

# Re: floppy drive interface specifications

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- *From:* [mzenier@xxxxxxxxxx](mailto:mzenier@xxxxxxxxxx) (Mark Zenier)
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In article <445648a1\$1\_5@xxxxxxxxxxxxxxxxxx>, Rene Tschaggelar <none@xxxxxxxx> wrote:

Thanks, that should start me going.  
The objective is to create a floppy drive. Not a magnetic one though

Here's some stuff I dug up a few years back when I was thinking about a project for an SPI interfaced floppy controller for low end embedded projects.

There are ISO standards for the format, with specs for the CRC and stuff like that, if you need to have the simulator interpret the data stream (track/sector and stuff like that).

ANSI X3.80-1988 the physical drive interface, (some strange obsolete stuff in there). I got better information from the National PC8477B super FDC controller chip datasheet.

ISO 7487/3 360 kbyte (MS-DOS) Double Sided Double Density disk format

ISO 8378/1 720 kbyte 5 1/4" disks media description

ISO 8378/2 seldom used standard format

ISO 8378/3 format used by MS-DOS

ISO 8630/1 1.2 Meg 5 1/4 inch media

ISO 8630/2 seldom used standard format

ISO 8630/3 format used by MS-DOS

ISO 9529/1 3.5 inch media

ISO 9529/2 1.44 Meg format

A couple of other items that look useful that are in my notes are Motorola Application Note AN917 about their analog floppy read/write ICs , and an article in Computer Design for February 1980.

The main wierdness that you'd have to deal with is that the controllers predistort the timing of pulses to compensate for bit time shifts caused by bit crowding on the media. So if your drive simulator amounts

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to a dumb logic analyzer, (just saving the bit stream), you'd need to compensate for this predistortion and then save each bit transition time with a resolution of (SWAG) 10 nanoseconds or so. (The controller derives the read timing with a PLL, so if the bit timing is too coarse, it might FUBAR).

What happened to my project? Well, I copied all of my floppy media to images on a CD ROM so I didn't need to read them again, and found in doing that, (like another poster said), that 3.5 inch media are now such crap that they're not longer worth the effort.

Mark Zenier mzenier@xxxxxxxxxxx

Googleproofaddress(account:mzenier provider:eskimo domain:com)

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