

WEKA COMBI TURBOTOOL

PLUS

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MANUAL

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*5 TIMES QUICKER LOADING FROM DISK
10 TIMES QUICKER LOADING AND SAVING FROM/TO TAPE
COMMAND FOR ADJUSTING THE RECORDER-HEAD
PRECONFIGURED FUNCTIONKEYS*

WEKA COMBI TURBOTOOOL plus

This cartridge contains many routines that makes it possible to work more quickly with your disk drive and cassette recorder. (respectively 5x and 10x). You will also have a number functions that will make working with your computer more efficient. This cartridge will not occupy any BASIC-memory from the Commodore and you can keep your cartridge in your computer all the time.

The cartridge must be placed in the expansion port of the Commodore 64 with the components on the top-side. You may only insert (or remove) the cartridge when the computer is switched off !!

When you switch on the computer you will get the normal start-up message and an extra message: WEKA COMBI TURBOTOOOL+.

When this does not happen, switch the computer off and check if the cartridge is correctly inserted into the expansion port.

After switching on the computer, and the cartridge is active you will have many EXTRA commands, including a command to adjust the recorder head.

Toolkit commands		Cassette	Disk	Copy
AUTO	PLIST	PUT	DLOAD	COPY
DEC	QUIT	PUT*	DSAVE	RECOP
DEL	RENUM	GET	DVERIF	DEV
DUMP	REP	COMP	DMERGE	
FIND	RESET	MERGE	. (dot)	
HELP	SET		↑ (arrow up)	
HEX	SHOW		/ (division sign)	
KEY	TRACE		FLOPPY	
OLD		+ 8 FUNCTION KEYS		

TOOLKIT COMMANDS

AUTO a,b

If you want to use automatic line numbering you can enter AUTO. The a is the start line and b is the step-size. Example: AUTO10,5 (return) will give an automatic line numbering starting at line 10, then line 15, 20 etc. If there are no values entered for a and b, the values will be 100 and 10.

DEC a

DEC will give the decimal value of a hexadecimal number. Example: DEC0801 ; result 2049

DEL a-b

With the DEL command you can delete part of a program, for example: DEL -100 deletes a program up to line 100. The instruction is similar to the LIST command.

DUMP

When you want to see the values of the variables after a program has stopped (with a BREAK, ERROR or just END) you can type DUMP.

FIND (expression)

For finding parts of a text or something else in a LIST you can use the command FIND.

Example: FINDA\$ displays all the lines where A\$ is present

HELP

When a program encounters an ERROR, you can type HELP, and the computer will show you where the error is located.

HEX a

HEXa will give the hexadecimal value of a decimal number. The value a has a maximum of 6400.

Example: HEX2049 : result 0801

KEY a

With the KEY command you can enable or disable the function keys.

With a=0 the function keys are disabled, with a=1 the function keys are enabled.

After a RUN/STOP-RESTORE the function keys are disabled.

OLD

After a NEW command or a RESET of the computer you can use this command to restore the program.

PLIST a,b

PLIST will do the same as LIST but with the difference that the listing is only one page and waits until you press the RETURN key to show the next page. Every other key will stop the listing and you can alter your program.

The listing will be from a to b.

QUIT

Disables the turbotool (enable with SYS 49179).

RENUM a,b

RENUM can automatically renumber the line numbers of a BASIC program. The new numbering starts from a certain line number and uses a certain step-size.

RENUM a,b where a = start-line and b = step-size.

When no a or b is given the standard start line is 100 and the step-size is 10.

REP

REP turns the key repeat function on. A second time REP turns the function off.

RESET

The RESET command is the same as turning the computer off and on.

SET a,b

With this command you can define the screen and border colour. a= screen, b= border. With only SET (return) the previous set colours are restored. The values a and b are between 0 and 15.

Example: SET 2,7 : screen red and border yellow

SHOW

SHOW gives a list of all the TURBOTOOl commands (and there are many !!)

TRACE a

If you want to observe how a program is executed you can use TRACE.

a is the line number where you want to start. If you do not enter a, it will start at the beginning of the program.

In the upper-right corner the line number will appear that is executed at that moment. This is especially helpful when searching for a mistake or if you want to alter a program.

With the SHIFT-key the program will advance (You can use the SHIFT-LOCK to run the program).

TAPE COMMANDO'S

PUT "name" , PUT* "name"

When you want to save a program at 10x faster to a cassette, you can use these instructions.

Example: PUT"name" : writes the program that is called 'name' to the cassette with a long header.

PUT* "name" : writes the program that is called 'name' to the cassette with a short header.

GET "name"

A program that is written to cassette with PUT (or with PUT*) can be loaded with this command. During the searching and loading of the program a pattern with stripes is visible on the screen.

Example: GET"name" : loads the program that is called 'name' into the memory

COMP "name"

Command to check if a program that is written to cassette with PUT or PUT* is correctly written to cassette (like VERIFY).

MERGE "name"

With this command you can merge two or more BASIC programs together. Pay attention that the second program has higher line numbers than the first. Otherwise the programs can interfere with each other.

DISK COMMANDS

DLOAD "name" (5x faster)

With DLOAD" name" you can load programs with turbo-speed from disk. When the directory is on the screen, you can put the cursor in front of the program name, type DLOAD and press RETURN. The program will be loaded, or even better just use function key 3.

DVERIFY "name"

With this command you can check a program that is written to disk (like VERIFY).

DMERGE "name" (5x faster)

DMERGE is the same as MERGE, but for disk.

DSAVE "name"

With DSAVE you can write a program to disk. (like SAVE).

↑ (arrow-up)

The directory will appear on the screen, but without destroying the program in the memory.

↑name" will only show programs that start with 'name'.

. (dot)

Prints the error-channel from the disk drive on the screen (Read the manual of your disk drive for more information).

.[floppycommand]

This command replaces the normal command: OPEN15,8,15:PRINT#15,"floppycommand".

Examples:

.N:diskname,id	formats a diskette with the name 'diskname'
.S:name	deletes a program that is called 'name'
.R:new=old	name 'old' becomes name 'new'
.V	makes extra space on a diskette
.U:	RESET for the disk drive

/ (division sign) (5x faster)

Will give an absolute load (. LOAD"name",8,1), see DLOAD for more information.

FLOPPY

The command FLOPPY changes the device number of a 1541 disk drive automatically into 9 (default is 8).

If you want to restore device 8, you must turn disk drive off and on.

CONTINUOUS LOADING WITH TURBO-SPEED FROM DISK

Continuous loading implies that after a program has started more files are loaded from disk. This can be done with turbo-speed if you use DEV8 (return) before you RUN the program.

See DEV for more information.

COPY COMMANDS

COPY "name",a,b

With the COPY command you can easily copy programs up to 46 Kbyte (that is 186 blocks !!). Even if the programs has auto-start of are copy protected (no NOVA load)!

Also sequential and user files can be copied. From disk everything is loaded with turbo-speed.

This is how it works;

You type COPY"name",a,b, where 'name' is the name of the program you want to copy, a is the device-number (see DEV for more information) of the device where the original is located and b is the device number of the device where the copy must go to, a and b may be the same (from tape to tape, from disk to disk).

Example: COPY"name",8,2 : copies 'name' from disk to tape.

After the program is loaded from disk the start- and end-address is displayed in hexadecimal and the text 'ENTER DESTINATION CASSETTE' will appear. Put a cassette in the recorder and press SPACE, the program will be written to the cassette.

When you copy from a cassette a name is not necessary, in that case the first program is copied.

The name of the copy can be changed by pressing a 'N' if the text 'ENTER DESTINATION ...' appears. Type the new name and press RETURN.

From disk to disk you can also copy USER and SEQuential files by typing after the name an ',U' or a ',S'.

Example: COPY"name",S",8,8 ; copies the sequential file 'name'.

REMARK: when you copy to fastload, you must wind the cassette a little bit further to avoid the tape-leader.

DEV a

When you have a two part program that is intended for disk, but you want to use it on cassette, this command can help you.

All LOAD"name",X,Y 's etc. will be automatically transferred to the device of your choice.

When you have a disk-program that loads another program and you want this to happen with turbo-speed, you can type the command DEV8 (return).

What is a device? Printers, cassette-recorders, disk drives etc. are devices. Each device has a number:

Cassette-recorder	device-number 1
Cass-rec (fast)	device-number 2
Disk-drive	device-number 8 (or 9)

After a DEV a, where a is the device-number, all the LOAD's, GET's etc. will be transferred to that device-number.

Example: DEV2 (return) will transfer a LOAD"name",8,1 to fast tape instead of disk. DEV (return) disables this function.

RECOP

With RECOP you can again SAVE, PUT or DSAVE a program that you previously have copied. What can you do with this command:

- If you want two or more copies, you do not have to reload the original program.
- If you have not enough room on your cassette during saving, you can re-save on a different cassette / diskette.

FUNCTION KEYS

The function keys have a number of often used or time consuming (to type in) functions.

Remember that the functions f2, f4, f6, f8 work in combination with the SHIFT-key.

f1	COPY",2,2	copy program from cassette to another cassette
f2	COPY",2,8	copy program from cassette to disk
f3	DLOAD	loads a program from disk
f4	PLIST	
f5	GET	loads a program from cassette
f6	HELP	
f7	QUIT & RUN	disables the TURBOTOOl and then
f8	RUN	RUNs the program

The function keys can be used within quotes. This means they can be used within PRINT instructions.

ADJUSTING THE RECORDER-HEAD

FIRST WE WANT TO STATE THAT YOU DO NOT HAVE TO ADJUST THE RECORDERHEAD IF IT IS NOT ABSOLUTELY NECESSARY.

The "WEKA COMBI TURBOTOOl plus" is the only cartridge that has the feature for adjusting the recorder-head. What you will need is a small Philips screwdriver and a reference tape with a constant (high) tone, recorded with a correctly adjusted recorder. This reference tape can be ordered from the supplier of this cartridge.

Work method

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1. Insert the "WEKA COMBI TURBOTOOl plus", and switch on the computer.
 2. Insert the reference-tape in the recorder and press "PLAY".
 3. Type GET and press RETURN.
 4. Watch the colours on the screen.
 - a. The head is correctly adjusted: You will see thin horizontal lines on the screen.
 - b. The head is not correctly adjusted: You will see an entire screen changing colour or wide horizontal stripes.
Insert the small screwdriver in the small hole above the "REWIND" Key. Turn the screw (while the recorder is still running) clockwise or anti clockwise. But never more than 1,5 turn in each direction. The pattern of the stripes will change. Adjust the screw until you can see the pattern as described before. Try to make the stripes as thin as possible.

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How to load a program that gives 'LOAD ERRORS' even when the recorder-head is correctly adjusted.

This is more difficult but it can be done. It will not be a quick-fix and can take up to 30 minutes.

When you load a program with this cartridge you see a colourful screen during the loading.

Insert the cassette with a program in the recorder and press "PLAY". When the recorder head is not correctly adjusted for this particular cassette you will see a different pattern of colours then normal.

Turn the screw of the recorder-head until you recognise the normal pattern of colours.

Rewind the cassette and try to load the program. After loading the program you must adjust the recorder-head with the reference cassette and save the program.

Remember that a not correctly adjusted recorder-head is not the only reason for 'LOAD ERRORS'. When the recorder-head is not clean, or the tape is old or left in the sun or left in a magnetic field you can expect troubles.

REMARKS

You can easily add a RESET button to the TURBOTOOL cartridge. For this there are two small connections on the bottom side of the circuit board that are marked with 'RESET'. You can solder a push button to this connection.

This cartridge is made with the PERMISSION of the author of the program. Using the program or parts of the program is NOT ALLOWED without the permission of the author.

All cartridge were tested and are guaranteed to work. If you have a cartridge with a small sticker on one of the components, do not remove this sticker.

Never insert or remove the cartridge when the computer is switched on !!!

1. Introduction

The WEKA monitor is a comprehensive and universal tool to write a programs in machine language. You can also use the monitor to edit an existing machine language program. The monitor is a part of the WEKA COMBI-TURBOTOOL cartridge. After switching on the computer with this cartridge you can use the command "MON address" to install the monitor at that address and activate it. For example MON 9000 installs the monitor at the address \$9000 (hexadecimal) and starts the monitor. The WEKA monitor uses 4 kB of memory in the example before that will be the range \$9000 to \$9FFF. The monitor does not use any zero-page addresses and no addresses outside its 4 kB block. This means you can test a program without the monitor influencing the outcome of the program.

2. Commando's

A - Assemble

A 0350 LDA F5

You can type the mnemonics and the monitor will translate this immediately. An : will close the entry if there is something else on the line further on.

B - Breakpoint

B 0350

The command BRK (this is 00) will be set on the given address, the original code will be saved. If you use B without an address the breakpoint will be removed. If you define a new breakpoint on a new address the old breakpoint will be removed automatically.

C - Compare memory

C AAAA BBBB CCCC

Compares the memory range from AAAA to BBBB with the memory that starts at the address CCCC.

D - Disassemble

D AAAA

Starts to disassemble from AAAA. After the first page is displayed You can advance a page with RETURN. If you use D without an address the disassembly will start at the previous defined address. If you replace the A with an : you can overwrite the byte directly. The end will be recognised by two spaces.

E - Edit in screen code

E AAAA BBBB

Shows the memory range from AAAA to BBBB, as if was poked into the screen memory. You can advance a page with RETURN. With E you can start from the beginning.

F - Fill memory
 F AAAA BBBB CC
 Fills the range from AAAA to BBBB with the hex value \$CC.

G - GO
 G AAAA
 Starts a program at the address AAAA. Please initialize the registers and flags first. If you use only G it will use the address from the PC (see command R). With a BRK in the program you will return to the monitor. Or press Restore.

H - Hunt memory
 H AAAA BBBB CC DD
 Searches in the memory range from AAAA to BBBB for the bytes CC, DD
 H AAAA BBBB'TEXT searches for ASCII characters.

J - Jump Subroutine
 For testing subroutines. The same as command G, but you will return to the monitor after a RTS.

L - Load program
 L"name",0X
 Loads a program (absolute) from device X. This is:
 01 - cassette normal (slow)
 02 - cassette turbo (fast)
 08 - disk normal or turbo
 If you want to use turbo-load with the 1541 you must enter DEV8 (return) in BASIC (ready mode).
 If the TURBOTOOL (memory range C000-CFFF) is overwritten you cannot work with disk turbo.
 L"name",0X,AAAA loads the program in the memory starting at address AAAA.

H - Memory dump
 Displays a hex dump. Usage similar to the command I.

N - Newlocator
 N AAAA BBBB CCCC DDDD EEEE
 Recalculates all absolute addresses. These are:
 AAAA - start address of the code
 BBBB - end address of the code
 CCCC - offset for the recalculation
 DDDD - start of memory range
 EEEE - end of memory range

Only the addresses in the memory range from DDDD to EEEE are recalculated. The other addresses, mostly ROM routines, will not be changed.

O - Origin
 O - AAAA relocates the WEKA-monitor to the memory range from AAAA to AAAA + 0FFF and starts the monitor. (Just like MON from BASIC)

P - Printer output
 P+ sends all output to the printer (Just like OPEN4,4: CMD4 in BASIC)
 P sends all output to the screen.

Q - Quicktrace
 Q AAAA BBBB
 Tests a program at the address that is in the PC (see command R).
 If the program goes outside the memory range from AAAA to BBBB it will be stopped, and the WALK mode will be started. You can stop with Run/Stop. Q (return) starts a quicktrace without the "WALK - range".

R - Register display

 PC AC XR YR SP NV*BDIZC
 .; AAAA BB CC DD EE 11010011

 Shows the registers as they are set before you start a program with G, J, Q or W. When you return in the monitor after a BRK the current values of the processor-registers are stored and displayed. The flags can be set easily without calculating them to hexadecimal!

S - Save program
 S"name",0X,AAAA,BBBB
 Writes the memory range from AAAA to BBBB-1 to device 0X. Remark ! the last byte on BBBB is not inclusive.
 The device number works the same as with command L.

T - Transfer memory
 T AAAA BBBB CCCC
 Copies the memory-range from AAAA to BBBB to the range that starts at CCCC.

V - Video screen input
 V AAAA TEXT AND CHARACTERS ...
 Writes the text and characters to the memory that starts at AAAA. The text and characters are written in the same way as the command E shows them on the screen.

W - Walk code
 W (return) of
 W AAAA BBBB
 Starts a program, in step mode, and shows all registers.
 The start address is in the PC. You can select different speeds with the keys Control, C= and space.
 When a range AAAA BBBB is given then this range is executed without step mode (quicktrace mode).

X - Exit to BASIC
Returns to BASIC. With MON or Restore you can re-enter the monitor.

Z - Zip through word-tables
Z AAAA BBBB CCCC DDDD EEEE
recalculates address tables. The definition of the values is the same as with the command N. The table with address words must be between AAAA and BBBB.

+ Add
+ AAAA BBBB gives the addition of the numbers AAAA and BBBB.

- Subtract
- AAAA BBBB gives the result of AAAA minus BBBB.

\$ - Hexadecimal number to binary and decimal.

% - Binary number to hexadecimal and decimal.

- Decimal number to binary and hexadecimal.

↑ - (arrow-up) displays the directory of the disk.

? - Error channel from the disk-drive.

> - Commando to the disk-drive. For example >I or >V etc.

WEKA COMBI

TURBOTOO

PLUS

- 6 x faster loading programs from disk.
- 10 x faster loading and saving on tape.
- Command for adjusting the recorder head (UNIQUE !!).
- ALSO CONTINUOUS LOADING (with turbo-tape and turbo-disk)!
- Copy programs with COPY, also machine language, programs in multiple parts and auto start programs. Possibilities:
 - Cassette to cassette
 - Cassette to diskette
 - Diskette to cassette (with disk-turbo !)
 - Diskette to diskette (PRG, SEQ, USR, 1 or 2 drives, with disk-turbo !)
- Up to 186 blocks (47 Kbyte) !!!
- Contains DOS 5.1 (improved) and BASIC 4 floppy commands.
- Listings per page with PLIST.
- 8 function keys, with useful function pre-programmed:
COPY",2,2 , COPY",2,8 , DLOAD , PLIST , GET , HELP , RUN ,
QUIT & RUN
- 17 very useful BASIC-toolkit functions:
AUTO , DEC, DEL, DUMP, FIND, HELP , HEX , KEY , OLD, PLIST ,
QUIT, RENUM , REP , RESET, SET, SHOW , TRACE
- 16 Disk and tape commands:
PUT , PUT* , GET , COMP , MERGE , DLOAD , DSAVE , DVERIFY , DMERGE ,
FLOPPY , COPY , DEV , RECOP , . , ↑ , /