



## Creating Your Own Digital Sign Files

### Quick Facts:

- The Digital Sign displays JPEG images and MPEG Videos
- These JPEG and MPEG files are stored on flash memory cards identical to those used by digital cameras
- A 128Mb flash card can store hundreds of image files
- MPEG videos can contain audio as well
- The JPEG and MPEG files will be played in alphabetical order
- Any other file types on the flash card (not JPEG or MPEG) will be ignored
- Transitions between screens and videos (timing and wipes) are set globally in the Digital Sign and apply to all screens
- You can place consecutive multiple copies of a screen on the flash card to selectively increase the viewing length of certain screens
- The files play in a continuous loop so that after the last file is displayed, it automatically loops back to the first file so the show is continuous.
- The Digital Sign will automatically scale the image as large as possible so it fits on the screen. Because the screen aspect ratio is 4:3, the file size should be in the same aspect ratio in order to fill the screen entirely. For example: image sizes of 400 x 300, 640 x 480, 800 x 600 or 1024 x 768 are all 4:3 aspect ratio.

The Digital Sign can display an endless number of images, animations and full motion video clips. It stores these images and videos on standard flash memory cards identical to those used by digital cameras. In fact, a single 128Mb Flash Memory card will typically hold between 250 to 500 images depending of the complexity and size of each image. Full motion video uses significantly more memory, typically at a rate of about 10Mb per minute.

The image files that the Digital Sign displays are of a specific file format called JPEG. JPEG files are the standard file format for most digital cameras because, through compression, they allow the most data to be stored in the smallest file space.

The video files that the Digital Sign will display are MPEG I and MPEG II files (note that this includes any audio associated with the video as well). Again, this is a file format that most video cameras employ. In addition, if you have full motion video in other formats (including video on DVDs) there are many third party software companies which provide software to convert these other formats to MPEG I or MPEG II files.

The main difference between MPEG I and II is that MPEG II offers significantly better video quality (close to DVD quality) but at a much smaller data compression rate so the files may end up being twice the size of MPEG I. Generally this is not a problem since the typical presentation will consist of many JPEG image files interspersed with 15 to 60 second video clips. Even if a presentation has ten 30 second MPEG II video clips (which is a great deal of video), there will still be room for hundreds of JPEG image slides on a 128Mb flash memory card. Larger cards are readily available from any computer or camera store as well.

## So how do you create your own signs to display on the Digital Sign?

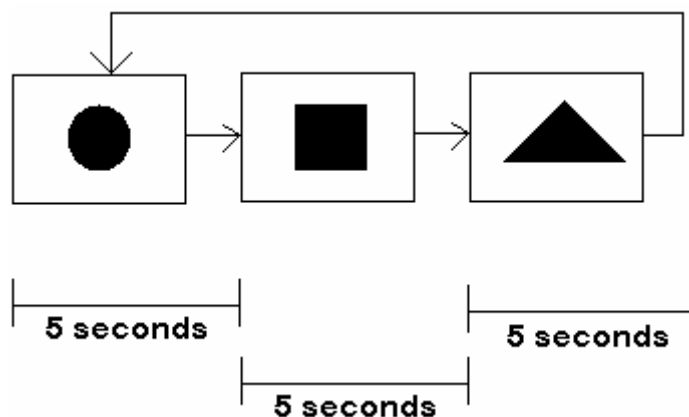
Actually, if you have even the slightest computer knowledge, the process is very simple and easy. It consists of the following steps:

- 1) Create your signs / images on your PC or Mac using ANY image software program that outputs JPEG files (which is virtually all graphics programs or digital cameras)
- 2) Move the JPEG image file to the Digital Sign Flash memory card using the supplied Flash Memory Reader/Writer
- 3) Place the Flash memory card containing the file(s) you created in the Digital Sign Card Slot.
- 4) Turn on the Digital Sign

In seconds, you will see any images you created on the Digital Sign display in dazzling full color glory. If there is only one JPEG image on the flash card, it will be displayed continuously. If there are 2 or more JPEG files on the flash card, they will be displayed in alphabetical order in a continuous loop. If there are other files on the flash card which are not JPEG (images) or MPEG (video/audio), they will be ignored.

For example, let's say that you have 3 sign images: a square, a circle and a triangle. The current filenames for these 3 images are also: Square.jpg, Circle.jpg and Triangle.jpg.

If you simply put these 3 files with the current filenames onto the Digital Sign Flash Memory card by themselves, and then displayed them on the Digital Sign, they would display in the following order:



Note that images are displayed in alphabetical order by their file names:

Circle.jpg  
Square.jpg  
Triangle.jpg

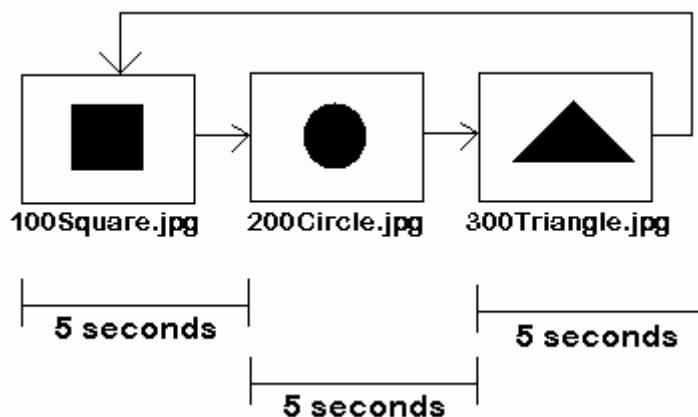
Let's assume that you want to change this order so that the square is displayed first, followed by the circle followed by the triangle. To accomplish this, you would simply rename the files. An easy and flexible way to accomplish this is to add a two or three digit number to the front of the filename. For example, to display the square, followed by the circle, followed by the triangle we could change the filenames to:

100Square.jpg  
200Circle.jpg  
300Triangle.jpg

You could have also accomplished the same thing by naming the files 1Square.jpg, 2Circle.jpg and 3Triangle.jpg but in the future if you wanted to insert a different file between any of these you would have to rename them. By leaving room for additional numbers between the filenames, you have room for insertion of future sign images.

The timing interval between screens (how long each screen displays before moving on to the next screen) and the transitions (how one screen changes to the next screen) are set on the Digital Sign and apply to all screens. For example, if the screen timing interval is set to 5 seconds, each slide will be displayed 5 seconds, and then the next screen (or video) will be displayed. You can selectively double, triple (or more) any particular slide by placing multiple consecutive copies of that slide on the flash memory card.

Let's again consider the example above where you now have the renamed files of a square, circle and triangle on the flash memory card. The order and timing of the screens will be as follows:



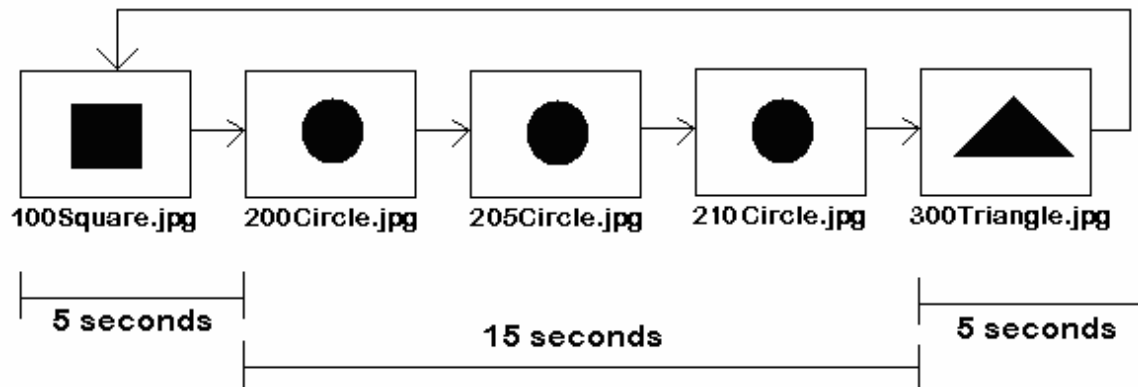
Let's now assume that you would like the circle image to be displayed longer than the other two images. If the timing interval on the Digital Sign is set for 5 seconds and you feel that the circle image needs to be displayed for 15 seconds, it is relatively easy to accomplish this.

You would simply place 2 additional copies of the circle image on the flash media card. You would also name the additional slides so all three identical slides would be played consecutively.

For example, you could copy the circle image twice and use the following filenames:

100Square.jpg  
200Circle.jpg  
205Circle.jpg  
210Circle.jpg  
300Triangle.jpg

When placing these 5 image files on the Digital Sign, the result would still look like 3 images, but the circle image would remain on the screen for 3 times longer than the other two images.



Lets examine the process of creating your own sign image and displaying it on the Digital Sign in more detail.

Step 1 – Creating your sign image.

Before we start, note that the image file you create, must be saved in JPEG format in order to be displayed on the Digital Sign. Fortunately, this is the most popular image file format and is supported by virtually all image software.

The second thing to keep in mind when creating a sign image file is that the Digital Sign will automatically scale the image as large as possible so it fits on the screen. Because the screen aspect ratio is 4:3, the file size should be in the same aspect ratio in order to fill the screen entirely. For example: image sizes of 400 x 300, 640 x 480, 800 x 600 or 1024 x 768 are all 4:3 aspect ratio. To verify this, divide the first number by 4 and then multiply the result by 3, which should give you the second number. Example:  $1024 / 4 = 256$ . Then  $256 \times 3 = 768$ . So a 1024 by 768 size file will fill the entire screen. If the file size is 1024 by 500, there will be black horizontal bands displayed on the top and bottom of the screen because the image will not fill the entire display.

For the purposes of this tutorial, we will look at 2 ways of creating images on a PC. Perhaps one of the easiest ways to create sign images is with Microsoft PowerPoint which is software specifically designed to create slides. If you are familiar with PowerPoint and have access to it on your computer, skip to the section titled: Creating Sign images with Microsoft PowerPoint.

## Creating a sign image file with the PAINT program

If you do not have PowerPoint, one program that is shipped standard with virtually every PC running Microsoft Windows is PAINT. To access the Paint Program on a PC running Windows to the following:

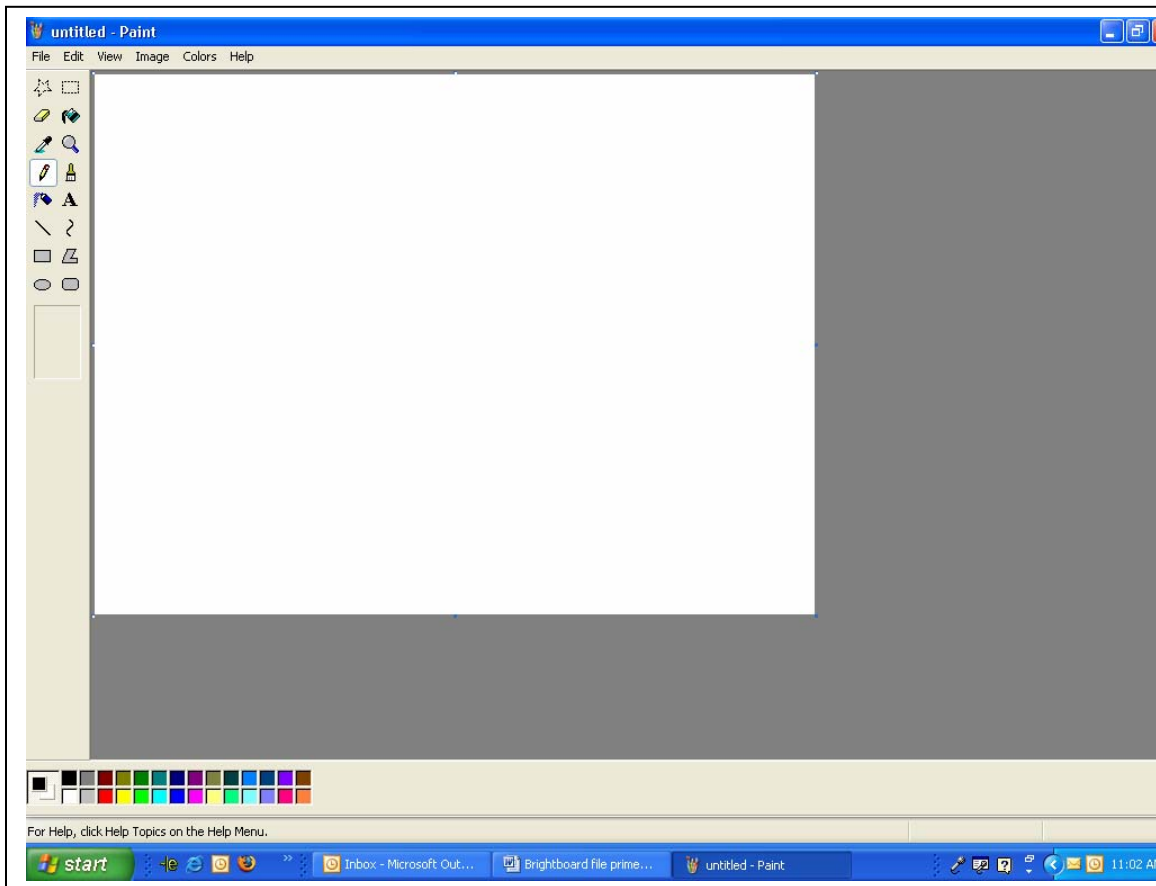
Select “start” in the lower left corner of the windows screen

Select “All Programs”

Select “Accessories”

Select “Paint”

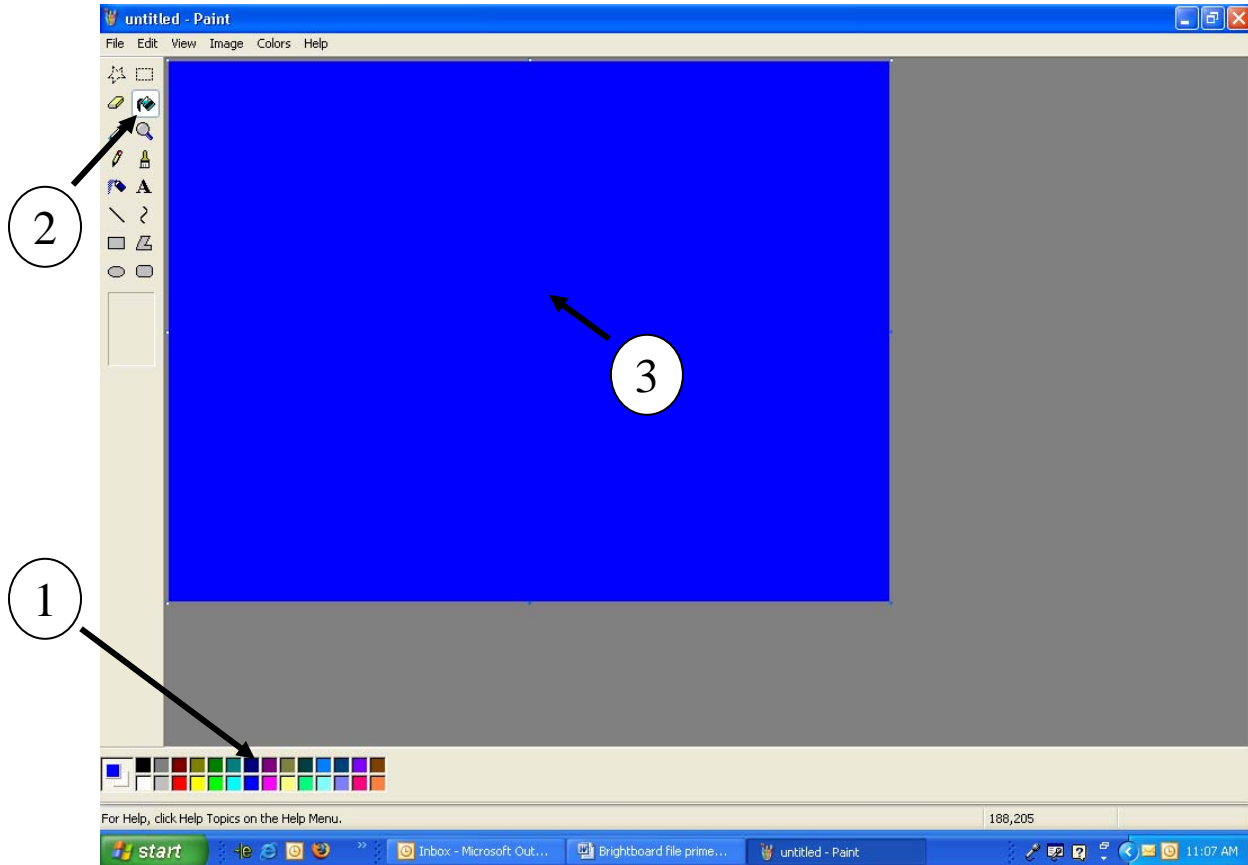
The Paint program will launch and look like this:



The white portion of the image above will be your sign and it is all ready in the correct 4 by 3 aspect ratio.

Next select the color blue from the color pallet ① at the bottom of the screen by left clicking on it with your mouse. Then select the flood fill tool ② from the tool menu on the left side of the screen. The flood fill tool looks like a paint can pouring out paint and is the 2<sup>nd</sup> tool down in the right hand column. If you have correctly selected this tool,

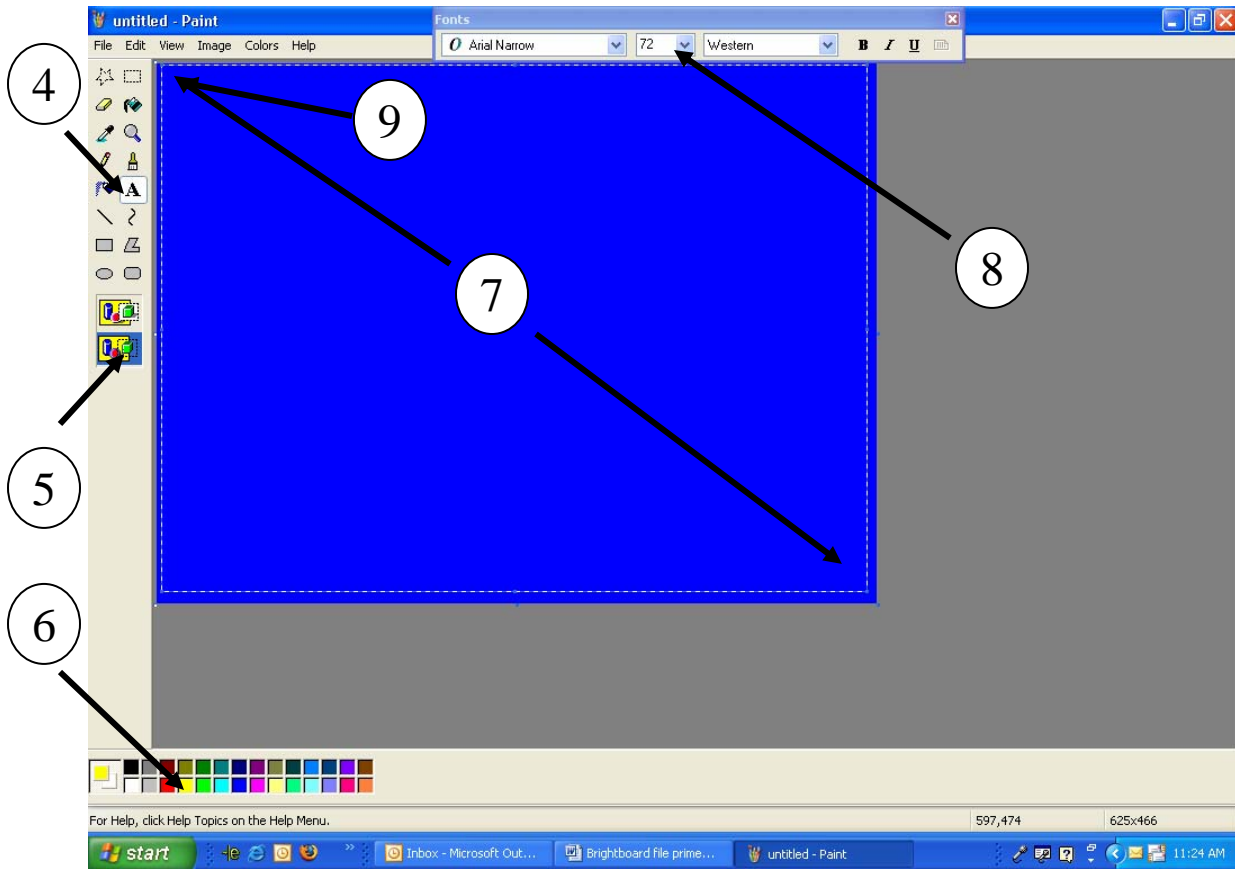
when you move your mouse over to the white “canvas” and click ③, the entire white canvas will be turned blue. (See below)



Next, select the text tool which looks like the letter “A” ④ and is the 5<sup>th</sup> tool down on the right hand column. Then select “Overlay” mode ⑤ by clicking on the very bottom icon in the toolbar on the left hand side which looks like a rectangle with a collection of shapes. Finally, select a color for the text by clicking on the yellow square in the color pallet ⑥ at the bottom of the screen.

When you move your cursor over to the screen it will change to a crosshair. Go to the upper left hand corner ⑦ of the blue area, hold down the left mouse button and drag the resulting rectangle to the lower right corner of the blue area, creating the largest dotted line rectangle you can.

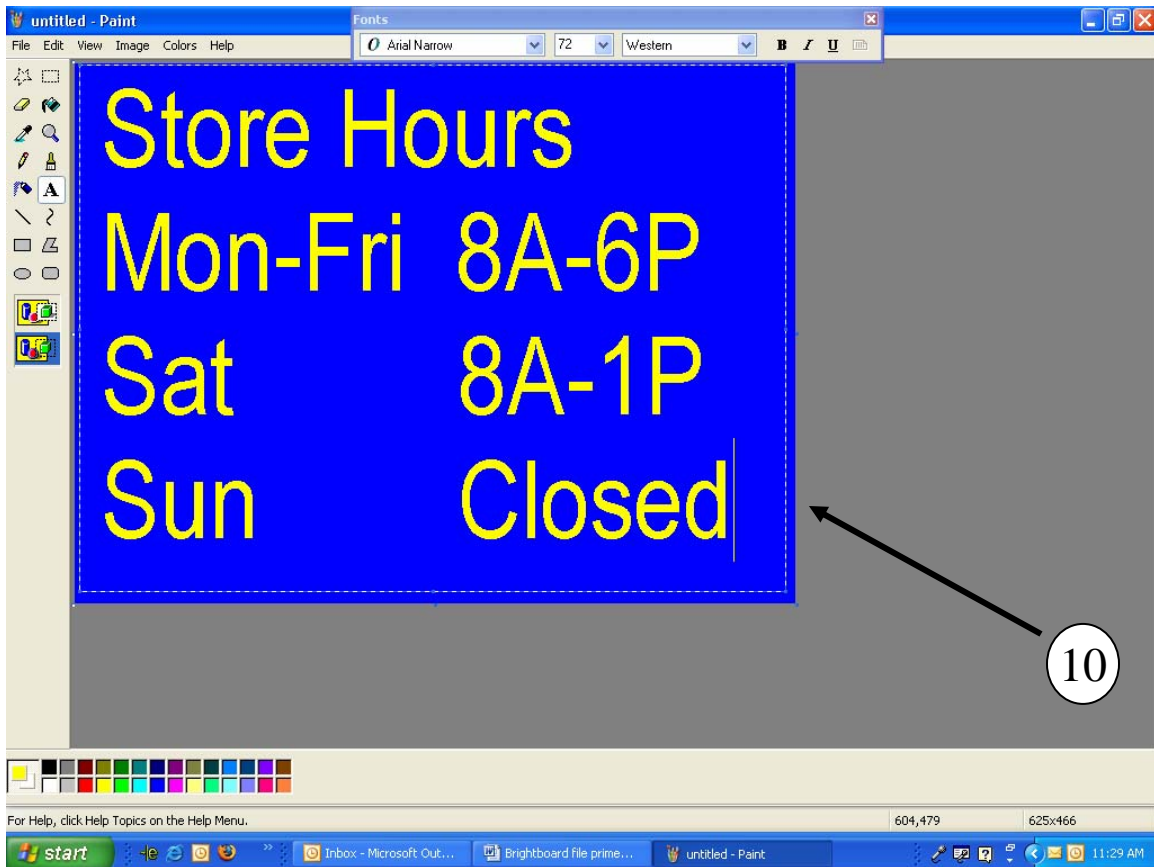
A window labeled Fonts should now appear on the screen. ⑧ Select Arial Narrow, then 72 for the point size and finally Western. The screen should now look like this:



Drag the cursor into the upper left corner of the dotted rectangle in the blue area and press the left mouse button. ④ The type the following:

Store Hours  
Mon-Fri 8A-6P  
Sat 8A-1P  
Sun Closed

The screen will now look like this: ⑩



You are now ready to save your sign file. Although you could save it directly to the Flash memory card (assuming you have the supplied USB reader with the memory card inserted connected to your system) for now we will simply save the file to the computer hard drive in your system and then transfer it to the card later.

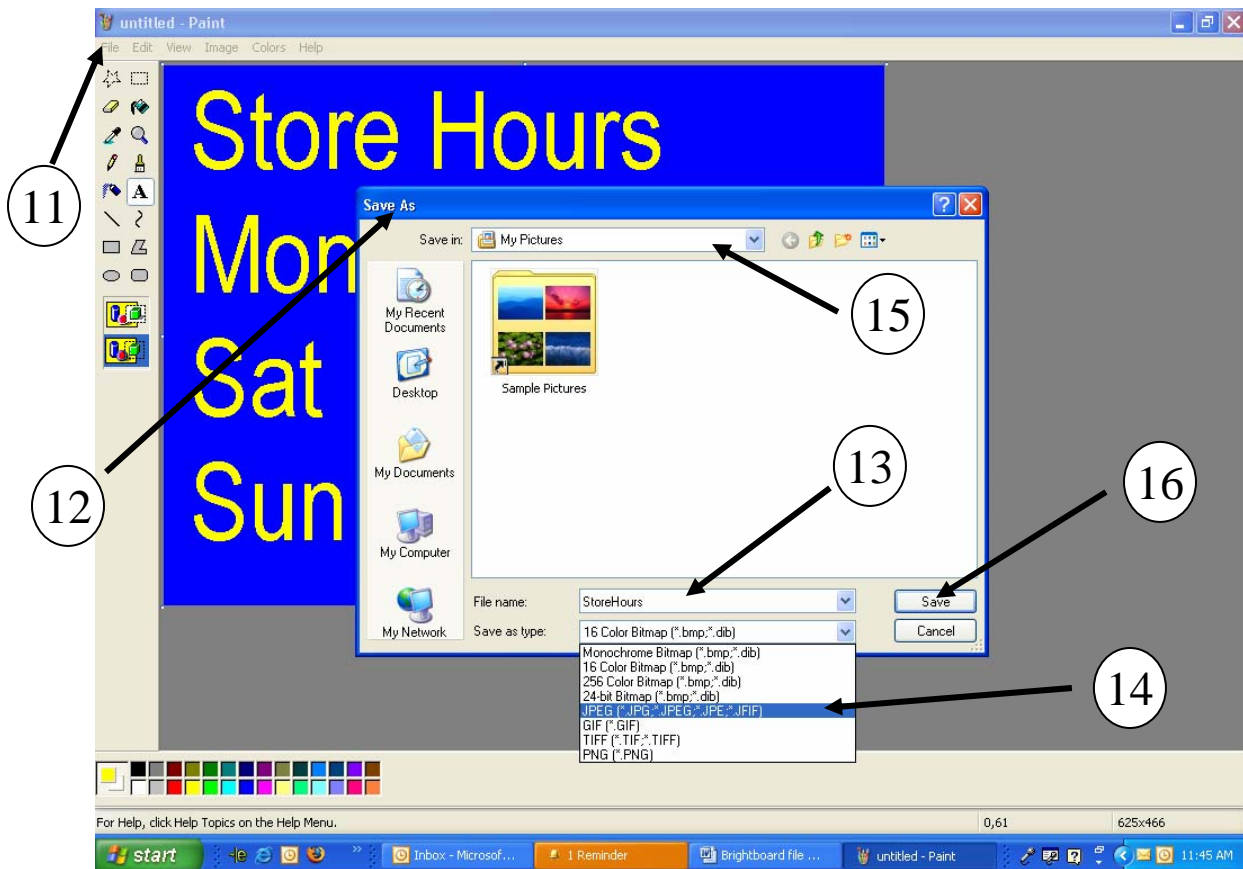
Select “File” in the upper left hand corner of the screen <sup>11</sup>

Select “Save As” <sup>12</sup>

When the “Save As” window appears, Next to File name: type “StoreHours” <sup>13</sup>

Underneath the filename box, click on the “Save as Type” pull down menu and select “JPEG (\*.JPG, \*.JPEG, \*.JPE, \*.JFIF)” <sup>14</sup>

The screen now looks like this:



Ensure that the pull down menu at the top of the screen labeled: “Save in” has the “My Pictures” folder displayed. This is where on your hard drive the sign image file will be saved. If this does not have the “My Pictures” folder displayed, this is not critical but remember the folder name so you can find your picture there later.

(15)

Finally, select the Save button in the lower right corner of the “Save As” window. (16)

Congratulations, you have just created your first Digital Sign Sign File. Next, skip over the following section on creating sign images with PowerPoint and go to the following section titled: Moving the JPEG image file you just created to the Digital Sign Flash memory card using the supplied Flash Memory Reader/Writer

## Creating Sign images with Microsoft PowerPoint.

If you have Microsoft PowerPoint on your computer and have a working knowledge of the program, you know that it is very easy to create a slide. What you may not know is that you can save this slide out as a JPEG image which can then be displayed on the Digital Sign. To demonstrate this, create a slide within PowerPoint. Select a colored background, then select a contrasting color for text and type the following:

Store Hours  
 Mon-Fri 8A-6P  
 Sat 8A-1P  
 Sun Closed

The font should be in a large enough size to fill the screen like 66 point.

Once you have the slide created, save it to the folder “My Pictures” using the following steps.

Select “File” in the upper left hand corner of the screen

Select “Save As”

When the “Save As” window appears, next to File name: type “StoreHours”

Underneath the filename box, click on the “Save as Type” pull down menu and select “JPEG File Interchange Format”

Ensure that the pull down menu at the top of the screen labeled: “Save in” has the “My Pictures” folder displayed. This is where on your hard drive the sign image file will be saved. You can browse to it typically by selecting My Documents then “My Pictures”. If this does not have the “My Pictures” folder displayed, this is not critical but remember the folder name so you can find your picture there later.

Finally, select the Save button in the lower right corner of the “Save As” window.

A Microsoft PowerPoint window will appear and ask:

“Do you want to export every slide in the presentation or only the current slide?”

Select “Current Slide Only”.

Congratulations, you have just created your first Digital Sign Sign File.

## **Moving the JPEG image file you just created to the Digital Sign Flash memory card using the supplied Flash Memory Reader/Writer**

The next step in the process of displaying your new sign image is to move the file you created on your computer to the flash memory card so it can be displayed on the Digital Sign. This again is very easy to do.

The first step in this process is to connect the supplied Digital Sign Flash Memory Card Reader/Writer to the USB port on your computer. This is shown below.



Next, insert the flash card into the appropriate slot in the Digital Sign Flash Memory Card Reader/Writer. Note that the Digital Sign supports several different Flash memory card formats including:

Compact Flash  
IBM Microdrive



When the card is correctly inserted into the Digital Sign Flash Memory Card Reader/Writer, the small LED next to the card type name of the top of the reader/writer unit will light up. **NOTE: If you are having trouble inserting the flash memory card or the small LED next to the card type does not light up, it may be because the card was inserted upside down. Some card readers require the card to be inserted with the label facing downward on some of the card types.**

Next, open up the folder containing the file you just created. We will assume that you stored this in the “My Pictures” folder when you saved the file.

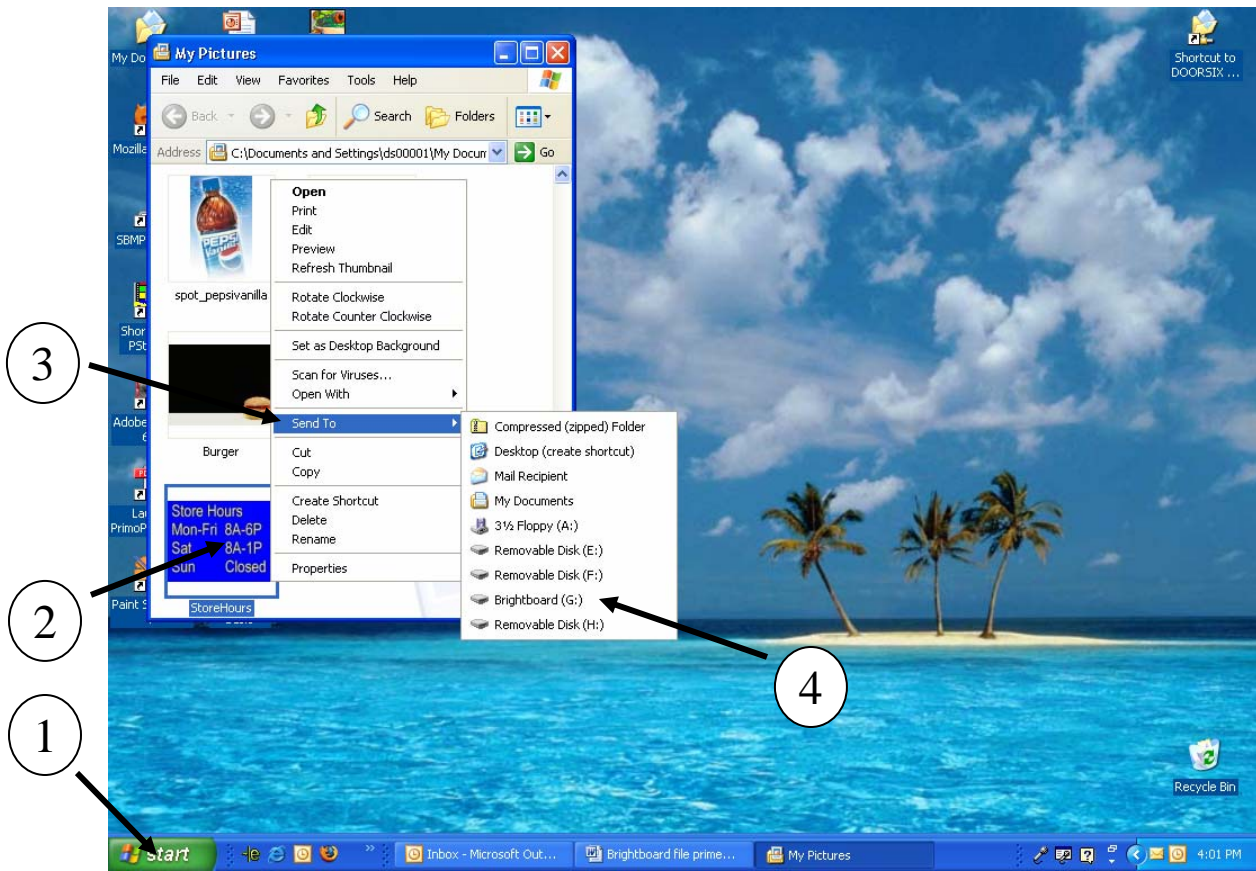
Select “Start” ①

Select “My Pictures” ②

(You should see the file named “StoreHours” although you may have to scroll down to find it.)

Right click on the Store Hours filename and then select “Send To” from the drop down window. ③

The screen should now look like this:



You will see a list of locations folders and devices. The Digital Sign USB Reader/Writer will show up as 4 “Removable Disk” Drives. If the flash memory card which you received with the unit is installed in the Reader/Writer correctly, the name Digital Sign will appear next to one of the drive letters. Move your mouse to select the Device labeled Digital Sign then click to select this device. ④

That’s it, you have successfully moved your file to the Digital Sign Flash Memory card. To verify this and see the contents of the card, you can do the following:

Select “start”

Select “My Computer”

Then double-click on the Digital Sign Drive you just saved the file to.

A window will open and show all the files on the Flash memory card including the “StoreHours” file you just placed there. There may be other files on the card as well. You can delete these files by dragging them to the Recycle Bin on the desktop or just leave them where they are. In order to determine the order that the image and video files on the card will be displayed,:

Select “View” from the top menu bar

Select “Arrange Icons By”

Select “Name”

The image and video files will be arranged in the same order that they would be displayed on the Digital Sign during playback. Let’s say that we want to “StoreHours” sign image to be the first sign displayed. We would simply need to rename the file so that it was alphabetically and numerically before every other file. To do this:

Right Click on the file “StoreHours”

Select “Rename” from the drop down list (Second option from bottom)

Click on the name bar before “StoreHours” and change the name to “000StoreHours” (where 000 are zeros). Then press enter. To reposition the file based on its new file name, follow the same procedure as before:

Select “View”

Select “Arrange Icons By”

Select “Name”

The File “000StoreHours” should now be the first file in your window. You are now ready to view your work on the Digital Sign.

Remove the Flash memory card from the Reader/Writer. (No need to unplug the reader/writer first).

On the Digital Sign unit, open the card reader access door. If the unit is on, you will see a Red LED light on in the triangular window in the front of the reader. If this Red LED is on, you will want to turn the unit off by pressing the “power” button on top of the reader. The RED LED should now be off. You can now safely slide in the memory card.



Slide the flash memory card into the appropriate slot in the Digital Sign card reader. Once the card is fully inserted, press the “power” button again and the following should happen:

- 1) The red Power LED will come back on
- 2) If the card is inserted correctly, an Amber light will illuminate next to the card slots indicating the type of card sensed.
- 3) Within seconds the Digital Sign display will show a screen with the words “initializing” up in the upper left hand corner.
- 4) After another second or two, the Digital Sign will start playing the contents of your memory card, the first of which will be the newly created “000StoreHours” sign.

Wasn't that easy?

Feel free to experiment with different image generation programs to create an endless variety of signs. The only limit is your imagination.



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