WIX-chemiPHOTO Chemi Imaging System

Instruction Manual

Catalogue Numbers

10702001

WIX TECHNOLOGY BEIJING CO.,LTD

Content

Safety Warning

The imaging systems should be used only by trained personnel.

When closing the sample tray, please do not put your fingers into the gap of the tray to avoid getting injured.

- WIX-chemiPHOTO is an electromechanical instrument, and the general safety precautions should be applicable to electrical equipment during operation. If the user does not follow the instructions in this manual, electric shock and personal injury may occur.
- The power cord of WIX-chemiPHOTO must be connected to a qualified power supply (110-240V/500W/6A) with a grounded socket. Using an unmatched power supply may cause electric shock and fire accidents.
- If an un-grounded socket is used, which shall be replaced by a grounded socket by a qualified electrician according to local electrical codes.
- Do not make any electrical changes or intentional damages to WIX-chemiPHOTO, otherwise it will cause a dangerous situation and the quality guarantee of the instrument will be invalid.
- If the power cord is broken, worn or disconnected, please contact WIX TECHNOLOGY BEIJING CO., LTD immediately for replacement.
- Do not touch the switch and power cord with wet hands.

1. Introduction

WIX-chemiPHOTO Chemi Imaging System, an integrated fully automatic gel imaging system, based on technology of advanced scientific grade cameras and lenses, accommodating both automatic and manual imaging modes, and a built-in computer for fast sample imaging.

1.1 Front and back components

System on/off button: Turn on/off the touch screen.

USB port: for external devices such as USB drives, mice, keyboards, etc.

Touch screen: Replacement of computer.

Power Indicator: Indicate the power supply status of the equipment. When the equipment is powered on, the indicator light will illuminate. When the power is cut off, the indicator light will go out.

AC power: 100-220V~50Hz/60Hz.

Sample tray: Place samples.

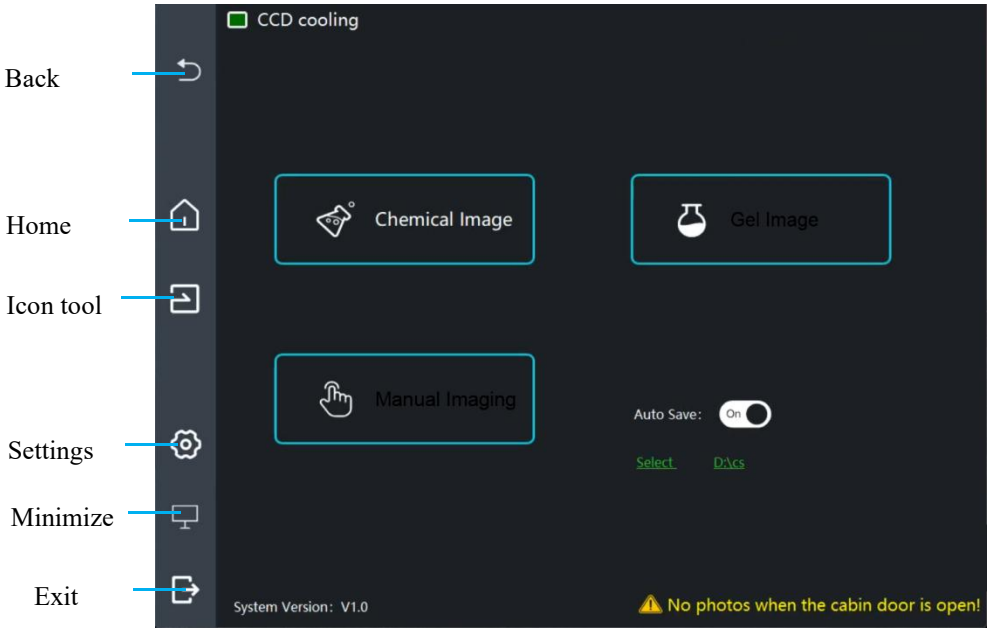
Sample tray on/off: hit for opening or closing sample tray automatically.

1.2 Specifications

Model	WIX-chemiPHOTO Chemi imaging system
Sensor model	SONY IMX492
Sensor size	4/3 inch
Pixel size	4.63μm x 4.63μm
Effective resolution	4164x2796
Maximum image area	10x14cm
Image resolution	11.7 MP
Exposure time	60μs-3600sec
Shutter type	Electronic Rolling Shutter
Lens aperture	F0.95
Excitation source	Double LED white light
Screen size	12.1 inch capacitive touch LCD screen
Quantum efficiency	90% (peak)
Full Well Capacity (1×1, 2×2, 3×3)	65ke-
A/D	14bit
Readout Noise	1.6-1.2e- @High gain mode 6.9-5.2e- @Low gain mode
Dark Current	0.002e- /pixel/sec@-20℃ 0.005e- /pixel/sec@-20℃
Cooling System	Dual Stage TEC cooler, about -35℃ below ambient
Optic Window Type	AR+AR High Quality Multi-Layer Anti-Reflection
Dimensions (mm)	320×430×430 (L×W×H)

2. Software

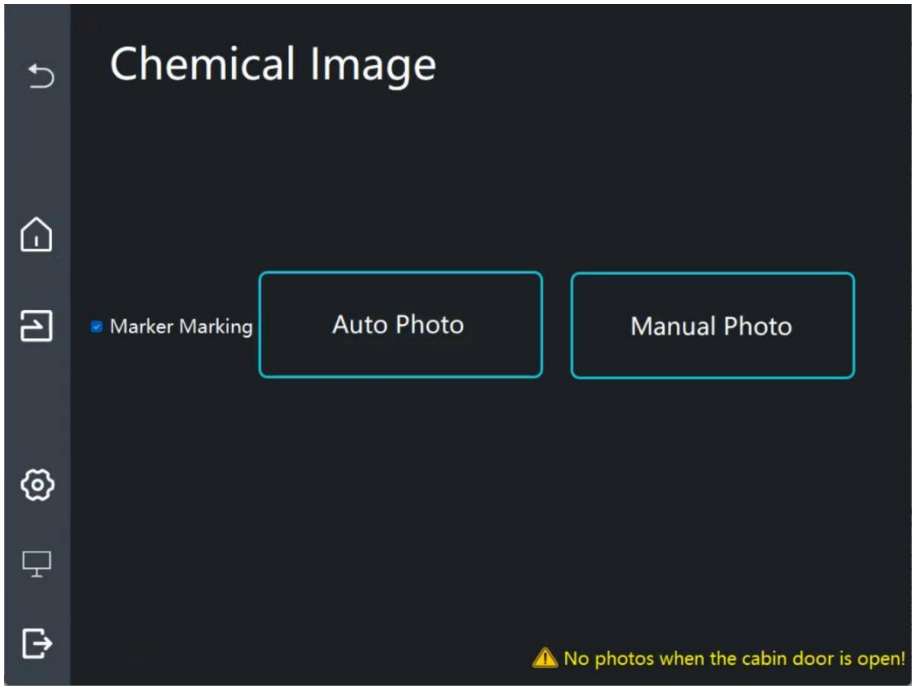
2.1 Home



1. Back: Navigate to the previous page.
2. Home: Navigate to the home.
3. Icon tool: Navigate to the page of image processing. Further details about the image processing page will be provided later.
4. Settings: Navigate to the page of the settings. Further details about the settings interface will be provided later.

5. Minimize: Minimize the page.
6. Exit: Exit the software.
7. CCD cooling: after powering on, the system will automatically activate the camera cooling function. A red icon indicating CCD cooling, Auto Photo and Manual Photo can't be navigated before the temperature reaching to its target. When cooling temperature is targeted, the icon's colour will be turned to green that photos can be taken now.
8. Chemical Image: hit to navigate to Chemical Image.
9. Auto save: Turn off/off auto save, allowing you to save your file locations for future use.

2.2 Introduction of the Chemical Imaging Function



1. Marker Marking:

Select the marker marking, the photo will automatically generate sample images, maker images, and combined images; if the marker marking is not selected, the image will only export the sample image.

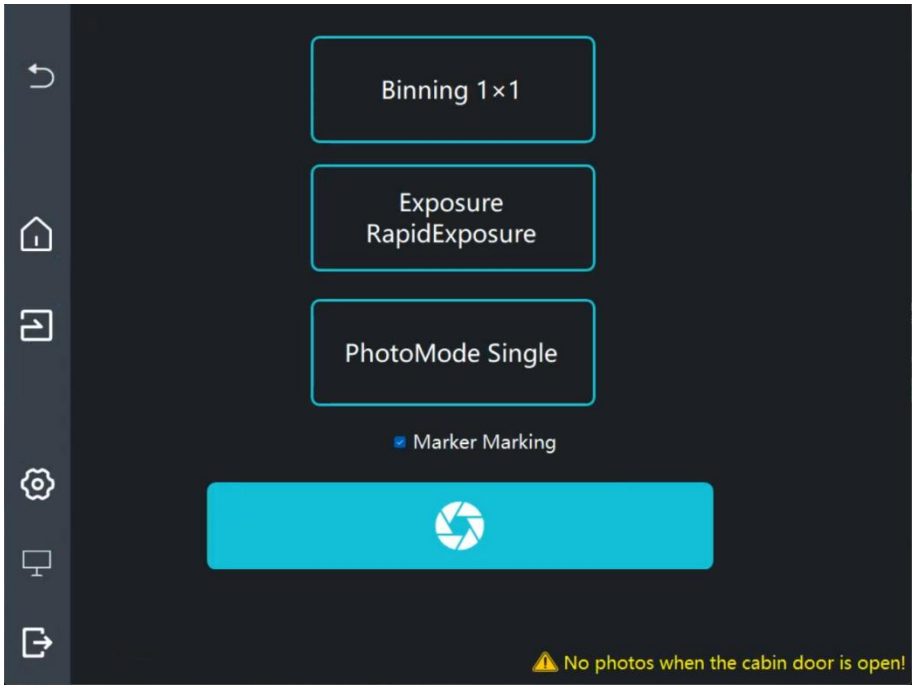
2. Auto Photo:

Hit for taking photos automatically. If marker markings selected, it will navigate to marker preview interface to adjust exposure time. After settings, hit OK to take photos automatically.

The photo progress will be shown, hit  to stop.

3. Manual Photo:

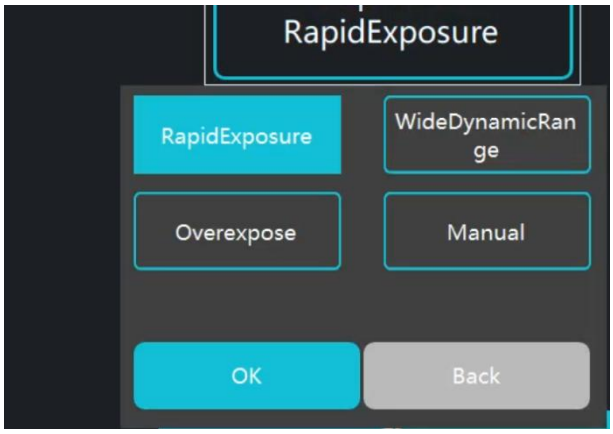
Hit to navigate to taking photos manually.



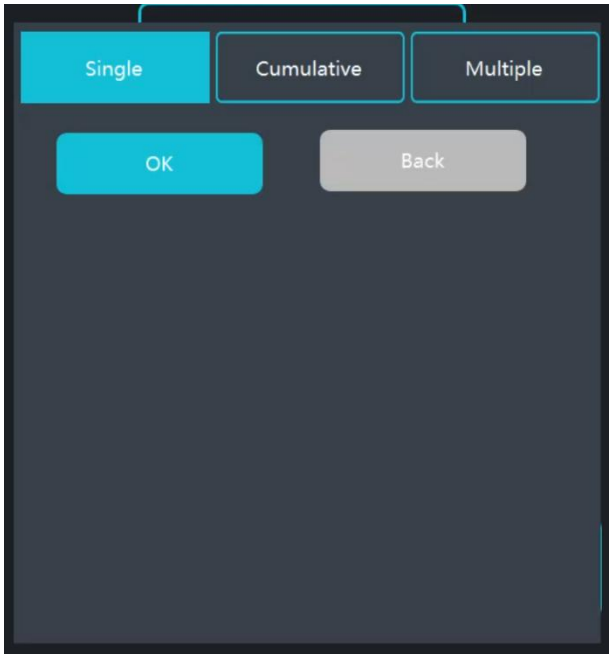
3.1 Binning: for Binning settings, three choices of 1x1, 2x2 and 4x4.

3.2 Exposure mode: for exposure settings, four choices of fast exposure, wide dynamic range exposure, overexposure and manual exposure.

Hit the manual exposure to set the exposure time and exposure gain.



3.3 Photo: hit for setting photo mode of Single, Cumulative and Multiple.



Single: only taking one photo.

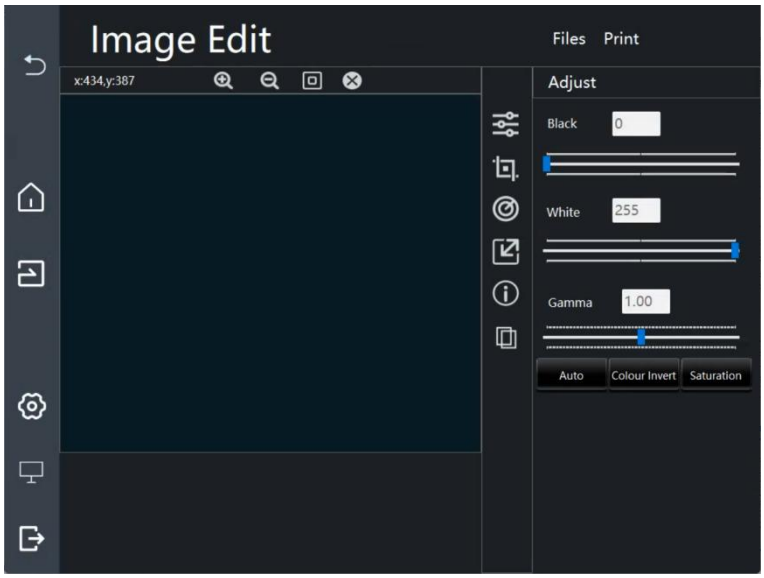
Cumulative: taking multiple photos.

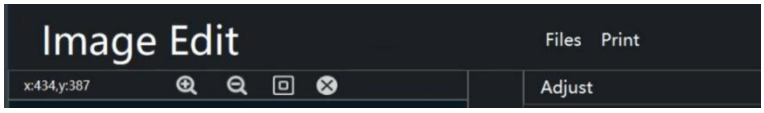
Multiple: taking multiple photos, each photo can set different exposure time.

Photo: hit for taking photo, same as auto photo, marker preview fist, then, taking photos for samples, hit  for stop.

2.3 Image settings

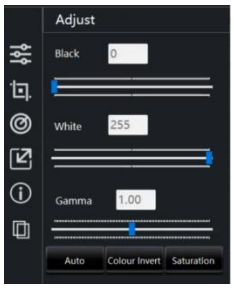
After photo, will navigate to the page of image settings, can be also navigated manually.





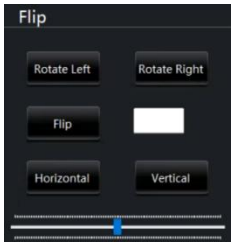
1. Toolbar: Includes functions such as File, Print (Print can be set to print images or reports. The printed report will save the images and the camera parameters used for taking photos in PDF format), Zoom In/Out for images, Restore Original Image, Close, and Mouse Position Coordinates.

2. Adjust: black/white, manual and automatic gamma. Functions for reversing the black and white of the image, and marking the over-saturated areas.

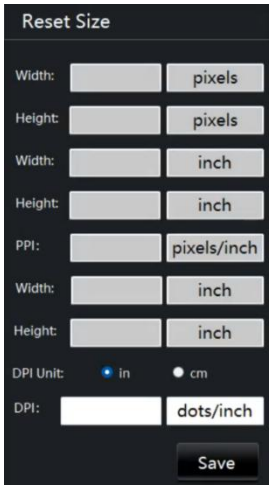


3. Cut: selecting and cropping images, as well as copying and pasting.

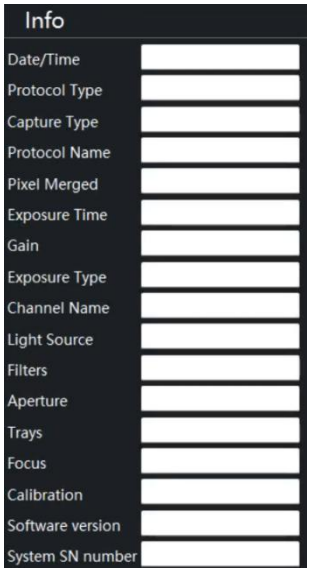
4. Flip Button: Counter-clockwise 90°, Clockwise 90°, custom angle flipping, horizontal flipping, and vertical flipping.



5. Reset image size: show current pixel and dpi. dpi can be set to save the image separately.



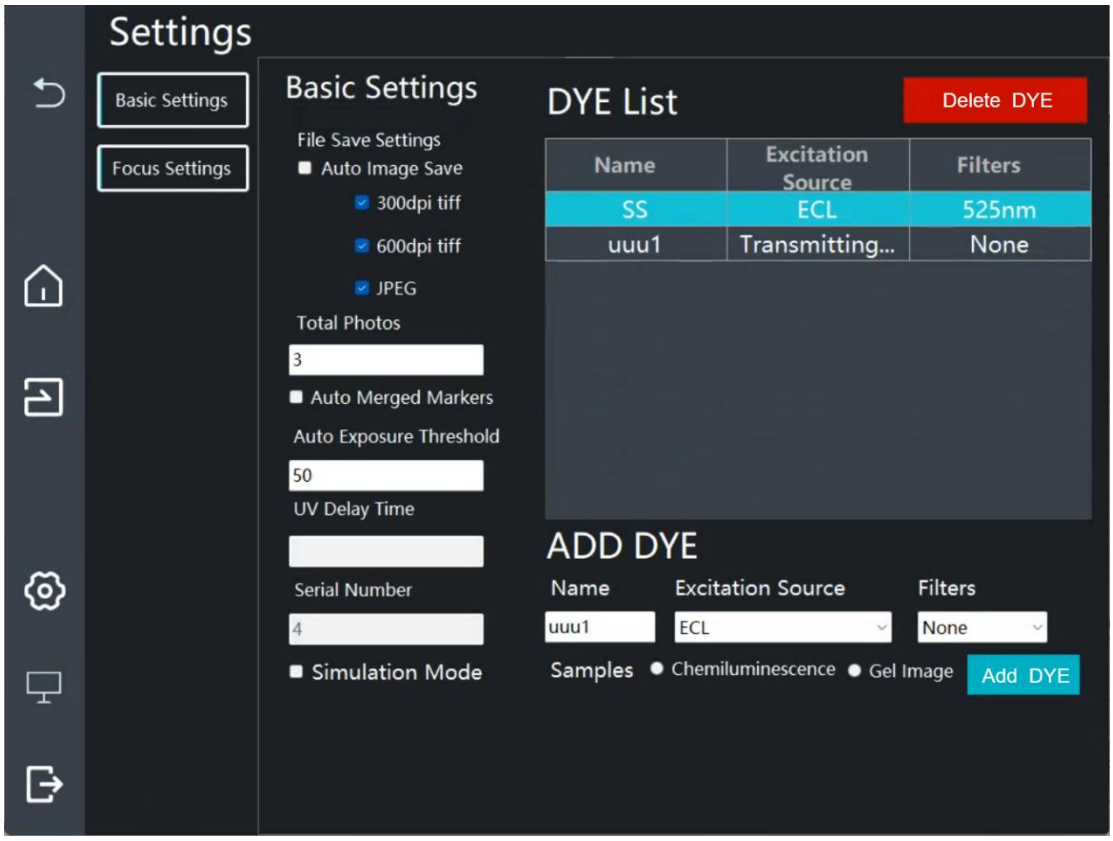
6. Info: Display the camera parameters and system parameters used for taking photos.



7. Images Merged: adding the images of samples and marker manually, hit the merged image to merge two images into one image.

Note: The marker images should be in a white background format.

2.4 Basic settings



1. File saving settings: Multiple saving formats for choices, 300tiff, 600tiff, and jpeg, etc. Hit the auto saving button , the images will be saved by the selected format in the corresponding folder.

2. Cumulative number of photos taken: default quantity is 3 photos.

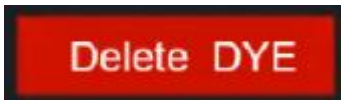
3. Automatic marker merging: default for selection, export merged image of samples and marker automatically, if not selected, image of samples and marker will be exported separately.

4. Automatic exposure threshold: The threshold for taking photos during automatic exposure can be set (range: 1 - 255).

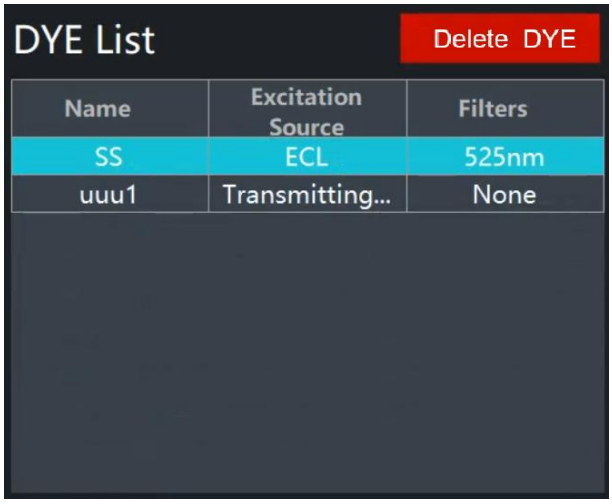
5. Ultraviolet delay time: None.

6. Serial number: Default.

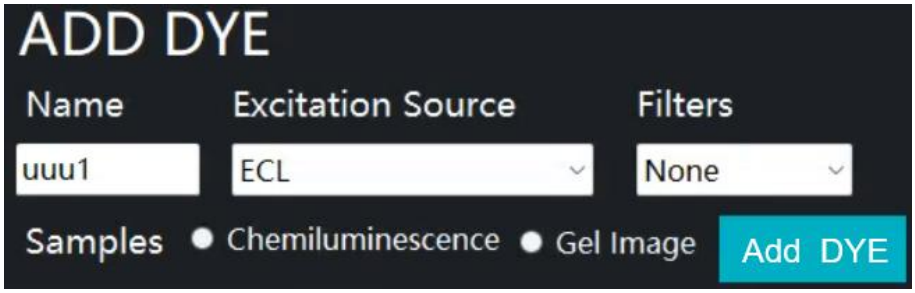
7. Dye list: Displays the names of saved dyes, excitation light source, and filter. Settings for chemical imaging only is invalid.



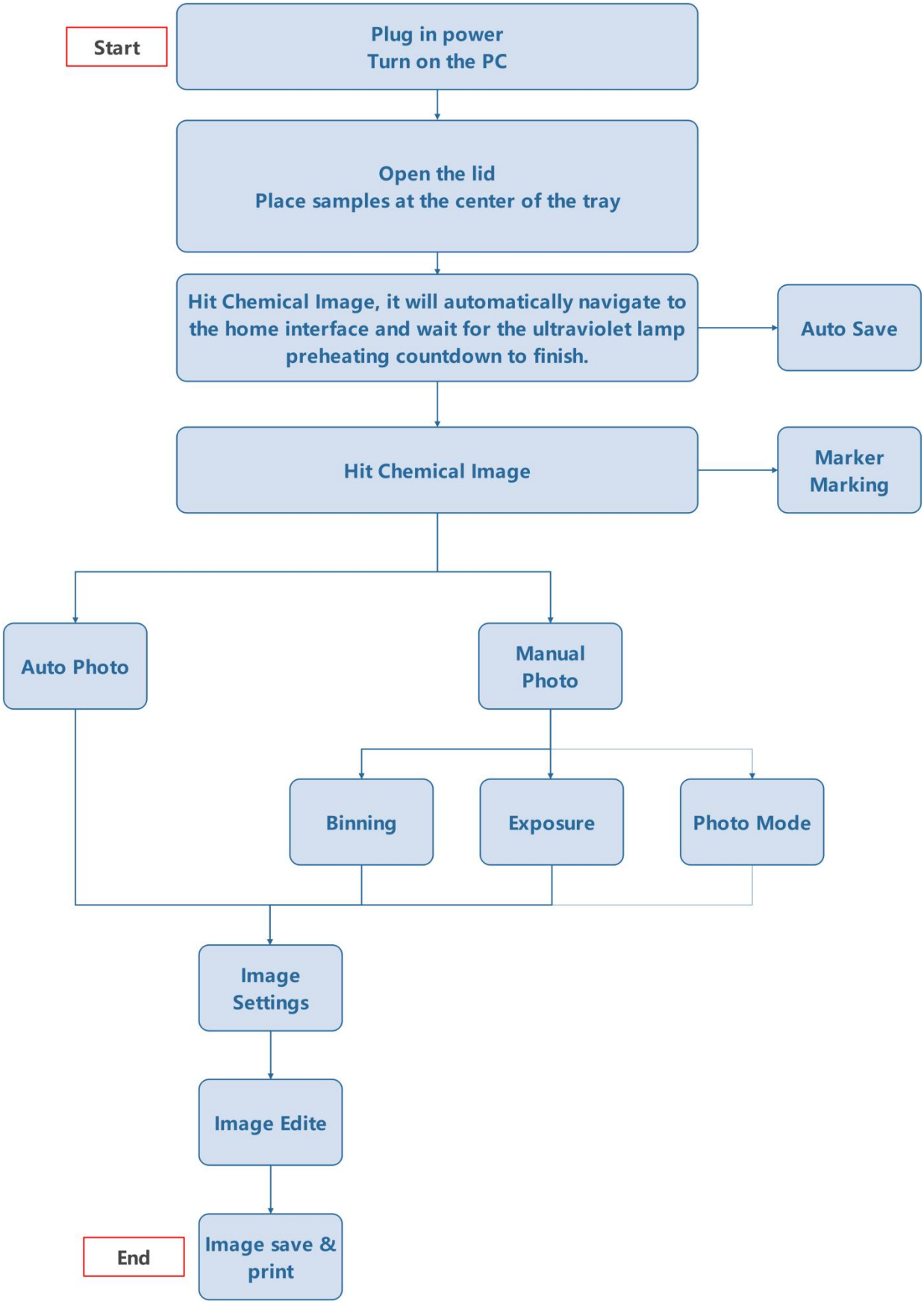
Delete the saved dye information.



8. Add dye: Can add new dye settings. Set the combination of the excitation light sources and the filters. You can set the name of the combination, as well as the type of samples it is applied to. Settings for chemical imaging only is invalid.



2.5 Basic process



3. Quality guarantee

(1) The warranty is 1 year since the date of sales.

(2) The warranty excludes the following situations otherwise it is charged.

a. No presentation of warranty card and invoice.

b. The invoice is revised.

c. Improper operation or accident factors.

d. The damage is caused by the user’s repair.

e. Out of the warranty, the instrument is still in usage after repair.

Makes research and development simple

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