# QuantorDent Vet User Manual

# Acquisition and Diagnosis Software

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3DISC



3DISC Americas 22560 Glenn Dr, Suite 116 Sterling, VA 20164 USA Tel : 1-703-430-6080 E-mail : info@3DISCimaging.com

# EC REP

3DISC Europe Gydevang, 39-41, 3450 Alleroed, Denmark Tel : 45-88-276-650 E-mail : info@3DISCimaging.com

#### Warnings and used symbols

To ensure the safety of patients, staff and other persons, any changes to software and hardware delivered by **3D Imaging & Simulations Corp.** may only be made with prior written permission from **3D Imaging & Simulations Corp.** 

Please read the respective manuals of the connected devices, such as of the X-ray generator, sensor, or reader, before starting to use the system.

The following symbols will be used throughout this manual:



#### DANGER

General prohibition indication.

The functionality of the system can be destroyed in the case of incorrect use.

If unauthorized changes have been made to delivered software and hardware components, the warranty by **3D Imaging & Simulations Corp.** becomes void. **3D Imaging & Simulations Corp.** will not accept any responsibility or liability for the proper functioning on the product in such a case.



#### DANGER

General mandatory action manual.

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#### WARNING

The functionality of the system can be limited in the case of incorrect use. Hints that require special attention.



#### ΝΟΤΕ

Notes represent information that is important to know but which do not affect the functionality of the system.

#### Medical Device Security

Users must take steps to secure their networks and protect their Medical Information Systems which includes a risk assessment strategy, network defense in depth strategy, business continuity planning, etc.

✓ User Authentication

Only authorized users should log on to computers on which medical information systems are installed.

✓ Password Security

In today's world, passwords can be compromised in literally seconds by using a wide variety of tools and techniques. To lower the possibility of a compromised password, it is vital to adhere to a set of protocols.

- Choose a password between 7 ~ 10 characters using both alpha and numeric characters.
- Do not share the password.
- Do not base the password on a pet's name, a relative's name or any dictionary word.
- Do not write down the password.
- Do not leave the account logged on.
- ✓ User Access Control

Configure the workstation to prompt for logon after coming out of stand-by mode.

✓ Internet Usage

Accessing to the Internet exposes the computer to a plethora of vulnerabilities such as:

- Viruses
- Spyware
- Trojans
- Hostile Codes

It is not recommended to install any unauthorized software on the computer. Peer-topeer software can expose your entire hard drive to any individual running the same type of software.

✓ Antivirus Products

Use of antivirus software can increase CPU and memory usage, which can cause a slight degradation in the performance of the system. However, functionality should not be affected.

✓ Physical Security

It is recommended that the user employs some method of physical security when dealing with the system to ensure that only authorized personnel have access to the product.

There are several vulnerabilities a malicious user could exploit locally. Some examples are:

- Theft of equipment
- Local password cracking
- Installation of hardware key loggers

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# 1. Introduction

**QuantorDentVet** is an acquisition and diagnosis software for intraoral X-ray imaging. **QuantorDentVet** is used to scan and review intraoral X-ray images. When scanning an IP radiated with X-ray, **FireCR Dental** shows the preview image on the LCD screen and the image is saved in the built-in memory storage. Shortly after the end of scanning, the IP is deleted and it can be used for the next imaging.

Images stored in the scanner are transferred to **QuantorDentVet** in the image workstation via network or USB. The images are post-processed through **QuantorDentVet** and saved in the database that allows searching in the future.

*QuantorDentVet* can transport the acquired images to the hospital image storage system using DICOM Send.

The scanner can be connected to the in-hospital network or directly to the image workstation.

The system has following components:

- FireCR Dental
- Fire ID
- QuantorDent

#### Safety Instruction

To ensure the safety of patients, staff and other people, any changes to software and hardware delivered by **3D Imaging & Simulations Corp** may only be made with prior written permission from **3D Imaging & Simulations Corp**.

#### Liability

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## 1.1. Major Features

#### Image Acquisition and Management

**QuantorDent** supports various image acquisition methods that meet the needs of dental hospital. It can be used in a simple structure where one workstation is connected to a scanner for basic use as well as in a multi-structure where multiple image workstations are connected to multiple scanners. When multiple systems are used, it supports **Fire ID**, which enables automatic image classification to designated patient and test information regardless of the scanning location.

#### Image Processing

To create an optimal image, you can apply different functions, including cropping, enhancing edges, and increasing contrast. You can also add or delete images and modify the image sequence at your discretion.

#### **Built-in Viewer**

**QuantorDentVet** not just simple image acquisition software, but can also be used as a diagnostic viewer. Like other viewers, it can manage patient and test information and contains all basic viewer functions.

# 2. Installation

## 2.1. Installation Environment

## 2.1.1. Recommended Computer Environment

Operating system	Microsoft Window 7 and 8
CPU	Intel CORE i5
Memory	4G or higher
Hard disk	500GB or higher
Network	1Gbps Ethernet
Video output	32-bit color display
Screen resolution	1920 x 1080, 1440 x 900

# 2.1.2. Minimum Computer Requirements

Operating system	Microsoft Window 7
CPU	Intel Processor
Memory	2GB
Hard disk	80GB
Network	1Gbps Ethernet
Video output	32 bit-color display
Screen resolution	1366 x 768, 1280 x 800, 1600 x 900, 1280 x 1024

## 2.2. Installation

## 2.2.1. Software Installation

- Log on to a PC with an administrator account.
- Connect the USB dongle to a USB port.
- Insert Installation CD. Install program will automatically launch.
- If the install program is not launched automatically, find and execute the "QuantorDent 2.x.x. Setup.exe" file on the CD.
- Click the "Next" button as shown in Figure 2.1.



#### Figure 2.1 Welcome Dialog Box

 Choose all components and click the "Next" button as shown in 오류! 참조 원본을 찾을 수 없습니다.

🕞 QuantorDentVet 2.1.11 Setup					
Choose Components Choose which features of QuantorDentVet 2.1.11 you want to install.					
Check the components you install. Click Next to continu	want to install and uncheck the comp ue.	oonents you don't want to			
Select the type of install:	QuantorDentVet 🔹				
Or, select the optional components you wish to install:	QuantorDentVet Files (Re HASP HL Driver	Description Position your mouse over a component to see its description,			
Space required: 101.6MB	4 III +				
Nullsoft Install System v2.46					
	< <u>B</u> ack	Next > Cancel			

Figure 2.2 Components Dialog Box

Choose your language and click • the "Next" button as shown in Figure 2.3.

🕞 Sele	ect a language to Us	e		_ <b>_ x</b>
		Choose Comp Choose which install.	onents features of QuantorDentVet	2.1.11 you want to
	–What language do yo Select a language f		English	•
Nullsof	t Install System v2.46 -		< Back Next :	Cancel

#### Figure 2.3 Components Dialog Box

Choose the destination folder • and click the "Install" button as shown in Firgure 2.4.

2.5.

🕞 QuantorDentVet 2.1.11 Setup					
3DISC	Choose Install Location Choose the folder in which to install QuantorDentVet 2.1.11.				
Setup will install QuantorDentVet 2.1.11 in the following folder. To install in a different folder, click Browse and select another folder. Click Install to start the installation.					
Destination Folder C:\U00f7QuantorDentVet 2	Browse				
Space required: 101.6MB Space available: 92.0GB Nullsoft Install System v2.46	< Back Install Cancel				

Figure 2.4 Installation Location Dialog Box

<Back Next > Cancel

Installation status will be 🕞 QuantorDentVet 2.1.11 Setup displayed as shown in Figure Installing Please wait while QuantorDentVet 2.1.11 is being installed. Execute: "setupSlaveDent.exe" C:₩QuantorDentVet 2.1.11 Show details

#### Figure 2.5 Installation Status Dialog Box

 Installation status of the dongle driver will be displayed as shown in Figure 2.6.

Sentinel Run-time Environment Install
Please wait

#### Figure 2.6 Installation of dongle Driver

 Installation status of the *FireCR* USB driver will be displayed as shown in Figure 2.7.

FireCRDriver 1.3 Setup Completed Show getails	ompleted	
Cancel Nullsoft Inst	all System v2,46 < Back	ish Cancel

Figure 2.7 Installation of FireCR USB Driver

- If installation is successful, Figure 2.8 will show up.
- Click "Finish to finish the installation.



Figure 2.8 Installation Finish Dialog Box

 If the Windows Security Dialog Box pops up after installation, click [Allow access].

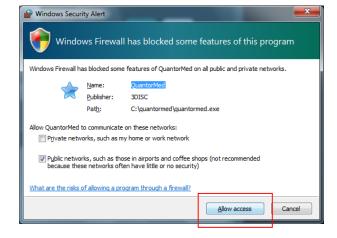


Figure 2.9 Windows Security Dialog Box

# 2.3. Start and Exit

### 2.3.1. Start system

- 1. Turn on the Fire CR device.
- 2. Turn on the PC and monitor.

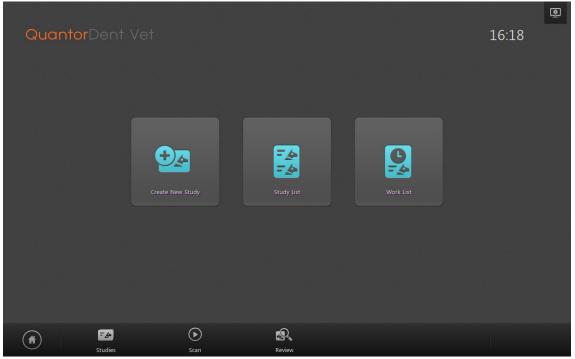


#### CAUTION

Do not run any application software other than *QuantorDentVet* during operation of the scanner. This may slow the scanner response.

## 2.3.2. Start program

After successfully booting Windows, double-click the *QuantorDentVet* icon on the desktop screen as shown in Figure 2.10 to start the *QuantorDentVet* program.



#### Figure 2.6 Home Screen



## 2.3.3. Exit program

Select the system button that looks like Figure 2.12 on the Home screen.



Figure 2.8 System button

You can select "Exit" in the system menu to close the program.

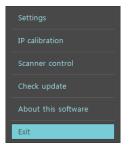
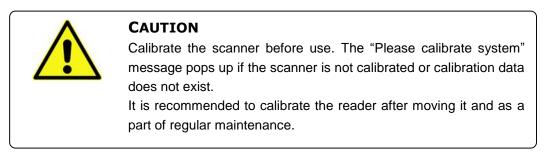


Figure 2.9 System menu

# 2.4. FireCR Dental Calibration

In the system menu, select IP Calibration to open a window as shown in Figure 2.14. Process calibration as instructed in the window.



Device Calibration						
	The X-ray beam shou	The X-ray beam should cover the entire IP area.				
needs SIZE4C IP		Upload	Download			
Erase			Calibration			
ScanBlank	ScanLowDose	ScanMidDose	ScanHighDose			
224	3529	9055	34136			
(50~500) 0.00kVp 0.00mAs SID 280 mm	(1500~5000) 70.00kVp 0.49mAs SID 280 mm	(8000~16000) 70.00kVp 1.40mAs SID 280 mm	(30000~45000) 70.00kVp 3.50mAs SID 280 mm			
			Cancel			

Figure 2.10 Calibration



### CAUTION

SIZE 4c IP must be used for calibration.

## 2.4.1. Step 1: Erase

At first, you can see the Erase button flickering. Place the IP on the tray and insert it. When the erase is completed, the Scan Blank part starts flickering.

## 2.4.2. Step 2: Scan Blank

Place an IP that has not been radiated with X-Rays on the tray and insert it. At the scan completion, the Scan Low Dose part starts flickering.

## 2.4.3. Step 3: Scan Low Dose

Adjust the X-Ray imaging settings to 70kVp, 0.49mAs and scan the IP from the recommended X-Ray imaging distance.

Place the IP on the tray and insert it. Once the scan is completed, the measurement is displayed below the button. It should be between 1500 and 5000. If so, click Accept to process the next step. If not, click Reject to repeat Step 3.

## 2.4.4. Step 4: Scan Mid Dose

Adjust the X-Ray imaging settings to 70kVp, 1.4mAs and scan the IP from the recommended X-Ray imaging distance. Place the IP on the tray and insert it. Once the scan is completed, the measurement is displayed below the button. It should be between 8000 and 16000. If so, click Accept to process the next step. If not, click Reject to repeat Step 3.

## 2.4.5. Step 2: Scan High Dose

Adjust the X-Ray imaging settings to 70kVp, 3.5mAs and scan the IP from the recommended X-Ray imaging distance. Place the IP on the tray and insert it. Once the scan is completed, the measurement is displayed below the button. It should be between 30000 and 45000. If so, click Accept to process the next step. If not, click Reject to repeat Step 3.

## 2.4.6. Calibration

This creates a Calibration data file.

## 2.4.7. Upload

If you click the Upload button, the calibration data is transferred to the scanner for storage.

## 2.4.8. Download

If you click the Download button, stored calibration data in the scanner is downloaded to the PC.

# 3. Software Overview

## 3.1. Supported Resolutions

Landscape resolutions with 16:9, 4:3 and 5:4 ratios are supported. Portrait ratios are not supported. The horizontal resolution of the monitor must be at least 1280 pixels, and the vertical resolution of the monitor must be at least 768 pixels. Recommended resolutions are listed in 오 류! 참조 원본을 찾을 수 없습니다.

Screen ratio	Screen resolution		
	1366 x 768		
	1280 x 800		
16:9	1400 x 900		
	1600 x 900		
	1920 x 1080		
4:3, 5:4	1280 x 1024		

Table 3.1. Supported Resolutions

If you have multiple monitors you can select **QuantorDentVet** display monitor at Setting's [System – System Option – Display Monitor]. If you select Review Monitor differently from Display Monitor at Setting's [System – System Option – Review Monitor], Review Screen will be displayed with full screen mode at assigned monitor. Full screen review monitor supports all screen resolution types, and both landscape and portrait monitor orientation.

## 3.2. Home

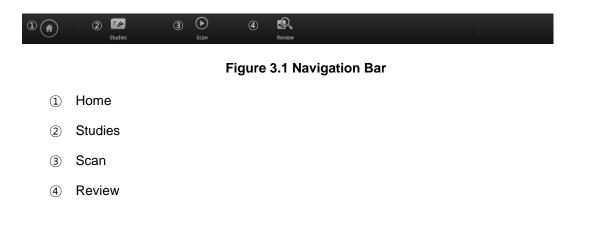
The Home screen is the first screen that appears when the program is run. From the Home screen, you can create a new study or view existing studies.



Figure 3.1 Home Screen

## 3.3. Navigation Bar

The Navigation Bar is located at the bottom of the screen. The Navigation Bar is always displayed while the program is running, allowing the user to easily switch screens during a task.



## 3.4. Study list

The Studies screen shows a collection of windows that are related to the studies. You can enter the Studies screen by clicking the Studies button in the Navigation Bar. The Sub-Navigation Bar is located on the left of the screen. In the Sub-Navigation Bar, you can select a Study List, Work List or Transport windows that are related to the study.

ß	126	Today		All 🔍 👻	-	-	Q,	7	ø	ŵ	+	۲
Study List	Date	Time	Name 🌾	ID S	Owner	Species 🐧	Breed 1	trage 1	W/S Name	Send Statury		
22	2014/10/20	16:32:46	jetok	10203304	andre	Canine		1				
	2014/10/20	10:12:33	ontt	10054903	53/3	Canine		0				-
~0	2014/10/20	1632.03	essei	10064901	jane	Caning		1				۲
3 Transport	2014/10/20	10.2023	fimto	10025502	kim	Canina						2
	2014/10/20	16:26:04	gsetb	10025501	kahal	Canine		2				ø
												۲
	-											
				_	_	_	_	_	_	_		
	6	46										
۲	Z		Ó			<u>.</u>						
0	Stud	95	Sc	an.		Review						

Figure 3.2 Studies Screen

- Study List: You can perform various tasks by searching existing studies and selecting a study.
- ② Work List: You can query the work list from the PACS work list server, select the desired study and immediately begin image acquisition.
- ③ Transport: You can confirm the transmission results of the acquired images.

# 3.5. Create New Study

The New Study screen is the first page to start a scan. After entering the necessary patient information and study information, and adding a new study, you can begin a scan.



Figure 3.2 Create New Study

# 3.6. Patient Information

The Patient Information Bar is displayed at the top of all the screens, with the exception of the Home screen and the New Study screen. The Patient Information Bar displays patient information and other related information.

1	Emergency ② ID000003	3 <sub>2013/08/23</sub> 4 <sub>0</sub>	(5) <sub>M</sub>	201 <b>9</b> 9/27	Ø	QuantorDent (8)	٤
		Figure 3.3 Pa	atient Information				
1	Patient Name						
2	Patient ID						
3	Patient's Date of Birth						
4	Patient's Age						
(5)	Patient's Sex (M: Male	e, F: Female, N	V/A: Other)				
6	Current Time						
$\overline{\mathcal{O}}$	Model Name						

(8) System

## 3.7. Scan

In the Scan screen, you can insert an IP into the *FireCR Dental* and process image acquisition.



Figure 3.3 Scan Screen

## 3.8. Review

In the Review screen, you can query scanned images. The Review screen is very useful for conducting diagnosis after acquiring the images.



Figure 3.4 Review Screen

# 4. Home Screen

## 4.1. Screen Layout

The Home screen is the first screen that appears when the program is run. From the Home screen, you can create a new study or view existing studies. You can go back to the Home screen by using one of the actions below.

- Clicking the Home button in the Navigation Bar
- Clicking the End Study button in the Scan screen
- Clicking the End Study button in the Review screen



Figure 4.1 Home Screen

- ① Model Name: Displays the model name of *QuantorDentVet*
- 2 Current Time: Current time is displayed in hours and minutes.
- 3 System: Displays the System menu.
- ④ Create New Study: Go to New Study screen.
- 5 Study List: Go to Study List screen.
- 6 Work List: Go to Work List screen.

## 4.2. System menu

The System button is always displayed in the upper-right corner of the program. When the button is clicked, the following menu appears on the screen.

Settings
IP calibration
Scanner control
Check update
About this software
Exit

Figure 4.2 System menu

- Settings: Displays the Settings window.
- IP Calibration: Runs IP Calibration program.
- Scanner Control: Runs Scanner Control program.
- Check Update: Checks for a new version. If a new version is available, it is automatically downloaded and installed.
- About this software: Displays software version information
- Exit: Exits the program.

# 5. Create New Study

# 5.1. Screen Layout

The New Study screen is the first page when performing a scan. Enter the necessary patient and study information. You can easily switch to the next input field by using the Tab key. Fields marked by \* are mandatory DICOM fields that must be filled in.



Figure 5.1 Create New Study

- ① Emergency: Mandatory fields are filled in automatically. This function is used in emergencies where patient information has not been identified to perform a scan first and fill in the patient data later.
- ② Edit Input Field: Bring up Input Field Edit dialog. In the Input Field Edit dialog, you can change the order of the input fields, and add or remove input fields.
- 3 System Menu: Display the System menu.
- ④ Input Field: Details about each input field are described in Table 5.1.

Title	Description	Mandatory		
Name	Enter patient name.	0		
ID	Enter patient ID.	0		
	Enter patient's date of birth. You can select a date from the			
Birth	drop-down box or manually enter numbers. When only the	0		
DIUI	date of birth is entered and not the age, age is calculated	0		
	automatically.			
Sex	Select patient's sex. M stands for male. F stands for Female.	0		
Sex	N/A stands for other.	0		
	Enter patient's age. Leave the Year field blank if the patient is			
A.g.o	less than 1 year old. When only the age is entered and not the	х		
Age	date of birth, date of birth is calculated automatically. When it			
	does, month and date are automatically entered as January 1.			
Ref. Physician	Enter the name of the referring physician.	Х		
Description	escription Enter study description.			
	Enter accession number. Entering an accession number is			
Accession No.	mandatory. If not entered, a new number will be generated	0		
	automatically.			

- (5) Page Up/Down: Go to another page.
- 6 Next: Go to the Region Selection screen, which is the next step.



#### WARNING

Warning message pops up if any of mandatory item is missing, and can't proceed to the next step.

# 5.2. Edit Column Dialog Box

In the Input Field Edit dialog box, you can change the order of the input fields, and add or remove input fields. The input fields can be edited according to the user's environment. However, mandatory input fields cannot be removed.

Edit Iı	nput Filed					
	① Selected		2	Unselected		
	* ID				_	
	* Name				_	
	* Birth				_	
	* Species	3			_	
	Breed				_	
	Owner				_	
	* Sex				_	
	Ref.Physician				_	
	<u>↑</u> 5 ∓ ∧ 4 ¥			_	* ¥	
		6	ок	7) Cancel	8 Reset	

Figure 5.2 Edit Input Fields

- 1 Input field items to be displayed on the screen.
- 2 Input field items not to be displayed on the screen.
- ③ Move selected items to left and right. Items on the left are displayed on the screen and the items on the right are not displayed on the screen.
- ④ Button for switching pages.
- (5) Move the selected items up or down on the list to change order.
- 6 Save changes and close the dialog box.
- ⑦ Cancel changes and close the dialog box.
- 8 Reset the fields to default settings.

# 6. Scan

In the Scan screen, you can insert the IP into the *FireCR Dental* and acquire images.

# 6.1. Screen Layout

jetok	10203304	2014/10/20		M Canine		QuantorDent Vet	۹
	ł			Þ.			
	1			_ Z	TASK LIST		di
	C. C. C.			<u>ل</u>			8
				180°	16:33:00		
				¶⊅:			
				$\otimes$			
	2			QA	1		
G 110 109 108 107 106 10	5 104 103 102 101 201 202 2	03 204 205 206 207 20	8 209 210 G	đ	1		
411 410 409 408 407 406 40	5 404 403 402 401 301 302 3	03 304 305 306 307 30			1		
	× 🗆 🚥	<b></b> 3	1121				
	Fæl	Scan	Review			(*)	0

Figure 6.1 Scan Screen

- ① Image window: Displays an image selected in the Task List.
- 2 Support window: Displays various forms of information related to teeth.
- ③ Tool box: You can change contents shown in the image view window and support window.

# 6.2. Tool Box

	〕①	5
	Figure 6.2 Scan Screen	
1	Image window: Displays images only.	
2	Image window + Dentition: Displays images and dentition.	
3	Image window + chart: Displays images and charts.	
4	Chart: Displays chart only.	
5	Template: Displays a template instead of chart.	

## 6.2.1. Image

When you click the Image button in the tool box, the image window only displays an image.



Figure 6.3 Image only

## 6.2.2. Image+ Dentition

When you click the "Image + Dentition" button in the tool box, it displays an image on the top and dentition on the bottom. Using dentition, you can record which teeth have been scanned after scanning completion.



Figure 6.4 Image+ Dentition

## 6.2.3. *Image* + *Chart*

When you click the "Image + Chart" button in the tool box, it displays an image on the top and the chart on the bottom. The chart provides the international standard teeth number in the center. You can drag an image from the image window or task bar and align them on the chart.



Figure 6.5 Image + Chart

## 6.2.4. Chart

When you click the "Chart" button in the tool box, the chart is provided in full screen.

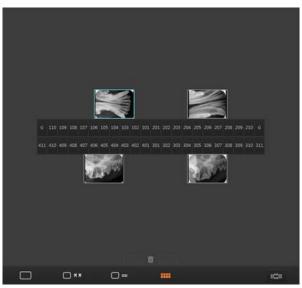


Figure 6.6 Chart

## 6.2.5. Template

When you click the Template button in the tool box, templates are provided that can scan the Full Mouth Series. Drag images from the image field or task bar and align them on the template.

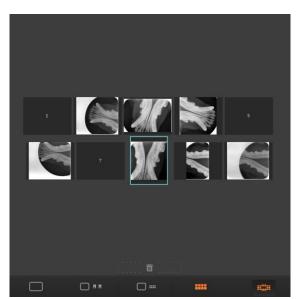


Figure 6.7 Template

# 6.3. Image Scan

- 1. Enter study information in the New Study screen and click "Next". Or select a study in the Study List screen and click "Scan".
- 2. Place an IP on the scanner tray and push it into the scanner.
- 3. The screen displays the scanning progression.

Emergency	ID00003	2014/01/16	0 N	A Canine	2014/02/07   18:55	QuantorDent Vet
	37%				1 TASK LIST 2014/01/16	
G 110 109 108 107 106 105 10						
411 410 409 408 407 406 405 44						
□                       ××			:::::::::::::::::::::::::::::::::::::::			
(f)	_	Scan	Review			$\langle \cdot \rangle$

Figure 6.8 Scan in Standalone version

4. When the scan is completed, the image is provided on the screen.

Note: When you insert the tray into a scanner without opening the study, the scanner conducts scanning but does not transport the image to *QuantorDent*.



#### ΝΟΤΕ

When you insert the tray into a scanner without opening the study, the scanner conducts scanning but does not transport the image to *QuantorDentVet*.

# 7. Image

# 7.1. Screen Layout

When an IP scan has been completed, the acquired image is displayed on the Scan window as shown in Figure 7.1.

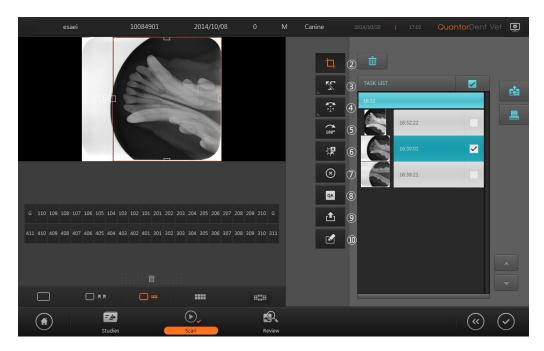


Figure 7.1 Image output

- 1 ROI Box: A tool for cropping the valid region of the scanned image.
- 2 ROI: ROI-related tools
- ③ Marking: Add markings on the image.
- ④ Rotate Flip: Rotate/flip the image.
- (5) 180 degree rotation: Rotate the image 180 degrees.
- 6 Auto window: Automatically adjust the image brightness and contrast.
- ⑦ Reject: Add Rejects marking the image.
- (8) QA: Bring up tools for adjusting image details.
- (9) Transport: Transport the image.
- 10 Memo: Use to enter image-related contents.

# 7.2. ROI

When a scan is completed, the image is displayed and the ROI Box is automatically displayed as shown in 오류! 참조 원본을 찾을 수 없습니다. When you drag the ROI Box to the desired location and double-click the ROI Box or click on the ROI button, the ROI is cropped and fitted to the screen as shown in. To adjust the size of the ROI Box, drag the small rectangles at each corner of the ROI. When transmitting or printing the image, only the ROI are used.



Figure 7.2 Image with cropped ROI region

## 7.3. Marking

This adds markings on the image. You can add markings to the image by selecting a predefined marking or manually typing text.

#### Add predefined marking

- 1 Click on the Marking button.
- 2 Select a marking.
- ③ Click a point on the image.

You can edit predefined markings in the [Overlay - Marking] under Settings.



Figure 7.3 Add Predefined Markings

#### Direct input marking

- 1 Click on the Marking button.
- 2 Select Direct Input.
- Click on a position where you want to add the marking and a text box appears. Enter your text.
   Click outside the text box when you are done.



Figure 7.4 Manually Enter Markings

# 7.4. Rotation/Flip

You can rotate or flip the image.

Icon	Action
0	Rotate Left
<b>O</b>	Rotate Right
Â	Flip Horizontally
C.	Flip Vertically

# 7.5. 180-degree rotation

Rotate the image 180 degrees.

# 7.6. Auto Window

Automatically adjust the image brightness and contrast.

# 7.7. Reject

When the quality of the scanned image is insufficient, Reject preserves the current image with a "Reject" marking without rescanning. When the Reject button is clicked, a "Reject' marking is added on the upper left corner of the image as shown below, and a "Reason" input field appears on the screen. Type in the reason for rejection, and click outside the input box when you are done. You can cancel a rejection by clicking the Reject button again.

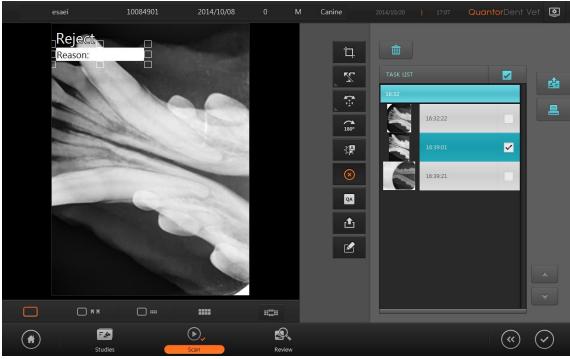


Figure 7.5 Reject

### 7.8. QA – Image Adjustment

Used to adjust the LUT Curve of the image. Adjusting the image requires expert knowledge about images. Adjusting the image without proper knowledge may result in lower image quality.

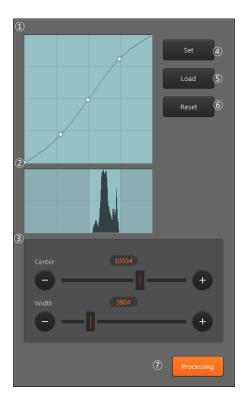
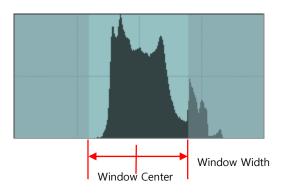


Figure 7.5 LUT Curve

- LUT Curve: LUT curve applied to the image. A default curve for each region is provided. The user can adjust the curve to their preference. To adjust the curve, set a control point and drag the curve using the mouse. To add a new control point, click on the line using the mouse. A control point can be removed by dragging it outside the box.
- ② Histogram: Shows the histogram of the image. The bright region at the center is the region currently displayed on the screen. The left part of the histogram indicates the frequency where X-ray penetration level is low and image is bright. The right part of the histogram indicates the frequency where X-ray penetration level is high and image is dark. Images have low pixel values in bright regions and high pixel values in dark regions.
- ③ Window Center / Width: Used to adjust the window center and width of the image. The window center is adjusted when you drag the image up or down, and window width is adjusted when you drag the image left or right. Dragging the sliders have the same effect as dragging the image.



- ④ Set: Set the curve and window value adjusted by the user as the default value for images of the current region.
- (5) Load: Load and apply default curves and window values of the current region.
- 6 Reset: Reset curve.
- ⑦ Processing: Go to Image Processing Filters screen.

# 7.9. QA – Image Processing

Used to adjust image processing filters. Adjusting the image requires expert knowledge about images. Adjusting the image without proper knowledge may result in lower image quality.

Set Load Reset
Contrast 3
Detail Contrast 2 - + Edge Enhancement 7 - +
Edge Frequency 2 +
Latitude Reduction

Figure 7.6 Image processing filter

- Contrast: Increases the image's contrast. The level can be adjusted from 0 to 10. Higher levels increase the intensity. Filter is not applied when 0 is selected.
- ② Detail Contrast: Increases the contrast in regions of the image with low contrast. The level can be adjusted from 0 to 10. Higher levels increase the intensity. Filter is not applied when 0 is selected.
- ③ Edge Enhancement: Enhances edges. It is used to increase visibility of blood vessels or small calcifications. The level can be adjusted from 0 to 5. Higher levels increase the intensity. Filter is not applied when 0 is selected.
- ④ Edge Frequency: Designates the range of the edges to emphasize. The level can be adjusted from 0 to 5. Lower level emphasizes the smaller edges. Higher levels emphasize the bigger edges.
- (5) Latitude Reduction: Compresses the low frequency regions to improve the overall visibility of the image. The level can be adjusted from 0 to 10. Higher levels increase the intensity. Filter is not applied when 0 is selected.
- 6 Noise Reduction: Reduces the noise in the image. The level can be adjusted from 0 to 10. Higher levels increase the intensity. Filter is not applied when 0 is selected.
- ⑦ Set: Set the filter values adjusted by the user as the default value for images of the current region.
- (8) Load: Load and apply filter values of the current region.
- 9 Reset: Reset filters.
- (1) LUT: Go to LUT Curve adjustment screen.

### 7.10. Send Image

Immediately transmits the current image to the image server designated in Settings.

### 7.11. Image Comment

Add a memo about image-related findings and extra information.

# 8. Task List

## 8.1. Screen Layout

The Task List is a list of scans to be performed. Tasks are group by studies, and arranged in chronological order. The user can select the desired region and perform a scan. The Task List consists of a list of studies, and each study consists of a list of tasks. The check boxes located to the right of the task bar is used to select tasks.

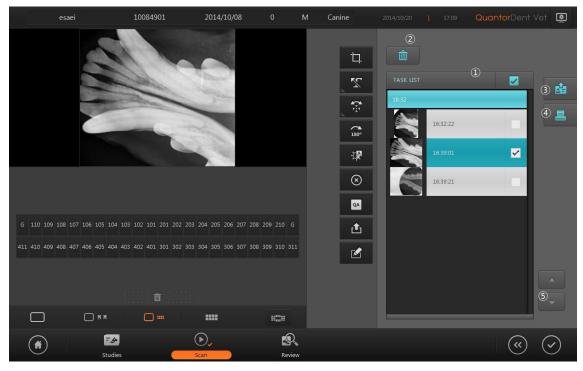


Figure 8.1 Task List

- ① Task bar
- 2 Delete
- 3 Send Study
- ④ Print
- 5 Page UP/Down

### 8.2. Task List

Task List consists of Study-Task tree structure. Study Bar is shown below, and it shows Study Date and Study Description.



Task Bars are shown under the Study Bar. Task Bar is shown below, and it shows Thumbnail Image, View Position and check box.



All Task Bars can be selected or deselected by checking the box in Task List.



### 8.3. Tool Button

lcon	Title	Action
Ê	Delete	Delete selected tasks
<b>Ġ</b>	Send Study	Transmit the selected study. Destination of the transmission can be added in Settings
		5
	Print	Print the selected images using a DICOM printer or a
	1 1110	Windows printer.

### 8.4. Print

Windows printers and DICOM printers are supported. The printed page can be previewed on the left part of the screen.

Print				
10084901 2014/10/08 M 0Y eseri IM 2	2014/10/20 1632/03 RP JOHN DOE	Printer Type	DICOM Printer	
	R <sup>p</sup> JOHN DOE	Layout	1 x 1 🔻	
		Film Size	14INX17IN	
		Orientation	PORTRAIT	
	- and	Destination	bunny	
	1000			
	Zoom 992%	×		
		Print	Stop Close	

Figure 8.2 DICOM Print

- Printer Type: Select printer type.
  - DICOM Printer
  - Windows Printer
- Layout: Select the layout of the image to be printed on film or paper.
  - 1x1 ~ 3x3 formats
- Film Size: Select standard DICOM film size.
  - 8INx10IN
  - 10INx12IN
  - 10INx14IN
  - 8INx10IN
  - 11INx14IN

- 14INx14IN
- 14INx17IN
- 24CMx30CM
- 24CMx24CM
- Orientation: Select film orientation.
  - Portrait: Uses portrait orientation.
  - Landscape: Uses landscape orientation.
- Destination: Select DICOM printer.
- Real Size: Print in real size.
- Print: Start printing.
- Stop: Stop printing.
- Cancel: Close dialog box.

When a Window printer is selected, the screen changes as shown in 오류! 참조 원본을 찾을 수 없습니다.3.

Print		
	Printer Type Layout	Window Printer
2014/10/20 17:11:18 1/1		
	Print	Setting Close

Figure 8.3 Window Printer

• Setting: Display the Print Setting screen.

# 9. Review

Review screen offers the identical functions as a PACS Viewer. It supports various image comparison, processing and measurement tools for performing a diagnosis.

## 9.1. Screen Layout

Screen layout of the Review is as 오류! 참조 원본을 찾을 수 없습니다.



Figure 9.1 Review screen

- 1 Study list: Opened study list
- 2 Thumbnail bar: Display thumbnail images of selected studies in study list.
- ③ Image display area
- ④ Toolbar

# 9.2. Open Study

In order to use Review window, select study and open it in Review window.

#### Open in Study List window

- Select studies in study list.
- Click review button in right side of study list.
- Then, selected studies are listed in study list in Review window, and the first image is displayed.

#### Open in Scan window

- Click Review button in navigation bar in Scan window.
- Then, the image displaying in Scan window is displayed in Review window.

#### 9.3. View

The screen displaying the image consists of multiple views. Each view consists of multiple images. The user can customize the view layout and image layout according to their needs.

Image	Image	View
Image	Image	view
View		View

Figure 9.1 View – Image Layout

To display an image in the view, all you have to do is simply drag the image from the Task Bar. When an image is dragged from the Task Bar, only the image is displayed in the view. When a Study Bar is dragged, all the images included the study are displayed in the view.

Caption bar is located at top of the View.



#### Figure 9.2 View Caption Bar

 Image Layout: Change image layout. When you click on the Image Layout button, a 3x3 grid shown in Figure 10.4 will appear on the screen. Select your desired layout. The largest image layout available 3x3.



Figure 9.3 Image Layout

- 1 Page Up: Go back to the previous page.
- 2 Page Down: Go to the next page.
- 3 Close: Close all images.

#### 9.4. Tool Bar

lcon	Title	Action
<b>8</b>	View Layout	Change the layout of the view
Q	Zoom	Used to zoom in and out of the image. Drag the image
<u> </u>	20011	left, right, up, or down using the mouse.
ıllı,	Pan	Pan the image. Drag the image left, right, up, or down
	Fall	using the mouse.
		Mouse is changed to Magnifier mode. Use Ctrl key to
Q.	Magnifier	change the zoom ratio and use Shift key to change the
		magnifier size
	Image	Open image manipulation tools for rotating, flipping and
	Image	inverting images
.st		Provides various measurement tools for measuring
<b>*</b>	Measure	distance and angle

_ X	Marking	Provides marking tools
	File	Provides file tools
3 ME	Tools	Provides other tools
	Apply	Designate the range in which image adjustments will apply.

# 9.5. Image Processing Tool Box

Icon	Title	Action
C .	Rotate Left	Rotate the selected image to counterclockwise by 90 degree.
Ċ	Rotate Right	Rotate the selected image to clockwise by 90 degree.
Â	Flip Horizontally	Flip the selected image horizontally.
(Ť.	Flip Vertically	Flip the selected image vertically.
	Reset image to initial state	Reset the image to initial state.
Ø	Negative image	Inverse the image
	Fit to page size	Scaling the image fit to the page size.
m	Original Size	Display the image without scaling. Pixel size of the image and monitor matches 1 to 1.
Q. 1:1	Real size	Scaling the image to real size. Monitor calibration is required to use this function.

# 9.6. Measurement Tool Box

Icon/Title	Description
	Measures distance. Click the start and
	end point of the measurement. A straight
	line is displayed between the two points
	and the measurement value is displayed
←→	at the end of the straight line. You can
Distance	move the measuring line by dragging it.
	You can move either one of the two
	control points by dragging them with your mouse. You can also move the
	position of the measurement values by dragging it with your mouse.
	Measures angle. Click on the center point
	of the angle you wish to measure, and
	then click on two control points. You can
<u>4</u>	move both lines at once by dragging. You
Angle	can also move either one of the two
Angle	control points. You can also move the
	position of the measurement values by
	dragging them with your mouse
	Draws a rectangle. Click the mouse at the
	desired position of the upper left corner of
	the rectangle, and then drag the mouse to
	the desired position of the lower right
Rectangle	corner of the rectangle and release the
rtootarigio	mouse button. Click on an area within the
	rectangle to move it. Drag the control
	points to resize the rectangle.
	Draws an ellipse. Click the mouse at the
0	desired position where the top and left-
	most point of the ellipse would intersect,
	drag the mouse toward the bottom right
Ellipse	and release the mouse after reaching a
	desired size and shape. Click on an area
	within the ellipse to move it. Drag the
	control points to resize the ellipse.

Polygon	A control point is added every time you click the mouse. Double-click when you are done drawing the polygon. Click on an area within the polygon to move it. Drag the control points to change the corners of the polygon.
ر Free Draw	Creates a free draw selection. Click and drag the mouse to the desired shape. Release the mouse when you are done drawing. You can click inside the selection to move the free draw selection
€ Pixel Value	Measures pixel value. Click and drag the mouse and the coordinates (x, y) and pixel values (p) of the pixel at the cursor position will be displayed on the screen.
Profile	<ul> <li>Profile: Draw a straight line in the same manner as measuring a distance, and a profile dialog box will be displayed automatically.</li> <li>1. Distance: Distance between two points</li> <li>2. Start Point: Start point information</li> <li>3. End Point: End point information</li> <li>4. Min: Minimum value</li> <li>5. Max: Maximum value</li> <li>6. Mean: Average value</li> </ul>

	7. Current Value: Pixel value of the current position when the mouse
	was clicked over the graph
<u>/</u>	Changes the color of the line.
Line Color	

# 9.7. Marking

lcon	Title	Action								
		Click two point in the image, then the line is generated with								
<b>~</b>	Arrow	the arrow mark in each end. You can move the line by								
		dragging the line or arrow by dragging the arrow.								
	Text	Text edit box is generated by clicking the image where you								
		wish to add the text. Add the text in the box and click								
Т		outside of the box. You can move the text by dragging it or								
		edit it by double clicking it.								

# 9.8. File Tool Box

lcon	Title	Action
4 <b>9</b>	Open DICOM	Open DICOM files.
	File	
đ	Open Image	Open images files other than DICOM.
	File	
	Export	Save the image
E	Export	(File format : DICOM, jpg, tiff, bmp)

# 9.9. Other Tool Box

lcon	Title	Action								
Ĺ	Copy to clipboard	Copies the active image to the Windows clipboard.								
	Pixel	Sets pixel size.								
	Calibration	1. Scan a measuring tool with a determined length.								
		2. Select the scanned image and click on the Pixel								

		Calibration button.
		3. The following dialog box will be displayed on the screen.
		Enter the actual length of the measuring tool.
		Pixel Spacing Calibration  Length of the ruler  OK Cancel
		4. Click on the start point of the measuring tool over the
		image and start dragging.
		5. Release the mouse at the end point of the measuring
		tool to complete the calibration.
Ŧ	Monitor Calibration	It is required to know the pixel size of the monitor to display the image in real size on the monitor. Following window pops up when Monitor Calibration button is clicked.
		Measure lengths of horizontal and vertical lines using the
		ruler and input in the window. You can use the real size
		function after calibration of the monitor.

Region Auto Window	This function shows small box on the image if you click mouse left button. Auto window is applied to this small box area. You can change box size if you move mouse with "Shift" key down.
Print	Print selected images.

# 9.10. Apply Range

Sets the range in which image processing will be applied. When comparing two images, you can apply the same filters to both windows for easier comparison. Image filters that can be used with Apply Range are as follows.

• Zoom, Pan, Rotate, Flip, Window

Icon	Title	Action						
		Active: The image that was clicked last is the active						
	Active	image. The active image is marked by an orange						
		border.						
		Select: You can select multiple images by clicking on						
	Select	images while holding down the Ctrl key. The selected						
		images are marked by a blue border.						
	Study	Study: Applies image filters to all images in the study						
	Study	that contain the active image.						
		Active: The image that was clicked last is the active						
	All	image. The active image is marked by an orange						
		border.						

# 10. Study list

# 10.1. Screen Layout

You can manage scanned images in Study List.

3		2) Today		All 🔻	3		Q	7	4 (	6 6	7 +	2
Study List	Date 🐧	Time 🎄	Name	ID 🐧	Owner 🐧	Species	Breed	Image 🐧	W/S Name	Send Status		]
2	2014/10/20	16:32:46	jetok	10203304	andre	Canine		1				
Work List	2014/10/20	16:32:33	cxntt	10084903	sara	Canine		0				
0	2014/10/20	16:32:03	esaei	10084901	jane	Canine		1				8
Transport	2014/10/20	16:26:21	fxmto	10025502	kim	Canine		4			<b>V</b>	9 🖳
	2014/10/20	16:26:04	gsetb	10025501	kahal	Canine		2				10 🕞
												1 🗐
												12
			_	_			_	_		_		
			13									
	₹. Studi			<b>b</b> can		<b>Q</b> eview						

Figure 10.1 Study List

- 1 Edit Column
- 2 Today
- 3 Search
- ④ Filter
- 5 Edit
- 6 Delete
- ⑦ New Study
- 8 Scan
- 9 Review
- 10 Send Study
- ① Export
- 12 Page Up/Down
- 13 Thumbnail

### 10.2.*List*

- Sorting: When you click on the header of each column, the list is sorted by the information in the selected column. The sorting order changes every time the header of the column is clicked.
  - Date
     Sort in ascending order
     Date
     Sort in descending order
- Multiple selections: You can use the check boxes to select multiple studies on the list. Use the check box in the column header to select the entire list.
- Switching Pages: You can switch pages by using the scroll wheel on the mouse or by pressing the Page Up/Down buttons.
- Change column width: To change column width, drag and move the separating line between the column headers.

The columns in the Study List are described in Table 10.1.

Column Title	Description
Date	Study date
Time	Study time
Name	Patient name
ID	Patient ID
Sex	Patient sex
Birth	Patient birth date
Age	Patient age
Desc	Study description
Ref. Phy	Referring physician's name
Acc. No.	Accession number
Image	Number of acquired images
Finish Status	Image transportation result
W/S Name	Workstation name (when run in Client mode)

#### Table 10.1. Study List Column

# 10.3. Edit Column

Edit C	olumn		
	Selected		Unselected
	Date		Sex
	Time		Age
	Name		Acc.No.
	ID	3	Desc
	Owner		Finish State
	Species		
	Breed		
	Image		
	<b>±</b> <sup>⑤</sup> <b>∓</b> ∧ ④ ¥		× ¥
			бок 🤊 Reset

Figure 10.2 Edit Column

- 1 Columns to be used in the Study List.
- 2 Columns to be hidden in the Study List.
- ③ Move selected items left and right.
- ④ Button for switching pages.
- (5) Move the selected items up or down on the list to change order.
- 6 Save changes and close the dialog box.
- ⑦ Reset the program to default settings.

### 10.4. Search

- ① Filter: Select the column to search. When a filter has not been set and All is selected, all the columns will be searched.
- 2 Keyword: Enter the keyword to search.
- 3 Search: Begin search.
- Search in all columns when "All" filter is selected.
- Search studies after set **Date and Time** when it is selected.
- Search studies on set **Date** when it is selected.

lcon	Title	Action								
M	Edit Column	Display a dialog box for editing the columns of the list								
7	Patient Filter	Search same patient's study with the selected study's patient.								
<u>I</u>	Edit	Edit the selected studies.								
Î	Delete	Delete the selected studies.								
+	New Study	Add a new study								
*	Region	Open the selected study and go to the Region Selection screen.								
۲	Scan	Open the selected study and go to the Scan screen								
<b>B</b>	Review	Open the selected study and go to the Review screen.								
¢	Send Study	Send selected study to registered PACS server or DICOM Printer.								
٩	CD Burn	Export the selected studies to a CD, DVD or a local drive.								

### 10.5. Tool Buttons

## 10.6. CD Burn

Device	2014/07/18 13:52:27 ID000176 M [2/3] Emergency	
E:\ [DVD A DH16AESH ]	2014/07/15 10:31:24	
	ID000173 M [2/2] Emergency	
2 20141020_1723 3 DVD-R/W		
④ DICOM ⑤ ▼	8	9
Log Message		e e e e e e e e e e e e e e e e e e e
6		
0.03/4.4GB [0.72 %]		Select All
	Anonymize	() Close () Abort () ₿urn
		B <sup>Close</sup> Abort B <sup>Burn</sup>

Figure 100.3 CD Burn

- Device: Select the storage device to export the images to. Optical disc drives connected to the PC will be listed. If you select Local, you can use other storage devices connected to the PC.
- 2 Label: Label to be displayed on disc.
- 3 Media Type: Displays the type of the media inserted in the drive.
- ④ Local Folder: Activated only when Local is selected in the Device field. Select a destination folder to save images.
- 5 Format: Select format to save images. Supported formats are as follows.
  - A. DICOM
  - B. Bitmap: Windows Bitmap file
  - C. Raw: RAW file
  - D. Jpg: JPEG
  - E. Tiff: TIFF
- 6 Log Message: Shows the progress when recording to an optical disc.
- ⑦ Progress Bar: Shows the image export progress.
- 8 Study List: Shows the list of selected studies.
- Image List: Shows images selected in the Study List. To not export a certain image, click and unselect the image.

- 10 Select All: Select all images.
- (1) Unselect All: Unselect all images.
- 2 Anonymize: Delete patient name and ID when saving as DICOM images.
- (13) Close: Close the dialog box.
- (Abort: Stop recording.
- (15) Burn: Start recording.

# 11. Work List

In the Work List screen, you can connect to Work List Servers of PACS or HIS systems and query the list of the studies to conduct. To use the Work List, register the Work List Server information in setting, [Network – Work List]. The way of using list, editing column and searching are identical to those of Study List.

### 11.1. Screen Layout

-4 -4	1	2 🗾 Toda			•	3	C	. 4	Waiting (	Auto q	uery Modaid	by 📃	<u></u>
Study List	Sch.Date	Sch.Time 🖡	Mod 🐧	Name 🐧	ID 🐧	Sex 🐧	Age 🐧	Species 🐧	Breed 🀧	Owner 🎄	Proc.Desci	<b>~</b>	
2	2014/10/08	16:41:54	CR	txgvg	10085409	М							0 🗗
Work List	2014/10/08	16:41:54	CR	sffwn	10085410	F							
a	2014/10/02	16:20:56	CR	tgmch	10025510	М		Dog					
<b>₽</b>	2014/10/02	16:20:56	CR	hvthj	10025509	F		Dog					8 🕥
Transport	2014/10/02	16:20:55	CR	gsetb	10025501	F		Dog					
	2014/10/02	16:20:55	CR	fxmto	10025502	М		Dog					
	2014/10/02	16:20:55	CR	erelb	10025503	М		Dog					
	2014/10/02	16:20:55	CR	owiuk	10025504	М		Dog					
	2014/10/02	16:20:55	CR	eqfwg	10025505	F		Dog					
	2014/10/02	16:20:55	CR	onhnx	10025506	F		Dog					
	2014/10/02	16:20:56	DR	dophl	10025507	F		Dog					9
	2014/10/02	16:20:56	CR	nsrnj	10025508	М		Dog					
		_	_	~	_		_	_	_				
		idies		Scan		Review							

#### Figure 111.1 Work List

- 1 Edit Column
- 2 Today
- 3 Search

- ④ Waiting
- 5 Auto Query
- 6 Modality
- ⑦ Import
- (8) Scan
- 9 Page Up/Down

### 11.2.List

Columns in Work List are described in Table 111.1.

Column Title	Description
Sch. Date	Scheduled date
Sch. Time	Scheduled time
Mod	Modality
Name	Patient name
ID	Patient ID
Sex	Patient sex
Birth	Patient birth date
Age	Patient age
Station AE	Station AE title
Station	Station
Species	Patient species
Breed	Patient breed
Owner	Patient owner
Proc. Desc	Scheduled procedure description
Proc.ID	Scheduled procedure ID
Study UID	Study instance UID
Ref. Phy	Referring physician's name
Acc. No.	Accession number

#### Table 111.1 Work List Columns

# 11.3. Tool Buttons

lcon	Title	Action
IM	Edit Column	Display a dialog box for editing the columns of the list.
IM		Using the Work List is identical to using the Study List.
	Waiting	Display the list of studies that have not been scanned yet.
	Auto Query	Perform an auto query at a preset time.
Modality		Set Modality filter for query.
Ę.	Import	Import: Import selected items to the Study List.
• Scan		Open the selected study and go to the Scan screen.

# 12. Transport

In the Transport screen, you can check the transmission results of images sent to an image server or a DICOM printer. The way of using list, editing column and searching are identical to those of Study List.

# 12.1. Screen Layout

					Port 🐧				
2014/10/20	17:32:16	1	bunny	127.0.0.1	3000	esaei	10084901	Sent	
2014/10/20	17:32:16		bunny	127.0.0.1	3000	gsetb	10025501	Waiting	
2014/10/20	17:32:15	1	bunny	127.0.0.1	3000	jetok	10203304	Sent	
2014/10/20	17:32:17	0	bunny	127.0.0.1	3000	esaei	10084901	Sent	
2014/10/20	17:32:17	1	bunny	127.0.0.1	3000	esaei	10084901	Sent	
2014/10/20	17:32:19	1	bunny	127.0.0.1	3000	fxmto	10025502	Sent	
2014/10/20	17:32:20	1	bunny	127.0.0.1	3000	fxmto	10025502	Sent	
2014/10/20	17:32:21		bunny	127.0.0.1	3000	fxmto	10025502	Sending	
2014/10/20	17:32:15		bunny	127.0.0.1	3000	fxmto	10025502	Waiting	
2014/10/20	17:32:15		bunny	127.0.0.1	3000	gsetb	10025501	Waiting	
2014/05/21	16:27:23	1	bunny	127.0.0.1	3000	Emergency	ID000090	Sent	
2014/05/21	16:27:22	1	bunny	127.0.0.1	3000	Emergency	ID000090	Sent	
		$(\mathbf{b})$		<u>s</u>					

#### Figure 122.1 Transport

- ① Today: Search only the studies from today.
- 2 Search: Search various criteria. Search method is identical to Study List.
- ③ Delete: Delete selected items.
- ④ Page Up/Down: Go to another page.

### 12.2.*List*

Column Title	Description
Date	Send date
Time	Send time
Lap	Duration in seconds
AE Title	Destination AE title
Host	Destination IP address
Port	Destination port
Name	Patient name
ID	Patient ID
Status	Send status

# 13. Settings

## 13.1. Screen Layout

The Settings screen consists of a main category, sub-category, and specific item. Clicking on the main category item changes the sub-category items. Clicking on the sub-category item changes the specific item in the selected sub-category. Setting values can be changed in the specific item.

Settings		
General >	Options >	Selected ROI Color
Fonts >	User Information >	Apply Auto Window After Cropping
Network/Export >	Password For Processing Parameter >	
Work List >	Display Language >	
Overlay >		
System >		
1	2	3
Reset		ОК

Figure 13.1 Settings

- $\textcircled{1} \quad \text{Main category item list} \\$
- ② Sub-category item list
- 3 Specific item list

# 13.2. General

### 13.2.1. Options

Items	Description	Default value
Color of ROI	Set the color of the ROI Box. Click on the item to change the color in the Color Picker.	Orange
Apply Auto Window After Cropping	Set whether to automatically apply Auto Window after cropping ROI Box.	FALSE

### 13.2.2. User Information

Items	Description
Institution Name	Set hospital name. The entered value will be included in DICOM information.
Dept. Name	Set the department name where the system is installed. The entered values will be included in the DICOM information.

## 13.2.3. Password for Processing Parameter

Items	Description	Default value
New Password	Set password.	
Confirm Password	Confirm password.	
Use password to access LUT & PROC	Activate password for accessing LUT and processing.	TRUE
Use password to save default value	Activate password for saving default values in the LUT and processing windows.	TRUE

## 13.2.4. Display Language

Items	Description	Default value
Language	Select language.	Language selected upon product installation

## 13.3. Fonts

#### 13.3.1. General

Items	Description	Default value
Font name	Name of font displayed on the screen.	Segoe UI
Font size	Size of font displayed on the screen. Adjustable from 8 to 12 points.	10

### 13.3.2. Marking

Items	Description	Default value
Font name	Name of marking font.	ARIAL
Font size	Size of marking font. Adjustable from 16 to 30 points.	22

### 13.3.3. DICOM Printer

Items	Description	Default value
Font name	Name of font used to print.	ARIAL
Font size	Size of font used to print. Adjustable from 8 to 12 points.	10

# 13.4. Network / Export

#### 13.4.1. Image Server

Manages list of DICOM servers for transmitting images to.

Settings			
General >	Image Server >	DICOM AE	Timeout 60 sec
Fonts >	Work List Server >	Junny bunny	127.0.0.1 3000
Network/Export >	DICOM Printer >		
Work List >	EMR Export >		
Overlay >	Options >		
System >			
		_	_
		Add	>
		Edit	>
		Delete	Network Test
		Move Up	Move Down
Reset			ОК

Figure 13.2 Network / Export

① Add: Add an image server.

Name	Description
Calling AE Title	Set AE title of <i>Quantor.</i>
Called AE Title	Set AE title of image server.
IP Address	Image server IP address
Port	Image server port
Description	Image server description

- ② Edit: Edit selected server. An identical screen as adding an image server will be displayed.
- ④ Network Test: Check the connection by sending DICOM Echo to the selected server.

- (5) Move Up: Move the selected server up.
- 6 Move Down: Move the selected server down.
- ⑦ Timeout: Drop the connection when responses are not received within the set amount of time.

Check boxes for each item will automatically be activated once a server is added. *Quantor* sends images to all checked image servers according to the order on the list.

#### 13.4.2. Work List Server

Manages Work List servers. Management method is identical to that for image servers. Multiple Work List servers can be added, but only one can be checked.

#### 13.4.3. DICOM Printer

Manages DICOM Printers List. Management method is identical to that for image servers. Unlike adding image servers, the following additional settings are required when adding DICOM printers.

Group	Name	Description	Default Value
Film Session	Print Priority	HIGH	MID
		MID	
		LOW	
	Film Destination	MAGAZINE	PROCESSOR
		PROCESSOR	
	Medium Type	PAPER	CLEAR FILM
		CLEAR FILM	
		BLUE FILM	
	Label	Label	
Film Box	Orientation	PORTRAIT	PORTRAIT
		LANDSCAPE	
	Trim	YES	NO
		NO	
	Size	8INX10IN	14INX17IN
		10INX12IN	
		10INX14IN	
		11INX14IN	
		14INX14IN	

-			1
		14INX17IN	
		24CMX30CM	
		24CMX24CM	
	Polarity	NORMAL	NORMAL
		INVERTED	
	Magnification	REPLICATE	BILINEAR
		BILINEAR	
		CUBIC	
		NONE	
	Border	BLACK	FALSE
		WHITE	
	Empty	BLACK	FALSE
		WHITE	
	Min		FALSE
	Max		FALSE
Image Box	Bits Used	8	8
		12	

Check boxes for each item will be automatically activated once a server is added. *Quantor* sends images to all checked servers according to the order on the list.

#### 13.4.4. EMR Export

EMR (Electric Medical Record) export function enables to export the image in JPG file format to designated folder in EMR. Image is exported and saved when study is finished it this function is enabled. File naming rule is as below.

A B C D.ipg (A: Prefix, B	: Patient ID or Accession No.	C: View Position.	D: Image Serial No)
, <u></u> , pg (, ., , , oinx, , b		, $\mathbf{O}$ . view i oblitoli,	D. Indge Genarite)

Name	Description	Default Value
Use EMR	Enable to use EMR function.	FALSE
path	Image save path.	
Filename Prefix	Prefix of the file name.	
Filename	Select the item to be used in file name.	Patient ID
	Patient ID	
	Accession No,	

# 13.4.5. Options

Name	Description	Default Value
Auto Send Study	Send the study automatically when the	FALSE
	study is finished.	
Export To	Define the action to take when the Send	Send
	Study button is clicked. You can choose	
	from Send or Print.	
Show Destination	A Destination list is shown if the Send	FALSE
	button is clicked in the Scan screen.	
Encoding Series	Set DICOM Encoding method.	Single Series has Single
	Single Series has Single Image	Image
	<ul> <li>Single Series has Multi Image</li> </ul>	
DICOM	Select Character Set used in DICOM.	ISO_IR100
Character Set	<ul> <li>ISO_IR100</li> </ul>	
	<ul> <li>ISO_IR192(UTF-8)</li> </ul>	

# 13.5. Work List

#### 13.5.1. Work List

Name	Description	Default Value
Auto Query Interval	Set the execution interval of Auto Query when using	1 min
	the Auto Query function on the Work List screen.	
S. Proc. Match with	The Work List Server records scan codes and	S. Proc. ID
	descriptions used in the hospital to Scheduled	
	Procedure Step ID and Scheduled Procedure Step	
	Description, respectively, and transmits them. By	
	using the QuantorOrganizer program, this	
	information can be automatically synced to presets.	
	Define base information to match with when	
	syncing with presets.	
Keep a column	Always show by the sorts when displaying query	TRUE
sorted	results to the screen.	
Use (*) for query	Use * in query string. Some Work List Servers must	FALSE
conditions	not use * when searching.	

## 13.6. Overlay

#### 13.6.1. Marking

This section can be used to edit pre-defined markings when adding markings to images in the Scan screen. After entering text in the input field, you can perform the following actions:

- Add: Add a new marking.
- Modify: Modify an existing marking.
- Delete: Delete the selected marking.
- Move Upper: Move the selected marking up by one slot.
- Move Lower: Move the selected marking down by one slot.

#### 13.6.2. Auto Mark Margin

Set the margins when markings are automatically added to an image. Each setting value shows margins by % compared to the width and height of the image.

Name	Description	Default Value
Left	Left margin.	10
Тор	Top margin.	10
Right	Right margin.	10
Bottom	Bottom margin.	10

#### 13.6.3. Print Overlay Contents

Select items to be shown in the image when printing.

### 13.6.4. Export Overlay Contents

Select items to be shown in the image when exporting.

# 13.7.System

Name	Description	Default Value	
Data Path	Set the destination folder for images to be stored.	Installation Folder/Database	
Data Space	Allocates disk space for saving images. Auto deletion is activated when the allocated disk space is full.	29.30GB	
Use Auto Deletion after idle time	Set whether to use Auto Deletion and Auto Deletion intervals.	TRUE 60 second	
Delete Study not Sent	<ul> <li>Define the action to take when deleting an image that has not been transmitted.</li> <li>Never: Never can be deleted.</li> <li>Confirm: Delete after confirmation.</li> <li>Always: Always delete without asking.</li> </ul>	Confirm	

## 13.7.1. File Management

## 13.7.2. System Options

Set other system settings.

Name	Description	Default Value
Temporary Path	Set the folder for saving temporary files used in the	Installation
	program.	Folder/Temp
Use On Screen	Decide whether to use the Windows On Screen	FALSE
Keyboard	Keyboard when entering data on the screen.	
Display Monitor	Select the displaying monitor when more than 2	1
	monitors are connected.	
Review Monitor	Select the monitor for review window to be displayed.	1
Auto Scan	Reader starts scanning automatically when the	FALSE
	cassette is inserted.	

13.7.3. Date

Name	Description	Default Value
Date Format	Set the date display format. Choose from one of the three formats below. <ul> <li>YYYY/MM/DD</li> <li>DD/MM/YYYY</li> <li>MM/DD/YYYY</li> </ul>	YYYY/MM/DD
Separator	Set the separator between year, month and day. Choose from one of the three separators below. <ul> <li>/</li> <li>-</li> <li>.</li> </ul>	/

#### 13.7.4. Dental

Item	Description	Default value		
Numbering System	<ul> <li>This selects one from following two dental numbering systems.</li> <li>European</li> <li>American</li> </ul>	European		
Workstation name	This sets the workstation name.			
Default template	<ul> <li>This selects a type of Full Mouth Series template.</li> <li>FMX18</li> <li>FMX20</li> </ul>	FMX20		

# 13.8.*Reset*

Reset restores all settings to default settings.

#### Appendix A: Canine Dental Chart

G	110	109	108	107	106	105	104	103	102	101	201	202	203	204	205	206	207	208	209	210	G
411	410	409	408	407	406	405	404	403	402	401	301	302	303	304	305	306	307	308	309	310	311

#### Appendix B: Feline Dental Chart

109	108	107	106	104	103	102	101	201	202	203	204	206	207	208	209
409	408	407		404	403	402	401	301	302	303	304		307	308	309

### Appendix C: Template

1	2	3	4	5		
6	7	8	9	10		