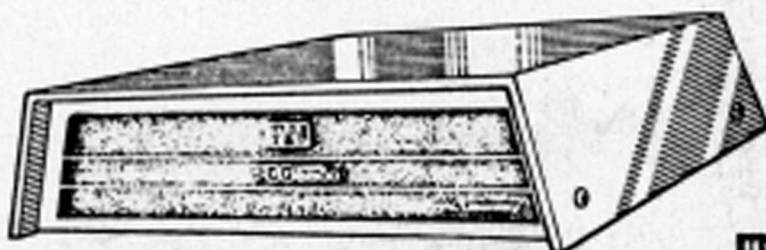


USER'S MANUAL

MODEL  
**PCG 6500**



**HAL**  
Laboratory



**SYSTEMS FORMULATE CORPORATION, U S A**

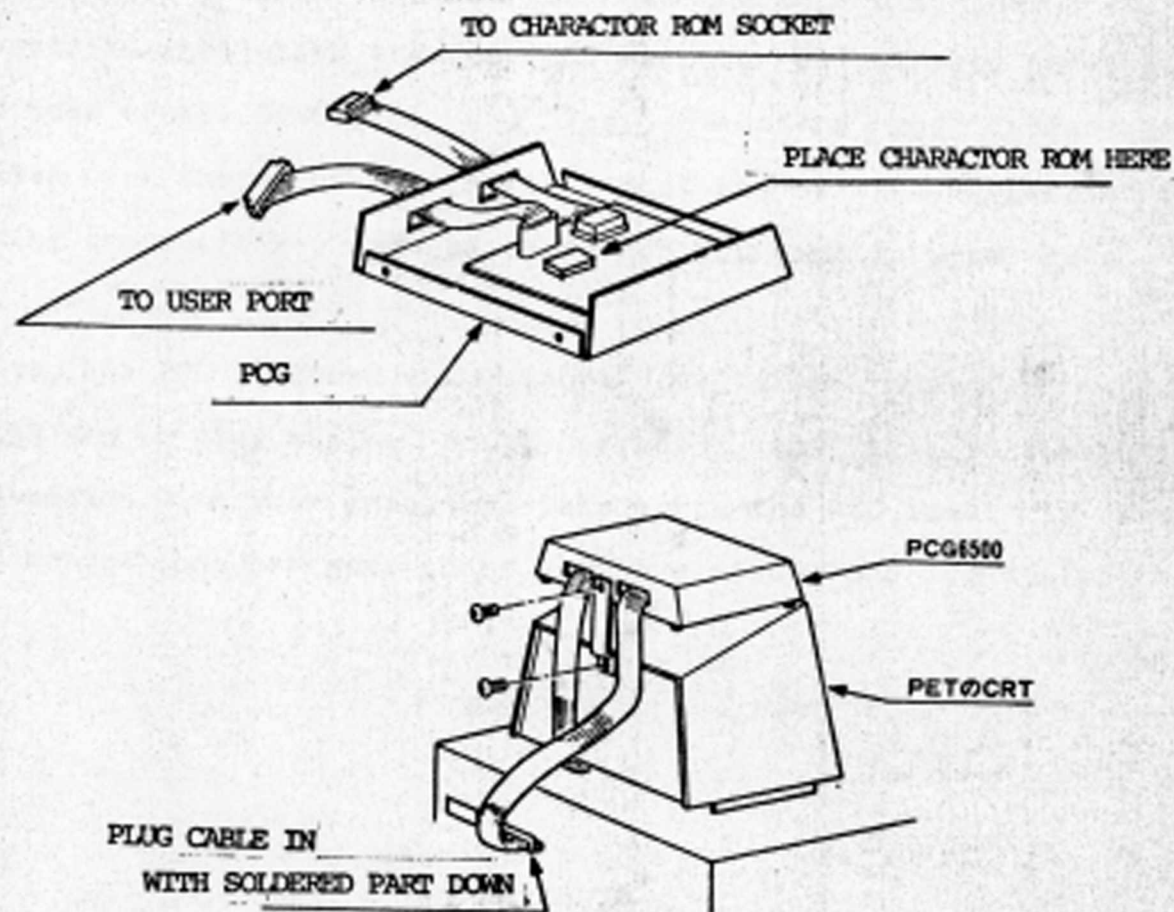
39 Town & Country Village Palo Alto, CA. 94301, (415) 328-8100

767-7449  
967-7449

# PCG MODEL 6500



## \*INSTALLATION\*



### \*\* CAUTION \*\*

- \* TURN OFF PET BEFORE INSTALLING PCG. \*
- \* MAKE SURE THAT THE CHARACTER ROM IS PLUGGED IN CORRECTLY. \*

The HAL PCG 6500 is a programmable character generator that allows you to program in 64 of your own characters in the 8 x 8 dot matrix. When using the PCG, the computer is put into the lower case mode (POKE 59468,14) and the characters you design are written over the upper case letters that are normally generated by holding the shift key and the character you want in upper case.

Also, the PCG includes a CB2 (port code) sound amplifier which allows you to play music, sound effects, or simply tones in conjunction with your graphics. This makes the PCG ideal in real time action computer game where you have visual and sound effects.

PAGES 2-8  
MISSING



If you wish to make duplicates of the PROGRAMMER or PCG AID, load the programs into the PET, and then save them. DO NOT load, run, and then save.

Always make sure the computer is in the lower case mode (poke59468,14) if you are using the PCG. To get upper case, poke59468,12.

#### Review of commands:

cursor down: move cursor down one row.

'' up : '' '' up '' ''.

'' left: '' '' left '' column.

'' right: '' '' right '' ''.

clear : returns cursor to home position.

clear home : clears 8 x 8 drawing board.

g : gets character and places it into the 8 x 8 drawing board.

p : puts character from 8 x 8 drawing board into designated code.

s : saves characters onto the appropriate device.

1-cassette #1

2-cassette #2

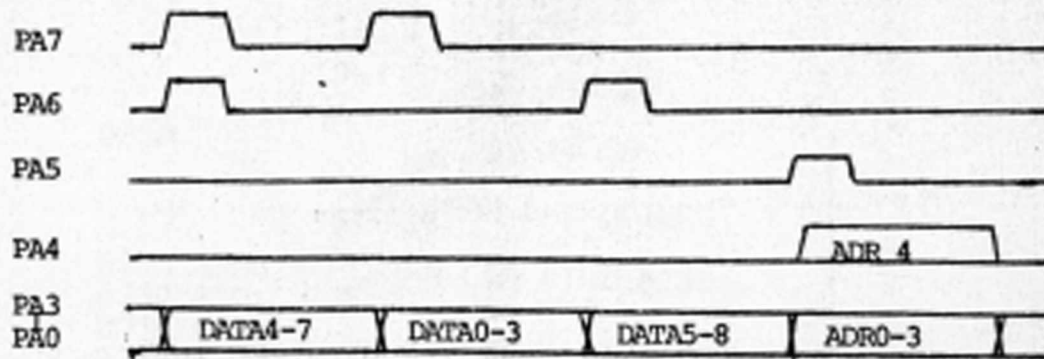
8-disk drive (computer prompts with drive number)

1

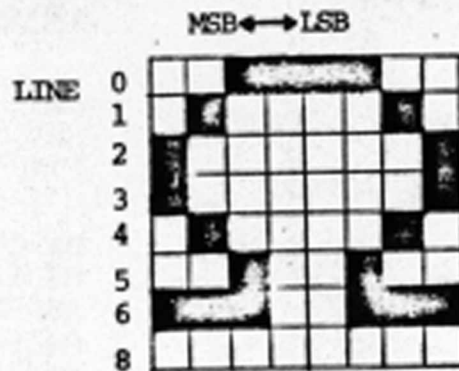
When loading or saving, the computer prompts you with 'file name' which is the name of the file you wish your characters to be saved in.

To adjust the volume when using the sound generator, use a small screw driver to rotate the potentiometer. The potentiometer is located on the right hand side of the PCG (with the front facing you). There is an access slot so you may adjust the volume without taking the cover off.

The following chart shows the timing of data and addresses to the PCG.



Data - Left edge of dot is MSB  
 ADR -  $ADR = 8 * (code - 64) + line$   
 Where  $64 \leq code \leq 127$   
 $0 \leq line \leq 7$



```

;
; PCG SUPPORT ROUTINE
;
; BY J. SUZUKI
;
DDRA EQU $E843
PORTA EQU $E84F
WORK EQU PORTA
PNT EQU $01
;
033A ORG $033A
;
; PROGRAM CHARACTERS
;
033A A900 PROGRAM LDA #TABL&255
033C 8501 STA PNT
033E A91E LDA #TABL/256
0340 8502 STA PNT+1
0342 A9FF LDA #$FF
0344 8E43E8 STA DDRA
0347 A200 LDX #0
0349 209E03 PRG0 JSR PRG1CH
034C A501 LDA PNT
034E 18 CLC
034F 69908 ADC #8
0351 8501 STA PNT
0353 9002 BCC PRG1
0355 E602 INC PNT+1
0357 E8 INX
0358 E040 PRG1 CPX #$40
035A D0ED BNE PRG0
035C 60 RTS
;
; PROGRAM A LINE
;
; A=DATA, X=CODE, Y=LINE
;
035D 48 PRGLIN PHA
035E 4A LSR
035F 4A LSR
0360 4A LSR
0361 4A LSR

```



0362	09C0	ORA	#\$C0
0364	8D4FE8	STA	PORTA
0367	290F	AND	#\$0F
0369	8D4FE8	STA	PORTA
036C	68	PLA	
036D	290F	AND	#\$0F
036F	0980	ORA	#\$80
0371	8D4FE8	STA	PORTA
0374	290F	AND	#\$0F
0376	8D4FE8	STA	PORTA
0379	8A	TXA	
037A	4A	LSR	
037B	4A	LSR	
037C	0940	ORA	#\$40
037E	8E4FE8	STA	PORTA
0381	290F	AND	#\$0F
0383	8E4FE8	STA	PORTA
0386	8A	TXA	
0387	0A	ASL	
0388	0A	ASL	
0389	0A	ASL	
038A	2918	AND	#\$18
038C	8D4FE8	STA	WORK
038F	98	TYA	
0390	0D4FE8	ORA	WORK
0393	0920	ORA	#\$20
0395	8E4FE8	STA	PORTA
0398	A900	LDA	#\$00
039A	8E4FE8	STA	PORTA
039D	60	RTS	

## ; PROGRAM ONE CHARACTER

039E	A007	PRG1CH	LDY	#\$07
03A0	B101	PR1CH0	LDA	(PNT),Y
03A2	205E03		JSR	PRGLIN
03A5	88		DEY	
03A6	10F8		BPL	PR1CH0
03A8	60		RTS	