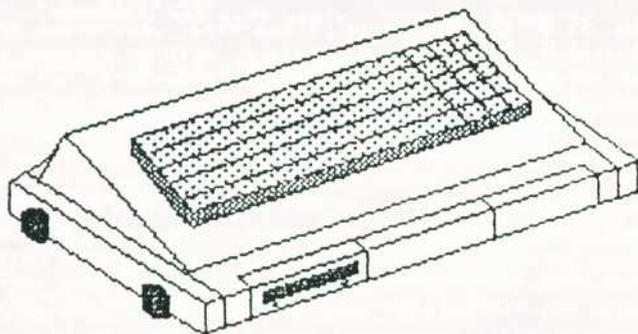


SC_PD3

Powerful Machine code Utility Software
FOR THE SAM COUPE 256/512K COMPUTER.



SC_SPECLONE	Spectrum 48K Emulator
SC_COMPRESSOR 1	Fast Screen and Code
SC_COMPRESSOR 2	Screen Cruncher
SC_DISCLONE	Exact Disc Copier
HUMPHREY	Disc Directory Util

by S.J.NUTTING

Copyright September 90 to March 92

STEVES SOFTWARE

7 NARROW CLOSE
HISTON
CAMBRIDGE
CB4 4XX

TEL 0223 235150
From 8pm-9pm

PUBLIC DOMAIN SOFTWARE

SC_P03 is a compilation of SC_PD1 and SC_PD2 with an extra bonus utility SC_DISCLONE.

There are two separate Manuals for SC_SPECLONE and HUMPHREY (the only program that I did not write, its by Matthew Halt of Manic Minor).

On Disc are the following files :-

1	samos2	17	C	491529,8192	
2	SCSPECLONE	7	BASIC	1	-load this for SC SPECLONE
3	trans	2	C	30000,925	
4	SPECLONE2	6	BASIC	9500	
5	high1 C	65500,30			
6	low 1 C	30000,189			
7	H3 .3	23	BASIC	5000	-load this for HUMPHREY
8	H2 .C	1	C	16384,300	
9	scompress	5	BASIC	9000	-load this for SC_COMPRESSOR 1
10	compcode	2	C	31882,630	
11	sc_comp	9	BASIC	10	-load this for SC_COMPRESSOR 2
12	sc_compcd	9	C	29300,4340	
13	sc_uncomp	1	C	16384,430	
14	scdisclone	17	BASIC	65250	-load this for SC_DISCLONE
15	dlsc1onecd	2	C	32768,1000	
16	tracksou	1	C	471556,54	
17	tracksou A	8	C	98304,3806	
18	DEMO				all other files after are DEMOS of all my Software.

SC SPECLONE, HUMPHREY and the tracksou Source files are freely available to anyone, incl Disc Magazines, The 2 SC_COMPRESSORS can be used, but only the uncomprnss routines riot the programs to enable users to compress screen\$. SC_DISCLONE needs special permission if you would like to use it.

The only condition to the use of my PD programs is that I get a mention somewhere in the Credits.

[This pdf doc was made by Steve Parry-Thomas]
[20 Jan 2005 for sam Coupe Users everywhere.]

SC_COMPRESSOR 1

This utility will compress Mode 3 or 4 Screen\$ and 16K Ram code blocks.

Like many people I collect quite a bit of Public Domain Discs, many containing some or a complete Disc of Screen\$, It's possible to only have upto 32 Screen\$ per Disc, with SC_COMPRESSOR 1 you can generally save twice as many Screen\$ compressed onto one Disc, thereby having a Library of Screen\$ collected together The amount of compression saving on a Screen depends on how complex and detailed a Screen is, Simple Cartoon Screen\$ crunch down by about 80%, Digitised detailed Screen\$ by 20%, most others vary from 30-60%.

On the Disc are two files:-

```
scompress 5 BASIC 9000
compcode 2 C 31882,630
```

Load in scompress, this samll Basic program will Compress and Uncompress Screen\$ to Disc. A simple Menu appears. Pressing key C will prompt you for a Screen\$ file to load in (Pressing RETURN will do a DIRECTORY of the Disc, key M for Menu) Once a file is Loaded in it will be compressed and then the number of bytes the screen has been compressed by (25000 bytes is the normal length of a Screen\$), then the percentage saving out of 100% is then shown.

Next you will be prompted for the filename to save the compressed Screen to Disc ,dont worry about the corrupted looking screen as it's saved to Disc this is normal. Pressing key M will take you back to the Menu, whereby pressing key U will Uncompress a Screen from Disc.

For those who would like to know the technical bits about the compressor, read on. The filename "compcode" 31882,630 is the routine that does all the work it occupies memory location 31882 to 32511, although the routine uses a buffer from 32512-32767, so make sure that the Ramtop CLEAR address is 31881 or lower.

First of all there is a poke to place in the machine code routine if your Coupe is a 256K Machine then:-

```
POKE 31895,14 (512K Sam POKE 31895,30).
```

To Compress a Screen do the following :-

```
LOAD "scr1" SCREEN$:CALL 31882: IF PEEK 31894=1 THEN STOP: ELSE
SAVE "scr2" CODE 507904+DPEEK 31897,DPEEK 31899
```

Note "scr1" is the Screen\$ filename you would like to compress

"scr2" is the Compressed Screen\$ filename to save to Disc

PEEK 31894 is the Flag to say if the Screen can be compressed or no

But alter 507904 to 245760 if you are using a 256K Sam

To Uncompress the Screen just type:-

```
LOAD "scr2" CODE: CALL 31885.
```

To Compress a 16K RAM block of Machinecode POKE 31896 with the RAM page number and then CALL 31888, If PEEK 31894=1 then that Ram block could not be compressed, if compression was sucessful (PEEK 31894=0) you can then save the compressed file to Disc as:- SAVE "filename" CODE PEEK (1+PEEK 31896)*16384+DPEEK 31987,DPEEK 31899.

To Uncompress the RAM block POKE 31896 with the Ram page, and then CALL 31891.

SC_COMPRESSOR 2

This is a more powerful screen Compressor than SC_COMPRESSOR 1, with an easier set up, automatic uncompressing of screen\$ upon loading plus the ability to view a whole set of screen\$ in memory, rather than load each individual screen to view from Disc.

SC_COMPRESSOR 1 can compress most screen\$, but not the palette lines, uncompressing is very fast, and compresses to the equivalent of MasterBasic SAVE MODE 3.

SC_COMPRESSOR 2 on the other hand will compress all types of Screen designs with Palette lines, uncompresses slower to the current screen address, but compresses screen\$ around 15% better than SC_COMPRESSOR 1

To give you an idear of how much screen\$ are compressed down to using SC_COMPRESSOR 2 see below .-

Complex Digitised Screen\$ compress down by about 40%

Simple Cartoon " " " " " 90%

Other types of " " " " " 55%

NOTE SC_COMPRESSOR 2 works with only SAMDOS and MASTERDOS, on Disc are 3 files,-

```
sc_comp          9 BASIC 10
```

```
sc_compcd9 C 29330,4340
```

```
sc_uncomp1 C 16384,430
```

Load in "sc_comp" to compress some screen\$

You are then prompted to input a Ram page number from 1 to 27 for the start of the 32K workspace needed as a temporary area.

For a 256K Sam an ideal Ram page number is 11 (512K 27).

Once done you should now be on the main menu.

Pressing key 1 will compress just one screen, so when you load it in from Disc or Ram Disc the compressed screen will automatically uncompress to cerreent screen.

Pressing key 2 will compress as many screen in memory as possible and save out the set of screen\$ as one file, ideal for sideshows.

So lets try compressing just one screen for the moment to get an idea of how thing work, Press key 1.

You will now be prompted for the filename of the screen you would like to compress, can use syntax like "d3, screen" to load screen from Ram Disc 3 for example.

Next the Ram page of where you would like the screen to compress to, e.g. type 1, this will store the screen at address 32768, a popular place to put machine code.

(also see table on page 4 on Ram page and addresses).

Once done the screen will load in Sams screen memory and start compressing, don't worry about the wield coloured lines that scroll down the screen, this is normal.

After about 30-60 seconds you will see the address of where the compressed screen states and ends as well as the number of bytes the whole crunched down screen used up.

Then you will be prompted for the filename the compressed screen file to save to disc, Once done you should be back to the main menu again.

Now press the ESC key, to drop back to basic, now load in the compressed screen just saved out to disc by LOAD "filename" CODE.

The file will load in and uncompress in the correct screen Mode 3 or 4 and to the correct screen area of either 256/512K Sam.

Note no other files need to be loaded or any CALL addresses to be used, everything is done automatically, but when the screen uncompresses it will use a small area in the system heap from 16384 to 17133.

Going back to the main menu, Pressing key 2 will enable you to compress a whole set of screen\$ from disc into memory.

First you will need to input the start address of where you like the set of screen\$ to be stored from, 32768 is the lowest address.

Next the end address of where the screen\$ can store upto, If you choosen the Ram page temporary storage area earlier in the set up of the program (i.e 11 on 256K, 27 on 512K). Then the maximum address to store screen\$ would be 198607 on 258K Sam and 458751 on a 512K, this would give you upto 160K on a 258 and 416K on a 512K Sam to store screen\$ in.

Now input the Drive no 1-7 you would like the screen to load from or enter 0 for a Dir of Disc.

Next input the screen filename to compress.

(type q as a filename, if you do not want to compress any more screen\$ (press RETURN will bring you on to 2 more inputs the first is the Program number start of the first screen to compress and the second input as the last program number of the last screen to compress, this is very useful if you have a disc full of screen\$ one after the other, you can then make yourself a cup of coffee while each screen is automatically loaded from disc and compressed.

Each screen is compressed one after the other in memory starting from the address you defined earlier upto as much memory as possible, once all screen\$ have been done, a display of each individual screen start address is shown, note down the addresses you will need it later on.

Pressing a key will allow you to view all screen\$ in memory with how many bytes it used up and the percentage savings.

Once you have viewed all screen\$ you will be asked the filename for the block of screen\$ to be saved out to disc.

Now to uncompress the block of screen\$ in your own program as a sort of slideshow follow the below :-

First you need to CLEAR 32787: LOAD "sc_uncomp" CODE and also the block of compressed screen\$.

Some variables need to be set up:-

```
LET r=a temporary ram page storage area such as 11 or 27
LET rr=(r+1)*16384: POKE 16385,r
LET s=the address of the screen you want to compress
POKE rr,mem$(s to s+530000): CALL 16384
```

The above will uncompress one screen, to uncompress all the screen\$ see page 4 for a suitable program.

```

10 CLEAR 32767: LOAD "sc_uncomp" CODE: LOAD "filename" CODE
20 LET r=11 or 27: LET rr=(r+1)*16384: POKE 16385,r
30 FOR s=1 to the number of compressed screen$ in memory
40 READ d: POKE rr,mem$ (d to d+30000): CALL 16384
50 PAUSE: NEXT s: STOP
60 DATA 32768,38624,etc

```

filename is the compressed screen\$ block of code
r is the temporary Ram page storage area
s is the FOR TO loop on how many screen\$ to view
DATA holds the start addresses for each compressed screen

Ram Pages and Addresses:-

```

0 16384 The system variables, SC_COMPRESSOR 2 program area
1 32768 The lowest area screen$ can start to be compressed
2 49152
3 65536
4 81920
5 98304
6 114688
7 131072
8 147456
9 163840
10 180224 The following ideal areas on a 258K sam
11 196608 Ram buffer temporary storage area (2 Ram pages are used)
12 212992
13 229376 samdos/Masterdos Disc Utility Area
14 245760 The screen display area part 1
15 262144 " " " " " 2
16 278528
17 294912
18 311296
19 327680
20 344064
21 360448
22 376832
23 393216
24 409600
25 425984
26 442368 The following ideal areas on a 512K sam
27 458752 Ram buffer temporary storage area (2 Ram pages are used)
28 475136
29 491520 samdos/Masterdos Disc Utility Area
30 507904 The screen display area part 1
31 524288 " " " " " 2

```

SC_DISCLONE

This Utility will copy a whole complete Disc even if the Disc is security protected with partly Formated Tracks, with non standard Tracks and sectors numbers and unformatted tracks. However Discclone cannot cope with non standard sectors which are not 512 bytes in length such as Prince of Persia which uses 5 sectors per Track, each sector being 1024 bytes long.

Why develops a copying Utility that copies protected Discs?

Well this is rather a controversial subject, most Utility software do not have any security, mainly because the Software has to be backed up onto another Disc, for various reasons. However a small number are protected which can be annoying, I know from all the letters I get.

Games Software on the other hand do not need to be backed up as only one disc is needed to run the software, but from all the Disc magazines I read, I hear of so many people who just want a backup copy so that if anything goes wrong with the master they have the backup copy to play with, although you can send the master back to the publishers and they will make another copy, sometimes they will make a charge for this sevice, or the software company has gone down or does not sell the game anymore. This Utility was written by public demand.

LOAD "scdiscclone", you should now see the computer configurations such as which Sam you have either a 258K or 512K. The number of drives 1 or 2, the Rom version number, the Dos you are using either Samdos, Masterdos or MasterBasic and whether you have a 1MB Ram interface.

Next there is a selection of options from 1 to 5.

Option 4 toggles Normal/Fast format, when a disc is to be backed up onto another Disc and you would like load files from it, the loading time can be speeded up if the Disc was specially Formatted (Fast Format), or load in at the standard reliable speed (Normal Format).

Option 1 is the quickest way to backup a Disc this will copy a Disc with or without tracks being formatted and that the number of sectors to a track is 10 (for a sam) or 9 for a PC).

Option 2 is the next security backup if option 1 does not work, this takes quite sometime to backup, especially if there are many unformatted tracks.

Option 3 is for Discs that are heavily secured, and will guarantee that the disc can be fully backed up, this takes a very long time to do so.

Option 5 is for Discs that usually have protected Tracks 208/207 but other tracks are normal. So you can copy the Disc with COPY "d1:*" to "d2:*" or BACKUP "d1" to "d1" etc using basic then use options 5 to copy the protected tracks 208/207, lerm use these tracks a lot.

The best computer set up to backup protected discs is with 2 drives, 512K Sam, If you have not got 2 drives a 1MB interface would help a great deal, otherwise you will have to change the Discs around a few times. Discclone uses it's own Dos routines, if your intrested in them, LOAD in source file "tracksou" with SC_ASSEMBLER 512K, for the routines and info.

Software for the SAM COUPE

£12.50

SC ASSEMBLER

If you have been reading the much praised article in the Format magazine 'Machine Code Without The Tears' by :- Carol Brooksbank and are new to the fascinating world of Machine code.

SC_ASSEMBLER is the ideal program to help you, thanks to the unique automatic autotab editor designed to help the absolute beginner.

Review in 'Outlet' Issue 53 Jan 92 "Simple enough for the beginner powerful enough for the expert".

Format vol3 no12 "A delight to use, it's certainly the one for me".

Highly recommended by Carol Brooksbank

£12.50

SC FILER

A POWERFUL
SAM COUPE
DATABASE

99% Machine code, Data compressed to allow massive storage of data. You can set up the database to your exact requirements, with fields of any size position, colour and charset in 4 different Mode 4 layouts and printouts.

Review in 'Sam Supplement' Issue 7 "Very versatile userfriendly database" 'Outlet' Issue 47 "Most professional looking file management program". 'Enceladus' Issue 7 "definitive filing system, if you need to file anything but this". 'Fred' Issue 9/14 "I would recommend you buy SC_FILER" 'Excalibur' no3 "Best Database around 94%".

£15.00

SC MONITOR

SC_MONITOR is an essential utility to use with an Assembler to help understand, debug machine code programs.

Single step each opcode to see what it does and the effects it has on flags, registers, memory and screen. Various special types of breakpoints will help pinpoint bugs and resets in programs. Unlike other monitors incl CP/M, this monitor copes with all opcodes, paging types on SAM without crashing.

There is also a super fast intelligent disassembler. SC_MONITOR comes with a large, comprehensive and easy to use manual with examples to help beginners

£15.00

SC AUTOBOOT

SC_AUTOBOOT is a new exciting chip for the Coupe. When you now turn on the power to the Coupe with a disc already in the drive, (disc will not corrupt) the DOS will immediately BOOT up.

Rets back to basic if no disc in drive No need to eject disc, turn on power, wait 3 secs, insert disc and press F9. Remains 100% compatible with the most up to date ROM 3.0 chip, which software companies guarantee software to work with 100%. The chip also has a powerful reset button to Break into any program running. The chip is easy to fit with an easy to follow manual.

£2.50

SC PD3

A Completion of SC_PD1 (Specclone-Spectrum emulator, Disc Utility, Screen Compressor 1) SC_PD2 (Screen Compressor 2), also included as a Bonus SC_DISCLONE, a super exact clone disc copier.

MORE INFO

Just send a blank formatted disc & a SAE for Demos/Screen Shots/Detailed Information on current software from STEVES SOFTWARE

FAST ORDERS

If you need any of the above items quickly, then just phone from 6pm-9pm, your order will then be despatched first thing next morning, when goods reach you, just send a cheque or postal order for invoiced items.

DUST COVERS

High Quality Dustcovers, Pure White with Blue Rim Trimming, Waterproof, Machine Washable, Non Shrink, Non Fade

£5.50 SAM COUPE

£6.50 PRINTERS

£7.50 MONITORS

If Ordering Printer or Monitor cover Please state Model.

STEVES SOFTWARE

7 NARROW CLOSE
HISTON
CAMBRIDGE
CB4 4XX

TEL 6pm-9pm
0223 235150

Special Offer Buy
SC Assembler-Monitor
For £24 save £3.50.
Upgrade from Assembler
to SC_Monitor £12

STEVE'S SOFTWARE is a member of TEAM
SAM