TELECOMMUNICATIONS AND YOUR T.I.
What You Will Need.
Part I in a Two Part Series.
By Evan Smith

i-Introduction

How would you like to expand your TI into a whole new world of information and communications? This world consists of other home computer users, in some cases professional users, and you have the potential to join it. There are bulletin boards, information services and electronic catalogs just a phone call away, if you have the right equipment.

In this first part of a two part series, I will discuss the equipment needed for telecommunications and some of the costs of this equipment. You will find that you have several options available to you so if you decided to get into the world of telecommunications, make sure you consider all the factors carefully before you make any purchases.

ii-RS 232

An RS 232 is a device that allows your computer to communicate with various standard peripherals including the TI acoustic modem and the new TI impact printer. It allows you to attach items made by producers other than TI such as graphics tablets, plotters and terminals.
There are several RS232's available for the TI-99/4A, some of them made by TI and some made by third parties. The TI RS232's are: the old RS 232 peripheral box (which you would have to buy used now, if you don't happen to find it sitting on the back shelf of some store), the RS 232 interface card for the Peripheral Expansion System (PES), which comes with two serial ports and one parallel port for approx. two hundred dollars ($200) Canadian and requires the four hundred dollar ($400) Peripheral Expansion Box to run. Then there is the HEXBUS system which needs the HEXBUS Interface to run on the TI 99/4A. This interface costs about one hundred dollars ($100), the HEXBUS RS 232 costs about two hundred dollars ($200) and, if you want the optional parallel interface, it costs thirty dollars ($30) extra. As far as my research has shown, the HEXBUS RS 232 Interface only has one serial port.
There are quite a number of third party RS232's available on the market now, as a quick look through the May issue of the Home Computer magazine (The 99'er Magazine) will show. It would be extremely difficult to recommend any one of them, since I have not seen any independently written information on any of them, nor have I heard of anyone who owns one of these models. They do, however, tend to be advertised cheaper than the TI version and should be quite compatible.

iii - Modems

Of all the components of your telecommunication system, you have the widest selection to choose from when you choose your modem. Since the RS 232 that TI uses is the standard EIA RS 232, you can use any modem that connects to a computer system through this standard interface. Therefore, you should think very carefully about what features you

The Victoria 99'er Newsletter is published once a month to provide our members with information about our user group, the TI 99/4A microcomputer and its related software and hardware.

We encourage our readers to contribute articles for publication in this newsletter, on any subject that they may feel is relevant to the interests of our user group.

Please submit type-written, double-spaced articles to our new editor: Rob Sorensen, at 3228 Service Street, Victoria, B.C., Canada, V8P 4M7 or phone him at 592-6790.

Meetings of the Victoria 99'er Group are held the third Saturday of every month at 23 Cadillac Avenue, Victoria, B.C., at 7.30 p.m.

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Victoria 99'er Group Officers

President: Johan Van Imschoot
Vice President: Tom Swirski
Secretary: Steve Holland
Treasurer: Nick Shemdin
Activities Director: Rick Nicolson
Newsletter Editor: Rob Sorenson
Newsletter Composition: Allan Ross

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NEW OFFICERS

Due to the resignation of Evan Smith at the April 1983 meeting of the Victoria 99'er Group, and pursuant to the Constitution of the Victoria 99'er Group, the President has appointed the following officers:

Steve Holland - Secretary
Nick Shemdin - Treasurer

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NEW ADVERTISING POLICY

Until such a time that our constitution is revised, all advertising in this publication will be free.

PROGRAM CONTEST

Just a reminder to you all, that entries for our program contest are due at the June 1983 meeting of the User Group. See the April issue of this newsletter for details.

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LIBRARY NEWS

Thanks to TI, we now have six more musical selections and a whole music program in our library. This library contains programs submitted by our members and programs of public domain. If you wish to get any of these programs, contact Tom Swirski.

Allan Ross has completed a technical manual on floppy disk drives, explaining how they work and their terminology. He has provided the 99'er Group library with two copies. Although it is not specifically dedicated to the TI floppy drives, the principles and terminology explained in the manual apply to all floppy drives, including the TI disk drive(s). It is worth reading if you want to know more about drives and how they work, especially if you are considering purchasing a drive in the future. (Allan is an electronics technologist and works for Wang Canada)

NEWS FROM THE U.S.

It would seem that TI plans to drop the price of the TI 99/4A to $150.00 in the U.S. and is going to offer a $50 rebate on the 99/4A for several months. This would effectively bring down the price of the computer to a flat $100 in the U.S.

will want in your modem before you make your choice. The major difference
between types of modems is how they hook up to the telphone system. A common,
and for years the cheapest, type of modem is the Acoustic Modem. An Acousic
modem is connected to the telecommunications network by placing the handset of
a standard Bell telephone into a set of acoustic couplers. When I say a
standard Bell telephone I mean the type with the two circular ends on its
independent handset. The actual acoustic couplers are a speaker and a
microphone, much like those found in the handset, but in the reverse order.
Acoustic modems tend to be notorious for their inaccuracy, as they tend to
transmit and receive garbage in the form of static.

   A much more reliable type of modem is a Direct Connect Modem. There are two
types of these: one, a relatively new type in this area, is the modular modem.
This type of modem connects between the handset of your phone and the dialing
part of the phone. The modular modem can be found cheaper than the acoustic
modem, but will require some rewiring of the phones commonly found in B.C.,
unless you just happen to have a modular phone. That is the type of phone
where the handset unplugs from the rest of the phone. You could decide to buy
one or perhaps pay a few extra dollars each month to rent one off of B.C.Tel.
Other than the inconvenience of actually connecting it to the telephone, a
Modular Direct Connect Modem works very well and can be considered a good buy
in my books.

   The more traditional type of Direct Connect modem, and the more expensive
one, plugs right into your wall plug of your telephone line, with the
telephone plugging right into it. Again you might experience difficulties if
you have an older telephone system that does not have a modular wall plug, but
this too can be overcome with some rewiring. This type of modem tends to be
the type that can come with some impressive optional features, such as
automatic dialing and answering, signal filtering, and other features that
make your life easier. This type of modem also has the reputation of being
extremely accurate, but costly.

   Modem prices are dropping all the time, so you should shop around and see
where you can get the best deal. You should be able to pick up a relatively
good modem for just about $100.

iv - Software

   In order for your computer to understand the communication it receives and to
send out information in a way that other systems will understand it, you will
need some software. The available software includes the Terminal Emulator II
(TE-II), and some copies of the Terminal Emulator I command modules. These
command modules were produced by TI for use with their RS 232's and their
acoustic modem. The TE-II is the commonly available software from TI now, with
the TE-I virtually extinct. The TE-II has a number of useful functions built
in (when they work!), which include: file transfers to and from your computer,
screen dumps to external devices, wrap control (either wraps the lines, or
uses a window for the rest of the line), a four page buffer, and control of
the Solid State Speech Synthesizer (either to speak out the contents of the
screen, or for use from TI Basic)

   The main problem with using the TE-II is that, if you get a 1200 baud modem,
or use the HEXBUS system, the TE-II will not run them. This means that you will

have to write your own software or get somebody else to write for you, as there is no third party software available for the TI for telecommunications (as far as I know). This software will probably have to be written in assembly language which means you will hve to have either the Assembler/Editor, Extended Basic with the Memory Expansion Unit, or the Mini-Memory Command Module. This will, however, permit you to use a 1200 baud modem or the HEXBUS system. It will also allow you customize your software for your own needs, such as making your TI seem like it is another type of terminal to the system you are communicating with (this will allow you to use full screen editing on some systems where you could not have if the system thought you were using a TI). By the way, a TE-II would cost you about $70 in Canada (that is if you shop at one of the stores that gives the user group a discount).

v.- Conclusions

Although the telecommunication world is a nice one to get into, it may cost you a bit to get started. If you plan to expand your system, you will eventually need the RS 232 anyway, and the additonal cost for the software and the modem are well worth the advantages of joining this new world of communications.

In the second part of this series, I will tell you something about the telecommunications world and why it is worth your time and money.

Notes:
1) 99'er HOMECOMPUTER magazine is a trademark of Emeral Valley Publishing Co., P.O. Box 5537, Eugene, Oregon 97405
2) HEXBUS, TI 99/4A, TI Impact Printer, Peripheral Expansion System - are trademarks of Texas Instruments Incorporated.
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IMPORTANT BUSINESS

It was moved at the April 1983 meeting of the Victoria 99'er Group, "That this organization consider registering with the Registrar of Societies of B.C. as a NON-PROFIT SOCIETY."

This would entail payment of a seventy-five dollar ($75) fee and the adoption of a new constitution that would conform with the Societies Act of British Columbia. We have asked the Nanaimo 99'er Group to consider affiliation with us for this purpose, for which they will send a representative to our May 1983 meeting to discuss.

A report by an appointed committee is to be given at the May meeting in regards to the full details of changes in the the constitution and the fees required for registration.

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It has also been announced that TI is going to postphone the full scale production of the TI 99/2, since they are not sure whether it would sell sufficiently well enough if the price of the 16 colour TI 99/4A is only a hundred dollars. Personally I think that this is a sad development, since the black and white TI 99/2 had some very nice features, including the fact that it runs 12 times faster than the 99/4A (according to bench mark tests), and is even said to run faster than the IBM PC.

FRIENDS BELOW THE BORDER
by Evan Smith

Over the past couple months we have been receiving mail from other TI User Groups. Three of these Groups have indicated that they would like to form some permenant correspondence with us. We hope to start exchanging newsletters with these groups on a regular basis (as regular as we manage to produce a newsletter). I would also encourage individual members to communicate with these groups, and any other TI User Group that you may hear of. The User Groups that wish to exchange newsletters are:

MSP 99 Users Group
P.O. Box 12351
St.Paul, Minnesota, 55112

Rocky Mountain 99ers
Box 3400
Littleton, CO. 80161

M.I.T. Lincoln Laboratory,
TI -99/4A User Group
244 Wood Street,
Lexington, Mass. 02173

We are glad to hear from these other members of the 99'er family!
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DISK MANAGER II

The new Disk Manager II command module is now available. If you have the Peripheral Expansion System Disk Drive Controller card, this new module will allow you to intialize both sides of a diskette (if you are using a double-sided, single density, ANSI standard disk drive).

To get the new card, send $9.95, a photocopy of your receipt for your disk drive controller card, the ATA or LTA of your current Disk Manager command module, and your address to:
Accessories, P.O. Box 53,
Lubbock, Texas 79408

You might also be interested to know that this module has a prompt for single or double density (currently inoperable for double density). This would seem to indicate that TI might be coming out with another Disk Drive Controller Card that will allow Double Density disk drives to be hooked up to the 99-4/A.

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MICRONOVA's HOME COMPUTER DICTIONARY

Written for the TI-4/A, this is a unique information resource handbook designed to put hundreds of useful contacts at fingertip reach. The directory has information on: Over 100 third party software businesses; On-line databases; UCSD P-System; Publications; Multilevel Marketing; Business contacts; Disk Drives; Sources of technical information, Computer camps, TI hotlines and contacts, Assembly language and much more!! Send $4.95 to: MICRONOVA, POB 1058, North-hampton, MASS. 01061.

ALPHABETICAL
SHELL-METZNER SORT ROUTINE - EX. BASIC
By Bob Willihnganz

```
100 REM ALPHABETIZATION ROUTINE
110 I=0 :: L=0 :: J=0 :: M=0
120 DIM D$(1000)
130 INPUT "NUMBER OF WORDS TO BE SORTED= ":N
140 FOR I=1 TO N
150 INPUT "WORD= ":D$(I)
160 NEXT I
170 FOR I=1 TO N
180 PRINT D$(I);"_ _";              [NOTE: _ _ means two spaces]
190 NEXT I
200 PRINT
210 REM  SHELL-METZNER SORT ROUTINE
220 M=N
230 M=INT(M/2):: IF M=0 THEN 310
240 K=N-M :: J=1
250 I=J
260 L=I+M :: IF D$(I)< =D$(L) THEN 200
270 X$=D$(I):: D$(I)=D$(L):: D$(L)=X$:: I=I-M
280 IF I> =1 THEN 260
290 J=J+1 :: IF J< =K THEN 250
300 GOTO 230
310 FOR I=1 TO N
320 PRINT D$(I); "_ _";
330 NEXT I
340 PRINT CHR$(12)
```

This program is writtent in Extended Basic. To use in BASIC, use separate
lines for each statement. Example: Line 110 should be broken down into four
separate lines.