# AmiDC

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# Contents

# Chapter 1

# AmiDC

## 1.1 AmiDC Guide Contents

AmiDC v2
A program to link the Amiga to
Kodak's DC20 and DC25 Digital Cameras





## 1.2 Copyright information

Welcome!



For the latest version, contact John Kennedy via email,
currently through john@sticky.net.

"This software is provided "AS IS", without warranty of
any kind, either expressed or implied. The author is not
responsible for any damage or loss of data due to use of

this program, these are solely the users concern." Blah.

## 1.3 Quick Start

AmiDC: Quick Start

(For manual haters)

The purpose of this program is simple: to enable the Kodak Digital cameras (models DC20 and DC25) to be used with the Amiga, instead of the PC and Mac software with which they come bundled.

This entails downloading the images from the camera and converting the images info IFF format. There is also a degree of camera control involved. However, the good news is that, by and large, it works. You can make full use of a DC20 or DC25 without owning a PC or a Mac.

Using AmiDC should be quite straightforward. Here's the plan:

1. Take pictures with your camera
2. Connect the camera to the Amiga's serial port
3 Run AmiDC

AmiDC only has five buttons (and one of those is Quit!) so you shouldn't get lost. The most important button is Fetch. When you click on Fetch the software will ask the camera to send all the images currently in memory.

The images will be downloaded into the current directory. Once the downloading is complete, they will be converted into IFF files. At the end of this process (which takes some time) you'll have a list of files which can be loaded into your favourite paint program, or displayed with any viewing program.

As the files can be quite large, use of a hard drive is recommended. I've not tested AmiDC on a floppy-only system.

## 1.4 Buttons

Buttons

SNAP

If there is at least one empty image, take a picture. The picture is taken almost immediately and stored in the camera's memory. It is not downloaded or converted until Fetch is used. This does the same thing as pressing the

shutter release on the camera.

FETCH
Download any images stored in the camera, store them to disk, and then run the conversion process to turn them into IFF images.

ERASE
If there is at least one image stored in the camera's memory, this option will send the command to purge the camera's memory. All images stored in the camera will be gone. For good. For ever. Unless you have previously Fetched the images, they will be lost forever. And ever. This does exactly the same thing as the button marked "erase" on the camera.

MODE
If there are no images stored in the camera, this button toggles the camera between Standard and High mode. The DC20 camera can only have its mode changed in this way, and will only do ao when there are no images left in memory. This instruction is for the DC20 only -- the DC25 has a switch on the top for this function.

QUIT
Frees up memory, shuts down menu structures, gadgets, windows and screens. Closes all libraries and files open. Terminates the currently running task. Oh, and it stops the program as well. It makes it go away. Vanish. Kapoot.

## 1.5 Advanced Features

Advanced Features

Speed it up!

The first thing you should do is experiment with baud rates. This is a measure of the speed at which the Amiga and the camera communicate. The default speed is 9600 baud, and this is really, really slow. If you have to download many images at this speed you will get very bored, and more importantly, waste valuable camera battery life.

AmiDC will start up in 9600 baud unless you tell it differently. You can tell it by altering the Tool Type in the AmiDC icon. This is easy.

Find the icon for AmiDC, select it and then open the Information window (Right Amiga and I usually does the

trick).

You should see a line which says:

BAUD=9600

If you click on this, it will appear in the box at the bottom of the window, ready to be changed. You should alter it to a higher setting. There are five speeds the camera understands:

BAUD=9600
BAUD=19200
BAUD=38400
BAUD=57600
BAUD=115200

You can use any of these (anything else, and the default 9600 is used). Depending on the speed of your Amiga, you might have problems with speeds higher than 19200. You will have to experiment. On my A4000, I use 115200 and it seems to work.

Filenames and Diskspace

As stated previously, AmiDC will dump the files it downloads into the current directory -- or into the directory in which AmiDC is stored. You might be able to speed things up a tiny bit by loading AmiDC into the Ram disk before using it.

Warning: the IFF files created are very large, and the error checking in the program is very lax. I don't recommend you place AmiDC anywhere other than into a directory with a lot of free hard disk space.

As AmiDC downloads files from the camera, it generates files of the form "dc_???.dc2". The question marks are replaced by the image number.

After downloading, AmiDC then searches out ANY files with this name and converts them into IFF files with the name "dc_???.iff". Finally, the .dc2 files are deleted. It is therefore possible you might find some dc2 files. If you do, they can be converted if you place them in the same directory than AmiDC is using. I recommend you rename them slightly (for example, to "dc_100.dc" so that files downloaded from the camera don't over-write them.

## 1.6 Features

AmiDC Features

* Supports the DC20 and DC25 Digital Cameras from Kodak.

* No need for PC or Apple Mac computer.

* Works at all serial speeds up to 115200 (Amiga permitting).

* Downloads images stored in the cameras to disk.

* Converts images into IFF24 format: more than 16 million colours.

* Supports Standard and High camera resolutions.

* Updated display of current camera status, including:

    Pictures taken.
    Pictures remaining.
    Battery status.
    Flash mode (DC25 only).

* Provides control over camera, including:

    Take Photograph.
    Erase images (DC20 only).
    Change mode (DC20 only).

* Written in C on the Amiga, by me. :-)

## 1.7 Important Information

Important Information

It is vital that you use AmiDC in a particular way to avoid the program hanging. If it hangs, and nothing seems to do anything, then you will have to reset the Amiga. Sorry, that's the way it works at the moment. I'll tell you why later.

Here's the vital part. The Amiga and camera must always be in proper communication. If the Amiga gets confused, then the AmiDC program will hang. The Amiga and camera must always both start in a "known state". What this means:

* When you connect the camera to the Amiga, the camera must have been switched off and then on so that it is operating at the default 9600 baud.

* If the camera is unplugged from the Amiga in the middle of an operation, the Amiga will freeze and must be reset.

* If communication is disrupted, because for example, the Amiga is busy doing something else at the time of a link, then the AmiDC program will freeze, and the Amiga must be reset.

* If the camera gets bored and switches itself off whilst
  connected to the Amiga, you must quit and restart AmiDC.

These rules sound pretty nasty, but in reality there shouldn't be many problems. If something goes wrong, the worst that happens is that AmiDC hangs and you need to reset the Amiga. You shouldn't lose any pictures permanently.

## 1.8 Questions and Answers

Questions and Answers

Here I do my mind-reading trick, and try to guess what problems you might be having. If all else fails, please email john@sticky.net with your problem. Please state the version of the program, the camera you have, the Amiga you have, and the nature of the problem.

Q. When I start the program, nothing happens! What gives?

A. When you start the program, you should see a reminder to connect the camera and power it up. Then you should see a text display with the current state of the digital camera.

If you don't see this display:

1. Check the camera is connected properly.

2. Check the camera has been switched off and then on.

3. Try setting the Amiga's serial preferences to 9600,
   no handshaking, even parity, 8 bits/char, 1 stop bit.

4. Scratch head. With a DC25 this seems to happen once in a
   while. Have some tea and try again.

5. You do actually have a DC20 or DC25 don't you? You
   aren't just running this program for a laugh?

Q. I see funny lines when I decode Standard mode images!

A. Standard mode isn't brilliant. The resolution isn't great, and so I rarely use it. In fact, when decoding images stored in Standard mode you'll see columns down the far right of the display. Sorry. The decoding process adds them, it is nothing to do with the camera. Delete them in the paint program. Or do what I do: use High mode all the time.

Q. Sometimes it just says "Waiting for camera"..

A. Somehow the Amiga and camera have fallen out. Sorry, you'll have to reset both. No pictures stored in the camera will be lost.

Q. AmiDC sometimes seems to lock up. What can I do?

A. First of all, make sure it is locked up and not just busy. Make sure you are operating at faster than 9600 baud. Make sure the Amiga isn't in the middle of converting an image into IFF format. This process takes a few moments on an A4000 -- on an A1200 it must seem forever. The version of AmiDC which makes use of an FPU is much, much faster. You will need an FPU of course!

Q. Why does AmiDC hang?

A. For two reasons:

1. The link to the camera is a three wire serial link, with no hardware hand-shaking. When the camera sends information, the Amiga must receive it there and then. And vice versa.

If the Amiga is distracted, it can wait until hell freezes over for a byte to come in at the serial port. If the camera has already send this byte, it will wait a similarly long time for the Amiga to tell it what to do next. Result: a hang up.

2. I haven't implmented a smart SerialRead() routine which can time out. I haven't the time or energy to re-write the necessary part of the AmiDC program. It works well enough for me, but then again, I'm lazy like that.

I could have added forbid() and permit() calls to disable multitasking, but this is generally a bad thing. When AmiDC stalls, you don't want the rest of the system going down with it.

Q. The Mac and PC have thumbnail images -- why don't we?

A. A previous beta version of AmiDC did display thumbnails. The extra time involved, and the 256 colour screen required, wasn't justified. Yes, it looked nice. No, I didn't use it. You really can't tell from a thumbnail image if the full size photograph is good enough. If the camera stored 100s of images, this would be a different matter.

Q. I can't find the converted pictures!

A. They will be in the same directory as AmiDC, and you should look out for files called "dc_001.iff" and so on.

Q. The images don't load into my paint program!

A. The images conform to the IFF24 standard, and so all *modern* paint programs should cope. I've seen Viewtek, Personal Paint, AdPro, Photogenics and others work. Please consider getting a more up-to-date program.

Q. The IFF files are bloody huge! Can't you make them
smaller?

A. Yes, they are huge, aren't they? That's why I recommend you use a hard drive. The images are saved as uncompressed IFF files. If you load them into a good paint program and save them out agan they will probably be smaller. Save them as JPG files, and they will shrink to a tiny fraction of their original size.

## 1.9 Cameras

Cameras

The DC20 and DC25 are digital cameras, which store images in internal memory. The images are then downloaded to a computer via a serial link, where they can be displayed, saved or printed.

The DC20 is a cheap and cheerful digital camera from Kodak. It can store up to 16 images in Standard resolution or 8 images in High resolution in memory. It has no flash, self-timer, memory expansion, DC power input, tripod bush or button for setting the resolution. Like I said, it's cheap.

The DC25 fixes all these short-comings and more. It has the same CCD element and so takes pictures of the same size and resolution. However, it has double the memory and a slot for a PCMCIA ram card. It has a flash, a DC power input jack, tripod bush and a button for setting the resolution. It also has an LCD display panel which acts as a preview screen, live (almost) view-finder, status panel and a way of using up your expensive batteries if you leave it on.

Both these cameras are far from the current >1,000,000 pixel cameras, but they are good fun and easy to use. If the see a DC20 ot DC25 going cheap, it's worth buying one just to mess around with. There are various hacks to use the cameras as Web-bots and so on around, and a brilliantly ingenious user straps his DC20 to a R/C plane and takes photographs of his house.

## 1.10 Credits and Thanks

Credits and Thanks

Thanks to Nick Veitch at Amiga Format who made it possible to spend the time developing this program in the first place.

Thanks to the readers of Amiga Format for encouragement, and for supporting the Amiga through thick and thin.

Thanks to Kodak for lending a DC25 for test purposes.

Thanks to Oliver Hartmann. His excellent Web site made this program possible, and that's all there is to it. Without Oliver, the information required to download the images from the DC20/25 camera would remain a secret. Oliver's programming also made the decoding possible.

Thanks to YOSHIDA Hideki, the person responsible for the image decoding algorithms used.

AmiDC was programmed using SAS/C 6.5, and StormC v3 on an Amiga4000. The Cygnus Ed text editor was used to edit source code.

And that's it. I hope this program is of use to someone.

John Kennedy, October 15th, 1997.

## 1.11 Information

Information

There is only one true source of information: The DC20 Secrets Web Page. It's at:

http://home.t-online.de/home/Oliver.Hartmann/dc20secr.htm

Kodak have a web site too. It's at www.kodak.com.