

## **RDS Version 2.1 Documentation**

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| <b>COLLABORATORS</b> |
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|               | <i>TITLE :</i><br>RDS Version 2.1 Documentation |                 |                  |
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# Contents

|          |                                       |          |
|----------|---------------------------------------|----------|
| <b>1</b> | <b>RDS Version 2.1 Documentation</b>  | <b>1</b> |
| 1.1      | RDS Version 2.1 Documentation         | 1        |
| 1.2      | Disclaimer                            | 1        |
| 1.3      | Distribution & Copyright              | 2        |
| 1.4      | Archive Contents                      | 2        |
| 1.5      | Acknowledgements                      | 2        |
| 1.6      | Requirements                          | 3        |
| 1.7      | Overview                              | 3        |
| 1.8      | Stereograms - What the hell are they? | 4        |
| 1.9      | Menus                                 | 5        |
| 1.10     | Source Code                           | 6        |
| 1.11     | Need Help?                            | 6        |
| 1.12     | To Do                                 | 6        |
| 1.13     | History                               | 7        |
| 1.14     | Open Main                             | 7        |
| 1.15     | Save Main                             | 7        |
| 1.16     | Close Main                            | 8        |
| 1.17     | Open Custom BitMap                    | 8        |
| 1.18     | Close Custom BitMap                   | 8        |
| 1.19     | Display Using Preferences             | 8        |
| 1.20     | Display Using Default Screenmode      | 8        |
| 1.21     | Display Using Screenmode Requester    | 9        |
| 1.22     | Stats                                 | 9        |
| 1.23     | About                                 | 9        |
| 1.24     | Quit                                  | 9        |
| 1.25     | Encode Stereogram                     | 9        |
| 1.26     | Decode Stereogram                     | 9        |
| 1.27     | Set Seed                              | 9        |
| 1.28     | Set Focal Width                       | 10       |
| 1.29     | Set IFF Compress On                   | 10       |

|      |                                    |    |
|------|------------------------------------|----|
| 1.30 | Set IFF Compress Off . . . . .     | 10 |
| 1.31 | Turn DisplayBeep on . . . . .      | 10 |
| 1.32 | Turn DisplayBeep off . . . . .     | 10 |
| 1.33 | Turn Stats Window on . . . . .     | 10 |
| 1.34 | Turn Stats Window off . . . . .    | 10 |
| 1.35 | Ask For Screenmode . . . . .       | 10 |
| 1.36 | Don't Ask For Screenmode . . . . . | 11 |
| 1.37 | Load RDS Settings . . . . .        | 11 |
| 1.38 | Use RDS Settings . . . . .         | 11 |
| 1.39 | Save RDS Settings . . . . .        | 11 |
| 1.40 | ASL Requesters . . . . .           | 12 |
| 1.41 | AGA Support . . . . .              | 12 |
| 1.42 | Queen . . . . .                    | 12 |

## Chapter 1

# RDS Version 2.1 Documentation

### 1.1 RDS Version 2.1 Documentation

RDS version 2.1

Copyright 1994 Ben Sutter

Read me! --->

Disclaimer

Distribution & Coypright

Archive Contents

Acknowledgements

Requirements & Compatibility

Overview

Stereograms - What the hell are they?

Menus

Need Help?

RDS Source Code

To Do

History

As a Libertarian, I share with you my feelings about the U.S. Government:

"You suck my blood like a leech  
You break the law and you breach  
Screw my brain till it hurts  
You've taken all my money - you still want more,"

Queen , 1975

### 1.2 Disclaimer

DISCLAIMER

Again, this is pretty much a beta version. It runs on my machine, but it may

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not run on yours. You have been warned. You are using RDS at your own risk.

## 1.3 Distribution & Copyright

RDS 2.1 is Copyright ©~1994 by Ben Charles Sutter. I, Ben Sutter, retain full Copyright to the executable, documentation, and source code. This archive may not be altered in any way. This includes adding ad files for BBS's to the archive.

RDS may be distributed through BBS's, Internet, software collections, etc. A copying fee may be charged, but be aware, if you payed money for this, you could have gotten it free of charge.

Although RDS may be included in re-distributable software collections and magazine disks, no Copyright for RDS may be claimed by such groups. Additionally, I always appreciate being informed of any such inclusions so I can make sure you have the most recent version of the archive.

RDS 2.1 is Shareware. I will not set a price for RDS or make threats like,

"You may use RDS for 14 days and 6 hours free of charge but then you MUST send me \$50 to become a registered user."

I will simply ask you to, if you choose, send me whatever you think RDS is worth to you. This does not have to be money. It can be programs of your own, your own stereograms you've created, or whatever else you can think of. The future of RDS will depend on what kind of response I get.

## 1.4 Archive Contents

NOTE: The archive may not be modified in ANY way. This includes adding ad files for BBS's. If you see RDS posted somewhere with any additional files, please let me know so I can have a correct version put in its place.

```
RDS/RDS      - executable version 2.1
RDS/RDS.info  - icon if needed
RDS/RDS.guide - this file
RDS/libs/iff.library - iff.library version 23.2 (required in LIBS:)
RDS/pics/mand - an example source picture of a Mandelbrot
RDS/pics/dips - an example picture, a bunch of dips
RDS/bitmaps/mand.bmx - example alternate bitmaps to use with mand
RDS/bitmaps/dips.bml - example alternate bitmap to use with dips
```

## 1.5 Acknowledgements

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In alphabetical order...

Warren Block - for the reference books, suggestions,  
tapes of the Simpsons, and moral support

Dr. Ed Corwin - for lending me the book on 68000 assembly  
and for being my favorite professor!

Pete Covert - for the 68000 assembly suggestions, and for  
being my one-and-only pseudo beta tester

Expert Services - for the \*excellent\* support of the Picasso II

SAS Institute - for making a wonderful C compiler. 6.5 is great!

Jim Sinks - for being a test subject for all of the  
pictures I made with this program

Village Tronic - for \*making\* the Picasso II; see Expert Services

Cristian A. Weber - for writing a terrific iff library, without  
which this program would not exist

## 1.6 Requirements

RDS 2.1 has two requirements:

- 1) Amiga Kickstart v36 or better
- 2) iff.library v23 or better in LIBS:

### Compatibility

RTPatch users should be aware that my AutoRequest calls will look like hell if RTPatch has patched the intuition functions. To get around this, use the "nointuition" command line option. This may not apply to all versions of RTPatch.

AGA machines should have no problems with RDS. See also AGA Support

I know of no other compatibility issues or problems. RDS is polite with all system resources, so if there is a problem with a particular program, I would guess that it's due to that program, and not RDS, but I WON'T swear to that. Anyone can make mistakes, especially me!

## 1.7 Overview

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I have only done work on the interface for this version. I have made several improvements. Here is a short list:

- Window position is saved in prefs instead of always centered on screen
- Screenmode requester can be used
- The contents of the stats window can now be put in the RDS window
- All appropriate settings are saved in the prefs file

I have tried to document all the features for how to control RDS, but I'm sure I have missed some. In general, I have tried to make RDS as intuitive as possible. For example, when encoding/decoding, it can be aborted by the close gadget on the update window, or by hitting escape. The display screen can be quit by hitting space, or escape or by hitting the right mouse button while the screen is active. Also, the screen is autoscroll so you can move it around by the moving the mouse to the edges, or by using the arrow keys. The main RDS window can be moved around with the arrow keys also. You see the pattern.....And if you have any suggestions let me know.

I would also like to know if there are any features in RDS that you don't use. As my work on RDS progresses, it gets more time consuming, so if I am wasting my time on features that nobody uses, the whole project is slowed down.

## 1.8 Stereograms - What the hell are they?

If you have a previous version of RDS, you already know this section. It is included only for the benefit of those who have never heard of random dot stereograms.

A random dot stereogram is a picture that looks like snow on a TV. By training your eye muscles to behave in a certain way, a 3-D image will magically appear. I do not know the specific optical properties that cause this to work. All I know is that it does.

First, a little background on how our eyes work. Our eyes are focusing instruments, just like a camera lens, or the Hubble Telescope (except the Hubble can't see as far). If you stand on the sidewalk and look at your house, and then hold your finger at eye level with your arm fully extended. Now, close one eye. You can now focus your open eye so that your finger will be clear, but your house will be blurry. You can then make the house clear, and your finger will become blurry. This is called focus.

The way we perceive depth is by the angle between our eyes. In other words, the further an object is from you the closer the line of sight of your eyes is to being parallel.

To see the stereogram, you need to angle your eyes as though you are looking at something twice as far away as the paper (or monitor). BUT, your eyes need to be focused at the surface of the paper, because when it comes right down to it, that is where the image actually is, on the paper.

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It will take some practice. Your eye muscles aren't doing anything they haven't before, you just need to train them.

Some of you may have seen these in magazines, or malls, where there were two dots above the image. These can be a big help. Hold your finger behind the paper just above the dots. Slowly pull your finger away, keeping your eyes focused on your finger, until the two dots turn into four dots and then the two middle dots merge into one, so you see three dots. Keep in mind that you must keep your eyes focused on your finger. You will see the two, or three or four, dots in your peripheral vision. When you have the three dots, you should see the image from your peripheral vision. Then you can slowly move your eyes down the page to see the rest of the image.

A note about the dots: If you look at the image, you will see a pattern repeating itself several times across the page. The space between the two dots corresponds to the width of the repeating pattern. In the pictures generated by RDS, this distance is always one eighth of the width of the picture.

## 1.9 Menus

### Project

- Open
- Save
- Close
- Open Custom BitMap
- Close Custom BitMap
- Display Picture
  - Use Prefs
  - Default Screenmode
  - Ask For Screenmode
- Display BitMap
  - Use Prefs
  - Default Screenmode
  - Ask For Screenmode
- Stats
- About
- Quit

### Stereogram

- Single Image
  - Encode
  - Decode

### Settings

- Seed
- Width
- IFF Compress
  - On
  - Off
- Display Beep
  - On
  - Off
- Stats In Window
  - On

Off  
Ask Screenmode  
On  
Off  
Load Settings  
Use Settings  
Save Settings

## 1.10 Source Code

The source code is not available. I have not released, and probably will not release it. Please don't write or call asking for the source code or the algorithm. Your local library may have helpful books. Or, if you have access to Internet and CARL, you will find a lot of documentation on random dot stereograms.

## 1.11 Need Help?

Sometimes it's easier to see these when they are on paper. If you are having difficulty seeing these, try printing them out on an 8.5 x 11 page. It helps some people to have the two dots at the top of the page. After some practice, you probably won't even need the dots.

If you are stuck, but are still interested, send me a self-addressed, stamped envelope, and I will send you a couple of my printouts.

If you still need more help, or have suggestions, comments, bug reports, or anything to say, I can be reached in several ways:

Snail Mail: Ben Sutter  
2415 Minnewasta Rd  
Rapid City, SD 57702-5156  
USA

Voice Phone: (605) 343-5121

Internet: bcs8624@silver.sdsmt.edu

C-Link: Bench@911:6030/2.0

## 1.12 To Do

In highest to lowest priority:

- Improve this Amigaguide doc file - (in progress)
  - Add 24 bit support (I have figured out a way to do this. I just haven't taken the time to code it yet. I also need to find docs on the IFF 24-bit format.)
  - Enhance the GUI even more
  - Command line arguments so RDS can be used in scripts
  - Replace CON: input with string, bool, and slider gadgets
-

- ARexx interface (maybe)
- Make and process Left/Right and Red/Blue stereo images
- Possibly use Image objects as sources - do you like that one?

I am always open to suggestions for ways to change RDS.

## 1.13 History

version 2.1 Released 14-April-1994

- Screenmode Requester can be used
- Display Beep after operation can be disabled
- Stats can now be in main RDS window
- Window position is saved in prefs files
- All new features are save in prefs file
- I included the correct iff.library version this time!

version 2.0 Released 14-February-1994

- RDS now has a GUI!!!!
- Random dots can be replaced with a custom bitmap
- Custom seed can be used
- Custom focal width can be used
- Decode and encode are now included in one executable
- Preferences can be saved

version 1.1 Released 4-June-1993

- Added some minor optimization
- Included UnRDS, a stereogram decoder
- RDS no longer requires version 18 or better of iff.library

version 1.0 Released 20-May-1993

- Initial Release

## 1.14 Open Main

Opens an ASL file requester and attempts to load the selected file

If an non-existant file or bad ILBM file is selected, an appropriate error message is given.

## 1.15 Save Main

Opens an ASL file requester and attempts to save the main picture as the selected file

If the file already exists, a selector will appear.

---

## 1.16 Close Main

De-allocates the main bitmap. If it has been encoded or decoded but not saved, a selector will appear.

## 1.17 Open Custom BitMap

Opens an ASL file requester and attempts to load the selected file

If an non-existant file or bad ILBM file is selected, an appropriate error message is given.

When a custom bitmap is loaded, it is used to replace the repeating pattern of random dots. When the custom bitmap is closed, random dots will be used.

The custom bitmap will be cropped or tiled as necessary to fill the needed space.

## 1.18 Close Custom BitMap

When a custom bitmap is loaded, it is used to replace the repeating pattern of random dots. When the custom bitmap is closed, random dots will be used.

The custom bitmap will be cropped or tiled as necessary to fill the needed space.

## 1.19 Display Using Preferences

This option will display the main picture or alternate bitmap depending on which menu was selected, and will open a screenmode requester if that option is set to on.

See Also: AGA Support

## 1.20 Display Using Default Screenmode

This option will display the main picture or alternate bitmap depending on which menu was selected, and will use the screenmode found in the IFF ILBM file regardless of the Ask Screenmode setting.

See Also: AGA Support

---

## 1.21 Display Using Screenmode Requester

This option will display the main picture or alternate bitmap depending on which menu was selected, and will open a screenmode requester to determine the screenmode regardless of the Ask Screenmode setting.

See Also: AGA Support

## 1.22 Stats

Displays current info about the program and what's loaded

## 1.23 About

Displays info about the RDS program

## 1.24 Quit

I can't believe you pressed this button! What are you, a dummy?  
Just kidding, this option exits the program.

If the main picture has been encoded or decoded but not saved, a selector will appear.

## 1.25 Encode Stereogram

Encode the current picture

If no custom bitmap is loaded, it uses random dots. Otherwise, the custom bitmap will be used.

## 1.26 Decode Stereogram

Decodes the current picture

If a normal un-encoded picture is in memory, the results will be complete garbage.

## 1.27 Set Seed

Opens a CON: window to set the seed value

Default: uses a clock based seed

---

## 1.28 Set Focal Width

Opens a CON: window to set the focal width

Default: uses a width of 1/8 the width of the main picture

## 1.29 Set IFF Compress On

Turns IFF compression on when saving

## 1.30 Set IFF Compress Off

Turns IFF compression off when saving

## 1.31 Turn DisplayBeep on

The Intuition DisplayBeep() function is called after every encode or decode operation.

## 1.32 Turn DisplayBeep off

The Intuition DisplayBeep() function won't be called.

## 1.33 Turn Stats Window on

The RDS window will show the stats found in the Stats window, so you don't have to use the menu item every time you want to look at something.

## 1.34 Turn Stats Window off

The RDS window is shrunk down to a small size. The stats are still available from the menus or by RIGHT-AMIGA-?.

## 1.35 Ask For Screenmode

A Screenmode requester will be opened when a display menu item is selected.

---

## 1.36 Don't Ask For Screenmode

A Screenmode requester will not be opened when a display menu item is selected. The default screenmode from the IFF ILBM file will be used.

## 1.37 Load RDS Settings

Load RDS settings from ENV:RDS.prefs

Settings are loaded from the prefs file and attributes within the program are changed accordingly.

## 1.38 Use RDS Settings

Saves RDS settings to ENV:RDS.prefs

Settings that are saved in the prefs file include:

- location, size, directories, and patterns of all file requesters
- location of RDS window.
- a custom seed, if selected
- a custom width, if selected
- whether or not to compress IFF files
- whether or not to beep after encodes and decodes
- whether or not to display stats in the RDS window
- whether or not to open a screenmode requester

NOTE: RDS 2.1 will read your 2.0 prefs file and use defaults for the new options where appropriate and save a 2.1 prefs file the next time you select use or save prefs.

Defaults are hard-coded into the program if no prefs file is found.

## 1.39 Save RDS Settings

Saves RDS settings to ENV:RDS.prefs and ENVARC:RDS.prefs

Settings that are saved in the prefs file include:

- location, size, directories, and patterns of all file requesters
- location of RDS window.
- a custom seed, if selected
- a custom width, if selected
- whether or not to compress IFF files
- whether or not to beep after encodes and decodes
- whether or not to display stats in the RDS window
- whether or not to open a screenmode requester

---

NOTE: RDS 2.1 will read your 2.0 prefs file and use defaults for the new options where appropriate and save a 2.1 prefs file the next time you select use or save prefs.

Defaults are hard-coded into the program if no prefs file is found.

## 1.40 ASL Requesters

I chose to use the ASL file and screenmode requesters for a few reasons.

- 1) I like it. The ASL requester is very intuitive and easy to use. I don't like reqtools because it has a max width for the window and doesn't show timestamps for the files. Req.library is just plain out of the question, as is arp.library.
- 2) using the Commodore standard file requester helps to promote ONE standard file requester instead of having who knows how many different libraries each with its own file requester. If a significant number of people don't like it, I may add in a later version an option to select what requester to use, but so far, nobody has complained.

## 1.41 AGA Support

At this time, I cannot guarantee if any AGA screenmodes will work. Once AmigaDOS 3.1 is released (if it is EVER released), I can emulate most AGA screenmodes on my Picasso board, so I can at least test these modes to see if they work.

I have attempted to support the new 96 bit as opposed to 12 bit palettes from 3.x and above, if you are running it. Although, ALL I had was the function prototypes, so I cannot guarantee what will happen in AGA screenmodes or if the full palettes will be used when viewing a bitmap.

## 1.42 Queen

This is my tribute to, in my opinion, the greatest band of all time,

```

      QQQQ
     Q   Q
    Q   Q
   Q   Q   u
  Q   Q   u   u   eeee   eeee   n nnn
 Q   Q   u   u   e   e   e   e   nn   n
 Q   Q   u   u   e eeee   e eeee   n   n
 Q   Q   u   u   e   e   e   e   n   n
  Q   Q   u   uu   e   e   e   e   n   n
   Q   Q   uuu u   eeee   eeee   n   n

```



QQQQ n  
QQQQ  
QQQQ

Freddie Mercury, rest in peace.