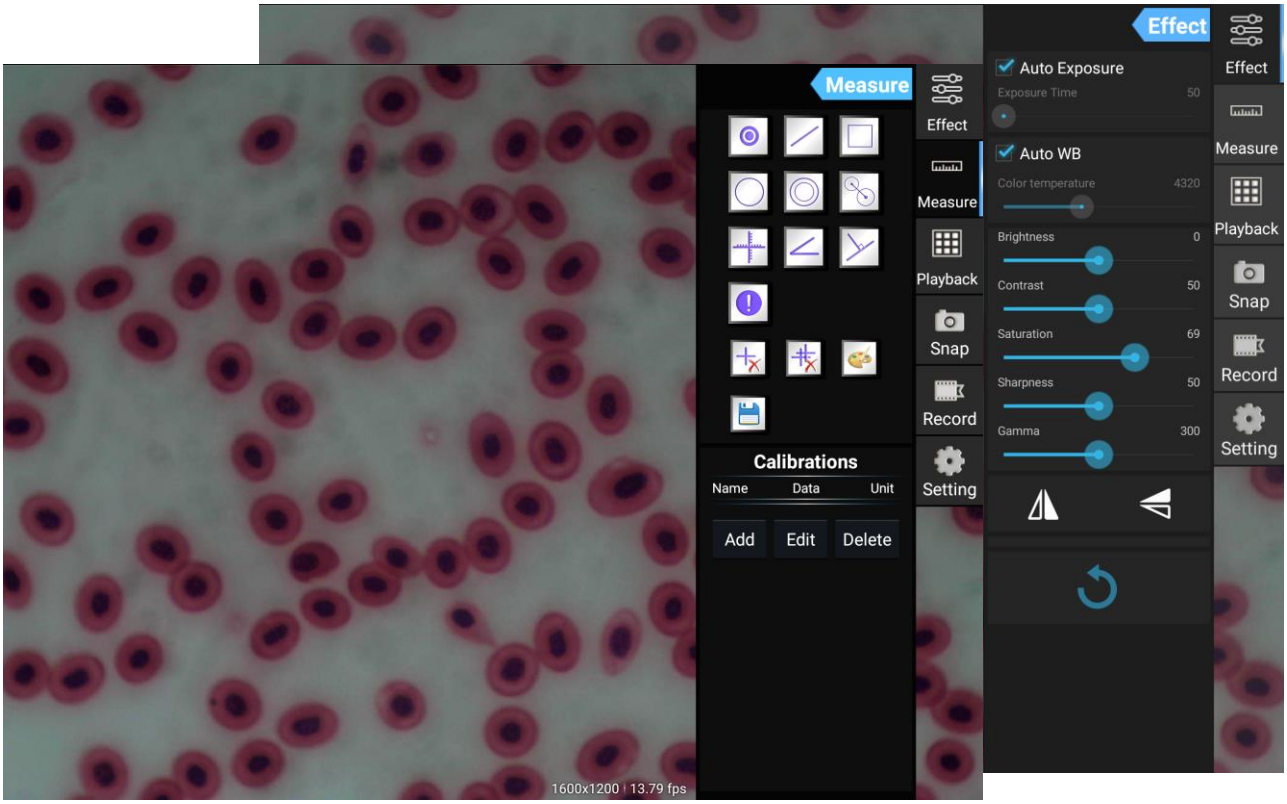
HD750-MTS User Manual

Real-Time Measurement Software for Android

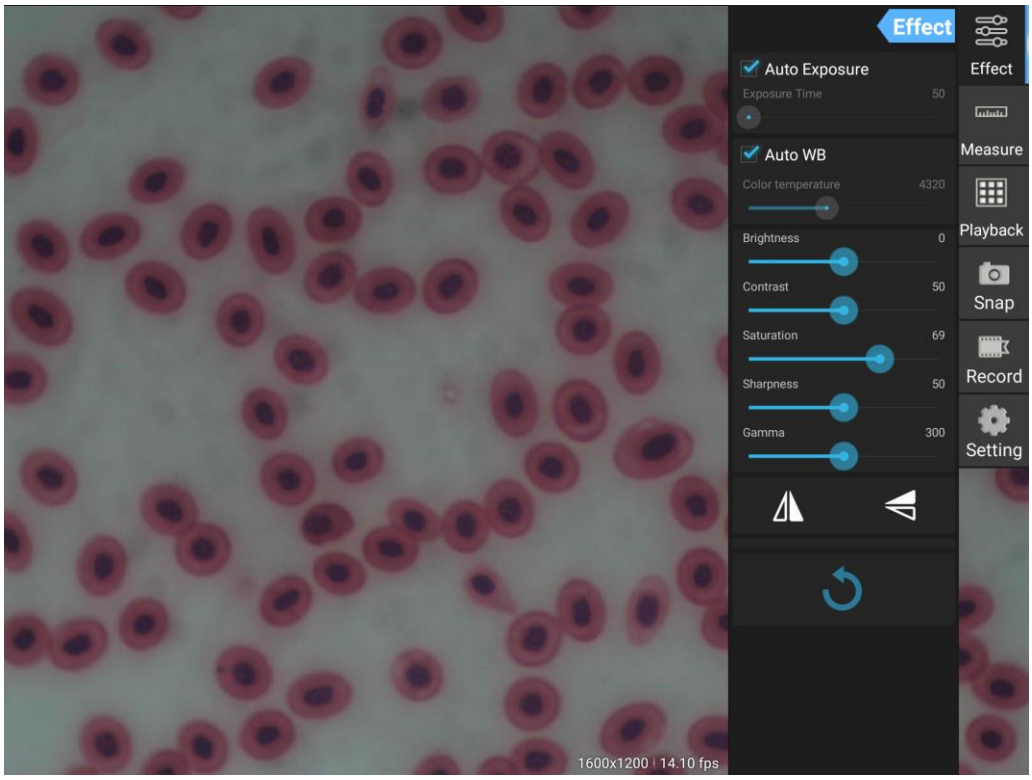


1. Introduction

This APP is a camera application for android devices. This APP can adjust image parameters, measure objects, and capture images and videos from the camera.

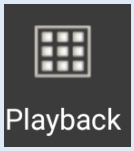
This APP also provides simple image processing features for particles analysis.

2. Camera User Interface

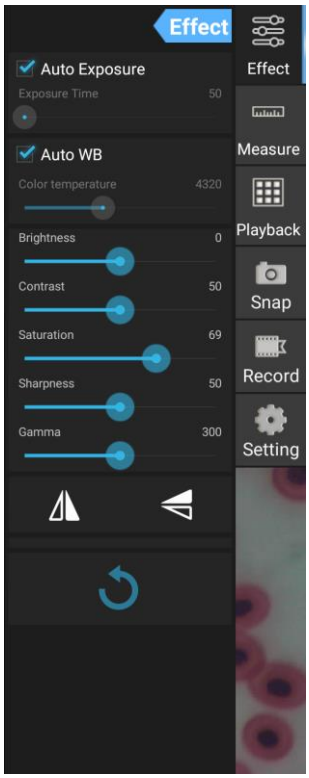


1. Preview Image – shows live video of the camera.
2. Tool Panel – Control panels, capture, adjust parameter, measurement, etc.
   2.1 Camera parameter adjustment.
   2.2 Measurement
   2.3 Image and video playback.
   2.4 Take pictures and record video.
   2.5 Setting

3. Capture and Playback

	Click “Snap” button to take a picture. Select picture size in the setting interface.
	Click “Record” button to start video recording, click again to stop video recording. If the preview size is smaller than 1080p, the video size is the same as the preview size. If the preview size is bigger than 1080p, the video size will scale down to a size smaller than 1080p.
	Shows picture just captured. Plays video file just saved. The picture will be opened in the **Image Analysis** interface.

4. Adjust image parameters of camera



When the color of an image is not vivid, adjust the effects of the image by using the “Effect” panel.

Exposure:

- **Auto mode:** Brightness of the image will be automatically adjusted, you can also adjust the target brightness.
- **Manual mode:** Manually adjusts exposure time and gain.

White Balance:

- **Once AWB:** Click **“One Push”** to trigger auto white balance.
- **Manual WB:** Manually adjust color temperature.

Color Adjustment

Contrast, Saturation, sharpness and gamma of the image can be adjusted too.

Flip

Flip image horizontally or vertically.

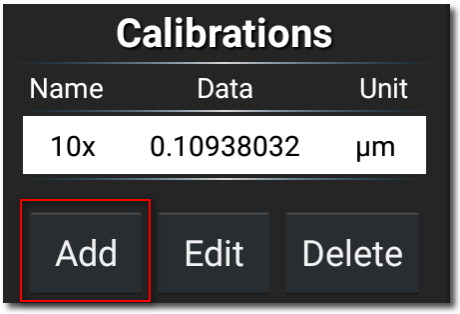
Click the reset button  to save or restore the camera profiles. You can save up to four sets of camera profiles, or you can set it to factory status.

5. Measurement

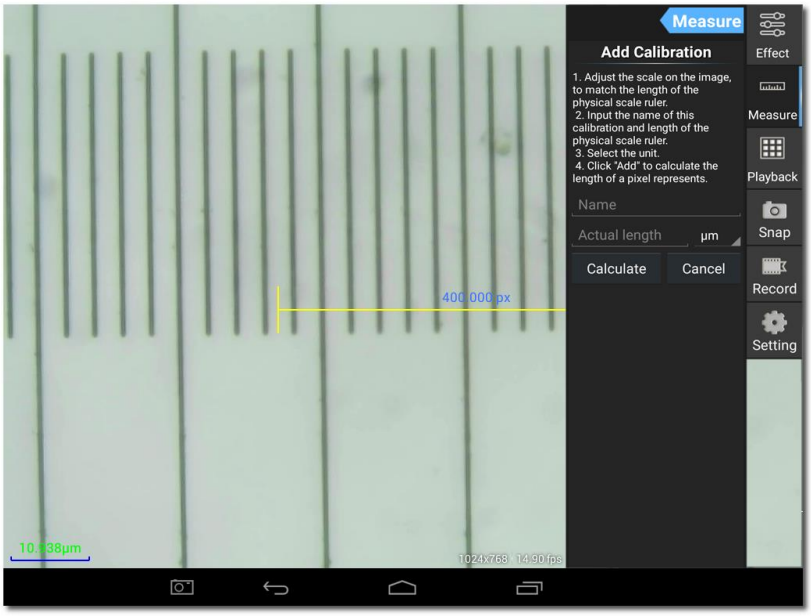
5.1 Calibration

We need to calibrate the ruler before measuring. Specific combination of magnification of microscope and the preview size of camera need specific calibration.

Swap the tool panel for measurement, click “Add” to add a new calibration. Click “Edit” to recalibrate the existing calibration.

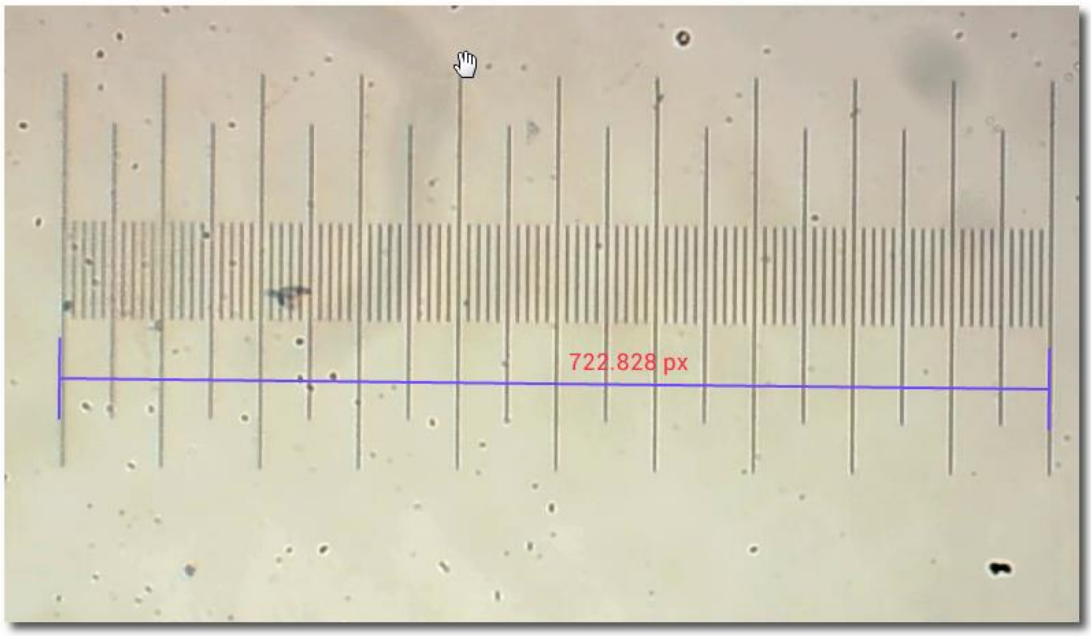


Enter calibration mode

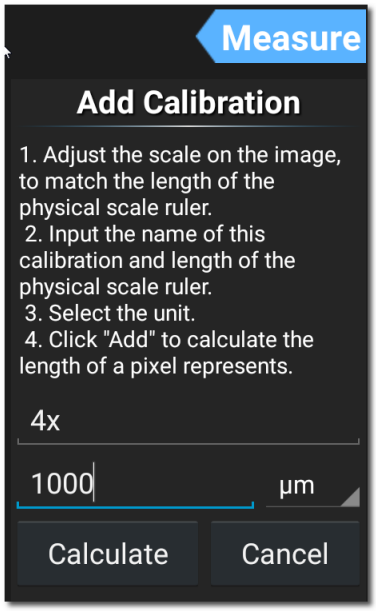


Follow the Tips：

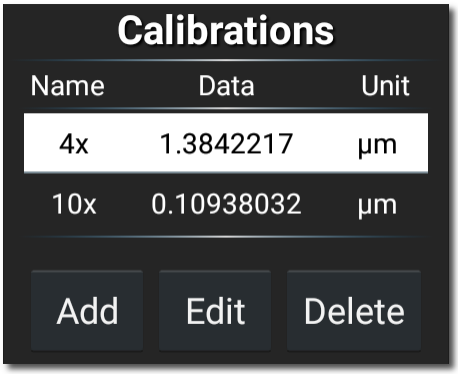
1. Drag the calibration ruler to let endpoints of the ruler close to the physical ruler's scale. We use the 0.01mm physical ruler, each scale is 10μm, we chose a whole ruler that's 1000μm.



2. Input the name of the calibration and the physical length of the ruler. We input 4x for the name, which means the magnification of objective is 4X,
Then input the physical length of the ruler which is 1000μm.



3. Click "Calculate" to calculate the calibration value for current objective and preview size, and save to list.

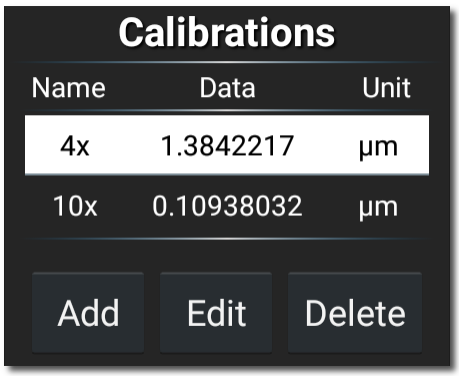


5.2 Measure tool

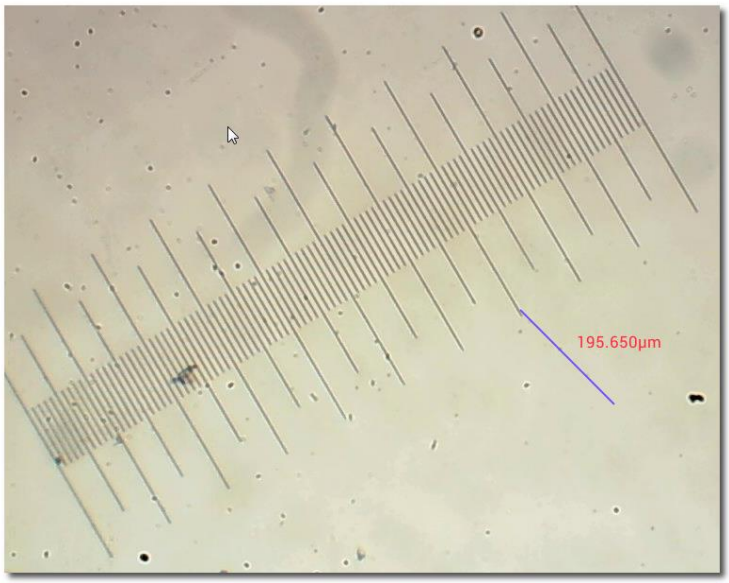
ICON	Function	Description
	point counting	Add a point counting marker on the image.
	Line	Measure distance of two points.
	Rectangle	Measure width, length and area of rectangle
	Circle	Measure area of circle
	Cross	Cross hair
	Angle	Angle measurement
	TwoCircles	Measure distance of two circles.
	Perpendicular	Measure length of perpendicular
	Concentric	Measure radius of two circles.
	Text Annotation	Draw text annotation on the image.
	Option	Change stroke width and color of rulers, and the size and color of the text.
	export	Export the image with measurement rulers.
	Delete	Delete the selected ruler
	Delete	Delete all

5.3 Measure with line ruler

Choose a calibration and the selected item will show with a white background and black text.



Choose line ruler from the right side bar. There will be a line ruler showing on the image.



Use the line ruler to measure the physical ruler.

We measured 6 large scale, the line ruler show 597.472μm, that represent the right result.