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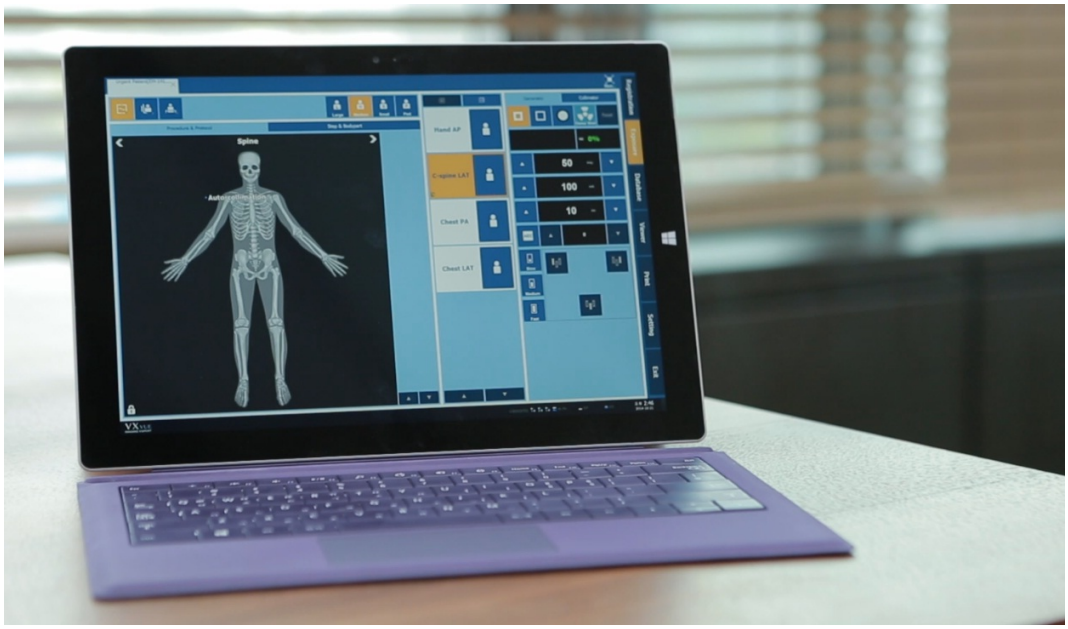
Vieworks

VXvue Service Manual



CE 2460

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This document is basically produced in English, and can be produced in the language of the relevant country upon request of the customer.

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1. Information

This section gives basic information of this manual and the product.

Disclaimer

Document Guide

Document Convention

Supporting Detectors

Revision History

1.1 Disclaimer

If the user is not fully acquainted with this manual the system can malfunction or cause otherwise unforeseen issues. To prevent any potential issues the user should fully understand the contents in this manual before operating the program and equipment.

When operating this software, take the following precautions or the product may not function correctly.

1 Roentgenography, image processing, reading of image, and data storage must be performed in accordance with the law of each country where the program is being used. Also, the user is responsible for protecting the privacy of image data.
2 In no event will Vieworks be liable for direct or indirect consequential damage arising out of the use of this program. Vieworks will not be liable for loss of image data for any reason.
3 Before using this software, be sure to read this manual thoroughly as well as the manuals for any equipment used in conjunction with this software. Keep this manual where it is easily accessible.
4 Other systems and product names in this manual are the trademarks from their manufacturer.

- The user is responsible for ensuring whether the detector calibration is performed correctly after the software installation. Do not try to use the software if the detector calibration has not been performed.

1.2 Document Guide

This manual explains how to install and configure **VXvue**, the image acquisition program developed by Vieworks Co., Ltd and is intended for service engineers who install and configure the **VIVIX-S** detector and **VXvue** software.

Contents

This manual describes how to install and set up VXvue, an image viewer program developed by Vieworks.

Target

This manual is intended for service engineers who install and configure the VIVIX-S detector and VXvue.

Contact Us

- This manual is provided in print format upon request by the customer.
- For comments or inquiries regarding this document and relevant products, contact via email below:

Item	Contents
Department	Customer Support Team at Vieworks
E-mail	CustomerSupport@vieworks.com

- You can download this manual from VDS (Vieworks Download System) website: https://clouds.vieworks.com:5001/. To obtain an ID and password for manual download, please contact the customer support team in Vieworks.

1.3 Document Convention

This section describes the symbols and notations in this manual.

1.3.1 Symbols

Caution and Warning

- This symbol is used for indicating a potentially hazardous situation while operating this product. Users should be well acquainted with this symbol and the related contents.

Information

- This symbol is used for indicating product related references and supplementary information.

1.3.2 Notations

Bold Types

Words in bold indicate options seen directly within the GUI (graphical user interface) of the **VXvue** program.

1.4 Purpose of Use

1.4.1 Intended Use

VXvue is intended to acquire Digital images from X-ray Detectors, process the images to facilitate diagnosis and to display, and transfer the resulting images to other devices for diagnostic purpose.

1.4.2 Patient Group

Patients of all ages, including pediatric patients, and genders.

1.4.3 Contra-Indication

It is not indicated for use in mammography.

1.5 Clinical Benefits of Product Use

The medical benefit of a VXvue is that it has a medical image of a patient created by the detector and that the physician can detect the disease in advance. Accordingly, the patient can be treated with medication or simple surgery, and the physician can treat the patient with accurate location information and progress of the disease. Therefore, this medical benefit is greater than the residual risk of a VXvue.

1.6 Features

- VXvue gets images from a detector, processes and transfers the images and manages patient's information and the images for radiologists. VXvue enables images such as x-ray images to be stored electronically and viewed on screens.

- VXvue offers full compliance with DICOM (Digital Imaging and Communications in Medicine) standards to allow the sharing of medical information with other PACS (Picture Archiving and Communication System Server). Besides, VXvue is a device that provides one or more capabilities relating to the acceptance, transfer, display, storage, and digital processing of medical images. The software components provide functions for performing operations related to image manipulation, enhancement, or quantification.

1.7 Product Use

This chapter provides instructions about the use of the product, disposal, and the liability limit of Vieworks.

1.7.1 Product Usage

1 Only legally authorized users (Radiolgic Technicians, Radiologists, Physicians, etc.) may use this product.
2 The equipment should be kept in a safe and operable condition by maintenance personnel.
3 Follow the guidelines in this manual when installing and using this product.
4 Use only computers and image display monitors recommended in this manual.
5 For details about installation and use of the product, consult your sales representative or a distributor.

1.7.2 Disclaimer

1 In no event shall Vieworks be liable for damage or loss arising from a fire, earthquake, any action or accident by a third party, any intentional or negligent action by users.
2 In no event shall Vieworks be liable for damage or loss arising from any trial usage, or other usage under abnormal conditions.
3 In no event shall Vieworks be liable for personal physical harm or property damage that is sustained when the instructions of this manual are not followed.
4 In no event shall Vieworks be liable for any damage arising from moving, alteration, inspection or repair the product by a person other than an authorized service engineer by Vieworks.
5 In no event shall Vieworks be liable for loss of image data for any reason while using this product.
6 Roentgenography, image processing, image reading, and image data storage must be performed in accordance with the laws of the country or region in which the product is being used.
7 The user is responsible for maintaining the privacy of image data acquired from this product.
8 It is the responsibility of the attending physicians to provide medical care services. Vieworks will not be liable for faulty diagnoses.
9 Specifications, composition, and appearance of this product may change without prior notice.
10 In the event of a serious accident involving the device, please report it to Vieworks and the country in which you purchased the product.

1.8 Safety Instruction

This product is designed and manufactured to ensure maximum safety of operation and to meet all the safety requirements applicable to electronic medical equipment. Follow these safeguards while using the products to prevent severe personal injury or substantial property damage. It is important to read and understand the contents of this manual before using the product.

1.8.1 Management and Authority

- The product should be installed, operated, and serviced according to Vieworks maintenance procedures and by a Vieworks service representative or a distributor who provides purchase of the Vieworks' product.
- Operation and maintenance should be done in strict compliance with the operation instructions contained in the manual.
- The system, in whole or in part, cannot be modified in any way without prior approval from Vieworks.
- Before authorizing any person to operate the system, verify that the person has read and fully understood the manual. The owner should make certain that only properly trained and fully qualified personnel are authorized to operate the equipment. An authorized operators list should be made and maintained.
- Do not shut down the system by force or disconnect the power during operation.
- If a malfunction occurs, do not use this device until qualified personnel correct the problem.
- Vieworks is not responsible for any direct or indirect damage that occurs during the use of this product. Also, we are not responsible for any data loss.
- It is important that this manual be kept at hand, studied carefully, and reviewed periodically by the authorized operators.

1.8.2 Shooting

- Be sure to read the manual carefully before shooting.
- X-ray imaging must be performed in compliance with the laws of the country where this product is used.
- Be sure to check the status of the detector before shooting. If the state of the detector is not normal, images may not be acquired even if X-rays are irradiated.
- By default, VXvue performs image acquisition only when an exam is open. If the exam is not open, an image may not be acquired even with X-rays.
- Depending on the area and direction to be photographed, the irradiation conditions may affect the image quality, so it is necessary to set the appropriate irradiation conditions.
- Patient size is one of the main factors affecting image quality. Appropriate imaging conditions should be set according to the size of the patient.
- Avoid performing other operations while shooting. If you perform other operations while shooting, image damage or unexpected behavior may occur.

1.8.3 Image Processing

- Before image processing, users must read this manual and XIPL User Manual before proceeding with image processing. Image processing without proper understanding may affect image quality.
- When processing images, make sure to understand the meaning of each adjustment value accurately and then change it.
- If you do not set the appropriate image processing adjustment value according to the patient area, the image quality may be affected.
- Do not arbitrarily change or delete files related to image processing. If the file related to image processing is arbitrarily changed, image processing is not performed normally.
- After processing the image or adjusting the image result, be sure to check it and save it. Vieworks is not responsible for any data stored without verification.
- Failure to meet program recommendations may affect the speed of image processing. Recommended specifications must be met for optimal image processing and functional operation.

1.8.4 Calibration

- The user is responsible for checking the detector calibration immediately after installing this software. We are not responsible for any direct or indirect damage that occurs while using the product without calibrating the detector.
- If you do not perform Detector Pixel Pitch Calibration or Film Pixel Pitch Calibration, the measurement may not be accurate.
- Be sure to read the manual carefully before performing calibration.

1.8.5 Cybersecurity

- The physical security of the Workstation where VXvue is installed depends on the physical security policy of the user organization or environment. Be careful not to allow access by unauthorized users. Security updates of Windows OS should be performed periodically. (Malware detection/protection, vulnerability supplementation) For the availability of VXvue, the Workstation's resources (memory, storage capacity) must be properly secured. Whether an activity is caused by inappropriate access can be checked through the log stored in the product. The privileges granted to the user ID determine the scope of use of VXvue. Be careful not to grant users more privileges than necessary. VXvue stores/manages health data. Be careful not to leak the patient's personal information. VXvue provides Emergency shooting function for use in emergency situations. Be careful not to allow emergency shooting to be used by unauthorized users.

1.8.6 Pediatric Application

- When radiography of children with the X-ray system that includes this equipment, pay attention to the following points.

- Every request should be reviewed by a pediatric radiologist prior to beginning the examination to ensure that an appropriate study is being performed.
- The technologist should use a proper technique considering the patient's size to decrease the radiation dose when he or she acquires diagnostic images.
- ALL pediatric patients shall be shielded for their X-ray examinations, except for when the shield will obscure the region of interest, as in a pelvic or SI joint X-ray for trauma or arthritis, or when it is physically or clinically unreasonable to shield the patient.
- For routine Hip X-Rays, ALL male children shall have their scrotum shielded using the small gonadal shield while females may not be shielded because doing so would obscure the hips.

1.9 Supporting Detectors

VXvue supports the following detectors and SCU.

Type	Model
FXRD (Detector)	1717S
	1417S
	1417W
	1012N
	1717N
	1417N
	1717V
	2530VW
	3643VW
	4343VW
	2530FW
	3643FW
	4343FW
VXTD (Detector)	2532E
FXRS (SCU)	02A
	03A
	04A

- Update the firmware to the latest version for best results.
- Contact to the manager in Vieworks for details about firmware update.

2. Instruction

This section provides basic concepts and recommended specifications of VXvue.

Overview

Recommended Specifications

2.1 Overview

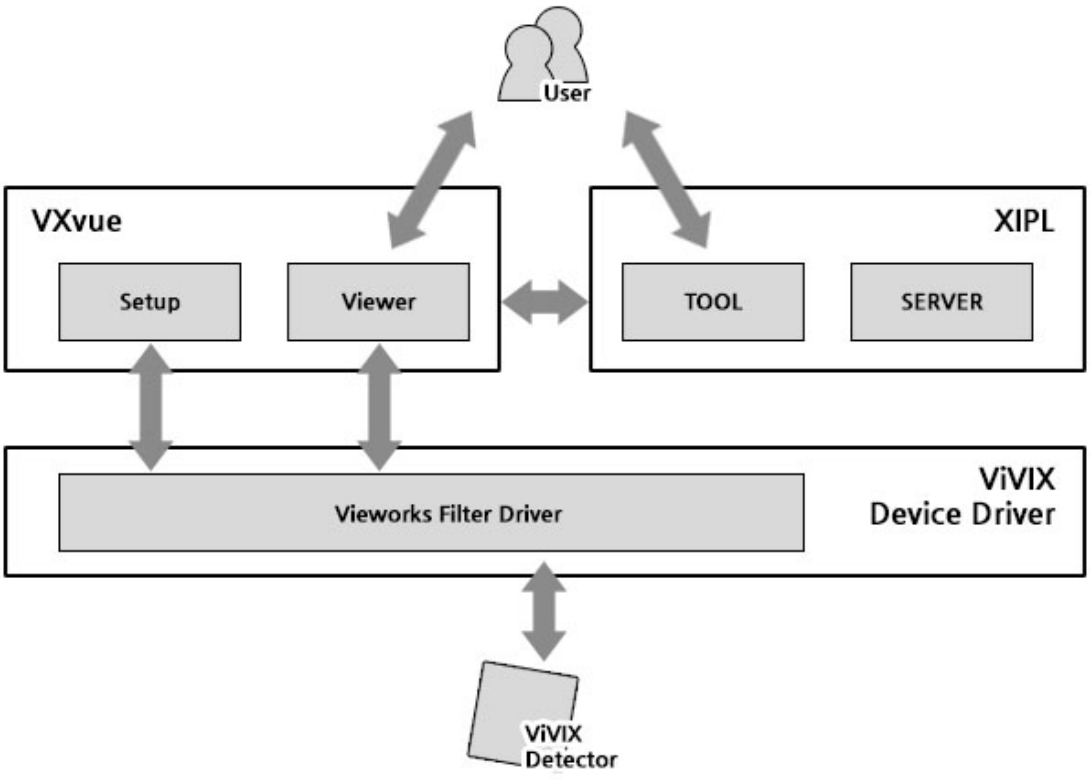
VXvue is the image acquisition program for **VIVIX-S**, used for acquiring, adjusting and managing images generated from the **VIVIX-S** detector. **VXvue** is organized with several specialized modules and provides high quality medical images to users through various advanced functions and quick image processing between modules.

2.1.1 Main Features

- Acquire and see the images acquired with a VIVIX-S detector.
- Implement high-quality images by applying the image processing algorithm developed by Vieworks
- Skins for various GUIs (Graphic User Interfaces) suitable for both ordinary and touch screens.
- Store and manage images in the database.
- Adjust images using various processing tools.
- Export images using various media.
- View detector status and change settings.
- Chase and search the system status.
- VXvue conforms to the standard of DICOM 3.0.

- **HS8** and **PureImpact™** are the image processing algorithms developed by Vieworks.
- Software-based scatter correction (S.B.S.C.) is an image processing algorithm that prevents image degradation due to scattered lines.

2.1.2 Hierarchy Chart



2.1.3 Main Components

Components	Description
VXvue	The image acquisition software for VIVIX-S detectors.
Viewer	The image viewer program for viewing and managing images.
VIVIX Setup	The setup program for engineers who set VIVIX-S detectors.
VwFilter	Vieworks network filter driver for acquiring images from the detector quickly.
XIPL	Vieworks image processing software for processing images acquired from VXvue.
(With HS8)	The existing image processing algorithm
(With PureImpact™)	New image processing algorithm
TOOL	The image processing program in XIPL for users.
SERVER	The image processing server program for image processing.

- Refer to the **XIPL User Manual** for detailed information regarding image processing functionality between **VXvue** and **XIPL**.

- **PureImpact™** is the newest version of **HS8** and will typically provide higher quality image processing results. It is recommended that **PureImpact™** be used for all image processing.
  - Get better results by applying **software-based scatter correction (S.B.S.C.).**
- **HS8** parameters are provided for users with quality comparisons with **HS8** and with established diagnostic protocols based on the existing **HS8** protocol.

2.2 Recommended Specifications

This section provides information about the recommended specifications for installing and using **VXvue**.

- Failure to meet these minimum specifications may prevent the installation of VXvue or affect performance and processing speed.
- It is important to meet the recommended specifications for optimal image processing and function operation.

2.2.1 Workstation

Components	Minimum Spec.	Recommended Spec.
OS	Windows 10 Professional (64bit)	Windows 10 Professional (64bit)
LAN Card	• Gigabit Ethernet card for detector interface (Intel® Series) ▫ Speed: 1Gbps or higher ▫ Jumbo Frames: 9K ▫ Receive Descriptors: 1024 ▫ 820.11ac (Wireless) • LAN card for network interface (optional)	• 1000BASE-T Gigabit Ethernet card for detector interface (Intel® I210 Series, I350 Series) ▫ Speed: 1Gbps or higher ▫ Jumbo Frames: 9K ▫ Receive Descriptors: 2K or more ▫ 820.11ac (Wireless) • Gigabit supported LAN card for network interface (optional)
CPU	Intel® Core™ i5 3330-CPU (or compatible CPU)	Intel® Core™ i7 8700-CPU or higher (or compatible CPU)
Memory	4GB	16GB or more
HDD or SDD	1TB	2TB or more
Monitor	General monitor: 1280 x 800	General monitor: 1920 x 1080, 2560 x 1440 Surface pro 4: 2160 x 1440
CD-ROM		CD or DVD Reader / Writer

- From January 14, 2020, Microsoft will no longer provide security updates or support for PCs running Windows 7. The current version of VXvue only supports upgrade with Windows 7 but will be expired in the near future. Therefore, upgrading to Windows 10 is highly recommended.

3. Installation

This section provides information about installing the VXvue image acquisition software.

Installation Guide

Checking Installation Contents

Setting Date and Time

Registering a License

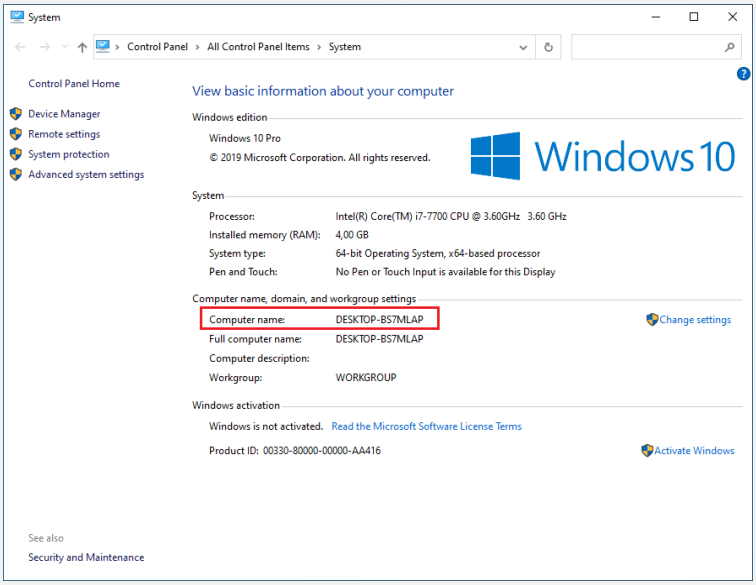
3.1 Installation Guide

Follow these instructions for the proper installation of **VXvue**. Failure to comply with these instructions may result in critical errors in installation or operation.

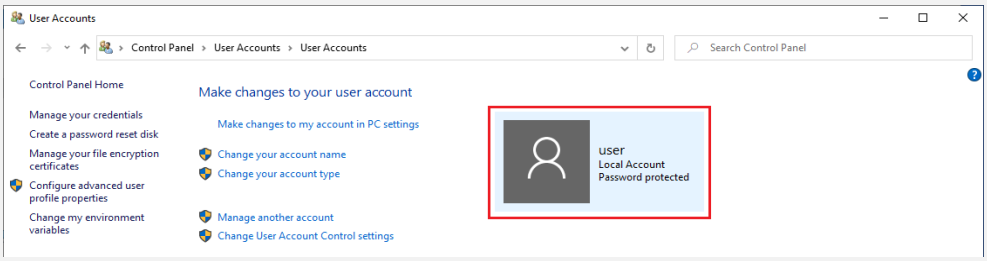
- Read and fully understand this manual before installing and/or using **VXvue**.
- It is recommended to use two hard drives as separate local disk drives, or a RAID 1 mirror with separate partitions.
- Do not install **VXvue** to an external HDD or network drive.
- In case of installing **VXvue** on a single hard disk, make create an addition partition.
- Be sure to install **VXvue** to the local drive. (C or D drive)
- Do not install **VXvue** to the root folder of C drive. It is recommended to install the program to the setup path guided by **VXvue**.
- Ensure there is enough free disk space before installing and/or using **VXvue**. Low disk space can cause severe performance issues.
- You should secure enough disk space for storing images and data.
- Log on to **VXvue** by the Windows account with administrative rights when installing or removing **VXvue**.
- Set the Windows nation / language in advance.
- Ensure that the PC is free from any malware/adware/virus software, or any other issues that could have a negative impact on the installation or operation of **VXvue**. Please contact your local IT support staff for further instruction for further instruction.

- **VXvue** complies with the **UAC** (User Account Control) policy of Microsoft Windows. Therefore, the user should install and log on to **VXvue** using a Windows account with administrative privileges. You can use **VXvue** with the general user account after the installation.

- The computer name and the user account name must be different to avoid issues with database installation.
  - Check the computer name as follows:



- Check the user account name as follows:



- Check the installation package provided by Vieworks before installing **VXvue**.

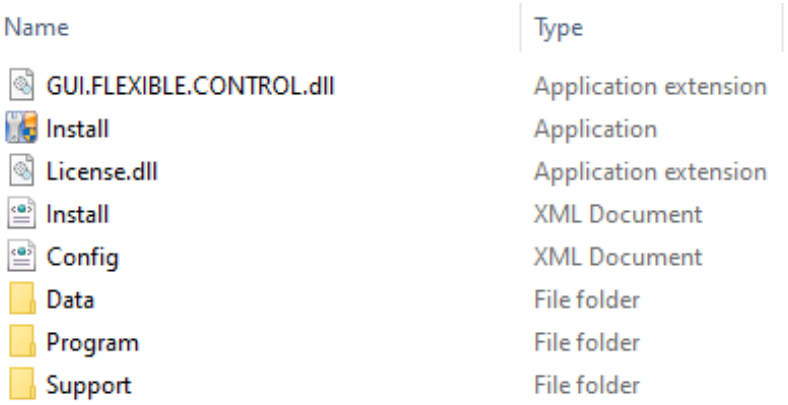
Name	File / Folder Name	Description
VXvue	Data/Database/BodypartCategory	Image folder of bodypart category
	Data/Database/Configuration	Configuration folder
	Data/Database/Database	LUT Data folder
	Data/Database/DemoImage	Image folder for Demo version
	Data/Database/Language	Language folder
	Data/Database/Theme	Theme folder for VXvue execution
	Program	Component installation folder
	Install.exe	Execution file of VXvue Installation

3.1.1 Installing VXvue

- Before installing, upgrading, or deleting **VXvue**, check if you log on to the PC with a Windows administrator account. If you have no administrative rights, stop the task, and log on with the administrator account.

- The installation procedures are written based on Microsoft **Windows 10**.

1 Check the file component after copying the folder of installation package files to the local drive.



- The built-in installation package files are as follows.
  - Data > Database > BodypartCategory : Collection of bodypart images
  - Data > Database > Language : Language file
  - Data > Skins: Skins of **VXvue** screen
  - Config.xml: The file to set the **viewer mode**. (Human, Vet, Equine, Vehicle)
  - Program: Pre-installer and installation files of **VXvue**

- If there are image files in the BodypartCategory folder, they will be copied automatically after installing **VXvue**.

- If there is 'Language.txt' file in the Language folder as the Unicode format, it will be overwritten after installing **VXvue**.

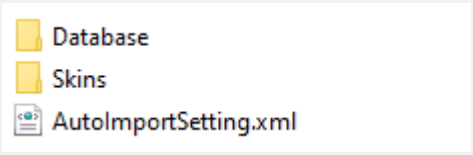
- If the width, height, and format (bmp) of a logo image file in the Skin folder are same, you can use the desired image from the path below.
  [Installation package folder]₩Data₩Skins₩Logo₩Logo₩Image

- Before installing **VXvue**, you can specify the application type according to the usage purpose by manipulating the items under <ShowViewerMode> in the Config.xml file.

```
<ShowViewerMode>
  <Item Name="Human" />
  <Item Name="Vet" />
  <Item Name="Equine" />
  <Item Name="Vehicle" />
</ShowViewerMode>
```

  - If the item exists, it is indicated in the Viewer mode selection window of **Register Options**. If you delete the corresponding line <Item Name ... />, the item is not indicated.
  - When all items are installed, the default value appears
  - Adding an item other than the default one does not appear.
  - When all items are deleted, only 'Human' can be selected.

- If you copy the configuration file exported from VXvue to the following path and file name before installing VXvue, you can import settings automatically after installation.
  - [Installation package folder]₩Data₩AutoImportSetting.xml or AutoImportSetting.vxs



- Refer to <4.1.3 Exporting / Importing Settings> section for export / import settings.

- It is not allowed to add or delete any file in the 'Skins' folder except the logo. Failure to do so may cause problems with installation and operation.

- Do not delete the **Data** folder because it contains files required by **VXvue**. Deleting the Data folder may cause problems with installation and operation.
- **Config.xml** and **Install.xml** are installation-specific configuration files. Do not modify or delete anything except the <ShowViewerMode> item. There may be problems with installation and operation.
- If you want to randomly delete the pre-installed files in the **Program** folder, you must install the pre-installation files separately before installing **VXvue**.

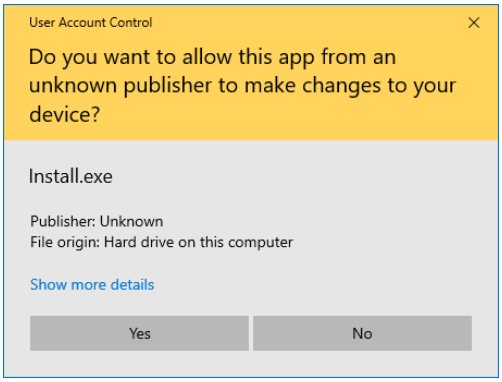
2 Right click the **Install.exe** file to start installing **VXvue** in administrator mode.

- With the **'Install.exe' file** you can install **VXvue** or upgrade from a previous version of **VXvue**.
- Installation may not proceed in the following cases:
  - The current version is equal to or higher than the version being installed.
  - If another type of **VXvue** is installed.

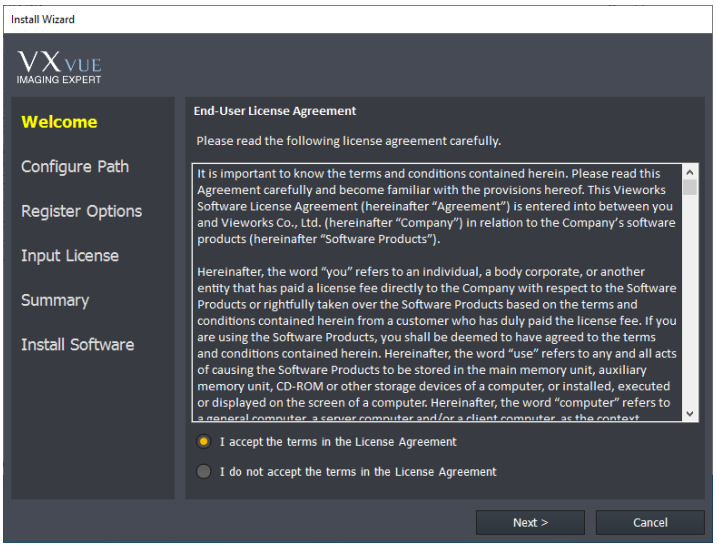
- Failure to meet minimum specifications required for installation and startup (operating system, CPU, RAM, etc.)
- If the network name of the PC and the name of the logged-in Windows account are the same.
- If VXvue is installed without rebooting after other software installation is made.

3 Click on **Yes** when the **User Account Control** dialog box is displayed.

- The dialog box may not be displayed depending on the Windows environment settings.



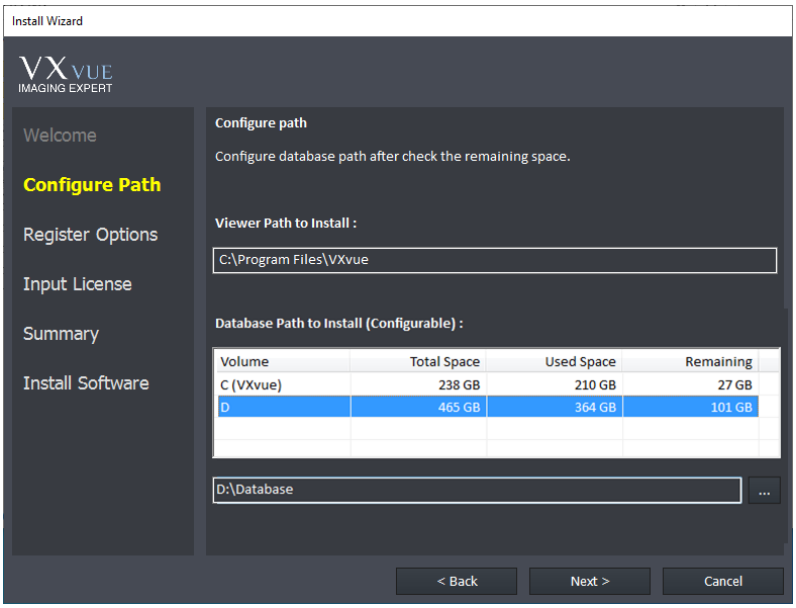
4 Check the **End-User License Agreement** in the **Install Wizard** dialog box. If you agree with the content, click the **I accept** button and then click the **Next** button.



- If you are upgrading VXvue, you will only see **Welcome**, **Upgrade Options**, **Summary** and **Install Software** items in the list on the left side of the screen.
- In **Upgrade Options**, you can select the type of **XIPL** parameter to use.

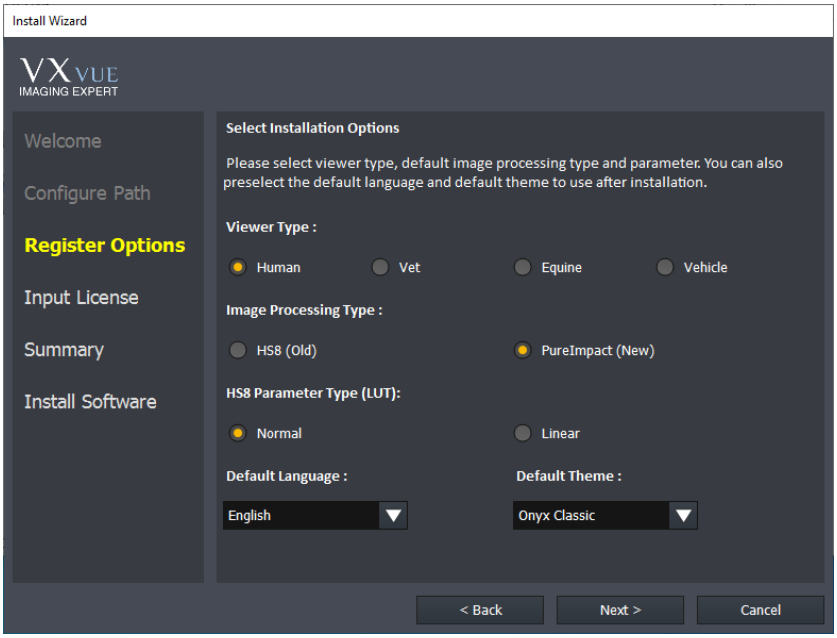
- After installing and upgrading **VXvue**, you can still use the existing customized **HS8** parameters and **PureImpact™**. If you use the existing image processing parameter (HS8), you can get the same result as before upgrade.

5 Check the drive and folder where VXvue will be installed, and where images and data for Vxvue will be stored, then click the **Next** button.



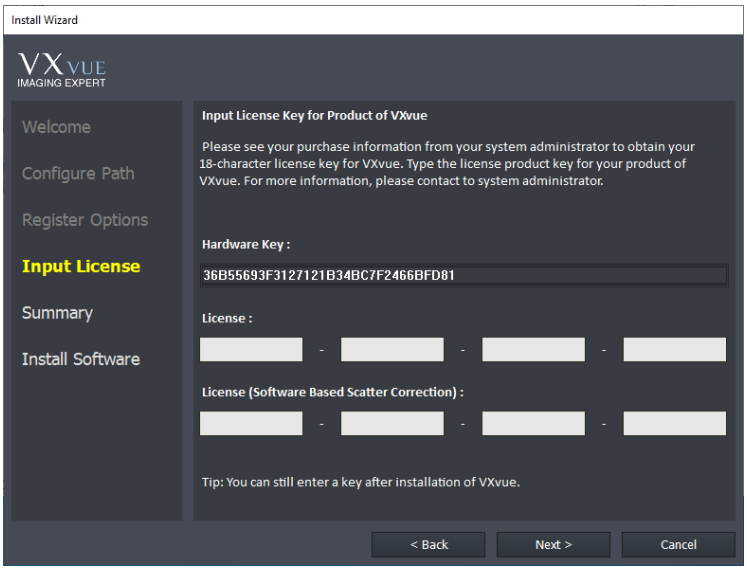
- The default path for installing **VXvue** is **Program Files₩VXvue** on the drive where **Microsoft Windows** is installed.
- The default path to the storage folder is **D:₩Database**.
- If you want to change the drive in which the database will be installed, check the available free space of the drives.
  - CDs, DVDs, NAS drives and external hard disks cannot be used as storage drives.
- Click the ... button to specify the path to the Database folder.

6 Choose the **Register Option** and click the **Next** button.



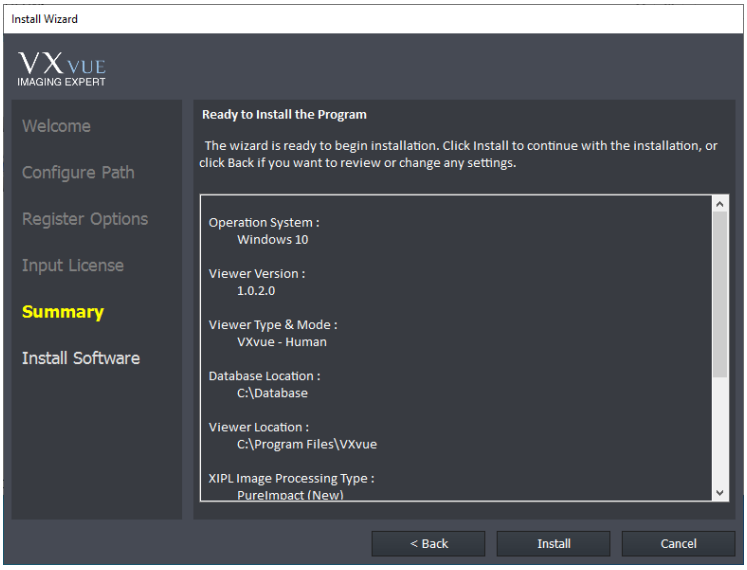
- Select the type of application you want to use.
  - Choose **Vet** or **Equine** to operate **VXvue** as a veterinary version.
  - Choose **Vehicle** to operate **VXvue** in a vehicle for examining patients.
  - If you already have a database and **XIPL** installed, the software will automatically choose the version for you.
- Select the default image processing type and parameter type to be used in **XIPL**.
  - Select the image processing type to be set as default.
  - If you select **Linear**, the **Linear LUT** is applied to the images shot with the **HS8** image processing parameters as default.
  - We recommend you select **Normal** for optimal images with recommended Post LUT.
  - If you already have **XIPL** installed, the parameter cannot be selected and the previously installed parameter is used.
- Select a language to be used in **VXvue**. You can change it after installing the program.
- Select a theme to be used in **VXvue**. You can change it after installing the program.

7 Enter the license which is issued by using the **Hardware Key** displayed in the License window and click the **Next** button.



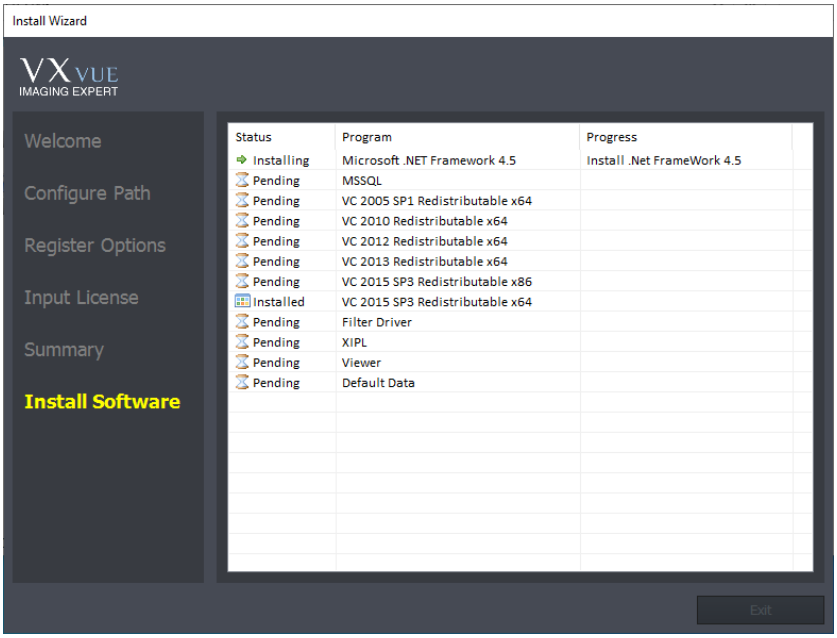
- You can change the license after installing VXvue.
- You cannot enter an invalid license.
- If the license registration is successful, the license input window does not appear after installing VXvue.
- You can register and activate additional S.B.S.C. licenses and use them with VXvue.
  - Software-based scatter correction (S.B.S.C.) is an image processing algorithm that prevents image degradation due to scattered lines.
  - After installing VXvue, you can add S.B.S.C. licenses by right-clicking the XIPL.SERVER tray icon at the bottom right.
- For more information on how to issue a license, please contact the person in charge of Vieworks' product licensing for your company.

8 Check the installation information and click the **Install** button to start the installation. If you wish to change any of the listed options, click the **Back** button to reselect.



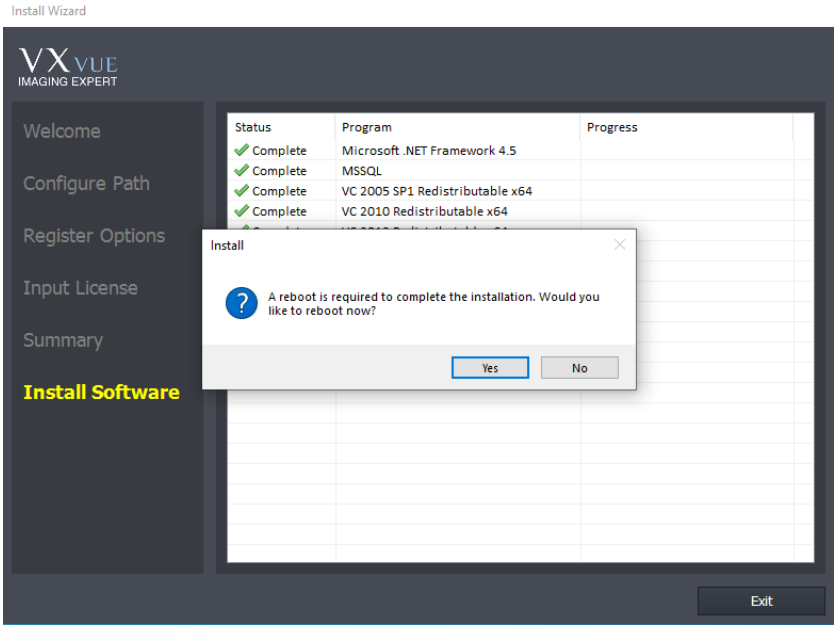
- After confirming the installation information, click the **Install** button to proceed with the installation. You cannot stop the installation until it completes.

9 Click the **Install** button to start installing **VXvue**. It may take a few minutes depending on your system specifications.



- Check the status in progress.
  - **Pending**: Standby status before program installation
  - **Installed**: A state that the program is already installed and does not need to be installed.
  - **Installing**: The program is now being installed.
  - **Complete**: Installation complete
  - **Fail**: Installation failed
- In **Program** and **Progress**, check the name of each program and the installation process.
- You cannot stop the installation until the program installation in the displayed list is complete.

10 When all the programs have been installed, click the **Yes** button to restart the computer.



3.1.2 How to Turn off Power Saving Mode

After installing VXvue, be sure to refer to the items below to turn off the sleep mode. If you do not cancel the power saving mode, the shooting and image information may not be saved normally by the power saving mode.

1 Make sure that power saving is enabled in the network adapter properties and disable the power saving mode.
2 Disable the power saving mode in monitor and power option of PC.

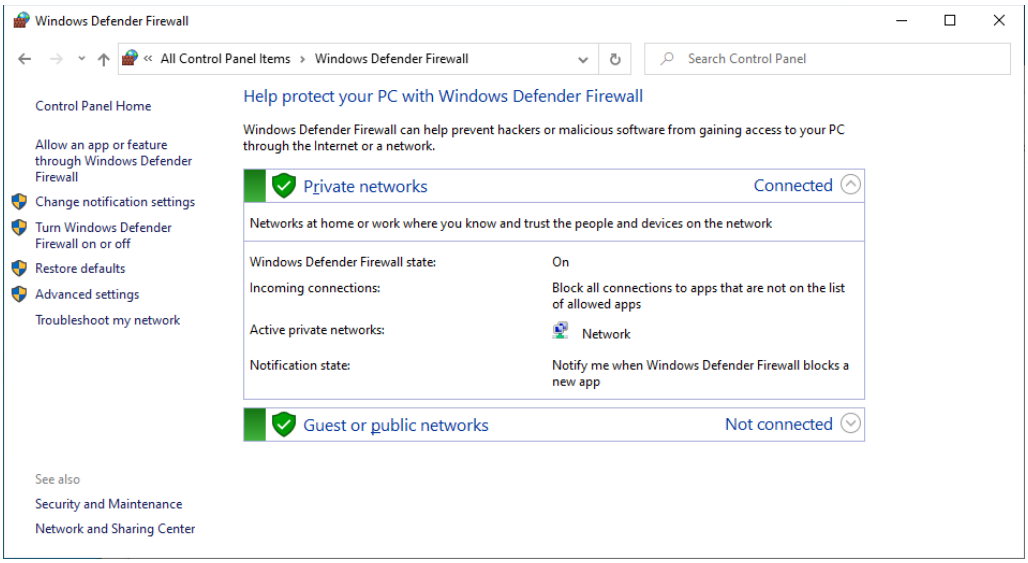
- The way to disable power saving mode may vary by **Windows OS** version. For more information, see the **Microsoft website**.
- If **Quick Start**(Recommended) is turned on, disable it before use.

3.1.3 How to Configure the Firewall

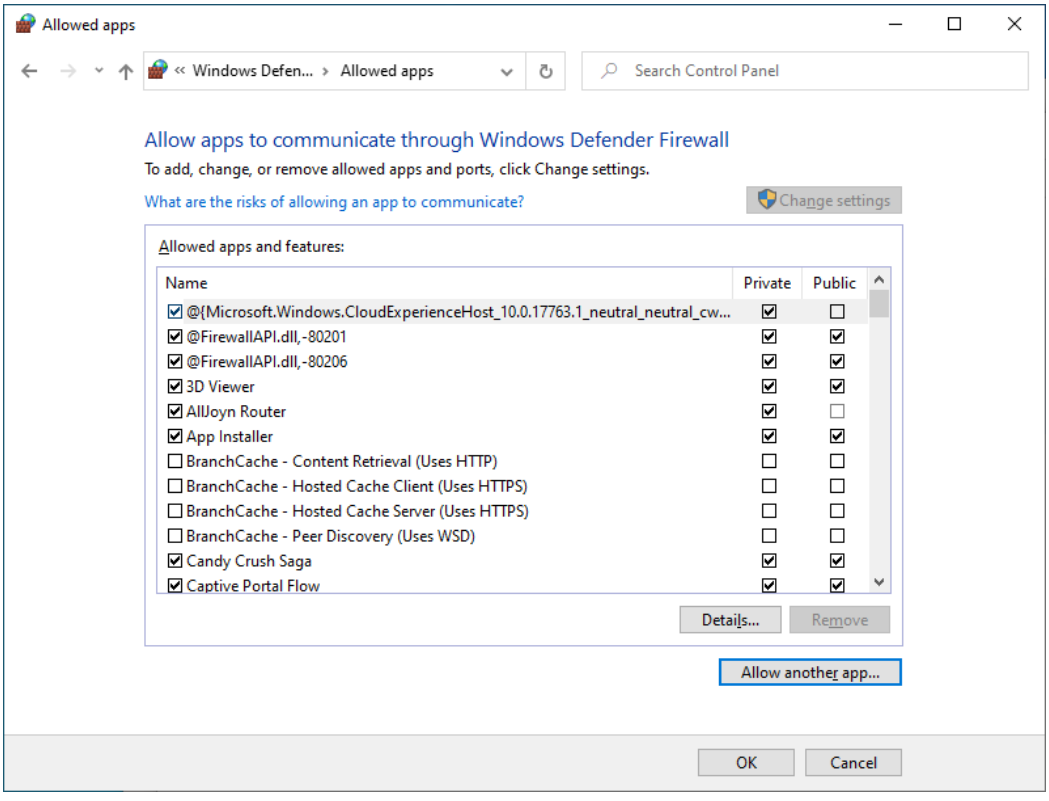
After installing **VXvue**, be sure to make the following changes in your firewall/. If you failed to comply with the procedures, communication between **Viewer** and detector (or **SCU**) cannot be worked normally because of the firewall.

1 Go to **Start > Control Panel > Windows Defender Firewall (Windows Firewall)**.

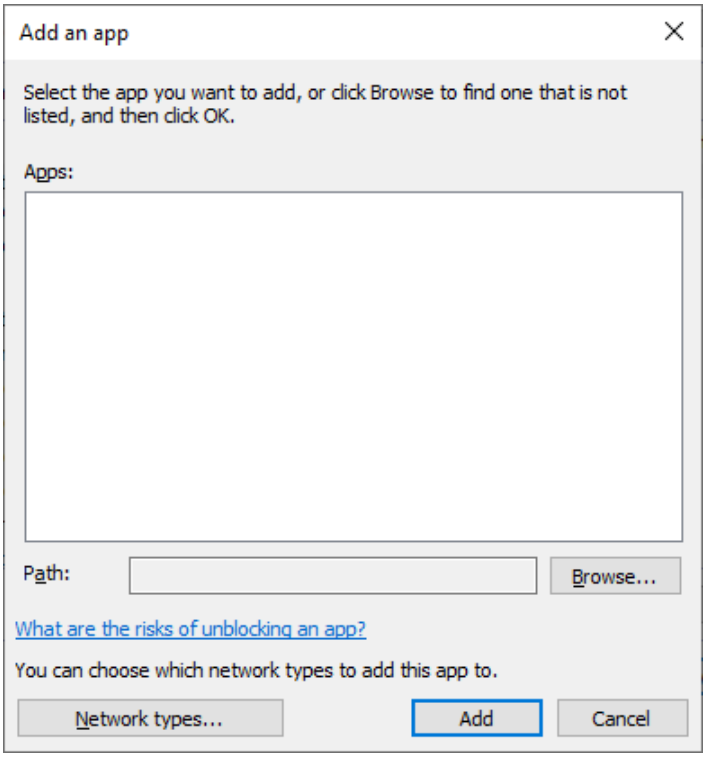
2 Choose Allow an app or feature through Windows Defender Firewall (**Allow an program or feature through Windows Firewall)** located on the left side.



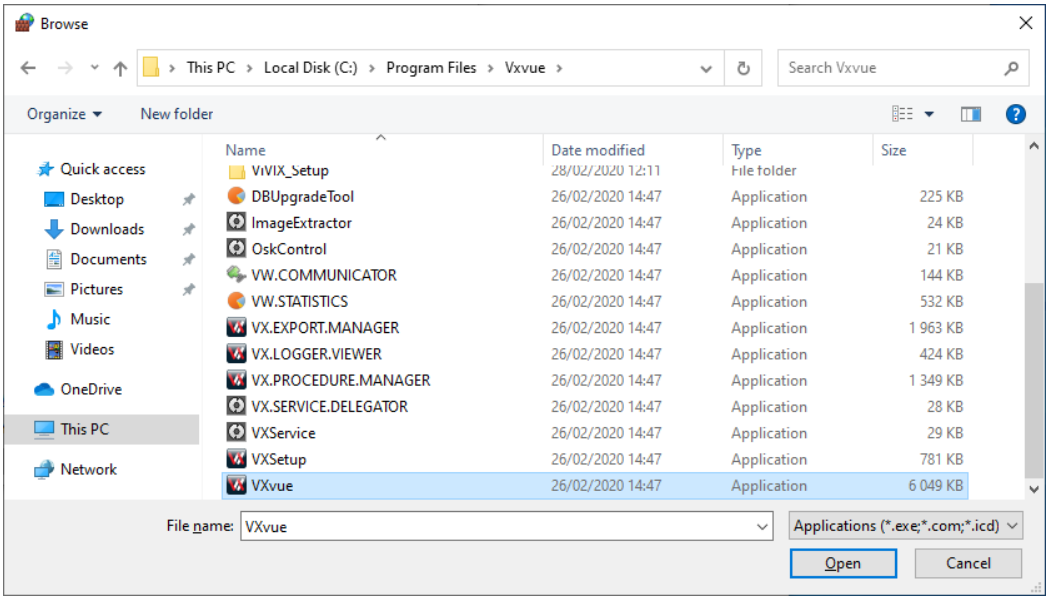
3 Click on the **Allow another app (Allow another program)** button to check if **VXvue** and **VXSetup** are registered on the list.



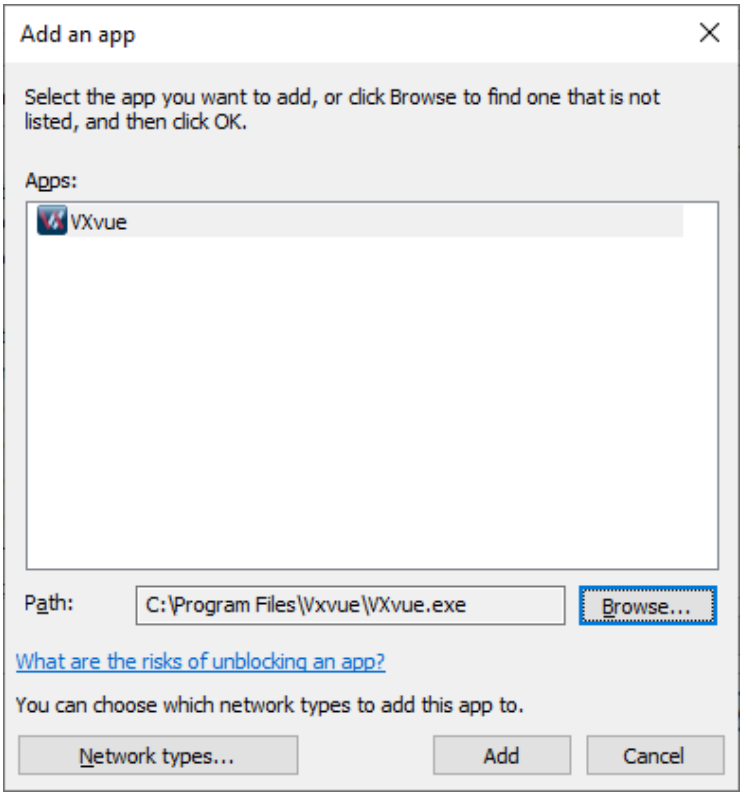
4 If VXvue and VXSetup are not added, click on the **Browse** button to add them manually.



5 Go to **C:\Program files\VXvue** and choose **VXvue.exe** file, then click on the **Open** button.



6 Choose **VXvue.exe** and click on the **Add** button.



7 Set the firewall for **VXSetup** and **XIPL** in the same manner as described above.

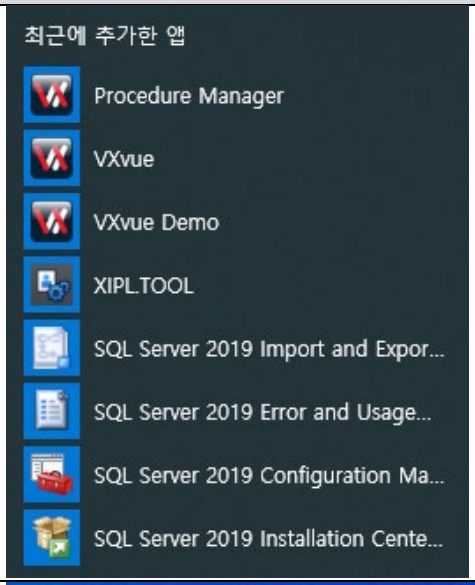
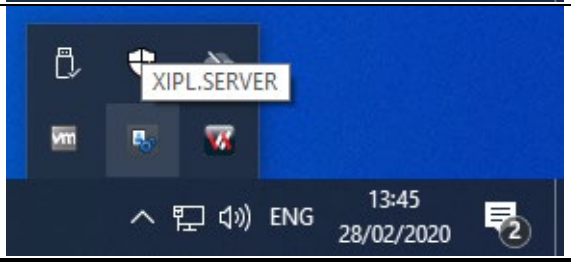
Name	Path
VXSetup	C:\Program files\VXvue\VXSetup.exe
XIPL	C:\XIPL\TOOL_X64\XIPL.TOOL.exe

3.2 Checking Installation Contents

This chapter shows how to verify that **VXvue** is properly installed before implementation.

3.2.1 Checking the Program

1 Check if the programs relevant to **VXvue** are installed correctly from the Startup program in Windows.
2 Check if the **Log Viewer** and **XIPL.SERVER** icons are visible and functional in the Windows tray.

Location	Program	Image
Startup Program	**VXvue** **VXvue Demo** **Procedure Manager** **XIPL.TOOL**	
Tray	**Log Viewer**	
	XIPL.SERVER	

- The above example images can vary depending on the installation environment and/or version.

3.2.2 Checking the Folder and File

- Make sure to check the main folder and files after installing **VXvue**.
- **VXvue** cannot be installed and/or operated correctly if any folder or file is omitted.

Folders

Category	Folder	Program
VXvue	**[VXVUE ROOT]**	C:\Program files\VXvue (Default), Root folder
	QXLink	DICOM Viewer folder
	Skins	Folder of Viewer UI and icons
	ViVIX_Setup	Folder for VIVIX Setup
XIPL	**[XIPL ROOT]**	C:\XIPL (Default), Root folder
	LICENSE	License storage folder
	PARAMETER	Folder for image processing parameters
	PLUGIN_X64	Folder for the image processing plug-in
	POSTLUT	Post Lookup Table folder
	SERVER_X64	Folder for the XIPL.SERVER execution module for Windows 64 bit
	TOOL_X64	Folder for the XIPL.TOOL execution module for Windows 64 bit
DATA	**[DATA_ROOT]**	D:\Database (Default), Date storage root folder
	BodypartCategory	Bodypart background image folder
	Database	Database file folder
	DemoImage	Demo image folder
	Dmp	Storage folder for dumps files
	ExportTemp	Temporary storage folder for exported images
	Image	Storage folder for acquired images
	ImageTemp	Temporary storage folder for image processing
	Language	Storage folder for language files
	Log	Log folder
	PrintTemp	Temporary folder for storing printed images
	SecondMonitors	Image folder for the second monitor
	Theme	Folder for storing VXvue themes

Main files

Category	File	File Name
VXvue	VXvue execution file	[VXVUE ROOT]\VXvue.exe
	VXSetup execution file	[VXVUE ROOT]\VXSetup.exe
	KIOSK Launcher execution file	[VXVUE ROOT]₩VX.LAUNCHER.exe
	Log Viewer execution file	[VXVUE ROOT]\VX.LOGGER.VIEWER.exe
	Statistics Viewer execution file	[VXVUE ROOT]\VW.STATISTICS.exe

	Export Manager execution file	[VXVUE ROOT]\VX.EXPORT.MANAGER.exe
	Procedure Manager execution file	[VXVUE ROOT]\VX.PROCEDURE.MANAGER.exe
	DB Upgrade Tool execution file	[VXVUE ROOT]\DBUpgradeTool.exe
XIPL	XIPL.TOOL execution file	[XIPL ROOT]\TOOL_X64\XIPL.TOOL.exe
	XIPL.SERVER execution file	[XIPL ROOT]\SERVER_X64\XIPL.SERVER.exe
DATA	Database data file	[DATA ROOT]\Database\DRF_dat.mdf
	Database log file	[DATA ROOT]\Database\DRF_log.mdf

3.2.3 Checking Database and Platform

- **VXvue** operates using a SQL Server database and .NET Framework platform. It is recommended to check the status of the database and platform after installing **VXvue**.

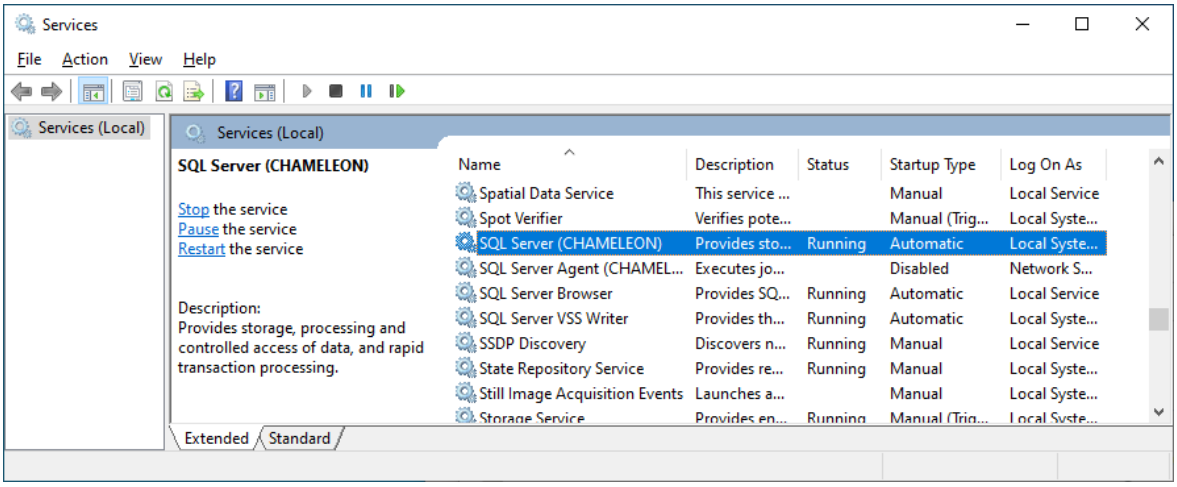
Check database (SQL Server)

1 Click **Start** → **Control Panel** → **Management Tool** → **Service** in order to enter **Services**.

2 Check if the **SQL Server (CHAMELEON)** is registered.

3 Check if the **Status** is set as **Started**.

4 Check if the **Startup Type** is set as **Automatic**.



- If the PC belongs to a domain, the **SQL Server** may not be able to be installed successfully because of certain domain policies. It is highly recommended to remove the PC from the domain before re-installing **VXvue**.

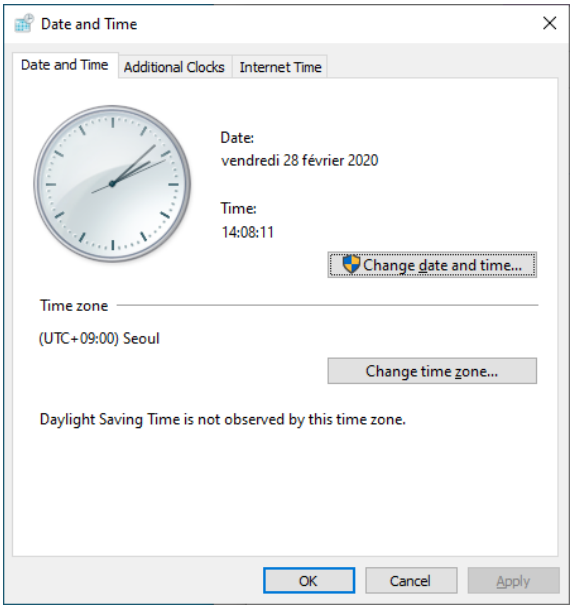
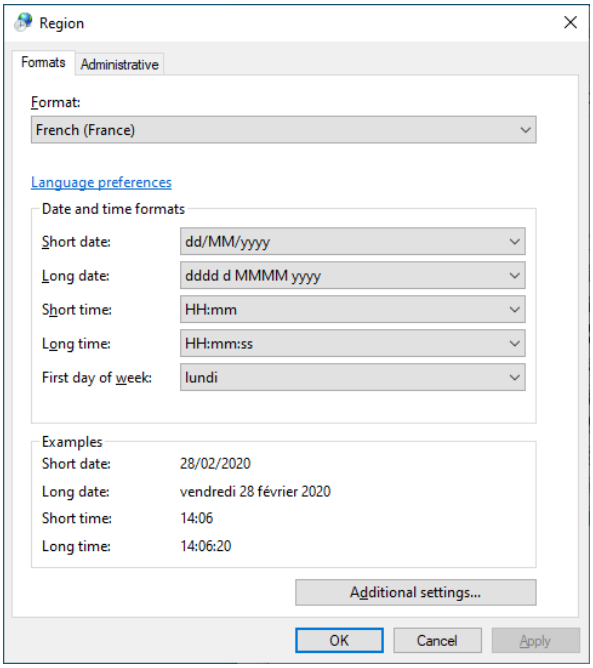
3.3 Setting Date and Time

Check the present date and time

The displayed date and time are controlled by Windows.

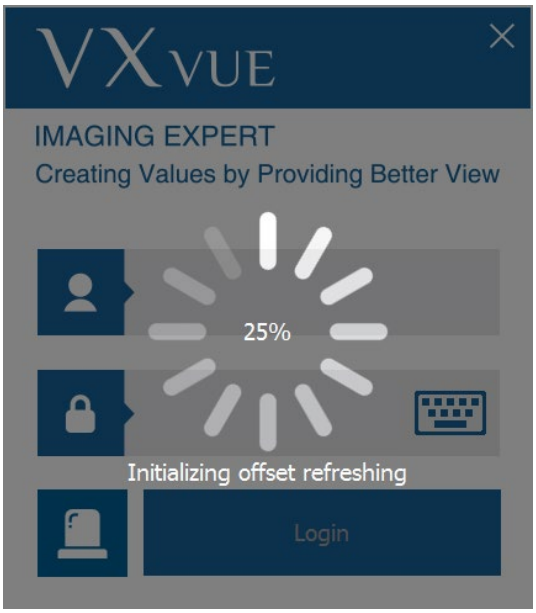
Set the present date and time

- Set the date and time in Control Panel of Windows to change the format.
  - Go to Control Panel and open Date and Time window to set the exact date and time.
  - Go to Control Panel and open Region and Language window to set the region and language.

Date and Time	Region and Language
	

3.4 Registering a License

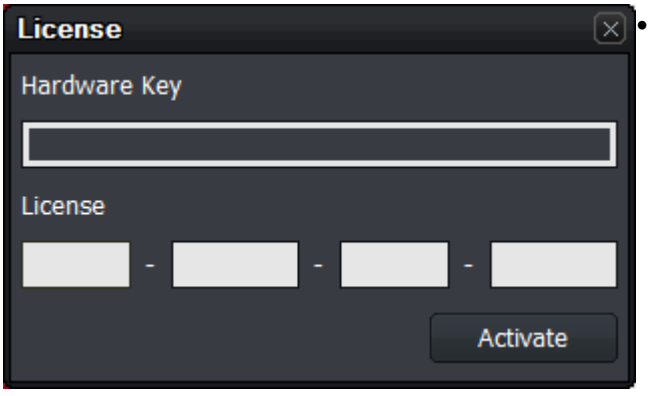
3.4.1 Running VXvue



1 Execute **VXvue**.
2 Wait until **VXvue** loads completely.

- While running **VXvue**, the following points are processed.
  - Connecting to database.
  - Checking license registration status
  - Checking detector connection status
  - Checking detector calibration status
  - Checking resolution.
  - Initializing UI (User Interface)

3.4.2 Getting a License



- Get a license by using the **Hardware Key** indicated on the License window.
  - This window is not displayed again after the license is registered successfully.

- When using a subscription type license, make sure that 'license.vieworks.com' is an exception to the firewall and communication is smooth if you have internet access.

- A new license window can be displayed if you change specifications of the PC where **VXvue** is installed.
- Contact the person in charge of Vieworks licensing for your company to acquire a valid license.

4. Settings

This section provides instruction for setting functions for VXvue.

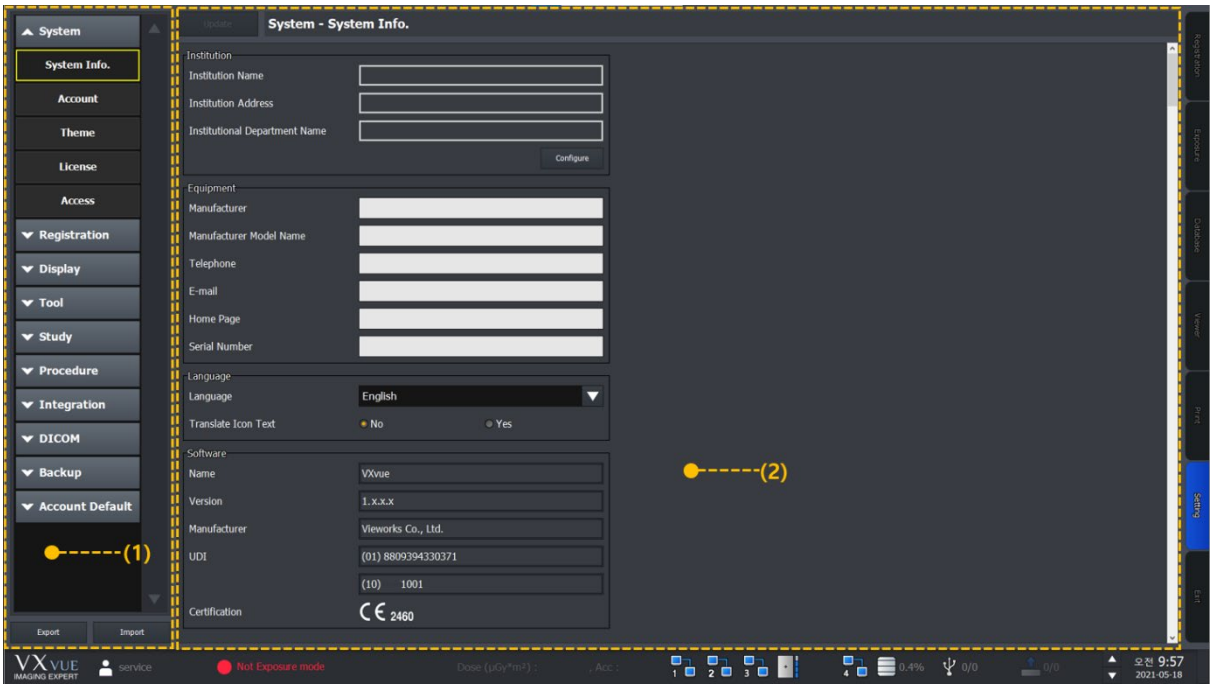
Overview
System Group
Registration Group
Display Group
Tool Group
Study Group
Procedure Manager
Integration Group
DICOM Group
Backups Group
Account Default Group

4.1 Overview

You can set various functions from the **Setting** mode depending on the environment. Any options that have been modified will be highlighted in red, and a pop-up window appears whenever you move to another tab to ask if you want to save your settings.

4.1.1 Getting Started

In **Setting** mode, you can set various values from the ten (10) setting groups as follows:



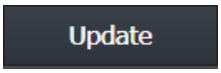
1 Group Area

Panel	Description
System	Configure general system information.
Registration	Configuration related to patient registration.
Display	Configuration related to the Viewer mode.
Tool	Configuration related to tools.
Study	Configuration for study management and tools.
Procedure	Sets the procedure information for shooting.
Integration	Configuration related to detector integration and other equipment.
DICOM	Configuration related to DICOM functionality.
BACKUP	Checks and restores information of study backup and deletion.
Account Default	Sets default values related to the account you want to use when adding another account.

2 Setting Area

The setting screen is converted to a specific format related to the panel you select.

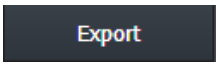
4.1.2 Saving the Settings



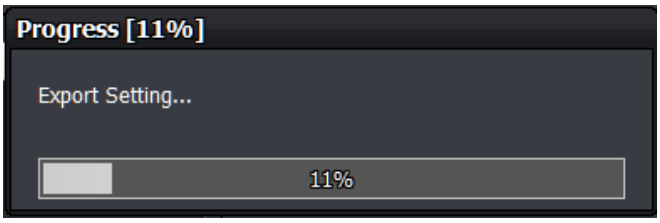
- The settings changed are indicated in red.
- Click on the **Update** button to save any changes.

4.1.3 Exporting / Importing Settings

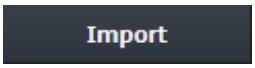
1 Export Settings



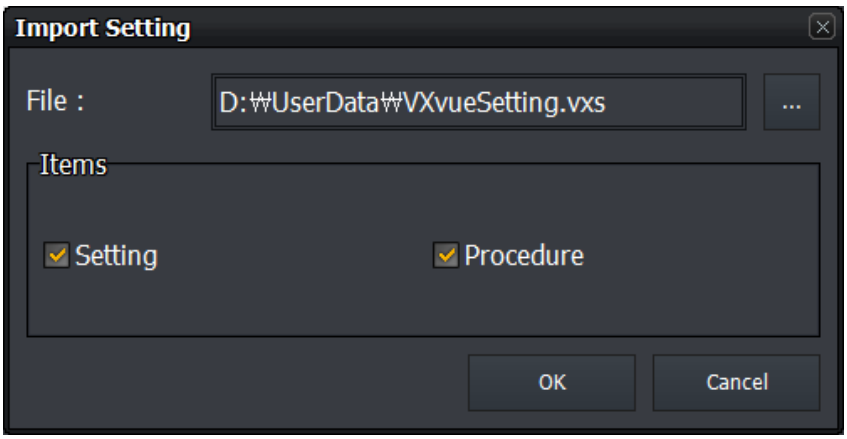
- Click on the **Export** button at the bottom of the group area to save the settings to your PC.
- Set the path to where you wish to save your exported settings and click the **OK** button.



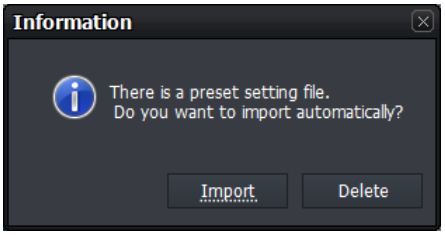
2 Import Settings



- Click on the **Import** button at the bottom of the group area to import settings stored in the PC.
- Set the path and select items to import. Then click the **OK** button to import and apply these settings.



- After copying the exported configuration file to [Installation package folder]₩Data₩AutoImportSetting.xml or [Installation package folder] ₩Data₩AutoImportSetting.vxs and installing VXvue on a new PC, you can use the function to automatically import the settings when VXvue first starts.



4.2 System Group

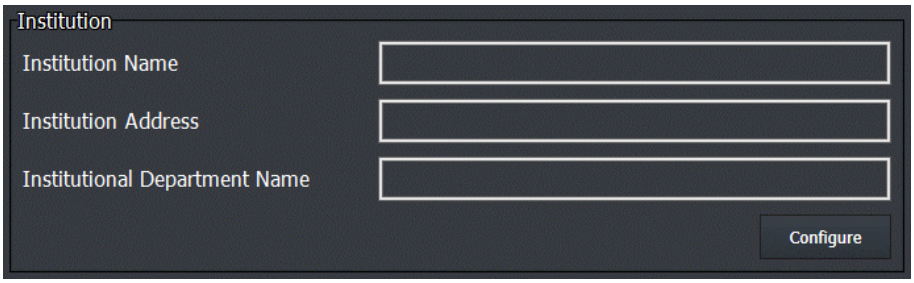
You can set system information, account, skin, and license from the **System** group.

4.2.1 System Information Menu

- You can input, change, or check the information needed for the system.
- Click on the **Update** button after you input or change each option.

Institution

- You can check the information related to **Institution** here.



Item	Description
Institution Name	Name of hospital or institution.
Institution Address	Address of hospital or institution.
Institutional Department Name	Department name of hospital or institution.

- Click on the **Configure** button and move to the **General** sub-menu of the **Registration** group if you want to change the information for **Institution**.

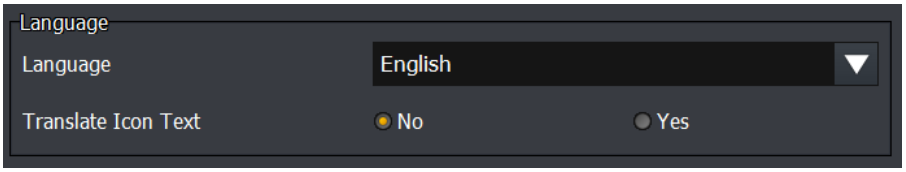
Equipment

- Some information is used as the DICOM information.

Item	Description
Manufacturer	Manufacturer name.
Manufacturer Model Name	System or equipment model name.
Telephone	Telephone number of the manufacturer.
Email	E-mail address of the manufacturer.
Homepage	Homepage of the manufacturer.
Serial Number	Serial number of the system or equipment.

Language

- Choose the language you want to use.



- **VXvue** supports English, Chinese, Japanese, German, Italian, Spanish, Russian, French, and Portuguese.
- You can change the supported default languages or add another language.
- You can set whether the icon tab is displayed in the selected language.
- Restart the program after you change the language setting.

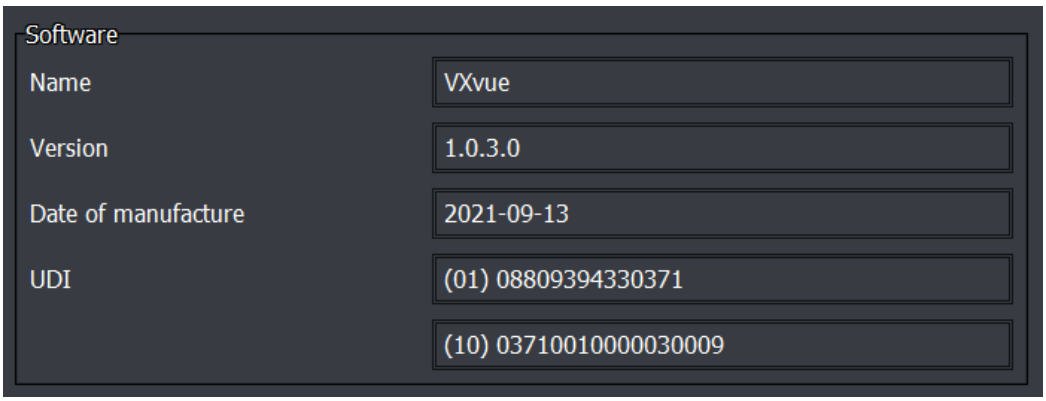
- Refer to <5.2 Setting a Language> for detailed information about adding a language or changing its setting.

4.2.2 Product Information Menu

- You can find the product information from the Product Info. Menu.

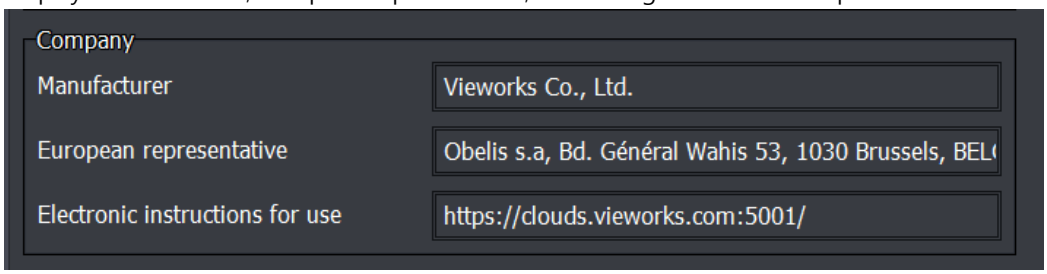
Software

- Displays the name, version, date of manufacture, and serial number of the product.



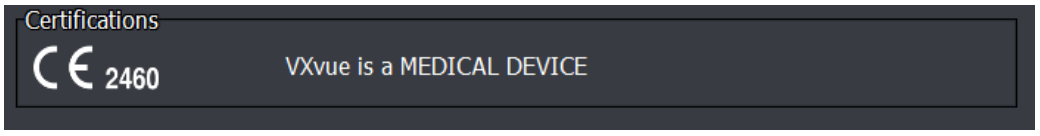
Company

- Displays manufacturer, European representative, and user guide URL of the product.



Certifications

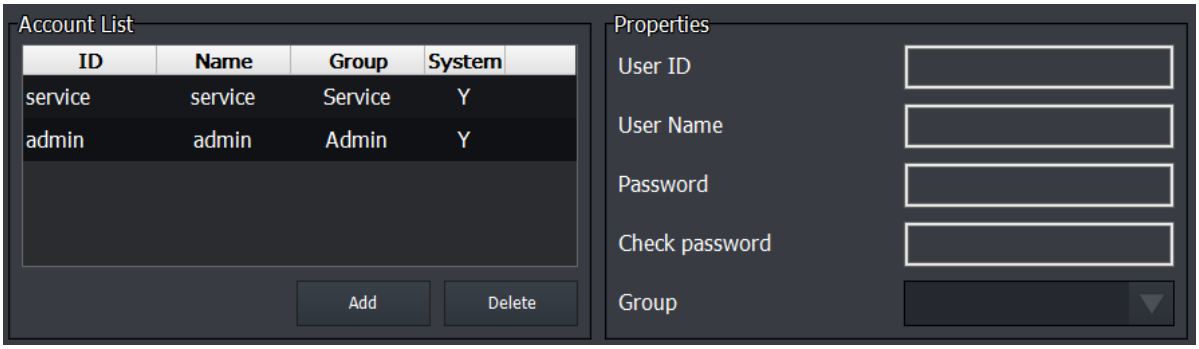
- Displays the authentication information the product has acquired.



4.2.3 Account Menu

You can manage the login account from the **Account** menu.

- Only the accounts in **Service** and **Admin** groups can modify these options.



Category	Item	Description
Account List	ID	Registered user ID
	Name	Registered username
	Group	Registered user group
	System	Indicates the system management authority.
	Add	Adds an account.
	Delete	Deletes an account.
Properties	User ID	User login ID
	User Name	Username
	Password	User login password
	Check Password	Verify the previously entered password
Group	Service	System management group

	Admin	System operating group
	User	System use group

Add account

1 Click on the **Add** button and verify that the account is added successfully.
   - Account is automatically added.
2 Modify the user ID, name, password, and the affiliated group.
3 Click on the **Update** button to store the account.

Delete account

1 Select the account from **Account List** and click on the **Delete** button.
2 Click on the **YES** button to delete the account.

Group policy

- The authorization of **Service**, **Admin** and **User** groups are provided, and all registered accounts belong to one of these group.
- The **Service** group account and the **Admin** group account are created automatically when you first install **VXvue**.
- At least one or more **Service** group and **Admin** group accounts should be registered.
- The login account being used cannot create a group account higher than the one it currently belongs to.
- You cannot delete the login account currently in use.

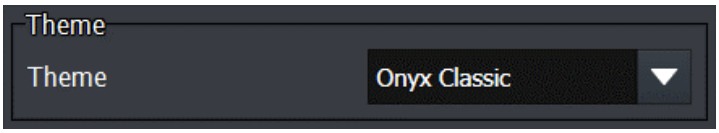
Authorization for each group

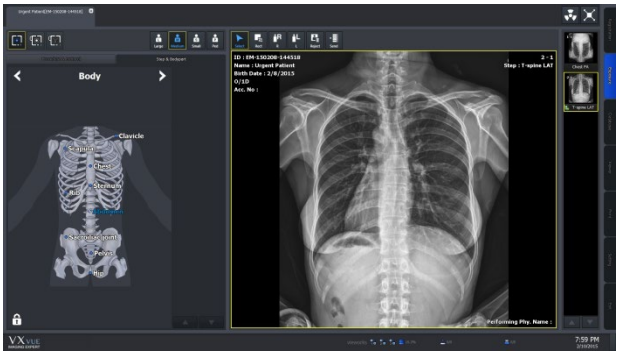
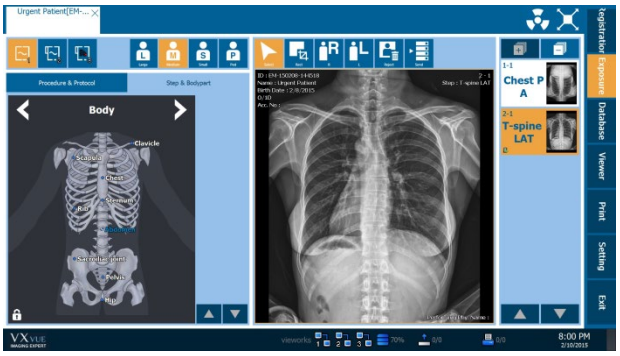
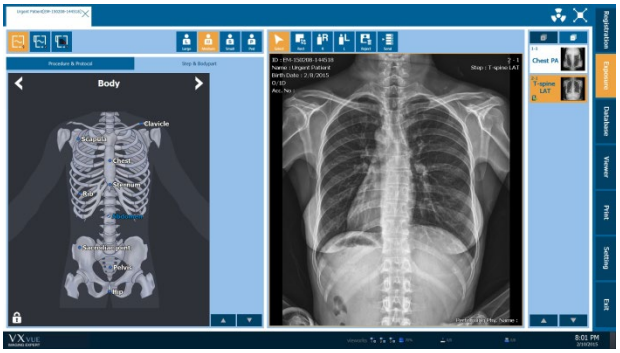
- **System** and **Admin** groups can manage the entire system and use all functions.
- The **User** group cannot use the **Statistics** function.
- The **User** group can access and use the limited tabs in the **Setting** mode as follows:
  - **System Info**, **Account**, **Theme** and **License** menu in the **System** group. (Unable to use the **Correction** button.)
  - **General**, **Unscheduled**, **Scheduled** and **Physician** menu in the **Registration** group.
  - **General, Information Overlay**, **Overlay Item, Annotation,** and **Layout menu** in the **Tool** group.
  - **General, Pre-defined Text, Image, Tool Quick Access, Thumbnail**, **Status Bar** menus in **Tool** group.
  - General, External Save, Rejected Reason menus in the **Study** group.
  - **Procedure Manager** in the **Procedure** group.
  - **General Detector** and **Collimation menu** in the **Integration** group.
  - General, **Queue** menu in the **DICOM** group.

- Group policies can be changed without notice due to functionality changes within **VXvue**.

4.2.4 Theme Menu

You can change the theme (skin) from the **Theme** menu.

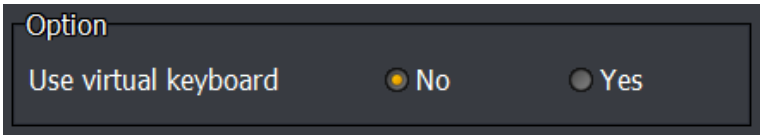


Name	Image
Onyx Classics	
Sapphire Blue-QHD	
Sapphire Blue	

- Refer to the VXvue Operation Manual for information about the **Sapphire Blue** skin.

Option

Choose whether you use the virtual keyboard or not.

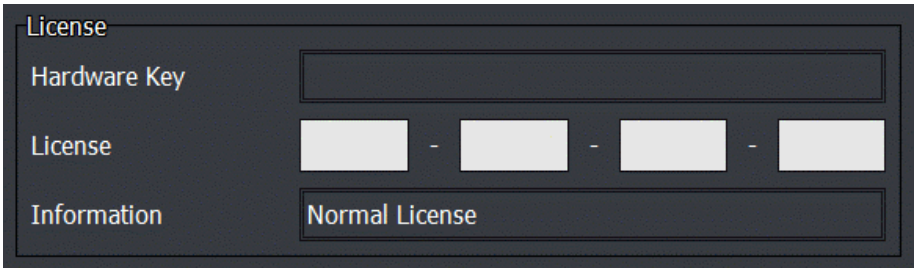


- Virtual keyboard is not supported on **KIOSK mode** from Setting Tab.
- Refer to <5.4 Using with KIOSK> for information on **KIOSK mode**.

4.2.5 License Menu

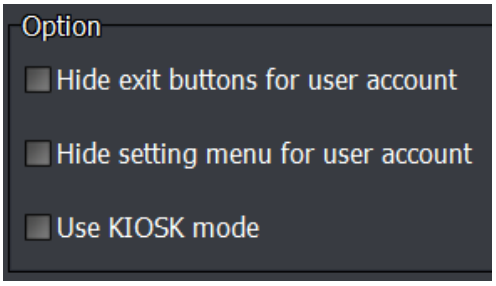
You can manage the registered license.

- Input a new license and click on the **Update** button to change the existing license.
- For licenses with expiration dates, you can find the expiration dates in the information section.



4.2.6 Access Menu

You can change the settings for the **user account** from **Access** menu or turn on the option for the **KIOSK mode**.



- Hide exit buttons for user account : User group has no access to the configuration and cannot close the program if checkmark is indicated on the option box.
- Hide setting menu for user account : User group has no access to the configuration and cannot see the Setting Mode if checkmark is indicated on the option box.

- Refer to <5.4 Using with KIOSK> for details in KIOSK mode.

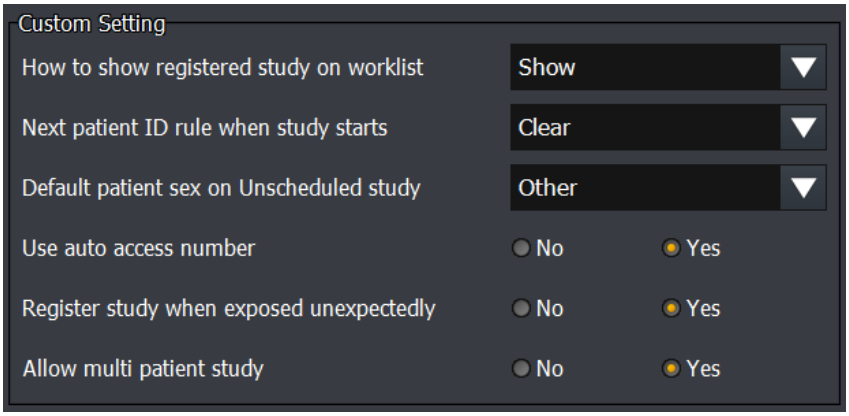
4.3 Registration Group

In the **Registration** group you can change several options related to patient and physician information.

4.3.1 General Menu

You can set the registration settings here.

Custom Setting



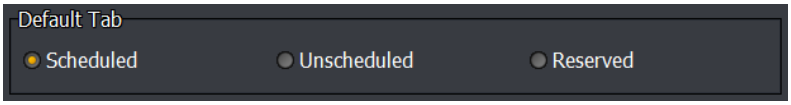
Menu	Description
How to show registered study on worklist	• Changes the way a study is shown on the **Scheduled** and **Reserved** tabs. ▫ Show: All patient information is displayed regardless of status. ▫ Show with color: The patient information turns green when shooting an image. ▫ Hide: The patient information a study in progress is not indicated on the list.
Next patient ID rule when study starts	• When a new study is started from the **Registration** mode in the **Unscheduled** panel, set the value in the edit box of a patient ID box. ▫ **Clear:** Empty the edit box of a patient ID when a new study is started. ▫ **Remember:** Though a new study is started, automatically input the last patient ID in the edit box. ▫ **Increase:** When a new study is started, automatically input the last patient ID as adding '1' to it. Ex. 1) Indicate with PatientID1 when the ID of the last patient is PatientID Ex. 2) Indicate with 1234567 when the ID of the last patient is 123456 Auto generate: Automatically input the patient ID, which is automatically created, in the edit box of a patient ID.

Default patient sex on Unscheduled study	• When a new study is conducted in **Unscheduled** panel, indicate the defined sex as a default value.
Use auto access number	• When a new study is generated from the **Unscheduled** panel of the **Registration** mode, accession numbers are made automatically. ▫ Ex.) YYYYMMDDNNNNN • Generation rule ▫ YYYY (Year) / MM (Month) / DD (Day) ▫ NNNNN: Serial number (00001 ~ 99999)
Register study when exposed unexpectedly	• If unexpectedly exposed to radiation, register Emergency study from Exposure tab and receive images.
Allow multi patient study	• Allows multi patient procedure. When option is activated, other patient studies can be open on Exposure tab.

Vehicle mode always allow Multi patient procedure, and the **Allow multi patient study** is not displayed on the Vehicle mode.

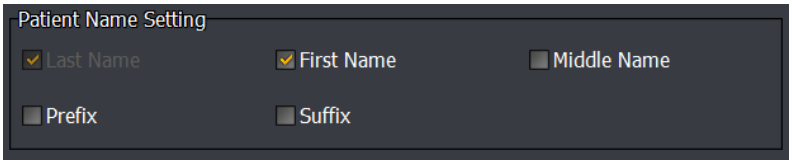
Set Default Tab

- Set the default tab that you want to display when entering the **Registration** mode.



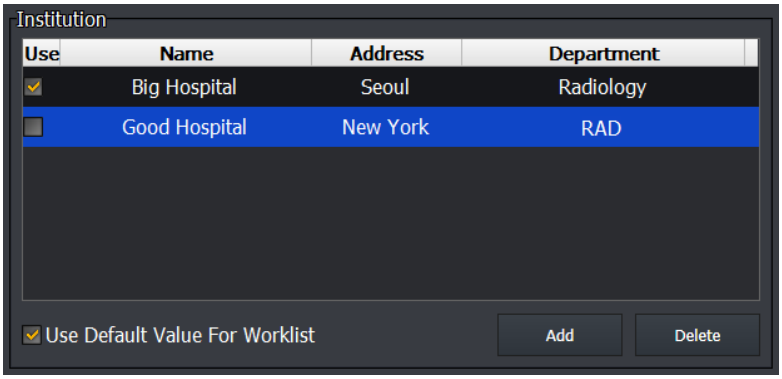
Set Patient Name

- Select an item(s) to input in the field.
- Patient name is set according to the checked items.
- "Last Name" is a required entry.



Set Institution

- You can set different entries for **Institution**.

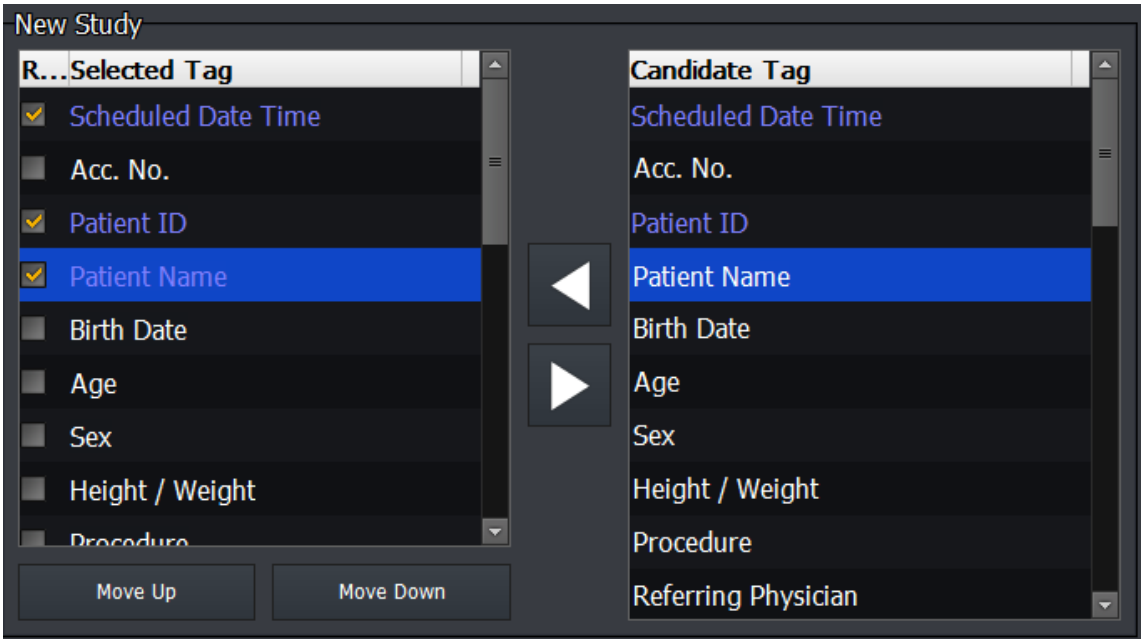


1 Click on the **Add** button to add items.
2 Double-click on the value of **Name, Address** and **Department** to correct information for an **Institution**.
3 Check the items to use (active selections).
4 Click on the **Delete** button to delete the selected items

- The checked items are registered in the **System Info.** tab and used as the **Institution** information.
- When you check **Use Default Value For Worklist**, the **Institution** information added from **Setting** is used instead of the **Institution** information of the study from the worklist.

4.3.2 Unscheduled Menu

You can set the entry options for patient information.



Registered item (Left list)

- You can find the registered items on the left list from the **Unscheduled** panel in the **Registration** mode.
  - The blue-colored items cannot be deleted.
  - If you check an item, it becomes a required field.
- Select an item and click on ▶ button to remove it from the list.
- Click on the **Move Up** or **Move Down** button to adjust order of a **Selected Tag**.

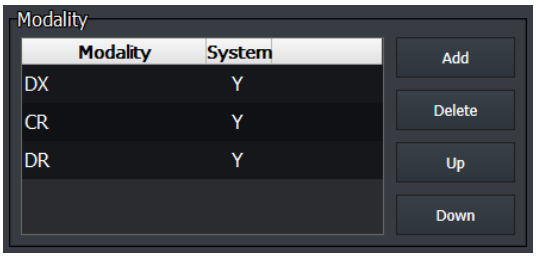
Collection of Items (Right list)

- You can find all items relevant to patient information on the list on the right.
- Select an item and click on ◀ button to add the selected items.

4.3.3 Scheduled Menu

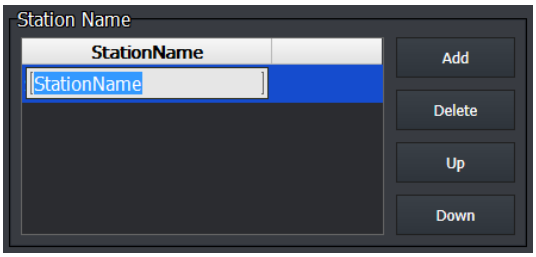
You can change the search criteria for querying patient information from the worklist in the **Scheduled** tab of the **Registration** mode.

Modality



- Configures which **Modality** to use as a search condition.
- You cannot delete or modify the built-in system modality (**DX/CR/DR**).
- Click on the **Add** button to add items.
- Select an item and click on the **Delete** button to delete an entry if it is not one of the default modalities.

Station Name



- Configures **Station Name** to use as a search condition.

1 Click on the **Add** button to add items.
2 Select an item and click on the **Delete** button to delete an entry.

Station AE Title

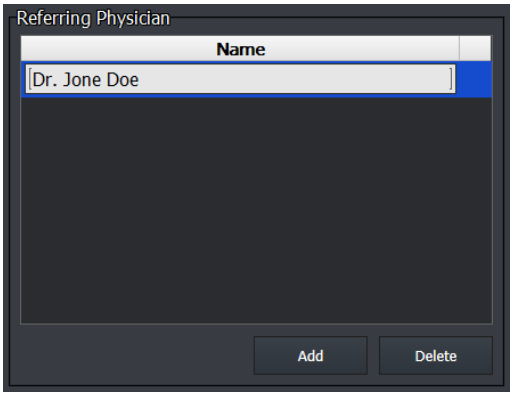
- Configures **Station AE Title** to use it as a search condition.

1 Click on the **Add** button to add items.
2 Select an item and click on the **Delete** button to delete an entry.

4.3.4 Physician Menu

You can register or modify physician information.

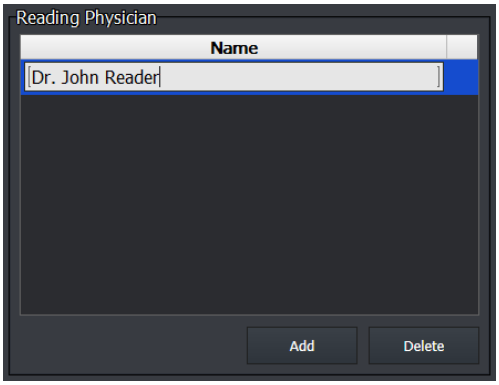
Register Referring Physician



- You can register or modify the name of a referring physician.

1 Click on the **Add** button to add a name.
2 Double click the name to modify it.
3 Click on the **Delete** button to delete the selected name.

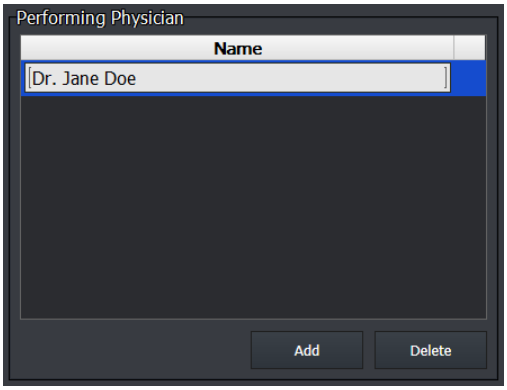
Register Reading Physician



- You can register or modify the name of a reading physician.

1 Click on the **Add** button to add a name.
2 Double click the name to modify it.
3 Click on the **Delete** button to delete the selected name.

Register Performing Physician



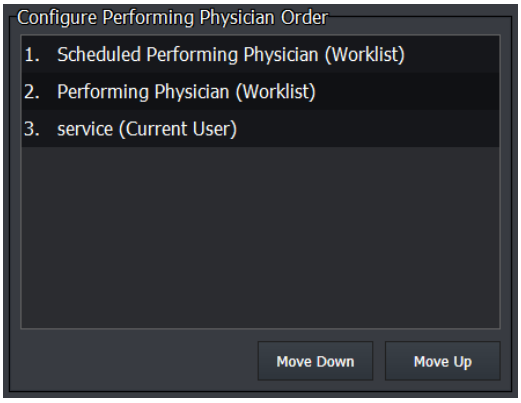
- You can register or modify the name of a performing physician.

1 Click on the **Add** button to add a name.
2 Double click on the name to modify it.
3 Click on the **Delete** button to delete the selected name.

Configure the order of Performing Physician

- You can select items of **Performing Physician** when you use a Worklist to acquire images.
  - Two Worklist entries and one user-configured item are provided.

- **VXvue** searches the item information by the order of 1 → 2 → 3, and the next item is used if there is no information in the first one. If the information is searched, the information of other orders is not used.
- Check the **Performing Physician** item to use and arrange the order with **Down / Up** buttons.



1 Scheduled Performing Physician (Worklist)

- DICOM tag information (0040,0006)
- Name of a doctor or radiological technologist who is reserved for study/exposure.

2 Performing Physician (Worklist)

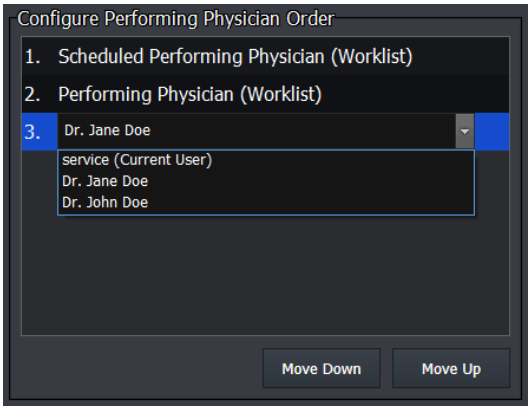
- DICOM tag information (0008,1050)
- Name of a doctor or radiological technologist who conducts the actual study/exposure.

3 Vieworks (Current User)

- Refer to the user-configured items described below.

Use the name of Performing Physician as the user-registered name

- You can use the name of performing physician which the user registered in advance.
- Double click **Vieworks (Default User)** to add a specific name.



- Select **Current User** to use the logged-in user information as **Performing Physician**.
- If you select the specific registered name, it is used as the name of **Performing Physician**.

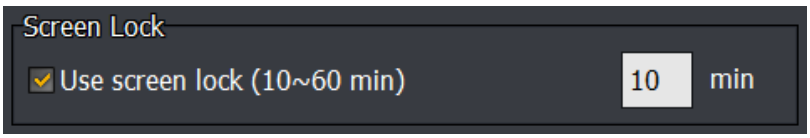
4.4 Display Group

4.4.1 General Menu

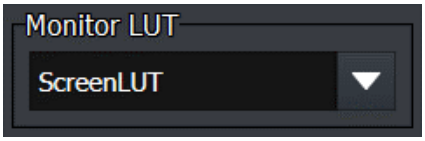
In this section, you can change settings for adjusting monitor values and/or display properties.

Screen Lock

- The screen is locked with a login window if the system is idle for the specified amount of time.
- The screen is unlocked by entering the same ID and password that you used to log in with.



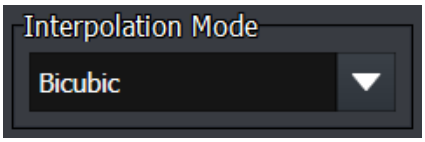
Monitor LUT



- Select the monitor LUT that is applied to the images in the **Exposure** and **Viewer** modes.

- Refer to <4.4.5 LUT Menu> for more information about the **LUT** setting.

Interpolation Mode

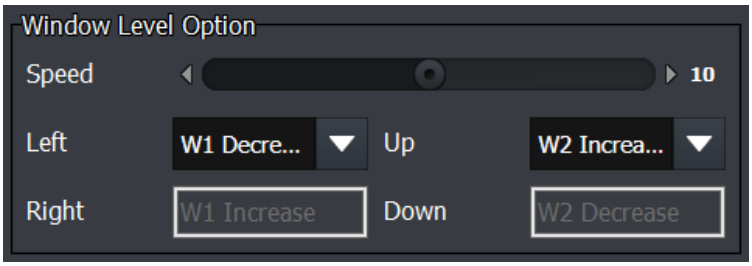


- Select the **Interpolation Mode** applied to the monitor.

Interpolation Mode items

Item	Description
Nearest Neighbor	Interpolates the nearest pixel
Bilinear	Bilinear interpolation
High Quality Bilinear	High quality bilinear
Bicubic	Bicubic interpolation
High Quality Bicubic	High quality bicubic
GDI	GDI library interpolation

Window Level Option



- You can set **W/L** movement according to the direction you move the mouse.
- **Speed** is the rate of change of **Window Leveling** as the mouse is moved. The default value is **10**.
- **Left** / **Right** are configured as a set.
- **Up** / **Down** are configured as a set.

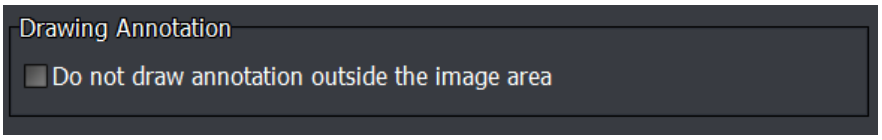
Operation method

Item	Description
W1 Increase / Decrease	Increase or decrease the W1 value.
W2 Increase / Decrease	Increase or decrease the W2 value.
Contrast Increase / Decrease	Increase or decrease the contrast of the image.
Brightness Increase / Decrease	Increase or decrease the brightness of the image.

Rational formula between Width / Level and W1 / W2

- The values of **Width** and **Level** are measured as **W1** and **W2** values as follows.
  - **W (Width) = W2 – W1**
  - **L (Level) = (W1+W2) / 2**

Drawing Annotation



- When the check box is set, annotation cannot be inserted outside the image area, and the part that extends outside the image area is not displayed.

4.4.2 Information Overaly Menu

You can select which information is displayed over your images.

Set the position of Image Overlay items

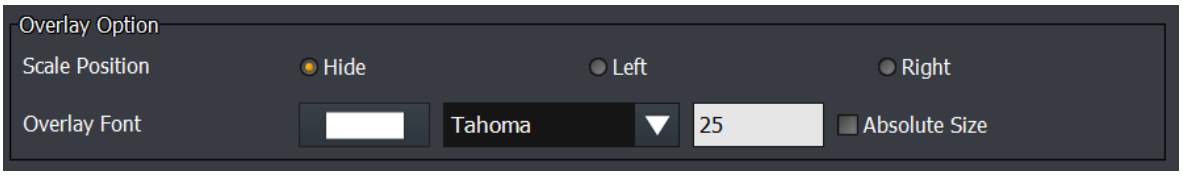
1 Select an item to add or remove from the desired position by clicking on ◀ or ▶ button.
   - You can add items to the **Top Left**, **Bottom Left**, **Top Right**, and **Bottom Right** lists.
   - You can overlap items.

2 Click on the **Update** button to save your settings.

Items available to be added to the Image Overlay

- Patient ID, Patient Name, Birthdate, Sex/Age, Height, Weight
- Bodypart, Projection, Laterality
- Performing Physician, Referring Physician
- Study Date, Study Time, Accession number
- Series Number, Instance Number, Exposure Time
- Dose kVp, Dose mA, Dose ms, Dose mAs, DAP
- Exposure Index, Deviation Index, Target Exposure Index
- Pixel Value, Histogram, Zoom Ratio
- Institutional Name, Institutional Address, Institutional Department Name
- Manufacturer, Manufacturer Model Name, Station Name, Modality
- Other Patient ID
- Image Orientation
- User-Defined Field

How to set Font & Color



- Set the font and color of the **Overlay Font** item.
  - Set colors and fonts. You can preview the font in **Select Other**.
  - Set the character size. The maximum value is 300.

- **Absolute Size**
  - **Checked**: Displays the same text size in all images regardless of the view size of the image
  - **Unchecked**: Adjusts the text size in proportion to the view size of the image

Scale Position

- Select the scale position that is indicated on the **Image Overlay**.
- You can hide or indicate the scale on the left or right of the image

4.4.3 Overlay Item Menu

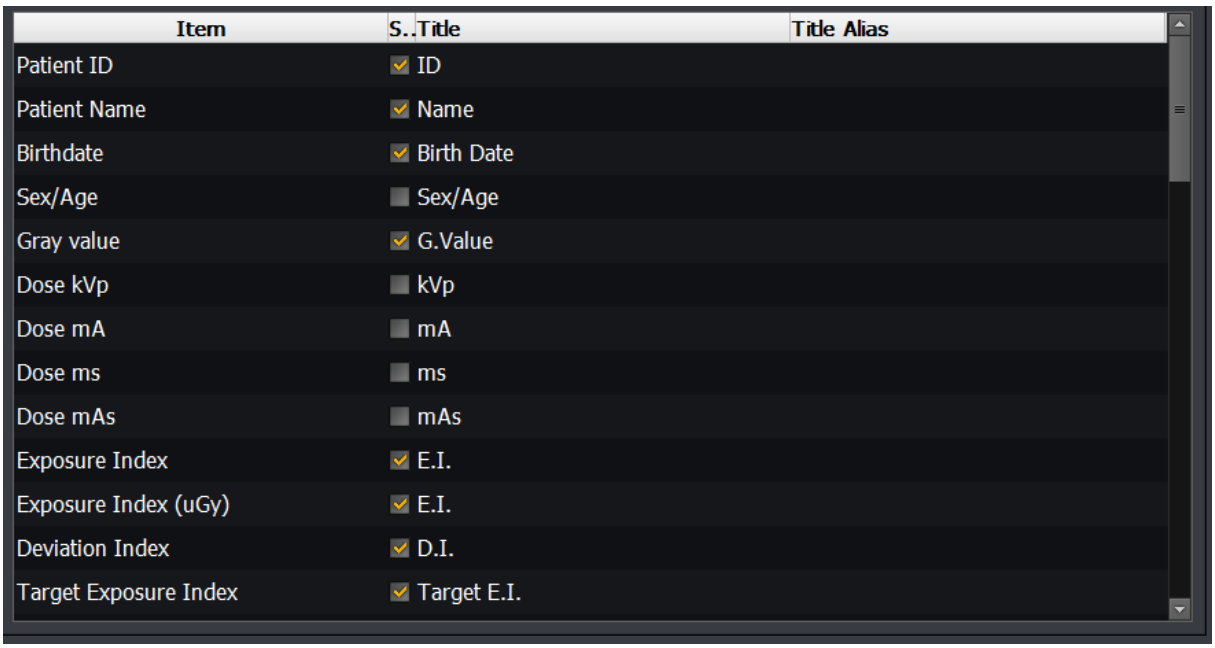
You can set whether to display the information about patient and image above the image.

Set which Overlay Item to show

1 Click in the checkbox next to the item you want to display.

2 You can change the title of the item to be displayed on the screen by using **Title Alias**.

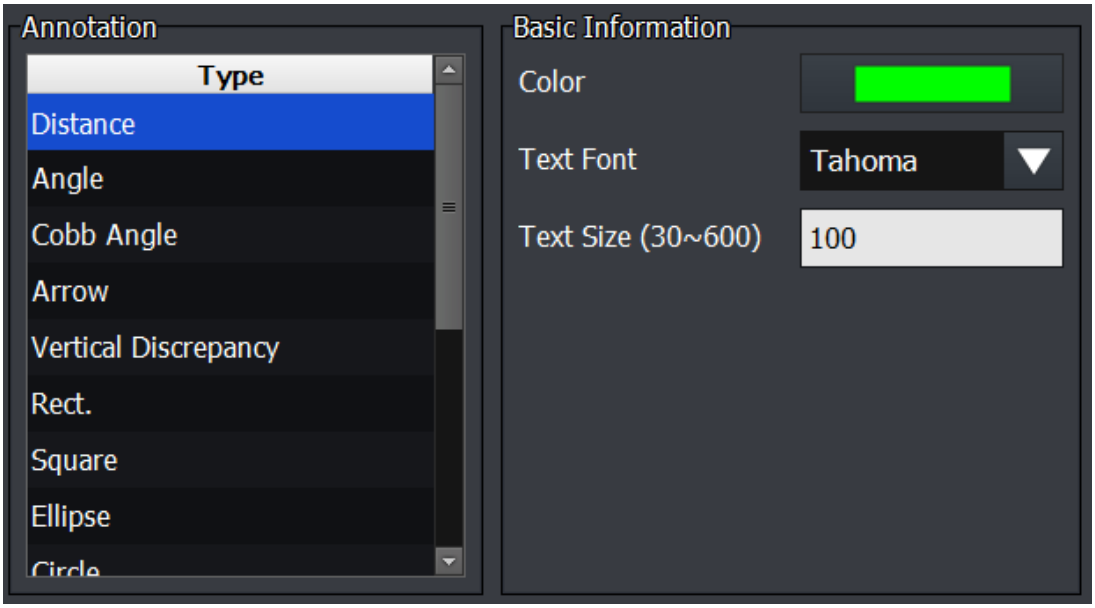
▫ You can personally change the title of items in the **User-Defined Field 1 through 10**.



4.4.4 Annotation Menu

You can change the font, size, and color of the annotation displayed above the image.

Set Font & Color



- First choose Type of annotation you are to set on the **Annotation** items
- Choose the **Font** and **Color** of the **Annotation** items
  - Color of annotation
  - Font name of annotation
  - Font size of annotation

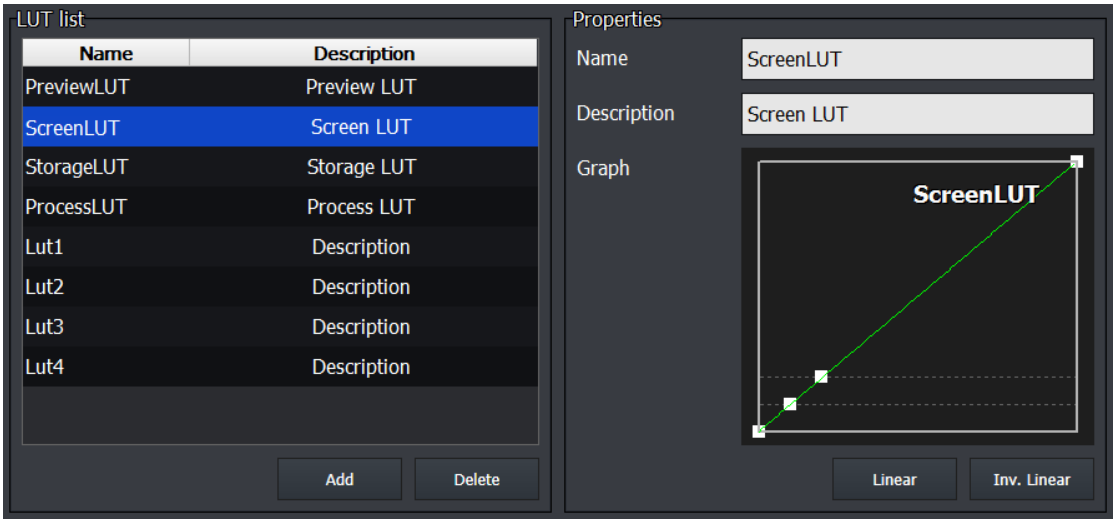
Check the configurable items of Annotation

- Distance, Angle, Cobb Angle, Arrow
- Vertical Discrepancy
- Rect, Square, Ellipse, Circle
- Label, Text
- Rect ROI
- Detector Pixel Spacing
- Image Pixel Spacing
- VHS
- TTA
- TPLO
- Norberg Angle

- The items of VHS, TTA, TPLO, and Norberg Angle are only configurable in the Veterinary VXvue.

4.4.5 LUT Menu

You can make **LUT** (Lookup Table) by applying gamma value of the image at **LUT** panel. Select the configured **LUT** to display on the monitor, process image, send DICOM storage server and set DICOM print.



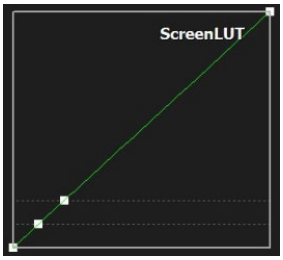
LUT List

- Eight (8) **LUT** items are provided to the **LUT List**.
- You can also add new **LUT** options manually.

LUT	Description
Preview LUT	Used to preview the image.
Screen LUT	Used for checking the image on the monitor.
Storage LUT	Used for sending images to the DICOM storage server or the DICOM print server.
Process LUT	Used for image processing.
LUT1,2,3,4	You can set custom LUT selections.

- It is recommended to modify and use the eight (8) default LUTs instead of generating LUT directly.

Add LUT



1 Click on the **Add** button to add an item and adjust a curve on the graph.
   - Use **Linear** or **Inverted Linear** button to adjust a curve.
   - Press and drag a LUT curve point to adjust a curve.
2 Click on the **Update** button to save after completing your adjustments.

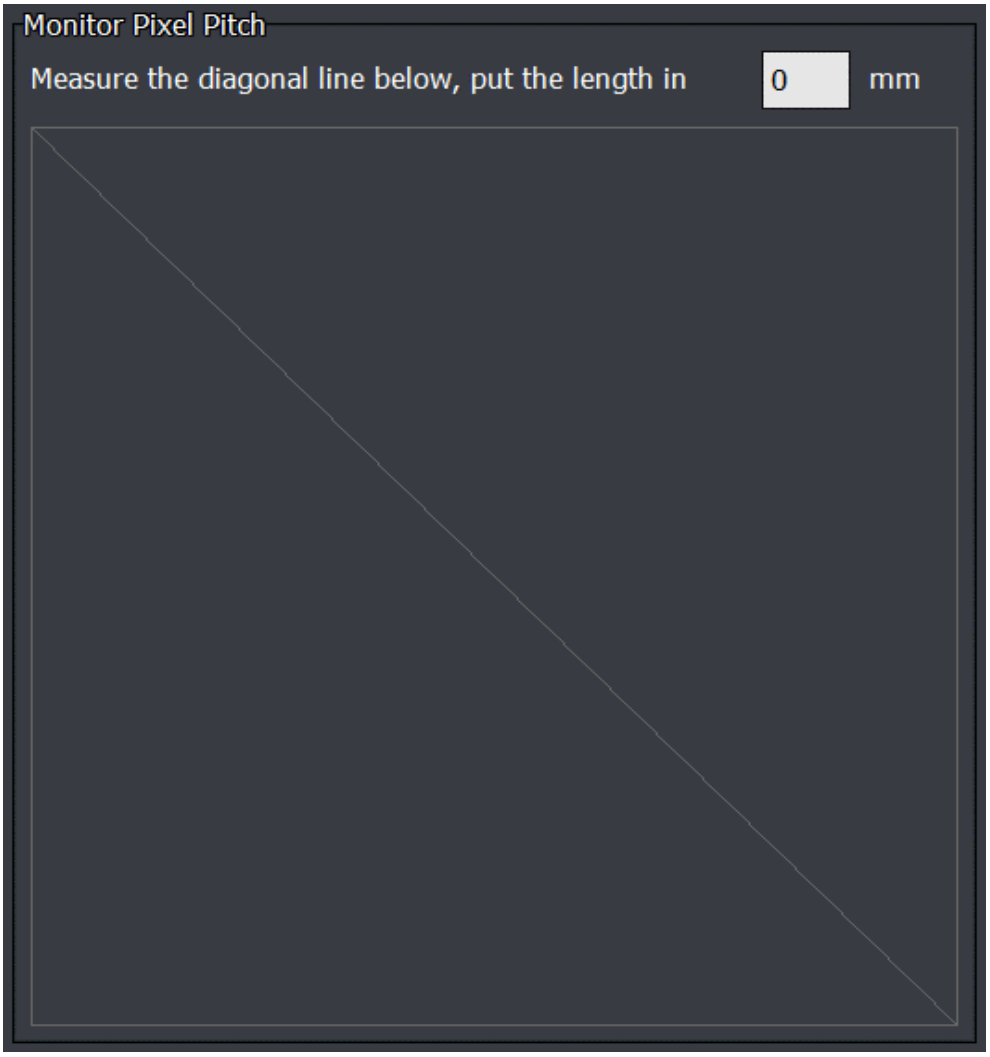
Delete LUT

1 Select the desired item to delete and click on the **Delete** button.

4.4.6 Monitor Correction Menu

You can set the actual pixel size of the monitor to display the relevant image in real size.

Monitor Pixel Pitch



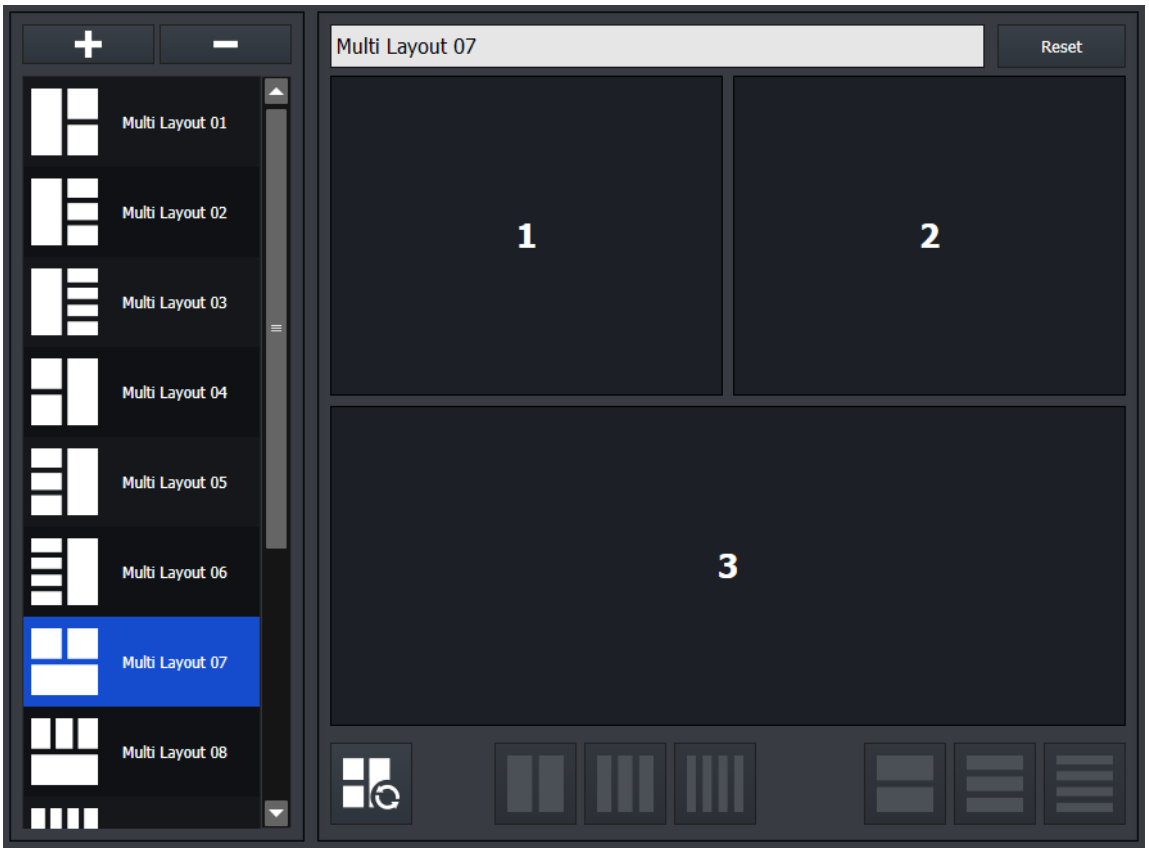
1 Measure the diagonal line on the screen with a ruler.

2 Input the measured value in **mm** and click on the **Update** button.

- The set value is used to view the image in actual size, so please measure it correctly.
  - Refer to the VXvue Operation Manual for information on the function (Real Size).
- Measure and set the pixel size again when the monitor is changed.

4.4.7 Layout Menu

You can add, delete or modify the multi-layout from the **Setting** mode → **Display** → **Layout** menu.



Layout	Description
	Turns the mode of layout reorder on or off.
	Splits rows of the selected area to 2, 3, 4.
	Splits columns of the selected area to 2, 3, 4.

Modify Multi-Layout

1 Choose a layout you want to modify from the left list.
2 Click the layout area and edit it by selecting one of the multi layout icons.
3 Click on the **Update** button.

- The available layout icons become activated when you click the layout area.
- Click on the **Reset** button to revert the area to a 1x1 layout.

Change the display order of multi-layout images

1 Click on the **Reorder** button to enter the Reorder mode.
2 Click the layout area from '1' to assign order.
3 Click on the **Update** button.

- The Reorder mode is deactivated automatically when you complete the assigning order.
- Click on the **Reorder** button again to release the Reorder mode in the middle of assigning a display order.

Add Multi-Layout

1 Click button.
2 Input the layout name and edit the layout area.
3 Click on the **Update** button to save your settings.

Delete Multi-Layout

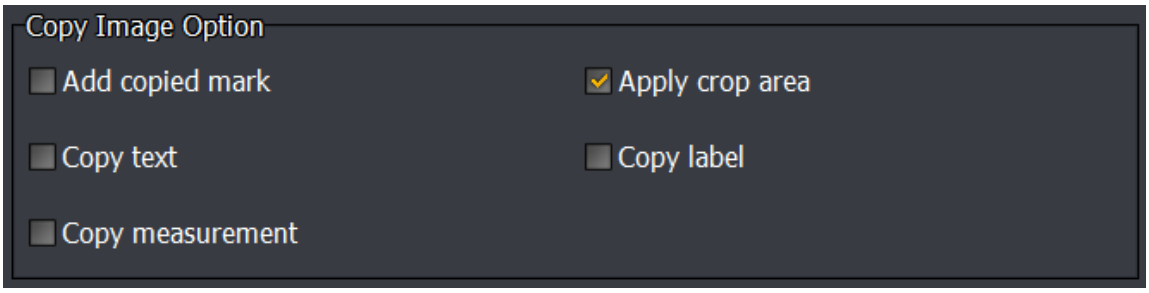
1 Choose a layout you want to delete from the left list.
2 Click button.

4.5 Tool Group

4.5.1 General Menu

Copy Image Option

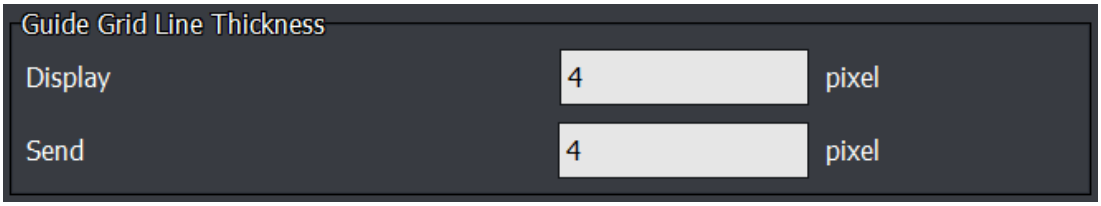
- You can set the options that are applied to a copied image.



Option	Description
Add copied mark	Adds "Copied mark" at the bottom of the image when copying the image
Apply crop area	Copies the information of the cropped area when copying the image
Copy text	Copies the text annotation when copying the image
Copy label	Copies labels when copying the image
Copy measurement	Copies other annotations, except for text and label, when copying the image

Guide Grid Line Thickness

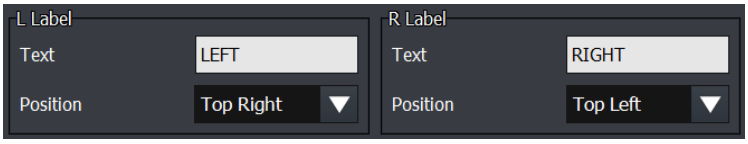
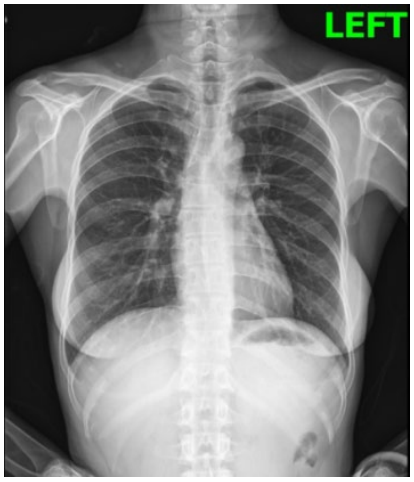
- **You can set the thickness of the guide grid line**



Setting items	Description
Display	Sets the thickness of the guide grid line that is shown on the screen when checking the image from VXvue.
Send	Sets the thickness of the guide grid line that is shown when sending or saving the image.

Label Setting

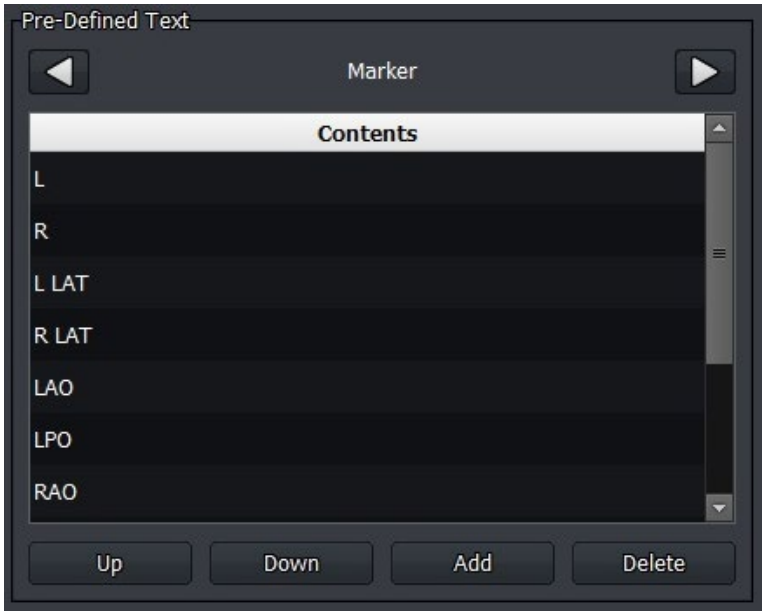
- Sets **alias** and position of **L / R** labels.

Label setting	Label check
	

4.5.2 Pre-Defined Text Menu

You can set and manage text used for markers from the **Macro Exposure** mode and the **Viewer** mode.

- Add or delete text using **Add** / **Delete** buttons.
- You can adjust the order of **Pre-Defined Text** indicated on the **Label** tab by using **Up / Down** buttons.



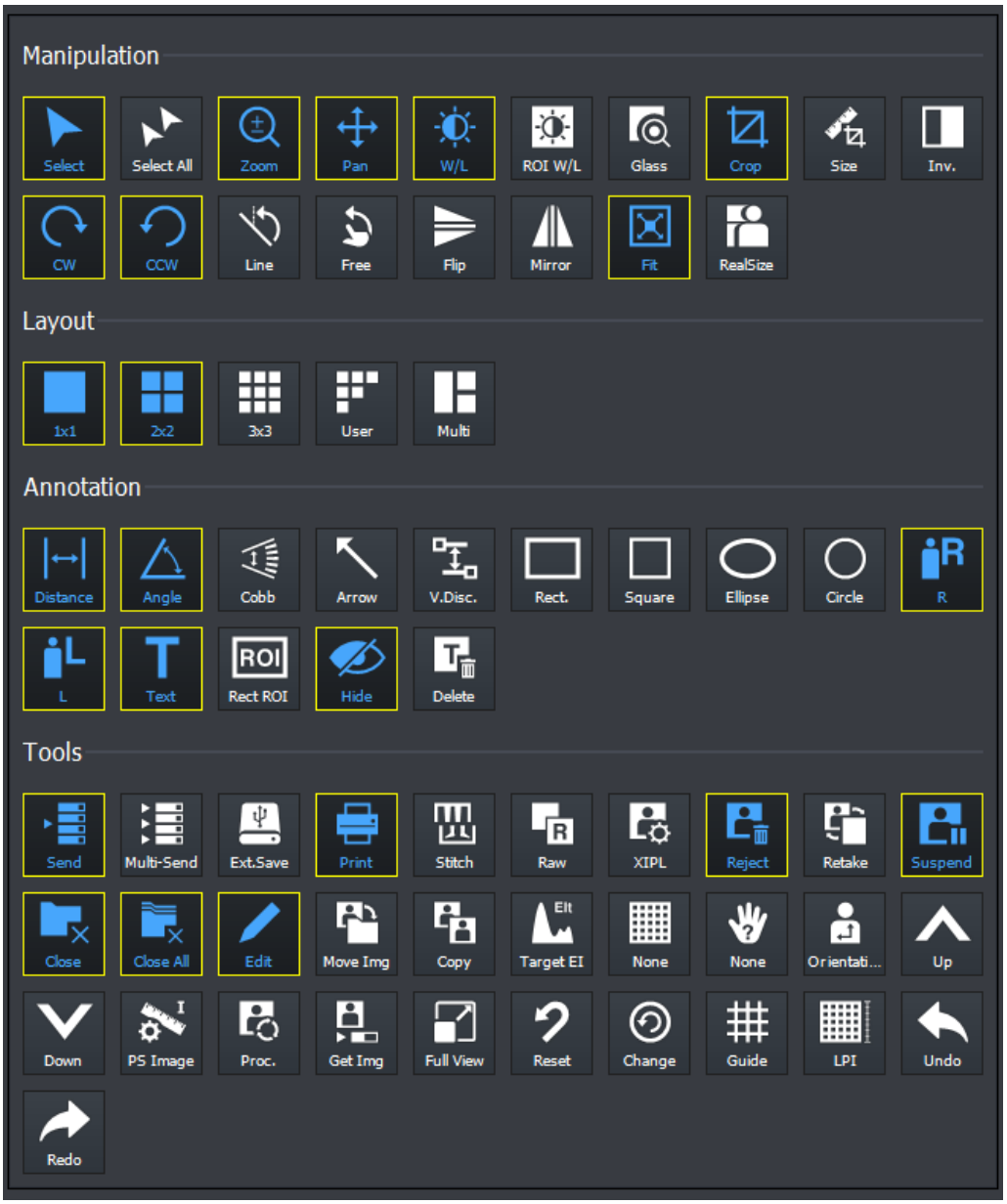
Marker	Position	Projection	Measure	Time	Others
					PORTABLE
L	ERECT	AP	0°- 90°	15/30 SEC	CROSS-TABLE
R	SUPINE	PA	(Every 5° interval)	1/2/3/5 MIN	WT BEARING
L LAT	PRONE	LAT		10/15/20 MIN	STRESS
R LAT	R LAT	OBL		30/45/60 MIN	DISTAL
LAO	DECUBITUS	AXIAL		2/3/4/5 HOUR	PROXIMAL
RAO	FLEXION	TANGENTIAL		12/24 HOUR	INTERNAL
L DECUB	EXTENSION				EXTERNAL
R DECUB	SITTING				CRANIAL
	LATERAL				INSPIRATION
	OBLIQUE				EXPIRATION
					CAUDAL
					SCOUT
					POST CONTRAST
					POST VOIDING

- The groups cannot be added, deleted or edited.

4.5.3 Image Tool Menu

You can assign icon buttons to be shown in the **Tool** panel in the **Viewer** mode and the macro exposure mode as basic tools.

- The color of selected icon becomes blue and will appear as a default tool.
- The unselected icons are provided as popup buttons.

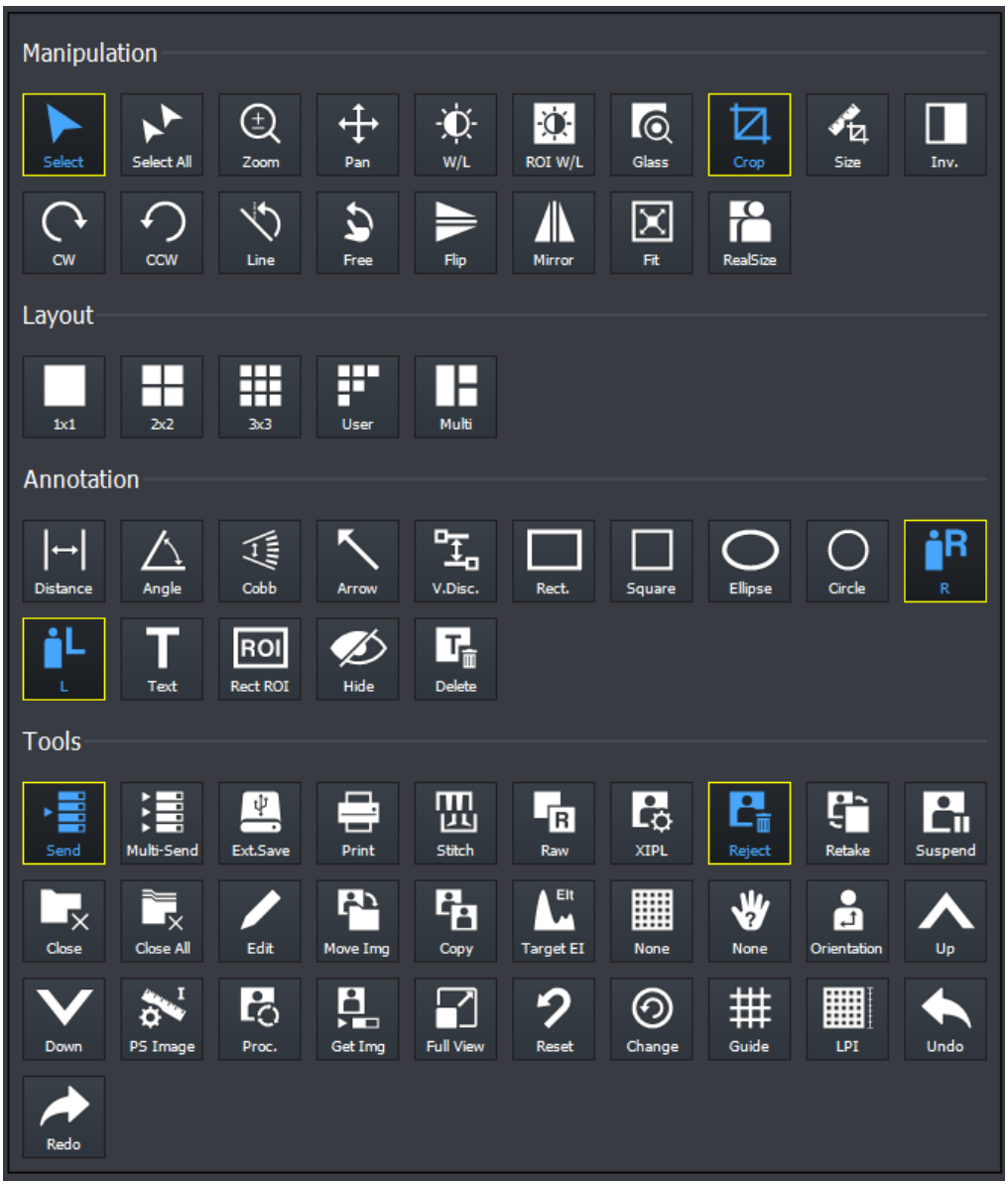


- The icon size is changed depending on the number of icons you chose.

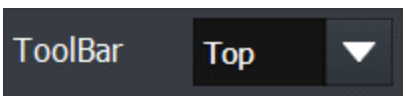
4.5.4 Quick Access Menu

You can assign icon buttons to be shown in the user-defined tools (**Quick Access**) area at the top of the **Exposure** mode (General exposure mode).

- The color of the selected icon becomes blue and appear as a default tool in the **Quick Access** area.

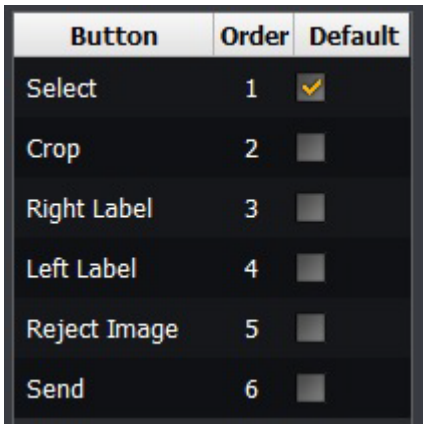


Change the location of selected icons



- Specify the location of selected icons.
  - **Top/ Left/ Right/ Bottom**
- The changed position is applied to the **Exposure** mode in real time.
- Use the shortcut key (**F7**) in the **Exposure** mode to do the same function.

Set the registration order



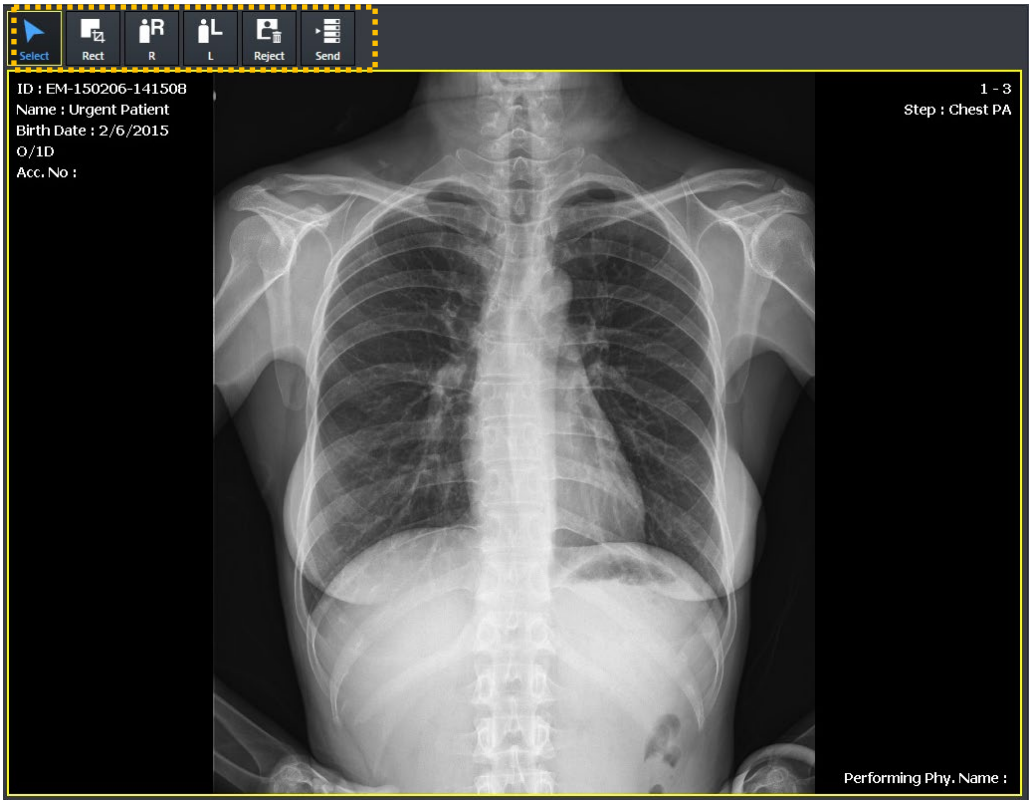
- You can appoint the order of selected icons to be displayed.
- The icons display from left to right according to the registry order.
- Use buttons to change order.

Set control functions as default

- You can set the control functions used frequently as the default ones among **Select/ Crop** / **W/L** / **Zoom** / **Pan** after acquiring image in the **Exposure** mode.
- Check the item to be used as a default one.

Check settings

- Registration order: **Select | Crop | Right | Label | Left Label | Reject Image | Send** (Example)
- Item to select default functions: **Select**

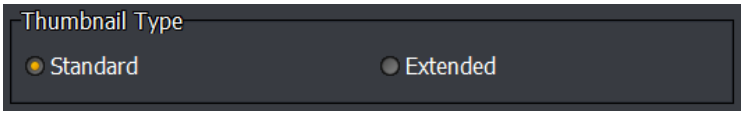


- The user default tools (Quick Access Tool) can be registered up to fifteen (15) ones.

4.5.5 Thumbnail Setting

You can set a thumbnail type as well as tools used in the thumbnail list.

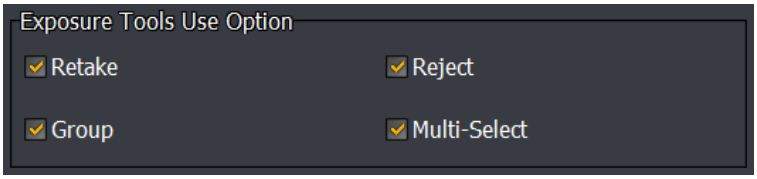
Thumbnail Type

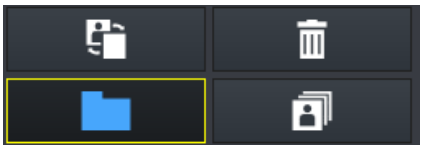


Thumbnail Type	Sample Image
Standard	
Extended	

Exposure Tools Use Option

You can set the tools used in the thumbnail list of the **Exposure** mode.

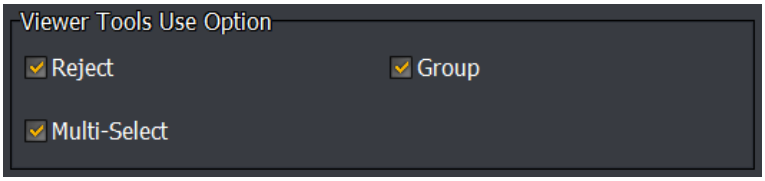




- Retake
- Reject
- Group
- Multi-Select

Viewer Tools Use Option

You can appoint tools used in the thumbnail list of the **Viewer** mode.

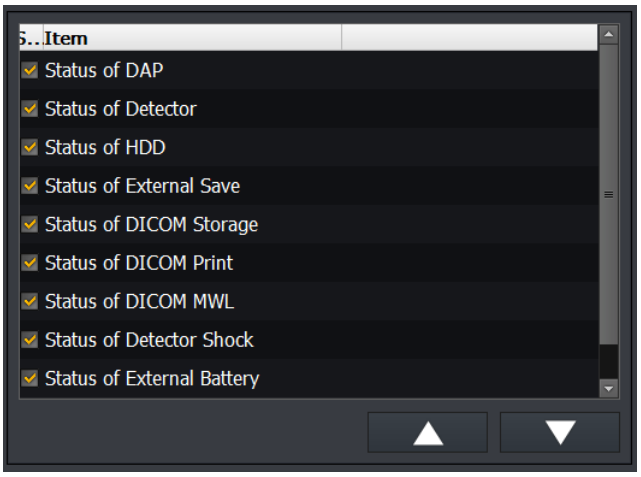


- Reject
- Group
- Multi-Select

4.5.6 Status Bar Menu

You can change settings or edit contents indicated on the status bar, located at the bottom of **VXvue** screen.

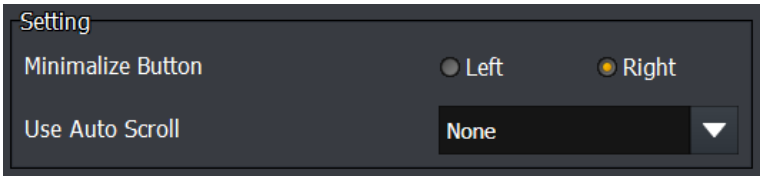
Edit Status Bar



- Check items that you want to show on the status bar.
- Use ▲ ▼ buttons to change the order of items.

Item	Description
Status of DAP	Indicates DAP information.
Status of Detector	Detector status (Connection, WIFI strength, battery status)
Status of HDD	The amount of using HDD
Status of External Save	Status of external save
Status of Storage	Status of storage sending
Status of Printer	Status of print sending
Status of MWL	Connecting status of MWL server
Status of Detector Shock	Status of detector shock
Status of External Battery	Remaining charge of the external battery (UPS) (displayed only when linked)

Setting



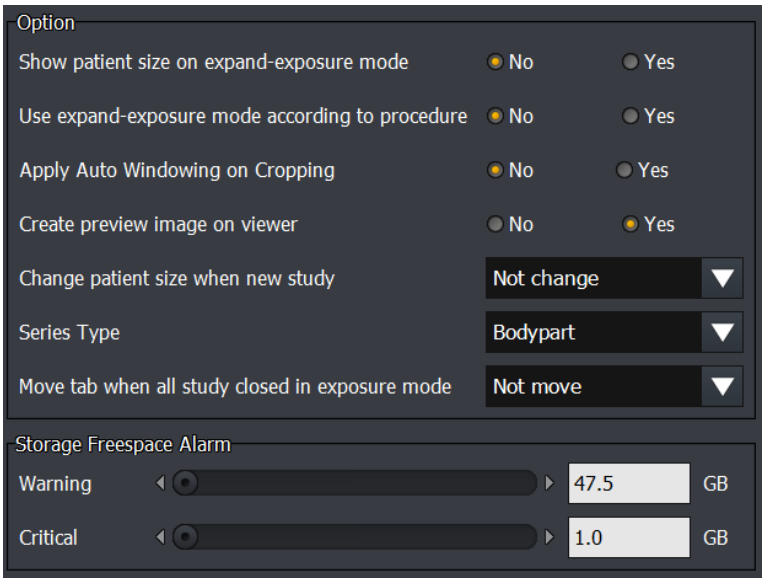
Item	Description
Minimalize Button	Chooses a location of the minimalize button **of VXvue**.
Use Auto Scroll	Sets the time of auto scroll.

4.6 Study Group

4.6.1 General Menu

Option

You can set items used in studies.

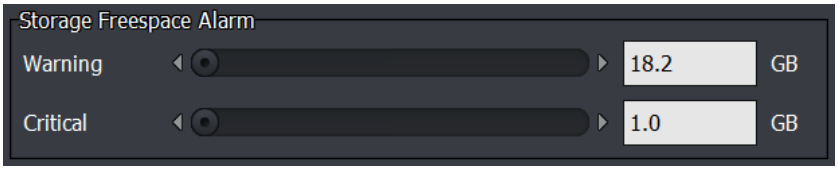


Menu	Description
Show patient size on expand-exposure mode	• Displays the patient size icon button when you select the macro exposure mode.
Use expand-exposure mode according to procedure	• If you take images with the pre-registered procedure, the screen is switched to macro exposure mode automatically.
Apply Auto Windowing on Cropping	• Applies Auto W/L when the cropped area is changed. • If the feature is not supported, such as PureImpact™ image processing, it will not be applied regardless of whether or not the user selects 'Yes'.
Create preview image on viewer	• Sets whether to create a preview image in VXvue and displays it on the screen using a full image, when the preview image is not transmitted from the detector.
Change patient size when new study	• Configures the patient size to be selected automatically when you start a new study. • If you choose 'Not change', the lastly applied patient size will be maintained.
Series Type	• Bodypart: The series number is separated when bodyparts are divided in a study. • Single: When shooting a single study, it is composed of a single series only. (1-1~1-N). • Image: When shooing a single study, the series number is separated for each image.

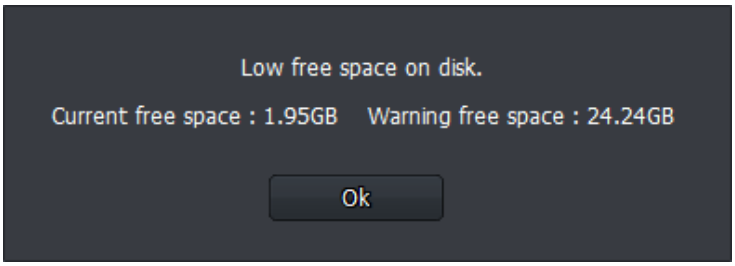
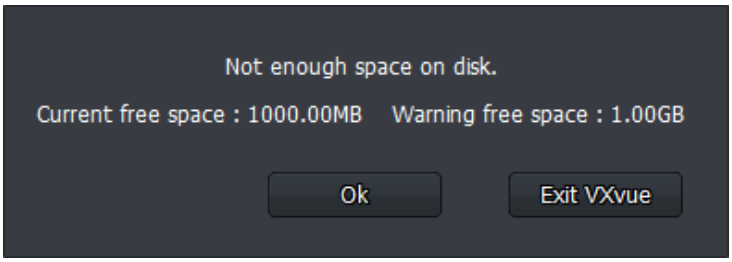
	• The series type of existing study is maintained as its initial state regardless of any changes from Setting.
Move tab when all study closed in exposure mode	• Choose a tab to move to one of the following options after taking images from the **Exposure** mode. ▫ **Not move / Scheduled / Unscheduled / Reserved**

Storage Free Space Alarm

Set warning or danger standard to get an alarm if the disk space is insufficient.



- Input the standard capacity for setting alarms and click on the **Update** button.
- **Warning Alarm** message displays if the free space of the disk is less than the **Warning** setting value.
  - ▫ You can keep making an exposure regardless of the alarm.
- **Critical Alarm** message displays if the free space of the disk is less than the **Critical** setting value.
  - ▫ You can keep making an exposure regardless of the alarm, but the message is displayed continuously.

Alarm	Message
Warning Alarm	
Critical Alarm	

4.6.2 Study Delete Menu

Set options to delete stored images in the storage medium (HDD, SSD, etc.) automatically or manually.

- If the configured condition is satisfied, the image will be deleted automatically at the appointed time while running **VXvue**.
- The image is deleted automatically when restarting **VXvue** if the configured condition is satisfied.

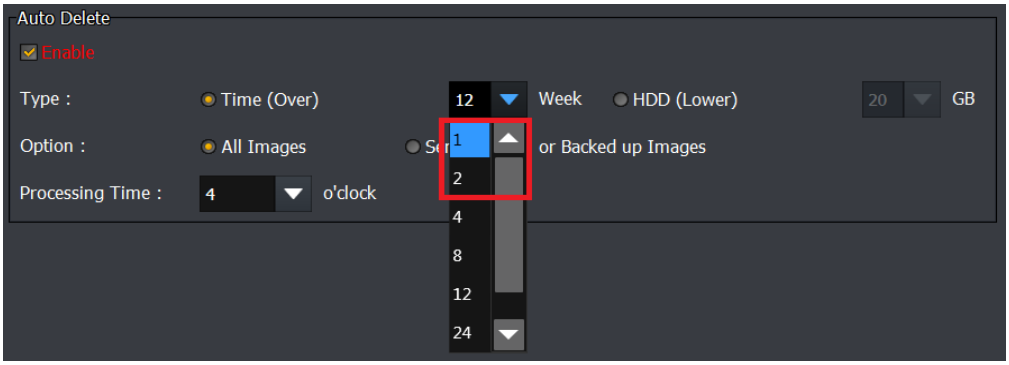
Manual delete

You can search and delete the images acquired in certain period from **Manual Delete**.

1 Set certain period from **Search Date** and click on the **Search** button.
2 Check the total number of exposed studies and images from **Search Result**.
3 Click on the **Delete** button to delete the selected images or click on the **Delete** button to delete all searched images.

Auto delete

You can set the conditions from **Auto Delete** to delete images automatically.



1 Check **Enable** to activate the **Auto Delete** function.
2 Select **Time (Over)** and set the period of image deletion.
   - Images stored before the setting period are deleted automatically.
   - Select the unit among **1** / **2** weeks, **1** / **2** / **3** (default), or **6** / **12** month.
3 Select **HDD (Lower)** and set the residual capacity of storage media.
   - If actual remaining capacity is less than the configured capacity, the images from older ones are deleted automatically.

4 Select the setting value option among **20** GB (default) / **40** / **60** / **80** / **100** GB.
   - According to the whole capacity, the number of selectable setting values of remaining capacity can be indicated differently.

5 Set the time for processing auto delete from the **Processing Time** menu.
   - The auto delete is processed at the selected hour from 0~23.

6 Select the range of images to be deleted from **Option**.
   - **Sent, Printed or Backed up Images** – DICOM sending, printing or backed up images
   - **All Images** – Delete all images

7 Click on the **Update** button to complete settings

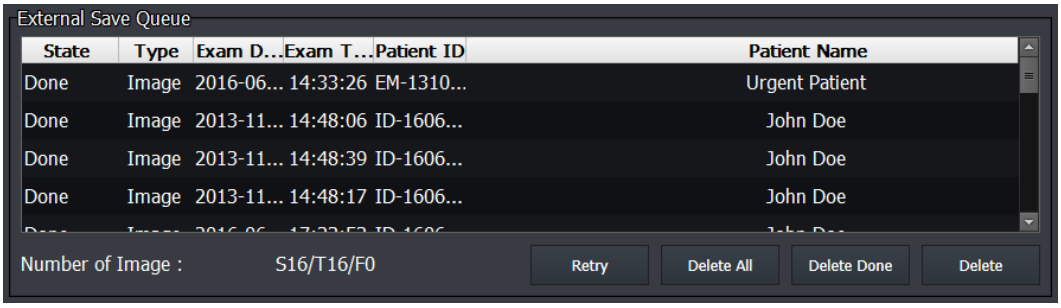
4.6.3 External Save Menu

With the **External Save** function, you can save images to the specific path such as external devices manually or automatically. You can also check the number of saved images and their state as well as set the storage options.

- Click on 25/25 button at the bottom of the **VXvue** screen to move to the setting dialog of **External Save** directly.

External Save Queue

This dialog indicates the current state of **External Save**.



- **Number of Image**: Indicates the stored images (S), total images tried to be stored (T), and the images failed to be stored (F). S17/T17/F0

- The meaning of messages for each state is as follows.
   - **Done**: Succeed in saving images.
   - **Failed**: Failed to convert images to files or errors in the storage path.
   - **Saving**: The images are being saved to the external device.
   - **Pending**: The images are added to the list for storing them in the external device.
   - **Stopped**: The **External Save** function operated background is stopped for errors in the storage path.

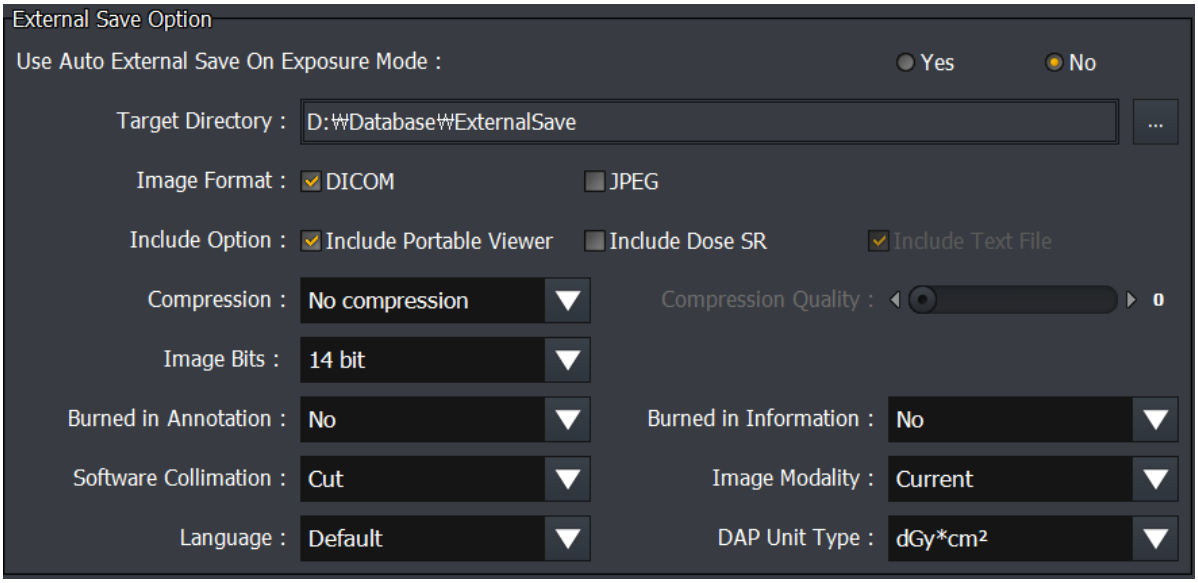
- Check the current state again from **External Save Queue** and click on the **Retry** button to save images, or click on the **Delete** button to delete images.
- If the images which have been stored to the external device are changed and replaced, they are not removed from the **Queue** list.

- If the image information is changed while the storage status is 'pending', the existing information is removed and replaced to the changed one.

Button	Description
Retry	• You can retry to save the '**Failed**' image to the external device. • If the background system of **External Save** is deactivated, examine the storage path and save the images again from the failed one.
Delete	• Deletes the selected list of images only. (Cannot delete the images being stored.) • The stored images can be deleted from the Queue list only. The images and files in the External Save path cannot be deleted. • The failed or pending images are deleted from the Queue list.
Delete Done	• Deletes whole list of images which are completed to be stored.
Delete All	• Deletes whole list of images regardless of the selected list.

External Save Option

You can change or set the options applied to each image when performing the **External Save** function. Be sure to click on the **Update** button after changing options to save the changed settings.



Item	Description
Use Auto External Save on Exposure Mode	Sets whether to save the images to specific path such as external devices automatically. • **Yes** ▫ **VXvue Human**, **Vet**, **Equine**: Applied when closing the study. ▫ **VXvue Vehicle**: Applied when closing location / selecting another study • **No**: Not use
Image Format	Selects the image format for External Save.
Include Option	Select features to add when creating a file. • **Include Portable Viewer** ▫ You can set whether to include **DICOM Portable Viewer**. ▫ Activated only when the DICOM option is checked.

	• **Include Dose SR**
	  ▫ You can set whether to include **Dose SR**.
	  ▫ Activated only when the **DICOM** option is checked.
	• **Include Text File**
	  ▫ You can set whether to include **Text File**.
	  ▫ Activated only when the **JPEG** option is checked.

Compression	Sets the way of JPEG2000 compression. If the DICOM server does not support JPEG2000, this function cannot be used. • **No Compression:** Not compressing JPEG2000 • **JPEG2000 Lossless**: Compressing JPEG2000 without a loss • **JPEG2000 Lossy**: Compressing JPEG2000 with a loss
Compression Quality	Sets JPEG2000 compressibility of DICOM images. It activates when checking the option **JPEG2000 Lossy Compression**. Sets compressibility by adjusting the slider.
Image Bits	Sets the number of Bit that expresses a pixel in DICOM image. **12 bits:** 14->12 **/ 14 bits:** 14->14(Default)
Burned in Annotation	Sets whether to include annotation information in the image during an External Save or not. • **Yes**: Included / **No**: Not included
Burned in Information	Sets whether to include the Overlay information in the image during an External Save or not. • **Yes**: Included / **No**: Not included
Software Collimation	Sets the image crop status. • **NONE**: Original image without cropping • **Cut**: Cropped area of the image • **Fill**: The outside area of the cropped image is filled with black. • **Fill & Center**: The image cropped from the original image is displayed at the center, and the area other than the cropped image is filled with black.
Image Modality	Sets modality information. • **Current:** Uses the modality information without change. • **DX / CR / DR:** Uses the modality information by fixing it among DX/CR/DR.
Language	Sets the language for DICOM encoding.
DAP Unit Type	The DAP value to be transferred to the DICOM image is changed according to the set unit. • **mGy*cm^2 , uGy*m^2, dGy*cm^2**

• The higher the compressibility, the image loss is happened severely. This may affect the image quality when performing loss image compression.

Select the folder (directory) to save images

1 Click on ... in **Target Directory** to specify the path for storing image files.

- The files are stored in the 'External Save' folder generated under a user-defined path of User Directory.
- The default path is the **Database** folder.

- The writable and readable media (HDD, USB, SSD) can be used only as the external storage.
- You cannot use an optical disk such as CD-ROM.

2 A folder for saving image files to the external media is generated in the user-defined path automatically.

- The format of external storage folder in **VXvue for Vehicle**
  - Selected path\ExternalSave\Location Name_Location Scheduled Date[YYYYMMDD]_ Location Key\
- The format of external storage folder in **VXvue for Human**, **Vet**, **Equine**
  - Selected path\ExternalSave\Study Date[YYYYMMDD]_Study Date[TTMMSS]_Patient ID_Patient Name

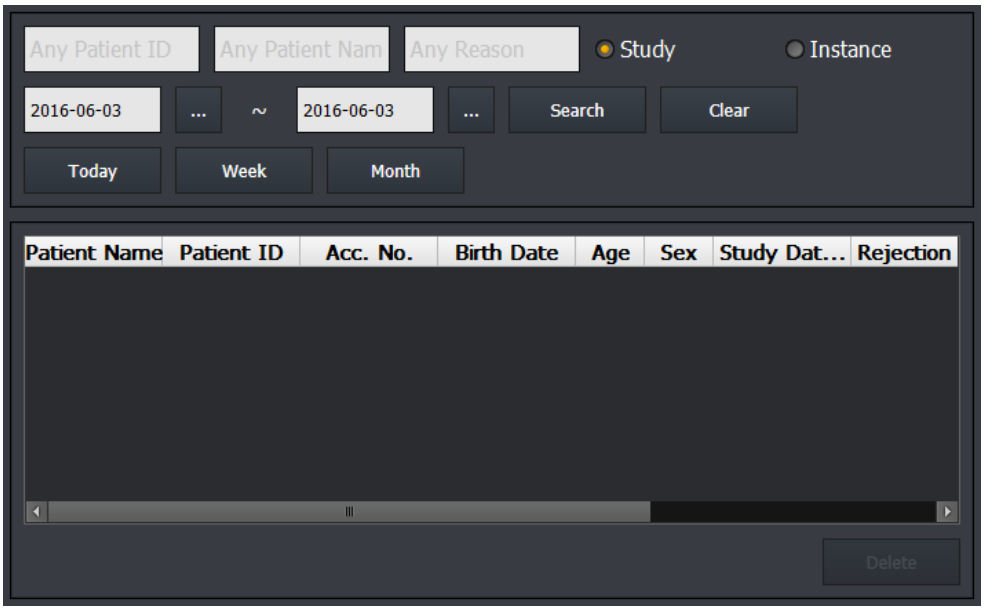
3 The file name of images is applied equally regardless of **VXvue** version or the file extension (dcm, jpg).

- If the DICOM option (**Include Portable Viewer**) is not checked:
  - Acquisition Date[YYYYMMDD]_ Acquisition Date[TTMMSS]_Patient ID_Patient Name.Extension (dcm or .jpg)
  - Ex.) 20150622_142503_230example.dcm
- If the DICOM option (**Include Portable Viewer**) is checked (In case of using DICOMDIR):
  - Acquisition Date[YYYYMMDD]_ Acquisition Date[TTMMSS]_Patient ID.dcm (or .jpg)

- If you change the DICOM option setting and save images externally, an error can occur since the file name is different.
  - Remove the files which have been stored in external media manually to search new stored files from the portable viewer.

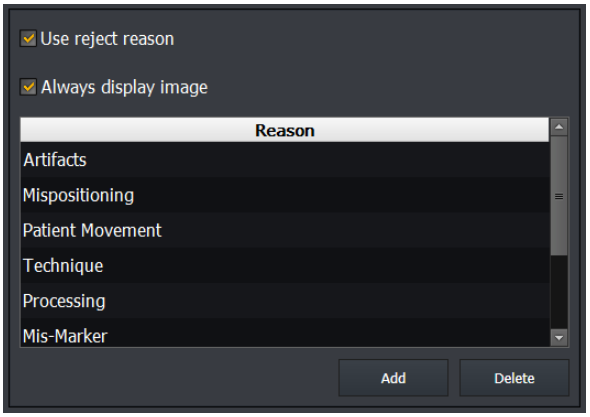
4.6.4 Rejected List Menu

You can search the rejected studies or images and remove them completely.



4.6.5 Rejected Reason Menu

You can set and select a reason of rejecting studies or images.



Option	Description
Use reject reason	Check this option to display a window to choose a reason for the rejected study. If not, the image will be rejected without opening the window.
Always display image	Check this option to display the rejected study and image by searching. If not, the rejected image is showed as a blank one in the study list and **Thumbnail**.

Register the rejection reason

1 Click on the **Add** button and add the **Rejection reason** item.

2 Double click the item and change its name to the desired name of reason.

3 Press the **Enter** key and click on the **Update** button to complete the update.

- The maximum number of rejection reasons to be added is 30.

Delete the rejection reason

1 Select an item and click on the **Delete** button.

2 Click on the **Update** button to complete the update.

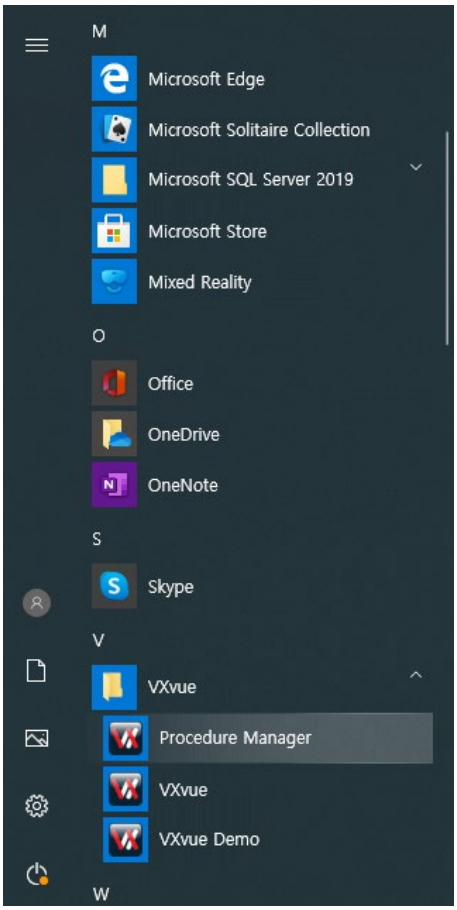
Default rejection reason

Reason	Description
Artifacts	Inferiority image
Mispositioning	Ill-posed patient
Patient Movement	Patient movement
Technique	Technical error
Processing	Poor image processing
Mis-Marker	Additional error of information
Others	Others

4.7 Procedure Manager

You can configure and manage the information of exposure procedure from **Procedure Manager**.

- The **Procedure** panel is organized with the **Category** tab, **Procedure** tab, **Stitch Protocol** tab, **Step** tab, and **Bodypart** / **Projection** tabs.
- You can start **Procedure Manager** even if **VXvue** is not executed.



1 Click on the **Start** button of Windows.
2 Move to **V** → **VXvue**.
3 Click on the **Procedure Manager** icon.

Setting order of Procedure or Stitch Protocol

1 Create a bodypart and projection from the **Bodypart/Projection** tab.
2 Create a step by combining **Bodypart** and **Projection** from the **Step** tab.
3 Create a procedure by selecting the step from the **Procedure** tab.

- Step for the image stitching can be created from the **Stitch Protocol** tab.
- The created procedure and stitch protocol can be used at the **Exposure** mode by appointing their shortcuts from the **Category** tab.

- It is recommended to restart **VXvue** after you modified settings from **Procedure Manager**.

4.7.1 Tool Area

Setting

Icon	Function

1 **Import**: You can import the settings stored in the PC.

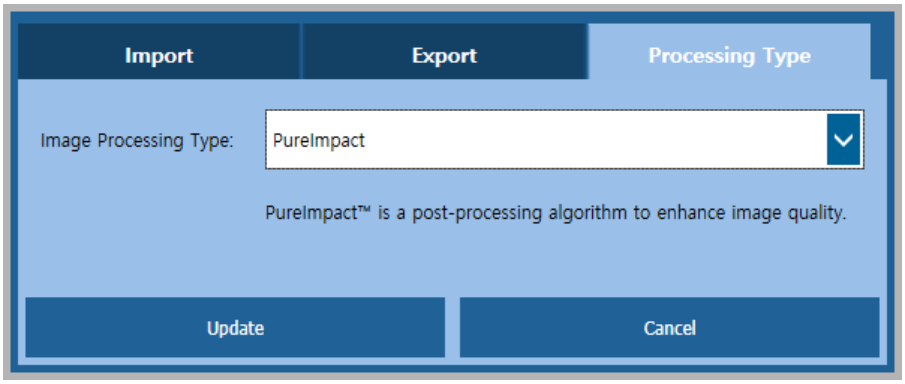
- Specify the setting path, select the item, and click the **Import** button to apply settings.

2 **Export**: You can save the settings on your PC.

- After setting the Export path, click the **Export** button to save the settings.

3 **Processing Type**: You can set the type to apply in image processing.

- If you click the **Update** button after selecting an item, the selected image processing type will be applied when performing the image processing.



- **HS8** and Pur**eImpact™** are image processing algorithms developed by Vieworks.
- As **PureImpact™** is the next version of HS8, you can get higher quality image processing results. Therefore, we recommend using PureImpact™.
  - **Software-based scatter correction (S.B.S.C.)** is an image processing algorithm that prevents image degradation due to scattered lines and is only available in **PureImpact™**.

Reset

Icon	Function
	• The changed settings in the tab area are displayed in red text. • Click the **Reset** button to return the changes to the previous settings.

Update

Icon	Function
	• The changed settings in the tab area are displayed in red text. • Click the **Update** button to save the changed settings.

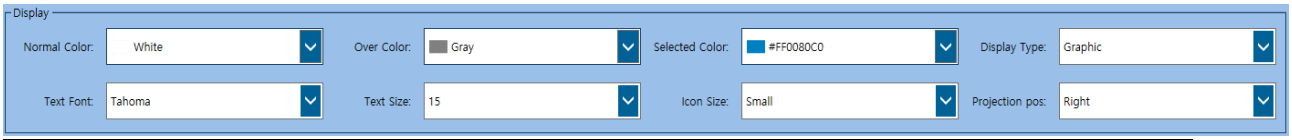
Exit

Icon	Function
	• Exit Procedure Manager.

4.7.2 Category Tab

Display

- You can adjust the color, size and font size of **Shortcut** items indicated on the human body image at the left of **Exposure** mode screen.
- Click on the **Update** button and check the result after adjusting the items.



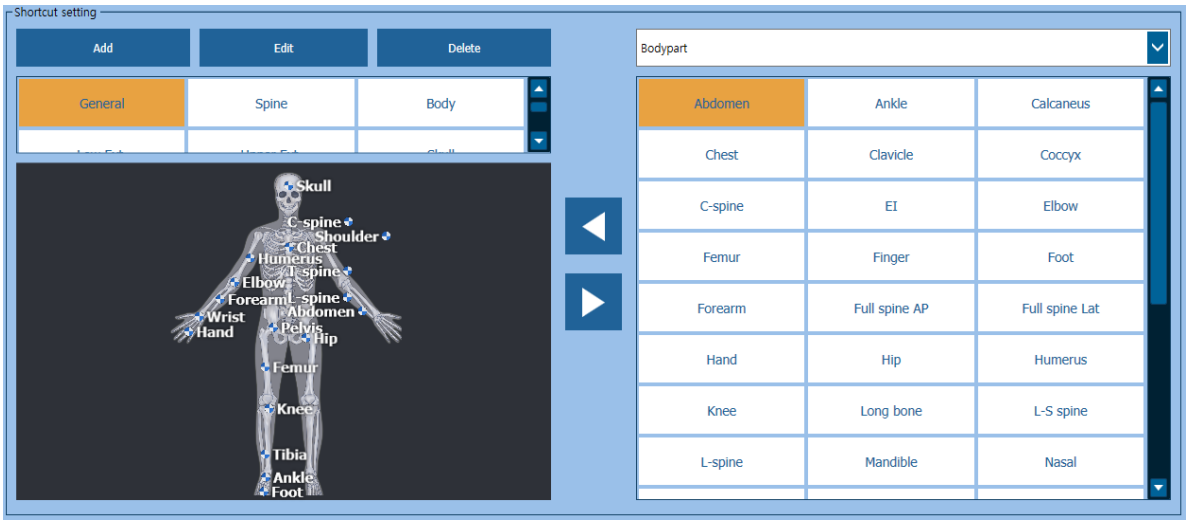
Item	Description
Normal Color	Color when shortcut is not clicked on
Over Color	Color when a mouse pointer is on the shortcut
Selected Color	Color when shortcut is clicked on
Text Font	Font shape
Text Size	Font size
Icon Size	Shortcut size
Display Type	The way to indicate a step (Graphic, Button)
Projection pos	The location of window for selecting projection (Left, Right)

Shortcut example

Shape	Select status	Size	Others (Text Size = 18)
	Selected (Blue Shortcut)	Normal	Selected Color = Blue
	Selected (Blue Shortcut)	Large	Selected Color = Blue
	Unselected (Gray Shortcut)	Large	No mouse cursor on (Normal Color)
	Unselected (Gray Shortcut)	Large	Mouse cursor on (Mouse-Over Color)
	Selected (Blue Shortcut)	Large	Selected Color = Red
	Selected (Blue Shortcut)	Large	Text Font = Vivaldi
	Selected (Blue Shortcut)	Small	-

Category

- Manage **Category** displayed at the **Exposure** mode.
- You can set other figures as categories plus the built-in human body image.



The default supplied value of Category (Based on the human version / HumanBody.bmp)

Spine	Body	Low Ext.	Upper Ext.	Skull	Stitch
Neck	Clavicle	Femur	Shoulder	Skull	Full spine AP (2)
C-spine	Scapula	Knee	Hemerus	PNS	Full spine AP (3)
T-spine	Chest	Patella	Elbow	Nasal	Full spine AP (4)
T-L spine	Sternum	Tibia	Forearm	Mandible	Full spine LAT(2)
L-spine	Rib	Ankle	Wrist	Zygomatic arch	Full spine LAT(3)
L-S spine	Abdomen	Calaneus	Hand	T-M joint	Full spine LAT(4)
Sacrum	Sacroiliac joint	Toe	Finger		Long bone (2)
Coccyx	Pelvis	Foot			Long bone (3)
	Hip				

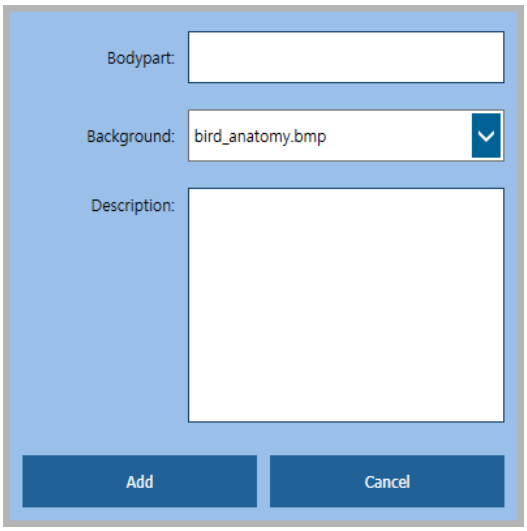
Add the category

1 Create a decent-sized BMP format image.

2 Store this image to **D:\Database\BodypartCategory**.

3 Click on the **Add** button from **Setting** mode > **Procedure** panel > **Category** tab.

4 Open **Insert a Category** window and select the BMP image added to the **Image File** list.



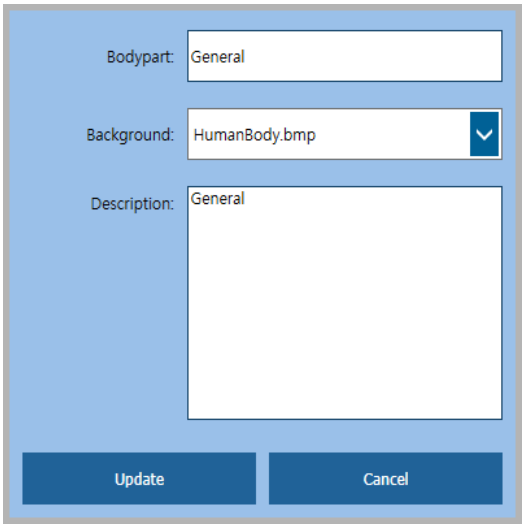
5 Input the **name** and **description** of a category.

6 Click on the **OK** button to complete registering the category.

- You can register multiple categories with the same BMP image.
- Up to 20 categories can be registered including the 11 built-in ones.

Modify the registry item

1 Choose a category you want to modify.
2 Click on the **Edit** button **from Procedure Manager** → **Category** tab.
3 Modify the items.
4 Click on the **Update** button to complete modifying category.



Delete the registered item

- Select the item and click on the **Delete** button.

Shortcut

- You can set shortcuts of **Bodypart**, **Step**, **Procedure**, and **Stitch Protocol**.
  - The registered shortcuts can be checked and selected from the **Exposure** mode.
  - Select **Category** to manage shortcuts for each registered category.

Candidate list

Shortcut target	Prefix	Source
Bodypart	**[B]**	Procedure panel > Bodypart / Projection tab > Bodypart item
Step	**[S]**	Procedure panel > Procedure tab > Step item
Procedure	**[P]**	Procedure panel > Procedure tab > Procedure item
Stitch Protocol	**[SP]**	Procedure panel > Stitch Protocol tab > Stitch Protocol item

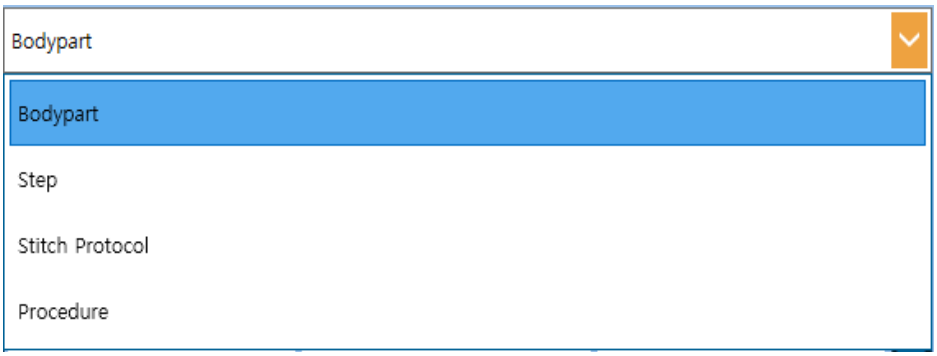
Shortcut list

- You can check the items registered as shortcuts.

Add and delete Shortcut

1 Check the desired items among Bodypart, Step, Procedure, and Stitch Protocol and the candidate items included in each item.

▫ Each designated item is added on the **Candidate** list.



2 Select items in the **Candidate** list and click on button. The selected item is added to the **Shortcut** list.

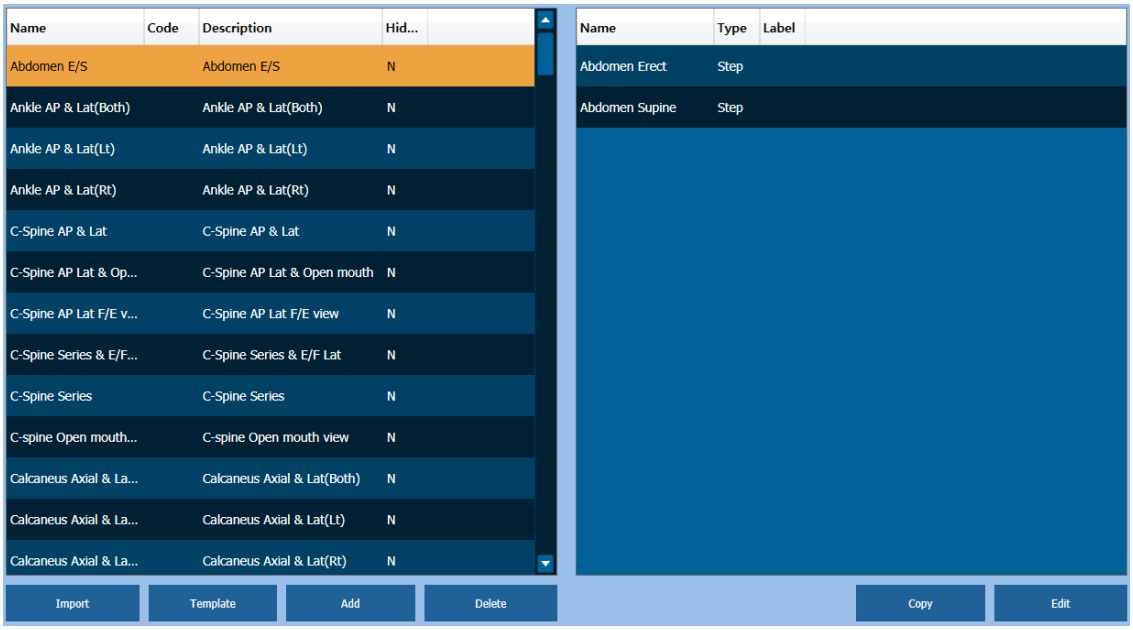
3 Select items in the **Shortcut** list and click on button. The selected items are deleted from the **Shortcut** list.

- Refer to <4.7.3 Procedure Tab> for more information about **Bodypart**, **Step**, **Procedure** and **Stitch Protocol**.

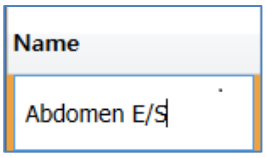
4.7.3 Procedure Tab

You can add, delete, or edit procedures organized with one or more shooting steps from the **Procedure** tab.

- When you register only one Procedure, a string of steps is registered to the shooting list in a lump.
- You can adjust the step order of shooting in Procedure by clicking on the **Edit** button.



Add Procedure



- Click on the **Add** button to add a new procedure to the **Procedure** window.
- To change the procedure name, double click it and input a new name.

- You should input **Procedure Code** since it is used as a matching code to Worklist.

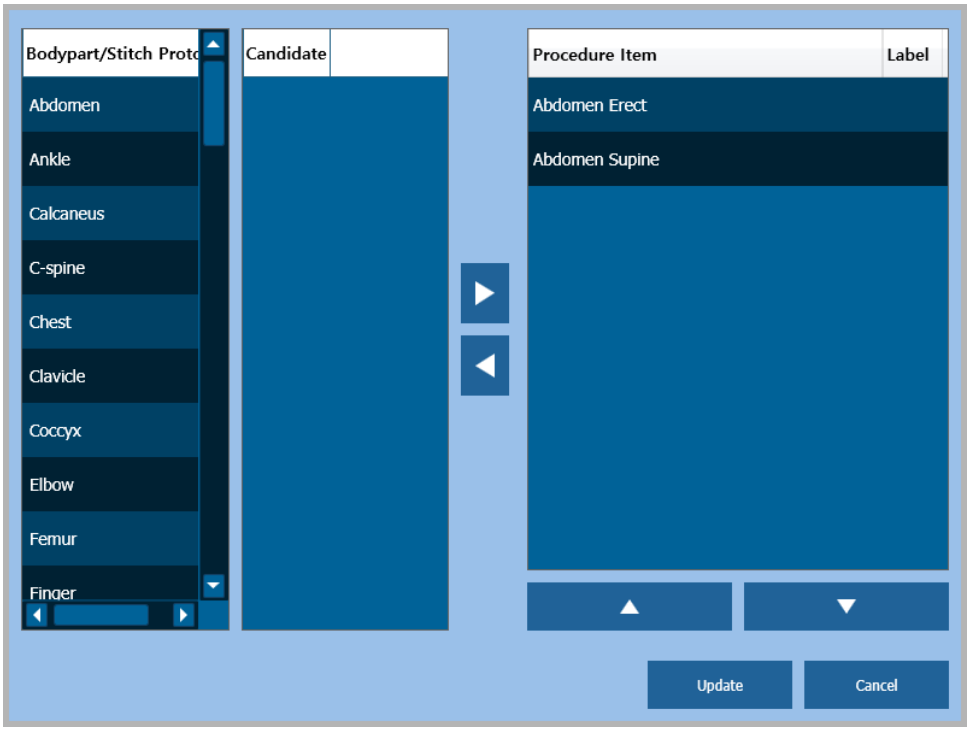
Import procedure

- Click on the **Import** button and bring Procedure in the **CSV** format file.
- The **CSV** file should comply with the following form.
  - Name1, Code1, Description1
  - Name2, Code2, Description2
  - ...
  - NameN, CodeN, DescriptionN

Template of Importing Procedure

- Click on the **Template** button to create a template file in CVS format which can import the procedure.

Edit Procedure



1 Click on the **Edit** button at the bottom of the **Step** list to open the **Step Editor** window.

2 Choose the desired items from **Bodypart / Stitch Protocol** list.

3 Choose the desired items from the **Candidate** list
4 Click on ▶ button to add the selected items to **Procedure Item**.
5 Select the item from **Procedure Item** and click on ◀ button to delete it.
6 Click on ▲ or ▼ button to change the order of procedure items.
7 Click on the **Update** button to save the edited procedures.

- You can select the added **Procedure** from the Unscheduled panel in the **Registration** mode.
  - Refer to the VXvue Operation Manual for the detailed information.

Check procedure code

Procedure code means an examination code used at the institution or at the hospital. This code can be received from DICOM worklist. You should match the examination code and **Procedure** code in case of using the hospital examination code.

- When the exam code is sent from Worklist, check if it is matched with the configured procedure code.
  - The steps registered in the relevant procedure will be added automatically if the exam code and the procedure code are matched together.
  - If not, the hospital exam code is unable to use.

- Refer to <4.9.4 MWL Menu> for the information about the matching tag of **Procedure** codes.

4.7.4 Stitch Protocol Tab

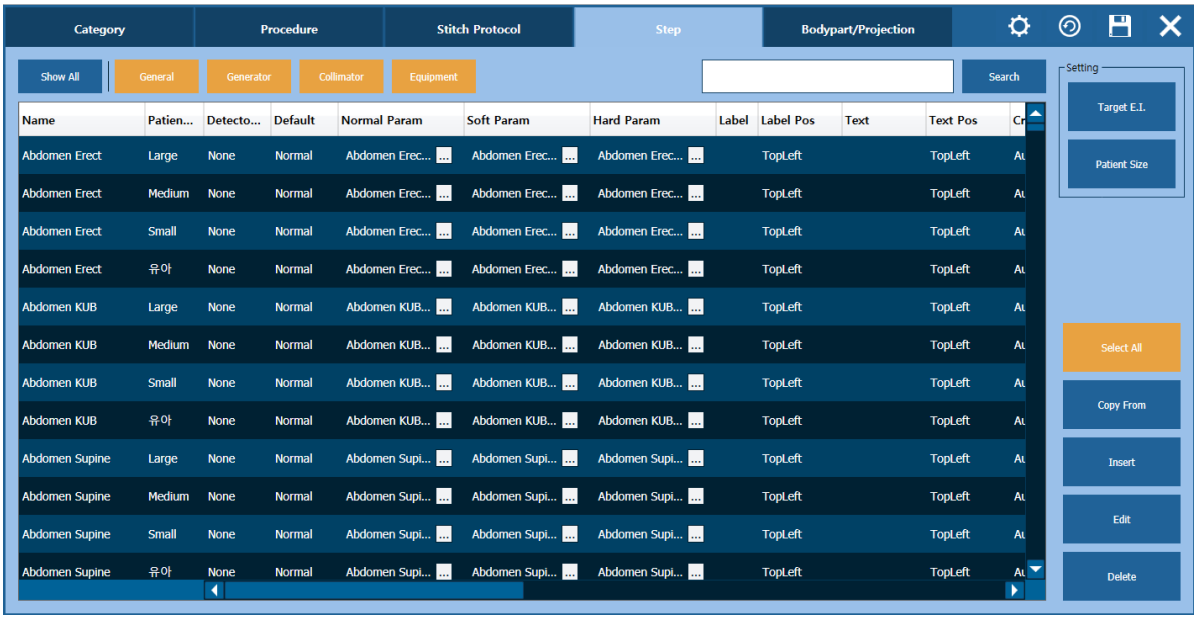
From the **Stitch Protocol** tab, you can set **Step** information of the images to be stitched.

- The **Stitch Protocol** tab provides same functions as those of the **Procedure** tab except several constraint conditions as follows.
- You cannot use the **Import** function.
- Up to 6 stitch steps can be registered in one **Stitch Protocol**.
- If the stitch step is used for image processing, all stitch steps in Stitch Protocol cannot be deleted including the relevant stitch steps.

- The **Stitch** option cannot be used if you operate **VXvue** for veterinary or for medical use.
- Take images with **Stitch** steps registered in **Stitch Protocol** if you use the auto stitching function from **Physical Matching**.
- Refer to VXvue Operation Manual for the detailed information.

4.7.5 Step Tab

You can register **Step** and set the exposure conditions for each step.



- **Step** means the exposure condition unit composed of **Bodypart**, **Projection** and patient size.
- All steps include **HS8** or **PureImpact™** image processing parameters.
  - Depending on the default image processing type selected during VXvue installation or upgrade, the image processing parameter names mapped at every step are updated automatically.
  - The image processing parameters mapped according to the set basic image processing type are displayed on the screen.
- According to the standard of medical image, one step is categorized as one series.

- You can set the image processing parameter from **XIPL.TOOL**. Refer to **XIPL User Manual** for the detailed information.

How to set

1 Check the value of each parameter and change it to the desired setting value.
   - The changed item is indicated as a red color.

2 After changing the setting value, click on the **Update** button.
   - When the update is completed, the changed item is saved finally, and the red color is disappeared.

Function

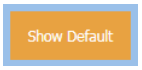
Item	Description
Select All / Unselect All	Selects or unselects all steps.
Copy From	Brings string value of steps from database.
Insert	Adds new steps.
Edit	Edits the selected steps.
Delete	Deletes steps.

Search

- Enter the desired step in the search window, and then press the Enter key or click the Search button.
  - The cursor immediately moves to and selects the desired item.

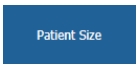
See representative values only

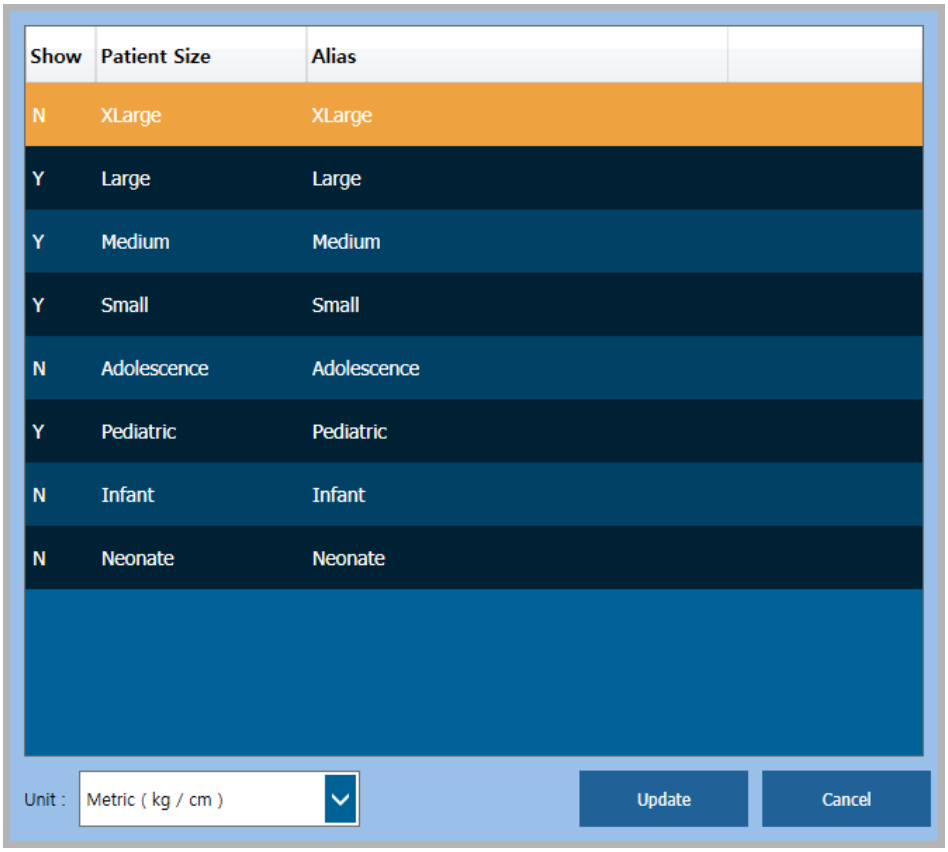
- Click the Show All or Show Default button.
  - In the Show All status, all the values set for each step size are displayed.
  - In the Show Default status, only the value set in the representative size of the step are displayed.



Settings for Patient Size

You can configure Alias and select visibility and options for patient size from the **Patient Size Setting**.

- Click the  button to open the setting window.



- **Show** : You can choose the visibility of patient size by selecting the column value.
  - N : Does not show the selected Patient Size.
  - Y : Shows the selected patient Size.
- **Alias** : You can change the name shown on the screen by entering the value in the column.
  - Patient Size translated in the current language is set as a default in Alias column.
  - Duplicate name is not allowed.
- **Unit** : You can change the unit of weight / height by changing the value.
  - Metric (kg / cm)

- English (lb / ft)

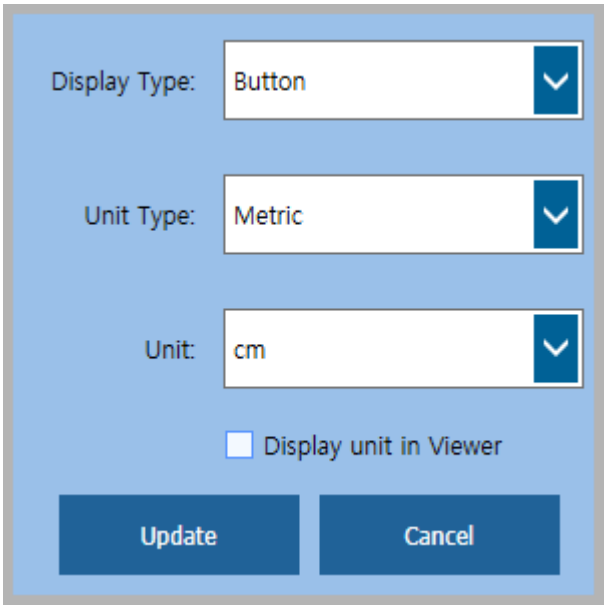
- Click the Update button to save the changes.

- Configuration is available only in VXvue for human body.

Setting Size Unit

You can configure size unit displayed on the screen in the **Size Unit Setting** window**.**

- Click the Size Unit button to open the Setting.



- **Display Type** : Display mode(Button and Slide) for the Patient Size selected for exposure
- **Unit Type** : Units: Metric, English
- **Unit** : Display unit selected in the **Unit Type**

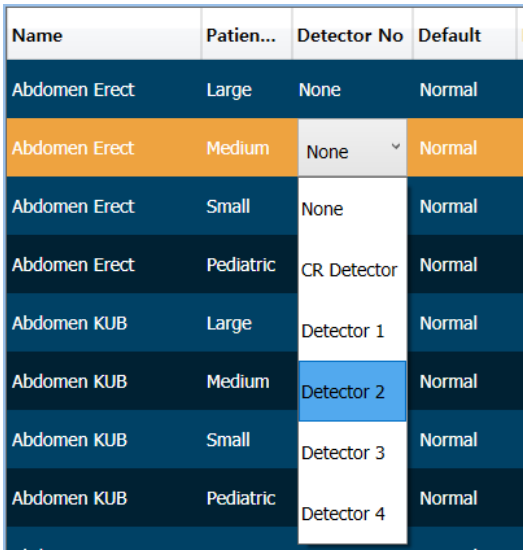
Metric	English notation
cm	ft
Kg	inch
g	lb

- Click the Update button to save the changes.

- Configuration is available only in VXvue for animal use.

Detector / Receptor Select

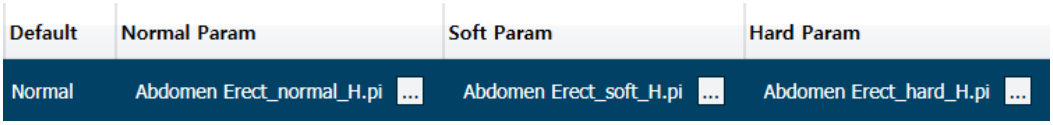
- You can configure a detector / receptor selected automatically when selecting steps.



- The detector name can be set in **Setting > Integration > Detector**.
- The use of the receptor can be set in **Setting > Integration > Generator**.

Image Process Parameter

- You can assign the path of image processing parameter applying to the exposed image.



1 Click on ... button to open the **Change Parameter** window.
   - You can specify a path to another parameter file with the same preference (e.g Normal, Soft, Hard).
2 Select one of the parameters provided in advance, and click on the **Update** button.

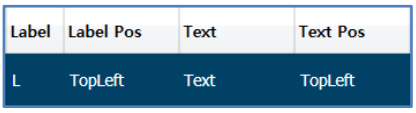
Item	Description
Normal Param	A processing parameter for normal image.
Soft Param	A parameter defined as processing the image smoother than Normal.
Hard Param	A parameter defined as processing the image roughly than Normal.
Default	A basic parameter applied when the image is acquired.

- The image processing parameters are the optimal ones preset in **VXvue**. They are provided when you install **VXvue** for the first time. Though you can modify the parameter information, it is recommended to use the image processing parameter that **VXvue** provides.
- The preference of image processing parameters may be added later.
- Parameter file format: Bodypart Projection_Preference_Application.Image Processing Type
  - Parameters ending in **pi** are subject to the **PureImpact™** image processing algorithm.
  - Parameters ending in **hs8** are subject to the HS8 image processing algorithm.

- **_H** is for humans, **_V** is for animals, and **_E** is for dedicated parameters in applications for Equine.
- You can change the parameter value for image processing from **XIPL.TOOL** directly.

Auto Label

- You can set the label to be displayed on the exposed image automatically.

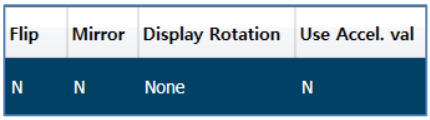


Label	Label Pos	Text	Text Pos
L	TopLeft	Text	TopLeft

Item	Description
Label	Input text of **L / R** labels which are displayed automatically.
Label Pos	Defines position of labels.
Text	Input pre-defined texts.
Text Pos	Defines position of texts.

Rotation

- Use this function to display the image as being auto rotated.
- This function is applied in the order of **Image Rotation** > **Display Rotation** > **Tool Rotation**.



Flip	Mirror	Display Rotation	Use Accel. val
N	N	None	N

- **Image Rotation**

Item	Description
Use Accel. Value	• **Y**: Rotate the acquired image by using acceleration sensor information of the detector. • **N**: Rotate the acquired image by using the rotation information configured from **VXSetup**.

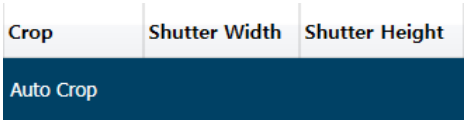
- **Display Rotation**

Item	Description
Flip	Sets whether inverting the image or not.
Mirror	Sets whether applying symmetry to the image or not.
Display Rotation	Sets the rotation magnitude. (**None, CCW90, CCW180, CCW270, CW90, CW180, CW270**)

- In case the acceleration sensor of detector is not activated, the image is rotated in the direction configured from **VXSetup** even if you choose 'Use Detector acceleration value'.
- Acceleration sensor is available only for the detector that supports the relevant function.

- If you change the orientation of displaying image from **VXSetup**, it is applied to the image showed in **Viewer**. Refer to VIVIX-S Setup Operation Manual for the detailed information about setting the image orientation.

Crop



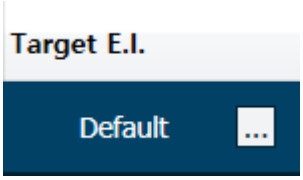
- You can set the crop options to make the exposed image be cropped automatically.

Item	Description
Crop	**Auto Crop**: Uses **Auto Crop** function configured from **XIPL**. **Shutter**: Automatically applies a rectangular shutter with the width and height set for the shot image. **Ellipse**: Automatically applies an elliptical shutter with the width and height set for the shot image.
Shutter Width	Sets the width of shutter applied to the image automatically if the crop is set as 'Shutter'. • Allowed range to input: **8 ~ 17** (unit: inch)
Shutter Height	Sets the height of shutter applied to the image automatically if the crop is set as 'Shutter'. • Allowed range to input: **8 ~ 17** (unit: inch)

- Refer to **XIPL User Manual** for the detailed information about setting **Auto Crop**.

E.I. (Exposure Index)

- You can set the group of a target E.I. to apply to the image.

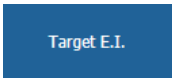


1 Open the window of **Change Target E.I.** by clicking ... button.

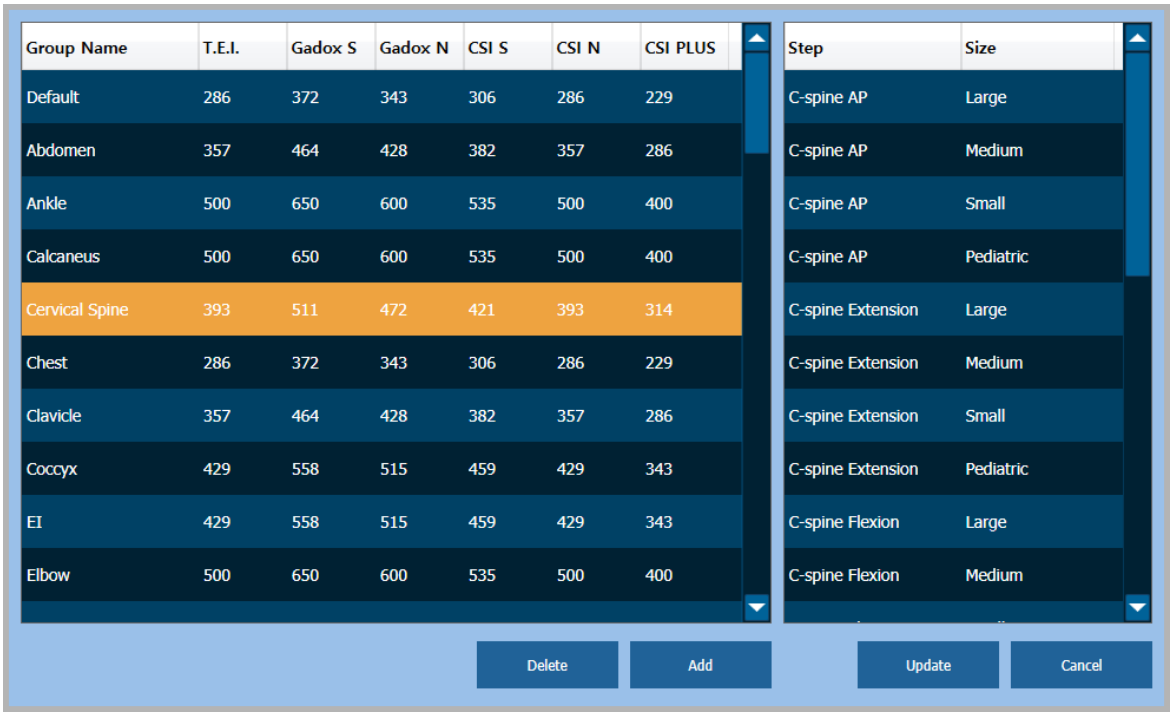
2 Select one of the **target E.I. group** and click **Update** button.

Editing E.I. group

You can add, delete, and edit a group in the **Edit Target E.I.** window.

- Click 

to open the **Edit Target E.I.** window.



- If you select the group, the list of steps that are using the selected group will appear in the right corner.
- After selection, click the **Delete** button to remove the group.
  - You can delete a group only when there is no Step-in use.
- Click the **Add** button to add a new group.
  - The name and the E.I. value of a newly created group are automatically set to the default value.
- Double click the item(s) under the Group Name column to edit group name.
- Double click the items under the T.E.I. column to edit values.
  - The values by each panel is automatically calculated and renewed once editing is done.
  - An acceptable range of T.E.I. value to input is between 100 and 5000. E.I.
- Click the **Update** button to save the changes.

- Refer to VXvue Operation Manual for the detailed information about the exposure index.

Scatter Correction

You can set the scatter line correction method to use when Step is selected.

Item	Description
Physical Grid	Equipped with real grid equipment and used for shooting images.
Software Based	When shooting images, use a software-based scatter line correction algorithm.
None	Not used any scatter line correction method.

Generator

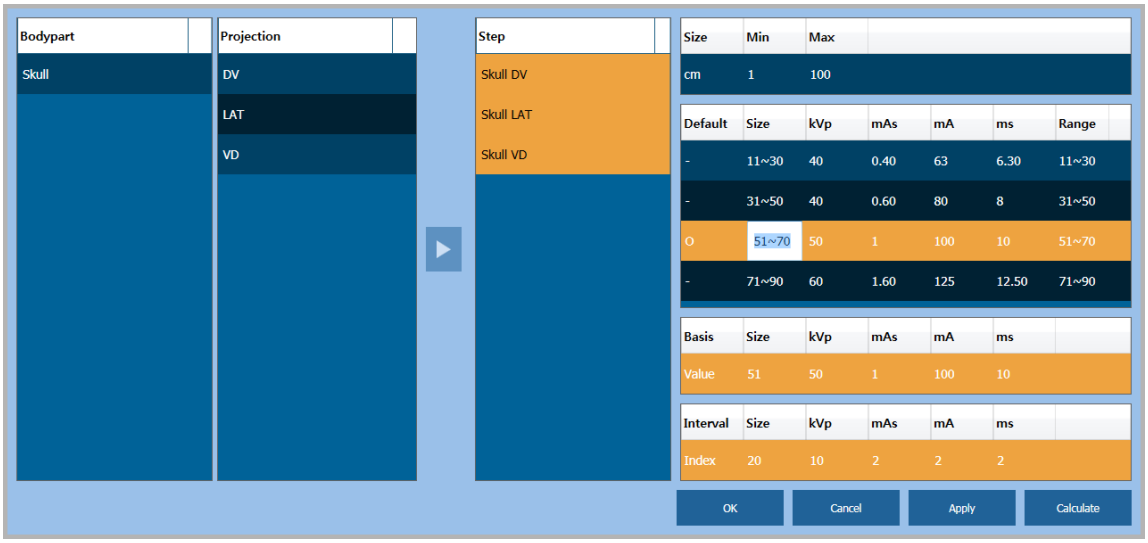
When using the interlockable generator, you can set the exposure condition of the generator at each step.

Dose Mode	kVp	mAs	mA	ms	Density	AEC_L	AEC_R	AEC_C
Current	50	1	100	10	0	N	N	N

- Set the suitable tube voltage (**kV**) / **mAs** / **Density**.
  - You can set the condition separately as **mA** and **ms**, instead of **mAs**.
  - If the connecting generator does not support the indicating values, they are changed to a gray color with strikethrough.
- You can set the Dose Mode (Current / mA, mA / ms, AEC).
  - When selecting a step, **Current** does not change the currently set Dose Mode.
  - When step is selected, **mA / ms, mAs, AEC** automatically changes the currently set dose mode to the selected item
- Select **AEC** in Dose Mode if the generator is integrated with **AEC** (Auto Exposure Control).
  - You can set the areas of **L** (Left) / **C** (Center) / **R** (Right).

Divide and calculate the exposure condition of the generator automatically

When using the generator that can be linked, you can automatically calculate and input the generator exposure conditions for each step.



1 Click the Edit button with the Insert or Selected Step.

2 Select the step to be divided by calculating it automatically.
  - Multiple selections are possible, and the division result is applied equally to the selected step.

3 Set the Patient Size, Tube Voltage (kV) / mAs in the Basis area to use as the default values.
  - mA can be set individually as mA and ms.
  - For VXvue for animals, you must also enter the minimum / maximum size. (Min / Max)

4 Set index of the tube voltage (kV) / mAs list to the Interval section that is to be increased or decreased around the basic value.
   - mAs can be set individually as the 'mA' index and the 'ms' index.
   - The mA Index does not take the mAs Index into consideration.
5 Press the Calculate button to perform the calculation and check the result.
   - The exposure condition is calculated as a differential division by using the reference value (Basis), interval setting value (Interval) and the size (Size).
   - For VXvue for animals, you can change the size display name.
   - After calculating, you can change the default value of divided step size, or you can manually adjust the exposure condition.
   - The calculation result is Preview, and it is applied last when you click Apply or OK button.

Collimator

You can set the operating condition of **Collimator** for each step if using the interoperable auto collimator.

Collimator Width	Collimator Height	Collimator SID	Collimator Filter
17	17	100	0

- You can select and set the **Collimator** size / **SID** / **Filter**.
- The relevant setting value is applied to image when clicking the exposure step in the **Exposure** mode.

- Contact the Vieworks engineer for the details of interoperable equipment.

U-Arm

You can set the operating condition of U-arm for each step, in case of using the interoperable one.

Defined Position	UArm Pos	UArm Angle	Detector Pos	Detector Angle	UArm Tube Pos
None	1313	90	795	0	285

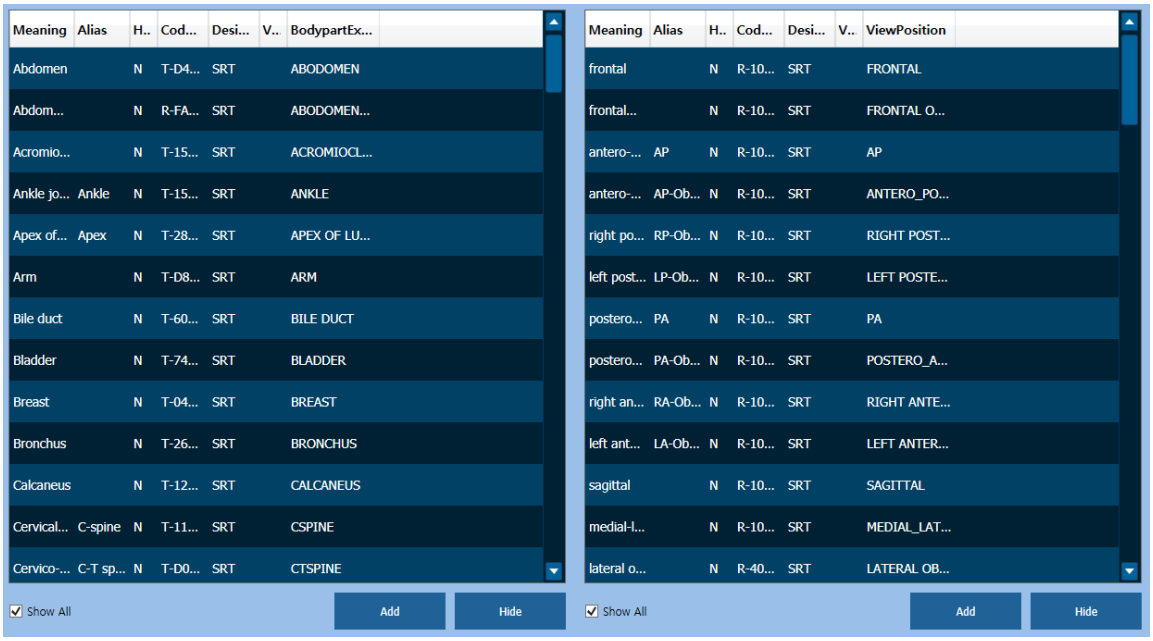
- You can use the default condition protocol of U-Arm location.
- The built-in protocols of U-Arm location are as follows.

Position Protocol	Arm Pos. (mm)	Arm Angle (°)	Det Pos (mm)	Det Angle (°)	Tube Pos (mm)
STAND 100	1445	90	610	0	390
STAND 180	1445	90	860	0	940
TABLE	1115	0	610	0	390
DECUBITUS	1050	90	860	0	390

- You cannot use this UI if U-Arm is not integrated with the viewer program.
- Refer to the engineer in Vieworks for the detailed information about the integration of equipment.

4.7.6 Body part / Projection Tabs

You can set a body part and projection from the **Bodypart** / **Projection** tab each.



Item	Description
Meaning	Meaning (name) of Bodypart / Projection
Alias	Alias of Bodypart / Projection marked to the user.
Hide	Hidden (Y) or show
Value	Standard code value of Bodypart / Projection
Designator	Code system or the institution providing code.
Version	Code system version
Bodypart Examined	DICOM tag input value – BODYPART EXAMINED (0018,0015)
View Position	DICOM tag input value – VIEW POSITION (0018,5101)

- The default value of **Bodypart** / **Projection** is complied with **SRT** (SNOMED-CT Reference Terminology).
- **Bodypart / Projection** items are divided into **SRT** and user registered item (**99VW**).

- You cannot delete the **SRT** item. Use **Hide** button to hide the item.
- You cannot delete the **99VW** item after registration. Use **Hide** button to hide the item.
- Check **Show All** checkbox to show all hidden items.

- You can only modify **Alias** among **SRT** items.
- You can modify **Meaning**, **Alias**, **Designator** among **99VW** items.

- Check the modified **Alias** from the shortcut icon in the **Exposure** mode.
-

Meaning	Alias	Hide	Value	Designa...
Chest	CHEST	N	T-D3000	SRT

- **Bodypart Examined** and **View Position** values are used as DICOM Tag.
  - BODYPART EXAMINED (0018,0015)
  - VIEW POSITION (0018,5101)

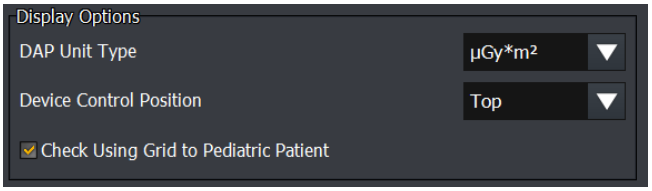
- If you install the Viewer for animals, certain Bodyparts in Equine will be preceded by an (E). If *the bodypart of an animal is not that of eq*uine, (E) is not displayed.
  - (E) Abdomen
  - (E) Pelvis
  - (E) Skull
  - (E) Spine
  - (E) Thorax

4.8 Integration Group

4.8.1 General Menu

Display Options

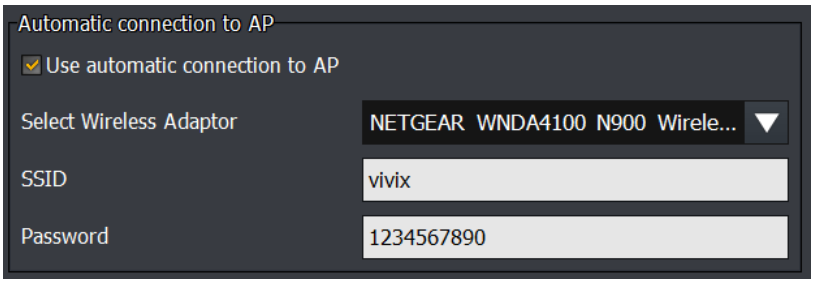
Sets the options indicated on the screen when VXvue integrated with devices.



Menu	Description
DAP Unit Type	• Sets the unit of DAP indicated on the status bar and the second monitor.
Device Control Position	• Sets the location of virtual console on the screen, used for integrating devices in the **Exposure** mode.
Check Using Grid to Pediatric Patient	• Set to display the message to check the use of grid for pediatric shooting.

Automatic connection to AP

It automatically connects the wireless network every 10 seconds between the entered **SSID**, the **access point** using the **password**, and the selected **wireless network adapter**.

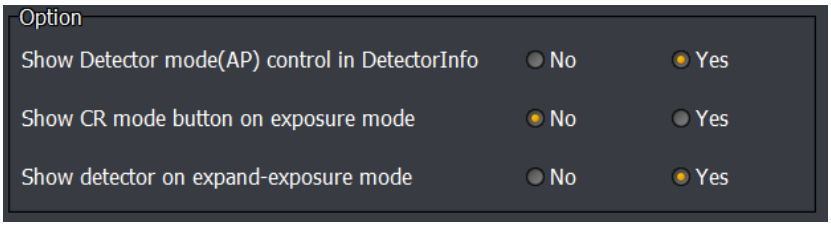


- If you use a wireless detector, you can set the **AP** mode to connect to your PC over the wireless network.
- If the settings you entered are changed or the detector is reconnected, it will automatically try to connect.
- If a network other than the network information you entered is connected, disconnect and try to connect again.

4.8.2 Detector Menu

Option

Set the display options related to the detector.



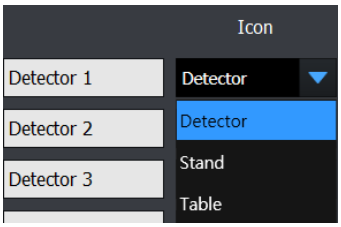
Menu	Description
Show Detector mode (AP) control in DetectorInfo	• Displays On/Off setting of the detector AP from Detector Info.
Show CR mode button on exposure mode	• Indicates the **CR** mode icon button in the **Exposure** mode.
Show detector on expand-exposure mode	• Displays the detector icon button when you select the macro exposure mode.

Detector Setting

You can change the detector icon in the Exposure mode for each detector.

- To measure the real size of an object, this tab corrects the error of actual measurement value by correcting the pixel spacing (generated when magnifying image) depending on the exposure distance (SID) and the distance between an object and a detector (OID).

Changing Icons and Names



- You can change the detector icon to display the position of bucky or the detector type.
  - **Detector**, **Stand**, **Table**, **Table Top**, **No Bucky**
- You can change the name of each detector.
  - Detectors are sorted from the lowest number in the order set in VXSeup.

Icon for selecting a detector	Stand Icon	Table Icon	Table Top Icon	No Bucky Icon

- Refer to VXvue Operation Manual for the detailed information of each detector icon.

Pixel Spacing Correction

1 When clicking on the **Correction** button of each detector, the screen is moved to the **Exposure** mode automatically and the study for pixel spacing correction is registered.

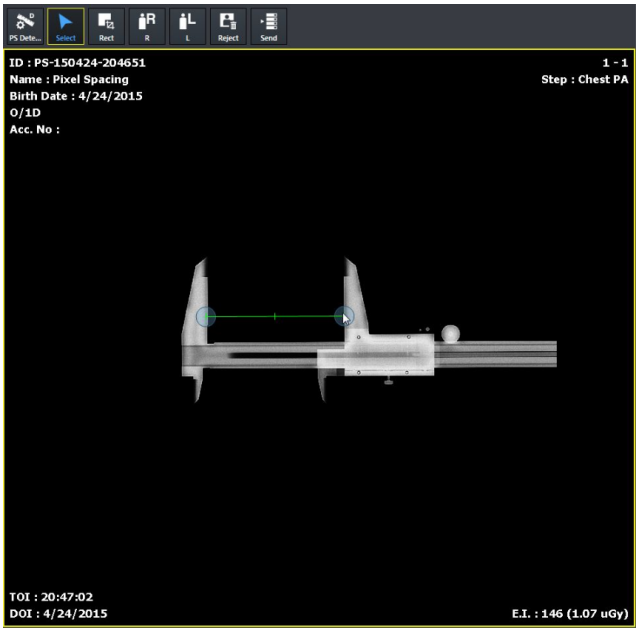
▫ If multiple detectors are connected, other detector icons, not the relevant one, are deactivated on the screen and cannot be used.

2 At the left end of **Quick Access Tools**, the **Detector Pixel Spacing** button is showed in deactivated state.

3 The magnification is different depending on the changes of SID and OID. Put the object measured its real length on the position where it is to be fixed in a real OID, and then take images.

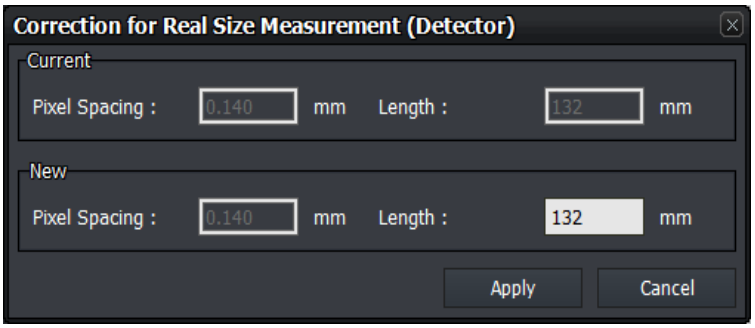
▫ The object of the following sample image is a vernier calipers fixed as 100mm.

4 After taking images, the **Detector Pixel Spacing** button is activated. Click on the button and then the mouse cursor is turned to a ruler shape. Click and drag a mouse button at the start point of OID to draw a line.



- This study is not affected by the option of automatic transmission since the study is used for correcting pixel spacing only. The database is not stored when closing the study.
- This study only can be examined after other studies are all finished.

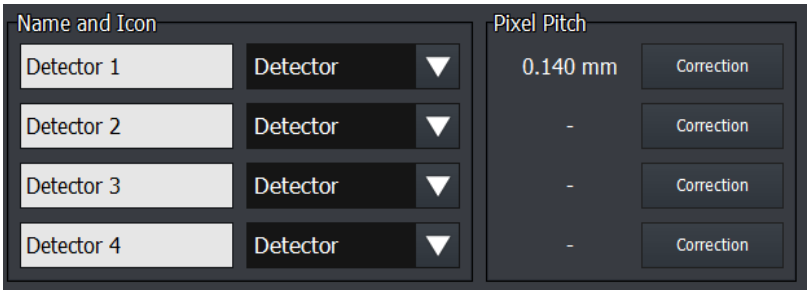
5 Release the mouse button, and then the **Correction for Real Size Measurement (Image)** dialog appears. Enter the real length of the object to **Length** of the **New** menu, and click on the **Apply** button to complete the correction.



Name		Description
Current		Setting value of the current detector
	Pixel Spacing	The pixel spacing set to the current detector already.
	Length	A converted segment length in magnification by pixel spacing set to the current detector.
New		Setting value to be changed newly.
	Pixel Spacing	• The pixel spacing applied to the current image. • The virtual distance between pixels according to the converted magnification by the number of pixels correspond to the segment of actual measurement.
	Length	Input the length of actual measurement.

6 Check the information of changed pixel spacing.

▫ Correct the pixel spacing for each detector if necessary.



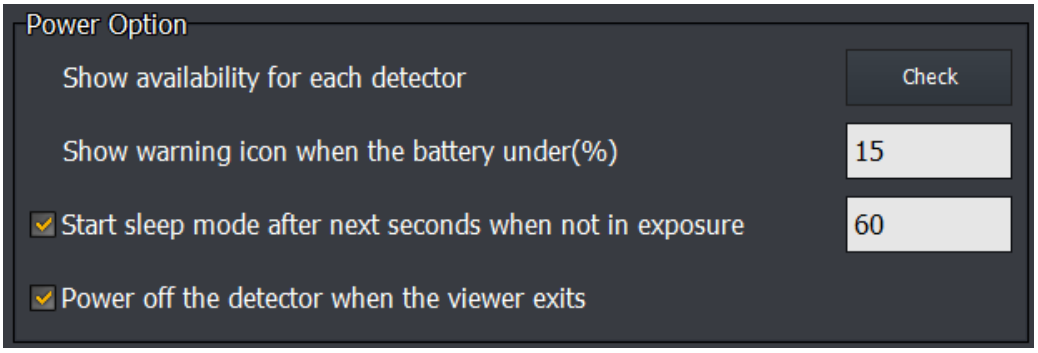
7 The result of corrected pixel spacing is applied to the next shooting.

- The pixel pitch of a detector is used as a default one if the pixel spacing is not corrected.
- Correct the pixel spacing again if SID and OID are changed remarkably.

- Refer to VXvue Operation Manual if it is needed to correct pixel spacing of each image for the change of SID.

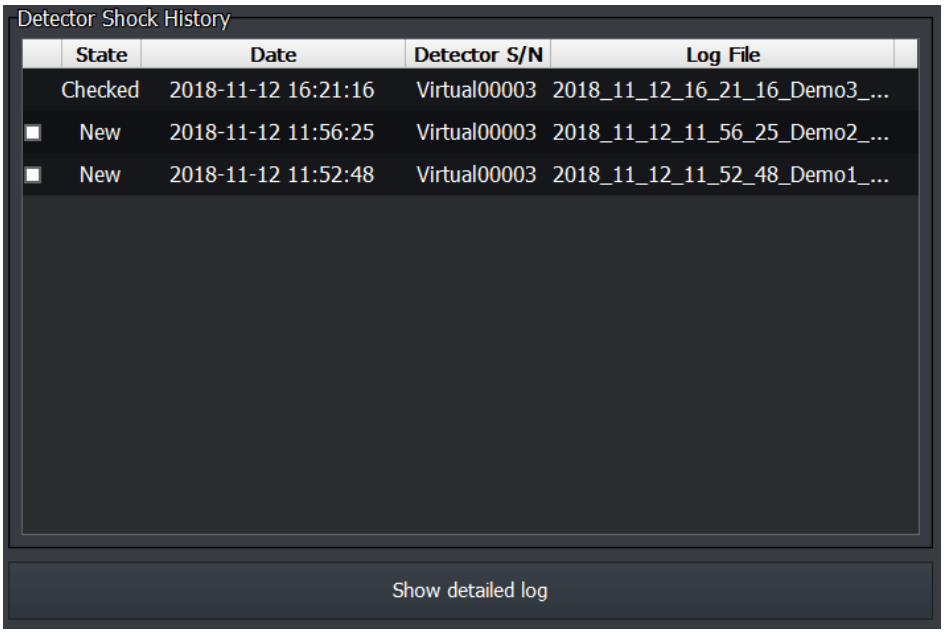
Power Option

Set the detector's power management function to increase standby time.



Menu	Description
Show availability for each detector	Click Check to check whether the connected detector supports the Sleep or Shutdown function.
Show warning icon when the battery under(%)	If the remaining battery level goes below the configured value(%), the warning icon appears on the detector.
Start sleep mode after next second when not in exposure	• If the detector is not ready to shoot (study registration), all the detectors will enter power saving mode after the set time (second). • After the time (60 to 600 seconds) set in the shooting ready status (study registration), the unselected detector will enter power saving mode.
Power off the detector when the viewer shuts down	When shutting down the VXvue, check again to turn off the power of the detector that supports the power off function, and then turn off the power.

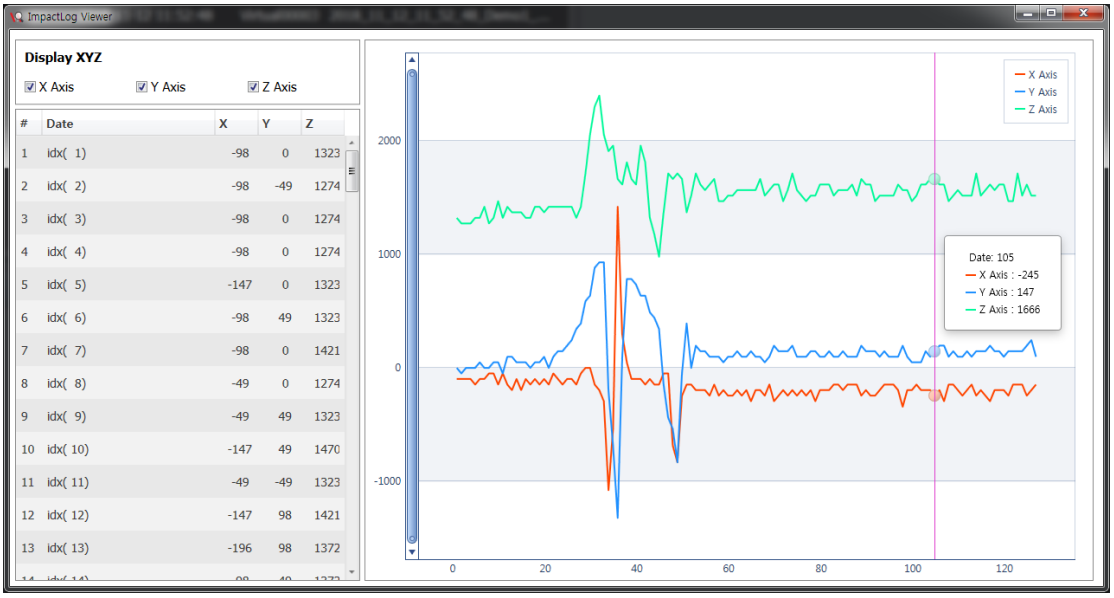
4.8.3 Shock Log Menu



Detector Shock History

When VXvue is operating, you can check the shock records received by the detector.

- Checking the box in front of the State column.
- When all items are confirmed, the Shock icon is disabled.
- Detectors with shocks are separated by serial number, and the time of the shock and the location of the file are displayed together.



Show detailed log

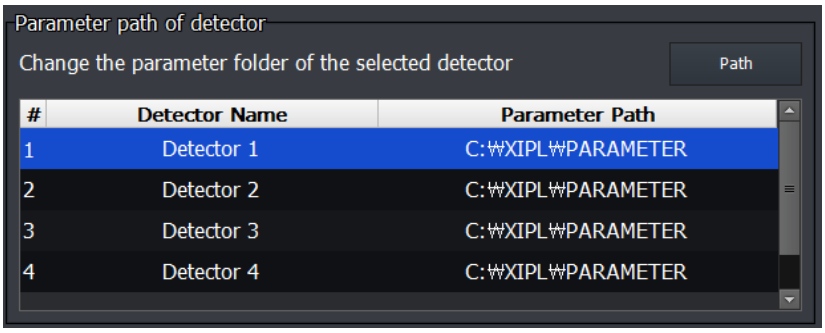
You can check the selected shock log in detail.

4.8.4 XIPL Menu

This chapter guides you through the settings related to XIPL, a module that performs image processing.

Parameter path of detector

In case of image processing, user can arbitrarily define image processing parameter file for each detector.

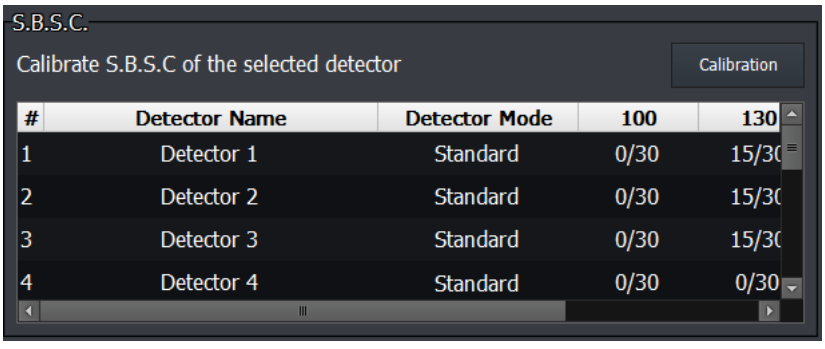


- Click to select the detector to set the parameter path, and then click Path button to select the path.
- Parameter files in the default folder (C:₩XIPL ₩ PARAMETER) and parameter files in the user-defined folder must have the same name and number.
  - If there is no parameter file set in the Procedure Manager in the user defined parameter folder, the same parameter file name in the default parameter folder is used.

S.B.S.C. (Software-Based Scatter Correction)

To apply S.B.S.C., check the list that requires calibration based on SID for each detector and perform calibration.

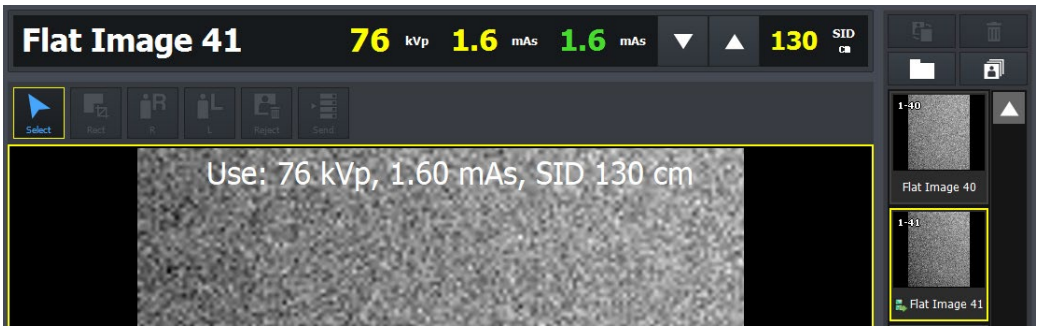
- Input Dose condition (kVp, mAs) and SID used for shooting, and perform scatter line correction algorithm based on the calibrated image.
- Click to select the detector to be calibrated, and then click Calibration button to start.



- Software-based scatter correction (S.B.S.C.) is an image processing algorithm that prevents image degradation due to scattered lines.
- Once the detector setup is complete, you need to calibrate for each SID you want to use in order to use the S.B.S.C. function in optimal quality.
- If the detector is changed or if the detector setting is changed, calibration must be performed again.

S.B.S.C. (Software-based Scatter Correction) Calibration

It is very similar to the normal shooting process, but you cannot use any functions other than image shooting and W/L.



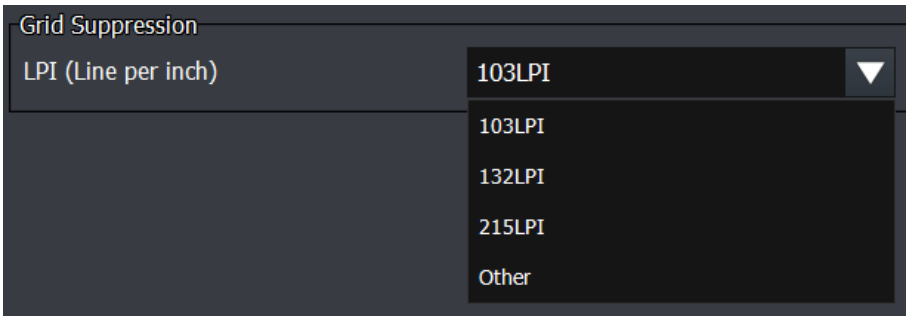
1 Adjust the generator exposure conditions and SID to the calibration requirements (kVp, mAs, SID) represented by the yellow numbers.
   - If the generator mAs value of the requirement is not supported, it should be corrected to the actual setting using the arrow.
2 If the requirements are met, take an image and check the calibrated flat image.
   - Check the white text on the image to make sure it matches the conditions you were shooting.
3 Check the progress count (00/120) on the study information tab on the upper left, and click button to finish the study when shooting of the desired SID is completed.

4 Go back to XIPL in **Setting** mode > **Integration** and check the number of shots taken for calibration.
5 Once all calibrations have been completed, register the study and apply the S.B.S.C. function at the start of shooting.

- During calibration, you cannot change the detector or detector mode while shooting is in progress.
- To change the detector, you have to exit calibration and select another detector and then start again.
- This study only can be examined after other studies are all finished.

Grid Line Suppression

With Grid Line Suppression applied, you can configure a distance between grid lines (LPI: Line pairs Per Inch) that you want to edit.



- **Line pairs per Inch,** abbreviated to **LPI**, is a distance between grid lines you will edit in the image.

- The value of LPI configured in **Setting** is set as a default when registering Study.

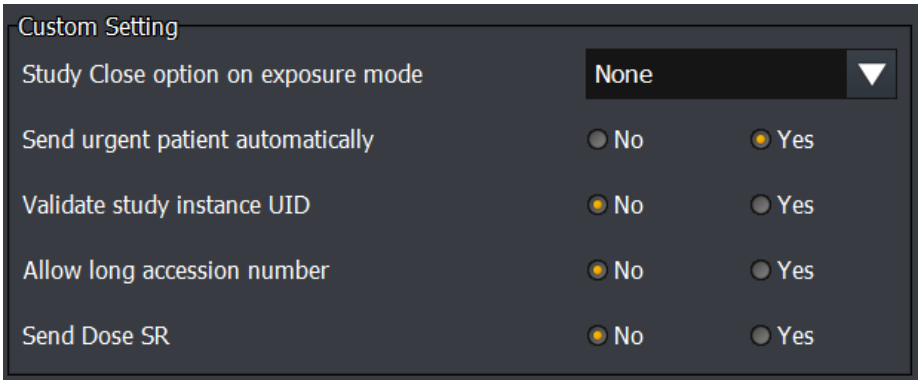
4.9 DICOM Group

You can set and manage the information related to DICOM from the DICOM panel.

4.9.1 General Menu

Custom Setting

Sets the use environment related to DICOM.



Menu	Description
Study Close option on exposure mode	• Sets behavior when the exam is finished in the **Exposure** mode. ▫ **None**: Closes the exam. ▫ **Send after Close**: When the exam is finished, it is sent to the storage automatically. ▫ **Close after Send**: When all images are sent to the storage, the exam is finished automatically. ▫ **Use Both**: Applies both behaviors of **Send after Close** and **Close after Send**.
Send urgent patient automatically	• In the case of urgent patient, it sets whether or not to send the study to Storage automatically after the study is finished. ▫ **Yes**: If **Send after Close**, **Use Both** options are set, the study is automatically transferred to Storage. ▫ **No**: In case of urgent patient, the study is not automatically transferred to Storage after it is finished.
Validate study instance UID	• Check effectiveness of Study Instance UID brought from the DICOM Worklist server. • Study Instance UID is created automatically in case it does not exist or is against to the DICOM standard.
Allow long accession number	• Allows the information of accession number up to 64 letters.
Send Dose SR	• Set whether to send Dose SR to DICOM Storage server. ▫ **Yes**: Automatically transmits images from the Exposure mode to Storage, or sends Dose SR when transferring all images in the Database mode. ▫ **No**: Dose SR is not sent to the DICOM Storage server.

- Be careful in using **Allow long accession number** option. As the maximum number of letters implied in DICOM standards are 16, the image cannot be sent if you use this option depending on the PACS system.

- All DICOM-related logs are saved as a file in the specific location. If any problem occurs, contact the manager.
- All logs which were generated more than 90 days ago are removed automatically.

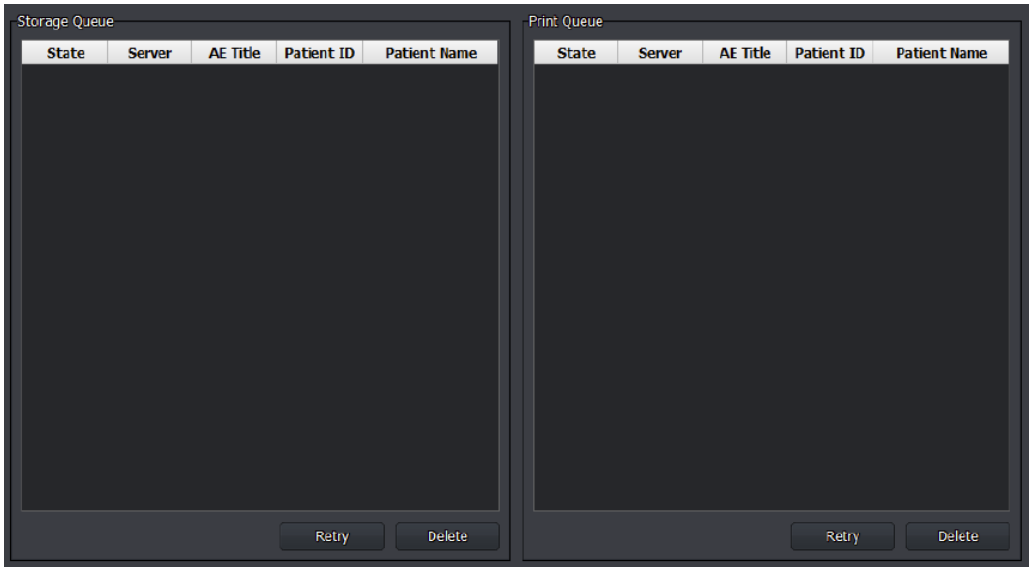
Station Name, Station AE Title

The station name, station AE Title and station port are used as the DICOM information.

4.9.2 Queue Menu

- Click on button at the bottom of **VXvue** screen to move to the dialog for checking **Queue**.

- When you start to send or print a DIOCM image, it is registered in **Queue** automatically.
- You can check the sending or printing status of DICOM image.
  - **Storage Queue** – Indicates the sending status of DICOM image to the DICOM storage server.
  - **Print Queue** - Indicates the printing status of DICOM image to the DICOM print server.



Sending status

Status	Meaning
Pending	On standby
Failed	Failed to send the image
Sending	Being sent the image
Stopped	Stops sending the image
Done	Completes to send (Succeed)

How to use

1 Select the item that has failed to send and click on the **Retry** button to send it again.
   - You can select multiple items by using the **Ctrl** or **Shift** key.

2 Select the item and click on the **Delete** button to remove items.
   - You cannot delete the item being sending or stopped sending.
   - You can select multiple items by using the **Ctrl** or **Shift** key.

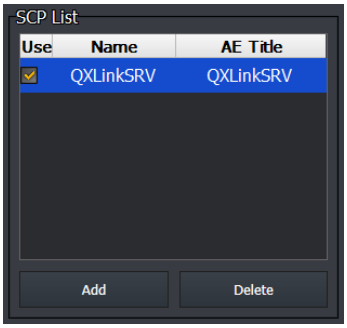
- **VXvue** checks the transmission status of DICOM image when executing for the first time. If **VXvue** finds an image to be transmitted, it notices to the user to send the image.

4.9.3 Setting Common Items of DICOM Server

Set the DICOM server information from each DICOM service tab to set the DIOCM information.
Among the setting items for each service, the setting ways of the following items are all the same.

Item	Description
SCP List	DICOM server list
Basic Information	Basic information of accessing DICOM server
Verification	Checking the DICOM connection status
Language	Setting DICOM Language Encoding

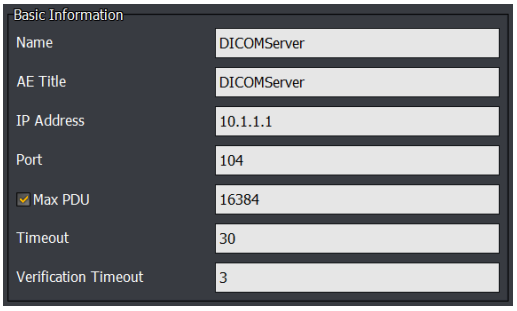
SCP List



- Click on the **Add** button to add the DICOM server.
   - Set the server information from **Basic Information** after adding DICOM server.
- Click on the **Delete** button to delete the DICOM server.
- Check **Use** to choose a server to use.
   - You can only select DICOM Storage to check multiple servers.

Basic Information

You can set information after selecting items from the **SCP List**.

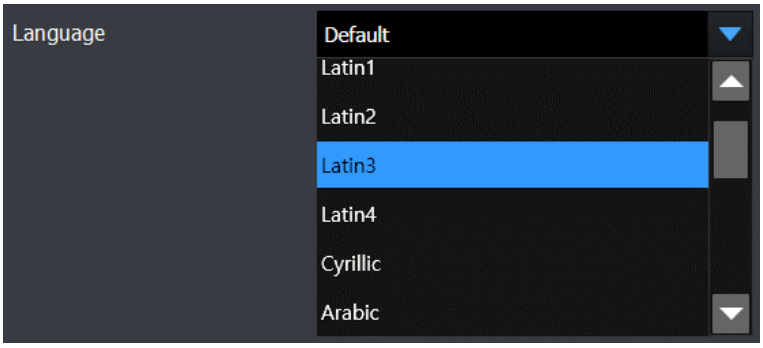


- **Name** – SCP server name
- **AE Title** – AE Title of the server (Called AE Title)
- **IP Address** – IP address of the server
- **Port** – Port number of the server
- **Max PDU** – Maximum packet data unit
- **Timeout** – Waiting time after connection (unit: sec.)

- You should configure **AE Title**.
- Check the **Max PDU** (Packet Data Unit) value.
  - Conform to the **Max PDU** value configured from the server if **Max PDU** is not used.
  - The communication speed is slowed or disconnected depending on **Max PDU** setting.
  - Check connection status by changing **Max PDU** value after checking server information.
- Check connection status by adjusting **Timeout** depending on the communication environment.
  - After trying to connect to the server, **VXvue** maintains connection during the setting time of **Timeout**. If there is no response during the waiting time, the system regards it as a communication failure and cuts off the connection.

Language

You can choose **DICOM Language** encoding when sending images.

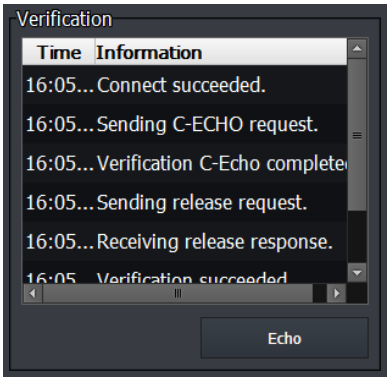


16 **Language** options are provided.

- If you select **Default**, the DICOM Encoding is not applied.
  Depending on the selection of **Use Code Extensions**, the value of Specific Character Set (0008, 0005) changes as below when sending the storage.

Extension Code	Check	Uncheck
Default	ISO 2022 IR 6	-
Latin1	ISO 2022 IR 100	ISO_IR 100
Latin2	ISO 2022 IR 101	ISO_IR 101
Latin3	ISO 2022 IR 109	ISO_IR 109
Latin4	ISO 2022 IR 110	ISO_IR 110
Cyrillic	ISO 2022 IR 144	ISO_IR 144
Arabic	ISO 2022 IR 127	ISO_IR 127
Greek	ISO 2022 IR 126	ISO_IR 126
Hebrew	ISO 2022 IR 138	ISO_IR 138
Latin5	ISO 2022 IR 148	ISO_IR 148
Japanese(Katakana)	ISO 2022 IR 13	ISO_IR 13
Thai	ISO 2022 IR 166	ISO_IR 166
Japanese(JIS)	ISO 2022 IR 13	ISO_IR 13
Japanese	ISO 2022 IR 87	ISO 2022 IR 87
Korean	ISO 2022 IR 149	ISO 2022 IR 149
Unicode UTF-8	ISO_IR 192	ISO_IR 192
Chinese GB18030	GB18030	GB18030

Verification



- You can check the connection state with the selected SCP server.

1 Select the SCP item and click on the **Echo** button.
2 Check the result of connection status.

Verification step

Verification is progressed as followings.

Step	Action	Description
1	**Connection**	Attempts to connect network and check its status.
2	**C-ECHO Request**	Asks DICOM Verification service to check the DICOM connection status.
3	**C-ECHO Response**	Receives response from DICOM Verification.
4	**Release Request**	Asks to release DICOM connection.
5	**Release Response**	Receives response of releasing DICOM connection.
6	**Close Connection**	Disconnects the network connection.

4.9.4 MWL Menu

You can use DICOM work list from the **MWL** menu by setting information of the DICOM Worklist sever.

- Get the patient and study information by asking them to the DICOM Worklist server.

Setting procedure

1 Click on the **Add** button on **SCP List** and add DICOM Worklist server.

2 Input the relevant server information in **Basic Information** correctly.

- Contact the person in charge of hospital or server about the server information.

3 Select the tag information for searching and receiving from **Tag Selection**.

- It is recommended to check all tags.

4 Select a tag from **Procedure Tag Selection** to match with the procedure of the relevant system.

- The received procedure information can use the tags different from each server.
- Contact the person in charge of server for more information.

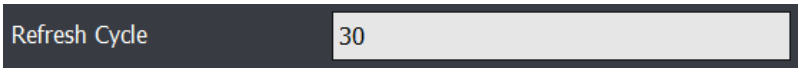
5 Click on the **Echo** button in **Verification** and check connecting status between the system and DICOM.

- Check the network and server condition if the connection is unstable.

6 Click on the **Update** button to complete the update.

Auto Refresh

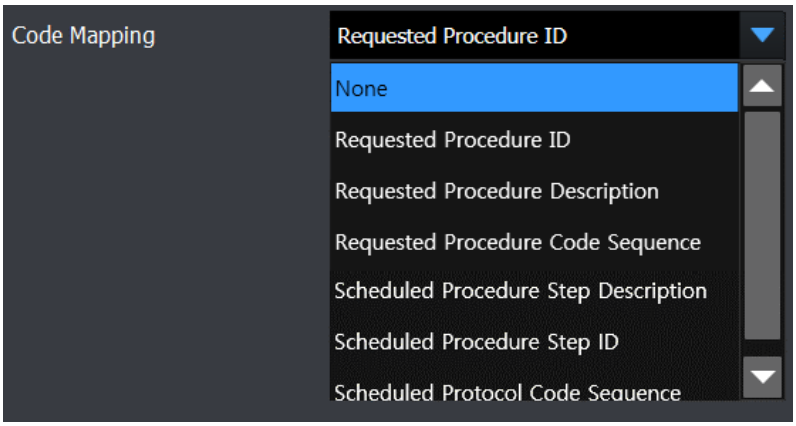
You can renew the patient information sent from the DICOM Worklist server in every setting time.



- The input unit is second, and the default value is 30 sec. (30~600)
- It does not work while registering patient information or sending to the detector.

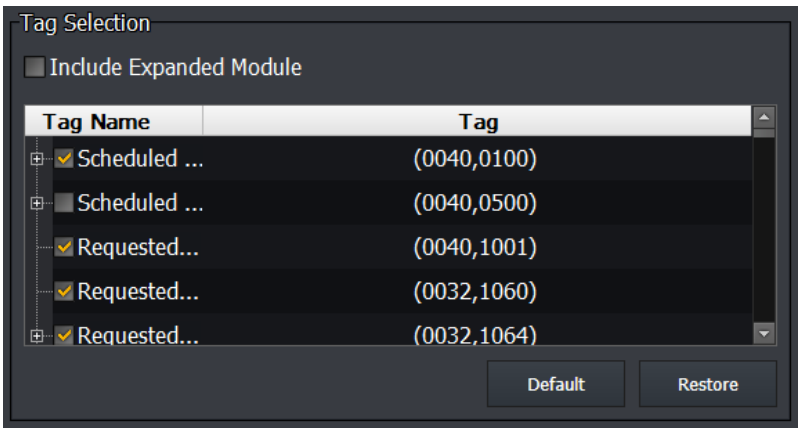
Procedure Tag Selection

- The exposure information codes are used from the different tag according to DICOM Worklist server. In this case, the user can set the codes by investigating tags which have the exposure information code of DICOM Worklist server.
- **VXvue** provides six (6) tags as the exposure information codes.
- If you select **None**, the Code Mapping function is not used.



Tag Selection

Some DICOM Worklist servers can ask to add other tags rather than the default tag, or remove specific tags among the default ones provided by **VXvue**. In this case, the user can set the codes by investigating tags needed for integrating with DICOM Worklist server.



1 Check out tags for integrating with DICOM Worklist server and select the relevant tags.

2 Be sure to click on the **Update** button after selecting the tags.

- You should check the SCP server information before connecting with DICOM Worklist server.
- The operation error can be solved by checking / unchecking tags.

Tag Selection Buttons

Button	Description
Default	Selects the default tags. The default tags are appointed under the DICOM standard. Refer to **VXvue DICOM Conformance Statement** for further details.
Restore	Returned to the last status (status before updating).

- Ask DICOM compatibility guide (**DICOM Conformance Statement**) to the DICOM server company for checking the operation of the **SCP** server and for its correct connection.
- Refer to <4.7 Procedure Manager> for the information about selecting **Procedure Tag** and setting its code.

4.9.5 MPPS Menu

You can set the information of DICOM MPPS (Modality Performed Procedure Step) server from the **MPPS** menu.

- DICOM MPPS is the service that sending the exposure processing state to DICOM MPPS server.
- It also sends the information of study processing state when you register (start) or close the study.

Setting procedure

1 Click on the **Add** button on **SCP List** to add DICOM MPPS server.

2 Input the relevant server information to the **Basic Information** menu correctly.

▫ Contact the person in charge of hospital or server about the server information.

3 Select a language to use in **Options**.

▫ The information is sent as encoding to the selected language.

4 Click on the **Echo** button in **Verification** and check the DICOM connection status.

▫ Check the network and server condition if the connection is unstable.

5 Click on the **Update** button to complete the update.

4.9.6 Storage Menu

You can set the server information of DICOM storage from the **Storage** menu.

- You can send the DICOM image to the DICOM storage server.

Setting procedure

1 Click on the **Add** button in SCP list and add the DICOM storage server (max.20 servers).

2 Input the relevant server information to the **Basic Information** menu correctly.

▫ Contact the person in charge of hospital or server about the server information.

3 Set each option from **Options**.

4 Register and set the desired protocol from **Protocol List**.

5 Click on the **Echo** button in **Verification** and check the DICOM connection status.

▫ Check the network and server condition if the connection is unstable.

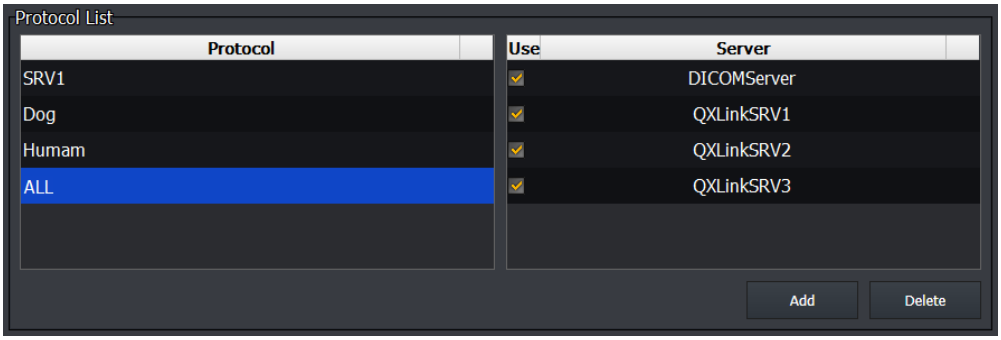
6 Click on the **Update** button to complete the update.

Retry Count

If failed in image transmission, you can set the number of re-transmission you want to try.

Protocol List

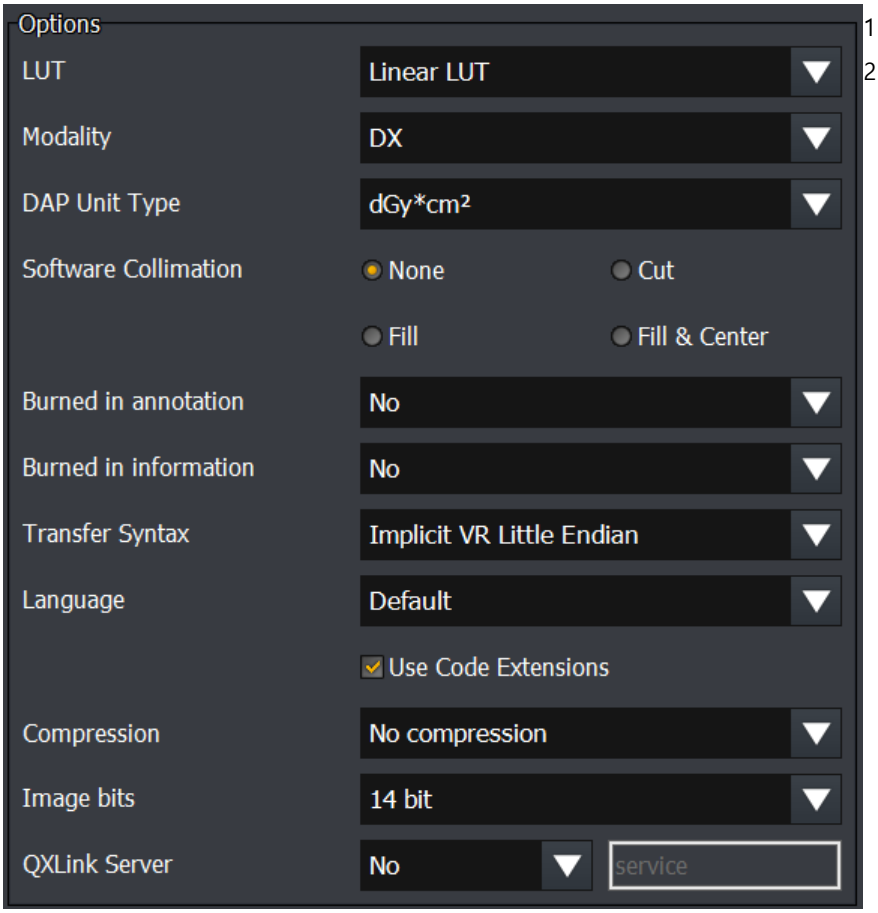
You can configure two or more DICOM servers (SCP) for each protocol. The image is sent to the preset DICOM server for each protocol.



1 Click on the **Add** button to register a new protocol.
2 Double click the new protocol to edit its name.
3 Check the **SCP Server** to be sent.
4 Select the protocol and click on the **Delete** button to delete.

- Refer to VXvue Operation Manual for the detailed information about sending DICOM image using **Send Option** button.

Options



1 Set each item in **Options**.
2 Click on the **Update** button after completing the setting.

Item	Description
LUT	Sets LUT to be applied.
Modality	Sets Modality information.

Current modality	Uses the Modality information without a change.
DX / CR / DR	Uses one of three Modality information as a fixed value - DX, CR, DR.
DAP Unit Type	The DAP value to be transferred to the DICOM image is changed according to the set unit.
mGy*cm²	-
uGy*m²	-
dGy*cm²	-
Software Collimation	Sets the image crop status.
NONE	Original image without cropping
Cut	Cropped area of the image
Fill	The outside area of the cropped image is filled with black.
Fill & Center	The image cropped from the original image is displayed at the center, and the area outside the cropped image is filled with black.
Burned in Annotation	Sets whether or not to include annotation information.
YES	Included
NO	Not included
Burned in Information	Sets whether or not to include the Overlay information.
YES	Included
NO	Not included
Transfer Syntax	Sets the sending method of DICOM image.
Implicit VR Little Endian	-
Explicit VR Little Endian	-
Language	Sets the language for DICOM encoding.
Use Code Extensions	Determines whether to use the code extension or not.
Compression	Sets the way of JPEG2000 compression. If the DICOM server cannot support JPEG2000, this function cannot be used.
No Compression	Not compressing JPEG2000
JPEG2000 Lossless	Compressing JPEG2000 without a loss
Image Bits	Sends to DICOM Storage after converting bit depth stored in an image
12 bit	Converts from 14bit to 12bit
14 bit	Keeps the bit depth in an processed image to 14 bit (Default)
QXLink Server	Checks if the configured DICOM storage is QXLink server or not.
YES	QXLink server
No	Not QXLink server
service	Enter the account name of QXLink used to login QXLink viewer. (Default: service) You must register the account name on the QXLink Server.

- For details on how to install and use **QXLink**, contact to Vieworks.

4.9.7 Storage Commitment Menu

You can set server information of DICOM Storage Commitment from the **Storage Commitment** menu.

- The information of DICOM Storage Commitment can be sent to the server after sending DICOM image.

Step procedure

1 Click on the **Add** button in **SCP List** and add the DICOM Storage Commitment server.
2 Input the relevant server information to the **Basic Information** menu correctly.
   ▫ Contact the person in charge of hospital or server about the server information.
3 Set each option from **Options**.
4 Click on the **Echo** button in **Verification** and check the DICOM connection status.
   ▫ Check the network and server condition if the connection is unstable.
5 Click on the **Update** button to complete the update.

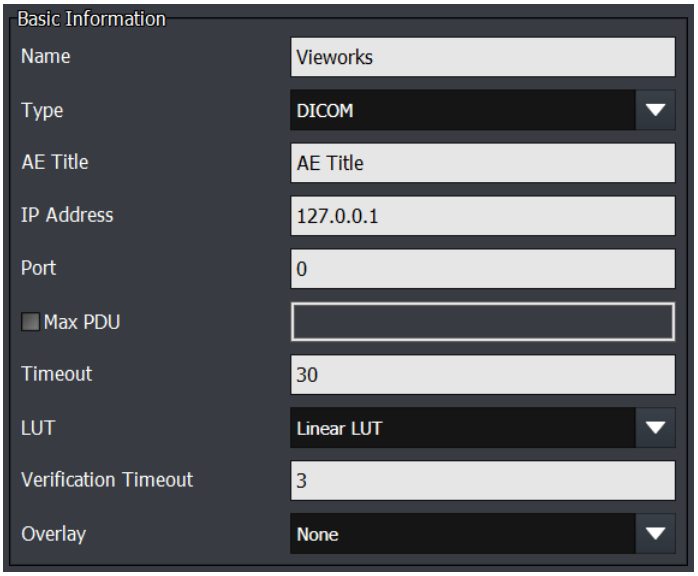
4.9.8 Print Menu

You can set the information of print and DICOM Print server from the **Print** menu.

- The DICOM image can be sent to the DICOM Print server for printing.
- You can also set the information printed on the printout.

- Precheck the condition of print and film before setting the print.

Setting procedure of DICOM Print



1 Click on the **Add** button in **SCP List** and add the print.
2 Input the **Name** item and choose DICOM from **Type**.
3 Input the relevant server information correctly.
   ▫ Contact the person in charge of hospital or server about the server information.
4 Set the print and film format from **Print Format**.
   ▫ Errors can occur depending on the print model.

- Check the server information of print in advance.

5 Click on the **Echo** button in **Verification** and check the DICOM connection status.

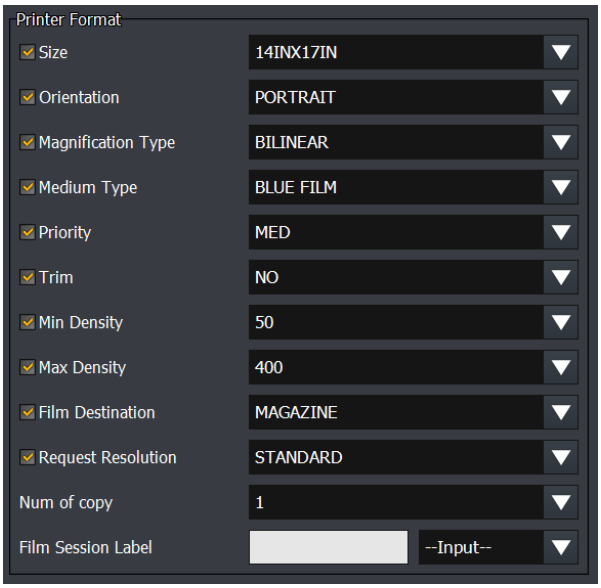
- Check the network and server condition if the connection is unstable.

6 Click on the **Update** button to complete the update.

DICOM Printer Format

You can set the print and film format items.

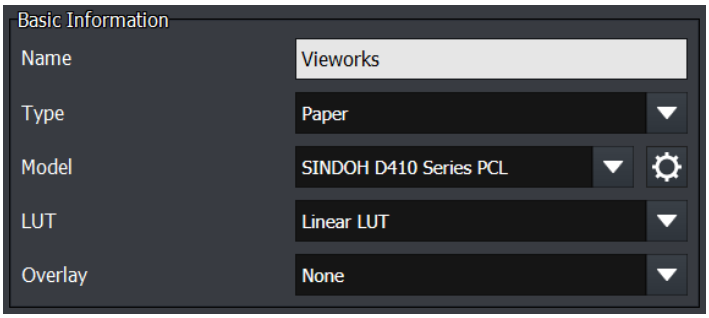
- Precheck the condition of print and film before using this menu.



Item	Meaning	Description
Size	**Film print size**	Sets print size of the film. ▫ 8IN X 10IN, 8.5IN X 11IN, 8.5IN X 12IN, 10IN X 12IN, 10IN X 14IN, 11IN X 14IN, 11IN X 17IN, 14IN X 14IN, 14IN X 17IN, 24CM X24CM, 24CM X30CM. A4. A3
Orientation	**Film print orientation**	Sets orientation of the film. ▫ Portrait / Landscape
Magnification Type	**Interpolation of printing image**	Sets the interpolation type applied to the printing image. ▫ Replicate ▫ Bilinear ▫ Cubic
Medium Type	**Film medium type**	Selects a type of film medium. ▫ Clear Film / Blue Film
Priority	**Priority order of print**	Sets the priority order of printing. (HIGH / MED / LOW)

Trim	**Apply trimming or not**	Sets applicability of trimming. (YES / NO)
Min Density	**Minimum print density**	Sets minimum density of printing.
Max Density	**Maximum print density**	Sets maximum density of printing.
Film Destination	**Printout object**	Sets the object to be printed. ▫ Magazine ▫ Processor ▫ BIN_i
Request Resolution	**Requested resolution**	Sets the requested resolution. (STANDARD / HIGH)
Num of copy	**Number of prints**	Sets the number of prints.
Film Session Label	**Film Session Label**	Sets the label to be entered per session on output ▫ Input: Prints the input value as a label. ▫ Patient Name: Displays the patient name of the image as a label. ▫ Patient ID: Prints the patient ID of the image as a label.

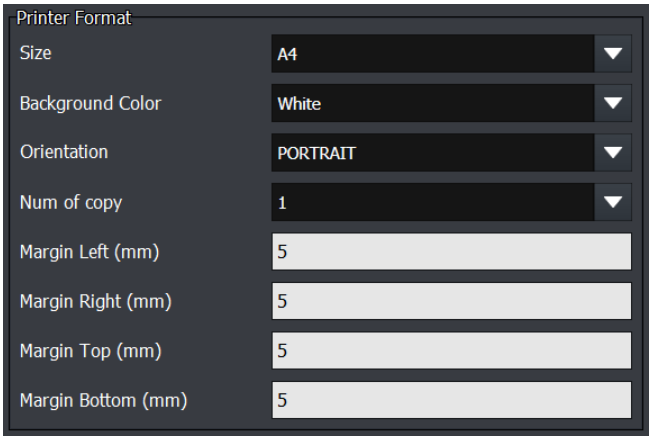
Setting procedure of Paper Print



1 Click on the **Add** button in **SCP List** and add the print.
2 Input the name and choose **Paper** from **Type**.
3 Choose the printer model from **Model**.
4 Set the printing information and format from **Print Format**.
   ▫ Errors can occur depending on the print model.
5 Click on the **Update** button to complete the setting.

Paper Printer Format

You can set the print and film format items.

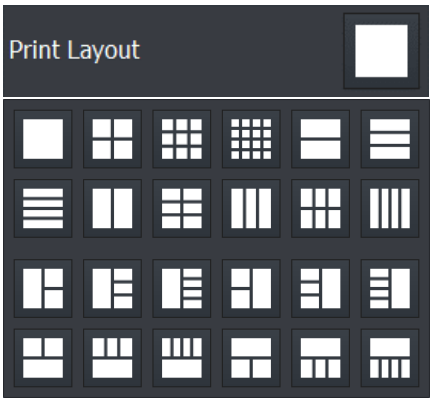


Item	Meaning	Description
Size	**Film print size**	Sets print size of the film. • A4, A3, B4, Letter, Legal, Tabloid
Background Color	**Background Color**	Sets the background color of printing. • Black / White
Orientation	**Film print orientation**	Set orientation of the film. • Portrait / Landscape
Num of copy	**Number of prints**	Set the number of prints.
Margin (Left/Right/Top/Bottom)	**Size of the margins**	Sets the size of margins (Unit: mm)

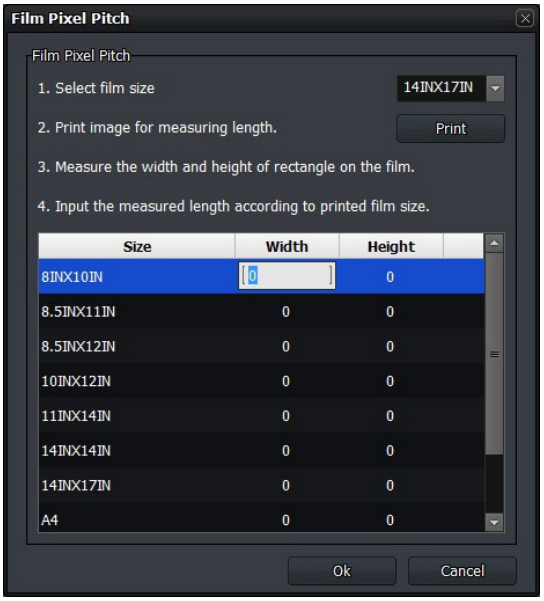
- For actual output, white is displayed when the background is black, and black when the background is white.
  - However, if you set the text color of the header part, it will be displayed in the user-defined color regardless of the background.

Set Print Layout

You can set the layout of printing images.



Film Pixel Pitch



1 Click on the **Setting** button in **Film Pixel Pitch**.
2 Set **Film Pixel Pitch** following the order from 1~4. You can set **Film Pixel Pitch** by inserting the value of **Width** / **Height** (Unit: mm) with the measured film size.
3 Click on the **Print Real Size** button in the **Print** mode to check if the image is printed according to the configured size value.

- You can set this menu after connecting the program to a real printer. Click on the **Print** button and check the printout.
- Refer to VXvue Operation Manual about the information of the **Print Real Size** icon.

4.9.9 Print Overlay Menu

You can set the printing information from the **Print Overlay** tab as follows.

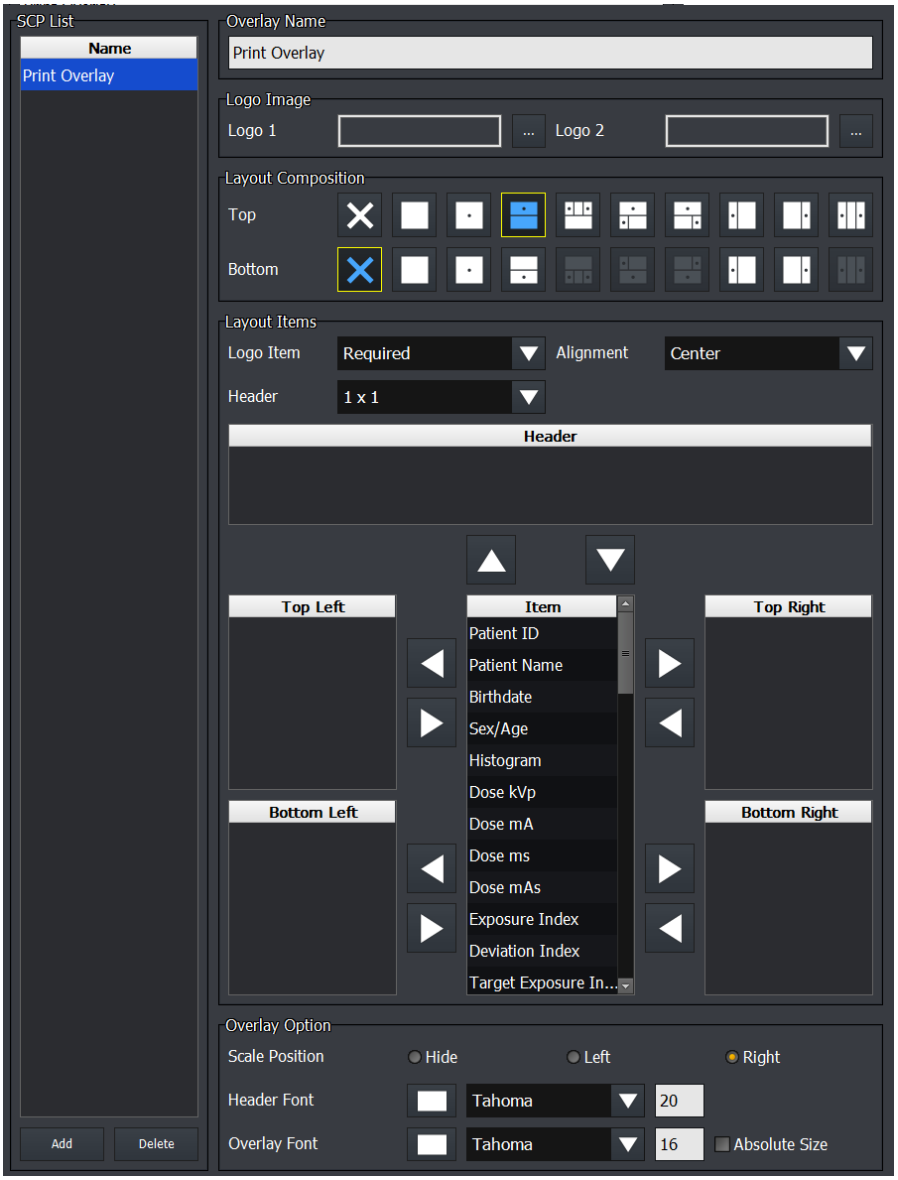
- Study, patient, annotation information.
- Print position of each information
- Shape, size, color of the prints

Add and Use the Overlay Items

1 Click on the **Add** button in **SCP List** and add print overlay.
2 Set the name of overlay and layout items.
3 Click on the **Update** button to complete the setting.
4 Choose the added overlay from **Basic Information** of the **Print** tab.

Set Layout items

You can specify the position of items printed on the film.



- The identical logo cannot be saved in two locations.
- You can set the composition of the Logo, Header, and Footer by clocking the button from **Layout Composition**.
  - The number of Logo items you can arrange in the footer and header of the printable area is 2.
  - The identical logo cannot be placed twice.
- All items except for **Histogram**, **Screen Zoom** and **Print Zoom** can be added in the header and footer.
  - If the item value of each image indicated on the header area is different, it is displayed as N/A.
- You can add items to the printable area (Top Left, Bottom Left, Top Right, Bottom Right).
  - You can add the duplicated items.

How to Set the Layout Items

1 Select an item and add to the desired position or delete it by clicking on ◀ or ▶ button.

2 Click on the **Update** button to complete the update.

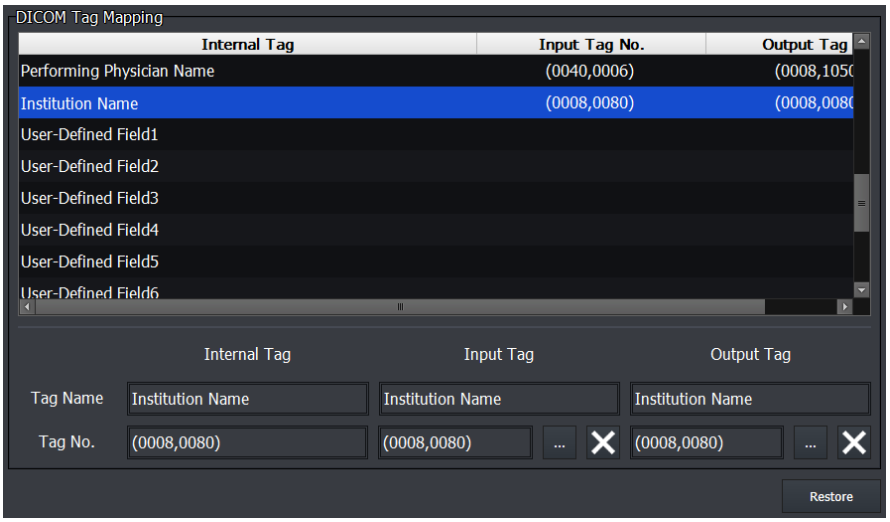
Set the color and font of the printed item

Set font, size, color of information and annotations printed on the header, footer, and image.

Item	Description
Logo Image	Sets the location of logo to be printed on the image. (None/ Top Left / Top Center/ Top Right / Bottom Left / Bottom Center/ Bottom Right) Sets the logo image to be printed on the image. (BMP/ JPEG/ PNG) The supported size of an original logo image is up to 1MB. The height of logo is fixed as 50px, printed in black and white.
Header Font & Color	Sets font, size, color of header information printed on the film. Sets the position of film header. Sets the film layout.
Overlay Font & Color	Sets font, size, color of information printed on the image.
Absolute Font Size	The font is printed as an absolute size regardless of the degree of enlargement in an image.
Annotation Font & Color	Prints the same size regardless of the view size of the image.

4.9.10 Tag Mapping Menu

You can map DICOM tag information with the other tag or add tags as necessary.



Tag	Description
Internal Tag	Principal tag defined in VXvue. • Input Tag and Output Tag are mapped based on Internal Tag.
Input Tag	Received from the DICOM Worklist server.
Output Tag	Transmitted to the DICOM Storage server.

Mapping principle – receiving DICOM Worklist

1 Receives Worklist Item from the DICOM Worklist server.

2 Connects **Input Tag** in Worklist Item to the mapped **Internal Tag**.

3 Sends the **Input Tag** value to the connected **Internal Tag**.

Mapping principle – sending DICOM image

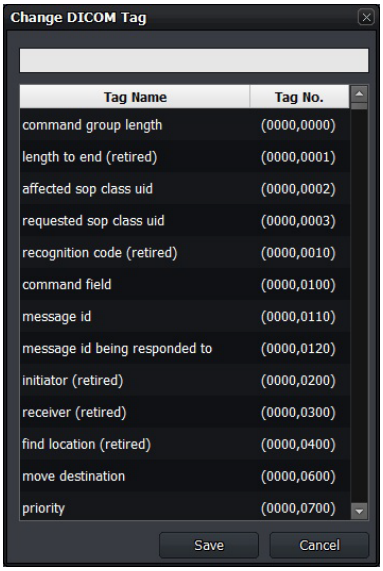
1 Connects Internal Tag to the mapped **Output Tag**.

2 Sends the Internal Tag value to **Output Tag**.

3 Includes **Output Tag** to DICOM image and send the image.

- Be sure to process the DICOM mapping by the engineer who fully understands about **VXvue**, DICOM, and PACS system.

Tag Mapping



1 Select Internal Tag to map from the tag list.
2 Click on ... button on the **Input Tag** or **Output Tag** item to display the **Change DICOM Tag** window.
3 Search a tag to find. You can search the desired tag by inputting a tag name or address to the search box at the top of the window.
4 Double-click the searched tag, or select the tag and click on the **Save** button.

Internal Tag List

- Accession Number, Modality, Referring physician Name, Study Description, Patient Name, Patient ID, Patient Birth Date, Patient Sex, Patient Age, Patient Height, Patient Weight, Patient Species Description, Patient Sex Neutered, Patient Breed Description, Breed Registration Number, Responsible Person, Responsible Person Role, Responsible Organization, Patient Comment, Bodypart Examined, Study Instance UID, Performing Physician Name, Study ID, Institution Name, Location Name, Bodypart, Projection, Bodypart Projection, Label, User-Defined Field1, User-Defined Field2, User-Defined Field3, User-Defined Field4, User-Defined Field5, User-Defined Field6, User-Defined Field7, User-Defined Field8, User-Defined Field9, User-Defined Field10

- All tag names and tag addresses provided in **Change DICOM Tag** cannot be changed.
- The changed tag information is indicated as a green color.
- Click on the **Restore** button to initialize the tap mapping information to the installed state of Viewer

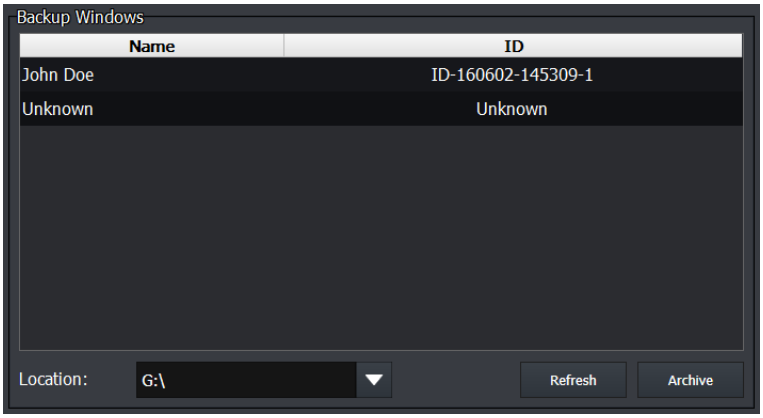
4.10 Backup Group

You can back up the study or manage the backed-up studies from the **Backup** group.

- We strongly place importance on the record management about studies and image information. Make sure to backup and keep the information safely to the storage device.

- In the **Setting** mode of **VXvue Vehicle**, the backup function is not provided.

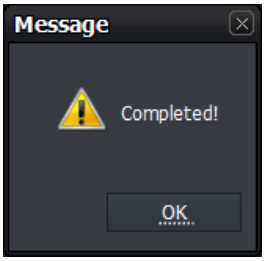
4.10.1 Backup Menu



How to Backup

1 Prepare the writable optical storage media or the external storage device.
   - It is recommended to use CD or DVD as the optical storage media.
   - It is recommended to use USB memory or USB hard disk as the external storage device.
2 Select the drive used for the study backup from **Location**.
   - Check if the storage media is connected normally to the drive.
3 Click on the **Refresh** button to search the study items to backup.
   - The available capacity for backup is displayed on the list from the old studies.
4 Click on the **Archive** button to start backup.
   - The process status window is displayed and the backup is started.

Complete backup

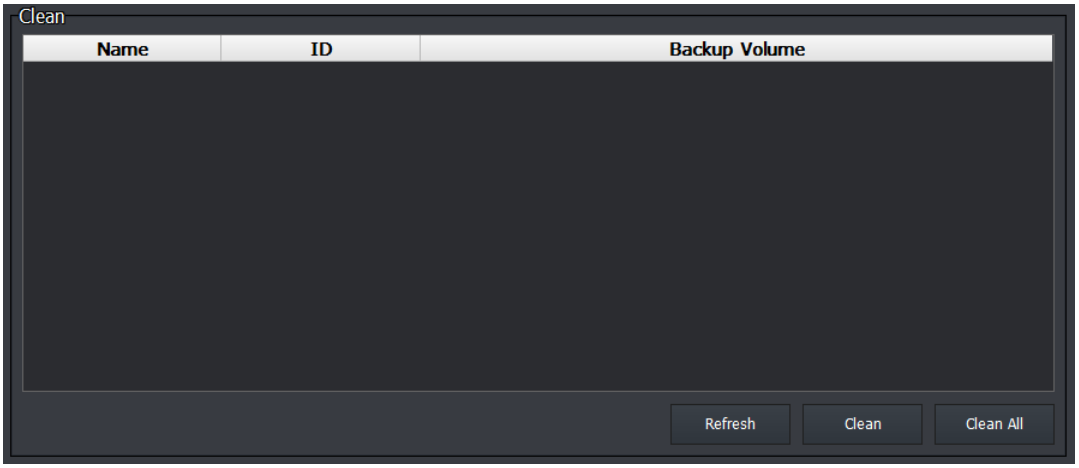


1 Check the window for indicating the backup completion.
2 Be sure to check the backup label.
3 Take the backed-up storage media out and write the label information.

- The backup storage media is distinguished by a label name and serial number. Therefore, the system which processes backup can only detect the relevant backup media.
- You cannot backup the backed-up study again. However, the restored study which has been cleaned completely can be backed up.
- It is not available to process additional backup to the optical storage media even though there is a free space left after backup. You need to prepare the new optical storage media.
- The backup function cannot be used because the external storage medium whose property is **Local Disk** is not recognized as an external storage medium by the system.
- In case of the external storage media, it is not available to change it to another storage media if there is free space left. You should consume up storage capacity of the media which is being backed up.

4.10.2 Clean Menu

You can completely remove the backed-up studies from the system.



How to Clean study

1 Click on the **Clean** tab. The backed-up study list is indicated automatically

2 Select desired items to remove completely.

- You can select multiple items by using **Ctrl** or **Shift** key.

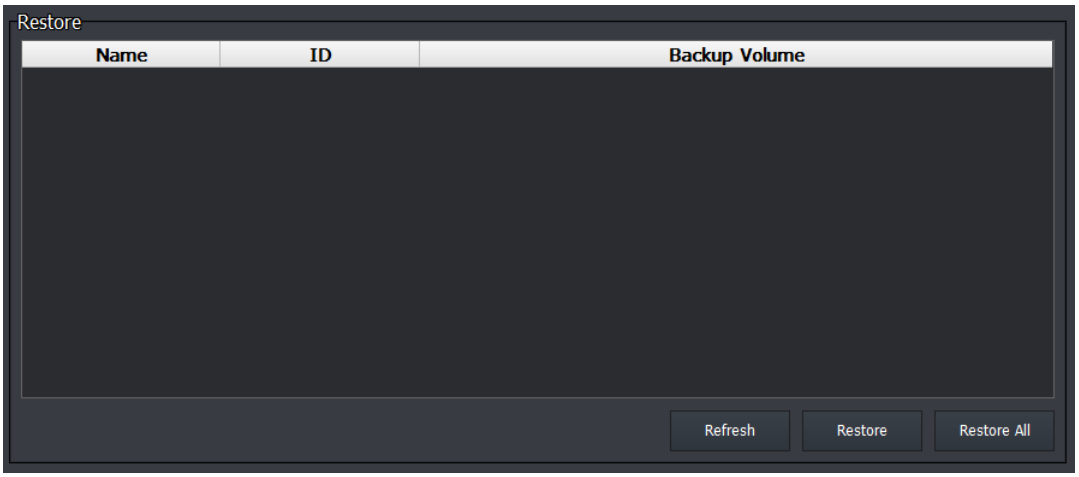
3 Click on the **Clean** button to remove the selected studies.

- Click on the **Clean All** button to remove all studies at once.

- The study which has not been backed up cannot be removed completely.

4.10.3 Restore Menu

You can restore the removed study.



How to restore

1 Connect the backed-up storage media to the system.
   ▫ Check the recognition of system drive and storage media before restoring the study.
2 Click on the **Restore** tab.
   ▫ The completely removed (cleaned) study list is displayed automatically.
3 Select the item you want to be restored.
   ▫ You can select multiple items by using the **Ctrl** or **Shift** key.
4 Click on the **Restore** button to restore the selected study items.
   ▫ Click on the **Restore All** button to restore all studies at once.

- A backed-up storage media should be prepared for restoring the study.
- The restored study is returned to the pre-backup condition as it is copied to the system again.
- You can back up the restored study again.

4.11 Account Default Group

When you add an account in the Account Default group, you can set the default value that is created along with the account. All menus under the group are set up differently for each account.

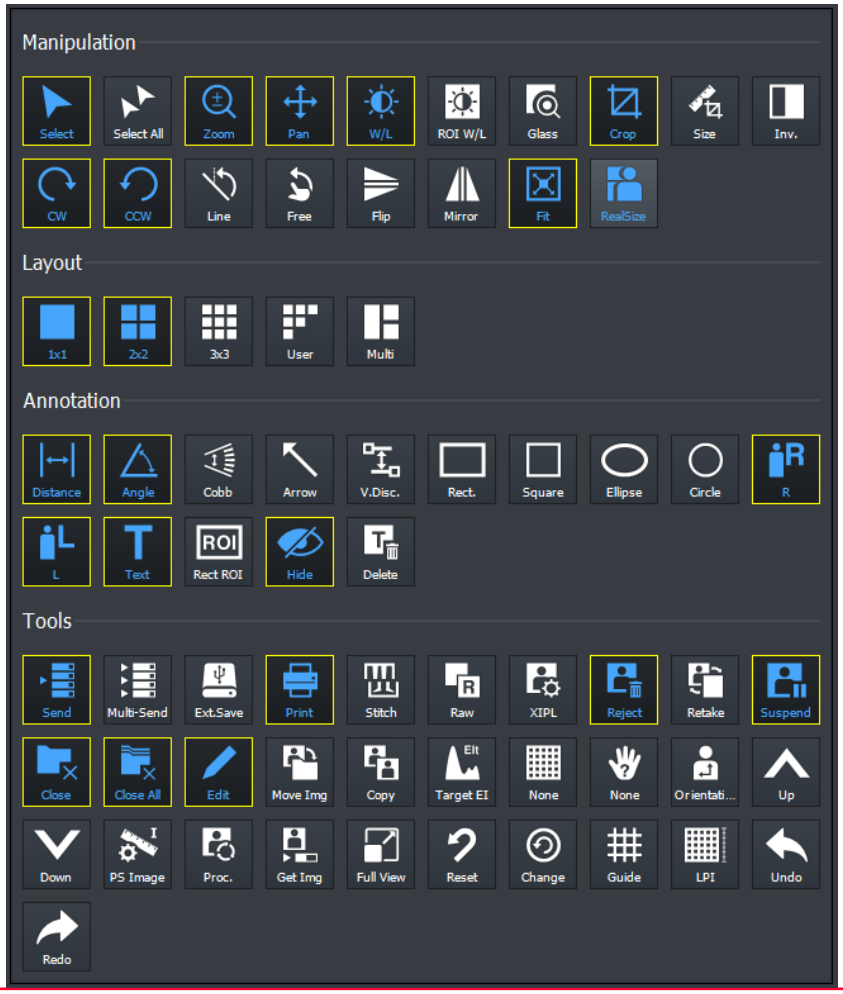
- If you import the account and settings stored in the file by using the **Import** function, the account default values and the settings for each account will be changed to the settings for the files you are importing.

- For information on how to create and manage accounts, refer to <4.2.2 Account Menu>.

4.11.1 Image Tool Menu

You can set the default value of the icon buttons to be registered as the default tool in the **Tool** menu of the close-up shooting mode and **Viewer** mode.

- Applies only to newly created accounts.
- When you select an icon, it changes to blue and it is registered as a basic tool.
- If no icon is selected, it will be provided as a pop-up button.
- If not set, the default value is the same as the following image.

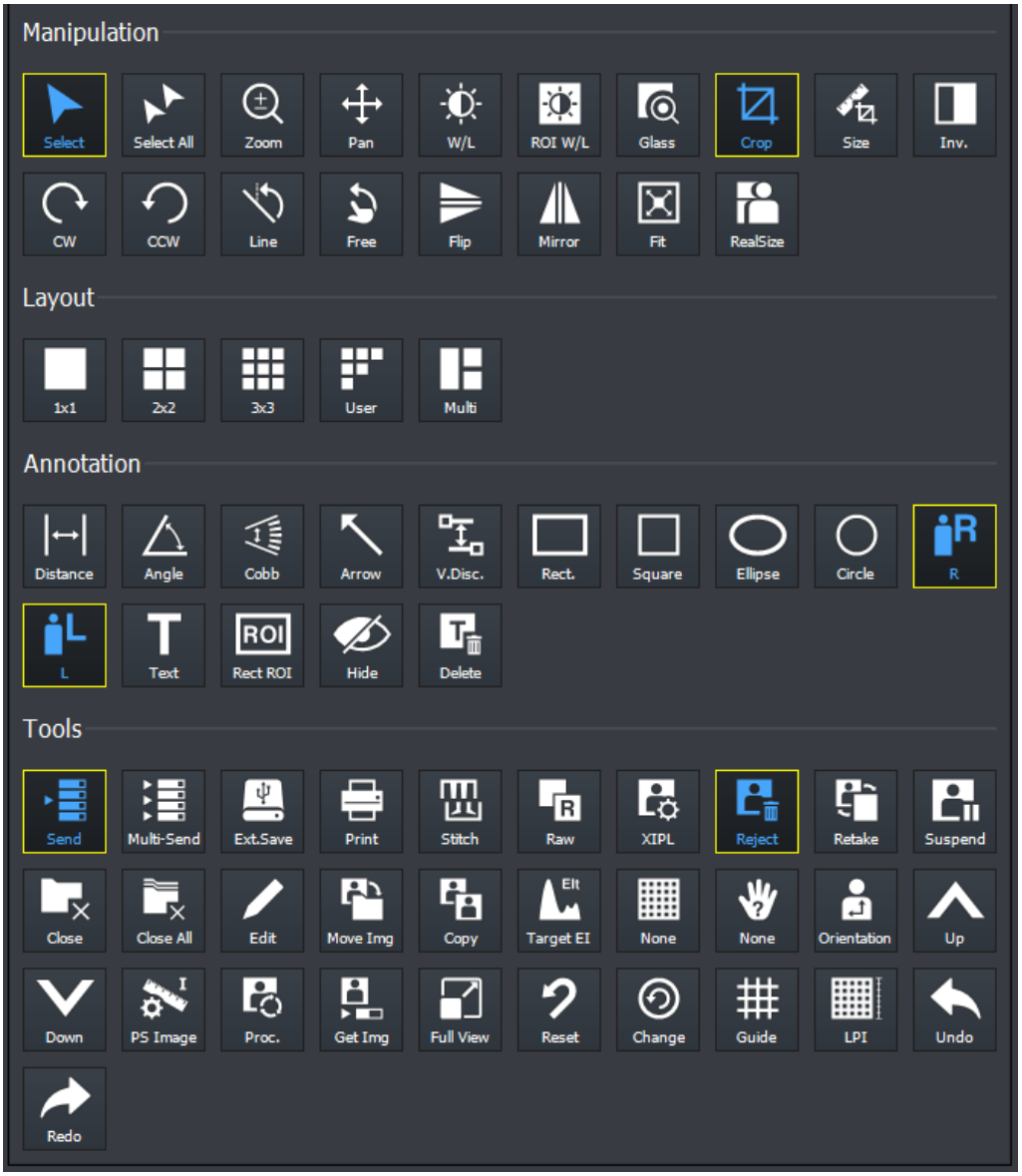


- The icons are resized based on the number of icons you have selected.

4.11.2 Quick Access Menu

You can set the default value of the icon button to be registered in the **Quick Access** area located at the top of **Exposure mode** (normal shooting mode).

- Applies only to newly created accounts.
- When you select the icon, it changes to blue and registered as a basic tool in the **Quick Access** area.
- If not set, the default value is the same as the following figure.



Set Registration Order

Button	Order	Default
Select	1	☑
Crop	2	☐
Right Label	3	☐
Left Label	4	☐
Reject Image	5	☐
Send	6	☐

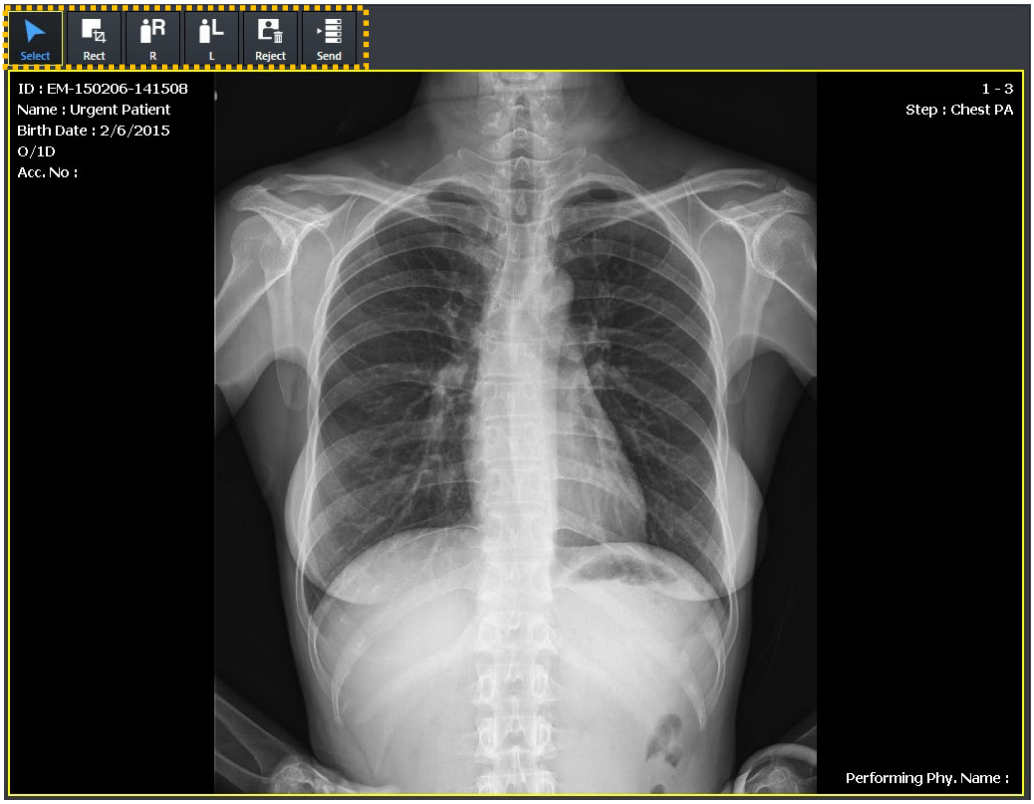
- Applies only to newly created accounts.
- You can specify the display order of the selected icons.
- The icon will be displayed from left to right in the registered order.
- You can adjust the order with ▲ ▼ at the bottom.
- If not set, the default value is the same as the image on the left.

Specify the operation function selected as Default

- Applies only to newly created accounts.
- After capturing in Exposure mode, you can set the frequently used operation function among **Select / Crop / W / L / Zoom / Pan** to Default.
- If not set, the default value is not selected.
- Check the items you want to use as Default.

Conform Settings

- Registration order: **Select | Crop | Right | Label | Left Label | Reject Image | Send** (Example)
- Default selection function: **Select**

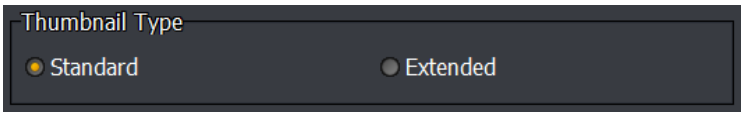


- Up to 15 Quick Access tools can be registered.

4.11.3 Thumbnail Menu

You can set the type of thumbnail and the tool to use in the thumbnail list. This applies only to newly created accounts. Otherwise, the default values are the same as those shown below.

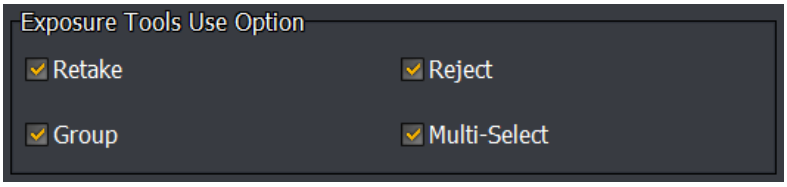
Thumbnail Type

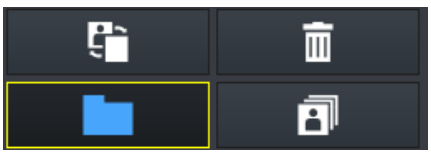


Thumbnail Type	Image (Example)
Standard	
Extended	

Exposure Tools Use Option

You can specify which tools to use in the Thumbnail list in **Exposure** mode.

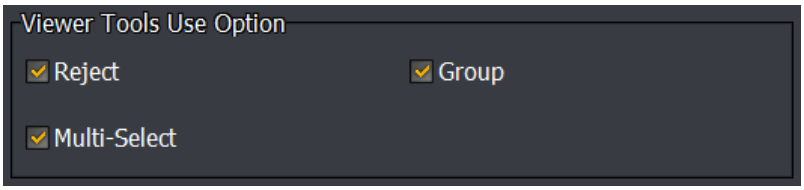


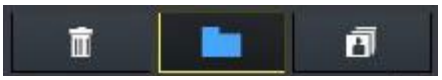


- Retake
- Reject
- Group
- Multi-Select

Viewer Tools Use Option

You can specify which tools to use in the **Thumbnail** list on **Viewer** mode.





- Reject
- Group
- Multi-Select

5. Advanced Settings

This chapter provides information about advanced settings of VXvue.

Setting a Language

VXvue Demo

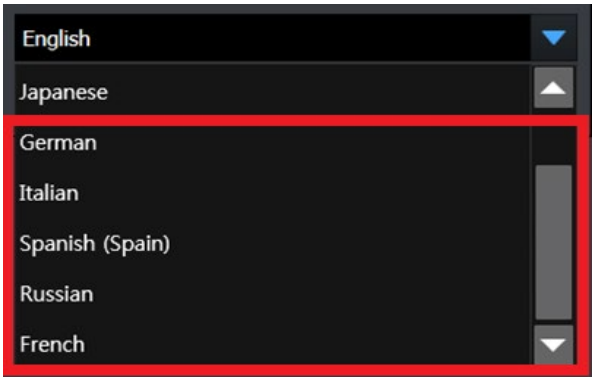
Using with KIOSK

Log Viewer

5.1 Setting a Language

5.1.1 Checking a Language to Use

- You can check the registered language used in the system from **Setting → System → System Information** tab.
- The basic language options are English, Chinese, Japanese, German, Italian, Spanish, Russian, French, and Portuguese.
- If you want to change a language, select the desired language to use and click on the **Update** button, and then restart the program.



5.1.2 Adding a Language to Use

If you want to use another language except the default options, you can add a new one by the following steps.

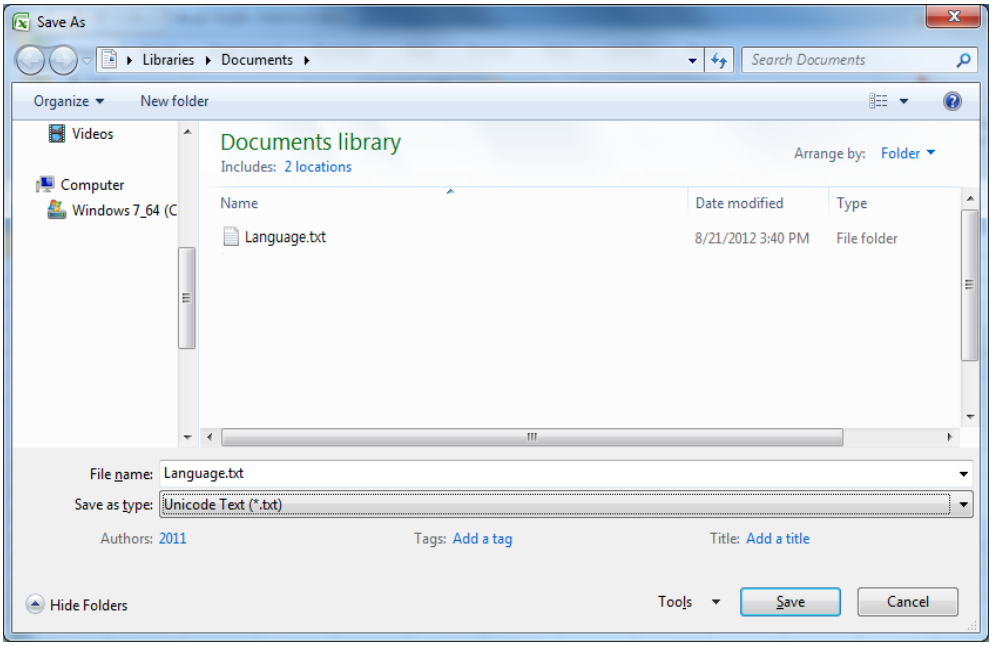
1 Run **Microsoft Office Excel** and open **Language.txt** file.
   ▫ You can find the language file from **D:\Database\Language** (default path).

2 Input the translated words and phrases of a new language at the next row of the previously setting language.

J12

	A	B	C	D	E
1	Index	English	Chinese	Japanese	New Language
2	// Last modified by	R&D (15/03/26)			
3	'%s' is already in u	%s' is already in us	已经使用了%s'	%s'が既に使用	Translate
4	&Left	&Left	&左	&左	Translate
5	&Right	&Right	&右	&右	Translate
6	<< New Exposure	<< New Exposure	<< 新曝光	<< 新しい撮影	Translate
7	<< Previewer	<< Previewer	<< 预览器	<< プレビュー	Translate
8	10INX12IN	10INX12IN	10X12英寸	10"×12"	Translate
9	11INX14IN	11INX14IN	11X14英寸	11"×14"	Translate
10	14INX14IN	14INX14IN	14X14英寸	14"×14"	Translate
11	14INX17IN	14INX17IN	14X17英寸	14"×17"	Translate
12	1x1	1x1	1x1	1x1	Translate
13	1x1 Layout	1x1 Layout	1x1 版面	1x1 レイアウト	Translate
14	2x2	2x2	2x2	2x2	Translate
15	2x2 Layout	2x2 Layout	2x2 版面	2x2 レイアウト	Translate
16	3x3	3x3	3x3	3x3	Translate
17	3x3 Layout	3x3 Layout	3x3 版面	3x3 レイアウト	Translate
18	4x4 Layout	4x4 Layout	4x4 版面	4x4 レイアウト	Translate
19	8.5INX11IN	8.5INX11IN	8.5X11英寸	8.5"×11"	Translate
20	8.5INX12IN	8.5INX12IN	8.5X12英寸	8.5"×12"	Translate

3 You should save the **Language.txt** file as Unicode text format (*.txt) after inputting words or phrases.



4 Restart **VXvue** and change the language to the added one from the **System Information**.

- You should maintain the form of '**%s'** (string) and '**%d'** (integer) among words or phase in **Language.txt**, because they are replaced to integer with other strings.
- Be sure to check '**%s'** and '**%d'** in all lines and rows.
- Be sure to maintain the correct marks are '**%s'**, '**%d'** in small letters.
- Be careful not to write the marks in capital letters ('%S','%D', etc.) or write them wrongly. ('%.s', '%z', etc.)

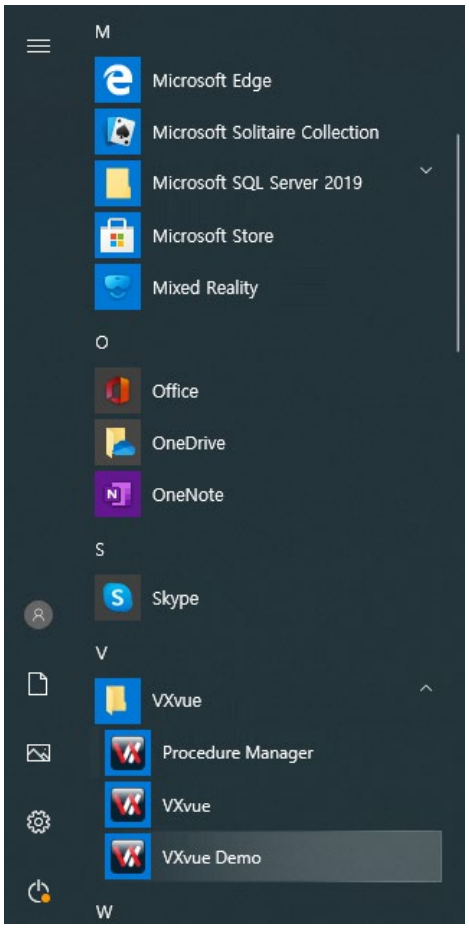
5.2 VXvue Demo

With **VXvue Demo**, you can use and check most functions of **VXvue** without connecting the program to the detector.

5.2.1 Features

- You can acquire virtual images without connecting **VXvue Demo** with a detector.
- You cannot acquire real images though **VXvue Demo** is connected with a detector.
- Both **VXvue** and **VXvue Demo** share the same database, images and parameter setting values.
- Some functions of **VXvue** cannot be operated from **VXvue Demo**.
- Some GUI (Graphic User Interface) is displayed on the demo version only.
- **VXvue Demo** uses the same license of **VXvue**.

5.2.2 Starting VXvue Demo

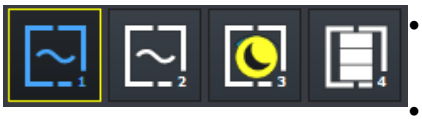


1 Press **Start** button of **Windows**.

2 V → **VXvue**.

3 Click on the **VXvueDemo** icon to execute the program.

5.2.3 Detector Icons of VXvue Demo

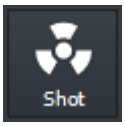


- Find the detector icon in the **Exposure** mode (general exposure mode).
- Four (4) icons are indicated regardless of connecting the real detector.

- You cannot take images though clicking on the icons.
- Use the official version of **VXvue** to acquire real images.

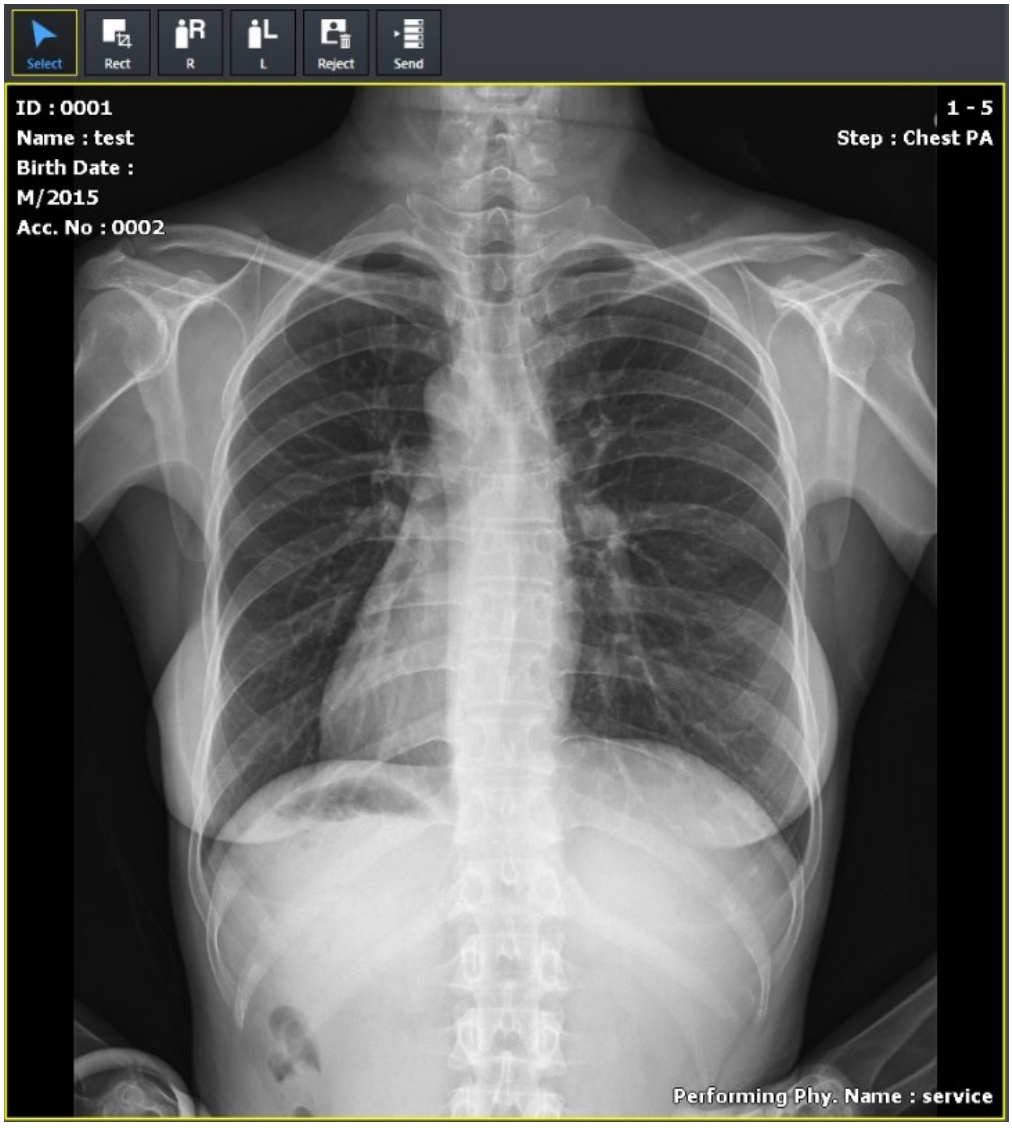
- You cannot make an exposure from the demo version. Execute **VXvue** for making the actual exposure.

5.2.4 Making Virtual Exposure in VXvue Demo



You can make a virtual exposure from **VXvue Demo**.

1 Register the patient information and add a step for preparing the virtual exposure.
2 Click on the **Maximum** button in the general exposure mode to move to the macro exposure mode.
3 Click on the **Demo Shot** button on the right top of the macro exposure mode.
   ▫ The virtual exposure is made, and the demo image is acquired.



4 After checking the virtual image, you can apply various functions such as image processing and storage.
   ▫ Almost all functions except the device integration are operated same as the formal version.

- The selected step information and virtual images have no relation with each other.

5.2.5 Changing Demo Image

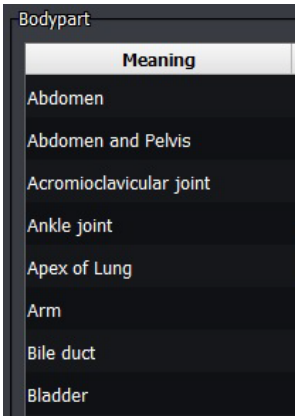
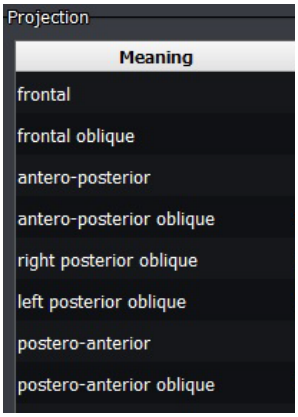
Add or change a basic demo image or demo images of each bodypart and projection in case of necessity.

Change the basic image

- Change the name of image to use as a basic demo image to **Default.img**.
- Move the **Default.img file** to **₩D:\Database\DemoImage**.

Change the demo image of each bodypart and projection

- Change the name of images to use for each bodypart and projection to **Bodypart.Projection. (Number)**.
   ▫ Ex) abdomen.erect.1 / chest.lateral.2 / hip joint.anterior-posterior.14
- Move the images changed their name to **D:\Database\DemoImage**.

Category	Description	Example
Bodypart	When you change the bodypart name, it should be matched with that of **Meaning** located in the **Setting → Procedure Manager → Bodypart/Projection** tab → **Bodypart**.	
Projection	When you change the projection name, it should be matched with that of **Meaning** located in the **Setting → Procedure Manager → Bodypart/Projection** tab → **Projection**	
Number	• Enter the natural number. The higher the number, the more demo images of the same bodypart and projection can be used in order.	

- When you take demo images of the same step, each number of image is indicated from the smaller one depending on the shooting sequence.

- The image format '.Img' from **VXvue** can be used for a demo image only.

5.3 Using with KIOSK

You can use VXvue with KIOSK. Availability of Windows functionality and environment varies in account privileges of VXvue.

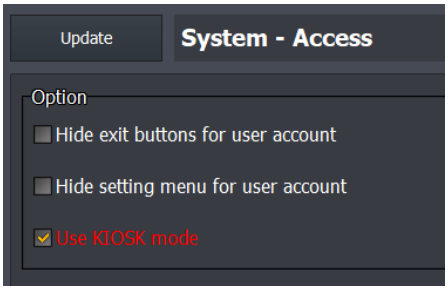
5.3.1 Functions of VXvue KIOSK

Icon	Description	Service	Admin	User
Viewer	Executes VXvue.	Y	Y	Y
Explorer	Executes Explorer.	Y	Y	N
Detector	Executes VXSetup for detector setting.	Y	N	N
Shutdown	Shuts down the system.	Y	Y	Y

- The following shortcut keys cannot be used in VXvue KIOSK.
  - Windows key
  - Ctrl + ESC
  - Ctrl + shift + ESC
  - Alt + Tab
  - Alt + ESC
  - Ctrl + alt + del
  - App key
  - Browser Search key
  - Fn key
  - Windows + L

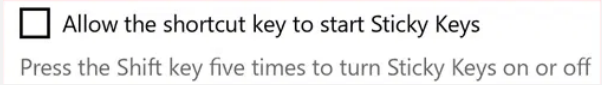
- **Admin** and **Service** authorized user can use the shortcut keys only when using the **Launcher** program.
- However, Ctrl + ESC and Windows key are unavailable on the KIOSK mode in any circumstance.

5.3.2 Setting to KIOSK



1 Go to **Setting → System → Access** after running **VXvue**.
2 Mark the **Use KIOSK mode** as an option before clicking the **Update** button.
3 Restart the system to operate as **KIOSK**.

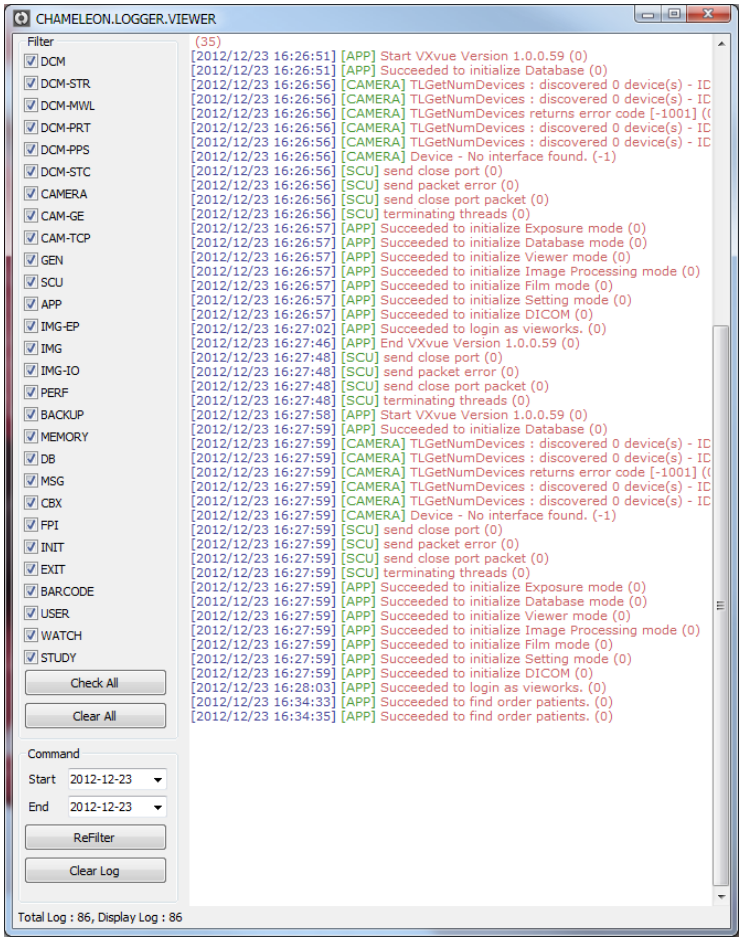
- KIOSK mode is available only on Windows 10 or higher version.
- The system settings for the KIOSK mode are needed as below:
  - Turn off Power Saving Mode : Refer to <3.2.4 How to Turn off Power Saving Mode >.
  - Turn off the Sticky Keys
    - Press **Windows + I** keys to execute Windows Settings panel.
    - Select the **Ease of access** menu.
    - Uncheck the box that says Allow the shortcut key to start Sticky Keys.

  - How to dismiss the pop-up window to connect the device.
    - Press **Windows + r** keys to open the execution window and input **gpedit.msc**.
    - Go to Computer System > Administrative Template > System > Drive Installation.
    - Double click the **Turn off the search message of Windows Updater driver** and select **Use** before saving the changes by clicking OK button.
- The KIOSK mode operates normally only with the USB-typed keyboard.
- Virtual keyboard is unavailable on the KIOSK mode

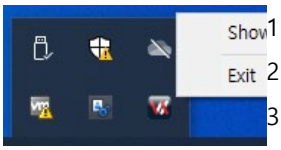
5.4 Log Viewer

VXvue records the actions and results as a log and stores it while using the system. You can check the records from the log viewer.



Execute log viewer

- The log viewer is operated automatically when you execute **VXvue**.
- The log viewer is registered in the Windows tray, run in the background and collects the operation record of **VXvue**.



1 Click the right mouse button on the tray.
2 Click on the **Show** menu to see the log viewer.
3 Click on the **Exit** menu to close the log viewer.

- Even though **VXvue** is closed, the log viewer is not closed automatically.

6. Regulatory Information

This section gives explanation about the regulatory information and symbols related to the products.

Medical Equipment Safety Standards

Labels and Symbols

6.1 Medical Equipment Safety Standards

6.1.1 Medical Equipment Classification

Item	Description
Classification no. (Item Code)	Medical image transmission device software (A26430.03)
Grade	2
Classification under MDR	Class IIa (Rule 11)
Classification under US FDA	Class II (LLZ)

6.1.2 Product Safety Standard

South Korea

Item	
KS P IEC 62304:2020	Medical Device Software – Lifecycle Process Medical Devices
KS P ISO 14971:2018	Application of Risk Management to Medical Devices Medical Devices
KS P IEC 62366-1:2018	Medical Device – Part 1: Application of Usability Engineering to Medical Devices

U.S.A / Canada

Item	
ANSI AAMI IEC 62304:2006/A1:2016	Medical device software-software life cycle processes
ANSI AAMI ISO 14971:2019	Medical Device- Application of risk management to medical devices
ANSI AAMI IEC 62366-1:2015+AMD1:2020	Medical Devices – Part1 Applciation of usability engineering to medical devices

European Union

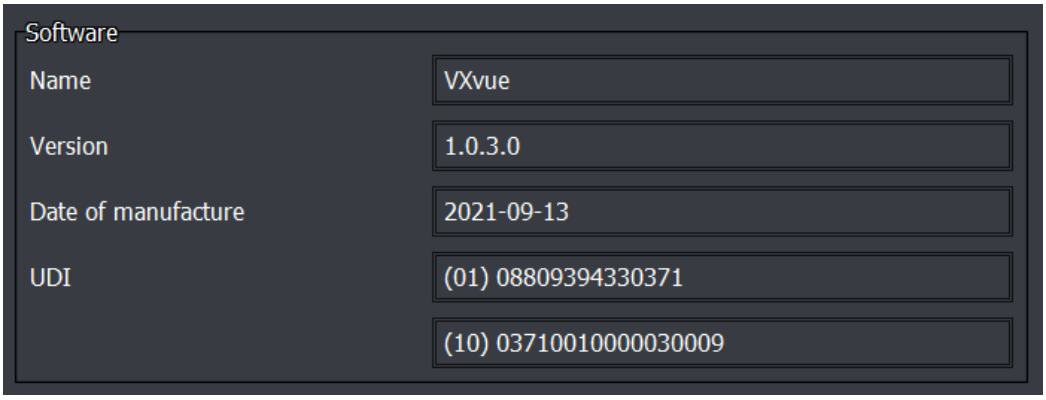
Item	
MDR (Medical Device Regulation)	Regulation (EU) 2017/745
EN ISO 13485 :2016/AC:2018	Medical devices – Quality Management systems – Requirements for regulatory purposes
EN 62304 :2006/AC:2008	Medical device software-Software life cycle processes
ISO 14971: 2019	Medical device – Application of risk management to medical devices.
EN 62366-1:2015/A1:2020	Application of usability engineering to medical devices

6.2 Labels and Symbols

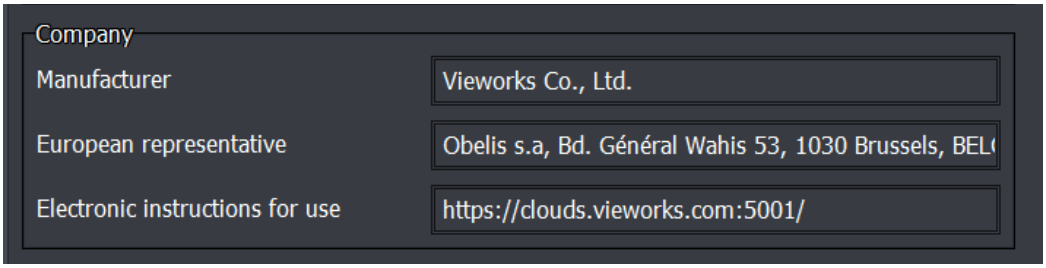
- VXvue has the following labels applied: Refer to the image below for details applied to each label.
- For label information, see <4.2.2 Product Information Menu>.

6.2.1 Labels

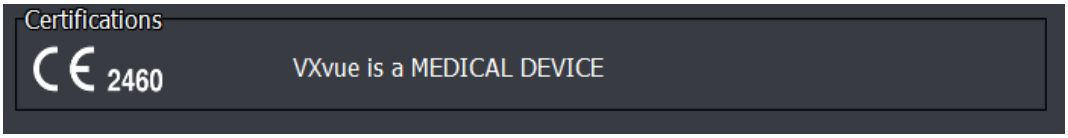
Software (Sample image)



Company (Sample image)



Certifications (Sample image)



6.2.2 Product Symbols

Image	Description
CE 2460	This mark shows compliance of the essential requirement and other relevant provisions.
	Read and understand all instructions and warning labels in the product documentation before using the equipment. Keep manual for future reference.
	General mandatory action sign
	Indicates the medical device manufacturer.
	Indicates the date when the medical device was manufactured.
	Consult operating instructions on website provided by the manufacturer.
MD	Indicates that this is a medical device
EC REP	European Representative Information

7. Revision History

7.1 Revision History

Ver.	Date	Revision History
V86b21	2017-08-24	Newly created by separating contents from the existing operation manual
V86b22	2017-09-06	Added: FXRD-1717V version to chapter 1.4 Version Information Added: 4.11 Account Default Group
V86b23	2017-11-06	Added: Information about PureImpact™ image processing
V86b24	2018-03-09	Changed: PureImpact ™ setting method Changed: The display method of generator value of the step
V86b25	2018-03-27	Added: 4.2.2 Account menu Added: 4.7.5 Step tab
V86b26	2018-05-28	Changed: 4.2.1 System Information Menu Changed: 4.9.6 Storage Menu
V86b27	2018-07-16	Added: 1.4 Version Information Changed: 3.2.3 Installing VXvue
V87	2018-09-03	Changed: 3.2.3 Installing VXvue Changed: 4.1.3 Exporting / Importing Settings Changed: 4.9.8 Print Menu
V1.0.1.0	2019-02-27	Changed: 2.2.1 Workstation Changed: 3.2.3 Installing VXvue Changed: 4.7.5 Step Tab Changed: 4.8.3 Shock Log Menu
V1.0.1.3	2019-08-23	Added: 3.2.4 How to Turn off Power Saving Mode Changed: 4.8.1 General Menu Changed: 4.8.6 Equipment Menu Added: 4.8.7 Battery Changed: 5.3.3 Detector Icons of VXvue Demo
V1.0.1.4	2019-11-15	Added: 1.4 Version Information Changed: 4.8.6 Equipment Menu
V1.0.2.0	2020-04-03	Added: 1.4 Version Information Changed: 2.2.1 Workstation Changed: 3.2.3 Installing VXvue Changed: 4.2.1 System Information Menu Changed: 4.6.1 General Menu Changed: 4.7.1 Tool Area Changed: 4.7.5 Step Tab Changed: 4.8.1 General Menu Changed: 4.8.2 Detector Menu Added: 4.8.4 XIPL Menu Changed: 5.2.1 Checking a Language to Use
V1.0.2.1	2020-05-07	Added: 4.6.3 External Save Menu Added: 4.9.1 General Menu
V1.0.2.2	2020-07-27	Added: 1.4 Version Information Changed: 3.5.2 Getting a License

		Changed: 4.2.1 System Info. Menu
V1.0.2.3	2020-09-07	Changed: 4.3.1 Registration - General Menu Changed: 4.3.2 Unscheduled Menu Changed: 4.4.2 Information Overlay Menu Added: 4.4.3 Overlay Item Menu Added: 4.4.4 Annotation Menu Changed: 4.5.1 Tool - General Menu Changed: 4.6.3 External Save Menu Changed: 4.7.2 Procedure Manager - Category Tab Changed: 4.7.5 Procedure Manager - Step Tab
V1.0.2.4	2020-10-26	Added: 1.4 Version Information Changed: 4.8.4 XIPL Menu – Grid Line Suppression Tab
V1.0.2.5	2020-11-27	Added: Product plant address Changed: 4.6.1 General Menu Changed: 4.8.4 XIPL Menu – Grid Line Suppression Tab Changed: 4.10.1 Backup Menu
V1.0.2.6	2021-04-02	Changed the recommended compatibility version of Software and Firmware Changed) 1.2 Document Guide Changed) 3.2.3 Installing VXvue Changed) 3.3.2 Checking the Folder and File Changed) 4.1.3 Exporting / Importing Settings Changed) 4.2.2 Account Menu Added) 4.2.5 Access Menu Changed) 4.3.1 General Menu Changed) 4.4.4 Annotation Menu Changed) 4.5.3 Image Tool Menu Changed) 4.5.4 Quick Access Menu Changed) 4.6.3 External Save Menu Changed) 4.7.1 Tool Area Changed) 4.7.2 Category Tab Changed) 4.7.5 Step Tab Changed) 4.8.4 XIPL Menu Changed) 4.9.1 General Menu Changed) 4.9.6 Storage Menu Changed) 4.9.9 Print Overlay Menu Changed) 4.11.1 Image Tool Menu Changed) 4.11.2 Quick Access Menu Added) 5.4 Using with KIOSK
V1.0.3.0	2021-09-29	Added) 1.4 Purpose of Use Added) 1.5 Clinical Benefits of Product Use Added) 1.6 Features Added) 1.7 Product Use Added) 1.8 Safety Instruction Changed) 1.9 Supporting Detectors Changed) 2.2.1 Workstation Changed) 3.1 Installation

	Deleted) 3.2 Installing .NET Framework 3.5
	Changed) 3.2 Checking Installation Contents
	Changed) 4.2.1 System Info. Menu
	Added) 4.2.2 Product Info. Menu
	Changed) 4.3.1 General Menu
	Changed) 4.6.3 External Save Menu
	Changed) 4.7.5 Step Tab
	Changed) 4.8.1 General Menu
	Changed) 4.8.2 Detector Menu
	Changed) 4.8.4 XIPL Menu
	Deleted) 4.8.5 Generator Menu
	Deleted) 4.8.6 Collimation Menu
	Deleted) 4.8.7 Equipment Menu
	Deleted) 4.8.8 Battery Menu
	Changed) 4.9.3 Setting Common Items of DICOM Server
	Changed) 4.9.6 Storage Menu
	Deleted) 5.1 Setting Date and Time
	Added) Regulatory Information
	Changed) 6.2.1 Labels

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