

MyBox: Easy Tools Set User Guide – Image Tools

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Contents

1 Introduction	4
1.1 Main Interface	4
1.2 Resources Addresses	5
1.3 Documents	6
1.4 Menu of Tools	8
2 View Image	9
3 Browse Images	10
4 Analyse Image	11
5 Play Images	13
6 Image Manufacture	14
6.1 Copy	15
6.2 Crop	16
6.3 Clipboard	17
6.4 Scale	18
6.5 Margins	19
6.6 Color	20
6.7 Effect	21
6.8 Enhancement	22
6.9 Text	23
6.10 Pen	25
6.11 Transform	26
6.12 Round corner	27
6.13 Shadow	
6.14 Editing Histories	29
6.15 Scope	30
6.16 Pop current image	
6.17 "Visible As Need"	
6.18 Demo	31
7 Image Manufacture in batch	
8 Edit Images	
9 Splice images	
10 Add Alpha channel	35
11 Repeat/Tile Image	
12 Split image	
13 Subsample image	
14 Extract Alpha channel	
15 Image Conversion	40
16 Recognize Texts in Image	41
17 Color Management	
17.1 Manage color palettes:	43
17.2 Add colors	44
17.3 Query color	45
18 Color Space	46

18.1 Draw Chromaticity Diagram	46
18.2 Edit ICC profile	47
18.3 RGB Color Space:	48
18.4 Transform Matrices between Linear RGB and XYZ	48
18.5 Transform Matrices between Linear RGB and Linear RGB:	
18.6 Illuminants	
18.7 Chromatic Adaptation Matrices	
19 Images in System Clipboard	49
19.1 Options	49
19.2 Conditions to Stop	50
19.3 Sources of Images in System Clipborad	
20 Images in MyBox Clipboard	51
21 Pixels calculator	
22 Convolution Kernels Manager	53
23 Convert image to base64	54
24 Big Image	55

1 Introduction

This is desktop application based on JavaFx to provide simple and easy functions. It's free and open sources.

1.1 Main Interface



1.2 Resources Addresses

Contents	Link
Project Main Page	https://github.com/Mararsh/MyBox/
Source Codes and Compiled Packages	https://github.com/Mararsh/MyBox/releases
Submit Software Requirements and Problem Reports	https://github.com/Mararsh/MyBox/issues
Data	https://github.com/Mararsh/MyBox_data_
Documents	https://github.com/Mararsh/MyBoxDoc
Mirror Site	https://sourceforge.net/projects/mara-mybox/files/
Cloud Storage	https://pan.baidu.com/s/1fWMRzym_jh075OCX0D8y8A#list/path=%2F

文件(F) 編輯(E) 查看(M) 历史(S) 书签(B) 工具(T) 帮助(H) Q 2 2 2 (Q) (P) (P) Q 2 2 (Q) (Q) (Q) (Q) (Q) (C) (C) (C) (C) (C) (C) (C) (C) (C) (C) (C) (C) (C) (C) (C) (C) (C) (C) (C) (C) (C) (C) (C) (C) (C)	/ 🗃 🛋 😂 🖼 C 🟛 /ararsh/MyBox 🗉 🛧 🖌 💁 🕋	+ 90% + 2 2 0 0 0 0 0 =
Search or jump to 7 Pull reque	sts Issues Marketplace Explore	+• •
H Mararsh / MyBox Public	sions ③ Actions 🗄 Projects 🖽 Wiki ① Security	 ✓ Star 79 ✓ Insights ⁽²⁾/₍₂₎ Settings
 P master - P 1 branch S 90 tags Mararsh a6.5.9 	Go to file Add file ↓ Code ↓ ↓ 798ff01 5 hours ago 🕑 573 commits	About Easy tools of document, image, file, network, location, color, and media.
alpha/MyBox a6.5.9 docs v6.5.8	5 hours ago 18 days ago 18 days ago	html markdown pdf image ocr csv sql database excel convert location javafx media bytes ppt
released/MyBox v6.5.6	18 days ago 3 months ago	파 Readme 화 Apache-2.0 license
LICENSE Initial commit README.md v6.5.8	4 years ago 18 days ago	 ☆ 79 stars ◆ 4 watching ♀ 17 forks
E README.md ReadMe in English		Releases 89 v6.5.8 Latest 18 days ago + 88 releases
https://github.com/Mararsh/MyBox/releases		~

1.3 Documents

Name	Version	Time	English	Chinese
Development Logs	6.7.1	2023-3-13	<u>html</u>	<u>html</u>
Shortcuts	6.7.1	2023-3-13	<u>html</u>	<u>html</u>
Functions list	6.7.1	2023-3-13	<u>html</u>	<u>html</u>
Packing Steps	6.7.1	2023-3-13	<u>html</u>	<u>html</u>
Development Guide	2.1	2020-8-27	PDF odt	PDF odt
User Guide - Overview	6.7.1	2023-3-13	html PDF odt	<u>html PDF odt</u>
User Guide - Data Tools	6.7.1	2023-3-13	html PDF odt	<u>html PDF odt</u>
User Guide - Document Tools	6.7.1	2023-3-13	<u>html PDF odt</u>	<u>html PDF odt</u>
User Guide - Image Tools	6.7.1	2023-3-13	<u>html</u> PDF odt	<u>html PDF odt</u>
User Guide - File Tools	6.7.1	2023-3-13	<u>html PDF odt</u>	<u>html PDF odt</u>
User Guide - Network Tools	6.7.1	2023-3-13	<u>html PDF odt</u>	<u>html PDF odt</u>
User Guide - Media Tools	6.7.1	2023-3-13	<u>html PDF odt</u>	<u>html PDF odt</u>
User Guide - Development Tools	6.7.1	2023-3-13	<u>html PDF odt</u>	<u>html PDF odt</u>
Examples - Information in Tree	6.6.1	2022-11-16	<u>html</u>	<u>html</u>
Examples - Favorite Address	6.6.1	2022-11-16	<u>html</u>	<u>html</u>
Examples - Notes	6.7.1	2023-3-13	<u>html</u>	<u>html</u>
Examples - SQL	6.6.1	2022-11-16	<u>html</u>	<u>html</u>
Examples - JShell	6.6.1	2022-11-16	<u>html</u>	<u>html</u>
Examples - JEXL	6.6.1	2022-11-16	<u>html</u>	<u>html</u>
Examples - JavaScript	6.6.1	2022-11-16	<u>html</u>	<u>html</u>
Examples - Math Function	6.6.1	2022-11-16	<u>html</u>	<u>html</u>
Examples - Row Filter	6.6.1	2022-11-16	<u>html</u>	<u>html</u>
About - data grouping	6.7.1	2023-3-13	<u>html</u>	<u>html</u>
About - Color	6.6.1	2022-11-16	<u>html</u>	<u>html</u>
About - Coordinate System	6.6.1	2022-11-16	<u>html</u>	<u>html</u>
About - Media	6.6.1	2022-11-16	<u>html</u>	<u>html</u>
About - Data Analysis	6.6.1	2022-11-16	<u>html</u>	<u>html</u>
About - Items in one sentence about java	6.7.1	2023-3-13	<u>html</u>	<u>html</u>
About - Items in one sentence about javafx	6.7.1	2023-3-13	<u>html</u>	<u>html</u>
Palette - Art hues wheel(RYB) - 24 colors	6.7.1	2023-3-13	<u>rgba</u> <u>all</u>	<u>rgba</u> <u>all</u>
Palette - Common Web Colors	6.7.1	2023-3-13	<u>rgba</u> <u>all</u>	<u>rgba</u> <u>all</u>
Palette - Chinese Traditional Colors	6.7.1	2023-3-13	<u>rgba</u> <u>all</u>	<u>rgba</u> <u>all</u>
Palette - Japanese Traditional Colors	6.7.1	2023-3-13	<u>rgba</u> <u>all</u>	<u>rgba</u> <u>all</u>
Palette - Colors from colorhexa.com	6.7.1	2023-3-13	<u>rgba all</u>	<u>rgba all</u>

Name	Version	Time	English	Chinese
Palette - Art hues wheel(RYB) - 12 colors	6.7.1	2023-3-13	<u>rgba</u> <u>all</u>	<u>rgba</u> <u>all</u>
Palette - Art hues wheel(RYB) - 360 colors	6.7.1	2023-3-13	<u>rgba</u> <u>all</u>	<u>rgba</u> <u>all</u>
Palette - Optical hues wheel(RGB) - 12 colors	6.7.1	2023-3-13	<u>rgba</u> <u>all</u>	<u>rgba</u> <u>all</u>
Palette - Optical hues wheel(RGB) - 24 colors	6.7.1	2023-3-13	<u>rgba</u> <u>all</u>	<u>rgba</u> <u>all</u>
Palette - Optical hues wheel(RGB) - 260 colors	6.7.1	2023-3-13	<u>rgba</u> <u>all</u>	<u>rgba</u> <u>all</u>
Palette - Art paints	6.7.1	2023-3-13	<u>rgba</u> <u>all</u>	<u>rgba</u> <u>all</u>
Palette - MyBox Colors	6.7.1	2023-3-13	<u>rgba</u> <u>all</u>	<u>rgba</u> <u>all</u>
Palette - Gray scale	6.7.1	2023-3-13	<u>rgba</u> <u>all</u>	<u>rgba</u> <u>all</u>
Stories of Images	6.7.1	2023-3-13	<u>html PDF odt</u>	<u>html PDF odt</u>

MyBox User Guide – Image Tools v6.7.1

1.4 Menu of Tools

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My Bo	MyBox: Set of Easy Tools v6.7	Sto	ries of Image	es
	虎 帝			
	75	View Image		
, in the second s		Browse Images		
D	ocument Tools Imag	Analyse Image		
		Play Images List		
	Edit image	Manufacture Image		•
and the second	Manufacture Image - Batch	Manage Colors		
	Edit Images List	Query olor		
11	Splice Images	Color space		►
	Repeat/Tile Image	Images in MyBox Clipboard		
	Add alpha channel from image	Images in System Clipboard		
	Split Image	Miscellaneous		►
	Subsample Image	Close(ESC/F6 Or click anywhere outside	e the object)	
	Extract alpha channel from image			
2	Convert Image		2	
R	Character Recognition in Image	gs/设置 Abou	Jt	
	Character Recognition in Image - Batch			

2 View Image

- 1. "Load Width". Read image file with "Original Size" or with defined width.
- 2. "Select Mode".
- 3. Rotation can be saved.
- 4. Recover, Rename, Delete.
- 5. Select whether display Corodinate, X/Y Rulers, Data.
- 6. Image attributes and image meta. ICC profile embedded in image can be decoded.
- 7. Navigation of images under same directory.
- 8. Context menu.
- 9. Option about whether handle selected area or whole image.
- 10. Redering parameters when save or modify image.



3 Browse Images

- 1. Display multiple images in same screen. Rotation and zoomming can be separated or synchronized.
- 2. Rotation can be saved.
- 3. Grid Mode. Files number, columns number, and load width can be set.
- 4. Thumbnails List Mode.
- 5. Files List Mode.
- 6. Rename and Delete.



4 Analyse Image

- 1. Statistic and visualization of image data, including average, variance, skewness, median, mode, minimum, maximum of occurance of each color channel, and their histograms.
- 2. Channels of histograms can be selected.
- 3. Statistic against selected area.



- 4. Count dominant colors:
 - Calculate mostly different colors in image by K-Means Clustering.
 - Calculate mostly occurred colors in image by Popularity Quantization.
 - Results can be imported in Color Palette.
- 5. Image data can be saved as html file.



5 Play Images

- 1. Following types of files can be played:
 - Dynamical gif file
 - Multiple-frames tif file
 - PDF file
 - PPT file

Each page of PPT/PDF file is converted as an image to display.

2. In this version, all required images are loaded in memory.

To avoid out of memory:

- Set frames range to display.
- Set width of images to load.
- Set dpi for images in PDF.
- 3. Images are displayed frame by frame:
 - Set intervals and speed times
 - Pause/Continue
 - Select a frame
 - Previous/Next frame
 - Options "Loop" and "Reverse"

My Play Images List d:\tmp\mybox-data-6.5.9\generated\lo	CC特性文件	+详解.pdf -	Frame 1				—		×
Window Document Image Data	File	Media	Network	Settings	Recent Accessed	Develo	opmen	it H	elp
▼ File	23	Interva	al(millisecor	ids) 300	Multiple speed	d 1	▼ F	rame	
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Load width Origin 💌			ICC特性文 ICC特性文	件详解 件一般由文件头、标签表及标	示签元素数据3部分组成。				
dpi 96 👻			文件头共占 类型、设备 XYZ等。	128个字节,主要介绍文件的 的色彩空间、特性文件连接3	属性,如特性文件类型、容量、版本号、色彩(2回(PCS)、色彩匹配方式、PCS空间的光源的	育理模块 自三刺激值			
			标签表主要 标签说明占 节的偏移量	包括特性文件中标签的总数, 12个字节,前4个字节为标签,后4个字节是该标签元素数	,以及每个标签的有关说明。标签总数占4个字 标识符,中间4个字节为该标签相对于特性文件 据的长度。	节;每个 起始点字			
From 1 To -1			标签元素数的。	据主要用于存储设备的色彩	空间与PCS之间的转换数据。每个标签元素的容	量是不同			
File size:168.681 KB			显示(例如	显示器)特性文件基本上是。	具有二维数字的表吗?				
Modify time:2022-08-23 12:46:07			显示特性文 后再跟着一	:件实际上是很复杂的,它们) 个表,结果好像是一个大表。	可以是一系列的表,或者是一个表随后跟着一个 各种类型的特性文件,都是一样的。	矩阵, 然			
Frames number:5			输出 (例如	打印机) 特性文件与显示特	性文件有什么不同?				
Current frame:1			大多数量7 別几乎与用 机特性文件 驱动程序中	;特性文件是表一矩阵一表的: 户无关。主要的差别是所有量 是从PCS到CMYK(即4通道与 转换成CMYK,这样,打印材	类型。打印机特性文件是一系列表的类型。但是 显示特性文件是从RGB到PCS(反之亦然),而i 亏通道相比)。然而,许多打印机要求RGB数据 1特性文件只有3个通道。	i,这些差 午多打印 居在它们的			
Pixels:793.0x1122.0			打印机特性备的测量色	;文件不同于显示特性文件, 排标, 并通过这些测量生成特性	打印中关注所有变量(纸张、油墨设置、伽马等 生文件。这样理解对吗?	 以及设 			
Loaded size:793x1122			这是对的。 度、色平衡 更好地使输	还要特别提醒的是,不但要会, 伽马等)进行校正,同样或 入和输出的色彩保持一致性。	生成打印机特性文件,还应对显示器的设置(X 5须测量显示器,以生成一个显示器特性文件。	比度、亮 这样才能			
Displayed size.source to			什么是"透	接特性文件" ? 它与设备特性	性文件有什么不同?				
▼ View			设备连接料 而且它只适	性文件,是将一种设备色彩的 用于那些特定的设备。	空间中译码的数据转换成另一种设备色彩空间中	的数据,			
	1		不同设备 具 义 了 设 备 约	有不同的表现色彩的能力, 色彩特性信息,通过这些信息	其所能表示的色彩范围并不相同。因此,设备料 息可以获取该设备能够捕获、显示或重现的色彩	性文件定 范围。			
			设备特性文 的需要,将 己的"妙计	件可以转换到PCS,或从PCS 输入和输出特性文件混合起来 ",或保持CMYK中的黑色,	转换设备特性文件,并在处理时联合起来,根 K。连接特性文件允许人们对特定的一对设备加 以在两种不同的印刷条件下进行CMYK转换。	H工作流程 上他们自			
40 -			每个特性文	件有多少数字?					
			例如,显示	特性文件能列出设备具有的F	RGB和CIELAB的所有色彩吗(24位RGB显示167	7万色)?			
		793x1122	2						

6 Image Manufacture



6.1 Copy

- 1. Copy part inside current scope, part outside of current scope, or whole image.
- 2. Whether cut margins, whether copy to system clipboard.
- 3. Set background color.



6.2 Crop

- 1. Crop part inside current scope, or part outside of current scope.
- 2. Whether cut margins, whether copy to system clipboard.
- 3. Set background color.



6.3 Clipboard

- 1. Clip sources:
 - "Copy"(CTRL+c) against whole image or selected part of image
 - Cutted part of image
 - System clipboard
 - Image files in system
 - Example clips
- 2. Manage clips list: Add, Delete, Clear, Set maximum number of list.
- 3. Click button "Paste"(CTRL+v) anytime while editing image, to paste the first image in clipboard onto current edited image. Or double click item in the clipboard to paste it.
- 4. Drag and move pasted clip on current edited image, to adjust clip's size and location.
- 5. Options to paste: whether clip on top, whether keep aspect ratio, blending mode, opacity, rotation angle.



6.4 Scale

- 1. By dargging anchors
- 2. By setting scale
- 3. By inputting pixel values with 4 types of keeping aspect ratio.



6.5 Margins

- 1. Blur margins with option of whether apply Premultiplied Alpha
- 2. Drag anchors to adjust margins
- 3. Add margins by width
- 4. Cut margins by width.
- 5. Cut margins by color.

Edit image D:\图片\纹饰\花卉\book3.jpg	- 🗆 X
Window Document Image Data File Media Network Settings	s Recent Accessed Develo
\$ 2 S \$ Q \$ D \$ D \$	▶ Сору
Current image Scope Saved scopes Edit histories Backup Save as 🗢	 Clipboard
	► Crop
	Scale
	Margins
Image: Section of the section of th	 Dragging Add margins Blur Cut margins by color Cut margins by width Margin color [] * ① ⑦ ⑦ ⑦ Drag anchors to adjust image's margins. Or left double click to set Left-Top and right double click to set Right-Bottom.
1202x1560	Color

6.6 Color

- 1. Object: Red/Green/Blue/Yellow/Cyan/Magenta channel, saturaion, brightness, hue, RGB itself, or opacity.
- 2. Operations: Increase, decrease, set, filter, or invert.
- 3. Scope.
- 4. Premultiplied Alpha is supported for setting opacity.



6.7 Effect

- 1. Posterize(reduce colors), thresholding, gray, black-white, Sepia, emboss, edges detect.
- 2. Algorithms and parameters can be set.
- 3. Scope.



6.8 Enhancement

- 1. Contrast, smooth, sharpen, convolution.
- 2. Algorithms and parameters can be set.



6.9 Text

- 1. Input texts in multiple lines.
- 2. Set location.



- 3. Style: like font family, style, size, color, blend modes, shadow, angle.
- 4. Outline, veritical, right-to-left.

Base Style Borders
Font color 🔜 🌸
Font family 幼圆
Font style Regular
Font size 48
Line height(px) 48 Vertical setting of types Right to left Outline Shadow 0 Angle 0
Blend mode 正常模式 Opacity 1.0 ✓ On top ✓ Ignore transparent pixels

5. Borders.



6.10 Pen

- 1. Polyline: One line by multiple drawing. Options: stroke width, color, whether dotted, blend modes.
- 2. Lines: One line by one drawing. Options: stroke width, color, whether dotted, blend modes.
- 3. Eraser: One line by one drawing. Always transparent. Option: stroke width.
- 4. Frosted Class: One dot by one drawing. Options: stroke width, intensity, shape(Rectangle or circle).
- 5. Mosaic: One dot by one drwaing. Options: stroke width, intensity, shape(Rectangle or circle).
- 6. Shape: Rectangle, Circle, Ellipse, Polygon. Options: stroke width, color, whether dotted, blend modes, whether fill-in, color of fill-in.



6.11 Transform

Shear, mirror, and rotate.



6.12 Round corner

Arc and background color can be set.



6.13 Shadow

Options: background color, shadow size, whether apply Premultiplied Alpha.



6.14 Editing Histories

- 1. Each modification will be recorded as image histories.
- 2. Manage histories: Delete, Clear, Recover selected history as current editing image, Set maximum number of histories.
- 3. Undo(CTRL+z) and redo(CTRL+y) previous modification. Recover to original image(CTRL+r) at any time. Either select one history to recover.

Bow Edit image	e D:\图片\纹饰\动物	叭猫爪y.png *			- 🗆	×
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Та	Record time	Image	Size	Description		
3	2022-09-2	6	25.479 KB	Effects Gray All	猫爪y_1	6643
_ 4	2022-09-2		25.479 KB	Effects Sharpen All	猫爪y_1	6643
5	2022-09-2		25.479 KB	Margins Set margins By draggi	ng All 猫爪y_1	6643
6	2022-09-2		57.886 KB	Margins Set margins By draggi	ng All 猫爪y_1	6643
7	2022-09-2		2.194 MB	Load All	猫爪y_1	6643
Maximum	histories 20	5	5			

6.15 Scope

- 1. Rulers to limit pixels to operate, including area rulers, color matching rulers, or rulers mixed by both types.
- 2. Define area: Rectangle, Circle, Ellipse, Polygon. Can be excluded.
- 3. Define colors list. Can pick colors directly from image by Color Palette.
- 4. Select object for color matching, including Red/Green/Blue channel, saturaion, brightness, hue, RGB, with distance defined. Can be excluded.
- 5. Matting: Match pixels around current pixel, and spread results with same matching rulers. Result is the collection of pixels matched by multiple points.
- 6. Outline: Extract outline of image which has transparent background, as the scope of operation.
- 7. Scope can be applied against Copy, Crop, Color, Effect, Convolution.
- 8. Scopes can be saved with names. User can manage them: Add, Delete, Clear, Edit, Use selected item in scopes list.



6.16 Pop current image

Option: Whether always on top.

6.17 "Visible As Need"

- 1. Show/Hide left pane(F4), show/hide right pane(F5)
- 2. Vertical accordion menus
- 3. Overlaying tabs to switch
- 4. Show/Hide controls as functions

6.18 Demo

One clicking to diaplay examples of kinds of image manufacture about "Color", "Effect", "Enhancement", and blend modes.



7 Image Manufacture in batch

My Manufacture Image - Batch - Te	xt							- [) ×	
Window Document	Image Da ⁻	ta File	Media	Network	Settings	Recent Acce	ssed	Development	Help	
Source files Options 1	View Image Browse Imag Analyse Imag	les ge		⊋ _ [a _	d) File		Туре	e Files num	⊲ nber	
	Play Images Manufacture	List Image	۲	Edit image						
	Manage Colo Query olor Color space	ors	Þ	Manufactu Edit Image Splice Imag	re Image - s List ges	×	Size Crop Paste			
	Images in MyBox Clipboard Images in System Clipboard Miscellaneous			Add alpha channel from image Split Image Subsample Image				Color Effects Enhancement		
				Extract alpl Convert Im	ha channel Iage Recognition	from image	_	Replace color Text Arc		
Files selector can be used Files selector All	l to pick files/d	directories	added i	Character I	Recognition Recognition	n in Image - Ba	tch	Shadow Transform Margins		

8 Edit Images

- 1. Add following:
 - Animated gif file. All frames are added into list.
 - Multiple-frames tif file. All frames are added into list.
 - PDF file. All pages are converted as images and added into list.
 - PPT file. All pages are converted as images and added into list.
 - Image in system clipboard.
 - Any supported image files.
- 2. Move images to set their orders.
- 3. Set durations of images, which work for playing list and animated gif file.
- 4. Play the list. Select some images by CTRL/SELECT to play, or select none to play whole list.
- 5. Save the list::
 - Select some images by CTRL/SELECT to save, or select none to save whole list.
 - Save each item as a supported image file.
 - Splice images.
 - Merge items as a multipleg-frames tif file.
 - Merge items as an animated gif file.
 - Merge items as a PDF file.
 - Merge items as a PPT file.
 - Merge items as a video file(need ffmpeg).

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9 Splice images

Options like array ordering, background color, interval, margins, and size.



10 Add Alpha channel

Add alpha channel from image	_	
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11 Repeat/Tile Image

This tool helps to make background/texture image:

- 1. Select an image, and set part or whole of it as source cell.
- 2. Set width and height to scale the source cell.
- 3. Make the target image:
 - Repeat the cell with horizontal number and vertical number.
 - Tile the cell into width and height of canvas.
 - Set interval between cells. Negative value may make effect of interleave.
 - Set margins of target image.



12 Split image

- 1. By number, by size, or by customizing.
- 2. Results can be saved as image files, multiple frames Tiff file, or PDF file.



13 Subsample image

- 1. Options like sample region and sample ratio.
- 2. When image file includes too many pixels and loaded as sampled image, splitting and subsampling handle the original image in file instead of the loaded image in memory.



14 Extract Alpha channel

🐉 Extract alpha channel from image —	- X
Window Document Image Data File Media Network Settings Recent Accessed Developmen	nt Help
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Alpha channel Keep Remove Premultiplied and keep Premultiplied and remove	
Compression type LZW LZW	
Quality 100 • %	
Binary algorithm	
Default	
Two files will be generated for each source file: "xxxxx_alpha.png" which only holds alpha channel of original file in PNG format. "xxxxx_noAlpha.yyy" which only holds RGB channels of original file in selected format.	
*	

15 Image Conversion

- 1. Formats of image file: png, jpg, bmp, tif, gif, ico, wbmp, pnm, pcx, raw.
- 2. Color spaces: sRGB, Linear sRGB, ECI RGB, Adobe RGB, Apple RGB, Color Match RGB, ECI CMYK, Adobe CMYK(several), Gray, Binary
- 3. Color space based on external ICC profile.
- 4. Option to embed ICC profile.
- 5. Options to handle transparent channel, including keep, delete, premultiply and delete, premultiply and keep.
- 6. Options of compression types and quality.
- 7. For binary, algorithms can be choiced: OTSU, default or threshold. And option of dithering.
- 8. Conversion in batch.

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16 Recognize Texts in Image

- 1. Preprocess image:
 - Algorithms of image maunfacture
 - Scale ratio
 - Binary threshold
 - Rotation angle
 - whether deskew automatically
 - Whether invert colors
- 2. Recognization Options:
 - Languages list and their order
 - whether generate data of "Regions" and level can be set
 - whether generate data of "Words" and level can be set
- 3. When recognize single image:
 - Preprocessed image can be saved and loaded
 - Rectangle can be set to define the area to do OCR.
 - Display preprocessed image, original image, recognized texts and html.
 - Display data of Regions and Words in html which can be saved.
 - Demo: One clicking to show examples of image enhancement.

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Original image	Preprocess 🔅 Scale 1.0 💌 🚄 Binary threshold 💌 🚄	 Recognize texts OCR options Text html Regions Words 					
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······································		Gaussian blur					
		Average blur					
		Close(ESC/F6 Or click anywhere outside the object)					

- 4. When recognize in batch, options:
 - Whether generate html or PDF
 - Whether merge recognized texts
- 5. OCR engine:
 - For win, both embedded and installed tesseract can be selected.
 - For linux and mac, only installed tesseract can be used.
- 6. OCR data files path:
- Can be set as any path which can be read. If tesseract is installed, suggest to set as its subdirectory "tessdata".
- MyBox includes "fast" data files of English and Chinese, and will copy them to this path if it has not them.
- Notice: When use embedded engine, it is better that name of file/path is pure English to avoid failure.

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8	8 afr								
Order of languages determines results. Notice to refresh the list after data files path is changed.									

17 Color Management

17.1 Manage color palettes:

- 1. Add/Delete/Rename/Copy.
- 2. Examples: "Common web color", "Traditional Chinese colors", "Traditional Japanese Colors", and "Colors from colorhexa.com".
- 3. Manage colors in palettes: Add/delete/Copy/Name/Order/Import/Export.
- 4. Display colors:
 - Data in table in simple/all columns. Or display colors in merged/separated columns.
 - Color is shown in a small rectangle. Its name(if has), hexidecimal value, rgb values, opacity, cmyk values, and cie values are popped when mouse is moved upon it.
- 5. Change colors:
 - Color name can be empty and duplicated. Same color can have different names in different palettes.
 - Color order can be any float. Same color can have order numbers in different palettes.
 - Click button to trim order numbers in step 1.
 - Drag-drop colors to adjust their orders in palette.

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	19	油绿	69	-167290	Adobe RGB Linear: 19 64 5		
	20	葱青	70	-158125	Apple RGB Linear: 6 66 0		
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	29	青色	79	-167197			
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- 6. Export colors: current page, all, or selected rows as html or csv file.
- 7. Import color file in CSV format:
 - File encoding is UTF-8 or ASCII.
 - \circ $\;$ The first line defines data headers which are delimited by English commas.
 - Followed each line defines one data row. Data fields are delimited by English commas.
 - Following fields are necessary: rgba or rgb
 - Following fields are optional: name

17.2 Add colors

- 1. Get colors from color-picker.
- 2. Input colors list. Examples are provided. Valid color values are like:

orange 0xff668840 0xff6688 #ff6688 #f68 rgb(255,102,136) rgb(100%,50%,50%) rgba(255,102,136,0.25) rgba(255,50%,50%,0.25) hsl(240,100%,100%) hsla(120,0%,0%,0.25)

3. Click button "Pick Color" in intefaces of image viewer/manufactor.

My Borv Input colors	- D X	
Input color value	es in web format. One value in each line. 🌲 🗖 白色 🔹 😻	
rgb(255,102,13 rgb(100%,60%,	Clear	
hsla(60,50%,60	orange pink lightblue wheat Oxf66840 Oxf66840 Oxf668640 #226888 #681 rgb(255,102,136) rgb(100%,60%,50%) rgba(102,166,136,0.25) rgba(155,20%,70%,0.25)	
#226688 rgba(155.20%.)	hsl(240,70%,80%) hsla(60,50%,60%,0.25)	
#68f		
]]

17.3 Query color

Web Colors

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18 Color Space

18.1 Draw Chromaticity Diagram

- Outlines of standard data, including CIE 1931 2 Degree Observer(D50), CIE 1964 10 Degree Observer(D50), CIE RGB Gamut, ECI RGB Gamut, sRGB Gamut, Adobe RGB Gamut, Apple RGB Gamut, PAL RGB Gamut, NTSC RGB Gamut, ColorMath ProPhoto RGB Gamut, SMPTE-C RGB Gamut.
- 2. Standard illuminants(White points), including A, C, D50, D55, D65, E.
- 3. User can fill in tristimulus values or color coordinate or select color, and the tool will calculate values in kinds of color space and display the calculated color in the chromaticity diagram.
- 4. User can input or import spectral data, and the tool will filter special characters and display the spectral values in the chromaticity diagram.
- 5. User can select to show or hide the items of above data in the chromaticity diagram.
- 6. User can select the background color of the chromaticity diagram as transparent, white, or black. Dot size or line size can be selected for outlines. Grid and wave values can be selected to show or hide too.
- 7. Table and texts are shown for standard data, including CIE 1931 2 Degree Observer 1nm, CIE 1931 2 Degree Observer 5nm, CIE 1964 10 Degree Observer 1nm, CIE 1964 10 Degree Observer 5nm. Data texts can be exported.



18.2 Edit ICC profile

- 1. Predefined standard ICC profiles, including Java Embeded ICC like sRGB/XYZ/PYCC/GRAY/LINEAR_RGB, files from ECI like ECI_CMYK/ECI_RGB_v2, and files from Adobe like Adobe_RGB/Apple_RGB/CMYK.
- 2. All fields in header can be edited. "Profile id" is calculated as MD5 digest automatically when ICC profile is saved.
- 3. Tags table shows fields of tag, name, type, offset, size, description, decoded data, and raw data of bytes in hexadeciaml.
- 4. Editable tag types include: Text, MultiLocalizedUnicode, Signature, DateTime, XYZ, Curve, ViewingConditions, Measurement, S15Fixed16Array.

Tag type "LUT" is not editable in this version.

- 5. Option "Normalize data of LUT in range of $0 \sim 1$ ".
- 6. Whole ICC profile is read as XML and can be exported. Data not decodes are shown as bytes in hexadeciaml.
- 7. Loaded ICC data can be modified and saved as new ICC profile.

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18.3 RGB Color Space:

- 1. User select or input RGB color space(Primaries and white), select or input reference white, and the tool will calculate the adapted primaries values automatically and show the calculation procedure.
- 2. Decimal scale can be set.
- 3. Adaption algorithm can be selected from Bradford, XYZ Scaling, and Von Kries.
- 4. Predefined standard RGB color spaces include CIE RGB, ECI RGB, sRGB, Adobe RGB, Apple RGB, PAL RGB, NTSC RGB, ColorMath ProPhoto RGB, SMPTE-C RGB.
- 5. Predefined illuminants include A, B, C, D50, D55, D65, D75, E, F1~F12 of CIE 1931 and CIE 1964.
- 6. Table and texts are shown for adapted primaries by different RGB color spaces, different illuminants, and different algorithms. Data texts can be exported.

18.4 Transform Matrices between Linear RGB and XYZ

- 1. User select or input RGB color space(Primaries and white), select or input reference white of XYZ color space, and the tool will calculate the transform matrix between the linear RGB and XYZ automatically and show the calculation procedure.
- 2. Table and texts are shown for transform matrices by different RGB color spaces, different reference whites of XYZ, and different algorithms. Data texts can be exported.

18.5 Transform Matrices between Linear RGB and Linear RGB:

- 1. User select or input source and target RGB color spaces(Primaries and white), and the tool will calculate the transform matrix between the 2 linear RGB color spaces automatically and show the calculation procedure..
- 2. Table and texts are shown for transform matrices by different RGB color spaces and different algorithms. Data texts can be exported.

18.6 Illuminants

- 1. User input source color(relative/tristimulus/coordinate), select or input source white and target white, and the tool will calculate the adapted color automatically and show the calculation procedure..
- 2. Table and texts are shown for standard illuminants list including color values, color temperature, and description. Data texts can be exported.

18.7 Chromatic Adaptation Matrices

- 1. User select or input source white and target white, and the tool will calculate the chromatic adaptation matrix automatically and show the calculation procedure..
- 2. Table and texts are shown for chromatic adaptation matrices by different standard illuminants and different algorithms. Data texts can be exported.

19 Images in System Clipboard

19.1 Options

Load/Refresh/Delete image in System Clipboard:

- 1. After button is clicked, new images in System Clipboard are monitored.
- 2. Monitor interval can be set.
- 3. Monitored images can be saved as files, or copyed in Mybox Clipboard.
- 4. Width of saved image can be set.
- 5. Options of files.
- 6. Options of images.



19.2 Conditions to Stop

The monitoring stops when one of following happens:

- 1. User clicks button "Stop"
- 2. MyBox exits.
- 3. All of following are satisfied:
 - "Copy to MyBox Clipboard" is not checked
 - "Save as Files" is not checked or target path is invalid
 - This interface is closed

19.3 Sources of Images in System Clipborad

Images in system clipboard come from screenshots or pictures generated by softwares like operation "CTRL+c".

On Windows, shortcuts to make screenshots:

"PrintScreen"	Make snapshot of full screen.
"Alt+PrintScreen"	Make snapshot of current active window.

On Linux, shortcuts to make screenshots:

"Ctrl+PrintScreen"	Make snapshot of full screen.
"Ctrl+Alt+PrintScreen"	Make snapshot of current active window.
"Shift+Ctrl+PrintScreen"	Make snapshot of selected area.

On Mac, shortcuts to make screenshots:

"Command+Control+Shift+3"	Make snapshot of full screen.
"Command+Control+Shift+4"	Make snapshot of selected area.
"Command+Control+Shift+4+Spacebar"	Make snapshot of current active window.

20 Images in MyBox Clipboard

- 1. Add/Delete/View images in MyBox Clipboard.
- 2. Examples are provided.
- 3. Image in System Clipboard can be added.
- 4. Selected image can be copyed in System Clipboard.



21 Pixels calculator

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O Photo	416x605	Chinese pass	port 3.3c	mx4.8cm 32	20dpi	•	
	416x277	Chinese ID ca	rd 3.3cmx	2.2cm 320c	ipi	Â	
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2	Edge detection Eig	3	3	Ту 🕚	B 🔘 S	Shar) Edge de	tecti	Emb	○ No	
3	Edge detection Eig	3	3	Width	7	Height	t 7	 Odd 	d number		
4	Edge detection Fou	3	3	Edges Keen values Fill zero							
5	Edge detection Fou	3	3								
6	Emboss Bottom 3*3	3	3	Descript	ion						
7	Emboss Left 3*3	3	3							-	
8	Emboss Left botto	3	3	0 1 Gaussian distribut Normalizat							
9	Emboss Left top 3*3	3	3	0.1.420							
10	Emboss Right 3*3	3	3	0.1428	0.0	0.0	0.0	0.0	0.0	0.0	
11	Emboss Right bott	3	3	0.0	0.1428	0.0	0.0	0.0	0.0	0.0	
12	Emboss Right top	3	3	0.0	0.0	0.1428	0.0	0.0	0.0	0.0	
13	Emboss Top 3*3	3	3				0 1/28				
14	Gaussian blur 11*11	11	11	0.0	0.0	0.0	0.1420	0.0	0.0	0.0	
15	Gaussian blur 7*7	7	7	0.0	0.0	0.0	0.0	0.1428	0.0	0.0	
16	Motion blur 3*3	3	3	0.0	0.0	0.0	0.0	0.0	0.1428	0.0	
17	Motion blur 5*5	5	5	0.0	0.0	0.0	0.0	0.0	0.0	0.1428	
✓ 18	Motion blur 7*7	7	7								
19	Sharpen Eight-nei	3	3								
20	Sharpen Four-nei	3	3								
< 21	Unsharn masking 5	5	5	<						>	

23 Convert image to base64

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24 Big Image

- 1. Evaulate the required memory for whole image, and judge whether load all data in memory.
- 2. If enough memory is available to load whole image, read all data for next operations. Try best to operate in memory and avoid file I/O.
- 3. If memory may be out, subsample the image for next operations.
- 4. The sample ratio is determined by following rule: Make sure the sampled image is good enough while the sampled data occupy limited memory.
- 5. The sampled image is mainly for displaying, and not suitable for operations against whole image and images merging.
- 6. Some operations, like splitting and subsampling, can be handled by reading part of image data and writing-while-reading, so they are suitable for big images. Sampled image is displayed while original image is handled.

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