

PROTON and PROTON+ Compilers

PROTON PROTON+

PPRINT

Syntax

GLCD_EXTERNAL_PRINT = PPRINT

Overview

Enable variable fonts using supplementary PPRINT graphical LCD routines.

Example 1

'Print "HELLO" on a GLCD display using an ARIAL font

```
INCLUDE "PROTON_G4.INT"          ' Demo using PROTON Dev board
GLCD_EXTERNAL_PRINT = PPRINT    ' Point to PPRINT.INC file
CLS
PRINT FONT Arial_B__12          ' Declare which font to use
PRINT AT 10,40,"HELLO"
STOP
INCLUDE "ARIAL_B_12.FNT"        ' Include the font
```

Example 2

'Print the binary representation of a number preceded by "%"

```
INCLUDE "PROTON_G4.INT"          ' Demo using PROTON Dev board
GLCD_EXTERNAL_PRINT = PPRINT    ' Point to PPRINT.INC file
CLS
PRINT FONT ARIAL_B__12          ' Declare which font to use
PRINT ISBIN 1250
STOP
INCLUDE "ARIAL_B_12.FNT"        ' Include the font
```

Usage

In use, all standard print directives are handed invisibly to the Pprint routines to enable a seamless integration of standard GLCD Print commands. There are however some differences.

PRINT AT is now addressable to individual pixels

PRINT AT ypos (0 to 63),xpos (0 to 123) 'Position the cursor on the LCD

CURSOR is now addressable to individual pixels

CURSOR ypos (0 to 63),xpos (0 to 123) 'Position the cursor on the LCD

Position 0,0 is top left corner of the GLCD screen

The **AT** reference point on a character is the top left hand corner. I.e. With a character 14 pixels high, **PRINT AT** 0,0,"A" will print "A" in the top left hand corner with the bottom of the character extending down to pixel position 13.

When the directive **DECLARE INTERNAL_FONT ON - OFF**, 1 or 0 is used. Font's will be read, internally in a CDATA table, or when external fonts are added, from an I2C Eeprom.

The use of Internal font/s requires that they be referred to by a label name.

PRINT FONT Arial_B__12

This label name is the found at the top of the font table.

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When external font's are selected these font's are referred to by a number in the range of 0 – 127.

PRINT FONT 0

Due to the large amount of data required to generate font's the character set is restricted to chars 32-127. Should a custom set of graphic symbols be required, these can be added easily with a new font.

All other modifiers work in the expected manner. (See PRINT for details)

Where more than one font is required, they can be easily accommodated by including them from within the program / an include file or on Eeprom and selecting when required.

There is no default value for Print Font. The command has to be issued before Print is used.

Pic* Compatibility

Only Pics* capable of writing to their own program space can use internal fonts. As fonts require a large amount of memory, it is recommended that large program capacity devices be chosen.

External fonts will be added later but will be limited to Pics* with MSSP support.

Notes

Not all of the character is visible, as each font is sized to have 1 pixel above and 1 below blank, to enable **INVERSE** to operate correctly. In addition, chars such as “_” extend below the rest of the range considerably and artificially enlarge the character size. A 14 pixel high character might be 12 or less when printed on the screen.

See Also : PRINT, FONTCONVERTER

* Note

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FONTCONVERTER

Overview

PPRINT requires that fonts be presented in a particular format. To enable the easy generation of font's, a font conversion program has been supplied.

"Fontconverter.exe" should be saved to /INC/EXTERNAL PROGRAMS within the Proton plus compiler directory.

Within the Proton+ Editor place your cursor where you wish the font to be placed, select Options / Run / Fontconverter. This will start the Fontconverter program.

Select the font you require and press "Convert Font". Once the conversion process has been performed, you will be returned to the editor with the converted font data.

While you can incorporate it directly into your program it is recommended that it be saved as a separate file and that be included in your program at the end with the **INCLUDE** statement.

The include files should be saved in the directory the basic program is compiled too. Alternatively, as is recommended, in the INC folder.

IMPORTANT NOTICE ON COPYRIGHT'S

While converting fonts for your own private use is acceptable. The sale or distribution of copyrighted fonts should to be cleared first with the copyright holder.

Neither the authors of Fontconverter or the authors of Pprint can be held responsible for any copyright violations.

See Also : PPRINT, Running an External Program from the Editor