The Final Cartridge III+ manual by EDK and SAM.

How to change menu text items and tools/programs...

Download the Hex editor HXD in your favorite language here: http://mh-nexus.de/en/downloads.php?product=HxD

Open the file FinalIII+V4.bin

Do a search for the text-string "tools", choose "All" and press "OK"..

Me HxD - [C:\Users\Gebruiker\Desktop\FinalIII+V4.bin]																	
File Edit Search View Analysis Extras Window ?																	
1 2 → 1 2 → 1 6 ANSI hex																	
Offset(h)	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	OF	
00000000	09	80	Find											5E	95	4C	.€^þÃÂÍ80LL€L^•L
00000010	E4	96	s	earch	for:	ools								80	4C	73	ä-Lû-LL;€Lî€Ls
00000020	94	4C		Datat										F9	80	A2	"L,€ . ©CL.Þ ù€¢
00000030	09	BI		Dataty	pe. []	ext-sti	ing							80	20	2F	.½â€Ê.÷`ù€ /
00000040	80	AS								Sea	arch di	rection	n	A3	FD	AD	€©;H©ùH©BL.Þ £ý.
00000050	11	DC								۲	All			99	00	02	.ÐHÜH©."™™
00000060	99	00	ΠU	nicode	string	1				0	Forwa	rd	1	A9	08	8D	™ÈĐô¢þ©
00000070	82	02	C	ase sei	nsitive					O	Backw	ard		85	В3	20	,.©^.©<²©³
08000000	15	FI						_	OK		0		- II	AA	68	E0	.ý [ÿ Sä ,€Xhªhà
00000090	7F	FC							UK		Car	icel.	3	B9	FC	CF	.õlàßõ.).õ¹üÏ
0A000000	D9	AD	00	DU	00	00	10	EJ	30	07	00	00	HO	4D	47	38	Ù.€Ð.^.õ0.l. MG8
000000B0	37	A9	80	8D	A 8	02	20	BF	E3	A9	7F	48	A9	FF	48	A9	7©€.". ;ã©.H©ÿH©
000000000	42	4C	01	DE	A2	4D	EC	FC	CF	D0	03	CE	FC	CF	A2	00	BL.Þ¢MìüÏÐ.ÎüÏ¢.
000000D0	A0	A0	20	2D	FE	A9	E3	48	A9	96	48	4C	OF	DE	20	DE	-þ©ãH©-HL.Þ Þ
000000E0	35	DE	41	DE	8D	DF	49	DE	73	DE	4F	DE	A0	1F	B9	14	5PAP.BIPSPOP .1.
000000F0	03	D9	30	FD	DO	19	88	10	F5	20	04	A0	A0	03	B9	DE	.ÙOÝĐ.^.Õ¹Þ
00000100	80	99	30	03	88	10	F7	AD	A6	02	FO	03	4C	A7	9F	60	€™0.^.÷.¦.Õ.LSŸ`
00000110	20	A5	FF	20	16	E7	C9	OD	DO	F6	4C	AB	FF	20	41	81	¥ÿ .çÉ.ĐöL«ÿ A.
00000120	20	A5	FF	A 8	20	A5	FF	C9	0D	D0	F9	20	AB	FF	CO	30	¥ÿ"¥ÿÉ.Đù «ÿÀO
00000130	60	A9	6F	48	20	C4	8B	20	B1	FF	68	20	93	FF	A5	90	`©oH Ä< ±ÿh "ÿ¥.
00000140	60	A9	6F	48	20	C4	8B	20	B4	FF	68	4C	96	FF	85	C3	`©oH Ä< ´ÿhL−ÿ…Ã
00000150	84	C4	A 0	00	A9	57	20	80	81	98	20	A 8	FF	8A	20	A 8	"Ä .©W €.~ "ÿŠ "
00000160	FF	A9	20	20	A 8	FF	B1	C3	20	A 8	FF	C8	98	29	1F	D0	ÿ© ¨ÿ±Ã ¨ÿÈ~).Đ

Look what we found here:

00003EA0	00	00	00	00	00	00	00	00	00	0B	00	00	1D	00	00	00	• • • • • • • • • • • • • • • • • • •
00003EB0	00	00	00	FF	CF	CB	00	C3	C1	CE	C3	C5	CC	00	2A	54	ÿïË.ÃÁÎÃÅÌ.*
00003EC0	4F	4 F	4C	53	50	54	52	2A	00	00	78	C1	6E	A 8	28	89	OOLSPTR*xÁn" (‰
00003ED0	60	00	FF	FF	FF	FF	FF	FF	80	C1	74	A 8	78	9D	01	00	`.ÿÿÿÿÿÿ€Át"x
00003EE0	88	C1	83	A 8	78	9D	01	00	90	C1	92	A 8	78	9D	01	00	^Áf¨xÁ′¨x
00003EF0	98	C1	90	A8	78	9D	01	00	A0	C1	AD	A8	78	9D	01	00	~Áœ″x Á.″x
00003F00	A8	C1	B6	A8	78	9D	01	00	BO	C1	C2	A 8	78	9D	01	00	"Á¶"x°ÁÂ"x
00003F10	B8	C1	CD	A 8	78	9D	01	00	CO	C1	D9	A 8	78	9D	01	00	,ÁÍ″xÀÁÙ″x
00003F20	C8	C1	E5	A8	78	9D	01	00	DO	C1	F6	A8	78	9D	01	00	ÈÁå¨xĐÁö¨x
00003F30	D8	C1	02	A9	78	9D	01	00	EO	C1	0D	A9	78	9D	01	00	ØÁ.©xàÁ.©x
00003F40	E8	C1	1A	A9	78	9D	01	00	FO	C1	29	A9	78	9D	01	00	èÁ.©xðÁ)©x
00003F50	F8	C1	36	A9	78	9D	01	00	00	00	44	A9	78	9D	01	00	øÁ6©xD©x
00003F60	00	00	00	00	00	00	00	00	FF	FF	FF	FF	FF	FF	FF	FF	·······ÿÿÿÿÿÿÿÿÿ
00003F70	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	<u> </u>
00003F80	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	<u> </u>
00003F90	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	<u>ŸŸŸŸŸŸŸŸŸŸŸŸŸŸŸ</u>

This is the table with the pointers to the texts in the "Tools" menu. We come back to this menu later...

Do a next search by pressing "F3" and you'll see this:

						12.2										
2E	30	00	2A	2A	2A	54	4F	4E	4C	53	2A	2A	2A	D4	CF	.0.*** <mark>TOOLS</mark> ***ÔÏ
CF	CC	D3	00	31	35	20	D3	C5	C3	2E	20	C6	CF	D2	CD	ÏÌÓ.15 ÓÅÃ. EÏÒÍ
C1	D4	00	31	35	34	31	20	C1	CC	DO	D3	20	D4	C5	D3	ÁÔ.1541 ÁÌĐÓ ÔÅÓ
D4	00	36	34	20	C4	CF	C3	D4	CF	D2	00	C3	C1	D3	D3	ô.64 ÄÏÃÔÏÒ.ÃÁÓÓ
C5	D4	D4	C5	20	C1	DA	C9	CD	D5	D4	C8	00	C3	CF	DO	ÅÔÔÅ ÁÚÉÍÕÔÈ.ÃÏĐ
D9	20	31	39	30	00	C3	CF	DO	D9	20	D1	20	D6	32	2E	Ù 190.ÃÏĐÙ Ñ Ö2.
30	00	C4	C9	D2	20	CD	C1	D3	D4	C5	D2	00	C4	C9	D3	0.ÄÉÒ ÍÁÓÔÅÒ.ÄÉÓ
CB	20	C4	CF	C3	D4	CF	D2	00	C4	C9	D3	CB	20	D7	C9	Ë ÄÏÃÔÏÒ.ÄÉÓË ×É
DA	C1	D2	C4	00	C6	C1	D3	D4	20	C6	C9	CC	C5	20	C3	ÚÁÒÄ. EÁÓÔ EÉÌÅ Ã
CF	D0	D9	20	20	00	CC	CF	C7	CF	20	C5	C4	C9	D4	CF	ïĐÙ .ÌÏÇÏ ÅÄÉÔÏ
D2	00	CD	C5	CE	D5	20	CD	C1	CB	C5	D2	00	CD	CF	CE	ò.íÅîõ ÍÁËÅÒ.ÍÏÎ
C9	D4	CF	D2	20	D4	C5	D3	D4	00	CE	CF	20	C2	CC	CF	ÉÔÏÒ ÔÅÓÔ.ÎÏ ÂÌÏ
C3	CB	D3	20	C2	CF	CF	D4	00	D3	C9	CD	CF	CE	D3	20	ÃËÓ ÂÏÏÔ.ÓÉÍÏÎÓ
C2	C1	D3	C9	C3	00	D3	D5	DO	C5	D2	20	D3	DO	D2	C9	ÂÁÓÉÃ.ÓÕĐÅÒ ÓĐÒÉ
D4	C5	D2	00	D4	C8	C5	20	C3	D2	D5	CE	C3	C8	C5	D2	ôảò.ôèå ãòôîãèåò
00	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	. 999999999999999999
FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	<u> </u>
FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	<u> </u>
	2E CFF C1 D4 C5 D9 30 CB DA CF D2 C9 C3 C2 D4 00 FF FF	2E 30 CF CC C1 D4 D4 00 C5 D4 D9 20 30 00 CB 20 DA C1 CF D0 D2 00 C9 D4 C5 C2 C1 D4 C5 00 FF FF FF FF FF	2E 30 00 CF CC D3 C1 D4 00 D4 00 36 C5 D4 D4 D9 20 31 30 00 C4 CF D0 D9 D2 00 CD C9 D4 CF D3 C2 C1 D3 C2 C1 D3 D4 C5 D2 00 FF FF FF FF FF FF	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	2E 30 00 2A 2A 2A 4F 4F 4C 53 2A CF CC D3 00 31 35 20 D3 C5 C3 2E 20 C1 D4 00 31 35 34 31 20 C1 CC D2 D3 C5 C3 2E 20 D4 00 36 34 20 C1 CC D0 D3 D4 00 36 34 20 C1 DA C3 D4 C5 D4 C4 CF C3 D4 C5 D4 C8 D9 20 31 39 30 00 C3 CF D0 D9 20 D1 30 00 C4 C9 D2 20 C1 D3 D4 C5 D2 D3 D4 C6 C9 D3 D4 C6	2E 30 00 2A 2A 2A 4F 4F 4C 53 2A 2A CF CC D3 00 31 35 20 D3 C5 C3 2E 20 C6 C1 D4 00 31 35 34 31 20 C1 CC D3 C5 C3 2E 20 C6 C1 D4 00 31 35 34 31 20 C1 CC D2 00 C3 C5 D4 D4 C5 20 C1 DA C9 CD D5 D4 C8 00 D9 20 31 39 30 00 C3 CF D0 D9 20 D1 20 C6 D4 CF C2 C0 C1 D3 D4 C5 D2 00 C8 0.0 C4 CF D2 00 C4 CF D2 00 C4 CF D2 D2	2E 30 00 2A 2A 54 4F 4F 4C 53 2A 2A 2A CF CC D3 00 31 35 20 D3 C5 C3 2E 20 C6 CF C1 D4 00 31 35 20 D3 C5 C3 2E 20 C6 CF D4 00 31 35 20 C1 CC D0 D3 20 D3 C5 C3 2E 20 C6 CF D4 00 31 35 20 C1 DA C9 D2 D0 C3 C1 D5 D4 D4 C5 20 C1 DA C9 D3 C6 D3 D0 C3 C1 C3 D4 C5 D2 D0 C3 C1 C4 C8 C3 D1 D2 D0 C4	2E 30 00 2A 2A 2A 4F 4F 4C 53 2A <td< td=""><td>2E 30 00 2A 2A 2A 4F 4F 4F 4C 53 2A 2A 2A D4 CF CF CC D3 00 31 35 20 D3 C5 C3 2E 20 C6 CF D2 CD C1 D4 00 31 35 34 31 20 C1 CC D0 32 2D D4 C5 D3 D4 D4 C5 D3 D3 D4 C5 D4 CF D2 00 C3 C1 D3 D4 C6 D3 D4 C6 D3 D4 C5 D3 D4 C1 D3 D3 D3 D3 D3 <</td></td<>	2E 30 00 2A 2A 2A 4F 4F 4F 4C 53 2A 2A 2A D4 CF CF CC D3 00 31 35 20 D3 C5 C3 2E 20 C6 CF D2 CD C1 D4 00 31 35 34 31 20 C1 CC D0 32 2D D4 C5 D3 D4 D4 C5 D3 D3 D4 C5 D4 CF D2 00 C3 C1 D3 D4 C6 D3 D4 C6 D3 D4 C5 D3 D4 C1 D3 D3 D3 D3 D3 <							

Here you see the text of the menu items in uppercase PETSCII. So A''= C1, B''=C2 and so on..

After ***TOOLS*** you see (left column) D4 CF CF CC D3. It's the word "TOOLS" as you see in the FCIII+ desktop. It is followed by a control byte "00" which means the end of that word.. Then you see 31 35 20 D3 C5 C3 2E 20 C6 CF D2 CD C1 D4 and also followed with "00".. It's "15 SEC. FORMAT"....The first menu item.. (A space is "20" and a point is.. "2E" in Hexadecimal !)

Take a look and you find all the 17 menu items in this list. It's not possible to add more items because there is no more memory free for the text pointers (see previous table)...

When you change the text in the menu you must also change the pointers in the previous menu. This is a way to find the right address:

000067F0	C3	00	C6	C9	CE	C1	CC	A0	CB	C9	CC	CC	00	C6	D2	C5	Ã.ÆÉÎÁÌ ËÉÌÌ.ÆÒÅ
00006800	C5	DA	C5	D2	00	D2	C5	C4	D2	C1	D7	00	CE	CF	D4	C5	ÅÚÅÒ.ÒÅÄÒÁ×.ÎÏÔÅ
00006810	DO	C1	C4	00	C4	CC	C9	CE	CB	0.0	D4	CC	C9	CE	CB	00	ĐÁÄ.ÄÌÉÎË.ÔÌÉÎË.
00006820	DO	D2	C5	C6	C5	D2	C5	CE	C3	C5	D3	00	C2	C1	D3	C9	ÐÒÅÆÅÒÅÎÃÅÓ.ÂÁÓÉ
00006830	C3	20	DO	D2	C5	C6	D3	00	C3	C1	CC	C3	D5	CC	C1	D4	à ĐÒÅÆÓ.ÃÁÌÃÕÌÁÔ
00006840	CF	D2	00	C4	C9	D3	CB	00	D4	C1	DO	C5	00	D3	C5	D4	ÏÒ.ÄÉÓË.ÔÁÐÅ.ÓÅÔ
00006850	D4	C9	CE	C7	D3	00	C4	C5	D3	CB	D4	CF	DO	AO	D6	32	ÔÉÎÇÓ.ÄÅÓËÔÏÐ Ö2
00006860	2E	30	00	2A	2A	2A	54	4F	4F	4C	53	2A	2A	2A	D4	CF	.0.***TOOLS***ÔÏ
00006870	CF	CC	D3	00	31	35	20	D3	C5	C3	2E	20	C6	CF	D2	CD	ÏÌÓ.15 ÓÅÃ. EÏÒÍ
00006880	C1	D4	00	31	35	34	31	20	C1	CC	DO	D3	20	D4	C5	D3	ÁÔ.1541 ÁÌĐÓ ÔÅÓ
00006890	D4	00	36	34	20	C4	CF	C3	D4	CF	D2	00	C3	C1	D3	D3	ô.64 ÄÏÃÔÏÒ.ÃÁÓÓ
000068A0	C5	D4	D4	C5	20	C1	PA	C9	CD	D5	D4	C8	00	C3	CF	D0	ÅÔÔÅ ÁÚÉÍÕÔÈ.ÃÏÐ
Offset: 6800	Block	c 6800	-686D			1	Le	ngth: 6	5E					Over	write		

From offset 6800 do a select to the start of the word "TOOLS" and you see it's "6E". This is for reference only because this is not needed to be changed and it cannot be much longer due to available space in the FCIII+ Desktop bar. Do a select from offset 6800 to the first character of "15 SEC FORMAT". You will see it's "74". Write it down and do that also for the other 16 items.

00003EB0000000FFCFCB00C3C1CEC3C5CC002A5400003E00 $\frac{4F}{4F}$ $\frac{4C}{53}$ 50 54 52 2A000078C1GEA8288900003E00 60 00FF <t< th=""><th>00003EA0</th><th>00</th><th>00</th><th>00</th><th>00</th><th>00</th><th>00</th><th>00</th><th>00</th><th>00</th><th>0B</th><th>00</th><th>00</th><th>1D</th><th>00</th><th>00</th><th>00</th><th>· · · · · · · · · · · · · · · · · · ·</th></t<>	00003EA0	00	00	00	00	00	00	00	00	00	0B	00	00	1D	00	00	00	· · · · · · · · · · · · · · · · · · ·
00003EC0 4F 4F 4C 53 50 54 52 2A 00 00 78 C1 6E A8 28 89 OOLSPTR*xA 00003ED0 60 00 FF TA A* 78 9D 01 00 C1 C2 A8 78 9D 01 00 TA A* TA A* A* A* TA T* A* A* TA T* A*	00003EB0	00	00	00	FF	CF	CB	00	C3	C1	CE	C3	C5	CC	00	2A	54	ÿïË.ÃÁÎÃÅÌ.*T
00003ED06000FF <th< td=""><td>00003EC0</td><td>$4 \mathrm{F}$</td><td>4 F</td><td>4C</td><td>53</td><td>50</td><td>54</td><td>52</td><td>2A</td><td>00</td><td>00</td><td>78</td><td>C1</td><td>6E</td><td>A8</td><td>28</td><td>89</td><td>OOLSPTR*xÁn" (%</td></th<>	00003EC0	$4 \mathrm{F}$	4 F	4C	53	50	54	52	2A	00	00	78	C1	6E	A 8	28	89	OOLSPTR*xÁn" (%
00003EE088C183A8789D010090C192A8789D0100 $\hat{A}_{1}^{+}x,\hat{A}'^{-}$ 00003EF098C19CA8789D0100A0C1ADA8789D010000003F00A8C1B6A8789D0100B0C1C2A8789D010000003F10B8C1CDA8789D0100E0C1D9A8789D010000003F20C8C1E2A8789D0100EAA3A4A4A400003F30D8C102A9789D0100EAA3A5CA4A5 <t< td=""><td>00003ED0</td><td>60</td><td>00</td><td>FF</td><td>FF</td><td>FF</td><td>FF</td><td>FF</td><td>FF</td><td>80</td><td>C1</td><td>74</td><td>A8</td><td>78</td><td>9D</td><td>01</td><td>00</td><td>`.ÿÿÿÿÿÿ€Át"x</td></t<>	00003ED0	60	00	FF	FF	FF	FF	FF	FF	80	C1	74	A 8	78	9D	01	00	`.ÿÿÿÿÿÿ€Át"x
00003EF098C19CA8789D0100A0C1ADA8789D0100"Á@"x Á."00003F00A8C1B6A8789D0100B0C1C2A8789D0100"Á@"x ÅÅ"00003F10B8C1CDA8789D0100C0C1D9A8789D0100A%Å"00003F20C8C1E5A8789D0100C0C1F6A8789D0100EÅÅ"x ÅÅÅ"00003F30D8C102A9789D0100EÅÅ"A%Å"A%Å"00003F40E8C11AA9789D010000A4A9789D010000003F50F8C136A9789D01000044A9789D010000003F6000000000000000044A789D010000003F60FF <td>00003EE0</td> <td>88</td> <td>C1</td> <td>83</td> <td>A8</td> <td>78</td> <td>9D</td> <td>01</td> <td>00</td> <td>90</td> <td>C1</td> <td>92</td> <td>A8</td> <td>78</td> <td>9D</td> <td>01</td> <td>00</td> <td>^Áf"xÁ′ "x</td>	00003EE0	88	C1	83	A 8	78	9D	01	00	90	C1	92	A 8	78	9D	01	00	^Áf"xÁ′ "x
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	00003EF0	98	C1	90	A8	78	9D	01	00	A0	C1	AD	A 8	78	9D	01	00	~Áœ¨x Á.¨x
00003F10 B8 C1 CD A8 78 9D 01 00 C0 C1 D9 A8 78 9D 01 00 $\hat{A}1^{\circ}x\hat{A}\hat{A}\hat{U}^{\circ}$ 00003F20 C8 C1 E5 A8 78 9D 01 00 D0 C1 F6 A8 78 9D 01 00 EÅ $a^{\circ}x\hat{A}A$ EÅ $a^{\circ}x\hat{A}A$ EÅ 00003F30 D8 C1 02 A9 78 9D 01 00 EÅ C1 DA P78 9D 01 00 EÅ $a^{\circ}x\hat{A}A$ EÅ 00003F40 E8 C1 1A A9 78 9D 01 00 F0 C1 29 A9 78 9D 01 00 èÅ. EÅ. CAÅ EÅ C 1 A9 78 9D 01 00 PD 01 00 PA 78 9D 01 00 PA 78 9D 01 00 A A 78 9D 01 00 A	00003F00	A8	C1	B6	A8	78	9D	01	00	BO	C1	C2	A 8	78	9D	01	00	"Á¶"x°ÁÂ"x
00003F20 C8 C1 E5 A8 78 9D 01 00 D0 C1 F6 A8 78 9D 01 00 ÈÅå"x ĐÁö" 00003F30 D8 C1 02 A9 78 9D 01 00 EÅå"x ĐÁö" 00003F30 D8 C1 02 A9 78 9D 01 00 EÅå"x ĐÁö" 00003F40 E8 C1 1A A9 78 9D 01 00 F0 C1 29 A9 78 9D 01 00 ÈÅ.©x ČÁ)© 00003F50 F8 C1 36 A9 78 9D 01 00 00 04 A9 78 9D 01 00 Àá.©x ČÁ)© 00003F60 00 00 00 00 00 02 04 44 A9 78 9D 01 00 Àá.©x ČÁ)© Čá.©x DØ 00003F70 FF	00003F10	B8	C1	CD	A 8	78	9D	01	00	CO	C1	D9	A 8	78	9D	01	00	,ÁͨxÀÁÙ¨x
00003F30 D8 C1 02 A9 78 9D 01 00 E0 C1 0D A9 78 9D 01 00 ØÁ.©xàÁ.© 00003F40 E8 C1 1A A9 78 9D 01 00 F0 C1 29 A9 78 9D 01 00 ČÁ.©xðÁ.© 00003F50 F8 C1 36 A9 78 9D 01 00 F0 C1 29 A9 78 9D 01 00 ČÁ.©xðÁ.© 00003F60 00 00 00 00 00 00 00 FF FF FF FF FF FF F	00003F20	C8	C1	E5	A8	78	9D	01	00	DO	C1	F6	A8	78	9D	01	00	ÈÁå xĐÁö x
00003F40 E8 C1 1A A9 78 9D 01 00 F0 C1 29 A9 78 9D 01 00 èÅ.@xôÅ)@ 00003F50 F8 C1 36 A9 78 9D 01 00 00 00 44 A9 78 9D 01 00 øÅ6@xD@ 00003F60 00 00 00 00 00 00 00 FF FF FF FF FF FF F	00003F30	D8	C1	02	A9	78	9D	01	00	E0	C1	OD	A9	78	9D	01	00	ØÁ.©xàÁ.©x
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	00003F40	E8	C1	1A	A9	78	9D	01	00	FO	C1	29	A9	78	9D	01	00	èÁ.©xðÁ)©x
00003F60 00 00 00 00 00 00 00 FF <	00003F50	F8	C1	36	A9	78	9D	01	00	00	00	44	A9	78	9D	01	00	øÁ6©xD©x
00003F70 FF	00003F60	00	00	00	00	00	00	00	00	FF	FF	FF	FF	FF	FF	FF	FF	·····ÿÿÿÿÿÿÿÿ
00003F80 FF	00003F70	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	<u> </u>
00003F90 FF	00003F80	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	$\mathbf{F}\mathbf{F}$	FF	FF	<u>YYYYYYYYYYYYYYYY</u>
	00003F90	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	<u>ŶŶŶŶŶŶŶŶŶŶŶŶŶŶŶŶŶŶ</u>

Take a look at the pointers table at offset 3EC0. There are 8 bytes for every menu item. You see 78 C1 6E A8 28 89 60. This is for the text "TOOLS". 78 C1 is the address on the screen in lowbyte highbyte order. 6E (remember ?) A8 is the address of the text in memory. 28 is the width of the lit area when you select the TOOLS menu. Do not change this.. 89 is the length of the menu and 60 the width of the menu.

From offset 3ED8 you see 80 C1 74 (remember ?) A8 78 9D 01 00.

There is a 8 byte string for every menu item. The first two bytes 80 C1 are the screen address and the second two bytes 74 A8 the pointer to the text in memory.

78 9D is the address where it jumps to when you select a item. This is the same for every item. How is that possible ? From \$9D78 the screen position is read out and the right pointer in another table (will follow later) is choosen. Then you see the byte "01". That will mean "normal text". When you change that in "00" the text will be in "ghost" mode and is not selectable then. In the last item the screen address is not set and must be filled with "00 00" and also locked with a couple of "00" to let the program know it's the last item in the menu. There is no more space in memory for more menu items but I think 17 pieces is a respectable number.. \textcircled

Do a next search for "tools" and you will see this, the tools handler !

00009F40	2A	2A	54	4F	4F	4C	53	48	41	4E	44	4C	45	52	2A	2A	**TOOLSHANDLER**
00009F50	A2	00	BD	60	9F	9D	00	01	E8	EO	64	DO	F5	4C	00	01	¢.½`ŸèàdĐõL
00009F60	78	A5	9B	38	E9	78	4A	29	7F	AA	BD	20	01	8D	FF	DF	x¥>8éxJ).ª½ÿß
00009F70	BD	21	01	8D	1D	01	BD	22	01	8D	1E	01	4C	1C	01	EA	½!½"Lê
00009F80	44	10	80	FF	44	60	84	FF	45	10	80	FF	44	00	9A	FF	D.€ÿD`"ÿE.€ÿD.šÿ
00009F90	44	00	A2	FF	46	10	80	FF	47	10	80	FF	48	10	80	FF	D.¢ÿF.€ÿG.€ÿH.€ÿ
00009FA0	49	10	80	FF	4A	10	80	FF	4B	10	80	FF	45	00	AE	FF	I.€ÿJ.€ÿK.€ÿE.®ÿ
00009FB0	46	00	A6	FF	4C	10	80	FF	4F	00	80	FF	4D	10	80	FF	F.¦ÿL.€ÿO.€ÿM.€ÿ
00009FC0	4E	10	80	FF	00	00	00	00	00	00	00	00	00	00	00	00	N.€ÿ
00009FD0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	

From offset 9F80 you see four bytes 44 10 80 and FF is a separation byte for the first menu item. 44 is the banknumber and 10 80 the startadress in lowbyte highbyte order. The next four bytes are for the next item in the tools menu. So program 1541 ALPS TEST is also in bank 44 but starts from address \$8460.. And what about 64 DOCTOR ?? You see it ? Bank 45 and start at \$8010 ⁽ⁱ⁾

You can find the startadress of every item in the file with a search of the program name in HXD. For example SIMONS BASIC:

0003BFC0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	<u> </u>
0003BFD0	FF	FF	FF	FF	FF	$\mathbf{F}\mathbf{F}$	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	<u> </u>
0003BFE0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	<u> </u>
0003BFF0	53	49	4D	4 F	4E	53	20	42	41	53	49	43	2E	2E	2E	2E	SIMONS BASIC
0003C000	A2	FF	78	9A	D8	20	A3	FD	20	50	FD	20	15	FD	20	89	¢ÿx𨠣ý ₽ý .ý ‰
0003C010	80	58	20	53	E4	20	BF	E3	78	A9	00	8D	20	D0	8D	21	€X Sä ;ãx© Đ.!
0003C020	D0	4C	D0	80	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	ÐLĐ€êêêêêêêêêêê
0003C030	A9	F0	85	FC	A 9	80	85	FD	A 9	00	85	FE	A 9	80	85	FF	©ðü©€ý©∎þ©€ÿ
0003C040	A2	3F	AO	00	B1	FC	91	FE	C8	DO	F9	E6	FD	E6	FF	CA	¢? .±ü 'þÈÐùæýæÿÊ
0003C050	D0	FO	EA	EA	EA	EA	EA	EA	EA	EA	EA	A9	FF	85	AE	85	Đốêêêêêêêê©ÿ®
0003C060	2D	A9	0D	85	AF	85	2E	A9	A0	85	38	A9	EA	8D	28	03	-©
0003C070	A9	1B	8D	11	D0	A9	30	8D	FF	DF	4C	52	81	EA	EA	EA	©Đ©0.ÿßLR.êêê
0003C080	EA	EA	EA	EA	EA	EA	EA	EA	EA	A9	03	85	9A	A9	00	85	êêêêêêêê@š©
00030090	99	A2	2F	BD	AO	80	90	FF	CF	CA	DO	F7	20	1B	E5	60	™c/% €. VTÊĐ÷ .å`

SIMONS BASIC is in Bank 4F and starts at \$8000..

You see a copy routine. The program is copied from ROM to RAM, after that the cartridge is disabled (by writing #\$30 to \$DFFF) to let the area from \$8000 - \$BFFF be available as RAM and the program is started. The copy routine is treated in the next chapter..

NOTE: Maybe it's a good idea to edit the .CRT version first.. You can simple find the right bank number by the CHIP headers and test the menu in VICE to see if it's all right.

Making a .BIN file from the . CRT is very easy. Remove the first 50 bytes, do a search for CHIP and remove every 10 bytes CHIP header and you are ready. After that the .BIN file must be 40000 bytes.