Font Tool
User Guide

Document Date: 22nd November 2011
Document Revision: 02

Abstract

This User guide explains Font Tool software in detail. Font Tool will assist the user in converting Windows fonts (including true type) into the Bitmap format required by the 4D display modules.

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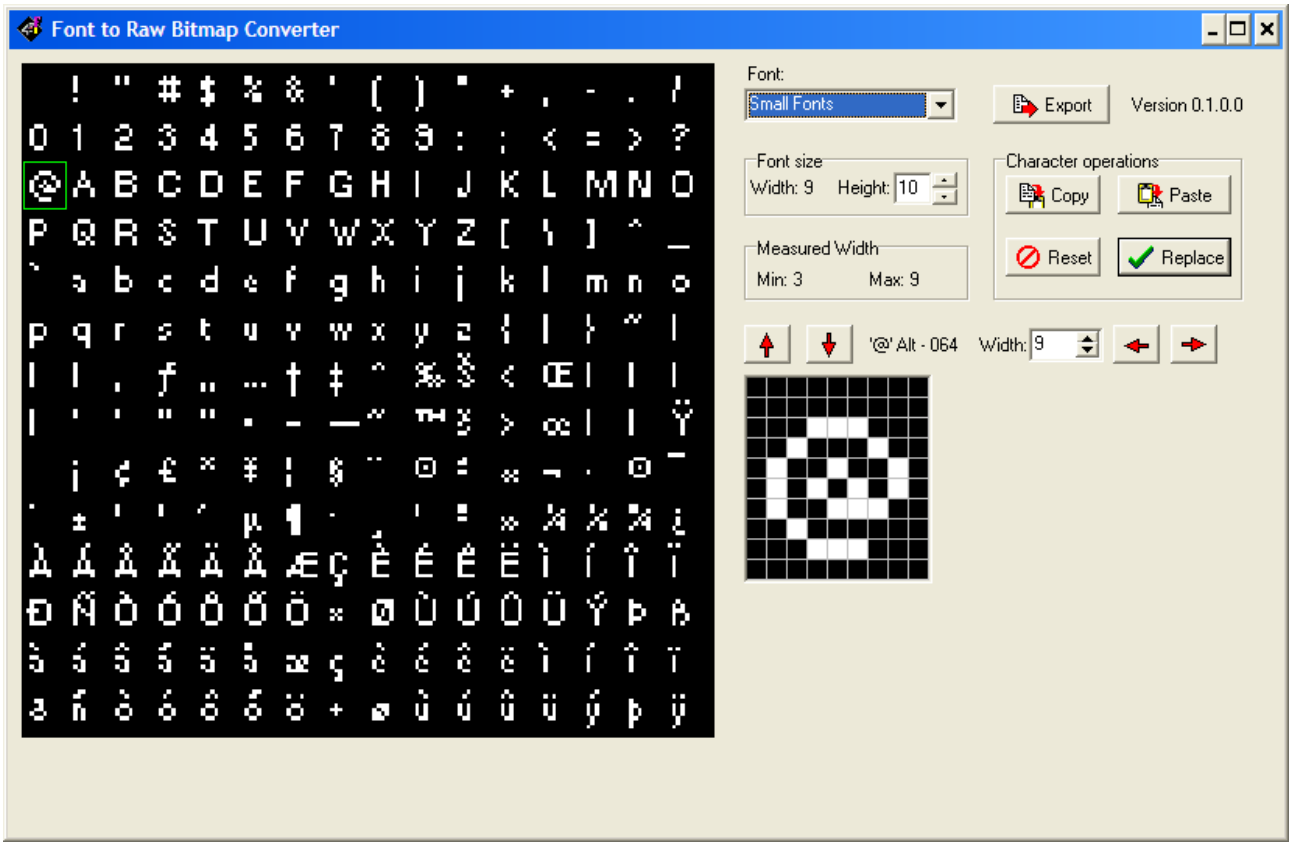
INTRODUCTION

Font Tool is a utility that can assist in converting Windows Fonts into the Bitmap format required by the 4D displays. Select the windows font you want to convert and a representation of it is displayed. You can change the size and view individual characters to work on the optimal size. Since most windows fonts are not designed to be converted into bitmap format. Windows 'smooths' fonts using dithering and halftones, these techniques are not available in Bitmapped fonts, so you will need to manually retouch the fonts you create with FontTool.

You can modify each character in the font by changing the individual bits in it, its position within the character space and its width when 'printed' proportionally.

Once you have produced the font in the format you desire, it can be exported in formats compatible with DISP, 4DGL includes, or C headers. The DISP format is also suitable for saving to a uSD card for usage by GFX2.

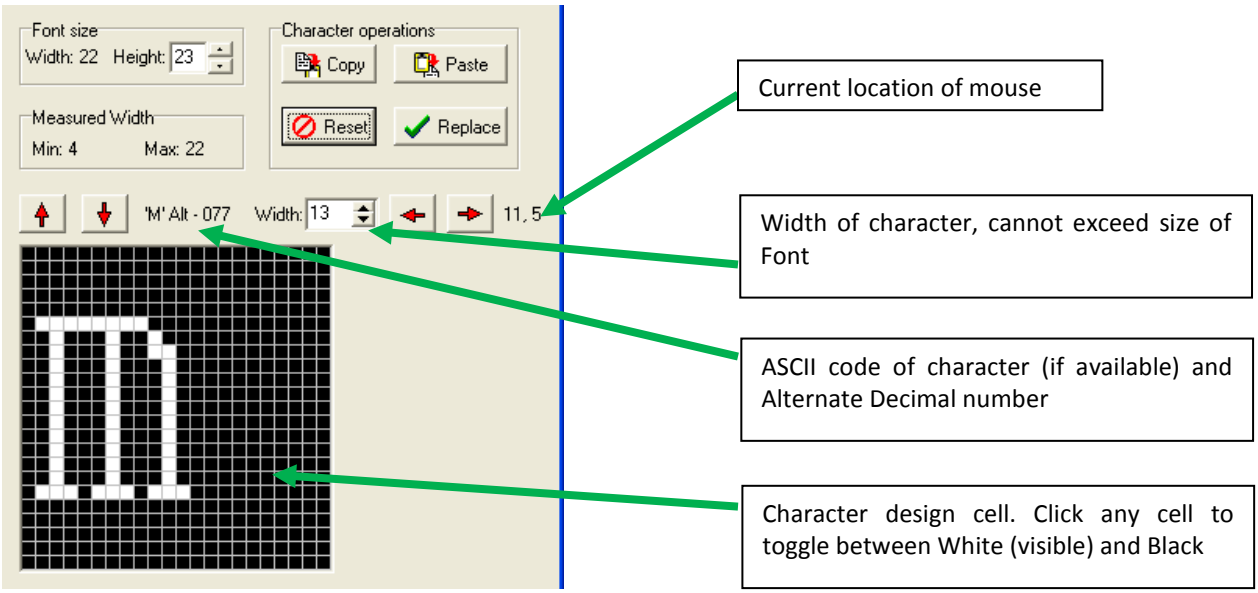


Startup

- Select the font you wish to start with from the Font Combo box.
- You can change the size of the font by clicking the up and down buttons in the 'Font Size' Panel. Due to the nature of windows fonts the height and width of the font may not change by single units, or there may be a 'gap' in the quality of the produced font.
- The rendition of the font on the left hand side of the screen is automatically enlarged or shrunk so it appears in a consistent size to the user. It may be harder to view than it really is, especially for larger fonts.
- Click on an individual character to view that character purely as a bitmap on the right hand side. The selected character has a green box around it. The box may appear to be slightly misplaced; this is due to the effects of the automatic resizing and is not an error.

EDITING

By default the G1 header files will have three fonts. You can add more fonts. User Flash must not exceed 100% when you save the file.



Character Operations

- Click 'Copy' to copy the current character to the copy buffer.
- Click 'Paste' to paste the contents of the copy buffer into the current character.
- Click 'Reset' to replace the current character with its representation from the main window font (undo).
- You can also move the whole character up, down, right or left within a cell by using arrow keys.
- After completing the character design click 'Replace'. The selected character, in the main window, will be replaced by edited character.

Character Widths

When a complex Windows font is converted to bitmapped format the widths of each character seem to vary quite a bit from their apparently 'correct' value. To change the width select the correct value and click 'Replace'.

- In the example above the width of the character 'm' is 13 pixels; the width of the font is 22 pixels.
- If the character 'm' was 'printed' as a proportional character it would be 13 pixels wide.
- If the character 'm' was 'printed' as a fixed character font it would be 22 pixels wide. It would be shifted to the right 4 pixels (floor of (22-13)/2) so as to centre it in the character space.

So, you may need to alter the character width even if you only intend using fixed fonts. If the character is always centered in the character space just set the character width to the font width, if the character is left justified you would usually set the character width to one more than the last column occupied by the character.

EXPORTING

Click 'Export' to export the converted font. You can choose to only export part of the font by truncating the font at the right and bottom.

Export File Types

Fonts can be exported as three different file types,

- A .H file suitable for use in C
- A .inc file, suitable for use in 4DGL
- A .4DFont file, suitable for importing into DISP or placing on a uSD card for use by GFX2

Export Options

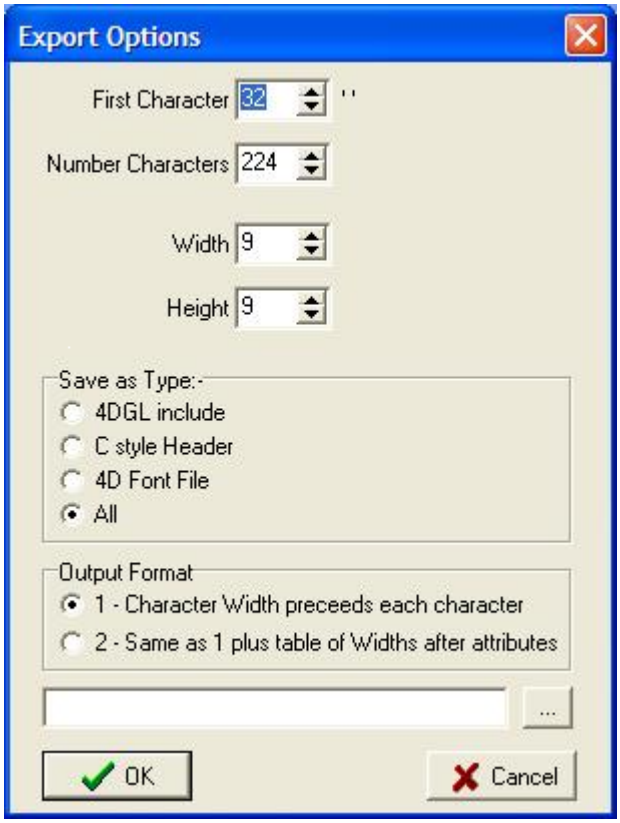
The First Character is usually the space character. But you might like to change this, for example, if you only need the numbers 0-9, or you only need uppercase characters.

The number of characters defaults to 224, but it is unlikely that you will want all of the special characters, or, in the case of a font for DISP, have enough space to save them all.

You can change the width and height here; this will simply truncate the characters to the right and the bottom. Many Windows fonts seem to have excessive 'white space' to the right and, sometimes, to the bottom. This does not matter much in the true type world of Windows, but is not very pretty and uses a lot of memory in the bitmapped arena.

DISP (Display Initialization Setup Personality) which is a Display initialization (external) tool uses Format 1.

GFX2 can handle both output formats. Output Format 2 has 'a copy' of all character widths at the front of the table to optimize string width calculations as used in GFX2.



Output Format 2 must be selected for string-width or character-width functions on the GFX2 processor to work properly.

You may need to experiment with these settings to get the desired results.

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