





Part #:	AD5940	  
Description:	<ul style="list-style-type: none"> Potentiostat and Electrochemical Impedance Spectroscopy functionality on a single chip Autonomous control with pre-programmable sequencer and on-chip FIFO 	 Download Datasheet








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Topic: Maynuo M9812 teardown, detail differences? (Read 3191 times)

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jitter
 Frequent Contributor



Posts: 804
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 **Maynuo M9812 teardown, detail differences?**

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« on: November 15, 2015, 08:47:59 pm »

Recently I acquired a Maynuo M9812 electronic DC load.

No extensive explanations necessary, the M97xx and M98xx are pretty well known on this forum and there have already been [teardowns](#) of the M9711 and possibly other models as well. Those models are also pretty similar or even identical apart from maybe some details. And that's what I'd like to focus this teardown on.

I'm aware of [Dave's teardown](#) of the BK Precision 8500 which is very similar but not identical to the Maynuo units. Most noticeable differences are isolation slots in the pcb and higher grade power resistors, also Lelon caps instead of G-Luxon. Less noticeable are different voltage reference, DAC and ADC.

Looking at Gerry Sweeny's teardown of the M9711, I can't help but think that my unit is identical apart from the extra power dissipation section (300 W vs 150 W).

Supposedly, the M98xx has some sort of LED function, whatever that is. The software that comes with the unit is for the... M97xx but runs on this one as well. Guess I'll have to wait until Maynuo have the software for the M98xx ready, perhaps then I'll discover the LED-feature (no, I have not yet read the manual 😊).

I'll forgo the overview photos and dive straight into the closeups of some remarkable things on my unit.

First photo shows that clearly rework was done on the uP, DAC and ADC. I wonder why...

The second and third photo show the modification near the 74HC20.

The fourth has a curious mod close to the ADC.

I included the fifth photo because in Gerry Sweeny's tear down video, he mentions the ADC is an ADS 8327, but in mine it's an 8328.

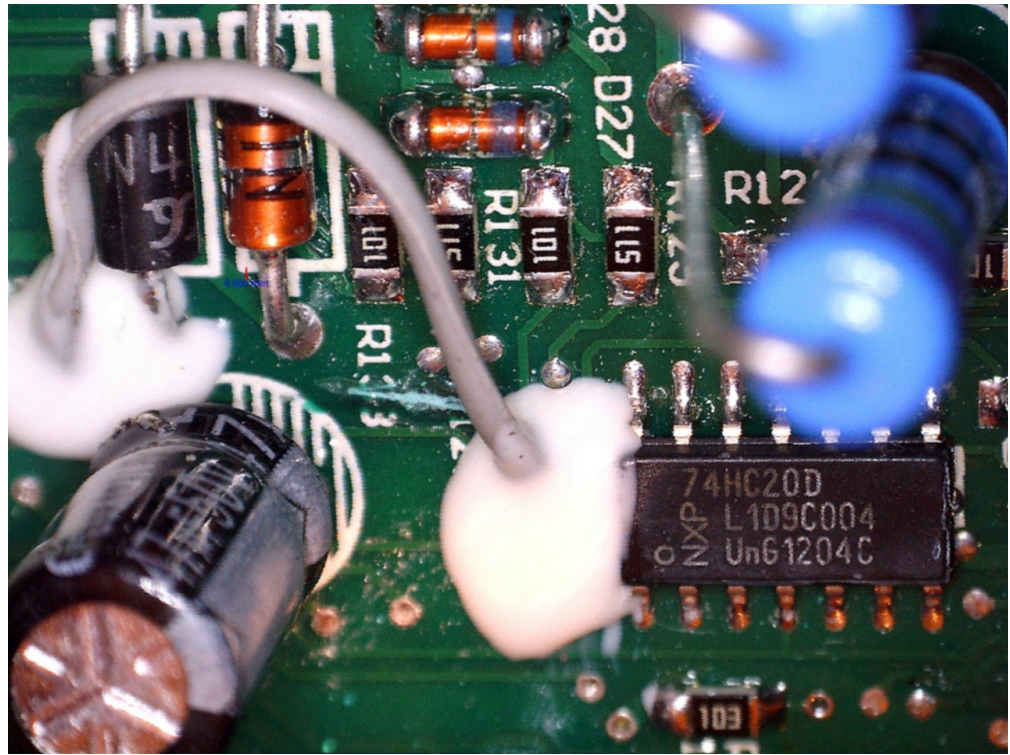


Image1.jpg (228.15 kB, 1280x960 - viewed 451 times.)

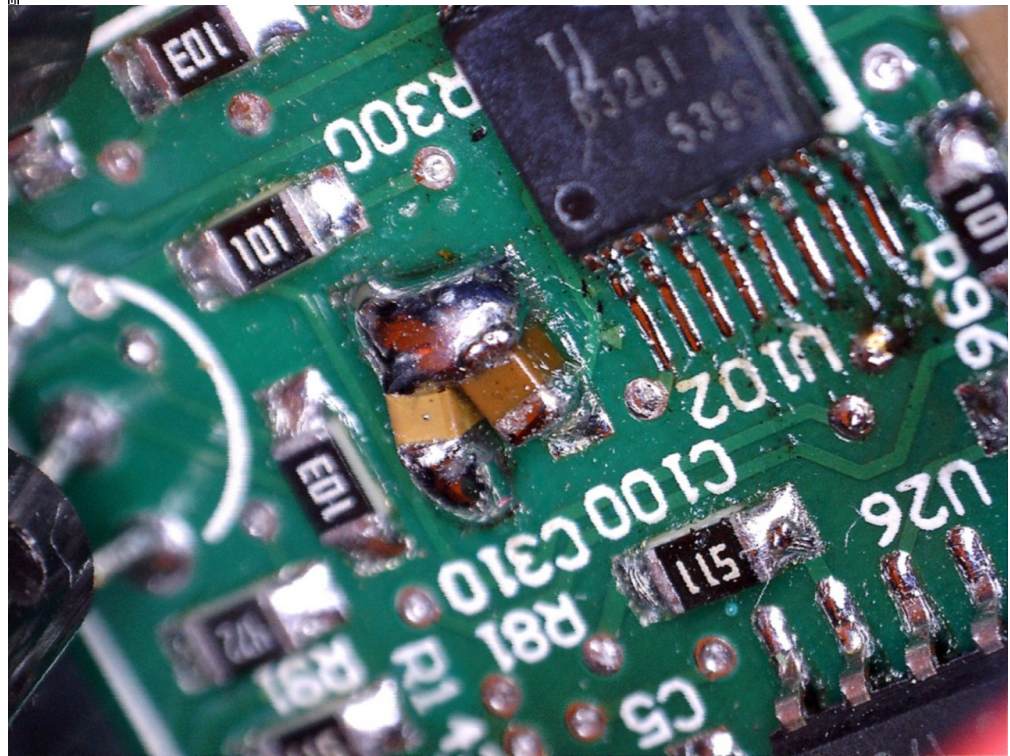


Image2.jpg (250.01 kB, 1280x960 - viewed 399 times.)

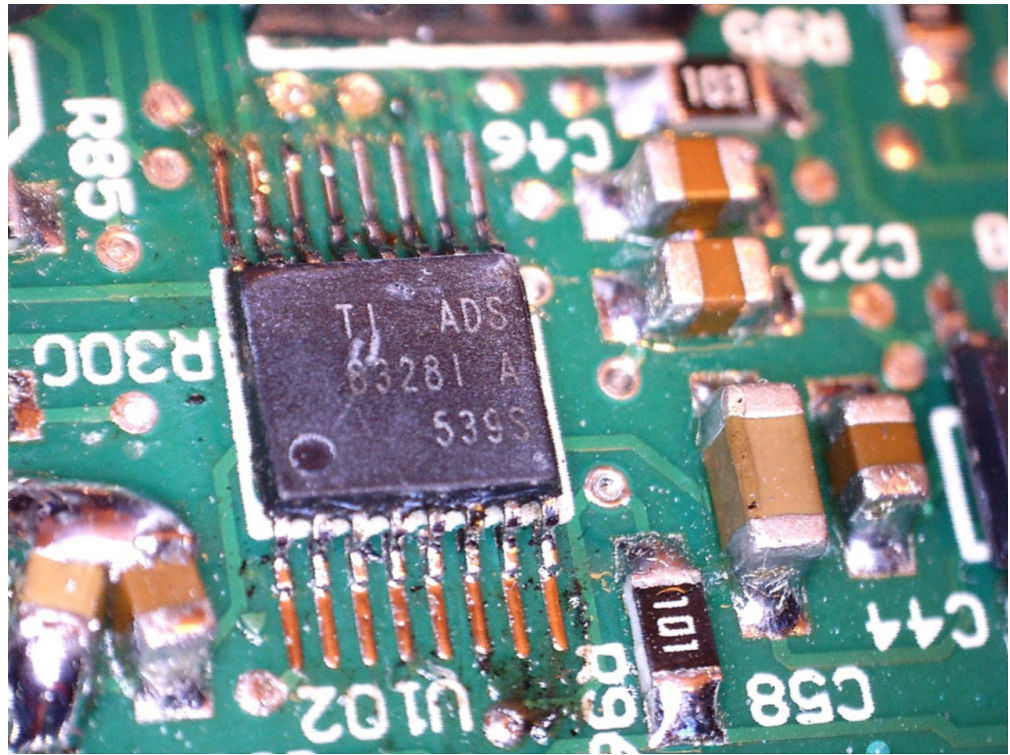


Image3.jpg (247.77 kB, 1280x960 - viewed 424 times.)

« Last Edit: November 16, 2015, 06:17:16 am by jitter »

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saturation

Super Contributor



Posts: 4788

Country:

Doveryai, no proveryai



Re: Maynuo M9812 teardown, detail differences?

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« Reply #1 on: November 16, 2015, 03:34:16 pm »

Glad it works for you. On the photos provided, construction quality is wanting. I'll presume the unit has been inspected thoroughly and I'd extend a burn-in to insure any failures happen while still under warranty.

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Best Wishes,

Saturation

georges80

Frequent Contributor



Posts: 806

Country:



Re: Maynuo M9812 teardown, detail differences?

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« Reply #2 on: November 16, 2015, 07:29:31 pm »

I've had my M9812 for a year+ now. Use it quite often (several times per week). The ONLY problem I've had was one of the relays not electrically closing when activated (posted in another thread) and after desoldering it cleared up and I put it back. I did buy a spare relay to keep on hand.

Mine was very clean, yours with all the flux residue looks horrible in comparison.

The LED feature just changes some damping etc in the control loop. I never use it since it really doesn't mimic a LED well at all. I often test LED loads up to 7A for some of my higher current/power LED drivers and leave the load in the NON-LED mode.

Adding an external cap across the posts helps improve the load's response. Typically I use something in the 330uF range. So, I don't see anything at all useful with the LED mode of the M9812.

cheers,
george.

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engiadina



Contributor

Posts: 44

Re: Maynuo M9812 teardown, detail differences?

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« Reply #3 on: November 16, 2015, 07:52:35 pm »


Country: 


Thanks for sharing those pictures.

I think this amount of flux residue is not acceptable. Maybe they forgot to clean the PCB.

How does a BK Precision unit looks like?

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 **georges80**
Frequent Contributor


 **Re: Maynuo M9812 teardown, detail differences?**

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« **Reply #4 on:** November 16, 2015, 09:31:17 pm »

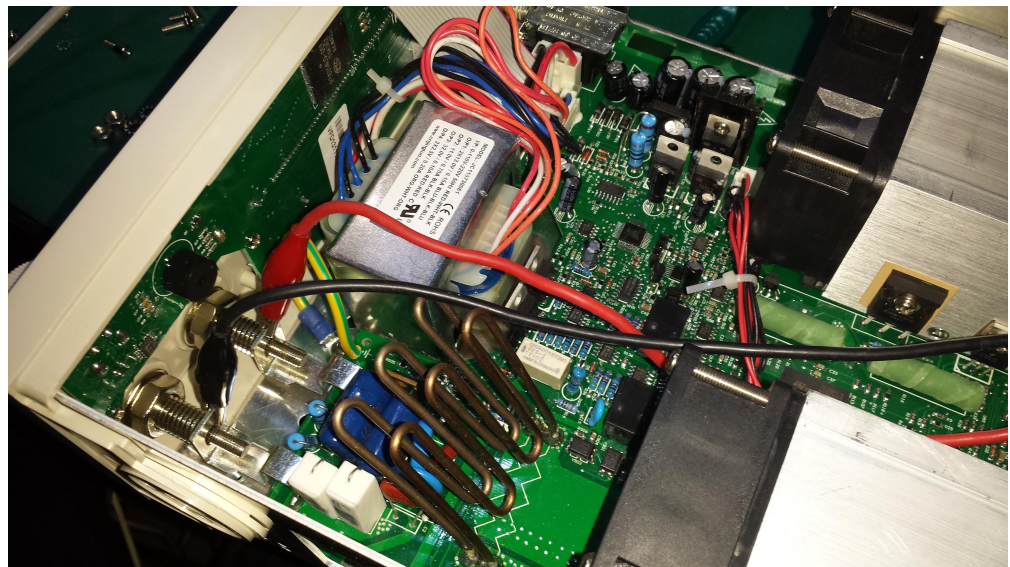



Posts: 806
Country: 


And attached is the one picture I have of my m9812 when I removed/reinstalled the relay - the offending one is the white Omron unit roughly in the middle of the picture.


As you can see, the PCB is nice and clean of flux.

cheers,
george.



 m9812a.jpg (845.39 kB, 3600x2025 - viewed 508 times.)

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AlfBaz
Super Contributor


 **Re: Maynuo M9812 teardown, detail differences?**

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« **Reply #5 on:** November 16, 2015, 09:38:55 pm »

Posts: 2007
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I remember people complaining about the "dirty" state of the pcb in the maynuo's and opened mine up (M9812) when I received it over a year ago. Spotless 😊

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jitter
Frequent Contributor


 **Re: Maynuo M9812 teardown, detail differences?**

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« **Reply #6 on:** November 16, 2015, 10:40:14 pm »



Posts: 804
Country: 


Well, mine certainly looks to have had repair and modifications done, I can only guess why. But I've been using it almost non stop for a week now, and it works fine.

I'm in the industry, and the black residue around the replaced components to me looks very much like what comes off desoldering wick. The flux in that braid really blackens very quickly, much more so than the flux core in the solder.

As it happens I mostly work on measuring instruments we make for one of our customers. Those are much more sensitive devices than this electronic load. Critical boards are washed to remove flux residue left on the boards from the wave soldering process. But the flux used in solder wire or desolder wick is quite different and even in those critical applications pretty harmless if they're of the so called "no-clean" type. I don't plan on cleaning the board in my Maynuo.

Note that thin liquid flux that will leave a white crystal like and also somewhat fatty residue after evaporating must be removed. That type will create quite a lot of leakage.

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