

## **DSA-5110D Series**

### **Network Digital Signage Display**

#### **User Manual**

**Rev. 1.1**

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## **Safety Instructions**

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Read the following safety instructions carefully:

1. Keep this User Manual for later reference.
2. Keep this equipment away from extreme environments such as high humidity areas.
3. Place this equipment on a stable surface during installation. Dropping the system may cause damage to the hardware.
4. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
5. Position the power cord so that passersby cannot trip over it. Do not place anything over the power cord.
6. All cautions and warnings on the equipment should be noted.
7. Never pour any liquid into an opening; this may cause fire or electrical shock.
8. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
9. If one of the following situations arises, get the equipment checked by service personnel:
  - a. The power cord or plug is damaged.
  - b. Liquid has penetrated into the equipment.
  - c. The equipment has been exposed to moisture.
  - d. The equipment does not work well, or you cannot get it to work according to the user manual.
  - e. The equipment has been dropped and damaged.
  - f. The equipment has obvious signs of breakage.
10. DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT WHERE THE STORAGE TEMPERATURE MAY GO BELOW -20° C (-4° F) OR ABOVE 60° C (140° F). THIS COULD DAMAGE THE EQUIPMENT.

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# Chapter 1. Introduction

## 1.1. General Introduction

The Advantech DSA-5110D Network Digital Signage Display comes with a 10.2" TFT LCD and build-in stereo speakers. It receives pre-edited content such as video, audio, graphics, and text via an IP network, then stores the content in its internal storage. The content is displayed according to either a pre-defined playlist or network commands. The DSA-5110D Series features the most advanced decoder and graphic processor available. DSA-5110D is an ideal network Digital Signage Display solution for advertising, presentations, training, and other media applications.



Figure 1-1

## 1.2. Features of DSA-5110D Series

### 1. Rich Content Presentation & Maximum Advertising Efficiency

Advantech's DSA-5110D Digital Signage solution supports DivX 5, MP3 and other formats for video & audio, and JPEG and BMP formats for graphics. Scrolling text displays multiple languages. Advantech offers user-definable layout templates with up to 7 zones of display to deliver maximized advertising efficiency for our customers. Insertion of live events and queuing numbers are supported with versatile messaging functions.

### 2. Compact Size with High Performance Display

DSA-5110D comes with a built-in 10.2" TFT wide LCD, and a pair of high-fidelity stereo speakers. With 256 x 195 mm compact dimension, it provides versatile input and output functions that offer users and developers the best performance and convenience.

### 3. Optimized Internal Storage Utilization and Content Management

DSA-5110D is equipped with an internal Flash storage. It offers flexible storage space with optimum utilization. Playback, operation, and transmission logs and reports are available to support client billing and error tracking.

## 1.3. Specifications

Play Contents		
Video	All related & popular formats	
Audio	2 channels, MPEG Layers I, II and III, 16-bit PCM, bit rate up to 384kbps, sample rate up to 48kHz	
Graphic	32-bit color with transparency BMP, JPEG	
Text Banner	Variable scrolling speed and position	
Playlist	Scheduling playback, endless loop playback, auto play after power on	
Input and Output Ports		
Video Output	Build-in display	10.2" TFT LCD
Audio Output	R / L channel analog	Stereo phone jack
	Embedded speaker	3 Watts Stereo
Network	10/100 Mbps	RJ-45 x 1
USB	USB 2.0	USB type A x 2
Network Protocol	Supports HTTP, DHCP; FTP (DSA-5110D)	
Display		
Size	10.2" Wide (Diagonal)	
Resolution	800 RGB x 480 pixels (Wide VGA)	
Number of Colors	262,144	
Surface Treatment	Anti-Glare	
Contrast Ratio	400 (typ.)	
Brightness	400 nit (typ.) Max.	
Viewing Angle	45/65/65/65° for U/D/L/R (typ.)	
System		
Storage	Internal SD memory card	
Dimensions(W*H*D)	256 x 195 x 52 mm	
Net Weight	Approx. 2.9kg	
Power Supply	DC 12V input	
Operating Temperature	0 to 40°C, Humidity 5 – 85% @ 40°C	

**Note:**

Due to speed limitation of the SD card, when it playback video during file transferring through network on the background, it's suggested to limit the network transferring speed under 400KB/s, and maximum bit rate of video file under 5Mb/s for MPEG4 and 2Mb/s for MPEG2.

## 1.4. Input/Output Interfaces

DSA-5110D unit with the I/O ports is shown below in **Figure 1-1**:

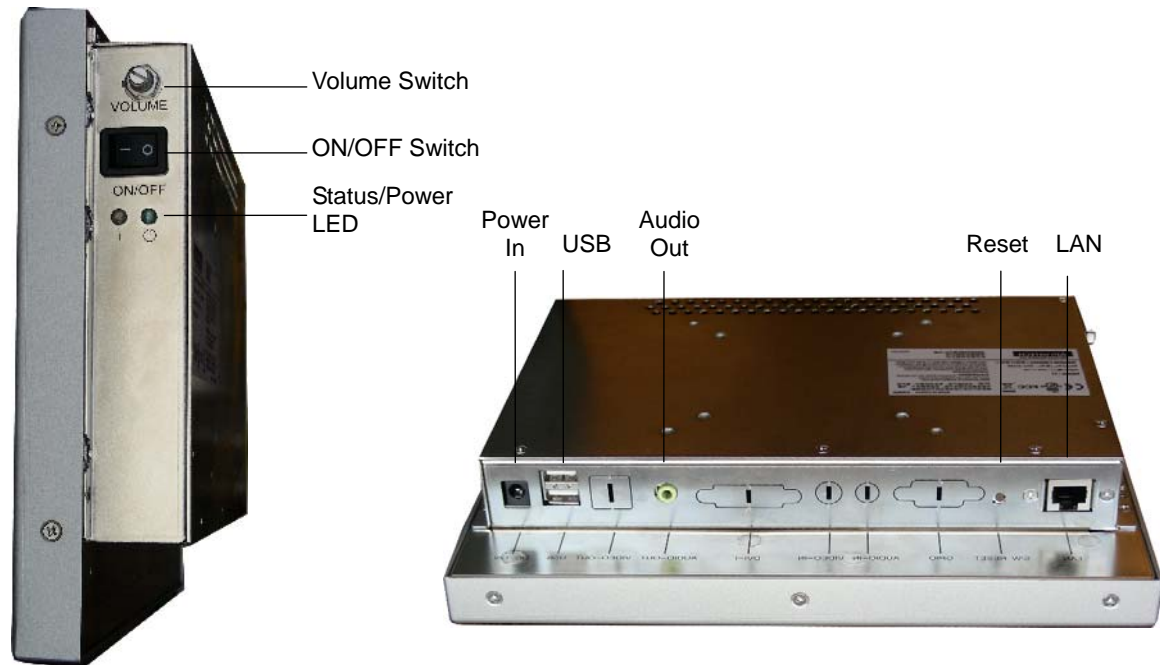


Figure 1-1

## 1.5. Packing List

DSA-5110D package contains the following items:

	Items	Qty
1.	DSA-5110D digital signage display	1
2.	Switching power adaptor (Input AC 110-240V; Output DC 12V) (without AC power cord)	1

## Chapter 2. Preparations and Setting Up

### 2.1. Connect the Power

1. Connect the power adapter cord with the AC power cord.
2. Connect the power adapter cable to the unit's DC 12V power port. See **Figure 2-1**.



Figure 2-1

3. Switch on DSA-5110D unit. The LCD will be lit on after few seconds.

**Warning:**

Only use the power adapter packaged with DSA-5110D. Using a different power adapter could damage the device.

### 2.2. Installation of DSA Composer and DSA Configurator

You can install the DSA Composer on any Microsoft Windows based server or PC as a management station to provide simple content-display management of the DSA player (Advantech Digital Signage Display). DSA Composer is created primarily for evaluation of the RISC-based Advantech Digital Signage Player. SDK is available for further development of the signage software.

**Note:**

You can download the latest version of DSA Composer / DSA Configurator from the following URL:

<http://www.advantech.com.tw/support/>

Follow the steps below for installation of DSA Composer and DSA Configurator:

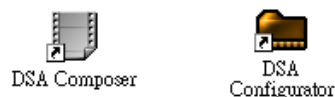
1. Unzip the downloaded DSA Composer file.
2. Double click the "composer\_setup.exe" icon and the setup utility will start with the welcome screen.
3. Click the "Next" button to continue.



4. The setup utility will choose a default folder to install the utility files.
5. Follow the instruction shown on the Setup Wizard.
6. The DSA Composer will then be installed. Select “Yes” to launch player after the installation.
7. Click “Finish” button to exit the setup.



8. Once the installation finishes, you will see the icons of “DSA Composer” and “DSA Configurator” on your desktop as shown below:

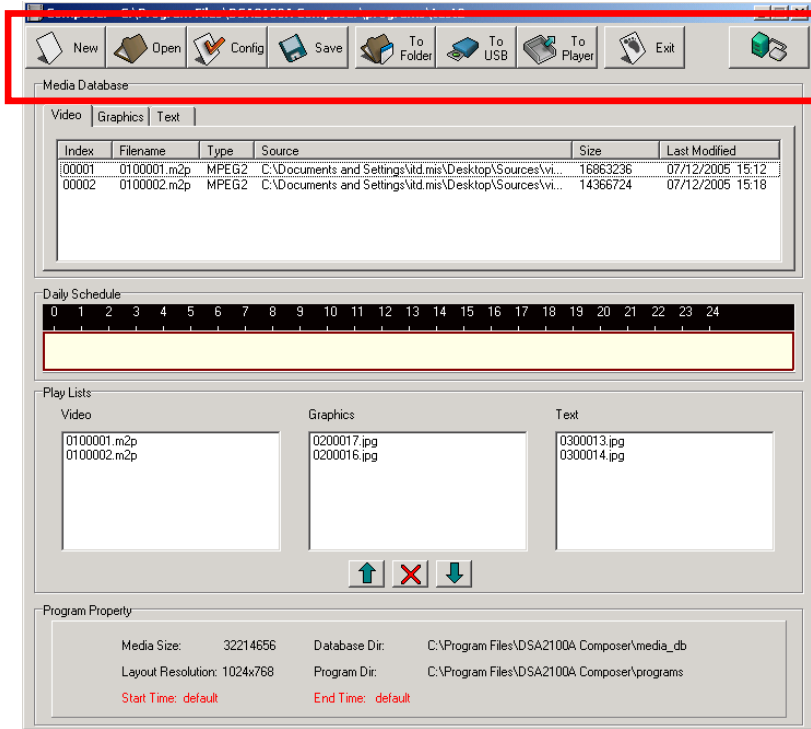


9. Now you can begin configuring the Composer program by continuing to the steps in **Chapter 3**.

# Chapter 3. DSA Composer Utility

## 3.1. Feature-set of DSA Composer

DSA Composer is the content management utility to edit up-to 3 zones of the windowed content presentation within a 24-hour time span. Once you launch the DSA Composer utility, the main menu of the DSA Composer will be shown as the figure below.

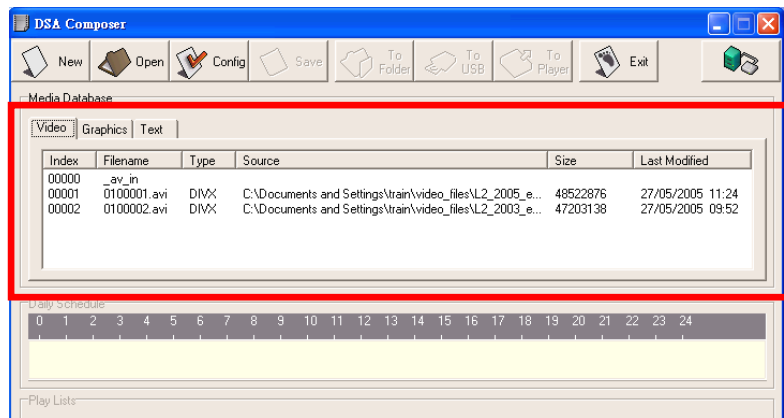


The main features of the DSA Composer include:

Icon	Function
New	Initiate a program
Open	Open an existing program
Config	Edit the configuration
Save	Save the edited program (including media files and play-list) in the local drive
To Folder	Export the edited program to a directory set by the user on a local or remote hard-drive (The player can download the program there per the customized setting.)
To USB	Export an edited program to a USB storage dongle (The program will be loaded to the player automatically when plugging-in the dongle to the player). Please refer to section 3.8.1
To Player	Export an edited program to the player directly through an Ethernet connection (Please note that the user must configure the DSA Composer program to set up this connection before utilizing this feature). Please refer to section 3.8.2
Exit	Exit Composer
Connection Status	Show the real-time connection status of the player

### 3.2. Media Database

The media files imported into the database will be listed here. Select among “Video”, “Graphics”, or “Text” tab to view the associated files in different media formats.



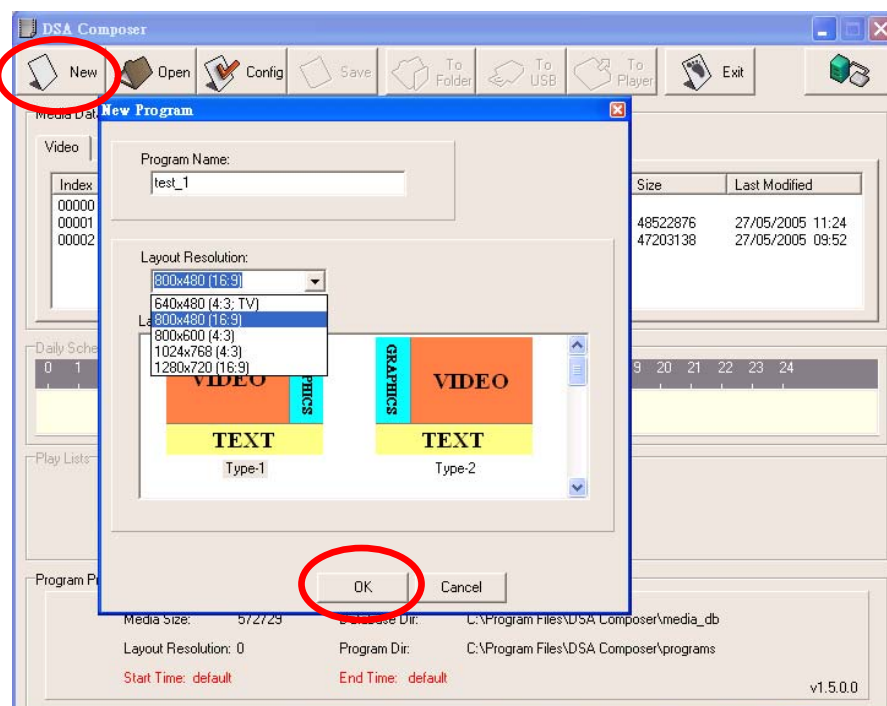
Acceptable formats are:

Content type	Media format
Video	MPEG 1/2/4, DivX (up to DivX 5 version), and VOB
Graphics	.JPG and .BMP
Text	ASCII text (.txt)

The method and process of managing the media contents will be described in details later in **Section 3.5**.

### 3.3. Initiate a New Program

1. Click on the “**New**” button, then a dialog with Project Name and Location editing field will pop up from the screen.
2. Input the new program name.



3. Select resolution: DSA Composer offers “640x480”, “800x600”, “1024x768”, and “1280x720” layout resolution for you to choose from.
4. Select layout template: DSA Composer offers several pre-defined layout for you to choose from. For multi-zone presentation, DSA Composer supports up to 3-zone of windowed content presentation.

**Note:**

Please select the resolution of 800\*480 (16:9) for DSA-5110D Digital Signage player to have prominent performance of the 10.2” TFT LCD screen.

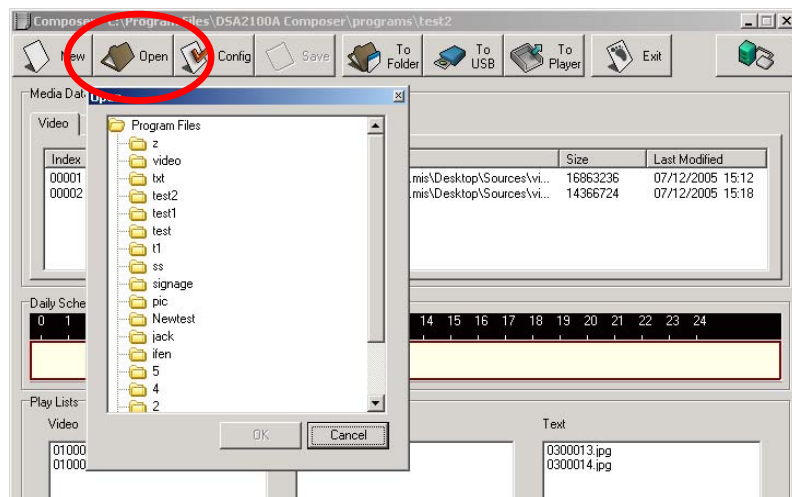
**Note:**

DSA Composer can support full screens of only video or graphics in alternatives to the 3-zoned display mode:

- (1) Choose the “Type 6” of DSA Composer template; or
- (2) Choose the “Type1~4” of DSA Composer template and edit the parameter of coordinates in graphic play-list or video play-list.

### 3.4. Open an Existing Program

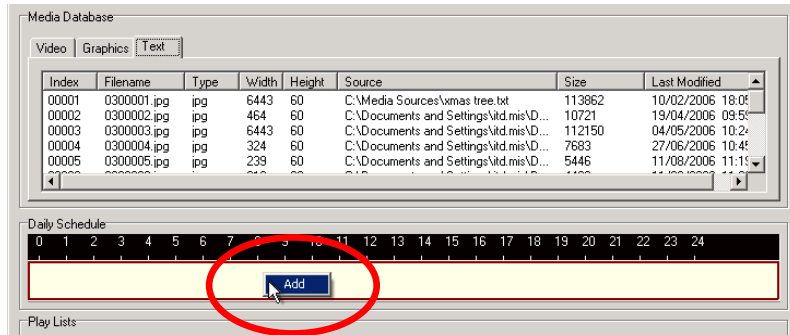
1. Click the “Open” button. A dialog box will pop up from the screen.



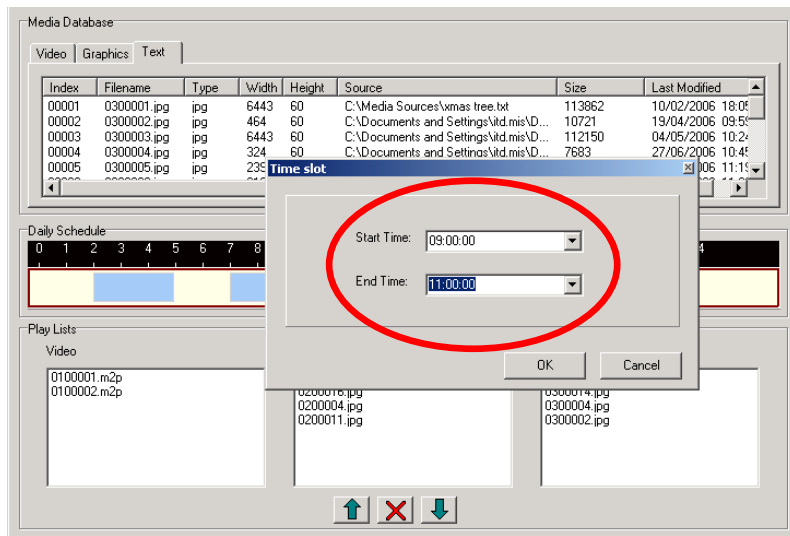
2. Select a pre-edited program then click “OK.” (Please note that the “OK” button will be enabled only when the selected directory is valid.)

### 3.5. Play Schedule Arrangement

1. DSA Composer allows you to set up the project playback schedule based on a 24-hour span. Right click the mouse on the schedule bar and select “Add” to edit the “Daily Schedule.”

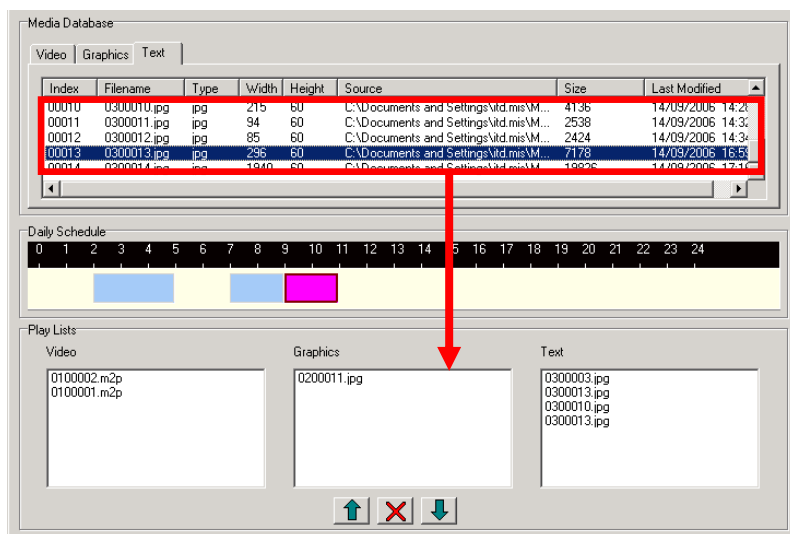


2. Enter the “Start Time” and “End Time” of the “Time Slot”.



3. Once you set up the duration of the schedule, you can drag-and-drop the media files that you would like to display during this period of time into the “Play Lists” field with the process in **Sec. 3.6**.

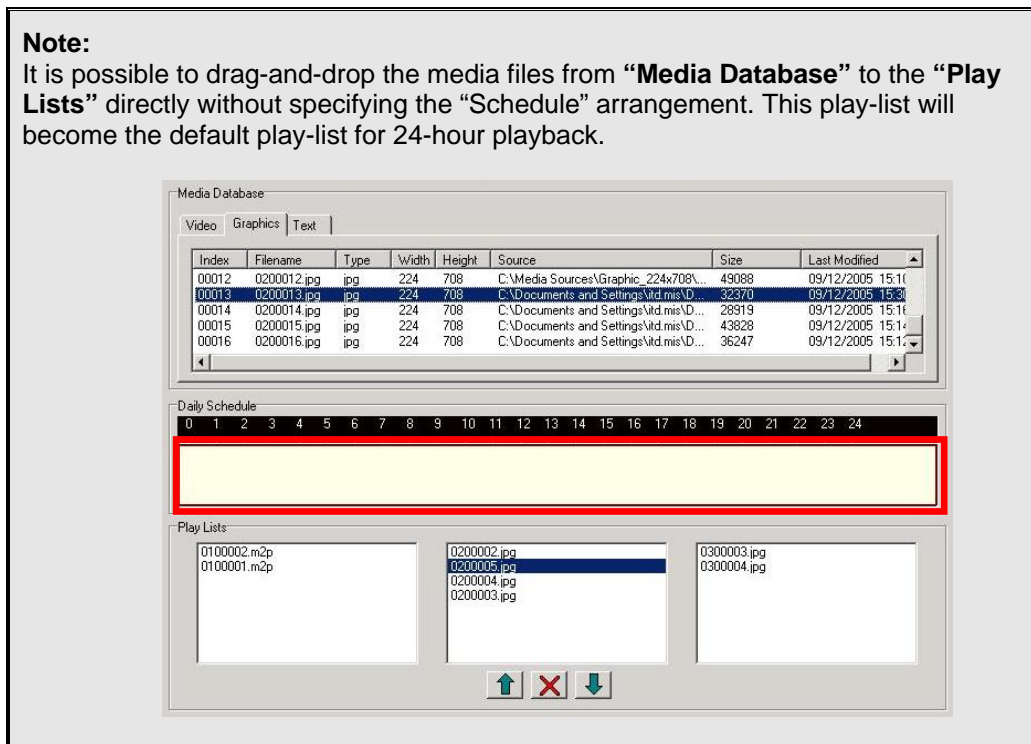
**Note:**  
If you have designated a timeslot for the new display program you have created, please make sure the DSA player has the correct system time through DSA Configurator; see **Sec. 4.4.4** for more details.



- Repeat step 1-4 above to add another timeslot in the “Daily Schedule.”

**Note:**

It is possible to drag-and-drop the media files from “Media Database” to the “Play Lists” directly without specifying the “Schedule” arrangement. This play-list will become the default play-list for 24-hour playback.

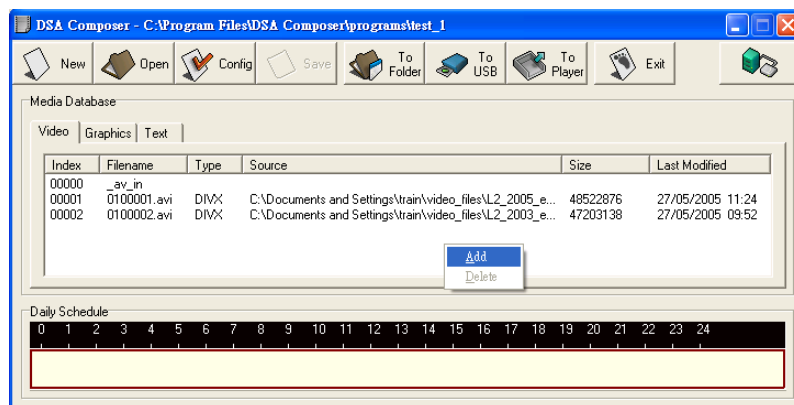


### 3.6. Media Contents Management

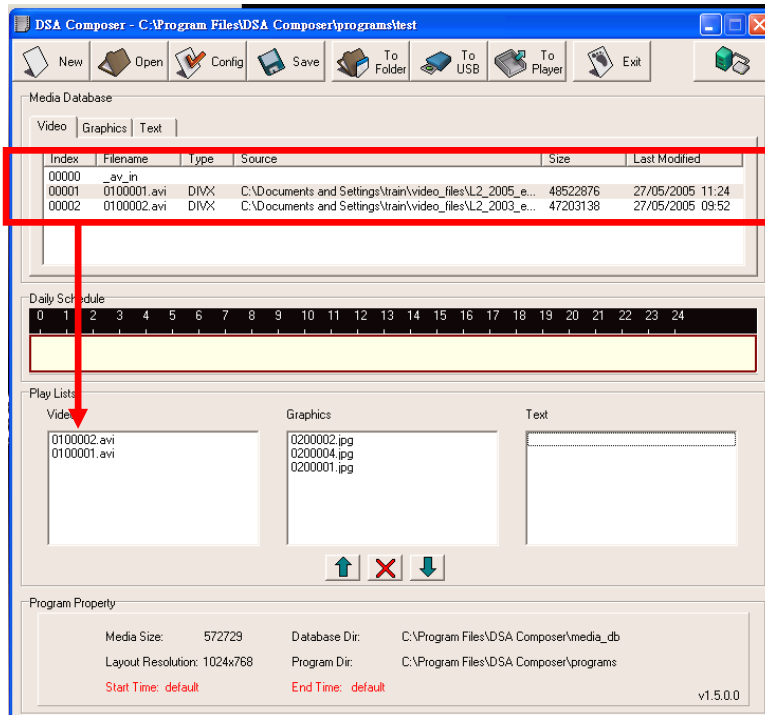
Follow the steps below to add the video, graphic and text media contents into your play-list respectively. Only the media files in the repository with valid format can be accepted.

#### 3.6.1. Video Files

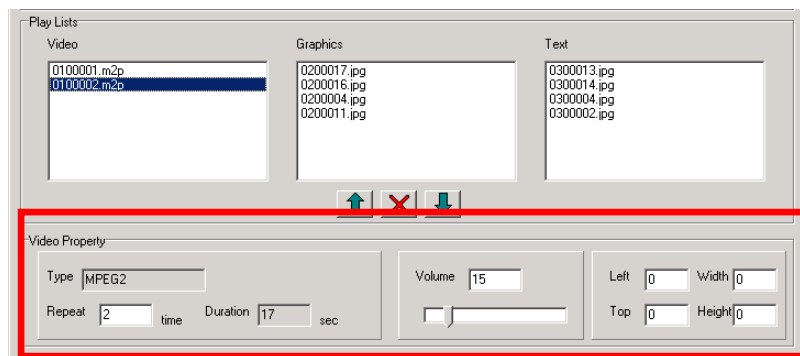
- Add new video file: You can either drag and drop the video files into the video database, or right click on the mouse to bring out the “Add/Delete” pop-up windows as shown below. Select “Add” to insert the video file(s) that you want to include in the media database.



- Drag-and-drop the selected video file(s) from the media database to the video “Play Lists” field on the left.



- Use the “UP” and “DOWN” button to adjust the play sequence of the video files in the play-list. Use to delete the video file if you want to remove it from the play-list.
- Edit the property such as repeat cycle and the playback volume in the “Video Property” field.



**Note:**

The `_av_in` video option is for AV-in supported DSA players only. This `_av_in` option does not apply to DSA-5110D Digital Signage Player.

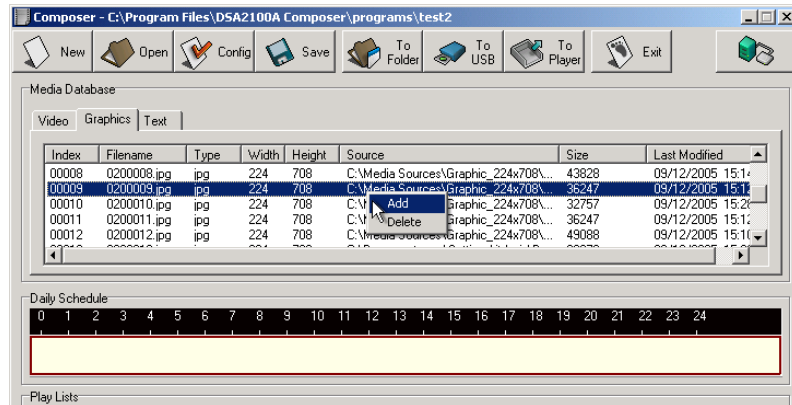
**Note:**




If the “Left,Top,Width,Height” is set to “0,0,0,0”, the video clip resolution will be automatically adjusted to fit the display screen list.

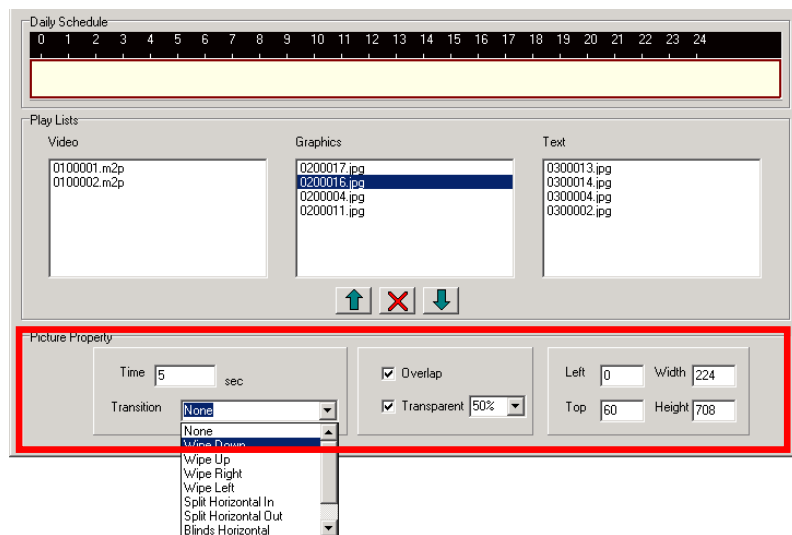
### 3.6.2. Graphic Files

- Add new graphic file: You can either drag and drop the graphic files into the graphic database, or right click on the mouse to bring out the “Add/Delete” pop-up windows as

below. Select “Add” to insert the graphic file(s) that you want to include into media database.

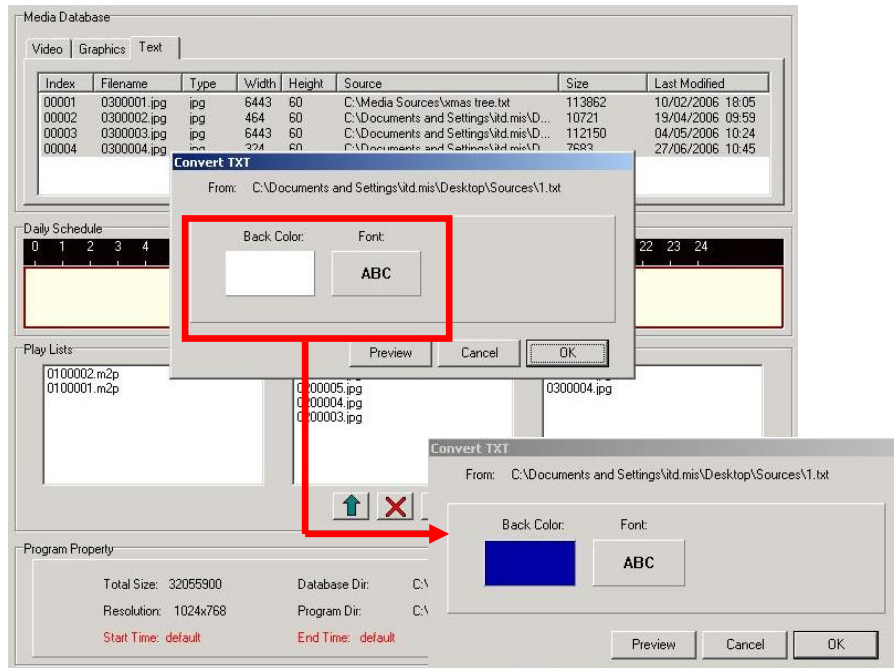





2. Drag-and-drop the selected graphic file(s) from the media database to the graphic “Play Lists” field in the middle.
3. Use the  “UP” and  “DOWN” button to adjust the play sequence of the graphic files in the play-list. Use  to delete the graphic file if you want to remove it from the play-list.
4. Edit the property of the graphic contents
  - (1) Length of display time: input the desired length of display time. Minimal display time is 1 second.
  - (2) Select graphic transition effect: DSA Composer offers 8 different transition effects, i.e. Wipe Down, Wipe Up, Wipe Right, Wipe Left, Split Horizontal In, Split Horizontal Out, Blind Horizontal, Blind Vertical, etc.
  - (3) Select overlap and/or transparency effects.
  - (4) Set the position and size of the graphic frame.

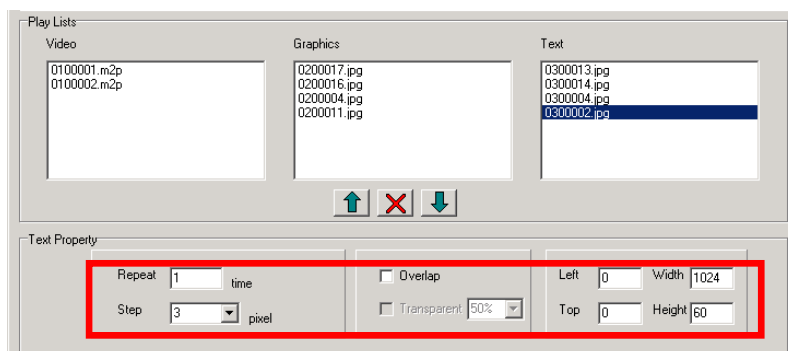


### 3.6.3. Text Files

1. Add new text file: You can either drag and drop the text files into the text database, or right click on the mouse to bring out the “Add/Delete” pop-up windows as below. Select “Add” to insert the text file(s) that you want to include into media database.
2. Once you insert the text file, a dialog box will pop up and allow you to set the background color and font of the text. DSA Composer will convert the .txt file into the .jpg format automatically.



3. Confirm the setting of the background color and font selected by clicking "OK." Click on "Preview" for a look of the text before confirming the change.
4. Drag-and-drop" the selected text file(s) from the media database to the text "Play Lists" field on the right hand side.
5. Use the  "UP" and  "DOWN" button to adjust the play sequence of the text files in the play-list. Use  to delete the text file if you want to remove it from the play-list.

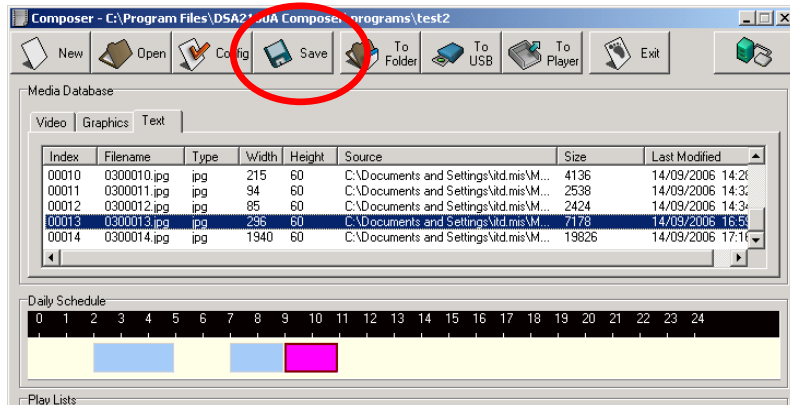


6. Edit property of the text
  - (1) Click on each text file in the play-list and determine the number of times you would like the text to be repeated.
  - (2) Set the speed of the scrolling text by how many pixel the text moved per second. The recommended speed is "4." If you would like the text to be scrolled slower, set the figure to "3." Adjust as necessary.
  - (3) Select overlap and/or transparency effects.
  - (4) Set the position and size of the text bar.

### 3.7. Save Program

You can save the edited program to the default directories in the local drive. This action will not modify the loaded program in the player.

Click the “**Save**” button when you finish editing the play-list. (All the play-list and media files are saved.) Please note that the opened program will be replaced.



### 3.8. Export Program

DSA Composer offers different methods to export a program to the player. When a program is open and/or edited, you can load the program to the player through:

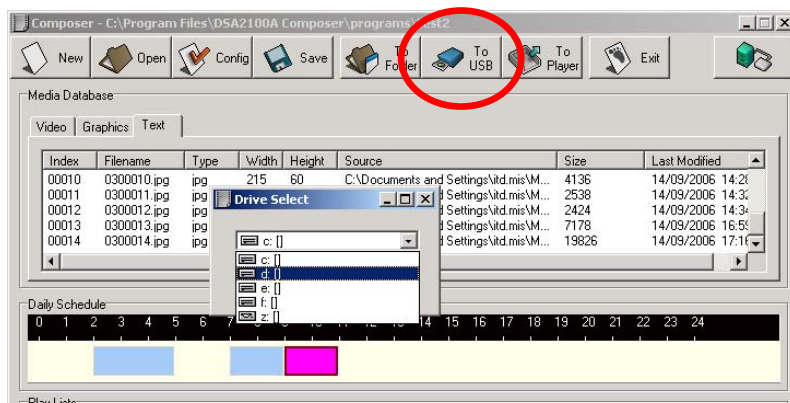
- (1) A USB storage dongle (USB drive), then manually load the program to the player; or
- (2) The default place in the local drive where the player will automatically download the newly modified play-list schedule; or
- (3) A local or remote web server, where the player can download the new play-list schedule with customized setting.

**Note:**

If you have designated a display timeslot to play the contents, the player will be activated to play the newly uploaded content at the next applicable time. For example, if you have allotted the schedule to play your managed content at 8AM, but the time of day is already 10AM, the player will not display the new content until 8AM the next day. Please also note that if there is no specific timeslot assigned in the “Daily Schedule”, the player will be activated immediately after the new program is uploaded.

#### 3.8.1. Export through USB

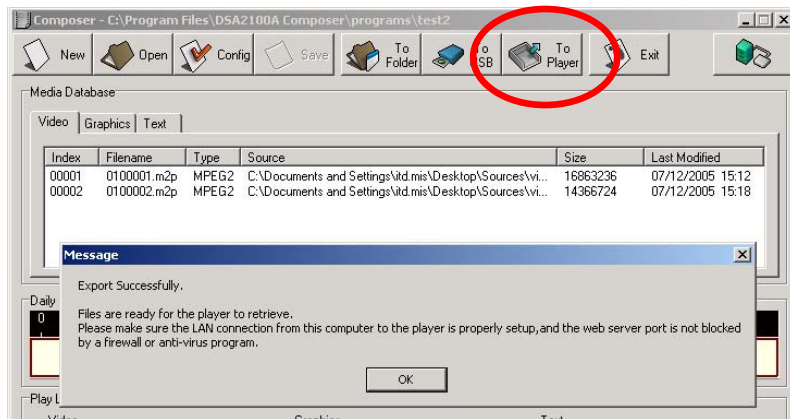
1. Click the “**To USB**” button, and then a dialog with “Drive Select” will pop up from the screen.
2. Choose the correct drive and click “OK”. The media files and play-list will be updated to the USB storage.



3. Plug the USB storage into the DSA player when it's power off, and then turn on the player. It will load the play-list & media files into the internal memory drive.

### 3.8.2. Export to Player Directly

DSA Composer provides a convenient method to export a program to the player via network or direct cable connection. Exporting is accomplished by a built-in tiny browser running in the background and you have to keep the Composer up and running until the DSA Player downloads the program completely. The program will be loaded to the directory in a local drive where the DSA player will download the newly updated play-list automatically based on the player's default setting. The program will be automatically saved before exporting.



#### 3.8.2.1 Export via Direct Cable Connection

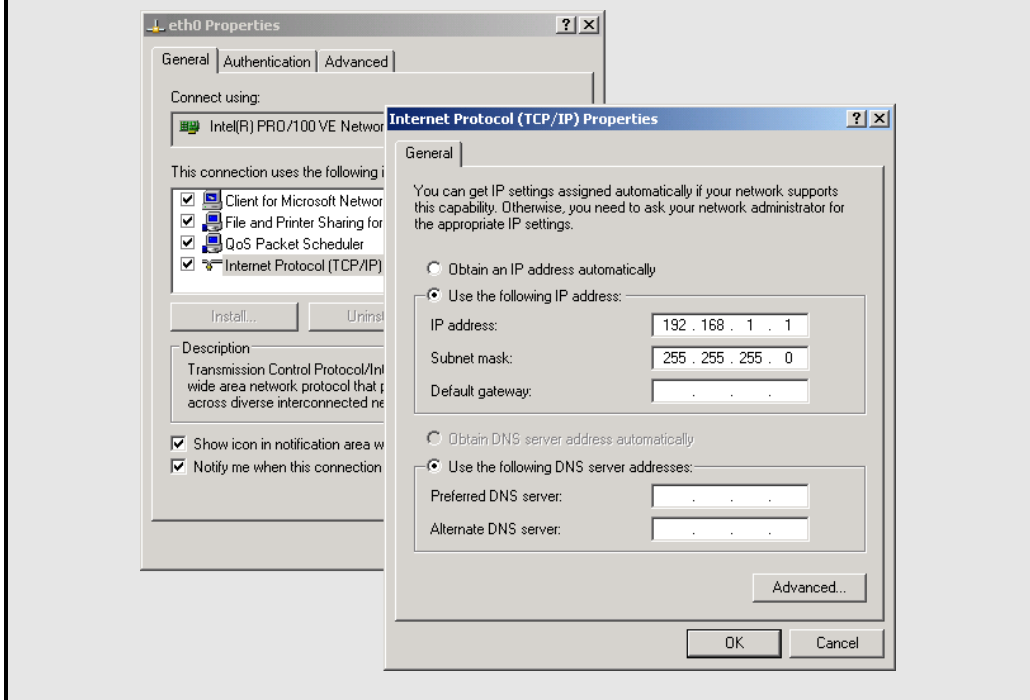
1. Please make sure your PC/Notebook IP address is set to 192.168.1.1 and the Net Mask is 255.255.255.0
2. Connect a "cross over" type of network cable between your PC and the Player
3. Click on "To Player" and you will have a "Export Successfully" message after the upload is complete
4. The Player will start the download within 60 seconds (default)

#### 3.8.2.2 Export via LAN

1. Please make sure your PC/Notebook IP address is set to 192.168.1.1 and the Net Mask is 255.255.255.0
2. Connect your PC to the network.
3. Click on "To Player" and you will have a "Export Successfully" message after the upload is complete
4. The Player will start the download within 60 seconds (default)

**Note:**

Please make sure you have set your PC/Notebook IP address as 192.168.1.1 and the Net Mask as 255.255.255.0 in advance.

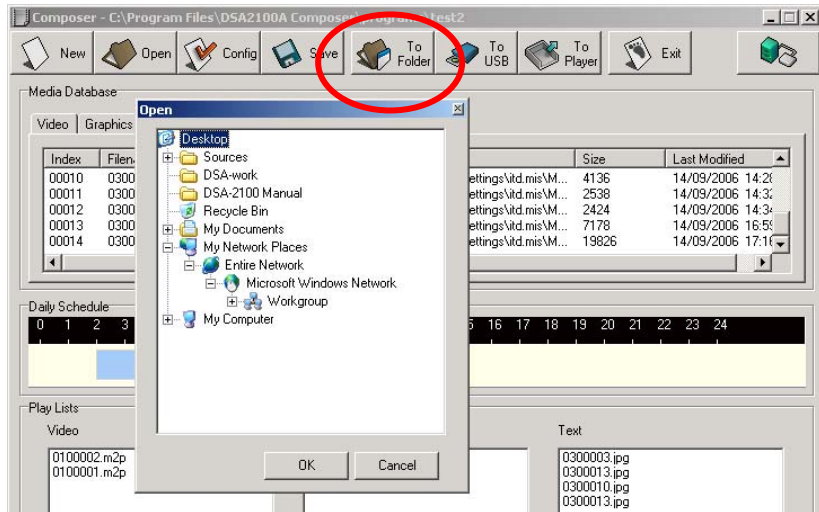


### 3.8.2.3 Export via Corporate LAN

1. Please consult with your Network/System Administrator to get the correct network information and configure the DSA player accordingly. (please reference Sec. 4.4.1)
2. Connect your PC to the network
3. Click on To player and you will have a “Export Successfully” message after the upload is complete
4. The Player will start the download within 60 seconds (default)

### 3.8.3. Export to Player through Web Server

Click the “To Folder” button to save the program to a chosen designation where the DSA player will download the program via a local or remote web server. (All the play-list and media files are saved.) The player will download the program from it based on the setting with the DSA Configurator. (See **Chapter 4**. for more information)



**Note:**

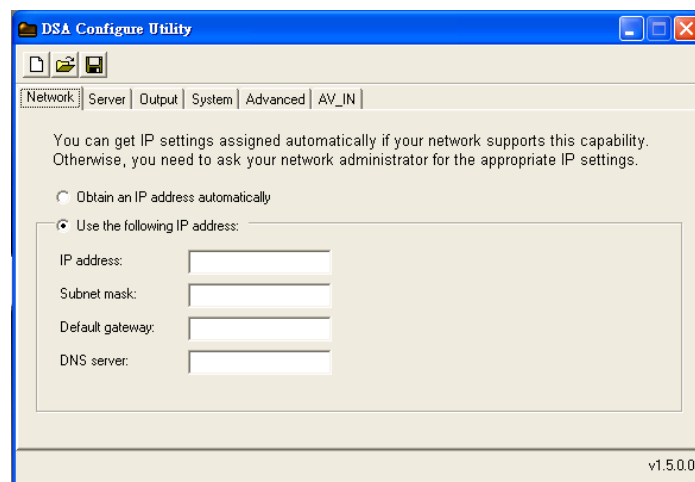
Please make sure the web server is in the same subnet with the DSA player, so the DSA player can download the program correctly. For example, the default setting of the DSA player is as IP address: 192.168.1.100 and the Net Mask: 255.255.255.0, then the IP address of the web server needs to be 192.168.1.x (x could be any number between 1 and 254, except 100.)

# Chapter 4. DSA Configurator Utility

## 4.1. DSA Configurator Utility Main Menu

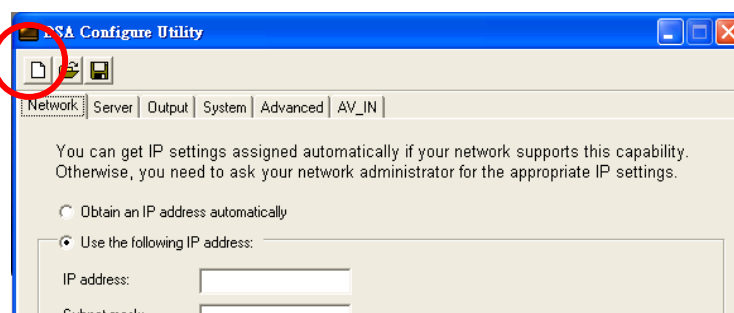
The DSA Configurator is the utility with which you can change and edit the configuration setting of the DSA player. A default configuration setting has already been loaded in the player.

Use the tool bar on top of the DSA Configurator window to create, open and save the configuration file.



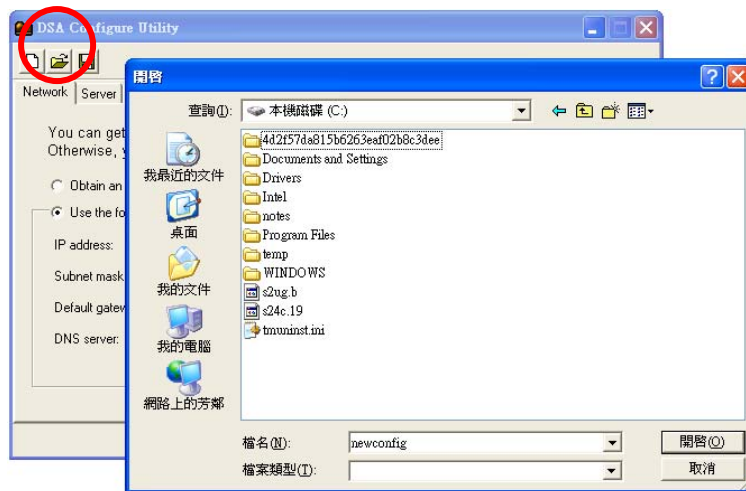
## 4.2. Create New Configuration

1. Click the "New File" button in the tool bar to initialize configuration value.



## 4.3. Open Existing Configuration

1. Click "Open File" in the menu bar; the "Open/New file" dialog will pop up from the screen.



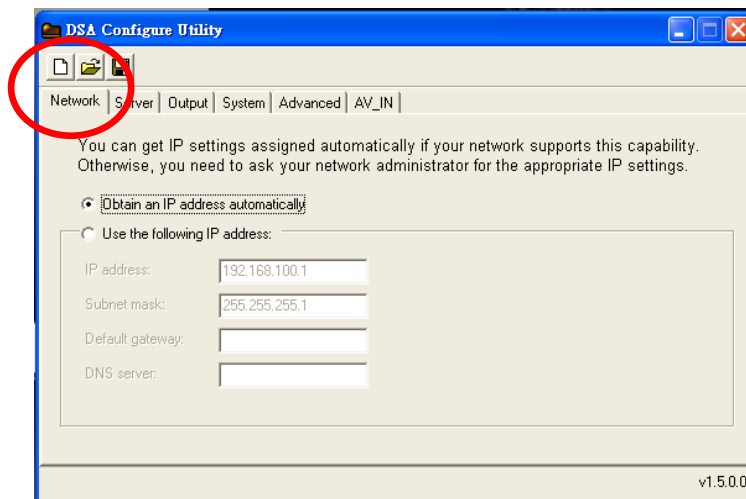
2. Select your specific DSA configuration file then click "OK."
3. DSA Configure will display default values of the selected configuration file.

## 4.4. Edit Configuration

Enter each field in every tab of DSA Configuration to edit settings on Network, Server, Output, System and Advanced settings for the DSA player.

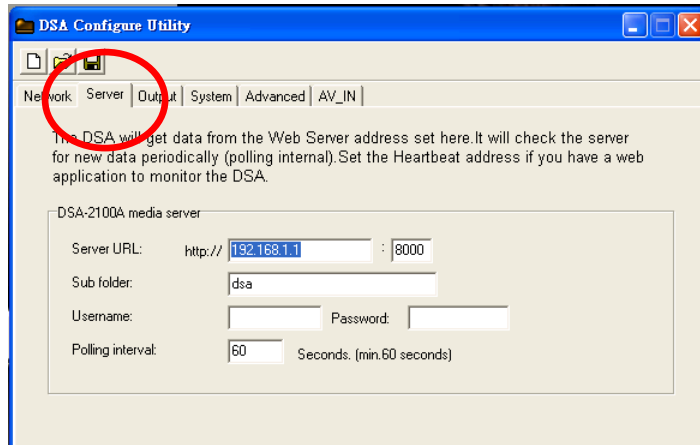
### 4.4.1. Network Items

Under the "Network" tab, for DHCP network, choose "Obtain an IP address automatically"; for Static IP address network, enter the pre-defined network settings for the signage player (Please consult your network administrator for detail network information).



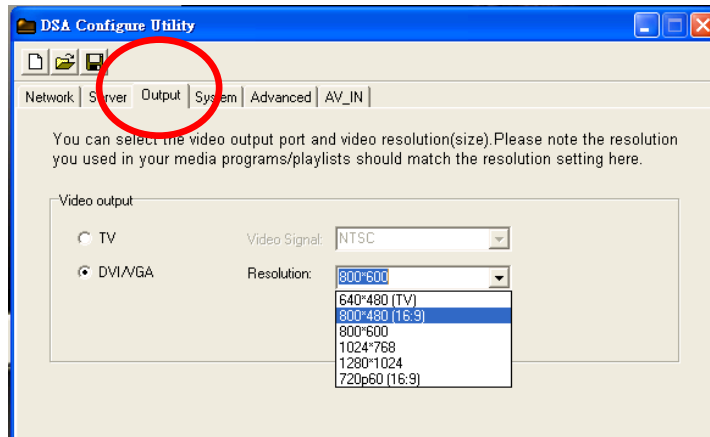
### 4.4.2. Server Items

Under the "Server" tab, set the configuration of the media server and the interval for data updating.



#### 4.4.3. Output Items

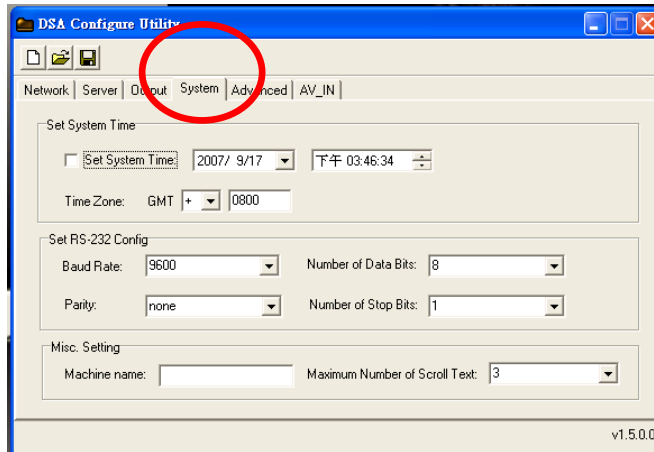
DSA-5110D is an integrated digital signage display with a build-in LCD. The resolution of the LCD is fixed by default configuration. Therefore, the selection of output resolution will not affect the performance of DSA-5110D digital signage player..



**Note:**  
Please do not make any selection of the Video output for DSA-5110D.

#### 4.4.4. System Items

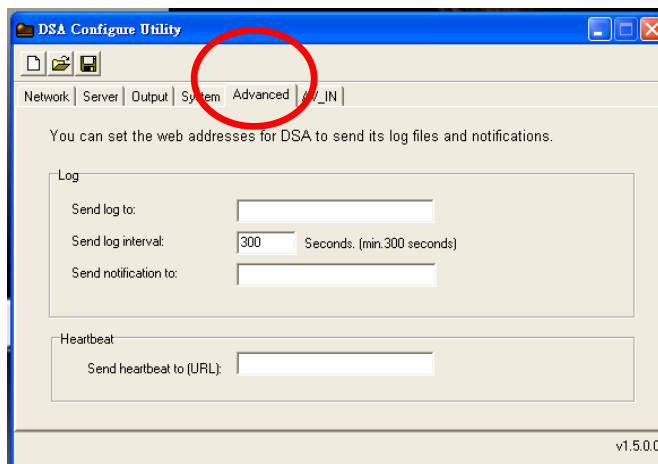
Click on the "System" tab to set the system time and the RS-232 Configuration.



**Note:**  
RS-232 is an optional output port which is not included in standard DSA-5110D series.

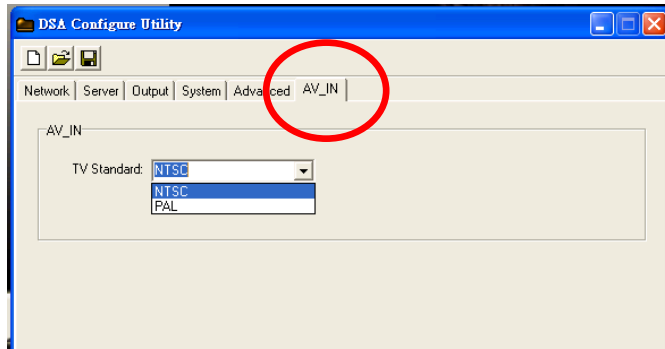
#### 4.4.5. Advanced Items

1. You may select “Enable log uploading” and enter the uploading server URL.
2. For exception handling, you may select “Send notification to server” and enter a designated server to send the notifications.
3. Heartbeat refers to the time interval for data updating proactively from media server. You can enter a designated server to send the heartbeat.



#### 4.4.6. AV-IN Items

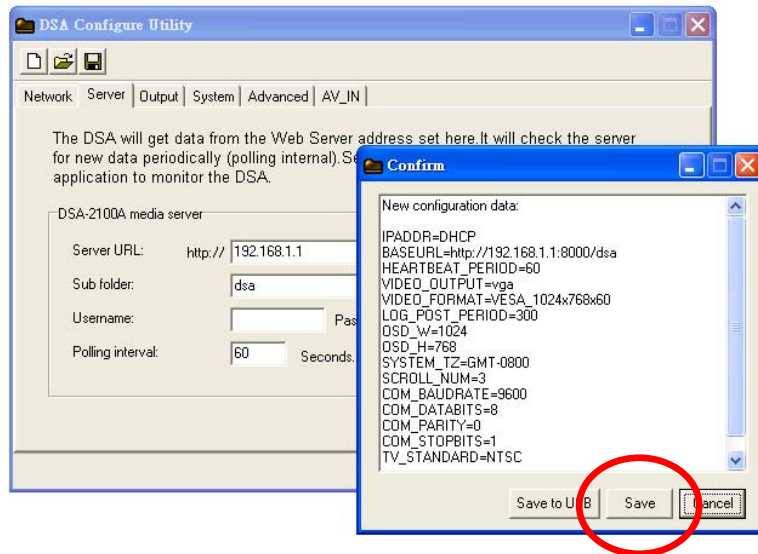
DSA-5110D is an integrated digital signage display with a build-in LCD. Therefore, this AV-IN signal selection does not affect the performance of DSA-5110D player..



**Note:**  
Please do not make any selection at this AV\_IN section for DSA-5110D.

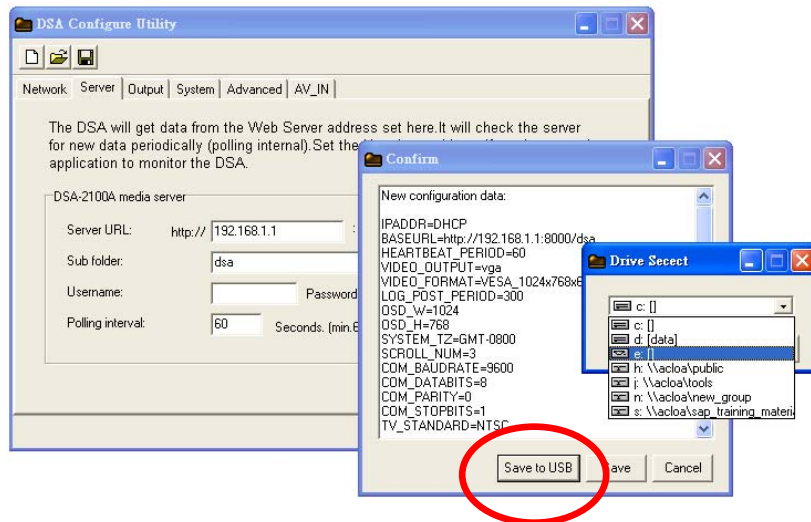
## 4.5. Save Edited Configuration

1. Click "Save" on the tool bar located in the "DSA Configure" screen; the "Confirm" dialog box will pop up a log containing the change you have made.
2. Click the "Save" button in the "Confirm" dialog to save the configuration locally or go to the steps in **Section 4.6** to export the configuration to the DSA player.



## 4.6. Export Configuration to Player

1. Click "Save to USB" in the "Confirm" dialog.
2. Select the USB storage device and click "Save" to begin exporting.



3. Plug the USB storage into the DSA media player when it's power off, and then turn on the player. It will download the new configuration setting automatically.
4. Reboot the DSA player again to activate the new configuration.