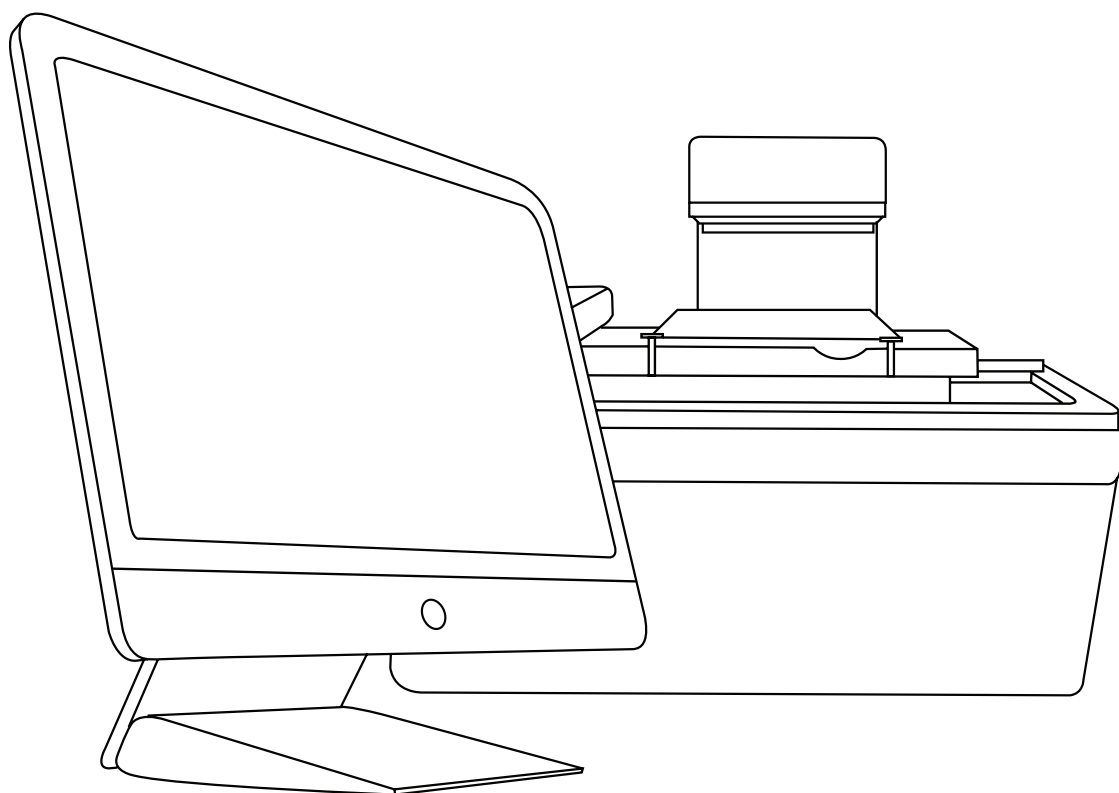


JuLI™ Stage

Real-Time Cell History Recorder

Quick manual



Nano**EnTek**

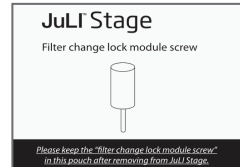
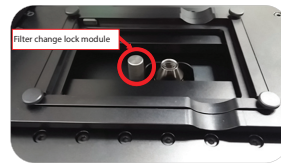
NanoEnTek Inc. (HQ) 2F, 5, Digital-ro 26-gil, Guro-gu, Seoul, 08389, Korea / Tel: +82-2-6220-7940, Fax: +82-2-6220-7921
NanoEnTek USA Inc. 5627 Stoneridge Drive Suite 304, Pleasanton, CA 94588, USA / Tel: +1-925-0108, Fax: +1-925-225-0109
www.julistage.com / sales@nanoentek.com

Installation

1. Open the box and remove the **material foam** in the box.
2. Carefully lift the instrument out of the box, holding it by handholds in the **bottom of the base**.
3. Place the instrument on a flat, level surface (table or incubator).

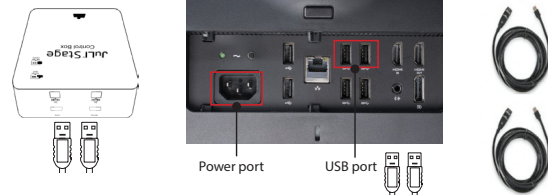


4. Unscrew the **filter change lock module screw** until they spin freely.
5. Gently pull filter change lock module screw out, away from the instrument. Put the filter in the pouch to keep.



6. Connect repeater to the PC and two USB cable, then connect to control box. (PC Monitor Resolution: 1920 × 1080 pixels)

*Note: Check the connection on the **rear side** of the PC.*



7. Connect the **JuLI™ Stage instrument** and the **Control box** and using the connection cable. Connect the connection cable and control box by matching the blue and red sticker.

Note: Make sure for connection port direction of control box before connecting.

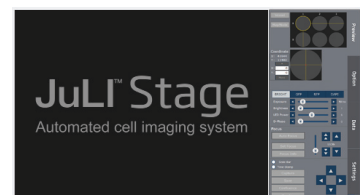


8. Plug the power cord of PC and instrument into the electrical outlet.

9. Turn the PC and the Control box on by pressing the **Power button**.



10. Double-click the JuLI™ Stage icon on desktop The JuLI™ Stage software starts up.



Basic operation

The JuLI™ Stage can be used in combination with PC (Monitor Resolution 1920x1080) which enables users to operate the instrument using the computer mouse and keyboard. The JuLI™ Stage basic operations use the mouse for moving, selecting and zooming in/out.

 **Quick manual describes the mouse function in Default setting (Type 1).**

If necessary, you can change the mouse setting type in the Setting menu.



Right mouse

1. Moving: Move the X-Y stage to wells or positions.

- Moving among wells (Inter well)
- Moving within the well (Intra well)
- Moving in view



Left mouse

2. Selection: Select the wells or specific positions which user want to set.

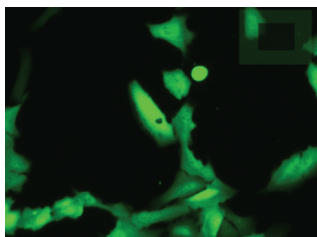
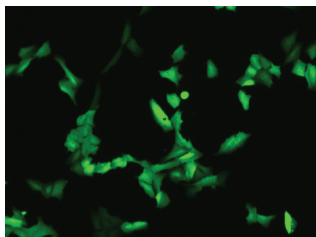
- Selecting well
- Selecting position



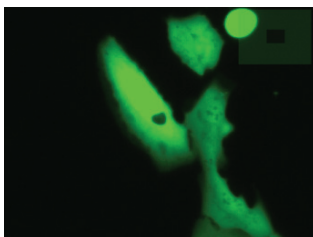
Mouse wheel

3. Zoom: Zoon in and out the image in the screen.

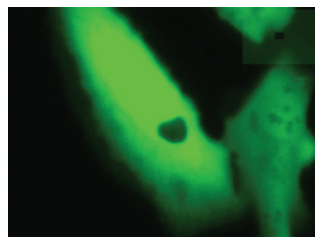
- Zoom-in (Scroll up)
- Zoom-out (Scroll down)
- Size bar (Wheel dragging)



[1st Zoom-in]



[2nd Zoom-in]

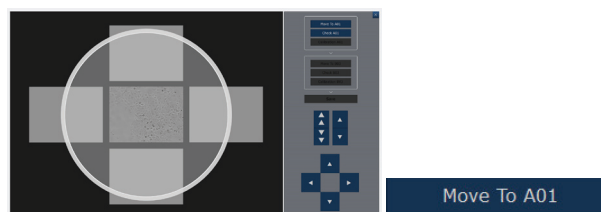


[3rd Zoom-in]

Position Calibration (Vessel type)

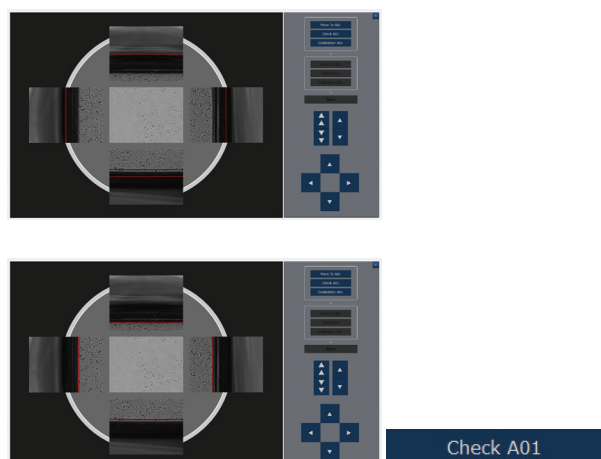
1. Press the Move To A01 button.

Like the picture, stage will move to A01 well and the center square displays the current location.

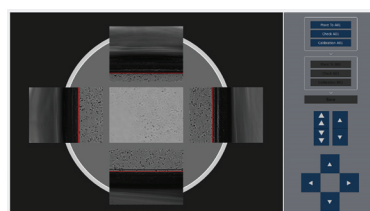


2. Press the Check A01 button.

If you press the button, stage will move to quadrantal direction automatically as radius distance of well. Then outside of well will be displayed on each square of quadrant. In case of the location adjustment needed, adjust the location to be symmetrical based on the red line. When you double click the location, the red line will move to the clicked location.

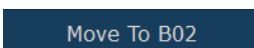


3. To apply the adjusted value, click Calibration A01 button. To check the current applied condition, press Check A01 button one more time.



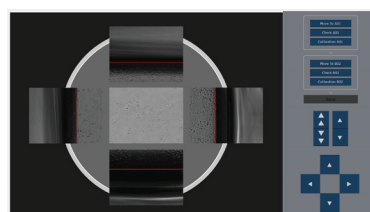
4. Press the Move to B02

(Well number can be changed by vessel type. Basically, it is expressed in the end well of relevant vessel type.)



5. Press the Check B02

Repeat the same process with A01 well calibration.



6. Press Save button and X button to finish vessel calibration.

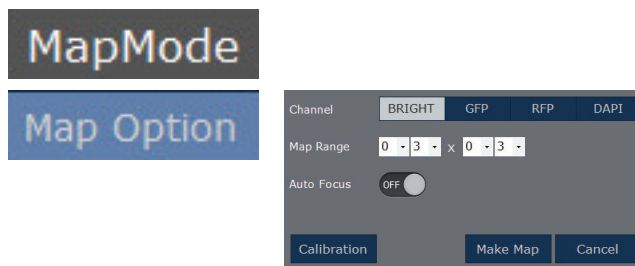


7. Click X button to end calibration.

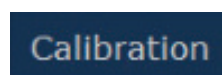
Stitching Image Calibration (Stitching & Map mode)

If there is overlapped image during map mode or stitching, need this function.

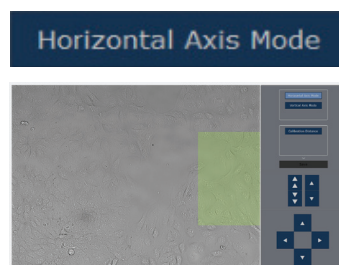
1. Select Map Option of Map Mode from Preview tap.



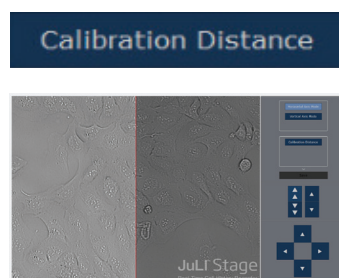
2. Press Calibration button in the Map option.



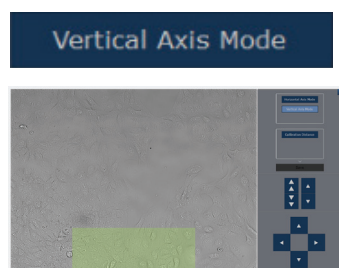
3. Select Horizontal Axis Mode button.



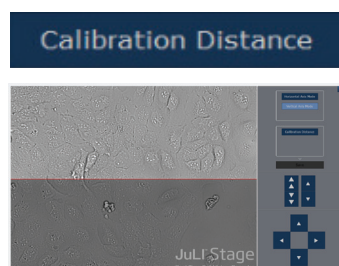
4. Press Calibration distance button to adjust Y-axis location. Move to appropriate location by dragging the two overlapped images with mouse.



5. Press Vertical Axis Mode button.



6. Press Calibration distance button to adjust X-axis location. Move to appropriate location by dragging the two overlapped images with mouse.



7. Press Save button and X button to finish stitching image calibration.

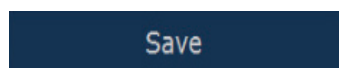
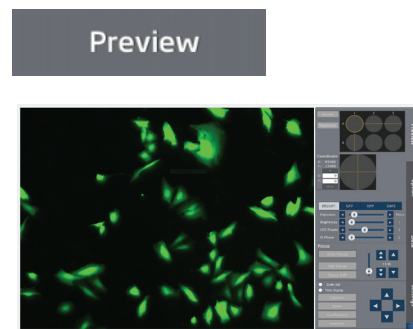
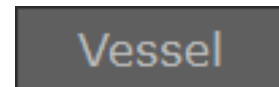


Image capture, Save and overlay

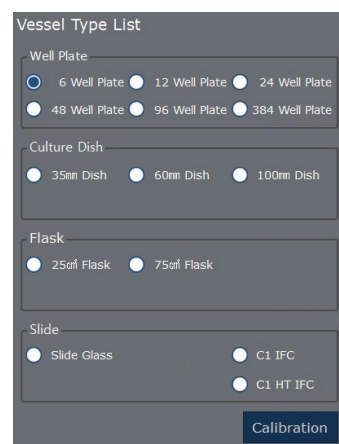
1. Select the **Preview** menu.



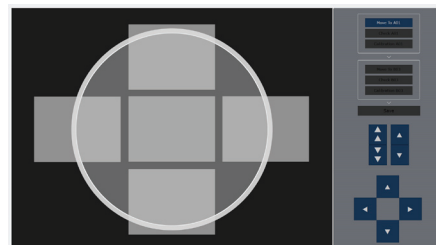
2. Press the **Vessel** button.



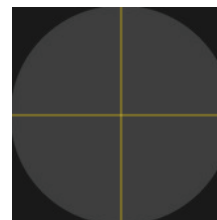
3. Select the **Vessel type** according to your sample when well type list appears.



4. Press the Calibration button, if necessary.
Set the Calibration option from first well to end well.



5. Move to the well and position you want using the **Right button** of the mouse. You can check the vessel image and the moving state in the navigation window and view field.



6. Select the **LED channel** for capturing images.



7. Adjust **Exposure, brightness and LED power and D-Phase**, if necessary.

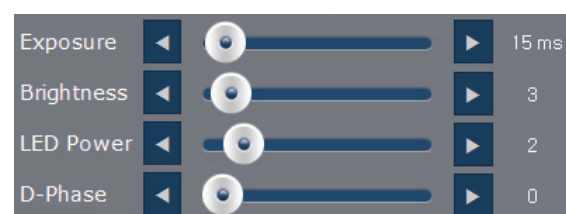
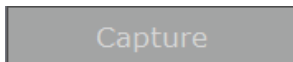


Image capture, Save and overlay

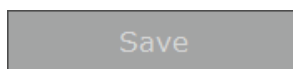
8. Find optional focus adjusting the **Focus bar and buttons**.



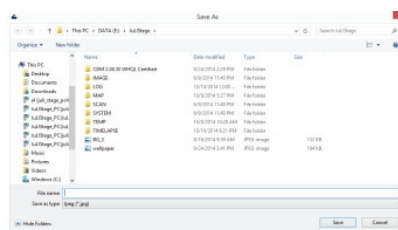
9. Press the **Capture** button to start capturing images.



10. Press the **Save button** to save the captured images, if necessary.



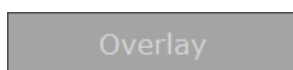
11. Once pop-up window appears, assign the storing path and file type, and press the **Save button** to confirm.



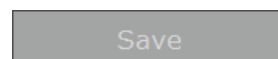
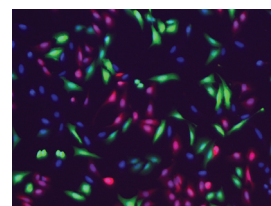
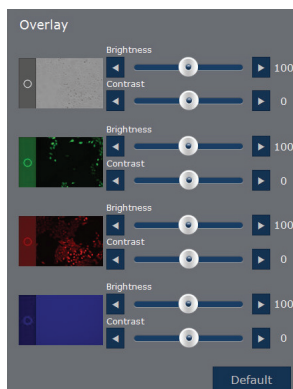
12. Select **Other LED channels**, If necessary to capture additional images in different channel.
Follow Step 6 ~ 10 repeatedly and save images for each channel.



13. Press the **Overlay button**. The overlapped images which captured in each channels will be displayed.



14. When overlay button opens the **Overlay setting window**, edit parameters according to your preference.
And then press the **Save button** to follow step 10 ~ 11 (The images will be saved as).



Operation type-1 (for Large scale of sample using the Auto focus)

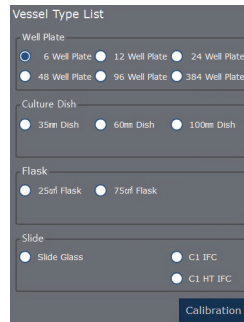
1. Select the **Option menu**.



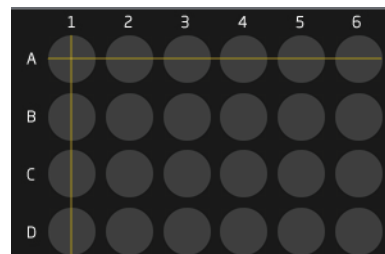
2. Press the **Vessel button**.



3. Select the **Vessel type** according to your sample when well type list appears.



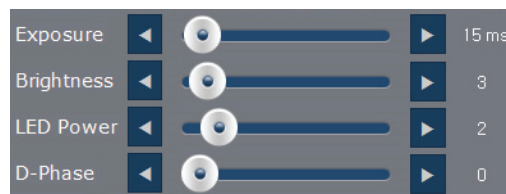
4. Check the **Selected Vessel type** and press **Vessel button** again to finish setting.



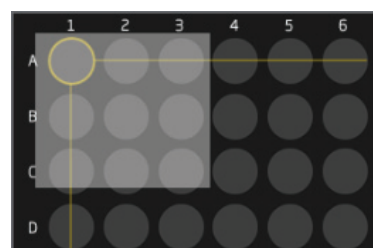
5. Select the **LED channel**.



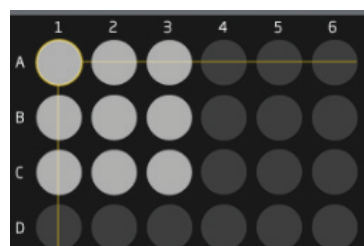
6. Adjust **Exposure, Brightness, LED Power and D-Phase**, in neccessary.



7. **Select areas** you want to capture by dragging with left mouse button. When you select the entire well, press **Select All button**.



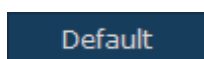
8. The selected wells are changed to **Grey color**.



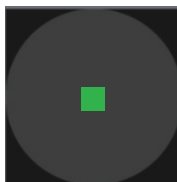
Operation type-1

(for Large scale of sample using the Auto focus)

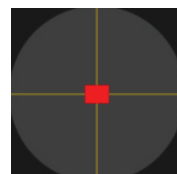
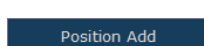
9. Press the **Default button** to equally capture central position of all wells.



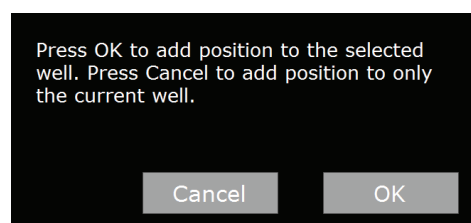
10. The assigned position is marked by green square on navigation window.



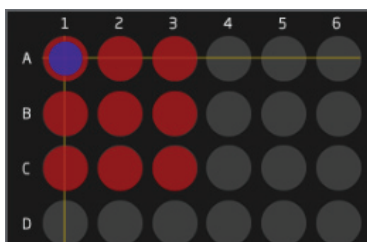
11. Press the **Position Add button** to complete setting that the green square is changed to Red.



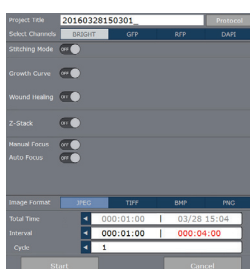
12. Press the **OK button** when pop-up window appears.



13. Once the wells are finally confirmed, they are changed to Red color.

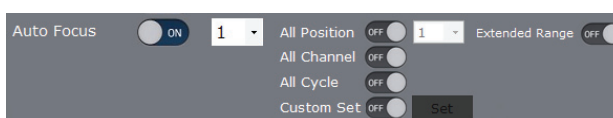


14. Enter the detail setting information.
(Please refer to the previous page)



15. Turn on the **Auto focus toggle button**.

There are four additional options of auto focus function; All Position, All Channel, All Cycle and All Cycle AF.

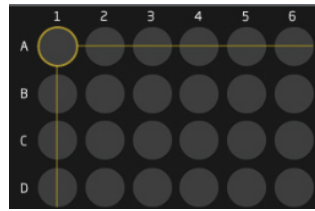


☞ Refer to the detail in the manual. (User manual Page. 22~27)

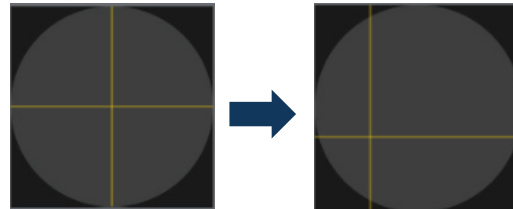
☞ Refer to the detail options of **Monitoring option** tap in the **Option menu** (User manual page. 36)

Operation type-2 (for small scale of sample using the Manual focus)

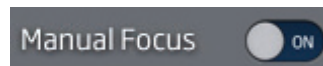
1. Click a well you want to capture using the **Right mouse** button.



2. Once the well is selected, stage is automatically moved to center of well. Move to position you want using the **Right mouse** button, and check where you moved to within the navigation window.



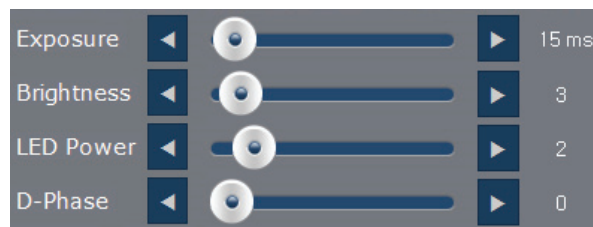
3. Turn on the **Manual Focus** toggle button.



4. Select the **LED channel**.



5. Adjust the **Exposure, Brightness and LED power and D-Phase**, if necessary.



6. Find optional focus adjusting the **Focus bar and buttons**.



7. **Set Focus button** is used to assign optional focus per each position. After setting the focus of each position, press the **Set Focus button** to save setting value.

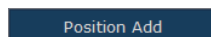


Operation type-2 (for small scale of sample using the Manual focus)

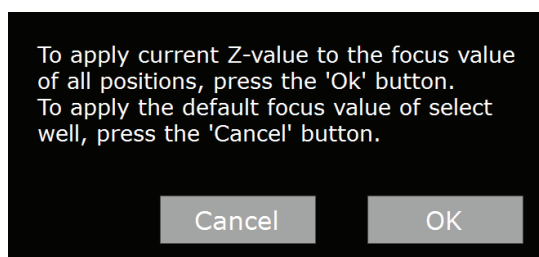
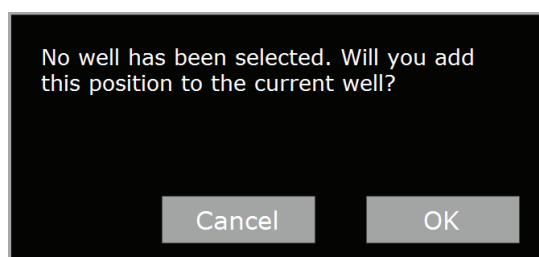
8. Select **Other LED channels**, If necessary to capture additional images in different channel.
Follow Step 4 ~ 7 repeatedly and save images for each channel.



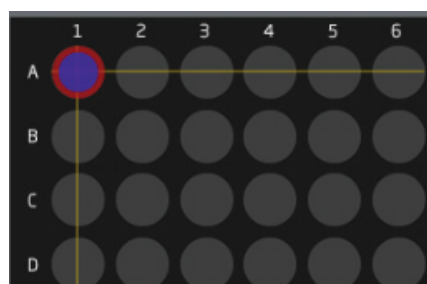
9. After adjusting focus and assigning position, press the **Position Add button**.



10. Press the **OK button** when the pop-up window appears.



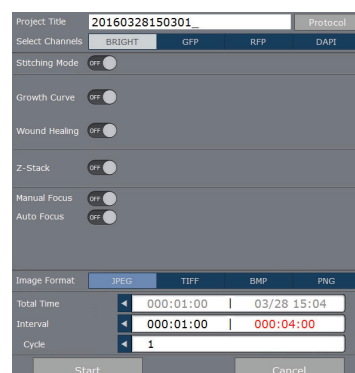
11. Once the wells are finally confirmed, they are changed to **Red color**.



12. If necessary to set manual focus in other well, follow the previous step 1 ~ 11.

13. Enter the detail setting information.
(Please refer to the previous)

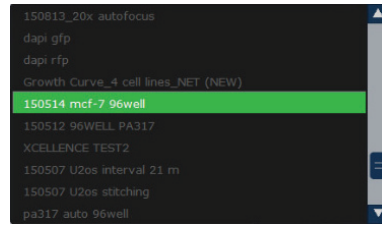
☞ Refer to the detail options of **Monitoring option tap** in the **option menu** (User manual page. 36)



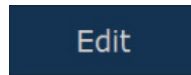
Data mode

(Make a Multi movie using the Movie Matrix)

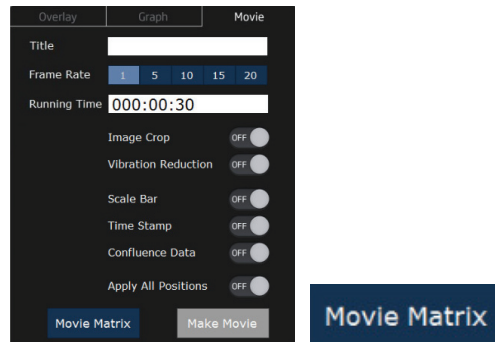
1. Click the data tap and select the title that you want to make movie.



2. Press the Edit button.

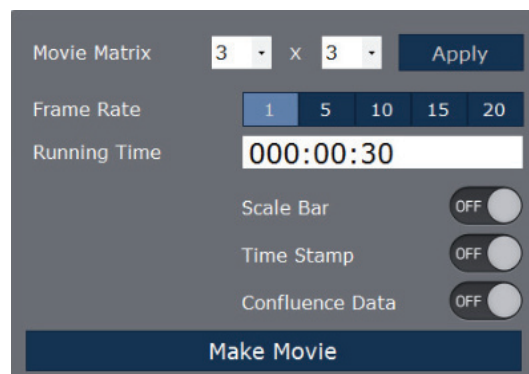


3. Go to the movie tap and press the Movie Matrix button.

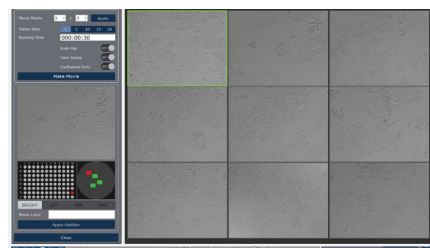


4. Movie Matrix

- 1) Movie Matrix : Set the number of X and Y square.
- 2) Apply : Press after completing Movie Matrix set up.
- 3) Frame Rate: Choose one of the frame rates.
(1, 5, 10, 15 or 20 fps)
- 4) Running time: Display calculated running time automatically.
- 5) Scale bar: Select to insert in video.
- 6) Time Stamp : Select to insert in video.
- 7) Confluence Data : Select to insert in video.
- 8) Make Movie : Press after completing all the settings.



5. When you click position within movie matrix, green square will be appeared. Select well or position that you want to insert, then press Apply Position button.



6. Single channel or merge image are also available.



7. Through Movie Label, you can also enter more specific video information.



8. Press Make movie button to create video.



Memo

Memo

Memo

JuLI™ Stage

Real-Time Cell History Recorder

NanoEnTek

Quick manual / NESMQ-JST-001E (V.1.5)

NanoEnTek Inc. (HQ)

2F, 5, Digital-ro 26-gil, Guro-gu, Seoul, 08389, Korea

Tel : +82-2-6220-7940

Fax: +82-2-6220-7921

NanoEnTek USA Inc.

5627 Stoneridge Drive Suite 304, Pleasanton, CA 94588, USA

Tel : +1-925-225-0108, +1-888-988-0108(Toll free)

Fax: +1-925-225-0109

Email

sales@nanoentek.com

Website

www.julistage.com

www.nanoentek.com