

xDib Control

Overview

The xDib control is used to map images to a given palette. It can be used with the xPal control or by itself to create the tools needed to support the xWinG control or identity palettes in general. The control has an internal palette that is initialized each time an image is read from disk or remapped. The palette stays in sync with the image unless the optimize subroutine is called. The control has an auto selection feature that enables the programmer to select an image rectangle from one control and copy it to another control. This is useful for selecting the best colors in a rectangle.

Dither and Remap Subroutines

The dither and remap subroutines are exported functions that take a control, array of flags, and a palette. The palette may come from the palette property of an xDib control or an xPal control. If the optimize subroutine was called, the palette might be from the same xDib control. The array is a 256 integer array and is passed as an array variable with the values set as follows:

0 - Normal remapping.

1 - Do not change the pixel index of the source dib. This index is probably going to be used for color animation.

2 - Do not use the palette color for color matched remapping. This is used to exclude the first 10 and those of the last ten system colors subject to change on different video drivers.

3 - Both 1 and 2. If a pixel has this index, then remap it to the same index. Otherwise do not use this color index.

When a control has a 24 bit image, the number one setting will be ignored and the number three setting will have the same effect as number two.

The dither subroutine takes one additional integer argument. This is the error level for the Floyd Steinberg dithering algorithm. If this is zero, then all color errors will be divided among the next group of pixels according to the FS algorithm. If the value is non zero then all color component errors larger than this value will be reduced by 25%. When the errorlevel is zero the maximum color match is achieved but some images mapped to some palettes will produce color bleeding and undesirable patterns. I usually set this value fairly low, about 8.

Optimize Subroutine

The optimize subroutine takes a control and a number of colors as arguments. It does not affect the control image but will replace the control palette with the number of colors specified and fill in the remainder with pure black. The image can then be dithered or remapped to its own palette or the colors can be added to an xPal control and the image can be remapped to that. Note that if the image uses less than the number or colors requested, the extra colors will be pure white.

Other Subroutines

ReadDib

This will read a bmp or dib file from the disk. The image must be either 8 or 24 bits deep but 8 bit files can be RLE encoded.

WriteDib

This will copy the image in the control to a file. The file should have a .bmp or .dib extension but no checking is done. The image will be in uncompressed 8 or 24 bit format.

WriteRle

This will copy the image in the control to a file. The file should have a .bmp or .dib extension but no checking is done. The image must be 8 bit and will be saved in RLE compressed format with no delta jumps. The xWinG control and all paint programs will read this format but Paintbrush will not.

FreeDib

This will remove an image from a control and free the memory.

CopySelection

This will copy the selected area of the image in one control to another control. By cropping the

image, the palette can be optimized for the colors used in the foreground.

GetRGB

This will break an RGB color into its red, green, and blue components. Of course this is easy to do in VB as well .

TopMost

This will make a window topmost or top but not topmost.

MakeDib

This will create an empty image with a solid background color. The color table will match the palette.

PasteDib

This will paste an image into an existing dib. Only uncompressed 8 bit dibs are supported. The color tables must match.

Several more functions will be added later.

Properties

dibWidth dibHeight dibDepth

Integer. Read only at run time.

The dimensions of the image in pixels and bits. These are all zero if there is no image in the control.

dibXorg dibYorg

The x and y origin of the upper left corner of the image in the control. These are affected by the scrolling position and the zoom value.

dibHandle

Integer. Read only at run time.

This is the global memory handle of the hDib. It is not used with this control but may be used with dll's to change the bitmap. The bitmapinfoheader should not be altered. This property may be set from another source. If so, the dib used must have a 256 color color table and becomes the property of the control, i.e. it must not be destroyed by another module. This property is only recommended for use by fairly advanced programmers.

FileName

String.

The file name used for the image read and write subroutines.

rgb

Boolean.

This controls whether the image is painted using RGB colors or palette indexes. Setting this property to false results in much faster painting. If the optimize function is called the palette will be out of sync with the image colors. If rgb is false in this case, the image will have totaly wacko colors until the image is dithered or remapped.

selectLeft selectHeight selectTop selectWidth

Integer

These properties are used to define a rectangle for image processing functions. Currently the only such function is copyselection. They may be set with the automatic selection feature. See the MouseDown event for further information on the automatic selection feature.

Zoom

Integer. Must be 1, 2, 4, 8, -2, -4, or -8

Positive numbers paint the image larger, negative numbers paint it smaller.

Palette

Integer. Read only at run time. The actual value of this property never changes but it is used to access the palette colors.

Events

MouseDown

X As Integer, Y As Integer, Button As Integer, Keys As Integer

X and Y refer to the position on the image. This is affected by the scroll position and the zoom value.

Button is which mouse button was pressed. Keys is the state of the alt, ctl, and shift keys. If Keys is set to either -1 or -2 during this event the control will enter the automatic select mode. A value of -1 will cause the bounding rectangle of the selection to be displayed, a value of -2 will cause the entire rectangle to be displayed.

MouseUp

X As Integer, Y As Integer, Button As Integer, Keys As Integer

X and Y refer to the position on the image. This is affected by the scroll position and the zoom value.

Button is which mouse button was pressed. Keys is the state of the alt, ctl, and shift keys. If the control is in automatic select mode, the select properties will be set before this event occurs.