

# Test Document

This document (named `Test Document.fm` with results in `00-Test.ps`) collects everything I could think of in one place. If all the letters and symbols line up properly, the book files should be good to go!

## Typographic Ruffles and Flourishes

Everything uses Adobe Type 1 font files, except for the TrueType `Lucida Console` that shows up in the code listings. See the last page of this test document for a font index.

Normal body text uses Adobe Caslon, with some *italic* and **boldface** here and there. Other character formats include **Commands**, **Filenames**, **Inline Code**, **Logic Symbols**, and Μαθη Συμβολοσ (that's a burst of "Math Symbols") such as 3×5 and 15 Ω.

Here are most of the paragraph and character faces, in a table format with shading that we should also verify:

Function	Face
Body text: <i>italic</i> and <b>bold</b> for emphasis	Adobe Caslon
Captions	Helvetica
Source code listings	Lucida Console
<b>Hardware logic signals</b>	<b>Courier Bold</b>
Disk file names	American Typewriter Condensed
<b>DOS and system commands</b>	<b>Trade Gothic Condensed Bold</b>
Special symbols: × μ Ω © ↑	Symbol Set

The special symbols are cross, mu, capital omega, copyright, and up-arrow.

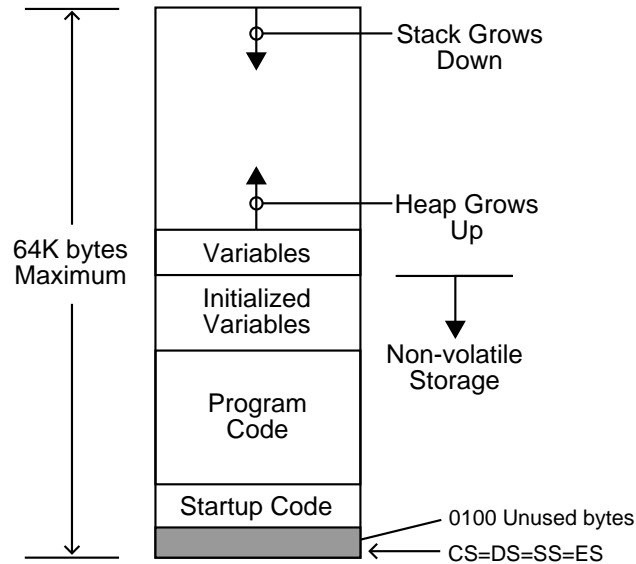
## Line Art Figures

The original line art files came from a Mac system in EPS format and some of those remain unchanged. However, for the rest, I converted them into TIFF files, tweaked them on a Windows 95 machine, and saved them either as TIFF or uncompressed Windows BMP files.

## The Embedded PC's ISA Bus

Figure 1

This is an EPS file. There should be a dark-gray screen at the bottom of the large rectangle, but if it comes out solid black, that's OK with me. This figure does not fill the page from margin to margin.

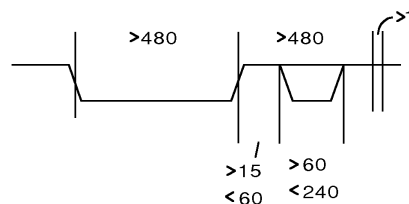


The captions use an un-anchored text box positioned at the top or bottom of the page, with the figures in an un-anchored graphic box within the text box. That let me tweak the gap between the figure and the surrounding text to make the answer come out right... sometime the automatic wrap didn't quite look right.

While we're on a page with lots of rules, note the margins: 7/8 inch on the binding side and 3/4 inch on the outside.

Figure 2

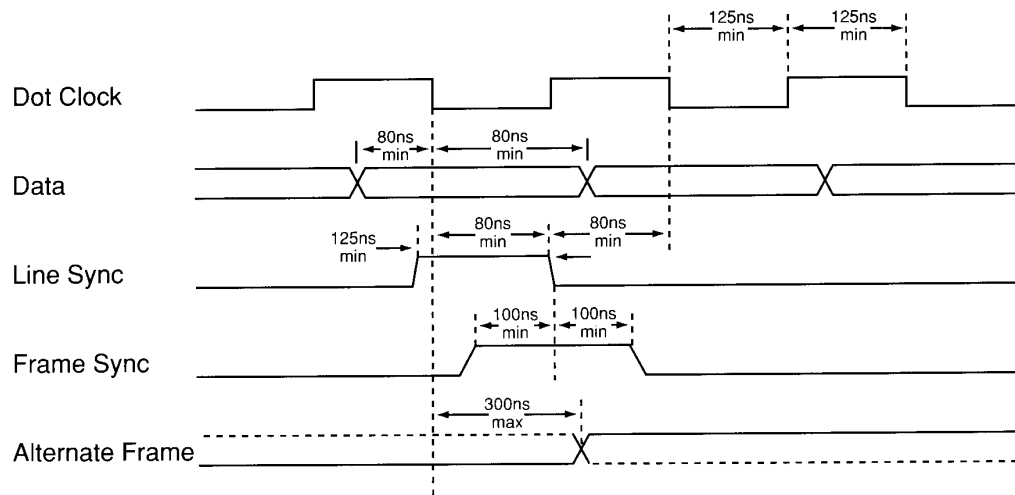
Here's a little bitty TIFF file that I converted from EPS so I could lay out the figure somewhat differently than it appeared in the magazine. The result should look about the same...



## Test Document

Figure 3

I scanned this figure from the magazine page. The result is a TIFF file stretched equally in both axes to fit the page margins at 300 dpi.



Unfortunately, because some of the magazine illustrations used an obsolete version of a program that I couldn't find a conversion for, I wound up scanning the files from the printed pages using an HP Scanjet IIp with 300 dpi optical resolution. The two previous figures should show the difference, which I desperately hope won't be terribly visible.

Note the rules below the figure above and above the caption below (got that?)... they should be 2 points, slightly less than the rules at the top and bottom of the page. They are placed manually after graphic images, so their location may vary.

Figure 4

Speaking of scanned images, here's the Peer-to-Peer logo that appears on the title pages. It came from a printed sample (of much higher quality than the figure above) and should look reasonably good.



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### Photographs

The photos started life as 35 mm color slides, turned into files a Photo CD, became grayscale images, and then got cropped and resized to fit.

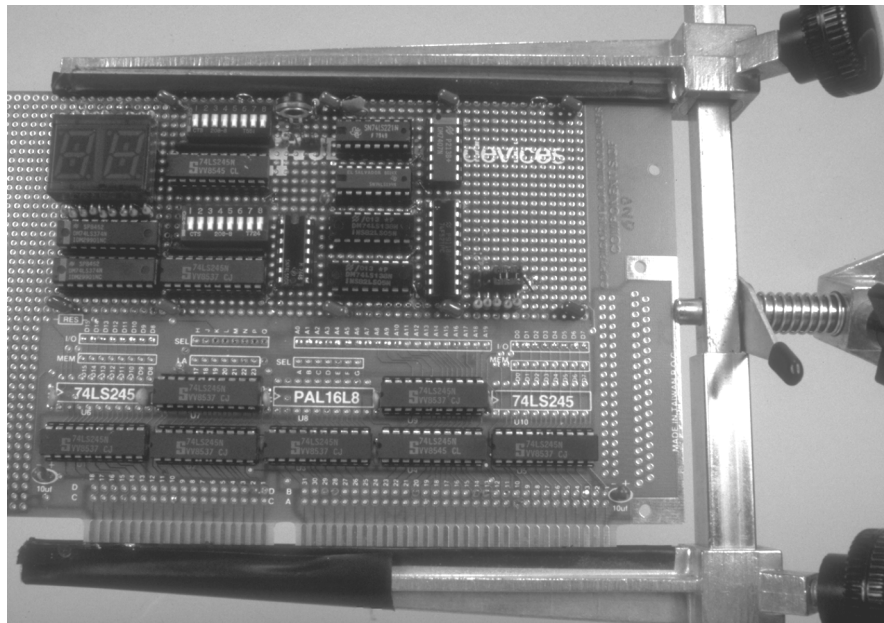
They are all 8-bit grayscale images, *not* digitally halftoned, and have 300 dpi resolution at their intended printing size. I figured that you folks could do halftoning much better than I can; the only thing I have here is Microsoft Imager... and it offers me the choice of a 70 lpi screen, which looks awfully gritty to me.

The “scope photo” in Chapter 13 (Photo 1, page 225 or thereabouts) is actually a TIFF file that I converted from a PCL original sent by my digital scope. No photography involved, but I still think of it as a photo rather than a line-art figure.

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Photo 1

Here's a photo of the board, appearing as Photo 3 in Chapter 3. The original color shot shows a green fiberglass circuit board with black epoxy ICs and silver solder dots. The board holder is shiny aluminum. All the photos are 300 dpi and sized to fit (I hope!).



## Code Listings

These listings, alas, are the justification for the only TrueType font in the book.

I picked `Lucida Console` because it is a fixed-pitch font with a really blocky appearance that remains legible at 8 points, just what I needed to fit the listings into these margins. Good old `Courier` is just too spindly at that size, even though it seems popular. See?

It also appears in the body text to mark `code fragments`, which look like that. In that case, I use 9 points to make it match the 10 point Caslon a little better.

It turns out that Adobe finally admitted (sort of) that there's a bug in Framemaker that messes up duplexing through the Lexmark Postscript driver. Whether or not it affects any other drivers is up for grabs, but the symptom is that some (not all, just a few) pages with listings have a blank spurious reverse side... which messes up the pagination for the rest of the chapter.

If `Lucida Console` absolutely doesn't work, we can substitute `Courier Bold` and verify that it doesn't introduce any line breaks anywhere. Most of the listings don't reach 80 columns, but goofs like that are the bane of printed code.

### Listing 5

The canonical First C Program prints "Hello, world!" and returns to the operating system. Our ISA-bus target system doesn't have an operating system, so, after this version of `Hello.C` displays its message, it begins an endless loop showing the contents of a simple counter. A BIOS function provides a half-second delay between displays.

```
#include <8086io.h>
#include "e:\mc86\custom\8086base.h"

#define LOOPDELAY 8                /* units of 64K microseconds */

unsigned int Counter;

main() {
    serinit(9600,1);                /* set up serial port */
   _putstr("Hello, world!\n");
    Counter = 0;

    while (TRUE) {
        printf("Counter: %5u\r",++Counter);
        asm {
            MOV    CX,#LOOPDELAY
            MOV    DX,#0
            MOV    AH,#$86
            INT     $15
        }
    }
}
```

## The Embedded PC's ISA Bus

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