




User Manual

Product: ExamVue Duo

Document Number JTD-ExamVueDuo-DHF11 (Rev.1)

	Prepared	Reviewed	Approved
S i g n			
	2021.08.24	2021.08.24	2021.08.24

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Revision History

Revision	Date	Descriptions
0	2021-08-23	Initial Release
1	2021-08-24	Updated the graphic symbols
2	2021-10-05	Added appendix - How to use the demo version?
3	2021-10-06	Added appendix - How to use the demo image in the ExamVue Duo?
4	2021-11-12	Added Tools Item (Auto / ROI Window Level, QC) Added appendix - How to use E-mail?

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1. Safety and Regulatory

The following safety notices are used to emphasize certain safety instructions. Follow the safety instructions in this manual along with warnings and cautions symbols. Ignoring such warnings or cautions while handling the product may results injury or accident. It is important for you to read and understand the contents of this manual before attempting to use the product.

1.1 Symbols

Symbols	Descriptions
	Indicates a potentially hazardous situation which may cause minor personal injury or property damage if the instructions are ignored.
	Provides additions information that is helpful to you. It may emphasize certain information regarding special tools or items to check before operating the product.

2. Introduction

ExamVue Duo is a software for the acquisition, processing, storage and viewing of digital x-ray images and indicated for use in general radiography, specialist radiology including podiatry, orthopedic, and other specialties, and in mobile applications. However, **ExamVue Duo** is not intended for use in mammography.

3. Hardware Requirement

- PC Computer

	Minimal and recommended Specification
Operating System	Microsoft Windows 10 Professional 64 bits (Home will not work with the new versions)
Graphics	Intel Integrated Graphic Card with DVI or HDMI
Processor	Intel Core i5-9400 (2.90GHz, up to 4.10GHz with Turbo Boost, 6 Cores, 9MB Cache) or equivalent
Memory	Recommended: 16GB DDR4 2666MHz UDIMM Minimal: 8GB DDR4 2666MHz UDIMM
Optical Drive	DVD+/-RW 16x (CD-R and DVD-R Media Only)
Storage	1 st Hard Drive <ul style="list-style-type: none"> - 1TB 7,200 RPM SATA or 512GB SSD Drive 2 nd Hard Drive <ul style="list-style-type: none"> - 1TB 7,200 RPM SATA
1st Ethernet Network Adapter	Intel Integrated 1Gbps
2nd Ethernet Network Adapter	Intel 1Gbps Ethernet I210-T1 Server Adapter or USB 3.0 1Gbps adapter
Monitor	24-inch monitor with minimal resolution of (1920 x 1080) 2MP with DVI or HDMI connector

- Laptop Computer

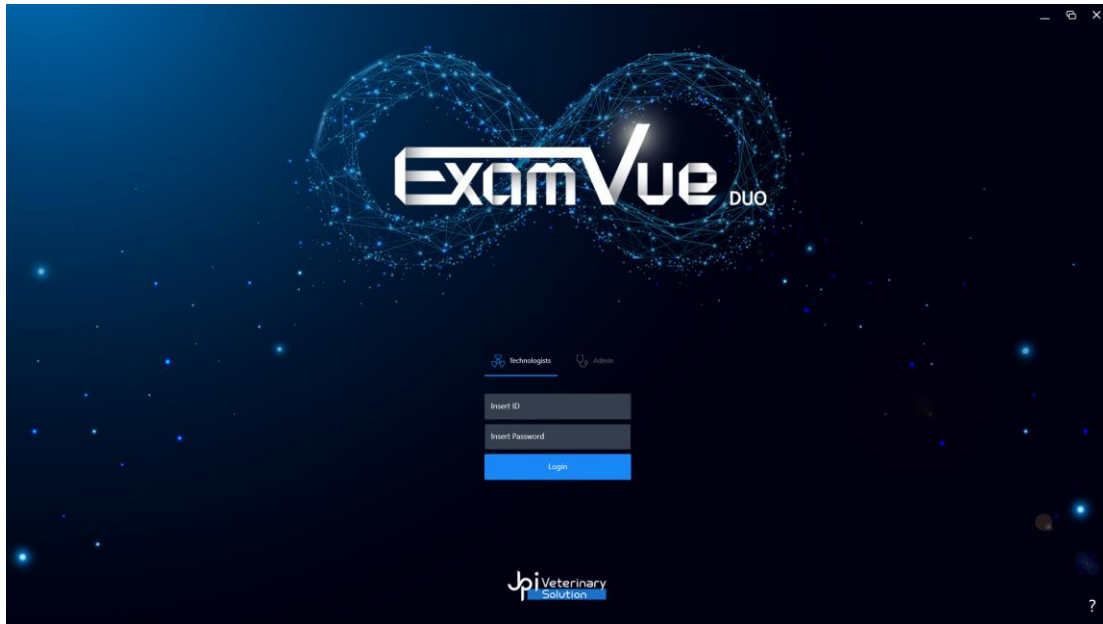
	Minimal and recommended Specification
Operating System	Microsoft Windows 10 Professional 64 bits (Home will not work with the new versions)
Graphics	Intel Integrated Graphic Card
Processor	8th Generation Intel® Core™ i5-8265U Processor (4 Core,6MB Cache,1.6GHz,15W) or equivalent
Memory	Recommended: 16GB DDR4 2666MHz UDIMM Minimal: 8GB DDR4 2666MHz UDIMM
Optical Drive	DVD+/-RW 16x (CD-R and DVD-R Media Only) or external DVD+/-RW 8X
Storage	1 st Hard Drive <ul style="list-style-type: none"> - 256GB SSD Drive 2 nd Hard Drive <ul style="list-style-type: none"> - 1TB 7,200 RPM SATA - 1TB 7,200 RPM SATA
1st Ethernet Network Adapter	Intel Integrated 1Gbps
Wi-Fi Network Integrated Adapter	Wireless card with AC connection up to 867 Mbps for maximum DR connection
USB 3.0 Wi-Fi Network Adapter	USB wireless card with AC connection up to 867 Mbps for maximum internet connection
Screen	14 or 15.6 screen with minimal resolution of 1600 x 900 Recommended (1920 x 1080) 2MP

4. Software Configuration

The program includes five windows, and the entire interface is designed for the touch screen operation.

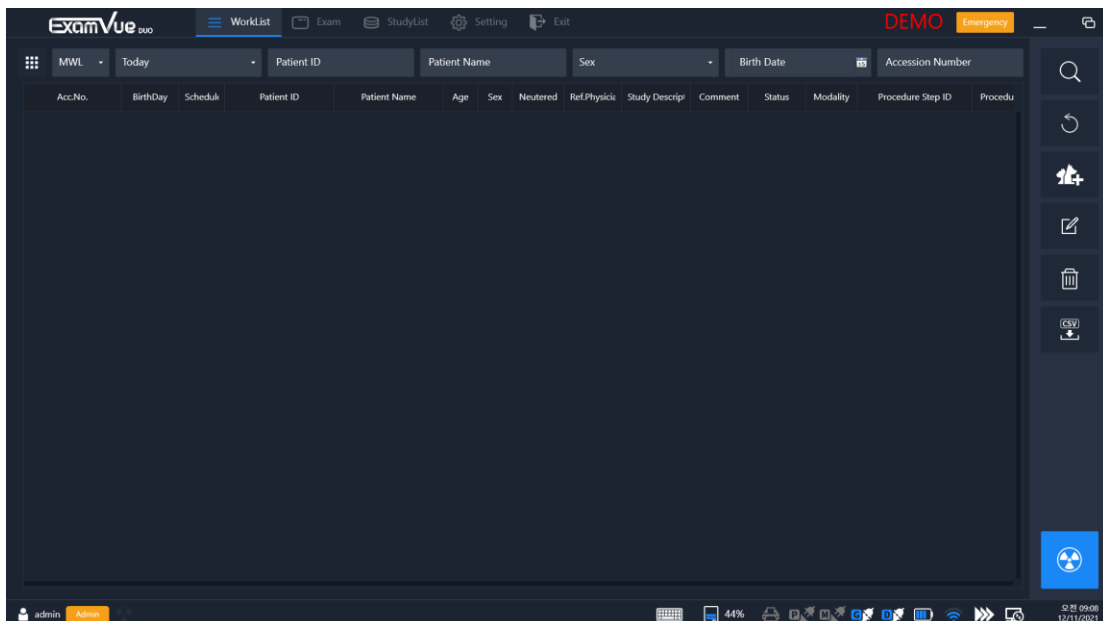
4.1 Log-In Window

Users need to log into the **ExamVue Duo** software to use with the right ID and Password.



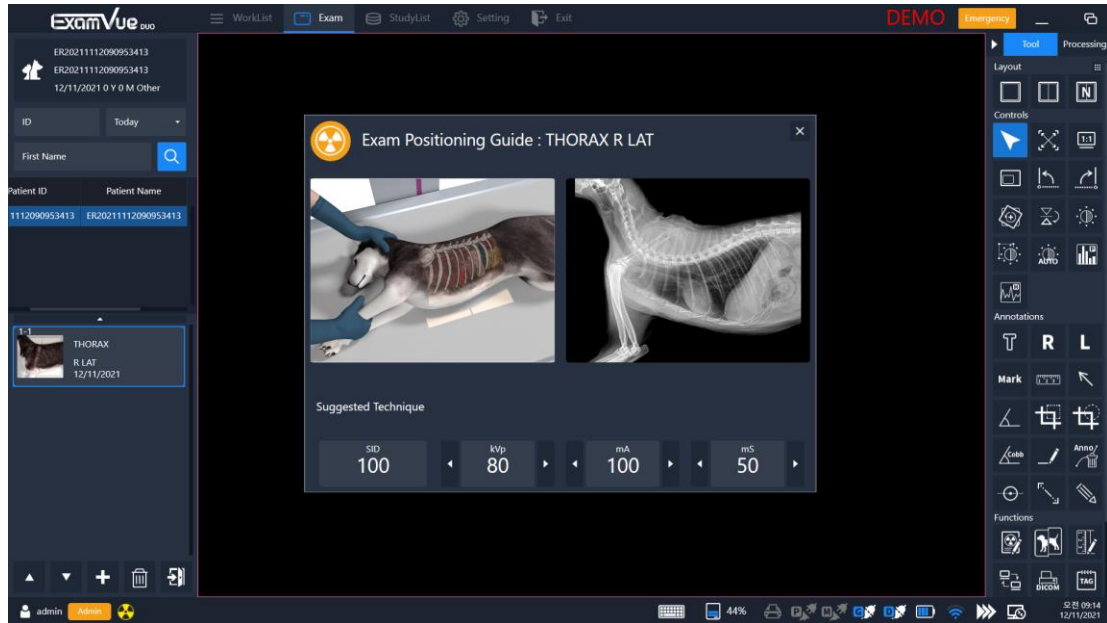
4.2 Worklist Window

Worklist Window has some patient information and user can select them to exam.



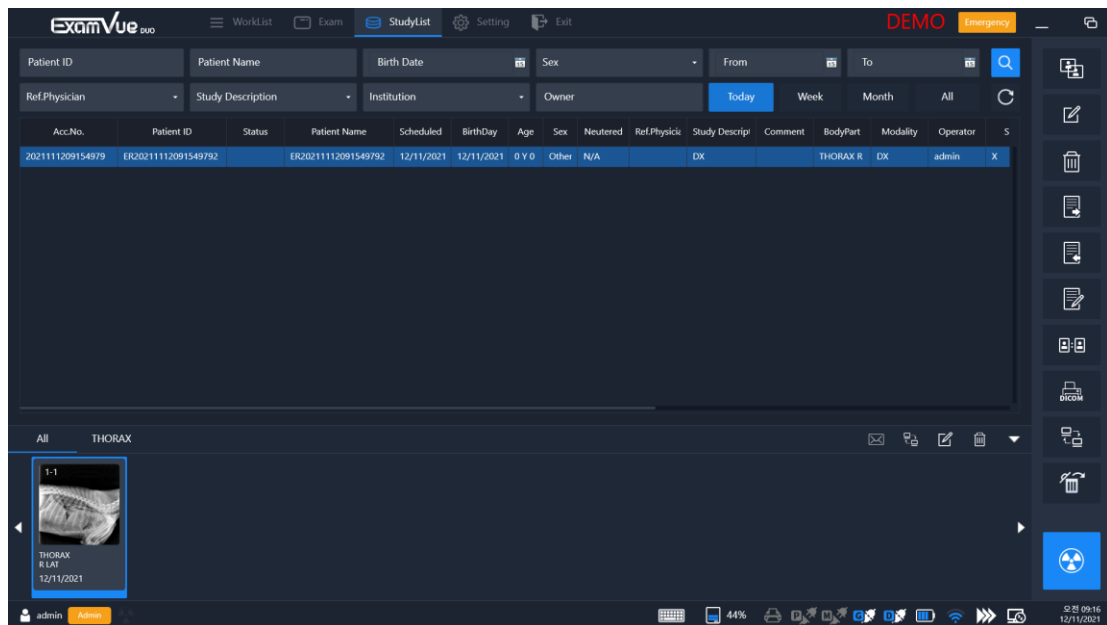
4.3 Exam Window

User can take X-ray images with registered patient information.



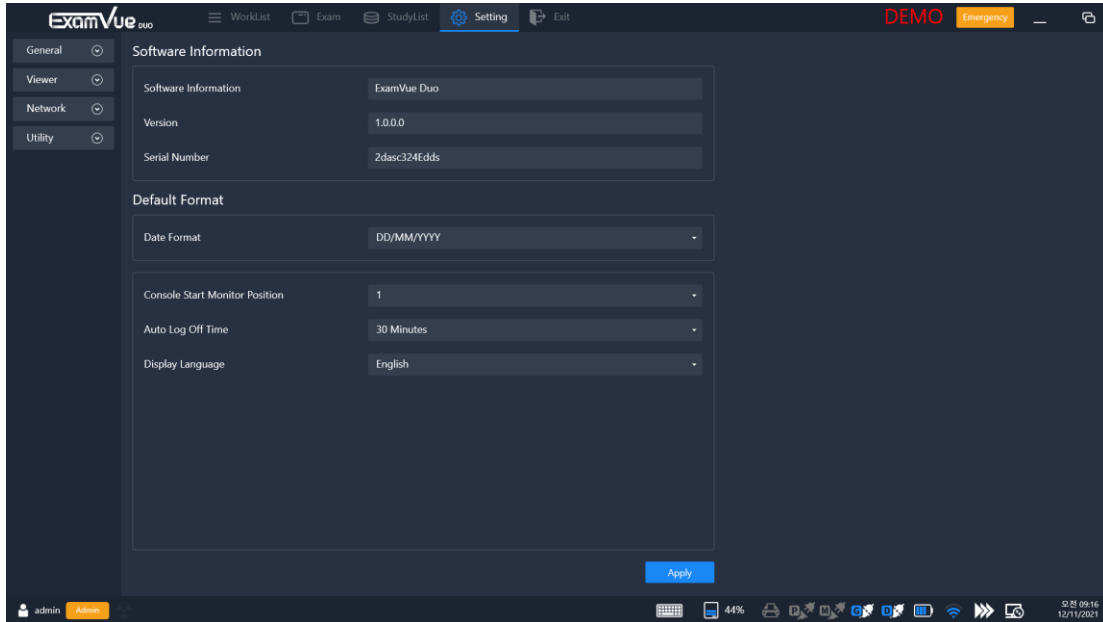
4.4 StudyList Window

All patient information stored in the database are displayed according to the search option.



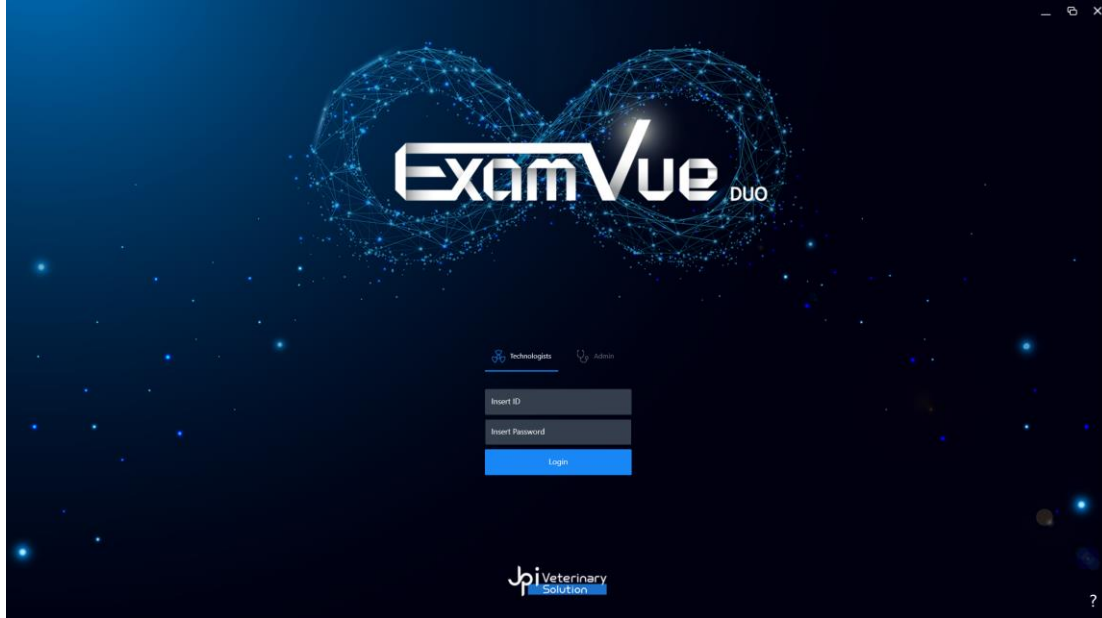
4.5 Settings Window






User can set settings of the features.



5. Log-In Window

Once the program has been started you will be asked to log in. Depending on the login level some features will be limited. Please just confirm the boxes the registered ID and PWD.



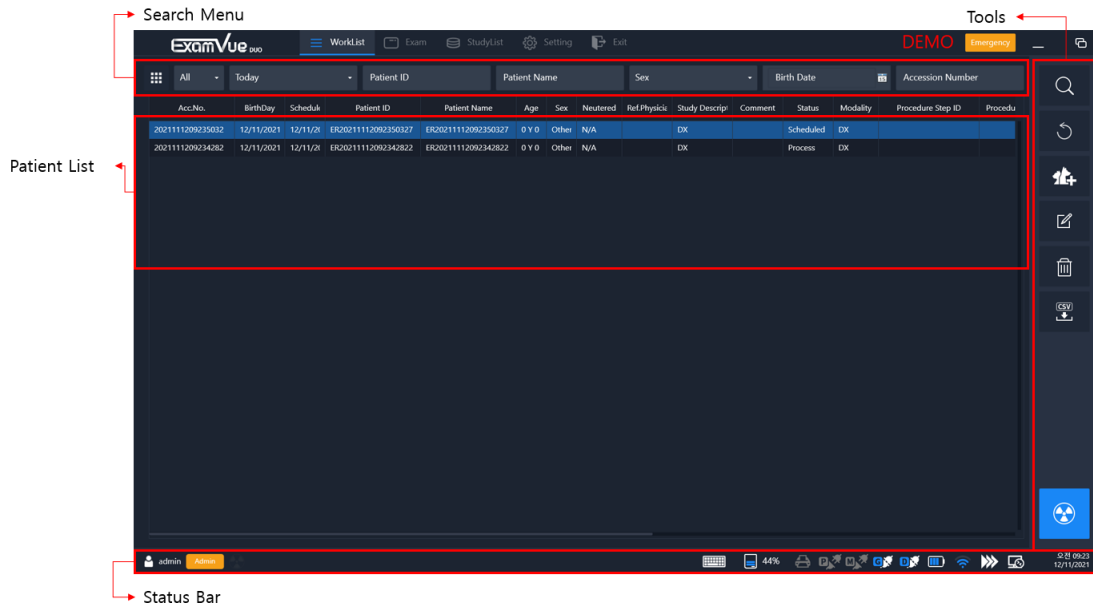
- **Admin Privileges:** Allow to access the Settings Window and delete images.
- **Technologist Privileges:** User operator but no access to Settings Window and can't delete images.
- **ID:** Input the operator ID
- **PWD:** Input the operator Password
- **Login:** Check the ID and PWD. if it's available and entry to the Worklist Window. If the information is not matched, the error window comes out. 
- **Minimize:** Hide the program in the window task bar. 
- **Maximize:** Show the log-in window with full screen window. 
- **Exit:** Exit the program. 
- **Help:** Shows some information related to your company and software. 



- The configuration option of the software requires special login details. Please consult your system administrator.
- The configuration of your system should only be changed by experienced technicians. Improper alterations or other configurations may endanger the health of the user and the patient.

6. Worklist Window

Through DICOM Worklist Server (MWL), you can take the patient information, integrated with hospital system, or input the patient information manually.



- To use MWL Server, you must register the MWL Server's information in the Settings Window.

6.1 Status Bar

Display currently logged operator mode and connection status with the other devices.



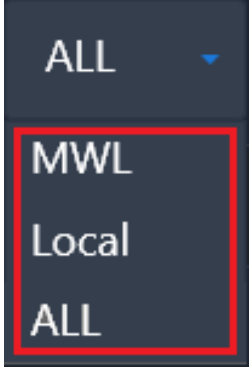

- ① Account: Display the logged in account
- ② Detector ready: Display the ready status of the detector
- ③ Virtual keyboard: Show / Hide the Virtual keyboard
- ④ HDD Capacity: Display used space on HDD
- ⑤ DICOM Print: Display the connection status of the DICOM Print
- ⑥ PACS: Display the connection status of the PACS
- ⑦ MWL: Display the connection status of the Modality Worklist Server
- ⑧ Generator: Display the connection status of the generator
- ⑨ Detector: Display the connection status of the detector
- ⑩ Battery: Display the charging status of the detector's battery
- ⑪ Wi-Fi: Display the signal status of the detector's Wi-Fi
- ⑫ Queue: Display the data status of the PACS and DICOM Print
- ⑬ Remote: Open the remote software











- You can set up a remote application (ex. TeamViewer) path from the Settings window.

6.2 Search Menu

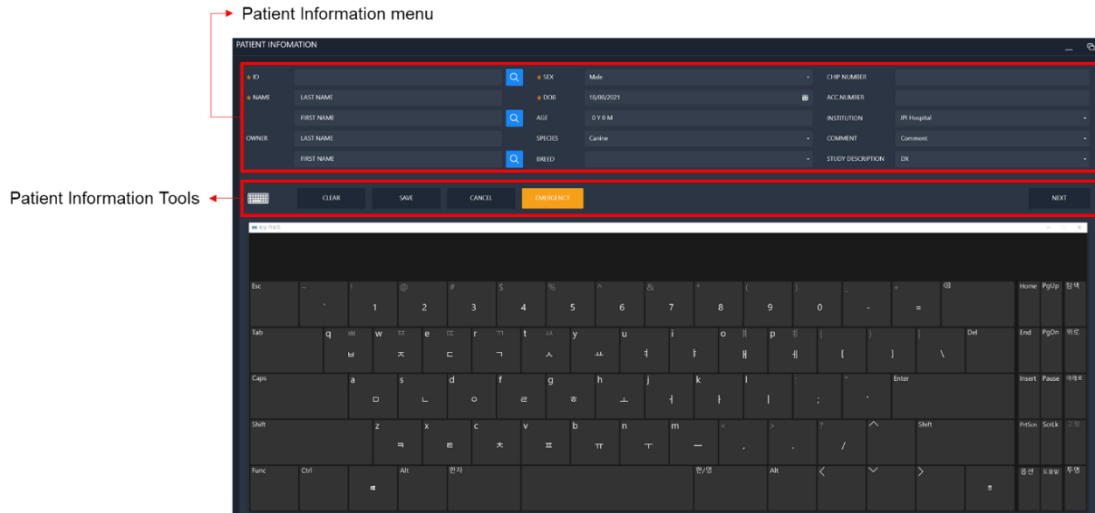
You can search some study by some filter like ID, Name and Accession number.

Name	Description
Search DB 	<ul style="list-style-type: none"> - MWL (Modality Worklist) : Query patient information manually from MWL - Local (Local DB) : You can search some patient information stored in the databases - ALL : Search in MWL and Local DB <div style="border: 1px solid gray; padding: 5px; margin-top: 10px;"> <ul style="list-style-type: none"> ● To use MWL Server, you must register the MWL Server's information in the Settings Window. </div>
Study Date	Select a search period
Patient ID	Input the Patient ID
Patient Name	Input the Patient's Name
Sex	Select in the Sex
Birth Date	Input the Birth Date (YYYY/MM/DD) or Choose from the calendar <div style="border: 1px solid gray; padding: 5px; margin-top: 10px;"> <ul style="list-style-type: none"> ● Date format depends on the Settings of the Date format in the Settings Window. </div>
Expansion Search	 Clicking the button will rise to the expanded search criteria and search for some studies with details.

6.3 Tools







Icon	Name	Description
	Search	Execute the Search button and shown the result data in the list
	Clear	Erase all information used in the search condition
	New Patient	Display the Patient Information Window to create the new patient
	Edit	Edit registered Patient information
	Delete	Delete registered Patient Information in the list, however this feature allows only Admin privilege
	Import	Import the patient list using the CSV file format
	Exam	Move to the Exam Window to take X-ray Image
	Emergency	Move to the Exam Window and register Emergency data but you must select Anatomy and Projection to take X-ray

6.4 Patient Information Window



- If the Virtual Keyboard settings is enabled, it will be displayed automatically in the bottom place.

6.4.1 Patient Information Tools

Icon	Name	Description
	Keyboard	Show and hide the Virtual keyboard
	Clear	Clear and reset all data as initial status
	Save	Save the inputted all information and move to Worklist Window
	Cancel	Move to the Worklist Window
	Emergency	ID, FIRST NAME, SEX, DOB and ACC.NUMBER are written as emergency information
	Next	Move to the Procedure Window

6.4.2 Patient input menu

- ***ID:** Patient's ID
- ***NAME:** Patient name (***First** / Last Name)
- OWNER: Owner's name (First / Last Name)
- ***SEX:** Patient's sex (Male, Female, Other, Neutered, Spayed)
- ***DOB:** Select or Input patient's birthday
- AGE: Patient's age
- SPECIES: Patient's species (Canine, Feline, Exotics, Equine)
- BREED: Patient's breed
- CHIP NUMBER: Patient's chip number
- ACC.NUMBER: Patient's Accession Number
- INSTITUTION: Select the Institution registered
- COMMENT: Input or select the user comment
- STUDY DESCRIPTION: Input the study description

- If clicked the Search button with some name or ID in the 'FIRST NAME' or 'PATIENT ID', all patient information related will be displayed in the pop-up window and you can select one. Then it will be filled out automatically in the Patient Information Window.



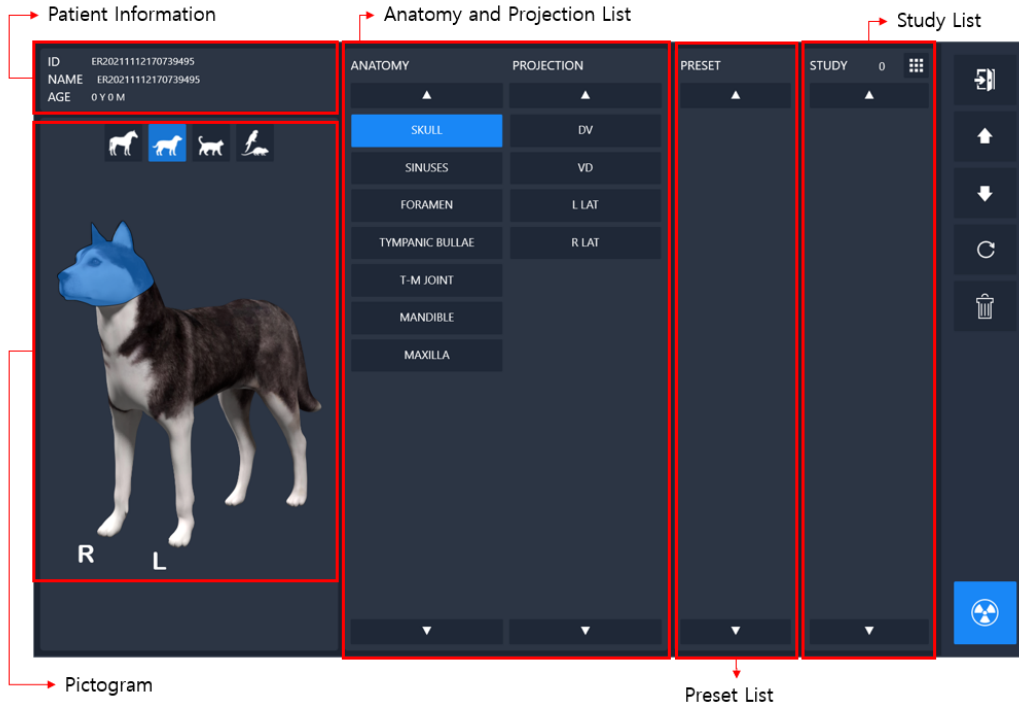
Result List				
ID	Name	Sex	DOB	OwnerName
ER20210818094313316	ER20210818094313316	OTHER	2021/8/18	
ER20210818094304938	ER20210818094304938	OTHER	2021/8/18	
ER20210818094252114	ER20210818094252114	OTHER	2021/8/18	
ER20210813180251389	ER20210813180251389	OTHER	2021/8/13	

OK CANCEL

6.5 Procedure Window

You can plan each X-ray the examination positioning in the Procedure window.

The selection of organ structures is displayed in the left side and select some organ.



6.5.1 Pictogram

The illustration is divided into different sections (organ groups).

- HEAD
- RIGHT / LEFT UPPER EXTRIMITY
- TORSO
- PELVIS
- RIGHT / LEFT LOWER EXTRIMITY

By clicking on an organ group, e.g. skull, all standard projections of the selected organ will be shown. Click on the examination to be performed to create a corresponding list entry in the right Study List.



- You can make new Anatomy and Projection in the separated **Management software**. Please contact to the administrator if needed.

6.5.2 Anatomy and Projection List

Select and the Anatomy and the Projection by clicking the illustration.

6.5.3 Preset List

Select the Preset data.



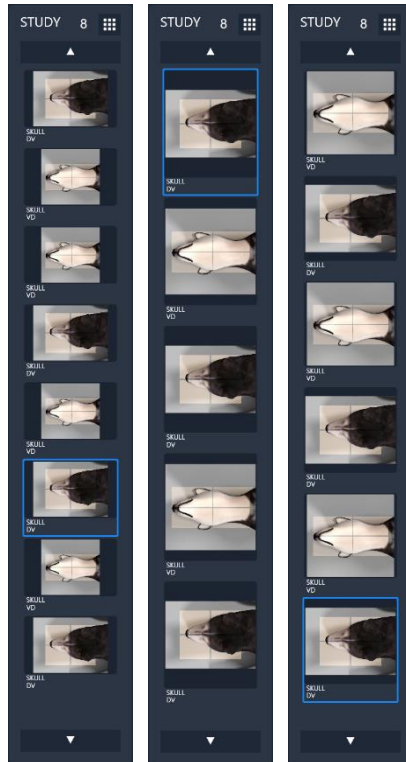
- You can make new Preset list in the separated **Management software**.
Please contact to the administrator if needed.

6.5.4 Study List

Show the registered Study in the list and can adjust the list size by clicking the size button.










[Size button]



[count : 8] [count : 5] [count : 6]

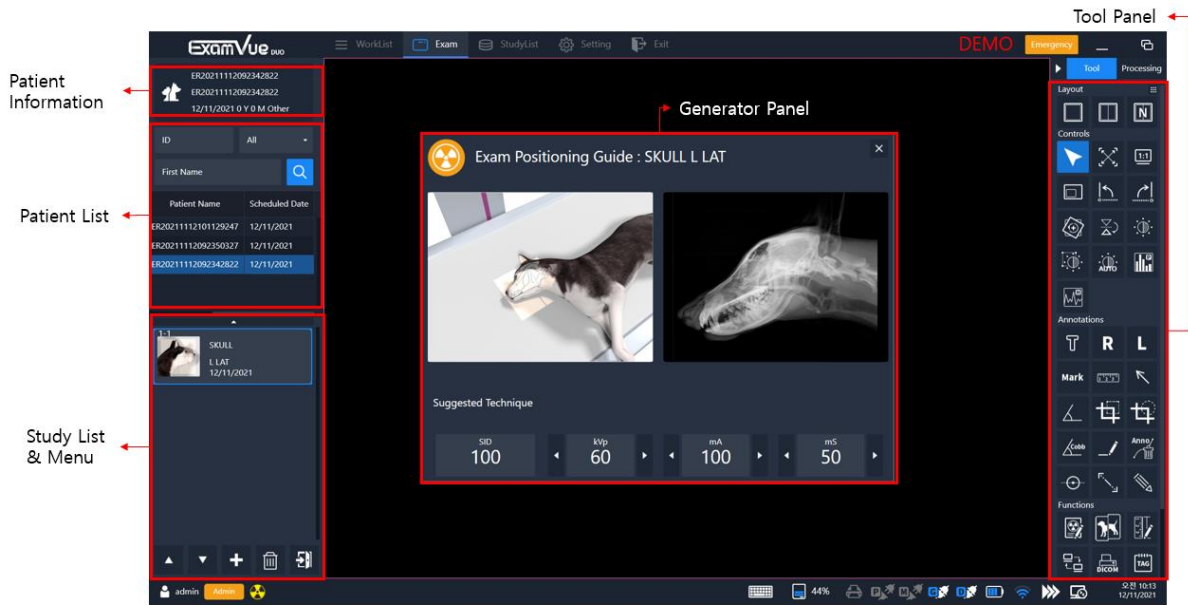
6.5.5 Procedure Management Tools

Icon	Name	Description
	Exit	Move to the previous Patient Information window without saving all data inputted
	Up	Up to the selected image position in the Study list
	Down	Down to the selected image position in the Study list
	Rest	Remove all lists from a study list
	Delete	Delete the selected image in the Study list
	Save	Save and move to the Worklist Window
	Exam	Move to the Exam Window to take an image with X-ray

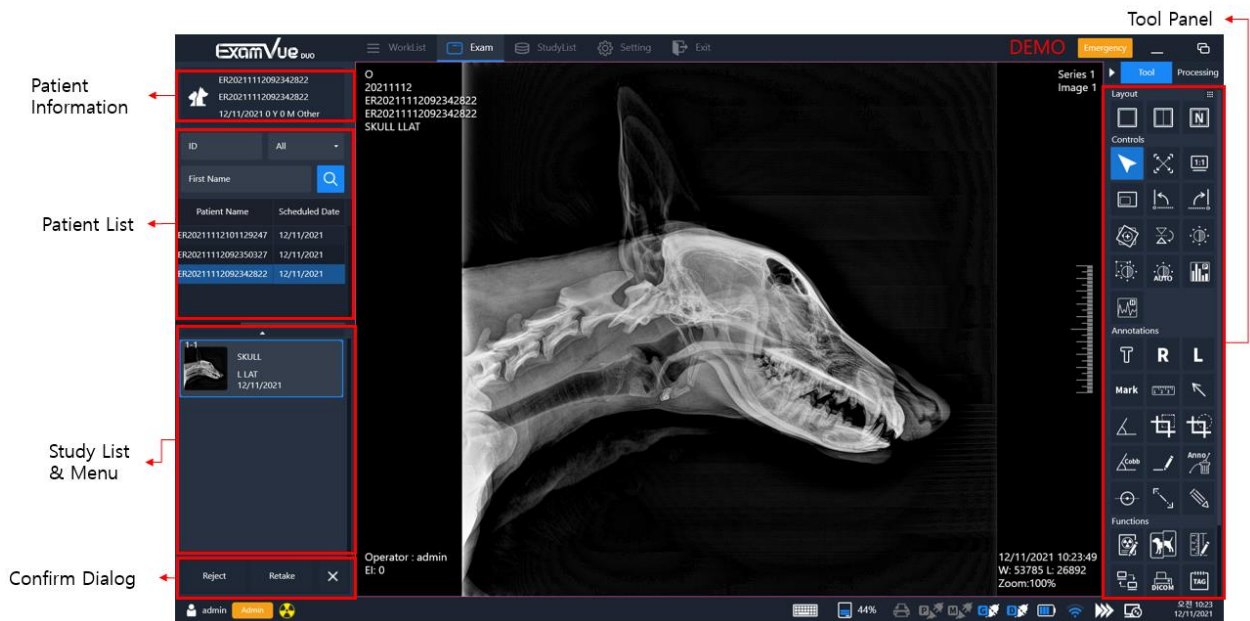
7. Exam Window

User can acquire the X-ray image from the detector.

The right side is the tools panel, and the left side of the screen is the study list. If the generator is connected the generator panel will be shown as shown the below figure.



Below shows the acquired image in the image viewer.



7.1 Patient List

Search patients that already registered to the database with search option.

7.2 Study List

Display the study ordered or searched in the list.

7.3 Generator panel

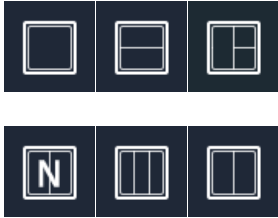










Control the generator settings such as kVp, mA, ms, mAs.






























- You can set up generator option in the separated **Management software**.










Please contact to the administrator if needed.














7.4 Tool panel

Icon	Name	Description
	Layout	Display images according to the selected layout
	Cursor	This is default mouse cursor state
	Fit Image	Fit an image to the size of the image viewer
	Real Size	Display the image in its actual size
	Full Screen	The Viewer area extends to the thumbnail area. So, you can see the larger image
 	CCW90 / CW90	Rotate an image by 90 degrees Counterclockwise / Clockwise
	Free Rotation	Rotate an image freely as 1 degree interval using the slide bar or mouse drag in the Free Rotation window
 	V Flip / H Flip	Flip an image Vertically / Horizontally
	Panning	Perform panning the image

	Magnifying	Magnify a local region of interest
	Zoom	Zoom in and out the entire image
	ROI Zoom	Zoom in and out the region of the interest (ROI) in the image
	Invert	Invert an image between black and white
	Window Level	Change the window level
	Window Level Reset	Reset the window level
	Window Level Auto	Change the window level automatically
	ROI Window Level	Change the window level of the region of interest
	Line Profile	Display various pixel values related to the line when you draw a line
	Histogram	It shows the pixel values
 	Ellipse/ Rectangle ROI Analysis	Analyzes the pixel maximum, pixel minimum, standard deviation, median, and average values in the drawn Ellipse / Rectangle ROI area
	Text	Draw test notes on the image and use can resizable the text size

	R / L Marker	Add R / L Marker
		
	User Marker	You can add delete or modify frequently used marks as desired
	Ruler	Measure distance between two points on the image
	Arrow	Draw the arrow in the image
	Angle	Measure the angle between three points over an image
	Rectangle / Ellipse Cropping	Crop an image of interest in the image
		
	Cobb Angle	This tool is used to find the angle where two lines intersect
	Line	Draw a straight line
	Delete Annotation	Delete selected annotation information
	Center Point	Draw the line having the center point in the image
	Expand Line	Draw the expanded line in the image
	Pencil (Free draw)	Draw the freely line in the image

	Annotation Hide / Show	Shows or hides the annotation entered by the user
	Patient Information ON / OFF	Shows or hides the patient's information
	Dot	Draw the Dot in the image
	Black Rectangle	Draw the black rectangle in the image and can change the size of the black rectangle after drawing
	Veterinary Tools	Additional functions used in Veterinary Tools (See Appendix for descriptions of each Annotation)
	Equine Tools	Additional functions used in Equines Tools (See Appendix for descriptions of each Annotation) NOTE) if you can't find the Equine tools, please contact to the administrator.
	Axial Line	Creates a vertical or horizontal axis, depending on the direction, in which the mouse pointer is moved
	Vertical / Horizontal Offset	Displays the angle and Vertical / Horizontal length of two points
	Modify Exposure Parameter	Enter the X-Ray condition in the acquired image. The information entered can be found in the DICOM Tag Viewer

	Stitching	Stitch the Two Image Selected and Add the Stitched Image in Study and Thumbnail Window (See Appendix for descriptions)
	Length Calibration	Calibrate the length
	E-mail Send	Send the selected image to E-mail
	DICOM Send	Transfer DICOM Images to PACS Server
	DICOM Print	Print the selected image to the DICOM printer
	DICOM Tag Viewer	Display the DICOM tag information from the selected image
	Save	Save all annotation information in the selected image
	Reset All	Restore as original image
	Paper Print	Print out the viewing image to the paper print
	File Import	Import an external DICOM image to add information to the study list
	File Export	Convert and export the selected images with various formats to the local drive, external USB or CD/DVD equipment
	Report	Make the report of the selected image using the report form and export to the report PDF or Paper print device
	Dual Screen	Display the full screen image in the secondary monitor if user is using the dual monitor

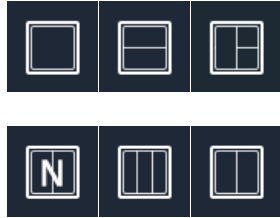


QC Pattern

Display the QC pattern.

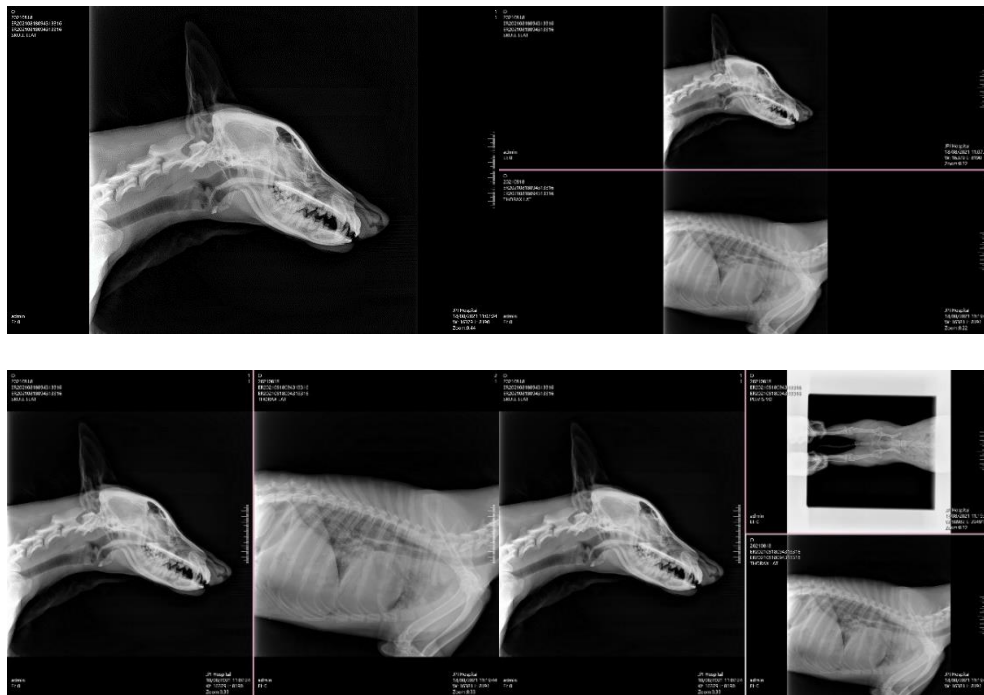
7.4.1 Layout Tools

- **Layout**



Layout

Display images according to the selected layout



[Layout: 1x1, 1x2, 2x1, Multi]

7.4.2 Control Tools

- **Fit Image**



Fit Image

Fit an image to the size of the image viewer



[Fit Image]

- **Real Size**



Real Size

Display the image in its actual size



[Original]



[Real Size]



- It depends on the monitor's resolution specification and the pixel spacing of the detector.

● **Full Screen**



Full Screen

The Viewer area extends to the thumbnail area. So, you can see the larger image



[Full Screen]

● **CCW90 / CW90**



CCW90
/ CW90

Rotate an image by 90 degrees
Counterclockwise / Clockwise



[CCW90]



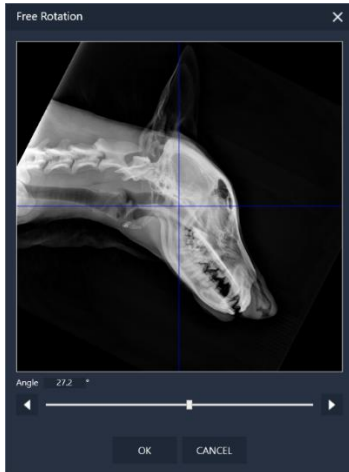
[CW90]

- **Free Rotation**



Free Rotation

Rotate an image freely as 1 degree interval using the slide bar or mouse drag in the Free Rotation window



[Free Rotation]

- **V / H Flip**



**V Flip
/ H Flip**

Flip an image Vertically / Horizontally



[V Flip]



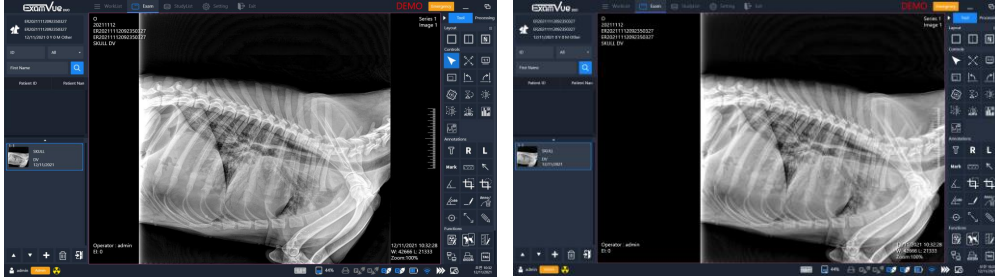
[H Flip]

● **Panning**



Panning

Perform panning the image



[Before]

[After]

- 1) Press and hold the left mouse button while dragging the image to the desired position.

● **Magnifying**



Magnifying

Magnify a local region of interest



[Magnifying]



- To set up ROI Window Size, you can set the configuration in the Settings Window.

- **ROI Zoom**



ROI Zoom

Zoom in and out the region of the interest (ROI) in the image



[Original]



[ROI Zoom]

- **Invert**



Invert

Invert an image between black and white



[Original]



[Inverted Image]

- **Window Level**



Window Level

Change the window level



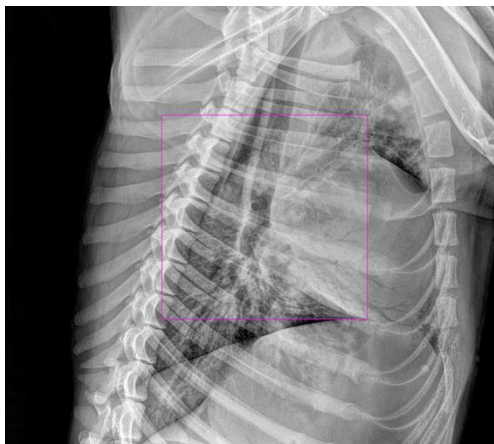
[Window Level]

- **ROI Window Level**



ROI Window Level

Change the window level of the region of interest



● **Line Profile**

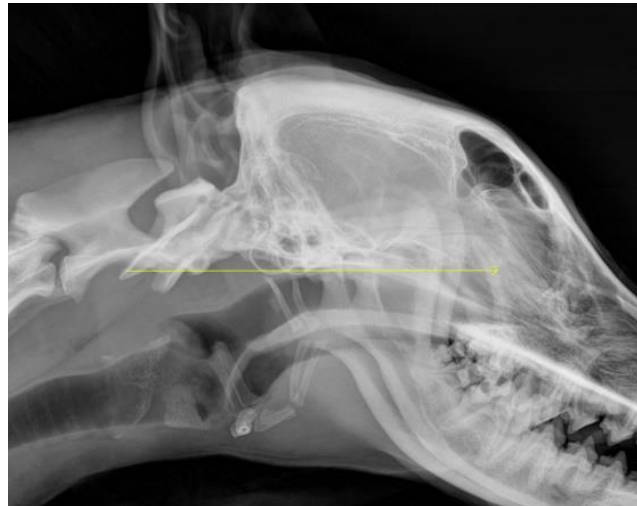


Line Profile

Display various pixel values related to the line when you draw a line



[Result Display]



[Draw Line]

1) Draw a line in the desired area as shown in the picture below.

● **Histogram**



Histogram

It shows the pixel values



[Result Display]

- **Ellipse/ Rectangle ROI Analysis**



**Ellipse/
Rectangle
ROI Analysis**

Analyzes the pixel maximum, pixel minimum, standard deviation, median, and average values in the drawn Ellipse / Rectangle ROI area



[Ellipse Analysis]



[Rectangle Analysis]

7.4.3 Annotation Tools

- **Text**



Text

Draw text notes on the image and use can resizable the text size



[Text Image]

- **R / L Marker**



R / L Marker

Add R / L Marker

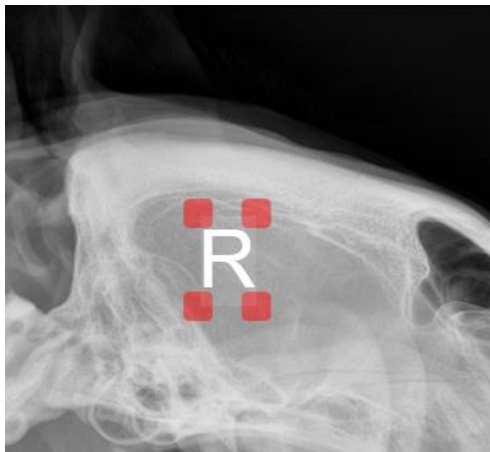


[R Marker]



[L Marker]

- 1) To adjust the size of the mark, you can do as follows.
- 2) Click and hold the right bottom edge point in the Marker area using the left mouse button.
- 3) Drag the marker size to resize it.



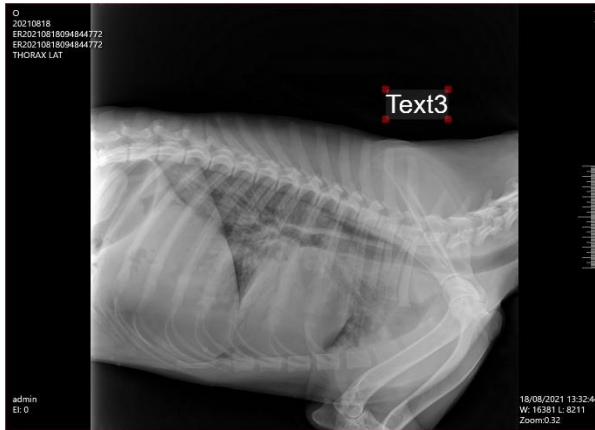
- It's the same way to resize the 'R', 'L' marker, User marker and Text size.

- **User Marker**



User Marker

You can add delete or modify frequently used marks as desired



[Mark Image]

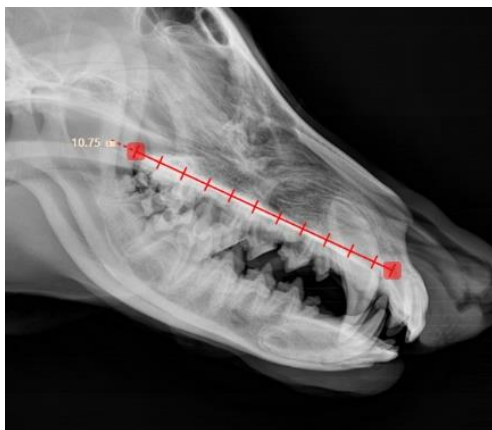
- 1) Click Mark button.
- 2) Enter the user maker and click Add button and then the use marker will be registered and shown in the list.
- 3) Select the user marker.
- 4) Click Okay button.

- **Ruler**



Ruler

Measure distance between two points on the image



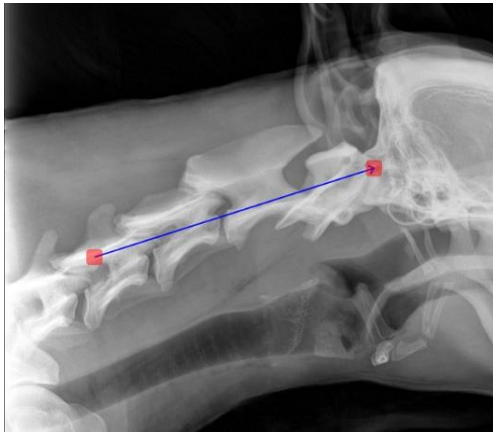
[Ruler]

- **Arrow**



Arrow

Draw the arrow in the image



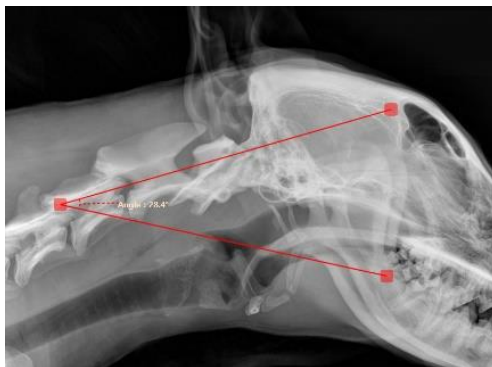
[Arrow]

- **Angle**



Angle

Measure the angle between three points over an image



[Angle]



- When you complete drawing an angle, the value of the angle will be calculated and displayed automatically.

- **Rectangle / Ellipse Cropping**



**Rectangle /
Ellipse
Cropping**

Crop an image of interest in the image



[Rectangle Cropping]



[Ellipse Cropping]

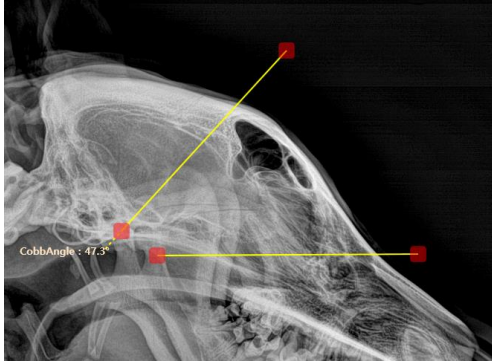
- 1) Click Crop button.
- 2) Locate the mouse cursor inside of the image.
- 3) Drag the mouse to the cropping area during pressing and holding the mouse left button.
- 4) Click Save button or Double-clicking of the left button to save the cropped image.

- **Cobb Angel**



Cobb Angle

This tool is used to find the angle where two lines intersect



[Cobb Angle]

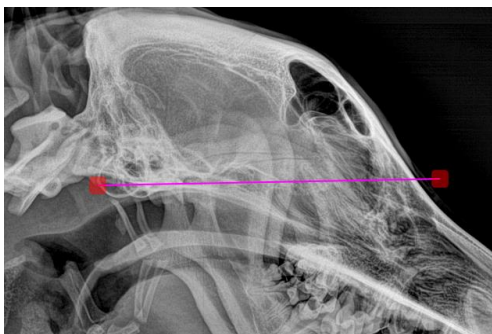
- 1) Draw the first line.
- 2) Draw the second line.
- 3) The angle is automatically calculated and drawn.
- 4) You can change the area by moving the red dot or line at the end of the line.

- **Line**



Line

Draw a straight line



[Line]

- **Center Point**



Center Point

Draw the line having the center point in the image



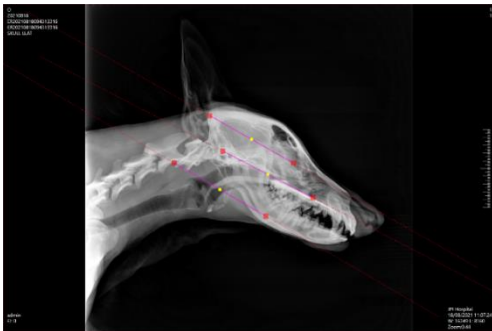
[Center Point]

- **Expand Line**



Expand Line

Draw the expanded line in the image



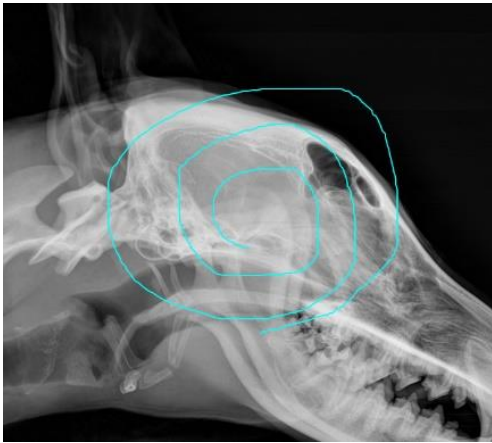
[Expand Line]

- **Pencil (Free Draw)**



Pencil
(Free draw)

Draw the freely line in the image



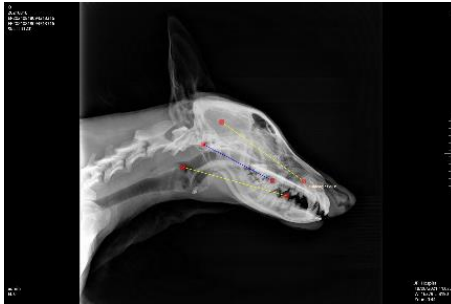
[Pencil]

- **Annotation Hide / Show**



Annotation
Hide / Show

Shows or hides the annotation entered by the user



[Show]



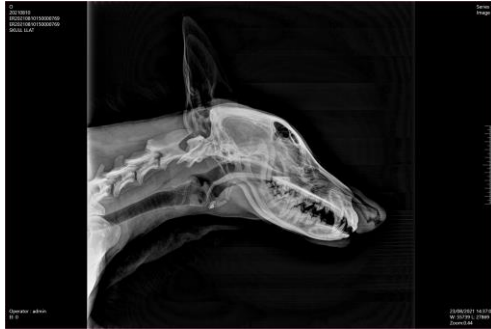
[Hide]

- **Patient Information ON / OFF**

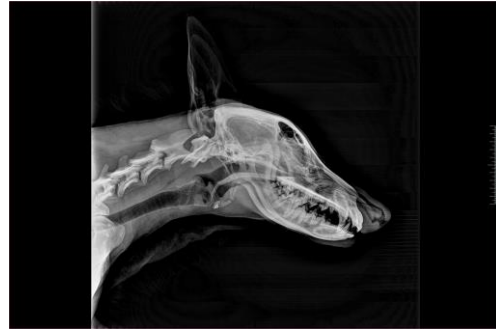


**Patient
Information
ON / OFF**

Shows or hides the patient's information



[ON]



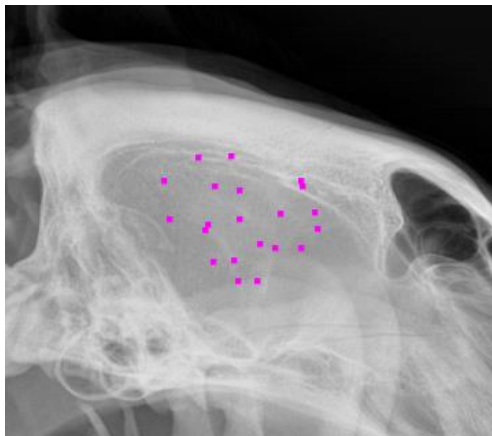
[OFF]

- **Dot**



Dot

Draw the Dot in the image



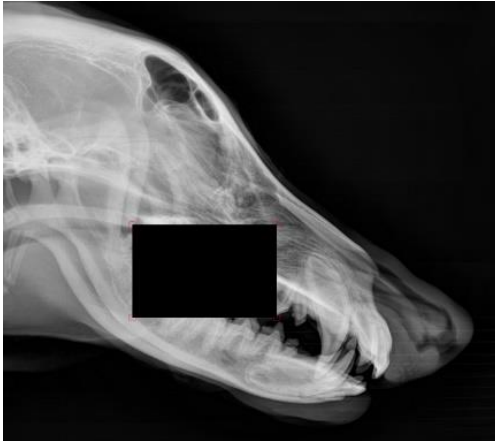
[Dot Image]

- **Black Rectangle**



**Black
Rectangle**

Draw the black rectangle in the image and can change the size of the black rectangle after drawing



[Black Rectangle Image]

- **Axial Line**



Axial Line

Creates a vertical or horizontal axis, depending on the direction, in which the mouse pointer is moved



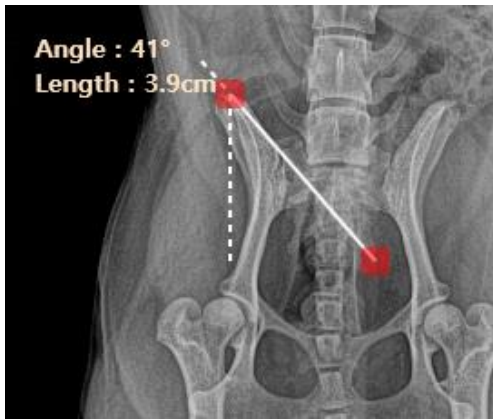
[Axial Line]

- **Vertical / Horizontal Offset**



**Vertical /
Horizontal
Offset**

Displays the angle and Vertical / Horizontal length of two points



[Vertical Offset]



[Horizontal Offset]

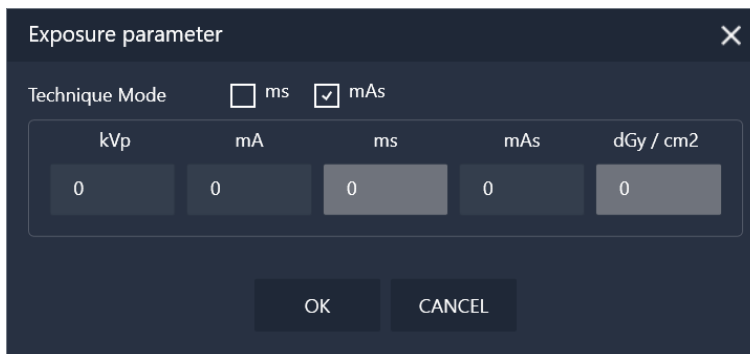
7.4.4 Function Tools

- **Modify Exposure Parameter**



**Modify
Exposure
Parameter**

Enter the X-Ray condition in the acquired image. The information entered can be found in the DICOM Tag Viewer



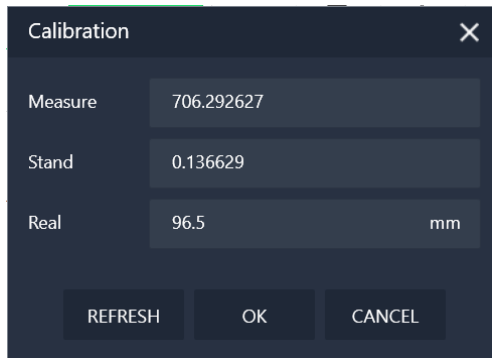
[Exposure Parameter]

- **Length Calibration**



Length Calibration

Calibrate the length



[Length Calibration Window]

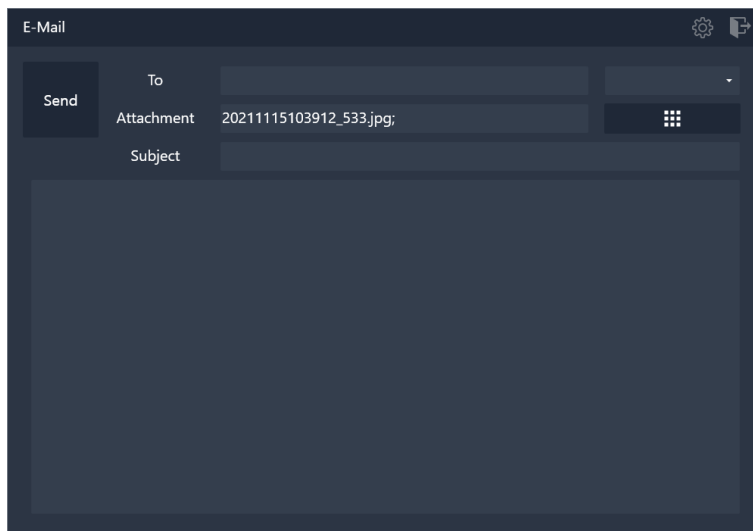
- 1) Enter the actual length (mm) on Real and then click ok.

- **E-mail Send**



E-mail Send

Send the selected image to E-mail



[E-mail Send]

- 1) Click E-mail Send button. (The selected image is automatically attached.)

- 2) Choose the address from the combo box or enter it yourself.
- 3) Click Send button.

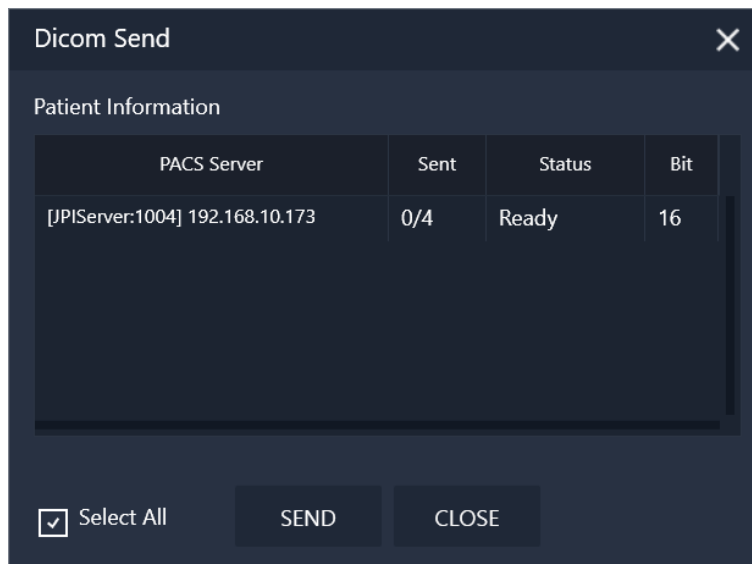


- Before working it, you must configure the E-mail Sever settings in the Settings Window. (See Appendix for descriptions)

• DICOM Send



DICOM Send Transfer DICOM Images to PACS Server



[DICOM Send]

- 4) Click DICOM Send button.
- 5) Select the PACS Server in the PACS Server list.
- 6) Click Send button.



- Before working it, you must configure the PACS Sever settings in the Settings Window.

● **DICOM Print**



DICOM Print

Print the selected image to the DICOM printer



[DICOM Print]

● **DICOM Tag Viewer**



**DICOM
Tag Viewer**

Display the DICOM tag information from the selected image

Tag	VR	Length	Desc	Value
(0008,0005)	CS	16	Specific Character Set	ISO 2022 IR 149
(0008,0008)	CS	16	Image Type	ORIGINAL\PRIMARY
(0008,0016)	UI	28	SOP Class UID	1.2.840.10008.5.1.4.1.1.1.1
(0008,0018)	UI	50	SOP Instance UID	1.2.410.200018.109.1.100.28.0.0.20210818110724959
(0008,0020)	DA	8	Study Date	20210818
(0008,0021)	DA	8	Series Date	20210818
(0008,0022)	DA	8	Acquisition Date	20210818
(0008,0023)	DA	8	Content Date	20210818
(0008,0030)	TM	6	Study Time	110614
(0008,0031)	TM	6	Series Time	110614
(0008,0032)	TM	6	Acquisition Time	110724
(0008,0033)	TM	6	Content Time	110724
(0008,0050)	SH	16	Accession Number	2021081809431331
(0008,0060)	CS	2	Modality	DX
(0008,0070)	LO	14	Manufacturer	JPI Healthcare
(0008,0080)	LO	12	Institution Name	JPI Hospital
(0008,0081)	ST	6	Institution Address	Seoul
(0008,0090)	PN	0	Referring Physician's Name	

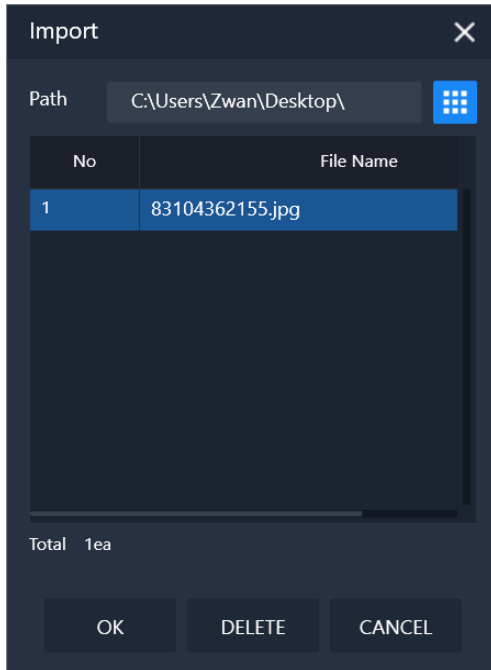
[DICOM Tag Viewer]

- **File Import**



File Import

Import an external DICOM image to add information to the study list



[File Import]



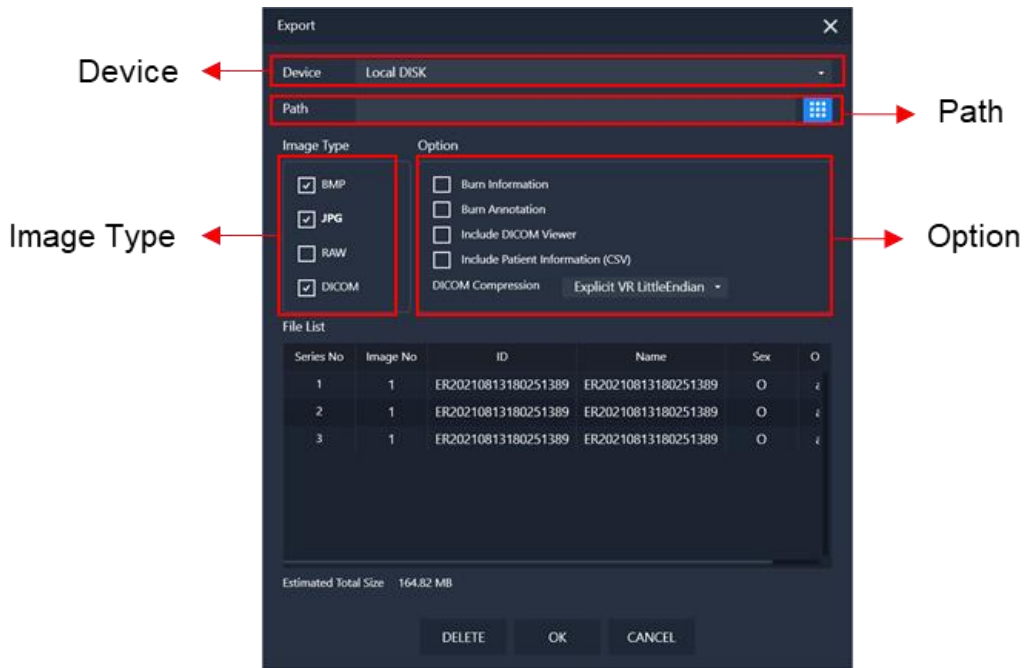
- If you click the 'New Patient' option during importing, the new ID and Name including in the DICOM tag will be created automatically.

● **File Export**



File Export

Convert and export the selected images with various formats to the local drive, external USB or CD/DVD equipment



[Export Window]

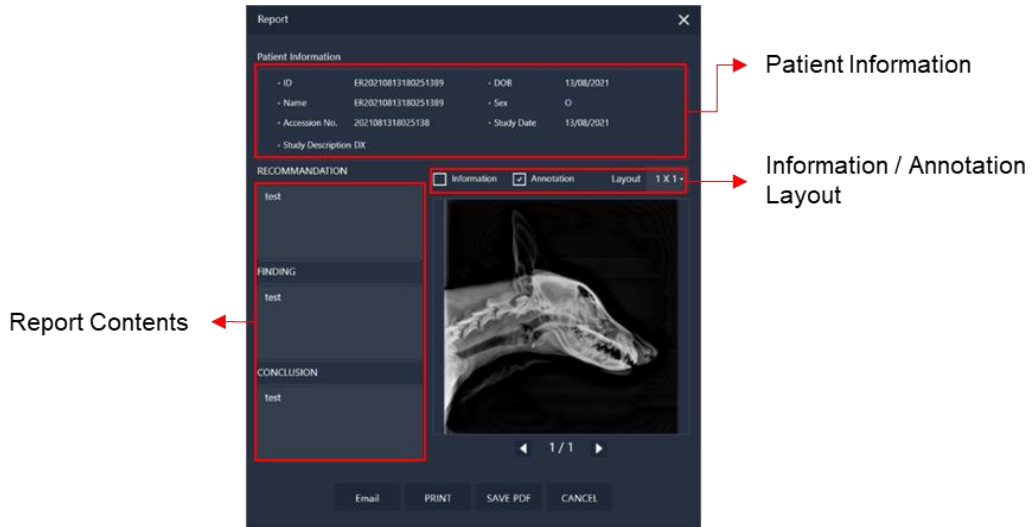
Name	Description
Device	Select the export device with Local Disk, USB or CD/DVD
Path	Set the image path for the image export. It allows only USB and Local Disk
Image Type	Select the image type in the BMP, JPG, RAW and DICOM
Option	<ul style="list-style-type: none"> - Burn Information: Save the patient information on the image - Burn Annotation: Save the annotation information on the image - Include the DICOM Viewer: It can allow only when selected DICOM Image format - Include the Patient Information (CSV): Make the CSV file with the selected patient info - DICOM Compression type: Select the DICOM compression type

● **Report**



Report

Make the report of the selected image using the report form and export to the report PDF, E-mail or Paper print device



[Report Window]

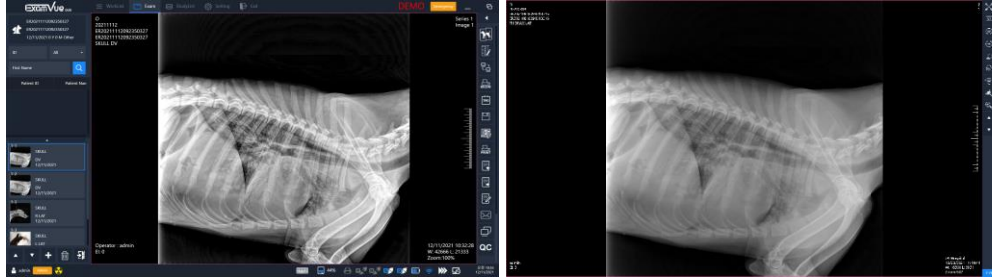
Name	Description
Patient Information	Display the information of the selected study
Report Contents	Write some comments (RECOMMADATION / FINDING / CONCLUSION)
Information / Annotation	Include patient Information / Annotations
Layout	Change the image layout (1x1, 1x2, 2x1, 2x2)
E-mail	Create a PDF of the report and send it as an attachment to the E-mail
PRINT	Print of the Paper Printer
SAVE PDF	Save as a PDF file
CANCEL	Exit the Report Window

- **Dual Screen**



Dual Screen

Display the full screen image in the secondary monitor if user is using the dual monitor



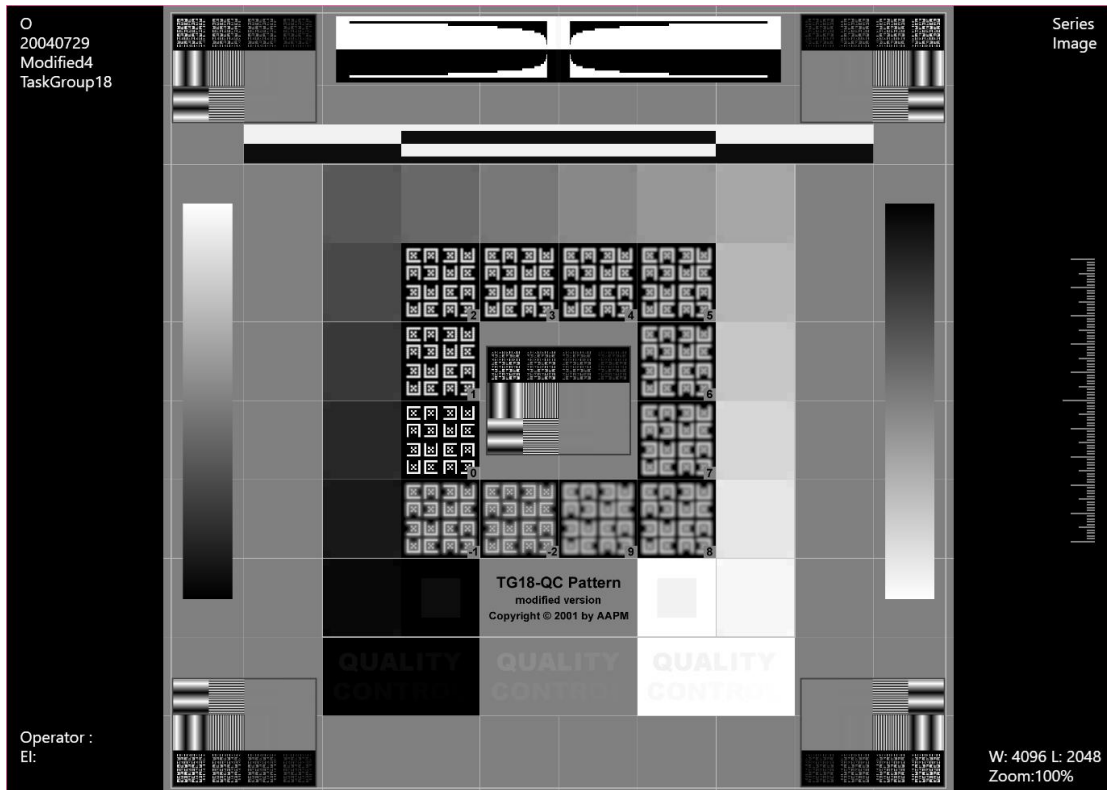
[Dual Screen]

- **QC Pattern**



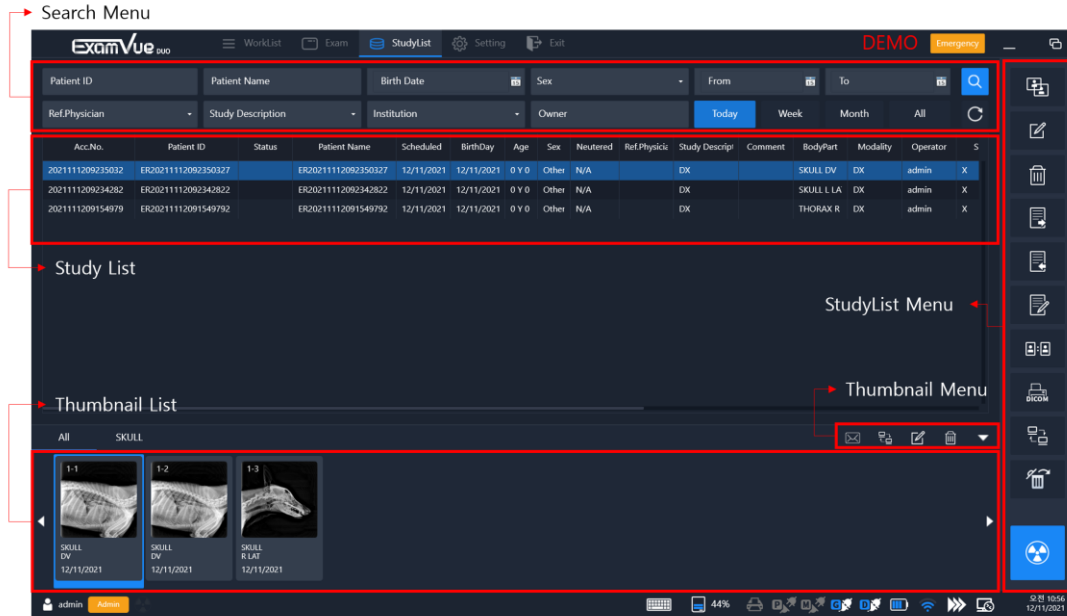
QC Pattern

Display the QC pattern.



8. StudyList Window

StudyList Window allows you to retrieve past studies from the database and shows in the list.



8.1 Search Menu

You can search the past studies using the following conditions on the database.



Name	Description
Patient ID	Input a patient ID of study to search
Patient Name	Input a patient name of study to search
Birth Date	Input a patient's birthday
Sex	Select the Sex
User Study Date (From to To)	Input or select a specific period of date to search
Ref.Physician	Input the information of the referring physician
Study Description	Input patient's study description
Institution	Input patient's institution information
Owner	Input patient's owner name

- Period search buttons: Search by Period.

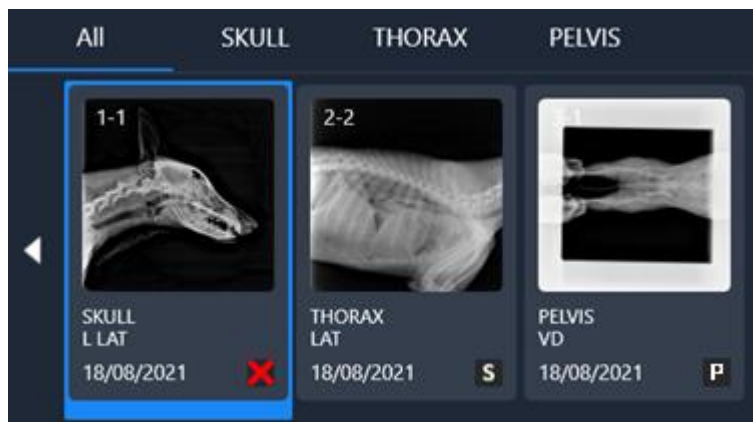


8.2 Study List




All studies searched with entered condition are displayed in the study list.

8.3 Thumbnail Window



Shows all images of the selected study







Thumbnail Symbol Table









Symbol	Description
	Rejected Image
	Printed out DICOM Image to the DICOM Printer successfully
	Sent DICOM Image to the PACS System successfully

Thumbnail Window Button Table

Icon	Name	Description
	E-mail Send	Send the selected image to E-mail
	DICOM Send	Send the selected image to DICOM

	Edit	Edit the registered information in the Thumbnail window
	Delete	Delete selected image in the thumbnail window
	Expand /	Expand / Reduce the study list
	Reduce	

8.4 Study Management Tools

Icon	Name	Description
	Merge	The image moves to the selected patient between the two patients
	Edit	Edit the patient information
	Delete	Delete the selected patient from the list. Allow deletion of administrative accounts only
	Export	Convert and export the selected images with various formats to the local drive, external USB or CD/DVD equipment
	Import	Import an external DICOM image to add information to the study list
	Report	Make the report of the selected image using the report form and export to the report PDF, E-mail or Paper print device
	Compare	Compare selected images in the Image Viewer
	DICOM Print	Print the selected image to the DICOM printer



PACS

Transfer DICOM Images to PACS Server



Restore

Restore deleted image to selected ID
Allow only managed account recovery



Exam

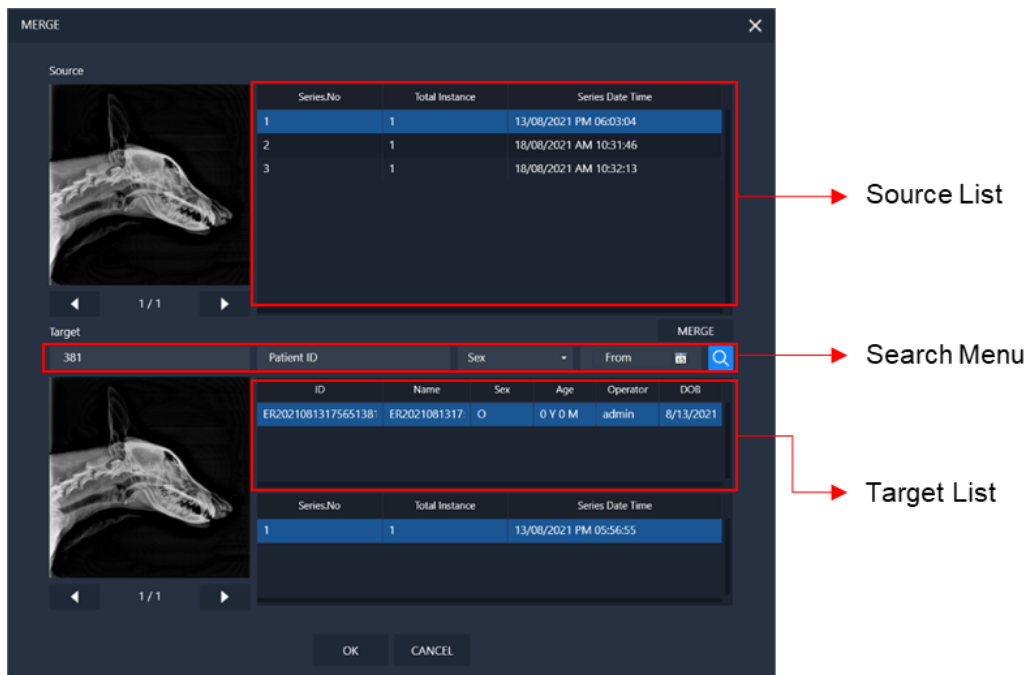
Move to the Exam Window to take X-ray Image

● **Merge**



Merge

Move to the selected images at between two patients



[Merge Window]

- 1) The Source contains the selection from the Study list in the Study Window.



- Merge Window does not appear unless selected.

- 2) Select an image to merge from the Source List.
- 3) Search for Target using Search Menu.

4) Select a target from the Target List.

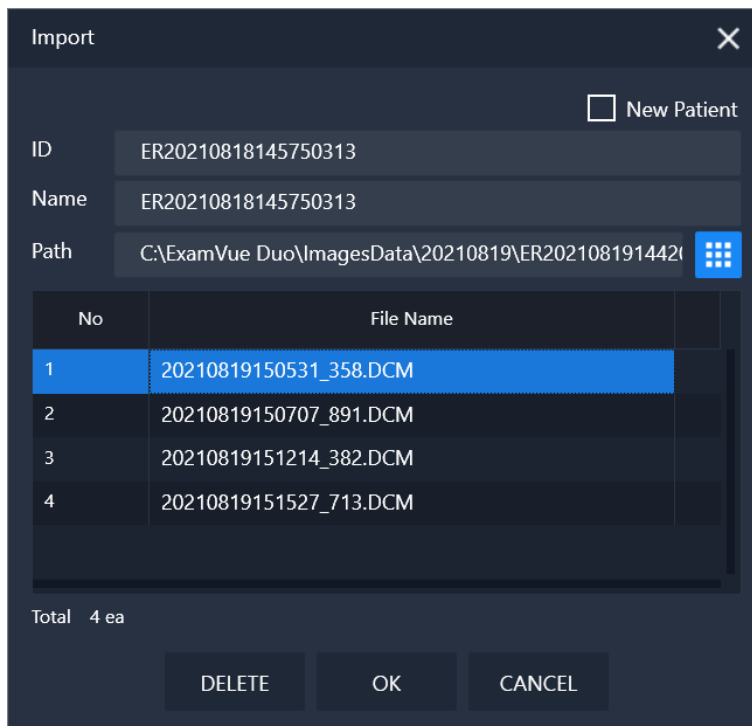
5) Click the MERGE button. 

● Import



Import

Import an external DICOM image to add information to the study list



No	File Name
1	20210819150531_358.DCM
2	20210819150707_891.DCM
3	20210819151214_382.DCM
4	20210819151527_713.DCM

Total 4 ea

DELETE OK CANCEL

[Import Window]



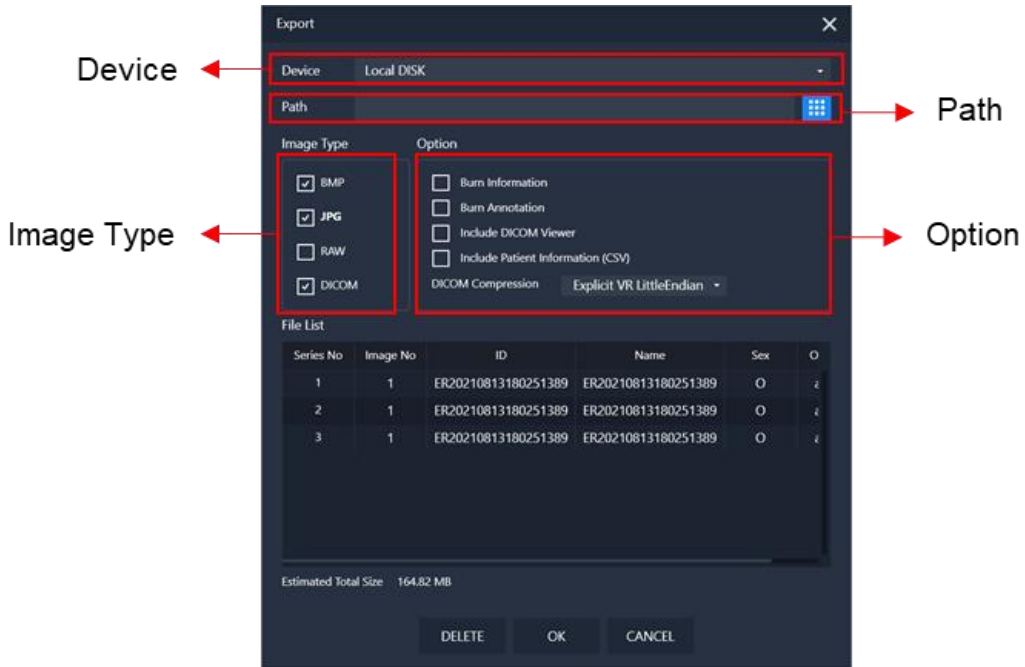
- If the **New Patient** option is selected, it is added as a new item.

● **Export**



Export

Convert and export the selected images with various formats to the local drive, external USB or CD/DVD equipment



[Export Window]

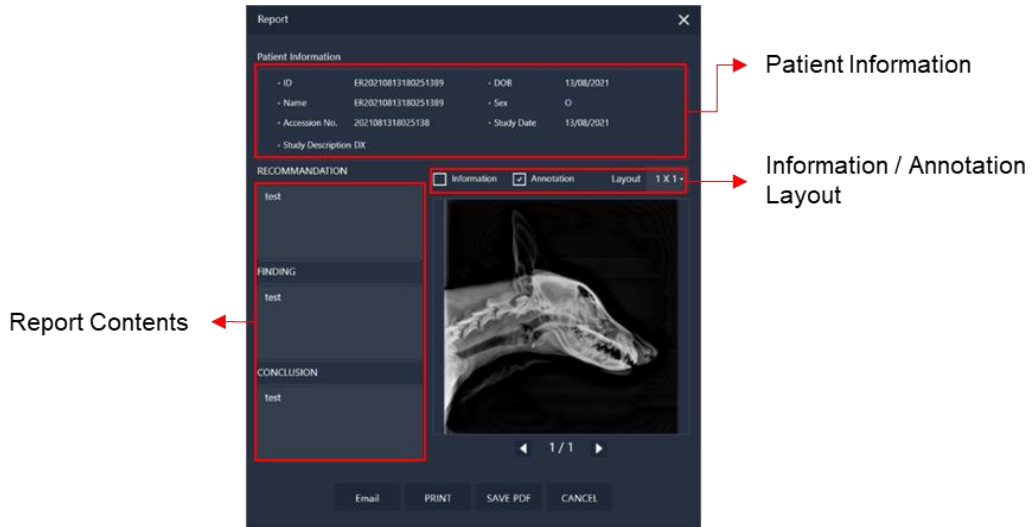
Name	Description
Device	Select the export device with Local Disk, USB or CD/DVD
Path	Set the image path for the image export. It allows only USB and Local Disk
Image Type	Select the image type in the BMP, JPG, RAW and DICOM
Option	<ul style="list-style-type: none"> - Burn Information: Save the patient information on the image - Burn Annotation: Save the annotation information on the image - Include the DICOM Viewer: It can allow only when selected DICOM Image format - Include the Patient Information (CSV): Make the CSV file with the selected patient info - DICOM Compression type: Select the DICOM compression type

● **Report**



Report

Make the report of the selected image using the report form and export to the report PDF, E-mail or Paper print device



[Report Window]

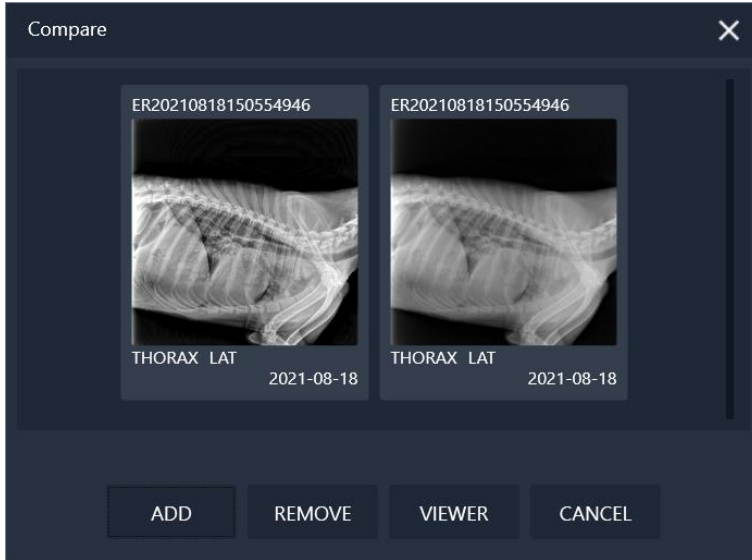
Name	Description
Patient Information	Display the information of the selected study
Report Contents	Write some comments (RECOMMADATION / FINDING / CONCLUSION)
Information / Annotation	Include patient Information / Annotations
Layout	Change the image layout (1x1, 1x2, 2x1, 2x2)
E-mail	Create a PDF of the report and send it as an attachment to the E-mail
PRINT	Print of the Paper Printer
SAVE PDF	Save as a PDF file
CANCEL	Exit the Report Window

- **Compare**



Compare

Compare selected images in the Image Viewer



[Compare Window]

Name	Description
ADD	Adds the selected image from the Thumbnail List
REMOVE	Remove the selected image
VIEWER	Move to the Image Viewer
CANCEL	Exit the Compare window



[Image Viewer]

● **DICOM Print**



DICOM Print Print the selected image to the DICOM printer



[DICOM Print Window]

Name	Description
Print Name	Name of DICOM Print Server to be used
Medium Type	Type of medium on which the print job will be printed
Film Size	Size of printed materials
Copies	Number of copies to print
Orientation	Type of image orientation (Portrait, Landscape)



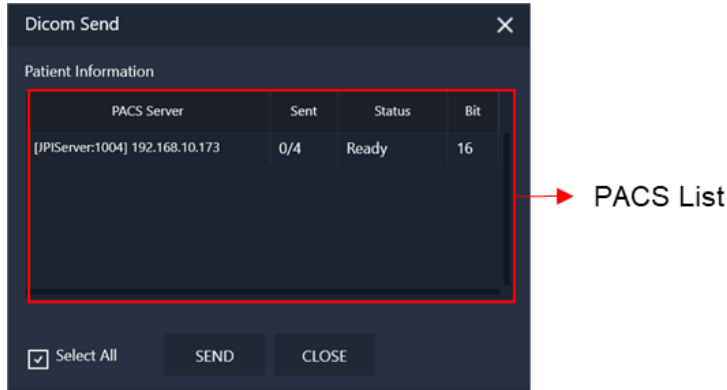
- Before working it, you must configure the DICOM Print settings in the Settings Window.

- **PACS**



PACS

Transfer DICOM Images to PACS Server



[DICOM Send Window]

- 1) Select PACS from the PACS list.
(If the **Select All** is checked, it is sent to all registered servers.)
- 2) Click the SEND button.



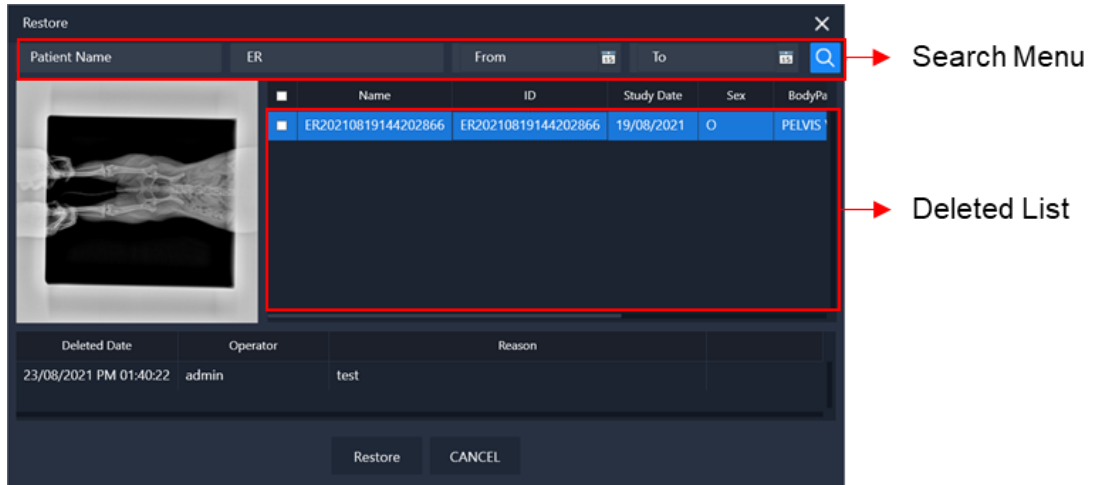
- Before working it, you must configure the PACS Sever settings in the Settings Window.

- **Restore**



Restore

Restore deleted image to selected ID



[Restore Window]

- 1) Search for deleted items using Search Menu.
- 2) Select the item to be restored from the Deleted List.
- 3) Click the Restore button.

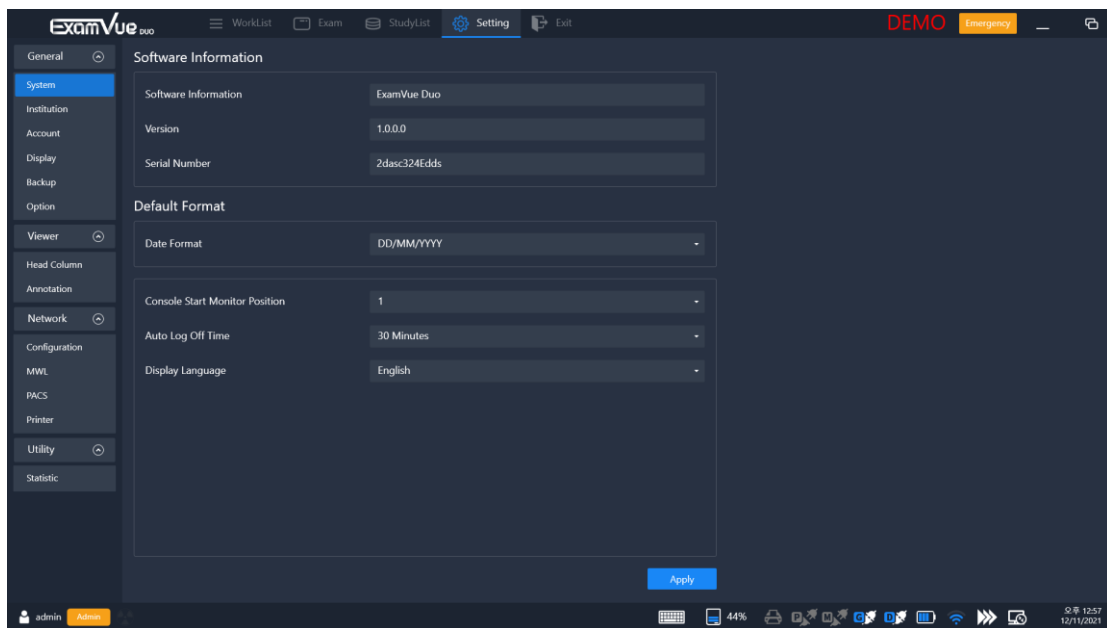
9. Settings Window

Administrator privileges are required to access the Settings window. If you cannot find the Settings Window menu in the top main menu, contact your administrator.

You can also save and apply the changed settings in the Settings window by clicking the Apply button and restarting the software.

9.1 General

9.1.1 System



[Setting – General – System]

Name	Description
Software Information	Display Software Name
Version	Display Software Version
Serial Number	Display Software Serial Number
Date Format	Change the Date Format
Console Start Position	Allow to start software position, but dual monitor need to configure in the system
Auto Log off Time	Select the Auto log off time

Select the language

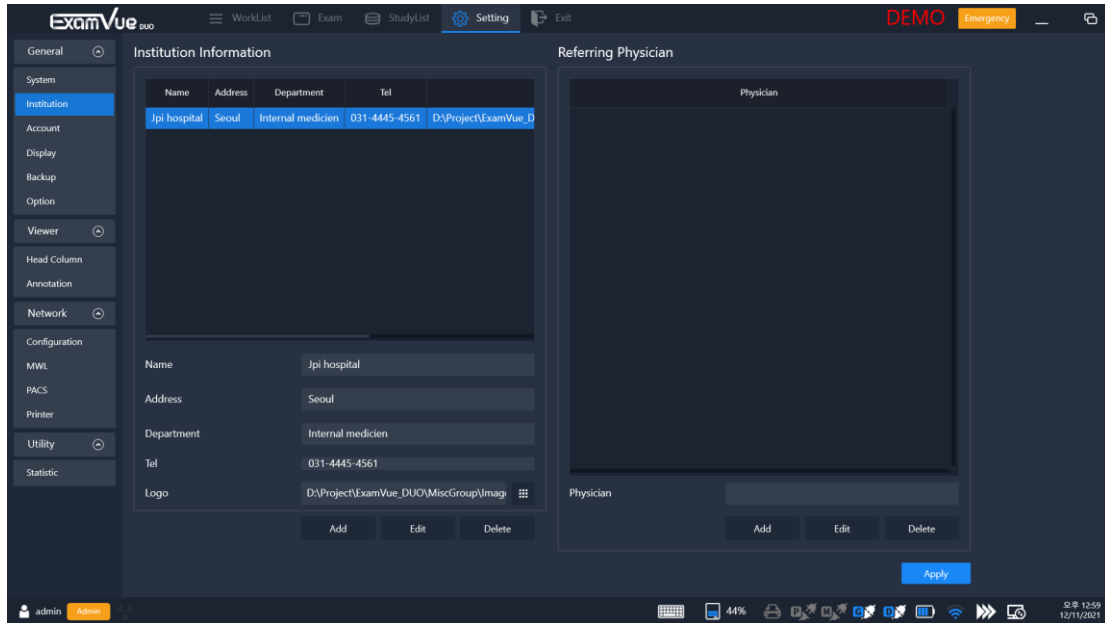
Display language

Language	DICOM Character Set
Korean	ISO IR6 \ ISO2022 IR 149
Chinese	ISO IR6 \ GB18030
Japanese	ISO 2022 IR 13 \ ISO 2022 IR 87
Default	UISI IR 100
Thai	ISO 2022 IR 166
UTF-8	ISO IR 192



- If this item is not correctly changed, some tag value of DICOM header will be not correctly contained.

9.1.2 Institution

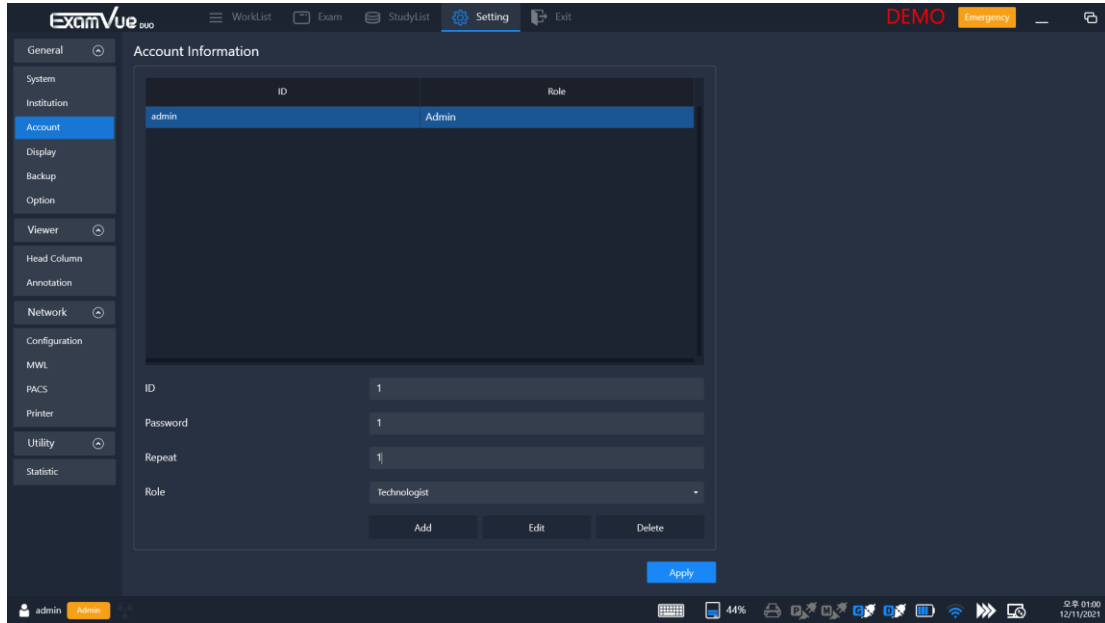


[Setting – General – Institution]

Name	Description
Name	Institution name
Address	Address of the institution
Department	Department name of the institution
Tel	Telephone number of the institution
Logo	Set the logo and it will be displayed in the Report form
Physician	Input the information of the referring physician

9.1.3 Account

Configures the account of the **ExamVue Duo** users and currently registered information is available on the list.

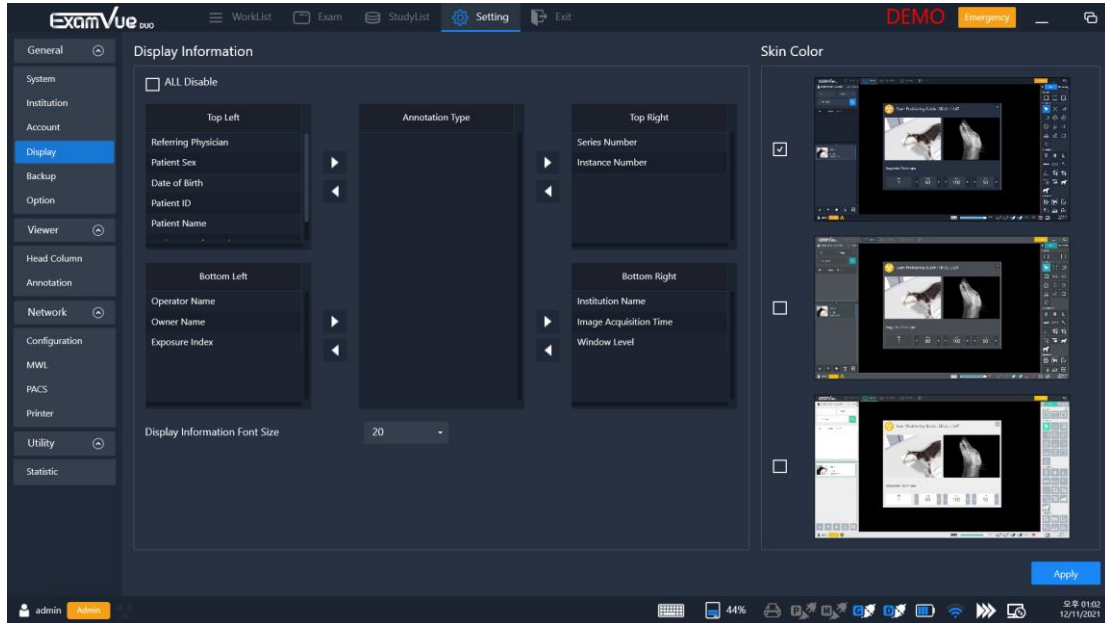


[Setting – General – Account]

Name	Description
ID	ID information
Password	Password information
Repeat	Same information as password
Role	Role information (Admin or Technologist)
Add	Add a new user account
Edit	Edit an existing user account
Delete	Delete an existing user account

9.1.4 Display

Allow information to be displayed on the upper left, lower left, upper right, and right sides of the image, and you can select Skin.

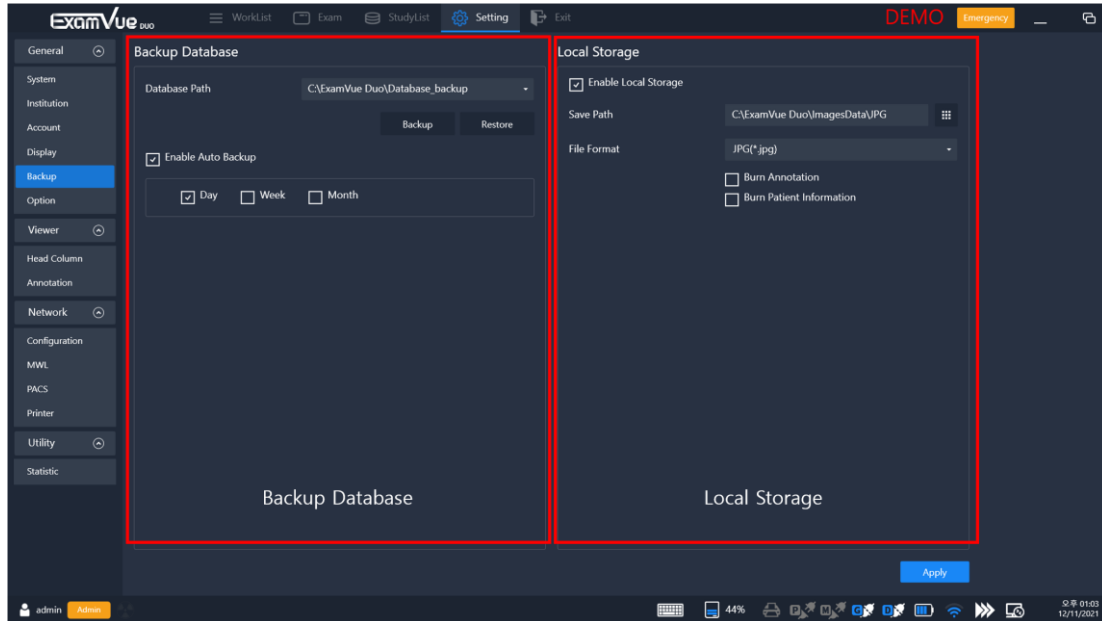


[Setting – General – Display]

Name	Description
ALL Disable	Hide all information when displayed an image in the viewer
Display Information Font Size	Choosing the font size for information display
Skin Color	Choose one of skins in Gray Dark, Navy and White

9.1.5 Backup

Backup and restore the database file.



[Setting – General – Backup]

● Backup Database

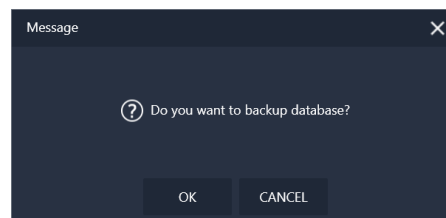
Name	Description
Database Path	Set the file path
Backup	Backup the database file
Restore	Restore the database file that backed up

- If the feature will be performed, the old database file has the patient, and the image information will be replaced or updated.

If 'Enable Auto backup' is checked, automatic backup is performed during the setting condition. Available units to be entered are Day/Week/Month

To do, please click **OK** button in the Backup window below

Enable Auto backup

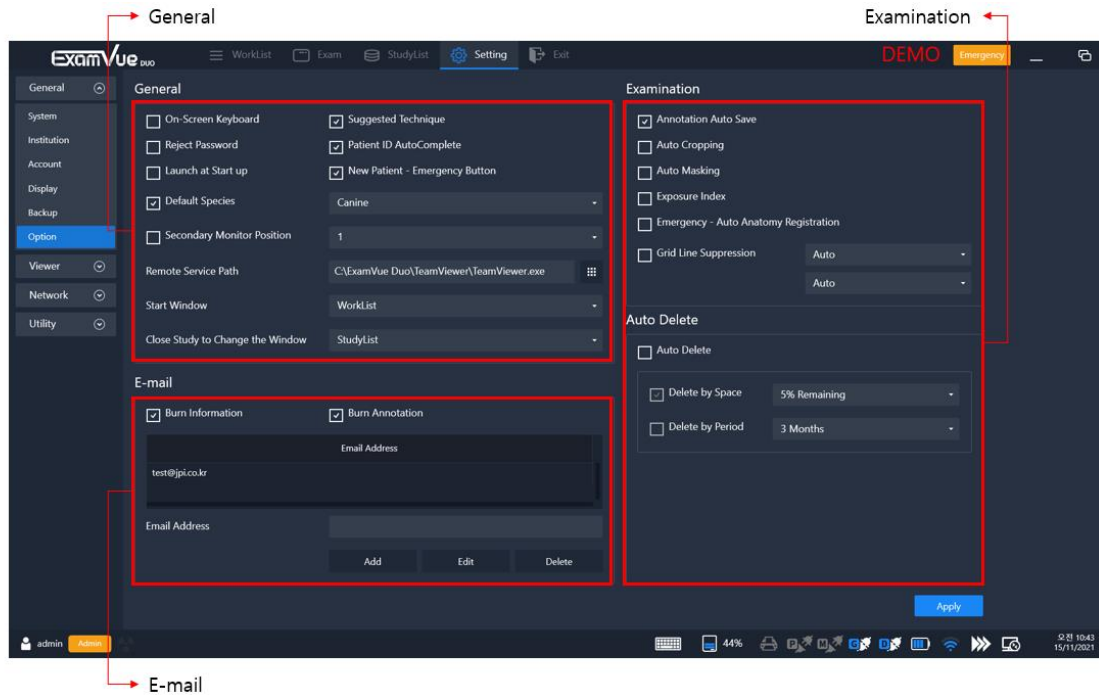


- **Local Storage**

User can save the JPG image automatically in the specified storage path during acquiring the image from the detector. And, during saving the image, user can set the options like the 'Burn Annotation' and 'Burn patient Information'.

Name	Description
Save path	Path where images acquired from the detector are stored
File Format	JPG format only is available
Burn Annotation	Save the annotation information in the JPG image
Burn Patient Information	Save the patient information in the JPG image

9.1.6 Options

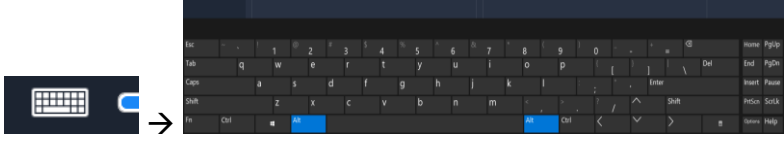
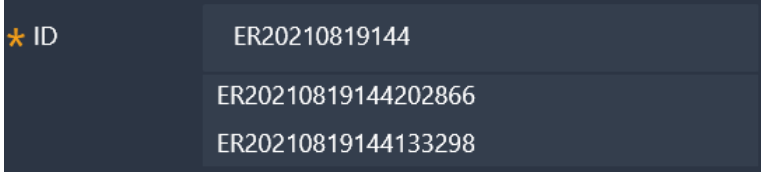


[Setting – General – Option]


● E-mail

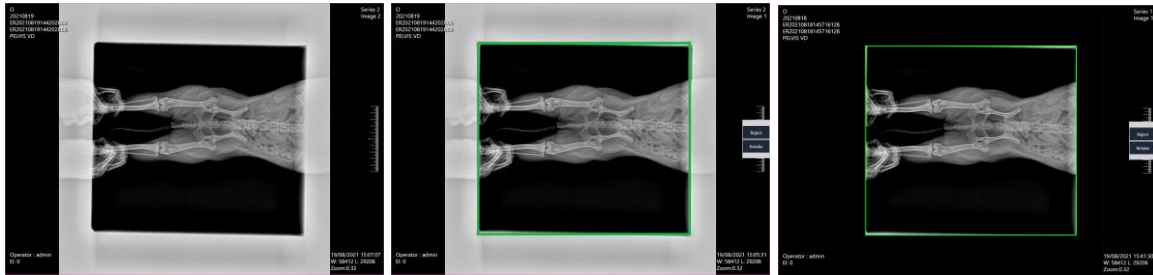
Name	Description
Burn Information	Add patient information to the E-mail attachment image
Burn Annotation	Add patient annotation to the E-mail attachment image
E-mail Address	Frequently used E-mail address
Add	Add the inputted E-mail address
Edit	Edit the registered E-mail address
Delete	Delete the registered E-mail address

● **General**

Name	Description
<p>On-Screen keyboard</p>	<p>Enable / Disable the virtual keyboard</p> <p>If a user click the virtual icon, the virtual key board will be displayed as below</p> 
<p>Suggested Technique</p>	<p>Show or Hide the Exam Positioning guide</p> <p>When moving to the Exam window, the examination guide will be displayed according to the option</p>
<p>Reject Password</p>	<p>Show or Hide the Reject window.</p> <p>When you attempt to run the reject function, a pop-up window will pop up and prompt you to enter your password</p>
<p>Patient ID Auto Fill</p>	<p>When you enter an ID on the Add Patient screen, the ID you previously entered is displayed below</p> 
<p>Launch at Start up</p>	<p>Enable or Disable the Launch at Start up.</p> <p>If enabled, ExamVue Duo starts automatically after booting the Windows system</p>
<p>Default Species</p>	<p>Species selected by default when adding patients</p>
<p>Secondary Monitor</p>	<p>Enable or disable the secondary monitor</p>
<p>Remote Service Path</p>	<p>Remote program path</p>
<p>Close Study to Change the Window</p>	<p>Select the screen that changes when you close the Study (WorkList, StudyList)</p>

● **Examination**

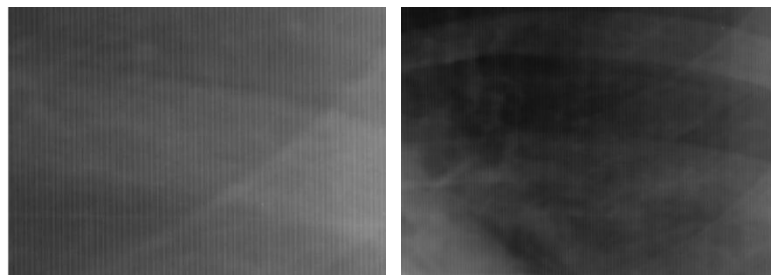
Name	Description
Annotation Auto Save	Save Annotation automatically
Auto Cropping	Enable the auto cropping function while Exam mode
Auto Masking	Enable the auto Masking function while Exam mode <div style="display: flex; align-items: center;">  <ul style="list-style-type: none"> ● Auto Masking is available only if Auto Cropping is enabled. </div>
Exposure Index	The Exposure Index will show up on the image
Emergency-Auto Anatomy Registration	Automatically register Anatomy during Emergency and navigate to the Exam window (The default value for anatomical values is Default Species)
Grid Line Suppression	It can remove the grid line in the image



[Original]

[Auto Cropping]

[Auto Cropping & Auto Masking]



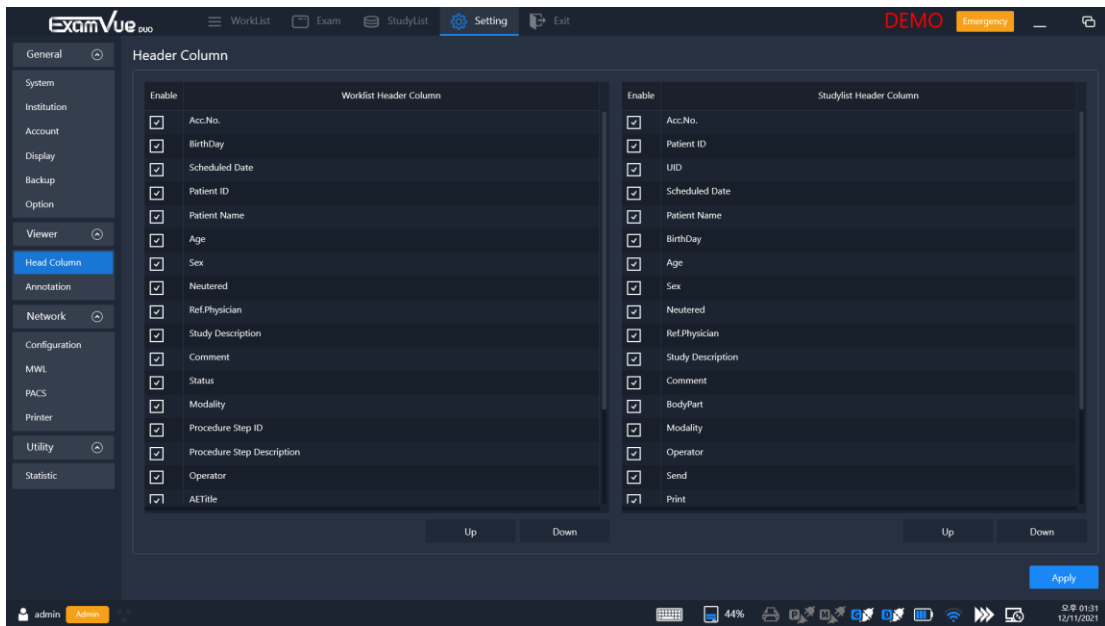
[Original]

[Grid Line Suppression Image]

● **Auto Delete**

Name	Description
	You can automatically delete data. Choose one of two options
Auto Delete	<ul style="list-style-type: none"> - Delete by Space - Delete by Period

9.2 Viewer



[Setting – Viewer – Header Column]

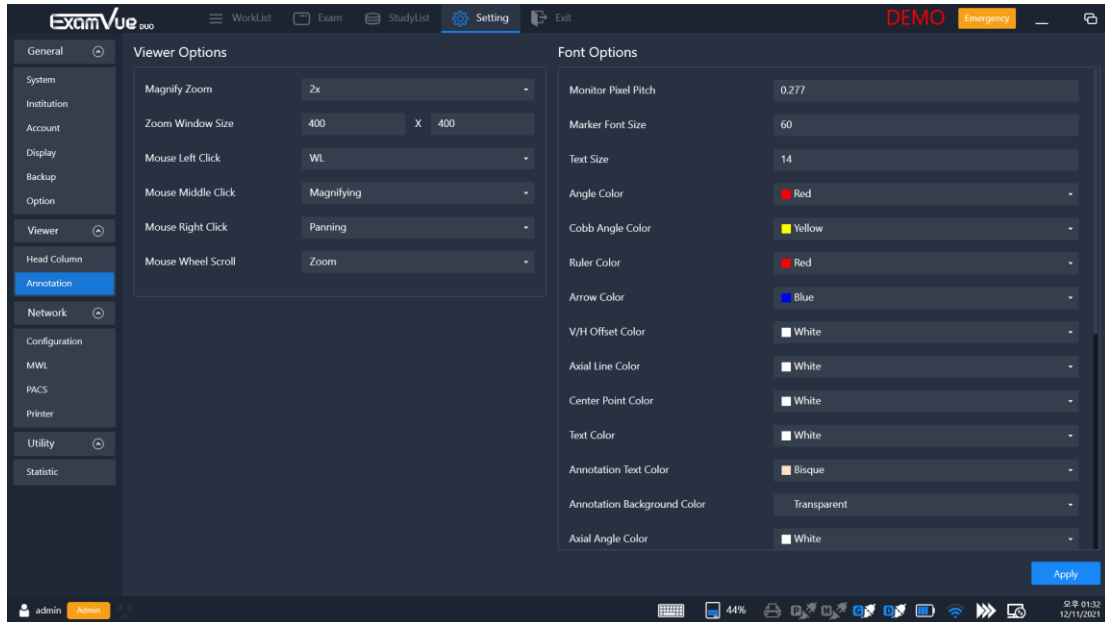
9.2.1 Header Column

You can select and move to the position in the header column for the Worklist and StudyList Window.

Name	Description
Up	Up to the selected header column
Down	Down to the selected header column

9.2.2 Annotation

User can set Viewer option and Font option.



[Setting – Viewer – Annotation]

- **Viewer Option**

Name	Description
Magnify Zoom	Set the Magnify zoom ratio
Zoom Window Size	Set the magnify zoom window size
Mouse Left click	Default Action for Mouse Left
Mouse Middle click	Default Action for Mouse Middle
Mouse Right click	Default Action for Mouse Right
Mouse Wheel Scroll	Default Action for Mouse Wheel Scroll

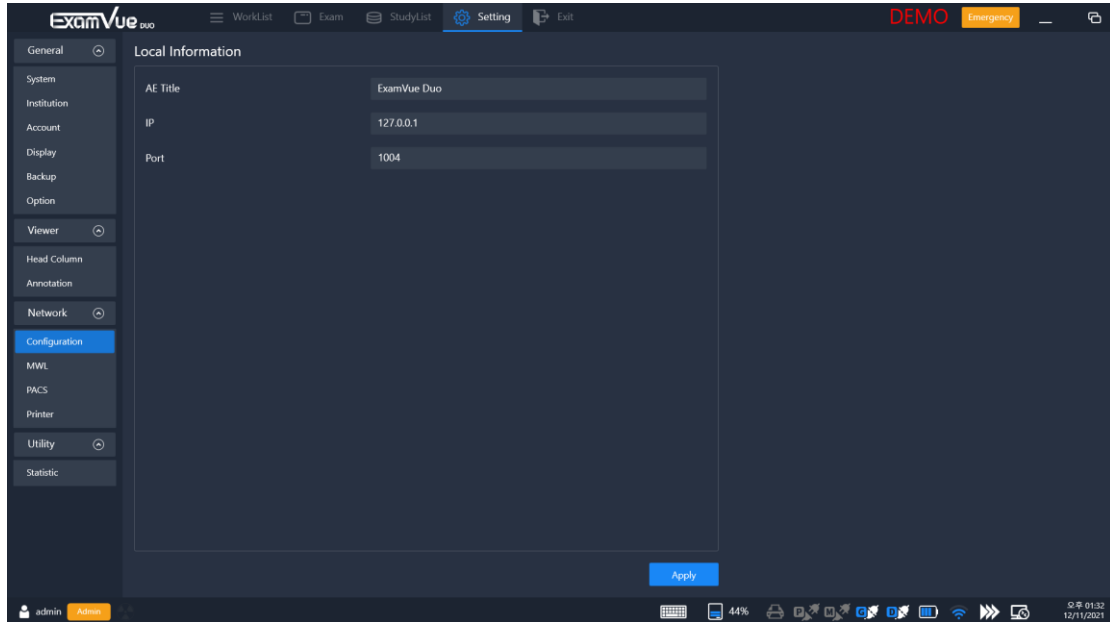
- **Font Option**

User can set the color in the annotation features.

9.3 Network

9.3.1 Configuration

Configures the network information.

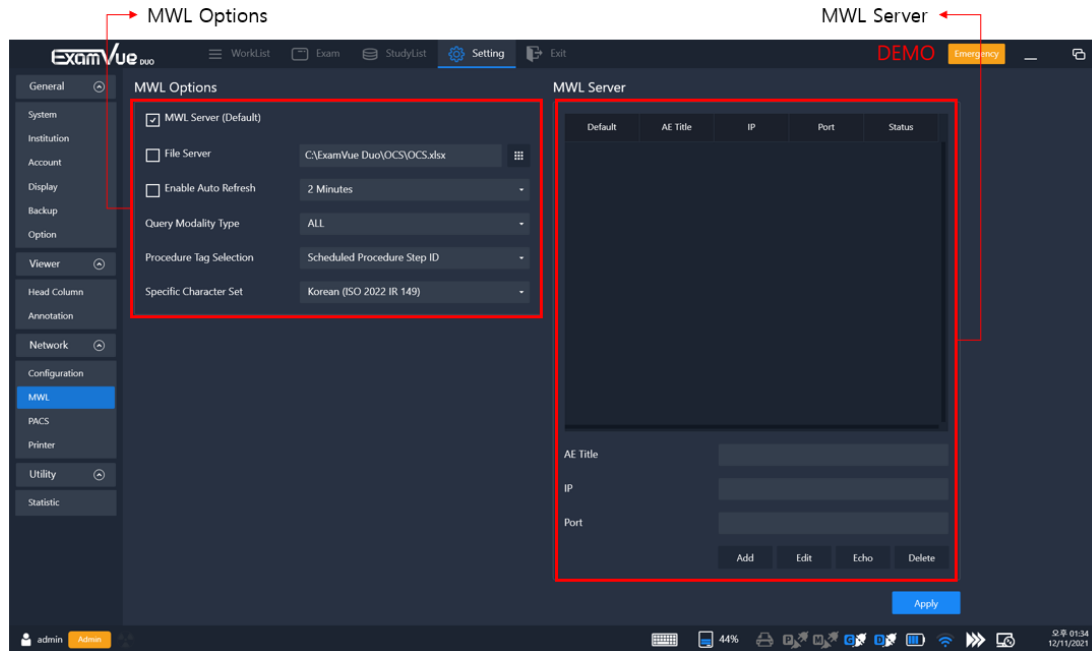


[Setting – Network – Configuration]

Name	Description
AE Title	Enter name of the local pc which will be displayed on the Network
IP	Enter IPv4 Address of the PC
Port	Enter the Port number, it should be configured in accordance with the linked server

9.3.2 MWL (Modality Worklist Server)

Configures the network information of the server storing the Modality Worklist.



[Setting – Network – MWL]

● MWL Option

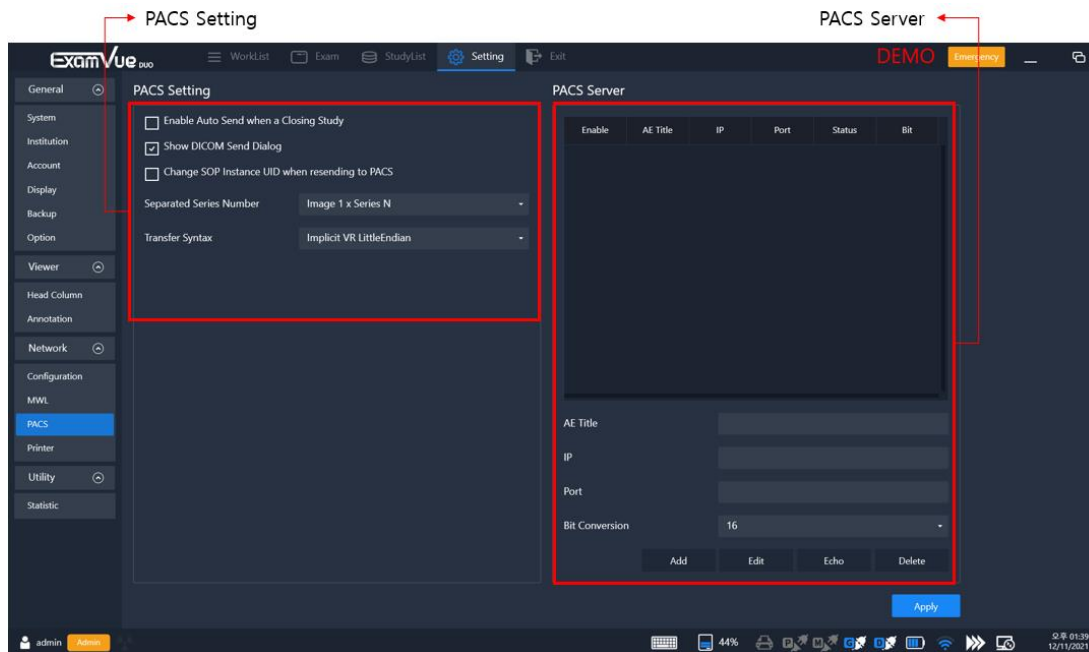
Name	Description
MWL Server (Default)	Enable or Disable the MWL feature
File Server	Enable or Disable the File Server feature
Enable Auto Refresh	Refresh the querying time automatically
Query Modify Type	Select the modality type of the imaging equipment
Procedure Tag Selection	Select the tag to match the code matching at the below table <ul style="list-style-type: none"> - Requested Procedure ID - Requested Procedure Description - Scheduled Procedure Step Description - Scheduled Procedure Step ID
Specific Character Set	Select the Specific Character Set

- **MWL Server**

Name	Description
AE Title	AE Title for MWL
IP	IP for MWL
Port	Port for MWL
Add	Add new MWL Server information in the list
Edit	Edit the registered MWL Server
Echo	Check the connection between the installed PC and the MWL Server
Delete	Delete the selected MWL Server in the list

9.3.3 PACS

Configures the network information of the PACS Server, which stores the images files.



[Setting – Network – PACS]

- **PACS Setting**

Name	Description
Enable Auto Send when a Closing Study	When you close an exam study, DICOM images are automatically sent
Show DICOM Send Dialog	Set the DICOM Send Dialog and send DICOM Images manually if it has been set
Change SOP Instance UID when resending to PACS	Change the SOP Instance UID number
Separated Series Number	Select the series number type
Transfer Syntax	Transfer Syntax is a set of encoding rules able to unambiguously represent one or more Abstract Syntaxes

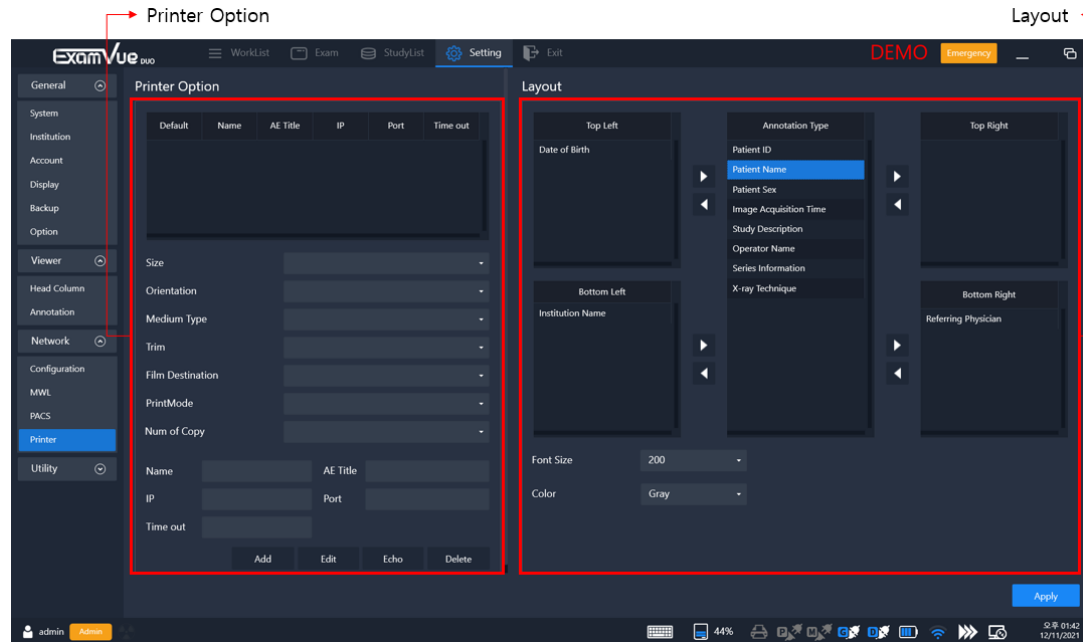
- **PACS Server**

Register PACS Server Information and select one or more PACS Server in the list.

Name	Description
AE Title	AE Title for PACS
IP	IP for PACS
Port	Port for PACS
Bit Conversion	Bit conversion of DICOM files
Add	Add new PACS Server information in the list
Edit	Edit the registered PACS Server
Echo	Check the connection between the installed PC and the PACS Server
Delete	Delete the selected PACS Server in the list

9.3.4 DICOM Print

Configures the connection information of the Printer and select one Server in the list.



[Setting – Network – Printer]

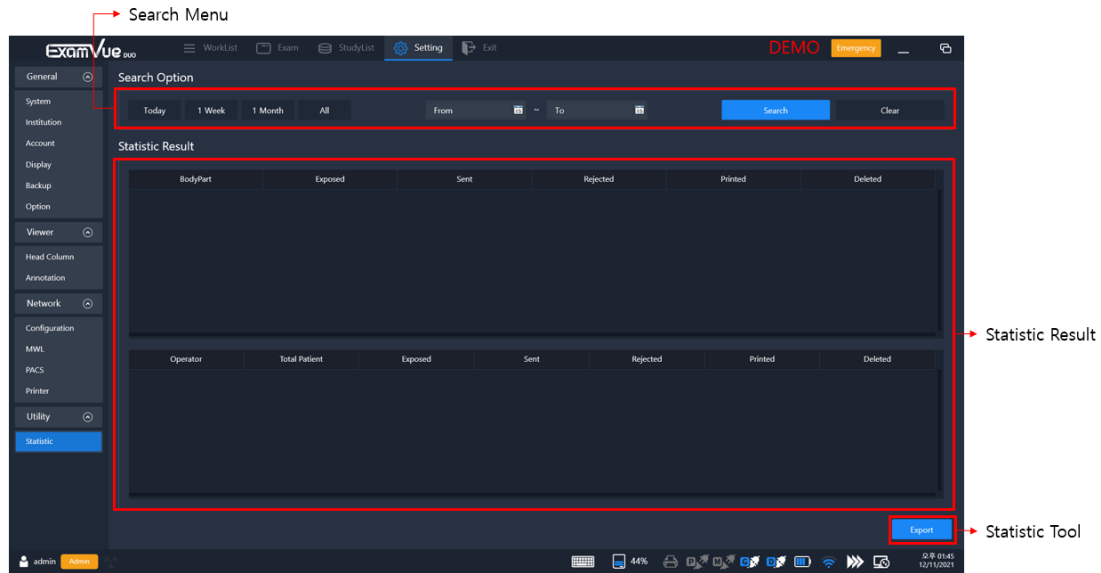
● Printer Option

Name	Description
Size	Choose the film size you typically use
Orientation	Select the direction of film
Medium type	Type of medium on which the print job will be printed
Trim	Select the trim
Film Destination	Select the destination of film
Print Mode	Select the Print Mode
Number of Copy	Sets the number of outputs
Name	Enter the name of the Print
AE Title	Enter the AE title of the DICOM Print
IP	Enter the IP number of the DICOM Print
Port	Enter the Port number of the DICOM Print
Time out	Set the time out

- **Layout**

Allow the location to show Patient Information in the image.

9.4 Utility



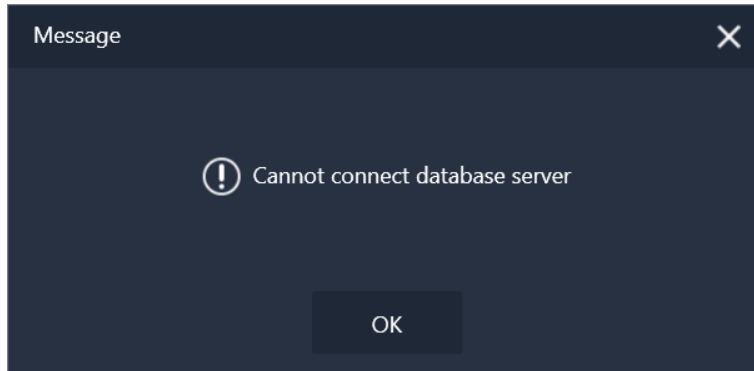
[Setting – Utility – Statistic]

Name	Description
Period	Today, 1 Week, 1 Month, ALL, From To
Search	Search all information in accordance with the search criteria
Clear	Clears all retrieved results
Export	Print out the result as the Report format and can save the PDF format

Appendix 1 – Trouble shooting

1. Can't log-in to the software

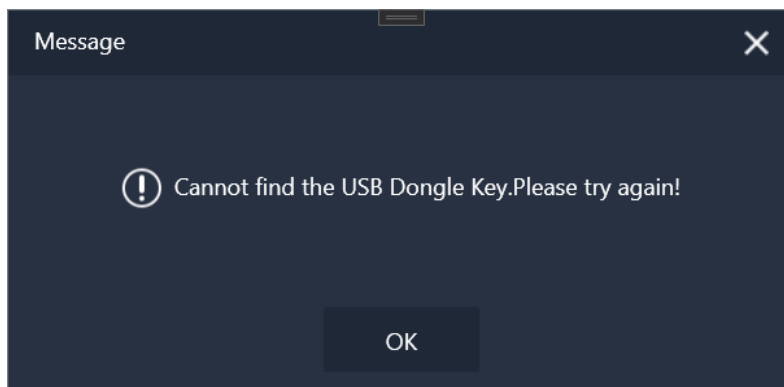
If below error message appeared check DB server is running.



2. USB Dongle key Error

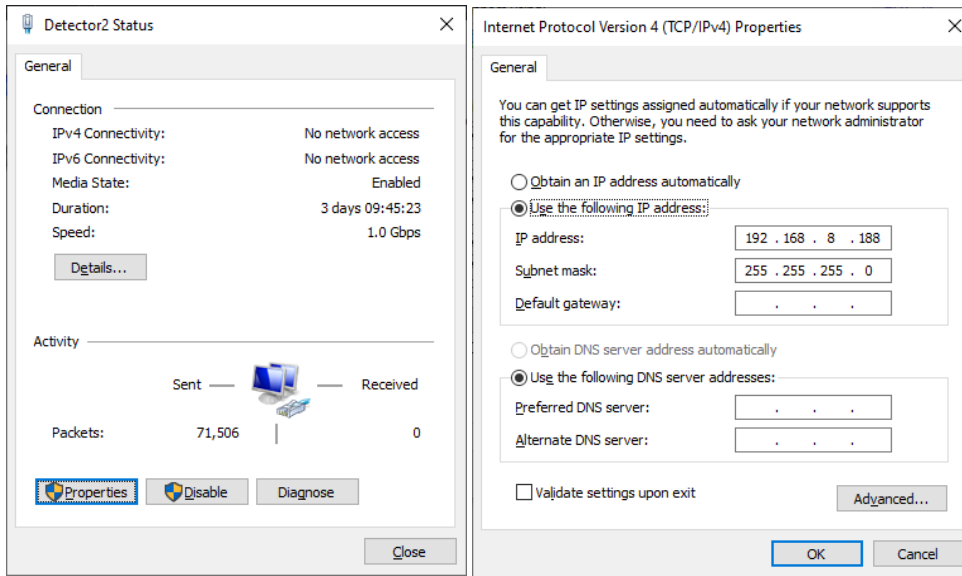
ExamVue Duo needs USB dongle key to run.

If the below error message appeared, please check if USB dongle key was inserted to the USB Port.



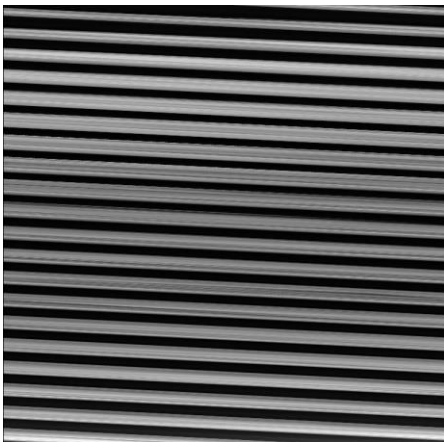
3. Can't connect to the detector or can't acquire the image from the detector

- Check the power of the detector
- Check the LAN Cable between the detector and PC.
- Check IP number on the Network settings



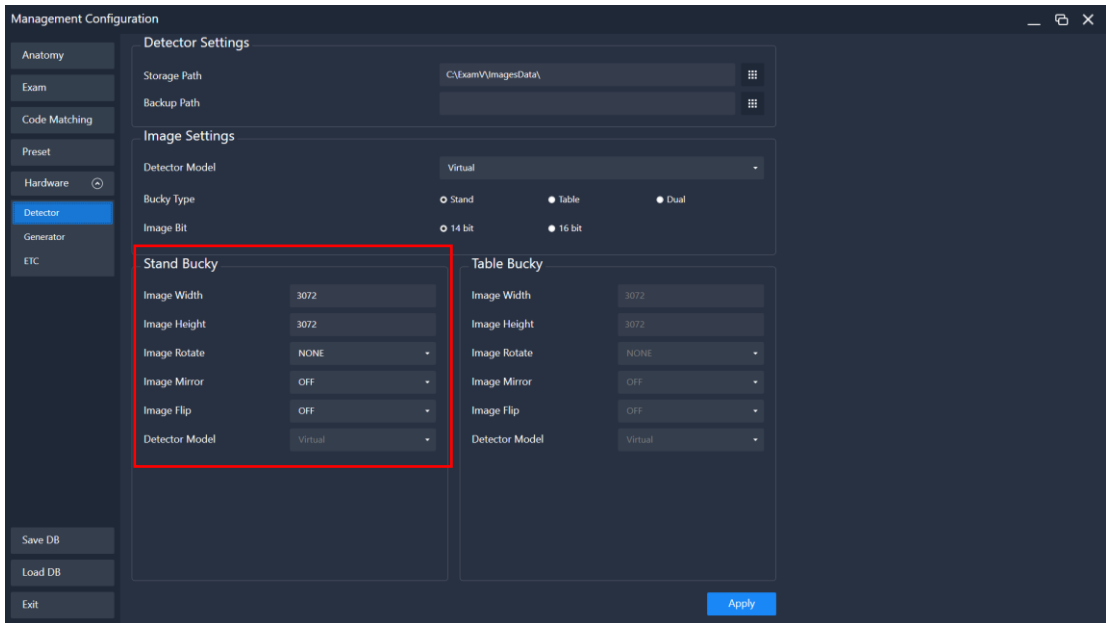
For the IP number, please refer to the detector user guide manual by the manufacturer

4. Display mismatched pixel data after acquiring the image



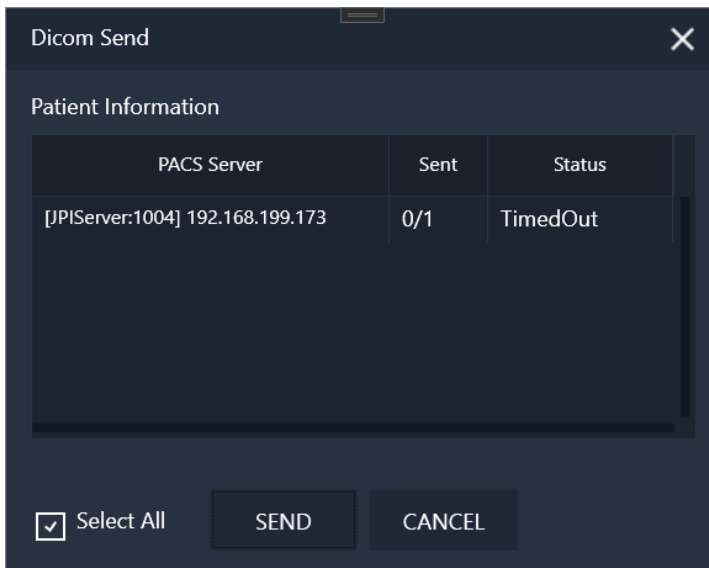
[Mismatched pixel data]

- Check the configuration of the detector in the management .exe

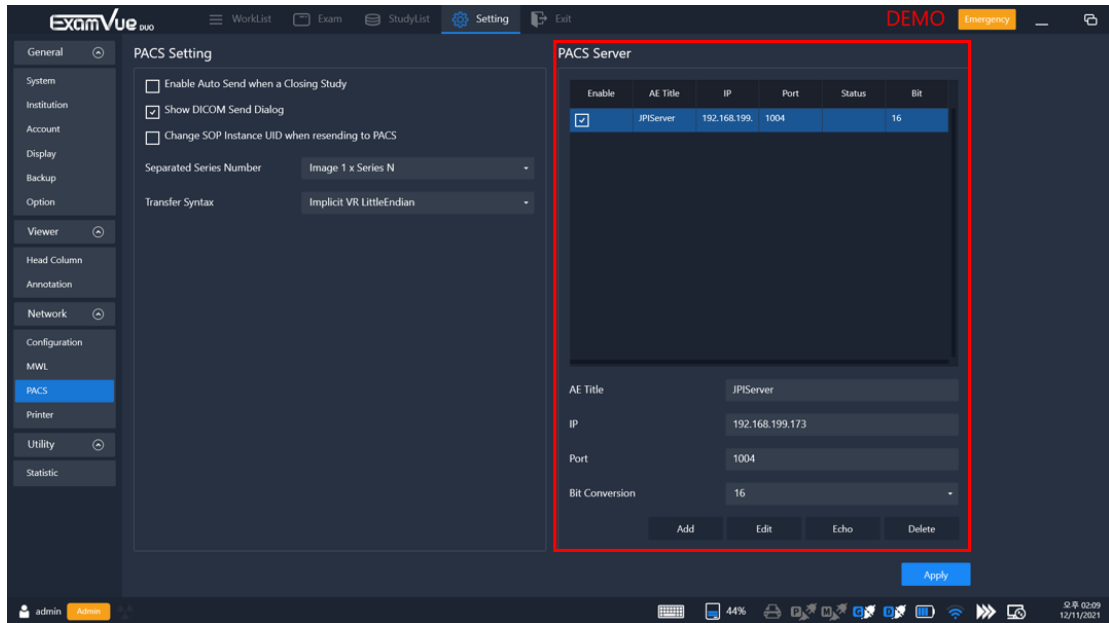


5. Can't send the Image to the PACS Server

A. If below error message appeared.



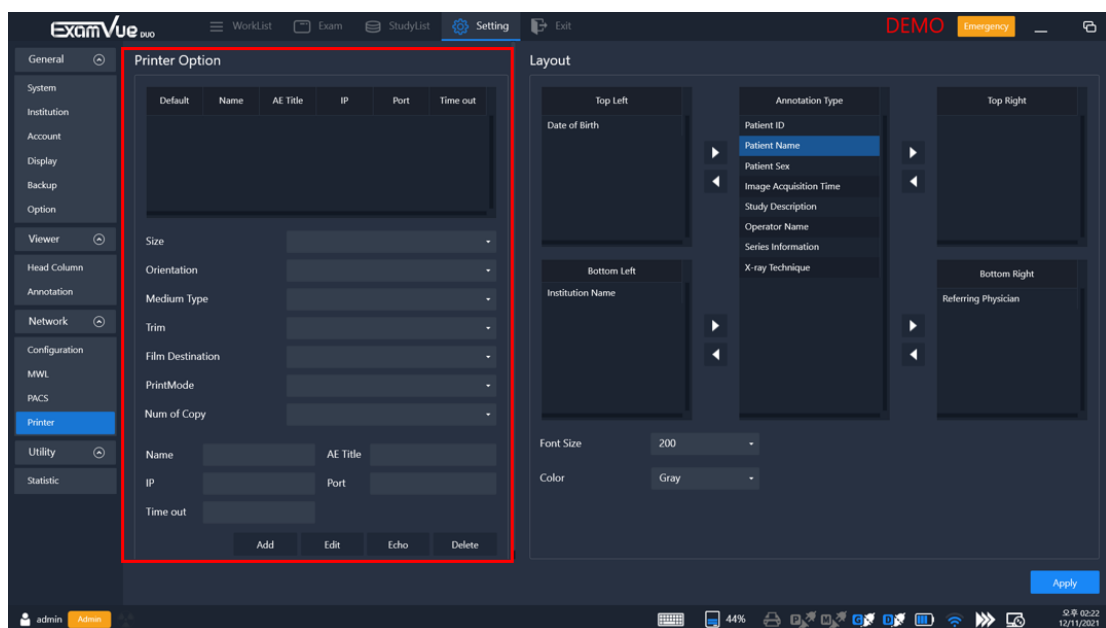
B. You should check AE Title and IP address.



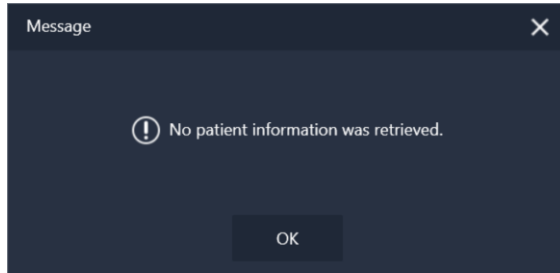
C. Check network status to PACS server.

6. Can't print out the image to the DICOM Print

- Check the power of the DICOM Printer
- Check the LAN Cable between the DICOM Printer and PC
- Check all information in the Settings window's DICOM Printer menu

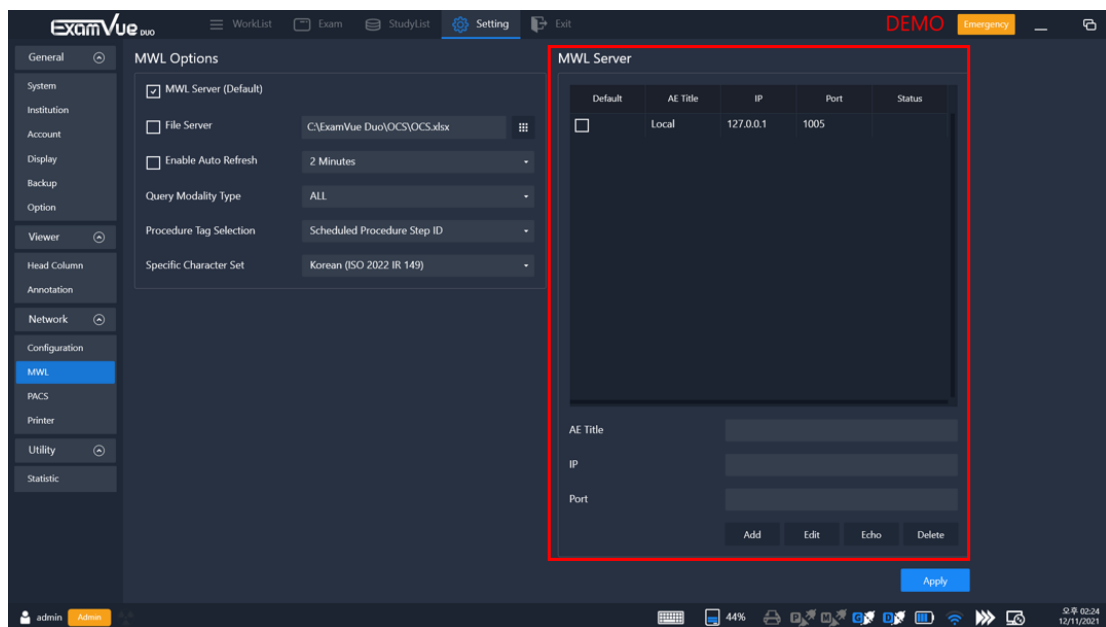


7. Can't query the Patient information from Modality Worklist Server



[Error message]

- Check the physical connection like the LAN cable
- Check the AE Title, IP address and port number in the Settings Window. Please move to the MWL menu and check all settings.
- Restart the software



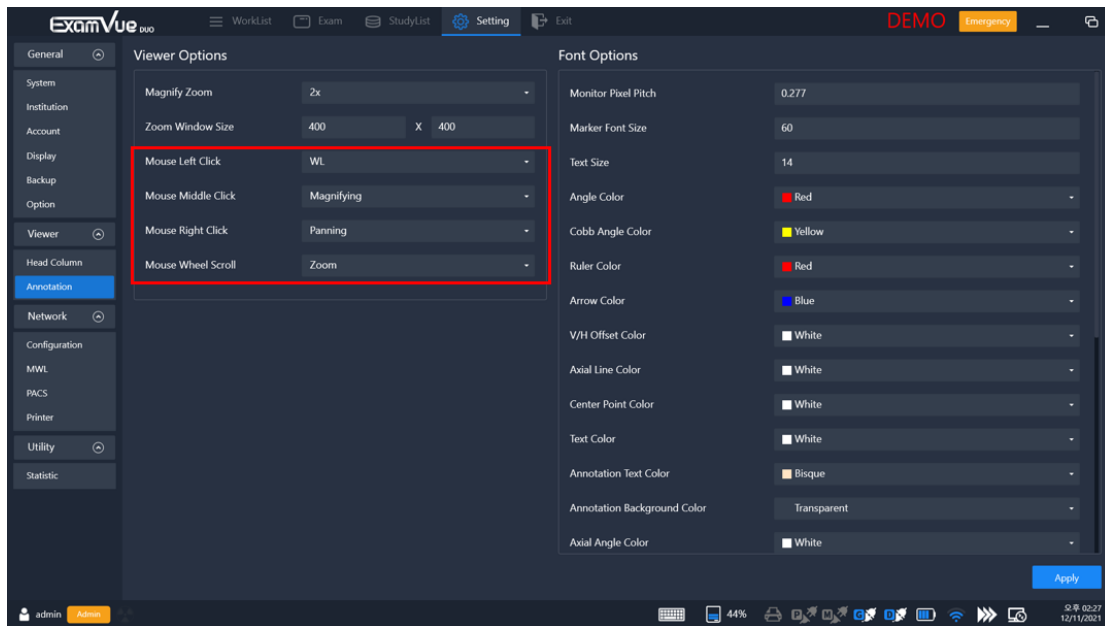
8. Can't save the image

- Please check if the image storage folder user did define
- Check the authority of the folder if it's possible to write.

Appendix 2 – How to use Mouse (default)

User can make mouse setting in the Settings window.

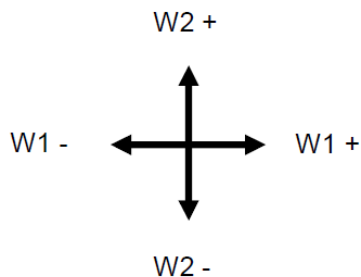
Please move to the annotation menu and check the mouse setting for the right, left and heel button.



So, user can control the image according to the mouse settings.

- Left button
- Right button
- Wheel button
- Right button and drag

If you need to adjust the window level, please press and hold the mouse button user set

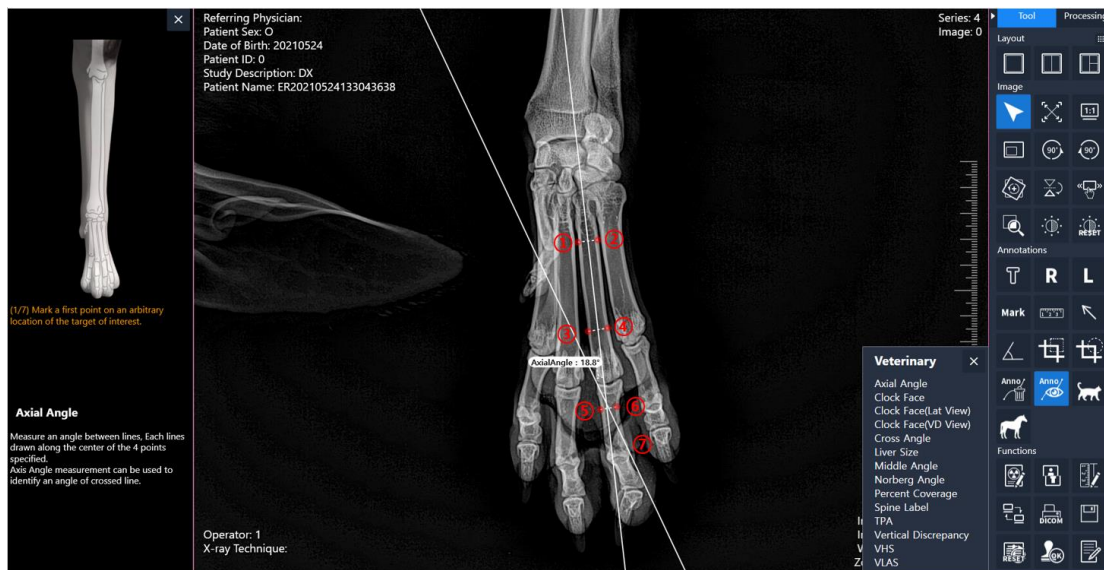


Appendix 3 – Veterinary Tool

- Axial angle

Measure an angle between lines, each line drawn along the center of the 4 points specified. Axis Angle measurement can be used to identify an angle of crossed line.

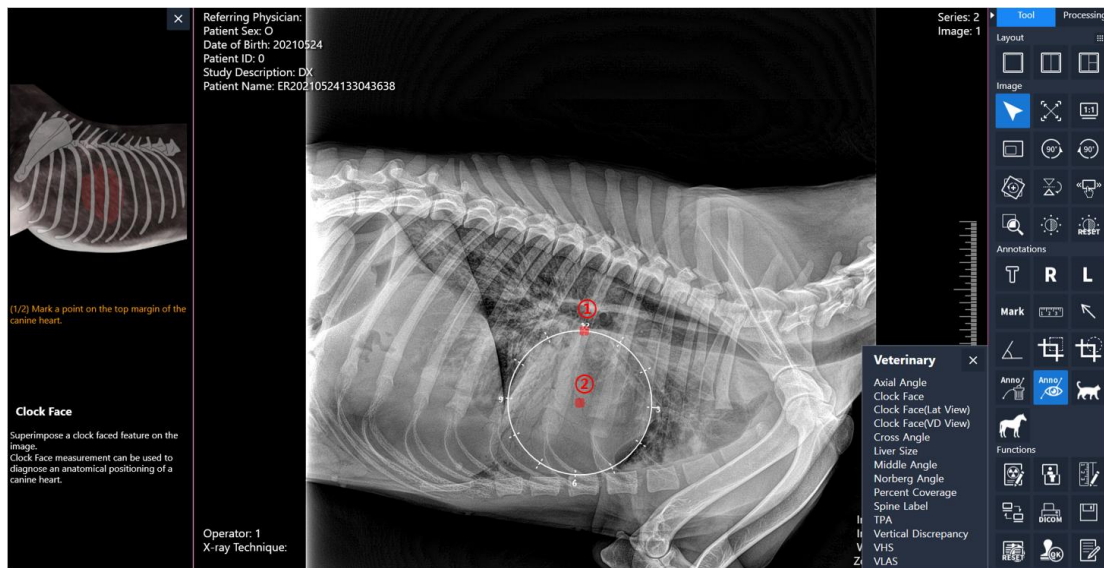
- 1) Mark a first point on an arbitrary location of the target of interest.
- 2) Mark a second point on an arbitrary location of the target of interest.
- 3) Mark a third point on an arbitrary location of the target of interest.
- 4) Mark a fourth point on an arbitrary location of the target of interest forming an axis line.
- 5) Mark a first point on an arbitrary location of the target of interest.
- 6) Mark a second point on an arbitrary location of the target of interest.
- 7) Mark a third point on an arbitrary location of the target of interest forming an axis line.



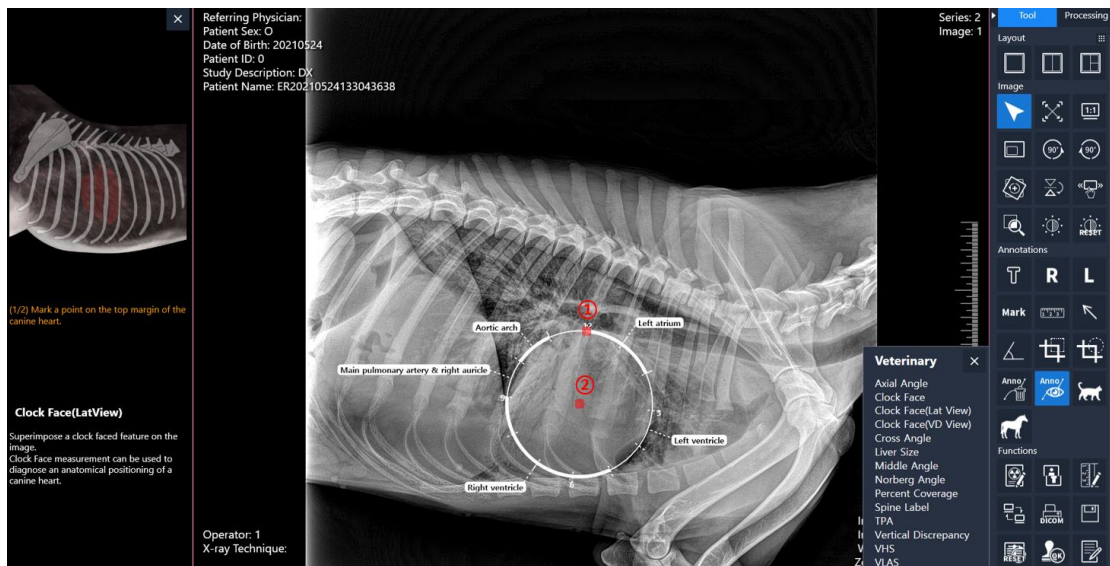
- Clock face

Superimpose a clock faced feature on the image. Clock Face measurement can be used to diagnose an anatomical positioning of a canine heart.

- 1) Mark a point on the top margin of the canine heart.
- 2) Mark a point on the center of the canine heart forming a clock face.



<Default>

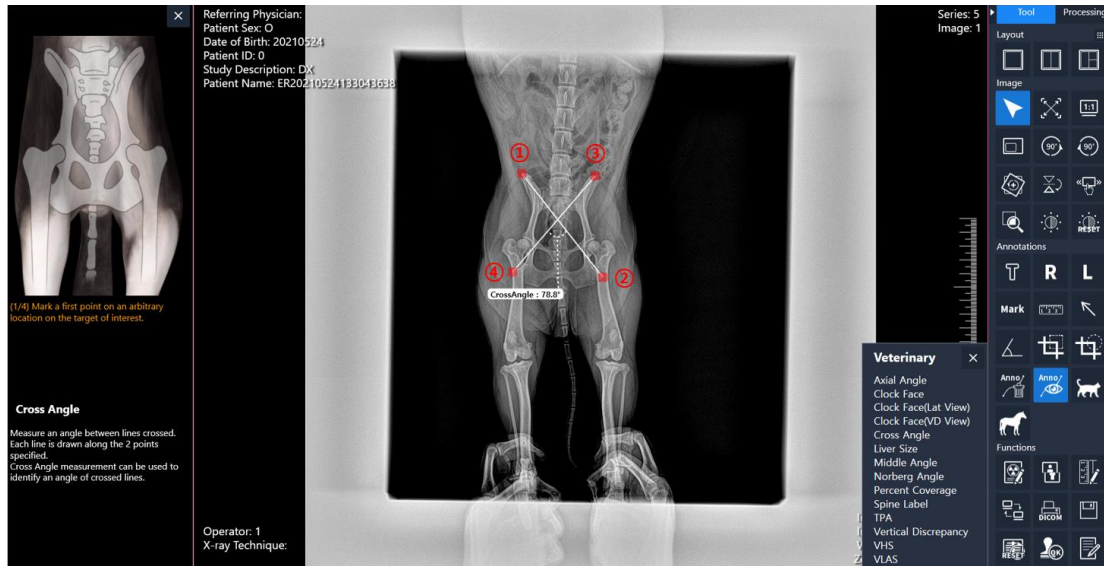


<Lat View>

- Cross angle

Measure an angle between lines crossed. Each line is drawn along the 2 points specified. Cross Angle measurement can be used to identify an angle of crossed lines.

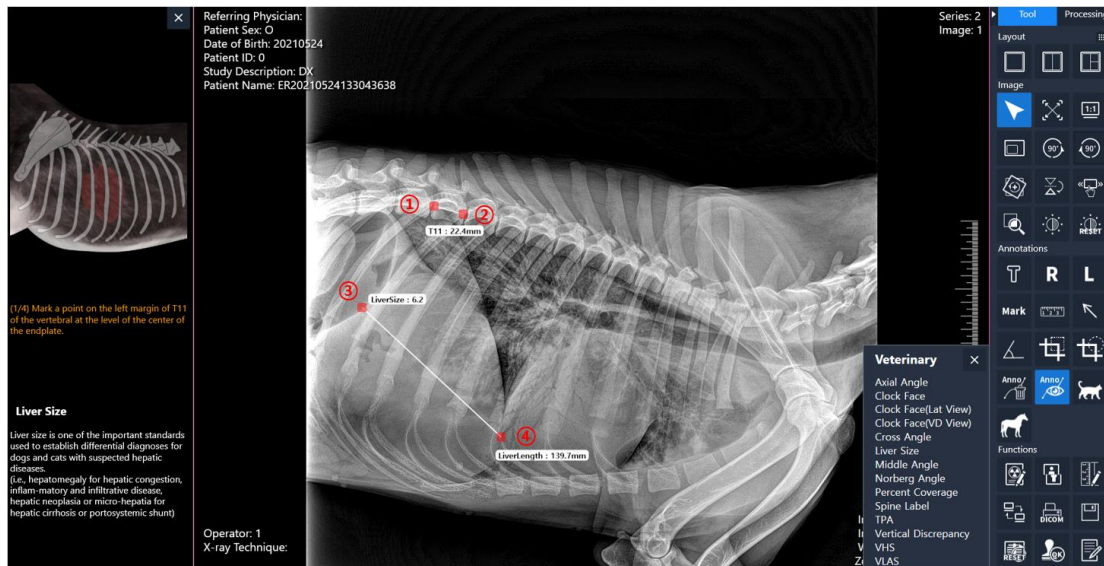
- 1) Mark a first point on an arbitrary location on the target of interest.
- 2) Mark a second point on an arbitrary location on the target of interest forming a line.
- 3) Mark a first point on an arbitrary location on the target of interest.
- 4) Mark a second point on an arbitrary location on the target of interest forming a cross line.



- Liver size

Liver size is one of the important standards used to establish differential diagnoses for dogs and cats with suspected hepatic diseases. (i.e., hepatomegaly for hepatic congestion, inflammatory and infiltrative disease, hepatic neoplasia or micro-hepatia for hepatic cirrhosis or portosystemic shunt)

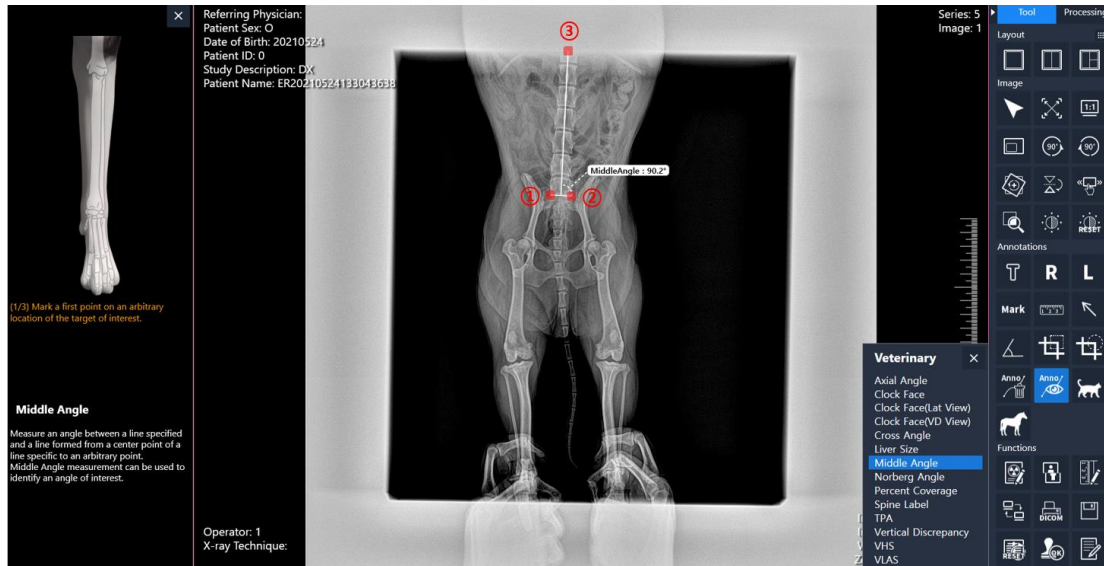
- 1) Mark a point on the left margin of T11 of the vertebral at the level of the center of the endplate.
- 2) Mark a point on the right margin of T11 of the vertebral at the level of the center of the endplate.
- 3) Mark a point on the most cranial point of the diaphragm.
- 4) Mark a point on the caudal vena cava to the apex of the caudal hepatic border.



- Middle angle

Measure an angle between a line specified and a line formed from a center point of a line specific to an arbitrary point. Middle Angle measurement can be used to identify an angle of interest.

- 1) Mark a first point on an arbitrary location of the target of interest.
- 2) Mark a second point on an arbitrary location of the target of interest forming a line.
- 3) Mark a third point on an arbitrary location of the target of interest drawn from the pivot point forming an angle.

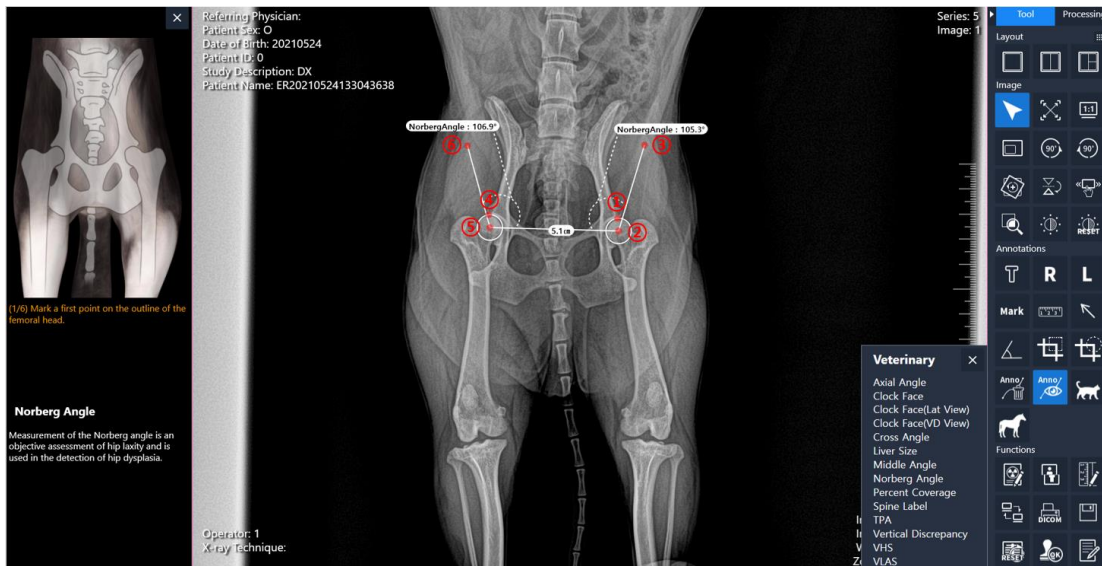


- Norberg angle

Norberg Angle is used in assessing hip laxity and in detecting hip dysplasia.

(The default Norberg Angle is 105 degrees)

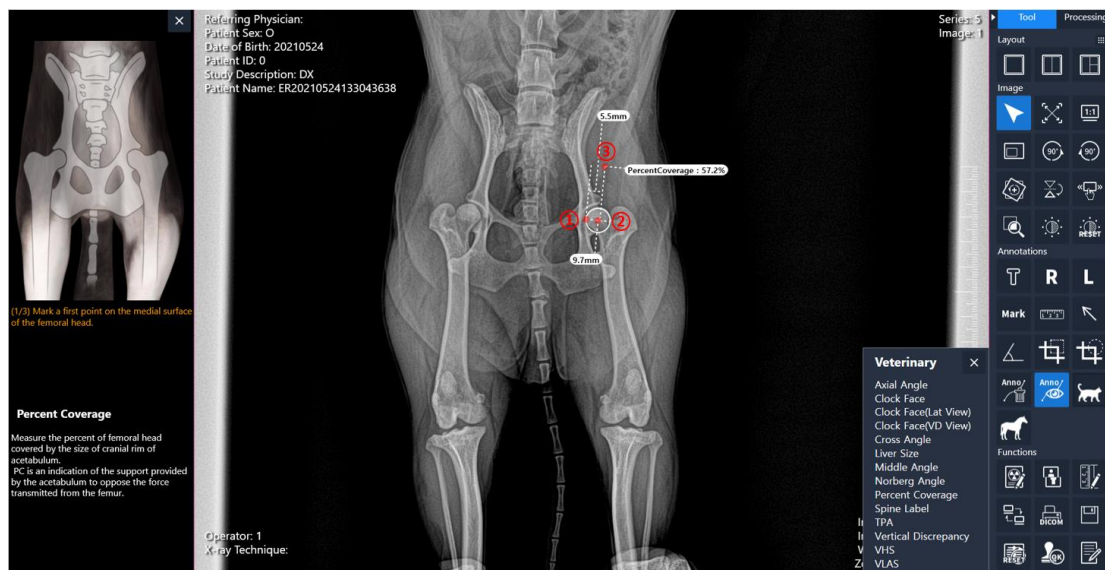
- 1) Mark a first point on the outline of the femoral head.
- 2) Mark a second point on the center of the femoral head forming a circle.
- 3) Mark a point forming a line connecting the center of the femoral head to the cranial rim of acetabulum.
- 4) Mark a first point on the outline of the femoral head.
- 5) Mark a second point on the center of the femoral head forming a circle.
- 6) Mark a point forming a line connecting the center of the femoral head to the cranial rim of acetabulum.



- Percent coverage

Measure the percent of femoral head covered by the size of cranial rim of acetabulum. PC is an indication of the support provided by the acetabulum to oppose the force transmitted from the femur.

- 1) Mark a first point on the medial surface of the femoral head.
- 2) Mark a second point on the center of the femoral head forming a circle.
- 3) Mark a third point on the cranial acetabular rim.



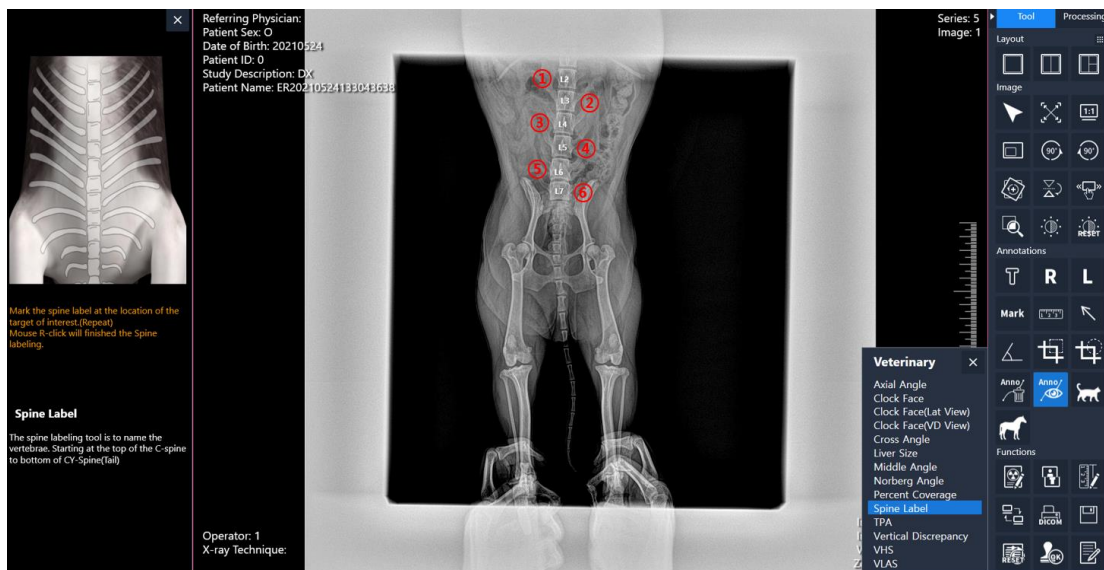
- Spine label

The spine labeling tool is to name the vertebrae. Starting at the top of the C-spine to bottom of CY-Spine (Tail)

- 1) Spine Label window will be displayed. Select the start label.
- 2) Mark the spine label at the location of the target of interest. (Repeat)
- 3) Mouse R-click will finish the Spine labeling.



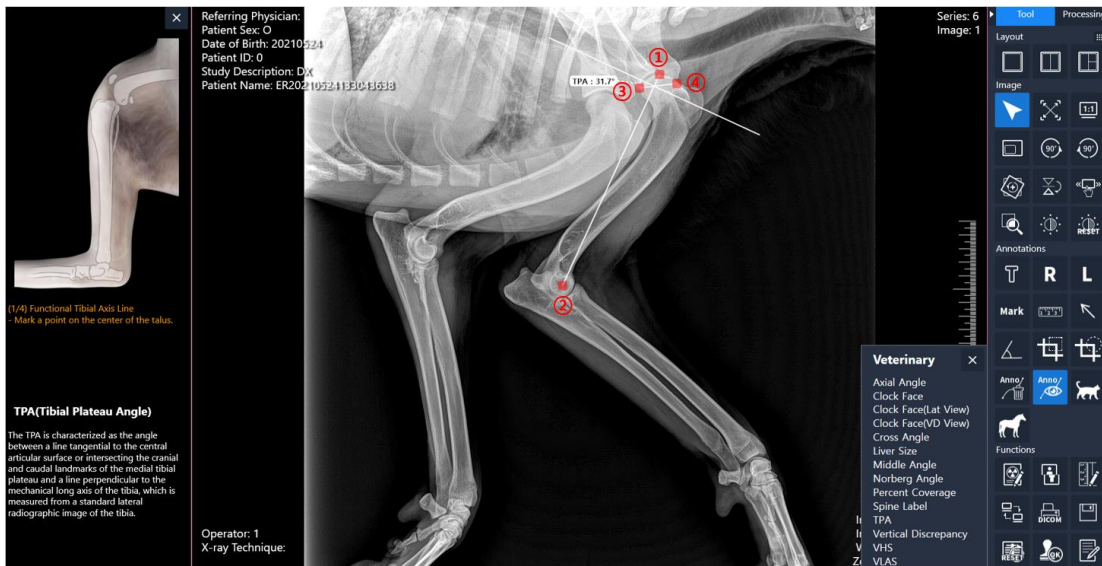
<Spine Label window>



- TPA (Tibial Plateau Angle)

The TPA is characterized as the angle between a line tangential to the central articular surface or intersecting the cranial and caudal landmarks of the medial tibial plateau and a line perpendicular to the mechanical long axis of the tibia, which is measured from a standard lateral radiographic image of the tibia.

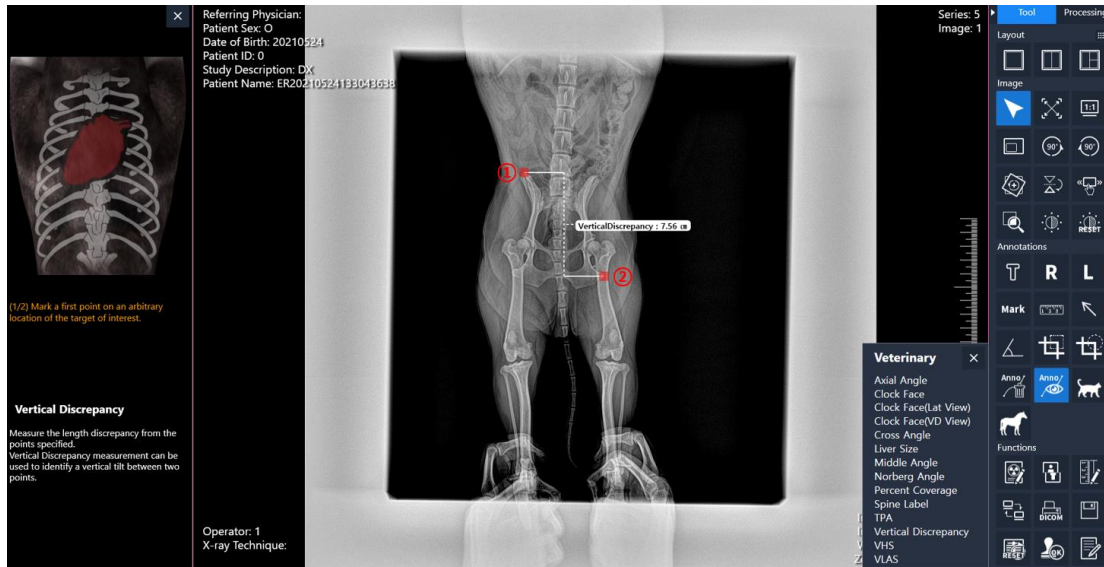
- 1) Mark a point on the center of the talus.
- 2) Mark a point on the center of the intercondylar eminences.
- 3) Mark a point on the cranial top of the tibial plateau.
- 4) Mark a point on the cranial inside of the tibial plateau.



- Vertical Discrepancy

Measure the length discrepancy from the points specified. Vertical Discrepancy measurement can be used to identify a vertical tilt between two points.

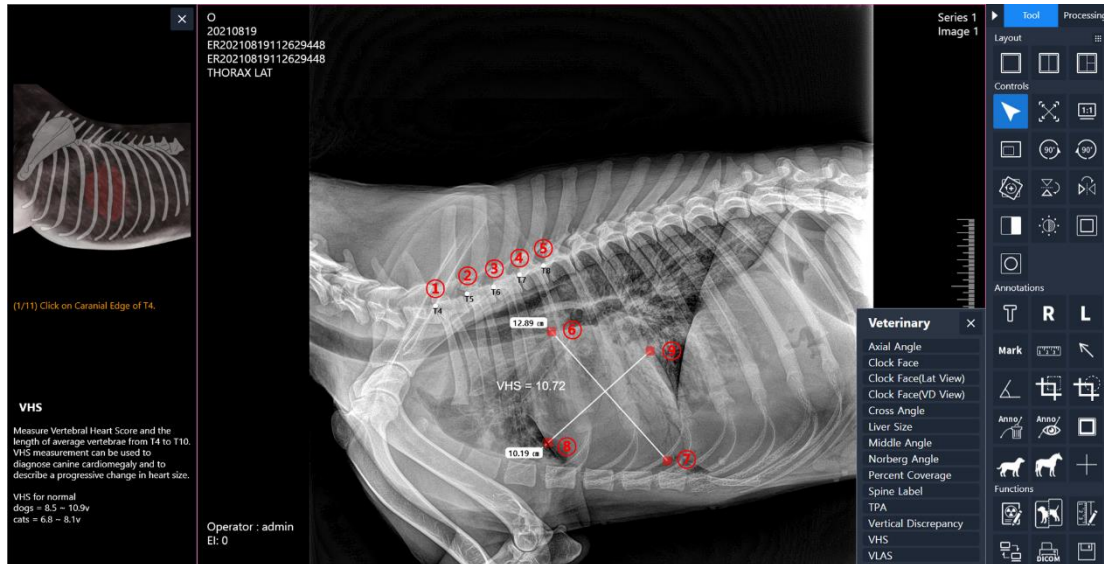
- 1) Mark a first point on an arbitrary location of the target of interest.
- 2) Mark a second point on an arbitrary location of the target of interest forming a tilting line.



- VHS (Vertebral Heart Score)

Measure Vertebral Heart Score and the length of average vertebrae from T4 to T8. VHS measurement can be used to diagnose canine cardiomegaly and to describe a progressive change in heart size.

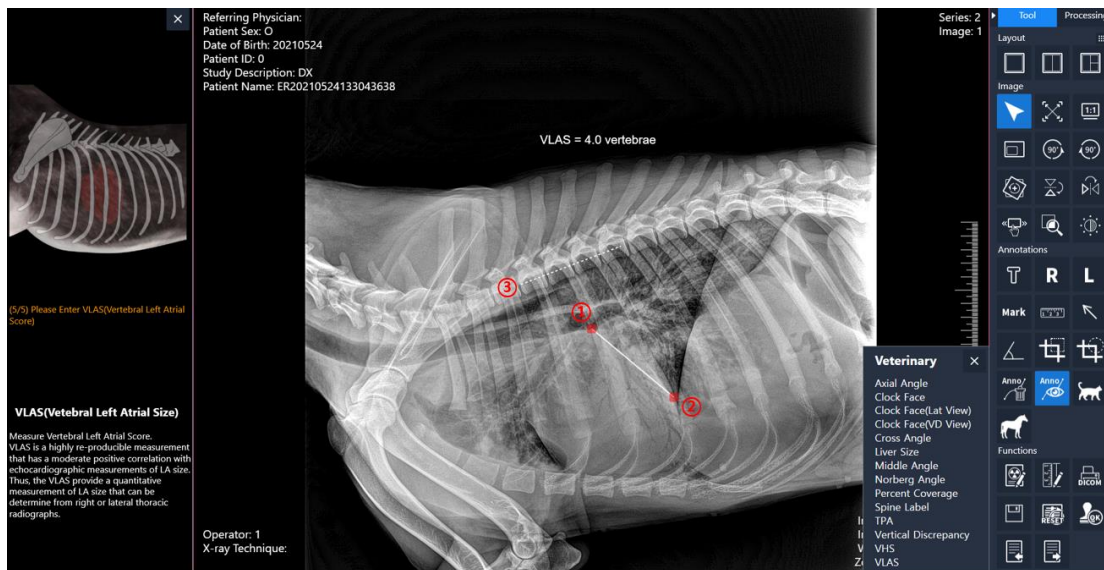
- 1) Click on Caranial Edge of T4.
- 2) Click on Caranial Edge of T5.
- 3) Click on Caranial Edge of T6.
- 4) Click on Caranial Edge of T7. (Mouse R-click to go for long axis directly)
- 5) Click on Caranial Edge of T8. (Mouse R-click to go for long axis directly)
- 6) Click on Caranial Edge of T9. (Mouse R-click to go for long axis directly)
- 7) Click on Caranial Edge of T10.
- 8) Mark a point on the top margin of the canine heart.
- 9) Mark a point on the bottom margin of the canine heart forming a long axis.
- 10) Mark a point on the left margin of the canine heart.
- 11) Mark a point on the right margin of the canine heart forming a short axis.



- VLAS(Vertebral Left Atrial Size)

Measure Vertebral Left Atrial Score. VLAS is a highly re-producible measurement that has a moderate positive correlation with echocardiographic measurements of LA size. Thus, the VLAS provide a quantitative measurement of LA size that can be determine from right or lateral thoracic radiographs.

- 1) Mark the first point at the center of the most ventral aspect of the carina (bifurcation of the left and right mainstem bronchi).
- 2) Mark the second point at the most caudal aspect of the left atrium where it inter-sects with the dorsal border of the caudal vena cava.
- 3) Mark the third point at the cranial edge of T4.
- 4) Mark the fourth point at the parallel to the vertebral canal.
- 5) Please Enter VLAS(Vertebral Left Atrial Score)

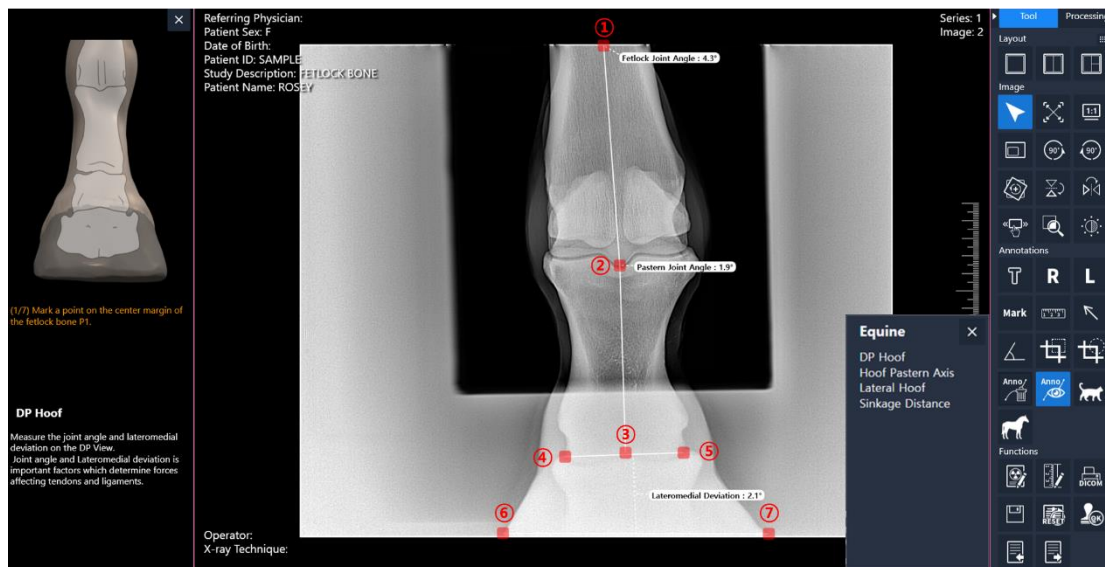


Appendix 4 – Equine Tool

- DP hoof

Measure the joint angle and lateromedial deviation on the DP View. Joint angle and Lateromedial deviation is important factors which determine forces affecting tendons and ligaments.

- 1) Mark a point on the center margin of the fetlock bone P1.
- 2) Mark a point on the center margin of the pastern bone P2.
- 3) Mark a point on the center margin of the coffin bone P3.
- 4) Mark a point on the top left margin of the coffin bone P3.
- 5) Mark a point on the top right margin of the coffin bone P3.
- 6) Mark a point on the left margin of the ground surface.
- 7) Mark a point on the right margin of the ground surface.

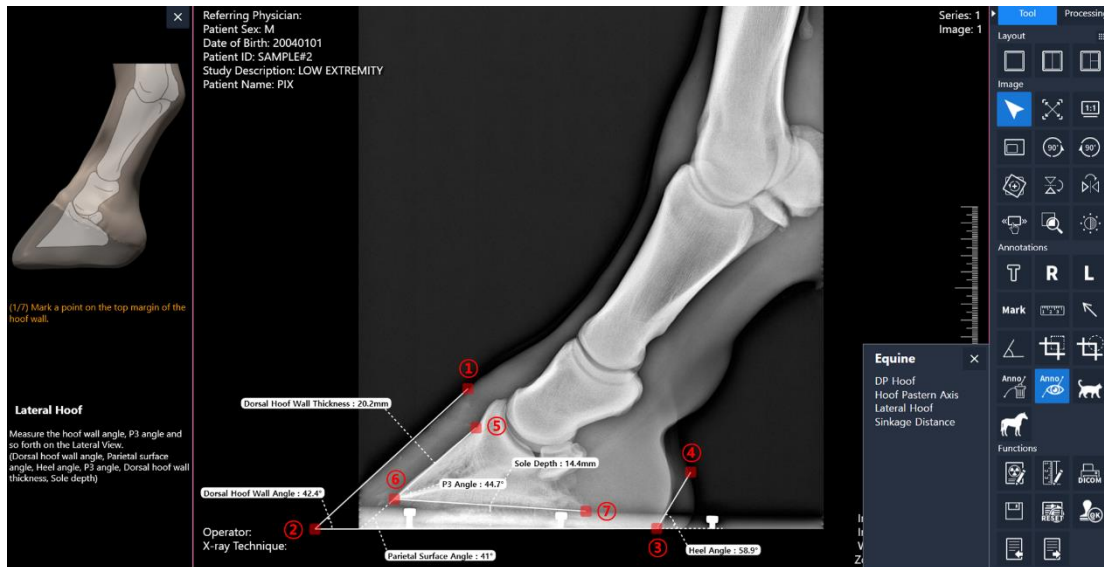


- Lateral hoof

Measure the hoof wall angle, P3 angle and so forth on the Lateral View.

(Dorsal hoof wall angle, Parietal surface angle, Heel angle, P3 angle, Dorsal hoof wall thickness, Sole depth)

- 1) Mark a point on the top margin of the hoof wall.
- 2) Mark a point on the bottom left corner margine of the hoof wall.
- 3) Mark a point on the bottom margine of the heel.
- 4) Mark a point on the top margine of the heel.
- 5) Mark a point on the top margin of the coffin bone P3.
- 6) Mark a point on the bottom left corner margine of the coffin bone P3.



- Hoof pastern axis

Measure the HPA from straight line running from the center of the fetlock, through the pastern, continuing straight from the coronet to the ground surface.

- 1) Mark the first point at the left side of the fetlock.
- 2) Mark the second point at the right side of the fetlock.
- 3) Mark the third point at the left side of the pastern.
- 4) Mark the fourth point at the right side of the pastern.
- 5) Mark the third point on a hoof wall.



- Sinkage distance

Measure the length discrepancy from the points specified. Sinkage Distance measurement can be used to identify a vertical tilt between Coronary band and Extensor process.

- 1) Mark a first point on a Coronary band.
- 2) Mark a second point on a Extensor process.



Appendix 5 – How to use the demo version?

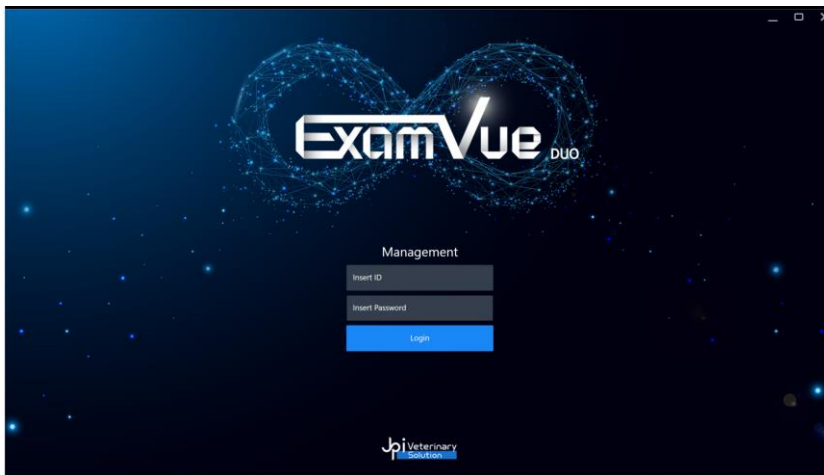
1. Run '**Management**' icon on the desktop



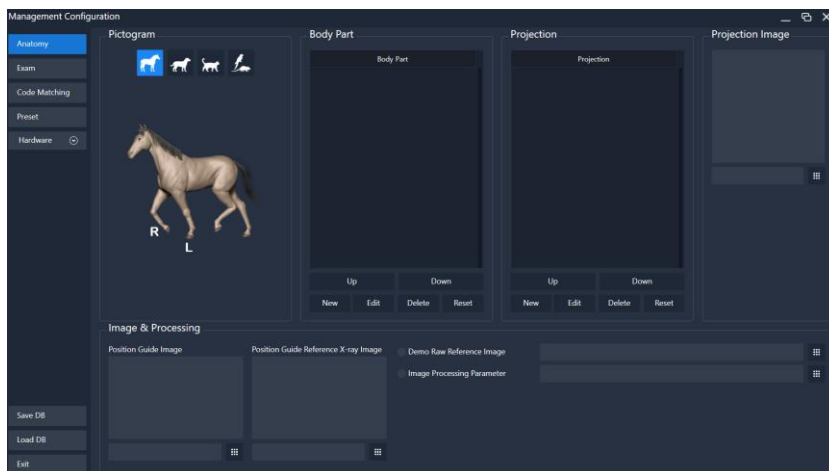
- You can also run the “ **Management.exe**” software into “ **C:\ExamVue Duo\Management**” folder

2. Input the **ID** and **PWD** to log into the main program and click “**Login**” button

(ID = admin, PWD = admin)

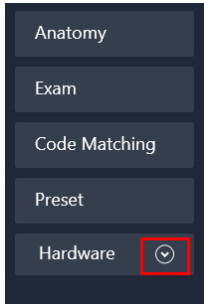


[Log-In Window]

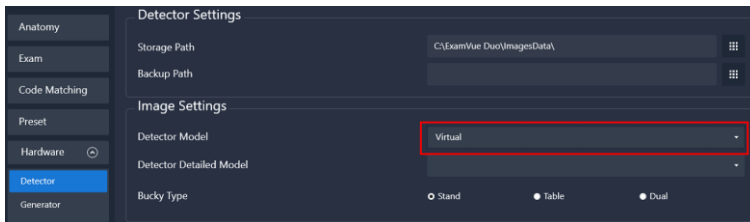


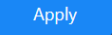

[Main Window]

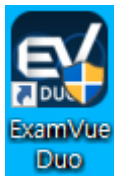
- Go to the “**Hardware > Detector**” tab in the left side men



- Select Detector type as **Virtual**

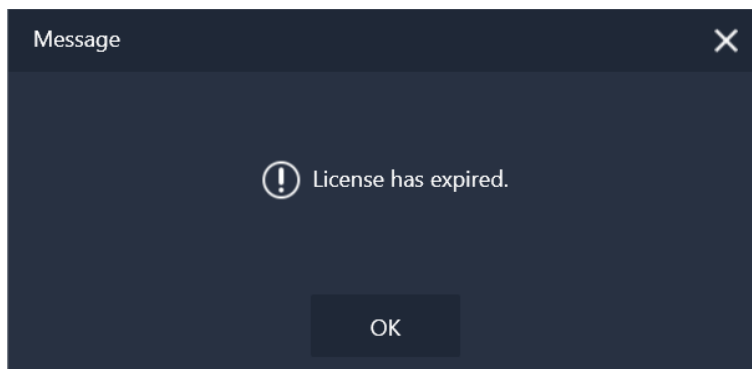


- Click the “**Apply**” button 
- Click the “**Exit**” button to close “**Management**” program 
- Run “**ExamVue Duo**” icon on the Desktop



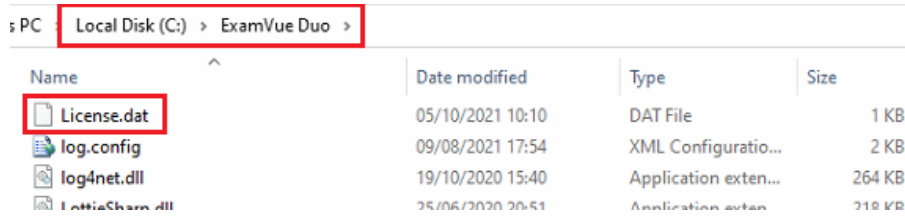
- Check the license file

The popup below appears because the license has not been issued yet



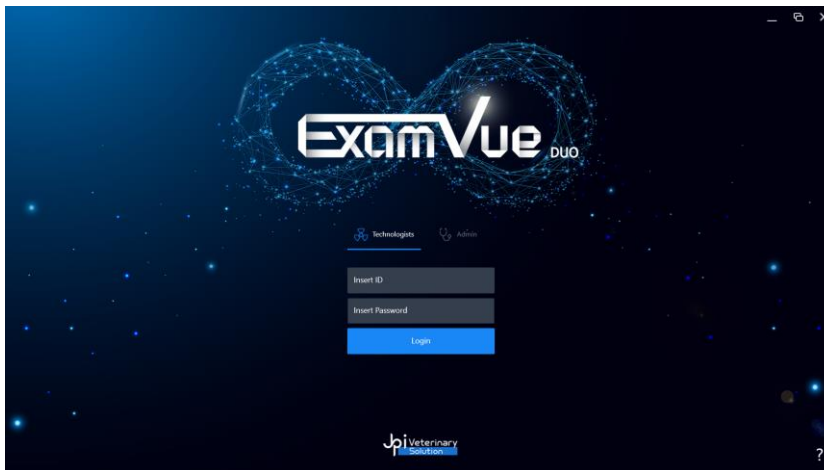
[License Error Message Window]

9. If the license file is NOT activated like 8) message above, please copy the “**License.dat**” file and send to JPI Healthcare’s administrator



10. Get the issued “**License.dat**” file from JPI Healthcare and overwrite the file into the “**C:\ExamVue Duo**” folder
11. Run “**ExamVue Duo**” icon on the desktop.

If you run **ExamVue Duo** and the login window appears as below, the license has been successfully applied



[Log-in Window]



- Please notice that the period to use the demo version is limited for 15 days.
- If you need to expand the demo version, please contact to JPI Healthcare’s administrator

Appendix 6 – How to use the demo image in the ExamVue Duo?

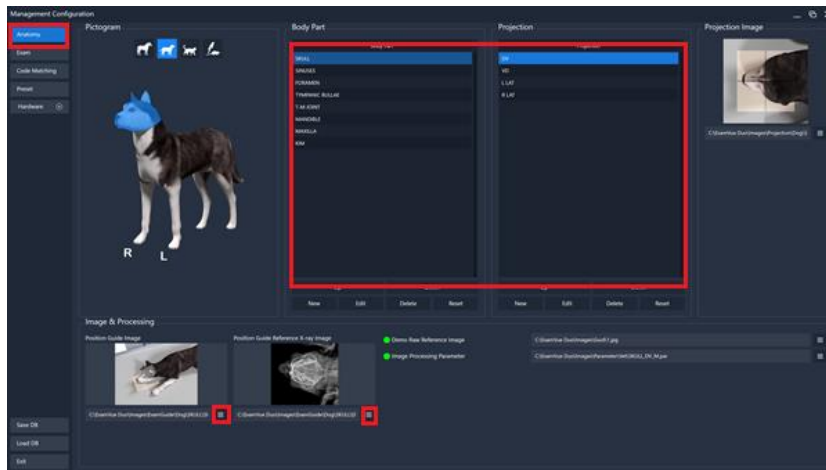
User can set display their own demo image using the management s/w and display it in the ExamVue Duo s/w. Before setting the instruction below, please prepare the demo images.

1. Run '**Management**' icon on the desktop

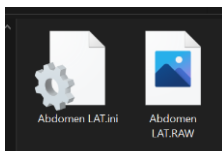


- You can also run the “ **Management.exe**” software into “ **C:\ExamVue Duo\Management**” folder

2. Move to the **Anatomy** menu in the left side
3. Select the **Body part & Projection** that want to be added new demo image, the positioning guide image or X-ray reference image



4. Move to “**C:\ExamVue Duo\Images\Demolimages\ folder**” and select one of the species to add the demo images
5. Copy the demo image
6. Make the INI file having the same name with the added demo image as shown the below figure



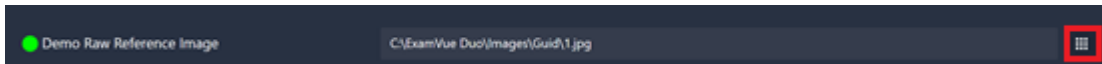
7. Open the created INI file and set the values according to the added demo image

```
*Abdomen LAT.ini - Notepad
File Edit Format View Help
[ImageInfo]
Width=3072
Height=3072
PixelPitchX=0.140
PixelPitchY=0.140
IsInverted = 1
IsProcessing = 0
```

In particularly, below is more importantly.

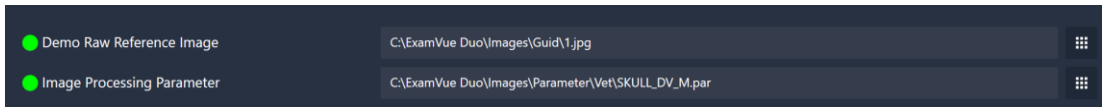
- IsProcessing = 0 // use the raw image (.raw)
- IsProcessing = 1 // use the processed DCIOM image (.dcm)

8. Click the browser button in the 'Demo Raw Reference Image' and link the demo image



9. Click the browser button in 'Image Processing Parameter' and set the parameter file

If processed DICOM image is used, you don't need to set the parameter file



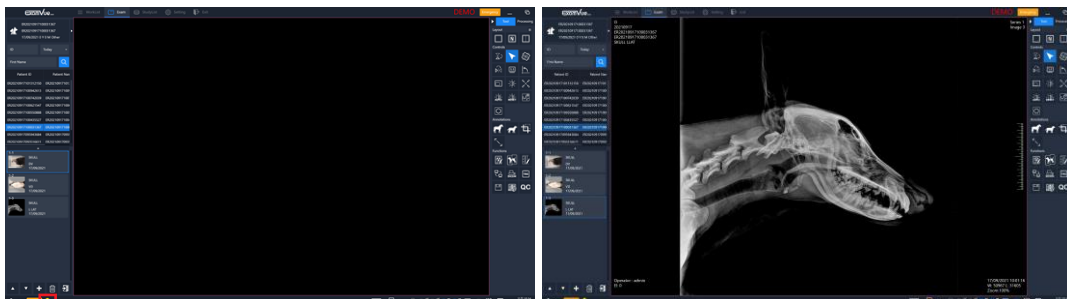
10. Close the Management.exe

11. Run **ExamVue Duo**

12. Register the new patient and set the Body part and the Projection in the Study Information

13. Move to the Exam window

14. Click the Radiation button

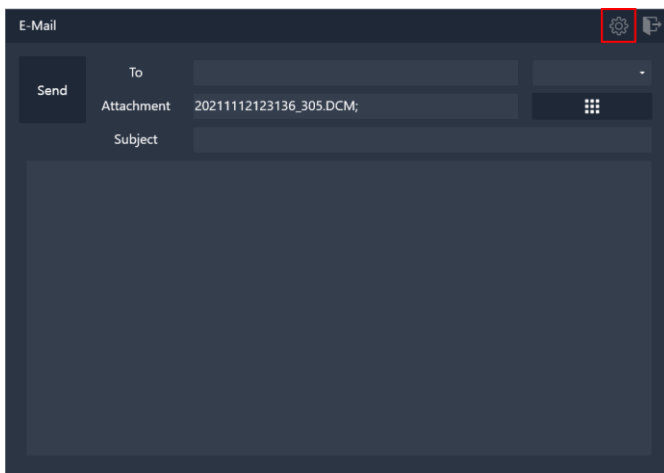


Appendix 7 – How to use E-mail?

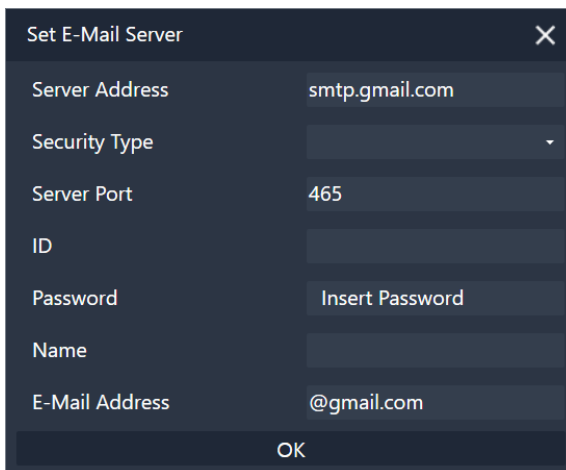
User can send the acquired image as JPEG format using the feature of E-mail in the software. However, please make sure to remember that User must set up an some settings in the E-mail server menu in the advance like the below direction.

1. Server Setting

- 1) Click **Server Settings** button



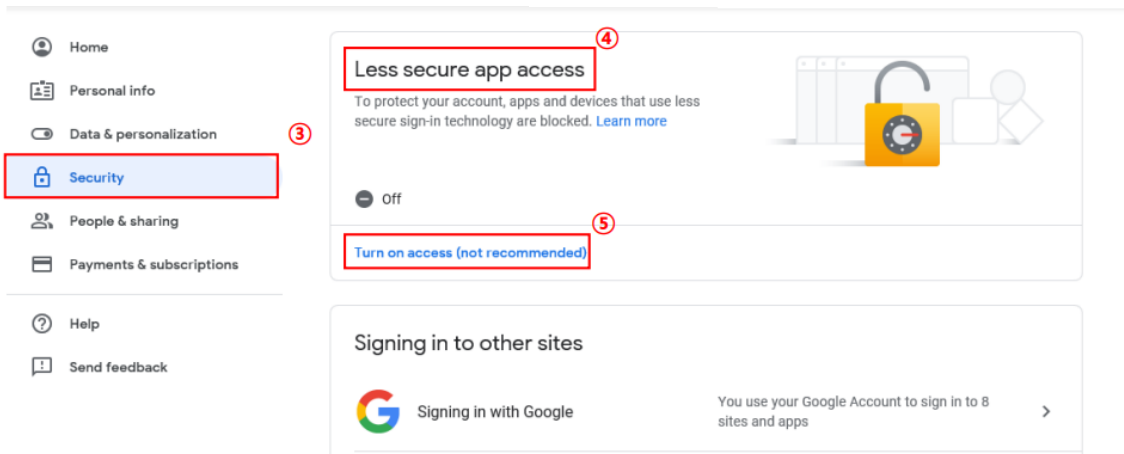
- 2) Enter or select the server information of the Email you're using in the menu



Below is some example for the Google email.

- In the case of Google, mail delivery may fail due to security concerns. To resolve this, try the following methods.

- ① Users must log in to Google on user's PC from Explorer, Chrome etc.
- ② If you can't send mail again despite the above way, try the following methods.
- ③ Click this button(①)
- ④ Click "Account"(②)



- ⑤ Click "Security"(③)
- ⑥ Scroll to "Less secure app access"(④)
- ⑦ Click "Turn on access(not recommended)"(⑤)
- ⑧ Click this button(⑥) -> Done(⑦)

← Less secure app access

Some apps and devices use less secure sign-in technology, which makes your account more vulnerable. You can **turn off** access for these apps, which we recommend, or **turn on** access if you want to use them despite the risks. [Learn more](#)

Allow less secure apps: OFF



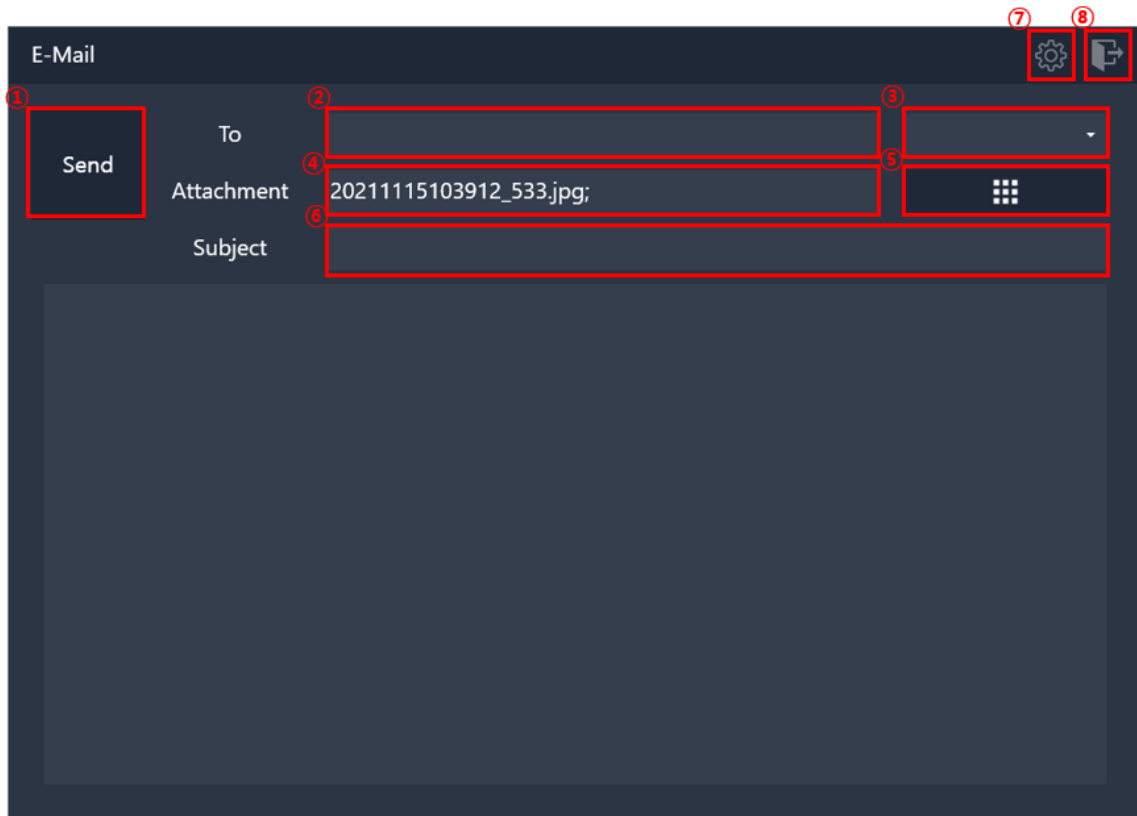
->

← Less secure app access

Some apps and devices use less secure sign-in technology, which makes your account more vulnerable. You can **turn off** access for these apps, which we recommend, or **turn on** access if you want to use them despite the risks. [Learn more](#)

Allow less secure apps: ON





And E-Mail has some features like below.

- Send: Send an E-mail
- To Address: E-mail recipient
- Address book: Select the recipient's E-mail address
- Attachment: Attached file list
- File explorer: Select a file to send by E-mail
- Subject: Enter the title of the E-mail
- Server Setting: Server settings for E-mail
- Exit: End of the program

2. To address

- 1) Select one of the email addresses entered in fig (3), Multiple choice available.
- 2) Users can directly input it. Email addresses are separated using “;”
Ex) Sample1@sample.com; Sample2@sample.com

3. File attachment

- 1) The file selected by the user is automatically attached and shown. In addition, the user can attach the file using the file explorer.
- 2) File can be attached using “drag and drop” and buttons.
- 3) You can delete unwanted files from the text box, file names are separated using “;”
Ex) Test1.jpg; Test2.jpg; Test3.jpg

4. Send E-mail

- 1) Click the button fig (①)
- 2) When mail transfer is complete, the program is turned off.
- 3) If the mail transfer fails, a message box appears. The server settings or email address is incorrect.