



THE DATA BUS

8407 (019)  
Delaware

THE DELAWARE VALLEY USERSGROUP

DEDICATED TO T.I. 99/4A HOME COMPUTER USER

P.O. BOX 6240 STANTON BRANCH WILMINGTON DE 19804

(meeting the 4th thur. monthly)

DuPont FAIR (by Lynn Acquard)

It's not too early to reserve July 5th- the date of the DuPont computer fair. We had such a good turnout at the University of Delaware fair, I'd like to see all the members helping once again. We have such a super bunch of people in this club, let's prove it!

Remember, you need not bring your whole set-up: get together with a friend or two and each of you bring a piece of equipment. That way you not only avoid having to haul everything, but you will also have time to walk around and see the other exhibits while your friend tends to the equipment. Which reminds me, I need someone who can bring their TV (or monitor). So mark Aug. 5th from 12 noon to 5 pm on your calendar and give me a call at 368-0609, or leave a message on the BBS (322-3999)

THANKS !

[[[[[[[[[[inside[[[[[[[[[[

TITLES PAGE

- Telephones and computers  
(The Gorilla Guide) ..... 2
- CREATING THE D.V.U.G.  
CATALOG Part 2 ..... 7

[[[[[[[[[[[[[[[[[[[[[[[[[[[[[[

HOTLINE NUMBER  
(302) 328-6162

Computers at meetings

I'm afraid that we have a problem with the equipment used at the meetings - that is the the number of machines is dropping! We can't solve programming problems or exchange ideas without the equipment being there. The same people are bringing their machines all the time and it is not fair. Please be considerate! We have enough members that NO ONE should HAVE to bring their machine more than once a YEAR. Remember that most of our members do NO have a disk system-so donot let that hold you back! Also remember that you can get together with one or two other people and each of you bring a part of your system. Which brings me to another problem. If you decide to bring your equipment, PLEASE let me know before the meeting. More than once, we have had TOO MANY systems because I had begged people to bring machines, then have unexpected ones show up. (It can also work in reverse, if you tell me you ARE bringing a machine then don't.) It is wonderful to have plenty of machines, but not if it means that someone's had to sit out in the car. So, if you suddenly feel the urge to bring your system to a meeting, please do, but PLEASE let me know. My phone number is 368-0609 or leave a message on the BBS (I get on the BBS usually every other day). THANKS! (Lynn Acquard)

"The GORILLA-GUIDE to TELECOMMUNICATIONS"

(or, How to get on/line without making a monkey of yourself!)

\*\*\*\*\*  
 by Barry T. Boland, [71366,542], <TI4439> July 6th, 1984

Hello - If you are one of the people that this series of articles is intended for, you're saying "Just what in H\*ll is TELECOMMUNICATIONS, and do I care?". If you really want an answer, I will try to lead you down the road to Pennylessness and Enlightenment.

CHAPTER 1 - what is it?

Telecommunications is using your computer, hooked to your telephone, to talk to another computer. Put in simple terms, You call someone somewhere with your telephone, you both hook your computers to the telephone, then you both run a program which lets your keyboard type to their screen, and their keyboard type to your screen.

CHAPTER 2 - what do I need?

The bare-essential basic equipment you need is:

- 1 - a Telephone
- 2 - a Computer
- 3 - a Terminal Emulator program
- 4 - an RS232 Interface
- 5 - a Modem
- 6 - Someone to call (who has similar equipment)

Let's explain the items, one at a time. I'll skip right over the *telephone and computer*. Anyone who doesn't have a telephone these days, is either too poor for telecommunications, not interested in telecommunications, or a complete NEANDERTHAL. I assume you have a computer, or you wouldn't be reading this article. Furthermore, since this is the 99/4a User's Group Newsletter, I will assume you have a Texas Instruments TI-99/4a computer!

*A Terminal Emulator program* \* This is a program of some sort, which will allow your computer to "emulate" (pretend to be) a "terminal". Terminals are/were something you may have seen in old movies about the Stock Market. They are also sometimes called Teletypes. For us Gorilla types - Let's just say its a special program. The most common, and easiest to find for the TI-99/4a, is the TERMINAL EMULATOR II Module (or cartridge). This sells now for about \$24.95.

*An RS232 interface* \* RS232-C is a "standard" interface used by almost all computers to 'talk' to printers, modems, and just about anything else there is. Let's just call it a 'black-box' that you have to have, and leave it at that. RS232's come in two popular types - One being the 'stand/alone' version: This is a separate 'black-box', which plugs into the side of your TI-99/4a. They sell for about \$110 to \$195. The other type is an RS232 "card": This is a small, slim 'black-box', which plugs into the PERIPHERIAL EXPANSION BOX (another 'black-box', made just to hold other 'black-boxes'!), and sells for about \$85 to \$110.

*A Modem* \* This is a "MOdulator-DEModulator". This is the 'black-box' that 'talks' to the telephone! These come in all shapes, sizes, brands, and prices. The normal, reasonable range being from \$60 to \$595, depending on how many 'Bells Whistles' (read Fancy Stuff) you want them to have. (Continued on page 3. Look for Chapter 2. *Gorilla Guide*)

(Continued from page 2.) The GORILLA GUIDE (Chapter 2, Continued)

Someone to call \* This would be some other Yoyo, who has as many "black-boxes", and as little sense (and cents, by now), as YOU. Someone like ME!

CHAPTER 3 - why do I care?

\*I\* care because it's NEAT. However, here are three reasons you can give your Spouse, and other people who aren't computer-nuts like you and I.

1 - It's easy to do. You don't need to know ANYTHING about programming. It's like the telephone, you yell in here, and it comes out there. No Electrical Engineering Degree needed. If you can handle turning on the TV, dialing the phone, and 'two-finger' typing with confidence - You can be a WIZARD of TELECOMMUNICATIONS!

2 - It's an unbelievable source of information. What the telephone and newspaper do for shopping, Bulletin-Boards and Data-Bases can do for your computer questions and needs. No other form of information will have the kind of retrieval time, either. Usually 24 hours OR LESS

3 - Your children and grandchildren will be doing it next year. Remember the "NEW MATH"? Don't let yourself be stuffed on the wrong side of the Generation Gap this time!

CHAPTER 4 - putting it all together, or Tab A into Slot B...

Well, now that we've talked about what you need, let's tell you what you have to do to put it all together and start using it!The RS232 thing is fairly simple, you SHOULD be able to manage that with the instruction book you receive with the card (or stand/alone unit) yourself. The modem should have instructions on set-up too, \*BUT\*, they hardly ever give you enough information to get the right cable for it! SO...

The cable for your modem connects it to the RS232 card (or stand/alone unit), and consists of (usually) a ribbon cable of 25 wires, with a 25 pin connector at either end. Generally one FEMALE plug (the kind with 25 little holes), and one MALE plug (the kind with 25 little pins). The tricky part is that not all computers use the same pins for the same things! We will have to switch a few of the wires on one end of the cable. For most MODEMS, you will only need 4 of the 25 wires to make it work. I will describe all 6 that may be used however, just in case.

MODEM RS232 CARD (or Unit)

pin #	connects to -	pin #
1	.....	1
2	.....	3 (*)
3	.....	2 (*)
6	.....	20 (*)
7	.....	7
20	.....	6 (*)

\* NOTICE: These pins are not straight pin-to-pin connections!

(Continued on page 4. See The GORILLA GUIDE

(Continued from page 3.) The GORILLA GUIDE (Chapter 3, Continued)

Pins number 6 and 20 are the ones you MAY not need. I include them just to be sure. If you have trouble getting your set/up to work at all, the cable configuration is the most likely problem. If you can't buy a cable which is made to connect your brand of modem to a TI-99/4a computer, you can buy the parts you need at any RADIO SHACK store, and (God forbid!) make it yourself. Ask around if you feel totally lost and I, or any of several other people can help you out. Total price ought to be in the \$25/30 range.

Some modems draw their power from the phone line itself, but most do not. Most need either a battery of some type, or have a "power-adapter" that plugs into a regular wallsocket (just what you needed, right? \*ANOTHER\* thing to plug into the wall!) If you have a choice between a battery or a Power-Adapter, I recommend you use the Power-Adapter. It's more reliable. Some modems will start 'dropping characters' if the battery gets weak. That can be VERY frustrating when you're paying \$6/hour to 'Download' a file that takes about 45 minutes, and it ABORTS 40 minutes into the transfer due to lost characters!

There are two switch settings on a modem that you need to use. They are FULL/HALF DUPLEX, and ORIGINATE/ANSWER. DUPLEX has to do with who can 'talk' when. HALF DUPLEX is a 'one-way' line. This means when you're typing something at your end, the other person has to wait until you are done to send anything to you. Sort of like a CB radio, where you can't hear anybody while you've got the mike-switch pressed down to talk. FULL DUPLEX, however, is a two-way street. Anybody can type at any time, this is more like the telephone, where you can both talk at once or interrupt each other if need be. For ANYTHING you will ALWAYS want the Modem set to FULL DUPLEX!

The other setting is ORIGINATE/ANSWER MODE. A modem works by sending out a "carrier-tone" to the other modem. This is the high-pitched 'squeal' you hear when you call a computer. There are two different 'squeals', one for the person who is calling (ORIGINATE), and one for the person who is being called (ANSWER). Since you will be making most of the calls until you know more about what you are doing, you'll want your modem set to ORIGINATE.

The only other switch you need to be concerned about on the modem is the ON/OFF switch. If you can't handle that one on your own, give it up, you're just not the computer type.

Modems come in two major types: ACOUSTIC and DIRECT CONNECT. ACOUSTIC means that it has two rubber 'cups' that you stuff the handset of the phone into. These are not complex, but a word of warning is called for - Make sure that you have the right end of the phone 'up'. That is, the mouthpiece is in the 'cup' that makes noise and the earpiece is in the end that listens! It should be marked (usually as 'the cord goes on this end'). One other thing to make sure of is that the phone is pushed FIRMLY into the rubber 'cups' (40,000 foot/pounds should do it) to avoid getting any 'outside' noise into the phone, like your son (or sister) next door playing those Punk-Rock tapes.

(Continued on page 5. The GORILLA GUIDE.)

(Continued from page 4.) The GORILLA GUIDE (Chapter 3, Continued)

The DIRECT-CONNECT modem either plugs right into the phone jack in the wall, or into the phone itself. If its not one of the fancy \$500 types that are automatic, you dial the phone, wait for the carrier tone, and flip a switch on the modem, then hang up the phone. If this switch isn't marked OFF/ORIGINATE, it may be a separate one marked VOICE/DATA. When you hear the carrier, switch it to DATA.

One last note on the modem, you can turn off the computer, turn off the lights, put the cat out and go to bed, BUT IF YOU HAVEN'T TURNED THE MODEM OFF (with a DIRECT-CONNECT modem), YOUR PHONE IS STILL OFF-THE-HOOK! Always remember to turn the modem off! Also, if you get 'stuck' on a Bulletin Board or Data Base, and can't seem to 'log/off', turning off your modem will ALWAYS get you 'off/line'.

CHAPTER 5 - getting started, a guided tour

OK, now we're ready to actually DO something with it! Turn on the computer (remember that you have to turn everything else on first, the computer console should be the last thing you turn on!) and plug in the TERMINAL EMULATOR II module. Now we're looking at the computer TITLE SCREEN, the one with the nice color bars. "READY - PRESS ANY KEY TO BEGIN" it says. OK, press a key, any key... Now you should have the console MENU SCREEN:

PRESS

- 1 FOR TI BASIC
- 2 FOR TERMINAL EMULATOR II
- 3 FOR DEFAULT OPTION TE II

Generally, you can use 3, the "DEFAULT OPTION", but I will walk you through option 2 and explain a few things first - so press "2".

The first thing you see is the "TERMINAL EMULATOR II" title screen, and after a pause of a few seconds, this is replaced by the "COMMUNICATIONS SET-UP" menu. You will see 3 columns labled "PARAMETER", "OPTIONS", and "CHOICE".

The first parameter is "BAUD RATE", this means hoe fast the data travels through the phone line. Both modems (yours and the one on the receiving end) must be set to the same speed. The most common setting is 300. Some modems are able to use 1200, but those are the \$400 and up ones. We will go with 300 for now. Looking at the "OPTIONS" column, we see:

- 1-300
- 2-110

You will notice that the TE II module gives us two choices here, 110 and 300. 110 baud is EXTREMLEY slow, and hardly ever used anymore. We want choice number 1. Looking at the "CHOICE" column, we see that it already shows the choice as 1! This is the 'default' choice. Since it is also the one we want, we can just press the "ENTER" key. Let's do that. (Continued on page 6. See The GORILLA GUIDE

(Continued from page 5.) The GORILLA GUIDE (Chapter 5, Continued)

Now the cursor moves down to the next row, which is "PARITY". Parity has to do with error-checking. When you send an "ASCII" character through the phone line, what you're sending is not a letter, but a 'code' consisting of a series of 1's and 0's. Error-checking is done by adding another 1 or 0 to the end of this series. This extra number is called the 'check-bit'. What it does is make the number that you get when adding all the 1's in the series that represents the letter either an ODD number, or an EVEN number. That's PARITY. You can probably see that if you're sending ODD, and the modem on the other end is checking for EVEN, it will assume something is wrong. So both modems have to be set to the same parity. Most of the Bulletin Boards and Data Bases that I use are set for EVEN PARITY, which again is the default, so just press "ENTER".

The cursor should now be on the row for "DUPLEX". If you have read the booklet that came with your TE II module, you may have seen that you use FULL DUPLEX to talk to a BBS (that means Bulletin Board System) or one of the big mainframe computers that are used for COMPUUSERVE and THE SOURCE. The book did tell you that if you were to talk to a friend who is using his TI-99/4a and modem (just like you are) you would want to use HALF DUPLEX. Let me explain that a little more - What DUPLEX does in this case is to either 'echo' what you type on your keyboard to your screen, or not 'echo'. If you use FULL DUPLEX, the system does NOT 'echo' back, but just sends what you type to the other modem. That's because the system on the other end, if it's a BBS or mainframe computer, will 'echo' what it receives back to your screen. If you used HALF DUPLEX, the TE II module would 'echo' back what you type as you type it - and then the system on the other end will 'echo' it back to your screen too! If you type "HELLO" and see "HHEELLLLLLOO" print out on the screen, that's what is happening. On the other hand, when you talk to a friend with a TI-99/4a, who is using the TE II module just like you, his computer will not 'echo' what it receives back to your system. In this case, if you use FULL DUPLEX, you type "HELLO" and see " " on your screen! It prints on the other end, but not on yours! So, we use HALF DUPLEX to print what you type on your screen before sending it, so you know what you typed. \*BUT\* one point I want to make clear, is change the DUPLEX setting HERE, ON THE TEII MODULE, and \*NOT\* the switch on the MODEM! Even though it is called the same thing, what it does is different. Our first session will be with either the Club BBS, or THE SOURCE, so we want FULL DUPLEX for now. Press "ENTER" to accept the default choice.

The next row is "RS-232 PORT". There are two different kinds of output 'ports' on the RS232 card. The 25 pin plug (the one that points straight out, or back) is the "SERIAL" or RS232 connection. The other plug is a 16 pin plug (the one that points straight down) and that one is the "PARALLEL" or PIO connection. If you have a printer connected to the RS232 plug on your card in the PERIPHERAL EXPANSION BOX, you'll need a "Y" cable to hook up the modem! The easiest way around this is to hook the printer to the PIO plug. It's cheaper and faster too. If you happen to have one of the 'stand/alone' boxes, you may have two 25 pin plugs, check your RS232 booklet to see which one is RS232/1 and which one is RS232/2. If your modem is hooked up to RS232/2 you will have to choose "port #2". Press whichever ever choice is appropriate here.

(To be continued Same time, Same Channel "a real cliff hanger?)

Quartz Mill Computers

ANNOUNCES

\*\*\*\*\* USED EQUIPMENT \*\*\*\*\*

\*Stand-Alone Disk Controller\*  
\*Stand-Alone Disk Drive\*

\*\*\*\*\*

NEW \*PE Box System\* NEW  
(Box)  
(32K Memory)  
(Disk Controller Card)  
(RS232 Card)  
(Internal Disk Drive)

ONLY .....\$ 499.99

(All TI Componets)  
(below DEALER COST)

\*\*\*\*\*NEW NEW NEW NEW NEW\*\*\*\*\*

WE NOW CARRY MBC PRINTERS

Priced at ONLY... \$262.50

NEW LOW PRICE ON NEC 8023AC

Priced at ONLY... \$360.00

GEMINI 10X PRINTER \$295.00

QUARTZ MILL COMPUTER:

25 Quartz Mill Road  
NEWARK, DE. 19711  
(302) 239-6714

\*\*\*\*\*COMING SOON!!!\*\*\*\*\*

The COR-COMP COMPUTER!!!

\*TI Compatible

\*80K RAM

\*Super Keyboard

\*The COR-COMP EXPANSION SYS.\*  
(Built-in RS232, 32K, Disk)  
(PLUS 3 MORE EXPANSION SLOTS)

Watch this ad for more detail!

\*\*\*NOW AVAILABLE\*\*\*

The SANYO Computer

\*\*IBM Compatible\*\*

128K RAM

Printer Port

80 Column

high resolution color

Disk Drive

Call for a home trial

\*\*\*\*\*SOFTWARE\*\*\*\*\*

We have new and pre-owned  
Texas Instruments Software

\*\*USED TI-WRITER \$40\*\*

X-BASIC CARTRIDGES IN STOCK

\*\*LETTER QUALITY PRINTERS\*\*

STAR (GEMINI)POWER TYPE \$410

SILVER-REED # 500 \$450

\*\*\*\*\*

