Preparing an Image for the Universal Communicator

Revision B



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1. Purpose

This document describes one way to prepare an image for the Universal Communicator for the OLED Smart Switch. It should be understood that there are other techniques available and that this may not be the best approach. Paint is used in this example as it is universally available but this tutorial does not represent a recommendation or endorsement. Other image editing programs can be used. Also other methods can be used. This tutorial covers NKK Switches' OLED Rocker, OLED pushbuttons and displays, LCD 64x32, and LCD 36x24 SmartSwitches but focuses on preparing images for the OLED SmartSwitch.

2. Image Sizes

2.1. There are four image sizes and types for SmartSwitches

- OLED Rocker SmartSwitch
  - Images are 96x64 pixels.
  - Monochrome bitmap file (*.bmp).



- OLED SmartSwitch
  - Images are 64x48 pixels.
  - 24 bitmap files (*.bmp).



- LCD 64x32 SmartSwitch
  - Images are 64x32 pixels.
  - Monochrome bitmap file (*.bmp).



- LCD 36x24 SmartSwitch
  - Images are 36x24 pixels.
  - Monochrome bitmap file (*.bmp).



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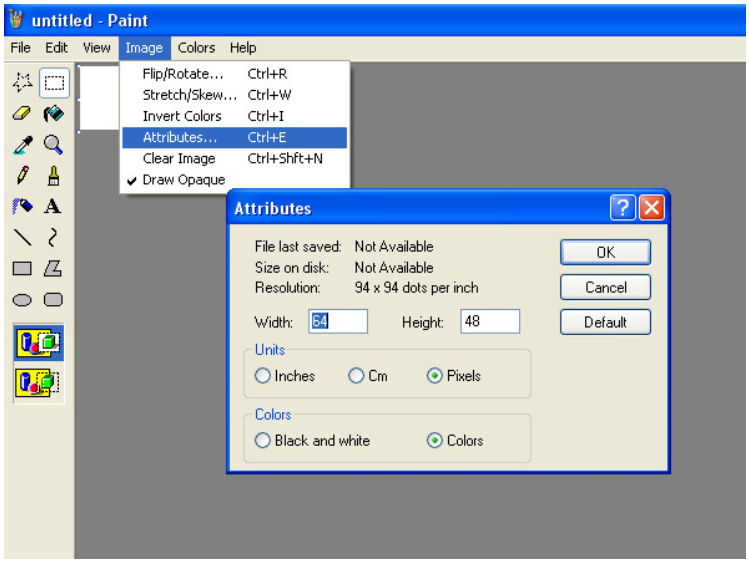
3. Creating a New Image.

- OLED Rocker SmartSwitch
  - Open Paint.
  - Change the image attributes to 96x64 pixels.
  - Change colors to black and white.
  - Draw image.
  - Save as Monochrome bitmap file (*.bmp).

- OLED SmartSwitch
  - Open Paint.
  - Change the image attributes to 64x48 pixels.
  - Change colors to black and white.
  - Draw image.
  - Save as 24 bitmap file (*.bmp).



- LCD 64x32 SmartSwitch
  - Open Paint.
  - Change the image attributes to 64x32 pixels.
  - Change colors to black and white.
  - Draw image.
  - Save as Monochrome bitmap file (*.bmp).

- LCD 36x24 SmartSwitch
  - Open Paint.
  - Change the image attributes to 36x24 pixels.
  - Change colors to black and white.
  - Draw image.
  - Save as Monochrome bitmap file (*.bmp).

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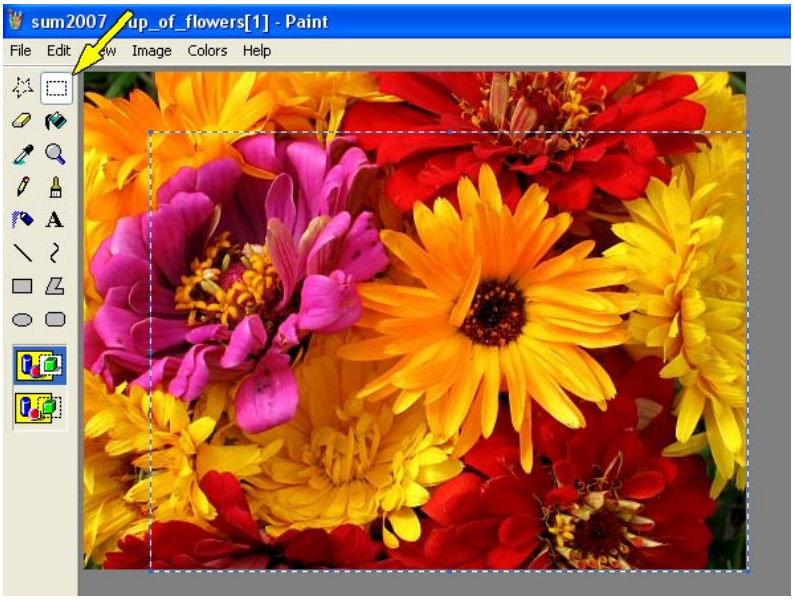
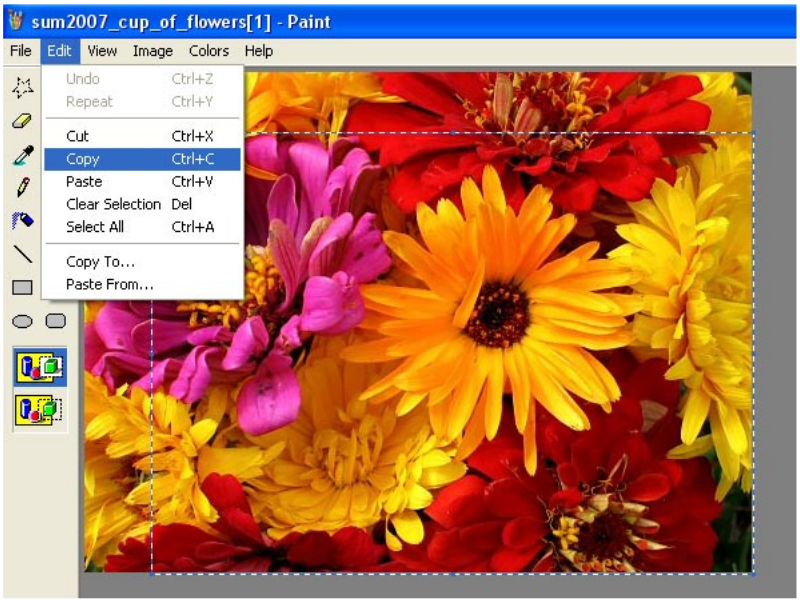
4. Editing an Existing Image.

4.1. Open the image in Paint

4.2. Select the part of the image that is desired.



4.3. Copy the image.



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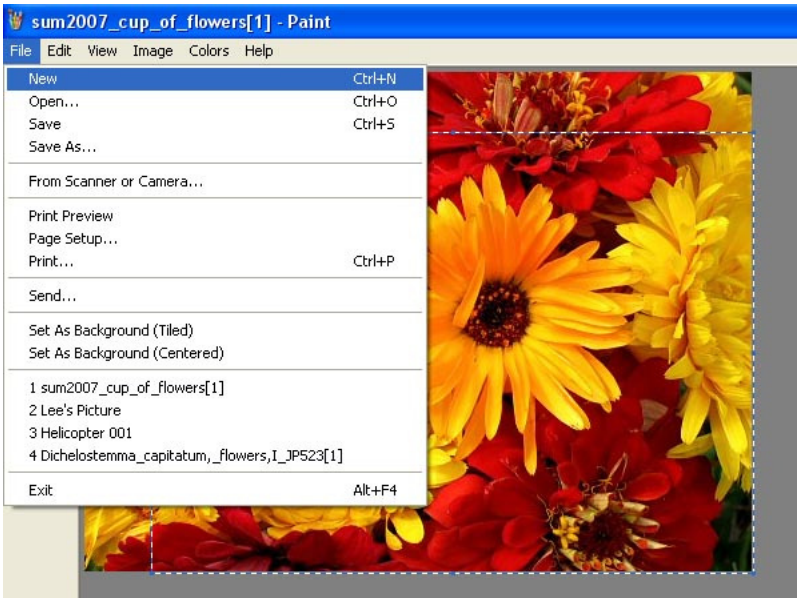
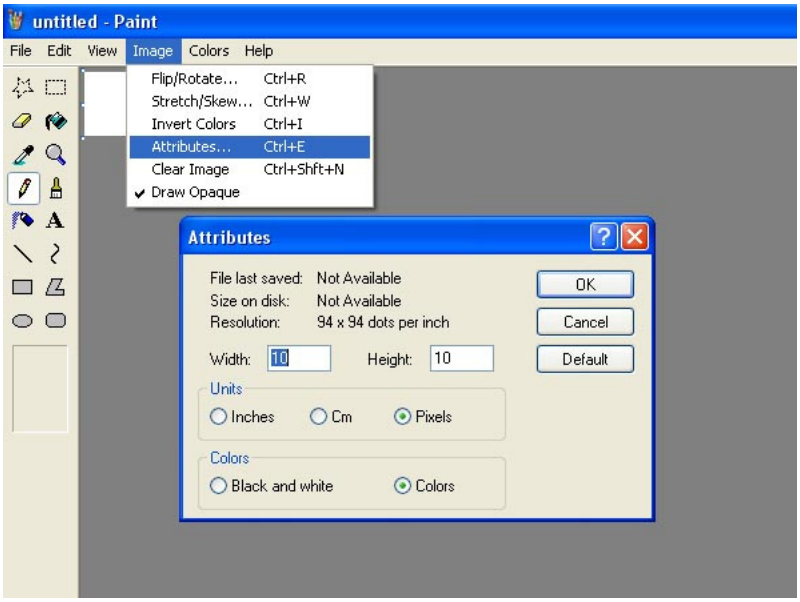
4.4. Create a new Paint image



4.5. Edit the width and height attributes to small values



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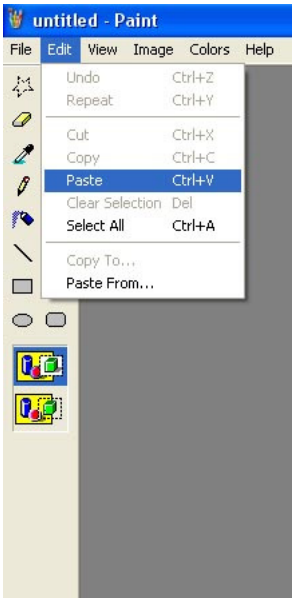
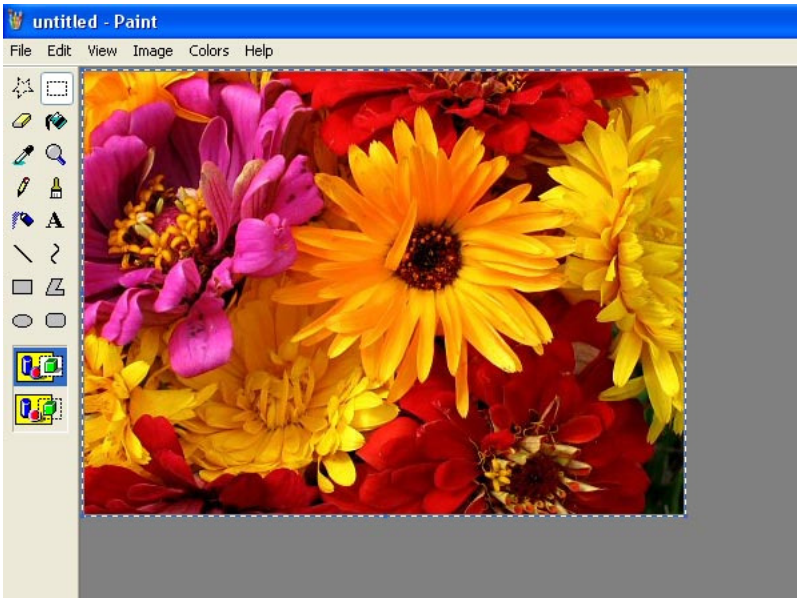
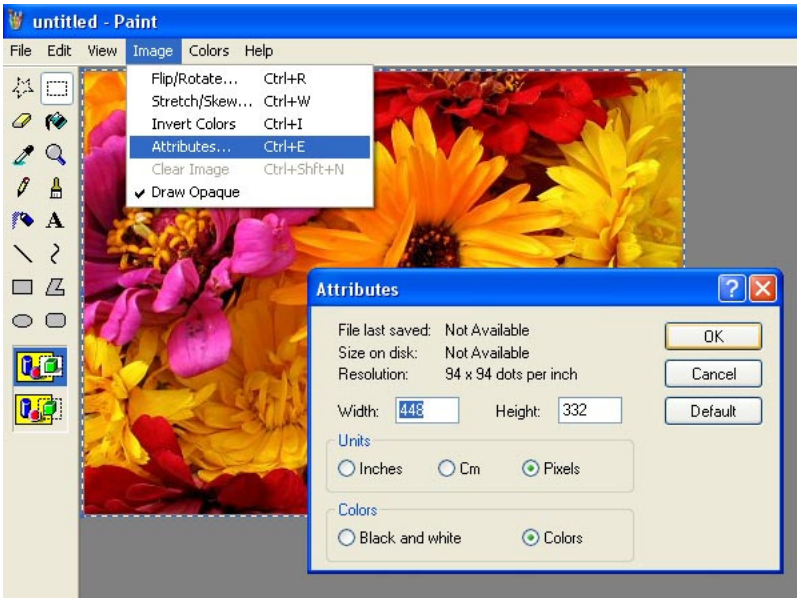
4.6. Paste the image





4.7. Write down the width and height attributes



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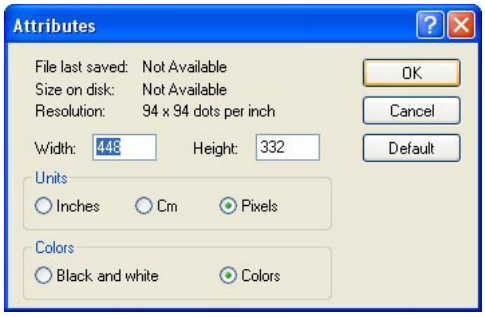
4.8. Calculate the percentage change to the image to get to the desired SmartSwitch dimensions.



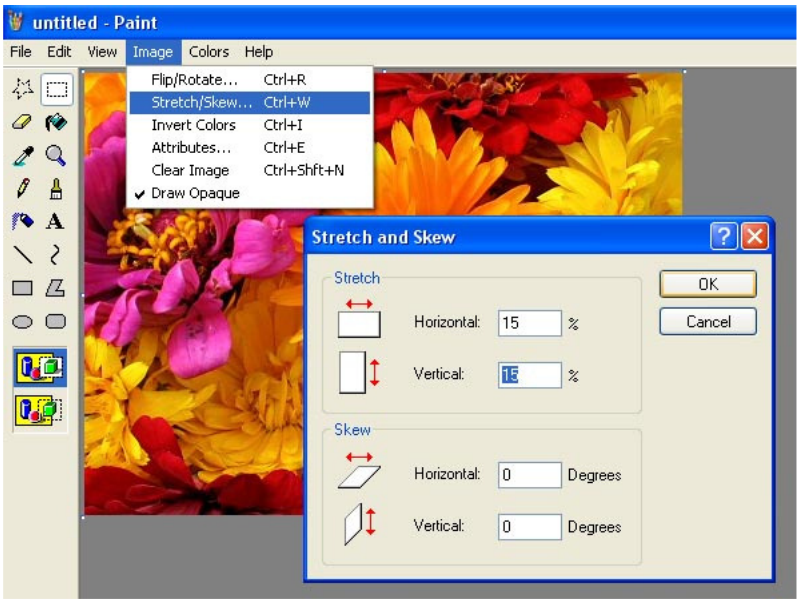
- 64 / width of image *100 or
- 48 / height of image*100

and round up

Example: 64/448=0.143 -> 15% or 48/332=0.145 -> 15%

Note: In this case the answers are the same but sometimes they are different. Pick whichever one covers the 64x48 display completely.

4.9. Choose stretch/skew and enter the percentage for both horizontal and vertical.



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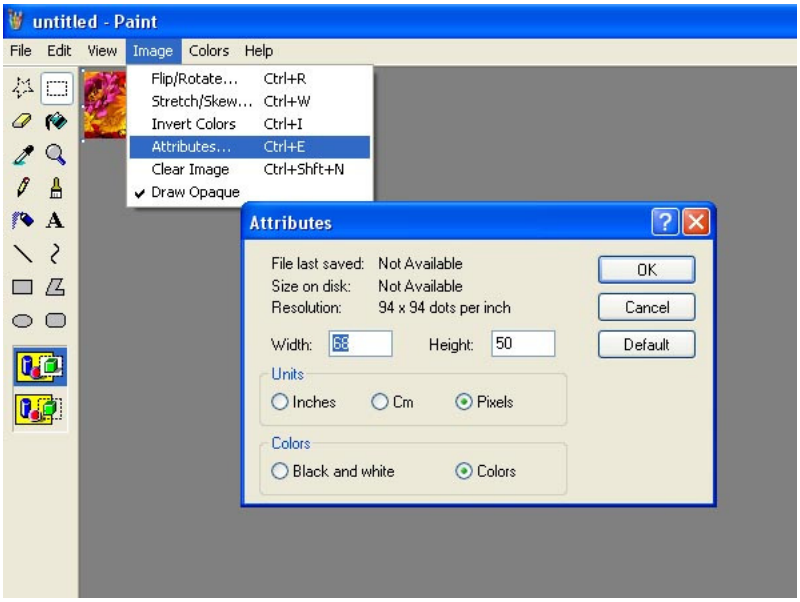
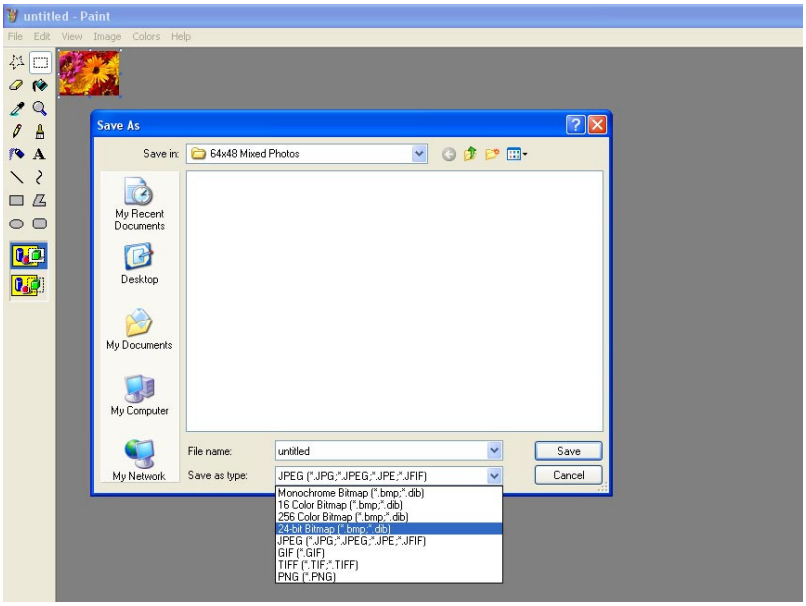
4.10. Edit width and height to 64 x 48. This will crop a few rows and columns off the right and bottom of the image.



4.11. "Save As" file as a 24-bit Bitmap Select BMP Format.



Note: Files in folders are ordered alphanumerically. The Universal Communicator does so too. To set a viewing order to more than one image add 0001, 0002, 000n, etc as a prefix to the image file names.

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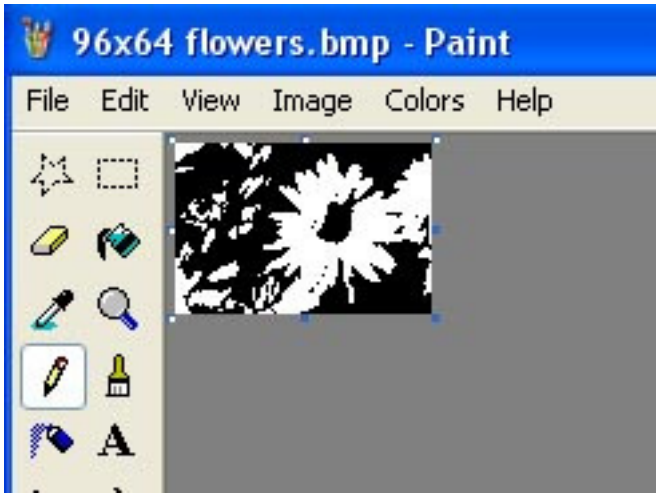
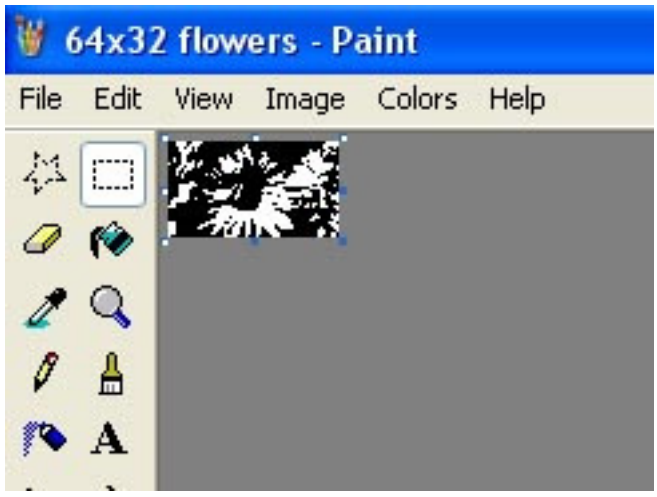
5. OLED Rocker Image:

- For 96x64 follow the same steps as shown above.
- Except:
  - Use 96 or 64 for the calculations.
  - Save as Monochrome bitmap file (*.bmp).



6. LCD 64x32 Image:

- For 64x32 follow the same steps as shown above.
- Except:
  - Use 64 or 32 for the calculations.
  - Save as Monochrome bitmap file (*.bmp).



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7. LCD 36x24 Image:

- For 36x24 follow the same steps as shown above.
- Except:
  - Use 36 or 24 for the calculations.
  - Save as Monochrome bitmap file (*.bmp).



The images are ready for the Universal Communicator.
Download files to the SmartSwitch controller using the Universal Communicator as per Universal Communicator Users Manual.

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