

# Introduction to OPTPiX iMageStudio for NINTENDO DS

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# What is OPTPiX iMageStudio?

OPTPiX iMageStudio is a graphic optimizer,  
which holds 90% share in Japan's game industry.

Major Japanese Game Studios using OPTPiX iMageStudio are:

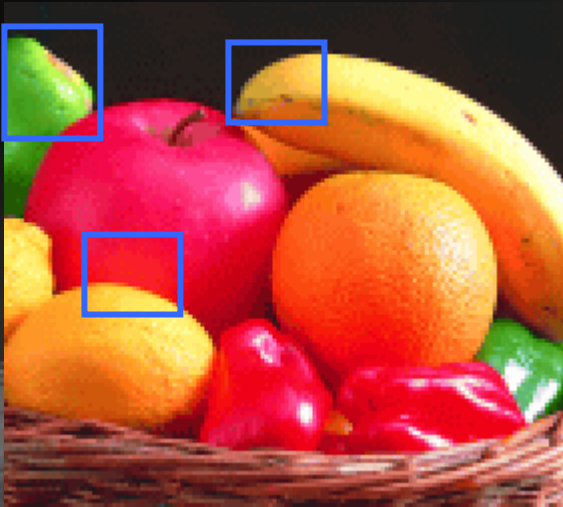
- Nintendo Co., Ltd.
- Sony Computer Entertainment Inc.
- KONAMI Co., Ltd.
- Namco Ltd.
- CAPCOM Co., Ltd.
- SQUARE ENIX CO., LTD.
- SEGA CORPORATION
- Koei Co., Ltd.
- TECMO, LTD.



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# Why OPTPiX iMageStudio?

## 1) Powerful and High Quality Color Reduction Functions



256 colors with iMageStudio



256 colors with Photoshop

- 2) Functions Specially Designed for Game Console
- 3) Flexible Macro for Batch Processing
- 4) Variety of Image and Palette Editing Functions

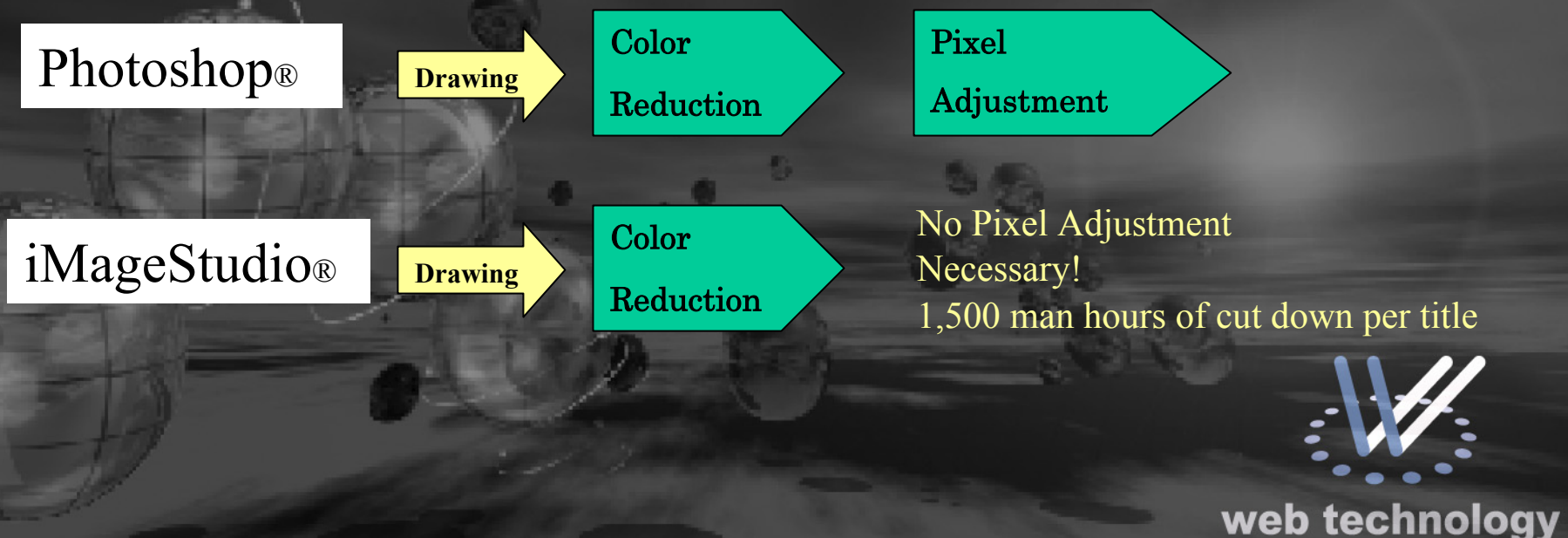


# What can iMageStudio do? (1)

1,500 hours cut down per title!

## 1) Efficient Graphic Adjustment

No more manual pixel adjustment is necessary when reducing color with the advanced color reduction engine



# What can iMageStudio do? (2)

- Half the size of palette

## 2) Advanced Color Reduction Engine

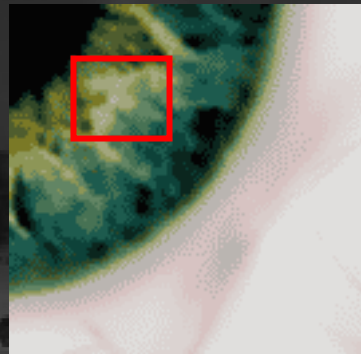
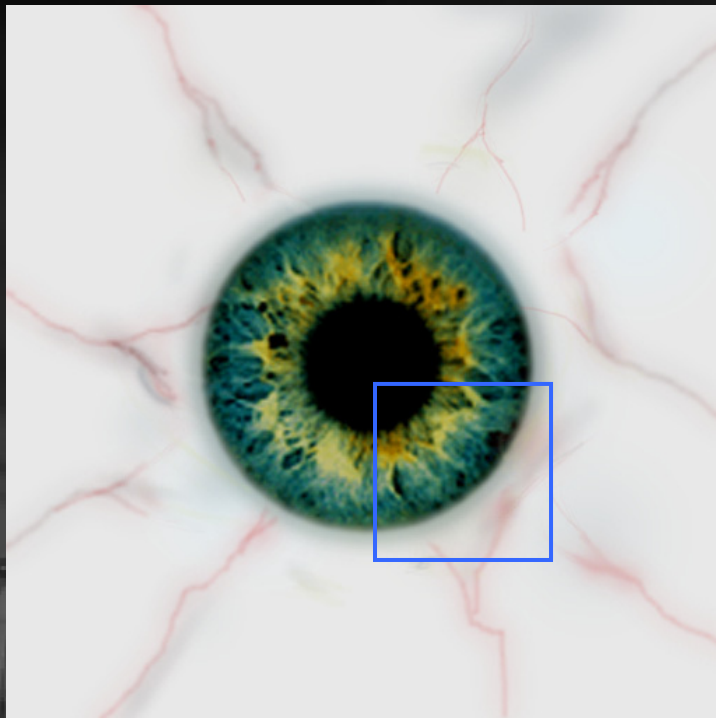
With the ultimate reduction engine, the same quality of image can be drawn using only half the palette compared to Photoshop®



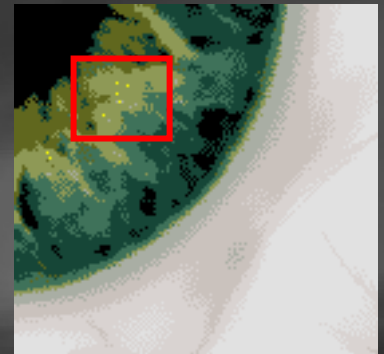


# Color Reduction Sample (1)

Same quality of image with  $\frac{1}{2}$  the palette compared with Photoshop®



iMageStudio  
16 colors



Photoshop  
32 colors



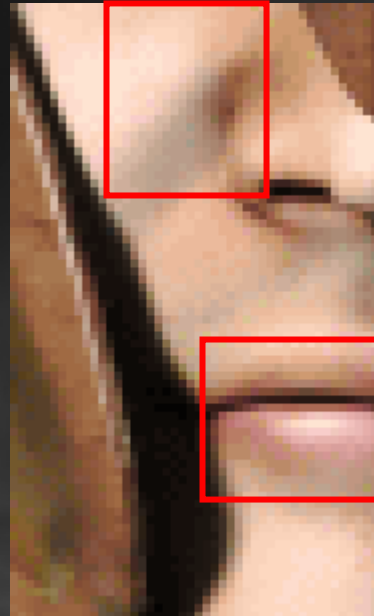
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# Color Reduction Sample (2)

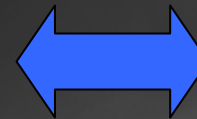
See the difference in quality in 256 colors!



Full colors



iMageStudio  
256 colors



Photoshop  
256 colors



# OPTPiX iMageStudio for NINTENDO DS

The functions exclusively designed for  
NINTENDO DS

OPTPiX iMageStudio for Nintendo DS provides all the functionality of iMageStudio for GAME BOY ADVANCE so that OPTPiX iMageStudio for Nintendo DS supports game development for both the Game Boy Advance and Nintendo DS.





# Image Conversion (1)

- OPTPiX iMageStudio for Nintendo DS supports image conversion to several Nintendo DS exclusive texture formats:
  - 1) Direct Color Texture,
  - 2) A5I3 Translucent Texture,
  - 3) A3I5 Translucent Texture, and
  - 4) 4x4 Compressed Texture.
- iMageStudio allows for creating high quality textures with efficient file compression by selecting 2 to 4 suitable colors for each block when using 4x4 texel compressed texture.

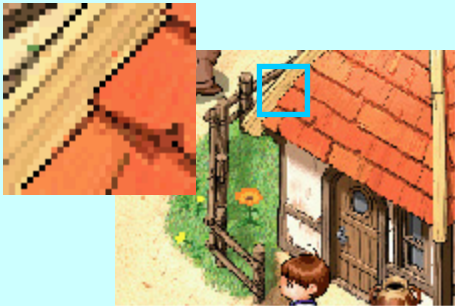


# Image Conversion (2)

Convert with Nintendo's tool

(no interpolation)

10,424 Palettes/Data Size: 39,280 bytes



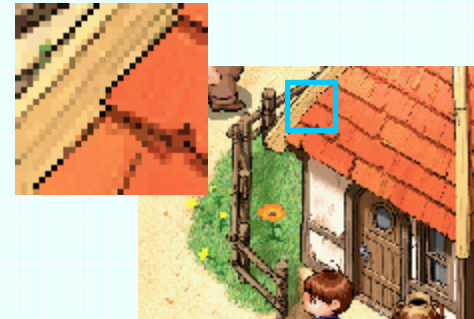
Small Data Size  
AND High Quality!



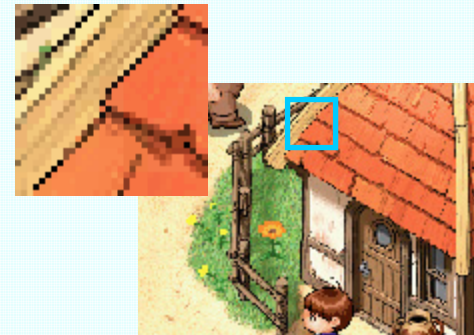
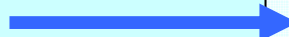
Convert with iMageStudio

(default setting)

8,984 Palettes/Data Size: 36,400 bytes



Same Number of  
Palettes BUT  
Quality Difference!



Convert with Nintendo's tool

(interpolation)

4,208 Palettes/Data Size: 26,848 bytes

Convert with iMageStudio

(limit number of Palettes)

4,208 Palettes/Data Size: 26,848 bytes

# Image Conversion (3)

**Image Conversion** [X]

**Conversion Method**

- ☐ Direct Color Texture
- ☐ A5I3 (Translucent 8 colors)
- ☐ A3I5 (Translucent 32 colors)
- ☒ 4x4 Compressed Texture

Optimization: 10

Low Quality (Fast Conv.) High Quality (Slow Conv.)

Balance: Threshold: 0

Compression (Low Quality) Quality (Not Small)

☐ Limit Output Palette Entries

Maximum Entries: 32768

☐ Show Output Palette Entries

**Rendering Method**

- ☐ Normal Error Diffusion
- ☒ None
- ☐ Dithering

Diffusion Level: 50%

☐ No Error Diffusion in Alpha channel

☒ Use Fixed Palette

5PL File (for Translucent Texture)

Browse...

5PC File (for 4x4 Compressed Texture)

Browse...

**COLOR EQUALIZER™ for NINTENDO DS**

☒ Use DS Color Equalizer

Equalizer: Min 0 50 100 150 200 Max 5

Brightness: Dark 0.25 0.5 1.0 2.0 4.0 Bright 100 %

Gamma: 1.00

☐ Process All Layers

☐ Open New Window

OK Cancel Help



# Character Map Color Reduction (1)

- The character map color reduction function can convert full color images to a character map image (16 colors x 16 palettes) to use as the background image in Nintendo DS games.
- The advance color reduction process used by OPTPiX iMageStudio for Nintendo DS recreates character map images of a quality comparable to the original full color image.



# Character Map Color Reduction (2)

**Char-Map Color Reduction** [X]

Map Mode: BG Mode    OBJ Mode    EXT Mode

Object Size (Width x Height)

☒ 8x8    ☐ 16x16    ☐ 32x32    ☐ 64x64  
☐ 16x8    ☐ 32x8    ☐ 32x16    ☐ 64x32  
☐ 8x16    ☐ 8x32    ☐ 16x32    ☐ 32x64

BG Mode Screen Size (Width x Height)

☒ Free Size (Source image size)  
☐ 256x256    ☐ 256x512  
☐ 512x256    ☐ 512x512

Character Compression

☒ Character Compression    Option...

Rendering Method

☒ Adaptive Error Diffusion  
☐ Normal Error Diffusion  
☐ None  
☐ Ordered Dithering

Diffusion Level: 25% [v]

Palette Options

Colors in each block: 16 (2-16)  
Output blocks: 16 (2-16)

☒ Keep top palette unused  
☒ Process in 15-bit Color

☒ Use DS/AGB Color Equalizer

for DS    for AGB


Equalizer: Min [slider] Max 5  
0    50    100    150    200

Brightness: Dark [slider] Bright 100 %  
0.25    0.5    1.0    2.0    4.0

Gamma: [slider] 1.00

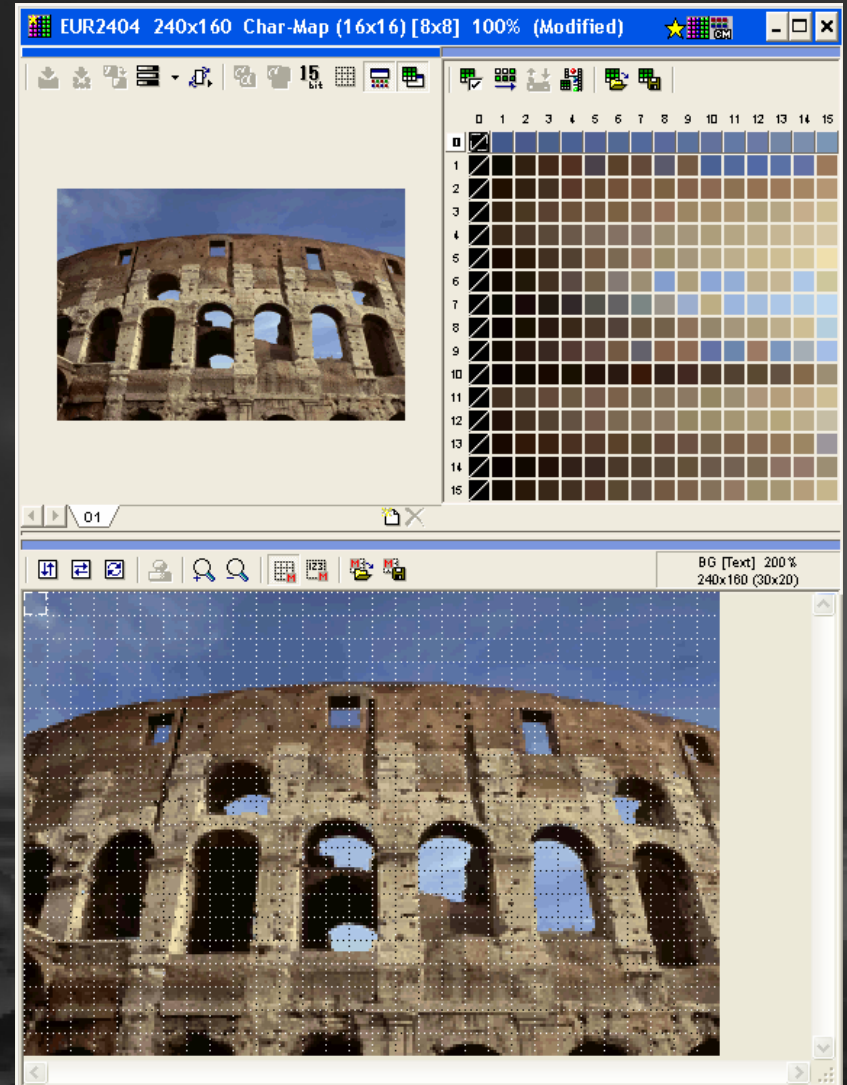
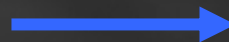
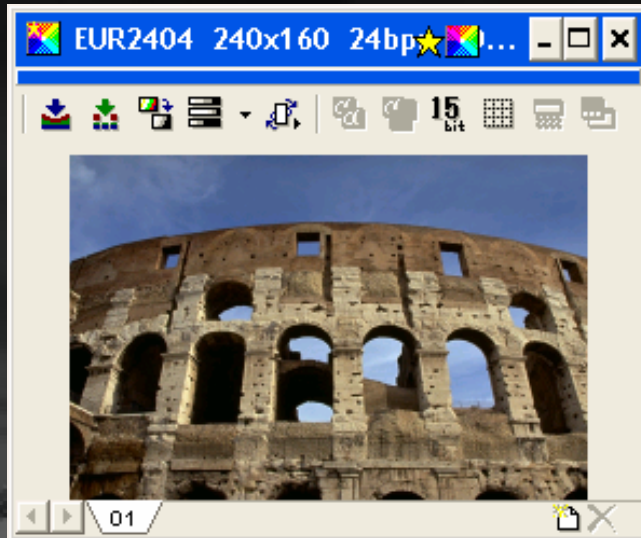
☒ Open New Window

Reset    OK    Cancel    Help



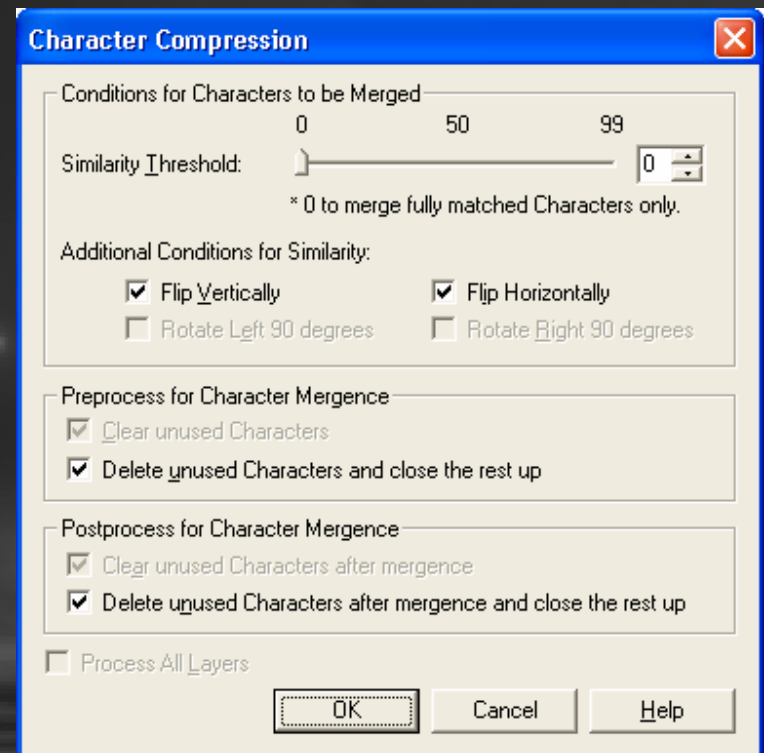


# Character Map Color Reduction (3)

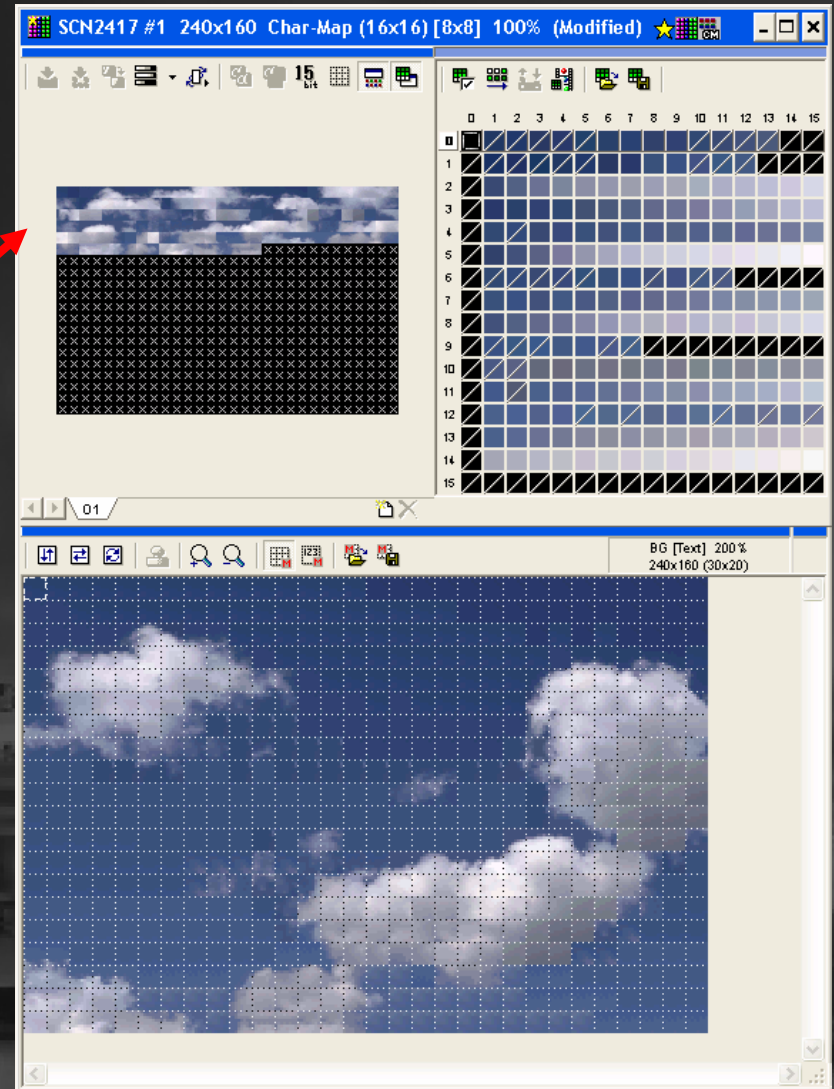
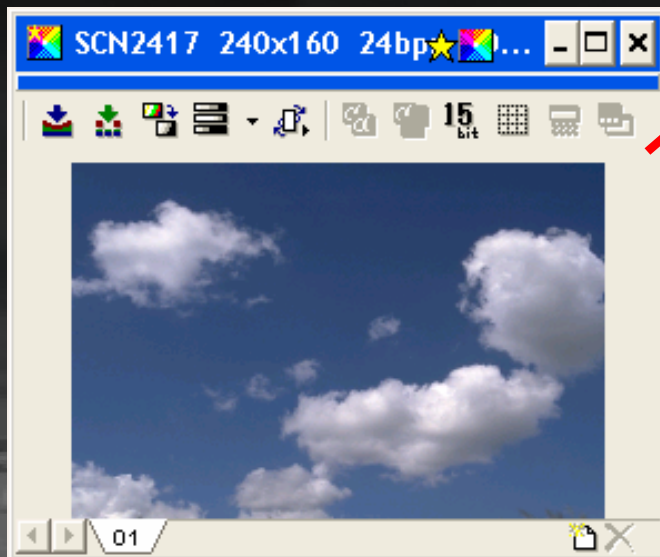


# Character Compression (1)

1. This function combines similar Characters to reduce the number of Characters. In this way, the data size is compressed.
2. The methods of searching the similar Characters include "flipped positions vertically and horizontally". You can also change a degree of Character similarity by moving a slider for the "Similarity Threshold" option.
3. This particular option also adjusts the data compressibility ratio.
4. iMageStudio recreates the original image on a Map after this process.

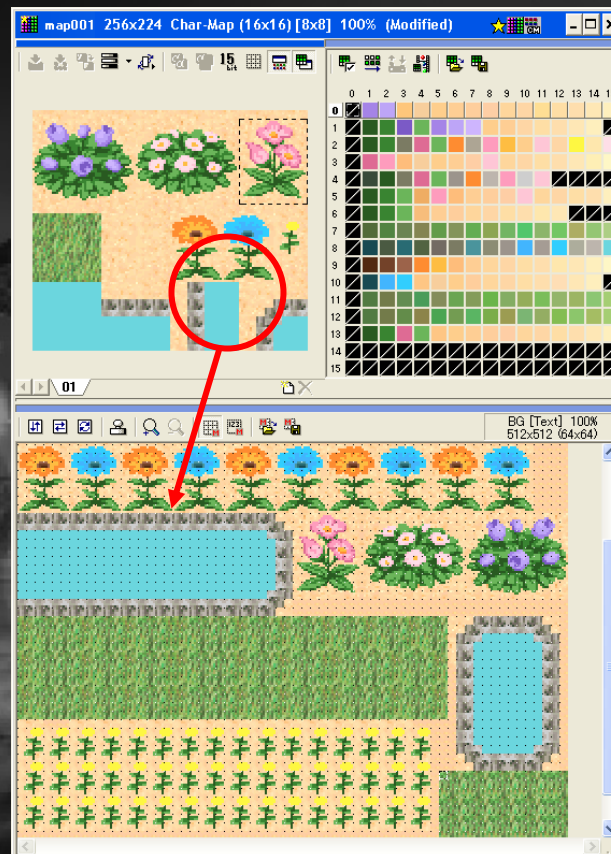


# Character Compression (2)



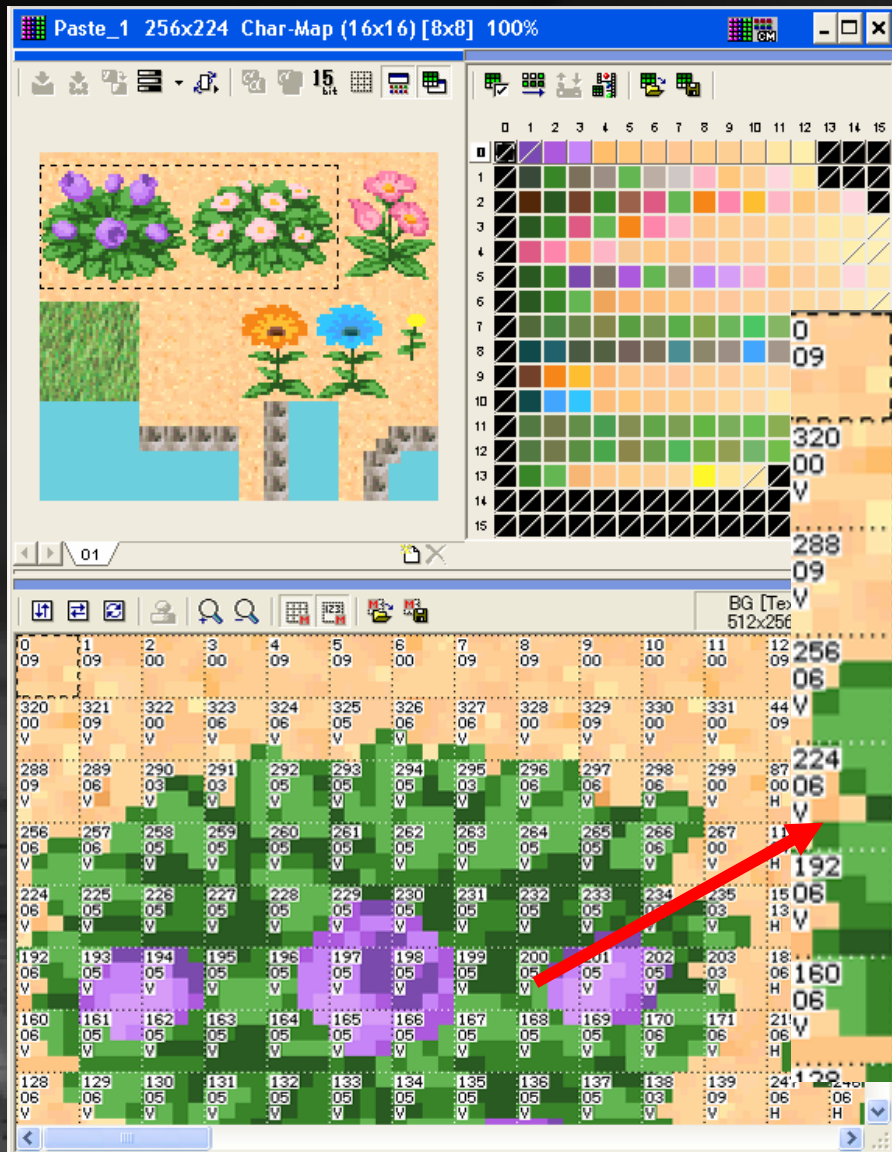
# Map Editor (1)

- The handy Map Editor edits map data created with the character map color reduction or character map conversion features. The Editor allows characters to be pasted, rotated, flipped, or even drawn in pen mode.



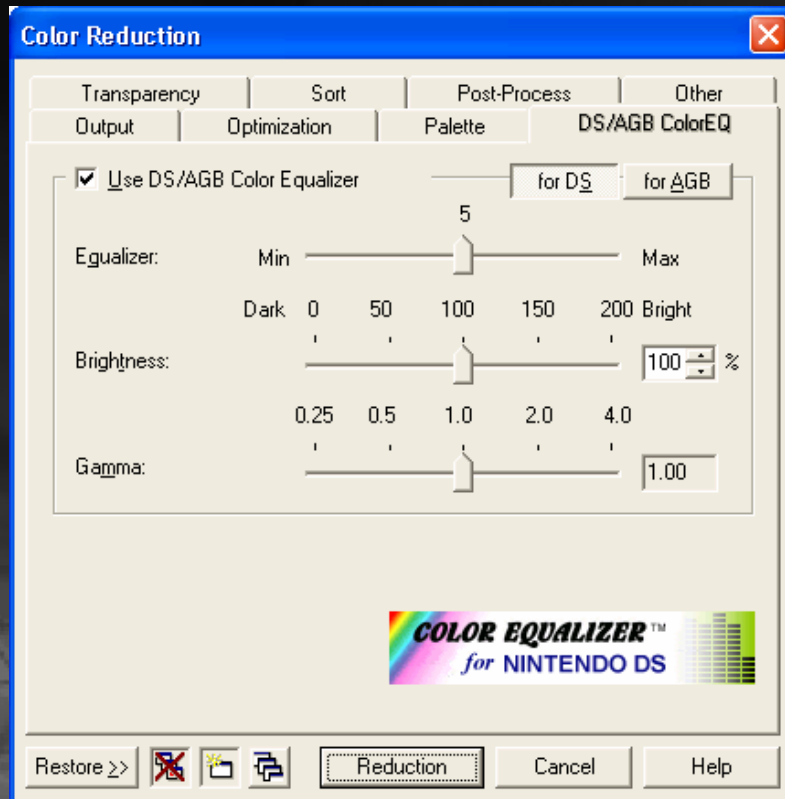


# Map Editor (2)





# Color Equalizer

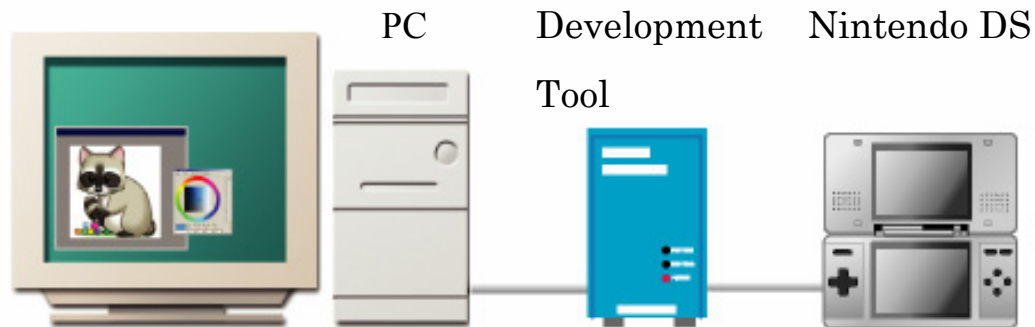
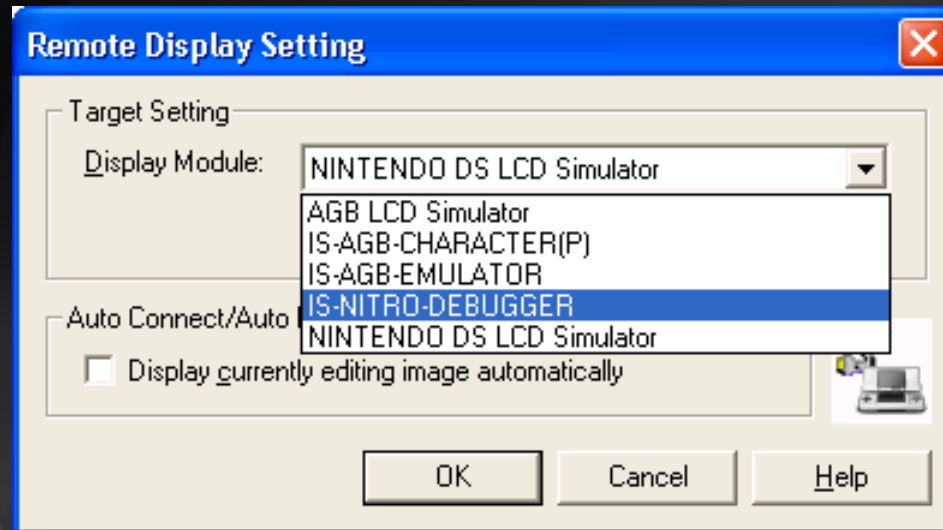


Color Equalizer ON



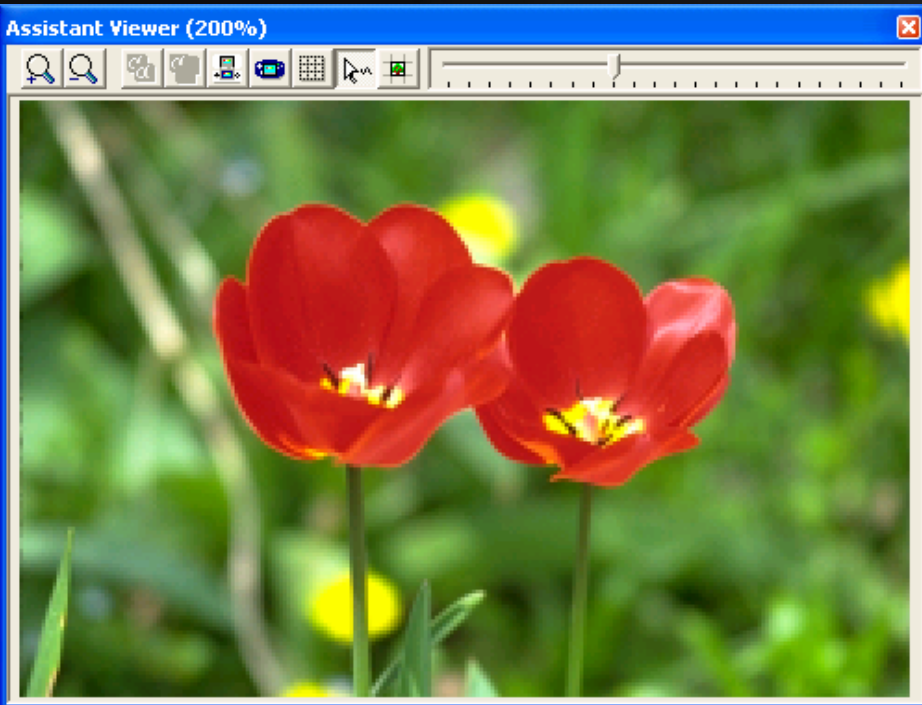
Color Equalizer OFF

# Remote Display

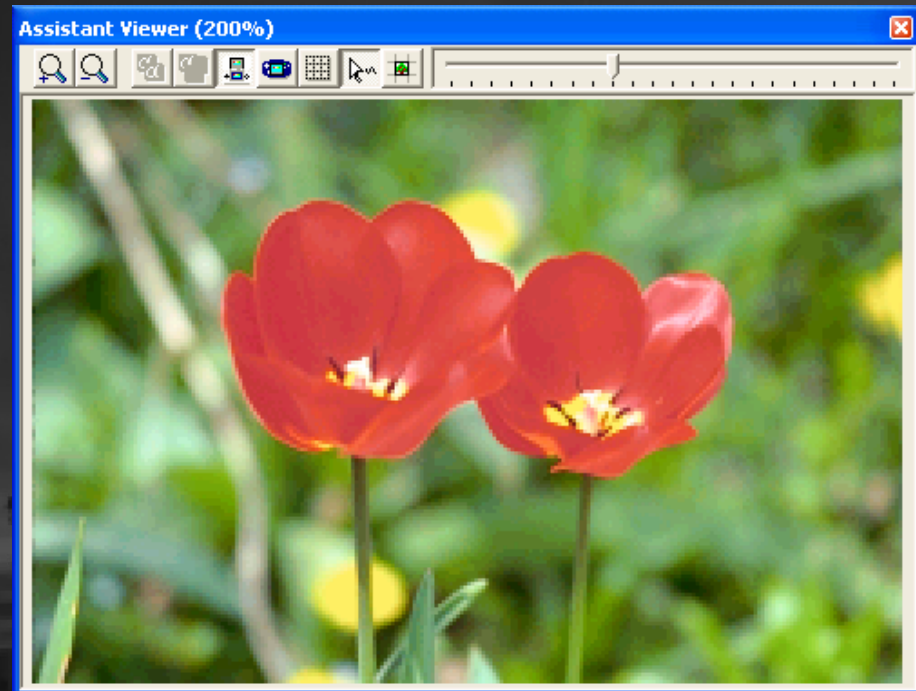


# LCD Simulator

## Assistant Viewer



LCD Simulator OFF



LCD Simulator ON



# Full Trial Version

We offer iMageStudio "Full Trial Version" for our prospective customers. With this version, you can try full functionality of iMageStudio for a period of 60 days free of charge. The hardware key ("timer dongle") is required to run the program and will be deactivated automatically after 60 days.

Contact:

Web Technology Corp.

[iMageStudio@webtech.co.jp](mailto:iMageStudio@webtech.co.jp)



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# Purchasing Detail

## OPTPiX iMageStudio for NINTENDO DS

- Unit Price: US\$2,300
- One-Year-Limit License Lease Option:  
US\$99/month (Under Discussion)

\* minimum of 12 months rental only.

OPTPiX iMageStudio for Nintendo DS is distributed overseas by Nintendo of America Inc. only. Please contact Nintendo of America Inc. at [support@noa.com](mailto:support@noa.com) for more detail.



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# Contact

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