

Omnidirection Camera Series

Utility Software Manual

“ Forest-N ”

User's Guide

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1. OVERVIEW

Forest-N.exe is the application (utility) software for the operation of the Omnidirection Camera NM33 series which work with the firmware of **the OPT's standard version and the UVC version.**

2. CONFIGURATION

- Forest-N.exe.....Application software. (No other files are needed.)

3. OPERATING ENVIRONMENT

OS: Windows XP SP2 and later / Windows Vista / Windows 7

Note: In case of the NM33 series working with the firmware for the OPT's standard driver version, only the 32-bit OS is usable.

Note: In case of the NM33 series working with the firmware for the UVC version, the 32 bit-OS and the 64 bit-OS are usable.

PC: The environment for proper functioning for above OS.

The number of colors of the PC monitor : more than maximum (32 bit).

4. Features

Camera Control	Display the image from the camera. Pan, tilt, zoom, roll, change the image size, switch the dewarping pattern, change the JPEG quality, etc...
Auto Pan	Automatically move the image in horizontal direction when the camera is the Desk Top Mode and the Under Ceiling Mode.
Capturing Movie	Record the live image in the AVI format.
Capturing Still Image	Record the still image in the JPEG format.
Preset	Save the image setting configuration as for the viewing position, zoom level, dewarping pattern, and sub-image indication in at most 8 addresses. The saved configuration can be switched every 5 seconds.

Note: Dewarping is the feature to correct the image distortion taken by the fish-eye lens.

5. USING Forest-N

In case of the NM33 camera working with the firmware for the OPT's standard driver, install the USB driver before using this application software.

5.1 Start and Stop of the application

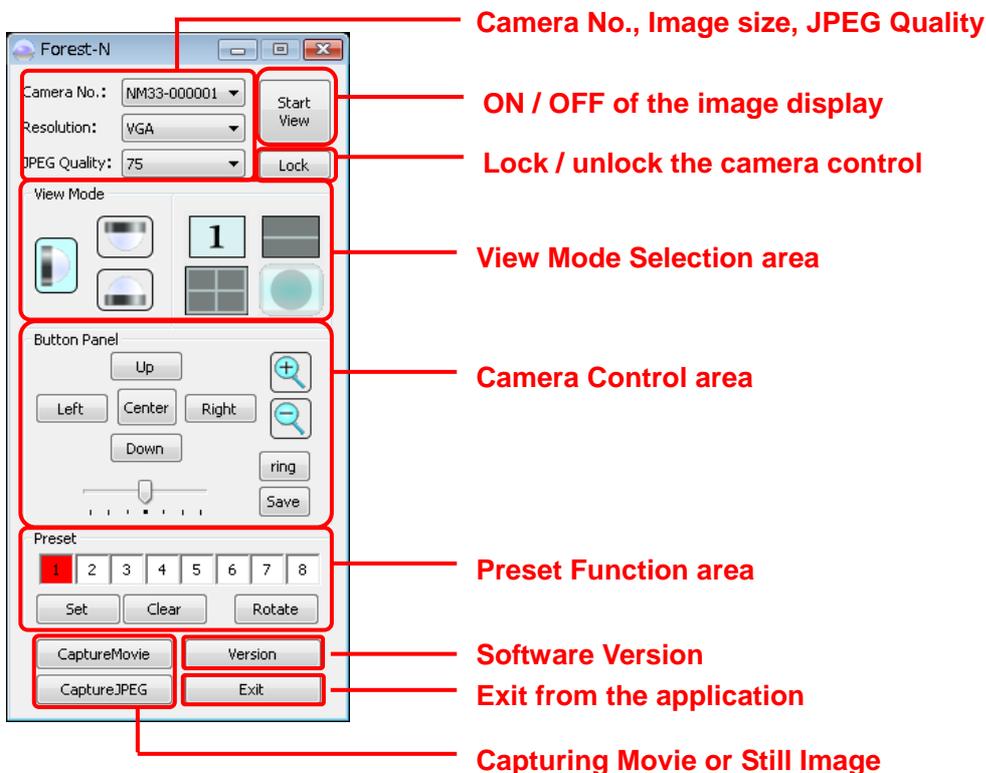
Start the Forest-N

- (1) Save the following file, stored in the accessory CD, to a suitable folder of your PC. :
Forest-N.exe
- (2) Connect the camera to your PC via the USB port.
- (3) Execute (double click the icon) "Forest-N.exe" file.



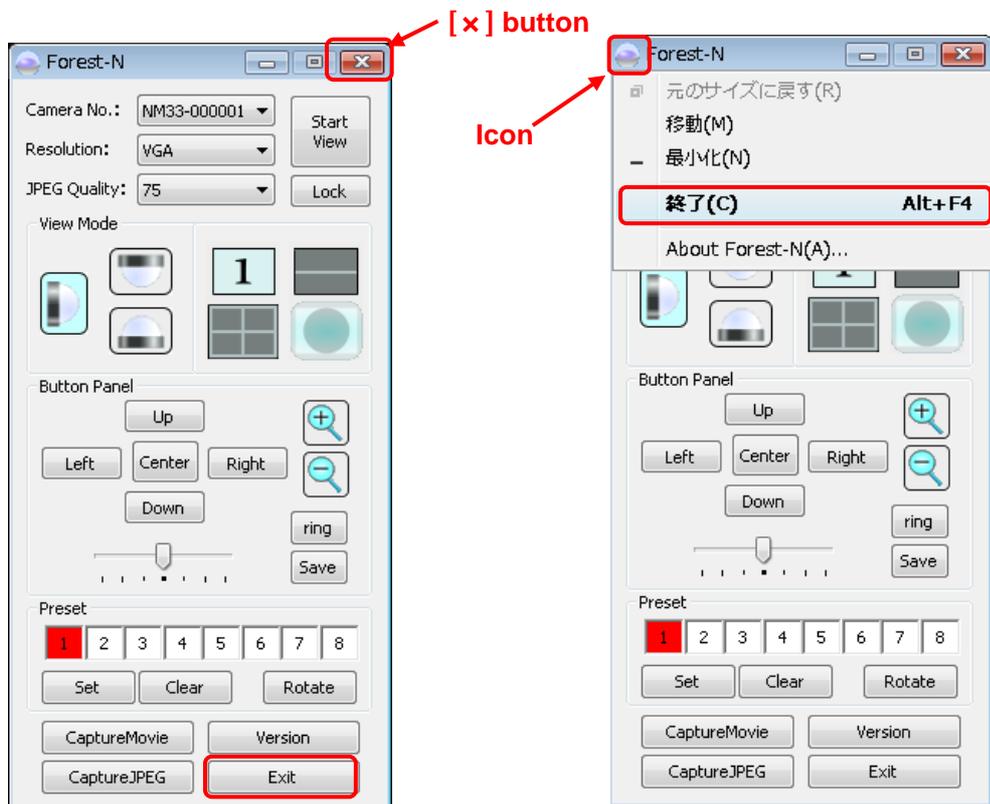
Forest-N.exe

The following Camera Control Window will appear.



Exit from the Forest-N

Click the [x] button of the Camera Control Window or the [Exit] to exit from the Forest-N. Or, click the icon at the upper left corner of the Camera Control Window and select [終了(c)].

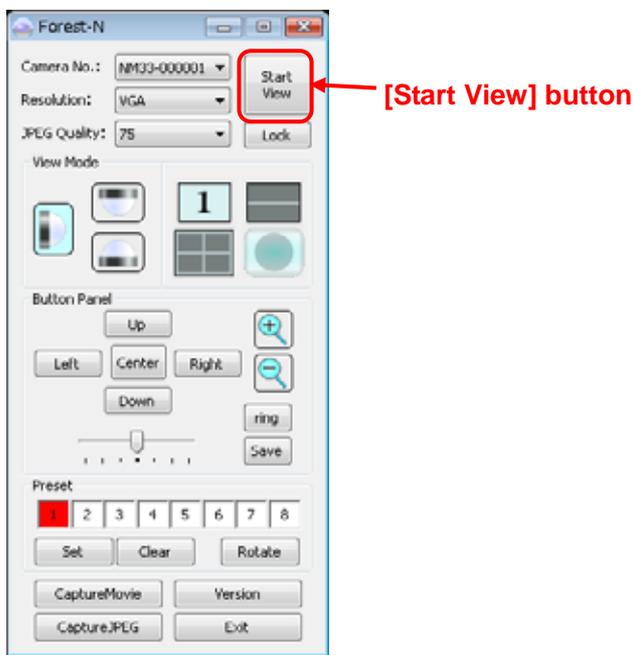


Note: When terminating the application, the current preset configurations are stored in the setting file (ini file). The setting file is made in the same folder of the execution file, Forest-N.exe.

5.2 Start Viewing and Camera Control

5.2.1 Start Viewing

Click the [Start View] button to see the video image from the camera.



By clicking the [Start View] button, the Camera Control Window will expand rightward and the live image through the camera will be displayed.



Note: If no image or any abnormal image is displayed, check if the number of colors of the PC is set at the maximum (32 bit).

Full Size Screen

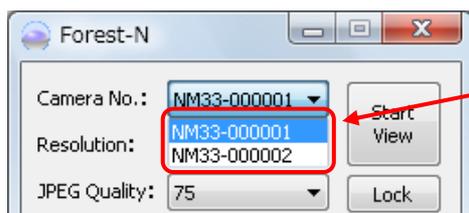
Double-click the left mouse button on the displayed live image, and the live image is enlarged up to the screen size.

In order to get the size back to the normal window size, double-click the left mouse button again or click the [Esc] button. Or, select the [Exit] from the pop-up menu appeared by pressing the right mouse button.

5.2.2 Switch the camera number

If multiple numbers of camera are connected to the PC, the view from the current camera can be switched to another by the command in the [Camera No.] combo box.

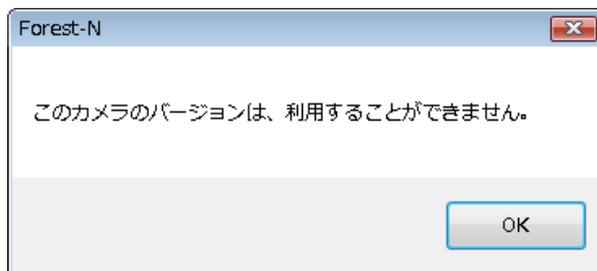
The below figure shows an example of using 2 cameras. The number of each camera is indicated in the [Camera No.] combo box. The later 6 digits following NM33- mean the serial number of the camera.



If two cameras are connected, two camera numbers are indicated in the [Camera No.] combo box.

Note: In case of the NM33 camera working with the firmware for the OPT's standard driver, only one camera can be connected at once.

Note: If the version of the camera is not supported by this application, the below message appears and any button other than the [Camera No.] combo box can not be selected.



5.2.3 Change the Image Size

The size of image from the camera can be changed.

The image size is selectable from the followings.

VGA (640×480) size, QVGA (320×240) size, LARGE (1536×1536) size.

Select [QVGA], [VGA], or [LARGE] from the [Resolution] combo box.

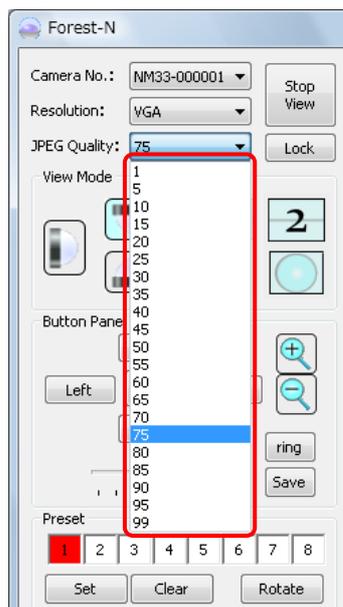


Note: When the LARGE size (1536×1536) is selected, the operating condition becomes the followings.

- The screen mode switches into the [Hemisphere mode].
- The letter of [LARGE] appears in the upper left corner of the screen.
- Viewing live image in the PC screen is possible, but no out put from the AV output terminal.
- All buttons in the View Mode Selection area, the Camera Control area, and the Preset Function area can not be operative.

5.2.4 Change JPEG Quality

In order to change the JPEG quality of the viewing image, change the setting of the [JPEG quality] between 1 and 99%, by 5%.



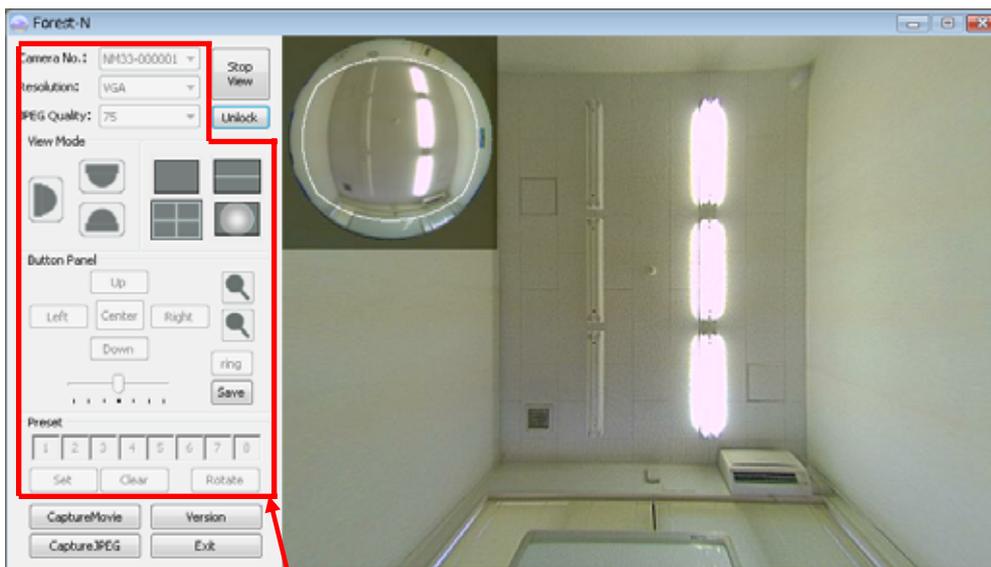
Note: Make the JPEG quality lower and lower, the image quality becomes worse and worse but the size of the image file becomes smaller accordingly.

5.2.5 Fixing the camera control

Clicking the [Lock] button will fix the current settings configuration and prevent the button operations for the Camera No., View Mode, Pan, Tilt, Zoom, Image Size, JPEG Quality, and Preset Function become difficult.



An example of the screen image when the [Lock] button is enable.



No button operation is allowed.

5.2.6 Switch the dewarping image pattern

In order to switch the dewarping image pattern, click each button in the View Mode Selection area as shown below.

Switch the dewarping image pattern

The dewarping image pattern can be switched by clicking the icon in the View Mode Selection area.

There are two image viewing modes; the Cross Line View Mode and the Rounding View Mode.

The Rounding View Mode consists of the Desk Top Mode and the Under Ceiling Mode.

Image Viewing Mode		Description
Cross Line View Mode		Suitable image for installing the camera with its optical axis in horizontal.
Rounding View Mode	Desk Top	Suitable image for placing the camera on the table with its optical axis in vertical.
	Under Ceiling	Suitable image for installing the camera under the ceiling with its optical axis in vertical.

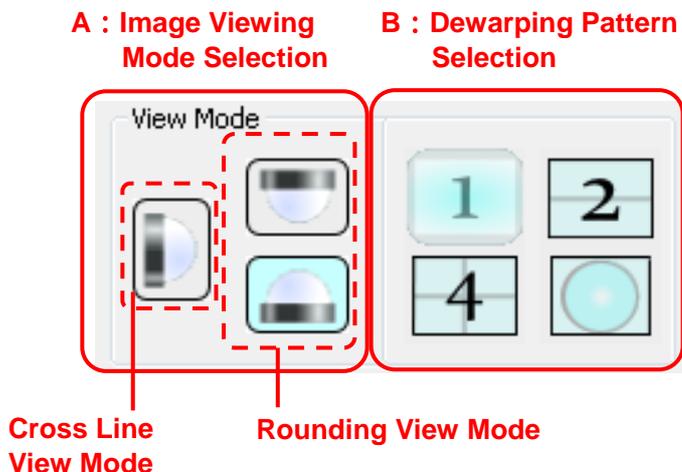
Each Image Viewing Mode has several dewarping patterns as below.

Image Viewing Mode	Dewarping Pattern	Description
Cross Line View Mode	Pattern 1	Enlarge the specified range and display in rectangle shape after correcting distortion.
	Hemisphere	Display the hemisphere image projected on the image sensor through the fish-eye lens. Good for observe all around (360 °) view.
Rounding View Mode	Pattern 2	Enlarge the specified range and display in rectangle shape after correcting distortion
	Quad Mode	Enlarge four specified ranges and display in four rectangle shapes after correcting distortion in one screen.
	Half Wide	Enlarge two 180 ° images from the specified range in rectangle shapes after correcting distortion and display one above the other.
	Hemisphere	Display the hemisphere image projected on the image sensor through the fish-eye lens. Good for observe all around (360 °) view.

Note: The Hemisphere image is the same in the Cross Line View Mode and the Rounding View Mode.

Note: Each of the dewarping pattern available in the Rounding View Mode is available in both of the Desk Top Mode and the Under Ceiling Mode.

View Mode Selection area



- A: switch the image viewing mode into the Cross Line View Mode or the Rounding View Mode.
- B: switch the dewarping pattern.

- : switch into the Pattern 1 of the Cross Line View Mode.
- : switch into the Under Ceiling Mode of the Rounding View Mode.
- : switch into the Desk Top Mode of the Rounding View Mode.
- : switch into the Pattern 1 of the Cross Line View Mode or the Pattern 2 of the Rounding View Mode.
- : switch into the Half Wide of the Rounding View Mode.
- : switch into the Quad Mode of the Rounding View Mode.
- : switch into the Hemisphere image

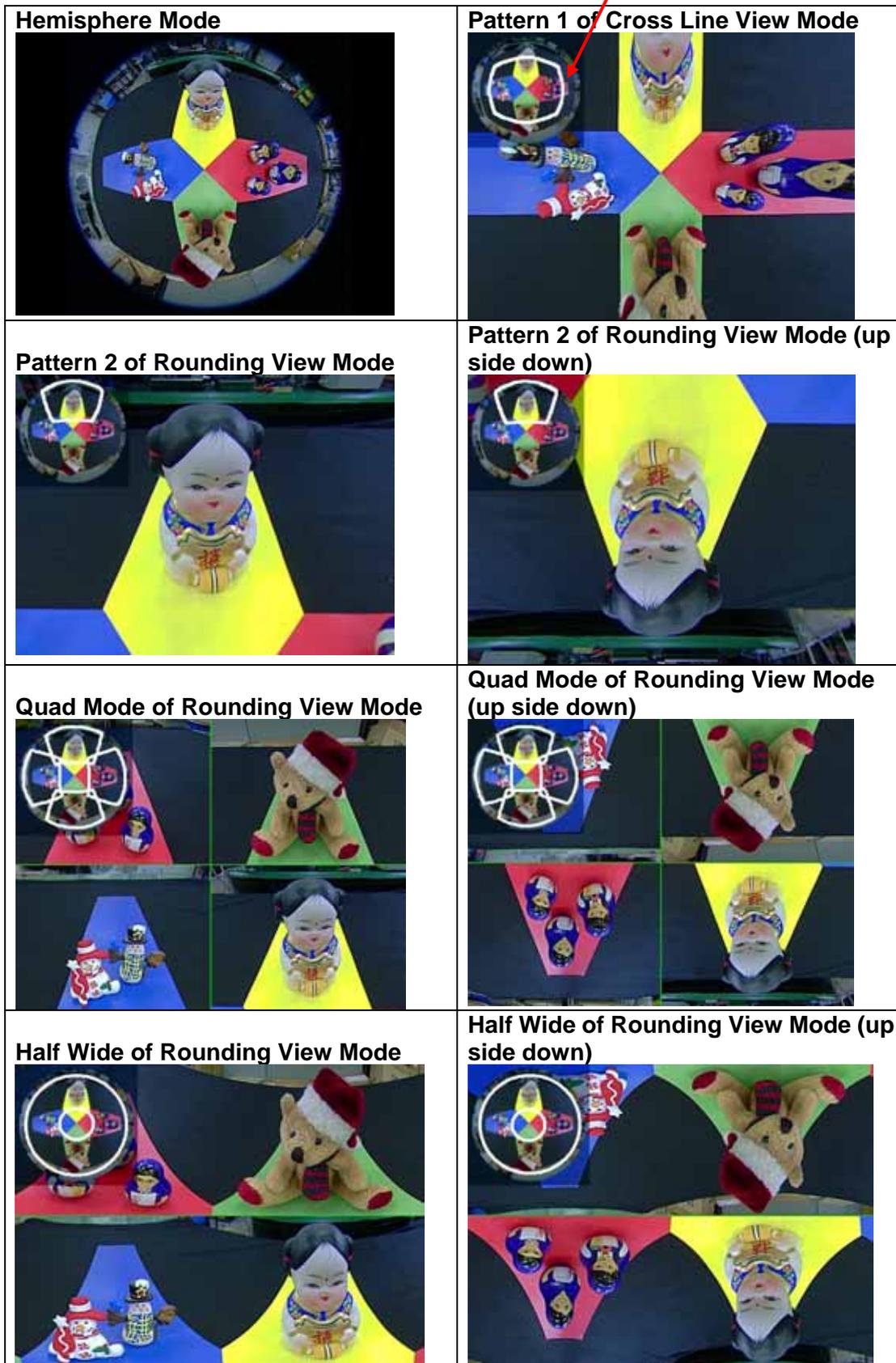
switching the dewarping pattern

- Select one of the viewing mode , , or from the area A.
- Select one of the dewarping patterns ~ from the area B.
According to the selected viewing mode, selectable dewarping pattern varies.
If selecting from the Cross Line View Mode, or dewarping patterns are selectable.
If selecting or from the Cross Line View Mode, one of ~ dewarping patterns are selectable.
- If selecting the Cross Line View Mode (), the dewarping pattern will be switched into the Pattern 1 of the Cross Line View Mode ().
- If switching from the Pattern 1 of the Cross Line View Mode () or the Hemisphere image () into the Desk Top Mode or the Under Ceiling Mode (、), it switches into the Pattern 2 of the Cross Line View Mode ().
- When selecting the Pattern 1 of the Cross Line View Mode (), the Half Wide () and the Quad Mode () can not be selected.

- When selecting the [LARGE] size, all buttons in the View Mode area can not be selected. Selecting the [QVGA] or the [VGA] size makes buttons operative.
- When selecting the Hemisphere image (), the Zoom button and the Ring button (Sub-circle Image ON/OFF) can not be selectable.

Dewarping Image Pattern

Specified area in the Sub-circle Image.



Note: Above are the examples of indicating the Sub-circle Image.

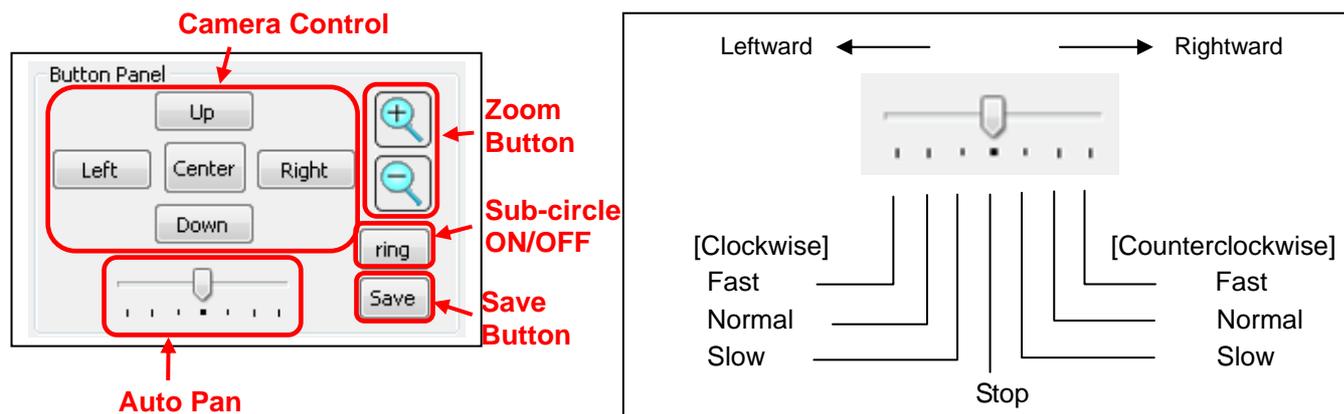
5.2.7 Camera Control

Clicking each button in the Camera Control area enables you to control the camera.
Please refer to the following “Camera Control Function”.

Camera Control Function

Use the buttons in the “Button Panel” to control the camera.

Note: If the video size is set to [LARGE] , the available view mode is only “Hemisphere” .



Function	Button	Description	Display Mode
Adjust the view area (Cross Line View Mode)	Rightward	Right	Cross Line View Mode
	Leftward	Left	
	Upward	Up	
	Downward	Down	
Adjust the view area (Rounding View Mode)	Counterclockwise	Right	Rounding View Mode
	Clockwise	Left	
	Inward	Up	
	Outward	Down	
Reset view position	Reset	Center	All except Hemisphere Mode
Zooming adjust	Zoom-in		All except Hemisphere Mode
	Zoom-out		
Auto Pan	Leftward		Rounding View Mode
	Rightward		
Indicate the Sub-circle Image	ring	Indicate the Sub-circle image in the View Area (*2) (Indicate the specified range)	All except Hemisphere Mode
Save the image condition (Save the current view set data)	Save	Save the current dewarping image mode and the view position data into the camera.	All modes

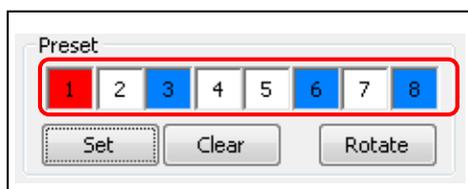
1 : The moving direction will reverse in the up-side-down mode.

2 : Sub-circle Image is the small hemisphere image shown in the viewing display, in which the range to be dewarped is specified. (Refer to the previous section **Dewarping Image Pattern**)

5.3 Preset Function

Save the image setting configuration as for the viewing position, zoom level, dewarping pattern, and sub-image indication in at most 8 addresses.

The saved setting configuration can be switched to the next preset address every 5 seconds.



[Set] button: Clicking the [Set] button applies the number from 1 to 8 for each of the current setting configuration regarding the viewing position, zoom level, dewarping pattern, and sub-image indication. The color of the number used for the presetting will turn into blue.

[Clear] button : Clicking the [Clear] button on a preset number clears its preset configuration. The color of the number cleared will turn into white.

[Rotate] button : Clicking the [Rotate] button automatically switch the preset configuration from 1 to 8 by 5 seconds. The number without preset is skipped.

Note: The [Rotate] button is workable only when more than 2 preset numbers are set.

Preset Numbers : The numbers to record the setting configuration. Click one of 8 numbers. The number selected will turn into red and be ready to record the setting configuration.

When starting the application, the number “1” is selected as default.

Note: Clicking the right mouse button on the preset number, the pop-up menu with [Set] and [Clear] is indicated. Using this menu can make the same result as the [Set] button and the [Clear] button do.

• Status of Preset Numbers

There are the following three statuses for the condition of Preset Numbers.

Color Status of Preset Numbers	Select status	Preset Data
1	Selected	Yes / No
2	Not selected	No
3	Not selected	Yes

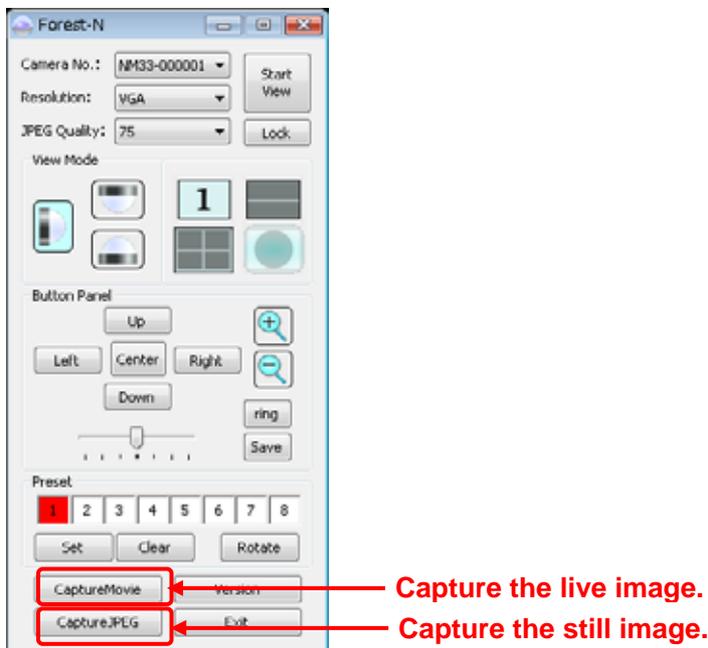
The following is the procedure to [Preset] and [Rotate].

1. Select one of the Preset numbers from 1 to 8 to set the setting configuration.
2. Make sure the current view configuration is good for recording as for the viewing position, zoom level, dewarping pattern, and sub-image indication.
3. Click the [Set] button to record the current image configuration as the preset data.
4. Select another Preset number. And repeat the above procedure #1 to #3.
5. Record more than 2 setting configurations (Preset numbers).
6. Click the [Rotate] button, and the preset images switch one to next in every 5 seconds.

Note: If changing the image size into [LARGE] during the [Rotate] action, the automatic rotation will be stopped. Also the switching to another camera by [Camera No.] will be unable.

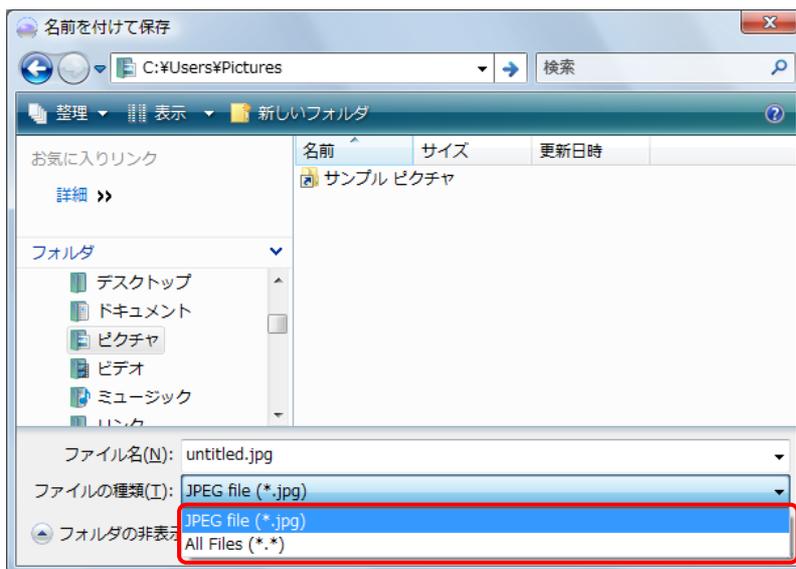
5.4 Capturing Movie and Still Image

Clicking the [Capture Movie] button or the [Capture JPEG] button will enable to record the live image or the still image of the current view.



5.4.1 Recording the still image

1. Click the [Capture JPEG] button in the Camera Control Window.
2. When the below window appears, specify the folder, file name and file type to record the data. The selectable file type is the JPEG only.

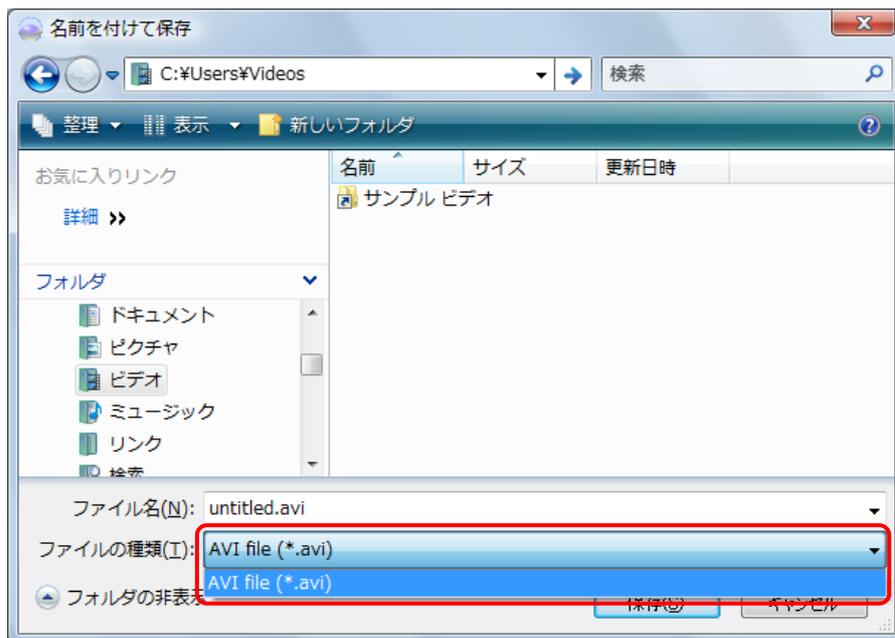


Note: Even if the live image is not displayed, to record the still image is possible.
 Note: The image at the moment of clicking the [Capture JPEG] button can be recorded.

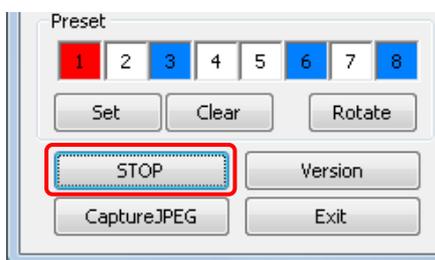
5.4.2 Recording the movie

1. Click the [Capture Movie] button in the Camera Control Window.
2. When the below window appears, specify the folder, file name and file type to record the data. The selectable file type is the AVI file only.

The file name of the actually recorded AVI file will have the numeric data of meaning the year, month, date, hour, minute, and second, and “.avi”.



3. To stop the recording the live image, click the [STOP] button which had been changed from the [Capture Movie] button.



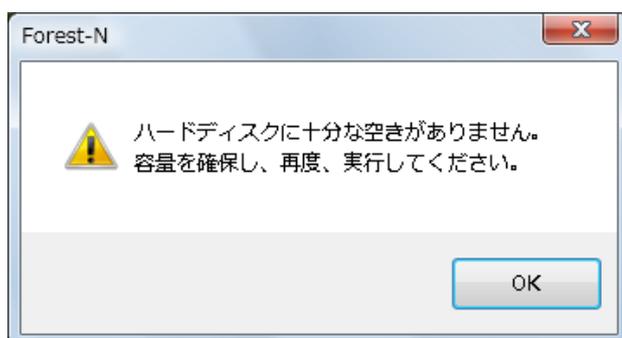
Note: During to record the live image, the change of the Image Size and the JPEG Quality is impossible. Selecting of the Image Size and the JPEG Quality should be done before clicking the [Capture Movie] button.

Note: Even if the live image is not displayed, to record the live image is possible.

Note: During to record the live image, to record the still image is possible by clicking the [Capture JPEG] button.

Note: If the recording of the live image is done in a long period beyond 1 GB of the file size or 30 minutes of the recording time, a new AVI file is automatically created. The newly created AVI file will have the new name with the same name as originally designated following the new numerical data of the year, month, date, hour, minute, and second, and “.avi”.

Note: If the allowed recordable area in the storage drive would be less than 500 MB, the recording will stop indicating the following message.

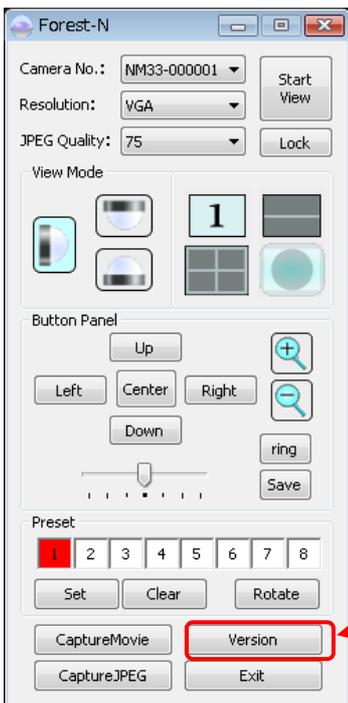


After achieving the sufficient recordable disc area, follow the recording procedure again.

5.5 Version Information

Check Version

In order to check the version of the application, click the [Version] button the main control window.



Click the [Version] button the main control window to see the application version.