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Subject: Megasoft shadow, by Jack Cornelius  
Posted by [Anonymous](#) on Tue, 19 Feb 2008 13:33:50 GMT  
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Originally posted by: davemcmurtrie@gmail.com

I just picked up one of these boards, and I haven't been able to find much information about it. I found one post in comp.sys.amiga.emulators that claims this thing is supposed to be inserted into a 1541 to allow copying of protected software, but it never worked.

Can anyone provide any additional information about this thing? Is it true that they didn't actually work? A user manual, perhaps?

Thanks,

Dave

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Subject: Re: Megasoft shadow, by Jack Cornelius  
Posted by [Wolfgang Moser](#) on Tue, 19 Feb 2008 20:05:15 GMT  
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Hello Dave,

davemcmurtrie@gmail.com schrieb:

> I just picked up one of these boards, and I haven't been able to find  
> much information about it. I found one post in  
> comp.sys.amiga.emulators that claims this thing is supposed to be  
> inserted into a 1541 to allow copying of protected software, but it  
> never worked.  
>  
> Can anyone provide any additional information about this thing? Is it  
> true that they didn't actually work? A user manual, perhaps?

at first many congratulations for this pickup, you surely got some rare find and a true legend. Although, on the other side, not of much real use when comparing one of its advertisements with the actual software features -- as some users tell.

Although I followed any discussion about The Shadow, the selling company MegaSoft, one of its employees of that time, Jim Drew or any of the later history with Utilities Unlimited, the Supercard or Supercard Plus board and then the Amiga stuff/crap(?)... There was no chance to pick up any manual scans or something like that. Somone, I think

it was Raymond Day, sent me a scan from a magazine advertisement and a photo from the board as plugged in into a 1541 disk drive.

From some old stories, I believe it was "Jim Drew speaks" from 1996, I know that wrote some sort of a new software for The Shadow to replace the old nonfunctional one. That software did make use of the drive RAM expansion only, but did not use any of the other features of the board -- whatever these were.

Dave, as you are now a new owner of such a board, I really would appreciate some nice high resolution photos from the board. Upper side as well as back side. Better than just making simple photos would be to actually scan the PCB with a 600dpi scanner.

Some (more) informations as found in the net:

Google groups, most of these finds are related to that hardware, but not all, have a look:

<http://groups.google.de/groups/search?q=%22The+Shadow%22+-Rising+group%3Acomp.sys.cbm&start=0&scoring=d&lr=&num=50&>

Jim Drew interviews for background information:

<http://c64preservation.com/jimdrew1.html>

<http://c64preservation.com/jimdrew2.html>

Womo

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Subject: Re: Megasoft shadow, by Jack Cornelius  
Posted by [Anonymous](#) on Wed, 20 Feb 2008 02:54:50 GMT  
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Originally posted by: [davemcmurtrie@gmail.com](mailto:davemcmurtrie@gmail.com)

On Feb 19, 3:05 pm, Wolfgang Moser <[wn0...@d81.de.invalid](mailto:wn0...@d81.de.invalid)> wrote:

> Dave, as you are now a new owner of such a board, I really  
> would appreciate some nice high resolution photos from the  
> board. Upper side as well as back side. Better than just  
> making simple photos would be to actually scan the PCB with  
> a 600dpi scanner.  
>

Hi Womo,

Many thanks for the additional links you provided. My original searches didn't turn up some of those conversations. I will provide low-quality pics tomorrow taken with my phone, then higher quality (I won't say high quality, because I'm not a great photographer) over the weekend taken with a real camera. I'll follow up with a URL.

Thank you,

Dave

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Subject: Re: Megasoft shadow, by Jack Cornelius  
Posted by [Glenn Holmer](#) on Wed, 20 Feb 2008 04:18:22 GMT  
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davemcmurtrie@gmail.com wrote:

> Can anyone provide any additional information about this thing?

I've never seen one, although I did pick up a copy of Ahoy! with this advertisement in it at last December's World of Commodore in Toronto:

<http://lyonlabs.org/commodore/megasoft-shadow-medium.png>

--

Glenn Holmer (Q-Link: ShadowM)  
<http://www.lyonlabs.org/commodore/c64.html>

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Subject: Re: Megasoft shadow, by Jack Cornelius  
Posted by [Anonymous](#) on Wed, 20 Feb 2008 12:43:30 GMT  
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Originally posted by: davemcmurtrie@gmail.com

I put some horrible, low-quality images (taken from my phone) up at <http://www.andrew.cmu.edu/user/dave64/Commodore/shadow/>

There's no html there -- just a directory index page. I'll put something better up over the weekend when time permits, and when I have a real camera available.

Thanks for all the information that folks have provided so far. I never heard about these boards before I got this one, and it's

certainly an interesting story. It seems insane to me that Megasoft would spend \$400,000 on advertising for a product that they apparently never tested.

Dave

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Subject: Re: Megasoft shadow, by Jack Cornelius  
Posted by [Wolfgang Moser](#) on Wed, 20 Feb 2008 18:45:10 GMT  
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Awesome Dave,

davemcmurtrie@gmail.com schrieb:

> I put some horrible, low-quality images (taken from my phone) up at  
> <http://www.andrew.cmu.edu/user/dave64/Commodore/shadow/>

that's the very first picture that I saw from a backside of this The Shadow. It let's me know that at least two ICs were intercepted with the board and some longer high precision adapter sockets. The 6502 as well as presumably the floppy disk controller gate array.

> There's no html there -- just a directory index page. I'll put  
> something better up over the weekend when time permits, and when I  
> have a real camera available.  
>  
> Thanks for all the information that folks have provided so far. I  
> never heard about these boards before I got this one, and it's  
> certainly an interesting story. It seems insane to me that Megasoft  
> would spend \$400,000 on advertising for a product that they apparently  
> never tested.

well .... ;-) That's how things screw up, when you sold 'em before they got produced or even engineered.

Womo

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Subject: Re: Megasoft shadow, by Jack Cornelius  
Posted by [Anonymous](#) on Wed, 20 Feb 2008 20:10:45 GMT  
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Originally posted by: bluebirdpod

On Feb 20, 5:43 am, "davemcmurt...@gmail.com"

<davemcmurt...@gmail.com> wrote:

> I put some horrible, low-quality images (taken from my phone) up  
at <http://www.andrew.cmu.edu/user/dave64/Commodore/shadow/>  
>  
> There's no html there -- just a directory index page. I'll put  
> something better up over the weekend when time permits, and when I  
> have a real camera available.  
>  
> Thanks for all the information that folks have provided so far. I  
> never heard about these boards before I got this one, and it's  
> certainly an interesting story. It seems insane to me that Megasoft  
> would spend \$400,000 on advertising for a product that they apparently  
> never tested.  
>  
> Dave

I remember that ad in a magazine back in the old day, but no one has  
ever had the "gt package" with  
the track and density display, I bought a 1541 with a external track  
and density display from a guy in the groups over  
10 years ago, he worked for Beckman multimeter makers. I bought it for  
\$25 back in the day, look at the post

[http://groups.google.com/group/comp.sys.cbm/browse\\_frm/thread/f9760bff5dde624a/ee345c2800a58508?lnk=st&q=wes+1541+track+display+for+sale&rnum=1&hl=en#ee345c2800a58508](http://groups.google.com/group/comp.sys.cbm/browse_frm/thread/f9760bff5dde624a/ee345c2800a58508?lnk=st&q=wes+1541+track+display+for+sale&rnum=1&hl=en#ee345c2800a58508)

I have the plans on a geos file I think, maybe not geos, but its on a  
1581 disk, Lemme dig it up and maybe I will find a place to post the  
instructions, with a Supercard Plus board installed it would be a good  
copier setup. the 1541 I bought has a real Supercard Plus board, but  
it was the first release of it, and it plugs directly into the 6502  
socket, later SCP boards had a 40 pin adapter and ribbon cable and the  
board was placed on the side of the case outside of the sheilding.  
strange though it does have the 1571 wire connection which is only  
needed to map the ram so it can be used.

-BBP

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Subject: Re: Megasoft shadow, by Jack Cornelius  
Posted by [Anonymous](#) on Sat, 23 Feb 2008 18:06:36 GMT  
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Originally posted by: [davemcmurtrie@gmail.com](mailto:davemcmurtrie@gmail.com)

As promised, I took better pictures and made them available:

<http://www.andrew.cmu.edu/user/dave64/Commodore/shadow/>

Glenn, the advertisement thumbnail links directly to your site. If you'd like me to copy the image locally, or just remove it, please let me know.

Thank you,

Dave

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Subject: Re: Megasoft shadow, by Jack Cornelius  
Posted by [Wolfgang Moser](#) on Sat, 23 Feb 2008 21:05:52 GMT  
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Hello Dave,

davemcmurtrie@gmail.com schrieb:

> As promised, I took better pictures and made them available:  
>  
> <http://www.andrew.cmu.edu/user/dave64/Commodore/shadow/>

oh wow that is amazing! I'm very happy about the bottom side photography. It clearly tells about the authorship from Mr. Cornelius -- be it a scam artist as Jim Drew said sometime in 1992 or a genius otherwise.

On the top side I wonder what may be written to the left side between the second and third little IC.

Too bad that nearly from all ICs the markings were removed; quite a common technique for these days. Professional-DOS (the fastest non-RAMdisk 1541 floppy disk speeder of the world) author Klaus H. Roreger did the same with his hardware -- with limited success since I was able to decipher any IC type some years ago. This may also be possible for The Shadow, if someone really wants to invest some time (40 hours working time I would estimate).

> Glenn, the advertisement thumbnail links directly to your site. If  
> you'd like me to copy the image locally, or just remove it, please let  
> me know.

Womo

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Subject: Re: Megasoft shadow, by Jack Cornelius  
Posted by [Anonymous](#) on Sat, 23 Feb 2008 22:16:06 GMT  
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Originally posted by: davemcmurtrie@gmail.com

On Feb 23, 4:05 pm, Wolfgang Moser <wn0...@d81.de.invalid> wrote:

> On the top side I wonder what may be written to the left  
> side between the second and third little IC.

It says, "made in USA".  
I told you I'm not a very good photographer ;)

> Too bad that nearly from all ICs the markings were  
> removed; quite a common technique for these days.

On one of the two 40-pin ICs, you can still faintly read:

MOS  
6502

3083

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Subject: Re: Megasoft shadow, by Jack Cornelius  
Posted by [Wolfgang Moser](#) on Sun, 24 Feb 2008 07:56:28 GMT  
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Hi Dave,

>> On the top side I wonder what may be written to the left  
>> side between the second and third little IC.

>

> It says, "made in USA".  
> I told you I'm not a very good photographer ;)

aha, ok, I already got the impression that it must  
be something simple like that. Thanks.

>> Too bad that nearly from all ICs the markings were  
>> removed; quite a common technique for these days.  
>

> On one of the two 40-pin ICs, you can still faintly read:  
>  
> MOS  
> 6502  
>  
> 3083

Well, from Ramond Days old picture of his board:

<http://d81.de/shared/1541-TheShadow.png>

there is not only the 6502 CPU shown, but also the floppy disk controller.

The third 40 pin chip may be identified by looking onto its bottom side. Often people forget to "protect" that side too by rubbing away all the markings.

Womo

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Subject: Re: Megasoft shadow, by Jack Cornelius  
Posted by [Anonymous](#) on Mon, 25 Feb 2008 15:52:55 GMT  
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Originally posted by: bluebirdpod

On Feb 24, 12:56 am, Wolfgang Moser <wn0...@d81.de.invalid> wrote:

> Hi Dave,  
>  
>>> On the top side I wonder what may be written to the left  
>>> side between the second and third little IC.  
>  
>> It says, "made in USA".  
>> I told you I'm not a very good photographer ;)  
>  
> aha, ok, I already got the impression that it must  
> be something simple like that. Thanks.  
>  
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>  
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>> MOS  
>> 6502



>  
>> 3083  
>  
> Well, from Ramond Days old picture of his board:  
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>  
> there is not only the 6502 CPU shown, but also the  
> floppy disk controller.  
> The third 40 pin chip may be identified by looking  
> onto its bottom side. Often people forget to  
> "protect" that side too by rubbing away all the  
> markings.  
>  
> Womo

Well after owning both SC and RB, I would have to say that Jim Drews product has the potential to be more powerful, as said by Pete Rittwage, the SC+ board will make IDENTICAL copies that are not reframed such as Maverick does with the RB when making copies., However, the MNIB images need to be reframed for use with emulators, funny. Guess GCR code is more elusive than we thought.

-BBP

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Subject: Re: Megasoft shadow, by Jack Cornelius  
Posted by [Wolfgang Moser](#) on Mon, 25 Feb 2008 20:47:50 GMT  
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Hello bluebirdpod,

> Well after owning both SC and RB, I would have to say that Jim Drews  
> product has the potential to be more powerful, as said by Pete  
> Rittwage, the SC+ board will make IDENTICAL copies that are not  
> reframed such as Maverick does with the RB when making copies.,  
> However, the MNIB images need to be reframed for use with emulators,  
> funny. Guess GCR code is more elusive than we thought.

it all depends on how precise you look onto the details.

Even SC+ is not able to make an identical copy of a certain disk. As Jim Drew explained somewhere, the true halftrack protection from Bounty Bob Strikes Back! cannot be reproduced with the native copier for the SC+. Instead Jim wrote a custom copier after he analyzed the protection.  
By analyzing a protection and then creating a mastering

routine that will recreate that protection does mean that this is not a `_copy_`, but a re-master.

And further true copier machines (Trace duplicator) are able to create patterns that can be detected with a 1541 disk drive, but cannot be written with 'em, even if you do adjust the motor speed. E.g. true Fat Tracks that are recorded over two adjacent halftracks. If you try to replicate that, then you would always overwrite one of the both halftracks due to mechanical issues. The 1541's R/W head is a so named tunnel erasing head. It write a wider track and after that the left and right side of that wide track are erased again after. This sharpens the track and it can be better reread after. In fact I never saw such a true Fat Track protection, mostly these were only precisely aligned adjacent full-tracks.

Another protection technique that cannot be reproduced from 1541 drive would be in-track bitrate changes that were created of irregular bitrates that the 1541 cannot create, but read. Let's say the 1541 is able to do 308, 286, 267 and 250 kBit/s on a nominal RPM of 300 1/min. If you then record a track with 250 kBit/s and change that to 258 kBit/s for only some 7 to 8 GCR Bytes inmid a track, the 1541 will be able to follow the bit stream, but it is definately not able to reproduce that. The protection check can check the number of cycles that go by for each GCR byte read and compare that with stored values. Even if you adjust your drives RPM, you will only be able to `_either_` write with 258 or 250 kBit/s, but you will not be able to do both and flip it inmid a track write.

A could think of ways to fool the protection check, but nevertheless you will be able to detect, if a disk is an original or a copy, when you use an oscilloscope to check that particular track for the bitrate change.

Reframing btw. is no magic issue. And because Jim Drew does not explicitly tell about all the nifty tricks that he used to make the copiers work does not mean that he did not use something similar to reframing for SC+. Since no 1541 drive runs at the very same RPM as the drive the original disk was recorded for, you always have to do SYNC and GAP length reducing/increasing, maybe RPM adjustments and some sort of reframing or frame detection (perhaps tail GAP detection too) on SYNC-less tracks.

Womo

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Subject: Re: Megasoft shadow, by Jack Cornelius  
Posted by [christianlott1](#) on Mon, 25 Feb 2008 22:07:26 GMT  
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Hello Womo,

On Feb 25, 2:47 pm, Wolfgang Moser <wn0...@d81.de.invalid> wrote:

>

how difficult would it be to make a h/w ipf reader/writer?

[http://www.softpres.org/faq:technology:describing\\_disk\\_formats](http://www.softpres.org/faq:technology:describing_disk_formats)

ie.

"The information contained in an IPF file can be used to write a real disk. It is in fact what they were designed for. Perhaps in the future a DIY hardware based device will be available that will act very much like the Trace duplicator, just a bit cheaper. ;-)"

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Subject: Re: Megasoft shadow, by Jack Cornelius  
Posted by [Anonymous](#) on Mon, 25 Feb 2008 22:30:19 GMT  
[View Forum Message](#) <> [Reply to Message](#)

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Originally posted by: bluebirdpod

On Feb 25, 1:47 pm, Wolfgang Moser <wn0...@d81.de.invalid> wrote:

> Hello bluebirdpod,

>

>> Well after owning both SC and RB, I would have to say that Jim Drews  
>> product has the potential to be more powerful, as said by Pete  
>> Rittwage, the SC+ board will make IDENTICAL copies that are not  
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>> However, the MNIB images need to be reframed for use with emulators,  
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> it all depends on how precise you look onto the details.

>

> Even SC+ is not able to make an identical copy of a  
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> halftrack protection from Bounty Bob Strikes Back!  
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> Instead Jim wrote a custom copier after he analyzed the  
> protection.  
> By analyzing a protection and then creating a mastering  
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> that this is not a `_copy_`, but a re-master.  
>  
> And further true copier machines (Trace duplicator) are  
> able to create patterns that can be detected with a 1541  
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> do adjust the motor speed. E.g. true Fat Tracks that are  
> recorded over two adjacent halftracks. If you try to  
> replicate that, then you would always overwrite one of  
> the both halftracks due to mechanical issues. The 1541's  
> R/W head is a so named tunnel erasing head. It write a  
> wider track and after that the left and right side of  
> that wide track are erased again after. This sharpens  
> the track and it can be better reread after. In fact I  
> never saw such a true Fat Track protection, mostly these  
> were only precisely aligned adjacent full-tracks.  
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> from 1541 drive would be in-track bitrate changes that  
> were created of irregular bitrates that the 1541 cannot  
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> If you then record a track with 250 kBit/s and change  
> that to 258 kBit/s for only some 7 to 8 GCR Bytes inmid  
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> but it is definately not able to reproduce that. The  
> protection check can check the number of cycles that go  
> by for each GCR byte read and compare that with stored  
> values. Even if you adjust your drives RPM, you will  
> only be able to `_either_` write with 258 or 250 kBit/s,  
> but you will not be able to do both and flip it inmid  
> a track write.  
> A could think of ways to fool the protection check, but  
> nevertheless you will be able to detect, if a disk is  
> an original or a copy, when you use an oscilloscope to  
> check that particular track for the bitrate change.  
>  
> Reframing btw. is no magic issue. And because Jim Drew  
> does not explicitly tell about all the nifty tricks that  
> he used to make the copiers work does not mean that he  
> did not use something similar to reframing for SC+.  
> Since no 1541 drive runs at the very same RPM as the  
> drive the original disk was recorded for, you always  
> have to do SYNC and GAP length reducing/increasing,  
> maybe RPM adjustments and some sort of reframing or

- > frame detection (perhaps tail GAP detection too) on
- > SYNC-less tracks.
- >
- > Womo

Hey Womo, did you ever figure out, what speed dos, JD stole to use in the SC+ rom ??  
most likely he patched a speed dos to use.

What did the big software houses use, you said (Trace duplicator) ??  
is that what most  
publishers used, as I would think a normal 1541 not reliable to make  
many tens of thousands  
of duplicates. not to mention totally redundant having to open the  
drive and change diskettes  
constantly.

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Subject: Re: Megasoft shadow, by Jack Cornelius  
Posted by [Wolfgang Moser](#) on Fri, 29 Feb 2008 10:47:27 GMT  
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Hi Christian,

christianlott1 schrieb:

- > On Feb 25, 2:47 pm, Wolfgang Moser <wn0...@d81.de.invalid> wrote:
- > how difficult would it be to make a h/w ipf reader/writer?

the hardware is available already, it is named  
Catweasel. But it lacks software supporting IPF  
dumping and remastering. Looking at recent  
changes to german law I doubt that such software  
will ever be written (in germany).

And then, even if you're able to make precise  
\_digital\_ copies of a raw data stream you're  
missing any analog effects that may help to  
understand some copy protection any better.  
Analog recording, dumping and/or storing  
(samples) may also help to repair heavily  
damaged images, so you always can go some  
steps further in perfectionism.

As for now, preserving originals with MNib/  
Nibtools is the method of choice for C64/1541  
related titles. Now and then you need to  
postprocess an image by hand to get a  
remasterable image file, but that's it.

Womo

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Subject: Re: Megasoft shadow, by Jack Cornelius  
Posted by [Wolfgang Moser](#) on Fri, 29 Feb 2008 11:00:56 GMT  
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Hi bluebirdpod,

- > Hey Womo, did you ever figure out, what speed dos, JD stole to use in
- > the SC+ rom ??
- > most likely he patched a speed dos to use.

no, I did not find any bigger similarities between SpeedDOS and the SC+ ROM. For JiffyDOS I cannot tell since I didn't investigate that in depth.

There are of course greater similarities between some routines from the Professional-DOS speeder system (RapidDOS Pro in the US, DemonDOS in the UK) and SC+, some routines that make absolutely no sense for SC+ since it misses the GCR decoding tables as well as the nybble shifting hardware.

Maybe this was bad coincidence or just made to obfuscate any code reverse engineers, I don't know.

- > What did the big software houses use, you said (Trace duplicator) ??
- > is that what most
- > publishers used, as I would think a normal 1541 not reliable to make
- > many tens of thousands
- > of duplicates. not to mention totally redundant having to open the
- > drive and change diskettes
- > constantly.

I cannot present you any hard statistical facts, but from reading many articles and WWW pages I know, that of course sometimes plain 1541 disk drives were used to copy disks.

Then there was the MSD dual disk drive, something like a clone of the 1541, but special software was available especially for disk duplication.

One type of a true professional duplication system was the Tracer/ST machine series. It was built to automatically duplicate a disk image onto a stack

of disks inserted.

This is a machine for 3.5" disks:

<http://www.awp1.com/pctpro.html>

I don't know what else was used to duplicate disks, but there surely were more of such professional systems. And all of these surely were able to dupe C64 disks as well as Apple and Atari ones and disks for MSDOS and UNIX systems.

Womo

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Subject: Re: Megasoft shadow, by Jack Cornelius  
Posted by [Groepaz](#) on Sat, 01 Mar 2008 15:37:03 GMT  
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Wolfgang Moser wrote:

> Hi Christian,  
>  
> christianlott1 schrieb:  
>> On Feb 25, 2:47 pm, Wolfgang Moser <wn0...@d81.de.invalid> wrote:  
>> how difficult would it be to make a h/w ipf reader/writer?  
>  
> the hardware is available already, it is named  
> Catweasel. But it lacks software supporting IPF  
> dumping and remastering. Looking at recent  
> changes to german law I doubt that such software  
> will ever be written (in germany).

its on my list. there is actually an exception in the dcma (and also european law) which allows it to dump <whatever> from "obsolete" media to modern media for backup purposes \*even\* when circumventing copy protection.

but for now, i am slowly fixing the various bugs you reported (thanks for that btw =))

that said, raw dumping doesnt have high priority right now, because the vast majority wants to transfer "cooked" images (not even gcr images, which are on my list too ofcourse). i'll add some features to help reading "bad" disks first, and improve handling 40 track stuff.

--

<http://www.hitmen-console.org>  
<http://www.pokefinder.org>  
<http://ftp.pokefinder.org>

It is dangerous to be right when the government is wrong.  
<Voltaire>

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Subject: Dumping protected disks with Catweasel, Was: Megasoft shadow, by Jack Cornelius

Posted by [Wolfgang Moser](#) on Sun, 02 Mar 2008 13:16:16 GMT

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Hi Groepaz, wou wrote::

> Wolfgang Moser wrote:

>> Hi Christian,

>>

>> christianlott1 schrieb:

>>> On Feb 25, 2:47 pm, Wolfgang Moser <wn0...@d81.de.invalid> wrote:

>>> how difficult would it be to make a h/w ipf reader/writer?

>> the hardware is available already, it is named

>> Catweasel. But it lacks software supporting IPF

>> dumping and remastering. Looking at recent

>> changes to german law I doubt that such software

>> will ever be written (in germany).

>

> its on my list. there is actually an exception in the dcma (and also

> european law) which allows it to dump <whatever> from "obsolete" media to

> modern media for backup purposes \*even\* when circumventing copy

> protection.

Don't know, if it is applicable here. Who defines what is called 'obsolete'? Currently enough "player devices" are available in working condition (C64 with 1541).

> but for now, i am slowly fixing the various bugs you reported (thanks for

> that btw =))

Oh, it got through to you? A short note about the receipt would have been fine.

> that said, raw dumping doesnt have high priority right now, because the vast

> majority wants to transfer "cooked" images (not even gcr images, which are

> on my list too ofcourse). i'll add some features to help reading "bad"

> disks first, and improve handling 40 track stuff.

Well, maybe it would be possible to make ARJuna



work again with the current Catweasel driver. I know that Christoph had to extend the driver a bit so that the raw data stream was accessible from userspace. To me it seems that this driver extension does not work for ARJuna currently.

Although ARJuna is not \_that\_ userfriendly, it would be an alternative to produce G64 files. Let's hope I remember how to configure the 'playfield' ;-)

Womo

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Subject: Re: Dumping protected disks with Catweasel, Was: Megasoft shadow, by Jack Cornelius

Posted by [MagerValp](#) on Mon, 03 Mar 2008 19:13:47 GMT

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>>>> > "WM" == Wolfgang Moser <wn0612@d81.de.invalid> writes:

WM> Don't know, if it is applicable here. Who defines what is called  
WM> 'obsolete'? Currently enough "player devices" are available in  
WM> working condition (C64 with 1541).

I don't remember exactly how it was worded, but since they have not been commercially available for 16 years, it should be perfectly safe.

--

```

  _ _ _ _ _ . . . . . + . . . . . O
  | | | | | + . + . + . . Per Olofsson, arkadspelare
  o-o . . . o + MagerValp@cling.gu.se
  - + + . http://www.cling.gu.se/~cl3polof/
```

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Subject: Re: Megasoft shadow, by Jack Cornelius

Posted by [sales](#) on Tue, 27 Aug 2019 17:55:25 GMT

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- > Even SC+ is not able to make an identical copy of a
- > certain disk. As Jim Drew explained somewhere, the true
- > halftrack protection from Bounty Bob Strikes Back!
- > cannot be reproduced with the native copier for the SC+.
- > Instead Jim wrote a custom copier after he analyzed the
- > protection.
- > By analyzing a protection and then creating a mastering

- > routine that will recreate that protection does mean
- > that this is not a `_copy_`, but a re-master.

That is not the case. The Bounty Bob Strikes Back! Copier is an actual copier. It is just a custom copier that knows which tracks are 1/2 tracks and which are not. Since the main copiers for Supercard+ do not support 1/2 tracks, a custom copier was needed. Copying Bounty Bob Strikes Back! is a two part process - first you copy the disk with the GCR Nibbler and then you copy it again using the custom copier.

- > And further true copier machines (Trace duplicator) are
- > able to create patterns that can be detected with a 1541
- > disk drive, but cannot be written with 'em, even if you
- > do adjust the motor speed. E.g. true Fat Tracks that are
- > recorded over two adjacent halftracks. If you try to
- > replicate that, then you would always overwrite one of
- > the both halftracks due to mechanical issues. The 1541's
- > R/W head is a so named tunnel erasing head. It write a
- > wider track and after that the left and right side of
- > that wide track are erased again after. This sharpens
- > the track and it can be better reread after. In fact I
- > never saw such a true Fat Track protection, mostly these
- > were only precisely aligned adjacent full-tracks.

If you disable the erase head you can write a 1/2 track. However, you need to first erase the disk with a magnet. EA used true 1/2 track protection, with tracks 34, 34.5, and 35 all containing valid sectors for the entire track.

- > Reframing btw. is no magic issue. And because Jim Drew
- > does not explicitly tell about all the nifty tricks that
- > he used to make the copiers work does not mean that he
- > did not use something similar to reframing for SC+.
- > Since no 1541 drive runs at the very same RPM as the
- > drive the original disk was recorded for, you always
- > have to do SYNC and GAP length reducing/increasing,
- > maybe RPM adjustments and some sort of reframing or
- > frame detection (perhaps tail GAP detection too) on
- > SYNC-less tracks.

I never changed gap lengths or anything else GCR related, and I didn't re-frame any data. The only real change was a reduction of the drive speed to 298.1 RPMs.

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Subject: Re: Megasoft shadow, by Jack Cornelius  
Posted by [sales](#) on Tue, 27 Aug 2019 17:59:17 GMT  
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> Hi bluebirdpod,  
>> Hey Womo, did you ever figure out, what speed dos, JD stole to use in  
>> the SC+ rom ??  
>> most likely he patched a speed dos to use.  
>  
> no, I did not find any bigger similarities between  
> SpeedDOS and the SC+ ROM. For JiffyDOS I cannot tell  
> since I didn't investigate that in depth.  
>  
> There are of course greater similarities between  
> some routines from the Professional-DOS speeder  
> system (RapidDOS Pro in the US, DemonDOS in the UK)  
> and SC+, some routines that make absolutely no sense  
> for SC+ since it misses the GCR decoding tables as  
> well as the nybble shifting hardware.  
>  
> Maybe this was bad coincidence or just made to  
> obfuscate any code reverse engineers, I don't know.

What are you referring to here?

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