

# ALCHNEWS

AND

# Z88 USER

**ISSUE 35, FEBRUARY 2001**



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YOUR LETTERS  
AN EXTENDED TRIBUTE TO THE SINCLAIR QL  
NEW SPECTRUM ROM  
PROGRAM LISTINGS: SIDEKICK 128  
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## CREDITS

### **BIG THANKS TO THE FOLLOWING CONTRIBUTORS:**

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Dominic Morris  
Michael Harrop  
Andrew Broad

Dennis Groning  
Richard Hallas  
Dilwyn Jones, *QL TODAY* magazine  
Namco (+2C ROM author, not the company)  
Peter Graf  
*QUANTA*  
Thierry Godefroy  
*Club QL International*

# EDITORIAL

Happy new year to everyone. I must say that I prefer a new year to the commercial farce that is now Christmas. I'm certainly not one for presents and cards, which instantly labels me as a 'humbug scrooge' (well it does to my staff at work!). Wouldn't it be nicer to just personally wish someone a happy Christmas and give them 50p, rather than boost the profit of the countless greetings cards companies. Even if the 50p is given to a worthy cause, such as Oxfam or the NSPCC, it would be much better spent and would show more care and emotion than any card with a phoney sentiment ever could. Like Barney Gumball in *the Simpsons* said; "Jesus must be spinning in his grave."

Anyway, my present to you all is a price reduction in the magazine. Now that it's starting to settle down and we can accurately judge numbers and costs, I feel it only fair to pass the savings back to you who support us. So, issues will be reduced by 50p. If you have a subscription you'll get an extra issue added to it. I could have just kept my mouth shut and pocketed the extra cash, but, those of you who've known me for some time, will know that I'm not like that.

This issue brings about something I've wanted to do for a long time - a letters page. Letters were always so hard to do in the electronic version of AlchNews, because it

meant painstakingly re-typing each letter. Now we have the wonders of decent DTP available to us all, it's just a case of simple cut and pasting an email! To show my appreciation for this valuable space filler, er I mean feedback, each issue gets a *proper* prize. I don't mean something worthless or a free issue or subscription, but something that you will actually find useful and can use.

This issue also marks an advancement in my getting to grips with *Publisher* by getting page numbers in the corner! Lots of people criticise Microsoft, Windows and associated applications.

Yes, they are bloated and expensive, but those who can't afford it just get it from a pirate trader anyway, and for ease of use (the software, not pirate traders), they can't be beat. I am a big fan of Linux, and do indeed have a version on my system, but since there are no drivers for my sound card, modem or even access to my ZIP drive, (maybe there are, but Linux is for tweekers and people with time to research into it - something Windows doesn't need) it needs to come on much further before it leaves the boundaries of the techno freak and nerds and into home system and be a direct replacement for Windows and the like, but I do relish the day when it arrives.

*Andy Davis*

# NEWS & VIEWS

## CLARIFICATIONS

A couple of errors which crept into last issue which I'd like to rectify:

**DRILLER.** I forgot to mention that the game also came with a large poster. I'd also like to thank The Amstrad CPC Games Resource for supplying Driller for the CPC emulator. The URL for this extensive site is:

<http://tacgr.emuunlim.com/>

**AMIGA EMULATING.** Simon Goodwin (formerly of *Crash* magazine) had the following comments to make:

*"Your emulation feature missed out the best two ZX emulators - the port of X128 by Paul Hill, which has lots of Amiga smarts (superior to the Linux one for multi-tasking etc.) but needs at least a 68040 and preferably a 68060 - and also does Scorpion and Pentagon (Russian clone) emulation:*

<http://www.lagernet.clara.co.uk/x128.html>

You also failed to mention William James's *Speculator*:

<http://de.aminet.net/pub/aminet/misc/emu/Speculator.lha>

which was a shocking omission; that runs nicely on any Amiga made in

*the last decade - even a 4 Mb 1200, and certainly most UAE/Fellow setups, and has far more features for ZX cross-development than any other, and is much the best for creative use, as opposed to games-playing - it has a labelling Z80 disassembler integrated, serial port transfer software (useless on UAE as it can't do any serial input - a very big flaw you missed) and good Z80 cross-assembler, very fast as it runs on the Amiga side, direct access to ZX-header type files on any Amiga drive, ROM patches including spelled-out option rather than 48K keyword entry, loads of legal examples including BetaBASIC a handler to read Spectrum disks so they appear like any other device (and in ANY Amiga program, not just the emulator, auto recognised on insertion into any floppy drive), a 'datatype' for AmigaOS 3.0 so ZX SCREEN\$ files can be loaded directly by any Amiga graphics program as if they were in Amiga ILBM format (auto-recognising and translating) and an enormous hypertext manual, partly written by me :-)*

You also missed out *Speccylator* by Richard Carlsson

<http://de.aminet.net/pub/aminet/misc/emu/Speccylator.lha>

which is a pretty nice though less sophisticated 48K ZX emulator for 68020 or even the old 68000

*Amigas, free with source code - and the reason the old CB Speccy you tried didn't run is because it uses the 68K MMU, for excellent reasons, and UAE - which can emulate only old 1980s Amigas - doesn't even /try/ to emulate that, as you'd know if you'd read the respective documentations."*

Fair comment, but my article was only intended as an *introduction* to the Amiga emulating scene on a bog-standard typical Windows based PC which would be found in the homes of most of my readers. Going in depth would have taken up most of the magazine and that is not our aim. We get our readers interested and let *them* carry on and find out more for themselves.

As for the X128 port, I mentioned this to Martijn van der Heide, who runs *World Of Spectrum* - where I got obtained the Spectrum emulators - and he had this to say:

*"Uh... this port is actually a leak! Paul hadn't given permission for its distribution yet, as it was far from finished. He finally gave clearance only this week, as he had to drop the project due to time restrictions*

*As for the other emulators mentioned, my page mentions only a handful of the available ones (only the ones that have been worked on since '97 or so) and refers to the FAQ for the remaining ones. I agree that there are a number of excellent emulators that I haven't listed on that particular page, but I didn't think it worthwhile to*

*duplicate the FAQ for them."*

### **U.A.A.G. WEB SITE "LIES"**

While perusing the web site for the *United Amstrad & Amiga Group* - sprung from the ashes of Martyn Sherwood's previous projects - I was surprised to see the following statement:

*"Prism PD also took over other PD libraries during the 90's which were: Alchemist PD, Impact PD, FPD, Total PD, Hammer PD, We are the authorised distributors of the software from these libraries"*

What bullshit! *Alchemist PD* is still owned by us and in fact now run by Michael Harrop on the internet. And the other libraries were not 'taken over' as he puts it. There was only one library which took over other libraries and that was *Alchemist PD*—which became *Alchemist Software*.

It seems that all these years on, Sherwood is still lying. Only several weeks ago we had a re-subscription letter from a Mr. Sam Quiqq who told us of Sherwood plaguing him with extensive anti-*Alchemist* propaganda!

### **DISCDOS NOW FREE**

Great news for anyone who owns a +3 with an external disk drive: *DISCDOS*, the incredible utility by Dominic Morris is now completely free!

For those unfamiliar, Dominic has

written some of the finest Spectrum programs to date, including the control shell for *AlchNews* when it was an 'electronic' magazine.

*DISCDOS* follows on from Dominic's predecessor - *SLOWDOS* - a program which read the files from a Disciple formatted diskette and copied them to the +3's internal drive, and vice versa.

The advantage of *DD* is that, once loaded, it stays resident in memory and adds new disk filing commands to +3BASIC. This gives the impression that the +3 physically has an MGT disk interface connected, without all the expense or hassle of conflicts. Inserting a +D disk into the external disk drive and starting a game is just as simple as it is on a genuine Disciple or +D system.

The program will shortly be uploaded to the Alchemist Software site: [www.alchemistresearch.com](http://www.alchemistresearch.com), and reviews for the program can be found in *AlchNews* 20 part 54 and *AlchNews* 26 part 16.

### **NEW Z88 MATERIAL**

Dennis Groning has added some new material to his site, relating to file transfers on the Z88. He says:  
*"Could you imagine there are at least 77 programs for Z88 file transfers with 14 different platforms using 12 different protocols? I couldn't before I started listing them."*

The page is at:

<http://www.algonet.se/~dennisgr/filetrans.htm>

Dennis has also added new material from the newsletter *Z88 FAX NEWS*: *"After inspiration from Keith Richard's project of scanning in the Z88 Users' Club newsletter Z88 EPROM, I have updated my site with a page with scans of the newsletter Z88 Fax News produced by Curtis Claar in 1990-1991. So far only a selection of different quality faxes are scanned to find out which resolution was needed"*.

### **ZSOCK REVISED**

The latest version of ZSock up on the Zsock web page at

<http://www.jb.man.ac.uk/~djm/z88dk/zsock/>

This release is the first to come in package form, and it's got a pretty full API for you all to play with and develop those web browsers, ftp clients and mailers.

### **NEW MINER FAN SITE**

Richard Hallas, one of the big names in the Miner Willy world, has a new web site:

<http://www.hallas.net/>

Richard was responsible for two of the 'new' Willy games that we brought from the internet and back onto real Spectrums: *Join the Jet Set!* and *Willy in Space*, as well as the article *A MINER TRIAD*, to be featured in the next issue.

## SPECSAISIE

Andrew Broad has written a Java system called SPECSAISIE which enables you to perform surgery on SNA and TAP files, and various other gubbins (some functions relate to Spectrum emulation in general, and there are even some that are specific to Manic Miner and Jet Set Willy!). SPECSAISIE gives you a pretty powerful Spectrum toolkit, especially when combined with other great utilities such as SPConv, SCR2GIF and BAS2TAP!

The utility is available from:

<http://www.cs.man.ac.uk/~broada/spectrum/>

## QL EMULATORS CD

Dilwyn Jones of *QL TODAY* magazine is currently in the process of releasing a very comprehensive CD of Z88 emulators and software. Dilwyn says:

“The emulator CD is currently in Beta test 2 status. Darren Branagh is testing it on platforms I don't have access to. He will do the initial release, but the CD will be freely copyable, anyone with a CD-Writer is welcome to copy it within the limits allowed by the copyright status notes with each of the emulators on the CD once it has gone beyond the Beta test status.

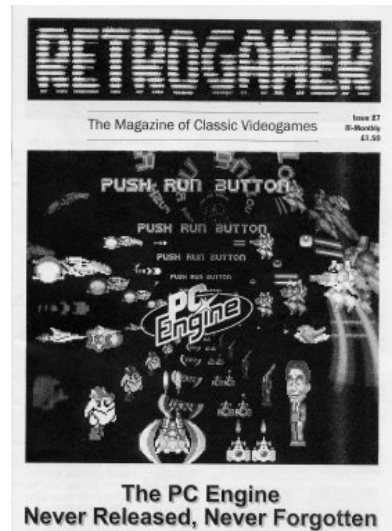
More information on the CD is in our QL section, on page 29.

## ARTICLES HELD OVER

Due to the unexpected extended coverage of the Sinclair QL, we've not had the space to feature *WORD ON THE WEB*, nor the *GAC* or *CARRIER COMMAND* and *DARKSIDE* articles as promised. These have now been included in issue 10 (AlchNews 36).

## RETROGAMER

Did anyone see Retrogamer editor Keith Ainsworth on the TV again? BBC Two program *I LOVE 1980*



featured Keith, talking about *PAC MAN!*

Retrogamer is still £1.50 and available direct from Keith (if he's not in make up for *another* TV programme!), address in *Trading Post* on the back cover.

**More news next issue (April).**

# SERIAL CONNECTIONS

How to connect almost everything  
by Mark J Swift and Simon N Goodwin.

This is the latest revision of a project thought up by former ZX enthusiast and Qdos Classic author Mark J Swift, later documented by former Crash Tech Tipster and continuing all-Sinclair enthusiast Simon N Goodwin. An earlier version of these articles appeared in the QL user-group magazine Quanta.

## **PART 1 - A tricky business?**

If you have ever tried to connect two pieces of hardware via a serial interface, you will know that things can get pretty tricky. The problem is compounded by the fact that no matter how many leads you have made up in the past, making a new one is like starting from scratch.

With a little forward planning however, making up a lead can be as simple as putting together a two-piece jigsaw...

These articles explain in words and pictures how you can make cheap and reliable connections between many Sinclair computers, near relatives like the Thor XVI and SAM, and other common machines like Amiga, Atari ST, BBC Micro, Apple Mac, Amstrad PCW (with CPS add-on) and PC-compatibles. This part includes details for SAM, Interface 1, IBM PCs and clones, BBC Micro and many printers and plotters. The

second part includes details for QL, Spectrum 128, Apple Macintosh and the S5/8 standard.

## **The JIGSAW solution**

Each of the accompanying diagrams is drawn as a single piece of a two-piece jigsaw. To discover the cable connections required to connect two machines, simply take the relevant pieces - and snap them together!

## **Other variations**

Not all the machines have their own picture - for instance, ST, Amiga and Amstrad PCWs all use the same 'standard' 25 pin connection. This was the old RS-232 'standard', used on old PCs, TRS-80s and many terminals. This fell out of favour because of the bulky connector with a large number of unused pins, sometimes assigned to conflicting 'extra' signals, and rather confusing names for the signals.

Later 'AT' PCs and add-on serial boards for various micros replace the 25 way connector with a nine pin connector wired as for the SAM, but with the addition of DSR on pin 6 and a small voltage, usually between 5 and 9 volts, on pin 7. This is nominally RTS, but finds its most common use providing power for a serial mouse! You can connect a PC mouse to SAM's Communications interface if you supply +5V on this



pin, but you need to poll the serial port about every 7 mS or characters get lost, and this makes it impractical for use with many SAM programs.

### **Making your own pieces**

If you have a machine that is not featured here then you will need to make up a jigsaw piece of your own. You should be looking for which lines are DATA and which lines are HANDSHAKE. You should also take note of the GROUND line and whether the signal lines are INPUT or OUTPUT.

It is wise to leave power connections, usually marked +5V or similar, well alone, as these are not needed for serial communications between computers and are most likely to cause damage if wrongly connected.

If your machine does not match any listed here - and many with 9 pin or 25 pin D connectors correspond to the SAM and DTE diagrams - you need to copy the diagram from one of these machines and replace the signal lines with corresponding ones for the new machine. In the manufacturers notes, the machine will be described as either DTE or DCE, and this will determine whether a line is input or output.

### **DTE devices**

'Data Terminal Equipment' is generally intelligent equipment such as Computers, Terminals and Printers. There should be at least FIVE signal

lines as follows:

TxD (output)  
CTS (input)  
GND  
RxD (input)  
DTR (output)

Note that both SAM and Spectrum Interface 1 are DTE devices, but SAM requires a female connector and the Interface 1 expects a male plug.

### **DCE devices**

'Data Communication Equipment' is generally dumb equipment such as modems, but the second QL serial port SER2 falls into this category. The signal names are taken from the intelligent end, so you will find for example that the Transmit Data (TxD) line is actually an input! This was one of the most confusing aspects of the original RS-232 serial standard. Again there will be at least FIVE signal lines as following:

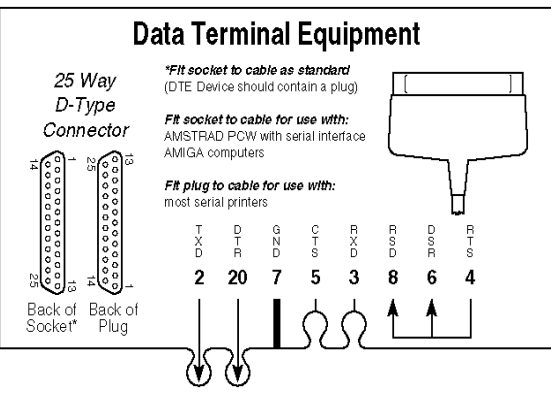
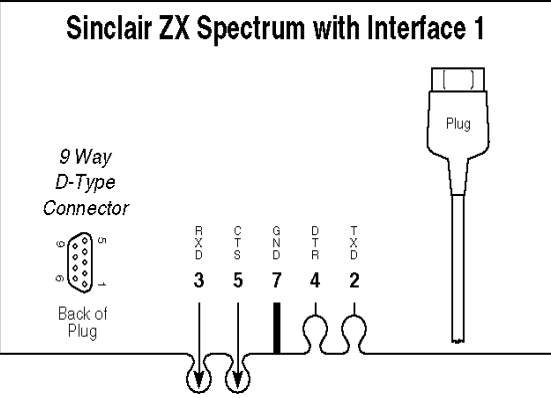
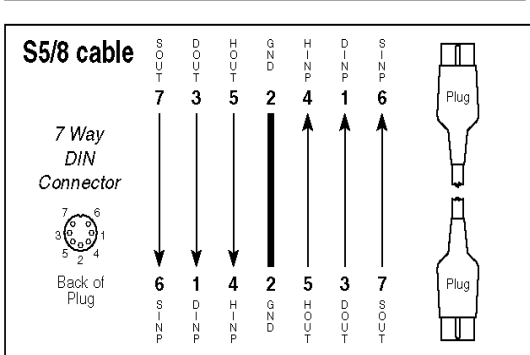
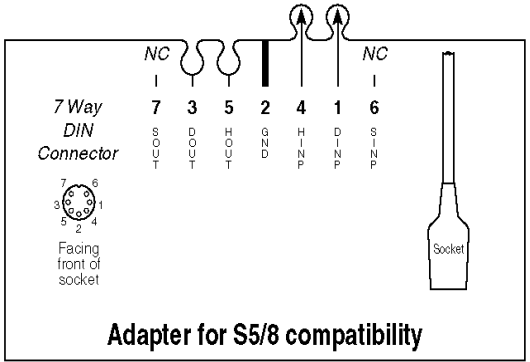
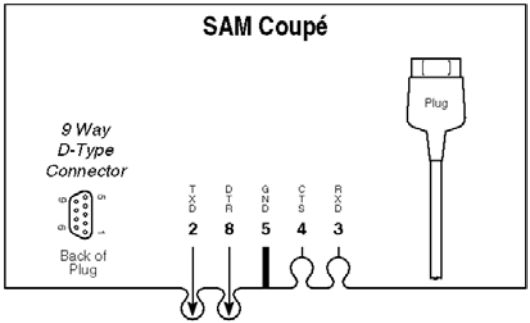
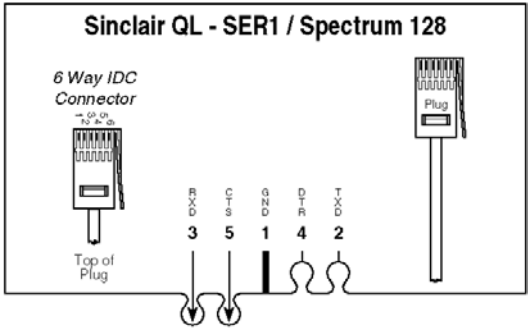
TxD (input)  
CTS (output)  
GND  
RxD (output)  
DTR (input)

### **Further information**

This article is based on graphics and text released as part of the Amiga Qdos Emulator, so you can find machine readable files of the diagrams - in monochrome packed IFF format - on the Amiga Qdos 3.20 SOURCE disk, in the sub-directory SerialConnections.

The authors would be interested to hear of details for third-party Spectrum serial interfaces such as the Swift Disc, Rotronics Wafadrive, and any others that may be in your collection. Please send details, care of the Editor, so that we can prepare graphics for these as well.

Next issue we shall cover the serial ports on Apple Macs and the remaining Sinclair machines, and a cheap way to link lots of machines serially.



# THE SPECTRUM +2C ROM

## BY NAMCO

The Spectrum Plus 2C ROM is copyright by nobody for nobody cares about the Speccy anymore but us, the old-school programmers. A big F\*CK YOU to Amstrad for completely f\*cking up the +3 ROMs with useless bullshit and bugs, bugs which any hobby programmer wouldn't have created.

I would like to thank nobody for making this project possible - i did it all on my own. Well, maybe Dr. Ian Logan and Dr. Frank O'Hara for writing the most awesome Speccy manual I know:

### *THE COMPLETE SPECTRUM ROM DISASSEMBLY*

Even those f\*cked up big time, though - it's all in HEX. Bah.

NaMcO  
namco@netc.pt

### **What the heck is all this +2C ROM thing ?**

Well, it's simply a new ROM for your 128K Speccy or +2 Speccy that has had a few bugs (tons) fixed and some other things changed. It might not run some odd program in BASIC, but whatever ran in machine code over the old ROM will run with this one as well. Who programs in BASIC anyway, except to do machine code loaders ?

### **Why man ?**

Well, I know there's tons of ROMs out there that do this and that and that but the fact is that most are 48K only and most won't work with ROM0 of a 128K Speccy. There is a special one i liked a lot and inspired me to do this one, modified by Andrew Owen, but for god's sake why the hell did you completely fuck up the keyboard ? And what the hell is that butt-ugly (C) message for ? Anyway, Andrew's ROM won't work on my 128K so i decided to go on and create something that does, with most bugs fixed (some REALLY had to stay out, the 128K uses some ROM1 positions that i couldn't touch - what does it do on address 00019 ??) and the +2C ROM popped up. Why the name +2C, well the last was the +2B, so...

### **How compatible is it?**

Let's say it is 100% compatible with the 128K's ROM0 and ROM1 (not). The draw routine was changed to use full screen, so some calls to the PLOT routine will have to be changed to handle this, whether they are made from machine code or BASIC. There is no COPY command, and the LLIST and LPRINT commands are simple LIST and PRINT now. I don't think anything else is changed in a way that will affect program operation.

I tested it with over 1000 games (literally) and demos and all ran perfect except the odd one that used the DRAW command (still worked but lines appeared on different places - offset 16 pixels down).

### **So, tell me, what did you mess with anyway ?**

Well, here's a detailed listing of what i changed in this ROM. Some stuff i might have forgotten to list is still there ;)

- Added 16-bit POKE. Where was your head Sir Clive ? POKE NN,XX is now possible and useful like hell. Shame you have to have this ROM to work with it or else "B Integer out of range" on other Speccies.

- DRAW PLOT and CIRCLE can now use the whole screen editor (WHY Clive?).

Try PLOT 0,191: DRAW 255,0: DRAW 0,-191 it's fun. or maybe this one CIRCLE 127,95,95.

Funnier. I would have added a real-time CIRCLE routine but i had no room to put it on.

- There's a new FREE command added instead of COPY. It will tell you the amount of free RAM to work with on BASIC programs. It was inspired on Andrew Owen's ROM, but mine is handled like a real error and doesn't print ", 0:1" on screen just to be pretty.

- Changed the 48K RESET routine so that it only uses 1 byte (0). Looks

like the 128K one now. Useless, but i like the effect.

- Fixed the CHR\$ 8 bug. If you did PRINT AT 0,0;"X";CHR\$ 8;"Y" on a normal ROM, the position isn't handled properly and it messes up with the attributes on screen.

- Fixed the CHR\$ 9 bug. This routine fails to store the position on exit and so if you PRINT "X";CHR\$ 9;"Y" you would get "XY" and not "X Y".

- Fixed the STR\$ routine bug (thanks Owen). This routine would fail to print expressions such as "2"+STR\$ 0.1 correctly because of a value left on the calculator stack which should have been deleted by the PRINT-FP routine.

- Fixed the division bug which caused values like 1/10 or 1/1000 to be rounded incorrectly.

- Fixed the well known INT -65536 bug. It would display -1 instead of the correct value of -65536

- Fixed the key handler at the "scroll?" prompt. No more messing around with extended mode or true video on it.

- Fixed the double store bug as reported on page 172 of the ROM disassembly manual. My version at least.

- SAVE colours are always BLUE+CYAN and there's no pause between the header and bytes. This was made just because i like it more like that.

- LOAD colours are always BLUE+WHITE and the lead signal is captured much faster, allowing load of blocks with a tiny lead.

- Speeded up the keyboard repeat routines to something more enjoyable in 48K mode.

- Removed the error code display in error messages. You used to see "K Invalid colour, 0:1" and you will now see "Invalid colour, 0:1".

- Speeded up the MAIN-4 execution by a few T-STATES, might cause some differences in BASIC programs (hardly - but i thought i'd let you know).

- Added a very basic tape header reader that only reads BASIC or CODE headers. No room for more. Replaced the command LPRINT with READER, which has no effect on 128K since it has its own print routines.

- Changed a few messages such as:

- "Start tape, then press any key" - "Press REC & PLAY, then any key"

- "scroll?" - "Scroll?"

- And tons of error reports (including a few 128K ones)

Other minor changes consist in the copyright message that was modified on both ROMs (i like this one better, it's just that), some error messages were also changed in order to give me room to add tiny bits of code.

Fixed a few 128K ROM calls, apparently the 128 ROM uses the 48 more than itself...hahahahahah.

There are more changes for sure, but i don't remember everything i did :P

### **Things i wanted to add but there wasn't room/patience**

- LLIST to display a clean listing of BASIC programs. No color codes, no hidden lines, etc etc.

- Decent header reader with name, DATA support, show variables length and name, etc, etc. This was written but took 385 bytes and i only had 70 free on the whole ROM :P

- Realtime CIRCLE. It's 650 bytes long, same problem as above :/

### **Known bugs**

- The FREE command isn't 100% pure but since it works and the problem it causes is minor, i didn't debug it. Type the FREE command and then cause a syntax error by typing "PLOT" alone and the message "NONSENSE in BASIC" or in this new ROM "Unknown Error" will appear.

- This isn't exactly a bug, but the FREE command doesn't work in 128K mode. The computer still thinks it's COPY and directs it to the COPY routine on the 128K ROM. Could be changed someday, if i get some time to reprogram it. The same happens to LLIST and LPRINT which are directed to their own routines on the 128K ROM.

- As above, the READER command doesn't work in 128K mode for the same reason - 128K ROM has its own print routines (which are nice at least).

### **Usual bullshit that people write in the end**

Many thanks to my girlfriend, unlike many others, she rocks and she supports me if i want a few hours for myself to work on my stuff. Thanks for being great. I love you, and my Speccy.

Thanks to Amstrad for f\*cking up so much our beloved +3. You made it a complete useless piece of shit, and made me reprogram my ROMs just to get the "0 OK, 0:1" message right when i type "SPECTRUM" in 128K mode.

Thanks to Andrew Owen for modifying that 48 ROM and inspiring me to work on my own ROM and make it better. Shame about:

- The completely crap keyboard mapping
- The extremely ugly FONT
- The even uglier copyright message upon RESET

If you don't like something on my ROM, remember i didn't force you to use it and that i made it available in case someone actually wants to use it or get inspired by it or modify it even more or even fuck it up completely.

NaMcO, namco@netc.pt  
04-11-2000

## **+3E ROM SYSTEM GARRY LANCASTER**

At long last I've got around to updating the +3e ROMs! I hope you'll agree the new version (v0.87) was worth waiting for; there are a large number of useful changes, including:

*Full support for two IDE drives*

*Additional compatibility with some previously unusable drives*

*New commands for renaming partitions and showing current drive mappings*

*Ability to map floppy drives and RAMdisk to any drive letter (yes, you can now have your 3.5inch external drive as A: and the 3inch internal drive as B: if you want!)*

*Extensions to several commands so that drive mappings, default drive, Editor/BASIC colour schemes etc can be automatically set up each time you turn the +3e on*

*Improved boot speed for single-harddisk systems*

*Several fixes to minor +3 problems*

You can get the ROMs and full details from the new website (don't forget to update your links/bookmarks!) which is now at:

[http://www.z88forever.org.uk/  
zxplus3e/](http://www.z88forever.org.uk/zxplus3e/)

# LETTERS

*Your feedback about the magazine, the Sinclair world, or anything in general is most appreciated. Star letter gets a useful mystery gift! Write or email to the usual address.*

I've read your magazine. it is a great job, nicely done and I want to encourage you to keep the flame of Speccy.

You wrote about someone's collection of Speccys, this is mine: A year ago I only had my rubber Speccy with tape and a couple of interfaces (centronics & joystick) and my old QL with a faulty keyboard. I began my collection and now I am the proud owner of:

1 Rubber 48K, 1 Rubber 48K with a TIMEX DISK interface. it came with the controller, the power supply and a 3" unit. Thanks to Jonnhy Reb (Portuguese Timex guru) I have re furnished it with 2 standard 3,5" units. TOS is the best disk op system I've ever seen for Speccy. A +128 with external keypad (faulty keyboard, looking for repair), A +2 grey, A +2 grey with a DISCiPLE interface with its 2 3,5" disks A +2A Black with its pistol, A Spanish QL (FAULTY), A English Q L , a Centronics printer interface for 48k, a Interface multijoystick and a programmable joystick interface3.

Plenty of original tapes (around 60)  
Plenty Magazines English & Spanish  
Plenty of Maps and instructions photocopies for non-

original tapes .  
Copsys of the "Lords of Midnight"  
MAP from CRASH (I think)  
Pijamarama and Jet Set Willy Maps

My goal is to get a 48+ and a +3 in order to complete the saga.

By the way, do you know any place where I can have my Spectrums repaired ?(I live in Spain but it doesn't matter) Another goal is passing 128K games to Disciple and 48K games to TOS. Could you tell me about a good tape to disk transfer program. I have the LERMS but no instructions!

Regards  
Alfonso R de Trio  
CHATHAM TECHNOLOGIES,  
ESPAÑA

*That's a pretty decent setup! I think that it is much more economical to buy another machine, rather than pay to get one repaired. 48+ machines are pretty common and cheap at the moment. Should I be able to pick one up I'll send it along.*

*As for tape to disk transfers, did you know that we actually own the rights to the LERM software? I was always a +D user and used a program called TRANSIT, written by our good friend Mark 'MIKTOR' Harris. Check out our PD website for some decent Disciple copiers.*

Hi , I just visited your site, and looked to link at my site :-)))))) . There writes something about projects from Kevin Gurd ! :-) I even don't know who is it. Btw. name of my site is Spectrum Hardware DIY . And all projects are from myself. Tripod has new form of addresses, so it is:

<http://piters.tripod.com/zx.htm>  
Cheers, Pera

*Who is Kevin Gurd? He's the UK's finest home-grown hardware designer and builder. We've been honoured to have been featuring his projects for years. I fondly recall reviewing his voice recognition system on my Spectrum! He's still active and was last beavering away writing new ROMs for the +D. Thanks for your URL, we will add it to our links page at the Alchemist website.*

Thanks very much for sending me a copy of Z88 User/AlchNews. I very much enjoyed reading the magazine and catching up on what's happening within the Z88 and Sinclair worlds - the clone piece was quite an eye-opener! I shall certainly point people who approach the Z88 Software Library for information in your direction. Perhaps there would be interest, from your side, on something about the Library in Z88 User - let me know if there is.

Currently, the Library is still "open" but very quiet. I have something over 200 (I can't remember - I'm on a train!) programs for BASIC, zBase and also document files in the

Library and would really like more people to share this resource!

Ian Braby.  
Z88 User's Club Software Library

*I'm glad you enjoyed Z88 User, for your dedication in keeping the library going you'll get free issues! Purchasing the library when I did certainly opened my eyes to the Z88 and what it's users had done. Before this I didn't think there was much support for the Z88.*

Hello Andy,  
I've got around to reading AN 34 which you kindly sent me (I didn't get AN 33 - must have got lost in the post - got any spares?) and very good it is too. Your experiences with the newsgroups leads me to stay away from them. Have you considered starting a Forum on the web - there are a free ones around and act rather like newsgroups. Nice to see a review of GAC, my favourite utility of all time. I was appalled to see how little there was on the web to do with GAC so I've started putting support for it on my own web site. There was a zine available in the 80's called Adventure Contact (sister publication to Adventure Probe) - it would be nice to get them onto the web if copies are still in existence as they gave some great tips for all the adventure creation packages.

Good luck with the next run of AN (I didn't realise you had such a large number of subscribers). I'm not sure if I still qualify for freebies - if not can you let me know what the 12 month



subscription rate is and I'll send you some money (or take another article for the next issue from my web site if there's one you like). Thanks again.

Regards  
Nick Cheesman.

*I must agree that forums are much better than newsgroups, and you don't have half the hassle setting it up. For my research on the Amiga I visited a very good forum, whose users gave me lots of help, advice and material.*

*Now that GAC is freely available and much more useful since Garry Lancaster's WHAT NOW? program, I very much want it to be a regular part of the magazine. Adventure creating is so very easy to do and is akin to writing a book. The difference is that you can explore it much further. I became hooked on adventuring way back in 1981 with a ROM cartridge of Pirates Cove on the Commodore Vic-20. There were no graphics whatsoever but the game had so much depth and seemed such an escape from the real world. From there I wrote a couple of very small adventures thanks to the listings in the INPUT magazines.*

Hi Andy,  
The Issue 7 copy you sent me is EXCELLENT to say the very, very least. It arrived yesterday, but I didn't get home until today, and I spent the first 10 minutes in a state of shock, it looks soooo good! I

think the layout is exceptional, and very professional looking - a true credit to you and Linzi. Congratulations due all round - I'll bet Bill is pleased. It showed up my paltry DTP efforts a lot :-)) Seriously, it was a great effort - well done.

I enjoyed the way you have Alchnews and Z88 User in one - nice idea, hope it works, which I think it will. I'd wager a lot of Z88ers are former Speccy users, like me (and you) and it will therefore appeal to the masses. It deserves to. I loved the articles on the different incarnations of the QL/Speccy/ZX81 worldwide, I had no idea there were so many - excellent stuff and enjoyable reading - I'm glad I called home for the post and some clean shirts! I settled down after work this evening in my hotel (away from home, and using a GSM and Laptop to send this!) and with a cup of tea, enjoyed every page

Darren Branagh, former editor.

*Cheers mate, but the thanks go strictly to you for launching it in the first place. If it wasn't for you, AlchNews would still be an electronic affair and was so time intensive to create I probably would have quit by now.*

*MY DTP skills are improving very slowly! I need a better quality digital copier to really get the finish to the same standard as the masters that come from the laser printer. Hope you can submit something once in a while!*

# LISTINGS: SIDEKICK 128

```
1 REM * SPECTRUM SIDEKICK *
2 REM  Loader/ Relocator
3 REM
10 LOAD "SIDEKICK.C"CODE 48641,343
25 FOR Z=50000 TO 50009: READ V: POKE Z,V: NEXT Z: DATA
    243,62,189,237,71,237,
    94,251,201
30 LET AH=190
40 LET VT=189
80 LET VECTTAB=VT*256
90 LET ADDRESS=AH*256+AH
100 CLS
110 PRINT "Address  :";ADDRESS;" to ";ADDRESS+153
120 PRINT "Vector Table:";VECTTAB;" to ";VECTTAB+256
140 PRINT ""1.. Change address"
150 PRINT "2.. Change vector table address"
160 PRINT "3.. Run"
200 LET L$=INKEY$
210 IF L$="1" THEN GO TO 1000
220 IF L$="2" THEN GO TO 2000
230 IF L$="3" THEN GO TO 3000
290 GO TO 200
1000 INPUT "Address:=nr*256+nr""Enter nr(93-190):";AH
1010 IF AH>190 OR AH<93 THEN GO TO 1000
1090 GO TO 80
2000 INPUT "Vector table: ";VT
2010 IF VT>190 OR AH<93 THEN GO TO 2000
2020 GO TO 80
3000 IF (ADDRESS>=VECTTAB AND ADDRESS<=VECTTAB+256) OR
    (ADDRESS+154>=VECTTAB AND
    ADDRESS+154<=VECTTAB+256) THEN PRINT #0;"Program is in Vectr
    Table.": BEEP 3,0:
GO TO 100
3060 RESTORE 3500
3070 READ B
3080 FOR F=1 TO B
3090 READ C
3100 LET D=PEEK (C)+256*PEEK (C+1)-48830+ADDRESS
3110 POKE C,D-256*INT (D/256)
3120 POKE C+1,INT (D/256)
3130 NEXT F
3200 FOR F=0 TO 256
```

```

3210 POKE VECTTAB+F,AH
3220 NEXT F
3322 FOR F=0 TO 154
3325 POKE ADDRESS+F,PEEK (48830+F)
3327 NEXT F
3330 POKE 50002,VT
3340 SAVE !" "CODE 0,54272
3344 LET C=VECTTAB
3347 IF VECTTAB>ADDRESS THEN LET C=ADDRESS
3350 CLEAR C
3360 RANDOMIZE USR 48641
3365 RANDOMIZE USR 50000
3367 PRINT "Press SYM SHIFT & SPACE to flip into alternate 128k mode."
3370 STOP
3500 DATA 4
3510 DATA 48868
3520 DATA 48958
3530 DATA 48980
3540 DATA 48658
9999 SAVE "SIDEKICK" LINE 0: SAVE "CODE"CODE 48641,343

```

48641	F3 F5 C5 D5 E5 DD E5 FD	48833	01 FE 7F ED 78 E6 03 28
48649	E5 08 D9 F5 C5 D5 E5 ED	48841	05 C1 F1 C3 38 00 D5 E5
48657	73 56 BF 3A 5C 5B 6F FD	48849	DD E5 FD E5 08 ED 5B 83
48665	21 00 40 DD 21 09 C0 01	48857	5B 2A 85 5B D9 F5 C5 D5
48673	FD 7F AF 57 3C 67 CB 3C	48865	E5 ED 73 56 BF 3A 5C 5B
48681	84 B5 67 FD 5E 00 7C ED	48873	E6 F8 6F FD 21 00 40 DD
48689	79 DD 73 00 7D ED 79 7A	48881	21 09 C0 01 FD 7F AF D9
48697	11 01 00 FD 19 30 0E CB	48889	4F D9 3C 67 CB 3C 84 B5
48705	45 20 16 7D F6 07 6F FD	48897	67 FD 5E 00 7C ED 79 DD
48713	21 00 EC ED 79 DD 19 57	48905	56 00 DD 73 00 7D ED 79
48721	30 D9 3C DD 21 00 C0 18	48913	FD 72 00 11 01 00 FD 19
48729	CA 3A 5C 5B ED 79 E1 D1	48921	30 0E CB 45 20 18 7D F6
48737	C1 F1 D9 08 FD E1 DD E1	48929	07 6F FD 21 00 EC ED 79
48745	E1 D1 C1 F1 FB C9 00 00	48937	DD 19 30 D5 D9 79 D9 3C
48753	00 00 00 00 00 00 00 00	48945	DD 21 00 C0 18 C1 3A 5C
48761	00 00 00 00 00 00 00 00	48953	5B ED 79 ED 7B 56 BF E1
48769	00 00 00 00 00 00 00 00	48961	D1 C1 F1 08 D9 22 85 5B
48777	00 00 00 00 00 00 00 00	48969	ED 53 83 5B FD E1 DD E1
48785	00 00 00 00 00 00 00 00	48977	E1 D1 C3 CA BE 00 00 00
48793	00 00 00 00 00 00 00 00	48985	00 00 00 00 00 00 00 00
48801	00 00 00 00 00 00 00 00		
48809	00 00 00 00 00 00 00 00		
48817	00 00 00 00 00 00 00 00		
48825	00 00 00 00 00 F3 F5 C5		

**Sidekick** is a remarkable program, not only for its complexity and uniqueness, but its size.

The program is a rare breed of programs, one which utilises the extra 64k RAM in a 128k machine. Such programs can probably be counted on just one hand.

Using the extra memory in a switching fashion, *Sidekick* allows you to have **two** virtual Spectrums running, well, side by side!

### PROGRAMMING

Start by entering the BASIC program and saving it to your preferred storage medium. You can make changes to line 10 which contains the machine code loader.



Line 9999 is a standard SAVE routine.

The machine code is in HEX. It was originally two separate pieces of code, hence the zero bytes at 48751 decimal. I've used hex for the listing because it's probably the easiest format for people to type in. Yes, Assembler is probably more meaningful and less prone to errors, but a bit harder to find and learn to use, especially with no manual. A hex editor program can be found almost everywhere and needs no complicated instructions. You could even use the Multiface to enter the code.

## NEW WILLY GAMES

The pictures across and below are taken from Andrew Broad's brand new Jet Set Willy and Manic Miner spin-offs based upon *Lord of The Rings* and *The Hobbit*. They can be found at:

<http://www.cs.man.ac.uk/~broada/spectrum/download>

We'll be featuring it in more detail next issue.



# RETRO: THE SINCLAIR QL



In 1984, Sir Clive Sinclair made a bold step from the home entertainment computers which had made his name and fortune and released a business orientated machine, the first of two (three if you count the Z88), of his career.

While not a flop as such, especially compared to the *Sinclair PC* - his other business machine - it didn't quite hit the mark and critics were quick to slam it's faults and gripes and cost.

The QL, or Quantum Leap, was a most powerful machine, especially if

you had previously owned a Spectrum. The basic model got a 8 MHz 68008 processor, 128 Kb of RAM, 48 Kb of ROM, two "microdrives" (looped tape cartridges with 100 Kb storage capacity) units and a 512x256 pixels screen in 4 colours or 256x256 in 8 colours & flash mode. It had two 'game' ports, two serial ports, external microdrive ports and a simple network.

The machine came with a very comprehensive manual (remember those?!), and a software suite by Psion, offering word processor

(Quill), Database (Archive), Spreadsheet (Abacus) and Graphics (Easel) - the Microsoft Office of it's day!

It was a couple of years after it's launch, in 1987, that I got my first QL: an second hand unexpanded 'JS' model with a power supply, TV lead, manual (not the original) and the programs Quill and Archive. Sadly, being a poor student at the time, it was an uphill struggle to invest money into the beast. My city library had a large collection of QL books, which helped me immensely in finding out how it worked and how to program it. There was also a lot of support with a magazine on the news-stands (*QL WORLD*) and program listings in many magazines, including *Your Computer* and *PCW*.

After numerous microdrive failures and their high cost, I sadly gave up on the QL. We parted company in a second hand shop in 1989 and that was the end.....

Until 1996 when I began to take an interest in emulating. Some bright spark had decided to create an emulator called QLAY. It was quite an impressive program, but software was limited and after a quick mess around, it was consigned to my collection.

And then a few months ago, Simon Goodwin got in touch. We've known each other a few years but lost contact a while ago. He'd seen Bill Richardson and *Z88 USER* at a QL show down south and got in touch.

He had seen the article on Sinclair Spectrum clones and asked why I had not included QL clones. Since I'd had no dealings with the QL for many years, I'll leave it to Simon to take up the story of the QL:

### **QL's AND CLONES** **Simon Goodwin**

OK, at that time the state of the art in QL clones was the CST Thor XVI first made in Stevenage, then in Denmark; about three times the original QL speed, with a 8 MHz 68000 and 2 MHz 6809 co-pro, 16 bit RAM expansion to several megabytes, and SCSI on board; this was the follow-up for the Thor 1 and Thor 20 (8 bit 68020 with small 32 bit cache) which were based on Sinclair boards. The Thor XVI was a true clone as it had no Sinclair parts and a new (but strongly influenced, compatible) OS. It also had 16 colour graphics and 8 bit mono sound.

Within a year or two of your owning one, the base QL was boosted to four or five times the speed and disk capacity when Miracle systems made the Gold Card—a 16 MHz 68000 with 2 Mb of 16 bit ZIP RAM and a controller capable of HD (1.4 Mb) and ED (3.2 Mb) floppy disk access at 50 or 100K/s, respectively. A lot of people still use those.

The current QL expansion limit is the Super Gold Card which arrived in the mid-1990s with 4 Mb of 32 bit RAM and a 24 MHz 68020, typically three or four times faster

than the Gold Card, and hence ten to twenty times the speed of an expanded QL, and up to 40 times faster than a 128K machine.

It does not have any bigger floppy drive but you can use QUBIDE (IDE controller) with it for ZIPs, LS120s, etc, as well as fixed platter hard drives.

QUBIDE is a through-port design with the same expansion connector as the original QL so it works on any model (or Thors) but extra RAM is pretty vital for the disk map.

We are waiting for a board based on the Coldfire from Zeljko Naticic, the designer of the Aurora QL graphics card - he's moved from Croatia to the USA which is delaying this, but we expect it to be two to four times faster than the Super Gold Card when it arrives. Coldfire is a cost-reduced version of the 68040 originally made for HP printers, without floating point or memory management hardware and with smaller caches (3K) but with the same ability to access up to three addresses at once.

Meanwhile Peter Graf in Germany has produced the Q40, a true QL clone on an ATX form factor board with buffered serial and parallel ports, native hires high colour as well as QL compatible graphics modes, and a 40 MHz 68040, three to five times faster than the Super Gold Card, 40 to 1000 times faster than the old QL (the latter using the hardware FPU in the 68040 to boost SuperBASIC

transcendentals). The Q40 is built by Tony Firshman and sold by Qbranch in the U.K.

These run Linux 68K, Classic Qdos (now freeware) and a port of Tony Tebby's 'Qdos compatible' SMS-Q which has stereo sound and 65536 colour graphics.

There is also an unreleased Q60 version based on the 68060, which is three way superscalar and manages 240 seriously CISC MIPS at 80 MHz, putting it in the midrange Pentium class (a single 668060 instruction can do up to three times as much work as an Intel one) and capable of running typical original Qdos tasks hundreds of times faster than the original hardware.

I'm running three slightly slower 68060s here with Qdos Classic, on 32 bit Amiga hardware. Qdos emulators that ran a modified OS without interpretation (i.e fast) also exist for the Atari ST and TT computers.

There are several software Qdos emulators - no match for the 040 or 060 native boards but pretty good on a modern Mac, Linux or Windoze box: these include QLAY, QPC, UQLX and QEmul.

There are getting close to the speed of the hybrid emulator, the QXL, which uses a 20 MHz (later 25 MHz) 68040 on an ISA board with up to 8 Mb 32 bit local RAM and software

on the PC and 68040 sharing the work of display and device access; this means all the PC devices can be used, but not as quickly as on a native 68K, or even as smoothly as a single-processor emulation. But a QXL delivers a lot of Qdos CPU power and deserves mention in any review of Qdos clones, even though it has been eclipsed recently by more tightly-integrated systems.



*Text by Peter Graf*

***The New Sinclair QL Successor  
Motorola 68040 / 40 MHz · 32 Bit-  
Bus · High-color graphics · Sound***

The Q40 hardware replaces the Sinclair QL by a modern system delivering much more speed, graphics, storage and peripheral capabilities. It's a new designed mainboard to run SMSQ/E or QDOS on a Motorola 68040 processor. There is also Linux for Q40.

**Q40 Mainboard**

Like the original QL mainboard the Q40 is a complete solution including graphics, peripherals and sound. It fits directly into an industry standard case. No parts from an existing QL, like CPU card, backplane or keyboard interface are needed.

**Processor**

The Q40 mainboard is equipped with a Motorola M68040 CPU

running at 40 MHz. It comes with the full version of the CPU with Memory Management Unit and Floating Point Unit.

**RAM**

It's possible to have 4 MB up to 32 MB of DRAM. EDO or FPM memory modules can be used. Two 72 pin PS2-SIMM sockets make for simple upgrading. No jumpers required for size detection.

**ROM**

256 KB, data bus 32 bit wide by using two 16 bit devices. The sockets support up to 1 MB.

**Graphics**

High speed graphics chipset and 32 bit dual-ported video RAM. 72 Hz vertical refresh rate, non-interlaced in all modes, dual scan capability for the low resolutions. Output for multisync monitors with at least 38 kHz horizontal frequency. 9 pin SubD connector (PS/2) or 15 pin HD connector with adapter.

**Video modes**

QL mode 8 256x256 pixel, 8 colours  
QL mode 4 512x256 pixel, 4 colours  
High color mode 512x256 pixel, 64K colours  
High color mode 1024x512 pixel, 64K colours

**Keyboard Interface**

Port for MF-102 keyboards. 5 pin DIN connector.

**Sound**

Stereo digital-analog converters, 10kHz or 20kHz sample rate selectable. Line and headphone



outputs.

### **Clock and Nonvolatile RAM**

Battery buffered real time clock  
2 KB nonvolatile static RAM

### **Disk Interface**

Enhanced IDE Controller for 2  
Harddisks (16 bit wide data transfer)  
Floppy Controller for 2 HD floppies

### **Ports**

2 serial ports with 115200 Baud  
1 parallel port  
1 joystick port  
Disk interface and ports are on a  
small IDE / Multi IO card that  
belongs to the mainboard.

### **Extension Slot**

The mainboard has two extension  
slots, one of them is occupied by the  
IDE / Multi IO card. There are 16  
data lines and 20 address lines, all  
signals are buffered and have a well  
defined timing. Signals and pinout  
also allow some ISA cards to be  
used in the slot.

### **Power Supply**

An industry standard power supply  
can be directly plugged into the  
Q40.

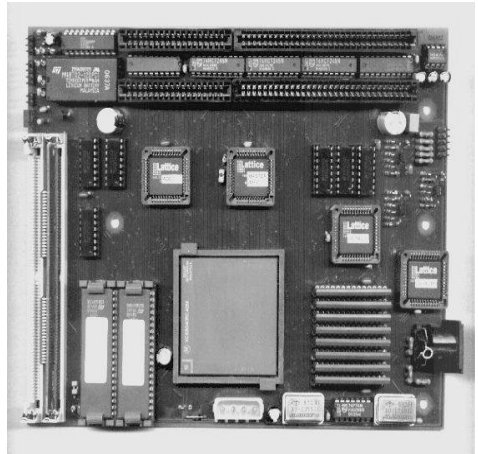
### **A complete Q40 System..**

.. is a Q40 Mainboard in  
combination with IDE Harddisk and  
HD Floppy mounted in an industry  
standard case with power supply,  
and a MF-102 keyboard.

### **QL Compatibility**

QL screen modes 4 and 8 are  
directly hardware compatible,  
ignoring mode 8 flashing. The 50 Hz

frame interrupt is available. Memory  
map and interrupt handling are  
similar, but ports have changed.  
Microdrives and the slow QL  
network are not supported.



## **CHOICE OF OPERATING SYSTEM**

### **QDOS**

QDOS is the original Operating  
System of the Sinclair QL computer.  
Mark J. Swift has developed an  
adaption for the Q40 and calls it  
QDOS "classic". It has been the first  
operating system available for the  
Q40. The latest version is  
"JSßp" (18.09.1999). Major features  
are:

QL floppy disk support

Hard disk support via QubIDE ROM  
(sources are commercial and not  
available)

System variables movable

Screen modes 4 and 8 both  
supported

SER driver up to 57600 baud

Keyboard history from standard <ALT><ENTER> combination  
For compatibility, data and instruction caches can be enabled/disabled

QDOS utilities disk available

Based on a JS ROM with many JS ROM bug fixes

Pointer Environment runs and also QPAC2

Source code included

NEW: It's now possible to boot QDOS from SMSQ/E with the Q40 Softrom toolkit!

NEW: Sampled Sound System SSS! Now you can Play music on your QDOS-Q40! Check out some Alerts or music (with qsplayer).

NEW: SuperBASIC BEEP command

### **SMSQ/E**

SMSQ/E is a small and efficient operating system. It's similar to QDOS but comprises new concepts and capabilities. SMSQ/E is developed by Tony Tebby. Current version is SMSQ/E 2.98:

Screen driver and windowing system, Graphic Device Interface Version 2

Device Interface Version 2

Hard disk support

Floppy support

SMS Sampled Sound System

Serial and Parallel ports

Mouse driver

High Color Support: 65535 Colours at resolution 512x256 and 1024x512

### **Linux**

Linux/m68k is the port of the popular Linux Operating System to the Motorola 680x0 processor family. Richard Zidlicky has done the port for the Q40 in an incredible short time. It's called Q40 Linux and comprises the kernel (Version 2.3.47 at the moment), installation ramdisk and a loader program for QDOS and SMSQ/E. There is also a guide, that explains how to install Linux. Important features of Q40 Linux are:

High color screen driver 1024 x 512 pixels

IDE hard disks and CD-Rom drives

Serial and parallel ports

Floppy

CD-Writers

Ethernet support

## SUPPORT

Providing you don't get stung by a collector, QL's regularly turn up in local classified ads newspapers, for around £20-£40, depending on accessories and condition.

The best sources for information are on-line. I must thank everyone who helped in the writing of this article:

### **Peter Graf: Q40**

<http://www.q40.de/>

### **Thierry Godefroy**

<http://www.users.imaginet.fr/~godefroy/english/main.html>

### **Club QL International**

Club QL International is a self-help group for the less knowledgeable QL user. Membership is free - you just send a disk in a padded envelope (e.g. a Jiffy bag) with return postage every month to the editor Mike Kenneally, or ask for the monthly newsletter to be sent to you by email.

<http://www.geocities.com/SiliconValley/Vista/4807/>

## QUANTA

QUANTA is the independent user group for Sinclair QL users. It was formed in 1984 with the aim of providing an independent source of support for and sharing information about the Sinclair QL. In time, it was to expand its brief to include compatible systems such as the ICL OPD (One Per Desk), CST Thor, Aurora and Q40, as well as emula-

tors of the Sinclair QL running on other platforms.

## QL TODAY

QL Today is the definitive source for news and information around the QL scene. We include not only news and articles about the QL, but about its compatibles and emulators too. We cater for everyone from beginners to advanced users.

QL Today was set up in 1996 and at the time of writing this page, we were up to Volume 4 Issue 4 of the magazine. Each issue consists of up to 60 pages and is only available by subscription by mail order from Jochen Merz Software or QBranch (see below for details).

All the major QL hardware and software suppliers advertise in QL Today - if you want to be informed about news, you need to subscribe to QL Today.

There are lots of articles by famous QL authors - we have series on programming in BASIC and assembler, about graphics, show dates, reviews, hardware, cartoons even!



## QL EMULATORS Thierry Godefroy

What I call a "QL emulator" is a software that allows to run a QDOS compatible system on a computer that does not get the original (in the full acceptance of the word !) Sinclair QL architecture.

This being stated, there are two categories of emulators in the QL world:

\* Those which "emulate" the original QL hardware on a 680x0 based computer: they often just consist in a rewrite of the QDOS drivers.

- Those which fully emulates the QL (including the 68000 processor, which emulation consumes many time...).

The emulators pertaining to the first category are:

**The QL emulator for ATARIs** (ST or Mega ST): made by [Jochen Merz](#), it was using (it is no more in production) a small auxilliary circuit in order to mimic the QL video modes.

**SMS2**: a QDOS "compatible" operating system for Atari. It only used the Atari monochrome 640x400 resolution but did not need any additional hardware (commercial software, no more available). Author: Tony Tebby.

**SMSQ/E**: a QDOS compatible (95%) operating system that runs either on all ATARIs (but the Falcon) without any additional hardware (640x400 monochrome mode), or on VME bus (or VME adaptor) fitted ATARIs together with the QVME video card

(made by [Jochen Merz](#)) offering QL resolutions and up to 1024x768 in 4 colours. SMSQ/E is a commercial software. Author: Tony Tebby.

**QLem**: a patched QDOS that runs on any Atari computer (Falcon included) but which is still in a very rudimentary state (freeware, [available on QLCF BBS](#)). Author: [Johan Klockars](#).

**The QL emulator for AMIGAs**: a patched QDOS, recently named [QDOS "Classic"](#) that runs on any Amiga computer without any additional hardware (freeware, available [here](#) and [on QLCF BBS](#)). Author: [Mark J. Swift](#).

The emulators pertaining to the second category are:

**QemuLator**: a QL emulator for (Power)MACs written in C (shareware, [available on QLCF BBS](#)). An assembly written version is available for some MACs. A [Win-doze version](#) is also available now. Author: [Daniele Terdina](#).

**QPC** and **QPC 2**: QL emulators for 486/Pentium PCs. Written by [Marcel Kilqus](#) and distributed by [Jochen Merz Software](#). They run [SMSQ/E](#). The 68000 emulator is written in 486 assembly language, which ensure good performances for a purely software based emulator. These emulators are at their full advantage into a Pentium notebook (where it is alas impossible to plug a [QXL](#) card). QPC runs under DOS while QPC 2 runs as a multitasking Windoze 95/98/NT application.

**QLAY:** a QL emulator for PCs, somewhat slow and still rudimentary (no true foreign keyboard support, no true polled interrupts, etc...) but free, now runs under DOS/Windows as well as under Linux. Author: [Jan Venema](#).

**UQLX:** a QL emulator for UNIX, a derivative of [Qemulator](#), actively developed (alpha-test) and adapted by [Richard Zidlicky](#). UQLX may also be compiled for OS/2 ! [Available on QLCF BBS](#).

## **QL EMULATORS CD-ROM**

### **By Dilwyn Jones**

This CD-ROM contains a number of emulators of the Sinclair QL computer, along with a number of sample program files.

Some of the software on this CD-ROM may place certain restrictions on use or distribution, some may be subject to GNU public license for example, so please read the individual text files where relevant to make yourself aware of any such restrictions. In particular, please note that the Sinclair QL ROM images supplied are NOT licensed for use in North America. The rights to the Sinclair ROM images for the USA and Canada are jointly held by Frank Davis and Paul Holmgren and applications to use these ROM images should be directed to them at:

Frank Davis: [fwdavis@hotmail.com](mailto:fwdavis@hotmail.com)  
Paul Holmgren: [paulholm@indy.net](mailto:paulholm@indy.net)

A QL-compatible ROM image called

Minerva (version 1.89) is supplied for cases of difficulty. Minerva is a QDOS compatible ROM replacement for the QL, published by TF Services in Britain. Further information from Tony Firshman: [tony@firshman.demon.co.uk](mailto:tony@firshman.demon.co.uk)

Most of the QL software is placed in a QXL.WIN file which most of the emulators available (QXL, QPC, recent PC versions of QemuLator and uQLx should be able to read). For those cases where QXL.WIN access is not possible, I have made archived copies (e.g. ZIP or LHA files) available outside the QXL.WIN, so that as a last resort you can copy the QL programs as zip files onto floppy disk and unzip them on the target computer.

The original archives of each emulator have been stored in a directory called 'archives' on the CD. Expanded versions are contained within their own directories, but if your system has problems accessing the expanded versions from the CD, you can always resort to copying the archives from the CD to your hard drive and expand them from there on your system using your system's normal archive expansion software (e.g. LHA on Amiga, Stuffit on Apple Macs and ZIP on PCs).

## **THE SINCLAIR QL**

The Sinclair QL is a computer originally manufactured by Sinclair Research Ltd in Britain in 1984. Several of these computers remain in use worldwide, although the availability of more modern hardware

has meant that many original users of the QL now either use more modern QL compatible hardware or use another computing platform entirely and continue to use the 'QL' via emulator software such as the ones provided on this CD-ROM.

The real beauty of this unique little computer was its operating system, QDOS, developed by Tony Tebby while at Sinclair Research Ltd. Tony Tebby later left Sinclair and set up his own company, QJump, and went on to develop software for the QL and eventually produced various compatible operating systems such as SMS2 and SMSQ/E for the QL, the Atari ST-QL emulator boards and more recently for the Aurora and Q40 QL compatible computers. QDOS was a pre-emptive multi-tasking operating system which was pretty advanced in its day. The operating system and the highly structured BASIC interpreter SuperBASIC (written by Jan Jones for Sinclair) were sure winners, but the hardware did not really capture the imagination until various expansion options became available for the QL. The original QL hardware comprised of:

- \* 128KB RAM, expandable to 640KB or 896KB (later to 2 or 4MB)
- \* 48KB system ROM, including QDOS operating system and SuperBASIC
- \* Twin 100KB microdrive tape loop drives
- \* 2 serial ports
- \* RGB, composite video and TV modulator
- \* 2 joystick ports
- \* 16K ROM expansion port
- \* Single channel sound

- \* 68008 main processor and 8049 second processor for I/O etc
- \* 64-way expansion port
- \* 2 local area network (QLAN) sockets (2-wire network)

Over the years, memory expansions, disk interfaces and faster processor add-ons kept interest in the QL going, and then emulators began to appear allowing you to run QL software on Amiga, Atari, Intel, Apple Mac and Linux platforms. There are a number of Web sites devoted to the QL, and there is an ample supply of free and commercial software out there for this computer. The QL is well suited for the home hobbyist and tinkerer who likes to dabble in a bit of programming or indulge in some Retro Computing! The open design of the QL and its operating system make it well suited for those who are looking for something just a bit easier and different from the modern complex computer systems.

## THE EMULATORS

**QLay** is a set of QDOS QL emulators for DOS, Windows and Linux by Jan Venema of The Netherlands. This is a freely distributable emulator with no restrictions. You can download the most recent versions from Jan's Web site:

<http://web.inter.nl.net/hcc/A.Jaw.Venema>

**QPC2** is a QL emulator using SMSQ/E running on Windows 95/98/NT machines. This is a demo version of a commercial product

written by Marcel Kilgus, available from Jochen Merz Software in Germany. It needs a minimum of a 486 processor. The full version of QPC2 now includes support for 16-bit colour video (sadly, not in the demo version at the time of writing). There are some restrictions on this version - see the documentation. Support, availability and price details available from the following Web sites:

AUTHOR: <http://www.deuschle.de/qpc/index.html>

PUBLISHER: <http://www.j-m-s.com/smsq.htm>

**QemuLator Lite** for Apple Macintosh is written by Daniele Terdina and is Shareware. There are versions for 68K Macs and for PowerMacs. Further details from the author's Web site at:

<http://www.geocities.com/SiliconValley/Heights/1296>

**QemuLator** for Windows is also written by Daniele Terdina and is Shareware. Further details from the author's Web site at:

<http://www.geocities.com/SiliconValley/Heights/1296>

**QDOS4Amiga** is a QDOS emulator for the Commodore Amiga, by Rainer Kowallik and Mark Swift. It is freeware. Up to date copies may be obtained from most Ami-Net sites:

<http://wuarchive.wustl.edu/pub/>

<aminet/info/www/dirs/aminet/misc/emu/QDOS4amiga1.readme>

**QDOS Classic for Amiga** is a QL emulator for the Commodore Amiga by Mark Swift. QDOS Classic for Amiga is closely related to QDOS Classic for Q40 by the same author. Freeware. Support from:

<http://pages.unisonfree.net/mswift/files/QZ/index.html>

**QeM** is an emulator for certain Atari ST machines, by Johan Klockars. Freeware. Details from:

<http://rand.thn.htu.se/>

**uQLx** is a derivative of the emulation engine used in QemuLator. uQLx is produced by Richard Zidlicky to run on Linux/Unix platforms. Further details from:

<http://www.geocities.com/SiliconValley/Bay/2602/>

## DILWYN'S WEB SITE

More information about the QL, links to QL related Web sites and some QL software to download from his QL Web site:

<http://www.soft.net.uk/dj/index.html>

END.

# TRADING POST

## **ADVENTURE WORKSHOP**

Phil Reynolds  
36 Grasmere Road, OLDHAM. OL2 6SR  
(Adventure software house)

## **BILL RICHARDSON AND CO. (EEC)**

6 Ravensmead, CHALFONT ST PETER  
Bucks. SL9 0NB  
*Email: wnr@compuserve.com*  
*Web: http://go.to/wnr*  
(Z88, QL and SPECTRUM hardware)

## **Kevin Gurd's EPROM Services**

21 Ladycross Road, Langdown, Hythe  
SOUTHAMPTON. SO45 3JR  
(EPROM / hardware designers)

## **CRASHED - now closed**

Dave Fountain  
11 Camel Road, Silvertown, LONDON  
E16 2DE  
*Email: Fountainboy\_uk@yahoo.com*  
*Web: www.geocities.com/fountainboy\_uk/*  
(Bi-Monthly A4 Speccy magazine)

## **DESERT ISAND DISKS**

Michael Bruhn  
Petersnorg 23  
6200 AABENRAA  
DENMARK  
*Email: Frankie@image.dk*  
*Web: www.image.dk/~frankie*  
(Bi-monthly A4 Speccy games magazine)

UK ONLY: C/O Joyce Cook  
32 Dursley Road, Trowbridge. BA14 0NP  
(As above)

## **DOMINO CUBES:**

Mike Fink  
249 West 34th St. 5th floor  
NEW YORK CITY 10001,  
212-695-1811  
*Email: domino-cubes@onebox.com*  
*Web: www.dominocubes.qpg.com*

## **HACKERS HANGOUT - now closed**

Andy Ryals  
29 Dent Drive, Eastmoor Estate,  
WAKEFIELD. WF1 4JG  
*Email: aryals@hotmail.com*  
(A4 Spectrum hack magazine)

## **QL TODAY**

The Bank Volt  
6 Coronation Buildings, Ham Road  
Sussex. BN11 2NN  
*Email: qbranch@qbranch.demon.co.uk*  
(Bi-Monthly A4 QL & compats. magazine)

## **RAKEWELL LTD.**

24 Putnams Drive,  
Aston Clinton,  
AYLESBURY,  
Bucks. HP22 5HH  
Voice: 01296-630617  
Fax: 01296-632491  
*Email: vic@rakewell.com*  
*Web: http://www.rakewell.com/*

## **RETROGAMER**

Keith Ainsworth  
52 Kingfield Road, LIVERPOOL. L9 3AW  
(Bi-Monthly A5 all formats retro magazine)

## **SPECTRUM PROFI CLUB / WOMO**

Im Tannenforst 10, D-51069 KOLN  
GERMANY  
*Email: womoteam@t-online.de*  
*Web: www.womoteam.de*  
(Spectrum & SAM A5 monthly magazine)

## **SINCLAIR USER CLUB / SINTECH**

Rainackerstrasse 4, 70794 FILDERSTADT  
GERMANY  
*Email: sintech@online.de*  
*Web: www.online.de/home/sintech*  
(Spectrum, SAM and MB-02 A5 magazine)

## **TRADE-IN POST**

Victoria Road,  
SHIFNAL. TF11 8AF  
*Web: www.tradeinpost.com*  
(Eight bit hardware and software)

## **Z88 SOFTWARE LIBRARY**

Ian Braby  
1 Butts Cottages, Copse Road, St. Johns,  
WOKING. GU21 1SU  
(Extensive Z88 software library)

**YOUR SERVICE NOT LISTED? Get in touch and you'll be added next issue.**