

Keithley 2001 repair - Bug #1184**Repair status**

04/11/2015 09:32 PM - tin

Status:	Closed	Start date:	04/11/2015
Priority:	Normal	Due date:	
Assignee:	tin	% Done:	100%
Category:		Estimated time:	0.00 hour
Target version:	Keithley 2001 #6		

Description

Analog board A14764
 Digital board A39541 B15

Fixed eaten trace under caps.
 Replaced all caps

Self-test issues:

Test	A/D input	Required value
401.1	-76m	+/-1m
402.1	+25.0m	27 - 37 m
404.1	5.5705	3.81 - 4.61
404.2	4.1110	1.74 - 2.42
404.3	2.7505	279 - .281
404.4	1.3644	1.91 - 2.59
404.5	0.1282	3.93 - 4.73
405.2	11.8598	
405.4	11.8592	
405.6	11.8588	
405.8	11.8584	
406.6	11.8610	
407.1	2.2620	6.85 - 7.15
407.2	11.8592	0.5 - 0.9
407.3	8.9122	0.1 - 0.18
409.6	6.8057	
410.1	2.2621	6.82 - 7.18
411.1	2.2623	6.82 - 7.18
411.2	2.2629	6.84 - 7.16

History**#1 - 02/14/2016 12:47 AM - tin**

Diagnostics revealed function issues - DCI measurement on ranges other than 2A was throwing some incorrect readings even with short on inputs, ACV was showing 480VAC on 750V range (no input signal) and overflow on lower ranges and ACI currents. Few other DG211 muxes, 14094 shift registers were replaced during debug process, but that was likely not necessary.

Issues fixed after U525 and 4.3V zener replacement. Original LTC1050 opamp had leaky 145 ohm between V+ and V- rails making floating supply circuitry unbalanced.

Second meter have bad LT1223 current mode operational amplifier, driving FET full-wave rectifier bridge to -12V, and screwing everything. Same dianosis errors and ACV,DCI and ACI function failures were observed. Removed U520 and powered meter without it, supply voltages on U525 become normal.

#2 - 06/07/2016 01:11 AM - tin

- Status changed from In Progress to Resolved

- % Done changed from 0 to 100

#3 - 06/07/2016 01:16 AM - tin

- Status changed from Resolved to Closed