

## The Ultimate Oldschool PC Font Pack v2.0: FONT LIST

- All fonts include the full **CP437** (DOS/US) character range; fonts labeled "+Plus" have extended Unicode versions, too.
- Most of these fonts were made for CRT or LCD monitors that didn't necessarily have square pixels, unlike current displays. Alongside the simple square-pixel versions, these fonts have aspect-corrected variants to reproduce the original appearance.
- For fonts that *were* originally used in square-pixel resolutions (or close enough that the difference is negligible), no aspect-corrected variants are provided.

### I. Fonts from the IBM PC & Family

These are the original character sets provided with the IBM PC line (PC, XT, PCjr, AT, PS/2, etc.) in hardware or firmware, and with official add-on products from IBM, such as graphics adapters and certain versions of DOS. Naturally, they were also duplicated by a huge number of 3rd-party hardware manufacturers.

#### IBM PC System BIOS

With pre-EGA video, the system BIOS provides the default **8x8** font for graphics mode (the firmware contains only the lower 128 ASCII characters; the upper half has to be loaded separately). For [EGA and up](#), IBM included the full version in the on-board video ROM, for text *and* graphics modes that require an 8x8 font.

The wide '2x' version is seen e.g. in 160x200 (PCjr) or 320x400 (VGA). The '2y' version is what you get in 640x200 modes.

**IBM BIOS** (8x8; charsets: CP437, +Plus)

**IBM BIOS-2x** (8x8; charsets: CP437, +Plus)

**IBM BIOS-2y** (8x8; charsets: CP437, +Plus)

#### IBM First-Generation Video - CGA/MDA

IBM's first two video solutions shared the same character ROM, which provided the text mode font: neither CGA nor MDA could redefine it. Cards for the US market contained the CP437 character set; the non-US characters in the 'Plus' fonts were adapted from localized ROMs off cards sold internationally (most of the Greek, Cyrillic and Hebrew blocks), plus manual additions.

#### CGA (Color/Graphics Adapter) and PCjr:

For CGA, the ROM contains two different 8x8 fonts usable in text mode. The default 'thick' variant differs from the [BIOS font](#) in only four characters (♣, ♠, \*, S); PCjr text modes use this font too. The alternate 'thin' one is selectable in CGA only and requires hardware modification. I've included 1:1 (40-column) and half-width (80-column) versions for both of these.

**IBM CGA** (8x8; charsets: CP437, +Plus)

**IBM CGA-2y** (8x8; charsets: CP437, +Plus)

**IBM CGAthin** (8x8; charsets: CP437, +Plus)

**IBM CGAthin-2y** (8x8; charsets: CP437, +Plus)

## MDA (Monochrome Display/Printer Adapter):

The same ROM includes the 14-scanline font used by the MDA for its single mode – 80-column text. Its characters are stored as 8 pixels wide, but displayed with an additional 9th column: blank for most glyphs, but for box/block-drawing chars it duplicates the 8th. The same font was used on the Hercules Graphics Card and a host of other clones.

**IBM MDA** (9x14; charsets: CP437, +Plus)

## IBM Second-Generation Video - EGA/MCGA/VGA

These adapters introduced fully programmable character sets, so DOS could now redefine them for international scripts – the multilingual 'Plus' versions here are based on various DOS code pages. 80-column text was evidently the main focus by this point: at 40 columns, the funny pixel aspect ratio makes the default font even \*less\* readable than CGA.

## EGA (and later):

The EGA's text modes (and 640x350 graphics mode) use the new **8x14** font by default. The **8x8** font is identical to the [PC BIOS](#) one, but it gets its own version, since the narrower aspect ratio in 350-line modes is specific to EGA:

**IBM EGA 8x14** (8x14; charsets: CP437, +Plus)

**IBM EGA 8x14-2x** (8x14; charsets: CP437, +Plus)

**IBM EGA 8x8** (8x8; charsets: CP437, +Plus)

**IBM EGA 8x8-2x** (8x8; charsets: CP437, +Plus)

When the EGA is used with a monochrome monitor, character cells receive a bonus 9th column just like on MDA/Hercules. The 14-line font even sports wider variants of some glyphs for this purpose.

**IBM EGA 9x14** (9x14; charsets: CP437, +Plus)

**IBM EGA 9x14-2x** (9x14; charsets: CP437, +Plus)

**IBM EGA 9x8** (9x8; charsets: CP437, +Plus)

**IBM EGA 9x8-2x** (9x8; charsets: CP437, +Plus)

## VGA/MCGA (and later):

The PS/2 standards further modified the system font, with a character cell 16 pixels tall and a few stylistic changes ('O', '0' etc.).

With VGA, 9-dot character cells were now the default, and the resulting **9x16** glyphs make up the famous font which remains most strongly associated with ASCII art on the PC, and probably with the entire DOS era in general. The [EGA](#) sizes were also available, but with different aspect ratios due to the extra vertical resolution.

**IBM VGA 9x16** (9x16; charsets: CP437, [+Plus](#))  
**IBM VGA 9x16-2x** (9x16; charsets: CP437, [+Plus](#))  
**IBM VGA 9x14** (9x14; charsets: CP437, [+Plus](#))  
**IBM VGA 9x14-2x** (9x14; charsets: CP437, [+Plus](#))  
**IBM VGA 9x8** (9x8; charsets: CP437, [+Plus](#))  
**IBM VGA 9x8-2x** (9x8; charsets: CP437, [+Plus](#))

Plain old 8-dot characters were still available, both on VGA and on its lobotomized low-end cousin, MCGA (where they were the only option). The 8x8 size here was exactly the same as the [PC BIOS](#) font once again, so no sense in adding yet another version of it.

**IBM VGA 8x16** (8x16; charsets: CP437, [+Plus](#))  
**IBM VGA 8x16-2x** (8x16; charsets: CP437, [+Plus](#))  
**IBM VGA 8x14** (8x14; charsets: CP437, [+Plus](#))  
**IBM VGA 8x14-2x** (8x14; charsets: CP437, [+Plus](#))

## Other IBM Hardware

### 3270 PC (IBM 5271):

This one has some [rather exotic video hardware](#), but also offers a basic 80x25 text mode with a distinct, (mostly) sans-serif **9x14** font. Unlike most PC hardware fonts, the 9th column is stored in the actual bitmap data.

**IBM 3270pc** (9x14; charsets: CP437)

### PGC (Professional Graphics Controller):

IBM's first high-end PC graphics card has a 400-line text mode with an **8x16** character cell. It basically takes the 8x14 [EGA font](#) and adds two scanlines, which most characters simply use as extra padding.

**IBM PGC** (8x16; charsets: CP437)

**IBM PGC-2x** (8x16; charsets: CP437)

### PC Convertible (IBM 5140):

Mostly based on CGA, the Convertible adds support for redefinable **8x8** charsets. The default is a rather elaborate serif font, which IBM also used as a basis for PC-DOS 3.20's LCD-specific codepages.

The squat, built-in monochrome LCD had square pixels at 640x200 (that's 16:5 - how's that for you widescreen fanatics?), but the optional external monitor was a regular 4:3 CRT, so the aspect-corrected versions are based on that.

**IBM Conv** (8x8; charsets: CP437)

**IBM Conv-2x** (8x8; charsets: CP437)

**IBM Conv-2y** (8x8; charsets: CP437)

### PS/2 Model 30 (early revision):

In the earliest variant of the PS/2 Model 30 (the 'rev. 0' BIOS dated 09/02/86), the built-in **8x16** font is slightly different from the [MCGA/VGA font](#) of the later units: "0", "O", "B", and characters with descenders and umlauts are closer to their [EGA forms](#). The Model 30 is MCGA-only, so there is no 9-dot-wide version.

**IBM Model30r0** (8x16; charsets: CP437)

**IBM Model30r0-2x** (8x16; charsets: CP437)

### PS/2 Model 30/35 (alternate fonts):

Certain PS/2 models (at least the ISA-based models 30 and 35) include additional fonts in ROM, alongside the default [8x16 MCGA font](#). These are all rather nondescript, and I'm not aware of any software that ever actually used them; I haven't seen them documented officially either, so such software is unlikely to exist.

IBM Model3x Alt1 (8x16; charsets: CP437)

IBM Model3x Alt2 (8x16; charsets: CP437)

IBM Model3x Alt3 (8x16; charsets: CP437)

IBM Model3x Alt4 (8x16; charsets: CP437)

## PS/55:

The [PS/2's Japanese cousin](#) had generously large bitmap fonts to support that language's various scripts. Since full CJK fonts are outside the scope of this collection, the version here is a **CUSTOM REMAPPING** to CP437 (with supplements).

Internally the bitmaps are 12x24 dots. Later, they were replicated in IBM DOS/V for generic PCs; at least the half-width Latin alphanumerics appear to be exactly the same, so this version is almost identical to the ["JP-24"](#) font in the DOS/V section. Almost, but not quite: the [PS/55's display adapter padded the characters](#) to **13x29**, so this font follows suit.

IBM PS/55 re. (13x29; charsets: CP437)

## 8514/A, XGA, XGA-2, Image Adapter/A - Adapter Interface drivers:

These are a bit of an exception here, since they're not really hardware fonts. IBM's more advanced PC video standards had, among other things, hardware-accelerated text output for their high-resolution graphics modes. These were accessed with an API called simply the Adapter Interface ("AI"), and the AI drivers for DOS contained some fonts for this purpose. (There's also an 8x14 size, but it basically copies the EGA/VGA font.)

True text modes remained purely a VGA function, although XGA(-2) had integrated the VGA part into the chipset, so they still used [the same fonts as VGA](#).

IBM XGA-AI 7x15 (7x15; charsets: CP437)

IBM XGA-AI 12x20 (12x20; charsets: CP437, **+Plus**)

IBM XGA-AI 12x23 (12x23; charsets: CP437)

## Fonts from Various IBM PC-DOS Versions

These are NOT what most would call "the" DOS fonts, since DOS normally uses the video hardware's character set (or .CPI versions that strongly resemble it). Still, a number of DOS versions provided different fonts for specific purposes.

## ISO-compliant IBM PC-DOS fonts:

Starting with IBM PC-DOS 5.02 (and later in MS-DOS as well), the "ISO.CPI" file included a bunch of new 8x16 codepage fonts. These were intended to comply with the (then-new) ISO standard for display ergonomics, namely ISO 9241-3:1992, "Ergonomics - Office Work with Visual Display Terminals (VDTs) - Visual Display Requirements", which went into extreme detail regarding character height, stroke width, size uniformity, spacing, and so on so forth.

```
IBM DOS ISO8 (8x16; charsets: CP437)
IBM DOS ISO8-2x (8x16; charsets: CP437)
IBM DOS ISO9 (9x16; charsets: CP437)
IBM DOS ISO9-2x (9x16; charsets: CP437)
```

## DOS/V - Japanese versions of IBM (PC-)DOS / MS-DOS:

Technically these aren't hardware/text mode fonts, so they're another exception here. DOS/V (V for VGA, not 5.0) ran in permanent graphics mode to support Japanese full-width glyphs and double-byte charsets, so you could choose from [a whole heap of resolutions](#) (all with a square pixel ratio) and character cell sizes.

However, the following versions do *\*not\** include the Japanese scripts. They're **REMAPPED/REMADE** for codepage 437/US, so they preserve only the half-width Latin alphanumerics, with custom additions to fill out the rest.

These originate from the various IBM versions of PC-DOS/V. The **8x19** and **12x30** fonts mostly duplicate their smaller siblings, with more generous vertical padding. For the 24/30-pixel versions, cf. [IBM PS/55](#):

```
DOS/V re. JPN12 (6x12; charsets: CP437)
DOS/V re. JPN16 (8x16; charsets: CP437)
DOS/V re. JPN19 (8x19; charsets: CP437)
DOS/V re. JPN24 (12x24; charsets: CP437)
DOS/V re. JPN30 (12x30; charsets: CP437)
```

Microsoft came in a bit later in the game; MS-DOS/V used a similar system, through it redesigned (and renamed) the font files:

```
DOS/V re. ANK16 (8x16; charsets: CP437)
DOS/V re. ANK19 (8x19; charsets: CP437)
DOS/V re. ANK24 (12x24; charsets: CP437)
DOS/V re. ANK30 (12x30; charsets: CP437)
```

## Chinese PC-DOS versions (Taiwan & PRC):

These were technically DOS/V as well, and the ASCII portion of the 24/30-pixel fonts is identical to the Japanese version, so these larger charsets are not repeated here.

In Taiwan, the Latin fonts unique to PC-DOS T7.0/V do have native CP437 encoding, so no remapping was needed. In fact they look like they're probably derived from OS/2:

**DOS/V TWN16** (8x16; charsets: CP437)

**DOS/V TWN19** (8x19; charsets: CP437)

The fonts from the PRC version are once again REMAPPED, and slightly adjusted for legibility to boot. Interestingly, they look quite close to those used on the Japanese [IBM JX](#) (still missing from this collection).

DOS/V re. PRC16 (8x16; charsets: CP437)

DOS/V re. PRC19 (8x19; charsets: CP437)

## II. Fonts from PC-Compatible Computers

The deluge of IBM PC compatibles included some outliers that extended on IBM's video standards, although most of them didn't. A lot of the clone makers contented themselves with cloning IBM's character bitmaps, too. These are naturally absent from this collection - only those with their own font designs are included here.

### Acer Inc.

#### Acer 710:

Acer's 'Turbo XT' machine from ~1987 includes an on-board video controller for CGA, MDA, and Hercules compatibility. For now, only the CGA fonts have been extracted for this collection.

**Acer710 CGA** (8x8; charsets: CP437)

**Acer710 CGA-24** (8x8; charsets: CP437)

### Amstrad Consumer Electronics

#### Amstrad PC1512 / PC1640 / PPC:

These computers all feature a nicely readable 8x8 font with a consistent style; very small differences exist between models. Characters are wider and more tightly spaced than in IBM's fonts. Besides the default codepage 437, Danish and Greek fonts were available, and the PC1640/PPC models added Portuguese; I used these as a basis for the 'Plus' unicode version.

The PPC line adds built-in monochrome support, along with the 9x14 font that this entails, but it's nearly identical to that of the [IBM MDA](#).

**Amstrad PC** (8x8; charsets: CP437, +Plus)

**Amstrad Pc-2y** (8x8; charsets: CP437, +Plus)

## AST Research

### AST Premium Exec:

This laptop came with a 3:4, 640x480 VGA LCD. At only 400 scanlines, normal 8x16 VGA text would appear squashed, so the display could be set to "Expand mode", which enables **8x19** characters for a square-pixel 80x25 text mode. AST's version of DOS 5.0 includes 19-scanline fonts for multiple codepages, which I've combined into the 'Plus' version here.

**AST PremiumExec** (8x19; charsets: CP437, +Plus)

## AT&T Information Systems

### AT&T PC6300:

The rebadged Olivetti M24, with its enhanced CGA-compatible video, introduced 400-line text and graphics modes for increased resolution. These supported an 8x16 character set, which was similar to the [IBM MDA](#) font, but with more of a slab serif style on the uppercase letters, and more consistent metrics for the lowercase and accented Latin characters.

This is the text mode version - in the 640x400 graphics mode, the only difference is a more rounded 'h' (identical to the IBM MDA one). The 8x8 BIOS font, on the other hand, was exactly the same as [IBM's](#).

**AT&T PC6300** (8x16; charsets: CP437)

**AT&T PC6300-2x** (8x16; charsets: CP437)

## Compaq Computer Corp.

### Compaq Portable III, Portable 386:

In terms of video these two portables are identical: both are CGA-compatible, but add an extended 640x400 resolution and allow redefinable characters. The default font is loaded from the BIOS, rather than a dedicated ROM. The orange plasma screen uses square pixels, so the 1:1 fonts here are already aspect-correct.



**Compaq Port3** (8x16; charsets: CP437)

**Compaq Port3-2x** (8x16; charsets: CP437)

### Compaq-DOS (alternate fonts):

Compaq's OEM versions of MS-DOS include their own lighter versions of the system font, loadable from a command-line utility. These versions come from Compaq-DOS v3.31; later versions introduced slight differences, but chiefly in the way of adding more of those weird little gaps in the glyphs.

These fonts aren't specific to a video mode/resolution, so there's no "correct" pixel aspect as such.

CompaqThin 8x16 (8x16; charsets: CP437)

CompaqThin 8x14 (8x14; charsets: CP437)

CompaqThin 8x8 (8x8; charsets: CP437)

## Corona Data Systems / Cordata

### Cordata PPC-21:

Corona rode the initial wave of PC compatibles, and was praised for its high-quality text displays. This particular 'luggable' has 640x325 mono graphics, but in the 80-column text mode, each character is 16 dots horizontally - twice the usual resolution. With the original CRT's 1:3 pixel aspect, the result is very well-defined.

Cordata PPC-21 (16x13; charsets: CP437)

### Cordata PPC-400:

This 1984 portable increased the text resolution even further: the monochrome CRT now handled 400 scanlines, and character cells were 16x16. At 80 columns, you effectively have a pixel resolution of 1280x400 - much sharper than even VGA and later. Another very nice font which deserves a 'Plus' enhancement.

Cordata PPC-400 (16x16; charsets: CP437, **+Plus**)

## Data General Corp.

### Data General/One (first model):

Known from the minicomputer market, DG introduced in 1984 what was probably the first true PC-compatible laptop with a full-sized 4:3 LCD panel. Alas, the display panel was remembered mostly for its atrociously poor contrast. Perhaps that was the reason for the alternate font with its heavier weight.

**DG One** (8x8; charsets: CP437)

**DG One-2y** (8x8; charsets: CP437)

**DG One Alt** (8x8; charsets: CP437)

**DG One Alt-2y** (8x8; charsets: CP437)

## ITT Information Systems

### ITT Xtra:

An early (1984) PC clone, although this font comes from the 1985 BIOS (v2.0), with the upper ASCII part courtesy of ITT's version of MS-DOS. A squarish, (mostly) sans-serif design that somehow looks like a cross between the earlier and later versions of the Amiga Topaz font.

**ITT Xtra** (8x8; charsets: CP437)

**ITT Xtra-2y** (8x8; charsets: CP437)

## Kaypro Corp.

### Kaypro 2000 (graphics mode):

One of the first PC-compatible laptops. The text-mode font was pretty much the same as the IBM CGA, but the BIOS (i.e. graphics mode) one is quite different, with thin strokes and sort of a 'techno' look. Interestingly the built-in LCD came in [two form factors](#): the aspect-correct versions are based on the larger screen; the smaller one has 1:1 pixels (or close enough) at 640x200.

**Kaypro2K G** (8x8; charsets: CP437)

**Kaypro2K G-2y** (8x8; charsets: CP437)

## Leading Edge Hardware Products

### Leading Edge PC Model M:

See the [Sperry PC \(HT3070-03\)](#), a somewhat improved version marketed by another vendor.

### Leading Edge PC Model D:

The rather successful Model D was another system with a dual mode on-board video controller, which could be switched to CGA or monochrome, and the respective ROM fonts shared the same basic style between them. (I'm not certain that my source for the CGA charset was 100% correct, so please let me know if you own this PC and want to help out.)

**LE Model D CGA** (8x8; charsets: CP437)

**LE Model D CGA-2y** (8x8; charsets: CP437)

**LE Model D Mono** (9x14; charsets: CP437)

## Micro Byte Systems

### Micro Byte PC230:

An interesting Australian computer based on the NEC V30 CPU, with built-in video hardware that could handle CGA, monochrome (Hercules) and EGA graphics. The firmware was extended by a 'SoftBIOS' loaded off the system disk, and at least some versions supported an extended "EGA+" mode, which accounts for the presence of an **8x16**-pixel font.

**MBytePC230 CGA** (8x8; charsets: CP437)

**MBytePC230 CGA-2y** (8x8; charsets: CP437)

**MBytePC230 EGA** (8x14; charsets: CP437)

**MBytePC230 Mono** (9x14; charsets: CP437)

**MBytePC230 8x16** (8x16; charsets: CP437)

## Nixdorf Computer AG

### Nixdorf 8810 M15:

This 10MHz laptop (manufactured by Matsushita) features a 4:3 monochrome LCD and CGA-level compatibility. As the resolution is 640x400, the character cell is doubled in size to **8x16**, with an atypically heavy-weight font.

**Nix8810 M15** (8x16; charsets: CP437)

#### **Nixdorf 8810 M16:**

A 286 model - once again with line-doubled CGA emulation on a 4:3 640x400 panel, and a more standard-looking **8x16** font this time around. There was also a VGA version, but that one used generic copies of the IBM fonts.

**Nix8810 M16** (8x16; charsets: CP437)

#### **Nixdorf 8810 M35:**

The M35 is a desktop machine, once again sourced from Matsushita, with a conservative 4.77MHz 8088 CPU and an on-board CGA controller. (There's a possibility that it also supports monochrome, with a corresponding 14-line font; if you have a source, please drop me a line.)

**Nix8810 M35** (8x8; charsets: CP437)

**Nix8810 M35-2y** (8x8; charsets: CP437)

### **Olivetti Personal Computers**

#### **Olivetti M24:**

See [AT&T PC6300](#), the rebadged model for the US market.

#### **Olivetti M15, M15 Plus:**

These two 80c88-based portables share a CGA-resolution (640x200), 4:3 monochrome display, with a distinct system font which shaves one pixel off the usual cap/ascender height. That reduces the tendency of adjacent rows to stick together, and makes text more legible than the average **8x8** job.

**Olivetti M15** (8x8; charsets: CP437)

**Olivetti M15-2y** (8x8; charsets: CP437)

#### **Olivetti M211v, M316, D33:**

Like AST's [Premium Exec](#), these VGA-equipped laptops increase the character dimensions to **8x19** square pixels, so that 25 rows of text can fill up the 640x480 monitor. They do play around with the design a bit more, though:

**Olivetti MxVGA** (8x19; charsets: CP437)

## Sanyo Business Systems

### Sanyo MBC-16:

I do not have much information about this computer, beyond the fact that it has CGA (and perhaps mono?) capabilities. As a matter of fact, I need a better source for the font(s) - the upper/non-ASCII half here can be considered a placeholder. If you own one, please get in touch; the same 8x8 font also appears to be used on the MBC-670, and perhaps others.

**SanyoMBC16** (8x8; charsets: CP437)

**SanyoMBC16-2y** (8x8; charsets: CP437)

## Seequa Computer Corp.

### Seequa Chameleon:

Although this is an interesting dual-CPU (Z80+i8088) luggable, the PC-compatible half of its split personality is compatible enough to be included in this category. Text and graphics output are CGA-type, and the **8x8** font doesn't try very hard to distinguish itself from IBM's original.

**SeequaCm** (8x8; charsets: CP437)

**SeequaCm-2y** (8x8; charsets: CP437)

## Sperry Corp.

### Sperry PC (HT3070-03):

The Sperry PC was basically the original [Leading Edge](#) PC (latter designated the "Model M") sold concurrently by a different vendor, but Sperry souped up their version a little. Most interestingly, there was an optional adapter/monitor combo that pulled off such tricks as 256 colors at 320x200, and hi-res 640x400 video (using **8x16-dot** characters) with 16-color text/graphics overlay: not bad at all for 1984! Both the CGA and hi-res fonts are reproduced here.

**SperryPC CGA** (8x8; charsets: CP437)

**SperryPC CGA-2y** (8x8; charsets: CP437)

**SperryPC 8x16** (8x16; charsets: CP437)

## Tandy Corp.

### Tandy Video I - early Tandy 1000 series (1000, A, HD, EX, SX, TX, HX):

One peculiarity of the 1000 line is the 225-line text modes - using an **8x9** character cell to improve readability. All but the earliest models (pre-EX) boot into 225-line mode by default, so the 8x9 variant is more commonly seen, but it is possible to set "TV mode" for standard **8x8** text using 200 lines.

**Tandy1K-I 200L** (8x8; charsets: CP437)

**Tandy1K-I 200L-2y** (8x8; charsets: CP437)

**Tandy1K-I 225L** (8x9; charsets: CP437)

**Tandy1K-I 225L-2y** (8x9; charsets: CP437)

### Tandy Video II - later Tandy 1000 series (SL, SL/2, TL, TL/2, TL/3, RL):

By this point, MS-DOS 3.x was included in the system ROM; but the Tandy Video II chip still couldn't redefine fonts for code-page support, so two character sets from MS-DOS were built in: CP437 (US) and CP850 (Western European Latin). As they're identical to the DOS .CPI fonts, the expanded 'Plus' version here is based on the latter.

**Tandy1K-II 200L** (8x8; charsets: CP437, **+Plus**)

**Tandy1K-II 200L-2y** (8x8; charsets: CP437, **+Plus**)

**Tandy1K-II 225L** (8x9; charsets: CP437, **+Plus**)

**Tandy1K-II 225L-2y** (8x9; charsets: CP437, **+Plus**)

The Video II chip could also drive a monochrome monitor (for MDA/Hercules modes), hence the additional **9x14** font. This one was cribbed from MS-DOS as well, so it lacks the wider 'M'/'T'/'W'/etc., which usually show up in hardware 9-dot fonts.

**Tandy1K-II Mono** (9x14; charsets: CP437)

## Toshiba Corp.

### Toshiba Satellite series:

The earlier Satellite laptops were released when text mode was still a relevant use-case, and their built-in VGA fonts share a consistent sans-serif design which is quite distinctive and readable. Optionally, the text display could be stretched to fill the 4:3 screen, so the aspect-corrected versions conform to the expected VGA pixel aspects.

This version of the font comes from the Satellite 4200; some other models introduced a few (negligible) differences.

**ToshibaSat 8x8** (8x8; charsets: CP437)

**ToshibaSat 9x8** (9x8; charsets: CP437)

**ToshibaSat 8x14** (8x14; charsets: CP437, **+Plus**)

**ToshibaSat 9x14** (9x14; charsets: CP437, **+Plus**)

**ToshibaSat 8x16** (8x16; charsets: CP437, **+Plus**)

**ToshibaSat 9x16** (9x16; charsets: CP437, **+Plus**)

### **Toshiba T-series:**

This doesn't apply to the original T1x00 laptops, which used duplicates of IBM's fonts, but to later models starting somewhere around 1986's T3100. They came with either amber plasma displays or LCD panels, and allowed the selection of single-dot or double-dot fonts - both of which had a custom-made stylized design.

The aspect-corrected variants are based on the gas-plasma models (e.g. T3100, T3200, T5100) which sported 640x400 pixels on their 4:3 screens.

**ToshibaTxL1 8x8** (8x8; charsets: CP437)

**ToshibaTxL1 8x16** (8x16; charsets: CP437, **+Plus**)

**ToshibaTxL2 8x8** (8x8; charsets: CP437)

**ToshibaTxL2 8x16** (8x16; charsets: CP437, **+Plus**)

### **Miscellaneous clones - BIOS/OEM fonts**

These all replace the 8x8 PC BIOS font in their respective machines, so they only ever show up in graphics mode, and include just the lower 128 ASCII characters. The other 128 were added manually to complete the CP437 character set, with varying amounts of effort to keep the design consistent (and most of these didn't merit much effort).

### **Copam Electronics BIOS:**

A prolific PC clone manufacturer from Taiwan. At least for version 3.86 of their generic XT-class BIOS (1985), the author seemingly grabbed a copy of the standard CGA font and proceeded to add/remove pixels pretty much at random. The result is about as hideous as you'd expect.

**Copam BIOS** (8x8; charsets: CP437)

**Copam BIOS-2y** (8x8; charsets: CP437)

#### DTK/ERSO XT clone BIOS:

Yet another variation on the CGA character set, without much of an effort put into it. This particular font is taken from v2.42 of the generic Taiwanese clone BIOS, although the other revisions were probably every bit as nondescript.

**DTK BIOS** (8x8; charsets: CP437)

**DTK BIOS-2y** (8x8; charsets: CP437)

#### Phoenix Technologies BIOS (v2.x):

Phoenix's brand of BIOSes (at least two known revisions: v2.27, v2.51) used an interesting graphics mode font with a bit of an Amiga style to it, although the capitals and numerals also resemble the classic Atari/Namco arcade font somewhat. As a result of the Phoenix BIOS line's success, this font can be found on quite a number of machines -- from generic beige boxes to Commodore's PC-compatible range (Commodore PC-I/II/III/Colt).

Some later iterations (e.g. v3.13) use a different 8x8 font which is identical to that of the [Phoenix EGA](#).

**Phoenix BIOS** (8x8; charsets: CP437)

**Phoenix BIOS-2y** (8x8; charsets: CP437)

#### VTech Laser XT BIOS:

Another nasty-looking font, this time a thin-stroked one, which seems to imitate a disheveled version of the alternate/thin CGA font. In sharp contrast, it clearly has the happiest-looking smiley faces in the bunch.

**VTech BIOS** (8x8; charsets: CP437)

**VTech BIOS-2y** (8x8; charsets: CP437)



### III. Fonts from 3rd-Party Video Hardware

This is where we cover all non-IBM graphics cards that were available for PC compatibles over the years (without being restricted to particular machines). Here too, the great majority of chipset/board manufacturers never really bothered to depart from IBM's original character designs, but there are quite a few exceptions.

#### Acer Inc.

##### Acer VGA:

At least some VGA boards based on Acer's M3125 video BIOS used their own 8x8 font design. For the other standard VGA character sizes, the bitmaps matched those of IBM, so only the 8x8 charset has been included here.

**Acer VGA 8x8** (8x8; charsets: CP437)

**Acer VGA 8x8-2y** (8x8; charsets: CP437)

**Acer VGA 9x8** (9x8; charsets: CP437)

#### American Megatrends, Inc.

##### Video cards w/AMI EGA BIOS:

EGA boards using AMI's video BIOS (e.g. the Matrox PG1281) have the following fonts, which cannot seem to decide whether they're serif or sans-serif, often in the same character. The **8x8** size also shows up in machines based on AMI's \*system\* BIOS, from the 8088 to the 486 era at least, as the default graphics mode font for CGA.

**AMI EGA 8x8** (8x8; charsets: CP437)

**AMI EGA 8x8-2y** (8x8; charsets: CP437)

**AMI EGA 8x14** (8x14; charsets: CP437)

**AMI EGA 9x14** (9x14; charsets: CP437)

#### ATI Technologies

##### ATI Wonder (and later) video cards:

This series of fonts includes every standard cell size supported by the usual CGA/EGA/VGA modes, and is used on a very wide range of ATI cards: most of the EGA/VGA Wonder, Mach 32/64, Rage, and similar lines. The style is maintained across sizes, and the 9-column variants have their own alternate wide glyphs ('M', 'T' and co.) to replace their 8-column counterparts.

**ATI 8x8** (8x8; charsets: CP437)

**ATI 8x8-2y** (8x8; charsets: CP437)

**ATI 9x8** (9x8; charsets: CP437)

**ATI 8x14** (8x14; charsets: CP437)

**ATI 9x14** (9x14; charsets: CP437)

**ATI 8x16** (8x16; charsets: CP437)

**ATI 9x16** (9x16; charsets: CP437)

### ATI Small Wonder Graphics Solution:

ATI's enhanced CGA/MDA/HGC clone offered (among other things) the ability to output 132-column text. The card has a specific 'thin' font for this purpose; on a monochrome display (MDA-compatible), 132-column mode is achieved by using 6 pixel wide character cells. This results in a pixel aspect of 5:8 on a typical 3:4 monitor.

(The normal CGA/MDA fonts on the card are identical to [IBM's](#), rather than the usual ATI fonts seen above.)

**ATI SmallW 6x8** (6x8; charsets: CP437)

## Eagle Computer

### Eagle Spirit CGA board (alternate fonts):

Eagle Computer produced a number of early PC compatibles; the Spirit was a 1983 luggable with a built-in 9" CRT. This CGA board was released for that specific machine, although it's (probably) usable with any IBM or clone. The default font is yet another identical copy of IBM's CGA charset, but interestingly the character ROM contains 3 more alternate fonts.

The first one ('Alt1') is identical to the system font from Eagle's 1630 and PC-2 computers, if not others. The other two are sci-fi & fantasy-inspired fonts: clearly not meant for "serious" use, but pretty elaborate and well-done regardless.

**EagleSpCGA Alt1** (8x8; charsets: CP437)

**EagleSpCGA Alt1-2y** (8x8; charsets: CP437)

**EagleSpCGA Alt2** (8x8; charsets: CP437)

**EagleSpCGA Alt2-2y** (8x8; charsets: CP437)

**EagleSpCGA Alt3** (8x8; charsets: CP437)

**EagleSpCGA Alt1-3y** (8x8; charsets: CP437)

## Epson Corp.

### Epson MGA Q205A:

The Q205A is a "Multi-mode Graphics Adapter" - the 'M' doesn't just stand for monochrome, as this board could be toggled for either CGA or Hercules compatibility. As such, it was provided with **8x8** and **9x14** ROM fonts to match, and even went the extra mile of including an alternate single-dot CGA font.

**EpsonMGA** (8x8; charsets: CP437)  
**EpsonMGA-2y** (8x8; charsets: CP437)  
**EpsonMGA Alt** (8x8; charsets: CP437)  
**EpsonMGA Alt-2y** (8x8; charsets: CP437)  
**EpsonMGA Mono** (9x14; charsets: CP437)

## Everex Systems

### Everex Micro Enhancer:

The Micro Enhancer series was a line of so-called "super EGA" boards with various extended feature sets. The ME Deluxe EV-657 supported (among other things) some proprietary text modes in a rare example of odd character widths, e.g. 132x44 characters at **5x8** dots each, and 94x51 at **7x8**.

The EV-659A was a similar board, which supported resolutions such as 640x480 (although it wasn't VGA-compatible). It is assumed that this explains the **8x16** VBIOS font.

**EverexME 5x8** (5x8; charsets: CP437)  
**EverexME 7x8** (7x8; charsets: CP437)  
**EverexME 8x16** (8x16; charsets: CP437)

## Paradise Systems

### Paradise VGA Plus:

This SVGA board had its own set of extended modes, and the DOS drivers included a set of fonts for them. At least on non-multisync monitors, they were rendered as 7 rather than 8 dots wide: 132x43 characters at **7x9** pixels each, and 132x25 at the **7x16** size. These are clearly thin-stroke versions of the original IBM bitmap fonts.

**Paradise132 7x9** (7x9; charsets: CP437)

**Paradise132 7x16** (7x16; charsets: CP437)

## Phoenix Technologies

### Video cards w/Phoenix EGA BIOS:

EGA cards based on Phoenix's 82C435 controller have these character sets built in. They all follow a consistent design with less rounded curves, sharper diagonals, and thinner strokes on the more elaborate characters. All the usual character sizes for EGA text modes make an appearance, complete with the monochrome-friendly **9x14** size.

Unlike standard EGA chipsets this controller also supported a 400-line text mode, so there's an **8x16** variant (with an unusually small x-height), but no VGA-compliant 9x16. The **8x8** size can also be seen in machines based on the Phoenix \*system\* BIOS v3.x, as the default for CGA graphics.

**PhoenixEGA 8x8** (8x8; charsets: CP437)

**PhoenixEGA 8x8-2y** (8x8; charsets: CP437)

**PhoenixEGA 8x14** (8x14; charsets: CP437)

**PhoenixEGA 9x14** (9x14; charsets: CP437)

**PhoenixEGA 8x16** (8x16; charsets: CP437)

## Trident Microsystems

### Trident TVGA series:

Trident's inexpensive (S)VGA chipsets largely didn't do much to distinguish themselves in terms of speed and performance. Fittingly, they didn't go out of their way to make their text characters distinctive either, sticking very closely to IBM's VGA and co. with only some token modifications here and there.

**Trident 8x8** (8x8; charsets: CP437)

**Trident 9x8** (9x8; charsets: CP437)

**Trident 8x14** (8x14; charsets: CP437)

**Trident 9x14** (9x14; charsets: CP437)

**Trident 8x16** (8x16; charsets: CP437)

**Trident 9x16** (9x16; charsets: CP437)

**TVGA 8800/8900** chipsets had some extra text modes that called for an **8x11**-dot cell. Different models used different fonts for this; most are either ugly, or simple dupes of the 8x8 font with more padding. This is about the only one that approaches legibility, taken from an Octek TVGA8900B card (and slightly modified here). The 1:1 aspect is as seen in proprietary mode 51h (640x480), but mode 55h (1056x480) had a roughly 3:5 pixel aspect.

**Trident 8x11** (8x11; charsets: CP437)

## Rendition Inc.

### Rendition Verite chipsets:

Various 3D boards based on **Verite 1000 / 2x00** chipsets (Sierra Screamin' 3D, Intergraph Intense 3D 100, QDI Vision-1, etc.) use these charsets, which are nicely readable with a squarish/more angular take on the [IBM VGA](#) character design, including stylized punctuation marks and special chars. There are no alternate wide glyphs for 'M', 'T' and their likes, as there usually are for the 9-dot-wide variants.

**Verite 8x8** (8x8; charsets: CP437)

**Verite 8x8-2y** (8x8; charsets: CP437)

**Verite 9x8** (9x8; charsets: CP437)

**Verite 8x14** (8x14; charsets: CP437)

**Verite 9x14** (9x14; charsets: CP437)

**Verite 8x16** (8x16; charsets: CP437)

**Verite 9x16** (9x16; charsets: CP437)

## Wyse Technology

### Wyse WY-700:

Originally a terminal manufacturer, Wyse was noted for its hi-res text displays. The WY-700 was one of the high-end graphics solutions that appeared for the emerging GUI, desktop publishing and CAD markets in the mid-'80s, before VGA, SVGA or VESA were a thing. It could emulate standard CGA/monochrome on its specialized 1280x800 "paper-white" monitor, so it featured a large **16x16** character set, for either 80x25 or 80x50 text mode.

This came in two hardware charsets: a thick serif font, which can pass as a higher-resolution version of the [IBM MDA](#) font, and a thin sans-serif one which is probably less of an eye-strain at 80x50.

**Wyse700a** (16x16; charsets: CP437)

**Wyse700a-2y** (16x16; charsets: CP437)

**Wyse700b** (16x16; charsets: CP437)

**Wyse700b-2y** (16x16; charsets: CP437)

#### IV. Fonts from PC "Semi-Compatibles"

These computers generally ran some kind of x86 CPU, and their own customized versions of MS-DOS, but only had limited degrees IBM PC compatibility. That puts these fonts less firmly within the project's scope, but it's not as if they're collected anywhere else, plus some of these machines were more interesting than a vanilla PC clone, so let's bring 'em on.

#### ACT / Apricot Computers

##### Apricot line (PC, Xi, F1, F2, Xen):

The desktop Apricots all supported a hi-res 800x400 monochrome monitor, giving 80x25 characters at **10x16** pixels each. Models with the color option added lower resolution fonts: **8x8** on 200-line displays, and **8x10** on 256-line ones (which made the pixels almost-square at 320x256, or 16:15 to be exact).

**Apricot Mono** (10x16; charsets: CP437)

**Apricot 200L** (8x8; charsets: CP437)

**Apricot 200L-2y** (8x8; charsets: CP437)

**Apricot 256L** (8x10; charsets: CP437)

**Apricot 256L-2y** (8x10; charsets: CP437)

The 286-based **Xen** was more of a PC-AT competitor, and it retained the hi-res mono option, but the color modes were brought closer to EGA at 640x350, and the corresponding font was accordingly **8x14** dots in size.

**ApricotXenC** (8x14; charsets: CP437)

## Apricot Portable:

The portable version was somewhat different in that it didn't have a true text mode - it permanently ran in 640x200 graphics mode, and as every pixel was addressable, the text could be customized with loadable soft fonts. It was mostly seen with Apricot's default 200-line font (above), but at least one version of the system disk swapped it for this one:

**ApricotPortable** (8x8; charsets: CP437)

## Fujitsu

### Fujitsu FM-Towns series:

A successful line in Japan with quite a few models. Display options varied, but most modes had square-pixel resolutions, so no aspect correction should be needed for the fonts. The FM-Towns didn't have a full CP437 encoding, so rather than 100% faithful conversions, the versions here are **ADAPTED/REMAPPED**; they only cover the half-width character forms.

**FM Towns re. 8x8** (8x8; charsets: CP437)

**FM Towns re. 8x16** (8x16; charsets: CP437)

**FM Towns re. 8x16-2x** (8x16; charsets: CP437)

## Mindset Computer Corp.

### Mindset:

This innovative but short-lived 1984 machine offloaded quite a few tasks to custom chipsets, Amiga-style. These coprocessors also handled advanced graphics at 320 or 640 pixels across, and 200 (or 400 interlaced) lines vertically. "Text mode" was emulated in graphics, so it supported custom character sizes and designs - even proportional fonts, but the system font was a monospaced **8x8**.

**M i n d s e t** (8x8; charsets: CP437)

**M i n d s e t - 2 x** (8x8; charsets: CP437)

**M i n d s e t - 2 y** (8x8; charsets: CP437)

## NEC Corp.

### NEC APC III:

NEC's 8086-based model from '84 was praised for being technically superior to contemporary PCs, and the display was no exception, with low (320x200), medium (640x200) or hi-res (640x400) output in either mono or color, and separate text/graphics buffers.

The APC III is closely related to the PC-9800 series marketed by NEC in Japan, and its fonts appear to be CP437 adaptations of that platform's native character sets.

```
NEC APC3 8x8 (8x8; charsets: CP437)
NEC APC3 8x8-2y (8x8; charsets: CP437)
NEC APC3 8x16 (8x16; charsets: CP437)
NEC APC3 8x16-2x (8x16; charsets: CP437)
```

## Philips Information Systems

### Philips :YES:

The :YES was an 80186 machine with proprietary on-board video allowing 160/320/640x252 graphics. Consequently, characters are **8x10** pixels each for a total of 25 text rows, at an almost-square pixel aspect ratio. The 40/80-column text mode font ('T') is slightly different from the one used in graphic mode ('G').

There was an optional add-on for hi-res mono support (probably with a matching font), but that's MIA as of this writing.

```
Philips :YES G (8x10; charsets: CP437)
Philips :YES G-2y (8x10; charsets: CP437)
Philips :YES T (8x10; charsets: CP437)
Philips :YES T-2y (8x10; charsets: CP437)
```

## Research Machines

### RM Nimbus PC-186:

A semi-compatible mainly seen in the British educational market, with a graphics subsystem supporting 320x250 or 640x250 RGB output. For standard 40x25/80x25 text mode, the PC-186 used an **8x10** character cell, like some of the other "incompatibles" in this section. The PC2 model was presumably similar.

```
RM Nimbus (8x10; charsets: CP437)
RM Nimbus-2y (8x10; charsets: CP437)
```



## Siemens

### Siemens PC-D:

The PC-D was yet another 80186 machine that ran its own customized version of MS-DOS; video output was monochrome at a 640x350 resolution, with a character size of **8x14** pixels to match. The system font is a readable, thin-stroke type which sort of resembles classic engineering/technical drawing text.

Siemens PC-D (8x14; charsets: CP437)

## Tandy Corp.

### Tandy 2000:

For a 1983 computer the 2000 was certainly powerful, and no slouch in terms of visuals either, with a hi-res display and various add-on options providing 640x400 graphics in color or monochrome. The character generator was based on RAM rather than the typical ROM, so custom fonts could be programmed; this is the default **8x16** font loaded on boot:

Tandy2K (8x16; charsets: CP437)

Tandy2K-2x (8x16; charsets: CP437)

## Telenova

### Telenova Compis / Compis II:

Another computer aimed at the educational market, this time the Scandinavian one, the Compis (AKA Scandis) natively ran CP/M-86 from ROM, but it also had its own port of MS-DOS - which supported the PC's CP437 character set seen here. (Graphically, it could pull off 640x400 and even a monochrome 1280x800 'ultra hi-res' mode.)

Compis (8x16; charsets: CP437)

## Toshiba Corp.

### Toshiba T300:

Toshiba's 1983 not-quite-compatible machine one-upped the PC in a few respects, among them a faster 6 MHz 8088 and a selection of improved graphics adapters, from 320/640x200 to a 640x500 option showing 16 colors from a palette of 256. Text modes were all 25 rows, so those 500 scanlines make me unsure about the correct aspect for the **8x16** font.

ToshibaT300 8x8 (8x8; charsets: CP437)

ToshibaT300 8x8-2y (8x8; charsets: CP437)

ToshibaT300 8x16 (8x16; charsets: CP437)