

[PDF] The Zx Spectrum Ula How To Design A Microcomputer Zx Design Retro Computer

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ZX Spectrum 48K ULA differences | ByteDelight.com

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vLA82 - Spectrum 48K ULA replacement from Charlie Ingley

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Building ZX Spectrum Clone - Harlequin - Part 1 - Malinov

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GitHub - TomMajor/ZX-Spectrum-Adventure-2020: Retro

GitHub - TomMajor/ZX-Spectrum-Adventure-2020: Retro

ZX Spectrum ULA Types - Spectrum for Everyone

Introduction The heart of the ZX Spectrum series of computers is a custom chip called the ULA (Uncommitted Logic Array). This was a technology pioneered by Ferranti, of which Sinclair was one of the first adopters (incorporating all of the discrete logic of the ZX80, plus a NMI generation circuit into the initial ZX81 2C158E ULA).

ZX Spectrum ULA - Sinclair Wiki

The ULA (Uncommitted Logic Array) is a chip which controls most of the interfaces between the Z80 CPU and peripheral functions. The ZX Spectrum 16K/48K ULA went through multiple revisions and is either a 5C or 6C series Ferranti ULA. On a ZX Spectrum 128, or ZX Spectrum +2 the ULA is the Ferranti 7K010E (later labelled

Amstrad 40056)

The ZX Spectrum ULA: How to design a microcomputer

Pages: 324. ISBN-13: 978-0-9565071-0-5.

Publisher: ZX Design and Media (Aug 2010) Read the fantastic reviews on .co.uk. "If you have ever wanted to design your own computer or wondered what was behind the most successful microcomputer of the 1980s, then this is the book for you. For the first time, the inner working of the Sinclair ZX Spectrum's custom chip and heart of the computer, the Ferranti ULA, ...

Overview :: ULA chip for ZX Spectrum :: OpenCores

The ZX Spectrum ULA Book

"The ZX Spectrum ULA: How to design a microcomputer" is pitched to be readable by the novice, but quickly moves into more complicated territory, and would be readable by anyone with a general interest who can follow boolean logic, the electronics hobbyist, the electronic engineering student, retro-hardware fan or just a piece of shelf-candy for the Sinclair enthusiast. It gives a thorough discussion of Ferranti, their ULA and a detailed examination of every functional unit of ...

Spectrum Clone Design Blog - The ZX Spectrum Reverse

ULA Book On Sale Now Aug 30, 2010. The ZX Spectrum ULA: How to design a microcomputer is on sale NOW. 324 pages detailing the design and implementation of the ZX Spectrum ULA, and the techniques involved in the development of a home microcomputer. Further details about the Spectrum ULA Book may be found in the

book section of this site. Read More.

vLA82 - A Spectrum 48K ULA replacement - The Microdrive

vLA82. The vLA82 is a modern plugin replacement for the Spectrum 48K ULA (type 6C001E-7 or earlier). It is one of several ULA replacements I have made for members of the Sinclair computer family including the vLA81 for the ZX81, the vLA128 for the Spectrum 128K (Toastrack) and +2 (Grey case) and the vLA1 for the Sinclair ZX Interface 1.

Nebula Spectrum ULA Chip Replacement Module @ Retroleum

Nebula Spectrum ULA Chip Replacement Module. The Nebula is a Spectrum 48 daughterboard, designed to replace the ULA chip found in UK Spectrum motherboards (versions 2 to 6). It was designed by myself, Phil Ruston (PCB design, mostly) and Alessandro Dorigatti (logic core) between 2015-2016. Many thanks to Chris Smith for his excellent book: "The ZX Spectrum ULA - How to design a microcomputer" ...

Modern hardware - Sinclair Wiki

128K motherboard except the ULA Intermittently from Sell My Retro, sometimes packaged with a SLAM ULA. Nebula ULA replacement for ZX Spectrum 16K/48K Retroleum Website: mULA48 ULA replacement for ZX Spectrum 16K/48K 8bits4ever: SLAM ULA Spectrum 128 ULA Intermittently from Sell My Retro: Sparrow: 48K motherboard replacement contact via oldcomp

How to Quickly Diagnose 48K RAM - Spectrum for Everyone

21/04/2017 · To understand this, a quick refresher of how the Spectrum handles display bytes is required. Memory between 16384 and 22527 (0x4000 - 0x57FF) is used for the pixel data, while memory between 22528 and 23295 (0x5800-0x5AFF) holds attribute data. Attribute data is interpreted by the ULA as follows:

ZX Spectrum Common Faults - retrotechlab.com

Swap the ULA; Replace the LM1889 (IC14) Symptom: Poor picture on PCB issue 3 and above, even if re-capped and composite modded. Unless you know that other Spectrum 16/48s work with your TV, try another TV (modern LCDs can be twitchy with the Spectrum...

The ZX Spectrum Ula: How to Design a

Microcomputer (ZX)

30/07/2010 · For the first time, the inner working of the Sinclair ZX Spectrum's custom chip and heart of the computer, the Ferranti ULA, is exposed in minute detail. Packed with over 140 illustrations and circuit diagrams, this book takes the reader through the cutting edge technology that was the Ferranti ULA and the design of the ZX Spectrum home computer, illustrating the ...

ULApplus - Google Search

ULApplus is a plug-in replacement ULA for the ZX Spectrum which increases the total palette to 260 colours. It is scheduled for inclusion in the production Harlequin SE, ...

vLA128 - A Spectrum 128K ULA replacement - vDrive ZX

vLA128 - A Spectrum 128K ULA replacement. The vLA128 is a modern plugin replacement for the Spectrum 128K (aka 'Toastrack') or Spectrum +2 (Grey case) ULA (type 7K010E-5 or Amstrad 40056). It is one of several ULA replacements I have made for members of the Sinclair computer family including the vLA81 for the ZX81, the vLA82 for the Spectrum 48K and the vLA1 for the Sinclair ZX ...

Gate array - Wikipedia

Sinclair Research ported an enhanced ZX80 design to a ULA chip for the ZX81, and later used a ULA in the ZX Spectrum. A compatible chip was made in Russia as T34VG1. [9] Acorn Computers used several ULA chips in the BBC Micro , and later a single ULA for the Acorn Electron .

ZX Spectrum replacement ULA - ZX RENEW

The vLA82 is a modern plugin replacement for the Spectrum 48K ULA (type 6C001E-7 or earlier). It is one of several ULA replacements Charlie has made for members of the Sinclair computer family including the vLA81 for the ZX81, the vLA128 for the Spectrum 128K (Toastrack) and +2 (Grey case). As they...

Pinouts - World of Spectrum

ULA: /CAS 1 40 GND One of the +5V is decoupled through a RC-low-pass. /WR 2 39 Q U,V are the color-difference signals. /RD 3 38 /MREQ /Y is the inverted video including sync. /WE 4 37 A15 D are the data-lines, decoupled from the CPU by resistors.

hardware - Documentation for the ZX Spectrum ULA

3 Answers3. Buy, and study carefully, The ZX Spectrum ULA. The book is the result of opening the chip and reverse-engineering it down to the transistor level. For your reference, this is the datapath I inferred after reading Chris book. It's the ULA datapath I've used in the ZX-UNO clone.

ZX Spectrum (and ZX81) ULA gallery | ByteDelight.com

04/09/2020 · The Inconvenient Truth - dying ULAs Well, if you're using the machine with that ULA anyway. After 35 years, the ZX Spectrum ULA has had a long and interesting life, and during the last 5-10 years it seems more and more ULA chips are passing away. The main cause is heat!

L Break Into Program - ZX Spectrum ULA

ULA Operation The ULA takes the clock feed from the crystal (14Mhz) and divides that down by 2 (7Mhz), then 2 again (3.5Mhz). The 14Mhz and 7Mhz clocks are used to drive the video and the 3.5Mhz clock is fed to the Z80.

48K ZX Spectrum Technical Information

The above information is correct for the 48K ZX Spectrum - for the 128k/+2 models the contention sequence starts at cycle 14361. Contended Input/Output. It takes four T states for the Z80 to read a value from an I/O port, or write a value to a port. As is the case with memory access, this can be lengthened by the ULA.

vLA82 ZX Spectrum 16/48K ULA replacement [vLA82 ZX Spectrum ...

vLA82 ZX Spectrum 16/48K ULA replacement The vLA82 is a modern plugin replacement for the Spectrum 48K ULA (type 6C001E-7 or earlier). These are new ULA replacements created and manufactured by Charlie Ingley. He sells these direct, but due to being located in New Zealand, postage and import costs to the EU/UK mean costs increase substantially.

Spectrum Chips - Retroleum

For the original 16K/48K ZX Spectrum - can be installed permanently (soldered or plugged into a chip socket). With this unit, either of two 16K ROM images can be selected using a small onboard switch (which can be accessed from Spectrum's expansion port so it is not necessary to open the machine to swap ROMs)

ULAs - ZX RENEW

D01 - 000000. This site has been setup to

facilitate users to be able to purchase aftermarket goods from suppliers at a value for money price point. Although it looks like it is very professional it is only here to serve the retro community.. The aim of the site is to allow the renewal of retro computers, whilst not making a huge profit.

Retro Revival ZX Spectrum Shop, ZX Spectrum shop for all

Retro Revival ZX Spectrum Shop : - Capacitors Repair/Refurbish services Hardware: Spectrums Transistors Chips (and sockets) Mods Other components Other parts, cables etc Games Books & Manuals Hardware: Peripherals Pre-Loved parts Customer Orders Gifts Retro Revival, RetroRevival, ZX Spectrum Parts, Spectrum Parts, ZX Spectrum Spares, Spectrum Spares, ZX Spectrum Repair, Spectrum Repair, ZX ...

Cooling down a ZX Spectrum ULA - YouTube

I did an experiment with a way-too-hot ZX Spectrum ULA chip, to see if it's easy to cool it down.

ZX Spectrum 48K ULA differences | ByteDelight.com

20/03/2014 · The ZX Spectrum Issue 4A and above will ONLY work reliable with the 6C001E-7 ULA version; don't use another ULA in an Issue 4A board or later Issue. Of course it's best to use the exact ULA model that corresponds to the ZX Spectrum Issue as listed above; ULAs are getting more rare each day.

ZX Spectrum ULA · AllPinouts

ZX Spectrum ULA. It appears that you are using AdBlocking software. The cost of running this website is covered by advertisements. If you like it please feel free to a small amount of money to secure the future of this website. 01 Mar 1998. Can be found at Sinclair ZX Spectrum's, I think

ZX Spectrum - Wikipedia

Timex of Portugal also made a PAL version of the TS2068, called the Timex Computer 2068 (or TC2068 for short) which had different buffers for both the ULA and the CPU, which significantly increased the compatibility with ZX Spectrum software when compared to the North American model (the TS2068). The expansion port was also modified and made to be 100% compatible with the ZX Spectrum...

Amazon.co.uk:Customer reviews: The ZX Spectrum Ula: How to

The amount of effort that went into researching and reverse engineering the ZX Spectrum ULA is quite clear to see and fascinating to read about. Highly recommended if you have an interest in hardware even if you're not a ZX Spectrum fan. 2 people found this helpful. Helpful.

Building ZX Spectrum Clone - Harlequin - Part 1 - Malinov

29/02/2016 · To get around, ZX Spectrum clones normally implement ULA functionality using regular logic ICs, but none of them are 100% compatible with the original. Several years ago Chris Smith reverse engineered the ULA, implemented a ZX Spectrum clone (Harlequin), and wrote a ...

[PDF] The Zx Spectrum Ula Download Full - PDF Book Download

The ZX Spectrum ULA is an essential read for the electronics hobbyist, student or electronic engineer wishing to design their own retro-style microcomputer or anyone with an interest in historical micro-electronic and digital design. All topics are explained in simple yet precise terms, building on their careful introduction towards the full

Sinclair ZX Spectrum - Retroleum

Sinclair ZX Spectrum. The quintessentially British home computer is now 30+ years old and most will have been through some rough treatment (and then left in the loft for decades!). I have sourced as many replacement parts as I can find and listed them here. Items are new / unused unless stated. Product Categories

vLA82 - Spectrum 48K ULA replacement from Charlie Ingle

The vLA82 is a modern plugin replacement for

the Spectrum 48K ULA (type 6C001E-7 or earlier). It is one of several ULA replacements I have made for members of the Sinclair computer family including the vLA81 for the ZX81, the vLA128 for the Spectrum 128K (Toastrack) and +2 (Grey case) and the vLA1 for the Sinclair ZX Interface 1.

SLAM ULA Plus Replacement ULA for Sinclair ZX Spectrum+128

ULA PLUS, idea by Andrew Owen, hardware by Mark Smith, assembling and sale Zaxon (it's me) The SLAM ULA PLUS is a plug-in replacement ULA for the Sinclair ZX Spectrum which increases the total palette to 260 colours. This version is for the Sinclair ZX Spectrum +128 (toastrack version) or the grey Sinclair ZX Spectrum+2, or the JS128 clone.

ZX Spectrum -=ULA Plus games=- - YouTube

ZX Spectrum -=ULA Plus games=- *** ULAPLUS is a plug-in replacement ULA for the ZX Spectrum which increases the total palette to 260 colours. It is scheduled

The Zx Spectrum Ula [PDF] Download Full - PDF Read Book Page

The ZX Spectrum ULA is an essential read for the electronics hobbyist, student or electronic engineer wishing to design their own retro-style microcomputer or anyone with an interest in historical micro-electronic and digital design. All topics are explained in simple yet precise terms, building on their careful introduction towards the full