

Testfile

COLLABORATORS

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Chapter 1

Testfile

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```

1.2 rtgmaster.library/CallRtgC2P

```
rtgmaster.library/CallRtgC2P
```

NAME

CallRtgC2P -- Perform c2p for Planar Screens, CopyRtgPixelArray for Chunky Screens ←

SYNOPSIS

```
int CallRtgC2P(RtgScreen, BufAdr, Array, signal, xpos, ypos, width, height, mode)
    D0          A0          A1          A2          D0          D1          D2          D3          D4          D5
```

```
int CallRtgC2P(struct RtgScreen *, APTR, APTR, ULONG, ULONG, ULONG, ULONG, ULONG, ←
    ULONG)
```

FUNCTION

This function will look what the "standard c2p" for the system is up to ←
now
(the standard c2p can be choose by a future version of the Rtgmaster ←
Screenmode
requester, the available c2p algorithms are found in libs:rtgc2p, how own ←
c2p
algorithms can be added to the system will be explained in the ←
documentation
of the first version of rtgmaster.library that actually supports ←
CallRtgC2P).

The function will, if the display is a Planar one, convert the Chunky Data ←
in
Array to Planar using the choosen c2p algorithm, and display it in the ←
choosen
Buffer. For Chunky Displays it will instead do the same as ←
CopyRtgChunkyPixel.

This way a very easy possibility to support both AGA and Graphics Boards ←
without
having to do "special versions" will be available, if one uses a Fastram ←
Buffer.

I am still looking for c2p algorithms for this function !!! All used c2p ←
algorithms
should support AGA and additional, it would be fine, if they supported
1x1,1x2,2x1 and 2x2. If you have fine c2p algorithms, mail me

(MagicSN@birdland.es.bawue.de).

NOTE : The Array should EXACTLY be as big as specified with Left, Top, Width and Height... it should *NOT* be bigger.

NOTE: Currently you *HAVE TO* use xpos=0 ypos=0 width=<max x> height=<max y> Maybe this will change in the future !!!!!!!!!!!!!!! This is only because i do not have ANY c2p that supports that feature up to now...

NOTE: Some c2p algorithms might do NOTHING in certain colour depths, or for interleaved bitmaps. Be careful about this. If the c2p works, this function returns 0, otherwise an errorcode.

Principially it COULD support 256, 64 (EHB), 32 or 16 colors and 1x1, 1x2, 2x1, 2x2, 4x2, 2x4 and 4x4 (look at the includes). It is also possible to choose the FASTEST AVAILABLE, the BEST AVAILABLE mode or the mode that was selected from the user as standard mode for his system, using the Screenmode Requester.

If the user did not specify a standard c2p, this function will use the fastest available mode.

The signal indicates (for asynchrone c2p) that the c2p has done. For ones it is set after quitting the function.

In mode you specify which c2p mode to use.

For Graphics Boards, ALWAYS 1x1 is used.

INPUTS

RtgScreen - The RtgScreen to use.
 BufAdr - The address of the buffer to use
 Array - The fastram buffer
 Left - The x position on the Bitmap of RtgScreen where to put the stuff
 Top - The y position
 Width - The Width of the stuff
 Height - The Height of the stuff

SEE ALSO

CopyRtgPixelArray()

1.3 rtgmaster.library/CloseClient

NAME

CloseClient -- Closes the Client of a TCP/IP connection again

SYNOPSIS

```
CloseClient (SBase, Socket)
            A0   A1
```

```
CloseClient (struct Library *, struct TCP_Socket *)
```

FUNCTION

Terminates a "virtual connection" of TCP/IP and gives the Socket of the Client back to the system. (For UDP it only gives the socket back to the system, as there are no "virtual connections" in connectionless UDP).

NOTE: It might appear strange to you, that you have to open bsdsocket.library yourselves and provide it as parameter. This is needed because of some internal problems of AmiTCP, that make it IMPOSSIBLE opening it inside a library. Look at the Docs for more information.

You do NOT have to use rtgmaster.library's Graphics Board features to use rtgmaster.library's TCP/IP features, if you do not WANT to...

INPUTS

SBase - Result of the call (C Syntax here...)
 SBase = OpenLibrary("bsdsocket.library",0);
Socket - The Socket of the Client you want to close.
 You should ONLY use this function for Clients,
 NOT FOR SERVERS !!!

SEE ALSO

```
OpenClient ()
,
OpenServer ()
,
CloseServer ()
,
RunServer ()
,
RtgSend ()

RtgRecv ()
,
RtgAccept ()
,
RtgIoctl ()
,
GetUDPName ()
,
RtgInAdr ()
```

1.4 rtgmaster.library/CloseRtgScreen

NAME

CloseRtgScreen -- Close a screen previously opened with
OpenRtgScreen

SYNOPSIS

```
CloseRtgScreen(RtgScreen)
                A0
```

```
CloseRtgScreen(ULONG)
```

FUNCTION

Should close a RtgScreen opened by this sublibrary and free all of its resources.

INPUTS

RtgScreen - A handle for a valid screen previously opened by this sublibrary's OpenRtgScreen() function.

SEE ALSO

OpenRtgScreen()

1.5 rtgmaster.library/CloseServer

NAME

CloseServer -- Closes the Server of a TCP/IP connection again

SYNOPSIS

```
CloseServer(SBase,Socket)
                A0    A1
```

```
CloseServer(struct Library *,struct TCP_Socket *)
```

FUNCTION

Terminates a "virtual connection" of TCP/IP and gives the Socket of the Server ↵
back to the system. For UDP it only gives the socket back to the system, ↵
as
for UDP there is no connection to terminate.

NOTE: It might appear strange to you, that you have to open bsdsocket. ↵
library
yourselves and provide it as parameter. This is needed because of some ↵
internal
problems of AmiTCP, that make it IMPOSSIBLE opening it inside a library. ↵
Look
at the Docs for more information.

You do NOT have to use rtgmaster.library's Graphics Board features to use rtgmaster.library's TCP/IP features, if you do not WANT to...

INPUTS

SBase - Result of the call (C Syntax here...)
 SBase = OpenLibrary("bsdsocket.library",0);

Socket - The Socket of the Client you want to close.
 You should ONLY use this function for Servers,
 NOT FOR CLIENTS !!!

SEE ALSO

```

    OpenClient()
  ,
    OpenServer()
  ,
    CloseClient()
  ,
    RunServer()
  ,
    RtgSend()

    RtgRecv()
  ,
    RtgAccept()
  ,
    RtgIoctl()
  ,
    GetUDPName()
  ,
    RtgInAdr()

```

1.6 rtgmaster.library/CopyRtgPixelFormat

NAME

CopyRtgPixelFormat -- Copy a rectangular array of pixels directly to the graphics card memory without any conversion

SYNOPSIS

```

CopyRtgPixelFormat(RtgScreen, BufferAdr, Array, Left, Top, Width, Height, ←
  SrcX, SrcY);
                A0      A1      A2      D0      D1      D2      D3      ←
                D4      D5

```

```

CopyRtgPixelFormat(struct RtgScreen *, APTR, APTR, ULONG, ULONG, ULONG, ←
  ULONG, ULONG, ULONG)

```

FUNCTION

Copies a rectangular array of pixels directly to the graphics card memory with no conversion. The array of pixels is assumed to be in the correct native format so it can be copied at maximum speed. The copy routine however does take segment boundaries in account (if required).

This routine is mainly intended for machines which have relatively fast FastRAM compared to the speed of the graphics card RAM. This

is usually on machines with a 32-bit accelerator card which have a Zorro-II graphics card installed.

This function is not supported by the `rtgAMI.library`.

INPUTS

`RtgScreen` - A handle for a valid screen previously opened by this sublibrary's `OpenRtgScreen()` function.
`BufferAdr` - The address of the memory containing the actual screen graphics
`Array` - Pointer to an array of pixels which is `Width` pixels wide, and `Height` pixels high. The size of the pixel is dependant on the `ScreenBuffer` your copying to. Make sure the array is in the correct native format.
`Left` - X position of the top-left of the rectangular pixel array
`Top` - Y position of the top-left of the rectangular pixel array
`Width` - Width of the array in pixels
`Height` - Height of the array in pixels

SEE ALSO

```

    OpenRtgScreen()
    ,
    WriteRtgPixelFormat()
    ,WriteRtgPixelFormatRGBArray()

```

1.7 `rtgmaster.library/DrawRtgLine`

NAME

`DrawRtgLine` - draws a line on a `RtgScreen`

SYNOPSIS

```

DrawRtgLine(RtgScreen, BufferAdr, Color, X1, Y1, X2, Y2)
           A0           A1           D0           D1 D2 D3 D4

```

```

DrawRtgLine(struct RtgScreen *, APTR, ULONG, LONG, LONG, LONG, LONG)

```

FUNCTION

Draws a line on the screen which will be clipped if necessary.

NOTE : $X1 \leq X2$ AND $Y1 \leq Y2$!!!

INPUTS

`RtgScreen` - A handle for a valid screen previously opened by this sublibrary's `OpenRtgScreen()` function.
`BufferAdr` - The address of the memory containing the actual screen graphics
`Color` - Color number
`X1,Y1,X2,Y2` - Draws a line from `(X1,Y1)` to `(X2,Y2)`

SEE ALSO

```

    OpenRtgScreen()
    ,
    DrawRtgLineRGB()

```

1.8 rtgmaster.library/DrawRtgLineRGB

NAME

DrawRtgLineRGB - draws a line on a RtgScreen

SYNOPSIS

```
DrawRtgLineRGB(RtgScreen, BufferAdr, Color, X1, Y1, X2, Y2)
                A0          A1          D0      D1  D2  D3  D4
```

```
DrawRtgLineRGB(struct RtgScreen *, APTR, ULONG, LONG, LONG, LONG, LONG)
```

FUNCTION

Draws a line on the screen which will be clipped if necessary.

NOTE: X1<=X2 AND Y1<=Y2 !!!

INPUTS

RtgScreen - A handle for a valid screen previously opened by this sublibrary's OpenRtgScreen() function.

BufferAdr - The address of the memory containing the actual screen graphics

Color - A 32-bit value describing the color

X1,Y1,X2,Y2 - Draws a line from (X1,Y1) to (X2,Y2)

SEE ALSO

```
OpenRtgScreen()
,
DrawRtgLine()
```

1.9 rtgmaster.library/FillRtgRect

NAME

FillRtgRect - draws a filled rectangle to a RtgScreen

SYNOPSIS

```
FillRtgRect(RtgScreen, BufferAdr, Color, Left, Top, Width, Height)
                A0          A1          D0      D1  D2  D3  D4
```

```
FillRtgRect(struct RtgScreen *, APTR, ULONG, ULONG, ULONG, ULONG, ULONG)
```

FUNCTION

Draws a filled rectangle at the specified position on a RtgScreen. The BufferAdr is the starting address of the buffer the users wants to draw the rectangle in. The user has obtained this address using LockRtgScreen() and GetBufAdr(). The BufferAdr is needed to specify the correct buffer for screens which are double or triple buffered.

This function should only work for Palette mapped modes, Color is the Color number of the palette.

INPUTS

RtgScreen - A handle for a valid screen previously opened by this sublibrary's `OpenRtgScreen()` function.

BufferAdr - The address of the memory containing the actual screen graphics

Color - Color number

Left - X position of the top-left of the rectangle

Top - Y position of the top-left of the rectangle

Width - Width of the rectangle in pixels

Height - Height of the rectangle in pixels

SEE ALSO

`OpenRtgScreen()`
,
`FillRtgRectRGB()`

1.10 rtgmaster.library/FillRtgRectRGB

NAME

`FillRtgRectRGB` - draws a filled rectangle to a `RtgScreen`

SYNOPSIS

```
FillRtgRectRGB(RtgScreen, BufferAdr, Color, Left, Top, Width, Height)
                A0          A1          D0    D1    D2    D3    D4
```

```
FillRtgRectRGB(struct RtgScreen *, APTR, ULONG, ULONG, ULONG, ULONG, ULONG ←
                )
```

FUNCTION

Draws a filled rectangle at the specified position on a `RtgScreen`. The `BufferAdr` is the starting address of the buffer the users wants to draw the rectangle in. The user has obtained this address using `LockRtgScreen()` and `GetBufAdr()`. The `BufferAdr` is needed to specify the correct buffer for screens which are double or triple buffered.

This function should only work for True Color modes, `Color` is a 32 bit value which specifies what Color the pixel should be. The layout of this 32-bit value is as follows:

```
%aaaaaaaa.rrrrrrrr.gggggggg.bbbbbbbb
```

`a` = AlphaChannel (8-bits) which may or may not be ignored. The user will set this to zero if the user doesn't want to use AlphaChannel.

`r` = Red component (8-bits) of the 24-bit RGB value

`g` = Green component (8-bits) of the 24-bit RGB value

`b` = Blue component (8-bits) of the 24-bit RGB value

INPUTS

RtgScreen - A handle for a valid screen previously opened by this sublibrary's `OpenRtgScreen()` function.

BufferAdr - The address of the memory containing the actual
 screen graphics
 Color - A 32-bit value describing the color (see above)
 Left - X position of the top-left of the rectangle
 Top - Y position of the top-left of the rectangle
 Width - Width of the rectangle in pixels
 Height - Height of the rectangle in pixels

SEE ALSO

```

    OpenRtgScreen()
    ,
    FillRtgRect()
  
```

1.11 rtgmaster.library/FreeRtgScreenModeReq

NAME

FreeRtgScreenModeReq - frees the ScreenReq structure again

SYNOPSIS

```

    FreeRtgScreenModeReq(myreq)
                        A0
  
```

```

    FreeRtgScreenModeReq(struct ScreenReq *)
  
```

FUNCTION

This function frees the memory allocated by RtgScreenModeReq again. Should be called after you need that data not any longer. Note: This function caused a system crash with an early Beta Version of rtgmaster. library. ↔

This does no longer happen, as this bug got fixed. This function is only in the master-library, not in the sublibraries.

INPUTS

myreq - The ScreenReq Structure returned by RtgScreenModeReq

SEE ALSO

```

    RtgScreenModeReq()
  
```

1.12 rtgmaster.library/FreeScreenModes

NAME

FreeScreenModes - frees a list of screenmodes

SYNOPSIS

```

    FreeScreenModes(array of screenmodes)
                        A0
  
```

```

    FreeScreenModes(APTR)
  
```

FUNCTION

This function should free a previously with GetScreenModes() allocated list of ScreenMode structures, including everything else GetScreenModes() allocated. Be prepared to handle a NULL pointer. THIS FUNCTION IS ONLY IN SUBLIBRARIES, NOT IN THE MASTER-LIBRARY ITSELF. IT IS ONLY CALLED BY RTGMASTER.LIBRARY ITSELF.

INPUTS

array - an array of ScreenMode structures or NULL

SEE ALSO

GetScreenModes()

1.13 rtgmaster.library/GetBufAdr

NAME

GetBufAdr -- Get the address for one of the buffers from a multi-buffered RtgScreen

SYNOPSIS

```
address = GetBufAdr(RtgScreen, Buffer)
D0                A0                D0
```

```
APTR GetBufAdr(ULONG, ULONG)
```

FUNCTION

If the user is using multi-buffered screens, it might be useful to know where the two buffers start in memory. After a LockRtgScreen() the user can call this function with a RtgScreen handle and a number to get the address of the corresponding buffer.

The address is only valid if the RtgScreen is currently locked using LockRtgScreen().

INPUTS

RtgScreen - A handle for a valid screen previously opened by this sublibrary's OpenRtgScreen() function.
Buffer - The buffer number the user wants the address of

RESULTS

address - the address of the buffer, or NULL for failure

SEE ALSO

LockRtgScreen()

,
OpenRtgScreen()

1.14 rtgmaster.library/GetRtgScreenData

NAME

GetRtgScreenData -- Fills a TagList with data about the RtgScreen

SYNOPSIS

```
GetRtgScreenData(RtgScreen, TagList)
                 A0          A1
```

```
GetRtgScreenData(ULONG, struct TagItem *)
```

FUNCTION

This function should fill the TI_DATA fields of the passed in TagList with the requested information.

See for available tags and descriptions in the .i/.h file.

NOTE: Starting with sublibrary V2.2, this function can also be used to find out to what BUSSYSTEM a Graphics Board is connected. In the original design of rtgmaster an extra function was intended for that, but now it is the job of GetRtgScreenData.

INPUTS

RtgScreen - A handle for a valid screen previously opened by this sublibrary's OpenRtgScreen() function.
 TagList - TagList which should be filled in with requested info.

SEE ALSO

```
OpenRtgScreen()
,
GetBufAdr()
```

1.15 rtgmaster.library/GetScreenModes

NAME

GetScreenModes - builds a list of available screenmodes

SYNOPSIS

```
array of ScreenMode structures = GetScreenModes()
D0
```

```
APTR GetScreenModes()
```

FUNCTION

This function should return a linked list of ScreenMode structures describing all the available ScreenModes available to this sublibrary. If there aren't any, or you couldn't allocate the memory for the list then return 0. THIS FUNCTION IS ONLY IN SUBLIBRARIES, NOT IN THE MASTER-LIBRARY ITSELF. IT IS ONLY CALLED BY RTGMASTER.LIBRARY ITSELF.

RESULTS

array - an array of ScreenMode structures or NULL

SEE ALSO

FreeScreenModes()

1.16 rtgmaster.library/GetSegment

NAME

GetSegment - get the active segment or ~0

SYNOPSIS

```
segnum = GetSegment()
      D0
```

```
ULONG GetSegment()
```

FUNCTION

If the graphic board works in segment mode -- with a memory window of 64 KByte -- you will get the number of the active segment after calling this function.

If the graphic board works non segmented, you will get ~0 (= 0xFFFFFFFF) as a result to this call.

RESULTS

segnum - number of active segment, or -1 if the board works non-segmented

SEE ALSO

SetSegment()

1.17 rtgmaster.library/GetUDPName

NAME

GetUDPName - Get the sockaddr_in structure of a UDP Client/Server

SYNOPSIS

```
name = GetUDPName(SocketBase, sock)
      A0           A1
```

```
struct sockaddr_in *GetUDPName(struct Library *, struct RTG_Socket *)
```

FUNCTION

If this is UDP, you will get the sockaddr_in structure of a Client/Server, else you will get 0. For what this is intended, read RtgRecv/RtgSend/ ↔ RtgInAdr.

And of course the Docs of rtgmaster.library where detailed information ↔ about

TCP, IP and UDP is found.

NOTE: It might appear strange to you, that you have to open `bsdsocket.library` yourselves and provide it as parameter. This is needed because of some internal problems of AmiTCP, that make it IMPOSSIBLE opening it inside a library. Look at the Docs for more information.

You do NOT have to use `rtgmaster.library`'s Graphics Board features to use `rtgmaster.library`'s TCP/IP features, if you do not WANT to...

INPUTS

SBase - Result of the call (C Syntax here...)
`SBase = OpenLibrary("bsdsocket.library",0);`
 Socket - The Socket of the Client you want to close.
 You should ONLY use this function for Clients,
 NOT FOR SERVERS !!!

RESULTS

name - The `sockaddr_in` structure of the Client/Server

SEE ALSO

```

    OpenClient()
    ,
    OpenServer()
    ,
    CloseServer()
    ,
    RunServer()
    ,
    RtgSend()

    RtgRecv()
    ,
    RtgAccept()
    ,
    RtgIoctl()
    ,
    RtgInAdr()
  
```

1.18 `rtgmaster.library/LoadRGBRtg`

NAME

`LoadRGBRtg` - changes one or more colors of a `RtgScreen`

SYNOPSIS

```

LoadRGBRtg(RtgScreen, Table)
           A0         A1
  
```

```

LoadRGBRtg(ULONG, APTR)
  
```

FUNCTION

Enables the user to change one or more colors of his/her screen. This function only works for RtgScreens which have a palette, and thus won't work for the True-color modes.

INPUTS

RtgScreen - A handle for a valid screen previously opened by this sublibrary's OpenRtgScreen() function.
 Table - A pointer to a series of records which describe which colors to modify

NOTES

Passing a NULL Table must be ignored. The format of the Table passed is a series of records, each with the this format:

```
WORD Count value: Number of colors to load
WORD Number of first color to be loaded
```

After these two words, a list of 3 Longs follow as many times as specified by the first word. These 3 longwords represent the left justified 32 bit RGB value.

And then the list repeats until ended with a count value of 0.

See for more information about the table graphics/LoadRGB32. This function must use the same format.

SEE ALSO

```
OpenRtgScreen()
, graphics/LoadRGB32()
```

1.19 rtgmaster.library/LockRtgScreen

NAME

LockRtgScreen -- Locks a RtgScreen (prevents it from being moved in memory)

SYNOPSIS

```
address = LockRtgScreen(RtgScreen)
D0                      A0
```

```
APTR LockRtgScreen(ULONG)
```

FUNCTION

This function should make sure that the screen is not moved from it's current location in memory. In other words, it will guarantee that the address you get back from this function remains valid until you call UnlockRtgScreen().

The result from this function should be the address of the buffer associated with the screen either in the graphics cards own

memory or the computers memory.

For multi-buffered screens the return-address must point to buffer 0 for this RtgScreen. To get the addresses of the other buffers the user will use GetBufAdr().

LockRtgScreen and UnlockRtgScreen functions must nest, which means you must call an UnlockRtgScreen for every LockRtgScreen. The field rs_Locks in the RtgScreen structure should be used to keep track of the number of times a screen was locked.

Note : On some Graphics Boards this function will take some CPU time to happen, so it is advised ONLY to call it *once* at the start of your code (And UnlockRtgScreen *once* at the end of your code, to be on the sure side...)

INPUTS

RtgScreen - A handle for a valid screen previously opened by this sublibrary's OpenRtgScreen() function.

RESULTS

address - The address of the (first) buffer of this screen.

SEE ALSO

```

    UnlockRtgScreen()
    ,
    OpenRtgScreen()
    ,
    GetBufAdr()

```

1.20 rtgmaster.library/OpenClient

```

    NAME
    OpenClient    -- Open a TCP/IP Client

```

SYNOPSIS

```

    Socket = OpenClient(SBase,host,port,mode,protocol)
    D0          A0    A1    D0    D1    D2

```

```

    struct RTG_Socket *OpenClient(struct Library *,char *,int,int,int)

```

FUNCTION

For TCP, this function opens a "virtual connection" between two ↔ applications.

For UDP it creates a socket that can be used by the application to transfer data connectionless to other applications.

This function is the "Client part" of the connection. The protocol being used is TCP/IP.

For more information, look at the docs. There is a chapter about "TCP/IP programming for newcomers", that shows you, how to support network gaming for your computer game, even if you never heard of TCP/IP before :) Up to now rtgmaster.library only supports the

"protocol stack" AmiTCP, no AS225 support up to now. Runs for sure with AmiTCP 4.0 demo from Aminet, i do not know about earlier versions.

NOTE: It might appear strange to you, that you have to open bsdsocket. library yourselves and provide it as parameter. This is needed because of some internal problems of AmiTCP, that make it IMPOSSIBLE opening it inside a library. Look at the Docs for more information.

You do NOT have to use rtgmaster.library's Graphics Board features to use rtgmaster.library's TCP/IP features, if you do not WANT to...

INPUTS

SBase - Result of the call (C Syntax here...)
 SBase = OpenLibrary("bsdsocket.library",0);

host - hostname of the "Server", to which you want to connect your application (for example "194.55.101.26").

port - The port your application uses. For example 4000.
 Be sure to use a number bigger than 3000, small numbers are often used for different protocols in TCP/IP. For example 21 is telnet.

mode - The mode of the connection. Up to now only SOCK_STREAM is supported ("virtual connection using a datastream").
 SOCK_DGRAM probably will give you a UDP connection, but I do not know enough about UDP to make this really working.. maybe in a future version...

protocol - The protocol To be used. Set this to 0 currently.
 mode SOCK_STREAM and protocol 0 will result in a TCP connection

RESULTS

Socket - The "Socket" of the Application. See more in the docs.

SEE ALSO

```

OpenServer ()
,
CloseClient ()
,
CloseServer ()
,
RunServer ()
,
RtgSend ()

RtgRecv ()
,
RtgAccept ()
,
RtgIoctl ()
,
GetUDPName ()
,
RtgInAdr ()

```

1.21 rtgmaster.library/OpenRtgScreen

NAME

OpenRtgScreen -- Open a screen

SYNOPSIS

```
RtgScreen = OpenRtgScreen(ScreenReq, RtgTags)
D0                A0                A1
```

```
struct RtgScreen *OpenRtgScreen(struct ScreenReq *, struct TagItem *)
```

FUNCTION

This function should open the screen which falls within the parameters specified by the user. If this function can't deliver such a screen than it will fail and will return zero.

Note that the Width and Height values you get from `rtgmaster.library` have been checked to see if they are valid for this screenmode. Also note that `RtgTags` may be zero.

INPUTS

`RtgTags` - Pointer to (an array of) `TagItem` structures, terminated by the value `TAG_END` (0).
`ScreenReq` - `ScreenReq` structure as returned by `RtgScreenModeReq()` of `rtgmaster.library`, see `rtg.i` for more information

Each `TagItem` is an optional tagged data structure which identifies a parameter to `OpenRtgScreen()`. The applicable tag ID values for `TagItem.ti_Tag` and their corresponding data can be found in the `.i/.h` file where the Tags for `OpenRtgScreen()` are specified.

RESULTS

`RtgScreen` - A handle for the screen you opened. The user may later use this handle to get information about this screen or perform actions like setting the palette or double/triple buffering. You should return `NULL` if the screen couldn't be opened.

SEE ALSO

`CloseRtgScreen`

1.22 rtgmaster.library/OpenServer

NAME

OpenServer - Opens a TCP/IP Server

SYNOPSIS

```
Socket=OpenServer(SBase,port,mode,protocol)
D0                A0    D0    D1    D2
```

```
struct TCP_Connect *OpenServer(struct Library *,int,int,int)
```

FUNCTION

For TCP this function opens a "virtual connection" between two ↔ applications.

For UDP it creates a server that UDP clients can access.

This function is the "Server part" of the connection. The protocol being used is TCP/IP. Up to now, as to the "transport protocol", only TCP is supported, no UDP (maybe in a future version ???) For more information, look at the docs. There is a chapter about "TCP/IP programming for newcomers", that shows you, how to support network gaming for your computer game, even if you never heard of TCP/IP before :) Up to now rtgmaster.library only supports the "protocol stack" AmiTCP, no AS225 support up to now. Runs for sure with AmiTCP 4.0 demo from Aminet, i do not know about earlier versions.

NOTE: It might appear strange to you, that you have to open bsdsocket. ↔ library yourselves and provide it as parameter. This is needed because of some ↔ internal problems of AmiTCP, that make it IMPOSSIBLE opening it inside a library. ↔ Look at the Docs for more information.

You do NOT have to use rtgmaster.library's Graphics Board features to use rtgmaster.library's TCP/IP features, if you do not WANT to...

INPUTS

SBase - Result of the call (C Syntax here...)
 SBase = OpenLibrary("bsdsocket.library",0);

port - The port your application uses. For example 4000.
 Be sure to use a number bigger than 3000, small numbers are often used for different protocols in TCP/IP. For example 21 is telnet.

mode - The mode of the connection. Up to now only SOCK_STREAM is supported ("virtual connection using a datastream"). SOCK_DGRAM probably will give you a UDP connection, but i do not know enough about UDP to make this really working... maybe in a future version...

protocol - The protocol To be used. Set this to 0 currently.
 mode SOCK_STREAM and protocol 0 will result in a TCP connection ↔

RESULTS

Socket - The "Socket" of the Application. See more in the docs.

SEE ALSO

```
OpenClient()
,
CloseClient()
,
```



```

        CloseServer()
    ,
    RunServer()
    ,
    RtgSend()

    RtgRecv()
    ,
    RtgAccept()
    ,
    RtgIoctl()
    ,
    GetUDPName()
    ,
    RtgInAdr()

```

1.23 rtgmaster.library/RtgAccept

NAME

RtgAccept - Let the server accept a connection deminded by a Client

SYNOPSIS

```

Socket=RtgAccept(SBase,Socket)
    D0          A0    A1

```

```

struct RTG_Socket *RtgAccept(struct Library *,struct RTG_Socket *)

```

FUNCTION

If you do not use the RunServer function (you do not use it, if you only do a point-to-point connection), you have to do this call on Server side to wait for the Client to connect. If you use RunSercer, DO NOT USE IT. It is only for connecting exactly TWO systems (one being the server, one the client), not for connecting ONE server with SEVERAL clients...

Also do not use it for UDP connection. RtgAccept is only needed for TCP. It does not work with UDP.

NOTE: It might appear strange to you, that you have to open bsdsocket. ←
 library
 yourselves and provide it as parameter. This is needed because of some ←
 internal
 problems of AmiTCP, that make it IMPOSSIBLE opening it inside a library. ←
 Look
 at the Docs for more information.

You do NOT have to use rtgmaster.library's Graphics Board features to use rtgmaster.library's TCP/IP features, if you do not WANT to...

INPUTS

```

SBase    - Result of the call (C Syntax here...)
           SBase = OpenLibrary("bsdsocket.library",0);
Socket   - the Socket of the Server

```

RESULTS

Socket - The "Socket" of the Client, that connected. See more in the docs.

SEE ALSO

```

    OpenClient ()
    ,
    CloseClient ()
    ,
    CloseServer ()
    ,
    RunServer ()
    ,
    RtgSend ()

    RtgRecv ()
    ,
    RtgIoctl ()
    ,
    GetUDPName ()
    ,
    RtgInAdr ()

```

1.24 rtgmaster.library/RtgBlit

NAME

RtgBlit - Performs a Blit without waiting

SYNOPSIS

```

RtgBlit (RtgScreen, SrcBuf, DstBuf, SrcX, SrcY, DstX, DstY, Width, Height, Minterm)
        A0          a1          a2          d0   d1   d2   d3   d4   d5   d6

```

```

void RtgBlit (struct RtgScreen *, ULONG, ULONG, ULONG, ULONG, ULONG, ULONG, ←
              ULONG, ULONG, UBYTE)

```

FUNCTION

This function blits the rectangle at (SrcX, SrcY) in the Buffer with the NUMBER SrcBuf (0-2) to the position (DstX, DstY) in the Buffer with the NUMBER DstBuf (0-2). The Blit has Width Width and Height Height.

For most GFX Boards this function is the fastest way to move graphics data.

Note : On some boards (for example EGS Boards) this function might wait on the Blitter to be finished as this can't be done in an other way with these boards. For these boards WaitRtgBlit simply does nothing.

Note : The source and the destination rectangle should NOT OVERLAP !!!

Valid minterms : \$30, \$50, \$60, \$80, \$C0. NO OTHER MINTERMS ARE VALID. OTHER MINTERMS MIGHT WORK WITH SOME SUBLIBRARIES, BUT PROBABLY NOT WITH ALL SUBLIBRARIES.

Note: This function MIGHT or MIGHT NOT work with some of the Minterns on rtgEGS.library... at least for \$C0 it works for all... for the rest... i do not see myself as Betatester of half-finished WB-Emulations...

INPUTS

RtgScreen - The RtgScreen where the Blit should happen
 SrcBuf - The Buffer NUMBER (not address !!!) of the Source Buffer
 DstBuf - The Buffer NUMBER (not address !!!) of the Destination Buffer
 SrcX - The X coordinate of the source Rectangle
 SrcY - The Y coordinate of the source Rectangle
 DstX - The X coordinate of the Destination Rectangle
 DstY - The Y coordinate of the Destination Rectangle
 Width - The Width of the Blit
 Height - The Height of the Blit
 minterm - the minterm of the Blit, defined as usual

SEE ALSO

```

    OpenRtgScreen()
    ,
    WaitRtgBlit()
    ,
    SwitchScreens()
  
```

1.25 rtgmaster.library/RtgBltClear

SYNOPSIS

```
RtgBltClear(RtgScreen, BufNum, xpos, ypos, width, height)
```

```
RtgBltClear(struct RtgScreen *, ULONG, ULONG, ULONG, ULONG, ULONG)
```

FUNCTION

This function clears a rectangular area using the GFX Board blitter. For people who wonder, why i did not implement that the "usual" way, like done in graphics.library : The graphics.library function would not be possible under EGS, therefor i did it this way. The function usually does not wait for the Blitter, use WaitRtgBlit for this (unless under EGS... like explained in RtgBlit and WaitRtgBlit...)

INPUTS

RtgScreen - The RtgScreen
 BufNum - The NUMBER of the concerned Buffer, between 0 and 2 (NOT the buffer address !!!)
 xpos - the start x position of the rectangle to be cleared
 ypos - the start y position of the rectangle to be cleared
 width - the width of the rectangle
 height - the height of the rectangle

SEE ALSO

```

    RtgBlit()
    ,
  
```

WaitRtgBlit()

1.26 rtgmaster.library/RtgClearPointer

NAME

RtgClearPointer - resets the pointer to its default image

SYNOPSIS

```
RtgClearPointer(RtgScreen)
                A0
```

```
void RtgClearPointer(struct RtgScreen *)
```

FUNCTION

This restores the default image of the mousepointer. This is very useful, if you changed it with RtgSetPointer, but sometimes want the default pointer image, too. The pointer is only changed on THIS RtgScreen.

INPUTS

RtgScreen - The RtgScreen, which pointer should be resetted...

NOTES

Not implemented yet on rtgPICA.library and rtgEGS.library

SEE ALSO

RtgSetPointer()

1.27 rtgmaster.library/RtgCloseFont

NAME

RtgCloseFont - closes an AmigaFont

SYNOPSIS

```
RtgCloseFont(RtgScreen, font)
                A0          A1
```

```
void RtgCloseFont(struct RtgScreen *, void *)
```

FUNCTION

This function closes an AmigaFont on a RtgScreen, much the same way, like OpenDiskFont does for Intuition Screens. The font parameter of the call is not for all WB Emulations a TextFont pointer. Don't use CloseFont with rtgmaster.library, use RtgCloseFont, for the best possible compatibility with all Sublibraries !!!

INPUTS

RtgScreen - an RtgScreen

font - a Font pointer. the structure of it is PRIVATE to rtgmaster.library (and not the same for all sublibraries...)

NOTES

Not yet implemented for rtgPICA.library

SEE ALSO

```
RtgOpenFont ()
,
RtgSetFont ()
,
RtgSetTextMode ()
,
RtgText ()
,
RtgSetTextModeRGB ()
```

1.28 rtgmaster.library/RtgInAdr

NAME

RtgInAdr - Find out the IP Address of a Receiver/Sender

SYNOPSIS

```
ip = RtgInAdr(SBase,si)
D0          A0  A1
```

```
char *RtgInAdr(struct Library *,struct sockaddr_in *)
```

FUNCTION

This function finds out the IP Address of a Receiver/Sender. You get back the sockaddr_in structure of a receiver/sender by RtgRecv/RtgSend or by using GetUDPName. This function ONLY works for UDP, not for TCP !!! It is used to differentiate Clients running on different machines from each other, if one does a Multiple Client "connection" (should not be called like that, as UDP is connectionless, but do you know a better term ?), without using RunServer...

Of course this function can't differentiate multiple Clients running on the same machine...

NOTE: It might appear strange to you, that you have to open bsdsocket. ↵
 library
 yourselves and provide it as parameter. This is needed because of some ↵
 internal
 problems of AmiTCP, that make it IMPOSSIBLE opening it inside a library. ↵
 Look
 at the Docs for more information.

You do NOT have to use rtgmaster.library's Graphics Board features to use rtgmaster.library's TCP/IP features, if you do not WANT to...

INPUTS

SBase - Result of the call (C Syntax here...)
 SBase = OpenLibrary("bsdsocket.library",0);
 si - Special structure returned by above mentioned calls

RESULTS

ip - IP Address as string (for example "194.55.101.26")

SEE ALSO

```

    OpenServer()
  ,
    OpenClient()
  ,
    CloseClient()
  ,
    CloseServer()
  ,
    RunServer()

    RtgSend()
  ,
    RtgAccept()
  ,
    GetUDPName()

```

1.29 rtgmaster.library/RtgInitRDCMP

NAME

RtgInitRDCMP - Inits the rtgmaster direct communication message port (RDCMP)

SYNOPSIS

```

result = RtgInitRDCMP(RtgScreen)
d0                          a0

```

```

struct RDCMPData *RtgInitRDCMP(struct RtgScreen *)

```

FUNCTION

Inits the input port of rtgmaster. Returns 0, if initialization failed (←
 for example,
 if sublibrary does not support RDCMP), something >0 else. The port has to ←
 be initialized
 once after Screen-Opening. The result will be a pointer to :

```

struct RDCMPData
{
  struct MsgPort *port;
  ULONG signal;
  WORD *MouseX;
  WORD *MouseY;
};

```

Port is the MessagePort of the RtgScreen. NOTE: Better do NOT use

that port, the way it handles events, might differ according to the WB Emulation you use, better use the RtgGetMsg function to get Messages !!!

The Port was only included, as the coder of a certain game wanted this.

Signal will contain the 1<<mp_SigBit of the MessagePort of the RtgScreen for fast Input-Handling.

MouseX and MouseY contain POINTERS to the current mouse position. This ←
sort
of checking is faster than using GetRtgScreenData for the mouse position.

NOTE: All RDCMP/Font/Text functions won't work on the rtgPICA.library, due to the Original Picasso II WB Emulation having some limitations (you only ←
get
Direct Video RAM Access *OR* IDCMP/Font/Text).

INPUTS

RtgScreen - The Screen, which port is to init

RESULTS

result - 0, if failed, something else, if succeeded

NOTES

RDCMP supports both waiting and polling !!!
As to my experiences, better use RDCMP than anything else...
other methods i tried tended to lose mouseclicks, if they came very fast, and if the application took a lot of processing time. RDCMP does not lose data.

SEE ALSO

```
RtgWaitRDCMP ()
,
RtgGetMsg ()
,
RtgReplyMsg ()
```

1.30 rtgmaster.library/Rtgioc1

NAME

Rtgioc1 - Set a Socket to "Blocking" or to "Non-Blocking" mode

SYNOPSIS

```
result = Rtgioc1(SBase,Socket,arg)
D0          A0    A1    A2
```

```
int Rtgioc1(struct Library *,struct RTG_Socket *,long *)
```

FUNCTION

This function determines, if RtgRecv and RtgSend will WAIT will the data was transmitted, or if they fail, if the data currently could not be transmitted. If arg POINTS to the VALUE 1, we have "non-blocking" (it does not wait), if it POINTS to 0, we have "blocking" (it waits). Default

(if you do not call RtgIoctl at all) is "blocking".

NOTE: It might appear strange to you, that you have to open bsdsocket. ↔
 library
 yourselves and provide it as parameter. This is needed because of some ↔
 internal
 problems of AmiTCP, that make it IMPOSSIBLE opening it inside a library. ↔
 Look
 at the Docs for more information.

You do NOT have to use rtgmaster.library's Graphics Board features to
 use rtgmaster.library's TCP/IP features, if you do not WANT to...

RtgIoctl is a VERY CPU TIME INTENSIVE FUNCTION !!!
 Only call it during the INITIALIZATION of the network !!!

My suggestion : Run the server in "blocking" mode, the Clients in
 "nonblocking" mode... seems to be the fastest...

INPUTS

SBase - Result of the call (C Syntax here...)
 SBase = OpenLibrary("bsdsocket.library",0);
 Socket - The Socket of the application, which socket is to be modified
 arg - "Non-Blocking" or "Blocking" (a pointer)

RESULTS

result - 0 on success, -1 on fail (should not fail, normally...)

SEE ALSO

```

    OpenServer()
    ,
    OpenClient()
    ,
    CloseClient()
    ,
    CloseServer()
    ,
    RunServer()
    ,
    RtgSend()
    ,
    RtgRecv()
    ,
    GetUDPName()
    ,
    RtgInAdr()
  
```

1.31 rtgmaster.library/RtgOpenFont

NAME

RtgOpenFont - opens an AmigaFont

SYNOPSIS

```
font = RtgOpenFont (RtgScreen, ta)
      D0             A0       A1
```

```
void * RtgOpenFont (struct RtgScreen *, struct TextAttr *)
```

FUNCTION

This function loads an AmigaFont to memory, for the usage on a RtgScreen, much the same way, like OpenDiskFont does for Intuition Screens. ta is a normal TextAttr pointer, like for OpenDiskFont for diskfont.library, but the RESULT is not for all WB Emulations a TextFont pointer. Don't use OpenDiskFont or OpenFont with rtgmaster.library, use RtgOpenFont, for the best possible compatibility with all Sublibraries !!!

INPUTS

RtgScreen - an RtgScreen
ta - a TextAttr structure, like defined in graphics/text.i (or .h)

RESULTS

font - A pointer to a font pointer. It's internal structure is PRIVATE to rtgmaster.library, and NOT THE SAME for all sublibraries

NOTES

Not yet implemented for rtgPICA.library

SEE ALSO

```
RtgCloseFont ()
,
RtgSetFont ()
,
RtgSetTextMode ()
,
RtgText ()
,
RtgSetTextModeRGB ()
```

1.32 rtgmaster.library/RtgRecv

NAME

RtgRecv - The Socket of this application receives data from a connected socket

SYNOPSIS

```
length = RtgRecv (SBase, Socket, message, sender, len)
      D0             A0       A1       A2       A3       D0
```

```
int RtgRecv (struct Library *, struct RTG_Socket *, struct char *, struct ←
      sockaddr_in *, int)
```

FUNCTION

This function is no longer compatible to rtgmaster.library V6 and below ←
!!!

This function gets data to the application that is sent to its socket by a ←
socket
that is connected to the socket of the Application (it is not that ←
difficult to
understand like it sounds... read the docs :))

If the "virtual connection" (or the "connectionless connection" or what ←
this is called
for UDP... :)) is "blocking", it WAITS, if there is no message available
on the socket, till one is available. If it is "non-blocking", it returns ←
-1, if no
message is available (see RtgIoctl for more details about "blocking" and " ←
Non-Blocking".
The default is "Blocking", BTW...)

Sender is a special structure that you can use to find out from what IP ←
Address
the message was sent. You can convert it to an IP Address using RtgInAdr. ←
This
only works with UDP (with TCP, you differentiate Clients from each other ←
with the
socket number...). Apparently, you CAN'T differentiate Clients that run ←
on the
same machine !!! Sender is NOT allocated by the function, you have to ←
provide
the structure...

For TCP you simple provide a 0 for Sender. It will be ignored.

You can use this feature to do multiple connection without using RunServer ←
(that
does not support UDP up to now anyways...).

NOTE: For *TCP* you provide the Socket of the Application which you want ←
to
contact. For *UDP* you provide your OWN'S Socket. Important difference !!!

NOTE: It might appear strange to you, that you have to open bsdsocket. ←
library
yourselves and provide it as parameter. This is needed because of some ←
internal
problems of AmiTCP, that make it IMPOSSIBLE opening it inside a library. ←
Look
at the Docs for more information.

You do NOT have to use rtgmaster.library's Graphics Board features to
use rtgmaster.library's TCP/IP features, if you do not WANT to...

NOTE: It is NOT possible to give Socket->s (the Socket Number) of a Client
to the Server using RtgRecv or RunServer !!! You will have to examine
inbuffer->num[x] to find out which Socket was the Sender !!! Also len
should NEVER be bigger than the actual message, or you might get a lot
of strange results !!!

INPUTS

SBase - Result of the call (C Syntax here...)
 SBase = OpenLibrary("bsdsocket.library",0);
 Socket - The Socket of THIS application
 message - The buffer, to which supplied messages will be put
 Sender - The Function will fill in data about the Sender to this ←
 structure.
 len - The length of the message to wait for

RESULTS

length - The length of the message received. If it is smaller than the message, you waited for, do a RtgRecv once more...
 NOTE: If a message was received that is too long to fit to the buffer, some Bytes might be discarded. So you should not send more Bytes than you want to receive... use a standard Package Size at best...

SEE ALSO

```

    OpenClient ()
  ,
    CloseClient ()
  ,
    CloseServer ()
  ,
    RunServer ()
  ,
    RtgSend ()

    RtgRecv ()
  ,
    RtgIoctl ()
  ,
    GetUDPName ()
  ,
    RtgInAdr ()

```

1.33 rtgmaster.library/RtgScreenAtFront

NAME

RtgScreenAtFront - determines if a RtgScreen is at front

SYNOPSIS

```
boolean = RtgScreenAtFront (RtgScreen)
                    A0
```

```
RtgScreenAtFront (struct RtgScreen *)
```

FUNCTION

This function should determine if this RtgScreen is currently at front. It should return TRUE (0xffffffff) if the screen is in front of all other screens, and FALSE (0) if the screen is behind (partially or completely) an other screen.

Note that this function will not be heavily reliable, since the user

might switch screens at any time.

INPUTS

RtgScreen - A handle for a valid screen previously opened by this sublibrary's `OpenRtgScreen()` function.

RESULTS

boolean - TRUE if screen is at front, FALSE otherwise.

SEE ALSO

`OpenRtgScreen()`

1.34 `rtgmaster.library/RtgScreenModeReq`

NAME

`RtgScreenModeReq` -- Opens a ScreenMode requester

SYNOPSIS

```
ScreenReq = RtgScreenModeReq(ScreenModeTags)
D0                                     A0
```

```
struct ScreenReq *RtgScreenModeReq(struct TagItem *)
```

FUNCTION

Opens a ScreenMode requester which displays all available ScreenModes to the user, depending on the Tags which are passed to this function. The function returns a pointer to a ScreenReq structure or NULL for failure or if the user cancelled the requester.

The ScreenReq holds various information which the user selected, like width, height, screenmode and depth.

THIS FUNCTION IS ONLY IN THE MASTER-LIBRARY. It handles the Screenmodes for ALL sublibraries.

Note: The Screenmode-Requester provided with an early Beta of the `rtgmaster.library` was VERY buggy. It got completely replaced by a new one for this version of the library.

INPUTS

ScreenModeTags - Pointer to (an array of) TagItem structures, terminated by the value `TAG_END` (0).

The description for the various tags can be found in the `.i/.h` file (`smr_Tags`). NOTE: The Tags changed a lot since the early Beta release of the library.

RESULTS

ScreenReq - A pointer to a ScreenReq structure or NULL for failure

SEE ALSO

```

    OpenRtgScreen()
    ,
    FreeRtgScreenModeReq()

```

1.35 rtgmaster.library/RtgSend

NAME

RtgSend - The Socket of this application sends data to a connected socket

SYNOPSIS

```

length = RtgSend(SBase,Socket,message,Receiver,len)
D0          A0    A1    A2    A3    D0

```

```

int RtgSend(struct Library *,struct RTG_Socket *,struct char *,struct sockaddr_in *,int)

```

FUNCTION

This function is no longer compatible to rtgmaster.library V6 and below !!!

This function puts data from the application to the socket of an application that is connected to the socket of the Application (it is not that difficult to understand like it sounds... read the docs :))

If the "virtual connection" (well, this term does not fit for UDP, as it is connectionless, but i do not know how to call it else... :)) is "blocking", it WAITS, if there is no message available on the socket, till one is available. If it is "non-blocking", it returns -1, if no message is available (see RtgIoctl for more details about "blocking" and "Non-Blocking". The default is "Blocking", BTW...)

Receiver is a special structure that you can use to tell the receiver your IP Address. You get your IP Address with GetUDPName (works only for UDP... for TCP this returns 0...). For TCP you provide simply 0 for Receiver, it will be ignored. You can convert it to an IP Address using RtgInAdr. This only works with UDP (with TCP, you differentiate Clients from each other with the socket number...). Apparently, you CAN'T differentiate Clients that run on the same machine !!!

You can use this feature to do multiple connection without using RunServer (that does not support UDP up to now anyways...).

NOTE: For *TCP* you provide the Socket of the Application which you want to
 contact. For *UDP* you provide your OWN'S Socket. Important difference !!!

NOTE: It might appear strange to you, that you have to open bsdsocket.
 library yourselves and provide it as parameter. This is needed because of some
 internal problems of AmiTCP, that make it IMPOSSIBLE opening it inside a library.
 Look at the Docs for more information.

You do NOT have to use rtgmaster.library's Graphics Board features to
 use rtgmaster.library's TCP/IP features, if you do not WANT to...

NOTE: It is NOT possible to give Socket->s (the Socket Number) of a Client
 to the Server using RtgRecv or RunServer !!! You will have to examine
 inbuffer->num[x] to find out which Socket was the Sender !!! Also len
 should NEVER be bigger than the actual message, or you might get a lot
 of strange results !!!

INPUTS

SBase - Result of the call (C Syntax here...)
 SBase = OpenLibrary("bsdsocket.library",0);
 Socket - The Socket of THIS application
 message - The message to be sent (an ASCII string, actually...)
 Receiver - The data you got from GetUDPName, tells the receiver your IP
 address...
 len - The length of the string to send ...

RESULTS

length - The length of the message sent. If it is smaller
 than the message, you sent, do a RtgSend once more...
 Probably the socket you sent to was quite busy with other
 messages currently...

NOTE: If the send fails at all, maybe your message was too
 long for TCP/IP ? (As to the allowed package sizes, 1 KB works
 for sure... i do not know exactly how much more is possible...)

SEE ALSO

```

OpenClient ()
,
CloseClient ()
,
CloseServer ()
,
RunServer ()
,
RtgSend ()

RtgRecv ()
,
RtgIoctl ()
,
GetUDPName ()

```

```
,
RtgInAdr()
```

1.36 rtgmaster.library/RtgSetFont

NAME

RtgSetFont - sets an AmigaFont to an RtgScreen

SYNOPSIS

```
RtgSetFont(RtgScreen,font)
           A0         A1
```

```
void RtgSetFont(struct RtgScreen *,void *)
```

FUNCTION

This function sets an AmigaFont (that was opened using RtgOpenFont tomemory before) to an RtgScreen. Following RtgText() calls will use this font, now.

INPUTS

RtgScreen - an RtgScreen
font - a Font pointer. the structure of it is PRIVATE to rtgmaster.library (and not the same for all sublibraries...)

NOTES

Not yet implemented for rtgPICA.library

SEE ALSO

```
RtgCloseFont()
,
RtgSetFont()
,
RtgSetTextMode()
,
RtgText()
,
RtgSetTextModeRGB()
```

1.37 rtgmaster.library/RtgSetPointer

NAME

RtgSetPointer - sets the pointer to a new image

SYNOPSIS

```
RtgSetPointer(RtgScreen,pointer,Width,Height,OffsetX,OffsetY)
              A0         A1         D0         D1         D2         D3
```

```
void RtgSetPointer(struct RtgScreen *,UWORD *,WORD,WORD,WORD,WORD)
```

FUNCTION

This function sets the mousepointer to a new image for this RtgScreen. The structure pointer is exactly the same like taken from intuition. ↔

library
command SetPointer (the data definition of a Simple Sprite). Different from this only is that the image HAS TO BE 16x18 pixels size. If you want a smaller pointer, modify the Width/Height values and set that pixels that you do not need to 0. But the SIZE of the structure has to be 16x18 pixels (72 Bytes). An example :

```
UWORD Hoehe[2]
{
    0x...,0x... // first line
    ...
    0x...,0x... // 18th line
}
```

Look at graphics.library SimpleSprite documentation for more information (01,10,11 are the three pointer colors,00 is transparent, each of the two words of a line determines ONE BIT of the 2-Bit mousepointer).

INPUTS

RtgScreen - The RtgScreen, which pointer should be resetted...
pointer - pointer image, see above
Width - Actual Width of the pointer
Height - Actual Height of the pointer
OffsetX - Display Offset for the pointer, from the mouseposition
OffsetY - Display Offset for the pointer, from the mouseposition

NOTES

Not implemented yet on rtgPICA.library and rtgEGS.library

Do NOT specifically demand Chipram for the pointer array. Else your program won't run on the DraCo. rtgmaster.library will handle this itself, that the pointer-image will end in Chipram for ECS/AGA, in ANYTHING AVAILABLE on GFX Board system. So simply allocate RAM for the pointer image, without simply demanding Chipram or Fastram (as DraCo needs FastRam, and ECS/AGA need Chipram here... but well... rtgmaster.library takes care of this :))

SEE ALSO

RtgClearPointer()

1.38 rtgmaster.library/RtgGetMsg

NAME

RtgGetMsg - replies the message on an RDCMP

SYNOPSIS

```
img = RtgGetMsg(RtgScreen)
d0          a0
```



```
void *RtgGetMsg(struct RtgScreen *)
```

FUNCTION

Gets the latest message of a RDCMP. RDCMP uses the structures of the IntuiMessage of intuition (but note, this is NOT an IDCMP... it only simulates the structures of the IDCMP !!!)
List of the structures for those guys without OS includes (look at intuition/intuition.h or .i) (ASM notation, as C guys usually HAVE OS includes...)

```
STRUCTURE IntuiMessage,0
```

```
STRUCT im_ExecMessage,mn_SIZE
```

```
LONG im_Class
```

```
// For rtgmaster this is IDCMP_MOUSEBUTTONS or  
// IDCMP_RAWKEY, as RDCMP only supports mousebuttons  
// or keyboard events... look at this field to examine  
// which event happened...
```

```
WORD im_Code
```

```
// For Keyboard events, here the Rawkey value of the pressed  
// key is found... Bit 7 handles Keydown/Keyup, like usual...
```

```
// For mouse : SELECTUP,SELECTDOWN,...
```

```
WORD im_Qualifier
```

```
// The Qualifiers for CTRL,SHIFT,... each qualifier has a bit...
```

```
APTR im_IAddress
```

```
WORD im_MouseX
```

```
WORD im_MouseY
```

```
// Mouseposition, when the event happened...
```

```
LONG im_Seconds
```

```
LONG im_Micros
```

```
// systemtime, when the event happened
```

```
APTR im_IDCMPWindow
```

```
// Well, undefined for RDCMP, as rtgmaster not  
// always uses Intuition :)
```

```
APTR im_SpecialLink
```

```
// Well... usually undefined for RDCMP... don't acces  
// it...
```

```
};
```

```

IDCMP_MOUSEBUTTONS EQU 8
IDCMP_RAWKEY EQU 1024
SELECTUP EQU (IECODE_LBUTTON+IECODE_UP_PREFIX)
SELECTDOWN EQU (IECODE_LBUTTON)
MENUUP EQU (IECODE_RBUTTON+IECODE_UP_PREFIX)
MENUDOWN EQU (IECODE_RBUTTON)
MIDDLEUP EQU (IECODE_MBUTTON+IECODE_UP_PREFIX)
MIDDLEDOWN EQU (IECODE_MBUTTON)

```

out of devices/inputevents.i :

```

IECODE_LBUTTON EQU $68 ; also uses IECODE_UP_PREFIX
IECODE_RBUTTON EQU $69 ;
IECODE_MBUTTON EQU $6A ;

IEQUALIFIER_LSHIFT EQU $0001
IEQUALIFIER_RSHIFT EQU $0002
IEQUALIFIER_CAPSLOCK EQU $0004
IEQUALIFIER_CONTROL EQU $0008
IEQUALIFIER_LALT EQU $0010
IEQUALIFIER_RALT EQU $0020
IEQUALIFIER_LCOMMAND EQU $0040
IEQUALIFIER_RCOMMAND EQU $0080
IEQUALIFIER_MIDBUTTON EQU $1000
IEQUALIFIER_RBUTTON EQU $2000
IEQUALIFIER_LEFTBUTTON EQU $4000

```

but well, simply include the two OS includes, and you won't have to bother about this stuff... :)

INPUTS

RtgScreen - The Screen, which port is to be used

NOTES

RDCMP supports both waiting and polling !!!
As to my experiences, better use RDCMP than anything else...
other methods i tried tended to lose mouseclicks, if they came very fast, and if the application took a lot of processing time. RDCMP does not lose data.
Information about polling : See docs of RtgWaitRDCMP

SEE ALSO

```

RtgWaitRDCMP ()
,
RtgInitRDCMP ()
,
RtgReplyMsg ()

```

1.39 rtgmaster.library/RtgReplyMsg

NAME

RtgReplyMsg - replies the message on an RDCMP

SYNOPSIS

```
RtgReplyMsg(RtgScreen, imsg)
           a0         a1
```

```
void RtgReplyMsg(struct RtgScreen *,void *)
```

FUNCTION

Replies the message on a RDCMP and tells the port, that the message can be deleted now. Save all values of the message that you need before this !!! Don't access the structure itself after the reply !!!

INPUTS

RtgScreen - The Screen, which port is to be used
 imsg - the messages to be replied

NOTES

DOES NOT RUN ON rtgPICA.library up to now !!!
 RDCMP supports both waiting and polling !!!
 As to my experiences, better use RDCMP than anything else...
 other methods i tried tended to lose mouseclicks, if they came very fast, and if the application took a lot of processing time. RDCMP does not lose data.

SEE ALSO

```
RtgWaitRDCMP ()
,
RtgInitRDCMP ()
,
RtgGetMsg ()
```

1.40 rtgmaster.library/RtgSetTextMode

NAME

RtgSetTextMode - sets text color and drawing mode

SYNOPSIS

```
RtgSetTextMode(RtgScreen,fgcolor,bgcolor,drmode)
           A0         D0         D1         D2
```

```
void RtgSetTextMode(struct RtgScreen *,UBYTE,UBYTE,UBYTE)
```

FUNCTION

Sets the foreground color, the background color and the drawing mode for Text on this RtgScreen. drmodes are defined as usual in graphics/rastport.i (or .h) : JAM1, JAM2, COMPLEMENT. INVERSVID is not valid...

This function should only be used on Displays with depth <=8.

INPUTS

RtgScreen - an RtgScreen
 fgcolor - Foreground color

bgcolor - Background color
 drwmode - Drawing mode, defined in graphics/rastport.i (or .h)

NOTES

Not yet implemented for rtgPICA.library

SEE ALSO

```

    RtgOpenFont ()
  ,
    RtgSetFont ()
  ,
    RtgCloseFont ()
  ,
    RtgText ()
  ,
    RtgSetTextModeRGB ()

```

1.41 rtgmaster.library/RtgSetTextModeRGB

NAME

RtgSetTextModeRGB - sets text color and drawing mode for depths >8

SYNOPSIS

```

RtgSetTextModeRGB(RtgScreen,fgcolor,bgcolor,drwmode)
                   A0          D0          D1          D2

```

```

void RtgSetTextModeRGB(struct RtgScreen *,ULONG,ULONG,UBYTE)

```

FUNCTION

Sets the foreground color, the background color and the drawing mode for Text on this RtgScreen. drwmodes are defined as usual in graphics/rastport.i (or .h) : JAM1, JAM2, COMPLEMENT. INVERSVID is not valid...

Should only be used on Displays with depth >8.

NOTES

Due to a bug in CyberGraphX, this function does not work very well with rtgCGX.library (strange colors...). Not yet implemented in rtgPICA.library.

INPUTS

RtgScreen - an RtgScreen
 fgcolor - Foreground color
 bgcolor - Background color
 drwmode - Drawing mode, defined in graphics/rastport.i (or .h)

SEE ALSO

```

    RtgOpenFont ()
  ,
    RtgSetFont ()

```

```

    ,
    RtgCloseFont ()
    ,
    RtgText ()
    ,
    RtgSetTextMode ()

```

1.42 rtgmaster.library/RtgText

NAME

RtgText - displays Text on an RtgScreen

SYNOPSIS

```
RtgText (RtgScreen,buffer,string,length,xpos,ypos)
          A0          A1          A2          D0          D1          D2
```

```
void RtgText (struct RtgScreen *,void *,char *,WORD,SHORT,SHORT)
```

FUNCTION

Displays the string "string" with the chosen font parameters (see RtgSetFont(), RtgSetTextMode(), RtgSetTextModeRGB()) at position xpos,ypos much the same way like Text() of graphics.library does.

INPUTS

```

RtgScreen - an RtgScreen
buffer    - The buffer address of the buffer where to display the text
string    - pointer to a string
length    - length of the string in characters
xpos      - the x-pos
ypos      - the y-pos

```

NOTES

Not yet implemented for rtgPICA.library.

SEE ALSO

```

    RtgOpenFont ()
    ,
    RtgSetFont ()
    ,
    RtgCloseFont ()
    ,
    RtgText ()
    ,
    RtgSetTextModeRGB ()

    RtgSetTextMode ()

```

1.43 rtgmaster.library/RtgWaitRDCMP

NAME

RtgWaitRDCMP - Waits on a message on the RDCMP of the Screen

SYNOPSIS

```
RtgWaitRDCMP (RtgScreen)
             a0
```

```
void RtgWaitRDCMP (struct RtgScreen *)
```

FUNCTION

Waits on a message on the RDCMP. If you don't want your application to WAIT while the user is giving no inputs (well, it usually should NOT wait for games...), use polling :

1. Open the Screen and init its RDCMP
2. Inside the loop, do RtgGetMsg
3. If `img->Class` is `RDCMP_MOUSEBUTTONS` or `RDCMP_RAWKEY`, handle the message and reply it using `RtgReplyMsg`
4. Else don't reply it (if you reply a message when there in fact is NO MESSAGE, you might crash the system !!!)

INPUTS

RtgScreen - The Screen, which port is to be used

NOTES

DOES NOT RUN ON `rtgPICA.library` up to now !!!

SEE ALSO

```
RtgInitRDCMP ()
,
RtgGetMsg ()
,
RtgReplyMsg ()
```

1.44 rtgmaster.library/RtgWaitTOF

NAME

RtgWaitTOF - Wait for the top of the next video frame.

SYNOPSIS

```
WaitTOF (RtgScreen)
        A0
```

```
WaitTOF (struct RtgScreen *)
```

FUNCTION

Wait for vertical blank to occur and all vertical blank interrupt routines to complete before returning to caller.

Does not do anything at all with some sublibraries... (CyberGraphX does ↔ not

support TOF-Waiting up to now...)

INPUTS

The Screen Handle of the GFX Board Screen (only in FACT needed for rtgEGS. ←
 library,
 and probably nothing much is done about it anyway... but be nice... give ←
 this
 parameter... to stay compatible :))

RESULTS

Places this task on the TOF wait queue. When the vertical blank interrupt comes around, the interrupt service routine will fire off signals to all the tasks doing WaitTOF. The highest priority task ready will get to run then.

SEE ALSO

graphics.library/WaitTOF()

1.45 rtgmaster.library/RunServer

NAME

RunServer -- Handle all the messaging for a server and several clients

SYNOPSIS

```
New_Socket = RunServer(SBase,Socket,in_buffer,out_buffer,maxplayers)
D0                A0    A1    A2    A3    D0
```

```
struct RTG_Socket *RunServer(struct Library *,struct RTG_Socket *,struct ←
RTG_Buff *,struct RTG_Buff *,int)
```

FUNCTION

You will have to run this fine function in a loop. Every time it returns, it gives you the Socket of a ←
 new connected client or 0, if no new Client connected. Also, in in_buffer, you will ←
 have all new messages sent from already connected Clients to the server, and all ←
 messages you filled in in out_buffer before calling this function, will be sent to the Clients ←
 .
 If nothing happened, this function returns at once, with consuming nearly ←
 no CPU time.

You SHOULD initialize the in_buffer.num values with -1 EACH TIME, before RunServer is run, and the out_buffer.num values once before the FIRST TIME RunServer is called !!!

NOTE: If you (later...) use RunServer, the Server can't handle a Player. ←
 You need ONE CLIENT PER PLAYER AND AN ADDITIONAL SERVER WITHOUT A PLAYER. The ←
 Server can run on a system, where a Client is also running, though (should be the fastest ←
 system in the connection, probably, as it will have to do all that messaging to the ←
 Client ...)

NOTE: It might appear strange to you, that you have to open bsdsocket. ←
 library
 yourselves and provide it as parameter. This is needed because of some ←
 internal
 problems of AmiTCP, that make it IMPOSSIBLE opening it inside a library. ←
 Look
 at the Docs for more information.

You do NOT have to use rtgmaster.library's Graphics Board features to
 use rtgmaster.library's TCP/IP features, if you do not WANT to...

NOTE: It is NOT possible to give Socket->s (the Socket Number) of a Client
 to the Server using RtgRecv or RunServer !!! You will have to examine
 inbuffer->num[x] to find out which Socket was the Sender !!! Also len
 should NEVER be bigger than the actual message, or you might get a lot
 of strange results !!!

NOTE: UP TO NOW (rtgmaster Version 7) ONLY SUPPORTS TCP... NO UDP SUPPORT ←
 UP TO NOW !!!

INPUTS

SBase - Result of the call (C Syntax here...)
 SBase = OpenLibrary("bsdsocket.library",0);
 Socket - The Socket of THIS application (the Server...)
 in_buffer - messages that arrived during the call of RunServer
 out_buffer - messages that Run_Server should deliver
 maxplayers - The Maximum of Clients allowed (CAN'T BE BIGGER THAN 12 !!!)

RESULTS

New_Socket - The Socket of a newly connected Client. Save it somewhere...

SEE ALSO

```

    OpenClient ()
    ,
    CloseClient ()
    ,
    CloseServer ()
    ,
    RunServer ()
    ,
    RtgSend ()

    RtgRecv ()
    ,
    RtgIoctl ()
    ,
    GetUDPName ()
    ,
    RtgInAdr ()
  
```

1.46 rtgmaster.library/SetSegment

NAME
SetSegment -- set the active segment

SYNOPSIS
SetSegment (segnum)
D0

SetSegment (ULONG)

FUNCTION
If the graphic board works in segment mode -- with a memory window of 64 KByte -- a call to SetSegment() sets the active segment to the supplied number.

If the graphic board works non-segmented, a call to this function has no effect.

INPUTS
segnum - number of segment

SEE ALSO

GetSegment ()

1.47 rtgmaster.library/SwitchScreens

NAME
SwitchScreens -- Perform doublebuffering

SYNOPSIS
SwitchScreens (RtgScreen, Buffer)
A0 D0

SwitchScreens (ULONG, ULONG)

FUNCTION
RtgScreen passed in A0 is a handle of a screen previously opened by OpenRtgScreen().

This functions is used to specify the buffer which should be displayed starting from the next Vertical Blank. The buffer supplied is a simple number (0 = first buffer, 1 = 2nd buffer etcetera).

If the same buffer is being specified as is being displayed then this function should do nothing.

This function will never be called from interupts.

INPUTS
RtgScreen - A handle for a valid screen previously opened by this sublibrary's OpenRtgScreen() function.
Buffer - The buffer number the user wishes to display

SEE ALSO

```
OpenRtgScreen()  
,  
WaitRtgSwitch()
```

1.48 rtgmaster.library/UnlockRtgScreen

NAME

UnlockRtgScreen -- Unlocks a RtgScreen

SYNOPSIS

```
UnlockRtgScreen(RtgScreen)  
A0
```

```
UnlockRtgScreen(ULONG)
```

FUNCTION

Unlocks a previously locked RtgScreen. If this screen hasn't been locked before this function will do nothing.

LockRtgScreen() and UnlockRtgScreen() functions nest, which means the user must call an UnlockRtgScreen() for every LockRtgScreen(). If not the user will end up with a permanently locked screen.

INPUTS

RtgScreen - A handle for a valid screen previously opened by this sublibrary's OpenRtgScreen() function.

SEE ALSO

```
LockRtgScreen()
```

1.49 rtgmaster.library/WaitRtgBlit

NAME

WaitRtgBlit - Waits on the Blitter to be finished

SYNOPSIS

```
WaitRtgBlit(RtgScreen)  
A0
```

```
WaitRtgBlit(struct RtgScreen *)
```

FUNCTION

Waits for the GFX Board Blitter to be finished. For those who wonder, why RtgScreen has to be given as parameter... it probably won't be used... just to be on the sure side :)

Does not do anything at all with some sublibraries. Some of them ALWAYS ↔
wait...

INPUTS

RtgScreen - The RtgScreen structure

SEE ALSO

```

    OpenRtgScreen()
    ,
    RtgBlit()

```

1.50 rtgmaster.library/WaitRtgSwitch

NAME

WaitRtgSwitch - Waits on Doublebuffering having happened

SYNOPSIS

```

WaitRtgSwitch(RtgScreen)
    A0

```

```

WaitRtgSwitch(struct RtgScreen *)

```

FUNCTION

As SwitchScreens does not wait till the Doublebuffering has happened, but returns AT ONCE, it might be that the program wants to access the video memory BEFORE the change has happened. In this case you can use WaitRtgSwitch to be sure the change really happened. If you do not want to wait, simply do not use this call :)

Does not do much for some sublibraries. Some always wait...

INPUTS

The Screenhandle of the Screen, where the Wait should happen...

SEE ALSO

```

SwitchScreens()

```

1.51 rtgmaster.library/WriteRtgPixel

NAME

WriteRtgPixel - plots a single pixel to a RtgScreen

SYNOPSIS

```

WriteRtgPixel(RtgScreen, BufferAdr, XPos, YPos, Color)
    A0          A1          D0    D1    D2

```

```

WriteRtgPixel(struct RtgScreen *, APTR, ULONG, ULONG, UBYTE)

```

FUNCTION

Draws a single pixel at the specified position on a RtgScreen. The BufferAdr is the starting address of the buffer the users wants to draw the pixel in. The user has obtained this address using LockRtgScreen() and GetBufAdr(). The BufferAdr is needed to specify the correct buffer for screens which are double or triple buffered.

This function should only work for Palette mapped modes, Color is the Color number of the palette.

This function is not supported by rtgAMI.library

DO NOT USE FOR SPEED RELEVANT STUFF. THIS FUNCTION MAY HAVE SOME OVERHEAD. FOR FAST OPERATIONS USE COPYRTGPIXELARRAY OR DO THE STUFF YOURSELVES.

INPUTS

RtgScreen - A handle for a valid screen previously opened by this sublibrary's OpenRtgScreen() function.
 BufferAdr - The address of the memory containing the actual screen graphics
 XPos - X position of the pixel the user wants to plot
 YPos - Y position of the pixel the user wants to plot
 Color - Color number

SEE ALSO

```

    OpenRtgScreen()
    ,
    WriteRtgPixelRGB()
    ,
    WriteRtgPixelArray()
  
```

1.52 rtgmaster.library/WriteRtgPixelArray

NAME

WriteRtgPixelArray - writes an array of pixels to a RtgScreen

SYNOPSIS

```

WriteRtgPixelArray(RtgScreen, BufferAdr, Array, Left, Top, Width, Height)
                   A0           A1           A2           D0           D1           D2           D3
  
```

```

WriteRtgPixelArray(struct RtgScreen *, APTR, APTR, ULONG, ULONG, ULONG, ←
                   ULONG)
  
```

FUNCTION

Draws an rectangular array of pixels to the specified position on a RtgScreen. The BufferAdr is the starting address of the buffer the user wants to draw this array of pixels in. The user has obtained this address using LockRtgScreen() and GetBufAdr(). The BufferAdr is needed to specify the correct buffer for screens which are double or triple buffered.

This function should only work for Palette mapped modes. The array

consists of one byte per pixel, each byte specifying a Color number.

This function is many times faster than writing each pixel separately to the screen using `WriteRtgPixel()`.

This function is not supported by `rtgAMI.library`

DO NOT USE FOR SPEED RELEVANT STUFF. THIS FUNCTION MAY HAVE SOME OVERHEAD. FOR FAST OPERATIONS USE `COPYRTGPIXELARRAY` OR DO THE STUFF YOURSELVES.

INPUTS

`RtgScreen` - A handle for a valid screen previously opened by this sublibrary's `OpenRtgScreen()` function.
`BufferAdr` - The address of the memory containing the actual screen graphics
`Array` - Pointer to an array of pixels which is `Width` pixels wide, and `Height` pixels high. Each pixel is one byte in size.
`Left` - X position of the top-left of the rectangular pixel array
`Top` - Y position of the top-left of the rectangular pixel array
`Width` - Width of the array in pixels
`Height` - Height of the array in pixels

SEE ALSO

```

    OpenRtgScreen()
    ,
    WriteRtgPixel()
    ,WriteRtgPixelRGBArray()

```

1.53 `rtgmaster.library/WriteRtgPixelRGB`

NAME

`WriteRtgPixelRGB` - plots a single pixel to a `RtgScreen`

SYNOPSIS

```
WriteRtgPixelRGB(RtgScreen, BufferAdr, XPos, YPos, Color)
                A0           A1           D0    D1    D2
```

```
WriteRtgPixelRGB(struct RtgScreen *, APTR, ULONG, ULONG, ULONG)
```

FUNCTION

Draws a single pixel at the specified position on a `RtgScreen`. The `BufferAdr` is the starting address of the buffer the users wants to draw the pixel in. The user has obtained this address using `LockRtgScreen()` and `GetBufAdr()`. The `BufferAdr` is needed to specify the correct buffer for screens which are double or triple buffered.

This function should only work for True Color modes, `Color` is a 32 bit value which specifies what Color the pixel should be. The layout of this 32-bit value is as follows:

%aaaaaaaa.rrrrrrrr.gggggggg.bbbbbbbb

a = AlphaChannel (8-bits) which may or may not be ignored. The user will set this to zero if the user doesn't want to use AlphaChannel.

r = Red component (8-bits) of the 24-bit RGB value

g = Green component (8-bits) of the 24-bit RGB value

b = Blue component (8-bits) of the 24-bit RGB value

DO NOT USE FOR SPEED RELEVANT STUFF. THIS FUNCTION MAY HAVE SOME OVERHEAD. FOR FAST OPERATIONS USE COPYRTGPIXELARRAY OR DO THE STUFF YOURSELVES.

INPUTS

RtgScreen - A handle for a valid screen previously opened by this sublibrary's OpenRtgScreen() function.

BufferAdr - The address of the memory containing the actual screen graphics

XPos - X position of the pixel the user wants to plot

YPos - Y position of the pixel the user wants to plot

Color - A 32-bit value describing the color (see above)

SEE ALSO

```
    OpenRtgScreen()  
,  
    WriteRtgPixel()  
,WriteRtgPixelRGBArray()
```