

THE DAK COMMUNICATIONS ROM MANUAL

By

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1. Introduction

The purpose of the manual is to explain and discuss the programs of the DAK Communications ROM Capsule. This ROM capsule was included with your Geneva package as an extra feature. Located on the ROM capsule are four programs that will facilitate the use of the Geneva. The four programs are described as follows:

DAKCOMM:

DAKComm (or DAK Communications) is a communications software program specifically written for the Geneva. It supports terminal emulation, file transfer, log file capability and other features found in most communications software. This program was written by me, Courtney Harris.

DAKTYPE:

DAKType is a program that will allow you to *type thru* to your printer. This feature is nice to have in the event that you need to type an envelope or a short letter and do not want to use WordStar. I also wrote this program.

WSP (WordStar Patch):

WSP is a program included for the DAK customers who received the Seikosha printer model No. SP1000-AP. This program performs a patch to WordStar so that it may function properly with the SP1000-AP printer. If you received the Seikosha SP-1000AS printer, you need not be concerned with this program. If you plan on using another printer with the Geneva and Wordstar, you'll need to run this program. It was written by Bob Diaz of Epson Corporation.

BATTERY:

This is a nice little utility that will display the Geneva's approximate battery voltage. A very helpful feature should you be unable to get the Geneva to its A.C. adapter. Of course, if the Geneva's battery dies, this program may not run too well. This is another Bob Diaz creation.

2. Installing the Rom Capsule.

This is a very simple procedure that has been outlined several times over in the other documentation supplied with the Geneva package purchased from DAK. Both the Epson documentation and the DAK Geneva Manual (DAK Ref. No. 4475) explain in detail, this procedure. It is advised that you insert the DAK Communications ROM capsule into the socket of the Multi-Unit 64, (Drive 'I') as this is a CMOS part, it will not damage the Multi-Unit 64 in any way or affect it's battery life. If you are not using the Multi-Unit 64, you will have to insert the DAK Communications ROM into the 'Drive B' Rom capsule socket located underneath the Geneva. Also refer to the supplied documentation for instruction regarding the installation of the Multi-Unit 64 or the 300 Baud Modem Wedge. When the Geneva is powered-up, its main menu will list the four programs of the ROM Capsule. Just use the arrow keys to select the program you desire, and hit the Return key. The Geneva will load and run the program for you automatically.

3. The DAK Communications Program

A. Introduction.

This section of the manual will explain the use and features of the DAK communications program (DAKComm). This program was especially written for DAK customers and designed to run on the Geneva PX-8 computer. This program has most of the common features found in other communications programs, such as number dialing capability, file transfer capability, log file capture, auto-answer, etc. The commands for DAKComm are easy to remember and consist of only two letters for simplicity. The dialing capability (using the internal modem only) supports both touch-tone and rotary dialing modes. File transfers are done using the very popular XMODEM protocol. The log file command will allow you to capture computer sessions to a file that may be printed at a later time. DAKComm also supports both the internal and external modem ports of the Geneva. The terminal emulation mode supports both full and half duplex communication as well as a remote echo mode for real-time computer conversations.

B. The Pre-requisites to running DAKComm

a. The modems that are available.

The DAKComm program will support two basic types of modems: internal and external. If you purchased the standard DAK Geneva package (DAK Reference No. 4610) then you received the Multi-Unit 64. This bolt-on wedge has an integral 300 baud modem which DAKComm will address. If you ordered the Modem Wedge 300 (DAK REF. No. 4611) this device can be attached to your Geneva and DAKComm will talk to it. If you ordered the RAM Disk 120 (DAK REF. No. 4612) or do not have an internal modem, you will have to use the external port. The external port is designed to connect with either a printer or a modem, and we have included the printer interface cable with your DAK Geneva Package. This cable will not work when connected directly to your external modem, although it might fit rather nicely. Not to worry, however, we have included what we call the *null modem connector*, (actually it is called a *flip* also.) This little device plugs in between your printer cable and external modem and will allow your Geneva to 'talk' to the modem via the printer cable. So be sure to locate this little beauty and connect it in-between the printer cable and external modem.

b. Talking to your desk-top P.C.

One of the Geneva's strongest features is the ability to upload documents to your desktop computer, (or any computer for that matter.) This feature will allow you to create and edit a document on the Geneva using Wordstar, and then send it to your larger computer for printing, (assuming that Seikosha printer will not be suitable for a particular document.) To send a file to your desk-top P.C., you need to connect the P. C. to your external serial port. To accomplish this, connect the printer cable to the RS-232 port on Geneva, the other end of this cable gets connected to your's P.C.'s modem port, (your P.C. will have to support an external modem channel and have the necessary cabling.) You may find that both connectors are of the same *gender*, thus preventing you from connecting them together. This problem is easily resolved, as we have supplied what we call a *gender changer*. This device will connect these similar connectors together. Once you have got the physical connection together, you will need some software on both machines in order to transmit files to one-another. That's

where DAKComm comes in, it is the software you will run on the Geneva. For your P.C., you'll need a communications software package that supports the XMODEM protocol. There are literally dozens of these types of programs available for the P.C., some examples are CrossTalk, (very popular, talks nicely to the Geneva) Smartcom II, Telpack, Sysdyne, etc. Using DAKComm's RF and SF commands, you will be able to receive and send files (respectively) from and to your P. C. Refer to these command descriptions for more information on file transmittal.

C. DAKComm Commands.

After you have installed the DAKComm ROM capsule, you will be able to run the DAKComm program. If your Geneva is in the menu mode, the four programs in the ROM will appear on the main menu. Just move the cursor (using the arrow keys,) over the word "DAKCOMM", it will begin to blink. Hit the RETURN key and the DAKComm program will be loaded and executed. First DAKComm will say hello and then tell you if it detects the presence of an internal modem. DAKComm will automatically select the internal port if the internal modem is present, otherwise it will select the external port (via the RS-232.) DAKComm will then prompt you for a command by displaying the following:

Com:

You then can enter the command as follows:

XX YYYY.....

Where XX is the actual command and YYYY..... are the optional command parameters. The commands are listed and described as follows:

a. TM - Terminal Command Options: F,H,R

Executing this command will start the terminal emulation mode. Your Geneva will 'act' like a terminal, sending data through either the internal or external modem, (depending on which one you selected.) The baud rate, parity bit, and stop bit count should all be set-up before you enter the mode. If you are using the internal modem, the baud rate will be set for you automatically at 300 baud and the internal modem port select will be active. The options are set according to the different types of communications format you are using, they are discussed below. If you wish to get out of the terminal emulation mode and return to the command mode, hit the ESC key.

The F option will place the terminal emulation mode into full duplex. This mode is what you would use for computer and bulletin-board services. In this mode, characters you type are sent out, but do not get displayed on the screen. If the Geneva should receive a character, it will be displayed on the screen. This is the way most computer terminals work. The H option will make the Geneva work like a half-duplex terminal. It is like full duplex, except that the characters you type will also be displayed on the screen locally. 'Locally' means that the Geneva itself is taking your characters and sending them to the screen. Some older computers do not 'echo' characters back to the remote terminal, so the Geneva does it for you. The R option is great for the times when you might be talking to another computer user via the keyboard, where you are

connected through the modems and actually having a conversation through the keyboard. As you type characters, they are sent both to your screen and to the remote computer. However, when the Geneva receives a character from the remote system, it will send it to your display and then send the character *back* to the remote user, (who should be in full duplex mode.) Essentially, this mode will allow both sides to see all the words of the conversation. Note that if two Genevas are communicating, only one of them should be in this mode, otherwise you will get what we refer to as the 'ping-pong effect,' where once a character is sent, it will get echoed back and forth between the systems, much like a ping-pong ball in the game of the same name. The other Geneva should be in full duplex mode.

b. **DL - Dial Number Command** Options: T,P

This command will dial a telephone number through the internal modem and wait for a carrier detect to be established. The format for the command is as follows:

DL X YYY-YYYY

where X is the option, (explained below) and YYY-YYYY is the telephone number to be dialed. Commas (',') can be embedded into the telephone number, causing a two second delay for each comma encountered. This will allow you to dial through a long distance network such as Sprint or MCI.

The T option will cause the Geneva to dial the number using touch-tone (or DTMF for you techies.) Although it is usually placed at the beginning of the telephone number, it can actually be placed anywhere in the number, i.e., this will allow you to switch from the pulse dialing mode to the touch-tone mode in the middle of the number. The P option will force the Geneva to dial pulse mode (rotary) instead of the touch-tone mode. This option too can be embedded anywhere in the telephone number. If the option is omitted, DAKComm will use the last dialing mode accessed, (touch-tone is the power-up default.) Hitting any character during the dialing sequence will terminate this command. This command will not work with external modems.

c. **BD - Baud Rate Command** Options: L,3,6,1,2,4,9,H

Use this command to set the baud rate for the modem port (internal or external.) The baud rates are as follows:

L - 110 baud (low speed)
3 - 300 baud
6 - 600 baud
1 - 1200 baud
2 - 2400 baud
4 - 4800 baud
9 - 9600 baud
H - 19.2k baud (high speed)

Obviously, the internal modem will not work at baud rates above 300 baud. However the external modem port will work properly at any of the above rates. The power-up default is 300 baud.

d. RF - Receive File Command

Use this command when you want to receive a file from a bulletin-board or computer service, (such as Compuserve.) The protocol used for file transfer is the very common *Ward Christensen Protocol*, (also known as Modem 7 or XMODEM protocol.) You may also use the command to receive a file from another Geneva using either *DAKComm* or the *Geneva Connection* (a communications program written by Epson.) To receive a file, have the remote party send the file, (or tell the remote computer to send the file) and then enter the command:

RF X:Filename.Filetype

where X is the drive (optional), *Filename* is the name of the desired file and *Filetype* is the three-letter file type, (a optional part of CP/M, refer to the Epson CP/M operations manual for details.) The Geneva will then start sending characters to the remote computer indicating that it is ready to receive the file. While the file is being received, the screen will display the record count and also inform you of any errors that might have occurred. Don't worry about errors, as the protocol will automatically re-send any data that might be questionable. When specifying a drive, be sure not to name any READ-ONLY drives such as a ROM capsule or the DAKComm program will give you an error message.

e. SF - Send File Command

Use this command when you want to send a file to a remote computer or service. It also employs the *Ward Chistensen* or XMODEM protocol. To send a file, have the remote computer ready itself for reception of the file, (or have the remote computer operator issue the necessary commands) and then enter the command:

SF X:Filename.Filetype

The file name conventions are as listed above in the RF command description. The Geneva will then wait for a signal from the remote computer indicating that it is ready to receive the file. When this signal is received, the Geneva will then start transmitting the file to the remote computer while at the same time displaying the record count on the screen of your Geneva.

With both the RF and the SF command, I am assuming that you have some knowledge of file transfer and the XMODEM protocol. If not, I suggest that you look into a variety of books that are available on the subject of computer communications.

f. LG - Create Log File Command

This command will allow you to 'capture' data displayed on your screen during terminal emulation mode to a log file. This command is useful when you wish to keep a record of a computer session in a log file. You may also want to save a conversation you have had with another user in a log file. To create a log file, enter the following command:

LG X:Filename.Filetype

This command also uses the above-mentioned file naming conventions. When you then

enter the terminal emulation mode, all data displayed on the screen will be sent to this file. You may leave the terminal emulation mode and return to it without harming the file, however if you decide to exit the DAKComm program, the file will automatically be closed. To close the file yourself, just enter the command **LG** without any filename, and it will be closed. If you use a name of a file that already exists, DAKComm will ask if you want to overwrite the existing file, respond with **Y** or **N**. If you attempt to open a log file while another log file is presently open, DAKComm will ask if you wish to close the first log file, respond with **Y** or **N**. If you answer **No**, the first log file will remain fully intact and ready to accept more data. If you answer **Yes**, the first log file will be properly closed and the second file will be opened ready to accept new data.

g. PT - Port Select Command Options: I,E --

Use this command to specify the port (internal or external) used for the modem communications. The **I** option will select the internal modem port, however, this option will be ignored if you do not have either the Multi-Unit 64 or the 300 Baud Modem Wedge installed on your Geneva. If either of these internal modems devices are installed on your Geneva, the DAKComm program will automatically select the internal port at the program start-up time. If there is no internal modem, the external port will be selected. When the DAKComm program first comes-up, it will inform you as to which port was selected. Use the **E** option if you are talking to an external modem via the printer cable/gender changer combination that was supplied with the Geneva package from DAK, (refer to the Prerequisites section.) The external port can be selected at any time regardless of whether or not the internal modem is installed.

h. WL - Word Length Command Options: 7,8

This command will set the word or byte length of the transmitted characters. The DAKComm program comes up the the word length set to 8. Generally, you should not be too concerned with this command, there is one exception however. If you should want to access Compuserve, you will need to set the word length to 7, while at the same time selecting even parity (use the **PA** command.) Otherwise, when you log on to Compuserve, all you will receive is garbage. After you get into Compuserve, enter the following:

GO PROFILE

and set your personal profile parity to zero, this will end the problem with the garbage while in eight bits. When you first log-on you will see garbage, but as soon as you enter your user identification, your profile will get loaded and the garbage will cease.

i. PA - Parity Set Command Options: O,E,N

This command will set the parity of the RS-232C communications link. In all truth this is a setting that most of you will not have to be too concerned with. Parity is a built-in error checking device of the RS-232C protocol. The start-up default for parity is **none** (no parity checking.) The **N** option will set the parity to **None**. The **E** parity will set the parity to **Even**, while the **O** option will set the parity to **Odd**. I will not attempt to explain how parity works, or why it is even part of the RS-232C protocol, there are many texts available that do that rather well.

j. **ST - Stop Bit Set Command** Options: 1,2

This command could be grouped with above PA command, it being a command you should not be too concerned with. It sets the number of stop bits used by the Geneva while sending and receiving RS-232 characters. The start-up default is 1 stop bit, which will work with 99.9% of the computers you are likely to access. Using the 1 option will set the number of stop bits to one. If you specify the 2 option, then two stop bits will be selected.

k. **RD - Re-Dial Last Number Command**

This command will re-dial the last number you attempted to dial using the DL command. This saves you from having to re-type the entire telephone number should it be busy. Just enter the command RD and hit return. If no number was previously dialed, this command will be ignored.

l. **AA - Auto-Answer Command**

This command will cause the Geneva to wait for the telephone line to start ringing. When it does, the Geneva will then answer the line and attempt to establish a carrier with the calling party, (assuming that the calling party is another computer.) This command is useful at times when you want to receive a call from another user for keyboard conversation or file transfer. To receive an incoming call, just enter the command AA, and hit Return. The Geneva will then wait for the incoming call. Hitting the ESC key will abort the Auto-Answer mode and return you to the command mode. Note that this command will not work with the external port selected, it is designed for the internal modem only.

m. **HU - Hang-up Command**

This command will force the Geneva's internal modem to 'hang-up' or dis-connect (go on-hook) the line. Type in the command HU while in the command mode and the intermodem will disconnect from the line. Note that this command will not work with the external modem port.

n. **QU - Quit Command**

This command will terminate the DAKComm program and return to the CP/M command level. It will also close an open log file and power-down the internal modem, thereby disconnecting the line. There is no way to exit DAKComm and return to it without disconnecting the line of the internal modem. This can be done while connected to the external modem port.

WARNING: Do not use any other method other than the QU command to exit the DAKComm program. Using Control-C will prevent the internal modem and UART devices from being powered-down properly, thereby creating a greater battery drain than needed. These devices use power and will considerably shorten the usage time of the Geneva if not powered off by the DAKComm program. If you should accidentally leave DAKComm using Control-C, cycle the power switch on the Geneva. This will power-down these devices.

o. **HE - Help Command**

This command will display a brief but informative list of the available commands in the DAKComm program. After the command description will follow a list of the possible options (where applicable.)

4. The DAK Type Program

As explained earlier, this program will allow you to *type thru* to the Geneva's printer. Using this program, you could type an envelope or a short letter or memo without have to load WordStar. To run this program, select it from the Geneva's main menu and hit Return. You will see this message:

```
DAK Type Program, Enter Control-C to Abort
```

At this point, you may start typing your text. Note however, that the text you enter will not be printed until you hit the Return key. This will allow you to correct simple mistakes you might make while typing the text into the Geneva. When you are finished typing, enter a control-C (hold down the CONTROL key and press 'C') and you will return to CP/M.

5. The WSP (WordStar Patch) Program

WSP (WordStar Patch) has been included with this ROM capsule for those DAK customers who received the Seikosha SP-1000AP printer. As fully outlined in the DAK Geneva Manual, this program patches WordStar so that it will run properly with the SP-1000AP printer. Refer to the DAK Geneva manual for details regarding this program.

6. The BATTERY Program

There is no need to say very much about this utility, except that it will display both the actual voltage of the Geneva's main batteries and a bar graph that is similar to a fuel gauge in a automobile. Simple enough?