.jsOnly {display: none! important; } .noJsOnly {Display: block! Important; }

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Forum64 " New Hardware " Storage » VC-20 Final Expansion »

[Sticky]   # VC20 Final Expansion :: Firmware / Firmware Flasher 🔒☑

Due to a server move by the Betreibes the Forum from Monday evening to Tuesday 22:00 05:00 will be offline. Thank you for your understanding.

«

Kinder
[Master]
⭐⭐⭐⭐

VC20 Final Expansion :: Firmware / Firmware Flasher

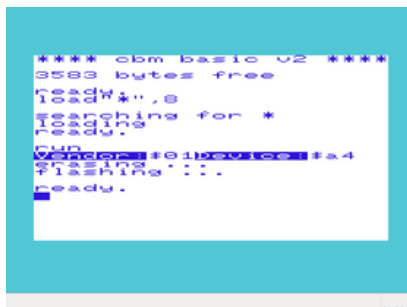21. Juni 2009, 20:37 June 21, 2009, 20:37

The Final Expansion comes with programmed CPLD and empty EEPROM. The EEPROM will include the latest **firmware** of the FE.

In order to bring the current firmware into the EEPROM, it takes the **firmware flasher.** The firmware flasher may describe new EEPROMs and naturally burn future updates of the firmware on the old firmware. The firmware flasher is located in the disk image and is called: **FE3FLASH**

need to program the EEPROM of the Final Expansion following steps are performed:

- Firmware write to the SD card (two files: **FE3FLASH** and **FE3FIRMWARE).**
- off VC-20!
- stuck Final expansion into the expansion slot of the VC-20th
- VC-20 switch.
- **,** Enter **LOAD "FE3FLASH" 8** or **LOAD "*", 8** when the file FE3FLASH is the first file on the SD.
- Enter **RUN.**

The screen should now look like this:

By pressing the reset button of the Final Expansion is now coming directly in the start screen of the FE:

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files

📎 FE3Firmware.zip

(11.51 kB, downloaded **59** times, most recently: 4. September 2016, 13:42 September 4, 2016, 13:42)

This post has been edited 6 times, last by Kinder (4. Juli 2009, 17:25 July 4, 2009, 17:25)

Kinder
[Master]
⭐⭐⭐⭐

25. Juni 2009, 08:54 June 25th 2009, 08:54

The disc loader of the r001 indicates severe weaknesses in the r002 all gefixed:

- System colors are set (for startup option RUN and SYS)
- The BASIC initialization is again passed to update the current RAM setting.
- Programs that are in Kasettenbuffer now work, but must be loaded last file.
- The loader had problems with A000 Cartridges if no RESET command follows. The r002 copied demolition case, the firmware again to RAM and can now have all boot options.

It now all previously known problem cases. Mir is not a program known that the loader could not start. Report Please problem cases to me, should occur which.

Kinder
[Master]
⭐⭐⭐⭐

27. Juni 2009, 13:04 June 27th 2009, 13:04

The flash utility was revised. It now works reliably even though what's on the EEPROM it. The firmware has now r003.

+ It is a test over the $ A and $ B area down whether the EEPROM is empty (Blank Check)

+ After the flash erase the Blank Check is again driven and may be canceled.

+ The Flasher now controls not only the return value of the EEPROM but also makes a Verify.

+ Tested with 29F040 and 29F040B

There is a new tool "fe3erase" erases the Flash (only). Will not normally required only if it does not work with the FE3FLASH.

Kinder
[Master]
⭐⭐⭐⭐

27. Juni 2009, 14:25 June 27th 2009, 14:25

Update r004:

+ The RAM test is bypassed when **RAM Manager,** by the VIC will start much faster.

Kinder
[Master]
⭐⭐⭐⭐

4. Juli 2009, 17:24 July 4, 2009, 17:24

Version **R005,** this firmware is running with the new CPLD Design 3.1.

Also **FE3FLASH** and **fe3erase** adapted here, because the lock bit.

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files

📎 FE3FirmwareR005.zip
(11.51 kB, downloaded **24** times, last: 4. September 2016, 13:42 September 4, 2016, 13:42)

Kinder
[Master]
⭐⭐⭐⭐

9. Juli 2009, 21:47 July 9th 2009, 21:47

Revision r006, this firmware improves the soft reset.

This now walk again all known VC-20 games, also the problematic **Moon Patrol** and **Ms.Pacman.**

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files

📎 FE3FirmwareR006.zip
(11.66 kB, downloaded **18** times, most recently: 4. September 2016, 13:42 September 4, 2016, 13:42)

Kinder
[Master]
⭐⭐⭐⭐

12. Juli 2009, 20:06 July 12th 2009, 20:06

Time for Revision 7:

The Wedge is completely rewritten and is now called **FE3 Wedge.** The only exception is the full RAM mode (F1, F7), since the old Easy Wedge is copied to $ 0500 because the FE3 wedge is not (yet) relocatable.

Highlights of the new Wedge:

- **The FE3 Wedge no longer attacks the CHRGET routine in the Zero Page, but properly used $ 300 vectors**

  Since the CHRGET remains routine compatibility with BASIC programs is better and defeated by again with 100% speed. The Wedge commands are, so to speak cleanly integrated into the VC-20 system.

- **The LOAD routine of the kernel has been modified and is now used throughout (even from diskloader)**

  The normal LOAD command has up to 3 arguments: filename, primary address (PA), secondary address (SA). Now comes a fourth (optional) argument to a **forced load address.** This allows a program or a file to a specific address to load regardless of what is stored in the file start for an address.

  The SA could be already 0 (BASIC) or 1 (program). Now there is an additional 2 for cartridges. In mode 2, the first two bytes of a file are no longer interpreted as the start address, but are a normal part of the file. VC-20 cartridges are often so stored, that is, without load address in the file. When in Mode 2 no load address we specified, loads the cartridge from BASIC Start.

  It appears the start and end address of the file after charging, even when VERIFY. So the **actual** loading and end address was used.

- **The Basic routine for evaluating math formulas FRMEVL been extended:**

  It can be used anywhere hex and binary numbers. Hexadecimal numbers begin with a $, and may be 2 or 4 digits. Binary numbers start with a% character and can 4, 8, 12 or 16 digits in length. The numbering system can be mixed and used in any expression, even in a BASIC program.

- **Number Conversion (Mini calculator):**

  With a "" can be converted in the input mode numbers in different systems. The "," character is followed by any numeric expression or simply a number. The command lists the equivalent of earnings or the number as hexadecimal, decimal and binary and also as ASCII (one or two characters).

- **The "actual" Wedge commands (/,%, #, $, @) are expanded and improved:**

  SD cards conditionally there are files that have more than 99 blocks. Therefore, the structure of the Directory display is adjusted to $ VC-20 with SD2IEC.

  All commands the string parameters need (/,%, $, @) take the string directly (without "" characters) or optionally in quotes.

  If a quotation mark in column 4 is (which is the Directory so) then the string is read argument there and ignored characters before. This allows you to view a directory, go up with the cursor, write a load command (/ or%) and press ENTER - done.

  the default can be changed or displayed device address #. Normal it is set to. 8

The load instructions can also optionally have a forced loading address, if the parameter string is in quotes. By specifying a load address of the command% goes into the cartridge loading mode (SA = 2). Start and end addresses are displayed as the normal load now.

- **Command RESET:**

  The command triggers a software reset. There are the VIC IO set and the address 64802 starts. Like all commands in the VC-20 can also FE3 instructions are abbreviated. So you can just write R + shift-E or RE + shift-S.

- **Instructions BLK, BLKD, BLKP:**

  The block commands from the diskloader go now in direct mode. Without argument, the IO registers the FE3 display. Behind the BLK commands the numbers can be entered 0,1,2,3 and 5 in beliebieger order. The numbers can comma separated or written together.

  The BLK and BLKP commands do the same thing, namely, the write protection of the FE3 activate for the specified blocks. So there are the bits 0 to 4 in the register one (39938) set.

  The BLKD command acts on the 2nd register So you can disable the specified blocks, so hide completely. So there are the bits 0 to 4 in the register two (39939) set.

- **command NOIO**

  Turns off the register of the FE3. The registers are invisible and 39938/39 unreachable.

- **Command OFF:** Turns off the Wedge

  If the command extension is due to incompatibility, it can be switched off. There are all vectors (BASIC and IO) updated. All extended command no longer function. Even the extended LOAD is now back to normal. It can not HEX or binary numbers be used.
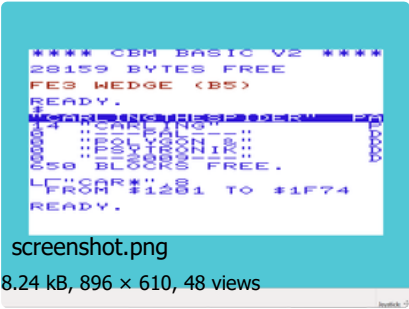
- **KILL command**

  Turns everything off (Wedge, FE3 registers and memory maps) and makes a soft - RESET.

- Code has been cleaned up a bit, disposed waste and optimizes similar code to subroutines

As with the Easy Wedge can at startup (switching on) of VC-20 hold the Shift or Commodore keys pressed. It then starts without firmware menu directly to BASIC with Wedge (Shift) or without (Commodore).
'

Images

screenshot.png
8.24 kB, 896 × 610, 48 views

files

📎 FE3FirmwareR007.zip
(12.46 kB, downloaded **21** times, most recently: 4. September 2016, 13:42 September 4, 2016, 13:42)

This post has been edited 1 times, last edit by Kinder (12. Juli 2009, 20:46 July 12th 2009, 20:46)

Kinder
[Master]
⭐⭐⭐⭐

12. Juli 2009, 21:47 July 12th 2009, 21:47

The firmware of the FE3 can be well tested in VICE, when it loads as an extension module (at $ A000).

Of course, some features do not go for testing because of VICE yes the FE3 (still) can not emulate ...

Kinder
[Master]
⭐⭐⭐⭐

13. Juli 2009, 21:24 July 13th 2009, 21:24

New Firmware - Revision 8:

+ Small bugfix (Unnew screen in the original color)

+ Diskloader can now also buy several parameters in a row correctly processed (+ BLK3,5: NOIO)

The Wedge now understands the commands OLD and UNNEW.

EDIT: kleienr bug has crept in, the FE3 firmware hangs when CD command to the SD2IEC. I Resolve today to service ...

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files

📎 FE3FirmwareR008.zip
(12.46 kB, downloaded **19** times, most recently: 4. September 2016, 13:42 September 4, 2016, 13:42)

This post has been edited 1 times, last edit by Kinder (14. Juli 2009, 08:42 July 14th 2009, 08:42)

Kinder
[Master]
⭐⭐⭐⭐

14. Juli 2009, 21:48 July 14th 2009, 21:48

Bugfix - Revision 009

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files

📎 FE3FirmwareR009.zip
(12.47 kB, downloaded **21** times, most recently: 4. September 2016, 13:42 September 4, 2016, 13:42)
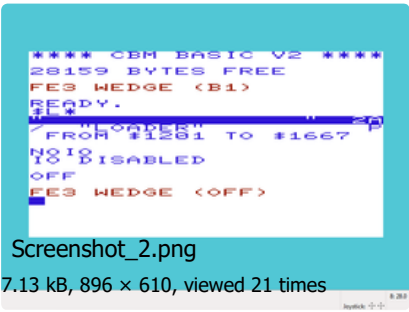

Kinder
[Master]
⭐⭐⭐⭐

18. Juli 2009, 20:17 July 18th 2009, 20:17

Revision 10, now only with its own code (FE3Wedge) plus source code.

The Wedge is code in the module from $ B000 and is fully relocatable. He called runs on any address in the memory. Simply move and restart all absolute addresses automatically adapt. With Start with full RAM (F1, F7), the wedge moves to the address $ 0500 because of the $ A module area is believed used as RAM.
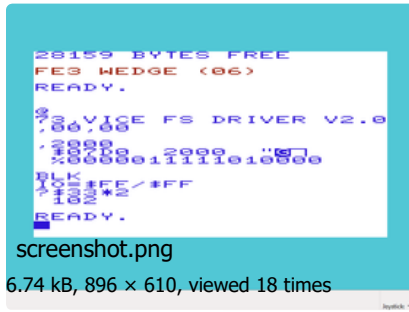
The same happened at SYS 41006, since the Wedge is copied and activated to $ 0500th

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Images
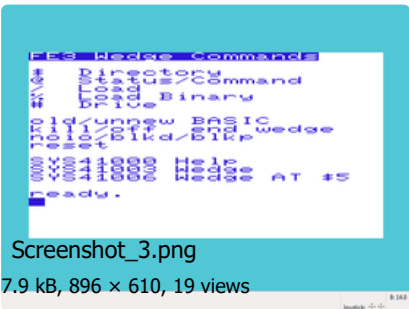

Screenshot_2.png

7.13 kB, 896 × 610, viewed 21 times

screenshot.png

6.74 kB, 896 × 610, viewed 18 times

Screenshot_3.png

7.9 kB, 896 × 610, 19 views

files

📎 FE3FirmwareR010.zip

(31.84 kB, downloaded **21** times, most recently: 4. September 2016, 13:41 September 4, 2016, 13:41)

Kinder
[Master]
⭐⭐⭐⭐

25. Juli 2009, 19:55 July 25th 2009, 19:55

Revision 010 integrated with SJLOAD:

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files

📎 FE3FirmwareR011.zip

(34.09 kB, downloaded **19** times, most recently: 4. September 2016, 13:41 September 4, 2016, 13:41)

Kinder
[Master]
⭐⭐⭐⭐

26. Juli 2009, 21:48 July 26th 2009, 21:48

revision 012

+ Fix for verify
+ Verify shortcut ">"

But the best: **SJSAVE** for Jiffy drives!

With active FE3WEDGE and Jiffy drive (or SD2IEC) the SAVE now runs pretty fast. 😳

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files

📎 FE3FirmwareR012.zip
(34.79 kB, downloaded **17** times, most recently: 4. September 2016, 13:41 September 4, 2016, 13:41)

Kinder
[Master]
⭐⭐⭐⭐

27. Juli 2009, 19:01 July 27th 2009, 19:01

Attention, Revision 012 has a bug:

When RAM configuration **F1 / F7 with Wedge** crashes with me from the VIC. Strangely, it works perfectly in VICE. I'm looking for the problem ...

Kinder
[Master]
⭐⭐⭐⭐

27. Juli 2009, 19:49 July 27th 2009, 19:49

Revision 013, as I know now without errors ...

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files

📎 FE3FirmwareR013.zip
(34.83 kB, downloaded **21** times, most recently: 4. September 2016, 13:41 September 4, 2016, 13:41)

Kinder
[Master]
⭐⭐⭐⭐

4. August 2009, 22:48 August 4th 2009, 22:48

Revision 014:

+ Menu Timeout away

+ Trial diskloader with **Joystick Support**

+ RAM test: if no RAM there goes the FE3 high anyway. When diskloader comes without RAM errors

+ FE3 Utilities menu - though still without function

,

files

📎 FE3FirmwareR014.zip
(32.05 kB, downloaded **25** times, most recently: 4. September 2016, 13:41 September 4, 2016, 13:41)

Kinder
[Master]
⭐⭐⭐⭐

23. August 2009, 11:56 August 23rd 2009, 11:56

Revision 015:

+ Many minor bugs (IEC Stati, IEC messages, device not present, ...)

tidy + Menus

+ Stop button with LOAD and SAVE

+ Now with each release the diagnostic program is

+ Now a VICE Image is with each release here

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files

📎 FE3FirmwareR015.zip
(47.07 kB, downloaded **21** times, most recently: 4. September 2016, 13:41 September 4, 2016, 13:41)

Kinder
[Master]
⭐⭐⭐⭐

25. August 2009, 20:27 August 25th 2009, 20:27

5 downloads and no one discovered the fairly obvious bug ??!

Obviously interested No, I do that probably only for myself ... ☹

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files

📎 FE3FirmwareR015a.zip
(47.08 kB, downloaded **21** times, most recently: 4. September 2016, 13:41 September 4, 2016, 13:41)
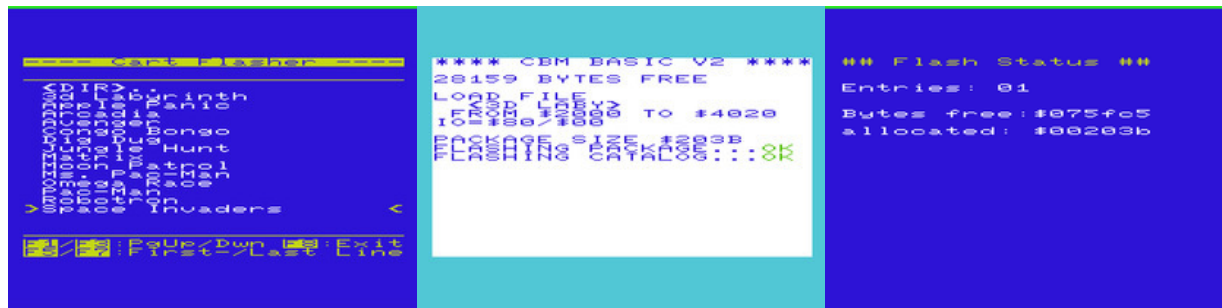
Kinder
[Master]
⭐⭐⭐⭐

7. September 2009, 09:35 September 7th 2009, 09:35

Progress report: The lot has done in the firmware:

- Firmware integrated flasher
- Flash Program Package
- Flash info (In the assignment of the flash memory)

Since there is not much to write something in the flash without being able to start it, I have no need for a release 016 and so on Releeastests.

Thus we approach the final release of the FE3 firmware!

Still open points / schedule:

- Cart Loader (start the programs in the flash memory) - R017 - 1 week
- Flash Backup storage on SD (flash image) - R018
- Restore all or individual programs Flash Imager - R019

For R018 and R019, there is no time frame because other ToDo are preferred (CPLD v3.2, XS-1541)

> This post has been edited 1 times, last edit by Kinder (7. September 2009, 21:30 September 7th 2009, 21:30)

Kinder
[Master]
⭐⭐⭐⭐

19. September 2009, 14:32 September 19th 2009, 14:32

Time for **Release 17**

+ Firmware integrated flasher

+ Cartflasher
+ Cartloader
+ Cartinfo

By **Cartflasher** can 480KB of flash memory to fill with all the programs that are a favorite.

Everyone can put together their favorite programs freely. The **Cartloader** loads the programs then quickly without the need for a floppy or a SD.

CAUTION: Use new Flasher since firmware now has 12KB

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files

📎 FE3FirmwareR017.zip

(73.07 kB, downloaded **22** times, most recently: 4. September 2016, 13:40 September 4, 2016, 13:40)

«

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SkydivinGirl

Forum64 " New Hardware " Storage » VC-20 Final Expansion »

🕐 September 4, 2016, 13:43

We like   INDIVIDUAL
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Forum Software: **Burning Board® 4.1.11,** *developed by* **WoltLab® GmbH**

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To:

English

View: **Translation** **Original**

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seit 2002

Forum64 " New Hardware " Storage » VC-20 Final Expansion »

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[Stick

Original German text:

Due t

unde   Aufgrund eines Serverumzugs seitens des Betreibes wird das Forum von Montag Abend 22:00 Uhr bis Dienstag 05:00 Uhr offlin

➕ Contribute a better translation

»

Kinder

[Master]

⭐⭐⭐⭐

21. September 2009, 20:54 September 21st 2009, 20:54

Bugfix release r17b:

+ Flash bug - Bank 0 as package buffer

+ Return from disk loader to main menu after disk commands or failed loads

+ Change to root of SD bevore firmware flashing

+ Internal firmware flasher now uses filename "FE3FIRMWARE.PRG" for compatibility with DirMaste

+ Erasing flash bench 2 to 14 if is not empty

With me everything is going fine with the Cartflasher / Cartloader ... 🙂