



General Guide for
Design and
Content Creation

CONTENTS

INTRODUCTION	3
Workflow	4
Content Design	4
File format test and approval	4
Storing media	4
Distribution	4
Image Format	5
Image Specifications	5
Image playback	5
Image transitions	6
Image slideshow with audio	6
Audio Format	7
Audio Specifications	7
Audio playback	7
Video Specifications	8
Video Format	8
Video orientation	9
Graphics and Animations	9
Video duration	10
Video playback	10
Recommendations for optimal video quality	10

INTRODUCTION

dBs Digital Banner Stand can playback audio, images and video. This document is a guide for the design and content creation specifically for dBs, and it is focused on the design requirements of this platform.

This guide is mainly for use by designers, dBs is a different platform unlike others like television, print and web. Additional technical information is presented for a better understanding.



Workflow

Content Design

dBs requires specific file types to playback images, videos and audio files correctly. When designing content keep in mind the specifications for each file type presented in this document.

File format test and approval

We recommend that you perform at least one test before distributing your files. Once you have performed the test and verified that plays back correctly, all you have to do is copy the files to a digital storage media and insert it in the dBs.

Storing media

The content created can be stored in diverse devices such as USB, SD Cards, Memory Sticks, Compact Flash and xD cards.

Distribution

When content is approved and stored in a memory device, just let the dBs playback the media files. For more information on the DBS operation see the user manual.

Image Format

Image Specifications

The image file format that the dBs handles is JPEG and the files should have the “.jpg” extension. For optimal playback and image quality, the recommended image size is 768 x 1366 pixels with a resolution of 72dpi. However the display supports images up to 12 megapixels or 4000 x 300 pixels with a 72dpi resolution. The image design for the dBs screen must be created for a vertical format of 768 x 1366 pixels.

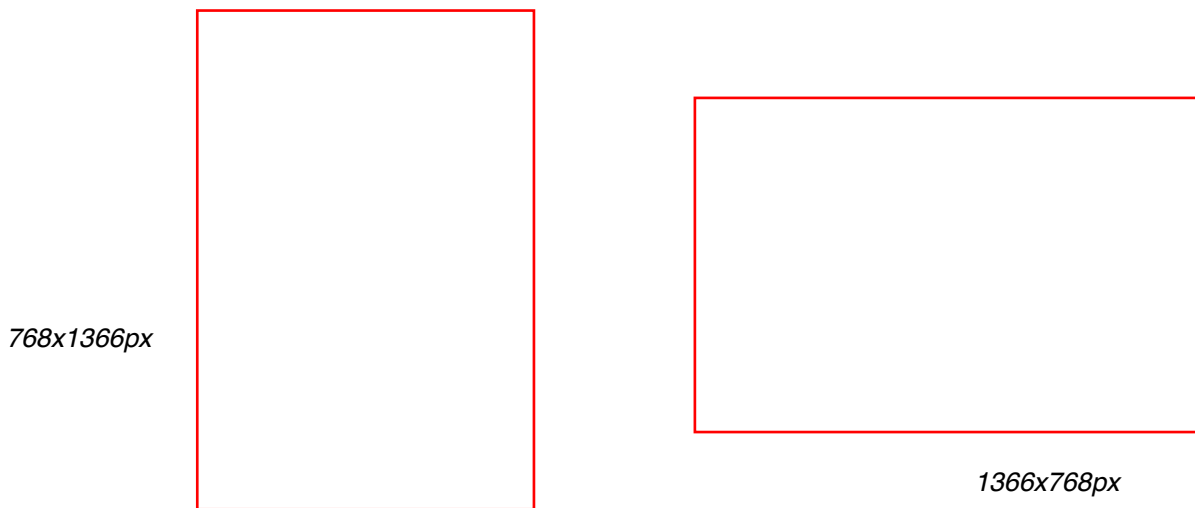


Image playback

dBs automatically plays images and audio¹ at the same time in presentation mode, regardless of the file location. The order in which images and audio are played is strictly alphabetical. Therefore, it is recommended to create a folder for image files and another for audio files, then name the files in a progressive sequence according to the desired sorting such as *001_~.jpg*, *002_~.jpg*, *003_~.jpg* and so on.

¹ Audio files must be in mp3 format and in the same memory device

If you want, you can configure the dBs to randomly play all the images inside a memory device. You can also configure the dBs to change the image onscreen duration². When all images in the memory are played, the dBs automatically starts repeating the playback sequence³.

***NOTE:** The audio is not linked to the images at any time, it is simply played in order, one track after another. If you want to make a presentation with audio and images synchronized together, you must use a video format.*

Image transitions

You can setup the dBs⁴ to generate transitions between images in order to make a dynamic presentation. Transitions can be: normal or without transition, random, dissolve, curtain, open door or crossed curtain.

The image size affects the transition speed, the larger the image the slower the transitions will be. We recommend creating the content 768 x 1366 pixels with 72 dpi resolution, which will ensure excellent image quality and smooth transitions.

Image slideshow with audio

The dBs will automatically play the audio files from the memory device that contains the images, if you don't want to have audio in your presentation, you can delete audio files from the device memory or just lower the volume of dBs when necessary. For more information about audio specifications see the next section.

² The image onscreen duration may be fast, normal or slow.

³ If the random playback option is turned on, the image playback sequence may change.

⁴ To see the complete dBs setup instructions, see the user guide

Audio Format

Audio Specifications

Audio files can be used as background music, for narrations and voiceovers, or can be played separately before a presentation through the music menu⁵.

The audio format must be **MP3**, maximum **48kHz, 16bit and 256kbps**.

Audio playback

The audio is played in a strictly alphabetical order. To play it during a presentation it must be located in the same memory device. It is recommended to have a folder labeled "music" where you can put all the songs you want.

If you want to have control over the audio playback order during the slideshow, you must establish a file naming convention that allows you to organize the audio files alphabetically, for example *001_~.mp3*, *002_~.mp3*, *003_~.mp3* and so on. When dBs finishes playing all audio files, it will automatically repeat playback in order. You can configure dBs to let you repeat a single audio file indefinitely or just stop playback once all the audio is played.

⁵ See user guide for more information about the music menu

Video Specifications

Videos must meet certain requirements in order to be played correctly by the dBs. While image playback is shown in high definition, video files must have a standard NTSC Widescreen resolution⁶.

Video Format

dBs will play videos in MPEG-2 format. The following table shows the format specifications in detail:

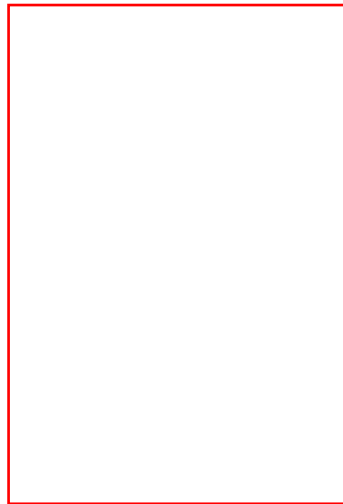
Codec MPEG-2 - Optimized for dBs	
Container or wrapper	.mpg o .mpeg
Video system	NTSC
Frame Size	720 x 480
Frames per second	29.97
Aspect ratio	16:9
Pixel aspect ratio	1.2111
Field dominance	Progressive
Video bitrate	between 6.0 mbps and 12 mbps.
Bitrate encoding	CBR
GOP structure	IBP (closed)
GOP size	7 or Automatic
Video orientation	Horizontal
Audio format	MPEG-1, Audio Layer II
Audio settings	Stereo/48kHz/16Bits/256kbps

⁶ NTSC Widescreen is a standard for widescreen video and it is equal to 720 x 480 pixels, 29.97 frames per second and a pixel aspect ratio or PAR of 1.2111

Video orientation

Video intended for the dBs must have an horizontal orientation. While most of the design must be created based on the vertical format, the video must be converted or exported with an horizontal orientation, so people can see the content as it should be.

480x872px (0°)
Design



720x480px - 16:9 (90°)
Distribution



Graphics and Animations

For videos with detailed graphics, vector images and animations, it is recommended to start the design with a vertical size of 480 x 872 pixels⁷ with square pixels⁸. Animation and compositing programs like Adobe After Effects, allow you to easily create a project with these specifications, remember to export the videos with a horizontal orientation for distribution⁹. It is also recommended to avoid interlaced footage¹⁰ at all times, because it can cause pixel distortion on the final video¹¹.

⁷ 480 x 872 pixels is the vertical format of 872 x 480, which is the equivalent of 720 x 480 pixels (16:9), in square pixels.

⁸ Square pixels refers to a pixel aspect ratio or PAR equal to zero.

⁹ In Adobe After Effects, you can rotate the sequence 90° and then export it without compression to use it in another editing program or just export it directly to an MPEG-2 format.

¹⁰ Interlaced footage refers to the file dominance in video files

¹¹ See section “Recommendations for optimal video quality” for more recommendations

Video duration

The video duration is linked to the storage capacity of the memory device. However it is recommended to split video files at least once every hour to ensure correct video playback. Also, you can organize many videos in a single folder and dBs automatically will play one by one in alphabetical order.

If you want to reduce the video file size to fit in a memory device with limited capacity, you can reduce the video length or decrease the video bitrate¹².

Video playback

The order in which the videos are played is strictly alphabetical, if you want to organize them you can use a naming convention that allows it, for example: 001_~.mpeg, 002_~.mpeg, 003_~.mpeg, etc. The videos are played one after another and once the last one ends dBs will automatically repeat all of them. You can also setup the dBs to repeat one specific video all the time, or just set the dBs to stop once all videos have been played¹³.

Recommendations for optimal video quality

- Work with NTSC progressive footage when possible¹⁴.
- Editing systems like Final Cut Pro y Adobe Premiere allow you to work in progressive sequences, activate these options¹⁵.
- Avoid large and complex animations that fill the video frame since it could affect video playback quality.
- Video source footage must be of good quality, at least 720 x 480 pixels.
- Better content quality means better final output. Avoid low quality content.
- When exporting for distribution double check that the video file format specifications match the ones in this document.

¹² The video bitrate is linked to the video file size. Higher bitrate means bigger video file size. Video bitrate should not be lower than 6mbps.

¹³ For more information about dBs settings, see the user's manual.

¹⁴ Refers to the video field dominance equal to none.

¹⁵ See the help section in the software documentation for more information