Product:	Molex's FCT Electronics Backshells for D-Sub Connectors	molex MOUSER ELECTRONICS
Description:	Provide an extended inner chamber suitable for D-Sub connectors with special contacts.	PDF Download Datasheet

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Author Topic: Tek TDS3000 series and Dallas NVRAM (Read 5218 times)

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MarkL
Supporter
Posts: 1469
Country:

Tek TDS3000 series and Dallas NVRAM
« **on:** September 26, 2014, 02:10:03 am »

I was performing a minor repair on a TDS3054 (not B or C version), and I noticed a "Dallas DS1742W-150 Timekeeping RAM" soldered onto the main board. The date code is 1999, and the Dallas datasheet claims a minimum of 10 year life expectancy for the battery.

Does anyone know if the cal data or other critical information is stored there? Is there any known backup procedure besides unsoldering it and reading it out on a programmer? Perhaps via the GPIB?

Has anyone seen any TDS3000 NVRAM go bad?

Given the actual lifetime reported on other Dallas NVRAM parts in other scopes, I probably still have many years left before I have to deal with it, assuming I keep the scope that long.

And a side note... The repair was to replace the CCFL tubes on the display which was getting very dim. There are two CCFL tubes and they slide out as modules. It's a trivial repair, although getting to the display itself requires a bit of disassembly. Display is part #NEC NL6448AC20–06, CCFL modules are 65LHS–3L. You can also get bare CCFL tubes (2.6mm x 153mm) and solder them in the modules yourself for much less. FYI.

Logged

voltsandjolts
Supporter
Posts: 660
Country:

Re: Tek TDS3000 series and Dallas NVRAM
« **Reply #1 on:** September 27, 2014, 07:18:20 am »

I replaced the NVRAM in my TDS3034 as a precaution - I didn't know if there was any critical info in there.
Turns out there isn't, so its safe to let the NVRAM battery die before replacing it.

The only difference I could see by fitting a new blank NVRAM was the "number of powerups" in scope diagnostics was reset to zero.
I think the NVRAM just stores scope setups, timebase, volts per division etc.

Thanks for the display and CCFL PNs, hopefully I won't need them!

Logged

David Hess
Super Contributor
Posts: 9290
Country:
DavidH

Re: Tek TDS3000 series and Dallas NVRAM
« **Reply #2 on:** September 27, 2014, 08:19:18 am »

Wow, that is good to know.

Earlier Tektronix oscilloscopes stored the calibration data in the NVRAM leading to a difficult or costly problem if the contents were lost.

Logged

HighVoltage
Super Contributor
DANGER HIGH VOLTAGE
Posts: 4131
Country:

Re: Tek TDS3000 series and Dallas NVRAM
« **Reply #3 on:** September 27, 2014, 08:25:19 am »

Quote from: voltsandjolts on September 27, 2014, 07:18:20 am

> I replaced the NVRAM in my TDS3034 as a precaution - I didn't know if there was any critical info in there.
> Turns out there isn't, so its safe to let the NVRAM battery die before replacing it.
> The only difference I could see by fitting a new blank NVRAM was the "number of powerups" in scope diagnostics was reset to zero.
> I think the NVRAM just stores scope setups, timebase, volts per division etc.
>
> Thanks for the display and CCFL PNs, hopefully I won't need them!

I also have an older TDS3034 and may be I should replace the NVRAM.
Did you replace it with the same "Dallas DS1742W-150 Timekeeping RAM" or are there alternatives?

Thanks for this great information.

Logged

There are 3 kinds of people in this world, those who can count and those who can not.

David Hess
Super Contributor
Posts: 9290
Country:
DavidH

Re: Tek TDS3000 series and Dallas NVRAM
« **Reply #4 on:** September 27, 2014, 08:56:45 am »

Quote from: HighVoltage on September 27, 2014, 08:25:19 am

> I also have an older TDS3034 and may be I should replace the NVRAM.
> Did you replace it with the same "Dallas DS1742W-150 Timekeeping RAM" or are there alternatives?
>
> Thanks for this great information.

You can use a faster one to replace a slower one. I see plenty available at Mouser and Digi-Key although they cost more than $20 each.

I am not aware of any third party equivalent replacements. I know this issue has come up for older Dallas Timekeeping RAMs which they no longer produce. In those cases, the Timekeeping RAMs were replaced with standard NVRAMs and the oscilloscope still worked but without the time and date functions.

Logged

MarkL
Supporter
Posts: 1469
Country:

Re: Tek TDS3000 series and Dallas NVRAM
« **Reply #5 on:** September 27, 2014, 11:57:42 am »

Thanks for the info on the NVRAM, voltsandjolts!

It's good to know design mistakes of the past don't always repeat themselves.

Logged

voltsandjolts
Supporter
Posts: 660
Country:

Re: Tek TDS3000 series and Dallas NVRAM
« **Reply #6 on:** September 27, 2014, 06:40:30 pm »

@HighVoltage
"Did you replace it with the same "Dallas DS1742W-150 Timekeeping RAM" or are there alternatives?"

Yes, I used that Dallas part. Not cheap.

Logged

prot_brot
Contributor
Posts: 13
Country:

Re: Tek TDS3000 series and Dallas NVRAM
« **Reply #7 on:** February 11, 2015, 03:10:46 am »

Will DS1642 work? it has the same 2k x 8 ram and pinout as the DS1742 at half the price

Logged

Jwalling
Supporter

Posts: 1140
Country:
This is work?

Re: Tek TDS3000 series and Dallas NVRAM
« **Reply #8 on:** August 10, 2016, 03:06:35 am »

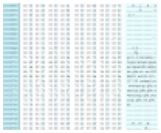
Quote from: MarkL on September 26, 2014, 02:10:03 am

> I was performing a minor repair on a TDS3054 (not B or C version), and I noticed a "Dallas DS1742W-150 Timekeeping RAM" soldered onto the main board. The date code is 1999, and the Dallas datasheet claims a minimum of 10 year life expectancy for the battery.
>
> Does anyone know if the cal data or other critical information is stored there? Is there any known backup procedure besides unsoldering it and reading it out on a programmer? Perhaps via the GPIB?
>
> Has anyone seen any TDS3000 NVRAM go bad?
>
> Given the actual lifetime reported on other Dallas NVRAM parts in other scopes, I probably still have many years left before I have to deal with it, assuming I keep the scope that long.

Had an opportunity to read out the contents of the Dallas chip in a TDS3014B
Is it possible that there is a back-door into these? I'm no hacker, completely clueless even.

I've attached the binary as well.

EDIT: Typo. Always a friggin' typo!
Jay



3014b.jpg (153.78 kB, 591x485 - viewed 588 times.)
TDS3014B Dallas DS1742.zip (0.38 kB - downloaded 253 times.)

« Last Edit: August 10, 2016, 03:08:32 am by Jwalling »

Logged

Jay

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