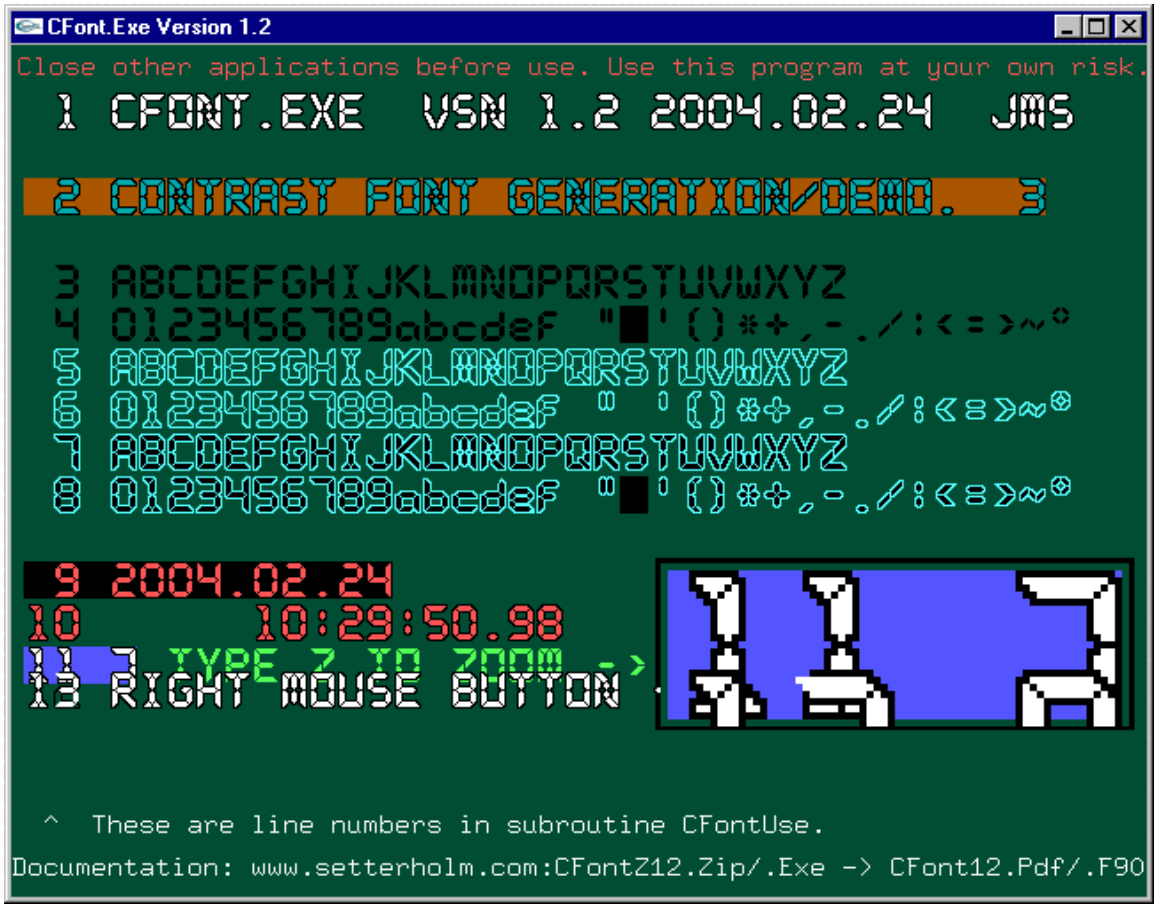
# "Contrast Font" CFont.Exe Version 1.2 2004.02.24

## Documentation - Version 1.3 2004.03.25

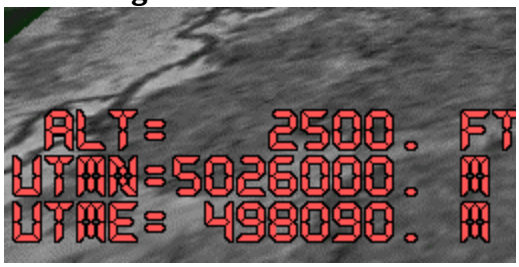
A download from www.setterholm.com




VuCFont.Bmp

**Years ago, I made extensive use of Genus Graphics font "LED30", which inspired this effort. (I had called this development "Nixie.Exe" through version 1.1, but the early nixie tubes formed full characters, rather than segmented characters.)**

**"CFont.F90" is the source code for generation, demonstration and use of the bitmap font included herein. The font supports two colors for each character (hence bi-color contrast) plus control of the background color. Being able to control the color of the voids and borders of characters as well as the color of the characters themselves allows for the preservation of contrast when the background is an arbitrary or changing scene, such as an image.**




VuOrtho.Bmp

## Caution "Use this program at your own risk."

**Close other applications before running CFont.Exe.**

**Because: This software may "locked out" for no apparent reason.**

On the rare occasions that my computer has locked out running CFont.Exe, powering down my computer has cleared the problem with no evidence of disk corruption on reboot.

## Software Overview - Source Code*

```
"CFont12.F90" contains:
 Module CFontSup
    Sub. ScrnUse  -the display & idle function callback.
                  -demonstrates a GLUT bitmap font, then calls...
    Sub. CFontUse -exercises the Contrast Font font by calling...
    Sub. AlphaCF -the Contrast Font writer.
    Sub. MenuInit –menu interface def. & right-mouse-button activation.
    Sub. MenuUse  -acts on menu choices by the user.
    Sub. KeyBdUse -the keyboard function callback and controls.
    Sub. Colors   -provides the 16 DOS colors (approximately).
 Program CFont  -is the main calling program.
 Sub. CFontgen  -converts "CFontIn.Txt" to "CFontOut.Txt" which is
                 then ready for insertion into subroutine AlphaCF.
```

* Of the 850 lines of code in CFont.F90: about 360 lines of code define the font's pixels data, and a combined total of about 230 lines of other code provide the substance ( "the beef").

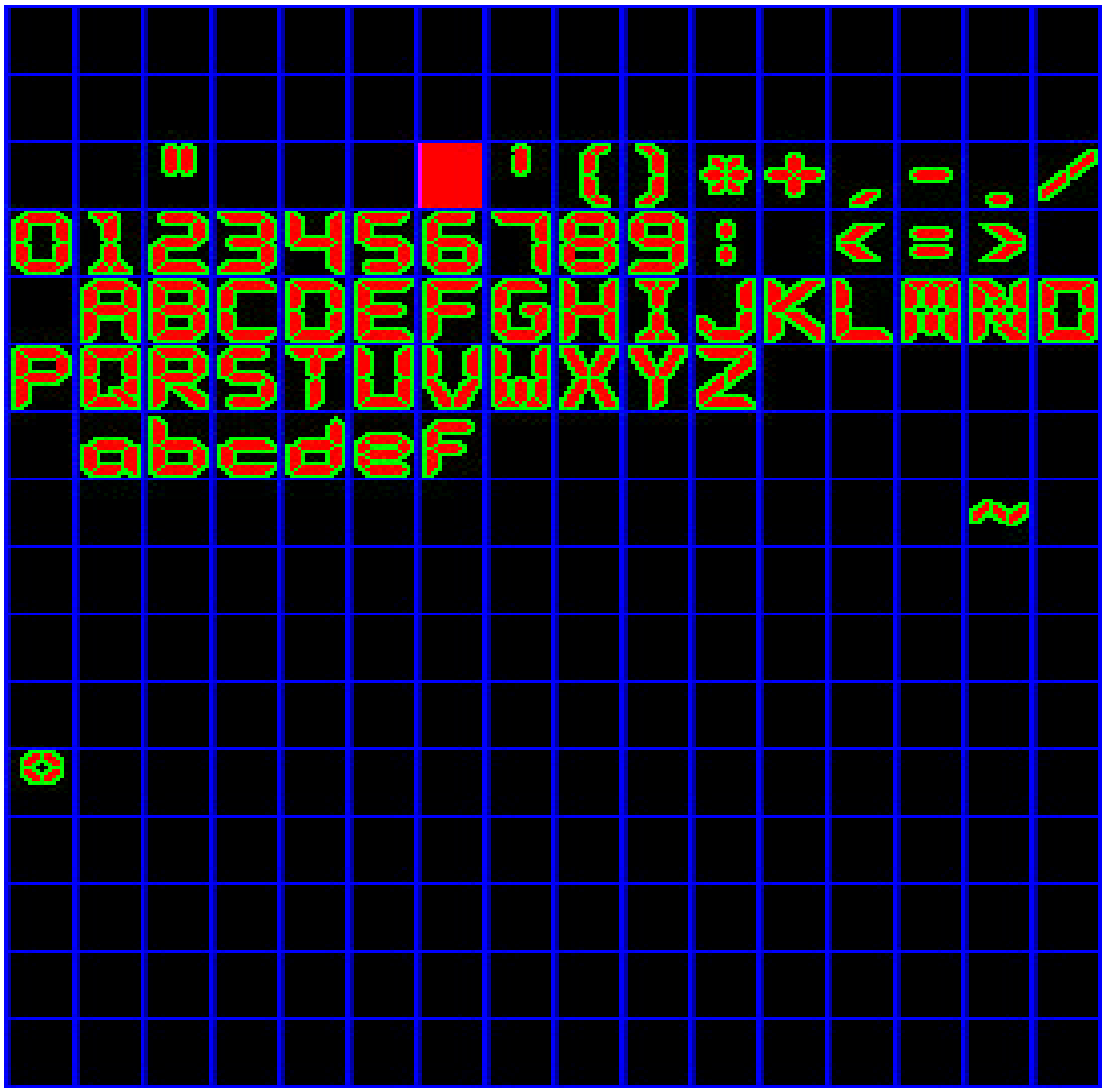
## - Other Files

```
"CFont.Exe"    is the associated executable.
"VuCFont.Bmp"  shows the screen output. (8-bits per pixel format)
"CFontIn.Txt"  is the source data 'pictures' of the font's characters.
"CFontOut.Txt" is the hexadecimal representation of "CFontIn.Txt",
               bit-sequenced appropriately, with four hexadecimal
               numbers encoding each pixel row, and 21 sets of
               such hexadecimal numbers encoding each character.
```

**The above files are compressed into: "CFZ12.ZIP"**
**and its self-extracting equivalent: "CFZ12.exe"**

| Date | Time | Size | FileName | Description |
|---|---|---|---|---|
| 02/24/04 | ~11:38a | ~43,834 | **CFont12.Pdf** | this file |
| 02/24/04 | ~11:55a | ~357,529 | **CFZ12.exe** | compressed/self-extracting |
| 02/24/04 | ~11:55a | ~333,542 | **CFZ12.ZIP** | compressed |
| 02/24/04 | 10:27a | 47,673 | **CFont12.f90** | source code |
| 02/24/04 | 11:43a | 364,544 | **CFont.exe** | application |
| 02/24/04 | 10:34p | 329,614 | **VuCFont.Bmp** | screen image from app. |
| 02/13/04 | 11:37a | 33,846 | **VuOrtho.bmp** | snippet of font on an image |
| 02/24/04 | 10:20a | 50,535 | **CFontIn.Txt** | editable font |
| 02/24/04 | 11:44p | 23,206 | **CFontOut.Txt** | processed font ready for insertion in Sub. AlphaNix |
| 11/08/01 | 01:27a | 237,568 | **GLUT32.DLL** | which came from the WINNT\System32\ in NT4.0 (Modifying this subdirectory is not an amateur sport. Very important files reside there.) |

The functionality of CFontIn.Txt can be achieved using a .Bmp image:



LedJms.Bmp

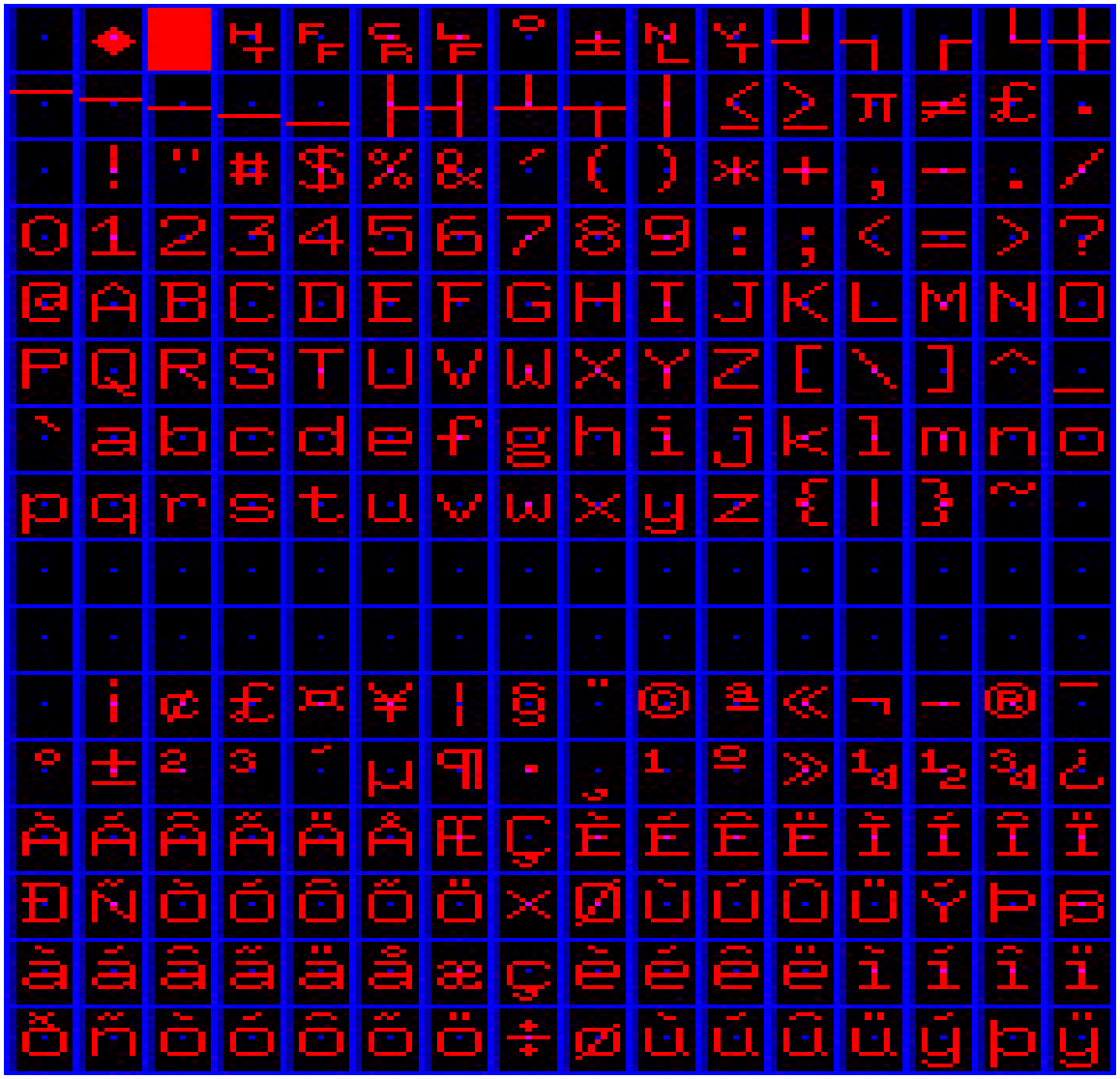
The .Bmp - is presently be 24 bits-per-pixel.
- has 16 characters per row and at least 16 rows
of characters, regardless of the number of characters actually defined.
(This is meant to simplify visual comparison of ASCII fonts.)
- The first row has ascii characters #0 thru #15 (if defined).
- The second row has ascii characters #16 thru #31 (if defined). Etc.

The ".Bmp" header is standard, except that the two (real*4) variables normally used for "pixels-per-meter" are used for two (integer*4) 'pixels-per-character' .

!Colors: Red =255 nom. [1,255] is a character pixel.
Green=255 nom. [1,255] is a voids/border pixel. (Optional.)
-If red>0 is found (with no green) within a character,

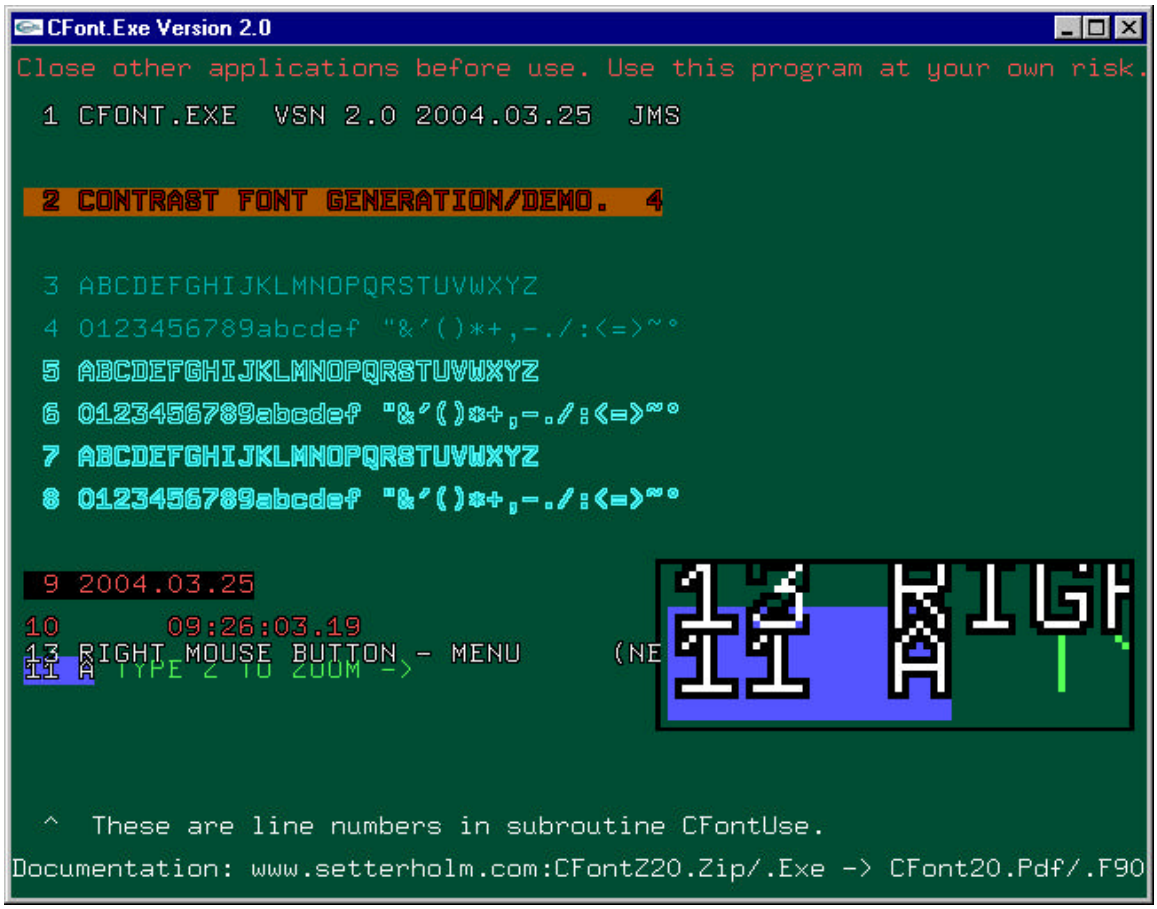
then the voids/borders are automatically computed.
Blue =255 boxes individual character definitions (lines 1 pixel wide).
Also used to mark the center-most pixel(s) of each box.
=160 is blank space between characters as displayed
(0 or more pixels on either side of each character).
-All values of blue are presently ignored by the reader.
They are an aid manually in editing/aligning character pixels.
A character box with all pixels having red=green=0 are undefined,
except the #0 box (null), for which red=green=0 is the definition.

This is font “GLUT_BITMAP_9_by_15” rendered in 10 x 16 pixel boxes (with some minor editing) :



CFont10x16.Bmp

Here the font above is being displayed as a ‘contrast font’ via automatic generation of voids & borders in a second color :




VuFnt20.Bmp

CFont.Exe was programmed on an Athlon 700 processor with a GeForce3 video card under Windows NT 4.0 service pack 6. Compaq Visual Fortran 6.6b and NIST's "F90GL" Fortran bindings to OpenGL were used. The screen resolution is 640 x 480 with "32bit" color.

GLUT32.DLL should be in the same directory with CFont.Exe, if it is not already in your computer's path elsewhere. (At runtime, Windows 2000 automatically looked for the Glut32.DLL in the same directory, and found it.) (GLUT is an alternative to GLAUX which bypasses almost all the complexities of Microsoft "Windows" programming.)

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