

## **chunky\_autodocs**

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# Contents

<b>1</b>	<b>chunky_autodocs</b>	<b>1</b>
1.1	chunky.library	1
1.2	chunky.library Licensing Information	3
1.3	chunky.library Submissions and Contributors	3
1.4	chk_initchunky	4
1.5	chk_initcolours	5
1.6	chk_freechunky	6
1.7	chk_drawchunky	7
1.8	chk_drawchunkyarea	7
1.9	chk_insertchunky	9
1.10	chk_createchunkyfrombitmap	10
1.11	chk_createchunkyfromrastport	11
1.12	chk_setdrmd	12
1.13	chk_setapen	13
1.14	chk_setopen	14
1.15	chk_setabopen	14
1.16	chk_move	15
1.17	chk_writepixel	15
1.18	chk_readpixel	16
1.19	chk_draw	17
1.20	chk_drawline	18
1.21	chk_drawrect	18
1.22	chk_rectfill	19
1.23	chk_drawellipse	19
1.24	chk_setrast	20
1.25	chk_setfont	21
1.26	chk_setsoftstyle	23
1.27	chk_textlength	24
1.28	chk_text	25
1.29	chk_textcentre	25

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1.30	chk_choosehardwaremode	26
1.31	chk_drawchunkychunkyarea	28
1.32	chk_drawchunkychunky	29
1.33	chk_drawtransparentrectangle	30
1.34	chk_getchunkyport	31
1.35	chk_putchunkycolours	32
1.36	chk_drawchunkytiled	33
1.37	struct ChunkyPort	34
1.38	struct ColoursCP	34
1.39	"	35
1.40	chk_c2poff	35
1.41	chk_drawchunkywindowarea	36
1.42	chk_drawchunkywindow	37
1.43	chk_queryuseos	37

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# Chapter 1

## chunky\_autodocs

### 1.1 chunky.library

chunky.library functions and commands  
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<http://www.q-soft.demon.co.uk> and <http://www.q-group.demon.co.uk>

Author: Andrew "Oondy" King - [oondy@bigfoot.com](mailto:oondy@bigfoot.com)

#### LICENSE

- Please read before using this library!

#### Submissions

- Who has contributed to this project

#### LIBRARY FUNCTIONS

CHK\_InitChunky ()

CHK\_InitColours ()

CHK\_FreeChunky ()

CHK\_DrawChunkyArea ()

CHK\_DrawChunky ()

CHK\_InsertChunky ()

CHK\_CreateChunkyFromBitMap ()

CHK\_CreateChunkyFromRastPort ()

CHK\_SetDrMd ()

CHK\_SetAPen ()

CHK\_SetOPen ()

CHK\_SetABOPen ()

CHK\_Move ()  
CHK\_WritePixel ()  
CHK\_ReadPixel ()  
CHK\_Draw ()  
CHK\_DrawLine ()  
CHK\_DrawRect ()  
CHK\_RectFill ()  
CHK\_DrawEllipse ()  
CHK\_SetRast ()  
CHK\_SetSoftStyle ()  
CHK\_SetFont ()  
CHK\_TextLength ()  
CHK\_Text ()  
CHK\_TextCentre ()  
CHK\_ChooseHardwareMode ()  
CHK\_DrawChunkyChunkyArea ()  
CHK\_DrawChunkyChunky ()  
CHK\_DrawTransparentRectangle ()  
CHK\_GetChunkyPort ()  
CHK\_PutChunkyColours ()  
CHK\_DrawChunkyTiled ()  
CHK\_C2POff ()  
(v3.1+)  
CHK\_DrawChunkyWindowArea ()  
(v3.2+)  
CHK\_DrawChunkyWindow ()  
(v3.2+)  
CHK\_QueryUseOS ()  
(v3.2+)

PUBLIC STRUCTURES

---

```
struct ChunkyPort
```

```
struct ColoursCP
```

And yes - if you were wondering by looking at the examples in this document - I am a huge Simpsons fan :)

## 1.2 chunky.library Licensing Information

UPGRADING FROM 3.0? Please read the seperate CHANGES\_3\_0 file.

NOTE WELL: RECOMPILATIONS OF chunky.library ARE NOT ALLOWED TO BE DISTRIBUTED! Rosande Limited can only recompile chunky.library.

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## 1.3 chunky.library Submissions and Contributors

The current list of contributors currently looks like this:

- James L Boyd <jamesboyd@all-hail.freemove.co.uk>  
Blitz Basic 2 support  
Documentation nagging :)
  - Stephan Rupprecht <stephan.rupprecht@primus-online.de>  
c2p/p2c code cleanups
  - Petri Koistinen <pkoistin@hit.fi>  
Reminding me to release an update :)
-



## 1.4 chk\_initchunky

NAME

CHK\_InitChunky -- Creates a chunky buffer

SYNOPSIS

```
struct ChunkyPort *
    CHK_InitChunky(UWORD Width, UWORD Height)
                    d0           d1
```

FUNCTION

Allocates an area of memory (preferably Fast RAM) for a chunky buffer. The buffer is cleared to nothing, and parts of the ChunkyPort are set up to default values.

INPUTS

Width -- the pixel width of the buffer. Must be greater than zero.  
Height -- the pixel height of the buffer. Must be greater than zero.

RESULT

Returns a ChunkyPort structure or NULL if the memory couldn't be allocated.

EXAMPLE

...

```
    struct ChunkyPort *
    CP = NULL;

    if(CP = CHK_InitChunky(320, 200)) // allocates a 320x200 chunky buffer
    {
        CHK_FreeChunky(CP);
    }
    ...
```

NOTES

The default values of the ChunkyPort are set thus:

```
cp_Flags = JAM1
cp_APen = 1
```

Other values are set to zero or NULL.

BUGS

SEE ALSO

CHK\_FreeChunky(), CHK\_InitColours()

## 1.5 chk\_initcolours

NAME

CHK\_InitColours -- allocate a colour table

SYNOPSIS

```
struct ColoursCP *
  CHK_InitColours(
  struct ChunkyPort *
  CP)
```

A0

FUNCTION

ChunkyPort's can have individual colour palettes. When they are originally allocated, they do not have a palette, but CHK\_InitColours sets up a colour table and attaches it to a ChunkyPort.

INPUTS

CP -- pointer to a valid ChunkyPort

RESULT

Returns a pointer to the allocated colour table if the ChunkyPort did not have a colour table, or a pointer to the colour table the ChunkyPort already has if there is one.

NULL is returned if the allocation failed.

EXAMPLE

```
...
struct ColoursCP *Cols;
struct ChunkyPort *CP;

if(CP = CHK_InitChunky(100, 100))
{
    if(Cols = CHK_InitColours(CP)) // allocate a colour table for CP
    {
        ...
    }
    CHK_FreeChunky(CP);
}
...
```

NOTES

Colour tables are only really useful if you are reading/writing ChunkyPort buffers to and from disk. Maybe they could have other uses,

but I'm not sure at the moment.

When a colour table is attached to a ChunkyPort, the colour table is freed when the ChunkyPort is freed. DO NOT free it yourself!

Allocated colour tables are all set to black and always have 256 colours.

BUGS

SEE ALSO

CHK\_FreeChunky()

## 1.6 chk\_freechunky

NAME

CHK\_FreeChunky -- frees a chunky buffer

SYNOPSIS

```
void CHK_FreeChunky(  
    struct ChunkyPort *  
    CP)  
A0
```

FUNCTION

Frees up memory allocated by CHK\_InitChunky(), thus removing the ChunkyPort from memory. Any additional buffers, such as colour tables, are also freed.

However, if the ChunkyPort was allocated using CHK\_GetChunkyPort() and the buffer was NOT copied, this routine will NOT free the ChunkyPort meaning your application MUST free the memory yourself. See CHK\_GetChunkyPort() for more information.

INPUTS

CP -- pointer to a valid ChunkyPort. Passing NULL is safe.

BUGS

If you pass a pointer to an area of memory which isn't a ChunkyPort or is a "corrupted" ChunkyPort, this will probably lead to a crash.

SEE ALSO

CHK\_InitChunky(), CHK\_GetChunkyPort()

---

## 1.7 chk\_drawchunky

NAME

CHK\_DrawChunky -- draws an entire chunky buffer onto a RastPort

SYNOPSIS

```
void CHK_DrawChunky(
    struct ChunkyPort *
    CP, struct RastPort *rp, UWORD x, UWORD y)
                                A0                                A1                                D0                                D1
```

FUNCTION

As CHK\_DrawChunkyArea(), except this routine will draw the entire ChunkyPort instead of part.

See CHK\_DrawChunkyArea() for more information.

INPUTS

CP -- pointer to a valid ChunkyPort  
 rp -- pointer to a valid RastPort  
 x -- the x-coord in the RastPort to start drawing to  
 y -- the y-coord in the RastPort to start drawing to

SEE ALSO

CHK\_DrawChunkyArea()

## 1.8 chk\_drawchunkyarea

NAME

CHK\_DrawChunkyArea -- draws part of a chunky buffer onto a RastPort

SYNOPSIS

```
void CHK_DrawChunkyArea(
    struct ChunkyPort *
    CP, struct RastPort *rp, UWORD x, UWORD y,
                                A0                                A1                                D0 ←
                                D1
                                UWORD Width, UWORD Height)
                                D2                                D3
```

FUNCTION

Places the contents of the supplied chunky buffer onto the specified RastPort. It will destroy whatever is currently on the RastPort with the chunky buffer from x,y to (x+width), (y+height).

It draws from x,y on the RastPort (but always draws from 0,0 in the chunky buffer), using the specified width and height.

THIS FUNCTION HAS BEEN FIXED when used under 3.0 and CGFX. (v3.1+)

#### INPUTS

CP -- pointer to a valid ChunkyPort to draw  
 rp -- pointer to a RastPort to draw onto  
 x -- the x-coord to start drawing to on the RastPort  
 y -- the y-coord to start drawing to on the RastPort  
 Width -- the width of the ChunkyPort to draw (must be <= the width of the chunky buffer)  
 Height -- the height of the ChunkyPort to draw (must be <= the height of the buffer)

#### EXAMPLE

```
...
struct ChunkyPort *CP;
struct Window *Window;

if(CP = CHK_InitChunky(100, 100))
{
    if(Window = OpenWindowTagList(NULL, NULL))
    {
        // Draw a rectangle on the chunky buffer in colour 3
        CHK_SetAPen(CP, 3);
        CHK_DrawRect(CP, 10, 10, 30, 30);
        // Draw half of the ChunkyPort onto the window at 20,20
        CHK_DrawChunkyArea(CP, Window->RPort, 20, 20, 50, 50);
        ...
        CloseWindow(Window);
    }
    CHK_FreeChunky(CP);
}
...
```

#### NOTES

Colour 0 is always drawn with this function. Use CHK\_InsertChunky() to not draw colour 0.

When used with AGA, several things are not checked to speed up the process. As a bit of a hack, the c2p code draws the chunky information direct onto the RastPort's BitMap, thus completely ignoring any clipping and such. If you draw the chunky buffer outside of the BitMap, you will corrupt memory - there is NO clipping, and there will never be (it's too slow otherwise).

Also, on AGA, if you are drawing on a window which is, for example, overlapping another window, the c2p does not respect overlapping and therefore will draw part of the chunky buffer on the window with is on top.

None of these AGA problems occur when used with Cybergraphics because the routines obey these restrictions.

Drawing to an x,y with is below zero is not supported. Do not pass a width or height of zero.

Drawing onto an "invisible" RastPort (e.g. a RastPort that consists of a BitMap and is never displayed) is not advised.

BUGS

SEE ALSO

CHK\_DrawChunky(), CHK\_InsertChunky()

## 1.9 chk\_insertchunky

NAME

CHK\_InsertChunky -- draws a chunky buffer into a RastPort preserving the background

SYNOPSIS

```
void CHK_InsertChunky(
    struct ChunkyPort *
    CP, struct RastPort *rp, UWORD x, UWORD y)
                                A0                A1                D0                ←
                                D1
```

FUNCTION

This routine is much like CHK\_DrawChunky(), except that any chunky pixels in the ChunkyPort that use colour zero will NOT get drawn on the RastPort.

The advantage of this is that most of the time, colour zero is used as a "background" colour and is usually not required to be transferred to the display. Therefore this routine ignores all chunky pixels that are colour zero, preserving the background of the RastPort, whilst drawing on to the "foreground".

INPUTS

CP -- pointer to a valid ChunkyPort  
rp -- pointer to a valid RastPort  
x -- the x-coord to start drawing to in the RastPort  
y -- the y-coord to start drawing to in the RastPort

NOTES

This routine requires to make a temporary buffer of the same dimensions as the ChunkyPort you are drawing, therefore have memory free to allow this routine to run.

It is slightly slower than CHK\_DrawChunky(), but not significantly.

Just don't use it for huge drawings.

Similar restrictions for AGA use apply with `CHK_InsertChunky()` as `CHK_DrawChunkyArea()` - because this routine calls `CHK_DrawChunkyArea()`.

BUGS

`CHK_InsertChunkyArea()` is missing :)

SEE ALSO

`CHK_DrawChunkyArea()`

## 1.10 chk\_createchunkyfrombitmap

NAME

`CHK_CreateChunkyFromBitMap` -- make a `ChunkyPort` using a `BitMap`

SYNOPSIS

```
struct ChunkyPort *
CHK_CreateChunkyFromBitMap(struct BitMap *bm, UWORD x, UWORD y,
                           A0                D0                ←
                           D1
                           UWORD width, UWORD height)
                           D2                D3
```

FUNCTION

Using the supplied `BitMap`, this routine creates a `ChunkyPort` out of a `BitMap`. As far as the image is concerned it is an exact copy, except that the image is chunky. You can then use all of the `chunky.library` routines with the new `ChunkyPort`.

INPUTS

`bm` -- pointer to a valid `BitMap`  
`x` -- x-coord to grab from on the `BitMap`  
`y` -- y-coord to grab from on the `BitMap`  
`width` -- width of the rectangle to grab from the `BitMap`  
`height` -- height of the rectangle to grab from the `BitMap`

RESULT

Returns a `ChunkyPort` with its buffer consisting of a copy of the `BitMap`'s pixels or `NULL` if the `BitMap` couldn't be converted for some reason.

EXAMPLE

```
...
struct ChunkyPort *cp;
```

```

struct BitMap *bm;

if(bm = AllocBitMap(320, 200, 8, BMF_CLEAR, NULL))
{
    ...
    // Convert the bitmap into chunky
    if(cp = CHK_CreateChunkyFromBitMap(bm, 0, 0, 320, 200))
    {
        ...
        CHK_FreeChunky(cp);
    }
    FreeBitMap(bm);
}
...

```

#### NOTES

Once the BitMap has been converted into a ChunkyPort, you no longer need to keep the BitMap if you don't need it.

Passing a width or height of zero is daft.

#### BUGS

#### SEE ALSO

CHK\_CreateChunkyFromRastPort(), CHK\_InitChunky()

## 1.11 chk\_createchunkyfromrastport

#### NAME

CHK\_CreateChunkyFromRastPort -- make a ChunkyPort from a RastPort

#### SYNOPSIS

```

struct ChunkyPort *
CHK_CreateChunkyFromRastPort(struct RastPort *rp, UWORD x, UWORD ←
    y,
                                A0                D0 ←
                                D1
                                UWORD width, UWORD height)
                                D2                D3

```

#### FUNCTION

Exactly the same as CHK\_CreateChunkyFromBitMap() except this routine uses a RastPort instead of a BitMap.

See CHK\_CreateChunkyFromBitMap() for more information.

#### INPUTS



```

rp -- pointer to a valid RastPort
x -- x-coord to grab from on the RastPort
y -- y-coord to grab from on the RastPort
width -- width of the rectangle to grab from the RastPort
height -- height of the rectangle to grab from the RastPort

```

#### RESULT

A copy of the specified RastPort, except as a ChunkyPort - or NULL for a failure.

#### SEE ALSO

CHK\_CreateChunkyFromBitMap()

## 1.12 chk\_setdrmd

### NAME

CHK\_SetDrMd -- set the drawing mode for a ChunkyPort

### SYNOPSIS

```

void CHK_SetDrMd(
    struct ChunkyPort *
    cp, UWORD flags)
    A0                                D0

```

### FUNCTION

Sets the drawing mode that is applied when a fill, line or text is drawn on the specified ChunkyPort.

Flag definitions are the same for graphics.library/SetDrMd() so see graphics/rastport.h for the bit definitions.

### INPUTS

```

cp -- the ChunkyPort to alter
flags -- an OR'd string of flags

```

### EXAMPLE

```

#include <graphics/rastport.h>
...
struct ChunkyPort *cp;
...
if(cp = CHK_InitChunky(100, 100))
{
    // Use JAM2 drawing instead of JAM1 (the default)
    CHK_SetDrMd(cp, JAM2);
    ...
    CHK_FreeChunky(cp);
}

```

...

#### NOTES

Not all combinations work. JAM1 and JAM2 are supported in all functions, although INVERSVID is also supported with text functions. Other flags are ignored.

#### BUGS

Using more than one flag is not currently supported (e.g. JAM1 | INVERSVID).

#### SEE ALSO

graphics.library/SetDrMd()

## 1.13 chk\_setapen

#### NAME

CHK\_SetAPen -- Set the primary pen for a ChunkyPort.

#### SYNOPSIS

```
void CHK_SetAPen(
    struct ChunkyPort *
    cp, UBYTE pen)
                                A0                                D0
```

#### FUNCTION

Sets the foreground pen which is used to draw lines, fills and text.

#### INPUTS

cp -- pointer to a valid ChunkyPort  
pen -- a colour index from 0-255

#### EXAMPLE

```
..
CHK_SetAPen(cp, 1); // use colour 1
CHK_DrawRect(cp, 20, 20, 100, 100); // draw a rectangle in colour 1
CHK_SetAPen(cp, 2); // use colour 2
CHK_DrawRect(cp, 30, 30, 100, 100); // draw an overlapping rectangle in colour ←
2
...
```

#### SEE ALSO

graphics.library/SetAPen(), CHK\_SetOPen(), CHK\_SetDrMd(),  
CHK\_SetABOPen()

## 1.14 chk\_setopen

NAME

CHK\_SetOPen -- Set the outline pen for a ChunkyPort.

SYNOPSIS

```
void CHK_SetOPen(
    struct ChunkyPort *
    cp, UBYTE pen)
                                A0                                D0
```

FUNCTION

Sets the outline pen which is used to draw outlines and embossments on text.

INPUTS

cp -- pointer to a valid ChunkyPort  
pen -- a colour index from 0-255

NOTES

The outline pen is only used when you wish to render text using some special styles exclusive to chunky.library's text rendering functions. See CHK\_SetSoftStyle() for more information on these new styles.

SEE ALSO

CHK\_SetAPen(), CHK\_SetDrMd(), CHK\_SetABOPen()

## 1.15 chk\_setabopen

NAME

CHK\_SetABOPen -- Sets all three pens in a ChunkyPort at once.

SYNOPSIS

```
void CHK_SetABOPen(
    struct ChunkyPort *
    cp, UBYTE a, UBYTE b, UBYTE o)
                                A0                                D0                                D1                                D2
```

FUNCTION

Changes the foreground pen, background pen and outline pen at the same

---

time.

This routine is really only useful when rendering text, since background and outline pens are only used with text.

#### INPUTS

cp -- pointer to a valid ChunkyPort  
a -- the new colour index for the foreground pen (0-255)  
b -- new colour for the background pen (0-255)  
o -- new colour for the outline pen (0-255)

#### SEE ALSO

CHK\_SetAPen(), CHK\_SetOPen()

## 1.16 chk\_move

#### NAME

CHK\_Move -- Moves a ChunkyPort's graphics pen position.

#### SYNOPSIS

```
void CHK_Move(  
    struct ChunkyPort *  
    cp, UWORD x, UWORD y)  
                A0          D0      D1
```

#### FUNCTION

Moves the graphics pen to x,y relative from 0,0 in the ChunkyPort. This is the starting point for all operations such as CHK\_Draw() and CHK\_Text().

#### INPUTS

cp -- pointer to a valid ChunkyPort  
x,y -- new coords for graphics pen

#### SEE ALSO

CHK\_Draw(), CHK\_Text(), graphics.library/Move()

## 1.17 chk\_writepixel

#### NAME

CHK\_WritePixel -- Sets a single "pixel" in a ChunkyPort to a specific pen

---

## SYNOPSIS

```
void CHK_WritePixel(
    struct ChunkyPort *
    cp, UWORD pen, UWORD x, UWORD y)
                                A0          D0          D1          D2
```

## FUNCTION

Changes a single point in a ChunkyPort to the specified pen. Does pretty much the same thing as graphics.library/WritePixel().

## INPUTS

cp -- pointer to a valid ChunkyPort (NULL is safe to pass)  
pen -- the colour index to use (0-255)  
x,y -- the point in the ChunkyPort to change

## NOTES

If x,y is outside of the ChunkyPort or cp is NULL, this function does nothing.

## SEE ALSO

graphics.library/WritePixel(), CHK\_ReadPixel()

## 1.18 chk\_readpixel

## NAME

CHK\_ReadPixel -- Sees what colour index a "pixel" uses in a ChunkyPort

## SYNOPSIS

```
BYTE CHK_ReadPixel(
    struct ChunkyPort *
    cp, UWORD x, UWORD y)
                                A0          D0          D1
```

## FUNCTION

Enquires a position in a ChunkyPort to see what colour it is.

## INPUTS

cp -- pointer to a valid ChunkyPort (NULL is safe)  
x,y -- the point in the ChunkyPort you want to examine

## RESULT

Returns the colour index of the specified point.  
Returns -1 if x,y is outside the buffer or cp is NULL.

---

SEE ALSO

`graphics.library/ReadPixel()`, `CHK_WritePixel()`

## 1.19 chk\_draw

NAME

`CHK_Draw` -- Draws a line in a ChunkyPort

SYNOPSIS

```
void CHK_Draw(  
    struct ChunkyPort *  
    cp, UWORD x2, UWORD y2)  
                A0                D0                D1
```

FUNCTION

Draws a line from the position set with `CHK_Move()`, to `x2,y2`.

INPUTS

`cp` -- pointer to a valid ChunkyPort  
`x2,y2` -- the point where the line should be drawn to

RESULT

A line is drawn from `x1,y1,x2,y2`.

EXAMPLE

```
...  
CHK_SetAPen(cp, 8); // draw the line in colour 8  
CHK_Move(cp, 100, 100); // move to 100,100  
CHK_Draw(cp, 200, 200); // draw the line from 100,100 to 200,200  
...
```

BUGS

This routine has not been tested since this library was compiled with SAS/C.

If `x2,y2` are outside of the chunky buffer, it WILL overwrite memory outside of the buffer. This will be fixed sometime.

SEE ALSO

`CHK_Move()`

---

## 1.20 chk\_drawline

NAME

CHK\_DrawLine -- draws a line in a ChunkyPort

SYNOPSIS

```
void CHK_DrawLine(  
    struct ChunkyPort *  
    cp, UWORD x1, UWORD y1, UWORD x2, UWORD y2)  
                                A0          D0          D1          D2          D3
```

FUNCTION

Shorthand for `CHK_Move(cp, x1, y1); CHK_Draw(cp, x2, y2);`.

INPUTS

cp -- a ChunkyPort  
x1,y1,x2,y2 -- coords to draw from and to

NOTES

No clipping with this function.

SEE ALSO

CHK\_Move(), CHK\_Draw()

## 1.21 chk\_drawrect

NAME

CHK\_DrawRect -- draws a rectangle on a ChunkyPort

SYNOPSIS

```
void CHK_DrawRect(  
    struct ChunkyPort *  
    cp, UWORD x1, UWORD y1, UWORD x2, UWORD y2)  
                                A0          D0          D1          D2          D3
```

FUNCTION

Draws a hollow rectangle onto a ChunkyPort. Hollow means that the rectangle is not filled.

INPUTS

cp -- a ChunkyPort  
x1,y1,x2,y2 -- coords to draw from and to

---

## NOTES

No clipping with this function.

## SEE ALSO

CHK\_RectFill()

## 1.22 chk\_rectfill

## NAME

CHK\_RectFill -- draws a filled rectangle on a ChunkyPort

## SYNOPSIS

```
void CHK_RectFill(  
    struct ChunkyPort *  
    cp, UWORD x1, UWORD y1, UWORD x2, UWORD y2)  
                                A0          D0          D1          D2          D3
```

## FUNCTION

Draws a filled rectangle on a ChunkyPort. This function acts exactly the same as `graphics.library/RectFill()`.

## INPUTS

`cp` -- a ChunkyPort  
`x1,y1,x2,y2` -- coords to draw from and to

## NOTES

No clipping with this function.

## BUGS

Could be a bit slow, but I hardly think it's noticeable.

## SEE ALSO

CHK\_DrawRect(), `graphics.library/RectFill()`

## 1.23 chk\_drawellipse

## NAME

CHK\_DrawEllipse -- draws an ellipse on a ChunkyPort

## SYNOPSIS



```
void CHK_DrawEllipse(
    struct ChunkyPort *
    cp, UWORD cx, UWORD cy, UWORD rx, UWORD ry)
                                A0                D0                D1                D2                D3
```

## FUNCTION

Draws an ellipse (i.e. a squashed circle) on a ChunkyPort. Pretty much the same as `graphics.library/DrawEllipse()`.

## INPUTS

`cp` -- a ChunkyPort  
`cx,cy` -- centre positions of the ellipse  
`rx,ry` -- radii of the ellipse on the x-coord and the y-coord

## NOTES

If `rx` or `ry` is NULL this function does nothing (although `cp` MUST NOT be NULL).

No clipping with this function.

## BUGS

Should work :)

## SEE ALSO

`graphics.library/DrawEllipse()`

## 1.24 chk\_setrast

## NAME

`CHK_SetRast` -- sets an entire ChunkyPort to a specified colour index.

## SYNOPSIS

```
void CHK_SetRast(
    struct ChunkyPort *
    cp, UBYTE pen)
                                A0                D0
```

## FUNCTION

Basically fills in the entire ChunkyPort to a colour. Anything that is in the ChunkyPort will get drawn over.

## INPUTS

`cp` -- pointer to a ChunkyPort  
`pen` -- the colour index to fill with (0-255)

## RESULT

A cleared ChunkyPort.

## NOTES

This function's called SetRast because it does the same as graphics.library/ ↔  
 SetRast() -  
 obviously :)

## SEE ALSO

graphics.library/SetRast(), CHK\_RectFill()

## 1.25 chk\_setfont

## NAME

CHK\_SetFont -- changes the font used on a ChunkyPort

## SYNOPSIS

```
void CHK_SetFont (
    struct ChunkyPort *
    cp, struct TextFont *tf)
                                A0                                A1
```

## FUNCTION

Because anything needs to be in chunky format before it can be applied to a chunky buffer, we need to convert a standard Amiga font into chunky to be able to draw the characters onto the buffer. Since standard Amiga fonts are actually 2 colour BitMaps, it's just a case of converting it into chunky.

And since every ChunkyPort can have a different font, this chunky-converted font is actually a buffer assigned to each ChunkyPort. Meaning you cannot CHK\_SetFont() the same font to more than one ChunkyPort at a time - the font needs to be CHK\_SetFont()'d for each ChunkyPort. This might seem like a waste of memory, but no font buffer is ever over 8K (small price to pay for flexibility I think you'll agree).

Any call to a text rendering function will fail if this routine has not been called previously - it only needs to be called once until the ChunkyPort is freed. Of course, it needs to be called again if you wish to use different fonts on the same ChunkyPort.

## INPUTS

cp -- pointer to a valid ChunkyPort  
 tf -- pointer to a previously opened/obtained TextFont structure or  
 NULL

## RESULT

A font is set up for the ChunkyPort. `CHK_Text`, etc. can now be called. If the font creation failed, text functions will do nothing.

## EXAMPLE

```
...
struct TextFont *tf;
struct ChunkyPort *cp;
struct TextAttr topaz80 = {"topaz.font", 8, NULL, NULL};
...

// Allocate a chunky buffer
if(cp = CHK_InitChunky(320, 200))
{
    // Open the font using the TextAttr structure (topaz.font is always in ←
    // memory)
    if(tf = OpenFont(&topaz80)) // graphics.library function
    {
        // Attach the font to the ChunkyPort
        CHK_SetFont(cp, tf);
        // Draw some text
        CHK_Move(cp, 40, 40);
        CHK_Text(cp, "Eat my shorts!");
        CHK_Move(cp, 100, 100);
        CHK_Text(cp, "Don't have a cow, man!");
        CHK_SetAPen(cp, 10);
        CHK_TextCentre(cp, "El Barto!", 150);
    }
}
if(tf) CloseFont(tf);
if(cp) CHK_FreeChunky(cp);
...
```

## NOTES

If you call `CHK_SetFont()` with the same `TextFont` in a previous call, this function does nothing. Also if `TextFont` is `NULL`, nothing happens.

You do not need to free the `ChunkyPort` if you wish to change the font. Just `CHK_SetFont()` the `ChunkyPort` with the new font.

You do not need the `TextFont` any more after a call to `CHK_SetFont()`.

You CANNOT use non-proportional (varying width) fonts. Only fixed-width fonts (e.g. `topaz.font/8`) are supported. Using non-proportional fonts will print garbage - you have been warned.

Colour fonts and non-`BitMap` `Compugraphic` fonts are not supported.

## BUGS

No non-proportional fonts - this may be fixed in the future (although it's not important).

## SEE ALSO

```
CHK_SetSoftStyle(), graphics.library/OpenFont(), CHK_Text()
```

## 1.26 chk\_setsoftstyle

NAME

CHK\_SetSoftStyle -- changes the style to draw text in

SYNOPSIS

```
ULONG CHK_SetSoftStyle(  
    struct ChunkyPort *  
    cp, ULONG styles)           A0           D0
```

FUNCTION

Text can be drawn in different styles to show emphasis, etc. Several styles are supported, and can be combined. These are:

```
FS_NORMAL      - no style  
FSF_BOLD       - apply bold to the text  
FSF_3D         - give the text a 3D-effect (try it and see)  
FSF_WIDE3D     - as FSF_3D except nearly twice the width  
FSF_OUTLINE    - draw the text normal but give the text an outline  
FSF_EMBOSSSED  - emboss the text
```

These settings will apply to all text you draw on the ChunkyPort until it is changed, or the font is changed.

INPUTS

```
cp -- pointer to a valid ChunkyPort  
styles -- flags to apply (listed above)
```

RESULT

Returns the styles applied.

EXAMPLE

```
...  
// Use embossed text  
CHK_SetSoftStyle(cp, FSF_EMBOSSSED);  
// Use bold and an outline  
CHK_SetSoftStyle(cp, FSF_BOLD | FSF_OUTLINE);  
...
```

NOTES

Some combinations are pointless (e.g. FSF\_3D | FSF\_WIDE3D).

FSF\_UNDERLINED and FSF\_ITALIC are not supported.

---

Normal styles are defined in graphics/text.h and the new ones are in chunky.h.

SEE ALSO

CHK\_SetFont(), CHK\_Text(), chunky.h

## 1.27 chk\_textlength

NAME

CHK\_TextLength -- figures out the pixel width of some text

SYNOPSIS

```
LONG CHK_TextLength(  
    struct ChunkyPort *  
    cp, STRPTR text, WORD length)  
                                A0                A1                D0
```

FUNCTION

Using the font which is attached to a ChunkyPort, this routine calculates the pixel width of the text specified.

INPUTS

cp -- pointer to a valid ChunkyPort with a font set with CHK\_SetFont()  
text -- the string you want the width of  
length -- the character length of text (strlen(text) for example)

RESULT

The pixel width of the text or NULL if failed.

EXAMPLE

```
...  
struct ChunkyPort *cp;  
unsigned char *text = "Ay Caramba!";  
long l;  
...  
  
l = CHK_TextLength(cp, text, strlen(text));  
printf("The pixel width of the text is %ld.", l);  
...
```

NOTES

If length is zero or the ChunkyPort has no font, this returns NULL.

SEE ALSO

---

```
graphics.library/TextLength(), CHK_SetFont()
```

## 1.28 chk\_text

NAME

CHK\_Text -- draw text characters in a ChunkyPort

SYNOPSIS

```
void CHK_Text(  
    struct ChunkyPort *  
    cp, STRPTR text)  
           A0           D0
```

FUNCTION

Outputs the relevant characters specified in the text string to a ChunkyPort using the pre-defined font.

The graphics pen position in the ChunkyPort is not changed.

INPUTS

cp -- a pointer to a valid ChunkyPort with font  
text -- the string to draw

NOTES

If text is NULL, nothing happens. If no font has been set, nothing happens.

BUGS

The graphics pen position may be moved two or three pixels if any style is used (not so for FS\_NORMAL draws).

Text is not clipped if it overruns the buffer - be warned.

SEE ALSO

CHK\_SetFont(), CHK\_TextCentre(), graphics.library/Text()

## 1.29 chk\_textcentre

NAME

CHK\_TextCentre -- draws some text centred on the x-coord

SYNOPSIS

---

```
void CHK_TextCentre(  
    struct ChunkyPort *  
    cp, STRPTR text, UWORD y)  
                                A0                A1                D0
```

#### FUNCTION

As `CHK_Text()`, except the text is automatically centred on the x-coordinate.

The graphics pen position in the `ChunkyPort` is changed to the top-left corner of where the text is to be drawn.

#### INPUTS

`cp` -- pointer to a valid `ChunkyPort` with font  
`text` -- the string to print  
`y` -- the y-coord to draw on

#### NOTES

This routine DOES clip the text on the x-coord and width, unlike `CHK_Text()`.

#### BUGS

Clipping here should be in `CHK_Text()`.

#### SEE ALSO

`CHK_Text()`, `CHK_SetFont()`

## 1.30 chk\_choosehardwaremode

#### NAME

`CHK_ChooseHardwareMode` -- allows `chunky.library` to decide to use CGFX or AGA

#### SYNOPSIS

```
void CHK_ChooseHardwareMode(ULONG ModeID)  
                                D0
```

#### FUNCTION

This important function determines what drawing method should be used for blasting chunky data onto the display.

It looks through the display driver database to see if the specified screen mode is native to the Amiga (e.g. AGA) or on a graphics board (e.g. Cybergraphics).

---

This routine MUST be called as soon as you open a screen or viewport before you draw any chunky information onto it (using `CHK_DrawChunky()`, etc.).

#### INPUTS

ModeID -- the 32-bit display mode ID number used when you open a screen/viewport

#### EXAMPLE

```
...
struct Screen *Screen;
ULONG ModeID = (PAL_MONITOR_ID | HIRES_KEY); // == 0x29000 (AGA)
// ULONG ModeID = 0x50011000; // == Picasso96: 640x480x256 ( ←
// GFX card)
...

if(Screen = OpenScreenTags(NULL, SA_LikeWorkbench, TRUE,
                          SA_DisplayID, ModeID,
                          TAG_DONE))
{
    // Determine the best hardware method (this will use AGA)
    CHK_ChooseHardwareMode(ModeID);
    ...
    // Free to use drawing routines now without worries of retargetting
    CHK_DrawChunky(cp, rp, 0, 0);
    ...
}
if(Screen) CloseScreen(Screen);
...

// Using either of the two ModeID's shown in this example requires NO change ←
// to any
// code. That's just how flexible chunky.library is :) It's easy to just use ←
// a screen
// mode requester and not care about what screen mode is used
// -- RTG or AGA.. who cares? :)
```

#### NOTES

If a screen mode ID that is passed is not recognised by `cybergraphics.library/IsCyberModeID()` or `cybergraphics.library` couldn't be opened, this routine FORCES to use custom c2p code (which only works on AGA - it will crash if used on a graphics board).

Not calling this routine at all in your program will make `chunky.library` ALWAYS use custom c2p code making your program AGA only and not RTG compatible. This routine MUST be called!

#### BUGS

Although `chunky.library` does not support Picasso96 direct, P96's emulation of `cybergraphics.library` is suitable.

Maybe this should double-check to see if it really is safe to use custom c2p code if `Cybergraphics` does not recognise the mode.



SEE ALSO

A good book on c2p (if there is one :).

## 1.31 chk\_drawchunkychunkyarea

NAME

CHK\_DrawChunkyChunkyArea -- copy data from one ChunkyPort to another

SYNOPSIS

```
void CHK_DrawChunkyChunkyArea (
    struct ChunkyPort *
    Dest,
    struct ChunkyPort *
    Src,
                                A0                                A1
    UWORD DestX, UWORD DestY, UWORD SrcX, UWORD SrcY, UWORD Width, ←
    UWORD Height)
    D0                D1                D2                D3                D4 ←
                                D5
```

FUNCTION

This routine is like CHK\_DrawChunkyArea(), except it does not draw from ChunkyPort to RastPort. It draws from ChunkyPort to ChunkyPort instead - useful for off-screen rendering.

The theory behind this routine is as follows:

1. Allocate two BitMap's with RastPort's for double-buffering.
2. Allocate a ChunkyPort to use as a go-between buffer.
3. In the main redraw routine, CHK\_DrawChunkyChunkyArea all the ChunkyPort's you want to display onto the go-between buffer.
4. CHK\_DrawChunky() the go-between buffer onto one of the RastPort's.
5. Swap buffers and loop from step 3.

That's the main point of this function, although I'm sure there are other uses for it.

INPUTS

```
Dest -- the destination ChunkyPort to copy to
Src -- the source ChunkyPort to copy from
DestX, DestY -- where to copy to in the destination
SrcX, SrcY, Width, Height -- the area of the rectangle to copy from the
                           source
```

EXAMPLE

```
...
struct ChunkyPort *src, *dest;
...
```

```

if((src = CHK_InitChunky(320, 200)) && (dest = CHK_InitChunky(320, 200)))
{
    // Got two buffers.. draw a box on one...
    CHK_DrawRect(src, 20, 20, 100, 100);
    // And copy that box to the other at a different position
    CHK_DrawChunkyChunkyArea(dest, src, 40, 40, 20, 20, 100, 100);
    ...
}
if(dest) CHK_FreeChunky(dest);
if(src)  CHK_FreeChunky(src);
...

```

#### NOTES

If the destination buffer is too small to receive the copy or the coordinates don't agree, this routine does nothing.

Copying data to the same buffer has not been tested - overlapping may have strange effects.

#### SEE ALSO

CHK\_DrawChunky(), CHK\_DrawChunkyChunky()

## 1.32 chk\_drawchunkychunky

#### NAME

CHK\_DrawChunkyChunky -- copies the whole of one ChunkyPort to another

#### SYNOPSIS

```

void CHK_DrawChunkyChunky(
    struct ChunkyPort *
    dest,
    struct ChunkyPort *
    src, UWORD x,

```

```

                                A0                A1                ←
                                D0
                                UWORD y)
                                D1

```

#### FUNCTION

This is just a simple routine which copies an entire ChunkyPort into another at a specified coordinate.

It is equivalent to doing  
CHK\_DrawChunkyChunkyArea(dest, src, x, y, 0, 0, w, h).

#### INPUTS

dest -- destination ChunkyPort to copy to

---

```
src -- source ChunkyPort to copy from
x,y -- coordinate in the destination to start copying to
```

SEE ALSO

```
CHK_DrawChunkyChunkyArea()
```

### 1.33 chk\_drawtransparentrectangle

NAME

```
CHK_DrawTransparentRectangle -- draws a filled "holy" rectangle into a
ChunkyPort
```

SYNOPSIS

```
void CHK_DrawTransparentRectangle(
    struct ChunkyPort *
    cp, UWORD x, UWORD y, UWORD w,
                                     A0           D0           D1           ←
                                     D2
    UWORD h)
    D3
```

FUNCTION

Draws a "transparent" rectangle. It is not true-transparency, but gives the impression of such an effect.

These rectangles are just every-after-one pixel is colour 0 (transparent) and the others pixels are coloured to whatever the last CHK\_SetAPen() colour was.

Effective, but not truly transparent; graphics card owners could improve this to be so, or even die-hard AGA fanatics - but changing the palette is out of the scope of this library. Or then again, maybe not :)

INPUTS

```
cp -- ChunkyPort to render onto
x,y,w,h -- box coordinates and sizes
```

NOTES

w,h are clipped if they are too big for the ChunkyPort.

The reason why I wrote this routine is that my custom GUI uses this to draw some boxes. It's just here because it was in my original chunky incarnations and never bothered to remove it. Still, some folk may find a practical use for it :)

SEE ALSO

CHK\_DrawRect(), CHK\_RectFill(), any good 3D renderer to see a real transparent box :)

## 1.34 chk\_getchunkyport

NAME

CHK\_GetChunkyPort -- creates from/uses a block of memory as a ChunkyPort

SYNOPSIS

```
struct ChunkyPort *
CHK_GetChunkyPort (APTR MemoryLocation, BOOL CopyBuf)
```

FUNCTION

WARNING!!! This function is very low-level and should only be used by people who know what they are doing (which always helps). You shouldn't really know about this :)

Using the supplied memory location, this routine "converts" or copies from this position a ChunkyPort.

The main use of this function is that if raw ChunkyPort data is read from disk (or included as part of the executable), you can use this as a ChunkyPort - providing it is actually a ChunkyPort structure.

It will expect the data to be like this in memory (NO GAPS):

- .. an entire ChunkyPort structure (which is of sizeof(struct ChunkyPort) bytes) ..
- .. the chunky buffer found in cp->cp\_Chunky (which is of cp->cp\_BufSize bytes) ..
- .. optionally a ColoursCP structure (which is sizeof(struct ColoursCP) bytes) ..

If the data is NOT organised in this way, you WILL get a crash.

If CopyBuf is FALSE, you MUST NOT free the memory allocated at MemoryLocation UNTIL you have CHK\_FreeChunky()'d the resulting ChunkyPort. THEN you MUST free the data - chunky.library will NOT free this memory (although it will free any font buffers).

If CopyBuf is TRUE, you can free the memory at MemoryLocation (if it is yours) as the routine will duplicate the memory block and create a ChunkyPort as if it were allocated using CHK\_InitChunky(). You can then CHK\_FreeChunky() the resulting ChunkyPort as normal.

Please don't use this routine unless absolutely necessary or you have mastered this library and understand it fully. Just use normal BitMap's and CHK\_CreateChunkyFromBitMap() them - it's infinitely more safe.

---

## INPUTS

MemoryLocation -- pointer to somewhere in memory to make a ChunkyPort  
from  
CopyBuf -- TRUE to copy the data, FALSE to reuse the same memory  
location (careful)

## RESULT

Returns a pointer to a ChunkyPort if successful, or NULL if the memory  
wasn't a ChunkyPort (as far as we could tell).

## EXAMPLE

Want an example? Make sure you've understood the whole library first -  
then e-mail oondy@bigfoot.com. This function is very advanced.

## NOTES

Don't come crying if you can't make this work. It is very tricky.

## BUGS

None - if you do it right.

## SEE ALSO

The other commands :)

## 1.35 chk\_putchunkycolours

## NAME

CHK\_PutChunkyColours -- copies attached colours in a ChunkyPort to a  
ViewPort

## SYNOPSIS

```

BOOL CHK_PutChunkyColours(
    struct ChunkyPort *
    cp, struct ViewPort *vp)
                                A0                                A1

```

## FUNCTION

Copies information from a ColoursCP structure in a ChunkyPort to a  
ViewPort immediately.

This function is for advanced use only.

## INPUTS

cp -- pointer to a ChunkyPort with a valid ColoursCP structure

---

vp -- pointer to a valid ViewPort

#### RESULT

Returns TRUE/FALSE success.

#### NOTES

chunky.library colour tables are rather private at the moment without functions to add, remove or change colours in the table. Please don't use the ColoursCP structures until I write routines to support them - i.e. don't roll your own methods (unless you submit them to include in a future release).

#### SEE ALSO

CHK\_InitColours()

## 1.36 chk\_drawchunkytiled

#### NAME

CHK\_DrawChunkyTiled -- tiles a ChunkyPort onto a RastPort

#### SYNOPSIS

```
void CHK_DrawChunkyTiled(
    struct ChunkyPort *
    cp, struct RastPort *rp, UWORD x, UWORD y,
                                A0                A1                D0 ←
                                D1
                                UWORD w, UWORD h)
                                D2                D3
```

#### FUNCTION

Draws a ChunkyPort over a RastPort using the specified rectangle. If the ChunkyPort is smaller than the specified rectangle the graphic is drawn until it fits. If the ChunkyPort is larger than the rectangle, it is clipped.

Useful for drawing static backgrounds and textures, etc.

#### INPUTS

cp -- ChunkyPort to draw  
 rp -- RastPort to draw onto  
 x,y,w,h -- rectangle dimensions to draw into on the RastPort

#### NOTES

Colour zero is not made see-through.

#### BUGS

Does not draw correctly width-ways and may even draw outside the buffer  
:(

This is really a quick bodge-together, and doesn't really work. Maybe fixed some time.

SEE ALSO

CHK\_DrawChunky(), CHK\_InsertChunky()

## 1.37 struct ChunkyPort

NOTE: entries marked with ### are private and should not be touched. All entries are READ ONLY.

```
struct ChunkyPort
{
    unsigned long    cp_Identifier; // == CHKP                ↔
    ###
    unsigned char    *cp_Chunky;    // Memory allocated for the chunky data
    unsigned short   cp_cx,        // Draw pen x position in buffer
                   cp_cy;        // Y pen
    unsigned char    cp_APen;      // Foreground pen
    unsigned char    cp_OPen;      // Outline pen
    unsigned char    cp_BPen;      // Background pen
    unsigned char    cp_IPen;      // Shine/shadow pen
    unsigned short   cp_Flags;     // Flags which are the same as graphics/ ↔
    rastport.h

    struct TextFont *cp_Font;      // Font to use for text rendering
    unsigned char    *cp_TxtChunky; // Chunky data buffer used for text rendering ↔
    ###
    unsigned short   cp_TxHeight;  // Height of the text                ↔
    ###
    unsigned short   cp_TxBaseline; // Baseline of the text              ↔
    ###
    unsigned short   cp_TxStyle;   // Softstyles in graphics/text.h plus these...
    unsigned short   cp_NoFree;    // TRUE if buffer was grabbed from a memory ↔
    location ###
    unsigned long    cp_BufSize;    // Number of bytes used for cp_Chunky
    unsigned short   cp_Width,     // Pixel width of buffer
                   cp_Height;    // Pixel height of buffer
    struct ColoursCP *cp_Colours;  // Pointer to colour palete data or NULL if ↔
    none ###
    unsigned long    cp_Reserved[7]; ###
};
```

## 1.38 struct ColoursCP

NOTE: These structures are PRIVATE AND READ ONLY!

```
struct cp_Colour32
{
    unsigned long R, G, B;
};

struct ColoursCP
{
    unsigned long    cpc_Identifier; // == CPCL
    short           cpc_ColourRecord;
    short           cpc_ColourFirst; // = 0
    struct cp_Colour32 cpc_ColourTable32[256+1];
};
```

## 1.39 "

NAME

SYNOPSIS

FUNCTION

INPUTS

RESULT

EXAMPLE

NOTES

BUGS

SEE ALSO

## 1.40 chk\_c2poff

NAME

CHK\_C2POff -- turns C2P off (v3.1)

SYNOPSIS

BOOL CHK\_C2POff(void)

FUNCTION

Disables usage of the custom AGA C2P routines, forcing the library to use OS drawing routines.

OBSOLETE! DO NOT USE THIS FUNCTION! This function MAY do something in



the future so don't use it now.

#### RESULT

As this function does nothing, this always returns zero.

#### BUGS

Dead function - do not use.

## 1.41 chk\_drawchunkywindowarea

#### NAME

CHK\_DrawChunkyWindowArea -- draws part of a ChunkyPort into a window  
(V3.2+)

#### SYNOPSIS

```
void CHK_DrawChunkyWindowArea(struct ChunkyPort *cp,  
                             A0  
                             struct Window *win, WORD x, WORD y, UWORD w, UWORD h)  
                             A1          D0          D1          D2          D3
```

#### FUNCTION

This routine just saves you a bit of extra work when dealing with Windows and not directly RastPorts.

It will calculate the offsets required to draw into a window that has a title bar and/or a border. It will then simply call CHK\_DrawChunkyArea().

#### INPUTS

cp -- pointer to a valid ChunkyPort  
win -- pointer to an open Window with a RastPort  
x,y -- coords to draw at in the Window (may be negative)  
w,h -- width and height of cp to draw

#### NOTES

Since this calls CHK\_DrawChunkyArea() no extra clipping is done under AGA, so make sure your window is large enough, or clip yourself.

#### BUGS

This routine could do so much more, but doesn't :)

#### SEE ALSO

CHK\_DrawChunkyWindow(), CHK\_DrawChunkyArea()

## 1.42 chk\_drawchunkywindow

### NAME

CHK\_DrawChunkyWindow -- draws an entire ChunkyPort into a Window  
(v3.2+)

### SYNOPSIS

```
void CHK_DrawChunkyWindow(struct ChunkyPort *cp, struct Window *win,  
                          A0                               A1  
                          WORD x, WORD y, UWORD w, UWORD h)  
                          D0           D1           D2           D3
```

### FUNCTION

As CHK\_DrawChunky(), but is tailored for Windows and not RastPorts.  
See CHK\_DrawChunkyWindowArea().

### INPUTS

cp -- pointer to a valid ChunkyPort  
win -- pointer to an open Window with a RastPort  
x,y -- coords to draw at in the Window (may be negative)

### SEE ALSO

CHK\_DrawChunkyWindowArea()

## 1.43 chk\_queryuseos

### NAME

CHK\_QueryUseOS -- asks chunky.library how it's drawing stuff  
(v3.2+)

### SYNOPSIS

```
BOOL CHK_QueryUseOS(void)
```

### FUNCTION

After your program has called CHK\_ChooseHardwareMode() there is no way  
how your program can find out if chunky.library is drawing using AGA  
C2P or CGFX routines. This function asks the library if it is using  
CGFX routines, returning TRUE if it is, and FALSE for AGA C2P.

### RESULT

TRUE if chunky.library is using CGFX...  
FALSE if it is using AGA C2P.

### NOTES

Though your program does not need to know how chunky.library is drawing its data on your screen, it can be useful to know sometimes.

Note that this result can only be correct once this routine has been called. It may change in the future.

---