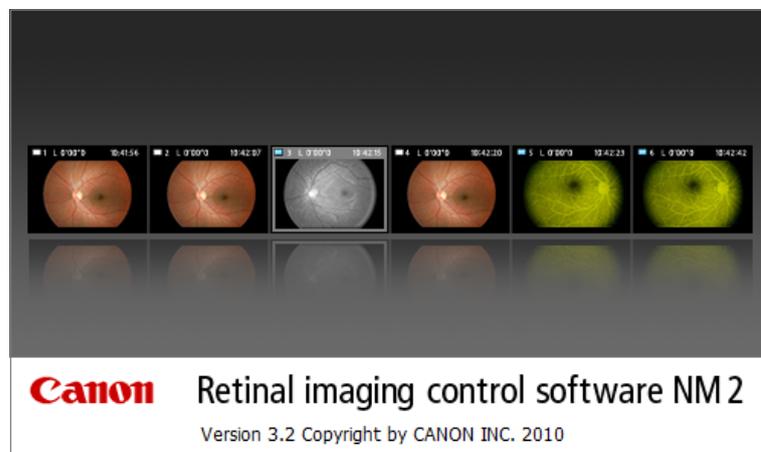




## Retinal imaging control software NM 2 Version 3.2

# Operation Manual

---



Make sure you read this manual before using the instrument.  
Keep this manual safely so that you can use it in the future.

This Operation Manual contains information necessary to operating and handling the Retinal imaging control software NM 2 (referred to as “Rics NM 2” in this manual), which is provided with the Digital Retinal Camera CR-2. Be sure to read this manual thoroughly before using the instrument, and apply the information that you learn.

## **Important**

- Before installing the Rics NM 2, you must read through the end user license agreement covering the terms and conditions under which the software is to be used.

## **Disclaimers**

- Canon takes no responsibility for damage that occurs due to fires, earthquakes, third party actions, other accidents, the user’s deliberate misuse, negligence, experimentation, or use under other abnormal conditions.
- Canon takes no responsibility for direct or consequential damages resulting from the use or the inability to use the Rics NM 2. In addition, no compensation is available for lost image data, regardless of the cause of the loss of the image data.
- Canon takes no responsibility for injuries or property damage that may occur if safety precautions are not followed or the instrument is used for something other than its intended purpose.
- Medical examinations are the responsibility of a doctor. Canon takes no responsibility for diagnostic results.
- Follow the laws relating to the production, processing, analysis, and storage of medical images. The user is responsible for maintaining the confidentiality of image data.
- Canon reserves the right to change the specifications and other aspects of the Rics NM 2 without prior notice.
- Although we have made every effort to ensure the accuracy of the information in this manual, if you have any queries regarding the contents, please contact the Canon representative or distributor from whom you purchased the Rics NM 2.

## **Installation**

- Please ask the distributor or Canon representative where you made the purchase to install the Rics NM 2.

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# Safety

Before using the Rics NM 2, read these safety precautions for information about how to use the Rics NM 2 correctly. The cautions indicated here are to prevent injury or harm to users or other as well as property damage.

## Conventions Used in This Manual

This manual uses the following symbols to indicate safety precautions that are important for using the Rics NM 2 safely. Always follow the advice in these safety precautions.

 <b>CAUTION</b>	A caution that incorrect operation may result in serious injury.
<b>CAUTION</b>	A caution that incorrect operation may break the Rics NM 2 or damage other products.
	This symbol indicates things that must not be done (prohibited actions).
	This symbol indicates things that must be done.
	This symbol indicates important advice that we strongly recommend be followed while operating the Rics NM 2.
	This symbol indicates supplementary explanations or advice for operating the Rics NM 2.

## Safety Precautions

---

 CAUTION



**Make sure that the patient's name, ID, birth date, and sex match those that are entered for the patient**

If the entered information is in error, patients may be mixed up and misdiagnosed, which may result in physical injury to the patient.

---

CAUTION



Prohibited

**While images are being transferred, never turn off the computer**

Doing so might damage the hardware or corrupt the data.

---



Prohibited

**Do not change the OS settings (e.g. screen resolution, date format, date, or language) while the Rics NM 2 is running**

If changes are made while the Rics NM 2 is running, it may not function properly.

---



Prohibited

**Do not operate the retinal camera while operating the Rics NM 2**

Otherwise, the Rics NM 2 may not function properly.

---



Prohibited

**After taking the image of the retina, do not operate the Rics NM 2 until transferring of the image is completed**

Otherwise, the Rics NM 2 may not function properly.

---



Prohibited

**While images are being transferred, do not turn off the retinal camera or disconnect the DC coupler of the digital camera and the USB cable between the PC and retinal camera**

Doing so might damage the hardware or corrupt the data.

---



**On the **Change Patient Information** screen, use care when editing the patient information**

Regardless of all the essential data, input-disabled data and input format settings which were set on the **Study Input/Manual Input** tab screen, all the data can be changed and input.

---

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# 1 Introduction

## Overview of Software

---

The Rics NM 2 imports retinal images taken with the Canon Digital Retinal Camera CR-2, and provides you with functions for browsing, processing, printing, saving, and comparing images.

## Features

### Study input

- Accepting input from keyboard, magnetic card, and barcode readers.
- Accepting input from worklist.
- Assigning accession numbers automatically.

### Taking images

- Acquiring the retinal images and right/left eye information taken with the retinal camera.
- Flash intensity and observation light brightness can be automatically adjusted.

### Image display

- Full-screen view is possible.
- Stereo photography and stereo view are possible.
- Comparison with past images is possible.
- Screens can be captured.

### Image processing

- Red, Green, Blue, digital Redfree, and digital Cobalt in color images can be displayed.
- C/D ratio (area, linear, verticalness) can be measured.
- Image adjustment (contrast, brightness, gamma, hue) is possible.
- Processed images (generated images) can be saved.

### Printing

- Simple printing and multiple layout printing.

### Database

- Managing and storing the study and patient information by individual studies.
- Study data on the database can be stored on DVD or external hard disk.
- Externally saved study data can be imported.

### Transferring and exporting images

- Exporting to JPEG format file containing DICOM or study information.
- Simultaneously transferring studies to two destinations. You can specify DICOM storage servers and folders on the network as the destinations.

### DICOM standard compliant

- Study information can be acquired from HIS/RIS using Modality Worklist.
- Sending study status information to HIS/RIS with the MPPS function.
- Sending images to the DICOM storage server with DICOM Storage Service.

## Software Operating Environment

The Rics NM 2 runs under the following operating environment.

For details on the system, contact the Canon representative or distributor.

Hardware or software	Specifications
CPU	Core 2 Duo 2.4 GHz or higher
RAM	2 GB or more
Display	Screen resolution: WXGA (1280 x 800 pixels) or higher Screen colors: 24 bits or more
Hard disk	3.5-inch 7,200 rpm or higher
Mouse	Microsoft Mouse or compatible mouse
Interface	USB 2.0 (for communication between retinal camera and digital camera) RS-232C (for magnetic card/barcode reader)
OS	Microsoft Windows 7 Professional Microsoft Windows Vista Business SP1/SP2 Microsoft Windows XP Professional SP2/SP3 The Rics NM 2 does not support x64 (64-bit version).
Software	Microsoft .NET Framework Version 3.5 SP1 SQL Server 2005 Express Edition SP3 Canon Easy-PhotoPrint EX Version 2.0.0 or later (for printing captured images)

## Notes on Use

---

### Software

- (1) The Rics NM 2 can be used only by users who belong to the following groups:  
 Windows 7 / Windows Vista: Users or Administrators  
 Windows XP: Administrators
- (2) The Rics NM 2 enables the retinal camera taking 30 images in a single study.
- (3) In a Windows operating environment, be sure to set the access permissions for the storage folder in the following cases.
  - When exporting files to a destination set with the **Storage Type of Export (DICOM) or Export (JPEG)**
  - When changing the saving folder for the study management to a folder from the default folder (Installation folder\Database\Images)
  - When saving the temporarily saved study logs
  - When using a study file for list input (such as ccrhis.his)

In the **Security** tab under the folder **Properties**, give **Modify** permission to the Users group and **Full control** permission to the Administrators group.

- (4) Use care with the following when saving the temporarily saved study logs or viewing the study log files.
  - To specify a folder on the network, get the access rights to the folder as the Windows login user. For details on the access rights on the network, contact the system administrator.
  - Do not set the password on the removable media (CD, DVD or flash drive etc.).
- (5) Do not use the **Switch User** (where the user is switched without logging off) in Windows. When multiple users are using the Rics NM 2, be sure to select **Log Off**, and then log on again as a different user.
- (6) Be sure to set the Screen saver, Power Options and Font settings as shown below.

Windows 7

Items	Settings
Screen saver	None
Turn off the display	Never
Put the computer to sleep	Never
Turn off hard disks	Never
When I press the power button	Shut down
Start menu power button	Shut down
Font size	Smaller - 100% (default)

## Windows Vista

Items	Settings
Screen saver	None
Turn off the display	Never
Put the computer to sleep	Never
Turn off hard disks	Never
When I press the power button	Shut down
Start menu power button	Shut down
Font size	Default scale (96 DPI)

## Windows XP

Items	Settings
Screen saver	None
Turn off monitor	Never
Turn off hard disks	Never
System standby	Never
When I press the power button on my computer	Shut down
Enable hibernation	Disable
Font size	Normal

During the Windows shut down process, do not perform any of the following operations.

Windows 7 / Windows Vista: Sleep

Windows XP: Standby

- (7) If an application error appears, the Rics NM 2 freezes or the captured image does not appear during a study, take the following steps.
- 1) Turn off the retinal camera and digital camera.
  - 2) Turn off the PC.
  - 3) Remove the DC coupler from the digital camera, and then re-insert it.
  - 4) Turn on the PC.
  - 5) After the OS starts up, turn on the retinal camera and digital camera.
  - 6) Start up the Rics NM 2.
- (8) To prevent a wizard or menu from automatically opening while the digital camera is connected to the Windows PC, take the following steps.

Windows 7 / Windows Vista:

- 1) Open the **Control Panel**, and click **Hardware and Sound** and click **Play CDs or other media automatically**.
- 2) Select **Take no action** from the dropdown list for **Canon EOS 50D RETINA**. Then, click **Save**.

Windows XP:

- 1) Select **Scanners and Cameras** in the **Control Panel**.
- 2) Right-click **Canon EOS 50D RETINA**, then open the **Properties** screen.
- 3) Click the **Events** tab and select **Take no action**, then click **OK**.

- (9) The Rics NM 2 does not support environment-dependent characters extended in Windows 7/ Windows Vista.

### Digital camera settings

- Do not change the digital camera settings. If the proper settings are not made, the camera will be unable to take images.
- No CF card is used. Do not insert a CF card into the digital camera.
- After turning on the digital camera or using menu buttons, "No card" and "Sensor cleaning" appear once on the digital camera's LCD display. This is not an error.

Basic settings for the digital camera are shown below.

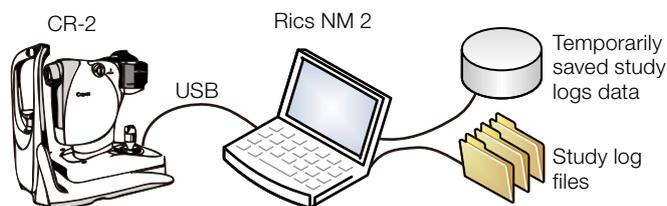
Items	Settings
Shooting mode	M (Manual exposure)
Expo. comp./AEB	0/Canceled
WB SHIFT/BKT	0,0/±0
Auto power off	Off
Live View function settings Expo. simulation	Disable
Live View function settings Silent shoot	Mode 1

## System Configuration

With the Rics NM2, the CR-2 can be configured in a variety of systems – from a standalone setup through to a DICOM network environment. Examples of three typical configurations are shown below.

### Example where the CR-2 System is not Connected to a Network

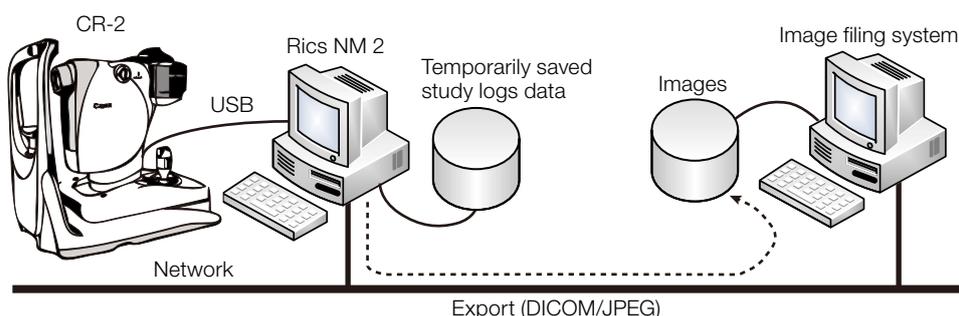
In this configuration, the CR-2 system is run as a standalone device. Patient information is input from the keyboard, and captured images are stored on the local hard disk as temporarily saved study logs. When the hard disk drive reaches its full capacity or the storage period of the study logs has elapsed, study data is saved on an external mirroring hard disk, DVD or other media as study log files. Study log files can be easily displayed, printed and compared with other studies whenever required. Up to 100 study log files can be imported and used as temporarily saved study logs. Up to 3,000 patient input histories can be stored in memory, which allows patient information to be input easily.



### Example of PC Network System

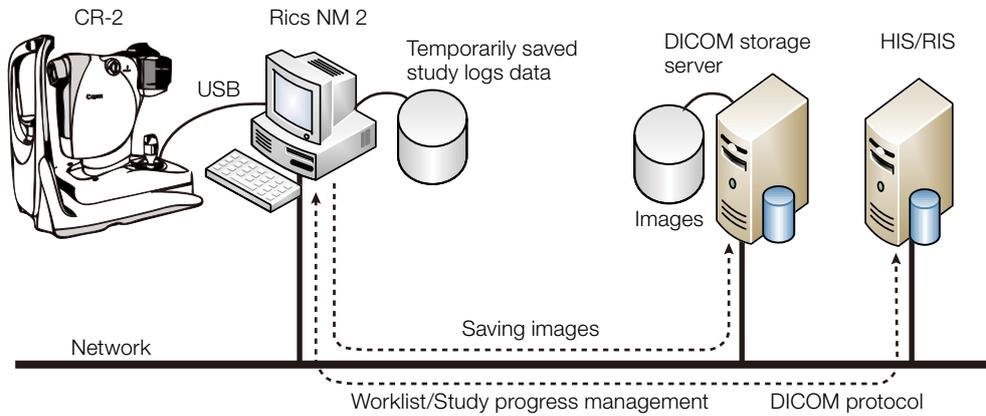
A configuration manages study data in an image filing system connected to the network in a hospital\*. Study information is input from keyboard, magnetic cards or barcodes. A captured image is converted into a DICOM file or JPEG file that contains the study information and exported to a folder in the image filing system on the network. These files are input on the image filing system. The study data is stored for a fixed period as temporarily saved study log data, and it can be exported to another image filing system, viewed locally, printed and compared with other studies.

\* For details on the image filing system, contact the Canon representative or distributor from whom you purchased the CR-2.



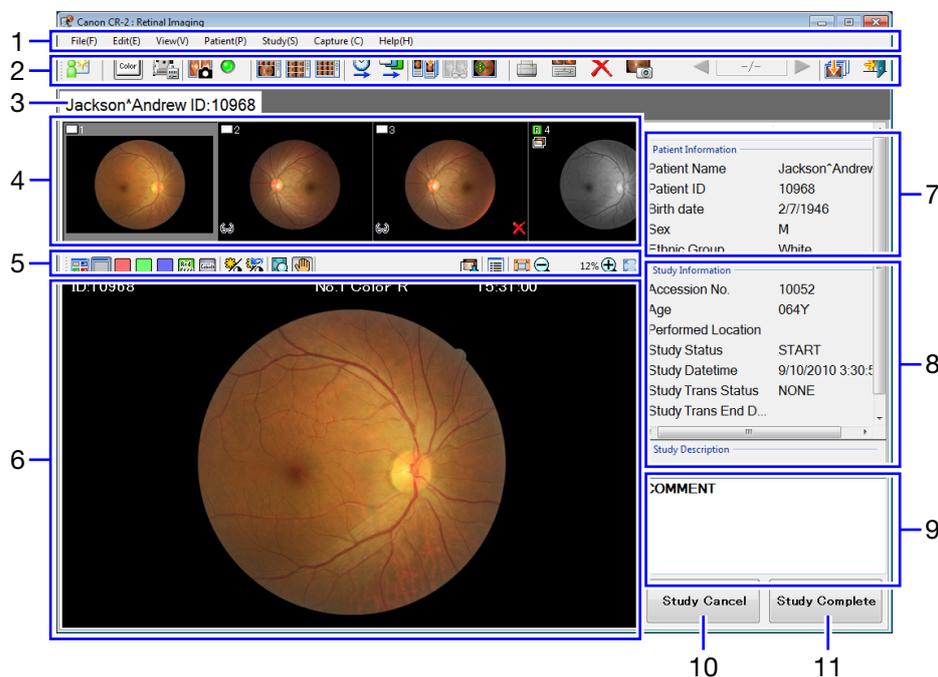
### Example of DICOM network system

In this configuration, the CR-2 system is connected to the DICOM network in a hospital. The worklist is acquired from HIS/RIS, and patient information is input for a selected study. Captured images are transferred and stored on the DICOM storage server. Study status information can be sent to the HIS/RIS at the same time. Since study data is stored for a fixed period of time as temporarily saved study logs data, it can be re-transferred to the DICOM storage server, transferred to a different image server, viewed locally, printed, and compared with other studies.

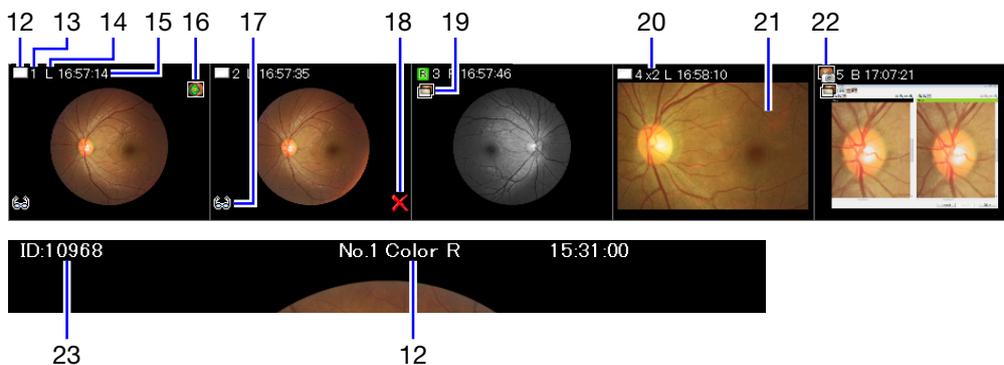


## Main Screen Elements

### Main Screen Layout



- |   |                      |    |                          |
|---|----------------------|----|--------------------------|
| 1 | Menu bar             | 7  | Patient information area |
| 2 | Toolbar              | 8  | Study information area   |
| 3 | Study tab            | 9  | Study description area   |
| 4 | Thumbnail image area | 10 | Study Cancel button      |
| 5 | Image toolbar        | 11 | Study Complete button    |
| 6 | Main image area      |    |                          |



- |    |  |    |  |
|----|--|----|--|
| 12 | Retinal camera mode<br><input type="checkbox"/> : Color<br><input type="checkbox"/> : Red<br><input type="checkbox"/> : Green<br><input type="checkbox"/> : Blue<br><input type="checkbox"/> : Digital Redfree<br><input type="checkbox"/> : Digital Cobalt<br><input type="checkbox"/> : Capture Screen | 14 | Right/left eye<br>R: Right eye, L: Left eye, B: Screen capture image |
| 13 | Image number (by time)   | 15 | Photography time   |
|    |  | 16 | C/D ratio measurement mark   |
|    |  | 17 | Stereo mark  |
|    |  | 18 | Reject mark  |
|    |  | 19 | Generated image mark   |
|    |  | 20 | x2 mark  |
|    |  | 21 | x2 image   |
|    |  | 22 | Capture Screen mark  |
|    |  | 23 | Patient ID   |

## Main Screen/Toolbar



Icon	Icon name	Description
	Study	Starts a new study.
	Color	Sets the color photography mode.
	Capture Settings	Makes the photography settings during a study.
	Capture for Stereo View	Sets the stereo photography mode.
	Photography Ready Lamp	Green indicates that shooting is possible. Red indicates that shooting is not possible.
	Main and Thumbnails	Displays main image and thumbnail images.
	Two-Row Thumbnails	Displays thumbnail images in two rows.
	Thumbnails Only	Displays all thumbnail images.
	By Time	Arranges the thumbnail images in the order they were taken.
	By Retinal Camera Mode	Arranges the thumbnail images by retinal camera mode.
	Compare Studies	Compares the image with the study log image.
	Stereo View	Displays the stereo view.
	C/D Ratio	Measures the C/D ratio.
	Print	Prints images.
	QA	Performs image QA processing.
	Reject	Rejecting the image
	Capture Screen	Captures the screen for the currently active study.
	Previous Study	Changes a study to display in the study log screen.
	Next Study	
	Study Logs	Displays study log list.
	Logout	Performs logout.

## Main Screen/Image Toolbar



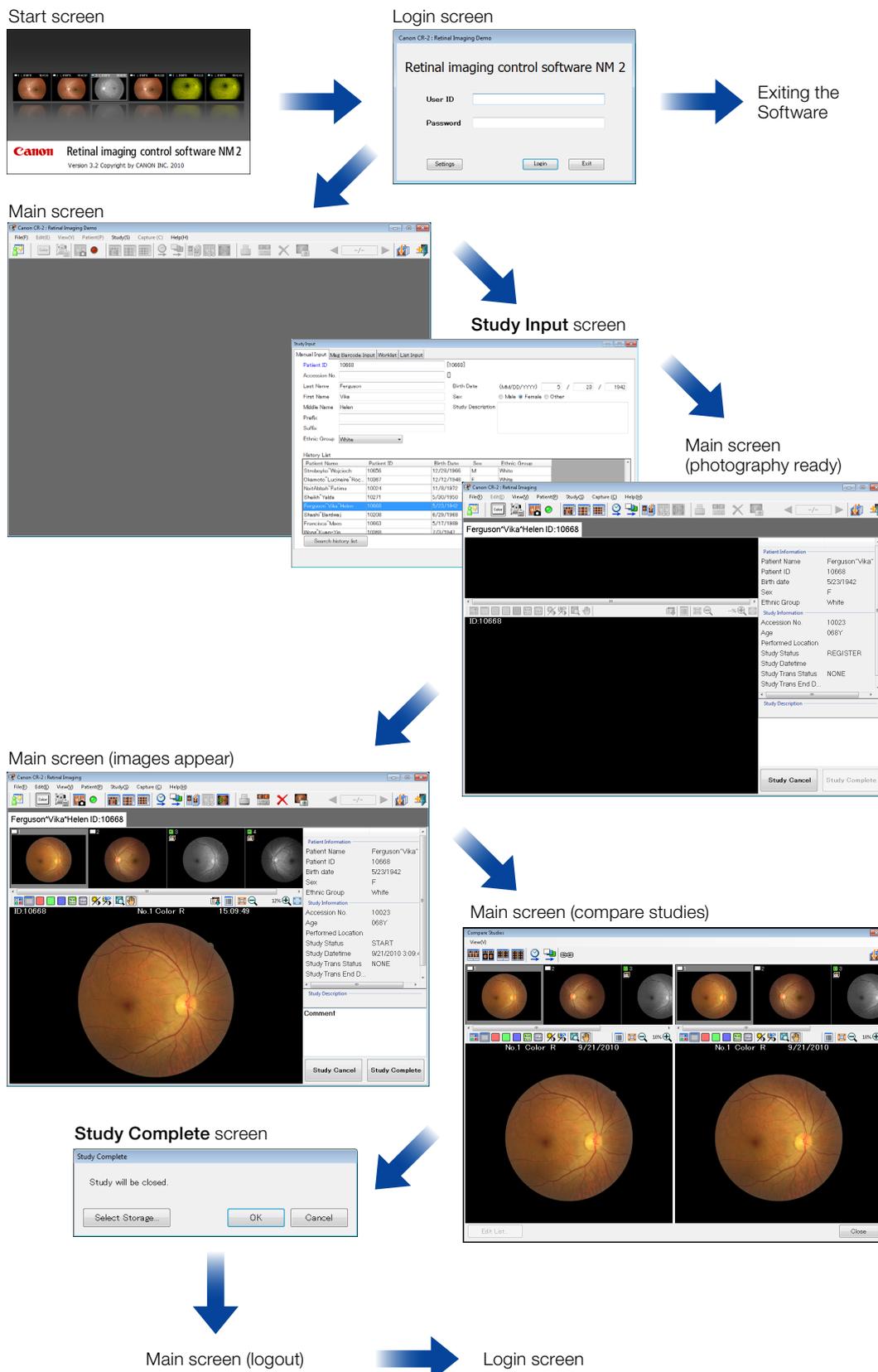
Icon	Icon name	Description
	RGB Channels	Displays the RGB color channels of the color image.
	Normal View	Returns to the color image view.
	Red	Displays the red component of the color image.
	Green	Displays the green component of the color image.
	Blue	Displays the blue component of the color image.
	Digital Redfree	Sets the color image display to the digital Redfree mode.
	Digital Cobalt	Sets the color image display to the digital Cobalt mode.
	Contrast/Brightness	Adjusts the contrast and brightness.
	Reset Contrast/Brightness	Resets the contrast and brightness adjustment.
	Loupe	Enlarges an area of the image.
	Hand	Moves the image.
	Save	Saves the main image as generated image.
	Image Property	Displays the image properties.
	Fit to Image Area	Displays the entire main image.
	Zoom Out	Zooms out the main image.
	Zoom In	Zooms in the main image.
%	Display magnification	Displays the magnification percentage.
	Full Screen	Displays the main image at full-screen size.

## Main Screen/Menu Items

Menu	Submenu	Key	Description
File	Change Password...		Changes the password of the login user.
	Print Adjustment...		Adjusts the printing images.
	Print		Prints images using the simple printing function.
	Page Setup...		Makes the page settings for Simple Printing.
	Easy-PhotoPrint EX		Starts up the Easy-PhotoPrint EX.
	Save As...		Saves images as a JPEG or TIFF file.
	JPEG Settings...		Sets the image quality and size of JPEG images.
	Logout	Alt+F4	Logs out of the Rics NM 2.
Edit	Select All		Selects all images.
	Select Same Mode Images		Selects all images taken in the same mode.
	Delete Generated Image		Deletes generated images.
View	Hide Rejected Images		Toggles between view/hide of rejected images.
	Hide Study Information		Toggles between view/hide of study information.
	Full Screen		Displays the main image at full-screen size.
Patient	Change Patient Information...		Displays the <b>Patient Info Edit</b> screen.
Study	Study	F1	Displays the <b>Study Input</b> screen to start a new study.
	Skip Study Input	F5	Starts a study without inputting the study information.
	Study Cancel (Close)		Cancels the study. (Closes the study on the study log screen.)
	Study Complete (Transfer)	F12	Ends the study. (Transfers the study on the study log screen. The F12 key function is disabled on this screen.)
	Set Auto Numbering...		Automatically assigns an accession No.
	Next Study	Space	Selects a study to display in the study log screen.
	Previous Study	Back Space	
Capture	Capture for Stereo View...	F6	Displays the stereo photography screen.
	Capture Settings...	F7	Makes the photography settings during a study.
Help	Version		Displays the software version information.

# Screen Flowchart

A screen flowchart is provided below for the process from the Rics NM 2 startup screen through to login, study input, capture of retinal image, completion of study, logout, and exiting the Rics NM 2.



# 2 Basic Operation

This chapter describes the basic operations of the Rics NM 2 from startup and input of the study information through to taking retinal images, browsing images, printing, ending the study, and exiting the software. For details on retinal camera operations, see the Operation Manual of the Digital Retinal Camera CR-2.



The system settings below are required for the Rics NM 2:

- Installation
- Environment setting that match the connected network and operation
- Login user registration
- Devices and settings used for study information input
- Saving procedures for images

The system settings must be made by a system engineer or service technician. For details on the settings, contact a Canon representative or distributor.

## Starting up the Rics NM 2

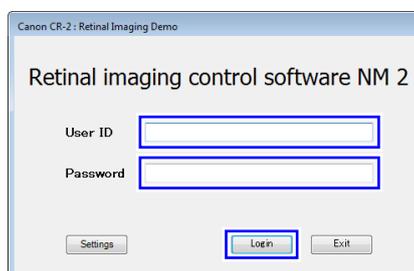
Double-click the Canon CR-2 icon on the desktop.

After the startup screen appears for several seconds, the login screen appears.



## Logging In

Input the **User ID** and **Password** on the login screen, and click **Login**. If authentication is performed correctly, the login screen closes, and the main screen appears.



## Starting a Study

This section describes how to input study information manually. To input the information in another way (from a magnetic card/barcode, worklist, or study file), see "Inputting Studies" (on page 28). In this example, the **Patient ID** was selected as an essential item. For details on essential item settings, see "Study Input" (on page 101).

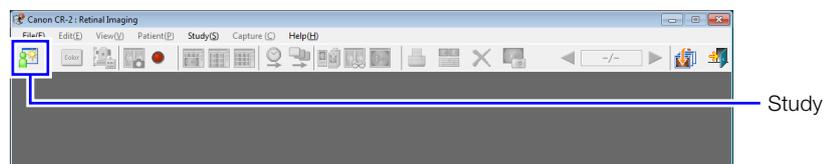


### CAUTION

**Make sure that the patient's name, ID, birth date, and sex match those that are entered for the patient**

If the entered information is in error, patients may be mixed up and misdiagnosed, which may result in physical injury to the patient.

- 1 Click  button (Study) on the toolbar of the main screen.  
Or, select **Study > Study F1** from the menu.



- 2 Select the **Manual Input** tab on the **Study Input** screen.

Input the patient ID. Essential input items are indicated in blue. Data can also be input for other items.

Manual Input

Patient ID: 10159 [10159]

Accession No.:

Last Name: Birth Date: (MM/DD/YYYY) / /

First Name: Sex:  Male  Female  Other

Middle Name: Study Description:

Prefix:

Suffix:

Ethnic Group:

Patient Name	Patient ID	Birth Date	Sex	Ethnic Group
Wong Kuan-Yin	10088	7/3/1947	M	Asian
Isabel de Sousa Yumiko	10008	4/26/1969	F	White
Francisca Mees	10663	5/17/1989	F	White
Anastasia Meskovic	10795	3/6/1947	F	White
Wadive Ousashie Kofi	10195	8/21/1987	M	
Chang Lily	10460	4/18/1957	F	Asian
de Sousa Isabel Yumiko	10611	4/26/1969	F	White
Gascoina Robert James	10030	12/8/1946	M	White

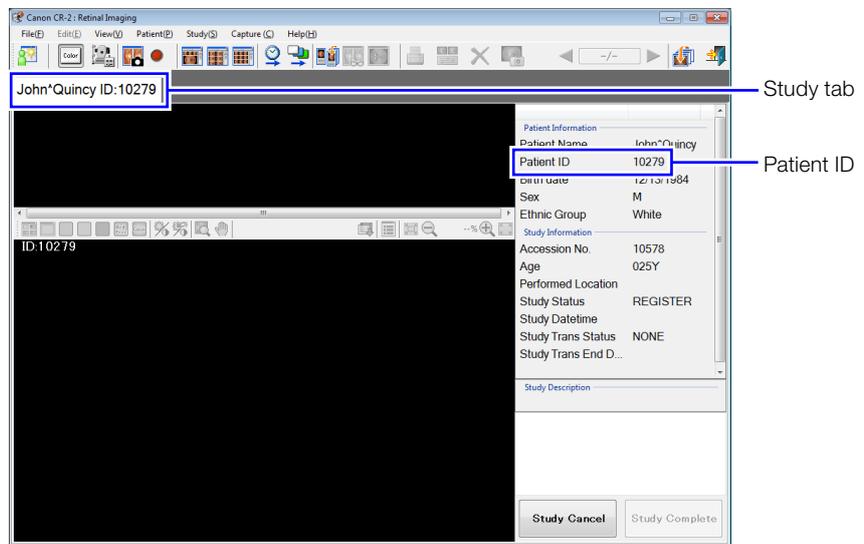
Search history list

OK Cancel

### 3 When input is completed, click **OK**.

The **Study Input** screen closes. The study tab is added to the main screen, and the patient information appears on the right side of the screen.

This screen is ready for starting the study. The retinal image can be captured.

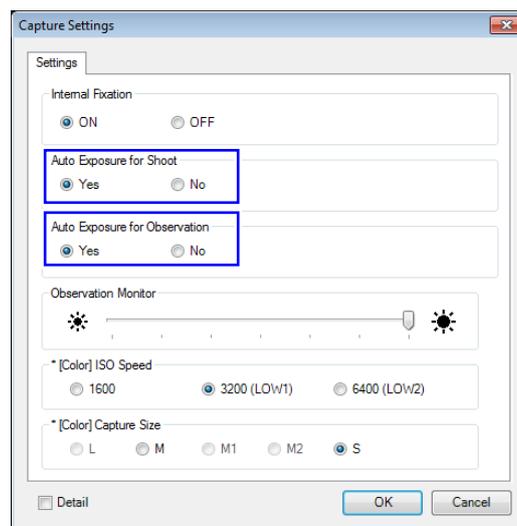


## Using Automatic Exposure (AE) for Intensity/Brightness Adjustment

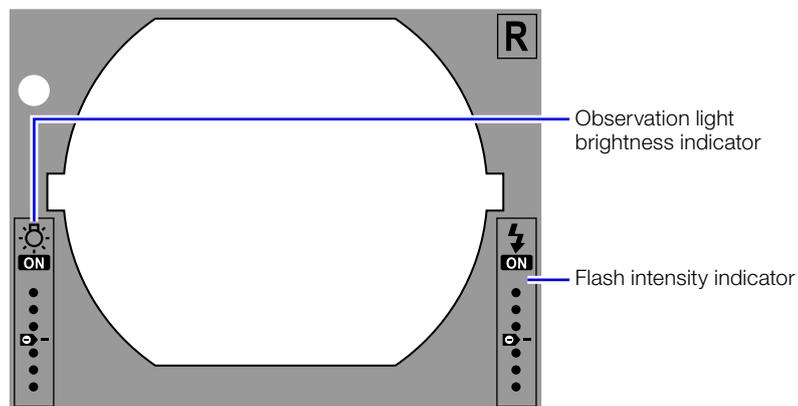
Manual and automatic exposure (AE) can be selected for adjusting the observation light brightness and flash intensity.

This section describes the procedure for setting the observation light brightness and flash intensity to automatic exposure (AE).

- 1 Click  button (Capture Settings) in the main screen.  
Or, select **Capture > Capture Settings F7** from the menu.  
The **Capture Settings** screen appears.
- 2 Select **Yes** under **Auto Exposure for Shoot** and **Auto Exposure for Observation**.



The intensity indicator of the observation monitor for the retinal camera changes to ON.



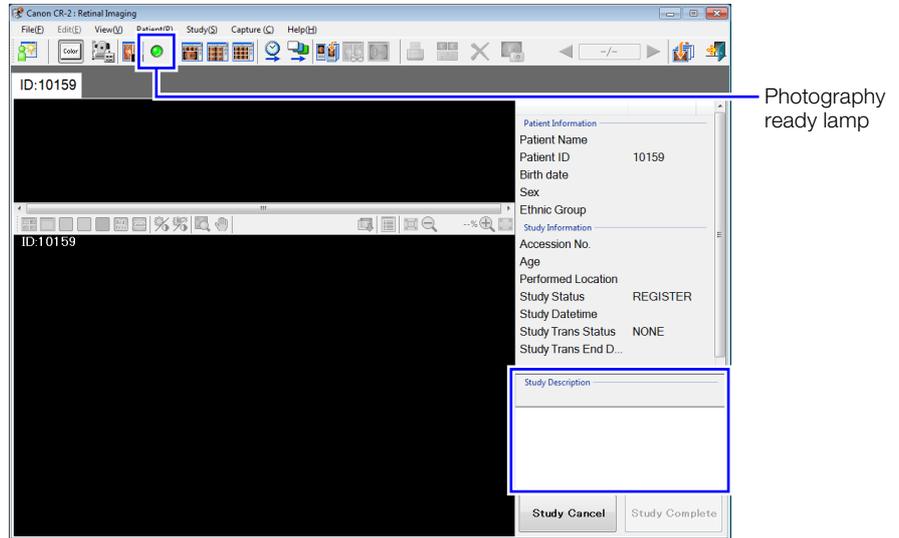
- 3 Click **OK**.  
The **Capture Settings** screen closes.

## Taking Images

To take retinal images, operate the retinal camera. For details, see the Operation Manual of the Digital Retinal Camera CR-2.

**1** Input the study description to **Study Description**.

The study description is applied for all images captured for the study. Input may be omitted, if it is not necessary.

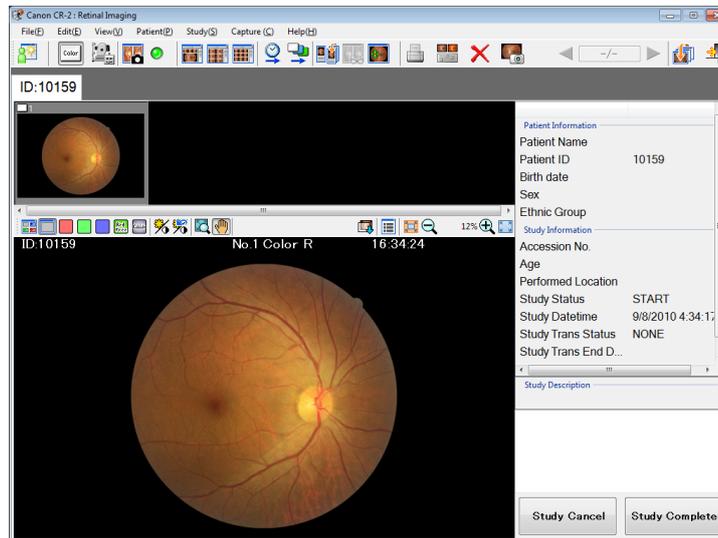


**2** Make sure that the photography ready lamp lights green.

Images cannot be taken if the photography ready lamp is red.

**3** Press the shutter release button on the retinal camera.

The retinal image data is captured, and appears on the main screen.



To capture another image, repeat the procedure from step 2.



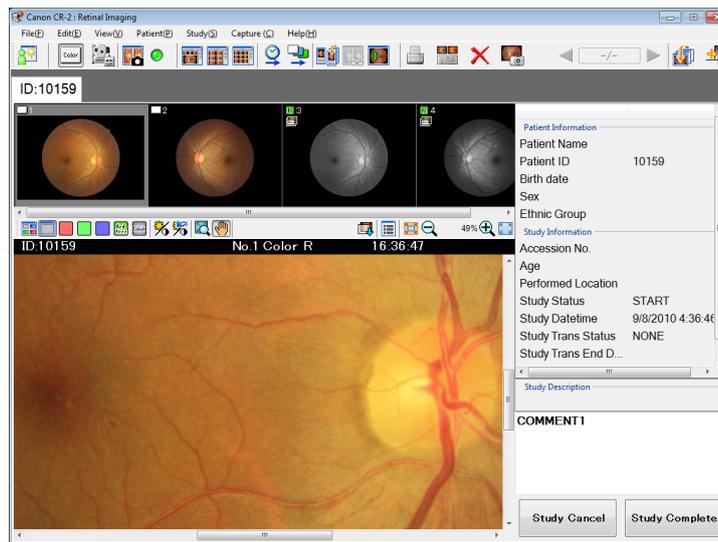
**Input comments for each image**

Click  button (Image Property) to display the **Image Property** screen. Input the comment to **Image Comments**.

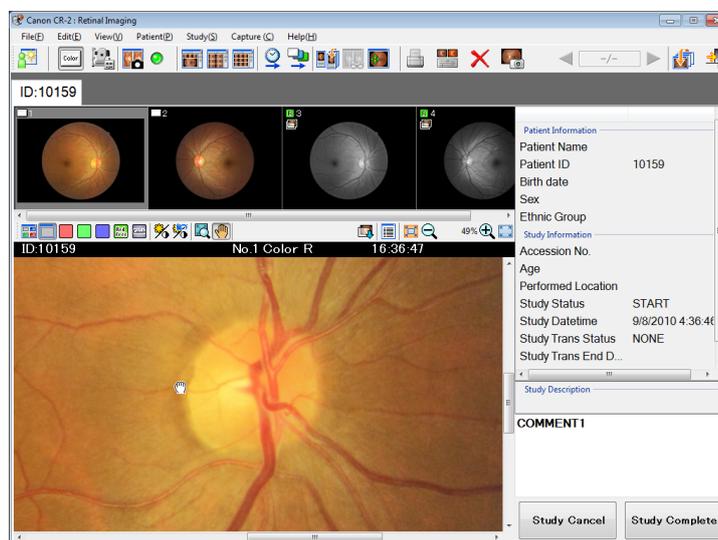
## Viewing Images

This section describes how to view captured images in the main screen.

- 1 Click the thumbnail image to be viewed.
- 2 Click  button (Zoom In) or  button (Zoom Out).  
Images can be zoomed in up to 100%. Turning the mouse wheel also changes the magnification. Click  button (Fit to Image Area) to display the entire image.



- 3 Select  button (Hand), and drag the image to move it.  
The image can also be moved by operating the scroll bars of the main image display area.



Any changes made to the display magnification and display positions are kept when another image is selected.

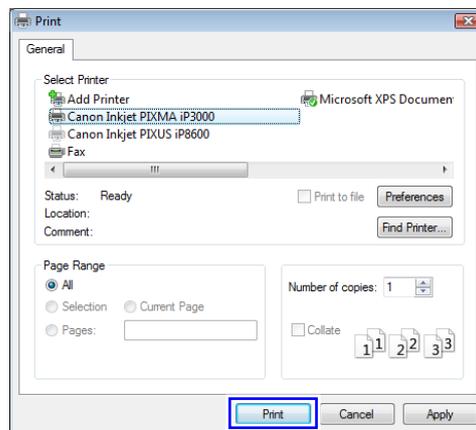
## Printing Images (in Simple Printing)

- 1 Click the desired image on the thumbnail image area.
- 2 Click  button (Print).  
Or, select **File > Print** from the menu.  
The **Print** screen appears.

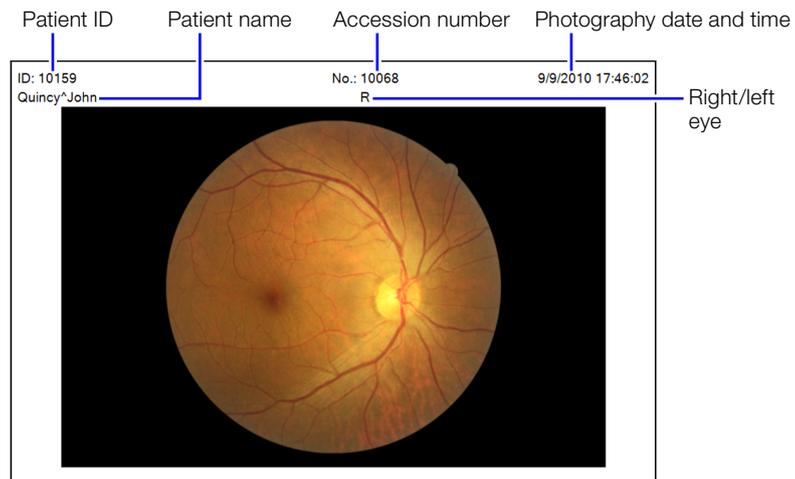


To assign simple printing to the Print button, see "Print" (on page 126).

- 3 Check that the desired printer is selected, and click **Print**.  
Printing is started.

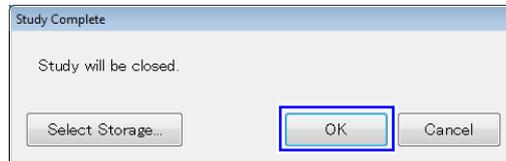


Patient information is printed in the margins of the printout.  
The patient ID and accession number are each prefixed with "ID:" and "No.".



## Ending a Study

- 1 Click **Study Complete**.  
Or, select **Study > Study Complete F12** from the menu.
- 2 Click **OK** in the **Study Complete** screen.  
Transfer of the study information is started.



An icon indicates the transfer status on the right end of the menu bar on the main screen. The icon disappears when transfer ends successfully.



## Logging Out

Click  button (Logout), or select **File > Logout Alt+F4** from the menu.  
The main screen closes, and the login screen appears.



If there is a study in progress, the user cannot log out. Before logging out, be sure to end the study.

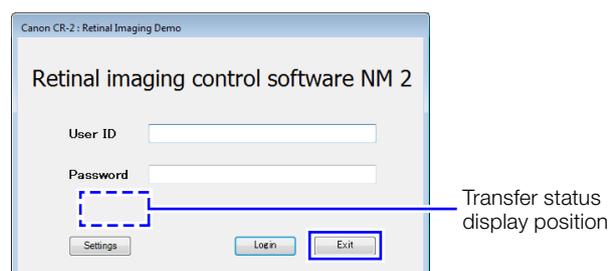
## Exiting the Rics NM 2

Click **Exit** in the login screen.  
If the transfer icon appears, the Rics NM 2 cannot be exited until the transfer is completed.  
If the transfer error icon appears, re-transfer manually. For details, see "Transferring All Temporarily Saved Study Logs" (on page 75).

### CAUTION

#### **While images are being transferred, never turn off the computer**

Doing so might damage the hardware or corrupt the data.



# 3 Advanced Operation

This chapter describes study operations: inputting studies using the worklist or study file, various image operation/processing, printing with Easy-PhotoPrint EX, measuring the C/D ratio, stereo photography, stereo view, and study log operations.

For details on retinal camera operations, see the Operation Manual of the Digital Retinal Camera CR-2.

## Inputting Studies

There are four methods below for inputting studies:

1. Manual input: Input studies using the keyboard.
2. Magnetic card/barcode input: Input studies using the magnetic card/barcode reader.
3. Worklist input: Input studies using the worklist acquired from the worklist server.
4. List input: Input studies using study files containing the patient information in text format.



**CAUTION**

**Make sure that the patient's name, ID, birth date, and sex match those that are entered for the patient**

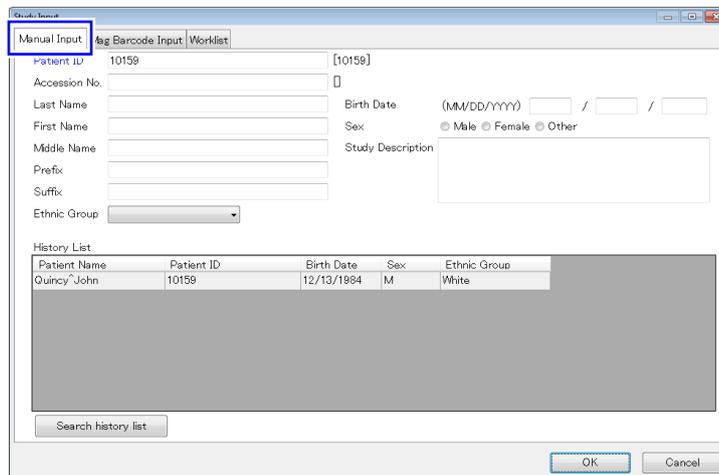
If the entered information is in error, patients may be mixed up and misdiagnosed, which may result in physical injury to the patient.

## Inputting Studies Using the Keyboard

1 Click  button (Study).

Or, click **Study > Study F1** from the menu.

The **Study Input** screen appears. Click the **Manual Input** tab.



Patient Name	Patient ID	Birth Date	Sex	Ethnic Group
Quincy John	10159	12/13/1984	M	White

## 2 Input the patient information.

The item names in blue are essential input data.



### Acceptable characters and input format for each item

- For details on the acceptable characters for each item, see "Acceptable Characters" (on page 142).
- It is possible to set the header items of the history list. See **Input-Disabled Data** of "Study Input/Manual Input tab" (on page 102).
- It is possible to select the input method of Birth Date. See **Birth Date Input** of "Study Input/Manual Input tab" (on page 102).
- History list can display the Patient ID, Last Name, First Name, Middle Name, Prefix, Suffix, Birth Date, Sex, and Ethnic Group.

## 3 Click **Search history list**.

History list displays only studies that match the search conditions.

Patient Name	Patient ID	Birth Date	Sex	Ethnic Group
Quincy, John	10159	12/13/1984	M	White

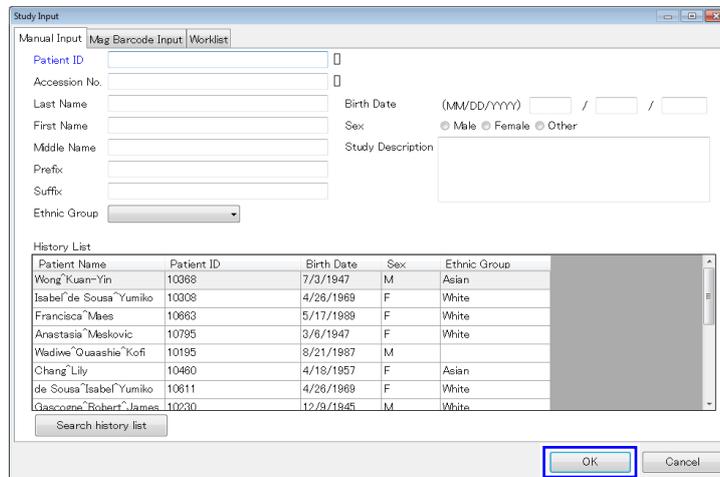


### Sorting history list

Clicking an item on the title row of the history list sorts the list by the corresponding item. The initial click sorts the list in ascending order, and clicking it again sorts it in descending order.

**4** Click a row on the **History List** to select a study.

The patient information of the study in the history list is inserted into each item field in the top half of the screen. To input any additional items, input the item and click **OK**. The **Study Input** screen closes, then the main screen appears.



**Study items**

- For searchable items, an AND search is made with the patient ID and patient name (Last Name, First Name, Middle Name), and the search is based on the beginning of the search string. Partial text searches are not possible.
- To display the entire previous studies in the history list after performing a search, either close the **Study Input** screen and open it again, or make all of the search condition fields blank, and then click **Search history list**.
- To delete a row displayed in the history list, click the row that you want to delete to select it, and then press the Delete key. The displayed row itself disappears, but the study information remains saved. For this reason, each item field in the top half of the screen is not erased from the history list even if it is deleted from the display.
- Only studies having an exact match for all items – Patient ID, Last Name, First Name, Middle Name, Prefix, Suffix, Birth Date and Sex for the study which was input – are considered to be the same study. If any item is different, the study is treated as a separate study.

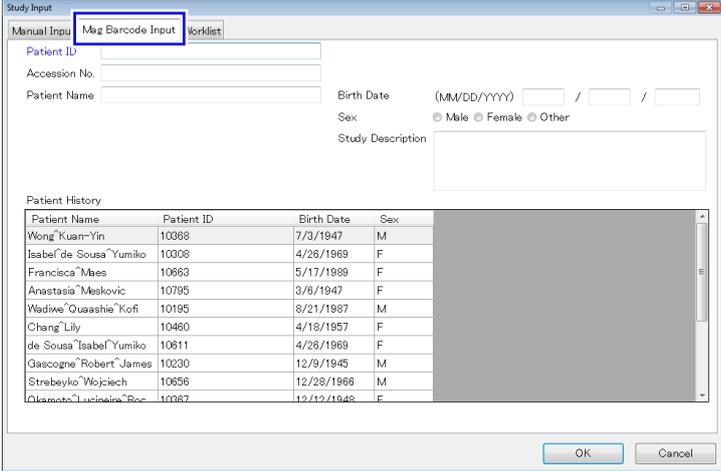


The last 3,000 patient entries are saved in the history list. If the history exceeds 3,000 entries, the entries are automatically deleted starting from the oldest.

## Inputting Studies Using the Magnetic Card/Barcode Reader

Data and communication settings must be made for using a magnetic card/barcode reader. For details, contact the Canon representative or distributor.

- 1 Click  button (Study).  
Or, click **Study > Study F1** from the menu.  
The **Study Input** screen appears.
- 2 Click the **Mag Barcode Input** tab.

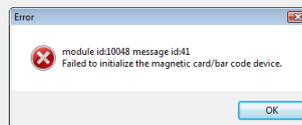


Patient Name	Patient ID	Birth Date	Sex
Wong Kuan-Yin	10368	7/3/1947	M
Isabel de Sousa Yumiko	10308	4/26/1969	F
Francisca Maes	10663	5/17/1989	F
Anastasia Meskovic	10795	3/8/1947	F
Madine Ouasshie Kofi	10195	8/21/1987	M
Chang Lily	10460	4/18/1957	F
de Sousa Isabel Yumiko	10811	4/26/1969	F
Gascoigne Robert James	10230	12/9/1945	M
Strebeyko Wojciech	10656	12/28/1966	M
Olameto Lucineira Roc	10367	12/12/1948	F

- 3 Input the study information using the magnetic card/barcode reader.  
A search is made for the input items, and the results appear in the history list.  
If some items were already manually input, they are overwritten by the data from the magnetic card/barcode reader. The item names in blue are essential input data.
- 4 Input any items not input from a magnetic card/barcode reader using the keyboard.  
Check the input study information, and then click **OK**.



If a magnetic card reader or barcode reader is not connected or the power is not turned on when the **Mag Barcode Input** tab is clicked, the **Error** screen appears.



For details on the acceptable characters for each item, see "Acceptable Characters" (on page 142).

### Inputting Studies from the Worklist

The Rics NM 2 can acquire worklists (scheduled study information) from a hospital information system (HIS) or radiology information system (RIS). Set the maximum number of worklists that can be acquired in a single operation on the **Study Input/Worklist** tab screen (on page 104).

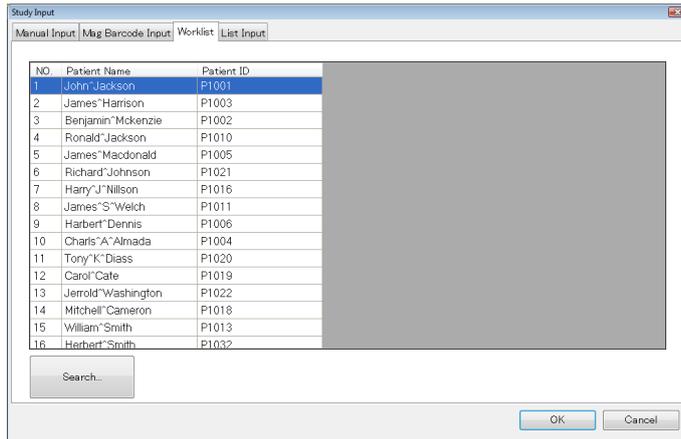
The Rics NM 2 can also notify the HIS/RIS of the study status.

1 Click  button (Study).

Or, click **Study > Study F1** from the menu.

The **Study Input** screen appears. Click the **Worklist** tab.

The study list acquired from the worklist server appears.



#### Worklist server searches

When **Display Worklist Search window** has been selected, the **Worklist search** screen appears automatically ahead of the **Study Input** screen. For further details, see "Study Input/Worklist tab" (on page 105).

For details on the **Worklist search** screen, see step 3.

#### Searches using a magnetic card/barcode reader

If a study is input from a magnetic card/barcode reader while the study list on the **Worklist** tab appears, a search of the worklist is performed again and the search results appear in a list.

- 2 To change the search conditions of the worklist server, click **Search**.  
The **Worklist search** screen appears.

- 3 Input the search conditions.  
To search by Patient ID, for instance, select **Patient ID** from the **Search Conditions: DICOM Tag Keyword** list box, and input the ID on the right side.
- 4 To return the search conditions to their defaults, click **Default**.  
For details on the default settings, see "Setting the Worklist Search Conditions" (on page 106).
- 5 Click **OK**.  
The **Worklist search** screen closes, and the worklist is re-searched.
- 6 Select the study from the re-searched study list, and click **OK**.  
The main screen appears.



#### Worklist search conditions

For a description of search date condition and search DICOM tag keyword settings, see "Setting the Worklist Search Conditions" (on page 106).

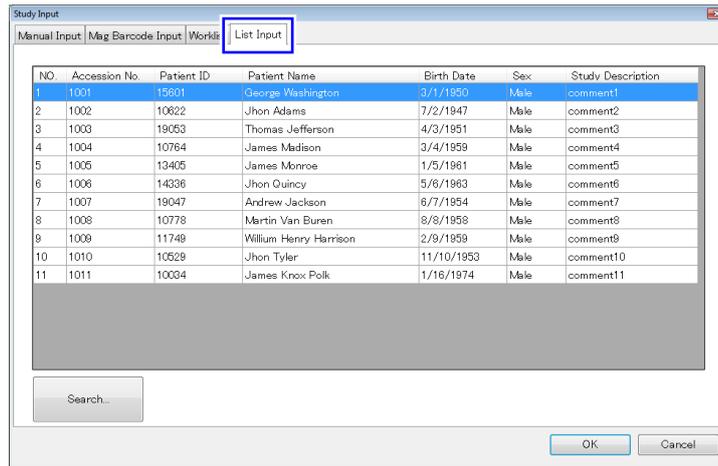
#### Changed search conditions

Among the changed search conditions, Patient ID, Patient Name, Accession No. and Requested Procedure ID are saved until either the **Study Input** screen is closed or switched to another screen. Other items are saved until either the software is exited or the worklist search conditions are changed. For further details, see "Setting the Worklist Search Conditions" (on page 106).

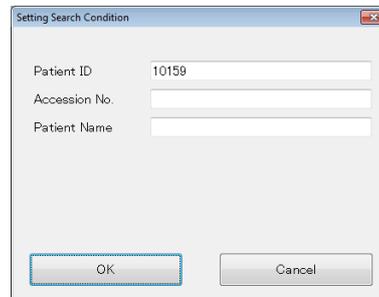
### Inputting Studies from the Study List

Study information can be input from a study file (ccrhis.his) that contains patient information. Up to 10,000 cases can be recorded in a study file. Study results can also be output to a study history file (ccrhis.hr).

- 1 Click  button (Study).  
Or, click **Study > Study F1** from the menu.  
The **Study Input** screen appears.
- 2 Click the **List Input** tab.



- 3 Select a study from the study list, or if there are too many studies in the list, proceed with a search.  
Click **Search**. The **Setting Search Conditions** screen appears.  
Input the search items. The magnetic card/barcode reader also can be used to input items.



For details on the acceptable characters for each item, see “Acceptable Characters” (on page 142).

- 4 Click **OK**.  
The search results appear on the **Study Input** screen.
- 5 Select a study, and then click **OK**.  
The **Study Input** screen closes, then the main screen appears.

## Correcting Patient Information

The patient information of the current study that was input manually or with a magnetic card or barcode reader can be corrected. Patient information acquired by list input or worklist input cannot be changed.

- 1 Click **Patient > Change Patient Information...** from the menu.

The **Patient Info Edit** screen appears.

Patient Name	Patient ID	Birth Date	Sex	Ethnic Group
Wong, Kuan-Yin	10068	7/3/1947	M	Asian
Isabel, de Sousa, Yumiko	10008	4/26/1969	F	White
Francisca, Maes	10863	5/17/1989	F	White
Anastasia, Meskovic	10795	3/6/1947	F	White
Wade, Quaashie, Kofi	10195	8/21/1987	M	
Chang, Lily	10460	4/18/1957	F	Asian
de Sousa, Isabel, Yumiko	10811	4/26/1969	F	White
Gascome, Robert, James	10230	12/9/1945	M	White

- 2 Correct the patient information.
- 3 Click **OK** to close the **Patient Info Edit** screen.

### CAUTION

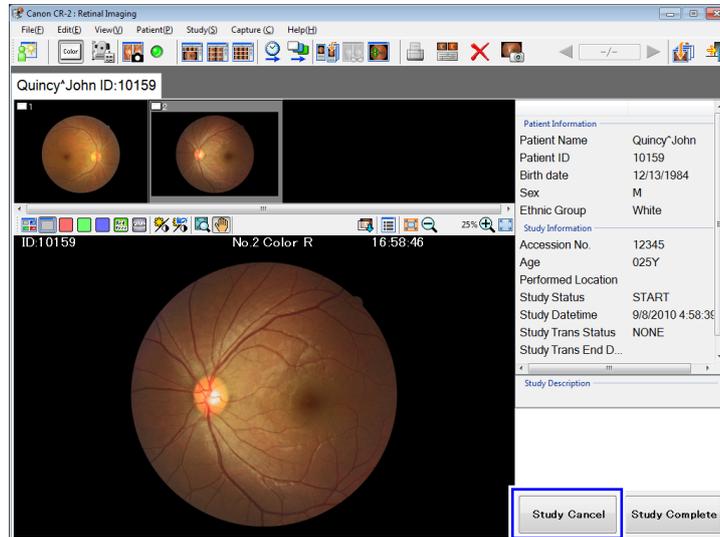
**On the Change Patient Information screen, use care when editing the patient information**

Regardless of all the essential data, input-disabled data and input format settings which were set on the **Study Input/Manual Input** tab screen, all the data can be changed and input.

## Canceling Studies

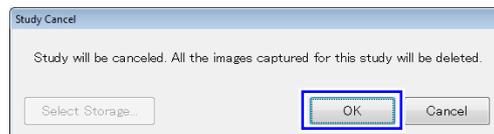
Studies can be canceled, for instance, when a study is to be canceled midway or there is no need to save images that have been captured.

### 1 Click **Study Cancel**.



### 2 Click **OK** in the **Study Cancel** screen.

The study is canceled without saving the images that have been captured.



#### Canceling a study

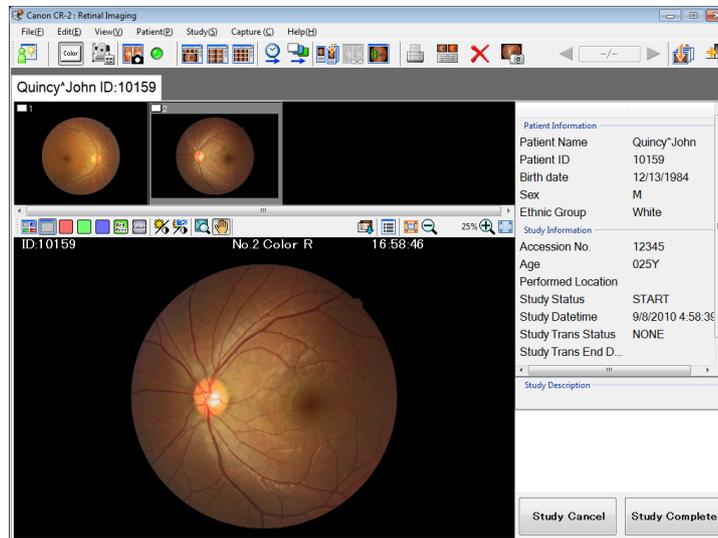
The same **Study Cancel** screen appears even when there are no captured images. To cancel a study, click **OK**.

## Interrupting One Study to Conduct Another Study

A study in progress can be interrupted to conduct another study. The studies of up to three patients can be kept open on the main screen.

1 Click  button (Study).

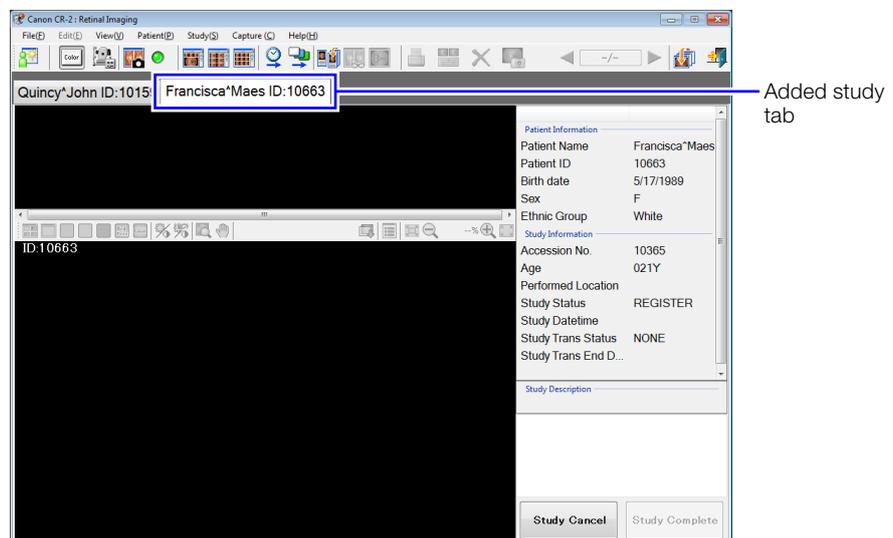
Or, click **Study > Study F1** from the menu. The **Study Input** screen appears.



2 Input the patient information on the **Study Input** screen, and click **OK** to close the screen.

3 Proceed with taking retinal images using the added study tab.

To resume the previous study, click the study tab to switch the study.



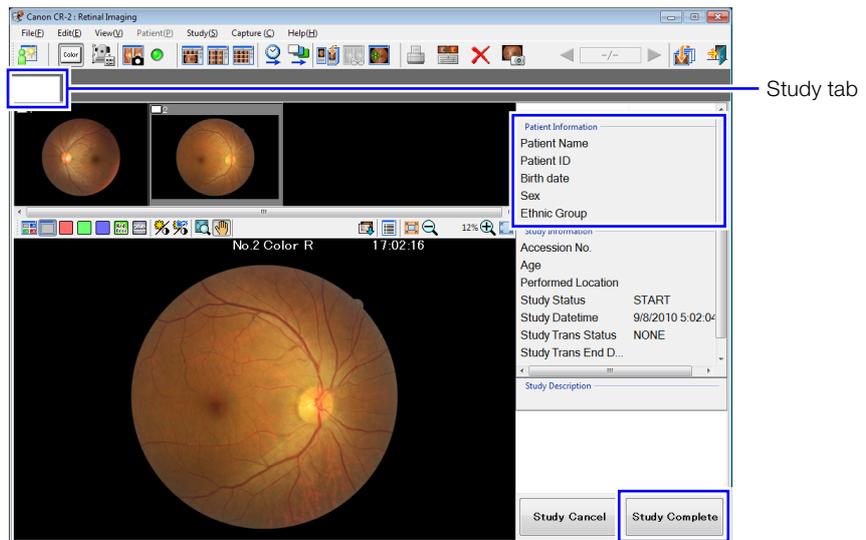
## Capturing Images before Completing Study Information

Retinal images can be taken without first opening the **Study Input** screen.  
When the study is completed, input the information and save the image.



When automatic numbering function is used, Skip Study Input function cannot be used.

- 1 Click **Study > Skip Study Input F5** from the menu.  
A blank study tab is added on the main screen.
- 2 After the retinal images have been taken, click **Study Complete**.

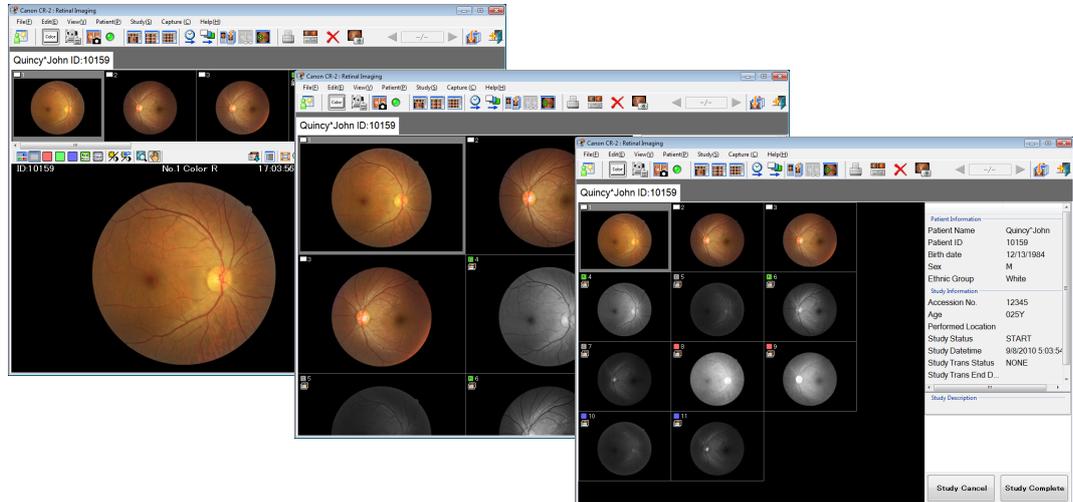


- 3 Input the patient information on the **Study Input** screen.  
Click **OK** to close the **Study Input** screen.

## Image Display

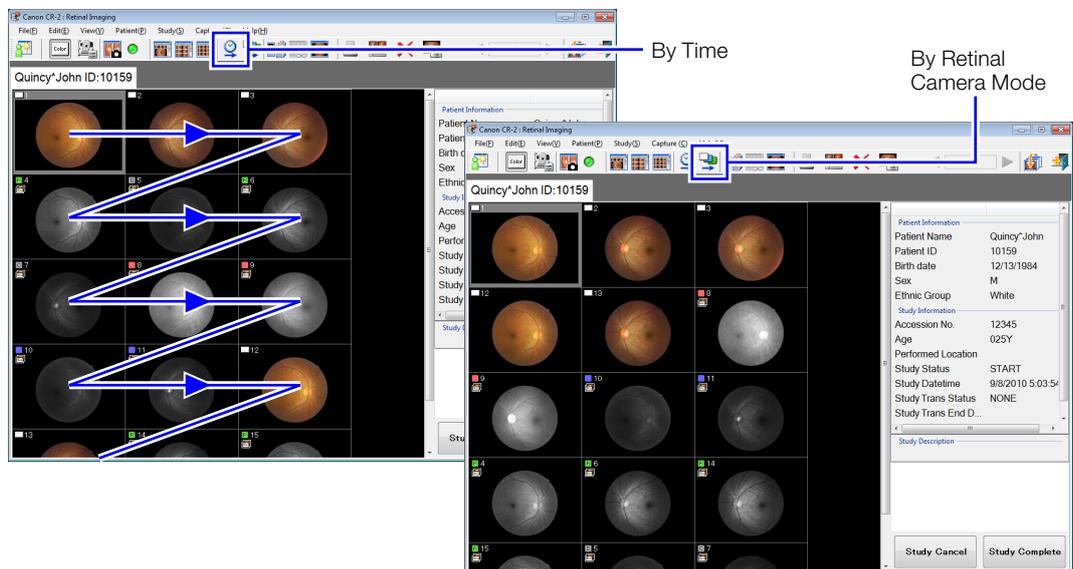
### Changing the View Mode of the Main Screen

Three view modes can be selected by  button (Main and Thumbnails),  button (Two-Row Thumbnails) and  button (Thumbnails Only).



### Changing the Display Sequence

The sequence in which thumbnail images appear can be selected using  button (By Time) or  button (By Retinal Camera Mode). Each click of the button toggles between ascending or descending order. The display sequence in the same retinal camera mode can be changed on the **Screen/Thumbnail Order** tab screen (on page 123).



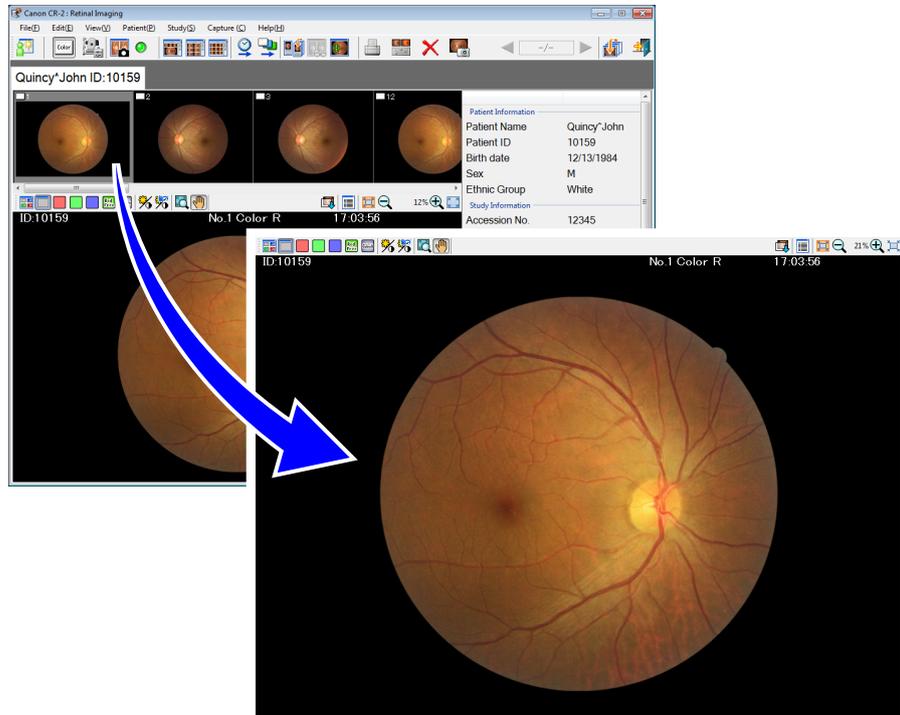
## Displaying in the Full-Screen Mode

The image appears at full-screen size when the main screen or the RGB channel view image is selected. You cannot take a retinal image when an image appears in the full-screen mode.

- 1 Click the thumbnail image to be browsed.

Or, click  button (Full Screen).

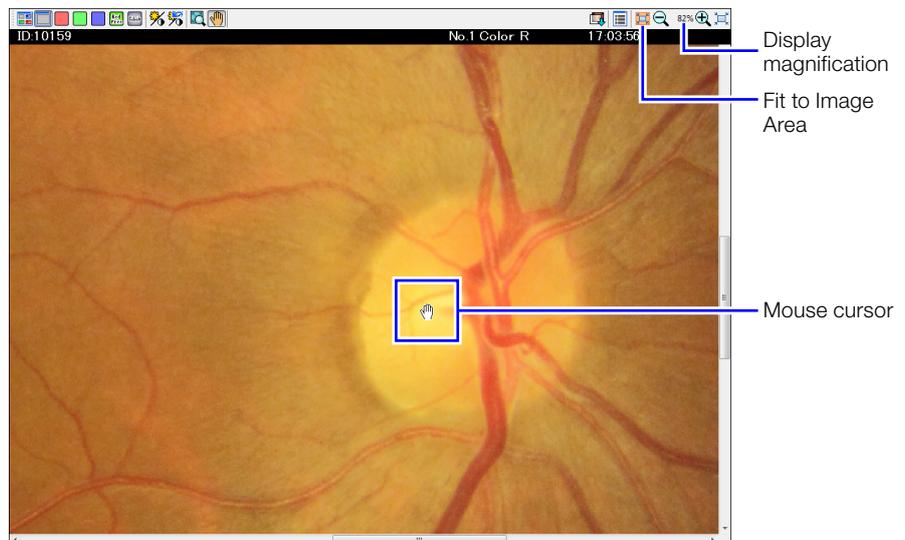
The main image appears in the entire screen.



- 2 Move the mouse to the region to be zoomed in, and roll the mouse wheel away from you.

The image is enlarged up to 100% centering on the mouse position. Rolling the mouse wheel towards you zooms out of the image. Zoom in and zoom out can also be performed by clicking  button (Zoom In) and  button (Zoom Out), respectively.

Click  button (Fit to Image Area) to display the entire image.



3 Select  button (Hand), and drag the display position of the image to move the image. Images can also be moved by dragging the scroll bars.

4 Click  button (Return).

The main screen re-appears. The same operation can be performed by pressing the ESC key.



#### Changing images

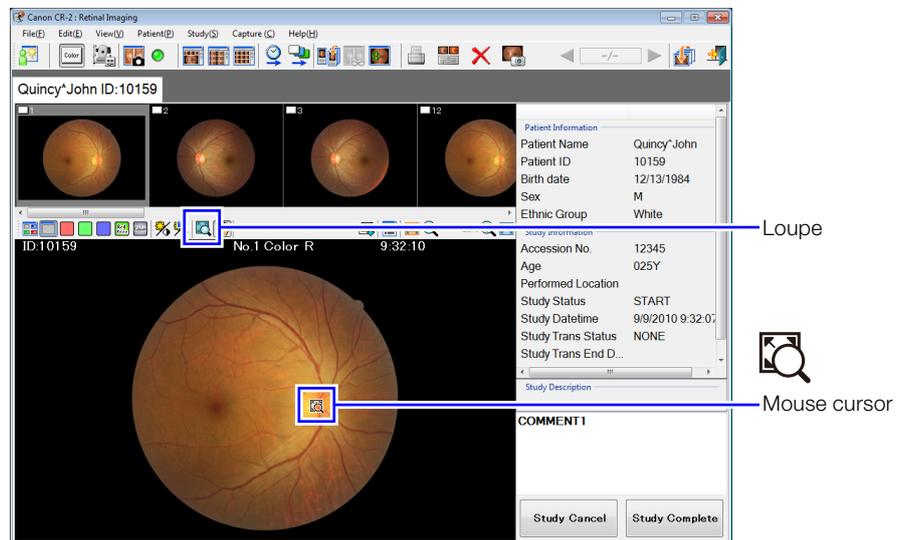
If there are two or more thumbnails, press the right or left arrow key to change the images.

## Magnifying Images Using the Loupe

Any part of the main image can be magnified.

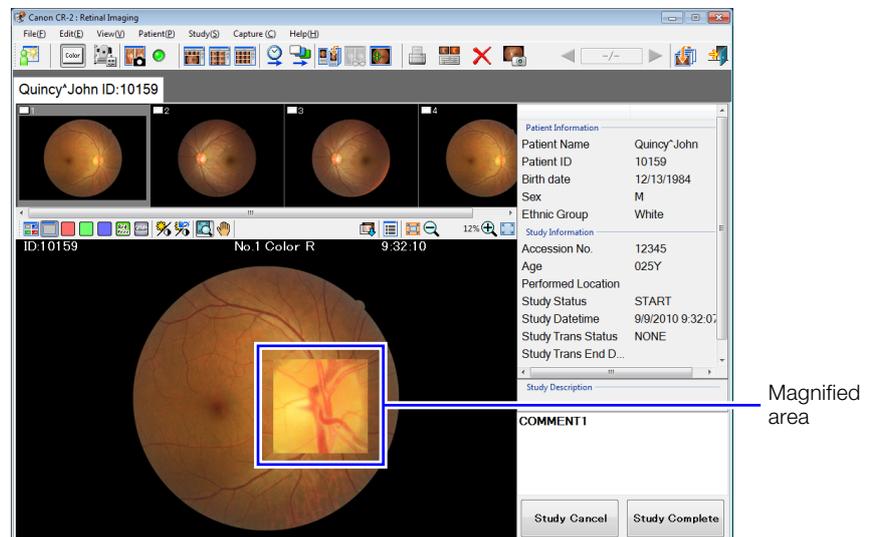
1 Click  button (Loupe).

The mouse cursor changes shape to a loupe. Move the mouse to the position to be magnified.



2 Click a part of the main image.

The part is magnified and appears. When the mouse is dragged, the magnification position moves as well. To change the magnification size and ratio, see “Screen/Loupe tab” (on page 124).

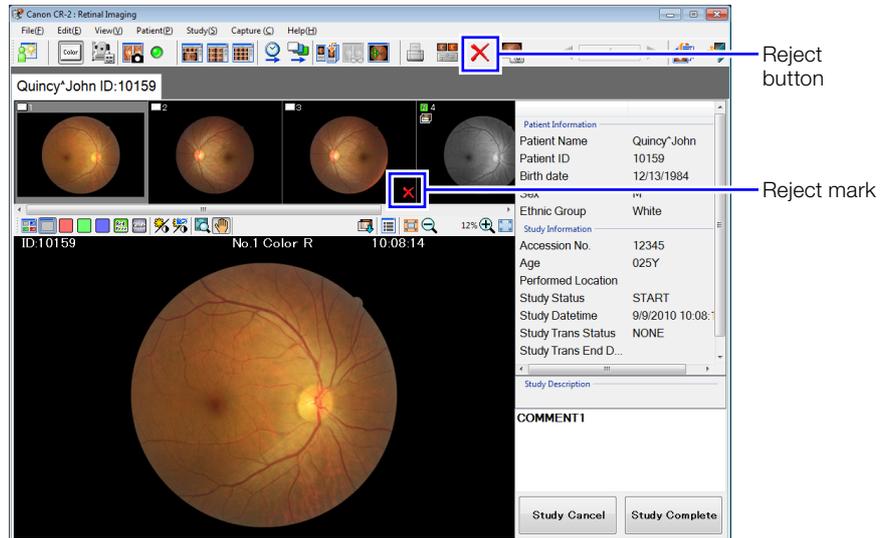


## Rejects

The reject mark can be assigned to images that have failed to be captured or images that do not need to be saved. These images will not be transferred when the studies are completed. Images with the reject mark can also be hidden.

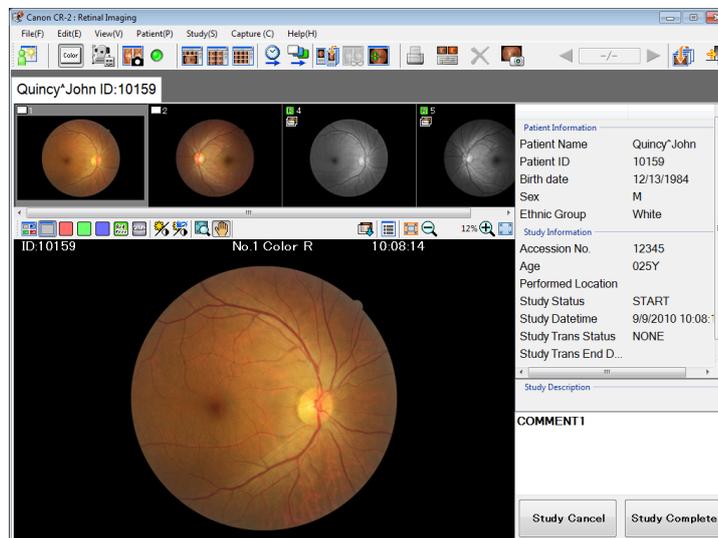
### Rejecting Images

Click the thumbnail image, and click **X** button (Reject). The reject mark will appear at the bottom right of the image.



### Hiding Rejected Images

Click **View > Hide Rejected Images** from the menu to select this item. Images with the reject mark are hidden, and **X** button (Reject) is also disabled.



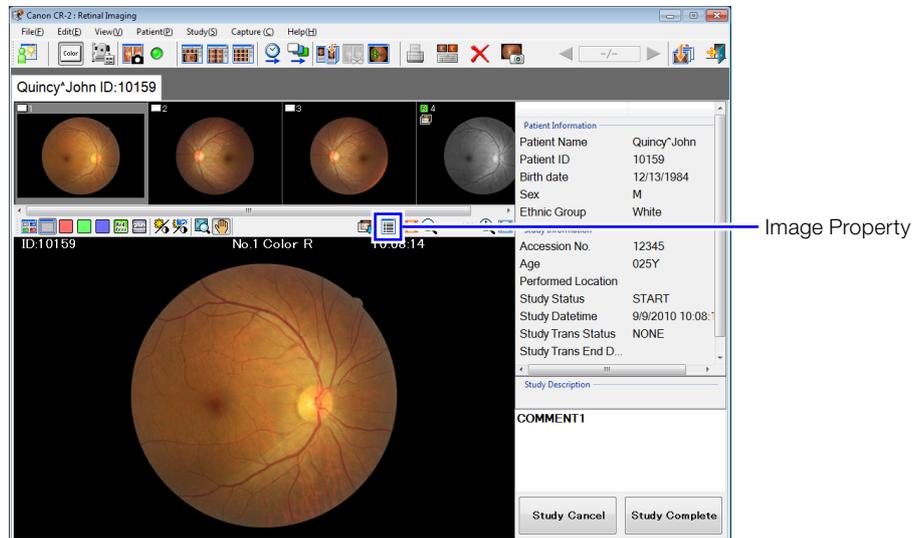
### Canceling Rejects

To cancel rejects, click **View > Hide Rejected Images** from the menu to clear the checkbox first. Then, click the rejected image, and click **X** button (Reject).

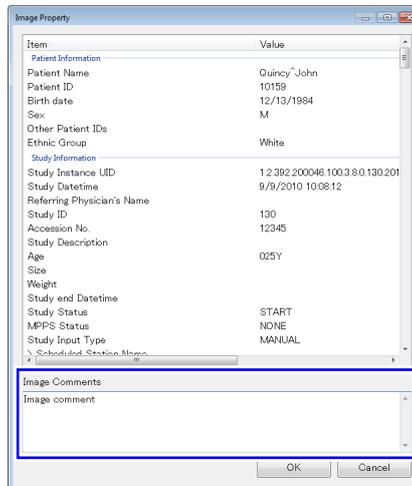
## Inputting Image Comments

Image comments can be attached to images.

- 1 Click  button (Image Property).  
The **Image Property** screen appears.



- 2 Input comments for the image.  
A comment consisting of up to 4,096 characters can be input.



To browse other items on screen, double-click the item name. The screen for the double-clicked item appears.  
Click **Close** to close the screen.

- 3 Click **OK** to save the image comment.

## Image Processing

This section describes contrast/brightness adjustment, RGB channel view, digital color filtering, quality assurance (QA), and screen capture. Digital color filtered images and screen capture images are treated as generated images.



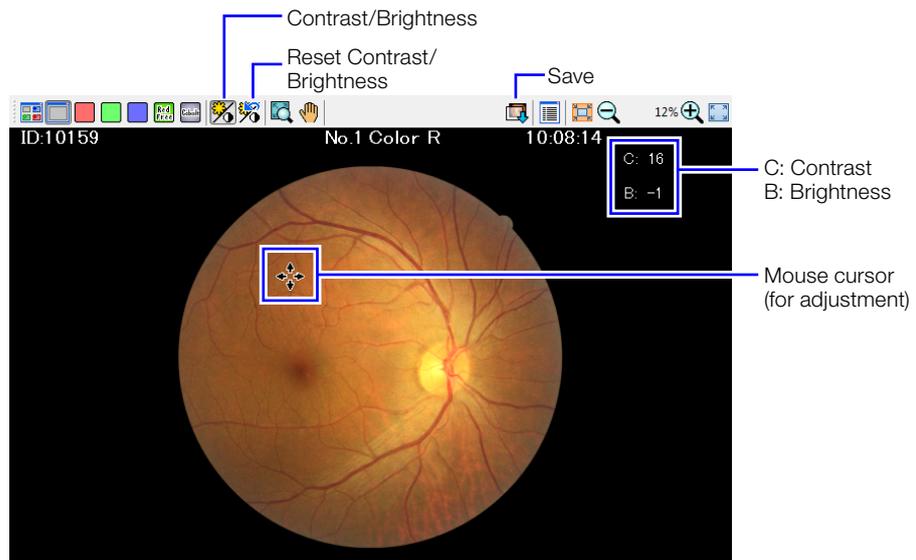
Up to 30 generated images can be saved to a single study. To delete generated images, select **Edit > Delete Generated Images** from the menu.

### Adjusting the Contrast/Brightness

The contrast and brightness of the main image can be adjusted.

- 1 Click the thumbnail image.
- 2 Click button (Contrast/Brightness).

The mouse cursor changes to a cross for adjustments. When the mouse button is clicked on the main image and then dragged up or down, the brightness (B) can be adjusted, and when it is dragged to the left or right, the contrast (C) can be adjusted.



To return to the image before adjustment, click button (Reset Contrast/Brightness).



The brightness and contrast values are retained for each image but they are not applied to the thumbnail displays, printed images or saved images. In addition, the adjustment values are reset when the Study tab is closed.

- 3 To save the image after adjustment, click button (Save).  
The adjusted image is added to the thumbnail image area. The contrast and brightness of the original image do not change.

## Displaying the RGB Channel View

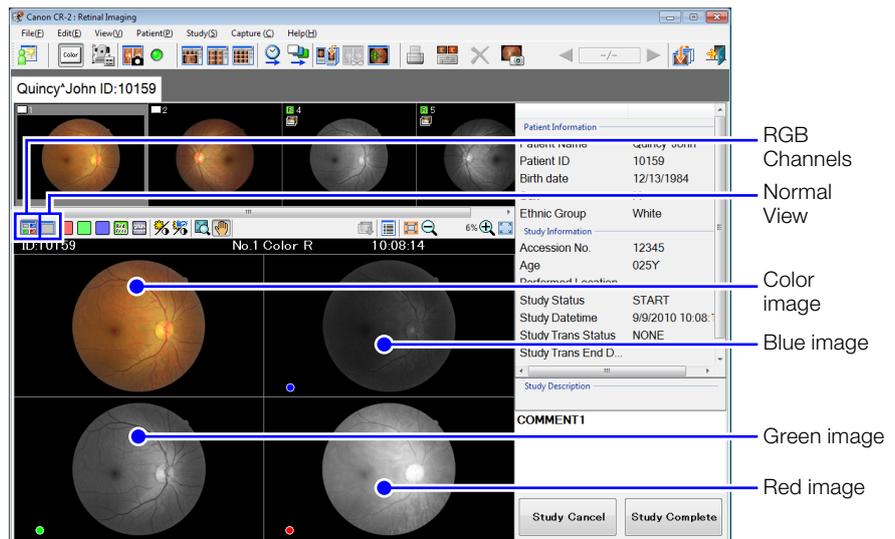
The color components (R, G, B) of the color image appear separately. This feature cannot be applied to captured images.

1 Click the thumbnail of the color image.

2 Click  button (RGB Channels).

In addition to the color image, the R (red), G (green), and B (blue) color component images also appear.

To restore to the original display, click  button (Normal View).



The following image operations are available on RGB channel view images:

- Zooming
- Full-screen display (on page 40)
- Loupe (on page 41)
- Contrast/brightness adjustment (on page 44)
- Moving the displayed area

Whenever the zooming in/out and moving operations are used, they are applied to all split-screen images. Contrast/brightness adjustment can be performed on individual split-screen images, and reset is applied to all split-screen images.

## QA (Quality Assurance)

The contrast, brightness, gamma and hues of the images can be adjusted.

### 1 Click the thumbnail image.

To select two or more images, click the images while holding down the Ctrl key, or to select a range of images, click the images while holding down the Shift key.



Quality assurance (QA) is not possible in the following instances:

- When the captured image and generated image are selected.
- When different types of generated images are selected.

### 2 Click button (QA).

The **QA (Quality Assurance)** screen appears.

### 3 Set the adjustment parameters.

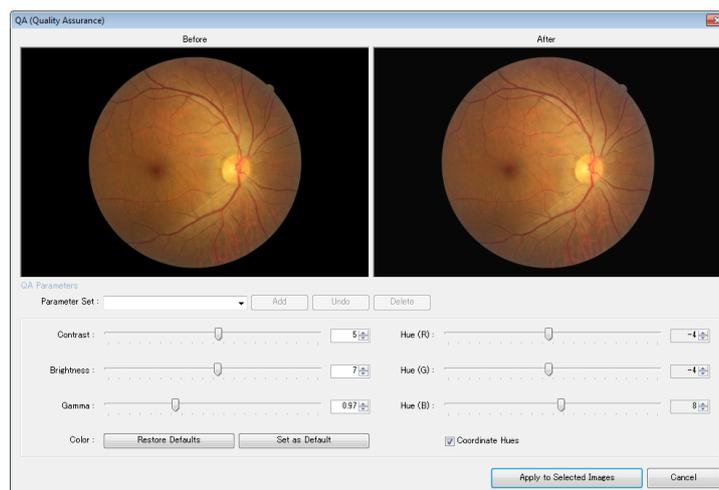
Set the parameters using one of the following methods:

- Drag the slider.
- Input a numerical value in the text box on the right side.
- Click the  button or the  button to specify a value.

Contrast and hues can be adjusted in the range of  $\pm 100$ , brightness can be adjusted in the range of  $\pm 150$ , and gamma can be adjusted in the range of 0.01 to 3.00. If the **Coordinate Hues** checkbox is cleared, each individual hue can be adjusted separately.

To return the parameters to the saved settings, click **Restore Defaults**.

To apply these parameters to the images in the same retinal camera mode, click **Set as Default**.





#### QA parameter sets

- A set of parameters can be assigned a name and saved as a parameter set. Enter the name in the **Parameter Set** field, and click **Add**.
- To apply a previously saved parameter set to the currently displayed image, select the set from the **Parameter Set** list box.
- Names consisting of 32 characters or less can be assigned to parameter sets, and up to 10 parameter sets can be saved.
- To overwrite an existing parameter set with the current settings, click **Update**, and to return to the saved settings, click **Undo**.
- To delete a saved parameter set, click **Delete**.

**4** Click **Apply to Selected Images**.

**5** Check the message on the **Warning** screen, and click **OK**.

The **QA (Quality Assurance)** screen closes, and the parameters are applied.



#### Images for which quality assurance (QA) has been performed

- When quality assurance (QA) is performed, the adjustments are applied to the thumbnail images.
- Changes by quality assurance (QA) are applied in printed images.
- Quality assurance (QA) is applied to the transferred images.

#### Generated images for which quality assurance (QA) has been performed

Contrast, brightness and gamma for generated images can be adjusted.

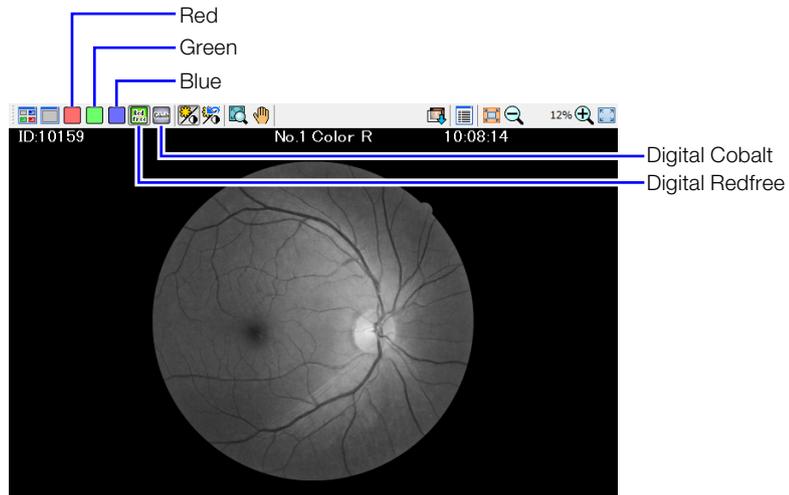
After setting the adjustment parameters, click **Apply to Selected Images**.

Click **Reset** to return to the values when the **QA (Quality Assurance)** screen was opened.

## Using Digital Color Filters

Digital filtering can be applied to color images, and color images appear in red, green, blue, digital redfree, or digital cobalt mode.

- 1 Click the thumbnail of the color image.
- 2 Click the desired digital color filter button.  
The digital color filtered image appears.



- 3 Click  button (Save).  
The digital color filtered image is added to the thumbnail image area.



The digital color filter is applied to only color images and cannot be applied to captured images.



### About Digital Redfree and Digital Cobalt

Digital color filtering is applied to color images to reproduce an image as though it was taken with an optical filter.

This means it is not the same as Redfree images and Cobalt images taken using an optical filter.

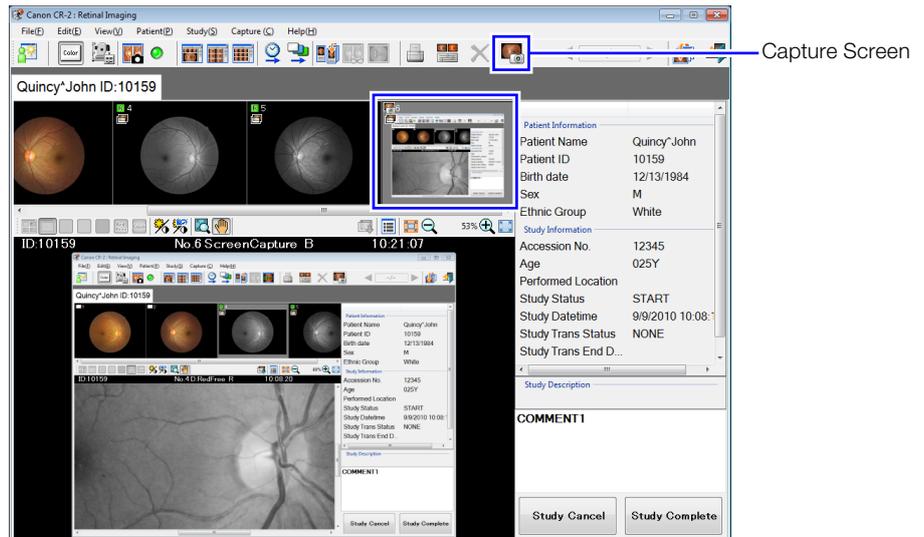
## Capturing Screen

The screen of the current study can be added as a study image.

The following screen components can be captured as a captured screen.

- Main screen
- **Capture for Stereo View** screen and **Stereo View** screen
- **C/D Ratio** screen
- RGB channels/Red/Green/Blue/digital Redfree/digital Cobalt mode screen

When  button (Capture Screen) is clicked, the entire currently displayed screen is captured and the captured image is added to the thumbnail image area.



## Printing

There are two printing modes available: simple printing and Easy-PhotoPrint EX. One of these printing types can be allocated to the Print button through the **Settings Menu** (on page 126). Select **Print with Easy-PhotoPrint EX** to print a multiple number of images on a single sheet.

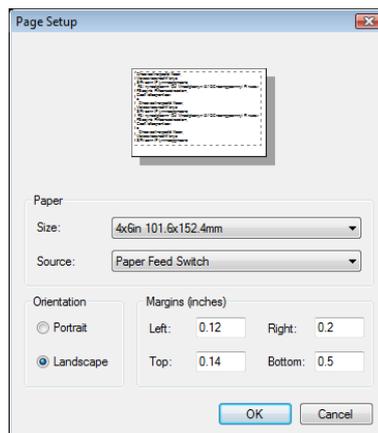


To print with Easy-PhotoPrint EX, install the software in advance.

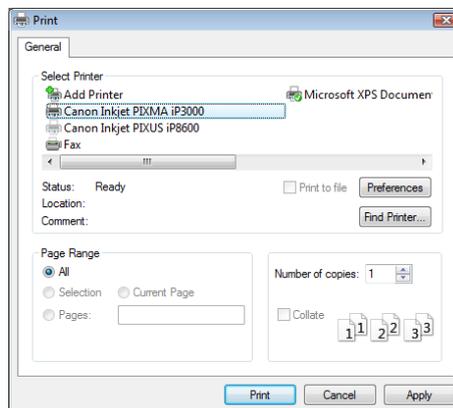
### Using Simple Printing

Clear the **Print with Easy-PhotoPrint EX** checkbox at the **Print Screen** in the **Settings Menu**.

- 1 Click the thumbnail image to be printed.
- 2 Click **File > Page Setup** from the menu.  
The **Page Setup** screen appears.
- 3 Select the paper size, paper source and printing orientation, and set the margin values (Left, Right, Top, and Bottom).  
Click **OK** to close the screen.

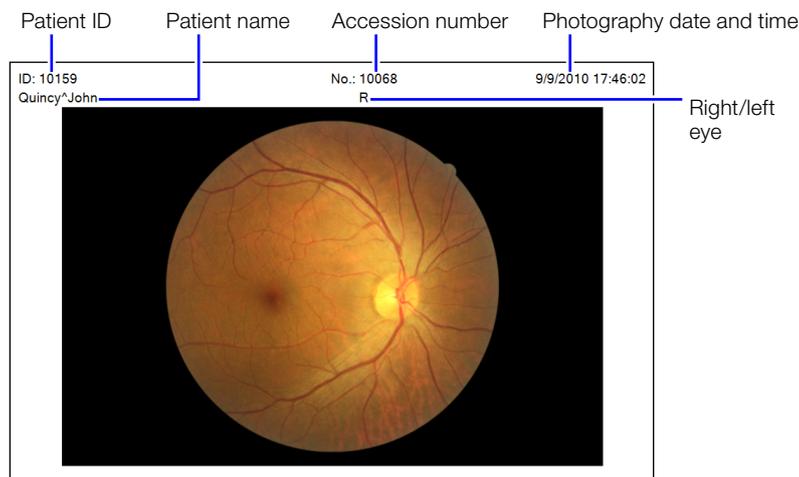


- 4 Click  button (Print).  
The **Print** screen appears. When **Print with Easy-PhotoPrint EX** under **When Print icon is clicked** is selected (on page 126), select **File > Print** from the menu.



## 5 Check the settings made in the **Print** screen, and click **Print**.

The print layout is as shown in the figure below.



## Using Easy-PhotoPrint EX to Print Images

Select the **Print with Easy-PhotoPrint EX** at the **Print** Screen in the **Settings Menu**.

With Easy-PhotoPrint EX, you can use many different kinds of print layouts. To print study information, select any of the sheet sizes and layouts indicated in the table.

Paper size	Layout	Study information
4" x 6", 5" x 7"	DICOM Info (x1), DICOM Info (x2)	Retinal camera model name, Patient ID, Accession No., Patient Name, photography date and time, R/L, Timer, file name*, image size*
A4	DICOM Info (x1), DICOM Info (x2), DICOM Info (x3), DICOM Info (x4), DICOM Info (x6), DICOM Info (x9), DICOM Info (x28)	
LTR	DICOM Info (x1), DICOM Info (x2), DICOM Info (x3), DICOM Info (x4), DICOM Info (x6), DICOM Info (x9), DICOM Info (x24)	

\* The file name and image size are printed only when **A4** or **LTR** is selected for **Paper Size** and **DICOM Info (x3)** is selected for **Layout**.

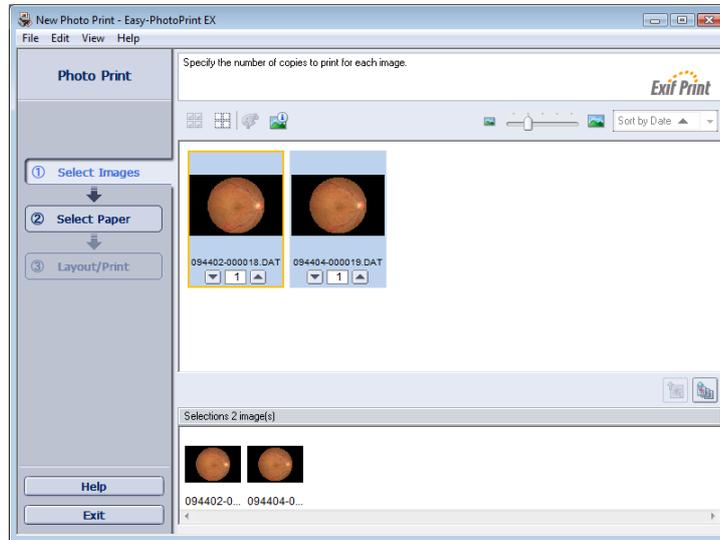
## 1 Click the thumbnail image to be printed.

To select two or more images, click the images while holding down the Ctrl key.

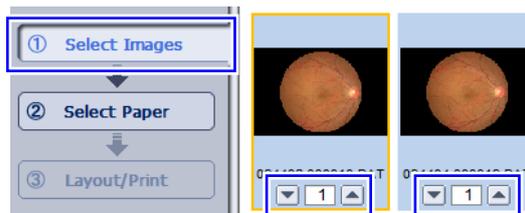
### 3 Advanced Operation

2 Click  button (Print).

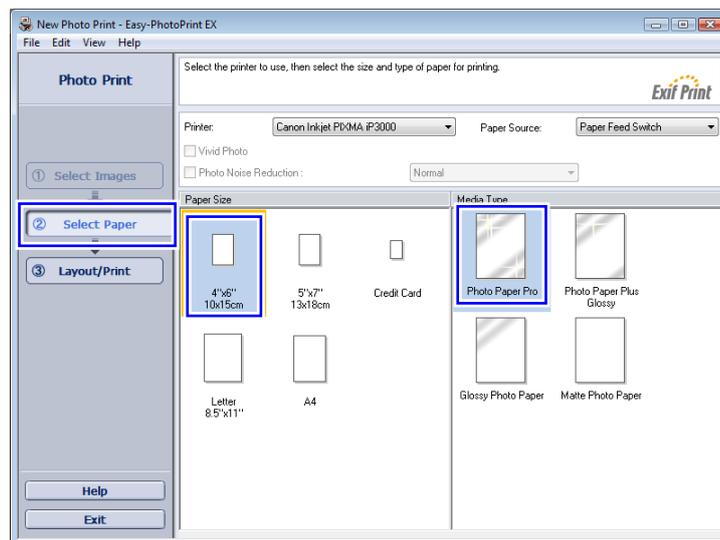
The **Easy-PhotoPrint EX** screen appears. When the Print button is set to Simple Printing, select **File** > **Easy-PhotoPrint EX** from the menu.



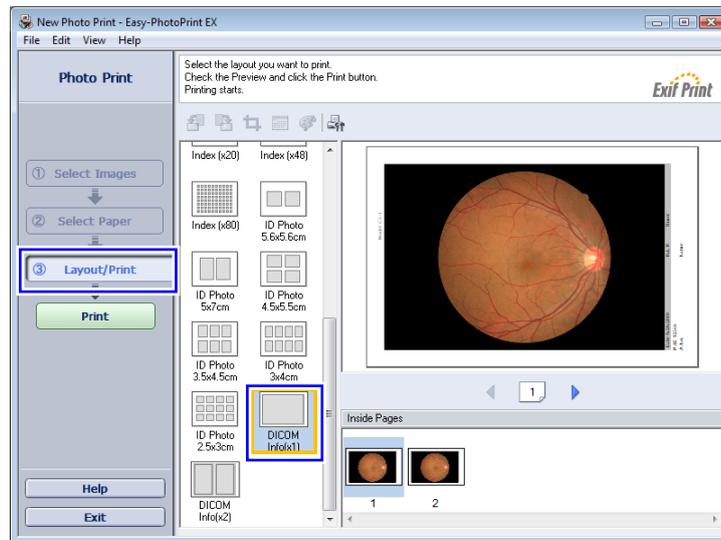
3 On the **Select Images** tab, set the number of copies for each image.



4 Click the **Select Paper** tab, and select **Paper Size** and **Media Type**.



- 5 Click the **Layout/Print** tab, and select the print layout.  
To print study information, click an option starting with "DICOM Info".



- 6 Click **Print**.  
Printing is started. After printing is completed, click **Exit**. The **Easy-PhotoPrint EX** screen closes, and the main screen re-appears.

## Adjusting the Printing Parameters

The contrast, brightness, gamma, and hue of printed images can be adjusted.

- 1 Click the thumbnail image.
- 2 Click **File > Print Adjustment** from the menu.  
The **Print Adjustment** screen appears.



- 3 Set the parameters by moving the sliders or changing the numbers in the fields at the right.  
The adjustment range is  $\pm 50$  for **Contrast**, **Brightness** and **Hue**, and  $\pm 1.00$  for **Gamma**.
- 4 Click **OK** to save the settings.

## Measuring the C/D Ratio

You can measure the cup-to-disc (C/D) ratio of the optic nerve papillary area from the retinal image. The following three methods are available:

Area ratio: Area ratio of cup part to the optic nerve papillary

Line ratio: Ratio of diameter of cup in the disc at any angle

Vertical ratio: Ratio of diameter of cup in the disc at a vertical angle

## Displaying the C/D Ratio Screen

- 1 Select the thumbnail image, and click  button (C/D Ratio).

The **C/D Ratio** screen appears.

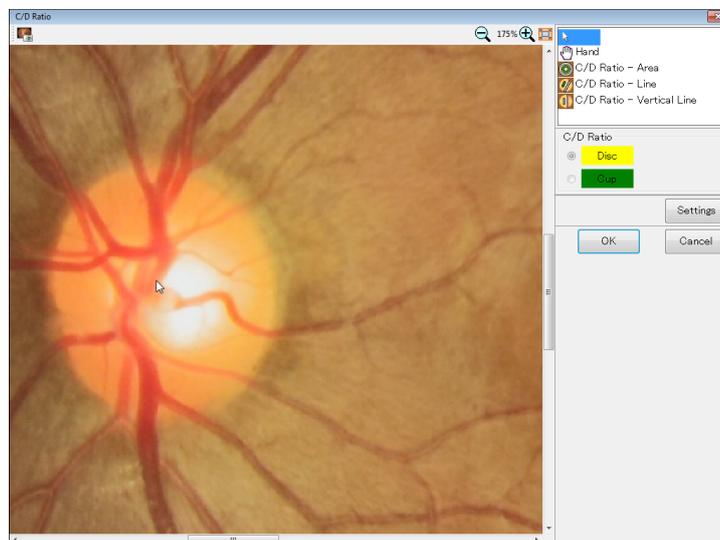
- 2 Point the mouse cursor to the center of the optic nerve papillary area, and roll the mouse wheel away from you.

The image is enlarged with the mouse cursor position as the center. Rolling the mouse wheel towards you zooms out of the image. Zoom in and zoom out can also be performed by clicking  button (Zoom In) and  button (Zoom Out), respectively.



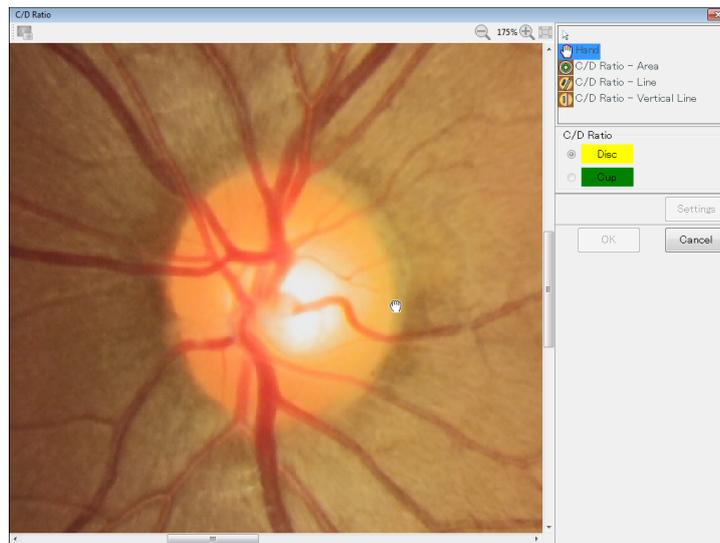
### Enlarging the image on the C/D Ratio screen

When measuring the C/D ratio for the first time, click any C/D ratio measurement button. The mouse cursor changes to the Zoom In tool. Click the optic nerve papillary area with mouse cursor to enlarge the image as the size set on the **Screen/C/D Ratio** tab screen (on page 124).



- 3 After clicking  button (Hand) to change the mouse cursor to  (Hand), drag the optic nerve papillary area to the center of the screen.

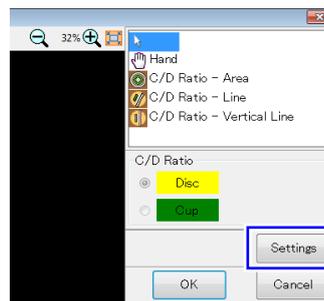
You can also move the image by operating the scroll bars.



## Changing the C/D Ratio Measurement Settings

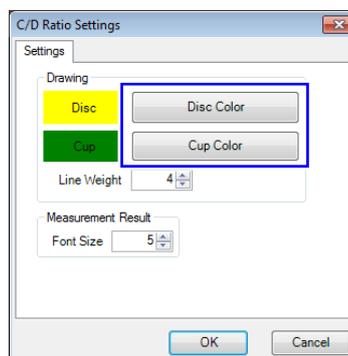
- 1 Click **Settings**.

The **C/D Ratio Settings** screen appears.



- 2 Change the color of the line to draw.

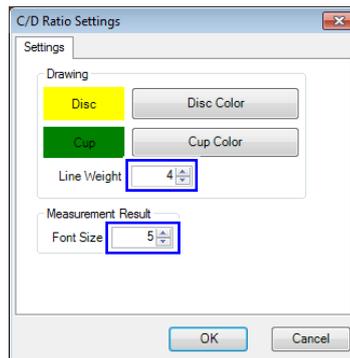
Click **Disc Color** or **Cup Color** to display the **Color** screen. Select the desired color.



### 3 Advanced Operation

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- 3** Change the line weight and font size in the measurement results.  
Either click the ▲ button or the ▼ button, or input numerical values directly.

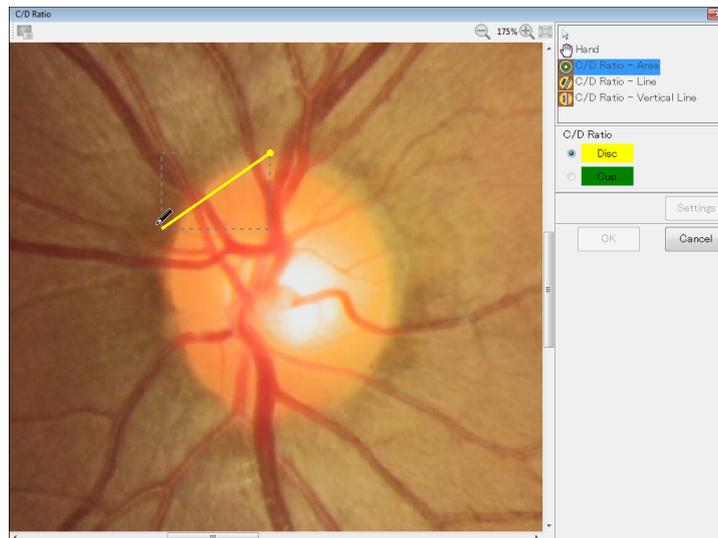


- 4** Click **OK**.  
The **C/D Ratio Settings** screen is closed, and the new settings are reflected.

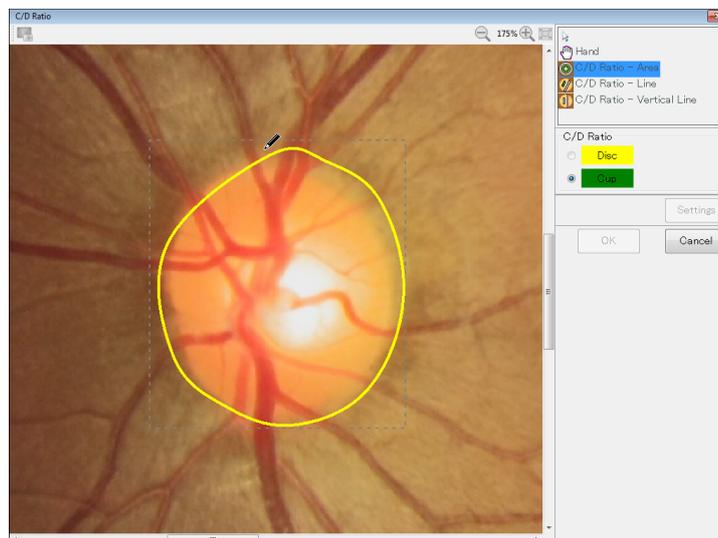
## Measuring the C/D Area Ratio

Draw closed curves on the retinal image to obtain the area ratio of the disc and cup.

- 1 Click  button (C/D Ratio – Area).  
The mouse cursor changes to the Pencil tool. When the mouse cursor appears as  (Hand), click **C/D Ratio** first.
- 2 Click the start point of the disc periphery on the image to start drawing.

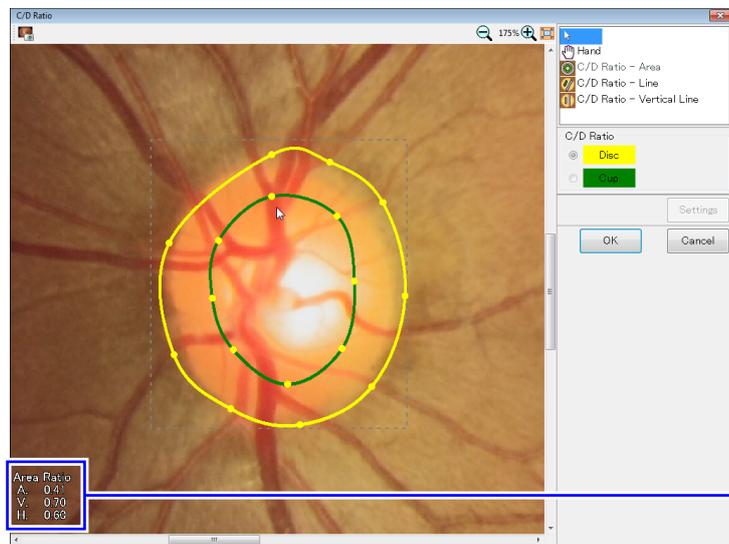


- 3 Click at least three points on the disc periphery and double-click to end drawing.  
A closed curve is drawn. Right-clicking and selecting **Form a Shape** from the menu also completes drawing of the closed curve. To delete the last selected point during drawing, press the BackSpace key.



- 4 Check that **Cup** is selected, and draw the cup periphery using the same procedure as for the disc.

Draw the cup periphery in the same way as for the disc periphery. When drawing of the cup and disc is completed, the measurement values appear at the bottom left of the screen.



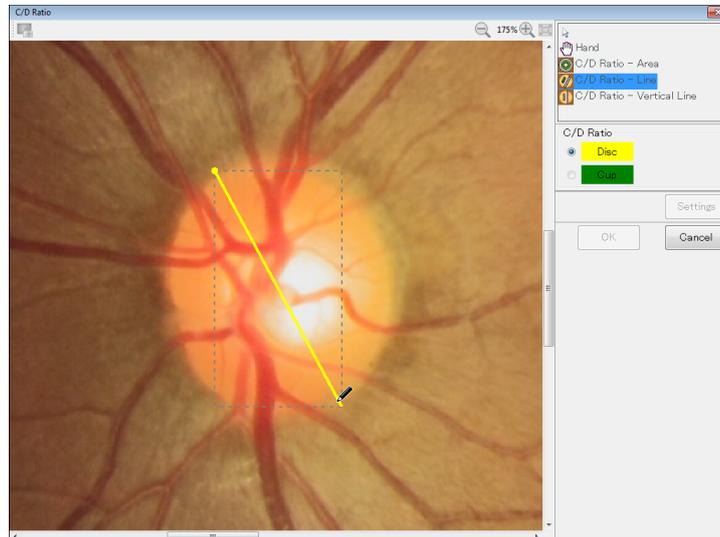
Area Ratio  
A. : 0.41  
V. : 0.70  
H. : 0.60

- 5 After drawing is completed, edit each curve.
- Moving dots: Point to a dot and drag it to the desired position.
  - Deleting dots: Point to a dot, right-click and select **Delete the Dot**.
  - Adding dots: Point to a point on the line, right-click and select **Insert the Dot**.
  - Deleting all dots of a drawn disc or cup: While drawing a line, right-click and select **Reset Disc** or **Reset Cup** of **Reset Drawing** from the menu. After drawing lines, right-click and select **Delete Objects** from the menu.
- 6 Click **OK**.
- The drawing information and measurement values of the C/D ratio are saved, and the screen closes.

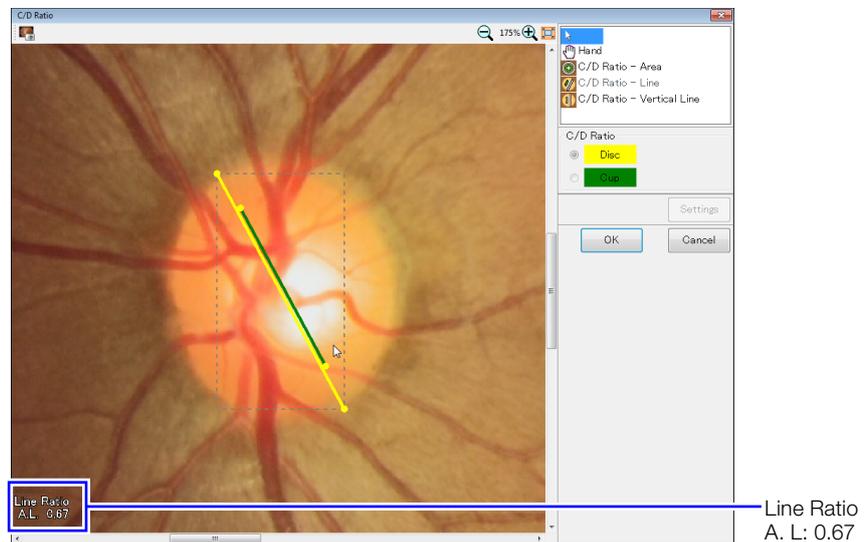
## Measuring the C/D Line Ratio

Draw straight lines of any angle on the retinal image to obtain the line ratio of the disc and cup.

- 1 Click  button (C/D Ratio – Line).
- 2 Click twice on the disc periphery of the image.  
A straight line is drawn connecting the clicked points.



- 3 Click twice on the cup periphery of the image.  
A straight line indicating the cup is drawn. The measurement results appear at **A.L** at the bottom left of the screen.



- 4 After drawing is completed, edit each line.
  - Moving dots: Point to a dot and drag it to the desired position.
  - Deleting all dots of a drawn disc or cup: While drawing a line, right-click and select **Reset Disc** or **Reset Cup** of **Reset Drawing** from the menu. After drawing lines, right-click and select **Delete Objects** from the menu.
- 5 Click **OK**.  
The drawing information and measurement values are saved, and the screen closes.

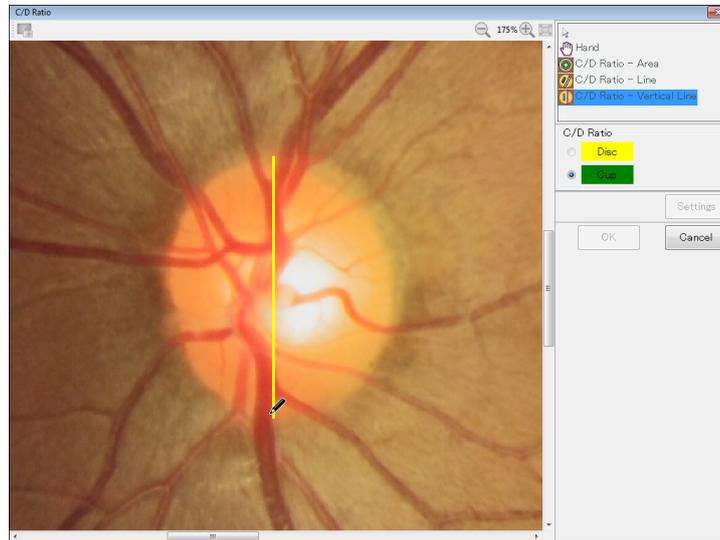
## Measuring the C/D Vertical Ratio

Draw vertical lines on the retinal image to obtain the vertical line ratio of the disc and cup.

1 Click  button (C/D Ratio – Vertical Line).

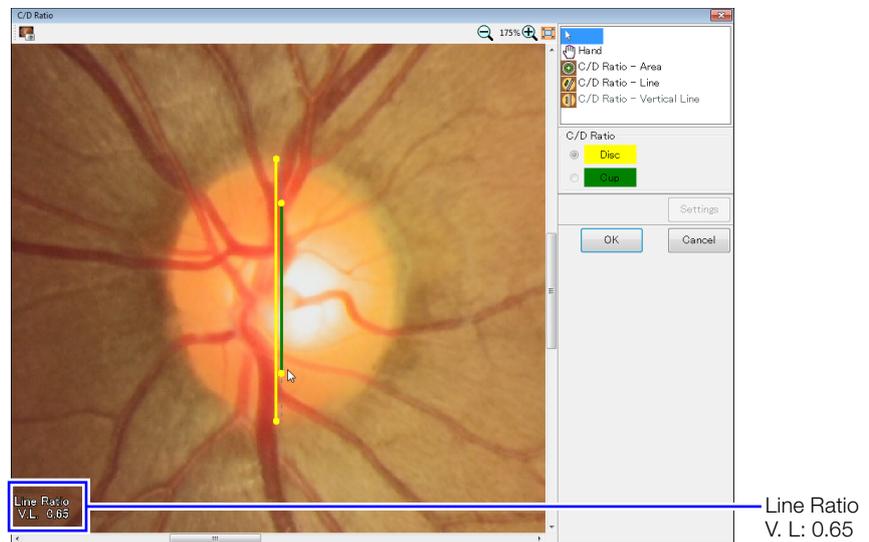
2 Click twice on the disc periphery of the image.

A vertical line is drawn connecting the clicked points.



3 Click twice on the cup periphery of the image.

A vertical line indicating the cup is drawn. The measurement results appear at **V. L** at the bottom left of the screen.



4 After drawing is completed, edit each line.

- Moving dots: Point to a dot and drag it to the desired position.
- Deleting all dots of a drawn disc or cup: While drawing a line, right-click and select **Reset Disc** or **Reset Cup** of **Reset Drawing** from the menu. After drawing lines, right-click and select **Delete Objects** from the menu.

5 Click **OK**.

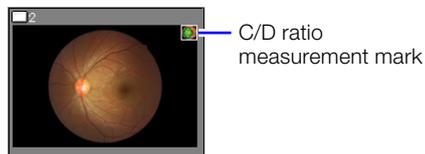
The drawing information and measurement values are saved, and the screen closes.

## Re-editing Saved C/D Ratios

For the C/D ratio measured image before ending a study or that of temporarily saved study log, you can reedit the C/D ratio for updating measurement values or start additional measuring.

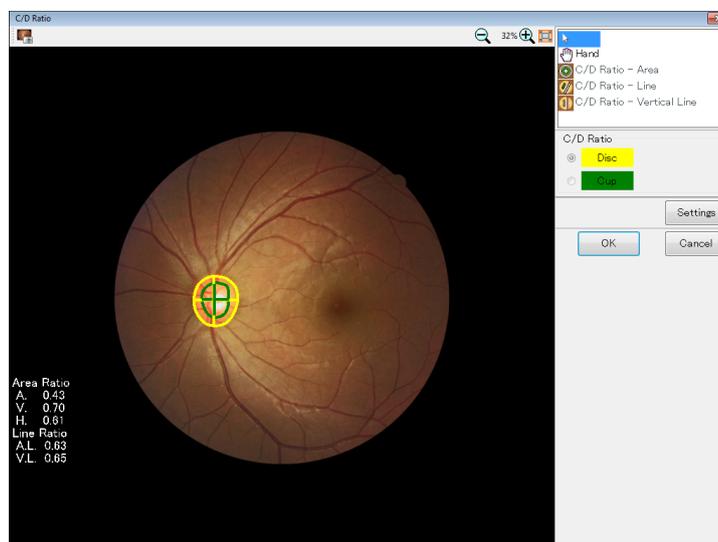
- 1 Select the thumbnail image whose C/D ratio was measured, and click  button (C/D Ratio).

The **C/D Ratio** screen appears.



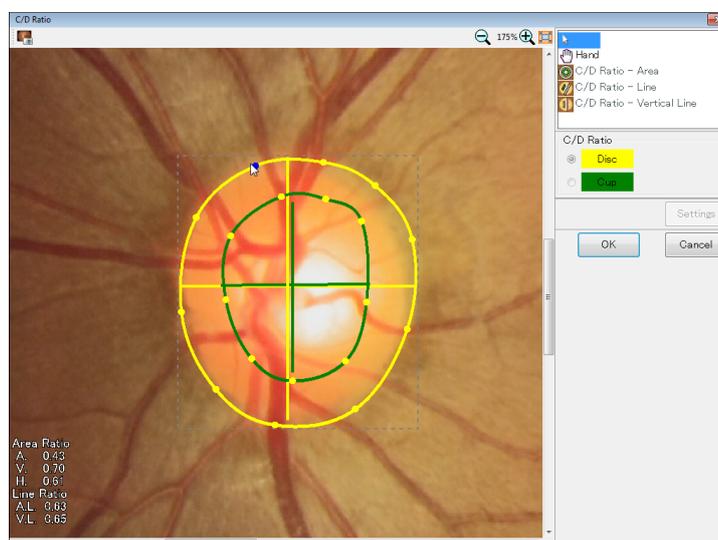
- 2 Enlarge the image for editing easily.

Point the mouse cursor to the optic nerve papillary area and roll the mouse wheel away from you to enlarge the image. Move the optic nerve papillary area to the center of the screen with the scroll bars or  button (Hand).



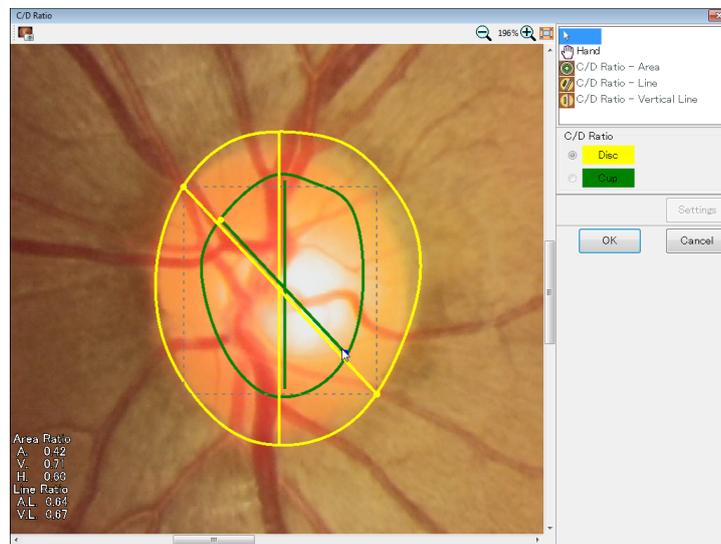
- 3 Point the mouse cursor to the line to edit and click it.

The dots appear on the line to be edited.



#### 4 Change a dot position.

Drag a dot to change the position. Each time a dot position is changed, the measurement values are updated. To change the color or weight of the lines, right-click and select **Object Drawing Settings** from the menu. The **Object Settings** screen appears. Change the desired settings.



#### 5 Edit the line again or another line.

Repeat the procedure from step 3.

#### 6 Click **OK**.

The **Warning** screen appears. Check the instruction in the screen and click **OK**. The drawing information and measurement values are saved and the screen closes.

## Stereo Photography/View

This section describes the following functions relating to stereo photography/view:

- Taking stereo photographs
- Displaying stereo images
- Registering individual captured images as stereo images
- Canceling stereo image pairs

Set use of the stereo guide mark on the **Retinal Camera/NM Settings** tab screen (on page 98).

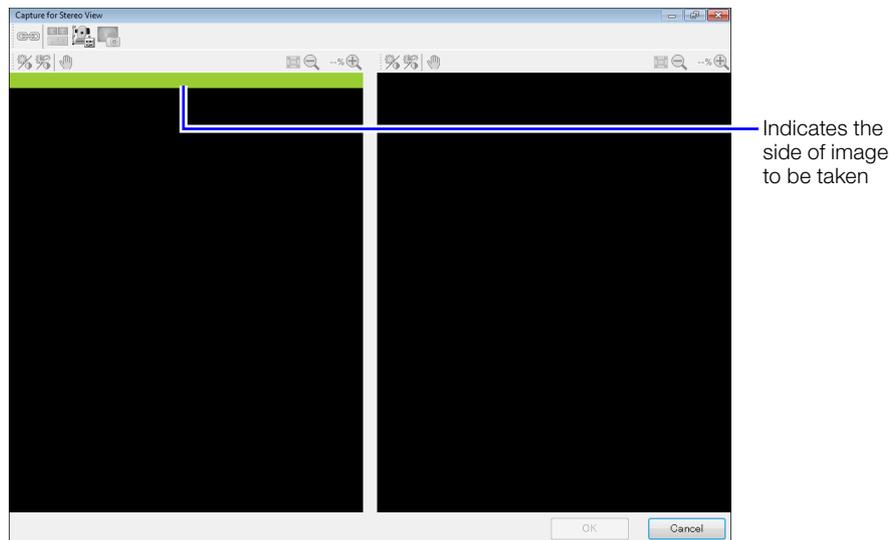
### Taking Stereo Photographs

Two retinal images shifted from the center to the ear and nose sides are taken for a stereo image. You will use working dots projected on the cornea to shift the image area. The shift amount is about 2.5 mm of the baseline on the pupil.

**1** Click  button (Capture for Stereo View).

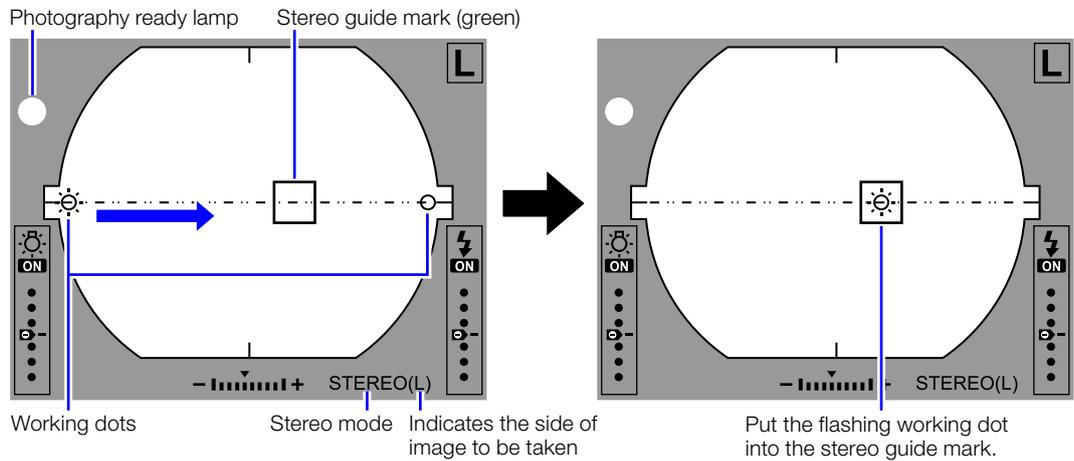
Or, select **Capture > Capture for Stereo View F6** from the menu.

The **Capture for Stereo View** screen appears. First, take the left side stereo image.

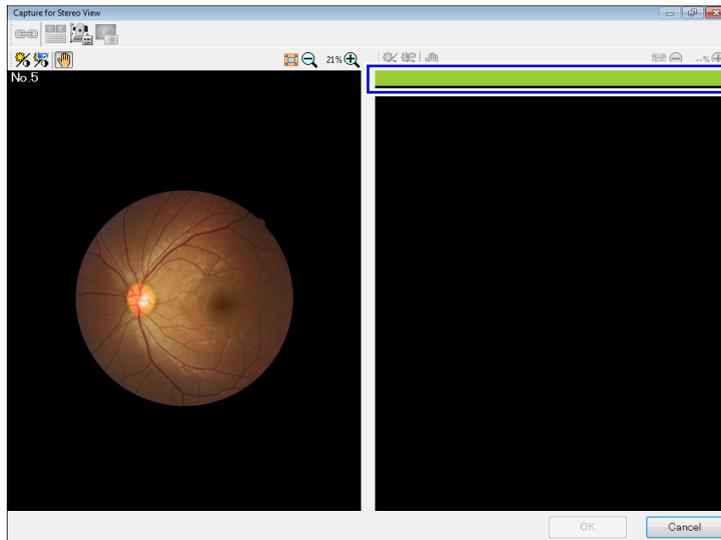


2 Take the left side stereo image.

1. Align the position of retinal camera with the target anterior eye, and press the alignment button to switch to retinal observation. The stereo guide mark appears on the observation monitor of the retinal camera.
2. Tilt the operation lever to the left to put the flashing working dot on the left side into the stereo guide mark.
3. Make sure that the photo ready lamp is green, and then press the shutter release button.



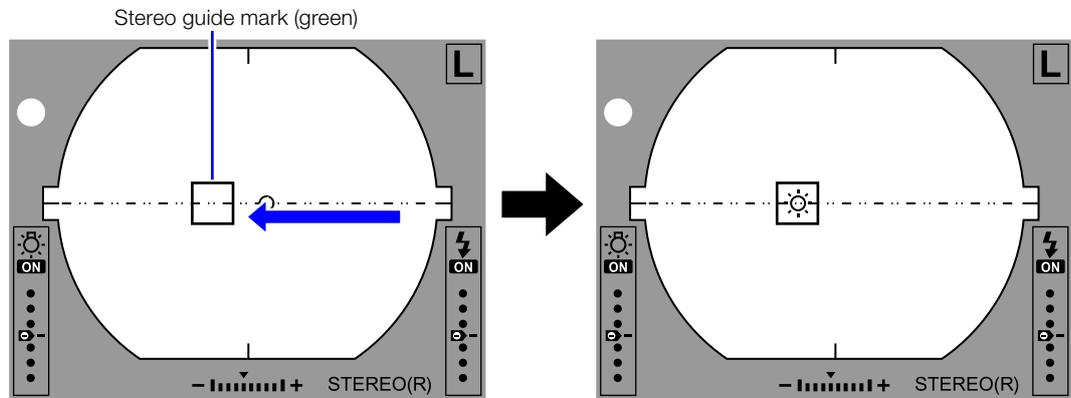
The left side stereo image appears on the left side of the **Capture for Stereo View** screen.



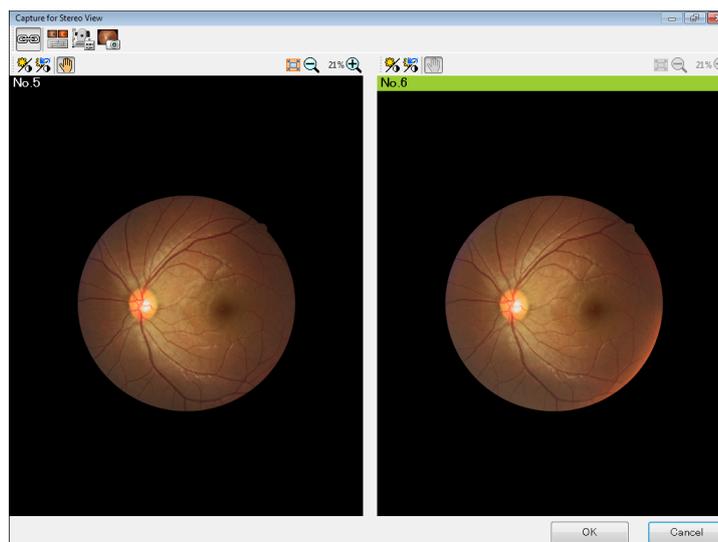
To take the left side stereo image again, click the left side of the screen. The light green bar displayed on the right side moves to the left side.

### 3 Take the right side stereo image.

The guide mark on the observation monitor of the retinal camera moves to the left side. The working dot starts flashing on the right side, outside the display range. Tilt the operation lever to the right to put the flashing working dot into the stereo guide mark. Make sure that the photo ready lamp is green, and then press the shutter release button.



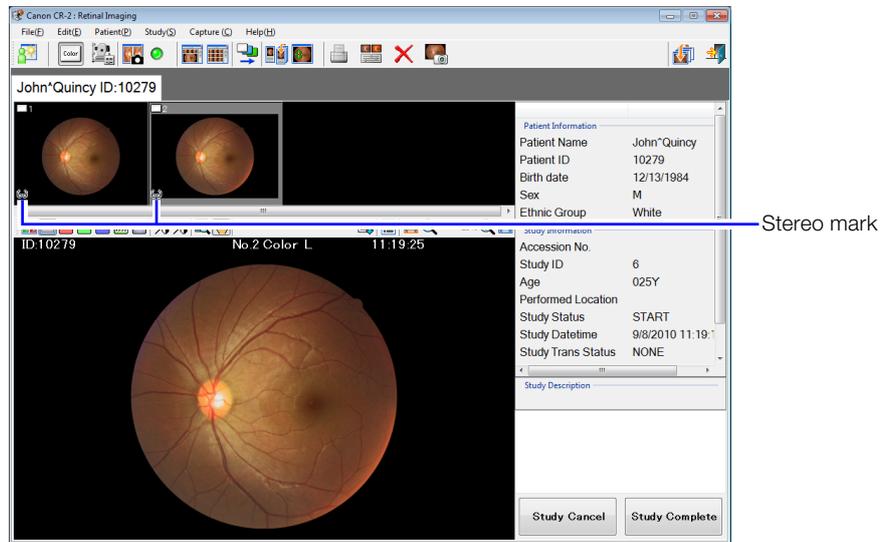
The right side stereo image appears on the right side of the **Capture for Stereo View** screen. To take the image again, click the side of the image to be taken, and then take the image. The previous image will not appear. However, all the images will remain in the thumbnail image area.



#### 4 Click **OK**.

The **Capture for Stereo View** screen closes, and the main screen re-appears.

Since the retinal camera is still in the retinal observation mode, press the alignment button to return it to the anterior observation mode.

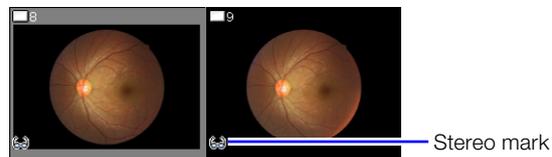


The retinal camera does not return to the anterior observation mode after retinal observation even if **Change Focus to Anterior After Every Exposure** on the **Retinal Camera/NM Settings** tab screen is set to **Yes**.

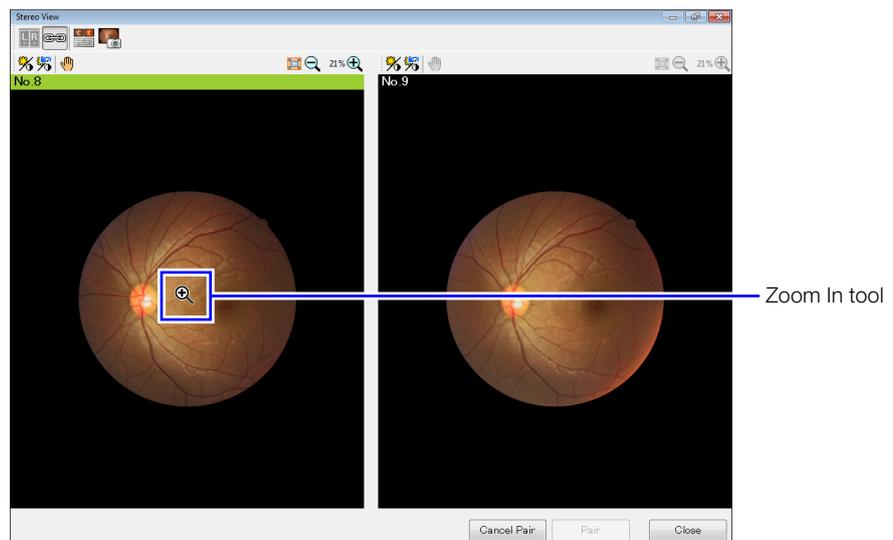
## Displaying Stereo Images

This section describes how to display the left and right images taken in stereo photography side by side. A stereo mark appears on the thumbnails of stereo images.

- 1 Click the thumbnail image with a stereo mark.



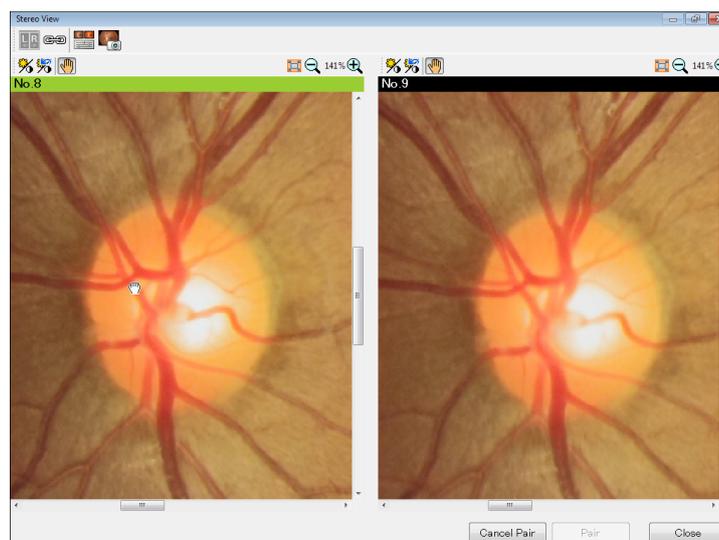
- 2 Click  button (Stereo View).  
The **Stereo View** screen appears.



- 3 Move  (Zoom In tool) to the center of the position to enlarge and click.

The image is enlarged with the clicked position as the center. The mouse cursor changes shape to  (Hand).

To individually fine-adjust the position, click  button (Move/Apply Effects to Both Images) to cancel the linked movement of the images and drag the image.



- 4 Click **Close**.

The **Stereo View** screen closes, and the main screen re-appears.

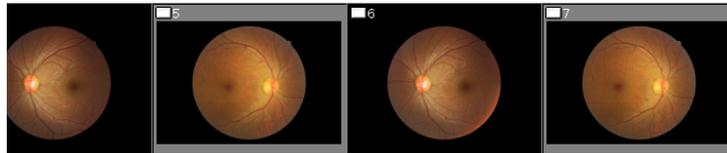
## Registering Individually Captured Images as Stereo Images

Images captured in modes other than stereo photography can be registered as stereo images as long they satisfy the following conditions:

- The photography mode, left/right eye direction and image size must all be matching.

**1** Click the thumbnail of the first image.

In this example, let's select shot No.5.



**2** Click the second thumbnail image with the Ctrl key held down.

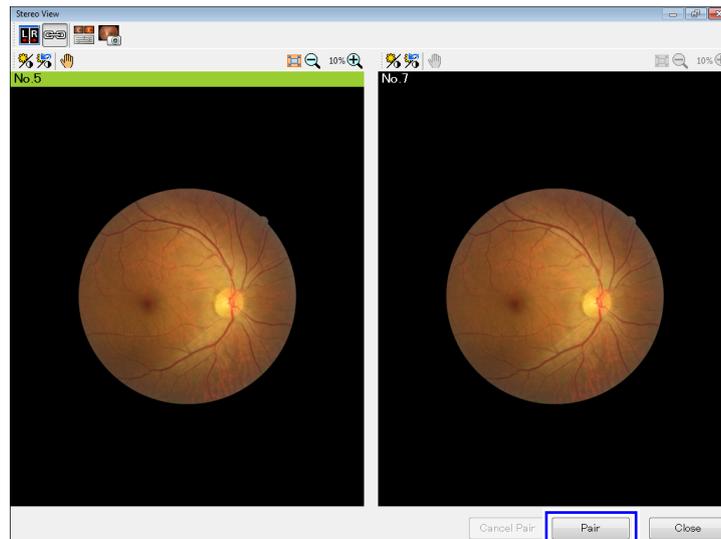
In this example, let's select shot No.7.

**3** Click  button (Stereo View).

The **Stereo View** screen appears. The images line up into order which appears in the thumbnail image area.

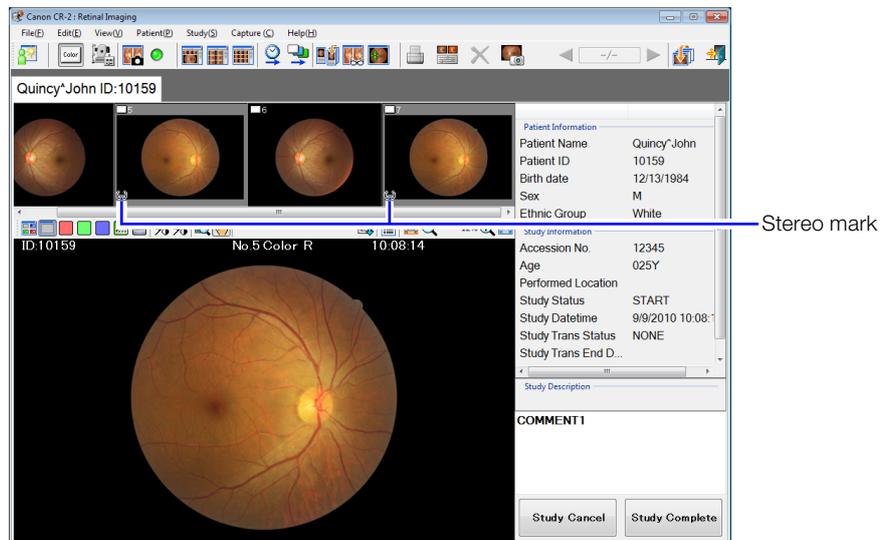
**4** Check the side-by-side alignment of the left and right images, and click **Pair**.

To switch the left and right images, first click  button (<-->) and then click **Pair**. The two images displayed are registered as stereo images.



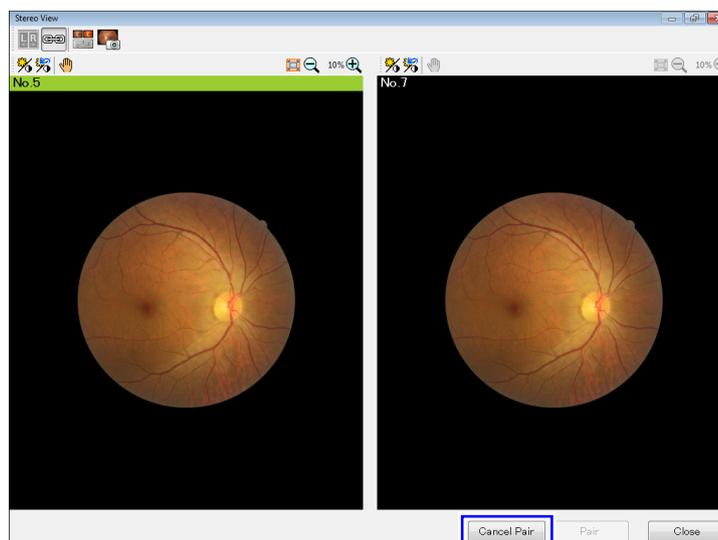
### 5 Click **Close**.

The **Stereo View** screen closes, and the main screen re-appears. The stereo mark appears on the thumbnail images.



## Canceling Stereo Image Pairs

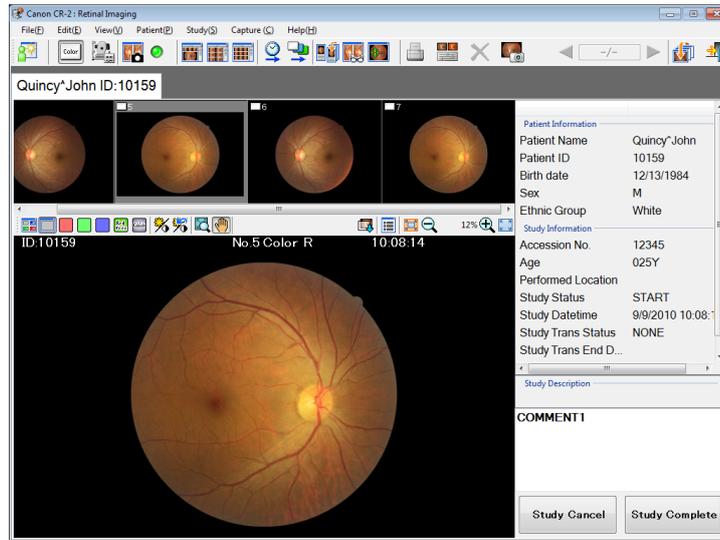
- 1 Click the thumbnail image with a stereo mark.
- 2 Click  button (Stereo View).  
The **Stereo View** screen appears.
- 3 Click **Cancel Pair**.  
The stereo pair is canceled.



### 3 Advanced Operation

#### 4 Click **Close**.

The **Stereo View** screen closes, and the main screen re-appears. The stereo mark disappears from the thumbnail images.



## Study Logs

You can browse completed studies (past studies) on the **Study Logs** screen. The Rics NM 2 classifies past studies either as a temporarily saved study log or as a study log file. When a study is completed, it is first saved as a temporarily saved study. Study data exceeding the storage capacity or storage period limit can be moved to another storage medium as a "study log file."

The temporarily saved study log data contains the following types of data:

- Transferred study data
- Failed transfer study data
- Untransferred study data

The untransferred or failed transfer study data can be transferred or re-transferred to a registered storage device by initiating a Transfer All operation.

### Displaying a List of Temporarily Saved Study Logs

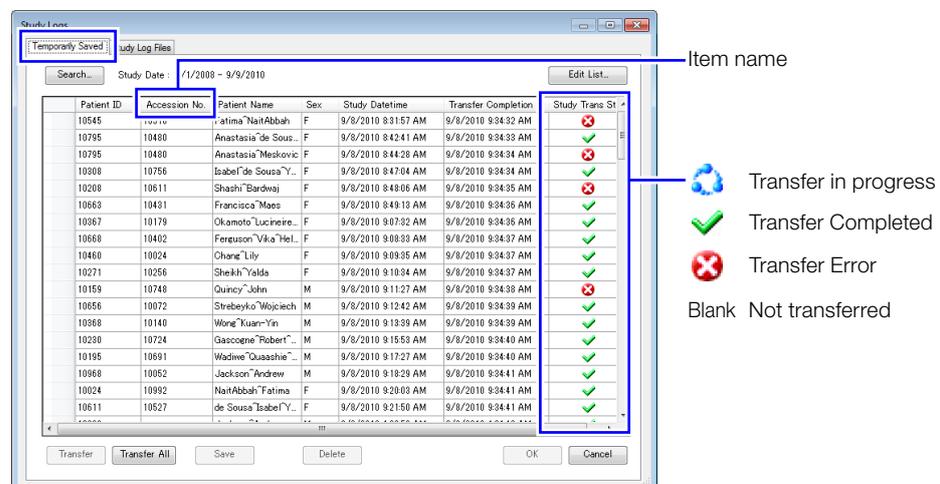
1 Click  button (Study Logs).

The **Study Logs** screen appears.

2 Click the **Temporarily Saved** tab.

The results searched using the study conditions that were set appear (on page 106).

The studies can be sorted in ascending or descending order each time one of the item names is clicked. The column width of each item can be adjusted by dragging the divider line between each column. To add or delete display items, or change their display order, see "Setting the Display Items on the Study Logs Screen."



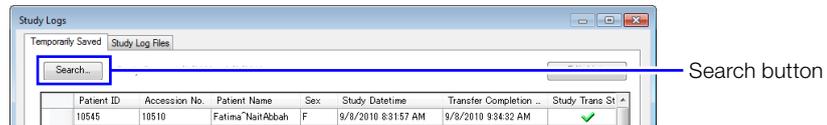
The screenshot shows the 'Study Logs' application window with the 'Temporarily Saved' tab active. The window title is 'Study Logs' and it contains a search bar, a date filter set to '1/1/2008 - 9/9/2010', and an 'Edit List...' button. The main area is a table with the following columns: Patient ID, Accession No., Patient Name, Sex, Study Datetime, Transfer Completion, and Study Trans St. The table lists various study entries with their respective details. A legend on the right side of the window explains the icons used in the 'Study Trans St' column: a blue circular arrow for 'Transfer in progress', a green checkmark for 'Transfer Completed', a red X for 'Transfer Error', and a blank space for 'Not transferred'.

Patient ID	Accession No.	Patient Name	Sex	Study Datetime	Transfer Completion	Study Trans St
10545	10480	Jatima NaitAbbah	F	9/8/2010 8:31:57 AM	9/8/2010 9:34:32 AM	
10795	10480	Anastasia de Sousa	F	9/8/2010 8:42:41 AM	9/8/2010 9:34:33 AM	
10795	10480	Anastasia Meskovic	F	9/8/2010 8:44:28 AM	9/8/2010 9:34:34 AM	
10308	10756	Isabel de Sousa Y.	F	9/8/2010 8:47:04 AM	9/8/2010 9:34:34 AM	
10208	10511	Shashi Bardwaj	F	9/8/2010 8:48:06 AM	9/8/2010 9:34:35 AM	
10663	10481	Francisca Maes	F	9/8/2010 8:48:13 AM	9/8/2010 9:34:36 AM	
10367	10179	Okamoto Lucineiro	F	9/8/2010 8:07:32 AM	9/8/2010 9:34:36 AM	
10668	10402	Ferguson Vika HeL	F	9/8/2010 9:09:33 AM	9/8/2010 9:34:37 AM	
10460	10024	Chang Lily	F	9/8/2010 9:09:35 AM	9/8/2010 9:34:37 AM	
10271	10256	Sheikh Yalda	F	9/8/2010 9:10:34 AM	9/8/2010 9:34:37 AM	
10159	10748	Quincy John	M	9/8/2010 9:11:27 AM	9/8/2010 9:34:38 AM	
10656	10072	Strebeyko Wojciech	M	9/8/2010 9:12:42 AM	9/8/2010 9:34:39 AM	
10368	10140	Wong Kuan-Yin	M	9/8/2010 9:13:39 AM	9/8/2010 9:34:39 AM	
10230	10724	Gascoene Robert	M	9/8/2010 9:15:53 AM	9/8/2010 9:34:40 AM	
10195	10591	Wadwe Ouashie	M	9/8/2010 9:17:27 AM	9/8/2010 9:34:40 AM	
10368	10052	Jackson Andrew	M	9/8/2010 9:18:29 AM	9/8/2010 9:34:41 AM	
10024	10592	NaitAbbah Fatima	F	9/8/2010 9:20:03 AM	9/8/2010 9:34:41 AM	
10511	10527	de Sousa Isabel Y.	F	9/8/2010 9:21:50 AM	9/8/2010 9:34:41 AM	

## Searching for a Study Log

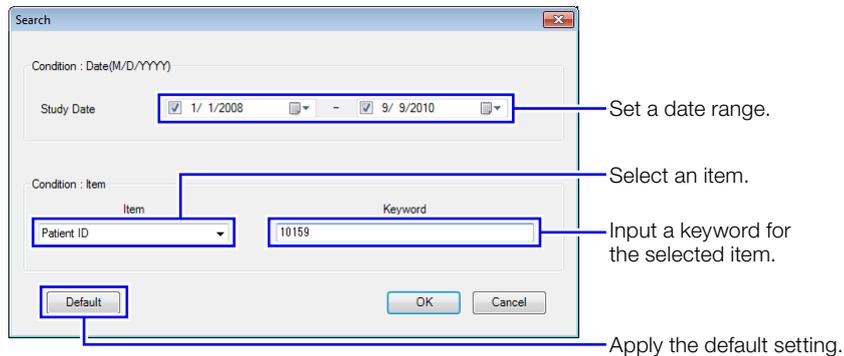
**1** Click **Search**.

The **Search** screen appears.



**2** Set the search conditions.

The earliest date and/or latest date can be set to limit the date range for **Study Date**. To set only either of the dates, clear the checkbox of the date setting field that you do not need. Select Patient ID, Accession No., Patient Name or Study Description for **Condition: Item**. Search condition of the study date that has been set is retained until logout.



**Initializing the study date**

When **Default** is clicked, the settings of "Study Log" are applied to the **Study Date** field (on page 126).

**3** Click **OK**.

The search is initiated, and the search results appear on the **Study Logs** screen.



**Search conditions of the study logs**

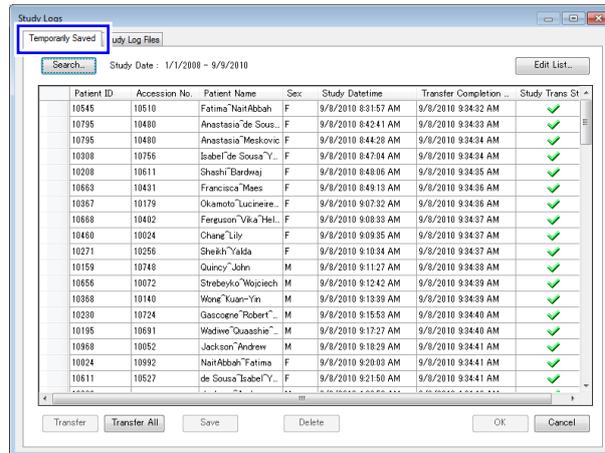
Patient ID is searched with perfect matching.  
 Accession No. and Patient Name are searched with prefix matching. Study Description is searched with partial matching.

**Number of displayed study logs in list**

Up to 10,000 study logs appear in the list. A flashing error icon (❗ mark) appears when the number of matched study logs exceeds the limit. If so, change the search conditions to narrow down the results. The error icon disappears once the number of study logs is within the displayable range.

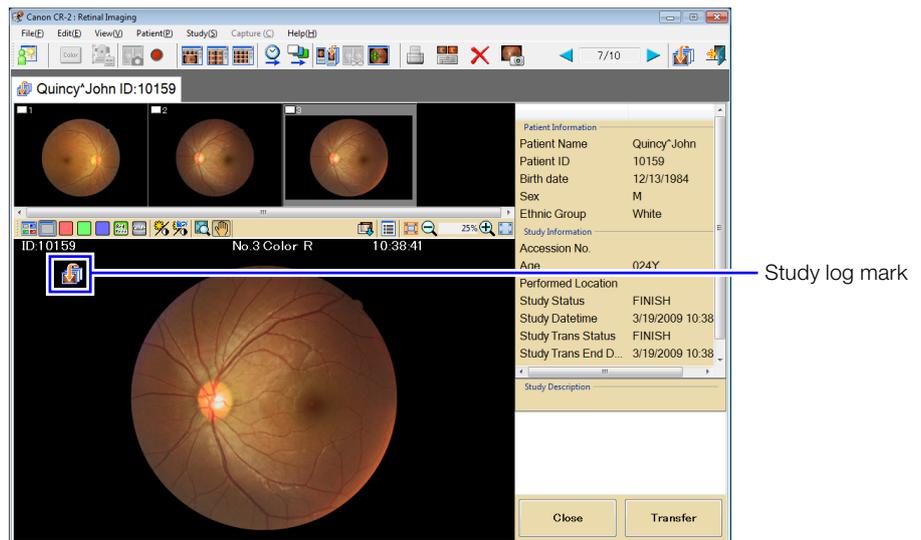
## Displaying Temporarily Saved Study Logs

- 1 Click the **Temporarily Saved** tab.



- 2 Double-click a study or select one, and then click **OK**.

The main screen appears, and the image in the study log appears. The study log mark appears on the study log image.



- 3 Click **Close** to exit the screen.

To continue displaying other study logs, perform the following:

- To display the next study (i.e. previous study): Click the Next/Previous Study button.
- To display a specific study log: Click the Study Logs button to display the study logs list.



#### Number of study logs that appear

Only one study appears from the study logs list.

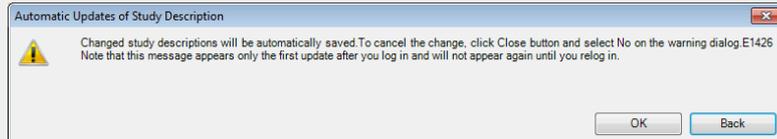
#### Editing study descriptions

Study descriptions of temporarily saved study logs can be edited in the main screen.

Changes to study descriptions can be saved by the following operations:

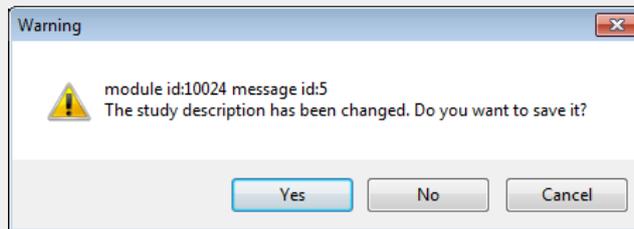
- Next/Previous Study button, Study Logs button, **Transfer** button, or Compare Studies button

When the **Automatic Updates of Study Description** screen appears, click **OK**.



- **Close** button

The **Warning** screen appears. Click **Yes**.

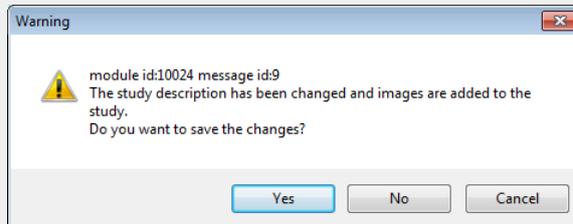


#### Adding generated images

You can add the generated images to temporarily saved study logs and save them.

- **Close** button

The **Warning** screen appears. Click **Yes**.

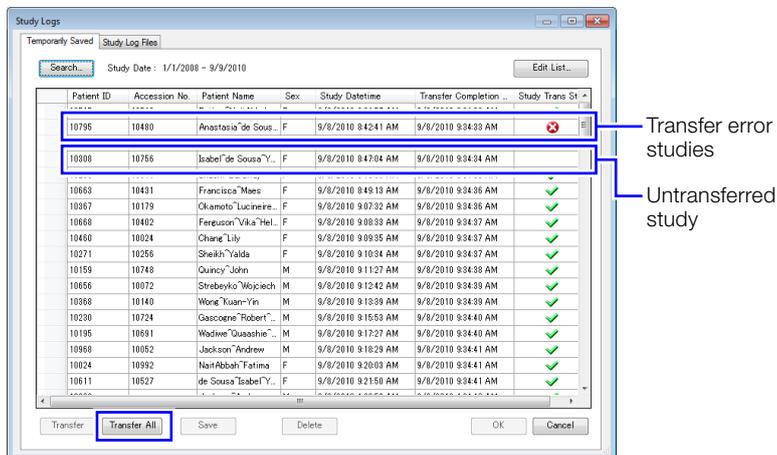


## Transferring All Temporarily Saved Study Logs

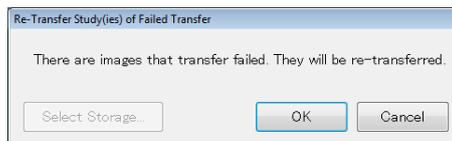
You can transfer all temporarily saved studies whose transfer status is transfer error or untransferred, at once.

Note that already transferred studies are not transferred.

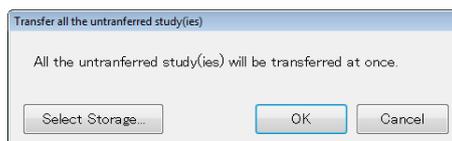
Click the **Temporarily Saved** tab on the **Study Logs** screen, then click **Transfer All**.



- If there are studies whose transfer status is in error, the **Re-Transfer Study(ies) of Failed Transfer** screen will appear. Click **OK**. This screen will not appear if there are no studies whose transfer status is transfer error.



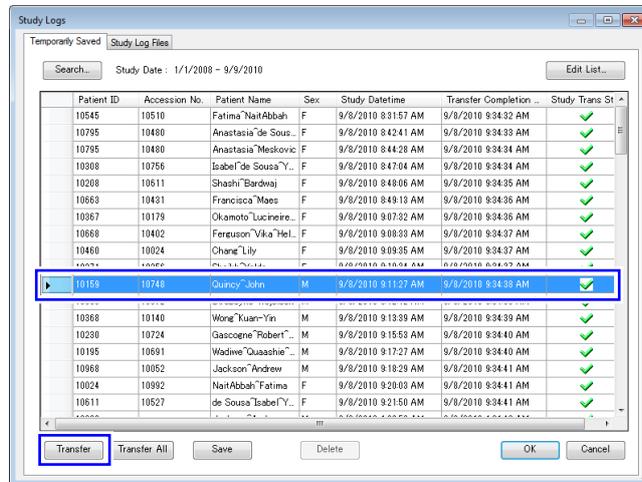
- If there are untransferred studies, the **Transfer all the untransferred study(ies)** screen will appear. To change the storage device, click **Select Storage**, and to proceed the transfer without changing the storage device, click **OK**.



### Transferring Temporarily Saved Study Logs

You can select and transfer temporarily saved study logs.

As a study is re-transferred, the DICOM information for these studies will be updated. For further details, see "DICOM Tag/Study Logs tab" (on page 119).



1 Click the **Temporarily Saved** tab.

2 Click a study (studies) to transfer.

To select two or more studies, click the studies while holding down the Ctrl key, and to select a range of studies, click the studies while holding down the Shift key.

3 Click **Transfer**.

The **Transfer the study(ies)** screen appears. Click **OK**.

A study for which a transfer is in progress cannot be transferred, and the attempt results in the **Warning** screen.



To change the storage device, click **Select Storage**. The **Select the Storage(s)** screen appears. Select the desired storage device, and click **OK**.

## Saving Temporarily Saved Study Logs

Temporarily saved study logs data can be saved in any folder on a study-by-study basis. Proceed to save the data in the following cases:

- When there is not enough free space on the hard disk where the temporarily saved study logs data is saved
- When you want to save temporarily saved study logs data, that have been kept beyond its storage period
- When the number of temporarily saved study logs data has increased and more time is required to display a list or conduct a search

Saved studies appear on the **Study Log Files** tab. For details, see "Displaying Studies in the Study Log File" (on page 80).

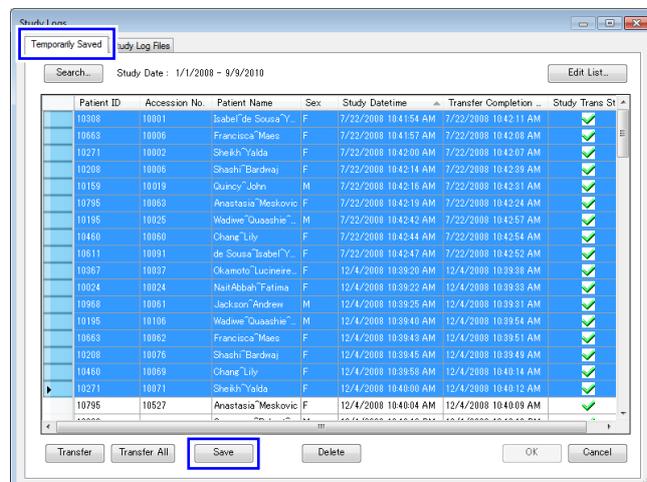


To save a study log data, appropriate access rights for the storage folder must be set. For further details, see "Software" (on page 10).

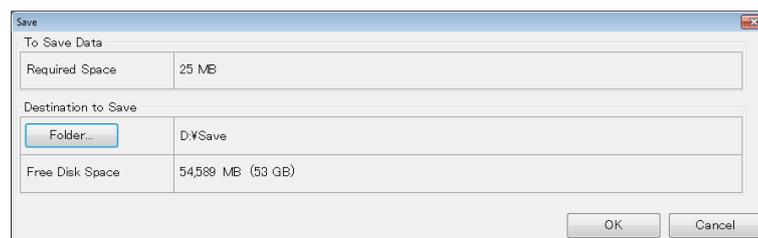
**1** Click the **Temporarily Saved** tab on the **Study Logs** screen.

**2** Select the study to be saved, and then click **Save**.

To select two or more studies, click the studies while holding down the Ctrl key, and to select a range of studies, click the studies while holding down the Shift key.



When calculation of the space required for storing the study data is completed, the **Save** screen appears.



#### 3 Click **OK**.

The study data is saved. After the data is saved, the **Study Logs** screen re-appears.

The **Error** screen appears if there is not enough free space or if the length of the path of the storage folder consists of more than 150 characters.



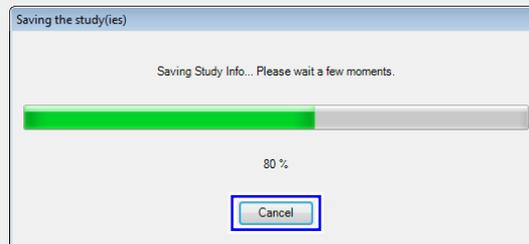
#### Changing the save destination folder

To select a new save destination folder or to change the save destination folder, click **Folder**. The **Browse For Folder** screen appears. Select the new save destination folder in this screen.

This software saves the storage folder information. However, if the Rics NM2 cannot access the destination folder when opening it – for example, when the media has not been inserted into the drive – the Rics NM2 will specify the desktop as the storage destination.

#### Canceling saving of studies

Click **Cancel** to cancel saving of studies. Once **Cancel** is clicked, the Rics NM 2 quits saving of unsaved studies. However, studies that have been saved or that are being saved are saved to the designated save destination folder.



#### Save destination folder

To specify a network shared folder as **Destination to Save**, proceed with "Map Network Drive". When a folder is "mapped" or allocated as a drive, the amount of free space appears.

#### Temporarily saved study logs data that has been saved

Even if temporarily saved study logs data has been saved as study log files, the original temporarily saved study logs data is not deleted. To delete this data, see "Deleting Study Log Files" (on page 82).

## Deleting Study Logs

You can delete temporarily saved study logs.

- 1 Click  button (Study Logs).

The **Study Logs** screen appears.

- 2 Select the study to be deleted.

To select two or more studies, click the studies while holding down the Ctrl key, and to select a range of studies, click the studies while holding down the Shift key.

- 3 Click **Delete**.

The **Warning** screen and the "**Selected study will be deleted.**" message appear. Click **OK** to delete the study. However, if the transfer status is "Transfer", the study concerned cannot be deleted.

## Setting the Display Items on the Study Logs Screen

On this screen, add or delete the items displayed on the temporarily saved study logs list, or set the display sequence of these items.

- 1 Click  button (Study Logs).

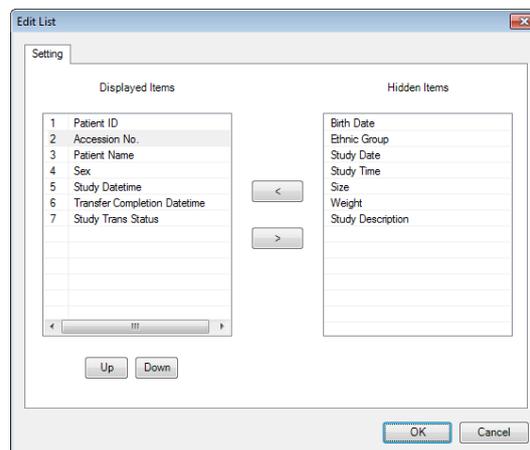
The **Study Logs** screen appears.



The column width of each item can be adjusted by dragging the divider line between each column.

- 2 Click **Edit List**.

The **Edit List** screen appears.



To change the display items, proceed as follows:

- To add an item, select the item in **Hidden Items**, and click the  button.
- To delete an item, select the item in **Displayed Items**, and click the  button.
- To change the display sequence, select the item, and then click the **Up** button or **Down** button to move the item.

- 3 Click **OK** to enable the settings.

## Displaying Studies in the Study Log File

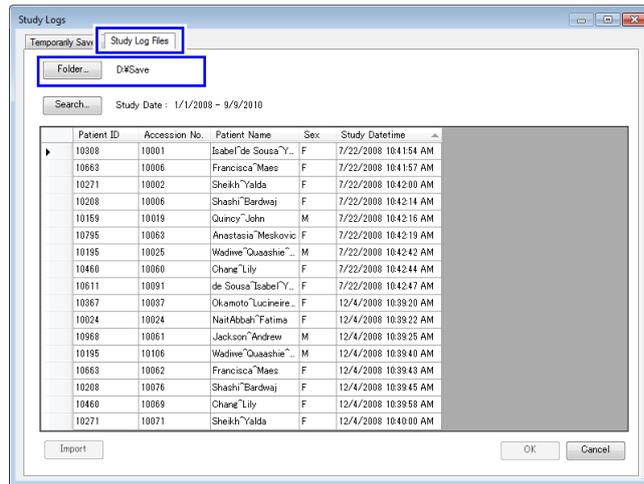
Studies stored in any of the folders or on a removable storage media, for instance, appear.

1 Click  button (Study Logs).

The **Study Logs** screen appears.

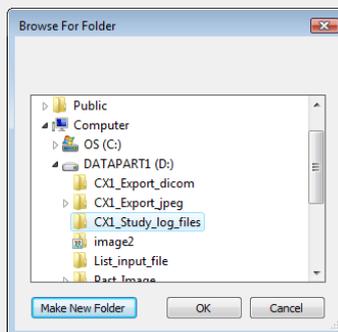
2 Click the **Study Log Files** tab.

The study file is read from the specified folder, and the study list appears. To change the display item of the study list, see “Setting the Display Items on the Study Logs Screen.”



### Specifying the folder

To browse for other folders, click **Folder**, and specify the location on the **Browse For Folder** screen.



### Changing the search conditions of the study list

To change the search conditions of the study list, see “Searching for a Study Log” (on page 72).

### Display items

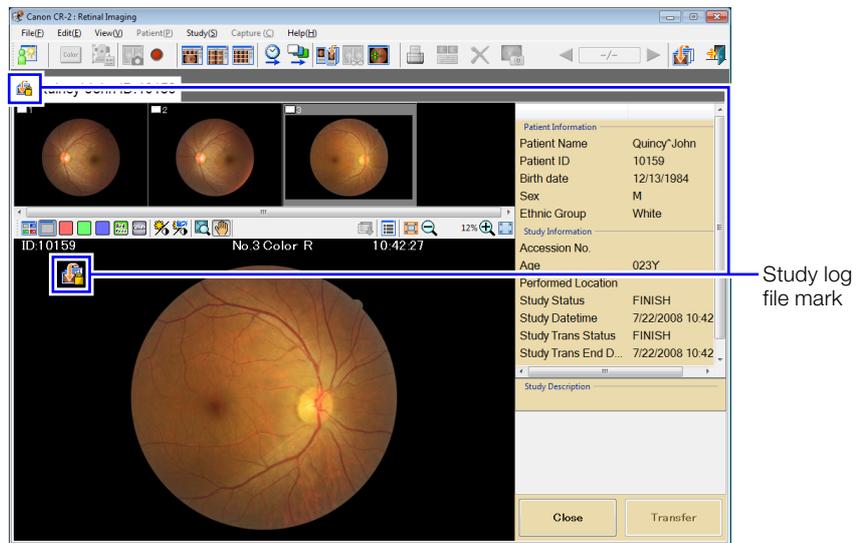
Display items set on the **Edit List** screen appear (on page 79). Note, however, that **Transfer Completion Datetime** and **Study Trans Status** cannot be set to display in the list.



On the **Study Log Files** tab, the **Transfer**, **Transfer All**, **Save**, and **Delete** commands cannot be executed.

### 3 Double-click a study or select one, and then click **OK**.

The main screen appears with the study log file images on it. The study log file mark appears on the main image and the study tab.



#### Functions on the study log file screen

The following functions are not available when a study log file on the main screen appears:

- QA
- Reject
- Correction of patient information
- Correction of image comments
- Correction of study descriptions
- Transfer of studies
- Change of studies
- Save of generated images
- Capture of screen

For Stereo view and C/D ratio view, images can be viewed only.

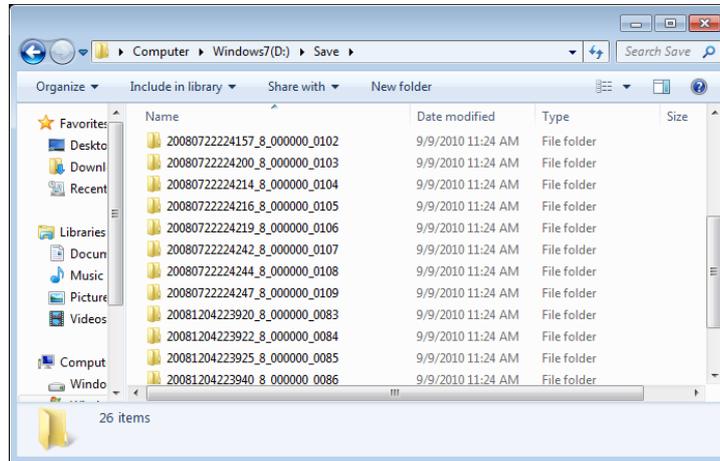
Before adding or correcting a study description or performing C/D ratio measurement on a study in a study log file, first import the study (on page 86).

### 4 Click **Close** to exit the screen.

## Deleting Study Log Files

Study log files can be deleted in Explorer.

- 1 Open the folder in which the study log files were saved.



- 2 Select the folder of the study log file to be deleted, and press the Delete key.



When a file or folder is deleted, it is saved temporarily in the recycle bin. To delete it completely from the computer's hard disk, open the recycle bin, select the file or folder, and then press the Delete key.

To delete a file or folder completely without sending it to the recycle bin, press the Delete key while holding down the Shift key.

## Comparing Study Logs

You can compare the image of the current study with a study log, or compare images in different study logs on the **Compare Studies** screen.

The **Compare Studies** screen appears only while a study appears on the main screen.

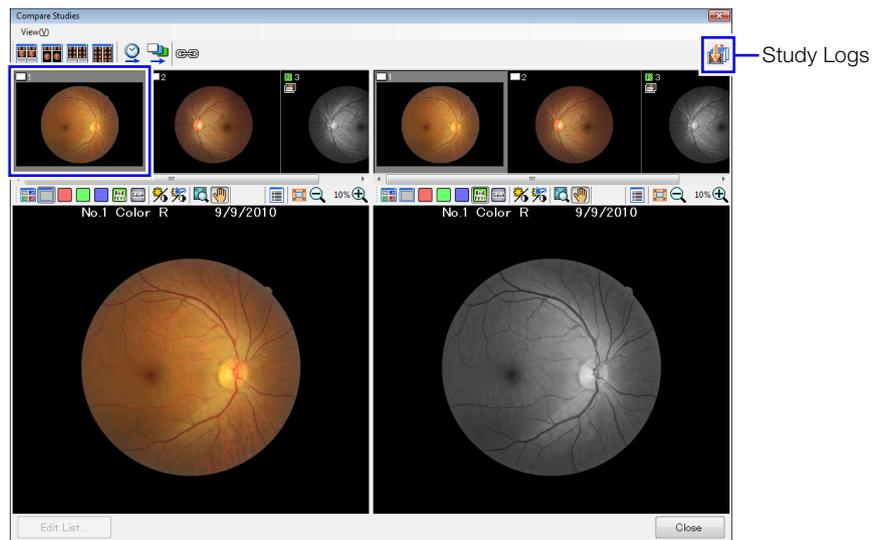
The following describes how to compare a study log image during a study.

- 1 Click  button (Compare Studies).

The **Compare Studies** screen appears.

- 2 Click the image to be compared from the thumbnail images on the left.

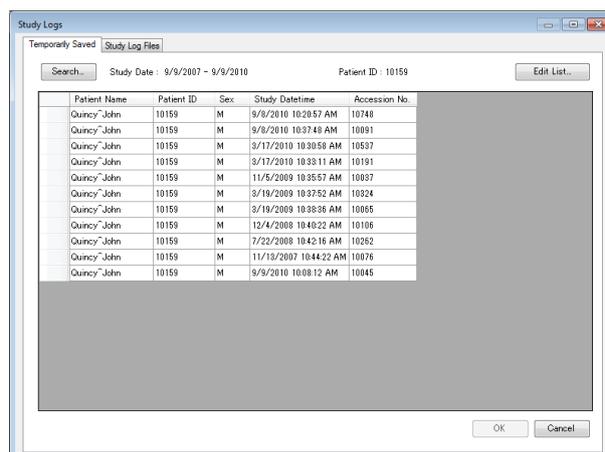
The images in the current study can be compared on the left and right screens. In this example,  button (Digital Redfree) has been clicked for the screen on the right.



- 3 Click  button (Study Logs).

The **Study Logs** screen appears.

A search is performed using the Patient ID, and the search results appear on the **Temporarily Saved** tab.



Patient Name	Patient ID	Sex	Study Datetime	Accession No.
Quincy-John	10159	M	9/8/2010 10:20:57 AM	10748
Quincy-John	10159	M	9/8/2010 10:37:48 AM	10091
Quincy-John	10159	M	3/17/2010 10:30:58 AM	10537
Quincy-John	10159	M	3/17/2010 10:33:11 AM	10191
Quincy-John	10159	M	11/5/2009 10:35:57 AM	10037
Quincy-John	10159	M	3/19/2009 10:37:52 AM	10024
Quincy-John	10159	M	3/19/2009 10:38:36 AM	10085
Quincy-John	10159	M	12/4/2008 10:40:22 AM	10106
Quincy-John	10159	M	7/22/2008 10:42:16 AM	10282
Quincy-John	10159	M	11/18/2007 10:44:22 AM	10076
Quincy-John	10159	M	9/9/2010 10:08:12 AM	10045



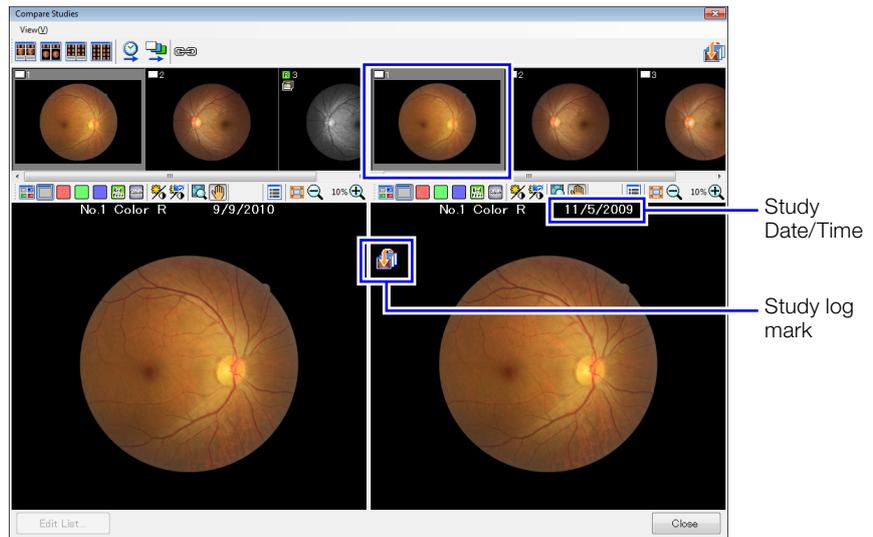
**To display a study that does not appear on the temporarily saved study log list**

To display a study with a different patient ID from the temporarily saved study log, click **Search**, and set the appropriate search conditions on the **Search** screen (on page 72).

To display study log files, click the **Study Log Files** tab, and select the study on the **Study Log Files** screen. If necessary, click **Folder** or **Search**, and either select the folder that appears, or set the conditions of the study that appears (on page 80).

**4 Select the study from the study list, and click **OK**.**

The selected study log image appears on the right side of the **Compare Studies** screen. Click the image to be compared from the thumbnail images on the right.



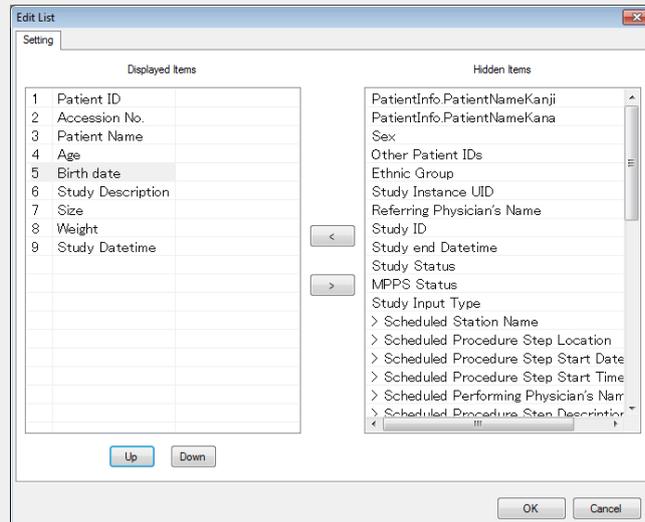
Click the toolbar buttons to change the display format or application range of the operations.

-  The main and thumbnail images appear together with the study information.
-  The main and thumbnail images appear.
-  The thumbnail images appear together with the study information.
-  The thumbnail images appear.
-  Images appear in the order that they were taken.
-  Images appear in the order of the retinal camera mode for the images.
-  When this option is enabled, an operation applied to the left or right image is applied to the other image. When the display is switched between RGB view and normal view, or Zoom In and Zoom Out button operations are performed for one of the images, the same operation is applied to the other image.  
Application of an operation to both images is canceled when one of the following operations is performed:
  - Selection of another image
  - De-selection of an image
  - Opening if a different study



To change the displayed items for the study information, click **Edit List**. The **Edit List** screen appears. Click **OK** to save the settings.

- To add an item, select the item in **Hidden Items**, and click the button.
- To delete an item, select the item in **Displayed Items**, and click the button.
- To change the display sequence, select the item, and then click the **Up** button or **Down** button to move the item.



## 5 To continue comparing studies

- To change the compared images, re-select the thumbnail images in the left and right screens.
- To display different study logs, click the Study Logs button and re-select from the study log list.

## 6 Click **Close**.

The **Compare Studies** screen closes, and the main screen re-appears.

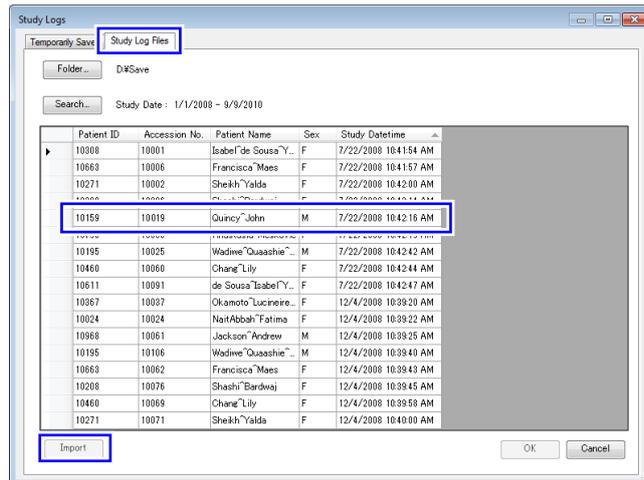
## Importing Study Logs from External Storage Media

You can import study log files saved on external storage media and use them as temporarily saved study log data.



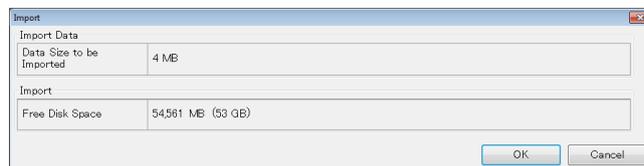
The maximum number of studies that can be imported in a single operation is 100. When importing over 100 studies, divide them up into several groups first.

### 1 Select the **Study Log Files** tab on the **Study Logs** screen.



### 2 Select a study, and then click **Import**.

To select two or more studies, click the images while holding down the Ctrl key. When calculation of the space required for importing the study data is completed, the **Import** screen appears.



### 3 Click **OK**.

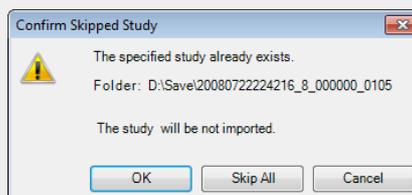
The import is started.



When a study having the same internal study instance UID is in temporary storage, the **Check Skipped Study** screen appears.

Click **OK**. The import is resumed with the study displayed on screen not imported. From here on, the **Check Skipped Study** screen will appear in the case of similar studies.

Clicking **Skip All** imports other studies from here on without importing studies having the same internal study instance UID.

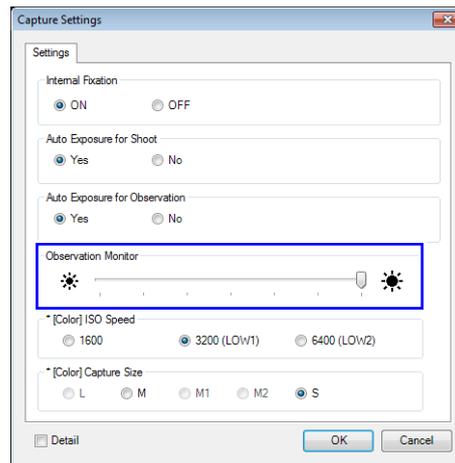


## Others

### Adjusting the Brightness of the Observation Monitor

The brightness of the observation monitor of the retinal camera can be adjusted.

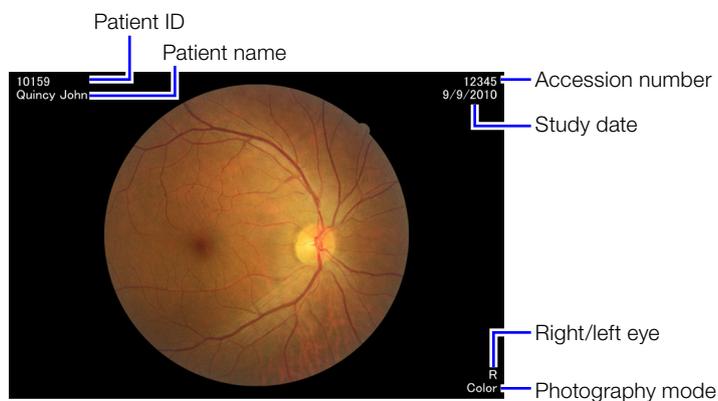
- 1 Select **Capture > Capture Settings...** from the menu.  
The **Capture Settings** screen appears.
- 2 Drag the slider.



- 3 Click **OK** to close the screen.  
The brightness of the observation monitor changes.

### Overlaying Study Information on Transferred Images

Patient information and study information can be overlaid on images transferred to the DICOM server and captured images that are exported in DICOM and JPEG format. For details on setting overlaid items, see "Setting Overlay." You can also set whether or not to overlay for each storage set to be transferred. See "Registering a DICOM Storage Server as the Storage Device," "Registering a Storage Device for Transferring Files in DICOM Format," and "Registering a Storage Device for Transferring Files in JPEG Format."



## Saving Images as JPEG or TIFF Files

Selected image(s) can be saved as a JPEG or TIFF file.

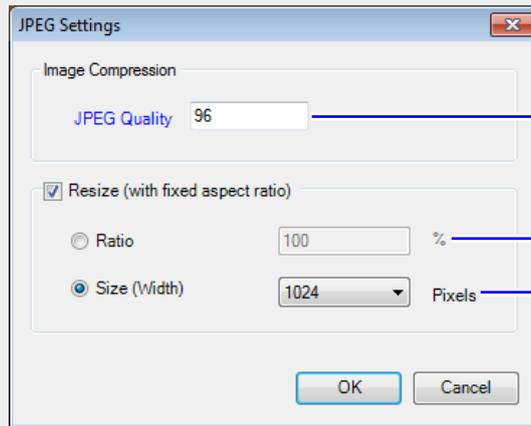
**1** Click the thumbnail image to be output as a file.

To select two or more images, click the images while holding down the Ctrl key.



### Setting the JPEG image quality

You can set the image compression and resizing options when saving images in JPEG format. Or, select **File > JPEG Settings...** from the menu. The **JPEG Settings** screen appears. Click **OK** to apply the settings.



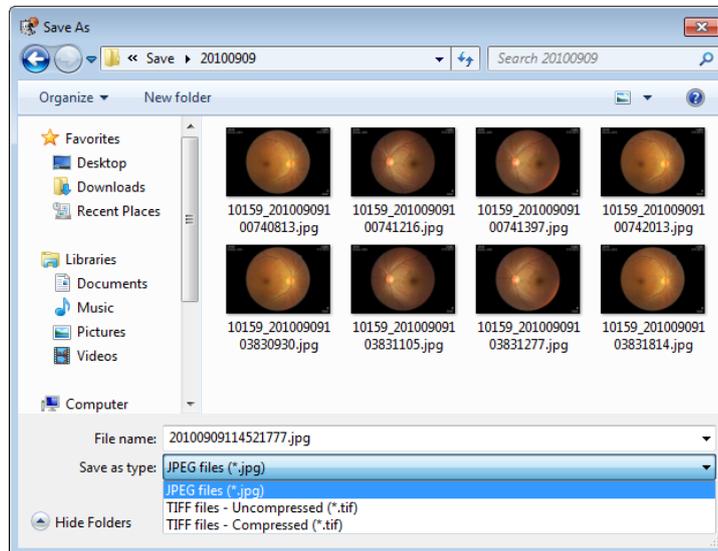
From 1 to 100  
"100" represents  
the highest quality.

From 1 to 100

Select the width  
of the image after  
reduction.

**2** Click **File > Save As...** from the menu.

The **Save As** screen appears. Select the file type (Jpeg or Tiff) from the **Save as type** list box.



**3** Specify the file name and folder where the image will be saved, and click **Save**.

The default file name appears as shown below. Change it if required.

"yyyyMMddhhmmssff.xxx" (year/month/day/hour/minute/second/millisecond when the selected file appeared on the **Save As** screen, with "xxx" representing the extension, jpg or tif)

**Folder where the image will be saved**

Windows 7/Windows Vista: **Pictures**

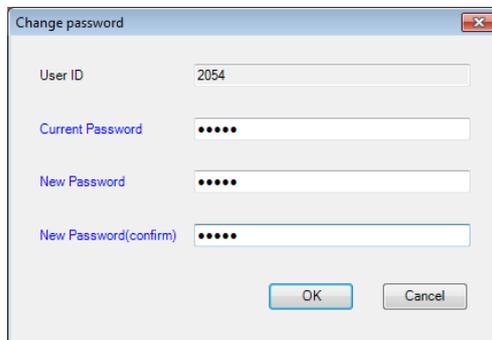
Windows XP: **My Pictures**

## Changing the Password

You can change the password of the user who is currently logged in.

**1** Select **File > Change Password...** from the menu.

The **Change password** screen appears.

**2** Input **Current Password**, **New Password** and **New Password(confirm)**.**3** Click **OK**.

The password is changed and the screen closes.

**Acceptable characters for the password**

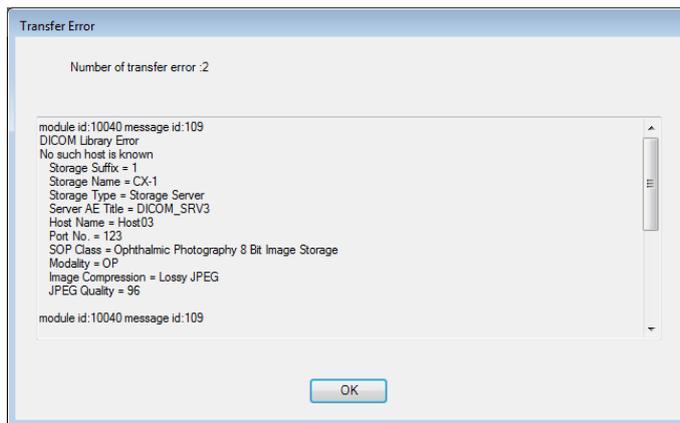
For further details, see "Acceptable Characters" (on page 142).

## Checking the Number and Nature of the Transfer Errors

- 1 Click the  icon while the transfer error is occurring. The **Transfer Error** screen appears.



The number of transfer errors and the nature of the errors appear on the **Transfer Error** screen. Check the nature of the errors, and take remedial action. For further details, see "5 Troubleshooting" (on page 127).



- 2 Click **OK**.  
The main screen re-appears and the transfer status icon disappears.

## Displaying the Version Information

Select **Help > Version** from the menu.  
The **Version Information** screen appears. The software version appears on this screen.



# 4 Settings

This chapter describes the initial settings of the various functions in the Rics NM 2.

## Setting Procedure

The setting procedure described here is for setting the items for **System** under **Modality** as an example. Use the same procedure for the other settings.

- 1 On the login screen, input the User ID and Password with which the privileges have been set to the Administrator, and click **Settings**.

The **Settings Menu** screen appears.

- 2 Click the icon for which you want to perform settings in the **Settings Menu** screen. Click **System**. The **System** screen appears.

- 3 Select the tab in which you want to perform settings.

- 4 Set the parameters, and click **OK** to save the settings.

The **System** screen closes, and the **Settings Menu** screen re-appears.

- 5 Click **Close**.

The **Settings Menu** screen closes, and the login screen re-appears.

Login screen

Canon CR-2: Retinal Imaging Demo  
Retinal imaging control software NM 2  
User ID  
Password  
Settings (1) Login Exit

Settings Menu screen

Settings Menu  
Modality: System (2), Device, Study Management  
DICOM: Study Input, Storage, DICOM Tag  
Other: User Accounts, Screen, Print, Study Logs List, Magnetic Card I/O  
Close (5)

Setting screen

System (3) Transfer Timing Specific Character Set Other  
Modality: Ophthalmic Photography & DR Image Storage  
Modality: GP  
AE Title: CANON\_NM2  
Station Name  
Location  
Institutional Department Name: ROOM 01  
Institution Name: Canon Hospital (4)  
OK Cancel

## System Settings

On the **System** screen, specify the modality details and set the timing for image transfer/saving, the specific character set to use in DICOM communication, and the separator between name elements.

### System/System tab

Set the modality information for this retinal camera system. The item names in blue are set as essential input data.

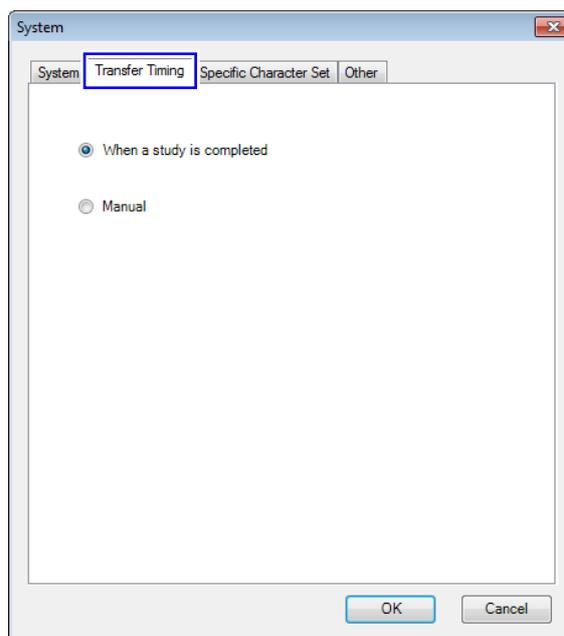
- **SOP Class (essential)**  
Select from the list box.
- **Modality (essential)**  
This is determined automatically in accordance with the SOP Class setting. (XC/OT/OP)
- **AE Title (essential)**  
The default value is "CANON\_NM2".
- **Station Name**  
Input the station name. Blank spaces only cannot be set.
- **Location**  
Input the location. Blank spaces only cannot be set.
- **Institutional Department Name (essential)**  
Input the institutional department name. Blank spaces only cannot be set.
- **Institution Name (essential)**  
Input the institution name. Blank spaces only cannot be set.



For details on essential item settings, see "Acceptable Characters" (on page 142).

## System/Transfer Timing tab

On this tab, you can select the timing at which the study data is transferred to the storage device.



- **When a study is completed**

When a study is completed, study data is automatically transferred to the registered storage device.

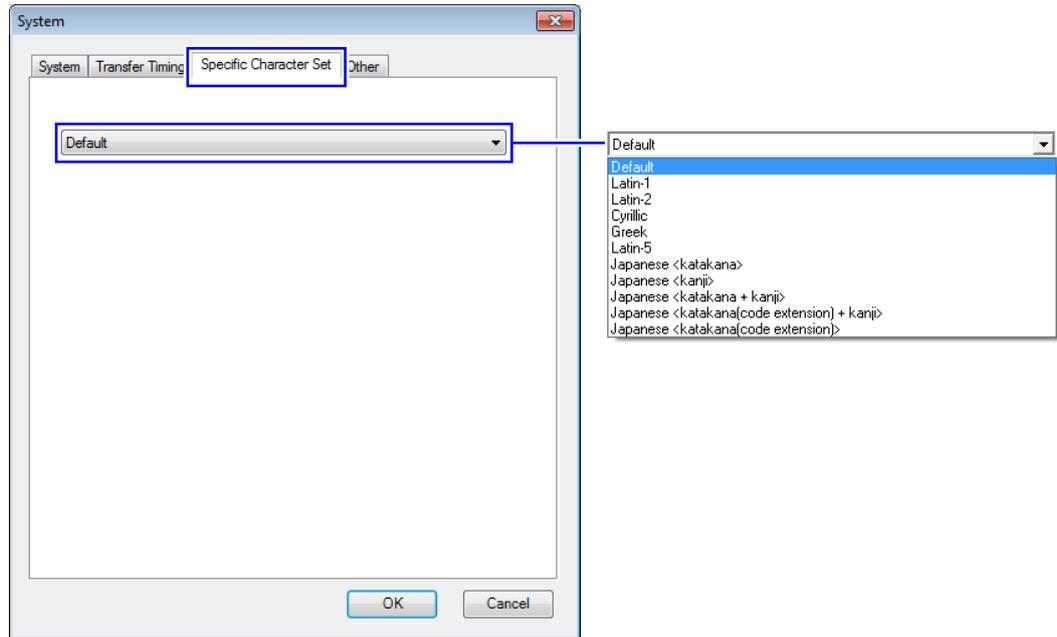
- **Manual**

When a study is completed, study data is not automatically transferred. The study data is saved as a temporarily saved study log.

To transfer the data, display the **Study Logs** screen and select a storage device (on page 76).

## System/Specific Character Set tab

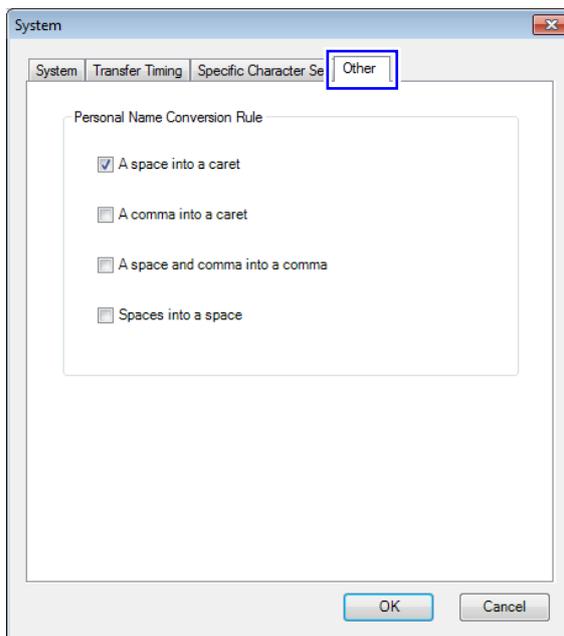
On this tab, you can set the specific character set used for DICOM communication. Click ▾, and select the desired character set from the list box.



- For details on the tag value for the specific character set, see "Acceptable Characters" (on page 142).
- The setting for the specific character set needs to match the connected system (worklist/MPPS/storage server). For details, check with the network administrator.
- The changed option is applied to transfer of new study data. The specific character set option for a set of study data is determined when the study is performed. So, the specific character set for study log data is not changed.

## System/Other tab

On this tab, you can set the conversion rule for the separator between name elements in DICOM communication.



- **Personal Name Conversion Rule**

To convert the separator between name elements, select one of the options. Selection of a conversion option changes the name display on the screen and output character string for DICOM communication.

**A space into a caret:** Converts a space into a caret (^).

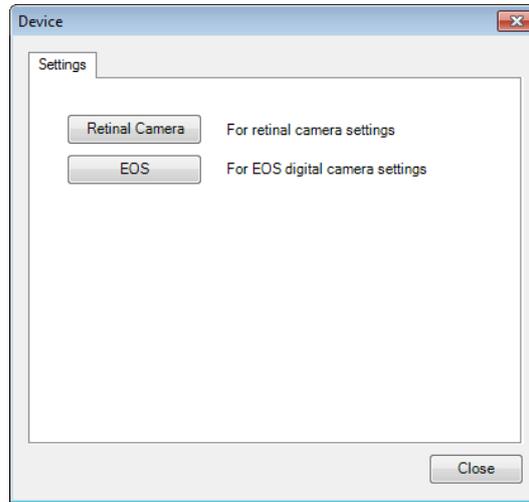
**A comma into a caret:** Converts a comma into a caret (^).

**A space and comma into a comma:** Converts a space and comma into a comma.

**Spaces into a space:** Converts multiple spaces into a space.

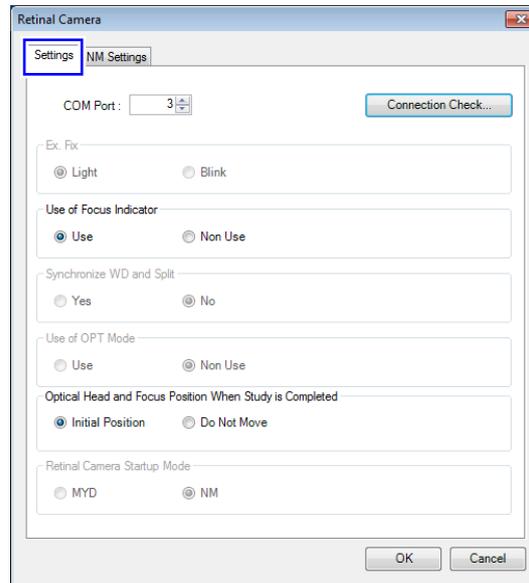
## Device

On this screen, you can make the settings for the retinal camera and digital camera. Click **Retinal Camera** to display the **Retinal Camera** screen, or click **EOS** to display the **EOS** screen.



### Retinal Camera/Settings tab

On this tab, you can set the port number of the serial port for communication with the retinal camera, and settings related to status control for the retinal camera.

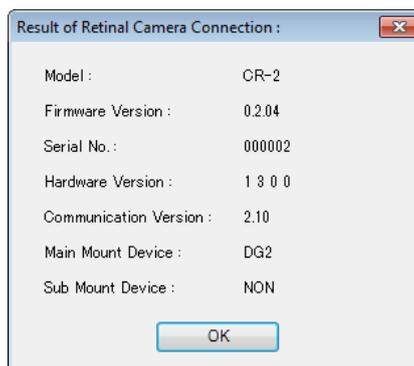


- **COM Port**

Click ▲ button or ▼ button to select a number for the port where communication is made with the retinal camera (from 1 to 16).

- **Connection Check...**

Click this button to check connections on the port you have set. If connection with the retinal camera has been made properly, the **Result of Retinal Camera Connection** screen appears.



- **Use of Focus Indicator**

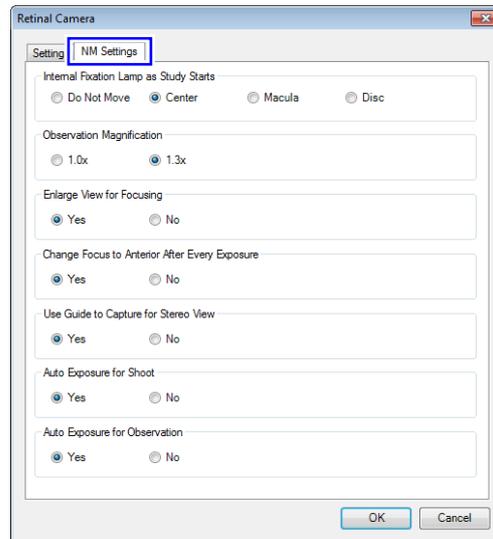
Selects whether or not to display the focus indicator.

- **Optical Head and Focus Position When Study is Completed**

Selects whether or not to move the vertical position of the main unit and focus position to the initial position when study is completed.

## Retinal Camera/NM Settings tab

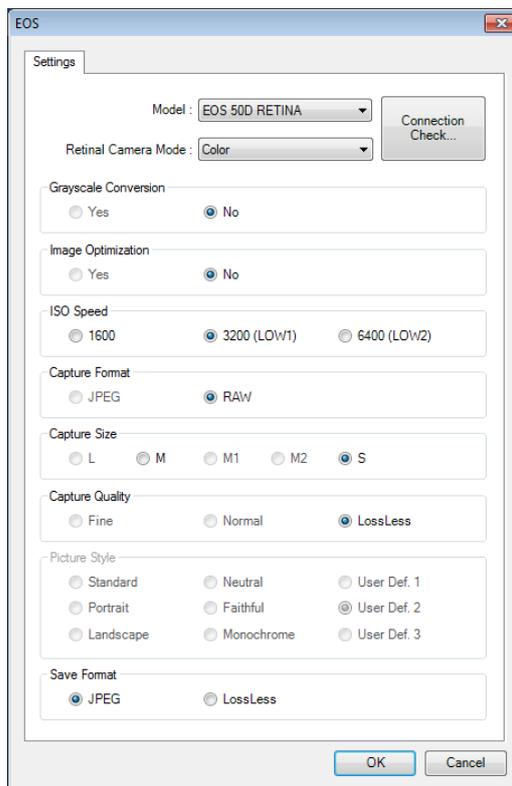
On this tab, you can set the options for the retinal camera in the non-mydratric mode.



- Internal Fixation Lamp as Study Starts**  
 Selects the lighting position of the internal fixation lamp when the study starts. To keep the lamp at the same position as the last time, select **Do Not Move**.
- Observation Magnification**  
 Selects the magnification for observing the target eye on the observation monitor.  
 The default magnification is 1.3x.
- Enlarge View for Focusing**  
 Determines whether or not to zoom in the image of the observation monitor when the focus knob is turned. To zoom in the image, select **Yes**, and to not zoom in, select **No**.
- Change Focus to Anterior After Every Exposure**  
 Selects whether or not to return to the anterior eye observation after the retinal image has been taken.  
 This function is disabled in stereo photography even if **Yes** is selected.
- Use Guide to Capture for Stereo View**  
 To display the stereo guide mark on the observation monitor when the Capture for Stereo View mode is selected, select **Yes**, and to not display, select **No**.
- Auto Exposure for Shoot**  
 Selects whether or not to automatically adjust the flash intensity. The setting appears as ⚡ in the observation monitor of the retinal camera. When **Yes** is set, ON appears and when **No** is set, OFF appears. With **Yes** setting, every time the flash intensity button of the retinal camera is pressed the flash intensity is corrected by 0.3 stop.  
 This function is disabled in anterior eye photography even if **Yes** is selected.
- Auto Exposure for Observation**  
 Selects whether or not to automatically adjust the observation light brightness. The setting appears as ☀ in the observation monitor of the retinal camera. When **Yes** is set, ON appears and when **No** is set, OFF appears. With **Yes** setting, every time the observation light brightness button of the retinal camera is pressed the observation light brightness is corrected by 0.3 stop.  
 This function is disabled in anterior eye photography even if **Yes** is selected.

## EOS/Settings tab

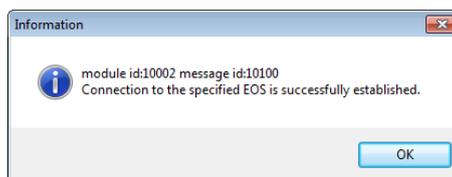
On this screen, you can select the model of the digital camera to connect to the Rics NM 2, and select the desired options.



- **Model**

Select the digital camera to be used from the list box.

Click **Connection Check...**. If the connections have been made properly, the **Information** screen appears.



When an **Error** screen appears, check the following:

- Is the retinal camera turned on?
- Is the digital camera turned on?
- Are the retinal camera and PC connected by the specified cables?
- Are the digital camera and retinal camera connected by the specified cables?

- **ISO Speed**

Select 1600 for standard photography. Select 3200 (LOW1) or 6400 (LOW2) for low flash intensity photography.

- **Capture Size**

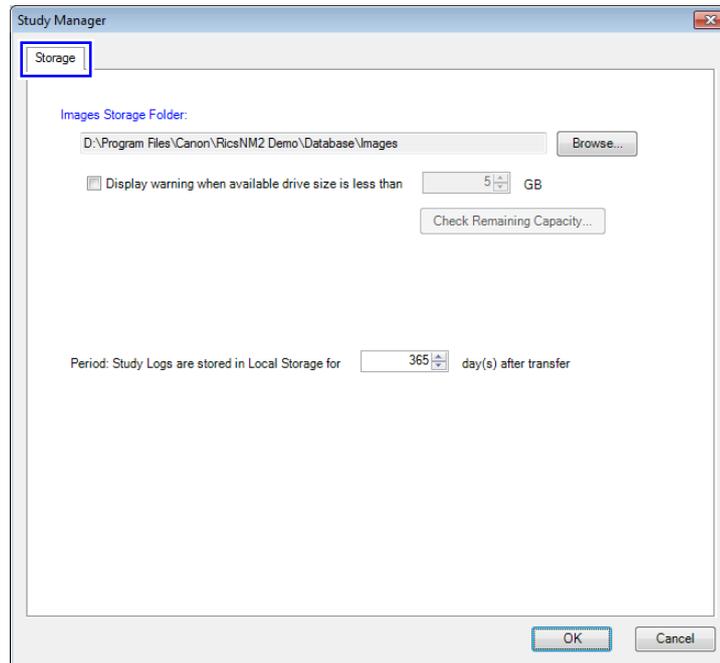
Select a size (L, M, or S).

- **Save Format**

Select the image format for saving.

## Study Manager

In the **Study Manager** screen, set the storage folder of the study data (images and patient information), drive size warning, and the storage period.



- **Image Storage Folder**

Specify any location on the local hard disk for storing the study data. Network drives and removable drives, such as DVD-R/RW, DVD-RAM, CD-R/RW, and USB flash drive, cannot be selected as the image storage folder.

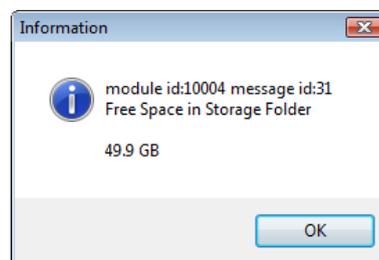


Do not change the path that was set at installation of the software.

- **Display warning when available drive size is less than**

Select this item to display a warning screen when free space on the hard disk has fallen below the setting. Specify a value from 5 to 999 GB.

When free space falls to 1 GB or less, the **Error** screen appears. Click **Check Remaining Capacity** to check the remaining free space on the hard disk and display the **Information** screen.



- **Period: Study Logs are stored in Local Storage for**

When the set number of days elapses after the study data transfer date, the study data is deleted. If a study targeted for deletion exists when you log out, the delete confirmation screen appears. Delete by following the displayed instructions.

Specify a value from 0 to 999 days.

Example: If this period is set to 5 days and you transfer study data on September 2, 2010, the study data is targeted for deletion at 00:00 on September 7, 2010.

## Study Input

On this screen, you can make settings for inputting patient information, such as the input method, essential input data and the input format.

Keyboard, magnetic card/barcode reader, worklist, and list input can be selected as the study input method. You can use two or more items one by one to find and/or complete the study information.

With worklist or study list, you can use the magnetic card or barcode for searches. With worklist, you can use MPPS.

### Study Input/Module Settings tab

On this tab, you can select the study input modules to be used.

In **Module List**, select the **Status** check boxes of the modules that you want to use. In the **Study Input/MPPS Modules** screen, the corresponding tabs appear arranged in the order that the modules are selected. In the **Study Input** screen, the tabs are arranged in the display order of the **Module List**.

Status	Module Name	Type
<input checked="" type="checkbox"/>	StudyManualInput	MANUAL_INPUT
<input checked="" type="checkbox"/>	StudyMagBarcodeInput	MAG_BARCODE_INPUT
<input type="checkbox"/>	StudyMMLInput	RIS_INPUT
<input type="checkbox"/>	MPPSCommunication	MPPS
<input type="checkbox"/>	StudyStuIdInput	LIST_INPUT

Open Study Input screen when a study is closed

OK Cancel

## Study Input/Manual Input tab

On this tab, you can set essential input data, input-disabled data, the method for entering birth date and the input format.

- **Essential Data**

Select the items which are to be set as the essential input data. Essential data is indicated in blue in the **Study Input** screen (on page 28). If **Patient Name** is selected as an essential item, the **Setting Details** screen will appear. Select **Last Name** and/or **First Name** to set as an essential item.

- **Input-Disabled Data**

Select the items to disable inputting to.

- **Birth Date Input**

Select the birth date input method from **Fill in a Box with Separator** or **Fill in Separate Boxes**. To specify May 23, 1986, for example, input “05/23/1986” or “23/05/1986” when **Fill in a Box with Separator** is selected; input “05,” “23,” and “1986” or “23,” “05,” and “1986” when **Fill in Separate Boxes** is selected. The date element order depends on the date format option set for the OS.

- **Input Format**

Select the items to set the format of the input items. The options (Length, Acceptable Character Set, Header string, and Filler Character) for the selected item are enabled. Then, set the parameters for these items as required.

Length: Specify the fixed length. Input a value from 1 to 64 for Patient ID, and from 1 to 16 for Accession No. If the value is not input for these items, the Patient ID field accepts up to 64 characters and the Accession No. accepts up to 16 characters.

Acceptable Character Set: Select the available character type from the list box.

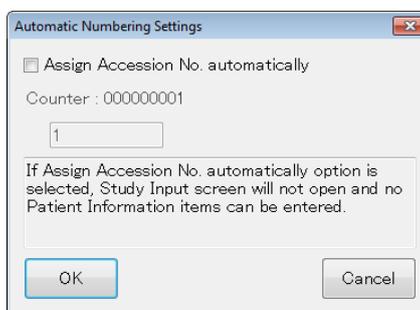
Header string:	Specify the character string added to the left side of input values. For example, if "ABC-" is specified and 16 is specified for <b>Length</b> , up to 12 characters can be input.
Filler Character:	If the input character string is shorter than the value specified in <b>Length</b> , the specified filler characters are used. For example, if 8 is specified for <b>Length</b> , 0 is specified for <b>Filler Character</b> , and "12345" is input, the filler characters are added to set "00012345".

- **Automatic Accession No. Assignment**

Select this checkbox to use the Automatic Accession No. Assignment menu. This enables the **Auto Counter Setting...** button and enables the automatic numbering setting. Automatic numbering setting also can be set from the Study menu in the main screen.

## Procedure for Automatic Numbering Setting

- 1 Click the **Auto Counter Setting...** button.  
The **Automatic Numbering Settings** screen appears.
- 2 Set the required options, and click **OK**.



- **Assign Accession No. automatically**

Select this checkbox to use the automatic numbering function.

- **Counter \*\*\*\*\***

Enter the counter value for the accession No. to be assigned when the **Study Input** screen is opened.

Enter within the range 0 to 999,999,999.

The \*\*\*\*\* display value is the current counter value.



### To enable the automatic numbering function:

Select the **Enable Automatic Accession No. Assignment** checkbox, or select the **Assign Accession No. automatically** checkbox in the **Automatic Numbering Settings** screen.

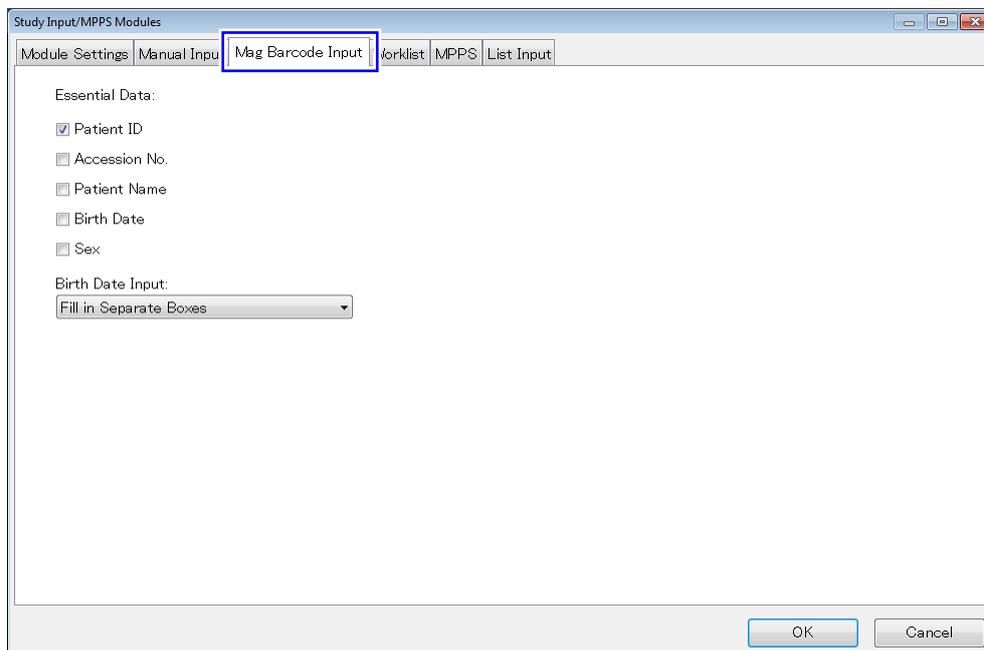
### About the automatic numbering function and the Study Input screen

When the automatic numbering function is enabled, the **Study Input** screen is no longer opened, and patient information other than the accession No. cannot be input.

To input patient information, cancel the automatic numbering function by menu > **Study** > **Set Auto Numbering...** in the main screen.

## Study Input/Mag Barcode Input tab

On this tab, you can set the essential items and the input method for the birth date during input from a magnetic card/barcode.



- **Essential Data**

Select the items which are to be set as the essential input data. Essential data is indicated in blue in the **Study Input** screen (on page 28).

- **Birth Date Input**

Select the birth date input method from **Fill in a Box with Separator** or **Fill in Separate Boxes**.

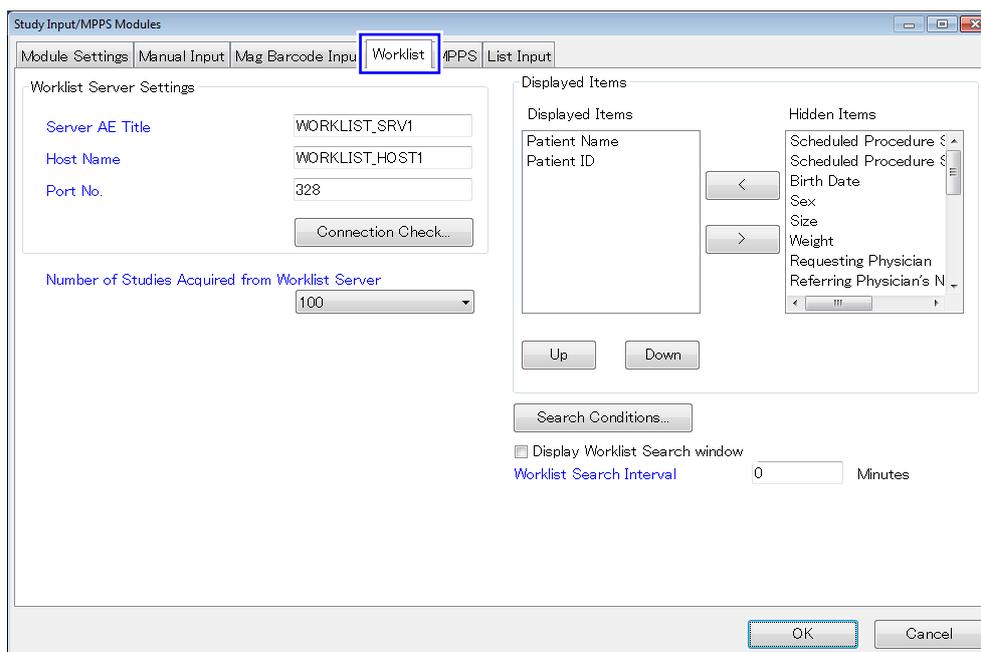
To specify May 23, 1986, for example, input "05/23/1986" or "23/05/1986" when **Fill in a Box with Separator** is selected; input "05," "23," and "1986" or "23," "05," and "1986" when **Fill in Separate Boxes** is selected. The date element order depends on the date format option set for the OS.

## Study Input/Worklist tab

On this tab, you can make settings for the display items, search conditions and worklist server.



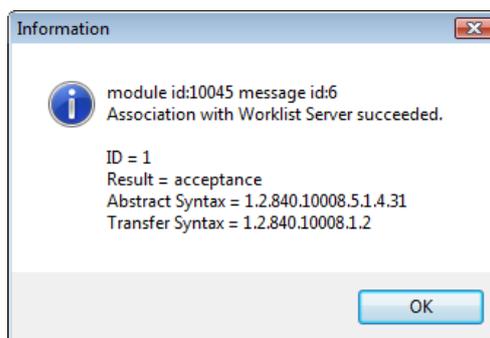
For details on the setting information for the worklist server, check with the network administrator.



## Setting the Display Items and Worklist Server

- **Worklist Server Settings**

Input the AE title, host name and port number for the worklist server. Click **Connection Check...** If the connections with the worklist server have been made properly, the following **Information** screen appears.



When the **Warning** screen appears, check that the network and worklist server are operating properly.

- **Number of Studies Acquired from Worklist Server**

To change the maximum number of studies that can be acquired from the worklist server, select the desired number from the list box.

- **Displayed Items**

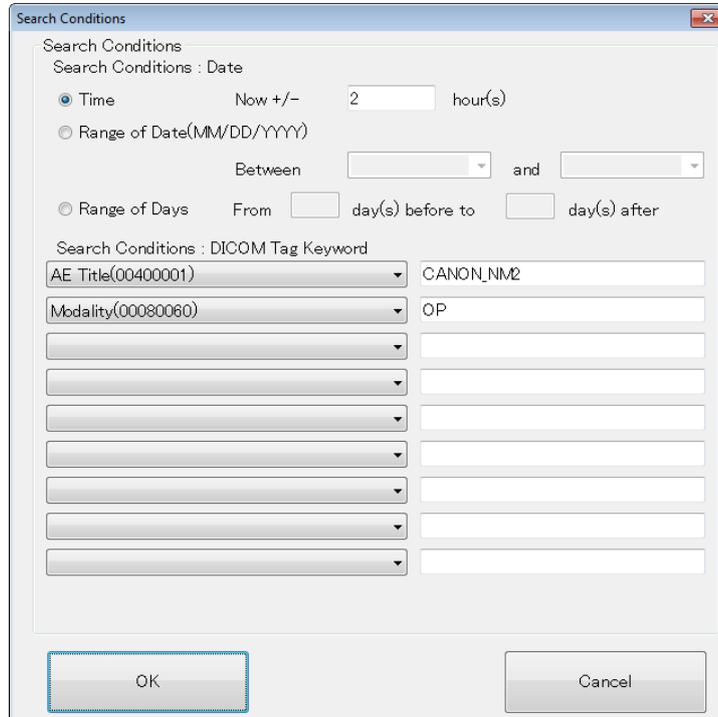
Select the item to be displayed in the **Study Input** screen from **Hidden Items**, and click the button. To move to **Hidden Items**, select the item in **Displayed Items** and click the button. To change the display order, select the item, and click the **Up** button or **Down** button.

### Setting the Worklist Search Conditions

Set the default values of the **Worklist search** screen (on page 32).

**1** Click **Search Conditions**.

The **Search Conditions** screen appears.



- **Search Conditions**

Select **Time**, **Range of Date** or **Range of Days** and set the conditions.

Time: From 1 to 24.

Date: Directly input the search start date and the search end date, or click ▼ and select from Yesterday, Today and Tomorrow. Select the dates in the range extending from 1/1/1870 to 12/31/9999.

Range of Days: Select a number of days (999 or less) before and after today.

- **Search Conditions: DICOM Tag Keyword**

Select a tag from the list box and input a value on the right side. When a wild card (\*) is used, a match is judged regardless of the tag value. The tags that can be selected are shown below.

AE Title(00400001)
Scheduled Station Name(00400010)
Modality(00080060)
Patient ID(00100020)
Scheduled Performing Physician's Name(00400006)
Scheduled Procedure Step Location(00400011)
Patient Name(00100010)
Accession No.(00080050)
Requested Procedure ID(00401001)



For details on essential item settings, see “Acceptable Characters” (on page 142).

**2** Click **OK** to save the settings.

## Setting the Worklist Search Interval and Worklist Search Window

- **Display Worklist Search window**

Select this item to first display the **Search Conditions** screen when the worklist is used for study input. This function is useful, for example, if there will be a large number of studies acquired from worklist. When the screen appears, input the search conditions and click **OK**. The worklists that were searched again appear.

- **Worklist Search Interval**

Set the time interval after which the worklist is automatically searched again during display of the **Study Input** screen. Specify this in minute units. Input a value from 1 to 60. If you do not want the search to be performed again, input 0.

## Study Input/MPPS tab

On this tab, you can make MPPS server settings and check the connections with the server.



For details on the setting information for the MPPS server, check with the network administrator.

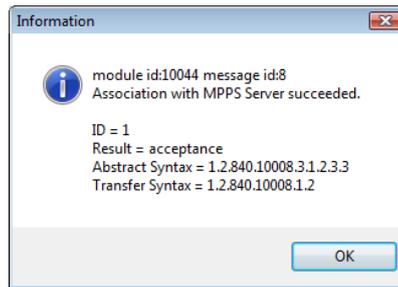
The screenshot shows a software window titled "Study Input/MPPS Modules". It has several tabs: "Module Settings", "Manual Input", "Mag Barcode Input", "Worklis", "MPPS", and "ist Input". The "MPPS" tab is active and highlighted with a blue border. Inside the window, there is a section titled "MPPS Server Settings" which contains three text input fields: "Server AE Title" (containing "MPPS\_SRV2"), "Host Name" (containing "MPPS\_HOST"), and "Port No." (containing "231"). Below these fields is a button labeled "Connection Check...". At the bottom right of the window, there are two buttons: "OK" and "Cancel".

**1** Input the AE title, host name and port number for the MPPS server.

**2** Click **Connection Check....**

If the connections with the MPPS server have been made properly, the **Information** screen appears.

3 Click **OK** to save the settings.

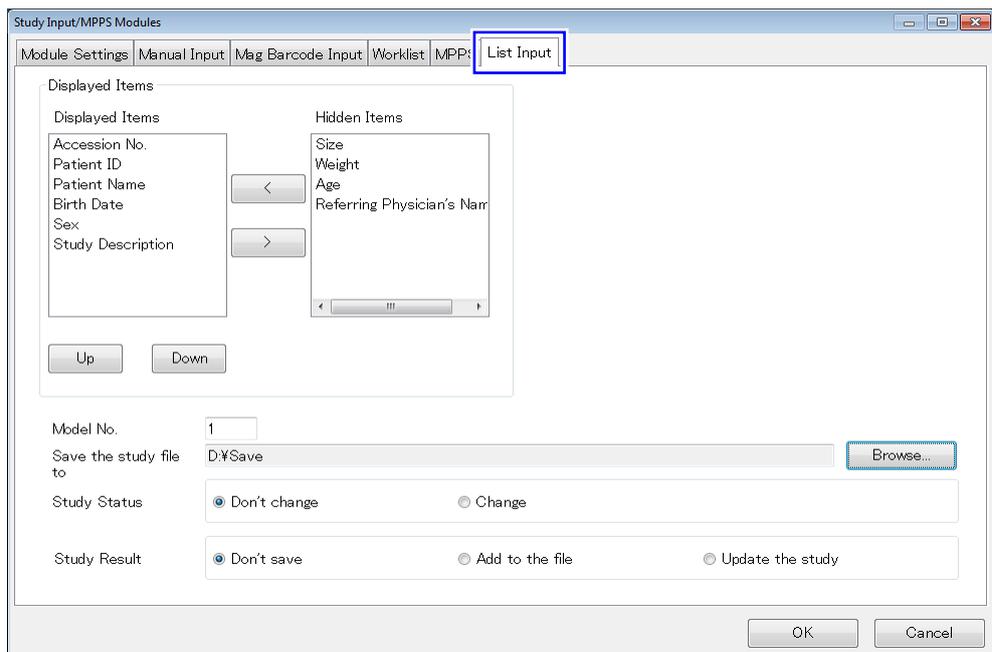


When a **Warning** screen appears, check the following:

- Is the network operating properly?
- Is the server working properly?

### Study Input/List Input tab

On this tab, you can make the settings for study input using a study file (ccrhis.his) or study history file (ccrhis.hr) that has recorded patient information to perform study input.



- **Displayed Items**

The items selected for **Displayed Items** appear on the **Study Input** screen. Select the item in **Hidden Items** and click the button to move to **Displayed Items**. To move to **Hidden Items**, select the item in **Displayed Items** and click the button. To change the display order, select the item, and click the **Up** button or the **Down** button.

- **Model No.**

Input a number for identifying the retinal camera. Input a value from 1 to 99.

- **Save the study file to**

Click **Browse...** to select the folder where the study file (ccrhis.his) has been saved. The folder path should be 79 bytes or fewer. The user should have write permission to the folder.

- **Study Status**

To update the study status that indicates start, cancel and end for the study file (ccrhis.his), select **Change**.

- **Study Result**

To add study cancel and end to the study history file (ccrhis.hr), select **Add to the file**, and to record only for the previous study result, select **Update the study**. If you do not want to record the study results, select **Don't save**.



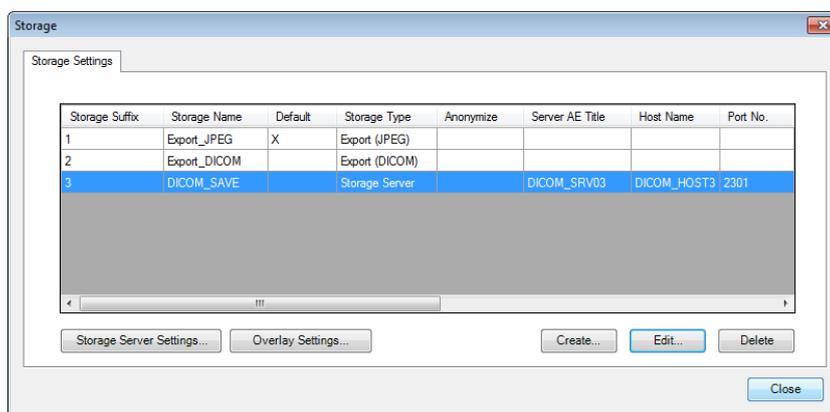
When using the study file (ccrhis.his) and study history file (ccrhis.hr), if you have any questions or want advice regarding the file specifications or operation methods, contact a Canon representative or distributor.

## Storage

The following options are available to transfer study data to a storage device.

1. DICOM storage server
2. Export (DICOM file)
3. Export (JPEG file)

Up to ten storage devices can be registered, and up to two storage devices can be set as simultaneous destinations in a single transfer.

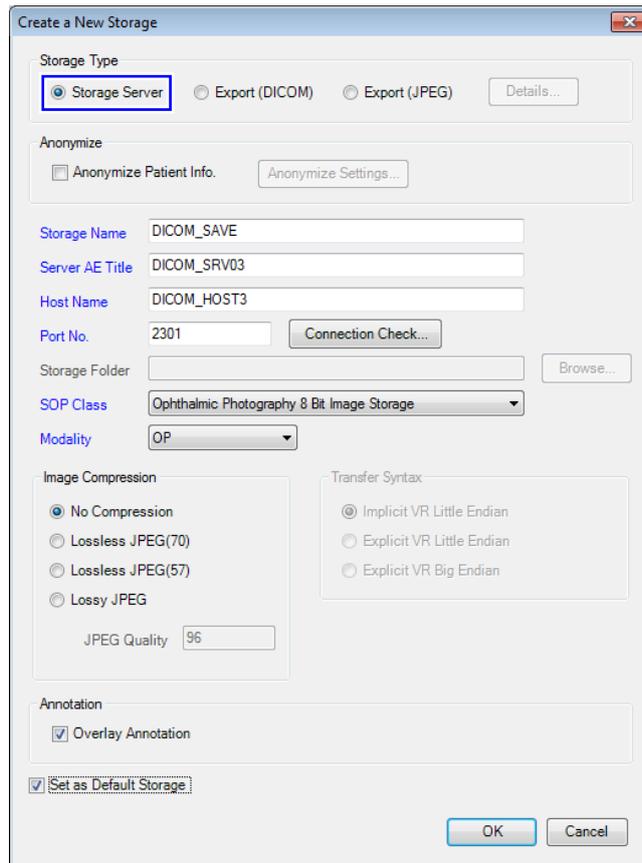


For details on the acceptable characters for the Storage Settings screen, see “Acceptable Characters” (on page 142).

## Registering a DICOM Storage Server as the Storage Device

- 1 Click **Create...** on the **Storage** screen.  
The **Create a New Storage** screen appears.

**2** Select **Storage Server** under **Storage Type**.



**3** To anonymize the patient information, select **Anonymize Patient Info.**

For details on essential item settings, see "Anonymizing the Patient Information" (on page 114).

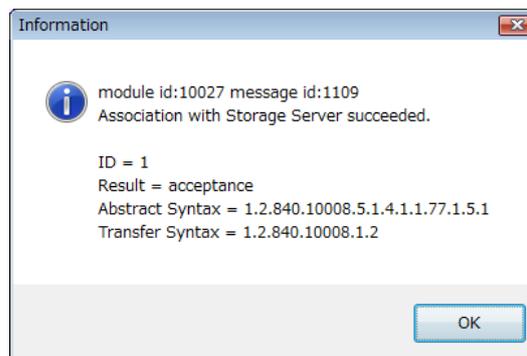
**4** Input **Storage Name**, **Server AE Title**, **Host Name**, **Port No.**, **SOP Class**, and **Modality**.



For details on the storage server settings, ask your network administrator.

**5** Click **Connection Check...** to check the connection with the server.

The **Information** screen appears if the connection has been made properly. Click **OK** to close the screen.



- 6 Set **Image Compression**. Select one of the methods.  
When **Lossy JPEG** has been selected, input a number from 1 to 100 for **JPEG Quality**. "100" represents the best image quality.
- 7 Select **Overlay Annotation** to perform this.
- 8 Select **Set as Default Storage** to set as the default storage.  
Up to two default storage devices can be set.
- 9 Click **OK** to save the settings.

## Registering a Storage Device for Transferring Files in DICOM Format

- 1 Click **Create...** on the **Storage** screen.  
The **Create a New Storage** screen appears.
- 2 Select **Export (DICOM)** under **Storage Type**.

The screenshot shows the 'Create a New Storage' dialog box with the following settings:

- Storage Type:**  Export (DICOM),  Storage Server,  Export (JPEG)
- Anonymize:**  Anonymize Patient Info., - Storage Name:** Export\_DICOM
- Server AE Title:** [Empty]
- Host Name:** [Empty]
- Port No.:** [Empty], - Storage Folder:** D:\Save, - SOP Class:** Secondary Capture Image Storage
- Modality:** OT
- Image Compression:**  No Compression,  Lossless JPEG(70),  Lossless JPEG(57),  Lossy JPEG,  JPEG Quality
- Transfer Syntax:**  Implicit VR Little Endian,  Explicit VR Little Endian,  Explicit VR Big Endian
- Annotation:**  Overlay Annotation
- Set as Default Storage
-

- 3 To anonymize the patient information, select **Anonymize Patient Info.**  
For details on essential item settings, see "Anonymizing the Patient Information" (on page 114).

### 4 Input **Storage Name**, **Storage Folder**, **SOP Class**, and **Modality**.

Click **Browse...** to display the **Browse For Folder** screen, and select the destination for **Storage Folder**.



To specify a CD or DVD drive as the export destination, a software (driver) that records using the packet write system is required for some operating systems. Use CD or DVD media that have been formatted using the packet write system.

### 5 Set **Image Compression**. Select one of the methods.

When **Lossy JPEG** has been selected, input a number from 1 to 100 for **JPEG Quality**. "100" represents the best image quality.

When **No Compression** is selected, **Transfer Syntax** is enabled. Select one of the items.

### 6 Select **Overlay Annotation** to perform this.

### 7 Select **Set as Default Storage** to set as the default storage.

Up to two default storage devices can be set.

### 8 Click **OK** to save the settings.

## Registering a Storage Device for Transferring Files in JPEG Format

### 1 Click **Create...** on the **Storage** screen.

The **Create a New Storage** screen appears.

## 2 Select **Export (JPEG)** under **Storage Type**.

## 3 To anonymize the patient information, select **Anonymize Patient Info.**

For details on essential item settings, see “Anonymizing the Patient Information” (on page 114).

## 4 Input **Storage Name** and **Storage Folder**.

Click **Browse...** to display the **Browse For Folder** screen, and select the destination for **Storage Folder**.



To specify a CD or DVD drive as the export destination, a software (driver) that records using the packet write system is required for some operating systems. Use CD or DVD media that have been formatted using the packet write system.

## 5 Set **Image Compression**. Select one of the methods.

Input a number from 1 to 100 for **JPEG Quality**. "100" represents the best image quality.

## 6 Select **Overlay Annotation** to perform this.

## 7 Select **Set as Default Storage** to set as the default storage.

Up to two default storage devices can be set.

## 8 Click **OK** to save the settings.

## Anonymizing the Patient Information

- 1 Select **Anonymize Patient Info.** on the **Create a New Storage** screen or **Edit Storage Settings** screen.
- 2 Click **Anonymize Settings...**  
The **Anonymization Settings** screen appears.

Item	Anonymization Typ	Replace
<input checked="" type="checkbox"/> Patient ID	Replace	XXXXXXXX
<input checked="" type="checkbox"/> Patient Name		
Last Name	Blank	
First Name	Blank	
Middle Name	Blank	
Prefix	Blank	
Suffix	Blank	
<input type="checkbox"/> Birth date	Blank	9/ 6/2010
<input type="checkbox"/> Sex	Blank	M
<input type="checkbox"/> Other Patient IDs	Blank	
<input type="checkbox"/> Ethnic Group	Blank	
<input checked="" type="checkbox"/> Accession No.	Replace	0123456789
<input type="checkbox"/> Age	Blank	(nnnY, nnnM, nnnV, nnnD)
<input type="checkbox"/> Size	Blank	
<input type="checkbox"/> Weight	Blank	

- Select the items that you want to anonymize.
- Select the **Anonymization Type** from the list box (**Blank** or **Replace**).
- When **Replace** is selected for **Anonymization Type**, input a text string that replaces the original value.

- 3 Click **OK** to save the settings.

## Setting the Export Setting Options

- 1 Click **Details...** on the **Create a New Storage** screen.  
The **Export Settings** screen appears.

The screenshot shows the 'Export Settings' dialog box with the following configuration:

- Storage Type:** Export (JPEG)
- Create Folder:** 
  - Storage Date
  - Study Date
- Filename:**
  - Saving Datetime
  - Study Datetime + Study ID + Series Number + Instance Number + Study Trans Count
- Add Patient Info. to the filename:** 
  - Patient ID
  - Accession No.
  - Patient Name
- Resize (with fixed aspect ratio):** 
  - Ratio: 75 %
  - Size (Width): 640 Pixels

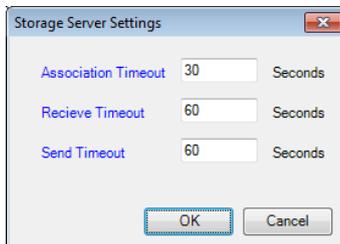
Buttons: OK, Cancel

- **Create Folder**  
Select this option to create a folder for saving the image files each time the study data is exported. Select **Storage Date** or **Study Date** for the folder name format.
- **Filename**  
Select the name format for the image file.  
When **Saving Date Time** is selected, "yyyyMMddhhmmssfff.ext"  
(Year, month, date, hour, minute, second, and millisecond when the file was stored)  
When **Study Date Time + Study ID + ...** is selected: "yyyyMMddhhmmssEEEESSllttt.ext"  
(EEEE: Study ID, SS: Series number, ll: Instance number, ttt: Study transfer count)  
(ext: dcm for Export (DICOM), jpg for Export (JPEG))
- **Add Patient Info. to the filename**  
Select this option to add the patient information to the file name. Then, select Patient ID, Accession No. or Patient Name.  
File format: "Patient information" + "\_" + "file name".ext  
(ext: dcm for Export (DICOM), jpg for Export (JPEG))
- **Resize (with fixed aspect ratio)**  
This option is disabled when **Export (DICOM)** is selected.  
Select this option to change the image size.  
**Ratio:** Specify the percentage compared to the original image.  
**Size (Width):** Select a value from the list box.

- 2 Click **OK** to save the settings.

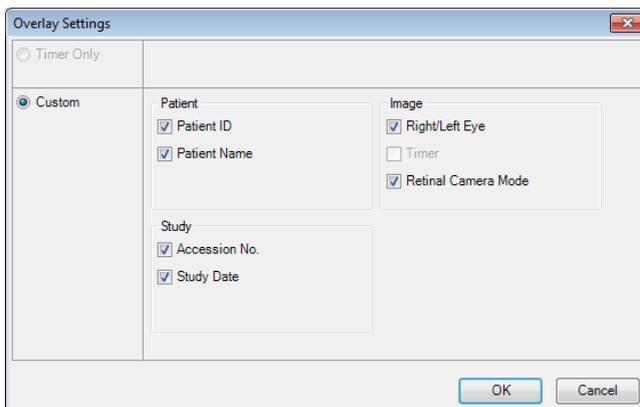
### Setting the Storage Server

You can specify the time-out period for transferring to the registered storage server. Click **Storage Server Settings...** on the **Storage** screen. The **Storage Server Settings** screen appears. Set the items on the screen, and click **OK**. Input a number from 1 to 600 for each item.



### Setting Overlay

You can specify the patient information and study information to display on images to be transferred. Click **Overlay Settings...** on the **Storage** screen. The **Overlay Settings** screen appears. Select the patient information, image information, and study information to be displayed, and click **OK**.



### Changing the Registered Information

Select a storage device on the **Storage** screen and click **Edit**. The **Edit Storage Settings** screen appears. Change the registered information by referring to the corresponding section shown below.

Storage Type	Reference section
Storage Server	Registering a DICOM Storage Server as the Storage Device (on page 109)
Export (DICOM)	Registering a Storage Device for Transferring Files in DICOM Format (on page 111)
Export (JPEG)	Registering a Storage Device for Transferring Files in JPEG Format (on page 112)

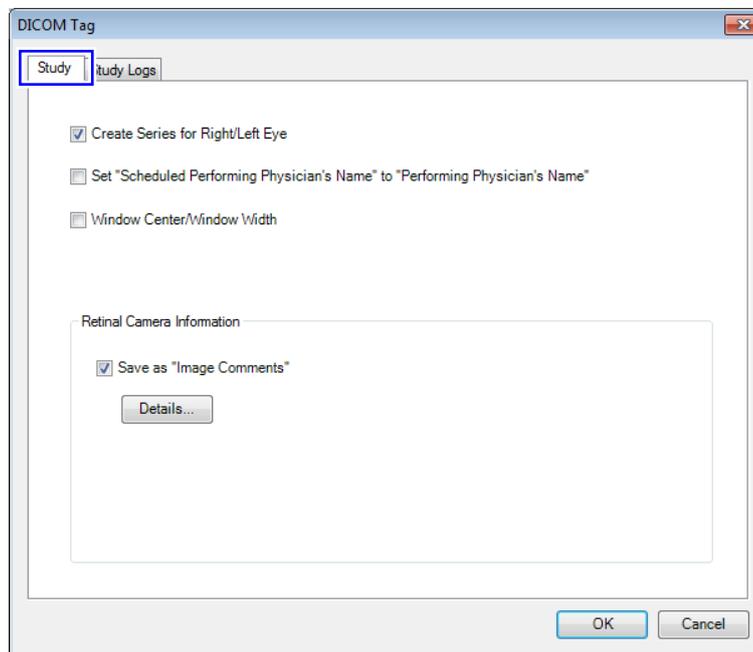
### Deleting Storage Devices

Select a storage device on the **Storage** screen, and then click **Delete**. The **Warning** screen and the "**Storage will be deleted from the list.**" message appear. Click **OK** to delete the storage device.

## DICOM Tag

On this screen, you can select the study information to be saved in the DICOM tag, and whether or not to update the instance UID on re-transfer.

### DICOM Tag/Study tab



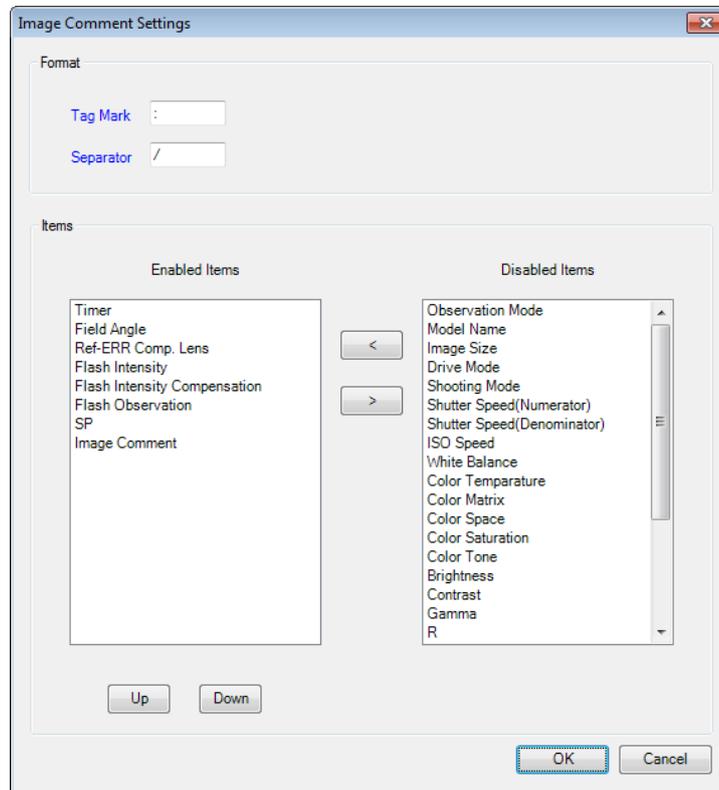
- Create Series for Right/Left Eye**  
 If this option is selected, a new series is created when the left and right eyes have been changed.
- Set “Scheduled Performing Physician’s Name” to “Performing Physician’s Name”**  
 If this option is selected, the scheduled performing physician’s name of the acquired worklist is saved as the performing physician’s name of the DICOM tag information on the images.  
 If this option is not selected, the login user name is saved as the performing physician’s name.
- Window Center/Window Width**  
 Select this option to save the window center and window width in the DICOM tag.  
 However, note that when **“Ophthalmic Photography 8 Bit Image Storage”** is selected for SOP Class for the storage device, the values will not be saved even if this option is selected.
- Save as “Image Comments”**  
 Select this option to save retinal camera image information in the DICOM tag.  
 If this option is not selected, only content that is input in the Image Property will be saved.  
 For details on the retinal camera image information, see "DICOM Tag/Study tab/Image Comment Settings" (on page 118).  
 Click **Details** to display the **Image Comment Settings** screen.

## DICOM Tag/Study tab/Image Comment Settings

On this screen, you can select the information to be saved in the DICOM image comment tag and display order.

What has been set on this screen will not appear as the Image Comments of the **Image Property** screen.

To display the **Image Comment Settings** screen, click **Details...** on the **DICOM Tag/Study** tab screen.



- **Format (essential)**

Enter an alphanumeric character to be used as the **Tag Mark** and **Separator**.

For instance, if ":" is used for the **Tag Mark** and "/" as the **Separator**, they will be saved as follows.

Example: Brightness:0/Contrast:0/Gamma:1.00

- **Items**

To add **Enabled Items**, select the item in **Disabled Items**, and click the  button.

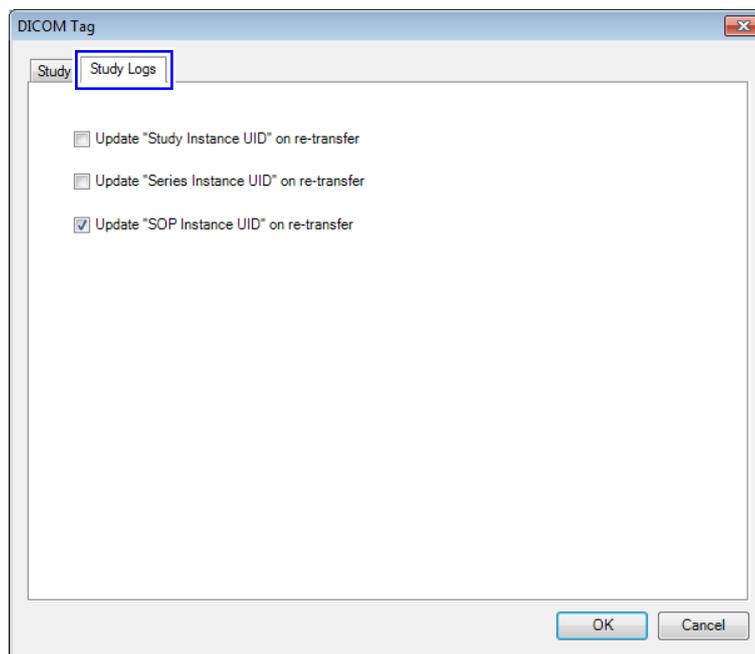
To delete **Enabled Items**, select the item and click the  button.

To change the sequence in which the items are saved, select the item, and then click the **Up** button or **Down** button.

## DICOM Tag/Study Logs tab

On this screen, you can select the settings for updating the DICOM information when re-transferring the study logs information.

However, these settings do not apply to studies that have not yet been transferred.



- **Update “Study Instance UID” on re-transfer**

Select this item to issue a new study instance when re-transferring the study as follows.

A new instance UID is as follows.

Model UID. study ID. transfer time (yyyyMMddhhmmss)

- **Update “Series Instance UID” on re-transfer**

Select this item to issue a new series instance when re-transferring the study as follows.

A new series instance UID is as follows.

Model UID. study ID. transfer time (yyyyMMddhhmmss). series number

- **Update “SOP Instance UID” on re-transfer**

Select this item to issue a new SOP instance when re-transferring the study as follows.

A new SOP instance UID is as follows.

Model UID. study ID. transfer time (yyyyMMddhhmmss). series number. instance number (image number). suffix for the storage device

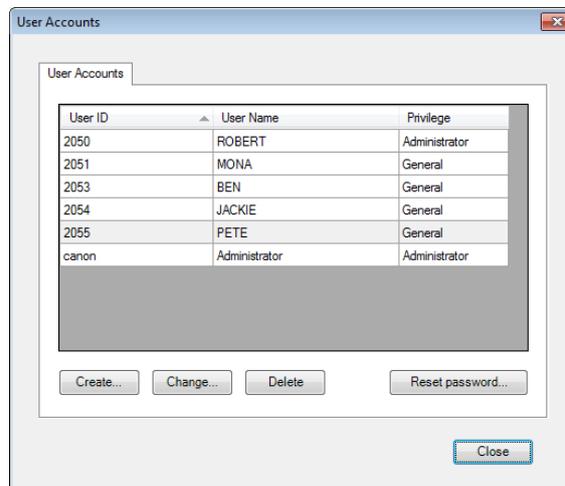


Whichever item is selected, only the transfer time is updated.

Furthermore, it is the information of the images to be re-transferred that is updated and not the information of the images saved.

## User Accounts

On this screen, you can create, delete and edit a login user. Also, you can change the login password. The user is authenticated with a user ID and password. The user name is saved as the DICOM tag "Operator's Name".



## Registering Users

In this system, up to 20 login users can be registered.

- 1 Click **Create...** on the **User Accounts** screen.  
The **Create a new account** screen appears.
- 2 Input the user ID, password, and input the password again for confirmation.  
Input the **User Name** options if required. The item names in blue are essential input data.

The screenshot shows a dialog box titled "Create a new account" with the following fields and options:

- User ID**: Input field containing "2054".
- Password**: Input field with masked characters (dots).
- Password (confirm)**: Input field with masked characters (dots).
- User Name** section:
  - Last Name**: Input field containing "JACKIE".
  - First Name**: Input field.
  - Middle Name**: Input field.
  - Prefix**: Input field.
  - Suffix**: Input field.
- Privilege**: Radio buttons for "Administrator" and "General". The "General" option is selected.
- Buttons: "OK" and "Cancel".



For details on the acceptable characters for each item, see "Acceptable Characters" (on page 142).

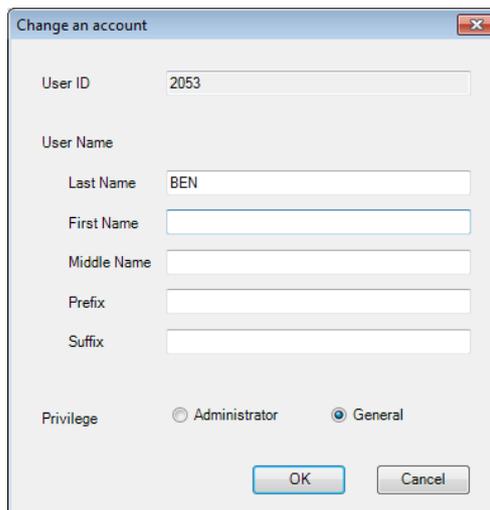
### 3 Set Privilege.

Select the **Administrator** privilege for users who will operate the Settings Menu. Click **OK** to save the user registration information.

## Changing the User Information

Select a user on the **User Accounts** screen, and click **Change...**

The **Change an account** screen appears. Change **User Name** and/or **Privilege**, and click **OK**.



The screenshot shows a dialog box titled "Change an account". It contains the following fields and options:

- User ID: 2053
- User Name:
  - Last Name: BEN
  - First Name: (empty)
  - Middle Name: (empty)
  - Prefix: (empty)
  - Suffix: (empty)
- Privilege:  Administrator  General
- Buttons: OK, Cancel

## Deleting the User

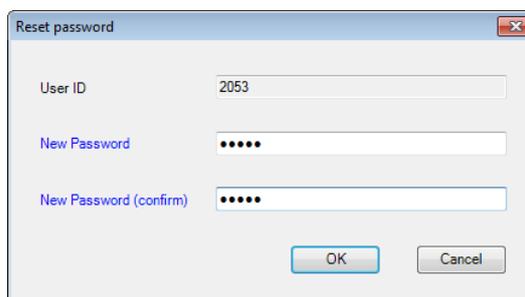
Select a user on the **User Accounts** screen, and click **Delete**.

The **Warning** screen appears. Delete by following the displayed instructions.

## Resetting the User Password

Select a user on the **User Accounts** screen and click **Reset password...** The **Reset password** screen appears. Input the password at both **New Password** and **New Password (confirm)**, and click **OK**.

The new user password is saved and the screen closes.



The screenshot shows a dialog box titled "Reset password". It contains the following fields and options:

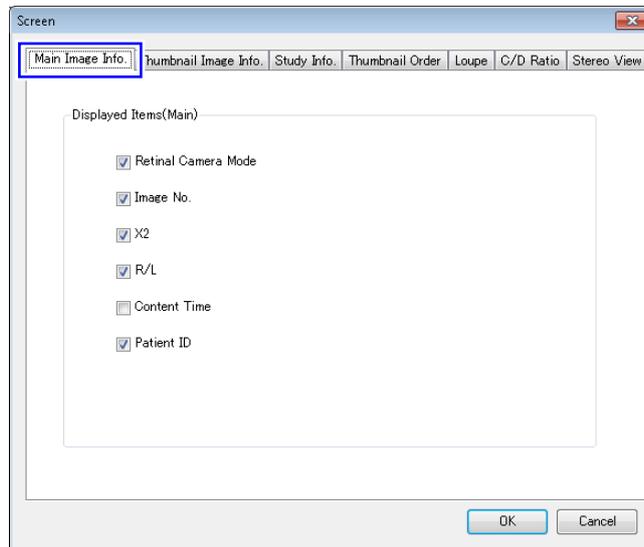
- User ID: 2053
- New Password: (masked with dots)
- New Password (confirm): (masked with dots)
- Buttons: OK, Cancel

## Screen

On this screen, you can select the information which appears on the main screen. Check the settings for each tab and change if necessary.

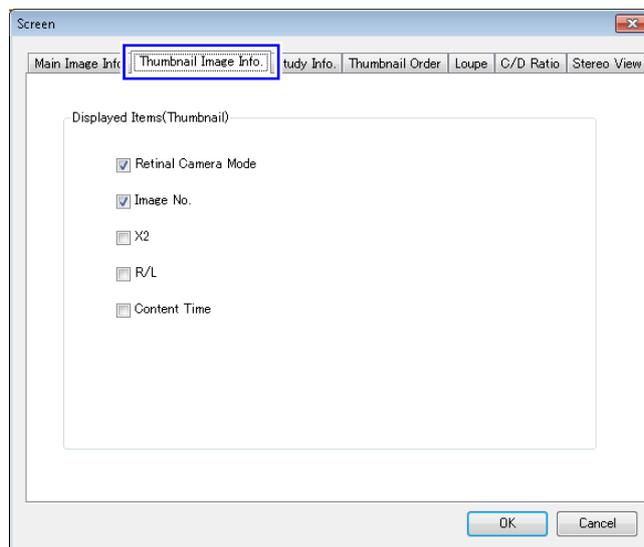
### Screen/Main Image Info. tab

On this tab, you can select the items which appear on the main image area. Select the desired items.



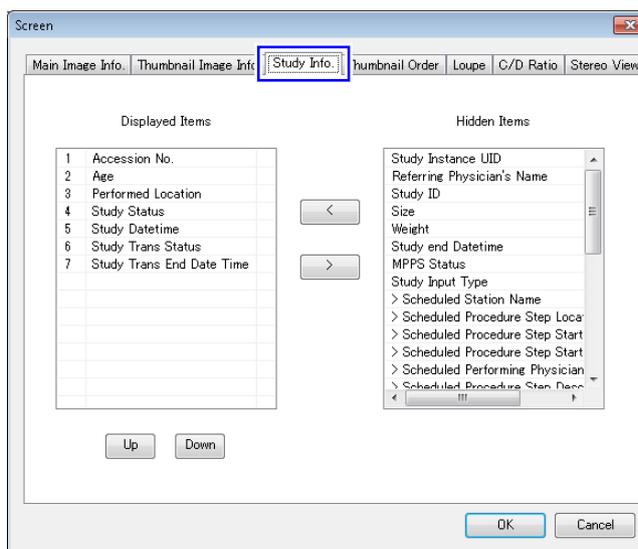
### Screen/Thumbnail Image Info. tab

On this tab, you can select the items which appear on the thumbnail image area. Select the desired items.



## Screen/Study Info. tab

On this tab, you can select the items which appear in the study information area.

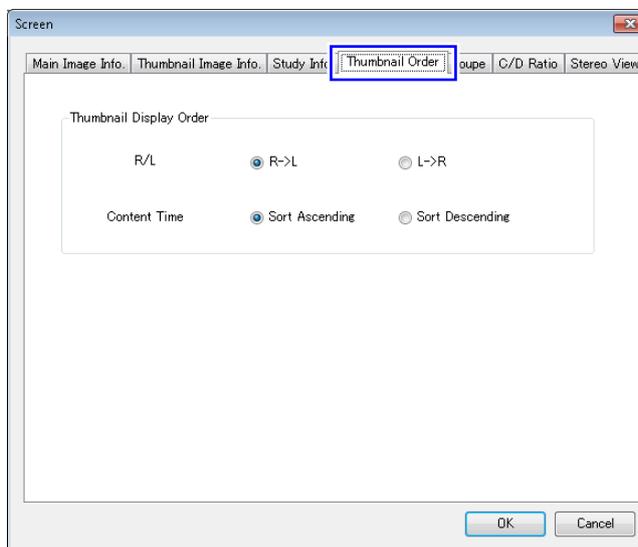


To add **Displayed Items**, select the item in **Hidden Items**, and click the  button. To delete **Displayed Items**, select the item and click the  button.

To change the sequence in which the items appear, select the items in **Displayed Items**, and then click the **Up** button or **Down** button.

## Screen/Thumbnail Order tab

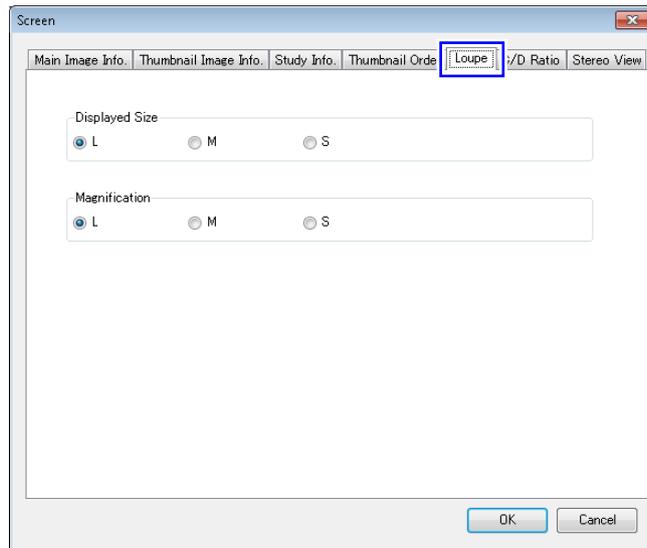
On this tab, you can select the thumbnail display sequence.



- **R/L**  
**R->L** displays the eye in order right eye and then left eye.  
**L->R** displays the eye in order left eye and then right eye.
- **Content Time**  
When **Sort Ascending** is selected, the thumbnail images appear from left to right starting with the oldest.  
When **Sort Descending** is selected, the thumbnail images appear from left to right starting with the most recent.

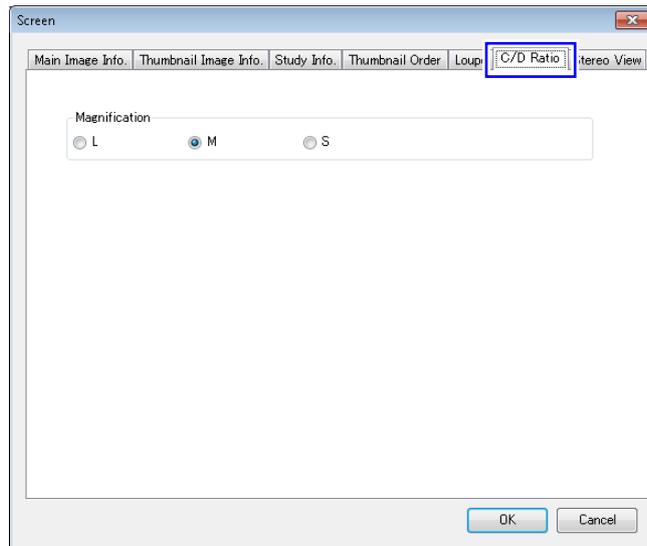
### Screen/Loupe tab

On this tab, you can select the display size and magnification for the **Loupe** tool (L, M or S).



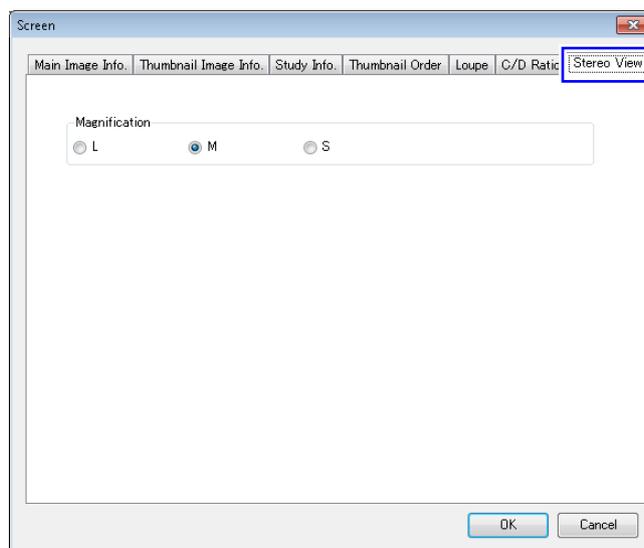
### Screen/C/D Ratio tab

On this tab, you can select the magnification ratio when the image on the **C/D Ratio** screen is clicked (L, M or S).



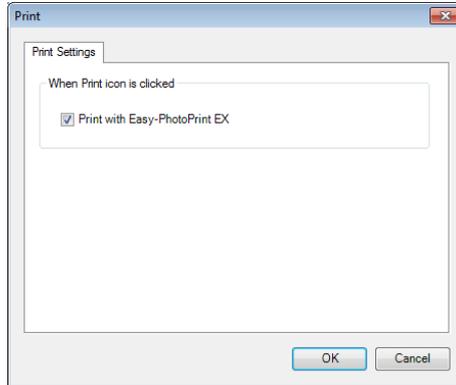
## Screen/Stereo View tab

On this tab, you can select the magnification ratio when the image on the **Stereo View** screen is clicked (L, M or S).



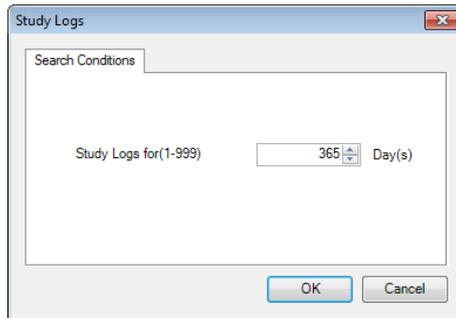
## Print

On this screen, you can set the function of the Print button on the main screen. Select **Print with Easy-PhotoPrint EX** to assign Easy-PhotoPrint EX. If this option is not selected, Simple Printing is assigned.



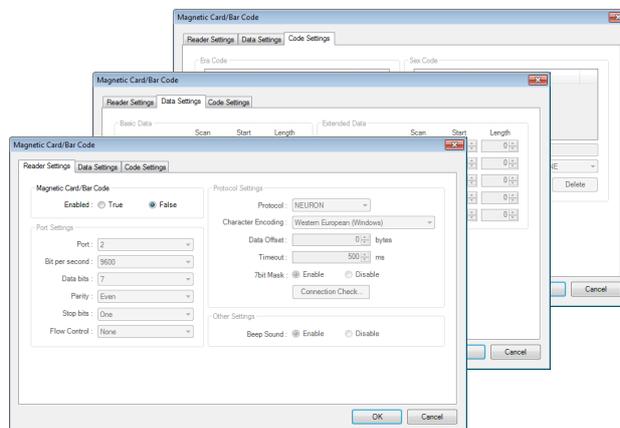
## Study Log

On this screen, you can set the number of days for display on the Study Log. To display a study list for the previous week, for example, input "7".



## Magnetic Card/Bar Code

On this screen, you can set the serial/USB communication settings for the magnetic card/barcode reader and the settings for the magnetic card/barcode data. The settings vary depending on the devices that you are using. For details, please contact a Canon representative or distributor.



# 5 Troubleshooting

## Appearance of the Message Screen

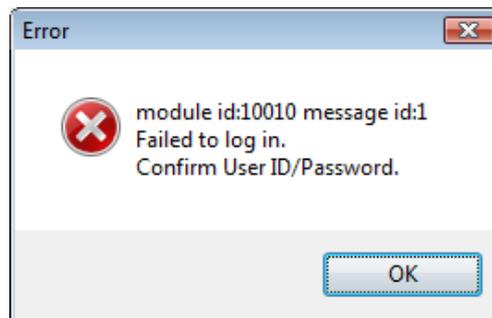
---

A message screen appears when trouble has occurred or when there is information for the user. In this case, take the corrective action shown in the table below. If the message screen does not close or if an error or warning message not shown in the list appears, contact a Canon representative or distributor.

 **Error message**

 **Warning message**

Check the message details. If you do not understand the corrective action in the message, see the Error list or Warning list based on the message type, module id, and message id.



Message screen (Error)

 **Information message**

This message indicates that the operation was performed properly. Click **OK** to close the message screen.

## Error List

module id	message id	Message	Remedy
00005	5	Specified User ID already exists.	The User ID which has been input is already registered. Change the User ID.
00011	1	Fail to open Omron Device.	<ul style="list-style-type: none"> <li>• Check that the OMRON device is connected correctly.</li> </ul>
	2	Fail to close Omron Device.	<ul style="list-style-type: none"> <li>• Check that the device number is assigned correctly.</li> <li>• Check that the driver is installed correctly.</li> </ul>
10002	101	Failed to connect to specified EOS.	Check the connection with the EOS digital camera.
10003	2	Incorrect Entry of Date for Search Conditions	Open the <b>Search</b> screen (on page 72) from the <b>Study Logs</b> screen, and then input the correct date.
10004	29	Insufficient Free Space in Storage Folder No image can be captured. [** GB]	No images can be taken since the free space on the drive containing the storage folder is less than 2 GB. Increase the amount of free space on the drive.
	3701	Service cannot start. Service name: MSDTC Display name: Distributed Transaction Coordinator	Set the startup type of the service to a setting other than "Disabled."
	4100	Error on Saving to External Storage	Check that the specified saving destination can surely save the study(ies).
	4103	Failed to read the external study. [File name] The file has been corrupted.	Try to display the study log file again. If this fails, the data may be corrupted. If the data is retained in the Temporarily Saved, try saving again.
	4106	A folder or file without access rights exists under the specified folder.	Select a folder again in the <b>Browse For Folder</b> screen. Select the study logs file folder or a folder at the nearest possible level.
	4107	The path of the specified folder exceeds the maximum length.	Move the folder of the study logs file to a location where the folder path is 150 characters or less. Click <b>Folder</b> , and specify the new folder location in the <b>Browse For Folder</b> screen.
10005	1001	Failed to open a port.	<ul style="list-style-type: none"> <li>• See "Retinal Camera/Settings tab" (on page 96), and check the port number setting.</li> <li>• Disconnect the retinal camera communication cable, then connect the cable again.</li> </ul>
	1007	Power for the retinal camera is turned off or the cable is improperly connected.	Check that the computer and retinal camera are connected correctly.
	1501	Error occurred during communications with the retinal camera. Failed to resend the command frame.	Turn the retinal camera's power off and back on.
	1502	Error occurred during communications with the retinal camera. Failed to resend the reply frame.	
	1503	Error occurred during communications with the retinal camera. Time-out for No Response	
	1504	Error occurred during communications with the retinal camera. Time-out for Incomplete Transmission	
	1603	Cameras are not attached to the main mount and sub-mount of the retinal camera.	Check that the digital camera is connected correctly.
	1701	Connected retinal camera model is different from the model setting in this software.	Check the model of the retinal camera.
10007	4	JPEG File Saving Error	Check how much free space is left on the hard disk where the data is to be saved.

## Error List

module id	message id	Message	Remedy
10010	1	Failed to log in. Confirm User ID/Password.	Input the User ID and Password registered in the user account (on page 120), and log in.
	2	It cannot be set without administrator's privileges.	Log in using the User ID for which the Privilege has been set to the Administrator (on page 120).
10011	2	This application is already running.	Use the software application which is running.
	101	Set the screen resolution to 1024 × 768 or more.	Set the Windows screen resolution to 1024 x 768 or more.
	102	Set the screen color to 24 bits or more.	Set the Windows color quality to 24 bit or more.
	110	Operation can be executed by a Windows user with Administrator privileges.	Log into Windows using the name of the user belonging to the Administrators group.
	114	Essential data has not been set up. Set up essential data.	Input the required items.
10012	27	Free space in the drive is not sufficient to capture images. Make up space in the drive by deleting studies in Study Logs List. [Drive:XX freesize: XXGByte(XXbyte)] [Drive: XX]	Delete study log images (on page 71) to increase the amount of available space in the image storage drive.
	29	Image cannot be captured due to insufficient space to store captured image. Make up space in the drive by deleting studies in Study Logs List. [Drive:XX freesize: XXGByte(XXbyte)]	
	30	Number of captured images exceeds the maximum for the study. No more image can be captured for the study.	End the study, and start a new study.
10019	7	MPPS Communication Error	Check that the MPPS server is operating properly. Check the <b>MPPS</b> tab (on page 107) settings.
	11	Study cannot be executed since a study having the same Study Instance UID is running.	Check the study information which was transmitted from the server.
10024	311	No main image is selected.	Select an image.
	10308	No image is selected.	Select the target image.
10031	3	Neither Manual Input nor Mag Barcode Input is selected. Either or both of them must be selected.	Select the <b>Manual Input</b> tab (on page 102) or the <b>Mag Barcode Input</b> tab (on page 104) on the Module Settings tab.
10040	104	No Storage Folder	Check the name of the storage folder.
	105	Failed to create a folder.	Check the access permissions for the storage folder.
	106	The same file name exists in the storage folder.	Either change the name of the storage file, or delete the file with the same name.
10041	105	Failed to create an image.	If a message that indicates shortage of memory appears with this message and the main image won't appear, select the thumbnail again. If a message that indicates shortage of memory appears with this message at transfer, try the transfer again. If the message appears in situations other than those shown above, contact a Canon representative or distributor.
10045	5	Failed to search worklist. It may be caused by communication failure with the worklist server.	Check that the worklist server is operating properly.
	25	Failed to initialize the magnetic card/bar code device.	Check the magnetic card/barcode reader connection. The magnetic card/barcode reader settings need to be made.
10048	41	Failed to initialize the magnetic card/bar code device.	Please contact a Canon representative or distributor.

## Error List

module id	message id	Message	Remedy
10049	11	Failed to register Patient Info. in the database.	The study progress status could not be saved to the study file. Check if the study file (ccrhis.his) is set to read-only.
	49	Failed to initialize the magnetic card/bar code device.	Check the magnetic card/barcode reader connection. The magnetic card/barcode reader settings need to be made. Please contact a Canon representative or distributor.
	50	The studies were not read. Number of studies exceeded the maximum to read.	Please reduce the number of studies in the study file (ccrhis.his) to the number of displayable studies.
10052	100	No printer is installed.	Install the printer from the <b>Printers and Faxes</b> screen in the <b>Control Panel</b> .
	200	No main image is selected.	Select the printing image.
	201	Image Read Error Only print info. is output since image reading has failed.	The printing information and the text "NO IMAGE" are printed for images where a reading error has occurred.
	300	Print Error Printing is cancelled.	Check the printer server and network cable connections.
	301	Print Error Printing is cancelled.	
10053	8	Failed to communicate with the magnetic card/bar code reader. Check the cable. Check the settings.	Check the magnetic card/barcode reader connection. The magnetic card/barcode reader settings need to be made. Please contact a Canon representative or distributor.
10056	204	No Storage Folder	See "Storage" (on page 109), click <b>Edit</b> in the storage setting screen, and check the storage folder.
	205	The same file name exists in the storage folder.	Either delete the file with the same file name at the storage folder, or change the storage.
	206	Failed to save JPEG File.	See "Software" (on page 10), and set the proper access privileges for the storage folder.
	207	Failed to create a folder.	
10063	1	JPEG File Saving Error	Check the following items at the save destination: <ul style="list-style-type: none"> <li>• Does a file with the same file name exist?</li> <li>• Does the login user have access rights to save files?</li> <li>• Is there enough space to save the file on the drive?</li> </ul>
10067	6	Specified folder does not exist or is not accessible.	Specify the folder again.
	7	No right to read contents in the folder.	See "Software" (on page 10), and set the proper access privileges for the storage folder.
	9	Not Recognized as a folder.	Specify the folder again.
	10	No right to write contents in the folder.	See "Software" (on page 10), and set the proper access privileges for the storage folder.

## Warning List

module id	message id	Message	Remedy
10001	1002	Invalid image was captured. Failed to acquire Retinal Camera Info. within the specified time. No Validity for Current Study	<ul style="list-style-type: none"> <li>Do not press the shutter button of the digital camera.</li> <li>Check that the computer and digital camera are connected correctly.</li> <li>Turn the equipment's power off and back on, and take a test image.</li> </ul>
	1009	Photography frequency exceeded the limit. Please wait.	Images cannot be saved since images were taken continuously over a short period of time. Wait for a few moments, and then take the images.
10002	1000	Failed to connect to EOS. Check the cable. Check the power supply.	Check that the computer and digital camera are connected correctly. Check that the digital camera is turned on.
	1004	Auto power off option is enabled on EOS. Select Off for Auto power off.	Set the Auto power off to Off on the digital camera.
	1005	Communications with EOS was disconnected.	Check that the computer and digital camera are connected correctly. Check that the digital camera is turned on.
	1006	EOS battery is almost empty. Supply power with the DC coupler.	Supply the power of the digital camera using the DC coupler.
	1011	Some data is recorded in the memory card in EOS. The performance may drop when a data-containing memory card is loaded in EOS.	Remove the CF card from the digital camera body.
10003	1	Selected study will be deleted.	To delete a study, click <b>OK</b> ; to cancel the deletion, click <b>Cancel</b> .
	3	No Storage Selected	Select the storage, and then transfer the image.
	4	Invalid Patient ID Includes the character '\.'	Delete the backslash (\).
	7	Invalid Patient Name Includes the character '\ ' or '= '.	Delete the backslash (\) or equal sign (=).
	8	Invalid Patient Name Enter in alphanumeric.	Delete the characters which are not single-byte alphanumerics or symbols.
	9	Invalid Study Description Includes '\', control character, or character unsupported by the specified Specific Character Set.	Delete the backslash (\) or control character and input in the specific character set.
	203	The study being transferred is selected. Failed to transfer.	No operations can be performed for studies being transferred so wait until the transfer is completed.
	204	The study being transferred is selected. Failed to delete the study.	
	205	Number of the selected studies exceeds the maximum for import ([100]).	Limit the number of studies to import to 99 and try importing again.
	206	Failed to import the study. A study is being transferred.	Try importing again after the transfer ends.
	207	Failed to save the study. The selected study is being transferred.	Try saving again after the transfer ends.
11004	<b>Study Logs</b> screen cannot display all logs. Number of study logs to be displayed exceeds the maximum. Change the search conditions.	Change the search conditions (on page 72).	

## Warning List

module id	message id	Message	Remedy
10004	25	Required fields must be entered. [item]	Input the required items. The titles of the required items are indicated in blue.
	26	The path for storage folder exceeds the maximum length. [Max. *** bytes]	Select a folder where the path for the Image Storage Folder (on page 100) is fewer than 150 bytes.
	27	Storage folder does not exist.	Check that the storage folder (on page 100) which has been set actually exists.
	28	Drive specified for storage folder is not a fixed disk.	Set the storage folder (on page 100) on the fixed disk.
	30	Insufficient Free Space in Storage Folder [** GB]	Increase the amount of free space on the fixed disk on which the storage folder has been set (on page 100).
	41	Invalid [item] Enter in alphanumeric.	Input tags and delimiter characters in the <b>Image Comment Settings</b> screen (on page 118) using single-byte alphanumeric characters and symbols.
	4105	Failed to read the external study. [File name] This product cannot read studies saved with newer version than the version of this product.	Upgrade the version of the Retinal imaging control software NM 2 to the same version as that you used to save the file, or to a newer version.
10005	103	Over Discharge Do not operate the retinal camera for a while.	Wait for a few moments, and then take the images.
	108	Communication Protocol Error	<ul style="list-style-type: none"> <li>• Turn the retinal camera's power off and back on.</li> <li>• Turn the computer's power off and back on.</li> </ul>
	109	Photography frequency exceeded the limit. Please wait.	Images cannot be saved since images were taken continuously over a short period of time. Wait for a few moments, and then take the images.
	202	X-contact Error in EOS Camera Mode	Turn the equipment's power off and back on, and take a test image.
	205	Flash Not Fired	
	206	X-contact Error in EOS Camera Mode	
207	Invalid Diopter Lens Potision.	Check that the position of the diopter compensation knob is correct.	
10006	1000	Default QA parameters for [Photography] mode will be changed. If Image Optimization is enabled, the default QA parameters will not be used.	To return the current settings to the default values, click <b>OK</b> on the <b>QA (Quality Assurance)</b> screen (on page 46).
	1001	Selected QA parameter set will be deleted.	To delete the current QA parameter set, click <b>OK</b> on the <b>QA (Quality Assurance)</b> screen (on page 46).
	1002	Current QA parameter values will be applied to all the selected images.	To apply the current settings to all the selected images, click <b>OK</b> on the <b>QA (Quality Assurance)</b> screen (on page 46).
	1003	Selected QA parameter set will be updated.	To overwrite the QA parameter set with the current settings, click <b>OK</b> on the <b>QA (Quality Assurance)</b> screen (on page 46).
10009	1000	Invalid Image Comments. Includes control character except line feed or character unsupported by the specified Specific Character Set.	Delete any control characters. Input in the designated specific character set.
10010	8	Invalid User Name Includes character unsupported by the specified Specific Character Set. Change the user name for User Accounts.	Input the user name using the specific character set.

## Warning List

module id	message id	Message	Remedy
10011	104	Enter User ID/Password.	When logging in, input the user ID and password.
	105	Invalid User ID or Password. Enter in alphanumeric.	Input the user ID/password in single-byte alphanumeric characters.
	109	Application will be closed. Press Cancel button and log in to the application to view the details of the transfer error.	To check the details of the transfer error, click <b>Cancel</b> , and then log in.
10012	28	Image can be captured but the storage space for captured images runs short. Make up space in the drive by deleting studies in Study Logs List.	Delete studies in the study log screen to increase the amount of available space in the drive.
10013	50	Images stored for more than the specified periods will be deleted.	To delete the images, click <b>OK</b> .
	85	Application cannot be terminated during transfer.	Close all studies after transfer, then exit the software.
10019	10	A study with same Accession No. or Patient ID is now in progress. Do you want to create a new study ?	To start as a new study, click <b>YES</b> .
	12	A study with same Accession No. or Patient ID is now in progress. Do you want to update ?	To update the study information, click <b>YES</b> .
10020	1000	No Storage Selected Image(s) will not be transferred.	Select the storage, and then transfer the image.
	1001	Transfer for this study is in progress. You can't transfer it before the transfer is completed.	Wait until the transfer is completed before performing the transfer.
10023	1	Invalid Birth Date The entered value could not be converted to a birth date.	Input the birth date appropriately.
	5	Patient Info. set as any of essential data items are not entered.	Input the required item that appears.
	6	The length of either of 5 Patient Name fields is too long. Shorten the length to 60 characters or less.	Shorten the length to 60 characters or less.
	12	The following items are invalid. [item]	Re-input the data based on the information that appears in <b>Details</b> .
	14	Invalid Study Description Includes line feed.	Delete the line feed code.
	15	Too Long Patient Name. Shorten the total length of the 5 items to 60 characters or less.	Input the Patient name in 60 characters or less for all five items total.
	16	Length of Accession No. exceeds the limit.	Input within the limited length.
	17	Invalid Accession No. Includes character other than the specified Acceptable Character Set or character unsupported by the specified Specific Character Set.	Input using the designated input character type or specific character set.
18	Length of Patient ID exceeds the limit.	Input within the limited length.	

### Warning List

module id	message id	Message	Remedy
10023	19	Invalid Patient ID Includes character other than the specified Acceptable Character Set or character unsupported by the specified Specific Character Set.	Input using the designated input character type or specific character set.
	21	Invalid Study Description Includes character other than the specified Acceptable Character Set or character unsupported by the specified Specific Character Set.	
	22	Invalid Accession No. Includes '\', control character, or character unsupported by the specified Specific Character Set.	Delete the backslash (\) and any control characters. Input in the designated specific character set.
	23	Invalid Patient ID Includes '\', control character, or character unsupported by the specified Specific Character Set.	
	24	Invalid Study Description Includes '\', line feed, control character, or character unsupported by the specified Specific Character Set.	Delete the backslash (\), line feed code, and any control characters. Input in the designated specific character set.
	29	Invalid Last Name Includes '\', '^', control character, multi-byte character or character unsupported by the specified Specific Character Set.	
	31	Invalid First Name Includes '\', '^', control character, multi-byte character or character unsupported by the specified Specific Character Set.	
	33	Invalid Middle Name Includes '\', '^', control character, multi-byte character or character unsupported by the specified Specific Character Set.	
	35	Invalid Prefix Includes '\', '^', control character, multi-byte character or character unsupported by the specified Specific Character Set.	
	37	Invalid Suffix Includes '\', '^', control character, multi-byte character or character unsupported by the specified Specific Character Set.	
	39	Invalid Birth Date The valid date ranges from a date in the year 1870 to today.	Input a valid birth date value.
	40	Invalid Birth Date The entered value could not be converted to a birth date.	

## Warning List

module id	message id	Message	Remedy
10023	55	Invalid Last Name Includes character other than the specified Acceptable Character Set or character unsupported by the specified Specific Character Set.	Input in the designated Acceptable Character Set of the specific character set.
	56	Invalid First Name Includes character other than the specified Acceptable Character Set or character unsupported by the specified Specific Character Set.	
	57	Invalid Middle Name Includes character other than the specified Acceptable Character Set or character unsupported by the specified Specific Character Set.	
	58	Invalid Prefix Includes character other than the specified Acceptable Character Set or character unsupported by the specified Specific Character Set.	
	59	Invalid Suffix Includes character other than the specified Acceptable Character Set or character unsupported by the specified Specific Character Set.	
	60	All the items are disabled to input.	Check the input-prohibited items.
	61	There is no header string set up in Input Format. Do you want to start or end study?	Check the header character string that was set in Input Format (on page 102).
	62	Invalid Ethnic Group Includes '\', control character, or character unsupported by the specified Specific Character Set.	Delete the backslash (\). Input in the designated specific character set.
	64	Length of Ethnic Group value exceeds 16 bytes.	Input the value within 16 bytes.
65	The length of Study Description field is too long. Shorten the length to 64 characters or less.	Input the value as instructed by the message.	
10024	4	Invalid Study Description Includes '\', control character, or character unsupported by the specified Specific Character Set.	Delete the backslash (\). Input in the designated specific character set.
	321	The selected images include a stereo pair. No deletion will be performed.	Cancel pairing, and try deleting again.
	11004	Invalid Study Description Includes '\', control character, or character unsupported by the specified Specific Character Set.	Delete the backslash (\). Input in the designated specific character set.
	11005	One or more studies are in progress.	End the study.
	12001	Number of selected images is not two.	Select two images.
	12003	The <b>Stereo View</b> screen will display images that the stereo pair information of each image does not match each other.	To re-select images having the same stereo pair information, click <b>Cancel</b> .
	15003	Right and Left Eyes	To display images in stereo view, select two images of right or left eye.
	15005	Different Zoom Rates	To display images in stereo view, select images of the same zoom rate.

## Warning List

module id	message id	Message	Remedy
10024	15006	Different Image Sizes	To display images in stereo view, select images of the same image size.
	15008	Different Image Formats	To display images in stereo view, select images of the same format.
	15013	The picture style for one image is different from the style for the other.	To display images in stereo view, select images of the same picture style.
	15015	Different Derived Modes.	To display images in stereo view, select images that have been processed in the same way.
	15016	Anterior and retinal images are selected.	To display images in stereo view, select two anterior eye images or two retinal images.
	16002	Capture for stereo view cannot be finished.	Click <b>OK</b> and then capture images for stereo view again.
10026	102	Enter essential data. [item]	Input the required items.
	103	The following items are invalid. Enter in alphanumeric except '\'. [item]	Delete the backslash (\).
	105	The following items are invalid. Includes the character '\' or character unsupported by the specified Specific Character Set.	Delete the backslash (\). Input in the designated specific character set.
10027	1001	No default is registered.	When a storage has been registered, check "Set as Default Storage" for one of the storages.
	1101	Length for a storage path exceeds the maximum. [Max. ***]	Select a folder where the number of characters for the Image Storage Folder (on page 101) is fewer than 150 characters.
	1102	Enter essential data. [item]	Input the required items.
	1103	Invalid [item] Enter in alphanumeric.	Use alphanumerics for the input.
	1104	Invalid [item] Enter in numeric.	Use numerics for the input.
	1105	Duplicated Storage Name	Change the Storage Name.
	1106	Invalid [item] Enter a value between [value 1] and [value 2].	Input a value in the range.
	1107	Invalid [item] Entered value could not be checked.	Use numerics for the input.
	1110	Association with Storage Server was rejected. Check the settings and status of Storage Server.	<ul style="list-style-type: none"> <li>• Check that the storage server is operating properly.</li> <li>• Check the settings on the <b>Create a New Storage</b> screen (on page 109).</li> </ul>
	1111	Invalid [item] Enter in alphanumeric except '\'.	Delete the backslash (\).
	1114	Storage folder does not exist.	Specify the folder again.
	1401	Storage will be deleted from the list.	To delete the storage, click <b>OK</b> .
	1601	The length of Patient Name fields is too long. Shorten the total length of the 5 fields to 60 characters or less.	Shorten the total length of Patient Name fields to 60 characters or less.
	1603	Invalid [item]	Delete the backslash (\). Input in the designated specific character set.
	1604	Includes the character '\' or character unsupported by the specified Specific Character Set.	
1605	Invalid [item] Enter a 3-digit numeric (nnn) and a capital Y, M, W, or D - in the format nnnY, nnnM, nnnW, or nnnD.	Input as instructed in the message.	

## Warning List

module id	message id	Message	Remedy
10027	1606	Invalid [item] Includes character other than 0 to 9, '+', '-', '.', 'E', and 'e' or it cannot be converted into a numeric value.	Input using numerics and/or characters shown in the message.
	1608	Invalid [item] Includes the character '\', '=', '^', or character unsupported by the specified Specific Character Set.	Correct the entry of Replace field for the item.
	2001	Number of selected storages exceeds the maximum.	Up to two storages can be selected for "Set as Default Storage."
	4001	Invalid Value(s) for Storage Settings.	On the <b>Anonymization Settings</b> screen, input the Replace field in the specified Specific Character Set.
10028	3	User Accounts Setting Error The User Name for User Accounts is invalid. Includes character unsupported by the specified Specific Character Set.	Input the User Name of the created user account using only characters supported by the specified Specific Character Set.
	104	User will be deleted.	To delete the user, click <b>OK</b> .
	202	No Essential Data	Input the required items.
	203	The following items are invalid. Enter in alphanumeric.	Input the field indicated in the message using alphanumerics only.
	205	Wrong Confirmation Password. Enter the password again.	Input the same characters as for Password into Password(confirm).
	208	The following item(s) is/are invalid. - The length of User Name fields is too long. Shorten the total length of the 5 fields to 60 characters or less. - The User Name fields include characters unsupported by the PN type.	Input using the specific character set.
	209	The following items are invalid. Includes the character '\', '=', '^', or character unsupported by the specified Specific Character Set. [item]	
	306	The following item(s) is/are invalid. - The length of User Name fields is too long. Shorten the total length of the 5 fields to 60 characters or less. - The User Name fields include characters unsupported by the PN type.	
	307	The following items are invalid. Includes the character '\', '=', '^', or character unsupported by the specified Specific Character Set. [item]	
	402	No Essential Data [item]	Input the required items.
	403	The following items are invalid. Enter in alphanumeric. [item]	Use alphanumerics for the input.
	404	Wrong Confirmation Password. Enter again.	Input the same characters as for Password into Password(confirm).
	502	No Essential Data [item]	Input the required items.
503	The following items are invalid. Enter in alphanumeric. [item]	Use alphanumerics for the input.	

## Warning List

module id	message id	Message	Remedy
10028	504	Wrong Old Password. Enter the password again.	Input the registered password.
	505	Wrong Confirmation Password. Enter the password again.	Input the same characters for New Password and New Password(confirm).
	508	New password is the same as the old password. Enter again.	Do not input the Current Password as the New Password.
10031	11	Invalid Module File Combination. To use the MPPS module, enable the worklist module.	When the <b>MPPS</b> tab (on page 107) has been set, set the <b>Worklist</b> tab (on page 104) as well.
10033	201	Print Adjustment parameters will be updated.	To update the parameters, click <b>OK</b> .
10044	9	Association with MPPS Server was rejected. Check the settings and status of MPPS Server.	<ul style="list-style-type: none"> <li>• Check that the MPPS server is operating properly.</li> <li>• Check the <b>MPPS</b> tab (on page 107) settings.</li> </ul>
	10	Invalid Server AE Title Check that valid characters are entered for AE Title.	Check the <b>MPPS</b> tab (on page 107) settings.
	11	Invalid Server Host Name Check that valid characters are entered for Host Name.	
	12	Invalid Port Number Enter a value between 1 and 65535.	
10045	7	Association with Worklist Server was rejected. Check the settings and status of Worklist Server.	<ul style="list-style-type: none"> <li>• Check that the worklist server is operating properly.</li> <li>• Check the <b>Worklist</b> tab (on page 104) settings.</li> </ul>
	8	Invalid Time Enter a value between 1 and 24.	See "Setting the Worklist Search Conditions" (on page 106).
	9	Invalid Range of Date Enter date values in the year 1870 or later.	
	10	Invalid Range of Days Enter values between 0 and 999.	
	11	Invalid Worklist Search Interval. Enter a value between 0 and 60.	
	12	Invalid Server AE Title Check that valid characters are entered for AE Title.	See "Setting the Display Items and Worklist Server" (on page 105).
	13	Invalid Server Host Name Check that valid characters are entered for Host Name.	
	14	Invalid Port No. Enter a value between 1 and 65535.	
	16	Invalid Search Condition Value(s) Selected item has an invalid character or the length is too long. [XXXX] (DICOM TAG Name+DICOM TAG Number)	See "Setting the Worklist Search Conditions" (on page 106).
	18	The same DICOM tag is already set up for Search Conditions. [XXXX] (DICOM TAG Number+DICOM TAG Name)	It is not possible to register a multiple number of the same DICOM tag.
	19	Specified End Date is earlier than Start Date.	Input a date later than the Start Date as the End Date.
	20	Length of acquired worklist item is too long. The following tag number item(s) are cut off. [XXXX] (DICOM TAG Number+DICOM TAG Name)	The transfer data of the worklist server does not meet the DICOM standards. Check the worklist server settings.
21	Acquired worklist item format is invalid. The following tag number item(s) are not acquired. [XXXX] (DICOM TAG Number+DICOM TAG Name)		
28	The specified tag for search is not supported.		

## Warning List

module id	message id	Message	Remedy
10048	1	Invalid Values for Birth Date The entered value could not be converted to a birth date.	Input the correct birth date.
	5	Patient Info. set as any of essential data items are not entered.	Input the patient information that was set in the essential data (on page 102).
	6	The length of either of 5 Patient Name fields is too long. Shorten the length to 64 characters or less.	Shorten the length to 64 characters or less.
	12	The following items are invalid. [Detailed information]	Check the details of the displayed item, and enter it again.
	14	Invalid Study Description Line feed code cannot be used for Study Description.	Delete the line feed code.
	22	Invalid Accession No. Includes '\', control character, or character unsupported by the specified Specific Character Set.	Delete the backslash (\) and any control characters.
	23	Invalid Patient ID Includes '\', control character, or character unsupported by the specified Specific Character Set.	
	24	Invalid Study Description Includes '\', line feed, control character, or character unsupported by the specified Specific Character Set.	Delete the backslash (\), line feed code and any control characters.
	29	Invalid Patient Name Includes one of the following: - '\', control character, or multi-byte character - Character unsupported by the specified Specific Character Set - 5 or more delimiters for the item	Delete the backslash (\) and any control characters.
	39	Invalid Birth Date The valid date ranges from a date in the year 1870 to today.	Input an appropriate value for Birth Date.
	40	Invalid Birth Date The entered value could not be converted to a birth date.	
50	Length of the acquired item is too long. The following item(s) is/are cut off.	Check the information input in the magnetic card or barcode.	
10049	7	Entered Model No. is not numeric or the value is out of the range between 1 and 99.	Set the model number to a number from 1 to 99.
	8	Length for storage path for the study file is too long. Shorten to less than 80 bytes.	Set the length of the storage path to less than 80 bytes.
	22	Invalid Accession No. Includes '\', control character, or character unsupported by the specified Specific Character Set.	The study information in the study file (ccrhis.his) is invalid. Delete the backslash (\) and any control characters.
	23	Invalid Patient ID Includes '\', control character, or character unsupported by the specified Specific Character Set.	
	24	Invalid Study Description Includes '\', line feed, control character, or character unsupported by the specified Specific Character Set.	The study information in the study file (ccrhis.his) is invalid. Delete the backslash (\), line feed code, and any control characters.

## Warning List

module id	message id	Message	Remedy
10049	25	Invalid Patient Name Includes one of the following: - '\', control character, or multi-byte character - Character unsupported by the specified Specific Character Set - 5 or more delimiters for the item	The study information in the study file (ccrhis.his) is invalid. Delete the backslash (\) and any control characters.
	29	Invalid Referring Physician Includes one of the following: - '\', '=', control character - Character unsupported by the specified Specific Character Set - 5 or more delimiters for the item	The study information in the study file (ccrhis.his) is invalid. Delete the backslash (\) and any control characters.
	39	Invalid Birth Date The valid date ranges from a date in the year 1870 to today.	The study information in the study file (ccrhis.his) is invalid. Input an appropriate value for Birth Date.
	40	Invalid Birth Date The entered value could not be converted to a birth date.	
	52	Folder for study file is not set.	Specify the folder to save the study file (ccrhis.his).
10050	2	Invalid Accession No. Enter a value between 1 and 16.	Set the length limitation of the Accession No. to 16 digits or less.
	3	Character set for Accession No. is not specified.	Specify the input character type.
	6	Invalid Patient ID Enter a value between 1 and 64.	Set the length limitation of the Patient ID to 64 characters or less.
	7	Character set for Patient ID is not specified.	Specify the input character type.
	10	Character set for Patient Name is not specified.	
	11	Character set for Study Description is not specified.	
	17	Header String for Patient ID exceeds the maximum length.	Set the length of the Header string within the length limitation.
	18	Invalid Patient ID Includes the character '\ or control character.	Delete the backslash (\) and any control characters.
	19	Invalid Patient ID Includes character other than the specified Acceptable Character Set or character unsupported by the specified Specific Character Set.	Input using the designated input character type or specific character set.
	20	Header String for Accession No. exceeds the maximum length.	Set the length of the Header string within the length limitation.
	21	Invalid Accession No. Includes the character '\ or control character.	Delete the backslash (\) and any control characters.
	22	Invalid Accession No. Includes character other than the specified Acceptable Character Set or character unsupported by the specified Specific Character Set.	Enter using the designated input character type or specific character set.
	23	Header String for Study Description exceeds the maximum length.	Set the length of the Header string within the length limitation.
	24	Invalid Study Description Includes the character '\ or control character.	Delete the backslash (\) and any control characters.
25	Invalid Study Description Includes character other than the specified Acceptable Character Set or character unsupported by the specified Specific Character Set.	Enter using the designated input character type or specific character set.	
26	Patient/Study Info. Setting Error	Set again the Patient/Study Info. based on the information that appears in <b>Details</b> .	

## Warning List

module id	message id	Message	Remedy
10051	901	The length of Patient Name fields is too long. Shorten the total length of the 5 fields to 60 characters or less.	Shorten the total length of the 5 fields (Last Name, First Name, Middle Name, Prefix, Suffix) to 60 characters or less.
	903	Invalid [item]	Delete the backslash (\) and any control characters.
	904	Includes the character '\ ' or character unsupported by the specified Specific Character Set.	
	905	Invalid [item] Enter 3-digit numerics (n) and a capital Y, M, W, or D - in the format nnnY, nnnM, nnnW, or nnnD.	
	906	Invalid [item] Includes character other than 0 to 9, '+', '-', '.', 'E', and 'e' or it cannot be converted into a numeric value.	Try inputting again using the characters indicated in the message in a format valid for numerical values.
	908	Invalid [item] Includes the character '\', '=', '^', or character unsupported by the specified Specific Character Set.	Delete the backslash (\) and any control characters.
10053	1000	This type of a magnetic card/bar code reader cannot use Connection Check function.	Check the magnetic card/barcode reader settings.
10063	1001	Enter essential data. [item]	Input the required item that appears.
	1002	Invalid [item] Enter in numeric.	Input the displayed item in single-byte alphanumeric characters.
	1003	Invalid [item] Enter a value between [value 1] and [value 2].	Input the displayed item within the limitation.
	1004	Entered value could not be checked.	Check the input value in the <b>JPEG Settings</b> screen (on page 88), and set it again if necessary.
	1005	Entered value is not numeric or out of range. [item]	Enter a value within the correct range for the displayed item.
10067	4097	Check the specified folder.	Check that there is enough space to save in the specified folder and that the folder can be written to.
	4098	The required space to save the study exceeds the available disk space.	Take either of the following two measures: <ul style="list-style-type: none"> <li>• Change the destination to save where the available disk space accommodates the data to be saved.</li> <li>• Make more available space in the disk specified for Destination to Save.</li> </ul>

# Appendix

## Acceptable Characters

### User

Login screen, **User Accounts** screen, **Change password** screen

Item	Number of characters	Description
User ID	16	Alphanumeric characters
Password	16	Alphanumeric characters
Last Name	60	Except for =, \ and ^.
First Name	60	Except for =, \ and ^.
Middle Name	60	Except for =, \ and ^.
Prefix	60	Except for =, \ and ^.
Suffix	60	Except for =, \ and ^.

### Study Input

**Manual Input** tab, **Mag Barcode** Input tab, **Setting Search Condition** screen of **List Input** tab

Item	Number of characters	Description
Patient ID	64	Selected specific character set except for \.
Accession No.	16	Selected specific character set except for \.
Last Name *	60	Except for =, \ and ^.
First Name *	60	Except for =, \ and ^.
Middle Name *	60	Except for =, \ and ^.
Prefix *	60	Except for =, \ and ^.
Suffix *	60	Except for =, \ and ^.
Study Description	64	Selected specific character set except for \.

\* Last Name, First Name, Middle Name, Prefix, and Suffix: In **Mag Barcode Input** tab and **Setting Search Condition** screen, these five items are replaced by "Patient Name," which accepts up to 64 characters including spaces and ^.

### System screen/Specific Character Set tab

Item	Specific character set tag value
Default	None
Latin-1	ISO_IR 100
Latin-2	ISO_IR 101
Cyrillic	ISO_IR 144
Greek	ISO_IR 126
Latin-5	ISO_IR 148
Japanese <katakana>	ISO_IR 13
Japanese <kanji>	\ISO 2022 IR 87
Japanese <kanji + katakana>	ISO 2022 IR 13\ISO 2022 IR 87
Japanese <kanji + katakana (code extension)>	\ISO 2022 IR 13\ISO 2022 IR 87
Japanese <katakana (code extension)>	\ISO 2022 IR 13

## DICOM settings

The items in the following table are set in the **System** screen, the **Study Input/MPPS Modules** screen, or a screen for setting a storage.

Item	Number of characters	Description
Storage	64	
AE Title	16	Alphanumeric characters except for \.
Station Name	16	Selected specific character set except for \.
Location	16	Selected specific character set except for \.
Institutional Department Name	64	Selected specific character set except for \.
Institution Name	64	Selected specific character set except for \.
Host Name	32	Alphanumeric characters except for \.
Modality	16	Alphanumeric characters except for \.
Port No.	5 digits	From 1 to 65535.
Scheduled Station Name	16	Selected specific character set except for \.
Scheduled Performing Physician's Name	1st: 64 2nd: 63 3rd: 63	The 1st to 3rd components are delimited by an equal sign (=). Selected specific character set except for \.
Scheduled Location	16	Selected specific character set except for \.
Patient Name	1st: 64 2nd: 63 3rd: 63	The 1st to 3rd components are delimited by an equal sign (=). Selected specific character set except for \.
Accession No.	16	Selected specific character set
Requested Procedure ID	16	Selected specific character set

## File Size by Save Format

Attached digital camera: EOS 50D RETINA

	L	M	S
JPEG	5.0 MB	3.0 MB	1.7 MB
LossLess	50.0 MB	24.0 MB	13.0 MB

\* The file size depends on the subject. The sizes shown in the table are for reference only.

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