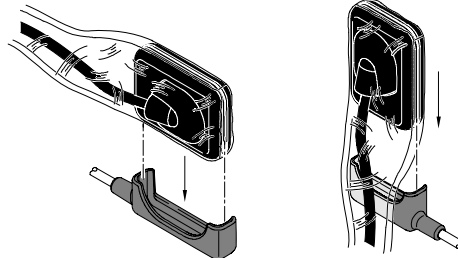
To prepare the selected RVG sensor, follow these steps:

- 1 Select an appropriate positioner for the region of interest and the sensor size.
- 2 Cover with a disposable hygienic sleeves specifically designed for each sensor size.



**Important: To prevent cross-contamination, use a new hygienic barrier for each new patient.**

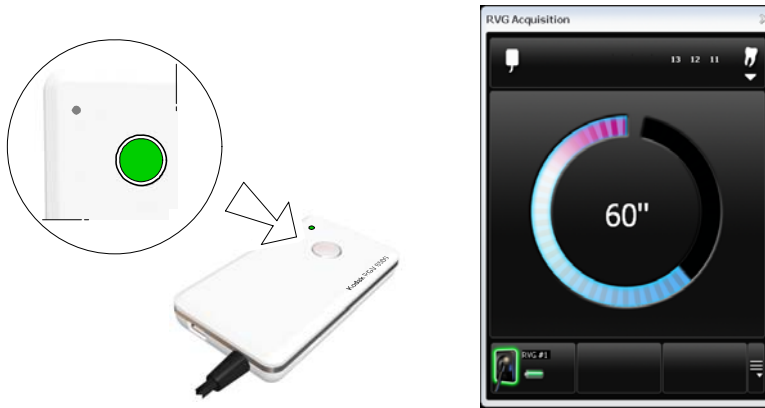
- 3 Place the protected RVG sensor in the sensor positioner's biteblock.



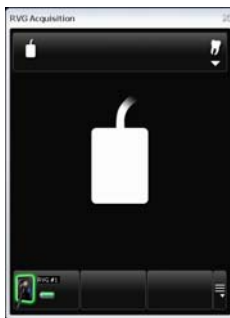
## Preparing the X-Ray Generator



To prepare the x-ray generator, follow these steps:

- 1 Press the remote control button of the selected RVG control box to access the **RVG Acquisition** interface.



**(Optional)** Press on the remote control button several times to pre-orient the sensor orientation. The acquired image is displayed with the last selected orientation on the **Imaging Window**.

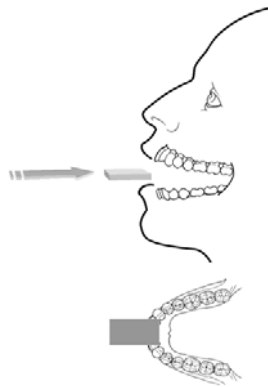


**(Optional)** Click  To select the tooth or teeth number. Click  to return to the **RVG Acquisition** interface. The selected tooth number is displayed on the **RVG Acquisition** interface.



- 2 Select the x-ray timing according to the region of interest and the patient type (follow the user instructions of your x-ray generator).

- 3 Insert the sensor holding it horizontally in the patient's mouth. Positioning in the patient's mouth depends on the region of interest.



- 4 Approach the x-ray generator tube head to the patient.

**(Optional) If you are using the IPS aiming ring system,** press the ON button. If you are in front of the aiming ring, make sure that the front LED is ON. If you are positioned in the back of the aiming ring, a quick press on the ON/OFF button will turn on the LED on the back.

- 5 Align the x-ray tube head with the patient's tooth and the sensor and make sure that the tube head is not shaking.

**(Optional) If you are using the IPS aiming ring system,** position the X-ray generator parallel to the active surface of the RVG sensor. When the RVG sensor is correctly centered in the ring the centring indicator becomes a green cross.



**Important: The IPS aiming ring turns off after 90 seconds.**

## Launching the X-Ray

To launch the x-ray, follow these steps:

- 1 Ask the patient to remain still.
- 2 Position yourself either 2 meters behind the x-ray generator or outside the door.
- 3 Keep visual contact with the patient during the x-ray.
- 4 Trigger the x-ray with the remote control of the x-ray generator.

The image appears in the preview screen of the **RVG Acquisition** interface. The light on the remote control button blinks blue indicating the image transmission.

When the acquisition ends, the **RVG Acquisition** interface disappears and the acquired image is displayed in the **Imaging Window**. The light on the remote control button becomes solid blue.

- 5 Check the image quality. If not satisfactory, redo the x-ray.
- 6 If satisfactory, remove the generator tube head.
- 7 Remove the RVG sensor from the patient's mouth. Remove the hygienic sensor protection.



**Important: DO NOT pull the sensor by its cable when you remove the hygienic protection.**





# 8 Troubleshooting

Occasionally, malfunctions can occur during use in the event of an incorrect action. The quick trouble shooting and the Information “I”, will guide you through the actions you need to take to correct the malfunction.



**Important: If the malfunction persists or more serious conditions occur, contact your representative.**

When you call your representative have the following information ready:

- Model Number: KODAK RVG 6500 or KODAK RVG 6500 IPS
- Error Code Number: I xx
- Message displayed on the popup on the computer screen.

## Quick Trouble Shooting

The quick trouble shooting guides you through actions you need to take to correct the malfunction.

The following table lists the malfunctions and the action to take.

**Table 1 Quick Trouble Shooting**

Malfunction	Possible Cause	Action
When you turn ON your RVG sensor, the battery LED is red but the control box is solid blue.	The battery needs recharging.	Recharge the battery. You can continue acquiring images but the quality will deteriorate.
When you turn ON your RVG sensor, it blinks blue then it turns OFF.	The battery needs recharging.	Recharge the battery.
When you turn ON your RVG sensor, the battery LED is red and the control box is blinking red.	No battery	Recharge the battery
Image quality is not good and there are white lines on the image	The battery needs recharging.	Recharge the battery
When you turn ON your RVG sensor, it blinks blue then after a long time it becomes solid red.	<ul style="list-style-type: none"><li>• WiFi access point is not ON.</li><li>• Configuration problem.</li></ul>	<ul style="list-style-type: none"><li>• Check that the WiFi access point is ON.</li><li>• If it is ON and the problem persists contact your representative</li></ul>

**Table 1 Quick Trouble Shooting (Continued)**



Malfunction	Possible Cause	Action
When you turn ON your RVG sensor, it blinks blue then becomes solid blue but the sensor cannot be found in the sensor list on the computer.	<ul style="list-style-type: none"> <li>• WiFi access point is not ON.</li> <li>• Configuration problem.</li> </ul>	<ul style="list-style-type: none"> <li>• Check that the WiFi access point is ON.</li> <li>• If it is ON and the problem persists contact your representative</li> </ul>
When you turn ON your RVG sensor, it blinks blue then becomes solid blue but when you press the control box button to acquire an image it does not turn green.	The KDIS is not open	Launch the KDIS
When you turn ON your RVG sensor, it blinks blue then becomes solid blue but when you press the control box button to acquire an image it does not turn green.	The RVG sensor is not locked on any device.	Lock the RVG sensor on the computer.
The IPS interface is frozen.	The IPS aiming ring connection problem.	<ul style="list-style-type: none"> <li>• Check that the IPS aiming ring is ON (the shut down time is 90 sec.).</li> <li>• The IPS aiming ring is too far from the RVG sensor.</li> <li>• The IPS aiming ring is too close to the RVG sensor.</li> </ul>
When you turn ON your RVG sensor, it blinks blue for a long time never becoming solid blue or solid red.		Contact your representative.
When you turn ON your RVG sensor, it blinks blue then rapidly it becomes solid red.		Contact your representative.

## Information Messages



An information “I” error code with a message is displayed on the popup on your computer screen.

The following table lists the information messages and the action to take.

**Table 2 Information Messages**

Information Error Code	Information Message	Action
I 1	Communication problem with the wireless RVG sensor. Turn off then on your sensor or restart your computer. If the problem persists, contact your representative.	<ul style="list-style-type: none"> <li>&lt; Turn Off then ON the RVG sensor.</li> <li>&lt; Or reboot your computer.</li> <li>&lt; If the problem persists, contact your representative.</li> </ul>
I 2	Wireless sensor error. Turn off then on your sensor and restart the acquisition software. If the problem persists, contact your representative.	<ol style="list-style-type: none"> <li>1. Turn Off then ON the RVG sensor.</li> <li>2. Click  to access the <b>RVG Acquisition</b> interface.</li> </ol> <p>If the problem persists, contact your representative.</p>
I 3	Error during image acquisition. Turn off then on your wireless sensor and restart the acquisition software. If the problem persists, contact your representative.	<ol style="list-style-type: none"> <li>1. Turn Off then ON the RVG sensor.</li> <li>2. Click  to access the <b>RVG Acquisition</b> interface.</li> </ol> <p>If the problem persists, contact your representative.</p>
I 4	Memory allocation problem. Turn off then on your wireless sensor. If the problem persists, contact your representative.	<p>Turn Off then ON the RVG sensor.</p> <p>If the problem persists, contact your representative.</p>
I 5	Wireless sensor has storage/transmission memory problem. Contact your representative.	Contact your representative.
I 6	Incorrect IPS calibration. Contact your representative	Contact your representative.
I 7	IPS Batteries have run down. Change the batteries.	Change the batteries of the IPS aiming ring.
I 9	Writing transmission error. Turn off then on your wireless sensor and restart the process. If the problem persists, contact your representative.	<ol style="list-style-type: none"> <li>1. Turn Off then ON the RVG sensor.</li> <li>2. Redo the process</li> </ol> <p>If the problem persists, contact your representative.</p>
I 10	Reading transmission error. Turn off then on your wireless sensor and restart the process. If the problem persists, contact your representative.	<ol style="list-style-type: none"> <li>1. Turn Off then ON the RVG sensor.</li> <li>2. Redo the process</li> </ol> <p>If the problem persists, contact your representative.</p>

**Table 2 Information Messages (Continued)**

Information Error Code	Information Message	Action
I 12	Memory allocation problem. Restart your computer. If the problem persists, contact your representative.	<ul style="list-style-type: none"> <li>&lt; Reboot your computer.</li> <li>&lt; If the problem persists, contact your representative.</li> </ul>
I 13	Error during the image transfer. Turn OFF then ON your wireless sensor and restart the acquisition software. If the problem persists, contact your representative.	<ol style="list-style-type: none"> <li>1. Turn Off then ON the RVG sensor.</li> <li>2. Click  to access the <b>RVG Acquisition</b> interface.</li> </ol> <p>If the problem persists, contact your representative.</p>
I 14	System error. Close and restart the acquisition software. If the problem persists, contact your representative.	<ol style="list-style-type: none"> <li>1. Exit the <b>KDIS</b>.</li> <li>2. Click  to access the <b>RVG Acquisition</b> interface.</li> </ol> <p>If the problem persists, contact your representative.</p>
I 15	Image storage problem in the patient database. Check the disk space, local file system, write access. Check the storage possibility of your computer.	<ol style="list-style-type: none"> <li>1. Check that you can access the patient database.</li> <li>2. Check the hard disk storage availability.</li> <li>3. Check if there is enough space in the patient database.</li> </ol> <p>If the problem persists, contact your representative.</p>




## Quick Trouble Shooting for WiFi

To minimize WiFi network malfunctions, make sure that:

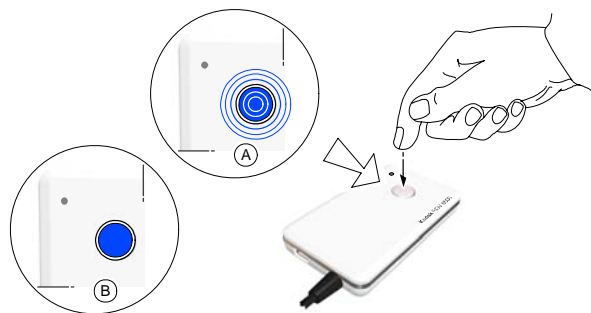
- The Wi-Fi access point, in use, is the one delivered by the manufacturer with the Kodak RVG 6500 System and Kodak RVG 6500 IPS System (Netgear WGR614).
- The computer in use, has at least the requirements listed in **KODAK RVG 6500 System\_Regulatory User Guide (SM737)\_Ed01B**, Chapter 3.
- The installation and configuration of the network has been done following the steps given in Chapter 5 of this document.
- The distance between different elements of the configuration is respected (See Chapter 5 of this document).

To correct the malfunction of your WiFi network, follow these steps:

- 1 Turn OFF the WiFi access point.
- 2 Turn OFF the RVG sensor control box.
- 3 Turn ON the WiFi access point and wait a minute and check that:

-  is on.
-  is on. Then goes off when the system is ready and running.
-  is on.

- 4 Press the remote control button of the RVG control box to turn ON the device. The blinking blue light indicates the sensor attempt to connect to the WiFi access point. Wait for the blinking blue light (A) to become solid blue. (B) The sensor is connected to the WiFi access point.



- 5 If the sensor cannot connect to the WiFi access point, see Tables 2 and 3.
- 6 If the WiFi access point functions correctly but cannot connect to your computer, see your computer's Troubleshooting section.



# 9 Maintenance

This chapter describes the maintenance task that you need to perform regularly for your KODAK RVG 6500 with or without IPS system and the accessories.

## Daily

### The RVG Sensor

The RVG sensor is supplied in a **non-sterile state**. Single-use disposable protective hygienic sleeves must cover the RVG sensor before placing it in the patient's mouth. These sleeves conform to the ISO EN 10993.

To prevent cross-contamination, use a new hygienic barrier for each new patient and disinfect the RVG sensor.



**WARNING: Never place the sensor and/or control box in an autoclave as this could result in serious damage to the sensor.**

### Cleaning and Disinfecting the RVG Sensor



**WARNING: You must first clean the RVG sensor before disinfecting it.**

You must first clean the RVG sensor before disinfecting it. To do so, follow these steps:

- 1 Remove the protective hygienic sleeves.
- 2 Remove debris or organic matter from the sensor surfaces with a disposable wipe or surface brush.
- 3 Inspect the sensor for debris. Repeat cleaning if there is any debris left.
- 4 Clean and disinfect with disinfecting wipes.

If you choose disinfecting solutions, use disinfectant suitable for medical devices and composed of Ethanol and/or Isopropanol, and/or Quaternary ammonium (follow the chemical manufacturer's instruction).

### Cleaning the RVG Sensor Control Box

The RVG sensor control box must be cleaned with disposable cleaning wipes similar to those used for the computer screens.



**WARNING: Never immerse the RVG sensor control box in any solution.**

### Cleaning the Positioning Accessories



**WARNING: Do not use chemical autoclave for the toothbrush holders and avoid direct contact with the metallic part of the autoclave.**

**Table 3 Positioning Accessories Daily Maintenance Tasks**

Accessories	Maintenance Tasks
Toothbrush holders	1. Remove any residue with hot water and soap.
Bite blocks	2. Put the metal and plastic parts in separate sterilization pouch and autoclave up to 132°C (273° F) before the next patient.
RINN Arm & ring	1. Disassemble the metal arm and the plastic ring. 2. Remove any residue with hot water and soap. 3. Put the metal and plastic parts in separate sterilization pouch and autoclave up to 132°C (273° F) before the next patient.
IPS aiming ring	Wipe clean with disposable cleaning wipes.

### Monthly

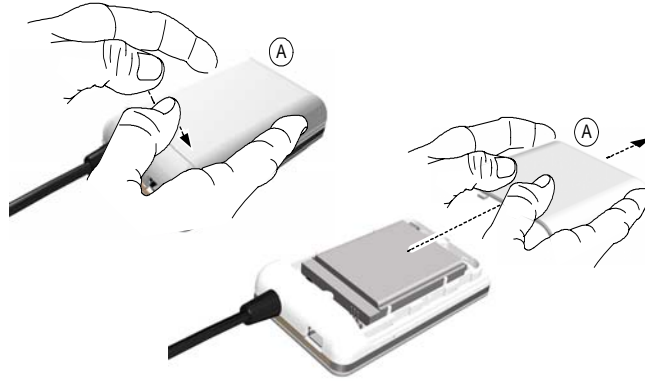
Wipe the outer covers of the WiFi AP with a soft and dry cloth.



## Replacing the RVG Battery

To replace the RVG battery, follow these steps:

- 1 Turn OFF the RVG sensor.
- 2 Make sure that the RVG sensor is not connected to the mains outlet.
- 3 Press down with fingers and slide the trap door (A) protecting the battery on the back of the control box.



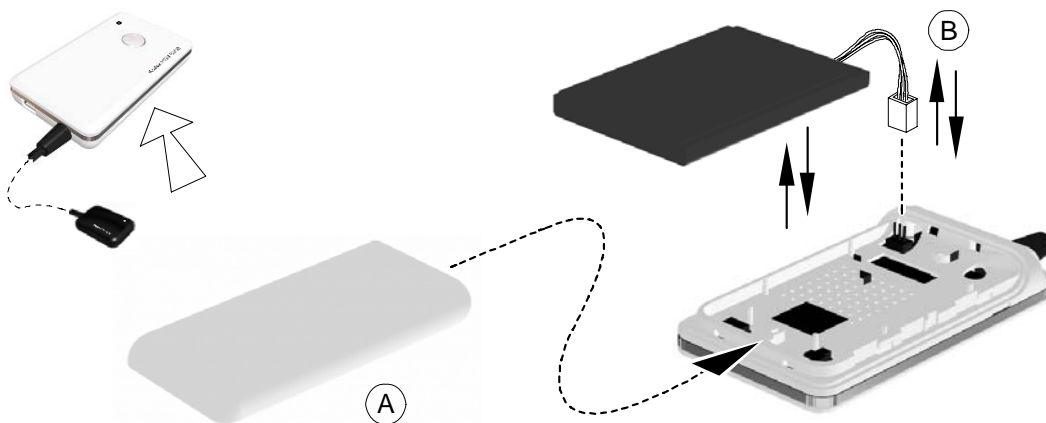
- 4 Remove carefully the connector (B) to remove the used battery.
- 5 Insert the connector (B) of the appropriate battery.



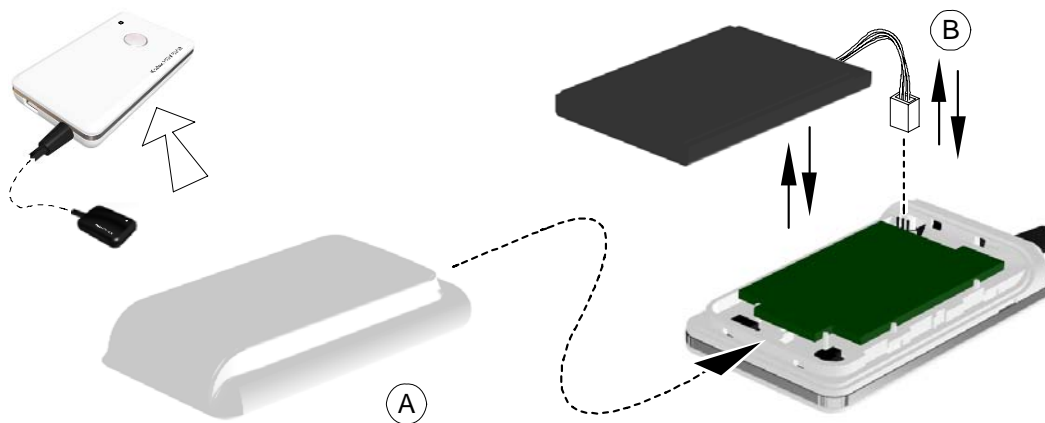
**WARNING:** Make sure that the battery is inserted correctly in its connector.

- 6 Slide and close the trap door (A) protecting the battery.

### RVG Control Box



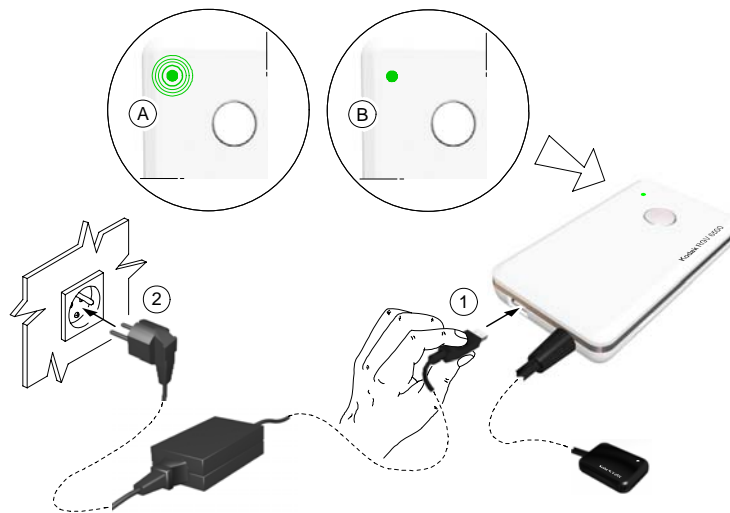
## RVG Control Box with IPS board



**Important:** For the RVG with IPS board, make sure that you insert the battery gently avoiding any damage to the IPS board.

- 7 Plug one end of the medical charger in the USB port of the RVG control box.
- 8 Plug the other end to the mains outlet.

The blinking green light of the battery status (A) on the control box indicates the charging process. The first charging takes about 4hours. When the green light becomes solid green (B) the charging is complete.



With a fully charged battery you can acquire 180 images.



**Important:** You can use the RVG sensor to acquire an image while charging **ONLY** with the medical charger.

- 9 You can use the USB cable to charge RVG battery with the computer.



**WARNING: NEVER** use the RVG sensor to acquire an image while charging with the USB cable.



**Important:** Remove the battery from the control box if you will not use it for a long period of time.

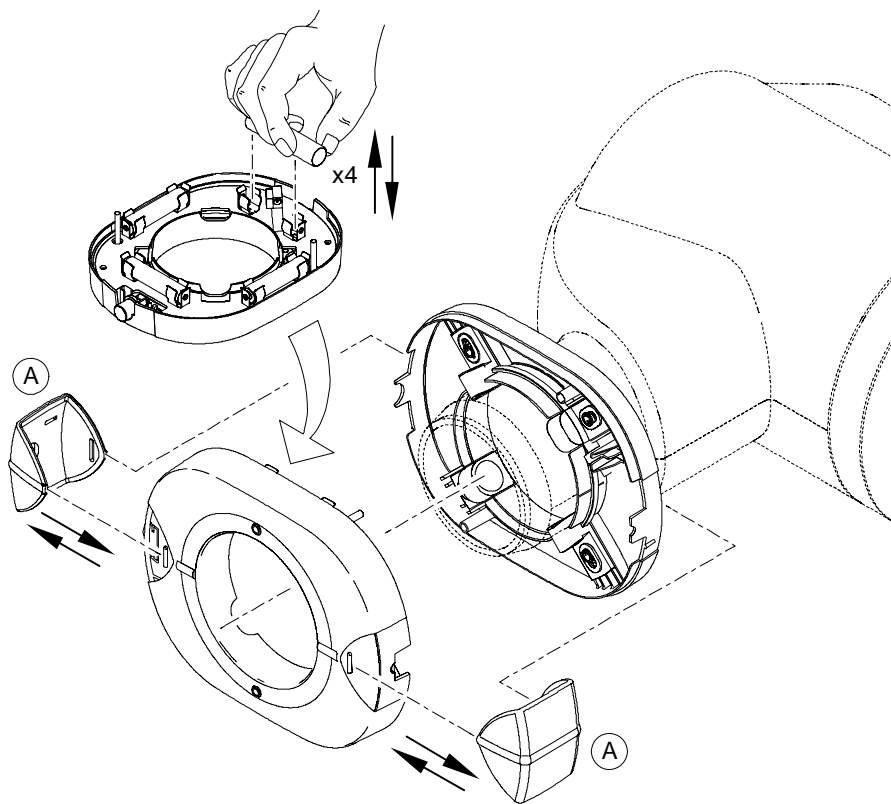
## Replacing the IPS Aiming Ring Battery



**Important:** When the battery is low the LEDs light becomes orange. You need to replace the IPS battery.

To replace the IPS aiming ring battery, follow these steps:

- 1 Remove the attachment brackets (A).
- 2 Remove the front cover.
- 3 Remove the used 4 batteries.



- 4 Replace correctly the new 4 batteries respecting the polarities.
- 5 Replace the front cover.
- 6 Replace the attachment brackets (A).
- 7 Turn ON the IPS aiming ring to check that the batteries are replaced correctly.



**Important:** Remove the battery from the IPS aiming ring if you will not use it for a long period of time.