Dental Imaging Software

EasyDent

User Manual Version 4

EasyDent is a Dental Imaging Software Solution for the management of personal data of patients; as well as for the storage, analysis and diagnoses of digital images which were acquired specially through VATECH and E-WOO dental imaging equipments.

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VATECH

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Attention

'EasyDent', a dental imaging software program, is protected under the Copyright Laws and the Computer Program Protection Law of Korea. Please refer to the terms of agreement relevant to the use of the product in the End User License Agreement, which is enclosed along with the EasyDent CD ; and which also appears on the screen during the installation of the EasyDent S/W program. For supplementations, this manual is subject to change without prior notice.

This manual provides detailed information on how to use EasyDent Viewer version 4.0. 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. User manual has been categorized into chapters on practical functions of EasyDent in order to enhance user convenience.

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All rights reserved. This document may not be reproduced in any manner without the prior written consent from the Publisher. This manual only contains the EasyDent user guide.

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This printed manual distributed along with the product may not include contents specific to the latest version of the product. Please refer to the software disk or contact your supplier for the latest version.

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1 Introduction

EasyDent Viewer v4 is a Dental Imaging Software Solution that stores, analyzes and diagnoses patient images that have been acquired through VATECH and E-WOO 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 V4 currently supports. In addition, images can be imported from other digital sources.

Key Features :

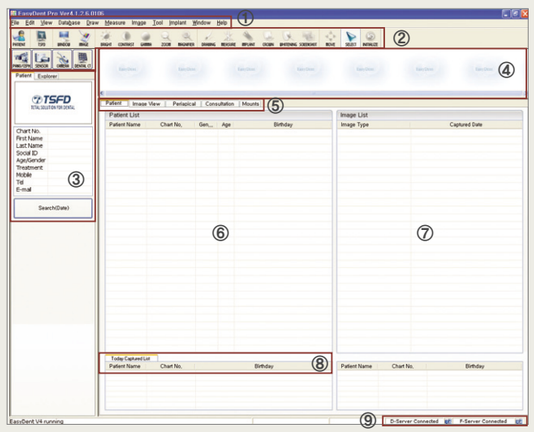
> Image Acquisition Software
> Patient Database Management
> Display : Large 'View Window' accompanied by 'Preview Thumbnails'
> Easy to use search tools for retrieval of patient data.
> Convenient Environment Settings
> Store Intraoral sensor images by tooth position for later reference
> Variety of Imaging Mounts

2 Main Screen

This chapter provides detailed information about the main screen and its operation.

2.1 Main Screen

To start EasyDent, double-click the 'EasyDent4 Viewer' 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.



① **Menubar** : All functions are divided and listed as items on the menubar.
② **Toolbar** : Icons created for quick usage of common tasks, such as image acquisition and the registering and search of patients and images.
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.

NOTE

Explanations about 'Menubar' and 'Toolbar' are included in each chapter.

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.
⑨ **Network Status :** Indicates the real time condition of communication between EasyDent and associated databases.

2.1.1 Menubar

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

File, Edit, View — These options will be explained in detail in Chapter 3: General Operating Instructions.

Database — This option will be explained in detail in Chapter 4: Database Management.

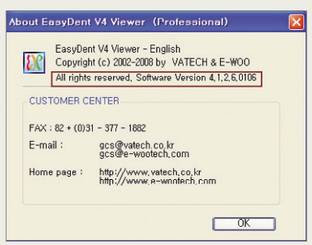
Draw, Measure, Image — These options will be explained in detail in Chapter 7: Image Processing.

Tool — This option will be explained in detail in Chapter 8: Special Tools.

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

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

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.

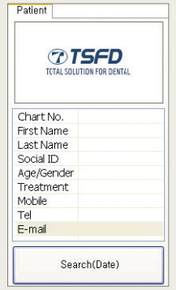


The 'Configuration' options will be explained in detail in Chapter 14 : Configuration.

2.1.2 Toolbar

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

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 pull up a simulated keyboard, as shown below.

You can input in the associated patient information by clicking the mouse on the simulated keyboard or by using your physical computer keyboard.

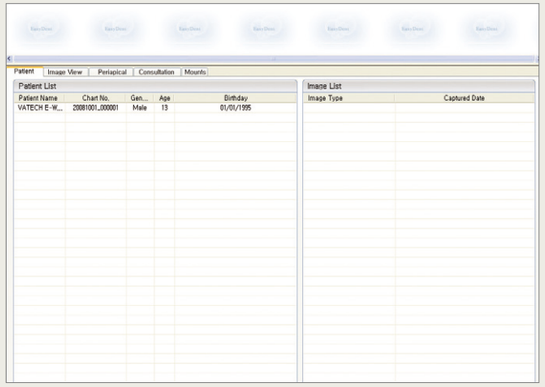
A patient name from the 'Patient List' can be searched by pressing the 'Enter' key on the keyboard.

NOTE

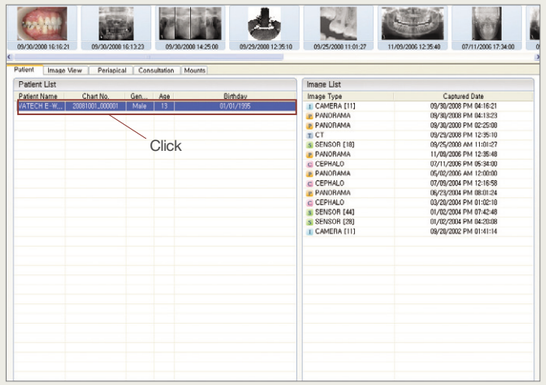
When searching for a patient by Chart Number, the search string must be exact.

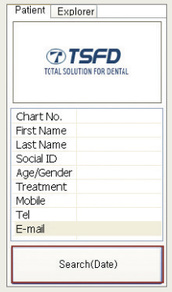
NOTE

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 all first names beginning with 'J' will be retrieved. If you input '_' (underscore) all data from all patients will be retrieved.



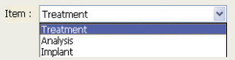
When you click the name of the patient on the 'Patient List' window, you can view the image information on both the 'Thumbnail' and 'Image List'.





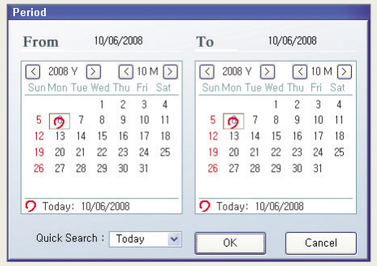
You are able to search patient information and images according to the type of image or type of associated patient treatment (Treatment, Implant, and Analysis).
A window will appear when you press the 'Search (Date)' button.

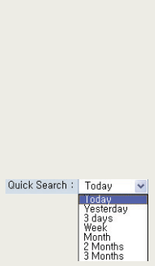
After selecting the date and the type of image you want to search, press the 'Search' button.
If you click on 'Treatment', a sub-window will appear, as shown below.



Select either 'Treatment', 'Analysis', or 'Implant', 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 dates the user wishes to search, press 'OK'





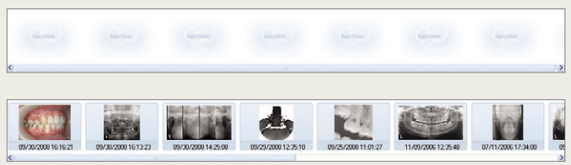
NOTE

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

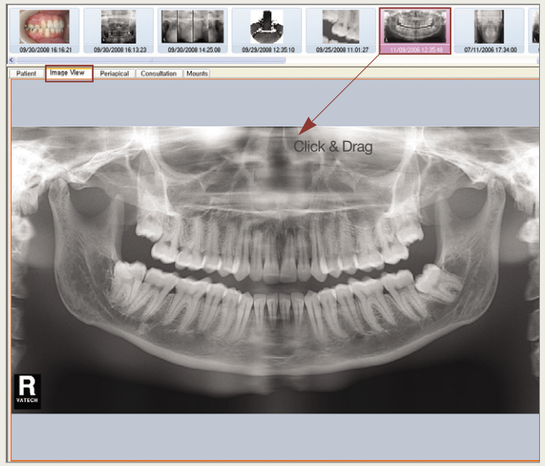
If you click on 'Quick Search', an expansion window will appear. The user can select the search period using this function.

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.



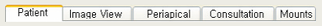
Click ‘Image View’ on the Function Tab. If you click the image you want from the images shown on the ‘Thumbnail’ window, the colors surrounding the image will change, as shown in the picture below. If you drag and drop this to the ‘Image View Function Tab’, you will see the full-size view of the selected image.



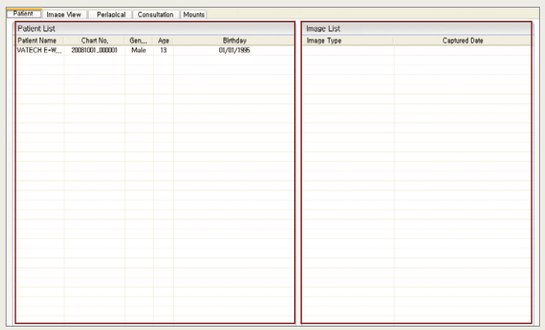
2.1.5 Function Tab

Patient

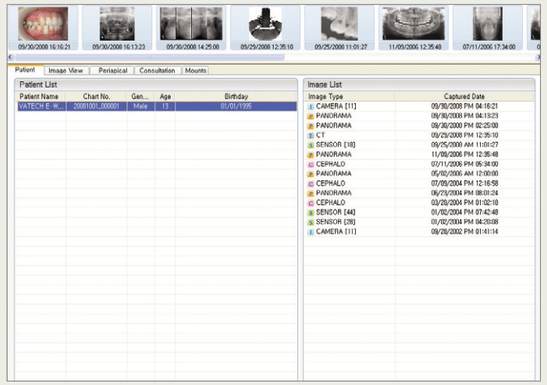
The Function Tab consists of ‘Patient’, ‘Image View’, ‘Periapical’, ‘Consultation’ and ‘Mounts’ sub-tabs as shown below.



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.



NOTE

If you click on an image from the ‘Image List’, it will update on the ‘Thumbnail’ window as well.

Image view

Please refer to the explanation provided in ‘Thumbnail’ for viewing of images in ‘Image view’.

NOTE

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 in full size mode. Please refer to Chapter 11: Window for further information.

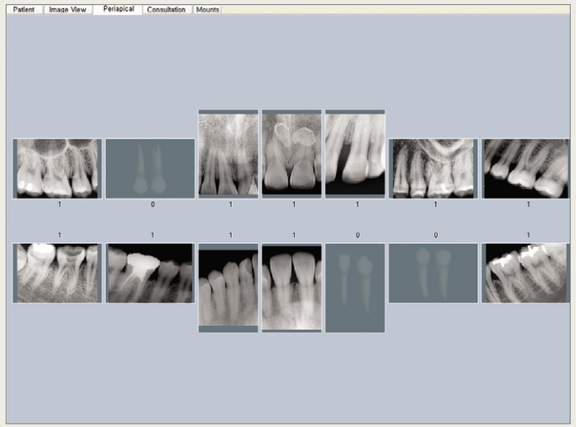
Periapical

There are two different options for tooth numbering within EasyDent - the F.D.I numbering system and the Universal numbering system (USA).
The ‘Periapical’ tab shows the images acquired by the intraoral sensor according to the location of the tooth.

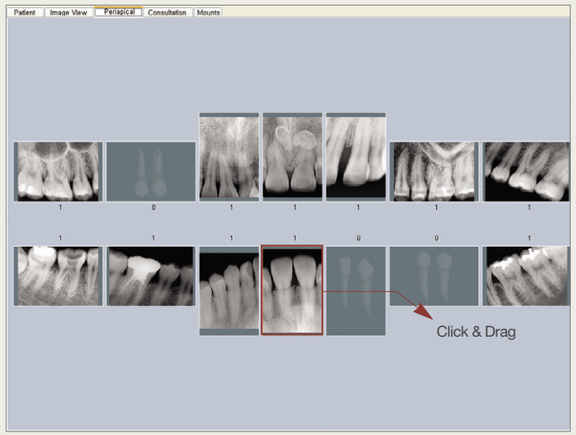
NOTE

For diagnostic purposes, it is important to designate the correct location of the teeth when acquiring or importing an intraoral image .

After specifying the correct tooth location for the intraoral image, from the ‘Periapical Tab’ you can see a layout of the patients tooth image according to designated tooth positions for individual intraoral images. The numbers beneath each tooth are the number of images saved for that location.



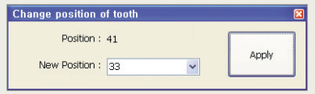
Changing the saved location of the tooth : When the image of the tooth is designated to the wrong location, you can amend it by following these steps:



Once you select the tooth image that is incorrectly placed, an orange frame will surround the image. If you click and drag the image to the location you wish to move the image using the mouse, a dialogue box named 'Change position of tooth' will pop-up.

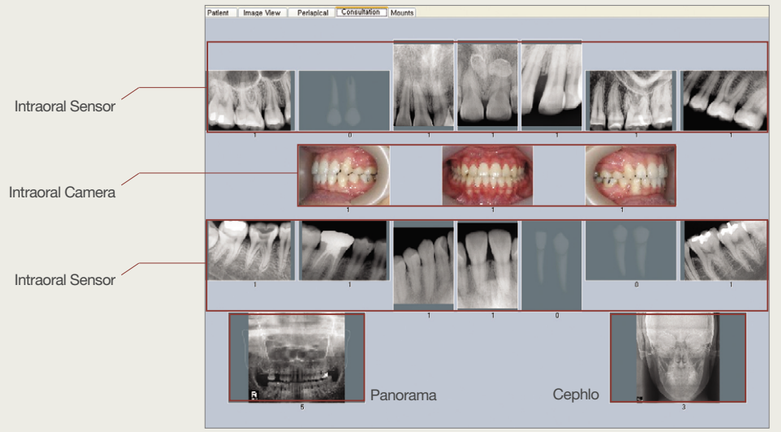
NOTE

When changing the location of a image in 'Periapical' mode, the change in location is permanent and will be maintained after exiting and re-executing EasyDent again. Please be careful when changing tooth locations.



After verifying the location of the tooth and clicking 'apply', you can verify that the image has been moved to the correct location.

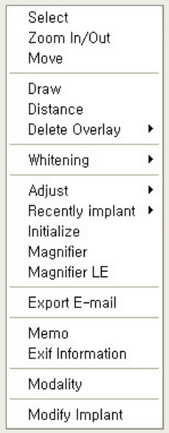
Consultation In 'Consultation' mode, you can view images from all sources (Intraoral, Pano, Ceph). These images can be organized to easily explain the patient's condition during consultation.



Unlike 'Periapical', in 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, the image saved in that location can be viewed on Thumbnails.

Mounts Please refer to 'Chapter 10 Mounts' on page 91.

2.2 Context Menu



If you click the image with your right mouse button, a 'Context Menu' will pop-up. Commonly used functions can be used conveniently without using the Toolbar or Icons.

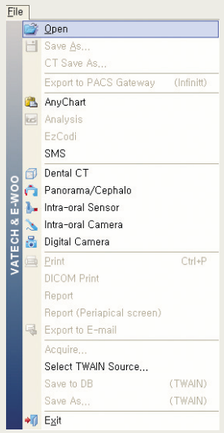
3

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

General Operating Instructions

3.1 File

3.1.1 Open

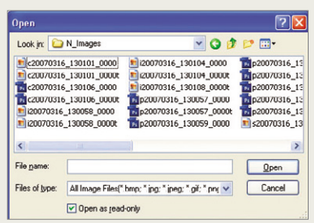


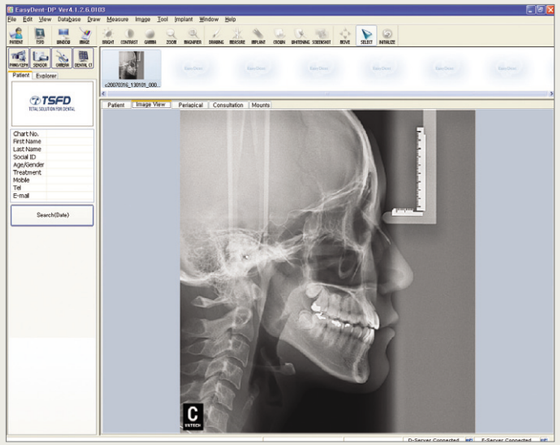
This functions enables you to open any image (bmp, jpg, gif, png, icon, & tiff formats) into EasyDent for viewing and editing.

Usage Method

'Open' window will pop-up when you click 'File' → 'Open'.

Select the file you wish to open by clicking 'Open', and an image appears on the 'Image View'.



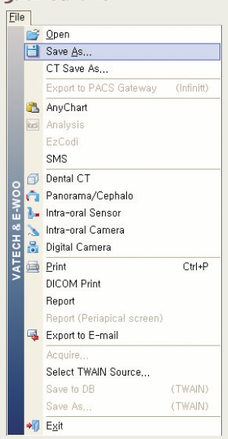


Images will also be shown in the 'Thumbnail' window along with the filename of the images.

NOTE

You can open the image to measure and analyze with EasyDent's image tools. This can be saved using 'File' → 'Save as'.

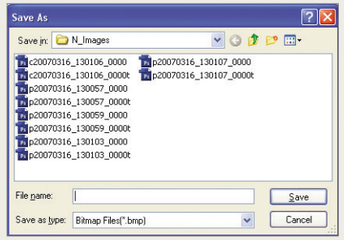
3.1.2 Save As



'Save as' is used to saved the selected patient image to an external source(6 formats - bmp, jpg, gif, png, icon, and tiff).

Usage Method

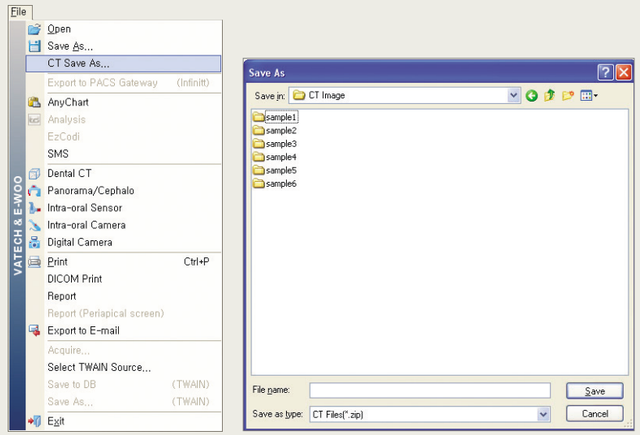
In order to save the selected patient's image, press 'File' → 'Save As', and the following window will appear. Choose the location you wish to save, and enter the file name and press 'Save'.



Saved image files can be viewed without running EasyDent.

3.1.3 CT Save As

This is a function to save the selected CT images of the patient in the form of CT Files(*.zip) into an external location other than EasyDent the program.



NOTE

CT images cannot be viewed without a 3D Viewer analysis program.

In order to save the selected CT image of the patient, select it from the 'Thumbnail' window and press the 'File' → 'CT Save As' button and a window will appear. Select the location you wish to save and enter the file name and then press 'Save'.

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 may send an SMS to the patient.

3.1.9 Dental CT
Further details are in Chapter 5: Image Acquisition on page 43.

3.1.10 Panorama / Cephalo
Further details are in Chapter 5: Image Acquisition on page 43.

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

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

3.1.13 Digital Camera
Linked to the EzCam software.

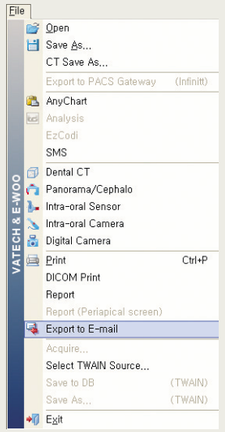
3.1.14 Print
Further details are in Chapter 12 : Print, DICOM Print & Report on page 121.

3.1.15 DICOM Print
Further details are in Chapter 12 : Print, DICOM Print & Report on page 121.

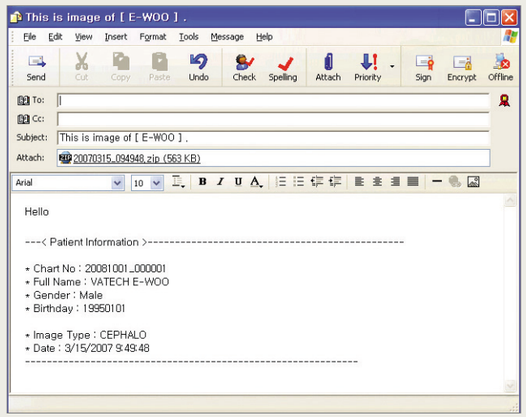
3.1.16 Report
Further details are in Chapter 12 : Print, DICOM Print & Report on page 121.

3.1.17 Report (Periapical screen)
Further details are in Chapter 12 : Print, DICOM Print & Report on page 121.

3.1.18 Export to E-mail



You can export your image to your e-mail. 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.



NOTE

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

NOTE

TWAIN (Toolkit Without An Interesting Name)
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 aquire images from it using EasyDent.

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

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

3.1.20 Select TWAIN Source
Set TWAIN device.

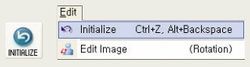
3.1.21 Save to DB (TWAIN)
Save scanned image to patient's DB.

3.1.22 Save As (TWAIN)
Save acquired images as a different filename.

3.1.23 Exit
Exit EasyDent.

3.2 Edit

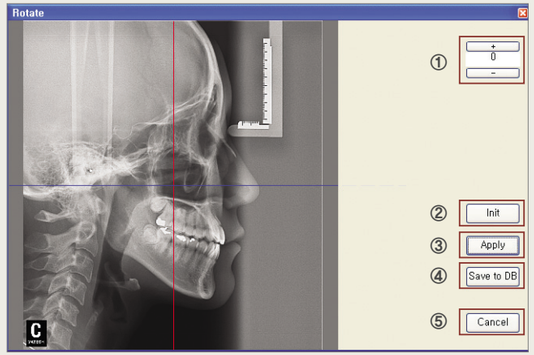
3.2.1 Initialize



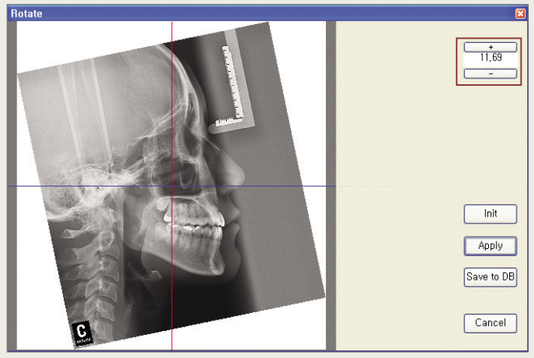
This is a function that can re-set all the changes made to the image. You may either click 'Edit' → 'Initialize', or 'Initialize' on the toolbar. Images with Drawing, Measure, Implant, and Implant Crown overlays applied cannot be initialized using this function. In this case, you can press 'Delete All'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

3.2.2 Edit Image

You may rotate the image to edit it. Select the image, and if you click 'Edit' → 'Edit Image', a rotate window will appear as below.



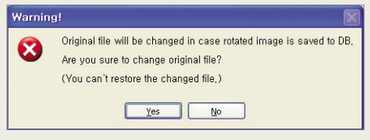
① Shows the angle of rotation of the image.



② **Init** : Resets the rotated image to its initial state.
③ **Apply** : Applies the rotated image.
④ **Save to DB** : Saves Rotated image to DB. A warning dialogue box will pop-up when you try to save a changed image.

CAUTION

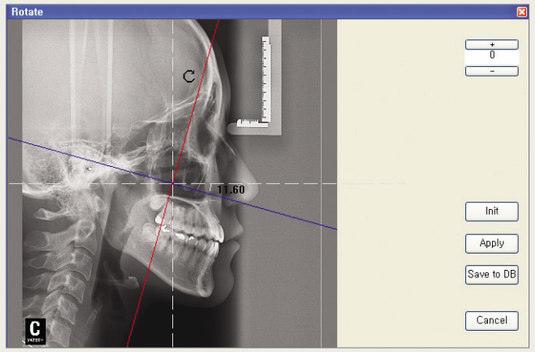
You cannot restore the original file once it is changed.



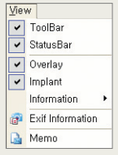
If you click the 'Yes' button, a dialogue box saying that the altered image was saved.

⑤ Cancel : Cancels the Edit Image process.

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



3.3 View



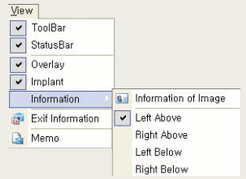
3.3.1 ToolBar
Click if you would like to have a 'ToolBar' at the top of the mainscreen. The toolbar is a variety of frequently used tools bundled together to allow quick execution of common tasks.

3.3.2 StatusBar
Click if you would like to have a 'StatusBar'at the bottom of the main screen.

3.3.3 Overlay
Click if you would like to see the 'Overlay' on the image. If you do not click 'Overlay', the use of tools such as 'Drawing' and 'Measure' will not be visible on the image.

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

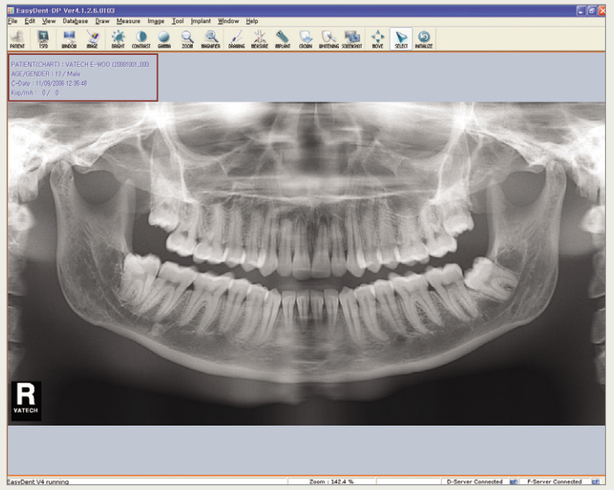


Click 'Information' whenever you would want to show patient information on the image. With 'View' → 'Information' → 'Information of Image' selected, you may choose where to locate the information shown in the submenus.

For example, if you choose 'Left Above', the patient information will be displayed at the Top-Left corner of the image.

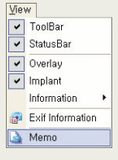
NOTE

This mode can be seen in the Extended Screen and full screen modes.



3.3.6 Exif Information
You can see the image information of the digital camera.

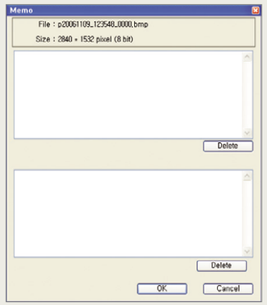
3.3.7 Memo



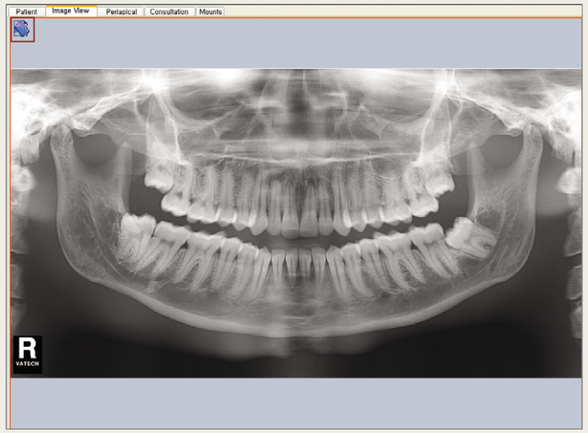
You can leave a simple memo on the image.

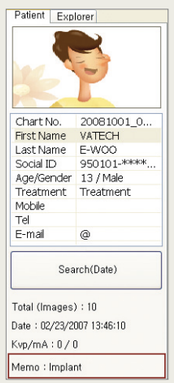
Choose the image you wish to insert a memo in.

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 left hand top corner of the image. Double-clicking the memo icon will allow the user to check and change the contents of the memo.





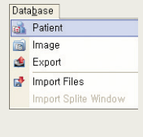
After you select a patient from the 'Patient List' window and locate the image in the 'Image View' window, you are able to check the contents of the memo in 'Patient Information'.

4

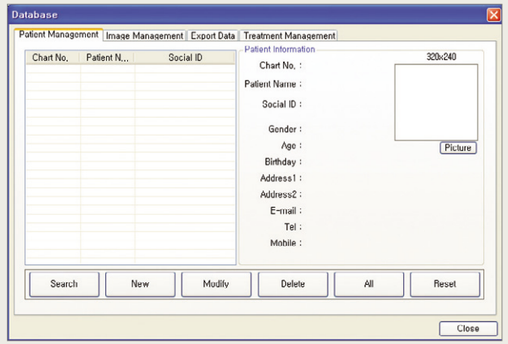
Database Management

In this chapter, an overall explanation of patient, image, and treatment management will be given, as well as direction on how to import and export data from the EasyDent software.
Patient Management deals with patient search, registration, and amendment of patient information. Image Management deals with amending and moving of saved images. Treatment Management deals with setting and amending of the treatment type for patients.

4.1 Patient Management

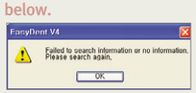


If you click 'Database' → 'Patient' from the menubar at the main screen, the following screen will pop-up.



NOTE

Chart No. or Social Security ID must be entered in EXACTLY. If not, a dialogue will pop-up, as shown below.



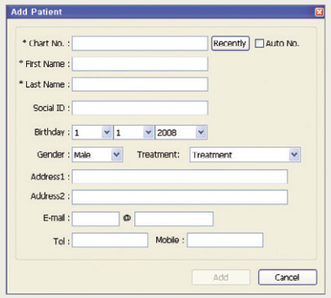
When searching using First or Last name, you can just enter the first letter of the name and all names starting with that letter will be compiled.

4.1.1 Patient Search

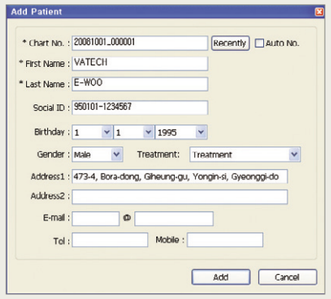
If you click the 'Search' button at 'Database' → 'Patient' → 'Patient Management', a dialogue box named 'Search' will appear.

You may choose to search by inputting just one of these categories (Chart No., First Name, Last Name, or Social ID) to search for the patient.

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.

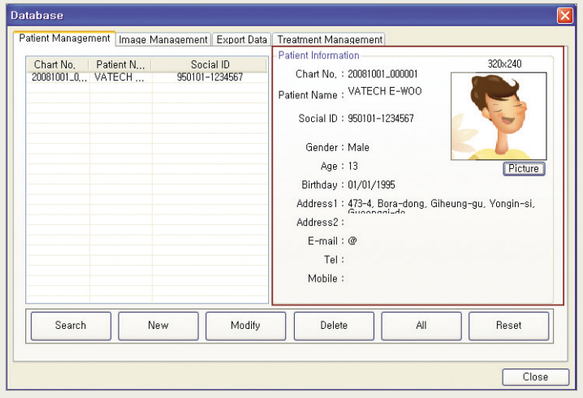


> **Entering Chart No.**
If you wish to enter a Chart No., you may press 'Recently' to view the most recent Chart No. entered into EasyDent. Check the 'Auto No.' option and then click the 'Auto' button, and a Chart No. will automatically be created in the following format; YYYYMMDD_HHMMSS (Ex. 20080909_175325).

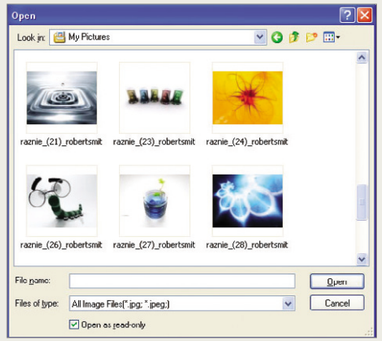
NOTE

Chart No., First Name, and Last Name are required fields and must be populated in order to register a patient.

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'.

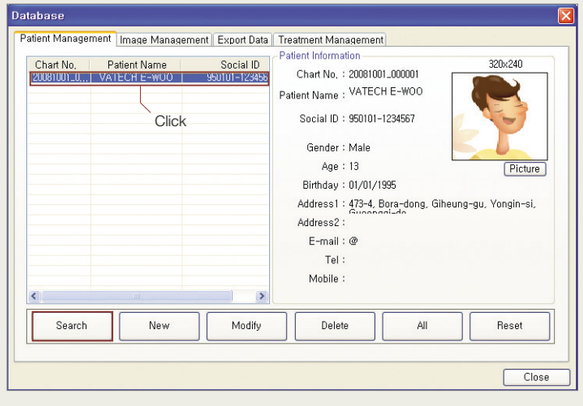


> **Inserting a photo for Patient Information**
If you click on the 'Picture' button at the right side of the 'Patient Information', an 'Open' window will pop-up. Please select a file photo and then click 'Open'.



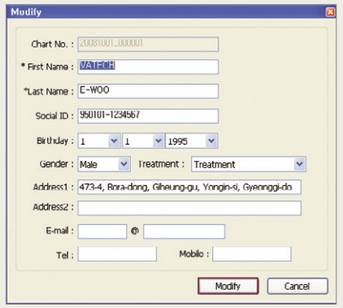
4.1.3 Changing Patient Information

If there is a need change a data in the patient information that was already registered (Name, Sex, Address, etc), please find the patient using the 'Search' button.



CAUTION

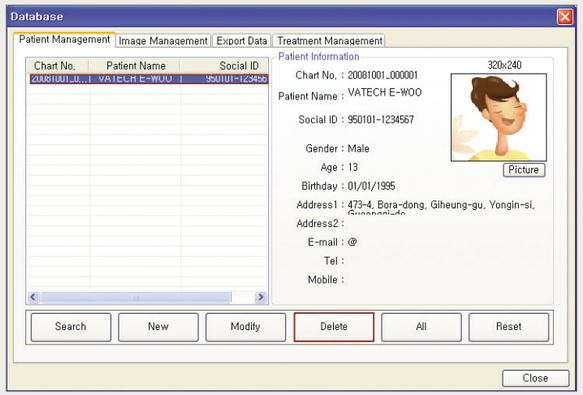
You cannot change the Chart No.

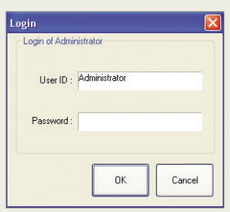


After clicking on the patient information that you wish to amend, press the 'Modify' button, and the following dialogue will appear. After modification, press the 'Modify' button to complete the process.

4.1.4 Deleting of patient information

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





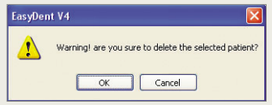
After which, a Log-in dialogue box will pop-up.

NOTE

For user management functions, please refer to 4.7. The initial password is set as 'oooo'.

CAUTION

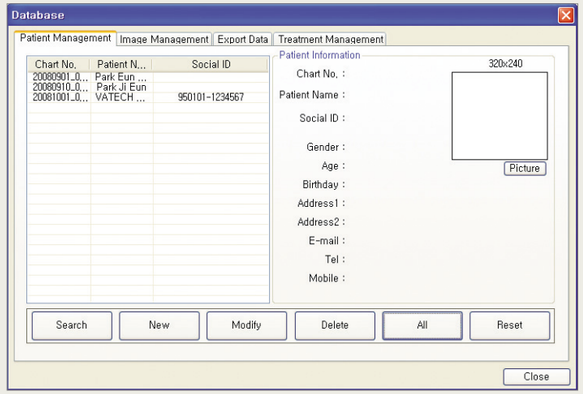
If you need to delete an entire patient from your database, you must first delete all the saved images for that specific patient. If you do not, the images will remain with the chart number. It is recommended that you do not use the same Chart No. for different patients.



Enter the Password, and an EasyDent V4 pop-up dialogue will ask for your confirmation of the deletion request.

4.1.5 All (Whole patient list)

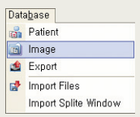
Using the 'All' button, you can pull up a list of all patients in your EasyDent database.



4.1.6 Reset

Reset will show the initial Patient Management status.

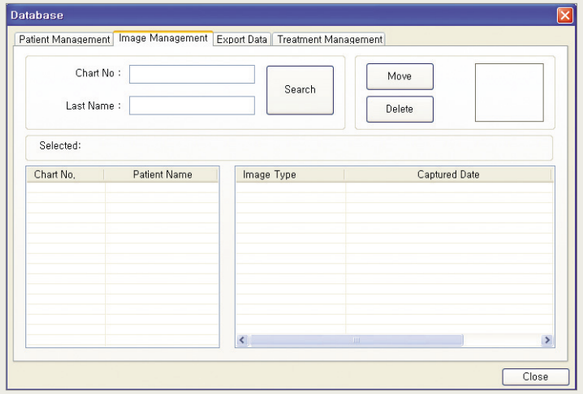
4.2 Image Management



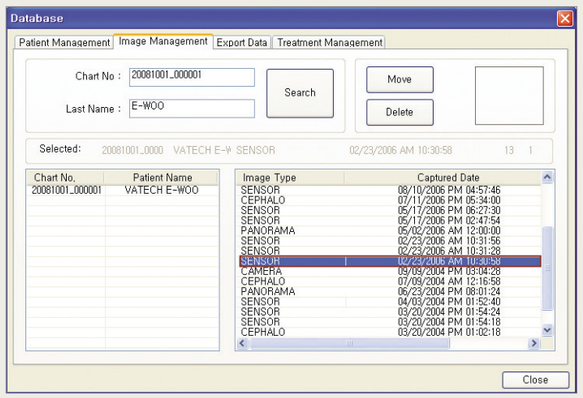
You can delete the image of an existing patient or transfer an image to another patient.

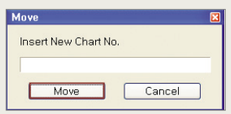
4.2.1 Image Transfer

If needed you can transfer a patient's image to another patient.
At the menubar, click the following : 'Database' → 'Image' → 'Image Management' to get the database screen.



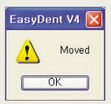
Input either the Chart No. or the Last Name and then press 'Search', and the software will generate a search of patient information as follows.





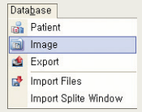
Select the image of the patient you wish to transfer, and then click 'Move'. A 'Move' dialogue box will pop up.

Enter the Chart No. of the patient exactly, and then click the 'Move' button.

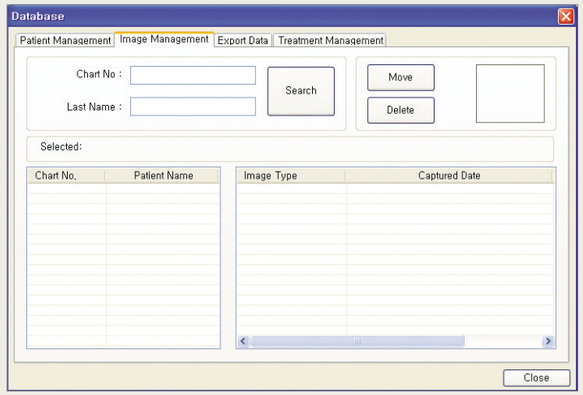


When the image of the selected patient is transferred to the designated Chart No., a window will appear. Press 'OK' and the move will be complete.

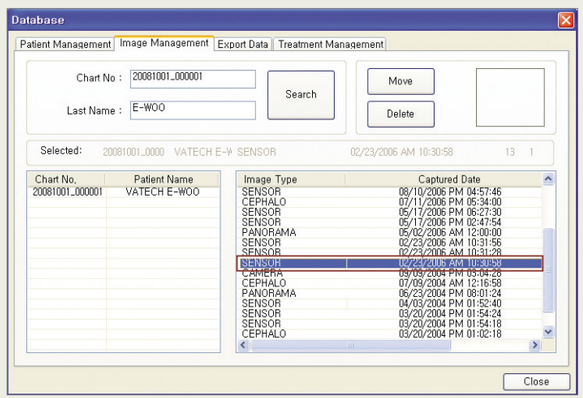
4.2.2 Deleting an image



If needed, you are able to delete images saved for specific patients.
At the menubar, click the following : 'Database' → 'Image' → 'Image Management' and a 'Database' screen will pop-up.



Input either the Chart No. or the Last Name and then press 'Search', and the software will generate a search of patient information.



Click the image that you want to delete and then press the 'delete' button. After which, a Log-in dialogue box will pop-up.

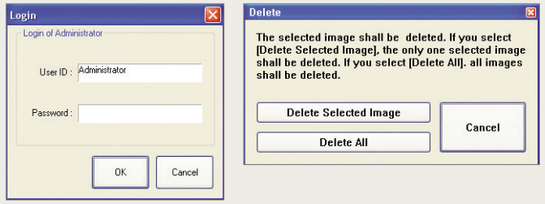
CAUTION

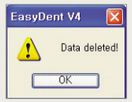
Please check whether the image you selected is indeed the image you wish to delete. It is advised that you delete images using the 'Delete Selected Image' button. If you use the 'Delete All' button, all images saved for that specific patient will be deleted.

NOTE

In order to properly delete an image, it is best not to run the 'Image Management' window. First, search for the patient on the Main Screen and then select the image you wish to delete at the Image List. If you run the 'Image Management' window after doing this, the image selected at the 'Image List' will automatically be selected when the 'Image Management' window appears.

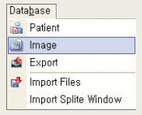
Enter the Password, and an EasyDent V4 pop-up dialogue will ask for your confirmation of the deletion request, as shown below.





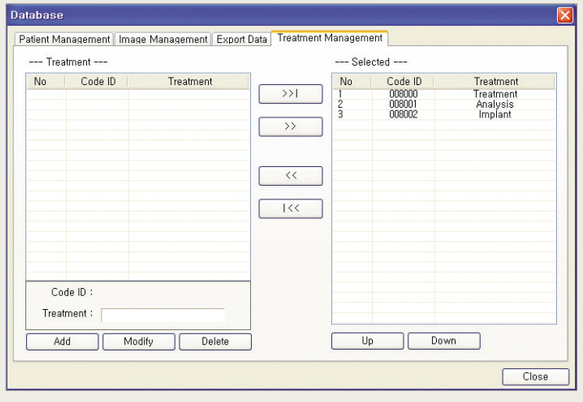
When the selected image is deleted, a dialogue that notifies you of the deletion will appear.

4.3 Treatment Management



This shows on the chart the kind of treatment that was 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 changed, deleted, or added.

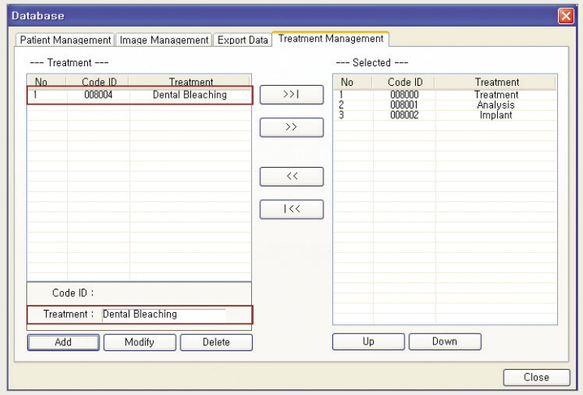
There is no icon within the toolbar that runs the Treatment Management Window. In order to run this, you will need to click on the 'Database' and click the 'Treatment Management' tab.



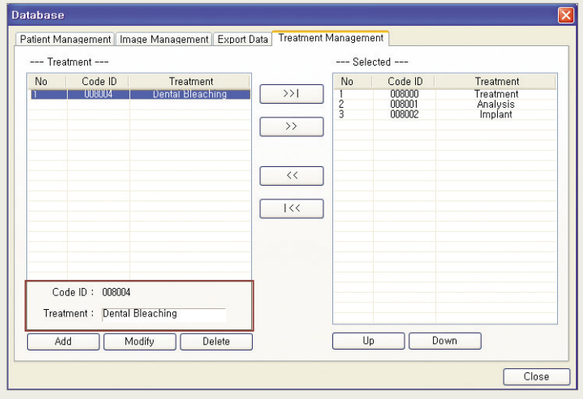
NOTE

The Code ID cannot be inserted or changed by the user.

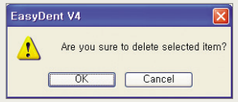
Add Users can add the treatment of their choice. If you wish to add 'Dental Bleaching' to the treatment, you can input 'Dental Bleaching' and press 'Add', you will be able to see that the treatment was added.



Modify When a treatment has been input incorrectly, it is possible to change it. As shown below, if you wish to change 'Dental Bleaching', you may select Dental Bleaching from the treatment list. You can modify the contents at the Treatment part and click 'Modify'.

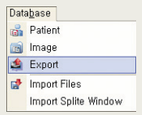


Delete If you wish to delete a Treatment, you may select the item you wish to delete as shown above, and press delete.



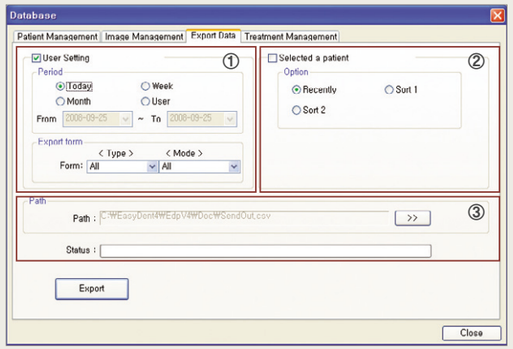
Once you have completed the addition or modification of 'Treatment', you will need to move it to the selected column in order to use it.
When the type of treatment is one item, press '[>>]' when many, '[>>I]'.
If you do not wish to use the items in the 'Selected' column, you can move the items already in the 'Selected' column back into the 'Treatment' column by using the '[<<]' , or '[I<<]' buttons.
At the 'Selected' column, you can use the 'UP' and 'DOWN' buttons to change the order of the Treatment.

4.4 Export Data

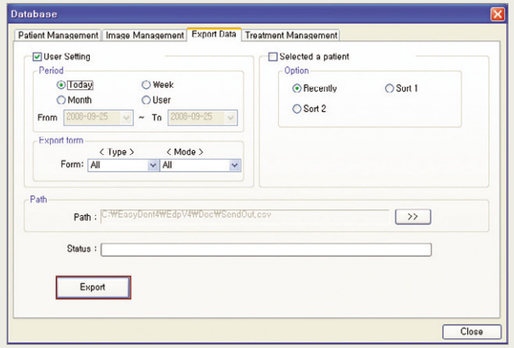


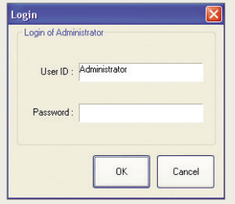
You can export image information of patients outside of EasyDent and open it in Excel.

If you click 'Database' → 'Export Data' from the menubar at the main screen, a database screen will appear as shown below.



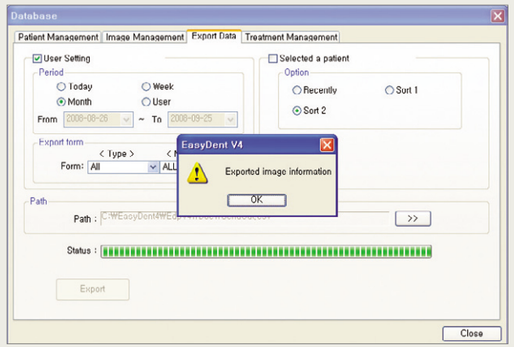
① **User Setting :** The user can specify the period that he wishes to export.
Today : Select images that were taken within the day.
Week : Select images taken within a week.
Month : Select images taken within a month.
User : The user can configure the period he wants. Also, the user should select which type of images he wants to export.
② If you click on 'Selected a patient', it will export according to the most recent patients.
③ **Path :** Shows the path where the exported patient image data will be saved. The path can be changed by the user. While the image information is being exported, the status will show on the status bar.

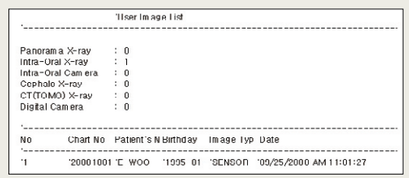




After configuration, press 'Export', and a Login dialogue box will pop-up.

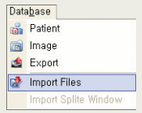
Enter the Password and then click the 'Ok' button to export the patient's image data. In order to verify the saved files, browse to the designated path you chose to save the files in. The default path is C:\EasyDent4\EdpV4\Doc.



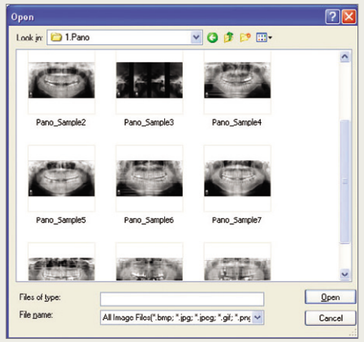


If you double-click the SendOut.xls file, you will be able to see that it was saved with a setup.

4.5 Import Files

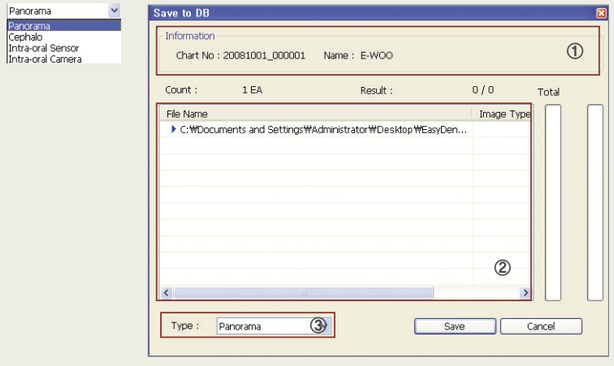


If needed, you are able to import image files from outside sources into a selected patient's file.

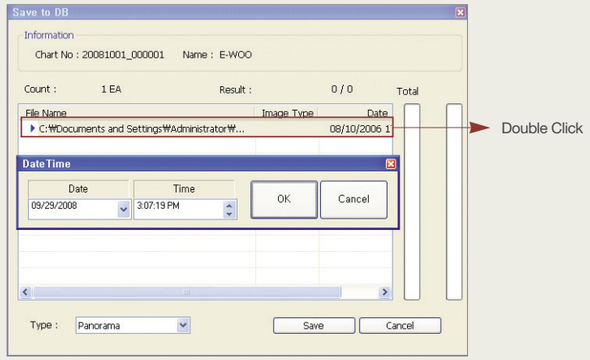


If you choose 'Database' → 'Import Files' from the menu at the top of the main screen, an 'Open' window will appear.

Select the image you want to import and then click 'Open' to open the 'Save to DB' screen.



① **Information Window :** Displays the Chart No. and the name of the patient associated with the image you wish to save.
② **File Window :** You can check the path of the image file you wish to 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. (The initial values are the Date and Time set in the user's computer.)



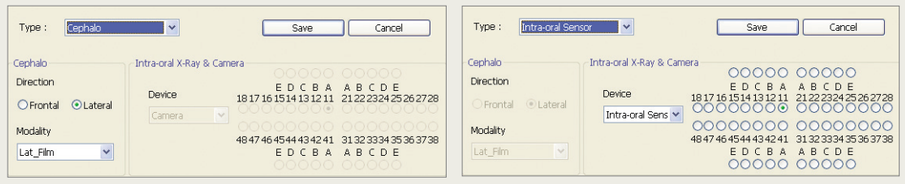
NOTE

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

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

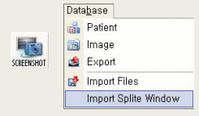
③ You can select Panorama, Cephalo, Intraoral Sensor, or Intraoral Camera type of image from the list. For a Cephalo image, you will need to select the Direction and the Modality.

For Intraoral Sensors and Intraoral Cameras, you need to select the image device and the location of the teeth.



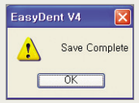
By clicking the 'Save' button; the chosen image will be saved at the file of the specified patient.

4.6 Import Splite 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 Splite Window' on the menubar, or click the 'SCREENSHOT' button on the toolbar. Press 'OK' button when the pop-up window appears.



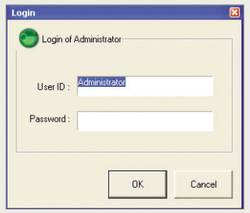
If you double-click the Patient List, you will be able to check the saved images in the Thumbnail window.

4.7 User Management Function

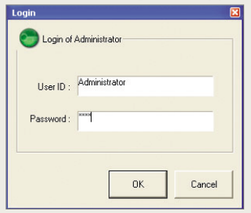
Only users with management authority can delete or export a 'patient/image information' and 'Image Export'.

Run C:\EasyDent4\DBUtil\Registration.exe.

A Log-in dialogue will pop-up.

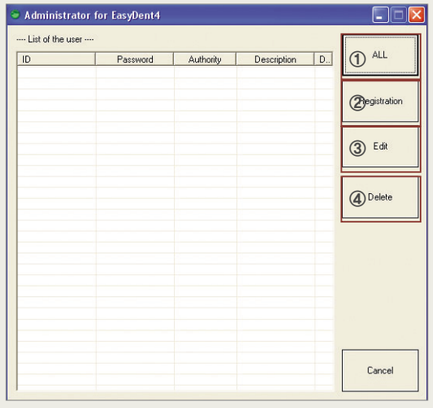


If you enter 'Administrator' and the 'password', dialogue will appear.



NOTE

The initial password is set as 'oooo'.



'Administrator for EasyDent4' is a function that allows search / register / edit / delete administrator information.

① **ALL** : Display all registered user information.
② **Registration** : You may register a user using this function.
③ **Edit** : You can edit the selected user information.
④ **Delete** : You may delete the selected user information.

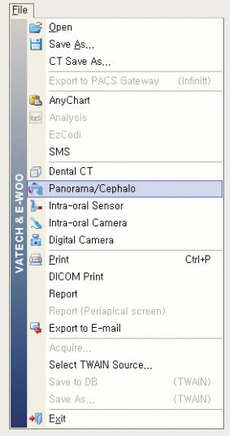
5

This chapter provides information on the method of acquiring images through Pano / Ceph and CT equipment that is integrated with the EasyDent software.

Image Acquisition

5.1 PANO / CEPH

This is used to acquire images from panoramic and/or cephalometric equipment. With the equipment and the computer linked, clicking the 'Pano/Ceph' button on EasyDent will execute the acquisition software to guide you through the process.



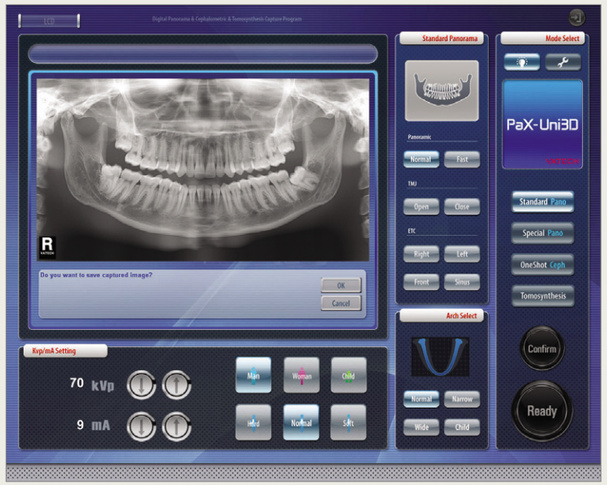
NOTE

The equipment and the computer with installed EasyDent software need to be linked to be able to use this function.

Select the patient you want from the 'Patient Information' at the left of the main screen.

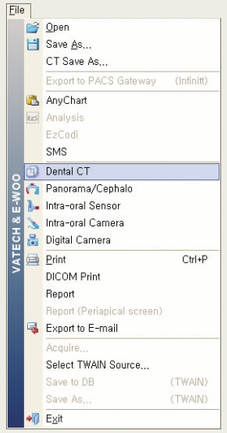
You may either click 'Panorama/Cephalo' from the menubar on the main screen, or click the 'PANO/CEPH' button on the toolbar. (The diagram below is the image acquisition software of PaX-Uni3D. Each of the equipments has its unique image acquisition software.

At the last stage of image acquisition, the program will ask whether you wish to save the image taken. Press the 'OK' button so that the image will be saved under the selected patient's file and you will be able to access the data on EasyDent.



After acquiring the image, the screen will change back 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



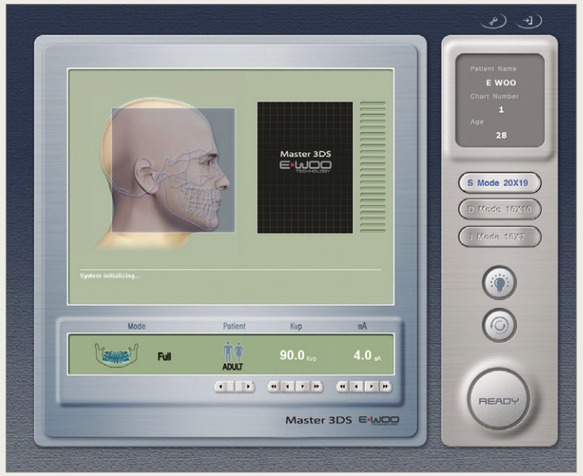
This function is used to acquire images from dental CT equipment. With the equipment and the computer linked, pressing the 'Dental CT' button will run the image acquisition program to guide you through the process.

NOTE

The equipment and the computer with installed EasyDent software need to be linked to be able to use this function.

Select the patient you wish to acquire an image from the 'Patient Information' on the left side of the main screen.

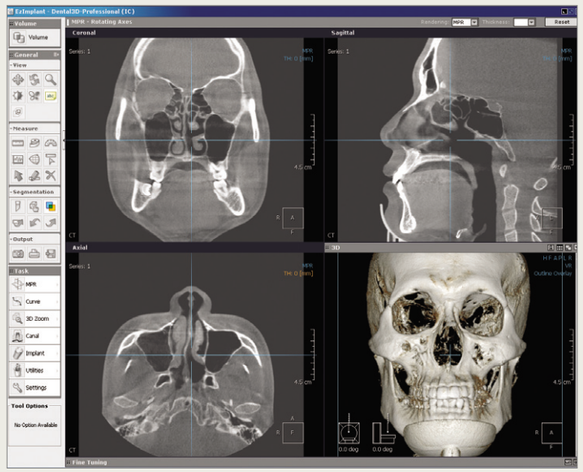
You may click 'File' → 'Dental CT' at the menubar on top of the main screen, or you may click the 'DENTAL CT' button at the toolbar. (The picture below is an image acquisition program of Master3DS. Each of the equipments has its unique image acquisition program.)



At the last stage of the acquisition of images, the program will ask whether you wish to save the images 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 data on EasyDent.

After acquiring the images, the screen will change back to the Main Screen of EasyDent, and by selecting the same patient from the 'Patient List', you can view the acquired images.

When you click the image from the Thumbnail, you will be automatically linked to the 3D Viewer program where you can view the CT images.



NOTE

Check whether the 3D Viewer software lock key, 'Ez3D2009' or 'Ez3D', is inserted in the computer. EasyDent alone cannot show CT images, so it needs to be linked with 'Ez3D2009' or 'Ez3D'.

6

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

Save To DB

6.1 Save to DB

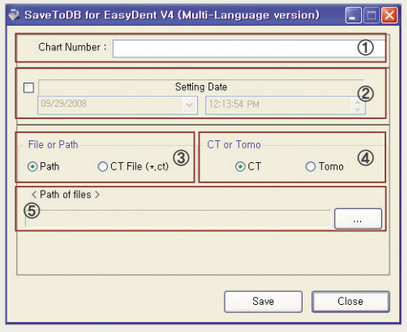
This is to be used when you wish to save a CT image to a selected patient's file.

Double-click the file C:\EasyDent4\DBUtill\SaveToDB4.

NOTE

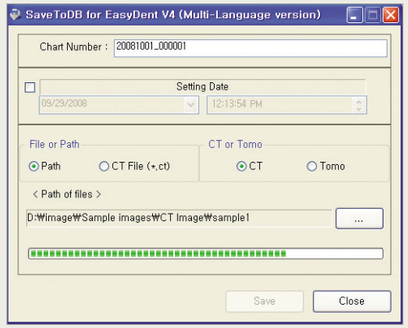
If you find yourself importing CTs into EasyDent quite often, if may be a good idea to create a shortcut for 'SavetoDB4' by right-clicking the icon and selecting 'Send To' → 'Desktop (Create Shortcut)'

The 'Save To DB for EasyDent V4' screen will appear, as shown below.

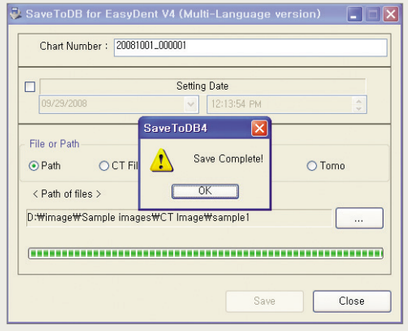


① **Chart Number** : Input the Chart No. of the patient whose CT image file you want to save.
② **Setting Date** : The user has the option to specify the date and time the image was taken.
③ **File or Path** : If the CT image you want to save is in .zip form or is a folder, choose Path. If the CT image file is a CT File(*.ct), choose CT File(*.ct).
④ **CT or Tomo** : Choose whether the image is a CT or a Tomo.
⑤ **Path of files** : Select the path where you can read the CT image files.

When these steps have been completed, click the 'Save' button. After which, you will be able to see the execution bar move, as shown below.

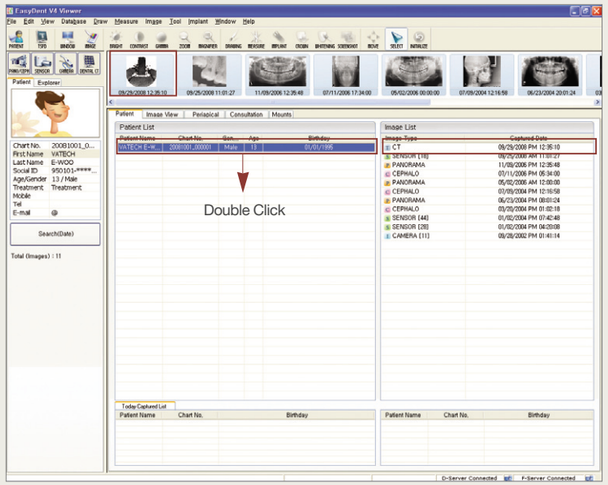


Once it is saved, a small pop-up window will appear with the message 'Save Complete!'. Then click 'OK'.



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

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

Image Processing

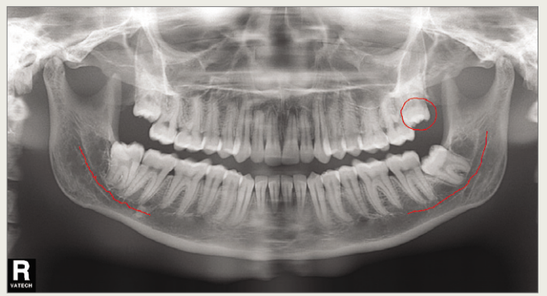
7.1 Drawing Tools

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

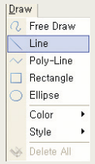
7.1.1 Free draw

This allows the user to draw freely on the image.

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

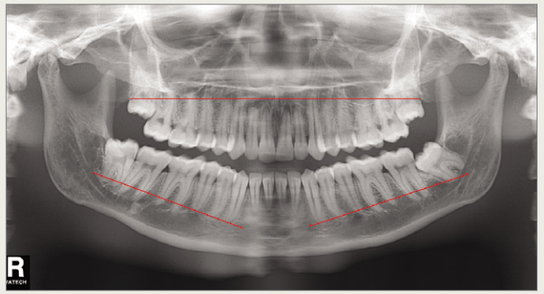


7.1.2 Line



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

Click ‘Draw’ → ‘Line’. Clicking once on the starting point of your choice and clicking again on the ending point of your choice will complete a line.

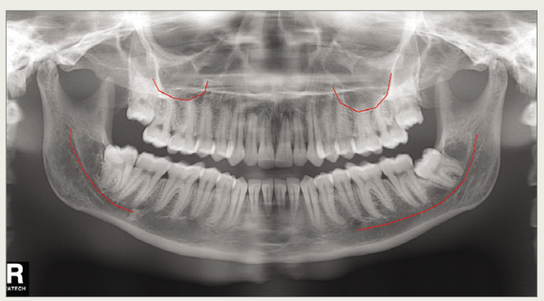


7.1.3 Polyline

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

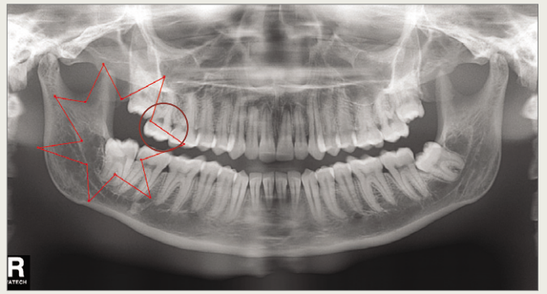
Drawing a Polyline

Click 'Draw' → ‘Polyline’. Then click at the starting point of your choice, click at the mid-points, and then double-click at the last point to complete a Poly-Line.



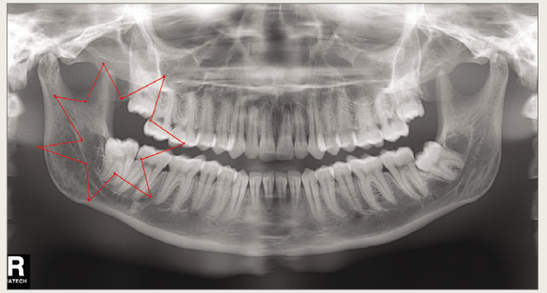
Moving a Polyline

If you select a Polyline drawn on the image by clicking the ‘Select’ button on the toolbar, the vertex at the end of the line transforms into a square shape. At this stage, by clicking the Polyline and dragging it , you can move it to a desired location.

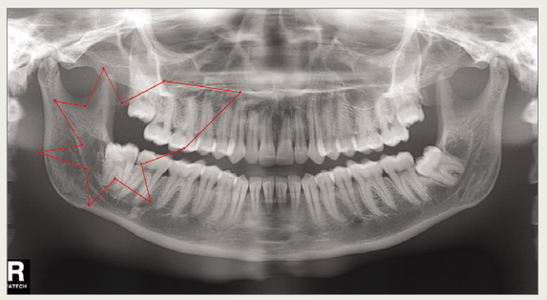


Modifying a Polyline

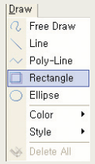
Click the corner of the part you would like to modify.



If you click and drag to a position you want, you will see that the Polyline will be changed, as shown below.

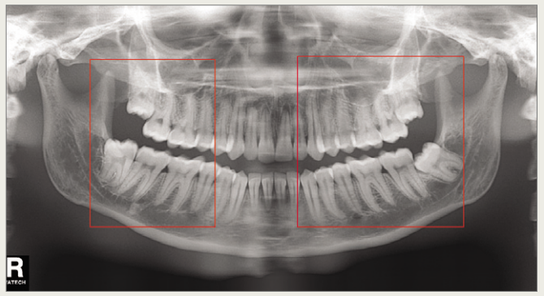


7.1.4 Rectangle

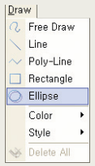


This allows the user to draw Rectangle (square) on the image.

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

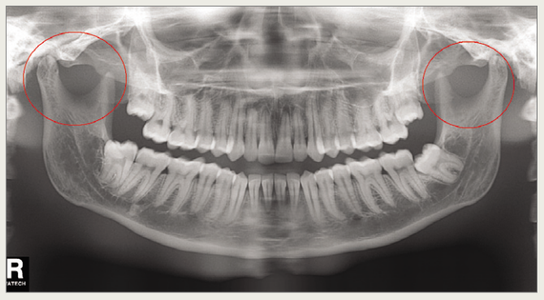


7.1.5 Ellipse

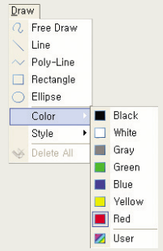


This allows the user to draw Ellipse on the image.

Click on 'Draw' → 'Ellipse', then draw an ellipse on the image as you would like.



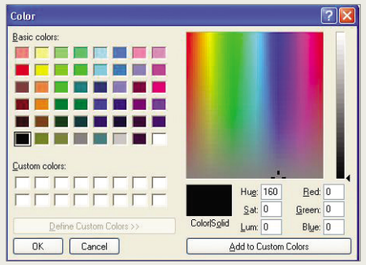
7.1.6 Color



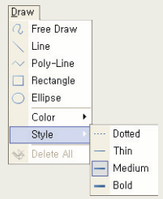
Using the Drawing Tool (Free Draw, Line, Poly-Line, Rectangle, Ellipse), you can change the color of the line used to draw on the image.

Click 'Draw' → 'Color', then you will be able to choose between the colors Black, White, Gray, Green, Blue, Yellow, and Red. If you want to choose a different color other than the above-mentioned colors, click 'User' and a 'Color' window will appear, as shown below.

In the color window, you can click 'Define Custom Colors' to open up an expanded color window.



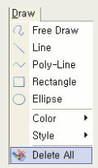
7.1.7 Style



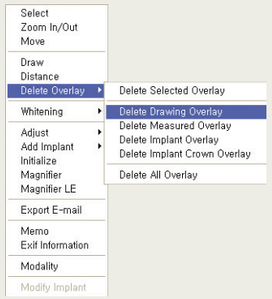
This enables the user to change the types of lines used when drawing on the image using the Drawing Tool (Free Draw, Line, Poly-Line, Rectangle, Ellipse).

If you click 'Draw' → 'Style', you can choose either 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, Polyline, Rectangle, Ellipse).



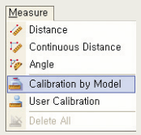
If you click 'Draw' → 'Delete All', all free draws, lines, polylines, rectangle, and ellipse drawn on the image will be deleted. Or, if you right-click the mouse button on the image, a context menu will pop-up and you can choose 'Delete Overlay' → 'Delete Drawing Overlay' to remove the drawings.

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.

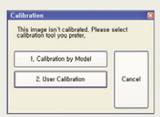
7.2.1 Calibration by Model

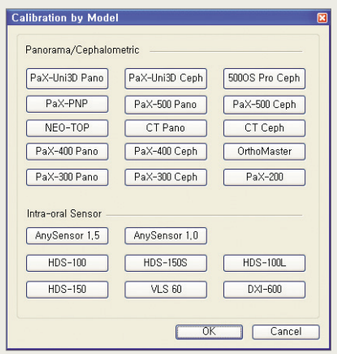
Provided herein is an explanation on the method of calibration according to the capturing equipment.



NOTE

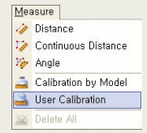
Initially, all images are 'non-calibrated images' if no calibration has ever been applied. For measuring length, the image should first be calibrated. If you have not calibrated an image and wish to measure it, a dialog box for calibration will appear, as shown below.



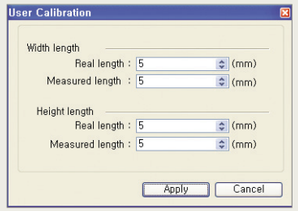


When you click 'Measure' → 'Calibration by Model', you can see a window that shows the various model names under Panoramic/Cephalometric equipments and intraoral Sensors. The 'Calibration by Model' has the Calibration values automatically input and thus, will no longer need separate settings. All the user has to do is select and click on the model of equipment that took the image.

7.2.2 User Calibration



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



By clicking 'Measure' → 'User Calibration', a user calibration dialogue box will appear where the user can directly input these values.

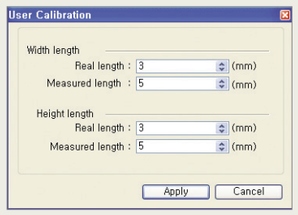
NOTE

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.

Image with Ball-Phantom

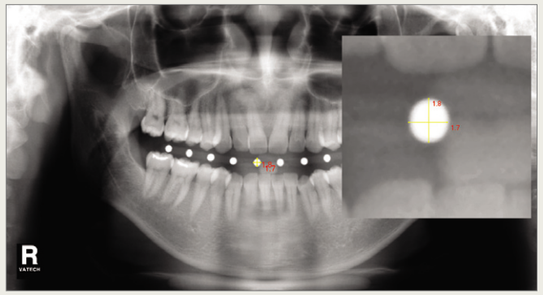
This is an image that was acquired with a Ball-Phantom in the patient's mouth.

Example of the Method to Use User Calibration on an image with Ball-Phantom

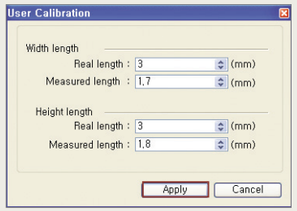


After acquiring an image using the Ball-Phantom, click 'Measure' → 'User Calibration' from the menubar at the top of the main screen. In the User Calibration dialogue box, input the actual size of the Ball-Phantom and click 'Apply'. The usual size of Ball-Phantom is 3mm.

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

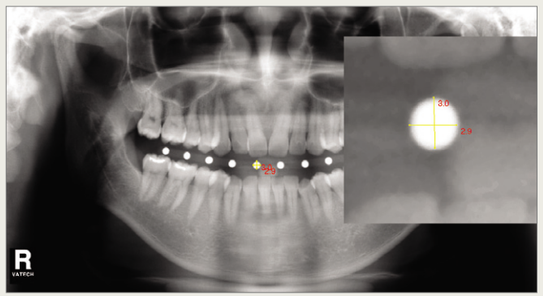


The measured size of the ball's width is 1.7mm and the height is 1.8mm.



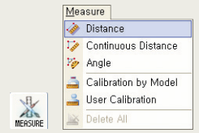
Click 'Measure' → 'User Calibration'. Input the 1.7 and 1.8 measured lengths on the blank spaces and then click 'Apply'.

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.



NOTE

Images that have been calibrated previously will still be calibrated, even if you restart EasyDent.

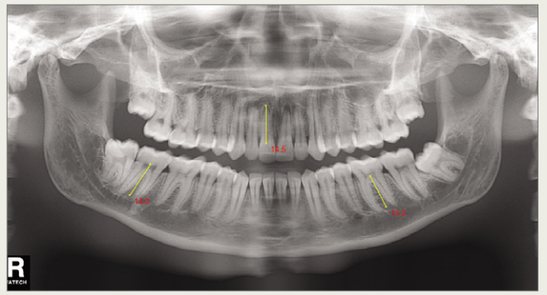


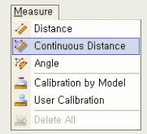
7.2.3 Distance

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

You may either click 'Measure' → 'Distance' on the menubar, or the 'MEASURE' icon on the toolbar.

To measure, click the mouse once at the starting point and once more at the end point of the distance you want measured.



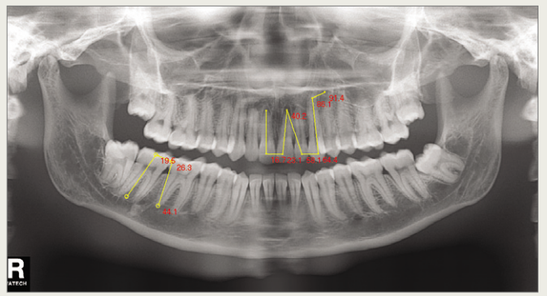


7.2.4 Continuous Distance

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

Click 'Measure' → 'Continuous Distance'.

Click once at the starting point of the area you want to measure then click the mouse in as many consecutive points as you want and finally, double-click at the end point to acquire the distance.

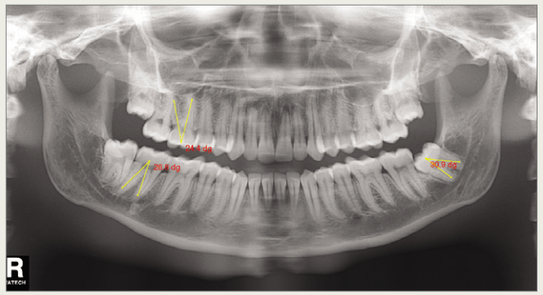


7.2.5 Angle

This tool allows you to measure an angle within an image.

Click 'Measure' → 'Angle'.

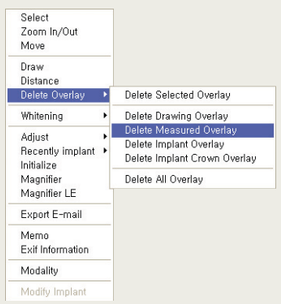
You may measure any angle on any part of the image. Click on three points on the image to create an angle.



7.2.6 Delete all

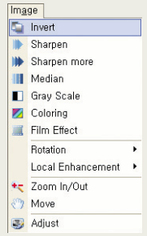
This tool is used to delete all measurements on the current image that were created using the Measuring Tools (Distance, Continuous Distance, and Angle).

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

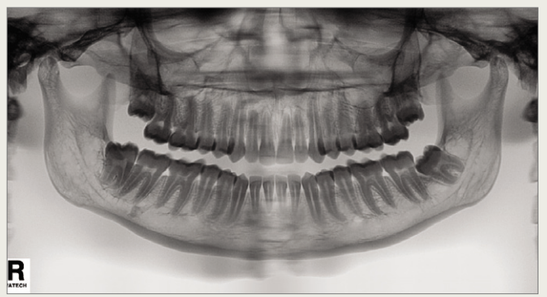
These tools allow you to modify images in different ways (invert, film effects, coloring, etc) to aid with both visual analysis and patient consultation.

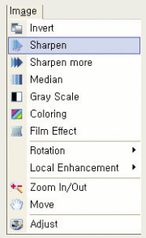


7.3.1 Invert

By inverting the image, soft tissue that looked too dark in the original image will appear in enhanced detail. Invert displays the opposite color of all the original colors in a chosen image.

Click 'Image' → 'Invert' at the menubar. You can see from the picture below that the image has been inverted.

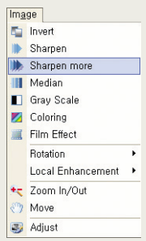




7.3.2 Sharpen

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

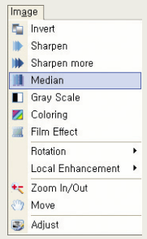
Click 'Image' → 'Sharpen'. You can see from the image below that it has been sharpened.



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.

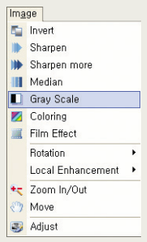


7.3.4 Median

This function is used to eliminate the noise in the image. It filters the pixel data to be the median of its surrounding pixels. Generally, using the median function will change the RGB value of the pixel into a median value, and will smudge the corners of the image.

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

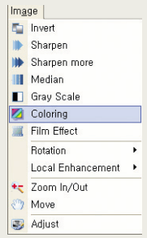
7.3.5 Gray Scale



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

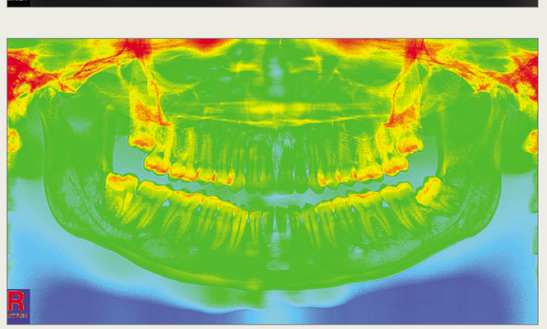
If you click 'Image' → 'Gray Scale', you can see that the image will be turned into its Gray Scale, as shown below.

7.3.6 Coloring

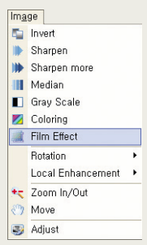


This changes the black and white image into a colored image. Red signifies high density and blue signifies low density.

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

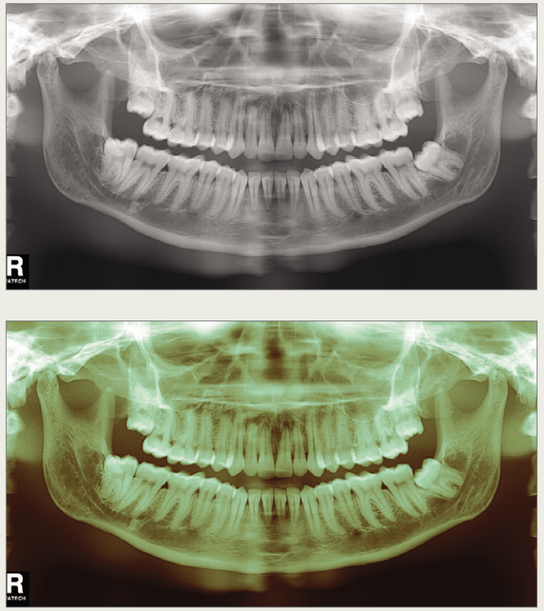


7.3.7 Film Effect



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

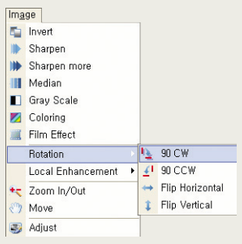
If you click 'Image' → 'Film Effect', you can see that the image will be altered into a film effect, as shown below.

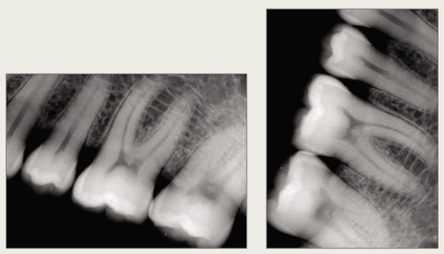


7.3.8 Rotation

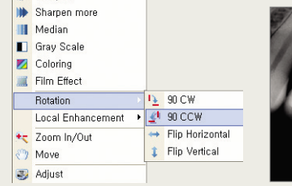
This enables the user to rotate the image in the direction and angle desired.

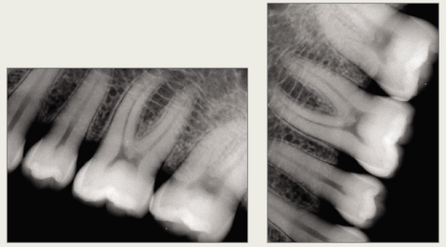
90 CW This is for rotating the image 90 degrees, clockwise.



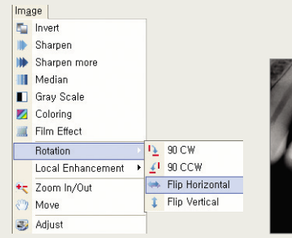


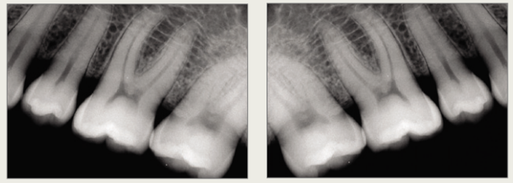
90 CCW This is for rotating the image 90 degrees, counterclockwise.



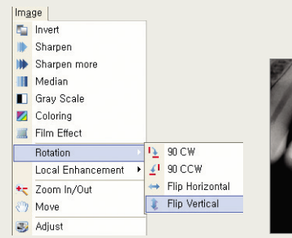


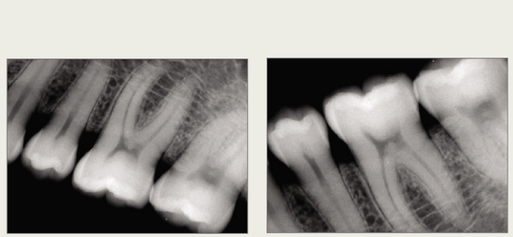
Flip Horizontal This function is for flipping the image horizontally.

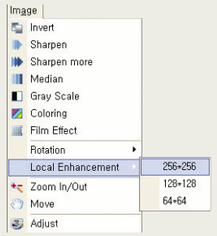




Flip Vertical This function is for flipping the image vertically.







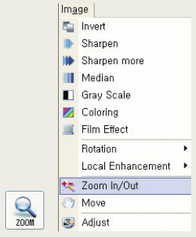
7.3.9 Local Enhancement

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

Click 'Image' → 'Local Enhancement'. 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.

Put your pointer on the rectangle and drag it to the area you would like to highlight.

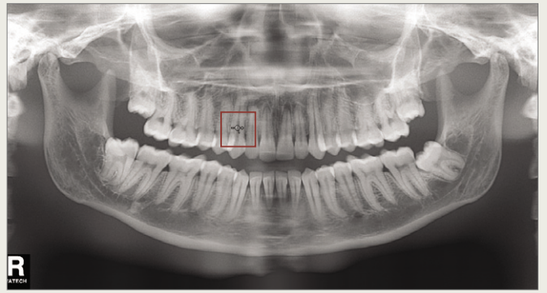
Example of a 256X256 local enhancement

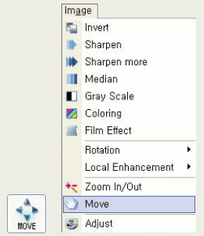


7.3.10 Zoom In/Out

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

Click 'Image' → 'Zoom In/Out' at the menubar 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.

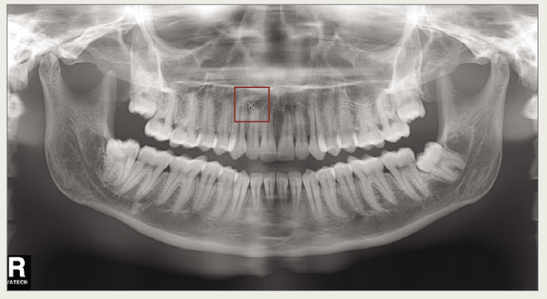


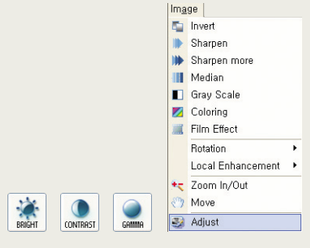


7.3.11 Move

This function allows the user to move the entire image.

Click 'Image' → 'Move' at the menubar or click the 'MOVE' icon on the toolbar, and the pointer on the image will look like this: ✣ .





7.3.12 Adjust

With this function, the user can adjust the Brightness, Contrast, and Gamma values of an image.

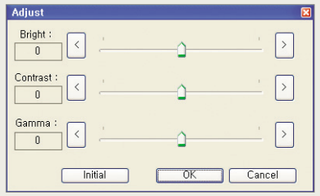
Click 'Image' → 'Adjust'. As shown in the picture below; an Adjust pop-up window appears and you can use the arrow tabs pointing to either sides to change the Brightness, Contrast, and Gamma values on a five-level scale interval.

NOTE

Bright : The degree of the brightness. Shows the brightness of colors.

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.

Gamma : The degree of brightness of the monitor.



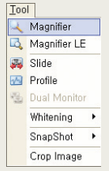
You can also click the 'Bright', 'Contrast', and 'Gamma' icons on the toolbar to adjust the values. Dragging the mouse towards the right side of the image will increase the value, while dragging it to the left will decrease the value.

8

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.

Special Tools

8.1 Magnifier



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

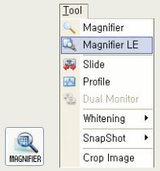
Click 'Tool' → 'Magnifier' at the menubar on the main screen. Then the pointer will turn into .

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.

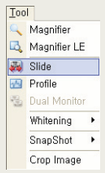
Click 'Tool' → 'Magnifier LE' on the menubar, or click the 'MAGNIFIER' icon on the toolbar.

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 .

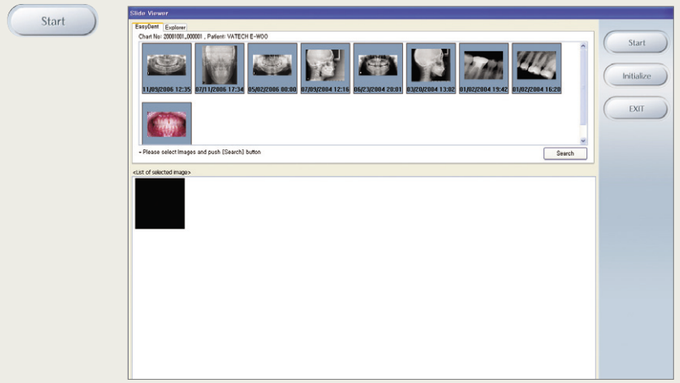
8.3 Slide

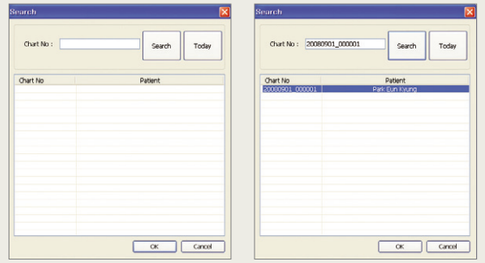


This shows the patient's images in the form of a presentation slide.

8.3.1 EasyDent's image Slide

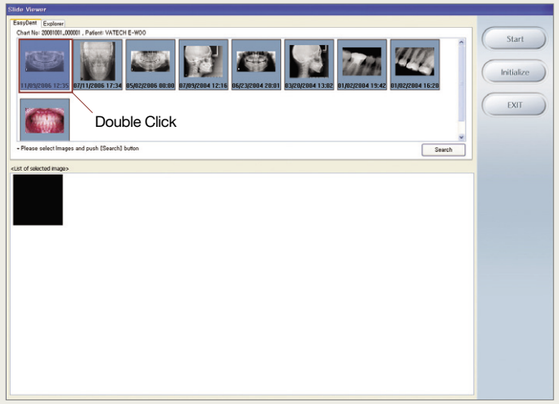
At the Patient List, choose a patient whose images you want to view. Click 'Tool' → 'Slide' on the menubar and a Slide Viewer window will appear. You can view all images of the patient on file.

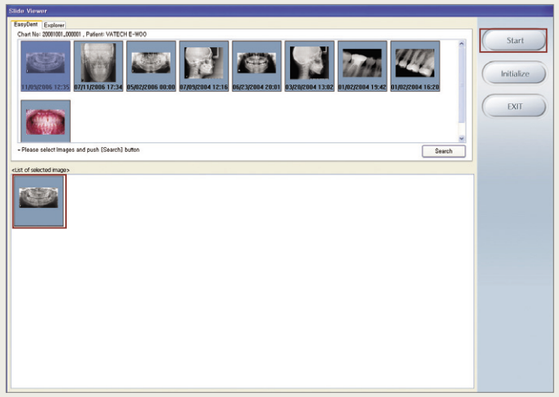




If you want to see the slide of another patient, you can search for that patient through the following steps : Click the 'Search' button → 'Search' dialogue box pops-up → Insert the 'Chart No.' → Click the 'Search' button. Click on the patient name with Chart No. and press 'OK'.

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.



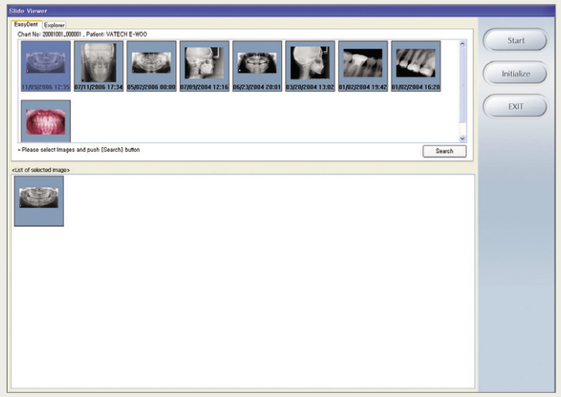


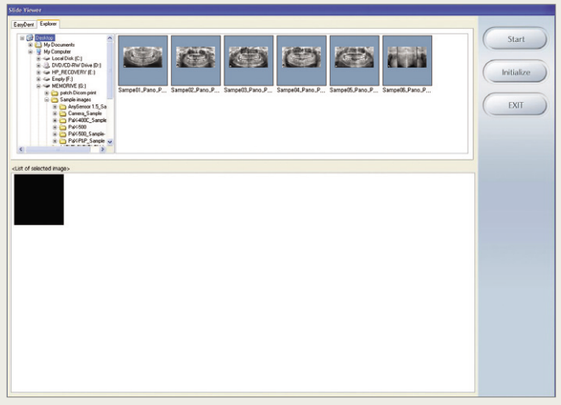
As shown in the illustration above, move all the images you want to see in a slide to the 'List of selected Image'. By pressing the 'Start' button, a window will appear to show the images from the 'List of selected Image' in a slide.

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

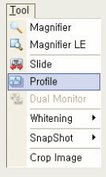
Click 'Tool' → 'Slide' at the menubar on the main screen, and the 'Slide Viewer' will appear. Click the 'Explorer' tab and find the location of the image to be imported.





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

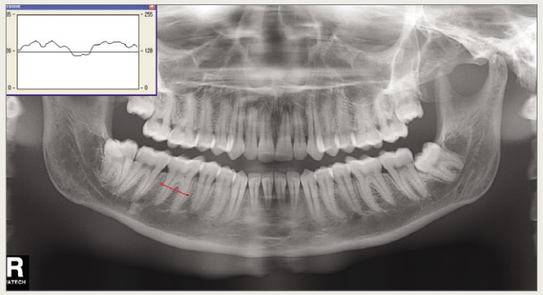
8.4 Profile



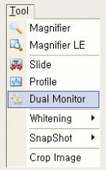
This is a useful tool for measuring the density of teeth before an implant placement.

Click 'Tool' → 'Profile' and the mouse cursor 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.



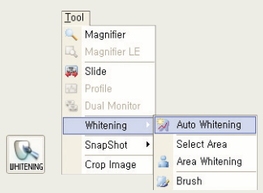
8.5 Dual Monitor



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



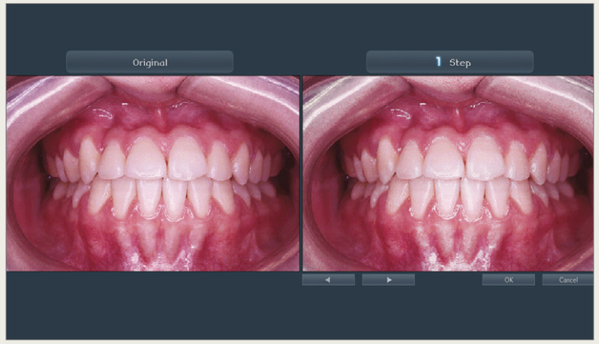
You can use this function on an image that was taken by an intraoral camera. It can show the results of tooth whitening to the patient beforehand.

NOTE

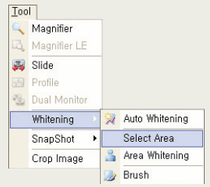
This function will not work on a Panoramic Image.

8.6.1 Auto Whitening

Click 'Tool' → 'Whitening' → 'Auto Whitening' at the menubar 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.



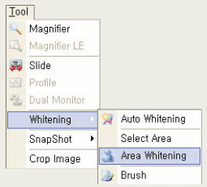
8.6.2 Select Area



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

Click 'Tool' → 'Whitening' → 'Select Area'. Using the Poly-line tool (Refer to 8.3 Poly Line), choose the area you want to be whitened.

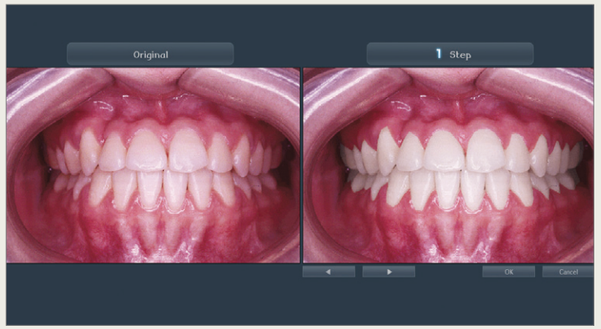
If you double-click on the last point, automatic area whitening will be run.



8.6.3 Area Whitening

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

Click 'Tool' → 'Whitening' → 'Area Whitening'.

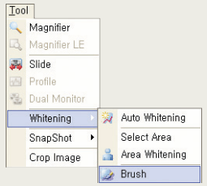


By clicking the arrow pointing left or right, you can whiten the selected area in 3 steps or levels.

NOTE

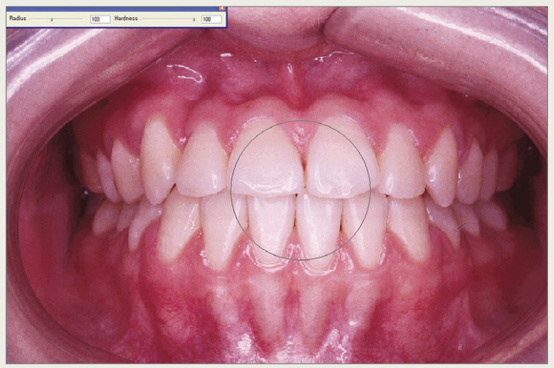
After selecting the area to be whitened using 'Select Area', you may use the 'Area Whitening' function.

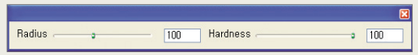
8.6.4 Brush



Using the circle, the user can execute whitening directly.

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

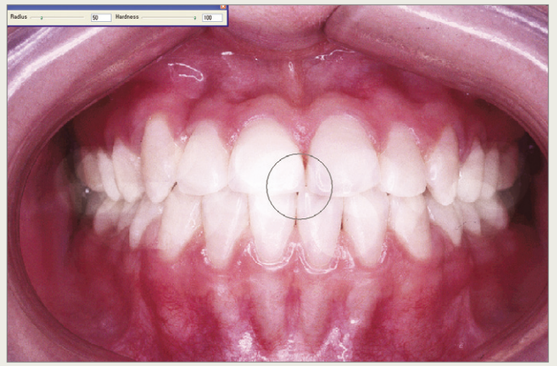




Radius refers to the size of the circle.

Hardness refers to the strength of Whitening.

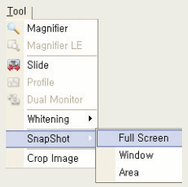
Once you have adjusted the size of the circle and the strength of the whitening, you can click on the circle and drag it across areas that you want to be whitened.



CAUTION

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

8.7 Snapshot

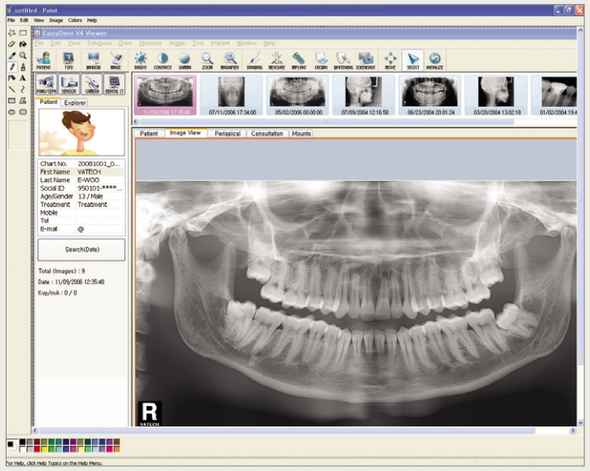


You can capture an image of the screen of EasyDent in 3 forms : Full Screen, Window, or Area. Snapshots can be pasted(ctrl+v) into programs such as paintpad or photoshop. If needed, you can edit or save a captured image.

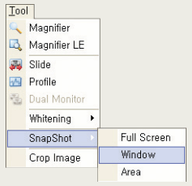
8.7.1 Full Screen

This captures the whole screen of EasyDent.

Click 'Tool' → 'SnapShot' → 'Full Screen'. Click on any area of the EasyDent screen. Open the paint pad and execute ctrl+v (paste) and you will be able to see that the whole screen of EasyDent has been captured.



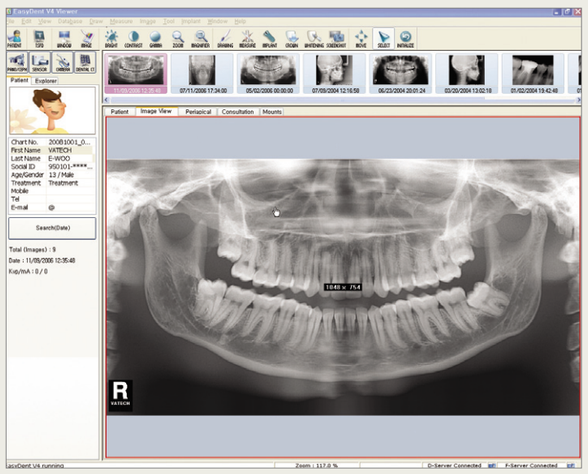
8.7.2 Window



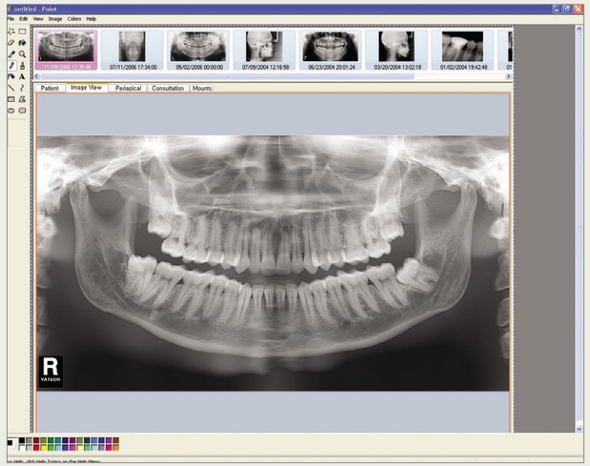
This captures a specific area in EasyDent.

Click 'Tool' → 'SnapShot' → 'Window'.

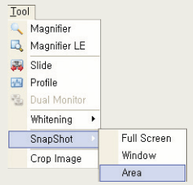
If you take your mouse cursor on any area of the EasyDent screen, a red frame and the size of the image to be captured will be shown. Select the area you want by clicking once to get rid of the red frame.



Open the paint pad and execute ctrl+v (paste).

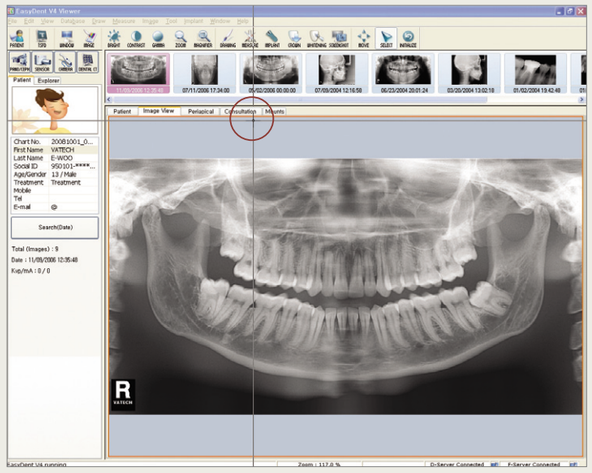


8.7.3 Area

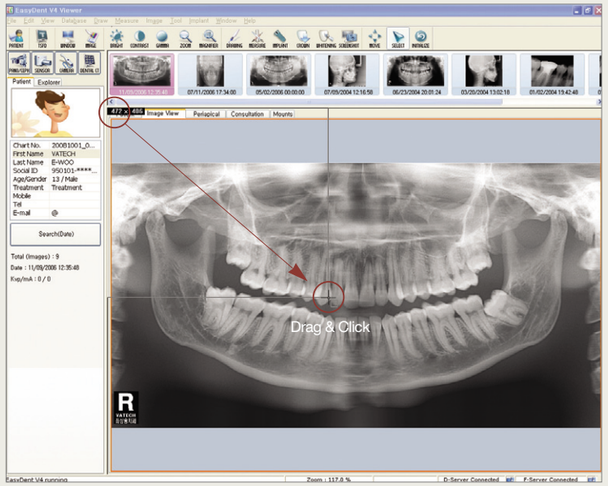


This function enables you to crop and capture the area that you want on EasyDent.

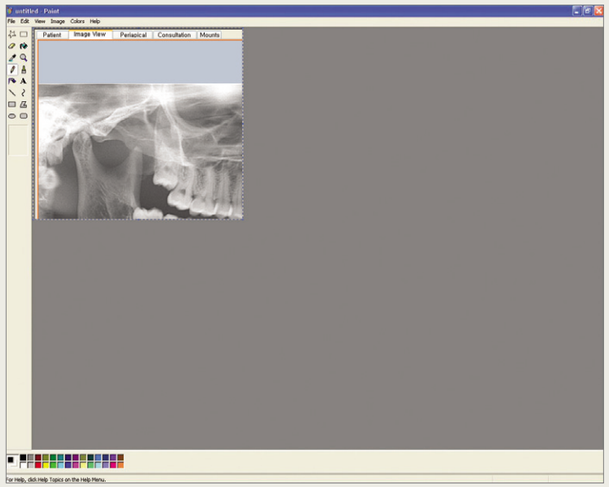
Click 'Tool' → 'SnapShot' → 'Area', and a cross-shaped intersecting lines will appear, as shown below.



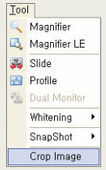
Position the center of the cross-shaped line on the area you want, then click and drag it to create a rectangular area for you to capture, then click once more.



Open the paint pad and execute ctrl+v (paste).



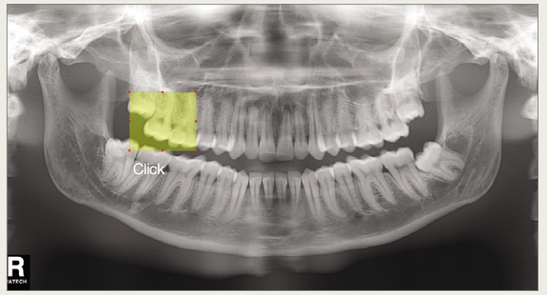
8.8 Crop Image



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

Click 'Tool' → 'Crop Image' on the menubar.

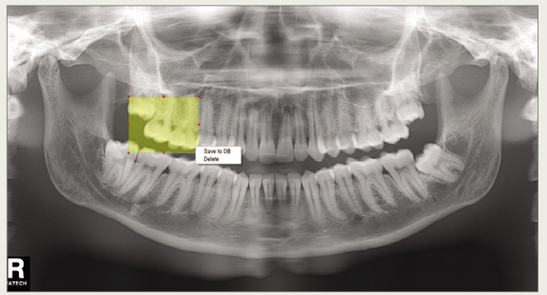
Click once at the position on the image you want, then drag the pointer to a position where you like to place it, and click. A yellow rectangle will appear with 8 red dots. The size of this rectangle can be adjusted.



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

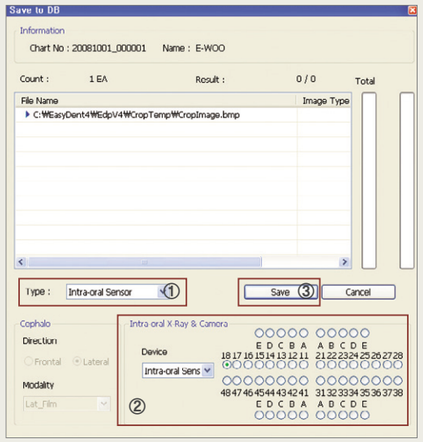
Save to DB : It allows the selected image to be saved like the image of an intraoral sensor.

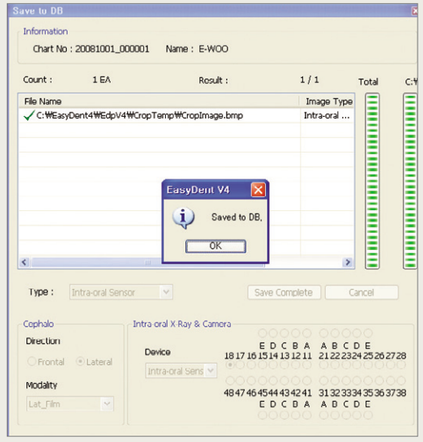
Delete : You can delete the selected region.



Click 'Save to DB' button, and a 'Save to DB' window will appear.

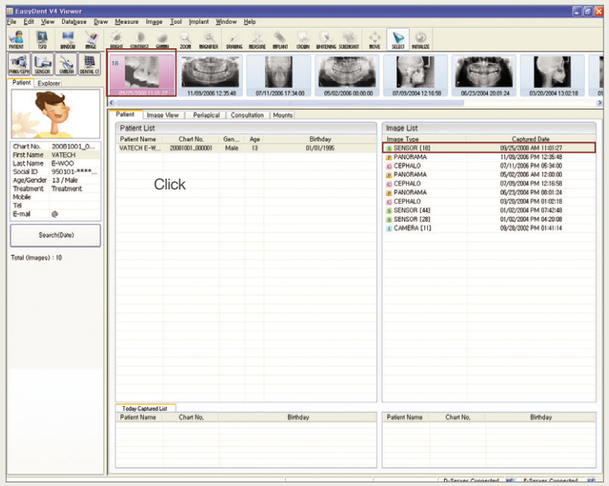
You need to choose an image type, either Panorama, Cephalo, Intraoral Sensor, or Intraoral Camera. For choosing 'Intraoral Sensor', the location of the teeth needs be selected. Press 'Save' to finish.





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.



9

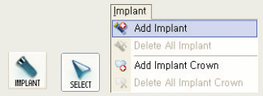
This chapter will explain methods of utilizing simulated implants and crowns on acquired images. Before an actual implant placement, the procedure can now be much more well planned by first doing an implant or crown simulation.

CAUTION

You must calibrate your 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.

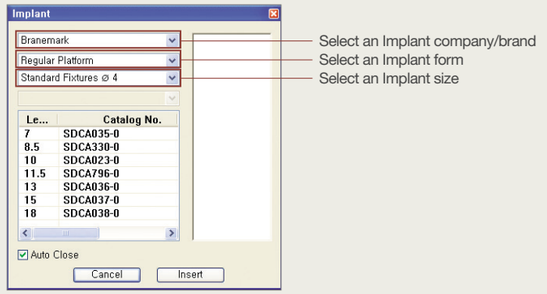
Implant Simulation

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).

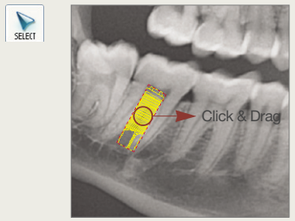
You can either click 'Implant' → 'Add Implant' on the menubar or click on the 'IMPLANT' icon on the toolbar, and the window below will pop-up.



After selecting the proper implant, click the 'Insert' button.

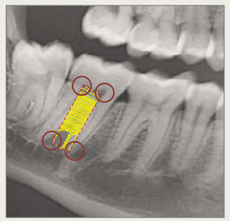
An implant will be created on top of the image. Place the cursor on the location where you want to place the implant and then 'click'.

9.1.1 Moving an implant



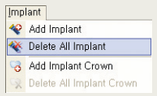
Click the 'SELECT' icon on the toolbar, and then click on the center of the implant. The selected implant will be highlighted in red. Click and drag it to the position where you want it moved.

9.1.2 Rotating an Implant



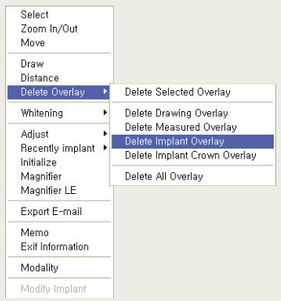
Using the 'SELECT' button on the toolbar, click one of the four corners of the implant. Click on the corner and rotate the implant in the direction and angle of your choosing.

9.2 Delete All Implants



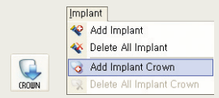
This tool allows you to delete all implant overlays on the simulated implant.

On the menubar, click 'Implant' → 'Delete All Implant' to delete all Implants on the image.



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.

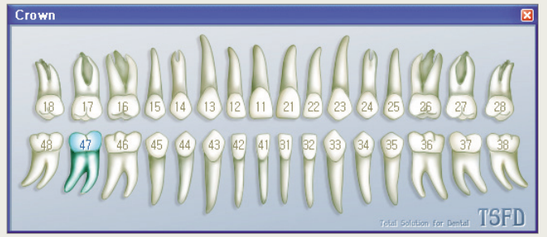
9.3 Add Implant Crown



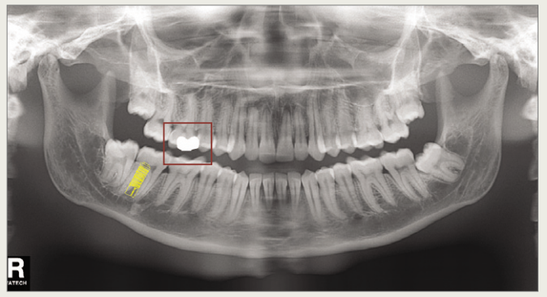
You can place an implant crown overlay on the implant simulation.

Click 'Implant' → 'Add Implant Crown' on the menubar, and a 'Crown' pop-up window will appear.

You will notice that when you place the mouse pointer on a tooth, the color of the tooth changes.

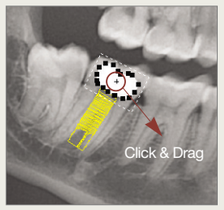


When you click the colored/highlighted implant crown, an implant crown will appear on the image.



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

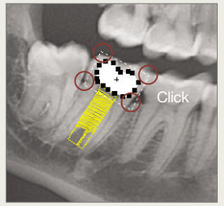
9.3.1 Moving the Implant Crown



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 & dragging it.

9.3.2 Rotating the Implant Crown

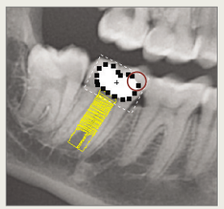


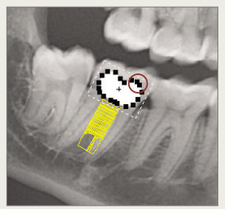
Click the 'SELECT' button on the toolbar then click on one of the four corners of the implant crown. The selected implant crown will have dotted edges. Click the corner and rotate the implant corner in the direction and angle of your choosing.

9.3.3 Adding a Point

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

Click the crown on the image. Choose 'Add point' on the pop-up menu that appears when you right-click on it. Click on the area of the crown where you want to add a point. You will notice that a black square dot was added.

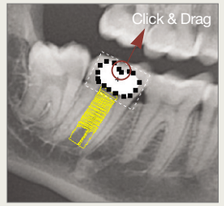


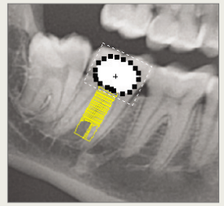


9.3.4 Changing the crown

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.

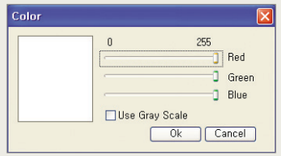


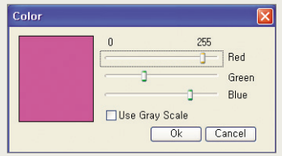


9.3.5 Changing the Crown Color

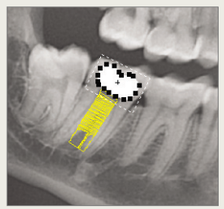
The crown color of the implant can be changed according to the user's preference.

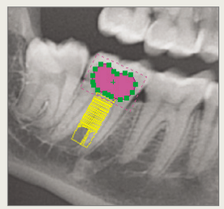
Choose a crown within the image. Click 'Color' on the context menu, which pops up after clicking the right mouse button. The pop-up window is the same as the illustration below. Adjust the Red, Green, and Blue color bars until the rectangle on the left displays the color that you want. When the color is set, press 'Ok'.





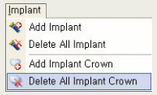
Notice that the color of the crown has been changed from white (initial value) to the color which the user has chosen.

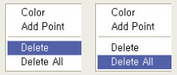




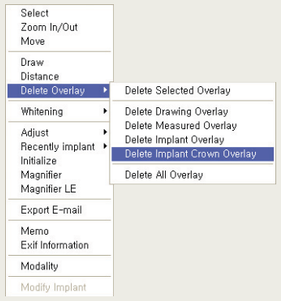
9.4 Delete All Implant Crown

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





Click 'Implant' → 'Delete All Implant Crown' on the menubar, 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. You may right-click anywhere on the image to show the Context Menu then click 'Delete Implant Crown Overlay' to delete the Implant Crown.

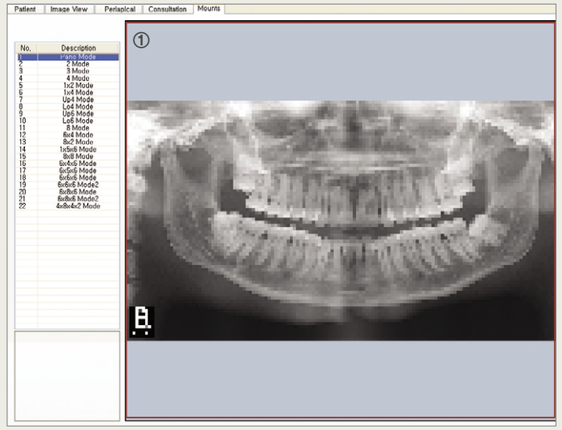


10

This chapter will explain the 'Mount' function, which is a mode to organize images in various periapical layouts.

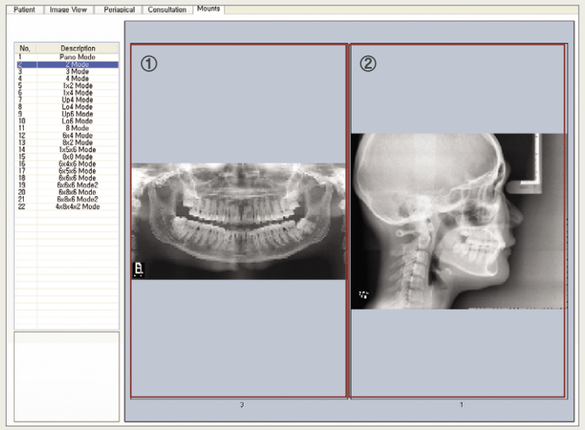
Mounts

10.1 Pano Mode



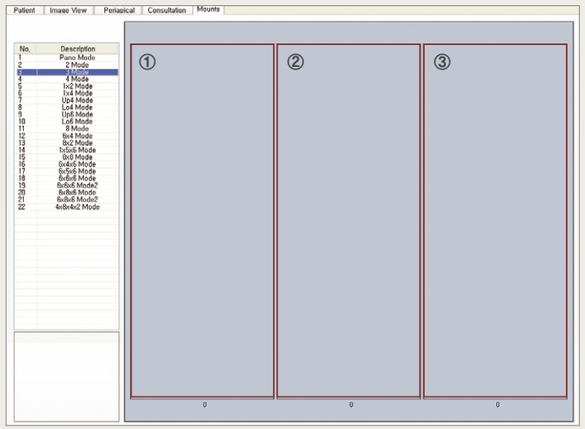
① Window for Panorama images

10.2 2 Mode



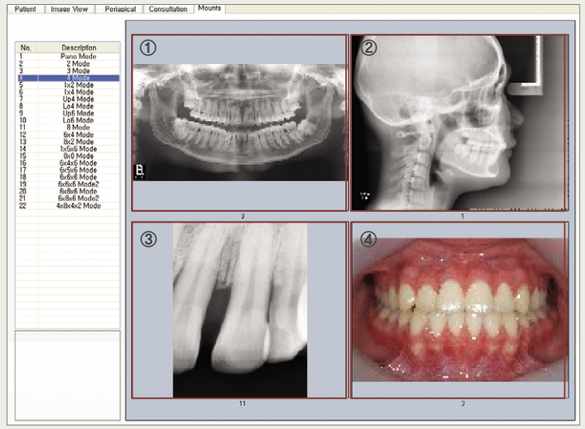
① Window for Panorama images
② Window for Cephalo images

10.3 3 Mode



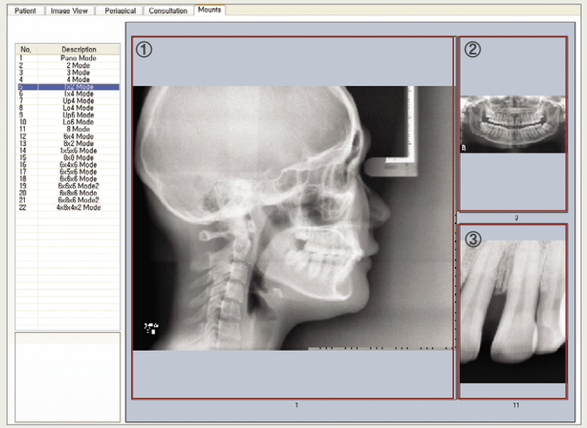
Not supported

10.4 4 Mode



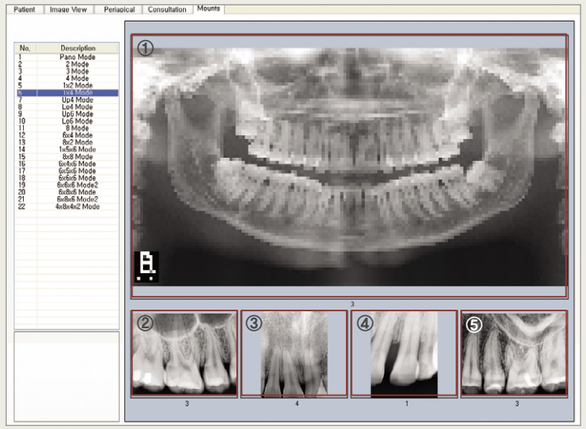
① Window for Panorama images
② Window for Cephalo images
③ Window for Intraoral Sensor images
④ Window for Intraoral Camera images

10.5 1x2 Mode



① Window for Cephalo images
② Window for Panorama images
③ Window for Intraoral Sensor images

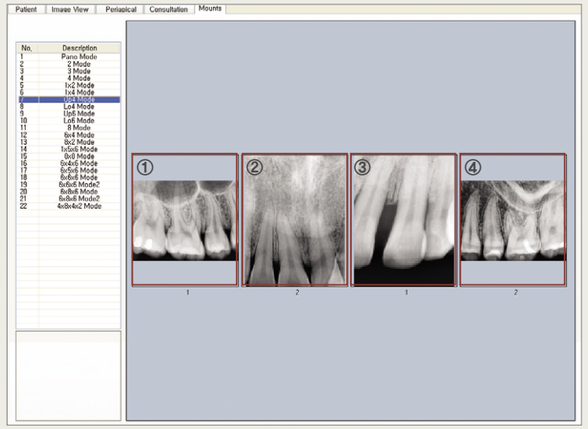
10.6 1x4 Mode



① Window for Panorama images
②~⑤ Windows for Intraoral Sensor images

	International System	F.D.I System(USA)
②	18, 17, 16, 15, 48, 47, 46, 45	1, 2, 3, 4, 29, 30, 31, 32
③	14, 13, 12, 11, 44, 43, 42, 41	5, 6, 7, 8, 25, 26, 27, 28
④	24, 23, 22, 21, 34, 33, 32, 31	9, 10, 11, 12, 21, 22, 23, 24
⑤	28, 27, 26, 25, 38, 37, 36, 35	13, 14, 15, 16, 17, 18, 19, 20

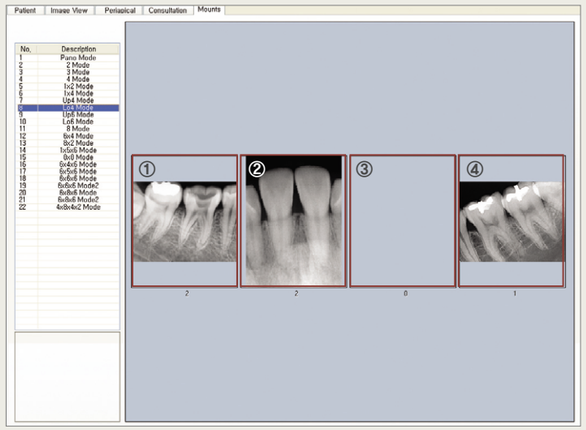
10.7 Up4 Mode



①~④ Windows for Intraoral Sensor images (Upper Teeth)

	International System	F.D.I System(USA)
①	18, 17, 16, 15	1, 2, 3, 4
②	14, 13, 12, 11	5, 6, 7, 8
③	24, 23, 22, 21	9, 10, 11, 12
④	28, 27, 26, 25	13, 14, 15, 16

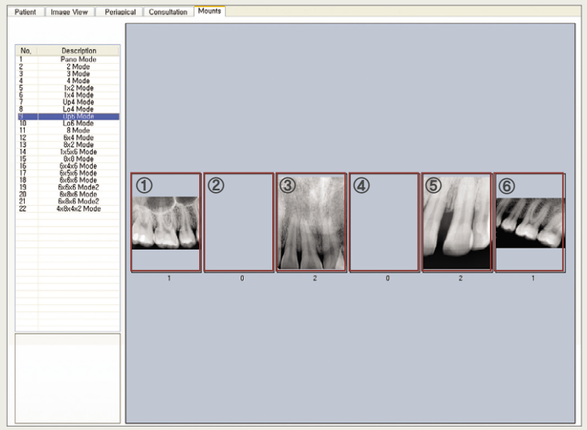
10.8 Lo4 Mode



①~④ Windows for Intraoral Sensor images (Lower Teeth)

	International System	F.D.I System(USA)
①	48, 47, 46, 45	29, 30, 31, 32
②	44, 43, 42, 41	25, 26, 27, 28
③	34, 33, 32, 31	21, 22, 23, 24
④	38, 37, 36, 35	17, 18, 19, 20

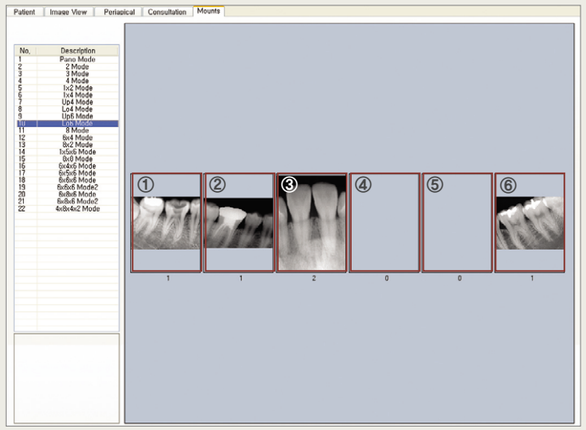
10.9 Up6 Mode



①~⑥ Windows for Intraoral Sensor images (Upper Teeth)

	International System	F.D.I System(USA)
①	18, 17	1, 2
②	14, 15, 16	3, 4, 5
③	13, 12, 11	6, 7, 8
④	23, 22, 21	9, 10, 11
⑤	26, 25, 24	12, 13, 14
⑥	28, 27	15, 16

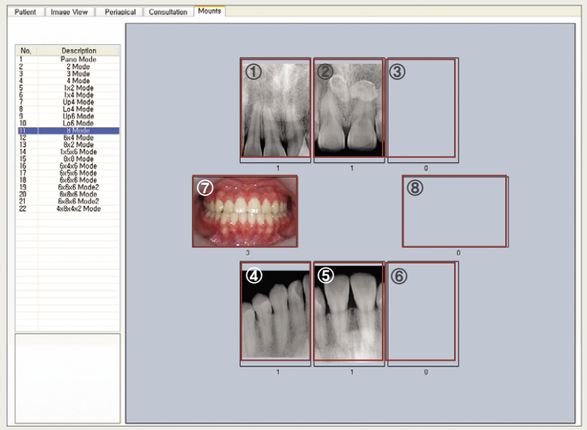
10.10 Lo6 Mode



①~⑥ Windows for Intraoral Sensor images (Lower Teeth)

	International System	F.D.I System(USA)
①	48, 47	31, 32
②	44, 45, 46	28, 29, 30
③	43, 42, 41	25, 26, 27
④	33, 32, 31	22, 23, 24
⑤	36, 35, 34	19, 20, 21
⑥	38, 37	17, 18

10.11 8 Mode



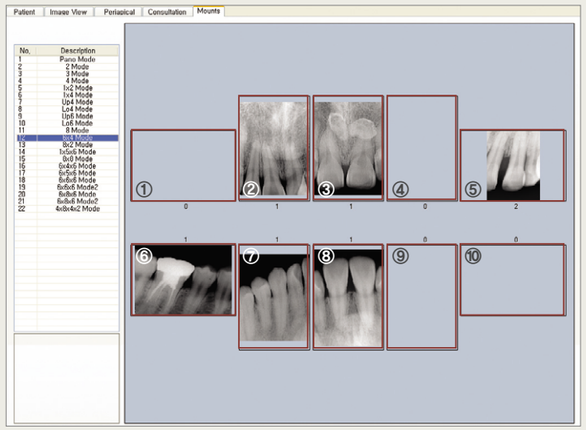
①~⑥ Windows for Intraoral Sensor images.

	International System	F.D.I System(USA)
①	13, 12	7, 8
②	11, 21	9, 10
③	22, 23	11, 12
④	43, 42	26, 27
⑤	41, 31	25, 24
⑥	32, 33	23, 22

⑦, ⑧ Windows for Intraoral Camera images

	International System	F.D.I System(USA)
⑦	11~18, 41~48	1~8, 25~32
⑧	21~28, 31~38	9~16, 17~24

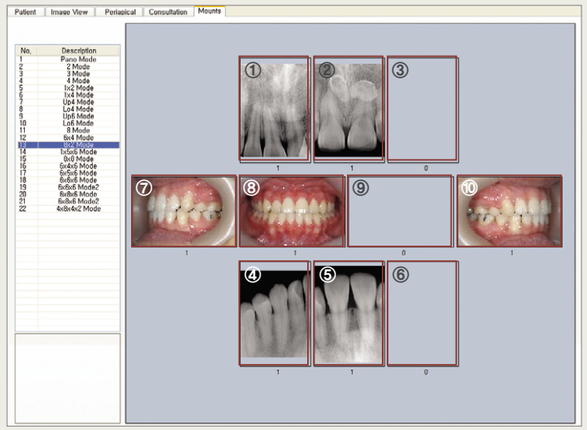
10.12 6x4 Mode



①~⑩ Windows for Intraoral Sensor images

	International System	F.D.I System(USA)
①	16, 15, 14	3, 4, 5
②	13, 12	6, 7
③	11, 21	8, 9
④	22, 23	10, 11
⑤	24, 25, 26	12, 13, 14
⑥	44, 45, 46	28, 29, 30
⑦	42, 43	26, 27
⑧	41, 31	24, 25
⑨	32, 33	22, 23
⑩	34, 35, 36	19, 20, 21

10.13 8x2 Mode



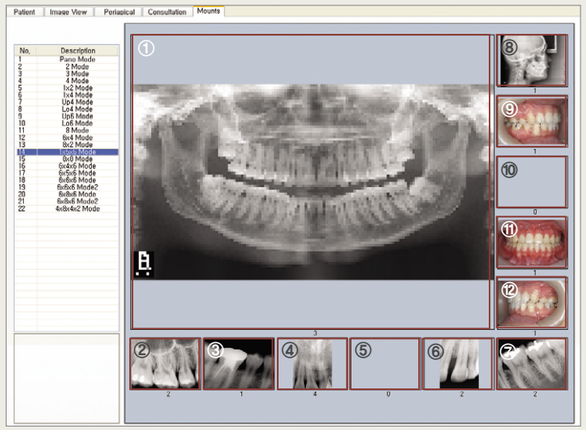
①~⑥ Windows for Intraoral Sensor images.

	International System	F.D.I System(USA)
①	13, 12	6, 7
②	11, 21	8, 9
③	22, 23	10, 11
④	42, 43	26, 27
⑤	41, 31	24, 25
⑥	32, 33	22, 23

⑦~⑩ Windows for Intraoral Camera images.

	International System	F.D.I System(USA)
⑦	14~18, 44~48	1~5, 28~32
⑧	11~13, 41~43	6~8, 25~27
⑨	21~23, 31~33	9~11, 17~19
⑩	24~28, 34~38	12~16, 20~24

10.14 1x5x6 Mode



① Window for Panorama image
②~⑦ Windows for Intraoral Sensor images

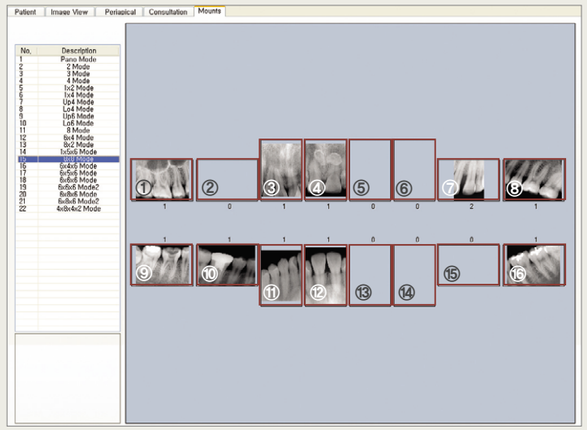
	International System	F.D.I System(USA)
②	18, 17, 48, 47	1, 2, 31, 32
③	14, 15, 16, 46, 45, 44	3, 4, 5, 28, 29, 30
④	13, 12, 11, 43, 42, 41	6, 7, 8, 25, 26, 27
⑤	23, 22, 21, 33, 32, 31	9, 10, 11, 22, 23, 24
⑥	26, 25, 24, 36, 35, 34	12, 13, 14, 19, 20, 21
⑦	28, 27, 37, 38	15, 16, 17, 18

⑧ Window for Cephalo image

⑨~⑫ Windows for Intraoral Camera images

	International System	F.D.I System(USA)
⑨	14~18, 44~48	1~5, 28~32
⑩	11~13, 41~43	6~8, 25~27
⑪	21~23, 31~33	9~11, 17~19
⑫	24~28, 34~38	12~16, 20~24

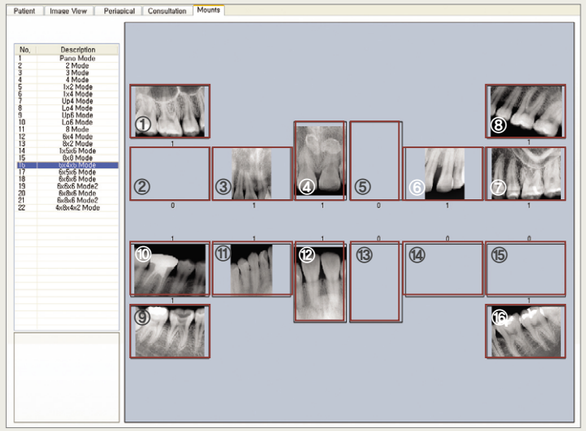
10.15 8x8 Mode



①~⑯ Windows for Intraoral Sensor images

	International System	F.D.I System(USA)
①	18, 17, 16	1, 2, 3
②	15, 14	4, 5
③	13	6
④	11, 12	7, 8
⑤	21, 22	9, 10
⑥	23	11
⑦	24, 25	12, 13
⑧	26, 27, 28	14, 15, 16
⑨	48, 47, 46	30, 31, 32
⑩	45, 44	28, 29
⑪	43	27
⑫	41, 42	25, 26
⑬	31, 32	23, 24
⑭	33	22
⑮	34, 35	20, 21
⑯	36, 37, 38	17, 18, 19

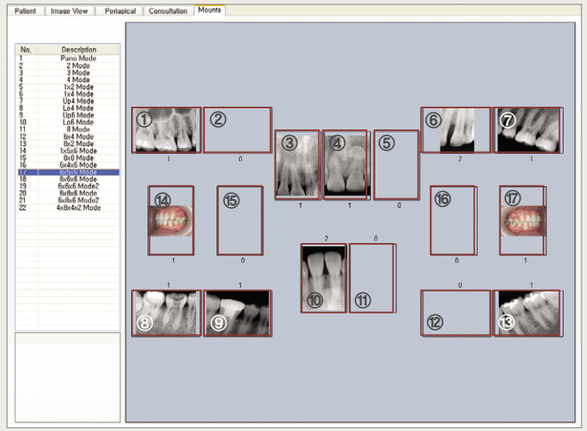
10.16 6x4x6 Mode



①~⑯ Windows for Intraoral Sensor images

	International System	F.D.I System(USA)
①	18, 17	1, 2
②	15, 16	3, 4
③	13, 14	5, 6
④	11, 12	7, 8
⑤	21, 22	9, 10
⑥	23, 24	11, 12
⑦	25, 26	13, 14
⑧	27, 28	15, 16
⑨	48, 47	31, 32
⑩	45, 46	29, 30
⑪	43, 44	27, 28
⑫	41, 42	25, 26
⑬	31, 32	23, 24
⑭	33, 34	21, 22
⑮	35, 36	19, 20
⑯	37, 38	17, 18

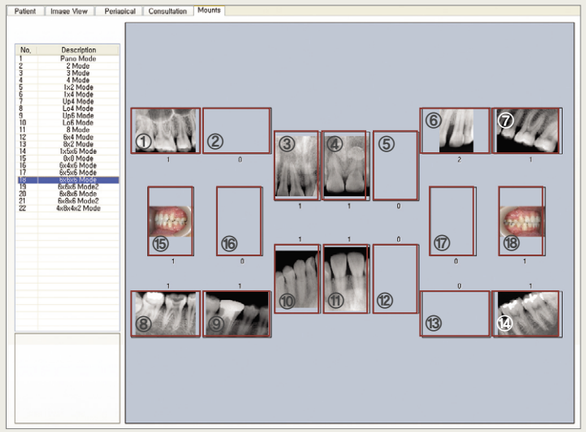
10.17 6x5x6 Mode



①~⑬ Windows Intraoral Sensor images

	International System	F.D.I System(USA)
①	18, 17	1, 2
②	14, 15, 16	3, 4, 5
③	12, 13	6, 7
④	11, 21	8, 9
⑤	22, 23	10, 11
⑥	24, 25, 26	12, 13, 14
⑦	27, 28	15, 16
⑧	48, 47	31, 32
⑨	44, 45, 46	28, 29, 30
⑩	42, 43, 41	25, 26, 27
⑪	31, 32, 33	22, 23, 24
⑫	34, 35, 36	19, 20, 21
⑬	37, 38	17, 18
⑭~⑰ Windows for Intraoral Camera images		
⑭	16, 17, 18, 46, 47, 48	1, 2, 3, 30, 31, 32
⑮	13, 14, 15, 43, 44, 45	4, 5, 6, 27, 28, 29
⑯	23, 24, 25, 33, 34, 35	11, 12, 13, 20, 21, 22
⑰	26, 27, 28, 36, 37, 38	14, 15, 16, 17, 18, 19

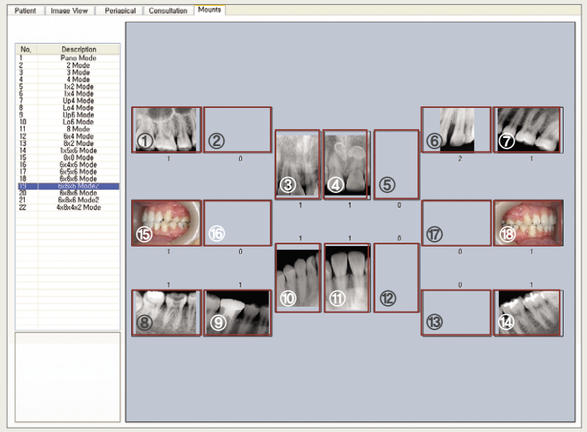
10.18 6x6x6 Mode



①~⑭ Windows for Intraoral Sensor images

	International System	F.D.I System(USA)
①	18, 17	1, 2
②	14, 15, 16	3, 4, 5
③	12, 13	6, 7
④	11, 21	8, 9
⑤	22, 23	10, 11
⑥	24, 25, 26	12, 13, 14
⑦	27, 28	15, 16
⑧	48, 47	31, 32
⑨	44, 45, 46	28, 29, 30
⑩	42, 43	26, 27
⑪	41, 31	24, 25
⑫	32, 33	22, 23
⑬	34, 35, 36	19, 20, 21
⑭	37, 38	17, 18
⑮~⑱ Windows for Intraoral Camera images		
⑮	16, 17, 18, 46, 47, 48	1, 2, 3, 30, 31, 32
⑯	13, 14, 15, 43, 44, 45	4, 5, 6, 27, 28, 29
⑰	23, 24, 25, 33, 34, 35	11, 12, 13, 20, 21, 22
⑱	26, 27, 28, 36, 37, 38	14, 15, 16, 17, 18, 19

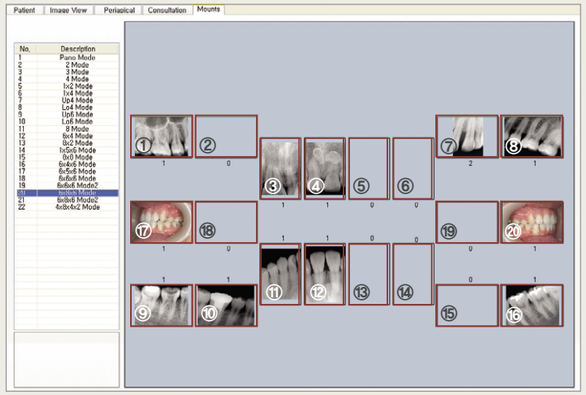
10.19 6x6x6 Mode2



①~⑭ Windows for Intraoral Sensor images

	International System	F.D.I System(USA)
①	18, 17	1, 2
②	14, 15, 16	3, 4, 5
③	12, 13	6, 7
④	11, 21	8, 9
⑤	22, 23	10, 11
⑥	24, 25, 26	12, 13, 14
⑦	27, 28	15, 16
⑧	48, 47	31, 32
⑨	44, 45, 46	28, 29, 30
⑩	42, 43	26, 27
⑪	41, 31	24, 25
⑫	32, 33	22, 23
⑬	34, 35, 36	19, 20, 21
⑭	37, 38	17, 18
⑮~⑱ Windows for Intraoral Camera images		
⑮	16, 17, 18, 46, 47, 48	1, 2, 3, 30, 31, 32
⑯	13, 14, 15, 43, 44, 45	4, 5, 6, 27, 28, 29
⑰	23, 24, 25, 33, 34, 35	11, 12, 13, 20, 21, 22
⑱	26, 27, 28, 36, 37, 38	14, 15, 16, 17, 18, 19

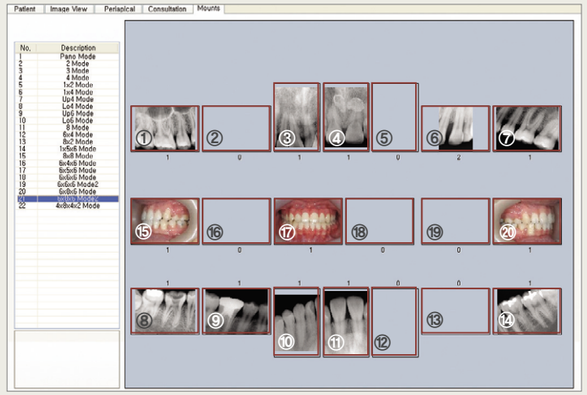
10.20 6x8x6 Mode



①~⑯ Windows for Intraoral Sensor images

	International System	F.D.I System(USA)
①	18, 17	1, 2
②	14, 15, 16	3, 4, 5
③	12, 13	6, 7
④	11, 21	8, 9
⑤	22	10
⑥	23	11
⑦	24, 25, 26	12, 13, 14
⑧	27, 28	15, 16
⑨	48, 47	31, 32
⑩	44, 45, 46	28, 29, 30
⑪	42, 43	26, 27
⑫	41, 31	24, 25
⑬	32	22
⑭	33	23
⑮	34, 35, 36	19, 20, 21
⑯	37, 38	17, 18
⑰~⑳ Windows for Intraoral Camera images		
⑰	16, 17, 18, 46, 47, 48	1, 2, 3, 30, 31, 32
⑱	13, 14, 15, 43, 44, 45	4, 5, 6, 27, 28, 29
⑲	23, 24, 25, 33, 34, 35	11, 12, 13, 20, 21, 22
⑳	26, 27, 28, 36, 37, 38	14, 15, 16, 17, 18, 19

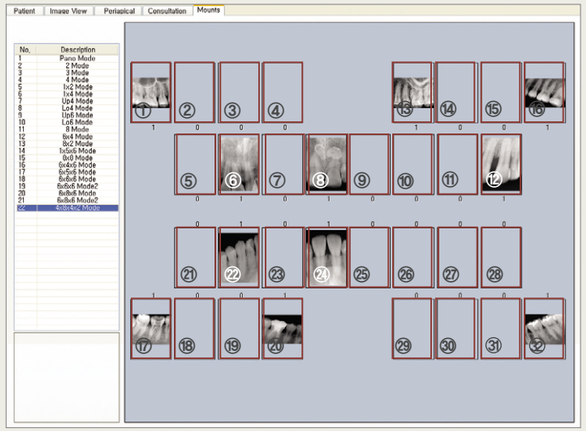
10.21 6x8x6 Mode2



①~⑭ Windows for Intraoral Sensor images

	International System	F.D.I System(USA)
①	18, 17	1, 2
②	14, 15, 16	3, 4, 5
③	12, 13	6, 7
④	11, 21	8, 9
⑤	22, 23	10, 11
⑥	24, 25, 26	12, 13, 14
⑦	27, 28	15, 16
⑧	48, 47	31, 32
⑨	44, 45, 46	28, 29, 30
⑩	42, 43	26, 27
⑪	41, 31	24, 25
⑫	32, 33	22, 23
⑬	34, 35, 36	19, 20, 21
⑭	37, 38	17, 18
⑮~⑳ Windows for Intraoral Camera images		
⑮	16, 17, 18, 46, 47, 48	1, 2, 3, 30, 31, 32
⑯	13, 14, 15, 43, 44, 45	4, 5, 6, 27, 28, 29
⑰	11, 12, 41, 42	7, 8, 25, 26
⑱	21, 22, 31, 32	9, 10, 23, 24
⑲	23, 24, 25, 33, 34, 35	11, 12, 13, 20, 21, 22
⑳	26, 27, 28, 36, 37, 38	14, 15, 16, 17, 18, 19

10.22 4x8x4x2 Mode



①~㉜ Windows for Intraoral Sensor images

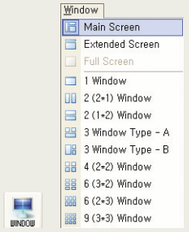
	International System	F.D.I System(USA)
①	18	1
②	17	2
③	16	3
④	15	4
⑤	14	5
⑥	13	6
⑦	12	7
⑧	11	8
⑨	21	9
⑩	22	10
⑪	23	11
⑫	24	12
⑬	25	13
⑭	26	14
⑮	27	15
⑯	28	16
⑰	48	32
⑱	47	31
⑲	46	30
⑳	45	29
㉑	44	28
㉒	43	27
㉓	42	26
㉔	41	25
㉕	31	24
㉖	32	23
㉗	33	22
㉘	34	21
㉙	35	20
㉚	36	19
㉛	37	18
㉜	38	17

11

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

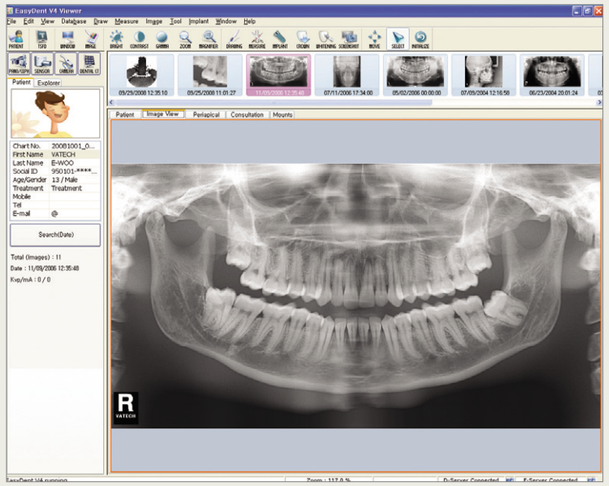
Window

11.1 Main Screen

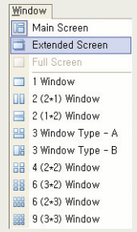


This is the basic image display window of EasyDent. On the left is the patient information, on top is the menubar, beneath is the toolbar in icons and buttons, and on the middle is a display of the patient's teeth.

Click 'Window' → 'Main Screen' on the menubar 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.)

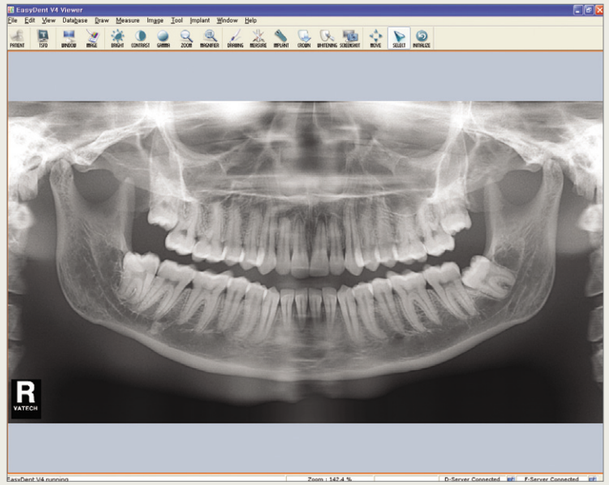


11.2 Extended Screen



This is an expanded screen from the Main Screen.

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



NOTE

If you double-click on the image shown on the main screen, it will be transferred into an extended screen. Subsequently, if you double-click on the extended screen, you will return to the main screen.

11.3 Full Screen

This viewing mode is an expansion of an 'Extended Screen' and shows only one large image on the screen.

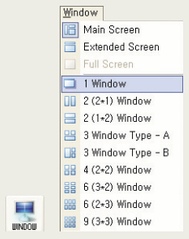
Click 'Window' → 'Full Screen' on the menubar or click the 'WINDOW' icon on the toolbar (You may also use the Alt+Enter button.), and you will see the window similar to below.

NOTE

1. The Full Screen can only be accessed through the Extended Screen mode. The Full Screen button will not activate on the Main Screen.

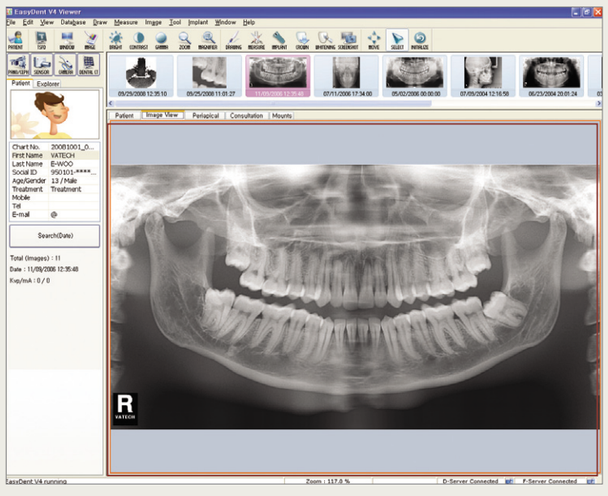
2. If you double-click the image in the full Screen mode, you will return to the 'Extended Screen'.

11.4 1 Window



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

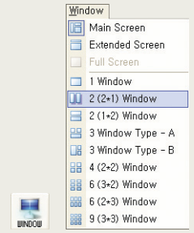
By clicking 'Window' → '1 Window' on the menubar or 'WINDOW' → '1 Window' on the toolbar icons, you will be able to view a selected image.



NOTE

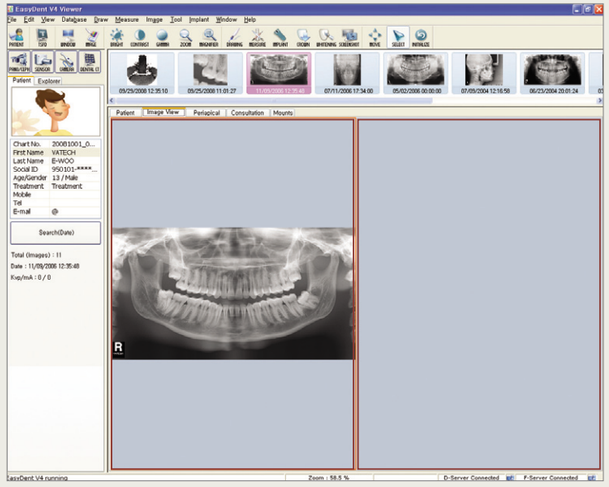
All Window configurations that are set from the Main Screen to 'Extended Screen' can be changed to 'Full Screen' mode.

11.5 2 (2*1) Window

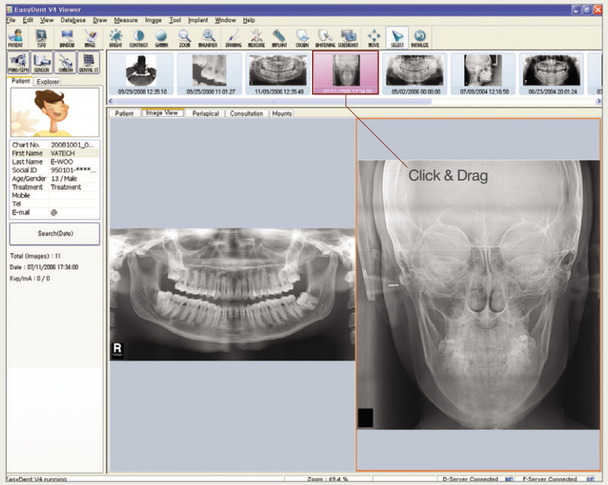


This is for viewing 2 images ; one on the left and another one on the right of the equally divided windows.

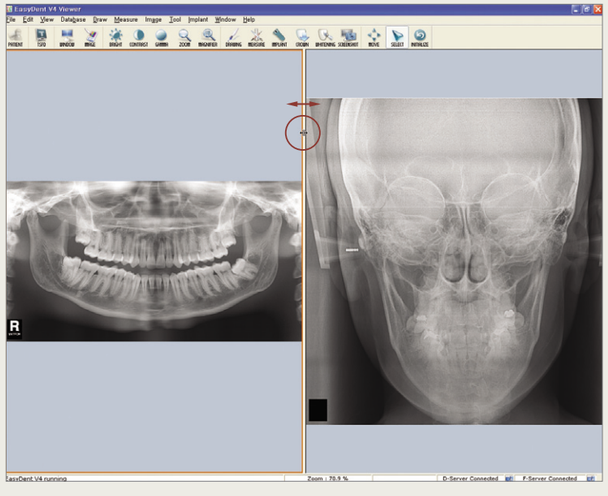
Click 'Window' → '2 (2*1) Window' on the menubar or 'WINDOW' → '2 (2*1) Window' on the toolbar icons, then the Screen will be split into two parts, as shown below.



Click and drag the image of your choice from the Thumbnail to the Screen.



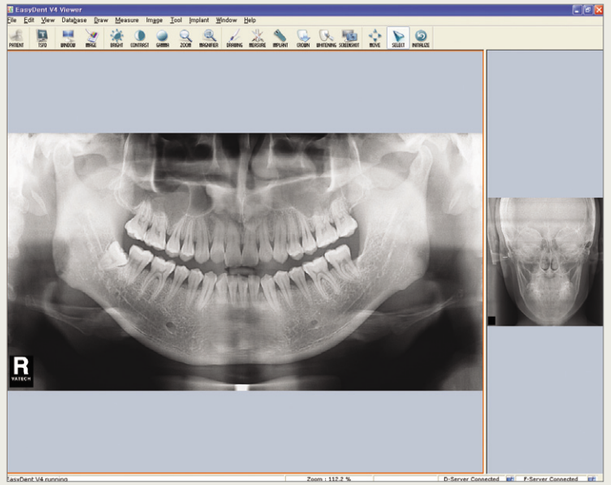
Click 'Window' → 'Extended Screen', or double-click the Main Screen to make it into an Extended Screen. Place your mouse pointer on the boundary of the 2 image windows and a bar with 2 arrows will appear in the middle. The user can adjust the size of the image window according to preference.



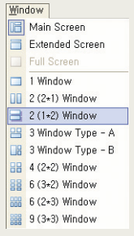
NOTE

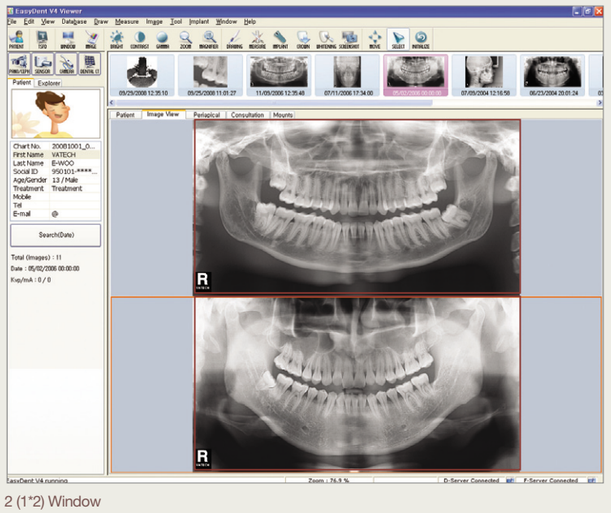
The above configuration can only be used on an Extended Screen and a Full Screen. The window size adjustment cannot be applied on the Main Screen.

You can change the ratio of the image by moving the bar in the middle.

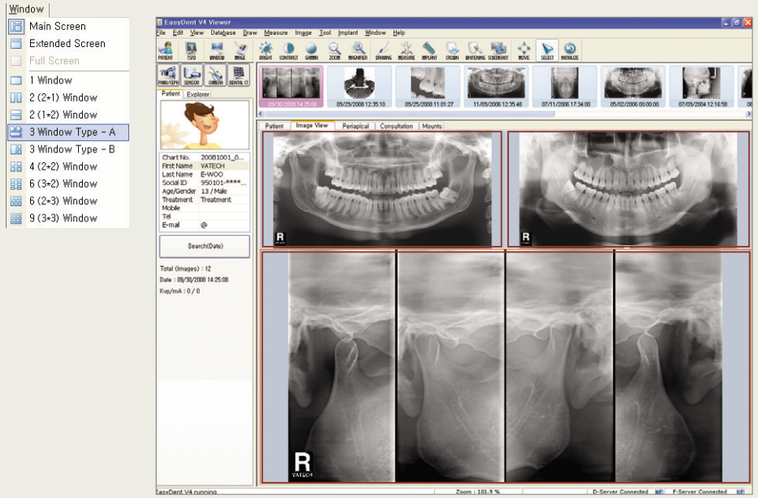


The rest of the window arrangements will appear like the images below.

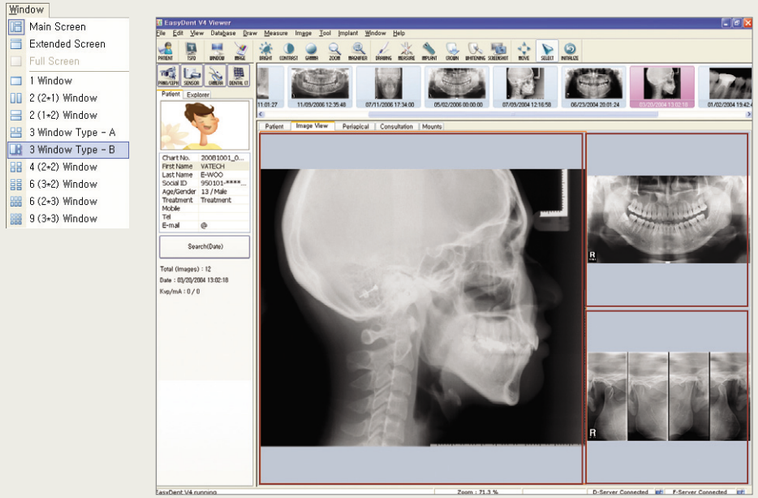




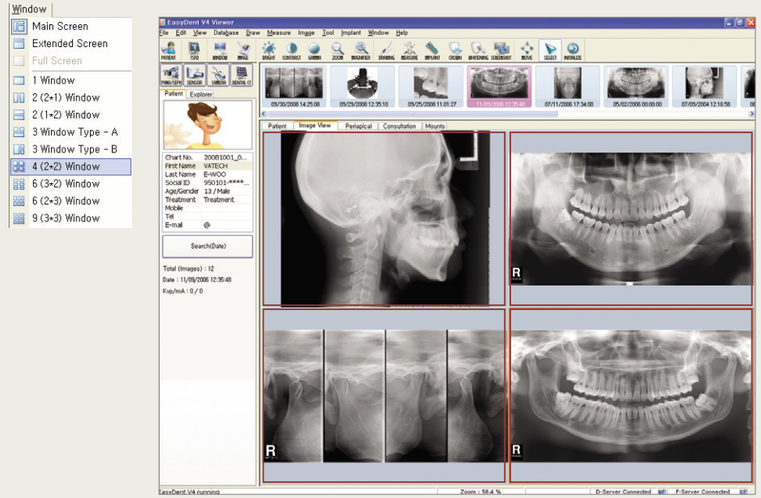
2 (1*2) Window



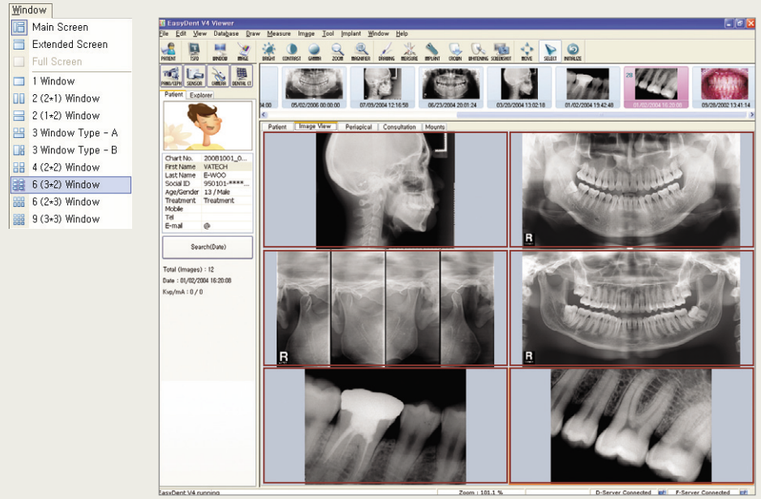
3 Window Type - A



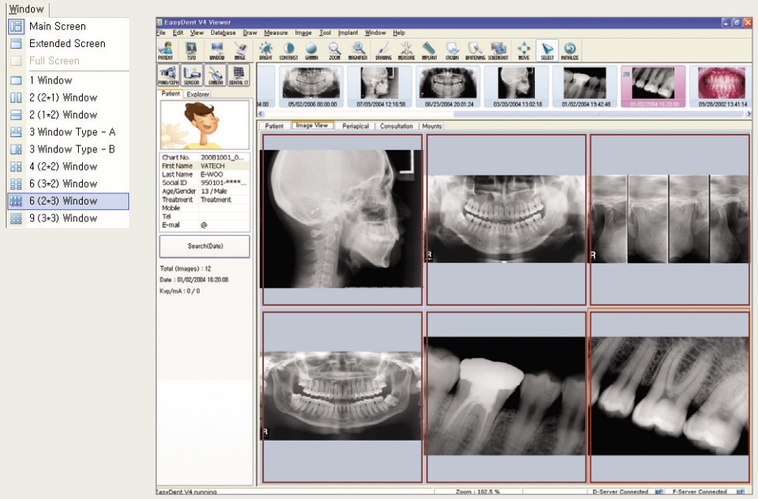
3 Window Type - B



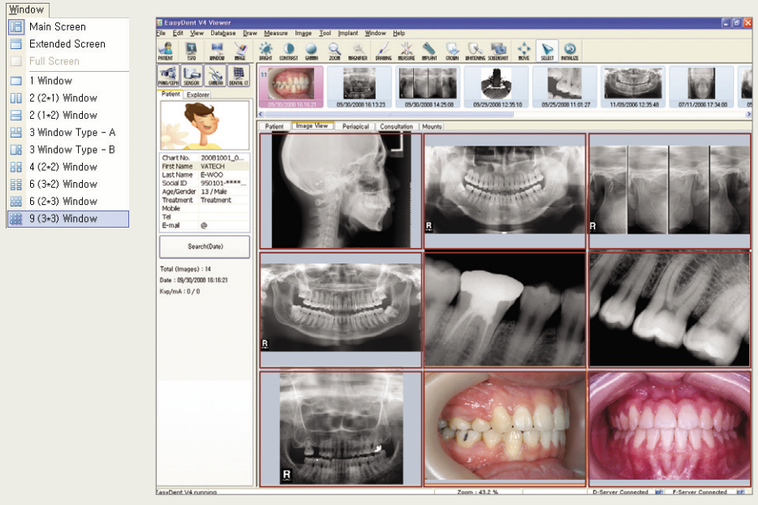
4 (2*2) Window



6 (3*2) Window



6 (2*3) Window



9 (3*3) Window

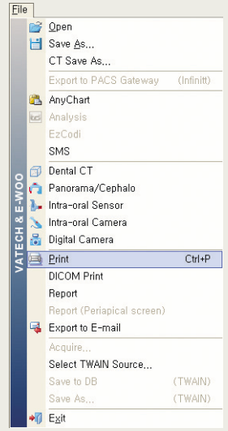
12

This chapter describes the Basic Print, DICOM Print and Report functions of EasyDent. 'EzDICOM Print' is EasyDent's DICOM Print function 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. Additionally, the 'Report' is a function that allows the user to display the Ruler, and to enter titles and comments which are all available for printing. The 'Ruler Display Function' enables the user to measure the image in millimeter ; while the Title Input Function enables the user to enter the name of the clinic, hospital, or radiology center(RC) ; and lastly, the Comment Input Function which enables the user to enter comments on the Header and on the Footer.

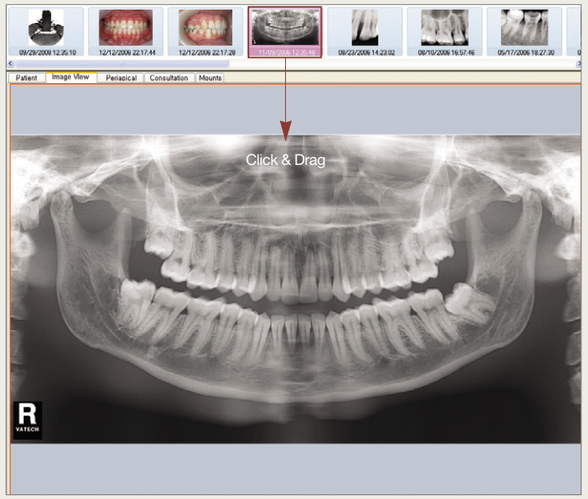
Print, DICOM Print, & Report

12.1 Print

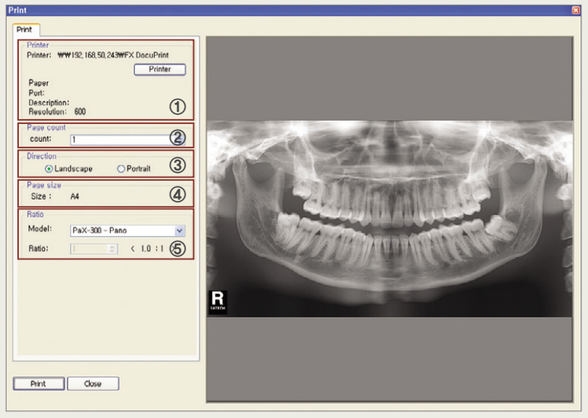
The image of your choice can be printed on a general printer, which must be installed on your computer.



First, select the patient whose image you want to print through the patient search.
Select an image of the patient from the Thumbnail and drag in onto the 'Image View'.

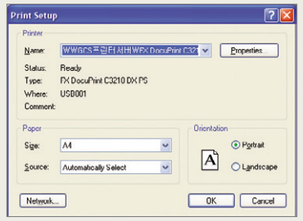


Clicking 'File' → 'Print' on the menubar, or pressing 'Ctrl+P' on the keyboard will enable the Print screen to appear.



① **Printer** : The user can choose a printer.
A 'Printer Configuration' window will appear when you press the 'Printer' button. Select the printer you want and after the configuration of the printer, press 'OK'.

② **Page Count** : The user can directly input the number of pages needed for printing, or use the scroll on the right to input a number.



③ **Direction** : Initial direction is set as Landscape, but it can be reset to Portrait depending on the user's preference.
④ **Page Size** : Shows the size of the paper. The change of Page Size can be done in the Printer properties' advanced configuration which can be done along with choosing the printer in step.
⑤ **Ratio** : In order to print at a 1:1 ratio, you can choose the equipment that was used to acquire the image.

Click the 'Print' button.

12.2 EzDICOM Print

12.2.1 EzDICOM Print's Requirement (about SCP1)

CAUTION

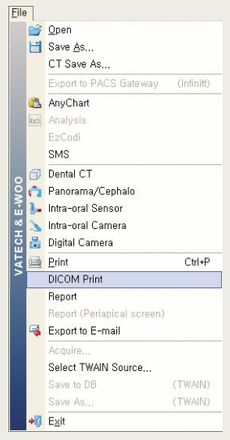
Be aware of the following items when installing EzDICOM Print. The 'DICOM Conformance statement' of the DICOM FILM Printer must be sent to the EasyDent team. Please check with the EasyDent team whether the DICOM FILM Printer can be used with EzDICOM Print.

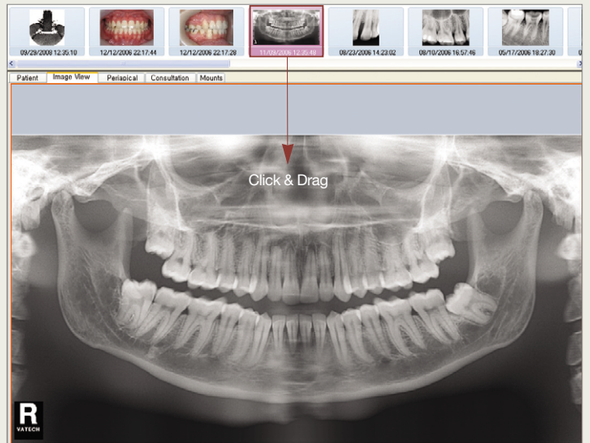
A DICOM Film Printer has to be registered at the EzDICOM Print's local AE Title ('EVPRINT').
For the printing options of DICOM Film Printer, the Magnification Type should be set to NONE and CUBIC.

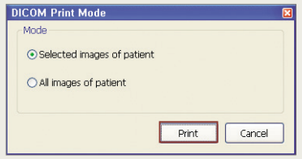
(SCP1: DICOM Service Class Provider; here, SCP refers to the DICOM Film Printer where the user requests for Film Printers.)

12.2.2 Using EzDICOM Print

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

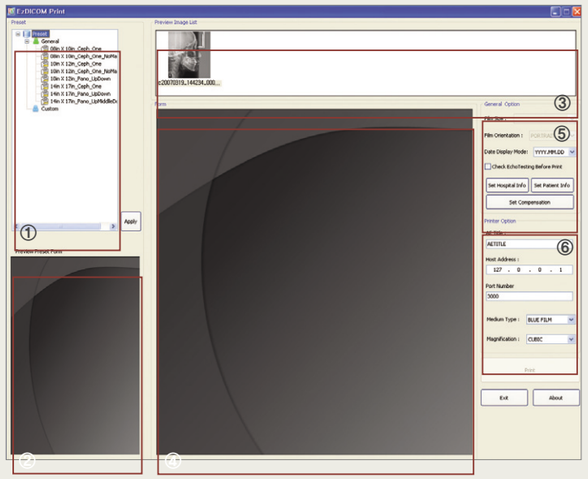






If you click the 'File' → 'DICOM Print', the 'DICOM Print Mode' dialogue box will appear. Choose whether to print the 'Selected images of patient' or 'All images of patient' and then click 'Print'.

Once you click 'Print', an 'EzDICOM Print' screen will appear, as shown below.

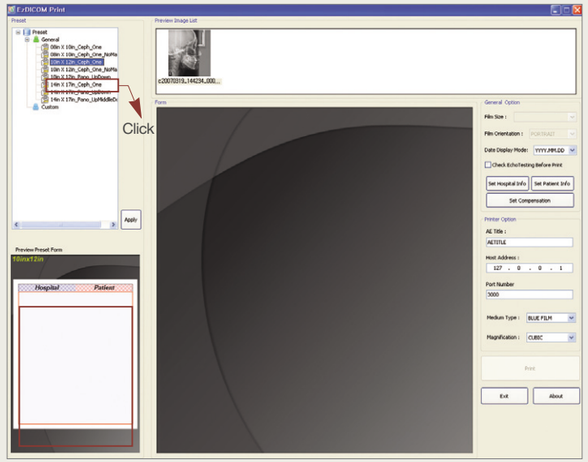


① **Preset** : Choose the size and shape of the image you wish to print.
② **Preview Preset Form** : You can check the selected form of the Preset.
③ **Preview Image List** : You can view the image which was selected for printing.
④ **Form** : You can get a combined view of the selected form at Preset and the selected images at the Preview Image List.
⑤ **General Option** : The user can configure the following ; Film Size, Film Orientation, Date Display Mode, Set Hospital Info, Set Patient Info., and Set Compensation.
⑥ **Printer Option** : The user can configure the following ; AE Title, Host Address, Port Number, Medium Type, and Magnification.

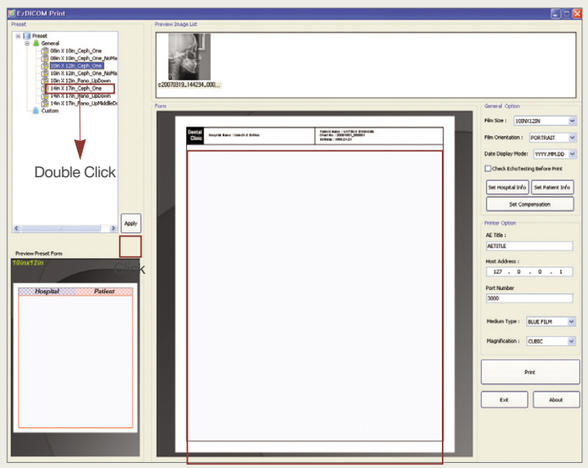
Taking the 'Preview Preset Form' as reference, choose the Preset Form.

NOTE

When you click a form from the Preset, you can view the shape of the selected form at the 'Preview Preset Form'.

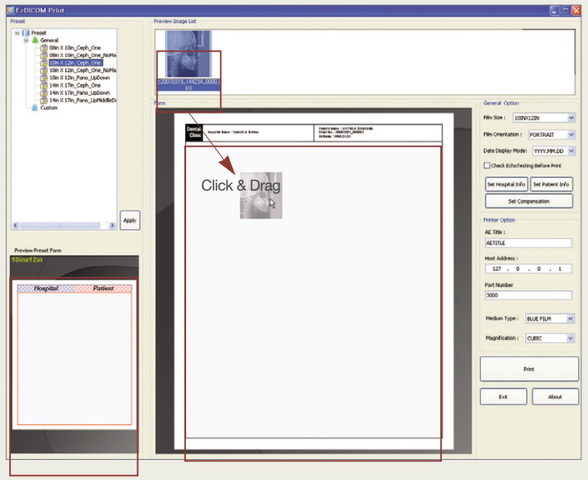


Double-clicking the preferred Preset form or clicking the 'Apply' button, will allow the user to view the applied Preset form.



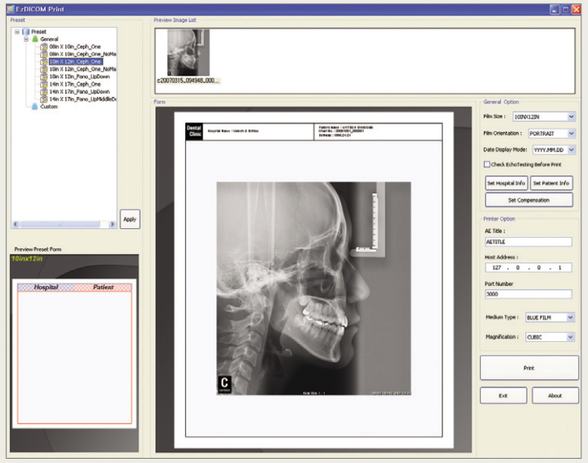
From the Preview Image List, click and drag the image and place it on the form

with preset applied in it.

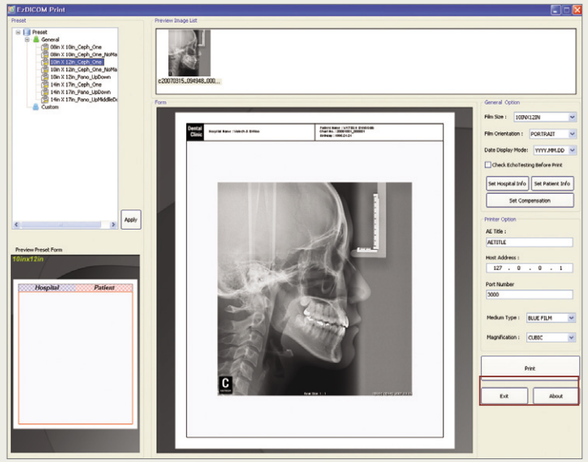


CAUTION

After the above process is done, and you have changed the size of the Preset form, the image applied will disappear. So again, you will need to drag and drop the image from the 'Preview Image List' onto the form.

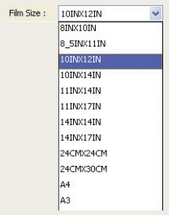


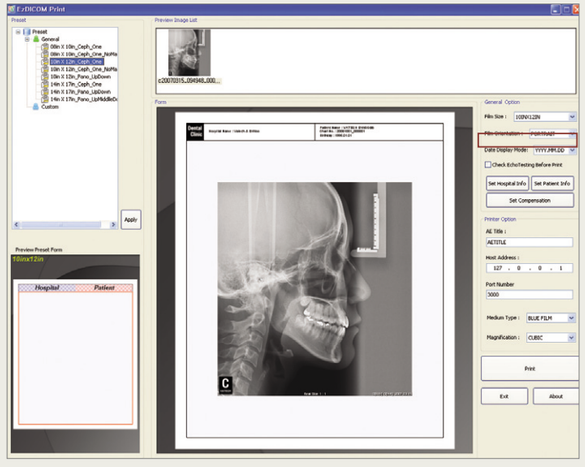
Click the 'Print' button.



12.2.3 General Options of EzDICOM Print

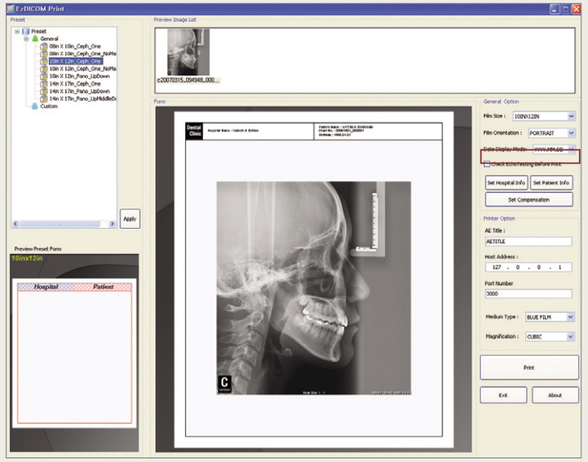
Film Size Using 'General Option', the user can change the film size according to preference.



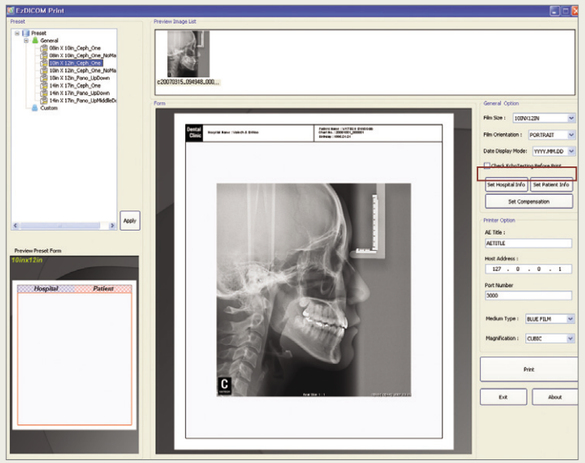


Film Orientation

The Film Orientation enables the user to configure the lay-out of the film print to either Portrait(Vertical), or Landscape(Horizontal). Portraits are usually used for Cephalo images, and Landscape is usually used for Panorama images.

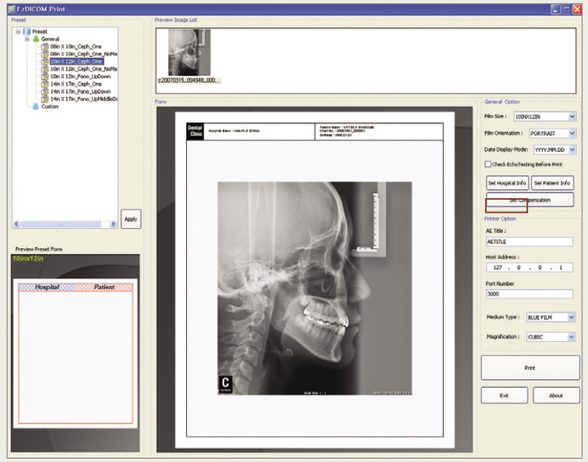


Date Display Mode You can change the configuration of the date display mode.



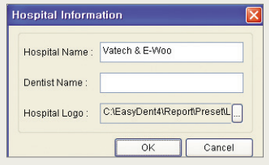
Set Hospital Info.

You can change the Hospital Name, Dentist, and Hospital Logo at the EzDICOM Print window.



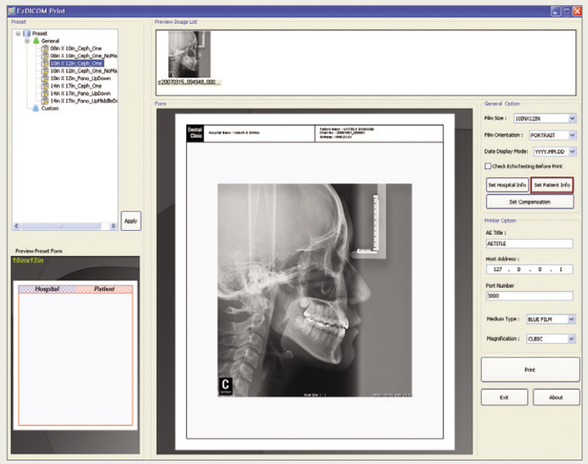
NOTE

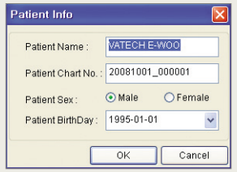
Hospital Name, Dentist Name, and Hospital Logos are not necessary; but if you do not enter a Hospital Name, the last inputted Hospital Name will be printed.



When you click 'Set Hospital Info', a dialogue box will pop-up. The details can be input and checked here. Enter the necessary information.

Set Patient Info You can change the Patient Name, Chart No., Sex, and Date of Birth of the Patient at the EzDICOM Print window.





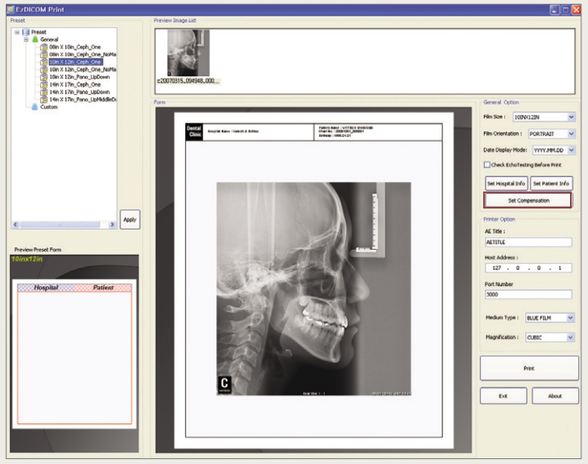
When you click 'Set Patient Info', a 'Patient Info' dialogue box will appear. Input the necessary information.

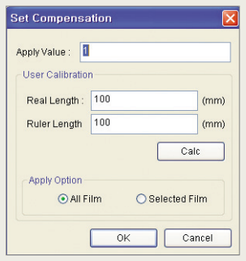
NOTE

Changing the Patient Information at the EzDICOM Print window will not alter the Patient Information which was registered initially. The above content is only valid for DICOM Print.

Print Compensation

The Set Compensation 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 dialogue box will pop-up when you click 'Set Compensation'.

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 through 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.

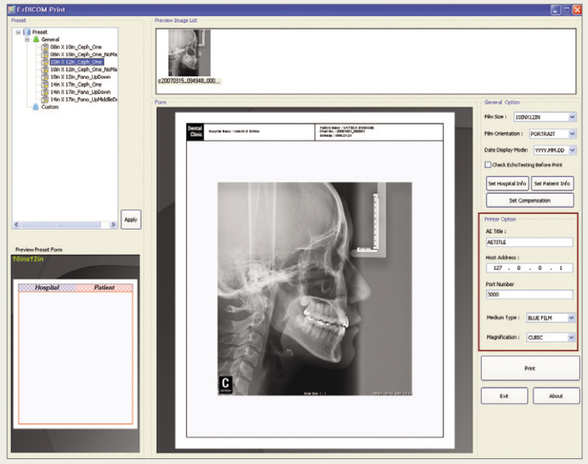
In the Apply Option part, you need to clarify whether the Calc value will be applied to all films or just the film selected by the user, and then press 'OK'.

NOTE

Based on the 'Apply Option' ; if you select 'All Film', the value will be saved and you will not need to Set the Compensation in the future DICOM Prints.
However, when the DICOM Print is changed, you will need to re-set the compensation.

12.2.4 Printer Option in EzDICOM Print

In order to connect the SCP(Provider, Printer) and SCU(User), the Local AE Title needs to be registered. You will need to call the SCP's DICOM Print Technician to register a Local AE Title named 'EVPRINT' from SCP.



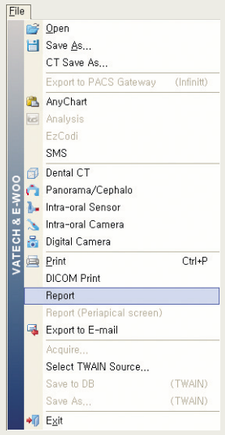
Medium Types : You can choose the type of film (CLEAR FILM or BLUE FILM).
Magnification : You can choose the option of your choice from the four types (NONE, REPLICATE, BILINEAR, or CUBIC) which are available for application on the image data.

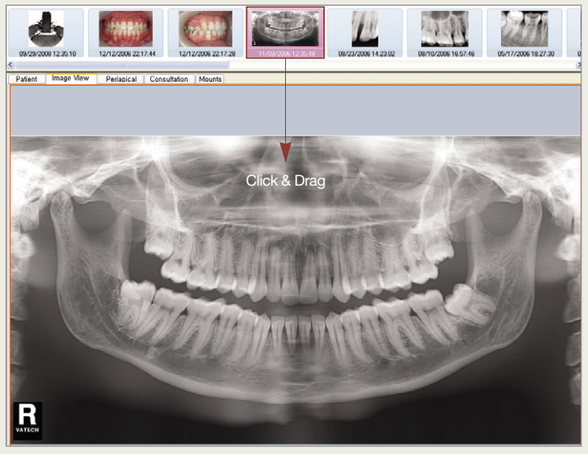
12.3 Report

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

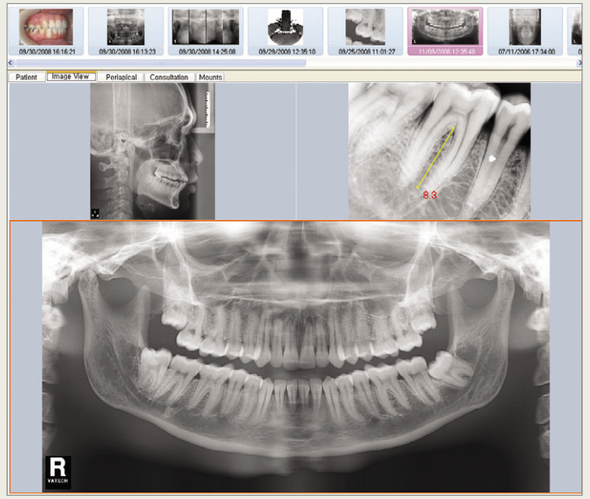
12.3.1 Using the Report function

Through the patient search, select the patient whose image you want to create a 'Report'.
Then, on the Thumbnail, select a patient's image that you want to report and drag it onto the 'Image View'.

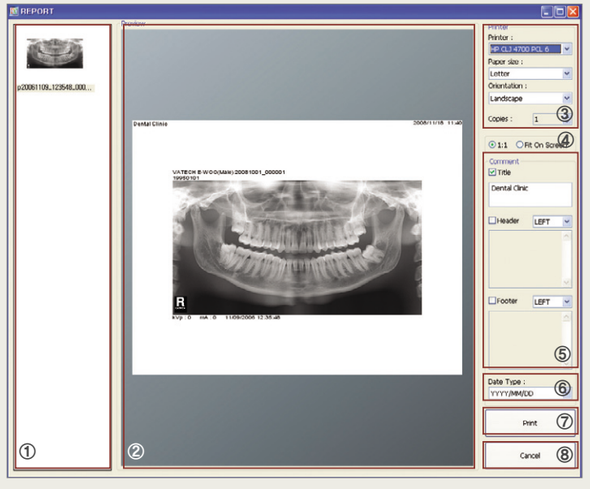




If you want to report various images at once, use the 'Window Function' as shown in the diagram below. Refer to Chapter 11 for guidance on how to use the 'Window Function' (on Page 112).



When you click 'File' → 'Report' on the menubar, a 'Report' screen will pop-up.

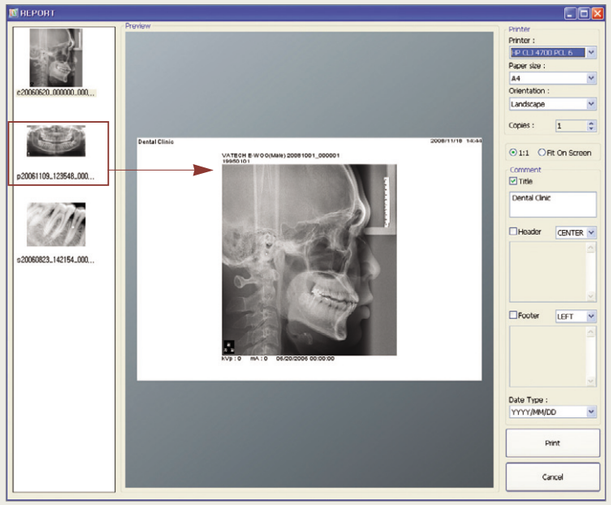


① **Thumbnail :** Displays the patient's images that you want to print on thumbnail.
② **Preview :** Provides a preview of the images and contents that you want to print.
③ **Print Setup :** Allows the selection and configuration of the printer.

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 section of the screen, as shown above.

If you have Reported various images, you are able to view the various images as thumbnails all at once. On the Preview, the topmost image on the Thumbnail will be displayed. 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.



NOTE

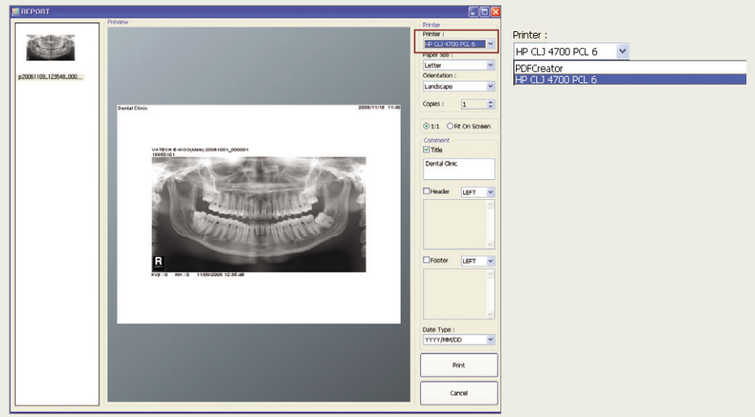
Although there may appear to be more than one image on the Thumbnail, the report will be made separately.

If you wish to print the image, click 'Print' ; if not, click 'Cancel'.

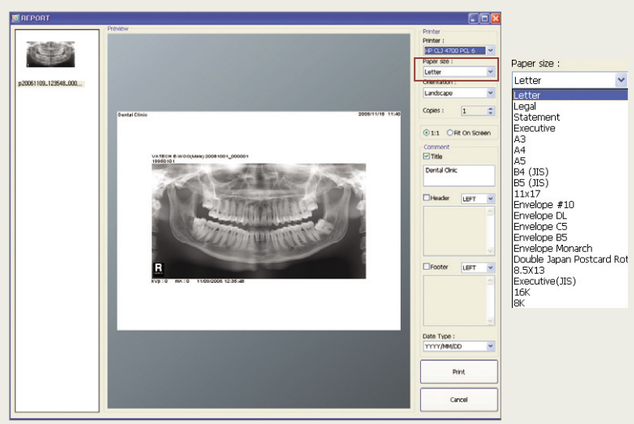
12.3.2 Print Setup of the Report

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

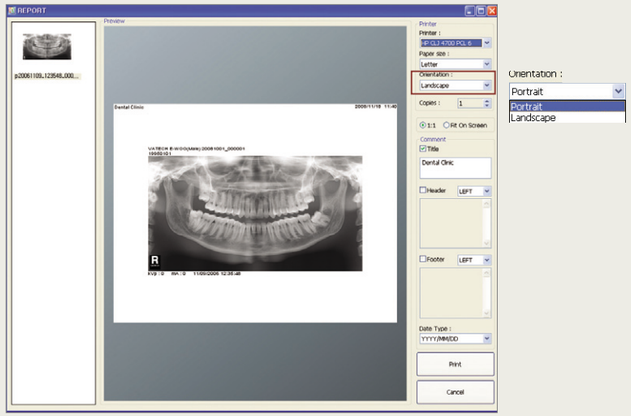
Printer The basic printer of EasyDent is identical to the basic printer configured for Windows (O/S). The user can select his preferred printer.



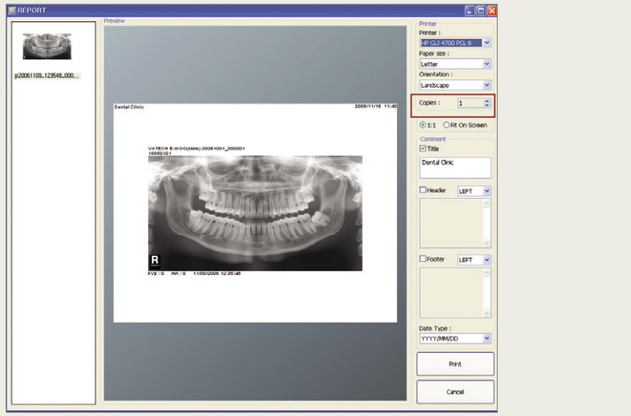
Paper size The user can select the size of the sheet. It shows a list of sheet sizes for the printer the user has selected. The paper size currently in the printer is set as the initial sheet size. The configured sheet size will be auto-selected the next time the user wants to print.



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.



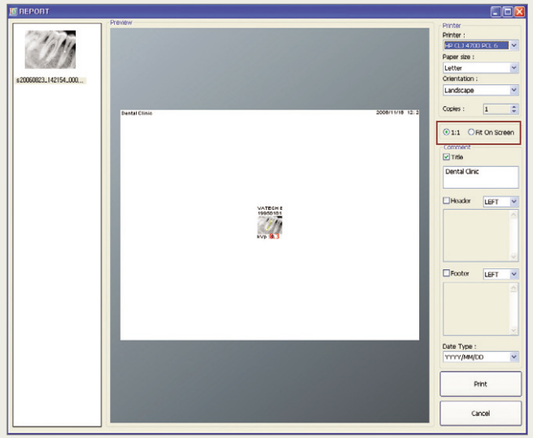
Copies You may set the number of copies you want to print. Initial setting is 1 copy. You can increase or decrease the number of copies using the up / down arrow. (Minimum : 1, Maximum : 100 copies)



12.3.3 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.

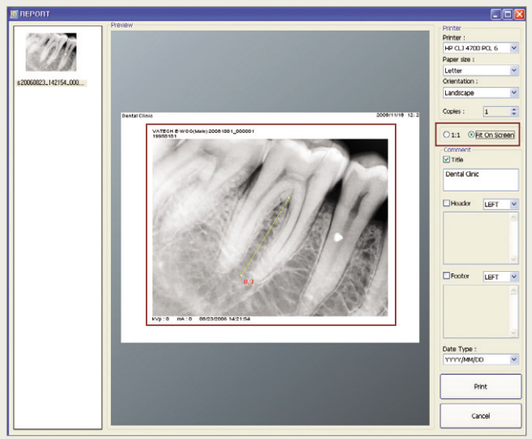
1:1 Mode



NOTE

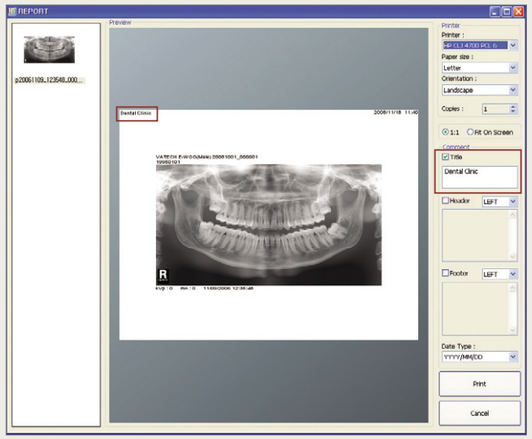
When selecting 1:1, in order for the image to be properly displayed, you will need to calibrate the image first. If not, even if you do select 1:1, the image will be fit to the screen.

Fit On Screen

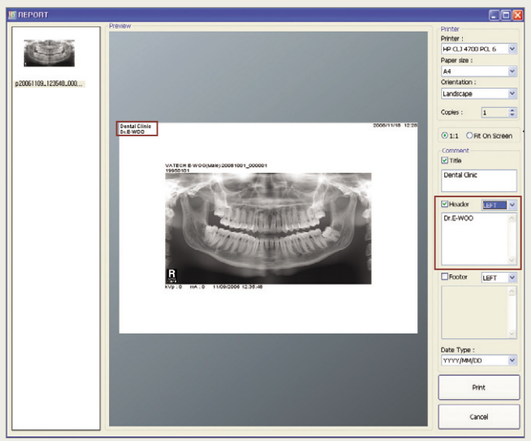


12.3.4 Comments on the Report

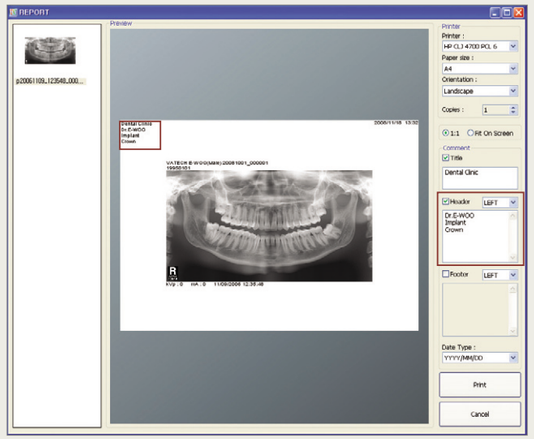
Title As the user, you can type the title you want and you can choose whether to print a title or not. The input title will be applied directly to the preview on your screen.



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.

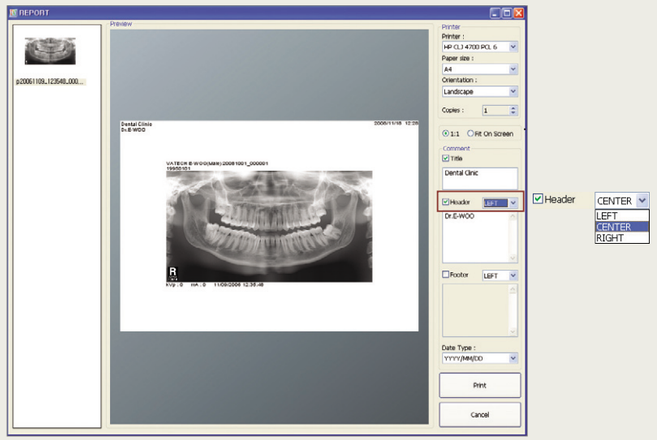


As shown below, the header can be input in multiple lines.

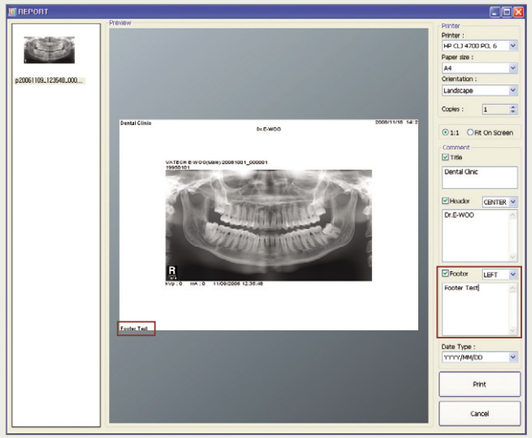


NOTE When inputting multi lines, the letters and images may overlap.

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.

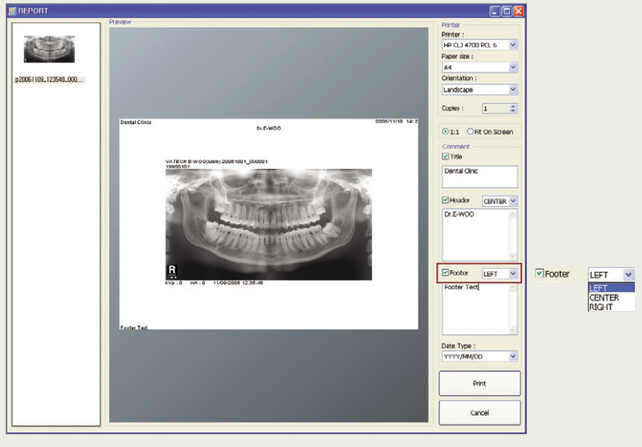


NOTE

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

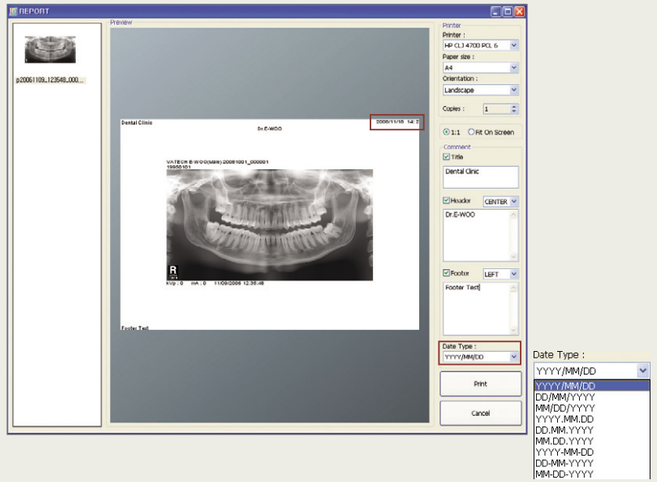
The Footer, like the Header, can be input in multiple lines.

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



12.3.5 Date Type of the Report

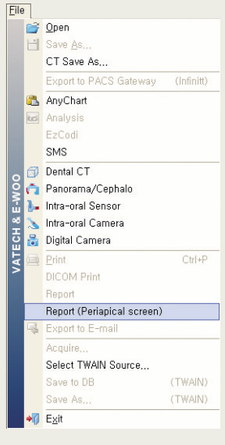
You may select the type(format) of the date to be printed.



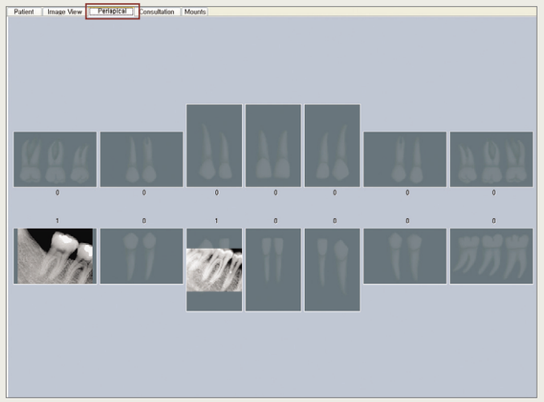
12.4 Report (Periapical Screen)

Through the 'Report(Periapical Screen)', the Periapical image can be printed directly.

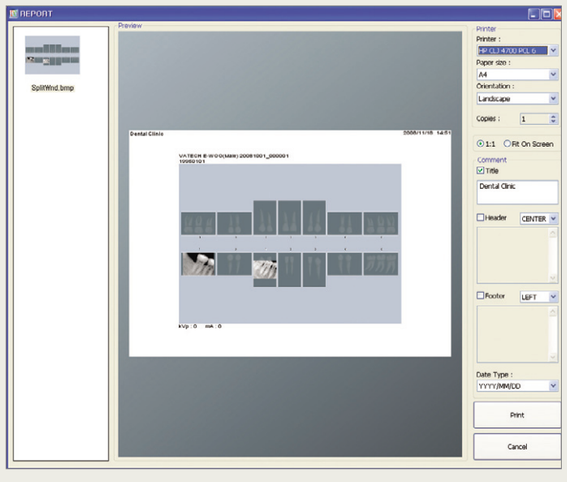
12.4.1 Report(Periapical Screen)



First, search for the patient whose image you want to report. Then, click the 'Periapical' tab.



Click 'File' → 'Report(Periapical Screen)' on the menubar at the top of the main screen and a 'Report' window will pop-up, as shown below.



NOTE

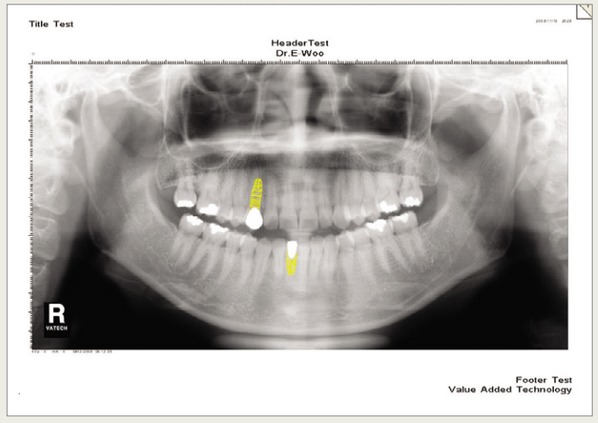
'Report' can be run from EasyDent's 'Image View' tab, while 'Report(Periapical Screen)' can be run from EasyDent's 'Periapical' tab. All the other basic functions are identical.

The rest of the methods of using the Report are identical to 12.3.

12.5 Printer Outcome

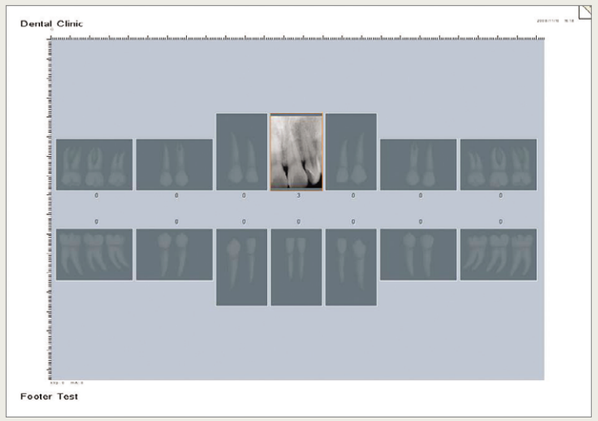
Outcome 1

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

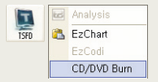


13

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

CD Burning

13.1 CD Burning



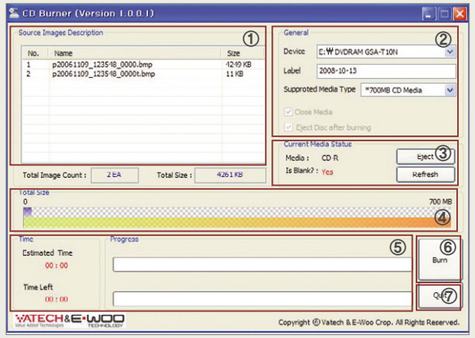
Search and select the patient whose data you want to store in the CD/DVD.
Place the image on the Image View window by dragging and dropping it.
Click the 'TSFD' button on the toolbar, and then click 'CD/DVD Burn' on its sub-menu.

When you click the 'CD/DVD Burn' button, a 'Select Burn Mode' window will appear where 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.)

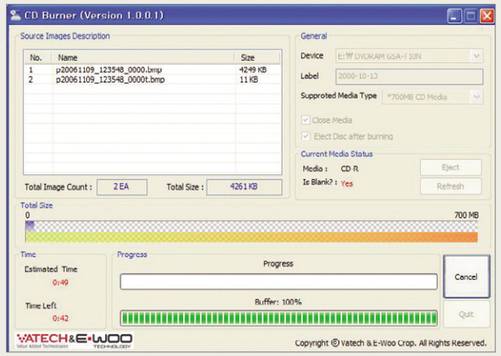
Insert a blank CD in the computer.

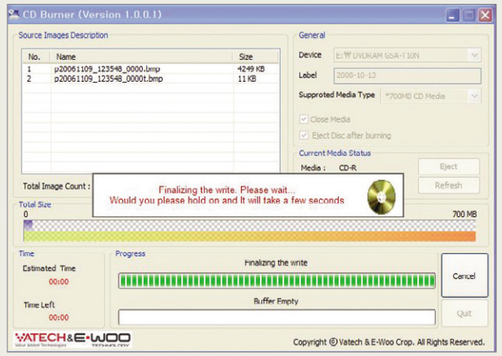
The illustration above shows an error message that may appear when there is no blank media in the CD/DVD-ROM. You simply need to insert a blank CD/DVD media.
CD Burner screen will appear, as shown below. Click the 'Burn' button.



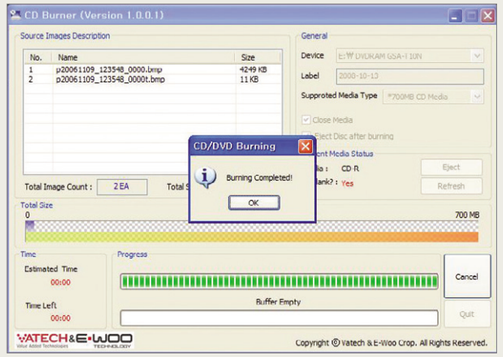
① **Image List** : You can see the list of images you selected.
② **CD/DVD device information** : You can see the device information of the CD/DVD-ROM that is installed on the current system.
③ **Current Media Status** : You can view whether a CD/DVD media is present in the CD/DVD-ROM and whether it 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** : You can check 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.

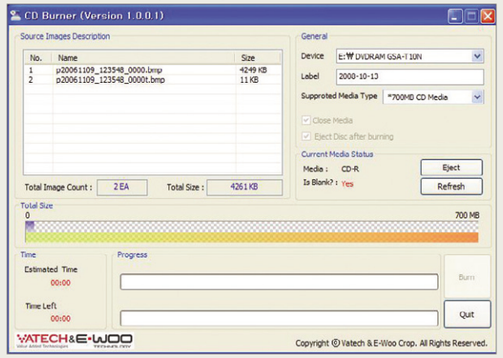




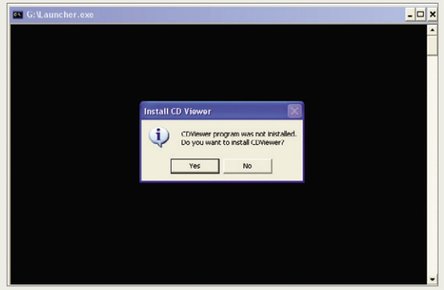
Once the CD/DVD Burning is completed, a message window will appear as shown below. Click 'OK'.



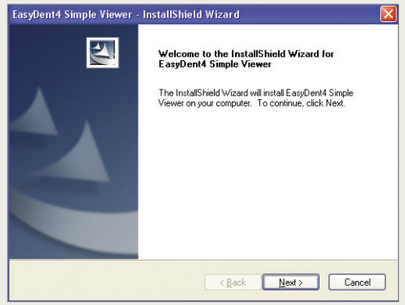
Exit the CD Burner by clicking 'Quit'.

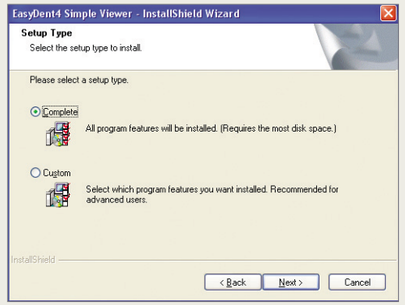


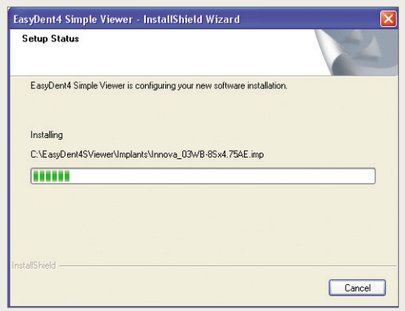
Insert the Published CD/DVD in a PC where EasyDent is not installed

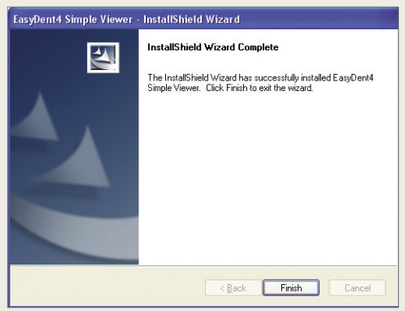


AutoRun will process to install the CD Viewer.
(The first Installation will be required for the initial running of the CD.)









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.

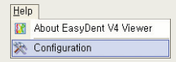
The Patient information and images will be shown through the EasyDent Simple Viewer. : Simple Viewer is a simple version of EasyDentV4 package, wherein functions and usages are identical to that of EasyDent V4. (However, there are certain limitations in functions).

14

This chapter deals with the method of configuration and application of Network, Overlay, Image Processing, and Default values on EasyDent.

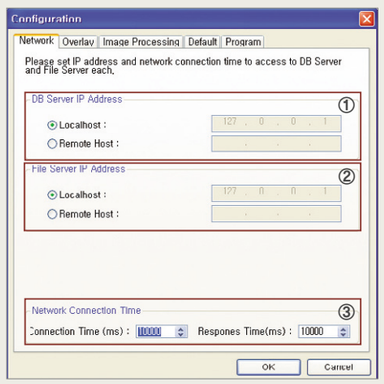
Configuration

14.1 Network



Configures the Network values of the DB Server IP Address, File Server IP Address, and Network Connection Time.

By clicking 'Help' → 'Configuration' on the menubar, a configuration screen will pop-up, as shown below.
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** : 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.

CAUTION

IP Address : Must be set based on the instruction given at the 'Installation Manual'
Network Connection Time : Computers in the network must be set at exactly the same time.

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

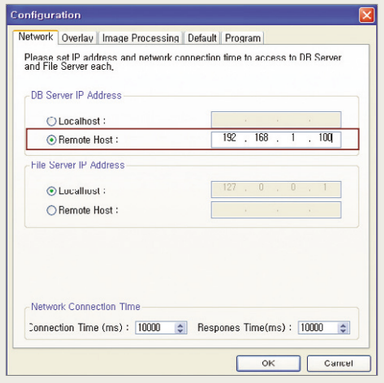
14.1.1 In such case where the DB Server and the File Server use separate computers

NOTE

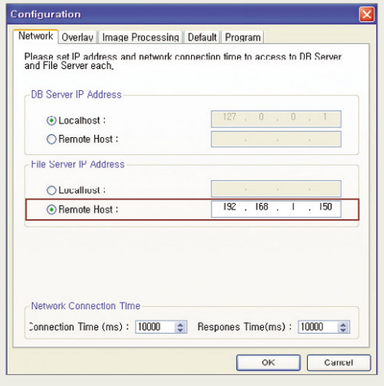
The two computers must be connected through a Network.

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

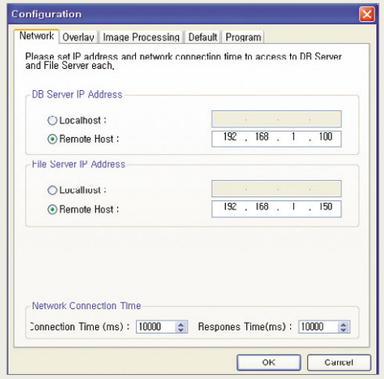
DB Server Computer IP: 192.168.1.100
File Server Computer IP: 192.168.1.150



Click on to the 'Remote Host' section of the DB Server IP Address. After that, input the IP Address of the DB Server Computer.



Click on to the 'Remote Host' section of the File Server IP Address. After that, input the IP Address of the File Server Computer.



In case the DB Server and the File Server are in 2 separate computers, the Network Configuration should be set up.

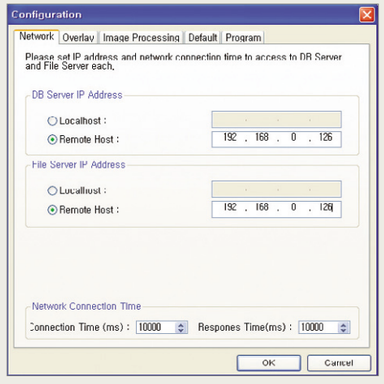
14.1.2 In such case where the DB Server and the File Server use only one computer

NOTE

The two computers must be connected through a Network.

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

DB & File Server Computer IP: 192.168.0.126



Click on to the 'Remote Host' sections of the DB Server IP Address and File Server IP Address. Input the same IP Address to the 2 'Remote Host' sections.

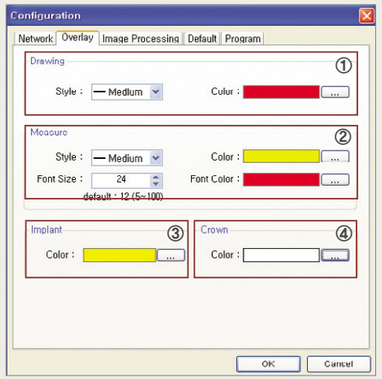
CAUTION

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

14.2 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 menubar, a configuration screen will pop-up. Select the Overlay tab.

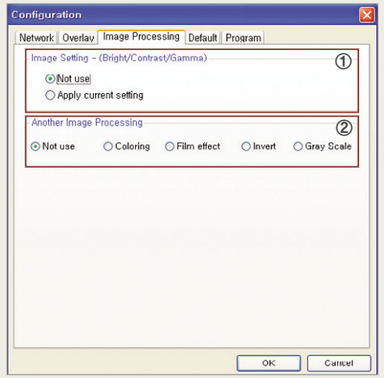


① **Drawing :** You can configure the style of the line (Dotted, Thin, Medium, Bold) and its color in the Drawing Tools. You can also change it at Color and Style explained in Chapter 7 under 7.1 'Drawing Tools'.
② **Measure :** You can select the style(Dotted, Thin, Medium, Bold) and color of the line 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 :** Configure the color of the Implant.
④ **Crown :** Configure the color of the Crown.

14.3 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, Gamma) on similar types of images. Also, 4 options such as Coloring, Film Effect, Invert, and Grayscale can be applied separately.

A configuration screen will pop-up when you click 'Help' → 'Configuration' on the menubar.
Select the 'Image Processing' tab.



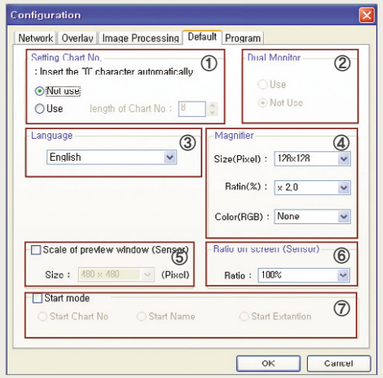
NOTE

You need to restart this program after setting the Image Process.

① **Image Setting(Bright/Contrast/Gamma) :** Save the current Bright, Contrast and Gamma Image setting by clicking 'Apply current setting'. The default setting is 'Not in Use'.
② **Another Image Processing :** Set the current Coloring, Film Effect, Invert and Gray Scale image process. The default setting is 'Not in Use'.

14.4 Default

You may configure the values of the Chart No., Dual Monitor, Language, and Magnifiers.
A configuration window will pop-up if you click 'Help' → 'Configuration' on the menubar.
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 a Dual Monitor or not.
③ **Language** : Choose the language that you want to use.
④ **Magnifier** :
- Size(Pixel) : You can choose a pixel size.(64x64, 92x92, 128x128, 192x192, 256x256)
- Ratio(%) : You can choose the ratio.(x1.5, x2.0, x2.5, x3.0)
- Color(RGB) : You may choose a color for the boundary when magnifying an image. (None, Black, Red, Green, Blue)

⑤ **Scale of preview window(Sensor)** : This function is for the selection of screen sizes for the Preview Window of Intraoral sensor images with the following resolutions selection : 340x340, 480x480 and 640x640.
⑥ **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%.
⑦ **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 Extention.

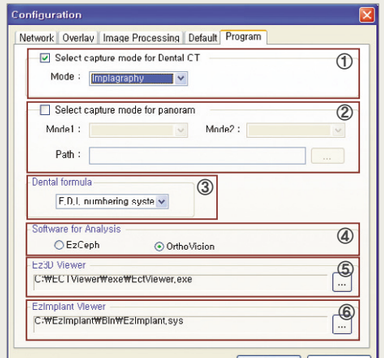
NOTE

Restart the EasyDent program in order to apply the new configurations.

14.5 Program

Here, you can configure the equipment that was used for capturing the image, as well as the locations of the 3D analysis softwares such as 'Ez3D' and 'Ez3D2009'.

If you click 'Help' → 'Configuration', a Configuration window will pop-up. Select the 'Program' tab.



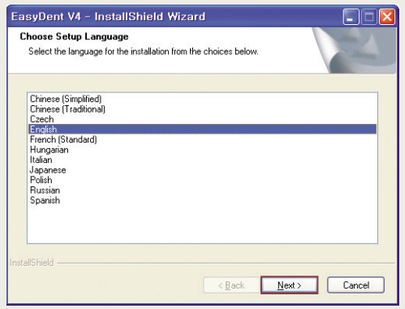
① **Select capture mode for Dental CT** : This is used to configure the capture mode for Dental CT equipment such as Implagraphy, DCT, VCT, EPX-Impla, ECT-12, ECT, Picasso-Trio, Picasso-Pro, Picasso-Master, or Picasso-Duo.
② **Select capture mode for panorama** : This is used to configure the capture 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, and PAX-Uni3D 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.

Appendix |

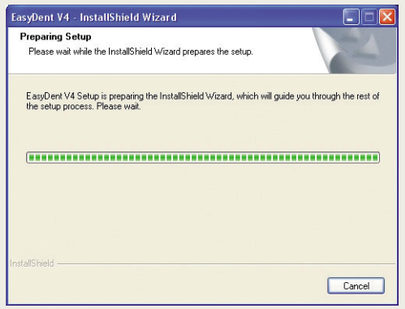
1. Installation & Uninstallation of EasyDent V4

1.1 Installation of EasyDent V4

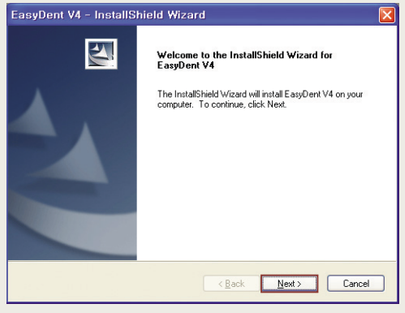
Select the language.



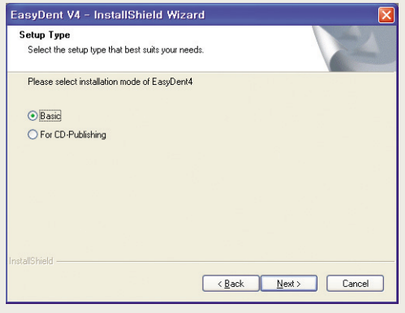
Prepare for the installation.



Click 'Next' so that the InstallShield wizard will install EasyDentV4 on the computer.



Select the installation mode of EasyDent4.



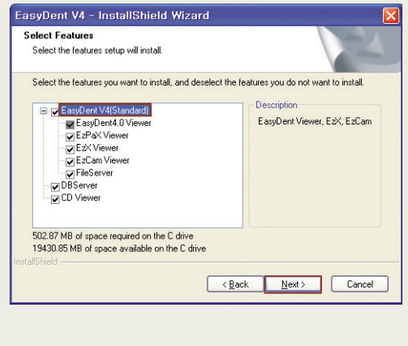
NOTE

Installing for servers(DB & File servers) : Click all the viewer features of the PC.

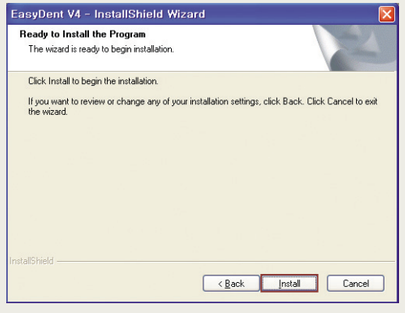
NOTE

We recommend installing DB & File servers on the same PC.

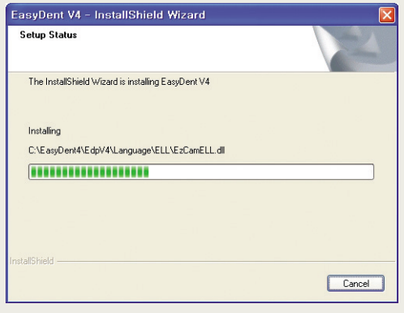
Select the features that you want to install, and then click 'Next'.



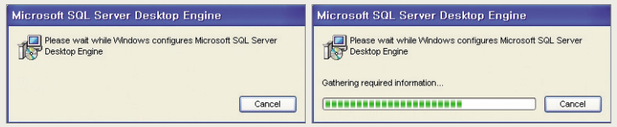
Click 'Install' to begin installation, or click 'Cancel' to exit the wizard.

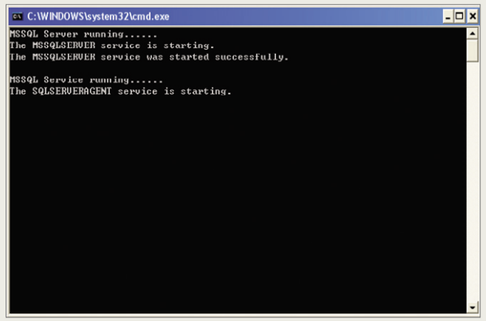


The installation will start automatically.

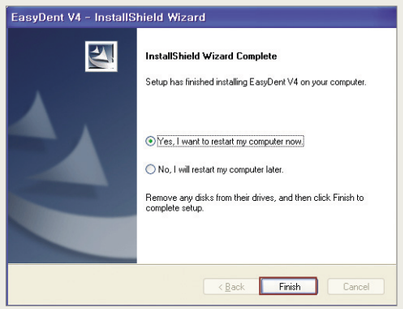


The MSDE(Microsoft SQL server Desktop Engine) will be installed automatically.



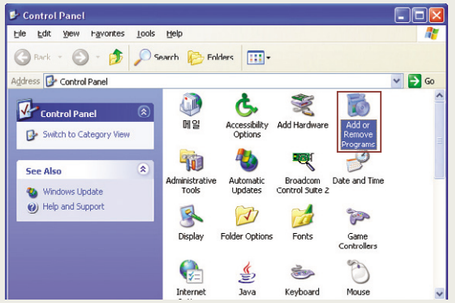


Choose 'Yes, I want to restart my computer now', and then click 'Finish'.

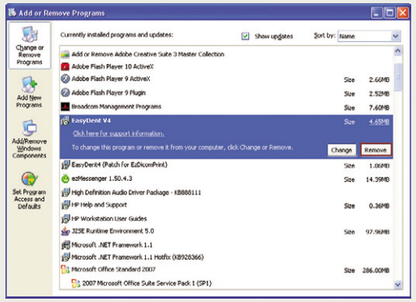


1.2 Uninstallation - EasyDent V4 Program

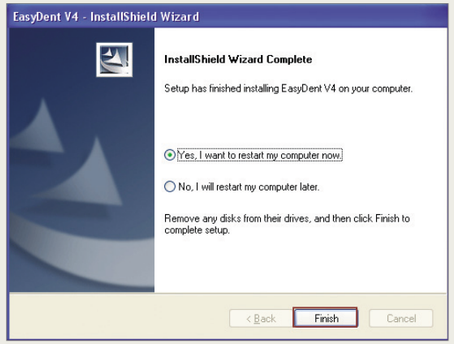
Go to the Control Panel and then select 'Add or Remove Program'.



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

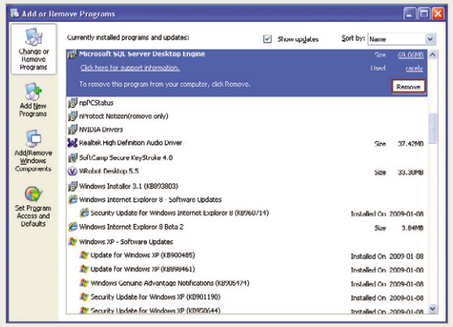


Choose 'Yes, I want to restart my computer now', and then click 'Finish'.



1.3 Uninstallation - Microsoft SQL Server Desktop Engine

1.3.1 Remove 'Microsoft SQL Server Desktop Engine'



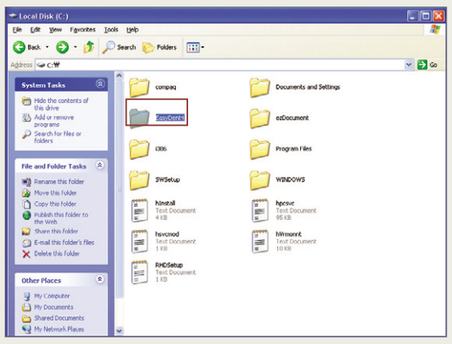
1.4 Uninstallation - Deletion of the 'EasyDent4' folder

Turn off the 'File Server'.

NOTE

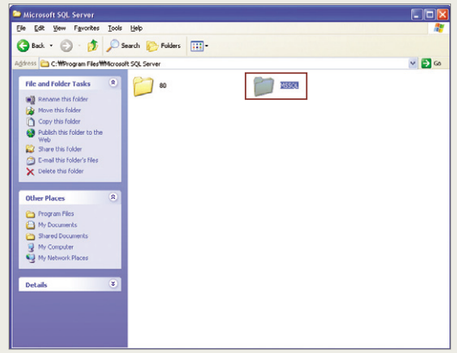
The 'EasyDent4' folder cannot be deleted if the File Server is turned on.

Delete 'EasyDent4' folder at drive C:\.



1.5 Uninstallation - Deletion of the MS SQL folder

Delete MS SQL folder at C: Program file\Microsoft SQL Server\MSSQL.



Appendix I

2. Frequently Asked Questions

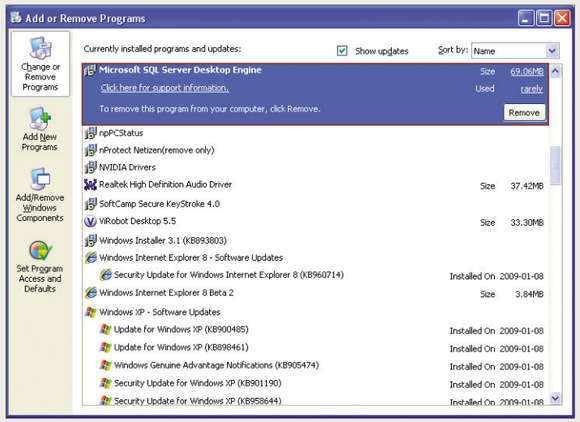
2.1 EasyDent V4 doesn't run after installation

Q. **Upon installation an error message occurred and EasyDent V4 didn't run after installation. What caused these problems?**

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, uninstall it from the PC. After which, reinstall EasyDent V4 on the PC.

Case 2 : In case EasyDent V4 needs to be re-installed
The operation is the same as Case 1.

CAUTION

If there is data in the DB of EasyDent V4, you should first back-up the DB[C:\EasyDent V4\DB\TSFD.mdf/TSFD.ldf] before re-installing. Generally, for reinstallation EasyDent4\DB, EasyDent4\File Server and EasyDent4\ImageBackup are backed up and reinstalled.

2.2 Cannot uninstall the MSDE from the PC for the installation of EasyDent V4.

Q. **Why can't I uninstall MSDE from the PC?**

A. 1) Use a new PC where MSDE is not installed (recommended).
2) Install MSDE as an instance (not recommended).
Install MSDE through EasyDent V4, for instance.
Modify the net.ini file [C:\EasyDent4\], as shown below.
[SQL_DBSERVER]
DNS=127.0.0.1\DBSERVER
Modify the net.ini file on the PC for viewing of images.

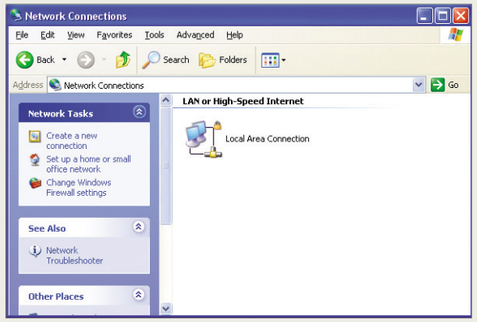
2.3 Cannot link to DB server via the network(Windows XP)

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

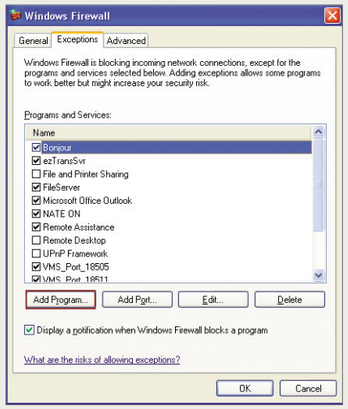
A. Inability to link to the DB server(MSDE) from inside a network usually happens because of a Windows Firewall blocking port access.

Cancel the Firewall, as shown below.

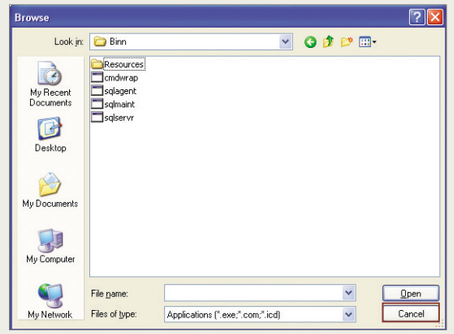
Go to ‘Start’ → ‘Setting’ → ‘Control Panel’ → ‘Network and Internet Connections’ → ‘Network Connections’. Click ‘Change Windows Firewall settings’.



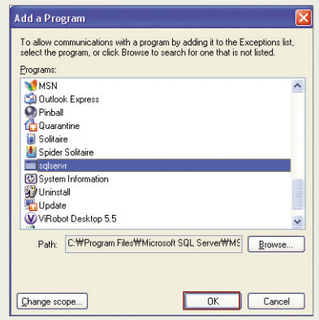
Go to ‘Exceptions’ tab, and then click ‘Add Program’

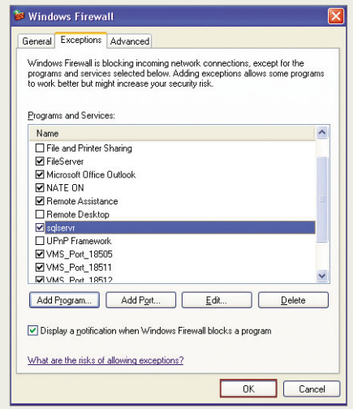


Click ‘Browse’ Select the item that cancels the firewall [C:\Program Files\Microsoft SQL Server\MSSQL\Binn\sqlservr.exe].



Check the item for cancellation. And then click ‘OK’.





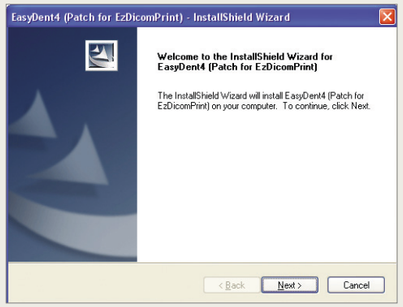
Restart PC.

Appendix |

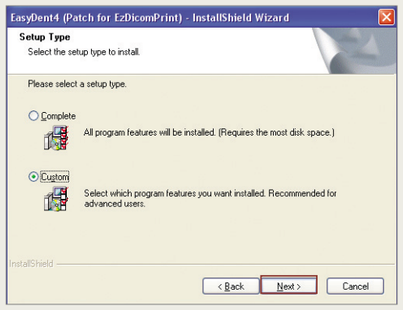
3. Patch for EasyDent Dicom Print

Install the EasyDent Dicom Print Patch. Patch File: EasyDent_DP_Patchxxxxxx.exe

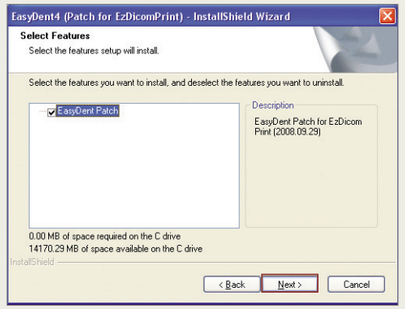
As shown below, when the EasyDent4 (Patch for EzDICOM Print) is run, click the 'Next' button.



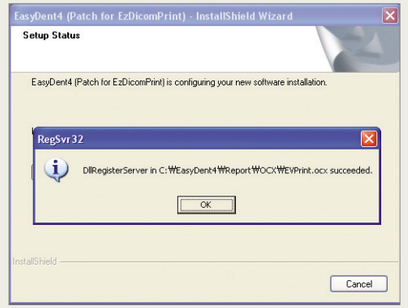
Select the installation Type(Complete or Custom) and then click 'Next'.
The Installation method is same for both Complete and Custom type.

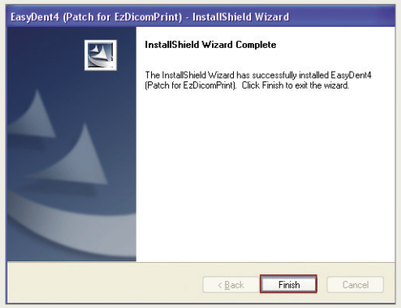


Check the installation category as shown below, and then click 'Next'.



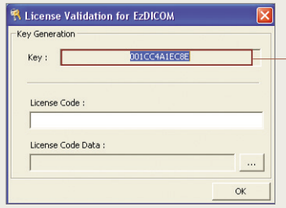
When the installation is completed, click the 'Finish' button to complete the installation of the EasyDent Dicom Print Patch.



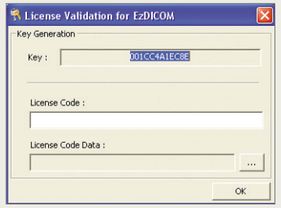


Master Lock Key Use When the EasyDent Dicom Print Patch installation is done, you can plug in the Master lock key to enable the use of the DICOM Print function. The method of using EzDICOM Print is explained in detail in Chapter 12 on page 121.

License Validation After the installation of the EasyDent DICOM Print patch file is completed, a License Validation for EzDICOM window will appear.



Validation



If you wish to run this window again, you may double-click the icon located on the desktop.
The key value needs be reported 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

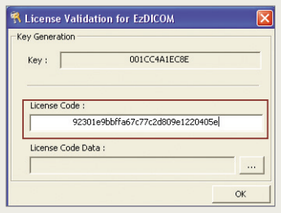
Dental Clinic : xx Dental Clinic

Equipment : Picasso-Trio or Pax-500ECT

Key : 001CC4A1ECBE

Sales Rep. or Requesting Client: XXX

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.

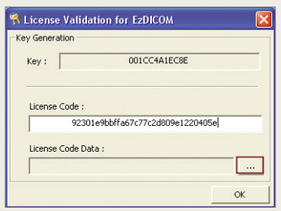


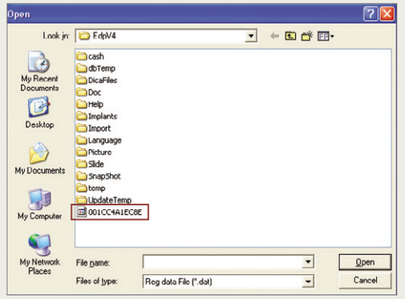
Please input the License Code(32 characters) you have received in the License Code slot.

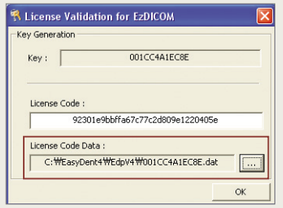
Please copy the 'License Code Data' into the path shown below:

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

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







After the above configuration is complete, click 'OK', and a message with the phrase 'Success' will pop-up, signifying that the process has been successfully completed.

After the validation is over, running EasyDent will enable the user to use the DICOM Printer. The method of using EzDicom Print is explained in detail in chapter 12 (on page 123).

NOTE

1. The License Code Data's file name is identical to the code written on the Key.
2. At validation, 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 illustration in this manual is shown with a sample value only.

Appendix I

4. ICONS

4.1 File

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

4.2 Edit

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

4.3 View

Button	Hotkey	Meaning
		Information of the Image
		Exif Information
		Memo

4.4 Database

Button	Hotkey	Meaning
		Patient
		Image
		Export
		Import Files

4.5 Draw

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

4.6 Measure

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

4.7 Image

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

4.8 Tool

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

4.9 Implant

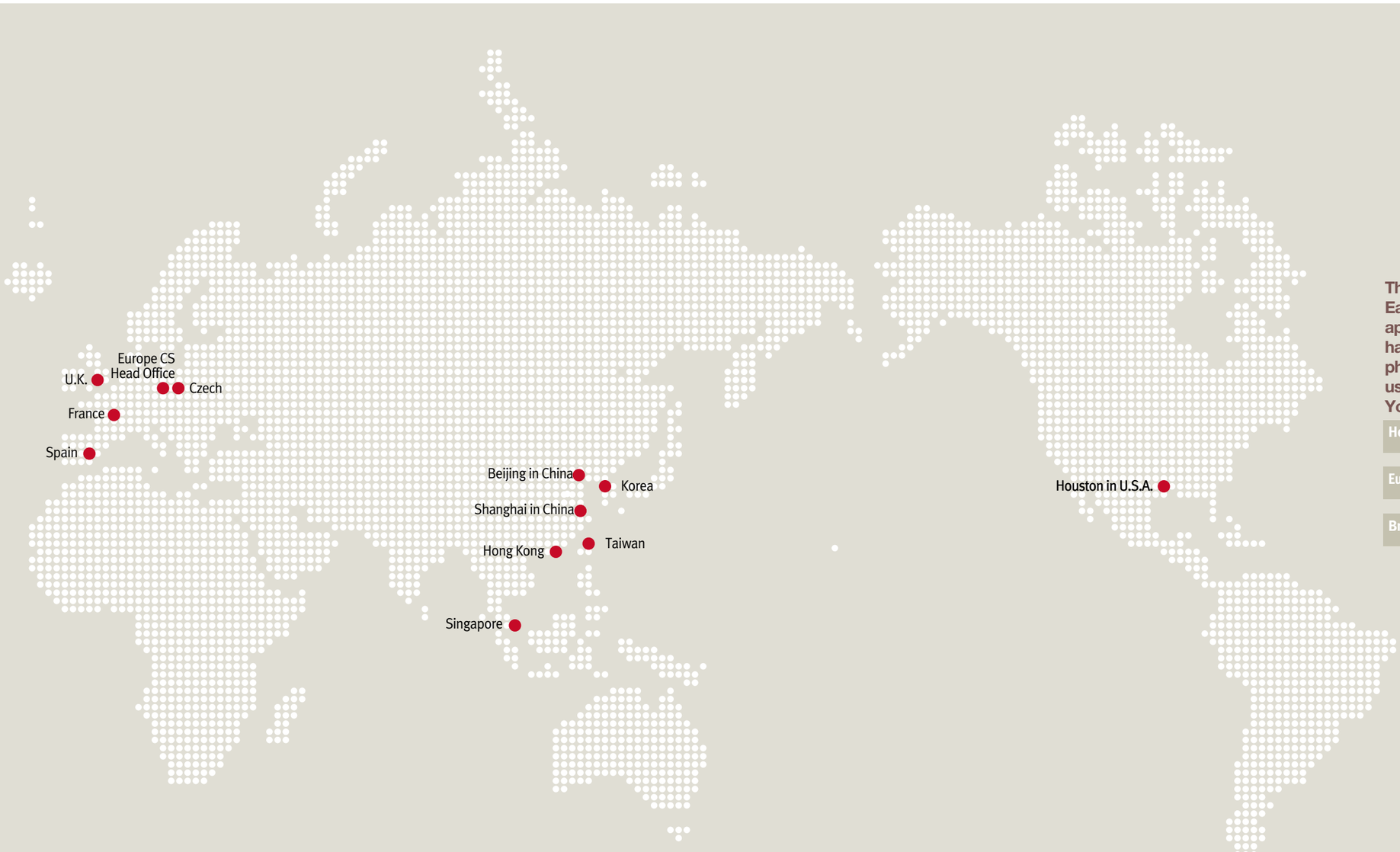
Button	Hotkey	Meaning
		Add Implant
		Delete All Implant
		Add Implant Crown
		Delete All Implant Crown

4.10 Window

Button	Hotkey	Meaning
		Main Screen
		Extended Screen
	Alt+Enter	Full Screen
		1 Window
		2 (2*1) Windows
		2 (1*2) Windows
		3-Window Type - A
		3-Window Type - B
		4 (2*2) Windows
		6 (3*2) Windows
		6 (2*3) Windows
		9 (3*3) Windows

4.11 Help

Button	Hotkey	Meaning
		About EasyDent V4 Viewer
		Configuration



Thank you for taking the time to use the EasyDent User Manual. We would appreciate any feedback or comments you have about this document. Please email or phone us with your comments. You can reach us at :

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