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Introduction

This is the fourth release of Term220, a VT220 emulator for the Macintosh. The desk accessory is compatible with all current Macintosh models with 128k ROMs or later.

Term220 is an outgrowth of a VT220 emulator kernel that is being created for Hypercard. The Hypercard product provides a terminal emulator directly in Hypercard's window. Additionally, XCMDs are provided to allow the Hypercard programmer to create Macintosh front-ends for remote systems. For example, a Hypercard programmer could create a stack enabling a Macintosh users to log in to a UNIX system and read their mail without knowing any UNIX commands!

Because the Hypercard kernel is several months from completion, it was decided to provide the terminal emulator portion of the kernel as a public service. If you are interested in the Hypercard terminal emulator, please contact:

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I hope you like Term220 and find it useful!

Installation

You need to use the Font/DA mover version 3.8 or later. For information on the Font/DA mover, see the *Macintosh Utilities User's Guide*.

1. Run the Font/DA mover.
2. Copy the Term220 DA from the "Term220" file into your system file.
3. Copy the six fonts located in the "Term220" file into your system file. To do this, you will need to hold down the option key when pressing the "open" button in the Font/DA Mover. You can then see the file "Term220" and open it. There are two fonts are named "%Ascii", two named "%Supplemental", and two named "%Special". You need all six fonts!

4. Quit the Font/DA mover.

5. You're ready to communicate!

Holding down the option key when pressing the "open" button in the Font/DA mover tells the Font/DA mover to display all file types — not just files Font files or not just DA files. Normally, when you have "Font" selected, the Font/DA mover will only display Font files when opening files. When you copy the Term220 fonts, you need to copy the fonts from a DA file, not a Font file. Thus you must hold down the option key when pressing the "open" button.

Special note for users of my previous desk accessory — Term102. You need to copy the fonts over. They have been modified since Term102. Also, the old font "%Suppl" has been renamed to "%Supplemental". You can also delete the file "Term102 prefs" from your system folder.

Why do you need to explicitly copy the Fonts? Well, it appears the Apple's Font/DA mover does not update the NFNT number's residing in a FOND resource when these resources are copied via a DA move. What this means is that although the all of the resource numbers would be correct, the actual information in the FOND resource would be wrong. If this doesn't mean anything to you, don't worry about it.

Using the Keyboard

Sending control codes. If you have an extended ADB keyboard with a "control" key, hold the control key down and press a letter to send control codes. If you don't have such a keyboard, hold down the command key down and the press a letter. To send a NULL (sometimes call control-@), use control-space.

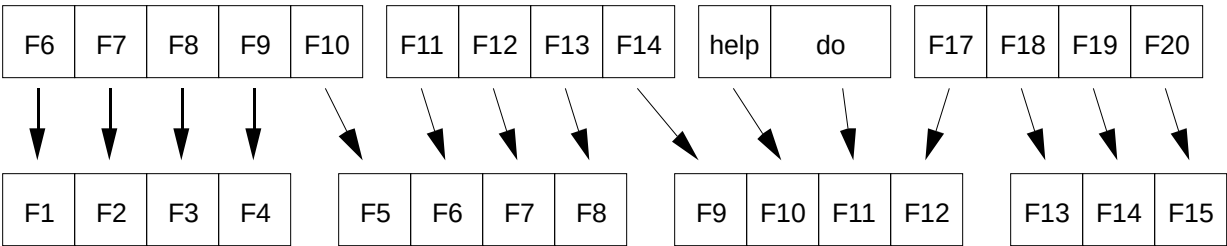
Sending keypad codes. The Macintosh keypad maps to the VT keypad positionally, not by name. Thus:

pf1	pf2	pf3	pf4
↓	↓	↓	↓
clear	=	/	*
7	8	9	-
4	5	6	+
1	2	3	enter
0		.	

← ,

All of the other keys on the Macintosh keypad match the names on the VT keypad.

Sending function keys. Like the keypad, the function keys map positionally. If you have the extended ADB keyboard, you are in luck:

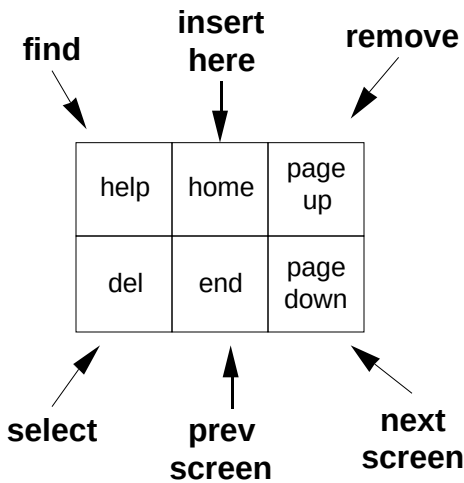


If you don't have an extended ADB keyboard, you can still send the function keys. Hold down the command key and press:

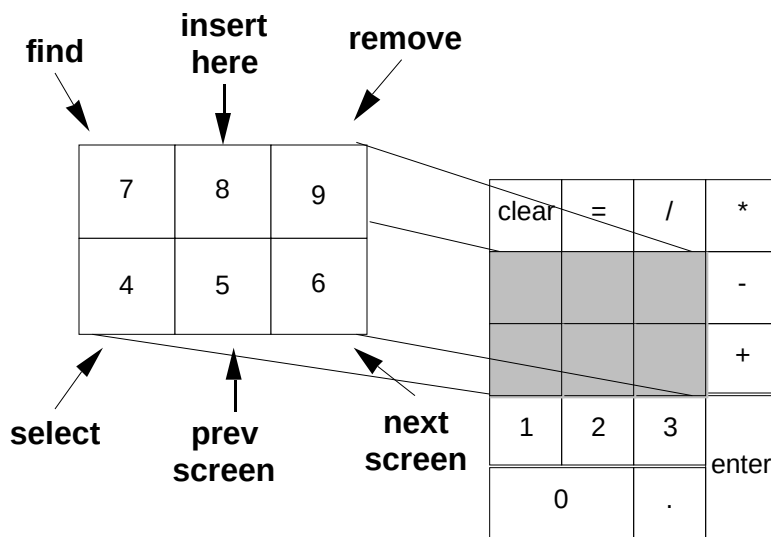


Sending editing keypads:

If you have an extended ADB keyboard:



If you don't have an extended ADB keyboard, you can hold down your control key and press keys on the keyboard:



Menu Reference

Send break. Sends a break over the serial line.

Send ESC. Sends an Escape character. This is useful for those of you who don't have an escape key.

Disconnect. Sets Data Terminal Ready (DTR) low for a short time and then back high. This is useful for modems which may use this as an "attention" signal.

Serial. Allows you to change the serial setup. When you select this menu item, you will see the current settings and change them. After you are done with the dialog box, the values will be saved in the "Term220 Prefs" file that Term220 puts in your system folder.

Maintain DTR. This checkbox item in the serial dialog box maintains DTR in it's current state (asserted) when Term220 is closed. This should have the effect of keeping the current connection, allowing you to exit and reenter Term220 without needing to reestablish the connection.

Break on Errors. If this checkbox item is selected, Term220 sends a break when the Macintosh serial driver detects a framing error or an overrun error.

Keyboard. Allows you to configure your keyboard. When you select this menu item, you will see the current settings and change them. The remote system can change some of these values by sending the proper escape sequences. The values in the dialog box include any changes made by the remote system. After you are done with the dialog box, the values will be saved in the "Term220 prefs" file.

Terminal. Allows you to configure your terminal. When you select this menu item, you will see the current settings and change them. As with the keyboard dialog box, the remote system can change some of these values by sending the proper escape sequences. The values in the dialog box include any changes made by the remote system. After you are done with the dialog box, the values will be saved in the "Term220 prefs" file.

VT102/VT220. These radio button items effect the id string that is sent back in response to Device Attributes report. It does not effect how Term220 responds to any other escape sequences nor does it prevent you from using VT220 function keys in

VT102 mode.

132 columns. Not supported yet.

Eightbit control. When this item is checked, Term220 will send eight-bit control codes for function keys and reports if, and only if, the terminal is in VT220 mode. You should also set the serial parameters to send 8 bit bytes. Term220 recognizes eightbit control codes it receives regardless of the setting of this item.

Ansi parse Alerts. When this item is checked, Term220 will tell you when it receives an ANSI escape sequence it doesn't understand.

Answerback. Enter the text you want Term220 to send in response to an enquire (Ascii \$05). To enter control characters in the answerback message, put in a backslash (\) followed by the hexadecimal code you want in the answerback message. For example, if you want to send "Fred" followed by a carriage return, enter "Fred\0D" in the editable text field. If you want to send a backslash, enter "\5C".

Soft reset. Performs a soft terminal reset. This function resets the scroll region, turns the cursor on, selects overstrike mode, select absolute origin mode, turns autowrap off, selects a numeric keypad, changes cursor key mode to normal, resets the cursor save state, and resets the current video attributes.

Clear screen. Clears the screen and resets the cursor position.

Reset tabs. Resets the tab stops to every eight characters.

Capture. Begins storing text received from the remote system into a file. When you first select this menu item, you will be presented with a SFPutFile dialog box. If you click Save, Term220 will check the Capture menu item and store incoming text in a file. Select the Capture menu item again to stop storing text.

Verbatim. If this checkbox is checked, then text will be stored exactly as it is received. If this checkbox is not checked, then control characters, such as linefeeds, are not stored in the file.

Creator. The creator of the text file that Term220 will create. "MACA" is MacWrite. "QED1" is QUED-M. "MPS " is the MPW shell.

Type. Sends a text file to the remote system. When you first select this menu item, you will be presented with a SFGetFile dialog box. If you click Open, Term220 will check the Type menu item and start sending the text. Select the Type menu item again to cancel sending the text.

When Term220 is sending text, you can not type any characters until the file is done. However, while Term220 is typing text, you can change the baud rate, terminal characteristics, etc. I suggest not doing this, it will thoroughly mess things up.

Character delay. The amount of time to delay after each character that isn't a carriage return. This is in 60ths of a second.

Line delay. The amount of time to delay after each carriage return send. This is also in 60ths of a second.

Await character echo. Causes Term220 to wait the echo of each character (except carriage returns) sent. When this item is checked, the character delay is actually a timeout - in 60ths of a second. If the character has not been echoed by the remote system in the specified amount of time, Term220 sends the next character anyways.

Line turnaround. Causes Term220 to wait for this string after each carriage return is sent. When this item is not empty, the line delay is actually a timeout - in 60ths of a second. If the line turnaround string isn't received in the specified amount of time, Term220 resumes sending characters any way.

You can use the backslash to specify control characters as with the answerback string. Additionally, a vertical bar (|) can be used to provide an "or" capability. For example, to resume sending characters when either "Fred" or "Barney" is received, enter "Fred|Barney" in this field.

Unimplemented emulation features

- Blinking video renditions — Displayed as underlined
- Downloadable character sets
- Double height
- Double width
- KAM (Keyboard Action Mode)
- Smooth scrolling
- 132 columns
- Set auto repeat — Term220 always auto repeats.
- National replacement char sets
- LEDs
- Downloadable function keys
- Compose sequences
- Reverse screen
- Printing escape sequences
- Test escape sequences
- Display controls
- VT52 mode
- hard reset —
 - Doesn't perform a disconnect.
 - Does reset tabs to every 8 columns.

How to reach me

If you find a bug or have a request, please let me know. You can reach me via U.S. mail:

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Or via GENie mail: THITT

History

1.0.0 - Initial release.

1.0.1 - Added control-space (sends Ascii 0).

1.0.2 - F3 now sends F8 on Saratoga keyboard. Cursor can now move vertically outside of scroll region. Printer port can be used.

1.1.0 - Fixed several emulation bugs. Improved window updating. Introduced Type and Capture.

Absence of Warranty

Because Term220 is licensed free of charge, it is provided with absolutely no warranty, to the extent permitted by applicable state law. Todd Hitt, and/or other parties provide Term220 "AS IS" without warranty of any kind, either express or implied, including, but not limited to, the quality, performance, or fitness for a particular purpose. The entire risk of this program is with you, the user. Should Term220 prove defective, you assume the cost of all necessary servicing, repair, or correction.

In no event will the author(s) be liable for direct, indirect, special, incidental, or consequential damages, resulting from use, inability to use, or defect in this software (including but not limited to loss of data or data being rendered inaccurate) or its documentation, even if advised of the possibility of such damages.

The absence of warranty set forth above is exclusive and in lieu of all others, oral or written, express or implied.

Distribution policy

Term220 is free! However, Term220 is **not** in the public domain. I retain all rights to it. You may distribute Term220 with the following conditions:

1. You **must** include this documentation.
2. You may not distribute a changed version of Term220. Feel free to modify your own copy all you want; just make sure that you give away or upload the original version.
3. You may **not** charge anything for Term220. Nor may you use Term220 to induce anyone to buy a product. There are two exceptions to this policy: BBS's and commercial information systems (like GENIE) that charge a fee for membership and connect time, but not for individual downloads. Additionally, NON-PROFIT user's groups may charge a copying fee in distribution. Note that companies which sell disks for profit may NOT distribute Term220.

Trademarks

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UNIX is a trademark of A T & T.