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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 Types - Spectrum for Everyone

The ZX Spectrum Ula: How to Design a Microcomputer (ZX Design Retro Computer) Paperback – Illustrated, July 30, 2010. by Christopher David Smith (Author) 4.5 out of 5 stars 47 ratings. See all formats and editions.

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The ZX Spectrum Ula: How to Design a Microcomputer (ZX ...

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.

The ZX Spectrum ULA: How to design a microcomputer

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)

ZX Spectrum ULA - SinclairFAQ

The ULA implementation follows, where possible, the original ULA timings, as stated in "The ZX Spectrum ULA: how to design a microcomputer", written by Chris Smith and published by ZX Design and Media, ISBN 978-0-9565071-0-5 There are implementations with some enhancements such as Timex hicolour support and ULA+ support. Features

Overview :: ULA chip for ZX Spectrum :: OpenCores

The ZX Spectrum (UK: / z d k s /) is an 8-bit personal home computer released in the United Kingdom in 1982 by Sinclair Research.. Referred to during development as the ZX81 Colour and ZX82, it was launched as the ZX Spectrum by Sinclair to highlight the machine's colour display, compared with the black and white display of its predecessor, the ZX81. The Spectrum was released as eight ...

ZX Spectrum - Wikipedia

ZX Spectrum ULA. 01 Mar 1998. UNKNOWN CONNECTOR at the computer. +5 VDC (One of the +5V is decoupled through a RC-low-pass.) +5 VDC (One of the +5V is decoupled through a RC-low-pass.) Color-difference signals. Color-difference signals. Inverted Video+Sync. Analog-I/O-line for beep, save and load.

ZX Spectrum ULA - AllPinouts

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, but you can use it right now...

ULApplus - Google Sites

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.

Spectrum Clone Design Blog - The ZX Spectrum Reverse ...

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A UK clone of the 48K ZX Spectrum, designed and developed by Chris Smith to aid the reverse engineering of the ZX Spectrum custom ULA chip, and its research documentation. Complete in 2008, it is the first 100% timing compatible clone. Until 2012/13 the Harlequin existed only as a breadboard prototype, ...

List of ZX Spectrum clones - Wikipedia

The Spectrum keyboard is row-scanned by the 8 upper address bits, with 5 column outputs fed into the ULA and appearing as the bottom 5 bits in its only register. This topology is mimicked here by using an array of 5-bit registers, the appropriate one presented to the ULA depending on the value on the address bus.

ZX Spectrum on FPGA | Mike's Lab Notes

The Spectrum has a 14 MHz ULA clock (which is divided by two to make the dot clock) and a 4.43MHz colour clock as is typical for PAL. There are 448 dots per line which gives an exact 64 microsecond line, 15.625kHz line frequency. The PAL system by design has just over 283.75 colour clocks per line.

Sinclair ZX Spectrum projects - Richard Atkinson

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.

vLA82 – A Spectrum 48K ULA replacement – The Microdrive ...

The ZX Spectrum Ula book. Read 3 reviews from the world's largest community for readers. This book takes the reader through the design and implementation...

The ZX Spectrum Ula: How to Design a Microcomputer by ...

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.

vLA82 - Spectrum 48K ULA replacement from Charlie Ingley ...

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

vLA81 – A ZX81 ULA replacement – The Microdrive Hardware ...

Chris also developed the original Harlequin 48K: a ZX Spectrum clone based on parts that replace the ULA, so no ULA is needed. ZX Spectrum fans continued on this development which resulted in the design that is now known as the ' Harlequin Superfo ' , with 128K versions like the Harlequin rev 2D.

Harlequin 128K kits | Product categories | ByteDelight.com

This is a great book, not just for ZX-spectrum fans & hobbyists but, in my opinion, for anyone interested in really delving into the nuts and bolts of a classic 8-bit

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computer. Detailed outline of the system, the hardware and how it was implemented in the original ULA.

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