

# INTERCAL ABC™

MICROCOMPUTING FOR SMALL BUSINESS AND HOME VOLUME 2, ISSUE 13, DECEMBER 1977 \$1.75  
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## Microcomputing for the Home

Computer As A Home Appliance  
Household Finance Programs

Also:  
Music to Compute By  
Pocket Computer  
Piranha Game

TAX COMPUTATION.....1  
ALARM SYSTEM CONTROLLING.....2  
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VECTOR GRAPHIC HOME COMPUTER

VECTOR 1+

VECTOR GRAPHIC, INC.



## COVER STORY

This month's cover symbolizes the theme of the issue, the introduction of the microcomputer into the home. The modern-day *penate* pictured here is a VECTOR 1+, but depending on the user's personal choice it might be SOL, IMSAI, APPLE or PET.

The scene was staged in the model kitchen of Block Tops, Inc. "Mother" in this composition is posed by Kathy Saffer and the children are Julie and Ted La Mantia.



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# INTERFACE AGE™

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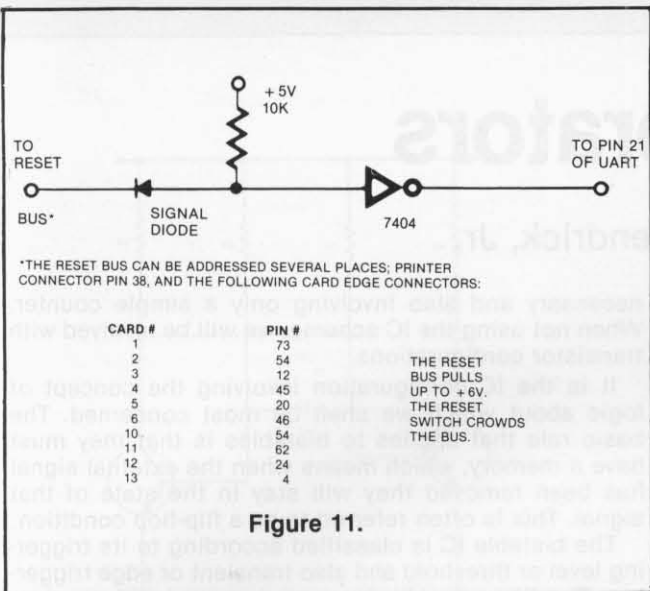


Figure 11.

In the text a green test point on board #7 is referred to. As fate would have it, this test point in many machines is white. To be sure that the proper test point is located, place board #7 on a table with the back side (the side without any components) up and with the edge connector toward the observer. The test point is the second from the right. As a further check, this point ties directly to the collector of a transistor which is one of two used in a free-running multivibrator circuit.

### TESTING AFTER MODIFICATION

A very useful test of the machine can be made by connecting the serial output to the serial input and typing (quickly) a single, printing character. The machine should print a second character, hopefully the same. The TX/Send and Receive lights should also function during this test. Remember, the machine is inherently a half-duplex device and is forced to receive mode any time a character appears on the serial input line.

Many full duplex machines require loop-back (echo of the serial output back to the serial input) to function properly. This machine does not need or want this and, if provided by the associated computer, it should be disable, if at all possible. If echo is provided by hard wire, e.g. with MIKBUG, the circuit can usually be disabled with a board cut and/or *jumpering*. If echo is provided by firmware, e.g. The System Monitor ROM, it may or may not be possible to disable it. For example, this is a deletable option with MINIBUG II. It is evidently not deletable with the Technico T.I. 9900 Monitor ROM.

The use of a good oscilloscope with a calibrated time base is highly recommended in checking out the machine. Either this or a frequency counter may be used in setting up bit rate. The latter becomes particularly important when test typing from someone else's cassette tapes. Needless to say, the bit rates must match closely since bit synch is not used.

When using A.C. powered test equipment the user should be extremely cautious with ICs — particularly the UART. Be absolutely sure that a good ground connection is used between equipments. Test probes with large isolating resistors are also to be preferred.

Solder all connections neatly and carefully with a hot, low wattage iron employing a grade of solder intended for use with microcircuits. Excessive resin, which may contain particles of carbon, tiny beads of solder or other contamination can prevent a UART from working.

I am quite interested in how the implementation of these mods is proceeding. Share your experiences with us by contacting us through the magazine or the club.

```

L
S105A0400015FD
*
S1130000FFA04ACEE19DC606A600BDE1D1085A264E
S1130010F7FEA04A390DE9CE0080BDE07EBDE1AC9B
S1130020810027F1813A2A0901302B050DD20820DD
S1130030E90DCDFFA04ACE01EABDE07EFEA04A20B4
S1130040DCDCDF76F5FFDFE93FADCEEF2FFF7620F
S1130050DE7FD99EF77CDEF4D7F7FEF2CB7F74EE19
S1130060B6D61FFAE3EFF5FC77BDF7DE57E3FAFCEB
S11300707F3F1E9AE27F67EEBF06BDBEB61B1E5CF8
S11300804920616D206120636F6D70757465722EF7
S1130090204920616D207468696E6B696E67206FFA
S11300A0662061206E756D6265722066726F6D20C8
S11300B03020746F20392E2054727920746F206799
S11300C0756573732069742E0D04596F75206775F7
S11300D065737365642077726F6E672E205472792E
S11300E020616761696E2E0D04596F75206775650F
S11300F0737365642077726F6E6720616761696EE0
S11301002C2044554D4D592121205472792061678A
S113011061696E2E0D04426F792120596F7520722A
S113012065616C6C792061696E277420746F6F202F
S11301306272696768742E204F682077656C6C2C36
S11301402049276C6C2074727920746F20626520BA
S113015070617469656E742E2054727920616761D0
S1130160696E2E0D0457726F6E6720616761696E48
S1130170212121212121205468617420646F6573203A
S113018069742C204E4E55434B4C45484541442EF5
S11301902049276D207469726564206F6620706C35
S11301A06179696E672D2D6C65742773207175698B
S11301B0742E0D043616E277420796F7520726567
S11301C061642C20594F594F3F2049207361696461
S11301D0206C657427732071756974212121212E87
S11301E00D040D040D040D040D04492073616964AC
S11301F02061206E756D6265722066726F6D205A83
S113020045524F20746F204E474E452C2044554085
S113021044554D2E20446F6E2774207472792074D7
S11302206F20757365207468652077686F6C65202E
S1130230636861726163746572207365742121213E
S1080240212E0D04B99C

```

Above is a MIKBUG™ memory dump of a simple, do nothing, fun program that readers with an M6800 MPU, a MIKBUG ROM and little troops may find interesting. Below is a run of the program.

```

*G
I AM A COMPUTER. I AM THINKING OF A NUMBER FROM 0 TO 9.
TRY TO GUESS IT.
7
YOU GUESSED WRONG. TRY AGAIN.
3
YOU GUESSED WRONG AGAIN, DUMMY!! TRY AGAIN.
A
I SAID A NUMBER FROM ZERO TO NINE, DUMDUM. DON'T TRY TO USE
THE WHOLE CHARACTER SET!!!!.
5
BOY! YOU REALLY AIN'T TOO BRIGHT. OH WELL, I'LL TRY TO BE
PATIENT. TRY AGAIN.
1
WRONG AGAIN!!!! THAT DOES IT, KNUCKLEHEAD. I'M TIRED OF
PLAYING — LET'S QUIT.
9
CAN'T YOU READ, YOYO? I SAID LET'S QUIT!!!!
6

```