

Re: SyncMaster 151s LCD monitor turns itself completely off after 20 minutes

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Source: <http://sci.tech--archive.net/Archive/sci.electronics.repair/2006-06/msg01637.html>

- *From:* "Paul & Fiona" <bellettfamily@xxxxxxxxxxxxxxxxxx>
 - *Date:* Thu, 29 Jun 2006 19:43:26 +1000
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Hi Frank,

Problem solved – Found that after around 20 minutes, an obscure 5 pin SMPS supervisory IC with the only markings on it (S0202 / DP502T) had made the heatsink it was mounted on, rather hot to touch. In fact even the PCB had some brown heat marks close to where the actually IC resided.

However Samsung did not fool me with their cyptic identification of the device! I thought to myself, it is probably a common SMPS IC under a different manufacturers name. Yes:–, In fact it was a Fairchild KA5Q12656RTYDU IC, and I confirmed this by Fairchild's Semiconductors web application note on the KA5Q series, for which Samsung have copied the identical circuit including surrounding components for 'their' LCD monitor power supply!

This IC has a built–in thermal shutdown latching circuit for when it is operating abnormally.

Anyway, I replaced it with the Fairchild KA5Q12656RTYDU IC from Mouser Electronics (\$3.80 USD) and it is now running almost as cool as a cucumber, and the fault has of course entirely disappeared.

Cheers for now

Paul

"Paul & Fiona" <bellettfamily@xxxxxxxxxxxxxxxxxx> wrote in message [news:445dc590\\$0\\$25130\\$afc38c87@xxxxxxxxxxxxxxxxxxxxxxxxxxxx](mailto:news:445dc590$0$25130$afc38c87@xxxxxxxxxxxxxxxxxxxxxxxxxxxx)

Thanks Franc,

Sounds like you are right on to it – A good trouble shooting technique for analysis.

I guess, if the PWM controller is anything like a common garden variety of UC3842 PWM IC , there are a couple methods for shutdown that are accomplished by, either raising pin 3 above 1 V or pull pin 1 below 1 V, which would localize as to where the external fault to the PWM would probably lie.

I'll keep you posted on what particular component is causing the PWM IC a bit of grief!

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Cheers

Paul

"Franc Zabkar" <fzabkar@xxxxxxxxxxxxxxxxxxxx> wrote in message
news:bquq52pqcpqqelfp48ojvajqd7vpsf72no@xxxxxxxxxxx

On Sat, 6 May 2006 12:00:20 +1000, "Paul & Fiona"
<bellettfamily@xxxxxxxxxxxxxxxxxxxx> put finger to keyboard and composed:

Hi Folks,

I have a powersupply inside a Samsung LCD monitor that turns itself off without fail after 20 minutes. All the Switchmode DC rail voltages such as 12V, 5V and 3.3volts all completely disappear. When you disconnect the mains for about 5 minutes and then plug it in again the power LCD monitor goes for another 20 minutes before completely losing it's power i.e. No Green power LED and no Picture. Even disconnected the load from the power supply, but it still has the same symptoms. Sprayed Rapid Freeze on all the components, but it did make the power supply come back on-- Even changed some Electrolytic caps due to higher than normal ESR readings but these have still made no difference. If you leave the power supply in standby mode with the green led flashing, it will stay on indefinitely for days without losing the 5V DC rail. So if there are some Switchmode power supply experts out there, it would be nice to get a tip to solve this strange peculiar problem.

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Kind regards

Paul Bellett

I'd be doing a little circuit tracing. For example, locate the PWM controller IC, find its datasheet, and determine if it has a latching shutdown pin. Then work backwards from this pin and determine whether it is connected to an overvoltage circuit, a current sense circuit, or a on/off pin on the mainboard.

– Franc Zabkar

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Please remove one 'i' from my address when replying by email.