分類/Classification	☐ tDS ☐ tGW ☐ PETL/tET/tPET ☐ DS/PDS/PPDS ☐ tM-752N ☐ I/O Card ☐ VXC Card ☐ VxComm ☑ Other (TouchPAD)				
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Q: How do I set the background of a picture to transparent on the TouchPAD?

The TouchPAD has two types of widgets for displaying images, Picture and Button (TextPushButton, CheckBox, RadioButton). Each has different configuration methods; please refer to sections 1 and 3 for settings.

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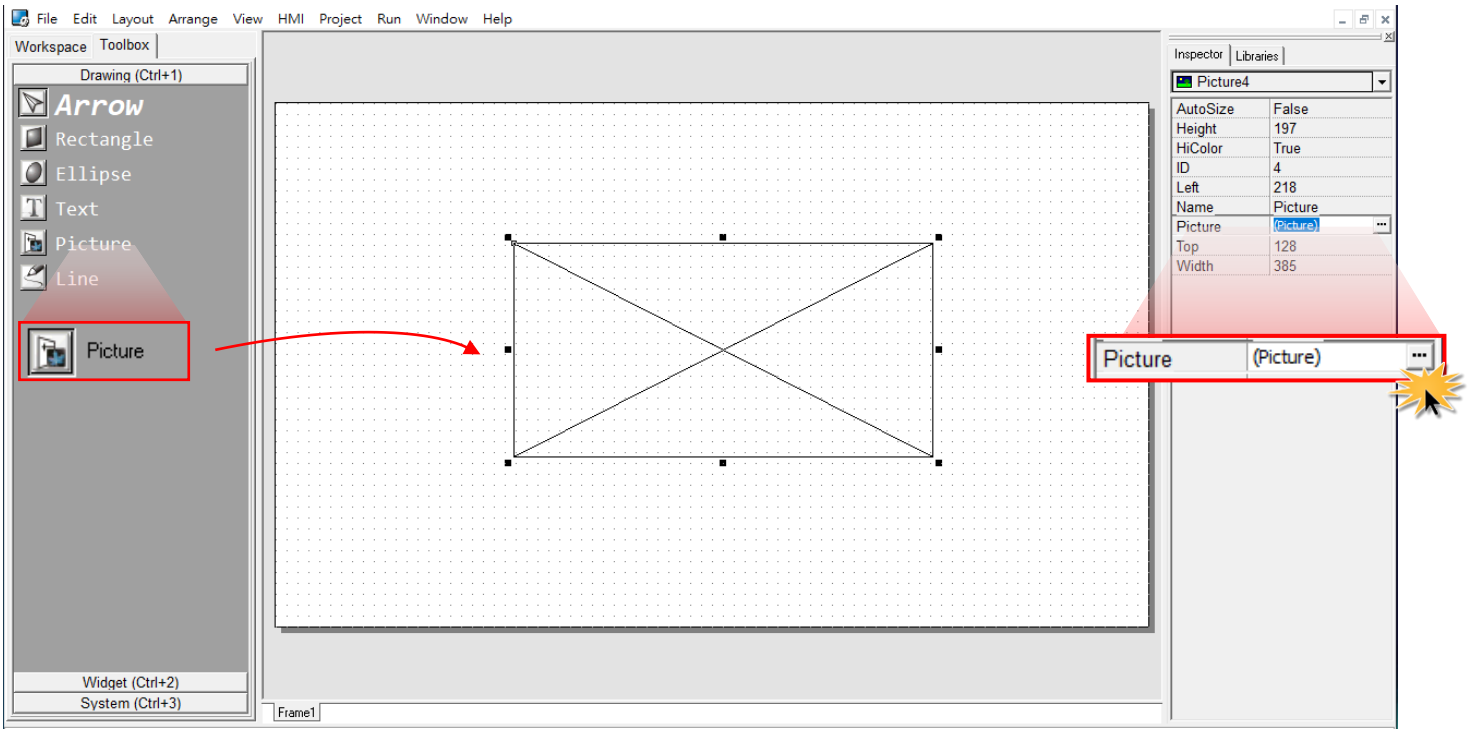
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1. Use a transparent background image on the PICTURE widget.

To create a transparency effect for the background of a picture, we must set the TouchPAD so that the specified color is not displayed on the screen.

Step 1: Click the **"Picture"** object in the **"Drawing"** section of the "**Toolbox**" pane, and then click the desired position on the design frame to place the image. Use the resize handles to change the size of the image as required.

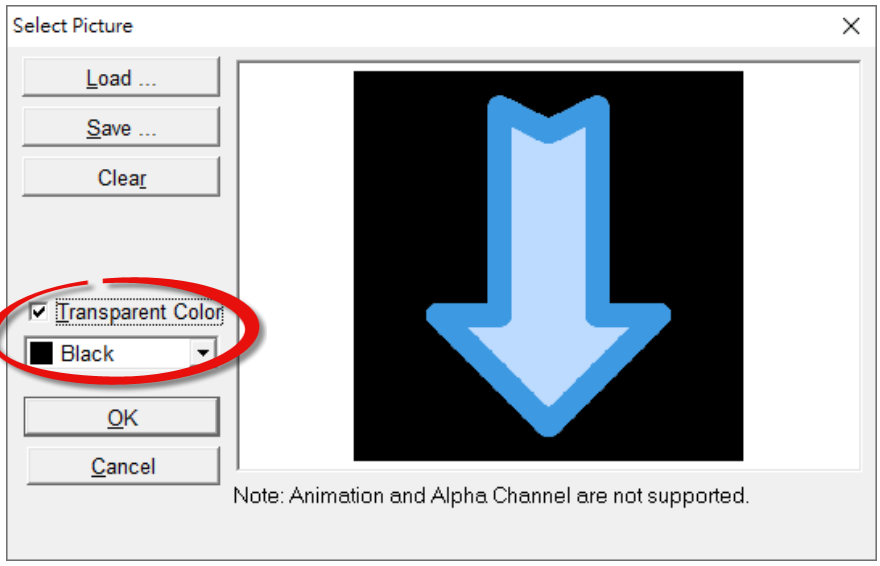
Step 2: In the **"Inspector"** pane for the picture object, click the "…" button for the "**Picture**" field to open the "**Select Picture**" dialog box.



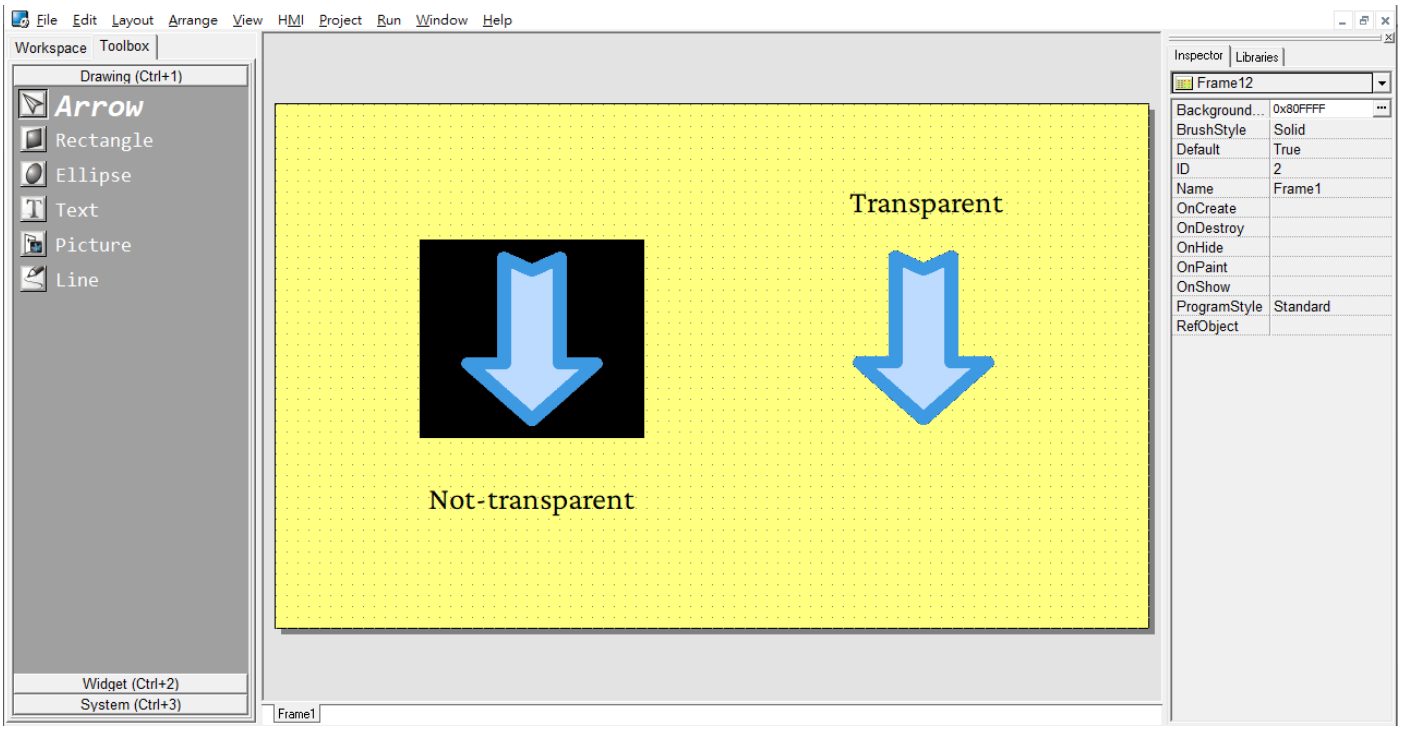
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Step 3: In the "**Select Picture**" dialog box, click the "**Load…**" button to select a picture and check the "**Transparent Color"** option, and then select the color that is used as transparent from the color drop-down menu. As shown in the image below, the background color for the arrow is black. When the "Transparent Color" option is set to black the background will become transparent when displayed on the screen.



Step 4: To better demonstrate the effect, the background color of the frame has been set to yellow. The transparent color is not checked on the left; black is selected as the transparent color on the right, so the effect of a transparent background is displayed.

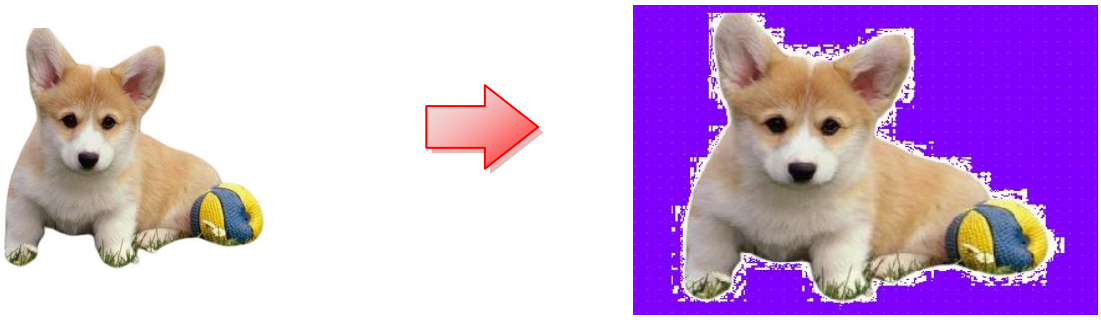


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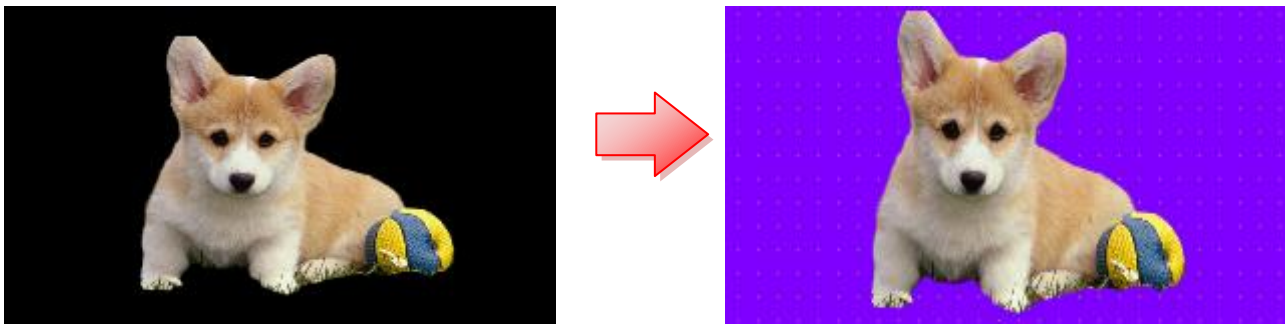
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Note: To improve the transparency effect, it is recommended that any images are processed first using an external image editing application before importing the image into HMIWorks.

As shown below:
When the **Transparent Color** option is set to white, the transparency effect can obviously be seen, but the result looks bad. This is because the transition of the color from the background to the main figure in the image is not precisely defined. To the naked eye, it may look like it is white, but actually it is not and there is a gradient of colors that can't be accurately masked. Consequently, the transparency effect produces an unacceptable result.



The solution is to redraw the background with a single color (e.g., pure black) that is completely different from all colors in the main image. Then select black as the transparent color for the image to get a better quality result.



Drawing/Editing Recommendations:

1. The background color (transparent) should use a single color, as even slight variations can affect transparency.
2. Ensure clear contrast between the foreground color and the background color (transparent). Enhance edge processing to avoid noise around the graphics.
3. Avoid using gradient color schemes. Rich gradient colors in the foreground may clash with the background color (transparent), leading to graphics noise.

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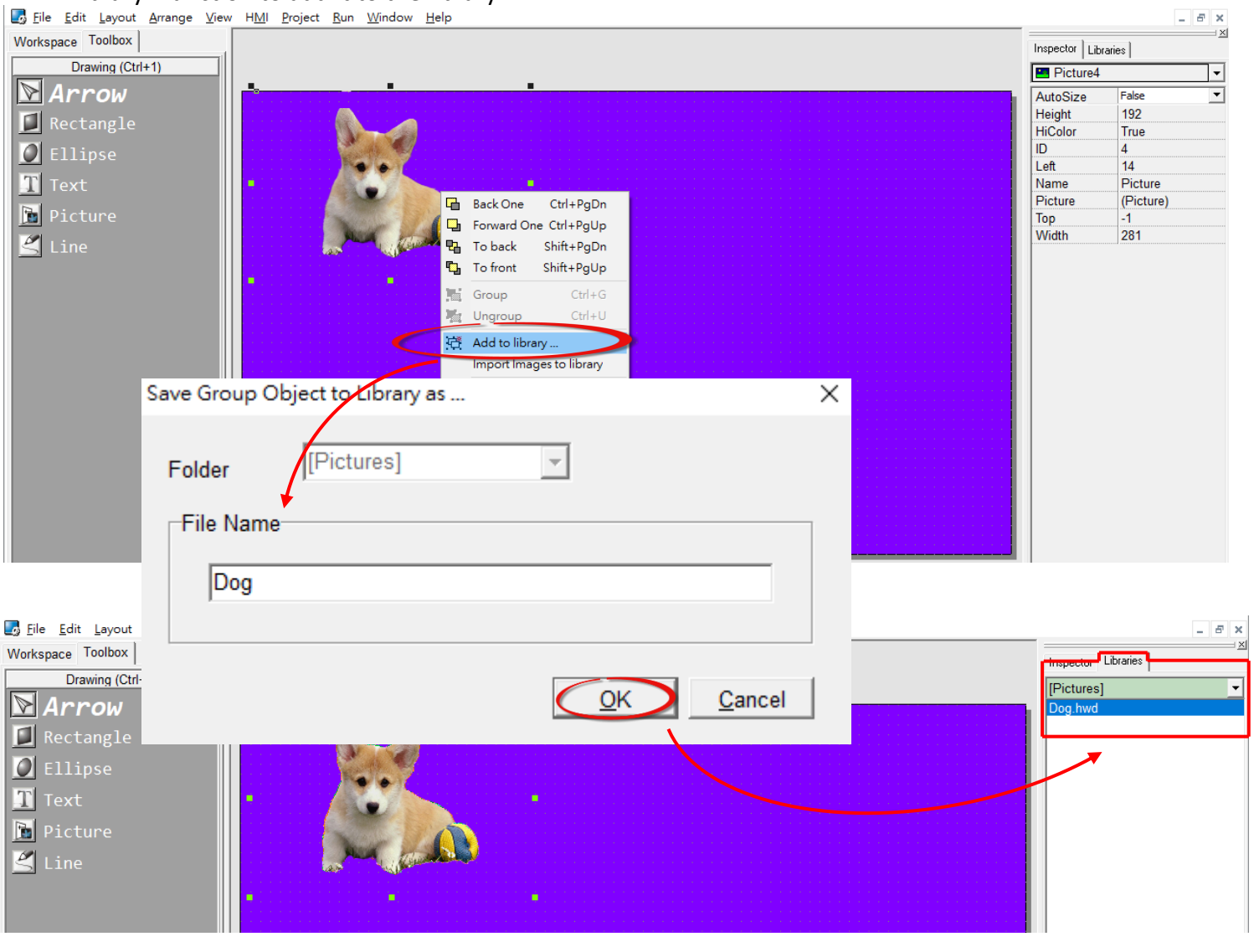
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2. Add the image with a transparent background to the library.

2-1. Use the PICTURE widget to add a single image file.

All images in the HMIWorks library are opaque. Users can add their own transparent image files to the library. Afterwards, they can use these imported transparent image files with the ObjectList to apply them to Button widgets.

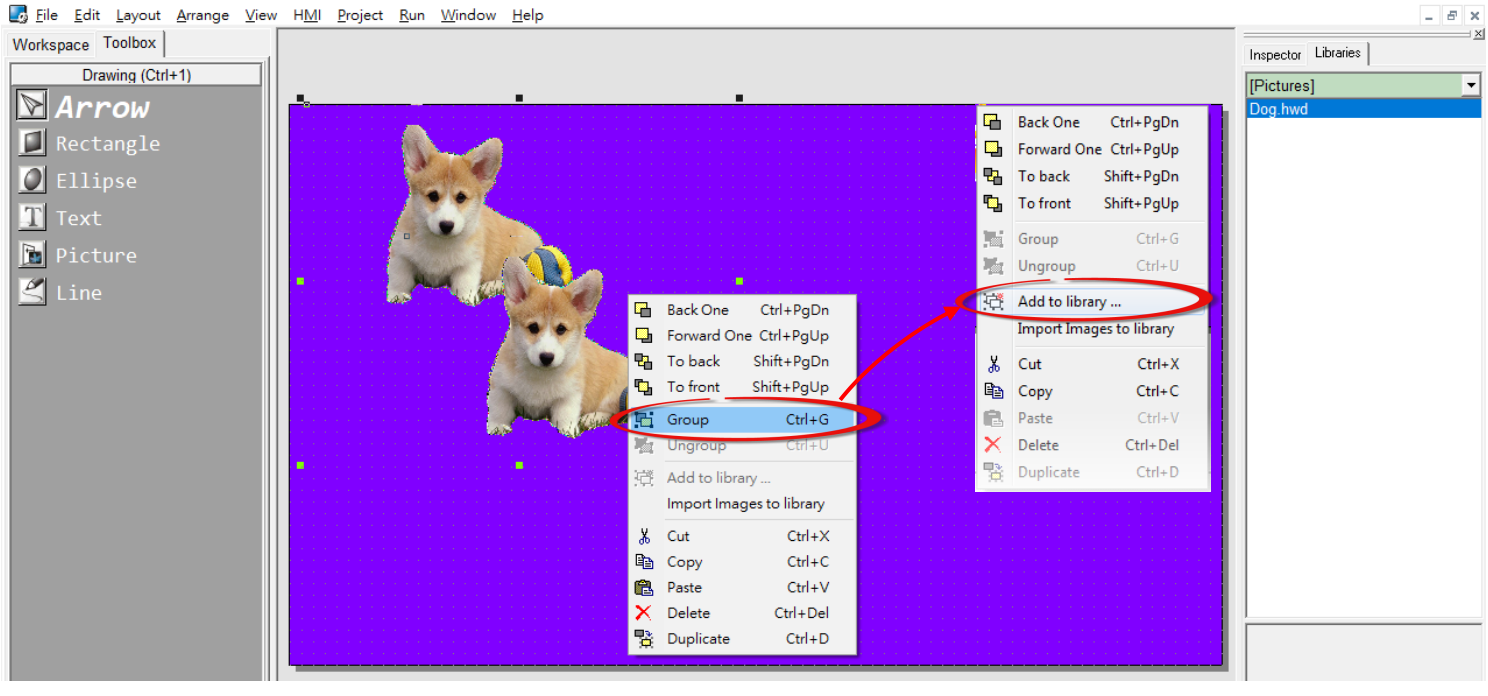
1. Right-click on a Picture widget where the transparent color is configured, and selects the “Add to library” function to add it to the library.



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2. If you want to combine multiple Picture widgets into one image, you can first **"group"** all Picture widgets and then add them to the library.



Note: Transparent background images added to the library as a group are only applicable to the **"Picture"**. Other widgets cannot load this group image from the library using **ObjectList**. If you want to use **ObjectList**, please redraw/combine them into a single image using graphics software before importing it into the library.

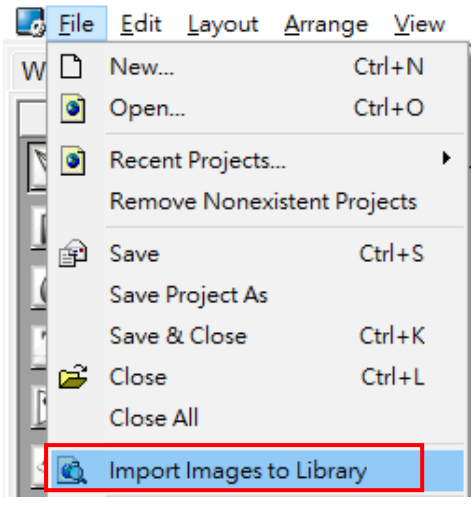
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2-2. Import one or more image files.

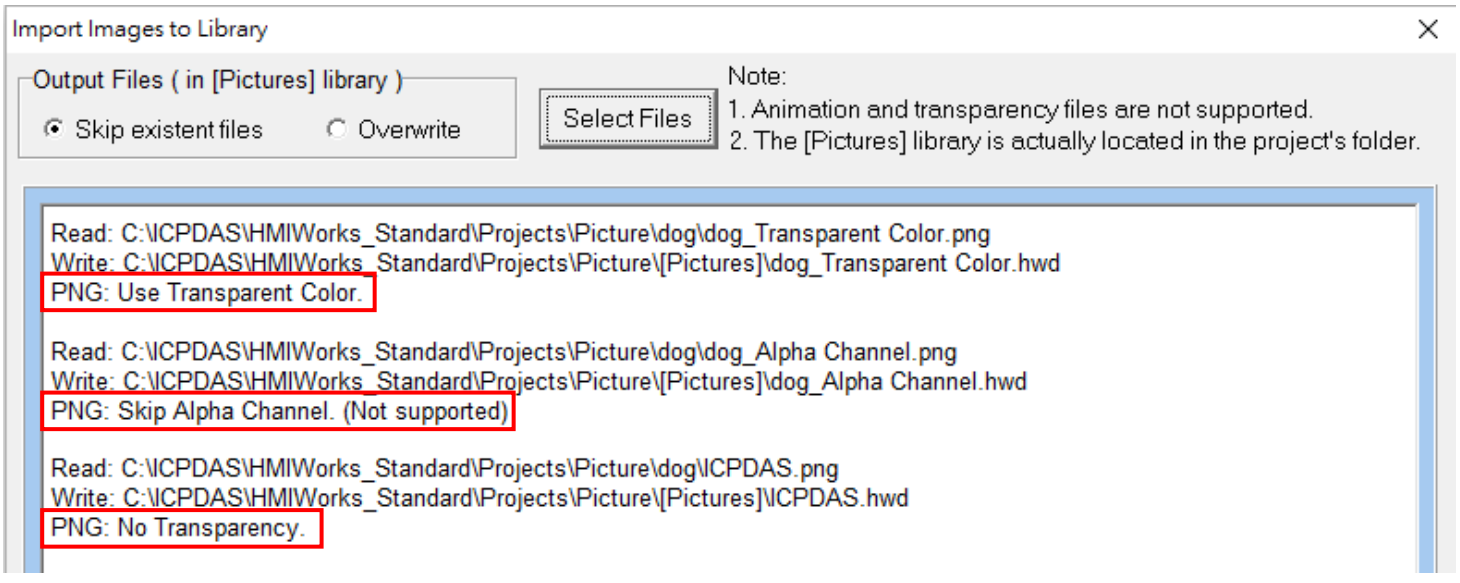
HMIWorks can import transparent color PNG image files. Note: Alpha channel format is not supported. Users must convert PNG files to Transparent Color format to ensure transparency effects are displayed correctly on the TouchPAD.

Step 1: From the **"**File (F)" menu, select the **"**Import Image to Library" option to open the window.



Step 2: Click the **"**Select File" button to choose one or more image files. These files will be converted into **"**.hwd" files recognized by HMIWorks and placed in the [Pictures] folder within the current project directory. If the imported ".PNG file" image displays:

- PNG: Use Transparent Color – Indicates that the PNG file is in Transparent Color format, and the TouchPAD can display transparent colors correctly.
- PNG: Skip Alpha Channel (Not supported) – Indicates that the PNG file is in Alpha Channel format, but TouchPAD does not support this format. So there is no transparency.
- PNG: No Transparency – Indicates that the imported PNG file itself has no transparency effect.



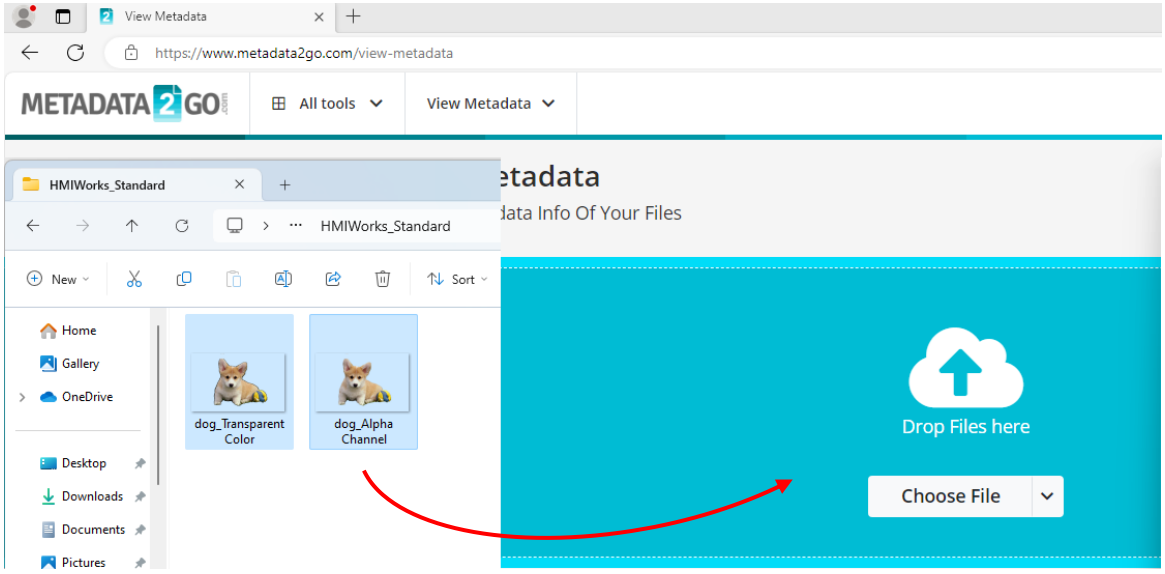
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2-3. How to determine if a PNG file is in Transparent Color format:

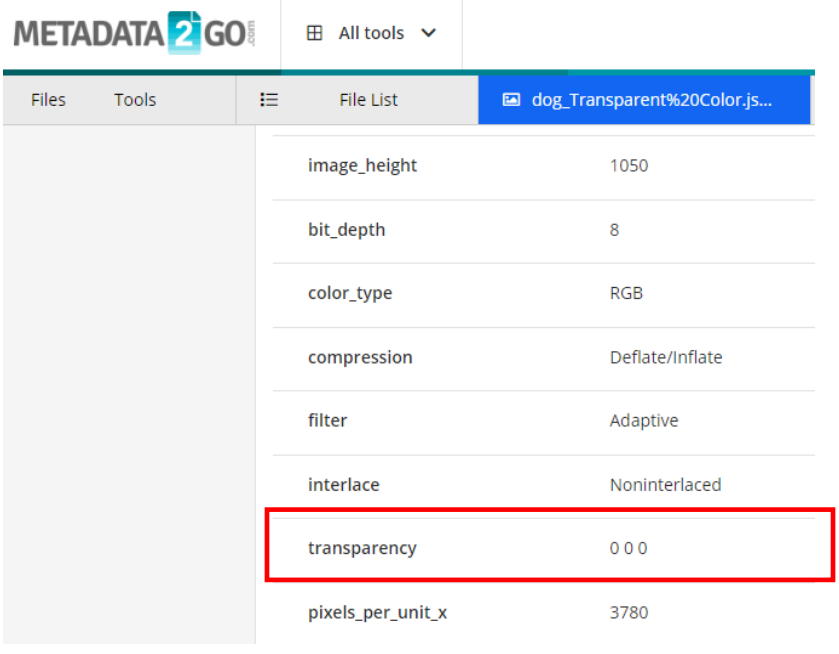
You can use third-party software to obtain all data information of an image file. E.g. free online tools metadata2go.

To check the transparency format of PNG files, you can upload each image to the metadata2go for analysis. (Note: Only one image can be uploaded at a time.)



The PNG file must have a transparent color (e.g. tranparency 0 0 0) and RGB color_type settings. Transparency will then be available after the PNG file is imported into HMIWorks.

Note: Just having displayed transparency information doesn't guarantee that it is in the Transparent Color format; it must be composed of three numbers representing RGB to be in this format.



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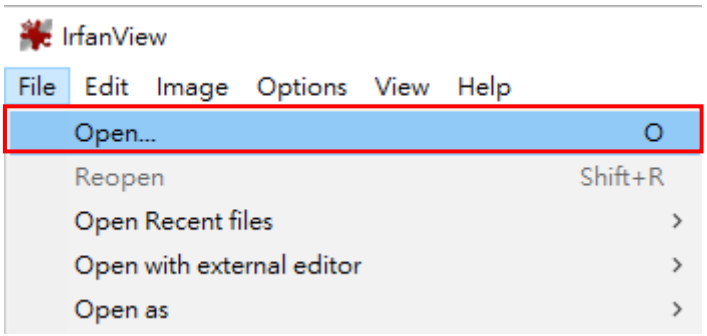
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2-4. How to create a PNG file in Transparent Color format:

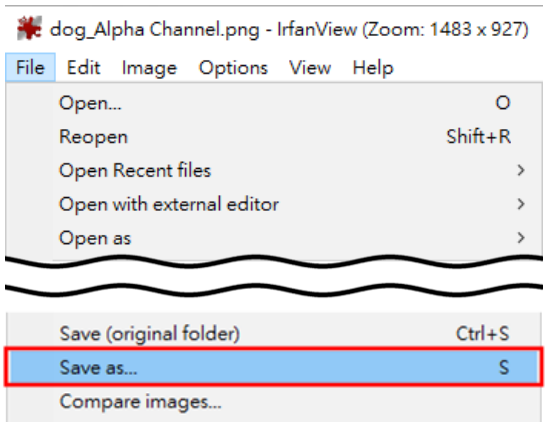
You can use third-party software, such as IrfanView (please refer to online resources for detailed installation instructions), to save an image as a PNG file in Transparent Color format. Please follow the steps below:

Note: In addition to PNG, you can also import BMP, GIF, or various other image files and then save as PNG with a transparent color. The processing in this section is solely for format conversion, and not all images can achieve a transparent effect. The quality of the transparency depends on whether the content of the image itself is suitable or if further enhancement and editing are required using graphic design software.

Step 1: Open IrfanView and select “Open...” from the “File” menu to load an image.



Step 2: From the “File” menu, select “Save as...”



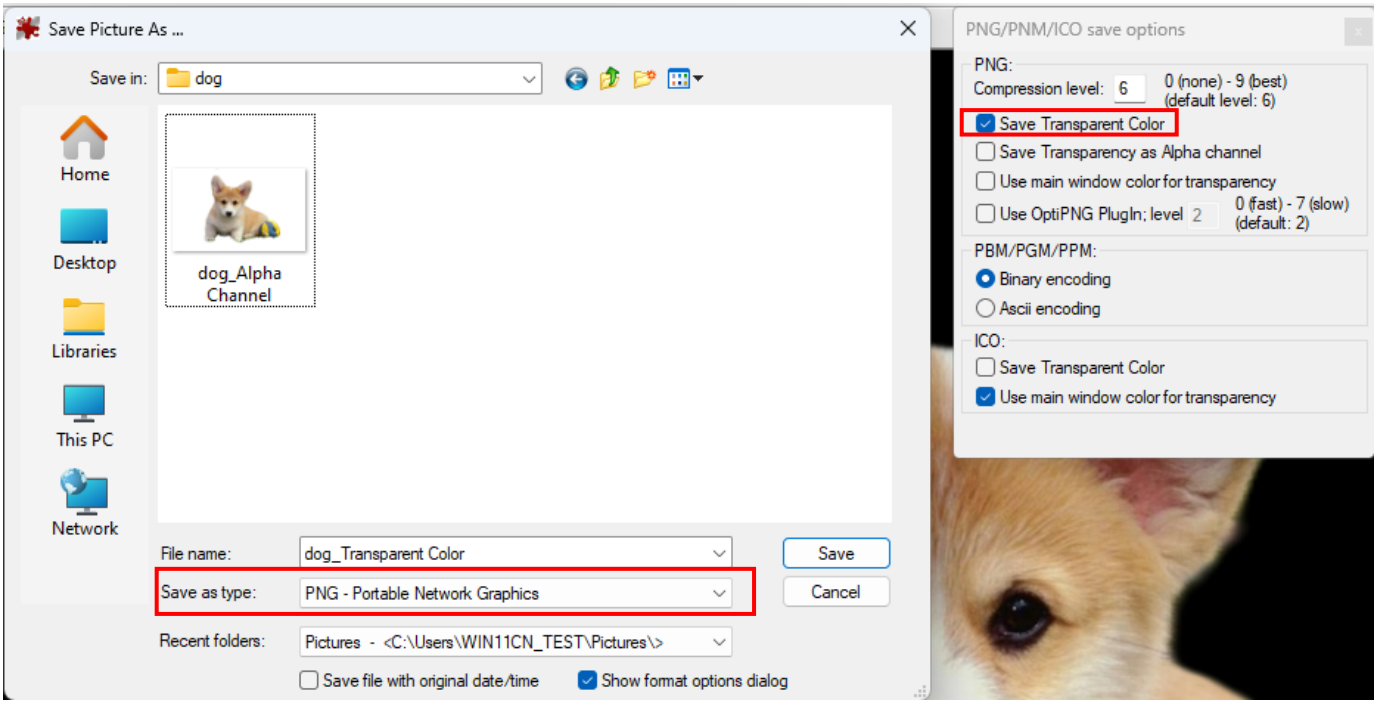
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Step 3: Under “Save as type,” choose “PNG-Portable Network Graphics.”

Step 4: Check the option “Save Transparent Color.”

Step 5: Uncheck (do not select) the “Save Transparency as Alpha channel



Step 6: In the “Choose transparent color” window, select a pixel color to serve as the Transparent Color for this image file.



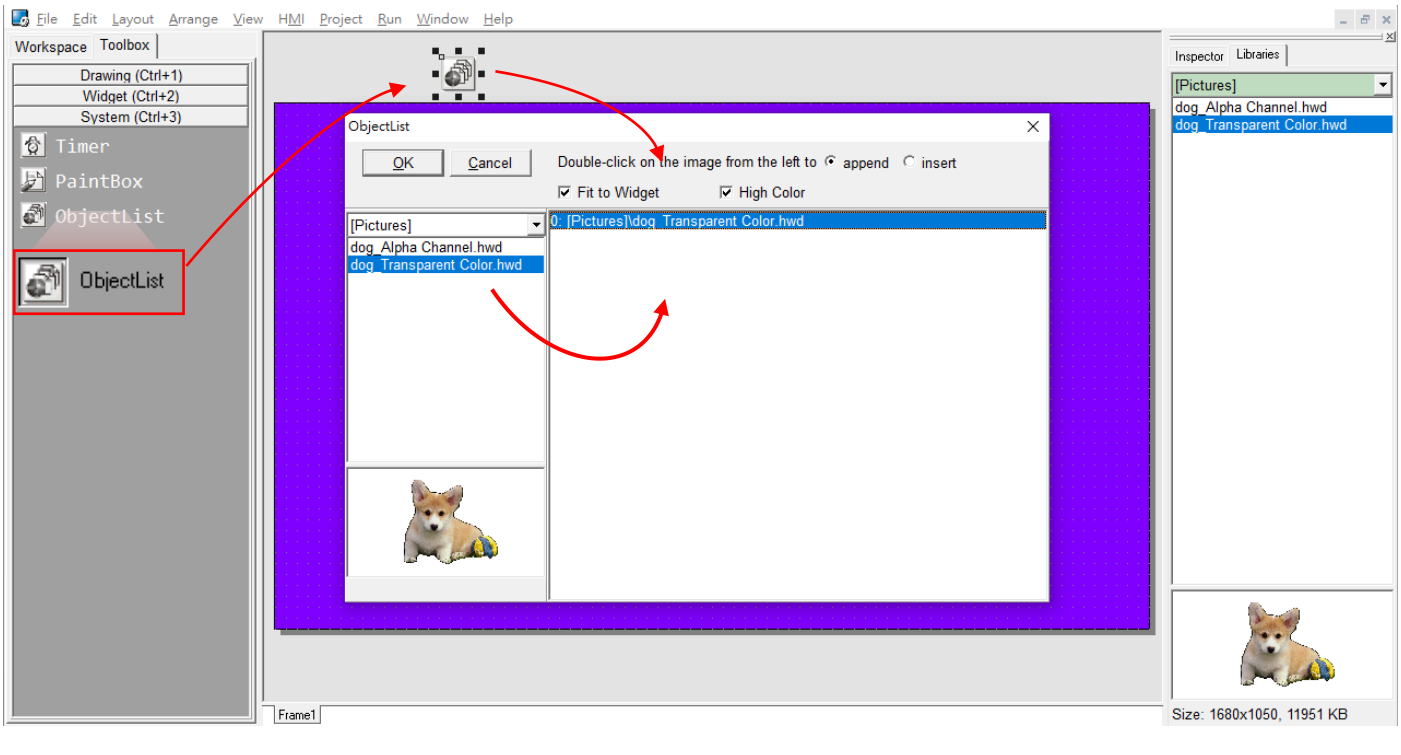
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3. Use a transparent background image from the library on the BUTTON widget.

HMIWorks does not allow direct setting of a transparent background on Button (TextPushButton, CheckBox, RadioButton). You need to import an image with a pre-processed transparent background into the “Library” first, and then utilize it with the ObjectList.
(Refer to section 2 for instructions on importing images with a transparent background into the Image Library.)

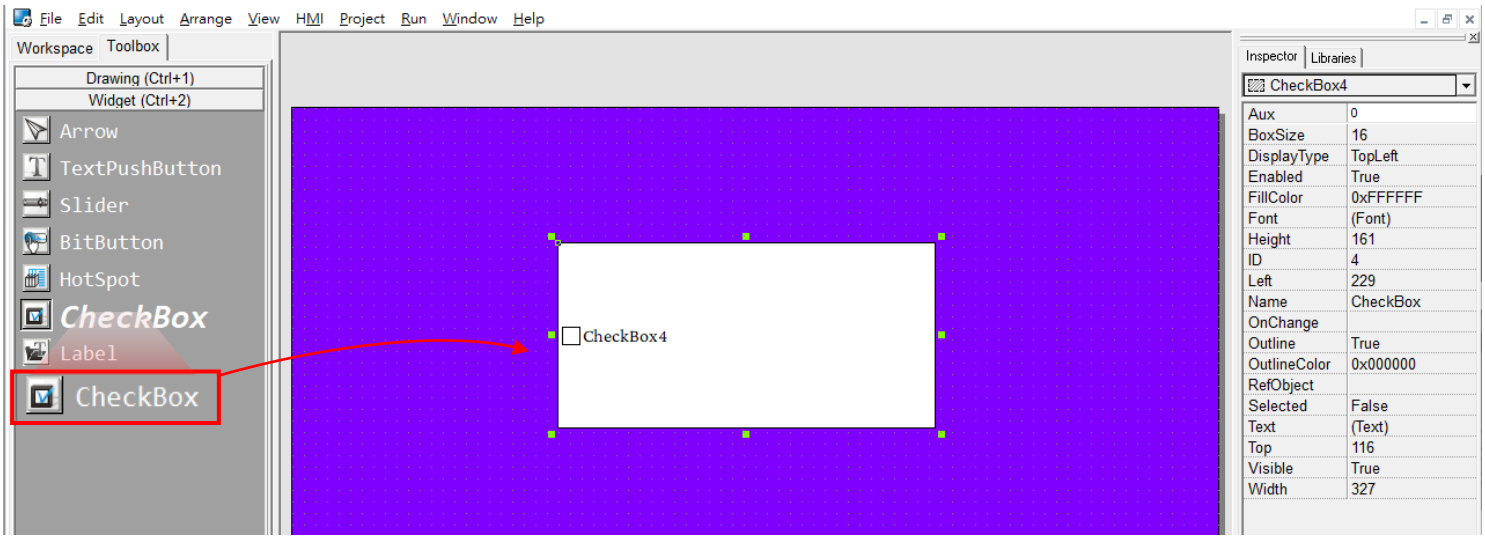
Step 1: In the “Toolbox” section, click on the “ObjectList” item and place the icon in an appropriate position on the control screen design area.
Step 2: Double-click on the “ObjectList” icon to open the “Object List” window.
Step 3: Double-click and select the image object from the left-side list in the “Object List” window. After clicking, you will see the selected object appear in the display area on the right.
Note: After placing a transparent image in the ObjectList, an additional background image for that widget is included during compilation to achieve the transparent effect. This results in an increased memory consumption equivalent to the size of one extra image.



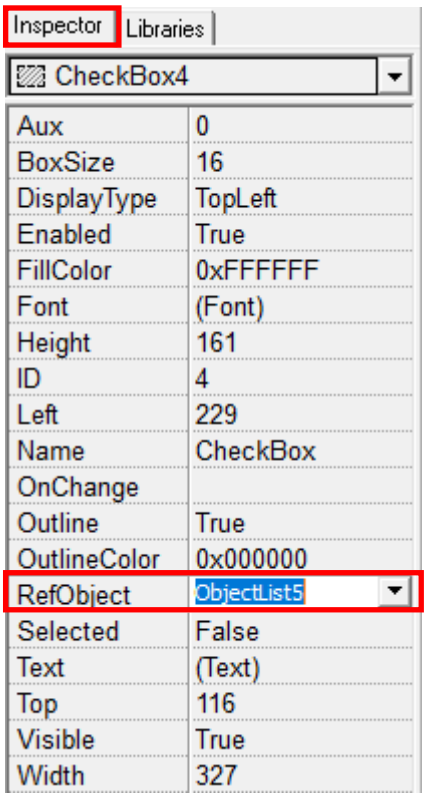
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Step 4: Add a Button widget, using CheckBox as an example, and place the icon in an appropriate position on the control screen design area.



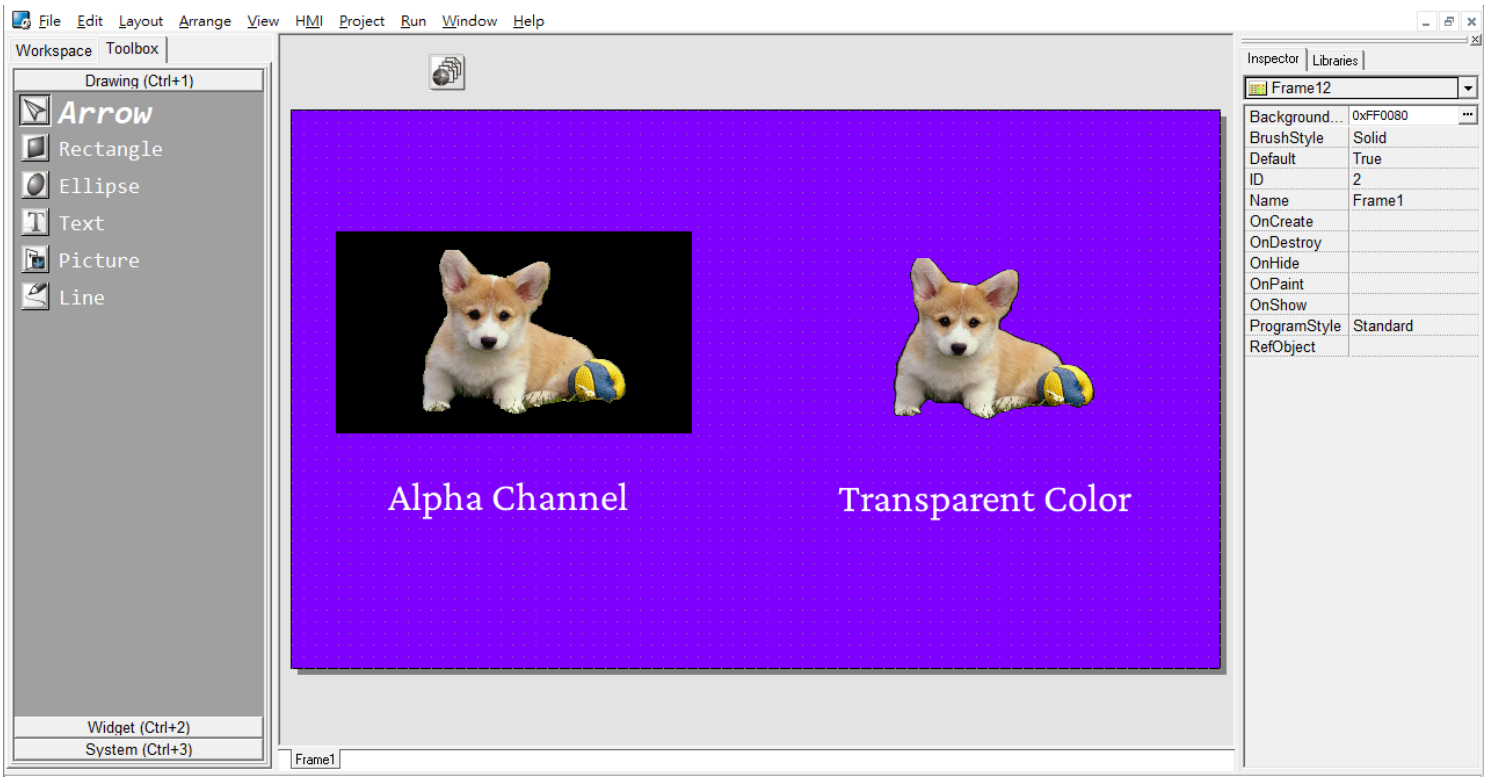
Step 5: In the Button's “Inspector” area, locate the “RefObject” property field and choose the **ObjectList** you want to link to.



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Step 6: As shown in the image below, set the background color of the frame to purple for easier viewing. On the left is the Alpha Channel format, where the background appears black and opaque. On the right is the Transparent Color format, which now appears transparency.



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