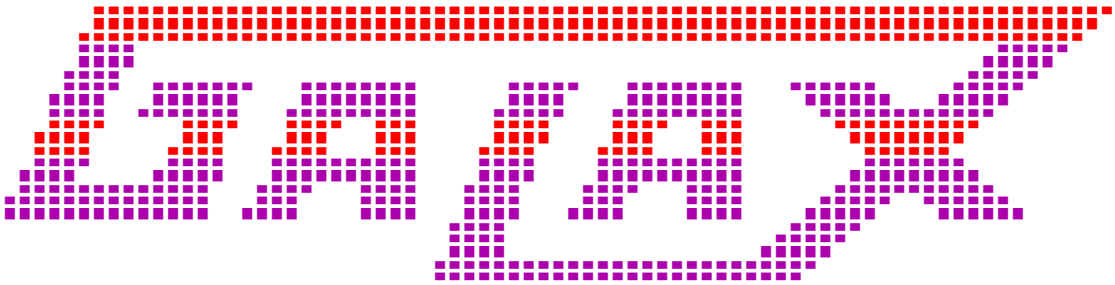
P100 GALAX.XYZ 102 Fri 17 Dec 14:27/51
Amazing new way to browse the web 110
New font resurrects Teletext..... 201



No images are used on this page!

This page uses a TrueType font to show Teletext text and graphics. If it does not display correctly, try this version with static images.

You can use this font to create authentic looking Teletext web pages.

Teletext font by 3d@galax.xyz 2014
Home End Static Email

Some Teletext Tools

A few handy utilities:

- Convert raw Teletext for the web (includes sample pages)
- Draw Teletext graphics
- Generate double-height text
- Teletext character set table
- The complete Teletext specification

Download the Teletext Font

The font is available with pixels in several aspect ratios, with square pixels and then with aspect ratios 10% to 40% wider than they are high:

- MODE7GX0.TTF 1.0:1 Square pixels
- MODE7GX1.TTF 1.1:1
- MODE7GX2.TTF 1.2:1
- MODE7GX3.TTF 1.3:1 * default *
- MODE7GX4.TTF 1.4:1

These versions might help with IE compatibility:

- MODE7GX0.EOT 1.0:1
- MODE7GX1.EOT 1.1:1
- MODE7GX2.EOT 1.2:1
- MODE7GX3.EOT 1.3:1
- MODE7GX4.EOT 1.4:1

This page uses MODE7GX3.TTF as that gives a BBC Micro MODE 7 screen with an aspect ratio very close to 4:3 [1]. It looks very close to the Teletext display of a typical TV as well.

This stylesheet is used by this page and the html generated by the tools above:

- TELETEXT.CSS

[1] The characters are 6 by 10 logical blocks, and the screen is 25 rows of 40 chars. (40*6*1.3)/(25*10)=1.248

Alpha Mode

Regular Height

```
    0123456789ABCDEF
0000
0010
0020  !"#$%&'()*+,-./
0030 0123456789:;<=>?
0040 @ABCDEFGHIJKLMNO
0050 PQRSTUVWXYZ←↖→↑_
0060 -abcdefghijklmno
0070 pqrstuvwxyz[‖]
0080
0090
00A0    £
00B0       ■     ¼½¾
00C0
00D0
00E0
00F0         ÷
    0123456789ABCDEF
```

Double Height

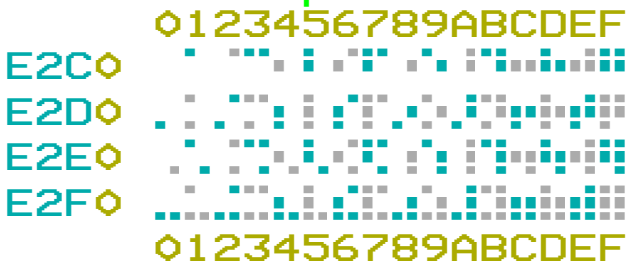
```
    0123456789ABCDEF
E020  !"#$%&'()*+,-./
E120 0123456789:;<=>?
E030 @ABCDEFGHIJKLMNO
E130 PQRSTUVWXYZ←↖→↑_
E040 -abcdefghijklmno
E140 pqrstuvwxyz[‖]
E050    £
E150       ■     ¼½¾
E060         ÷
E160
E070
E170
E0A0
E1A0
E0B0
E1B0
E0F0
E1F0
```

0123456789ABCDEF

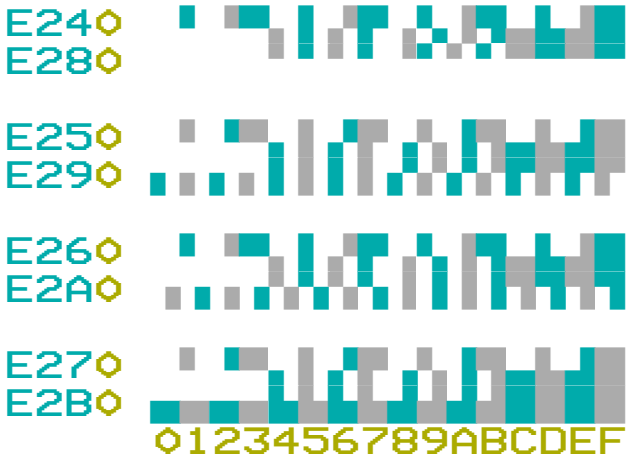
Graphics Mode

Contiguous

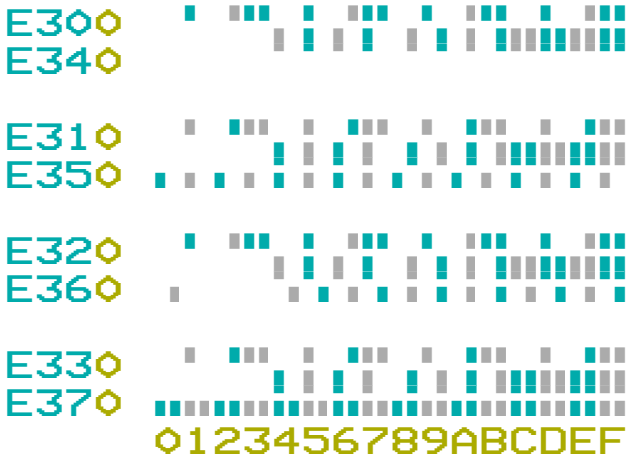
Separated



Double Height



Double Height Sep.



Calculating Alpha Character Values

Characters in the range 00-FF hex (0-255 decimal) use their normal Unicode values. Note that the position of some characters is different from their ASCII value and/or their value assigned b the TELETEXT standard.

Add E000 hex (57344 decimal) to the original char for Double Height - Upper, and add E100 hex (57600 decimal) for Double Height - Lower.

For example, to display a double height capital A, which has the code 41 hex (65 decimal), use the codes E041 and E141 hex (57409 and 57665 decimal):

A E041 = 41 + E000
A E151 = 41 + E100

A 57409 = 65 + 57344

57665 = 65 + 57600

Calculating Graphic Block Char Values

The 64 standard graphics blocks start at E200 hex (57856 decimal). Each block is character into 6 blocks. Add on these values for each block that is on:

Hex		Decimal	
1	2	1	2
4	8	4	8
10	20	16	32

For example the code for character is E219 hex (57881 decimal):

```
E219  = E200  + 1 + 8 + 10
57881 = 57856 + 1 + 8 + 16
```

Add on 40 hex (64 decimal) for Double Height Upper characters, and 80 hex (128 decimal) for Double Height Lower.

For separated graphic characters add on C0 hex (192 decimal). This can be combined with double height. For example to display the character in double height and separated, use the codes E319 and E359 hex (58137 and 58201 decimal):

```
 E319 = E219 + 40 + C0
 E359 = E219 + 80 + C0

 58137 = 57881 + 64  + 192
 58201 = 57881 + 128 + 192
```

Note that the TELETEXT standard uses 64 (40 hex) for the value of the lower right pixel within the graphics block when calculating graphics characters.

A Few Notes

The Font was based on ModeSeven by Andrew Bulhak. I added the double height characters, all of the various graphics blocks, and fixed a few errors. I created this because I

couldn't find a free font that included the graphics block characters, someone might have created one before though.

The advantage of this approach over one that uses images for each of the graphics characters is that the font file itself is relatively small, and the browser doesn't have to download many hundreds of small images. Teletext pages are often rendered as a single image, but the problem with that is that the text can't be copied, searched, or indexed- it's more hassle to maintain than simple static HTML fiiles too.

The main negative aspect of my approach (using a font over images) is that support for the @font-face attribute is still a bit patchy. This page should work fine in modern browsers however.

This stylesheet allows characters to be arranged in many ways which would be impossible in the standard Mode 7 Teletext screen. For example, the character that changes the foreground colour causes a space in the page, and changing the background colour causes two spaces. If you are looking to recreate an authentic Teletext web page you must pay attention to these limitations.

Mode 7 is 25 rows of 40 characters. The first character on each row is usually blank, which allows first character to be use to set the foreground or background colour on any row while still aligning the left edge of the text.

The values of the graphical characters in the Teletext character set can also be calculated by assigning a power of 2 to each of the 6 sub-blocks, but the bottom right sub-block is assigned 64 where I used 32.

If you are crazy enough to do the calculations by hand as I did for this page, you will find performing the calculations in **hex** much simpler than in **decimal**- the examples above should be enough to demonstrate this. I added the **decimal** equivalents for people who

aren't interested in learning to count in hexadecimal just to use this font.

Using this font and stylesheet you can do things that are illegal within the TELETEXT standard, such as two-colour double height text (which the BBC Micro's MODE 7 allows too), black foreground, and instant changes of background and foreground colours that would require empty spaces on a TELETEXT page or MODE 7 screen.

This font is free to use in non-commercial projects. I would appreciate a credit and notification that you are using it. Let me know if you see any errors, or have any other feedback!

Teletext font by 3d@galax.xyz 2014

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