

EasyDent

User Manual Version 4.1.4.0

English



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General Information

This manual provides detailed information on how to use **EasyDent**. This document may not be reproduced in any manner without the prior written consent from the publisher.

It is recommended that users read this user manual thoroughly before using the program in order to learn the installation of EasyDent S/W and the functions of the operating system.

For supplementations, this manual is subject to change without prior notice. A printed manual distributed along with the product may not include contents specific to the latest version of the product. For additional information pertaining to this manual and the product, please contact us at:

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User Notices

1. To maintain seamless operation, user must read and follow the instructions prior to using **EasyDent**
2. User must respect the procedures and instructions described in this manual.
3. For the optimal use of EasyDent V4, user must comply with the system requirements.

1 Introduction

EasyDent is a dental imaging software solution that stores, analyzes and diagnoses patient images that have been acquired through VATECH dental equipment.

EasyDent is equipped with everything you need for digital panoramic and Cephalometric image storage, processing and viewing. **EasyDent** functions as a central storage point for digital images and associated patient data. Images can be acquired directly from equipment that **EasyDent** currently supports. In addition, images can be imported from other digital sources.

With **EasyDent** you can perform the following operations assuming that all the other equipment is ready to use.

- Create and store new patient information in a database
- Capture and store digital X-ray images with exposure values from the device.
- Capture and store intraoral photographs.
- Export and import digital images
- Process images to enhance their diagnostic value with dental-specific tools
- Analyze the image with application-specific measurement tools
- Build an environment with multiple workstations using a database shared over a network.
- Printing images and image related information.

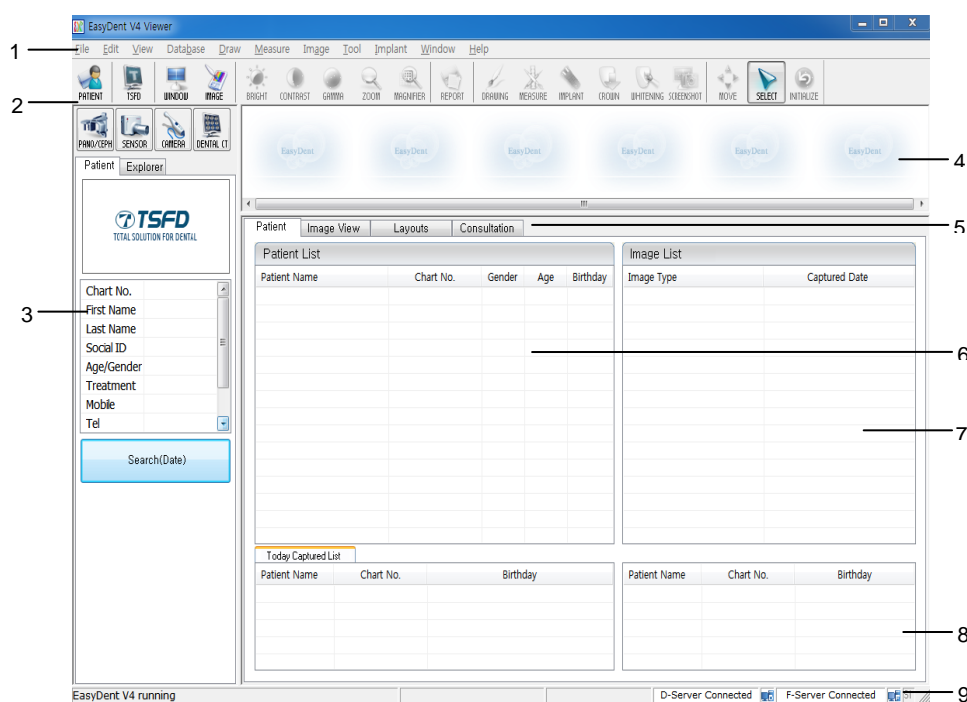
EasyDent can be used in a networked environment. If EasyDent is installed in several computers, the patient and image database can be shared among them and used from different workstations.

2 Main Screen

2.1 Main Screen

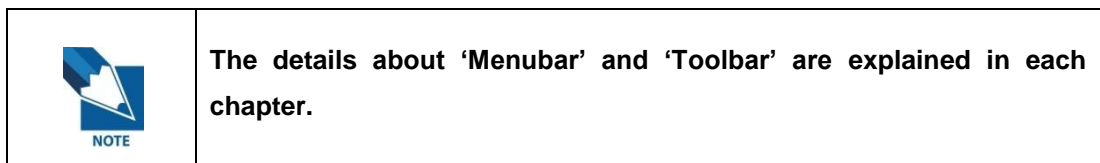
To start EasyDent, double-click the **EasyDent** icon on the desktop or open the program from the start menu. Below are the components of the main screen, the first screen you will see when you run EasyDent.

All functions can be selected from the menu bar. In addition, there are graphical symbols on the toolbar for some of the most frequently used functions. This manual primarily describes the procedure through menu bar.



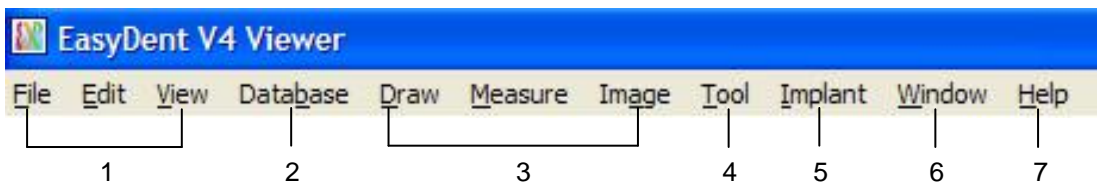
1. **Menu bar:** All functions are divided and listed as items on the menu bar.
2. **Toolbar:** Icons created for quick usage of common tasks, such as image acquisition and search of patients and images etc.
3. **Patient Information:** Displays a selected patient's photo and personal information such as chart number, name, age, and sex.

4. **Thumbnail (Preview Window):** Displays thumbnails of captured images for the selected patient.
5. **Function Tap:** Allows quick selection of different viewing windows within EasyDent.
6. **Patient List:** Displays the list of patients.
7. **Image List:** Displays a list of images for the selected patient.
8. **Today's Captured List:** Displays a list of all patients that have had a new image captured and added to their chart within the current work day. If you want to enable this function, click Today Captured List.
9. **Network Status:** Indicates the communication status between EasyDent and associated databases.



2.1.1 Menubar

The menu bar consists of menus such as File, Edit, View, Database, Draw, Measure, Image, Tool, Implant, Window, and Help, as shown below.



1. **File, Edit, View**
These options will be explained in detail in **Chapter 3: General Operating Instructions**.
2. **Database**
This option will be explained in detail in **Chapter 4: Database Management**.
3. **Draw, Measure, Image**
These options will be explained in detail in **Chapter 7: Image Processing**.
4. **Tool**
This option will be explained in detail in **Chapter 8: Special Tools**.

5. Implant

This option will be explained in detail in **Chapter 9: Implant Simulation**.

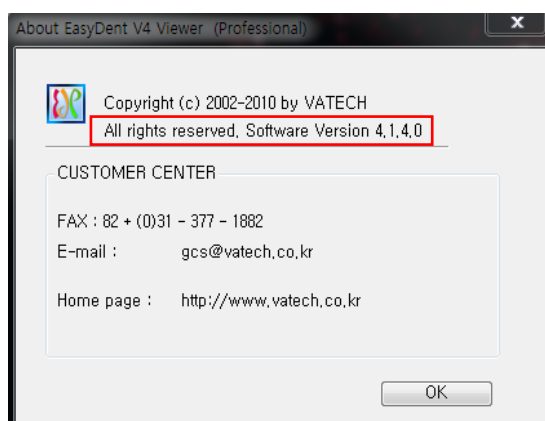
6. Window

This option will be explained in detail in **Chapter 11: Window**.

7. Help

This menu consists of the **About EasyDent V4 Viewer** and **Configuration** options.

If you click on **About EasyDent V4 Viewer** on the Help menu, the window shown below will appear. From here you will be able to check the version of your EasyDent software.



The **Configuration** options will be explained in detail in **Chapter 14: Configuration of the parameters**.

2.1.2 Toolbar

Functions that are frequently used are also shown as icons on the Toolbar.



2.1.3 Patient Information



The Patient Information window displays information of pre-registered patients. Search options include: Chart Number, First and Last name. The search results will appear in the **Patient** Function Tab.

How to search by Chart Number, First Name, or Last Name

Double-click on **Chart No.**, **First Name** or **Last Name** to pop up a virtual keyboard, as shown below.

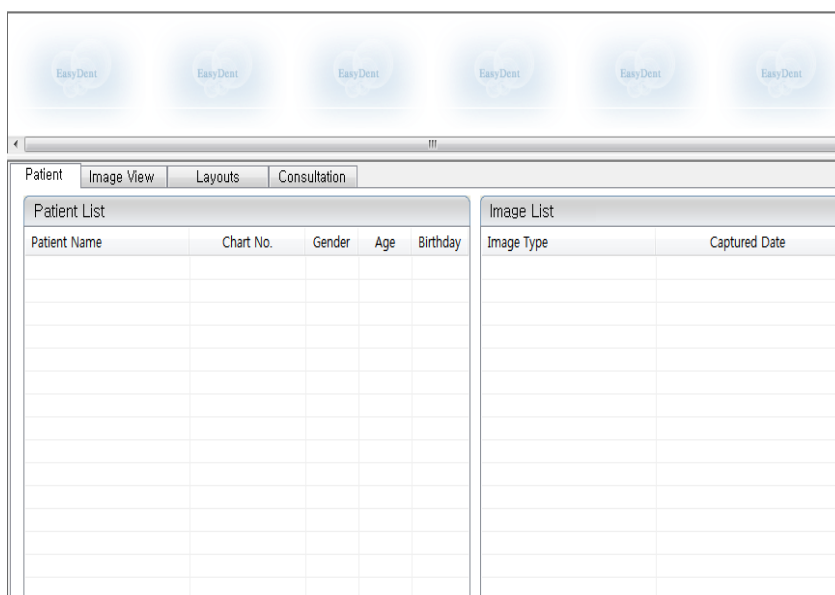


You can enter the associated patient information by clicking the mouse on the virtual keyboard. Of course, the physical keyboard can be used to do the same job.

	<p>When searching for a patient by Chart Number, the search string must be exact.</p>
--	--

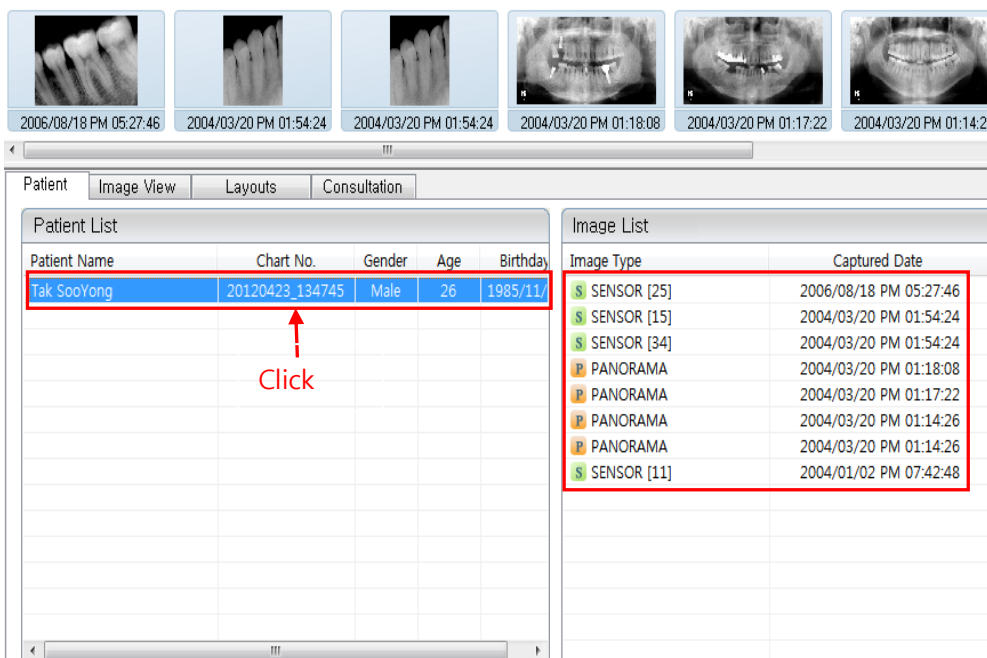
	<p>When searching by First or Last Name, you may obtain search results by inputting just the first letter of the first name. For example, if the name of the patient is 'John Doe', you may input 'J' in First Name and then all first names beginning with 'J' will be retrieved. If you input '_' (underscore) all data from all patients will be retrieved.</p>
--	---

A patient name from the **Patient List** can be searched by pressing the **Enter** key on the keyboard.



When you click the name of the patient on the **Patient List** windows, you can view the image information on both the **Thumbnail** and **Image List**.

The Image List indicates images capturing modes such as panoramic, Cephalometric, CT, etc; as well as the tooth positions.



Search (Date)

The screenshot shows a window titled "Patient Explorer" with a tab labeled "Patient". At the top center is the TSFD logo with the text "TOTAL SOLUTION FOR DENTAL". Below the logo is a form with the following fields: Chart No., First Name, Last Name, Social ID, Age/Gender, Treatment, Mobile, Tel, and E-mail. At the bottom of the form is a button labeled "Search(Date)".

You are able to search patient information and images according to the type of image or type of associated patient treatment (Treatment, Implant, and Analysis).

A following window will appear when you press the **Search (Date)** button.

The screenshot shows a search filter window with the following buttons: All, Panorama, Today, Cephalo, Yesterday, Intra-oral Sensor, 3 days, Intra-oral Camera, Week, CT, Month, Treatment, User, Search, and Cancel. The TSFD logo is visible in the background.

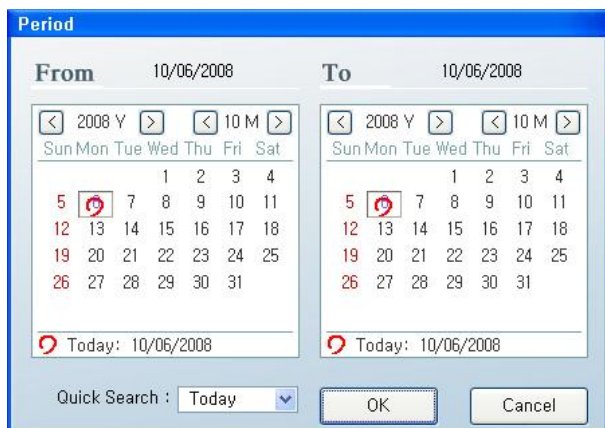
After selecting the date and the type of image you want to search, press the **Search** button.

If you click on **Treatment**, a sub-window will appear, as shown below.

The screenshot shows a sub-window titled "Treatment" with a dropdown menu labeled "Item : Treatment". The dropdown menu is open, showing the following options: Treatment, Analysis, and Implant. There are "OK" and "Cancel" buttons at the bottom of the window.

Select **Treatment**, **Analysis**, or **Implant**, and then press **OK**. Items appearing as Treatment, Analysis, and Implant can be corrected using the **Database** → **Treatment Management** tool.

When selecting **Search (Date)** → **User**, the following **Period** window will appear. After selecting the range of search dates, press **OK**.



If you click on **Quick Search**, the field will expand. The user can select the search period using this function.



NOTE

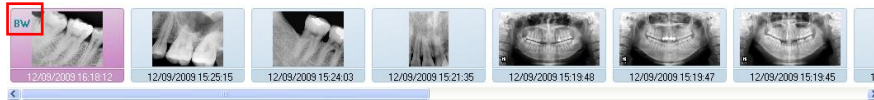
Using **Search (Date)**, the user can search patients that fall under both 'Date' and 'Image' categories.

2.1.4 Thumbnail (Preview window)

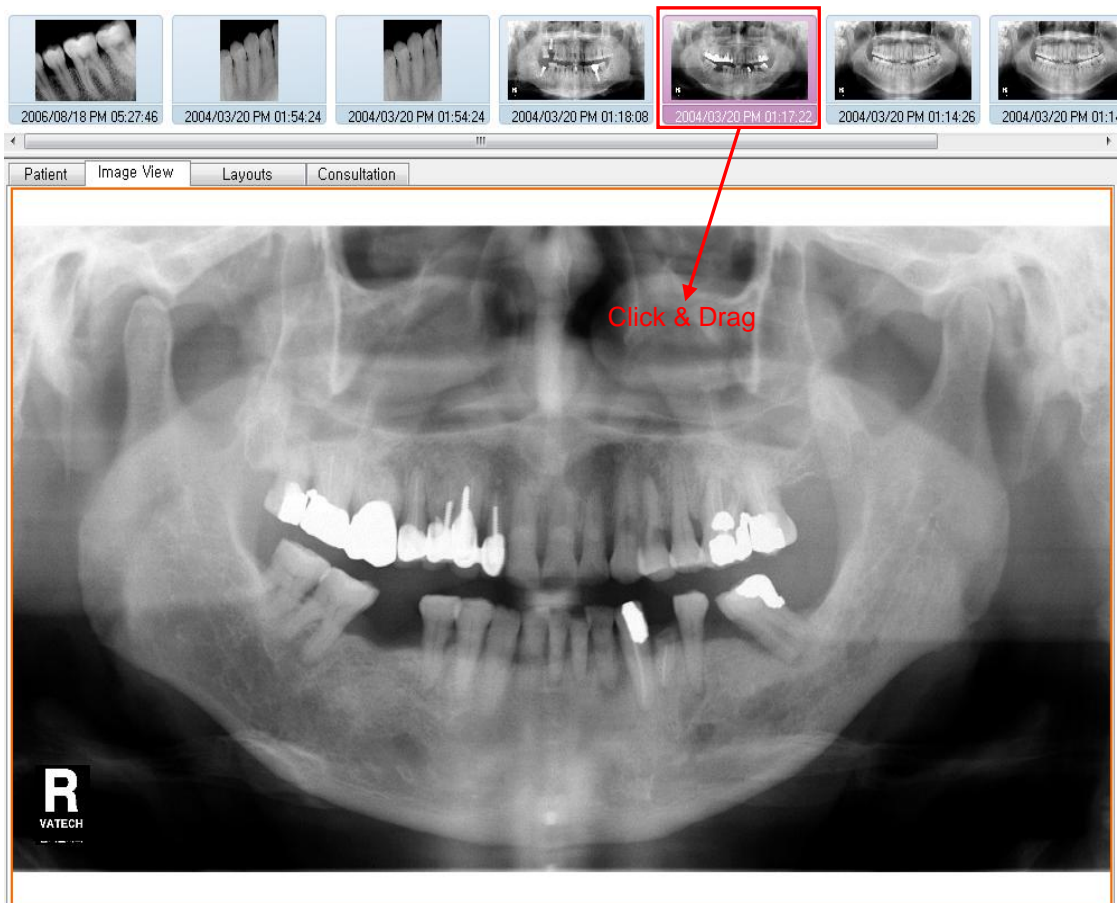
If you select a patient from the **Patient List**, the application will show any associated images acquired for that patient, along with the date and time the images were first created.

The following figure displays a typical example after selecting a certain patient from the list.

BW, which is the abbreviation of Bitewing, will be displayed on the Bitewing image.



Click **Image View** on the Function Tab. If you click the image you want to be displayed from the images aligned on the **Thumbnail** window, the color surrounding the image will change, as shown in the picture below. If you drag and drop this onto the main window, you will see the full-size image.



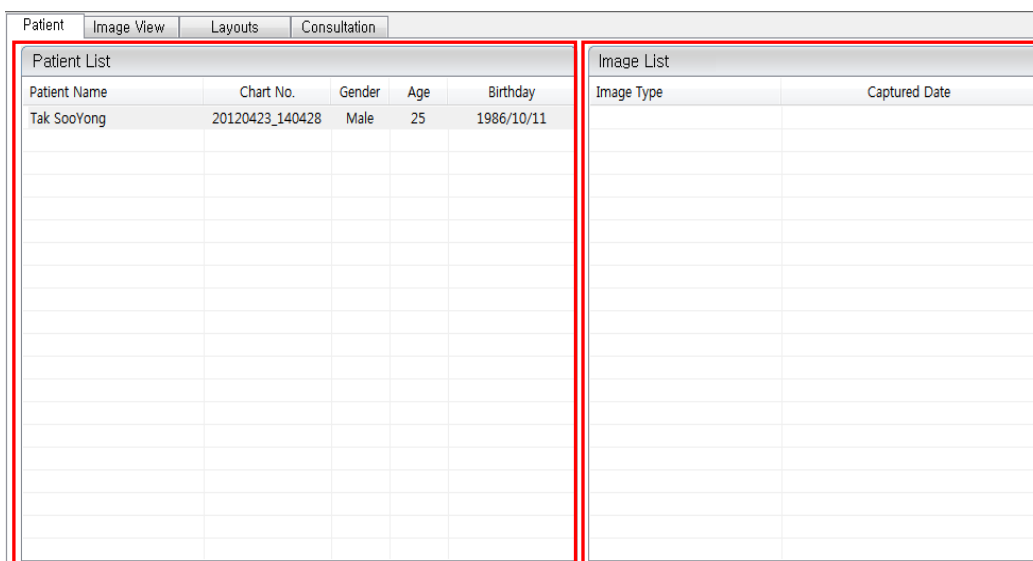
Function Tab

Patient

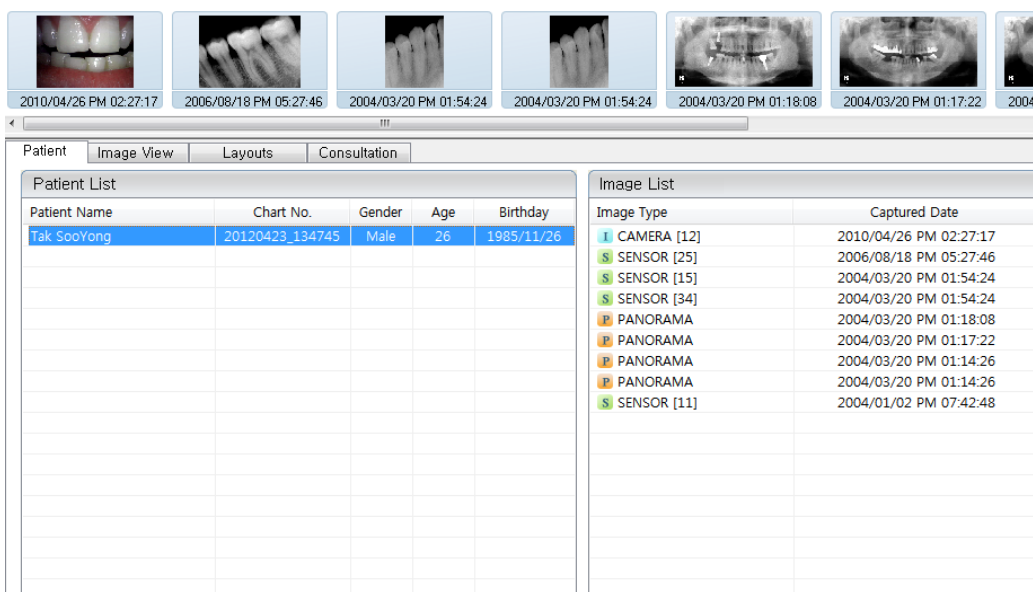
The function tab consists of **Patient**, **Image View**, **Layouts** and **Consultation** sub-tabs as shown below.



The **Patient** tab is divided into **Patient List** and **Image List** windows.



When you click on the patient you want to treat from the **Patient List**, an **Image List** for that patient will be shown, along with a preview of images taken in the **Thumbnail** window above.





 <p>NOTE</p>	<p>If you click on an image file from the 'Image List', the corresponding image will be focused with purple color among many images on the 'Thumbnail' window.</p>
---	--

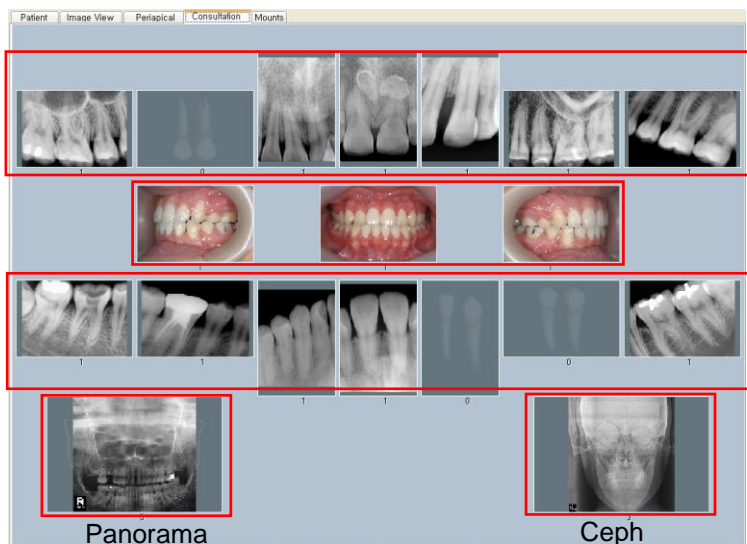
Image view

Please refer to section 2.1.4 Thumbnail for view of images in Image view.

 <p>NOTE</p>	<p>When you double-click an image from either the 'Thumbnail' or 'Image List' window, the image will open in full size, and the 'Thumbnail' and 'Image View' will no longer be visible. To return to the main screen, double-click anywhere on the image. For further information about these, please refer to <i>Chapter 11. Window</i>.</p>
---	---

Consultation

In **Consultation** mode, you can view images from all sources (Intraoral, Pano, and Ceph). These images can be organized so as to easily explain the patient's condition during consultation.



Intra-Oral Sensor

Intra-Oral Camera

Intra-Oral Sensor

Panorama

Ceph

The **Consultation** mode, double-clicking the image will change the **Function tab** into **Image View**, and you will be able to view the expanded image. If you click the image only once, all the images saved in that location can be viewed on Thumbnails.

Layouts

Please refer to **Chapter 8.9~9.11**

2.2 Context Menu

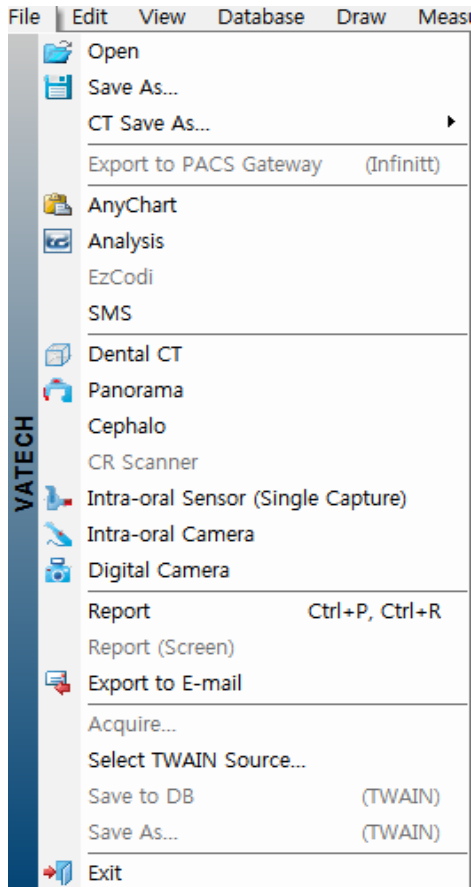
If you click the image with your right mouse button, a **Context Menu** pop-up. The frequently used functions are grouped and can be used without using the Toolbar or Icons.

Select
Zoom In/Out
Move
Draw
Distance
Delete Overlay ▶
Whitening ▶
Adjust ▶
Recently implant ▶
Initialize
Magnifier
Magnifier LE
Export E-mail
Memo
Exif Information
Modality
Modify Implant

3 General Operating Instructions

In this chapter, we will explain the **File**, **Edit**, and **View** menus.

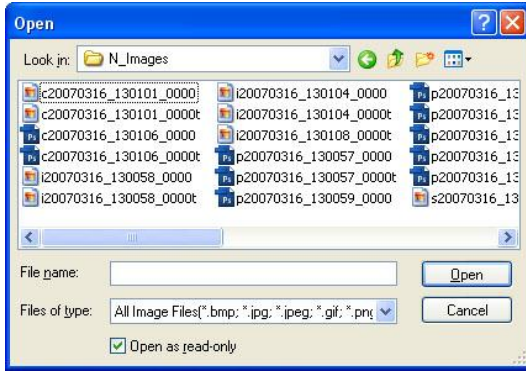
3.1 File



3.1.1 Open

This function enables you to open any image in the formats of BMP, JPG, GIF, PNG, ICON, and TIFF in EasyDent for viewing and editing.

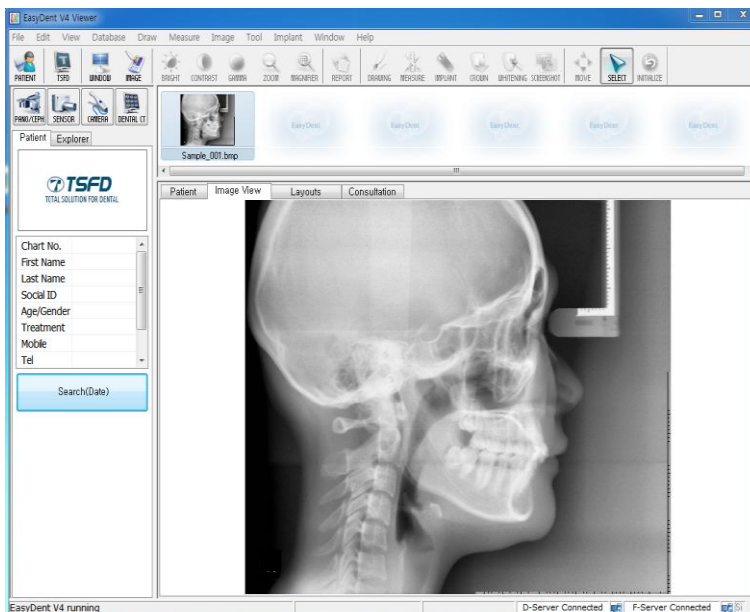
To open the existing file, click **File** → **Open**. Then Open window will pop-up.



3 General Operating Instructions

3.1 File

Select the file and click **Open** button, and an image will appear on the **Image View** area.

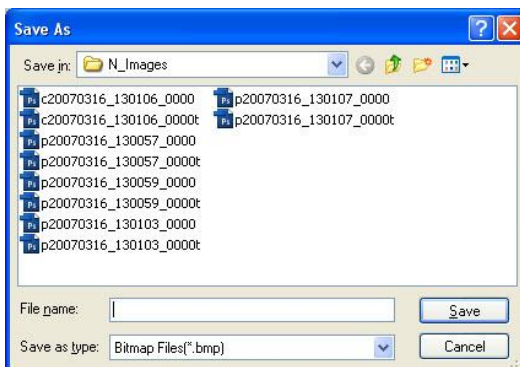


The same image(s) will also be shown in the **Thumbnail** area, along with the filenames of the images.

3.1.2 Save As

Save as lets the user make a copy of the file in a different folder or make a copy with a different name and extension in the formats of BMP, JPG, GIF, PNG, ICON, AND TIFF.

In order to save the selected patient's image in the different file name or format, press **File** → **Save as**, and the following window will appear. Choose the location in which you want to save file, and enter the file name and press **Save**.



Saved image files can be viewed without running EasyDent.

3.1.3 CT Save As

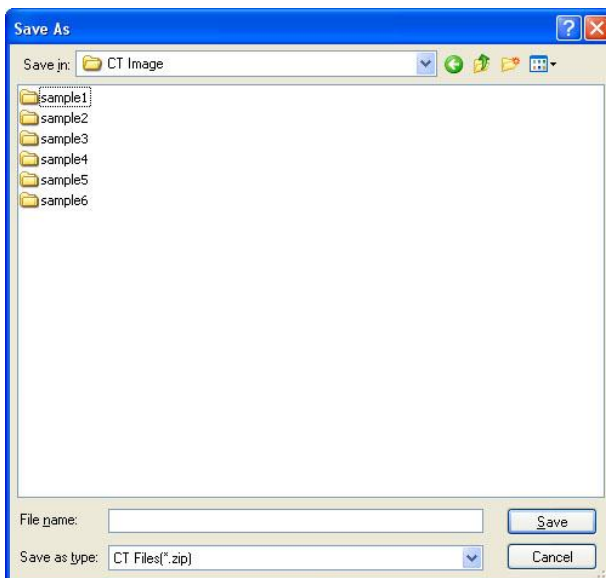
You can export / import the **CT files** and the **Ez3D2009 project files** in the following ways:

Exporting CT files

This is a function to save the selected CT images of the patient in CT files (*.zip) form into an external location (into a local path of the user's PC) other than in the EasyDent program.

In order to export the selected patient's CT image from EasyDent, click its **Thumbnail** image and click **File** → **CT Save As**, and then a window will appear.

Select the directory (location) where you want to save the CT image, and then enter the file name and click **Save**.

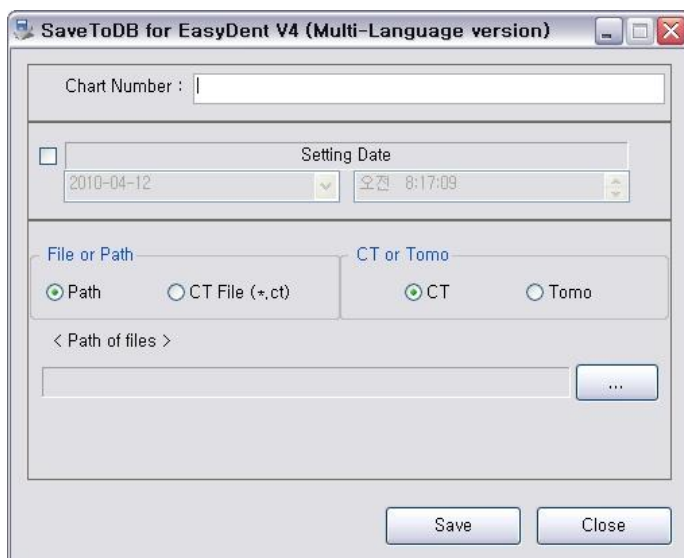


CT images cannot be viewed and analyzed unless the 3D Viewer analysis program runs.

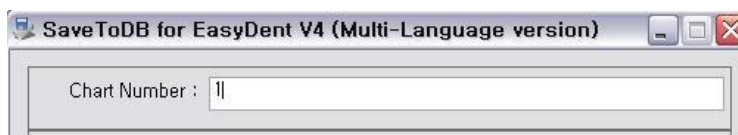
Importing a CT file

This function is accessible through **C:\EasyDent4\DBUutil** → **SaveToDB4.exe** that is located at the sub folder of the EasyDent Program.

1. First, execute **SaveToDB4.exe**.



2. Enter the chart No. of the patient, whose CT image file is to be imported, in the Chart Number input box.



3. If you want to change the importing date, check the **Setting Date** box then enter the date you prefer. If the **Setting Date** box is left unchecked, the CT file will be imported based on the current date and time of your pc.



4. You can import both the **DICOM File** and the **CT File** through the **SaveToDB.exe**. In the case of **DICOM file**, select the folder where the DICOM files are located. On the other hand, select the **CT file** folder in the case of CT file.

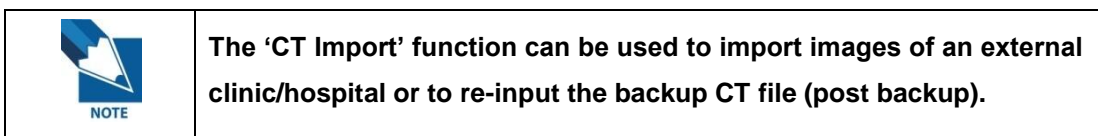
File or Path	CT or Tomo
<input checked="" type="radio"/> Path <input type="radio"/> CT File (*.ct)	<input checked="" type="radio"/> CT <input type="radio"/> Tomo

File or Path	CT or Tomo
<input type="radio"/> Path <input checked="" type="radio"/> CT File (*.ct)	<input checked="" type="radio"/> CT <input type="radio"/> Tomo

5. Select the type of CT file to be imported from either **Tomo** or **CT**.

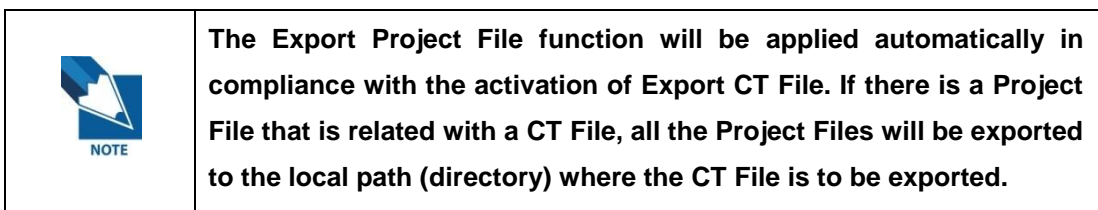
File or Path	CT or Tomo
<input type="radio"/> Path <input checked="" type="radio"/> CT File (*.ct)	<input checked="" type="radio"/> CT <input type="radio"/> Tomo

6. Click the **Save** button. If the CT Import has been done successfully, a “**Save Complete!**” message appears.



Exporting an Ez3D2009 Project file

A **Project File** is a file of Ez3D2009 3D viewer. The **Export Project File** function will be applied automatically in compliance with the activation of **Export CT File** function.



Importing an Ez3D2009 Project file

The **Import Project File** function enables you to save the **Ez3D2009 Project File** to the EasyDent DB. Follow the procedures below:

1. Execute **C:\EasyDent4\DBUtil\ImportNPJDat.exe**.

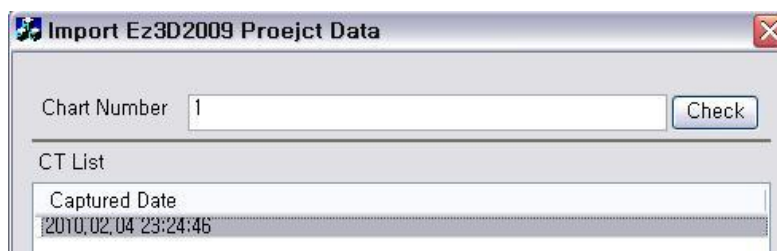
3 General Operating Instructions

3.1 File

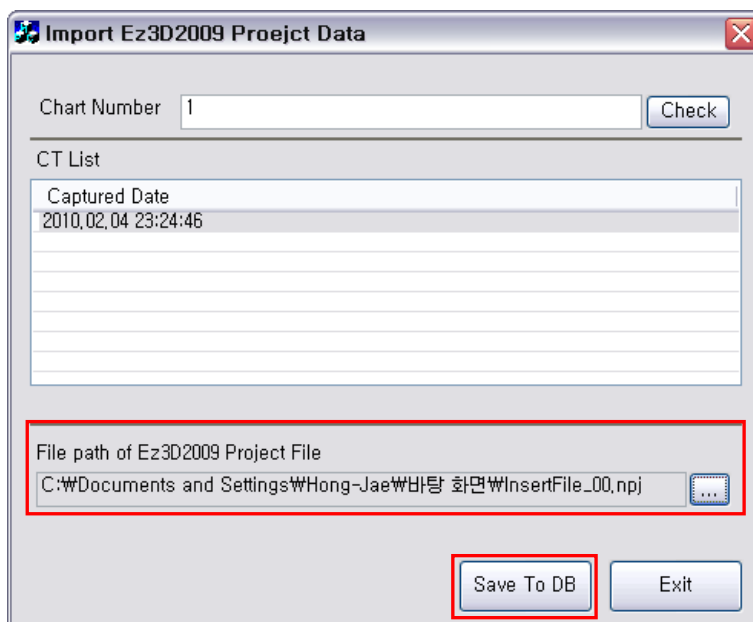
2. Enter the chart No. of the patient, whose Project file is to be imported, in the Chart Number input box and then click the **Check** button.



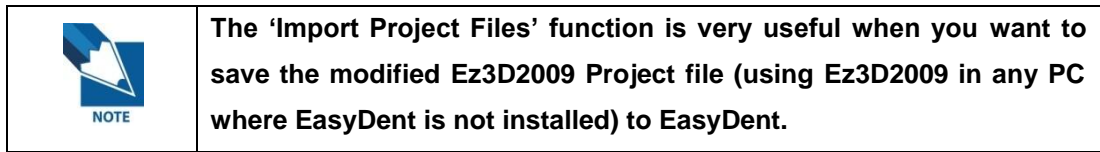
3. If the selected patient has a CT file, the CT files will be displayed. Select the **CT file** you wish to import. But if there is no CT file list, the **Project file** import will not be accessible.



4. Click the file path '...' button and select the **Project File** that you wish to save into the EasyDent DB. Click the **Save To DB** button.



5. If the file upload to the EasyDent DB has been done successfully, a “**Succeed! upload to DB**” message appears.



3.1.4 Export to PACS Gateway

This function allows you to save selected images into a PACS server that is linked to an Infinity PACS Gateway (not available for CT images).

3.1.5 AnyChart

A direct link to the program **AnyChart**, a widely used electronic charting program in Korea

3.1.6 Analysis

EasyDent is linked with the Orthodontic analysis program chosen at the **Software for Analysis** portion of the **Help** → **Configuration** → **Program** tab to allow the direct use of the EzCeph or OrthoVision software programs.

3.1.7 EzCodi

EzCodi is directly linked as well. EzCodi is a patient consultation program used within Korea.

3.1.8 SMS

You can send an SMS to the patient.

3.1.9 Dental CT

Further details are in **Chapter 5: Image Acquisition**.

3.1.10 Panorama

Further details are in **Chapter 5: Image Acquisition**.

3.1.11 Cephalo

You can acquire Cephalometric images through the capturing program.

3.1.12 CR Scanner

Direct link to the EzTWAIN Software. The EzTWAIN software manual is provided separately.

3.1.13 Intraoral Sensor

Direct link to the EzX Software. The EzX software manual is provided separately.

3.1.14 Intraoral Camera

Direct link to the EzCam software. The EzCam software manual is provided separately.

3.1.15 Digital Camera

Linked to the EzCam software

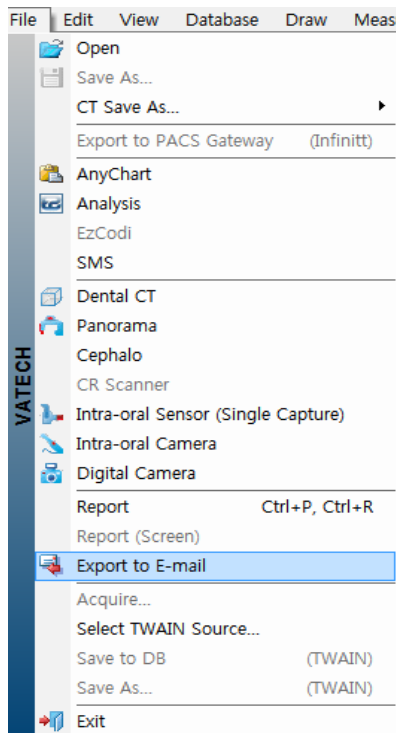
3.1.16 DICOM Print

Further details are in **Chapter 12: DICOM Print and Report**.

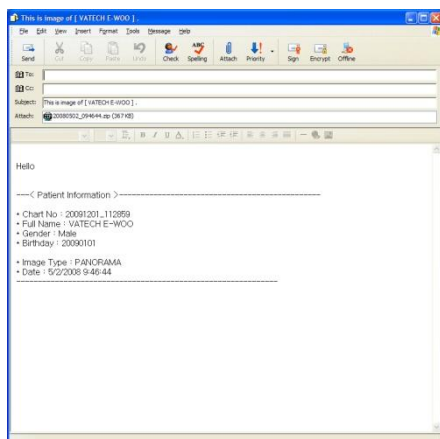
3.1.17 Report

Further details are in **Chapter 12: Print, DICOM Print & Report**.


3.1.18 Export to E-mail



You can email your image. Please select the image you wish to send through e-mail. If you click **File** → **Export to E-Mail** or click the right mouse button and select **Export to E-Mail** from the context menu, a window will pop-up. You can verify the image you have selected along with a brief overview of the patient that will be attached to the e-mail.




After adding any necessary information, please enter the address of the receiving patient and then press **Send**.

 <p>NOTE</p>	<p>You can use the 'Export to E-mail' function only if you have 'Outlook' installed and configured on your computer.</p>
---	--

3.1.19 **Acquire**

To get an image from the TWAIN device, please select the source first.

 <p>NOTE</p>	<p>TWAIN (Toolkit Without An Interesting Name)</p> <p>This is an international standard related to digital input devices such as scanners and digital cameras. If the device and software are compatible with TWAIN, you can acquire images from it using EasyDent.</p>
---	--

3.1.20 **Select TWAIN Source**

Set TWAIN device.

3.1.21 **Save to DB (TWAIN)**

Save scanned image to patient's DB.

3.1.22 **Save As (TWAIN)**

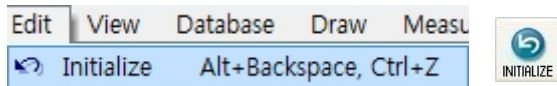
Save acquired images as a different filename.

3.1.23 **Exit**

Exit EasyDent.

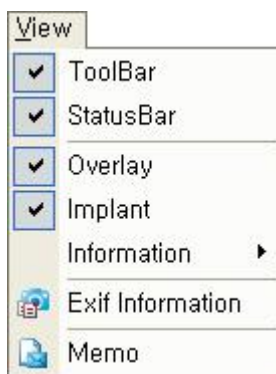
3.2 Edit

3.2.1 Initialize



This is a function that can re-set all the changes made to the image. You may either click **Edit** → **Initialize**, or **Initialize** on the toolbar. Images with Drawing, Measure, Implant, and Implant Crown overlays applied cannot be initialized using this function. In this case, you can press **Delete All** to remove all overlays applied to the image.

3.3 View



3.3.1 ToolBar

Click if you would like to create a **ToolBar** at the top of the main screen. The toolbar is a variety of frequently used tools bundled together to allow quick execution of common tasks.

3.3.2 StatusBar

Click if you would like to create a **StatusBar** at the bottom of the main screen.

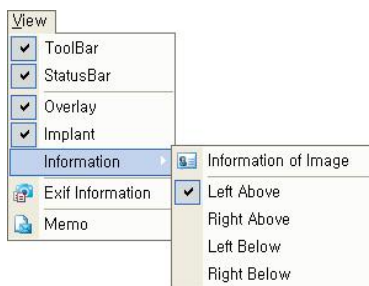
3.3.3 Overlay

This enables **Drawing** and **Measurement** results to be visible or hidden from the screen. Check it if you would like to see their results on the image. Otherwise, uncheck **Overlay** to hide the result.


3.3.4 Implant

Click if you would like to see the **Implant** on top of the image. If you do not click **Implant**, the use of Implant overlays will not be visible on the image.

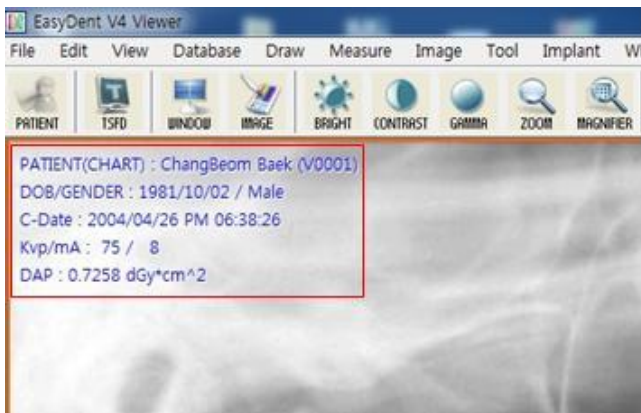
3.3.5 Information




Click **Information** whenever you would want to show patient information (such as patient's name and gender, date captured, Kvp, mA, DAP, etc.) on the image. With **View** → **Information** → **Information of Image** selected, you may choose where to locate the information shown in the submenus.

 <p>NOTE</p>	<p>This mode can be seen in the Extended Screen and full screen modes.</p>
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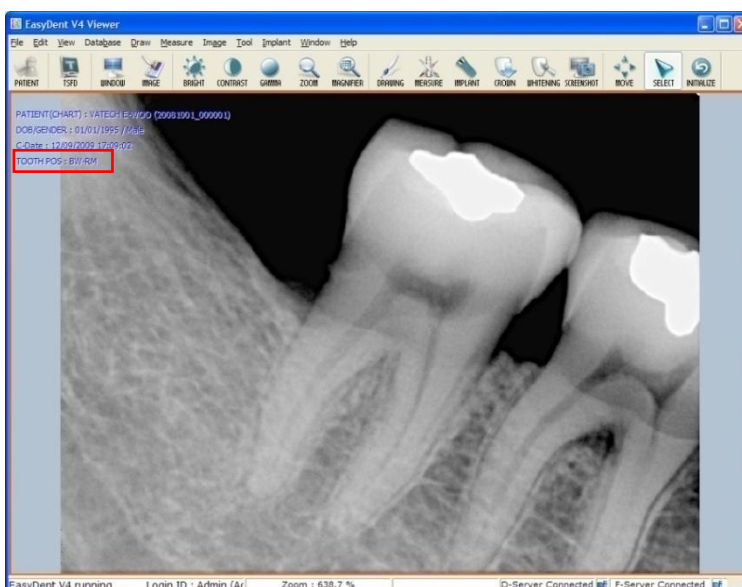
For example, if you choose **Left Above**, the patient information will be displayed at the upper left corner of the screen.



The DAP value, with its **dGy x cm²** unit, is displayed only for the Panoramic and Cephalometric images, not on CT images.

 NOTE	<ol style="list-style-type: none"> 1. The DAP value is displayed on the screen of EasyDent if the DAP display feature is incorporated in the imaging software, whereas DAP: 0.0 is displayed otherwise. 2. The 'DAP : 0.0' is displayed on EasyDent when the DAP value is less than or equal to 0.
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If you select Annotation and Thumbnail of TOOTH POS on the single image view screen (in case of Sensor image), TOOTH POS: BW-RM will be shown on the Bitewing image.



3.3.6 Exif Information

You can see the image information of the digital camera.

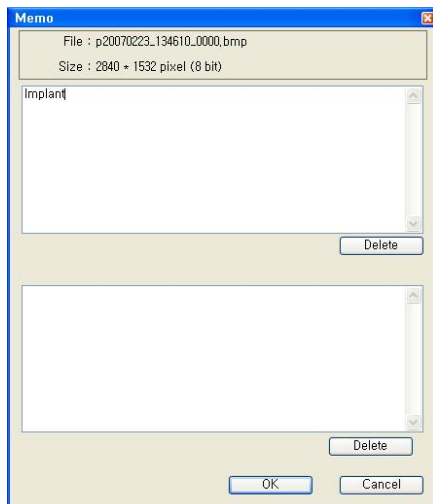
3.3.7 Memo



You can leave a simple memo on the image.

Choose the image you wish to insert a memo in.

If you click **View** → **Memo** or if you click the right mouse button then choose **Memo** at the Context menu, the memo window will appear. You may record the contents you wish to input and press the **OK** button.



A memo will be inserted at the upper left corner of the image. Double-clicking the memo icon will allow the user to check and change the contents of the memo.



After you select a patient from the **Patient List** window and locate the image in the **Image View** window, you are able to check the contents of the memo in **Patient Information**.

Patient		Explorer
		
Chart No.	20081001_0...	
First Name	VATECH	
Last Name	E-WOO	
Social ID	950101-****...	
Age/Gender	13 / Male	
Treatment	Treatment	
Mobile		
Tel		
E-mail	@	
Search(Date)		
Total (Images) : 10		
Date : 02/23/2007 13:46:10		
Kvp/mA : 0 / 0		
Memo : Implant		

4 Database Management

In this chapter, an overall explanation of patient, image, and treatment management for EasyDent will be given, as well as direction on how to import and export data and files.

Patient Management manages search, registration, and amendment of patient information. Image Management deals with modifying and moving of saved images. Treatment Management deals with setting and modifying of the treatment type for patients.

Database Management provides different types of user authority in accordance with the grades of EasyDent users, as shown on the table below. This is equally applied to Patient Management (patient information modification and deletion), Image Management, and Exportation Data.

Table 1: EasyDent user's grade and authority

Classification	User Account Management	Patient Information Management			
		Search (Reference)	Register	Modify	Delete
Admin (Grade 1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Doctor Type-A (Grade 2)		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Doctor Type-B (Grade 3)		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Staff Type-A (Grade 4)		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Staff Type-B (Grade 5)		<input type="radio"/>	<input type="radio"/>		

If you log in your user account by clicking **Change Login Account**, you will be able to manage or erase patients' information and images depending on the authority granted to you.

But a notice message will pop-up if you try to modify or delete a patient's information —with no authority to do. Try to log in another user account that will allow you to modify or delete information.

When you try to manipulate the **Database Management** without logging in your user account, a window will appear as shown below.

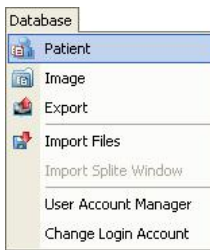


Click the **OK** button.

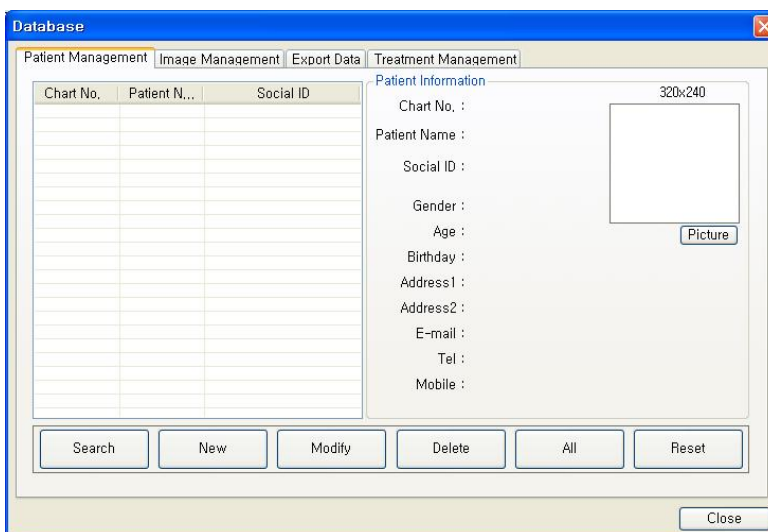
Input your user account and password then click **OK**. A window, where you can manage or delete patients' information and images, will appear.



4.1 Patient Management



If you click **Database** → **Patient** from the menu bar of the main screen, the following window will pop-up.


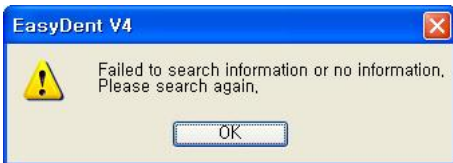


4.1.1 Patient Search

If you click the **Search** button at **Database** → **Patient** → **Patient Management**, a search window will appear.



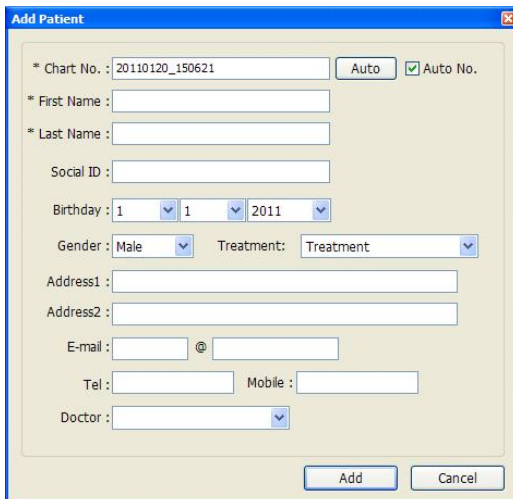
It is possible to search the patient by filling in just any one field among Chart No., First Name, Last Name, and Social ID.

 <p>NOTE</p>	<p>Chart No. or Social Security ID must be entered in EXACTLY. If not, a warning box will pop-up, as shown below.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;">  </div> <p>When searching using First or Last name, all the patients' names starting with that letter will be searched and compiled.</p>
---	---

4.1.2 Patient Registration



If you click the **New** button at **Database** → **Patient** → **Patient Management**, or if you click on the **PATIENT** button at the toolbar, an Add Patient dialogue box will pop-up. To add a patient, a user first must be registered through the User Account Manager and then log in user account. For more details, refer to **4.7 User Account Manager**.



The 'Add Patient' dialog box contains the following fields and controls:

- * Chart No. : 20110120_150621 (with 'Auto' button and 'Auto No.' checkbox)
- * First Name : [text input]
- * Last Name : [text input]
- Social ID : [text input]
- Birthday : [Month dropdown] 1 [Day dropdown] 2011 [Year dropdown]
- Gender : Male [dropdown] Treatment : Treatment [dropdown]
- Address1 : [text input]
- Address2 : [text input]
- E-mail : [text input] @ [text input]
- Tel : [text input] Mobile : [text input]
- Doctor : [dropdown]

Buttons: Add, Cancel

Entering the Chart No

If you wish to enter the Chart No., you may press **Recently** to view the most recent Chart No. entered into EasyDent. Check the **Auto No.** and then click the **Auto** button, and a Chart No. will automatically be created in the following format; YYYYMMDD_HHMMSS (Ex. 20080909_175325).

4 Database Management

4.1 Patient Management

Add Patient

* Chart No. : 20090501_000001 Auto No.

* First Name : VATECH

* Last Name : E-WOO

Social ID : 950101-1234567

Birthday : 1 / 1 / 1995

Gender : Male Treatment : Treatment

Address1 : 473-4, Bora-dong, Giheung-gu, Yongin-si, Gyeonggi-do

Address2 :

E-mail : @

Tel : Mobile :

Doctor :



Chart No., First Name, and Last Name are the required fields to be filled in order to register a patient successfully.



When you register a patient, enter the chart number with no spaces. If you paste the chart number to the edit box, any space between the numbers will be removed automatically.

After entering the other necessary items, please press **Add**. After registration of the patient, you will be able to check the information at the **Patient Information**.

Database

Patient Management | Image Management | Export Data | Treatment Management

Chart No.	Patient Name	Social ID
20081001_0...	VATECH ...	950101-1234567

Patient Information (320x240)

Chart No. : 20081001_000001

Patient Name : VATECH E-WOO

Social ID : 950101-1234567

Gender : Male

Age : 13

Birthday : 01/01/1995

Address1 : 473-4, Bora-dong, Giheung-gu, Yongin-si, Gyeonggi-do

Address2 :

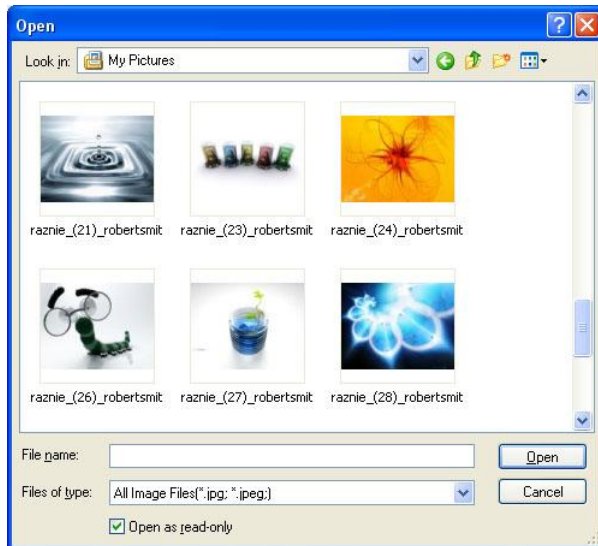
E-mail : @

Tel :

Mobile :

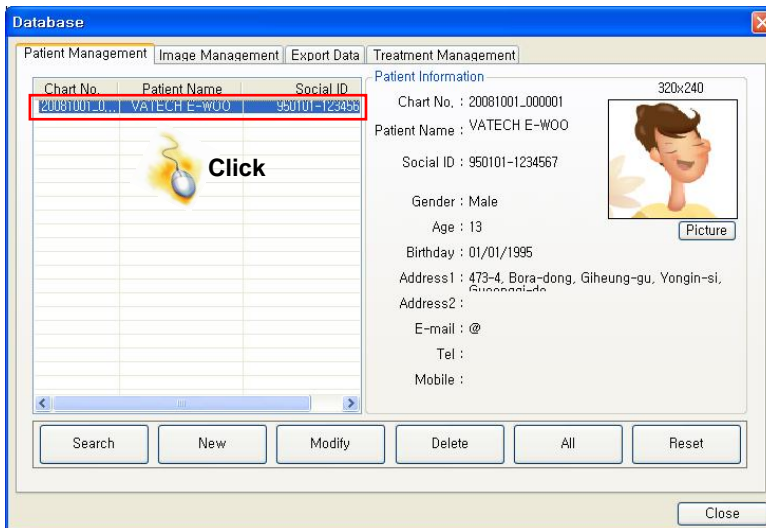
Inserting a photo into Patient Information

If you click on the **Picture** button at the right side of the **Patient Information**, an **Open** window will pop-up. Please select a file photo and then click **Open**.

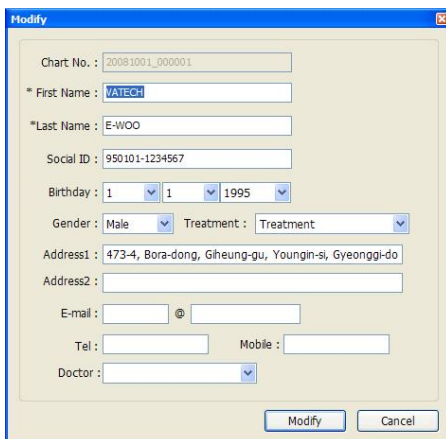


4.1.3 Modifying Patient Information

In the case of modifying the patient information—Name, Sex, Address and etc— that was already registered, please find the patient using the **Search** button.



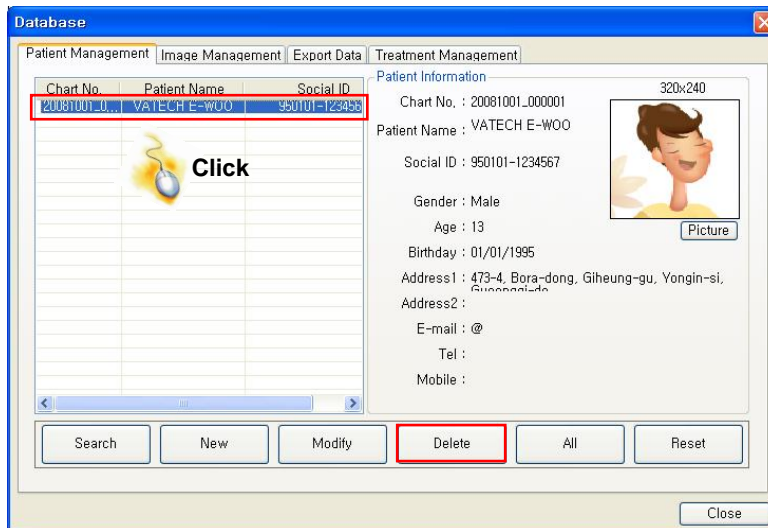
After clicking on the patient information that you wish to modify, click the **Modify** button, and the following dialogue box will appear. After modification, press the **Modify** button to complete the process.



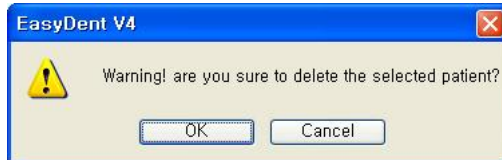
 CAUTION	You cannot change the Chart No.
---	--

4.1.4 Deleting Patient Information

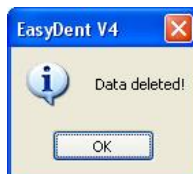
Find the patient information that you wish to delete by clicking the **Search** button, and then clicking the **Delete** button.



You are asked to confirm the deletion request.



Click the **OK** button.



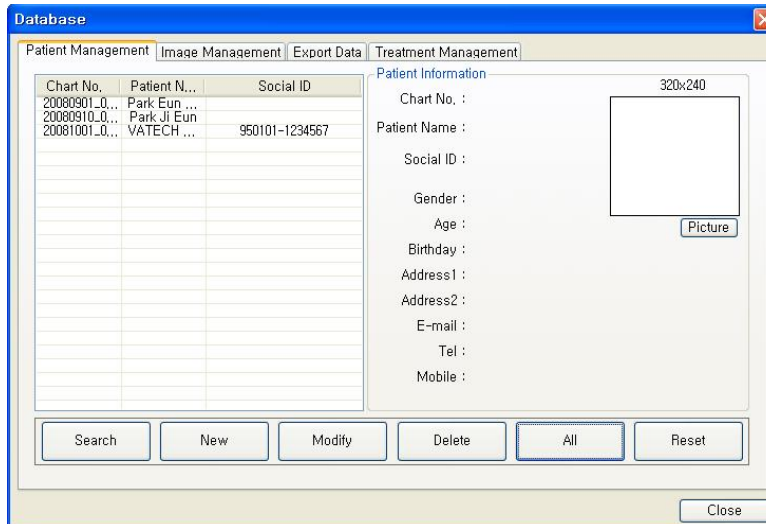
1. If you need to delete an entire patient from your database, you must first delete all the saved images for that specific patient. If you do not, the images will remain with the chart number.
2. It is recommended that you do not use the same Chart No. for different patients.

4 Database Management

4.1 Patient Management

4.1.5 All (Whole Patient List)

Using the **All** button, you can pull up a list of all patients in your EasyDent database.

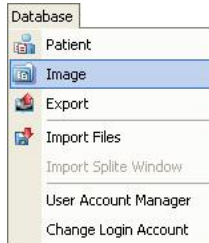


4.1.6 Reset

Reset will restore the **Patient Management** to initial status.

4.2 Image Management

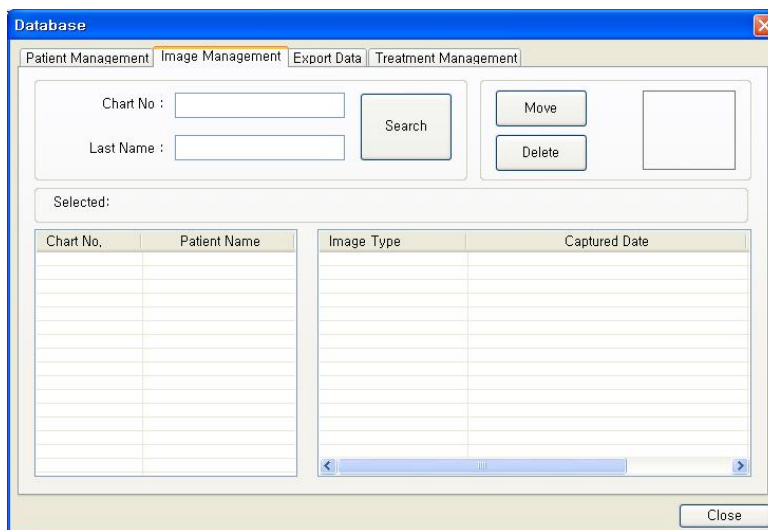
You can delete the image of an existing patient or transfer an image to another patient.



4.2.1 Image Transfer

If needed, you can transfer a patient's image to another patient database.

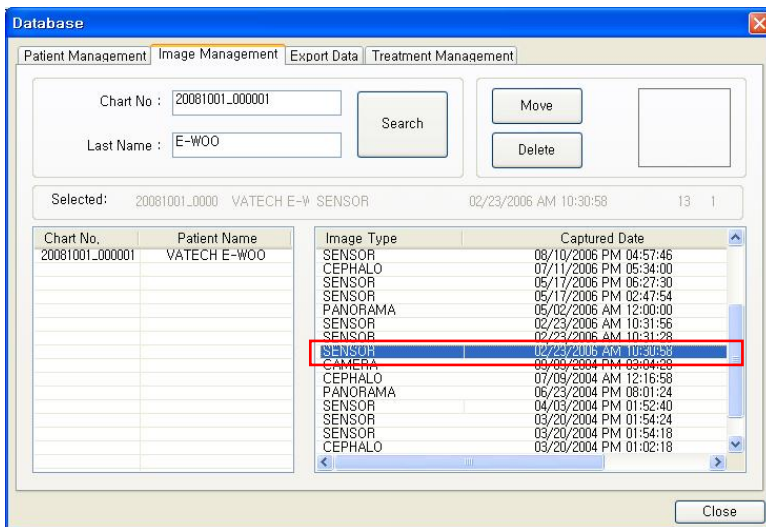
To get the database window, click **Database** → **Image** → **Image Management** in sequence.



4 Database Management

4.2 Image Management

Enter either the Chart No. or the Last Name and then click **Search**, and the search result for patient information will be listed up, as follows.

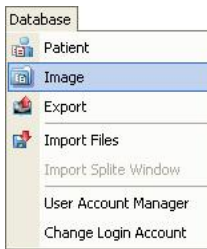


Select the image of the patient you wish to transfer, and then click **Move**. A **Move** window will pop up.



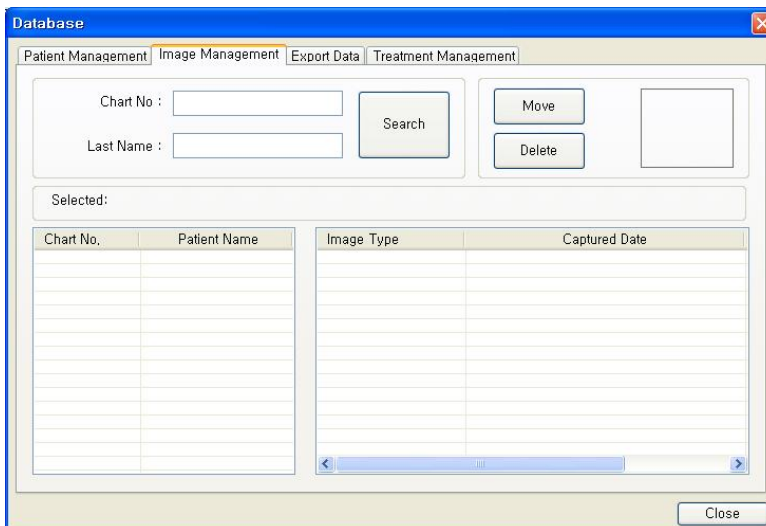
Enter the new Chart No. of the patient, and then click the **Move** button. When the image of the selected patient is transferred to the designated Chart No., a window will appear. Press **OK** and the move will be complete.

4.2.2 Deleting an Image

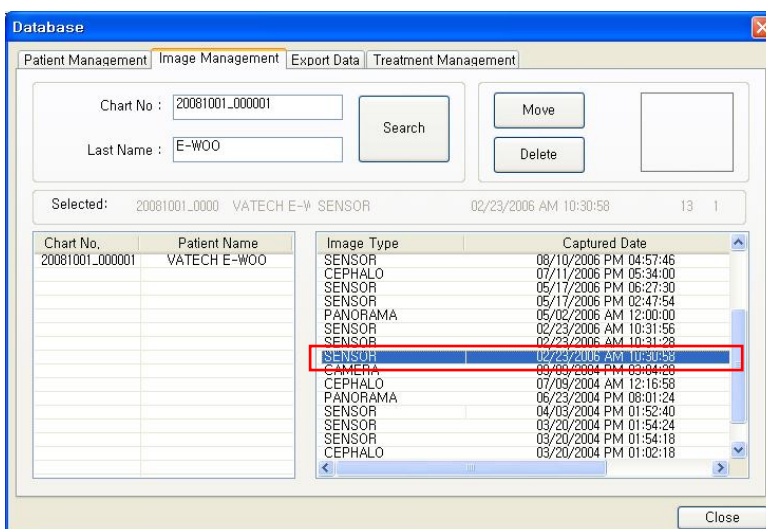


If needed, you are able to delete images saved.

At the menu bar, click the following: **Database** → **Image** → **Image Management** and a **Database** window will pop-up.

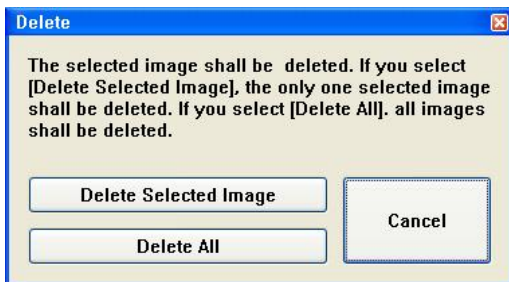



Enter either the Chart No. or the Last Name and then press **Search** and the search result for patient images will be listed up.




Click the image that you want to delete and then press the **delete** button.

A pop-up window will ask for your confirmation of the deletion request, as shown below.



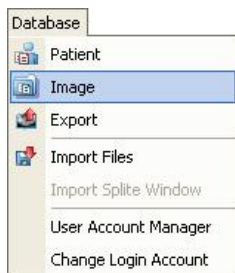
 CAUTION	<ol style="list-style-type: none">1. Please check whether the image you selected is indeed the image you wish to delete.2. It is advised that you delete images using the 'Delete Selected Image' button. The 'Delete All' deletes all images saved for that specific patient at a single click.
--	---

Upon deleting the selected image, a box that notifies you of the deletion will appear. Click the **OK**.

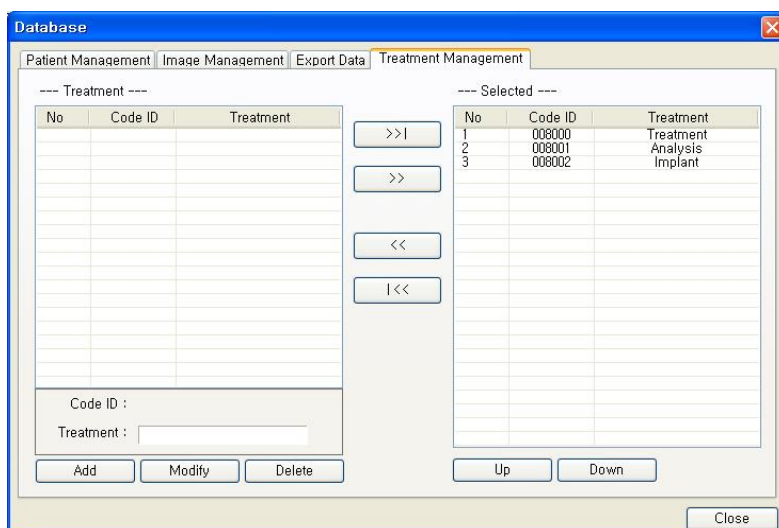
 CAUTION	<p>Although you can delete an image in the 'Image Management' window, this is not recommended, due to highly likelihood of mistakes that could lead to an unintended deletion of other image(s)—this could happen since you <i>can't</i> view the selected image <i>in the Image Management window</i>.</p> <p>The following procedures are preferred.</p> <ol style="list-style-type: none">1. First, search for the patient on the Main Screen.2. Then select the image you wish to delete in the Image List. Now you can view the selected image on the Thumbnail area.3. Now run the 'Image Management' and then the image selected in the 'Image List' will automatically be selected and focused.
--	---

4.3 Treatment Management

This shows on the chart the kinds of treatment that were done to the patient by the user. The treatment is composed of three components: Treatment, Analysis, and Implant. According to the needs of the user, this portion can be modified, deleted, or added.



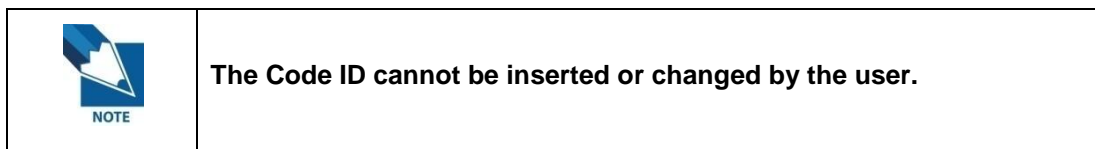
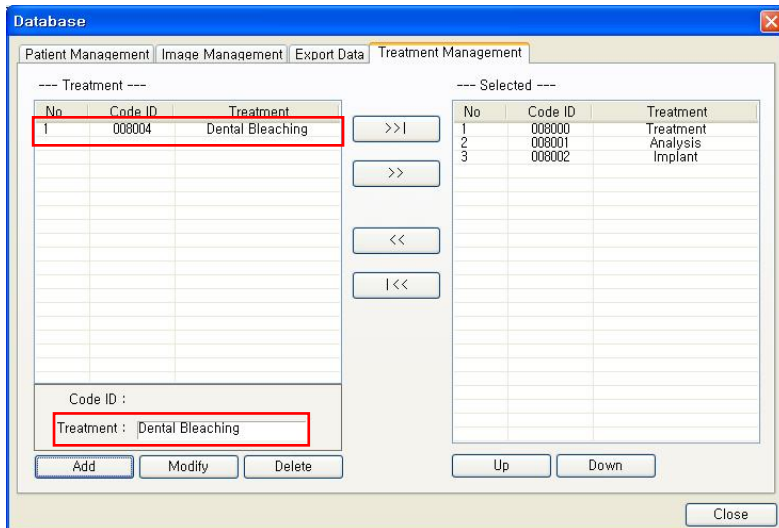
There is no icon within the toolbar that runs the **Treatment Management**. In order to run this, you will need to click on the **Database** and click the **Treatment Management** tab.



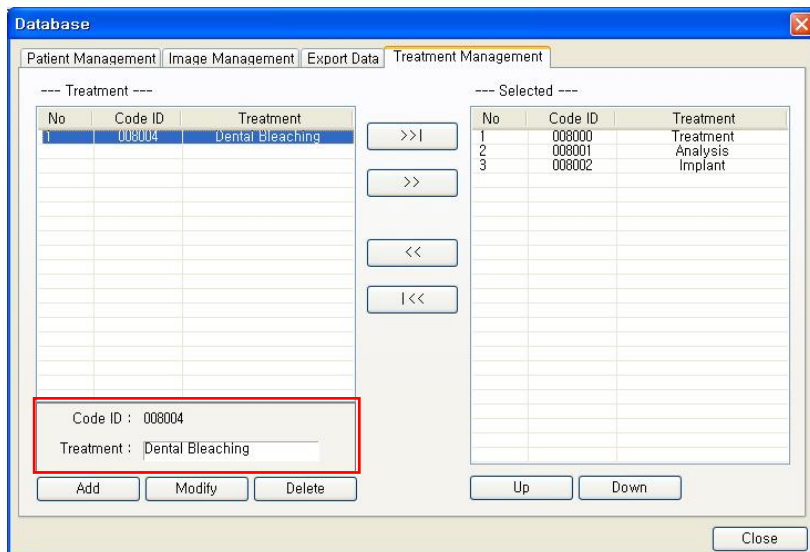
4 Database Management

4.3 Treatment Management

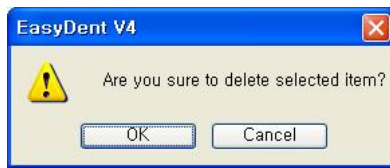
Add: User can add the treatment of choice. For example, if you want to add **Dental Bleaching** to the treatment, you can enter **Dental Bleaching** and press **Add**. Then you can see that the treatment was added.



Modify: When treatment information entered incorrectly, it is possible to change it. As shown below, you may change **Dental Bleaching** by selecting **Dental Bleaching** from the treatment list. You can modify the contents at the **Treatment** and click **Modify**.



Delete: If you want to delete a Treatment, select the item you want to delete, as shown above, and press delete.



Once you have completed the addition or modification of **Treatment**, you will need to move it to the selected columns in order to use it.

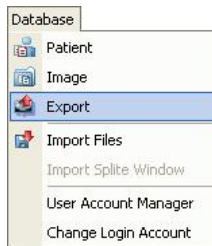
When the number of treatment is one item, press ' >> ' when many, ' >>| '.

If you do not use the items in the **Selected** columns any more, you can move those in the **Selected** columns back into the **Treatment** column by using the ' << ' , or ' |<< ' buttons.

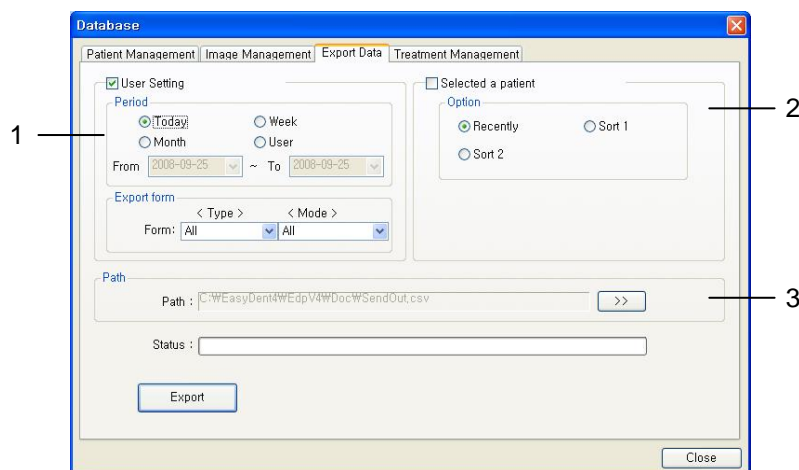
At the **Selected** area, you can use the **UP** and **DOWN** buttons to rearrange the order of the appearance of treatment.

4.4 Export Data

You can export image information of patient to MS's Excel.

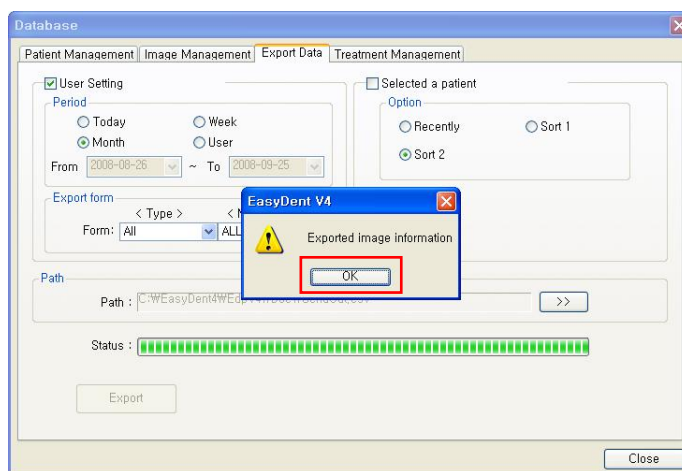
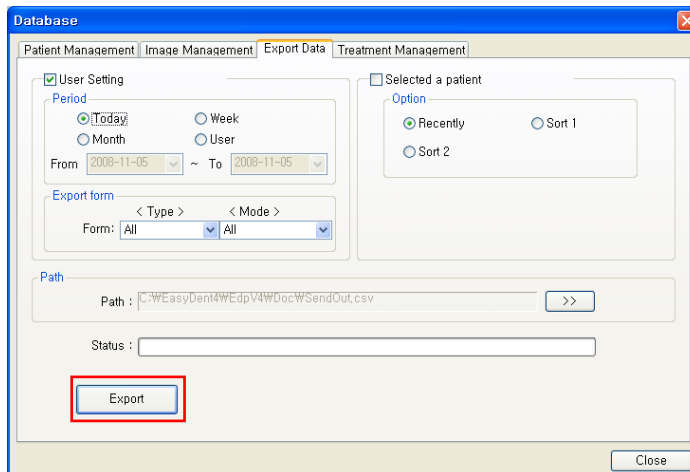


If you click **Database** → **Export Data** from the menu bar at the main screen, a database window will appear as shown below.



- 1. User Setting:** The user can specify the storage period within which image(s) are to be exported.

 - Today:** Select images that were taken within the day.
 - Week:** Select images taken within a week.
 - Month:** Select images taken within a month.
 - User:** The user can set the period. Also, the user can select the type of images to be exported.
- 2. Being Selected a patient** clicked, it will export the most recent images for the selected patient into Excel file.
- 3. Path:** Shows the path where the exported patient data will be saved. The path can be changed by the user. While the image information is being exported, the status in progress will be shown.



Click the **OK** button to export the patient's image data. In order to verify the result, browse the directory to the designated path. The default path is **C:\EasyDent4\EdpV4\Doc**.

In that directory, double-click the **SendOut.xls** file to examine the internal contents.

The following figure shows the typical example of the inside contents of the exported file.

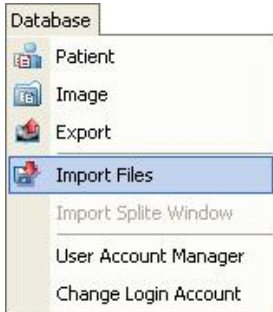
```

-----
'User Image List
-----
Panorama X-ray      : 0
Intra-Oral X-ray   : 1
Intra-Oral Camera  : 0
Cephalo X-ray      : 0
CT(TOMO) X-ray     : 0
Digital Camera     : 0
-----
No      Chart No  Patient's N Birthday  Image Typ  Date
-----
'1      '20081001 'E-WOO    '1995-01- 'SENSOR  '09/25/2008 AM 11:01:27
-----

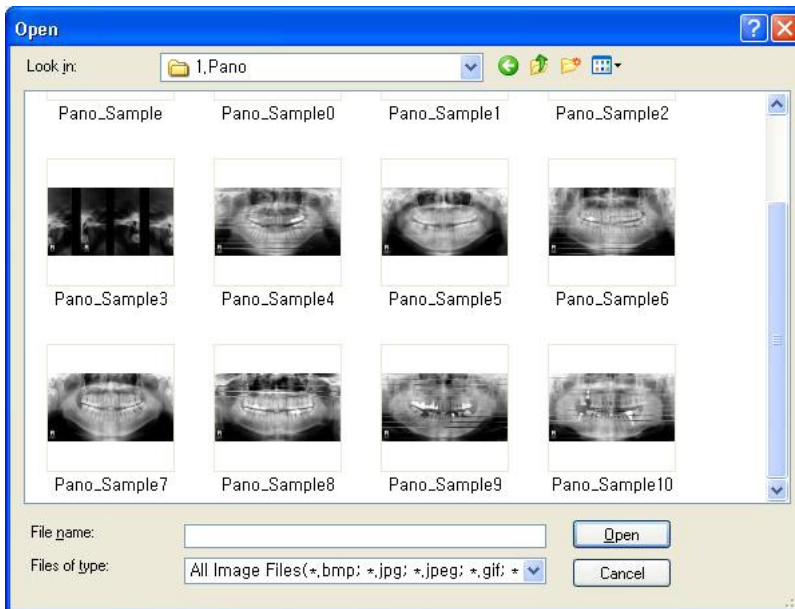
```

4.5 Import Files

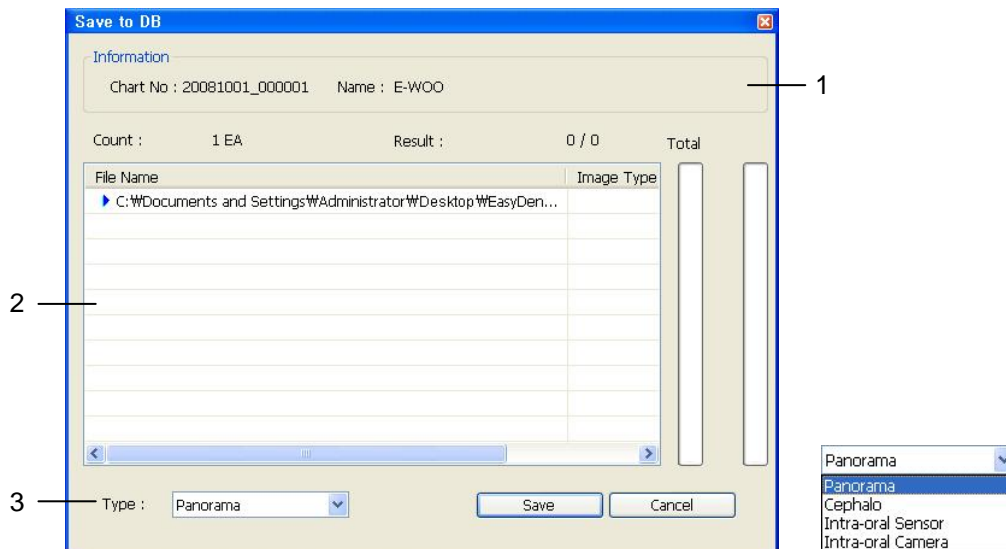
If needed, you are able to import image files from outside sources into a selected patient's file.



If you choose **Database** → **Import Files** from the menu at the top of the main screen, the **Open** window will appear.



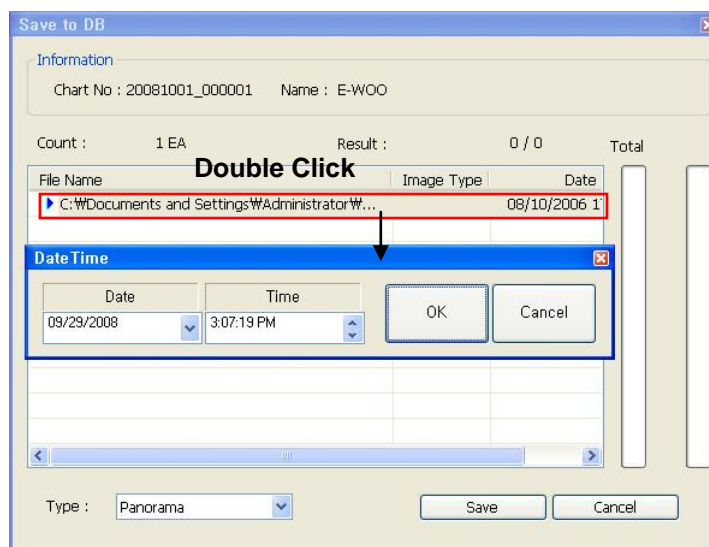
Select the image you want to import and then click **Open** to open the **Save to DB** window.



1. **Information:** Displays the Chart No. and the name of the patient associated with the image you want to save.

2. **File:** You can check the path of the image file to be import.

When you double-click the file, a **Date Time** window will pop-up as shown below, and the user may change the date and time. (By default, the Date and Time are synced to the user's computer.)



Once the Date and Time had been modified, press the **OK** button or if not, press **Cancel**.



If there are no modifications on the Date and Time, the save date and time are set as the creation date and time of the file.


4 Database Management

4.5 Import Files


3. **Type:** select Panorama, Cephalometric, Intraoral Sensor, or Intraoral Camera type of image from the pull-down list. For a Cephalometric image, you are required to select both the Direction and the Modality.



For Intraoral Sensors and Intraoral Cameras, you need to select the device and the location of the teeth. You can also set the Bite-Wings.



By clicking the **Save** button; the chosen image will be saved at the file of the specified patient.

 <p>NOTE</p>	<p>RM (Right-Molar), RI (Right-Incisor), LI (Left-Incisor), and LM (Left-Molar).</p>
---	---

4.6 Import Split Window

This allows the user to save just the patient image only for viewing convenience.



Select the patient file, and locate the image you wish to save on the image View.

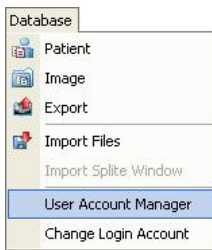
You can either click **Database** → **Import Split Window** on the menu bar, or click the **SCREENSHOT** button on the toolbar. Press **OK** button when the pop-up window appears.

If you double-click the Patient List, you will be able to check the saved images in the Thumbnail window.



If you click on the SCREENSHOT button at the toolbar, Patient, Image View, Layouts, and Consultation tab screens will capture and save on the database.

4.7 User Account Manager

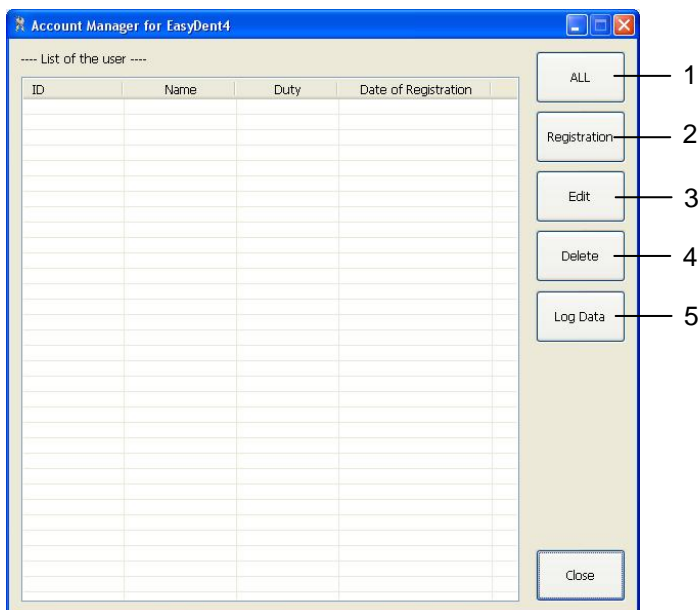


You can register, edit, or delete a user account. On the menu bar, click **Database** → **User Account Manager**.



Enter the initial setup data (ID: Admin / Password: 0000), then click **OK**.

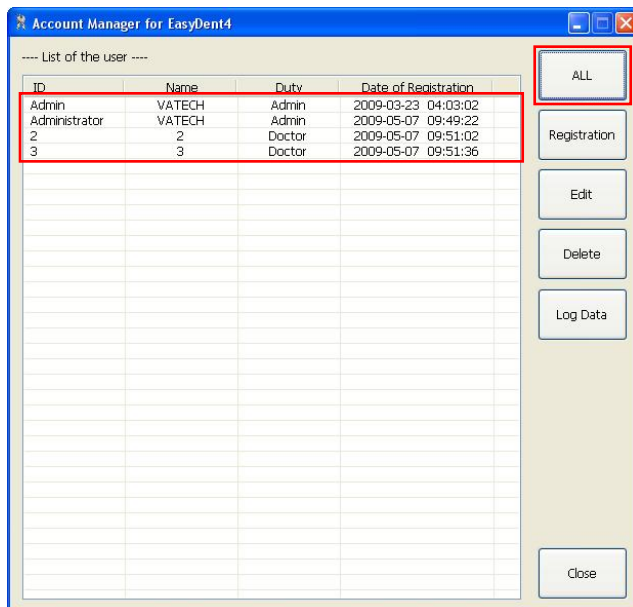
An **Account Manager for EasyDent4** window where you can manage user accounts will appear. Note that each field is case-insensitive.



1. **ALL:** All users will be shown on the list.
2. **Registration:** Used for user registration.
3. **Edit:** Used for modifying user information.
4. **Delete:** Used for deleting user information.
5. **Log Data:** shows the history of modification and/or deletion of users.


ALL

When you click the **ALL** button, you can see all the users on the list.



Registration

Click the **Registration** button to show a registration window, where you can register a new user account.

 NOTE	Items beginning with asterisk (*) in the above dialogue box are required fields to be entered.
---	---

Password must be at least 4 characters.

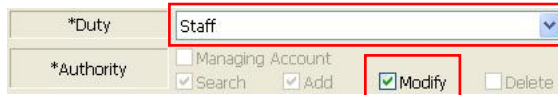
Duty is classified into three levels. Refer to <Table1: EasyDent User's Grade and Authority>

Duty → **Admin**: the full authority to manage account, search, add, modify, and delete information is given at this level.

Duty → **Doctor**: the authority to search, add, and modify information is given at this level by default. But the extra authority to delete information may be optionally given.

Duty → **Staff**: the authority to search and add information is given at this level by default.

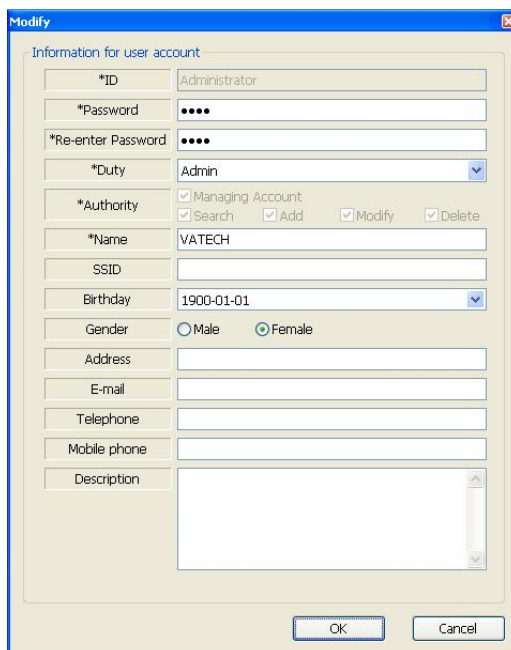
But the extra authority to modify information is optionally given. However, the staff doesn't have authority to *delete* information.



The screenshot shows a form with two main sections. The first section has a label '*Duty' and a dropdown menu currently displaying 'Staff'. The second section has a label '*Authority' and four checkboxes: 'Managing Account' (unchecked), 'Search' (checked), 'Add' (checked), and 'Modify' (checked). The 'Delete' checkbox is present but unchecked. Red boxes highlight the 'Staff' dropdown and the 'Modify' checkbox.

Edit

On the **List of Users**, select a user then click **Edit** button or double click the user (information) and a Modify window will appear.



The 'Modify' dialog box is titled 'Modify' and contains the following fields and options:

- *ID: Administrator
- *Password: masked with four dots
- *Re-enter Password: masked with four dots
- *Duty: Admin
- *Authority: Managing Account (checked), Search (checked), Add (checked), Modify (checked), Delete (unchecked)
- *Name: VATECH
- SSID: empty
- Birthday: 1900-01-01
- Gender: Male (radio), Female (radio)
- Address: empty
- E-mail: empty
- Telephone: empty
- Mobile phone: empty
- Description: empty text area

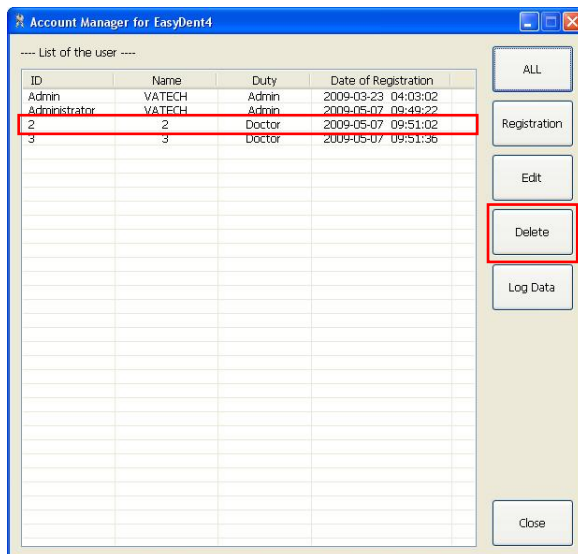
Buttons: OK, Cancel

You can modify any information fields of the user except for the ID.

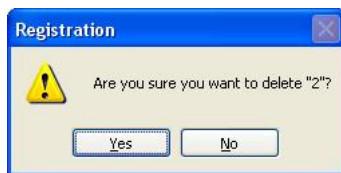
You should enter at least 4 characters of the **Password** to modify user account information.

Delete

Select a user from the list, and then click the **Delete** button so you can delete the user's information.

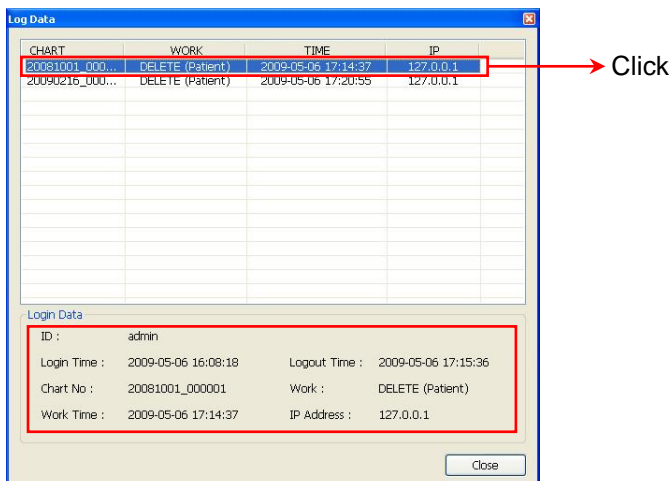


Click **Yes** to confirm deletion of the user's information.

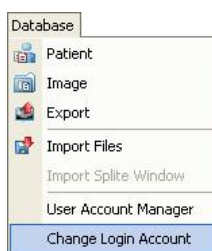


Log Data

When you click the **Log Data** button after selecting a user on the List, a Log Data window will appear showing the user's work diary. Click a particular work data on the **Log Data** window so you can verify the user's ID and the login/logout time at the bottom of the window.



4.8 Change Login Account



The user account can be changed through the **Change Login Account**.

If you click **Database** → **Change Login Account**, a login dialog window will appear. Enter the user's ID and Password.



You can verify the current user's ID and Duty at status bar located at the lower left side of the screen.

Login ID : Admin (Administrator)

↓ ↓

ID Duty Authority

If you have not changed the user account through **Change Login Account** or if you have not closed the EasyDent Program, the initially set user account will be kept as it is.

5 Image Acquisition

This chapter explains on how to acquire images from PANO, CEPHALO and CT equipment through EasyDent software.



The equipment and the computer with EasyDent installed need to be linked prior to using this function.

5.1 Panorama

This is used to acquire the panoramic images from equipment. With the equipment and the computer connected, you can click the **PANO** from the main screen of EasyDent or **Panorama** in File menu to call the imaging software (GUI).



To acquire the image:

- A. Select the patient from the **Patient Information** at the left of the main screen.
- B. You may either click **Panorama** from the menu bar on the main screen, or click the **PANO** button on the toolbar.



Although each of the equipments has its unique imaging software, the following imaging software for the PaX-Uni3D is picked as a typical example for explanation.



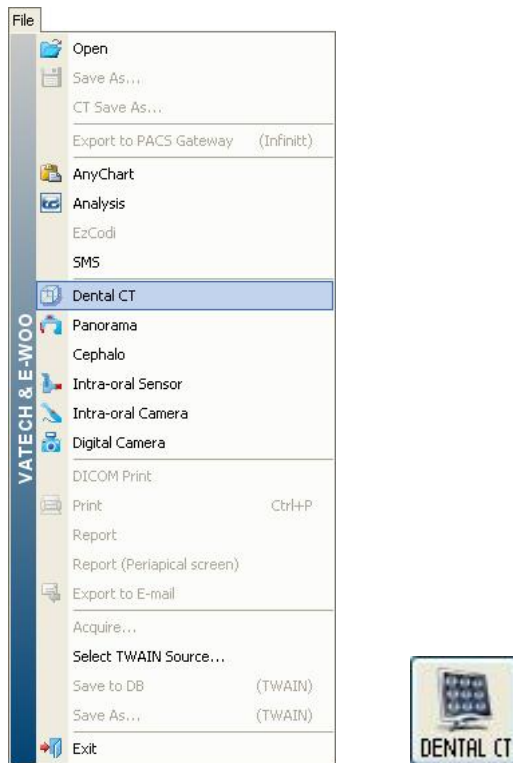
- C. At the last stage of image acquisition, you are asked whether you want to save the image taken. Press the **OK** button so that the image will be saved under the selected patient's file.



- D. After acquiring the image, the screen will return to the main screen of EasyDent, and by selecting the same patient from the **Patient List**, you can view the acquired image.


5.2 Dental CT

This function is used to acquire images from dental CT equipment. With the equipment and the computer linked, pressing the **Dental CT** button will run the image acquisition program.



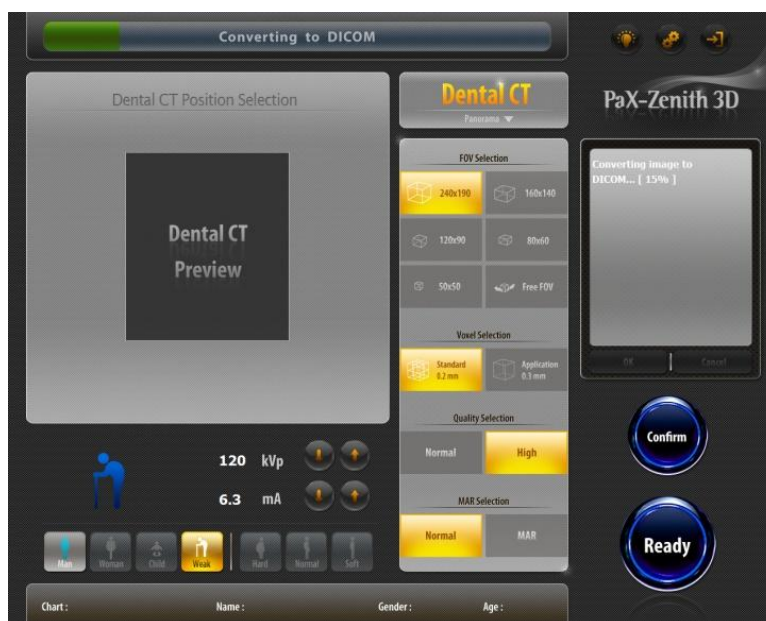
- A. Select the patient from the **Patient Information** on the left side of the main screen.
- B. Click **File** → **Dental CT** at the menu bar or the **DENTAL CT** button at the toolbar.

Then the following imaging software's main screen will be displayed.

 <p>NOTE</p>	<p>Although each of the equipments has its unique imaging software, the following imaging software for the PaX-Zenith3D is picked as a typical example for explanation.</p>
---	--



- C. At the last stage of the acquisition of images, you are asked whether you want to save the image taken. Press the **OK** button so that the images will be saved under the selected patient's file and you will be able to access the image on EasyDent.



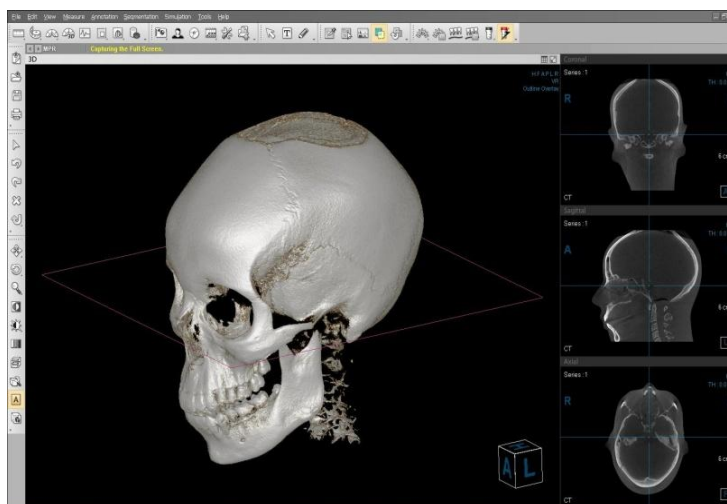
5 Image Acquisition

5.2 Dental CT



- D. After acquiring the images, the screen will return to the main screen of EasyDent, and by selecting the same patient from the **Patient List**, you can view the acquired images.

When an image from the Thumbnail on EasyDent is clicked, it will be read by the 3D Viewer program (Ez3D2009), where you can view it.



NOTE

Check whether the HASP keys for the 3D Viewers—Ez3D2009 or Ez3D are inserted in the USB ports of the computer before viewing image. Since the CT image *can't* be displayed on EasyDent, it is transferred to the 3D viewer which is interfaced with EasyDent internally.

6 Save To DB


This chapter will explain the method of importing and saving a CT image to your patient database.

6.1 Save to DB

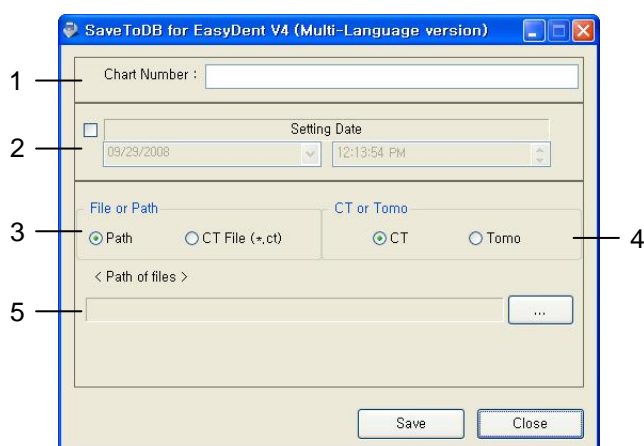
This function is used when you want to save a CT image to a selected patient's file.



Double-click the file **C:\EasyDent4\DBUtil\SaveToDB4**.

 <p>NOTE</p>	<p>You may create shortcut to the above subdirectory to facilitate easy access to that application. To do this, go to the 'SaveToDB4' and click the right button on it and select 'Create Shortcut' from the pull-down list. Move the newly created file to the desired destination, such as another folder or the desktop.</p>
--	--

The **SaveToDB for EasyDent V4** window will appear.



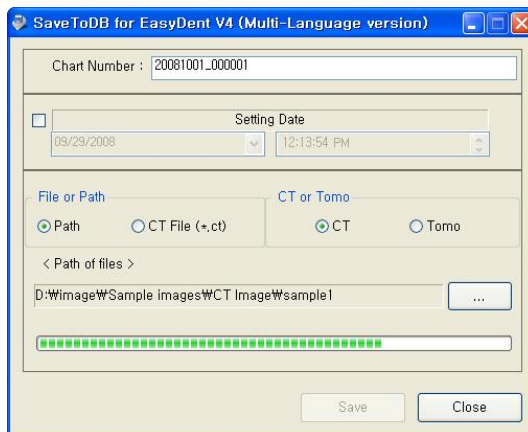
1. **Chart Number:** a field for the Chart No. of the patient whose CT image file you want to save.
2. **Setting Date:** a field to specify the date and time of change.
3. **File or Path:** If the CT image you want to save is in .zip form or a folder, choose **Path**. If the CT image file is a CT File (*.ct), choose **CT File (*.ct)**.

6 Save To DB

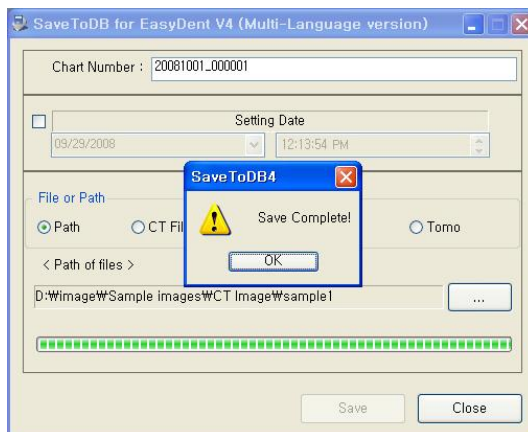
6.1 Save to DB

4. **CT or TOMO:** Choose whether the image is a type of CT or TOMO.
5. **Path of files:** Set the path through which you can read the CT image files.

When these steps have been completed, click the **Save** button. Then the progress bar will move, as shown below.

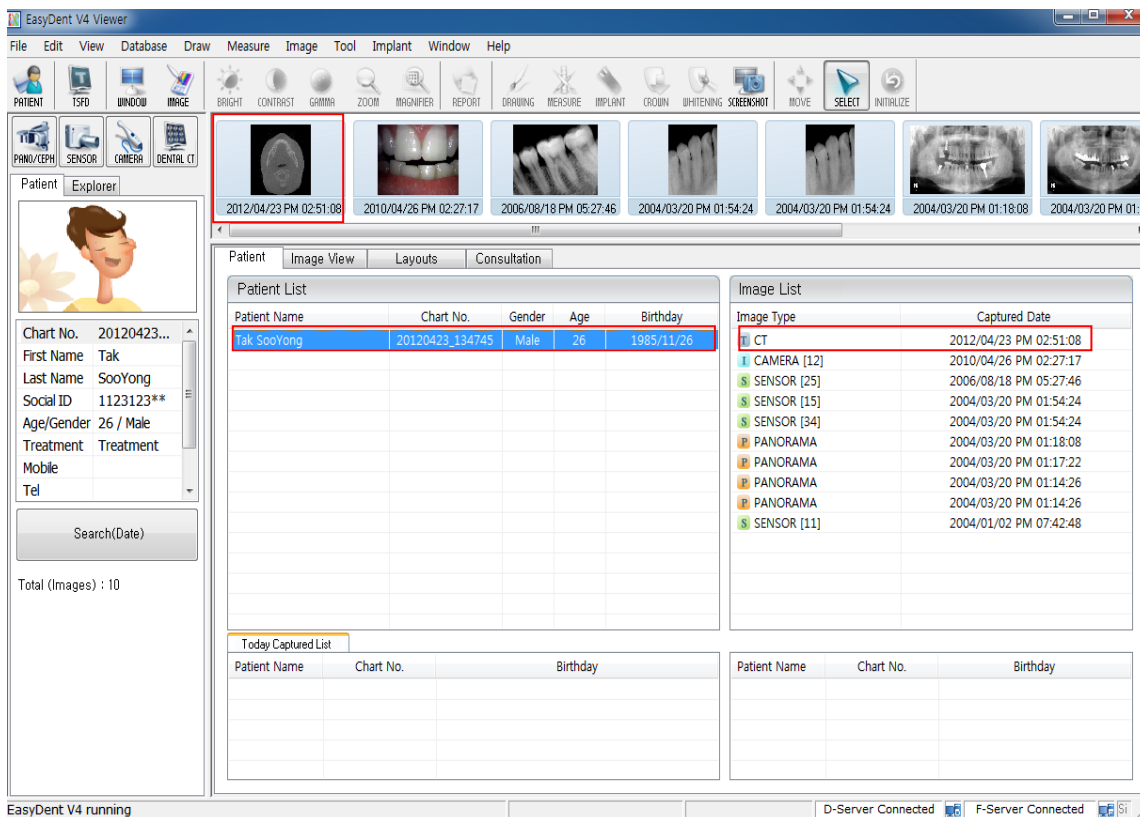


Once it is saved, a small pop-up window will appear with the message **Save Complete!** Then click **OK**.



If you want to import additional CT images, use the same method. If not, click **Close**.

If you double-click the patient's name from the **Patient List**, you will be able to check that the CT image has been saved on the **Image List** and on the **Thumbnail**.

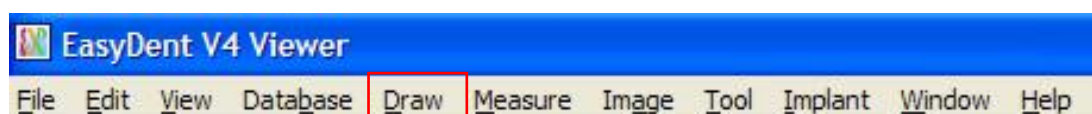


7 Image Processing

This chapter will explain the method of drawing, measuring and use of imaging tools for patient images and the configuration of image settings.

7.1 Drawing Tools

These are tools that help draw various lines and figures on the patient's image.

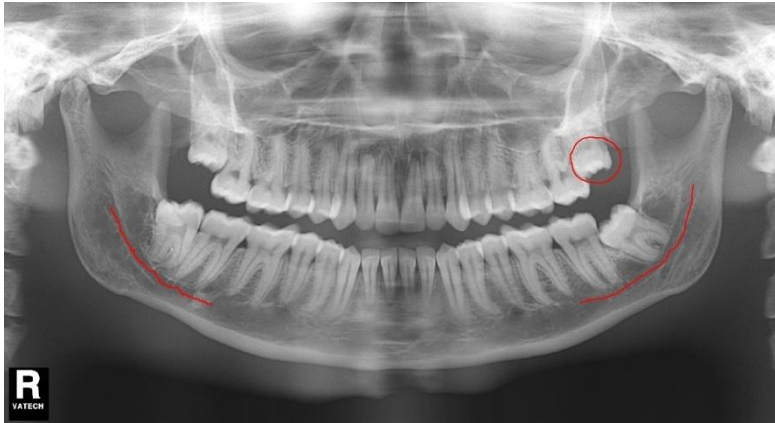


7.1.1 Free Draw

This allows the user to draw freely on the image.

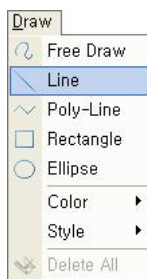


Click **Draw** → **Free Draw** on the menu bar at the top of the EasyDent Viewer window, or click on the **DRAWING** icon on the toolbar. Then, draw freely on the image.

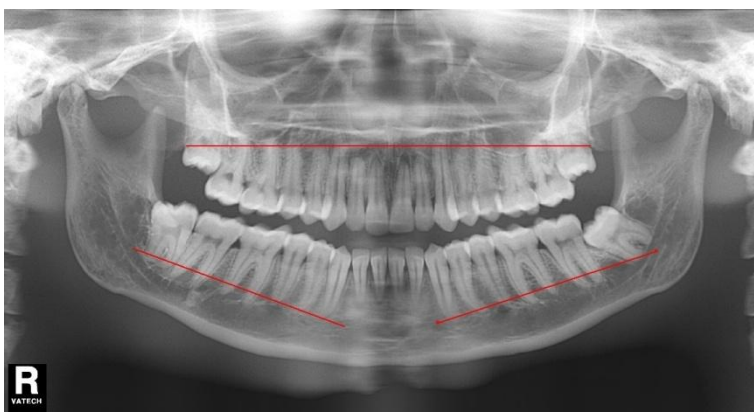


7.1.2 Line

This allows the user to draw straight lines on the image.

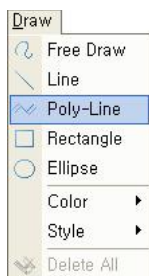


To draw a line, click **Draw** → **Line**. Click the left button of the mouse once at the start point. After dragging it, click again at the end point. Then the line segment between two points is drawn.



7.1.3 Poly-Line

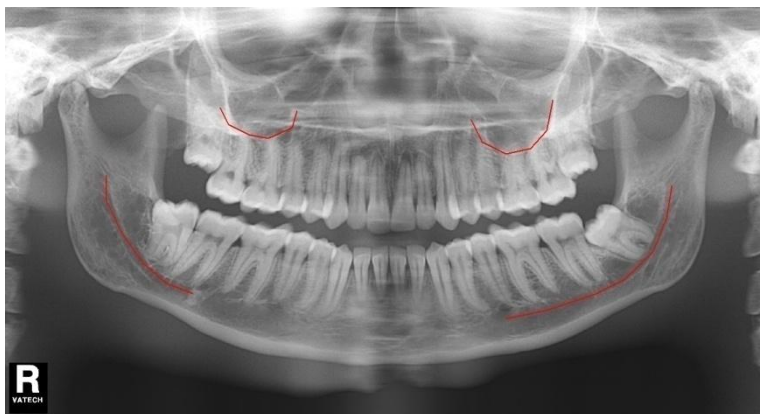
This allows the user to draw continuous lines on the image.



Drawing a Poly-Line

To draw a poly-line, click **Draw** → **Poly-Line**. Then click the mouse at the start point, followed by clicks at certain points, and then *double-click* the mouse at the end point.

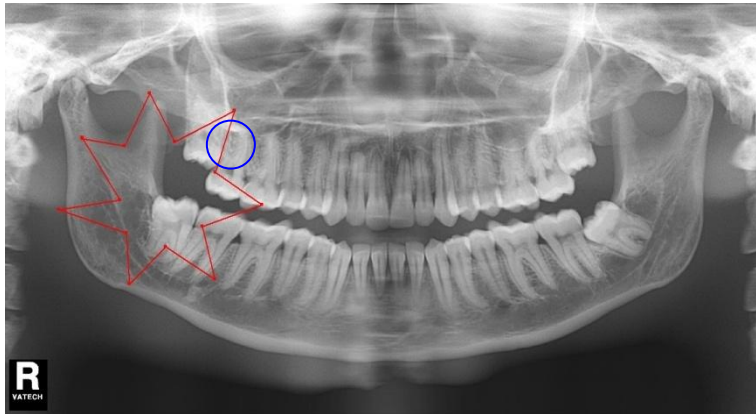
If n points are clicked between start and end points, $n + 1$ line segments are drawn.



Moving a Poly-Line

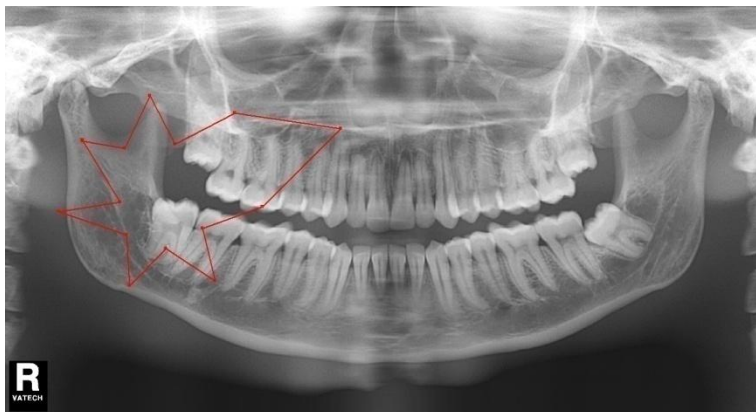
The poly-line drawn can be moved to a desired position. To move it, do follow the following steps.

- A. If a Poly-Line drawn on the image is clicked, using the **Select** button on the toolbar, all the vertexes transforms into a square shape.
- B. At this stage, by clicking and dragging the Poly-Line, you can move it to a desired location.



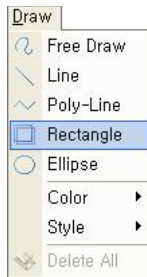
Modifying a Poly-Line

- A. Click the vertex of part you would like to modify.
- B. Click and drag the vertex to a desired position, and you will see that the shape of two line segments containing a common vertex changes, as shown below.

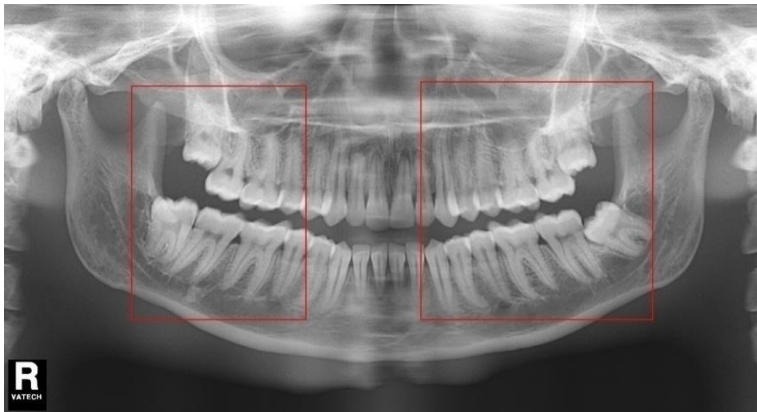


7.1.4 Rectangle

This allows the user to draw a rectangular (square) shape on the image.

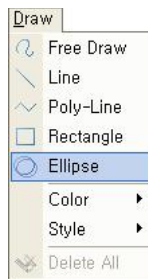


Click **Draw** → **Rectangle** on the menu bar at the top of the main screen, and then draw any rectangular shape on the image as you would like.



7.1.5 Ellipse

This allows the user to draw an elliptical shape on the image.



Click on **Draw** → **Ellipse**, then draw an elliptical shape on the image as you would like.



7.1.6 Color

You can change the color of the line drawn on the image.



To change line colors:

- A. Click **Draw** → **Color**, then you can choose colors from Black, White, Gray, Green, Blue, Yellow, and Red.
- B. Click **User** for the different colors other than the above-mentioned ones. Then the full color palette will appear.

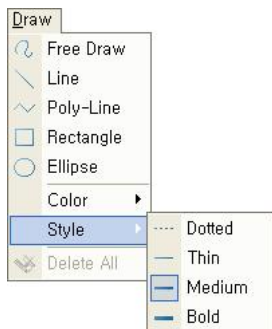


In the color palette, you can click **Add to Custom Colors** to open up an expanded color window.



7.1.7 Style

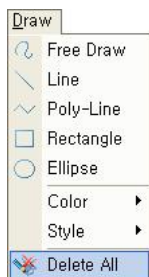
This enables the user to change the types of lines used when drawing on the image using the Drawing Tool (Free Draw, Line, Poly-Line, Rectangle, and Ellipse).



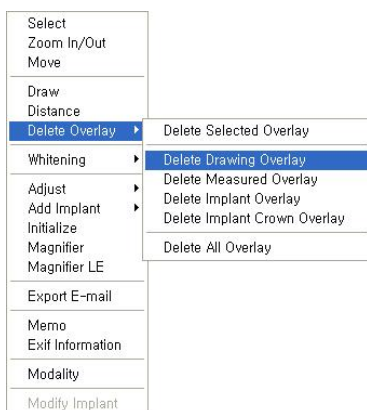
If you click **Draw** → **Style**, you can choose Dotted, Thin, Medium, or Bold.

7.1.8 Delete

This is to be used for deleting all drawings on the image using the Drawing Tool (Free Draw, Line, Poly-Line, Rectangle, and Ellipse).

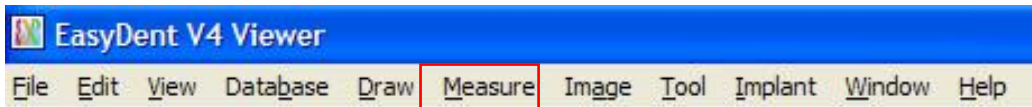


If you click **Draw** → **Delete All**, all free draws, lines, poly-lines, rectangle, and ellipse drawn on the image will be deleted. Or, if you right-click the mouse button on the image, a context menu will pop-up and you can choose **Delete Overlay** → **Delete Drawing Overlay** to remove the drawings.



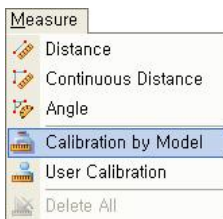
7.2 Measuring Tools

These are tools that help measure the length and angles of parts of the patient's image. **Calibration by Model** and **User Calibration** functions are used to correct the measurement results.



7.2.1 Calibration by Model

Provided herein is an explanation on the method of calibration according to the capturing equipment.




When you click **Measure** → **Calibration by Model**, you can see the list of registered equipment models wherein calibration values for Panoramic / Cephalometric equipments and Intraoral Sensors can be adjusted.



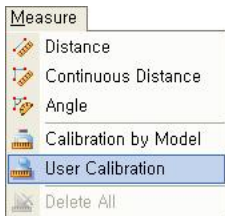
The fields from List 1 to 5 of both the **Panoramic / Cephalometric** and **Sensor** equipments list are similar to the bookmark function of Internet Explorer. For example, when you click **Calibration by Model** after registering the **PaX-Primo Pano** in List 1 and the **CT Pano** in List 2, the registered equipments listed in List 1 and 2 are automatically displayed on the **Calibration by Model** window.

The **Calibration by Model** enables automatic input of Calibration values. Thus, if you want to calibrate the image, just click the **Apply** button of the appropriate list.

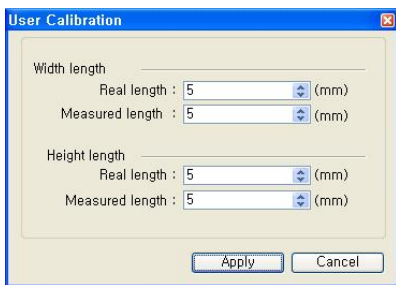
 NOTE	<p>Initially, all images are 'non-calibrated images' if no calibration has ever been applied. To perform measurement on the image, the image should first be calibrated. If you try to measure the image that is not calibrated yet, a dialog box requesting calibration will appear, as shown below.</p> <div data-bbox="549 869 893 1106" style="border: 1px solid black; padding: 5px;"><p>Calibration</p><p>This image isn't calibrated. Please select calibration tool you prefer.</p><table border="0"><tr><td style="border: 1px solid gray; padding: 2px;">1. Calibration by Model</td><td rowspan="2" style="border: 1px solid gray; padding: 2px; vertical-align: middle;">Cancel</td></tr><tr><td style="border: 1px solid gray; padding: 2px;">2. User Calibration</td></tr></table></div>	1. Calibration by Model	Cancel	2. User Calibration
1. Calibration by Model	Cancel			
2. User Calibration				

7.2.2 User Calibration

This calibration method enables the user to correct the length by direct input of calibration values manually.



By clicking **Measure** → **User Calibration**, a user calibration pop-up window will appear, where the user can directly enter these values.




	<p>In order to use User Calibration, the user has to have the actual size of the Phantom and the measured size when the image was acquired by the Phantom.</p>
---	---

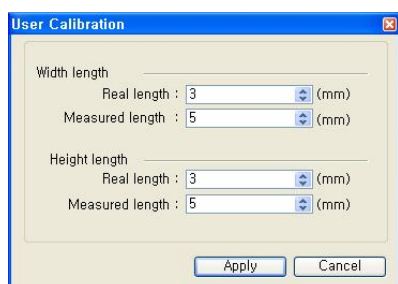
Image with Ball-Phantom

This is an image that was acquired with a Ball-Phantom in the patient's mouth.

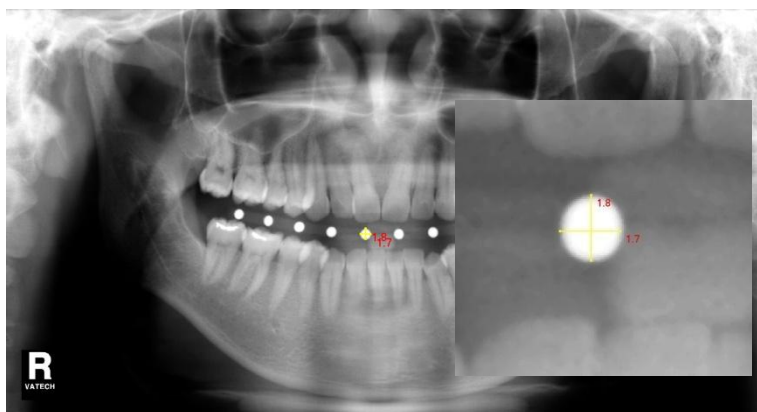


Example of the method to use User Calibration on an image with Ball-Phantom

- A. After acquiring an image using the Ball-Phantom, click **Measure** → **User Calibration** from the menu bar at the top of the main screen.
- B. In the User Calibration window, enter the actual size of the Ball-Phantom and click **Apply**. The typical size of Ball-Phantom is 3mm.

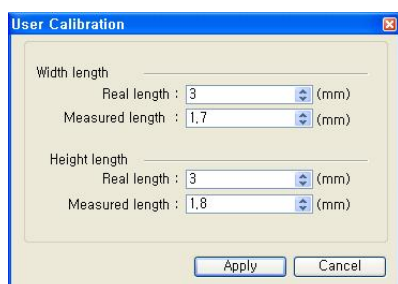


- C. On the image with the Ball-Phantom, measure the width and height using the **Distance (Refer to section 7.2.3 Distance)** tool.



The measured size of the ball's width is 1.7mm and the height is 1.8mm.

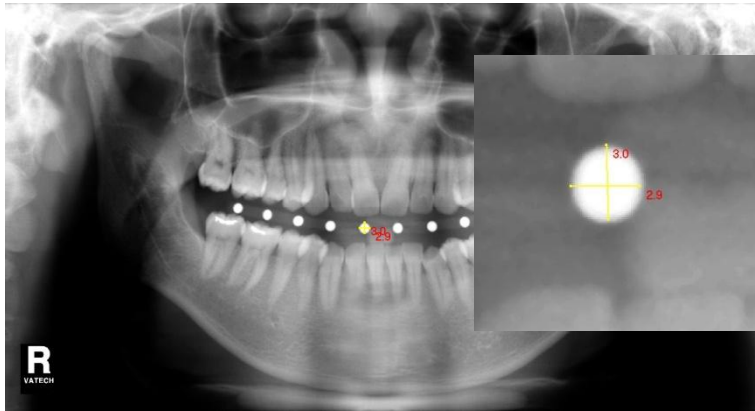
- D. Click **Measure** → **User Calibration** again. Enter the 1.7 and 1.8 in the measured lengths fields, respectively and then click **Apply**.



7 Image Processing

7.2 Measuring Tools

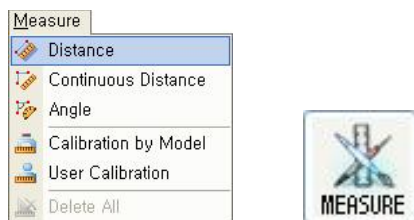
- E. You can see from the image below that the ball's width in the image has changed from 1.7 to 2.9, and the height from 1.8 to 3.0.



Once image is calibrated, calibration status doesn't be affected by restarting EasyDent. This means recalibration is not required.

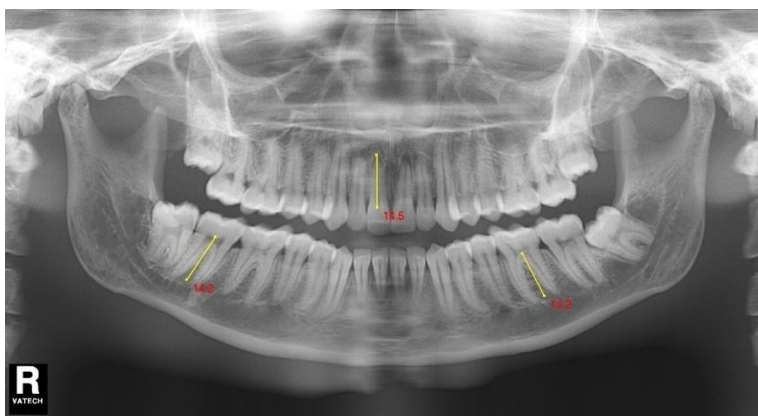
7.2.3 Distance

This tool allows you to measure the distance between two points on the image.



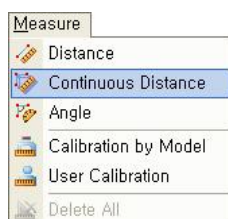
You may either click **Measure** → **Distance** on the menu bar, or the **MEASURE** icon on the toolbar.

To measure, click the mouse once at the start point and once more at the end point of the distance.



7.2.4 Continuous Distance

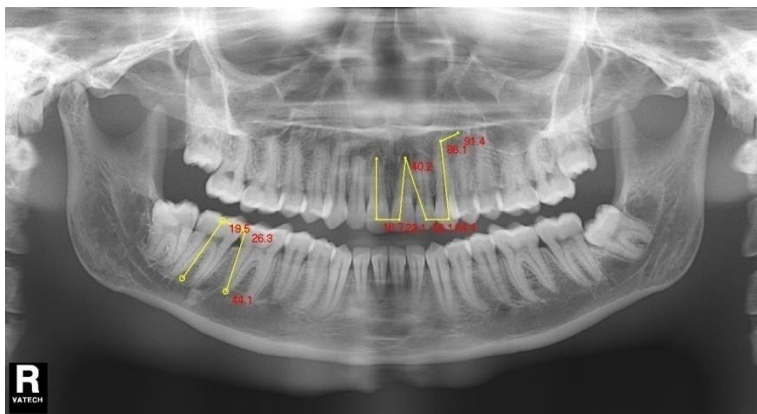
This tool allows you to measure the distance between several points, continuously.



- A. Click **Measure** → **Continuous Distance**.
- B. Click once the mouse at the start point on the image followed by clicks at many consecutive points and finally, double-click at the end point to acquire the distance.

7 Image Processing

7.2 Measuring Tools



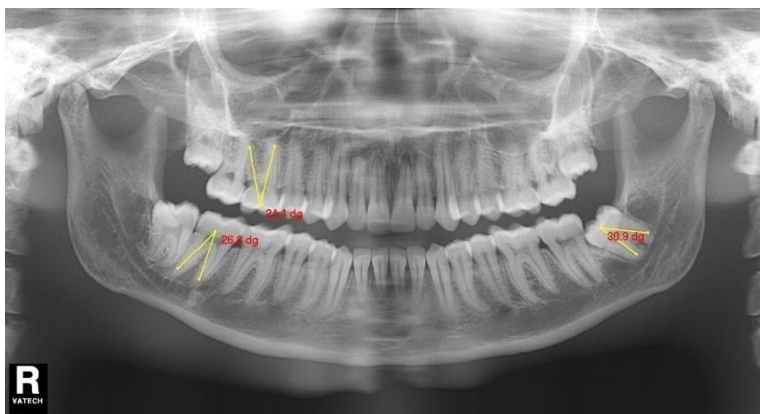
7.2.5 Angle

This tool allows you to measure an angle between two lines on the image.



Click **Measure** → **Angle**

You may measure any angle on any part of the image. Click on three points on the image to create an angle.

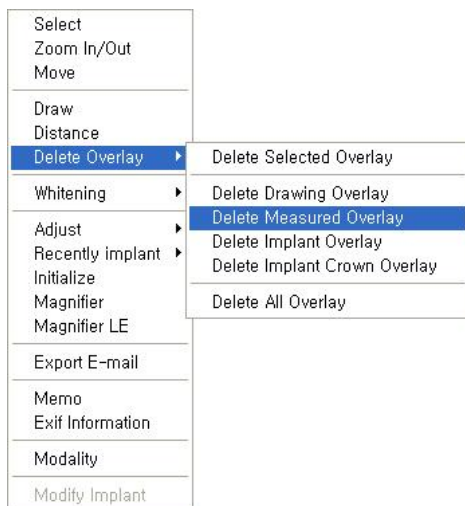


7.2.6 Delete All

This tool is used to delete all measurements on the current image that were created using the Measuring Tools (Distance, Continuous Distance, and Angle).

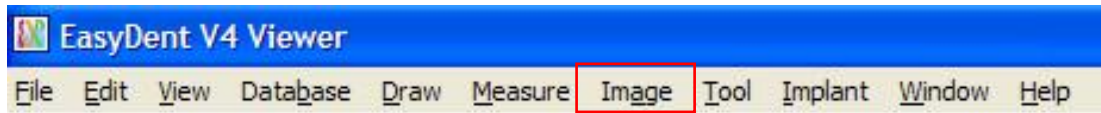


If you click on **Measure** → **Delete All**, all distances and angles added using the measuring tool will be deleted. If you right click on the image, a context menu will appear. From here, you can click on **Delete Overlay** → **Delete Measured Overlay**.



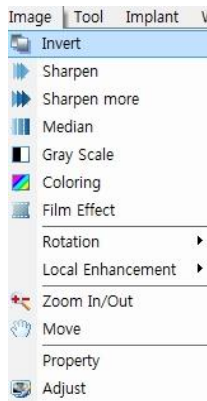
7.3 Imaging Tools

These tools allow you to modify images in different ways (invert, film effects, coloring, etc) to analyze image and aid with the patient consultation.



7.3.1 Invert

By inverting the image, soft tissue such as the blood vessels and nerves that looked dark in the original image will appear in enhanced detail. Invert displays the opposite color of all the original colors of the image.



Click **Image** → **Invert** at the menu bar. You can see from the picture below that the image has been inverted.



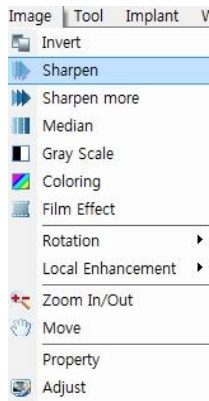
Original image



Inverted image

7.3.2 Sharpen

The Sharpen function increases the contrast of the pixels to enhance the clarity of the image.



Click **Image** → **Sharpen**. You can see from the image below that it has been sharpened.



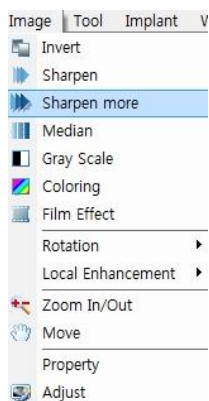
Original image



Sharpened image

7.3.3 Sharpen More

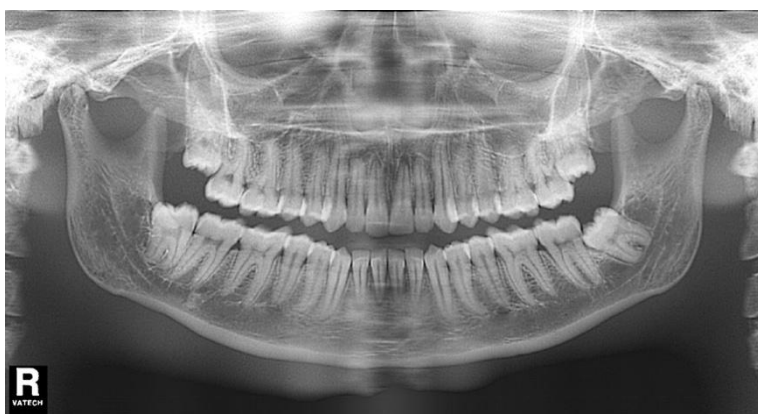
This tool simulates running the **Sharpen** function 2-3 times. If you click the **Sharpen more** button, you can see that it increases the contrast of pixels and enhances the clarity much more than the **Sharpen** function.



Click **Image** → **Sharpen more**. You can see that the clarity of the image has been enhanced much more.



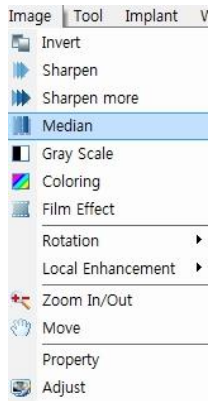
Original image



After the Sharpen more function applied

7.3.4 Median

This function is used to eliminate the noise in the image. It filters each pixel data in a way that each pixel takes the median of its surrounding pixels. Generally, using the median function will take a median RGB value for each pixel, which smudges the edges of the image.



Click **Image** → **Median** and you can see that the image has been changed and smudged, as shown below.



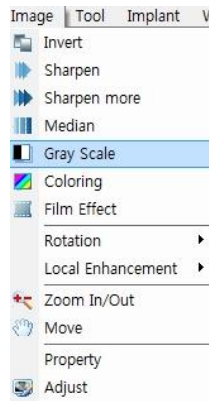
Before applying the median function



After applying the median function

7.3.5 Gray Scale

This shows the degree of brightness in step levels, from white to black.

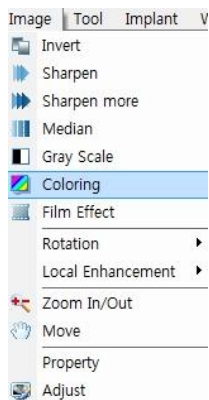


If you click **Image** → **Gray Scale**, you can see that the image will be turned into its Gray Scale, as shown below.

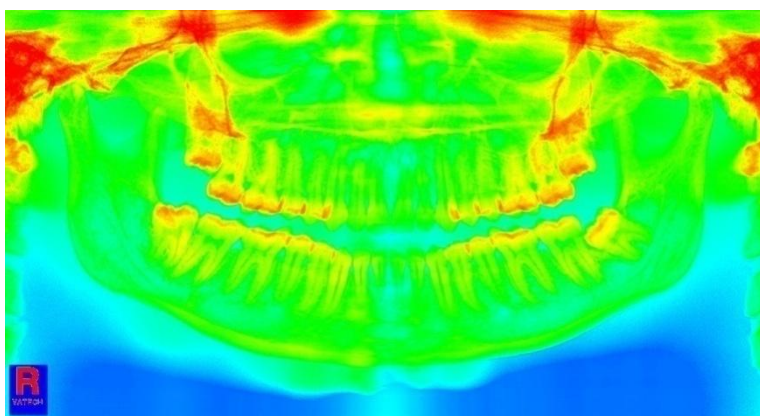


7.3.6 Coloring

This converts the black and white image into a colored one. Red signifies high density and blue signifies low density.

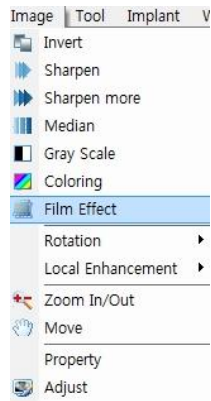


If you click **Image** → **Coloring**, you can see that the image changes to color, as shown in the image below.



7.3.7 Film Effect

This modifies the image so that it will have effect of the texture of the developed film.



If you click **Image** → **Film Effect**, you can see that the image will be altered into a film effect, as shown below.

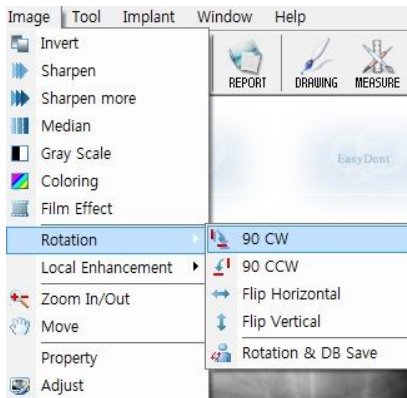


7.3.8 Rotation

This enables the user to rotate the image in four different angles.

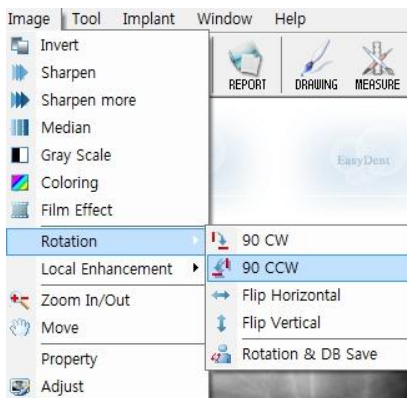
90 CW

This is for rotating the image 90 degrees, clockwise.



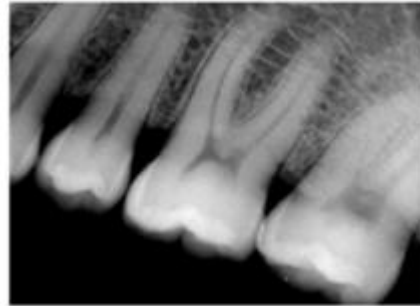
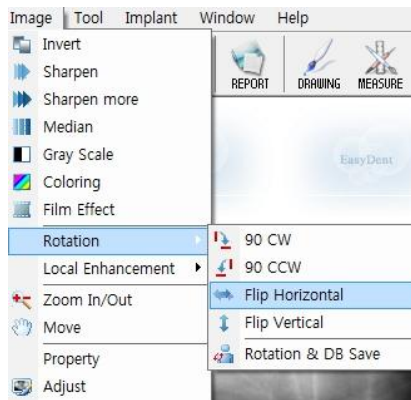
90 CCW

This is for rotating the image 90 degrees, counterclockwise.

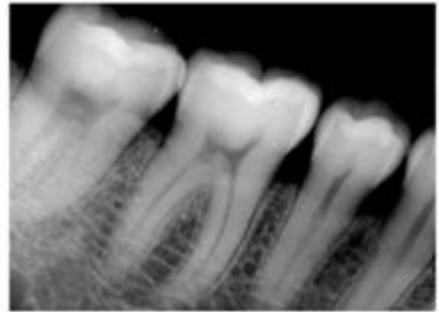


Flip Horizontal

This function is for flipping the image horizontally.

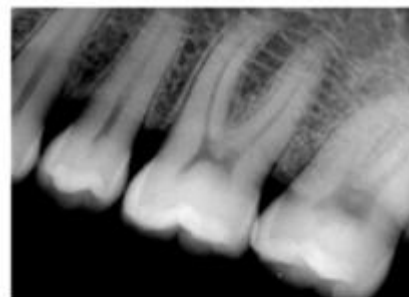
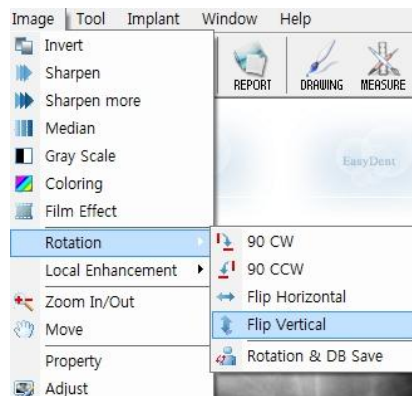


Flipped horizontally



Flip Vertical

This function is for flipping the image vertically.

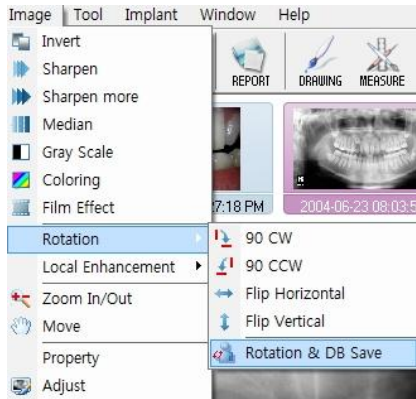


Flipped vertically

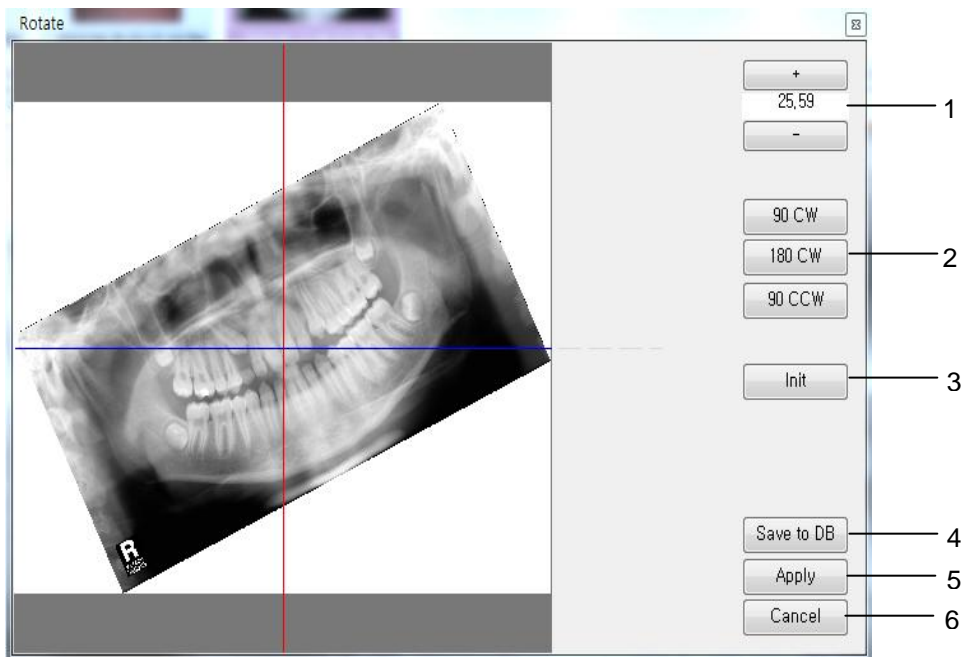


Rotation & DB Save

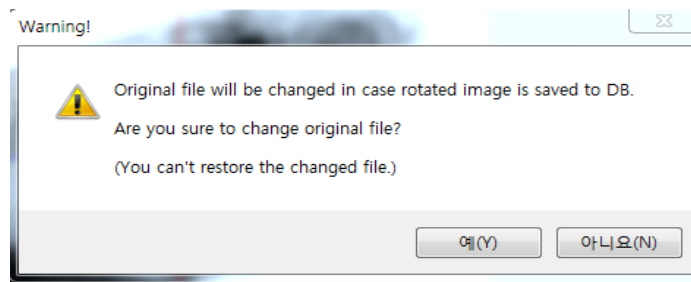
You may rotate the image to edit it. Select the image, and if you click **Image** → **Rotation** → **Rotation & DB Save**, a rotate window will appear as below.



1. Shows the angle of rotation of the image.

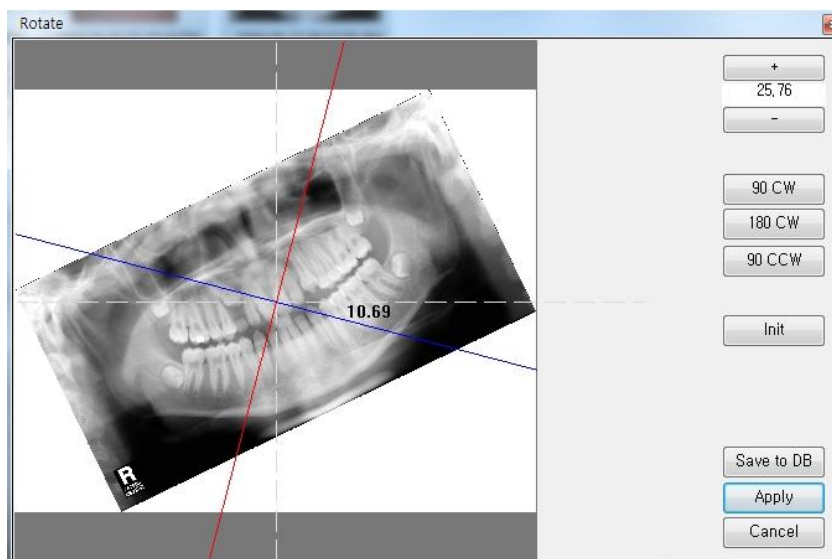


2. The same as described above.
3. **Init:** Resets the rotated image to its initial state.
4. **Save to DB:** Saves Rotated image to DB. A warning window pop-up when you try to save a changed image.



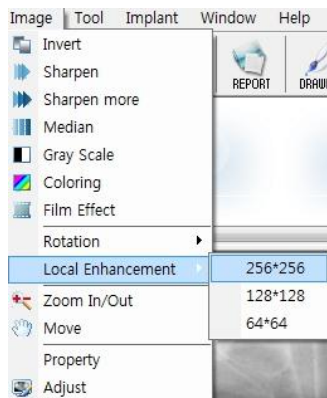
5. **Apply:** Applies the rotated image.
6. **Cancel:** Cancels the Edit Image process.

You may click and rotate the axis to rotate the image as many times as you want.



Local Enhancement

This function is used to highlight a specific area of an image and make it easier to view.



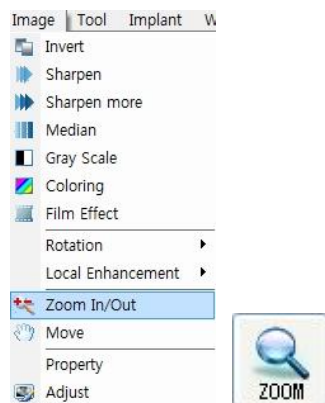
- A. Click **Image** → **Local Enhancement**.
- B. Select the part of the image that you wish to enhance. If you click your mouse on that area an enhanced view in a rectangular shape will appear.
- C. Put your pointer on the rectangle and drag it to the area you would like to highlight.




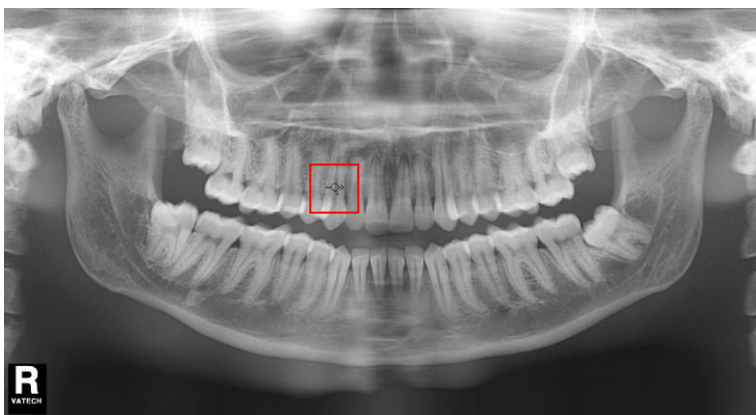
<Example of a 256X256 local enhancement>

7.3.9 Zoom In/Out

This tool allows you to zoom an image in or out.

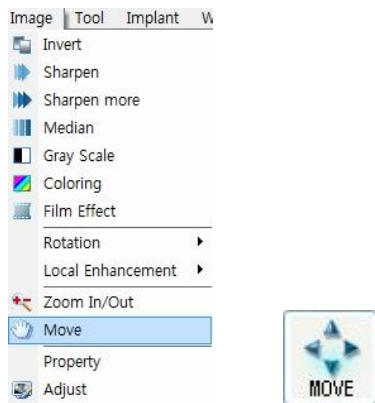



Click **Image** → **Zoom In/Out** at the menu bar or click the **ZOOM** icon on the toolbar and the pointer will turn into . Dragging the mouse in the left direction will zoom out the image, while dragging it to the right will zoom in the image.

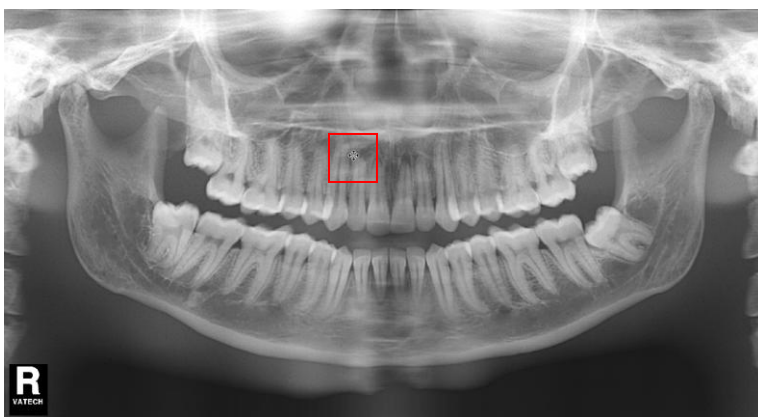


7.3.10 Move

This function allows the user to move the entire image.

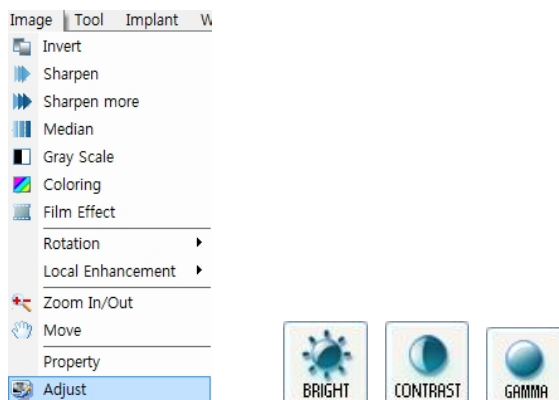


Click **Image** → **Move** at the menu bar or click the **MOVE** icon on the toolbar, and the pointer on the image will look like this: .

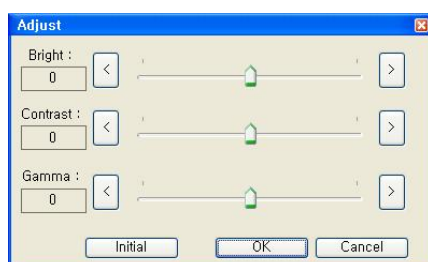


7.3.11 Adjust


With this function, the user can adjust the brightness, contrast, and gamma values for an image.



- A. Click **Image** → **Adjust**.
- B. As shown in the picture below; an Adjust pop-up window appears and you can use the arrow tabs pointing to either sides to change the Brightness, Contrast, and Gamma values on a five-level scale interval.

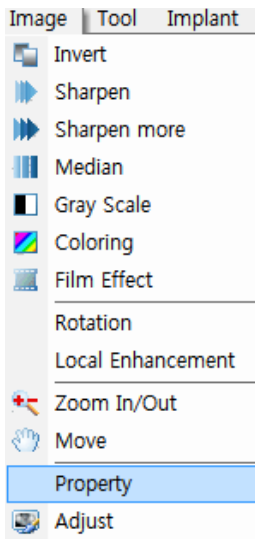


You can also click the **Bright**, **Contrast**, and **Gamma** icons on the toolbar to adjust the values. Dragging the mouse towards the right side of the image will increase the value, while dragging it to the left will decrease the value.

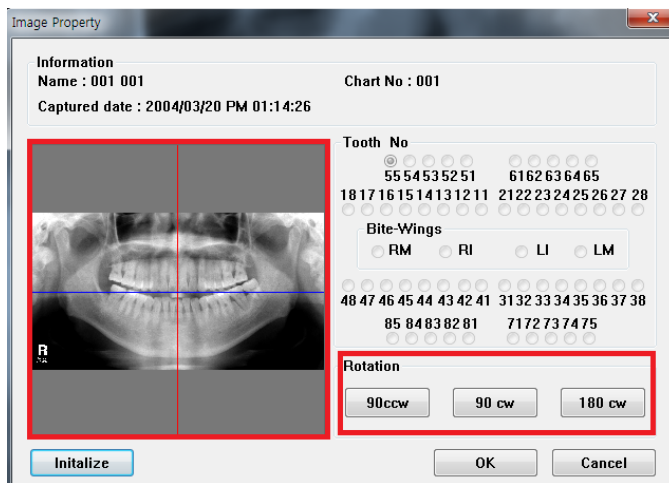
 NOTE	<ol style="list-style-type: none"> 1. Bright: The degree of the brightness. Shows the brightness of colors. 2. Contrast: The phenomenon where two neighboring colors stand out as they are affected by each other. Usually, Contrast increases as the difference in brightness and saturation of a color or chroma increases. 3. Gamma: The degree of brightness of the monitor.
---	--

7.3.12 Property

With this function, the user can rotate the image and modify the tooth number.

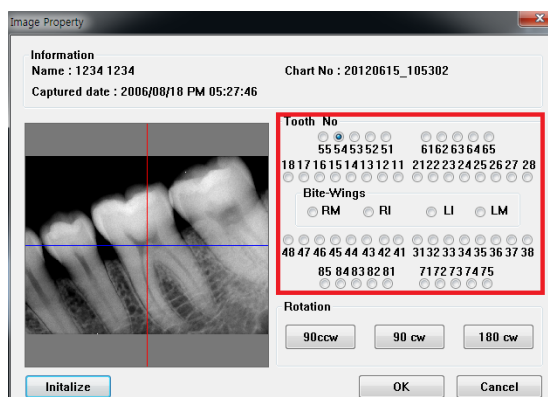


A. Click **Image** → Property



B. You can rotate the image by clicking the buttons which located in red bordered box. You also can rotate the image by press and hold down the left mouse button while you drag the pointer up or down.

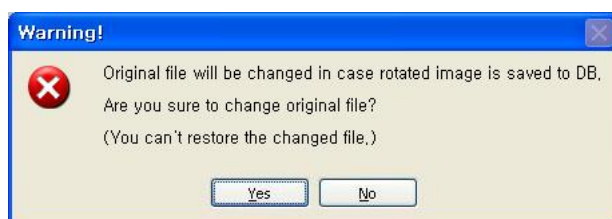
C. You can change the tooth number by clicking the numbers which in the red border.



Initailize: Resets the rotated image to its initial state.

OK: Saves Rotated image to DB. A warning window pop-up when you try to save a changed image.

Cancel: Cancels the Edit Image process.

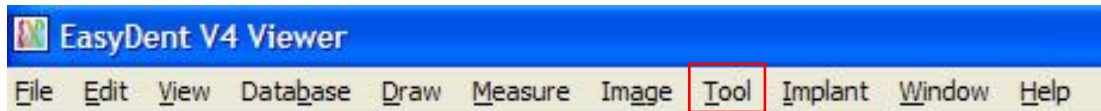


If you click the Yes button, a window saying that the altered image was saved.



8 Special Tools


This chapter is about the various special functions within EasyDent, such as Magnifier, Magnifier LE, Slide, Profile, Dual Monitor, Whitening, Snap Shot, and Crop Image.



8.1 Magnifier

This tool is used to magnify a specific area of an image.




Click **Tool** → **Magnifier** at the menu bar on the main screen. Then the pointer will turn into .

Click the mouse on the area that you want to magnify, and that part of the image will be magnified.

If you drag the mouse slowly, you can see that the area surrounding the mouse cursor will be magnified along with the movement of the mouse.




If you click once more after the image is magnified, you can see that the point will be converted back to .

8.2 Magnifier LE

The Magnifier LE (Local Enhancement) is a combination of functions of the Magnifier and the Local Enhancement tools. This function magnifies the specific area and in addition, performs a local enhancement of that area.




Click **Tool** → **Magnifier LE** on the menu bar, or click the **MAGNIFIER** icon on the toolbar.

You will see that the mouse pointer will be changed into  on the image.

If you click on the part that you want to magnify, that part will be magnified, as shown below. If you drag the mouse slowly, you will see that the parts surrounding the mouse cursor magnifies.



If you click once more after the image is magnified, you will see that the point will be converted back to .

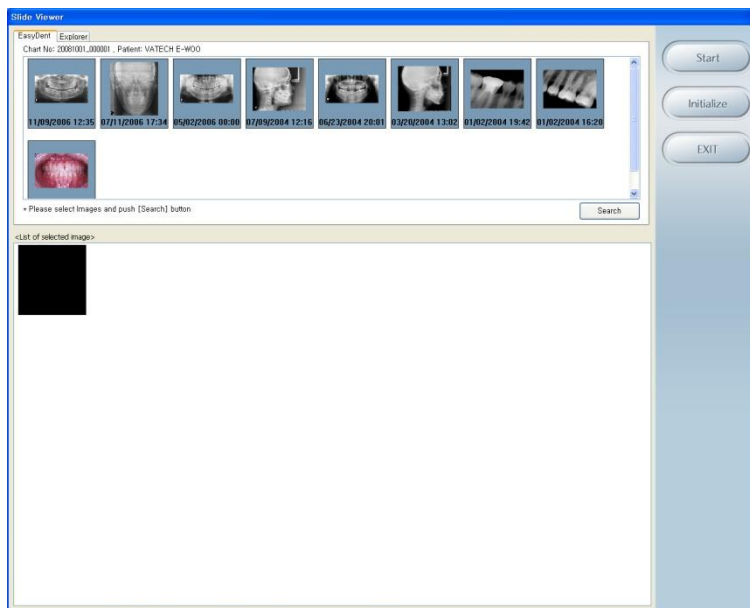
8.3 Slide

This shows the patient's images in the form of a presentation slide.

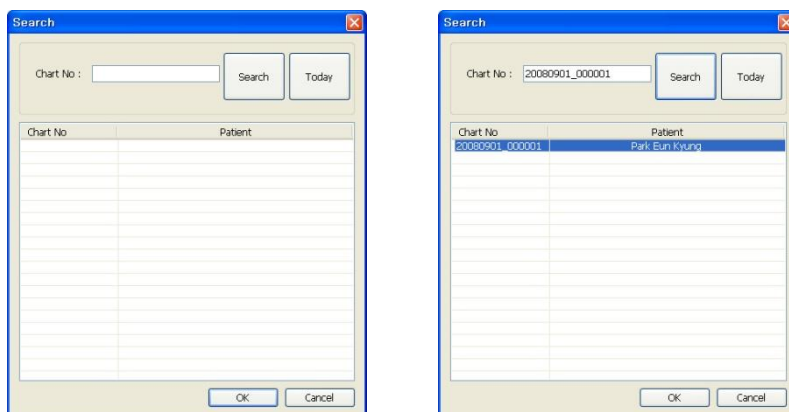


8.3.1 EasyDent's Image Slide

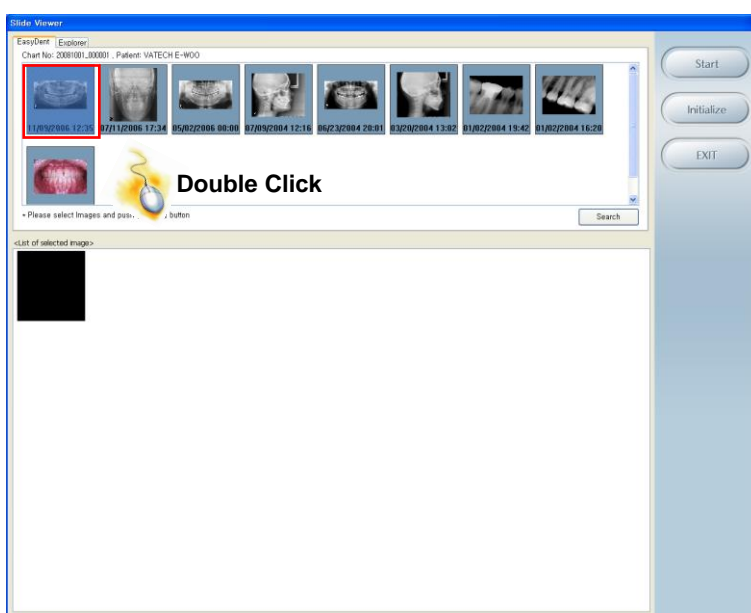
At the Patient List, choose a patient whose images you want to view. Click **Tool** → **Slide** on the menu bar and a Slide Viewer window will appear. You can view all images of the patient on file.



If you want to see the slide of another patient, you can search for that patient through the following steps: Click the **Search** button → **Search** dialogue box pops-up → Insert the **Chart No.** → Click the **Search** button. Click on the patient name with **Chart No.** and press **OK**.

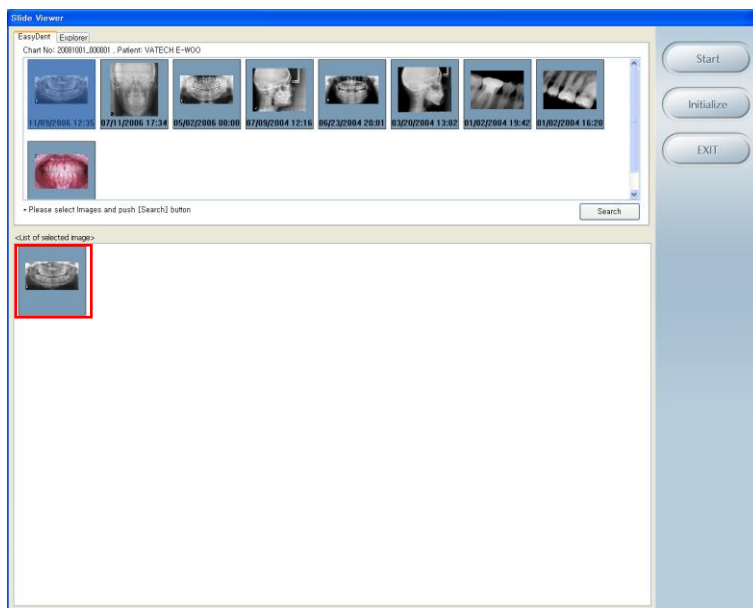


If you click on the image you want to see as a slide, you can see that the color of the image changes, as shown below. Double-click on the image.




8 Special Tools

8.3 Slide



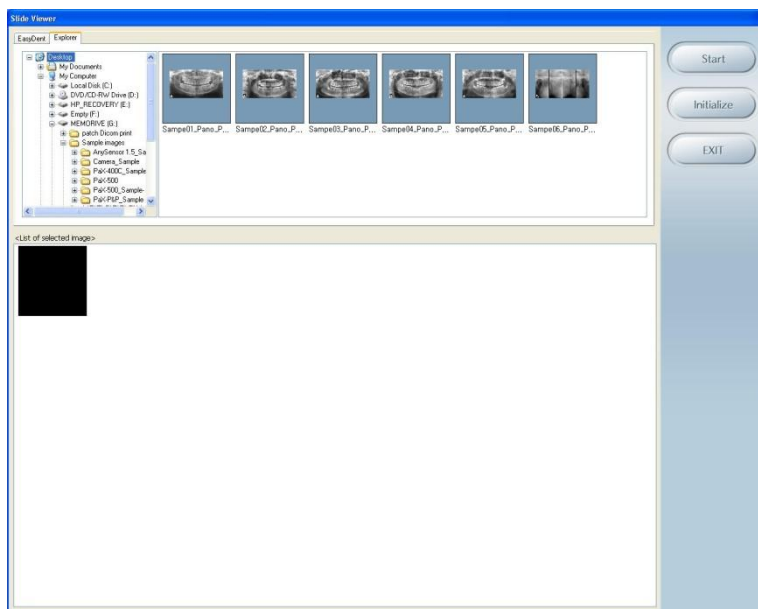
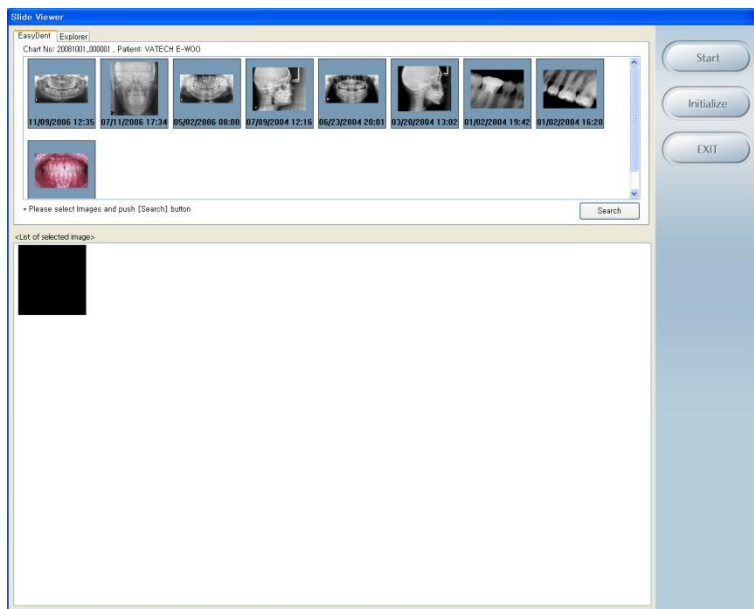
As shown in the illustration above, move all the images you want to see in a slide to the **List of selected Image**. By pressing the **Start** button, a window will appear to show the images from the **List of selected Image** in a slide.



Click on the image to see the next slide. When the slides are all viewed, a short message will appear. Press  to exit the slide.

8.3.2 External Image Slide

Click **Tool** → **Slide** at the menu bar on the main screen, and the **Slide Viewer** will appear. Click the **Explorer** tab and find the location of the image to be imported.




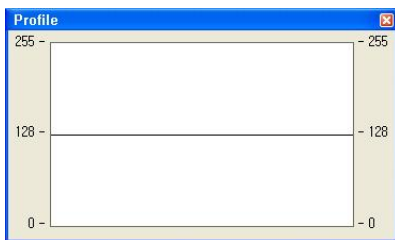
The method of viewing the slides is the same as in procedure 8.3.1.

8.4 Profile

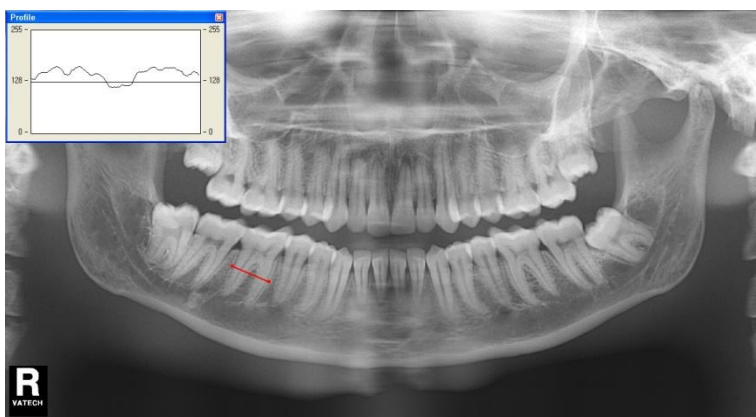
This is a useful tool for measuring the density of teeth before an implant placement.



Click **Tool** → **Profile** and the mouse pointer will turn into  , and a **Profile** pop-up window will appear.



Select an area where you want to get a density Profile. Click on the initial point, drag it on to the end point of that area you want, and then click again to show the profile window that shows the density of the selected area.



8.5 Dual Monitor

This function becomes available if a dual monitor setup is recognized in the operating system. Dual monitors can be utilized to view the images across two screens.



Click on the following: **Help** → **Configuration** → **Default**. Then, click **Use** on the Dual Monitor column and you will be able to see the image display on the second monitor.

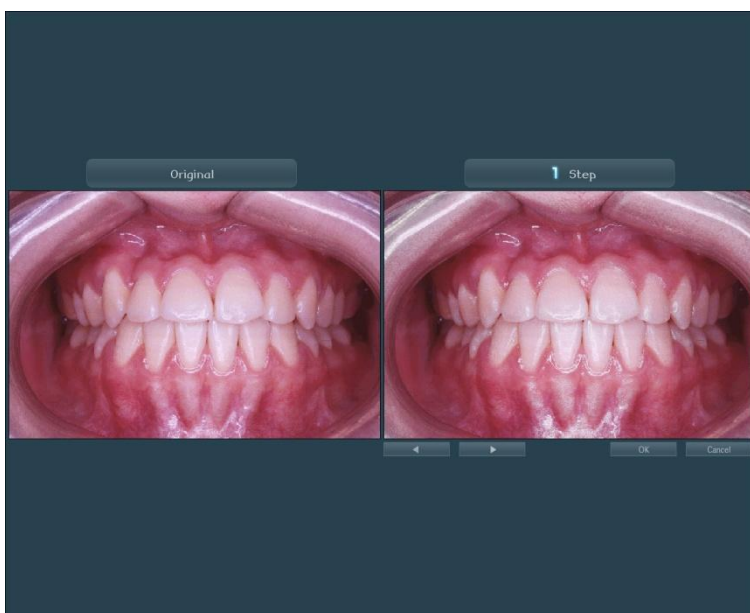
8.6 Whitening

You can use this function on an image that was taken by an intraoral camera. It can show the results of tooth whitening to the patient beforehand.



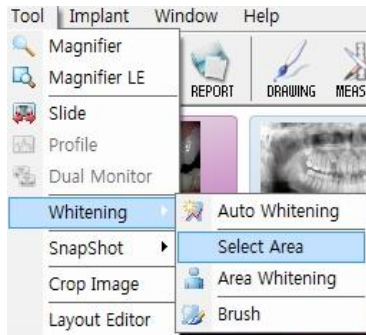
8.6.1 Auto Whitening

Click **Tool** → **Whitening** → **Auto Whitening** at the menu bar to open up a presentation mode that will simulate the whitening process. By clicking on the arrow, you will see the teeth being whitened in up to 3 steps.



8.6.2 Select Area

This tool allows you to choose the area you would like to simulate whitening.



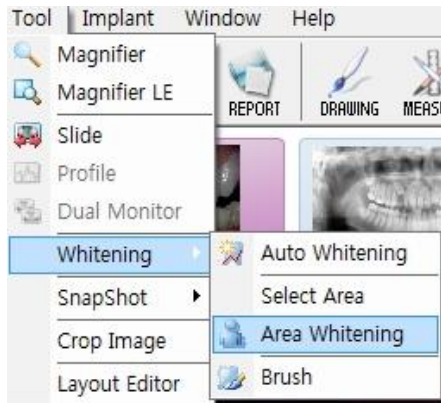
- A. Click **Tool** → **Whitening** → **Select Area**.
- B. Using the Poly-Line tool (Refer to **7.1.3 Poly-Line**), choose the area you want to be whitened.




- C. If you double-click at the last point, automatic area whitening will be run.

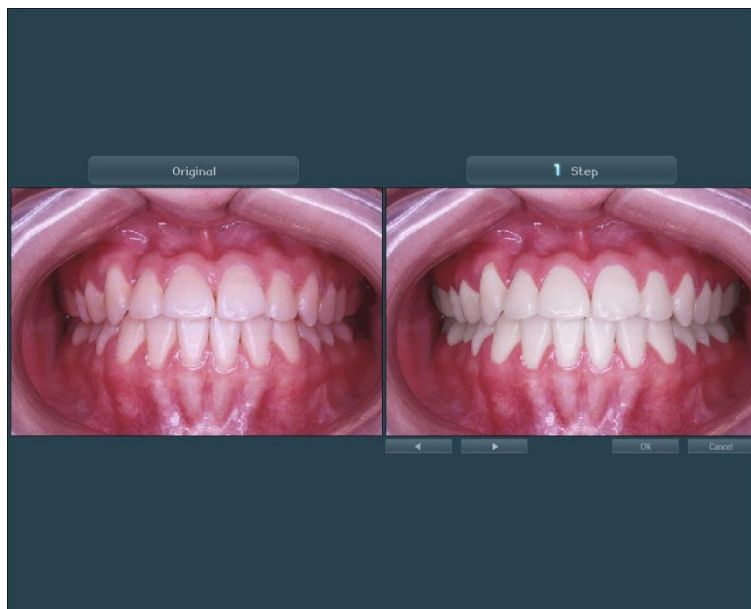
8.6.3 Area Whitening

Using this tool, you can apply whitening to a specific area of your interest.



A. Click **Tool** → **Whitening** → **Area Whitening**.

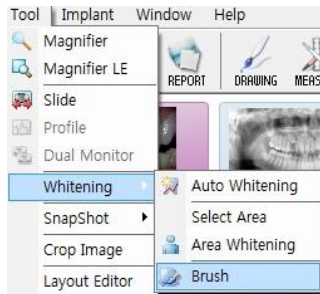
 NOTE	<p>After selecting the area to be whitened using 'Select Area', you may use the 'Area Whitening' function.</p>
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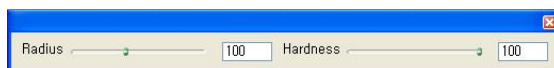
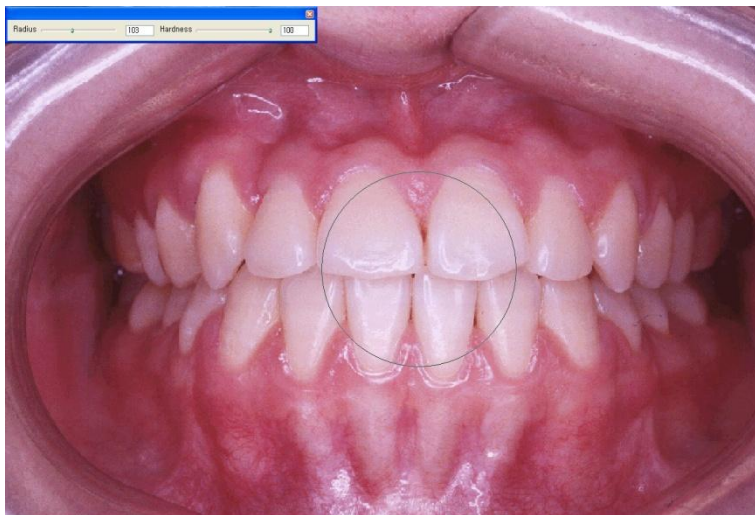
B. By clicking the arrow pointing left or right, you can whiten the selected area in 3 steps or levels.

8.6.4 Brush

Using the circle, the user can execute whitening directly.



- A. If you click **Tool** → **Whitening** → **Brush**, the mouse pointer changes into the shape of a circle.

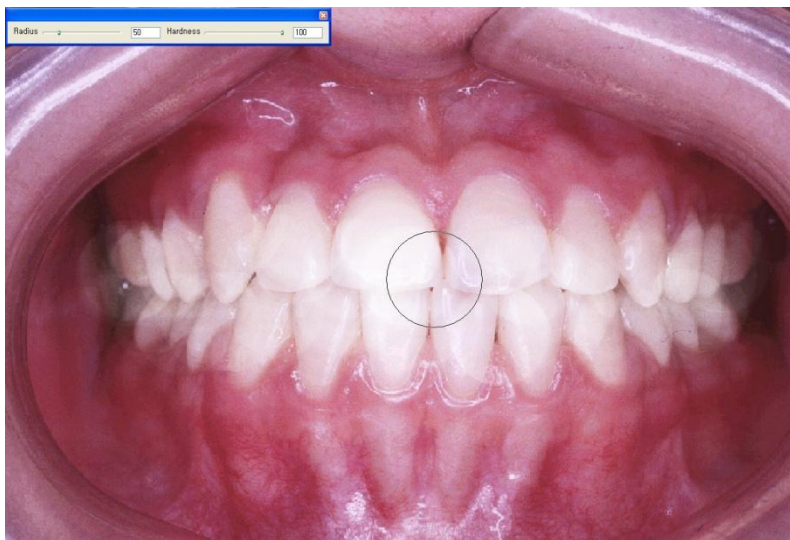


- B. Radius refers to the size of the circle.
- C. Hardness refers to the strength of Whitening.

8 Special Tools

8.6 Whitening

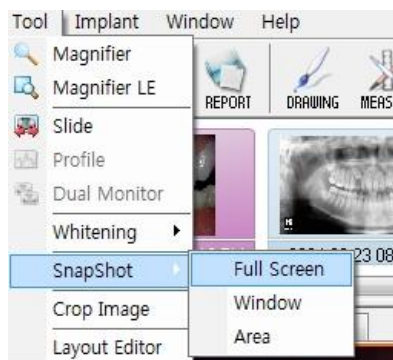
- D. Once you have adjusted the size of the circle and the strength of the whitening, you can click on the circle and drag it across areas that you want to be whitened.



Please be aware that double-clicking the mouse will bring you back to the main screen.

8.7 Snapshot

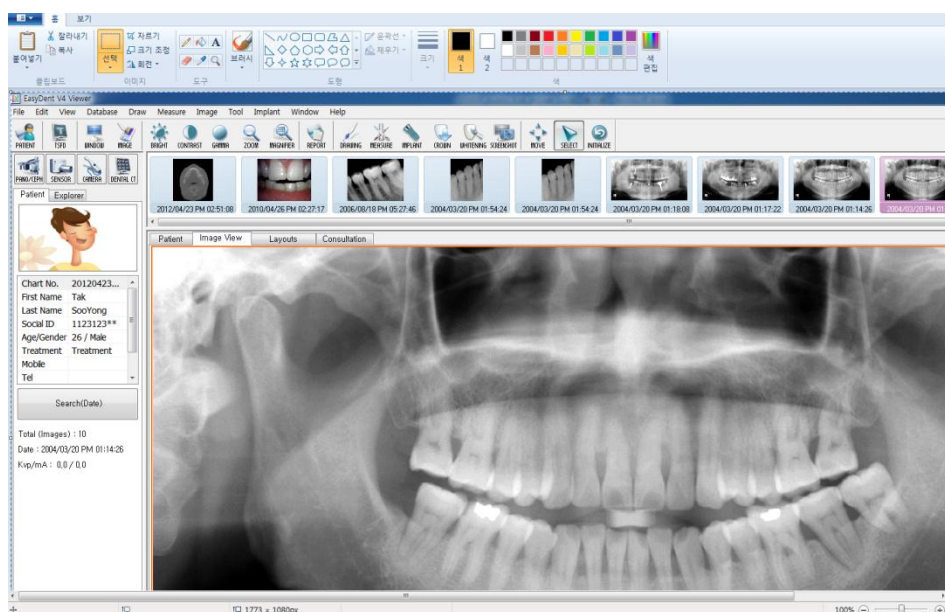
You can capture an image of the screen of EasyDent in 3 forms: Full Screen, Window, and Area. These snapshots can be pasted (CTRL+V) into programs such as **Paint** or **Photoshop**. If needed, you can edit or save a captured image.



8.7.1 Full Screen

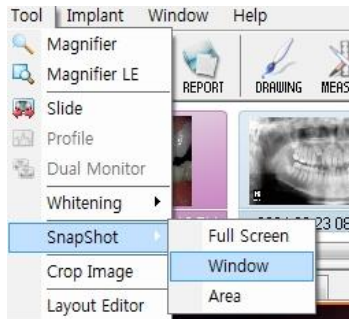
This captures the whole screen of EasyDent.


- A. Click **Tool** → **SnapShot** → **Full Screen**.
- B. Click on any area of the EasyDent screen.
- C. Open the **Paint** and execute CTRL+V (paste) and you will be able to see that the whole screen of EasyDent has been captured.




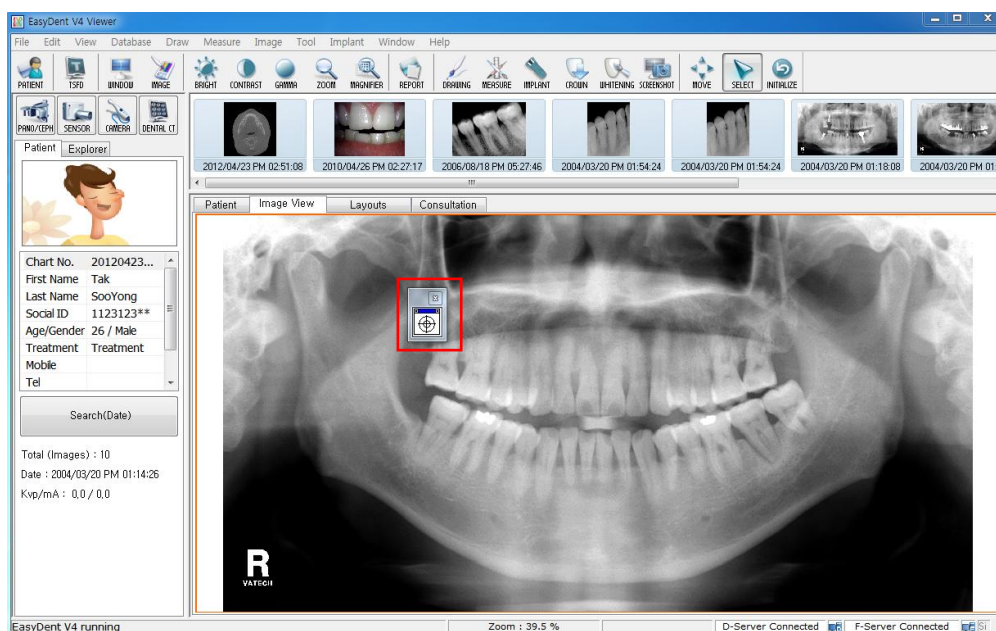
8.7.2 Window

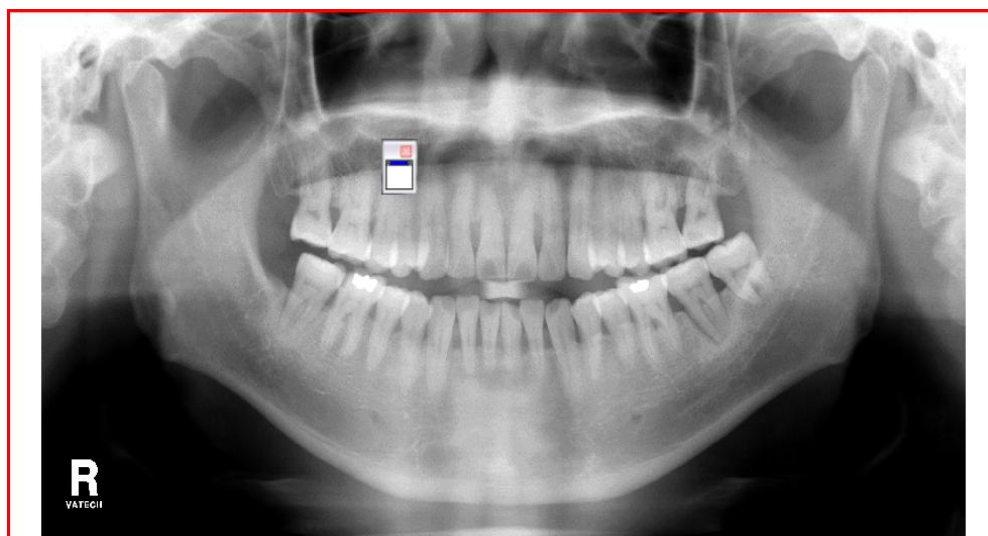
This captures a specific area on the EasyDent screen.



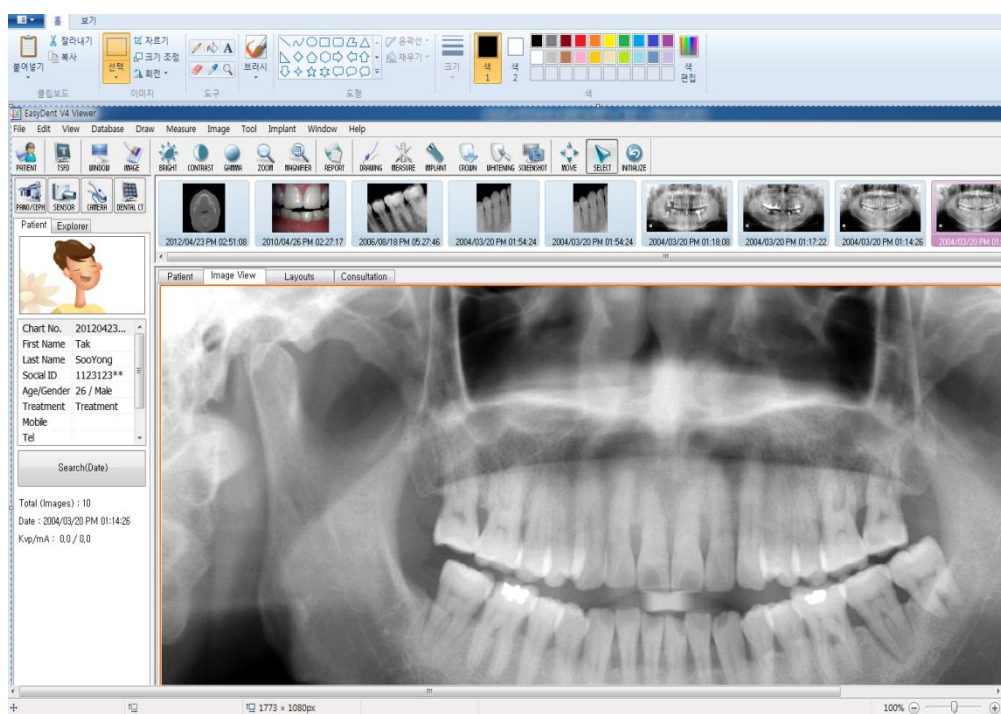
- A. Click **Tool** → **SnapShot** → **Window** accordingly, then a target mark () will appear.
- B. If you click and drag the target mark to any window of the EasyDent screen, a red frame image to be captured will be created.
- C. If you release the mouse button at this point, the selected area (window) will be captured and saved to the C:\Easydent4\EdpV4\SnapShot.

 <p>NOTE</p>	<p>The SnapShot folder is automatically created at C:\Easydent4\EdpV4 as you installed the Easydent4 program.</p>
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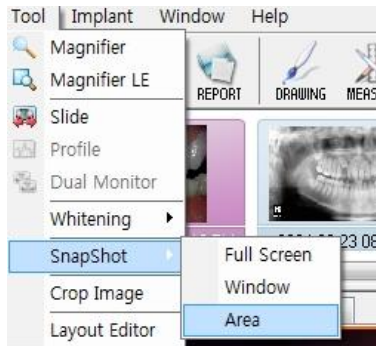


D. Open the **Paint** and execute CTRL+V (paste).

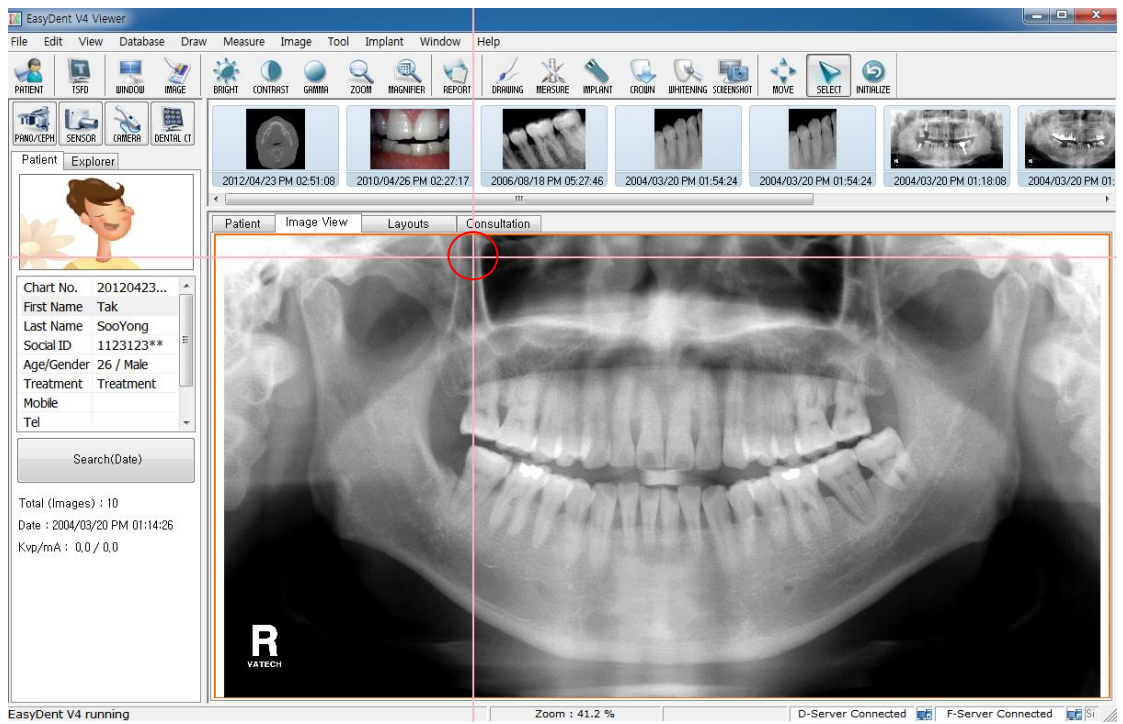


8.7.3 Area

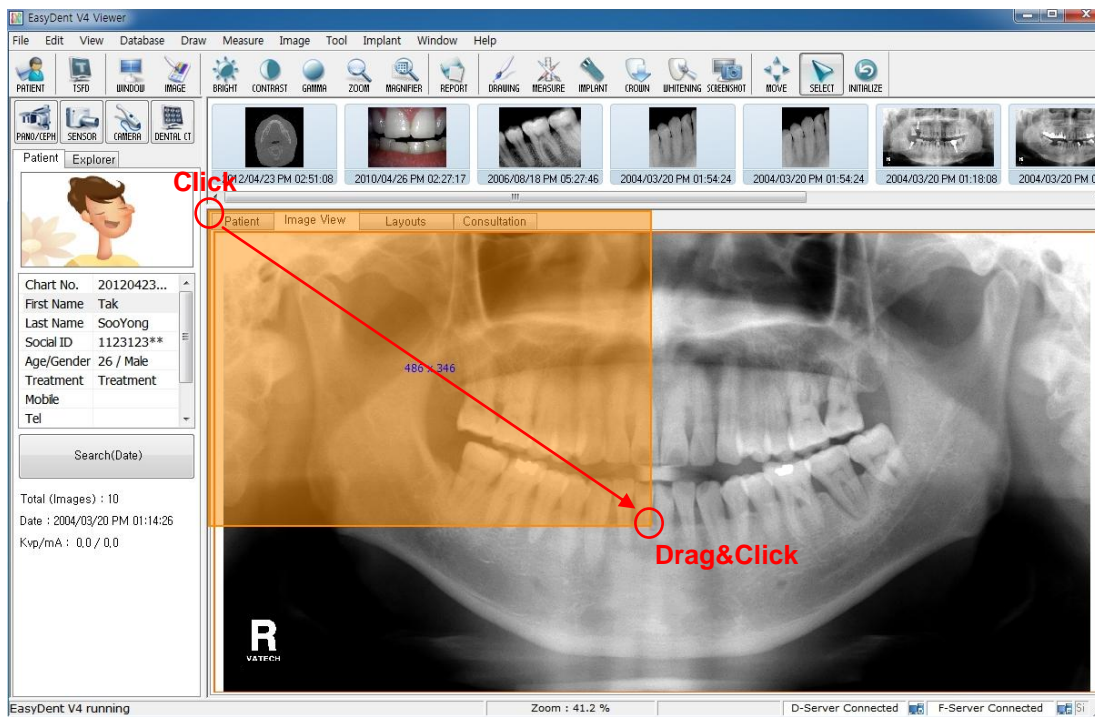
This function enables you to crop and capture the area that you want on EasyDent.



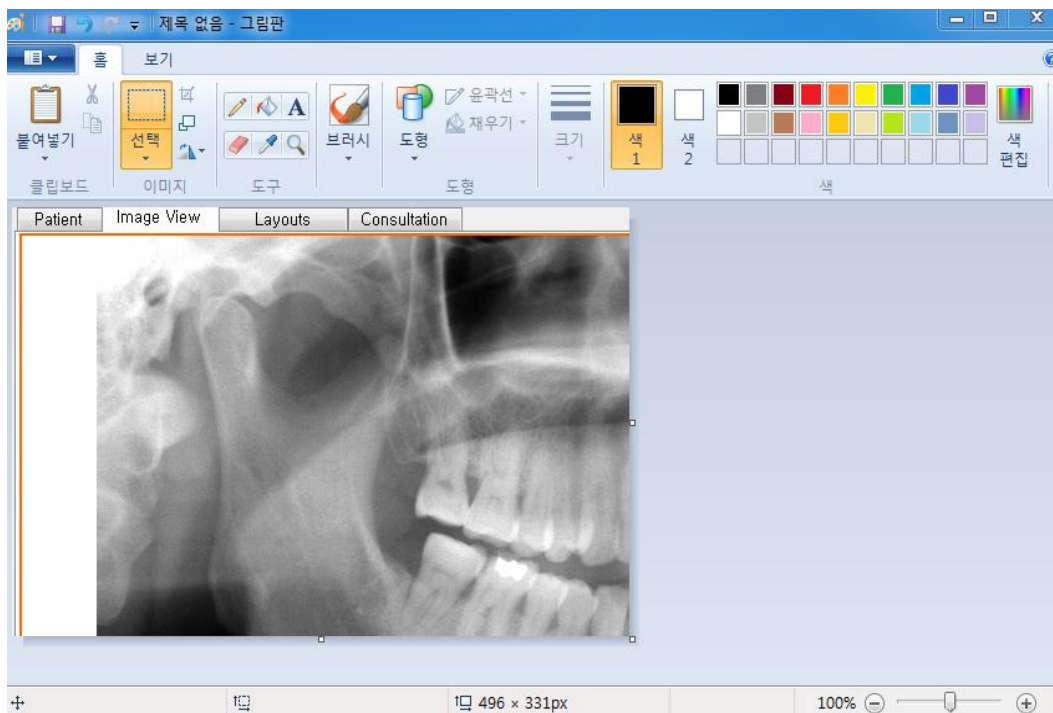
- A. Click **Tool** → **SnapShot** → **Area**, and a cross-shaped intersecting lines will appear, as shown below.



- B. Position the center of the cross-shaped line on the area you want, then click and drag it to create a rectangular area for you to capture, then click once more.

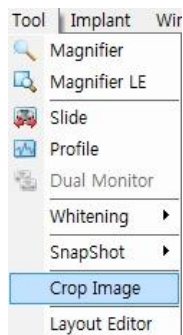


- C. Open the **Paint** and execute CTRL+V (paste).

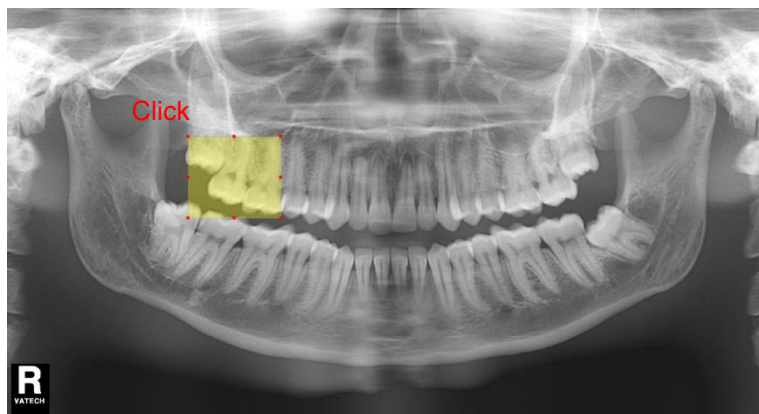


8.8 Crop Image

A Panorama image can be cropped and used as an intraoral sensor image.



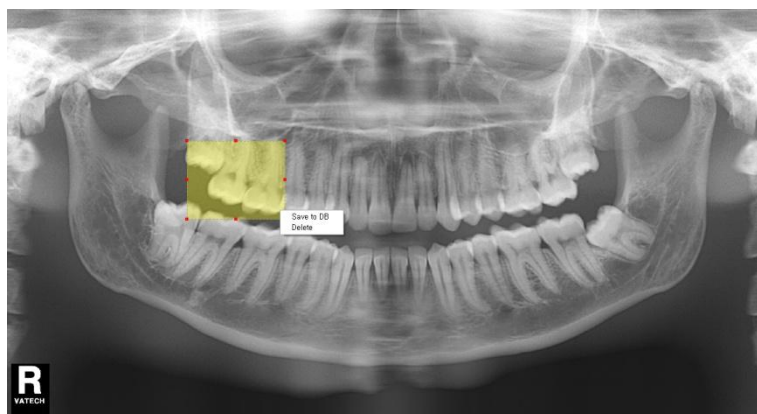
- A. Click **Tool** → **Crop Image** on the menu bar.
- B. Click once at the position on the image you want, and then drag the pointer to a position where you like to place it, and click. A yellow rectangle will appear with 8 red dots. The size of this rectangle can be adjusted.



- C. If you right-click the mouse inside the yellow rectangle, a context menu asking whether to **Save to DB** or **Delete** will appear.

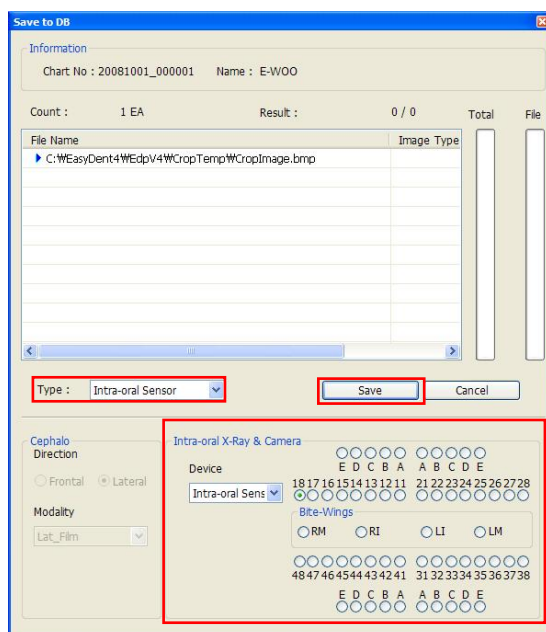
Save to DB: It allows the selected image to be saved like the image of an intraoral sensor.

Delete: You can delete the selected region.

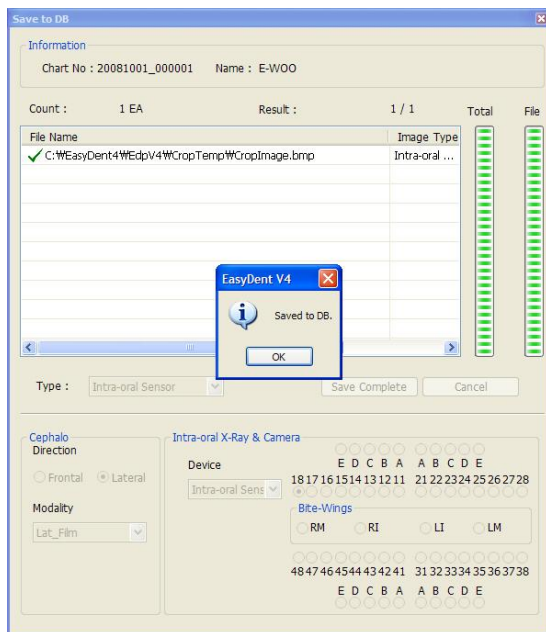


- D. Click **Save to DB** button, and a **Save to DB** window will appear.

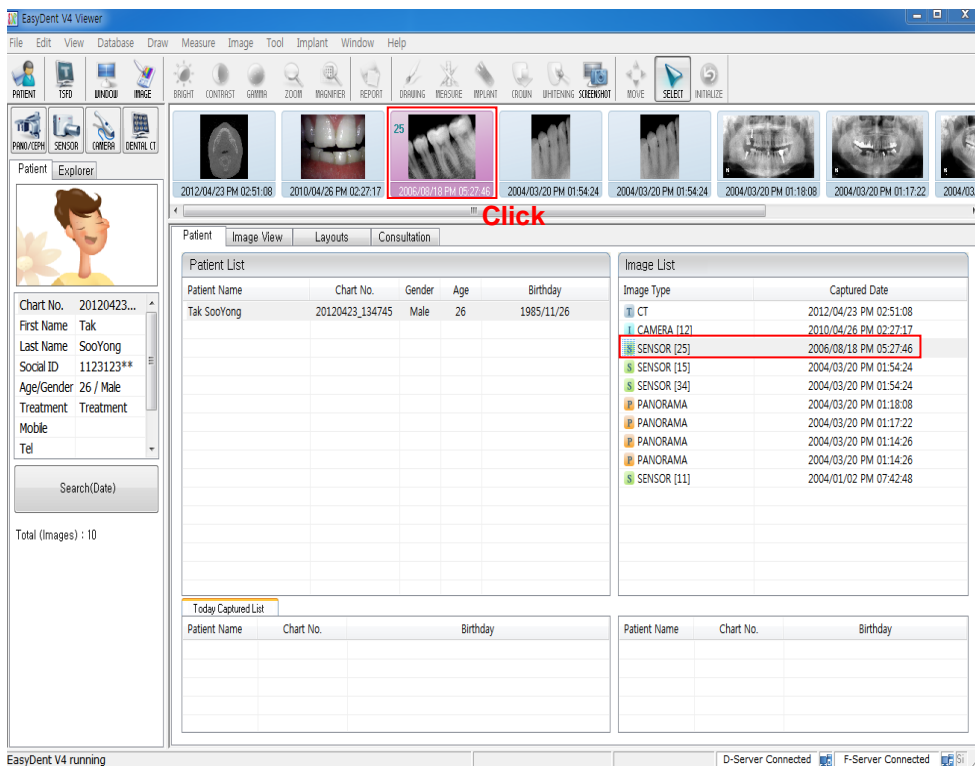
You need to choose an image type, Panorama, Cephalo, Intraoral Sensor, or Intraoral Camera. For choosing **Intraoral Sensor**, the location of the teeth needs be selected. Press **Save** to finish.



After saving the data, click **OK** or **Cancel** to close the **Save to DB** window.

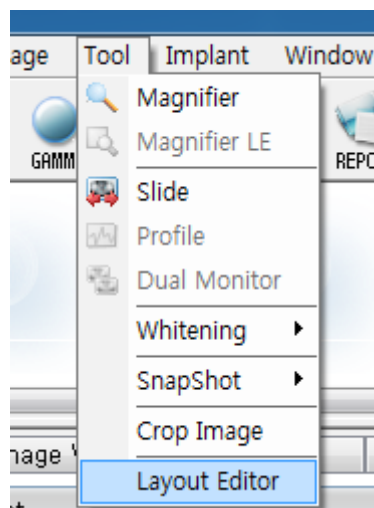


If you click the patient file again on the Patient's List, you can check the saved Crop Image.



8.9 Layout Editor

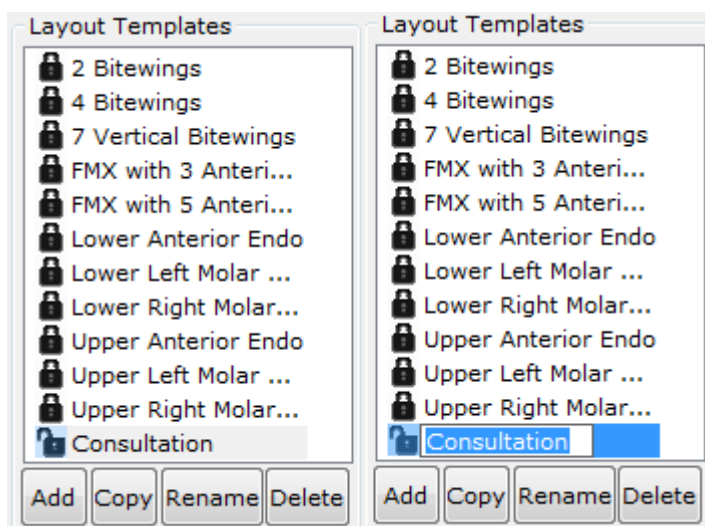
This **Layout Editor** provides tools to create user-defined layout. Layout sequence can be designated by the user. Created layout and sequence information can be saved on the database and shared with others.



(Running Layout Editor: Click **Tool**-> **Layout Editor** on the menu bar.)

A. Layout Templates

This function provides to **Add, Copy, Rename, and Delete** of the Layout Templates.



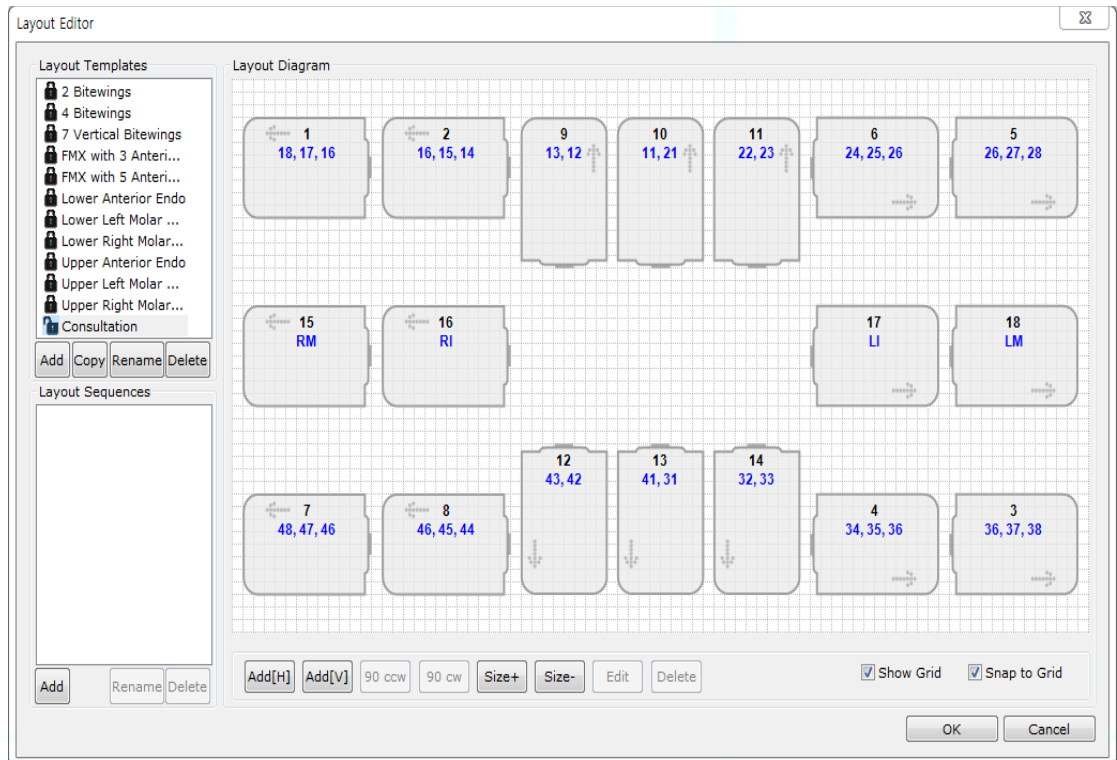
(Layout Templates Creating Tools)

- **Add:** Creating new templates on the List. You can re-enter the name of newly created template.
- **Copy:** Selected template will be copied and added on the List.
- **Rename:** Selected template's name will enable to edit.

- **Delete:** Selected template will be deleted from the List.

B. Layout Templates Editing Tools

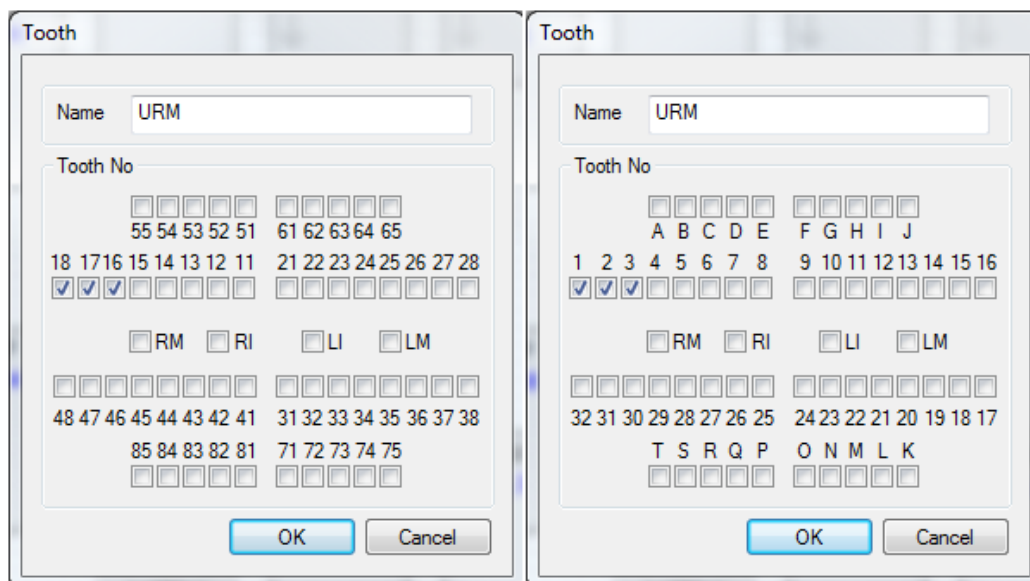
Layout Template can be edited with the functions of add, delete, rotate and change image size of the Tooth Image Box.



- **Add(H):** Landscape Tooth image Box will be added.
- **Add(V):** Portrait Tooth image Box will be added.
- **90ccw:** Rotating the Tooth image Box as counterclockwise.
- **90cw:** Rotating the Tooth image Box as clockwise.
- **Size(-):** Reducing Tooth image Box.
- **Size(+):** Enlarging Tooth image Box.
- **Edit:** Editing name and tooth numbers of the Tooth image Box.
- **Delete:** Deleting selected Tooth image Box.

C. Setting Tooth No.

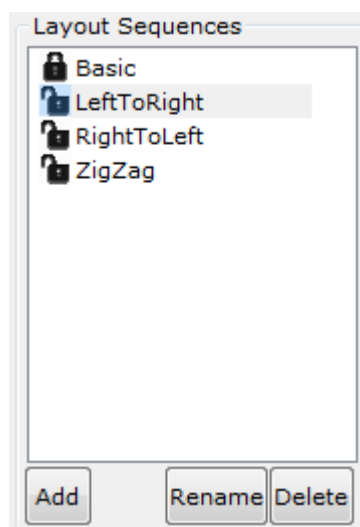
Double click Tooth Image Box to designate tooth number. Tooth No. will display either FDI Numbering Notation or Universal Numbering Notation by the setting.



* **Left:** FDI Notation, **Right:** Universal Notation

D. Layout Sequence

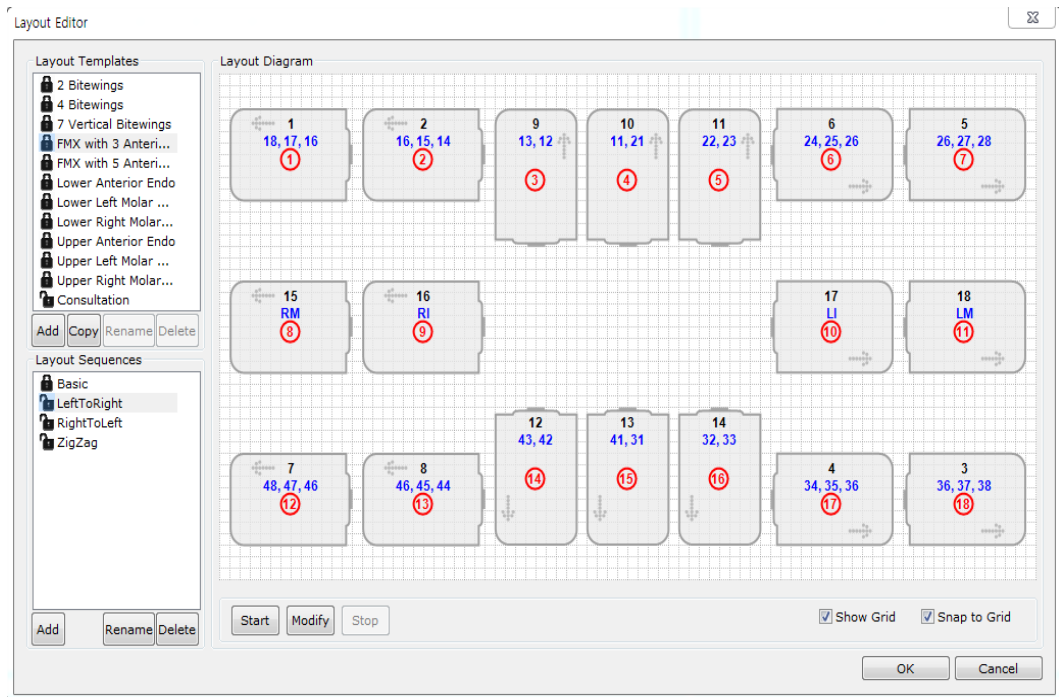
This function provides Add, Rename, and Delete of the Layout Sequence.



- **ADD:** Creating new sequence on the List. You can re-enter the name of newly created sequence.
- **Rename:** Selected sequence name will enable to edit.
- **Delete:** Selected sequence will be deleted from the List.

E. Layout Sequence Setting

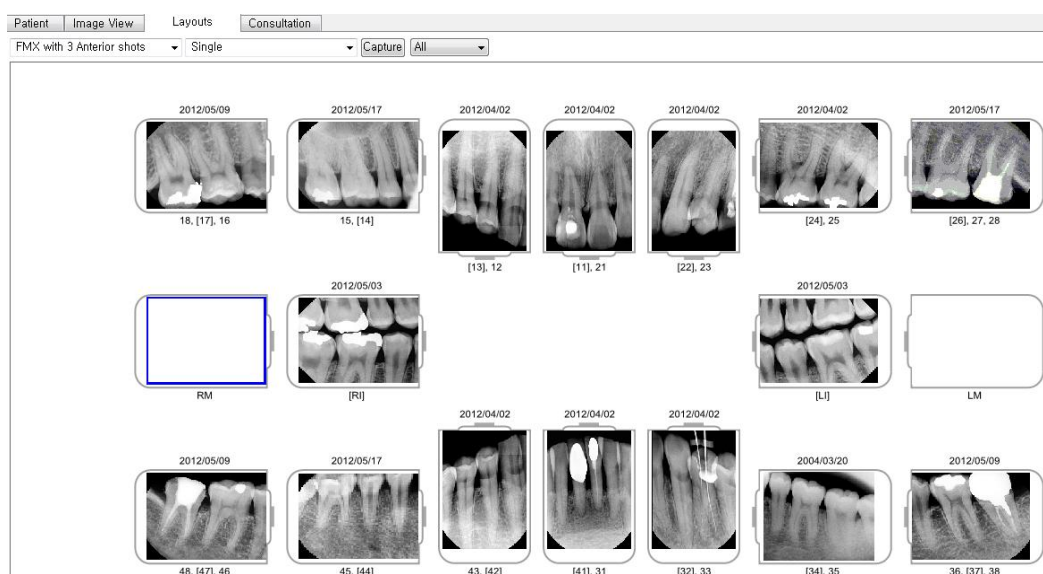
If you click the **Start** button on the bottom of the Layout Diagram, sequence will be changed by the clicking Tooth image Box. Click **Stop** button after the changes. If you click the **Modify** button, pre-set sequence will be changed. Also, if you click already designated Tooth image Box of the sequence, it will be deleted and another sequence number will be given.



8.10 Layout Viewer

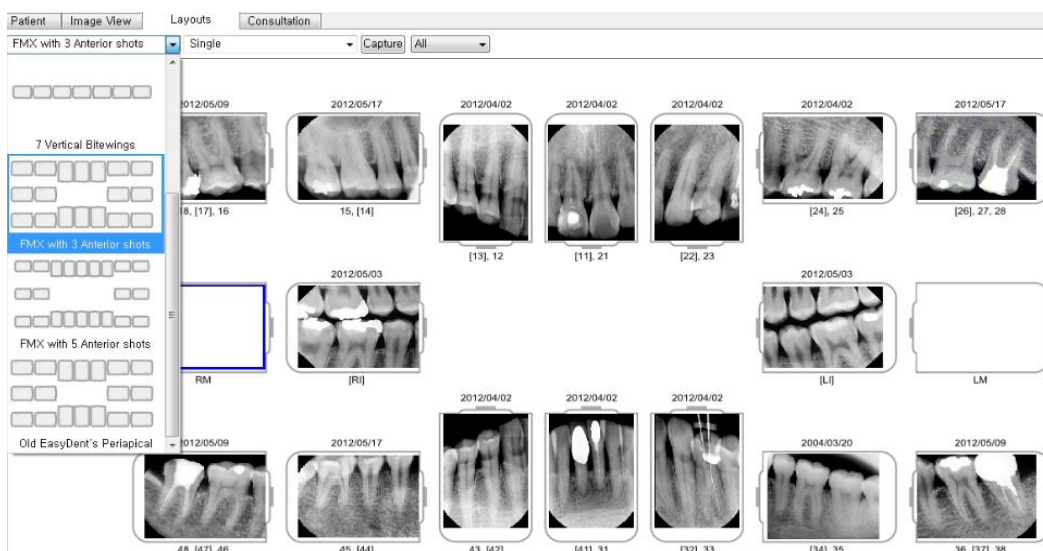
A. Layout Viewer

Saved Layout Template can be selected and displayed on the Layout Viewer. Taken images will be displayed on the ToothBox, and if there are several relevant images in one Tooth Box, only representative images will be displayed as a thumbnail image.



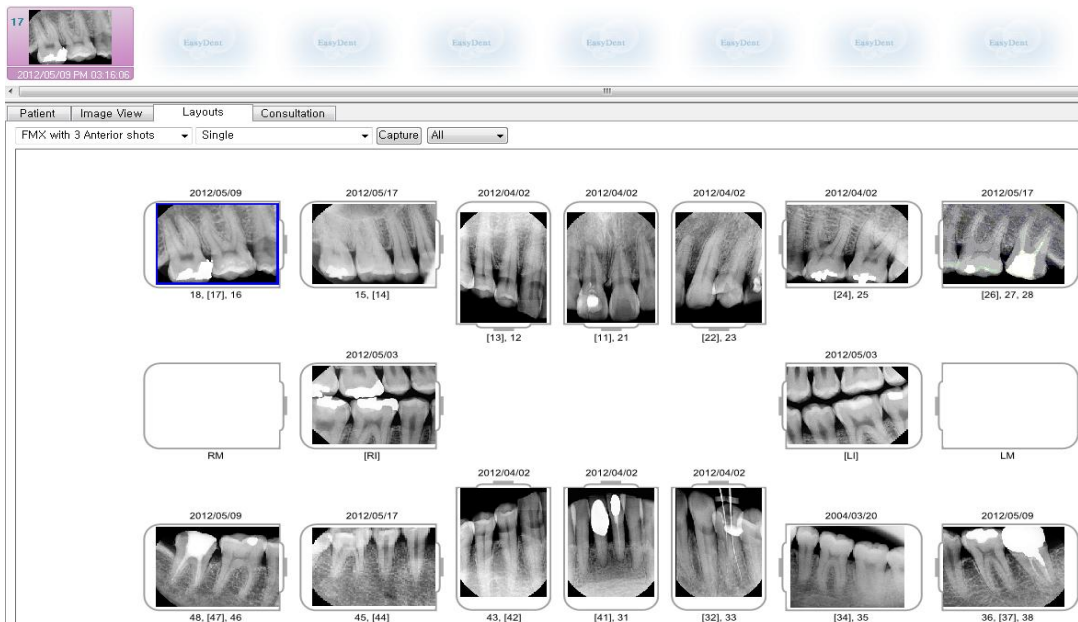
B. Select Layout Template

Select and click the Layout Template combo box. Preview, click and display the Layout template.



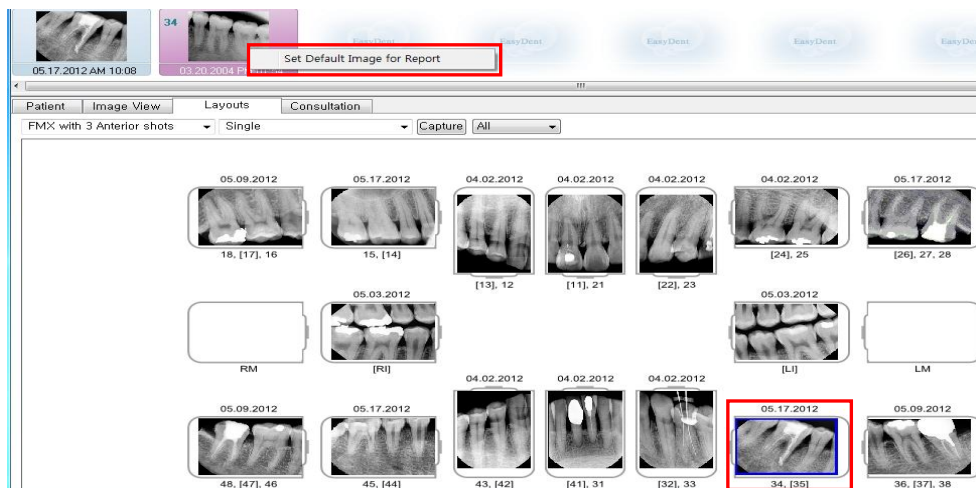
C. Adding image box

If you drag and drop the thumbnail images on the Tooth image Box of the Layout Viewer, Tooth No. will change and display by the relevant Image Box.



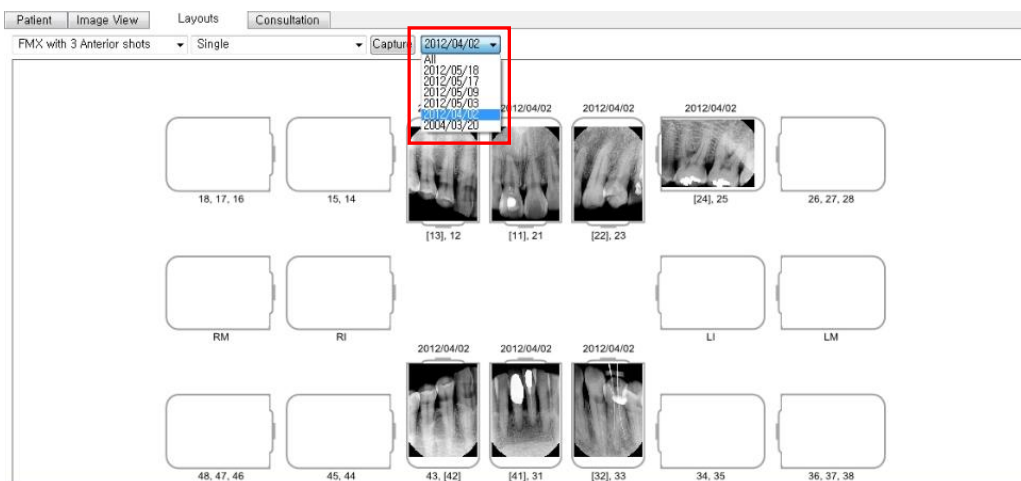
D. Changing representative images

If there are several images exist on the specific tooth number on the ToothBox, most recently taken image will become a representative image. On the thumbnail, the image will be marked as representative image. If you want to change the representative image, select an image you want, mouse right click then select **Set Default Image for Report** . Changed image will display on Tooth Box.



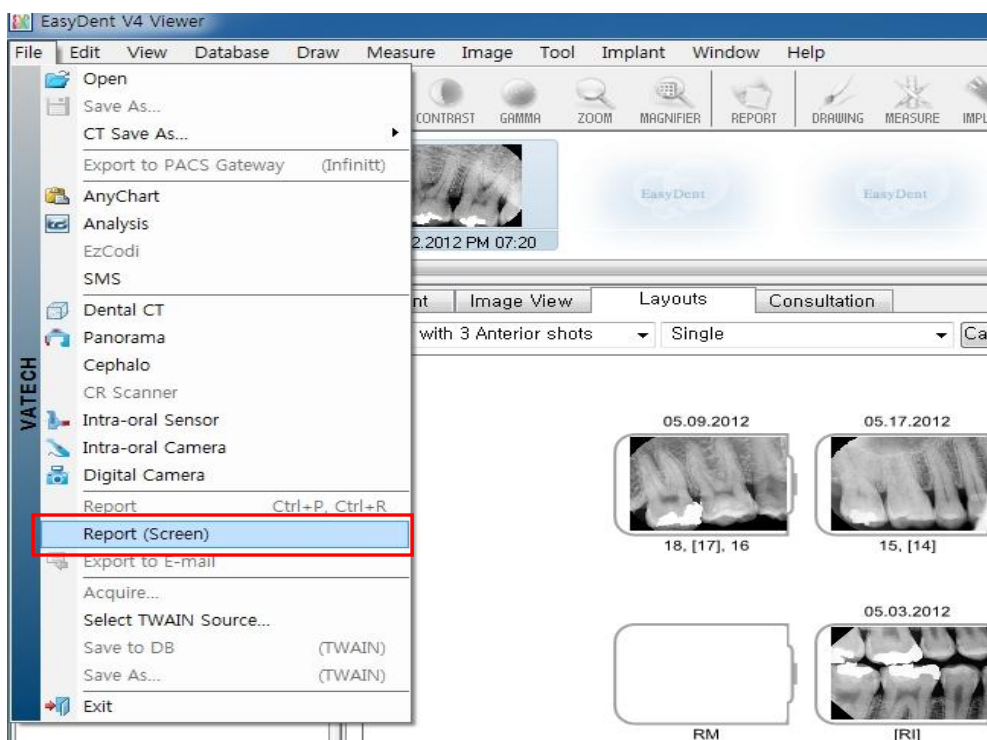
E. Display images by the captured date

On the last drop box, all of the patient's image captured date will be displayed. If you want to display images which captured on specific date, select the date then images will display on the Tooth Box.



F. Print Layout Viewer

If you want to print Layout Viewer, select Layout tab, click File from the menu bar, and select Report(Screen).



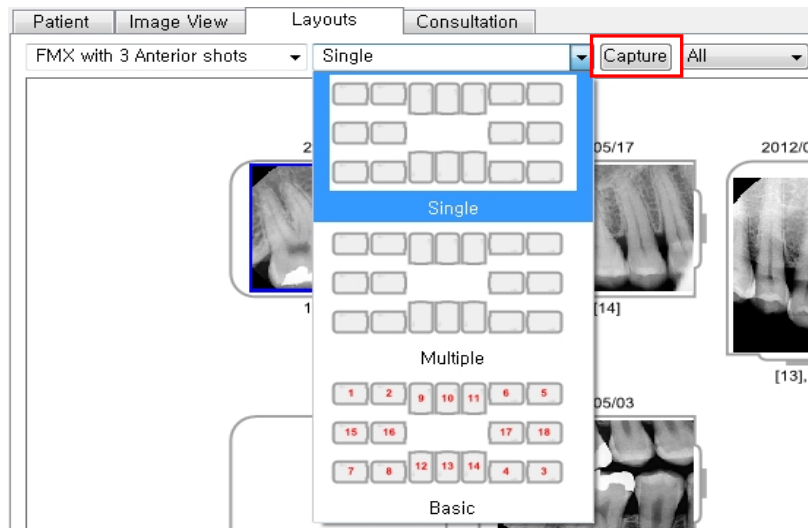
8.11 IO Sensor Shooting

A. Select Shoot Type

If you click the shoot type combo box, shooting method will be displayed. Select and change the method.

8 Special Tools

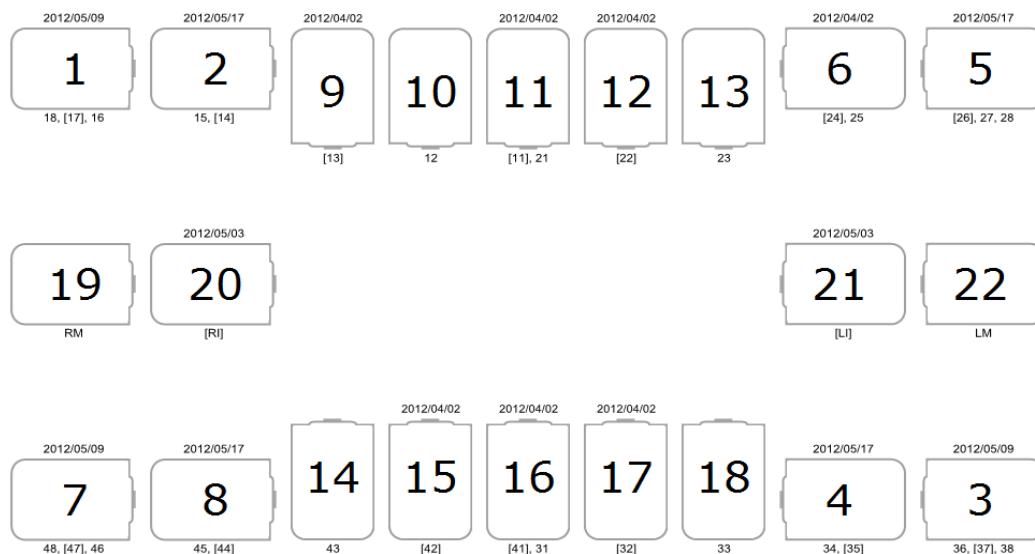
8.11 IO Sensor Shooting



- **Single:** Single type is about selecting tooth number and click Capture button to take pictures. After the shooting, the images will be displayed on the Tooth image box.

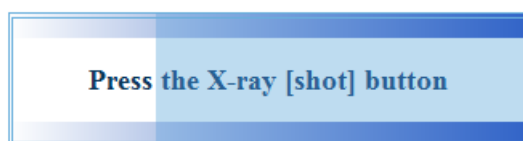


- **Multiple:** Multiple type is about taking several images on the same location. Shooting type is same as single.
- **Basic:** Basic type is about taking images by the designated sequence from the layout editor. Capture will be terminated after the last shooting is done.

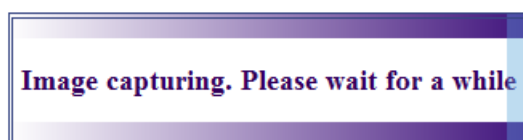


B. Progression UI

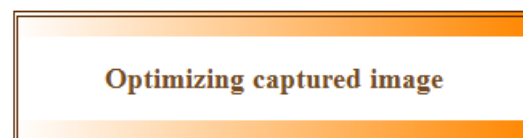
- Waiting



- In Progress

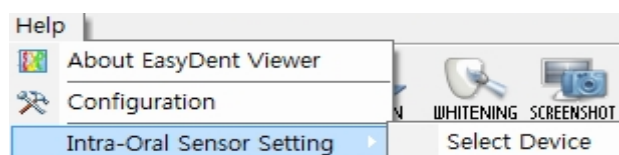


- Optimizing

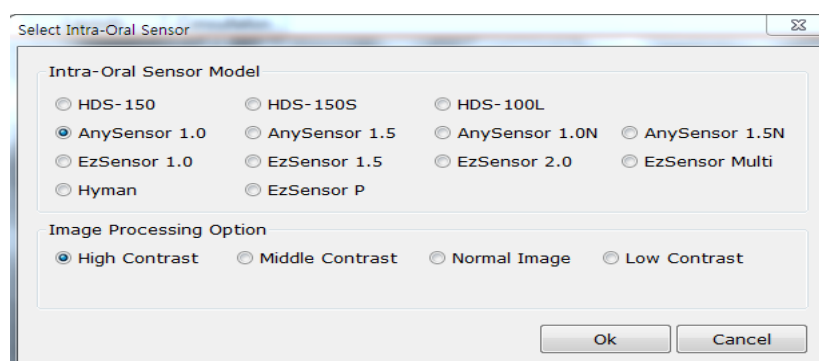


8.12 IO Sensor Shooting

If you want to select Intra Oral-Sensor, click Menu->Help->Intra-Oral Sensor Setting.




If you select Intra Oral-Sensor and Image Processing Option, selected Intra Oral-Sensor Setting will apply.



9 Implant Simulation

This chapter will explain methods of utilizing simulated implants and crowns on acquired images. Before an actual implant placement, the procedure can now be much better planned by first doing an implant or crown simulation.

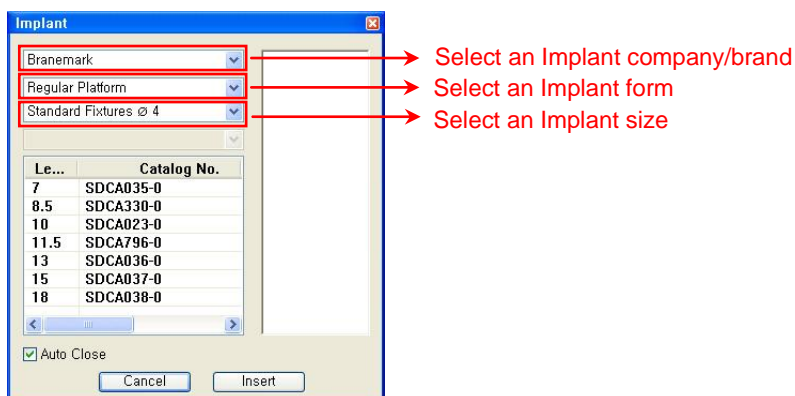
 CAUTION	<p>You must calibrate image before the implant simulation. If not, it is hard to measure the exact length of the implant. Go to the menubar and click 'Measure' icon → then Select the Calibration method you prefer.</p>
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9.1 Add Implant

To begin the simulation process, the user must first select an implant by searching for a fixture through three submenus (manufacturer, shape and length).



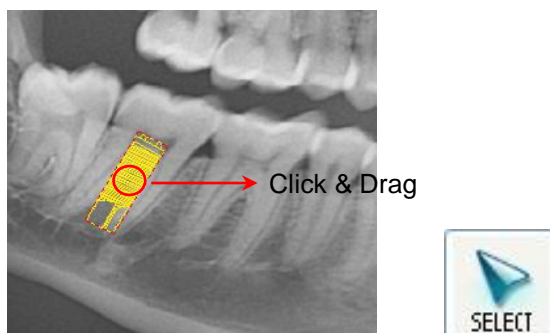
You can either click **Implant** → **Add Implant** on the menu bar or click on the **IMPLANT** icon on the toolbar, and the window below will pop-up.



After selecting the proper implant, click the **Insert** button. An implant will be created on top of the image. Place the cursor on the location where you want to place the implant and then **click**.

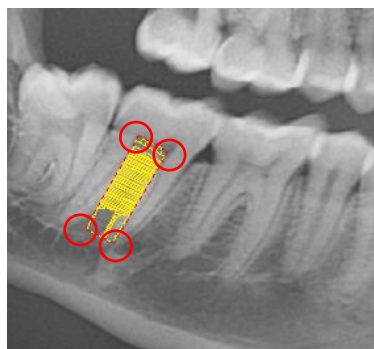
9.1.1 Moving an Implant

Click the **SELECT** icon on the toolbar, and then click on the center of the implant. The selected implant will be highlighted with red border. Click and drag it to the desired position.



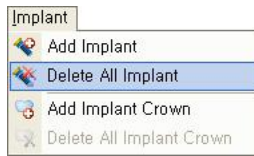
9.1.2 Rotating an Implant

Using the **SELECT** button on the toolbar, click one of the four corners of the implant and rotate the implant in the desired direction and angle.

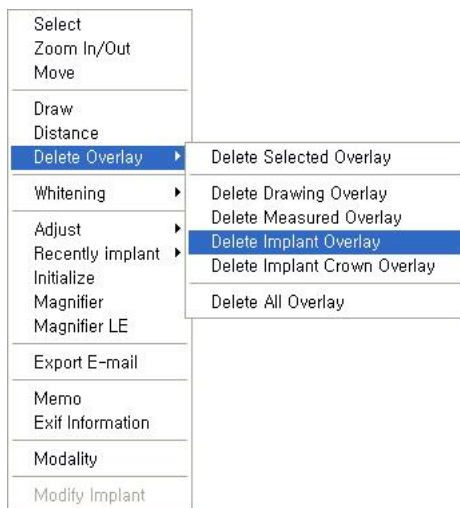


9.2 Delete All Implants

This tool allows you to delete all simulated implant overlays on the image.

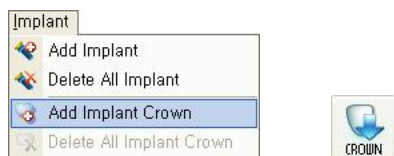


- A. On the menu bar, click **Implant** → **Delete All Implant** to delete all Implants on the image.
- B. Or, you can right-click on the image to show the Context menu Window. Then click **Delete Overlay** → **Delete Implant Overlay** to delete all implants on the image.

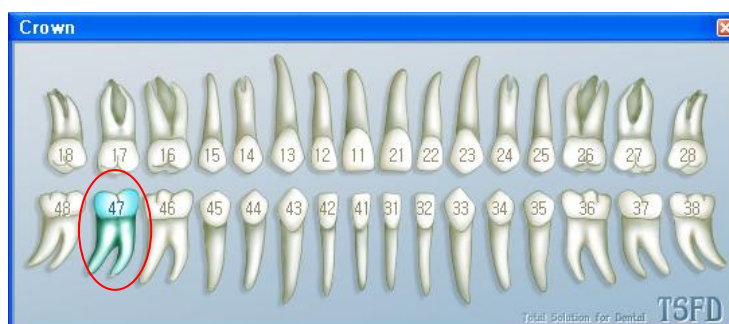


9.3 Add Implant Crown

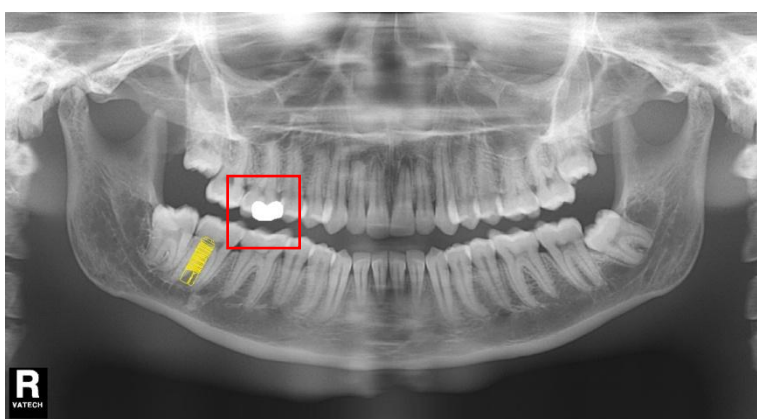
You can place an implant crown overlay on the implant simulation.



- A. Click **Implant** → **Add Implant Crown** on the menu bar and a **Crown** pop-up window will appear.
- B. You will notice that when you place the mouse pointer on a tooth, its color changes.



- C. When you click the colored/highlighted implant crown, an implant crown will appear on the image.

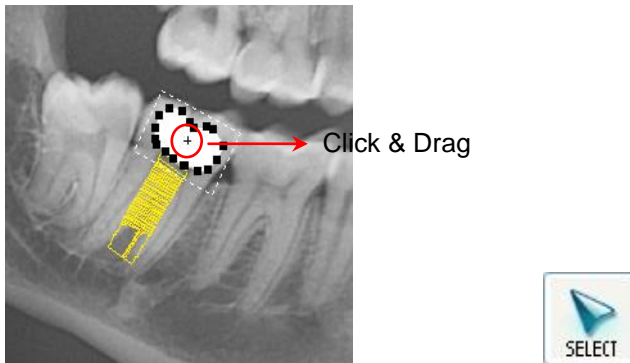


- D. Move the crown and place it on top of the implant overlay.

9.3.1 Moving the Implant Crown

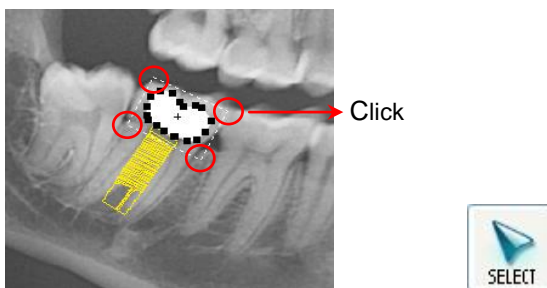
Click the **SELECT** button on the toolbar then click the **Implant Crown**. The selected implant crown will have dotted edges and a + indicator in the center.

Place the crown to its appropriate location by clicking and dragging it.



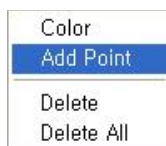
9.3.2 Rotating the Implant Crown

Click the **SELECT** button on the toolbar then click on one of the four corners of the implant crown. The selected implant crown will have dotted edges. Click the corner and rotate the implant corner in the desired direction and angle.

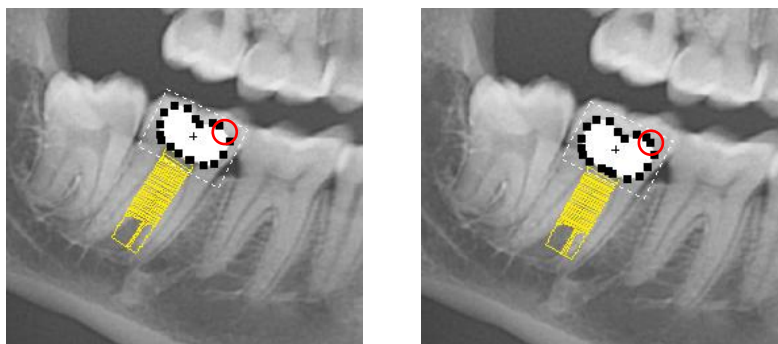


9.3.3 Adding a Point

This function allows you to change the shape of the crown.



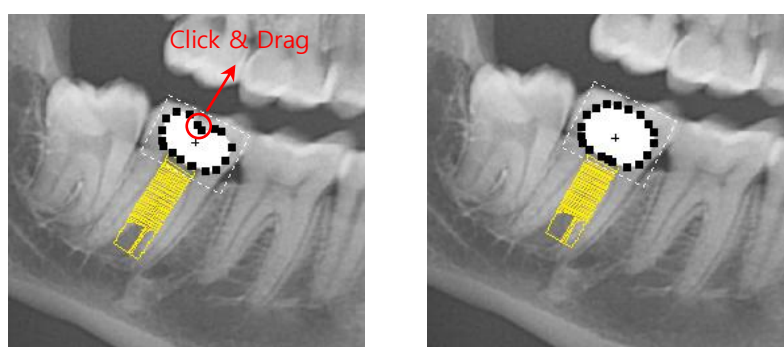
- A. Click the crown on the image.
- B. Right-click the mouse and choose **Add point**.
- C. Click on the area of the crown where you want to add a point. You will notice that a black square dot is added.



9.3.4 Changing the Crown

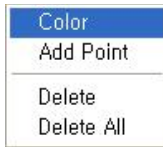
The shape of the crown can be changed according to the user's preference. When necessary, you can add a point using Procedure 9.3.3. **Adding a point**.

Click a crown on the image; then choose a black square point on the edge of the crown which you can use to change its shape. Click on it then drag to form a shape you want to make.

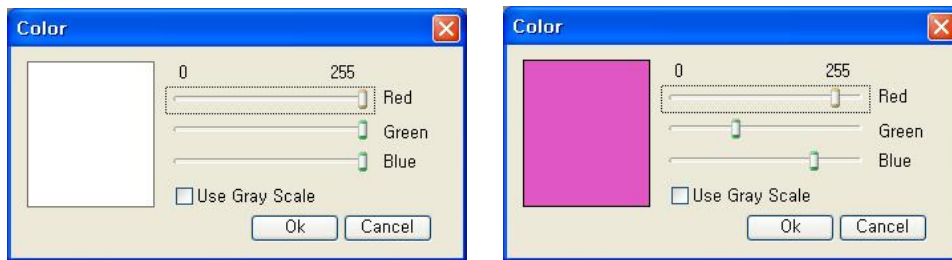


9.3.5 Changing the Crown Color

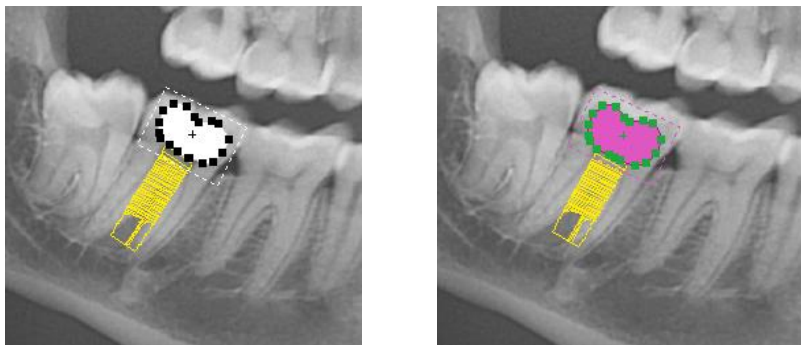
The crown color of the implant can be changed according to the user's preference.



- A. Choose a crown within the image.
- B. Click **Color** on the context menu, which pops up after clicking the right mouse button.
- C. Adjust the Red, Green, and Blue color bars individually until the desired color is obtained in the rectangle. When the color is set, press **Ok**.

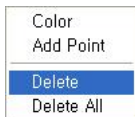
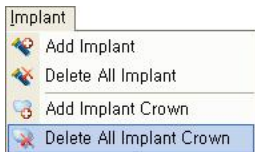


- D. Notice that the color of the crown has been changed from white (initial value) to the color which the user has chosen.

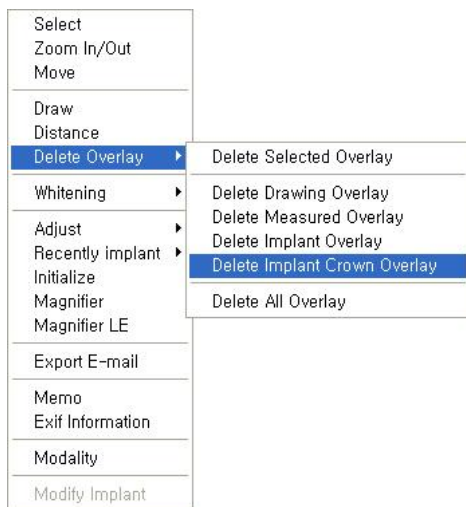


9.4 Delete All Implant Crown

This tool allows you to delete all crown overlays on an image.



- A. Click **Implant** → **Delete All Implant Crown** on the menu bar, or right-click on the crown to be deleted and then click **Delete** to delete the selected crown or click **Delete All** to delete all crowns.
- B. Or, you may right-click anywhere on the image to have the Context Menu then click **Delete Implant Crown Overlay** to delete the Implant Crown.



10 Window

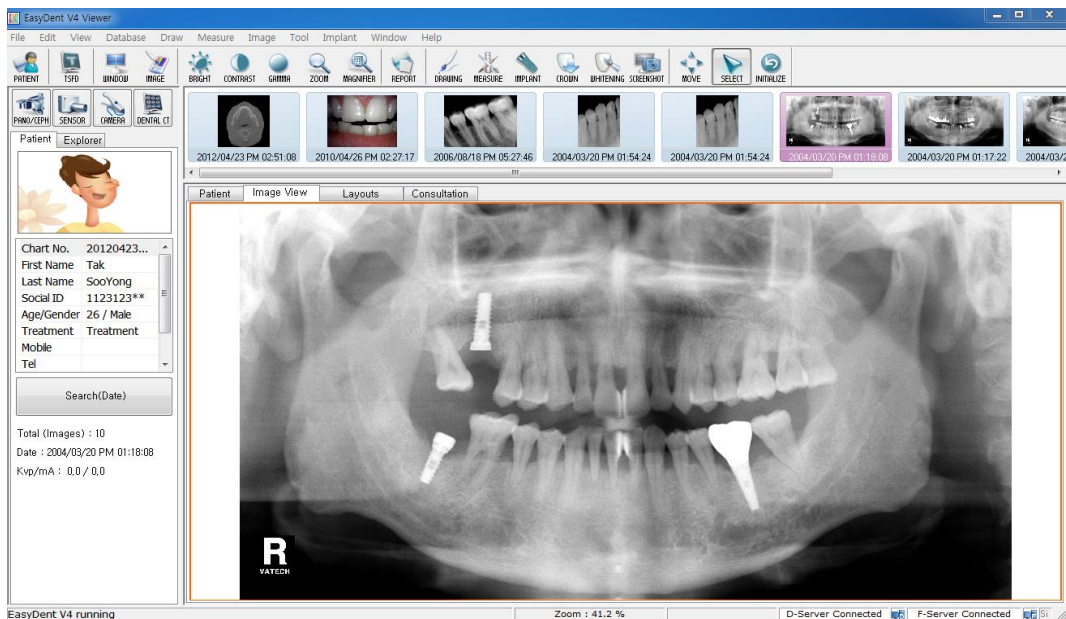
This chapter explains the method which the user can use to view the windows in a convenient layout.

10.1 Main Screen

This is the basic image display window of EasyDent. On the left is the patient information, on top is the menu bar, beneath is the toolbar in icons and buttons, and on the middle is a display of the patient's teeth.

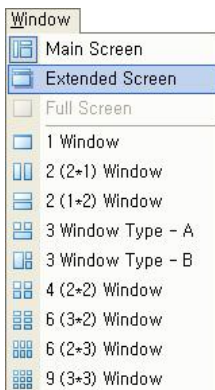


Click **Window** → **Main Screen** on the menu bar or click **WINDOW** icon on the toolbar, to see the Main Screen in default mode. (This display is a default screen set at the start of EasyDent software.)

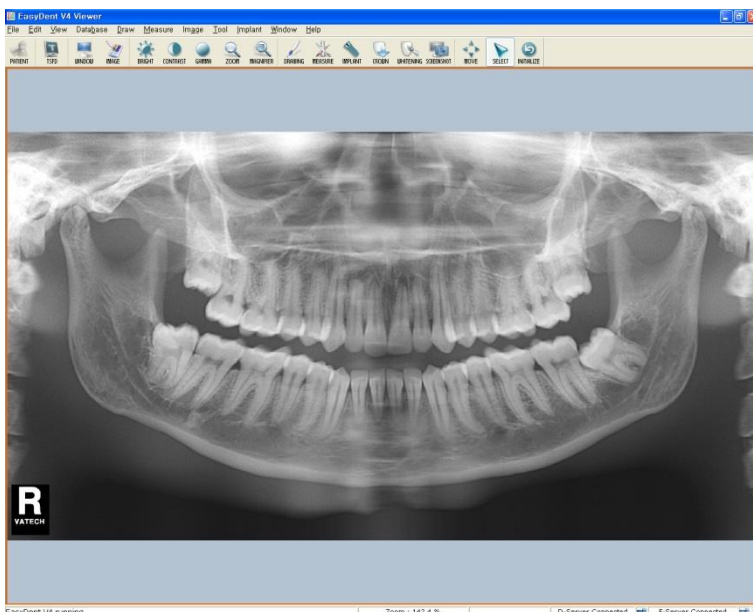



10.2 Extended Screen

This is an extended screen from the Main Screen.



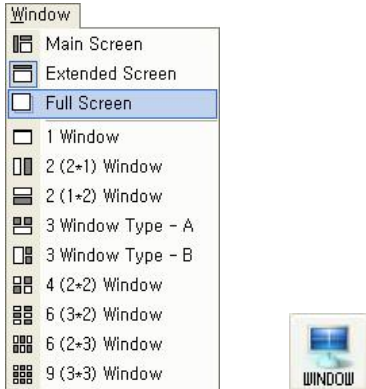
Click **Window** → **Extended Screen** and you will see the window as shown below.



 <p>NOTE</p>	<p>If you double-click on the image shown on the main screen, it will be extended. Conversely, if you double-click the mouse on the extended screen, it will return to the main screen.</p>
--	---


10.3 Full Screen

This screen is a maximized mode, only to have one large image.



Click **Window** → **Full Screen** on the menu bar or click the **WINDOW** icon on the toolbar (You may also use the ALT+ENTER), and you will see the window similar to the figure below.



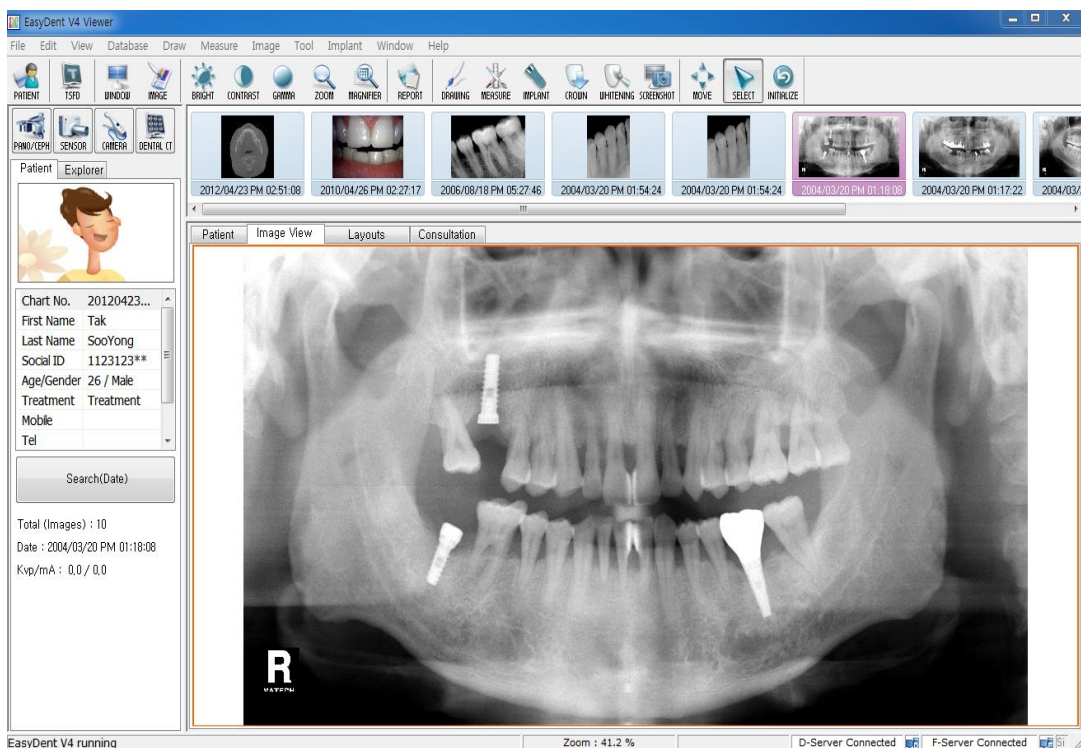
 <p>NOTE</p>	<ol style="list-style-type: none">1. The full screen can only be entered through the extended screen mode. Thus the full screen button will not be active on the main screen.2. If you double-click the mouse on the full screen, it returns to the extended screen.
---	---

10.4 1 Window

With this window, the user will be able to view only one selected image.



By clicking **Window** → **1 Window** on the menu bar or **WINDOW** → **1 Window** on the toolbar icons, you will be able to view a selected image.

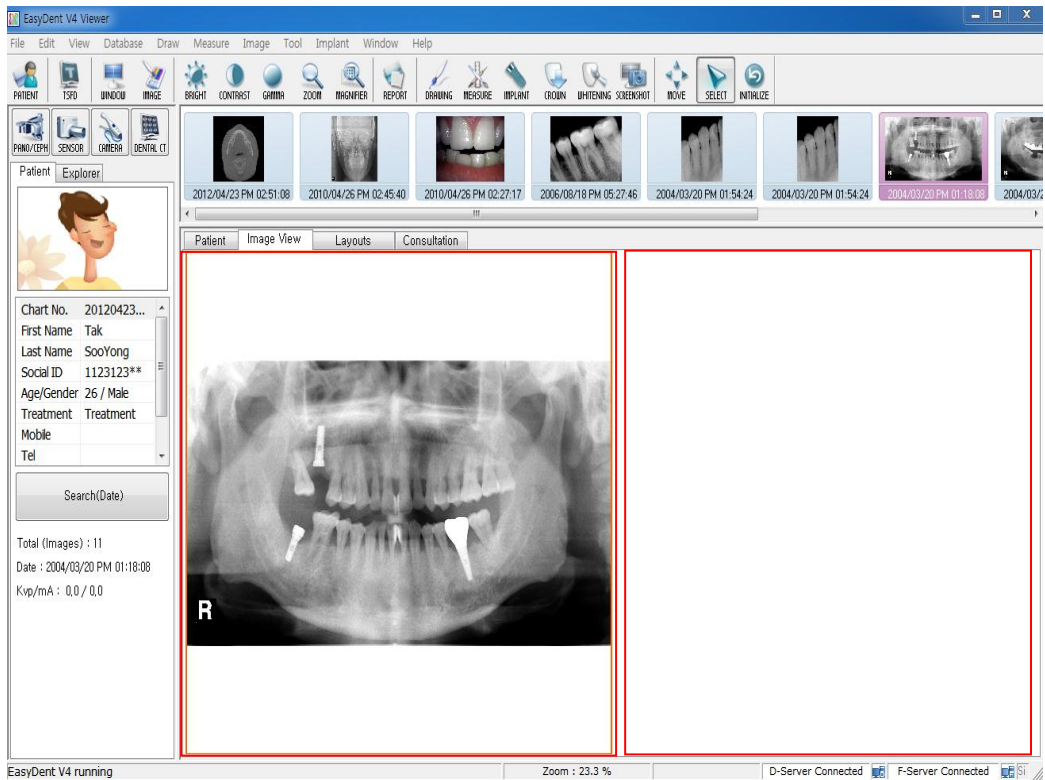


10.5 2 (2*1) Window

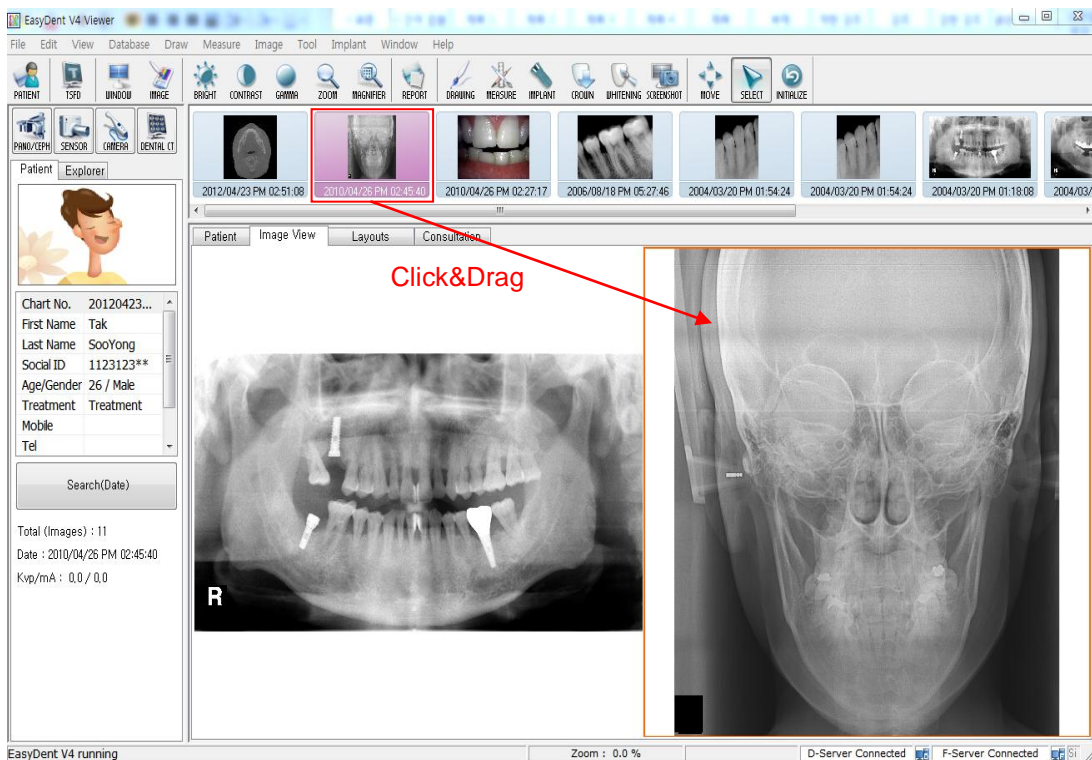
This enables image window to split into two areas, as shown in the following figure.



- A. Click **Window** → **2 (2*1) Window** on the menu bar or **WINDOW** → **2 (2*1) Window** on the toolbar icons, then the screen will be split into two parts.

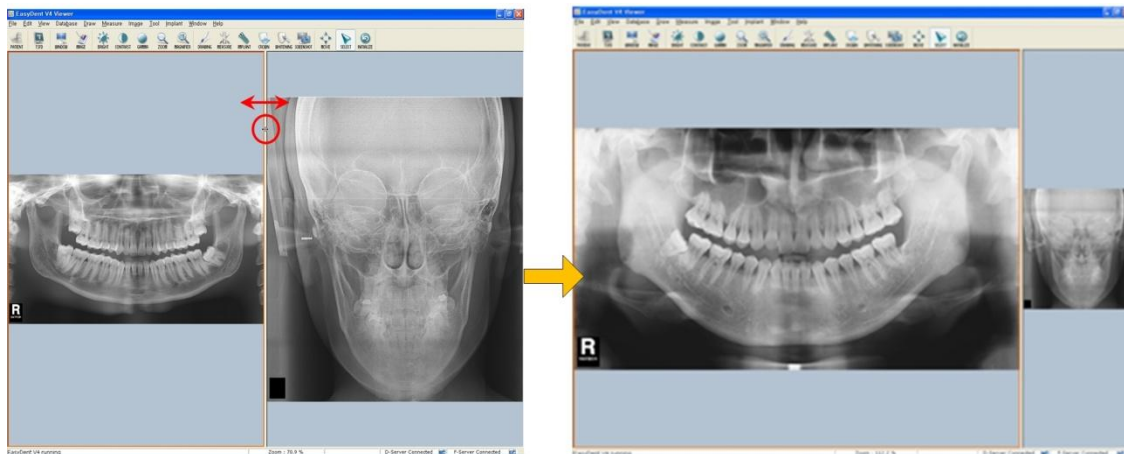


B. Click and drag the images of your choice from the Thumbnail to those areas.



C. Click **Window** → **Extended Screen**, or double-click the main screen to extend the screens.

D. Place your mouse pointer on the border of two image windows, and then a bar with two arrows will appear in the middle. You can adjust the size of the each image window, according to your preference.

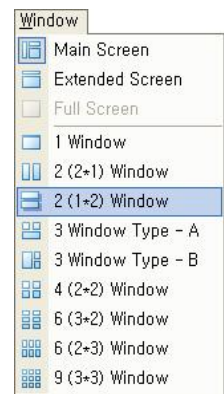
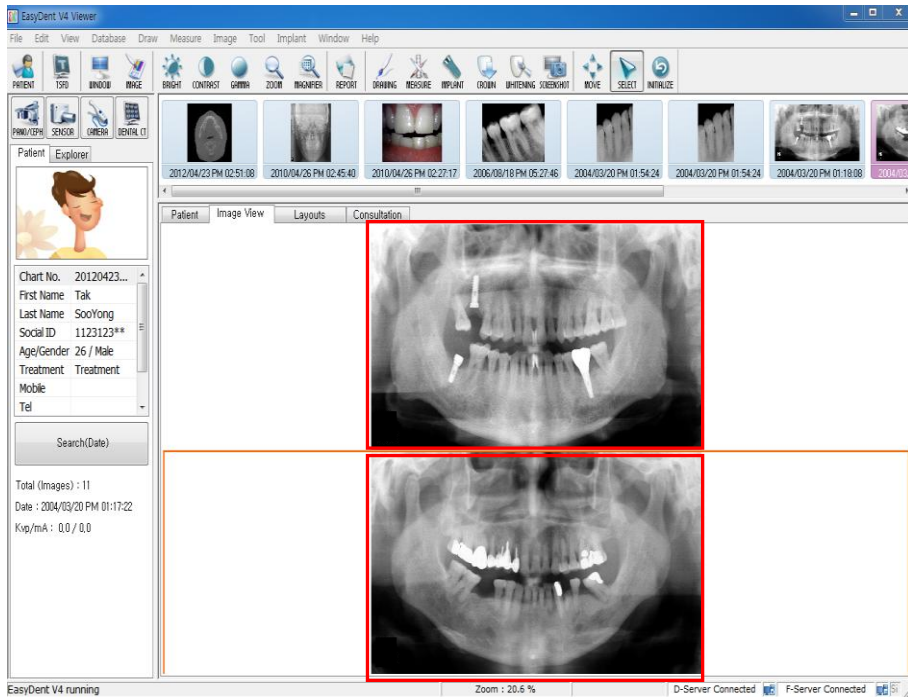


	<p>The window size adjustment is effective only for the full and extended screens.</p>
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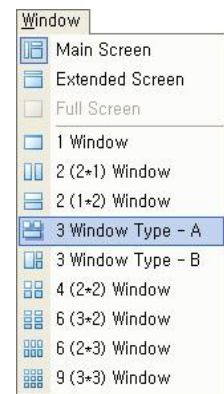
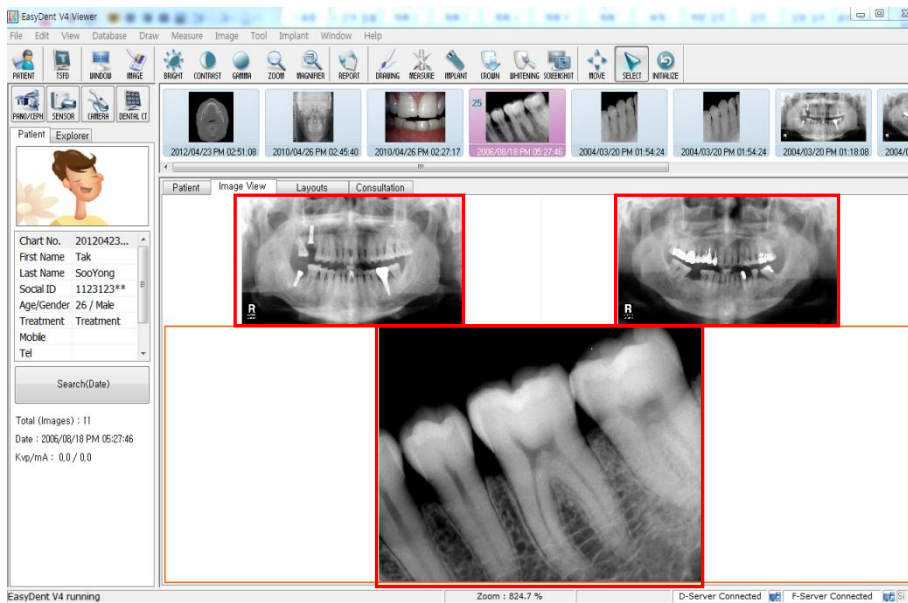
10.6 The Other Split Windows

2 (1*2) Window: two split views

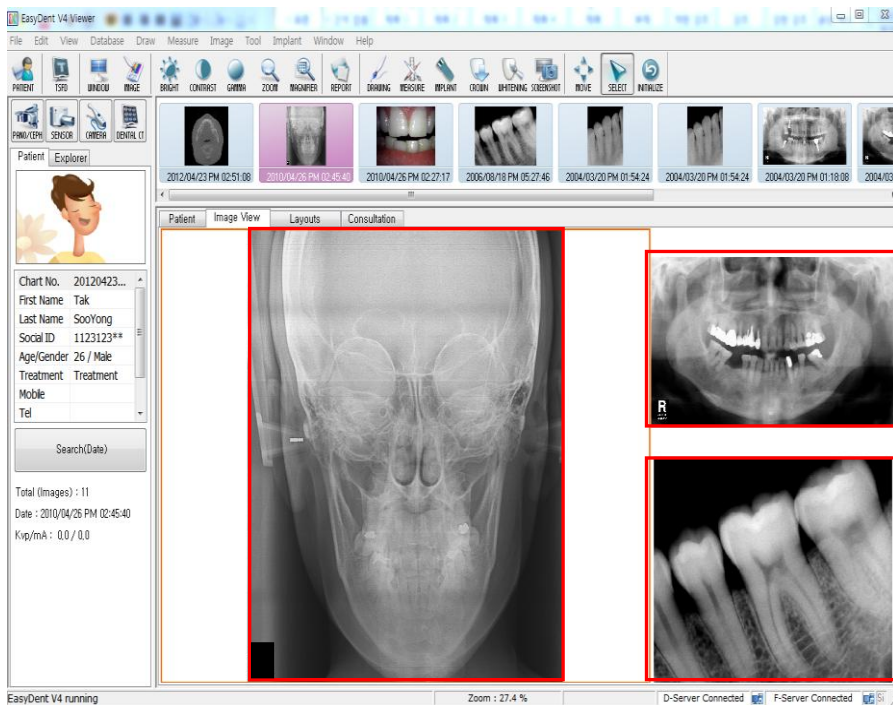
The rest of the window arrangements will appear like the images.



3 Window Type – A: three split views

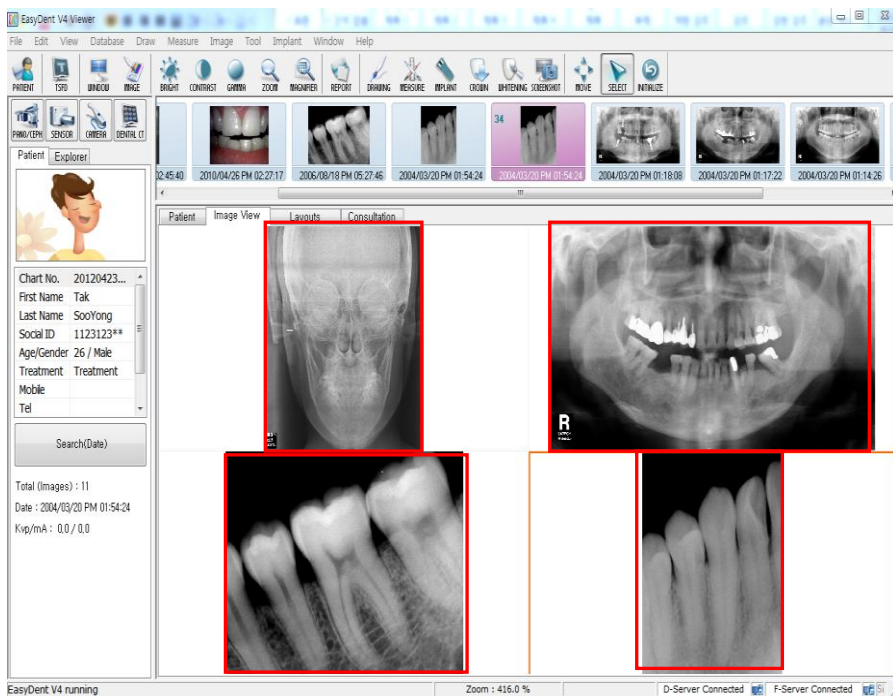


3 Window Type – B: three split views



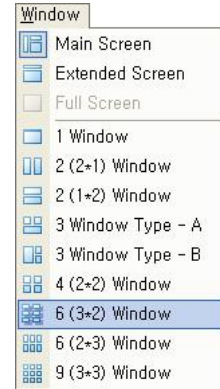
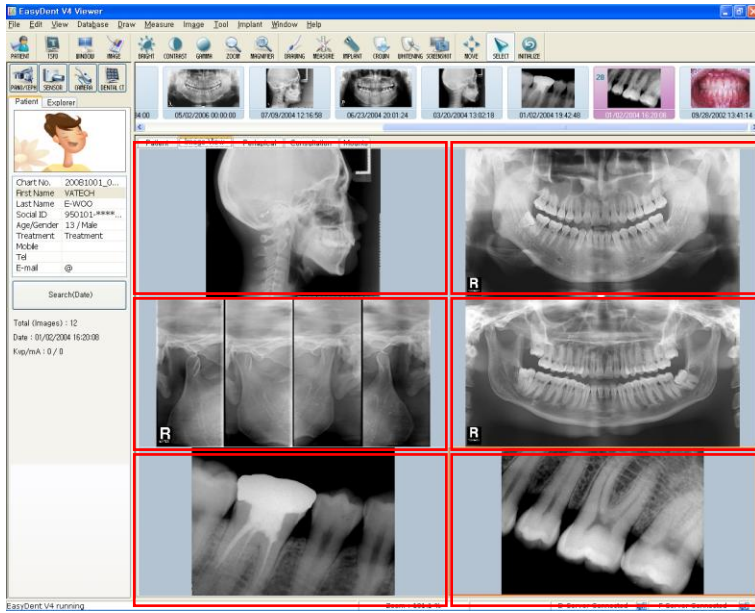
- Window
- Main Screen
- Extended Screen
- Full Screen
- 1 Window
- 2 (2+1) Window
- 2 (1+2) Window
- 3 Window Type - A
- 3 Window Type - B**
- 4 (2+2) Window
- 6 (3+2) Window
- 6 (2+3) Window
- 9 (3+3) Window

4 (2*2) Window: Four split views

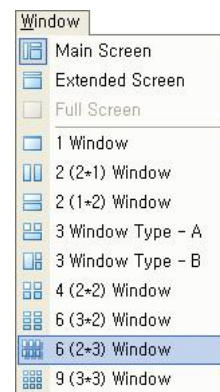
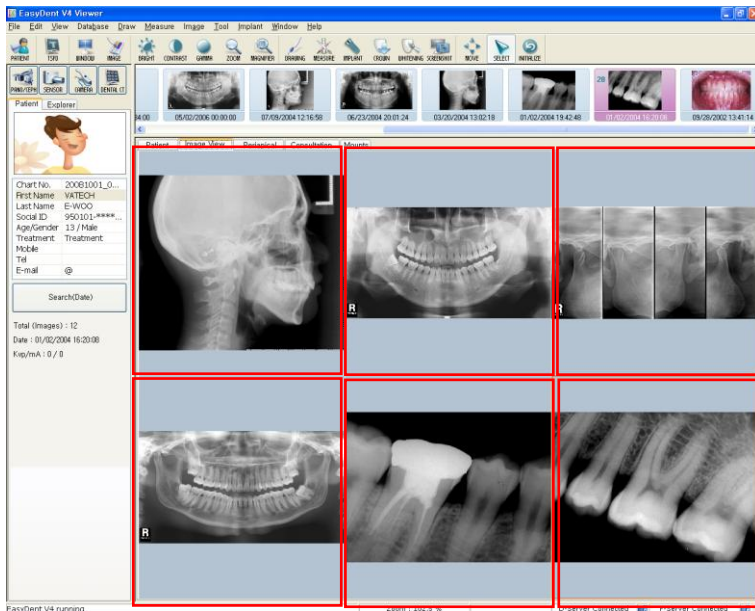


- Window
- Main Screen
- Extended Screen
- Full Screen
- 1 Window
- 2 (2+1) Window
- 2 (1+2) Window
- 3 Window Type - A
- 3 Window Type - B
- 4 (2*2) Window**
- 6 (3+2) Window
- 6 (2+3) Window
- 9 (3+3) Window

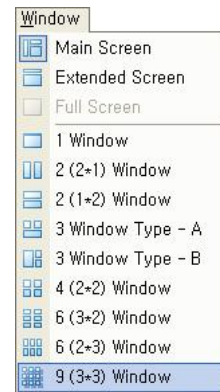
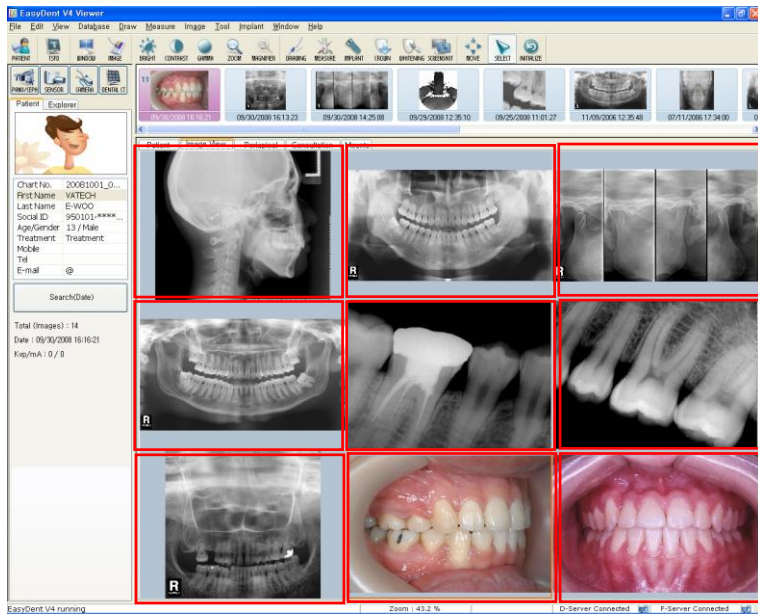
6 (3*2) Window: Six split views



6 (2*3) Window: Six split views



9 (3*3) Window: Nine split views



11 DICOM Print and Report

This chapter describes the DICOM prints and Report incorporated in EasyDent.

EzDICOM Print is the DICOM Print function built in EasyDent that can print Panorama/Cephalo images acquired from the patient through the DICOM Film Printer, which supports an output of 1:1 real-size image or automatic fit-on function.

The **Report** function is summarized in the following table.


	Function	Description
Report	Ruler Display	Measure the image in millimeter unit
	Title Input	Enter the name of the clinic, hospital, or radiology center (RC)
	Comment Input	Enter comments on the Header and the Footer.

11.1 EzDICOM Print

11.1.1 EzDICOM Print’s Requirement (about SCP1)

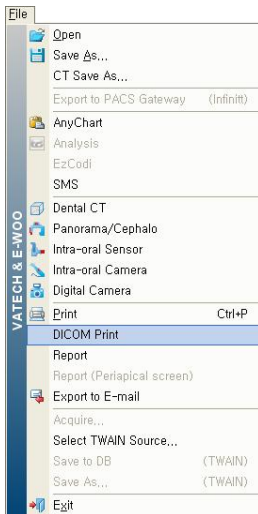
A DICOM Film Printer has to be registered at the EzDICOM Print’s local AE Title (‘EVPRINT’).

For the printing options of DICOM Film Printer, the Magnification Type should be set to NONE and CUBIC.

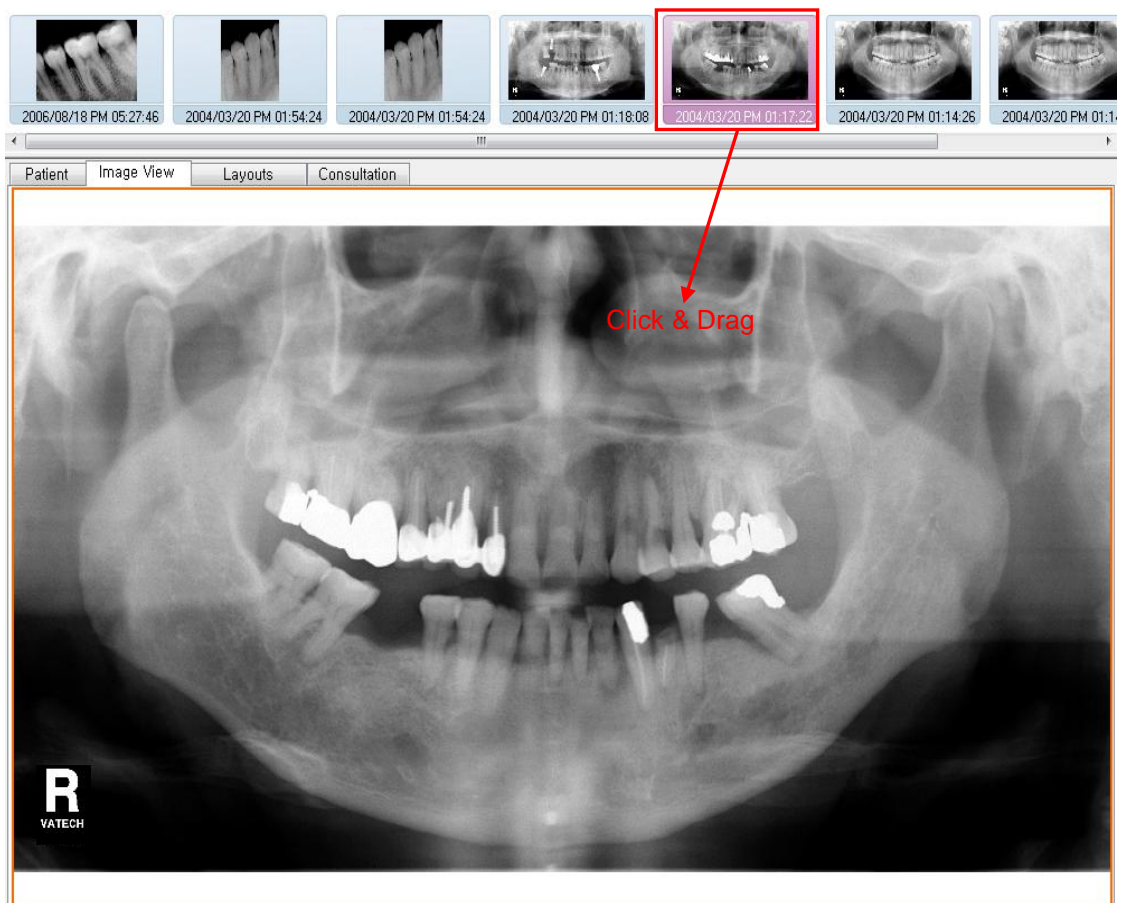
 <p>CAUTION</p>	<p>Be advised to take the following procedures when installing EzDICOM Print.</p> <ol style="list-style-type: none"> 1. The ‘DICOM Conformance statement’ of the DICOM FILM Printer must be sent to the EasyDent development team. 2. Please make sure with them whether the DICOM FILM Printer can be used with EzDICOM Print.
--	--

(SCP¹: DICOM Service Class Provider; here, SCP refers to the DICOM Film Printer where the user requests for Film Printers.)

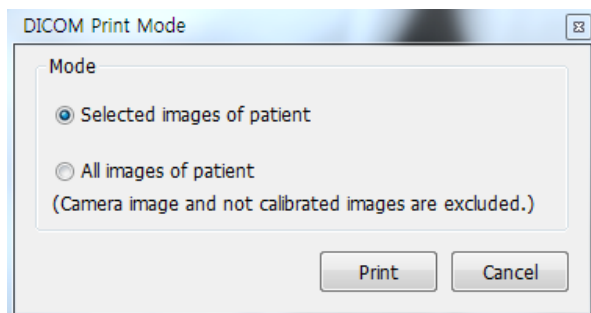
11.1.2 Using EzDICOM Print


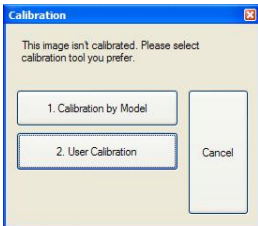


- A. Search and select the patient whose image you want to DICOM print.
- B. On the thumbnail, choose the image that you want to DICOM print by clicking and dragging it over to the 'Image View' window.

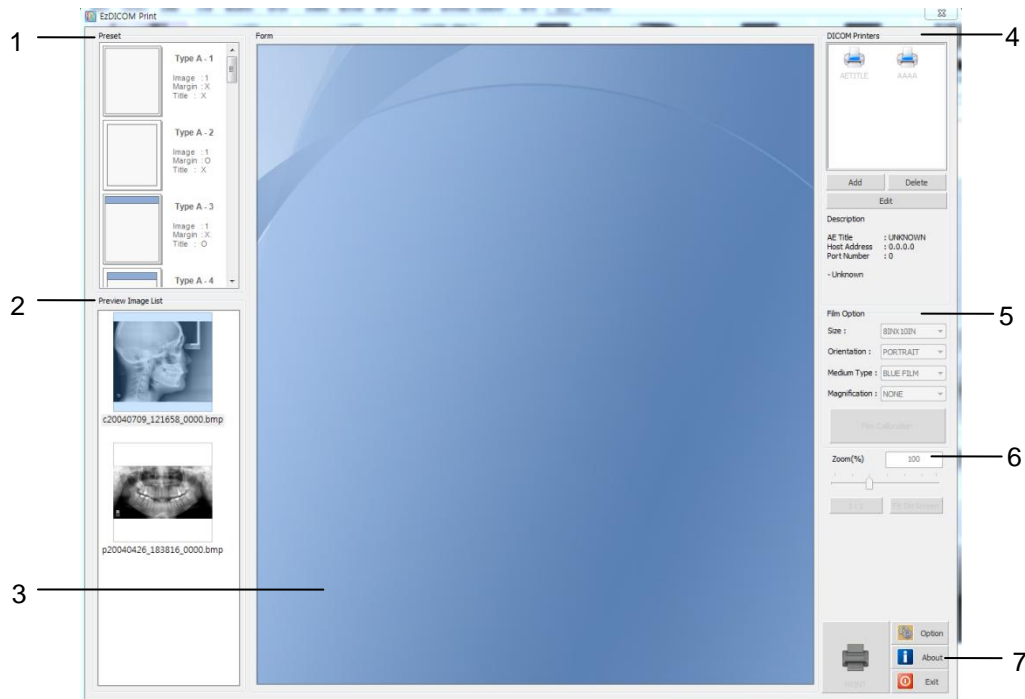


- C. If you click the **File** → **DICOM Print**, the **DICOM Print Mode** dialogue box will appear. Choose whether to print the **Selected images of patient** or **All images of patient** and then click **Print**.



 <p>NOTE</p>	<p>When you run the DICOM Print and the image is uncalibrated, the calibration dialogue box will appear, as shown below.</p> 
<p>For more details, refer to sections 7.2.1 Calibration by Model and 7.2.2 User Calibration.</p>	

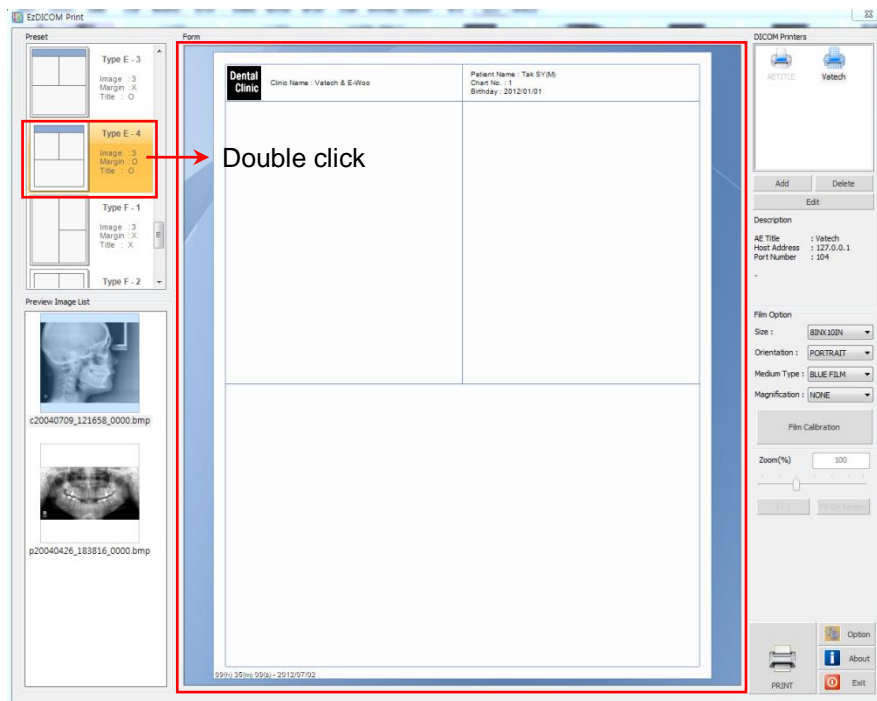
D. Once you click **Print**, an **EzDICOM Print** pop-up window will appear, as shown below.



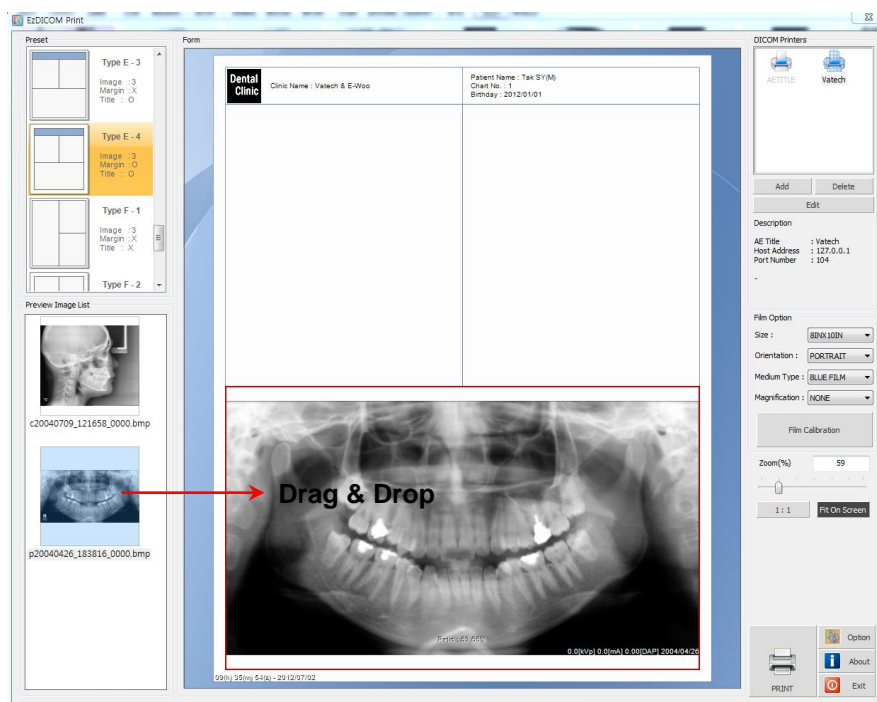
1. **Preset:** EzDICOM Print module provides Preset files which can be seen with brief descriptions of its preset panel. Each preset type provides a number of images, margin application, and title indication.
2. **Preview Preset List:** You can view the selected images from EasyDent in the Preview Image List. Select a Preset form then drag and drop it to the Main Form. Select the image from the Preview Image List, and then drag and drop the image to the Main Form.
3. **Main Form:** show image for actual film printing.
4. **DICOM Printers:** User can add, delete, modify, and verify the information about the DICOM Printers.
5. **Film Option:** User can set up the film type, direction, and film calibration for each film as defined by the DICOM regulations.
6. **Zoom:** User can zoom in and out the image.
7. **Etc:** Print, EzDICOM option, About, and Exit functions can be used.

EzDICOM Print Usage Method

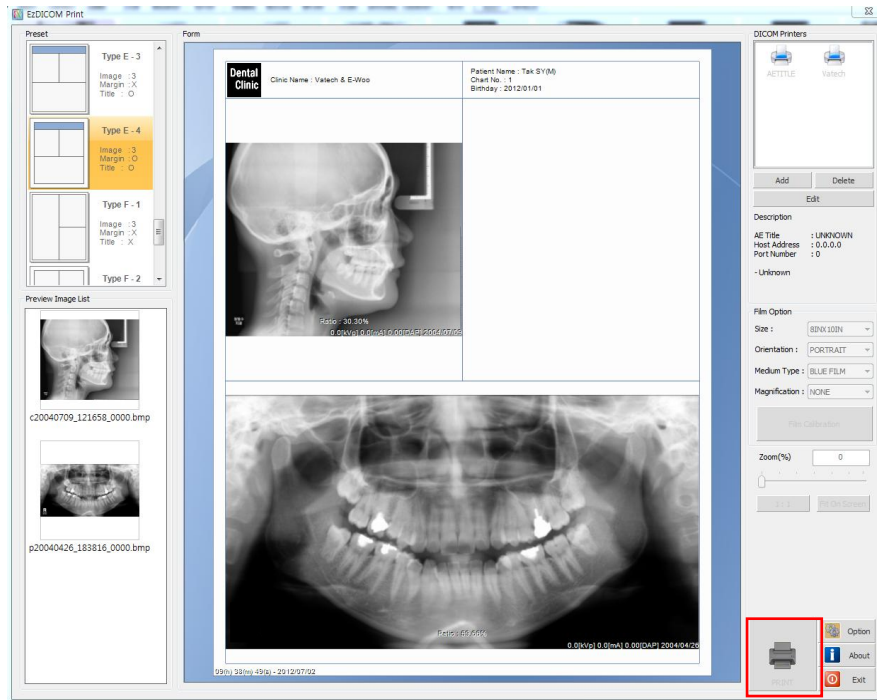
- A. From the Preset Window, double click the preset form you selected and it will be created on the Main Form Window.



- B. Click an image from the Preview Image List, then drag and drop it to the desired location on the Main Form window.

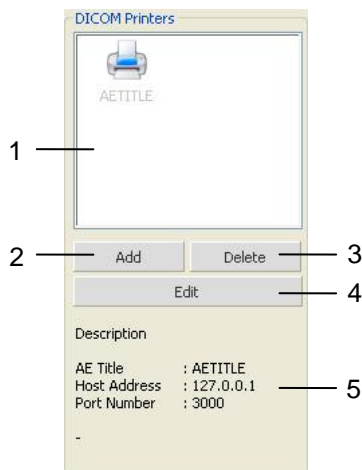


C. To print, select the **Film Option** and the **DICOM Printer** then click the **PRINT** button.

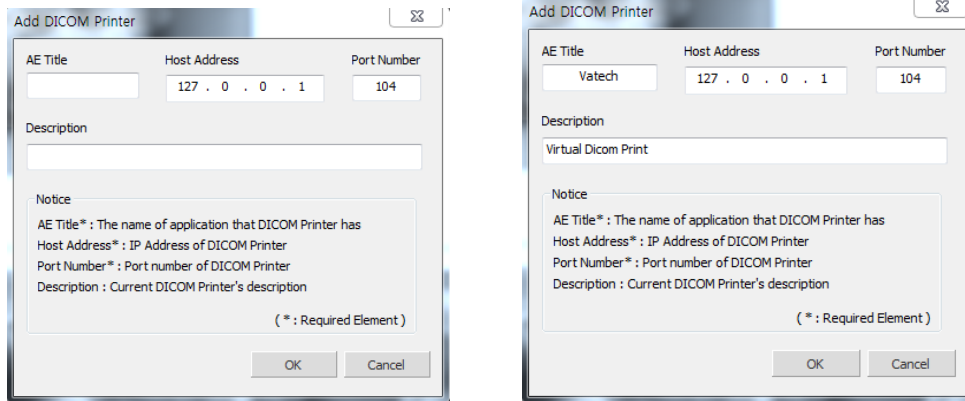


11.1.3 Setting up the DICOM Printer

You can add, delete, and modify the DICOM Printer, as well as verify the information of the chosen DICOM Printer.

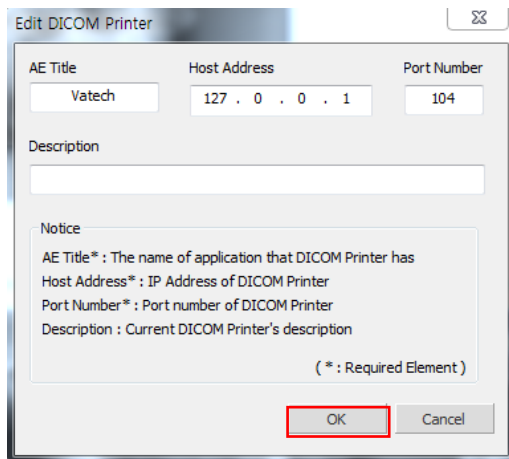


1. **Registered DICOM Printer List**
2. **Add:** Add DICOM Printer. Click the **Add** button and the **Add DICOM Printer** window appears. Input the information of the DICOM Printer, which you wish to add, and then click the **Add** button.



Add DICOM Printer

3. **Delete:** Delete the DICOM printer
4. **Edit:** You can edit the information of the DICOM printer. Select the DICOM printer you want to edit then click the **Edit** button. An **Add DICOM Printer** window will pop up. Modify the DICOM Printer information and click the **Edit** button.



Edit DICOM Printer

5. **Description:** You can verify the AE Title, Host Address, Port Number, and information of the selected DICOM Printer.

11.1.4 Film Options

You can set up the **DICOM Film Size**, **Film Orientation**, **Medium type**, **Magnification**, as well as the **Calibration value** of each film. When you modify the film size and orientation, the changes can be viewed at the main form window.

Size

On **Film Option**, the film size can be selected according to preference.

Orientation

The film orientation allows you to configure the lay-out of the film print to either Portrait (Vertical), or Landscape (Horizontal). Portraits are usually used for Cephalometric images, while Landscapes for Panorama images.



When you modify the film size and orientation, its changes can be viewed at the main form window.

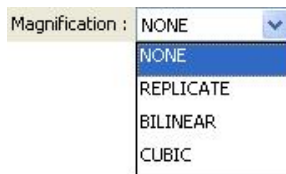
Medium Type

You can choose the film type to either CLEAR FILM or BLUE FILM.



Magnification

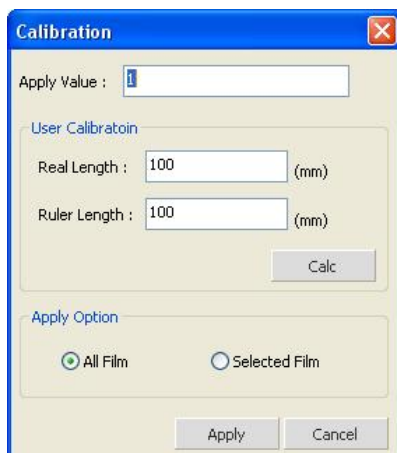
You can choose the magnification option from the four types (NONE, REPLICATE, BILINEAR, or CUBIC), which are available for application on the image data.



Film Calibration

The Film Calibration allows the user to input the **Real Length** and the **Ruler Length** values in order to print in a 1:1 ratio with DICOM Print.


A pop-up window will appear when you click **Film Calibration**.



- **Apply Value:** Input the Real Length and the Ruler Length, and then click the **Calc** button to get the Apply Value (Apply = Real Length / Ruler Length).
- **Real Length:** Input the real ruler measurement of the image size.
- **Ruler Length:** Input the size measured by the ruler on the image.

When measuring the ruler value on the image with a real ruler, there can be differences. You need to input the value of the location where the ruler on the image and the real ruler scale are matching. Also, the bigger the calibration scale values, the higher the accuracy.

In the Apply Option part, you need to clarify whether the Calc value will be applied to all films or just the film selected by the user, and then press **Apply**.

 <p>NOTE</p>	<p>The 'All Film' option will do without compensation in the future DICOM prints. However, when the DICOM Print is changed, you need to perform the same compensation process as the above-mentioned one.</p>
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Reason for setting the calibration

Since film sizes differ from the DICOM printers and film manufacturing companies, an actual 1:1 real size compensation of each DICOM printer and film size must proceed prior to using the printer.

First, the ratio of the ruler length on the film print and the actual ruler length should be checked.

For example, if the lengths measured using the ruler on the film and an actual ruler are 100mm and 98mm, respectively, and then enter **98** in the Real Length field and **100** in the Ruler Length field. Click the **Calc** button, and then the value **100/98=1.02040...** will appear in the **Apply Value** field.

11.1.5 Zoom



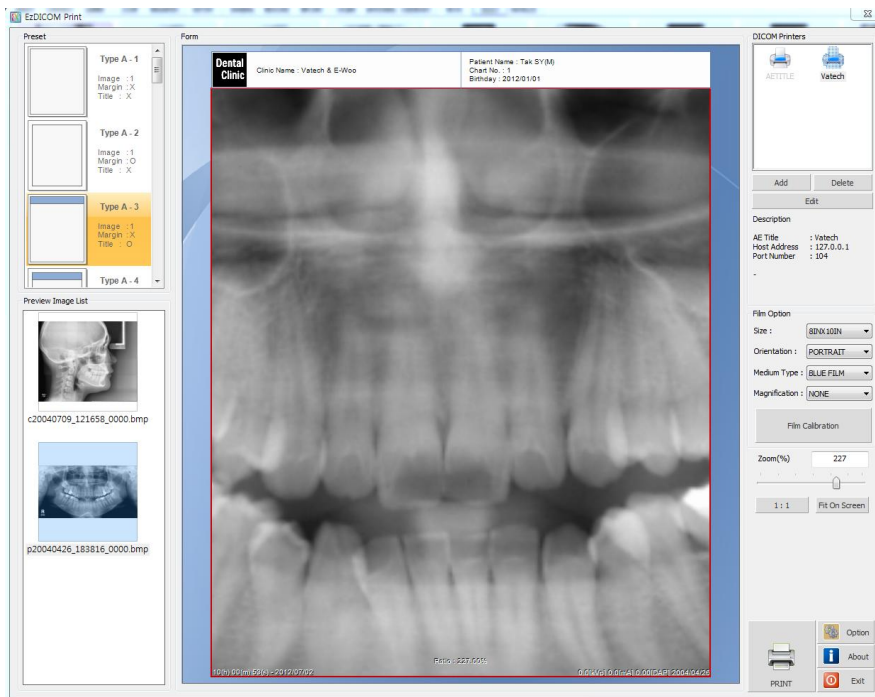
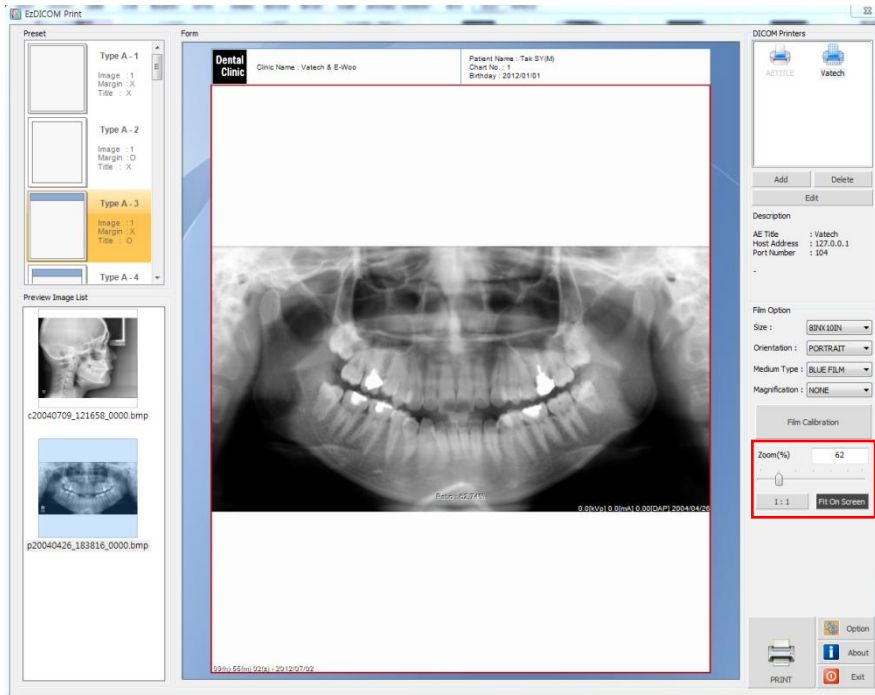
Zooming In/Out operation can be performed in the range of 10% ~300%.

When you drag and drop images initially, the image will display as Fit On Screen mode.

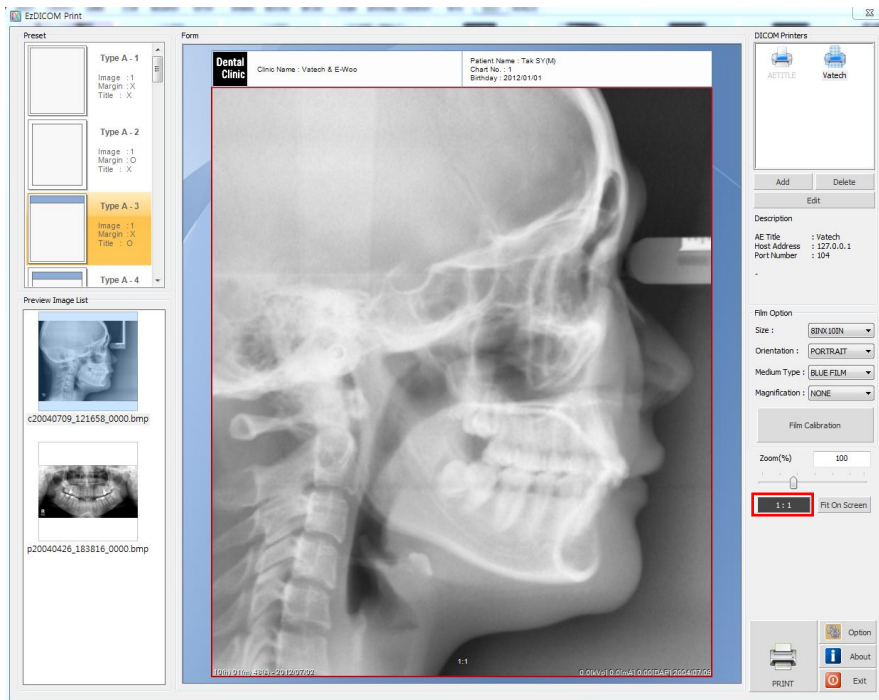
If you click either 1:1 or Fit On Screen button, the image size will change by the selection. Also, selected button will change to darken color.

11 DICOM Print and Report

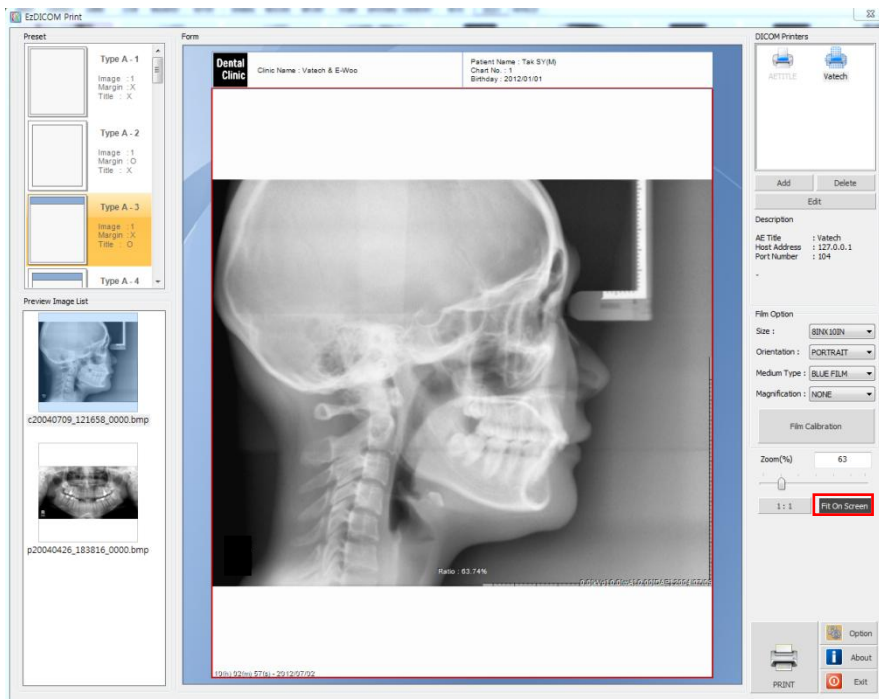
11.1 EzDICOM Print



1:1 Size



Fit On Screen

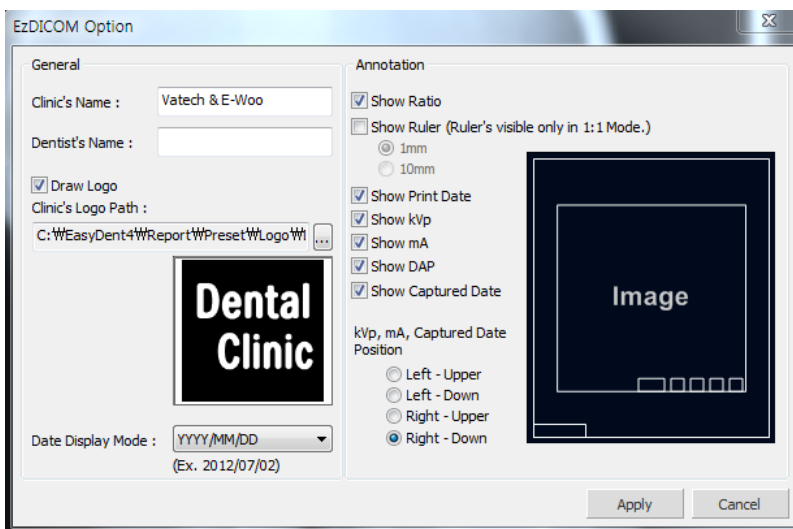


11.1.6 Other Functions



EzDICOM Module Option

Click the **Option** button, and then the **EzDICOM Option** will appear.



- **General**

A. The Clinic's Name and the Dentist's Name can be changed at the input boxes.

B. You can set, change, and preview the Drawing of the Logo Image.

C. Provides six types of Date Display Modes:

Year/Month/Day - Ex) 2009/08/15

Month/Day/Year - Ex) 08/15/2009

Day/Month/Year - Ex) 15/08/2009

Year.Month.Day - Ex) 2009.08.15

Month.Day.Year - Ex) 08.15.2009

Day.Month.Year - Ex) 15.08.2009

Year-Month-Day - Ex) 2009-08-15

Month-Day-Year - Ex) 08-15-2009

Day-Month-Year - Ex) 15-08-2009

YearY MonthM DayD - Ex) 2009Y 08M 15D

MonthM DayD YearY - Ex) 08M 15D 2009Y

DayD MonthM YearY - Ex) 15D 08M 2009Y

D. Initial date will display by the EasyDent4 configuration settings.

- **Annotation**

- Show Ratio Function

Option to show or hide the **1:1 real size** calibration and **zoom magnification** ratios of the image.

- Show Ruler

Option to show or hide the ruler when the image is viewed in a calibrated 1:1 real size ratio:
Option for 1mm or 10mm unit setting

- Show Print Date

Option to show or hide the date printed

- Show kVp

Option to show or hide the kVp data of the image

- Show mA

Option to show or hide the mA data of the image

- Show DAP

Option to show or hide the DAP value.

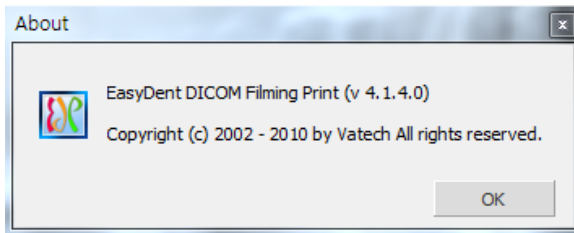
- Show Captured Date

Option to Show or Hide the capturing date of the image.

- kVp, mA, Captured Date Position

Options for selecting one of the four different positions where the information such as kVp, mA, and image capturing date is to be placed on the main form

About



Click the **About** button if you want to verify the EasyDent DICOM Print version.

Exit

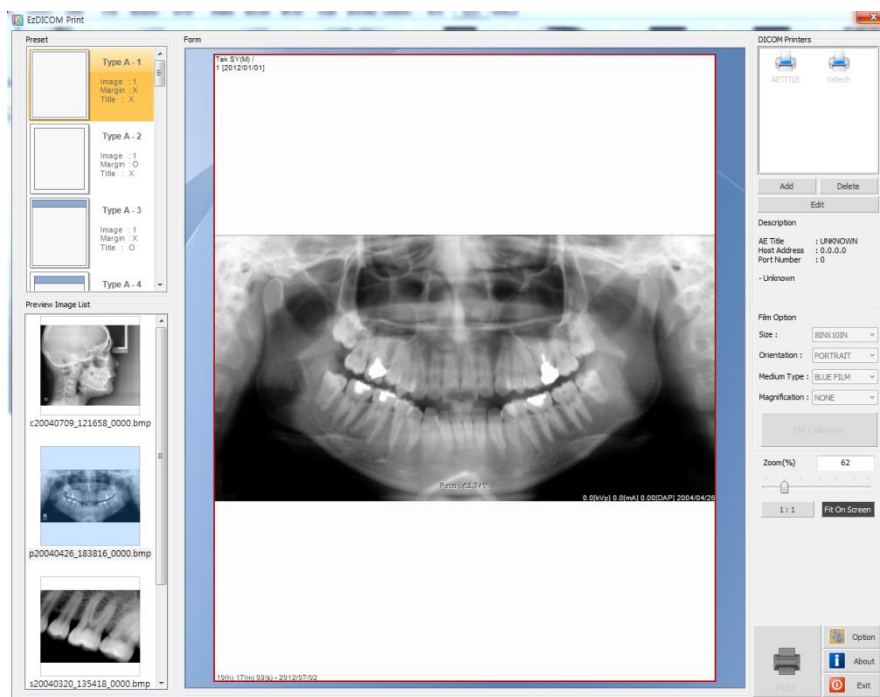
Click **Exit** to close the EasyDent DICOM Print program

Print

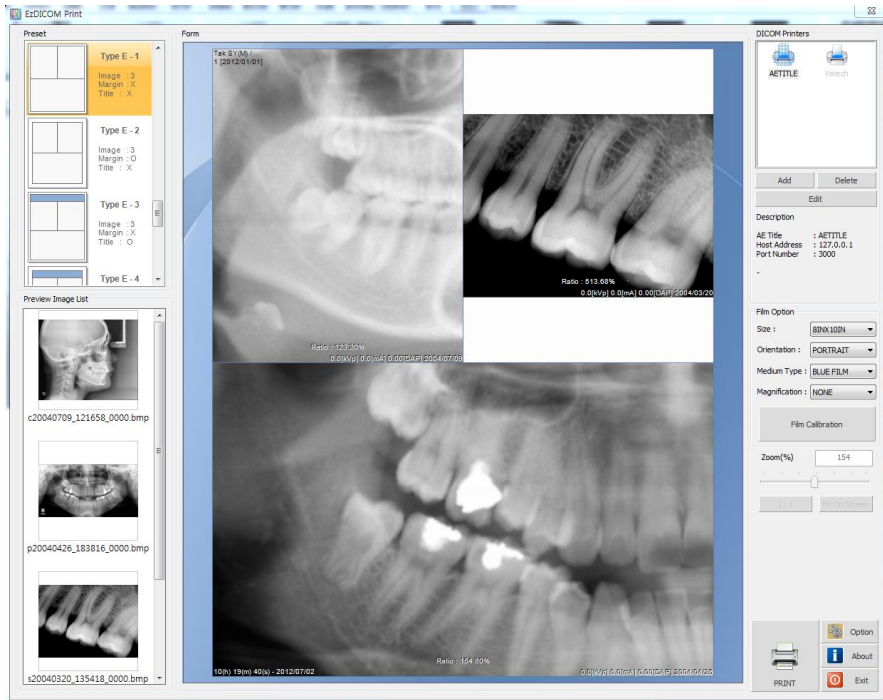
Click **Print** to execute EasyDent DICOM Printing function.

11.1.7 Sample Images of the Preset Forms:

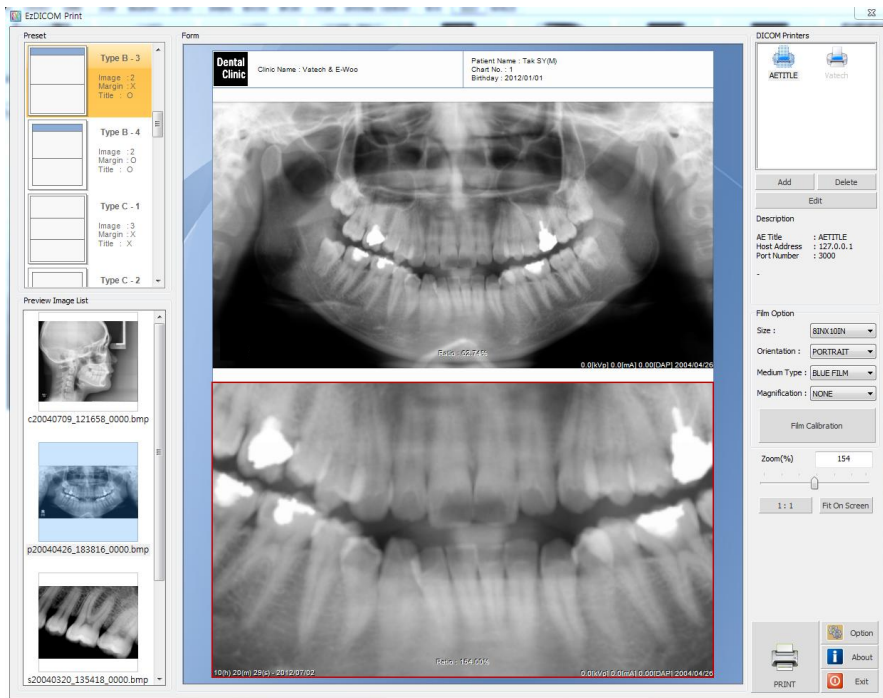
Sample A (Type A-1)



Sample B (Type E-1)



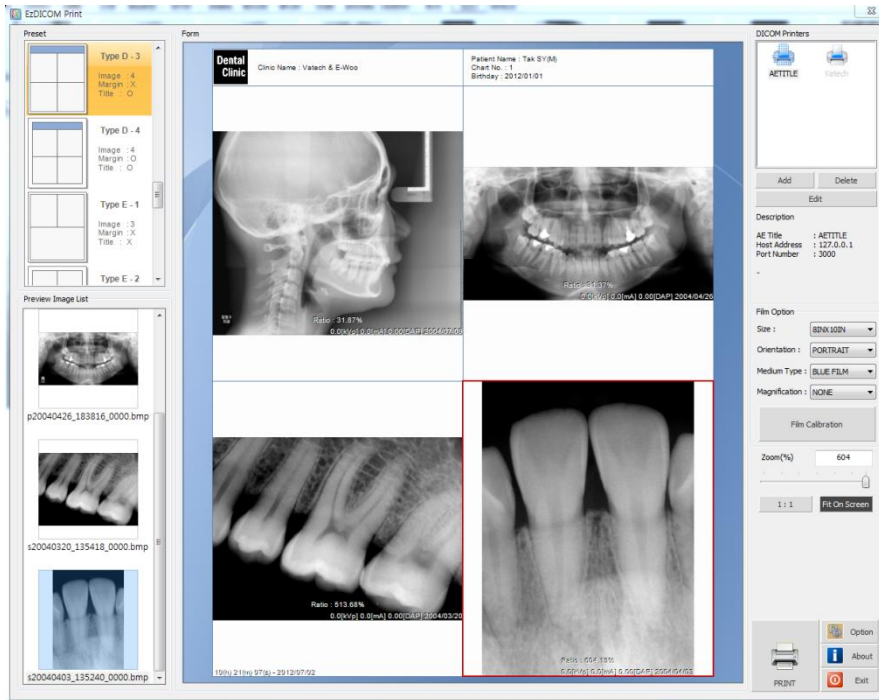
Sample C (Type B-3)



Sample D (Type D-3)

11 DICOM Print and Report

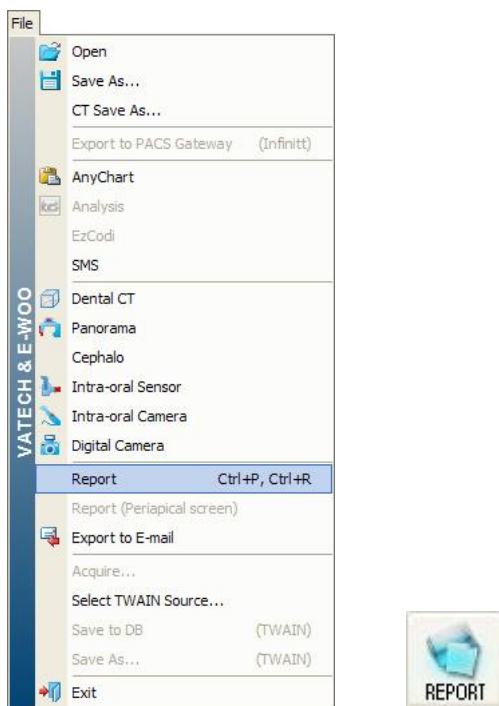
11.1 EzDICOM Print



11.2 Report

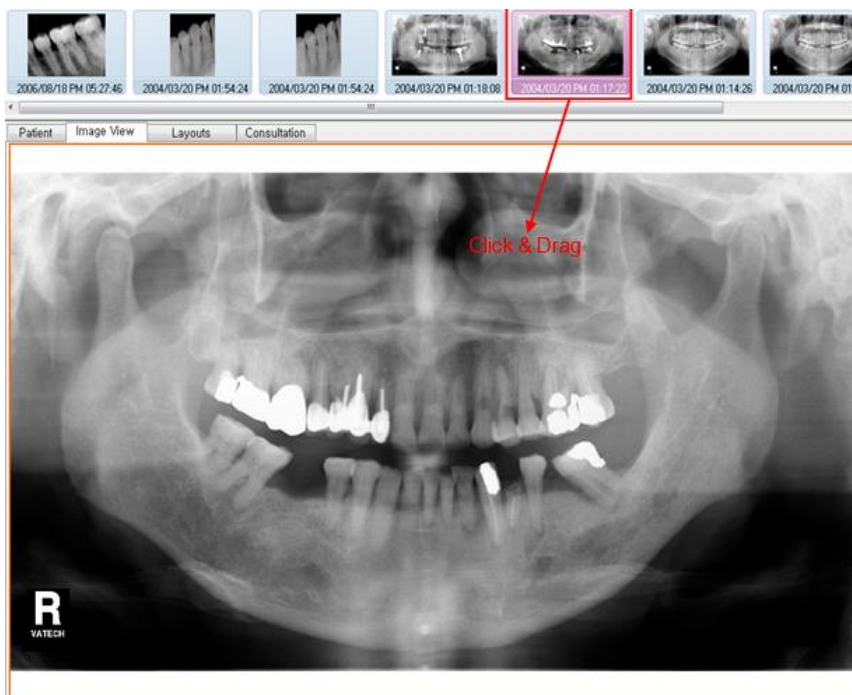
Apart from the printing function of EasyDent, the **Report** function allows printing with added ruler display, title, and comment.

11.2.1 Using the Report Function

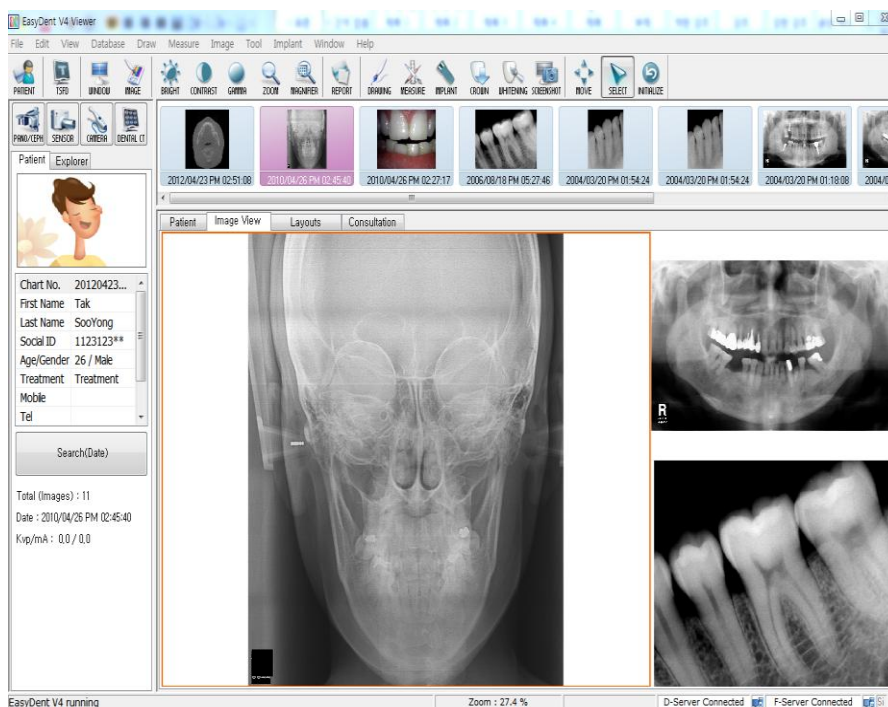


- A. Through the patient search, select the patient whose image you want to create a **Report**.

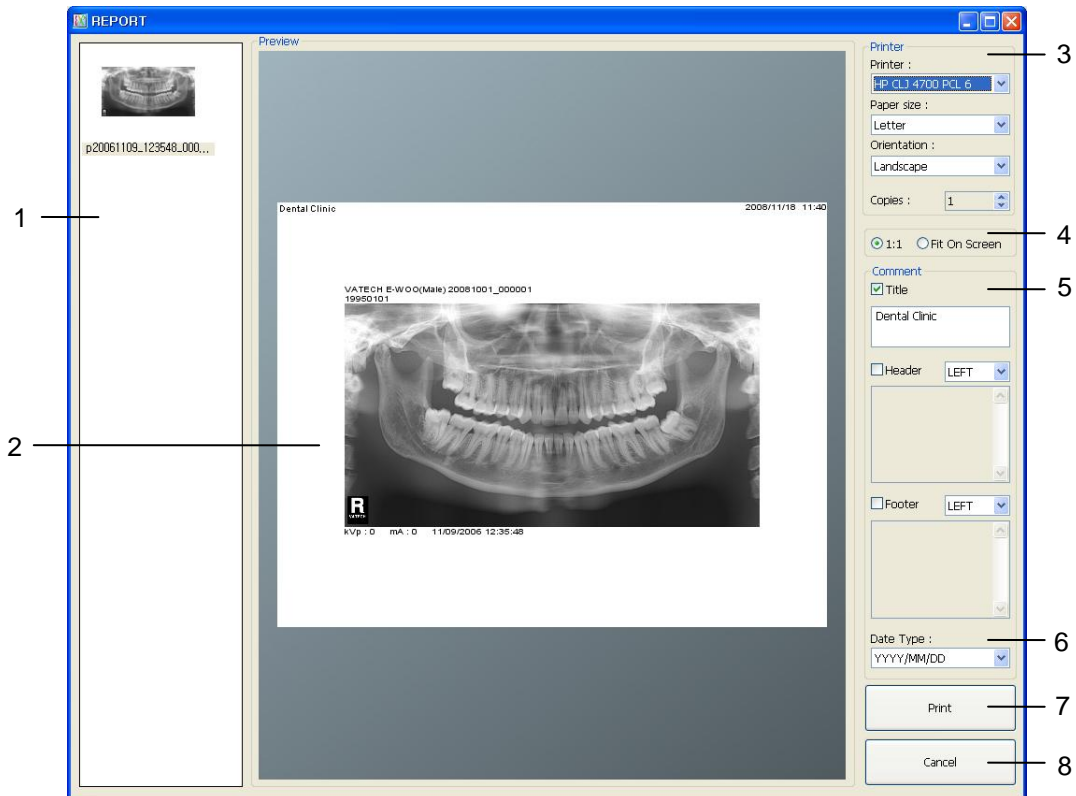
- B. Then, on the Thumbnail, select a patient's image that you want to report and drag it onto the **Image View**.



- C. If you want to report various images at once, use the **Window** Function as shown in the diagram below. Refer to 'Chapter 11 Window' for guidance on how to use the **Window** Function.



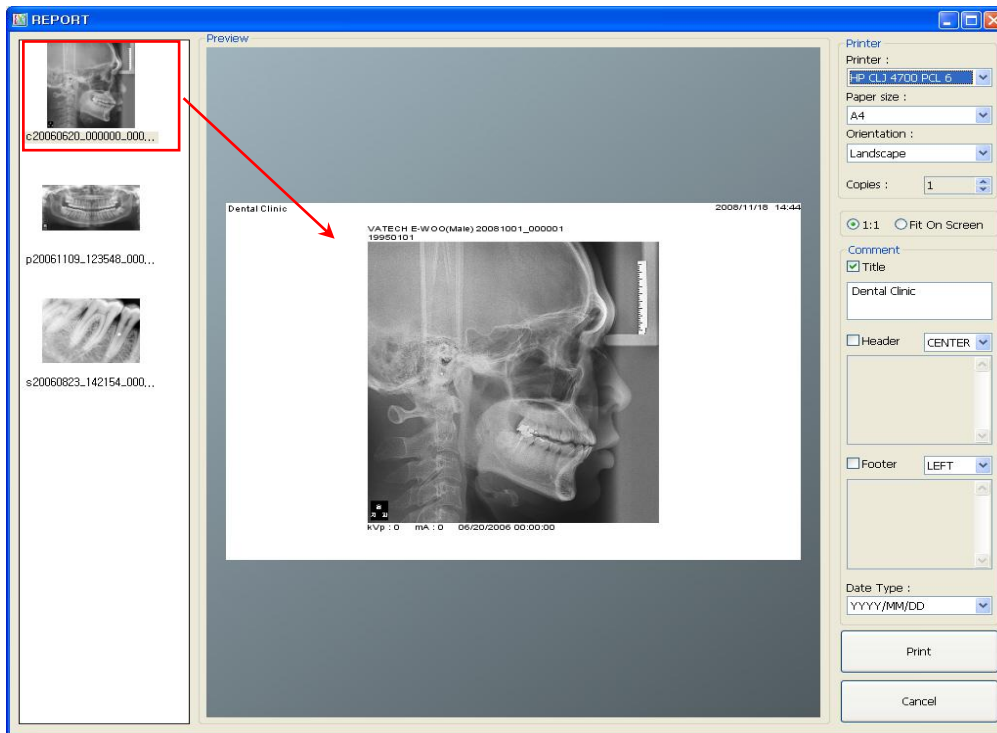
- D. When you click **File** → **Report** on the menu bar or click the **Report** button on the tool bar, a **Report** viewer will appear.




1. **Thumbnail:** Displays the patient's images that you want to print on thumbnail.
2. **Preview:** Provides a preview of the images and contents that you want to print.
3. **Print Setup:** Allows the selection and configuration of the printer.
4. **Image Scale:** The user can adjust the image scale to either 1:1 or fit on screen.
5. **Comment:** The user can enter comments on the Title, Header, and Footer.
6. **Date Type:** The user can change the date format for printing.
7. **Print:** Executes the print function according to the user's settings.
8. **Cancel:** The user can cancel the printing process.

The selected patient's image in EasyDent can be previewed at the preview area of the window, as shown above.

If you have reported various images, they appear in the thumbnail area. If the user wants to change the image to be reported, simply select the preferred image on the Thumbnail and drag it onto the preview area to display the image.



 <p>NOTE</p>	<p>Although there may appear to be more than one image on the Thumbnail, the report will be made separately.</p>
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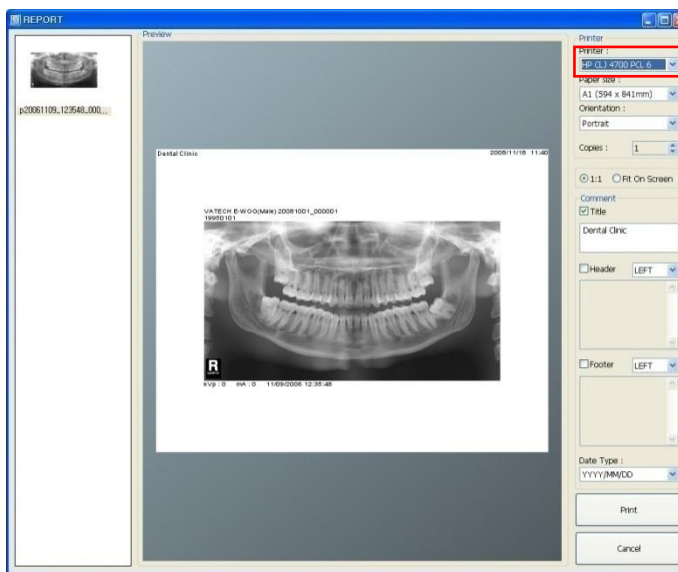
If you want to print the image, click **Print**; if not, click **Cancel**.

11.2.2 Print Setup of the Report

Configure the Printer, Paper size, Orientation, and Copies at the Printer Setup.

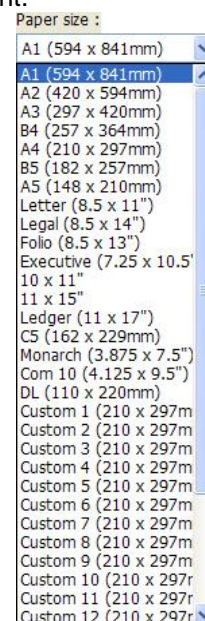
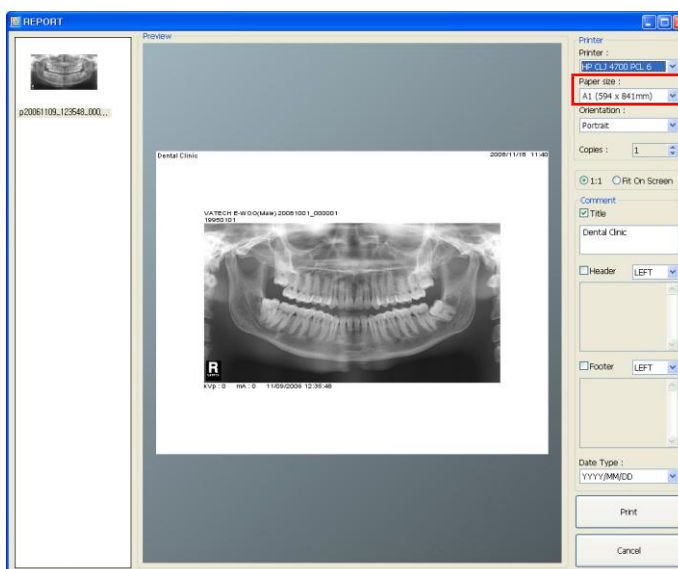
Printer

The basic printer of EasyDent is identical to the basic printer configured for Windows (O/S). The user can select his preferred printer.



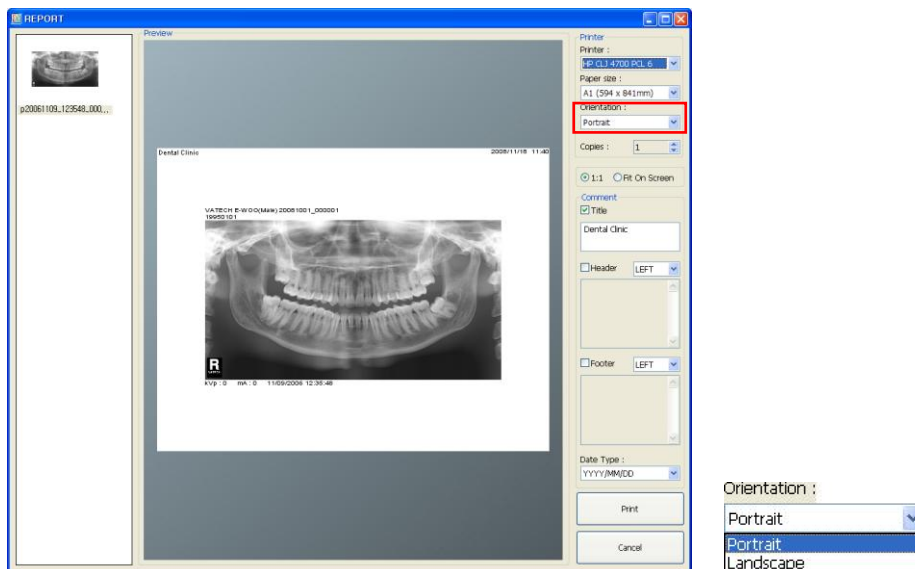
Paper size

The user can select the size of the sheet. It shows a list of sheet sizes for the printer the user has selected. The paper size currently in the printer is set as the initial sheet size. The configured sheet size will be auto-selected the next time the user wants to print.



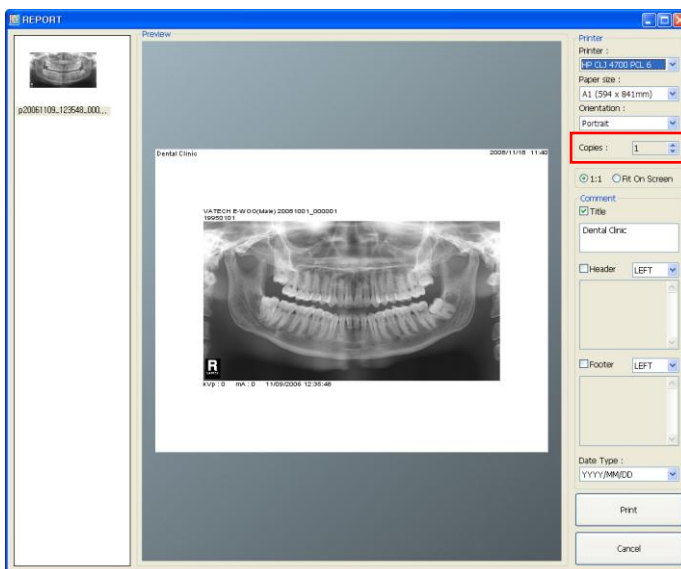
Orientation

You can adjust the print Orientation layout to either Portrait or Landscape. The layout orientation which had been set will be auto-selected the next time you print.



Copies

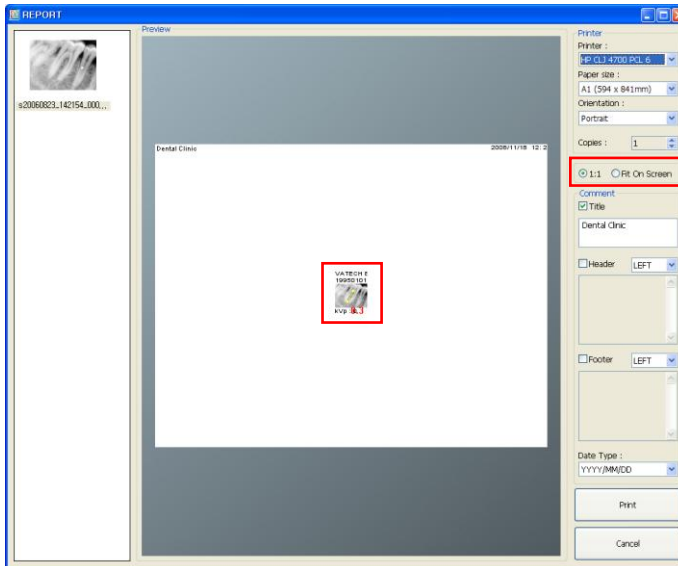
You may set the number of copies you want to print. Initial setting is 1 copy. You can increase or decrease the number of copies using the up / down arrow. (Minimum: 1, Maximum: 100 copies)




11.2.3 Image Scales of the Report

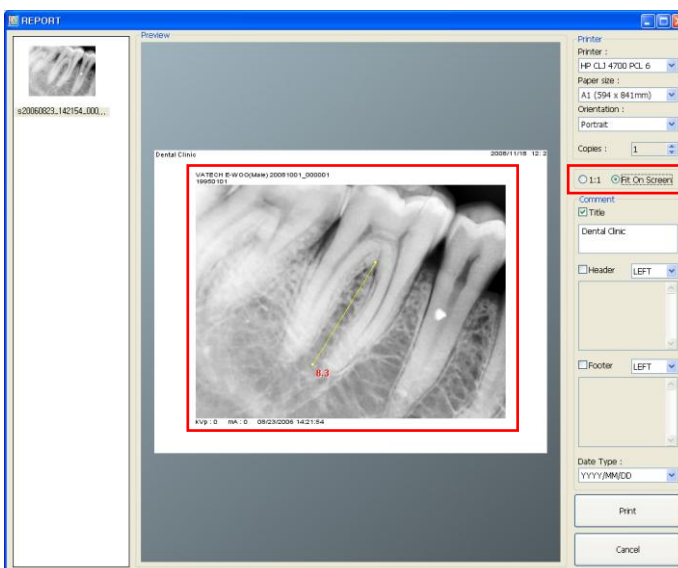
You can adjust the size of the image you wish to print. You can either choose 1:1 or fit on screen.

1:1 Mode



 <p>NOTE</p>	<p>When selecting 1:1, in order for the image to be properly displayed, you will need to calibrate the image first. If not, even if you do select 1:1, the image will be fit to the screen.</p>
--	--

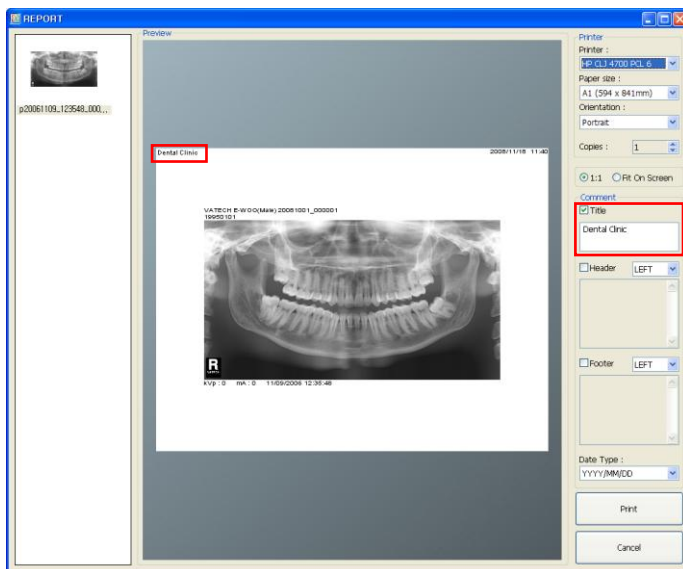
Fit On Screen



11.2.4 Comments on the Report

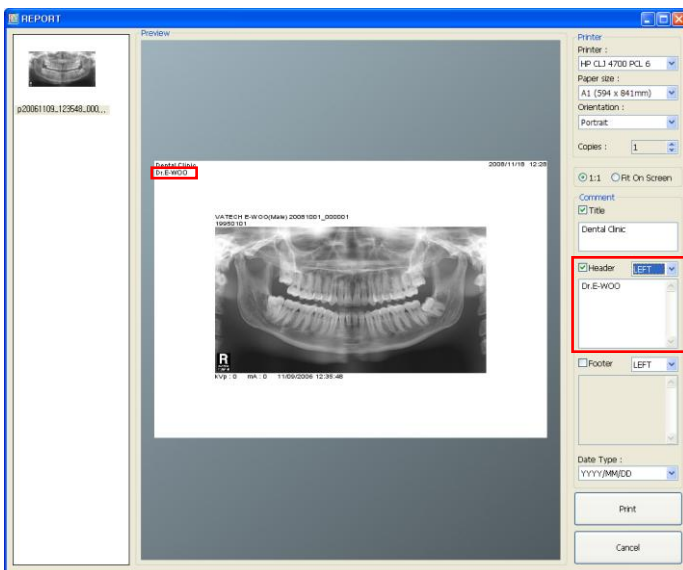
Title

As the user, you can type the title you want and you can choose whether to print a title or not. The input title will be applied directly to the preview on your screen.

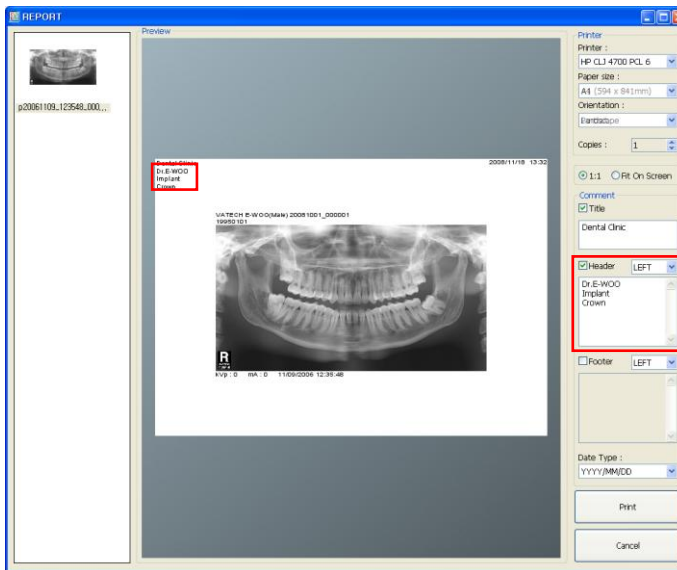



Header

You can choose whether you want to print the Header or not. You can also input the contents of the Header. Custom headers will be applied directly to the preview on the screen.



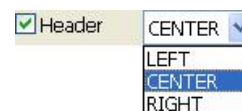
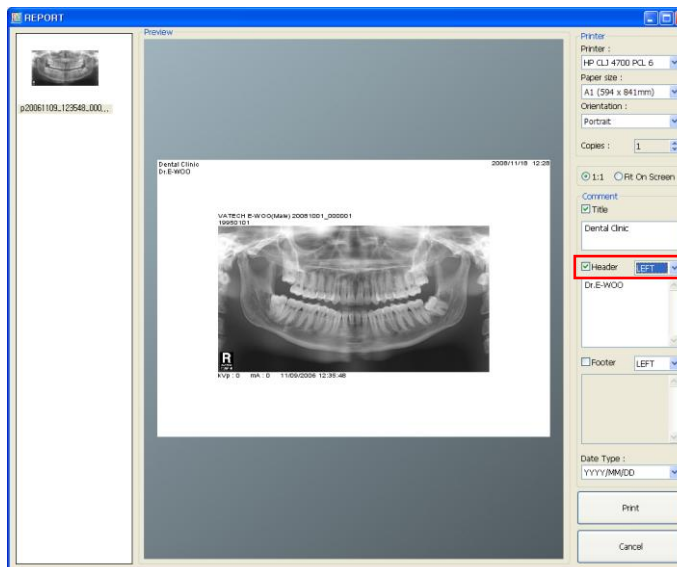
As shown below, the header can be input in multiple lines.





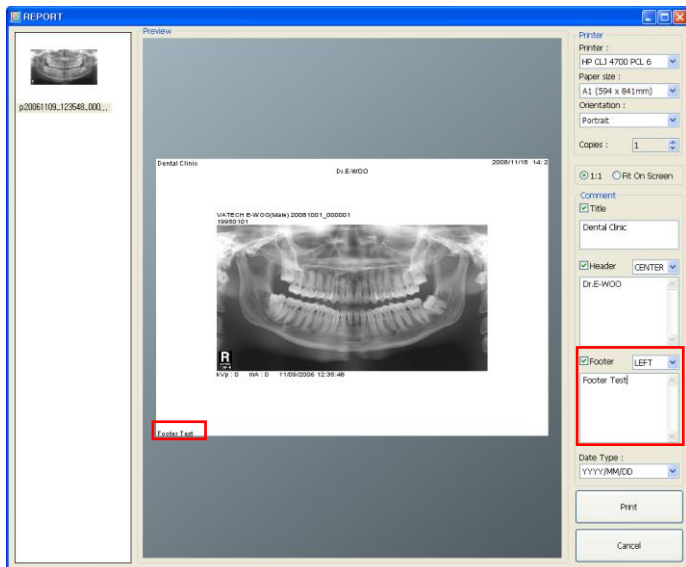
When inputting multi lines, the letters and images may overlap.

Also, the Header can be configured in order to be placed on the Left, Center, or Right of the preview window by the user.




Footer

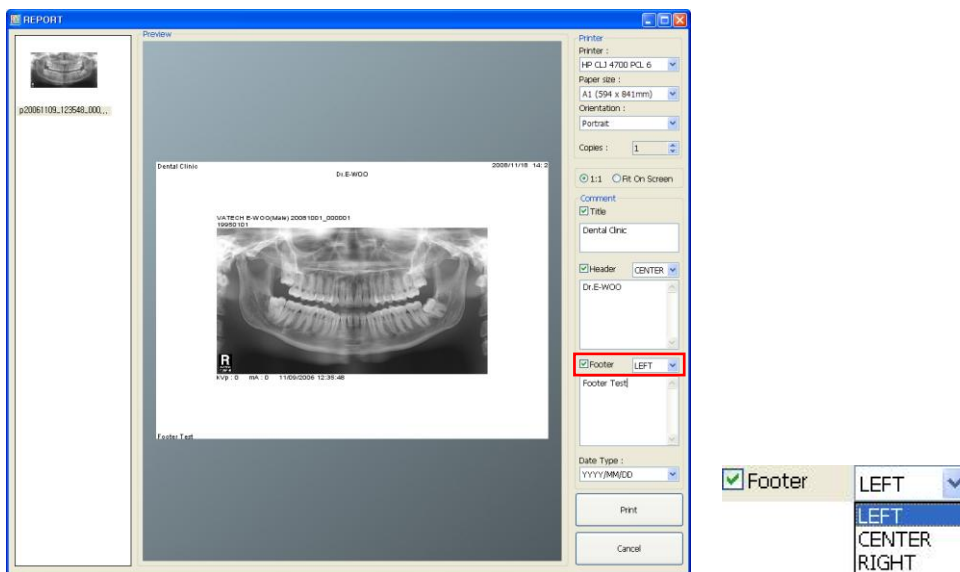
You may choose whether to print the Footer, and can also input the contents. Custom footers will be applied directly to the preview on your screen.



The Footer, like the Header, can be input in multiple lines.

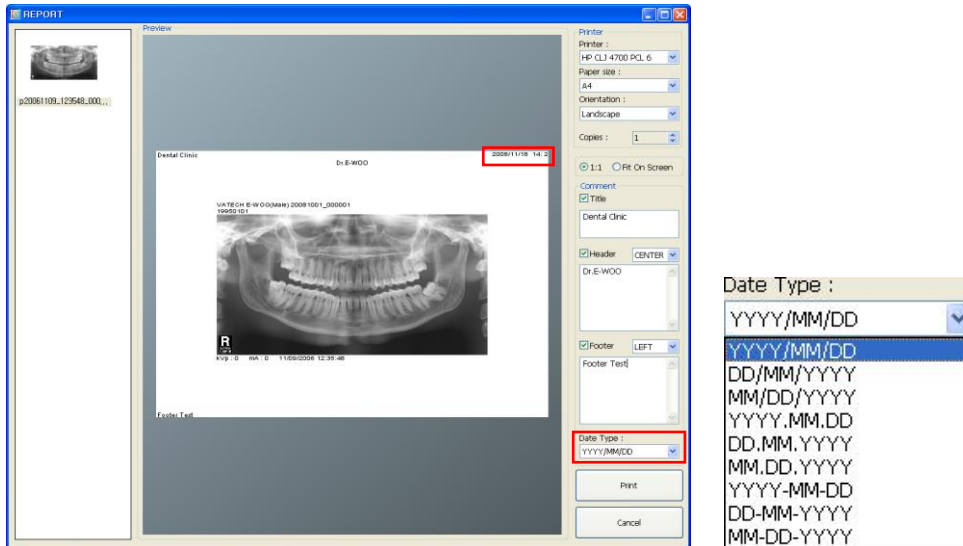
 NOTE	When inputting multi lines, the letters may overlap the image.
---	---

Also, the Footer can be configured in order to be placed on the Left, Center, or Right of the preview window by the user.



11.2.5 Date Type of the Report

You may select the type (format) of the date to be printed.



11.3 Printer Outcome

< Outcome 1 >

Paper Size: A4

Orientation: Landscape

Image Scale: Fit On Screen

Title: Title Test

Header

Text: Header Test

Dr. E-Woo

Order: Center

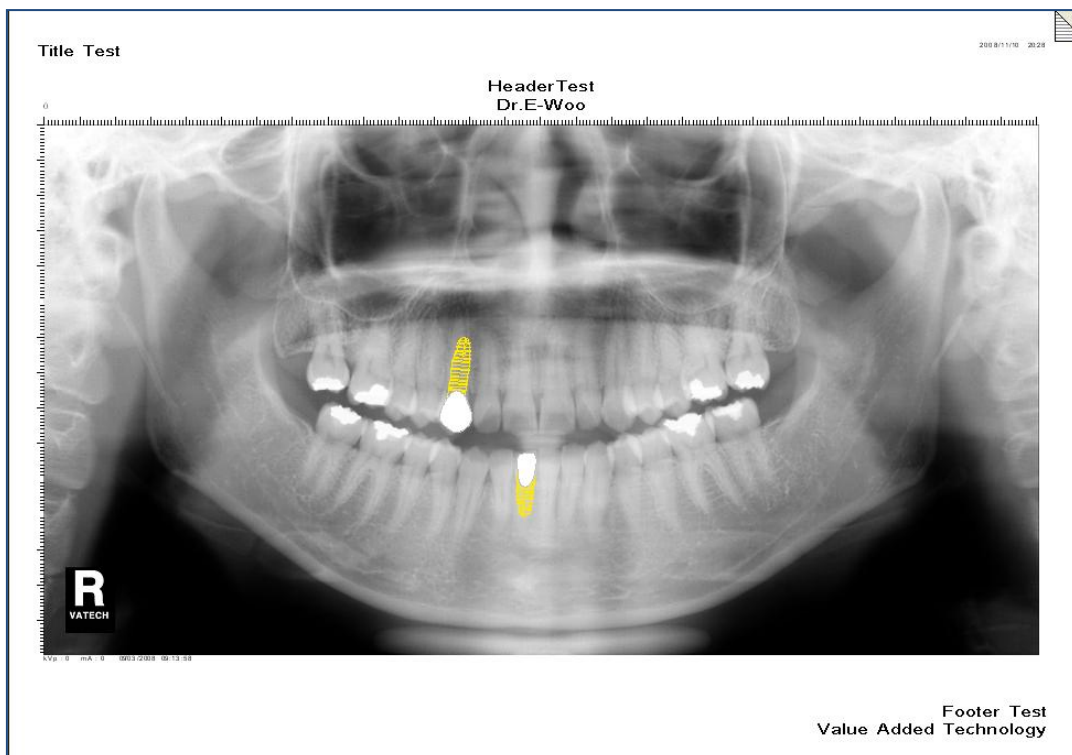
Footer

Text: Footer Test

Value Added Technology

Order: Right

Date Type: YYYY/MM/DD



< Outcome 2 >

Paper Size: A4

Orientation: Landscape

Image Scale: 1:1

Title: Dental Clinic

Header

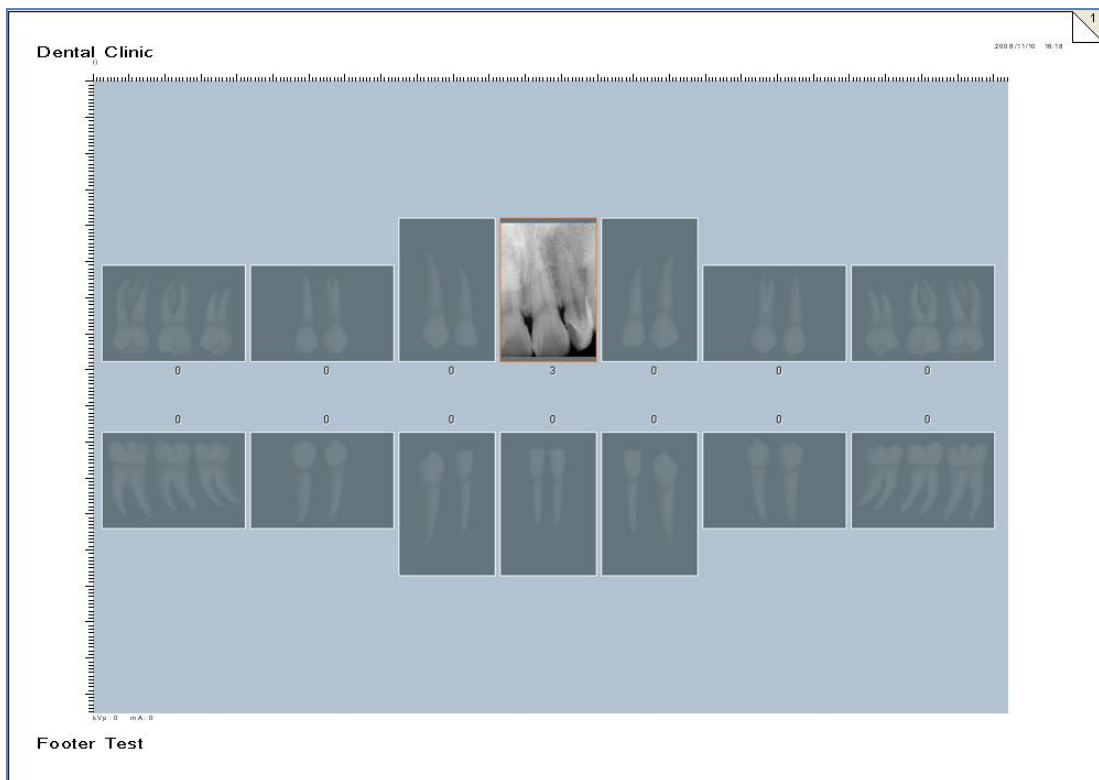
Text: NONE

Footer

Text: Footer Test

Order: LEFT

Date Type: YYYY/MM/DD

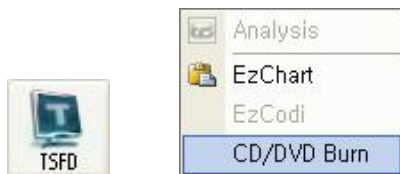


12 CD Publishing

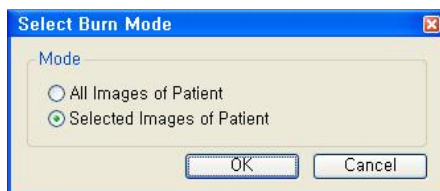
This chapter deals with the burning of CDs for storage of patients' data.

12.1 Saving Data to the CD/DVD Media

- A. Search and select the patient whose data you want to store in the CD/DVD.
- B. Place the image on the Image View window by dragging and dropping it.
- C. Click the **TSFD** button on the toolbar, and then click **CD/DVD Burn** on its sub-menu.



- D. A **Select Burn Mode** window will appear, from which you can choose the mode.

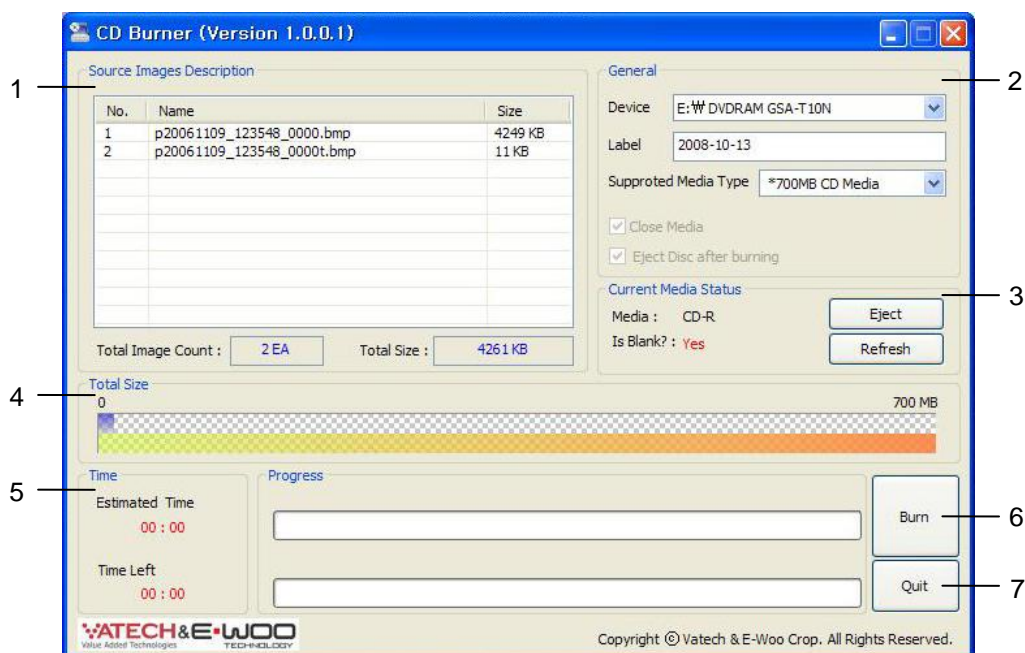


All Images of Patient: You may burn all images of the patient (excluding CT, TOMO) on the CD/DVD.

Selected Images of Patient: Currently, you may burn the selected images from the Image Viewer window on the CD/DVD. (All images that are included in the Multi-View Window can be stored in the CD/DVD.)

- E. Insert a blank CD into the drive.

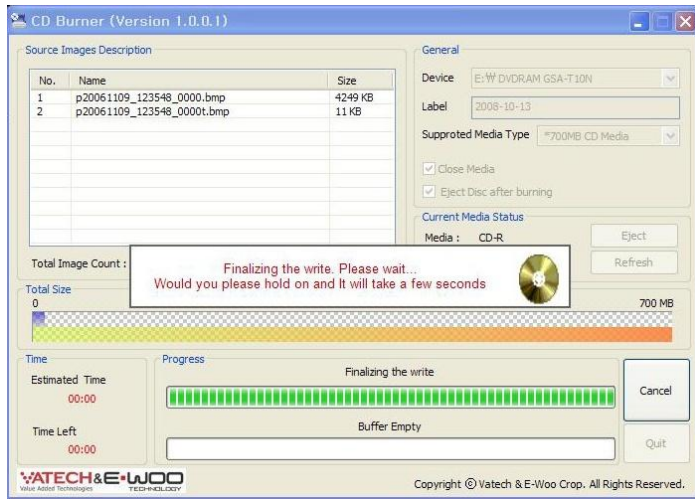
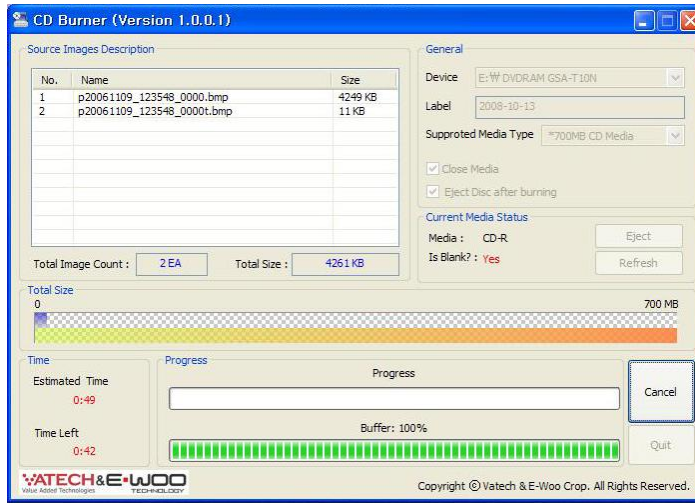
Then the CD Burner window will appear, as shown below. Click the **Burn** button.



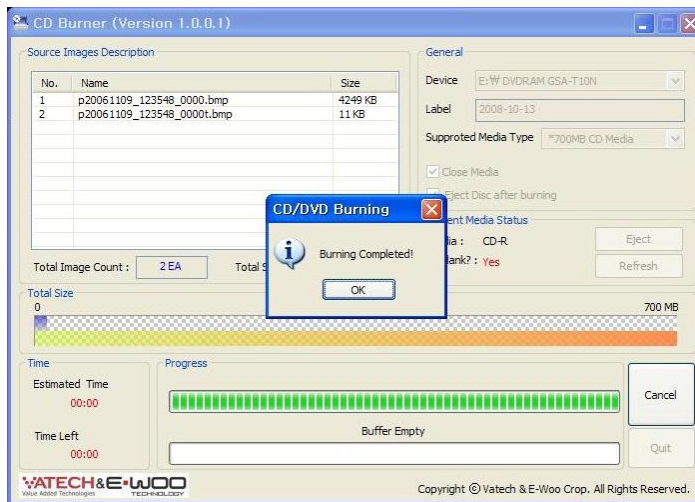
1. **Image List:** shows the list of images you selected.
2. **CD/DVD device information:** shows the device information of the CD/DVD-ROM that is installed on the current system.
3. **Current Media Status:** shows the current device status of whether a CD/DVD media is present in the CD/DVD-ROM and whether it is available for Burning.

Media (CD/DVD) Eject or Refresh: You can check whether a CD/DVD media is present in the CD/DVD-ROM.
4. **File Size:** shows the size of the file that you can store within the CD/DVD-ROM media.
5. **Progress Information:** displays the burning progress.
6. **CD Burn:** CD/DVD Burning Start button. (This will be available when a CD/DVD media is present.)
7. **Quit:** Exit CD Burner.

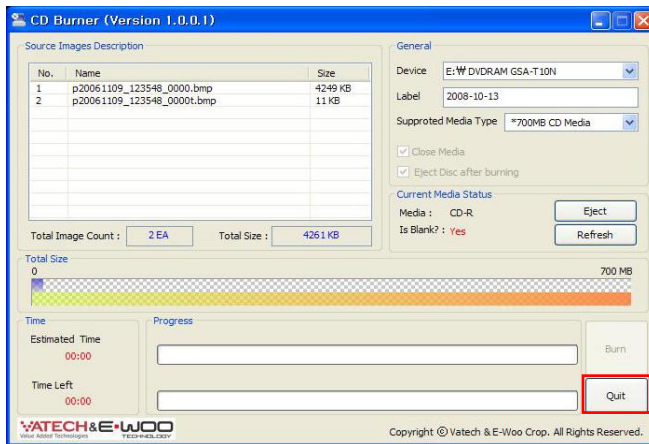
The burning progress will be displayed, as shown below.



F. Once the CD/DVD burning is completed, Click **OK**.



G. Exit the CD Burner by clicking **Quit**.

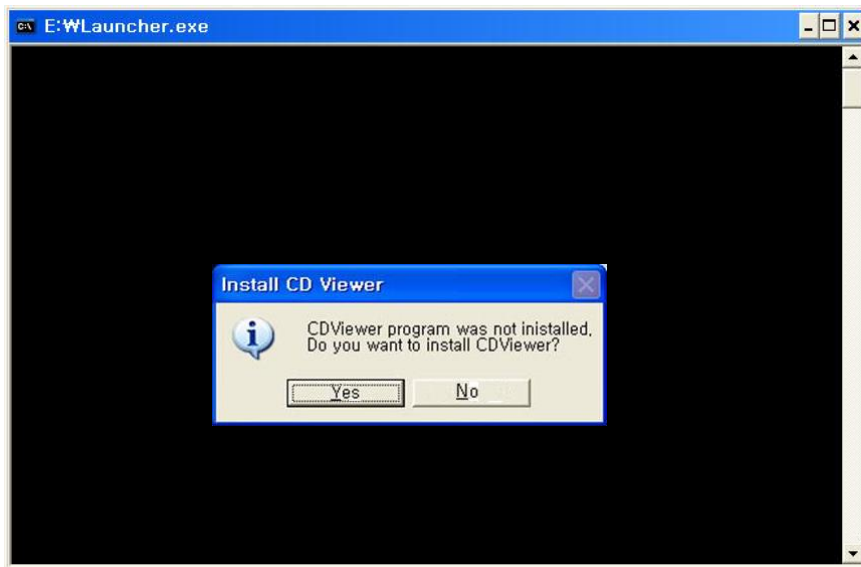


12.2 Viewing CD Publication without EasyDent

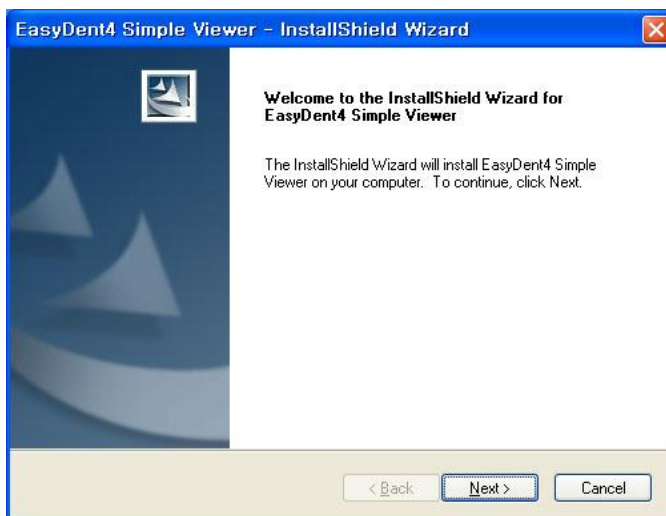
In general, to view and manage the published data on the CD/DVD requires EasyDent program. But only to view them do without EastDent. In this case, the viewer called the **EasyDent simple viewer** plays the role for EasyDent. This is a simplified version of EasyDentV4's full package.

To install it for the first time:

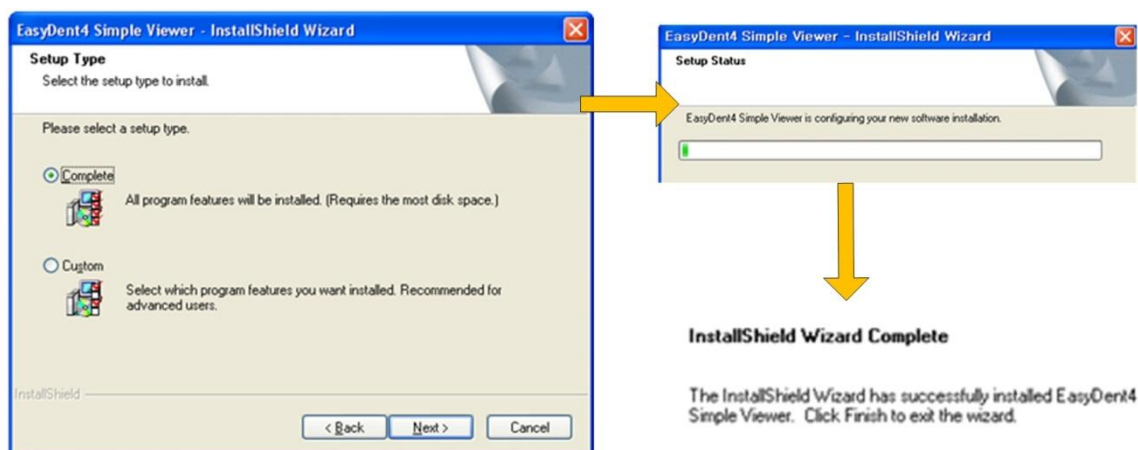
- A. Insert the Published CD/DVD into the drive. And then AutoRun will install the CD Viewer and click **Yes**.



- B. Click **Next**.



- C. Select **Complete** and click **Next**. And then showing the progress, installation is complete.



After the completion of the installation, execute the **Launcher.exe** of the CD. You will only be required to execute **Launcher.exe** on the initial run and will not have to do so a second time.



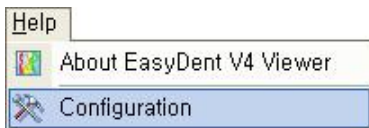
The *EasyDent simple viewer* is a simplified version of the EasyDent which can view and manage the patient data, only to have the viewing capability.

13 Configuration of the Parameters

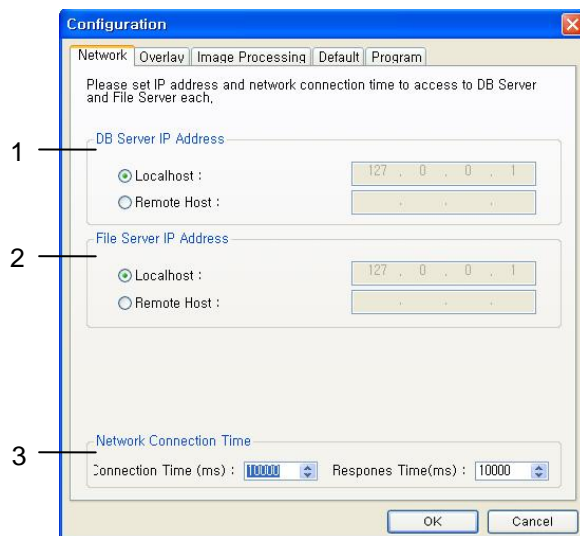
This chapter explains on how to configure the environmental parameters of the Network, Overlay, Image Processing, and Default values for the proper use of EasyDent.

13.1 Network

This configures the parameters such as the DB and File Server IP Addresses, and Network Connection Time associated with the network connection.



A. Click **Help** → **Configuration** on the menu bar, a pop-up window will appear, as shown below.




B. Select the **Network** tab.

1. **DB Server IP Address:** Configure the DB Server's IP Address. It consists of Local Host and Remote Host.
2. **File Server IP Address:** Configure the File Server's IP Address. It consists of Local Host and Remote Host.

3. **Network Connection Time:** the *Connection Time* is the time that the server waits in order to connect; while the *Response Time* is the time taken for the reception of data after the connection to the server is accomplished. The initial value for each time is optimized, so we recommend keeping the initial value, unless otherwise specified.

You can re-set the Connection Time and the Response Time according to your preference.


 CAUTION	<p>IP Address must be set, based on the instruction given in the 'Installation Manual'.</p> <p>Network Connection Time must be set at exactly the same time for the computers sharing the network.</p>
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13.1.1 The DB and the File Servers installed on the separate computers

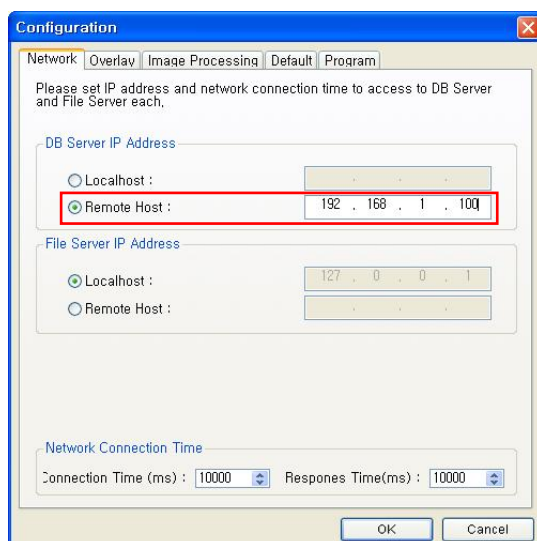
Assuming that the DB Server computer and the File Server computer have the following IP addresses, the Network should be configured, as follows:

DB Server Computer IP: 192.168.1.100

File Server Computer IP: 192.168.1.150

 NOTE	<p>In this circumstance the two computers must be connected through a network.</p>
--	---

- A. Click on to the **Remote Host** section of the DB Server IP Address. After that, input the IP Address of the DB Server computer.



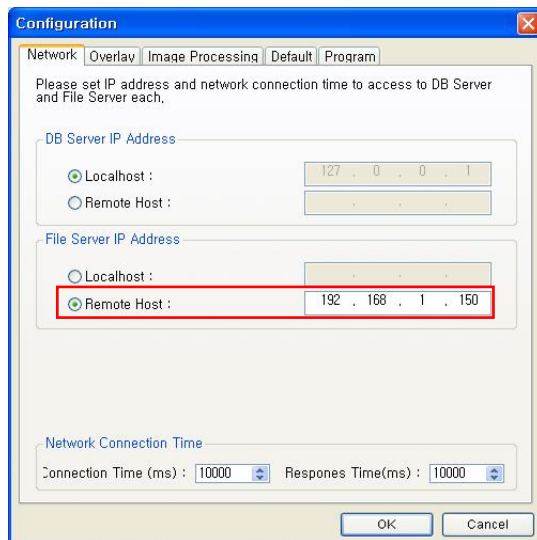
The screenshot shows a 'Configuration' dialog box with the following details:

- Network** tab is active.
- Instruction: "Please set IP address and network connection time to access to DB Server and File Server each."
- DB Server IP Address:**
 - Localhost :
 - Remote Host : 192 . 168 . 1 . 100
- File Server IP Address:**
 - Localhost : 127 . 0 . 0 . 1
 - Remote Host :
- Network Connection Time:**
 - Connection Time (ms) : 10000
 - Response Time(ms) : 10000
- Buttons: OK, Cancel

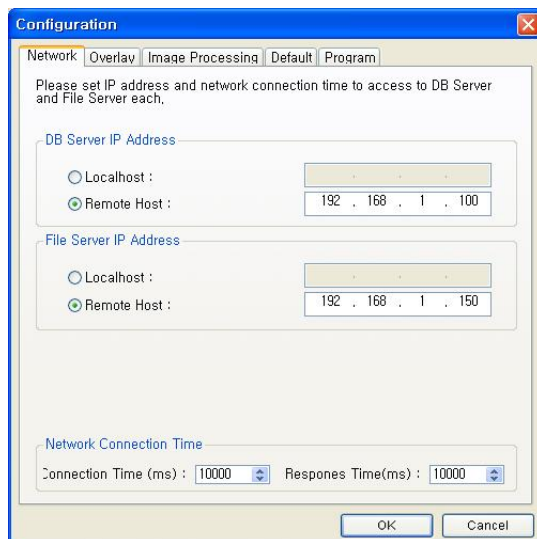
13 Configuration of the Parameters

13.1 Network

- B. Click on to the **Remote Host** section of the File Server IP Address. After that, input the IP Address of the File Server computer.



- C. The Network configuration should be set up, as shown below.

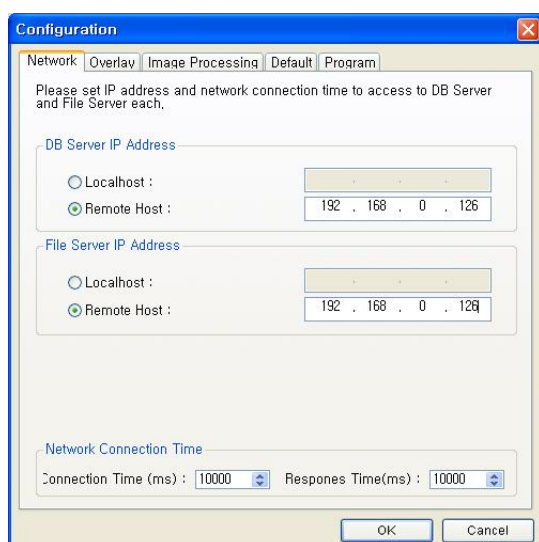


13.1.2 The DB Server and the File Server installed on the same computer

Assuming that the DB Server and File Server are installed on the same computer which has the following IP address, the Network should be configured as follows.

DB and File Server Computer IP address: 192.168.0.126

- A. Click on to the **Remote Host** field of the DB Server IP Address.
- B. Enter the above-mentioned IP address.
- C. Click the **Remote Host** field of the File Server Address and enter the same address.

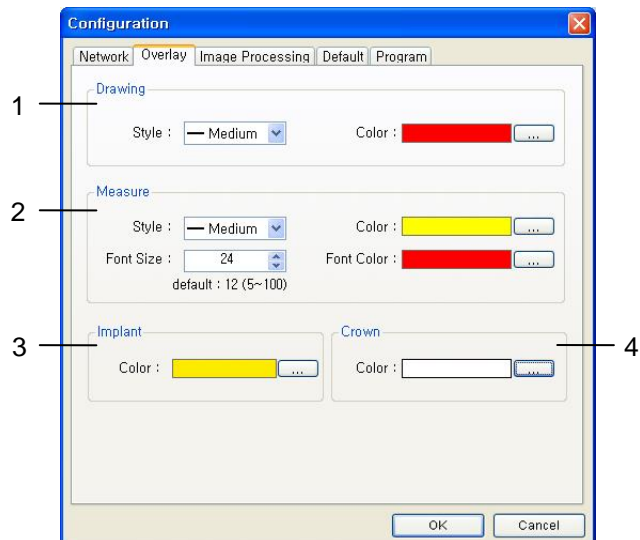


The Localhost IP Address 127. 0. 0. 1 is assigned to the computer itself. Therefore, you don't have to alter it.

13.2 Overlay

You can configure the initial values of the style and color of the lines which are to be used for Drawing, Measuring, and Implants.

If you click **Help** → **Configuration** on the menu bar, a configuration screen will pop-up. Select the Overlay tab.



1. **Drawing:** configure the style of the line (Dotted, Thin, Medium, and Bold) and its color in the Drawing Tools. You can also change it at Color and Style explained in **Chapter 7. Image Processing**.
2. **Measure:** select the style (Dotted, Thin, Medium, and Bold) and color of the line to be used in the 'Measuring Tools'. Also, the font size, which has a default of 12 and can either be inputted directly by the user or can be configured by using the scroll on the right to choose any number between 5~100; and the font color can be configured.
3. **Implant:** configures the color of the Implant.
4. **Crown:** configures the color of the Crown.

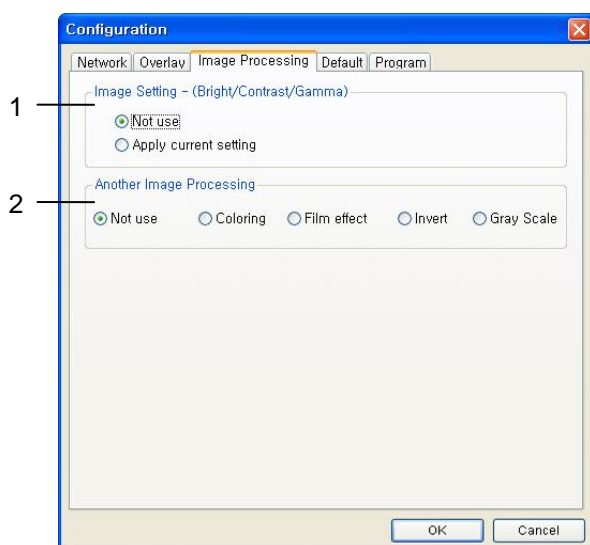
13.3 Image Processing

You can configure the basic functions used for Image Processing.

It is a function which is to be used for applying the current settings of the effects (Bright, Contrast, and Gamma) to similar types of images. Also, four options such as Coloring, Film Effect, Invert, and Grayscale can be applied separately.

A configuration pop-up screen will appear when you click **Help** → **Configuration** on the menu bar.

Select the **Image Processing** tab.



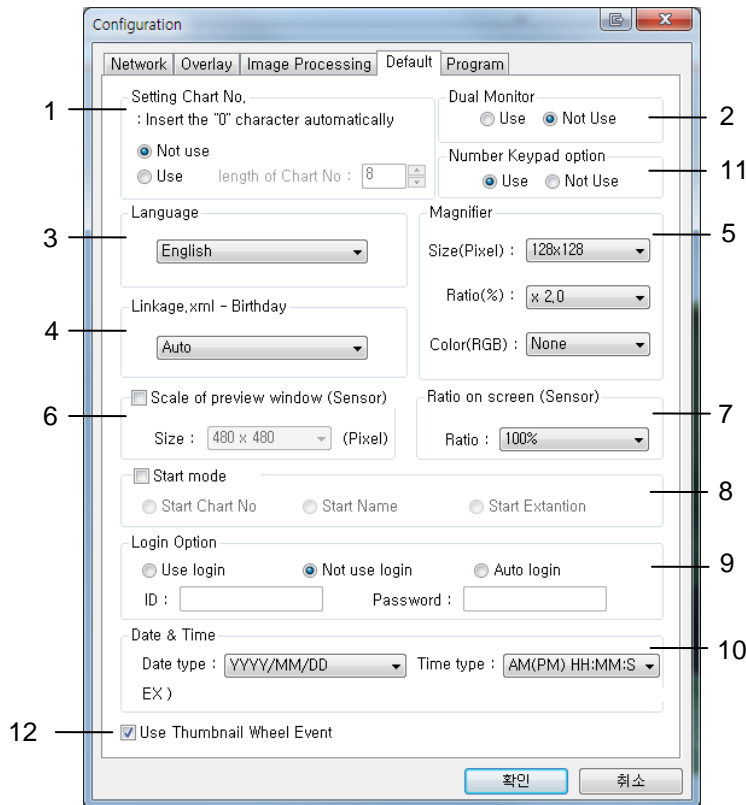
1. **Image Setting (Bright/Contrast/Gamma)**: saves the current Bright, Contrast and Gamma levels. The default setting is **Not in Use**.
2. **Another Image Processing**: sets the current Coloring, Film Effect, Invert and Gray Scale image process. The default setting is **Not in Use**.



You need to restart EasyDent after setting these parameters.

13.4 Default

You may configure the values of the Chart No., Dual Monitor, Language, and Magnifiers. A pop-up window will appear if you click **Help** → **Configuration** on the menu bar. Select the **Default** tab.



1. **Setting Chart No.:** click **Use** to set the length of the chart number.
2. **Dual Monitor:** configure whether you want to use dual monitors.
3. **Language:** select the language that you want to use.
4. **Linkage.xml-Birthday:** Interfacing the patient's information with a third-party program through *Linkage.xml*, you can print out the patient's image, according to your preferred format of the patient's date of birth.
 - Auto: The date format used in Windows OS system is automatically recognized.
 - mm/dd/yyyy: mm/dd/yyyy date form.
 - dd/mm/yyyy: dd/mm/yyyy date form.

Ex) If you input the patient's October 4, 1972 birthday as <04/10/1972> and the other program uses the dd/mm/yyyy date format, the EasyDent program will recognize the format that you have selected.

5. **Magnifier:**
 - Size (Pixel): You can choose a pixel size among 64x64, 92x92, 128x128, 192x192, and 256x256.
 - Ratio (%): You can choose the ratio among x1.5, x2.0, x2.5, and x3.0.
 - Color (RGB): You may choose a color for the boundary when magnifying an image. (None, Black, Red, Green, Blue)
6. **Scale of preview window (Sensor):** This function is for the selection of screen resolution for the Preview Window of Intraoral sensor images from 340x340, 480x480 and 640x640.
7. **Ratio on screen (Sensor):** This function is for the configuration of the Intraoral Sensor's proportion to the screen. The ratio of the sensor on the screen can be configured at 100%, 85%, 70%, or 50%.
8. **Start Mode:** This allows the user to decide whether to allow the virtual keyboard to appear automatically when searching for a patient in EasyDent using the Start Chart No., Start Name, or Start Extension.
9. **Login Option:** Shows options to configure whether the user should 'Use Login', 'Not Use Login', or 'Auto Login' when executing EasyDent.
 - **Use login:** Set 'Use login' if you want the Login window to appear each time you run EasyDent.
 - **Not use login (Default Setting):** Set 'Not use login' if you don't want the login window to appear each time when you run EasyDent. This is the default setting upon installation of EasyDent.
 - **Auto login:** To set **Auto login**, register and save a User ID and Password in the auto login input boxes and these data will be saved in PC. Once you re-execute the EasyDent program, it will automatically log in to the set user account only.

10. **Date & Time:** The Date & Time display format (display mode) on EasyDent can be set according to the user's preference among the random formats selection in the Configuration window.

Date Display Mode (Ex: January 31, 2010)

	Type	Example
Display Format	YYYY/MM/DD	2010/01/31
	MM/DD/YYYY	01/31/2010
	DD/MM/YYYY	31/01/2010
	YYYY.MM.DD	2010.01.31
	MM.DD.YYYY	01.31.2010
	DD.MM.YYYY	31.01.2010
	YYYY-MM-DD	2010-01-31
	MM-DD-YYYY	01-31-2010
	DD-MM-YYYY	31-01-2010
	yyyyY mmM ddD	2010Y 01M 31D
	mmM ddD yyyyY	01M 31D 2010Y
	ddD mmM yyyyY	31D 01M 2010Y

Time Display Mode (Ex: AM 08:30:50)

	Type	Example
Display Format	AM(PM) HH:MM:SS	AM 08:30:50
	AM(PM) HH:MM	AM 08:30
	HH:MM:SS AM(PM)	08:30:50 AM
	HH:MM AM(PM)	08:30 AM


Once you set the Date & Time display mode through **Configuration** → **Default** → **Date & Time**, all Date & Time displays on the EasyDent screen will reflect the same format as set.

Date and Time Display Mode (Ex: MM/DD/YYYY and AM (PM) HH:MM:SS format)

- **Patient List** → **Birthday**

Patient List					
Patient Name	Chart No.	Gen...	Age	Birthday	
Vatech E-WOO	1	Male	29	10/31/1980	

- **Image List** → **Date Captured**

Image List	
Image Type	Captured Date
 PANORAMA	01/28/2010 AM 11:28:40

- **Patient** → **Search(Date)**

Total (Images) : 1

Date : 01/28/2010 AM 11:28:40

Kvp/mA : 75 / 9

- **Database** → **Patient Management** → **Patient Information**

Patient Information

Chart No. : 1

Patient Name : Vatech E-WOO

Social ID :

Gender : Male

Age : 29

Birthday : 10/31/1980

Address1 :

Address2 :

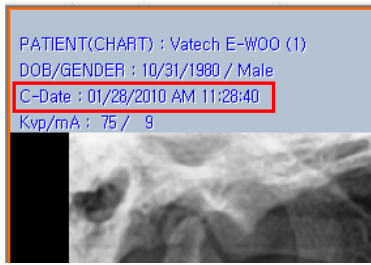
E-mail : @

Tel :

Mobile :



- **Image Annotation Information – Patient’s birthday, date captured**



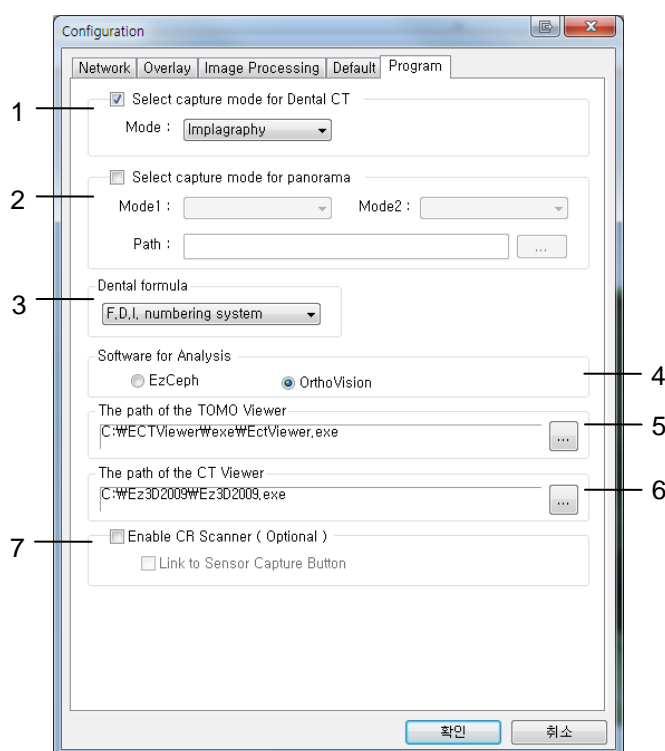
11. **Number Keypad option:** This allows the user to use either number keypad or virtual keyboard to search Chart No..
 - **Use:** Number Keypad
 - **Not use:** Virtual Keyboard)
12. **Use Thumbnail Wheel Event:** This function is for configuration of the changeover the previous or next images with mouse wheel on the **Image View** tab.

 <p>NOTE</p>	<p>Restart EasyDent in order to apply the new configurations.</p>
--	--

13.5 Program

Here, you can configure the equipment that is used for capturing the image, as well as the location of the 3D analysis software such as **Ez3D2009**.

If you click **Help** → **Configuration**, a Configuration window will appear. Select the **Program** tab.



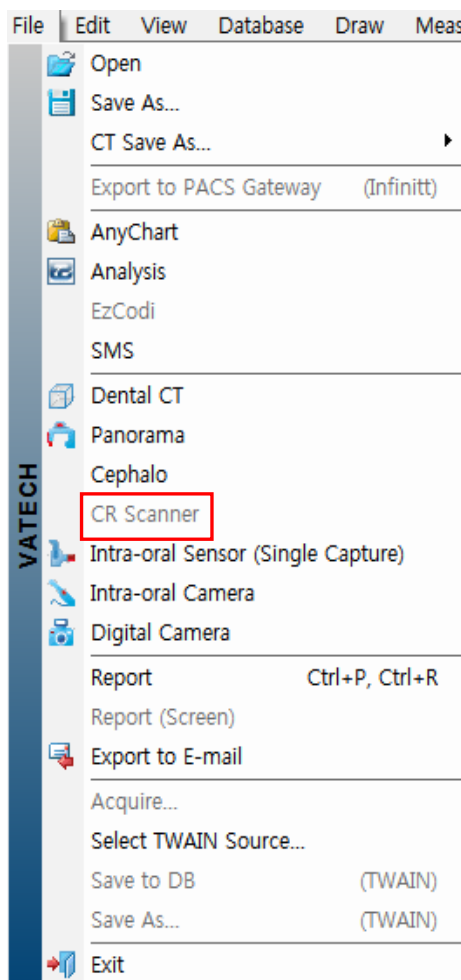
1. **Select capture mode for Dental CT:** This is used to configure the capture mode for Dental CT equipment such as: Implagraphy, DCT, VCT, EPX-Impla, ECT-12, ECT, Picasso-Trio, Picasso-Pro, Picasso-Master, Picasso-Duo, Master3DS, PaxReve3D, PaxDuo3D, PaXZenith3D, PaxFlex3D or PaxFlex3D UHD.

The imaging software for PaX-Duo3D and PaX-Zenith3D are linked to DBSave Mode.

* **DBSave Mode:** A mode where you directly store the image and image data from the imaging software to EasyDent.

2. **Select capture mode for panorama:** This is used to configure the capture mode for panoramic equipment such as: EzPax, PaX-400(Series), Neo-Top, PaX-PNP, PaX-500, PaX-500 Versa, PaX-500 Versa (C2), PaX-500 OS, PaX-500 OS PRO, PaX-500 ECT, PAX-Uni3D, PaxPrimo, PaXPrimo UHD and AI Pan which captures panoramic images.
3. **Dental formula:** You can choose a Dental formula of either the F.D.I. numbering system or the Universal numbering system (USA).

- 4. **Software for Analysis:** You can choose either EzCeph or OrthoVision, both of which are programs for analyzing CEPH images.
- 5. **Path for the TOMO Viewer (EasyDent V4.1.2.6.0104):** You can designate and configure the location of the Ez3D Viewer's execution file.
- 6. **Path for the CT Viewer (EasyDent V4.1.2.6.0104):** You can designate and configure the location of the Ez3D2009 Viewer's execution file.
- 7. **Enable CR Scanner (EasyDent 4.1.3.0):** Check on the box if you are using CR Scanner.
 - * **Registration** window will pop-up when you check on the box initially.
 - * After you enter the license information of the CR Scanner, **CR Scanner** menu will enable.



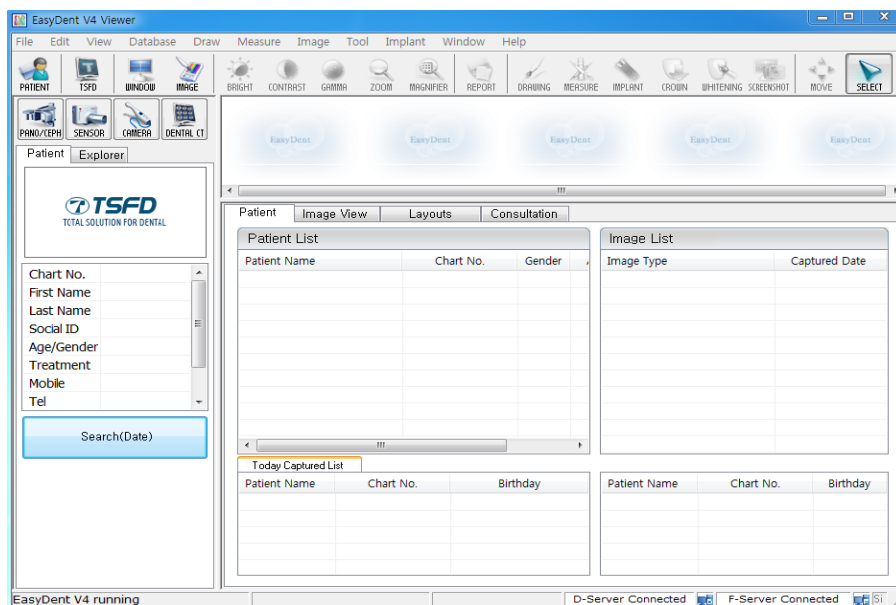
* If you check on the **Link to Sensor Capture** Button, **CR Scanner** will run when you click **SENSOR** button at the toolbar.

14 Interfacing with EzBridge

This chapter explains on how to interface between EasyDent4(Oversea) and EzBridge. EzBridge helps to share patient information and images between 3rd Party Application and EasyDent4. It works without setting on EasyDent4.

14.1 Running EasyDent4 from EzBridge

EasyDent4 will run at any other 3rd party application without special set up.

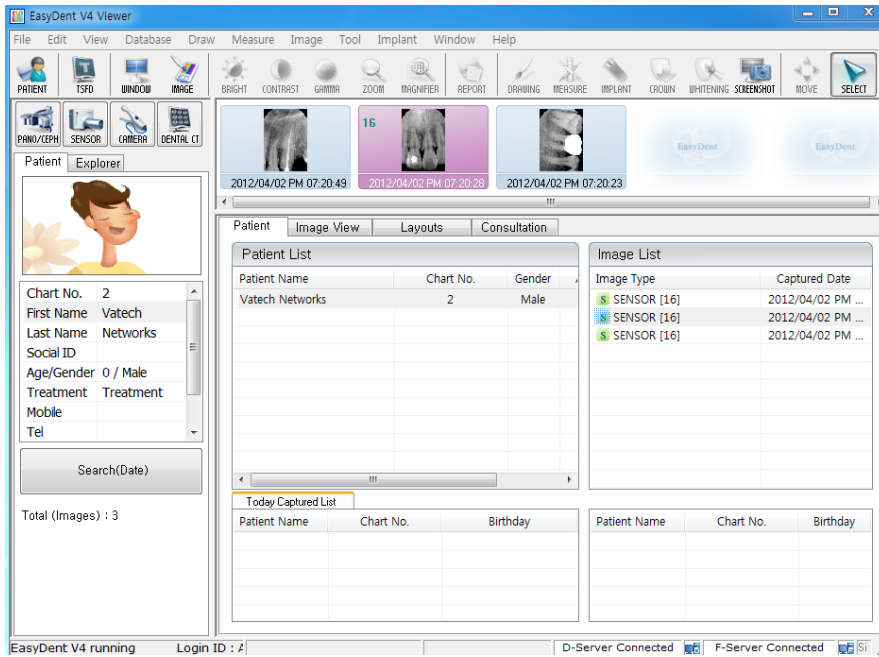


14.2 Calling Patient Information

When you enter patient's **Chart No.**, on the EzBridge, EasyDent4 will call patient information. If EasyDent4 is not currently running, the EasyDent4 will automatically run and display patient information.

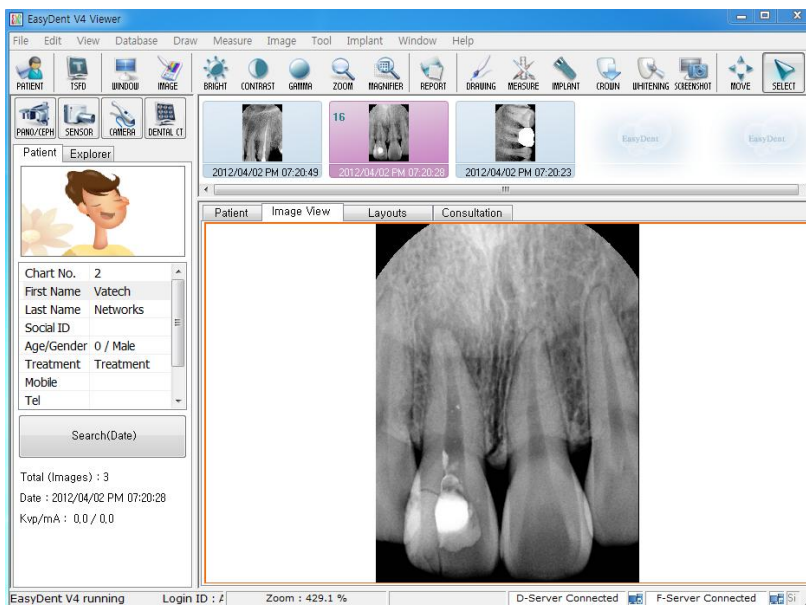
14 Interfacing with EzBridge

14.3 Calling Images of the Patient



14.3 Calling Images of the Patient

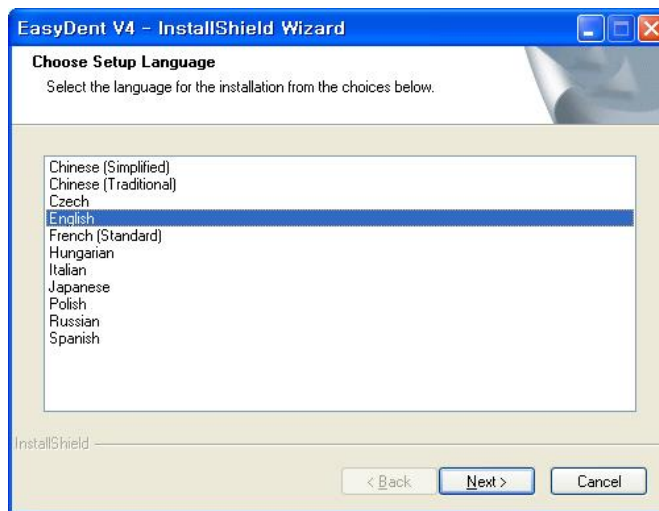
When you enter patient's Chart No. on EzBridge, EasyDent4 will call required patient's image and display the image on the screen. If EasyDent4 is not currently running, the EasyDent4 will automatically run and call patient's image.



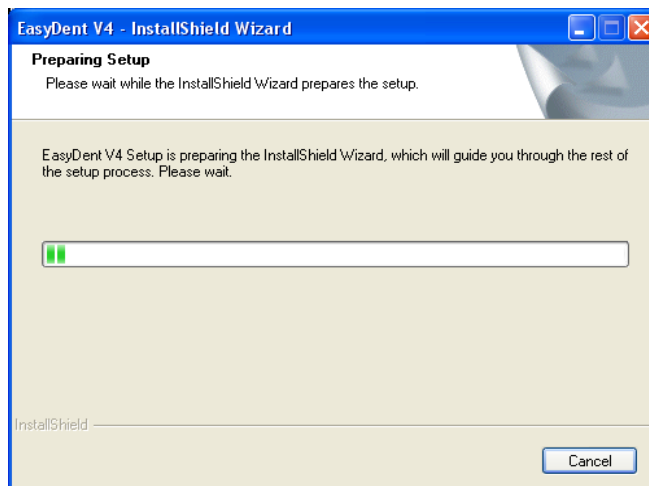
APPENDIX

1 Installing EasyDent V4

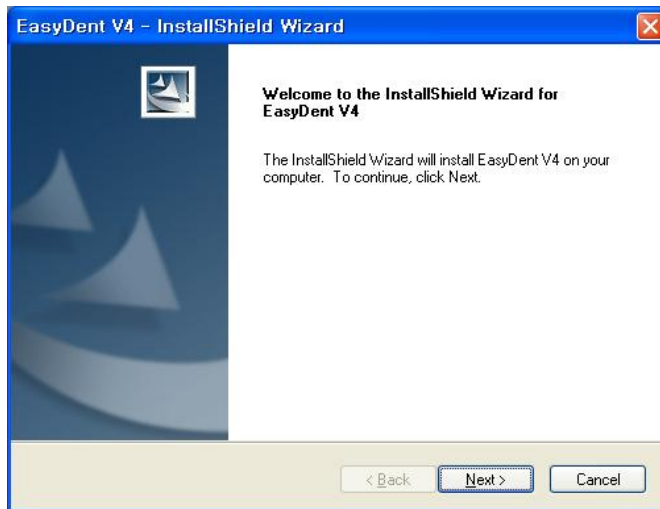
- A. Insert the CD/DVD with EasyDent into the drive.
- B. Select the language.



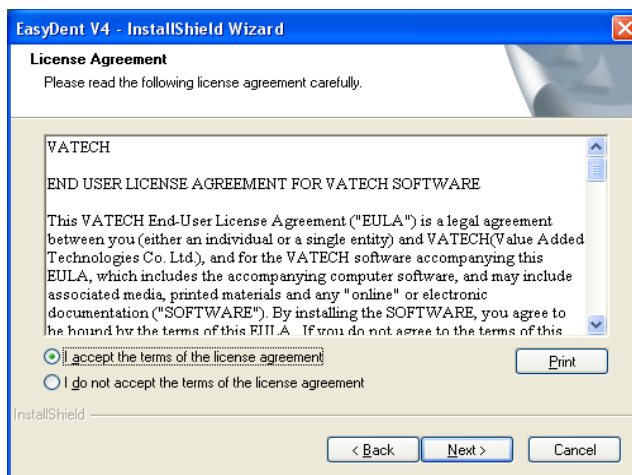
- C. Preparation for the installation now is in progress.



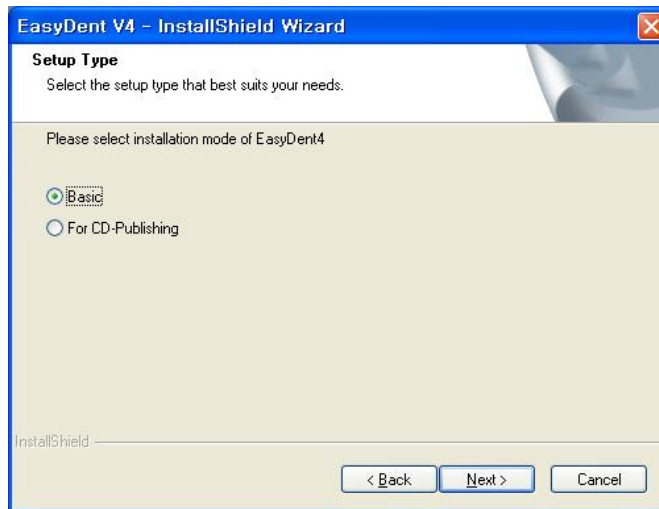
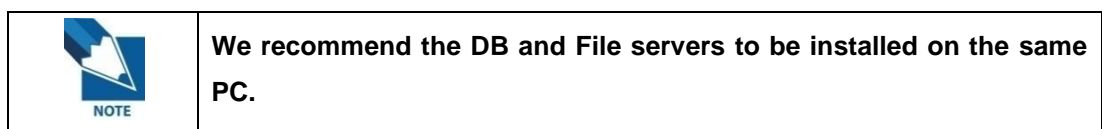
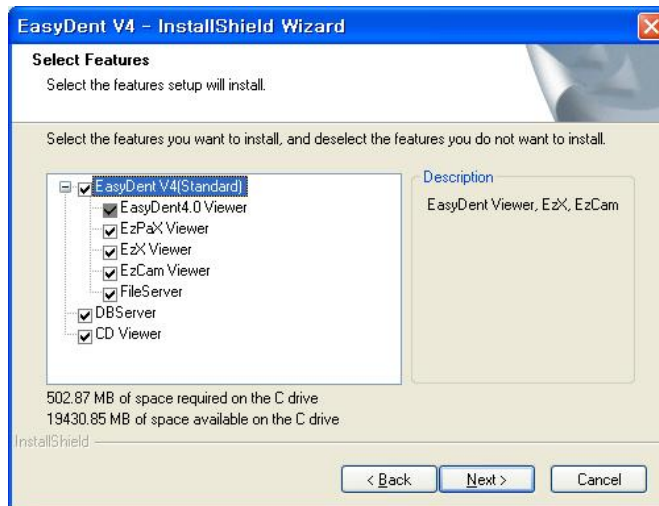
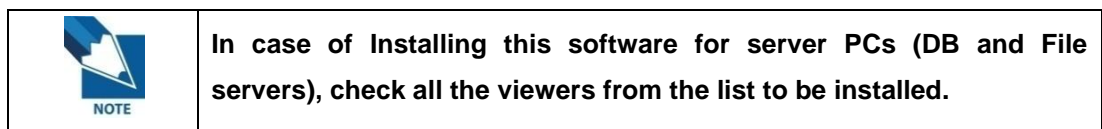
D. Click **Next** to continue.



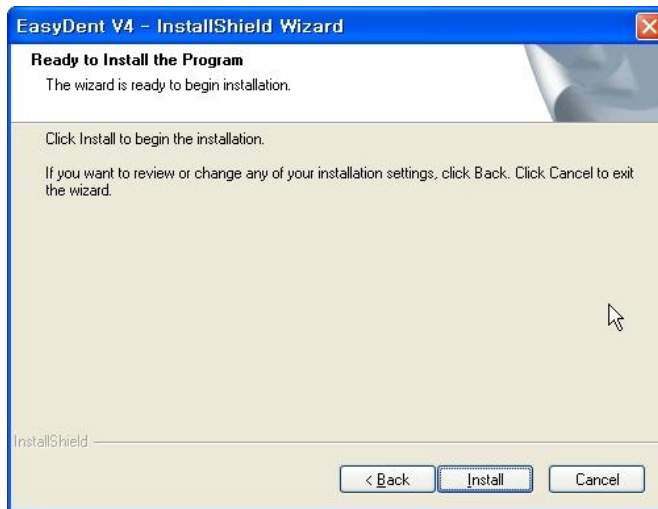
E. Check 'I accept the terms of the license agreement' and click **Next**.



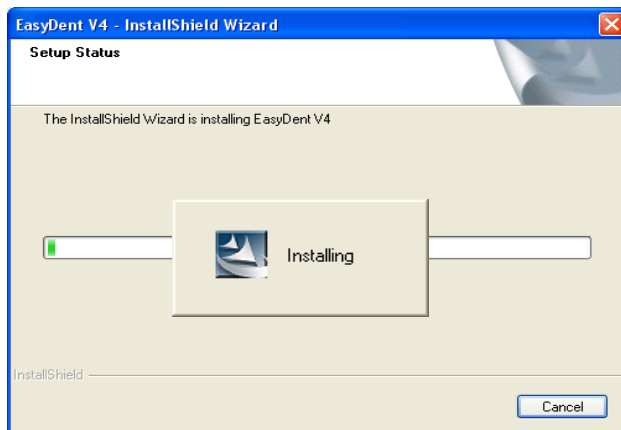
F. Select the installation mode.

G. Select the additional programs that you want to install, and then click **Next**.

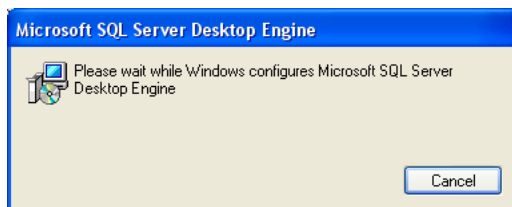
- H. Click **Install** to begin installation, or click **Cancel** to exit the wizard.

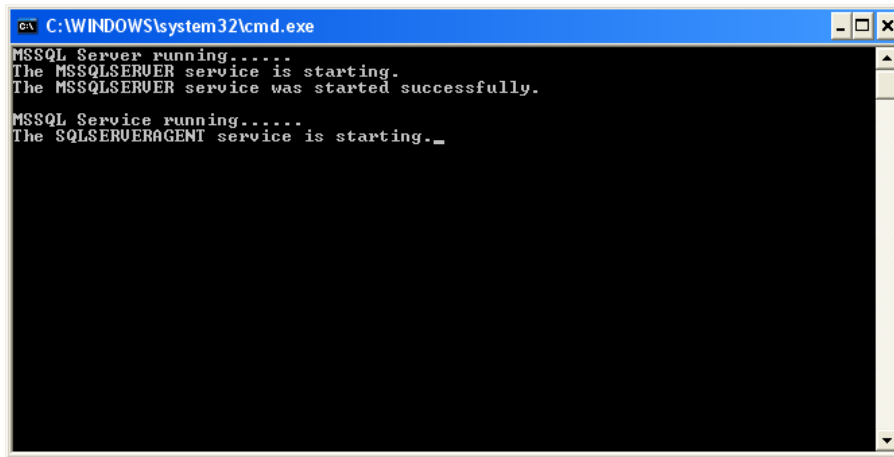


- I. The installation will start automatically.



The MSDE (Microsoft SQL server Desktop Engine) will be installed automatically.

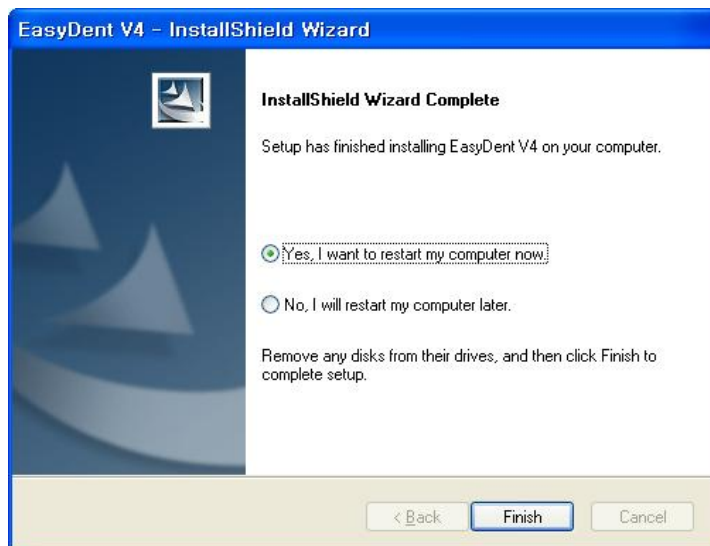




```
C:\WINDOWS\system32\cmd.exe
MSSQL Server running.....
The MSSQLSERVER service is starting.
The MSSQLSERVER service was started successfully.

MSSQL Service running.....
The SQLSERVERAGENT service is starting._
```

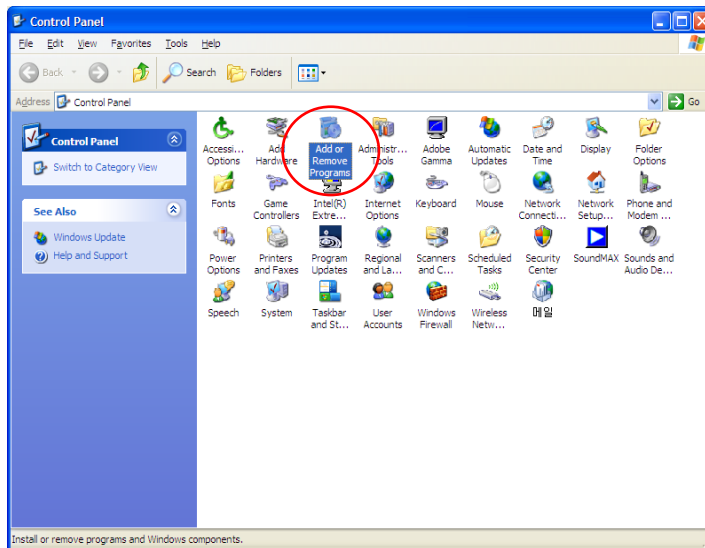
- J. Choose **Yes, I want to restart my computer now**, and then click **Finish**.



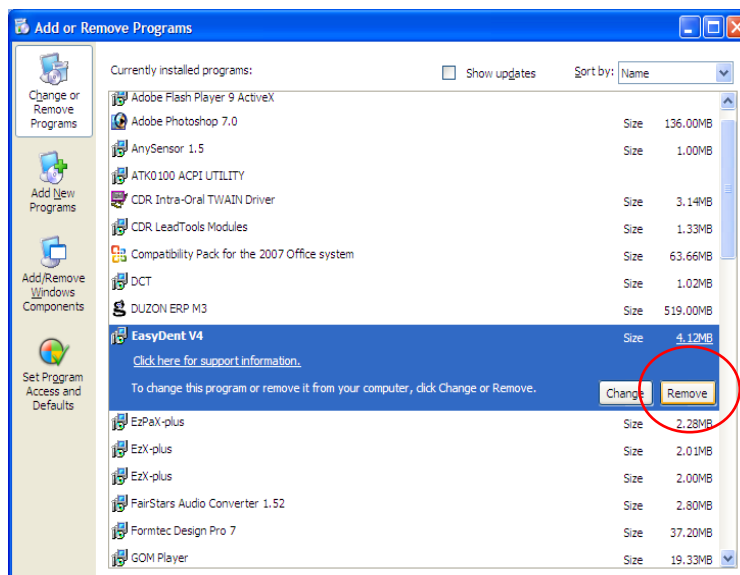
2 Uninstalling Software

2.1 Uninstalling EasyDent

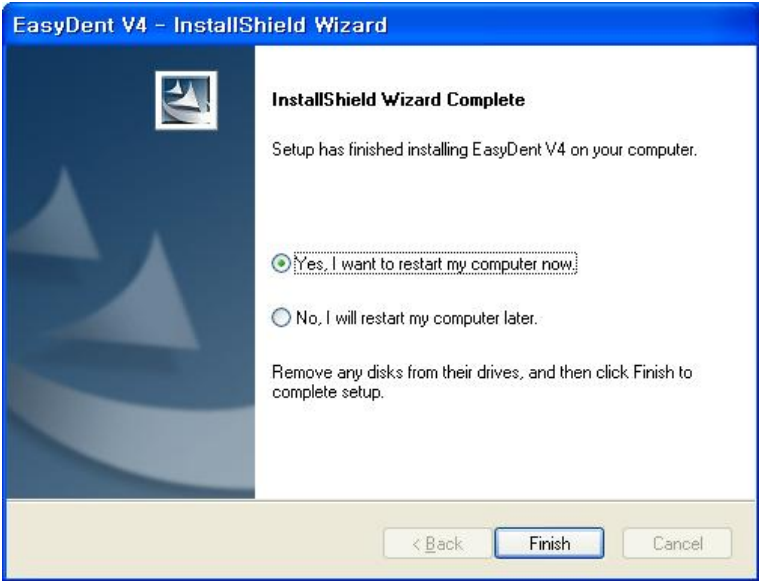
A. Go to the Control Panel and then select **Add or Remove Program**.



B. Highlight the EasyDent V4 program file, then click **Remove** button.

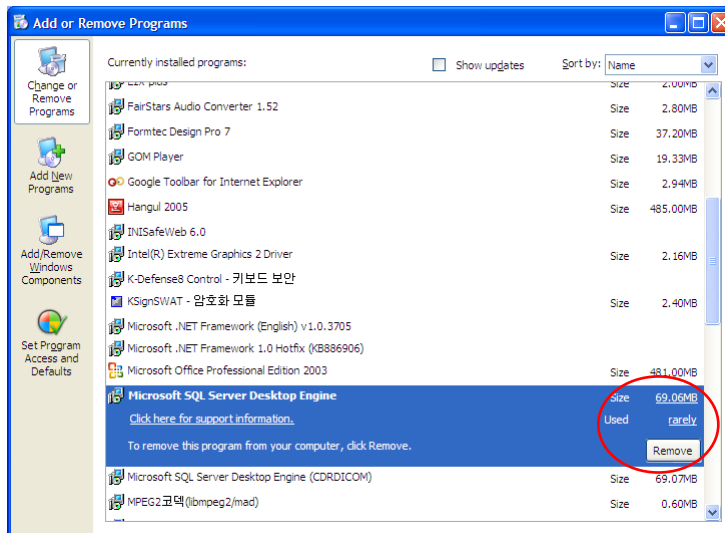


C. Choose **Yes, I want to restart my computer now**, and then click **Finish**.



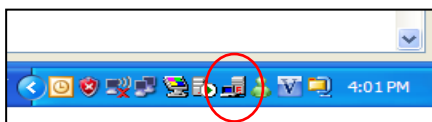
2.2 Uninstalling Microsoft SQL Server Desktop Engine


- A. Go to the control panel and locate the MS SQL Server Engine.
- B. Focus it and click **Remove**.

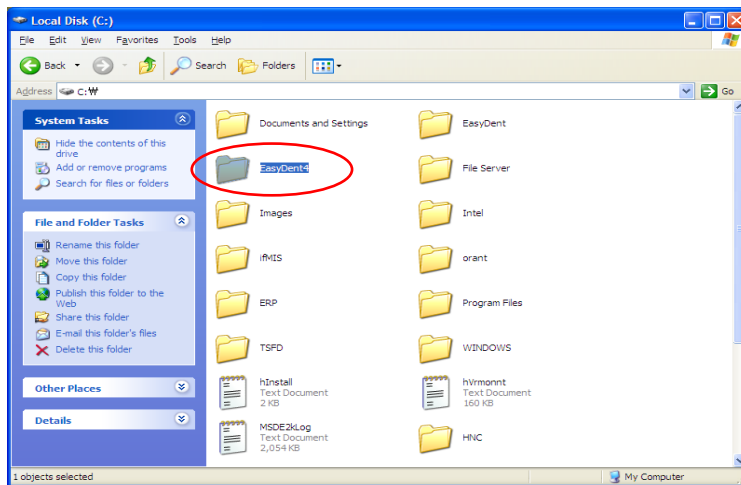
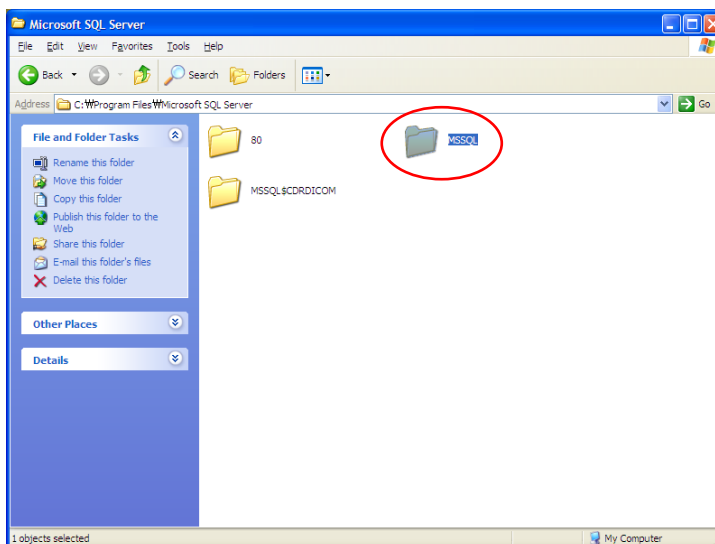


2.3 Deleting the EasyDent4 and MS SQL Folders

- A. Turn off the **File Server**.



 NOTE	<p>The 'EasyDent4' folder cannot be deleted if the File Server is turned on.</p>
--	--

B. Delete EasyDent4 folder at drive C:\Program Files.**C. Delete MS SQL folder at C:\Program file\Microsoft SQL Server\MSSQL.**

3 FAQ

3.1 EasyDent V4 doesn't run after installation

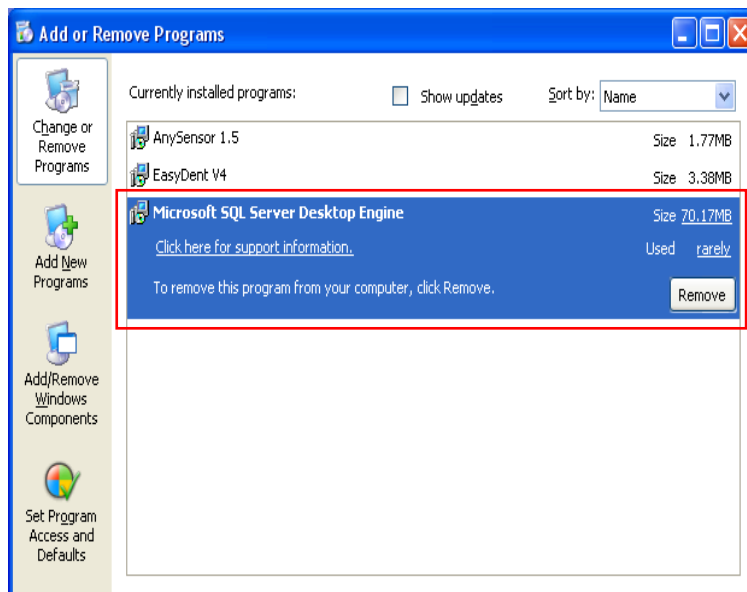
Q: Upon installation an error message occurred and EasyDent V4 didn't run after installation.

A : The problem is caused by a failed installation of the MSDE(Microsoft SQL server Desktop Engine) with a variety of factors. Please check the PC, as shown below, and reinstall MSDE.

Case 1: If the MSDE was already installed in the PC

Check the installation


Click **Start** → **Setting** → **Control Panel** → **Add or Remove Programs**.



If the previously installed MSDE is not needed, remove it and reinstall EasyDent V4.

Case 2: In case EasyDent V4 needs to be re-installed

The operation is the same as Case 1.

 CAUTION	<p>Please back up first the existing data, if any, before reinstalling EasyDent. To back up the data, three subdirectories—<i>DB</i>, <i>File Server</i> and <i>ImageBackup</i> in EasyDent4 directory— must be backed up.</p>
--	--

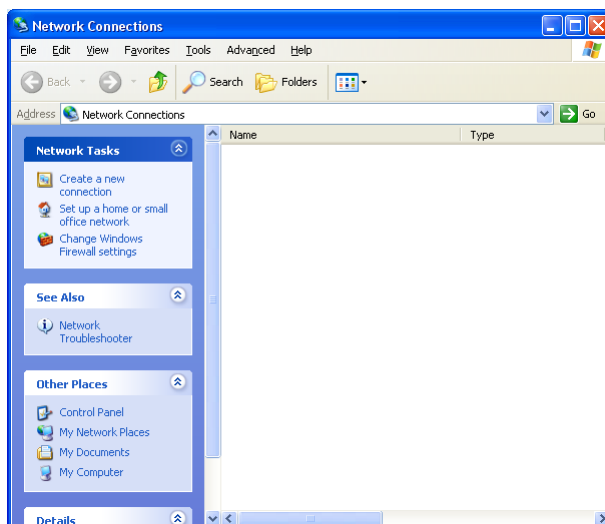
3.2 Can't link to DB server via the network (Windows XP)

Q: Why can't I link to DB server via the network?

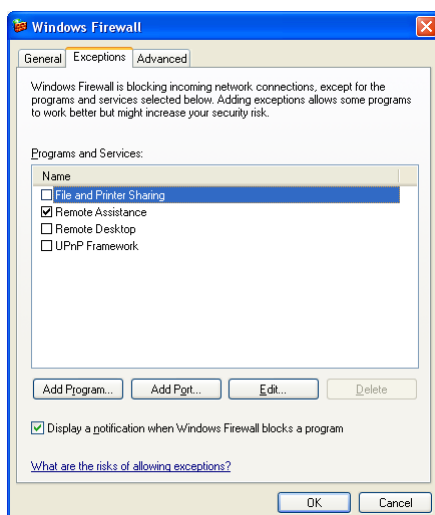
A: This could usually happen when the connection from the outside network to the DB server (MSDE) could not be established because of a Windows Firewall blocking port access.

To solve this kind of problem, disable *the Firewall* function, as shown below.

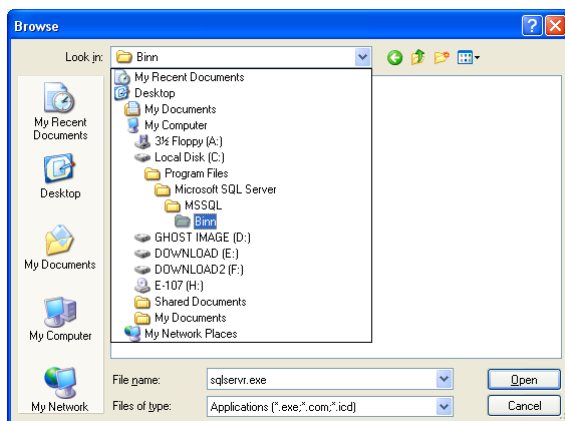
- A. Go to **Start** → **Setting** → **Control Panel** → **Network and Internet Connections** → **Network Connections**. Click **Change Windows Firewall settings**.



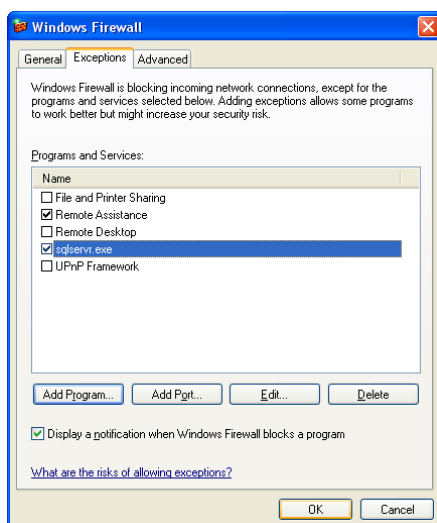
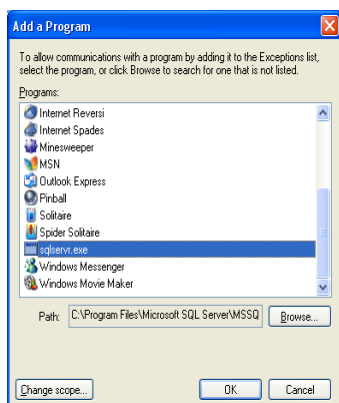
- B. Go to **Exceptions** tab, and then click **Add Program**.



- C. Click **Browse**. Select the item that cancels the firewall [C:\Program Files\Microsoft SQL Server\MSSQL\Binn\sqlservr.exe].



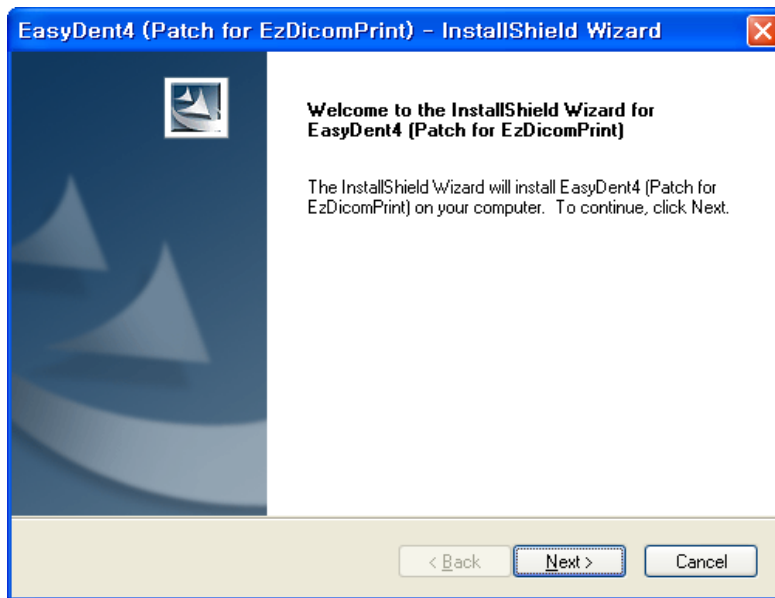
- D. Check the item for cancellation. And then click **OK**.



- E. Restart PC.

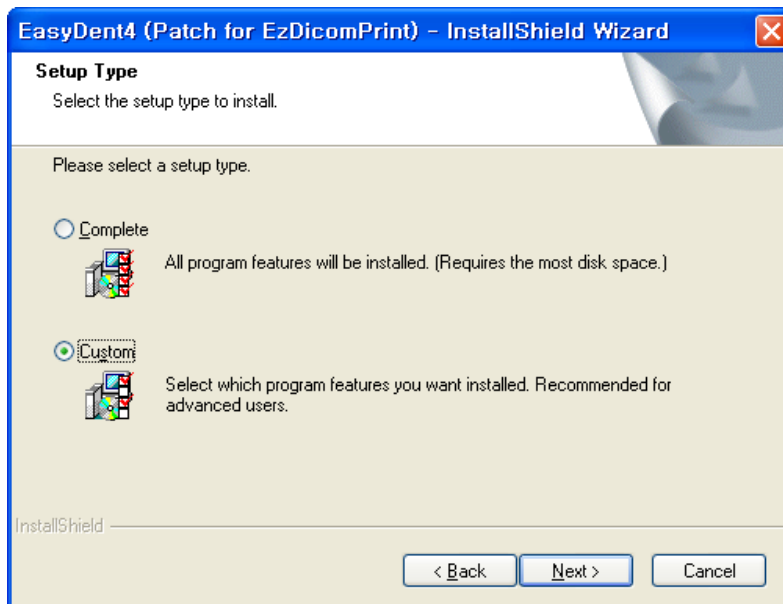
4 Patching for EasyDent Dicom Print

- A. Install the EasyDent Dicom Print Patch. Patch File: EasyDent_DP_Patchxxxxxx.exe.
- B. As shown below, when the EasyDent4 (Patch for EzDicomPrint) runs, click the **Next** button.

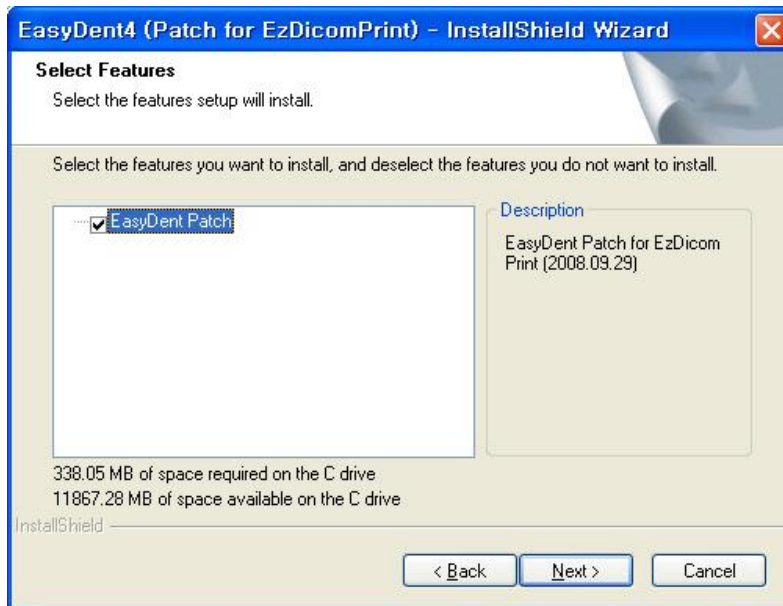


- C. Select the installation type (Complete or Custom) and then click **Next**.

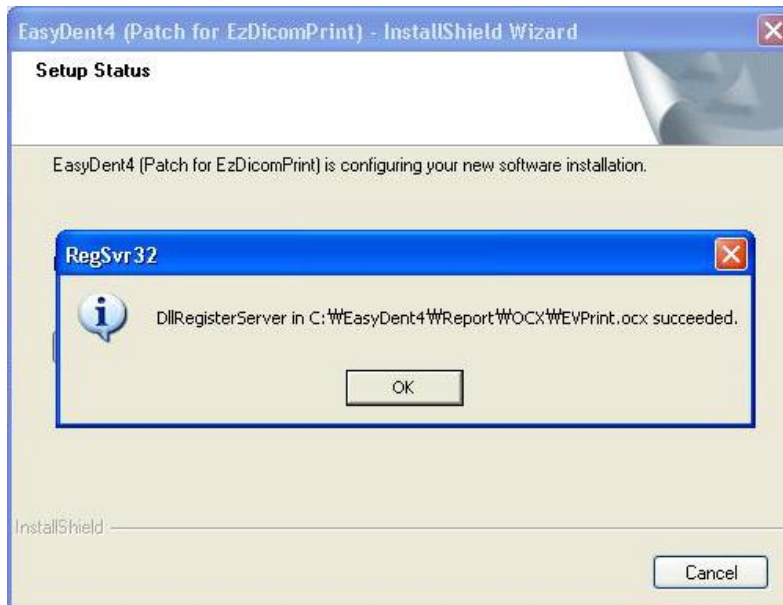
Note that the Installation method is same for both Complete and Custom type.

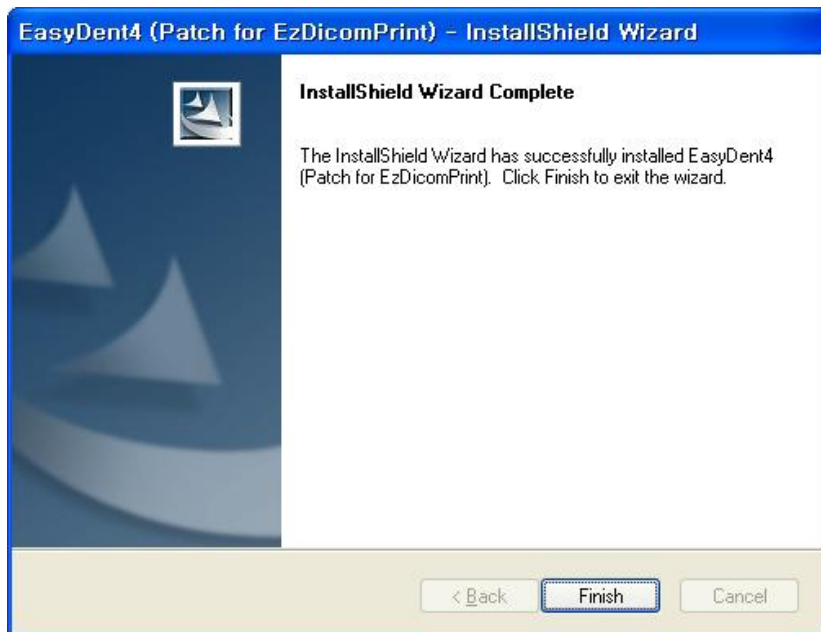


- D. Check the installation category as shown below, and then click **Next**.



- E. Click the **Finish** button to complete the installation of the EasyDent Dicom Print Patch.



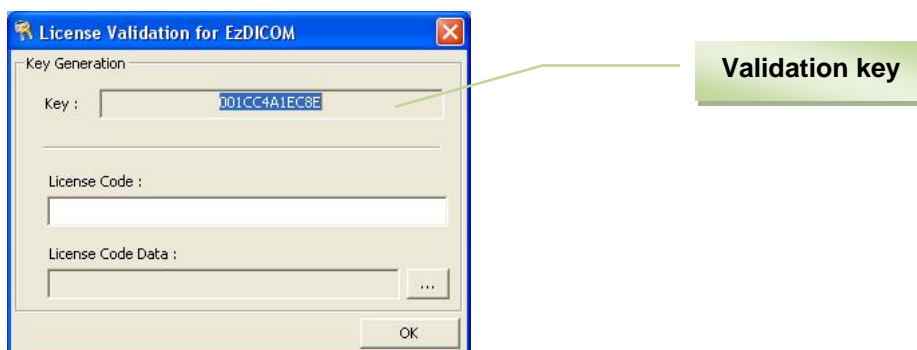




Plugging the Master Lock Key

- F. Now plug in the Master lock key to enable the use of the DICOM Print function. The method of using EzDicom Print is explained in detail in **chapter 12 DICOM Print & Report**.

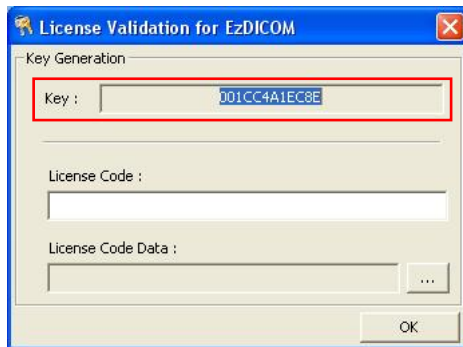
Validating the License

- G. When the Master key is plugged, a *License Validation for EzDICOM* window will appear.



 <p>NOTE</p>	<p>Double-click the  icon located on the desktop to open the above dialogue box again.</p>
---	---

- H. Sent the key value to either the EasyDent team or the sales representative for activation.



Ex) The report form should be simple, as shown below.

Country: Republic of Korea

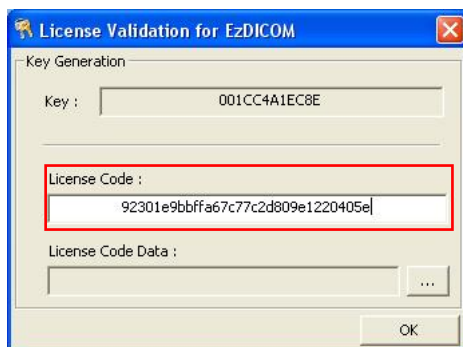
Dental Clinic: xx Dental Clinic

Equipment: Picasso-Trio or Pax-500ECT

Key: 001CC4A1ECBE

Sales Rep. or Requesting Client: XXX

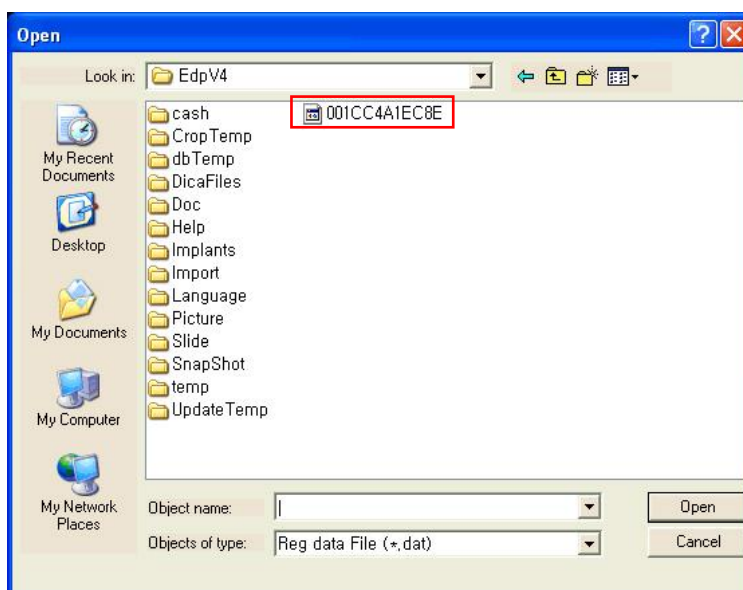
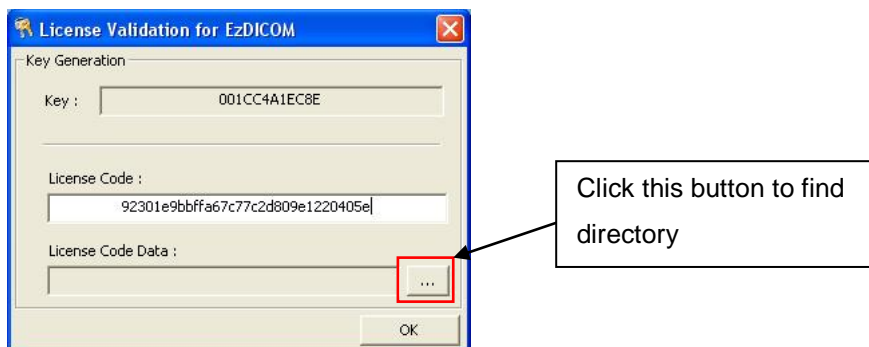
- I. If you send an email to the EasyDent Team or to your sales representative with the above format, the **License Code** and **License Code Data** file will be sent to you.
- J. Please enter the License Code number (32 characters) you have received in the License Code field.



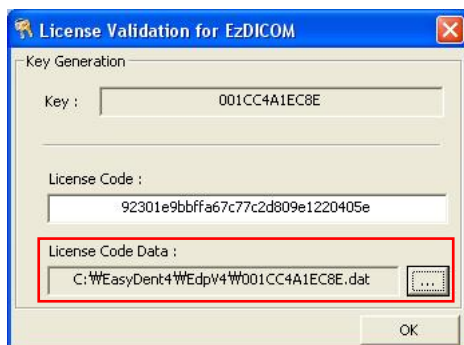
K. Please copy the **License Code Data** into the path shown below:

Copy Path: "C:\EasyDent4\EdpV4\"

L. Click the path configuration button and select the path where you have copied your License Code Data.




Make sure that the path is correctly established and click **OK**, as shown below.



- M. The message “**Success**” will pop-up, signifying that the process has been successfully completed.














Now the validation process is over. EasyDent will enable the user to use the DICOM Printer. The details on how to use the EzDicom Print is explained in **chapter 12 DICOM Print & Report**.



 <p>NOTE</p>	<ol style="list-style-type: none">1. The License Code Data's file name is identical to the code written on the Key.2. If the 'Success!!!' message does not show up, it is because the license code is incorrect. Please contact the EasyDent team or your sales representative so you will be re-issued a code.3. The License Code number used in this figure is for sample use only.
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5 Icons




File

Button	Hotkey	Meaning
		Open
		Save As
		AnyChart
		Analysis
		Dental CT
		Panorama / Cephalo
		Intraoral Sensor
		Intraoral Camera
		Digital Camera
		Export to E-mail
		Exit





Edit

Button	Hotkey	Meaning
	Ctrl+Z Alt+BACKSPACE	Initialize
		Edit Image











View

Button	Hotkey	Meaning
	Ctrl+Z Alt+Backspace	Information of the Image
		Exif Information
		Memo







Database

Button	Hotkey	Meaning
		Patient
		Image
		Export
		Import Files















Draw

Button	Hotkey	Meaning
		Free Draw
		Line
		Dotted
		Thin
		Medium
		Bold
		Poly-Line
		Rectangle
		Ellipse
		Delete All









Measure

Button	Hotkey	Meaning
		Distance
		Continuous Distance
		Angle
		Calibration by Model
		User Calibration
		Delete All





Image

Button	Hotkey	Meaning
		Invert
		Sharpen
		Sharpen more
		Median
		Gray Scale
		Coloring
		Film Effect
		90 clockwise
		90 counterclockwise
		Flip Horizontal
		Flip Vertical
		Zoom In/Out
		Move
		Adjust













Tool

Button	Hotkey	Meaning
		Magnifier
		Magnifier LE
		Slide
		Profile
		Dual Monitor
		Auto Whitening
		Area Whitening
		Brush



Implant

Button	Hotkey	Meaning
		Add Implant
		Delete All Implant
		Add Implant Crown
		Delete All Implant Crown

Window

Button	Hotkey	Meaning
		Main Screen
		Extended Screen
	Alt+Enter	Full Screen
		One window
		2 (2*1) Windows: two split windows horizontally
		2 (1*2) Windows: two split windows vertically
		3-Window Type – A: three split windows
		3-Window Type – B: three split windows
		4 (2*2) Windows: four split windows
		6 (3*2) Windows: six split windows
		6 (2*3) Windows: six split windows
		9 (3*3) Windows: nine split windows

Help

Button	Hotkey	Meaning
		Information about EasyDent V4 Viewer
		Configuration



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