

Table of Contents

PART I FUNDAMENTAL KNOWLEDGE	4
1.1 SYSTEM REQUIREMENTS	4
1.2 PREPARATION BEFORE YOU BEGIN	4
1.2.1 Inspecting Connection.....	4
1.2.2 Calibrating	4
1.2.3 Checking the Calibration Accuracy	5
1.2.4 Starting the Software.....	5
1.3 SETTINGS	5
1.3.1 User Management	5
1.3.2 Define the Default Settings of Pen Size and Highlighter Styles	6
1.3.3 Handwriting Recognition Settings	6
1.3.4 Hardware Customization.....	6
1.3.5 Interface Settings.....	6
1.3.6 Automatic File Saving	6
PART II SOFTWARE OVERVIEW	7
2.1 DESIGN MODE	7
2.2 TEACHING MODE.....	7
PART III DESIGN MODE	9
3.1 MENU BAR	9
3.1.1 File menu.....	9
3.1.2 Edit menu	10
3.1.3 Page menu	10
3.1.4 Insert menu	11
3.1.5 Academic Subject menu	11
3.1.6 Drawing menu	12
3.1.7 Tool menu	12
3.1.8 Help menu	13
3.2 PANEL.....	14
3.2.1 Index Bar Panel	14
3.2.2 Property browser Panel	14
3.2.3 Subject Panel	14
3.2.4 Slide Panel.....	14
3.2.5 Network Classroom	15
3.2.6 Effects Interactive Panel	17

PART IV COMMON OPERATIONS 18

4.1 PEN TOOL	18
4.2 BASIC OPERATIONS OF THE OBJECTS.....	19
4.2.1 Select the Objects	19
4.2.2 Moving the Objects	19
4.2.3 Rotating and Scaling the Objects.....	20
4.2.4 Object Property	20
4.2.5 Grouping the Objects.....	21
4.2.6 Locking the Objects	21
4.2.7 Cloning the Objects.....	21
4.2.8 Layer Order of the Objects	21
4.2.9 Editing the Objects.....	22
4.2.10 Aligning the Objects	22
4.2.11 Object Playback	22
4.2.12 Filling the Objects	22
4.2.13 Speech.....	22
4.2.14 Duplicating the External Images and Text	22
4.2.15 Saving the Images.....	22
4.3 TEXT INPUT	23
4.3.1 Keyboard Input	23
4.3.2 Handwriting Recognition Input	23
4.3.3 Third Option of Text Input.....	23
4.4 IMPORTING THE MULTIMEDIA FILES	23
4.5 IMPORTING THE PPT FILES	24

PART V MULTIDISCIPLINARY SUBJECTS 25

5.1 MATHEMATICS	25
5.1.1 Hand-sketched Equations.....	25
5.1.2 Functional Equations	30
5.1.3 Drawing Graphs	32
5.1.4 Measurement Tool	34
5.2 ENGLISH.....	35
5.2.1 Phonics tips	36
5.3 PHYSICS	36
5.3.1 Electrical Symbols	38
5.3.2 Electrical Magnetism Symbols	39
5.3.3 Optical Symbols.....	40
5.4 CHEMISTRY.....	40
5.4.1 Hand-sketched Equation	41
5.4.2 Equation Editor	41
5.4.3 Double-line Bridge.....	42
5.4.4 Benzene Function	42

5.4.5 Chemical Bonding	42
5.4.6 Chemical Element Table	42
5.4.7 Diagram of the Atomic Structure	43
5.4.8 Chemical Diagram	43
PART VI TEACHING MODE	48
6.1 INTRODUCTION OF THE FUNCTIONS OF THE PALETTE	48
6.1.1 Palette Toolbar	48
6.1.2 Page Adjustment	50
6.1.3 Screen Annotation	51
PART VII SOFTWARE EXTENSION	53
7.1 VISUALIZER FUNCTION	53
7.2 CLOUD PLATFORM	54
7.2.1 Log in Cloud Platform	54
7.2.2 Upload Documents	54
7.2.3 Download Class Materials	54
7.2.4 Visit HiteCloud	54
7.3 EM INTEGRATED MACHINE	55
7.4 COMPOSITE WHITEBOARD	55
7.5 WIN7,WIN8 OPERATING SYSTEM	55
7.5.1 WIN8 Operating System	55
7.5.2 WIN7,WIN8 Operating System	56

Part I Fundamental Knowledge

1.1 System Requirements

- Pentium dual-processor or above
- 2GB internal memory
- Windows XP SP3, Windows Vista SP2, Windows 7 and Windows 8 operating system
- Adobe Flash Player
- Adobe Reader
- FinalCodecs or other decoding software (video player functions are required in some cases)

1.2 Preparation Before You Begin

1.2.1 Inspecting Connection



icon indicates that the interactive whiteboard and the PC are not connected or the connection is lost;



icon indicates the connection is on.

1.2.2 Calibrating

A 9-point calibration is usually used.

Calibration method : Touch the “*Calibration*” button from the connection menu. Figure 1- 1 shows the pop-up menu after right click the connection icon.

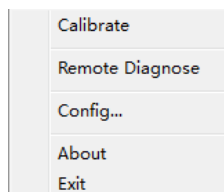


Figure 1- 1 The pop-up menu after right click the connection icon
(Calibration, Remote diagnosis, Configuration, About, Exit)

Touch 1 to 9 numbers that appear on the screen to perform the calibration process and a calibration quick key window will appear afterward (displayed in Figure 1- 2). Users simply follow the signals on the screen to touch the center part of the upper left, lower left, upper right, and lower right quick keys to complete the calibration.

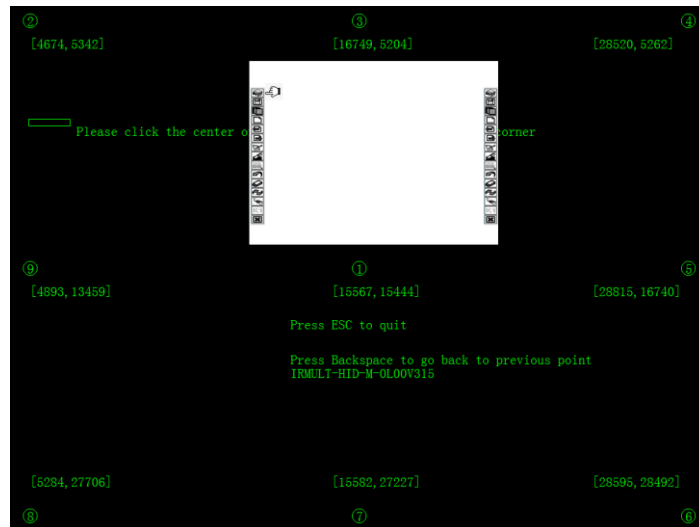


Figure 1- 2 A calibration quick key

1.2.3 Checking the Calibration Accuracy

Move the pen around and check if the target on the interactive whiteboard tracks the position of the pen precisely. If so, it is highly accurate.

1.2.4 Starting the Software

Users can start the software doing one of the following three methods:

- Start the programs via the software shortcut on the desktop or in the start menu.
- Touch any quick key on the whiteboard.
- Pick up any pen from the pen tray in the lower part of the whiteboard.

1.3 Settings

This software supports multiple user settings similar to the Windows system. Each user can define his own settings.

1.3.1 User Management

Path: File --- Settings --- User Management.

The user icon marked with a red square indicates that the account is activated. Figure 1-3 is an example of a “Default User” already being activated. User icons marked with [] are in use of the system currently. User 1 is currently using the system as illustrated in Figure 1- 3.

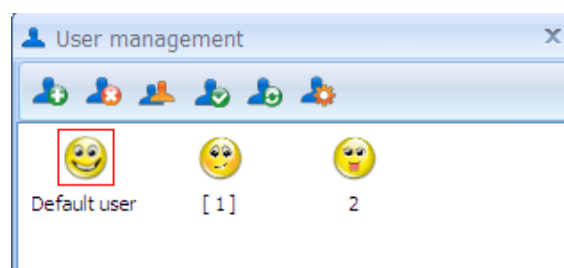


Figure 1- 3 User management window

1.3.2 Define the Default Settings of Pen Size and Highlighter Styles

Path: File --- Settings --- System Settings --- Pen Configuration

1.3.3 Handwriting Recognition Settings

Path: File --- Settings --- System Settings --- Handwriting Recognition Settings

1.3.4 Hardware Customization

Some of the hardware have a list of function keys appearing on both sides of the screen. These function keys can be customized with specific functions by the following steps.

Path: File --- Settings --- System Settings --- Hardware Customization

1.3.5 Interface Settings

Edit the function keys in the menu bar and the toolbar.

For example, Figure 1- 4 is the default settings of the menu bar and the toolbar prior to user's modifications; Figure 1- 5 shows the customized menu bar and the toolbar after the configuration.

Path: File --- Settings --- Set Settings --- Interface Settings

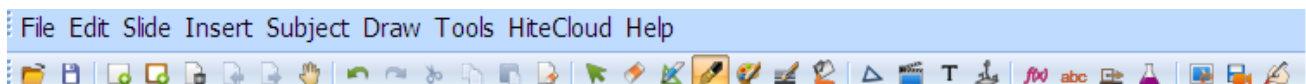


Figure 1- 4 Default settings of the menu bar and the toolbar



Figure 1- 5 The customized menu bar and the toolbar after the configuration

1.3.6 Automatic File Saving

Once the function of automatic file saving is activated, when the software is unexpectedly shut down and restarted again, the damages is minimal.

Path: File --- Settings --- System Settings --- others


Part II Software Overview

The software can be operated in two modes, design mode and teaching mode. The design mode allows users to prepare class materials, while the teaching mode is for demonstration and lecture.

2.1 Design Mode

The design mode is similar to the Windows operation environment. Users may perform functions by selecting commands from the menu bar and the toolbar. When users' computers are not connected to the whiteboard equipments or the secured dongle is not plugged in, a watermark will appear in the writing area. However, users can continue working on the software disregard the watermark. It is common to prepare the class materials in the design mode.

2.2 Teaching Mode

Click the “Play”  button in the design mode will change to the teaching mode. In the teaching mode, the writing area is set to be full-screen to make writing easier. Teaching mode is mainly used in the classroom teaching, the tool palette shown in Figure 2- 1 is available in the teaching mode.

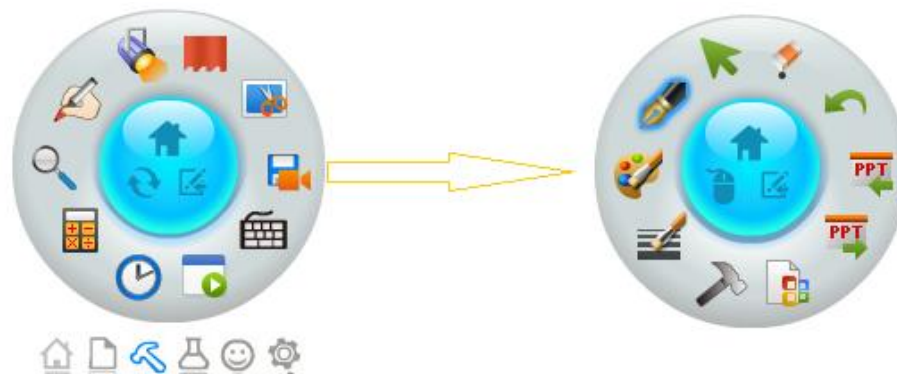






Figure 2- 1 The tool palette in the teaching mode

Button	Function
 minimize tool palette	Select this button will minimize the tool palette; selecting the button again will restore the tool palette on the screen.
 mouse	When users are using the screen annotation, a “Mouse” button will appear in the center of the tool palette. Select “Mouse” to aid operative advantages on Windows related operations. The “Mouse Button” function switches you from annotating your desktop to navigating your desktop.
 Minimize	Select this button will minimize the software window.

software window	
 Exit teaching mode	Select this button will change from the teaching mode to the design mode.

Part III Design Mode

The software provides two operating modes for users to use in different requirements. This chapter describes the menu bar, the toolbar, and academic tools in the design mode. Figure 3- 1 is the screen interface of the design mode which comprises four major parts, namely the menu bar, the toolbar, the writing area and the function panel (including index bar, property browser, subject, slide, network classroom, and effects interactive panel).

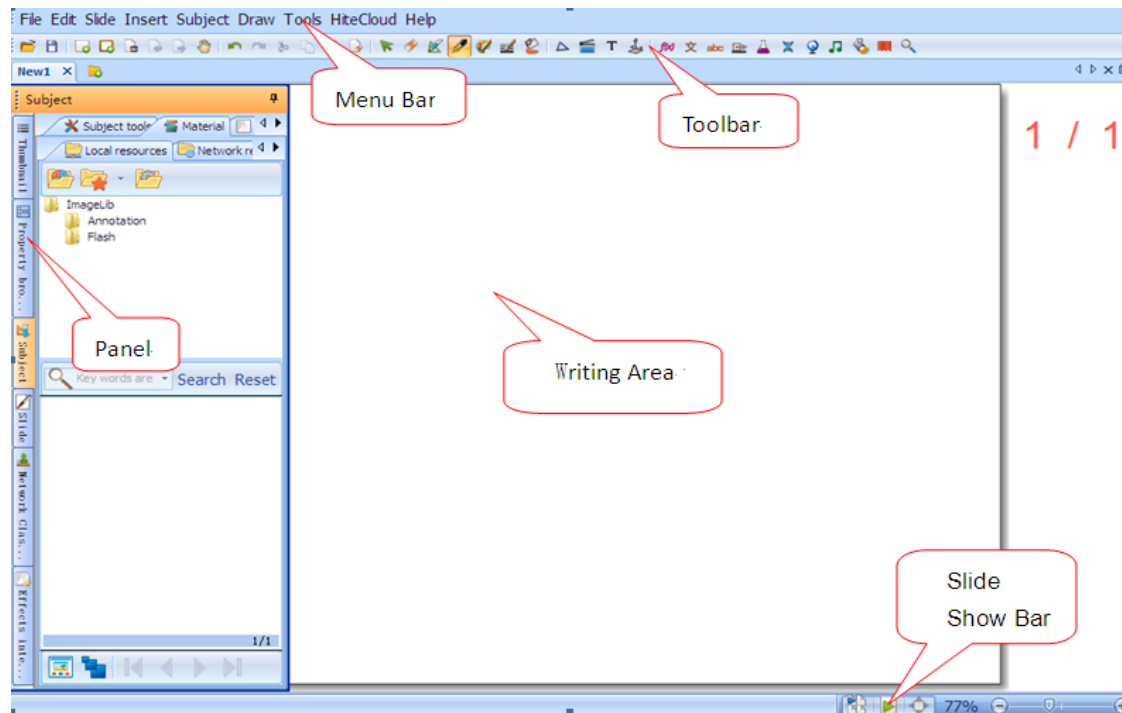















Figure 3- 1 Interface of the design mode










3.1 Menu bar

3.1.1 File menu


Button	Function
 New	Create a new HHT file.
 Open	Open a HHT file.
 Recent documents	List recently used HHT files.
 Save	Save the current HHT file.
 Save as	Save the current HHT file under a different path and name.











 Import external file	Import an external file in the formats supported by the software to the current HHT file.
 Export	Export the content in the current page document in a format supported by the software.
 Send e-mail	Email the file as an attachment.
 Print	Print the content of the file.
 Configuration	Define the software settings.
 Language Select	Select the language of the software.
 Close file	Close the current file.
 Quit	Exit the software.

3.1.2 Edit menu







Button	Function
 Undo	Undo the previous action.
 Redo	Redo the previous action.
 Cut	Cut the selected objects.
 Copy	Copy the selected objects.
 Paste	Paste selected objects that have been copied or cut.
 Delete	Delete the selected objects.
 Cloning	Clone the selected objects.
 Drag cloning	Drag to clone the selected objects.
 Clear slide	Clear all the objects other than the settings of the page grid and the ruler.

3.1.3 Page menu

Button	Function
 New slide	Create new white page, screen page and black page.





 Delete slide	Delete the current page.
 Previous slide	Go to the previous page.
 Next slide	Go to the next page.
 Move	Activate unlimited page roaming to allow larger screen space for writing. When touch the screen using three or more finger tips at the same time, the page will switch to page roaming style.
 Slide playback	Playback the process of operation on the current page.
 Background color	Set up the background color of the selected page.
 Background image	Set up the background image of the selected page.
 Change the background texture line	Set up the textures of the selected page.
 Remove background image	Delete the background image of the selected page.
 Slide settings	Set up the percentage of the all page.

3.1.4 Insert menu




Button	Function
 Media	Insert multimedia files, for example, image, flash, audio and video.
 Text box	Insert a text box in the selected page and edit the text.
 Vector graphics	Insert vector graphics.
 Common graphics	Insert user-defined graphs.
 WordArt	Insert artistic words.
 Visualizer	Combine with the visualizer to display contents in the page.

3.1.5 Academic Subject menu

Button	Function
--------	----------















 Mathematics	Insert mathematical subjects.
 English	Insert English subjects.
 Physics	Insert physical subjects.
 Chemistry	Insert chemical subjects.

3.1.6 Drawing menu




Button	Function
 Select	Select an object.
 Eraser	Delete an object.
 Pen box	Select different types of pen.
 Texture	Define the color of the texture pen.
 Pen Color	Define the color of pens other than the texture pen.
 Pen Width	Define the size of the pen.
 Line body	Define the line style of the pen.
 Start Cap	Define the style of the line header.
 End Cap	Define the style of the line end.
 Filling	Select a closed area to fill color, image, or texture a wanted color from the pull-down menu to fill the selected area
 Fill Setting	Define color, image, and texture settings of the “Color Fill” function.

3.1.7 Tool menu

Button	Function
--------	----------

 Spotlight	The tool provides the spotlight effect only on a specific area to be visible.
 Curtain	The function of <i>Curtain</i> is to block part of the screen.
 Image Capturer	The tool can capture the current screen image.
 Screen recorder	The tool can record and save the steps and operations appear on the screen.
 Custom Recording	The “Record Settings” can record and save the software operations in .dpb format according to user-defined settings.
 Screen keyboard	This function features an on-screen keyboard.
 Handwriting recognition	The tool performs handwriting recognition and converts handwritings to printed characters.
 Writing Panel	The tool creates a new window in the current screen for users to input writings.
 Window player	The tool creates a display window specifically to play videos, PowerPoint and other demonstration files.
 Clock/Timer	There are two functions, timer and clock, in this tool.
 Calculator	The tool is a calculator.
 Magnifier	The tool is a magnifier for zooming.
 Lock screen	The tool blocks the page with an opaque layer to avoid unwanted software functions performed on it.
 Shortcuts	The tool stores shortcuts to all the user-defined resources for faster and easier retrieval.

3.1.8 Help menu

Button	Function
 Help	Provide help document.
 Check for update	Check whether the software is the latest version or not, and update the program if needed.
 About	Display the version of the software presently in use.

3.2 Panel

Click the  button to show the panel. Click the  button in the right upper corner of the panel to hide/lock the panel.


3.2.1 Index Bar Panel


The index bar panel provides the page index function. The index bar allows users to cut, copy, paste, delete and move the pages.

3.2.2 Property browser Panel

Use the Property browser Panel to view and change the detailed properties of the objects in the page.

There are three methods to open the Property browser Panel:

Method 1: Click the  button to open (expand) the panel, and switch to “Property Viewer”.

Method 2: Select an object; click  at the lower left corner and select “Property Viewer”.

Method 3: Select an object; right click the object to open the shortcut menu, and select “Property Viewer”.

3.2.3 Subject Panel

The subject panel consists of three parts, the subject tools, material and subject templates.

➤ Subject Tools

The subject tools includes tools for language, mathematics, English, physics, chemistry, biology, geography, and music. Further descriptions will be provided in the multidisciplinary section.

➤ Material

The local resources includes the default resources, system resources, and storage folder.

➤ Subject Templates

Subject templates is composed of the system templates and user defined templates.

The system templates is provided by the software and can not be added, deleted, and modified by the users; however, users can add, delete and modify the user defined templates according to their needs.

3.2.4 Slide Panel

The Slide Panel has two parts, the slide template and the effects of the page.

➤ Slide Template


The slide template includes system slide template and user slide template. Define the area of application in the system slide template; then drag the system slide template into the page. The system slide template is provided by the software and cannot be added, deleted and modified; however, users can add, delete, and modify the user slide template.

➤ The Effects of the page

Use “The Effects of the page” to perform the animated page effect similar to that in the powerpoint illustrated in the class.

3.2.5 Network Classroom

Use the network classroom panel to conduct remote teaching.

The presenter starts the software; click the  button in the left side of the screen to open the panel; then select “Network Classroom Panel”. Click the “Create the network classroom” button, a pop-up window as shown in Figure 3- 2 will appear.

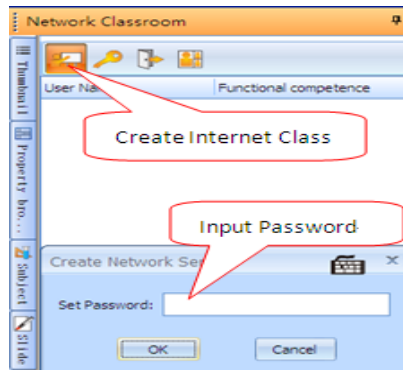
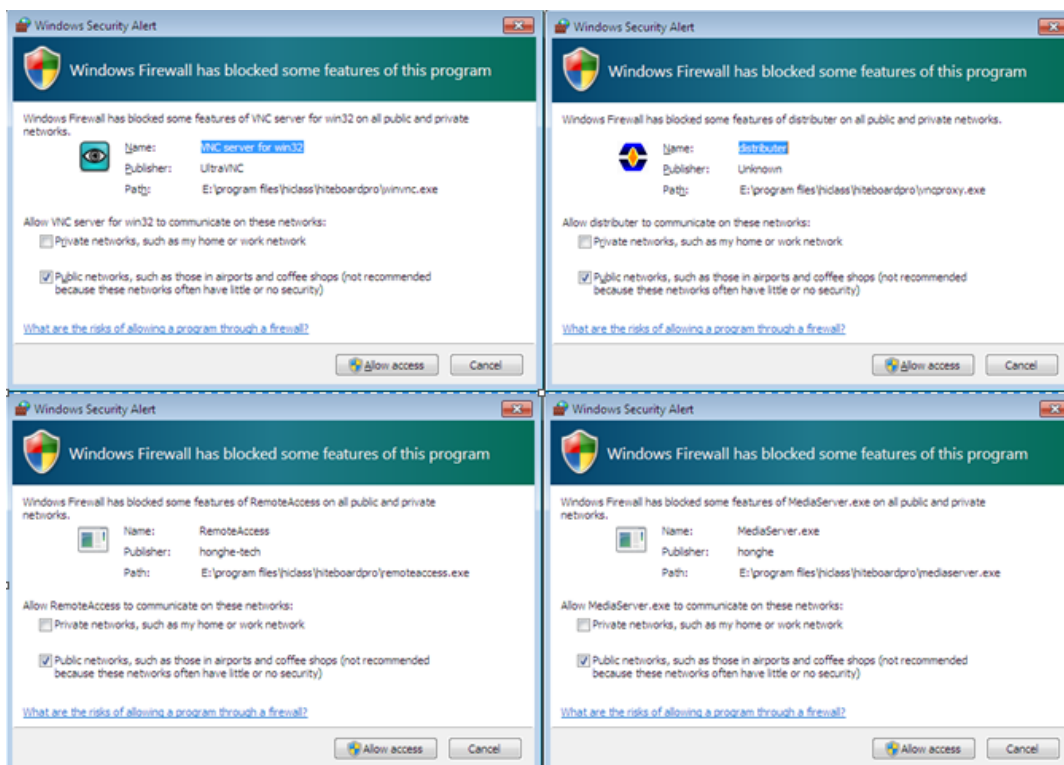


Figure 3- 2 The pop-up window to create an network classroom panel

For a first time user, once the password is entered, a window displayed in Figure 3- 3 will appear.



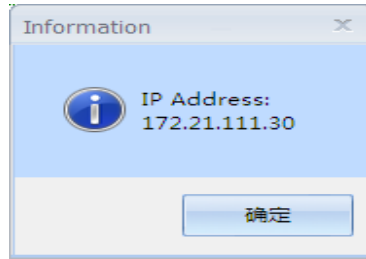


Figure 3- 3 The pop-up windows for the first time users

The functions available in the network classroom are extended from those of VNC, including VNC basic features of VNC server for win32, distributor, RemoteAccess; MediaServer for audio and video service; and IP address of 172.21.99.26 reserved for the class presenter. Set all services to be “Access Allowed” and click “OK”, as displayed in Figure 3- 4, to complete the preparation that is done by the presenter.

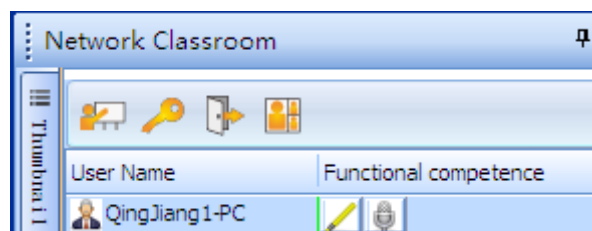



Figure 3- 4 The presenter in the user list

The attendees start the software; click the  button in the left side of the screen to open the panel; then select “Network Classroom Panel”. Click the “Enter the Network Classroom” button, a pop-up window as shown in Figure 3- 5 will appear.

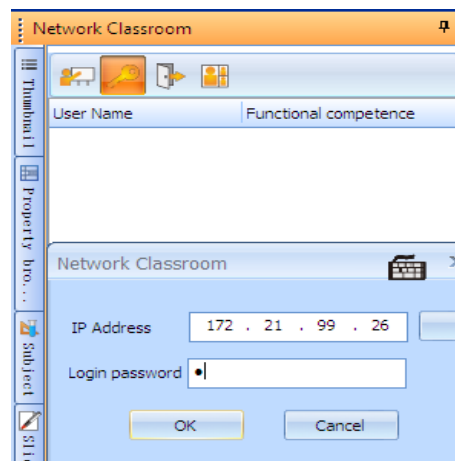


Figure 3- 5 Attendees enter the network classroom

Enter the presenter’s IP address and log in password; then click “OK” to enter the network classroom. Figure 3- 6 is the interface after attendees log in to the network classroom.

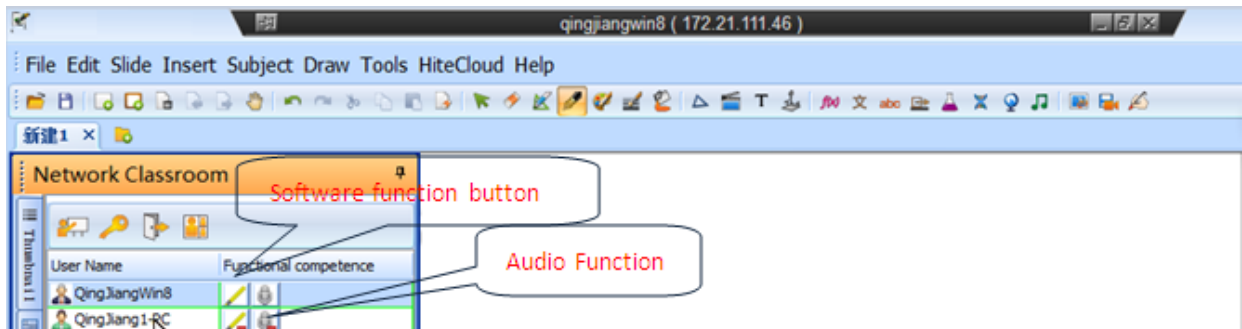






Figure 3- 6 The interface after attendees log in to the network classroom

The presenter can grant access rights to attendees on using “Software Function Button ” and “Audio Button ”. The “Show/Hide Video Button ” controls the video conference function between the presenter and the attendees. Attendees can click  to exit from the network classroom.

3.2.6 Effects Interactive Panel

The “ effects interactive panel” enriches the interactive features of the software. Users can drag the “Trigger Object” and “Result Object” to the “Trigger Object” window and “Result Object” window respectively; define the interactive effect with respect to each trigger action to complete the process, as displayed in Figure 3- 7.

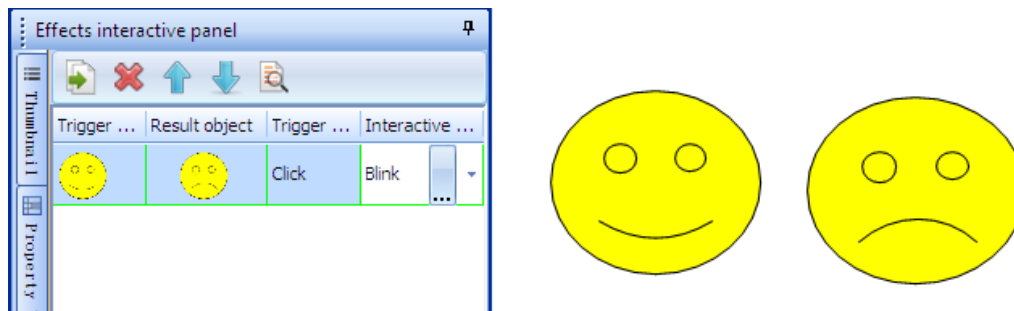











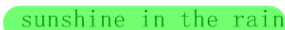








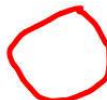

Figure 3- 7 The screen of the special interactive effect

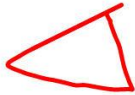
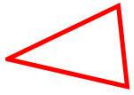
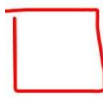







Drag an object to the center of a trigger table cell and a result table cell. When the symbol  appears, release the mouse click and the existing trigger object will be replaced. When the symbol  appears, release the mouse click and the a new trigger object is added.

The effects interactive can only be previewed in the working mode and is executable with special effects in the teaching mode.

Part IV Common Operations

4.1 Pen Tool

Button	Function		
<div></div> <div>Smooth pen</div>	The smooth pen stimulates the writing effect of a fountain pen, bal pen and chalk pen.		
<div></div> <div>Brush</div>	The Brush pen stimulates the writing of a brush pen with the effect of sharpness, weight and brush of the pen.		
<div></div> <div>Bamboo pen</div>	The bamboo pen expresses the writing effect of Tibetan, Arabic characters.		
<div></div> <div>Highlight pen</div>	The highlight pen stimulates the effects of a bright highlighter with choices of different colors.		
<div></div> <div>Laser pen</div>	The laser pen attracts attention by varying its color between actions. Once an action is performed, the colorful trace of pointer disappears.		
<div></div> <div>Gesture pen</div>	The gesture pen performs different functions on the page, including turning to next/previous page, erasing selected contents, and selecting objects.	<div>Hand signal</div> 	<div>Function</div> Next page
			Previous page
			Erase the selected area
			Select an object
<div></div> <div>Intelligent pen</div>	The intelligent pen can recognize the shapes of a line, angle, and triangle drawn by users. Intelligent pen also creates different control points for different drawings allowing users to adjust the drawings as shown to the right.	<div>The graph before the recognition</div> 	<div>The graph after the recognition</div> 

			
			
			
			
	The texture pen displays the effect of texture in writing.		

4.2 Basic Operations of the Objects

4.2.1 Select the Objects

To select an object, click a target item, among the “polygon”, “smiling face”, or “3”, as shown in Figure 4- 1.



Figure 4- 1 The selection of a single object


To select multiple objects, click the  button first; then drag the mouse pointer around the selected objects.

Figure 4- 2 shows how to select three lines by dragging the mouse point to draw a circle around.

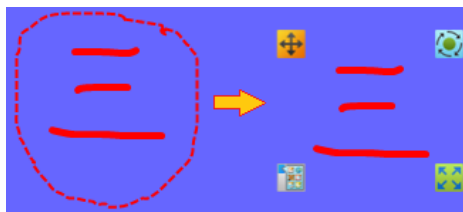


Figure 4- 2 The selection of multiple objects.

4.2.2 Moving the Objects




To move multiple objects, after completing the selection of multiple objects, use the “Move ” button to move the objects around as showed in Figure 4- 3.



Figure 4- 3 An example of moving objects

4.2.3 Rotating and Scaling the Objects

Once the object is selected, use the “Rotate ” button appearing at the upper right corner and the “Scale ” button at the lower right corner of the object frame to rotate and scale the objects, as displayed in Figure 4- 4.

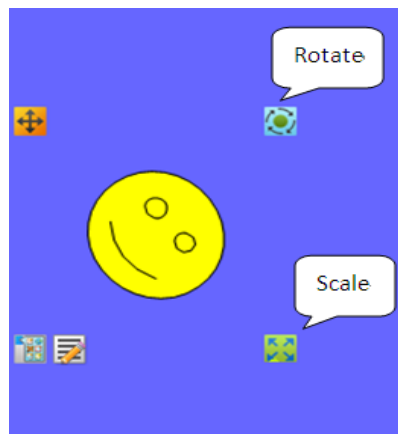



Figure 4- 4 The method of rotating and scaling the objects

4.2.4 Object Property

Once an object is selected, click on the “Property ” button at the lower left corner of the object frame to see more property functions available, as shown in Figure 4- 5.

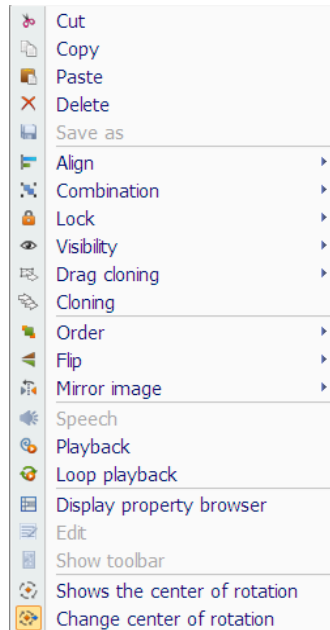
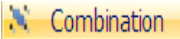
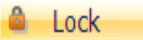


Figure 4- 5 The property menu


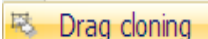
4.2.5 Grouping the Objects

Once a set of objects is selected, click on the “Combination  ” button from the property menu to make them to be viewed as an object. Any operation applied to the grouped objects will treat the grouped objects as if a single object.

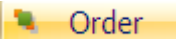
4.2.6 Locking the Objects

Upon an object or multiple objects being selected, click on the “Lock  ” button from the property menu to lock the object. The locked objects cannot be moved, rotated and affected by the operations.


4.2.7 Cloning the Objects

Upon an object or multiple objects being selected, click on the “Cloning  ” button from the property menu to produce a clone of the object. Use the “Drag Cloning  ” to drag and produce unlimited copied of the object.

4.2.8 Layer Order of the Objects

Upon an object or multiple objects being selected, click on the “Order  ” button from the property menu to define the layer order and display of the objects.

4.2.9 Editing the Objects

When a text object is selected, click the “Edit”  button that appears at the lower left corner of the object frame, and begin to edit the text box, hand-sketched mathematic equations, hand-sketched chemical equations, and English phrases, as illustrated in Figure 4- 6.

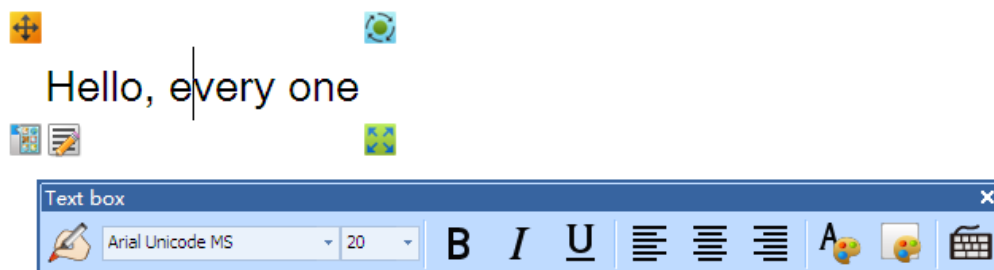




Figure 4- 6 Editing the Objects

4.2.10 Aligning the Objects

Upon an object or multiple objects being selected, use the “Align” button in the property menu to align the objects.


4.2.11 Object Playback

Upon an object or multiple objects being selected, use the “Playback”  button or “Loop Playback”  button in the property menu to replay the objects.

4.2.12 Filling the Objects

Use the paint bucket to fill the closed object with colors, images or textures.

4.2.13 Speech

Upon an object or multiple objects of Chinese or English words being selected, use the “Speech”  button in the property menu to pronounce. The effect of this function depends on the operating system and appears to be excellent in WIN7 operating system.

4.2.14 Duplicating the External Images and Text


The software supports the copy and paste functions by using “Ctrl+C” 、 “Ctrl+V” to input external images and text to the page.

4.2.15 Saving the Images

The software supports the “Save As” function on the images. External images pasted in the page can be stored in the local folders by “Save As” function.

4.3 Text Input

4.3.1 Keyboard Input

Select the “Text Box ” button from the toolbar and click once or hold and drag the mouse pointer to create a text box, as shown in Figure 4- 7.

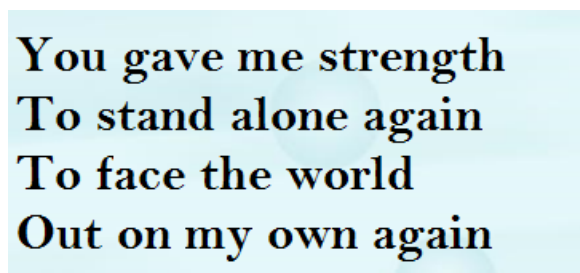

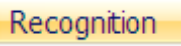


Figure 4- 7 The text box editor

4.3.2 Handwriting Recognition Input

Select the “Handwriting Recognition ” button from the toolbar, the software will convert handwritings to printed characters.

4.3.3 Third Option of Text Input

Use the smooth pen, brush pen , bamboo pen , highlight pen and gesture pen to write the contents; then click the “Recognition ” button in the property menu to convert the handwritings to printed characters.

4.4 Importing the Multimedia Files


Select the “Multimedia ” button from the toolbar to open the multimedia files in the format supported by the software. (The software supports most formats of the multimedia file. If the software suggests that you need to have a specific decoding program, please install “FinalCodecs” or other decoding software first.) To import the multimedia file, drag the file to the text box.



Figure 4- 8 The display of a multimedia file.

4.5 Importing the PPT Files

Path: File --- Import

The function of importing the PPT files places the powerpoint files in the page; the text in the PPT files remains as a text in the page.

Part V Multidisciplinary Subjects

The subject tool consists of application tools for language, mathematics, English, physics, chemistry, biology, geography and music.

5.1 Mathematics



The mathematic subject tool provides commonly used mathematic functions. Select the “Mathematics”  button in the toolbar to access the mathematic subject as shown in Figure 5- 1.



Figure 5- 1 The mathematic subject tool

5.1.1 Hand-sketched Equations

The function of the hand-sketched equations converts hand written equations to printed characters. Click the  symbol after open the mathematic subject tool; then click in the writing area or drag it to the writing area to create the editing window of hand-sketched equation where users write mathematic equations as illustrated in Figure 5- 2.

$$x = \frac{-b + \sqrt{b^2 - 4ac}}{2a}$$
$$x = \frac{-b + \sqrt{b^2 - 4ac}}{2a}$$

Figure 5- 2 A hand-sketched mathematic equation








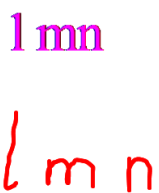


The correct way of writing equations:







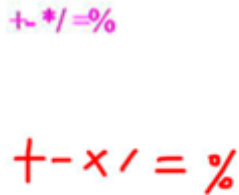

The variations in handwriting styles among users may cause errors in the recognizing process. Currently, the overall recognition percentage of the system is 90 percentages. The time required to recognize a hand-sketched equation depends on the number of stroke in an equation. The more strokes, the more time it takes to convert into a printed form. The current version allows a maximum of 35 strokes in a single hand-sketched equation. Therefore, hand-sketched equations which are complied the following requirements, can be recognized and converted more correctly.

- Follow the formal sequence and form of stroke strictly while writing the equations.
- Write neatly and specification clearly.
- To delete the handwriting contents: Whenever an error occurs while using the hand-sketched equations feature, erase the selected area by smudging the pointer and re-draw the contents.
- Special conditions: For example, to recognize a "radical" symbol, the system needs a combination of a radical symbol and a number in order to convert correctly. A radical symbol without a number in it will be expressed as $\sqrt{}$. There are three types of mathematical formulas can be recognized by the hand-sketched equations function: the number signs, basic operators and special operators. The supported inputs of each category are listed in the following table.

Category	Symbol	
Number Sign	Digit	0~9
	English alphabet	a~z lower case
	Greek letter	$\alpha, \beta, \gamma, \delta, \varepsilon, \theta, \lambda, \omega, \sigma, \pi, \Pi, \Sigma, !$
	Math symbol	$+, -, \times, *, /, -, \div, =, ., \sqrt{}, \%$
	Other character	$(,), [,], \{, \}$
Basic Operator	Power	a^3
	Fraction	$\frac{}{}$
	Radical	$\sqrt{}$
	Decimal	\cdot
Special Operator	Trigonometric function	sin, cos, tg, ctg
	Inverse trigonometric function	sin-1, cos-1, tg-1, ctg-1
	Logarithm	lg, ln
	Fractorial, sum, modulo, round	!, Σ , mod(), int()

When users input hand-sketched math formulas, there are different ways of inputting different characters or symbols as illustrated in the table below. The handwritten note is shown right below the converted outputs in the diagram.

Input	Input method	Image output
a,b,c,d,e,f,g,h	Input neatly according to the normal specifications and sequence of writing.	
i	<p>The character “i” consists of two parts. Write it according to the order shown.</p> 	
j	<p>The character “j” consists of two parts. Write it according to the order shown.</p> 	
k	<p>The character “k” shall be drawn in 1 stroke according to the order shown.</p> 	
l,m,n	Write the characters “l, m, n” neatly according to their writing specifications.	
o	Write the character “o” neatly according to its writing specification.	
p,q,r,s,t,u,v,w	Write the characters “p, q, r, s, t, u, v, w” neatly according to their writing specifications.	

x	<p>The character “x” shall be drawn according to the order shown.</p> 	
y	<p>The character “y” shall be drawn according to the order shown.</p> 	
$\alpha, \beta, \gamma, \delta, \epsilon, \theta, \lambda, \omega, \sigma, \pi, !$ $\alpha, \beta, \gamma, \delta, \epsilon, \theta, \lambda, \omega, \sigma, \pi, !$	<p>Write the symbols “$\alpha, \beta, \gamma, \delta, \epsilon, \theta, \lambda, \omega, \sigma, \pi, !$” neatly according to their writing specifications.</p>	
Π, Σ	<p>Write the symbols “Π, Σ” neatly according to their writing specifications.</p>	
$+, -, *, /, =, \%$	<p>Write the symbols “$+, -, *, /, =, \%$” neatly according to their writing specifications.</p>	
\times, \div	<p>Write the symbols “\times, \div” neatly according to their writing specifications.</p>	

$\sqrt{}$	Write the "radical" symbol along with a number in order to convert correctly. A radical symbol without a number in it will be expressed as“.”	$\sqrt{2}$ $\sqrt{2}$
$(), [], \{\}$	Write the symbols “(), [], { }” neatly according to their writing specifications.	$() [] \{\}$ $() [] \{\}$
Addition: + Subtract: – Multiply:	Write the symbols of the “addition, subtract, multiply” functions neatly according to their writing specifications.	$3+410-72*3$ $3+4 10-7 2*3$
Division: /, -, ÷	Write the symbols of the “division” function neatly according to its writing specifications.	$4\div 28/6\frac{a}{b}$ $4\div 2 \ 8/6 \ \frac{a}{b}$
Decimal	Write the “decimal according to the formal input.	$2.674.23$ $2.67 \ 4.23$
Power Expression: Fraction Radical	For the radical expression, write the base values with a fractional power, decimal power, radical power, and integer power, according to their formal inputs.	$a^{\frac{3}{2}} a^0 .5\sqrt{a} a^2$ $a^{\frac{3}{2}} a^0 .5 \sqrt{a} a^2$
Trigonometric functions: sin, cos, tg, ctg Trigonometric functions: sin, cos, tg, ctg Inverse trigonometric	Input the handwriting expressions of the trigonometric functions, inverse trigonometric functions, and logarithmic functions according to their formal forms.	$\sin \cos \operatorname{tg} \operatorname{ctg} \sin^{-1} \ln$ $\sin \cos \operatorname{tg} \operatorname{ctg} \sin^{-1} \ln$

functions: sin-1,cos-1, tg-1, ctg-1 Logarithm: lg, ln		
Fractorial Logarithm Modulo: MOD () Rounding: int () Percentage: %	Write the “Fractorial, logarithm, modulo: MOD () , rounding: int (), percentage: % ” functions neatly according to their writing specifications.	$3! \ln \text{mod}() \text{int}() \%$ $3! \ln \text{mod}() \text{int}() \%$

5.1.2 Functional Equations

Three types of functional procedures are supported in the mathematic subject tool, including the explicit functional equation, polar coordinates functional equation, and parametric functional equation. The steps to insert the functional equations are explained as follows:

Select a functional graph icon as shown in Figure 5- 3; then click in the writing area or drag it to the writing area.

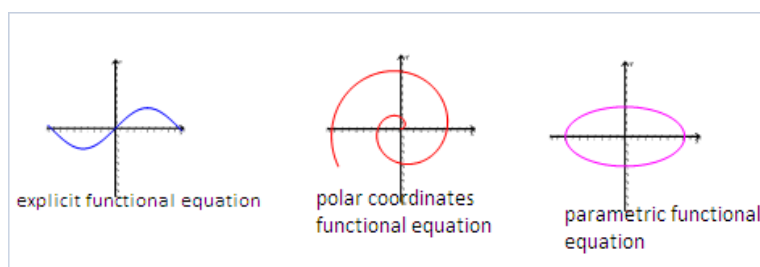



Figure 5- 3 The graph icons of different functional equations

Select the functional object and click the property menu  to open the property viewer. Compose the functional equation by editing formulas and adjusting the coordinates as illustrated in Figure 5- 4.

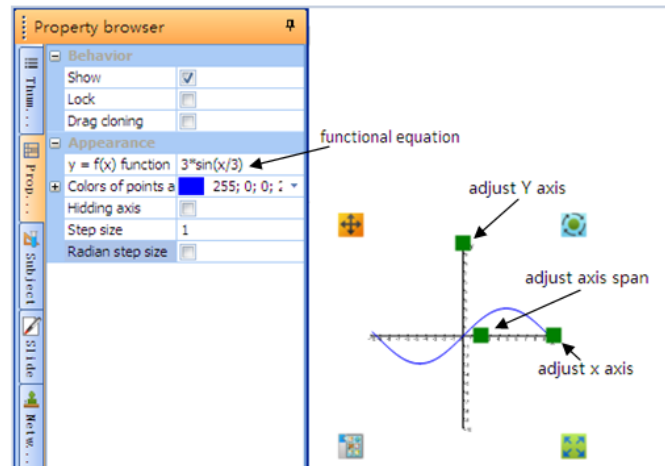


















Figure 5- 4 The interface of the functional equation editor








The software requires that the functional equations to be input correctly according to their writing specifications. Currently, the functional equations supported by the software are listed as follows:

- Sine function: $y=\sin (x)$
- Sine hyperbolic function: $y=\text{sh} (x)$
- Cosine function: $y=\cos (x)$
- Cotangent function: $y=\text{ctg} (x)$
- Cosine hyperbolic function: $y=\text{ch} (x)$
- Tangent: $y=\tan (x)$
- Tangent of hyperbolic function: $y=\text{th} (x)$
- Ln: exponential function with the natural number e as the base
- Log: logarithm function with the natural number e as the base
- Inverse sine function: $y=\arcsin (x)$
- Inverse cosine function: $y=\arccos (x)$
- Inverse tangent function: $y=\text{arctg} (x)$
- Quadratic equation $y=x^2$, enter it as $y=x^{\wedge}(2)$












5.1.3 Drawing Graphs





➤ Two Dimensional Graphs

Button	Function
 Point	Click this button to draw a point in the page. (The point marked with A in the default setting. To remove the remark, set the marking to be BLANK in the property viewer.)
 Line segment	Click this button to draw a line segment in the page. (The line segment is marked with A and B as the line header and end respectively in the default setting. To remove the remarks, set the marking to be BLANK in the property viewer.)
 Single-arrow	Click this button to draw a single-arrow in the page.
 Double-arrow	Click this button to draw a double-arrow in the page.
 Geometric segment	Click this button to draw a geometric segment in the page.
 Angle	Click this button to draw an angle in the page. (The default angle is 45 degrees.)
 Arc, Pie	Click this button to draw an arc, curve and pie in the page. (The default is an arc sharp.)
 Circle	Click this button to draw a circle in the page.
 Oval	Click this button to draw an oval in the page.
 Arbitrary triangle	Click this button to draw an arbitrary triangle in the page.
 Geometric triangle	Click this button to draw a geometric triangle in the page. (The lengths, angles are measured and marked. To remove the remarks, de-select the marking in the property viewer.)
 Square, Rectangle	Click this button to draw a square and a rectangle in the page.
 Arbitrary quadrilateral	Click this button to draw an arbitrary quadrilateral in the page.
 Parallelogram, Diamond	Click this button to draw a parallelogram and a diamond in the page.
 Diamond	Click this button to draw a diamond in the page.
 Isosceles trapezoid	Click this button to draw an isosceles trapezoid in the page.

	Arbitrary pentagon	Click this button to draw an arbitrary pentagon in the page.
	Isosceles triangle	Click this button to draw an isosceles triangle in the page.
	Isosceles quadrilateral	Click this button to draw an isosceles quadrilateral in the page.
	Isosceles pentagon	Click this button to draw an isosceles pentagon in the page.
	Isosceles hexagon	Click this button to draw an isosceles hexagon in the page.
	Isosceles heptagon	Click this button to draw an isosceles heptagon in the page.
	Isosceles octagon	Click this button to draw an isosceles octagon in the page.

➤ Three Dimensional Graphs

Button		Function
	Sphere	Click this button to draw a sphere in the page.
	Spherical cap	Click this button to draw a spherical cap in the page.
	Cone	Click this button to draw a cone in the page.
	Vertical cone	Click this button to draw a vertical cone in the page.
	Cylinder	Click this button to draw a cylinder in the page.
	Cone with flat top	Click this button to draw a cone with flat top in the page.
	Cuboid	Click this button to draw a cuboid in the page.
	Bevel	Click this button to draw a bevel in the page.
	Dihedral angle	Click this button to draw a dihedral angle in the page.
	Pentagonal pyramid	Click this button to draw a pentagonal pyramid in the page.
	Pentagonal bevel	Click this button to draw a pentagonal bevel in the page.

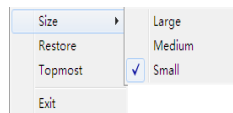
	Pentagonal prism	Click this button to draw a pentagonal prism in the page.
	Cube	Click this button to draw a cube in the page.
	Plane	Click this button to draw a plane in the page.
	Triangular pyramid	Click this button to draw a triangular pyramid in the page.

5.1.4 Measurement Tool

➤ Triangular Plate

The software has two built-in triangular plates, 30-60 degree triangular plate and 45-45 degree triangular plate, as shown in Figure 5- 5. Users can use these tools to draw lines and to measure the distance. Drag the edge of the triangular plate where the tick-mark is, to draw a line. The tool can be moved along the horizontal direction or rotated. Click any area of the triangular plate to hold and move it around. Right click any area of the

triangular plate to see a pop-up menu that allows users to change the size or exit the operation.



that allows users to change the size or exit the operation.

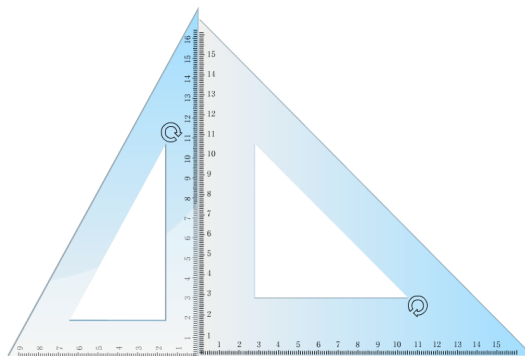


Figure 5- 5 Triangular plates

➤ Compass

The compass tool can draw curves, fan or pie graphs. Figure 5- 6 is a compass symbol show in the page. Click on different spots of the compass to use the corresponding functions, such as to moving in the horizontal direction and rotating.



Figure 5- 6 A compass

➤ Protractor

The protractor provides few functions for users to measure the angle and to draw an angle, a arc, fan and pie.

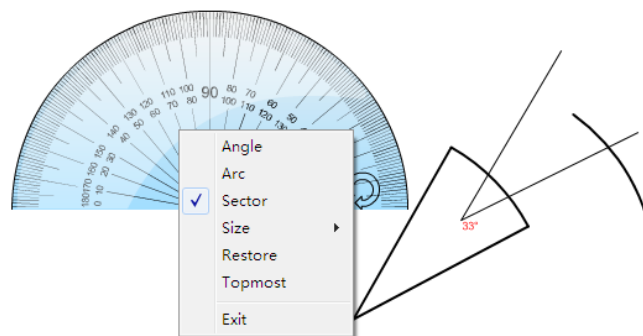


Figure 5- 7 A protractor

➤ Ruler

Use the ruler to draw lines and to measure the distance. Drag the edge of the ruler where the tick-mark is, to draw a line. Right click any area of the ruler to see a pop-up menu that allows users to change the size or exit the operation. The ruler can be moved along the horizontal direction or rotated.

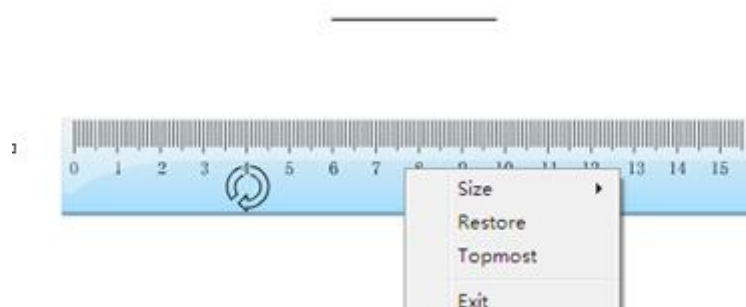


Figure 5- 8 A ruler


5.2 English

The English subject tool provides functions commonly used in an English class. Click on the “English



“ button to open the English object tool in the object panel.

5.2.1 Phonics tips

Click the “Phonetics”  button in the language subject tool; then click in the writing area or drag it to the writing area to create the phonetics information or words. More functions are available through editor and property viewer.

5.3 Physics





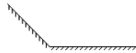




The physics subject tool provides functions commonly used in a physics class. Click on the “Physics”  button to open the Physics object tool in the tool menu or use the object path --- physics to do so. Figure 5- 9 displays the physics subject panel of the physics subject tool.

























Figure 5- 9 The physics subject tool

➤ Linear Motion




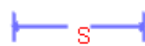









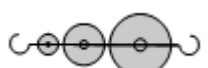
The mechanical component functions related to the linear motion are as follows:



Button	Function	Example
 Plane	Create the plane of the linear motion.	
 Inclined plane	Create the inclined plane of the linear motion.	
 Triangular beveled plane	Create the triangular beveled plane of the linear motion.	
 Conveyor belt	Create the conveyor belt of the linear motion.	

	Small ball	Create the small ball of the linear motion.	
	Trolley	Create the trolley of the linear motion.	
	Wood block	Create the wood block of the linear motion.	
	Wood stick	Create the wood stick of the linear motion.	
	Level	Create the level of the linear motion.	
	Ruler	Create the ruler of the linear motion.	
	Vernier caliper	Create the vernier caliper of the linear motion.	
	Scale viewer	Create the plane of the linear motion.	
	Round groove	Create the round groove of the linear motion.	
	Groove	Create the groove of the linear motion.	
	Arc skateboard	Create the arc skateboard of the linear motion.	

➤ Newton Law







A list of mechanical symbols that function according to the Newton Law, is listed in the following table.

Button	Function	Example
 Force	Create the force of the Newton Law.	
 Distance expression	Create the distance expression of the Newton Law.	
 Spring	Create the spring of the Newton Law.	
 Spring scale	Create the spring scale of the Newton Law.	
 Pulley	Create the pulley of the Newton Law.	
 Pulley (two wheels)	Create the pulley (two wheels) of the Newton Law.	
 Pulley (three wheels)	Create the pulley (three wheels) of the Newton Law.	

	hooked weight	Create the hooked weight of the Newton Law.	
---	----------------------	---	---

























- Solid State, Liquid State, Gas State























A list of mechanical components related to the use of solid, liquid, and gas.

Button	Function	Example
 Propeller	Create the propeller established for solid, liquid, and gas media	
 Pressure gauge	Create the pressure gauge established for solid, liquid, and gas media	
 Gas Chamber	Create the gas chamber established for solid, liquid, and gas media	

5.3.1 Electrical Symbols

















The frequently used mechanical diagrams (such as ammeters, voltmeters, sliding rheostats, etc) and electrical diagrams (for instance, batteries, bi-directional switches, and switches) are displayed below.







Button	Function	Example
 Switch	Create the electrical switch of the electrical components	
 knob	Create the knob of the electrical components	
 light bulb	Create the light bulb of the electrical components	
 Ammeter symbol	Create the ammeter symbol of the electrical components	
 voltmeter symbol	Create the voltmeter symbol of the electrical components	
 Sensitive galvanometer	Create the sensitive galvanometer of the electrical components	
 User-defined meter	Create the user-defined meter of the electrical components	
 Sliding rheostat	Create the sliding rheostat of the electrical components	
 Battery	Create the battery of the electrical components	
 Battery pack	Create the battery pack of the electrical components	
 Two-directional switch	Create the two-directional switch of the electrical components	
 Switch	Create the switch of the electrical components	

	Light bulb	Create the Light bulb of the electrical components	
	Bell	Create the Bell of the electrical components	
	DC motor	Create the DC motor of the electrical components	
	AC motor	Create the AC motor of the electrical components	
	Ammeter	Create the Ammeter of the electrical components	
	Voltmeter	Create the voltmeter of the electrical components	
	Resistor	Create the Resistor of the electrical components	
	Slide rheostat	Create the Slide rheostat of the electrical components	
	Grounding	Create the Grounding of the electrical components	
	Capacitor	Create the Capacitor of the electrical components	
	Horn	Create the Horn of the electrical components	

5.3.2 Electrical Magnetism Symbols

















The frequently used electrical magnetism diagrams (such as wires, coils, electric field, positive and negative electrons) are displayed below.

Button	Function	Example
 connecting wire	Create a connecting wire of the electrical magnetism	
 coil	Create a coil of the electrical magnetism	
 coil A	Create a coil A of the electrical magnetism	
 Core	Create a core of the electrical magnetism	
 Bar-shaped magnet	Create a Bbar-shaped magnet of the electrical magnetism	
 U-shaped magnet	Create a U-shaped magnet of the electrical magnetism	
 Magnetic field	Create a magnetic field of the electrical magnetism	
 Electric field	Create a electric field of the electrical magnetism	

	Charge particle	Create a charge particle of the electrical magnetism	
	Positive and negative electrons	Create positive and negative electrons of the electrical magnetism	
	Small magnetic needle	Create a small magnetic needle of the electrical magnetism	

5.3.3 Optical Symbols

The following symbols are frequently used in optical devices, such as convex lens, concave lens, optical frames and other.

Button	Function	Example
 Convex lens	Create a convex lens of the optics	
 Plano convex lens	Create a plano convex lens of the optics	
 Convex symbol	Create a convex symbol of the optics	
 Concave lens	Create a oncave lens of the optics	
 Plano concave lens	Create a plano concave lens of the optics	
 Concave symbol	Create a concave symbol of the optics	
 Optical frame	Create an optical frame of the optics	
 Candle	Create a candle of the optics	

5.4 Chemistry

The chemistry subject tool provides functions commonly used in a chemistry class. Click on the “Chemistry



” button to open the Chemistry object tool in the tool menu or use the object path --- chemistry to do so.


Figure 5- 10 displays the chemistry subject panel of the chemistry subject tool.




Figure 5- 10 The chemistry subject tool

5.4.1 Hand-sketched Equation

The function of the hand-sketched equations converts hand written chemistry equations to printed characters.

Click the  symbol after open the chemistry subject tool; then click in the writing area or drag it to the writing area to create the editing window of hand-sketched equations where users write chemistry equations. The method is similar to that of the hand-sketched mathematic equations and will not provide further details here.

5.4.2 Equation Editor

The equation editor is to provide an editing function for chemistry equations. Click the  symbol after open the chemistry subject tool; then drag it to the writing area to create the editing windows of hand-sketched equation, as shown in Figure 5- 11.

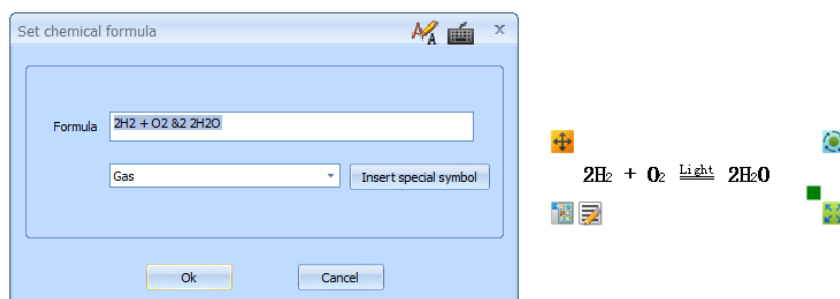


Figure 5- 11 Editing Chemistry equations

5.4.3 Double-line Bridge



Double-line bridge can represent the transfer direction of an atomic electron and information of the combining power ratio in a chemical reaction process. Select the double-line bridge  symbol after open the chemistry subject tool; then drag it to the writing area, as shown in Figure 5- 12. Users can drag the green symbols on the double-line bridge to adjust the length and height.



Figure 5- 12 The double-lane bridge

5.4.4 Benzene Function

The benzene structure tool can quickly draw the structure diagram of a benzene. Select  after open the chemistry subject tool; then drag it to the writing area. The benzene object will appear in the writing area; change the benzene structure by adjusting its object property, as shown in Figure 5- 13.

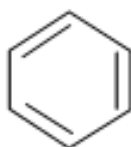



Figure 5- 13 Benzene

5.4.5 Chemical Bonding

The Chemical bonding expresses the structure of the material. Select  after open the chemistry subject tool; then drag it to the writing area. The chemical bonding object will appear in the writing area; change the chemical bonding structure by adjusting its object property.

5.4.6 Chemical Element Table


Select the  symbol after open the chemistry subject tool to see the chemical element table. Click each element to see its detailed information, as shown in Figure 5- 14 The chemical element table.

Figure 5- 14 The chemical element table

5.4.7 Diagram of the Atomic Structure

The diagram of the atomic structure illustrates the number of protons in the nucleus and the number of electrons in different layer around the protons. Users can easily understand the structure of an atom. Select



after open the chemistry subject tool; then drag it to the writing area. The structure of the atom will be displayed in the writing area as shown in Figure 5- 15.

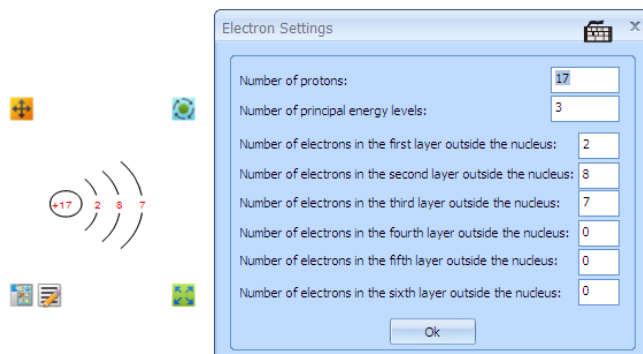

























































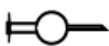










Figure 5- 15 A diagram of atomic structure





5.4.8 Chemical Diagram

➤ Chemical Device

Button	Function	Example
 Scale	Create a scale of the chemical devices.	























	Scale weight	Create a scale weight of the chemical devices.	
	Alcohol lamp	Create a alcohol lamp of the chemical devices.	
	Flame	Create a flame of the chemical devices.	
	Thermometer	Create a thermometer of the chemical devices.	
	Graduated cylinder	Create a graduated cylinder of the chemical devices.	
	Iron rack-1	Create an iron rack-1of the chemical devices.	
	Iron rack-2	Create an iron rack-2of the chemical devices.	
	Tripod rack	Create a tripod rack of the chemical devices.	
	Test tube clamp	Create a test tube clamp of the chemical devices.	
	Burette clamp	Create a burette clamp of the chemical devices.	
	Tweezers	Create a tweezers of the chemical devices.	
	Medicine spoon	Create a medical spoon of the chemical devices.	
	Heating spoon	Create a heating spoon of the chemical devices.	
	Wood block	Create a wood block of the chemical devices.	
	Stopper	Create a stopper of the chemical devices.	

	Glass stopper	Create a glass stopper of the chemical devices.	
	Glass stick	Create a glass stick of the chemical devices.	
	Asbestos screen	Create a asbestos screen of the chemical devices.	
	Pan	Create a pan of the chemical devices.	
	Glass tube	Create a glass tube of the chemical devices.	
	Free-form glass catheter	Create a free-form glass catheter of the chemical devices.	
	Glass catheter	Create a catheter of the chemical devices.	
	Rubber tube	Create a rubber tube of the chemical devices.	
	U-shaped tube	Create a U-shaped tube of the chemical devices.	
	Condensation tube	Create a condensation tube of the chemical devices.	
	Rubber head dropper	Create a rubber head dropper of the chemical devices.	
	Drying tube	Create a drying tube of the chemical devices.	
	Acid burette	Create an acid burette of the chemical devices.	
	Alkali burette	Create an alkali burette of the chemical devices.	
	Funnel	Create a funnel of the chemical devices.	
	Long tube funnel	Create a long tube funnel of the chemical devices.	
	Spherical separating funnel	Create a spherical separating funnel of the chemical devices.	

 Separating funnel	Create a separating funnel of the chemical devices.	
 Kipp's apparatus	Create a Kipp's apparatus of the chemical devices.	





➤ Chemical Container



The followings are the chemical container buttons and their functions.

Button	Function	Example
 Test tube	Create a test tube of the chemical containers.	
 Flask	Create a flask of the chemical containers.	
 Distillation flask	Create a distillation flask of the chemical containers.	
 Beaker	Create a beaker of the chemical containers.	
 Sink	Create a sink of the chemical containers.	
 Set cylinder	Create a set cylinder of the chemical containers.	
 Tapered bottle	Create a Tapered bottle of the chemical containers.	
 graduated flask	Create a graduated flask of the chemical containers.	
 bottle with curved neck	Create a bottle with curved neck of the chemical containers.	
 Reagent bottle	Create a reagent bottle of the chemical containers.	
 Drainage tube	Create a Drainage tube of the chemical containers.	

➤ Others

Other chemical functions include the following items.

Button	Function	Example
 Solid material	Create a solid material of the chemical objects.	
 Gas bubble	Create a gas bubble of the chemical objects.	

 Water drop	Create a water drop of the chemical objects.	
---	--	---

Part VI Teaching Mode

6.1 Introduction of the Functions of the Palette

In the teaching mode, all the function keys are available in the palette. Users can click on the functions on the palette to add elements, if needed, to complete a specific operation. All the functions of the palette in the teaching mode are labeled with remarks and are identical to those in the design mode.

6.1.1 Palette Toolbar

➤ Palette - Main page





All the buttons of the basic operations are place in the palette main page , such as pointer  、pen  、delete  and more. Users can apply these functions to perform basic operations, as show in Figure 6- 1.



Figure 6- 1 Main page of the palette

➤ Palette – Page





The buttons available in the page screen  of the palette toolbar including buttons of new page , new screen page , screen annotation  and more. Users can conduct tasks on the page using functions on the palette quickly, as shown in Figure 6- 2.



Figure 6- 2 The palette page

➤ Palette – Tool Page








The buttons available in the tool page  of the palette toolbar including buttons of flash light , curtain , screen capture  and more. Users can conduct tasks on the page using functions on the palette quickly, as shown in Figure 6- 3.



Figure 6- 3 The palette tool page

➤ Palette – object page

The buttons available in the object page  of the palette toolbar including buttons of mathematics , English  and more. Users can conduct tasks on the page using functions on the palette quickly, as shown in Figure 6- 4.

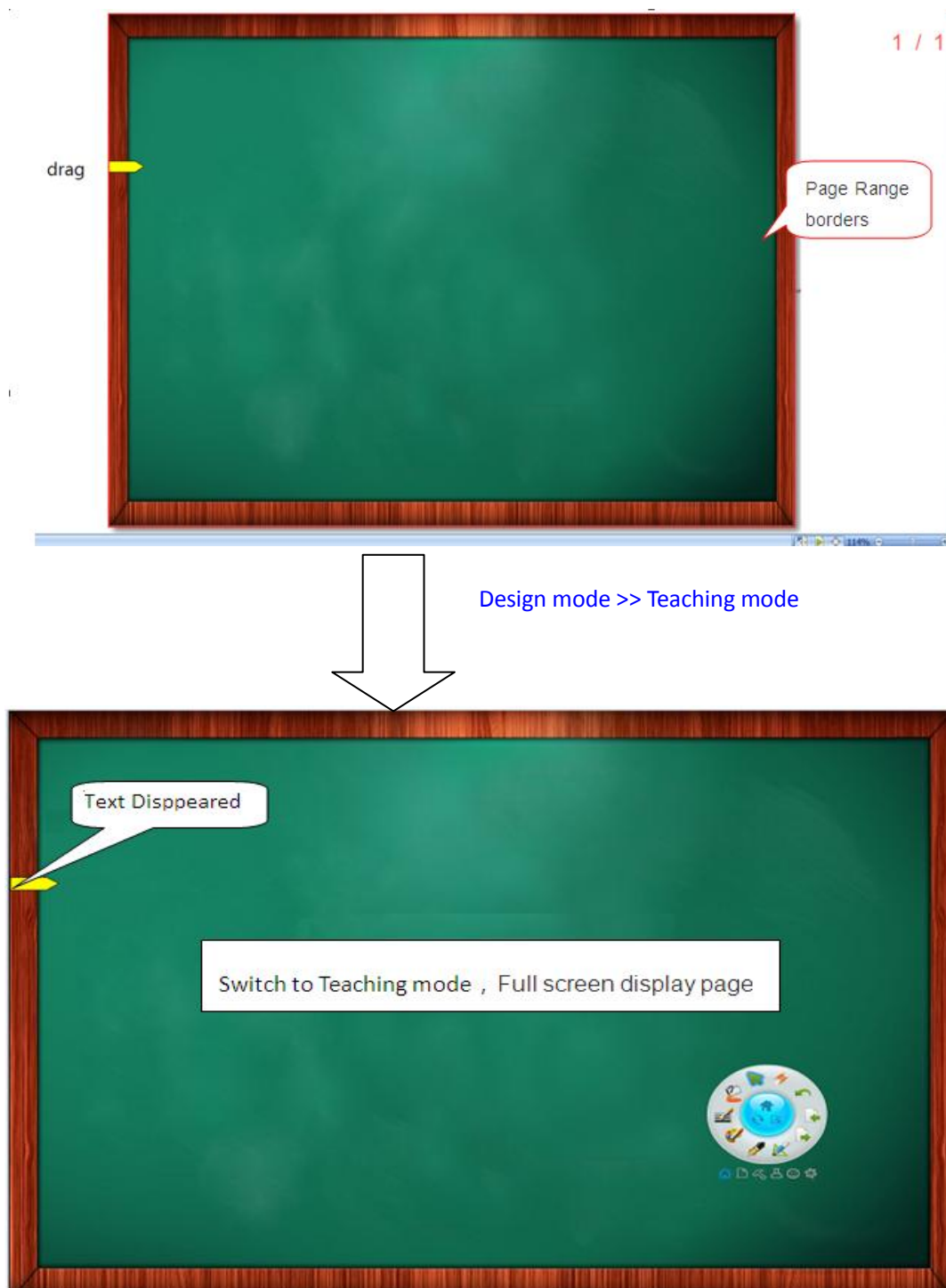



Figure 6- 6 The Adjustable Page on the projector

6.1.3 Screen Annotation

The function of screen annotation is mainly to add remarks in the OFFICE files. When users want to add remarks, click smooth pen in the toolbar to proceed. To open a document file, click the mouse pointer on the palette and switch the function mode. The OFFICE remark toolbar is shown in Figure 6- 7.

Part VII Software Extension

7.1 Visualizer Function

Select the visualizer function  button from the “Insert” option; drag it to the page and the screen of Figure 7- 1 will appear.

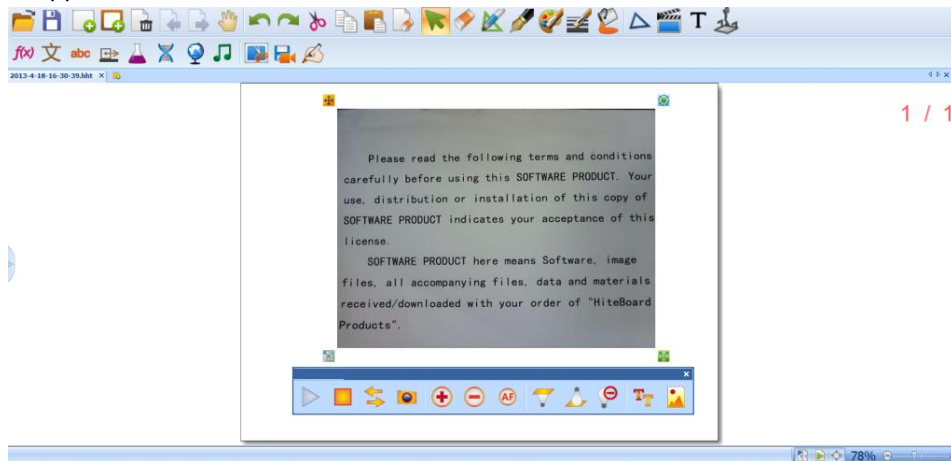














Figure 7- 1 The visualizer

Functions of the visualizer are listed below.

Button	Function
 Start	Initiate the review function of the visualizer.
 Stop	Stop the preview function of the visualizer.
 Switch between equipments	Switch the operations between different equipments. When the computer is connected to the visualizer and the camera, if the software is inserted with the visualizer function, the system will display the visualizer as the default setting when it is initiated. Use the “Switch between equipment” button to switch to camera, when needed.
 Photo shot	Perform snapshot of the screen of the visualizer.
 Zoom in	Enlarge the image on the visualizer.

 Zoom out	Reduce the scale of the image on the visualizer.
 Auto focus	Perform automatically focusing on the image of the visualizer.
 Turn on the lower light	Turn on the lower light in the visualizer.
 Turn on the upper light	Turn on the upper light in the visualizer arm above the visualizer panel screen.
 Turn off the light	Turn off the visualizer light.
 Text mode	Switch to the text mode and edit the text contents.
 Graphic mode	Switch to the graphic mode and process the graphics.

7.2 Cloud Platform

7.2.1 Log in Cloud Platform

Path: select the cloud platform --- log in. Visit the cloud platform log in page; enter user name and password to log in.

7.2.2 Upload Documents

After log in to the system, select the cloud platform --- upload documents. Select the files to be uploaded and the path to be saved.

7.2.3 Download Class Materials

Select the cloud platform --- download class materials. Select the files to be downloaded and the path to be saved.

7.2.4 Visit HiteCloud

Select the cloud platform --- visit HiteCloud to connect to HongHe Educational websites via the cloud Platform for more functions and resources.

7.3 EM Integrated Machine

In the configuration of the service program, the default value of the sensitivity is 1, for the EM Integrated Machine, in order to optimize the software performance, need to change it to be 3, as shown in Figure 7- 2 Configuration of EMBoard.

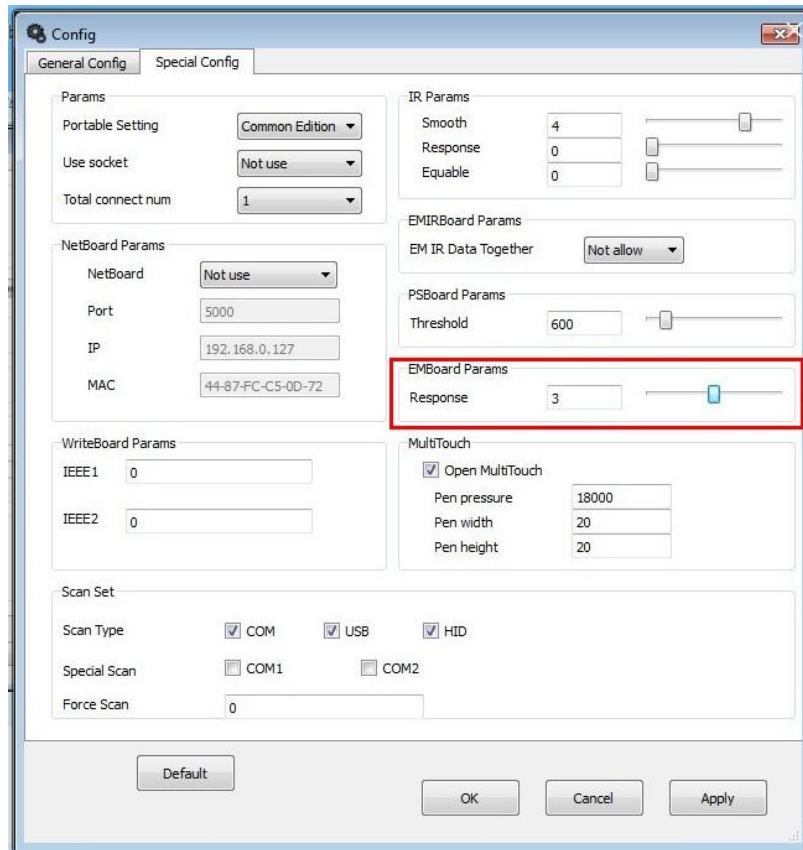


Figure 7- 2 Configuration of EMBoard

7.4 Composite WhiteBoard

Characteristics of functions for Composite WhiteBoard :

1. Both the infrared pen and electromagnetic pen can be used to write, but the electromagnetic pen has precedence over the electromagnetic pen, namely the infrared pen will fail to work while the electromagnetic pen is being used to write.
2. Two electromagnetic pens keep the same functional attribute, namely the infrared pens and electromagnetic pens have one functional attribute (they are same in function).

7.5 WIN7,WIN8 Operating System

7.5.1 WIN8 Operating System

In order to optimize the software performance in the WIN8 operating system, conduct the following steps:

- Click “Control panel” and “Pen and touch screen” in sequence; then de-select “Touch screen display and intuitive response” feature, as demonstrated in Figure 7- 3 The WIN8 touch screen adjustment.

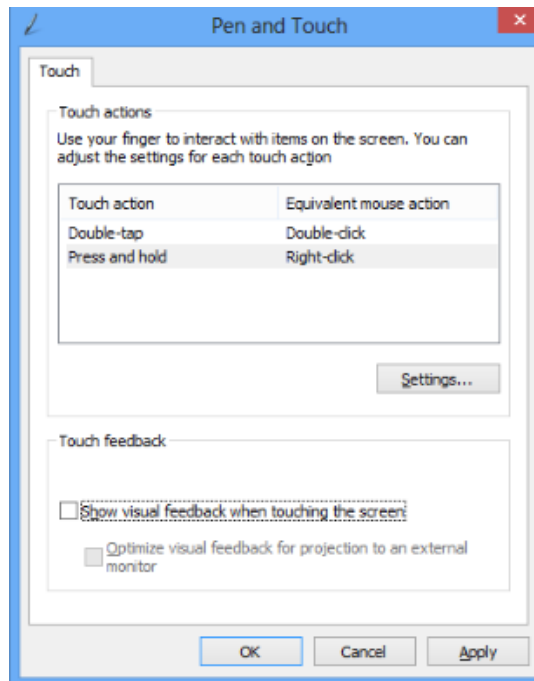


Figure 7- 3 The WIN8 touch screen adjustment

7.5.2 WIN7,WIN8 Operating System

For WIN7 and WIN8 operating system, the system display-"Make text and other items larger or smaller" settings options need to be changed as follow: When the proportion is set to be "larger-150%", as shown in Figure 7- 4 System display-Make text and other items larger or smaller, the Custom DPI Setting option "Use Windows XP style DPI scaling" should be selected as shown in Figure 7- 5 System display-Custom DPI Setting.

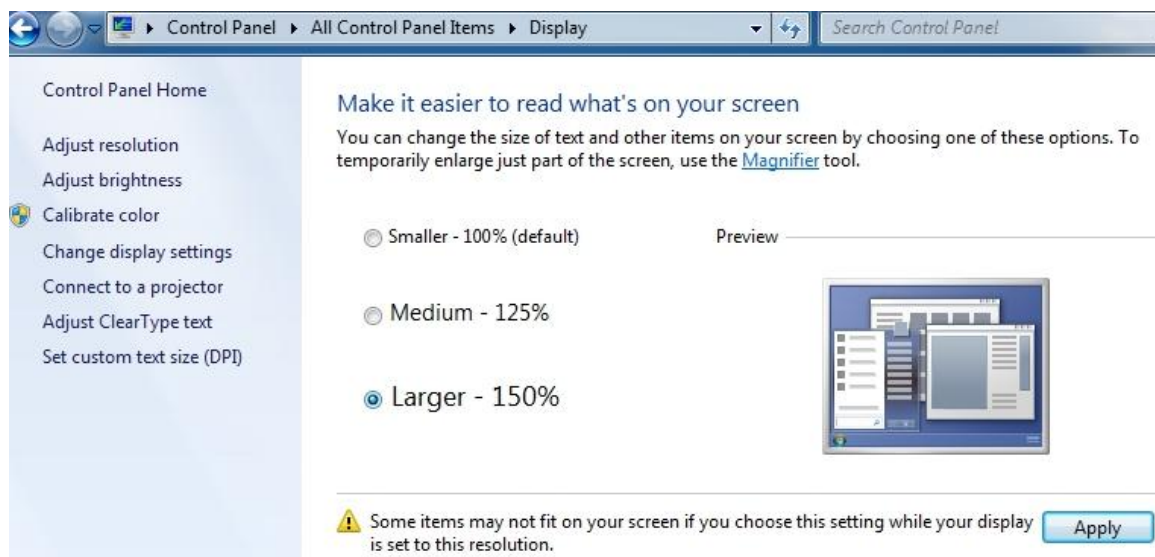


Figure 7- 4 System display-Make text and other items larger or smaller

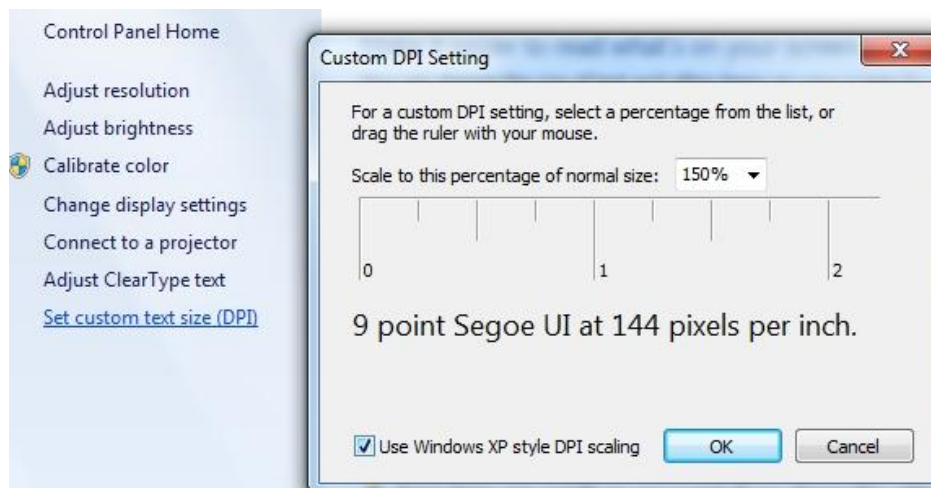


Figure 7- 5 System display-Custom DPI Setting