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*           C H A R I T   2 . 0           *  
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*           Green Mountain Micro           *  
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***** C H A R I T *****
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*
*           by Dennis Bathory Kitsz
*           Green Mountain Micro, Roxbury, Vermont 05669
*           (c) 1983 by Green Mountain Micro. All rights reserved.
*
*****
*
* CHARIT is a character-creation program for the TRS-80
* Color Computer. It is intended for use in developing
* your own character sets for the Green Mountain Micro
* WORD PROCESSING LOWERKIT II, or with any character
* generator that uses a compatible dot row-column
* arrangement. CHARIT requires a TRS-80 Color Computer,
* Extended Color BASIC, minimum 16K memory, and cassette
* storage. (A version is also available that will run on
* the TRS-80 Model I disk system.)
*
* Please note that by itself CHARIT will not create a new
* character set for your Lowerkit II. Rather, CHARIT
* creates tape data files which can be read and "burned"
* into a programmable memory. This programmable memory
* becomes the character generator that you install in your
* Lowerkit II. The programmable memory "burning" is done
* when you send your data tape to Green Mountain Micro; in
* return you will receive a programmed EPROM and your file
* tape. If you wish, you may forward your own erased type
* 2716-1 EPROM for programming; refer to your Lowerkit II
* manual for technical details. The enclosed sheet lists
* current prices for EPROMs and programming.
*
*****
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Loading the Program

Two copies of the program are provided on one side of the tape. Load the tape into your recorder, rewind it to the start of the labeled side, and place the recorder in "play" position. Type <CLOAD> <ENTER>. The tape will begin moving, and the name CHARIT will be displayed. After the program start is found, loading time is approximately one minute.

Enter <RUN>. Occasionally, if this is the first program being run since turning on your Color Computer, certain versions of Extended Color BASIC will cause a ?SN ERROR IN 10 message to be displayed. This is unimportant. Enter <RUN> a second time; the program will operate correctly.

After a sign-on message and copyright notice, an important warning will be displayed. This warning states that lines 100 to 227 must not be edited. This is crucial; editing these lines will make the resident program totally inoperable! Also, do not attempt to save this program as an ASCII file ("A" option), because subsequent loads will also be impossible.

* Loading problems? Check tape player volume levels (between 5 and 8 on a CTR-41 or CTR-80), the cleanliness of the tape head and rubber puck, and playback head alignment. This tape was created on equipment aligned to commercial audio recording standards. If you continue to get I/O error messages, try the second recording on the tape. If you have no success after checking levels, head cleaning and alignment, you may return the tape for an immediate replacement.

Using CHARIT

After the sign-on messages and warning, you will be asked if you wish to use joysticks. If you touch N (no), only the four arrow keys will move the cursor. If you touch Y (yes), either the joystick or the four arrows will move the cursor. After your choice, the following prompt will appear:

CHARACTER NUMBER ----->?

Enter the character number you wish to create (in decimal). Remember that ASCII uppercase runs from 64 to 95, lowercase from 96 to 127, numbers and symbols from 32 to 63. Characters 0 to 31 can be displayed using the Color Computer only by POKEing them on the screen. Green Mountain Micro foreign language character sets (Kata Kana, Greek, Cyrillic, etc.) and special character sets (APL, gaming, math symbols) use positions 0 to 31 for these extra characters.

If this is your first session using CHARIT, a blank orange rectangle will be drawn, and a flashing cursor will appear at the left corner. This is your character drawing pad. The four keyboard arrows move the flashing cursor around the rectangle. The rectangle is an 8 by 12 matrix, representing an 8 by 12 dot matrix for Color Computer display. The entire matrix may be arranged in any way you wish.

Your options:

- <H> for help. A summary of the instructions below will be printed on the screen for quick reference.
- <I> to insert a "dot" into the character you are building. This will appear as a black or blue square at the cursor position. Note that the cursor is a rectangle half the size of the dark square.
- <D> to delete a dot from the cursor position.
- <ENTER> to store the current character in memory as part of the program. For further information, refer to <CLEAR>.
- <+> or <;> to move to the next numbered character. Be sure to press <ENTER> first, or your present character will not be saved!

<-> to move to the previous numbered character.
Remember that you must hit <ENTER> first if you wish to save the character already displayed on the screen.

<X> to exit from the current numbered character and present the "do you wish to use joysticks" prompt. You must hit <ENTER> first if you want to save the current character.

<CLEAR> to save the program with the current set of characters. As each character is stored using <ENTER>, one of program lines 100 to 227 is actually changed. Your characters reside in the program itself until you change them, so saving the program on tape also preserves your new character set. In this way you can build many different character sets into various copies of CHARIT. Insert a blank tape in the recorder, place it in record mode, and follow the prompts. Hitting <ENTER> without entering a file name will return to the "enter character" prompt.

Note: you MUST use this <CLEAR> tape storage in order to preserve the character set you have created. The <SHIFT> <Up arrow> command (see below) is used ONLY for transmission to Green Mountain Micro for burning into your Lowerkit II EPROM.

<SHIFT> <Up-arrow> to transmit the current character set to tape for shipment to Green Mountain Micro. Insert a blank tape in the recorder, place it in record mode, and follow the prompts. The current character values being saved are displayed.

The characters you create will look somewhat awkward in the large screen format. Nevertheless, when reduced to normal screen dot display, they will resolve into attractive looking characters. The stock Green Mountain Micro character generators use a 7 by 9 matrix for uppercase, extending into the bottom three lines only for lowercase characters and special symbols.

```

1 PMODE0:PCLEAR1:CLEAR500:DIMA$(128):DIMA(8,6):CLS:PRINTSTRING$(
32,164):PRINT:PRINT:PRINT:Q=1:Z=0:T=2:X=Z:Q=Z:Q1=Z:B=Z:C=Z:M1=Z:
M2=Z:S=Z:U=0:Q#=CHR$(34)
2 PRINT " * C H A R I T 2.1 *":PRINT:PRINT"Lowerkit ROM Dev
elopment Program";:PRINT:PRINT" Copyright (C) 1983":PRINT"
Green Mountain Micro":PRINT" Roxbury, Vermont 05669":P
RINT@480,STRING$(31,161);:POKE1535,161:SCREEN0,1
3 GOSUB322:GOSUB322:CLS:PRINT@129," A T T E N T I O N !":P
RINT@193,"For correct operation of CHARIT";:PRINT@225," do NOT
edit lines 100-227 ";:PRINT@289,STRING$(2,159)"If you need he
lp, touch "Q#"H"Q#;
4 PRINTSTRING$(T,159);:TIMER=Z
5 A$=INKEY$:IFA$="H"ORA$="h"THENCLS:GOSUB300:GOSUB322:ELSEIFTIM
ER>400THEN6ELSE5
6 CLS:PRINT@128,"Would you like to use joysticks?";
7 A$=INKEY$:IFA$="Y"ORA$="y"THENJJ=1ELSEIFA$="N"ORA$="n"THENJJ=0
ELSE7
8 CLS
9 GOSUB100:GOSUB321:INPUT"Character Number ----->";C$:IFVAL(C
#)>127ORVAL(C#)<Z THENPRINT:PRINT:PRINT" ENTRY VALUE ERROR
":SCREENZ,0:GOSUB322:GOTO8
10 IFC$="H"ORC$="h"THENGOSUB300:GOSUB322:GOSUB322:CLS:GOTO9
11 C=VAL(C#)
12 FORX=0 TO6:PRINT@138+X*32,MID$(A$(C),(X-0)*8+0,8);:NEXT:M1=20
:M2=10
13 IFPOINT(M1,M2)THENQ=0 ELSEQ=Z
14 IFJJ=1THEN15ELSE19
15 J1=JOYSTK(0):J2=JOYSTK(1):IFJ1=X1 ANDJ2=X2 THEN19ELSE16
16 X1=J1:X2=J2:J1=INT(J1/8):J2=INT(J2/5):GOSUB323:M1=J1*T+20:M2=
J2+10:IFM2>21THENM2=21:GOTO13
17 IFPOINT(M1,M2)THENRESET(M1,M2):SET(M1,M2,T)ELSESET(M1,M2,T):R
ESET(M1,M2)
18 GOTO13
19 A$=INKEY$:IFA$=""THEN20ELSE23
20 RESET(M1,M2)
21 A$=INKEY$:IFA$=""THEN22ELSE23
22 SET(M1,M2,T):GOTO14
23 A=ASC(A$):IFA=8THEN25ELSEIFA=9THEN27ELSEIFA=10THEN29ELSEIFA=9
4THEN31ELSEIFA=13THEN33
24 IFA=43ORA=59THEN36ELSEIFA=45ORA=61THEN38ELSEIFA=68ORA=100THEN
35ELSEIFA=73ORA=105THEN34ELSEIFA=72ORA=104THENGOSUB300ELSEIFA=88
ORA=120THEN6ELSEIFA=95THEN41ELSEIFA=12THEN40ELSE21
25 GOSUB323:M1=M1-T:IFM1<20THENM1=20
26 GOTO13
27 GOSUB323:M1=M1+T:IFM1>34THENM1=34
28 GOTO13
29 GOSUB323:M2=M2+0:IFM2>21THENM2=21
30 GOTO13
31 GOSUB323:M2=M2-0:IFM2<10THENM2=10
32 GOTO13
33 GOSUB323:FORX=1TO6:FORB=0TO7:A(B,X)=PEEK(1162+X*32+B):NEXT:NE
XT:Q=VARPTR(A$(C)):Q1=256*PEEK(Q+T)+PEEK(Q+3):FORX=1TO6:FORB=0TO
7:POKEQ1,A(B,X):Q1=Q1+0:NEXT:NEXT:GOTO13
34 RESET(M1,M2):RESET(M1+0,M2):GOTO13
35 SET(M1,M2,T):SET(M1+0,M2,T):GOTO13
36 C=C+0:IFC>127THENC=127
37 CLS:GOSUB321:PRINT"CHARACTER NUMBER ----->";C:GOTO12

```

APPENDIX I * ASCII CHARACTER SET IN TRS-80 COLOR COMPUTERS

Code	Char	Code	Char	Code	Char
32	space	64	@	96	(f)
33	!	65	A	97	a
34	"	66	B	98	b
35	#	67	C	99	c
36	\$	68	D	100	d
37	%	69	E	101	e
38	&	70	F	102	f
39	'	71	G	103	g
40	(72	H	104	h
41)	73	I	105	i
42	*	74	J	106	j
43	+	75	K	107	k
44	,	76	L	108	l
45	-	77	M	109	m
46	.	78	N	110	n
47	/	79	O	111	o
48	0	80	P	112	p
49	1	81	Q	113	q
50	2	82	R	114	r
51	3	83	S	115	s
52	4	84	T	116	t
53	5	85	U	117	u
54	6	86	V	118	v
55	7	87	W	119	w
56	8	88	X	120	x
57	9	89	Y	121	y
58	:	90	Z	122	z
59	;	91	Left Bracket (a)	123	(f)
60	<	92	Backslash (b)	124	(f)
61	=	93	Right Bracket (c)	125	(f)
62	>	94	Up Arrow	126	(f)
63	?	95	Left Arrow (d)(e)	127	(f)

- (a) Use <SHIFT> <DOWN ARROW>
- (b) Use <SHIFT> <CLEAR>
- (c) Use <SHIFT> <RIGHT ARROW>
- (d) Use <SHIFT> <UP ARROW>
- (e) Displays underscore with Lowerkit II.
- (f) Not available from keyboard.

Notice

Green Mountain Micro is not responsible for errors in your character sets, including but not limited to their alignment, order, shape, size, legibility or visual quality. Green Mountain Micro warrants only that the characters created by the proper use of CHARIT can be faithfully reproduced in a programmable read-only memory suitable for installation in the Word Processing Lowerkit II. No other warranties are expressed or implied.

Problems?

No program is crash-free. However, CHARIT has been designed with a great deal of error-checking to avoid accidental crashes. Green Mountain Micro would appreciate any errors reported by users, and suggestions for improvements. If you have any trouble using CHARIT, please call Green Mountain Micro for assistance.

Warranty Notice

This software is sold "as is", without warranty. Green Mountain Micro assumes no responsibility or liability to the purchaser or other user with respect to loss or damage, direct or consequential, caused by this software. This includes, but is not limited to, interruption of service; loss of profits, business, or anticipatory profits; or consequential damages resulting from the use of this software.

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