DICOM Image Web Viewer

UniWeb Viewer

Version 6.1.1146

User's Manual

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Attention

UniWeb Viewer is image viewer software that works on Web client PC accessed UniWeb Server or EBM Server (with Web Option).

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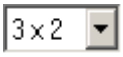

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Conventions used in the manual

The following conventions are used in the manual.

Convention of menu and button

Representation (bold)	Description
[File]	pop-up menu's name is represented inside the [ ]
[File]/ [exit]	sub menu's name is follow by / and inside [ ]
"Open graphic file"	dialog box's name is inside the double quotes " "
[OK]	dialog box's button and tab's name is represented by []

Convention of key operation

Key Operation Representation	Description
Enter	No special symbol used for the key's name
Ctrl + A	plus (+) symbol means pressing multiple keys simultaneously
Left Click	Click on mouse left button
Right Click	Click on mouse right button
Left Drag & Drop	Hold down left mouse button, move mouse, and then release mouse button
Right Drag & Drop	Hold down right mouse button, move mouse, and then release mouse button
Double Click	Double click left mouse button to execute a function or application program

Other Convention

Other representation	Description
Attention	attention to the operational instruction
Note	hint to the operational instruction

1. Introduction of UniWeb Viewer

UniWeb Server is a web client transmission system that the image data is saved in DICOM format. By using Internet Explorer, user can login to UniWeb Server and download the viewer program in order to display the images. The program you will be downloading is UniWeb Viewer.

UniWeb Viewer is an Active-X program operating on the MS Windows / Internet Explorer. It has the following characteristics, not found in any other web graphic system.

- Images can directly be displayed by the UniWeb Viewer and transferred using the server saved DICOM through the web Client, without the need of JPEG format conversion.
- By using lossless and lossy compression, images are transferred at high speed.
- The viewer can adjust window/level and measure distance, distance ratio, angle and area.
- The server saves the setting of window/level user, modality, moving part.
- It can display a stack of graphics and play in cine loop.
- It can display images as animation (multi-frame). (Optional).
- By tagging an image, the server will save the user's name and modality type, etc.
- The results of the measurement and annotation can be saved to the clipboard or pasted to other application.

2. Specification of UniWeb Viewer

Pixel display	No limitation. It depends on the memory capacity.
Image layout	2x1, 1x2, 2x2, 3x2, 3x3, 4x3, 4x4, 6x4, user defined (Any C x R). Any arbitrary image layout can be displayed in the full size.
Stack display	Stack one series of images to display, plays as frames, use loop function.
Zoom in/out	Zoom in and out at an arbitrary rate, panning with mouse drag. Expansion lens function.
Rotate/Mirror	Rotates left/right 90 degree, flips horizontally or vertically.
Synchronization	The operation of the level adjustment and image selection, page selection, expansion, reduction, and window/reversing the rotation is made synchronized in two or more arbitrary program windows.
Window/level	Changes window/level by mouse drag, controls a series of images simultaneously, auto adjust by selected ROI, invert.
VOI (Gamma control)	DICOM image include VOI LUT data can be use for Gamma correction display.
Other display Control	Curve data (ECG trace etc.) display. Shutter function.
Measurement	Measures distance, distance ratio, angle, area (box, Oval, polygon)
Annotate	Copy test, line, arrow, oval, and polygon from the clipboard.
Tag	Tags from all four corner; displays any DICOM Value and different modality types.
Image output	Copy (include annotation and measurement result) to clipboard. JPEG and BMP file output.
Loop play	Plays normal, counter or two ways.
Loop play speed	Changes speed, pauses, plays frame.
Synchronous loop play	Play two or more images on one window synchronously. Play animation on two or more arbitrary windows synchronously.
MPR	Another slice image in an arbitrary position and direction can be created and displayed from any slice image of one series.
Image enhance filter	Low passing, high passing, and outline emphasis filter.

3. Computer Requirement

The conditions required of the client PC for using Web Viewer are as following.

Operating system

Window 2000 SP1 or above, Windows XP Professional.
Microsoft Internet Explorer 6.0 (or above 5.0).
Direct-X 8.1 (or above Direct-X 7.0) is recommended. If Direct-X is installed, the performance of a motion display will improve.

Basic Hardware
Mouse, PC with network card

CPU:	Pentium II 400MHz and above. Pentium III 1.0 GHz and above is recommended for motion display.
RAM:	256MB and above. It is recommended 1 ～ 4GB for motion display.
Hard Disk	500MB or above space
Graphics/Display	800 x 600, 24-bit true color or above. Use of the graphics card which supports Direct-X by hardware for the high-speed motion display is recommended.
Network card	TCP/IP supported 10/100MB bit/sec Ethernet card

In order to peruse the operation description (it can download by clicking an upper right icon when the Web page of login is displayed by the file of this description) of Viewer, please install 5.0 or above of Adobe Acrobat Reader in the client PC which you use beforehand.

4. Basic Operation

4.1 Operation flow chart from login to graphics representation

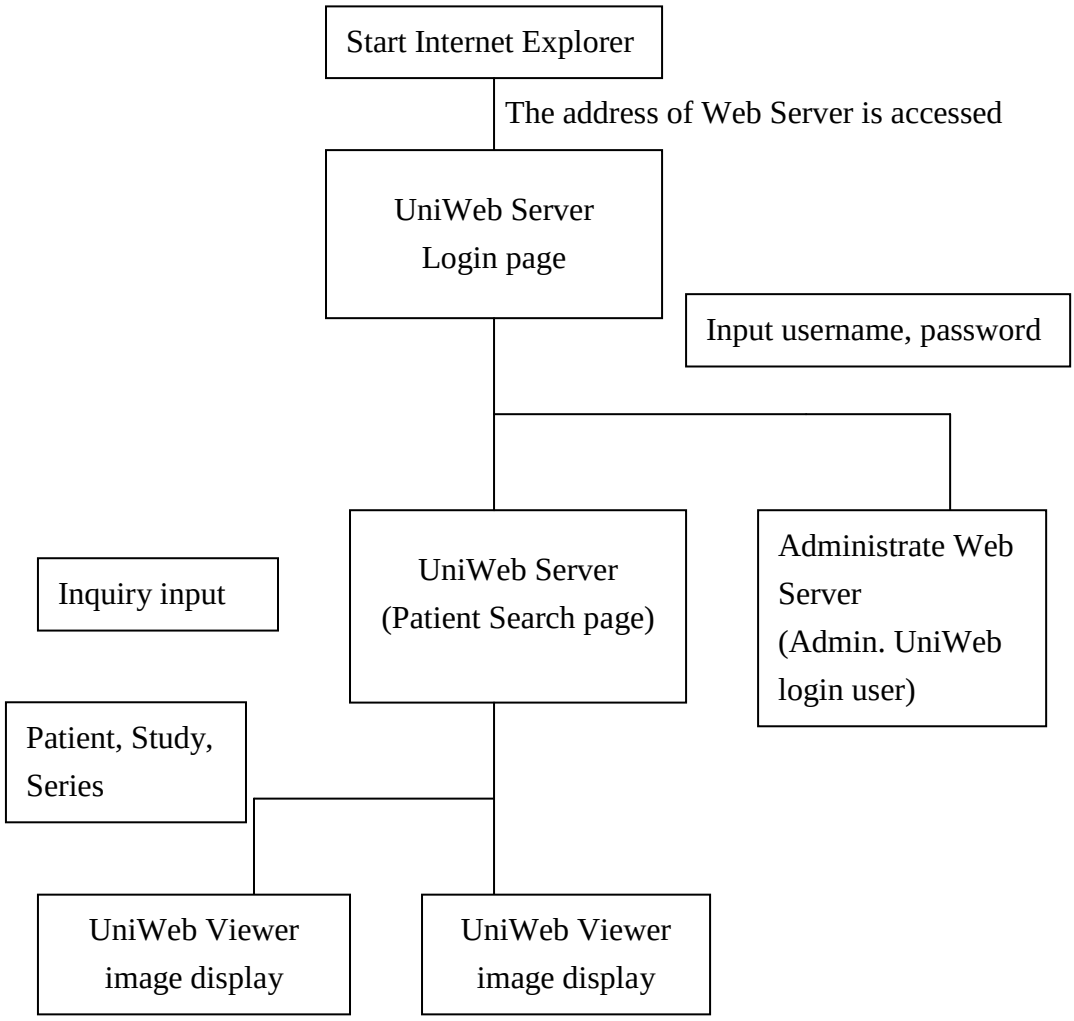


Fig-1

It's possible to open multiple UniWeb Viewer windows to compare and view the past and current records of patient.

4.2 Login

Start Internet Explorer, input UniWeb Server address in the URL and press Enter key. It will connect to the UniWeb Server and display the login page.

Fig-2

Input the registered User Name and Password.

Click on **"UniWeb Server"**, or **"Administrate UniWeb"** and click on **[Login]** button to access search page.

Note The user name and password is different from window's login and password.

[UniWeb Server] If UniWeb Server is selected, the search page will appear.

[Administrate UniWeb] If Administrate Web Server is selected, the administrator's info will appear, this page is only for the use of the administrator group.

[Reset] If reset is clicked, the username and password column will be cleared.

Each user can change his password by clicking the icon at the right of the password input column. When the icon is clicked, the subsequent page is displayed.

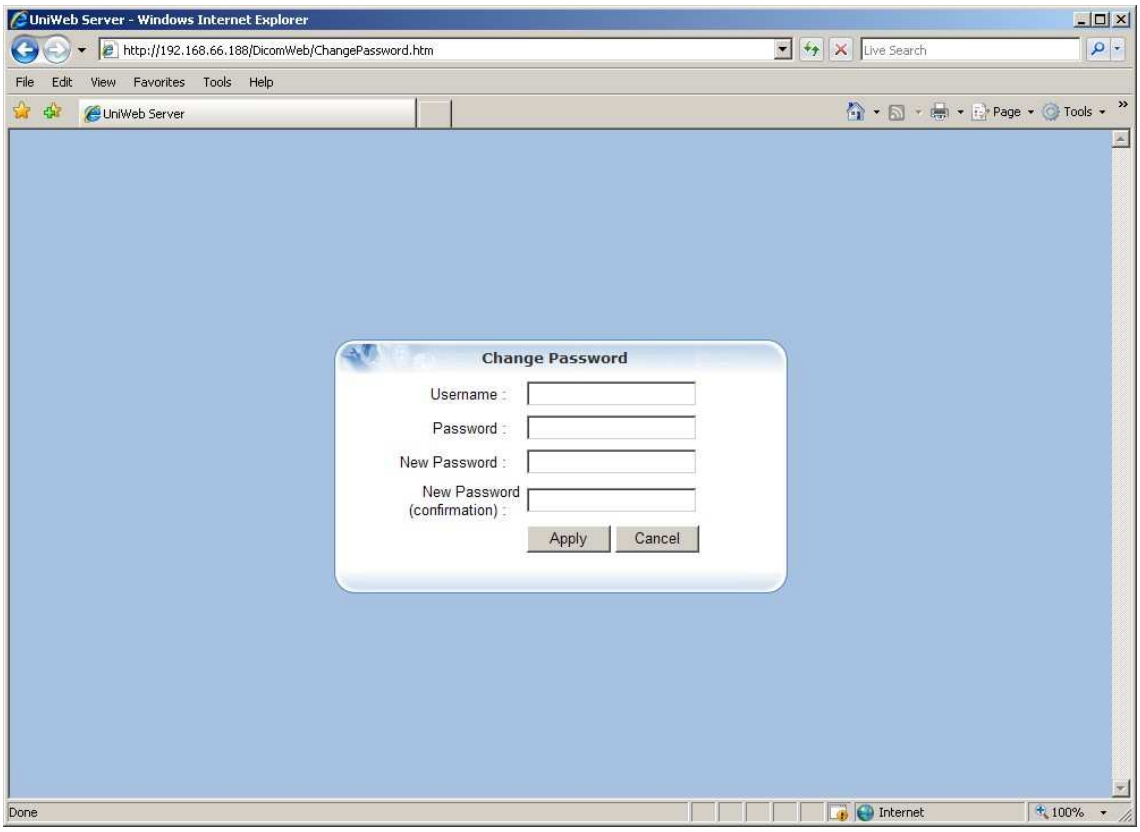


Fig-3

Inputting a user name, present password, new password to two places and left click on **[OK]**. The password is changed from **"Present password"** to **"New password"**.

4.3 Search Page

After select the **[UniWeb Server]** and successfully login, the search page will appear.

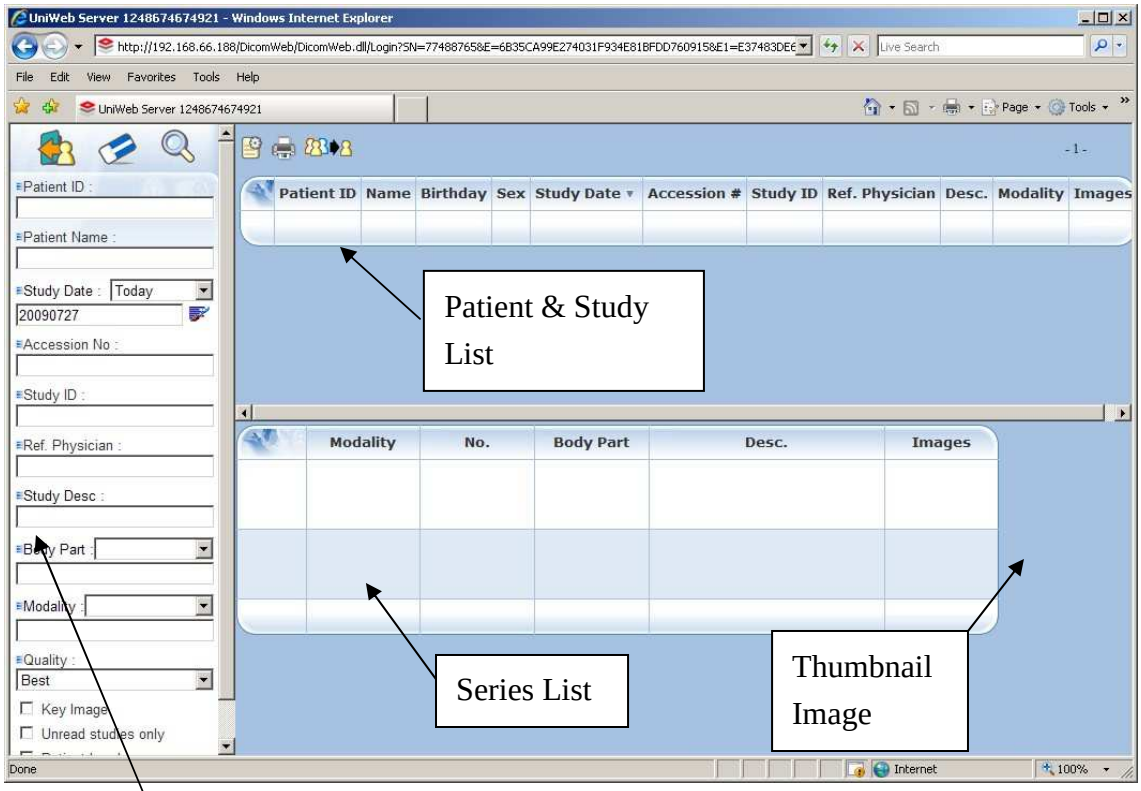


Fig-4

How to search and search specifically

For inquiry, input data starting from patient id to the **Patient ID** field, and press the button. The results will show on the **Patient List** area.

When multiple search conditions are inputted, all the search matches will be listed. For instance, if a patient's name is searched; all the names that match with the inquired name will be displayed.

It is also possible to search by date. The examination default date is present day. To input a specific search date, use the numeric representation i.e. YYYYMMDD, or

clicking the icon at the right of the "**Study Date**" input column to select a specific or period of date and search results will be narrowed down to the specific date.
If no specific examination date is desired, leave the field blank.

Select patient & study information and display image

The information of patient study found by the inquiry can be sorted by categories i.e. **Patient ID**, **Name**, **Birth date**, **Sex**, **Study Date** of most recent exam. Click on one of these titles, and the viewer will re-sort increase or decrease list according to the selected category. Left click on specific patient study from **Patient & Study List** area will then display all the series of that study and show in **Series List** area. Double click on specific patient from **Patient & Study List**, UniWeb viewer will start and display all series images of the patient's study in full screen.
Press and hold down Ctrl key and use left click can select multiple studies. Use double click on any selected study, multiple UniWeb Viewer program windows will start and display all images from left to right by selected order individually. These windows size will be automatically divided into equal parts on screen display.
The type of image data will be shown by icon in the left column of **Patient & Study List** area.

Image only	PDF Report Only	Image & PDF Report

Left click on any icon above, UniWeb Viewer will start and display image only, PDF Report only, or include images & PDF Report.

Select series and display image

To select a patient's series, after performing a search, left click on the desired study from the **Patient & Study List** area. Patient's series of that study will appear on the **Series List** area. Double click on specific series and UniWeb Viewer will start and display all images of that series in full size.

Press and hold down Ctrl key and use left click can select multiple studies. Use double click on any selected study, multiple UniWeb Viewer program windows will start and display all images from left to right by selected order individually. These windows size will be automatically divided into equal parts on screen display.

Note When multiple studies or series have been selected and displayed by UuiWeb Viewer, these program windows will be arranged by selected order from left to right.

Select Thumbnail and display image

While left click on a certain series, all constituted images will be instant showed in Thumbnail Image area. Left click on the thumbnail image(s) to select the candidate image(s) related to the patient. Press and hold down [Shift] or [Ctrl] key and use left click can select continuously or particular images (selected ones will be shown as a green frame, see Fig-5). Double click on last selected thumbnail image and UniWeb Viewer will start and show all selected images. If double click one thumbnail icon only, only that image will be displayed on UniWeb Viewer.

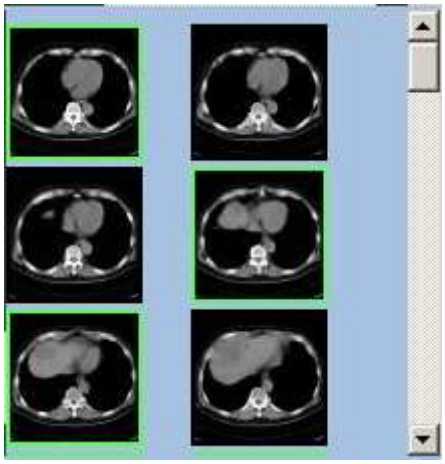


Fig-5

Note Left click on icon at right corner of **Series List** area can hide **Thumbnail Image** area. Left click on icon to show **Thumbnail Image** area again when **Series List** area been extended.

The symbol of thumbnail icon

Example thumbnail figures include image data are shown as following

Static image Thumbnail

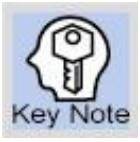
Multi-frame Image Thumbnail

Key Image Thumbnail

Example thumbnail figures include non-image data are shown as following

PDF Report Thumbnail (REPORT)

Presentation Status Thumbnail (PR)



Key Image Note Thumbnail (KO)

Structured Reporting Thumbnail (SR)

Note Presentation State (PR) is data of an image display status. Key Image Note (KO) is a tag paper data. Although it is not displayed if these data is independent, when the associated image is displayed, it is used automatically.

[**Reset**] button

Left click on this button, all the inputted search reference conditions will be cleared and specification of an inspection day will return by the end of default [Today].

[**Logout**] button

It logs out and returns to a login page. There is a limitation in the number of the users who can login to UniWeb Server simultaneously. For the convenience of other users to login to server, it is better to logout after finished.

Note It does not log out if only closes the program window of UniWeb Viewer. Left click on [Logout] button or [X] button at the upper right of a search page will close it, and the UniWeb Viewer window will be closed also.

If there is no reference operation within 15 minutes or more, it logs out automatically. After login, if the user remains idle for 15 minutes, it wills logout automatically again.

[Quality] List Box

This is a list of compression method while images transmit from UniWeb Server. The compression method when downloading image data from server is specified. Usually, downloading data with big capacity, such as a case where the narrow communication circuit of zones or as remote medical treatment which has been used and un-compressing data by which loss-less compression is carried out will take a longer time. To short a transmission times by select relative compression method of images transferring from server.

Best The data (data compressed when a picture was received from modality) compressed with the server downloads as it is. The compression method and the rate of compression are determined by setup of a server.

Better Image transmission is compressed and carried out by Lossy JPEG (irreversible) which gave priority to quality of image over the rate of compression. Quality of image will not be better compare to a setup of "Best"

Medium Image transmission is compressed and carried out by Lossy JPEG (irreversible) at the standard rate of compression.

Low Image transmission is compressed and carried out by Lossy JPEG (irreversible) which gave priority to the rate of compression over quality of image.

[Key Image Only] Check box
When it checks, only what contains a key image note in a reference result will be listed. This check may be unable to be removed depending on the group to which a user belongs.

[Unread studies only] Check box
If it checks, press [Query] button to search for the studies that haven't been read by this login account.

[Patient Level] Check box
If it checks, press [Query] button to perform a specific search will display "all inspection and all series" of the patient containing inspection applicable to reference conditions or series as a reference result. For example, suppose that it refers to two search conditions of modality=CR & inspection day=today as well as [Patient Level] been checked. It means that patient's inspection today and last time about the patient who underwent inspection of CR today, and all that contain past inspection and other modality about the patient who underwent inspection of CR by one reference today will be listed.

[Preferences…] Icon

Left click on icon to change default user interface display after login.

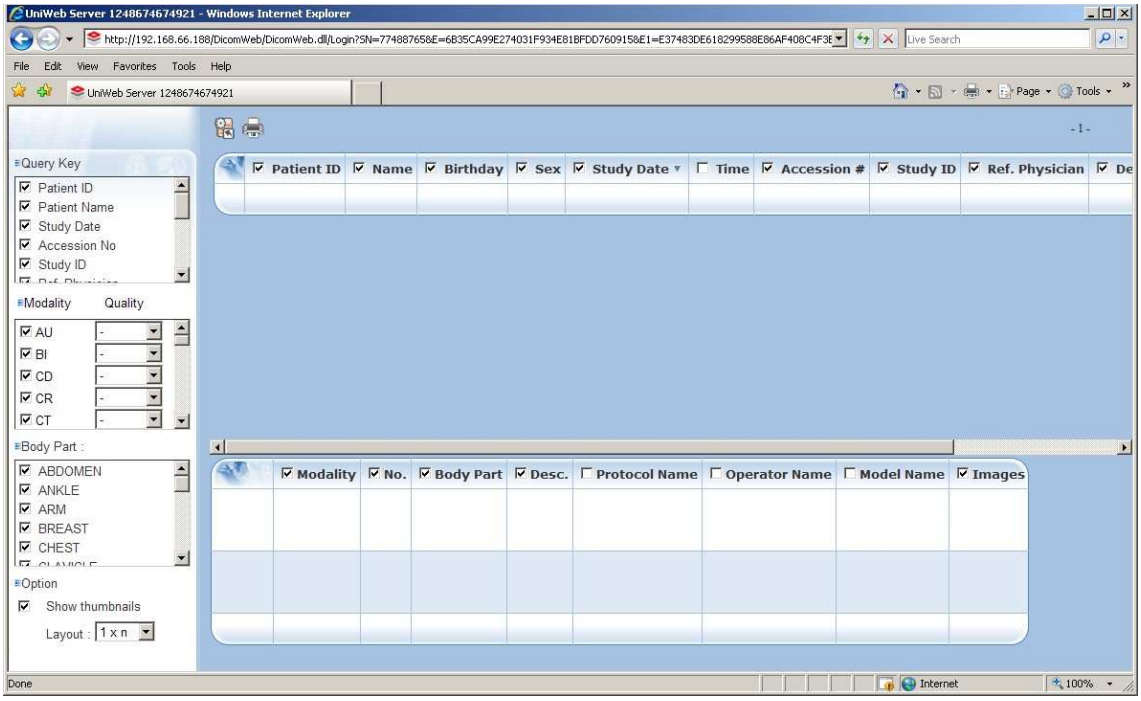


Fig-6

Left click on icon to save change and back to search page.

Note Version of Internet Explorer which you are change default setting, the display of a page may not change in an instant. Please press **[Reset]** button and re-display a reference result when it is not changed.

[DICOM Printer] Icon

Left click on DICOM Printer icon to pop-up a window as below. This function is to check the print job on the DICOM Printer.

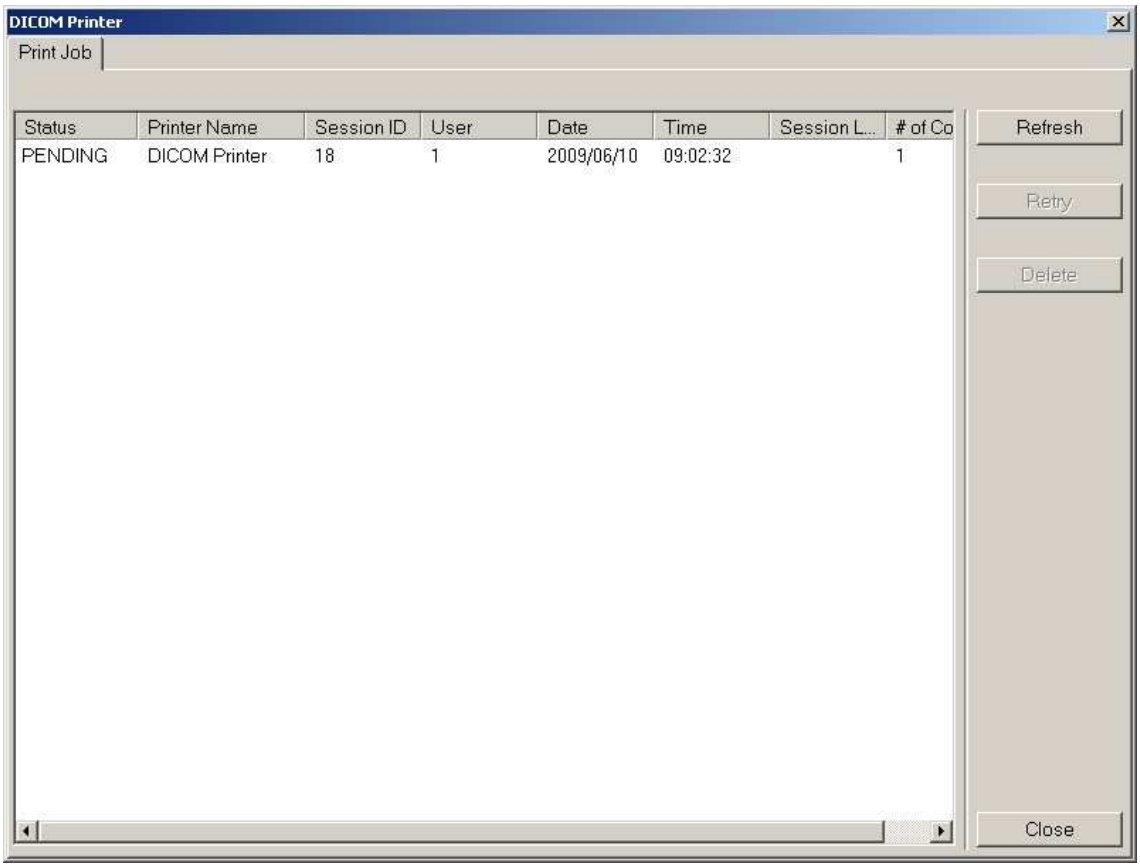


Fig-7

Note If one print job is queue in the list and not responding, user can click on [Retry] button to print or click on [Delete] button to cancel the print job.

[All study of patient] Icon

Click on this icon to display all study of the specific patient user selected.

How to handle pop-up message

"Your connection license has expired. Please Login again"

Fig-8

After login, if it is left 15 minutes or more, it logs out automatically. A login page is displayed and please login again.

"Web Viewer was not able to be downloaded"

Fig-9

The Windows login user doesn't have the authority to download and install UniWeb Viewer components. Try to login Windows as Administrator or Power User, this message is not displayed.

"The ActiveX Control of UniWeb Viewer does not be loaded completely"

Fig-10

Please change a security setup of Internet Explorer to be able to perform execution of ActiveX. Ask a network administrator about change method of security setup of Internet Explorer.

"Installation of the ActiveX control" is selected from the menu, and the dialog of the following is displayed.

Fig-11

This message is displayed at the first time to access UniWeb Server as well as update UniWeb Viewer client program.

By the warning message of security, it is not an error. User can click on **[yes]** and proceed. It will not appear again afterwards.

4.4 UniWeb Viewer window representation

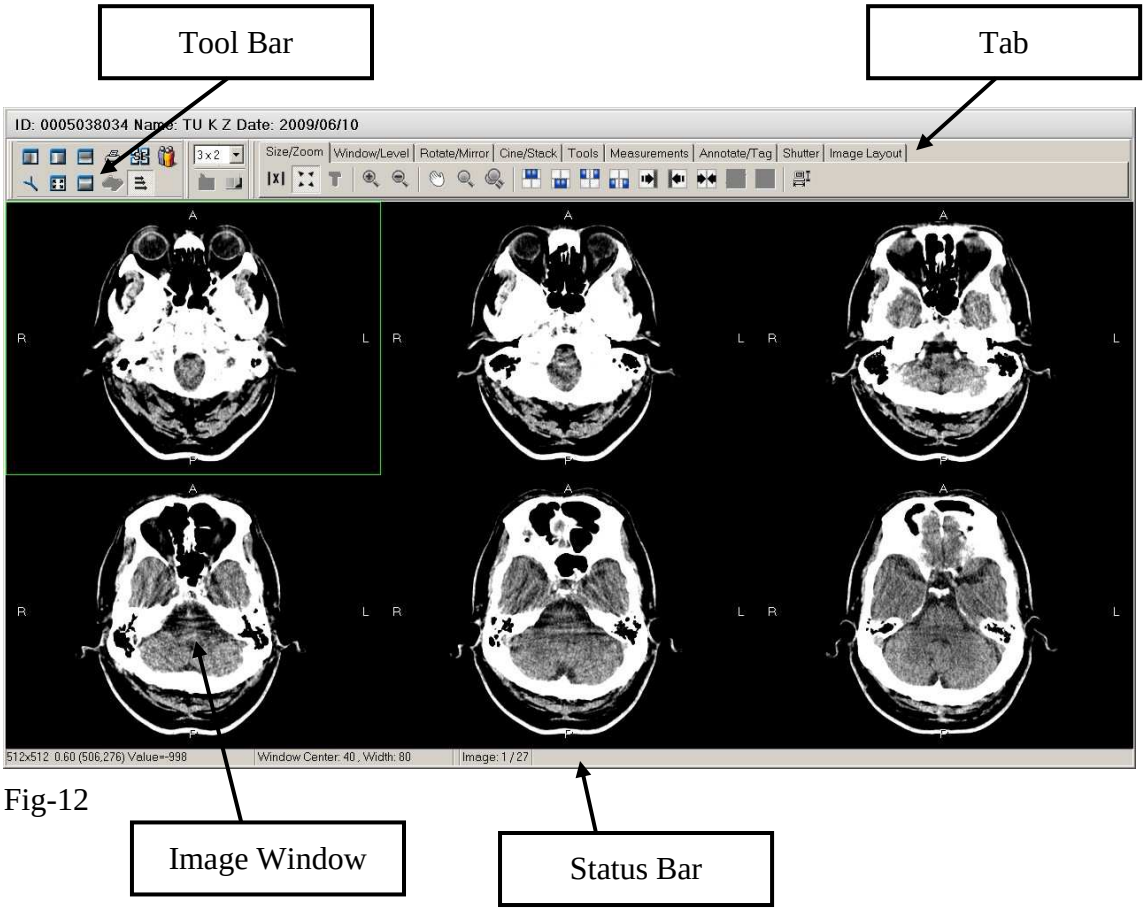


Fig-12

Tool Bar

The tool bar area consists of the graphical icon buttons found on the top left of the viewer window.

Tab

Many functional buttons are separated in groups. The group's titles are displayed on top of the tab.

Status Bar

Located at the lowest part of the window, the Status Bar will display messages. For example, the Status Bar displays zoom percentage, the window and level setting, multiple frames images' frame number and the rate of play.

Pop-Up Menu

Click on the right button of the mouse and the Pop-Up Menu will appear. Without moving the cursor to the **Icon Area**, the user can choose the function right from the Pop-Up Menu.

Image window

All the displays are separated by the square space, which is called the image window. Each image window displays different image.

Active Window

The image window currently be displaying is surrounded by a green frame and this image window is called the Active Window, it represents the window you have chosen. Most Viewers' functions are applied to the Active window. To make another Active Window, first move the mouse cursor over to the top of the image, and then click on the left mouse button and the Active Window can be moved by use the arrow key.

Display of Key Image

1) The image marked as a key from UniWeb Viewer.
2) In case of images related with DICOM KO (key image note) saved, a small icon of key form is displayed on the upper left of the image.
3) Point mouse cursor to key icon and a key image note (text information) will be displayed like tag paper. The 1st line is the title & creation date of key image note and the 2nd line shows the key object description saved with the key image note.

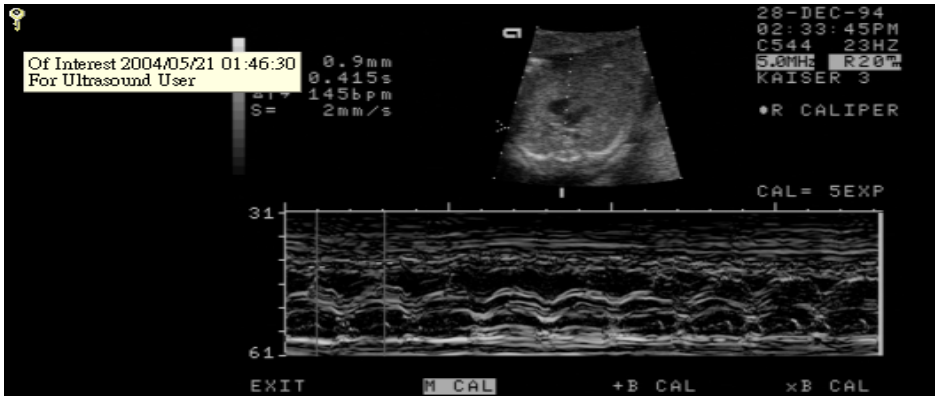


Fig-13

4.5 UniWeb Viewer's basic operation

From the search page double click on the patient, examination, series, or thumbnail, the UniWeb Viewer's program window will appear.

4.5.1 Web Viewer window size and position change

Using the button in the **Icon Area**, one can easily change the size of the window and the position of the window.

This will display on screen left half side of UniWeb Viewer's program window.

This will display on screen right half side of UniWeb Viewer's program window.

This will display on screen upper half side of UniWeb Viewer's program window.

This will display on screen lower half side of UniWeb Viewer's program window.

This will display on screen full size on UniWeb Viewer's program window.

4.5.2 Changing the image representation layout

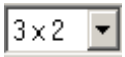
Maximize (Method 1)

Double click on the image, and it will be maximized. To return to the original size double click on it again.

Maximize (Method 2)

Use the arrow key and select the window (Active Window) and then press the Enter key. To return to the original size press Enter key again.

Change the way of dividing image window



Click on this, located on the **Icon Area**, and then select the desired size.

4.5.3 Changing the size of the image

Change Zoom size (Method 1)

If the mouse has wheel, rolling the mouse wheel will change zoom percentage.

Change Zoom size (Method 2)

Left click on **[Size/Zoom]** tab, and then left click on or button to change zoom.

Moving the image

Left click on **[Size/Zoom]** tab, and point mouse cursor to the active image will become a hand mark. Use left drag & drop to move image position.

Returning to the original display

Left click on **[Size/Zoom]** tab, and then left click on button.

4.5.4 window/level setting

Adjusting manually (Method 1)

Point mouse to image, and then use right drag & drop at any time to change window level.

Adjusting manually (Method 2)

Click on the **[window/level]** tab, and then point mouse to image. Use left drag & drop to change window level.

Auto adjusting by selected ROI

Left click button on the [**Window/Level**] tab, and then use left drag & drop to select a box area. Depending on selected ROI, it will display the best window/level setting.

Positive/Negative

Left click button in the [**Window/Level**] tab will change image to positive or negative display.

Using preset

On the **[window/level]** tab, left click on one of the following icon

, and it will change the window/level setting according to preset default values.

You can setup your own user default window/level for each preset.

Returning the original window/level setting

Left click button in [**window/level**] tab will return to original window/level setting.

4.5.5 Representing series of images in Cine/Stack

Representing in stack

Open one series mode of multiple images, double click on the image or press the Enter Key to maximize.

Playing and Stopping

Press Space Bar or button, and the loop will start to play. Press on the Space Bar or button again, and it will pause.

Manual cine mode

Make the display in stack mode, and hold left mouse and drag on the [**Cine/Stack**] tab will cine the images manually(image number changed).

Back to the title representation

Double click on the image or press **Enter** key and it will return to the title representation.

4.5.6 Saving the setting

Right click in any image will show Pop-Up Menu, and from the menu select [**file**] then [**Save Profile**].

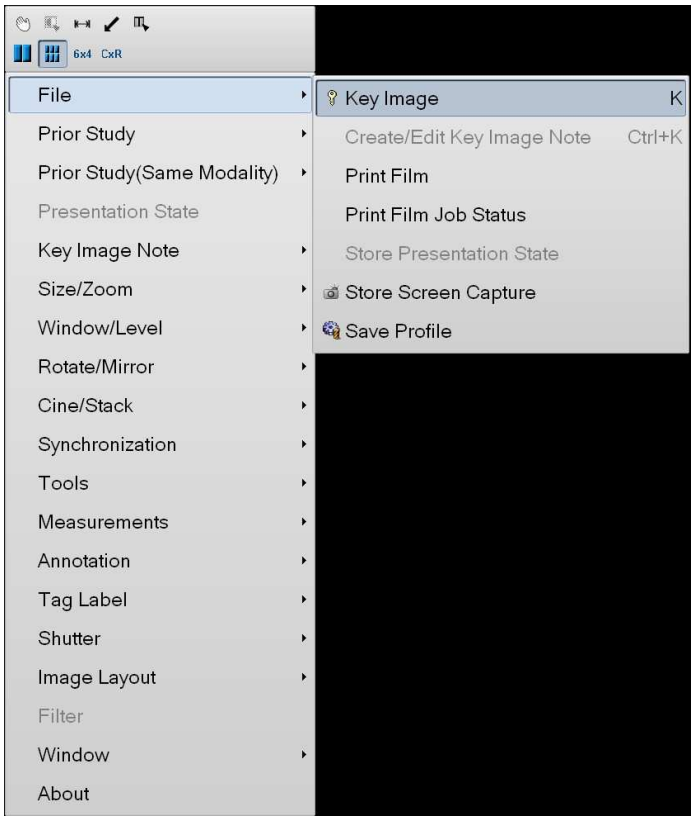


Fig-14

Layout and present window/level value, measurement, annotation's color, font, DICOM tag, and all other user settings will be saved. All this including the user info and modality will all be saved on the server.

Note Login without a user name (after link, jump through the search page) will not save settings.

4.5.7 Returning to query page

To keep the current UniWeb Viewer program window and do another reference search by left click button will show query page again. Otherwise left click on **[X]** at right upper corner will close program window.

5. Tool and Tab Instruction

5.1 Tool Bar Instruction

Fig-15

On the upper left of the UniWeb Viewer window always has the window operation buttons.

Query window

Pop-Up Menu	Hot Key	Function
None	None	Back to search

This operation is the same as clicking on the window task bar on the Internet Explorer button.

Window left

Pop-Up Menu	Hot Key	Function
None	None	UniWeb Viewer's program window will be displayed left half side on screen

Window right

Pop-Up Menu	Hot Key	Function
None	None	UniWeb Viewer's program window will be displayed right half side on screen

Window top

Pop-Up Menu	Hot Key	Function
None	None	UniWeb Viewer's program window will be displayed upper half side on screen

Window bottom

Pop-Up Menu	Hot Key	Function
None	None	UniWeb Viewer's program window will be displayed lower half side on screen

Window Maximized

Pop-Up Menu	Hot Key	Function
None	None	UniWeb Viewer's program window will be displayed full size on screen

Print

Pop-Up Menu	Hot Key	Function
None	None	Open Print Film configuration window and print the films

Report Mode

Pop-Up Menu	Hot Key	Function
None	Ctrl + Enter	If the patient study with report of PDF format. It can be showed at the same time or switch the image and report mode by click on the button.

Open Conference

Pop-Up Menu	Hot Key	Function
None	None	Inviting doctor(s) login to the same UniWeb Server to consult with on-line (just like MSN). All invited users will get synchronously image display.

Stack All Series

Pop-Up Menu	Hot Key	Function
None	Ctrl + F12	Stack all images in to series and separate by each series

Synchronization

Pop-Up Menu	Hot Key	Function
[Cine/Stack] / [Synchronization]	S	Synchronize all opened patient windows series

Operation at the time of one program window display

Video A	Video B
Video C	Video D

The above figure is the example as which four video, A, B, C, and D, is displayed on one program window. When **[Synchronization]** button is pressed and it is in "Synchronization mode", loop reproduction of four video will all synchronize. At the time of synchronous mode, the image of which loop reproduction took a round previously will be in a loop stop state until other images end loop reproduction. When other images end loop reproduction, all images start loop reproduction from the beginning all at once. The above operation is repeated, four video synchronizes and loop reproduction is carried out.

Operation when displaying two or more video on the program window

Video A	Video B
Video C	Video D

Program window 1

Video E	Video F
Video G	Video H

Program window 2

The above figure is the example as which the video of A, B, D, D, and E, F, G, H is displayed on two program windows, respectively. If both the synchronization button of the program window 1 and 2 are turned on, all of eight images from A to H will perform synchronous loop play. When only the synchronization button of program window 1 is turned on, four images of A to D perform synchronous loop play (when the synchronization button of the program window 2 is OFF). Thus, the image which participates in synchronous loop play can be chosen in the unit of a program window.

Operation when displaying two or more static images on the program window

Series 1 Image 1	Series 1 Image 2
Series 1 Image 3	Series 1 Image 4

Program window 1

Series 2 Image 1	Series 2 Image 2
Series 2 Image 3	Series 2 Image 4

Program window 2

The above figure is the example as which different series on two program windows is displayed. If both the synchronization button of the program window 1 and 2 are turned on, the operation performed in one program window will be reflected in other program window. For example, if operation which moves a selection image in the program window 1 is carried out, a green frame will move in the program window of both right and left (if "→" arrow key is pushed). If the Enter key is pressed and the image is indicated by expansion, image will be expanded in both program windows. If "→" arrow key is pressed, or **[Cine/Stack]** tab is chosen and with mouse dragged, image frame will change on the program window of both of right and left. Similarly, page change, **[Size/Zoom]** of image, **[Window/Level]** adjustment, and **[Rotate/Mirror]** operation are also synchronized.

In order to cancel synchronous operation, left click on **[Synchronization]** button or press ***S*** key to turns it OFF.

Synchronize by Frame (Right mouse click)

Pop-Up Menu	Hot Key	Function
[Cine/Stack] / [Synchronize by Frame]	None	The method of making the operation that moves the selection image synchronous.

Right click on synchronization icon and **[Synchronize by Frame]** menu is displayed. Use left click to switch ***ON/OFF***. It's a synchronization method according to image frame when the series image is separately displayed in two or more UniWeb Viewer windows.

There is no limit to effect on the same patient or study.

Status is OFF

When **[Synchronize by Frame]** has been turned off, the two or more UniWeb Viewer windows with **[Synchronization]** enabled will synchronize the slice by nearest anatomy position regardless of the image frame number.

It synchronizes for the dynamic scene so that the nearest frame is displayed time wise.

Status is ON

When **[Synchronize by Frame]** has been turned on, the two or more UniWeb Viewer windows with **[Synchronization]** enabled will synchronize the slice related to image number (differences of image numbers) regardless of nearest anatomy position.

It synchronizes for the dynamic scene so that the relation of the frame number is kept constant regardless of time.

Note The default status of [Synchronization] and [Synchronize by Frame] being on or off can be save for each user via pop-up menu → [File] / [Save Profile].

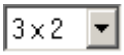
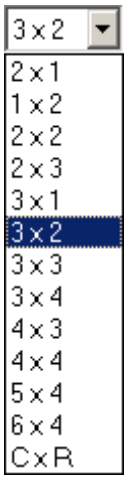


Image layout

Pop-Up Menu	Hot Key	Function
[Image layout]	None	Display number of images window and layout setting



By pulling down list shown on the left side, select the number of image windows and layout setting for display.

Previous page

Pop-Up Menu	Hot Key	Function
None	PgUp	Go to previous page

A page must have page been shown before the current page in order to use this function.

Next page

Pop-Up Menu	Hot Key	Function
None	PgDn	Go to next page

A page must have page after the current page in order to use this function.

5.2 [Size/Zoom] Tab

Fig-16

After left clicking on the **[Size/Zoom]** tab, the buttons for image size and image position adjustment will show up.

1:1 (Pixel Size)

Pop-Up Menu	Hot Key	Function
[Size/Zoom]/[1:1]	1	The expand ratio will equal to original size

Left click on this button, the expand ratio will return to original size. In original size, 1 pixel at the time of image acquisition corresponds to 1 pixel of graphics displays of a computer, and becomes the display of 1:1. It is not the meaning of becoming the same picture size as the image currently displayed on the monitor of diagnostic equipment.

Fit (Matching window size)

Pop-Up Menu	Hot Key	Function
[Size/Zoom]/[Fit]	0	This will automatically adjust the zoom ratio to fit the whole window

Left click on this button, and the image will be auto-adjusted to fit the window. The image size is depends on the size of the window.

True Size

Pop-Up Menu	Hot Key	Function
[Size/Zoom]/[True Size]	2	Exactly patient image size show in display window.

Left click on this button, the image will expand or shrink to exactly patient slice size. In other words, for example, the distance measurement on the screen must match the ruler scale.

Note The monitor calibrate must been done first.

Zoom in

Pop-Up Menu	Hot Key	Function
[Size/Zoom]/[Zoom in]	+	Display magnified image is increased 1.4 times of the present setup.

If the mouse has a wheel on it, rolling it downward will zoom into the image.

Zoom out

Pop-Up Menu	Hot Key	Function
[Size/Zoom]/[Zoom out]	_	Display magnified image is set to 1/1.4 of the present setup.

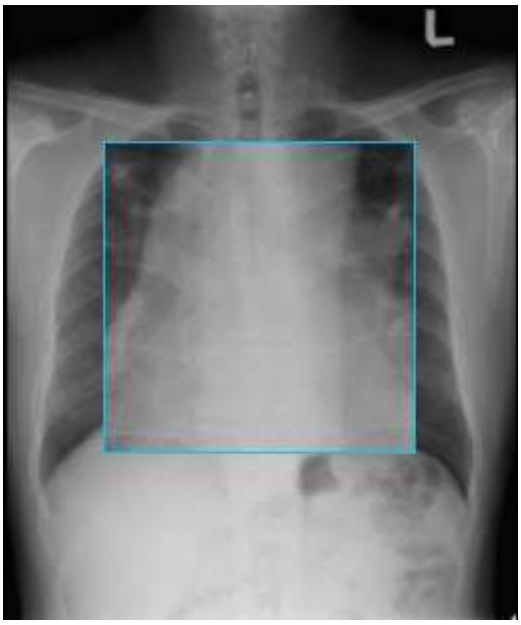
If the mouse has a wheel on it, rolling it upward will zoom out the image.

Panning

Pop-Up Menu	Hot Key	Function
[Size/Zoom]/[Panning]	None	Use left drag & drop to move image position (panning). All other images will synchronize at the same time.

Magnifying glass

Pop-Up Menu	Hot Key	Function
[Size/Zoom]/[Magnifying glass]	None	Left click on the image to set the position of the lens to zoom 2x of the image



If this button is pushed down, the mouse cursor will be changed.

Point the cursor to the place that the user wants to expand by left click. If the user drags the cursor (holding the mouse button) to another point on the image, the expansion of the image will be changed to the current cursor position.

If the mouse has a wheel, rolling it downward will zoom in the current cursor position.

Fig-17

Sync. Magnifying glass

Pop-Up Menu	Hot Key	Function
[Size/Zoom]/[Sync. Magnifying glass]	None	To set the bilateral position of the lens to zoom 2x of the image synchronously.

If this button is pushed down, the mouse cursor will be changed. Point the cursor to the place that you want to view by left clicking. If the you drag the cursor (holding the mouse button) to another place of the image, the expansion of the image will be changed to the current cursor position.

If the mouse has a wheel, rolling it downward will zoom in the current cursor position.

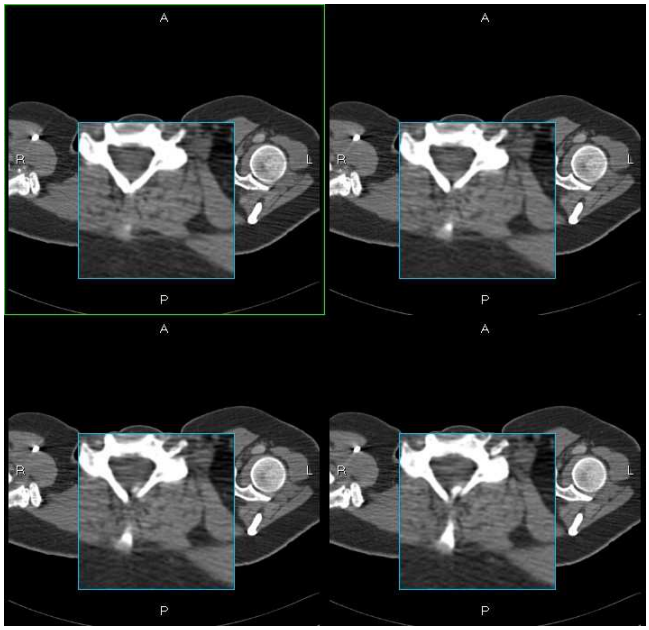


Fig-18

[Upper Inner Quadrant] Button

Pop-Up Menu	Hot Key	Function
[Size/Zoom]/[Upper Inner Quadrant]	Alt + 1	To display the upper inner quadrant of the bilateral mammography images. This will automatically adjust the zoom ratio to fit the whole window

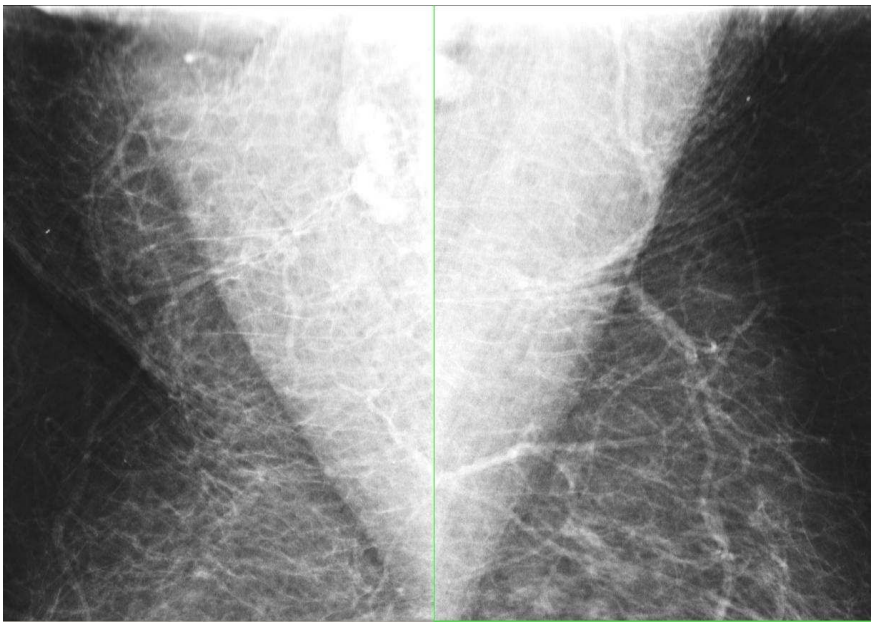


Fig-19

[Lower Inner Quadrant] Button

Pop-Up Menu	Hot Key	Function
[Size/Zoom]/[Lower Inner Quadrant]	Alt + 2	To display the lower inner quadrant of the bilateral mammography images. This will automatically adjust the zoom ratio to fit the whole window.

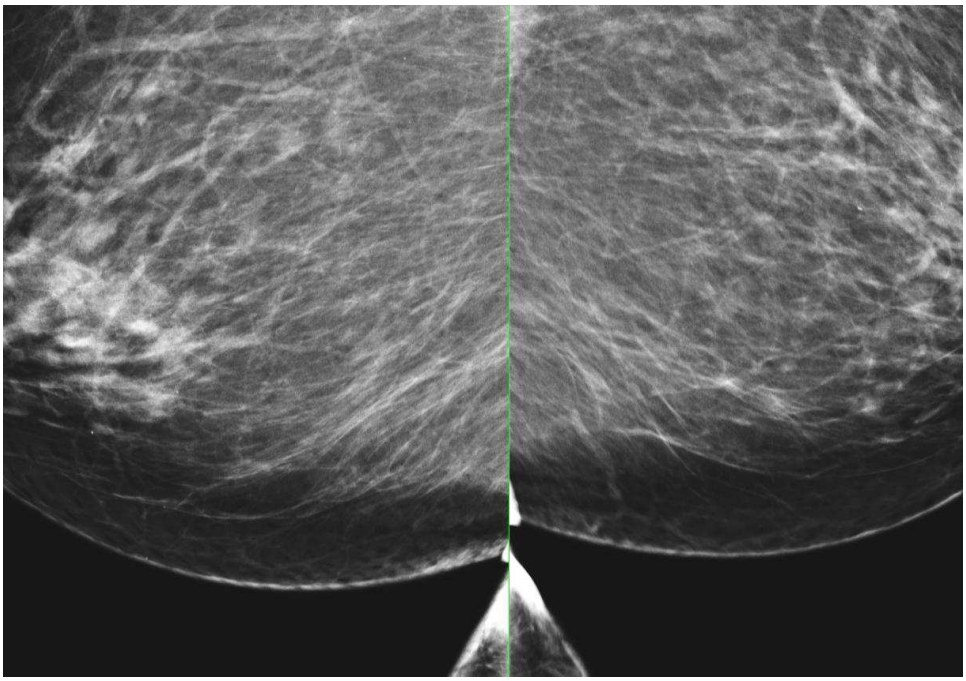


Fig-20

[Upper Outer Quadrant] Button

Pop-Up Menu	Hot Key	Function
[Size/Zoom]/[Upper Outer Quadrant]	Alt + 3	To display the upper outer quadrant of the bilateral mammography images. This will automatically adjust the zoom ratio to fit the whole window.

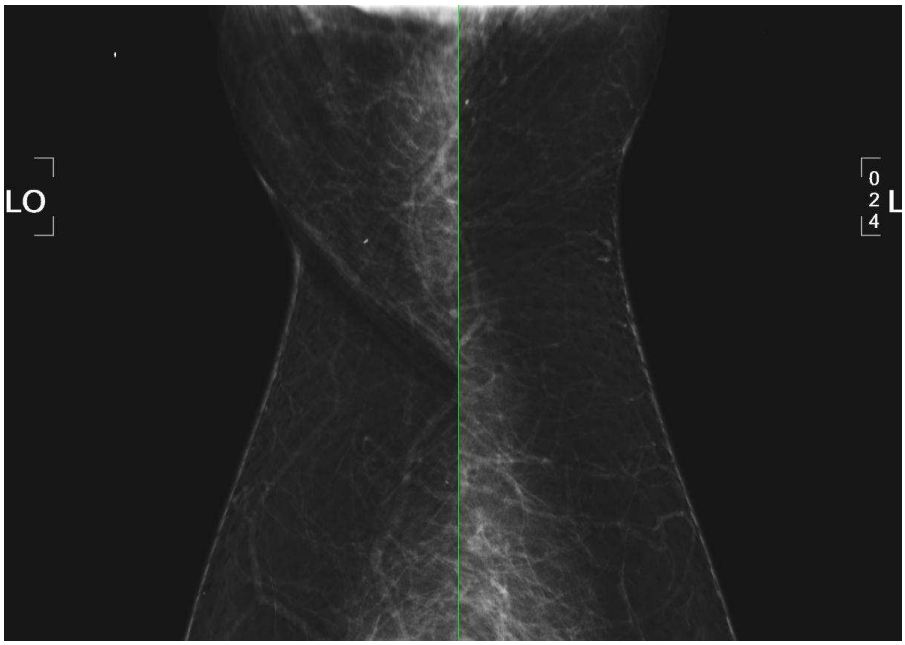


Fig-21

[Lower Outer Quadrant] Button

Pop-Up Menu	Hot Key	Function
[Size/Zoom]/[Lower Outer Quadrant]	None	To display the lower outer quadrant of the bilateral mammography images. This will automatically adjust the zoom ratio to fit the whole window.

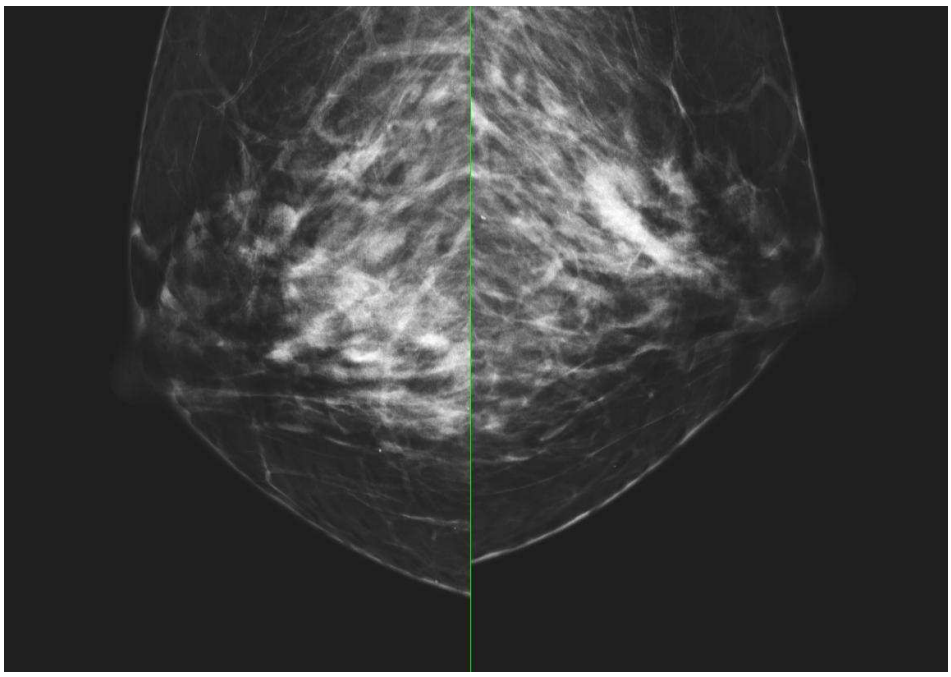


Fig-22

[Align Right] Button

Pop-Up Menu	Hot Key	Function
[Size/Zoom]/[Align Right]	Alt + →	To align the image to the right direction. If the image doesn't have DICOM information to configure hanging protocol, user can arrange the image position first and use the function to fit user's mammo diagnostic preference. This is often used for CR mammo images.

Fig-23 is Fuji mammo CR images. Images are arranged to the opposite position first.

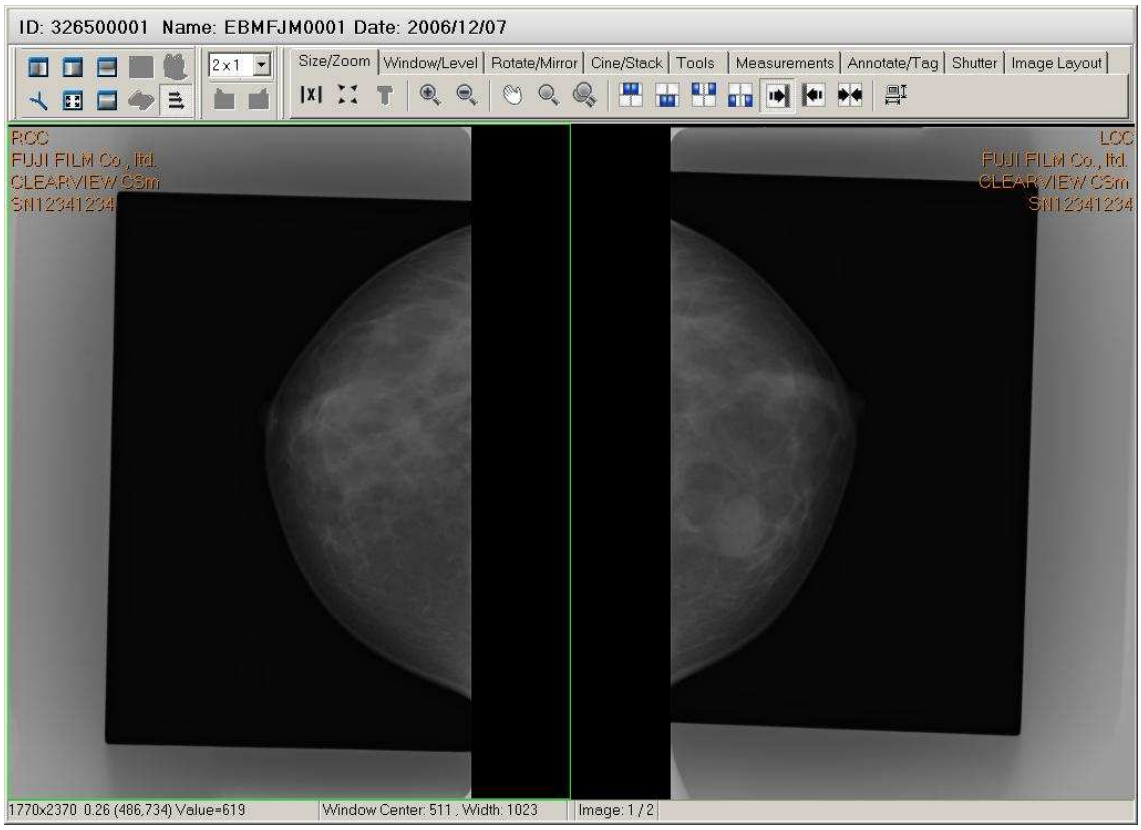


Fig-23

We choose the RCC image first and press the [Alight Right] button. The result shows like fig-24.

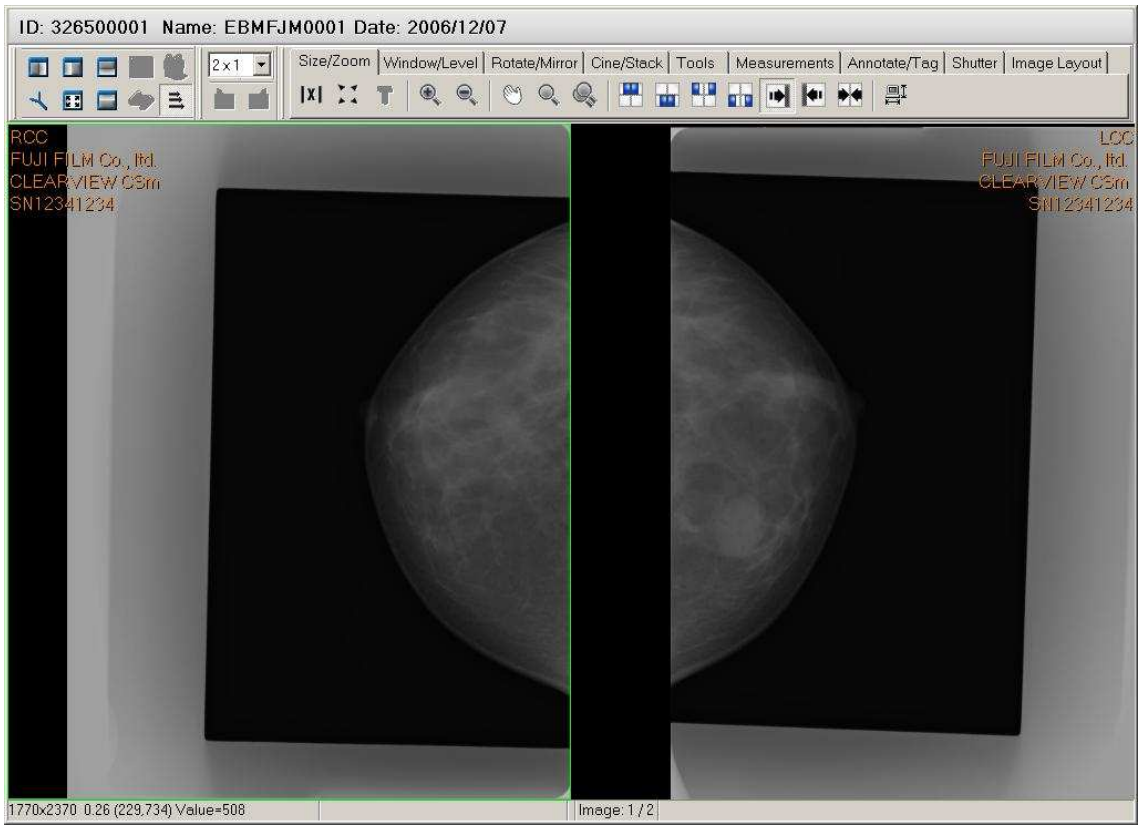


Fig- 24

[Align Left] Button

Pop-Up Menu	Hot Key	Function
[Size/Zoom]/[Align Left]	Alt + ←	To align the image to the left direction. If the image doesn't have DICOM information to configure hanging protocol, user can arrange the image position first and use the function to fit user's mammo diagnostic preference. This is often used for CR mammo images.

This is also exemplified using Fig- 23. When we choose the LCC image first and press the [Alight Left] button. The result is as Fig-25.

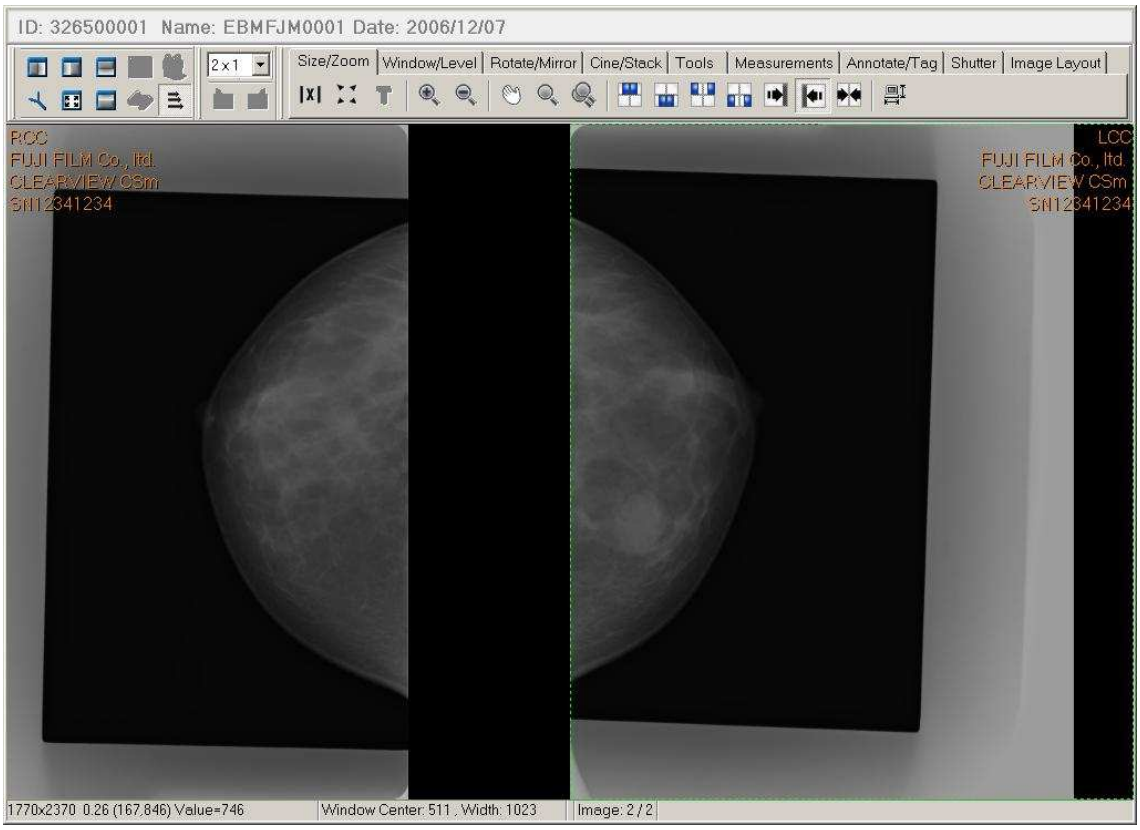


Fig-25

[Align Horizontal Center] Button

Pop-Up Menu	Hot Key	Function
[Size/Zoom]/[Align Horizontal Center]	Alt + 5	To align the image to the center direction. If the image doesn't have DICOM information to configure hanging protocol, user can arrange the image position first and use the function to fit user's mammo diagnostic preference. This is often used for CR mammo images.

This is also exemplified using fig-23. When we choose any image of the viewport and press the [Align Horizontal Center] button the result is as shown in fig-26.

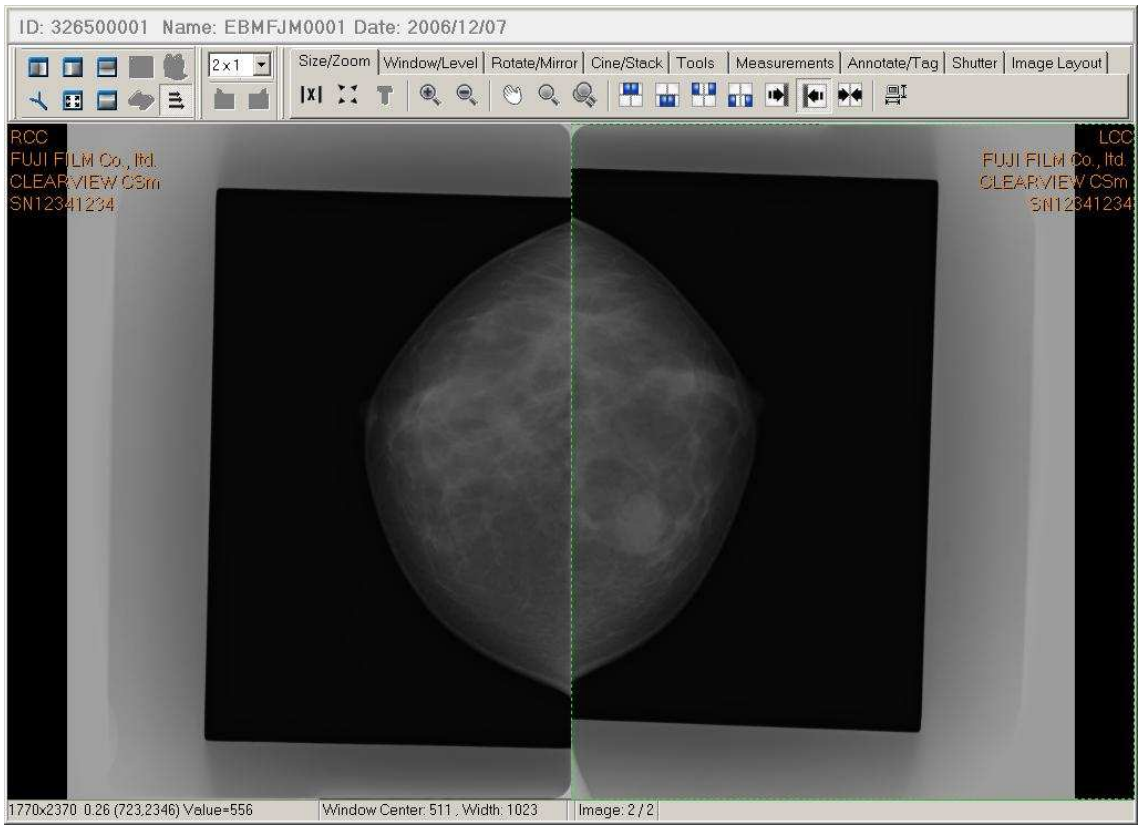


Fig-26

Monitor Calibration

Pop-Up Menu	Hot Key	Function
[Size/Zoom]/[Monitor Calibration]	None	Calibrate actual monitor display size.

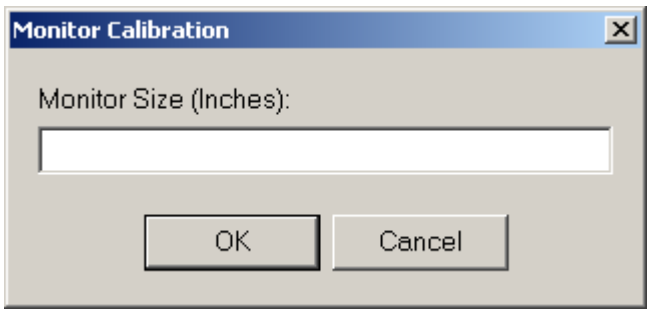


Fig-19

Input the actual monitor display size in inches and press OK button.

5.3 [Window/Level] Tab

Fig-20

Left click on the **[window/level]** tab, the buttons for the window/level setting will show.

Restore

Pop-Up Menu	Hot Key	Function
[Window/Level]/[Reset]	ESC	This will set the setting back to the default value

Window/Level

Pop-Up Menu	Hot Key	Function
[Window/Level] / [Window Level]	None	Use left drag & drop to control Window/level setting (brightness /contrast)

When this button is on the mouse cursor is changed. Point the cursor to the desired window. Use left drag & drop to change setting of window's level (brightness) and window's width (contrast). The setting depends on the drag direction.

Drag the mouse upward: width decrease, contrast increase
Drag the mouse downward: width increase, contrast decrease
Drag the mouse to right: level decrease, brightness increase
Drag the mouse to left: level increase, brightness decrease

Note It doesn't matter which button, if use right drag & drop, the user always can change the setting of the window/level setting. Right click on icon to change the right drag & drop function direction of **[Window/Level]** default.

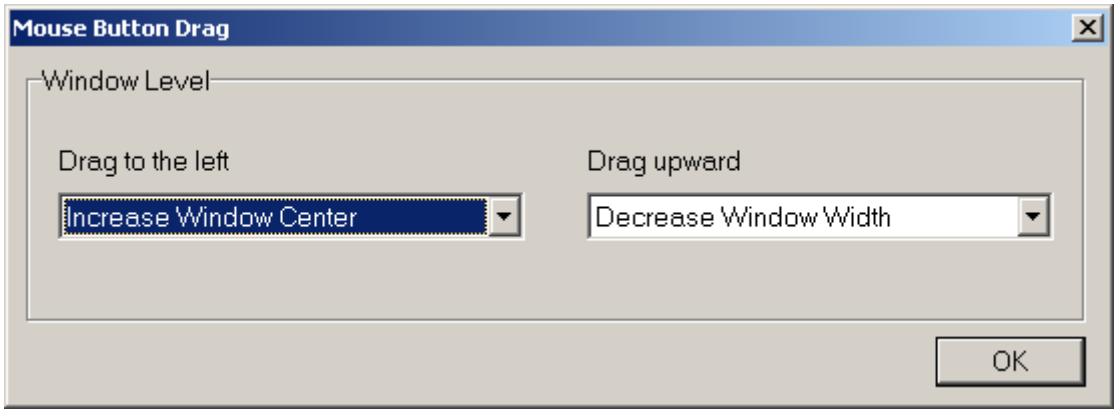
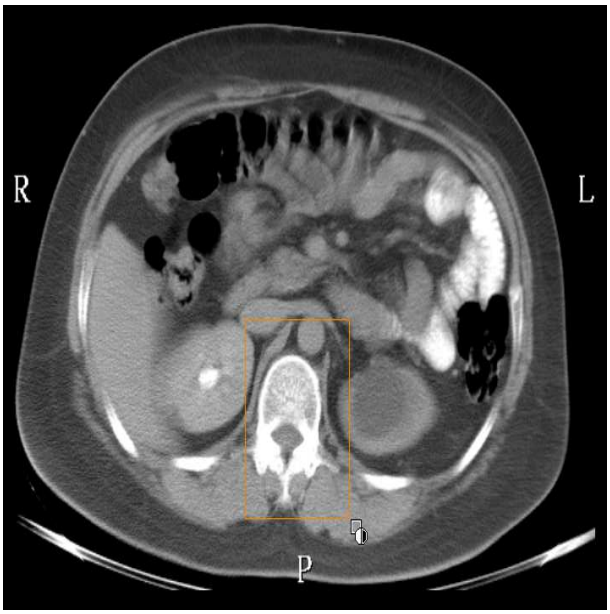


Fig-21

After the above dialogue shown, please select the default setting of **"Drag to the left"** and **"Drag upward"**. Then click on **[OK]**, every default been changed will save to server for each user.

ROI W/L

Pop-Up Menu	Hot Key	Function
[Window/Level]/[ROI Window Level]	None	Use the left button of the mouse to drag it will automatically adjust the Window/level setting



Press on this button, use left drag & drop to box in attention area (ROI), and then the dragging box calculates the fittest window/level pixels for the area after mouse button released. The whole image will automatically adjust the window/level setting.

Fig-22

Polarity

Pop-Up Menu	Hot Key	Function
[Window/Level]/[Polarity]	P	To display image in negative or positive

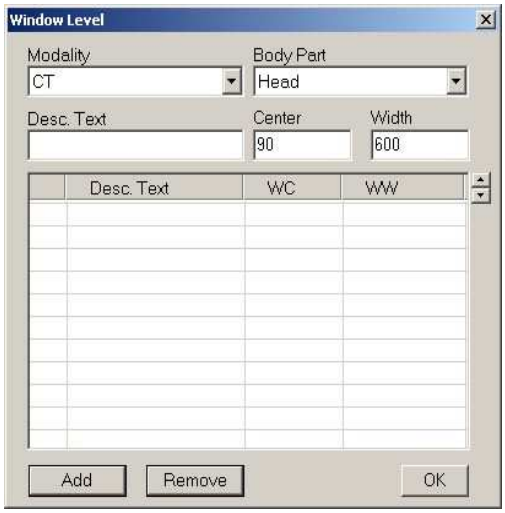
SIGMOID

Pop-Up Menu	Hot Key	Function
[Window/Level]/ [SIGMOID]	O	To adjust window level to S shaped

… Window/Level Template

Pop-Up Menu	Hot Key	Function
None	[F1] ~ [F10]	Change the default window/level template setting

Preset the window/level image representation by left click on particular button.
The preset value, user info, and modalities are saved in the server. Before changing the preset, user is using the server default value, but it can be changed.
Right click on particular button, and then left click on **[Setup]** in poll down menu.



When this dialog shows, input the **"Center"** and **"Width"** value and left click on **[Add]** button, and then **[OK]** button. To save the new value in server, right click to show pop-up menu and select **[File] / [Save Profile]**.

The following eighth hot key is automatic preset and named for default template.

1st Hot Key : [Fn] key (According to different body part from F1 to F10)
2nd Hot Key : [Ctrl] + [Fn]
3rd Hot Key : [Alt] + [Fn]

4th Hot Key : [Shift] + [Fn]
5th Hot Key : [Ctrl] + [Alt] + [Fn]
6th Hot Key : [Ctrl] + [Shift] + [Fn]
7th Hot Key : [Alt] + [Shift] + [Fn]
8th Hot Key : [Ctrl] + [Alt] + [Shift] + [Fn]

5.4 [Rotate/Mirror] Tab

Fig-23

After clicking on the [Rotate/Mirror] tab the buttons for rotating the image will show.

Restore

Pop-Up Menu	Hot Key	Function
[Rotate/Mirror]/[Restore]	ESC	After rotate or counter rotate, it returns to a default display state

Rotate Left

Pop-Up Menu	Hot Key	Function
[Rotate/ Mirror]/[Rotate Left]	L	Rotate counter clockwise 90 degree

Rotate 180

Pop-Up Menu	Hot Key	Function
[Rotate/ Mirror]/[Rotate 180]	None	Rotate 180 degree

Rotate Right

Pop-Up Menu	Hot Key	Function
[Rotate/ Mirror]/[Rotate Right]	R	Rotate clockwise 90 degree

Horizontal Mirror

Pop-Up Menu	Hot Key	Function
[Rotate/ Mirror]/[Horizontal Mirror]	H	Image on the right will go to left and vice versa

Vertical Mirror

Pop-Up Menu	Hot Key	Function
[Rotate/ Mirror]/[Vertical Mirror]	V	An image display is reversed up and down.

5.5 [Cine/Stack] Tab

Fig-24

After click on the **[Cine/Stack]** tab, the dynamic scene and the stack display of the series image is displayed.

Previous frame

Pop-Up Menu	Hot Key	Function
[Cine/Stack]/[Prev Frame]	Ctrl + ←	When loop reproduction of a multi-frame image has stopped, or the series images are being indicated by the stack, this button will go to previous frame.

Pause

Pop-Up Menu	Hot Key	Function
[Cine/Stack]/[Play/Pause]	Space Bar	When multi frame images playing in the loop it can pause it.

Next frame

Pop-Up Menu	Hot Key	Function
[Cine/Stack]/[Next Frame]	Ctrl + →	When multi frames image playing in the loop and the user pause it, this button can take the user to next frame. When a stack of series images are playing, this can take the user to next frame

Note Instead of using the three above-mentioned buttons, uses left click and drag can also stop loop playing and change tomography frame forward and backward.

Increase

Pop-Up Menu	Hot Key	Function
[Cine/Stack]/[Increase Frame Rate]	Ctrl + ↑	When multi frames image is showing it will increase the frame rate

Default Frame Rate

Pop-Up Menu	Hot Key	Function
[Cine/Stack] / [Default Frame Rate]	None	Set the loop play, frame rate back to the default setting

Decrease

Pop-Up Menu	Hot Key	Function
[Cine/Stack] / [Decrease Frame Rate]	Ctrl + ↓	When multi frames image is showing it will decrease the frame rate

Normal loop

Pop-Up Menu	Hot Key	Function
[Cine/Stack] / [Normal Loop]	None	Loop in the normal direction

Reverse loop

Pop-Up Menu	Hot Key	Function
[Cine/Stack] / [Reverse Loop]	None	Loop in the counter direction

Sweep

Pop-Up Menu	Hot Key	Function
[Cine/Stack] / [Sweep]	None	Play in the sweep mode

5.6 [Tools] tab

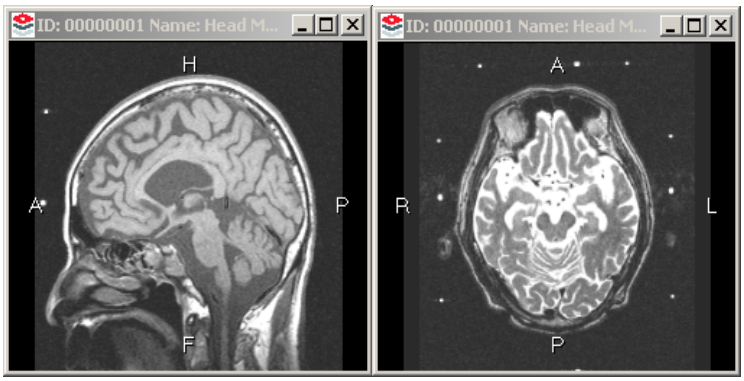
Fig-25

Left click on **[Tools]** tab, tools function will enable.

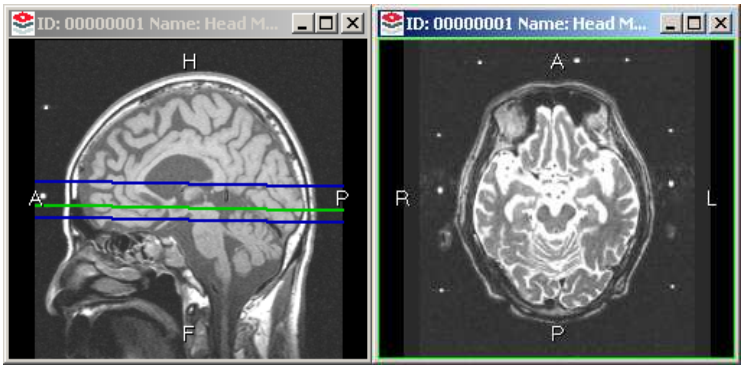
Intersection Lines (cut line display)

Pop-Up Menu	Hot Key	Function
[Tools]/[Intersection Lines]	Ctrl+L	Cut Line Display

When the series image related spatially is displayed by 2 or more sets of stacks, an intersection line can be displayed on the either or both. An intersection line expresses the transection position on the series image window related to another side as a line.



To display an intersection line in left hand side window, use [Ctrl+ L] key or left click on icon to activate it.

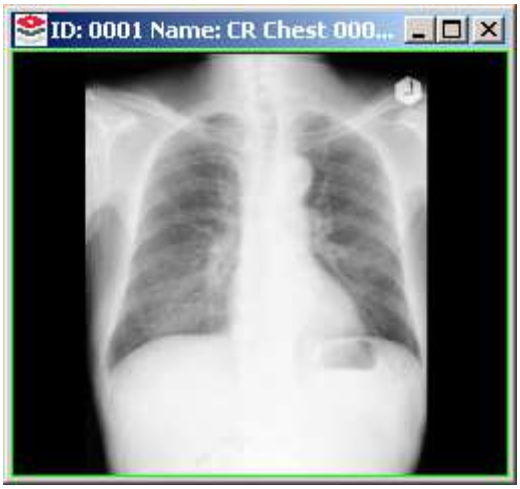


Left click on right hand window, and the transection position will show green line in left hand window. It also shows transection range by two blue lines.

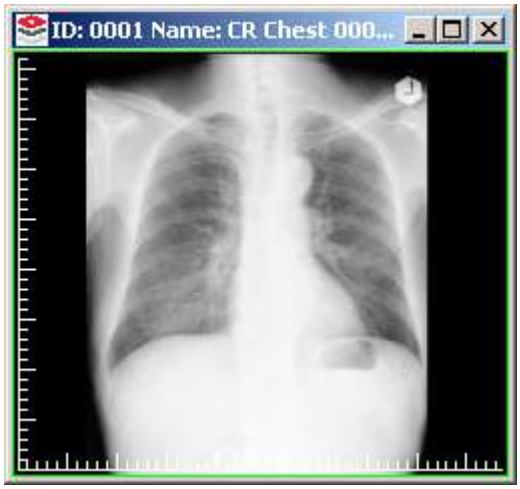
Use [←] or [→] key on image window or left drag to change tomography display, and the tomography position of the image frame currently displayed is reflected in the highlight of intersection lines. To cancel intersection lines display, use [Ctrl+L] or left click on icon on the image window while it is made active.

Show Ruler

Pop-Up Menu	Hot Key	Function
[Tools]/[Show Ruler]	Ctrl+R	Display 1cm scale ruler to left and lower side of the image



Show Ruler OFF



Show Ruler ON

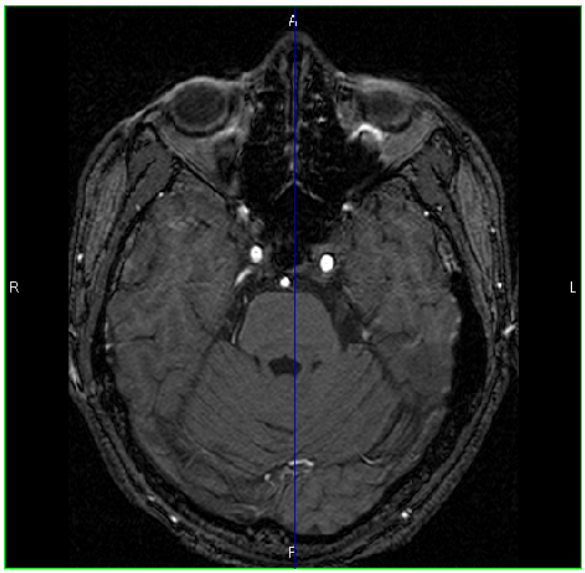
Slicer (MPR slice creation)

Pop-Up Menu	Hot Key	Function
[Tools]/[Slicer]	None	To create MPR rectangular section slice image

Choose a series image and left double click on a reference page for inspection, and image of one series is displayed.

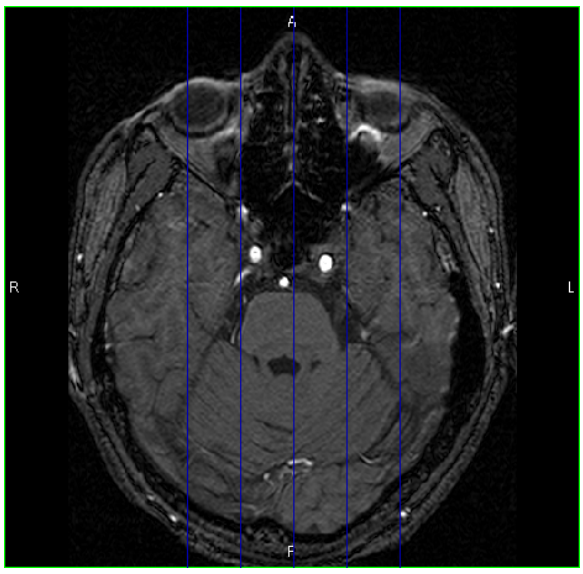
Left click on [Tools] tab, then icon.

Note The series image to be performed a MPR slice creation must be continuously and has same body part tomography, transaction direction, and distance interval as well.



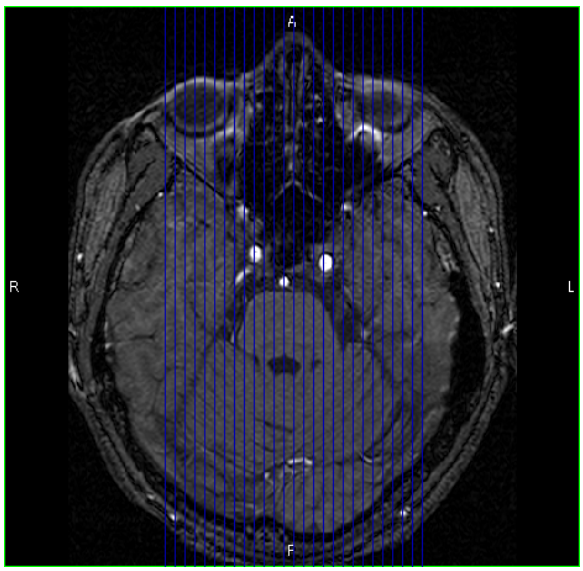
Left drag and drop to determine and change the main slice position of the MPR slice angle. A blue line is displayed during mouse drag operation.
It becomes the position which intersects perpendicularly slice of MPR center to this line created.

Fig-25



Then, move mouse cursor on image, two or more blue lines will be displayed and the width will be changed. The blue line of both ends define as a section of the MPR slice image.

Fig-26



If the wheel of a mouse is rotated, the number of the blue lines displayed will change. The slice interval of the MPR slice created by this operation is determined. When the wheel is not attached to the mouse which you are using, the interval of a slice can be adjusted by pushing the [+] key and the [-] key.

Fig-27

If the above adjustment finishes and the position of a MPR slice, width, and an interval are decided, left click image will launch another program window to show new MPR slice images.

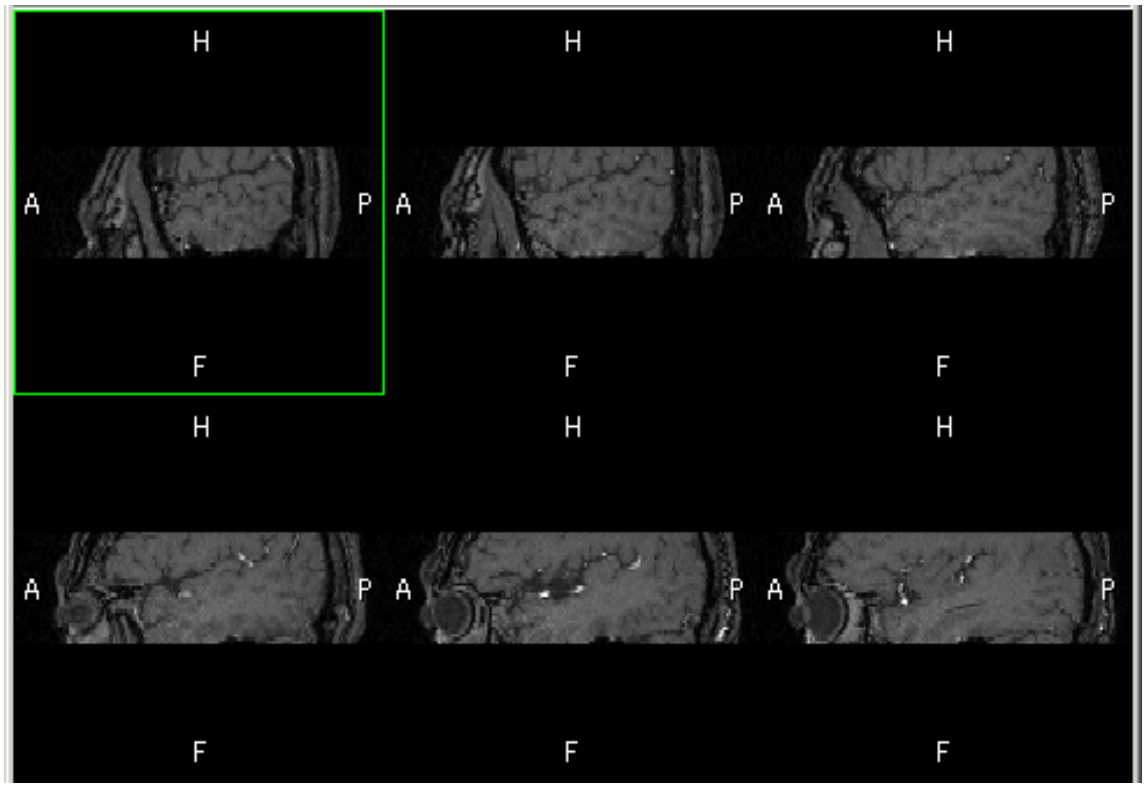
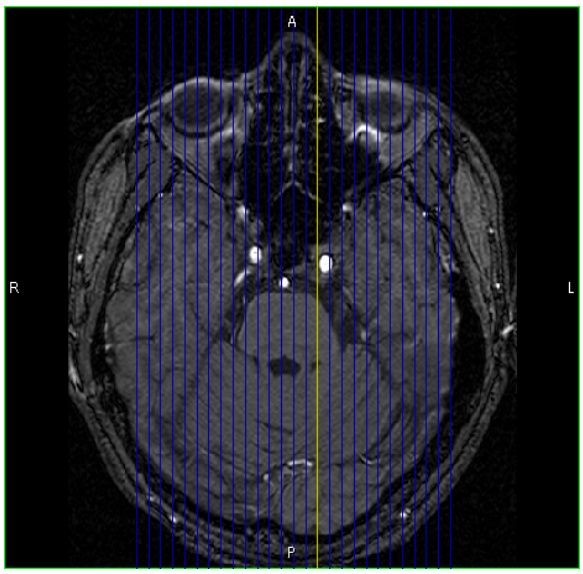


Fig-28

If a mouse cursor is moved on the former picture before MPR slice creation, a yellow line will appear and a cursor position will move in connection with a mouse cursor.



Use left drag to show the image position of the rectangular slice section. While drag the mouse, the intersection line will be shown in yellow (Fig-29) and related rectangular slice will show in green dotted line frame (Fig-30).

Fig-29

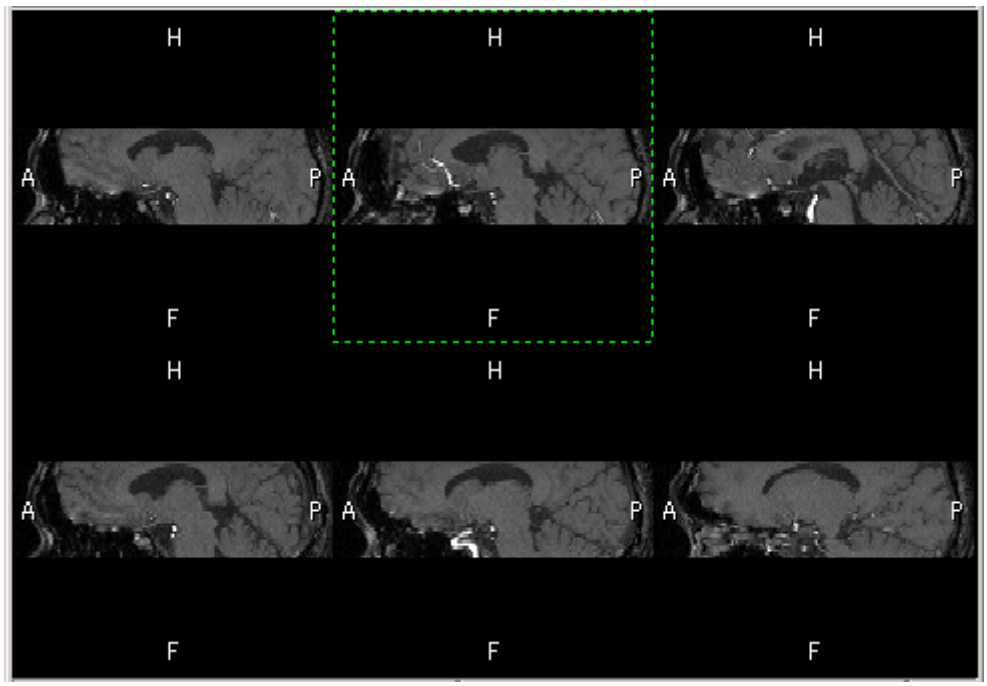


Fig-30

If a slice image is chosen with a mouse left button on the program window where the MPR slice is displayed, the position of the slice picture is shown by green line on a former picture.

Find Intersecting Images

Pop-Up Menu	Hot Key	Function
[Tools]/[Find Intersecting Images]	None	Use the mouse cursor to point the intersecting line and display the images representing the intersecting line

Split Stack

Pop-Up Menu	Hot Key	Function
[Tools]/Spilt Stack]	None	Split stack in 3 different views

Clone Image

Pop-Up Menu	Hot Key	Function
[Tools]/[Clone Images]	D	To clone the existing image and display on the viewer

Subtraction

Pop-Up Menu	Hot Key	Function
[Tools]/[Subtraction]	None	This will display grayscale image in a Subtraction Mode.

Subtraction Display is calculated as the following.

"Display Frame" = "Contrast Frame" ─ "Mask Frame"

The "Contrast Frame" is the original Image that has the original frame data. You can change the [Mask Frame] by changing it in the [Subtraction] dialog box to adjust the image displayed.

SR Report

Pop-Up Menu	Hot Key	Function
[Tools]/[SR Report]	Y	To create a simple text report and store on DICOM Server with SR (Basic Text SR) format.

Audio Report

Pop-Up Menu	Hot Key	Function
[Tools]/[Audio Report]	U	To record the report verbally and store on DICOM Server

Option

Pop-Up Menu	Hot Key	Function
[Tools]/[Option]	Ctrl+O	To setup mouse and arrow keys function

5.7 [Measurements] Tab

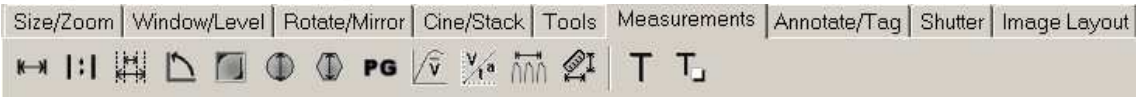


Fig-31

After left click on the **[Measurements]** tab, all possible measurement buttons on the image will show.

Note If each measurement explained in this chapter is performed, a measurement result (digital data) will be automatically copied to the clip board of MS Windows. After perform the measurement, the value can be carried out and paste to other application program window immediately.

Note Use **Ctrl +Z** key to undo the last measurement had been made.

Note After the measurement is operated, the position of measurement value can be moved by mouse left drag operation.

Caliper

Pop-Up Menu	Hot Key	Function
[Measurements]/[Caliper]	None	Measure the distance between two points in the image

Use left drag & drop will measure the start of the dragging point to the end point. If space correction information carried in DICOM image data (pixel's scale factor), the measuring result will in CM, otherwise result will be in pixel.

Ratio

Pop-Up Menu	Hot Key	Function
[Measurements]/[Ratio]	None	Compare two distance and put it in ratio form

Use left drag & drop two times to draw two measurement lines. The first measurement line called "A" and the second one is "B".

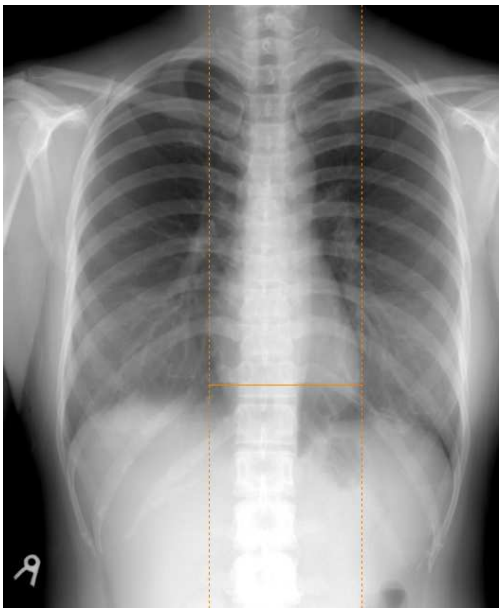
After line B finished drag, it will calculate the ratio and display result for A/B and B/A beside line B. The B/A ratio will display in the parentheses (). Furthermore, length of line A & B will be display also. Line B length will display in the parentheses ().

If want to drag 3rd comparison, hold down **[Shift]** key and drag mouse again, the ratio result will base on 1st line A and can be measured continuously.

CTR

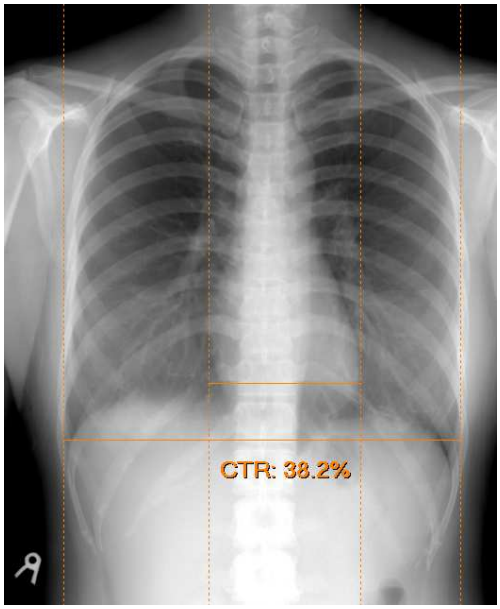
Pop-Up Menu	Hot Key	Function
[Measurements]/[CTR]	None	The ratio of heart and chest in horizontal diameter is measured as CTR(%).

The mouse curser will become a cross while CTR button is activated. Use left drag & drop two times to perform the measurement.



Use left drag & drop to draw a horizontal diameter line crossing the heart at the first time.

While left click at the edge of the heart in horizontal, the first perpendicular line that passes starting point is displayed in dot. The second perpendicular and solid horizontal line will display. Release mouse at another edge to determine a heart horizontal diameter.



Use left drag & drop to draw a horizontal diameter line crossing the chest at the second time.

Use the same way to draw a horizontal diameter crossing through the widest contour of chest. After release mouse at the second edge of chest, the CTR value will be calculated comparing to heart horizontal diameter in %.

Follow the above-mentioned method to do the measurement over again.

Angle

Pop-Up Menu	Hot Key	Function
[Measurements]/[Angle]	None	Measure the angle between two lines.

Use left drag & drop two times to draw two lines.
The angle value of two segment lines is degree° and complementary angle is displayed in a parenthesis().
If want to drag 3rd comparison, hold down **[Shift]** key and drag mouse again, the angle will base on 1st dragging related and can be measured continuously.

Rectangular

Pop-Up Menu	Hot Key	Function
[Measurements]/ [Rectangular]	None	Measure the selected area and show the average pixel value in square

Use left drag & drop to select the measuring box area. If space correction information carried in DICOM image data (pixel's scale factor), the measuring result will in cm^2 (sq cm) and the average pixel value will show behind, otherwise it will display only in $pixel^2$ (sq pixel).

Circular

Pop-Up Menu	Hot Key	Function
[Measurements]/[Circular]	None	Measure the selected area and show the average pixel value in square

Use left drag & drop to select the measuring ellipse area. If space correction information carried in DICOM image data (pixel's scale factor), the measuring result will in cm^2 (sq cm) and the average pixel value will show behind, otherwise it will display only in $pixel^2$ (sq pixel).

Polygonal

Pop-Up Menu	Hot Key	Function
[Measurements]/[Polygonal]	None	Measure the selected area and show the average pixel value in square

Use left drag & drop to select the measuring freehand (polygonal) area. If space correction information carried in DICOM image data (pixel's scale factor), the measuring result will in cm^2 (sq cm) and the average pixel value will show behind, otherwise it will display only in $pixel^2$ (sq pixel).

Polygonal

Pop-Up Menu	Hot Key	Function
[Measurements]/[Pressure Gardient]	None	

Average Velocity

Pop-Up Menu	Hot Key	Function
[Measurements]/[Average Velocity]	None	The average flow velocity measured on Ultrasound Doppler Spectrum.

By tracing on an Ultrasound Doppler Spectrum image (mouse drag operation), the time of both ends, move distance, and the average flow velocity are measured. Respectively, the result will be display in time (Sec), move distance (cm), the average flow velocity (cm/S). Move distance expresses Flow Distance.

Acceleration

Pop-Up Menu	Hot Key	Function
[Measurements]/ [Acceleration]	None	The acceleration measured on Ultrasound Doppler Spectrum.

When the mouse cursor is dragged over the Ultrasound Doppler Spectrum image, this function measures the time (Sec), flow velocity (cm/sec), and acceleration (cm/sq sec) between two points.

Heart Rate

Pop-Up Menu	Hot Key	Function
[Measurements]/ [Heart Rate]	None	The heart rate measured on Ultrasound Doppler Spectrum or M-Mode image.

This function measures the time between two points on the Ultrasound Doppler Spectrum image or M-Mode image, and converts it to the heart rate in BPM (beat per minute). Please measure the width for two cardiac cycles. Please notice the measurement is not one but two cardiac cycles.

Calibration

Pop-Up Menu	Hot Key	Function
[Measurements]/ [Calibration]	None	It proofreads in order to perform distance and area measurement.

If there is no space correction information carried in DICOM image data (pixel's scale factor), the distance and area measurement value unit will be displayed in pixel. After **[Calibration]** function has been performed, the measurement will be in cm or cm^2. But the exactly length must be given in that image to perform calibration.
After left click on **[Calibration]** button, mouse cursor will become a "+" mark. Use left drag & drop to draw a line on a given length in image window and the following dialogue window will show up.

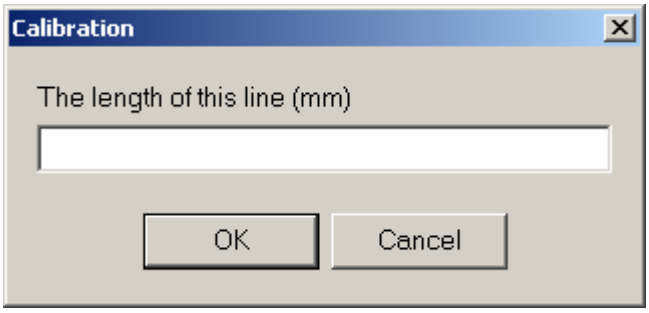
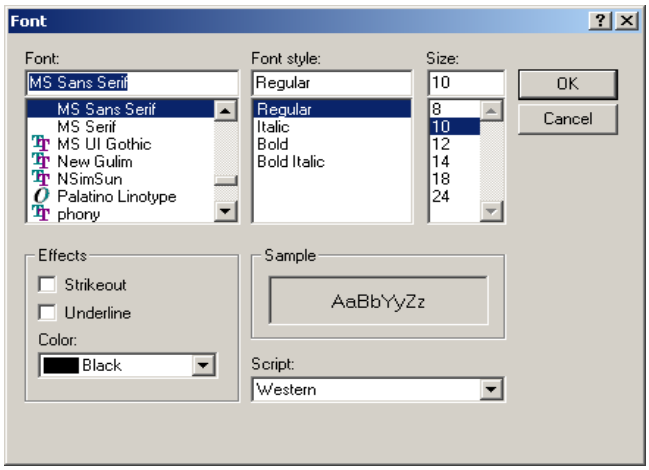


Fig-32

Input the exact length value of the drawing line in mm and left click on **[OK]**. After that, the calibration line will disappear, and all the measurement value will be display in cm or cm^2.

Font

Pop-Up Menu	Hot Key	Function
[Measurements]/[Font]	None	Select the font to display the measurement result



In the dialog on the left, select the font type, style, and size then press OK. And from now on all the measurement result will display using the font that user choose. If want to save this as the preset value in the server, right click on the mouse and select **[File/Save Profile]** from the Pop-Up Menu.

Fig-33

Edit

Pop-Up Menu	Hot Key	Function
[Measurements]/[Edit]	None	After the measure use this button to erase the all the measurement or part of it.

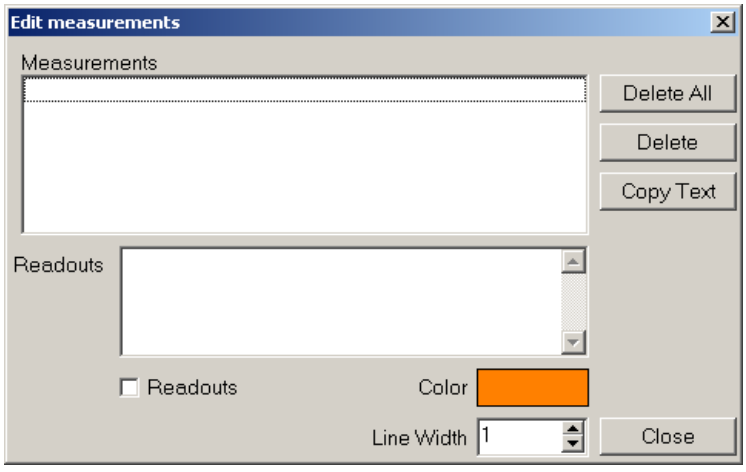


Fig-34

Select the measurement list from the dialog and click on **[Delete]** to delete, or modify in **"Text"** area, or check "Text" box to display measurement or not, or change color and line width.

If **[Delete All]** button is pressed, all the annotations will be erase.

5.8 [Annotate/Tag] Tab

Fig-35

Left click on the **[Annotate/Tag]** tab, all the operation buttons for annotation and tag will show.

Although neither what draw as Annotate, nor the inputted comment is saved to a server, it can be copying to a clip board together with an image, or being carrying out file preservation by the format of JPEG etc., and sticking on a report etc. with other applications.

Note Use **Ctrl +Z** key to undo the last annotation had been made.

Note After the measurement is operated, the position of measurement value can be moved by mouse left drag operation.

Arrow Anchor

Pop-Up Menu	Hot Key	Function
[Annotation]/[Arrow Anchor]	None	Draw a line with arrowhead only on the image.

Use left drag & drop to point mouse cursor on image and the arrowhead will point to the 1st click place.

Line Anchor

Pop-Up Menu	Hot Key	Function
[Annotation]/[Line Anchor]	None	Draw a line on the image, and add comment on it.

Left click mouse and drag, the line will draw from the start point to the end point. Then the text box will show. Type the comment in the text box then press Enter Key. If the comment are not necessary just hit the Enter Key without typing anything.

Arrow and Text

Pop-Up Menu	Hot Key	Function
[Annotation]/[Arrow and Text]	None	Draw arrow mark on the image, and add comment on it.

Left click mouse and drag, the line will be drawn from the start point to the end point. Then the text box will show. Type the comment in the text box then press Enter Key. If the comment are not necessary just hit the Enter Key without typing anything.

Rectangular Box

Pop-Up Menu	Hot Key	Function
[Annotation]/[Rectangular Box]	None	Draw box on the image, and add comment on it.

Left click mouse and drag, and the line will draw from the start point to the end point. Then the text box will show. Type the comment in the text box then press Enter Key. If the comment are not necessary just hit the Enter Key without typing anything.

Circular Box

Pop-Up Menu	Hot Key	Function
[Annotation]/[Circular Box]	None	Draw oval on the image, and add comment on it.

Left click mouse and drag, and the line will draw from the start point to the end point. Then the text box will show. Type the comment in the text box then press Enter Key. If the comment are not necessary just hit the Enter Key without typing anything.

Polygonal Box

Pop-Up Menu	Hot Key	Function
[Annotation]/[Polygonal Box]	None	Draw polygon on the image, and add comment on it.

Left click mouse and drag to trace the polygon. Then the text box will show. Type the comment in the text box then press Enter Key. If the comment are not necessary just hit the Enter Key without typing anything.

Text

Pop-Up Menu	Hot Key	Function
[Annotation]/[Text]	None	Add comment on the image with text box

Left click mouse anywhere on the image, and the text box will show. Type the comment then press Enter.

Spine Labeling

Pop-Up Menu	Hot Key	Function
[Annotation]/[Spine Labeling]	None	To label each spine in order without manually typing

Font

Pop-Up Menu	Hot Key	Function
[Annotation]/[Font]	None	Select the annotation used font

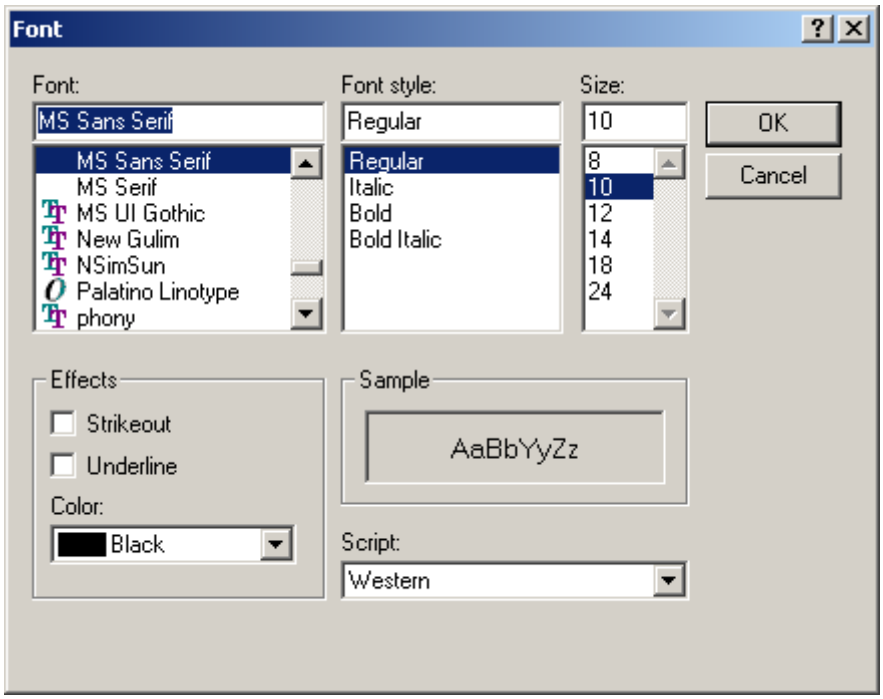
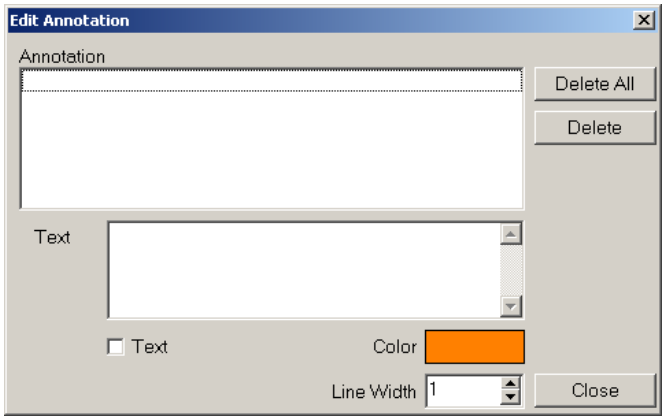


Fig-36

In the dialog on the left, select the font type, style, and size then press OK. And from now on all the annotation will display using the font that user chooses. If want to save this as the preset value in the server, right click on the mouse and select **[File]/[Save Profile]** from the Pop-Up Menu.

Edit List

Pop-Up Menu	Hot Key	Function
[Annotation]/[Property]	None	To erase all the annotation or part of the annotation.

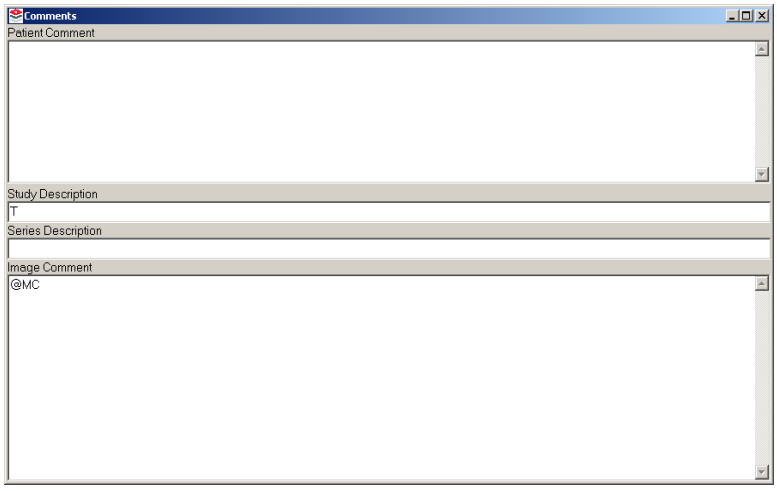


Select the annotation list from the dialog and click on **[Delete]** to delete, or modify in **"Text"** area, or check "Text" box to display annotation or not, or change color and line width.
If **[Delete All]** is pressed, all the annotations will be erase.

Fig-37

Comments

Pop-Up Menu	Hot Key	Function
None	Ctrl+T	Show doctor's comments with the patient.



Patient Comment

Study Description
Series Description

Image Comment

Fig-37

Attention All of the comments are not able to added or edited.

Add/Remove Tag Label

Pop-Up Menu	Hot Key	Function
None	None	Display DICOM info. in selected 4 corners format of the patient image.

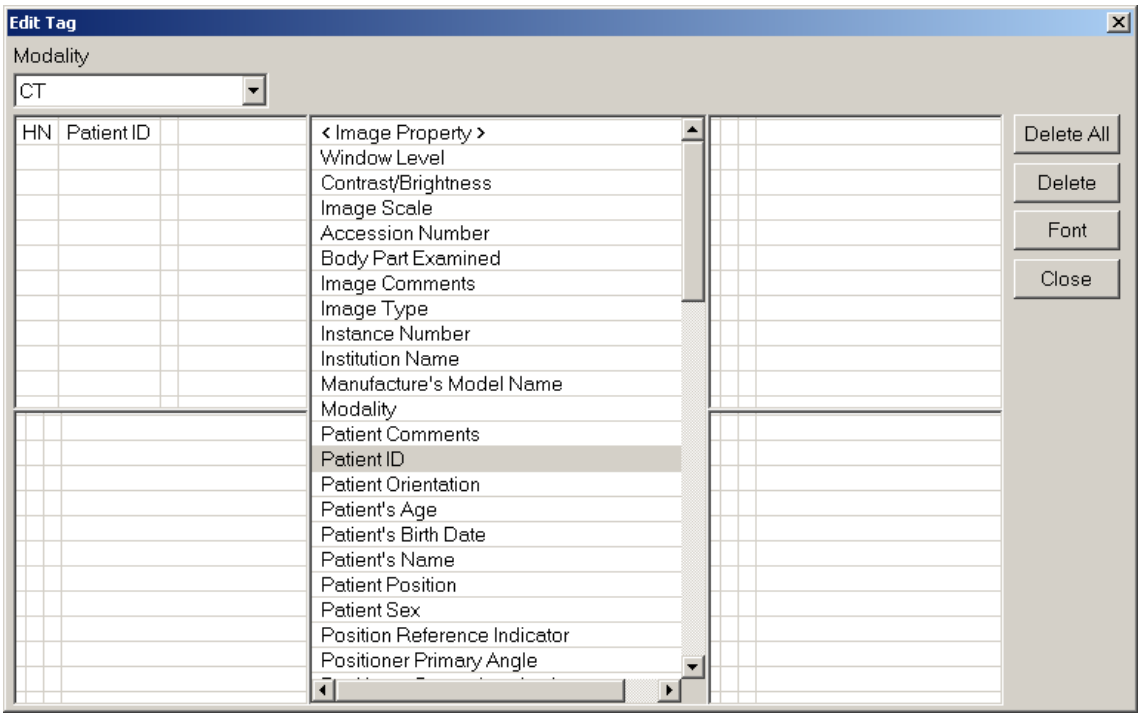


Fig-38

In the center of the dialog select the desired DICOM tag from the list. Four lists of surroundings show each corner of the image window. Use left drag and drop to pick particular DIOCM tag and drag to the position that wants to be displayed. It can be added a prefix (ex. HN, PN, Sex…) in front of tab by double click on it.

The setting of the tag display for each user and different modality is preserved.

If want to save this as the preset value in the server, use right click and select **[File] /[Save Profile]** from the Pop-Up Menu.

5.9 [Shutter] Tab

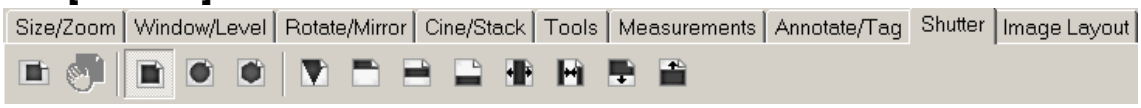


Fig-39

Click on the **[shutter]** tab, all the shutter setting buttons will show.

It uses for a shutter carrying out mask of the unnecessary portion, and indicate legible area of image. Although not saved to server, it can copy to the clipboard or save it as JPEG etc. file.

Restore

Pop-Up Menu	Hot Key	Function
[Shutter]/[Reset Shutter]	[ESC]	Clear shutter setting

Move Shutter

Pop-Up Menu	Hot Key	Function
[Shutter]/[Reset Shutter]	[ESC]	Clear shutter setting

Rectangular Shutter

Pop-Up Menu	Hot Key	Function
[Shutter]/[Rectangular Shutter]	None	Set a box shape shutter

Use left drag & drop to draw a rectangular domain. After the rectangle is set the area outside the rectangle will be masked.

Circular Shutter

Pop-Up Menu	Hot Key	Function
[Shutter]/[Circular Shutter]	None	Set a oval shape shutter

Use left drag & drop to draw an oval domain. After the oval is set the area outside the oval will be masked.

Polygonal Shutter

Pop-Up Menu	Hot Key	Function
[Shutter]/[Polygonal Shutter]	None	Set a polygon shape shutter

Use left drag & drop to draw a polygonal domain. After the polygon is set the area outside the polygon will be masked.

[V- Shape Shutter] Button

Pop-Up Menu	Hot Key	Function
[Shutter]/[V- Shape Shutter]	[None]	Set a v- shape shutter.n It can be used at MLO view.

The Shutter's area can be modified by the scroll of the mouse. See Fig- 126.

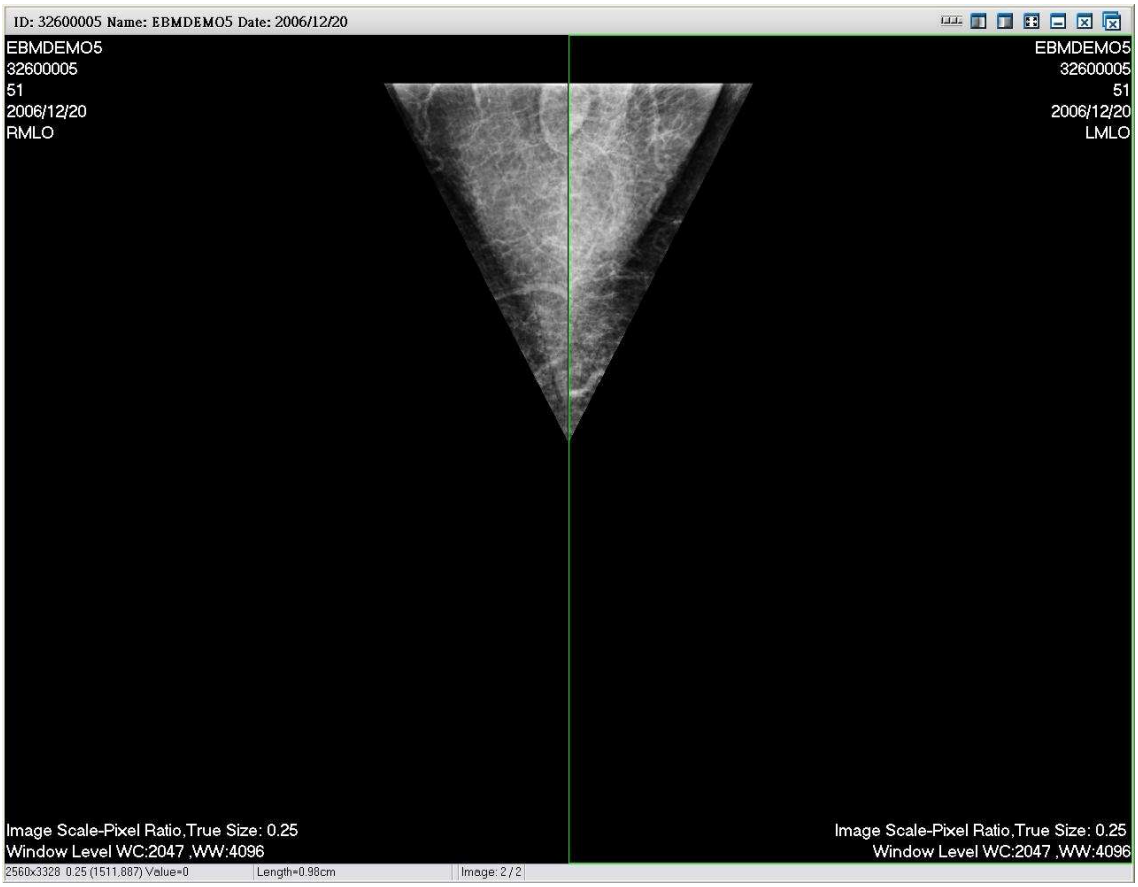


Fig-40

[Upper Shutter] Button

Pop-Up Menu	Hot Key	Function
[Shutter]/[Upper Shutter]	[None]	Set a upper shape shutter

The Shutter's area can be modified by the wheel of the mouse. See Fig- 41.

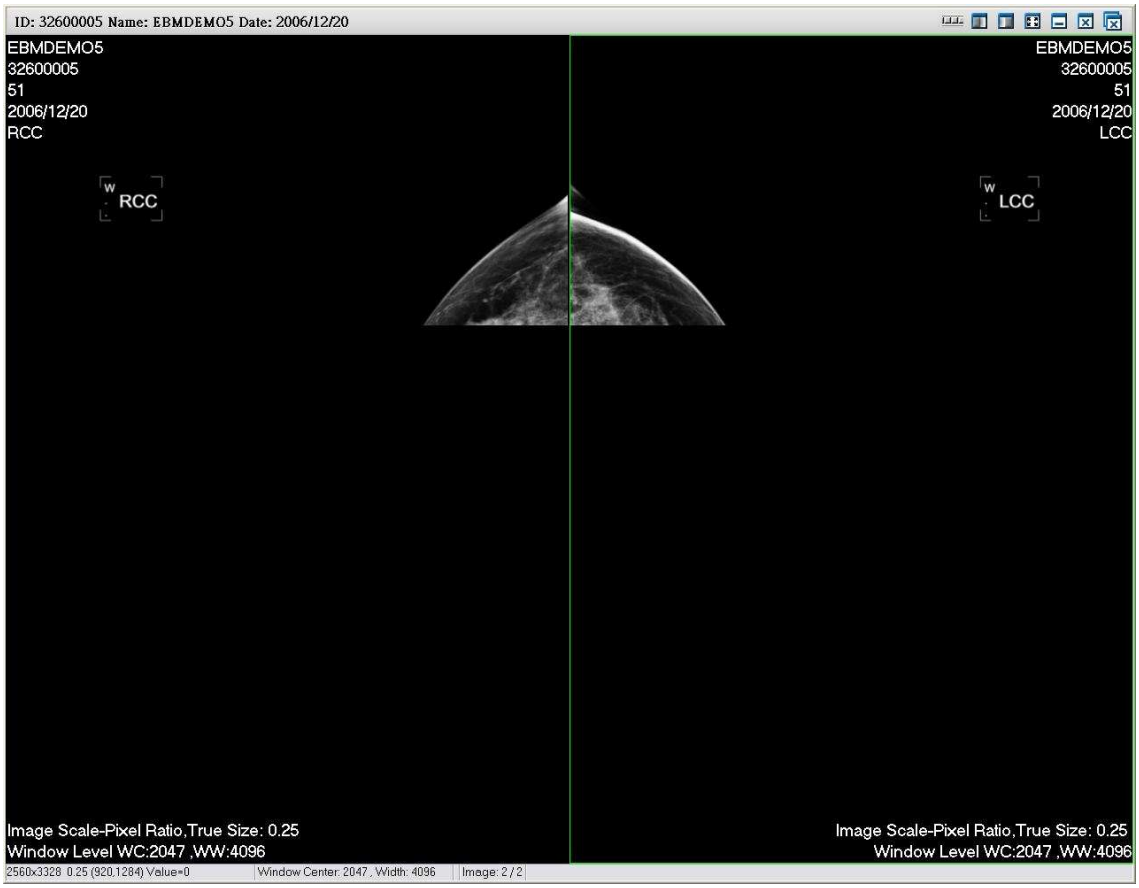


Fig-41

[Central Shutter] Button

Pop-Up Menu	Hot Key	Function
[Shutter]/[Central Shutter]	[None]	Set a central shape shutter

The Shutter's area can be modified by the scroll of the mouse.

[Lower Shutter] Button

Pop-Up Menu	Hot Key	Function
[Shutter]/[Lower Shutter]	[None]	Set a lower shape shutter

The Shutter's area can be modified by the scroll of the mouse.

[Inner Shutter] Button

Pop-Up Menu	Hot Key	Function
[Shutter]/[Inner Shutter]	[None]	Set a inner shape shutter

The Shutter's area can be modified by the scroll of the mouse.

[Outer Shutter] Button

Pop-Up Menu	Hot Key	Function
[Shutter]/[Outer Shutter]	[None]	Set a outer shape shutter

The Shutter's area can be modified by the scroll of the mouse.

[Upper Half Shutter] Button

Pop-Up Menu	Hot Key	Function
[Shutter]/[Upper Half Shutter]	[None]	Set a upper half shape shutter

The Shutter's area can be modified by the scroll of the mouse.

[Lower Half Shutter] Button

Pop-Up Menu	Hot Key	Function
[Shutter]/[Lower Half Shutter]	[None]	Set a lower half shape shutter

The Shutter's area can be modified by the scroll of the mouse.

5.10 [Image Layout] Tab

Fig-40

Left click on the **[Image Layout]** tab, default image layout buttons will show.

By left click on particular button will display patient images in different zone format.

[Auto Smart Layout] Button

Pop-Up Menu	Hot Key	Function
[Image Layout]/ [Auto Smart Layout]	Alt + A	According to the number of images, viewer will calculate the suit image layout automatically.

Maximization display

Pop-Up Menu	Hot Key	Function
None	Enter	Switch between max. zone and selected multi-zone image display

Switch the active image (surrounded by the green frame) to maximum display and previous display layout by left click on this button or **[Enter]** key.

Reverse Order

Pop-Up Menu	Hot Key	Function
None	Enter	To permute image displayed in reverse order.

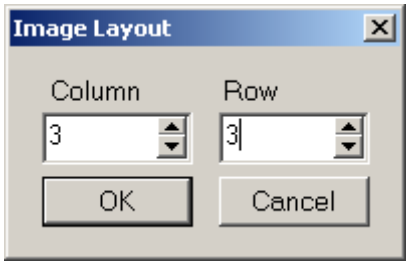
When two or more images are displayed, they will usually be arranged in increase order by image (instance) number. Press "Reverse Order" to permute images display in a decrease image number order.

Default Zone

Pop-Up Menu	Hot Key	Function
[Image Layout]/[2x1, 1x2,…]	None	Left click on default zone format to display multi-zone images

Custom Zone

Pop-Up Menu	Hot Key	Function
[Image Layout]/[Custom]	None	Custom design multi-zone image display



Left click on CxR button or right click to show Pop-Up Menu then chose Custom, and **Image Layout** window will pop up. Left click up-down sign or input number in Column and Row, then press **[OK]** button to create customized multi-zone image display.

6. Pop Up Menu

Right click on any image frame in UniWeb Viewer will show pop-up menu.

Fig-42

Most of the pop up menu functions can be performed by Hotkey and icon button in each tab section. This chapter only explains the remaining function which is spread in pop up menu.

6.1 [File] / [Save Profile]

All conditions setup of the present UniWeb Viewer operation etc. can be saved. The saved setup is automatically applied when user login next time. Since every users setup are saved to server, even if the same user name login by another client PC, that user setup will be applied as well.

Different **[Window/Level]** setup can be saved to different modality for body parts as a preset value. The different modality preset will be automatically loaded and match the one of chosen patient image. For example, if CT image has been displayed, the CT **[Window/Level]** preset.

6.2 [Presentation State]

"Presentation State" will be abbreviated as PS in the following.

When the PS is related with object image, it can be chosen which PS to display among object image. It can select different PS or **"Use no Presentation State"** from pop-up menu to apply to object image.

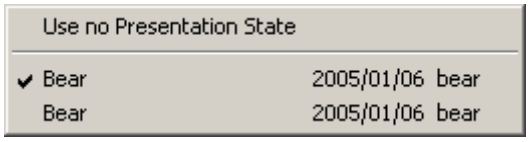


Fig-42

The label of the PS will be listed by creation date and name of maker. The current applied PS label will be shown in status bar at lower right of UniWeb Viewer window.

Note The newest PS will be chosen as default label applied to object image in UniWeb Viewer. From pop-up menu can choose other different PS or "**Use no Presentation State**" to an original image display.

6.3 [Key Image Note]

Key Image Note icon will be shown at upper left corner of image, it will show as a tag while mouse cursor move to that icon. Choose **[Key Image Note]** from pop-up menu can select specific one from the list if the Key Image Note text is too long. Also from this sub-menu will show whole Key Image Note list related to the image. Select a specific Key Image Note will show the following dialogue.

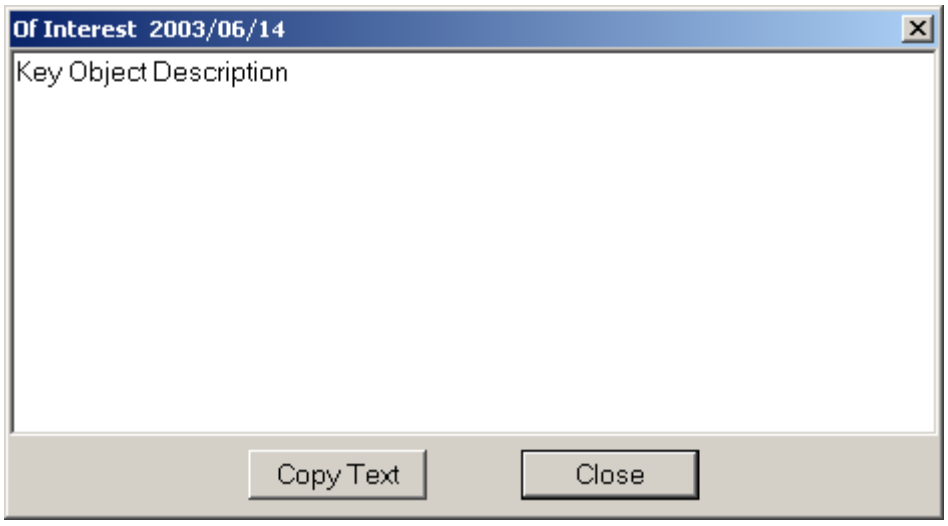


Fig-43

The type of Key Image Note and create date will be shown as title on the top of dialogue.

Note Key Image Note created by UniWeb Viewer can not be saved to server. It only can be created and saved corresponding DICOM

Viewer or modality to DICOM Key Object Selection SOP Class or Key Image Note Integration Profile of IHE.

6.4 [Filter]

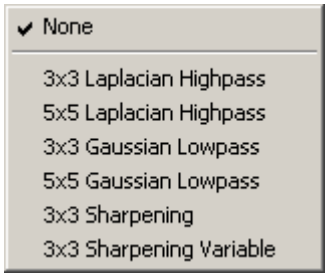


Fig-44

The default filter setup is set to “None”. Select the rest type of filter will perform filtering process. After select the last one (3x3 Sharpening Variable) from filter list, will show up following dialogue.

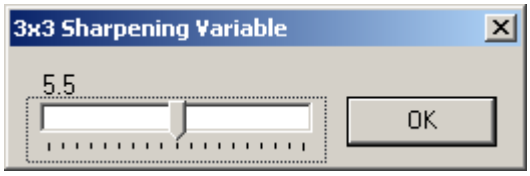


Fig-45

Left drag & drop on slide control bar and left click on [OK] button to enhance image sharpening. The slide control scale is from 0.0 to 10.0. Sharpening value set to 0.0 means no enhancement, and set to 10.0 to get most sharpening enhancement.

Note Filter can only applied in gray scale image, and will lose efficacy in color image.

6.6 [Window] / [Close Window]

Exit current selected UniWeb Viewer program window.

6.7 [Window] / [Close All]

Exit all launched UniWeb Viewer program windows.

6.8 [About]

Show UniWeb Viewer software version, memory and Hardware information,