Tektronix and Keithley

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TDS3034 Won't boot

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TapioK   ❝

TDS3034 Won't boot

📄 October 1st, 2014, 7:44 am

Hello All!

I have TDS3034 oscilloscope, the old version with a floppy disk drive. Problem is that oscilliscope won't start.

First there was problem that instrument was totally dead, nothing happened when power was switched on. I found that resistor R2 was blown in PSU board and replaced resistor with a new one. Now when I press powerbutton, the fan starts and screen goes all white, but nothing else happens!

According to service manual, **I measured voltages from mainboard connector J900 and voltages are OK.**

What could be wrong? Someone has taken floppydisk drive off from the instrument, so does the oscilloscope require a disk drive to boot? (I guess no, but just wondering..)

I replaced electrolytic capacitors on mainboard, but this had no effect.

Thanks for your help!

                                                                              ⊙

cap   ❝

Re: TDS3034 Won't boot

📄 October 1st, 2014, 12:26 pm

It is not the lack of a floppy drive, it would boot anyhow. Sometimes one of the asics will fail, look for a itty bitty crack or crater, white screen. A tantalum can short out with similar result. These scopes can also fail to remember their boot settings and just sit there.

Neat scopes when they work but pretty tough to bring back when they have a white screen or the measurement man only displayed. These scopes are all 500 MHz capable, sampling rate is actually dependent on current time base setting and not limited by model type; marketing.

cap

                                                                              ⊙

TapioK

Re: TDS3034 Won't boot

October 2nd, 2014, 2:41 am

> **cap wrote:**
> Sometimes one of the asics will fail, look for a itty bitty crack or crater, white screen. A tantalum can short out with similar result. These scopes can also fail to remember their boot settings and just sit there.

Thanks for your answer. Could you explain more in detail what tantalums you mean?

I'll next find a floppy drive and try firmware flash....

cap

Re: TDS3034 Won't boot

October 2nd, 2014, 10:01 am

Tantalum capacitors can fail overtime by becoming a short circuit; they can also explode. It can be any one of them. You can look for evidence of heat, check for voltage across the tantalums, remove one post and measure the capacitance, check for plausible voltages (especially on devices with published datasheets) and so on to zero in on a problem. When inspecting the board, this should be under magnification, physical damage can be a crack the thickness of a hair follicle and not impressive at all; you will not see that with - eye.

It does not sound like your scope is booting up enough to even try to do a firmware upgrade.

Check for heating as damage to the power supply might be telling you that something let go elsewhere as indicated above. On the other hand, on a Tek digital scope, usually there is but one failure w/a short list of what probably caused that based on symptoms, multiple problems can indicate that a scope has parts from several crappy scopes...

cap

tekfanatic

Re: TDS3034 Won't boot

October 21st, 2014, 4:12 am

Hello,

Have you checked the following components:

Q900, Q910, C929, U520, U100, U200, U300, U400.

If one of them fails (most of the time short-circuit) it may prevent the scope to boot (white screen).

Also, sometimes the power pc microcontroller U600 needs reballing.

Regards,

tekfanatic

TapioK

❝

Re: TDS3034 Won't boot

🗓 October 25th, 2014, 8:04 am

Thank you for your answer.

I checked C929, Q900 and Q910, they seem to be undamaged (no shorts). Complex ICs are more difficult to check, but I noticed that U530 (see figure) gets quite hot while power is on, is this normal? And what is this U530 for? I can't find a datasheet for it......

Figure: http://tapsa.dy.fi/~tapsa/u530.JPG

Does anyone have full component listing for 671-4722-XX mainboard?

⌃

boddax

❝

Re: TDS3034 Won't boot

🗓 October 25th, 2014, 9:19 pm

That chip is a custom Tek and is a part of acquisition engine and yes normally run hot without fan ,
R2 burnt resistor is a hint follow the lines to discover the cause of failure.
Usually with PowerPC platform , color display , white,green..etc
meaning mem failures , check momory chips with datasheet , if you lucky
maybe one of them is short and cause of r2 burnt , much better replace
ram chip than custom tek ,)

⌃

TapioK

❝

Re: TDS3034 Won't boot

🗓 November 10th, 2014, 12:29 pm

> ❝ **cap wrote:**
> Neat scopes when they work but pretty tough to bring back when they have a white screen or the measurement man only displayed. These scopes are all 500 MHz capable, sampling rate is actually dependent on current time base setting and not limited by model type; marketing.
>
> cap

How can I upgrade my scope to 500MHz version? Is a firmware update all I need?

⌃

TapioK

❝

Re: TDS3034 Won't boot

🗓 November 16th, 2014, 1:29 pm

> ❝ **TapioK wrote:**
> I have TDS3034 oscilloscope, the old version with a floppy disk drive. Problem is that oscilliscope won't start.

Problem solved! I replaced the mainboard. Mainboard is from 3014 model, so I wonder if its possible to upgrade to 300/500 MHz ? 😎

⌃

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