The Graphics Zapper!

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Introduction

Thank you for purchasing the Graphics Zapper, we hope you enjoy what it has to offer. This software is offered for sale on an "AS IS" basis. No guarantees are made or implied and we accept no responsibility for any damage caused by this program.

Introduction to the Graphics Zapper

This program will enable you to search disks for graphics pictures from within other programs. Then you may edit them and save them back to the disk or write them to another disk in picture format for loading from basic programs or into graphics programs like CoCo Max.

Table of Contents

System Requirements

- A Color Computer I or II with a disk drive and 64Kb of memory,
- or Color Computer III with a disk drive.

Typography

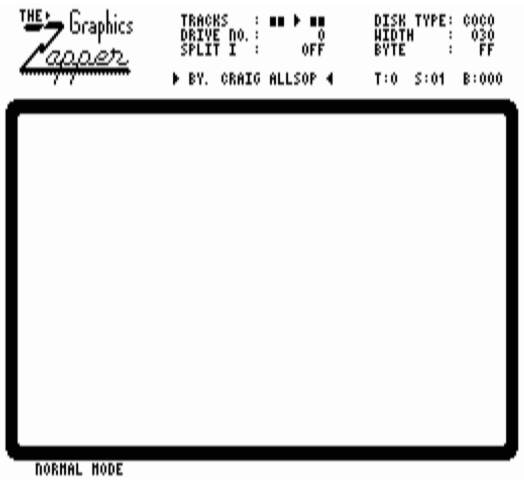
- `KEY` - denotes a key which you have to press.
- Kb - Kilobytes.
- $xx - Hexadecimal number (Base 16).

Launching Graphics Zapper

Insert the "Graphics Zapper" disk into your disk drive. At the "OK" prompt type the following -

LOADM "Z" **ENTER**

Then the Graphics Zapper will be loaded and executed. The work screen will appear:



The work screen has two parts:

1. A scrolling or searching window, which is used for locating graphics and saving them as a file or modifying them and saving the buffer back to the disk.

2. A status bar which contains the title at the left and two groups of information which look like this:

```
TRACKS   : 00 > 06      DISK TYPE: COCO
DRIVE NO.:       0      WIDTH    :  030
SPLIT I  :     OFF      BYTE     :   FF

>                 <     T:0  S:00  B:000
```

TRACKS : 00 > 06

This shows which tracks have been loaded off disk and are currently in the buffer. It is updated every time the buffer is loaded or saved to the disk. If COCO disks are being used then the buffer will hold six tracks and three tracks if IBM disks are used.

DRIVE NO.: 0

This shows the current drive being used when zapping Coco disks or saving files. When loading or saving to IBM disks, disk drive 0 must always be used and the drive number will be ignored.

SPLIT I : OFF

This shows you if the split image is on or off. (Scrolling with split on is slower than when it's off.)

DISK TYPE: COCO

Shows you what type of disks, graphics are being zapped from. Coco disks or IBM disks.

WIDTH : 030

Shows the current width of scrolling. (in bytes) Multiply by 8 to give the width in pixels.

T:0 S:00 B:000

This show you where the scrolling window is at currently. "T" stands for the track number which will range from 0 to 6, this is the offset to the first number next to "TRACK NO.". "S" stands for the sector number and "B" is the current byte. If this status was like the following - T:1 S:13 B:0E0, then the location on the disk would be +1 from the starting track loaded, sector 13 on that track, and $E0 (224) bytes inside sector 13.

BYTE : FF

This is the value of the byte at the current location of the scrolling window which is displayed graphically in the top left hand corner of the scrolling window.

At the lower left corner of the screen shows you if you are running normal speed (.89 MHz) or turbo speed (1.7 MHz, only if you have a Coco 3)

The text which changes inside the two arrows is just "decoration". It shows the name, author, copyright etc.

Quick Reference

Modes

Key	Function
F	Search (Find) (Initial Mode)
E	Edit
B	Box

Search Commands

Key	Function
D	Select Drive Number
C	Select Coco Disk Type (256b sectors)
I	Select IBM Disk Type (512b sectors)
L	Load Tracks
S	Save Tracks
LEFT	Decrease Width
RIGHT	Increase Width
UP	Scroll Backwards
DOWN	Scroll Forwards
,	Scroll Backwards 1 byte
.	Scroll Forwards 1 byte
1	Scroll Speed: 1 line
2	Scroll Speed: 2 lines
3	Scroll Speed: 8 lines
4	Scroll Speed: 1 page
5	Scroll Speed: 256b (1 sector)
:	Invert Bytes
N	Squash Even Pixels
M	Squash Odd Pixels
X	Split Image by Even/Odd Bytes
H	Half/Full Height Window
T	Turbo/Normal Speed (Coco3)

Quick Reference

Edit Commands

Key	Function
P	Set white pixel
O / @	Set black pixel
R	Restore (Undo last edit)
F	Save/Exit Edit to Search (Find)

Box Commands

Key	Function
B	Exit Box Command
CLEAR + arrow	Resize the Boxed area
P	Print area
O	Save area as Image Data

L S Load/Save Commands

Before you load any tracks from a disk you must have set what type of disks you are reading from. In the top right corner of the screen is a status called the "DISK TYPE:", this tells you, and the Graphics Zapper what type of disks the load and save commands are working with. If you are loading or saving with Coco disks then this must be set to "COCO", or "IBM" if you are using IBM disks. To change disk type press C to use Coco disks and I to use IBM disks.

Also, when working with Coco disks, make sure you are logged onto the correct drive you wish to use. To change the logged drive press D and the "DRIVE NO." located in the middle at the top of the screen will increment by one. When it gets to three, it will go back to zero. So if you wanted to use drive two to load some tracks in, press D until the number changes to a "2". When working with IBM disks the drive number has no effect and so you must always use drive 0 and it must be a drive which is double sided. (So old Tandy drives which the disk is inserted vertically will not work. If you have to flip the disk over to read the other side then you have a single sided drive and these will not work with IBM software.)

To activate the load command press L, and a window will pop-up. It will then wait for the user to type in a TWO digit starting track number. The Graphics Zapper will load 6 tracks starting from the track which is entered. Eg. To load tracks 00 to 05 then type the starting track 00 in by pressing 0 , 0. Only 3 tracks are loaded from IBM disk as they are double sided one track on the IBM disks equals twice the information stored on one track on a Coco disk.

Press ENTER to start loading from the number displayed on the screen. If a mistake is made in typing the number then just type the number in again. Press BREAK to abort the load & save commands only while nothing is being read/written.

Saving the buffer back to disk can be done by pressing S and ONLY when the SAME disk that the buffer was loaded from is in the drive then press ENTER. (The track number will already be displayed, but it can be changed if you want to put the buffer in a different place on the disk. There is no need to type a new track number in and should only be done if you know what your doing.)

- NOTE 1 - When you want to save any changes that have been made then ALWAYS be sure you have another copy of the WHOLE disk not just the files, because it is very easy to destroy disks if you change the wrong information. The program will not make errors, only the operator will make errors. Put a write-protect tab on a disk if cannot make a copy and then this will stop you from saving to the disk. When just loading tracks from any disk then there is no need for a write-protect or a backup.

- NOTE 2 - The Graphics Zapper will only load IBM disks which are 9 sectored, double sided, 360K disks. (MS-DOS 3.00 or greater will format a 5-1/4 360K double sided disk for you, then just put some graphics on it so you can zap it on the Coco. Get a friend with an IBM compatible machine to do it for you.

If an error appears then consult Table 1. which is below or Appendix 2, for the appropriate action. Only while the error is displayed the following commands will work.

R - Go back and retry the bad sector.

I - Ignore the bad sector and continue loading/saving.

ANY OTHER KEY - abort loading/saving.

TABLE 1. ERRORS FROM LOAD & SAVE COMMAND ONLY

Problem	Description
READ/WRITE ERROR	Try reinserting the disk in the disk drive and press R to retry. Or press I to ignore it if you are only intend to read from the track and not save to it.
WRITE PROTECTED	This means that a write protect tab is preventing the program from writing to the disk in the disk drive. To correct this remove the tab from the disk.
WRITE FAULT	This means that there is something wrong with the disk itself. It might not be formatted correctly or might be just the disk drive, so refer to a READ/WRITE ERROR.
DISK/DEVICE ERR.	Check that the disk drive is connected correctly and the disk in the disk drive is mounted correctly and that the drive door is closed.
DISK/DEVICE ERR.	Error will also be caused if the following is attempted. If a track greater than 34 is accessed on a 35 track disk, - or greater than 39 on a 40 track disk, - or greater than 40 on an IBM disk, - or greater than 79 on a 80 track disk,

Exercise 1. *Test out the load command by inserting the Graphics Zapper disk in drive 0 and pressing* L *and see if you know how to load in track 00. (For the answers to all of the exercises look in Appendix I.)*

There are some graphics, text, free disk space, machine language programs, and a few other bits and pieces on the first 6 tracks of the Graphics Zapper disk. The next section will show how to see all of this and how to tell what it is your looking at.

F Search Mode (Find)

After the Graphics Zapper is loaded it always starts in search mode. This mode is used for locating any graphics that have been loaded from a disk, be it a Coco or IBM disk.

By pressing F, the search mode is activated. (If F is pressed while already in search mode the screen will be restored. This is necessary after pressing N & M, more on these later.)

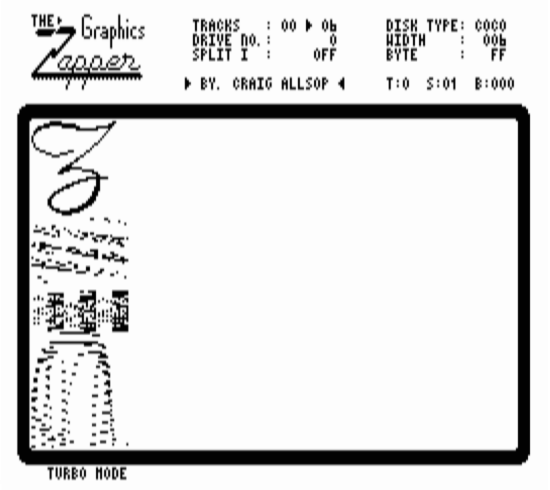
The width of scrolling column after the program is loaded is always 30. This means that the column is 30 bytes wide, or 240 pixels wide. Each byte contains equals 8 pixels, so whatever the width in bytes is, the width in pixels is the width multiplied by 8. The width is always displayed in the top right corner of the screen next to 'WIDTH :'.

Whatever is loaded from disk is stored in the buffer, and the buffer is displayed inside the search window in a column format. By pressing **LEFT** or **RIGHT** the width of the column will decrease or increase by 1 byte (or 8 pixels). The column width can go as wide as 255 bytes but you will probably not need to go wider than 80 bytes.

The scrolling window only displays a part of the buffer so as the name suggests it can be scrolled forward or backward. To do this is simple, just press **DOWN** to scroll forward and **UP** to scroll backward. The position of the window is displayed in the top right corner of the screen in track - sector - byte format.

When the width is greater than 30 then you will not see the right side of it as the window shows only 30 bytes. Or if the graphics displayed it is cut off (or wraps around) and you need to move it left or right, then you can scroll the column to the right by pressing **,** , and by pressing **.** , will scroll the column to the left. These keys decrement and increment the location of the window by one which causes the buffer to move in the opposite direction, this is why they seem back-to-front, they can be remembered by the greater than and smaller than sign which increment and decrement the buffer by one byte.

Exercise 2. *Move the buffer column to the start by pressing* ***UP*** *until the track is 0, the sector is 01 and the byte is 000. Then by using* ***LEFT*** *and* ***RIGHT*** *, see if you can work out the correct width of the first piece of graphics which is a letter "Z". (A width of 6)*



When you are looking for graphics, they will appear as mysterious patterns. This is because they are not the same width as you are scrolling in. So to see them as they would normally appear then you must change the width by increasing or decreasing it, and once the pixels are in line with each other then the picture will be apparent.

If you have a Coco 3 then you can run this program at twice the normal speed. To do this press **T** (Turbo key) and it will toggle the mode which is in the bottom left corner of the screen between slow and fast.

> If you press the turbo key on a Coco 1 or 2 you will see garbage, press turbo key again to return to normal.

To compensate for the slowness of the Coco one and two, there are two options you have. You can half the scrolling window which will make it scroll faster. This can be done by pressing H and if you press it again then the window will go back to normal. Or you can change the step rate of scrolling with the following keys.

KEY	SCROLL RATE
1	1 line.
2	2 lines.
3	8 lines.
4	one page. (the size of the window)
5	256 bytes. (the size of one coco sector)

Graphics which is in 4 colors and 16 colors are not supported in this version of the Graphics Zapper, this will be added to a future version if enough people buy this program. You may use N & M to help see these graphics in high resolution. Using N takes all the even columns of pixels and squashes them together or M will squash all the odd columns of pixels together. This cannot be set on all the time as it is far to slow even on the Coco 3 to scroll in.

Some graphics may be white on a black background and this sometimes looks better if it where the other way around. So to flip black to white and white to black (or invert it) then press : and it will toggle the inverse on and off.

Some IBM game graphics characters may appear to have a double image (see below) which is inverted. Now you cannot use the inverse key to fix it because then the other half it inverted as well and nothing is achieved. These split or interleaved images can be recomposed into two halves by using X and it will toggle on/off the split image.

Exercises to do

Exercise 3. *Try scrolling up and down at different rates by using the keys* `1` *-* `4`*. Then if you have a Coco 3, press* `2` *and take a look at the speed difference when you toggle the "SPEED" between fast and slow with the ??? key.*

Exercise 4. *The second image after the "Z" is in a width of 7, so adjust the width until it is 7. Now you can see what it is, just to fool around see what happens if you press* `N`*. Now press it again and see what happens. Do the same with the* `M`*.*

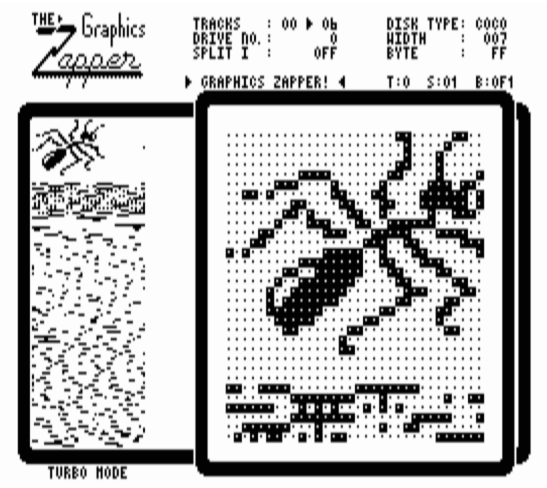
Exercise 5. *The third piece of graphics is a double image picture, take a good look at the difference between it and the "Z". The Note the black and white double stripe effect. Press* `X` *and note how it separates these two images. (Width 10)*

Exercise 6. *With the split still on try scrolling, then press* `H` *key to half the window and scroll again. Note the speed difference.*

Exercise 7. *INVERT the first graphic (the "Z") with what ??? key, to see what happens. Inverting pictures with a lot of black area saves on your ribbon if you print it out.*

E Edit Command

To edit a picture press E and a editing window will be overlaid on top of the scrolling window. The area which is in the top left corner of the scrolling window has now been enlarged by four times. A grid is placed on top of the editing area to show where dots would be if there is a lot of black or white area. A cursor, the same size as each pixel can now be used to edit any of the picture. It can be moved around the edit area by using the arrow keys. If you move the cursor out of the edit area then the window will automatically move to keep up with the cursor.



To change pixels, you can press P to set a pixel to white and O or @ to set a pixel to black. You can hold these keys whilst using arrow keys to draw.

If by any chance you make a mistake, then if you haven't moved out of the edit area then the modification can be restored by pressing R. However, if the area is scrolled whilst editing, then it will be saved automatically and and cannot be restored with the R key.

Once you are finished editing then by pressing F you will go back to searching and the modification is saved.

B Box Command

There are two other commands which require the selection of graphics. To do this you must have a box on and setup around a piece of graphics which you want to use with the following commands.

To activate the "Box" press B and a box will appear. (to turn it off when you don't want to use it press B again) You can then adjust the size of the box by pressing and holding CLEAR down and moving the bottom right corner of the box with the arrow keys. The top left corner is fixed so you have to move your graphics by scrolling the window around until it is in the top left corner of the window.

There are two commands that are ONLY active while the box enabled, Output and Print are as follows.

O Output Command

To activate the output command press O and another window will pop-up in the middle of the screen asking for a filename. This will save the boxed off area to a graphics file so that it can be loaded from basic, into Coco Max or any other graphics program which will load a normal picture.

The picture format is in 256 resolution 2 colors - black & white. So, insert another Coco disk with some space on it in the disk drive and type a filename and press ENTER to save the picture in the box. This command will save the file on the current drive no. Remember to put the disk that you working with back into the disk drive if you only have one disk drive or for the people with two disk drives you could change the drive number to 1 prior to this and put a normal Coco disk into drive 1 to save all the pictures on it and change the drive back to 0 when loading more tracks to look at.

To load pictures into Coco Max I or II then you have to RENAME the file extension from ".BIN" TO ".MAX" and to load them into Coco Max III use the file on the Coco Max III disk to convert pictures to 320x200 format.

You can change the format of which the pictures are saved by pressing RIGHT. There is only one other format which is called "PACKED", this will save the picture in the following format.

BYTE	DESCRIPTION (Packed)
0	The width of picture in bytes.
1	The height of picture in pixels or lines.
2 .. ?	The data for the picture. The length will be the width of the picture in bytes times the height of the picture in lines plus the first two data bytes.

If an error occurs then the saving will be aborted so you will have to try again. The possible errors that will occur are listed below.

Problem	Description
READ/WRITE ERROR	The program is having trouble writing the file to the current disk. You may want to try another disk.
WRITE PROTECTED	There is a write protect tab prohibiting the program to write to the current disk. Remove the tab and try again.
DISK SPACE FULL	There is not enough room on the disk for the current file be saved. Try another disk.
DISK/DEVICE ERR.	Check that the disk drive is on, the disk is in the drive and the door is closed. Or the disk might not be formatted correctly.
WRITE FAULT	An error while writing to the disk. Refer to a READ/WRITE ERROR.

P Print Command

First, turn your printer on. Then to activate this command press P and a window will pop-up with the following information inside it.

ACT. KEY	OPTION	DEFAULT	OTHER OPTIONS
L	PRINT LARGE	YES	NO
M	PRINT MARGIN	02	??
D	DENSITY	HIGH	MED , LOW
P	PRINTER TYPE	EPSON	TANDY
S	STRIKE	DOUBLE	SINGLE
H	DOT HEIGHT	08	??
W	DOT WIDTH	04	??
K	SQUASH PIX	OFF	I , II

The Option column is what you see inside the pop-up window and the Default column is the initial information after the program is loaded. The far right column are the other options which are available for the corresponding command. For the options which have a "??" then this is where you have to type a two digit number in.

For example:

- To change the margin, press M and a two digit number.
- To change the density, press D and it will toggle between "High", "Med", and "Low".
- To change the height, press H and a two digit number.
- To change the printer, press P and it will toggle between "Epson" and "Tandy".
- The Squash Pix option simply means the picture will be squashed like N & Ms. Squash I will squash like N and Squash II like M.

Once you have set up the options the way you wish the simply press ENTER to send it to the printer.

APPENDIX I - ANSWERS TO EXERCISES

1. To load track 0 press `0`, `0`, `ENTER`.
2. The first piece of graphic, the letter "Z", is width 6. Change the width by using `LEFT` and `RIGHT` arrow keys until the width is 6.
3. To activate Coco 3 turbo, press `T`.
4. The ant is squashed. This is what it would look like if it was printed in high density on the printer.
5. You should find that there is an increase in scrolling speed.
6. Pressing `I` will invert the scrolling column.

More Examples