

**A4**

Thomas König

Copyright © 1995,96 Thomas König

---

**COLLABORATORS**

	<i>TITLE :</i> A4		
<i>ACTION</i>	<i>NAME</i>	<i>DATE</i>	<i>SIGNATURE</i>
WRITTEN BY	Thomas König	February 12, 2023	

**REVISION HISTORY**

NUMBER	DATE	DESCRIPTION	NAME

# Contents

<b>1</b>	<b>A4</b>	<b>1</b>
1.1	A4 - C-16/116/+4 Emulator . . . . .	1
1.2	History . . . . .	2
1.3	Overview . . . . .	2
1.4	Installation . . . . .	3
1.5	ROM Image . . . . .	3
1.6	About me . . . . .	4
1.7	Future . . . . .	5
1.8	Features . . . . .	5
1.9	Frodo . . . . .	6
1.10	Drives. . . . .	6
1.11	How to use. . . . .	7
1.12	Requirements . . . . .	8
1.13	FTP-Site . . . . .	8
1.14	Registration . . . . .	9
1.15	Floppy cable . . . . .	9
1.16	Copyright . . . . .	9

---

# Chapter 1

## A4

### 1.1 A4 - C-16/116/+4 Emulator

A4 V0.2a

© 1995-96 by Thomas König

The only Commodore C-16/116/Plus4 Emulator for the Amiga  
=====

Download the ROM here!

Whats new ?

Overview

What is it?

Installation

How to get it running?

Requirements

Which Hard- and Software

How to use

Hau tu jus #\$\$z8 <;-)

Features

What the A4 can do.

Future

What it can't do yet.

=====

---

Registration  
How to register

History  
of A4

Copyright  
Copyright

Author  
Me

## 1.2 History

Release history:

V0.1 First Public Release

V0.2

- Fixed several minor bugs
- real floppy drive access with cable
- Added Prefs-Requester
- Integrated R4 into A4
- 30-50 % faster
- Fixed bug in CMP command
- ROM-Module recognition (A4XROM.dat)
- Full Bankswitching implemented
- NO reqtolls.library required any more
- RUN/STOP key bug fixed
- added shareware keyfile recognition for registered users
- Accessing all drive IDs (Dirs and Floppy)

(17.04.96)

V0.2a - Fixed a bug which made the ROM from nic.funet.fi unusable

## 1.3 Overview

The A4 is a program that emulates the old Commodore machine ←  
Plus4.

Files can be loaded and saved to an Amiga directory or with a cable directly to an external Floppy diskdrive. Bankswitching is supported. Graphic capabilities are very limited right now but this will change in the future. User defined char-sets can be used though. D64 Diskimage files will be usable in V0.3 (soon)!

A4 V0.2 is now Shareware.

SAVEing and Floppy access are disabled in the unregistered version.

This version is shareware.

---

Registered  
users will get a keyfile which enables ALL functions.

## 1.4 Installation

Installation is very simple:

- 1.) Copy the file A4 into any directory.
- 2.) Place the  
ROM Image file  
in the same directory.  
(The file has to be named A4ROM.dat !)
- 3.) Make sure there are directories named A4Dir<ID> in  
the same path of A4!  
  
e.g. A4Dir08 <- ID8 Access with LOAD"XYZ",8  
A4Dir09 <- ID9  
etc...
- 4.) Now start A4.  
(Make sure ParPort is not in use and your desired monitor was  
placed in the directory DEVS:Monitors at system startup time!)

And now you should see this very familiar screen that says:

```
COMMODORE BASIC V3.5 60671 BYTES FREE
```

```
READY.
```

```
*
```

```
^- well, this should be this great cursor :-)
```

```
Basic v3.5, the simple builtin Assembler/Monitor and Floppy access  
are available now.
```

```
Now, have the same fun you had those days with your real C=16/116/+4
```

```
;-)
```

## 1.5 ROM Image

The A4 needs a ROM Image file taken from an original C ↔  
=16/116/+4.

The same old problem with almost every emulator.

How to get the File:

- \* The best way is to download it here

You will find the ROMs split into too parts. After download simply merge them with the AmigaDOS command JOIN.

e.g. JOIN file ROMfile1 file ROMfile2 TO A4ROM.dat

Place the resulting file in the same Path the Emulator is located.

- \* I used a serial cable from a +4 to the Amiga. In this case the +4 needs to be equiped with a RS232 driver circuit (e.g. MAX232). No problem for Mr. Solder :-)  
A short program (A4Ser (included within the archiv) will receive 32768 bytes (baud rate set in system prefs.) and save the Image file: A4ROM.dat.

- \* If you have a 1541-Floppy Drive maybe this works:

- 1.) Save the rom to Disk:  
in monitor type:

```
T 8000 FD00 8000
T FF40 FFFF FF40
S"A4ROM.DAT",8,8000,FFFF
```

- 2.) Get this file somehow into your Amiga by using

Frodo  
and the floppy cable described in  
Frodo.guide (Aminet). This file needs a small correction.  
The program A4Cor does this for you.

Otherwise try the 1541 Emulator on Aminet.

## 1.6 About me

If you have problems check the docs and THEN contact me.  
Please send me bug reports.  
Tell me bugs in this A4.guide document too, because english is not my native language.

Internet:

E-Mail: tomking@koenig.VOL.at

WWW : <http://www.ping.at/members/tomking/A4/>

Home-address:

Thomas König  
Höchster Straße 14  
6850 Dornbirn



Austria

## 1.7 Future

Please help to make A4 more featurerich by  
registrating  
!

Things being worked on: (unordered list)

- \* make the GRAPHIC command work (this is done next)
- \* Using D64 Diskimage files
- \* IRQs !!
- \* Rasterline graphic refresh mode ( demos,... )
- \* Support decimal mode for SBC and ADC
- \* Undocumented OpCodes
- \* Much better Graphic/Video support, COLORS!
- \* Speed optimization (still some potential left)
- \* Supporting jokers in filenames (they work on direct Floppy access!)
- \* Better Floppy Drive emulation (DIRECTORY,DLOAD,DS\$,....)
- \* Datassette (if frequently requested)
- \* Better Key mapping !! (There is no C= key right now :- ( )
- \* Better Prefs window.
- \* Sound
- \* And more .....

## 1.8 Features

Please help to make A4 more featurerich by  
registrating  
!

- \* emulates the Commodore C-16/116/Plus4 OS (Basic 3.5 + Ass. monitor)
  - \* allows data storage in Amiga directories (LOAD and SAVE)
    - a floppy-drive emulation!
    - (SAVE is available in registered version only)
-

- \* allows data storage onto External Floppy diskdrive with a special cable. The same cable as Frodo uses.  
(Available in registrated version only)
- \* TED-Registers emulated so far:  
  
\$FF12 - Charset RAM/ROM switch  
\$FF13 - Charset address
- \* general Registers  
  
Bank switching:  
\$FF3E - ROM On  
\$FF3F - RAM On
- \* fully compatible Bankswitching  
\$FDD0 - \$FDDE
- \* external ROM Modules  
( A4XROM.dat )

## 1.9 Frodo

Great C=64 emulator © by Christian Bauer.  
Available on Aminet. (misc/emu)

## 1.10 Drives.

There are 3 ways to use virtual or real diskdrives:

- 1.) Access a real external Floppy Diskdrive, using a

cabel  
.

All floppy commands do work. But dont't expect speed loaders to work, they require an almost unemulatable timeing!

DLOAD"xx", DSAVE"xx", SCRATCH, HEADER, etc. do work.

- 2.) Access files stored in Amiga directories named A4Dir<ID> where 'ID' is the unit number.

Features still missing:

-DLOAD, DSAVE, etc.. are not emulated right now.

-Deleting files is not possible.

-No DIRECTORY displayable

But this will change, see  
future plans

.

- 3.) Access files stored in D64 compatible Disk imagefiles.  
This will be implemented only in V 0.3 and later.

## 1.11 How to use.

After A4 went through the Init-procedure a Prefs-Requester ←  
pops up.

(Can be disabled with ToolType STARTUPSCR=NO) You can adjust the  
displaymode to your needs and assign the emulation type of each  
Disk drive ID. Then save the settings (Menu Save settings).

After startup a remark is displayed that this is an unregistered  
version. If you are registered and have a key-file your registration  
info is displayed. Registered users can disable this textoutput by  
setting the ToolType SHOWREGINFO=NO!

Now, programs can be loaded ,saved and started.

See

here  
for drive options!

If you have a 32Kb image file of the 3-Plus-1 ROM-Software, which  
is build into the Plus4 and name it A4XROM.dat this unusable piece  
of software is running on your A4 :- ) (Not to much testing done.)

You even can write your own ROM-Moduls or use other ROMs. eg. from  
expansion cards (are or were there some?)

All Function keys are working F1-F8.  
F10 equal CLR/HOME key.  
Ctrl equal RUN/STOP key. (works now :- )  
All editor Esc-key sequences work!

The Commodore Key is not available jet. :-( ugly..

Key mapping is still unclear. Well see  
future plans

.

Don't use the GRAPHIC command -> wait for A4 V0.3

By pressing the HELP key a small options window shows up which  
gives you the following choices:

Reset            - Resets the A4

Goto           - Jumps to the address specified in the field  
                  'To:'

Back           - Just leaves the window with no action executed

Exit A4       - Well, exits A4

The current ProcessorCounter is display in the field 'PC:'.

Please help to make A4 more featurerich by  
  registrating  
  !

## 1.12 Requirements

- \* A Commodore Amiga :-)
- \* A4 needs a 68020 Processor
- \* OS-version 2.0 or later
- \* For acceptable speed you need FastRam!
- \* Desired Monitor driver installed in DEVS:Monitors
- \* ROM Image file. See  
  here  
  .
- \* A4Key.dat for all functions. See  
  registration  
  .

## 1.13 FTP-Site

You will find the required ROM file here:

```
nic.funet.fi:/pub/cbm/firmware/c16/
```

For some reason the file is split into too parts  
Join them using the shell command:

```
JOIN file <ROMFile1> file <ROMFile2> TO A4ROM.dat
```

where

```
ROMFile1 is the Basic part  
ROMFile2 is the Kernel part
```

Copy the resulting file (A4ROM.dat) into the A4 Path!

---

## 1.14 Registration

If you register you will get a keyfile which enables all features  
in this version and all future versions!

This features have been disabled in the unregistered version.

Your registration will help to improve the A4 by forcing me not to stop coding and debugging and coding and debugging,.....

The registration fee is only 5 US\$.

Please print the orderform (included within the archive), fill it in, sign it and send it with the enclosed fee of 5 US\$ to my  
Home-address

Unsigned forms are not accepted.  
(Please send only cash in US\$ - no check or moneyorders)

You will receive your keyfile immediately via E-Mail (UUEncoded).

If you don't have E-Mail:  
Send an empty disk (HD or DD) along with your registration.  
I will return your disk to you with your keyfile on it. In this case the fee is 10 US\$ (includes shipping).

Thank you in advance!

## 1.15 Floppy cable

You will find the instruction to build the cable in Christian Bauers  
Frodo.guide included with his C64 emulator  
Frodo

I had to write additional code to provide compatibility with this cable but I assumed that most of you already have this cable.

## 1.16 Copyright

A4 is shareware!

All programs in the archive A4.lha are copyright by Thomas König 1995, 96.

All files may be freely redistributed as long as the files and the archive stays unchanged and no profit over 5 US\$ is made.

The  
Author

---

---

can not held liable for any damage  
( data loss, system performance, hardware failures ) directly or  
indirectly caused by the programs or any information provided  
in the A4.guide.

The archive is provided as-is. I do not guarantee that the included  
programs are fit for any specific purpose.

The A4 Keyfile may only be used on one (1) computer and must not  
be passed to any other person, nor be copied or resold.

The A4 Keyfile will work for all future releases of A4 and will  
enable ALL function implemented in A4.

---