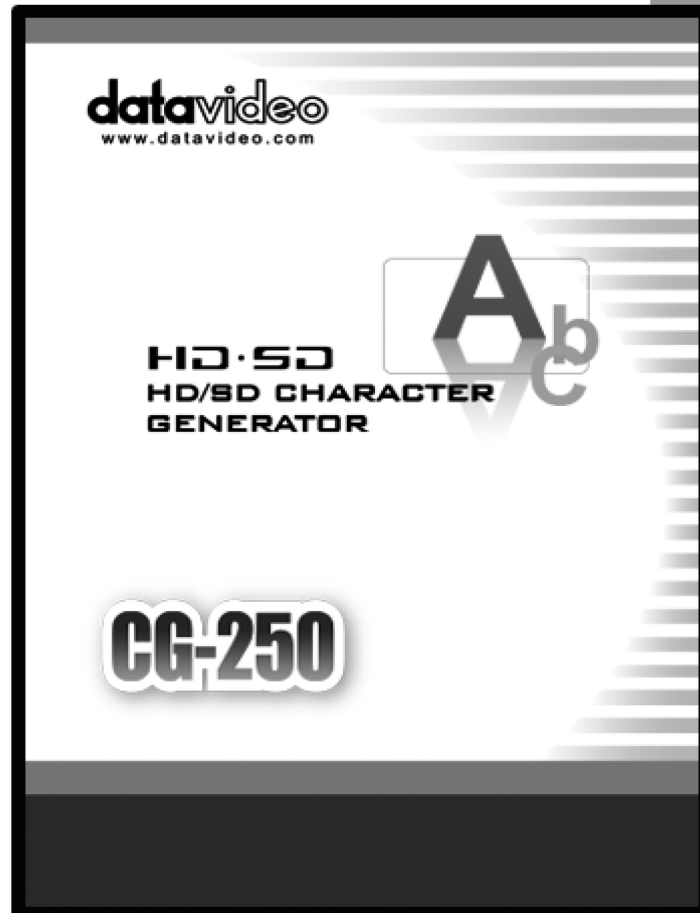


datavideo



HD/SD CHARACTER GENERATOR CG-250 Quick Start Guide

www.datavideo.com

Features of Character Generator:

1. Simple user interface which is uniform across all models. Over 10 years of research and development, internationally recognized, stable system, and standard, fast and convenient operation.
2. Best anti-aliasing algorithm in texture mapping, absolutely no aliasing and clear small fonts. Three anti-aliasing levels can be configured; image clarity and aliasing at your will.
3. The first realtime playback of the subtitles in the country combined with the concept of manual time synchronization of subtitles and video clips, thus realizing realtime adjustment of time length, picture frame sequencing and picture layers. Playback can also be controlled manually by tapping the space key.
4. Playback of unlimited subtitle layers; multiple layers of subtitles with tracks separately defined. Software designed subtitles can be divided into independent time control, four-layer realtime base subtitles, realtime character generation, and uniquely designed TV station mark layer.
5. The first real high-definition nonlinear editor, compatible with all mainstream nonlinear systems, such as Premiere Pro, CannopusEdius, Pinnacle Liquid, and DPS VelocityHD. Mainstream HD/SD formats are supported. Free conversion between HD/SD subtitle files.
6. Size, color and other properties of the font in the text box can be individually configured.
7. New UniCode font design, compatible with Japanese, Korean, and Chinese. Support all fonts supported by Windows.
8. Powerful subtitle-related functions such as four columns of scrolling lyrics, up scroll, left scroll, right scroll, left crawl-in, top crawl-in, right crawl-in and etc.
9. First unique "actual picture" design method; picture animation can be created and modified at will.
10. First "Particle Animation" effect in the country, adding rich colors to text animation.
11. Realization of simultaneous display of up-scroll, left crawl-in, animation, and TV station mark on the same screen. Equipped with features such as up-scroll and left crawl-in with animation, as well as masking, lighting and animation template.
12. New transformation algorithm; shape editing at your will without aliasing.
13. Simplified Chinese, Traditional Chinese, and English versions are available.
14. Unique CG template; fill in the text part for frequently used subtitles.
15. Batch-concept database for documents; text documents and CG template to generate batches of subtitles.
16. Real time left crawl-in of subtitles; in text mode, the user is able to customize various formats or pictures – the first in China.
17. Real 3D subtitle and animation are supported.

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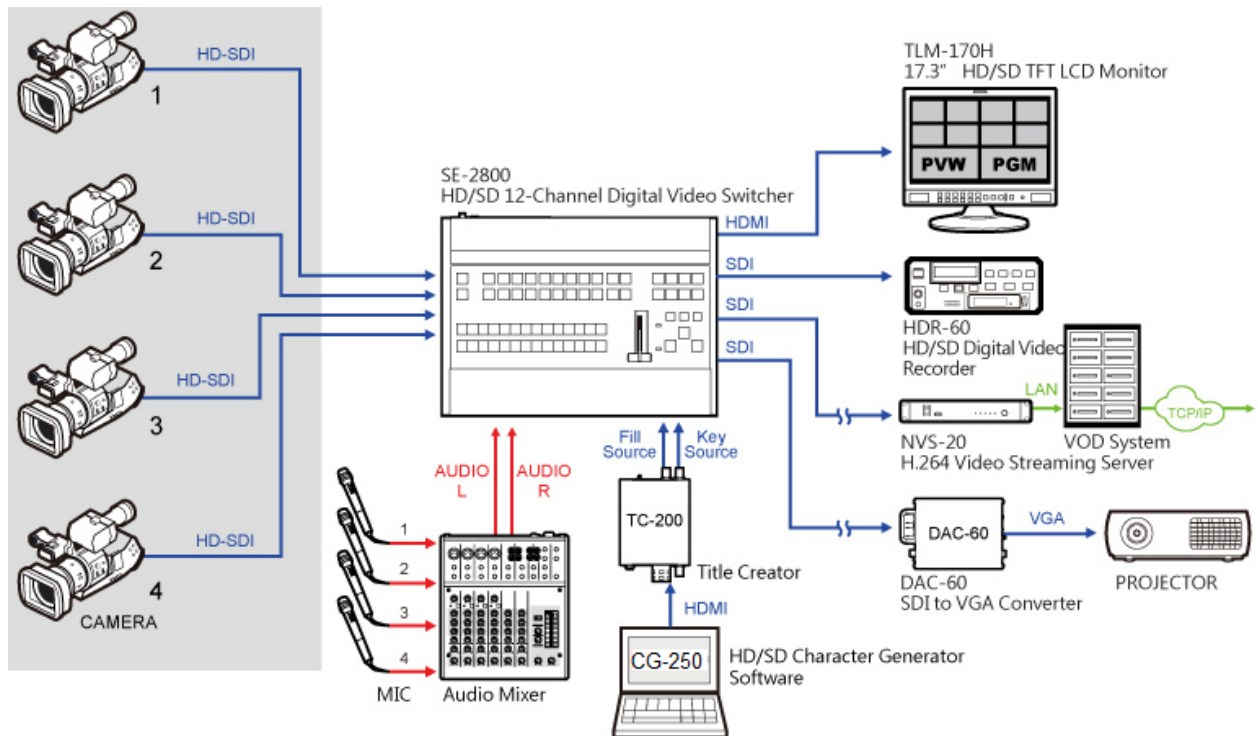
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Chapter 1 Foreword

1. Application Scope

1. CG-250 is used with TC-200 Title Creator as illustrated in the system diagram below.



2. System Requirement

1. Windows XP or above
2. Screen resolution must be set to 1024x768 and above (HD editing modes are 1280x1024, 1600x1200 and etc); 32 bit colors; system font is set to small size; style is Windows Classic.
3. Hard disk space must be 1GB at the minimum.

3. Software Installation

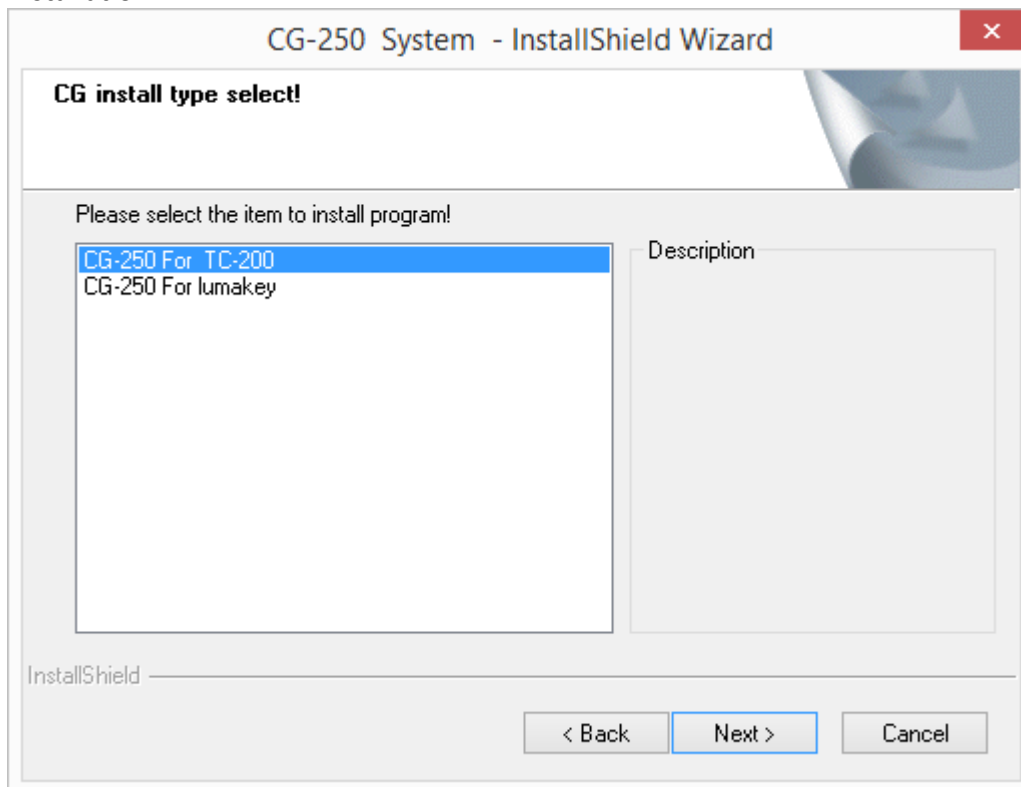
CG Software Installation

1. Run setup.exe on the installation CD

Name	Date modified	Type	Size
AUTORUN.INF	1/20/2015 6:30 PM	Setup Information	1 KB
data1.cab	2/3/2015 1:44 PM	CAB File	272 KB
data1.hdr	2/3/2015 1:47 PM	HDR File	199 KB
data2.cab	2/3/2015 1:47 PM	CAB File	241,199 KB
datavideo.ICO	1/20/2015 6:30 PM	ICO File	30 KB
engine32.cab	12/5/2002 2:16 PM	CAB File	409 KB
layout.bin	2/3/2015 1:47 PM	VLC media file (.bi...	1 KB
setup.boot	2/3/2015 1:43 PM	BOOT File	335 KB
setup.exe	12/2/2002 3:33 PM	Application	105 KB
Setup.gif	11/5/2009 7:36 PM	GIF image	4 KB
setup.ini	2/3/2015 1:42 PM	Configuration sett...	1 KB
setup.inx	2/3/2015 1:42 PM	INX File	176 KB



2. Select the TC-200 installation procedure that corresponds to the CG card to complete installation.

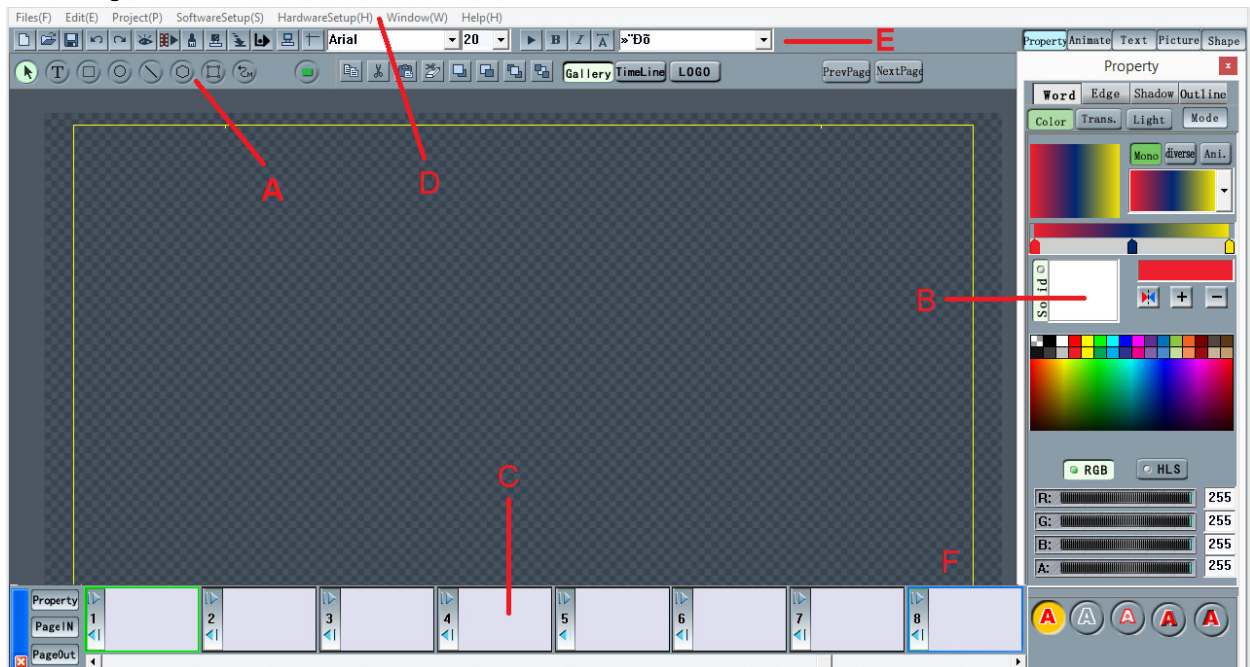


3. CG card driver installation: installation program will install driver under C:\CG250.

CG Installation for Nonlinear Editor

1. Run setup.exe on the installation disk and select the installation procedure that corresponds to the non-linear editor to complete installation.
2. Software plugin must be installed in the corresponding non-linear editor directory. Please refer to the listed directories and search the non-linear editor installation directory on the local disk for the actual installation directory.
3. CG software can be installed in any location.
4. After installation is complete, please run the CG software once to allow the non-linear editor to automatically tune the CG software.

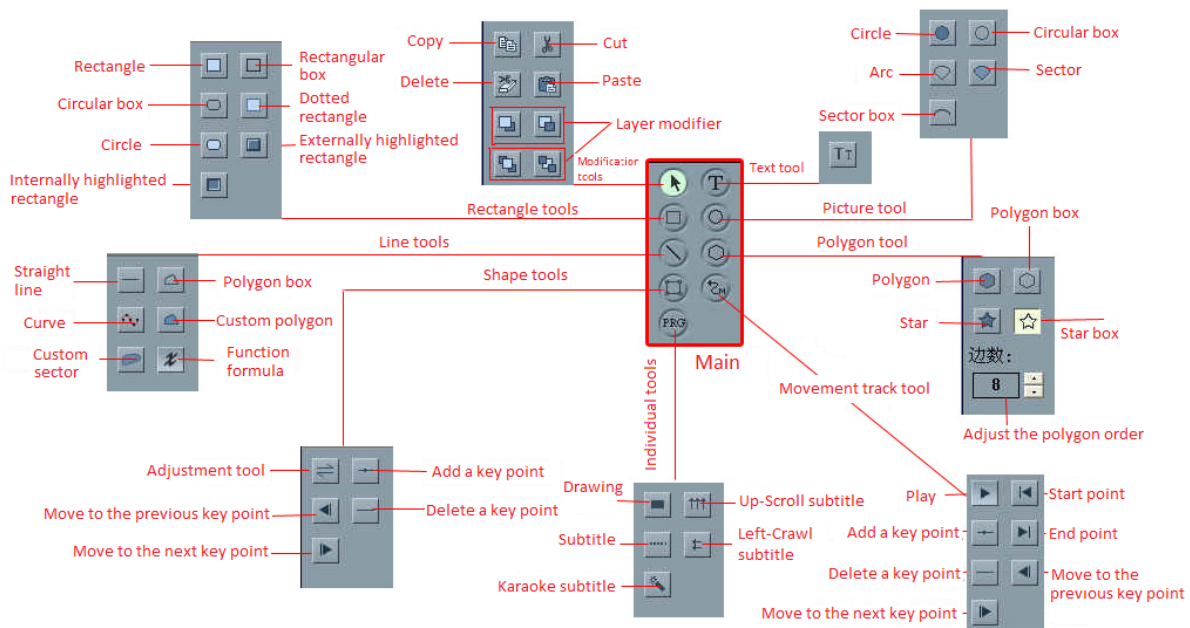
Chapter 2 User Interface



- A: Drawing Tool Pane
- B: Special Effect Setting Box
- C: Subtitle Pane
- D: Menu Bar
- E: Tool Bar
- F: Editing Area

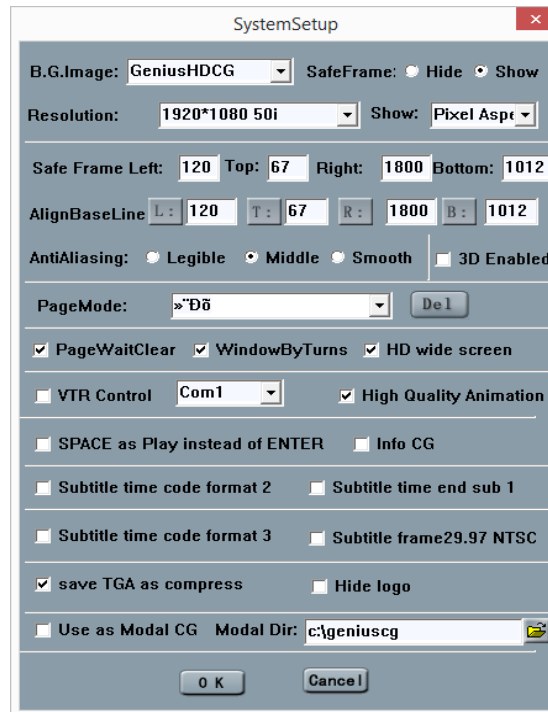
1. Drawing Tool Pane

Drawing tool pane is comprised of a main category pane and several sub-category panes as shown in the diagram below:



2. CG System Configuration

1. System Configuration can be found under Software Configuration on the menu bar and allows the user to configure background, safety margin, standard and resolution, page design and other settings.

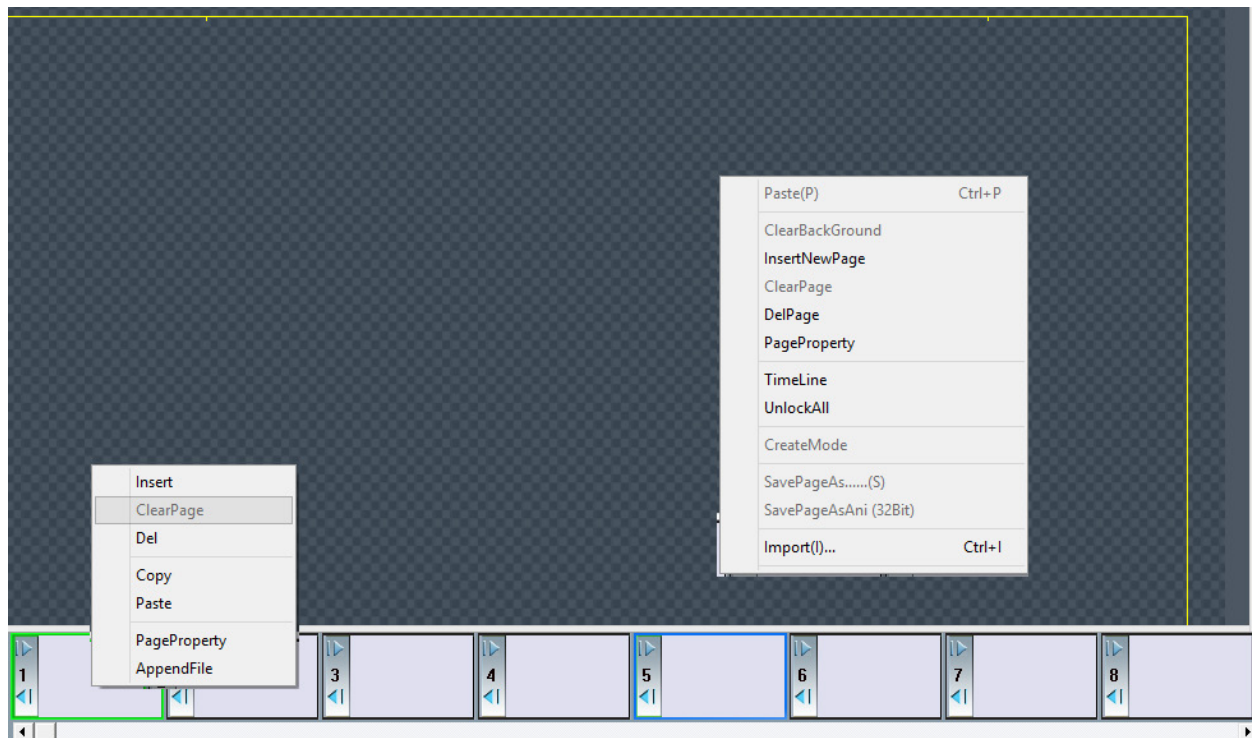


- a) BG Image: Configuration of background image on the editing area where it is transparent; BG image database is installed in CGSystem\ScreenBkGrd and users are allowed to save their own images to this directory.
- b) Resolution: System resolutions range from 1920×1080, and 1440×1080, to 720×576 and 720×480 and the user is allowed to select between HD and SD modes.
- c) Baseline Alignment: This is designed for the user to configure a uniform system baseline alignment. Commands that adjust the graphic baseline Shift+L, Shift+R, Shift+T and Shift+B.
- d) Anti-Aliasing: System font configuration and usually, in a CG system, it is recommended to select middle mode in this option. In an NLE system, legible or middle are recommended.
- e) Page Wait Clear: Manual or auto mode for page Slide-IN or Screen Clear.
- f) Special Language Process: Select this mode for processing illegible codes in certain language modes.
Note: Unicode should be considered first if the texts become illegible codes after the text file is opened.
- g) Window By Turns: Coexistence or alternate display of main system tool windows.

2. Under Project option, the user can create animation effects such as scroll, left scroll, right scroll, crawl-in from top, crawl-in from left, crawl-in from right, subtitles, live stock quotes, corner weather report, special symbols and etc.
3. Under Window option, timeline of subtitles SLIDE IN/OUT as well as the TV station mark layer can be configured. TV station mark layer is usually used on character generator, which realizes simultaneous display of TV station mark, clock, three corner marks and a real-time left crawl-in subtitle animation. The three corner marks and the real-time left crawl-in subtitle animation are queued, i.e. independent objects, thus it is possible to realize different playback methods such as timed playback, sequential playback, and manual playback. TV station mark layer and subtitle are independent of each other and can be separately controlled.
4. Hardware Setup allows the user to calibrate CG cards, configure Y/C and Composite outputs and output colors, and etc.

Chapter 3 CG Instructions

1. Editing and Setting of Subtitles



I. Editing in Subtitle Pane

- a) In the editing area, if no graphic element is selected, the user is then in page edit mode. Color of the page background can thus be configured on the color setting pane. By right-clicking on the editing area, an option menu is opened up and the user is allowed clear the page background, insert new page, clear page, delete page, set page property, create mode, and save page as.
- b) In the gallery edit area, there are multiple minimized page views and the user can set frequently used pages, primarily for copy and paste of multiple pages. Press and hold CTRL key to realize selection and copy and paste of multiple pages.

II. Subtitle Page Properties

The screenshot shows a 'PageProperty' dialog box. It has a title bar with the text 'PageProperty' and a close button. The dialog is divided into several sections. The first section is 'Name:' followed by a text input field. The second section is 'Auto Play Control' and contains a 'PageGap' field with three spinners showing '0', '0', and '12', followed by unit labels 'M', 'S', and 'F'. Below this is a 'Timer' section with two spinners showing '0' and '0', followed by unit labels 'H' and 'M', and a 'C' button. There is also a 'Sequence' button. The third section is 'PlayTimes:' followed by a spinner showing '1' and the text 'Times'. The fourth section is 'Hand Play Control' and contains a 'Hold' button and a checked checkbox labeled 'WaitClear'. At the bottom of the dialog are 'OK' and 'Cancel' buttons.

1. Right click on the editing area to open up a menu and select “page property”
2. Name: Assign a name to the page, primarily used for easy identification in the playback window.
3. Page Gap: During autoplay or in NLE, set the duration between disappearance of the previous page to the time at the which the next page is slided in. Duration will be recorded in manual playback mode.
4. Timer: Set the page playback to a timed playback. Time is set in the time edit boxes.
5. Sequence: Automatically plays the next page after the previous page is done playing. The user does not need to press the “Enter” key to continue playing.
6. Page Time: While playing the next page, contents of the previous page is kept on the screen to serve as the next page background.
7. Page Wait Clear: In manual mode, page slide-out can be either automatic or manual. It can be enabled in the System Setup option under Software Setup in the main menu.

III. Page Slide IN/OUT Animation

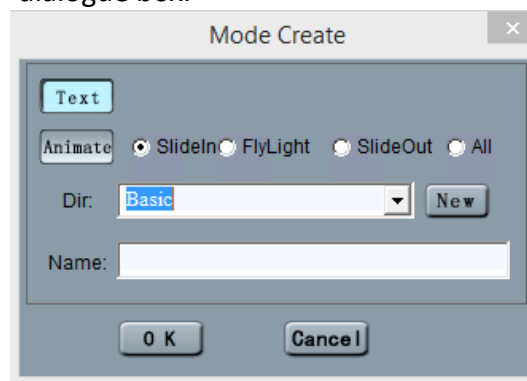


8. Open the gallery window, click the page IN/OUT buttons located on the left of the row of minimized pages to open a slide IN/OUT dialogue box.
9. Select a suitable slide IN/OUT animation. Double click any symbol of the slide IN/OUT dialogue box to exit or click OK button after selecting the desired symbol.
10. If the page is assigned a slide IN/OUT animation, the buttons located on the left of

the minimized page  will turn white.

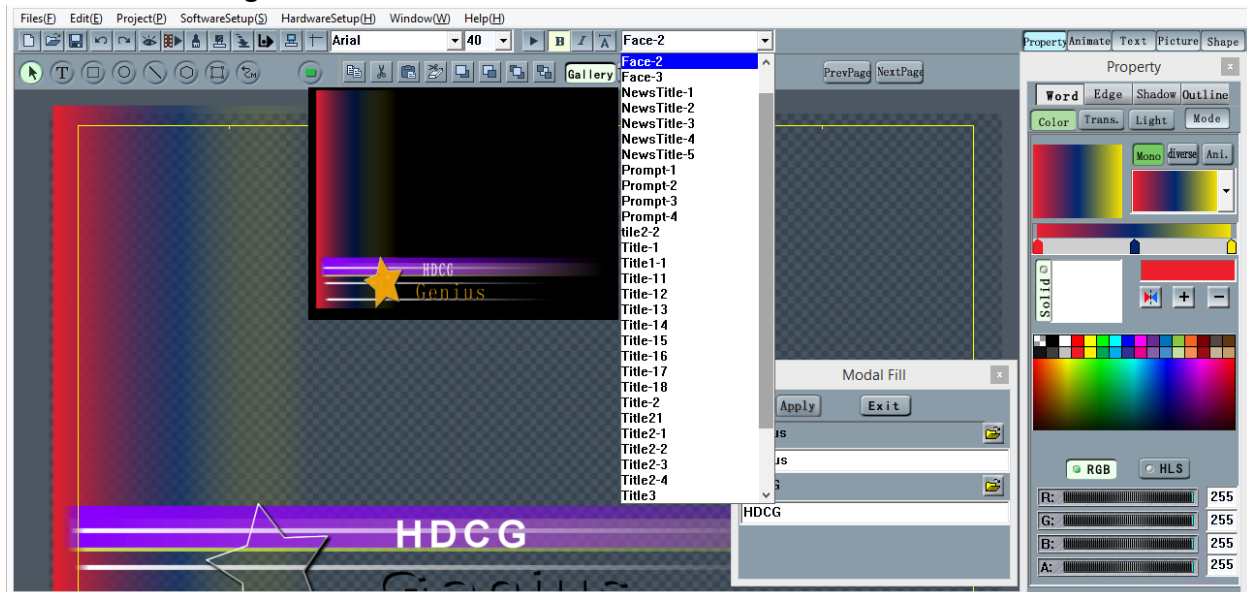
IV. Page Template Creation

11. Right-Click on the empty space in the editing area without selecting any graphic element to open a menu where the user can select “create mode” to open the “create mode” dialogue box.



12. Enter the mode name in the “name” text box of “mode create” dialogue box (all other control components are ineffective in this dialogue box) and click the OK button.
13. In the drawing tool pane, the new template option is available in the “Page Template” frame.

14. For page template deletion, please go to main menu → SW Setup → System Configuration



V. Automatic Page Template Application

Character Generator provides an advanced template application feature for subtitle design. The page template facilitates subtitle design in such a way that creating subtitle is just as easy as filling in the blank.

15. For page template application or information display, use a user-friendly name to label the graphic elements. Enable Info CG in “SW Setup → System Configuration”. Before creating the page template, right-click the graphic element and select “design label” from the menu. Put a user-friendly name.
16. For new graphic element design, the number of words could be different from the template, thus the location may vary. Before creating the page template, a text element alignment can be applied to the template. Select text element → main menu/edit → text template alignment method

BaseLine Center X(M)	Shift+M
BaseLine Center Y(I)	Shift+I
AlignLeftDatumLine(L)	Shift+L
AlignRightDatumLine (R)	Shift+R
AlignTopDatumLine (T)	Shift+T
AlignBotDatumLine (B)	Shift+B
TextModalAlignLeft	
TextModalAlignRight	
TextModalCenter	
RepeatProperty(J)	Ctrl+J

17. Select main menu/options/template application, and on the template application dialogue box, select template and fill in the blank.

VI. Automatic Application of Batch Data to Page Template

CG systems of version 4.86 and later provide a subtitle page template application for batch data from text or database files, which is used for creation of subtitles similar to those of weather forecast.

For the example of weather forecast,

1. The page template for weather forecast

The page for weather forecast is usually designed to be broadcasted in such a way that the page consists of the name of the place, weather description, temperature and main pictures. These four pieces of information and the creator's background are combined. To apply more effects, please refer to the weather forecast or weather.tcg in the template.

2. Put an information label on the graphic element

Location element setting: ADDRESS

Weather description element setting: WEATHER

Temperature element setting: TEMPERATURE

Main picture element setting: PICTURE

3. Page template creation – named “weather forecast”

4. Database file (.dbf) for weather forecast should include:

Column title, such as ADDRESS, PICTURE and etc, and data below (Please refer to weather.dbf).

5. Select main menu/options/template application

On the template application dialogue box, select weather forecast template and open weather.dbf file by clicking on the database link.

6. Click the confirmation button to complete the creation.

2. Text Editing

I. Text Input

- a. Select “T” on the drawing tool pane
- b. Enter a line of words; left click on the area in which the text element lies on the editing area. Enter the text in the window that pops up.
- c. To enter multiple lines of words, the user should use the mouse cursor to draw a rectangular text frame in the area where the texts are placed on the editing area and enter the texts after that (The text frame is a standard text editing window that allows line change, and supports copy (Ctrl+C), paste (Ctrl+V), cut (Ctrl+X) and other shortcut keys for text selection; the texts can be imported directly from a pure text document).

II. Text Modification

Method 1:

- a) Select “T”, the text tool, on the drawing tool pane
- b) On the editing area, move the mouse cursor over on the texts to be modified and left click on the texts to enter the editing frame for modifying the texts.

Technique: If the position of the mouse click is in the partial or full area of the first word of the text, the user may directly delete the original texts upon entering the text editing frame for re-entering of the texts.

Method 2:

- a) Select the texts to-be-edited on the editing area
- b) Double click the texts to enter the text editing frame

Method 3:

- a) Modify texts in the text document processing window

Remarks: 1. Single line is changed to multiple lines: press Ctrl+Enter keys to change lines in the text editing frame; 2. Automatic adjustment of number of words on each line in the multi-line text editing box: press shift key while drag and move to change the right border of the text element to approve modification in the text document processing window.

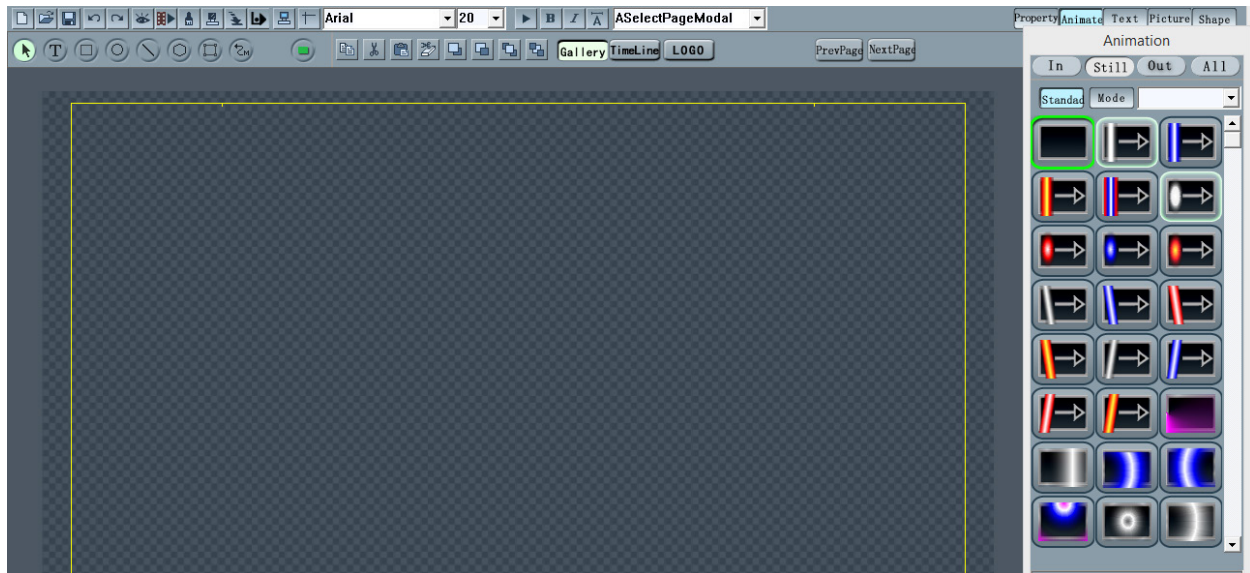
3. Graphic Editing

I. Graphic Element

- a) Select a main category drawing button on the drawing tool pane
- b) Select a sub-category drawing button
- c) To draw rectangle and circle, left click on the editing area and drag the cursor to the desired size; release the left mouse button to complete the drawing.
- d) For line and other polygon drawings, left click on the editing area and release the left mouse button click to complete setting a control point; move the mouse cursor to the desired location, left click the mouse and release the left mouse button click to complete setting the second control point. The process is repeated until the maximum number of control points is reached; right click the mouse to complete the drawing.
- e) Please refer to text and graphic element properties configuration for modification of settings such as the drawing color, appearance and etc.
- f) When drawing a straight line, press the shift key to connect the lines; the lines are connected at an angle of 15 degrees.

II. Graphic Element Modification, Straight Line and Curve

- a) Shape of the drawing can be modified by changing the frame size of the graphic element.
- b) Modify the drawing control points to modify the drawing shape
 - (1) Select a graphic element of the drawing
 - (2) Move the mouse cursor to the control points and when the cursor arrow becomes a hand, hold the left mouse button click to drag and move the control points to see the shape change; release the left mouse button click after moved to the proper position.
- c) Drawing Technique
 - (1) Concave and convex effects can be realized via applying lighting effects to words or the boundaries.
 - (2) "Subtraction" algorithm of the graphic element can be realized by configuring "penetration" of the graphic element.
- d) Line or Curve Drawing
 - (1) Create either a straight line or curve graphic element
 - (2) Click the "animation" tab in the Special Effect Setting Box located on the top right section of the screen, select "halt" in the animation option and apply effect "45" to straight line or curve graphic element.



III. Grouping Graphic Elements

Grouping graphic elements is to group multiple independent graphic elements (text, drawing, picture, and animation) into a single graphic element to facilitate group moving, configuring the properties, and etc.

a) Method of Creating a Graphic Elements Group

Method 1:

(1) Click and hold the left mouse button and drag the mouse cursor to form a rectangular frame such that the selected graphic elements are contained within. Release the left mouse button click to see a prompt including the rectangular frame that selects the graphic elements.

Method 2:

(1) Select graphic element "1"

(2) Press Ctrl key and mouse-click to select other graphic elements accordingly

b) Grouping Graphic Elements: The graphic elements group created above is a temporarily-grouped graphic element and the positions can be changed at random as well as the configuration properties; the graphic elements group will be automatically cancelled upon selection of other graphic elements. To make the group permanent and create a complete animation, the graphic elements must be grouped properly.

(1) Create a graphic elements group according to step (a)

(2) Single click the right mouse button to select the "Group" option

(3) Animation of a graphic elements group can be configured just like an ordinary graphic element.

c) Ungroup a Grouped Graphic Element

(1) Select a grouped graphic element

(2) Single click the right mouse button to select "Ungroup" option

IV. Graphic Layer Editing

- a) **Graphic Layer:** Graphic layers of a graphic element refer to the relationship between layers of the displayed picture. On a page, deep graphic layer of a graphic element is always below the shallow graphic layer of a graphic element.
 - (1) Select a modification tool on the Drawing tool Pane
 - (2) Select the graphic element that requires layer change
 - (3) Modify using the graphic layer modification tool button on the subcategory tool pane of the drawing tool pane; or perform a single right mouse click and modify by selecting a graphic layer editing command under the right mouse button click menu. Press Ctrl+T keys to show top layer, Ctrl+B to show bottom layer, Ctrl+U to move up a layer, Ctrl+D to move down a layer.
- b) **Editing of Position and Size of Graphic Element**

Method 1:

- (1) Select a modification tool on the Drawing tool Pane
- (2) Select the graphic element that requires size change
- (3) The cursor shape will change when the mouse cursor is moved to one of the four corners of a graphic element frame or the mid-point of either side of the four sides and an operation hint will appear. Drag and move the mouse cursor to change the size of the graphic element.

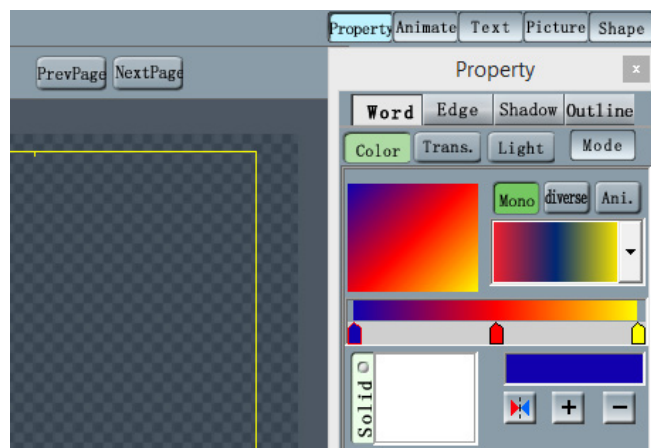
Method 2:

- (1) Select Window/Page structure on the main menu
- (2) Select the graphic element that requires change of position and size
- (3) Directly enter the coordinates of the graphic element into the “edit frame” under the Page Structure Window

V. Text and Graphic Element Properties

a) **Editing of Appearance and Properties of Text and Graphic Element**

- (1) Text and appearance of the graphic element can be realized by grouping individual designs of words, boundaries, shadow and silhouette. Various modes can be applied to each component as well as other effects such as gradient color, single color, picture, animation, alpha and lighting effect.



b) Word Parameters for Appearance Design

- i. Click the “Word Parameter” button
- ii. Switch between modes accordingly



Mode 1: Normal word option

Mode 2: Wordless option, i.e. no word color such as a hollow word

Mode 3: Convex word option allows the word color to transition from the current configured edge color to the current configured word color.

Mode 4: Convex lighting effect

Mode 5: Concave lighting effect

- iii. Edit color and appearance of the word

c) Edge Parameters for Appearance Design

- 1) Click the “Edge Parameter” button on the properties page

- 2) Switch between edge modes accordingly

Mode 1: Normal edge option

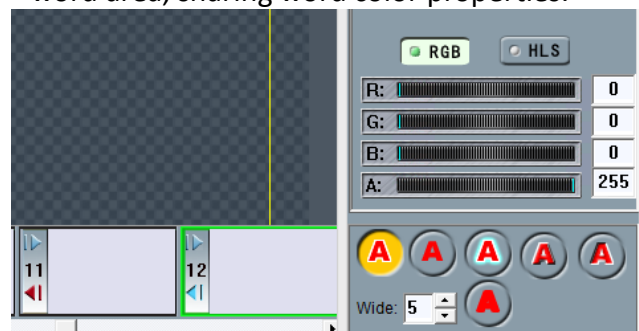
Mode 2: Edgeless word option, i.e. edge color is not required

Mode 3: Wrapped edge option allows the current configured gradient color to fade from inside to outside on the edge.

Mode 4: Convex lighting effect on the edge

Mode 5: Concave lighting effect on the edge

Mode 6: Edge is integrated into words, i.e. the edge area is combined with the word area, sharing word color properties.



3) Edge width is adjusted according to the design.

4) Edit color and appearance of the edge

d) Shadow for Appearance Design

1) Click the “Shadow” button on the properties page

2) Switch between shadow modes according to the design requirement



Mode 1: Normal shadowless option

Mode 2: Physical shadow option

Mode 3: Single shadow layer option

Mode 4: Fade option of the phase shift direction of the shadow

Mode 5: Shadow is applied to the edge and together with the phase shift to make the word look like a 3D concave font option

Mode 6: Shadow covered with word background; usually with the shadow color and transparency, effects such as underscore and etc can be applied.

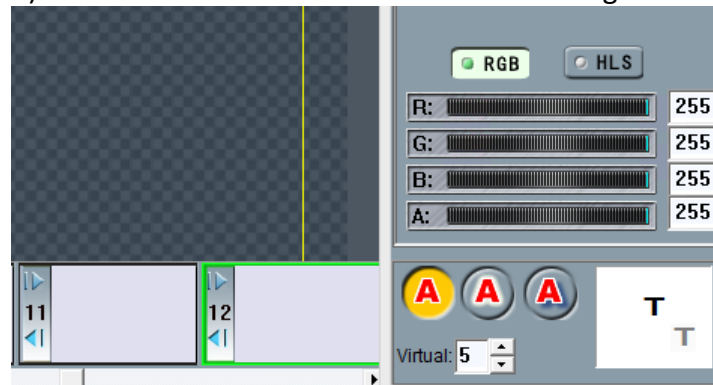
3) Shadow phase shift adjustment: move the mouse cursor to the alphabet T in the shadow phase shift box and when the cursor becomes a hand shape, click the mouse to drag the alphabet T.

4) Edit color and appearance of the shadow

e) Silhouette for Appearance Design

1) Click the “Silhouette” button on the properties page

2) Switch between silhouette modes according to the design requirement



Mode 1: Default no outline option

Mode 2: Virtual outline surrounds the word

Mode 3: Outline offset – different from shadow in the way that it is a virtual offset font

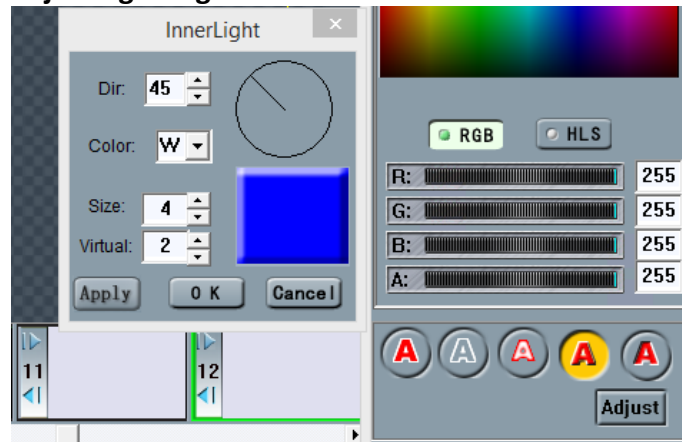
3) Virtual degree can be adjusted according to the design requirement

4) In mode 3, the outline offset amount can also be adjusted

5) Edit the outline color

f) Light Effect

Both protruding and concave modes of word and edge can be further adjusted by adjusting its light effect



g) Word Mode

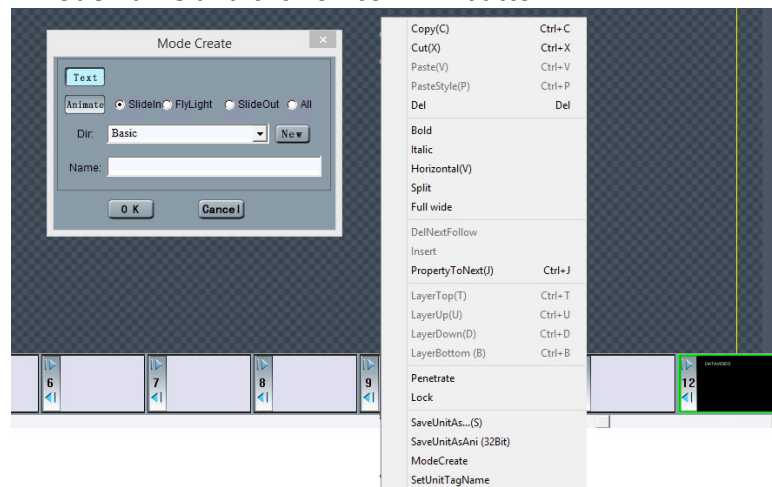
The best way to change the appearance of word and drawing is to directly apply the off-shelf word mode.

Mode Create:

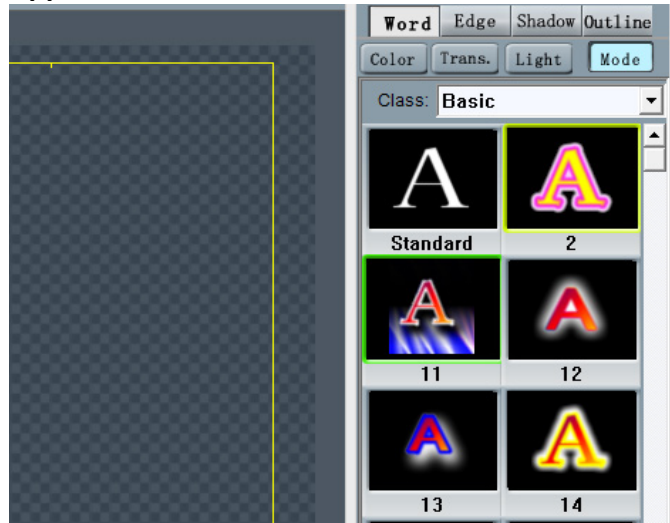
1) Design text appearance and style

2) Select the text element and right click the mouse button; select “Mode Create” in the menu that pops up

3) On the pop-up dialogue box, mode create, select the mode type, enter the mode name and click on confirm button



h) Application of Word Mode



- 1) Click on the mode button in the Property window
- 2) Select the required mode class
- 3) Click on the appropriate thumbnail
- 4) Double click on the thumbnail to apply the new mode to the current graphic element or drag the thumbnail to the desired graphic element
- 5) At step 4, color and mode are applied but not the font size. To apply the font size at the same time, press shift key while executing step 4.

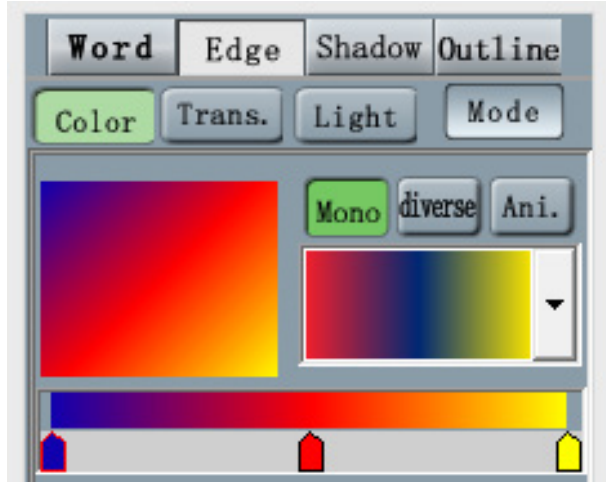
i) Shape Configuration

- 1) Subtitle Shape
 - i. Shaped Graphic Element
 - ii. Click "Shape" button located at the top right corner of the window
 - iii. Double click to apply the displayed shape to the current graphic element or drag the displayed shape to the graphic element
- 2) Shape Editing
 - i. Select the graphic element requiring shape transformation
 - ii. Click on "Shape" button located in the top right hand corner of the window
 - iii. Shape adjustment lines and control points will be displayed on four sides of the graphic element
 - iv. Move the mouse cursor to any control point and when the cursor becomes the hand shape, drag the control point to change shape
 - v. Shape tool pane also provides functions such as edit, add, delete, and control point movement in case of error

VI. Color Editing

- a) How to adjust the color: Final color is formed by mixing the color itself (gradient color, single color and image), degree of transparency and light effect, which are three independent individual layers.
- b) General steps for configuring color

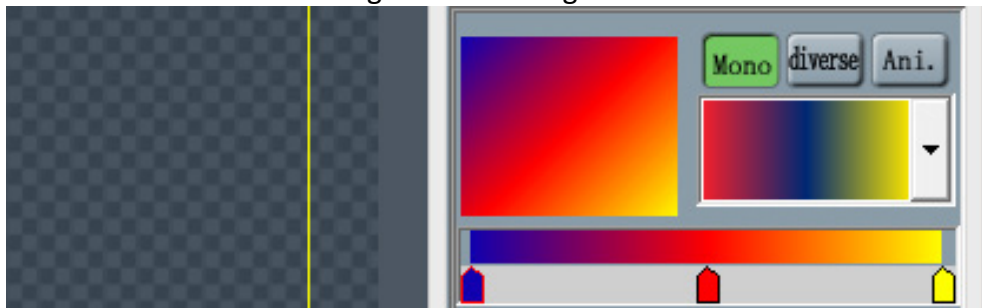
- i. Confirm the item to be applied of the color – the graphic element, or parameters such as word, edge, shadow or outline
- ii. Confirm if it is single color, gradient or image; edit and configure
- iii. Configure the degree of transparency as required
- iv. Configure the light effect as required



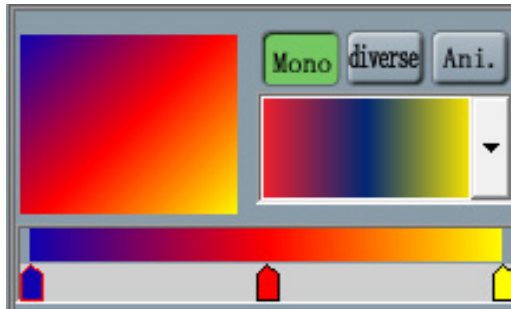
- c) How to adjust single color?
 - i. Single click the color button and open the color editing window
 - ii. Click on the single color preview area and make sure it is single color editing mode
 - iii. Pick a desired color in the color picking area
 - iv. Directly adjust the RGB values until the desired color is obtained
 - v. HLS mode can also be selected so as to use light, hue and saturation to mix a desired color
 - vi. Move the mouse cursor to the single color preview area and double click the left mouse button to apply the color to the current graphic element or background; or click and hold the left button of the mouse and drag the color to the target graphic element or background
- d) How to mix a gradient color



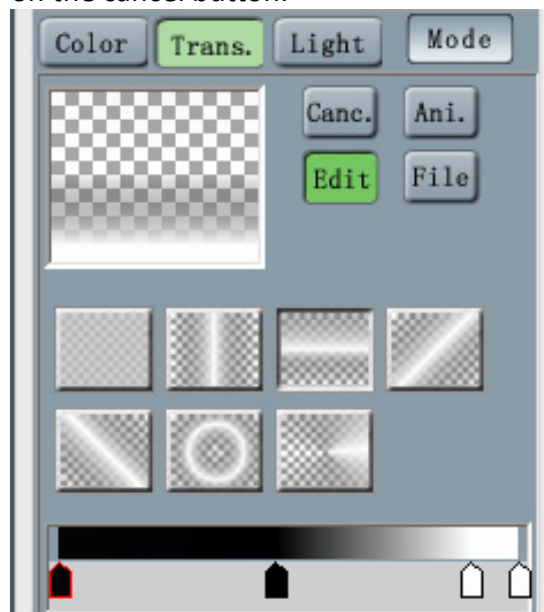
- i. Single click the color button to open the color editing window
- ii. Single click the gradient color preview area and make sure it is the gradient color editing mode
- iii. In the gradient color selection frame, select a desired gradient mode
- iv. Single click to select the to-be-edited gradient color control point
- v. Edit the color of the current gradient color control point, and the method is same as steps 3-5 in single color edit mode
- vi. "Add" or "delete" control points as required, "+" button adds a control point subsequent to the current control point and "-" deletes the current control point (Cannot delete the head and tail control points)
- vii. Select the method of filling the text with gradient color: mono or diverse



- viii. To adjust the center of the circle or fan gradient, move the mouse cursor to the center of the circle or fan gradient in the preview area and click and move the mouse cursor when it turns to a hand shape

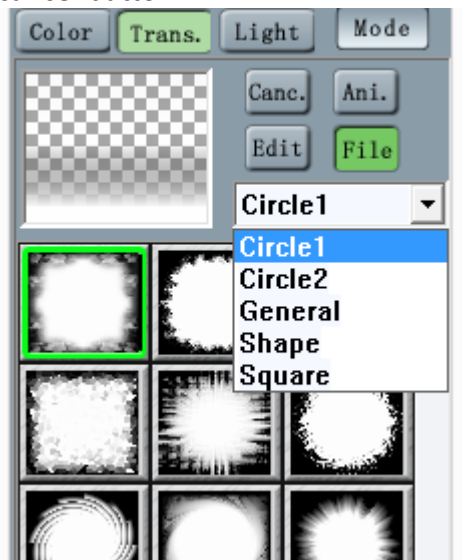


- ix. Gradient color animation option, i.e when the graphic element stops, should the gradient color also change?
 - x. Move the mouse cursor to the gradient color preview area; double click the left mouse button to apply the current gradient color to the current graphic element or background; or you can also click and hold the left mouse button and drag it to the target graphic element or page background
- e) Transparency Setting
- i. Click on the Transparency button
 - ii. Single click the “edit” button to edit regular transparency or single click the “file” button to create irregular transparency
 - iii. Select transparency design mode
 - 1) Adjust the degree of transparency according to the gradient color design
 - 2) Move the mouse cursor to the preview area for degree of transparency; double click the left mouse button to apply the current degree of transparency to the current graphic element or background; or click and hold the left mouse button and drag to the target graphic element or page background.
 - 3) To remove the degree of transparency to resume the original color, click on the cancel button.



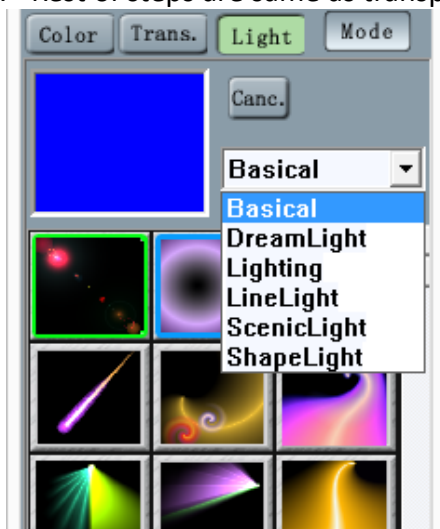
- f) File transparency setting

- i. Single click the “transparency” button
- ii. Single click the “file” button
- iii. Select the file type from the pull-down menu
- iv. Select the required shape from the thumbnail gallery – Single click the thumbnail to preview
- v. Double click thumbnail to directly apply the degree of transparency to the target item; or move the mouse cursor to the preview area for degree of transparency and double click the left mouse button to apply the current degree of transparency to the current graphic element or background; or click and hold the left mouse button to drag the degree of transparency to target graphic element or page background.
- vi. To remove the degree of transparency to resume the original color, click on the cancel button



g) Light Effect Setting

- i. Single click the “Light” button
- ii. Rest of steps are same as transparency setting.



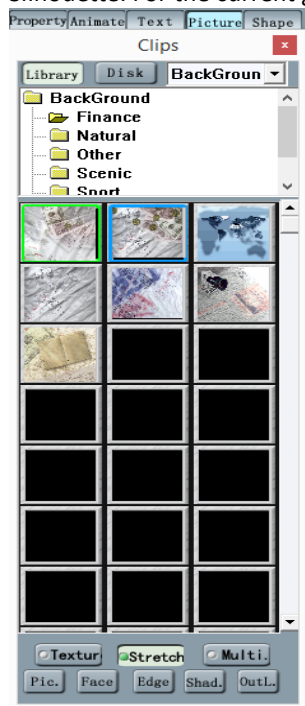
4. Animation Editing

I. Animation and Still Picture Inputs

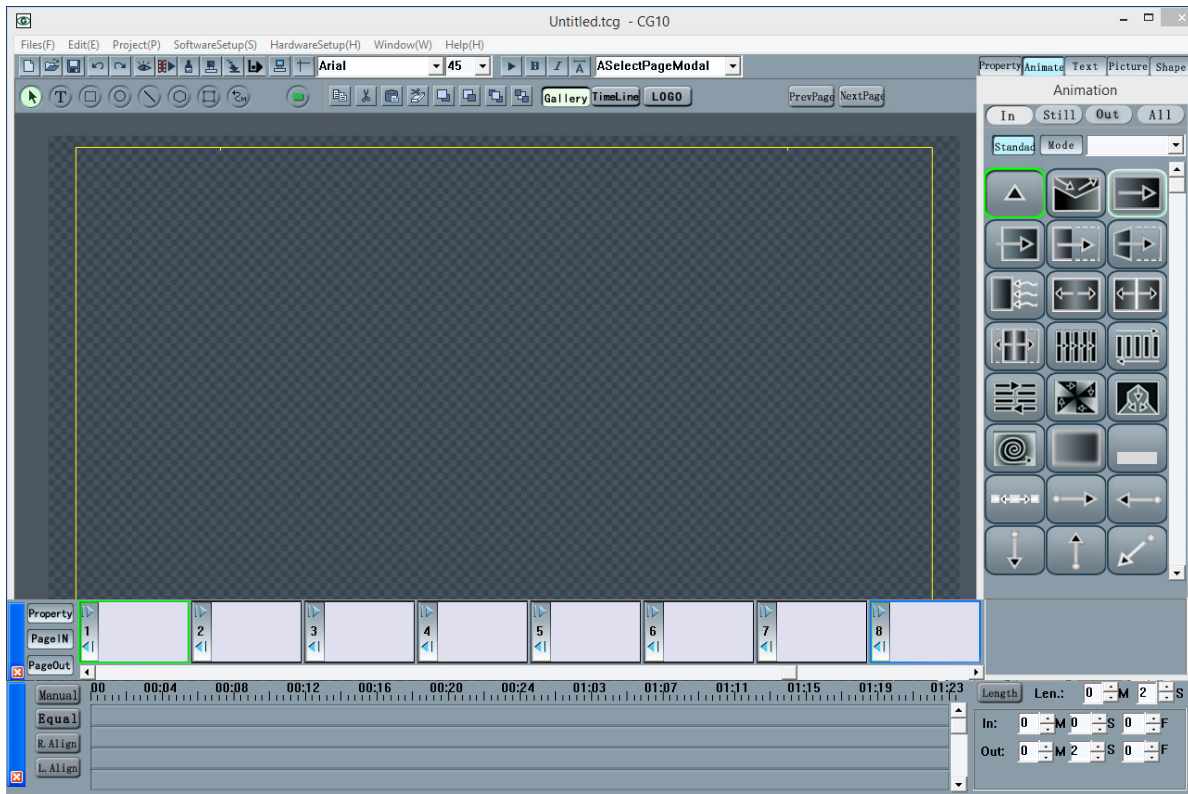
- a) Animation and still picture file formats supported in Datavideo CG
Animation video formats: MPG, AVI (4G and greater are supported), MOV (Quicktime), TNG (Datavideo HDCG's animation file format)
Still picture format: TGA, PNG, BMP, GIF and JPG
- b) Three main input methods: On the main menu, select file → open and double click on the desired picture file; On the blank page, single click the right button of the mouse and select "import" on the popped up menu; browse and import the animation file or still picture; Import animation and still picture files from the Clip Art library.

II. Clip Art

- a) The Datavideo CG system automatically installs the clip art library. Since the system creates the thumbnail gallery for every directory upon first visit, thus the user is able to browse the gallery quickly. All files are saved under cgclips and the user is allowed to expand the directory.
- b) Files: Use the file browsing method to look up any directory
- c) Texture: Image fill method adopts the texture picture paste method;
 - i. repetitively fill according to the original size
 - ii. fill by enlarging and shrinking picture to the target size
- d) Multiple: Primarily for the text, filling each word with an image
- e) Image: Create graphic elements based on the current image
- f) Font: For the current graphic element to use as the font color based on the current image
- g) Edge: For the current graphic element to use as the edge color based on the current image
- h) Shadow: For the current graphic element to use as the shadow based on the current image
- i) Silhouette: For the current graphic element to use as silhouette based on the current image



III. Graphic Element Animation

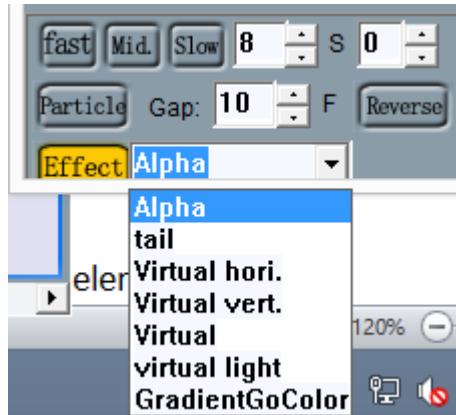


Features: Every graphic element can appear in a number of ways such as Slide-IN, Still Fly-Light Animation, and Silde-Out. Rich animation can be applied to Slide IN/OUT, allowing the user to freely design the animation track as well as other special effects. Every animation can also be configured of its particle text movement. Still fly-light animation provides colorful lights and the user can also customize its light as well as color animation. The animation time can be configured individually.

IV. Slide IN/OUT Animation

- a) **Configuration Steps:**
 - i. Select the graphic element
 - ii. Click on the “Animation” tab in the tool bar located at the top right corner of the window
 - iii. On the animated page, switch to Slide-IN (or Slide-OUT)
 - iv. On the animation thumbnails list, select the desired animation; to apply the selected animation, either double click on the thumbnail or drag it to the graphic element
 - v. At the bottom of the animated page, select the animation direction or animation sub-category (if available)
 - vi. At the bottom of the animated page, configure the animation time and other parameters (such as animation effect, particle, reverse sequence and etc.)
 - vii. In the case of animated track, edit the animation track according to the design requirement

b) Parameters



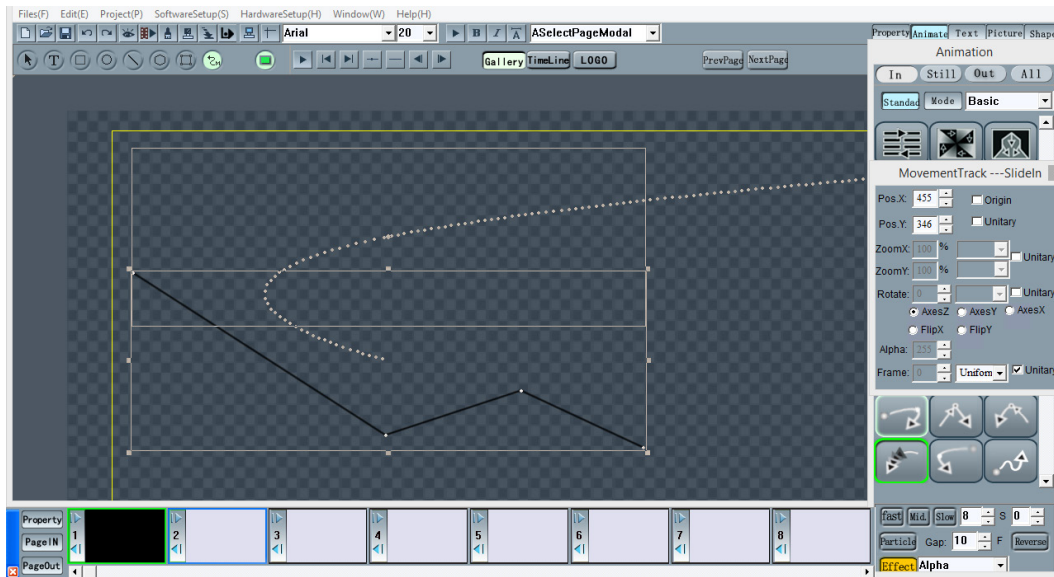
- i. Particle effectively animates the sequence of fonts of the text element.
- ii. GAP configures the gap between particles of the animation.
- iii. Reverse Sequence plays the animation starting from the last text particle.
- iv. Special effect configures the animation effect of the graphic element such as Alpha, streaking, blur and etc, in particular, color animation involves gradient color changes in the sequence as defined.

V. Still Animation

- a) Still Animation: Refers to the animation of a still graphic element positioned at the same location (still) and since it is usually used for “Fly-Light” effect so it is also known as Fly-Light Animation
- b) Count: Number of changes designed for the animation
- c) Edit: Edit the light effect of Fly-Light animation



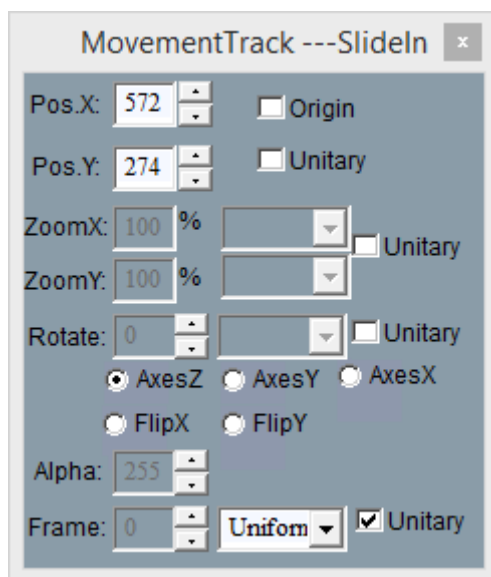
VI. Animated Track Editing



Steps:

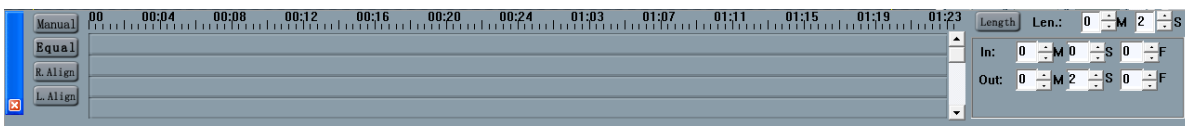
- Set track animation to the graphic element
- Select the track editing tool in the drawing tool pane
- IN the edit dialogue box located on the right of the window, directly edit the track points, location and size
- Add control point, delete control point and etc in the track point control edit pane located below the drawing tool pane
- The control point parameters window provides detailed parameter setting of the track control point
- For special effect, select effects such as alpha, streaking, blur and etc

VII. Track Control Point Parameters Window



- a) X-axis and Y-axis: coordinates of current control point
- b) Still Animation: control point location is ignored and the animation stays at the original graphic element position.
- c) Unify Track: In case of text particle animation, this is to unify all control points of text particle movement except for the last control point falling at the graphic element position.
- d) Zoom X/Y: Zoom ratio of the current control point
- e) General: Parameters are calculated for the overall track with the start control point and final control point only; related parameters of middle control points are not considered.
- f) Rotation: z-axis, y-axis and x-axis represent rotation axis
- g) Frame Number: Speed of movement between control points is based on number of frames; speed modes are accelerate, decelerate or average.

VIII. Animation Timeline



- a) Manual control: manual control of the current page playback, i.e. press Enter key to play the next graphic element according to the time sequence. Space key clears the already played graphic element. ◦
 - b) Page length automatically calculates the total length of the current page and sets it as the total length on the scale. ◦
 - c) Time length displays the total length of the current scale and can also be used for setting the total scale length. ◦
 - d) Uniform division: evenly distributes all graphic elements of the current page in time order. ◦
 - e) Left alignment: aligns all start points of all graphic elements on the current page. ◦
 - f) Right alignment: aligns all end points of all graphic elements on the current page
- Remarks: Points of slide-in, pause, and slide-out on the timeline can be indicated by yellow, red and green respectively; to adjust, one can use the mouse cursor to drag the points

IX. Playback Preview

- a) After the animation is configured, immediately previews the effect on the screen
- b) Select the graphic element and click on the Play button on the tool bar located at the top
- c) **Current overall animation preview:** Select the current page (single click the empty space or press Escape key to deselect the current graphic element) and click on the Play button on the tool bar located at the top

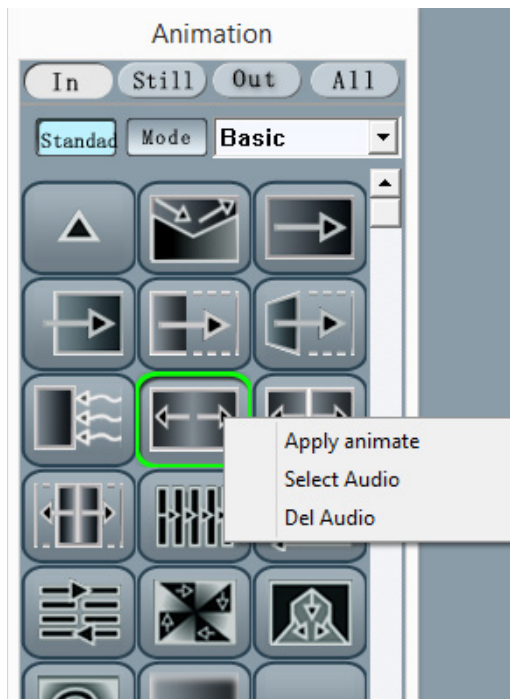


- d) **Animation preview pause:** Press Escape key to interrupt the animation preview

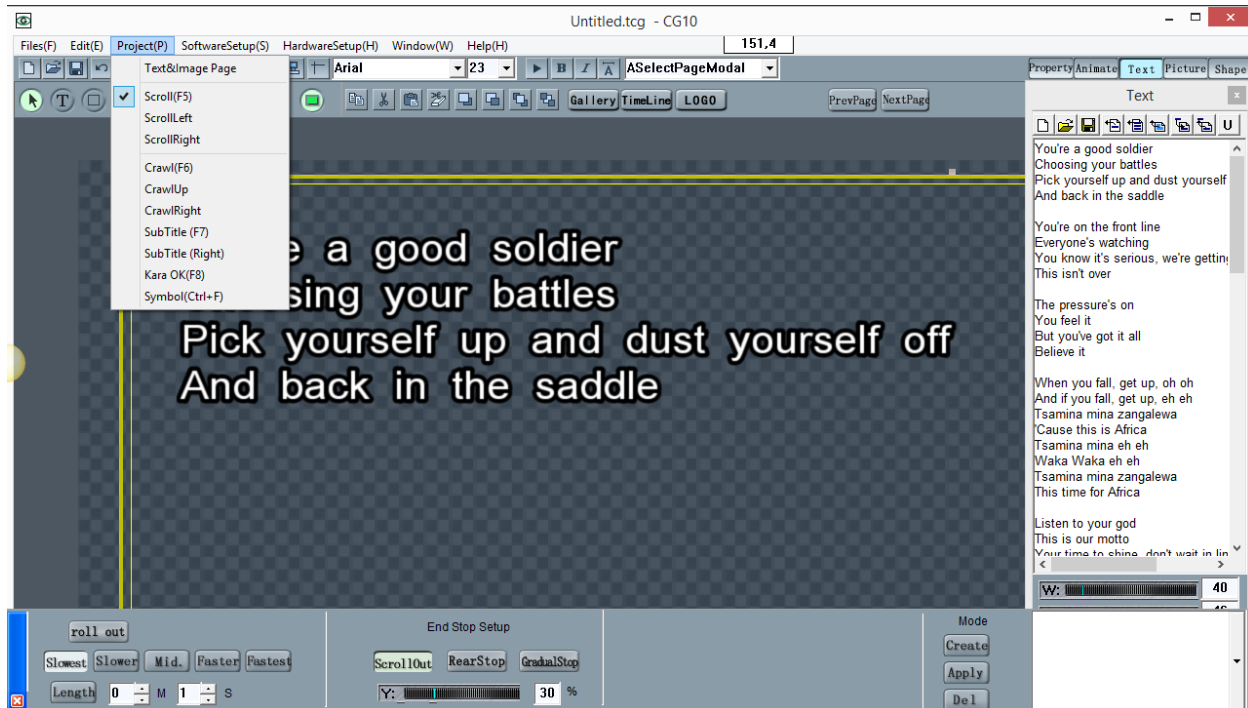
X. Animation Sound Effect

Animation sound effect is a feature included in Datavideo's HDCG Ver. 5.08. Slide-IN/OUT and still animation can be activated with a sound file (.wav, .mp3 and .wma), which is used as a sound effect during the animation play. As restricted by the system source, at most 8 sound files can be played at a time (plugin play is void). System library can be found in the installed Audio directory. Before using any special effect, the user should properly set the animation and sound effect first and then create an animation mode to facilitate future use.

1. Click on either one of the Slide-IN, Still and Slide-OUT buttons and then select the desired animation; audio effect cannot be added without animation.
2. Single click the right mouse button on the desired effect, and select audio on the menu
3. To remove the audio effect, simply click on "Del Audio"



5. Scroll Editing



I. Setting of Scroll, Scroll Left, and Scroll Right

- On the menu bar of Datavideo HDCG, select "Edit" → Left/UP/Right Scroll
- Frame for left/UP/right scroll will appear in the editing area as well as the text prompt.
- Directly enter texts and import graphics into the yellow frame for left/UP/right scroll or open the text document listed in the text window on the right and import the texts directly as UP-SCROLL
- Set the scroll speed or change the scroll direction in the dialogue box for UP-SCROLL
- Arrange the up-scroll texts and set the termination method

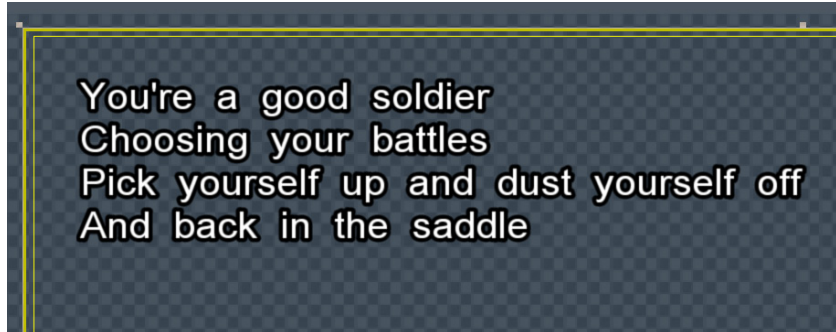
II. Scroll Template

- Base layer configuration: Single click the yellow frame and select UP-SCROLL. On the "Properties" page of the pane on the right, click the base layer button to edit the base layer color and apply UP-SCROLL to it. Select transparent single color to cancel the base layer color. To add graphics or set animated base layer, select still picture or the desired animation effect in the clipart library of the pane on the right and apply it to UP-SCROLL.

III. Scroll Mask

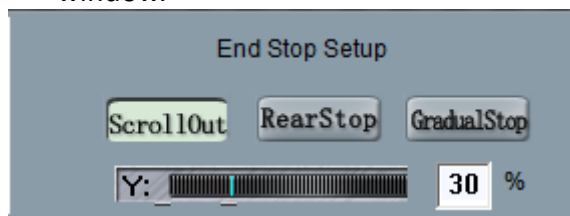
UP-SCROLL mask refers to the physical layer between the base layer and the up-scroll texts and the mask can be configured to transparent (For example, as shown in the diagram below, fade in/out and light effect are applied to the texts above and below UP-SCROLL subtitle).

- a) Single click the yellow frame and select up-scroll; click the mask button on the “Properties” page of the pane on the right.
- b) Apply either transparency or light effect to the UP-SCROLL. Single click the “Cancel” button to remove the mask from transparent page or light effect.



IV. End Screen Termination Methods

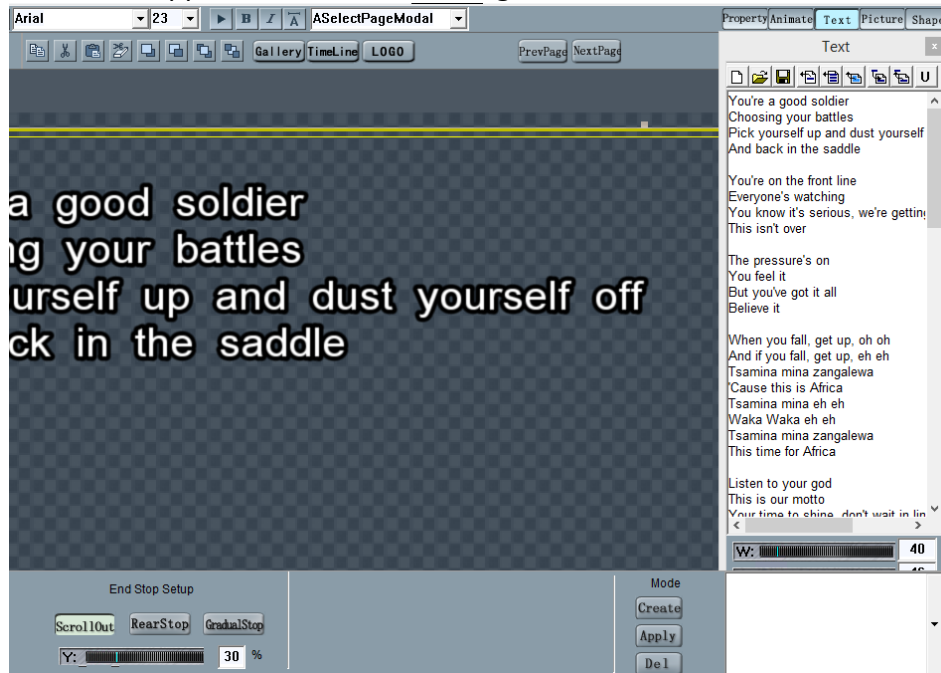
- a) OUT-SCROLL screen: subtitles disappear completely from the screen.
- b) Stop on End Screen: Last page of the subtitle stops on the screen.
- c) Gradual Stop on End Screen: Last page of the subtitle stops gradually on the screen.
- d) Use Z, X and V to regulate the speed while it is being played
- e) Position of the end screen can be adjusted by scrolling the scroll bar of the editing window.



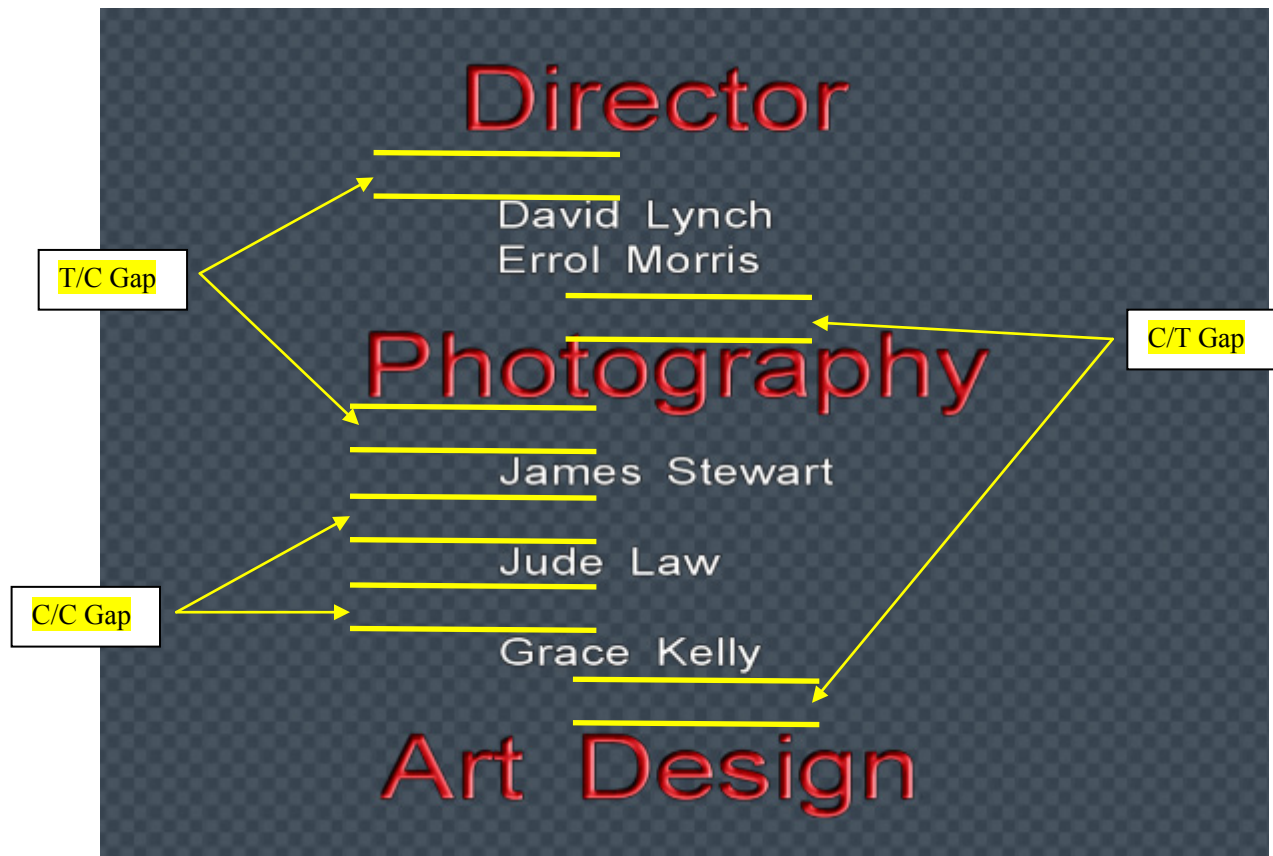
V. Scrolling Text Alignment

- a) Universal Commands for Text Alignment
 - i. To align with reference to a selected text graphic element, press CTRL+L, CTRL+R and CTRL+M to left/right/mid to align all other graphic elements to the reference. In the case of left and right scroll, they respectively mean top alignment, bottom alignment and vertical alignment.
 - ii. To align with reference to a selected text graphic element, press CTRL+Y to align the line spacing of all other graphic elements to the reference.
 - iii. To align with reference to a selected text graphic element, press CTRL+J to copy properties of the reference graphic element to all other graphic elements.
- b) Custom Alignment Methods

- i. Title refers to subjects of partial texts of the UP-SCROLL such as director, light and etc. Content refers to partial texts of the UP-SCROLL such as contents, names and company names. Picture is the graphic element inserted into the UP-SCROLL and is not be applicable to automatic alignment.



- ii. Configuration Method for Title, Content and Picture
 - 1) In the imported UP-SCROLL text, add @ to the beginning of the title and the subsequent texts will be automatically configured to title during UP-SCROLL; the rest of the texts will be content.
 - 2) Click the "Title" button after selecting the graphic element or press the "T" shortcut key to set the text to title; Click the "Content" button or press the "C" shortcut key to set the text to Content.
- iii. Automatic Calibration and Alignment can be activated after Title and Content of the UP-SCROLL are configured.
 - 1) T/C Style: Select a Title text first and then press CTRL button while selecting the subsequent Content text; click the T/C Style button to apply the selected style to the selected title and content in the UP-SCROLL. In addition, line spacing of all title and content will adopt the line spacing of the selected style.
 - 2) C/C Style: Select two consecutive Content elements first and click the C/C style button to apply C/C style to all Content elements of the UP-SCROLL. In addition, line spacing between all contents and content elements will adopt the line spacing of the selected style.
 - 3) C/T Style: Unlike T/C style, this style copies the line spacing between all Content and Title.

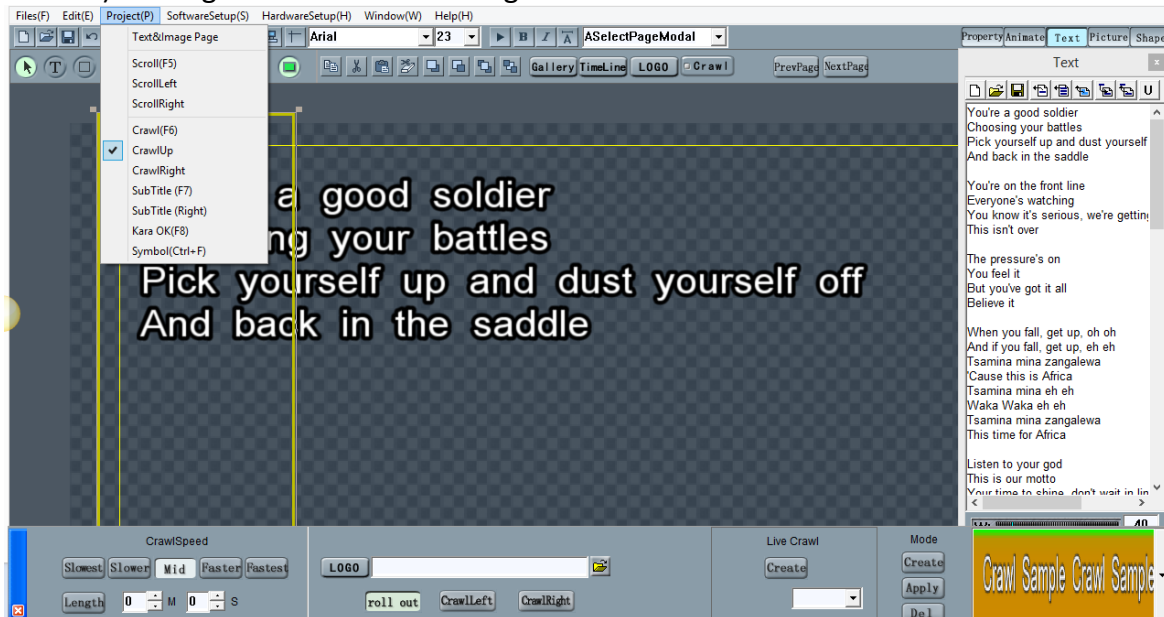


- iv. Up-Scroll shape refers to the shape changes during up-scroll. In the UP-SCROLL dialogue box, there are different shapes for selection such as trapezoid, ball, wave, and etc.

6. Crawl-In Animation Effect

I. Crawl-In from Left, Top and Right

- On the menu bar of Datavideo HDCG, select Edit → Left/UP/Right Crawl-IN”
- Position of the left crawl-in will appear in the editing area as well as the text prompt.
- Directly enter texts and import graphics into the yellow frame for left/UP/right crawl-in or open the text document listed in the text window on the right and import the texts directly as left crawl-in
- Configure the left crawl-in speed in the left crawl-in dialogue box or change the crawl-in direction
- Configure the left crawl-in logo

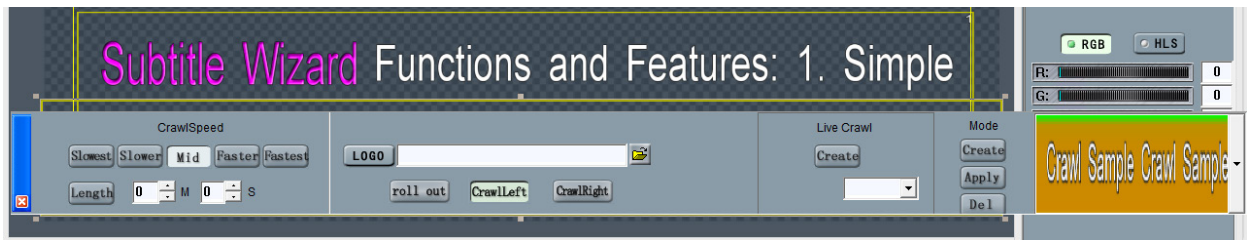


II. Base Layer and Mask for Left Crawl-In

[Refer to subtitle base layer and mask in Up-Scroll section](#)

III. Time Setting for Left Crawl-In, Live Subtitle Crawl-In from Left, and TV Station Mark

- Timed Left Crawl-IN: This function can be realized by configuring the time of the page on which left crawl-in is set.
- Real Time Crawl-IN: This is for left crawl-in of the logo layer and does not need to be configured beforehand. Crawl-in text can be added anytime and played at a set time, manually, repeatedly, or in sequence. Please refer to the logo layer.
- Configuration of Position, Style and Speed of Real Time Crawl-IN: Configure the left crawl-in with the required position, style, and speed; single click the “Create” button in the “real time left crawl-in template” segment of the left-crawl-in dialogue box.

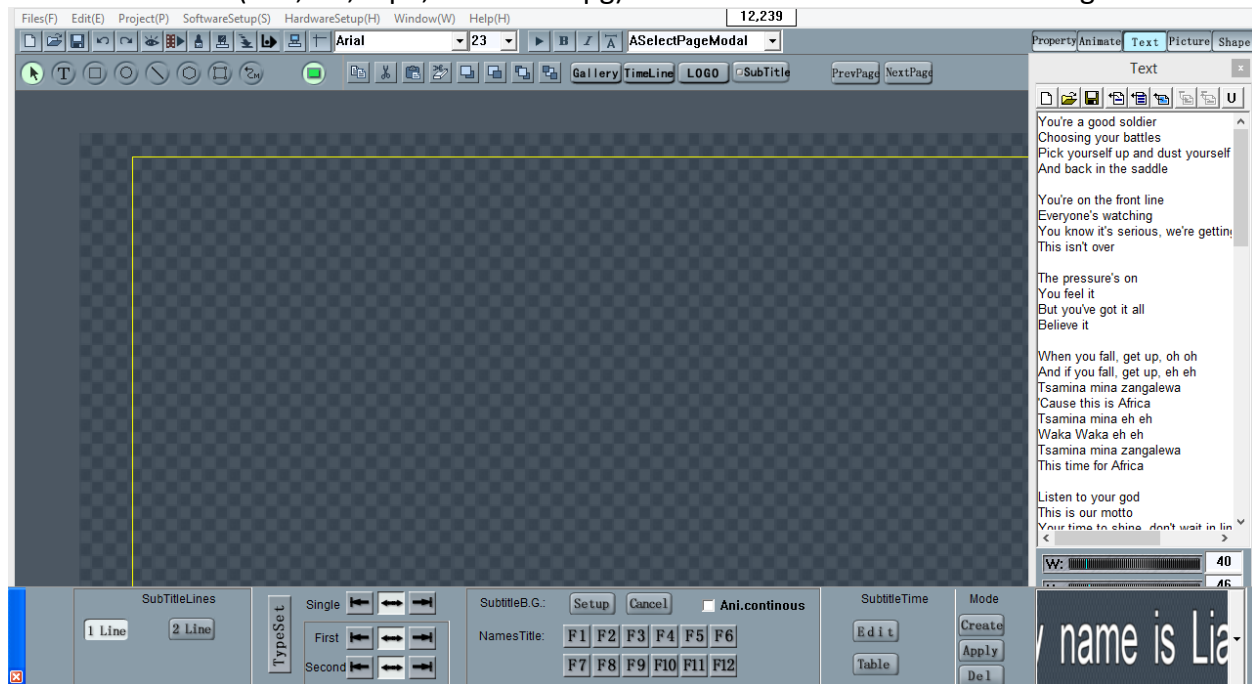


- d) Left crawl-in logo is located at the beginning or tail of the text as a still or animated picture; it is usually reserved for TV station name, ad title and etc.

7. Subtitle Editing

I. Steps of Subtitle Creation

- Click on “Project → Subtitle” on the main menu bar of Datavideo HDCG
- In the editing area, position of the subtitle and prompt text will appear.
- In the yellow subtitle frame, enter the text directly or import the image, or click on the “Text” tab located at the top right corner of the window, open the file browsing window and then import the subtitle directly from the hard disk.
- Configure the text properties of the subtitle on the subtitle properties configuration window
- Set the lyrics positions and the automatic layout
- Click on the “Edit” button of the subtitle time and then edit the time of each subtitle line in a nonlinear timeline fashion. Overlapping of audio, image and video files (wav, avi, mp3, mov and mpg) can be achieved for timeline editing.



II. Text File for Subtitle Creation

- Switch to the text dialogue frame
- Open or edit the subtitle text file
- Confirm that the subtitle or the graphic element in the subtitle is the current one
- Select the number of lines of the subtitle in the dialogue frame
- Click on the “Create unit from all the text” button in the text dialogue frame, i.e. subtitle creation

- f) In the situation where some of the lyrics are already edited, if the user would like to create the subtitle using the text file method, the system will prompt the user whether to “replace” or “add”
- g) Time table of the text file must be opened in the timeline
- h) If, after opening the text file, unreadable code appears, it could be due to that the original text file is in Unicode format, just click on the “Unicode” button in the text dialogue frame to solve this problem.

III. File format of the text file

- a) Automatic line change symbol in the text file: “\\” or “//”
 For example: You're a good soldier//Choosing your battles
 Pick yourself up and dust yourself off
 And back in the saddle//You're on the front line
 The created subtitle will be:
 First:
 You're a good soldier
 Choosing your battles
 Second:
 Pick yourself up and dust yourself off
 Third:
 And back in the saddle
 You're on the front line
- b) If line spacing is used for automatic page change, then the above lyrics in the text file should look like:
 You're a good soldier
 Choosing your battles

 Pick yourself up and dust yourself off

 And back in the saddle
 You're on the front line

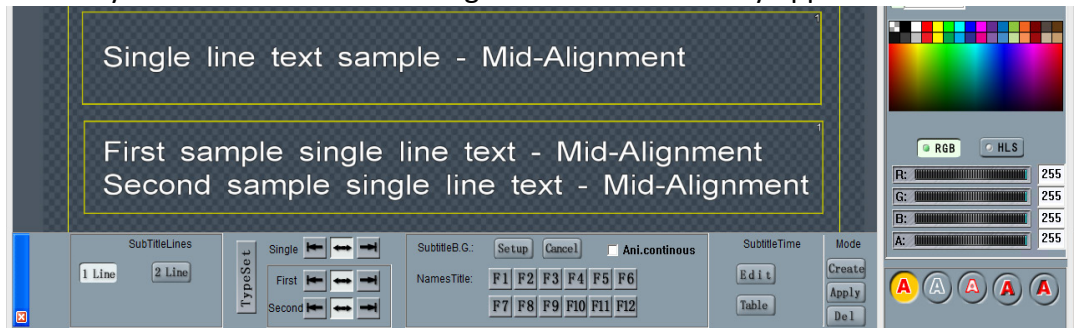
IV. Automatic Subtitle Text Arrangement

- a) Pre-define subtitle properties, location and alignment method, and in later modification, deletion and addition of subtitles, the pre-defined settings will be automatically applied to properties and layout.

Method 1:

- i. On the main menu bar, select “Project→Subtitle” and a yellow frame and a sample text will appear in the editing area as depicted in the diagram below
- ii. According to design requirement such as layout and properties, directly configure the line position, font size, font color and etc, and then use the alignment button in the dialogue frame to select the alignment method

- iii. Define the subtitle animation according to the design requirement
- iv. After defining the settings, either import the text file or directly enter the text into the yellow frame and the settings will be automatically applied



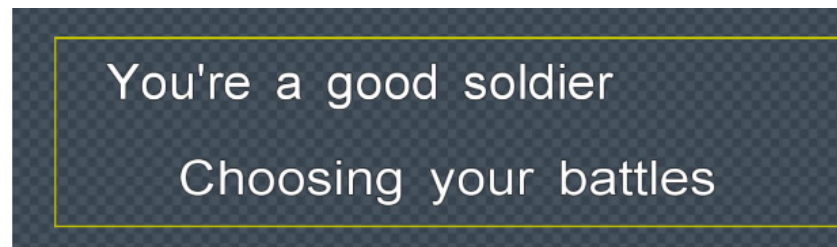
- v. After the subtitle is created, please refer to the above steps to redefine or modify the subtitle properties and layout

Method 2:

- i. Use page home, page-up or the slide bar of the editing frame to return to first page of the subtitle
- ii. Select the first line of a dual line text element
- iii. Set the font type, size, color, animation and other properties of the first line
- iv. Click on the align button located at the rear of the first line text element to complete the automatic layout settings
- v. If the alignment method is not changed and only some properties are changed, press Ctrl+J to apply all styles of the current graphic element settings to the first line text of the subtitle after change.
- vi. According to the above steps to set automatic layout of subsequent line and the first line

First Line

Second Line



- b) Automatic layout of a four-line text element of the subtitle
 - i. Selected subtitle is comprised of four lines
 - ii. Import the text file or enter four lines of the lyric directly
 - iii. Automatic layout of the four-line subtitle divides the four-line subtitle into two segments: upper (1) and lower (2). Graphic elements can be moved to segment 1 or segment 2 accordingly.
 - iv. The upper (1) and lower (2) segments are equivalent to a dual line subtitle.
 - v. Select the text element in one of the segments and apply the automatic layout setting of the dual line subtitle

V. Editing of Singer Introduction

- a) Single-click F1-F12 buttons in the subtitle dialogue box and select the desired singer introduction for editing
- b) After selecting F1-F12 buttons, all graphic elements created in the editing area will become the images for singer introduction.
- c) Slide IN/OUT animation can also be applied to graphic elements for singer introduction
- d) To finish editing singer introduction, single click again on the selected F1-F12 buttons to resume the original state of buttons

VI. Editing of Subtitle Timeline

- a) Click on “Edit” button located in the “subtitle timeline” option and a timeline window will appear.
- b) If the timeline is to be referenced to audio or video files, click on the “open” button to browse files such as avi, wav, mp3, mov and mpg. If the selected file is avi, mov or mpg video files, the video image will then appear in the editing window for the user to overlay the subtitle on the video image.
- c) Single click the scale to select the resolution of timeline scale as required
- d) On the timeline window, the user will be able to view the current position of the text on the timeline and also edit the current time position. Press enter to change the current time position
- e) Subtitle is distributed in text units on the timeline and timeline is edited in a nonlinear fashion.
- f) Move the mouse cursor to the head, tail or middle of a text unit until the cursor shape changes. Click the mouse upon cursor shape change and hold the click. Drag the cursor to modify the entry and exit points of the current text unit or time shift the whole text unit.
- g) At step 6, press shift key while modifying the entry or exit points or time shift the whole text unit, the subsequent graphic elements will move backward; press Ctrl key at the same time, previous graphic elements will move forward.
- h) To fine-tune the entry point, press shift+left (right) keys to increment or decrement the entry point by one frame. At the same time, the content overlay effect appears at the entry point on the timeline. Press shift+up (down) keys to fine-tune the exit point.
- i) In order to precisely fine-tune the entry or exit points of every line of the subtitle, double click on the text element placed on the timeline or click on the “table” button in the timeline editing window to edit directly in the subtitle time table.
- j) In order to set the subtitle time table while listening to or watching the video:
 - i. Single click the “open” button to browse media files such as mov, avi, mp3 and wav
 - ii. Single click the “play” button to play the selected media file and tap the keyboard according to the music; tap enter key to move to the next screen, tap space

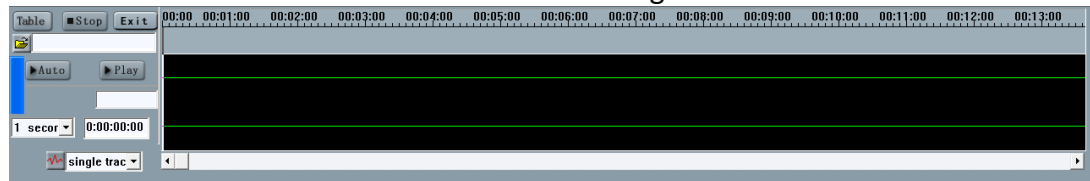
- bar to clear the current screen, tap Escape key to terminate “playback by tapping keys” and the timeline set previously will be recorded and displayed.
- iii. Or move the mouse cursor to outside the timeline window (above); left mouse button is equivalent to the enter key and right mouse button is equivalent to the space bar.
 - k) How to make sure the set time is accurate or meets the media file rhythm?
 - i. Single click the auto-play button to automatically play the media file with the subtitle to see if the subtitle time table is accurate or meets the song rhythm
 - ii. In order to monitor a particular line or partial subtitle timeline, drag and move the timeline to select the segment for playback; press enter key to play.
 - l) Set shortcut keys for entry and exit points

On the subtitle timeline,

 - i. Press i key to set the entry point to the point closest to the graphic element entry point on the timeline
 - ii. Press o key to set the exit point to the point closest to the graphic element exit point on the timeline
 - iii. If it's a dual line subtitle, the entry and exit points on the same page are related.
 - m) How to instantly insert or delete subtitle lines.
 - i. Select insertion location or deleted graphic element
 - ii. Press Shift+Insert or Shift+Del to insert and delete
 - n) How to realize dual line subtitle?
 - i. When dragging subtitle, press shift key to realize unit movement and press alt key to realize dual line movement.

VII. Subtitle Timetable Editing

- a) Click on the “Table” button in the subtitle dialogue frame or click on the “Time Table” button in the subtitle timeline editing dialogue frame or double click on the text on the timeline to enter the time table editing window.



- b) Click on the “Time Table” button again to close the time table window
- c) If the “Time Code” check box is checked, the entry and exit points will be shown or else they will be hidden.

Subtitle time table			
Index	In	Out	Contents
1	0:00:00:00	0:00:00:00	
2	0:00:00:00	0:00:00:00	
3	0:00:00:00	0:00:00:00	
4	0:00:00:00	0:00:00:00	
5	0:00:00:00	0:00:00:00	
6	0:00:00:00	0:00:00:00	
7	0:00:00:00	0:00:00:00	
8	0:00:00:00	0:00:00:00	
9	0:00:00:00	0:00:00:00	
10	0:00:00:00	0:00:00:00	
11	0:00:00:00	0:00:00:00	
12	0:00:00:00	0:00:00:00	
13	0:00:00:00	0:00:00:00	
14	0:00:00:00	0:00:00:00	
15	0:00:00:00	0:00:00:00	
16	0:00:00:00	0:00:00:00	
17	0:00:00:00	0:00:00:00	
18	0:00:00:00	0:00:00:00	
19	0:00:00:00	0:00:00:00	
20	0:00:00:00	0:00:00:00	

d) How to modify the Slide IN/OUT time of the subtitle?

- i. Directly edit the time in the frame for editing Slide IN/OUT time. Time editing frame supports frame increment/decrement by cursor drag up/down, keyboard input, and up/down arrows.
- ii. To delay the Slide IN/OUT time of the current subtitle and all subsequent subtitles, press the shift key and in the frame for editing Slide IN/OUT time, click on up/down buttons at the same time to increment and decrement by one frame at a time.
- iii. To add a page or delete a page, move the cursor to the position before the text line to be deleted or inserted, press Shift+Ins keys to insert a space line, or Shift+Del to delete the previous line.

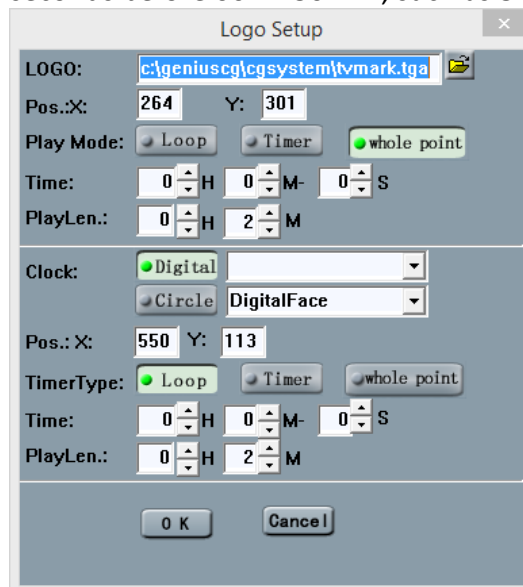
8. Logo Layer Editing

Logo layer is usually used in character generator, realizing logo, clock, three corner logos and two real time left crawl-in functions. The three corner logos and real time left crawl-in are queue functions, which can be used for timed, sequential and manual playback. Logo layer and subtitles (video queues) are independent playback.

a) To open the dialogue box for logo page configuration, select “Main Menu → SW Configuration → Logo Page”

b) Logo Configuration:

- i. Logo File: Still pictures in bmp, tga and png formats are available; as for animated logo, avi and tng files are supported but we recommend using tng file for animated logo (fast). Logo animation can be created using this software and saved as tng file. You can also create TGA animation file in other professional animation creator and convert it to tng file by selecting “Main Menu → SW Configuration → Animation Conversion.”
- ii. Time Method: Cycle refers to repeated playback; Time refers to fixed point playback; Hour refers to playback at a particular hour, for example, if the timed playback is set at 00HR:30MIN – 30 Sec, this means that playback starts at 30 seconds before 00HR:30MIN, such as 8:29:30, 8:59:30, 9:29:30 and etc.



- iii. Time Fix: Used for configuring the time of playback at a regular hour or at a particular hour; note that the second field refers to the amount of time for playback in advance
 - iv. Playback Length: Time length of each logo playback; if the length of logo animation file is less than this number, the playback will stop at the last frame.
- c) Clock Configuration
- Digital Clock: Create a new clockdig.tga file in the file format of cgssystem\clockdig\电子\clockdig.tga; change every numerical digit to the desired graphic. This document is

picture file with a uniform distribution of "0123456789:" with Alpha Channel. Size of the numerical digit in the file determines the style and size of the digital clock.

Picture of Digital Clock Base: Picture of the clock base can be created according to the size of the digital clock (a general digital clock must contain alpha channel) and placed in cgsystem folder of the CG installation directory. Base digital clock types can be expanded in the sub-directory of cgsystem\clockdig. Directory of the digital clock types must contain clockdig.tga files. If this directory contains clockbk.tga, the base picture will appear after the type is selected. Displayed clock size is the size of the base picture. Digital clock is located at the center of the base picture.

Circular Clock Surface: Refer to cgsystem\clockcir\表面\clock.tga for the size to design a new clock surface

Refer to logo playback time setting section for methods setting the clock playback time

d) Corner Logo Configuration

Corner logo is usually used for playback of advertisement animation and display of TV station name or show name at the screen corners. This system is capable of three corner logos. Each corner logo is a queue object allowing real time playback and editing.

Below configuration sets the corner logo location:

Corner Logo 1: Coordinates of the bottom left corner indicate the location as well as the left/base alignment mode.

Corner Logo 2: Coordinates of the bottom right corner indicate the location as well as the right/base alignment mode.

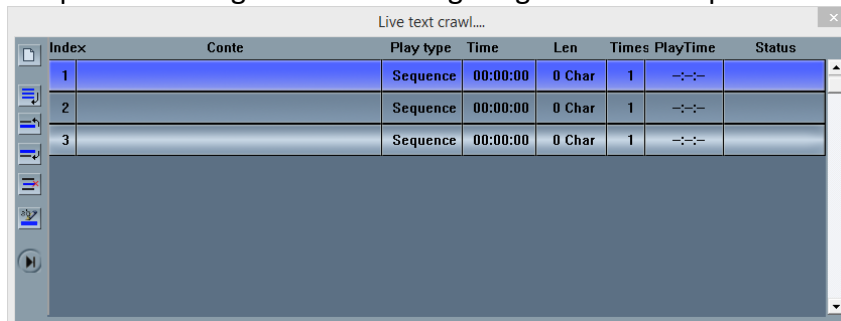
Corner Logo 3: Coordinates of the top right corner indicate the location as well as the right/top alignment mode.

e) Real time left crawl-in

Real time left crawl-in plays texts queue on the logo layer, in particular, the texts are played in real time regardless of their sizes.

Real time left crawl-in template: Position, method (Up/Right Crawl-In), color, base, and mask of real time left crawl-in can all be configured in the left crawl-in configuration window; please refer to left crawl-in configuration.

Left crawl-in queue configuration: Single click real time left crawl-in list on the logo page to open the dialogue box for configuring left crawl-in queue.



i. Function buttons on the left of real time left crawl-in list are:

New: Clear the current list and create a blank playback list; Add: Add a new item to the list after playback; Insert before the item: Insert a new blank item

before the current item; Insert after the item: Insert a new blank item after the current item; Delete: Delete the current item; Edit: Edit the current item.

- ii. Playback method: Clear the current list and create a new blank playback list.

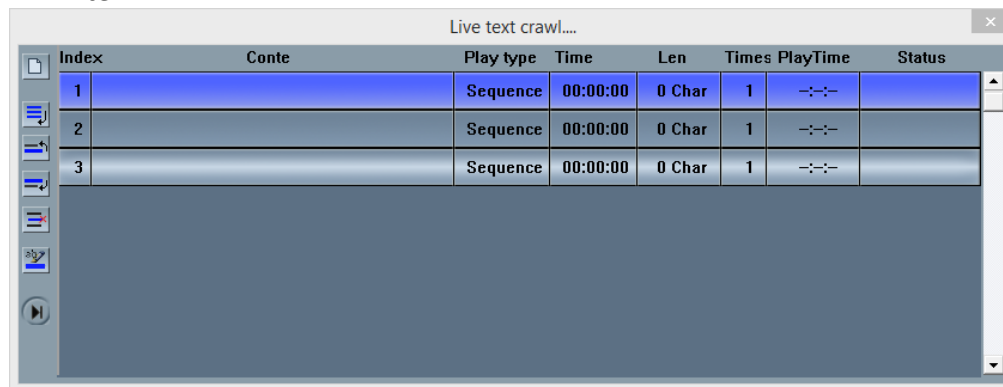
Sequential Playback: Play in sequence; play the next item after the previous one is finished.

Time: Play at a set time

Time Gap: Start time of the previous item plus the gap time equals the start time of the current item.

Repeat: Repeat plays the current item repeatedly; if 123 is set to repeat, 123, 123, 123 will be played repeatedly.

- iii. Add a blank playback item: Single click this item to highlight it in blue, indicating the current item. Double click the content of this item so that this item enters the edit mode. The corresponding control functions will be enabled for editing the item.



Index	Conte	Play type	Time	Len	Times	PlayTime	Status
1		Sequence	00:00:00	0 Char	1	--:--:--	
2		Sequence	00:00:00	0 Char	1	--:--:--	
3		Sequence	00:00:00	0 Char	1	--:--:--	

- iv. Single click the “Open” icon in the content field or double click the content field to open the Text Edit window. The Text Edit window is used for editing or opening text files of the playback content of the current item.
- v. The user is allowed to select the playback method; playback time and count can be configured in the window for configuring time and count. Commonly used keyboard functions such as up/down arrow keys can be used to increment or decrement the numbers.
- vi. Real time left crawl-in of multi-style texts: Multi-style texts are added to left crawl-in feature. Different colors and font types can be applied to left crawl-in texts. The user can also use picture files. We are the first to implement this feature in China

Operation Method:

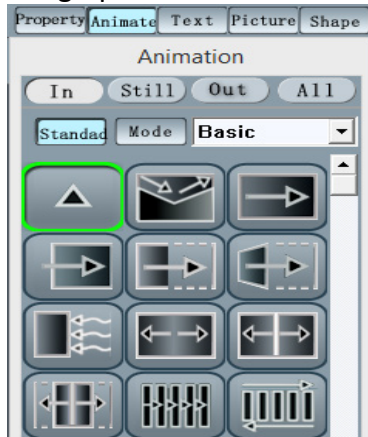
- Create left crawl-in template for multi-style texts
 - Create multiple font styles required for left crawl-in multi-style texts
 1. Create a text graphic element and configure the text color, font, and other properties
 2. Select the text graphic element and right click to open the menu → select create template

3. If this is the first style, you must create the template type name first.
Enter "Left Crawl-IN" in the type text bar. Simply single click the create button after selecting the Left Crawl-IN type if this is the second style.
 4. Enter the style name and confirm creation
 5. Repeat steps 1-4; the user can create up to 10 text styles.
- Location, mode (Up/Right Crawl-IN), color, base layer, mask and etc can be configured in the left crawl-in edit window. Please refer to [left crawl-in edit](#) section.
 - Locate real time left crawl-in text in the subtitle interface and then assign the style name to the multiple frames below (CG must be restarted in order to display the styles created in Step a)
 - Single click the "create" button for real time left crawl-in text. Save the new text as the real time left crawl-in text 1 or real time left crawl-in text 2 in the logo layer. If Info CG is selected in the system configuration, then save the text as real time left crawl-in document.
 - The style type is labeled by ## placed before and after real time left crawl-in text. Characters in between cannot exceed 80 (image file name cannot exceed 256 characters). If the first character is a numerical digit, then apply the style of that numerical digit, otherwise assign a image file name.
For example: Phone number##013971173707##Name##1Wang Rong Lin##Image##c:\\wangimg.tga## and the played content will be (description in the brackets):
phone number(style 0)13971173707 name (style 1) image of Wang Rong Lin (Picture c:\\wangimg.tga)
 - Those played from the disk or CG info can also adopt multiple text styles. All you need is to assign the template file to left crawl-in of multi-style texts.

9. Shaping, Subtitle Playback, File Storage and Export

I. Subtitle Shape

- a) Select the graphic element requiring shape transformation; Click on “Shape” button located in the top right hand corner of the window; Double click to apply the displayed shape to the current graphic element or drag the displayed shape to the graphic element.



- b) Select the graphic element requiring shape transformation; Click on “Shape” button located in the top right hand corner of the window; Shape adjustment lines and control points will be displayed on four sides of the graphic element; Move the mouse cursor to any control point and when the cursor becomes the hand shape, drag the control point to change shape; Shape tool pane also provides functions such as edit, add, delete, and control point movement in case of error.

II. Subtitle Playback

- a) Under the circumstances of having character generator or similar tools, the system’s subtitle output methods comprise five ways listed on the tool pane and the six ways for broadcasting logo layer on the logo page.



Preview Playback: Play all subtitle graphic elements in the subtitle editing window; this is frequently used for setting playback time or rehearsal in the scenario in which the equipment that has no subtitle output.



Official Subtitle Playback: Play subtitles on equipment that has subtitle output



Subtitle Edit State: Clear the subtitle output content (this does not affect broadcasting of the logo layer)



Subtitle Edit State: Output the subtitle contents on the current page (this does not affect broadcasting of the logo layer) with the shortcut key F9



Subtitle Edit State: Output the subtitle contents on the current page in real time (this does not affect broadcasting of the logo layer)

- b) Subtitle Playback – Configuration of the current page
 - i. Configuration of the current Playback Page: In the playback dialogue window, the user is allowed to select the idle or standby playback page in edit mode from the page gallery on the left. Press the Escape key to exit the current playback page and move on to the next page playback. .
 - ii. Current Page Playback:

Press the Enter key on the keyboard to play the next page, and space key to clear the page. These are equivalent to pressing play and clear buttons or the user can single click the left and right mouse buttons outside the dialogue window. Press Ctrl+O keys to modify online (keep output contents) during playback (wait till the images become still) without affecting the output. Shut down the playback dialogue window after editing to continue playback.

Under normal circumstance, page slide-out is triggered only after playback of contents according to the timeline is finished. However, the user can press the Q key to unconditionally trigger page slide-out immediately.
- c) Standby page refers to the page after playback of the current page is finished. Shortcut keys, PageUp and PageDown can be used to switch between pages. Result of the switch will be displayed in the page preview area. The user can also enter the page number to directly skip to the desired page. Press shift key and single click the up/down arrows to skip pages. Up to 10 pages can be skipped at a time.
- d) Subtitle Playback— Logo layer configuration

Logo layer design is completely independent of page playback and the corresponding buttons are pressed to start playback at any time.
- e) Subtitle Playback— Subtitle playback and real time modification

Current standby subtitles: Selected standby subtitle page are highlighted in blue. Double click the subtitle page number can change the current standby subtitle page. The user can also directly enter the page number to skip to another standby subtitle page. The workload of subtitles playback is usually heavy, thus online modification must be included to correct the subtitles during playback. Modification methods can be found by right clicking the corresponding position to open a menu.

III. File Storage and Export

- a) Supported file formats that can be exported to the hard disk: tcg file; 32-bit bmp, tga and png still picture with alpha channel and jpg picture without alpha channel; avi audio and video file (allows combination of avi, mov, mp3 and wav files and some of nonlinear video files)

b) File saved to disk: Save the tgc subtitle file; select “Main Menu → save or save as” or simply click the “save to disk” icon on the tool bar located at the top of the window. To export avi, tng or TGA files, select “Main Menu → document → export”

c) Graphic element saved to disk: Select the graphic element to be saved and right click the mouse button and select “save as” on the pop-up menu. Various available file formats are tga, bmp, png, jpg, avi and tng. The subtitles, after saved, will be assigned to each screen accordingly.

d) Page saved to disk:

Method 1:

Select the page (single click the blank space or press escape to deselect the graphic element selection), right click the mouse button and select “save as” on the pop-up menu. Various available file formats are tga, bmp, png, jpg, avi and tng. Subtitle may be saved as a 32-bit animation in tga format or 32-bit avi and tng animation files.

Method 2

Single click the “Keep the Current Page” button on the tool bar located at the top of the window and select the file type to be saved to disk.

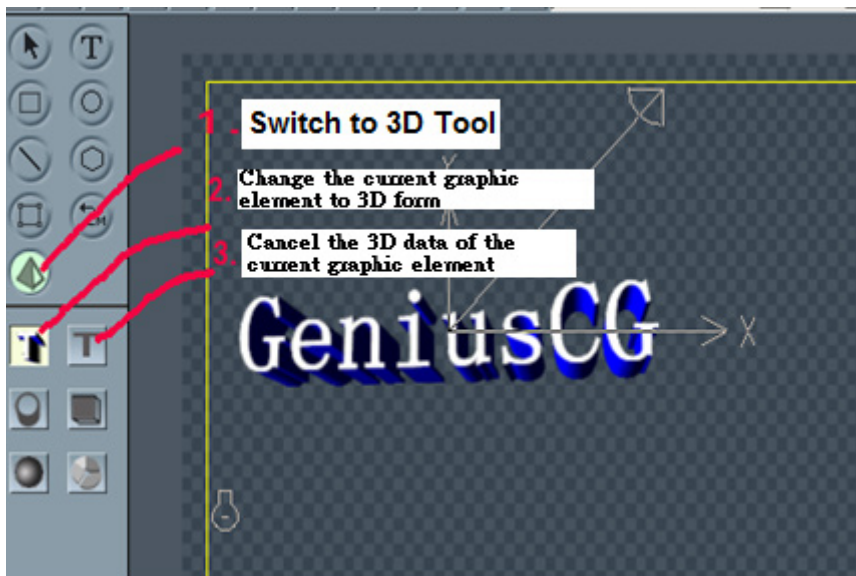
10. 3D Subtitle

I. 3D Editing

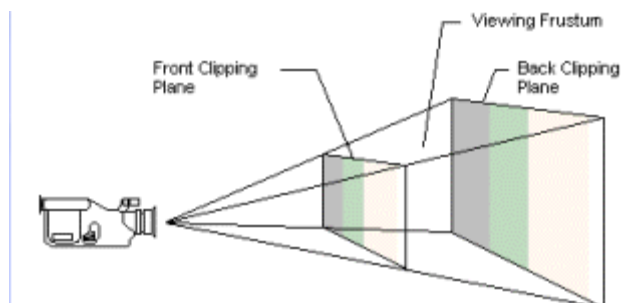
1. 3D font of the system is processed by 3D Engine of DirectX 9.0 and above. Hence, the user must install DirectX 9.0 and above in their system in order to be able to create and edit 3D subtitles.

2. Conversion of Text to Three Dimensional

Because 2D text is still the most frequently used subtitle format, this system is designed primarily based on 2D subtitle editing. If one particular word requires 3D, select the text graphic element and click 3D function to convert the graphic element to 3D.



3. 3D Visual Points (Camera)



3D Visual Space is a 3D space in a studio. Its position is determined by camera lens. Shape of this space determines how the model in the space captured by the camera is projected to the screen. Geometric projection is one of the most frequently used projection type. This type of projection will make the near object appear larger than far object.

3D Visual Space can be initialized as a pyramid shape by placing the camera at the top. This pyramid is divided by two planes and the space between the two planes is known as visual space. Only objects in the visual space are seen.

Datavideo CG Software – Configuration of Location and Direction of Camera



In CG, it is to determine the camera location and shooting direction or eye viewing from a point (viewing point) to a direction (viewing direction).

Move the mouse cursor to the proximity of the viewing point and viewing direction as shown in the diagram, and when the cursor turns to a hand cursor, click the mouse to drag and move the point position (x-y coordinates). To change the z-value, simple scroll the mouse wheel.

4. 3D Light Source

Light source must exist in a 3D scene, or else nothing can be seen in darkness.

3D source can be categorized into:

a. Point Source

For a point source, there are color and position but there is no single direction. The light source radiates equally in all directions. A light bulb is a light source.

b. Directional Light

Directional light only has color and direction but no position. It radiates parallel light rays, i.e. all light rays radiated from directional light are in one direction. You can think of a directional light source as a light source at an infinitely far location like the sun. Directional light does not attenuate and there is also no distance limit. Hence, calculation of vertex color only needs to take into account of light direction and color. In this way, expense of the system will be reduced with the least requirement.

c. Spot Light

II. 3D Animation

Slide IN/OUT of 3D animation can be configured while editing 3D graphic element.
Enable Slide IN/OUT of 3D animation

Slide-in (slide-out) button indicates if the current animation is slide-in (slide-out).
“ON” check box is for the user to enable/disable slide-in (slide-out) animation.

If animation is enabled by default, the key control point will then appear. The first point is the original state of the graphic element, i.e. the state in which the graphic element is not assigned any animation (idle state). As for slide-in animation, it is the last playback state but to slide-out animation, it is the first playback state. The state properties can only be changed after exiting the animation edit mode. Once in the animation edit mode (press slide-in or slide-out button), the user is then able to edit the state parameters of the current control point.

Add control point: Move the mouse cursor to the control point on the right until the cursor turns to a hand cursor; press and hold down the Ctrl key and drag the hand cursor to the left to create a new control point based on the state of the control point on the right. Up to 6 control points can be added.

Delete control point: Drag the control point to be deleted to the location of the control point on the right until they overlap, release the left mouse button click once they overlap and the control point is deleted.

Modification of the properties of every key point: properties that can be modified are listed as follows.

- 1) Number of Frames
- 2) Position
- 3) Visual Point Location
- 4) First Light Position
- 5) Material Color (Only for non-pasted graphics)
- 6) Rotation angle around X,Y, and Z-axis as well as the phase shift of X, Y and Z-axis

Chapter 4 Q&A

1. Shortcut Keys

i. Graphic element alignment and position shortcut keys

a. Position of the current graphic element (reference is the baseline)

- Shift + L: Left alignment
- Shift + R: Right alignment
- Shift + T: Top alignment
- Shift + B: Base alignment
- Shift + M: Center horizontally
- Shift + I: Center vertically

b. Copy the position of the current graphic element

- Ctrl+J: Copy the current graphic element properties and apply it to the graphic element below
- Ctrl+Y: Copy the vertical gap between current graphic elements and apply it to the graphic element below
- Ctrl+L: Apply left alignment of the current graphic element to the graphic element below
- Ctrl+R: Apply right alignment of the current graphic element to the graphic element below
- Ctrl+T: Apply top alignment of the current graphic element to the graphic element below (ineffective in up-scroll)
- Ctrl+B: Apply base alignment of the current graphic element to the graphic element below (ineffective in up-scroll)

c. Grouped elements alignment – Up-scroll and Left Crawl-In

- Ctrl+H: Equal line spacings
- Ctrl+I: Alignment of two ends and can also be document import function

d. Up/Down/Left/Right keys for adjusting graphic element position

- Ctrl+Up/Down/Left/Right keys for accelerating the graphic element position adjustment

ii. Shortcut keys for gaps between texts

a. L applies to text graphic element, automatically adjusting the gaps between texts so that overlap does not occur during particle movement.

b. +/- only applies to text graphic element: Ctrl+(+/-) adjusts texts line spacing.

c. Automatic alignment of text block fonts: While adjusting the right alignment of the text block, press and hold shift key to automatically align the texts to the new right borderline.

iii. Shortcut keys for graphic element selection and others

a. Tab key to switch between selected graphic elements

Ctrl+A to select all graphic elements on the current page

Mouse click+Ctrl = Add new graphic element to the grouped graphic elements

b. Escape key to deselect the current graphic element

- c. Escape key or Enter key to end text input
- d. To move up-scroll, left crawl-in or other grouped elements, press Shift to move all graphic elements in the grouped elements or else only the position of the box containing the grouped elements is moved.
- e. Upon creating or modifying straight line or rotation, press Shift key to trigger the sticky effect
- f. During up-scroll playback in the window, real time speed control keys are Z, X and V; Press Z to stop, X to accelerate, and V to decelerate.
- g. Press Ctrl+O to output the current screen contents in layers
Press Ctrl+Q to clear the current layered screen contents
Press O to obtain the size information of the still graphic or animation graphic
- h. Press Ctrl+C to copy;
Press Ctrl+X to cut and
Press Ctrl+V to paste (Paste to the location same as the original location – different from the paste option on the menu bar)
- i. Page down, page up, page home, and page end are for page change; if it is the graphic element (up-scroll, left crawl-in, narration and OK) that we want to change at the point of page change, then press CTRL in the playback window and select the next page to be played.

iv. Shortcut keys for playback window

- a. Enter key and space key for playback and screen clear
- b. Escape key to stop playback of current page
- c. Break key to stop playback of current page and clear the screen
- d. 0~9 keys and Ctrl+(0~9) keys are used for real time playback of base layer when real time base layer is opened.
- e. A~S (first 20 alphabets) keys are used for real time role introduction.
- f. Press Ctrl+O for offline playback
- g. F1~F12 keys are for playback of singer introduction while the lyrics are played.

2. Frequently-Asked Questions

i. Why sometimes graphic selection is unsuccessful? What kind of rules should be followed?

- a) Continue to select the graphic elements in the range of current graphic elements (press escape key to deselect the current graphic element)
- b) Select by clicking the rectangular box if there is no overlapping graphic elements
- c) When graphic elements overlap, select by clicking the graphic element contents
- d) When selection cannot be made, use tab key to switch between graphic elements or select in the page structure. Sometimes if a particular graphic element like the background image is too big, lock that graphic element.
- e) As for grouped graphic elements, select by clicking the graphic element, that is select the corresponding sub-graphic element (for easy modification) of the content. Select the grouped graphic elements by clicking inside the group box other than the graphic elements.

ii. How to create an animation that has multiple graphic elements moving at the same time?

- a) Group multiple graphic elements into a group and then configure the group animation.
- b) If it is a full screen animation, you may apply page Slide IN/OUT.

iii. Why sometimes font color cannot be applied?

- a) In the properties window, move your cursor over on the color that you would like to apply and click confirm (font, border, shadow and outline)
- b) Confirm the mode to be displayed (font, border, shadow and outline)
- c) Confirm if the color transparency is configured the degree of transparency
- d) Confirm color transparency

iv. Can I apply different font sizes and color parameters to some alphabets in a text line (text graphic element)?

- a) Yes, please refer to the text editing section

v. Can left crawl-in base layer be animated?

- a) Yes, convert the animation to tng file format and then apply it to left crawl-in base layer

vi. How to precisely enter the coordinates and size of the graphic element?

- a) Enter the information at the bottom of the page structure window

vii. Can we group a few graphic elements first and then apply animation?

- a) Yes, multiple graphic elements can be grouped together first and then apply group animation configuration

viii. Can animation slide IN/OUT time be lowered to less than one second?

- a) Yes, under normal circumstance of animation time configuration, if frame is zero, time can never be lowered to 0 second, because if time is lowered to 0 second, the system will perceive the total time as 0. You may adjust the frame to the appropriate size and then lower the time to 0.

ix. Bad jitter is seen on the output image

- a) Zoom IN/OUT of images adopts the most advanced multi-dimensional interpolation method. The image output will thus have no jitter and regardless of the zoom ratio, our CG program guarantees the image clarity without any further jitter processing.
- b) Many digital images contain jitter and thus must undergo jitter processing before output. Hence, create a rectangular box in the CG program and paste the digital image into the box before any image output. In this way, jitter processing is then applied to the image in CG and you will not see jitters in the output image.

x. Can font size be applied along with text template application?

- a) Yes
- b) Select the graphic element to be applied the desired template properties, and find the appropriate template in the “properties/template” dialogue frame
- c) Press Shift and double click the icon or drag the icon to the graphic element to complete application of the template properties such as font size, gap and etc.

xi. How to set external image to the page background?

- a) Import image or drag the Windows art gallery to the CG; create a new graphic element, not a page background.
- b) Select the art gallery window, find the external file, drag the image to a blank page, and set the image to the page background

xii. What are the limitations of CG-250?

- a) .txt, .CSV and .RSS file formats are not supported.
- b) When play control is being executed, other pages cannot be opened for real time modification.
- c) CG-250 cannot be used with BlackMagic Decklink capture card.
- d) It can take CG-250 approximately 10 to 15 seconds to finish converting an image sequence to an animation file and this might lead the user to think that CG-250 has crashed.
- e) Timer cannot be stopped and started from where it previously stops; it can only be restarted.

xiii. How to create timer font style?

- a) Create a text element of the desired font type, size and color on the editing area.
- b) Save the text element in .sty file format (new font style file)
- c) Locate countertime.sty in cgsystem directory (original font style file)
- d) Replace the original timer font style file with the new one
- e) After the new timer font style file is saved into the cgsystem directory, the user will then be able to create count down timer using the new font style.

xiv. Why does subtitle file (subtitle/edit/open) do not output audio component?

- a) This is because CG-250 is used with TC-200, which outputs the video component only and not the audio component.

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