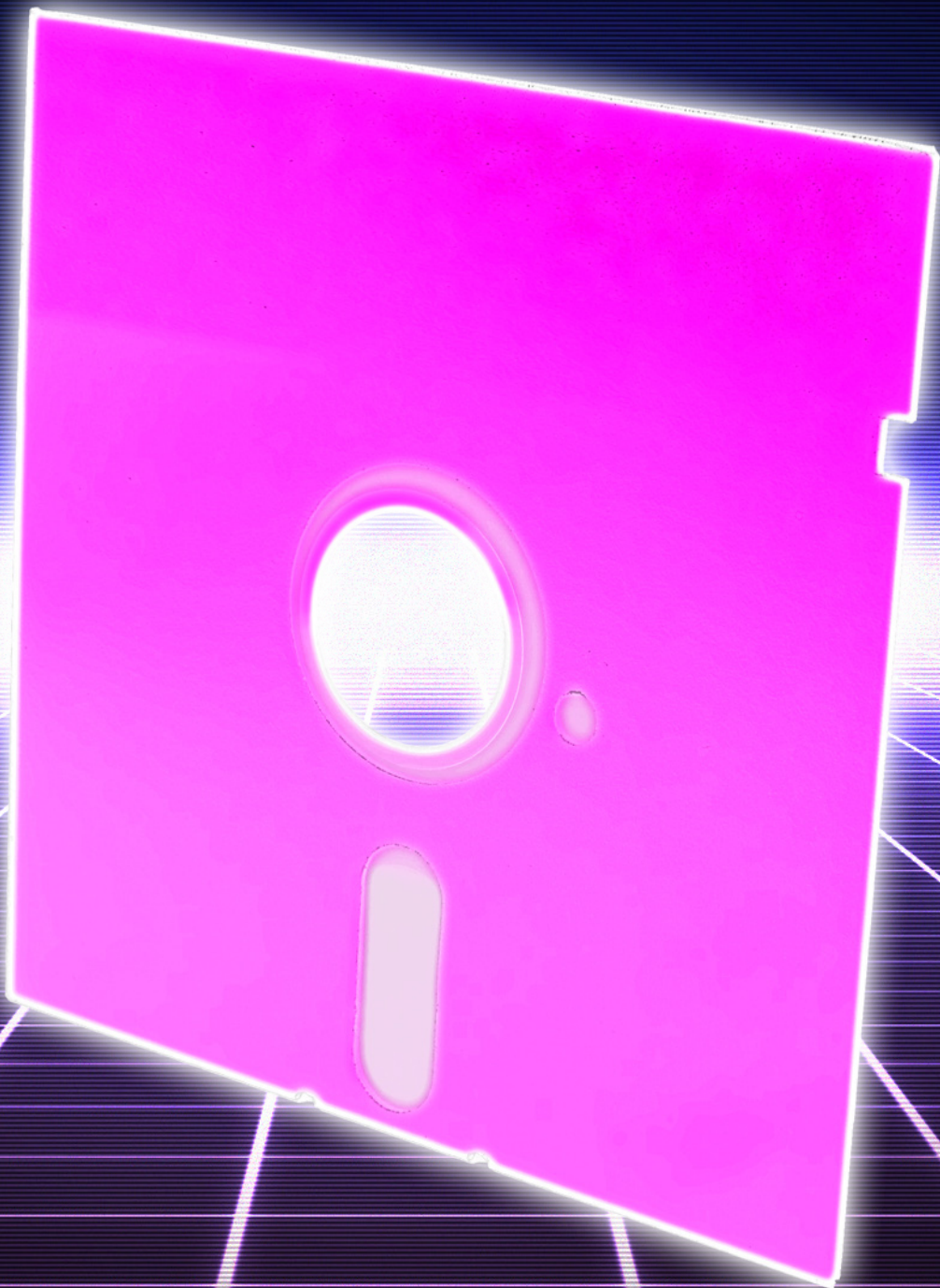


# KILOBYTE MAGAZINE

2016 / 1

PORTRAIT: ALAN SHUGART · THE ART OF FLOPPY DISK SLEEVES · INTERVIEW: TOM PERSKY  
MASTERTRONIC HISTORY BOOK · LANDS OF ZADOR (PLUS/4) · JAM IT! (C64) · AND MORE



8BIT  
ONLY





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**IMPRINT:**

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# PORTRAIT

03

ALL YOUR FLOPPYS ARE BELONG TO HIM

His Hawaiian shirt was always a bit too large, his charisma was typical Californian, and his nature as sunny as the state he was born in: Alan Shugart is one of the probably best known fathers of the floppy disk. This co-invention also secured a place in the history books for him, along with the creation of industry standards such as Shugart-Bus, SCSI and his still well-known harddrive company Seagate.

## RISE OF THE FLOPPY DISK

The engineering graduate began his first job at IBM in 1951, where he stayed for 18 years. He worked his way up from service technician to head of the research department and has been involved in the world's first disk drive: RAMAC. As computers grew more and more powerful, they demanded larger data storage devices, and Shugart had some clever ideas. And after nearly two decades with big blue, he wanted to pursue his ones: In 1969 he went to Memorex and continued his work in the field of data storage. Then, in 1972, the company brought the very first 8" floppy disks to mass market. But Shugart was convinced that diskettes could be smaller and fit more data. So in 1973 he founded Shugart Associates and only three years later already the company - then owned by Xerox - introduced the very first 5.25" mini floppy disk to the market. Its capacity: 87.5 kilobyte. It kept being improved until the disk reached its maximum in 1982 with

1.2 megabyte. His Shugart-Bus for connecting the drives to computers became a de-facto industry standard, as were his mini floppy disks, not least thanks to the booming home computers.

## HARD DRIVES

When floppies reached their peak, Shugart was already busy with the next big thing: He started Seagate with Finis Conner and nothing more than an idea of magnetic hard drives for micro computers. Their timing was perfect and Seagate hard drives were selling like hot cakes. The connection bus, then called Shugart Associates System Interface (SASI), became another de-facto standard which later was called SCSI.

## HARD TIMES FOR FLEXIBLE DISKS

The 5.25" diskette stayed relevant until the mid-nineties, although it had been outsold by 3.5" disks since 1988 and rapidly faded into obscurity 1994/95.

## JESTER SHUGART

Alan Shugart will also be remembered for his great sense of humor: In 1996 he started a satirical campaign for his dog as a Senator and wrote a book about it. In 2000 he supported a campaign that suggested an addendum to Californian vote sheets, stating "None of the above". His speech about the history of magnetic storage at the Computer History Museum is also studded with funny anecdotes. (bk)

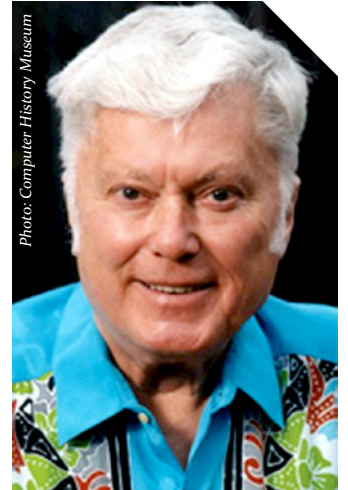


Photo: Computer History Museum  
Floppy pioneer Alan Shugart.

➤ *It is important to remember when starting and growing a new company that cash is more important than your mother.*

*Alan Shugart*

*Did you know: The US-based company Athana was the last one worldwide to produce 5.25" diskettes until 2008.*





Photo: bk

*There are nice covers in your diskbox as well - we're sure of it! Please send your scans or photos to: [kilobytemag@gmail.com](mailto:kilobytemag@gmail.com)*

#### FLOPPY DISKS IN SPACE

What a nice dust cover: KILOBYTE MAGAZINE starts a multi-part series about exceptional floppy disk sleeves. Because these little paper fellows are to disk aficionados what album covers are to friends of vinyl. Some disk companies really gave their babies a nice protection - like this one by the German Comtec

Disketten GmbH from Bielefeld: Floppy disks floating from a fictional space station to ... well, wherever to. It could be a nice game cover, but it delivered protection only to factory new disks. Details on the artist or further company information have not been traceable. Maybe one of our readers knows more? (bk)



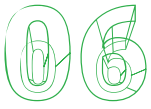
**DOT MATRIX**

Scandisk is something every DOS user is familiar with, but this envelope has nothing to do with Microsoft's operating system. Maybe the Scandinavian floppy disk manufacturer of this name wanted to emphasize the quality of his disks - who knows?

But the dot matrix is a typical motif from the 80s: From spy movie to space opera, no complex computer analysis was complete without illustrating the progress on the screen in exactly this way. But what might be the meaning of the subtitle „high tec 60+“? (Thanks to Volker Rust)



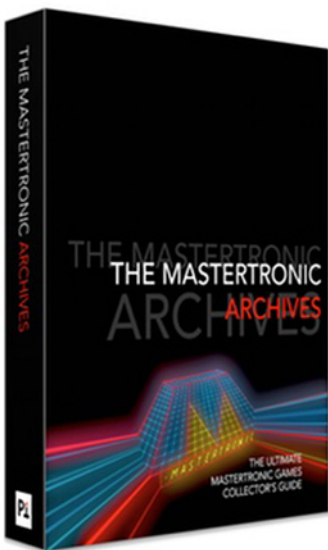




# ONENINETYNINE

MASTERTRONIC GETS ITS OWN HISTORY BOOK

*The Standard Edition 256 page hardcover book will cover all of the Mastertronic £1.99 releases including game reviews, game credits, screen shots and cover images.*



If you were a 8bit gamer back in the 80s, you knew this publisher because of the affordable games they released. And it didn't matter if you had a Commodore, Sinclair, Atari or Amstrad: Mastertronic had games for all of us with its "199 Range" – games for as little as 1.99 GBP on tape. Everybody had at least one original game in their collection, and due to Mastertronic's price and availability – at some point, you could even fetch a game at a gas station in Britain – it was very likely that you, dear reader, also had one. However, most games showed their price and were not that interesting in the long run. But there have also been those legendary titles that

many a gamer has fond memories of: One man and his droid, Kikstart, Action Biker or Kane and Kane 2 only to mention a few. And then, there are some personal favorites that not many gamers share. Or who can claim that they seriously like Dark Star or Spooks? Well, there are at least some people who do. And because Mastertronic was just so distinguishable from other game companies, it was time that someone sat down and started writing a book about them.

**THE MASTERTRONIC ARCHIVES** \_\_\_\_\_ Anthony Olver from Canberra, Australia, sure loves vintage gaming. And he has some experience when



it comes to publishing books, as he had shown with his “Illustrated History of Game Controllers Vol. 1”, which raised more than 5.000 AUD on Kickstarter and featured an overview of many different joysticks and game controllers from 1972 to 1989. And this time, he aims high with his new Kickstarter campaign, targeting 33.000 AUD for “The Mastertronic Archives”. The campaign ends on June 11th and as this text is being completed, he needs roughly 12.000 AUD till he reaches his goal. And besides the information about the games, including reviews, game credits, screen shots and cover images, Anthony frequently reaches out to former Mastertronic employees to win them over for a contribution in his book. So far, he has already convinced Anthony Guter (Mastertronic’s Financial Controller), Mark J. Brady (artist for some of the most memorable scifi covers), John “The Brush” (artist for the comic inspired

covers), Andrew Wright (Mastertronic Budget Labels Product Manager) and Richard Burton (no, not the actor and ex-husband of Liz Taylor, but passionate Mastertronic collector). This list will certainly grow as the campaign nears its end.

#### A FITTING ENTRY PRICE

So whoever is interested in the history of Mastertronic can pledge as little as 1.99 AUD to receive the digital copy of the book as soon as it’ll be ready. It contains 256 pages and will cover all of the 199 Range Mastertronic published. There are pledges for a physical copy and special editions of the book as well, of course. The covers look sleek and you got to love this logo art on the front. But what’s even better: A detailed look on every budget game this legendary studio put out, including titles by M.A.D., Americana, Rebound, Rack-It and so on is worth 1.99 AUD for sure. (bk)



The „199 Range“ Limited Collector’s Edition comes with a book with 512 pages, a cover art gallery book and a USB cassette with the cover art shown above.





LAST MAN STANDING IN THE FLOPPY BUSINESS



Photo: Great Big Story, Youtube.com

Tom Persky, Founder  
and CEO of  
Floppydisk.com.



Photo: bk

➤ I am unaware of any current manufacturing of floppy disks.

Tom Persky

*In times where some software already changed their save symbol from floppy disks to an arrow pointing downwards, because most users now growing up have never used disks. How come you are still in the floppy business?*

We are still in the floppy disk business because we still have customers. Many different types of people continue to use disks. From hobbyists who love old systems to manufacturers who have equipment that still runs on floppy disks.

For 30 years the floppy disk was the

high point of technology, and during that period many industrial machines were made to use diskettes. Those machines are still around and they work perfectly. So the users will still need floppy disks to run those machines.

In addition, we run a very active floppy disk transfer business. Customers who cannot retrieve old files on floppy and zip disks will send the disks to us. We retrieve the files and send them to the customer on USB thumb drives or by email. If you think about how much data has





been written to floppy disks over the last 40 years ... well, we should be in business for a while.

***When Sony declared that they stopped making 3,5“ disks by the end of 2010, they still sold around 12 million per year in Japan alone. Back then, Verbatim said they will fill the gap and keep on producing them. Now it's 2016 - is anybody out there actually still producing new floppy disks of any sort?***

I am unaware of any current manufacturing of floppy disks. When the last new disk is sold, that will be the end for new disks. But no worries. We will continue to recycle disks as part of our floppydisk.com recycling program. People send us old disks and we erase, reformat them and then resell them. So, we will have a dependable supply of disks for at least the next ten years.

***Would it be correct to call you the last king of floppy disks?***

Maybe not the king. But as long as I have customers, I will remain a loyal servant.

***Did you by chance acquire some productions machines for diskettes so that you could think of starting a new production line?***

In order to make a diskette, you need at least seven separate and unique parts. Not one of these parts is currently manufactured. It is much easier to make a CD or flash

memory, so I think the last floppy disk has been made.

***How much demand is there for floppy disks, how „big“ is the market?***

Hard to say, but we are a big player and we sell hundreds of thousands of disks each year.

***Do you get orders from around the world or are you focussing on the US?***

We sell worldwide.

***Who are your customers? Mostly businesses or do you sell to the public as well?***

Most of our sales are made through our floppydisk.com website. We sell to individuals, businesses, and even governments.

***Where do you get your old diskettes from?***

We try to publicize our floppy-



**»» We will have a dependable supply of disks for at least the next ten years.**

**Tom Persky**





## LAST MAN STANDING IN THE FLOPPY BUSINESS



» ***Diskettes that fail to reformat are sold to people who use them for art projects, promotional purposes, and other uses.***

**Tom Persky**

disk.com recycle service. That way people can send us new and used disks for recycling. We buy new disks and we recycle used disks at no cost to the person who wants to send them in.

***What do you do with them after you received them? What is the process like?***

When we get used disks, we run them through a commercial degausser in order to delete the data. Then we sort them and attempt to reformat them. Those that successfully reformat are relabeled and resold as recycled disks. Those that fail to reformat are sold to people who use them for art projects, promotional purposes, and other uses. To see a remarkable use, check out [www.nickgentry.com](http://www.nickgentry.com).

***You sell 3.5" and 5.25" floppies, both in HD and DD. Which of those are in higher demand?***

3.5 disks are by far the most popular. They are still used in embroidery machines, medical equipment, airplanes, and many other applications.

***What happens to dirty disks, is there any kind of cleaning process?***

We attempt to erase the data on recycled disks, but that's all.

***In your experience, given the check-ups you do on a daily basis, which disks are more reliable: 3.5" or 5.25"? Double or High Density?***

Because the 3.5 DS/HD disks are the most modern, we have the fewest

*Just in case you were wondering: This is not Tom Persky's car. But it's an interesting way to put defective floppy disks into artistic use: Lara Weigand did this to her old Honda and received some news coverage for it.*



Photo: Lara Weigand





Photo: Nick Gentry

*Nick Gentry made a name for himself by using defective 3.5" floppy disks as canvas for his paintings.*

problems with them. But our floppydisk transfer service regularly recovers data from 20 and 30 year old 5.25 disks.

***What about 8" floppies? Do you get them in, too? If so, what happens to them?***

We have a small quantity of 8 inch disks, but we sell very few of them. We do have a large supply of used 8 inch disks that people use for gifts and promotional purposes. We've seen them used as gag gifts or wedding invitations.

***With all that old hardware around you, haven't there been times when you thought: Oh, I can't see all this anymore, I'm gonna quit the floppy business for good?***

I enjoy the work. It is fun helping people with this old technology. And I especially love our floppy disk transfer business. People send us

floppy disks and we try to get the data off. We send them a USB drive or email with the data. Our floppydisk.com transfer service recovers lost family photographs, first novels, college dissertations and other irreplaceable items. We try to preserve a customer's privacy, so we don't look at the files, but we know that we are retrieving special items for our customers.

***What have been the two most curious or funny inquiries you received so far?***

On the curious side, we've had the FBI come in and ask us if we transferred floppy disk files related to a high profile criminal prosecution. When the FBI walked in with a court order we gave up the files. I am glad to say that I have no idea what was on them!

***Thanks for the interview, Tom!***

**»» *I enjoy the work. It is fun helping people with this old technology.***

**Tom Persky**





WE GOT YOU COVERED



Photo: huandi, 123rf.com

*A nicely fitting cover for the Sinclair Spectrum Plus is only one of the sweet dust protection cases Jurek Dudek designed.*



Photo: Jerzy Dudek

Yes, the picture above looks kind of nasty, doesn't it. But we all have been there, be it because we bought a vintage computer lot someone had stored somewhere deep in his cellar and forgot all about it for a decade or two, or be it because we have our favorite equipment set up on a daily basis – and just don't get the time to do so. In any case, after a few months of neglect, this is the picture we face: There is dust on the keys and – even more frustrating to clean – between them. Now this is nothing new of course, there always has been a market for computer dust covers. What's new is that someone thinks it is time for new dust covers for several vintage computer platforms. And that was exactly what Jurek Dudek from Poland was thinking when he founded Retronics.eu.

### **IT'S A DUSTY JOB,**

### **BUT SOMEONE HAS TO DO IT \_\_\_\_\_**

Not long after Jurek started to collect retro computers at the end of the 90s, he founded Retronics and offered accessories like all sorts of cables for vintage computers. He built and sold the XU1541 in some quantity to people who were not able or did not want to build this adapter cable to connect a C64 floppy drive via USB to PC. Besides that, he liked the computer in his collection nice and clean, but dust covers were not that easy to come by in large quantities. Furthermore, every collector likes to show his favorite pieces, but if you cover them with cloth or painted covers, nobody can see the beauty beneath. That was the initial start for what now is available as new and translucent vintage computer covers. (bk)



***Jurek, maybe you can introduce yourself to our readers?***

My name is Jerzy Dudek, friends call me Jurek. My profession is software engineering and electronics. Many years I have spent in one of the biggest corporations, but my dream was to have a company which bases on my hobby.

***And that is why you founded Retronics. Can you tell us a bit more about the company and what your further plans are?***

The new website of [www.retronics.eu](http://www.retronics.eu) is under development now. I am going to offer more and more products – new disk drives are in queue on my desk, awaiting their final shape so they can hopefully start production soon. Also interfaces and other accessories are on my list of future products.

***Can you be a bit more specific about the mentioned disk drives?***

I'm afraid I can't as of now, but there are other projects that might be interesting for gamers and collectors alike.

***Like what?***

The variety of dust covers will be increasing: I want to make covers for tape decks and disk drives as well, for example. And I will publish Re-releases (under license) of famous Polish titles, some of them are really rare, even here in Poland. They will be available as Collector's Edition including maps in exclusive big boxes. Look out on [www.retronics.eu](http://www.retronics.eu) for updates.

***Was it complicated to produce the dust cover?***

Yes. I spent a lot of time with the design so they fit perfectly and I had to find a suitable production company. They are manufactured in hundreds, or sometimes only dozens of pieces (for rare models).



Photo: Jerzy Dudek

*Jerzy Dudek, whose friends call him Jurek, loves his hobby and collects vintage computers since the late 90s. He owns Retronics.eu.*



Photo: Jerzy Dudek

*This case is just an example of what Retronics have to offer: Besides Atari Jurek designed dust covers also for Commodore 64 and Amiga as well as for the ZX Spectrum models 48K, 128K and Spectrum Plus.*



**WAFER THIN**

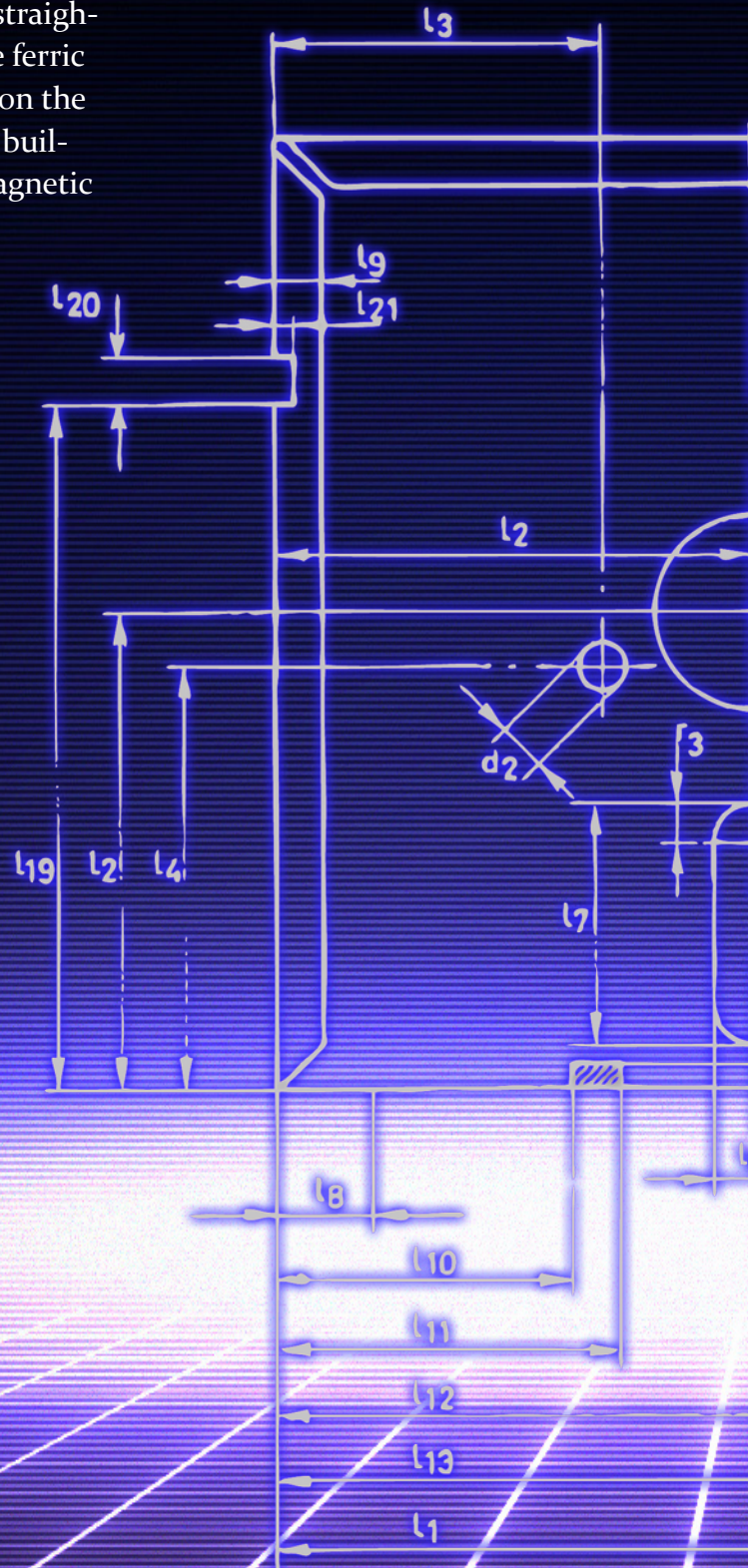
The actual diskette is only 0,1 mm thin and very bend-sensitive. It contains a layer of ferric oxide particles which are smaller than 0,5 micrometers. They are applied on the wet surface material inside a clean room. After the following drying process, rolls compress the layer before it is put inside the floppy disk case.

**COVER-UP**

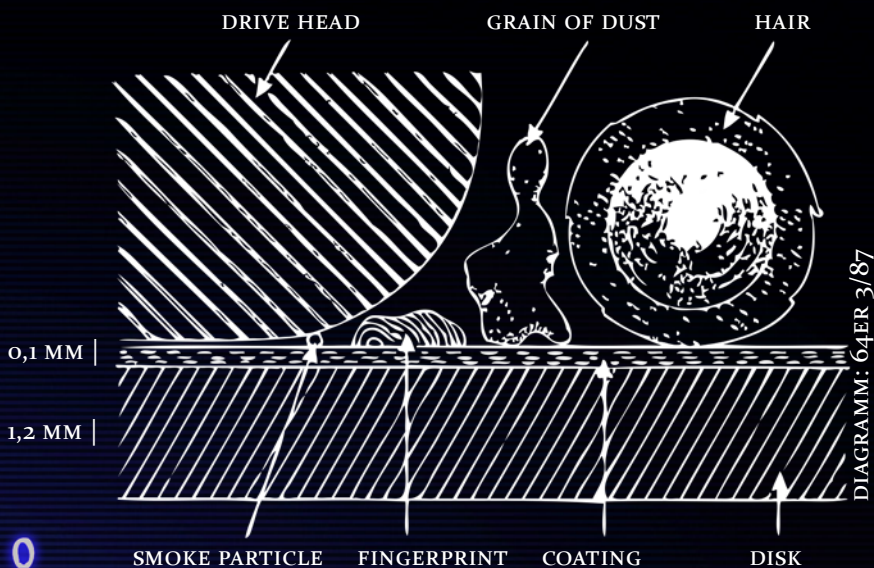
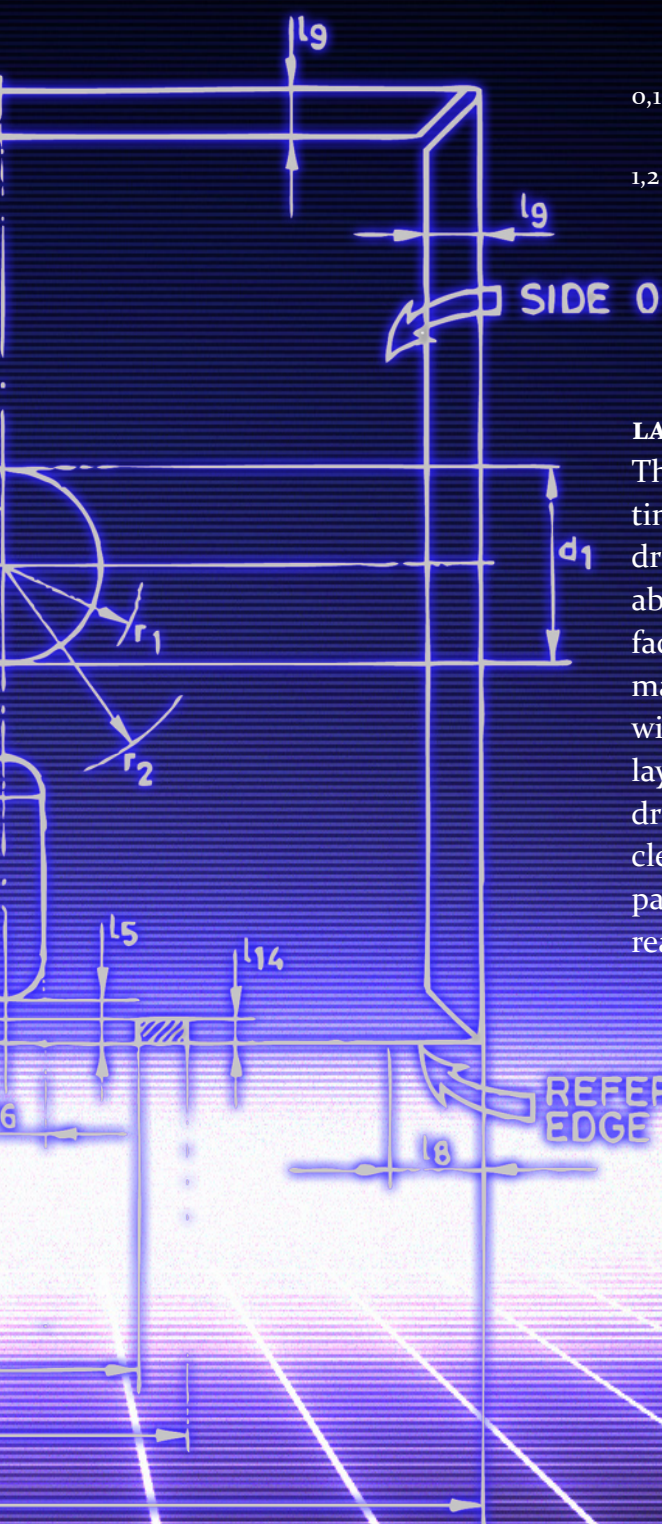
The disk rotates inside a PVC-cover, which is separated by an antistatic fleece from direct contact with the magnetic surface of the disk. This fleece protects the disk against dust and dirt. The manufacturing quality allows the disks to be used even thirty years (and sometimes more) after they have been produced. The fleece still does neither crumble nor produce any lint.

**WRITING**

The disk head straightens up the fine ferric oxide particles on the disk surface by building up a magnetic field.







### LAYER BY LAYER

The reading and writing process of the drive head leads to abrasion on the surface of the disk: Slowly magnetic particles get wiped off the coated layer and stay on the drive head. If it's not cleaned regularly, those particles can lead to read errors.

### HIGH DENSITY

The magnetic field being produced by the drive head of a Commodore 1541 is not sufficient to change the magnetic surface of a High Density disk permanently. The ferric oxide particles will be sat up, but because they cannot reach their maximum magnetization, the sat bits „fall“ back and data is lost. This is why HD disks, if they are written on, will not provide long time data storage.



NEW 64 AIMS TO BE MODERN C64 SUCCESSOR

**MODEL WORK\_\_****Wayne Malton:**

A local artist from Harrogate, United Kingdom. He did the first scale model of the new computer.

**TEAM PLAYERS\_\_****Paul Gouge:**

Founded Ironstone Partners who orchestrated a deal between Mammoth Toys, Commodore Licensing B.V. and some talented hackers around Jeri Ellsworth. The result: C64 DTV.

**Darren Melbourne:**

Designed C64 games like CounterForce and Slug and later became European Development Director at THQ, later at UbiSoft. He was Executive Producer at Ironstone Partners for the C64 DTV.



Photo: the64.computer

Volkswagen and Fiat did it. Bina-tone did it. And so did Nike. They all took an iconic product design that had been a huge hit amongst consumers and adapted it for today's world. In the process, the design had to be (slightly or radically) adjusted and of course technical specifications had to be updated. For example, a New Beetle with a 30 HP boxer motor would not sell today. Sure, it would be more authentic to the original, but people would not appreciate that they cannot drive faster than 40 kph when the going gets tough on an uphill road.

So if Commodore had been still around today, they might have just done what Indiegogo campaign "The 64" does: Take their beloved computer model and repackage it. It's been done before, and arguably brilliant under Barry Altman's Commodore

USA relaunch of the old C64 breadbin design. We might recur to that later. So first of all, there is nothing wrong with taking an beloved cult-product and reimagine it.

**?KEYBOARD NOT FOUND ERROR\_\_**

Having said this, let's take a look at the new 64. The Indiegogo campaign states: "The 64 is an exciting and respectful re-imagining of the original home computer, the Commodore C64." Meaning that the first thing the team behind this project did was taking the original breadbox case, scribble some marks on it and then chop it down to a box that can merely fit the classic keyboard. Why they did this is not explained. One might argue that it does not look sleeker than the old one, and it doesn't look as if it was well-designed. Furthermore, there



is something interesting about the new design regarding the keyboard shown in the main picture: It is a classic one – except for the Com-modore key, which is replaced by a chunk of clay. With no word a new keyboard of this upcoming breadbin 2.0 is mentioned anywhere in the campaign text, which seems rather odd. Because the moment you chop down the original case and try to design a sleeker one, you must also think of the rather chunky key caps as well.

#### ?HARDWARE NOT FOUND ERROR\_\_

So much for the outside. Now you'd expect a look at the specs – but they have not been ready for the launch of the campaign. The only thing you could tell from a picture was that “The 64” would sport a HDMI and two USB ports, a SD card slot, an audio jack, a cartridge slot, a mini-USB port and – of course – a keyboard, a power button and an activity indicator. I kid you not, they actually listed those last three things as features in a rendered picture. A rather vague paragraph stated that the new 64 would also take advantage of “multiple SIDs for stereo sound”, “new high-capacity(512MB+) writable cartridge support, with an adapter interface available later to provide classic cartridge compatibility”, an “emulation of the 1541” and “hopefully the possibility to connect original peripherals, or via adapters.” So as there have been not that much hardware details in there, what else

did the text say? Well, it told you a lot about “team” (twenty times, yet you'll never read much about who these people are), “passion” (eight times), “experience” (six times) and “love” (three times). However, several people must have asked questions about the hardware, so they had to put out something. And they finally stated what everybody was thinking anyway: An ARM Cortex SoC will be the heart of the machine – and that was all the additional information there was. So the guess that a Rhaspberry Pi might be all there is to the new 64 machine comes to mind. However, it would need to be modified in some way to access the cartridge port they promise.

#### LOADING ... PLEASE WAIT\_\_\_\_\_

Astonishingly, it looked quite good for the campaign as people were throwing in their pledges, also for the 64 handheld we are not discussing here, but which is part of the deal. However, there is a catch to the campaign as it used flexible funding, meaning that even if they do not match their goal of 150.000 USD – and they did not – they could keep the money and still try to launch the whole thing. Which they declared to do shortly after the campaign ended at 100.611 USD. So let's see what happens next. The first computers were promised around early December 2016. And while we wait for Santa, let's take a look at what we get for 133 EUR and what the components might cost ... (bk)

#### HIGHSCORE\_\_\_\_\_

Top-5 phrases used in the campaign text:

1. “team” (20x)
2. “support“ (12x)
3. “passion” (8x)
4. “experience” (6x)
5. “love” (3x)



*You might not notice it in this small photo, but if you take a look on the campaign site, you'll notice that the guy holding the prototype had a logo on his shirt blurred out. Don't you want to know what it was?*



## NEW 64 AIMS TO BE MODERN C64 SUCCESSOR

**A REAL COMPUTER FOR THE PRICE OF A TOY?**

As we received no information from the 64 team, this is just a very rough price thought: A basic computer console version will cost 133 Euros, including costs for all of this per unit:

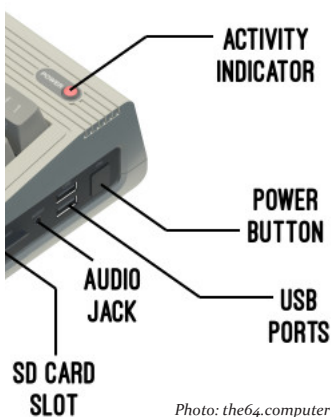


Photo: the64.computer

*This new computer even has an activity indicator (probably based on LED technology) as well as a power button.*

**KEYBOARD**  
If they are intending to duplicate the exact style and feel of the original keyboard (which we may assume as they took an old C64 keyboard for their new project), they need to produce new key caps. There are some guys over in Germany trying to get this for new C64 keycaps in different colors. Let's say they manage to get the same price for a small product quantity:

20 Euros

**CASE**  
Last year, the old C64C molds were discovered and with their help new C64 cases were made for 35 USD. And Barry Altman sold his barebone C64x cases for as much as 350 USD each. For this new 64 project, such molds would have to be made first, which is rather expensive. But let's expect a great price despite a small quantity of a few thousand cases:

30 Euros

**ELECTRONICS**  
The specifications sound like they are going to put in a Raspberry Pi with some hardware modifications like a special cartridge port and maybe ports for original equipment. Based on the price for the RhasPi 3 with some major discount:

35 Euros





Photo: the64.computer

**DO THE MATH**

If we sum this up, we get estimated production costs of 95 Euros. But let's say this estimate is too high (although we've not yet included assembly, storage, packaging and handling or even wages for the team). Let's assume they can get all of this together for 70 Euros. That would still be more than half of the asked product price. And it would still exclude all of the above mentioned additional costs that they will be facing. Plus taxes. How large will their profit margin be – and will that be enough to feed the crew and maintain a healthy company? We shall see in early December. (bk)

**LICENCES**

They licensed the C64 ROMs from Cloanto, maybe for a one time payment and maybe for a certain period of time. But they also will include some C64 games on their machine, for which they will have to pay money as well. Including the upcoming smash title Sam's Journey. Let's say all in all, those fees might amount to:

**5 Euros**

**CABLES**

The computer will need at least a power supply and a HDMI cable. Let's imagine they get this stuff thrown at them:

**5 Euros**

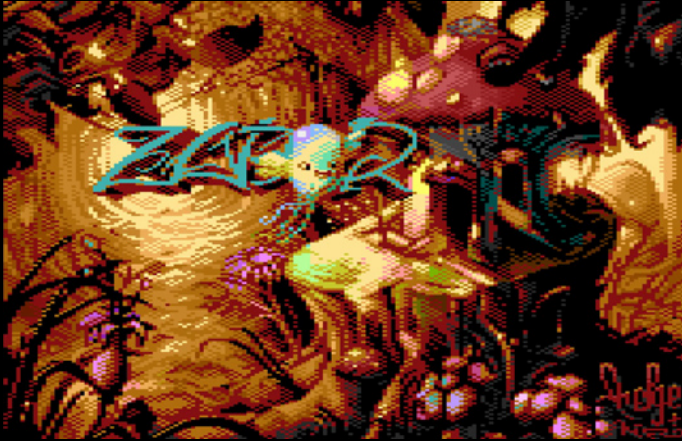
Photo: the64.computer



*Just in case: This is the actual boxart of the packaging for „THE 64“. The photo was added during the campaign.*



## THE LANDS OF ZADOR (PLUS/4)



Colors ... all these beautiful colors ... „The Lands of Zador“ is certainly one of the most colorful Jump'n'Runs there is on the Commodore Plus/4. And it has been put together by the very same guys that brought us „Majesty of Sprites“ last year: Bauknecht. It's simply amazing what they did here. As the Commodore 264 series does not support sprites nor

do they have a fancy sound chip, it's all the more impressive how well the shapes in this game come together and how catchy most of the tunes are. With eight multiscrolling bitmap levels to explore, TLOZ has a lot to offer. Though it can be challenging sometimes to jump on enemies and keep track on what's happening onscreen, for example

if jumping behind a waterfall. The hardware sure works at its limits, but one seldom has the feeling that it does. And you can see and hear that Bauknecht put a lot of love into this little game. Like „Majesty of Sprites“ before it, TLOZ will be available via Psytronik later this year. But you can also grab the free d64 at [www.plus-4world.com](http://www.plus-4world.com) (bk)

*The Lands Of Zador has been presented at Revision Party 2016 challenging in the gamedev competition, and it ranked 3rd out of nine.*





# SAFETYFIRST

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PROTECT YOUR C64 WHEN THE PSU IS FAILING

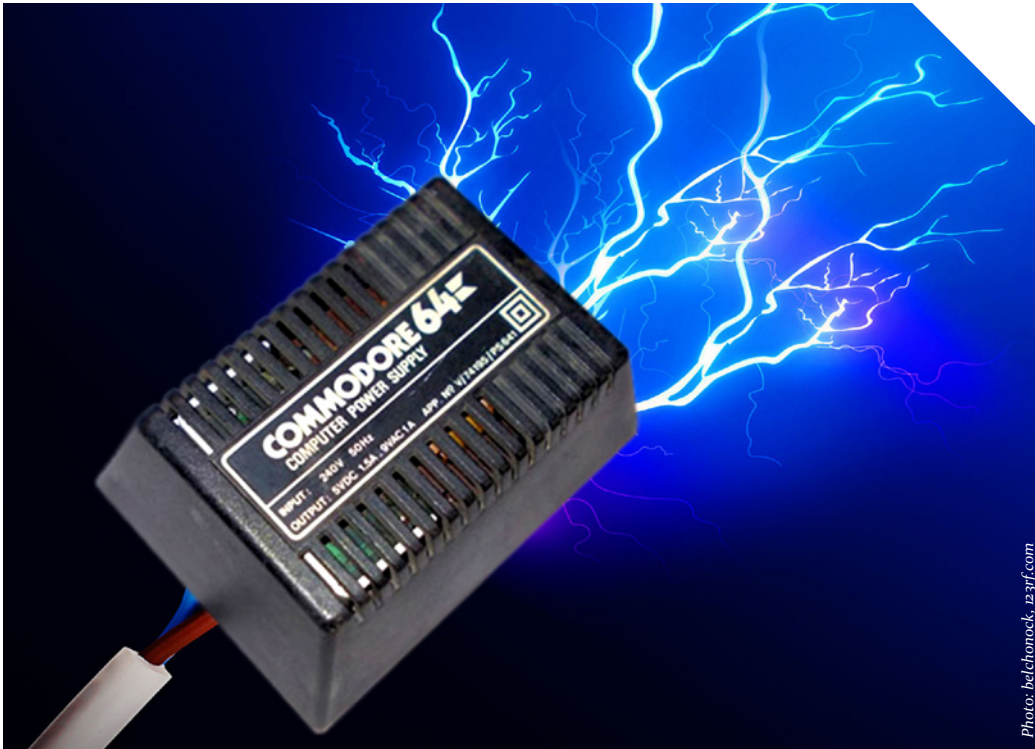


Photo: belchonock, 123rf.com



Ray Carlsen bought his first Commodore 64 in 1986.

Most Commodore 64 computers stand the test of time, sitting there on our desks as if they silently sing “who wants to live forever”. However, their companions, the PSUs, do not at all hold up so well: When such a sturdy old brick says its farewell, it might send a lethal goodbye charge to the poor C64. It seems quite surprising that in times where people are buying new C64 cases and seek for new key caps, there is still no commercially available alternative for the old power supplies. That is, except you want to build one yourself, as there are plenty of technical instructions to be found on the web. But luckily for us, there is another way to protect the breadbins and flatbins of this world from over-voltage. One such device is called “cable saver” and was designed by

former Commodore service technician Ray Carlsen from the United States. “Repair work, the saver and the power supplies I make came into being mostly because nobody else was doing it”, says Ray. And because of that, it’s even more surprising that his products are still a kind of insider tip. “I guess you could call it a glorified hobby. I’ll quit when it stops being fun”, he adds. His cable saver plugs between the PSU and the C64 and cuts off power to the computer before the voltage from the power supply goes high enough to damage the computer. This way, one can safely use their original power supply until it dies. Ray also has new C64 PSUs in stock and cable savers for other Commodore computers like the Plus/4 as well. Take a look! (bk)



➤➤ ***I learned about the bad reputation of the original C64 „brick“ power supply and thought there had to be a way to use it safely – and so the Saver was developed.***

**Ray Carlsen**



JAM IT! (C64)



Photo: bk



Photo: Psytronik

The cover artwork was done by Oliver Frey who was responsible for some legendary covers of gaming magazines such as Zzap!64 and Crash back in the 80s.

Since Hockey Mania, there hasn't been a sports game that provided fun for up to four players – now there is. And this new little title is pretty well done. As an arcade style game rather than a simulation, it's easy to learn the basics. But you will need some time for your first screen shattering extreme dunk. And you will celebrate it like a child. That's a promise. Speaking of celebration: After the first half time you'll see

some nice cheerleaders perform. If you feel like it, you can jump in and control their choreography with your joystick. That's only one of the funny aspects this sweet title offers. It also offers humorous com-

mentaries like California Games did. And it has a replay function like Microprose Soccer. But don't think it's laughable: The opponent AI can be quite challenging. There is a lot of action crammed into this tiny game. The graphics are pretty, yet the sound could have used some tweaks, or at least an option to play a catchy tune during the matches. But you got to love this game anyway. Hopefully, we'll see more like this one soon. (bk)





# SCENE WORLD



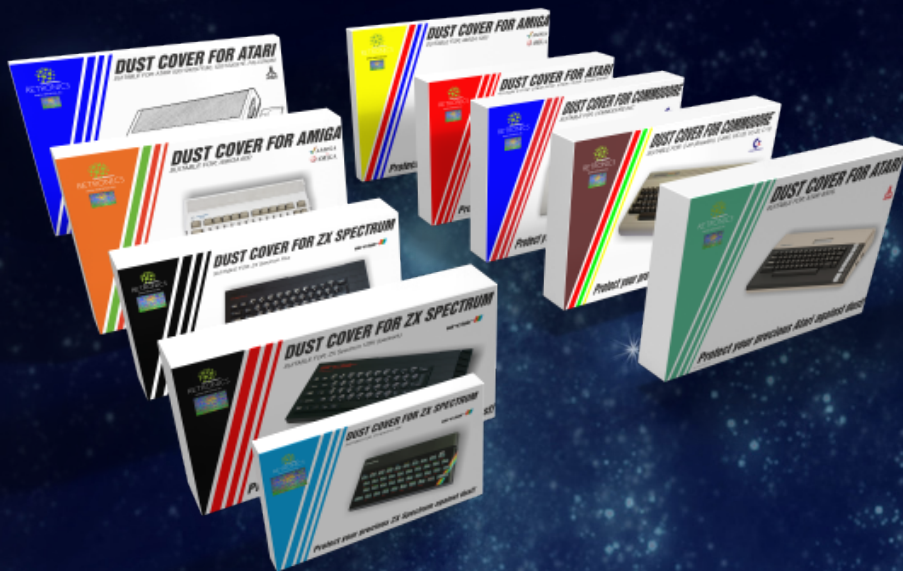
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