

**guigfx**

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| <b>COLLABORATORS</b> |
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# Chapter 1

## guigfx

### 1.1 guigfx.doc

```
AddPaletteA ()
AddPictureA ()
AddPixelArrayA ()
ClonePictureA ()
CreateDirectDrawHandleA ()
CreatePenShareMapA ()
CreatePictureBitMapA ()
CreatePictureMaskA ()
DeleteDirectDrawHandle ()
DeletePenShareMap ()
DeletePicture ()
DirectDrawTrueColorA ()
DoPictureMethodA ()
DrawPictureA ()
GetPictureAttrsA ()
IsPictureA ()
LoadPictureA ()
LockPictureA ()
MakePictureA ()
ObtainDrawHandleA ()
ReadPictureA ()
ReleaseDrawHandle ()
RemColorHandle ()
UnLockPicture ()
```

### 1.2 guigfx.library/AddPaletteA

#### NAME

AddPaletteA - add a palette's colors to a pen-sharemap.  
AddPalette - varargs stub for AddPaletteA.

#### SYNOPSIS

```
colorhandle = AddPaletteA(psm,palette,taglist)
d0              a0  a1      a2
```

```
APTR AddPaletteA(APTR, APTR, struct TagItem *)
```

```
APTR AddPalette(APTR, APTR, tag, ..., TAG_DONE)
```

#### FUNCTION

This function adds a palette's colors to a pen-sharemap.

#### INPUTS

```
psm          - pointer to a pen-sharemap
palette      - pointer to a color table
tags         - pointer to an array of TagItems
```

#### TAGS

GGFX\_PaletteFormat (ULONG) - format of the palette. Currently defined are:

```
PALFMT_RGB8
    ULONG 0x00rrggbb

PALFMT_RGB32
    ULONG red, green, blue. This is the LoadRGB32()
    format without trailing longword.
```

Default: PALFMT\_RGB8

GGFX\_NumColors (ULONG) - number of colors in the color table. Currently, this argument is mandatory. Default: 0

GGFX\_Weight (ULONG) - weight factor. Valid range: 1...255. With this factor, you can specify a significance for this color instance. The higher this value, the higher the palette's influence on the pen-sharemap. Default: 1

#### RESULTS

```
colorhandle - identifier for a particular dependency between
             color information and pen-sharemap. there is
             no need for you to store a colorhandle, unless
             you want to manually remove it from the pen-sharemap
             via RemColorHandle(). NULL if something went wrong.
```

#### NOTES

An example is provided with the documentation for AddPictureA().

#### SEE ALSO

```
RemColorHandle(), AddPictureA(), AddPixelArrayA(),
CreatePenShareMapA(), DeletePenShareMap(), ObtainDrawHandleA()
```

## 1.3 guigfx.library/AddPictureA

#### NAME

```
AddPictureA - add a picture's color information to a pen-sharemap.
AddPicture  - varargs stub for AddPictureA.
```

## SYNOPSIS

```
colorhandle = AddPictureA(psm,picture,taglist)
d0          a0  a1      a2
```

```
APTR AddPictureA(APTR,APTR,struct TagItem *)
```

```
APTR AddPicture(APTR,APTR,tag,...,TAG_DONE)
```

## FUNCTION

This function adds a picture's color information to a pen-sharemap.

## INPUTS

|         |                                   |
|---------|-----------------------------------|
| psm     | - pointer to a pen-sharemap       |
| picture | - pointer to a picture            |
| tags    | - pointer to an array of TagItems |

## TAGS

GGFX\_Weight (ULONG) - weight factor. Valid range: 1...255.  
With this factor, you can specify a significance for this color instance. The higher this value, the higher the picture's influence on the pen-sharemap.  
Default: 1

## RESULTS

colorhandle - identifier for a particular dependency between color information and pen-sharemap. there is no need for you to store a colorhandle, unless you want to manually remove it from the pen-sharemap via RemColorHandle(). NULL if something went wrong.

## EXAMPLE

Assume there were three different pictures to be drawn.

- a) a noisy background
- b) a logo of your company
- c) navigation icons

you might want to differenciate the significances for these pictures as follows:

```
AddPicture(psm, backpic, GGFX_Weight, 2, TAG_DONE);
AddPicture(psm, logopic, GGFX_Weight, 3, TAG_DONE);
AddPicture(psm, navpic, GGFX_Weight, 5, TAG_DONE);
```

the backpic's influence on the allocated pens would be 20%, the logo contributed with 30%, and the navigation buttons would be taken into account with 50% then.

## NOTES

## SEE ALSO

```
RemColorHandle(), AddPaletteA(), AddPixelArrayA(),
CreatePenShareMapA(), DeletePenShareMap(), ObtainDrawHandleA()
```

## 1.4 guigfx.library/AddPixelFormatA

### NAME

AddPixelFormatA - add a pixel array's color information to a pen-sharemap.  
 AddPixelFormat - varargs stub for AddPixelFormatA.

### SYNOPSIS

```
colorhandle = AddPixelFormatA(psm,array,width,height,taglist)
d0          a0  a1      d0      d1      a2
```

```
APTR AddPixelFormatA(APTR,APTR,UWORD,UWORD,struct TagItem *)
```

```
APTR AddPixelFormat(APTR,APTR,UWORD,UWORD,tag,...,TAG_DONE)
```

### FUNCTION

This function adds a pixel array's color information to a pen-sharemap.

### INPUTS

```
psm          - pointer to a pen-sharemap
pixelarray   - pointer to a pixel array
width        - pixel array's width [pixels]
height       - pixel array's height [rows]
tags         - pointer to an array of TagItems
```

### TAGS

GGFX\_PixelFormat (ULONG) - pixel format. Currently defined are

```
PIXFMT_CHUNKY_CLUT
    chunky bytes, directly acting as indices
    to a color-lookup-table. You must specify the
    GGFX_Palette and GGFX_NumColors tags as well.
```

```
PIXFMT_ORGB_32
    truecolor pixels (ULONG 0x00rrggbb).
```

Default: PIXFMT\_CHUNKY\_CLUT

GGFX\_Palette (APTR) - pointer to a color table. Mandatory for PIXFMT\_CHUNKY\_CLUT (see above).

Default: none

GGFX\_NumColors (ULONG) - number of colors in the color table. Mandatory for PIXFMT\_CHUNKY\_CLUT (see above).

Default: none

GGFX\_PaletteFormat (ULONG) - format of the palette. Currently defined are:

```
PALFMT_RGB8
    ULONG 0x00rrggbb
```

```
PALFMT_RGB32
    ULONG red,green,blue. This is the LoadRGB32()
    format without trailing longword.
```

Default: PALFMT\_RGB8

GGFX\_Weight (ULONG) - weight factor. Valid range: 1...255.  
 With this factor, you can specify a significance  
 for this color instance. The higher this value, the  
 higher the pixel array's influence on the pen-sharemap.  
 Default: 1

#### RESULTS

colorhandle - identifier for a particular dependency between  
 color information and pen-sharemap. there is  
 no need for you to store a colorhandle, unless  
 you want to manually remove it from the pen-sharemap  
 via RemColorHandle(). NULL if something went wrong.

#### NOTES

An example is provided with the documentation for AddPictureA().

#### SEE ALSO

RemColorHandle(), AddPaletteA(), AddPictureA(),  
 CreatePenShareMapA(), DeletePenShareMap(), ObtainDrawHandleA()

## 1.5 guigfx.library/ClonePictureA

#### NAME

ClonePictureA - create a duplicate from a picture.  
 ClonePicture - varargs stub for ClonePictureA.

#### SYNOPSIS

```
newpicture = ClonePictureA (picture, taglist)
d0          a0          a1
```

```
APTR ClonePictureA (APTR, struct TagItem *)
```

```
APTR ClonePicture (APTR, tag, ..., TAG_DONE)
```

#### FUNCTION

This function creates a duplicate from a picture. Memory will  
 be allocated, and the picture will be copied including all its  
 attributes. Optionally, the picture is cloned only in part.

#### INPUTS

picture - pointer to a picture  
 tags - pointer to an array of TagItems

#### TAGS

GGFX\_SourceX (ULONG)  
 left edge inside the picture where to fetch the pixels  
 from [pixels]. Default: 0.

GGFX\_SourceY (ULONG)  
 top edge inside the picture where to fetch the pixels  
 from [rows]. Default: 0.

---



GGFX\_SourceWidth (ULONG)  
width of an area inside the picture [pixels].  
Default: The picture's width.

GGFX\_SourceHeight (ULONG)  
height of an area inside the picture [rows].  
Default: The picture's height.

GGFX\_DestWidth (ULONG)  
width of the new picture [pixels].  
Default: The picture's width.

GGFX\_DestHeight (ULONG)  
height of the new picture [rows].  
Default: The picture's height.

#### RESULTS

newpicture - a vanilla copy of the specified picture (or a part of it), or NULL if there was not enough memory available.

#### SEE ALSO

MakePictureA(), DeletePicture()

## 1.6 guigfx.library/CreateDirectDrawHandleA

#### NAME

CreateDirectDrawHandleA - derive a handle for 'direct' drawing (v9)  
CreateDirectDrawHandle - varargs stub for CreateDirectDrawHandleA

#### SYNOPSIS

```
ddh = CreateDirectDrawHandleA(drawhandle,sourcewidth,sourceheight,
                               a0          d0          d1
                               destwidth,destheight,taglist)
                               d2          d3          a1
```

```
APTR CreateDirectDrawHandleA(APTR,UWORD,UWORD,UWORD,UWORD,
                             struct TagItem *)
```

```
APTR CreateDirectDrawHandle (APTR,UWORD,UWORD,UWORD,UWORD,
                             Tag,...,TAG_DONE)
```

#### FUNCTION

Derive a handle from a drawhandle for highly optimized ('direct') drawing function calls. Currently only truecolor data (PIXFMT\_0RGB\_32) are supported.

#### INPUTS

drawhandle - drawhandle from which to derive a directdrawhandle  
sourcewidth - source width [pixels]  
sourceheight - source height [rows]  
destwidth - dest width [pixels]  
destheight - dest height [rows]

---

tags            - pointer to an array of TagItems

#### TAGS

GGFX\_PixelFormat - type of pixels to be processed. Currently only PIXFMT\_0RGB\_32 is supported.  
Default: PIXFMT\_0RGB\_32

#### RESULTS

ddh    - a direct-drawhandle, an object that can be passed to DirectDrawTrueColorA()

#### NOTES

You must free the direct-drawhandle with a matching call to DeleteDirectDrawHandle(). You are not allowed to free the underlying drawhandle before the direct-drawhandle. The consequences might be fatal.

#### SEE ALSO

DeleteDirectDrawHandle(), DirectDrawTrueColorA(), ObtainDrawHandleA()

## 1.7 guigfx.library/CreatePenShareMapA

#### NAME

CreatePenShareMapA - create a screen-pen manager.  
CreatePenShareMap - varargs stub for CreatePenShareMapA.

#### SYNOPSIS

```
psm = CreatePenShareMapA(taglist)
d0                            a0

APTR CreatePenShareMapA(struct TagItem *)

APTR CreatePenShareMap(tag,...,TAG_DONE)
```

#### FUNCTION

This function creates a screen-pen manager.

#### INPUTS

tags            - pointer to an array of TagItems

#### TAGS

GGFX\_HSType (ULONG) - internal histogram type, according to the histogram types defined in render/render.h. Better you never touch this tag, unless you know exactly what you are doing. Also consider reading the 'memory' text file supplied with the render.library distribution.  
Default: HSTYPE\_12BIT\_TURBO

#### RESULTS

psm    - a pen-sharemap ready for usage or NULL if there was not enough memory available.

#### NOTES

The term 'pen-sharemap' might be confusing and has been maintained for consistency reasons. It is actually a histogram that collects color statistics. When a pen-sharemap is passed to ObtainDrawHandleA(), it allows to calculate a very specific palette.

SEE ALSO

DeletePenShareMap(), ObtainDrawHandleA(), AddPictureA(), AddPaletteA(), AddPixelArrayA()

## 1.8 guigfx.library/CreatePictureBitMapA

NAME

CreatePictureBitMapA - create a BitMap from a picture.  
CreatePictureBitMap - varargs stub for CreatePictureBitMapA.

SYNOPSIS

```
bitmap = CreatePictureBitMapA(drawhandle,picture,tags)
d0                                a0          a1          a2
```

```
struct BitMap *CreatePictureBitMapA(APTR,APTR,struct TagItem *)
```

```
struct BitMap *CreatePictureBitMap(APTR,APTR,tag,...,TAG_DONE)
```

FUNCTION

This function creates a BitMap from a drawhandle and from a picture. This BitMap will be applicable to the drawhandle's RastPort and ColorMap, i.e. it may use colors allocated with the drawhandle, and can be blitted efficiently to the RastPort with graphics.library functions.

If the picture argument is omitted (i.e. NULL), then this function creates a blank, displayable BitMap that can be blitted efficiently to the drawhandle's RastPort. Note: The tags GGFY\_DestWidth and GGFY\_DestHeight are mandatory if no picture is specified, and all other tags will be ignored. (v15)

Note: The BitMap structure must be freed with graphics.library/FreeBitMap().

INPUTS

```
drawhandle - pointer to a drawhandle from ObtainDrawHandleA()
picture    - pointer to a picture, or NULL.
tags       - pointer to an array of TagItems
```

TAGS

```
GGFY_DestWidth (ULONG)
    destination width for the BitMap [pixels].
    Mandatory if no picture is supplied.
    Default: the picture's width.
```

```
GGFY_DestHeight (ULONG)
    destination height for the BitMap [rows].
    Mandatory if no picture is supplied.
```

Default: the picture's height.

GGFX\_SourceX (ULONG)

left edge inside the picture where to fetch the pixels from [pixels]. Default: 0.

GGFX\_SourceY (ULONG)

top edge inside the picture where to fetch the pixels from [rows]. Default: 0.

GGFX\_SourceWidth (ULONG)

width of an area inside the picture [pixels].  
Default: The picture's width.

GGFX\_SourceHeight (ULONG)

height of an area inside the picture [rows].  
Default: The picture's height.

GGFX\_CallbackHook (struct Hook \*)

pointer to a callback Hook structure. The associated callback function will be called from time to time while the picture is being rendered to the BitMap. The callback has to return TRUE for continuation or FALSE for abortion. It will be submitted a pointer to the picture for the object, and a message of the following type:

ULONG GGFX\_MSGTYPE\_LINEDRAWN  
ULONG line\_number

Also refer to the example provided with DrawPictureA().  
Default: NULL.

GGFX\_DitherMode (ULONG) - dither mode. Currently available are:

DITHERMODE\_NONE

no dithering at all

DITHERMODE\_FS

Floyd-Steinberg dithering

DITHERMODE\_RANDOM

Random dithering. This mode is significantly slower than Floyd-Steinberg dithering.

DITHERMODE\_EDD

EDD dithering. This mode is faster than Floyd-Steinberg dithering.

Default: The drawhandle's dithermode.

GGFX\_DitherAmount (ULONG) - dither amount. Valid range: 0...255.

Currently, this value is of any use only for DITHERMODE\_RANDOM. Default: The drawhandle's dither amount.

GGFX\_AutoDither (BOOL) - automatic dither activation.

temporarily overrides the drawhandle's autodither

---

state - see ObtainDrawHandleA().  
 default: the drawhandle's autodither state. (v17)

#### RESULTS

bitmap - a BitMap structure ready for being blitted to the RastPort via graphics.library/BltBitMapRastPort(), or NULL if there was not enough memory available.

#### SEE ALSO

ObtainDrawHandleA(), DrawPictureA(), graphics.library/FreeBitMap(), graphics.library/BltBitMapRastPort(), CreatePictureMaskA()

## 1.9 guigfx.library/CreatePictureMaskA

#### NAME

CreatePictureMaskA - create a mask from a picture. (v15)  
 CreatePictureMask - varargs stub for CreatePictureMaskA.

#### SYNOPSIS

```
success = CreatePictureMaskA (picture, array, bytewidth, tags)
d0              a0      a1      d0      a2
```

```
BOOL CreatePictureMaskA (APTR, UBYTE *, UWORD, struct TagItem *)
```

```
BOOL CreatePictureMask (APTR, UBYTE *, UWORD, tag, ..., TAG_DONE)
```

#### FUNCTION

This function creates a single-bitplane mask from a picture's alpha-channel. This mask can be passed to e.g. graphics.library/BltMaskBitMapRastPort() for masked blitting.

If the picture contains no alpha-channel, the resulting mask will be completely opaque, i.e. all bits will be set.

Use GGFX\_Ratio to specify a threshold. Alpha-channel values below this threshold will be rendered to a clear bit, values greater or equal to a set bit.

The array argument must point to a single bitplane, with an alignment according to  $((width+15)>>4)<<1$ . The bytewidth must be an even number.

Optionally, the alpha-channel is scaled to the resulting bitplane.

#### INPUTS

picture - pointer to a picture  
 array - pointer to a single bitplane. reserve at least  $((width+15)>>4)<<1 * height$  bytes.  
 bytewidth - total width of the bitplane array [bytes]  
 tags - pointer to an array of TagItems

#### TAGS

GGFX\_DestWidth (ULONG)

destination width to be used in the resulting bitplane [pixels]. Default: the picture's width.

GGFX\_DestHeight (ULONG)  
destination height to be used in the resulting bitplane [rows]. Default: the picture's height.

GGFX\_SourceX (ULONG)  
left edge inside the picture where to fetch the alpha-channel from [pixels]. Default: 0.

GGFX\_SourceY (ULONG)  
top edge inside the picture where to fetch the alpha-channel from [rows]. Default: 0.

GGFX\_SourceWidth (ULONG)  
width of an area inside the picture [pixels].  
Default: The picture's width.

GGFX\_SourceHeight (ULONG)  
height of an area inside the picture [rows].  
Default: The picture's height.

GGFX\_Ratio (ULONG) - threshold. Alpha-channel values greater or equal this threshold will appear as a set bit. Default: 128

#### RESULTS

success - boolean, FALSE if there was not enough memory for intermediate buffers

#### SEE ALSO

CreatePictureBitMapA(), graphics.library/BlitMaskBitMapRastPort()

## 1.10 guigfx.library/DeleteDirectDrawHandle

#### NAME

DeleteDirectDrawHandle - remove a direct-drawhandle. (v9)

#### SYNOPSIS

```
DeleteDirectDrawHandle(ddh)
                        a0
```

```
void DeleteDirectDrawHandle(APTR)
```

#### FUNCTION

this function deletes a direct-drawhandle object and frees all associated memory.

#### INPUTS

ddh - a direct-drawhandle, created with CreateDirectDrawHandleA()

#### RESULTS

none

SEE ALSO  
CreateDirectDrawHandleA()

## 1.11 guigfx.library/DeletePenShareMap

NAME  
DeletePenShareMap - dispose a pen-sharemap.

SYNOPSIS  
DeletePenShareMap(psm)  
a0

void DeletePenShareMap(APTR)

FUNCTION  
This function discards a pen-sharemap and frees all associated memory and colorhandles.

INPUTS  
psm - pointer to a pen-sharemap to be deleted.

SEE ALSO  
CreatePenShareMapA(), RemColorHandle()

## 1.12 guigfx.library/DeletePicture

NAME  
DeletePicture - dispose a picture.

SYNOPSIS  
DeletePicture(picture)  
a0

void DeletePicture(APTR)

FUNCTION  
This function discards a picture and frees all associated memory.

INPUTS  
picture - pointer to a picture to be deleted.

SEE ALSO  
MakePictureA()

## 1.13 guigfx.library/DirectDrawTrueColorA

---

## NAME

DirectDrawTrueColorA - draw truecolor data. (v9)  
 DirectDrawTrueColor - varargs stub for DirectDrawTrueColorA.

## SYNOPSIS

```
success = DirectDrawTrueColorA(directdrawhandle,array,x, y,
                                a0          a1    d0 d1
                                taglist)
                                a2
```

```
BOOL DirectDrawTrueColorA(APTR,ULONG *,UWORD,UWORD,
                           struct TagItem *)
```

```
BOOL DirectDrawTrueColor(APTR,ULONG *,UWORD,UWORD,Tag,...,
                           TAG_DONE)
```

## FUNCTION

Draw an array of truecolor data of the type PIXFMT\_ORGB\_32 to the RastPort associated with a direct-drawhandle's parent drawhandle. This function has got very few overhead and writes (or renders) the data as straightforward as possible.

## INPUTS

directdrawhandle - an object derived from a drawhandle via CreateDirectDrawHandleA()  
 array - pointer to an array of data of the type PIXFMT\_ORGB\_32  
 x,y - destination coordinates inside the RastPort.  
 taglist - pointer to an array of TagItems.

## TAGS

GGFX\_SourceWidth - total width of source array [pixels]  
 default: sourcewidth supplied with CreateDirectDrawHandleA()

## RESULTS

success - TRUE if the call succeeded. failures are currently very unlikely, but you should be prepared. future implementations might differ and be more likely to fail due to a lack of memory.

## SEE ALSO

CreateDirectDrawHandleA(), DrawPictureA()

## 1.14 guigfx.library/DoPictureMethodA

## NAME

DoPictureMethodA - apply a method to a picture.  
 DoPictureMethod - varargs stub for DoPictureMethodA.

## SYNOPSIS

```
result = DoPictureMethodA(picture,method,arguments)
```

---



a0            d0            a1

ULONG DoPictureMethodA(APTR, ULONG, ULONG \*)

ULONG DoPictureMethod(APTR, ULONG, argument, ...)

#### FUNCTION

This function applies a method to a picture. Arguments and results depend on the specified method.

#### INPUTS

picture        - pointer to a picture  
method        - method identifier (see below)  
arguments     - pointer to a list of arguments (see below)

#### METHODS

PICMTHD\_AUTOCROP        tags

crop the picture at its outmost borders with differing pixels. optionally limit the search for differing pixels to an area inside the picture.

#### TAGS

GGFX\_SourceX (ULONG)  
left edge of the area to check [pixels]  
Default: 0

GGFX\_SourceY (ULONG)  
top edge of the area to check [rows]  
Default: 0

GGFX\_SourceWidth (ULONG)  
width of the area to check [pixels]  
Default: the picture's width.

GGFX\_SourceHeight (ULONG)  
height of the area to check [rows]  
Default: the picture's height.

#### RESULTS

success (boolean)

PICMTHD\_CREATEALPHAMASK        rgb, tags

this method creates an alpha-channel for the given picture. The alpha-channel will be the difference for each pixel in the picture against the specified 0x00rrggbb value. Optionally, a clip area inside the source picture may be specified.

#### TAGS

GGFX\_SourceX (ULONG)  
source left edge in the second picture [pixels]. Default: 0

GGFX\_SourceY (ULONG)  
source top edge in the picture [rows].  
Default: 0

GGFX\_SourceWidth (ULONG)  
width of an area in the picture [pixels].  
Default: the picture's width.

GGFX\_SourceHeight (ULONG)  
height of an area in the picture [rows].  
Default: the picture's height.

## RESULTS

success (boolean)

## NOTES

this method requires conversion to PIXFMT\_0RGB\_32  
(see annotations below)

## SEE ALSO

PICMTHD\_SETALPHA

PICMTHD\_CROP     x, y, width, height, tags

crop a picture to a rectangle defined throughout  
position (x|y) and dimensions (width|height)

## TAGS

none defined

## RESULTS

success (boolean)

PICMTHD\_FLIPX     tags

flip image (or a part of it) horizontally.

## TAGS

GGFX\_DestX (ULONG)  
left edge of the area to flip [pixels]  
Default: 0

GGFX\_DestY (ULONG)  
top edge of the area to flip [rows]  
Default: 0

GGFX\_DestWidth (ULONG)  
width of the area to be flipped [pixels]  
Default: the picture's width.

GGFX\_DestHeight (ULONG)  
height of the area to be flipped [rows]  
Default: the picture's height.

## RESULTS

success (boolean)

PICMTHD\_FLIPY      tags

flip image (or a part of it) vertically.

TAGS

GGFX\_DestX (ULONG)

left edge of the area to flip [pixels]

Default: 0

GGFX\_DestY (ULONG)

top edge of the area to flip [rows]

Default: 0

GGFX\_DestWidth (ULONG)

width of the area to be flipped [pixels]

Default: the picture's width.

GGFX\_DestHeight (ULONG)

height of the area to be flipped [rows]

Default: the picture's height.

RESULTS

success (boolean)

PICMTHD\_INSERT    second\_picture, tags

insert a second picture (or a part of it) to the current picture. Clip areas may be specified both inside the current and the second picture. The processed pixels will be scaled to the specified dimensions, if necessary.

TAGS

GGFX\_SourceX (ULONG)

source left edge where to fetch the pixels from in the second picture [pixels].

Default: 0

GGFX\_SourceY (ULONG)

source top edge where to fetch the pixels from in the second picture [rows].

Default: 0

GGFX\_SourceWidth (ULONG)

width of an area in the second picture [pixels]. Default: the second picture's width.

GGFX\_SourceHeight (ULONG)

height of an area in the second picture [rows]. Default: the second picture's height.

GGFX\_DestX (ULONG)

---

destination left edge where to insert  
the pixels into the current picture  
[pixels]. Default: 0

GGFX\_DestY (ULONG)

destination top edge where to insert  
the pixels into the current picture  
[rows]. Default: 0

GGFX\_DestWidth (ULONG)

width to be inserted in the current picture.  
[pixels]. Default: the current picture's width.

GGFX\_DestHeight (ULONG)

height to be inserted in the current picture.  
[rows]. Default: the current picture's height.

#### RESULTS

success (boolean)

#### NOTES

this method requires conversion to PIXFMT\_ORGB\_32  
(see annotations below)

PICMTHD\_MAPDRAWHANDLE drawhandle, tags

map a picture for optimized drawing to a drawhandle's  
RastPort. Drawing a picture via DrawPictureA() is much  
faster thereafter.

#### TAGS

none defined

#### RESULTS

success (boolean)

#### NOTES

- The internal representation of a picture may change at any time. The specified pixel format is only valid until the next call to DoPictureMethodA(). Use GetPictureAttrsA() to find out about the current format.
- You risk to lose color information, i.e. when a truecolor picture has to be rendered to a 8bit RastPort, for instance.

PICMTHD\_MIX second\_picture, tags

mix a second picture to the current picture. Clip areas may be specified both inside the current and the second picture. The processed pixels will be scaled to the specified dimensions, if necessary.

#### TAGS

GGFX\_Ratio (ULONG)

---

mix ratio (0...255). Default: 128

GGFX\_SourceX (ULONG)

source left edge where to fetch pixels  
from in the second picture [pixels].  
Default: 0

GGFX\_SourceY (ULONG)

source top edge where to fetch pixels  
from in the second picture [rows].  
Default: 0

GGFX\_SourceWidth (ULONG)

width of an area in the second picture  
[pixels]. Default: the second picture's  
width.

GGFX\_SourceHeight (ULONG)

height of an area in the second picture  
[rows]. Default: the second picture's  
height.

GGFX\_DestX (ULONG)

destination left edge where to apply  
the operation to in the current picture  
[pixels]. Default: 0

GGFX\_DestY (ULONG)

destination top edge where to apply  
the operation to in the current picture  
[rows]. Default: 0

GGFX\_DestWidth (ULONG)

width of an area for the operation to be  
applied to in the current picture [pixels].  
Default: the current picture's width.

GGFX\_DestHeight (ULONG)

height of an area for the operation to be  
applied to in the current picture [rows].  
Default: the current picture's height.

#### RESULTS

success (boolean)

#### NOTES

this method requires conversion to PIXFMT\_ORGB\_32  
(see annotations below)

#### SEE ALSO

PICMTHD\_MIXALPHA

PICMTHD\_MIXALPHA

secondpicture, tags

mix a second picture to the current picture via  
alpha-channel. Clip areas may be specified both inside

the current and the second picture. The processed pixels will be scaled to the specified dimensions, if necessary.

#### TAGS

**GGFX\_SourceX** (ULONG)  
source left edge where to fetch pixels from in the second picture [pixels].  
Default: 0

**GGFX\_SourceY** (ULONG)  
source top edge where to fetch pixels from in the second picture [rows].  
Default: 0

**GGFX\_SourceWidth** (ULONG)  
width of an area in the second picture [pixels]. Default: the second picture's width.

**GGFX\_SourceHeight** (ULONG)  
height of an area in the second picture [rows]. Default: the second picture's height.

**GGFX\_DestX** (ULONG)  
destination left edge where to apply the operation to in the current picture [pixels]. Default: 0

**GGFX\_DestY** (ULONG)  
destination left edge where to apply the operation to in the current picture [rows]. Default: 0

**GGFX\_DestWidth** (ULONG)  
width of an area for the operation to be applied to in the current picture [pixels].  
Default: the current picture's width.

**GGFX\_DestHeight** (ULONG)  
height of an area for the operation to be applied to in the current picture [rows].  
Default: the current picture's height.

#### RESULTS

success (boolean)

#### NOTES

this method requires conversion to PIXFMT\_ORGB\_32 (see annotations below)

#### SEE ALSO

PICMTHD\_SETALPHA, PICMTHD\_MIX

PICMTHD\_NEGATIVE      tags

---

invert the colors of the picture (or a part of it)

#### TAGS

GGFX\_DestX (ULONG)  
left edge of the area to invert [pixels]  
Default: 0

GGFX\_DestY (ULONG)  
top edge of the area to invert [rows]  
Default: 0

GGFX\_DestWidth (ULONG)  
width of the area to invert [pixels]  
Default: the picture's width.

GGFX\_DestHeight (ULONG)  
height of the area to invert [rows]  
Default: the picture's height.

#### RESULTS

success (boolean)

#### NOTES

this method requires conversion to PIXFMT\_ORGB\_32  
(see annotations below)

PICMTHD\_RENDER pixelformat, tags

render a picture to a specified pixel format. Valid pixel formats are as follows:

PIXFMT\_CHUNKY\_CLUT  
chunky bytes

PIXFMT\_ORGB\_32  
ULONG 0x00rrggbb truecolor data

PIXFMT\_RGB\_24  
UBYTE 0xrr,0xgg,0xbb truecolor data

#### TAGS

none defined

#### RESULTS

success (boolean)

#### NOTES

- The internal representation of a picture may change at any time. The specified pixel format is only valid until the next call to DoPictureMethodA(). Use GetPictureAttrsA() to find out about the current format.
- You risk to lose color information, i.e. when a truecolor picture is rendered to PIXFMT\_CHUNKY\_CLUT.

PICMTHD\_SCALE    width, height, tags

scale a picture to the specified dimensions.

TAGS

none defined

RESULTS

success (boolean)

NOTE

This function fails if applied to a static buffer, and when the image needs to grow. In this case, specify GGFX\_Independent or set a larger buffer with GGFX\_BufferSize when creating the picture with MakePictureA().

PICMTHD\_SET      rgb, tags

set a picture (or a part of it) to the specified RGB value.

TAGS

GGFX\_DestX (ULONG)  
destination left edge [pixels]  
Default: 0

GGFX\_DestY (ULONG)  
destination top edge [rows]  
Default: 0

GGFX\_DestWidth (ULONG)  
width to be affected [pixels]  
Default: the picture's width.

GGFX\_DestHeight (ULONG)  
height to be affected [rows]  
Default: the picture's height.

RESULTS

success (boolean)

NOTES

if you apply this method to a picture of the format PIXFMT\_CHUNKY\_CLUT, it cannot be guaranteed that the specified RGB value is exactly hit. you can use PICMTHD\_RENDER in order to convert the picture to PIXFMT\_ORGB\_32 before.

PICMTHD\_SETALPHA      alpha-array, width, height, tags

set an alpha-channel array for the current picture.

---



The alpha-channel is a plain array of chunky-bytes, defining a mixing ratio for each pixel. The alpha-channel array will be scaled to fit exactly to the current picture, unless you specify other dimensions. Passing a NULL pointer for alpha-array will discard an existing alpha-channel.

#### TAGS

GGFX\_DestX (ULONG)  
destination left edge where to insert the alpha-channel into the current picture [pixels]. Default: 0

GGFX\_DestY (ULONG)  
destination top edge where to insert the alpha-channel into the current picture [rows]. Default: 0

GGFX\_DestWidth (ULONG)  
width to be inserted to the current picture [pixels]. Default: the current picture's width.

GGFX\_DestHeight (ULONG)  
height to be inserted to the current picture [rows]. Default: the current picture's height.

#### RESULTS

success (boolean)

#### NOTES

this method requires conversion to PIXFMT\_0RGB\_32 (see annotations below)

#### SEE ALSO

PICMTHD\_CREATEALPHAMASK

PICMTHD\_TEXTURE texturepic, coordinates, tags

draw a texture to the current picture, texture-mapped via an array of coordinates. texturepic is a pointer to a picture that contains the texture, coordinates is a pointer to an array of 4 WORD pairs of x/y coordinates each. They form a trapezoid inside the current picture for the texture picture to be mapped to. border clipping is fully implemented.

#### TAGS

GGFX\_SourceX (ULONG)  
source left edge inside the texture [pixels]. Default: 0

GGFX\_SourceY (ULONG)  
source top edge inside the texture [rows]. Default: 0

GGFX\_SourceWidth (ULONG)  
texture width [pixels]. Default:  
the texturepic's width.

GGFX\_SourceHeight (ULONG)  
texture height [rows]. Default:  
the texturepic's height.

GGFX\_DestX (ULONG)  
destination left edge where to apply  
the trapezoid to the current picture  
[pixels]. Default: 0

GGFX\_DestY (ULONG)  
destination top edge where to apply  
the trapezoid to the current picture  
[rows]. Default: 0

GGFX\_DestWidth (ULONG)  
maximum width to be inserted to the  
current picture [pixels]. Default: the  
current picture's width.

GGFX\_DestHeight (ULONG)  
maximum height to be inserted to the  
current picture [rows]. Default: the  
current picture's height.

## RESULTS

success (boolean)

## NOTES

this method depends on both pictures to be in the same format. DoPictureMethodA() tries to convert either of the involved pictures to the other's format. (see annotations below)

## SEE ALSO

render.library texture-mapping documentation

PICMTHD\_TINTALPHA      rgb, tags

tint the picture with the given 0x00rrggbb. the mixing ratio is defined throughout the picture's alpha-channel.

## TAGS

GGFX\_DestX (ULONG)  
destination left edge where to apply  
the operation [pixels]. Default: 0

GGFX\_DestY (ULONG)  
destination left edge where to apply  
the operation [rows]. Default: 0

GGFX\_DestWidth (ULONG)

width of an area for the operation to be applied to [pixels].  
Default: the picture's width.

GGFX\_DestHeight (ULONG)  
height of an area for the operation to be applied to [rows].  
Default: the picture's height.

#### RESULTS

success (boolean)

#### NOTES

this method requires conversion to PIXFMT\_ORGB\_32  
(see annotations below)

#### SEE ALSO

PICMTHD\_TINT, PICMTHD\_MIXALPHA

PICMTHD\_TINT      rgb, tags

tint the picture with the given 0x00rrggbb value, and optionally with a specific ratio.

#### TAGS

GGFX\_Ratio (ULONG)  
mix ratio (0...255). Default: 128

GGFX\_DestX (ULONG)  
destination left edge where to apply the operation [pixels]. Default: 0

GGFX\_DestY (ULONG)  
destination left edge where to apply the operation [rows]. Default: 0

GGFX\_DestWidth (ULONG)  
width of an area for the operation to be applied to [pixels].  
Default: the picture's width.

GGFX\_DestHeight (ULONG)  
height of an area for the operation to be applied to [rows].  
Default: the picture's height.

#### RESULTS

success (boolean)

#### NOTES

this method requires conversion to PIXFMT\_ORGB\_32  
(see annotations below)

#### SEE ALSO

PICMTHD\_TINTALPHA, PICMTHD\_MIXALPHA

---

## RESULTS

result            - return value (specific for the applied method)

## NOTES

Methods that require conversion to PIXFMT\_0RGB\_32 will fail in a static buffer, i.e. when the picture was created with MakePictureA() in the format PIXFMT\_CHUNKY\_CLUT, and without a buffer overhang or GGFX\_Independent. See MakePictureA() for further details.

## SEE ALSO

MakePictureA(), ObtainDrawHandleA(), DrawPictureA()

## 1.15 guigfx.library/DrawPictureA

## NAME

DrawPictureA - draw a picture to a drawhandle.  
 DrawPicture - varargs stub for DrawPictureA.

## SYNOPSIS

```
success = DrawPictureA(drawhandle,picture,x, y, tags)
d0              a0              a1              d0 d1 a2
```

```
BOOL DrawPictureA(APTR,APTR,UWORD,UWORD,struct TagItem *)
```

```
BOOL DrawPicture(APTR,APTR,UWORD,UWORD,tag,...,TAG_DONE)
```

## FUNCTION

This function draws a picture to the RastPort associated with a drawhandle. Optionally, the picture will be scaled to the specified dimensions. A clip area inside the picture may be specified as well.

## INPUTS

drawhandle - pointer to a drawhandle from ObtainDrawHandleA()  
 picture - pointer to a picture  
 x - left edge inside the RastPort [pixels]  
 y - top edge inside the RastPort [rows]  
 tags - pointer to an array of TagItems

## TAGS

GGFX\_SourceX (ULONG)  
     left edge inside the picture where to fetch the pixels  
     from [pixels]. Default: 0.

GGFX\_SourceY (ULONG)  
     top edge inside the picture where to fetch the pixels  
     from [rows]. Default: 0.

GGFX\_SourceWidth (ULONG)  
     width of an area inside the picture [pixels].  
     Default: The picture's width.

GGFX\_SourceHeight (ULONG)  
height of an area inside the picture [rows].  
Default: The picture's height.

GGFX\_DestWidth (ULONG)  
destination width for the picture to be drawn [pixels].  
Default: the picture's width.

GGFX\_DestHeight (ULONG)  
destination height for the picture to be drawn [rows].  
Default: the picture's height.

GGFX\_CallBackHook (struct Hook \*)  
pointer to a callback Hook structure. The associated  
callback function will be called from time to time  
while the picture is being drawn.  
The callback has to return TRUE for continuation or FALSE  
for abortion. It will be submitted a pointer to the  
picture for the object, and a message of the following  
type:

```
ULONG GGFX_MSGTYPE_LINEDRAWN
ULONG line_number
```

Also refer to the example below.  
Default: NULL.

GGFX\_DitherMode (ULONG) - dither mode. Currently available are:

```
DITHERMODE_NONE
    no dithering at all

DITHERMODE_FS
    Floyd-Steinberg dithering

DITHERMODE_RANDOM
    Random dithering. This mode is significantly
    slower than Floyd-Steinberg dithering.

DITHERMODE_EDD
    EDD dithering. This mode is faster than
    Floyd-Steinberg dithering.
```

Default: The drawhandle's dithermode.

GGFX\_DitherAmount (ULONG) - dither amount. Valid range: 0...255.  
Currently, this value is of any use only for  
DITHERMODE\_RANDOM. Default: The drawhandle's dither amount.

GGFX\_AutoDither (BOOL) - automatic dither activation.  
temporarily overrides the drawhandle's autodither  
state - see ObtainDrawHandleA().  
default: the drawhandle's autodither state.

GGFX\_RastLock (struct SignalSemaphore \*) - pointer to an  
initialized exec.library SignalSemaphore which is  
used for RastPort sharing between tasks. if you want

---

to draw to the drawhandle's RastPort while another task is rendering to this RastPort with DrawPictureA(), you must supply this argument and enclose all accesses to the RastPort with ObtainSemaphore()/ReleaseSemaphore() pairs. default: NULL (v16)

RND\_DestCoordinates (WORD \*) - Pointer to an array of coordinates for texturemapped drawing. This array consists of 4 WORD pairs of x/y coordinates each. The array forms a trapezoid inside the destination rectangle. Any parameters are valid, since clipping is fully implemented. Texture-mapping and drawing are performed in a single pass, and there are no additional buffers allocated. Note that rotation can be easily implemented with this feature, since rotation is merely a special case of texture-mapping. See also the documentation of ObtainDrawHandleA()/GGFX\_BGColor. Default - NULL. (v16)

#### RESULTS

success - TRUE if the picture could be drawn, FALSE if there was not enough memory available. Another reason for this function to fail is that the optional callback hook returned FALSE.

#### NOTES

There is almost no overhead for scaling. Scaling is extremely fast and may be considered 'gratis'.

#### EXAMPLE

The callback hook allows to interrupt DrawPictureA() at any time. A simple callback function might look like this:

```
ULONG __saveds __asm abortdrawfunc(register __a0 struct Hook *hook)
{
    ULONG abortsignal = 1 << *((BYTE *) (hook->h_Data));
    if (SetSignal(0, 0) & abortsignal)
    {
        return FALSE;
    }
    else
    {
        return TRUE;
    }
}
```

In this example, an abortion signal was allocated and made available to the function via h\_Data. If the signal arrives, the callback function returns FALSE to DrawPictureA(), and drawing will be interrupted.

Note: Not all internal drawing-routines actually execute the hook function more than once. This mainly depends on the typical speed for a particular drawing routine or certain graphics.library or cybergraphics.library implementations. At least it is supported when scaling and rendering is involved to the drawing process.

#### SEE ALSO

ObtainDrawHandleA(), CreatePictureBitMapA()

## 1.16 guigfx.library/GetPictureAttrsA

### NAME

GetPictureAttrsA - get picture attributes.  
GetPictureAttrs - varargs stub for GetPictureAttrsA.

### SYNOPSIS

```
count = GetPictureAttrsA (picture, tags)
d0          a0          a1
```

```
ULONG GetPictureAttrsA (APTR, struct TagItem *)
```

```
ULONG GetPictureAttrs (APTR, tag, ..., TAG_DONE)
```

### FUNCTION

This function obtains a list of picture attributes. It returns the number of attributes that have been retrieved actually.

### INPUTS

picture - pointer to a picture  
tags - pointer to an array of TagItems

### TAGS

PICATTR\_Width (ULONG \*)  
The picture's width [pixels]

PICATTR\_Height (ULONG \*)  
The picture's height [rows]

PICATTR\_PixelFormat (ULONG \*)  
The picture's internal pixel format. Currently this can be PIXFMT\_CHUNKY\_CLUT, PIXFMT\_ORGB\_32, or PIXFMT\_RGB\_24.

PICATTR\_RawData (APTR \*)  
Pointer to the picture's raw data. Operate on the raw pixel array only with knowledge of the actual pixel format. Warning: The internal representation of a picture may change with every call to DoPictureMethodA() or drawing functions.

PICATTR\_AspectX (ULONG \*)  
Horizontal pixel aspect.

PICATTR\_AspectY (ULONG \*)  
Vertical pixel aspect.

PICATTR\_AlphaPresent (BOOL)  
indicates if an alpha-channel is present.

### RESULTS

count - the number of attributes that could be retrieved.

---

## 1.17 guigfx.library/IsPictureA

### NAME

IsPictureA - determine whether a file is a picture or not. (v4)  
IsPicture - varargs stub for IsPictureA.

### SYNOPSIS

```
ispicture = IsPictureA(filename,tags)
d0                a0                a1
```

```
BOOL IsPictureA(char *,struct TagItem *)
```

```
BOOL IsPicture(char *,tag,...,TAG_DONE)
```

### FUNCTION

This function checks if the specified file could be loaded as a picture with LoadPictureA().

### INPUTS

filename - name of the file to be checked  
tags - pointer to an array of TagItems

### TAGS

### RESULTS

ispicture - TRUE if the specified file is recognized as a picture that could be loaded with LoadPictureA().

### SEE ALSO

LoadPictureA()

## 1.18 guigfx.library/LoadPictureA

### NAME

LoadPictureA - load a picture file.  
LoadPicture - varargs stub for LoadPictureA.

### SYNOPSIS

```
picture = LoadPictureA(filename,tags)
d0                a0                a1
```

```
APTR LoadPictureA(char *,struct TagItem *)
```

```
APTR LoadPicture(char *,tag,...,TAG_DONE)
```

### FUNCTION

This function loads a picture. Currently, this is implemented via picture.class datatypes.

---



## INPUTS

filename     - name of the file to be loaded  
 tags        - pointer to an array of TagItems

## TAGS

GGFX\_ErrorCode (LONG \*)  
     Pointer to a variable that will receive a standard DOS error code. This will be NULL if loading was successful.  
     Default: NULL

GGFX\_UseMask (ULONG) (v15)  
     boolean to indicate whether a transparency color, an alpha-channel or a mask (if present) should be inserted to the picture. Note: This tag requires the picture to be converted to PIXFMT\_ORGB\_32.  
     Default: FALSE

GGFX\_HSType (ULONG) - picture's internal histogram type, according to the histogram types defined in render/render.h. Better you never touch this tag, unless you know exactly what you are doing. Consider reading the 'memory' text file supplied with the render.library distribution. You do not need this tag under normal circumstances.  
     Default: not defined (will be set to the pen-sharemap's histogram type, or to the default type when needed)

## RESULTS

picture     - pointer to a picture or NULL if something went wrong. The exact reason for failure can be obtained via the GGFX\_ErrorCode tag.

## NOTES

- As for current datatype implementations, alpha-channels do not seem to be supported. The datatype might translate it to a single bitplane.  
 guigfx.library, on the other hand, does not (yet) support single-bitplane masks, so masks and transparency colors will be translated to alpha-channels.

## SEE ALSO

DeletePicture(), IsPictureA(), MakePictureA(), ReadPictureA()

## 1.19 guigfx.library/LockPictureA

## NAME

LockPictureA - lock picture attributes. (v3)  
 LockPicture - varargs stub for LockPictureA.

\*\*\* obsolete \*\*\*

## SYNOPSIS

```
success = LockPictureA(picture, flags, arguments)
d0              a0              d0              a1
```

```
BOOL LockPictureA (APTR, ULONG, ULONG *)
```

```
BOOL LockPicture (APTR, ULONG, argument, ...)
```

#### FUNCTION

This function locks certain picture attributes and prevents the picture from internal conversions that affect the specified flags.

#### INPUTS

```
picture      - pointer to a picture
flags        - locking flags
arguments    - flag-specific arguments
```

#### FLAGS

```
LOCKMODE_DRAWHANDLE drawhandle
```

lock the picture to the specified drawhandle. this leads to optimized drawing without the need to render. combine with LOCKMODE\_FORCE if you want to lock the image even if color information would be lost.

#### RESULTS

```
success      - TRUE if locking was successful, FALSE if
               locking is not possible, or if locking
               required a conversion with loss of
               color information.
```

#### NOTES

This function is currently (v4) not working, and it will always return FALSE. If you need optimized drawing, use the method PICMTHD\_MAPDRAWHANDLE instead.

#### SEE ALSO

```
UnlockPicture(), DoPictureMethodA()
```

## 1.20 guigfx.library/MakePictureA

#### NAME

```
MakePictureA - make a picture from raw data or from a BitMap.
MakePicture  - varargs stub for MakePictureA.
```

#### SYNOPSIS

```
picture = MakePictureA(data,width,height,tags)
d0              a0    d0    d1    a1
```

```
APTR MakePictureA (APTR, UWORD, UWORD, struct TagItem *)
```

```
APTR MakePicture (APTR, UWORD, UWORD, tag, ..., TAG_DONE)
```

#### FUNCTION

This function makes a picture from an array of raw

---

data (or a part of it), or from a BitMap structure (or a part of it). Optionally, memory is allocated for a 'blank' picture. Optionally, the picture will be scaled.

Raw data is not incorporated to the picture, instead it is referenced at its original location in memory, unless you specify the tag GGFY\_Independent. (This does not apply to BitMap structures - pictures created from BitMaps are always independent.)

If GGFY\_Independent is not specified (and your picture is taken from its original location in memory), you may additionally specify a buffer 'overhang' with the tag GGFY\_BufferSize. This allows internal conversions which require the image to grow at its original location in memory. You must be the owner of that memory, of course.

#### INPUTS

data     - pointer to  
          - an array of truecolor data,  
          - an array of chunky pixels,  
          - a BitMap structure  
          or NULL.  
width    - total width of the source array or BitMap [pixels]  
height   - total height of the source array or BitMap [rows]  
tags     - pointer to an array of TagItems

#### TAGS

GGFY\_PixelFormat (ULONG) - pixel format. Currently defined are

PIXFMT\_CHUNKY\_CLUT

chunky bytes, directly acting as indices  
to a color-lookup-table.

PIXFMT\_ORGB\_32

truecolor pixels (ULONG 0xaarrggbb).

PIXFMT\_BITMAP\_CLUT

a BitMap structure with normal palette lookup.  
You must also specify the GGFY\_Palette and  
GGFY\_NumColors tags.

PIXFMT\_BITMAP\_HAM8

a BitMap structure with HAM8 color lookup.  
You must also specify the GGFY\_Palette and  
GGFY\_NumColors tags.

PIXFMT\_BITMAP\_HAM6

a BitMap structure with HAM6 color lookup.  
You must also specify the GGFY\_Palette and  
GGFY\_NumColors tags.

PIXFMT\_BITMAP\_RGB

a BitMap structure which is assumed to contain  
truecolor data. This may apply to CyberGraphX  
bitmaps.

---

Default: PIXFMT\_CHUNKY\_CLUT

GGFX\_Palette (APTR) - pointer to a color table. If this tag is not specified with PIXFMT\_CHUNKY\_CLUT, a default palette of 256 grey tones will be generated.  
Default: NULL

GGFX\_NumColors (ULONG) - number of colors in the color table. This tag is mandatory when GGFX\_Palette is specified (see above). Default: not defined

GGFX\_PaletteFormat (ULONG) - format of the palette. Currently defined are:

PALFMT\_RGB8  
ULONG 0x00rrggbb

PALFMT\_RGB32  
ULONG red,green,blue. This is the LoadRGB32() format without trailing longword.

Default: PALFMT\_RGB8

GGFX\_SourceX (ULONG) - left edge of an area inside the array or BitMap [pixels]. Default: 0.

GGFX\_SourceY (ULONG) - top edge of an area inside the array or BitMap [rows]. Default: 0.

GGFX\_SourceWidth (ULONG) - width of an area inside the array or BitMap [pixels]. Default: width.

GGFX\_SourceHeight (ULONG) - height of an area inside the array or BitMap [rows]. Default: height.

GGFX\_DestWidth (ULONG) - destination width of the resulting picture [pixels]. Default: GGFX\_SourceWidth.

GGFX\_DestHeight (ULONG) - destination height for the resulting picture [rows]. Default: GGFX\_SourceHeight.

GGFX\_BufferSize (ULONG) - total size of the specified buffer in bytes. This defines an 'oversized' buffer for the array of pixels. It informs the picture to what size it may grow for internal conversions. This tag is ignored when you supply a BitMap structure, or when GGFX\_Independent is specified.  
Default: Required size in bytes for width \* height \* bytes\_per\_pixel.

GGFX\_AspectX (ULONG) - picture's horizontal aspect.  
Default: 1

GGFX\_AspectY (ULONG) - picture's vertical aspect.  
Default: 1

---

GGFX\_AlphaPresent (BOOL) - flag to indicate that the array contains alpha-channel information. This tag is only considered with PIXFMT\_0RGB\_32. Default: FALSE

GGFX\_Independent (BOOL) - If set to TRUE, the pixel array will always be copied to a separate buffer that is maintained with the picture internally. This tag is meaningless when the input data is a BitMap structure. Default: FALSE

GGFX\_HSType (ULONG) - picture's internal histogram type, according to the histogram types defined in render/render.h. Better you never touch this tag, unless you know exactly what you are doing. Consider reading the 'memory' text file supplied with the render.library distribution. You do not need this tag under normal circumstances. Default: not defined (will be set to a pensharemap's histogram type, or to the default type when needed)

#### RESULTS

picture - pointer to a picture or NULL if something went wrong.

#### SEE ALSO

DeletePicture(), LoadPictureA(), ReadPictureA()

## 1.21 guigfx.library/ObtainDrawHandleA

#### NAME

ObtainDrawHandleA - obtain a handle for drawing.  
ObtainDrawHandle - varargs stub for ObtainDrawHandleA.

#### SYNOPSIS

```
drawhandle = ObtainDrawHandleA(pensharemap,rastport,colormap,tags)
d0                                a0                a1                a2                a3
```

```
APTR ObtainDrawHandleA(APTR,struct RastPort *,struct ColorMap *,
                        struct TagItem *)
```

```
APTR ObtainDrawHandle(APTR,struct RastPort *,struct ColorMap *,
                      tag,...,TAG_DONE)
```

#### FUNCTION

This function obtains a drawhandle for drawing to a RastPort. Depending on the RastPort's environment, pens may be allocated from the ColorMap.

Before a pen-sharemap is passed to this function, it has to be loaded with colors via AddPictureA(), AddPaletteA(), and/or AddPixelArrayA(). Otherwise ObtainDrawHandleA() returns NULL.

Optionally, you may specify NULL for the pen-sharemap argument, in which case a drawhandle for a static palette will be generated.

## INPUTS

pensharemap - pointer to a pen-sharemap created with CreatePenShareMapA(), or NULL.  
rastport - pointer to a RastPort  
colormap - pointer to a ColorMap. Usually, this is screen->ViewPort.ColorMap of the rastport's screen.  
tags - pointer to an array of TagItems

## TAGS

OBP\_Precision (ULONG) - precision for pen allocations, according to the definitions in graphics/view.h. See also graphics.library/ObtainBestPenA(). Default: PRECISION\_IMAGE.

Note: The default precision suffices for almost every application. ObtainDrawHandleA() obtains pens in an extremely effective way. You get excellent results even with lower precisions. Commodore's idea with ObtainBestPenA() was to create a fair and effective pen-sharing mechanism, and ObtainDrawHandleA() behaves in perfect accordance to this intention. Never use insane patches for ObtainBestPenA().

GGFX\_DitherMode (ULONG) - dither mode. Currently available are:

DITHERMODE\_NONE  
no dithering at all

DITHERMODE\_FS  
Floyd-Steinberg dithering

DITHERMODE\_RANDOM  
Random dithering. This mode is significantly slower than Floyd-Steinberg dithering.

DITHERMODE\_EDD  
EDD dithering. This mode is faster than Floyd-Steinberg dithering.

Default: DITHERMODE\_FS.

GGFX\_DitherAmount (ULONG) - dither amount. Valid range: 0...255. Currently this value is of any use only for DITHERMODE\_RANDOM. Default: 40

GGFX\_AutoDither (BOOL) - automatic dither activation.  
If set to TRUE, dithering is automatically activated for drawing a particular picture to a particular environment, when the loss of color information would exceed a certain threshold (see below). Default: TRUE

GGFX\_DitherThreshold (ULONG) - threshold for automatic dithering. The lower, the earlier automatic dithering is activated. Useful thresholds range between 10 and 10000. Refer to render.library/RGBArrayDiversityA() for further details. better you do not use this tag unless you have a good reason to. let the user customize it with the environment

---

variable AUTODITHERTHRESHOLD. Default: 250

GGFX\_MaxAllocPens (ULONG) - limit for the number of pens to be allocated from the ColorMap. Do not use this feature unless you have a good reason to. Valid range: 0...256. Default: not defined

GGFX\_ModeID (ULONG) - screen's modeID. Currently, this is required for guigfx.library to detect HAM modes. The full HAM color range can be achieved only with this tag specified. Default: INVALID\_ID (no HAM detection takes place)

GGFX\_BGColor (ULONG) - RGB of an optional background color. it will be considered when a picture is being drawn with texture-mapping/rotating enabled, and there are areas inside the destination rectangle on the rastport which are not covered by the resulting picture. these areas will be rendered with this color. see also DrawPictureA()/RND\_DestCoordinates for further details. default: 0xffffffff (v16)

#### RESULTS

drawhandle - pointer to a handle for drawing to rastports.  
NULL if something went wrong.

#### SEE ALSO

ReleaseDrawHandle(), CreatePenShareMapA(), DrawPictureA(),  
graphics.library/ObtainBestPenA(),  
render.library/RGBArrayDiversityA()

## 1.22 guigfx.library/ReadPictureA

#### NAME

ReadPictureA - read a picture from a RastPort.  
ReadPicture - varargs stub for ReadPictureA.

#### SYNOPSIS

```
picture = ReadPictureA(rastport,colormap,x, y, width,height,tags)
d0                a0                a1                d0 d1 d2        d3        a2
```

```
APTR ReadPictureA(struct RastPort *,struct ColorMap *,UWORD,UWORD,
                  UWORD,UWORD,struct TagItem *)
```

```
APTR ReadPicture(struct RastPort *,struct ColorMap *,UWORD,UWORD,
                  UWORD,UWORD,tag,...,TAG_DONE)
```

#### FUNCTION

This function reads a picture from a RastPort (or a part of it), and optionally scales it to the specified dimensions.

#### INPUTS

rastport - pointer to a RastPort where to fetch the pixels from  
colormap - pointer to a ColorMap where to fetch color information from. Usually this is screen->ViewPort.ColorMap of the

specified RastPort's Screen.  
 x - left edge in the RastPort [pixels]  
 y - top edge in the RastPort [rows]  
 width - width of the area to be read [pixels]  
 height - height of the area to be read [rows]  
 tags - pointer to an array of TagItems

## TAGS

GGFX\_DestWidth (ULONG) - destination width [pixels].  
 Default: width.

GGFX\_DestHeight (ULONG) - destination height [rows].  
 Default: height.

GGFX\_AspectX (ULONG) - horizontal pixel aspect for the resulting picture. Default: 1

GGFX\_AspectY (ULONG) - vertical pixel aspect for the resulting picture. Default: 1

GGFX\_ModeID (ULONG) - screen's mode ID. currently required for determining HAM rastports. Default: none

GGFX\_HSType (ULONG) - picture's internal histogram type, according to the histogram types defined in render/render.h.  
 Better you never touch this tag, unless you know exactly what you are doing. Consider reading the 'memory' text file supplied with the render.library documentation.

## RESULTS

picture - pointer to a picture or NULL if not enough memory.

## SEE ALSO

LoadPictureA(), MakePictureA()

## 1.23 guigfx.library/ReleaseDrawHandle

## NAME

ReleaseDrawHandle - free a drawhandle.

## SYNOPSIS

```
ReleaseDrawHandle(drawhandle)
                a0
```

```
void ReleaseDrawHandle(APTR)
```

## FUNCTION

This function discards a drawhandle, frees associated memory, and returns allocated pens (if any) to the related ColorMap.

## INPUTS

drawhandle - drawhandle obtained via ObtainDrawHandleA()

## SEE ALSO



ObtainDrawHandleA()

## 1.24 guigfx.library/RemColorHandle

### NAME

RemColorHandle - manually remove a colorhandle.

### SYNOPSIS

```
RemColorHandle(colorhandle)
               a0
```

```
void RemColorHandle(APTR)
```

### FUNCTION

This function removes particular color information from a pen-sharemap. Further calls to ObtainDrawHandleA() may lead to different pen allocations then.

### INPUTS

colorhandle - pointer to a colorhandle from  
AddPictureA(), AddPaletteA(),  
or AddPixelArrayA()

### NOTE

DeletePenShareMap() arbitrarily frees all its colorhandles. There is no need to manually remove them. This function is only required if you wish to modify a pen-sharemap and then call ObtainDrawHandleA() again.

Calling RemColorHandle() for colorhandles that have been removed with DeletePenShareMap() will be fatal.

### SEE ALSO

AddPictureA(), AddPaletteA(), AddPixelArrayA(),  
DeletePenShareMap(), ObtainDrawHandleA()

## 1.25 guigfx.library/UnLockPicture

### NAME

UnLockPicture - unlock picture attributes (v3)

\*\*\* obsolete \*\*\*

### SYNOPSIS

```
UnLockPicture(picture, flags)
               a0       d0
```

```
UnLockPicture(APTR, ULONG)
```

---

**FUNCTION**

This function frees picture attributes that have been locked with `LockPictureA()`.

**INPUTS**

`picture`        - pointer to a picture  
`flags`         - flags to unlock

**RESULTS**

none

**SEE ALSO**

`LockPictureA()`

**NOTES**

This function will currently (v4) do nothing. Read the annotations in `LockPictureA()`.

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