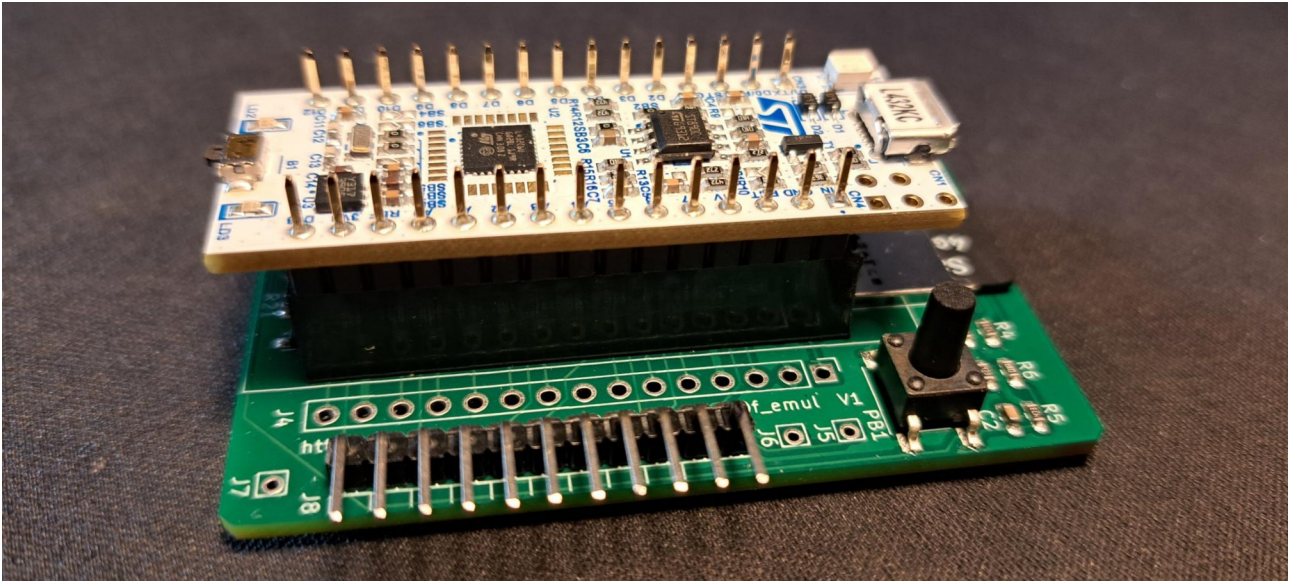


Tiny Manual CE-140F Emulator

collected and written by Christian Becker (xianbild)

Overview

The CE-140F emulator by Fabio Fumi is a wonderful little gadget for several Sharp pocket computers (i.e. PC-1403, PC-1475, PC-1360). You can store programs and data on a SD-card with far more space than a 2.5“ diskette. It's not quicker than the original, as it „simply“ emulates the original and though needs to base on the Sharp protocols for data exchange with the CE-140F.



It consists of a PCB, which was designed by Fabio Fumi and is published on his GitHub page: https://github.com/ffxx68/Sharp_ce140f_emul/

However, the green PCB is not the whole thing. The firmware of the emulator runs on a Nucelo L432KC board, which is plugged into some connectors on the base board, as you can see in the picture above. The Nucelo board is powered by 5V via a micro USB plug. And the board (green) is connecting into the Sharp pocket computer 11 pin connector.

I have documented the build process in two documents. If you want to start yourself, just let me know and I'll hand those documents to you. They are still a bit work in progress and though not yet published. The green board has been made and manufactured by PCBway in China, which worked extremely well from my perspective. Soldering the connectors and a tiny modification of the Nucelo board were "self made" and after flashing the firmware, powering up the device and connecting it to my PC-1403, the CE-140F emulator worked straight way with a 2GB SD-card formatted simply as FAT.

Findings on Usage

My experience until now (not really very long) says to better first connect everything (either direct or via extension cable) and switch and power on the CE-140F emulator and then the Sharp PC. Sometimes i got an ERROR 8, meaning some timing issues. Sometimes restart helps, sometimes not. But in that order (connecting everything, powering up emulator, powering up pocket computer) I had minimized the ERROR 8 situations and everything works more or less fine. See the next chapter "Command Reference" for details and of course the original CE-140F manual from Sharp.

What i also found out was an ERROR 8 after copying a file via PC to the SD-card. The filename was one character too long, after shortening the filename to the 8 characters plus the 3 for the extension, i could complete the FILES command and load the file. Lessons learned: take care of the correct filename length when copying files from PC to the SD card.

It seems to me like the wildcards „*“ and „?“ do not work in any circumstance with all commands from the instruction set for the drive.

Additional information

The original manual can be found in different places around the internet. i. e. Here:

<https://www.facebook.com/groups/sharpcasioworld/permalink/3701161200208539/>

To whom it might be of interest, you'll find the CE-140F service manual here:

<https://www.facebook.com/groups/sharpcasioworld/permalink/3701161593541833/>

Command Reference

CHAIN: The command works as documented in the original CE-140F manual.

CLOSE: The command works as documented in the original CE-140F manual.

COPY: The command does not seem to work. At least i could not copy a file. Neither from „X:“ to „X:“ not from „X:“ to „Y:“ (plus filename, of course).

DSKF: The command works, but only return a value which is not representing the free space. I have a 4GB SD-card inserted and the return value of „DSKF (1/2)“ is 65535.

EOF: Command works and returns the values 0 or 1 depending on all data has not been read or has been read.

FILES: works partially. A „FILES“ command without any parameters lists all files on the drive (arrow up and down scrolling through the list) but a „FILES „X:*.DAT““ does the same. So any parameters do not change the behavior of the command. To find out which files are on the card (,disk') the command is working.

INPUT#: command is working as documented in the original manual.

INIT: I have tried the command with an 8 GB SD-card. The disk (aka SD-card) wasn't formatted, however, the green LED was blinking for about 2 seconds. I could save files on the SD-card, but that may be due to the fact, that the card was formatted correctly before i tried the command. The Unix file system directory „LOST.DIR“ was not deleted and still visible via FILES command.

KILL: command seems to work. At least i could delete a file on the disk i had formatted with the INIT command and after copying a file on the ,original' SD-card via PC.

LFILES: the command does not do anything. No error, no action – at least not on the SD-card i have inserted into the emulator.

LOAD: fully working as it seems, including the „R“ parameter to start the loaded program.

LOC: the LOC statement only returns an ERROR 8, so basically not working.

LOF: does also not seem to work (see LOC).

MERGE: works as designed

NAME: does not do anything at all. Takes all parameters, accesses the card but does not change anything.

OPEN: command works as designed. Tested in a short example program.

PRINT#: works as designed, however have not tested the complete instructions set.

SAVE: works as designed

SET: does not seem to work. At least I could not protect „P“ any file for deletion.