Re: Sharp LL− T17A4−B lcd Monitor

Source: http://sci.tech−archive.net/Archive/sci.electronics.repair/2008−06/msg00575.html

- *From*: jakdedert <jakdedert@xxxxxxxxxxxx>
- *Date*: Wed, 18 Jun 2008 02:55:44 −0500

Franc Zabkar wrote:

> On Tue, 17 Jun 2008 00:38:41 −0500, jakdedert
> <jakdedert@xxxxxxxxxxxxx> put finger to keyboard and composed:
>
> > It contains a (socketed) Winbond W78E56P−40. I pulled up the data sheet for
> > that, but it's beyond my experience to decipher how this generic processor is
> > employed in the circuit.
>
> That's the microcontroller and firmware:
> http://www.datasheetarchive.com/pdf/3655561.pdf
>
> > The other large scale (100 or so leads) chip has a logo that looks like a
> > backward capital 'N' with numbers MST9111. Google drew a blank on that
> > one.
>
> It's a single−chip LCD Controller for SXGA LCD Monitors by MStar
> Semiconductor:
> http://www.sacg.com.tw/sacweb/marcom/epaper/PDFs−new/MST.pdf
>
> The PDF contains a functional block diagram of the chip but no
> details. :−(
>
> There are no datasheets on the MStar web site, either, only an email
> address:
> http://www.mstarsemi.com/products/
>
> FWIW, the MST chip appears to be the one that interfaces to your DB−15
> connector. The OSD appears to be generated within it as well. I'd be
> looking around there. Maybe check its supply rails, caps, crystal?
>
> I'm not sure what would happen if the host microcontroller (Winbond)
> were to fail. If the monitor still responds to the front controls,
> then I would think that the Winbond chip is working, or at least not
> totally brain dead. I wonder if you would still get anything on your

screen (eg an error OSD) if you were to remove the Winbond chip. Might be worth trying ...

> Changing video resolution makes no difference (refresh was initially 60 Hz anyway). The OSD, when accessed while 'in symptoms', is just a blue smear up the entire height of the display.

I would compare the OSD in the presence of H&V sync input with the OSD in the absence of an input. In the latter case the MStar chip would have to rely solely on the crystal for its reference, whereas in the former case it would be generating a pixel clock by using its internal PLL to multiply the H sync frequency.

> Any video input to the display is likewise; all columns and no rows. Each column of pixels is uniform in color from top to bottom, although that color changes with the video content. Occasionally horizontal bands will appear, either a lighter or darker shade...sometimes only a pixel wide, other times wider.
>
> (I wonder if I could record and post a short video somewhere?)

Youtube?

> For the last day or so, I've not been able to get any sort of legible display. I hooked it up to a spare computer, on screensaver, next to my desk, hoping to catch it actually working...turn it on occasionally for short periods.
>
> You might be able to tell that I'm not too familiar with the innards of lcd displays <g>.

Ditto. Maybe we can both learn something. :−)

− Franc Zabkar

Thanks again, Frank. As detailed, I've no time for bench work this week, but will mull over the above while mapping out my next steps. Thinking it over, it seems obvious that the lcd is getting no horizontal information. I need to study how that's normally supplied to an lcd monitor, then look to where it may have disappeared. Unfortunately there's little generic lcd troubleshooting information on the web. It seems like usually the power supply fails. Most lcd info I've accessed is either pretty dense engineering data...or specific fixes for various models, which usually involves replacing one or more caps in the smps.

In fact, I've repaired a couple myself with that very problem. I was hoping this would be one....

Perhaps we'll write that chapter in the repairfaqs. ;−) OTOH, I have little interest in pioneering...mostly want

to get my monitor working so that I can send one off to college with my daughter.

jak
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