

NATIONAL IMAGINATION COMPUTER CLUB

* 515 Shadylane-Barrington-Illinois-60010

APRIL 1982

Welcome to the third edition of the newsletter for the imagination machine. In order to have a really good newsletter, we need input from the members, both programs and helpful hints. So, please, contribute your games, answers to questions you have had or answers to those we will list in the newsletter. Also, if you send in programs, we would appreciate them in tape form, they will be returned to you if requested, but we do not have enough time to type all of the program listings and we are currently having problems with some of them not working once we have keyed them in, especially those that are handwritten.

ANSWERS TO CLUBMEMBER QUESTIONS

To Chris Phillips

1. Your question regarding a direct connect modem puzzles us, there is an SI-232 serial interface which can be used to interface with a modem or a printer. This interface has only one port to connect to either the printer or modem. There are adaptors sold that would take the SI-232 and create two plugs for both the printer and the modem, however this just saves time from plugging and replugging, the computer does not understand if the modem and printer would both be running at the same time. We currently have two disk drives and a printer hooked up to our APF with two slots still empty.
2. We do not think you can hook a monitor up to the APF. Our resolution with our TV is really pretty good. If you are using the computer more for business, we recommend switching to a black and white TV as they give better resolution.
3. The basic in ROM does have the disk commands and the printer commands built in.

Answers to Mr. Phillips (continued)

4. The machine is configured only to accept an additional 8K of ram. This is a design limitation and not a limitation of the 6800 chip which will address 64K.
5. We have to get a maintenance manual to answer your last question. So hold that one until the next month.

To HJT

1. We are not familiar with the teletype models you mentioned however if it is RS-232 compatible, you can interface through the SI-232 port.

To Gregory Carroll

1. by the sounds of you'r problem, you may have a power problem. It sounds like you are loosing power to the computer which would cause it to go fuzzy and reset itself.

FROM OTHER CLUBMEMBERS

1. From Don Schmidt, author of the Checkers program, line 620 should be corrected as follows:

```
620 SB=SB+16: SX=SB+7: NEXT X: RETURN: REM NEXT BLOCK
```

2. for those members interested in writing in machine language, Don recommends "BASIC MICROPROCESSORS AND THE 6800". It retails for \$14.95, however, he stated it can be obtained from the distributor at a reduced price:

Hayden Book Company Inc.
c/o Transworld Distribution Services
80 Northfield Avenue
Edison, NJ 08871
Attn: Lorraine Corsey

QUESTIONS TO OTHER MEMBERS

1. If anyone is writing programs that would make the computer act like a calculator like $\sin(x)$, $\log x$, scientific notations please send us the program. We have a member who is looking for this type of help.
2. Does anyone have a program to check out the RAM?

If anyone would like to be contacted by other clubmembers, just send us your name, and address and we will publish it. If it is regarding one specific item, i.e. help with machine language, just let us know that and we will indicate it. Likewise, you you have anything you think is worth selling to other clubmembers, just let us know and we will also advertise for you. If you need to know just how good a program is, you can send us a copy for evaluation, we will try it out and return it to you with our comments. Remember, if you have programs to sell, documentation is very important (as we all find out while trying to understand the APF computer).

PROGRAMS FROM OTHER CLUB MEMBERS

PHANTASMAGRAM

.....from dan Ferguson of Virginia

This program runs random shapes on the screen with movement.

```
1 REM -DAN FERGUSON
10 POKE 24578,54
20 CALL 17046
30 FOR A=216 TO 1 STEP -1
40 C= INT ( RND (0)*129)+128;Z= INT ( RND (0)*129)+128
46 READ R
50 FOR B=512 TO 1023 STEP A
54 POKE B-32,C; POKE B+32,C; POKE B-1,Z
60 POKE B,R; POKE B+1,Z; NEXT B
70 CALL 17046; NEXT A; GOTO 20
80 DATA 143,159,175,191,207,223,239,255;RESTORE
```

ALPHABETIZER

.....from ???? there was no name on the program, if you would like to let us know who wrote this, we will publish it next month with another mystery written program.

```
1 REM -THIS PROGRAM WILL ALPHABETIZE A LIST OF UP TO 50 WORDS.**
2 REM -EACH WORD CAN CONTAIN UP TO 15 LETTERS,NUMBERS OR COMBINATION OF LETTE
RS AND NUMBERS.**
3 DIM K$(1)
5 POKE 24578,54
10 CALL 17046
20 INPUT "ENTER THE NUMBER OF WORDS TO BE ALPHABETIZED",N
30 DIM A$(49,15)
35 DIM T$(1,15)
40 FOR X=1 TO N: PRINT "ENTER WORD NUMBER";X: INPUT A$(X,0)
50 PRINT : PRINT
55 NEXT X
60 FOR X=1 TO N: PRINT A$(X,0): NEXT X
70 PRINT : PRINT
80 FOR I=1 TO N
90 FOR J=1 TO N-1
100 IF A$(J,0)>A$(J+1,0) THEN GOTO 110
102 GOTO 140
110 T$(1,0)=A$(J,0)
120 A$(J,0)=A$(J+1,0)
130 A$(J+1,0)=T$(1,0)
140 NEXT J
150 NEXT I
160 FOR X=1 TO N: PRINT A$(X,0): NEXT X
180 END
```

AGE

.....from GREG LONGFIELD of Illinois

```
10 POKE 24578,54: CALL 34061
20 CALL 17046: POKE 40961,0
30 DIM Z$(1)
40 INPUT "HOW OLD ARE YOU IN YEARS",A
50 B=365:C=24
60 PRINT : PRINT : PRINT "YOU ARE APPROX."
70 MUSIC "103050*10 50+10000"
80 PRINT A*B*C
90 PRINT "HOURS OLD"
100 PRINT : PRINT : PRINT "BY THE APF MACHINE"
110 PRINT : PRINT : INPUT "TRY AGAIN Y/N ",Z$
120 IF Z$="" THEN CALL 17046: END
130 IF Z$="N" THEN CALL 17046: END
140 IF Z$="Y" GOTO 10
150 IF Z$<>"Y,N" GOTO 110
```

COLORS & SHAPES

.....FROM LOUIS POOL, OCOLA, FLORIDA

```
5 REM *SHAPE AND COLOR TESTS* L. DOOLEY*
10 CALL 17046
15 FOR F=1 TO 8
20 COLOR =F-1
30 X=15:Y=7:D=1:I=1:M=1:P=1
40 SHAPE =1: PLOT X,Y
41 SHAPE =2: PLOT X+I,Y
42 SHAPE =4: PLOT X,Y+P
43 SHAPE =8: PLOT X+I,Y+P
44 GOSUB 300
45 I=I+1:P=P+1
50 SHAPE =1: PLOT X-D,Y-M
51 SHAPE =2: PLOT X+I,Y-M
52 SHAPE =4: PLOT X-D,Y+P
53 SHAPE =8: PLOT X+I,Y+P
54 GOSUB 300
60 FOR K=1 TO 6
65 D=D+2:I=I+2:M=M+1:P=P+1
66 SHAPE =1: PLOT X-(2*M),Y
67 SHAPE =4: PLOT X-(2*M),Y+P-M
68 SHAPE =2: PLOT X+(2*M)+1,Y
69 SHAPE =8: PLOT X+(2*M)+1,Y+P-M
70 SHAPE =1: PLOT X-D,Y-M
71 SHAPE =2: PLOT X+I,Y-M
72 SHAPE =4: PLOT X-D,Y+P
73 SHAPE =8: PLOT X+I,Y+P
75 SHAPE =1: PLOT X,Y-M
76 SHAPE =2: PLOT X+1,Y-M
77 SHAPE =4: PLOT X,Y+P
78 SHAPE =8: PLOT X+1,Y+P
80 GOSUB 300
90 NEXT K
100 NEXT F
105 CALL 17026
110 CALL 17046
112 H=0
115 FOR W=0 TO 7
120 R=0
125 FOR F=0 TO 7
130 S=0:V=0
140 FOR K=0 TO 15
150 COLOR =K+H: SHAPE =S: PLOT K+V,R
160 GOSUB 300
170 S=S+1:V=V+1
180 NEXT K
190 R=R+2
```

COLOR & SHAPES (continued)

```
195 NEXT F
200 H=H+1
210 NEXT W
215 CALL 17026
220 GOTO 10
300 FOR N=1 TO 5:A=0:A=1: NEXT N: RETURN
350 ON F GOTO 371,372,373,374,375,376,377,378
371 MUSIC "10000": GOTO 380
372 MUSIC "20000": GOTO 380
373 MUSIC "30000": GOTO 380
374 MUSIC "40000": GOTO 380
375 MUSIC "50000": GOTO 380
376 MUSIC "60000": GOTO 380
377 MUSIC "70000": GOTO 380
378 MUSIC "*10000"
380 RETURN
999 END
```

JACKPOT

.....FROM JIM NEWMAN & STEPHEN GREENE OF CALIFORNIA

```
CALL 17046: POKE 24578,38
INPUT "GIVE CASHIER MONEY IN QUARTERS",Y
2 CALL 17046: PRINT " JACK POT": MUSIC C"1234567 7 654321"
9 Y=Y-1: CALL 17046
10 PRINT "#TRY YOUR LUCK"
11 PRINT : PRINT : PRINT
12 PRINT "*****": REM THERE ARE 30 STARS
20 PRINT : PRINT : PRINT
30 PRINT "*****": REM IN THIS LINE THERE ARE #30 STARS
31 GOSUB B000
32 PRINT "GAME IN SESSION": REM THIS IS TO TELL YOU THE COMPUTER IS READY TO
START
40 IF KEY$(1)="S" THEN 50: REM PUSH DOWN TO KEEP GOING
41 GOTO 40
50 A= INT (4* RND (X)+1)
51 B= INT (4* RND (X)+1)
52 C= INT (4* RND (X)+1)
53 L=6:P=2
54 MUSIC "*7"
55 D=L*32+P+512
56 POKE 40960,D/256
57 POKE 40961,D- INT (D/256)*256
58 MUSIC "/1"
59 IF A=1 THEN PRINT "CHERRY"
60 IF A=2 THEN PRINT "LIME"
70 IF A=3 THEN PRINT "LEMON"
80 IF A=4 THEN PRINT "===="
```

JACKPOT (continued)

```

90 IF KEY$ (1)="S" THEN 100: REM   PUSH DOWN TO KEEP GOING
91 GOTO 90
100 L=6:P=13: MUSIC "*7"
101 D=L*32+P+512
102 POKE 40960,D/256
103 POKE 40961,D- INT (D/256)*256
104 MUSIC "/1"
105 IF B=1 THEN PRINT "CHERRY"
106 IF B=2 THEN PRINT "LIME"
107 IF B=3 THEN PRINT "LEMON"
108 IF B=4 THEN PRINT "==="
110 IF KEY$ (1)="S" THEN 120: REM   PUSH DOWN TO KEEP GOING
111 GOTO 110
120 L=6:P=23
121 MUSIC "*7"
122 D=L*32+P+512
123 POKE 40960,D/256
124 POKE 40961,D- INT (D/256)*256
125 MUSIC "/1"
126 IF C=1 THEN PRINT "CHERRY"
127 IF C=2 THEN PRINT "LIME"
128 IF C=3 THEN PRINT "LEMON"
129 IF C=4 THEN PRINT "==="
130 IF A=1 IF B=1 IF C=1 THEN 9950
140 IF A=2 IF B=2 IF C=2 THEN 9950
150 IF A=3 IF B=3 IF C=3 THEN 9950
160 IF A=4 IF B=4 IF C=4 THEN 9950
170 GOTO 9952
7000 IF KEY$ (1)="?" THEN RUN : REM   PUSH CL TO START OVER
7001 PRINT "PUSH CL TO START": GOTO 9996
8000 PRINT : PRINT : PRINT "MONEY LEFT": PRINT "  ";Y;" QUARTERS"
8001 IF Y=-1 THEN CALL 17046: PRINT "OUT OF MONEY": MUSIC "/2/1/3/2/3"
8002 IF Y=-1 THEN 9995
8003 RETURN
9000 IF KEY$ (1)="N" THEN 9: REM   PUSH UP TO START OVER
9001 GOTO 9000
9950 MUSIC "*7*7*7*7*7*7*7*7*7*7": REM   NO SPACES!
9951 Y=Y+5: PRINT "WINNER"
9952 PRINT "TO START OVER PUSH UP"
9954 GOTO 9000
9995 MUSIC "              ": CALL 17046
9996 S= INT (15* RND (X)+0):C= INT (7* RND (X)+0)
9997 SHAPE =S: COLOR =C
9998 P= INT (31* RND (X)+0):L=15: PLOT P,L
9999 GOTO 7000

```

LO-RES GRAPHICS

.....FROM EDDIE BEDNAR

```
1 POKE 24578,38
2 A=15: B=14: C=16: D=13: E=14
3 GOTO 20
5 A=A+1: B=B+1: C=C+1: GOTO 15
7 B=B-1: A=A-1: C=C-1: GOTO 15
8 D=D+1: E=E+1: GOTO 15
9 D=D-1: E=E-1: GOTO 15
15 IF B=0 THEN END
17 IF C=31 THEN END
18 IF E=15 THEN END
20 IF D=0 THEN END
21 CALL 17046: COLOR=7: SHAPE=15
25 PLOT A,D: PLOT A,E
30 SHAPE=6: PLOT B,E
35 SHAPE=9: PLOT C,E
40 IF KEY$(1)="N" THEN 9
45 IF KEY$(1)="S" THEN 8
46 IF KEY$(1)="W" THEN 7
50 IF KEY$(1)="E" THEN 5
55 IF KEY$(1)=" " THEN 40
60 GOTO 40
```

?

.....FROM J. H. SCHARFELD

Here is a small variation of the graphic program by Ken Whitmore that was published in the Premier Issue of the Clubletter. It kind of looks like the "Burlington Mills" logo on T.V.

```
1 CALL 17046
2 POKE 24578,54
10 SHAPE = 7
15 FOR C=0 TO 7
20 COLOR = C
25 FOR A = 0 TO 15
26 FOR X = 1 TO 2:NEXT X
30 HLINE 0,31,A
31 NEXT A
32 FOR B = 0 TO 31:COLOR=C+2
35 VLINE 0,15,B
41 NEXT B
43 FOR P = 1 TO 13:NEXT P
45 NEXT C
50 GOTO 10
```


STAR TRECK (continued)

```
2710 PRINT " STAR FLEET HAS DETERMINED THAT YOU ARE TOO BLOOD-THIRSTY."
2720 PRINT " THEREFORE, IT HAS BEEN DECIDED THAT YOU WILL NOT BE ALLOWED"
2730 PRINT "TO CONTINUE ON THIS RAMPAGE OF"
2740 PRINT "KILLING POOR LITTLE DEFENSELESS"
2741 PRINT "KLINGONS!"
2742 PRINT TAB (10);"ADMIRAL WESTLAKE,"
2750 PRINT "          STAR FLEET COMMAND"
2751 GOTO 2820
2760 INPUT A$
2770 RESTORE
2780 IF S4>=4 THEN 2710
2790 IF A$="YES" THEN 2810
2800 IF A$<>"YES" THEN 2820
2810 S4=S4+1
2811 GOTO 350
2820 PRINT ""
2830 END
```

SQUARE ROOT

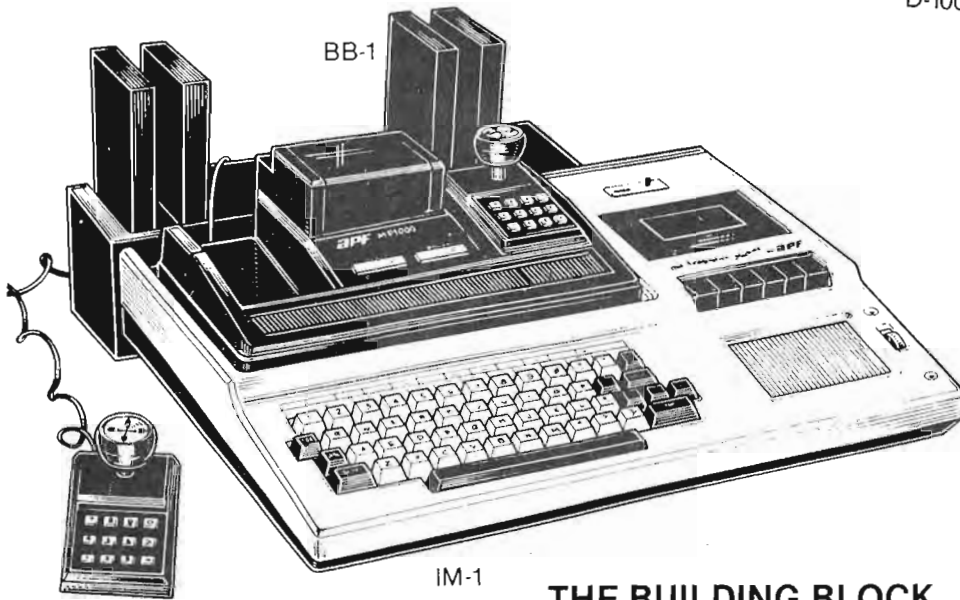
.....from PAUL SCHNEIDER OF ILLINOIS

```
10 INPUT "NUMBER WHOSE SQUAREROOT YOU WANT",N
20 INPUT "YOUR GUESS ",A
30 B=(A^2+N)/(2*A)
40 IF B=A THEN GOTO 70
50 A=B
60 GOTO 30
70 PRINT "THE SQUAREROOT OF ";N;" IS ";B
```

CUBE ROOT

.....also from PAUL SCHNEIDER OF ILLINOIS

```
10 INPUT "NUMBER WHOSE CUBE ROOT YOU WANT",N
20 INPUT "YOUR GUESS",A
30 B=(A*A*A+2*N)/(A*A*3)
40 IF B=A THEN GOTO 70
50 A=B
60 GOTO 30
70 PRINT "THE CUBE ROOT OF ";N;" IS ";B
```

APF**APF APF**

IM-1

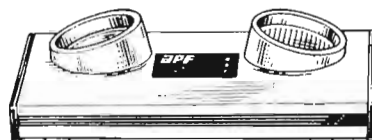
THE IMAGINATION MACHINE (IM-1)

Exciting, personal, home computer for home management, entertainment and education. User-programmable in BASIC or uses APF software cassette programs. Features 9K RAM, 14K ROM, 53-key keyboard, 32 characters x 16 line screen format, alpha numerics in up to 8 colors. Built-in sound synthesizer, built-in tape deck, 2 game-style handheld controllers.

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The APF modem (modulator/demodulator) allows you to hook up the computer to a remote terminal over telephone lines and access time-sharing services or trade programs with a compatible computer.

TM-150

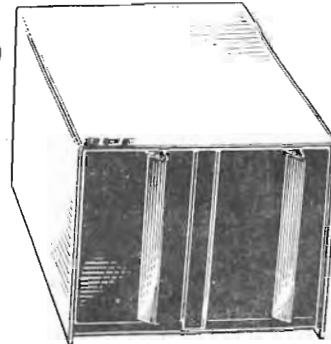


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For example, a cartridge, enabling hookup to any standard printer or telephone modem. Ports can also hold cartridges for 8K RAM memory and mini-floppy disk drive.

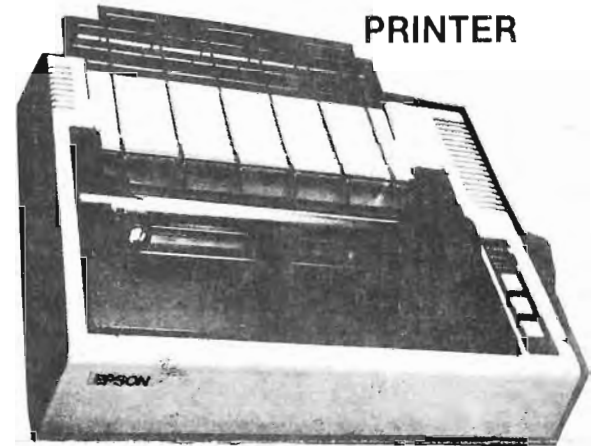
D-100



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The EPSON MX

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MEMORY MAP

ADDRESS

HEX DECIMAL

0000 00000

03FF 01023

0400 01024

1FFF 08191

2000 08192

2003 08193

2004 08194

3FFF 16383

4000 16384

5FFF 24575

8000 24576

8003 24579

8004 24580

83FF 25599

8400 25600

87FF 26623

8800 26624

17FF 30719

!-----! ! SCREEN DISPLAY MEMORY

! * 01F2 00498

! INPUT VALUE FROM RIGHT OR LEFT KEYPAD CONTROLLER!

! * 0200-03FF 00512-01023

! PIA MC6821 IN MF-1000

! * 2000 8192

! DATA REGISTER A

! * 2001

! CONTROL REGISTER A

! * 2002

! DATA REGISTER B

! * 2003

! CONTROL REGISTER B

! ALSO USED FOR PIA

! MP-1000 PGM (SCREEN, KEYPADS, KEYBOARD)

! * 418E 16850

! GET INPUT FROM LEFT KEYPAD CONTROLLER

! * 41D9 16857

! GET INPUT FROM RIGHT KEYPAD CONTROLLER

! * 426E 17006

! "BEEP" NOISE

! * 4282 17026

! "BEEP" AND "WHISTLE" NOISE

! * 4296 17046

! CLEAR SCREEN

! * 4298 17048

! SET SCREEN VALUE TO ALL ONE VALUE

! * 477C 18300

! STORE SAME VALUES IN CONSECUTIVE GROUP OF MEMORY ADDRESSES

! MP-10 PIA (CASSETTE TAPE)

! * 6002 24578

! TURN OFF AUDIO WHEN POKED WITH "54"

! ALSO USED FOR PIA

! EXTERNAL I/O DEVICES

! BASIC ROM CARTARAGE (4K)

! * 7000 28672

! IM-1 MONITOR PROGRAM

! * 7700 30464

! MOVE BLOCK OF MEMORY

! * 771B 30491

! ADD TO INDEX REGISTER

! * 80CF 32975

```

! INPUT FROM KEYBOARD, RETURNS TO REG A
! * 8473 33907
! OUTPUT CHARACTER TO SCREEN
! * 84F8 34040
! ENABLE TAPE MOTOR AND AUDIO
! * 850D 34061
! TAPE MOTOR AND AUDIO OFF
! * 854B 34228
! READ TAPE INTO MEMORY AT "HIGH" AND "LOW" ADDR
! * 8550 34128
! WRITE MEMORY CONTENTS TO TAPE FROM "HIGH" AND
! "LOW" ADDRESSES
! * 855A 34138
! WRITE HEADER, 512 BYTES BASED ON MODE FLAG,
! ALL MEMORY TO TAPE
! * 8561 34225
! READ TAPE, FIRST 512 BYTES TO SCREEN, REST TO
! MEMORY
!
!FOR ROM EXPANSION
!
!
!BASIC ROM CARTRIDGE (8K)
!
!
!USER RAM
! * A000-A2FF 40960-41727
! SYSTEM VARIABLES, LABEL TABLE, SIMPLE VARIABLES
! * A000-A001 40960-40961
! POINTER TO CURSOR LOCATION
! * A007-A008 40969-40970
! "LOW" ADDRESS POINTER
! * A009-A00A 40971-40972
! "HIGH" ADDRESS POINTER
! * A031-A032 41009-4100A
! POINTERS TO DIMENSIONED VARIABLES
! * A0C3-A1AD 41155-41389
! LABEL TABLE, 26 ENTRIES OF 9 BYTES
! * A1E6-A1E7 41446-41447
! POINTER TO END OF MEMORY
! * A1EC 41452
!
! MODE FLAG FOR TAPE OPERATION
! 0=SAVE ADDRESSES 0-512
! 1=SAVE ADDRESSES 513-1023
! * A300-A3FF 41728-41983
! I/O BUFFER
! * A400-BFFF 41984-49151
! PROGRAM TEXT, COMPLEX VARIABLE STORAGE, STACKS
! * A400-A401 41984-41985
! POINTER TO NEXT AVAILABLE BASIC STATEMENT
!
!
!USER RAM EXPANSION
!
!
!NOT USED (LOOKS LIKE COPY OF MONITOR)
!
!
!RESET INTERRUPT VECTOR - ROM

```

APF

- IN STOCK - SUPER SALE! Product Catalog and Price List

JUNE
JANUARY 1, 1982

SPECIAL CLUB
LIST *FACTORY
PRICE PRICE

COMPUTER PRODUCTS

23K APF IM-1 COMPUTER. Includes 14,000 Bytes ROM with BASIC built in, 9000 Bytes User RAM, Color, Sound. Professional 53 keyboard, Two controllers, Two 10 key numeric pads, High speed cassette, A. C. adapter, R. F. Modulator, T.V. switch box. Accepts TAPE-DISK-PLUG in cartridges. It is plug in expandable. 90 days parts and labor warranty, Owners guide, BASIC language manual, Beautiful Black & White Console Case. **X** ~~\$599.00~~ \$239.00
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JUNE 1, 1982

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