

Converting Gradation Data to Two Tones

RSD-SUNMAX Series

SUNMAX LASER

About this document: This is an English translation of the Japanese original prepared by SUNMAX LASER for reference purposes. In case of any discrepancy, the Japanese original shall prevail. Specifications are subject to change without notice.

Converting Gradation Data to Two Tones (Adobe Illustrator Edition)

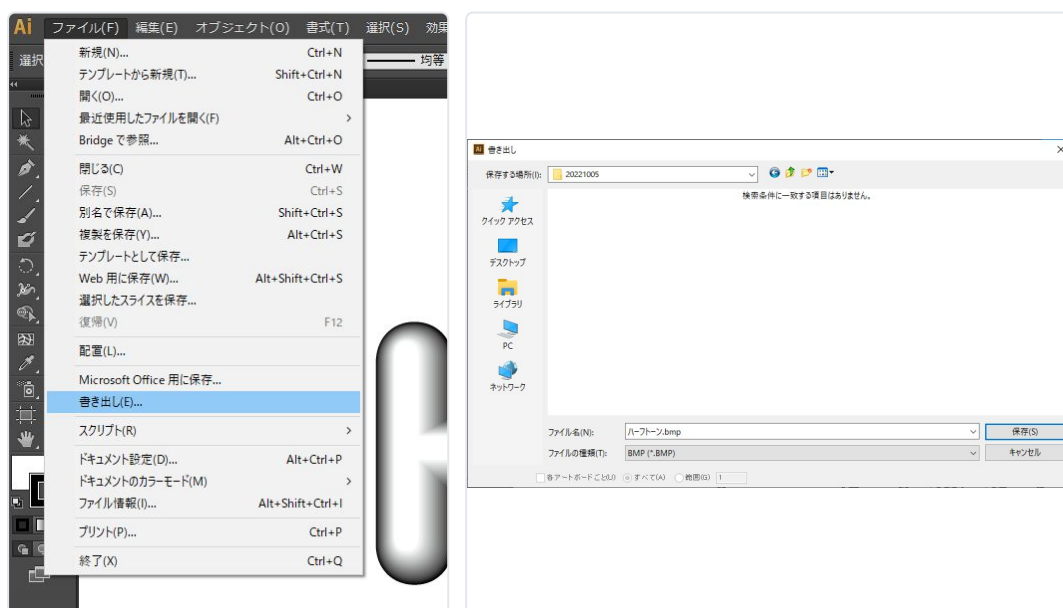
This document explains the procedure for outputting gradation data — created with tools such as the Adobe Illustrator Blend tool — as monochrome two-tone data.

The data shown below is used throughout this document.



Exporting the Data

Select File menu -> Export.

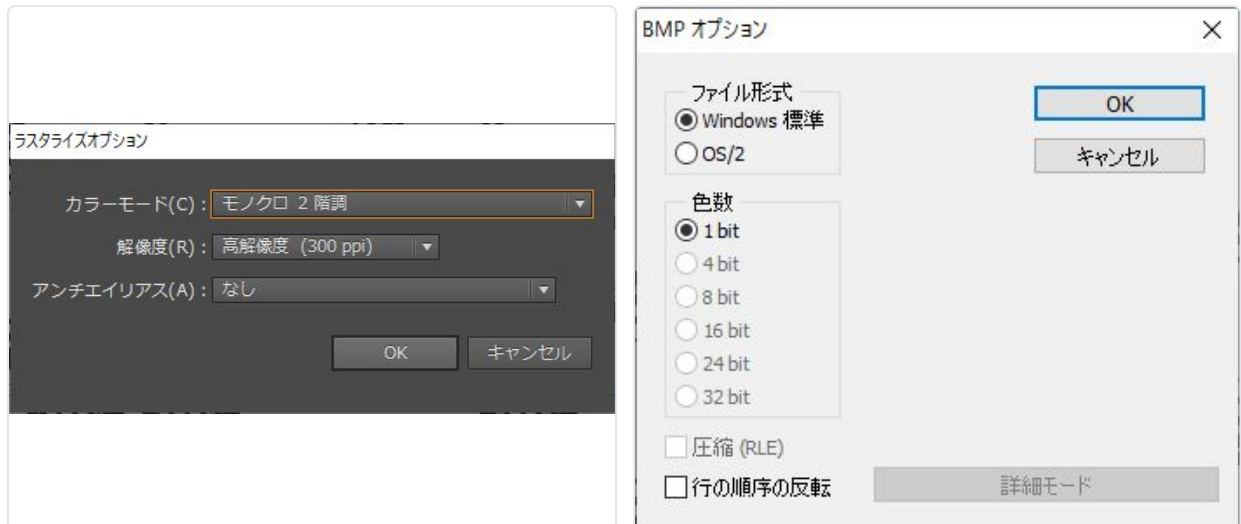


The Export dialog box appears as shown below.

Select "BMP (*.BMP)" from the file type list, enter a file name, and save.

The Rasterize Options dialog box appears as shown below.

Set Color Model to "Bitmap" (monochrome two-tone), Resolution to "High (300 ppi)", and Anti-aliasing to "None", then click "OK".

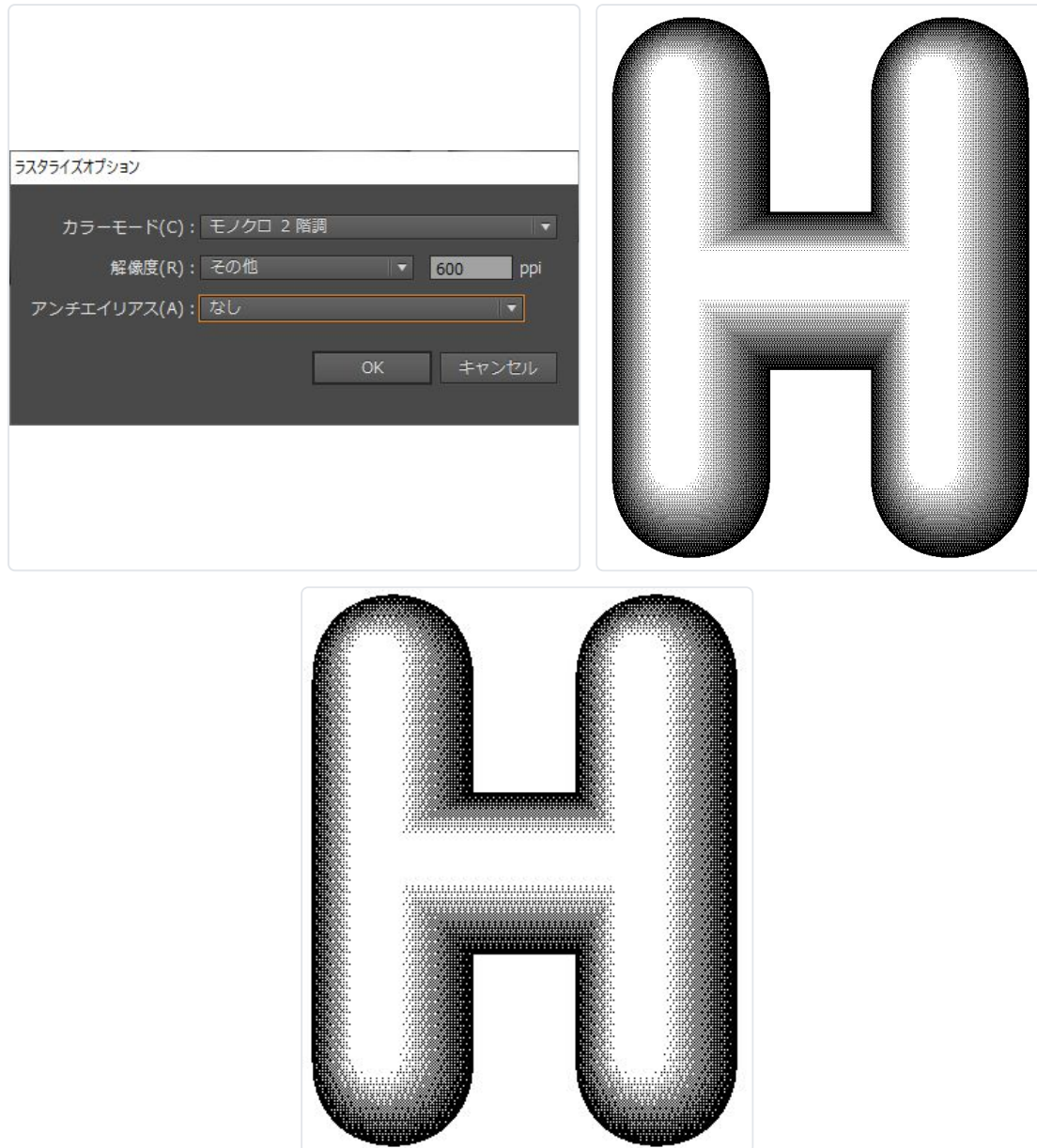


The BMP Options dialog box appears as shown below. Confirm that File Format is set to "Windows" and Depth is set to "1 bit", then click "OK" to complete the save.

When you check the saved data, you will see that Adobe Illustrator has automatically exported a monochrome two-tone bitmap using diffusion dithering, as shown below.

For this export, the image resolution can also be changed.

In the Rasterize Options dialog box during the export procedure, set Resolution to "Other" to enable direct numeric entry of the resolution.



For laser engraving, resolutions of up to approximately 1000 ppi are possible.

A higher resolution setting results in a larger data size, so set it according to the job.

Differences in Exported Data by Resolution

- 600 ppi
- 300 ppi

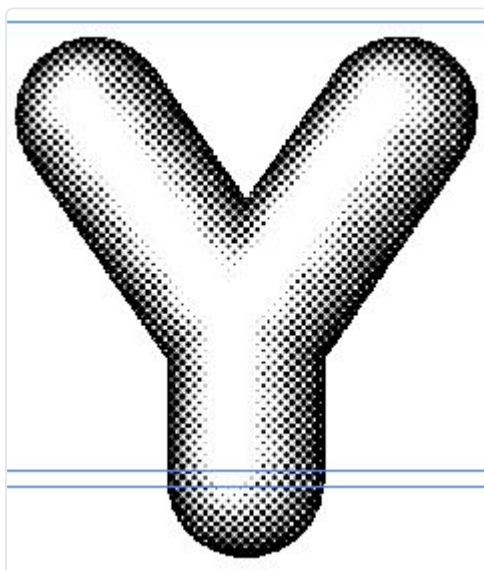
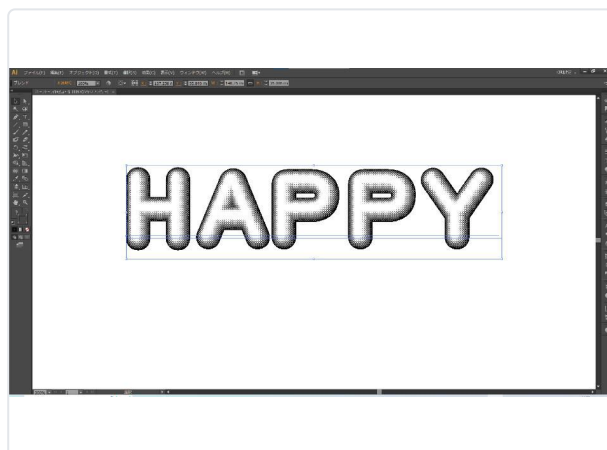
Exporting Halftone-Style Data

To convert gradation data created in Adobe Illustrator into halftone-style data, use the following procedure.

Select all of the data you want to convert to halftone, then select Effect menu -> Pixelate -> Color Halftone.



The Color Halftone dialog box appears as shown below.



Set Max. Radius to "4" pixels, and set the halftone screen angles to "0" for Channels 1 through 3 and 45 for Channel 4, then click "OK".

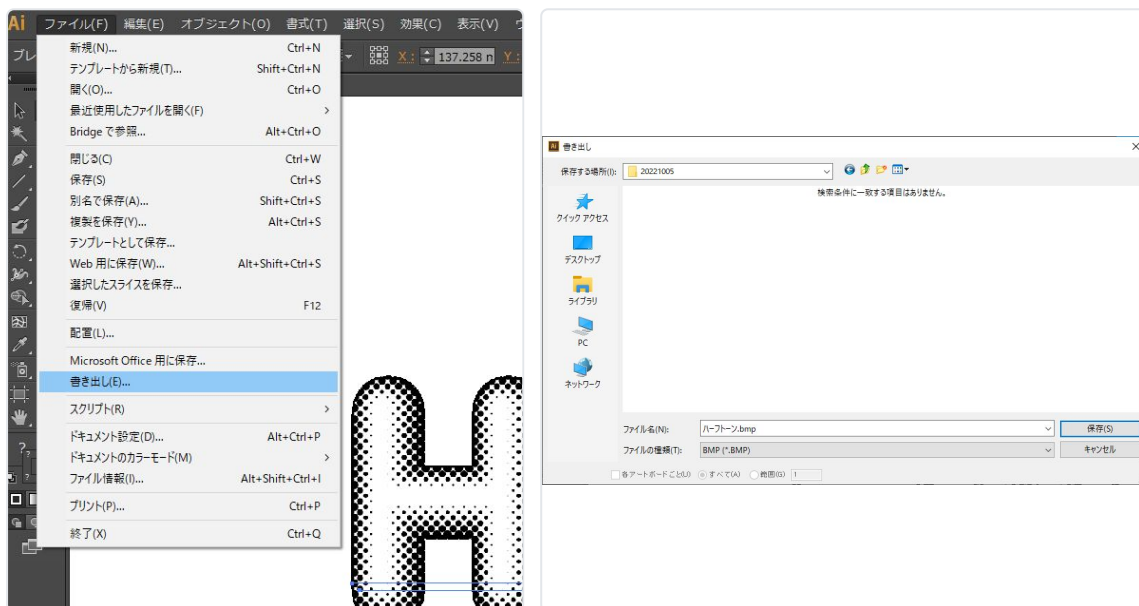
The halftone data is created as shown below.

Note: Color Halftone is normally configured for cyan (Channel 1), magenta (Channel 2), yellow (Channel 3), and black (Channel 4). Since the data here is created in grayscale, only Channel 4 needs to be set.

The Max. Radius value represents the halftone spacing and can be set between 4 and 127.

Export the halftone data as monochrome two-tone data to create a bitmap file.

Select File menu -> Export.

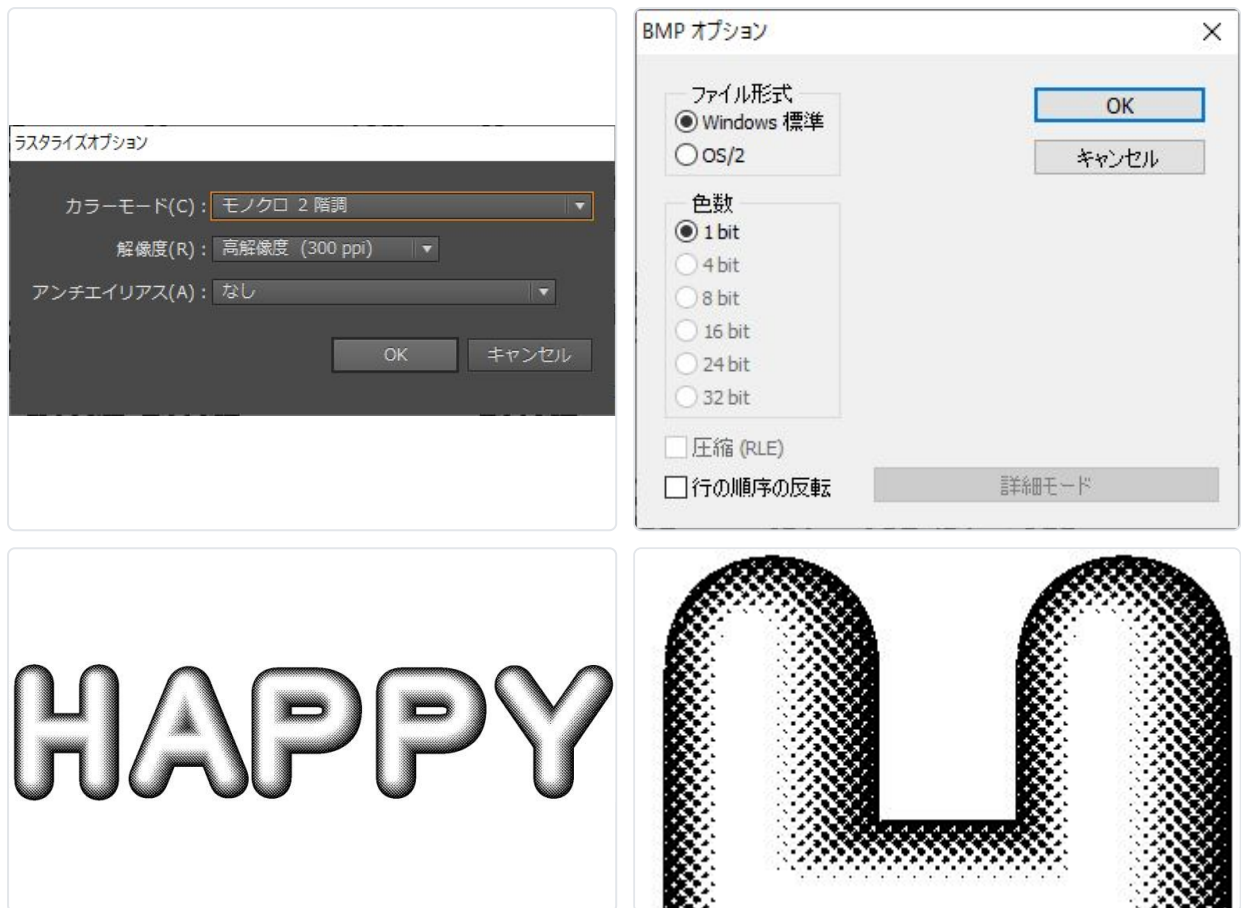


The Export dialog box appears as shown below.

Select "BMP (*.BMP)" from the file type list, enter a file name, and save.

The Rasterize Options dialog box appears as shown below.

Set Color Model to "Bitmap" (monochrome two-tone), Resolution to "High (300 ppi)", and Anti-aliasing to "None", then click "OK".



The BMP Options dialog box appears as shown below. Confirm that File Format is set to "Windows" and Depth is set to "1 bit", then click "OK" to complete the save.

When you check the saved data, you will see that a monochrome two-tone bitmap has been created as shown below.

About the Finished Result

Refer to the following for the differences in processing results between the exported data sets.

Test Processing — Conditions Common to All Data

Test machine	RSD-SUNMAX-RD1490, 150 W model
Material	MDF
Processing mode	Engraving
Power	40%
Speed	200
Scan interval	0.05

Processing Result of Data Exported at High Resolution (300 ppi)



Processing Result of Data Exported Using "Other" (600 ppi)



Processing Result of Halftone Data Exported at High Resolution (300 ppi)



If you want a finer halftone, you must convert the image to bitmap (monochrome two-tone) using software such as Adobe Photoshop. Note, however, that while a fine halftone is suitable for reproducing photographic data, it is not suitable for deep engraving such as kamaboko-style (rounded relief) carving.