

Re: SED1335 LCD Controller: Screen Disturbance

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- *From:* "Richard Phillips" <raphillips@xxxxxxxxxxxxx>
 - *Date:* Wed, 21 Jun 2006 09:25:00 +0100
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Peter Dickerson wrote:

"Richard Phillips" <raphillips@xxxxxxxxxxxxx> wrote in message
[news:e78lk8\\$7k0\\$1@xxxxxxxxxxxxxxxxxxxxx](mailto:news:e78lk8$7k0$1@xxxxxxxxxxxxxxxxxxxxx)

Hello all,

I've been using this chip (built into an LCD module) for a while and have the LCD inverted, i.e. background "black" and characters "green".

I find that when I write info to the screen I often get very slight disturbances (tiny horizontal lines) appearing on the screen that vanish again almost immediately.

This is caused by writing in the active refresh time.

I have written my code so that it only updates the SED's memory inbetween LCD screen-line writes (if I don't do this, the problem is MUCH worse!) to minimise flicker.

This is a common problem. If you are writing to the controller when it wants to read for refresh it substitutes 0x00. So the problem is much worse if you have mostly 0xFF. Doing the writes in the line and frame sync is definitely the right thing. But be careful if you use the line sync because this can be very short, so you don't get much chance for the update. Think interrupts! Suppose an interrupt comes along when you have just decided there is time to transfer another byte. The transfer gets delayed in the active part of the line and...

I found it better to only use the frame sync period since this is longer. I program the controller for a relatively long sync (slightly slower refresh) to give a larger proportion of the time available for updating.

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I am going to study how the timings are working out today hopefully, although I know I did this when the software was originally written, by calculation and with a scope.

I worked out that I had time for approx 5 or 6 writes at the end of each line (I wait for the D6 status flag to change from 1 to 0 to ensure I start writing my data at the start of the retrace period).

I have tried reducing the writes per line to just 1 and disabling interrupts during writes. These things help a fair bit, but I can't seem to completely remove the problem, only minimise it!

That's interesting what you say, about the controller substituting 0x00 when there is a clash. I definitely have mostly 0xFF.

I wonder if the controller does something similar if you are in the middle of writing e.g. 8 bytes, you write 4 then stop for the line draw, then write the next 4. I wonder if it does some substitution in this case, even though I'm not actually writing at the moment it tries to read memory?

I will also consider changing the sync time, although the downside may not be worth it (slower refresh).

I always use the line sync, I don't think I have access to frame sync via the interface to this module.

I find that if the LCD is not inverted, the effect cannot be seen at all (at the moment, the spec I am following requires inversion).

It is often possible to by panels that are inverted or not, in the same form factor.

Does anyone have any experience of this problem with this chip? I have poured over the device spec and can't see anything I can do, it's not a terrible problem because the disturbance is only slight, but I'd like to get it as good as possible!

Its an old chip. I used used it years ago.

I got the impression from reading old forum posts etc (it's proved hard to find people using this chip, due to it's age?) that it's both an old chip, and not particularly well thought of?!

Regards,
Richard.

Re: SED1335 LCD Controller: Screen Disturbance

Regards,
Richard.

Peter