Freescale Semiconductor
User Guide

Freescale Embedded GUI Converter Utility 2.0 Quick User Guide

1 Introduction

The Freescale Embedded GUI Converter Utility 2.0 converts images and fonts into data in ANSI C language, resulting in a format suitable for the Freescale eGUI LCD driver for MCUs and MPUs. Output data is stored in source and header files. The utility enables plenty of conversion modes (color, grayscale, monochrome, palette) and color modes (65536, 4096, 256, 2 colors) for image conversion. The images can also be adjusted (change size, rotate, flip) before the conversion. Various fonts can be easily customized, converted, and used effectively with the Freescale eGUI LCD driver.

Contents

freescale™
semiconductor

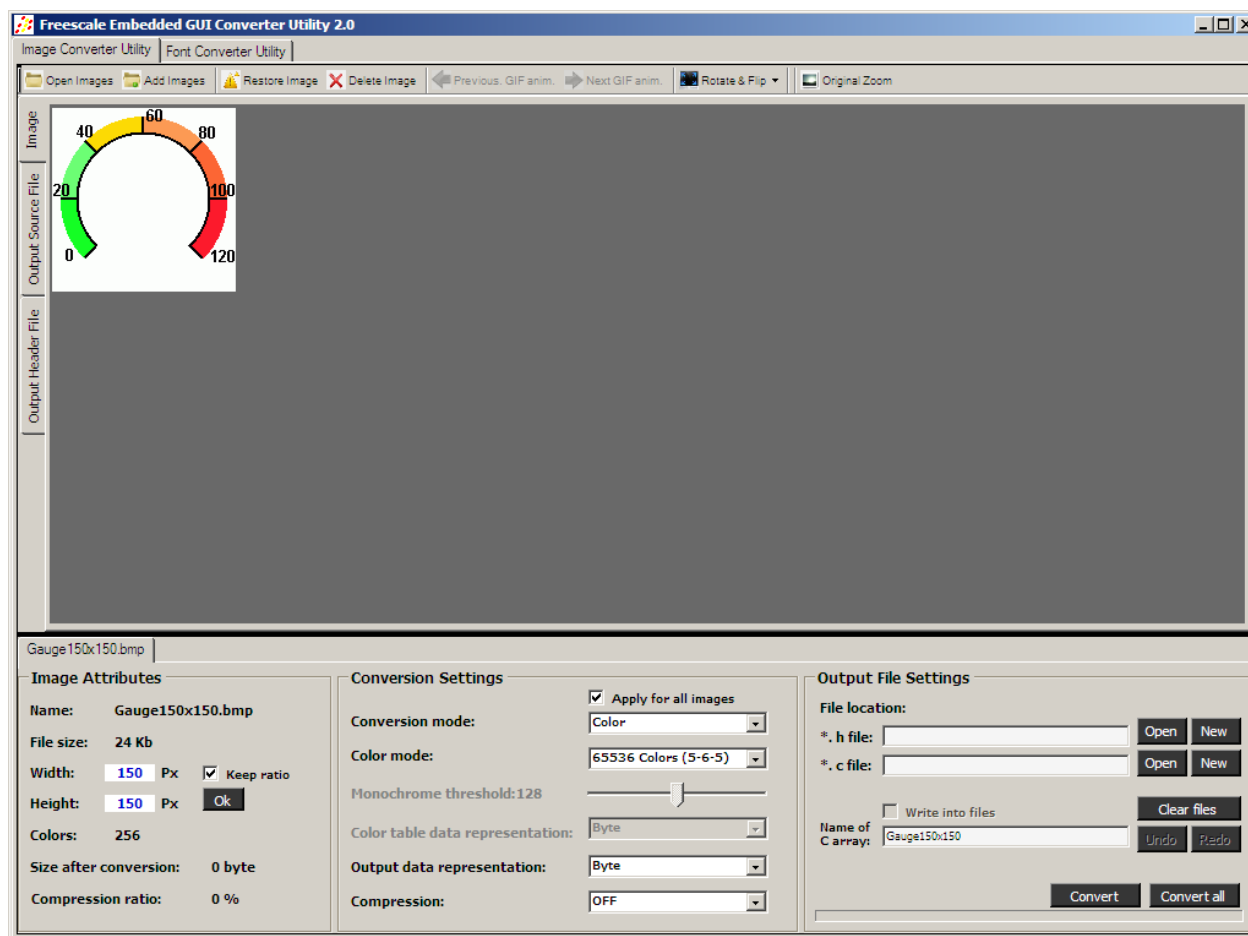# 2 Image converter utility

Figure 1. Freescale Embedded GUI Converter Utility 2.0

2.1 Basic controls

- **Open Images**

  Open one or multiple images for the conversion. Each image and its attributes are represented via bookmark with an image name. This function controls replacing opened images with new images.

- **Add Images**

  Open one or multiple images for conversion and keep previous images. Can be used as an alternative to drag and drop action.

- **Restore Image**

  Replace a modified image with the most recently saved version of that image.

- **Delete Image**

  Remove an image from the utility.

- **Previous GIF anim. /Next GIF anim.**

  Controls display of each animated frame.

- **Rotate & Flip**

  Enables image adjustment with rotate and flip actions.

- **Zoom in/Zoom out**

  Zoom in or out of image according to zoom ratio. Zoom can be also achieved by setting image width and height in **Image attributes** section.

- **Original Zoom**

  Image can be zoomed with the mouse wheel, which enables focusing on image details without changing the image attributes. The Original Zoom control is used for reversing the mouse wheel zoom action. This function restores the image which was adjusted via **Rotate & Flip** or **Zoom In/Out** controls. This is the main difference between the **Restore Image** and **Original Zoom** controls.

- **Image tab**

  Shows opened image.

- **Output source file/Output header file tabs**

  Shows contents of source and header files after image conversion. When selected, each tab provides a few additional controls: **Edit text**, **Write into file**, **Search**.

  — **Edit text** allows modifying the file contents.

  — **Write into file** writes modified contents into the appropriate file in **Files locations**.

  — **Search** can be initiated manually or automatically by a mouse click on the image tab under the search button control. Automatic search is used to search for **Name of C array** in **Output files settings.**

2.2   Image attributes

The image attributes section shows the name of the image and the size of the opened file. The size of the image in pixels is editable and can be used for image zoom. The "Colors" field represents the number of colors in the image. The last two fields show the size of the converted image and, if compression is enabled, the compression ratio.
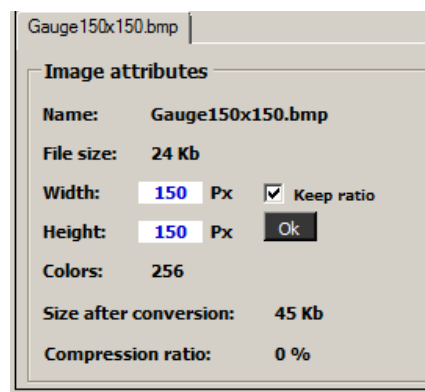

Figure 2. Image attributes

2.3   Conversion settings

- **Conversion mode**
  - — Color
  - — Grayscale
  - — Monochrome (black and white)
  - — Palette (color palette included)
- **Color mode**

  Represents the number of colors and bit count for each color (red/green/blue).

  For color and grayscale conversion mode, the options are:
  - — 65536 (5-6-5) colors
  - — 4096 (4-4-4) colors
  - — 256 (3-3-2) colors

  For palette conversion mode, the options are:
  - — 256 (3-3-2) colors
  - — 2 colors
- **Monochrome threshold**

  This value represents the threshold of color intensity. Every pixel above or equal to the threshold will be black; otherwise it will be white. The threshold has the same function for palette conversion mode in two-color mode. The colors for the palette are chosen from the color dialog window.
- **Color table data/Output data representation**

  Represents 16- or 8-bit data types. Data types can be customized.
- **Compression**

  Enables or disables the compression algorithm.
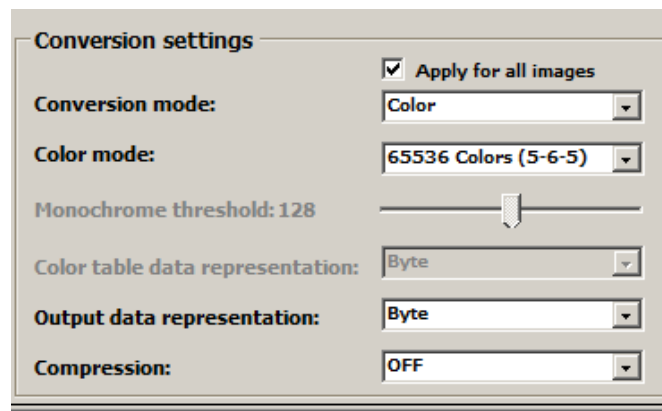
Figure 3. Conversion settings

3   Font converter utility
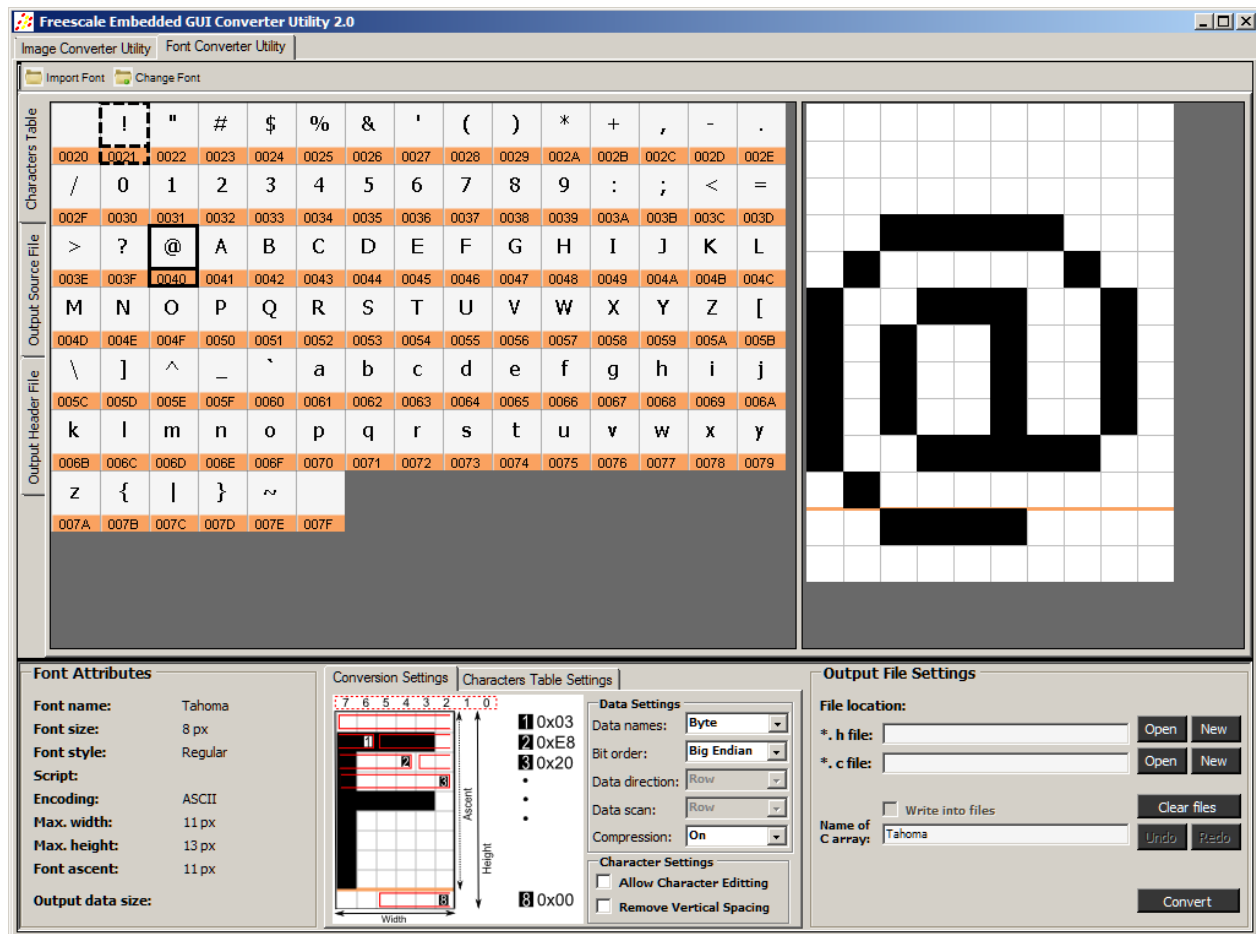
Figure 4. Font converter utility

3.1   Basic controls

- **Import font**

  Load the installed font from the PC and use it for the default ASCII character set. A detailed view of each character is shown in the right window. Switching between characters is performed by mouse click or with the arrow keys. The character in the dashed rectangle will be used by the eGUI LCD driver for missing characters. This character is set by double-clicking the mouse button or with the Enter key.

- **Change font**

  Used only for changing font. The character set is not overwritten with the default ASCII set.

3.2   Font attributes

- **Font name**

  Font name loaded from PC.

- **Font size**

Font size loaded from PC.

- **Font style**

  Regular, italic, bold, etc.

- **Script**

  Western, Central European, Hebrew, Arabic, Greek, Turkish, Baltic, Cyrillic, Vietnamese.

- **Encoding**

  Encoding used.

- **Maximum width**

  Width of the widest character in the set, in pixels.

- **Maximum height**

  Height of the highest character in the set, in pixels.

- **Font ascent**

  Distance from the base line to the top of the character bitmap, in pixels.

- **Output data**

  Size of the converted output data.

Figure 5. Font attributes

3.3   Conversion settings

- **Data names**

  Represents 16- or 8-bit data types. Data types can be customized.

- **Bit order**

  Big or Little Endian bit order.

- **Compression**

  If compression is on, each bit of the byte will be used for bitmap packing — the byte can contain bits from multiple rows. If compression is off, each byte will contain bits from one row only. Figure 6 shows that in the dialog box a graphic image of the bitmap packing will appear. This image will change according to the conversion settings that have been selected. If the conversion

settings are changed to, for example, Little Endian with compression off, then the image will show different bitmap packing as a result of the changed settings.

- **Allow character editing**

Each character bitmap can be now customized by selecting the detail in the right window of the Font Convertor Utility.

- **Remove vertical spacing**

Removes empty rows of the character bitmap to decrease output data size.
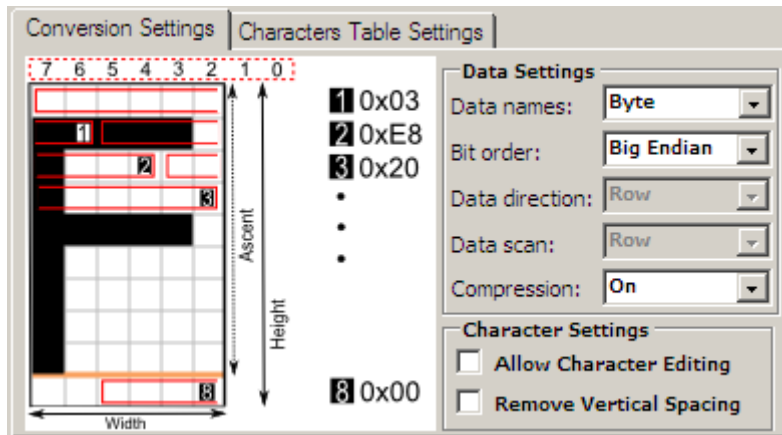
Figure 6. Font conversion settings

3.4　Character table settings

- **Encoding**

ASCII, ASCII EXTENDED, WINDOWS — 1252, Custom ASCII encoding. Custom ASCII enables the use of custom characters, if all of the ASCII table is not necessary. Custom characters can be written in the text box or added via hexadecimal values.
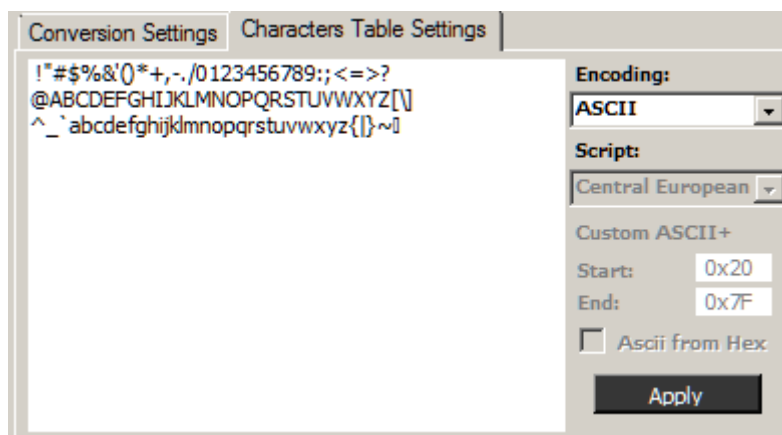
Figure 7. Font character table settings

4   Output file settings

- **File location**

  Open source and header files or create new files.

- **Write into files**

  If checked, data will be written to the specified source and header files. If not checked, the image will be converted but output data will not be written to the files.

- **Clear files**

  Clear contents of the files.

- **Name of C array**

  Name of the C array in the output files. The array name must be used only once in each header file.

- **Undo/Redo**

  These controls are available only if **Write into files** is checked. After an undo or redo, the file contents are modified instantly.

- **Convert**

  Convert the image or font.

- **Convert all**

  Convert all image or fonts.
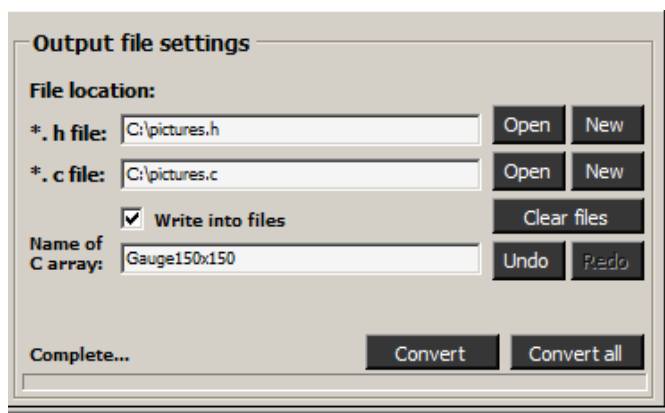
Figure 8. Output file settings

THIS PAGE IS INTENTIONALLY BLANK

Document Number: EGUICUG
Rev. 1
08/2010