SATIR IR Tools

Operation Manual

Content
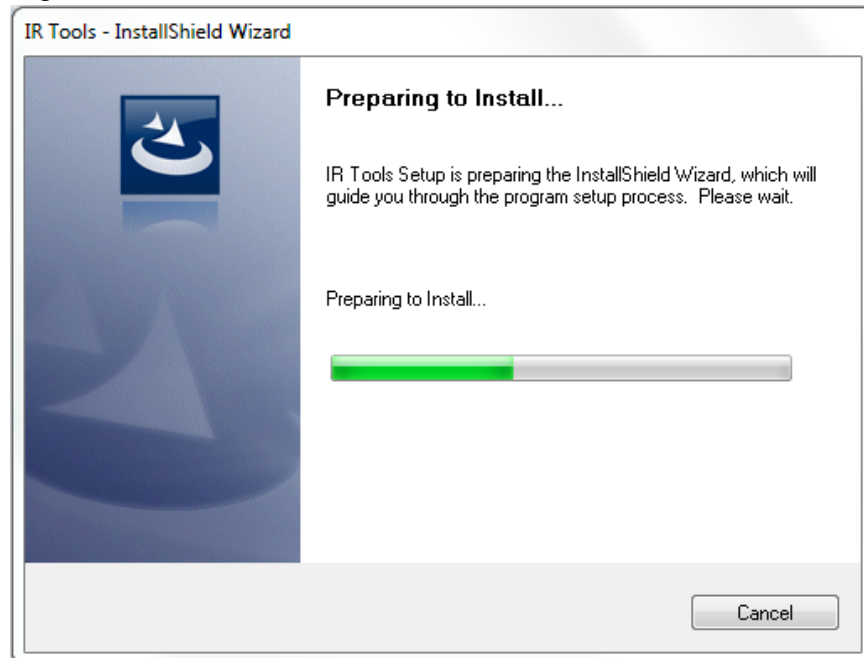
1. Software Installation

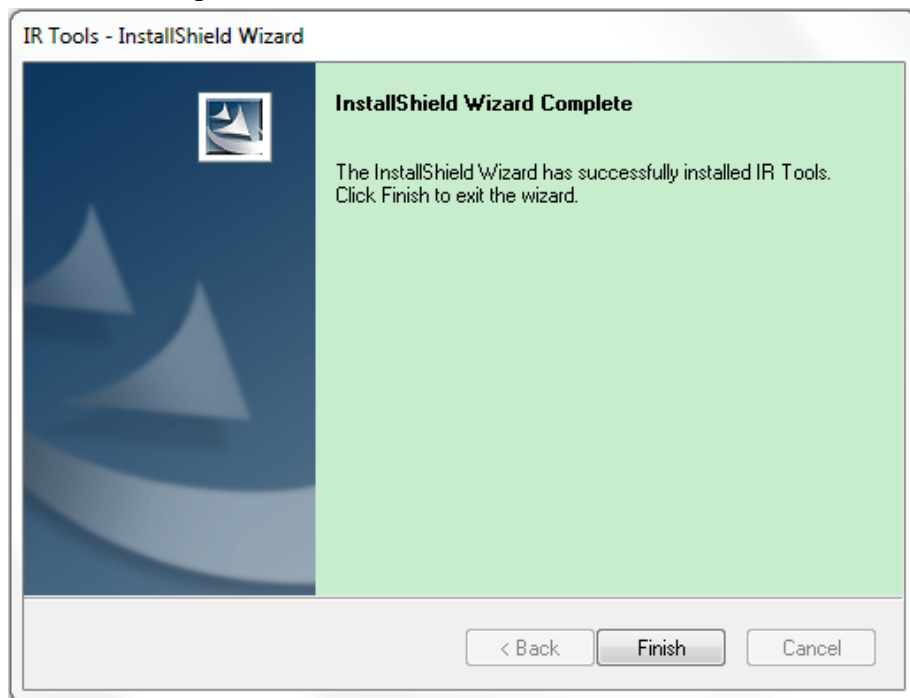1.1 Double click on "IR Tools.exe" ![IR Tools.exe icon] IR Tools.exe ;

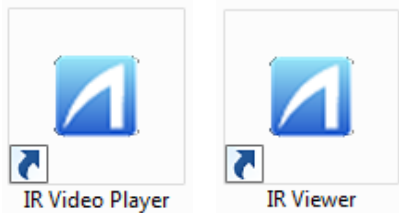1.2 Extracting IR Tools for installation;

1.3 Click "Next" to continue the installation;
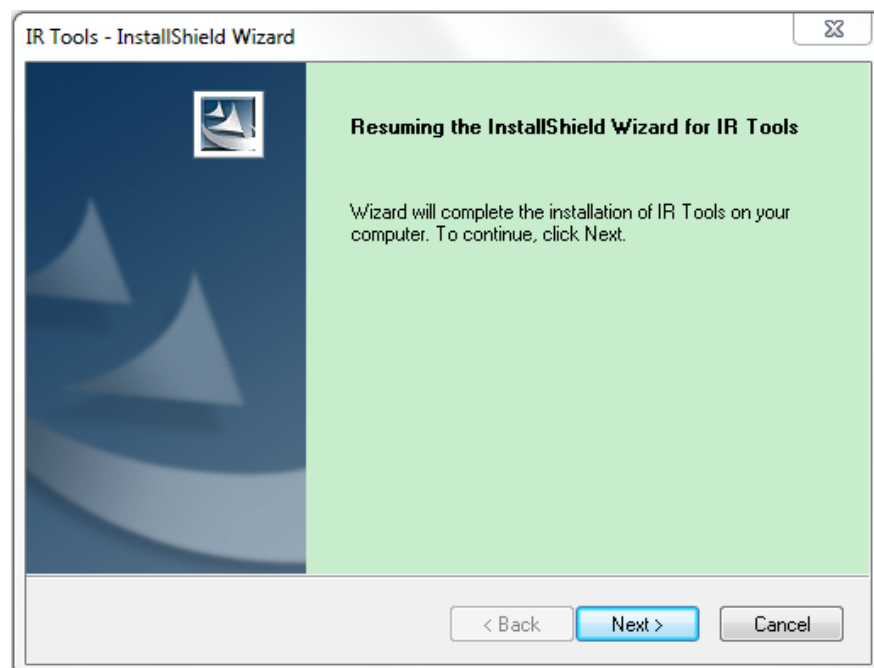
1.4 Click Finish to complete and close installation.

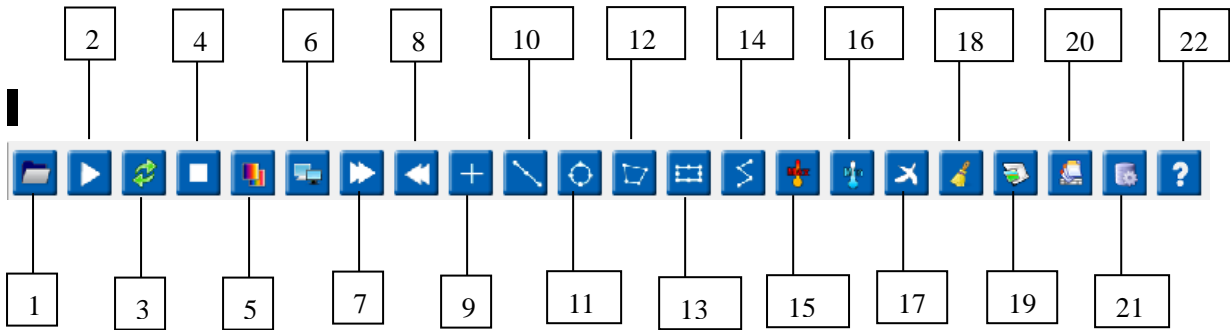1.5 After installation, shortcut of IR viewer and IR Video Player will automatically generate on Desktop.

2. IR Video Player Introduction

2.1 Double click on IR Video Player to open IR Video Player;

2.2 .Manu introduction;

| 1	Open file	12	Add polygon
2	Play/Pause	13	Add rectangle
3	Loop playback	14	Add polyline
4	Stop	15	Max temp
5	Change Palette	16	Min temp
6	Video operation	17	Delete analysis
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8	Decelerate	19	Snap image
9	Add point	20	Report generation
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3. IR Video Player Operating Instruction

3.1 Open Video

3.1.1　　Click icon "open" to choose thermal file;
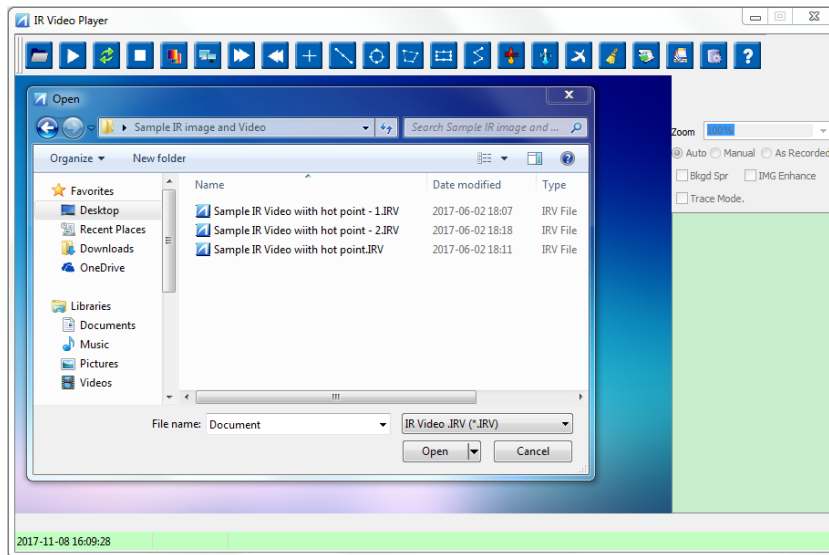
3.1.2　　After choosing video, software is as follows:
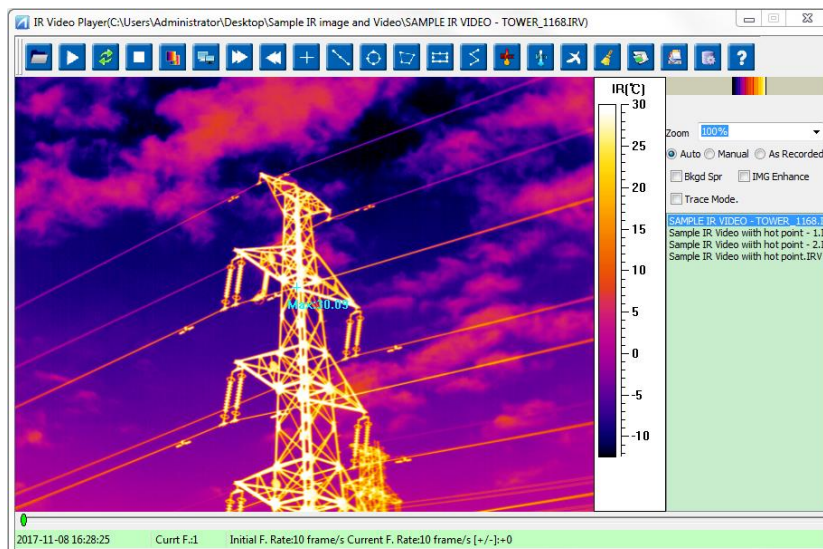
3.2 Video playing

3.2.1　Click ▶ to start playing IR video;

3.2.2　Click ⏸ to pause;

3.2.3　Click 🔄 to loop playback;

3.2.4　Click ⏹ to stop playing video;

3.2.5　Click ⏩ to accelerate video;

3.2.6　Click ⏪ to decelerate video;

3.3 Add analysis

3.3.1 ![icon] Max temp.:

Software will automatically point out the max temp. of chosen video:

3.3.2 ![icon] Min temp.:
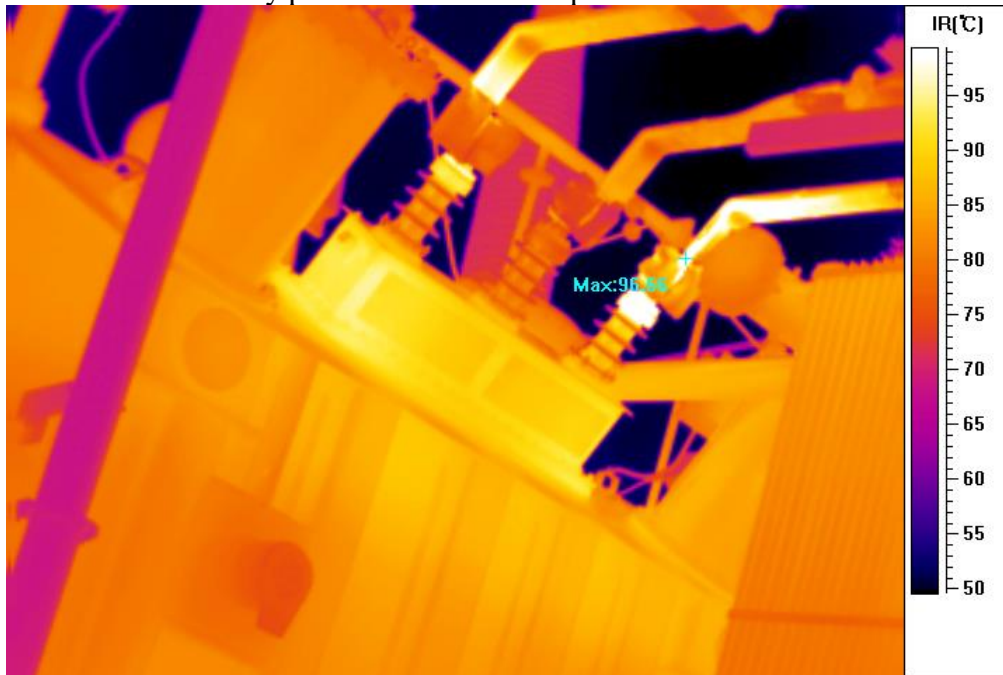
Software will automatically point out the min temp. of chosen video:

3.3.3 ➕ Add point

Click ➕ and then click on target in the image, a new point analysis is added.
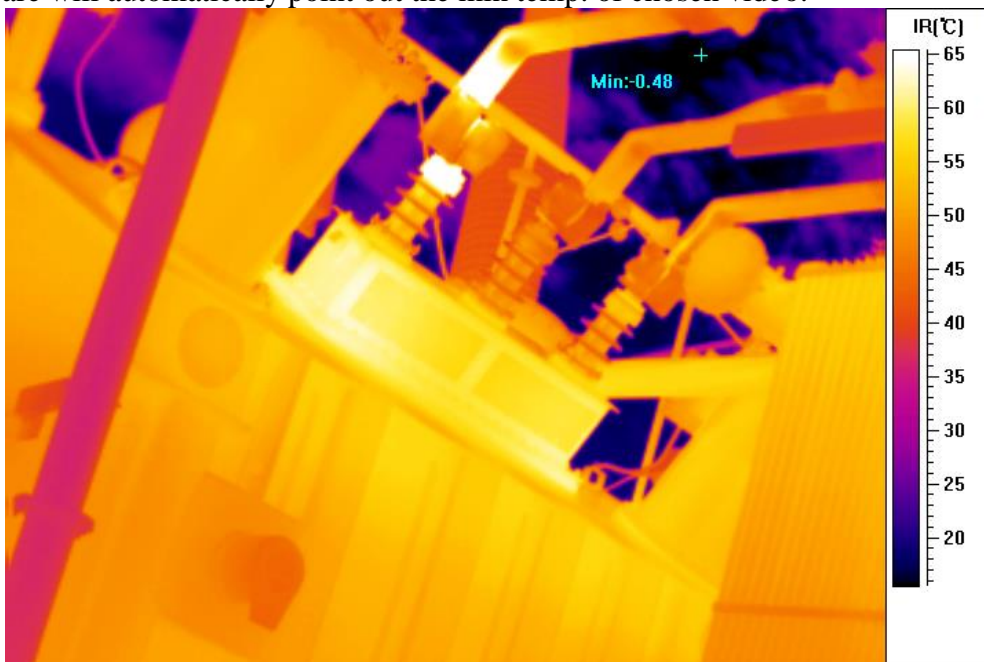The number of point is limitless, and the points are named by P00, P01, P02, P03, etc.
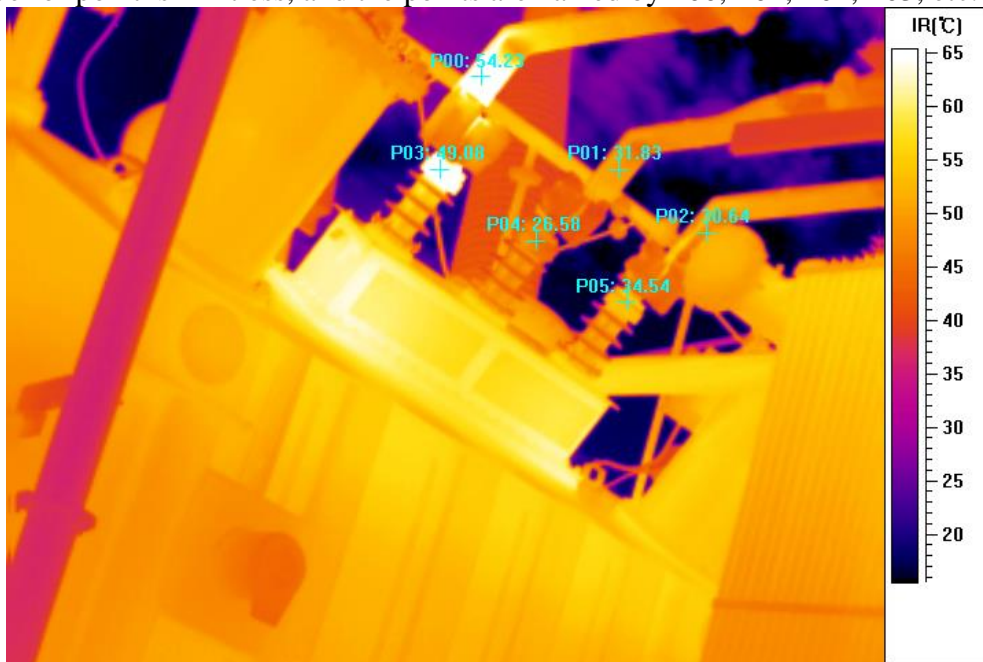
3.3.4 ◣ Add line

Click ◣ then click on image to draw a line.
User can move the line by holding the line to somewhere else. Line is changeable by pulling the ends of the line.
The number of line is limitless, and the lines are named by L00, L01, L02, L03, etc.
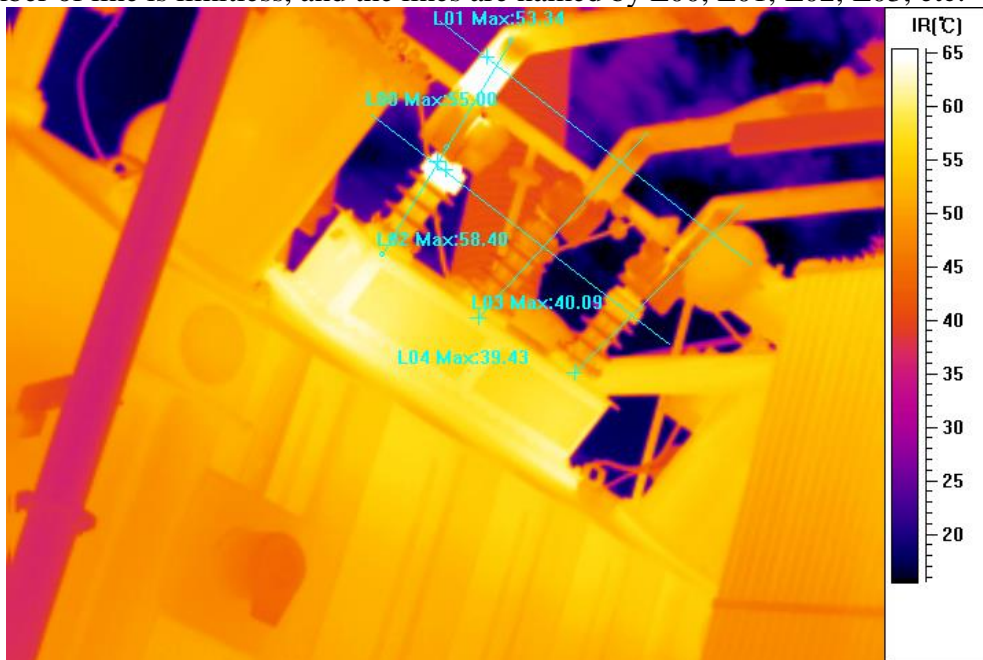
3.3.5 ⊞ Add rectangle

Click ⊞ then click on image to draw a rectangle.

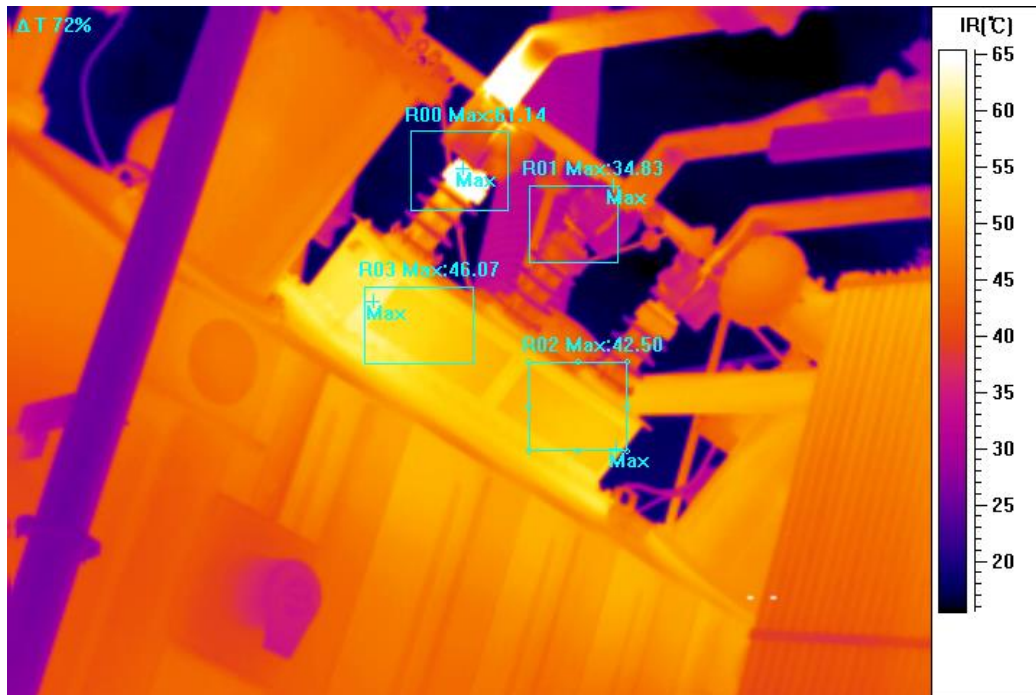User can move the rectangle by holding the rectangle to somewhere else. Rectangle`s size is changeable by pulling the borders of the rectangle.

The number of rectangle is limitless, and the rectangles are named by R00, R01, R02, R03, etc.
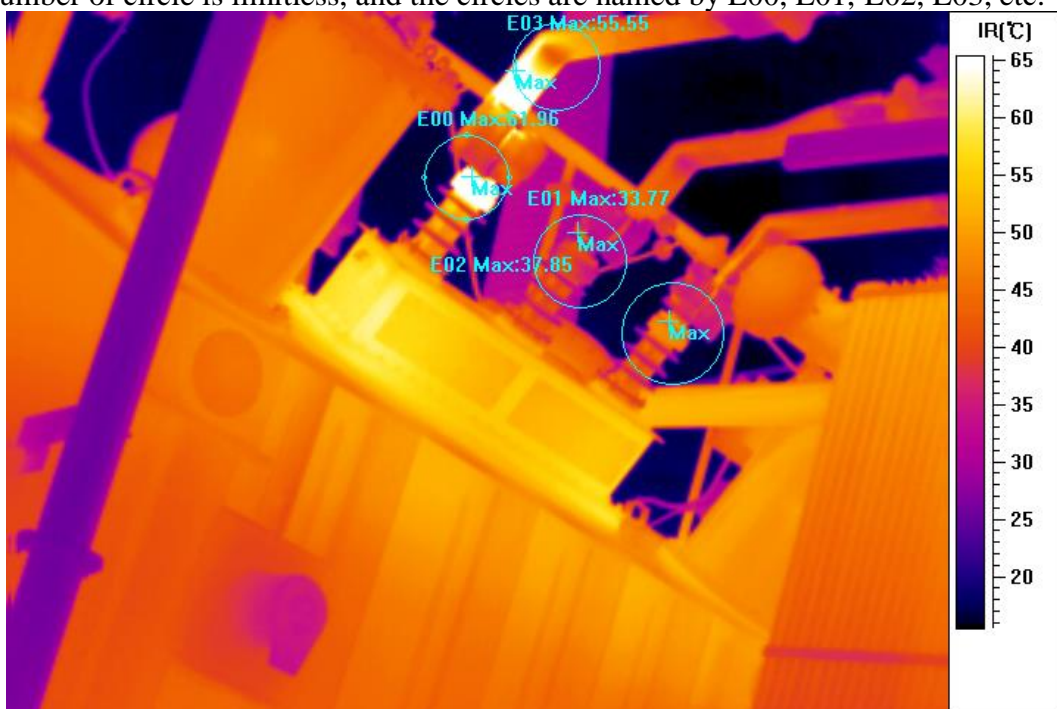

3.3.6 ⊙ Add circle

Click ⊙ then click on image to draw a circle.

User can move the circle by holding the circle to somewhere else. Circle`s size is changeable by pulling the border of the circle.

The number of circle is limitless, and the circles are named by E00, E01, E02, E03, etc.
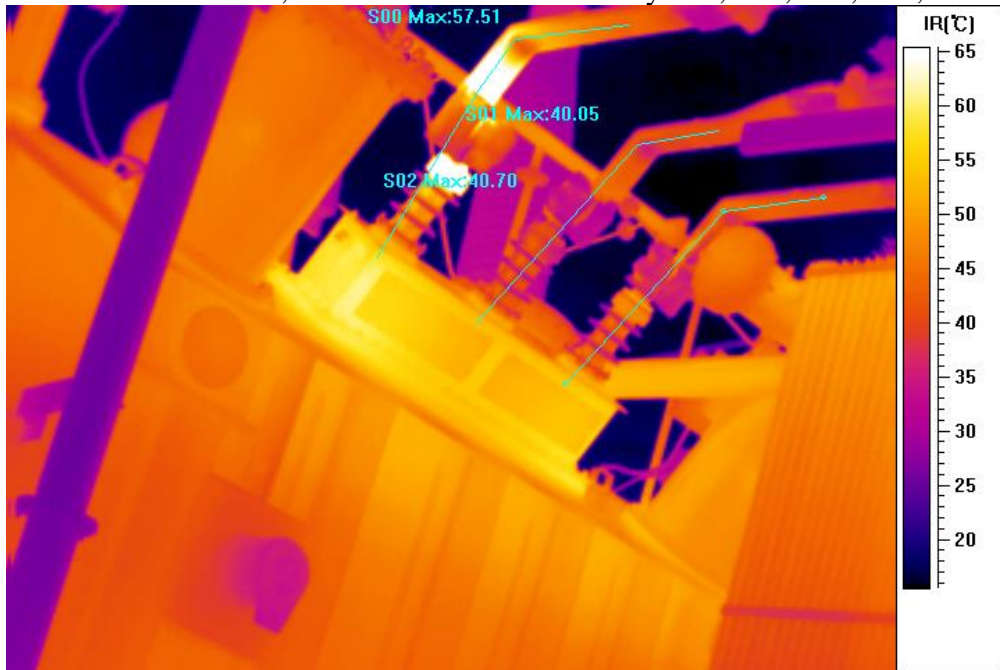
3.3.7 ![icon] Add polyline

Click ![icon] then click the screen to add a polygon. Single-click is to fix the turning point, double-click to finish.

User can move the polyline by holding the polyline to somewhere else.

Polyline's size is changeable by pulling the turning point of the polyline.

The number of circle is limitless, and the circles are named by S00, S01, S02, S03, etc.

3.3.8 ![icon] Add polygon

Click icon ![icon] then click the screen to add a polygon. Single-click is to fix the turning point, double-click to finish.

User can move the polygon by holding the polygon to somewhere else.

Polygon's size is changeable by pulling the turning point of the polygon.

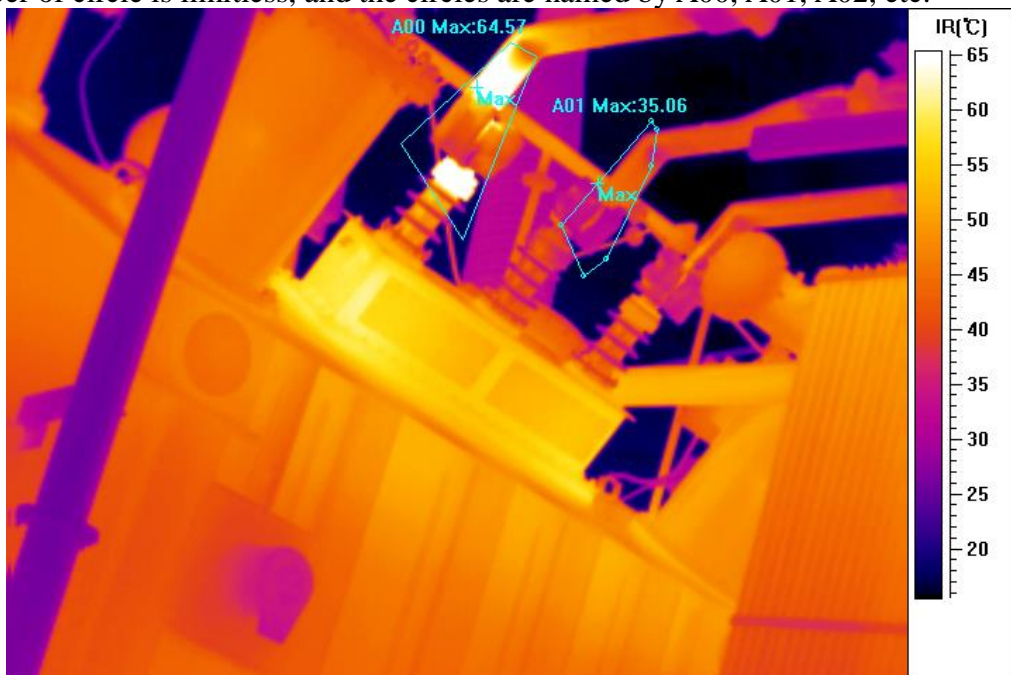The number of circle is limitless, and the circles are named by A00, A01, A02, etc.

3.4 Change analysis

Before move and resize a measurement tool, please move the mouse pointer to the measurement tool. (If the measurement is selected, there will be 8 panes surrounding it). Remove the mouse to layout and resize the measurement tool. There are different levels for measurement tools. The level sequence range from point, line, circular, box, polygon, polyline. Each meanings of them are as below.

Moving point.

Moving line without resizing.

Stretching line basing end-point.

Moving box without resizing.

Resizing box basing on arrow direction.

Moving circle without resizing.

Resizing circle basing on arrow direction.

Resizing polygon basing on surrounding block.

Place a point between two points of polygon.

Place a point between two points of polyline.

Remove polyline.

IR temperature data will be recalculated after moving and resizing the measurement tools.

3.5 Delete analysis

3.5.1 Delete single analysis

Click on and mouse icon shows as , then click on the analysis that needs to be deleted. Repeat above to continue delete analysis.

Different icon: delete point, delete line, delete circle, delete box, delete polygon, and delete polyline. Software will realign tag and change related data analysis automatically.

3.5.2 Delete all analysis

Click to delete all analysis, software will realign tag and change related data analysis automatically. (point/ line/ box/ polygon/ polyline/ isotherm)

3.6 Set Palette

Infrared image distinguish temperature by palette, image can achieve best display effect by changing palette. Click icon ![icon] to adjust the palette, default palette of IR file is iron red as below:
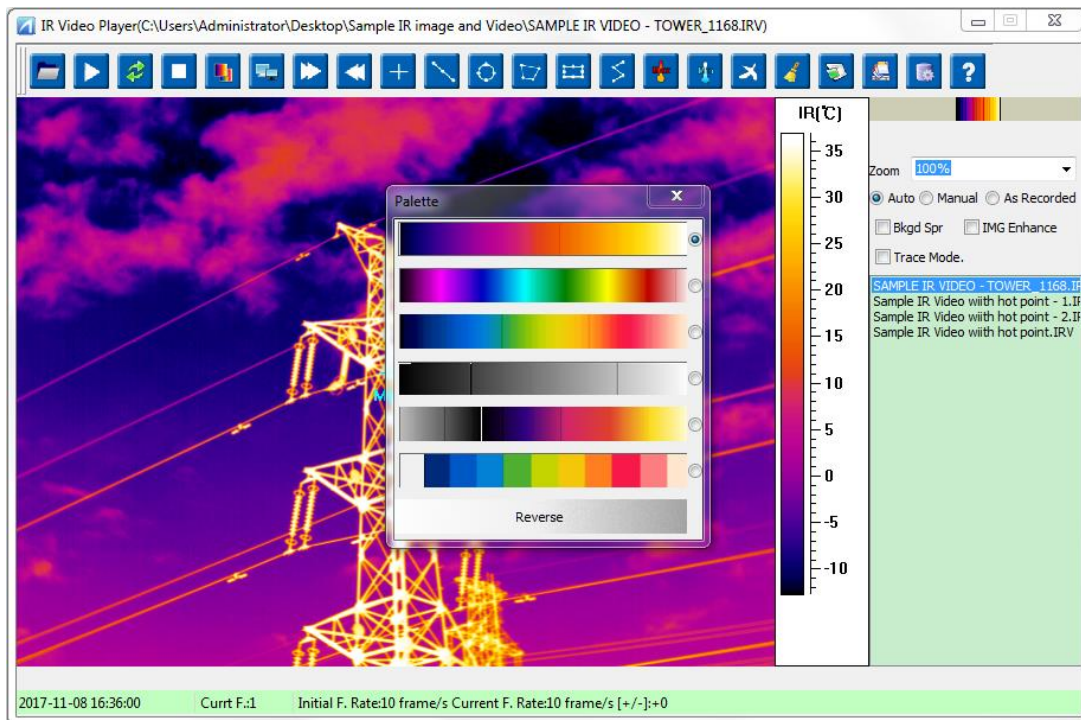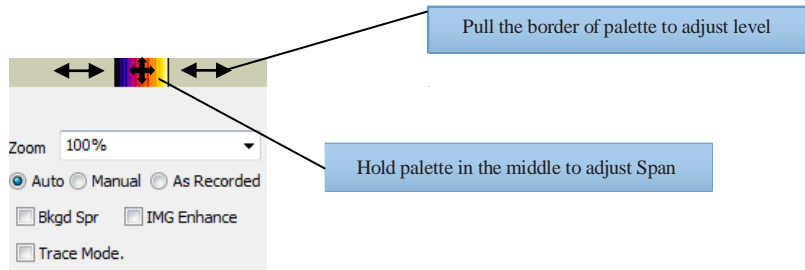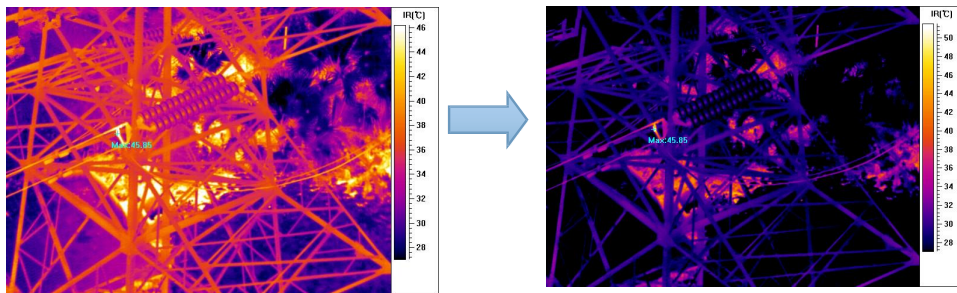

Click "Reverse" to reverse all the palette as below:
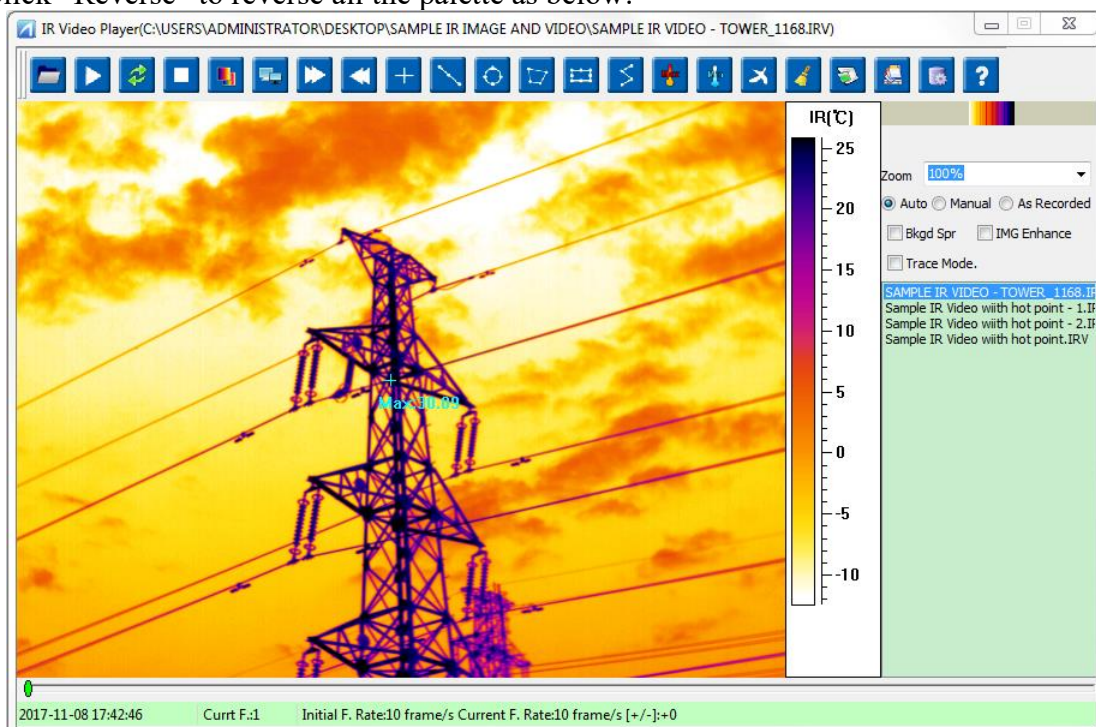
3.7 Adjust Level &Span and playing mode

Click on Manual to adjust Level & Span manually. Otherwise, please choose Auto or As record.

Pull the border of palette to adjust level

Hold palette in the middle to adjust Span

After adjustment, please check the palette effects.
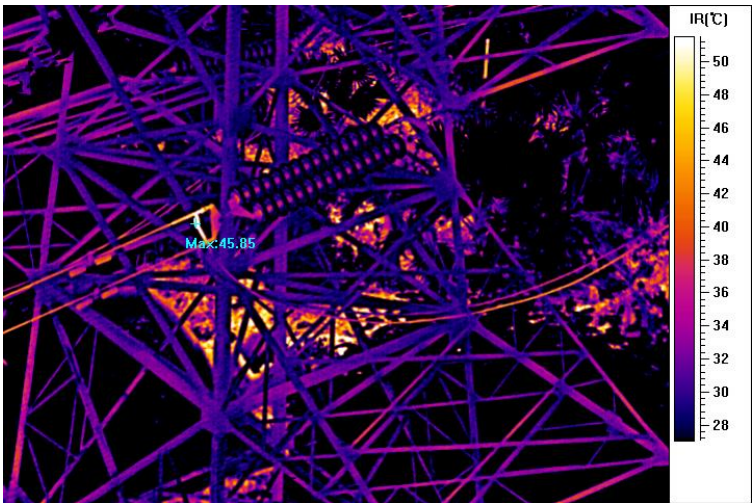

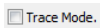Click icon to separate the level & span between background and target.

Hold palette in the middle to adjust background and palette
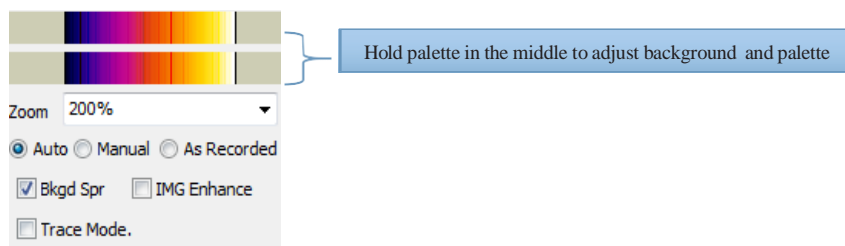
3.8 Image Enhance

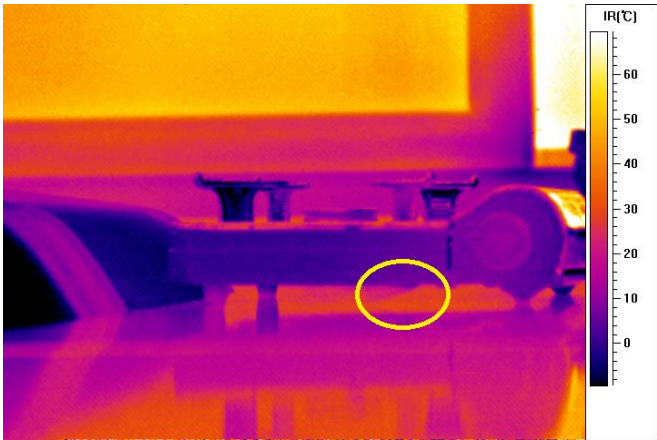Click icon [IMG Enhance] to make enhancement to image, after adjustment, please check the enhancement effects.
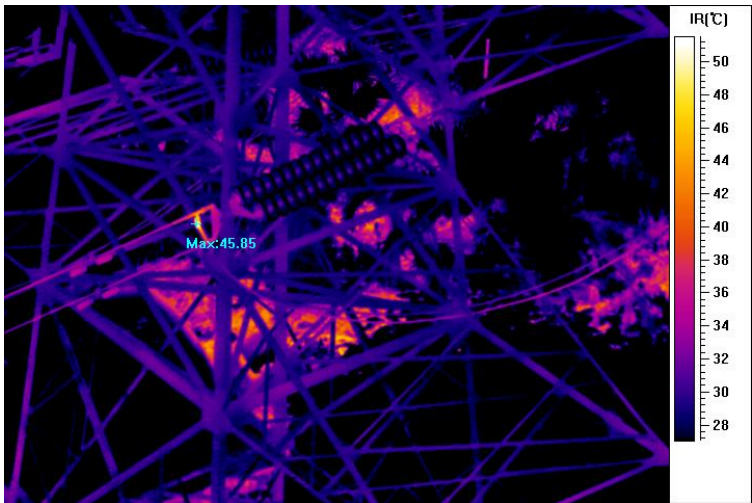
3.9 Trace Mode

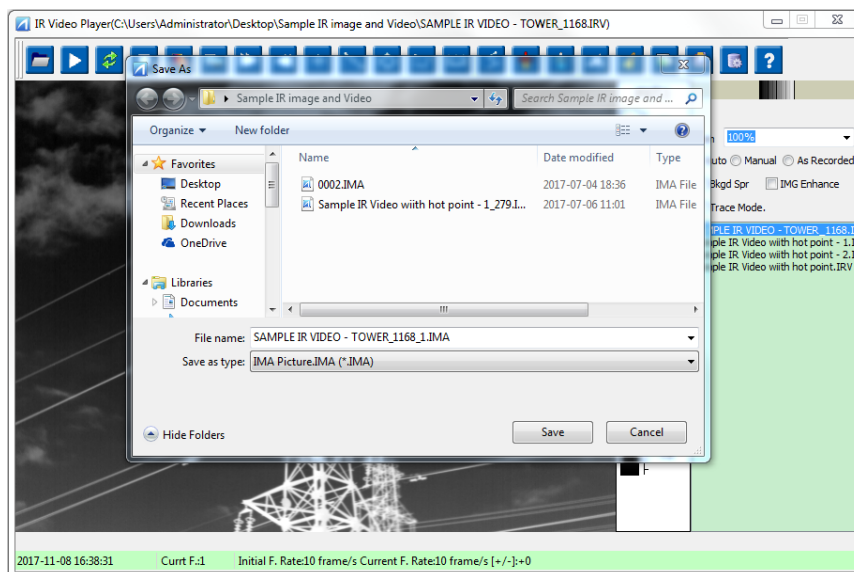Click icon [Trace Mode.] to change the playing mode from normal mode to Trace mode, please check the enhancement effects.

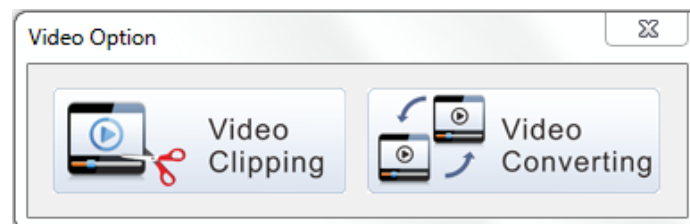(Only available for gas leak detection video)
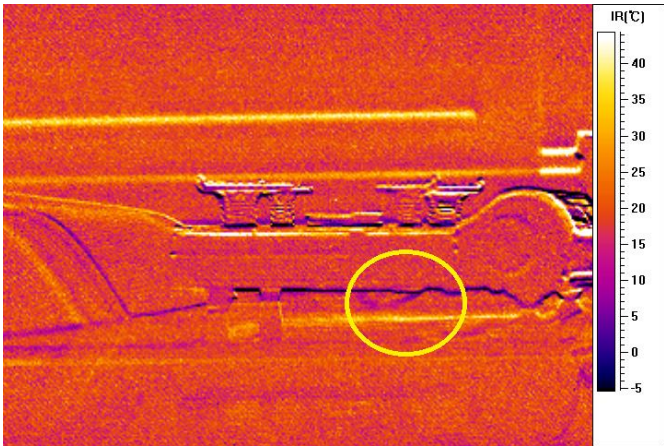
3.10   Image capture

Pause the IR video and click icon [icon] to capture IR image. IR image can be saved as JPG or IMA (full radiometric temperature data) format as below:

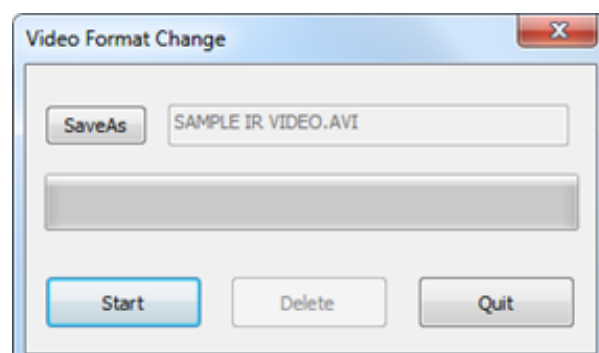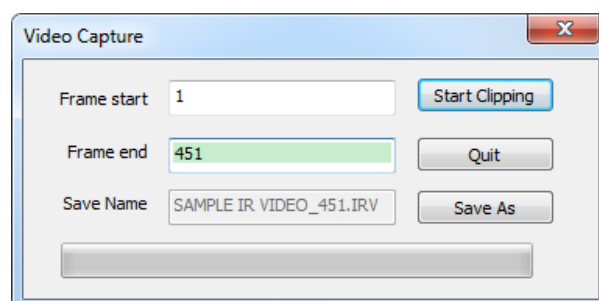## 3.11   Video Editing

Click Video Editing , to operate "Video Clipping" or "Video converting" as below:

To clip a video or change the video format to AVI

3.12 Generate report

1．Click to fulfill the details of report before report generation.

2．Click "Generate Report' after fulfilling details and generate report as below:

3.13   About and help

1．Click to check the info of shortcut key language switch.
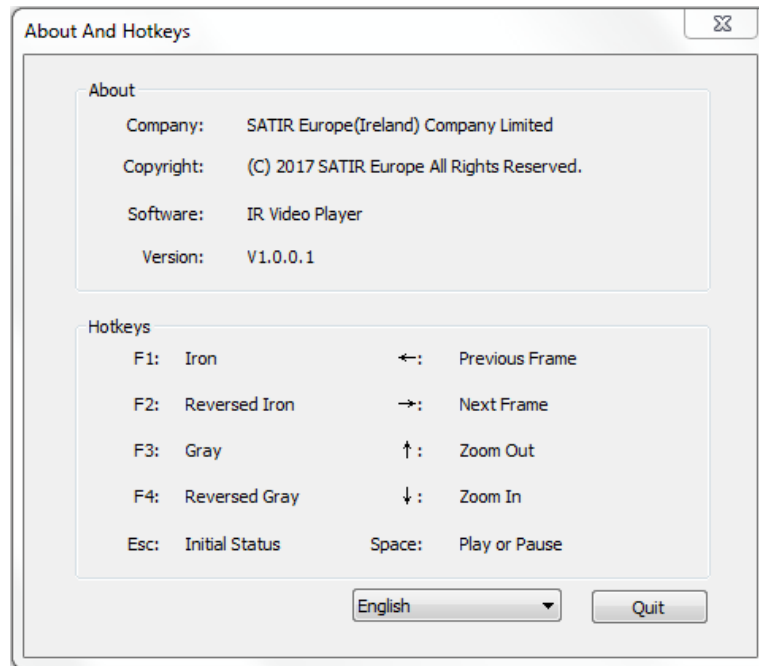
2．Click button to set language of software as below:
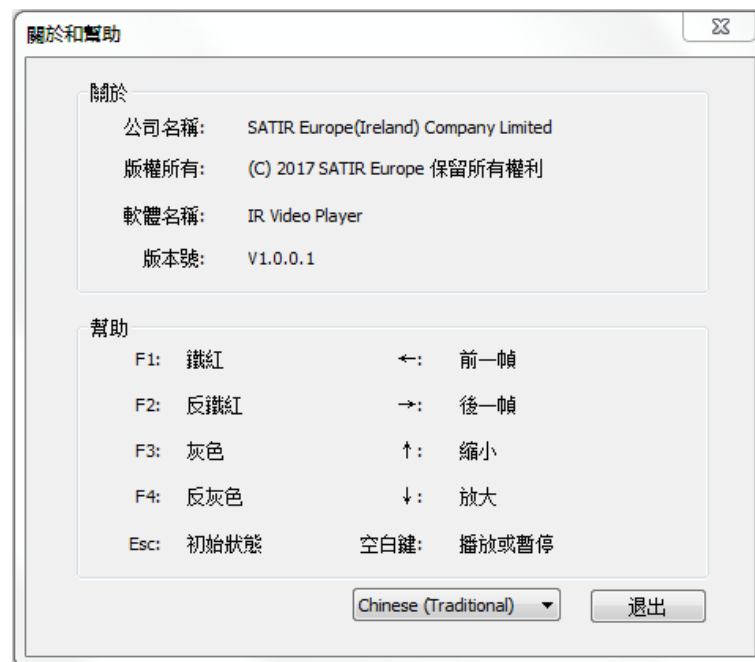
1．Click Exit to exit "About and help".

4. IR Viewer Introduction

4.1 Double click on IR Video Player to open IR Video Player:
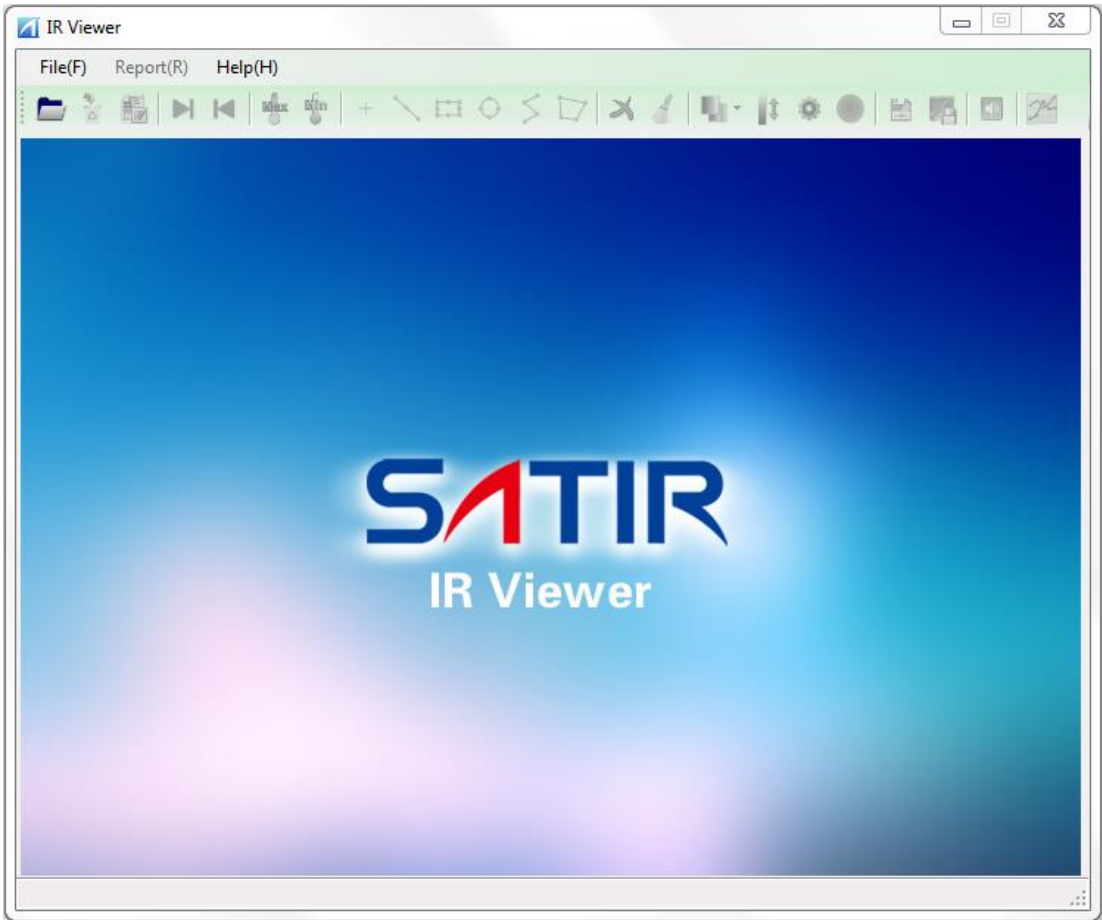
4.2 Menu
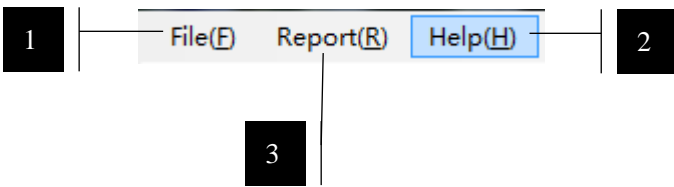
1 File	Open IR image
2 Report	Generate report
3 Help	Software info and language switch
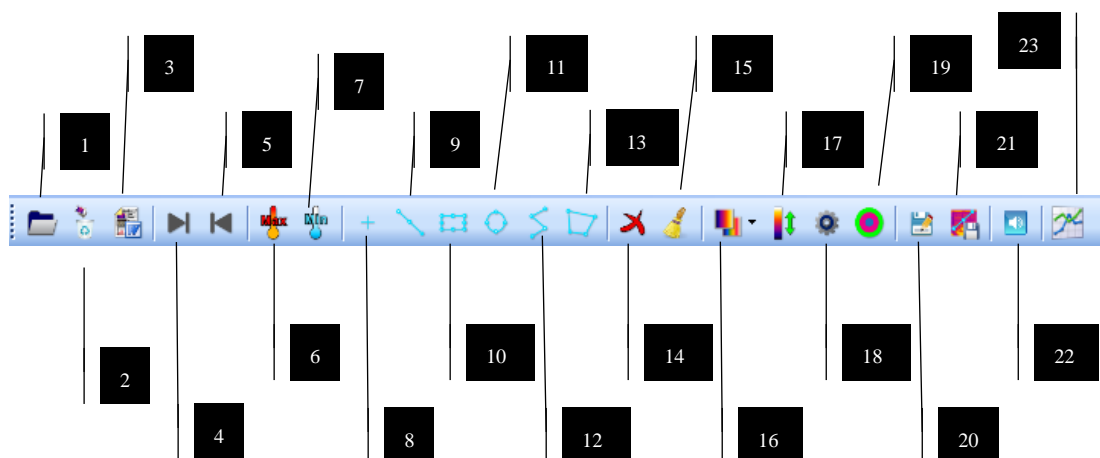
1	Open image	13	Add polygon
2	Delete image	14	Delete
3	Generate report	15	Delete all
4	Next	16	Palette
5	Previous	17	Level &Span
6	Max temp	18	Parameter setting
7	Min temp	19	Isotherm
8	Add point	20	Image save as
9	Add line	21	Image save with analysis
10	Add rectangle	22	Play sound
11	Add circle	23	Trending layout
12	Add polyline		

5. IR Viewer Operating Instruction

5.1 Open image

5.1.1   Click to choose IR image, corresponding CCD image will be opened automatically;
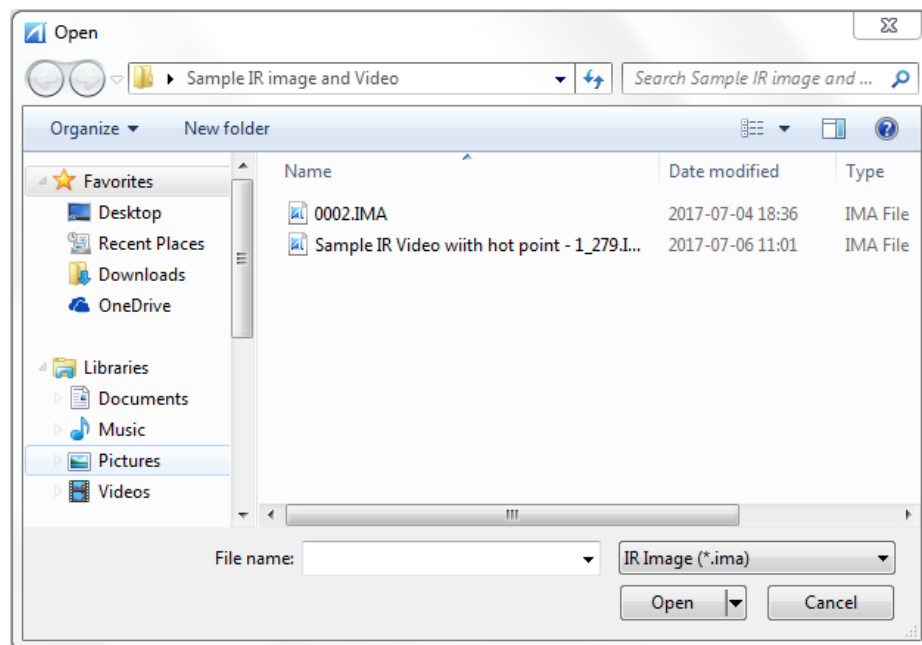
5.1.2   Example:

5.2 Add Analysis

5.2.1 ![Max icon] Max temp:

Software will automatically point out the max temp of chosen image;

5.2.2 ![Min icon] Min temp:

Software will automatically point out the min temp of chosen image;

5.2.3 ✛ Add point:

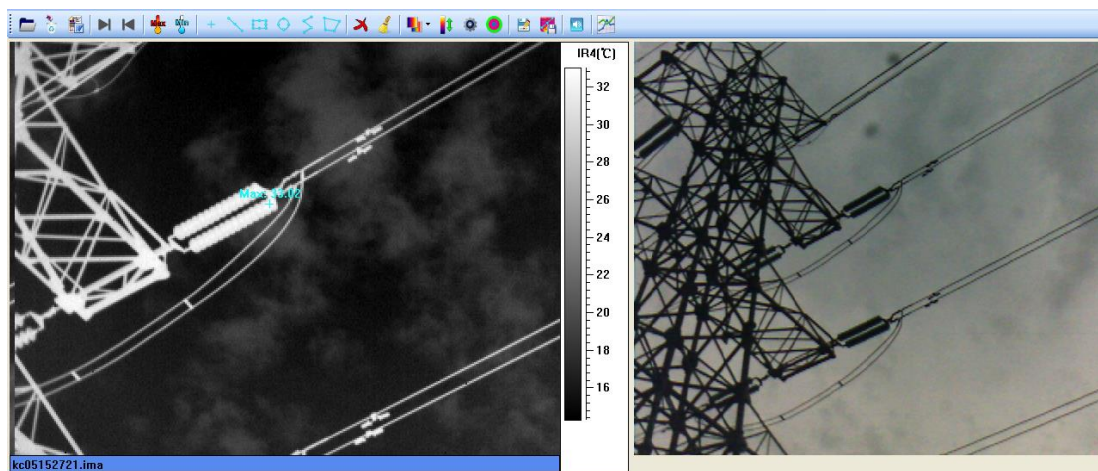Click ✛ and then click on target in the image, a new point analysis is added. The number of point is limitless, and the points are named by P00, P01, P02, P03, etc.

5.2.4 ✎ Add line:

Click ✎ and then click on image to draw a line.

User can move the line by holding the line to somewhere else.

Line is changeable by pulling the ends of the line.

The number of line is limitless, and the lines are named by L00, L01, L02, L03, etc.

5.2.5 ⬚ Add rectangle:

Click ⬚ and then click on image to draw a box.

User can move the box by holding the box to somewhere else.
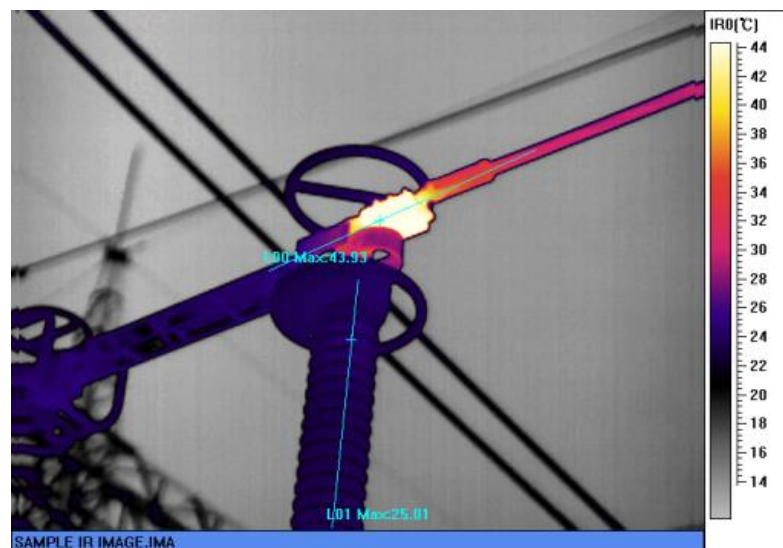
Box's size is changeable by pulling border of the box.

The number of box is limitless, and the boxes are named by R00, R01, R02, R03, etc.
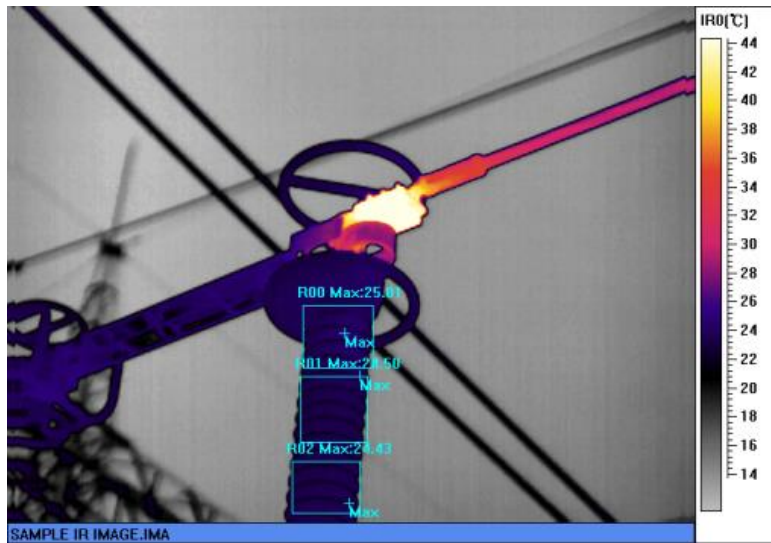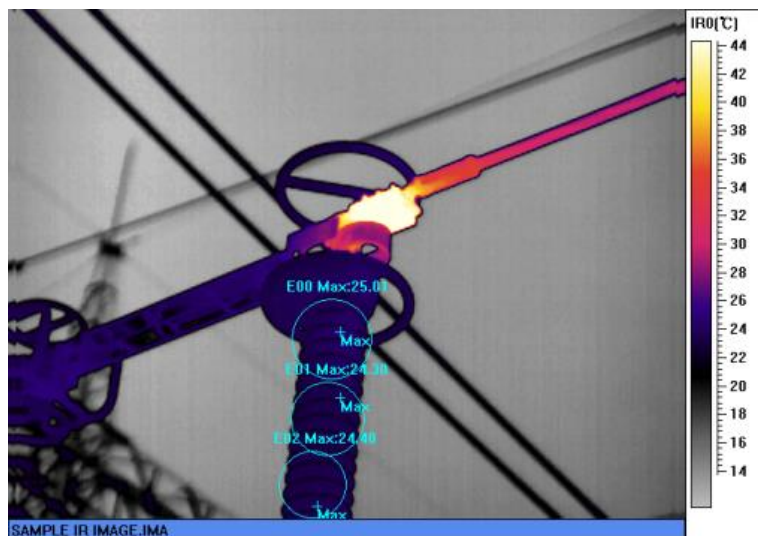

5.2.6 ○ Add circle:

Click ○ and then click on image to draw a circle.

User can move the circle by holding the circle to somewhere else.

Circle's size is changeable by pulling border of the circle.

The number of circle is limitless, and the circles are named by E00, E01, E02, E03, etc.

5.2.7 ⭨ Add polyline:

Click icon ⭨ then click the screen to add a polygon.

Single-click is to fix the turning point, double-click to finish.

User can move the polyline by holding the polyline to somewhere else.

Polyline's size is changeable by pulling the turning point of the polyline.

The number of circle is limitless, and the circles are named by S00, S01, S02, S03, etc.
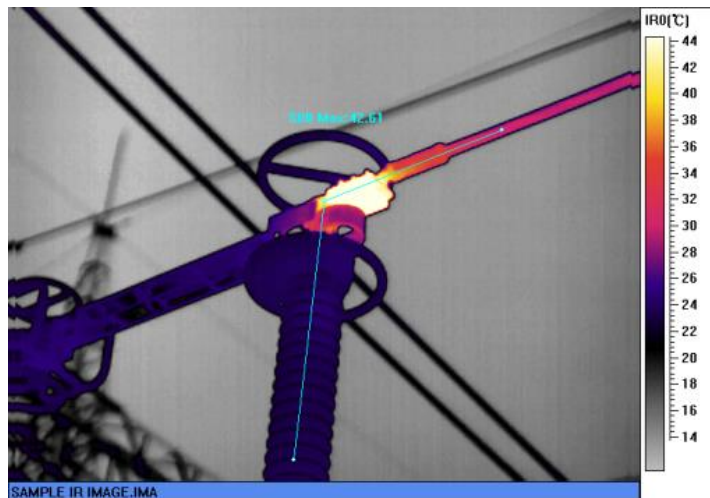

5.2.8 ⬡ Add polygon:

Click icon ⬡ then click the screen to add a polygon. Single-click is to fix the turning point, double-click to finish.

User can move the polyline by holding the polyline to somewhere else.

Polyline's size is changeable by pulling the turning point of the polyline.

The number of circle is limitless, and the circles are named by A00, A01, A02, etc.

5.3 Change analysis

Before move and resize a measurement tool, please move the mouse pointer to the measurement tool. (If the measurement is selected, there will be 8 panes surrounding it). Remove the mouse to layout and resize the measurement tool. There are different levels for measurement tools. The level sequence range from point, line, circular, box, polygon, polyline. Each meanings of them are as below.

Moving point.

Moving line without resizing.

Stretching line basing end-point.

Moving box without resizing.

Resizing box basing on arrow direction.

Moving circle without resizing.

Resizing circle basing on arrow direction.

Resizing polygon basing on surrounding block.

Place a point between two points of polygon.

Place a point between two points of polyline.

Remove polyline.

IR temperature data will be recalculated after moving and resizing the measurement tools.

5.4 Delete analysis

（1）**Delete single analysis**

Click on and mouse icon shows as , then click on the analysis that needs to be deleted.

Different icon: delete point, delete line, delete circle, delete box, delete polygon, and delete polyline. Software will realign all tag and change related data analysis automatically.
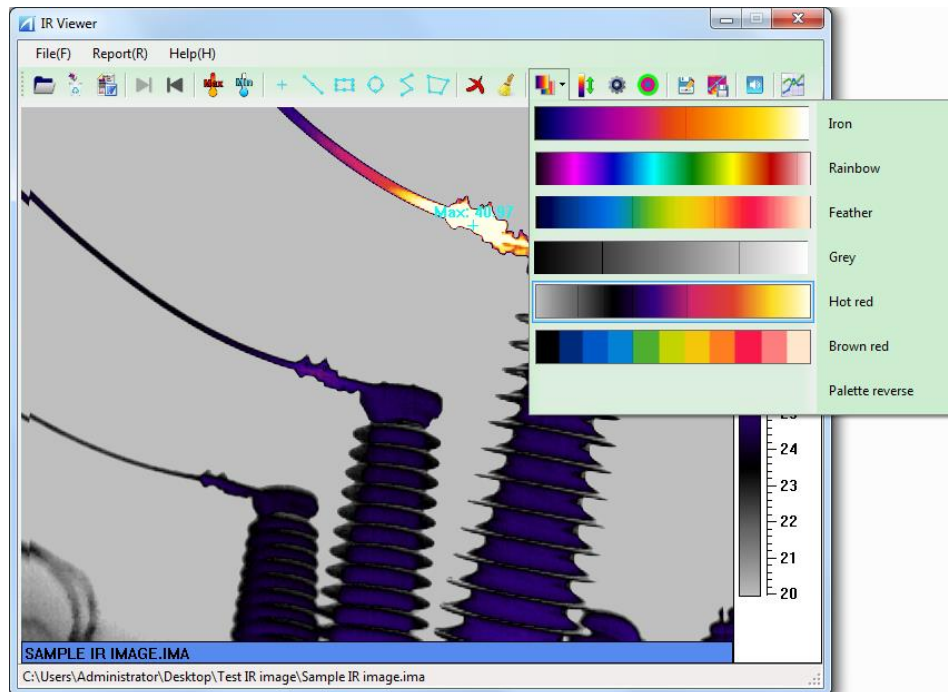
（2）**Delete all analysis**

Click icon to delete all the items, software will realign tag and change related data analysis automatically. (Point/ line/ rectangle / polygon/ polyline/ isotherm)
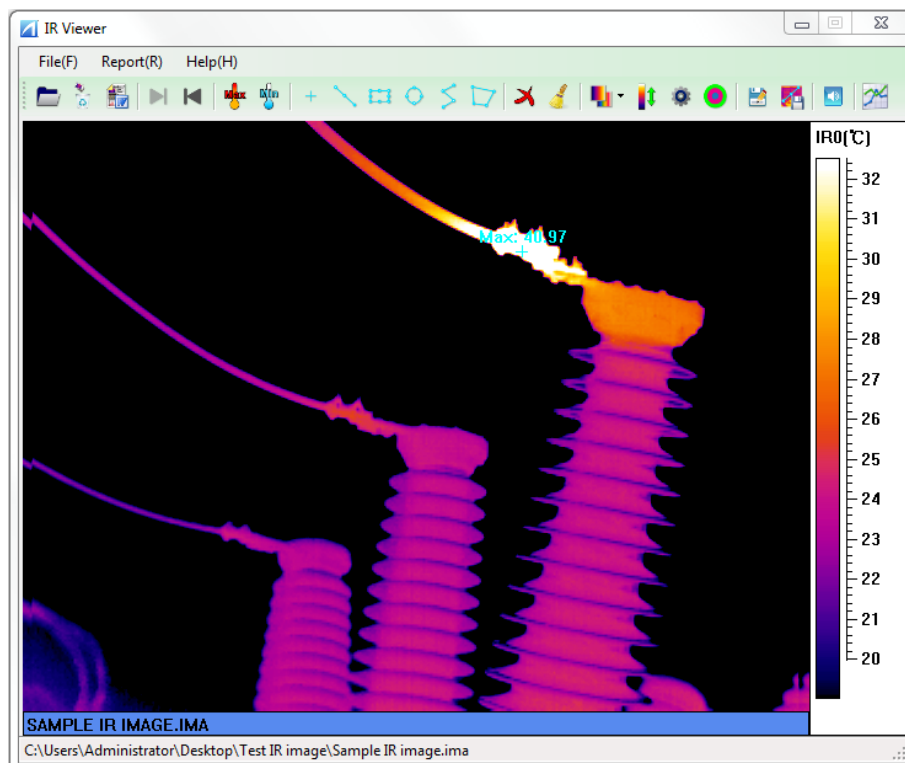
5.5 Set Palette
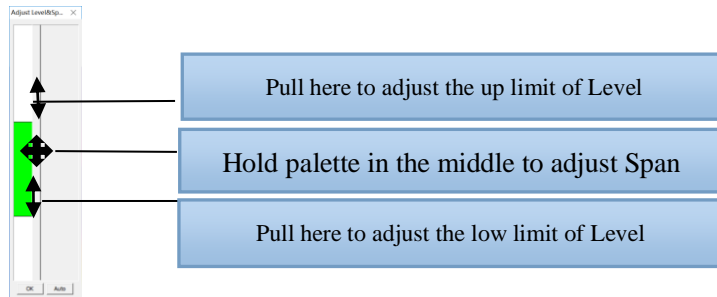
5.5.1　　Click icon to adjust the palette.

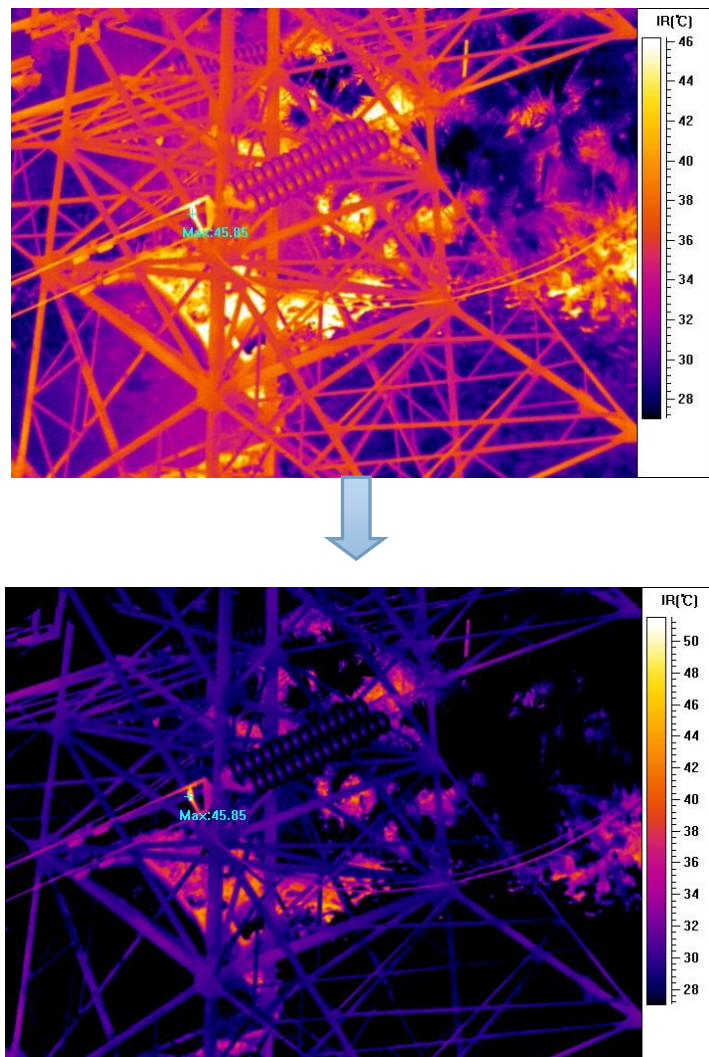5.5.2　　Click "Reverse" to reverse all the palette.

5.6 Adjust Level& Span

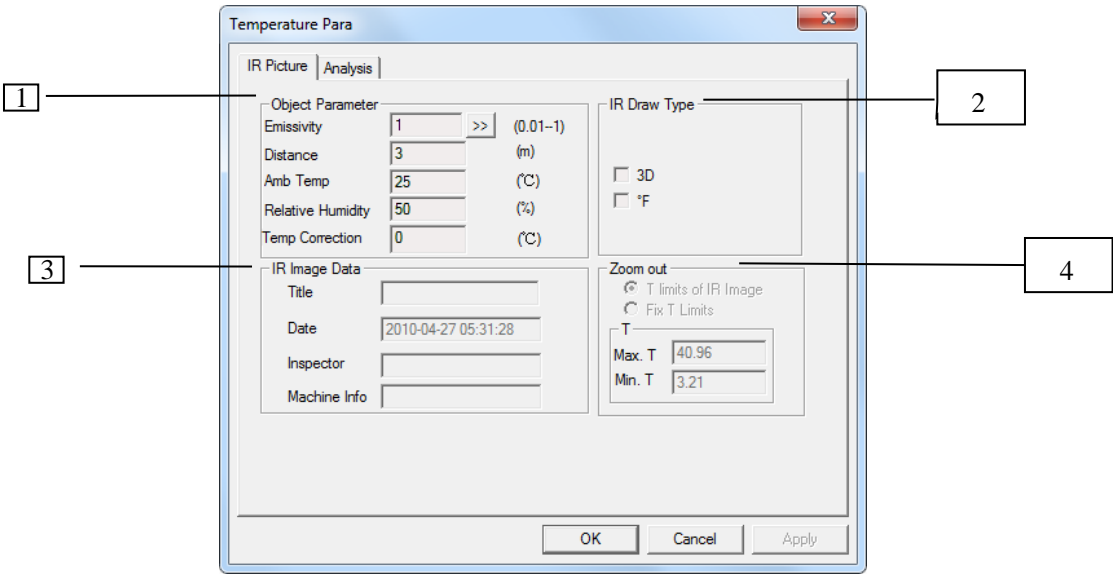Click icon to adjust Level& Span:

	Pull here to adjust the up limit of Level
	Hold palette in the middle to adjust Span
	Pull here to adjust the low limit of Level

Example as below:

5.7 Parameter Setting

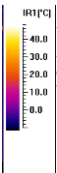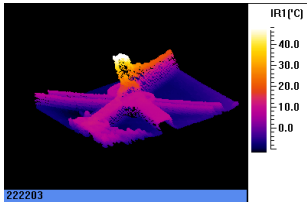Click parameter setting icon ⚙ to adjust parameter, as below:

5.7.1   Image parameter setting

A.   Object parameter

Emissivity, distance between the object and IR camera, ambient temperature and relative humidity can be set. Press >> right beside *Emissivity* and the built-in emissivity table pops up as follows.

B. Set IR image display

Show analysis label	Whether to display the palette as shown on the left side
3D	Whether to display 3D image as follows

C. Set IR data

Title	Indicate title of the IR image
Date	Indicate date of the IR image
Operator	Indicate operator of the IR image

D. Zoom

Temperature limits of IR image	Display level & span of IR image automatically
Fix temperature limits	Set a fix value to level & span of IR image

5.7.2   Set analysis tools

Click parameter setting icon ⚙ and and Select *Analysis* as below:
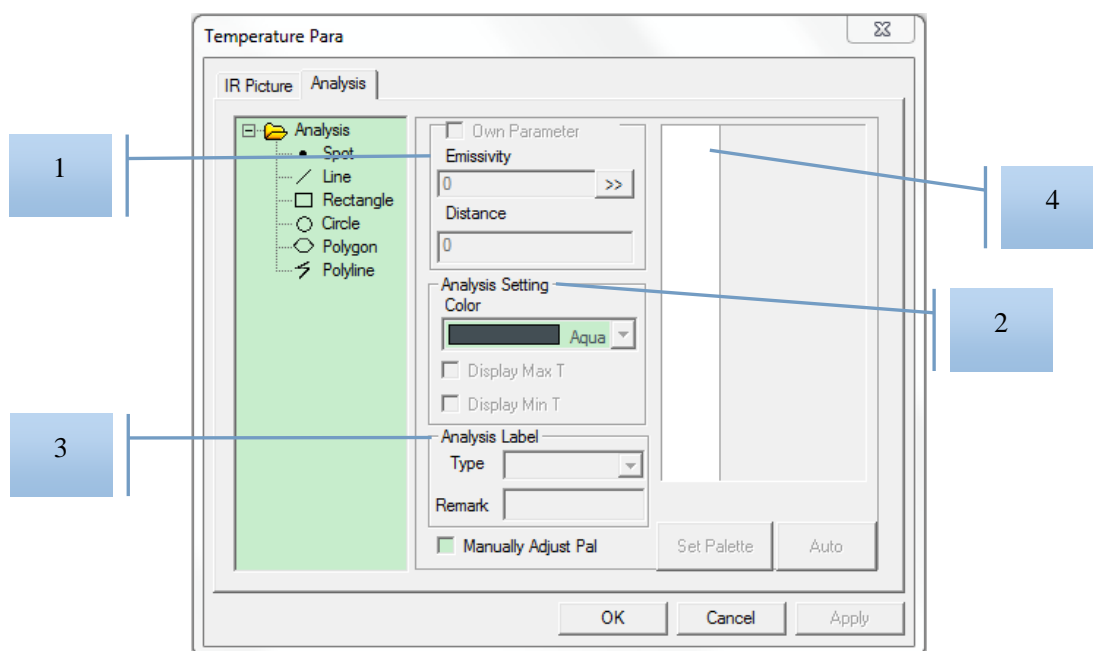
Before setting, an analysis tools should be selected in advance.

A. Customized parameter (Independent parameter can be set when this option is selected.)

Emissivity	Set emissivity of the object
Distance	Set distance between the object and IR camera

Notice: emissivity value can be inputted manually, or selected from emissivity table. Please check 4.7 to find out emissivity table.

B. Analysis setting

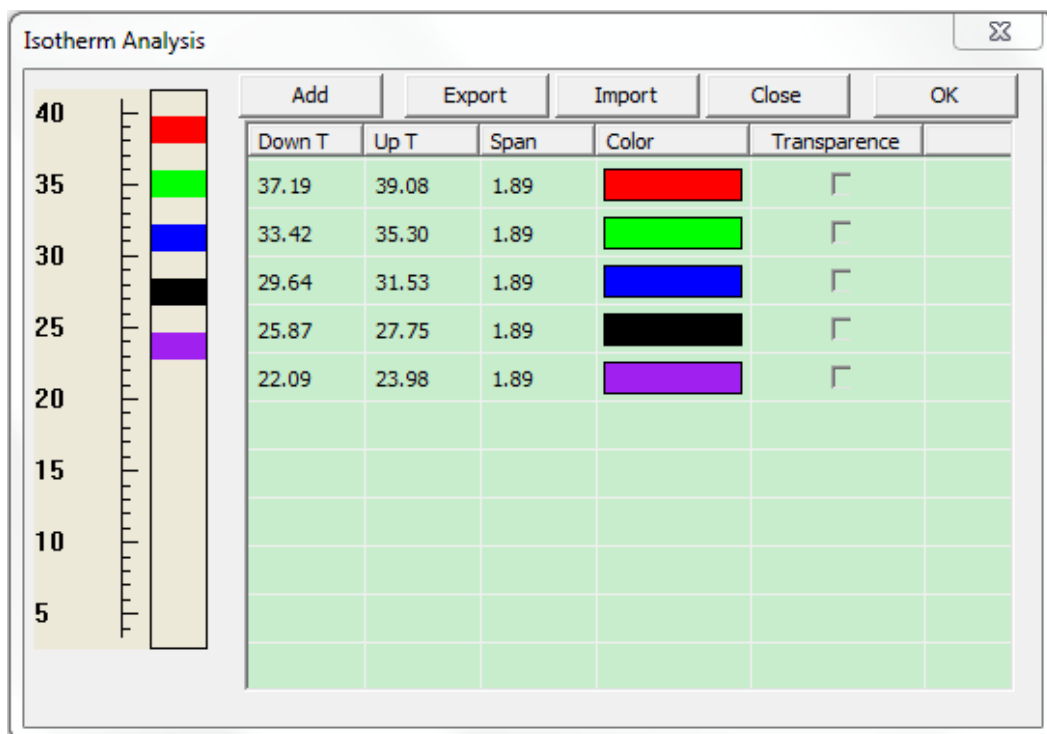| Color	Set color of the analysis tool
Display Max T	Display maximum temperature (only for circles, boxes and polygons)
Display Min T	Display minimum temperature (only for circles, boxes and polygons)

C. Analysis label

Type	Indicate analysis tool, displays corresponding temperature data ● For spots, Blank/Temperature is available. ● For lines, boxes, circles, polygons and polylines, Blank/Max T/Min T/Ave T is available.
Remark	Users can add any notes.

D. Set level & span and palette (only for boxes, circles and polygons)

Level & Span	Set level & span for the area manually
Set Palette	Set palette for the area

5.8 Isotherm analysis

Click icon ⦿ to set Isotherm as below

Isotherm Analysis

Add	Export	Import	Close	OK

Down T	Up T	Span	Color	Transparence	
37.19	39.08	1.89	🟥	☐	
33.42	35.30	1.89	🟩	☐	
29.64	31.53	1.89	🟦	☐	
25.87	27.75	1.89	⬛	☐	
22.09	23.98	1.89	🟪	☐	

- Click Add to add color analysis to IR image, ten colors are available for isotherm analysis.

- To delete any color, right click the color and select Delete. To delete all colors, right click and select Delete All.

- After select the color for isotherm analysis, click *OK* to save the setting and click Close to exit. In order not to save the setting, click *Close* directly to exit without saving.
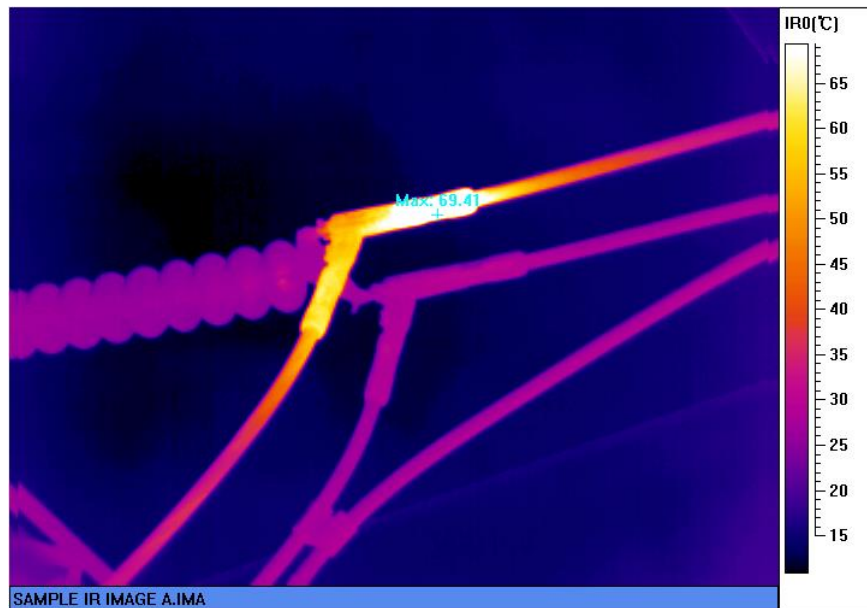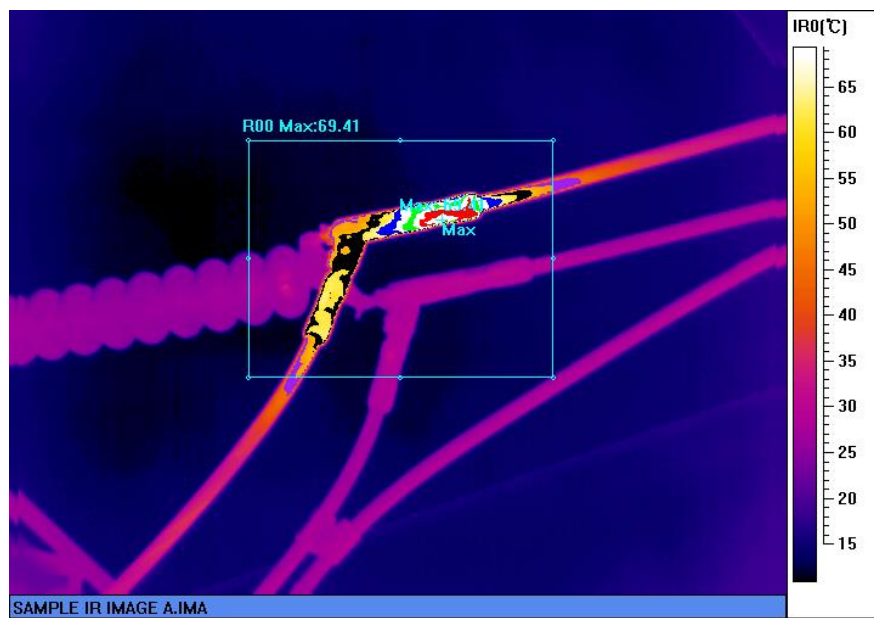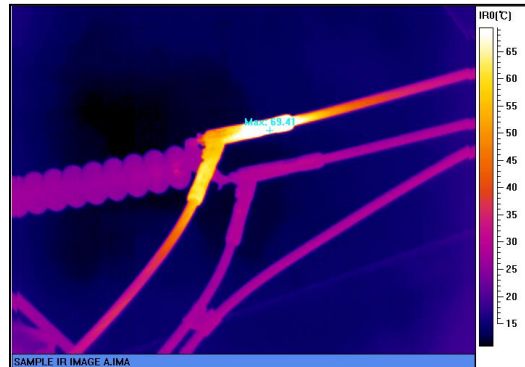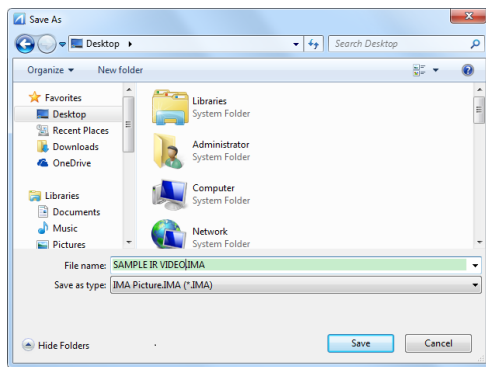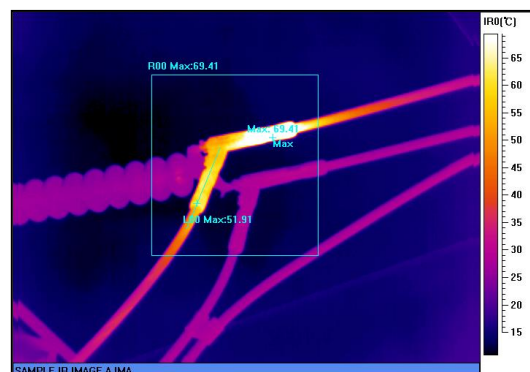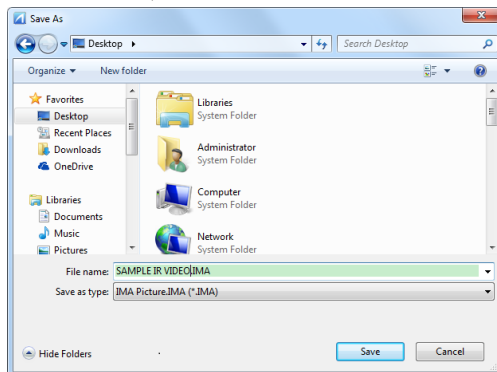
Original Image

Image with Isotherm analysis

5.9 Save image, play sound and trending
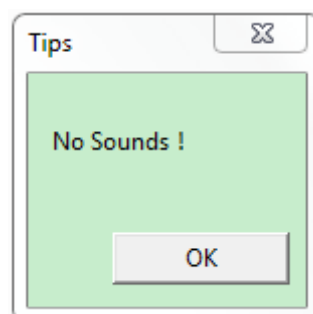
5.9.1   Click icon to save IR image as BMP or JPEG format (without analysis tools);
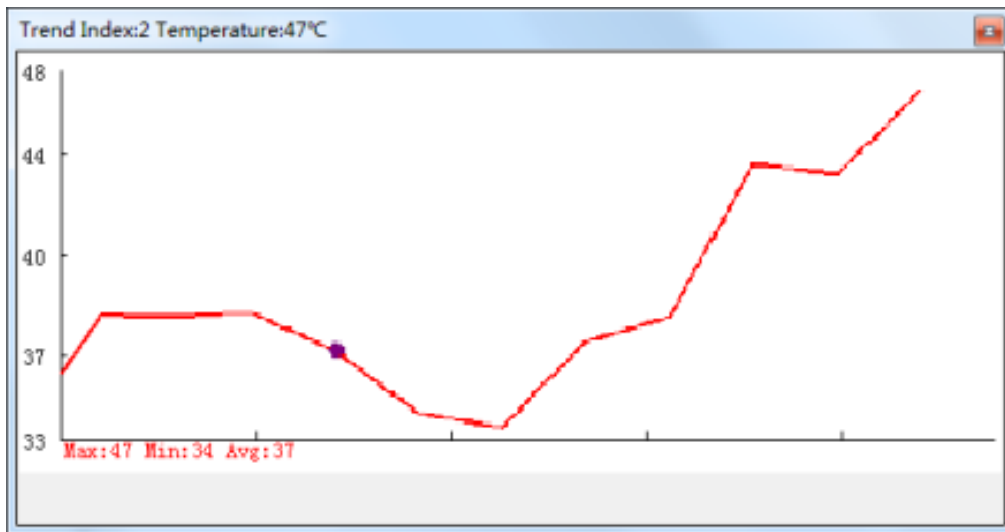

5.9.2   Click icon to save IR image with added analysis as BMP or JPEG format;

5.9.3   Click icon to play sound; if image doesn`t contain sound, tip will show up as below:

5.9.4   Click icon to generate max temp trending of all image within folder.

Trend Index:2 Temperature:47°C

Max:47 Min:34 Avg:37

5.10 Generate report

5.10.1 Click icon ![icon] to fulfill the details of report before report generation.

ReportData

Main Information

Working Voltage		Snap Date	2015-08-18
Equipment Name		Snap Time	16:06:42
Weather		Analyst	
Amb Temp	25.00°C		
Load Current			
Emissivity	1.00		
Inspector			

Temperature data

Max. Temp	46.97	Min. Temp	32.46°C
R00MAX	46.97°C	P00	-
R01MAX	-	P01	-
R02MAX	-	P02	-
L00MAX	-	P03	-
L01MAX	-	P04	-
L02MAX	-	P05	-

Other Information

Title

Remarks

Suggestion

Feedback

Generate Report Import Data... Export Data... Cancel

5.10.2   Click "Generate report" after fulfilling details and generate report as below:

6. Declaration

Welcome to use SATIR IR Tools, we appreciate your support and trust!

1. SATIR is not responsible for breakdown of Microsoft Office Word caused by the misoperation.

2. SATIR reserves the right to make changes or updates with the respect to or in the content of software and manual at any time without notice.

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