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1.0 TERMINAL MENU

A smart terminal is for communicating with other hosts, that is an external computer. The smart terminal program allows your computer to act like a terminal. The terminal menu allows you to alter the parameters that govern the actions of the smart terminal. Correct use of these options should allow the use of the Compac smart terminal with most hosts. Other parameters are controled by direct commands from the terminal mode. All of these options are explained in detail below.

1.1 HALF/FULL DUPLEX

After selecting "1" at the main menu, you must select "T" to alternate between half and full duplex or <ENTER> to leave the current state unaffected. The terminal program often refers to a (C/R). This is short for "carrige return"---the same thing as <ENTER>.

In full duplex (the most common mode) all incoming data is displayed on the screen, and all outgoing data (eg. keys pressed) is transmitted without being displayed on the screen. Normally the host would echo this data back to your screen. In half duplex, incoming data is displayed on the screen, and all outgoing data is transmitted as well as displayed on the screen.
Uses: When typing to another terminal and not a host, it is often helpful to use half duplex so you can see what you are typing. Also, many hosts require half duplex.

1.2 CONFIGURE RC-2322c

This command allows you to change the RC-232c settings. After pressing "2" at the main menu, respond to the prompts with a new value or <ENTER> to leave the current value unchanged. Choose from the following valid responses:

Baud: 110,150,300,600,1200,2400,4800,9600
Word Length: 5,6,7,8
Stop Bits: 1,2
Parity: NONE, EVEN, ODD, N, E, O

If no default is supplied for these values (see the default section, sec 4.0), then the sense switches will be used on a model I, or whatever is received from the equivalent locations on a model III.

Uses: Hosts often require different RC-232c settings. Find out from the host you are using which values to use. Many hosts use 300 Baud, 7 bit word, 1 stop bit, with even parity. If you get "garbage" on the screen when you are in the terminal mode, you could have the wrong RC-232c settings. However, another cause could be bad values in your translation tables.

1.3 SAVE/LOAD DEFINED KEYS

This option saves and loads to/from disk the values specified in options 6 and 7 (defined strings and bytes). These values are automatically saved by the default files, so this command need only be used if you want to define more keys than there are keys to define.

If this is the case then follow this procedure: Define as many keys as you can then save them. You can then re-define the keys and save the new keys under a different filename. Just load in the keys as you need them.

1.4 SAVE/LOAD TRANSLATION TABLES

This option saves and loads the tables defined with option 5. This command is used in conjunction with the Default command. If you need to change the translation table values, save them with this command, and use the default option to tell the computer to load in the tables. See default section (Section 4.0) and the translation table section (1.5)

1.5 DEFINE TRANSLATION TABLES

A translation table is a table of 256 locations. When a character goes to the video or printer, its ascii value is changed to the value entered in the translation table at the location equal to the ascii value of the character. For example, suppose we wanted to change all the "A"'s being printed out to the screen to "B"'s. Just change the value in the video translation table at location 64 from 64 ("A") to 65 ("B"). This example isn't of much use, but it does show how the translation table works. The purpose of a translation table is to zero out characters you don't want the video or printer to receive. It is also useful for redefining characters going to your printer. This allows for the quirks of your individual printer. For example, location 15 is zero'd out on the video translation table because it is the code to turn off the cursor. We want the cursor to stay on.

In response to the prompt "Enter value or range", enter either a single value, or a low and a high value seperated by commas. Example: 0,35 will display the values 0 to 35.

By loading in the table "GRAPH/TAB", your computer can display TRS-80(tm) graphics if the host computer can send it. To show graphics would also reqire an 8 bit word length. This is an RC-232c setting.

1.6 DEFINE KEYS AS BYTES

Each letter on the keyboard can be defined as an ascii value between 1 and 255. To transmit the defined value, press <CLEAR> and <LETTER>.

Uses: This feature is useful for sending characters that are

not on the TRS-80 Keyboard. Some computers require a delete (ascii 127) instead of a backspace (ascii 8). To send a del, define a key as 127. Then, to send the del, press the <CLEAR> and the defined <KEY> simultaneously. When you first run compac, The "D" key will be defined as delete, "L" as a left Bracket, and "R" as the right bracket.

1.7 DEFINE KEYS AS STRINGS

The numbers 0-9 can be defined as a strings(a series of characters). The string must not be over 62 characters long. If a "/" is the first character in the string, the terminal program will pause slightly between sending each character in the string. This is to allow some hosts to accept data when they wouldn't be able to receive it at the fastest possible rate. To send a defined key press <CLEAR> and <NUMBER>. To enter the <ENTER> key in a string, press <SHIFT> and <DOWN-ARROW>.

Uses: This is a good place to store passwords. You can log on to BBS's or hosts with just one command after you have defined a key as a password.
These strings will also be accepted by some smart modems. You can store commonly used smart modem comands and phone numbers here.
1.8 DEFINE POLL STRING

A poll string is a short message that the smart terminal program will automatically send when it receives 5 ascii 30's. When the terminal program receives 5 ascii 30's in a row it will print <POLL> in the upper left corner of the screen and send the poll message defined under this option. The only time you need to change the poll string is if you want to download in DFT(tm) from a BBS that requires a DFT(tm) poll. In this case, any string who's first 3 letter are "DFT" will probably work. (see file transfer for more on DFT(tm)).

1.9 ENTER TERMINAL MODE

This option puts you in the terminal mode, ready to use your modem.

1.10 EXECUTE A DOS COMMAND
This option allows NEWDOS or DOSPLUS users to execute a DOS command from the terminal menu. If you don't have NEWDOS or DOSPLUS then this command will execute a DOS command but will not return to the terminal menu. You must specify NEWDOS or DOSPLUS in the default section for this command to work properly.

1.11 EXIT TO MAIN MENU

This option returns to the main menu.

1.12 CONTROL CHARACTERS

Control characters are used to tell the host computer to do something right away. A control character is sent by pressing the control key (the up arrow) and a letter at the same time. Control S will usualy stop printing and control Q resumes printing. Control C is similar to a break. On most mainframe computers it will return to a menu or command mode.

2.0 TERMINAL MODE

Once in the terminal mode, the computer is monitoring the RC-232c port; you can now call a host computer. The smart terminal can do certain functions as well as the commands in the terminal menu. To use one of these commands, press <SHIFT> + <CLEAR> + <Command letter> at the same time. Each command is explained below.

2.1 OPEN BUFFER (O)

The buffer is an area in memory that is used to store data as it is received by the smart terminal; however, data will only be place in the buffer if it is open. This can occur two ways. Either you can manually open the buffer by using the "O" command, or the buffer will automatically open if an ascii 18 is received.

 USES: Assume you are reading the instructions to a game. It would be helpful if you could save them for future reference. To do this, open the buffer at the beginning of the text and close the buffer when you are finished. Then, save it to disk with the "F" command.

2.2 CLOSE BUFFER (C)

Use this command to close the buffer. The buffer can also be close automatically by the host computer by sending an ascii 20 (see open buffer).

2.3 SAVE BUFFER (F)

This command saves the current buffer contents to disk. When asked "Convert buffer contents to binary?" respond with either "Y" or "N". If you answer no, the buffer will be saved as it is with no changes; however, if you answer yes, the smart terminal will assume that the buffer is in a hexadecimal format, and the data will be changed to a binary representation as it is saved.

 USES: The ability to convert data to binary is used for downloading machine language files. See sec 2.10 below.

2.4 LOAD BUFFER (G)

The "G" command loads a disk file into the buffer. Answer the prompt "Convert file to ascii?" with either "Y" or "N". If you answer no, the file will be loaded into the buffer with no changes; however, if you respond yes, the file will be assumed to be in machine language (or other non-text file), and each byte will be changed into a two byte hexadecimal number as it is saved in the buffer.

 USES: The ability to convert data to hexadecimal is useful for uploading machine language files. See sec 2.5 below.

2.5 UPLOAD BUFFER (U)

This command sends the buffer contents to the host computer. Answer the question "Wait for a prompt character?" with either "Y" or "N". If the answer is yes, then before sending each line of data from the buffer, the smart terminal will wait for a ">". This is to give the host computer time to save data. In response "Enter transmission speed", enter an integer between 0 and 9 with 0 being fastest and 9 being slowest. Different hosts can accept data at different rates. If you answer yes to the prompt "Open & close receivers buffers?" the smart terminal will open the buffer of the computer on the other end of the phone line. This is good if you want to send a file to another smart terminal program that has the ability of automatic buffer open and close.

USES: The ability to wait for a prompt character before sending a line is not only useful for uploading programs. You can also use it to send a message to a BBS. This method allows you to prepare a message with a word processor and send it to the BBS. This only works if the BBS gives a ">" prompt symbol.

2.6 HELP PAGE (H)

The "H" command will print a list of commands in case you forget which letter goes to what command.

2.7 CLEAR SCREEN (L)

The "L" commad clears the screen. This is for those of you who like to be neat.

2.8 PRINTER TOGGLE (T)

If the printer is off, then this command turns it on. If the printer is on, this command turns it off. When the printer is on, all data is sent to a printer buffer as well as to the screen. The printer buffer is simultaneously spooled to the printer at a rate the printer can accept. This buffer is fairly small, so if you use a very slow printer it could fill up and start loosing data. If this is the case, you can open the main buffer and save the data to disk. Later, you can list the file to the printer at your convenience.

2.9 EXIT (E)

The "E" command returns you to the terminal menu.

2.10 DOWNLOADING

This isn't a command, but is instead something that Compac is very good at. To download is to receive a file from a host computer. The smart terminal supports ascii download; data is transmitted as straight ascii (see file transfer for other protocols). When you download a file, generally the host will automatically open your buffer, send the data, and close the buffer. You then save the buffer to disk ("F" command). The host you are downloading from should explain the exact procedure to use.

2.11 UPLOADING

This isn't a command either, but is the exact opposite of downloading. To upload is to send a file to someone. The smart terminal supports ascii uploading

3.0 FILE TRANSFER

File transfer is just that--transfering files from one computer to another. The file can be anything: a machine language game, a basic program, or just a text file.

The previously mentioned Downloading and Uploading is file transfer. Downloading is receiving a file and Uploading is sending a file, but the above protocol (the format used to send a file) was ascii. A file is sent as straight text with machine language programs being changed to hexadecimal for transmission. This method is inherently bad for three reasons: its slow, there is no error checking, and the size of the file that can be transmitted is limited to the buffer size. The reason it is included is that many BBS's suport it, and it is usefull in some applications.

For serious file transfer, compac supports two other protocols: Xmodem and DFT(tm). Each of these reads data from the disk, and sends it a block at time. After each block, a checksum is used to determine if the transmission was error free.   If the transmission was not, that block is retransmitted until it is sent correctly. The length of a block for DFT(tm) is 256 bytes--xmodem has a block length of 128 bytes.

Xmodem is compatible with modem80, the public domain program "Xmodem", and the CP/M modem series of programs. Dft(tm) is compatible with the program "DFT". These are both popular protocols.

3.1 XMODEM

Xmodem sends a file in blocks of 128 data bytes. In the authors opinion, this is the protocol that should be used for transmiting a single file. It is faster than DFT(tm), and has fewer disk acceses.

Also, this protocol is compatible with the public domain program "Xmodem". "Xmodem" can be downloaded from a BBS. If you want to transfer files to a friend, give them "xmodem" not "Compac"; Compac is a copyrighted program, and pirating will determine whether or not this author decides to market any more programs.

3.2 DFT(tm)

Dft(tm) is provided to allow file transfer with the many people and BBS's that use it.   It is slower than xmodem because it accesses the disk every sector.

Remember that some BBS's require a dft(tm) poll string. To do this, change the poll string to "DFT". See section 1.8

3.3 STATUS DIPLAYS

During file transmission of anyone of the above two protocols, the status of the transmission is monitored by the "STAT" label. The possible status displys are:
 BLK   Transmiting a normal block.

NAK   Negative Acknowledgement.   The block is being
re-transmitted because a bad check sum was received.
 ACK   Acknowledge.
 OSE   Out of Sync Error. This is usually a fatal error, and
if the display doesnt soon change you should abort and start
over.
 BAB Bad begin of block.
 BAE Bad end of block

     On "DFT(tm)" and "Xmodem" the number following "BLK" is
the block number being sent.

3.4 ABORTING

     To abort a transmission press the break key. If the
transmission doesn't abort after a minute, or if you want to
abort sooner without telling the other computer to abort,
press the shift and break keys at the same time.

3.5 PROCEDURES

     The procedure menu allows the transmission or reception
of multiple files.   This allows you to send or receive
multiple files without being present at the computer the whole
time. When you get to the prompt "Press (C)ontinue, (E)xit,
or (R)enter a file" you have three choices. You may return to
the file transfer menu by pressing "E", or you may continue by
pressing "C". Pressing "R" allows you to change a filename if
you have made a mistake. When you get to "Enter number to
change", enter the number of the file by counting from the
left.
3.6 Originate or anwser

     If you are new to modems remember that one person must be
originate and the other person must be answer. You both
cannot be the same. Refer to your modems instructions on how
to set the originate or anwser tones.

4.0   DEFAULTS

The default menu allows you to set Compac parameters that you want to stay the same every time you use the program. These options are saved in a disk file "DEFAULT/DAT" and are loaded by compac when it is first run.   If compac does not find the file "DEFAULT/DAT" it assumes you have not made a default file and will set their values to some common ones. You can bypass the loading of a default file by holding down the <CLEAR> key while the program is loading.

4.1   SPECIFY NEWDOS OR DOSPLUS

This item allows you to select the dos you use.   If you do not use Newdos or Dosplus, ignore this choice.

4.2   LOAD TRANSLATION TABLES AUTOMATICALLY

This option allows you to tell compac to automatically load a translation table.   Use this if you change the translation table values.

4.3   STARTING MENU

With this option you can cause compac to go to a different menu besides the main menu when it runs.   If you always use the terminal section, you might want to select terminal mode as the starting menu.

4.4   RC-232c SETTINGS

This option takes the current settings defined under the terminal menu and makes them the permanent ones.   Now when you first run compac, these values will be used for the RC-232c instead of the sense switches.

4.5 SAVE CHANGES AND EXIT

This saves the current default values to disk. It also saves the defined strings and keys to the default file.   You must use this command if you alter any of the above default options, or if you define any keys and you want them made permanent.

4.6. EXIT

This exits to the main menu without saving the changes. The default values are still remembered by compac, but as soon as you exit the program they will be forgoten. If you want to make the changes permanent, you must use option 4.5