modular jacks, you can purchase an adapter to make the conversion for about $5.00).

2. <u>Baud</u> (speed) <u>Rating</u> - This is how fast the modem can send and receive data. A 1200 BPS modem is four times quicker than a 300 BPS modem, but costs about (4) times as much. (Note: although you can receive information four times faster, Compuserve and most "databases" charge extra to send information at this speed).

HUG Ed. NOTE: Note also, that all higher speed modems can be used at the lower speeds, and most either have a "speed switch" on the case or can be commanded to the desired speed by software commands. Many will switch automatically to match the <u>answering modem</u> speed, and the 2400 and higher modems will usually also automatically switch to a lower speed if line conditions do not support the high speed transmission. Prices (Oct.88) are running: 300 Baud - $25 (Used only, no longer being made); 1200 Baud - $75 to $150 for good, Hayes <u>compatable</u> direct-connects; 2400 BPS modems are about $150 and up; and 4800 BPS units are $300 to $750.

3. <u>Auto Originate</u> (Dial) ** - This feature causes the modem to dial the number you have entered from the computer keyboard, as opposed to you dialing the phone yourself. (Note: The real advantage to this is that the modem will also have the ability to keep trying the number if it is busy, which frees you up from dialing over and over).

4. <u>Auto Answer</u> ** - This feature is necessary if you want to have the ability to receive calls via your computer. (Note: If you ever want to set up your own BBS, then this feature is a must).

HUG Ed. Note: all modems can be used to "originate" calls, many can be set to "answer" manually or automatically and so act as a "host" terminal - so long as one modem is in the "answer" mode and the other is in the "originate" mode on the same speed, they can make the connection, <u>modem</u> to <u>modem</u>.

5. <u>Full Duplex</u> ** - This is the ability to send and receive signals at the same time. Simply put, the database computer is constantly asking your computer if it is ready, and your machine is constantly responding "yes". Without full duplex, there would be a line turnaround delay between each question and answer. (Note: Full Duplex can be compared to having a conversation on a telephone, as opposed to Half Duplex which can be compared to having a conversation on a CB Radio).

HUG Ed. Note: The items above marked ** are part of the standard features of the "Hayes (tm) Compatable" modems, along with the standard set of "Hayes Commands" used by the computer to direct the activities of the modem, and the standard hookup connections configuration. Almost ALL 1200 BPS modems claim Hayes compatability - and they <u>are</u>, to the extent needed by any TI applications. Some of the more exotic features and commands are only of use with highly specialized software (usually for the IBM) and for special installations such as amateur radio repeater hook-ups, and these features are sometimes MISSING in some of the "Hayes compatable" units. Also, and obviously, some modems just plain WORK better than others, given equal line noise, etc. Best advice is to find someone who can give you an actual "I used it" summary or review of the unit before you buy. Please note that all the newer 1988 models of 1200 BPS modems are substantially BETTER in performance and features than the ones of just a year or so ago, and a lot CHEAPER, due to technology advances, but prices probably won't go down much more since chips are going UP.

Any modem (Well, almost any <u>external</u> modem) can be used with any communicating computer. However, serial cards (and software packages) are designed for specific computers. To hook up the modem, you need to have a serial card (port). The job of the serial card, simply put, is to take the internal language of your computer, which is spoken in 8 bit "words" (bytes) and send the "words" out of the computer to the

modem <u>one</u> <u>bit</u> <u>at</u> <u>a</u> <u>time</u>, instead of 8 at a time ("serial" for transmitting bits individually in a series, and "parallel" for transmitting bits in parallel, 8 at a time).

NUG Ed. Note: Serial ports are pretty universally 8-bit data, regardless of the internal "size" of the processor. Another form of "dedicated" modem is the "internal" unit, designed to plug directly into the "bus" of a particular type of computer, such as the IBM clones or Apples.

There will be a "port" or plug on the serial card, and a port on the modem. Now, just because you bought a modem, that doesn't mean it comes with a cable to connect it to the serial card in your computer! (Or that the cable it came with will <u>work</u>, or even <u>plug into</u> the port! In fact, the 99/4A is cable incompatable with standard RS-232 cables for modems.

RS-232 Connections for Modems

The 4A PEB RS-232 Card has three ports, on two plugs. One plug is the 36-pin "PIO" port for parallel output, TTL 5 volt logic signals, primarily to a printer. The other two ports are the <u>serial</u> ports addressed as "RS232/1" and "RS232/2", with RS232 type +/-12 volt signals for both output and input, and are pin-accessible on the DB-25 female plug at the rear of the card.

USUALLY, a DB-25 connector on a computer serial card is set up as a "Data Terminal Equipment Device" (DTE), and will hook up to a modem "Data Communications Equipment" (DCE), on a straight-across basis: Pin 1 to Pin 1, Pin 2 to Pin2, etc. HOWEVER, Texas Instruments decided to set up <u>their</u> ports as DCE devices, to make it "easier" to hook up to a serial Printer such as the MX-80, which is configured as a DTE, using a "one-to-one" 25-pin cable. Which is why the "Impact Printer" will work with the TI and some computers using that cable it came with, and not with others (Since MOST companies like Tandy (tm) set their ports as DTE and their printers as DCE, or played cabling games with the whole thing to try to convince you not to stray from their brand, "See, if you had just bought OUR printer and OUR cable to go with OUR computer. .". So we have an immense problem in regards to hooking up to the so-called "standard" RS-232, of which there are <u>at least</u> 100 variations.

Luckily, around 1978 a guy named Dennis Hayes cornered the market on direct-connect modems, and the system he was using has become the default standard for almost all modems, since "Hayes compatable" means <u>plug compatibility</u> also.

RS-232 CONNECTIONS

For a "universal" cable for most any RS232 printer, you should only need a cable as follows:

```
        Printer: Pin  1          RS232: Pin  1
                 Pin  7                 Pin  7
                 Pin 20                 Pin  6

        --- PLUS
        either:      Pin  2 + 3 -  Port 1 Pin  3
        for RS232/1  Pin  5 or 6 -        Pin 20
        ---
        or;          Pin  2 + 3 -  Port 2 Pin 16
        for RS232/2  Pin  5 or 6 -        Pin 19
```
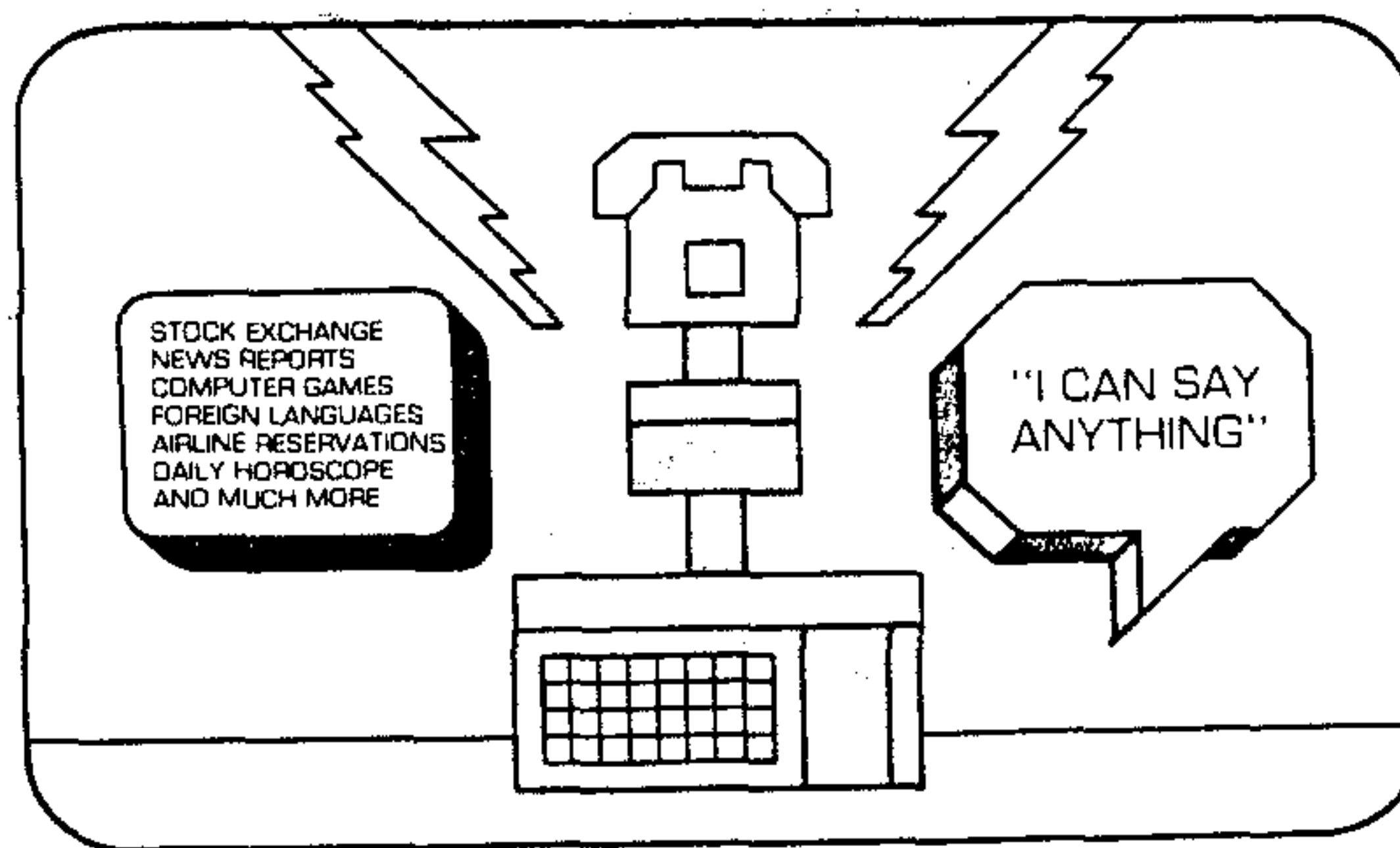
Following is the plug Pin-outs for hooking up some of the RS232 devices, such as modems:

```
The "standard" 1200 BPS        TI RS232 card pins:
     "Hayes" modem pins:
==================================================================
Pin  1 -- Frame Ground   ----- Pin  1 -- Ground
Pin  2 -- Transmit Data  <<<<< Pin  3 -- RS232/1 Data Out
Pin  3 -- Received Data  >>>>> Pin  2 -- RS232/1 Data In
Pin  4 -- N/C **               Pin  4 -- N/C
Pin  5 -- Clear to Send* >>|<< Pin  5 -- CTS, (CRU bit out)
Pin 20 -- Data Term Rdy  <<<<< Pin  6 -- Data Set Ready 1/2
Pin  7 -- Signal Ground  ----- Pin  7 -- Ground
Pin  / -- norm. not used    << Pin  8 -- Carrier Detect #1
Pin  9-11 N/C                  Pin  9-11 N/C
Pin  / --        (used for TI  << Pin 12 -- Carrier Detect #2
Pin  / --        RS232/2 port) << Pin 13 -- CTS#2, CRU bit #2
Pin  / --        " " " "       >> Pin 14 -- RS232/2 Data In
Pin 15 -- Transmit Clock >>     Pin 15 -- N/C
Pin 16 -- N/C               << Pin 16 -- RS232/2 Data Out
Pin 17 -- Receive Clock  >>     Pin 17 -- N/C
Pin 18 -- N/C                  Pin 18 -- N/C
Pin 19 -- N/C               >> Pin 19 -- Data Term Rdy #2
Pin  8 -- Carrier Detect +12v> Pin(19)-- Used by BBS only
Pin  6 -- Data Set Ready >>>>> Pin 20 -- Data Term Rdy #1
Pin 21 -- N/C                  Pin 21-25 N/C
Pin 12 -- High Speed Ind.>>     Pin  / -- Used by BBS only
          (+12v on 1200 BPS)
Pin 22 -- Ring Indicator >>     Pin  / -- Used by BBS only
          (+12v on rings)
Pin 24 -- Transmit Clock <<     Pin  / -- from synchronous
                                            terminal only
Pin 13,14 N/C                  Pin // --
==================================================================
```

Actually, to make a working MODEM CABLE, only 6 wires need to be hooked up, for the RS232/1 Port:

```
        MODEM:          RS232 CARD:
        Pin  1    -----  Pin  1
        Pin  2    -----  Pin  3
        Pin  3    -----  Pin  2     --- Can be
        Pin  6    -----  Pin 20      ¦  a single
        Pin  7    -----  Pin  7      ¦  plug for
        Pin 20    -----  Pin  6      ¦  accessing
and for the Port RS232/2:                ¦  both Ports
                                     ¦  RS232/1 +
        MODEM:          RS232 CARD:  ¦  RS232/2
        Pin  1    -----  Pin  1      ¦  via two
        Pin  2    -----  Pin 16      ¦  cables into
        Pin  3    -----  Pin 14      ¦  two RS232
        Pin  6    -----  Pin 19      --- devices.
        Pin  7    -----  Pin  7
        Pin 20    -----  Pin 12 (or 6)
==================================================================
```
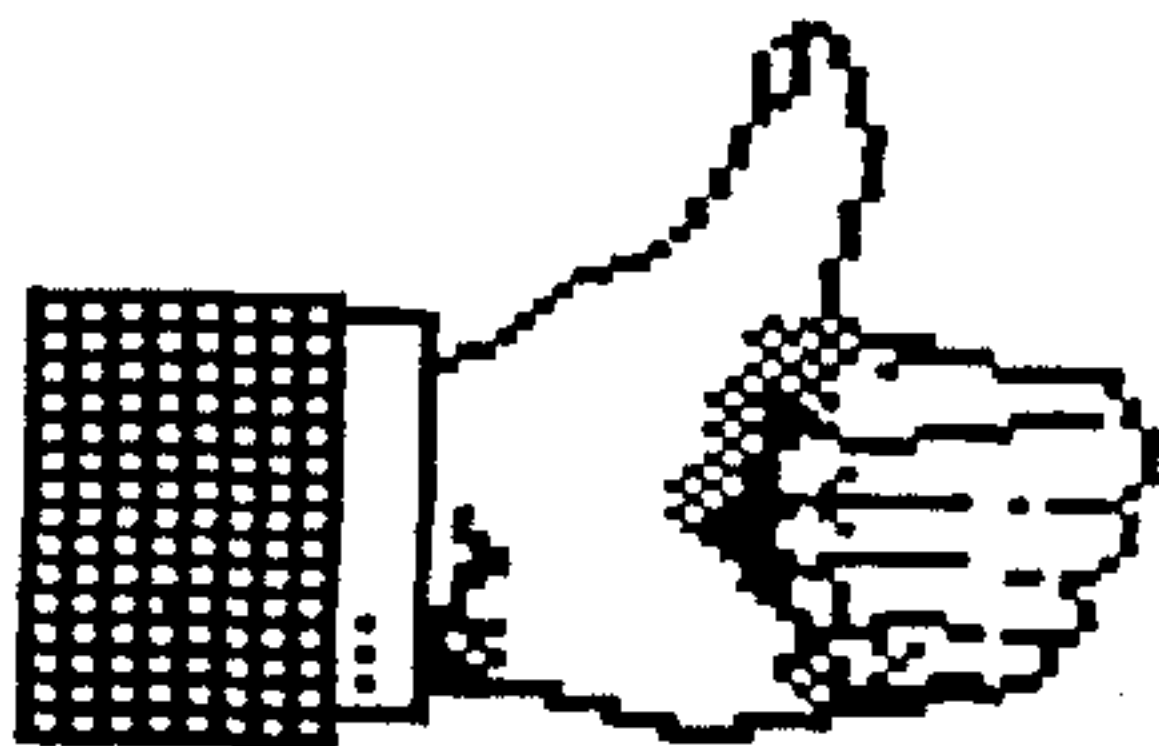
NOTE that you CANNOT make a single cable to hook up both Port 1 and Port 2 to a single modem, but you CAN make a double cable which will hook both PORTS, through a single plug at the card, to two separate devices, such as a printer and a modem, sharing ground pins 1 and 7 at the Card-end plug.

This wiring hookup shown for a modem will evade many of the problems people have encountered with the "switch settings" for these modems, which have often been "fudged" to correct for improper cabling, thus leaving the modem partly "out of control" by the card. On the other hand, it is possible to set the switches to "lock on" the Carrier Detect and DTR signals on the Modem, and loop Pin 6 back to Pin 20 at the RS232 card, and ONLY hook up: Pin 1 to Pin 1; Pin 2 to Pin 3; and Pin 3 to Pin 2; on a THREE WIRE cable, and have the modem work, though without proper status display, etc. Whatever "turns you on".

Switch Settings: Another area of confusion. READ the manual with your modem. With a proper cable you want the DTR and the Carrier Detect and the CTS signals from the LINE, not locked on. You want Commands Recognized, Active; Verbal Display of Status Signals, Active; and Display Commands Active. You probably want Auto Answer Defeated; and Single Line selected. You want the bell (Not CCITT) system; you may or may not want or be able to pre-select the speed default. WITH AN IMPROPER CABLE, you will have to LOCK ON the DTR, CD, and CTS signals, probably. If your modem DOES NOT WORK like your friends, using his cable, it does not mean your modem is bad. Your switches probably DO NOT MATCH his settings in function. PLEASE NOTE that "ON" on a switch DOES NOT MEAN THAT FUNCTION IS "ON". SOME "ON" positions activate a "DEFEAT" of that function, therefore, "OFF" is sometimes "ON" on modem functions!!!!! ENUF? Clear as mud, huh? GET HELP.

Please note that TI's pins #5 and #13 (CRU extra bits) would have been available as "input" bits, for sensing such things as the "Ring", "High speed", "Carrier detect" signals, which NOW have to be read by such places as the cassette port! It actually does no good to hook up things such as pin 12 to pin 12, since the TI card cannot READ at pin 12, but is actually simulating an output AS IF IT WAS A COMMUNICATION DEVICE. Pin #19 CAN be read and is sometimes used with BBS systems to read for Carrier or for Ring or for High Speed. With proper utilization of the "smart modem" status signals and switching, only the Carrier Detect needs to be monitored electrically, anyway.

STOCK EXCHANGE
NEWS REPORTS
COMPUTER GAMES
FOREIGN LANGUAGES
AIRLINE RESERVATIONS
DAILY HOROSCOPE
AND MUCH MORE

"I CAN SAY ANYTHING"

NEW PRODUCT SOON TO BE AVAILABLE!

Just recently announced by Don O'Neil on Delphi and GEnie conferences, is Don's new *Accelerator* for the Texas instruments 99/4a computer. This small 3 inch by 5 inch board installs inside your computer to speed it up drastically, with the posibilty of 20 times faster! Currently in it's final testing stages, it runs at 12 Mhz crystal speed and is equivilant to the speed of the Geneve 9640. Check out the spec's in the table below:

New 99/4a Product Overviews:

99/4a Accelerator card:

* Upgrades 3.3 Mhz 9900 to 12Mhz 99105
* Offers at least x5 performace gain or x10 perfomance gain with new 16 bit ram
* *Provides access to 16 bit data bus for 0 wait operation*
* Invisible to system, offers 100% compatability with current code.
* Piggy-backs 9900, *no soldering required for instalation!*

This product should be shipping very shortly from Bud Mills Services and OPA, look for their addresses in this issue. Retail price is $250 fully assemebled, you install. Installation can be arranged with either Bud or OPA.

Also announced by Don was his next project, avaiable sometime around the time of the Chicago faire, is his replacement P-Box interface cable/ multi function card:

* P-Box interface card:

* *Functional replacement for TI P-BOX cable*
* Battery backed static RAM DSR's for easy upgrades (16 bit, 0 wait)
* Smaller connection to side of console, only 1.5" wide!
* Uses 16 bit data bus from adaptor or from Accelerator (adaptor included)
* *8 SIMM slots for up to 8 Mb of RAM expansion*
* 32k static RAM, 0 wait operation built in, Replaces your existing 32k.
* 1 "processor direct slot" for future expansion:

  * 16 bit data bus
  * All stndard CRU and Address available
  * Video interrupt available
  * Supply voltages allready regulated
  * Great for 9938/58/78 video expansion

* *Options available:*

* Up to 8Mb "RAMBO" program memory using 256k, 1 Mb IBM Style DRAM simms, 0 Wait operation, DSR link access
* Real time clock like P-Gram/CorComp clock, DSR link access
* *68881 or 68882 Math co-processor at 12 Mhz to speed up math in programs that utilize it, 0 Wait (16 Bit), DSR link access*

* 16 Bit Bus Expander Adaptor:

* Provides access to 16 bit data bus for 0 wait operation
* Bus provided on 20 pin connector for connection to new interface
* Piggy-backs 9900, no soldering required for instalation!

Bits & Bytes.

DISK MANAGER FUNCTIONS - A COMPARISON
Based on a Chart from Program Bitten (Sweden)

Updated June, 1991

Manager/ Function	TI DM 2	OTTAWA DM1000 3.5	MYARC MDM V 1.30	DISK UTIL 4.2	FWB DR40 4.31	FWB DR80 4.31
Drives Supported	1-3	1-8	1-9,WDS	1-9,A-Z	1-9	1-9
Densities Supported	S,D	S,D	S,D,Q	S,D,Q	S,D,Q	S,D,Q
Single Drive In/Out	Y	Y	Y	Y	Y	N
FILE FUNCTIONS						
Copy File	Y	Y	Y	Y	Y	Y
Header Before Data	Y	N	Y	Y	Y	Y
Read/Write	File?	Sector	Sector	Sector?	File	File
Sectors Per Pass	45	40	58	40	??	59
Copy with Rename	Y	N	N	Y	Y**	Y**
Warn Before Overwrite	N	N	Y	N	N	N
Move File	N	Y	Y	Y	N	N
Delete File	Y	Y	Y	Y	Y	Y
Recover Deleted File	N	Y	N	Y	Y	Y
View DV80	N	Y	Y	Y	Y	Y
View DF80	N	Y*	Y	Y	Y	Y
View all DV and DF	N	N	Y	Y	Y	Y
View INT + Program	N	N	N	N	Y	Y
View Myart G6/G7	N	N	N	N	N	Y
Protect/Unprotect File	Y	Y	Y	Y	Y	Y
Rename File	Y	Y	Y	Y	Y	Y
DISK FUNCTIONS						
Catalog	Y	Y	Y	Y	Y	Y
Send Printer Codes	N	Y	N	Y	N	N
Rename Disk	Y	Y	Y	Y	Y	Y
Copy Disks File by File	Y	Y	Y	Y	Y	Y
Files per Pass	1	1	Several	1	1	1
Destination Number	1	1	1	1	8	8
Copy Disks By Sector	N	Y	N	Y	N	N
Copy Used Sectors	n/a	Y	N	Y	n/a	n/a
Copy All Sectors	n/a	Y	Y	Y	n/a	n/a
Sectors per Pass	n/a	104	57	39	n/a	n/a
Format Disk	Y	Y	Y	Y	Y	Y
Multidisk Format	N	Y	N	Y	N	N
Sweep Disk	N	Y	N	Y***	Y	Y
DISK TESTS						
Read Test	Y	N	Y	Y	Y	Y
Read and Write Test	Y	N	Y	N	N	N
OTHER FUNCTIONS						
Sector Edit	N	N	N	Y	Y	Y
Run Program	N	N	N	N	Y	Y

*   Funnelweb version of DM 1000 will not view DF80 files.
**   File rename available only with single file copy
***   Sweep Disk called "Reset Disk"

TIPS FROM THE TIGERCUB

No. 64

Tigercub Software
156 Collingwood Ave.
Columbus, OH 43213

#########

My three Nuts & Bolts
disks, each containing 100
or more subprograms, have
been reduced to $5.00. I am
out of printed documentation
so it will be supplied on
on disk.

My TI-PD library now has
over 500 disks of fair-
ware (by author's permission
only) and public domain, all
arranged by category and as
full as possible, provided
with loaders by full program
name rather than filename,
Basic programs converted to
XBasic, etc. The price is
just $1.50 per disk(!), post
paid if at least eight are
ordered. TI-PD catalog #5
has now been printed and is
is available for $1, which
is deductible from the first
order.

Back in the days of David
Ahl's Creative Computing
magazine, when computers
were too expensive for hard-
ware hacking and had memory
too small to run much of a
program, the emphasis was on
"recreational computing",
and the British TI'ers carry
on that tradition. A recent
issue of their excellent
TI#MES newsletter had this
challenge - write a program
to set up a circle of any
chosen number of objects;
starting at one, count them
off by 10's, removing every
10th object. What are the
numbers of the last two
left?
This is my solution. It is
not the best one, but it
does show how strings can be
used to perform math.

```
100 INPUT "NUMBER?":N
110 FOR J=1 TO N :: N$=N$&CH
R$(J):: NEXT J :: IF N<10 TH
EN 140
120 N$=SEG$(N$,11,255)&SEG$(
N$,1,9):: IF LEN(N$)>9 THEN
120
140 FOR J=1 TO 10 :: N$=SEG$
(N$,2,255)&SEG$(N$,1,1):: NE
XT J :: N$=SEG$(N$,1,LEN(N$)
-1):: IF LEN(N$)>2 THEN 140
150 FOR J=1 TO 2 :: PRINT AS
C(SEG$(N$,J,1)):: NEXT J
```

Which reminds me that I
forgot to give you the
answer to that short CALL
SOUND puzzler in Tips #62. A
CALL SOUND, even with a pos-
itive duration, will be in-
terrupted by a BEEP.

Here's a bit of nonsense
I worked up from an idea by
Tim Brooks. Save this by
SAVE DSK1.BUGS,MERGE . Then
when you get a chance, load
one of your friend's favor-
ite programs, add this to it
by MERGE DSK1.BUGS, and in
the middle of the program
somewhere put a line with
CALL BUGS .

```
32000 !@P+
32001 SUB BUGS
32002 CALL CLEAR :: CALL CHA
RSET :: CALL DELSPRITE(ALL):
: CALL SOUND(225,220,0):: PR
INT "#ERROR 4 IN LINE 150" :
: PRINT "#BUGS IN PROGRAM"
32003 CALL SCREEN(8):: FOR A
=1 TO 500 :: NEXT A :: A$(1)
="997E3CFF3C7EBD99" :: A$(2)
="D83CBD7E3CFFBD99" :: X=1 :
: CALL CHAR(96,A$(X))
32004 RANDOMIZE :: CALL MAGN
IFY(2):: FOR T=1 TO 2 :: FOR
A=1 TO 20 :: X=X+1+(X=2)#2
:: CALL CHAR(96,A$(X)):: FOR
D=1 TO 20 :: NEXT D
32005 CALL SPRITE(#A,96,2,19
5,RND#240,-5,0):: NEXT A ::
NEXT T :: CALL CLEAR :: CALL
DELSPRITE(ALL):: SUBEND
```

Here is a puzzle game for
you brainy types. I worked
it up from a game by Jack
Sughrue -

```
100 ! PSYCHO by Jim Peterson
110 CALL CLEAR :: RANDOMIZE
:: CALL SCREEN(2):: FOR S=1
TO 12 :: CALL COLOR(S,2,16):
: NEXT S :: CALL VCHAR(1,31,
31,96):: CALL KEY(3,k,S)
120 RANDOMIZE :: Y$(1)="+" :
: Y$(2)="-" :: Y$(3)="x" ::
Y$(4)="/"
130 CALL VCHAR(1,3,32,672)::
D$="" :: Y(0),X=INT(10#RND+
5)
140 DISPLAY AT(2,11):"PSYCHO
":" Enter P(lus), (M)inus,
(T)imes or (D)ivided by"
150 FOR J=1 TO 4 :: Y(J)=INT
(10#RND+5):: Z(J-1)=INT(4#RN
D+1)
160 IF Z(J-1)=1 THEN X=X+Y(J
):: GOTO 180 ELSE IF Z(J-1)=
2 THEN X=X-Y(J):: GOTO 180 E
LSE IF Z(J-1)=3 THEN X=X#Y(J
):: GOTO 180
170 IF X/Y(J)=INT(X/Y(J))THE
N X=X/Y(J)ELSE Z(J-1)=INT(3#
RND+1):: GOTO 160
180 NEXT J :: R=6 :: FOR J=0
TO 3 :: DISPLAY AT(R,12):Y(
J):: R=R+2 :: NEXT J :: DISP
LAY AT(R,12):Y(4)
190 DISPLAY AT(R+1,12):"____
" :: DISPLAY AT(R+3,12):X
200 FOR J=0 TO 3 :: D$=D$&ST
R$(Y(J))&Y$(Z(J)):: NEXT J :
: D$=D$&STR$(Y(4))&"="&STR$(
X):: FOR J=1 TO 4
210 ACCEPT AT(J#2+5,12)SIZE(
1)VALIDATE("PMTD"):A$ :: IF
A$="" THEN 210
220 ON POS("PMTD",A$,1)GOSUB
270,280,290,300
230 DISPLAY AT(J#2+4,12):""
:: DISPLAY AT(J#2+6,12):Y(J)
240 NEXT J
250 IF Y(4)=X THEN DISPLAY A
T(19,9):"RIGHT!" :: GOTO 260
ELSE DISPLAY AT(19,9):" WR
ONG! OFF BY";ABS(X-Y(4)):: D
ISPLAY AT(21,3):D$
260 DISPLAY AT(23,2):"PLAY A
GAIN? Y/N" :: ACCEPT AT(23,1
8)SIZE(1)VALIDATE("YN"):Q$ :
: IF Q$="N" THEN CALL CLEAR
:: STOP ELSE 130
270 Y(J)=Y(J-1)+Y(J):: RETUR
N
280 Y(J)=Y(J-1)-Y(J):: RETUR
N
290 Y(J)=Y(J-1)#Y(J):: RETUR
```

```
300 Y(J)=Y(J-1)/Y(J):: RETUR
N
```

Someone uploaded the New
Testament books of the Bible
to Delphi, probably ported
over from IBM files. They
included a program to break
them into individual verses
and another to display them
on screen. Neither program
worked properly, so I wrote
this one to do it right.

```
100 CALL CLEAR :: CALL SCREE
N(16):: FOR J=1 TO 12 :: CAL
L COLOR(J,2,1):: NEXT J :: D
ISPLAY AT(2,8):"BIBLE READER
" !by Jim Peterson
110 DIM I$(127),L$(24)
120 DISPLAY AT(24,1):"DRIVE
#?" :: ACCEPT AT(24,10)VALID
ATE(DIGIT)SIZE(1)BEEP:DN ::
CALL CLEAR :: ON WARNING NEX
T
130 X=0 :: OPEN #1:"DSK"&STR
$(DN)&".",INPUT ,RELATIVE,IN
TERNAL :: INPUT #1:N$,A,A,A
140 INPUT #1:F$,A,B,C :: IF
LEN(F$)=0 THEN 160
150 IF C=80 AND ABS(A)=2 THE
N X=X+1 :: I$(X)=F$ :: DISPL
AY AT(X+(X>23)#23,1-(X>23)#1
3):STR$(X);" ";I$(X):: GOTO
140 ELSE 140
160 DISPLAY AT(23,1):"Read f
ile #" :: ACCEPT AT(23,12)VA
LIDATE(DIGIT):FL :: IF FL<1
OR FL>X THEN 160
170 CLOSE #1 :: OPEN #1:"DSK
"&STR$(DN)&"."&I$(FL),INPUT
:: CALL CLEAR :: DISPLAY AT(
3,1):"Press any key at the b
eep" :: X=0
180 LINPUT #1:M$
190 IF POS(SEG$(M$,1,5),":",
1)=0 THEN 220
200 IF FLAG=0 THEN FLAG=1 ::
GOTO 220
210 X$=M$ :: GOTO 250
220 IF T$<>"" THEN M$=T$&" "
&M$ :: T$="" :: GOSUB 320 EL
SE GOSUB 320
230 IF LEN(T$)>27 THEN M$=T$
:: T$="" :: GOSUB 320 :: GO
TO 230
240 IF EOF(1)<>1 THEN 180
250 IF T$<>"" THEN X=X+1 ::
L$(X)=T$ :: T$=""
```

```
260 CALL SOUND(1,500,8)
270 CALL KEY(0,K,S):: IF S=0 THEN 270
280 FOR J=1 TO X :: DISPLAY AT(9+J,1):L$(J):: NEXT J :: FOR J=10+X TO 24 :: DISPLAY AT(J,1):"" :: NEXT J :: X=0
290 IF X$<>"" THEN M$=X$ :: X$="" :: GOSUB 320 :: GOTO 230
300 IF EOF(1)<>1 THEN 180 ELSE IF X>0 THEN 250 ELSE CLOSE #1 :: CALL SOUND(1,500,5)
310 CALL KEY(0,K,S):: IF S=0 THEN 310 ELSE 100
320 IF LEN(M$)<29 THEN X=X+1 :: L$(X)=M$ :: RETURN
330 IF SEG$(M$,28,1)=" " THEN X=X+1 :: L$(X)=SEG$(M$,1,28):: T$=SEG$(M$,29,255):: RETURN
340 IF SEG$(M$,29,1)=" " THEN X=X+1 :: L$(X)=SEG$(M$,1,28):: T$=SEG$(M$,30,255):: RETURN
350 P=27
360 IF SEG$(M$,P,1)=" " THEN X=X+1 :: L$(X)=SEG$(M$,1,P-1):: T$=SEG$(M$,P+1,255):: RETURN
370 P=P-1 :: IF P>1 THEN 360 ELSE X=X+1 :: L$(X)=SEG$(M$,1,28):: T$=SEG$(M$,29,255):: RETURN
```

Files ported over from IBM lack carriage returns, which can be a problem if you want to do any editing. I think this tinygram will do a good job of adding CRs to any text file which has centered headers and indented paragraphs.

```
100 DISPLAY AT(3,4)ERASE ALL :"CARRIAGE RETURN ADDER":"": " This tinygram program wil ladd carriage returns to any text file which has centere d"
110 DISPLAY AT(8,1):"headers and indented para- graphs. "
120 DISPLAY AT(12,1):"Input filename?":"DSK" :: ACCEPT AT(13,4):IF$
130 DISPLAY AT(15,1):"Output filename?":"DSK" :: ACCEPT AT(16,4):OF$
140 OPEN #1:"DSK"&IF$,INPUT :: OPEN #2:"DSK"&OF$,OUTPUT
150 LINPUT #1:M$
160 IF M$="" THEN PRINT #2:CHR$(13):M$;ELSE IF ASC(M$)<33 THEN PRINT #2:CHR$(13):M$;ELSE PRINT #2:"":M$;
170 IF EOF(1)<>1 THEN 150 ELSE CLOSE #1 :: CLOSE #2
```

Note that the program does all its work in line 160!

When text files are reformatted to a shorter line length, using the Funlweb Formatter, there are often long gaps at the ends of the lines, or between words if Fill and Adjust is used, due to long words which would have been hyphenated if the text had been originally typed in the shorter length. This little program will reformat text (containing carriage returns) to any shorter length and allow you to optionally hyphenate words which do not fit at the end of a line.

```
100 CALL CLEAR :: CALL SCREEN(5):: FOR SET=0 TO 12 :: CALL COLOR(SET,2,16):: NEXT SET
110 CALL CLEAR
120 DISPLAY AT(12,1):"Input filename?":"DSK" :: ACCEPT AT(13,4)BEEP:IF$ :: OPEN #1:"DSK"&IF$,INPUT
130 DISPLAY AT(15,1):"Output filename?":"DSK" :: ACCEPT AT(16,4)BEEP:OF$ :: OPEN #2:"DSK"&OF$,OUTPUT
140 DISPLAY AT(18,1):"Reformat to what length?" :: ACCEPT AT(18,26)SIZE(2)VALIDATE(DIGIT):R
150 IF EOF(1)THEN 270 :: CALL CLEAR :: LINPUT #1:M$ :: M$=P$&M$ :: P$=""
160 L=LEN(M$)+(POS(M$,CHR$(13),1)<>0):: IF L<=R AND POS(M$,CHR$(13),1)<>0 THEN PRINT #2:M$ :: GOTO 150 ELSE IF L<R THEN P$=M$&" " :: GOTO 150
170 C$=SEG$(M$,1,R):: CALL LASTPOS(C$," ",Y)
180 IF Y<>0 THEN 190 ELSE PRINT #2:C$ :: M$=SEG$(M$,R+1,255):: GOTO 160
190 IF R-Y<3 THEN C$=SEG$(M$,1,Y):: M$=SEG$(M$,Y+1,255):: PRINT #2:C$ :: GOTO 160
200 X=POS(M$," ",Y+1):: IF X=0 THEN X=LEN(M$)ELSE IF X=R+1 THEN PRINT #2:C$ :: M$=SEG$(M$,Y+2,255):: GOTO 160
210 DISPLAY AT(2,1):M$ :: DISPLAY AT(8,1):SEG$(M$,1,R)
220 DISPLAY AT(12,1):SEG$(M$,Y+1,R-Y-1)&"-"&SEG$(M$,R,X-R+1):: Z=R-Y
230 DISPLAY AT(15,1):"Hyphenate?" :: ACCEPT AT(15,12)SIZE(1)VALIDATE("YNyn"):Q$ :: IF Q$="N" OR Q$="n" THEN 260
240 ACCEPT AT(18,1)SIZE(Z):H$ :: IF POS(H$,"-",1)=0 THEN 240
250 C$=SEG$(C$,1,Y)&H$ :: M$=SEG$(M$,Y+1+LEN(H$)-1,255):: PRINT #2:C$ :: GOTO 160
260 PRINT #2:SEG$(C$,1,Y):: M$=SEG$(M$,Y+1,255):: GOTO 160
270 CLOSE #1 :: CLOSE #2 :: STOP
280 SUB LASTPOS(A$,B$,Y):: X,Y=0
290 X=POS(A$,B$,X+1):: IF X>0 THEN Y=X :: GOTO 290
300 SUBEND
```

I really think that all program listings should be published in 28-column format, as my Tips from the Tigercub have always been published, because that is how they appear on screen, making it much easier to key them in accurately. However, if you absolutely MUST reformat them, I think that this program will accurately reformat to/from any length up to 79 PROVIDING that you first put a carriage return at the end of every program line.

```
100 DISPLAY AT(3,6)ERASE ALL :"PROGRAM RELISTER":"":" Will reformat a LISTed XBasic program from any linelength to any other length."
110 DISPLAY AT(8,1):" Each program line (not file line) must end in a carriage return."
120 DISPLAY AT(12,1):"Input filename?":"DSK" :: ACCEPT AT(13,4):IF$ :: DISPLAY AT(15,1):"Output filename?":"DSK" :: ACCEPT AT(16,4):OF$
130 DISPLAY AT(18,1):"Present line length?" :: ACCEPT AT(18,22)SIZE(2)VALIDATE(DIGIT):A
140 DISPLAY AT(20,1):"Reformat to what length?" :: ACCEPT AT(20,26)SIZE(2)VALIDATE(DIGIT):X :: IF X=A THEN 130
150 OPEN #1:"DSK"&IF$,INPUT :: OPEN #2:"DSK"&OF$,OUTPUT :: IF X<A THEN 230
160 IF EOF(1)THEN 270 :: LINPUT #1:M$ :: L=LEN(M$):: IF POS(M$,CHR$(13),1)=0 THEN 180
170 IF P+L<X+1 THEN PRINT #2:M$ :: P=0 :: GOTO 160 ELSE PRINT #2:SEG$(M$,1,X-P):SEG$(M$,X-P+1,255):: P=0 :: GOTO 160
180 IF L<A THEN M$=M$&RPT$(" ",A-L):: L=A
190 IF P=0 THEN PRINT #2:M$; :: P=L :: GOTO 160
200 IF P+L<X THEN PRINT #2:M$;:: P=P+L :: GOTO 160
210 IF P+L=X THEN PRINT #2:M$ :: P=0 :: GOTO 160
220 PRINT #2:SEG$(M$,1,X-P):SEG$(M$,X-P+1,255):: P=LEN(SEG$(M$,X-P+1,255)):: GOTO 160
230 IF EOF(1)THEN 270 :: LINPUT #1:M$
240 L=LEN(M$):: IF L+P>X THEN PRINT #2:SEG$(M$,1,X-P):: M$=SEG$(M$,X-P+1,255):: P=0 :: GOTO 240
250 IF M$=CHR$(13)THEN 230
260 IF POS(M$,CHR$(13),1)<>0 THEN PRINT #2:M$ :: P=0 :: GOTO 230 ELSE PRINT #2:M$;:: P=LEN(M$):: GOTO 230
270 CLOSE #1 :: CLOSE #2
```

MEMORY FULL

Jim Peterson

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Disk Librarian	Lou Holmes 617 965/3584			
Tape Librarian	Walter Nowak 413 436/7675			
NEW-AGE/99	Jack Sughrue	476/7630		

JULY MEETING. Jack went to work on his computer and when he was finished, it was holy. It's not what you think, he drilled holes in his consol to vent the heat. It worked and he didn't get electrocuted when he turned it on. Don C. took Lou's monitor apart and fixed some loose wires, it was interesting to see the insides of a monitor. Bruce led another group in computer cleaning. Walt Nowak won the raffle and there were 13 members present.

AUGUST MEETING. This month will be pot luck, not the kind you smoked in your youth. I am sure we will have something interesting for everyone.

RAFFLE. Every month we have a raffle to help defer the rental cost of our meetin hall. A typical raffle will have game and utility programs, T-Shirts, books, bumper stickers, blank discs and all sorts of odds and ends for the T.I.

LIBRARY NOTICE. Please return any items borrowed from our library. If you can not come to a meeting or give these items to someone who will be at the meeting.

REPRINTS. Reprints are permitted as long as credit is given to M.U.N.C.H.

ARTICLES. I am always looking for articles for this newsletter, anything which interests you will probably interest other members of the TI community, so please share your ideas and opinions with all of us.

DISK LIBRARY. The disk library will be at the meetings from now on. We have copies of all disks in the library and they are available to members for just $1.50 each.

FOR SALE. The group has a TI Count Business Software package available for sale. If interested contact Jim Cox at the above numer or the club address.

DISK OF THE MONTH. We are taking a month of for DOM, but I will have our library at the meeting for anyone who wants to pick up something from our catalog.

DISK PURCHASE. For anyone interested in getting some disks for their personal use we will take pre-orders for a group purchase at this month's meeting. The cost is $25.00 per hundred disks, sleves included. Bring your checks or cash to the meeting or mail them to the club address. I will send in the order on August 31st.

M.U.N.C.H.
560 LINCOLN ST.
P.O. BOX 7193
WORCESTER, MA. 01605-7193

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