# The EHD330KMB-WUH Camera Help manual

# Contents

# 1 EHD330KMB-WUH Camera Application

Figure 1 The EHD330KMB-WUH Camera

The EHD330KMB-WUH camera is a short-wave infrared camera utilizing a SONY SWIR indium gallium arsenide (InGaAs) sensor. It features high quantum efficiency and high sensitivity, making it suitable for various industrial applications. Commonly found in sectors such as semiconductor manufacturing, medical imaging and research, video surveillance, security, and packaging, this camera delivers exceptional performance across diverse industrial segments.

The basic characteristic is listed as below:

- Compact size, easy to integrate
- Sony SWIR InGaAs CMOS sensor
- HDMI/ WiFi/ USB multiple video outputs
- USB flash drive for captured image and video storage, support local preview and playback
- Supports USB Voice Control module, enabling real-time control of the camera through voice commands for snap, recording, freeze, and other operations
- Embedded XCamView for the control of the camera and image processing, supporting automatic edge finding and measurement functions
- Excellent ISP with local tone mapping and 3D denoising
- EHDView/EHDLite software for PC

## 2 EHD330KMB-WUH Camera Datasheet and Functions（1）

| Model / Parameter | EHD330KMB-WUH<br>0.33M pixels 1/4" CMOS USB3 industrial camera |
|---|---|
| Sensor model | Sony IMX991-AABJ-C |
| Sensor Type | InGaAs |
| Spectral Range | 400nm-1700nm |
| Pixel size | 5.0 μm x 5.0 μm |
| Sensor size | 1/4" |
| ADC | 12 Bit |
| Frame rate | 137fps@640 × 512 |
| Conversion Gain | 43.0e/ADU |
| Dynamic range | 59.6dB |
| Readout Noise | 178.8e |
| Full Well | 176.2ke |
| SNRmax | 52.5dB |
| Sensitivity | 121mV |
| Dark current | 638e/s(20°C) |
| Exposure time | 0.04-1000ms |
| Shutter | Global shutter |
| Binning | Software1x1 |
| Data Format | 12bit |
| Optical filter | 400-1800nm(default); 1030-1800nm(optional) |
| CRA | 2.35 Deg |

| Camera Model | Video Saving (MAX FPS/Resolution) | HDMI1.4 (MAX FPS/Resolution) | USB (MAX FPS/Resolution) | WiFi (MAX FPS/Resolution) |
|---|---|---|---|---|
| EHD330KMB-WUH | 137@640*512 | 60@1920*1080 | 137@640*512 | 137@640*512 |


Figure 2 Available Ports on the Back Panel of the Camera Body

| Interface or Button | Function Description |
|---|---|
| USB Mouse | Connect USB mouse for easy operation with embedded XCamView software |
| USB Video | Connect a Micro USB cable to a computer terminal to achieve video image transmission |
| HDMI | Comply with HDMI1.4 standard. 1080P format video output |
| DC12V | Power adapter connection (12V/1A) |
| USB2.0 | Connect USB flash drive to save pictures and videos<br>Connect the 5G WiFi adapter module to achieve wireless video and image transmission<br>Connect the USB Voice Control module to enable real-time control of camera snap, recording, freeze, and other operations through voice commands |
| LED | LED status indicator |
| **Video Output Interface** | **Function Description** |
| HDMI Interface | Comply with HDMI1.4 standard<br>60fps@1080P |
| WiFi Interface | Connecting 5G WiFi adapter (USB2.0 slot) in AP/STA mode |
| USB Video Interface | Connecting Micro USB port of PC for video transfer<br>MJPEG format video |
| **Other Function** | **Function Description** |
| Video Saving | Video format:330K (640*512) H264 encoded MP4 file<br>Video saving Maximum frame rate：137fps |
| Image Capture | 330K (640*512) JPEG/TIFF image in USB flash drive |

| | |
|---|---|
| Measurement Saving | Measurement information saved in different layer with image content<br>Measurement information is saved together with image content in burn in mode |
| ISP | Exposure(Automatic / Manual Exposure) / Gain， Sharpening， 3D Denoise， Contrast Adjustment， Brightness Adjustment， Gamma Adjustment， 50HZ/60HZ Anti-flicker Function |
| Image Operation | Zoom In/Zoom Out (Up to 10X), Horizontal/Vertical Flip, Freeze, Cross Line, Overlay, Compare (Comparison between real time video and images in USB flash drive), Embedded Files Browser, Video Playback, Measurement Function |
| Embedded RTC(Optional) | To support accurate time on board |
| Restore Factory Settings | Restore camera parameters to its factory status |
| Multiple Language Support | English / Simplified Chinese / Traditional Chinese / Korean / Thailand / French / German / Japanese / Italian / Russian |
| **Software Environment under WiFi/USB Video Output** | |
| USB Video Interface | Connecting Micro USB port of PC for video transfer<br>MJPEG format video |
| Video Saving | Static images or videos |
| Capture/Control SDK | Windows/Linux/macOS/Android Multiple Platform SDK (Native C/C++, C#/VB.NET, Python, Java, DirectShow, Twain, etc) |
| Recording System | Still Picture or Movie |
| Operating System | Microsoft® Windows® 7 / 8 / 8.1 /10(32 & 64 bit)<br>OSx(Mac OS X)<br>Linux |
| PC Requirements | CPU: Equal to Intel Core2 2.8GHz or Higher |
| | Memory: 4GB or More |
| | Ethernet Port: RJ45 Ethernet Port |
| | Display:19” or Larger |
| | CD-ROM |
| **Operating Environment** | |
| Operating Temperature (in Centidegree) | -10°~ 50° |
| Storage Temperature (in Centidegree) | -20°~ 60° |
| Operating Humidity | 30~80%RH |
| Storage Humidity | 10~60%RH |
| Power Supply | DC 12V/1A Adapter |

## 3 Dimension of EHD330KMB-WUH

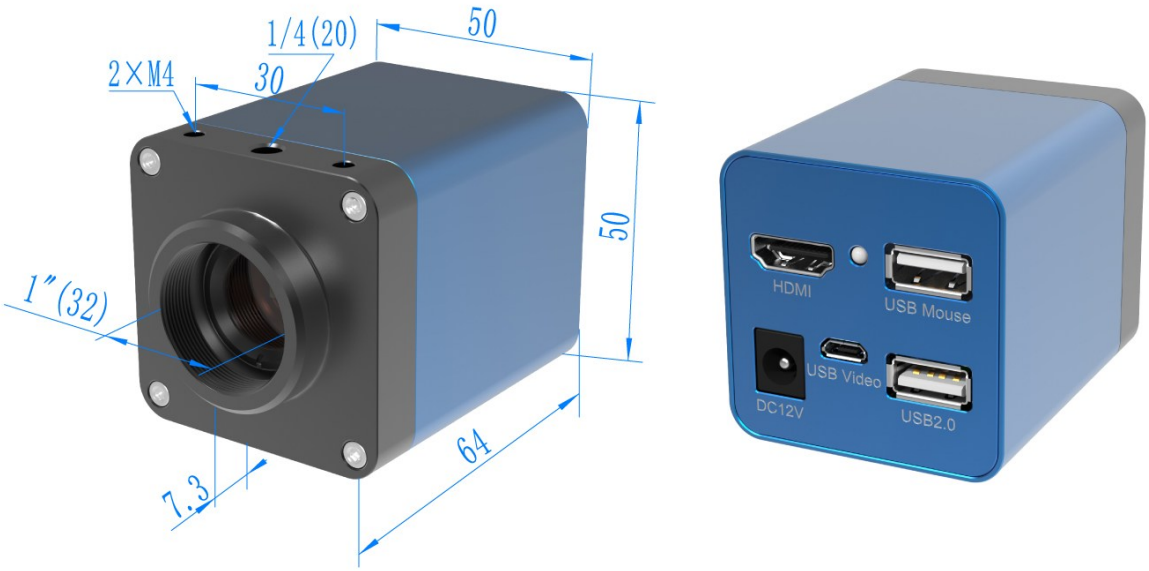



Figure 3 Dimension of EHD330KMB-WUH

# 4 EHD330KMB-WUH Camera Packing Information


Figure 4 EHD330KMB-WUH Camera Packing Information

| | | | |
|---|---|---|---|
| **Standard Packing List** | | | |
| A | Gift box: L:25.5cm W:17.0cm H:9.0cm (1pcs, 1.57Kg/ box) | | |
| B | EHD330KMB-WUH Camera | | |
| C | Power Adapter: Input: AC 100~240V 50Hz/60Hz, Output: DC 12V 1A<br>American standard: Model: POWER-U-12V1A(MSA-C1000IC12.0-12W-US): UL/CE/FCC<br>European standard: Model: POWER-E-12V1A(MSA-C10001C12.0-12W-DE): UL/CE/FCC<br>EMI standard: FCC Part 15 Subpart B<br>EMS standard: EN61000-4-2,3,4,5,6 | | |
| D | USB Mouse | | |
| E | HDMI Cable | | |
| F | Micro USB cable | | |
| **Optional Accessory** | | | |
| G | Voice Control Module | | |
| H | USB flash drive | | |
| I | Adjustable lens adapter | C-Mount to Dia.23.2mm Eyepiece Tube<br>(Please choose 1 of them for your microscope) | 108001/AMA037<br>108002/AMA050<br>108003/AMA075 |
| J | Fixed lens adapter | C-Mount to Dia.23.2mm Eyepiece Tube<br>(Please choose 1 of them for your microscope) | 108005/FMA037<br>108006/FMA050<br>108007/FMA075 |
| | Note: For I and L optional items, please specify your camera type (C-mount, microscope camera or telescope camera), EHD engineer will help you to determine the right microscope or telescope camera adapter for your application; | | |
| K | 108015(Dia.23.2mm to 30.0mm Ring)/Adapter rings for 30mm eyepiece tube | | |
| L | 108016(Dia.23.2mm to 30.5mm Ring)/ Adapter rings for 30.5mm eyepiece tube | | |
| M | USB WiFi adapter | | |

# 5 Software and App

The software or the APP can be downloaded from the following link：

www.ehd.de/driver

# 6 EHD330KMB-WUH Camera Configurations

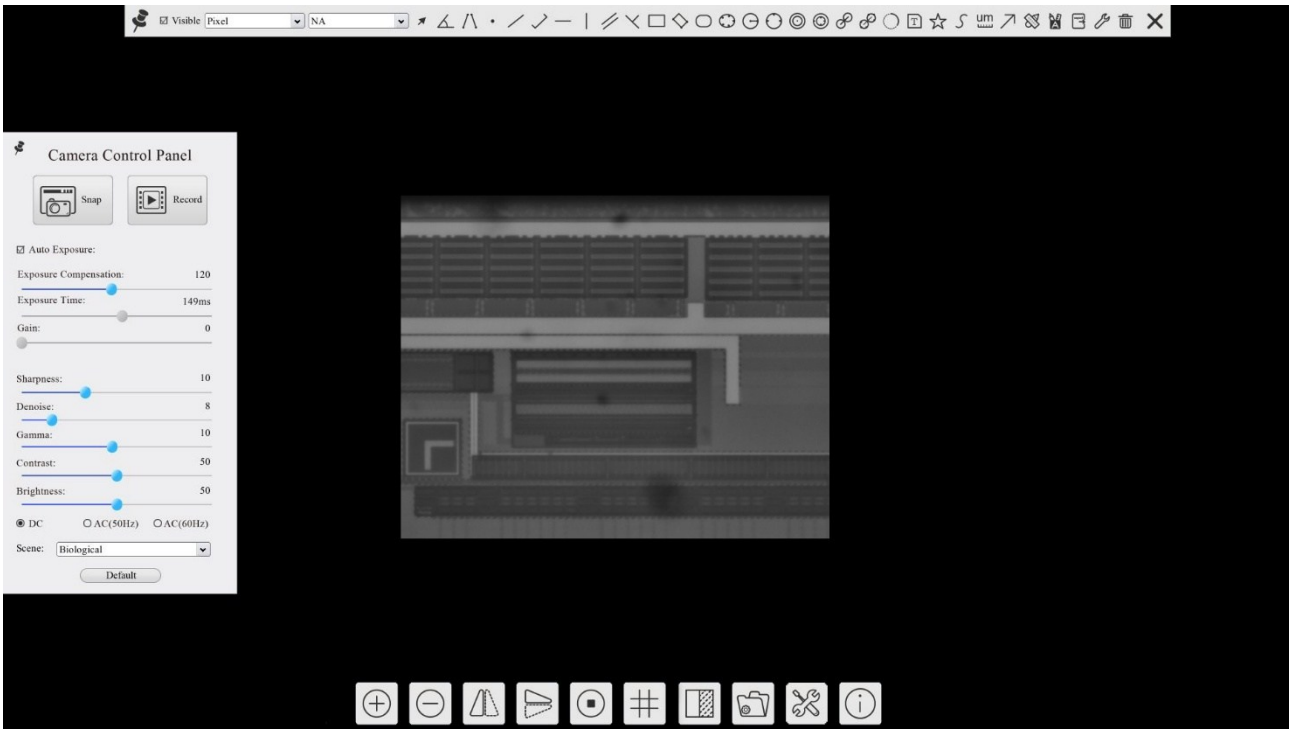
You can use the EHD330KMB-WUH camera in 4 different ways. Each application requires different hardware environment.

## 6.1 Camera working standalone with built-in XCamView software

Figure 5 EHD330KMB-WUH Camera paired with BSM-T100VA Short-Wave Infrared Microscope System and HDMI Interface Monitor

For this application, apart from the microscope, you only need an HDMI monitor, the supplied USB mouse, and the camera embedded XCamView software. A computer or a network connection is not required to operate the camera in this application. The steps to start the camera are listed as below:

- Connect the camera to a HDMI monitor using the HDMI cable;
- Insert the supplied USB mouse to the camera's USB port;
- Insert the supplied USB flash drive (USB2.0 slot) into the EHD330KMB-WUH camera USB2.0 slot;
- Connect the camera to the power adapter and turn it on;
- Turn on the monitor and view the video in the XCamView software. Move the mouse to the left, top or bottom of the XCamView UI, different control panel or toolbar will pop up and users could operate with the mouse at ease.



## 6.2 Connecting camera to computers with Micro USB Port

For Windows user (Windows 7/8/10/11 (32/64 bit)), please use EHDView.

For macOS and Linux user (macOS 10.10 or above or Linux distributions with kernel 2.6.27 or higher), please use EHDLite. The steps to start the camera are listed below:

- Start the camera according to Sec.6.1. After the camera is running, connect camera to computer with Micro USB cable. Please use "USB Video" slot, NOT "USB Mouse" slot as shown below.
- Install EHDView/EHDLite on your PC or install EHDView App on the mobile device; Run the software EHDView/EHDLite, clicking the camera name in the camera list n to start the live video as shown in Figure 7.

Notice:

After the Micro USB cable is connected, the mouse will not work. If you want to use the mouse, please unplug the Micro USB cable.

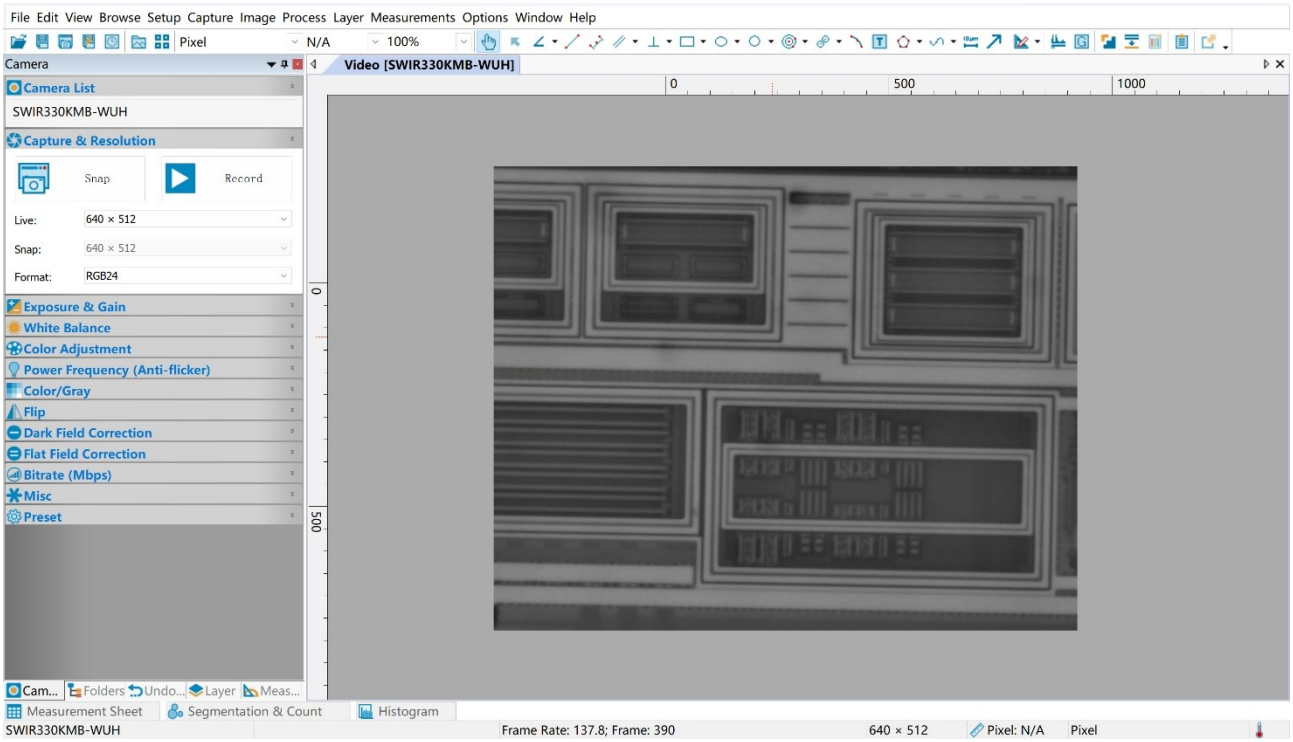



Figure 7 EHDView and EHD330KMB-WUH Camera in USB Mode

## 6.3 Camera working in WiFi mode (AP mode)

Please make sure your PC is WiFi enabled.

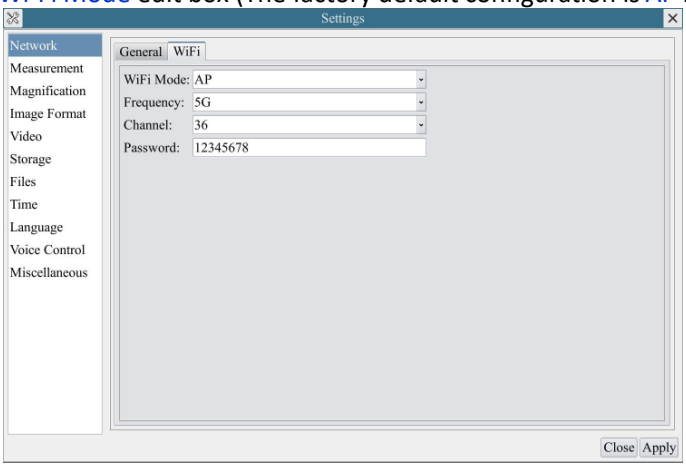

Figure 8 The PC or Mobile Device Connect to the Camera through WiFi

For Windows user (Windows 7/8/10/10/11 (32/64 bit)), please use EHDView.

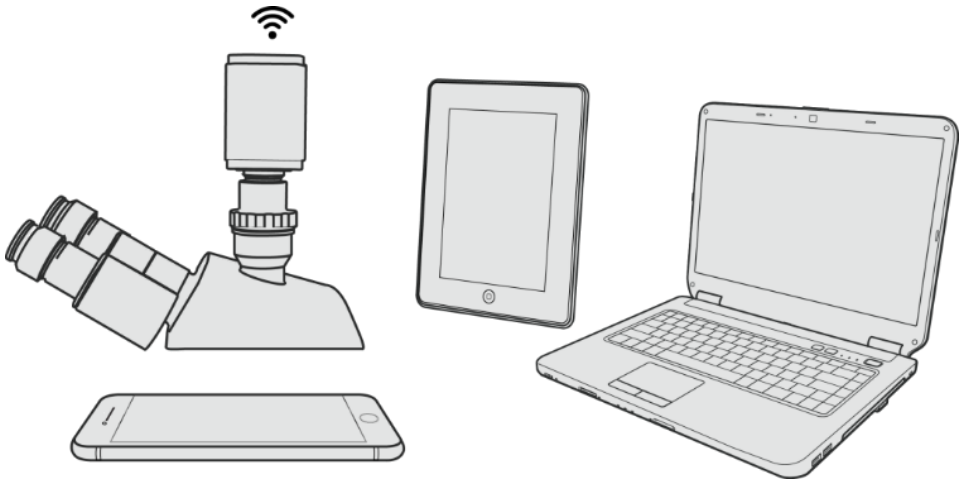
For macOS and Linux user (macOS 10.10 or above or Linux distributions with kernel 2.6.27 or higher), please use EHDLite. When connecting the camera with a mobile device, the free EHDView App is required. Just make sure that the mobile device uses iOS 11 or higher/Android 5.1 or higher operating systems.

The steps to start the camera are listed below:

- Start the camera according to Sec.6.1. After the camera is running, move the mouse to the bottom of the GUI and clicking the button on the Synthesis Camera Control Toolbar at the bottom of the video window, a small window called Settings will pop up as shown below. Click Network>WiFi property page and choose the AP in the Wi-Fi Mode edit box (The factory default configuration is AP mode).




- Plug the USB WiFi adapter into the camera's USB2 .0 port, the upper left corner of the HDMI graphics interface will display "AP mode";
- Install EHDView/EHDLite on your PC or install EHDView App on the mobile device, Connect the PC or mobile device to the camera's WiFi AP point; The network name (SSID) and the WiFi password (The default one is 12345678) can be found on the camera's Setting>Network>WiFi page in AP mode.



- Start EHDView/EHDLite software or EHDView App and check the configuration. Normally, the active SWIR330KMB-WUHcameras will be automatically recognized. The live image of each camera is shown in Figure 9. For the display, the Camera List tool window is used in EHDView/EHDLite software, and the Camera Thumbnail is used in EHDView App.

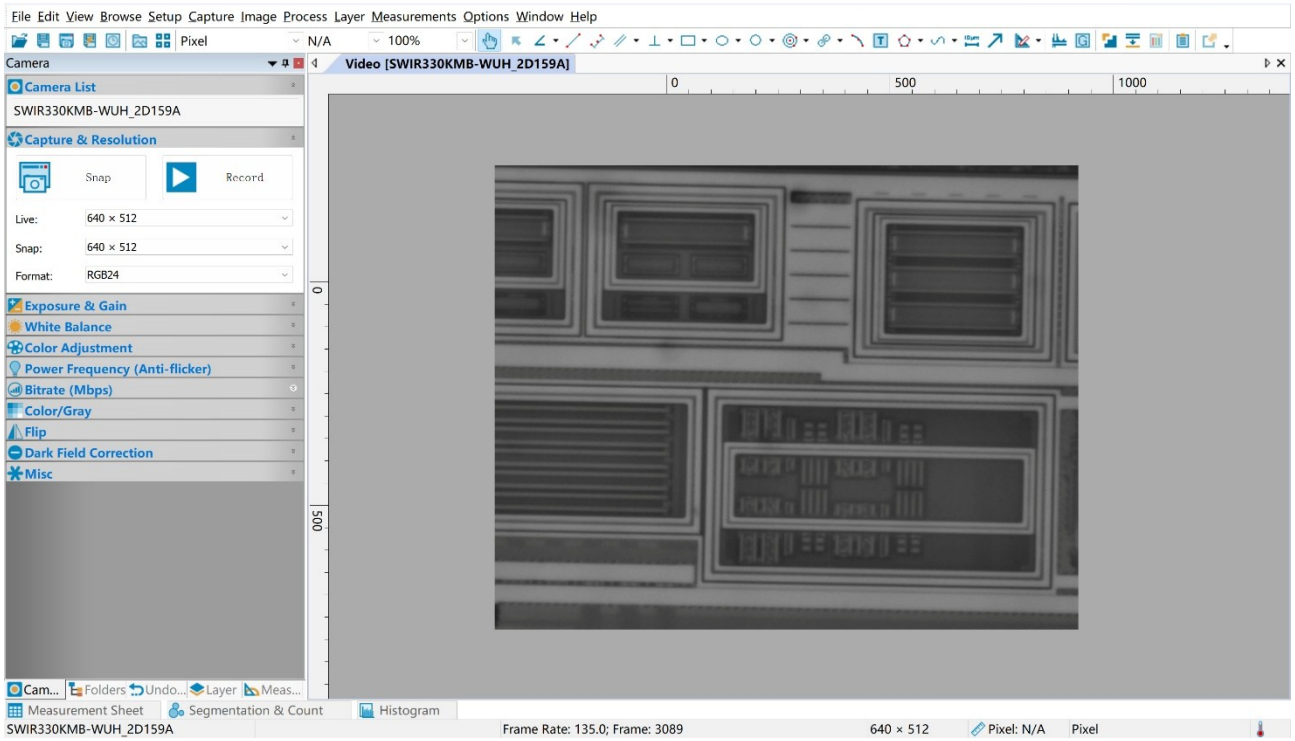



Figure 9 EHDView and EHD330KMB-WUH Camera in WiFi AP Mode

## 6.4 Connecting multi-cameras to the router through the WiFi STA mode for the network application

Multi EHD330KMB-WUH cameras are connected to router through the WiFi STA mode, and the user can control the HDMI camera on the computer or mobile device through WiFi.

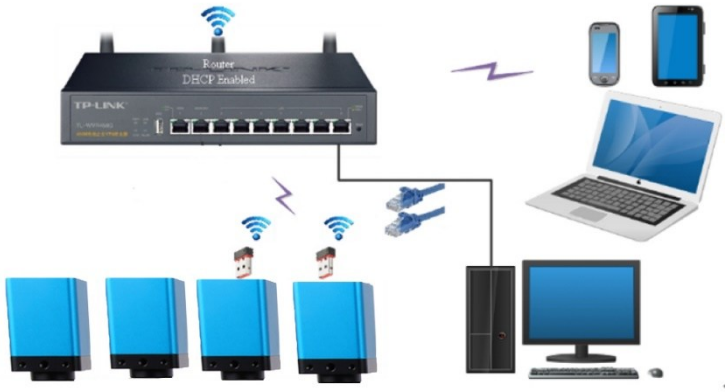
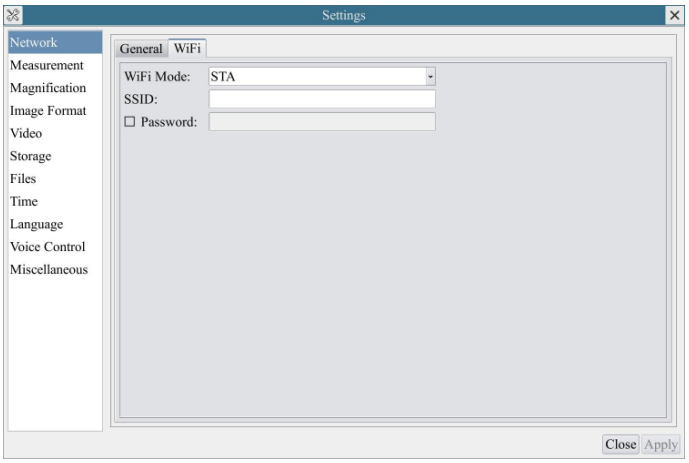
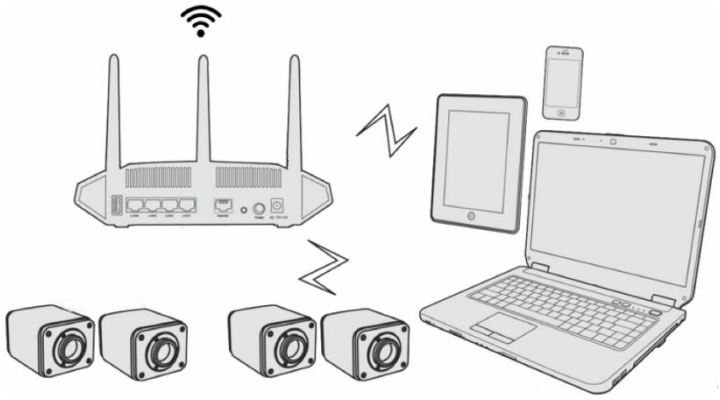



Figure 10 Multi EHD330KMB-WUH All-in-One Cameras Connecting to the Router through the WiFi Style

Start the camera according to Sec.6.1. After the camera is running, move the mouse to the bottom of the video window and clicking the button on the Synthesis Camera Control Toolbar at the bottom of the video window, a small window called Settings will pop up as shown below. Clicking Network> WiFi property page and choosing the STA in the WiFi Mode edit box (The factory default configuration is AP mode). Input the to be connected router's SSID and Password as shown below:




- Install EHDView /EHDLite software on your PC. Alternatively, install the free EHDView App on the mobile device;
- Plug the USB WiFi adapter into the camera's USB2.0 port(for those connected to router with WiFi STA mode), the upper left corner of the HDMI graphics interface will display "STA Mode";
- Finally, as shown below, 4 EHD330KMB-WUH all-in-one cameras are connected to the same router with WiFi STA mode (The number of the cameras are determined by the router performance).



Make sure that your PC or your mobile device is connected to the WiFi of the router; Start EHDView/EHDLite software or EHDView App and check the configuration. Normally, active EHD330KMB-WUH cameras are automatically recognized. The live image of each camera is displayed. For the display, Camera List group is used in EHDView/EHDLite software, and Camera Thumbnail is used in EHDView App; Select the EHD330KMB-WUH camera you are interested in. To do so, double click the camera's name in Camera List tool window if you use EHDView /EHDLite software; If you use EHDView App, tap the camera's thumbnail in Camera List page (See Figure 11)

## About the routers/switches

It is suggested that routers/switches supporting WiFi 5G should be selected to achieve better wireless connection experience.

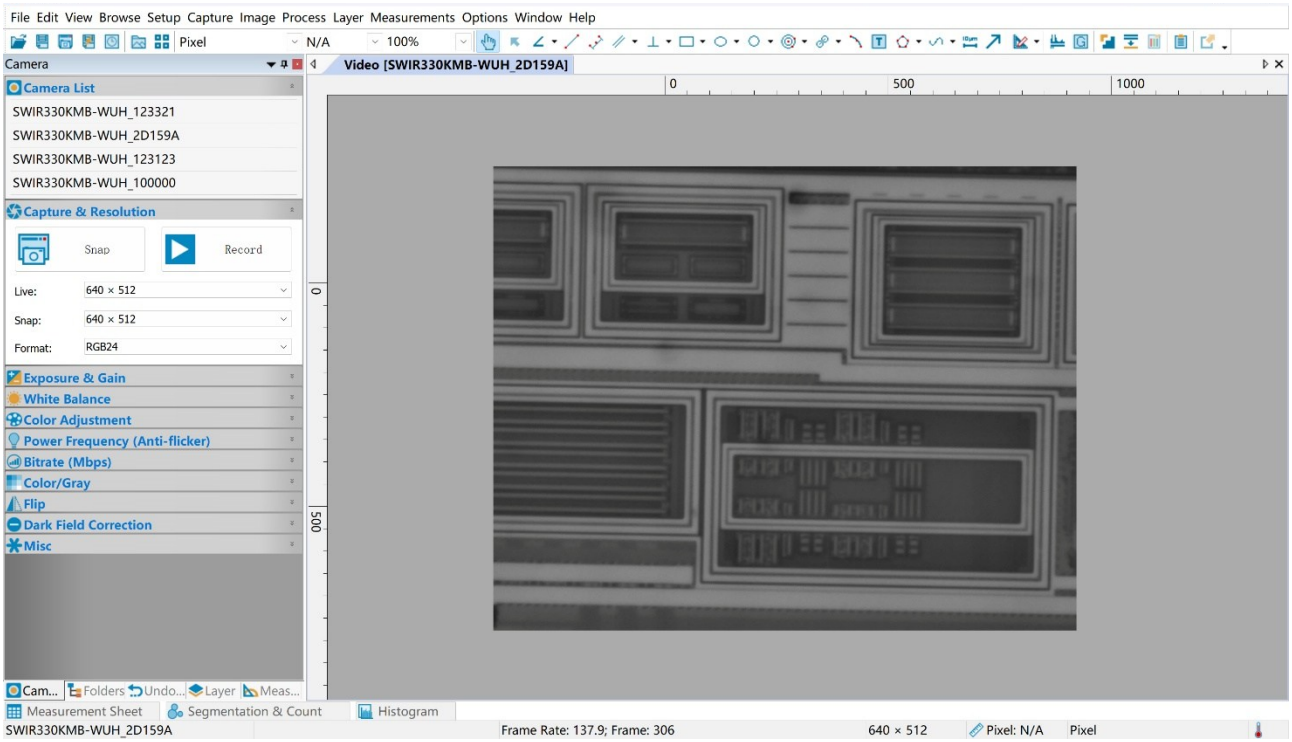



Figure 11 EHDView and EHD330KMB-WUH Camera in WiFi STA mode

# 7 Brief Introduction of EHD330KMB-WUH UI and Its Functions

## 7.1 XCamView UI

The EHD330KMB-WUH UI shown in Figure 12 includes a Camera Control Panel on the left of the video window, a Measurement Toolbar on the top of the video window and a Synthesis Camera Control Toolbar on the bottom of the video window.

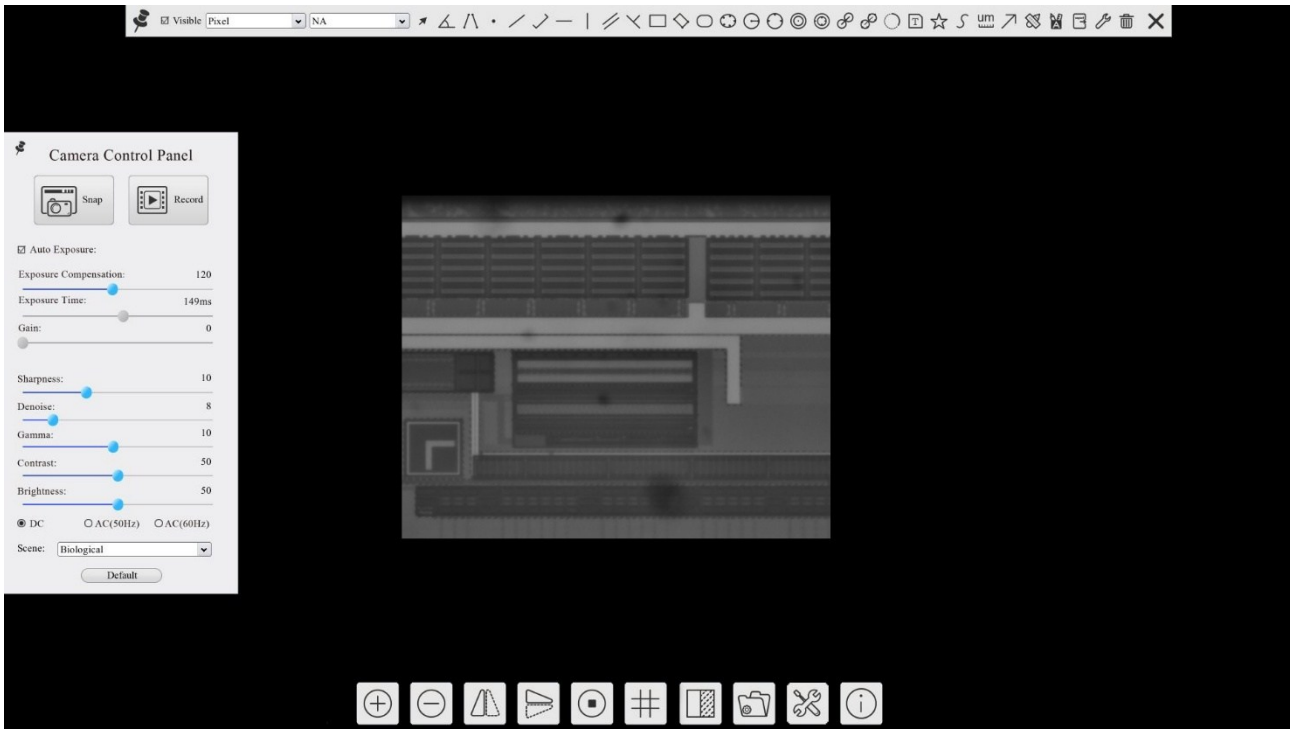
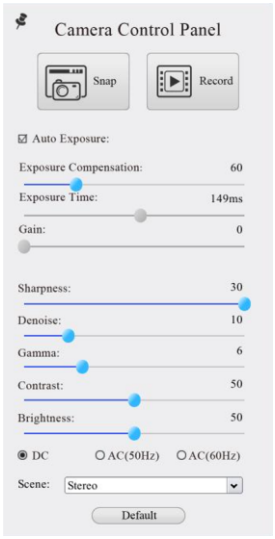



Figure 12 The SWIR330KMB-WUHCamera's Control GUI

| | Notes |
|---|---|
| 1 | To show the Camera Control Panel, move your mouse to the left of the video window. See 7.2 for details |
| 2 | Move the mouse cursor to the top of the video window, a Measurement Toolbar will pop up for calibration and measurement operations. When user left-clicks the Float/Fixed button on the Measurement Toolbar, the Measurement Toolbar will be fixed. In this case the Camera Control Panel will not pop up automatically even if users move mouse cursor to left side of the video window. Only when user left-clicks the button on the Measurement Toolbar to exit from measuring procedure will they be able to do other operations on the Camera Control Panel, or the Synthesis Camera Control Toolbar. During the measuring process, when a specific measuring object is selected, an Object Location & Attributes Control Bar will appear for changing location and properties of the selected object. See Sec.7.3 for details. |
| 3 | When users move mouse cursor to the bottom of the video window, the Synthesis Camera Control Toolbar will pop up automatically. Sec.7.4 for details. |

## 7.2 The camera control panel on the left side of the video window

The Camera Control Panel controls the camera to achieve the best video or image quality according to the specific applications; It will pop up automatically when the mouse cursor is moved to the left side of the video window (in measurement status, the Camera Control Panel will not pop up. The Camera Control Panel will only pop up when the measurement process is finished or terminated while user's cursor on the left edge of the video window). Left-clicking button to achieve Display/Auto Hide switch of the Camera Control Panel.

| Camera Control Panel | Function | Function Description |
|---|---|---|
|  | Snap | Capture image and save it to the USB drive |
| | Record | Record video and save it to the USB drive |
| | Auto Exposure | When Auto Exposure is checked, the system will automatically adjust exposure time and gain according to the value of exposure compensation |
| | Exposure Compensation | Available when Auto Exposure is checked. Slide to left or right to adjust Exposure Compensation according to the current video brightness to achieve proper brightness value |
| | Exposure Time | Available when Auto Exposure is unchecked. Slide to left or right to reduce or increase exposure time, adjusting brightness of the video |
| | Gain | Adjust Gain to reduce or increase brightness of video. The Noise will be reduced or increased accordingly |
| | Sharpness | Adjust Sharpness level of the video |
| | Denoise | Slide left or right to denoise the video |
| | Gamma | Adjust Gamma level of the video. Slide to the right side to increase Gamma and to the left to decrease Gamma. |
| | Contrast | Adjust Contrast level of the video. Slide to the right side to increase Contrast and to the left to decrease Contrast. |
| | Brightness | Adjust Brightness level of the video. Slide to the right side to increase Brightness and to the left to decrease Brightness. |
| | DC | For DC illumination, there will be no fluctuation in light source so no need for compensating light flickering |
| | AC (50HZ) | Check AC (50HZ) to eliminate flickering caused by 50Hz illumination |
| | AC (60HZ) | Check AC (60HZ) to eliminate flickering caused by 60Hz illumination |
| | Scence | Select different default parameters according to the type of microscope |
| | Default | Restore all the settings in the Camera Control Panel to default values |



## 7.3 The Measurement Toolbar on top of the video window

The Measurement Toolbar will pop up when moving mouse cursor to any place near the upper edge of the video window. Here is the introduction of the various functions on the Measurement Toolbar:


Figure 13 The Measurement Toolbar on the Upper Side of the Video Window

| Icon | Function |
|---|---|
| | Float/ Fix switch of the Measurement Toolbar |
| Visible | Show / Hide Measurement Objects |
| Pixel | Select the desired Measurement Unit |
| NA | Select Magnification for Measurement after Calibration |
| | Object Select |
| | Angle |
| | 4 Points Angle |
| | Point |
| | Arbitrary Line |
| | 3 Points Line |
| | Horizontal Line |
| | Vertical Line |
| | 3 Points Vertical Line |
| | Parallel |
| | Rectangle |
| | 3 Points Rectangle |
| | Ellipse |
| | 5 Points Ellipse |
| | Circle |
| | 3 Points Circle |
| | Annulus |
| | 3 Points Annulus |
| | Two Circles and its Center Distance |

| | |
|---|---|
| | 3 Points Two Circles and its Center Distance |
| | Arc |
| | Text |
| | Polygon |
| | Curve |
| | Scale Bar |
| | Arrow |
| | Execute Calibration to determine the corresponding relation between magnification and resolution, which will establish the corresponding relationship between measurement unit and the sensor pixel size. Calibration needs to be done with the help of a micrometer. For detailed steps of carrying out Calibration please refer to EHDView help manual. |
| | Auto Measurement: Two Points Parallel, Circle Detect, Annulus Detect, Rectangle Detect |
| | Export the Measurement information to CSV file(*.csv) |
| | Measurement Setup |
| | Delete all the measurement objects |
| | Exit from Measurement mode |
| | When the measurement ends, left-click on a single measuring object and the Object Location & Properties Control Bar will show up. User could move the object by dragging the object with the mouse. But more accurate movement could be done with the control bar. The icons on the control bar mean Move Left, Move Right, Move Up, Move Down, Color Adjustment and Delete. |

Note:

1) When user left-clicks Display/Hide button on Measurement Toolbar, Measurement Toolbar will be fixed. In this case Camera Control Panel will not pop up automatically even if moving the mouse cursor to the left edge of the video window. Only when user left-click the button on Measurement Toolbar to exit from the measurement mode will they be able to doing other operations on Camera Control Panel or Synthesis Camera Control Toolbar.

2) When a specific Measurement Object is selected during the measurement process, Object Location & Attributes Control Bar will appear for changing the object location and properties of the selected objects.

## 7.4 Icons and functions of the Synthesis Camera Control Toolbar at the bottom of the video window

Figure 14 The Synthesis Camera Control Toolbar on the Bottom of the Video Window

| Icon | Function | Icon | Function |
|---|---|---|---|
| | Zoom In the Video Window | | Zoom Out the Video Window |
| | Horizontal Flip | | Vertical Flip |
| | Video Freeze | | Display Cross Line |
| | Compare Image with the Current Video | | Browse images and videos in the USB drive |
| | Settings | | Check the Version of XCamView |

The Setting function is relatively more complicated than the other functions. Here is more information about it:

### 7.4.1 Settings>Network>General

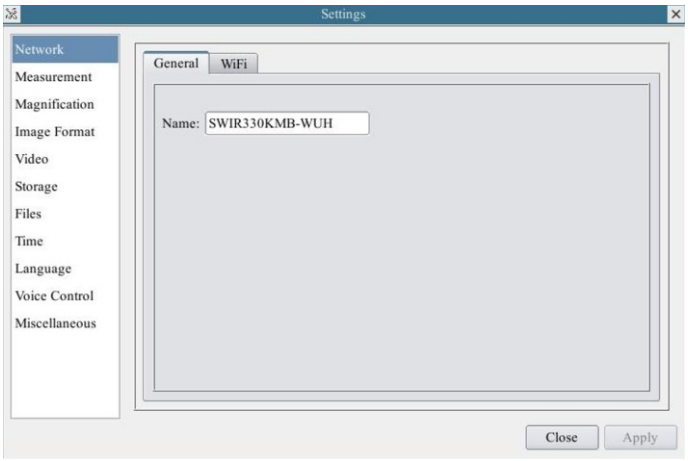



Figure 15 Comprehensive Network General Settings Page

| | |
|---|---|
| Name | The current camera name recognized as the network name |

### 7.4.2 Settings>Network>WiFi

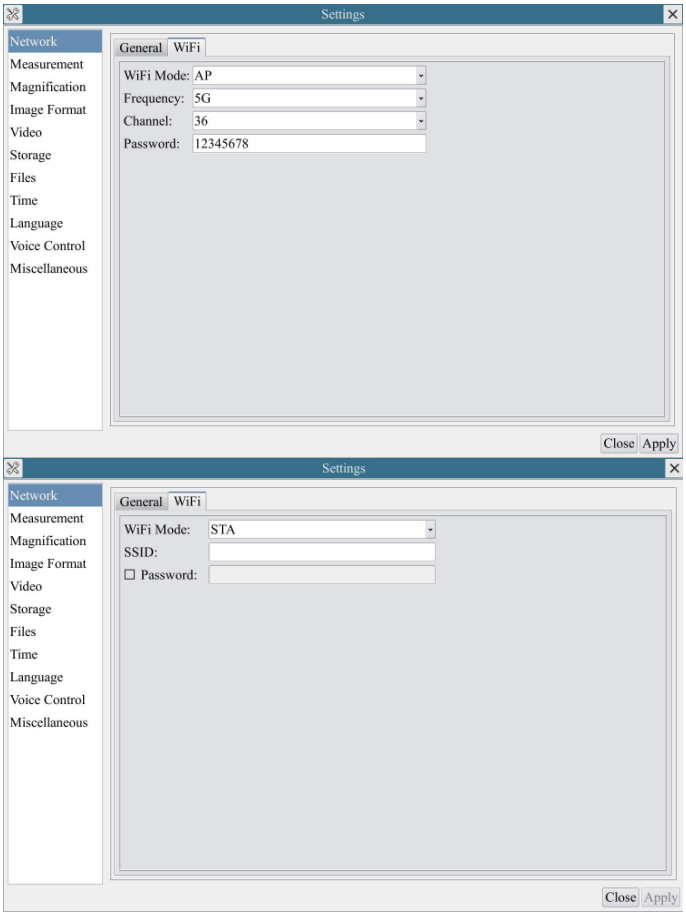



Figure 16 Network Setup

| | |
|---|---|
| Wi-Fi Mode | AP/STA mode to select; |
| Channel/SSID | Channel for the AP mode and SSID for the STA mode. Here, the SSID is the router's SSID; |
| Password | Camera Password for the AP mode. Router Password for the STA mode |

### 7.4.3 Settings>Measurement

This page is used for the define of the Measurement Object properties.

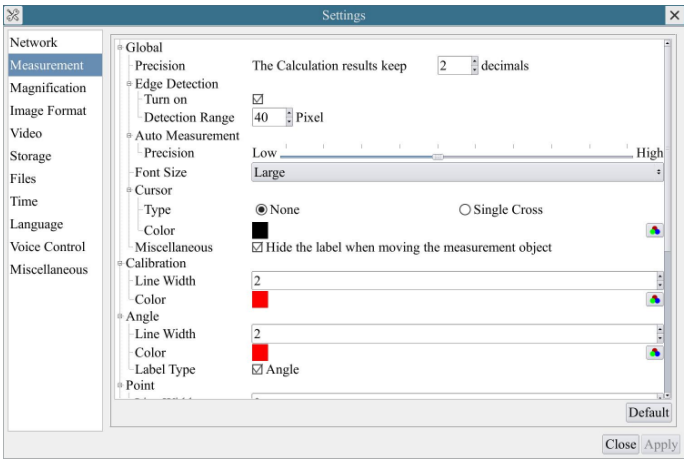



Figure 17 The Measurement Setup

| | | |
|---|---|---|
| Global | Precision | Used for setting digits behind the decimal point for measurement results; |
| | Edge Detection | Select whether to enable the automatic edge search function and set the detection range; |
| | Auto Measurement | Used for define the level of accuracy used for auto measurement; |
| | Font Size | The font size of measurement data can be divided into three types: large, Middle, and Small; |
| | Cursor | Select whether the cursor is a single crosshair and set the color of the single cross; |
| | Miscellaneous | Whether to hide the label when moving the measurement objects; |
| Calibration | Line Width | Used for defining width of the lines for calibration; |
| | Color | Used for defining color of the lines for calibration; |
| | EndPoint | Type: Used for defining shape of the endpoints of lines for calibration: Null means no EndPoint, rectangle means rectangle type of endpoints. It makes alignment more easily; |
| Point, Angle, Line, Horizontal Line, Vertical Line, Rectangle, Circle, Ellipse, Annulus, Two Circles, Polygon, Curve | | |
| | Left-click the ⊞ along with the Measurement command mentioned above will unfold the corresponding attribute settings to set the individual property of the Measurement Objects. | |

### 7.4.4 Settings>Magnification

This page's items are formed by the Measurement Toolbar's Calibration command.

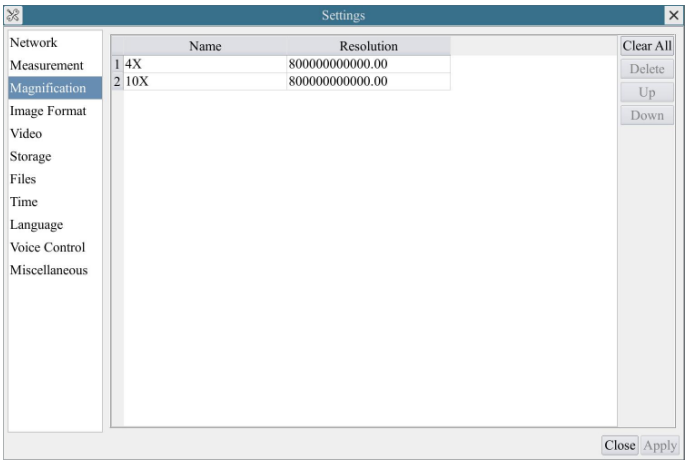



Figure 18 Comprehensive Magnification Settings Page

| | |
|---|---|
| Name | Names such as 10X, 40X, 100X are based on magnification of the microscopes. For continuous zoom microscopes, ensure that the selected magnification coincides with the scale alignment line on the microscope zoom knob; Users could also edit the name of the magnification with other information, for example, microscope mode, users name, etc. |
| Resolution | Pixels per meter. Image device like microscopes have high Resolution value; |
| Clear All | Click the Clear All button will clear the calibrated magnifications; |
| Delete | Click Delete to delete the selected magnification; |
| Up | Click Up to delete the selected magnification; |
| Down | Click Down to delete the selected magnification; |

### 7.4.5 Settings>Image Format

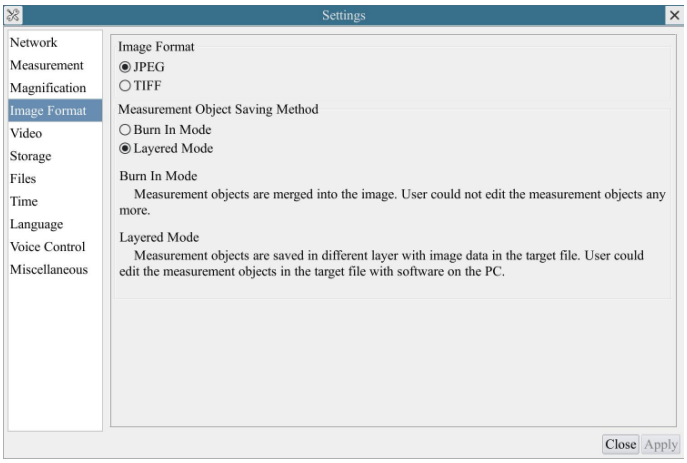



Figure 19 Comprehensive Image Format Settings Page

| | |
|---|---|
| Image Format | JPEG: The extension of JPEG file can get very high compression rate and display very rich and vivid images by removing redundant images and color data. In other words, it can get better image quality with the least disk space. If measurement objects are available, the measurement objects will be burned into the image and the measurement cannot be edited.<br>TIFF: TIFF is a flexible bitmap format mainly used to store images including photos and artistic images. |
| Measurement Object Saving Method | Burn in Mode: The measurement objects are merged into the current image. User could not edit the measurement objects any more. This mode is not reversable.<br>Layered Mode: The measurement objects are saved in different layer with current image data in the target file. User could edit the measurement objects in the target file with some software on the PC. This mode is reversable. |

### 7.4.6 Settings>Video

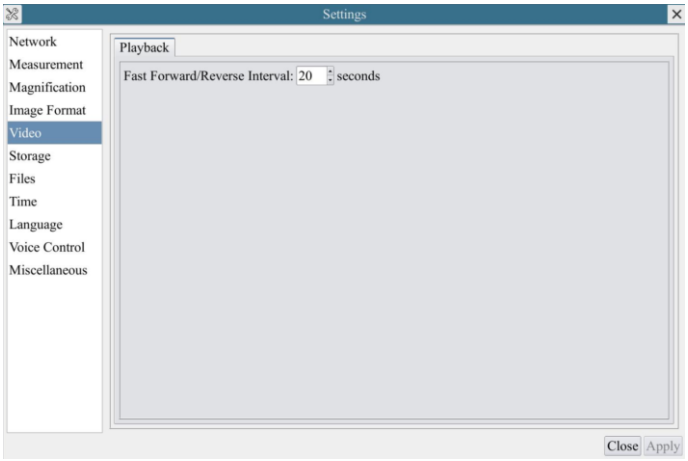



Figure 20 Comprehensive Setting of Video page

| | |
|---|---|
| Video Playback | Fast Forward/Reverse internal in second unite for Video Playback |

### 7.4.7 Settings>Storage


Figure 21 Comprehensive Setting of Storage Page

| | |
|---|---|
| File System Format of the Storage Device | List the file system format of the current storage device<br>FAT32: The file system of USB Flash Drive is FAT32. The maximum video file size of single file in FAT32 file system is 4G Bytes; |

| | |
|---|---|
| | exFAT: The file system of USB Flash Drive is exFAT. The maximum video file size of single file in FAT32 file system is 16E Bytes;<br>NTFS: The file system of USB Flash Drive is NTFS. The maximum video file size of single file is 2T Bytes.<br>Unknown Status: USB Flash Drive not detected or the file system is not identified; |
| Note: For USB Flash Drive, USB 3.0 interface is preferred. | |

### 7.4.8 Settings>Files

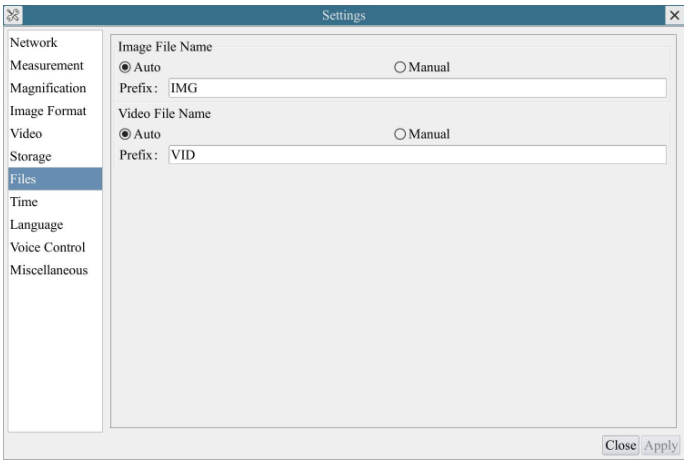



Figure 22 Comprehensive Setting of Files Name

| | |
|---|---|
| Image or Video File Name Paradigm | Provide Auto or Manual naming paradigm for Image or Video file; |
| Auto | With specified name as the Prefix and XCamView will add digital after the Prefix for the Image or Video file; |
| Manual | A file dialog will pop up to enter the Image or Video file name for the captured Image or Video. |

### 7.4.9 Settings>Time

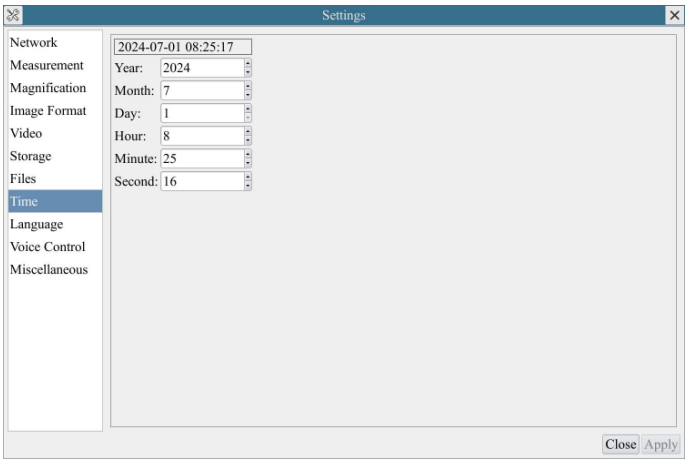



Figure 23 Time Setting

| | |
|---|---|
| Time | User can set Year, Month, Day, Hour, Minute and Second ital.in this page. |

### 7.4.10 Settings>Language


Figure 24 Comprehensive Setting of Language Selection Setting Page

| | |
|---|---|
| English | Set language of the whole software into English; |
| Simplified Chinese | Set language of the whole software into Simplified Chinese; |
| Traditional Chinese | Set language of the whole software into Traditional Chinese; |
| Korean: | Set language of the whole software into Korean; |
| Thailand | Set language of the whole software into Thailand; |
| French | Set language of the whole software into French; |
| German | Set language of the whole software into German; |
| Japanese | Set language of the whole software into Japanese; |
| Italian | Set language of the whole software into Italian; |
| Russian | Set language of the whole software into Russian; |

### 7.4.11 Settings>Voice Control

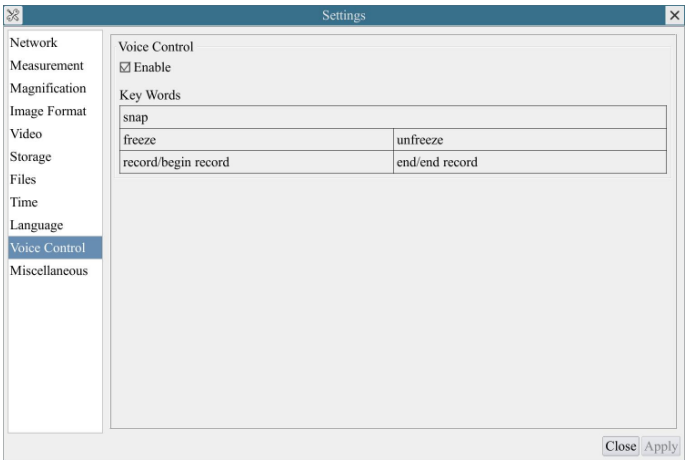



Figure 25 Comprehensive Setting of Voice Control

| | |
|---|---|
| Voice Control | Select whether to enable or not; |
| Key Words | Provide Key Words for “snap”; |
| | Provide Key Words for “freeze”, “unfreeze”; |
| | Provide Key Words for “record/begin record”, “end/end record”; |
| Note: After the camera is turned on, if the voice control module is not plugged in, the Key Words information will not be displayed by default; | |

### 7.4.12 Settings>Miscellaneous

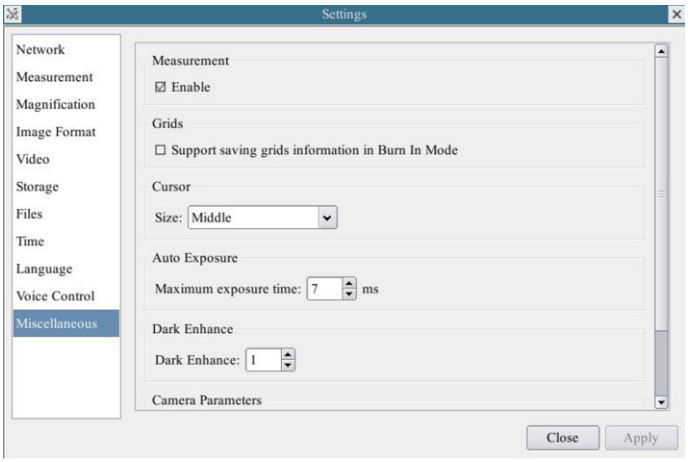



Figure 26 Comprehensive Miscellaneous Settings Page

| | |
|---|---|
| Measurement | Select to display the measurement toolbar in the video window, otherwise not to display the measurement toolbar; |
| Grids | Select to support saving mesh information in fusion mode, otherwise not to support; |
| Cursor | Choosing the Cursor size according to the screen resolution or personal preference |
| Auto Exposure | Define the maximum automatic exposure time; |
| Dark Enhance | Define the intensity value of dark enhancement; |
| Camera Parameters Import | Import the Camera Parameters from the USB flash drive to use the previously exported Camera Parameters |
| Camera Parameters Export | Export the Camera Parameters to the USB flash drive to use the previously exported Camera Parameters |
| Reset to factory defaults | Restore camera parameters to its factory status; |

## 8 Contacting Customer Service

EHD imaging GmbH
Zum Rennplatz 15
D-49401 Damme (Germany)
Tel: +49-5491-2090
email: info@ehdimaging.de
Web: www.ehd.de