MC-4KE Camera Manual

CONTENTS

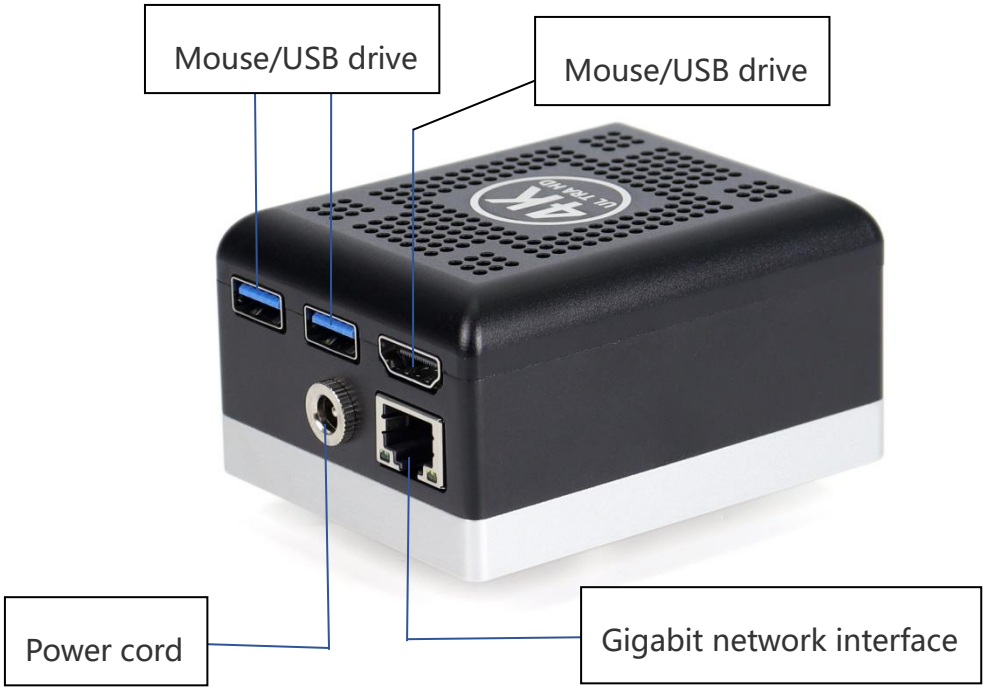
Chapter 1 Functionality and Features

MC-4KE HD industrial camera with 4K (3840×2160) imaging, frame rate up to 60 fps; can be connected to the network to transfer pictures or video; also can be output to the computer via USB3.0 video; menu is easy and convenient to use; mouse operation, U-disk storage for video recording, video playback, etc.; and provide dozens of multiple measurement tools.

1.1 Camera characteristics

- SONY high-performance photoreceptor chip, low noise, high sensitivity, high colour reproduction;
- 4K resolution video transmission (3840*2160) at 60 frames per second with no lag or delay;
- Adopting the latest long and short frame super wide dynamic technology, perfectly solving the problem of high reflection;
- 8 million HD picture storage, can be stored locally or via network to PC.
- HD video recording; instant video playback.
- Custom interface editing, custom template editing functions;
- HDMI2.0 interface adaptive 4K, 1080P mode switching;
- Supports mouse operation (can be wireless);
- The camera has a built-in image measurement system;
- Supports box-selected measurement methods for faster measurement and higher accuracy;
- Supports automatic edge-finding for more accurate measurements;
- More quick-operation measurements at the touch of a button;
- One-touch exposure, one-touch white balance;
- Support network video transmission to solve remote work problems;

1.2 Camera structure diagram



1.3 Status Indicators

car indicator	Status Description
Power indicator (green)	Green light on: Normal power supply; Green light off: abnormal power supply; (check power adapter)
Status indicator (blue light)	Blue light is on: the system is working normally; Blue light Red light blinks alternately: the system is storing pictures or videos;

1.4 Technical parameters

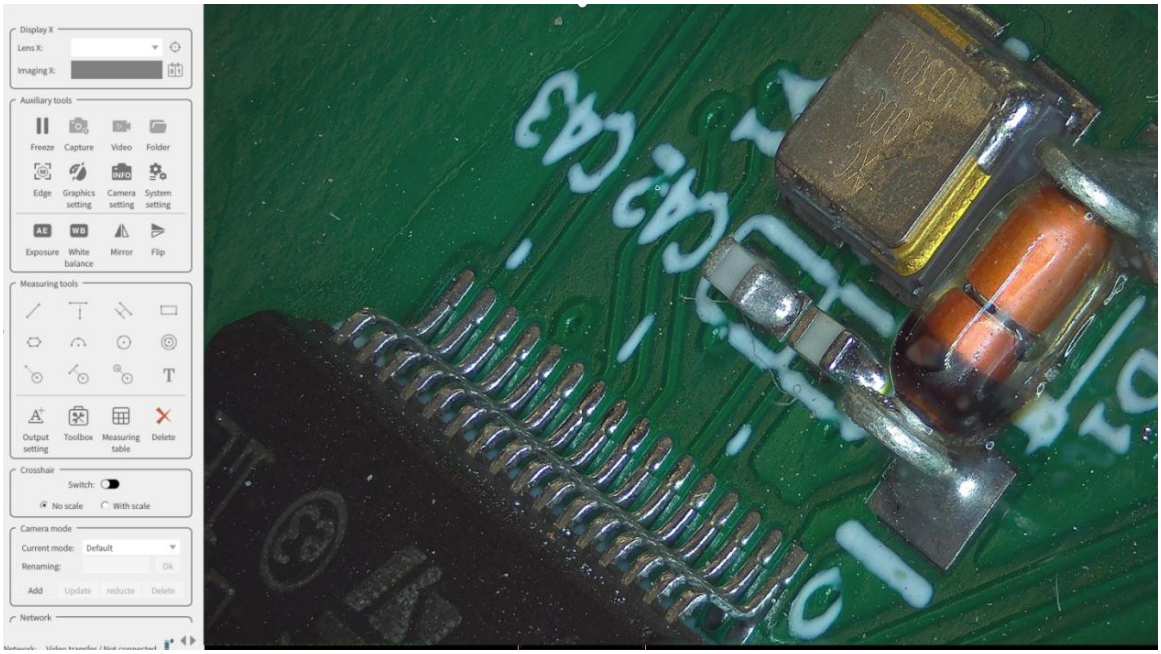
MC-4KE			
chip structure	Ultra HD Smart IP Camera SOC	**optical size**	1/1.8 inch
operating system	LINUX	**pixel size**	2.0um*2.0um
kernel structure	ARM Cortex A55	**Resolution**	3840*2160
Main Frequency Speed	1.2GHz * 4	**Frame rate**	60 fps
intelligent computing (computing) staircase (for residential buildings)	Built-in Intelligent Computing Acceleration Engine Built-in binocular depth acceleration unit Built-in Matrix Computing Acceleration Unit	**USB port**	USB3.0*2
video output	HDMI digital output	**network interface**	1000Mb
operating temperature	-20 ~ 70°C	**Lens Interface**	C interface
Overall dimensions	86*66*45mm	**Weight**	300g
Voltage input	DC 12V	**Power Consumption**	5W

Chapter 2 Camera Features Description

2.1 Switching on

First of all, the HDMI high-definition cable into the HDMI interface, and then sequentially plugged into the mouse, the power supply (12v), the camera in front of the blue and green lights will light up and the start-up screen appears on the monitor, and after a short wait, it will enter the main interface of the camera. Power on before you must first connect the monitor, the camera will automatically display settings according to the resolution of the monitor, if not connected to the monitor is uniformly set in accordance with the resolution of 1920 × 1080.

2.2 Main interface



2.3 Showing and hiding the menu bar

Double-clicking the right mouse button outside of the on-screen menu closes and opens the menu for easy viewing of the full-screen image.

2.4 Calibration

"Lens Magnification" refers to the current optical magnification of the lens.

"Imaging Magnification" refers to the actual current image magnification.

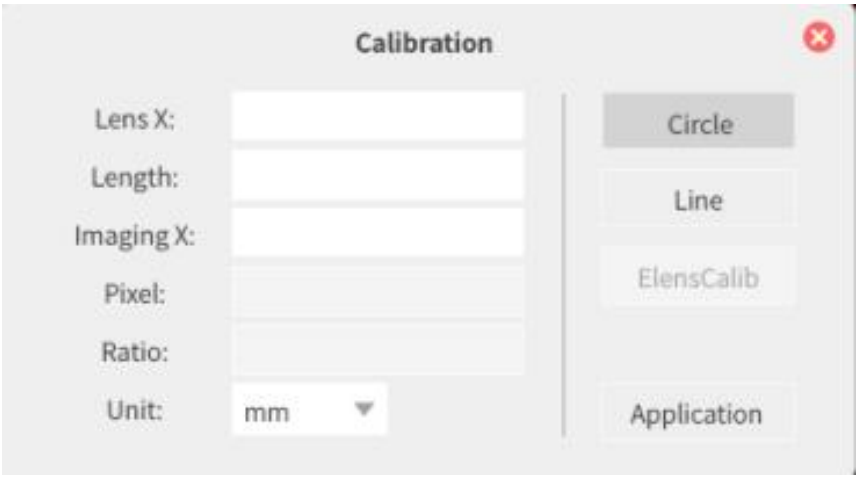
"  "Click here to see the calibration factor for the current magnification. For example, you can know: 1 pixel point = how many mm.

2.4.1 New calibrations

You need to log in to the administrator before calibration and log in to make calibration's or changes, the purpose is to prevent the user may change the calibration coefficients without authorisation, which may cause inaccurate measurement results. Specific reference to the system settings in the login administrator, after logging in the calibration column changes as shown in the figure below:

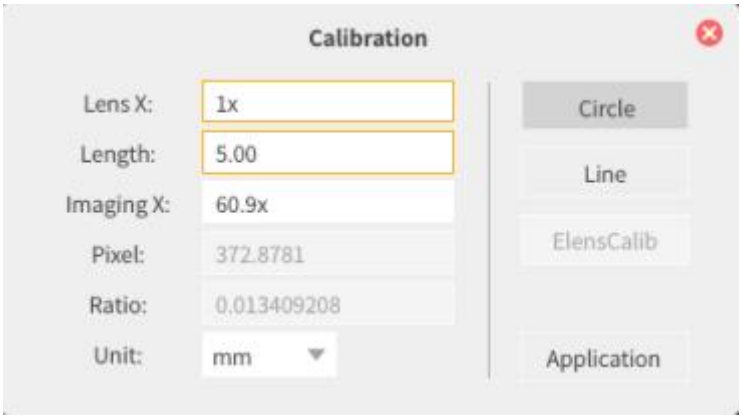
Calibration symbols appear after logging in

Adjust the lens magnification, place the calibration plate at the centre position under the lens, focus clear, click the calibration icon shown above to pop up the calibration dialogue box, as shown in the following figure:



According to the need to select the "calibration mode", select "line" or "circle", enter the creation of calibration state, such as selecting the circle calibration mode, the circular calibration plate placed under the lens. After the image adjustment is clear, select any three points on the outer edge of the circle, you can draw a circle, check the circle drawn and the calibration plate of the circle overlap, if you are not satisfied with the circle can be redrawn until you are satisfied. Then enter the current lens magnification, the actual diameter of the calibration circle and other information in the dialogue box. At this time in the menu "calibration"

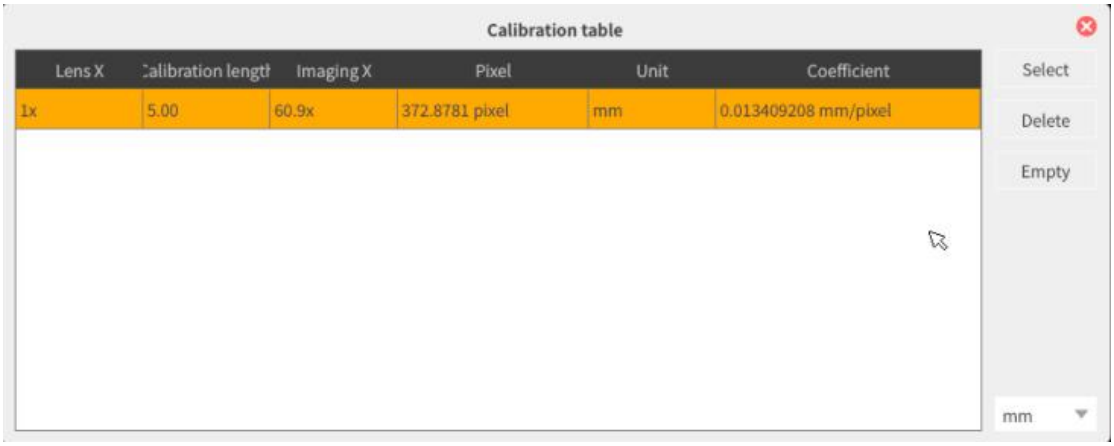
dialogue box will appear in the current calibration information. After calibration, if the lens is a zoom lens, you can switch to another magnification to continue calibration, repeat the operation just now on the software can be another magnification of the calibration. Repeat the above calibration in turn, you can complete the calibration between different magnification of the lens. Imaging magnification that is, the total magnification, the default calculation by 21-inch monitor, if other sizes of the monitor can be changed in the system settings inside the settings. After clicking Apply, the calibration bar in the menu bar will automatically switch to the current calibration of the magnification, after the calibration is completed, click the red circular icon in the upper right corner to close the dialogue box.



2.4.2 Switching multiplier

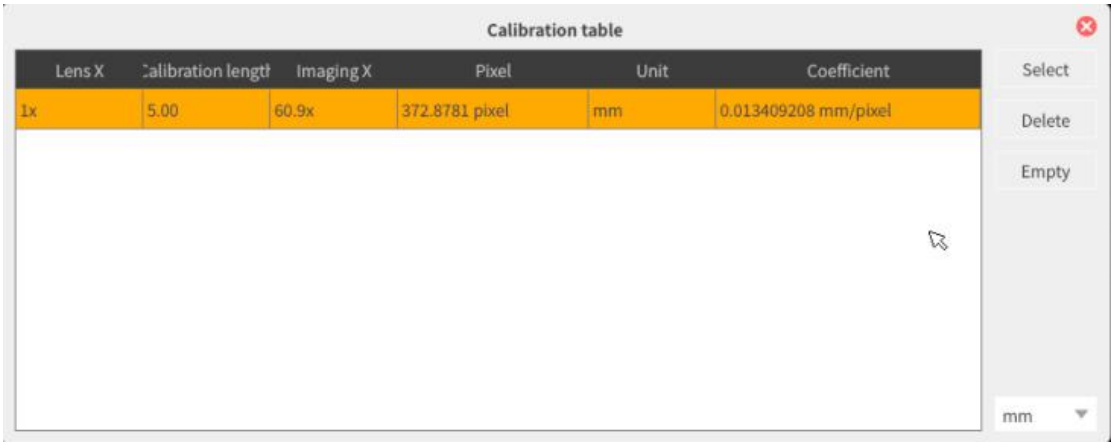
After the calibration is completed, if the magnification is switched during the measurement process, the software should also be switched to the corresponding magnification calibration, click on the calibration list

icon  on the right side of the calibration column to bring up the calibration list dialogue box, select the calibration line corresponding to the current lens, click on the selection icon therefrom, and the calibration box in the menu bar will be switched to this calibration automatically, as shown in the following figure:



2.4.3 Changing the calibration

Refer to the above figure, select a calibration line, click on the right side of the Delete icon to delete the calibration, click on the Clear icon to delete all the calibrations, the calibration of the lower right corner of the unit of measurement display can be selected, pixel,mm ..... The unit of measurement can be selected in the lower right corner of the calibration, pixel,mm



2.5 Measurement functions

2.5.1 Description of measurement tools

(1)  Two-point line ---- points Take two points and draw a line segment.

(2)  Angle ----- first draw a line through two points, and then draw another line through two points after the system will automatically calculate the angle between the two lines.

(3)  Parallel Lines ---- First draw a line through two points, then

continue to find a point on the other line, a second line will be drawn automatically, the system will automatically measure the distance between these two lines.

(4)  Rectangle ---- You can select two points and the system will draw a rectangular square based on these two points.

(5)  Polygons ---- can be taken by clicking on the points according to the location of the polygon and the system will automatically connect the points. When selecting the last point, you can press the right mouse button so that the system will automatically connect the first point after the last point to form a closed figure. Note that the polygon can only have a maximum of 10 points.

(6)  Arc ---- can draw a segment of arc through three points.

(7)  Circle ---- A circle can be drawn by taking a circle at three points.

(8)  Concentric Circles ---- You can draw the first circle by taking the circle at three points then dragging the mouse over the edge of the second circle to select a point to draw the second circle.

(9)  Point to Circle ---- A point is first selected and then a circle is drawn through the three points. The system automatically measures the distance from the first point to the centre line to the centre of the circle.

(10)  Line to Circle ----- First draw a line through two points and then find a circle by taking three points and measure the distance between the centre of the line and the centre of the circle.

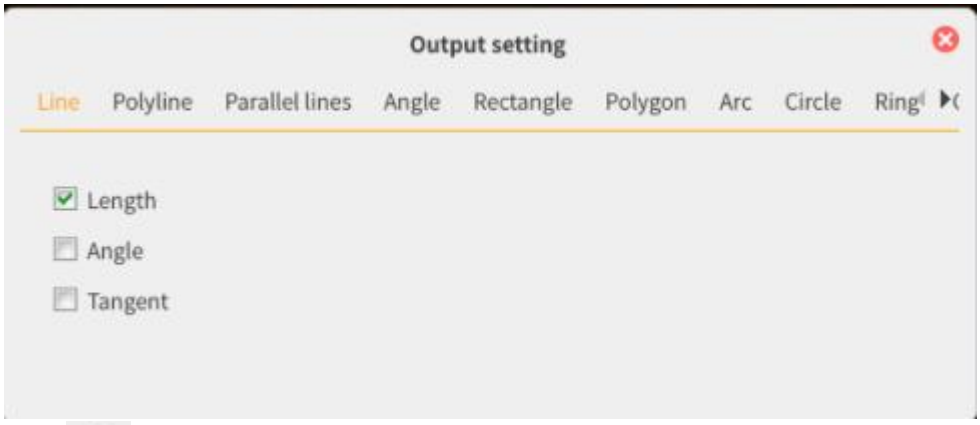
(11)  Circle Centre Distance ---- Draws two circles by taking three points. The system automatically measures the distance between the centres of the two circles.

(12)  Text annotation ---- allows you to annotate text information at a specified location on the screen.

(13)  Clear ---- removes all measurement tools from the interface.

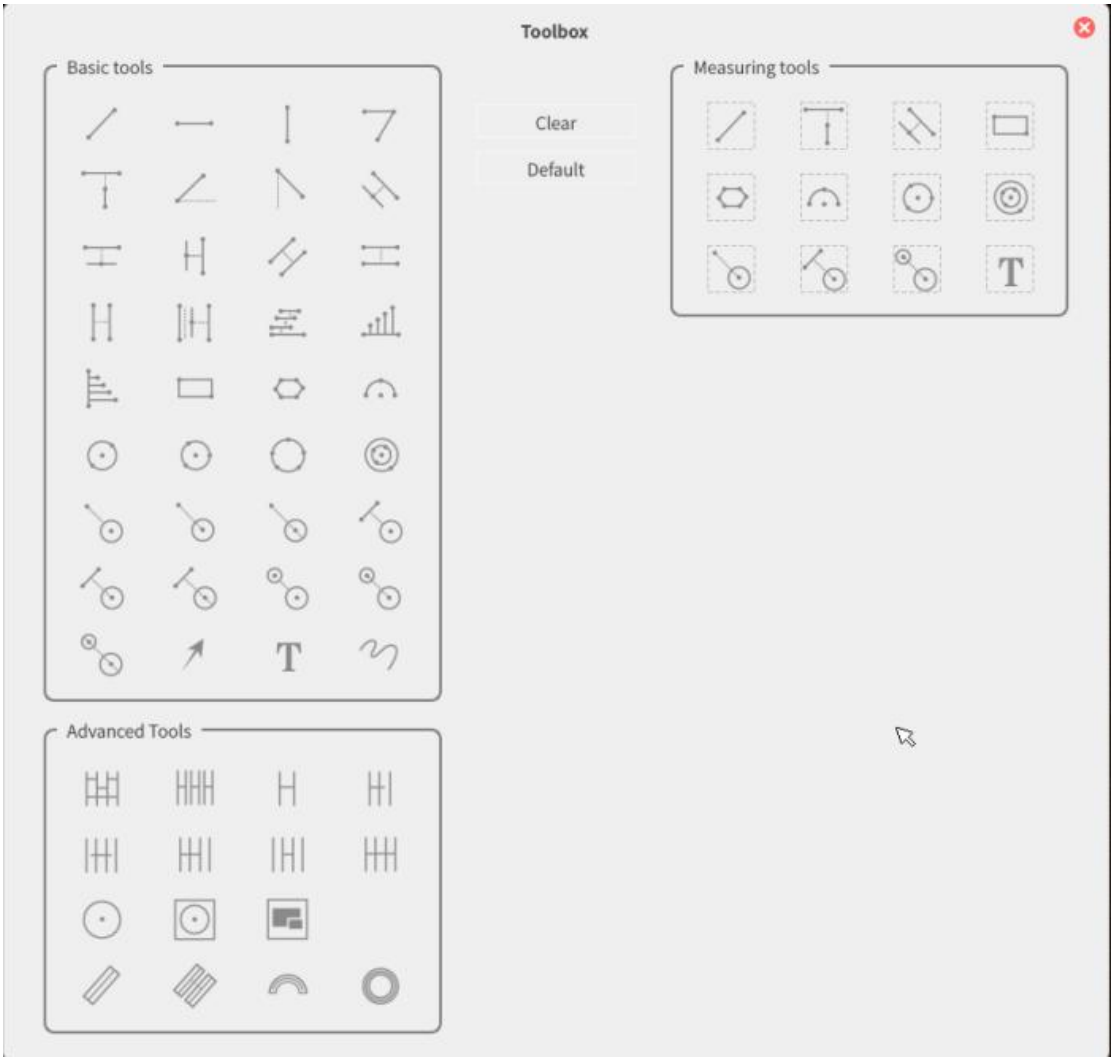
(14)  Output Settings ---- sets the data data of all measurement features, such as circle can choose to display radius/diameter/perimeter/area/centre of circle, angle can choose to display acute angle or supplementary angle .....

As shown in the figure below:



(15)  Toolbox ---- a variety of measurement tools to choose from, you can customise the measurement tool table, as shown in the figure below, drag out a certain icon inside the measurement tool, drag the tool inside

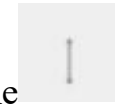
the basic tool to this position, you can replace the dragged out tool, or click on the clear icon, you can empty the measurement tool, according to the needs of the left side of the basic toolbar tools dragged to the measurement tool inside the measurement tool to achieve the customisation of the measurement in the menu bar tools in the menu bar.



As we have previously introduced 12 measurement tools, here are the new basic tools that have been added

(1)horizontal line 

Draw a line segment by taking two points horizontally.

(2) Vertical straight line 

Point take two vertical points to draw a line segment.

(3) Four-point perspective 

Click the left mouse button on the four dots to generate two straight line angles.

(4) Horizontal angle 

Click the left mouse button to select the first point, move the mouse, click the left mouse button to select the second point, complete the angle measurement of the line connecting these two points with the horizontal line

(5) Vertical angle 

Click the left mouse button to select the first point, move the mouse, click the left mouse button to select the second point, complete the angle measurement of the line connecting these two points with the vertical straight line

(6) Three-point transverse parallel 

Click the left mouse button, drag the mouse, click the left button to generate a horizontal line, and then click a point to automatically calculate the distance between the two horizontal lines.

(7) Three-point vertical parallels 

Click the left mouse button, drag the mouse, click the left button, generate vertical lines, and then click a point to automatically calculate

the distance between two vertical lines.

（8） Four-point arbitrary parallel lines 

Click the left mouse button, drag the mouse, click the left button to generate a straight line, and then click the two points to automatically calculate the distance between two parallel lines.

（9） Four-point transverse parallel 

Click the left mouse button, drag the mouse, click the left button to generate a horizontal straight line, and then click the two points to automatically calculate the distance between the two parallel lines.

（10） Four-point vertical parallel 

Click the left mouse button, drag the mouse, click the left button to generate a vertical straight line, and then click the two points to automatically calculate the distance between the two vertical parallel lines.

（11） Distance from the centre of a parallel line to the centre of a straight line 

Click the left mouse button to select four points to automatically generate the centre of a parallel line, then click two points to generate a straight line and automatically calculate the distance between the two lines.

（12） Distance between two adjacent parallel lines 

Click the left mouse button to select multiple points, generate multiple parallel lines, and automatically calculate the distance between two adjacent parallel lines.

（13） Distance from each point to the horizontal datum 

Click the left mouse button to select two points to generate a horizontal line, drag the mouse to select multiple points to automatically calculate the distance from each point to the horizontal datum line.

（14） Distance from each point to the vertical datum 

Click the left mouse button to select two points to generate a vertical straight line, drag the mouse to select multiple points to automatically calculate the distance from each point to the vertical datum line.

(15) Drawing a circle with two points 

Click the left mouse button to select the first point on the circle, move the mouse and click the left mouse button to select the second point on the circle to complete the circle drawing, select the line connecting the two points as the diameter of the circle.

（15） Drawing Circles with Three Points 

A circle can be drawn by taking a circle at three points.

(16) Shortest distance from a point to a circle 

Click the left mouse button to select the first point, move the mouse to select three more points to draw the circle and complete the measurement

(17) Longest distance from a point to a circle 

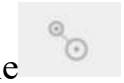
Click the left mouse button to select the first point, move the mouse to select three more points to draw the circle and finish.

(18) Shortest distance from a straight line to a circle 

Click the left mouse button to select two points to draw a straight line, and move the mouse to select three points to draw a circle to complete the measurement.

(19) Longest distance from a straight line to a circle 

Click the left mouse button to select two points to draw a straight line, and move the mouse to select three points to draw a circle to complete the measurement.

(20) Shortest distance from circle to circle 

Click the left mouse button to select three points to draw a circle, move the mouse to select three more points to draw another circle to complete the measurement

(21) Longest distance from circle to circle 

Click the left mouse button to select three points to draw a circle, move the mouse to select three more points to draw another circle to complete the measurement

（22）arrow indication 

Drawing arrows to mark the target area

（23）text markup 

Labelling and text description of the screen

2.5.2 Advanced tools

(1) Inner parallel spacing and outer parallel spacing 

This is an edge auto-detection tool that automatically detects edges within a rectangle. Click the left mouse button to select a point as one of the vertices of the rectangle, move the mouse to frame the four edges into the rectangle, and click the left mouse button to complete the rectangle framing.

(2) Inner parallel line spacing 

This is an edge auto-detection tool that automatically detects edges within a rectangle. Click the left mouse button to select a point as one of the vertices of the rectangle, move the mouse to frame the four edges into the rectangle, and click the left mouse button to complete the rectangle framing.

(3) Automatic detection of parallel line distance 

Boxing and triggering detection by the mouse is also an edge auto-detection tool that automatically detects edges within a rectangle. Click the left mouse button to select a point as one of the vertices of the rectangle, move the mouse to frame the four edges into the rectangle, and click the left mouse button to complete the rectangle framing.

(4) Distance between two parallel lines 

This is an edge auto-detection tool that automatically detects edges within a rectangle. Click the left mouse button to select a point as one of the vertices of the rectangle, move the mouse to frame the four edges into the rectangle, and click the left mouse button to complete the rectangle framing.

(5) Outer parallel spacing (Article 2.4) 

This is an edge auto-detection tool that automatically detects edges within a rectangle. Click the left mouse button to select a point as one of the vertices of the rectangle, move the mouse to frame the four edges into the rectangle, and click the left mouse button to complete the rectangle framing.

(6) Inner parallel spacing (1-3 lines) 

This is an edge auto-detection tool that automatically detects edges within a rectangle. Click the left mouse button to select a point as one of the

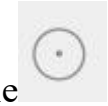
vertices of the rectangle, move the mouse to frame the four edges into the rectangle, and click the left mouse button to complete the rectangle framing.

(7) Parallel line centre distance 

This is an edge auto-detection tool that automatically detects edges within a rectangle. Click the left mouse button to select a point as one of the vertices of the rectangle, move the mouse to frame the four edges into the rectangle, and click the left mouse button to complete the rectangle framing.

(8) Distance between parallel lines 

This is an edge auto-detection tool that automatically detects edges within a rectangle. Click the left mouse button to select a point as one of the vertices of the rectangle, move the mouse to frame the four edges into the rectangle, and click the left mouse button to complete the rectangle framing.

(9) Tap Circle 

This is a circle auto-detection tool. Click the left mouse button in the garden to complete the automatic detection of the circle

(10) Area Selection Circle 

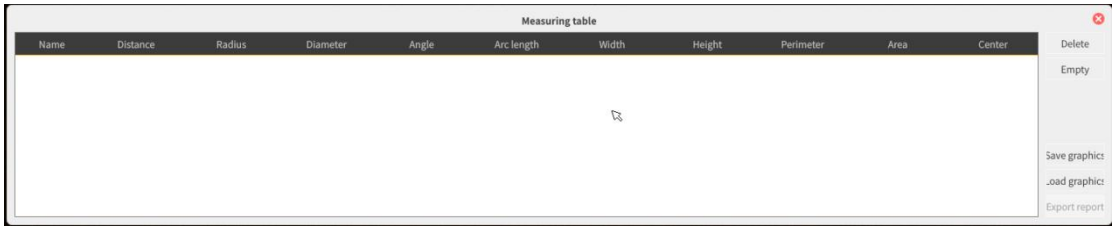
This is an automatic detection tool for circles. Click the left mouse button to select a point as one of the vertices of the rectangle, move the mouse to

frame the circle to be detected as a rectangle, and click the left mouse button to finish the detection.

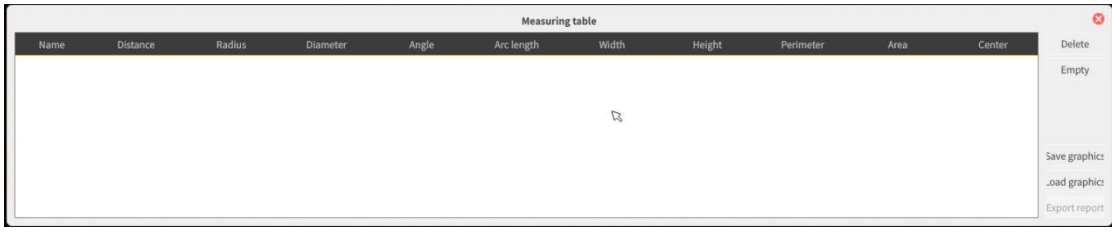
(11) Automatic Contour Inspection 

This is an automatic detection tool for outlines. Click the left mouse button to select a point as one of the vertices of the rectangle, move the mouse, and click the left mouse button to complete the rectangle box selection.

（16）  Measurement table ---- Clicking on the icon opens a record of the measured values of the tools measured in the current viewport.



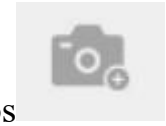
Referring to the above figure, select a data row and click the Delete icon on the right side to delete the measurement row and the graph on the viewport will also be deleted, and click the Clear icon to delete all the measurement rows, as shown in the following figure:



2.6 Auxiliary tools

2.6.1 Freeze 

If the machine is shaking unsteadily in the middle of drawing, you can select the Freeze button to freeze the current screen. Pressing this button again will release the freeze condition.

2.6.2 taking photos 

Click on the Measurement Picture Take Picture icon to save the image and data from the current screen as a picture. The format is BMP or JPG or PNG.

2.6.3 Video recording 

Insert the USB flash drive, click the video icon, the video dialogue box will pop up, you can set the video file name. The video file format is H.264. The video can be paused and played back for real-time viewing, as shown in the figure below: 

2.6.4 Folders 

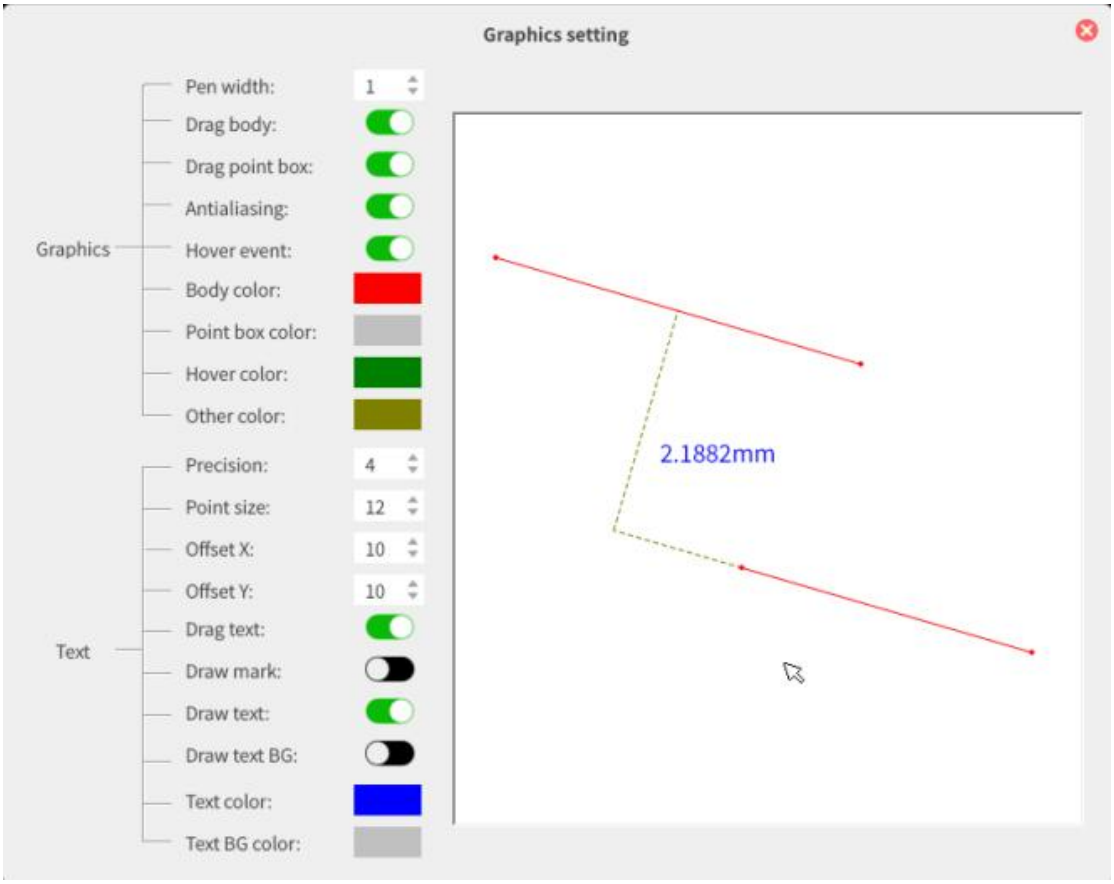
Click on the folder icon to save a preview of the picture. You can play back previews of previously saved pictures.

2.6.5 Edge detection 

If you select Manual  to pick a point on the screen, the point will be picked up wherever the mouse point is. If you choose the automatic intelligent  point selection, the system will automatically find the edge according to the 20 pixels around the mouse point after the mouse point. This way can reduce the human error of point selection. However, there must not be more than 2 edges around the selected point, otherwise it may be selected incorrectly.

2.6.6 Graphic settings 

Clicking on the icon brings up a dialogue box. The user can set the line width of the drawn image, the colour, the font size of the label after measurement, the colour and whether the label is closed, the length and other settings.



(1) Graphics

1. Brush width - the width of the line to be drawn, up to a maximum of 6 pixels.

2. Drag and drop the body - if it is closed, then the graphic will not be able to drag and drop to change the position; if it is open, then the graphic can be dragged and dropped to the specified position after it is drawn.

3. Drag and drop point frame: You can drag and drop any position at either end of the drawn line segment to change the angle of the segment.

4. Smoothing - refers to the drawing of the line if the line is inclined to produce jagged, if you turn on the balance of processing will improve the jagged lines.

5. Hover events.

6. Body Colour: The body colour is the final rendering colour of the drawn line, double click on the colour block to select any colour;

7. Dot box colour

8. Hover Colour: is a colour that will be specified when the line is drawn, and when the drawing is complete the colour will change to the body colour (i.e. the colour chosen by the body)

9. Other Colour: is the colour of the line connecting the two tool options.

(2) Text

1. Accuracy: You can set the number of decimal places after the decimal point of the measurement value, up to 4 places;

2. Text size: You can set the size of the font size for the display of measurement values, the maximum is 48 font.

3. Offset X: You can set the distance (in X direction) of the measurement result display figure from the measurement line in pixel points.

4. Offset Y: You can set the distance (Y direction) of the measurement result display figure from the measurement line in pixel points.

5. Drag and drop text: When closed, it will not be possible to move the text of the measurement display; if it is open, it will be possible to drag and drop the text of the measurement and move it to a suitable position. At this time, it should be noted that: if the body of the drag and drop is closed, the measurement of the text can be achieved to change the position of the text, if the body of the drag and drop is open, then it will be the priority of the body of the drag and drop function, that is, at this

time, the drag and drop will be moved together with the drawing line and the text.

6. Drawing marking: if you open it, you can give the first marking for each measurement, if you close it, it will not show the marking but only the result.

7. Drawing text: When it is closed, the measurement result is not displayed; when it is open, the measurement result is displayed.

8. Draw text background: when open will appear in the measurement results of the background colour block, the function is mainly to distinguish sometimes pattern background will be closer to the measurement of text, so that it is not easy to observe the measurement results. When it is closed, there will be no background colour block.

9. Text colour: double-click the colour block can choose any colour as the measurement data display colour.

10. Text background colour: Select the measurement result background colour to distinguish the measurement data colour and make the measurement result text more conspicuous.

2.6. 7 Camera Settings 

Camera settings allow you to adjust various parameters of the camera to achieve the best image results.

(1)**Exposure:** With the slider, you can adjust the exposure time. Longer exposure times increase the brightness of the image and are suitable for dimly lit environments, while shorter exposure times are suitable for brighter environments. The camera's exposure function also has two working standard and enhanced modes. In standard mode, the camera does not increase brightness by reducing the image sampling frame rate to obtain a larger exposure time. In Enhanced Mode, the camera automatically reduces the sampling frame rate to obtain a larger exposure time for the user (the camera samples at a minimum of 25 frames per second to improve smoother video results).

(2)**Gain:** With the slider bar, the ISO gain of the camera can be adjusted. By adjusting the ISO gain, the camera's light sensitivity is changed thus adjusting the brightness, but too high an ISO gain may introduce image noise.

(3)**Brightness:** With the slider, the camera displays brightness compensation that can be adjusted. Brightness compensation allows you to force a certain amount of brightness to be added or subtracted from the image, but too high or too low will affect the contrast of the image.

(4)**Red:** With the slider, you can adjust the red component of the camera image.

(5)**Green:** With the slider, you can adjust the green component of the camera image.

(6)**Blue:** With the slider, you can adjust the blue component of the camera image.

(7)**Wide Dynamic:**

The Wide Dynamic function integrates the detail information of bright and dark areas by merging the image information under different exposures to achieve a more comprehensive coverage of the overall scene. Adjusting the slider bar allows you to change the Wide Dynamic composite ratio and change the display brightness of the light and dark areas, so that you can see the dark areas clearly as well as the light areas. The camera integrates 4 levels of wide dynamic range adjustment for environments with different light to dark ratios. The larger the dynamic

range level, the larger the ratio of light to dark is covered, and the greater the difference between visible light and dark areas.

(8)**Contrast:** Adjust the contrast parameter by sliding the bar. Increasing the contrast enhances the difference between light and dark in different areas of the image, making the image sharper and clearer. Decreasing the contrast reduces the difference between light and dark in the image, making the image look softer and smoother.

(9)**Saturation:** Using the slider, adjust the Saturation parameter. Increasing saturation makes the colours in the image more vibrant and brighter, while decreasing saturation makes the colours in the image softer and lighter.

(10)**Sharpness:** Adjust the Sharpness parameter by using the slider. Increasing the sharpness makes the edges in the image clearer and sharper, while decreasing the sharpness makes the image smoother. The camera has two sharpening modes, Standard and Enhanced. In standard mode, the camera sharpens only the edges of the image. In Enhanced mode, not only the edges of the image are sharpened but also the texture of the image.

Advanced Mode

Click "Advanced Mode" to add more adjustment parameters.

(1)**Hue:** Adjust the Hue parameter by using the slider bar. Adjusting the hue changes the colour bias of the image, decreasing the hue makes the image greenish, increasing the hue makes the image purple.

(2)**De-fogging**: Adjust the de-fogging parameters by using the sliders. Increasing the degree of defogging reduces the fog effect in the image (the image has a layer of grey and the contrast is lower) and makes the image clearer.

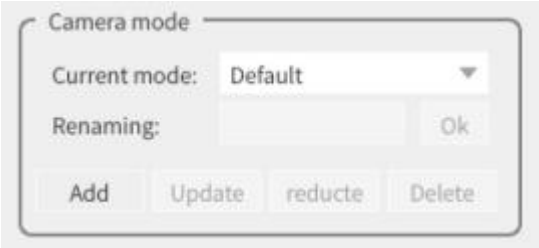
(3)**Detail Contrast:** Adjust the detail contrast by sliding the bar. Detail Contrast is different from Contrast in that Contrast adjusts the overall contrast between dark and light areas of the image. Detail Contrast adjusts the contrast between dark and light in each area of the image separately, thus improving the clarity of the details in the dark and light areas of the image.

(4)**Purple Edge Removal:** Adjust the Purple Edge Removal parameters via the slider. These parameters may include the degree of purple edge removal, intensity, etc. Purple edges are generally caused by poor lens resolution, resulting in light refraction deviations. The phenomenon is usually present at the highlighted edges of the image and can be corrected by violet edge correction.

(5)**Exposure Compensation:** Adjust the Exposure Compensation parameter using the slider. This parameter is primarily used by the camera's Auto Exposure function to change the balance of the brightness of the auto exposure. A negative value of Exposure Compensation decreases the average brightness of the exposure, while a positive value increases the average brightness.

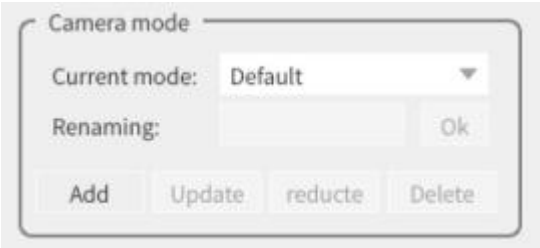
Camera parameter saving

According to different products you can adjust the camera-related parameters, and you can save them after adjustment. Next time you can open it again, the camera automatically loads the original parameter values. It is convenient for users to manage the environmental parameters of multiple products.



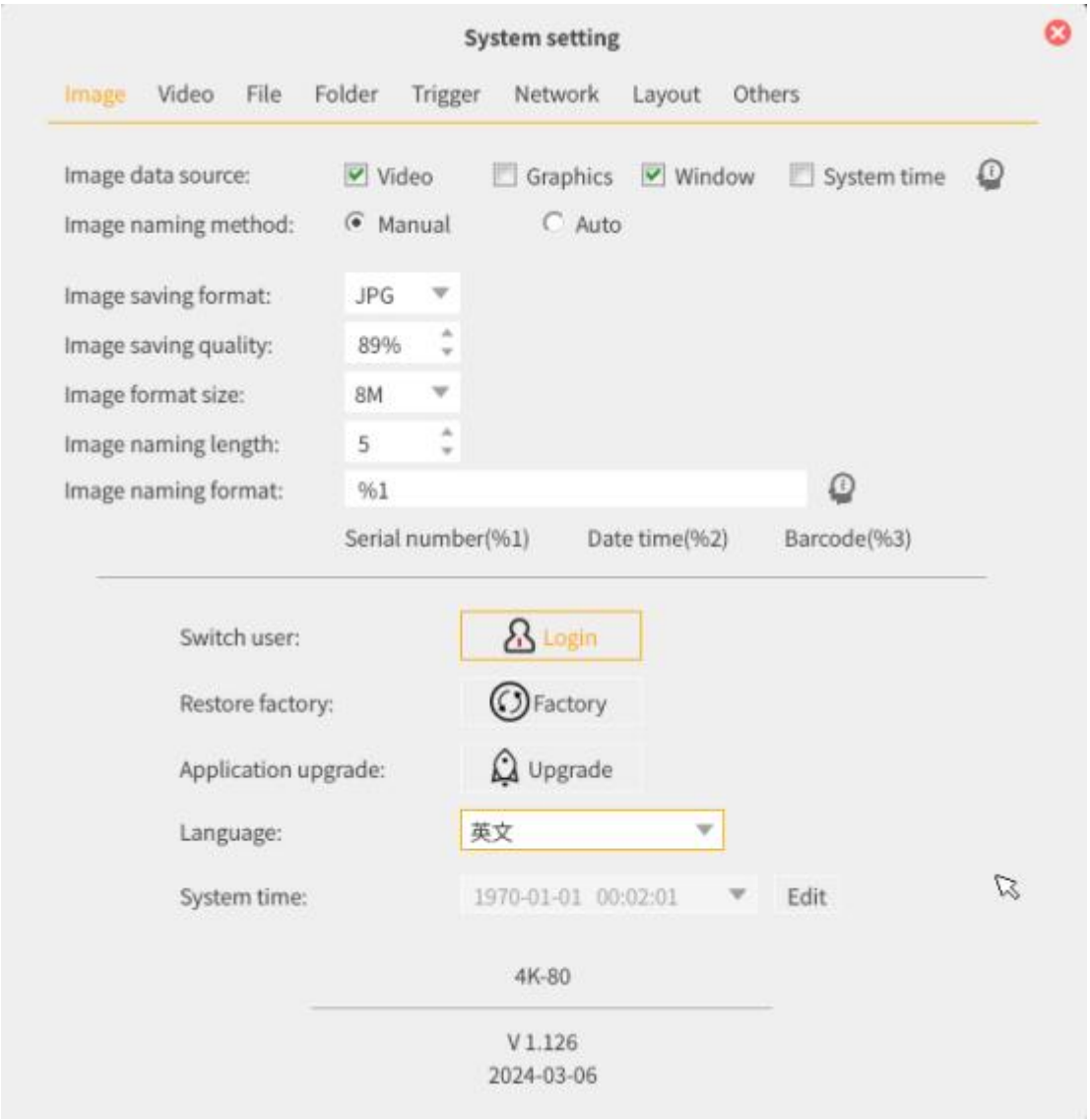
Camera parameter loading

Allows managers to load previously saved camera parameters and quickly switch between product usage environments.



2.6.8 system setup 

Click the System Settings icon to bring up the System Settings dialogue box, as shown below:



(1) Image

Image data source:

Video - Store the current video stream image when taking a picture;

Scene - save the plotted graphs (aka measurement graphs and results) when taking a picture;

Window - Save the menu bar in the picture when taking a picture.

Image naming method: Manual - a dialogue box pops up when you take a picture, you can edit the name and file format when you save the picture;

Auto --- Pictures are automatically stored in the set folder according to the set file format and naming method when taking pictures. That is, it will not pop up a dialogue box for selection but save the picture directly.
Image saving format: you can choose to keep the format of the picture, JPG is a compressed format, the image quality is slightly worse, but the file size will be smaller, will not take up too much space to save; BMP and PNG are uncompressed formats, the file will be larger, but there is no loss of image quality. It is recommended to give priority to BMP.
Image saving quality: 0-100%, the higher the value, the better the image effect, the larger the file, the longer the time.
Image naming length: default 5 digits, e.g. XXXXX.JPG
Image naming format: serial number - 1% (e.g. saved in the order of 0001,0002, 0003); date and time - 2% (will be named in accordance with the date and time of the current system to be saved, for example, 202401231015-meaning 23rd January 2024 at 10:15 minutes);
Barcode-3%, can be connected to the camera through the barcode gun, each scanning of the barcode will be automatically photographed, the picture will be named according to the serial number of the barcode scanned out when the picture is taken.
Switch users: At this time, you can choose to "log in", a dialogue box will pop up in the account will be "user" and "administrator" to choose, the user's authority is small, there will be a lot of restrictions on the "user" rights; and "administrator" will have greater authority, such as calibration

lens function must be obtained by logging in the "administrator" rights. The user has less authority, there will be a lot of restrictions on the "user" authority; while the "administrator" will have greater authority, such as calibration lens function must be logged in the "administrator" to obtain permission. The "password" is empty in the factory setting, so you can log in directly; if you need to set a "password", double-click on the blank space of the password to pop up a dialogue box, and you can enter your own password according to your needs.

Restore Factory Settings: It can be restored to the original setting state.

Application Upgrade:

You can upgrade and update the version of the programme. Put the upgrade file into the root directory of the USB flash drive, insert it into the USB port of the camera, and click Upgrade to upgrade the programme. The start-up screen can be customised with a 3840×2160 picture to change the start-up screen.

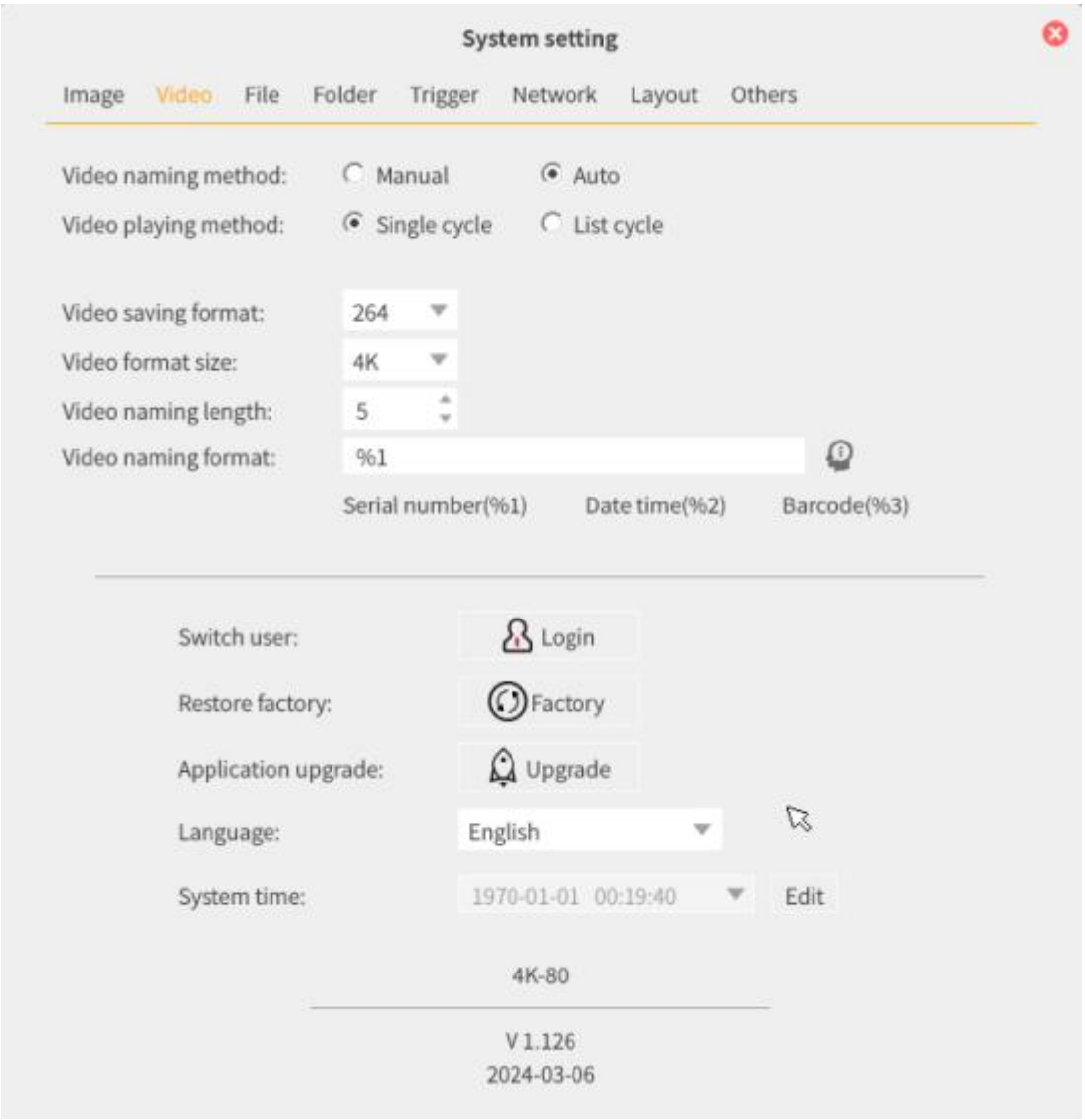
System time: Year/Month/Day/Hour/Minute/Second, mouse point to the position that needs to be changed, scroll to change the corresponding value, change well, click "Set" to save

Language: Simplified Chinese/Traditional Chinese/English

/Application upgrade: put the upgrade file into the root directory of the

USB memory stick, plug in the camera, and click upgrade to upgrade the application.

(2)video

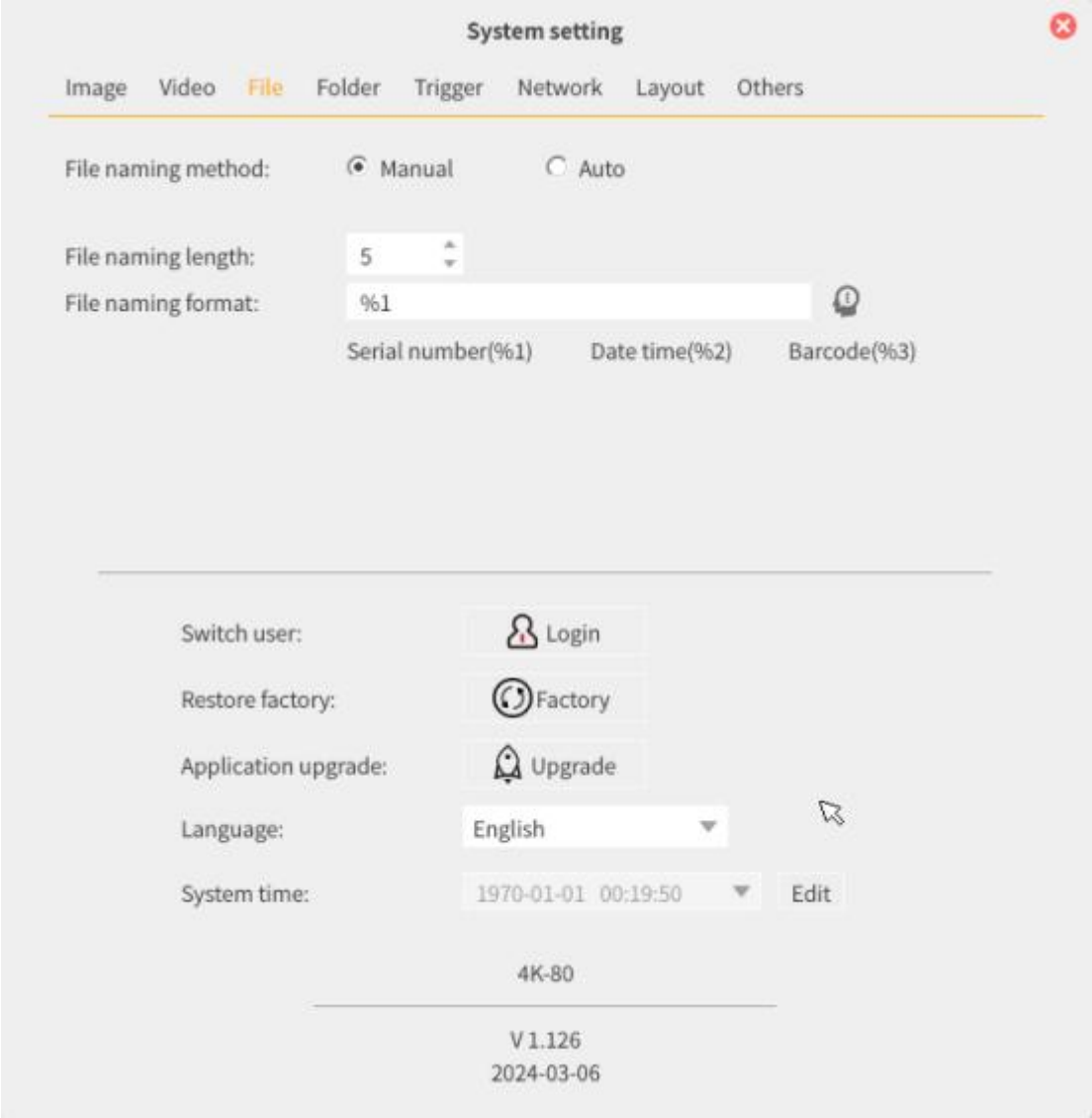


Video naming method: Manual --- pop-up swap box when saving, you can set the video location and name; Automatic --- save the video according to the set video path and format and naming method automatically stored to the set folder

Video playback mode: single loop once cut-off, list loop playback

Video zoom mode: you can slide the mouse wheel to zoom in and out on the local position of the image.

(3)papers



/File naming method: Manual - pop-up box when saving, you can set the location and name of the file; Automatic - the file is automatically stored in the set folder according to the set file path and format and naming method.

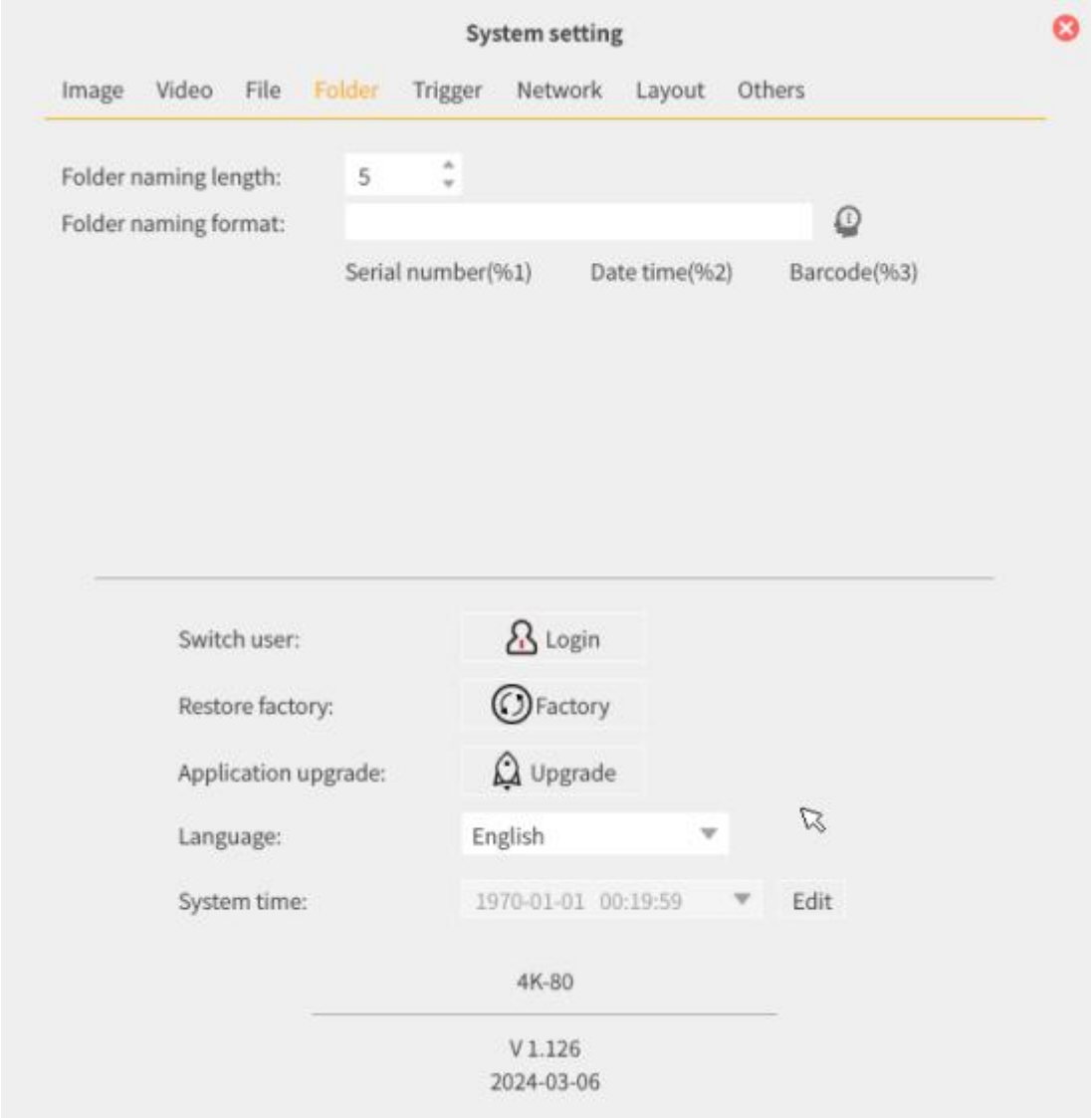
/File naming length: default 5 digits, e.g. xxxxxx

/File naming format: serial number 1 per cent, date and time 2 per cent, bar code 3 per cent, can also be set in combination, such as: 1 per cent - 2 per cent for 00001-2022031211305901

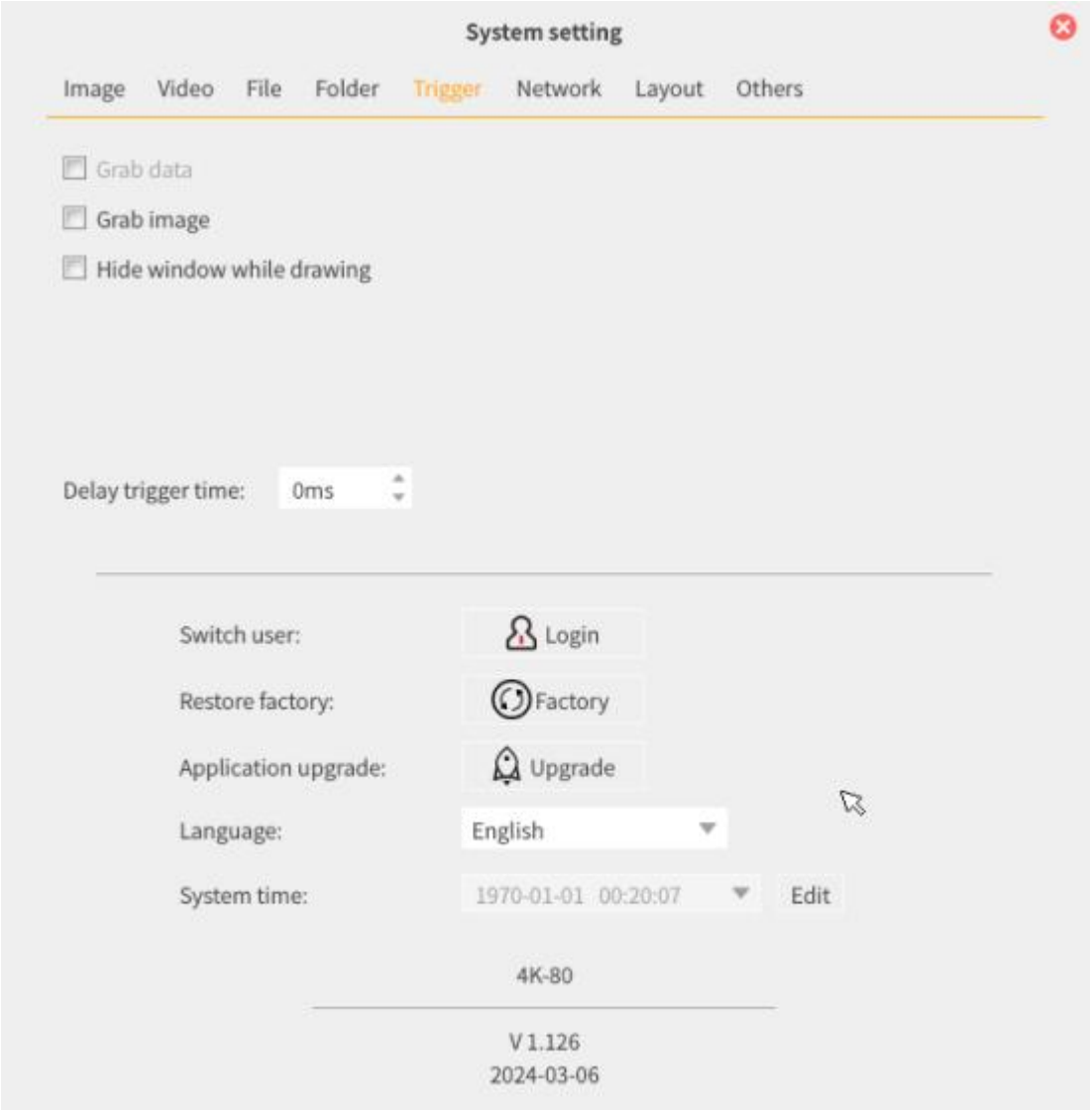
(4) Folders

/Folder naming length: default 5 digits, e.g. xxxxxx

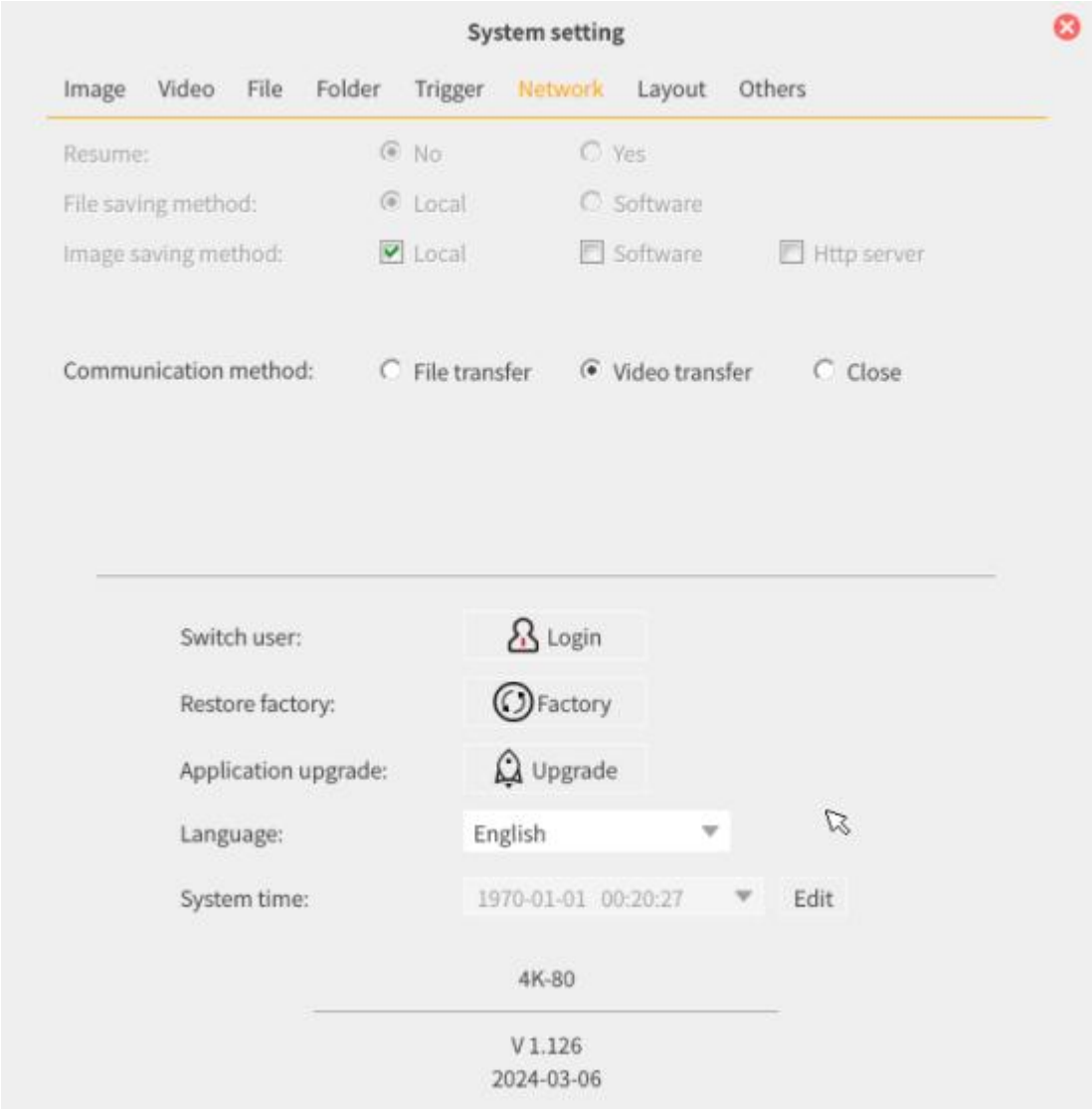
/Folder naming format: serial number 1 per cent, date and time 2 per cent, bar code 3 per cent, can also be set in combination, such as: 1 per cent - 2 per cent for 00001-2022031211305901



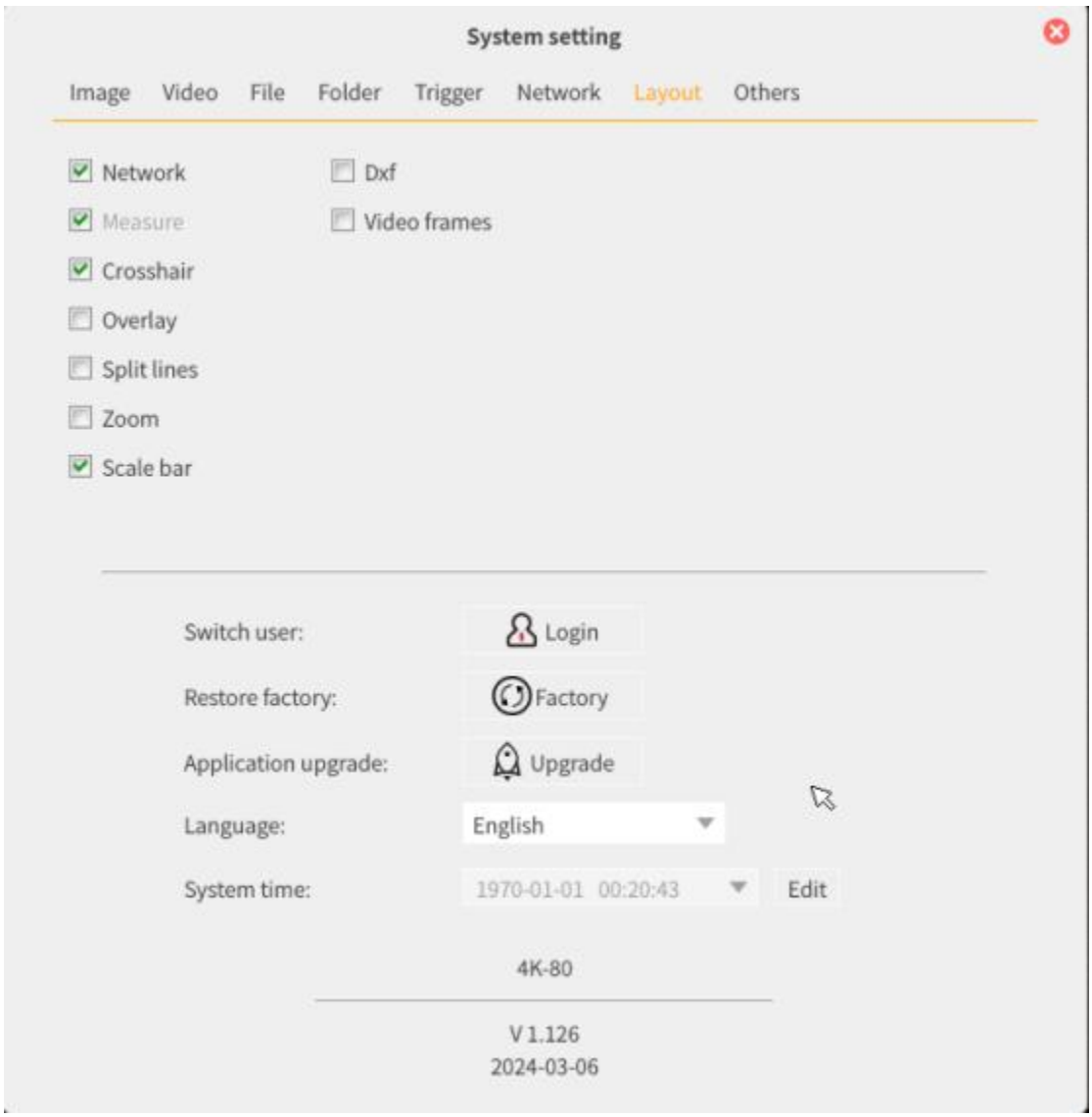
（1）trig


System setting
Image
Video
File
Folder
Trigger
Network
Layout
Others
Grab data
Grab image
Hide window while drawing
Delay trigger time:
0ms
Switch user:
Login
Restore factory:
Factory
Application upgrade:
Upgrade
Language:
English
System time:
1970-01-01 00:20:07
Edit
4K-80
V 1.126
2024-03-06

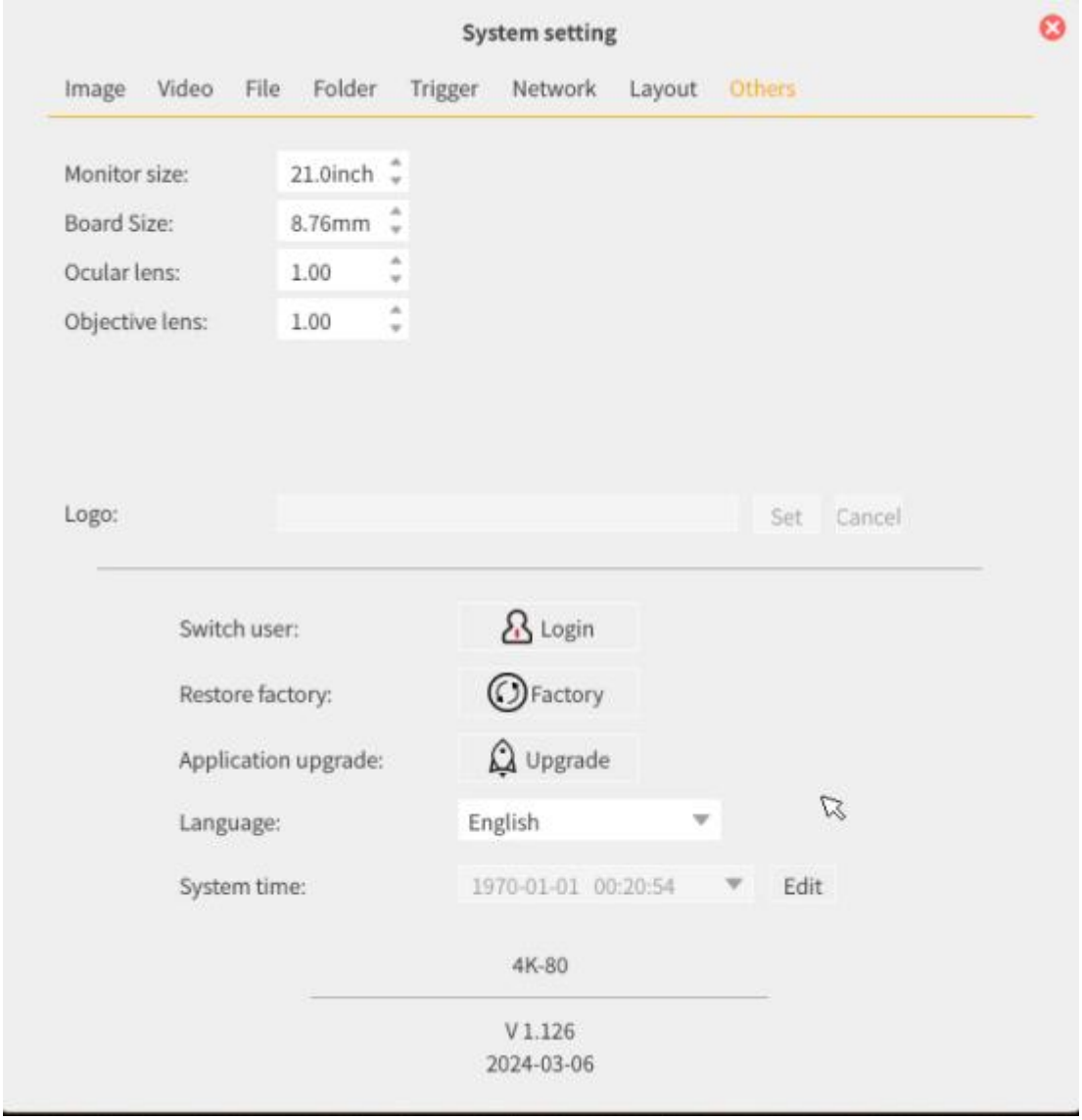
(2) reticulation



（2）opening (chess jargon)



(4) Other



/Display size: default 21 inches, can be changed according to the actual. The monitor size here is related to the total magnification of the calibration.

/Eyepiece: Eyepiece magnification can be set according to the lens

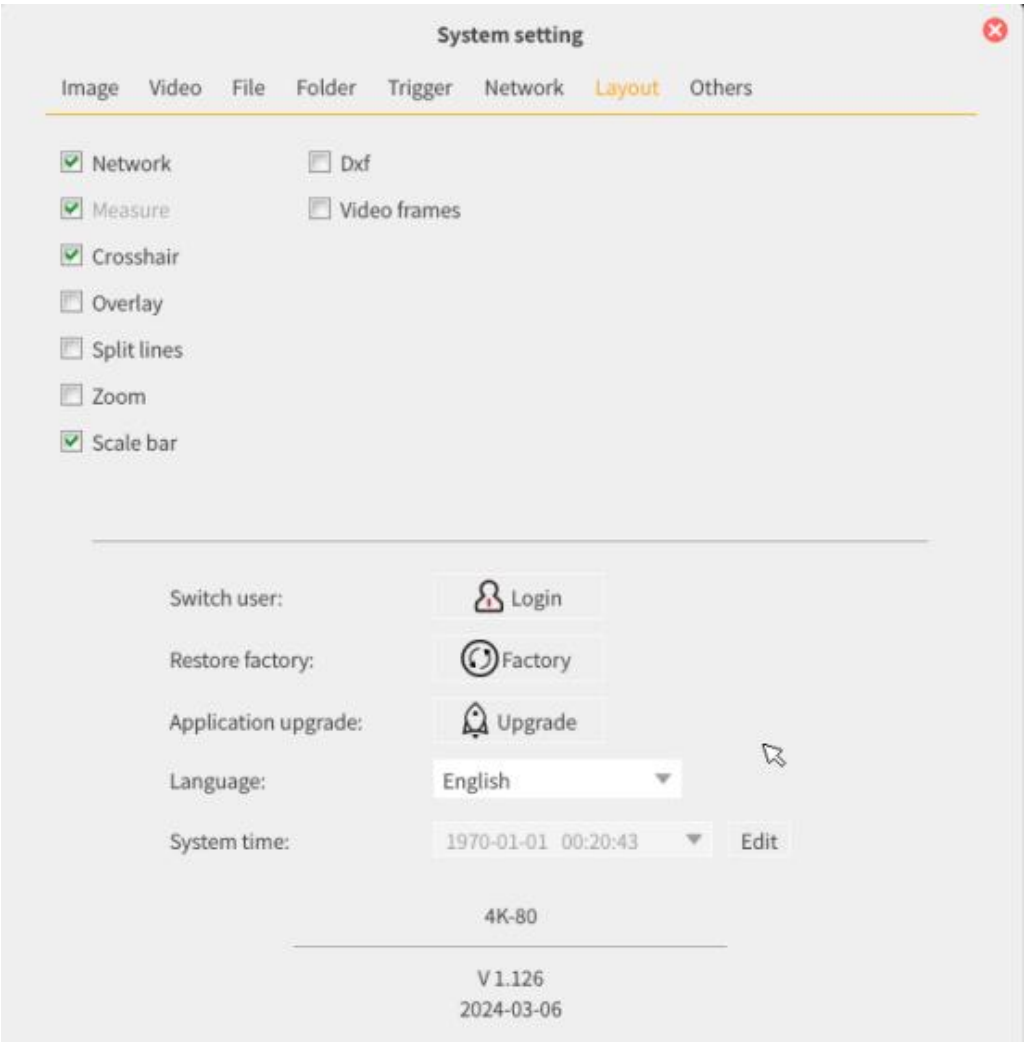
/Objective: Objective magnification can be set according to the lens

/Fan switch: top fan on or off

/Logo: Generate company logo in the bottom left corner of the page

2.7 Crosshairs

Crosshair function needs to be checked in "System Settings" - "Layout".

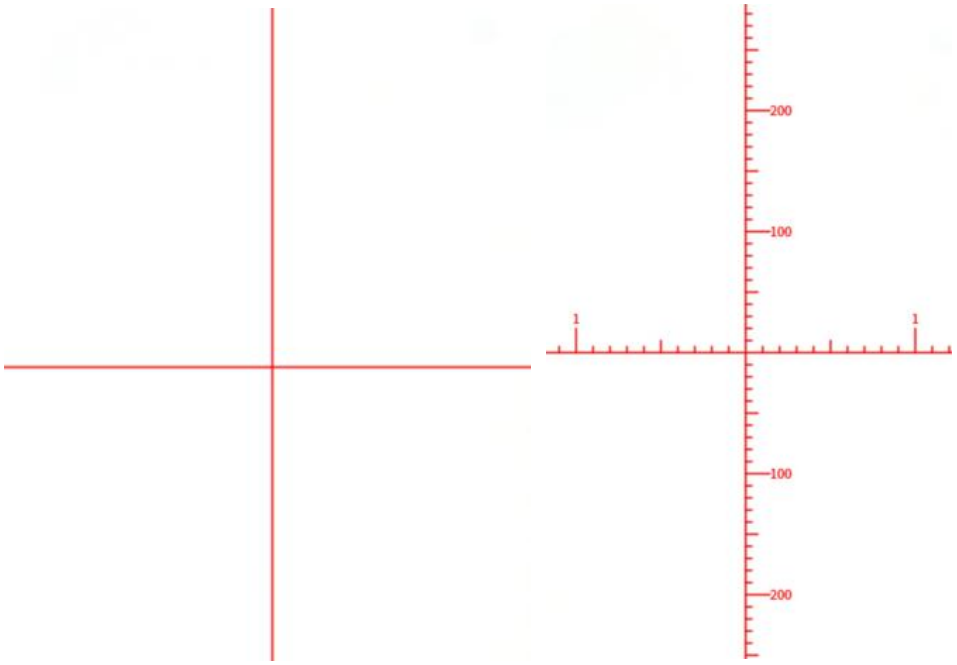


2.7.1 Cross wire switch

Turning on the crosshair opener (colour green) displays the crosshair on the screen

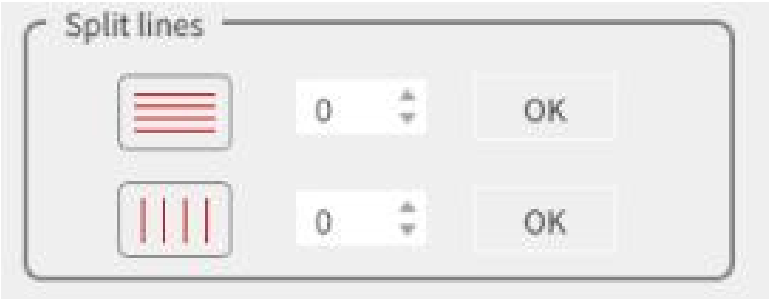
2.7.2 Types of crosshairs

Both unscaled and scaled, the scale will change with calibration change

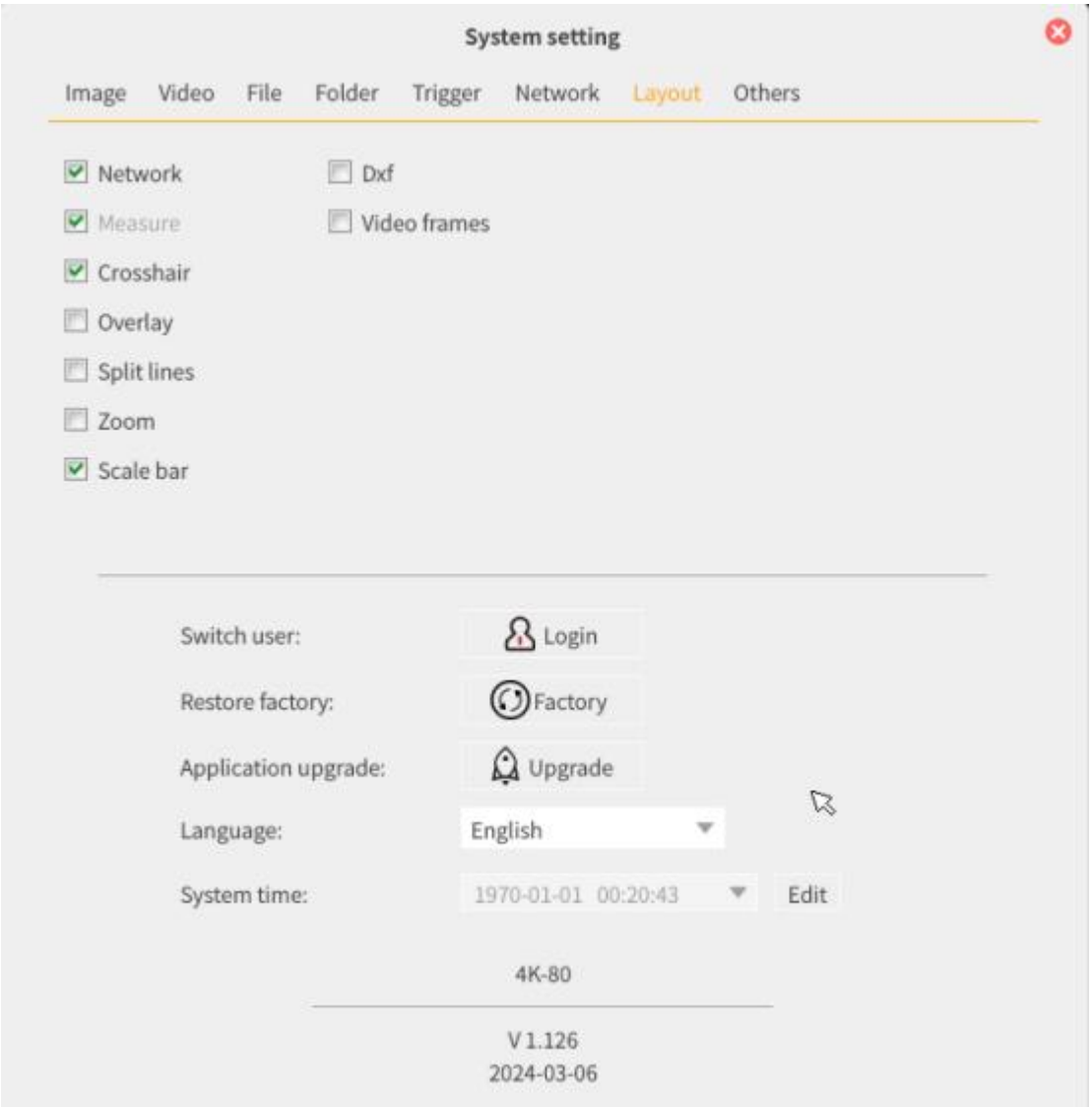


2.8 Dividing Line

The maximum number of horizontal and vertical split lines is 64, the maximum number of horizontal split lines is 32, and the maximum number of vertical split lines is 32. If set to zero, the split lines are turned off. Each split line can be dragged in position with the mouse and the colour and thickness of the line can be changed.

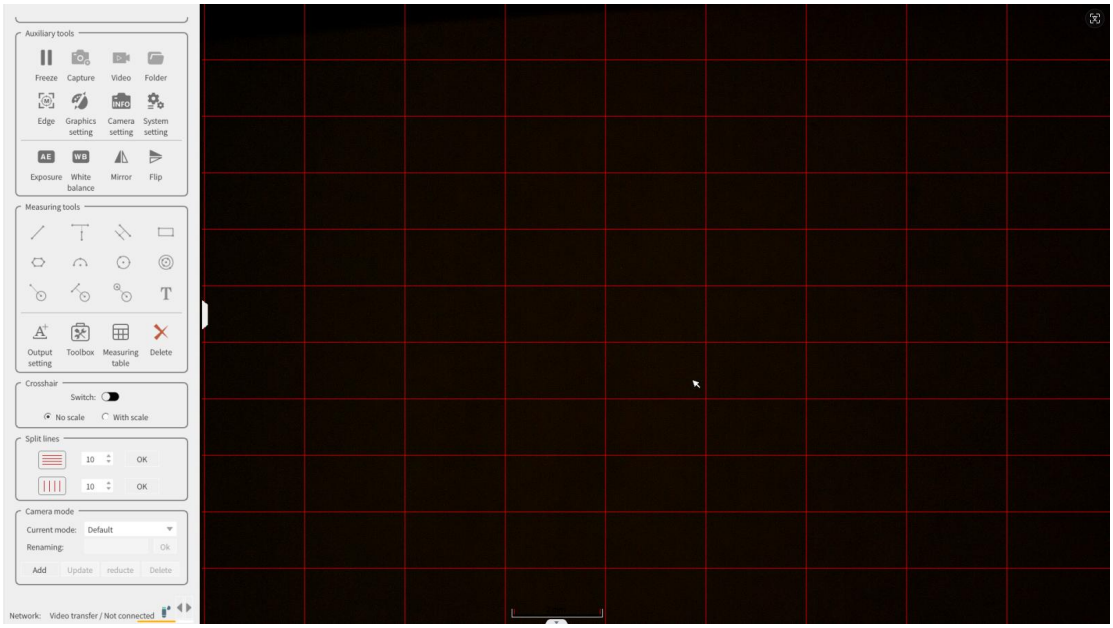


You need to select "Crosshair" function in "System Settings" - "Layout".



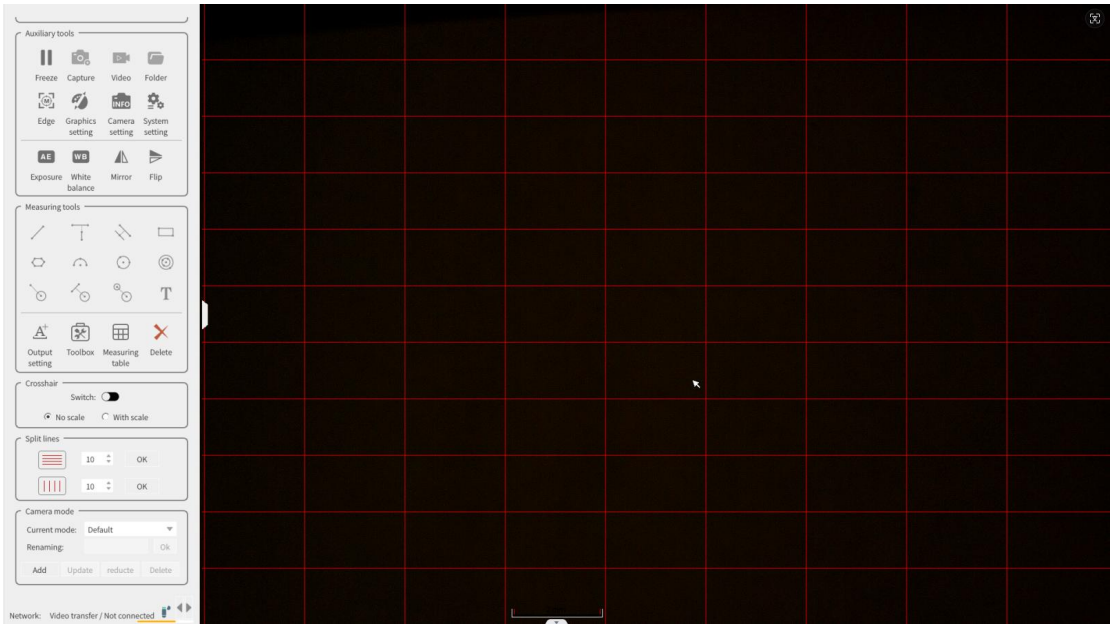
2.8.1 Horizontal dividing line

Mouse click on the upper and lower triangles to set the number of horizontal dividing lines, click OK to confirm.



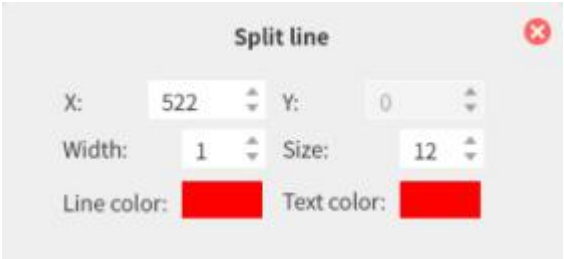
2.8.2 Vertical division lines

Mouse click on the upper and lower triangles to set the number of horizontal dividing lines, click OK to confirm.



2.8.3 Segment Line Parameter Settings

Move the mouse to the split line you want to change, click the right mouse button to bring up the split line setting dialogue box



(1) The vertical pixel values in the X/Y box indicate the position of the segmentation line, change the corresponding values inside to change the position of the segmentation line.

(2) Changing the width value changes the width of the dividing line

(3) Click on the colour box to bring up the colour chart box, select the appropriate colour to change it

2.9 Reference Chart Overlay

The overlay function facilitates the customer to load a contour map, you can set the background colour transparent, for the product and the display of the contour to do the comparison, if the product does not comply with the display of the contour, the operator can determine that the product is not qualified.

2.10 Network Settings

2.10.1 IP Address Setting

Click the Network Settings button to enter the camera network IP address Settings window.

There are two ways to set the network. If the customer has a router on the network, you can set the camera to automatically obtain an IP address. After the camera obtains an IP address, it will be displayed in the IP address box below. As shown in the picture below:

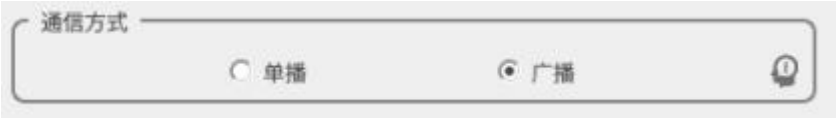
If the computer is directly connected to the camera, or a specified IP address needs to be assigned within the network, select Use the following IP address to set a fixed IP address for the camera. The fixed IP address must be on the same network segment as the IP address of the computer receiving the image. That is, the first three segments of the IP address are the same, but the last segment is different (for example, camera IP address 192.168.0.35 and computer IP address 192.168.0.63). Restart the camera after the Settings are complete.

After the camera IP address is set, the camera will automatically search for the server after restarting the camera. If the server is found, it will be displayed in the "Online Host List" window. At this time, you can select the host and click "Connect" button to connect to the server.

The connected camera can also select "Disconnect" to end the network service.

2.10.2 Communication Mode Selection

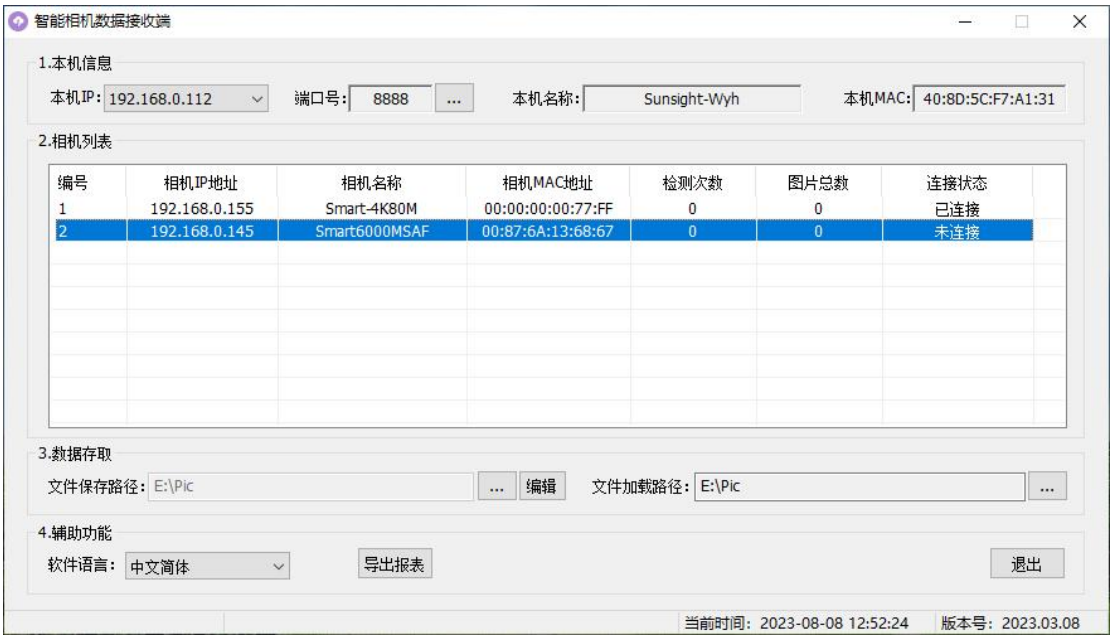
The default is broadcast communication mode, the camera and the computer are in the same network segment, the server will be automatically searched, and the search will be displayed in the list box, at this time, select the server to be connected, and the motor can be connected. The stored images will be uploaded to the computer server.



If the customer's network is physically connected and the camera and computer are not on the same network segment, unicast communication can be adopted. Set a specified IP address. Then click Connect again.

2.10.3 Picture receiving software

After the network is set up, install the SmartRxdCCD.exe file on your computer, open the file, and you can receive the pictures and measurement files sent by the camera. For detailed SmartRxdCCD operation instructions, refer to the SmartRxdCCD Usage Instructions. The receiving software can set the default receiving path, and the software can be added to the automatic startup TAB, which automatically loads the software every time the computer starts.



2.11 Console

This function is used to test whether the network is unblocked.

You can query whether the server is online.

2.12 Video Transmission Settings

2.12.1 Network Settings

The M C 4KE camera is also a network camera that can transmi tvideo to a remote computer.

Setting method:

First set the camera IP address, ensure that the camera and the computer network is connected, the network setting method is as follows:

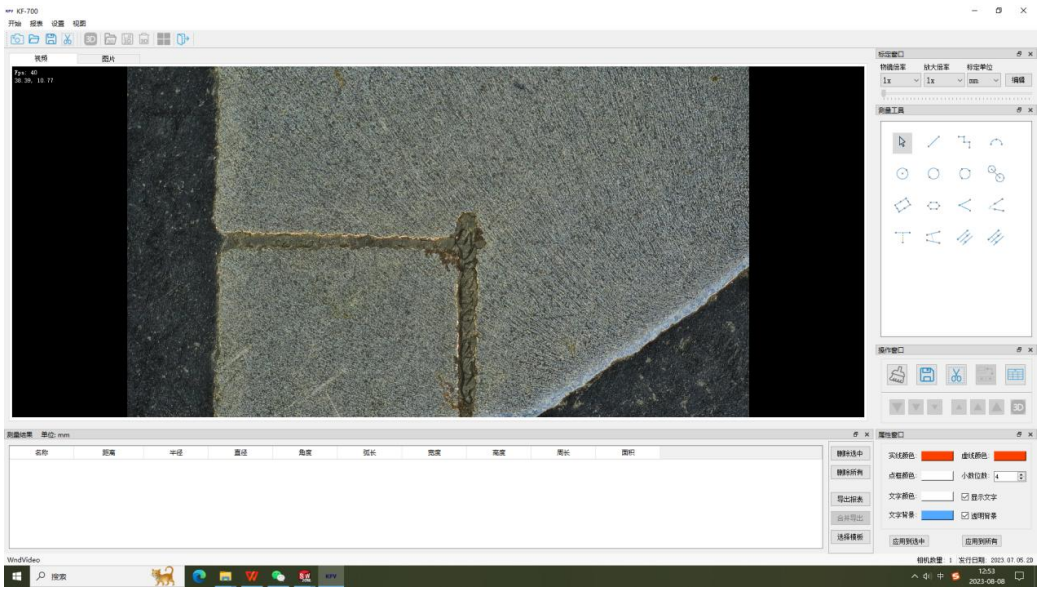
Click the Network Settings button to enter the camera network IP address Settings window. As shown below:

There are two ways to set the network. If the customer has a router on the network, you can set the camera to automatically obtain an IP address. After the camera obtains an IP address, it will be displayed in the IP address box below. As shown in the picture below:

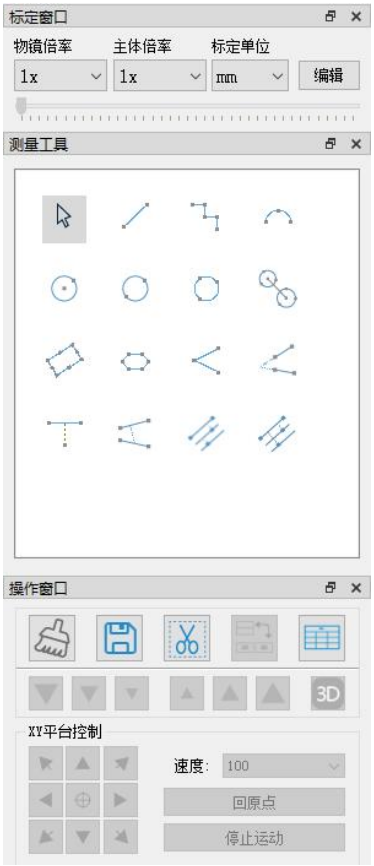
2.12.2 Receiving Software

If the setting is complete, install the 2D software on the computer side, and open the software after installation, the system will automatically look for the camera that can receive, at this time the camera is also looking for the server, if both parties receive the information, it will automatically load the video of the camera. If you have multiple cameras to choose from, you need to manually select the camera you want in Settings - Camera Selection. At this time, the video will be transferred to the computer, as shown in the figure below. Note a few things, the camera port and the computer port should be set the same.


相机选择
选择网卡: 192.168.0.112
端口: 7777
选择相机: NET相机 192.168.0.155
刷新
自动获得相机IP地址
使用下述相机IP地址
IP地址: 192.168.0.155
子网掩码: 255.255.255.0
默认网关: 192.168.0.1
相机Mac地址: 00:00:00:00:77:FF
相 机 名 称: 00:00:00:00:77:FF
发现 1 台相机
确定
取消



2.12.3 Measurement Function Menu



2.12.4 Detailed Software Description

Computer software can remotely set camera parameters and transmit video to the computer. The system can calibrate the size and measure the product size. And can save the measured data and pictures. At the same time, it can output measurement data report and other functions.