# Cyclops system user manual




Note: Please refer to software if any update happen

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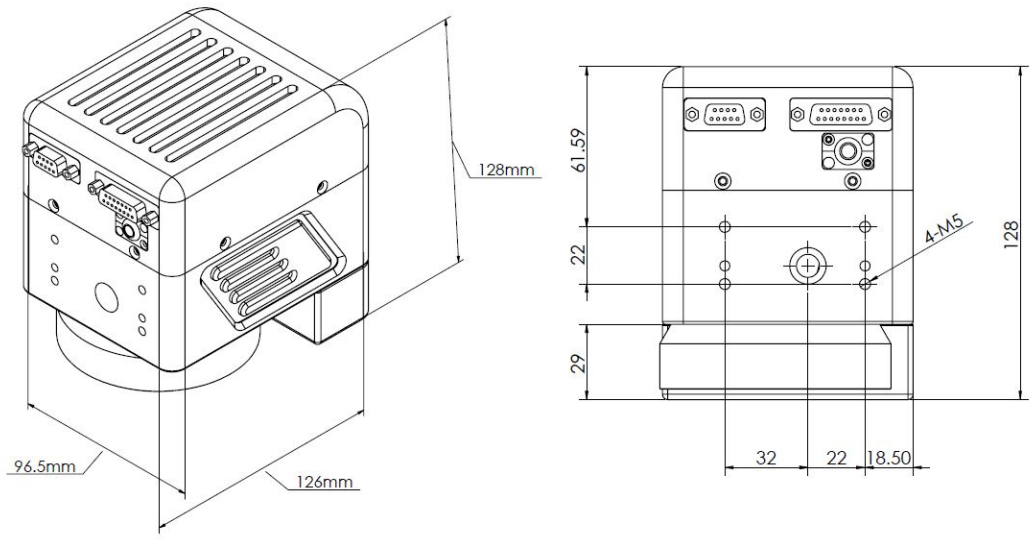
# SUMMARIZE

## 1.Component：

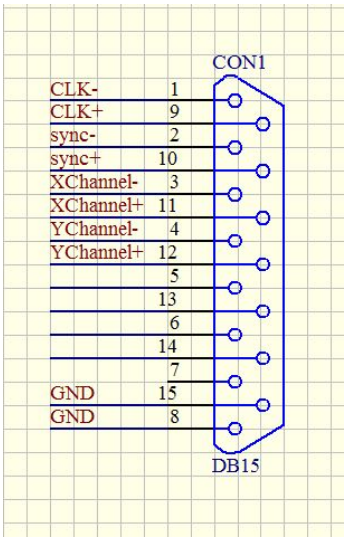
EZCAD with background show function, calibrate program（CameraCali）, .net environment, camera, USB cable, jig.

## 2. Introduction：

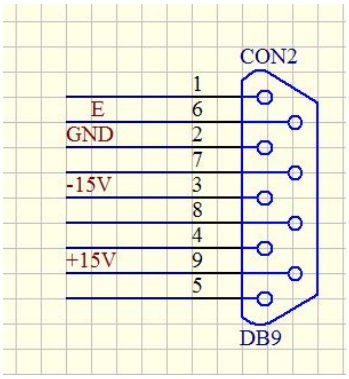
### 2.1 Cyclops scanhead




Drawing of Cyclops




Pins definition of CON1




Pins definition of CON2

## 2.2、Back ground show software Ezcad

The software include ezcad and calibrate program.Camera collect image and send it to ezcad workspace,calibrate program match the camera and scanhead coordinate,so with this system,where you put the text on in workspace,where it will be marked on the real part(inside of the calibration area).user can view the part and also adjust the text marking position according to the position of the part,no need to use red point.

If you use this system in WIN7 OS,after get the key file from seller,put cursor on ezcad.exe then right keyboard choose '**Run as Administrator(A)**'. Only the first time to operate it like this, from the second time, just double click to run it.

This system support both B&W camera and colorful camera.

# 3.Installation：

1. Copy ezcad folder to PC;
2. Open background show function in the marking board
3. Contact JCZ ask for licence.
4. Double click BJJCZ_remoteupdate.exe will show follow:




5. Click online finish and input the licence to the pop up window.

**Note: Computer need to link internet, also must fix computer and dongle!**

## 4. Steps:

1. First install .net environment
2. Same as normal EZCAD, firstly calibrate scanhead
3. Open CameraCali.exe and set parameters,finish calibrate and save the calibration file
4. Open ezcad and draw something and mark, it will be marked on the position you see through the view window.
   Note: the marking position is ezcad show position is just limited in the calibration area.
   **Follow will detail introduce the usage**

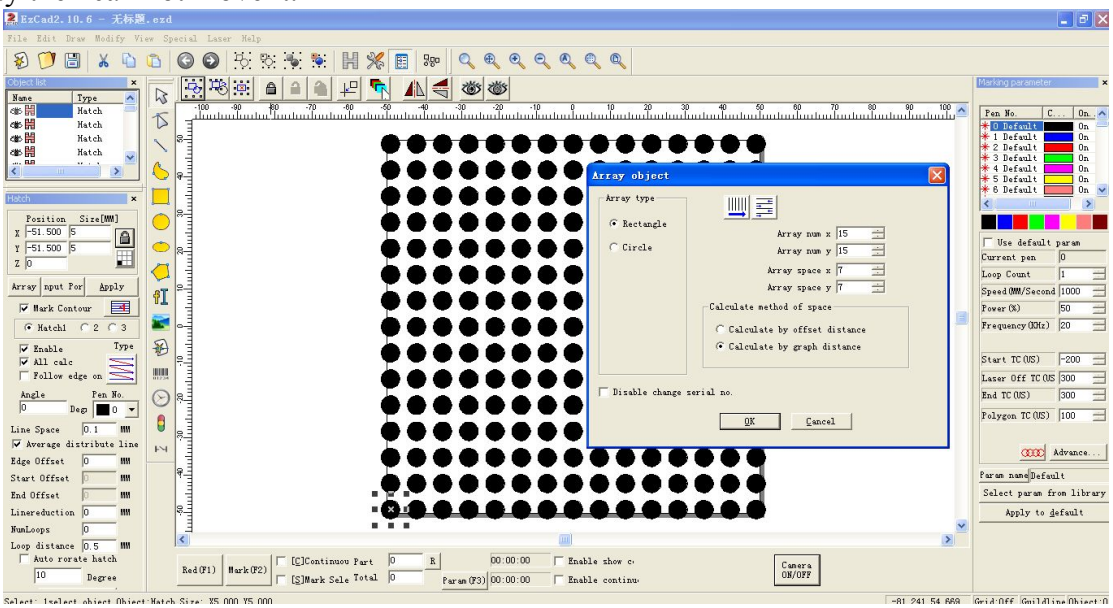
# 5. Function introduction

## 5.1 Marking-Ezcad

How to make the camera calibrate file：

1. Open EZCAD and click F3 to finish parameter setting and also load in the scanhead calibration file.

2. Then make point marking file in ezcad. And use the file in cameracali.exe program.the file is point array, number of the point must be odd,and please remember point distance.like follow the diameter of the point is 5mm, point distance is 7mm,number is 15X15,number of x and y direction must be odd, but can be different. Mark the point array then can not move it.




3. open folder of res,then in param.ini

```
CAMERA=1
CAMERATYPE=MVC3000F
//CAMERATYPE=MVC1000
```

CAMERA=1：enable background show function

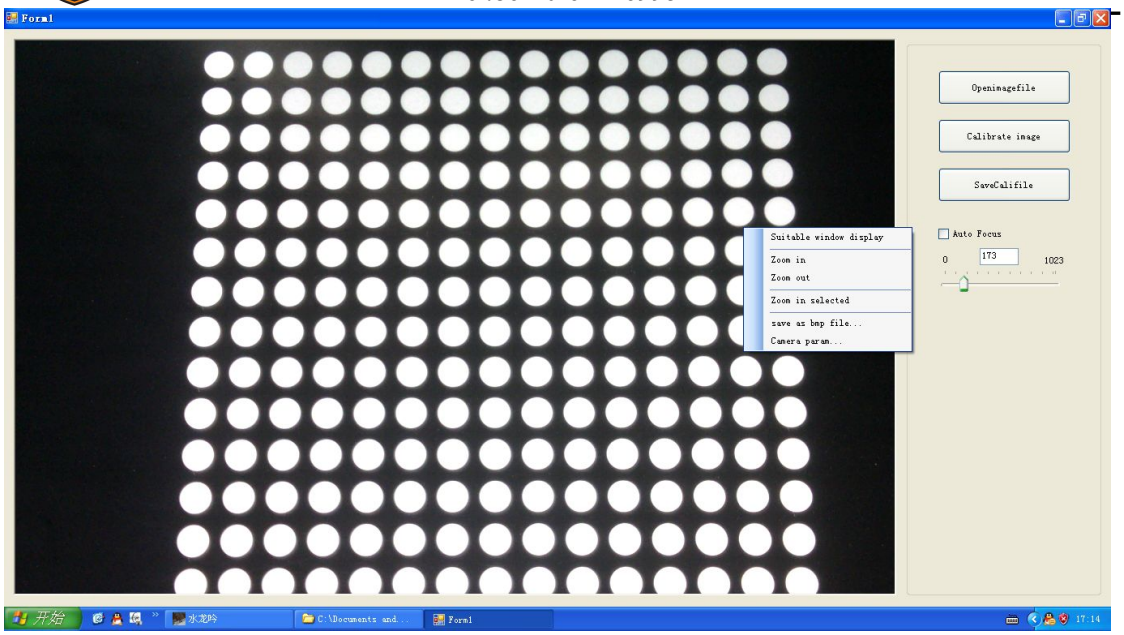
CAMERATYPE=MVC300F:enable camera

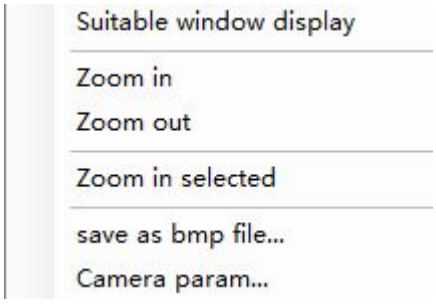
//CAMERATYPE=MVC1000:not use this camera

## 5.2 Calibrate—how to use CameraCali.exe

1. **Run** 

**,and click right keyboard in view area,will show follow:**



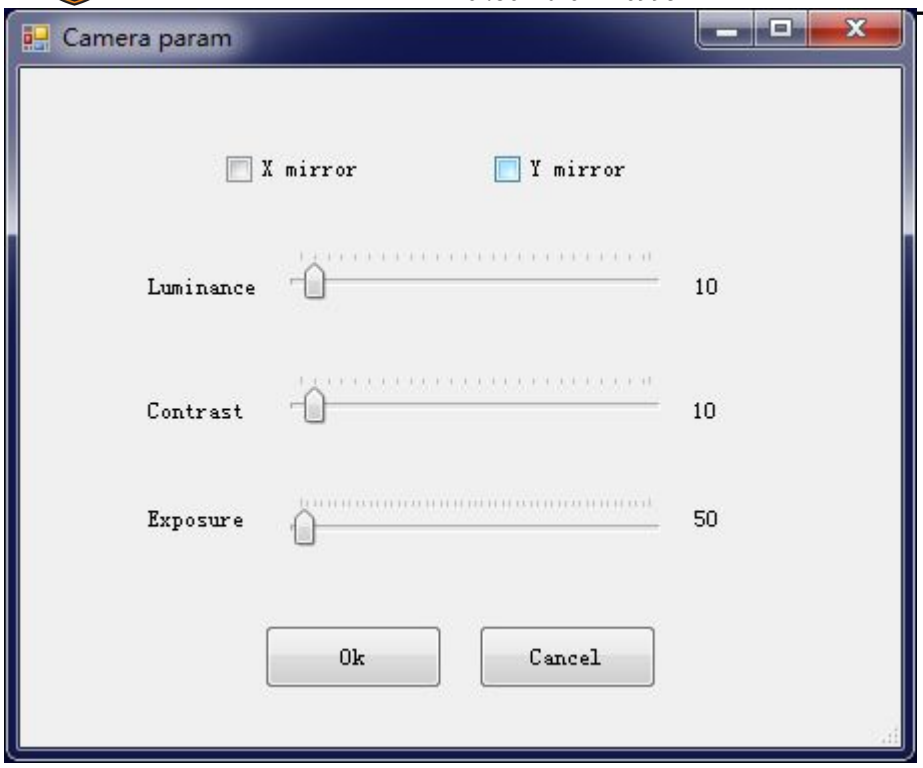



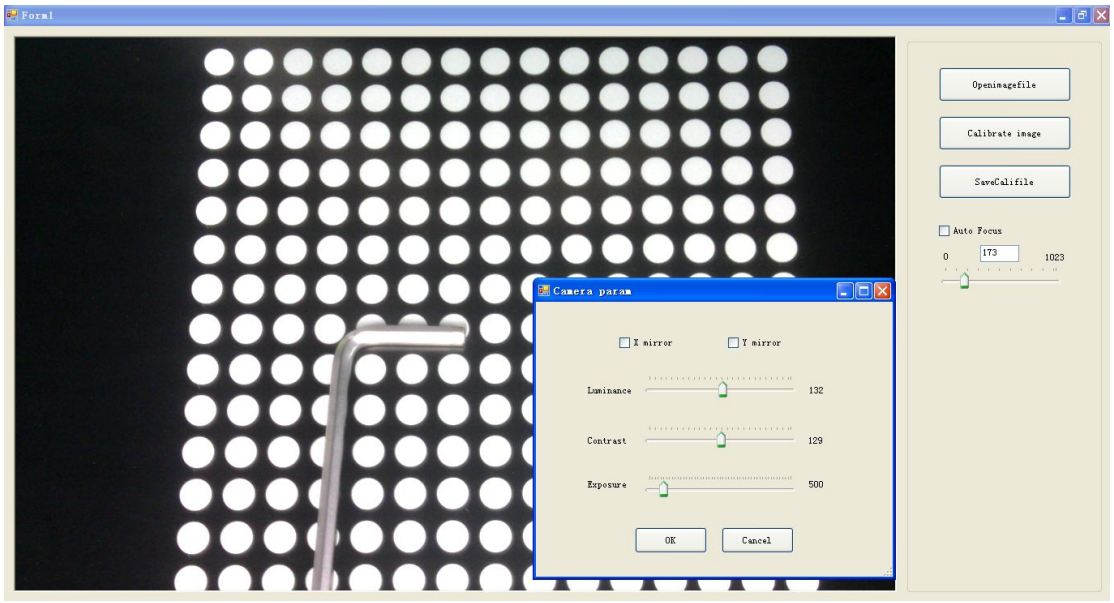

**Suitable window display:camera view area same size as workspace**

**Zoom in selected:use mouse to choose the area you want to zoom in**

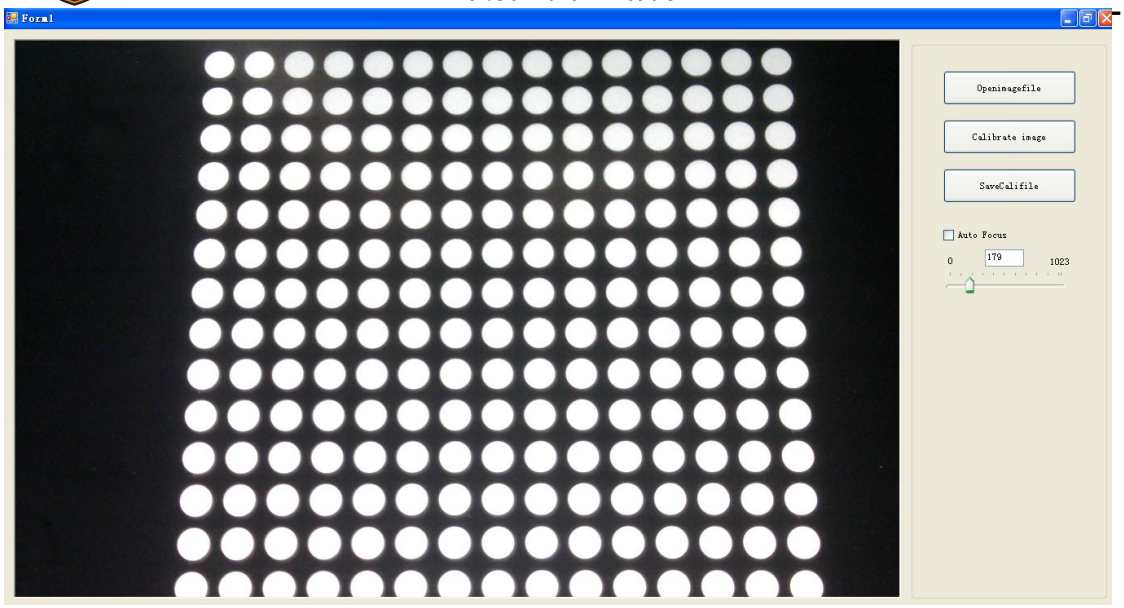
**Save as bmp file: save current show as bmp file(user don't need it usually)**

**Camera param:click it can set mirror,Luminance,contrast and exposure.please make sure the view image same as real object.**




2. Adjust position of the camera,focus of the camera to make sure every point is clear to see, and no other light noise,as fig:

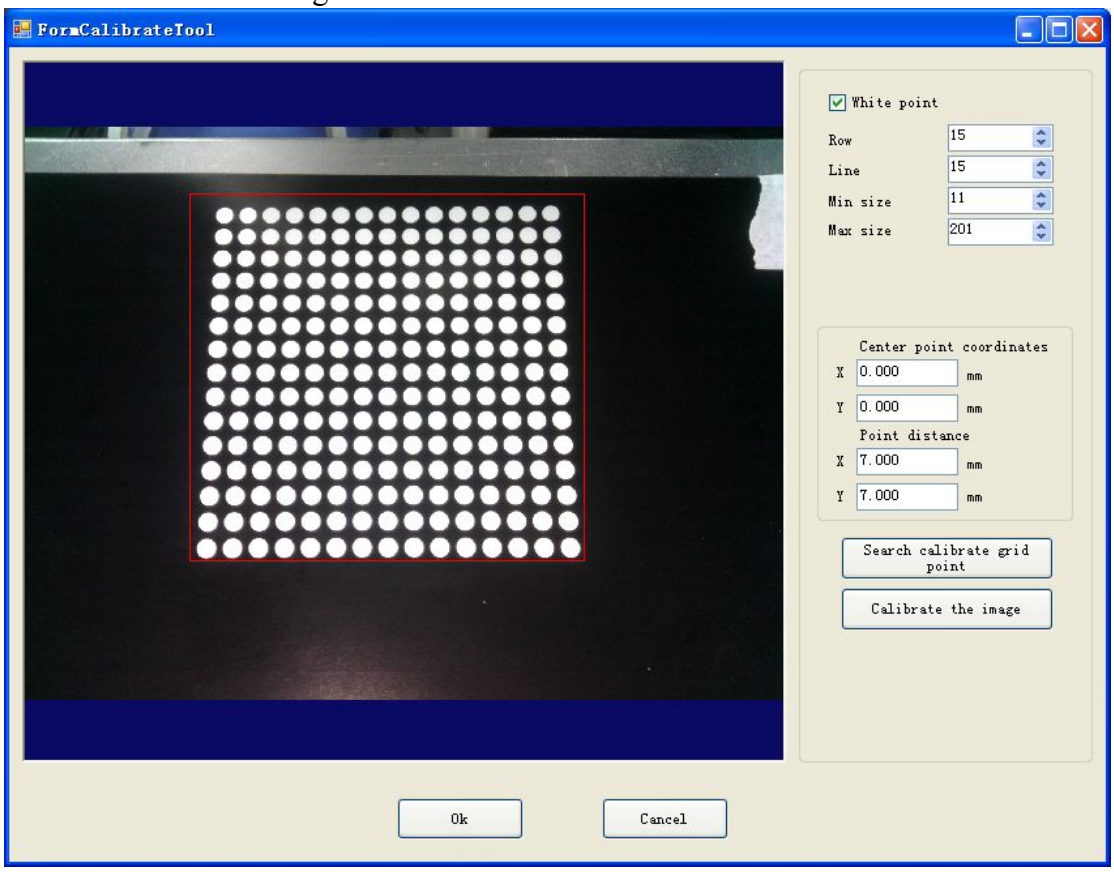




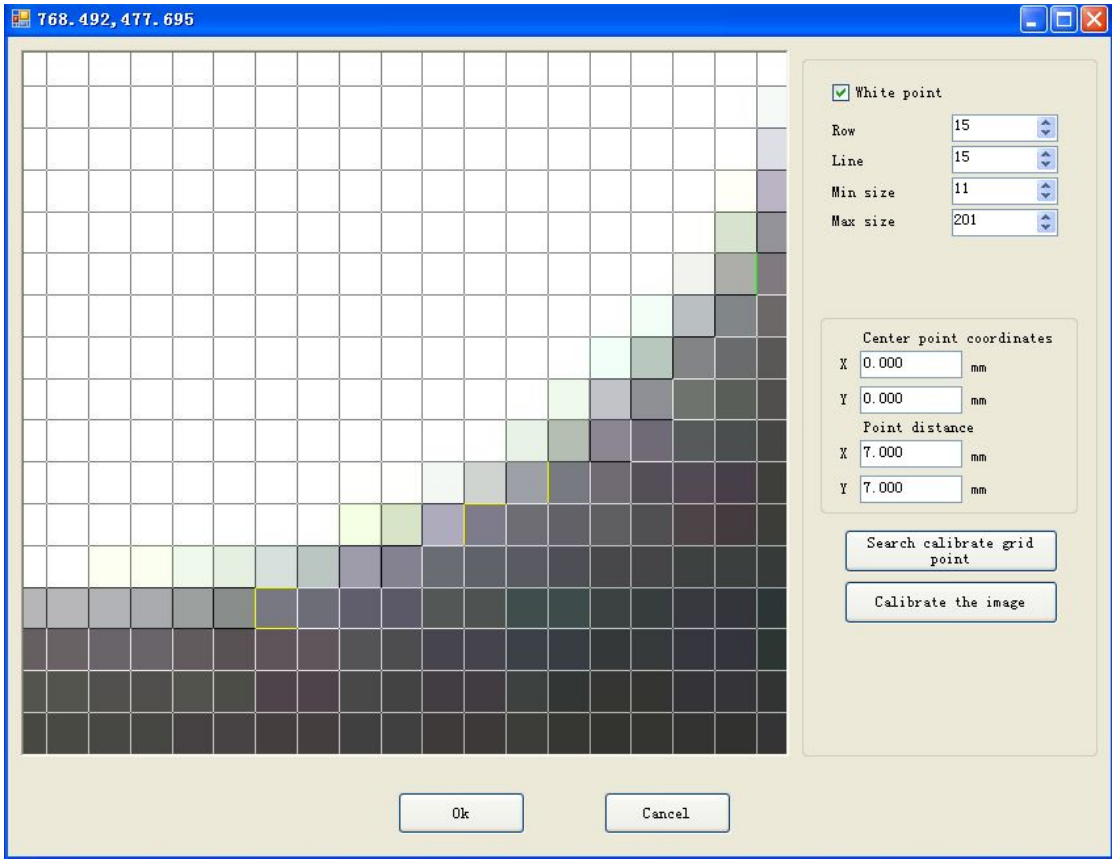


Click ‘Auto Focus’, system will automatic focus, if not, will be handle focus,we suggest not use auto focus,with handle focus, the value is 0-1023

3. Click ‘Calibrate the image’



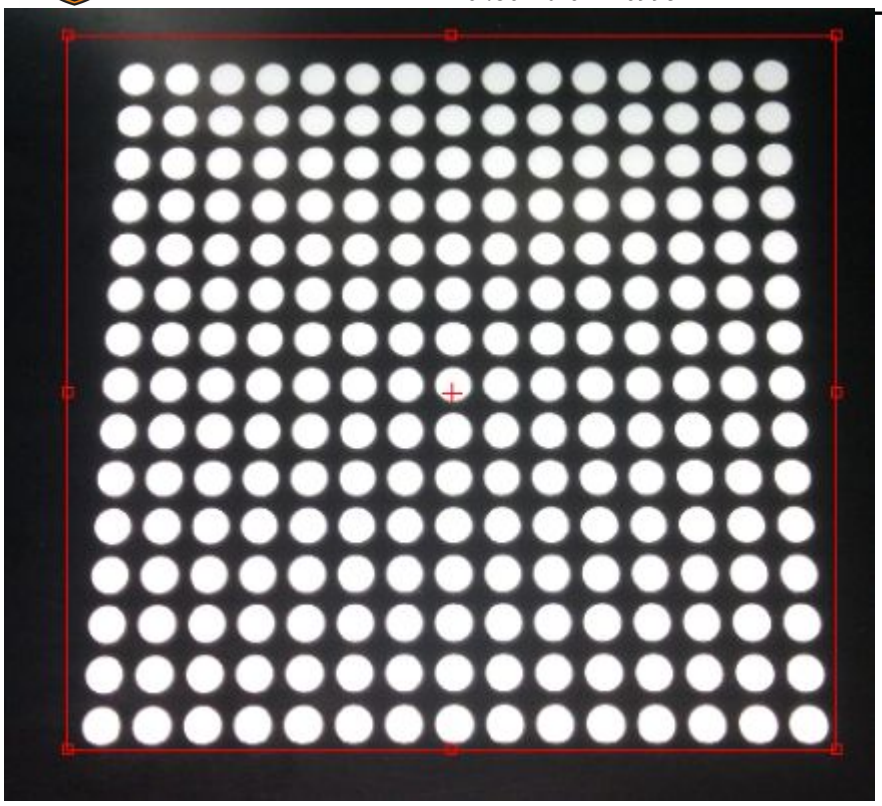
White point:when the point array is white color,please click it.
Row&Line: Row number and Line number of the point array.
Min size&Max size:Pixel number of each point,move mouse wheel can magnify it,and can see the grid as follow picture， count the number of the grid in one point,set max and min size to make the grid number between the min and max pixel number.



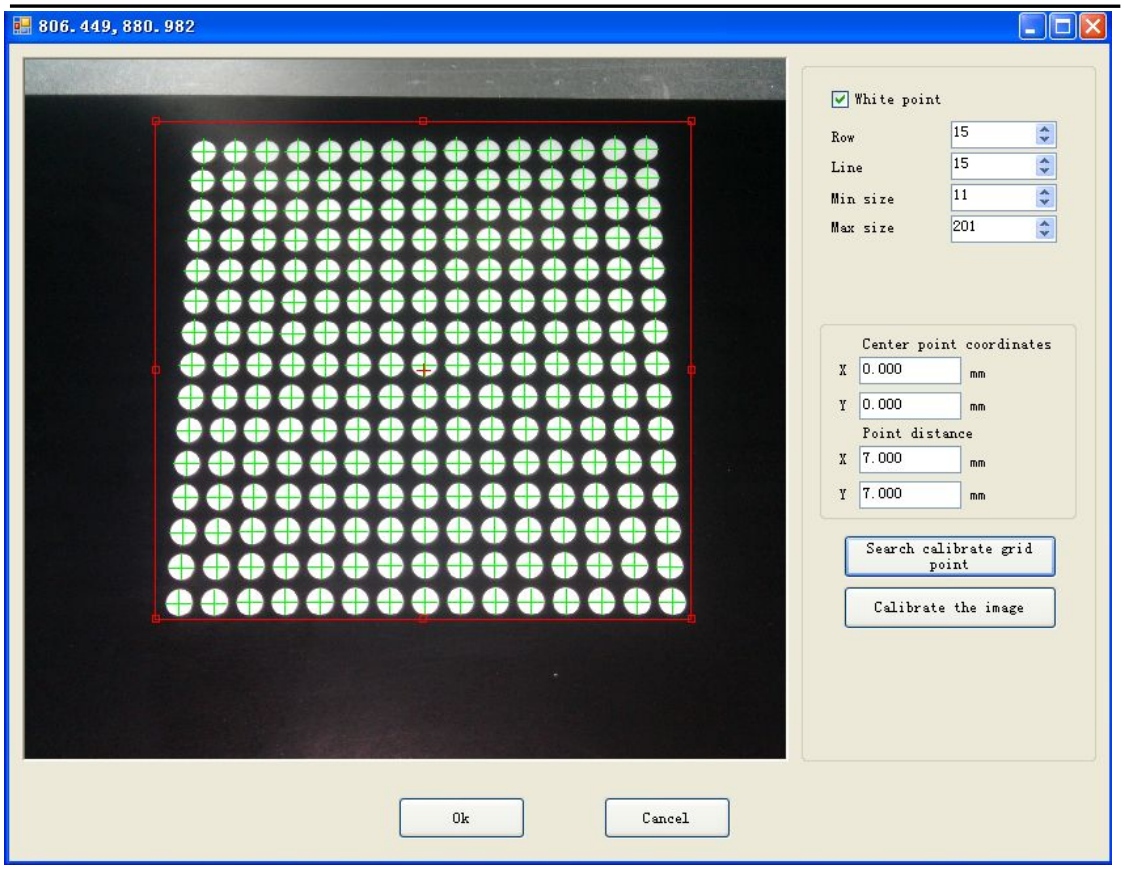

Center point coordinates: coordinates of point array center that be chosen.

Point distance:distance between two points in the point array.

4． Then draw box to make it cover whole point array,the center of the red box is repeat with center of point array.



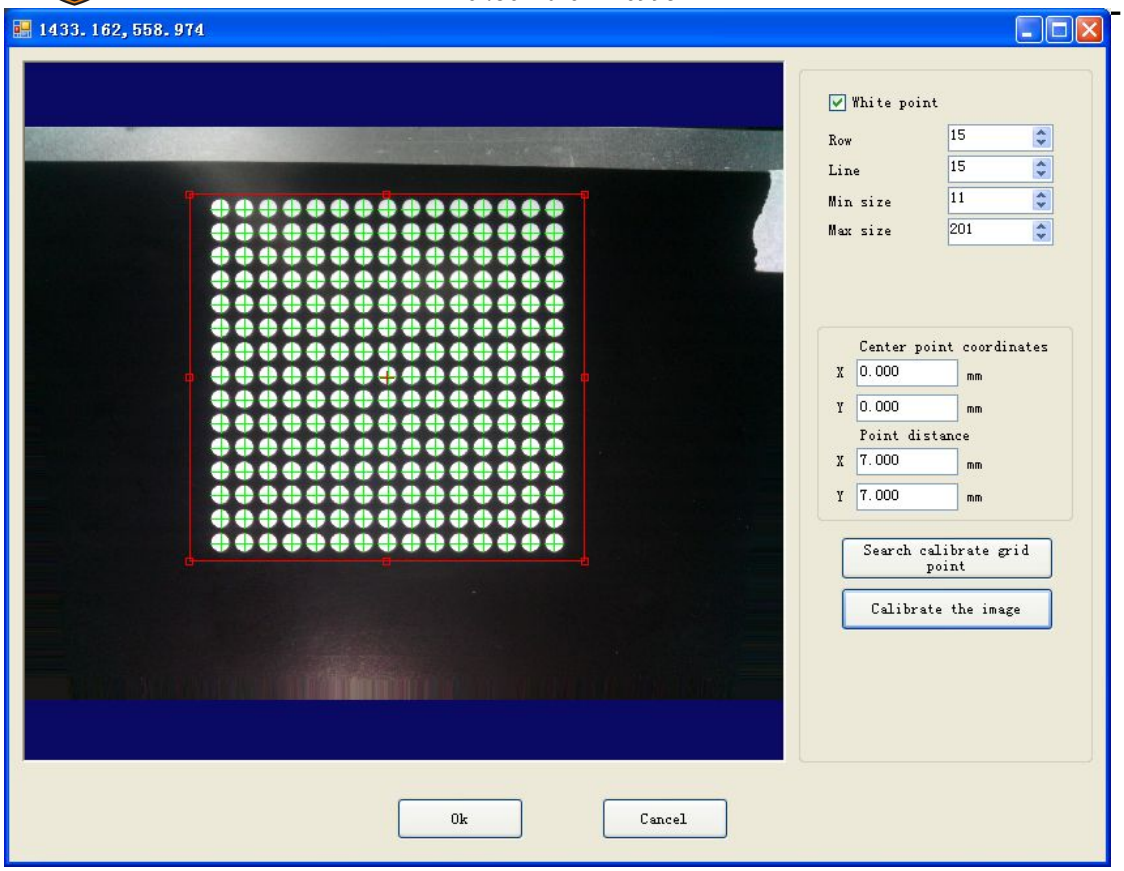
5. Click ‘search calibrate grid point’ then will show green color of cross in each point center.




Or will show error message:




5.Click ‘Calibrate the image’ will find the image change obviously.



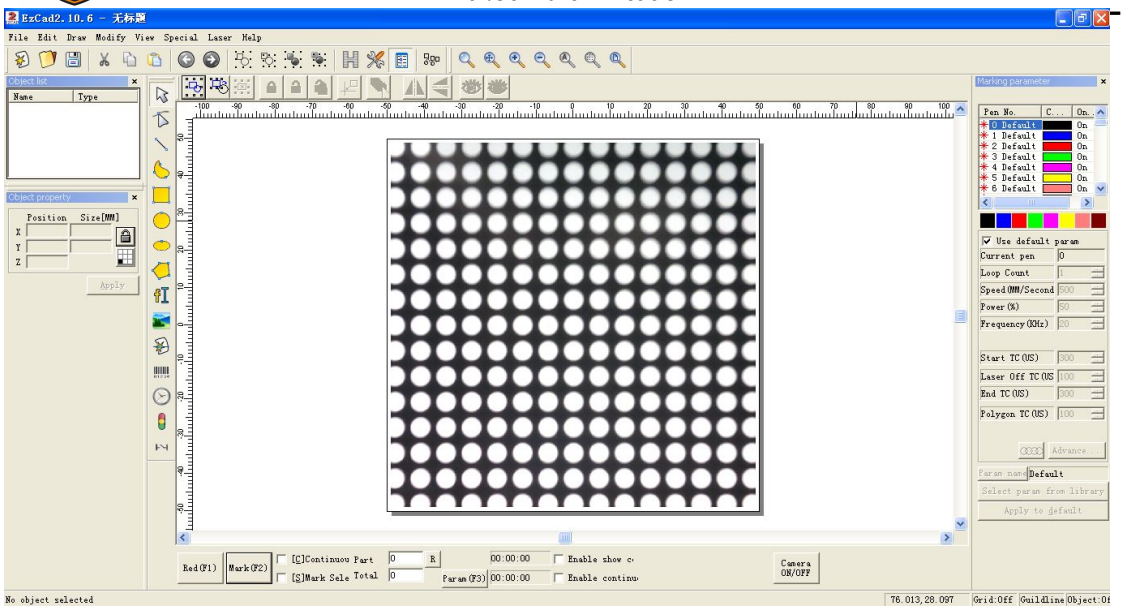

7.click OK,save calibrate file to same folder with ezcad.exe. Open the folder RES,then param.ini,make some setting.

```
CAMERACALI=1
CAMERACALIFILENAME=CameraCalibration.cal
```

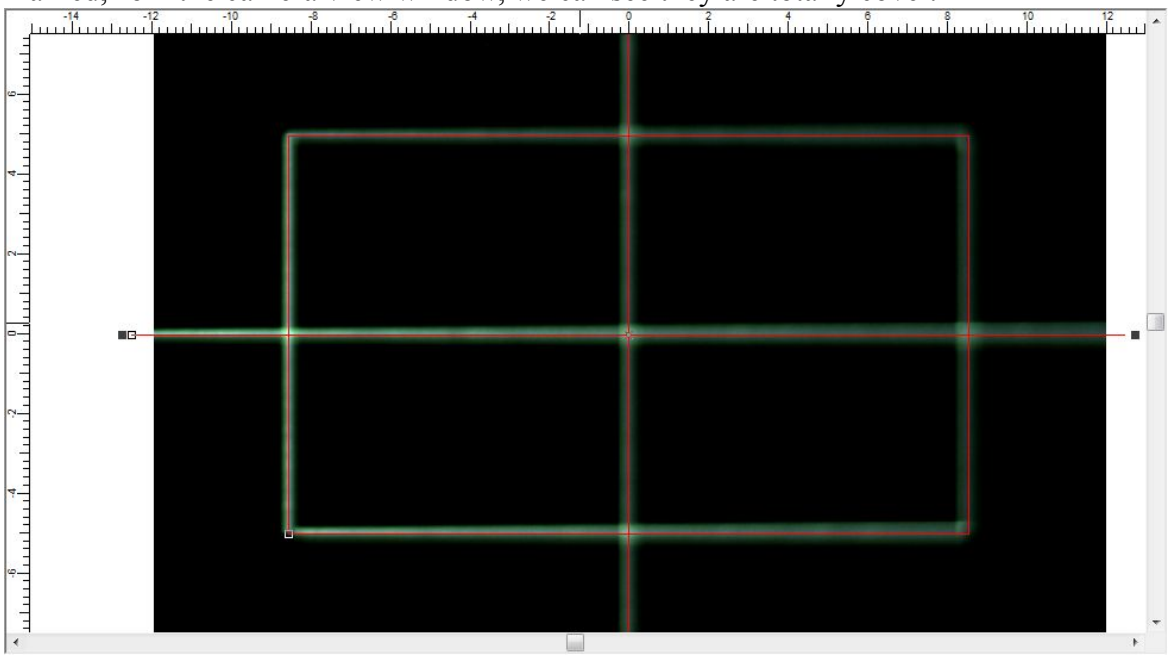
CAMERACALI=1：enable background show calibrate file

CAMERACALIFILENAME=CameraCalibration.cal:the name must same as calibrate file name.

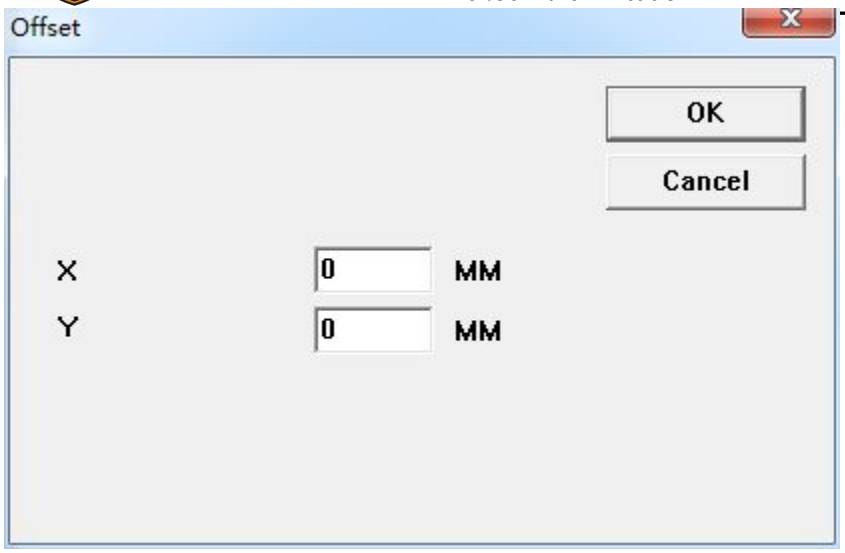
8.Now open EZCAD,it is already finish calibration, so can make mark position same as the position you see in work space.（Please don't let the PC becomes dormant）




Follow is one example, red lines is what we wants to mark,white lines is what we marked,from the camera view window, we can see they are totally cover.

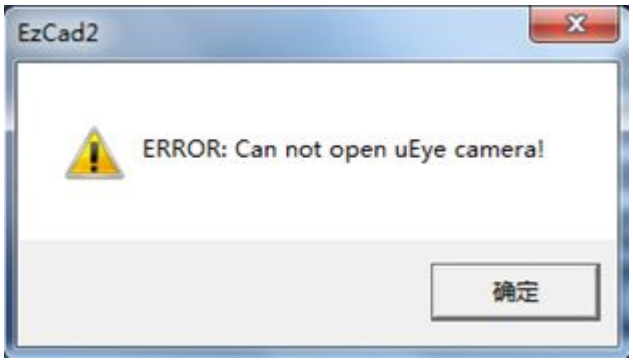


Because of some person reason,maybe after calibrate, the drawing object and marked result is not totally cover,now please click right key in the view area and choose ‘Camera’,will show follow window, change the value of x and y to calibrate the small position difference.(note:before calibrate make sure both of the x and y is 0).


Offset
OK
Cancel
X
0
MM
Y
0
MM

# Usual Questions

Q1: Open ezcad show follow error




A1: In the folder RES,open param.ini,make sure CAMERATYPE=IDS.

Q2: Open Ezcad,and no background show also no on/off button

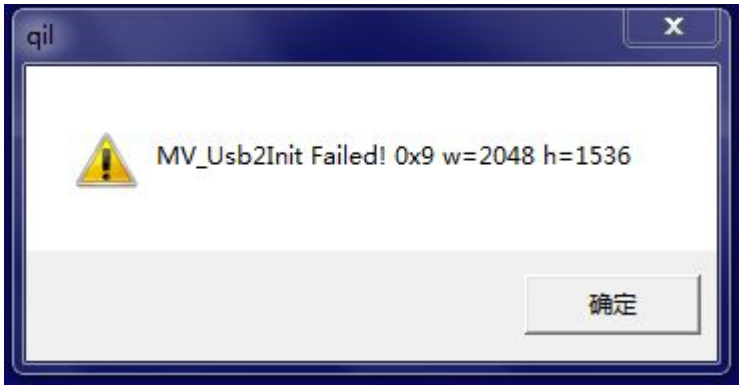
A2: No camera function opened in the dongle(or board),if dongle exist camera function but still show above problem, please set CAMERA=1 in param.ini under RES folder.

Q3: after calibrate the camera and open Ezcad, find the background result still with distortion

A3: Please make sure CAMERACALI=1 in param.ini under the folder RES. Also make sure the camera calibrate file is same name with the CAMERACALIFILENAME=CameraCalibration.cal

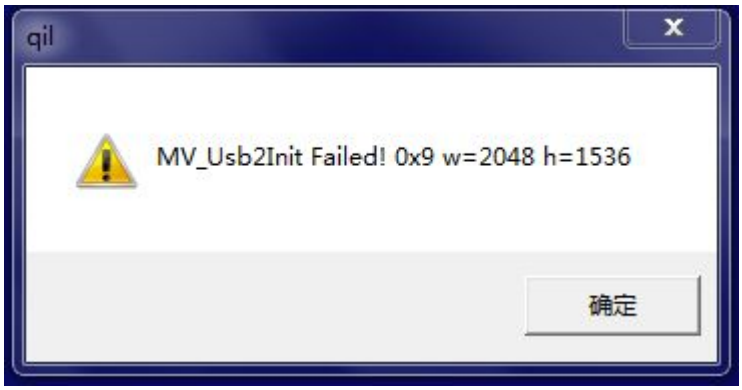
For example:user save the camera calibrate file as 1.cal, then here CAMERACALIFILENAME=1.cal

Q4: First time to use CameraClia program, show follow error

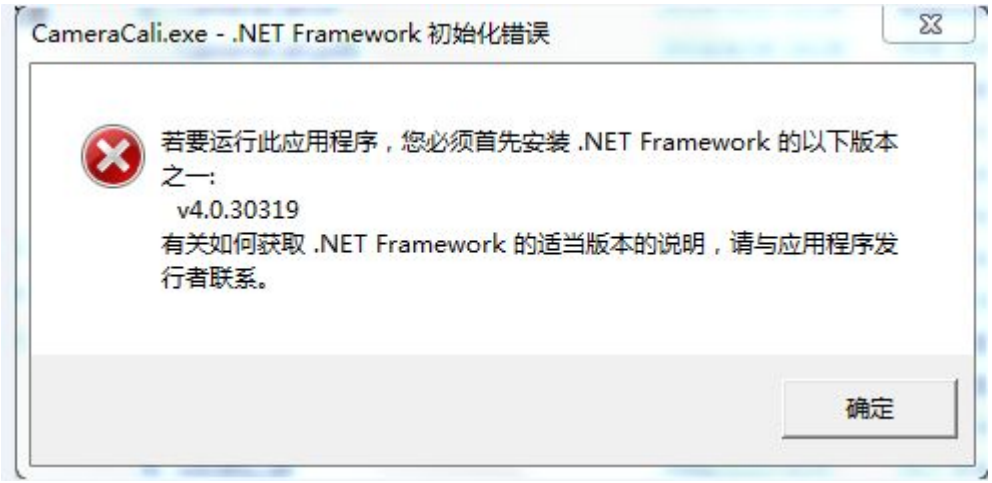



A4: please login EZCAD as Administer,then in the future will not show this error. If still show this error,please check whether the CameraName(in the file of CameraClia.ini) same as the camera.

CameraName=JCZUSB




**Q5:**Double click Cameraclia show follow error



A5: Please make sure whether installed .net in the computer.(there is a dotNetFx40_Full_x86_x64 in the CD, please install it)

Q6: Double click Cameracali.exe will show follow




A6: Please contact with BJJCZ