

Alphatronic P2 - only with the MOS produce a cp/m disk via V24

Dipl.-Ing. Helmut Wiertalla, developed for Alphatronic P2 or similar machine.

Prerequisite to NOTHING to [create a CP/M](#) diskette.

(update 10.jan.2019) Added: [cpm43t7.bin](#)

Do you have a technically working Alphatronic P2 - or a similar machine - and some free recordable Floppy-disks (160kB, DD or better, 5 ¼"), then you can CP/M system disks and produce some key programs with few details even easy! **I will help you to help yourself!**

- [CODE1 2](#)
- [COLD FORMATTER](#)
- [create CP/M](#)
- [Filetransfer](#) YMODEM
- [V24 connect](#)



1 Green=Printer, Red=V24 RS 232C

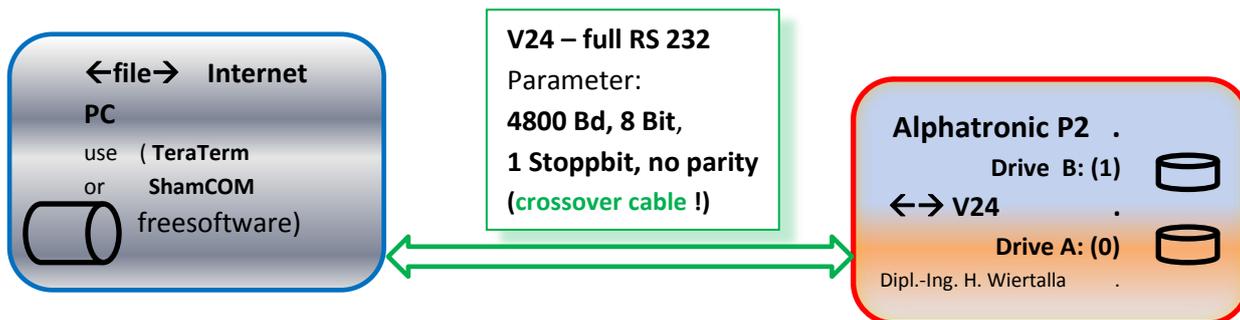
HARDWARE

To prepare, you need a [crossover cable](#) from the V24 Alphatronic P2, P2S or P2U (25 pol.) to a PC (eg WIN) and Internet access to this PC. For this to work, you must use the **red point for V24 connection**.

About my website important: For [step A](#)) or [step B](#)) a sufficient Alphatronic with 48kB memory expansion. Later, at the start of the newly created TPA 100h a CP/M ([cpm2p7t.bin](#)) diskette required 64kB memory expansion. **Added yet, I create another new 48kB memory variant for cp/m and a lot of programs (TPA 4300h!) is [cpm43t7.bin](#) available!**

<http://www.wiertalla.de/AlphatronicP2.php>

get yourself Alphatronic P2 - and MOS - documents (PDF) and some binary / files.



Hardware - Configuration

Software workshop:

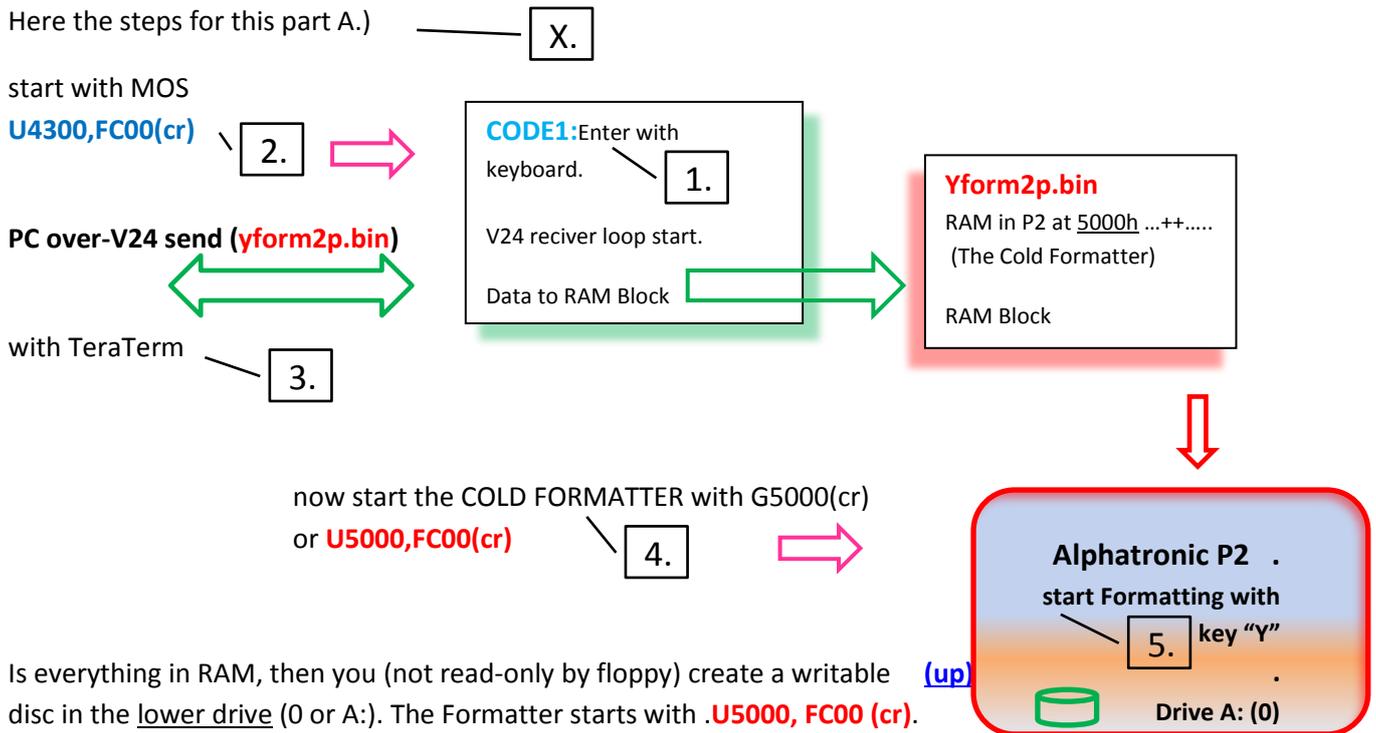
You have no CP/M disk, or **can not write to their floppy** thing. I will help you to help yourself! Show to A.) or my [WEB](#).

A.) Formatting a disk with a COLD Formatter. MOS [CODE1](#) you [keys in the RAM](#). If the Code1 was first started with the MOS, send the Formatter ([yform2p.bin](#)) per TeraTerm (Free-software, read user manual-binmode!). Then start the [CODE 1](#) with the MOS [U43000,FC00](#) (cr= Return Key). The eternal loop receives each character of the V24 and puts the character from 5000h and following in the memory.

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These start with the "TeraTerm", send file in **binary mode yform2p.bin** the file. If everything is received (PC display), you can only cancel the Alphatronic P2 button HARD RESET.

Here the steps for this part A.)



Is everything in RAM, then you (not read-only by floppy) create a writable disc in the lower drive (0 or A:). The Formatter starts with **.U5000, FC00 (cr)**. The process run automatically with the formatting and proofreading.

There are only two short messages. **ok - then you win**, otherwise **Error** - is what the disc or the device is not in order. **Repeate!** Then **any more new disks are formatted**. These hard reset key and restart with the MOS at **U5000,FC00 (cr)** or **G5000 (cr)**. [\(up\)](#)

```

RESET   Alphatronic P2 DISPLAY
MOS-3-033.42D.14G

$1976 4010 FFEF
.U5000,FC00
COLD FORMATTER 1.01 -H.Wiertalla, 15-Sep-2015
Diskette in Drive 0 / A: -START only with Y :

27      < Format Track ( hex)
27      < Read verify Track ( hex)
ok      Final -info
MOS-3-033.42D.14G

$42F8 03C3 FFEF
Dipl.-Ing. H. Wiertalla
    
```

If they have permanent format mistake "Error / FEHL", they study workshop on my website. Check your Hardware and/or the Floppy disc drive (read- write heads or more).

END section FORMATTER [\(up\)](#)

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Here the **handling** of the input CODE1 and / or CODE2 via **MOS**.

The Substitute `.Shhhhcr` **MOS command** it is begun. Of the `.` (**Point** comes from MOS) So **S** and following a hhhh = HEXE input (0..9 or A..F), **cr** = is the **Return key**. The displayed memory content can now be modified with a hex value. This is done with the **BLANK** button, the next memory cell is displayed, for example, be edited as before. **Case A**) is the value currently displayed and is to be no change, is incremented with **BLANK** (example below here `_`). **Case B**), it is also - a cell to **go back** (**minus key**). **Return** key ends At the conclusion is with **cr**. (see other description in MOS). Next the CODE-area is to get as an image from the Web Site (download show this)!

Before we sweep the input area with Fill: (**red** are the reactions eg **MOS**, **blue** input with key's)

`.F4300,4400,0cr`

Here we go: To try and the storage area to occupy on eg with 55h.

(Only the left column with `.S` generated - **right column only for understanding**)

<code>.S4300cr</code>	CODE1	ADR : CODE	Symbolic instruction	(up)
<code>4300:00-01_ 00-00_ 00-90_</code>		4300: 01 00 90	LXI B,9000h	;long
<code>4303:00-21_ 00-00_ 00-50_</code>		4303: 21 00 50	LXI H,5000h	;start address
<code>4306:00-1E_ 00-55_ 00-73_</code>	eg....	4306: 1E 55	MVI E,55h	;Konstante
		<code>4308: 73</code>	MOV M,E	;move to memory
		4309: 23	INX H	;address++
		430A: 0B	DCX B	;long--
		430B: 78	MOV A,B	
		430C: B1	ORA C	;is .not zero. BC
		430D: C2 08 43	JNZ 4308h	;not finish
		4310: 21 00 50	LXI H,5000h	;addaddress start !!!
		4313: C3 50 43	JMP 4350h	;jump to V24 init and loop

only CODE (HEX) input.

`.S4350cr` **CODE-1 the V24 init and loop** (**reciver loop V24**) (up)

<code>4350:00-3E_ 00-91_ 00-D3_</code>		4350: 3E 91	MVI A,91h	;Dummy
<code>4353:00-05_ usw.....</code>		4352: D3 05	OUT 5	;Port V24 command
<code>.</code>		4354: 3e 40	MVI A,40h	;Reset
<code>.</code>		4356: D3 05	OUT 5	
<code>.</code>		4358: 3E 4E	MVI A,4Eh	;Mod-cmd
<code>.</code>		435A: D3 05	OUT 5	
<code>.</code>		435C: 3E 37	MVI A,37h	;Mod-line
<code>.</code>		435E: D3 05	OUT 5	
<code>.</code>		<code>4360: DB 05</code>	IN 5	;read STATUS Port
<code>.</code>		4362: E5 02	ANI 2	;RxRdy for character
<code>.</code>		4364: CA 60 43	JZ 4360h	;loop
<code>.</code>		4366: DB 04	IN 4	;get data from Port
<code>.</code>		4368 77	MOV M,A	;data to mem
<code>.</code>		436A: 23	INX H	;position++
<code>.</code>		436B: C3 60 43	JMP 4360h	;loop

`. end cr` in MOS -

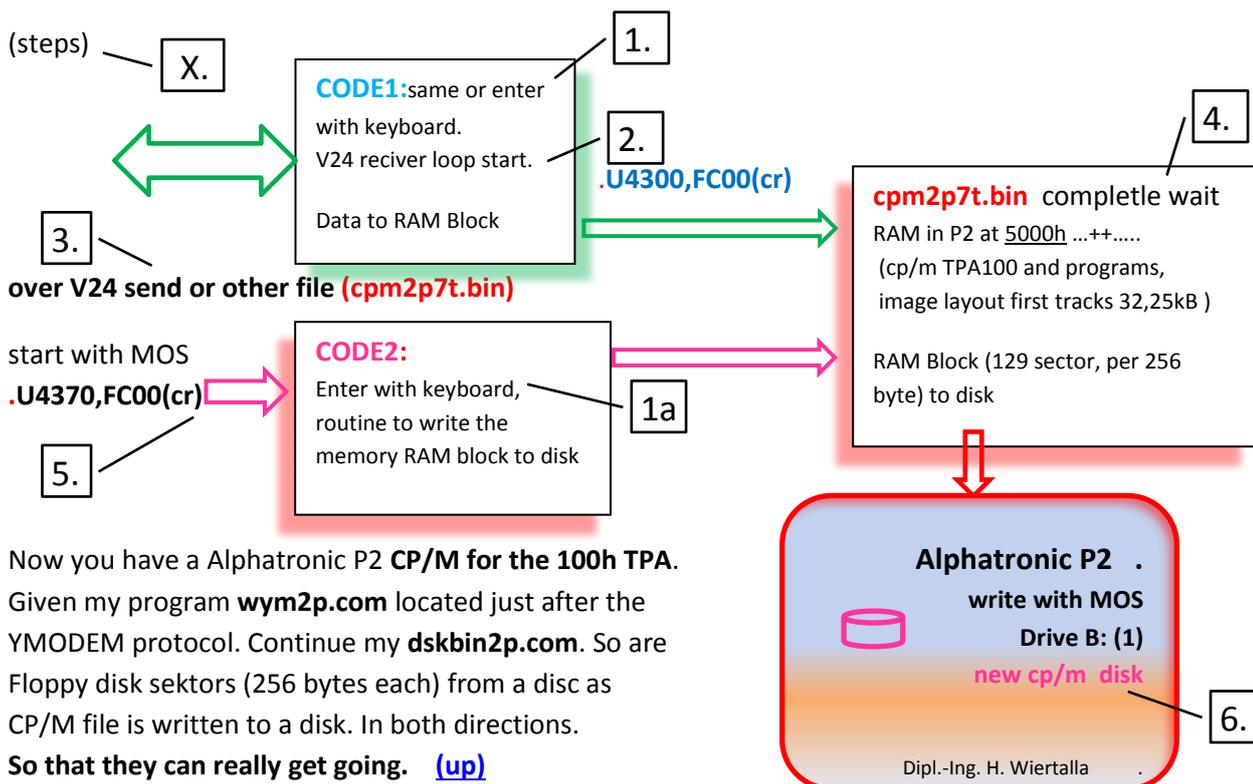
(up)

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update in Attention-line!

<code>.S4370cr</code>	CODE-2	(enter <i>reciver block</i> to Disk write mem block)
<code>4370:00-2E_00-10_00-3E_</code>	4370: 2E 10	MVI L,10h ;LW 1 = drv upper, or LW0 =0
<code>4373:00-84_00-11_00-00_</code>	4372: 3E 84	MVI A,84h ;Positions-CODE
<code>4376:00-01_00-CD_00-14_</code>	4374: 11 00 01	LXI D,0100h ;RD sec=1,RE Track=0 !Attention!
....	4377: CD 14 08	CALL 814h ;disc driver
.	437A: DA 98 43	JC 4398h ;error jump
.	437D: 2E 10	MVI L,10h ;LW 1=upper, or LW0 =0
.	437F: 3E 83	MVI A,83h ;write code
.	4381: 01 00 50	LXI D,5000h ;memory address.
.	4384: 11 00 81	LXI B,8100h ;long BLOCK
.	4387: CD 14 08	CALL 814h ;disc driver
.	438A: DA 98 43	JC 4398h ;error jump
.	438D: 21 B8 43	LXI H,43B8h ;ok -Text
.	4390: CD 5E 00	CALL 5Eh ;Txt output
.	4393 : C3 55 00	JMP 55h ;jump to MOS ok
.	4398: 21 B0 43	LXI h,43B0h ;error -text
.	439B: CD 5E 00	CALL 5Eh ;text output
.	439E: C3 55 00	JMP 55h ;jump to MOS
<code>.(up)</code>	43B0: 06 0D 0A 46 45 48 4C	DB 06,13,10,"FEHL" ;for error
.	43B8: 04 0D 0A 6F 6B	DB 04,13,10,"ok" ;04_long ok

B.) Preparing a CP/M diskette and equal to agree useful programs from me. The identical **CODE1** will now be expanded to include the small **CODE2** using the keyboard. The **CODE2** later with two **floppy disk driver** calling a block 129 setoren (per 256 byte) to a floppy disk drive in 1 or B: but here written. [\(up\)](#)

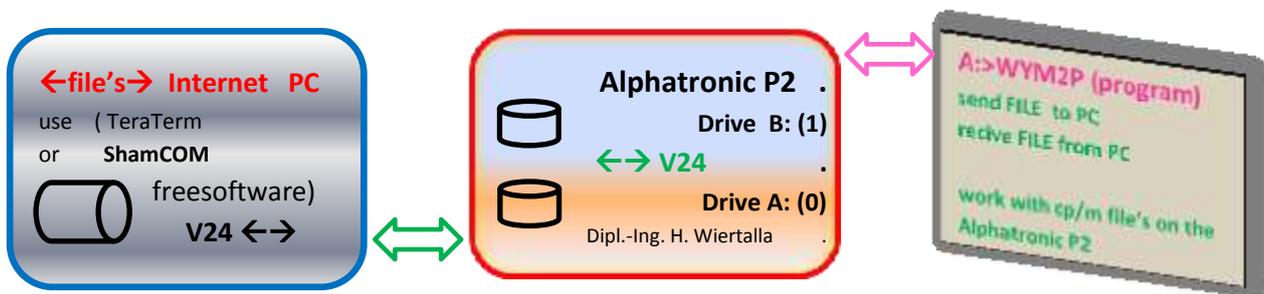


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If you exchange the cpm2p7t.bin to **cpm43t7.bin**, then you create a CP / M for a TPA **4300h**, so put them memory configuration of **48 kB RAM**, with **wym43.com**. A zip -file for cp/m 4300h programs are ready.

C.) Filetransfer with the YMODEM protocol (**wym2p.com** on the cp/m disk TPA 100h)

If you have created a **new cp/m Alphatronic P2 disk**, use my **wym2p.com** (Ymodem protocol). In order to work with the identical V24 crossover cable as before, with the PC (batch transmission only from the Alphatronic P2) (WINDOW 7 or..) program **TeraTerm** or **better ShamCom**. For this they get a [guide program](#) to **wym2p.com** from my website. The most important basic functions of the file transfer from the PC to Alphatronic P2 and in the other direction. Please study my instructions. ([up](#))



Connected to the world

Now I have helped you - to help himself.

```
0550: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0560: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0570: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
#^C
C>SAVE 4 YFORM2P.BIN
C>WYM2P
set 4800 wym (mini-YMODEM) 1.07 -hu 22-Aug-2015
-s C:file>YFORM2P.* s send from Alphatronic P2 starting
06: files

yform2p.mac 18432 ::::::::::::::::::::
yform2p.rel 1792 ::
yform2p.com 1024 :
yform2p.bak 17408 ::::::::::::::::::::
yform2p.sym 640 :
yform2p.bin 1024 :send ok

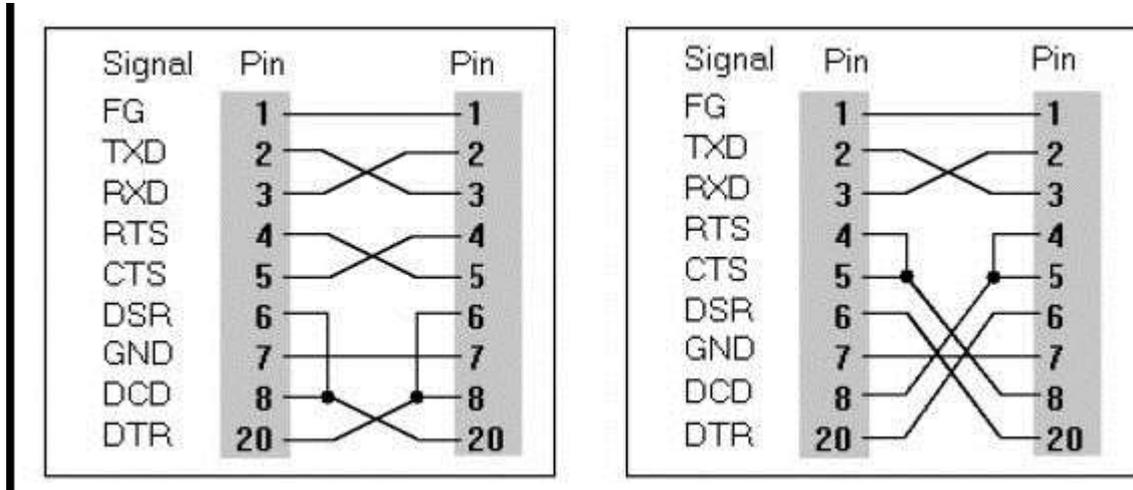
( Remote work PC with ShamCom, fine)

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```

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V24 cross-over cable

You must have a V24 cable from Alphatronic P2 (**red point**) to a PC (V24). This cable must like as this shown here. My part is on the left (semilar "Drehteil" see) [\(up\)](#). The accessories - like V24 cable or converter USB to V24 are easily available in the trade. Or you build yourself a lot.



Much success of Alphatronic P2 owners and similar systems. [\(up\)](#)



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Verify the CODE1 and CODE2 [\(up\)](#)

Hexdump to compare after the input via MOS command with S ..

CODE 1

CODE 2

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Adr. hex:	Char dec:	Overwri
7400	01	
7410	21 00 50 C3 50 43 00 00 00 00 00 00 00 00 00 00	!
7420	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	P Ä P C
7430	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	
7440	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	
7450	3E 91 D3 05 3E 40 D3 05 3E 4E D3 05 3E 37 D3 05	> ' Ó > @ Ó > N Ó > 7 Ó
7460	DB 05 E6 02 CA 60 43 DB 04 77 23 C3 60 43 00 00	Ü æ é ` c ù w # Ä ` c
7470	2E 10 3E 84 11 00 01 CD 14 08 DA 98 43 2E 10 3E	. + > . i ¶ ù ~ c . + >
7480	83 01 00 50 11 00 81 CD 14 08 DA 98 43 21 B8 43	f P ◀ i ¶ ù ~ c ! , c
7490	CD 5E 00 C3 55 00 00 00 21 B0 43 CD 5E 00 C3 55	í ^ Ä U ! ° C í ^ Ä U
74A0	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	
74B0	06 0D 0A 46 45 48 4C 00 04 0D 0A 6F 6B 00 00 00	- F E H L J o k
74C0	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	
74D0	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	
74E0	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	
74F0	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	
7500	1A	→ → → → → → → → → → → → → → → →

It would be nice if I would sometimes hear of your successes.
Who wants me via e-mail to find me, find me by search engines. [\(up\)](#)

<http://www.wiertalla.de/AlphatronicP2.php>