

Converter for 4-Color Images

1. General Description

The program "KOBAROG" - "Converter for 4-Color Images" - is designed to convert images created in four-color graphic modes into monochrome graphics mode no. 8. Individual colors are replaced with dot patterns of varying density based on their brightness—darker colors get denser patterns, while lighter colors get sparser ones. This way, a converted image, when printed, resembles its original color version as displayed on a monochrome screen.

The program can convert images created in all four-color modes: **GRAPHICS 3**, **GRAPHICS 5**, **GRAPHICS 7**, and **GRAPHICS 15**. Additionally, it supports images made with popular graphics programs: **DRAWIT**, **MAGIC PAINTER**, **MICRO PAINTER**, **FUN WITH ART**, and **KOALA MICROILLUSTRATOR**. Any other graphic programs that store images in the same format as those mentioned above are also compatible. For example, **RAMBRANDT** supports both the **KOALA** and **MICRO PAINTER** systems.

Converted images can be saved for future editing in **DESIGN MASTER**, allowing modifications and printing via **HARDCOPY MASTER**. The program includes a **mini DOS** for basic file operations, including **directory listing**, **locking**, **unlocking**, **renaming**, **deleting**, and **returning to DOS**.

It works with both **cassette** and **disk storage**, although using a cassette is recommended in combination with **TOS 4.1 Turbo operating system**.

2. Cassette & Disk Contents

2.1 Cassette

- **KOBAROG.COM** - Main program
- **UKLADAC.LST** - BASIC subroutine for saving images in **GRAPHICS 3**, **5**, **7**, and **15**
- **LOADER.LST** - BASIC subroutine for loading images saved with **UKLADAC.LST**
- **PRIKLAD.LST** - Example of using **LOADER.LST**
- **OBRGR3.LST** - Demonstrates **UKLADAC.LST** usage
- **OBRGR5TB.LST** - **TURBO BASIC** program for creating and saving images
- **Various sample images** - In **GRAPHICS 3**, **5**, **7**, **15**, and formats from supported programs

2.2 Disk Version In addition to cassette contents, the disk version includes:

- **DOS.SYS**
- **DUP.SYS**
- **RAMDISK.COM**

3. Using the Program

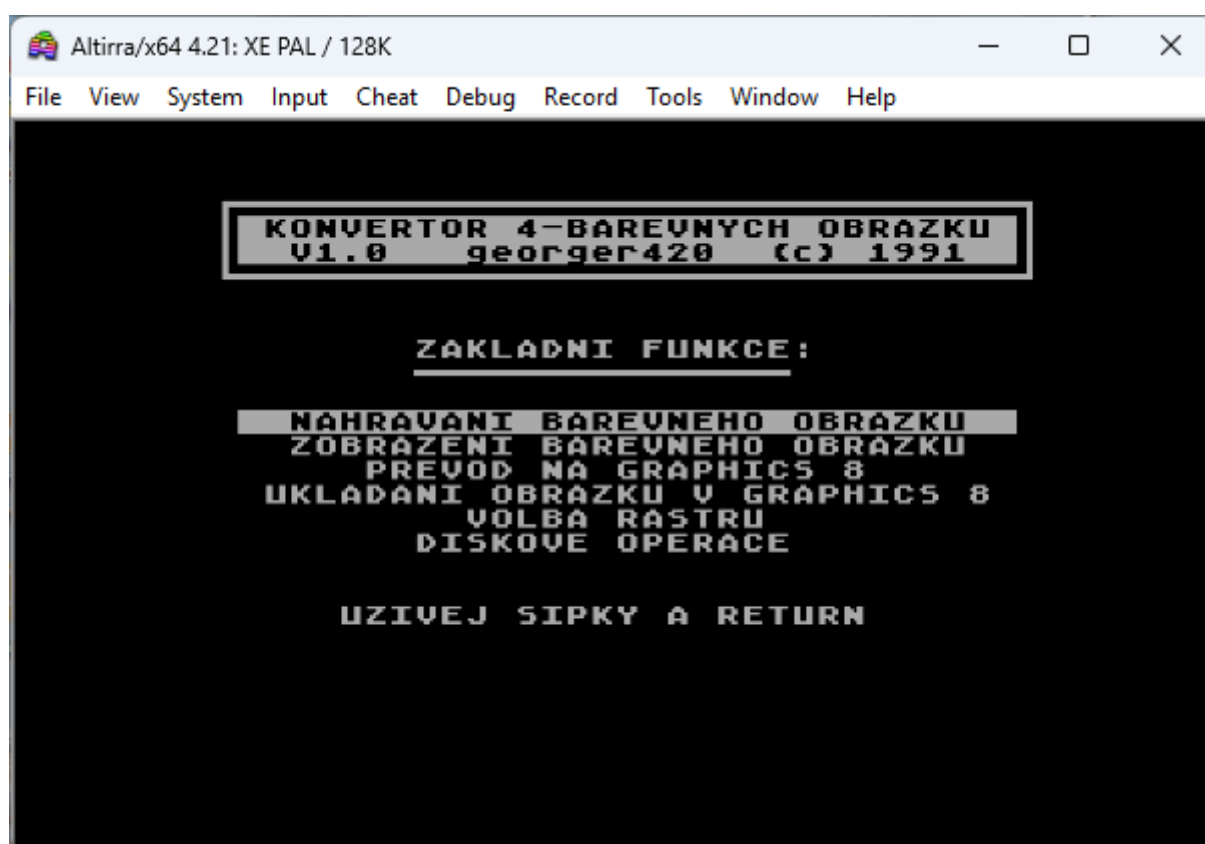
The interface is simple—users navigate options using **arrow keys**, with some requiring confirmation via specific keys.

Warning: Pressing RESET will lock the system, requiring a reboot.

3.1 Loading & Starting the Program

- **Cassette version:** Load TOS 4.1, then use function "L" to load KOBAROG.COM, start with "Y".
- **Disk version:** Insert the disk, hold "OPTION" while turning the computer on (loads DOS 2.5), then load KOBAROG.COM using DOS function "L".

3.2 Main Menu Options

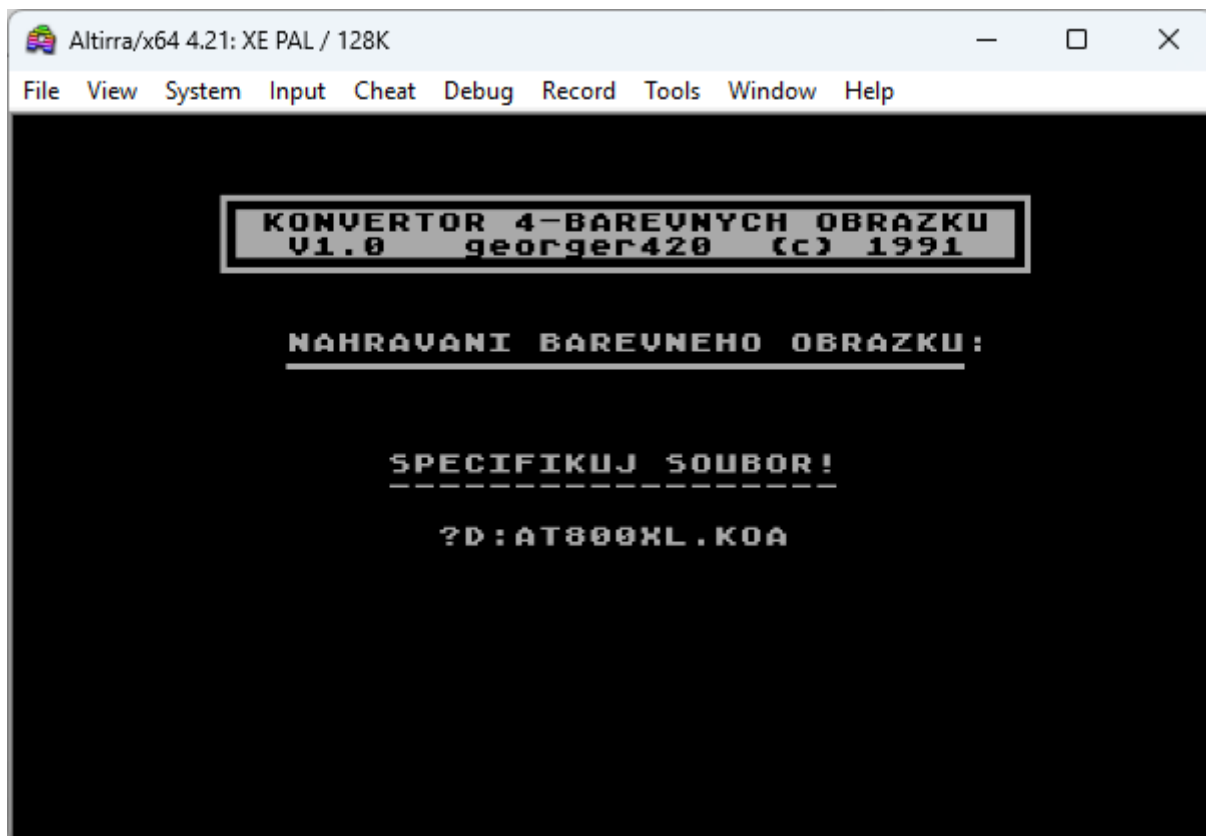
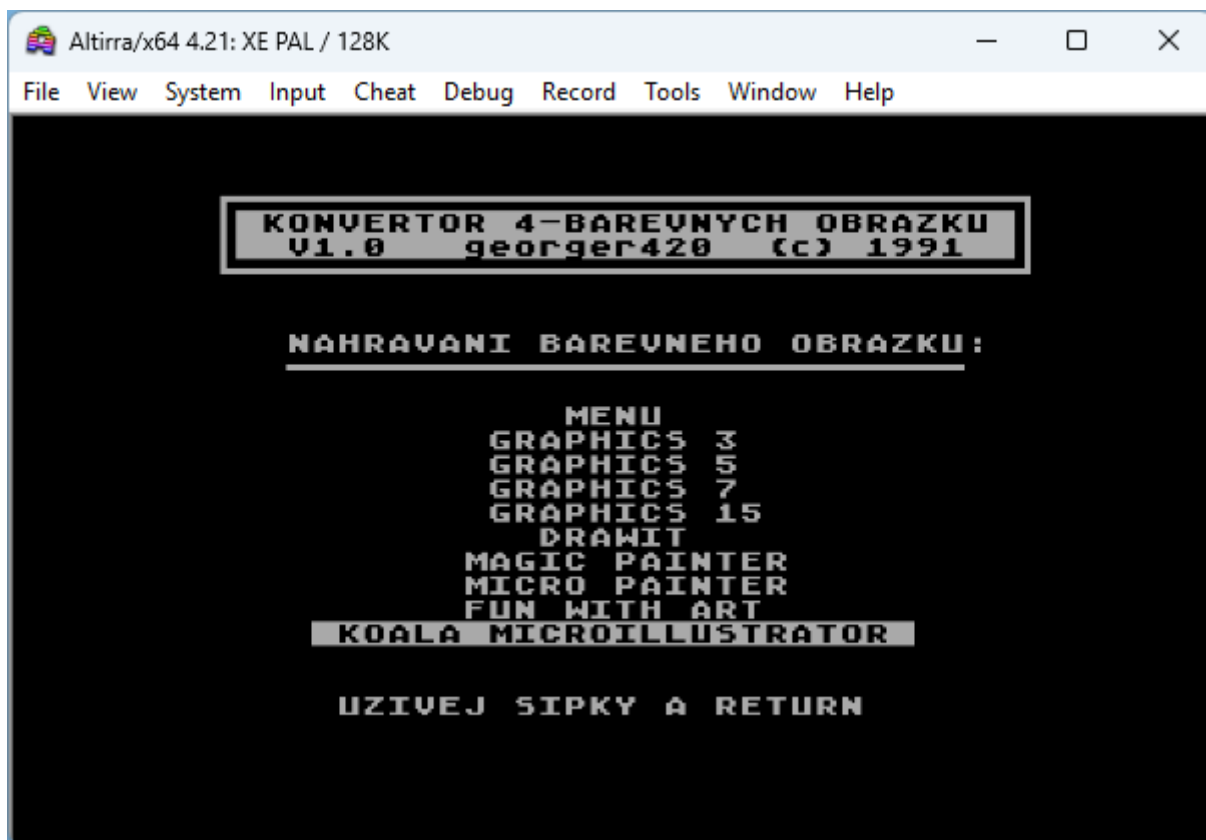


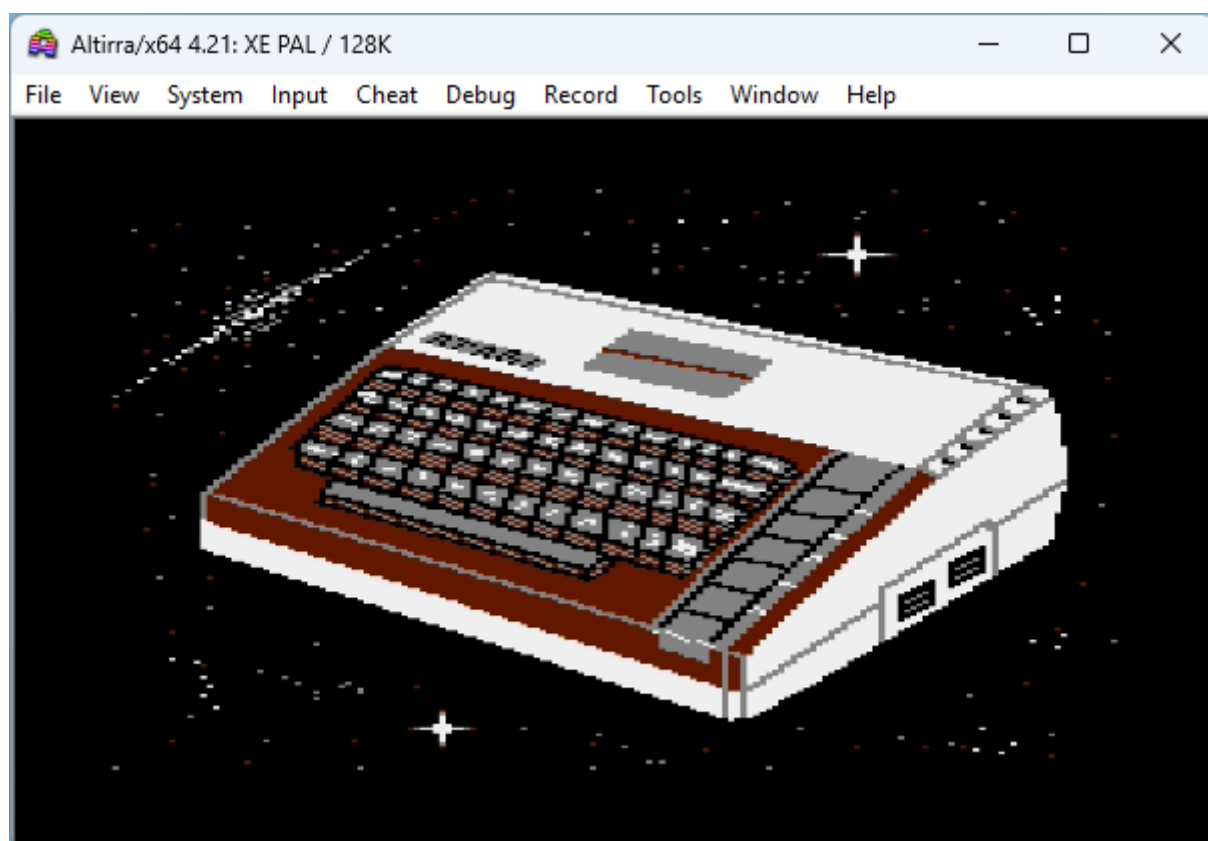
- Load Color Image
- Display Color Image
- Convert to GRAPHICS 8
- Save GRAPHICS 8 Image
- Select Patterns
- Disk Operations

Selection is made with arrow keys and confirmed with **RETURN**.

3.3 Color Image Loading & Display

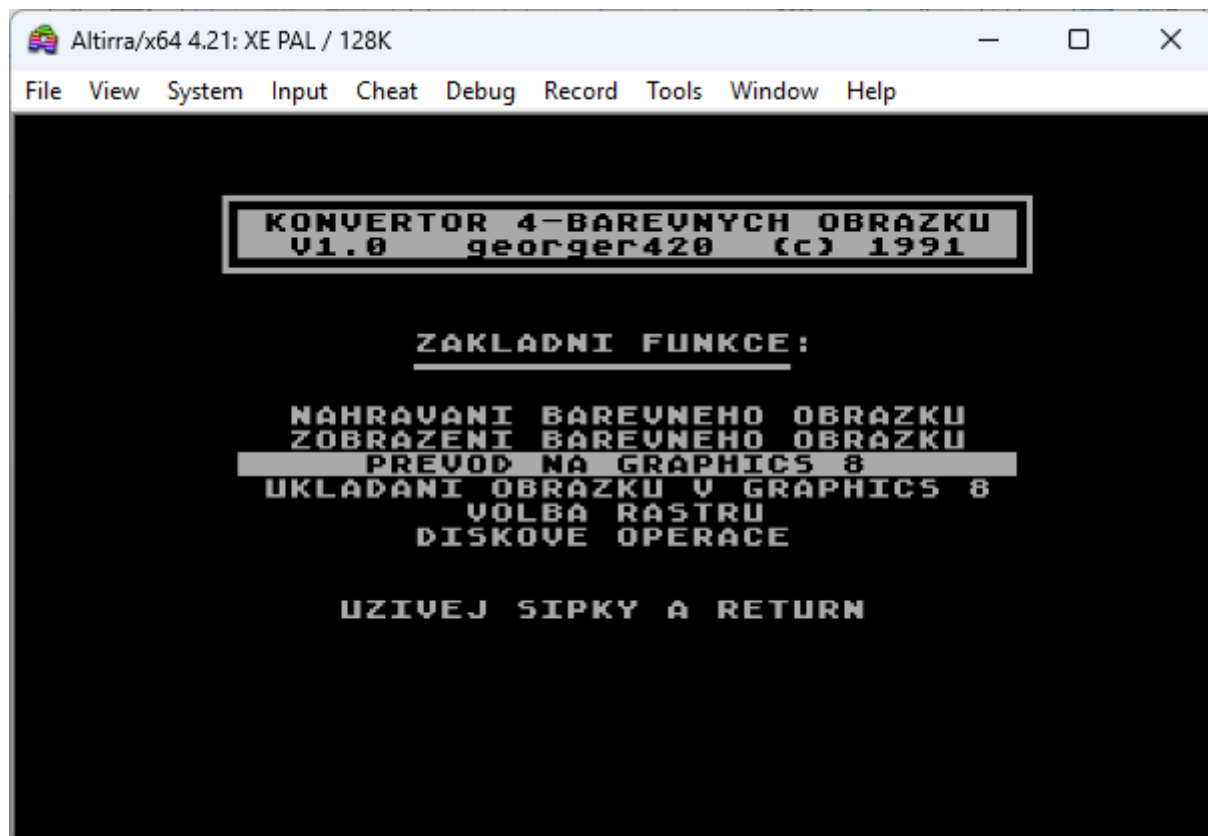
Before loading, the program prompts for confirmation ("N"). Users select from various image formats, enter the file name, and the image is either displayed during loading or immediately after.

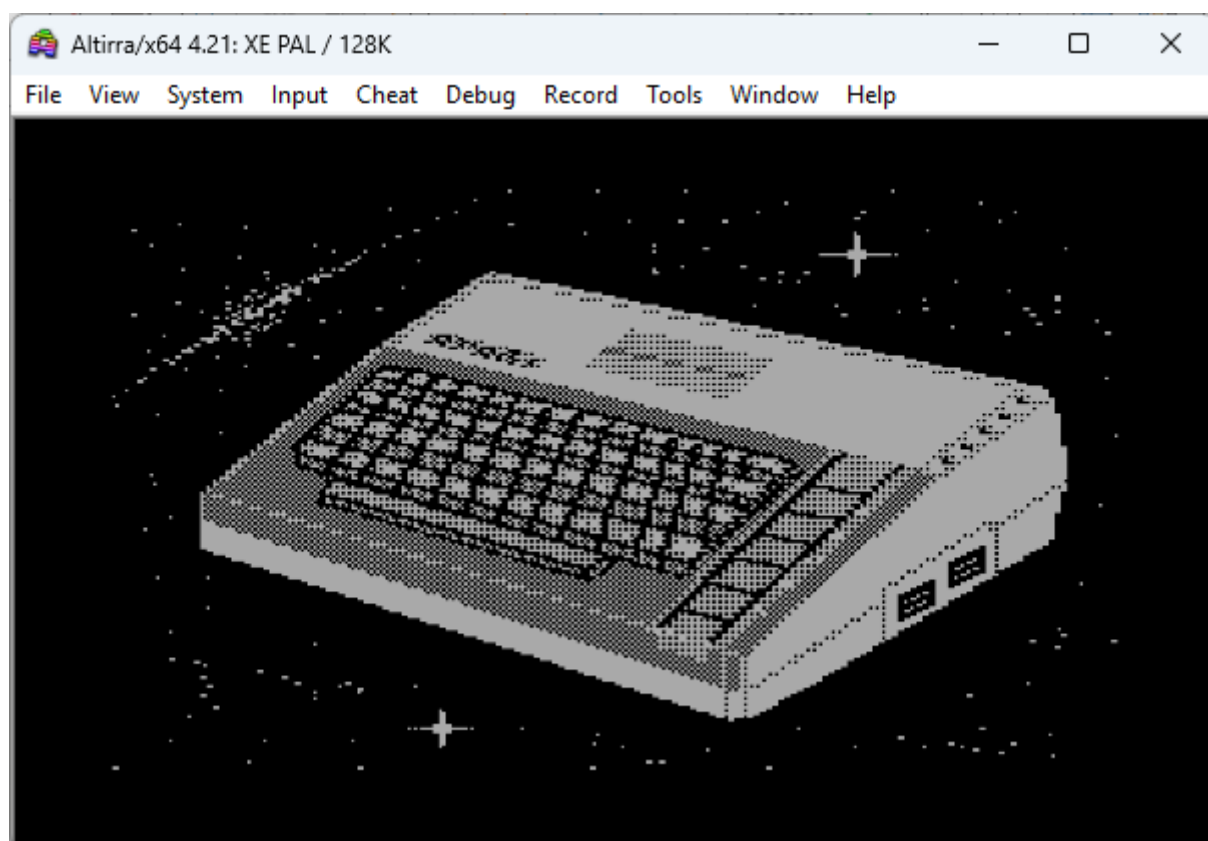




3.4 Conversion to GRAPHICS 8

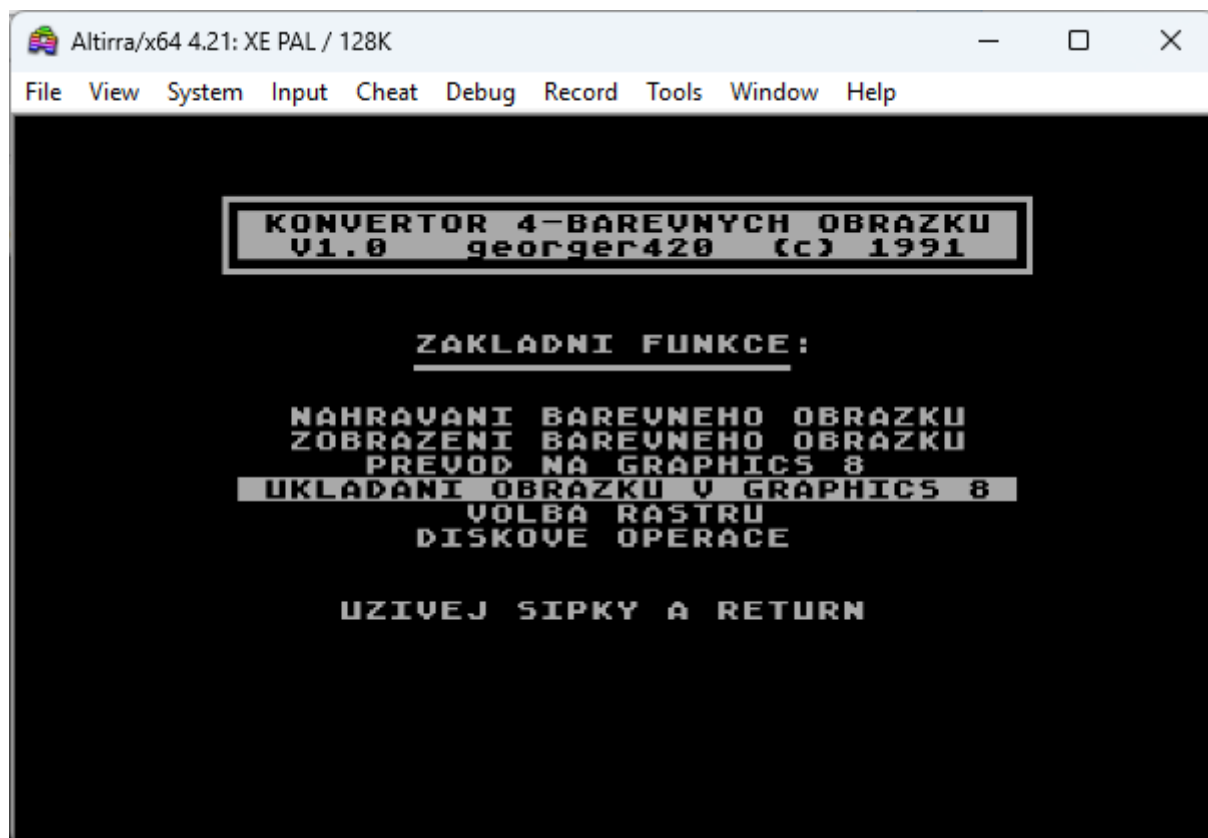
This function replaces colors with dot patterns based on brightness, simulating a grayscale image for printing. The display reflects the final printed result—black on screen is black on paper, white remains white.

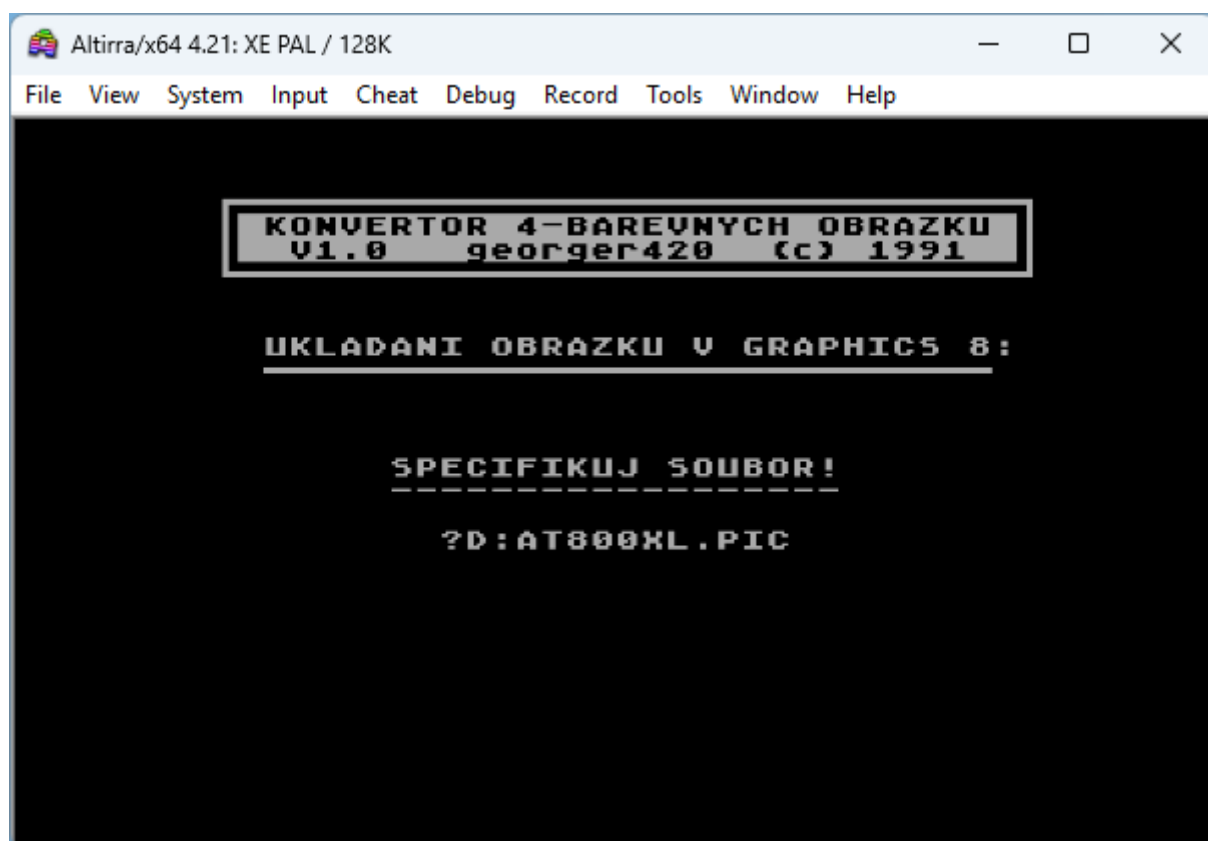




3.5 Saving GRAPHICS 8 Images

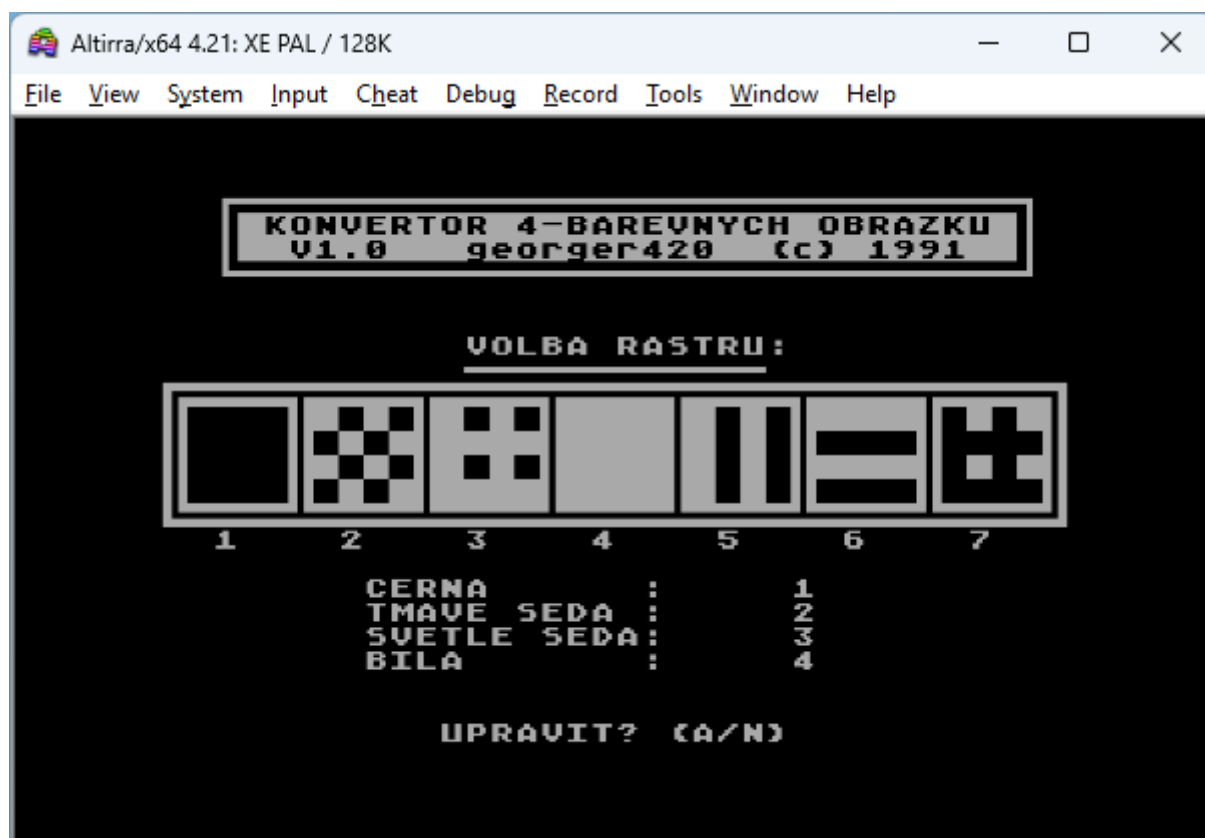
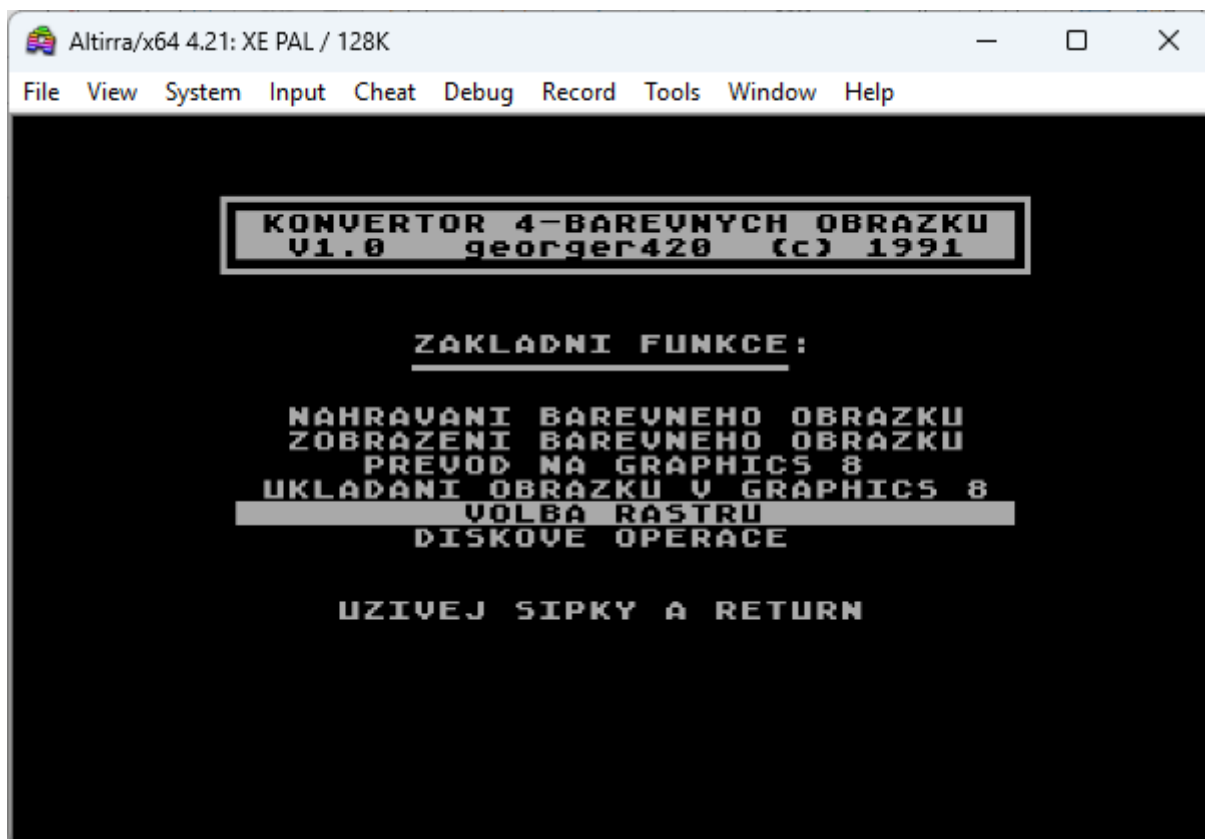
Converted images can be saved with a specified name and device.





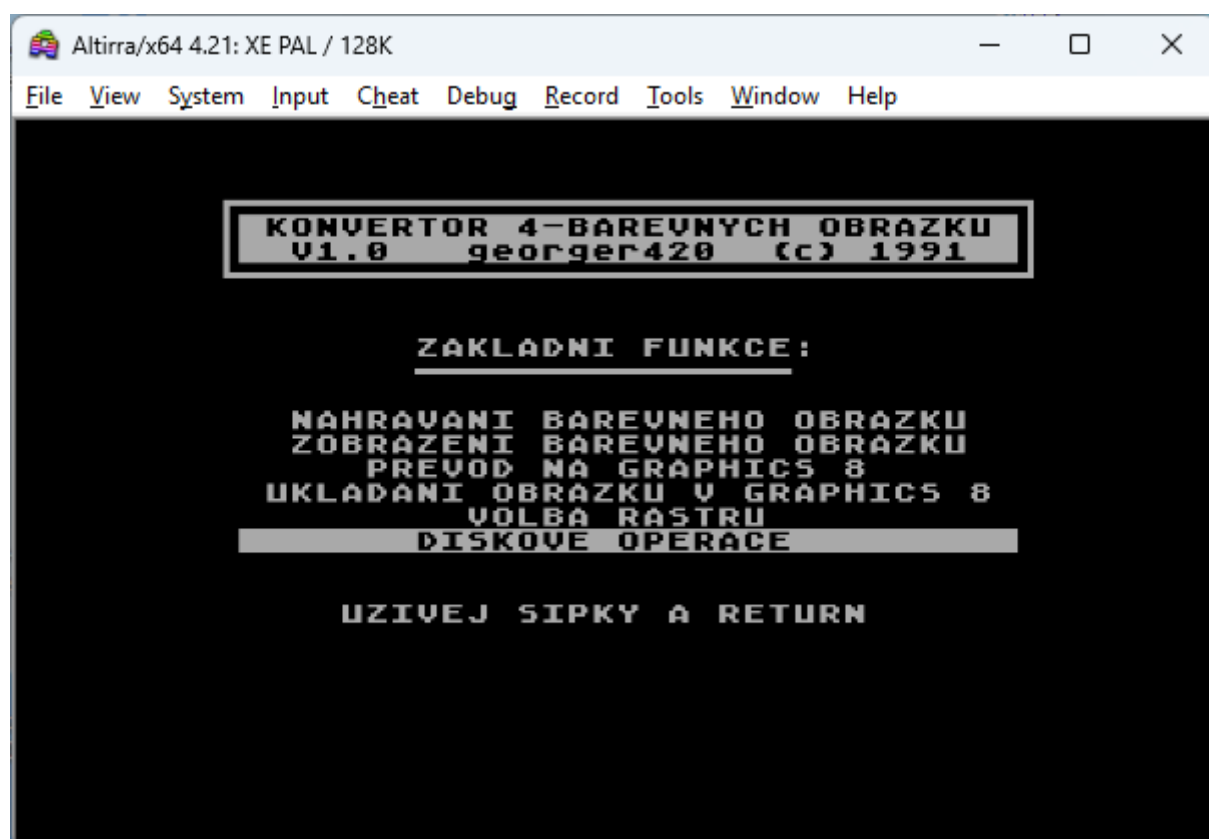
3.6 Selecting Patterns (Raster Styles)

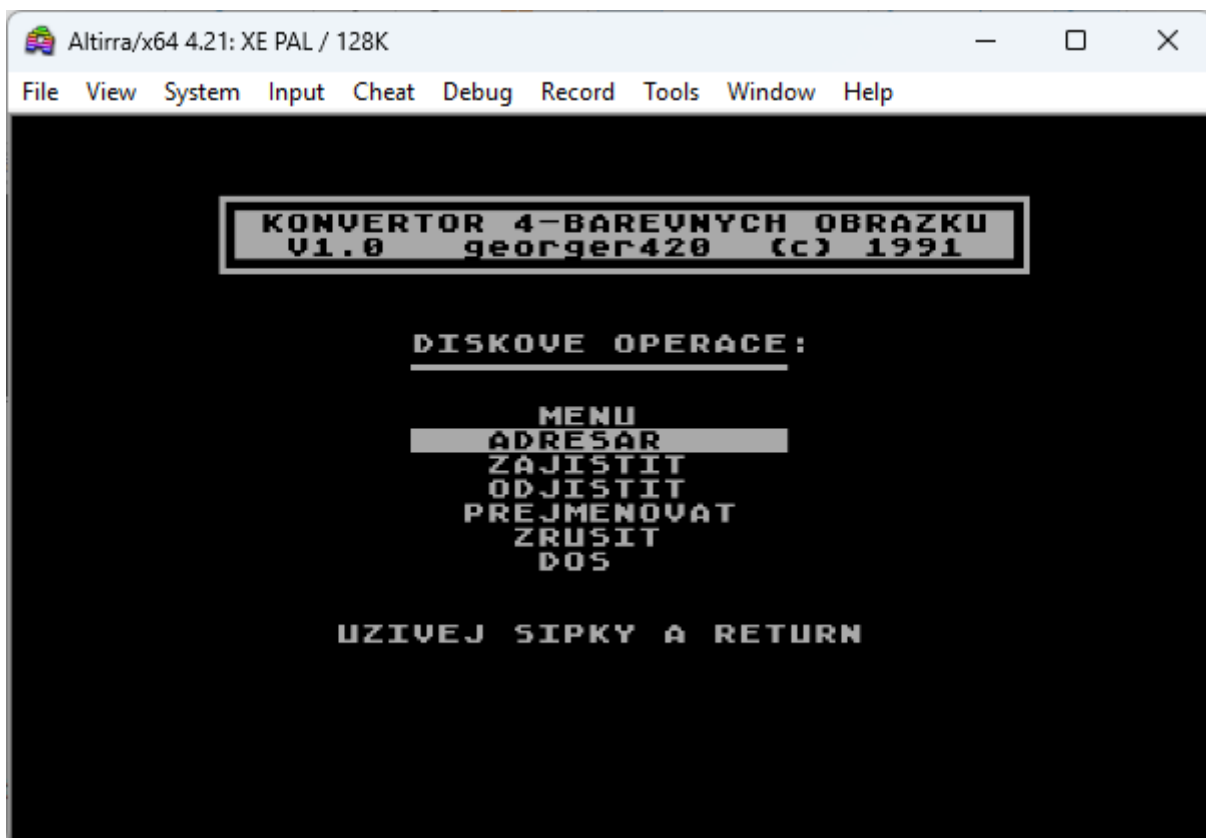
Users can customize dot patterns assigned to individual colors to refine the final grayscale effect. Available patterns range from **empty** (lightest) to **dense** (darkest).



3.7 Disk Operations

Includes directory listing, file protection, renaming, deletion, and exiting to DOS. Cassette users can only access MENU and DOS options.





- Main menu
- Directory (lists files on disk)
- Lock
- Unlock
- Rename
- Erase
- DOS (leaves program)

4. Additional Notes

- The program starts at **\$2000**, making it compatible with most DOS and TOS versions.
- **DO NOT use a colored TV**, as raster interference can distort image clarity.
- **Multicolored rasters** in original images may appear distorted after conversion due to individual pixel mapping.

Appendix 1: Image Formats

GRAPHICS 3

- Bytes 1-5: Color register values (708, 709, 710, 711, 712)
- Bytes 6-245: Image data (video memory contents)

GRAPHICS 5

- Bytes 1-5: Color register values (same as GRAPHICS 3)
- Bytes 6-965: Image data

GRAPHICS 7

- Bytes 1-5: Same as GRAPHICS 3
- Bytes 6-3845: Image data

GRAPHICS 15

- Bytes 1-5: Same as GRAPHICS 3
- Bytes 6-7685: Image data

Formats from Graphics Programs

DRAWIT (image in GRAPHICS 7)

- Bytes 1-3840: Image data
- Bytes 3841-3845: Color register values (708-712)

MAGIC PAINTER (image in GRAPHICS 7)

- Byte 1: Color register 712
- Bytes 2-5: Color registers 708-711
- Bytes 6-3845: Image data

MICRO PAINTER (image in GRAPHICS 15)

- Bytes 1-7680: Image data
- Byte 7681: Color register 712
- Bytes 7682-7684: Color registers 708, 709, 710

FUN WITH ART (image in GRAPHICS 15)

- Bytes 1-2: Identification header (\$FE)
- Bytes 3-6: Color register values (712, 708, 709, 710)
- Bytes 7-262: ANTIC subprograms (ignored by KOBARO)
- Bytes 263-4342: First part of image data (4080 bytes)
- Bytes 4343-4358: Empty bytes (ignored by KOBARO)
- Bytes 4359-7958: Second part of image data (3600 bytes)
- Bytes 7959-10262: Data for ANTIC program (ignored by KOBARO)

KOALA MICROILLUSTRATOR (image in GRAPHICS 15)

KOALA MICROILLUSTRATOR compresses image data, reducing file size but requiring a decompressor for loading.

File structure:

- **Header (4 bytes):** Identification bytes (255, 128, 201, 199)
- **Compression type (1 byte):**
 - 0 = uncompressed
 - 1 = vertical compression
 - 2 = horizontal compression
- **Color register values (5 bytes):** 708, 709, 710, 711, 712
- **Image data blocks:** Compressed segments using various repetition encoding

Appendix 2: Using the UKLADAC Program

The UKLADAC program is designed to save images created in GRAPHICS 3, 5, 7, or 15 using a BASIC program.

To use:

1. Define a variable FIL\$(20) containing the filename (e.g.,
FIL\$="D:OBRAZ.KOA")
2. Activate one of the lines **30001-30004** based on the graphics mode
3. Call the subroutine using GOSUB 30000

Example usage:

- **OBRGR3.LST** creates the image **KONVER.GR3**
- **OBRGR5TB.LST** creates the image **ORNAMENT.GR5** using TURBO BASIC

Appendix 3: Using the LOADER Subprogram

The LOADER subprogram loads images into a BASIC program in GRAPHICS format. Usage is similar to UKLADAC.

Steps:

1. Load LOADER using ENTER
2. Remove the REM statement from one of **30001-30004** based on the graphics mode
3. Define FIL\$(20) with the filename
4. Call GOSUB 30000

Example: **PRIKLAD.LST** loads and displays **ORNAMENT.GR5**.

Translated from Czech by MS Copilot.