WREB Functional Test Report

Board ID: 0x123b55b6
Board Type: b
Link Version: 020
Front-end FPGA Code Version: 0020
Test Performed: 2016-07-12 10:05:50

Status	Test	Results
N/A	Idle Current	N/A
FAIL	Channel Comms	-3/33 channels missing.
PASS	ASPIC Comms	1/1 ASPICS communicating.
N/A	CS Gate Test	N/A
N/A	PCK Rails	N/A
FAIL	SCK Rails	LV Gain: 0.992864. UV Gain: 0.847598. 43/50 values okay.
FAIL	RG Rails	LV Gain: 0.998735. UV Gain: 0.866379. 44/50 values okay.
FAIL	Diverging SCK Rails	LV Gain: 0.725285. UV Gain: 0.614557. 24/38 values okay.
FAIL	Diverging SCK Rails	LV Gain: 0.798340. UV Gain: 0.702715. 16/38 values okay.
FAIL	Diverging SCK Rails	LV Gain: 0.366294. UV Gain: 0.719704. 25/38 values okay.
PASS	Diverging RG Rails	LV Gain: 0.980816. UV Gain: 0.951211. 35/38 values okay.
FAIL	Diverging RG Rails	LV Gain: 0.808609. UV Gain: 0.951311. 16/38 values okay.
FAIL	Diverging RG Rails	LV Gain: 0.665334. UV Gain: 0.820703. 27/38 values okay.
PASS	OG Bias Test	Gain: 0.991682. 21/21 values okay.
PASS	OD Bias Test	Gain: 0.993114. 15/16 values okay.
PASS	GD Bias Test	Gain: 0.995829. 15/16 values okay.
PASS	RD Bias Test	Gain: 0.996969. 15/16 values okay.
N/A	Board Temperature	N/A
FAIL	ASPIC Noise Tests	29/48 channels within sigma<5.5.

Idle Current Test

Channel	Voltage	Channel	Current
DigPS_V	4.925	DigPS_I	643.0
AnaPS_V	6.975	AnaPS_I	283.5
ODPS_V	26.0095	ODPS_I	1.8819
ClkHPS_V	9.0	ClkHPS_I	33.5
DphiPS_V	0.95	DphiPS_I	6.25
HtrPS_V	8.025	HtrPS_I	1.5

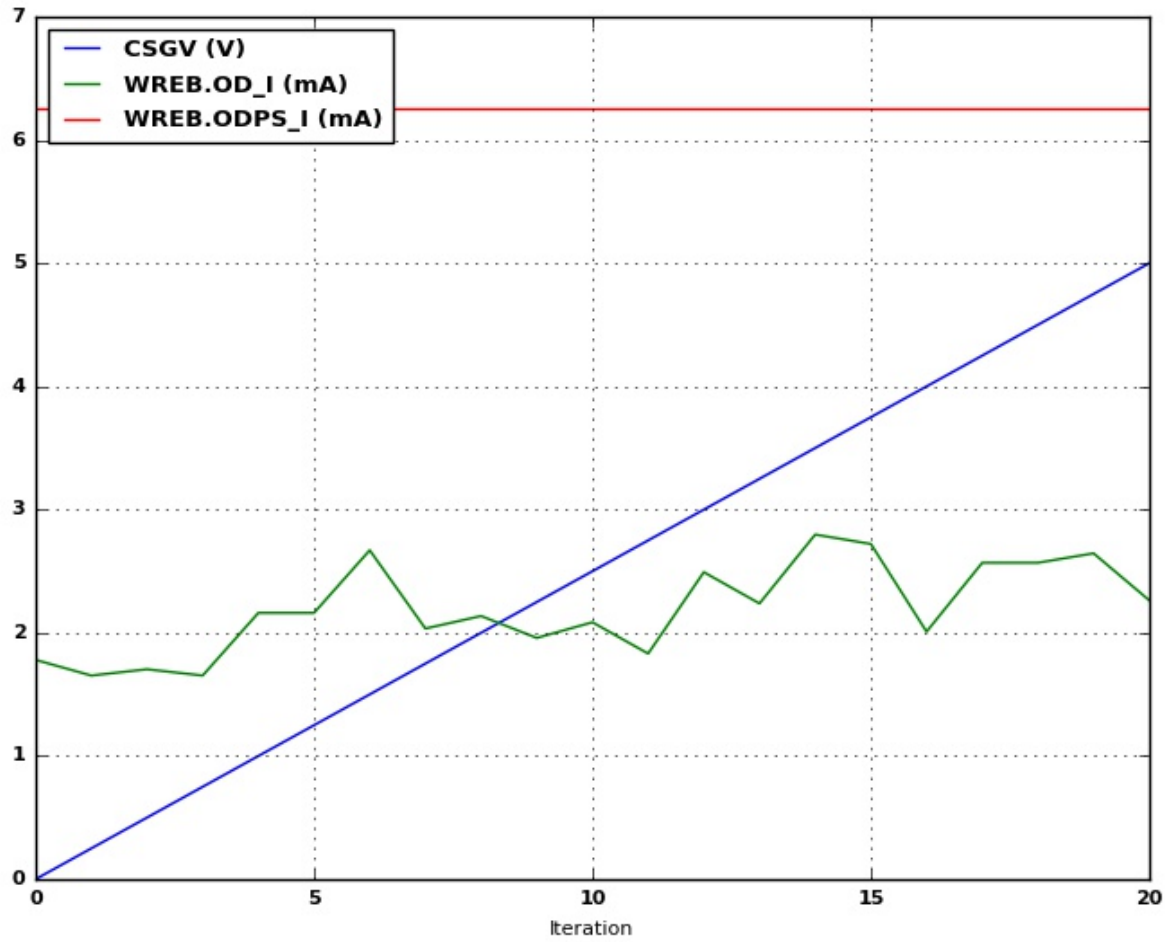
Channel Communications Test	
Channel	Value
WREB.Temp1	38.25
WREB.Temp2	39.9375
WREB.Temp3	32.0
WREB.Temp4	37.625
WREB.Temp5	35.0625
WREB.Temp6	34.6875
WREB.Atemp0U	-128.4853
WREB.Atemp0L	-128.3014
WREB.CCDtemp	2857.1427
WREB.RTDtemp	2857.1427
WREB.DigPS_V	4.925
WREB.DigPS_I	643.25
WREB.AnaPS_V	6.975
WREB.AnaPS_I	283.5
WREB.ODPS_V	31.05
WREB.ODPS_I	6.25
WREB.ClkHPS_V	9.0
WREB.ClkHPS_I	33.5
WREB.DphiPS_V	0.95
WREB.DphiPS_I	6.25
WREB.HtrPS_V	8.025
WREB.HtrPS_I	1.75
WREB.VREF25	2.4947
WREB.OD_V	26.0078
WREB.OD_I	2.3905
WREB.OG_V	-2.4271
WREB.RD_V	11.5646
WREB.GD_V	25.8652
WREB.CKP_V	-8.0449
WREB.CKPSH_V	-8.0269
WREB.CKS_V	4.1676
WREB.SCKU_V	4.1557
WREB.SCKL_V	-4.0413
WREB.RG_V	8.0231
WREB.RGU_V	8.0002
WREB.RGL_V	-1.9348

ASPIC Communications Test

Test PASS. 1/1 ASPICS communicating.

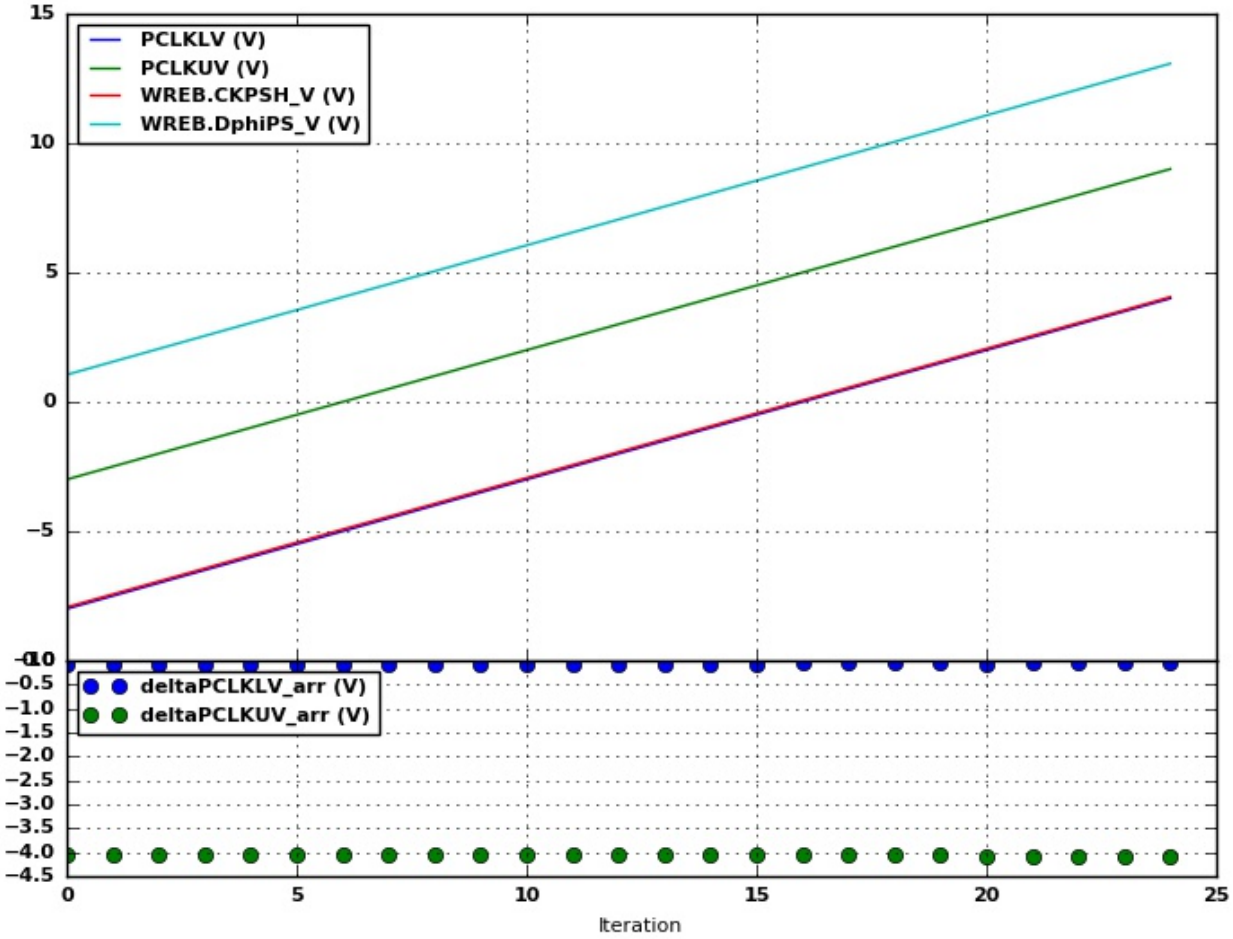
ccs-cr.checkAsics result: [0]

CSGate Test

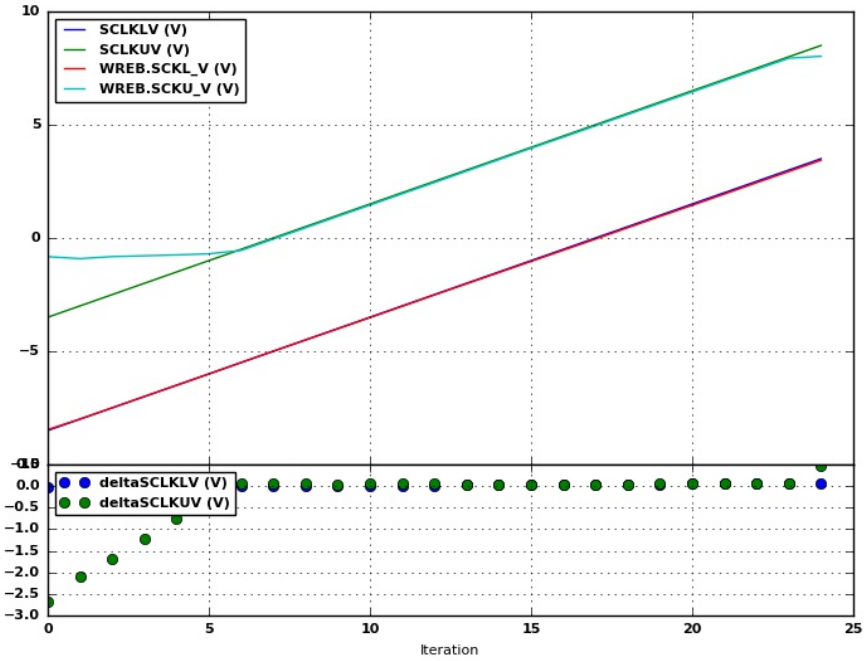


CSGV (V)	WREB.OD_I (mA)	WREB.ODPS_I (mA)
0	1.7802	6.25
0.25	1.653	6.25
0.5	1.7039	6.25
0.75	1.653	6.25
1.0	2.1617	6.25
1.25	2.1617	6.25
1.5	2.6703	6.25
1.75	2.0345	6.25
2.0	2.1362	6.25
2.25	1.9582	6.25
2.5	2.0854	6.25
2.75	1.8311	6.25
3.0	2.4923	6.25
3.25	2.238	6.25
3.5	2.7974	6.25
3.75	2.7212	6.25
4.0	2.0091	6.25
4.25	2.5686	6.25
4.5	2.5686	6.25
4.75	2.6449	6.25
5.0	2.2634	6.25

PCKRails Test



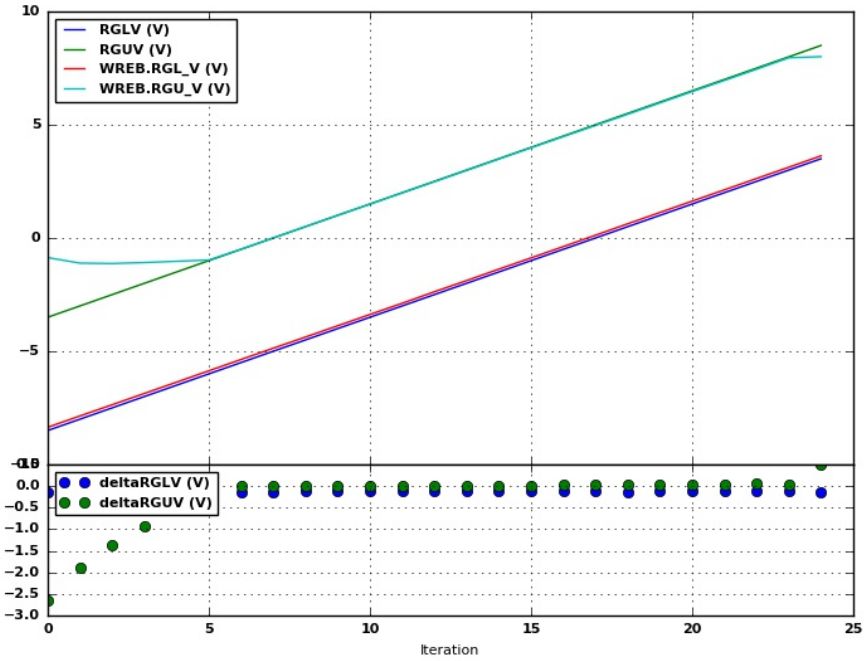
SCK Rails Test



LV Gain: 0.992864. UV Gain: 0.847598. 43/50 values okay.
Test FAILED.

SCLKLV (V)	SCLKUV (V)	WREB.SCKL_V (V)	WREB.SCKU_V (V)	deltaSCLKLV (V)	deltaSCLKUV (V)
-8.5	-3.5	-8.461	-0.8247	-0.039	-2.6753
-8.0	-3.0	-7.9948	-0.9109	-0.0052	-2.0891
-7.5	-2.5	-7.4989	-0.8217	-0.0011	-1.6783
-7.0	-2.0	-6.9992	-0.7866	-0.0008	-1.2134
-6.5	-1.5	-6.5033	-0.7462	0.0033	-0.7538
-6.0	-1.0	-6.0081	-0.6989	0.0081	-0.3011
-5.5	-0.5	-5.497	-0.5501	-0.003	0.0501
-5.0	0.0	-4.998	-0.0488	-0.002	0.0488
-4.5	0.5	-4.5036	0.4486	0.0036	0.0514
-4.0	1.0	-4.0108	0.9552	0.0108	0.0448
-3.5	1.5	-3.5141	1.4519	0.0141	0.0481
-3.0	2.0	-3.0167	1.9508	0.0167	0.0492
-2.5	2.5	-2.5146	2.4506	0.0146	0.0494
-2.0	3.0	-2.0203	2.9533	0.0203	0.0467
-1.5	3.5	-1.5266	3.4584	0.0266	0.0416
-1.0	4.0	-1.0338	3.9619	0.0338	0.0381
-0.5	4.5	-0.5402	4.454	0.0402	0.046
0.0	5.0	-0.0473	4.953	0.0473	0.047
0.5	5.5	0.4539	5.4558	0.0461	0.0442
1.0	6.0	0.9521	5.9502	0.0479	0.0498
1.5	6.5	1.4442	6.4468	0.0558	0.0532
2.0	7.0	1.9402	6.9466	0.0598	0.0534
2.5	7.5	2.4414	7.4417	0.0586	0.0583
3.0	8.0	2.9358	7.9376	0.0642	0.0624
3.5	8.5	3.4348	8.0238	0.0652	0.4762

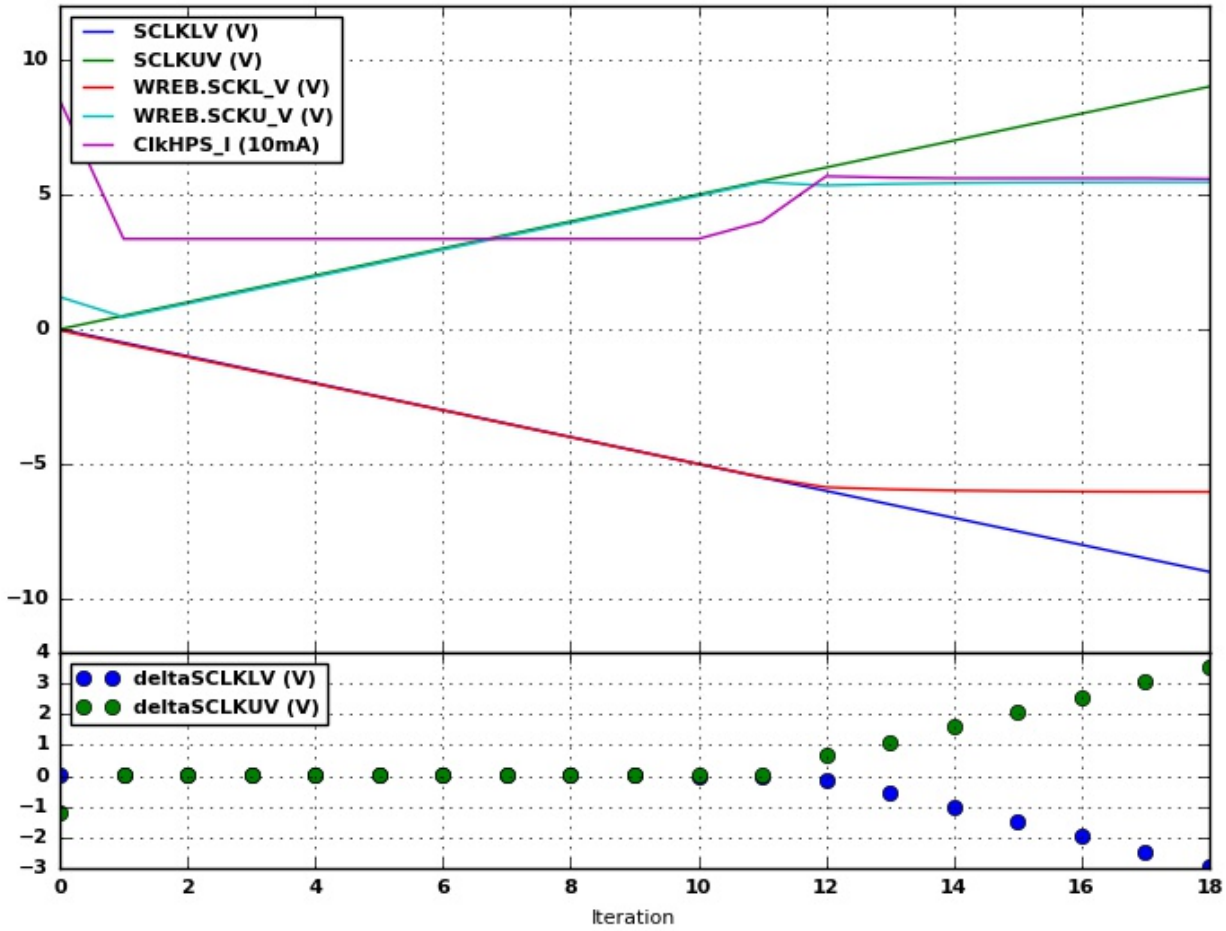
RG Rails Test



LV Gain: 0.998735. UV Gain: 0.866379. 44/50 values okay.
Test FAILED.

RGLV (V)	RGUV (V)	WREB.RGL_V (V)	WREB.RGU_V (V)	deltaRGLV (V)	deltaRGUV (V)
-8.5	-3.5	-8.3572	-0.8636	-0.1428	-2.6364
-8.0	-3.0	-7.8583	-1.1101	-0.1417	-1.8899
-7.5	-2.5	-7.3631	-1.1261	-0.1369	-1.3739
-7.0	-2.0	-6.8642	-1.0841	-0.1358	-0.9159
-6.5	-1.5	-6.3652	-1.0292	-0.1348	-0.4708
-6.0	-1.0	-5.8647	-0.972	-0.1353	-0.028
-5.5	-0.5	-5.3635	-0.4944	-0.1365	-0.0056
-5.0	0.0	-4.866	0.0038	-0.134	-0.0038
-4.5	0.5	-4.3739	0.5058	-0.1261	-0.0058
-4.0	1.0	-3.8757	1.004	-0.1243	-0.004
-3.5	1.5	-3.3775	1.4938	-0.1225	0.0062
-3.0	2.0	-2.8824	1.9905	-0.1176	0.0095
-2.5	2.5	-2.375	2.4849	-0.125	0.0151
-2.0	3.0	-1.8799	2.9831	-0.1201	0.0169
-1.5	3.5	-1.3763	3.4851	-0.1237	0.0149
-1.0	4.0	-0.8789	3.9818	-0.1211	0.0182
-0.5	4.5	-0.3799	4.4754	-0.1201	0.0246
0.0	5.0	0.1228	4.9683	-0.1228	0.0317
0.5	5.5	0.6271	5.4634	-0.1271	0.0366
1.0	6.0	1.1269	5.9639	-0.1269	0.0361
1.5	6.5	1.6266	6.4629	-0.1266	0.0371
2.0	7.0	2.1255	6.955	-0.1255	0.045
2.5	7.5	2.6268	7.4516	-0.1268	0.0484
3.0	8.0	3.125	7.9567	-0.125	0.0433
3.5	8.5	3.6278	8.0063	-0.1278	0.4937

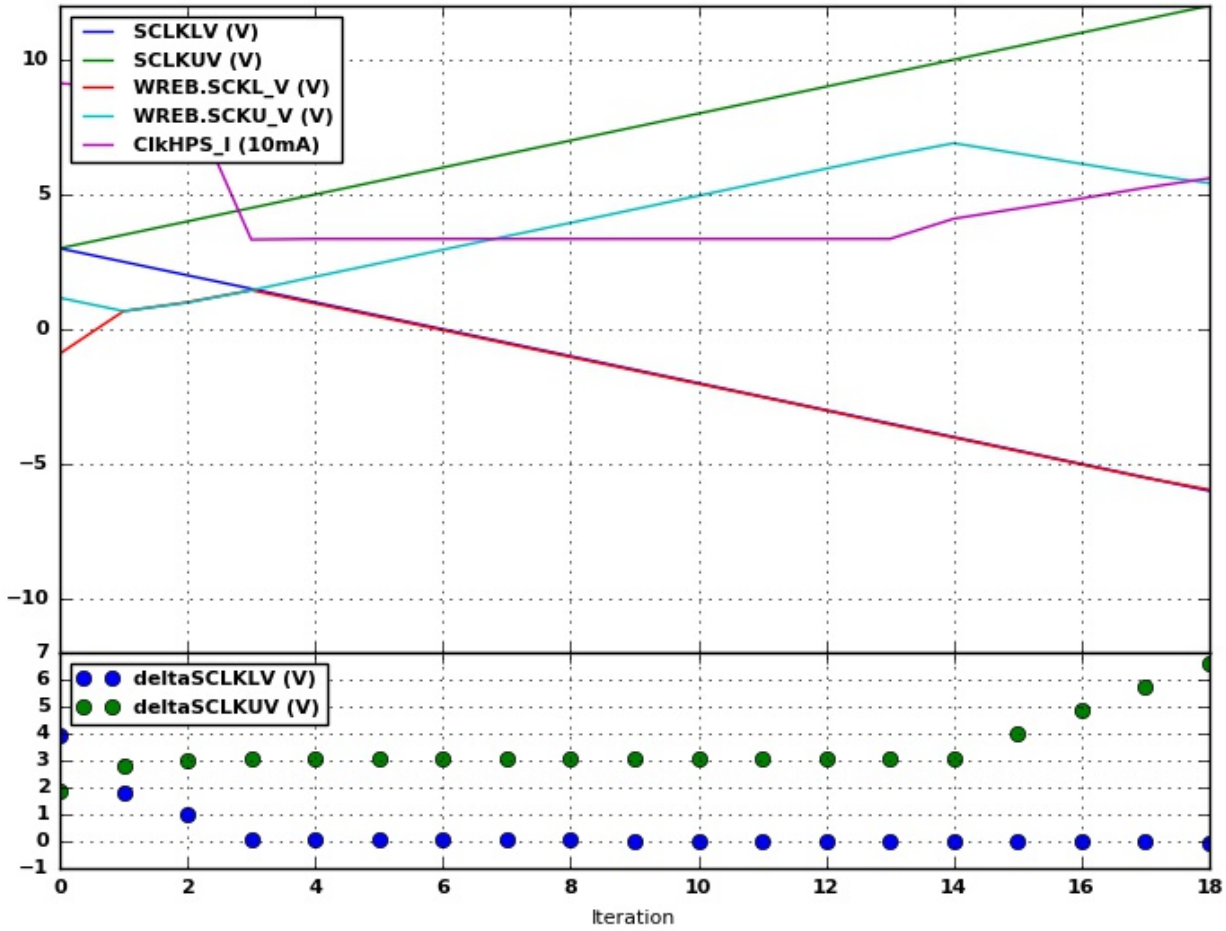
Diverging SCKRails Test 0 V



LV Gain: 0.725285. UV Gain: 0.614557. 24/38 values okay.
Test FAILED.

SCLKLV (V)	SCLKUV (V)	WREB.SCKL_V (V)	WREB.SCKU_V (V)	ClkHPS_I (10mA)	deltaSCLKLV (V)	deltaSCLKUV (V)
0.0	0.0	-0.0412	1.1955	8.5	0.0412	-1.1955
-0.5	0.5	-0.5424	0.4509	3.35	0.0424	0.0491
-1.0	1.0	-1.0368	0.9499	3.35	0.0368	0.0501
-1.5	1.5	-1.5297	1.445	3.35	0.0297	0.055
-2.0	2.0	-2.0226	1.947	3.35	0.0226	0.053
-2.5	2.5	-2.5154	2.4445	3.35	0.0154	0.0555
-3.0	3.0	-3.0098	2.9503	3.35	0.0098	0.0497
-3.5	3.5	-3.5118	3.4492	3.35	0.0118	0.0508
-4.0	4.0	-4.0085	3.9459	3.35	0.0085	0.0541
-4.5	4.5	-4.5067	4.4472	3.35	0.0067	0.0528
-5.0	5.0	-5.0003	4.95	3.35	0.0003	0.05
-5.5	5.5	-5.4924	5.4535	4.0	-0.0076	0.0465
-6.0	6.0	-5.8662	5.3352	5.675	-0.1338	0.6648
-6.5	6.5	-5.9433	5.3886	5.625	-0.5567	1.1114
-7.0	7.0	-5.9845	5.4207	5.6	-1.0155	1.5793
-7.5	7.5	-6.0097	5.4382	5.6	-1.4903	2.0618
-8.0	8.0	-6.0242	5.4482	5.6	-1.9758	2.5518
-8.5	8.5	-6.0318	5.455	5.6	-2.4682	3.045
-9.0	9.0	-6.0364	5.4573	5.575	-2.9636	3.5427

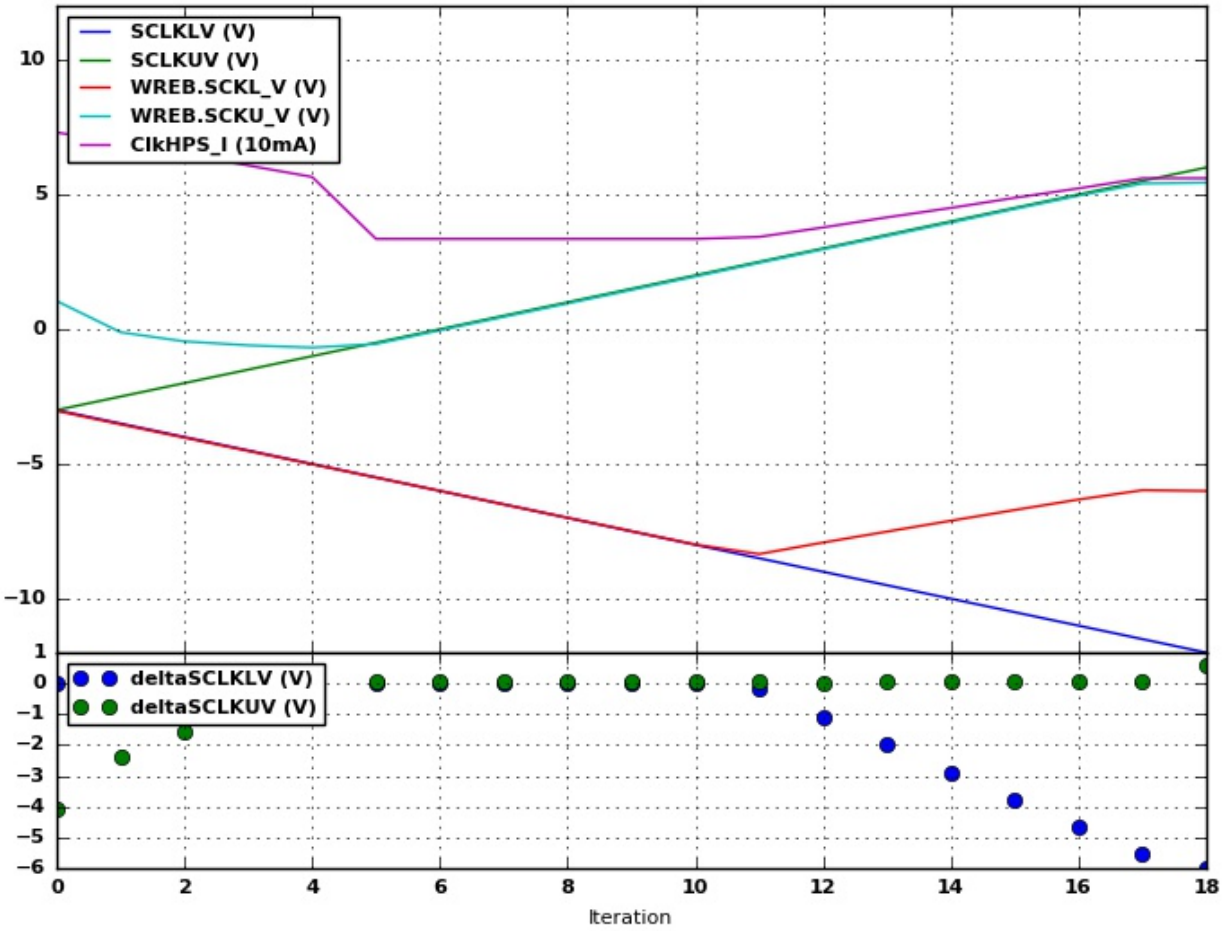
Diverging SCKRails Test 3 V



LV Gain: 0.798340. UV Gain: 0.702715. 16/38 values okay.
Test FAILED.

SCLKLV (V)	SCLKUV (V)	WREB.SCKL_V (V)	WREB.SCKU_V (V)	ClkHPS_I (10mA)	deltaSCLKLV (V)	deltaSCLKUV (V)
3.0	3.0	-0.9109	1.165	9.125	3.9109	1.835
2.5	3.5	0.6683	0.6714	8.95	1.8317	2.8286
2.0	4.0	1.001	0.985	8.7	0.999	3.015
1.5	4.5	1.445	1.4442	3.325	0.055	3.0558
1.0	5.0	0.9521	1.9478	3.35	0.0479	3.0522
0.5	5.5	0.4593	2.4445	3.35	0.0407	3.0555
0.0	6.0	-0.0366	2.9495	3.35	0.0366	3.0505
-0.5	6.5	-0.5356	3.4492	3.35	0.0356	3.0508
-1.0	7.0	-1.0345	3.9467	3.35	0.0345	3.0533
-1.5	7.5	-1.5312	4.4472	3.35	0.0312	3.0528
-2.0	8.0	-2.0264	4.9507	3.35	0.0264	3.0493
-2.5	8.5	-2.5185	5.4543	3.35	0.0185	3.0457
-3.0	9.0	-3.0182	5.957	3.35	0.0182	3.043
-3.5	9.5	-3.5286	6.4499	3.35	0.0286	3.0501
-4.0	10.0	-4.0253	6.9023	4.1	0.0253	3.0977
-4.5	10.5	-4.5219	6.5193	4.475	0.0219	3.9807
-5.0	11.0	-5.0194	6.1348	4.85	0.0194	4.8652
-5.5	11.5	-5.5161	5.7526	5.25	0.0161	5.7474
-6.0	12.0	-5.9517	5.4199	5.6	-0.0483	6.5801

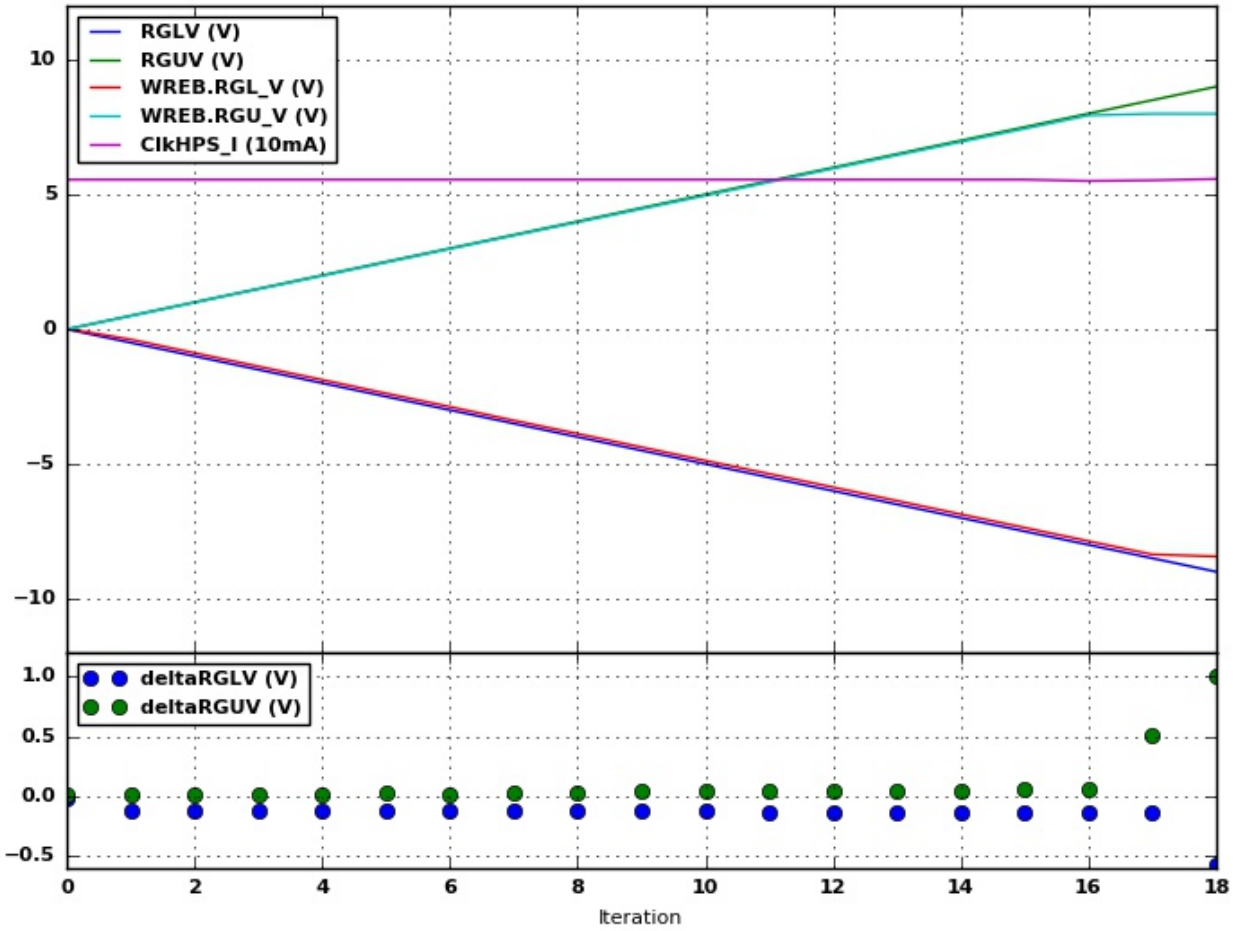
Diverging SCKRails Test -3 V



LV Gain: 0.366294. UV Gain: 0.719704. 25/38 values okay.
Test FAILED.

SCLKLV (V)	SCLKUV (V)	WREB.SCKL_V (V)	WREB.SCKU_V (V)	ClkHPS_I (10mA)	deltaSCLKLV (V)	deltaSCLKUV (V)
-3.0	-3.0	-3.0319	1.046	7.3	0.0319	-4.046
-3.5	-2.5	-3.5324	-0.1144	6.925	0.0324	-2.3856
-4.0	-2.0	-4.0268	-0.4524	6.5	0.0268	-1.5476
-4.5	-1.5	-4.5197	-0.5981	6.075	0.0197	-0.9019
-5.0	-1.0	-5.0125	-0.6813	5.65	0.0125	-0.3187
-5.5	-0.5	-5.5038	-0.5486	3.35	0.0038	0.0486
-6.0	0.0	-5.9982	-0.0412	3.35	-0.0018	0.0412
-6.5	0.5	-6.501	0.4562	3.35	0.001	0.0438
-7.0	1.0	-6.9984	0.9544	3.35	-0.0016	0.0456
-7.5	1.5	-7.4951	1.4549	3.35	-0.0049	0.0451
-8.0	2.0	-7.9903	1.9562	3.35	-0.0097	0.0438
-8.5	2.5	-8.3427	2.462	3.425	-0.1573	0.038
-9.0	3.0	-7.9163	2.9648	3.775	-1.0837	0.0352
-9.5	3.5	-7.5096	3.4584	4.15	-1.9904	0.0416
-10.0	4.0	-7.1083	3.9558	4.5	-2.8917	0.0442
-10.5	4.5	-6.7085	4.4609	4.875	-3.7915	0.0391
-11.0	5.0	-6.3202	4.9545	5.225	-4.6798	0.0455
-11.5	5.5	-5.9746	5.4062	5.6	-5.5254	0.0938
-12.0	6.0	-6.0028	5.4352	5.6	-5.9972	0.5648

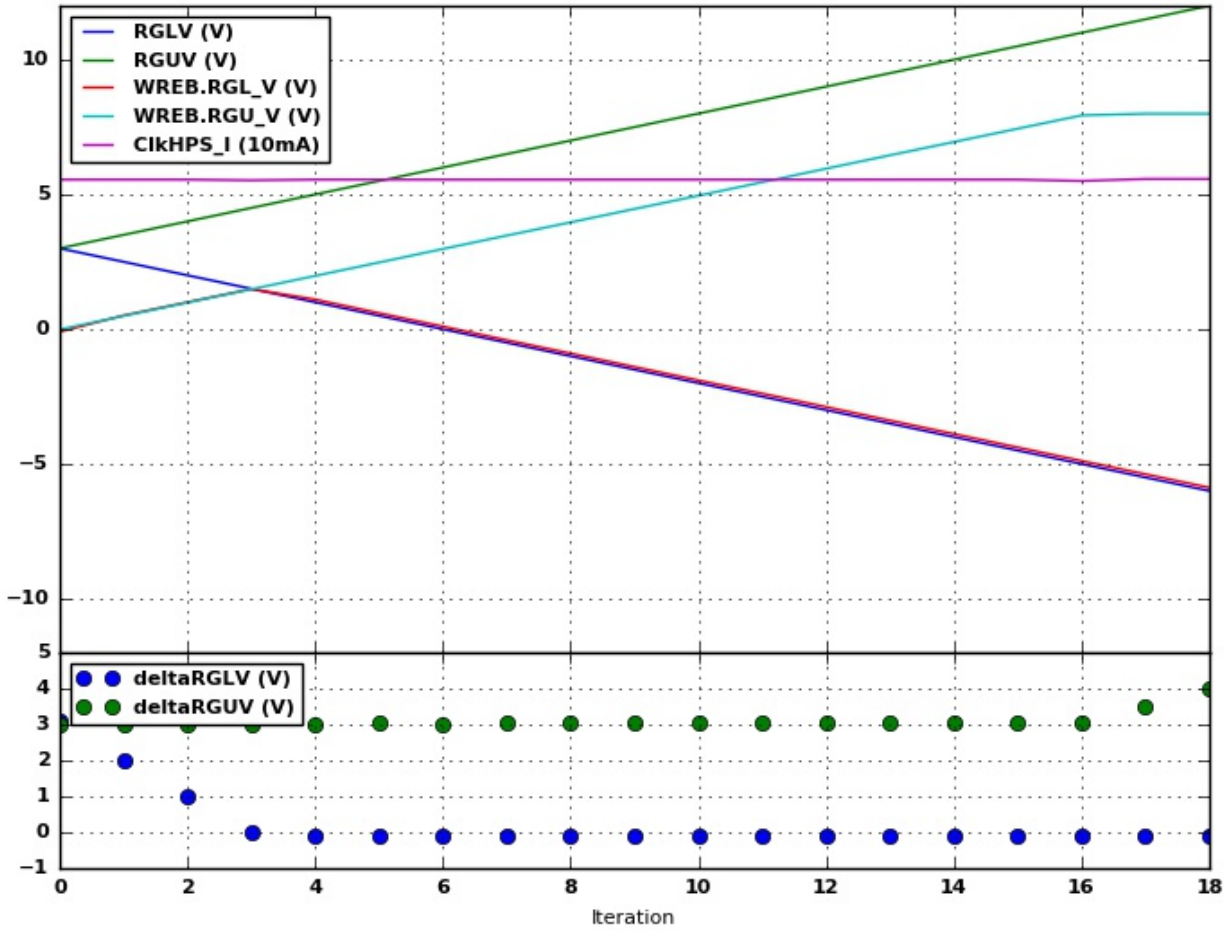
Diverging RGRails Test 0 V



LV Gain: 0.980816. UV Gain: 0.951211. 35/38 values okay.
Test PASSED.

RGLV (V)	RGUV (V)	WREB.RGL_V (V)	WREB.RGU_V (V)	ClkHPS_I (10mA)	deltaRGLV (V)	deltaRGUV (V)
0.0	0.0	0.0221	-0.0114	5.55	-0.0221	0.0114
-0.5	0.5	-0.3807	0.489	5.55	-0.1193	0.011
-1.0	1.0	-0.882	0.9865	5.55	-0.118	0.0135
-1.5	1.5	-1.3809	1.4847	5.55	-0.1191	0.0153
-2.0	2.0	-1.8791	1.9775	5.55	-0.1209	0.0225
-2.5	2.5	-2.3827	2.4765	5.55	-0.1173	0.0235
-3.0	3.0	-2.8793	2.9785	5.55	-0.1207	0.0215
-3.5	3.5	-3.3867	3.4744	5.55	-0.1133	0.0256
-4.0	4.0	-3.8803	3.9673	5.55	-0.1197	0.0327
-4.5	4.5	-4.3785	4.4624	5.55	-0.1215	0.0376
-5.0	5.0	-4.8775	4.9561	5.55	-0.1225	0.0439
-5.5	5.5	-5.3688	5.455	5.55	-0.1312	0.045
-6.0	6.0	-5.8655	5.9578	5.55	-0.1345	0.0422
-6.5	6.5	-6.3683	6.4545	5.55	-0.1317	0.0455
-7.0	7.0	-6.8687	6.9481	5.55	-0.1313	0.0519
-7.5	7.5	-7.3662	7.4394	5.55	-0.1338	0.0606
-8.0	8.0	-7.8659	7.9338	5.5	-0.1341	0.0662
-8.5	8.5	-8.3611	7.9941	5.525	-0.1389	0.5059
-9.0	9.0	-8.4312	7.9933	5.575	-0.5688	1.0067

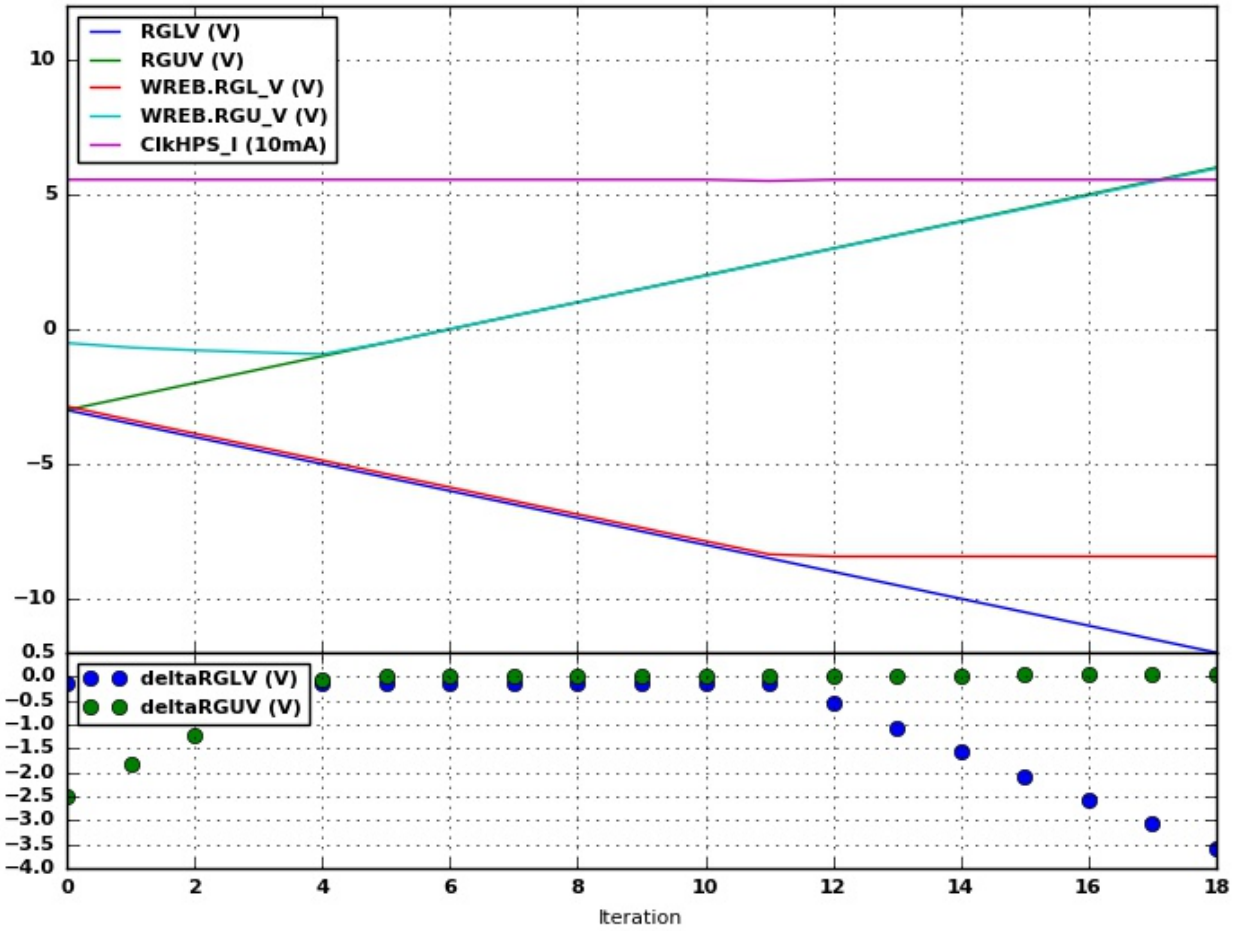
Diverging RGRails Test 3 V



LV Gain: 0.808609. UV Gain: 0.951311. 16/38 values okay.
Test FAILED.

RGLV (V)	RGUV (V)	WREB.RGL_V (V)	WREB.RGU_V (V)	ClkHPS_I (10mA)	deltaRGLV (V)	deltaRGUV (V)
3.0	3.0	-0.0961	-0.0107	5.55	3.0961	3.0107
2.5	3.5	0.5104	0.4898	5.55	1.9896	3.0102
2.0	4.0	1.0017	0.9865	5.55	0.9983	3.0135
1.5	4.5	1.4915	1.4832	5.525	0.0085	3.0168
1.0	5.0	1.1024	1.9783	5.55	-0.1024	3.0217
0.5	5.5	0.5974	2.475	5.55	-0.0974	3.025
0.0	6.0	0.1007	2.9785	5.55	-0.1007	3.0215
-0.5	6.5	-0.4051	3.4744	5.55	-0.0949	3.0256
-1.0	7.0	-0.8995	3.9665	5.55	-0.1005	3.0335
-1.5	7.5	-1.3985	4.4617	5.55	-0.1015	3.0383
-2.0	8.0	-1.8974	4.9553	5.55	-0.1026	3.0447
-2.5	8.5	-2.388	5.455	5.55	-0.112	3.045
-3.0	9.0	-2.8847	5.9578	5.55	-0.1153	3.0422
-3.5	9.5	-3.3867	6.4545	5.55	-0.1133	3.0455
-4.0	10.0	-3.8864	6.9466	5.55	-0.1136	3.0534
-4.5	10.5	-4.3861	7.4402	5.55	-0.1139	3.0598
-5.0	11.0	-4.8859	7.9338	5.5	-0.1141	3.0662
-5.5	11.5	-5.3795	7.9956	5.575	-0.1205	3.5044
-6.0	12.0	-5.88	7.9956	5.575	-0.12	4.0044

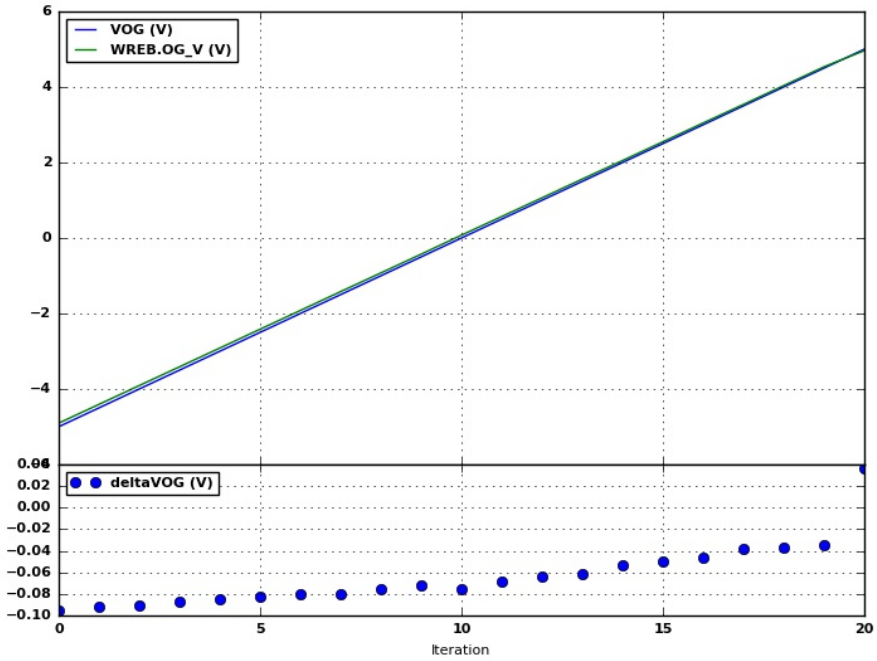
Diverging RGRails Test -3 V



LV Gain: 0.665334. UV Gain: 0.820703. 27/38 values okay.
Test FAILED.

RGLV (V)	RGUV (V)	WREB.RGL_V (V)	WREB.RGU_V (V)	ClkHPS_I (10mA)	deltaRGLV (V)	deltaRGUV (V)
-3.0	-3.0	-2.8633	-0.5119	5.55	-0.1367	-2.4881
-3.5	-2.5	-3.3699	-0.679	5.55	-0.1301	-1.821
-4.0	-2.0	-3.8704	-0.7813	5.55	-0.1296	-1.2188
-4.5	-1.5	-4.3694	-0.8591	5.55	-0.1306	-0.6409
-5.0	-1.0	-4.8676	-0.9285	5.55	-0.1324	-0.0715
-5.5	-0.5	-5.3703	-0.4959	5.55	-0.1297	-0.0041
-6.0	0.0	-5.867	0.0053	5.55	-0.133	-0.0053
-6.5	0.5	-6.3736	0.5028	5.55	-0.1264	-0.0028
-7.0	1.0	-6.8687	0.9949	5.55	-0.1313	0.0051
-7.5	1.5	-7.3677	1.4885	5.55	-0.1323	0.0115
-8.0	2.0	-7.8644	1.9844	5.55	-0.1356	0.0156
-8.5	2.5	-8.3572	2.4834	5.5	-0.1428	0.0166
-9.0	3.0	-8.4328	2.9854	5.55	-0.5672	0.0146
-9.5	3.5	-8.432	3.4813	5.55	-1.068	0.0187
-10.0	4.0	-8.4312	3.9772	5.55	-1.5688	0.0228
-10.5	4.5	-8.4305	4.4678	5.55	-2.0695	0.0322
-11.0	5.0	-8.4312	4.9629	5.55	-2.5688	0.0371
-11.5	5.5	-8.4312	5.4626	5.55	-3.0688	0.0374
-12.0	6.0	-8.4312	5.9624	5.55	-3.5688	0.0376

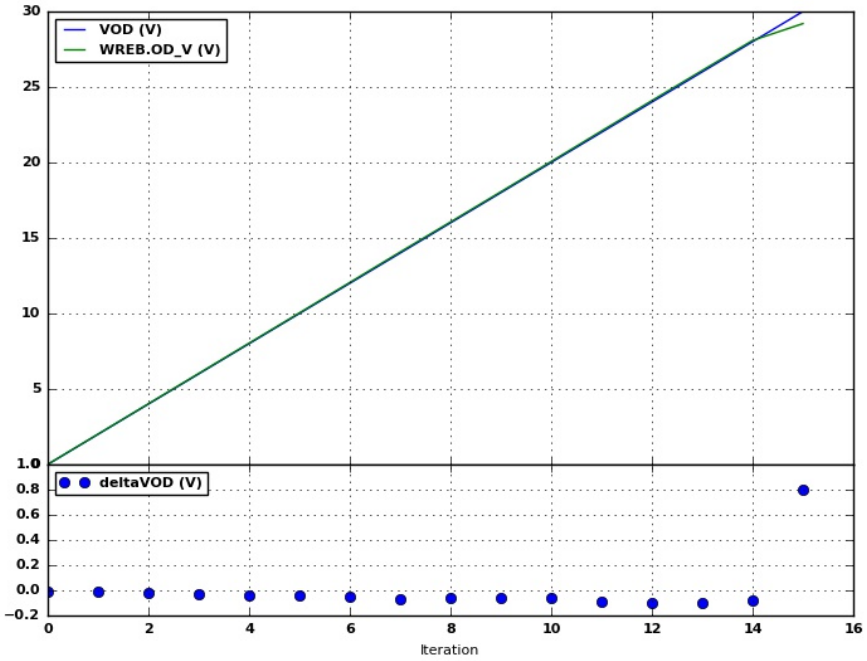
OG Bias Test



Gain: 0.991682. 21/21 values okay.
Test PASSED.

VOG (V)	WREB.OG_V (V)	deltaVOG (V)
-5.0	-4.9045	-0.0955
-4.5	-4.4077	-0.0923
-4.0	-3.9091	-0.0909
-3.5	-3.4123	-0.0877
-3.0	-2.9155	-0.0845
-2.5	-2.417	-0.083
-2.0	-1.9202	-0.0798
-1.5	-1.42	-0.08
-1.0	-0.9248	-0.0752
-0.5	-0.428	-0.072
0.0	0.0755	-0.0755
0.5	0.569	-0.069
1.0	1.0641	-0.0641
1.5	1.561	-0.061
2.0	2.0528	-0.0528
2.5	2.5496	-0.0496
3.0	3.0464	-0.0464
3.5	3.5382	-0.0382
4.0	4.0367	-0.0367
4.5	4.5352	-0.0352
5.0	4.9632	0.0368

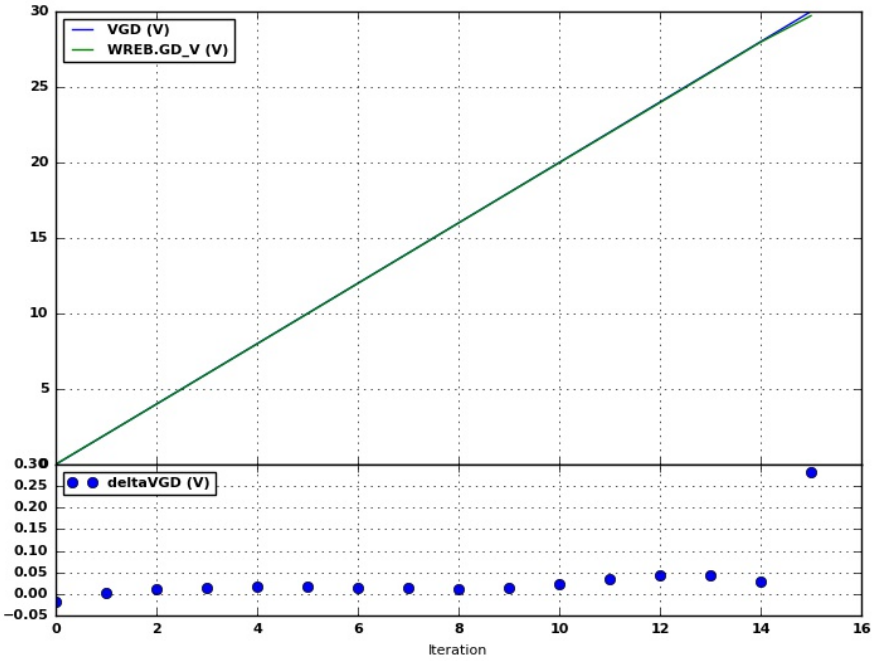
OD Bias Test



Gain: 0.993114. 15/16 values okay.
Test PASSED.

VOD (V)	WREB.OD_V (V)	deltaVOD (V)
0	0.0117	-0.0117
2	2.0125	-0.0125
4	4.0233	-0.0233
6	6.0307	-0.0307
8	8.0365	-0.0365
10	10.0406	-0.0406
12	12.0547	-0.0547
14	14.0706	-0.0706
16	16.0612	-0.0612
18	18.062	-0.062
20	20.0644	-0.0644
22	22.0886	-0.0886
24	24.0994	-0.0994
26	26.0968	-0.0968
28	28.0824	-0.0824
30	29.1986	0.8014

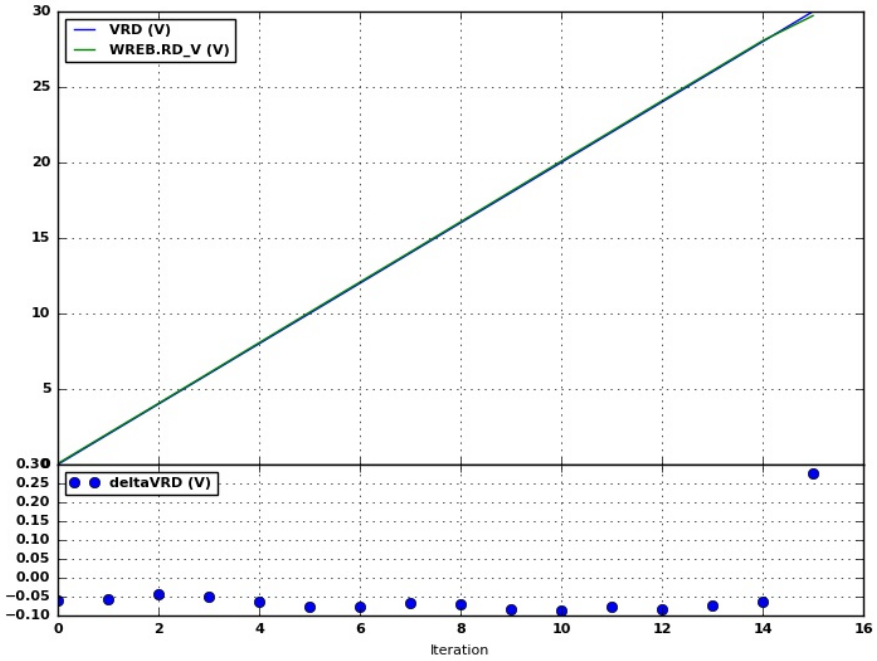
GD Bias Test



Gain: 0.995829. 15/16 values okay.
Test PASSED.

VGD (V)	WREB.GD_V (V)	deltaVGD (V)
0	0.0185	-0.0185
2	1.9974	0.0026
4	3.9897	0.0103
6	5.9871	0.0129
8	7.9828	0.0172
10	9.9835	0.0165
12	11.9859	0.0141
14	13.9867	0.0133
16	15.9874	0.0126
18	17.9848	0.0152
20	19.9771	0.0229
22	21.9661	0.0339
24	23.9568	0.0432
26	25.9558	0.0442
28	27.97	0.03
30	29.7173	0.2827

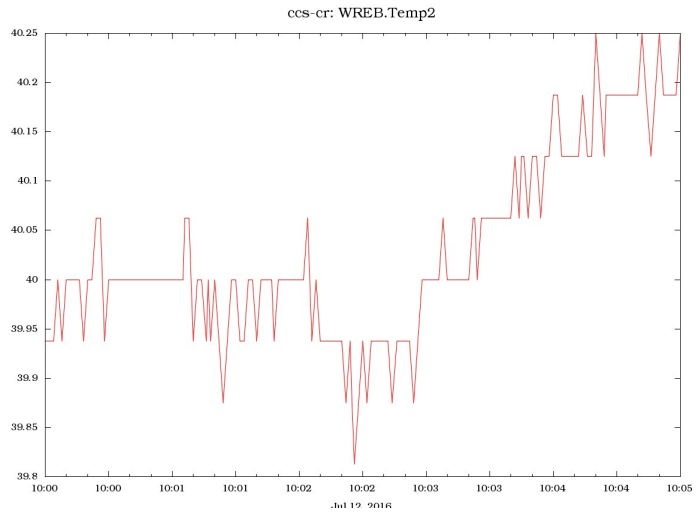
RD Bias Test

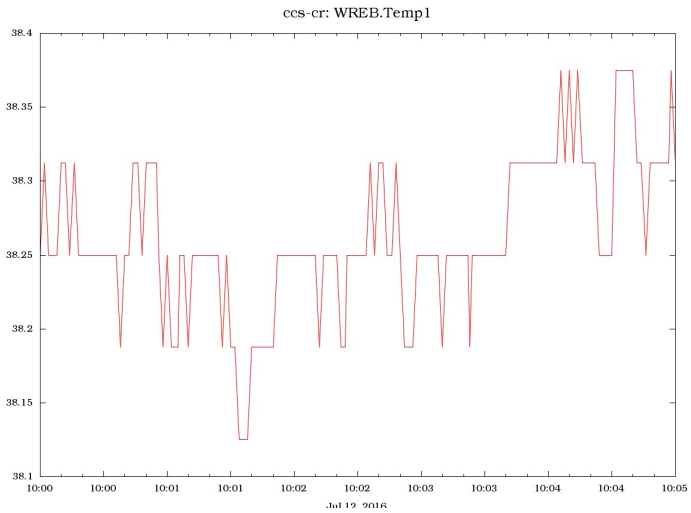


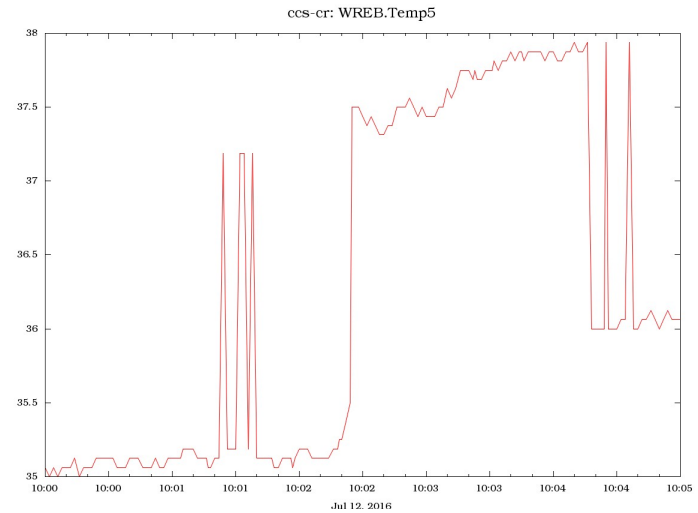
Gain: 0.996969. 15/16 values okay.
Test PASSED.

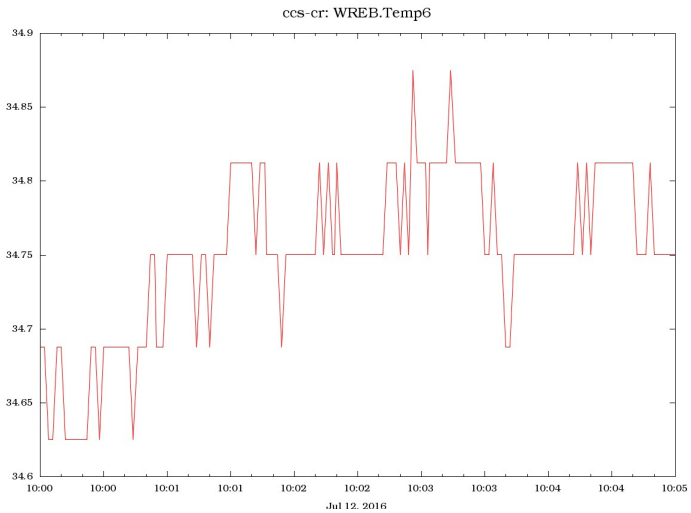
VRD (V)	WREB.RD_V (V)	deltaVRD (V)
0	0.0587	-0.0587
2	2.0561	-0.0561
4	4.0434	-0.0434
6	6.0509	-0.0509
8	8.0634	-0.0634
10	10.0758	-0.0758
12	12.0766	-0.0766
14	14.0656	-0.0656
16	16.0713	-0.0713
18	18.0838	-0.0838
20	20.0862	-0.0862
22	22.0769	-0.0769
24	24.0843	-0.0843
26	26.075	-0.075
28	28.064	-0.064
30	29.7223	0.2777

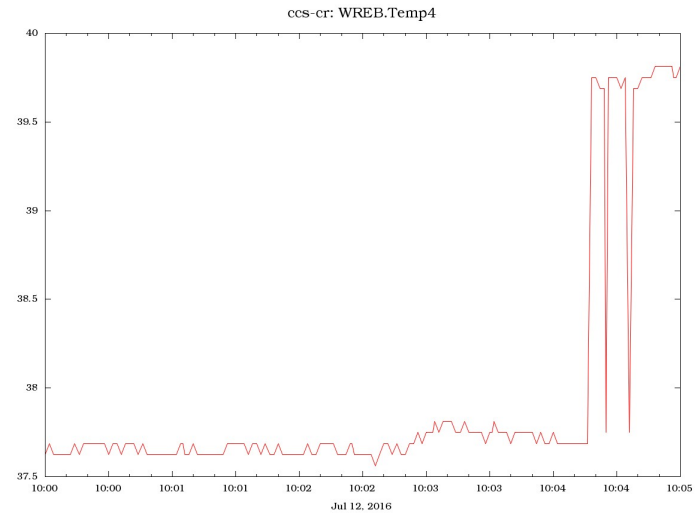
Board temperature test

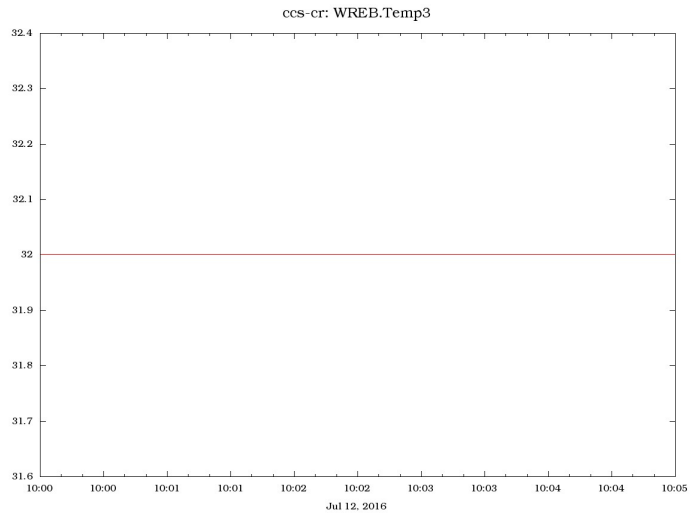






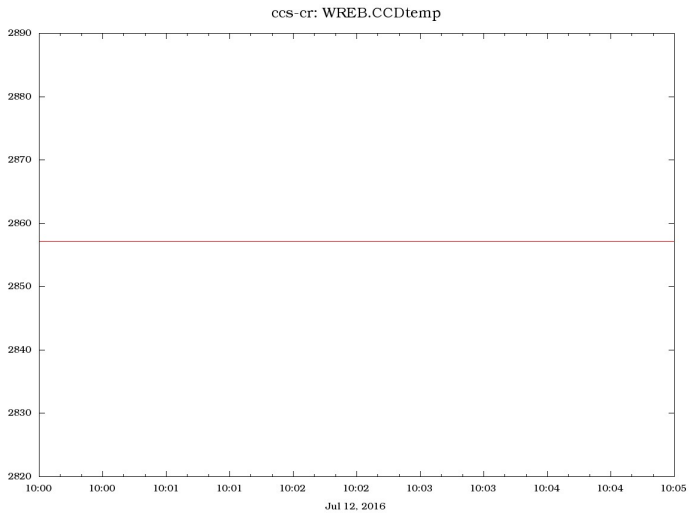


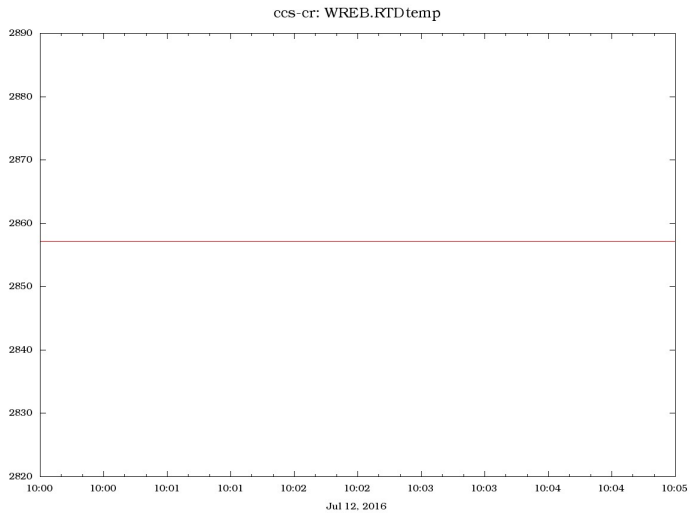




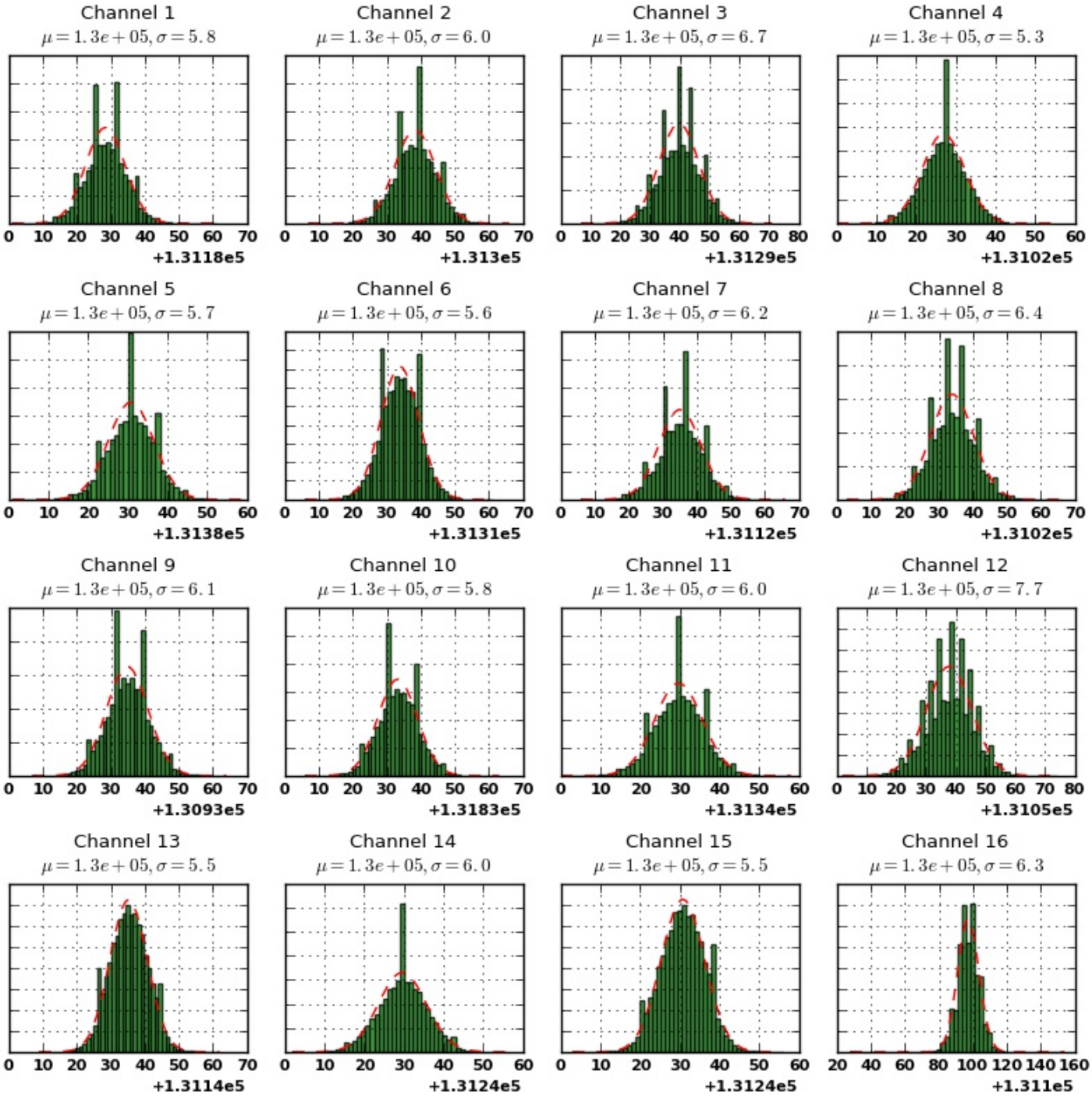
WREB Test: 2016-07-12 10:05

CCD temperature test



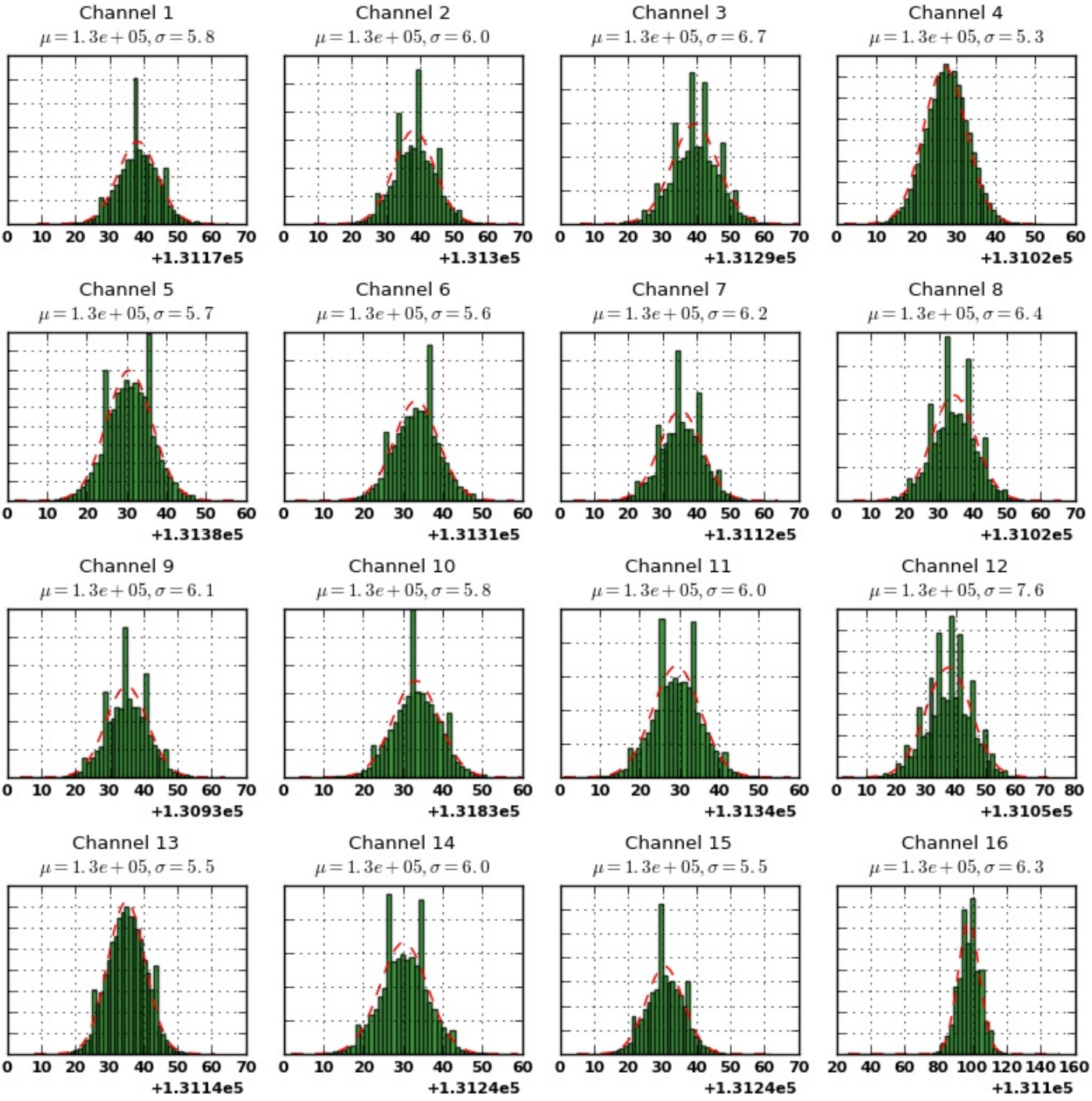


Unclamped ASPIC Noise Test



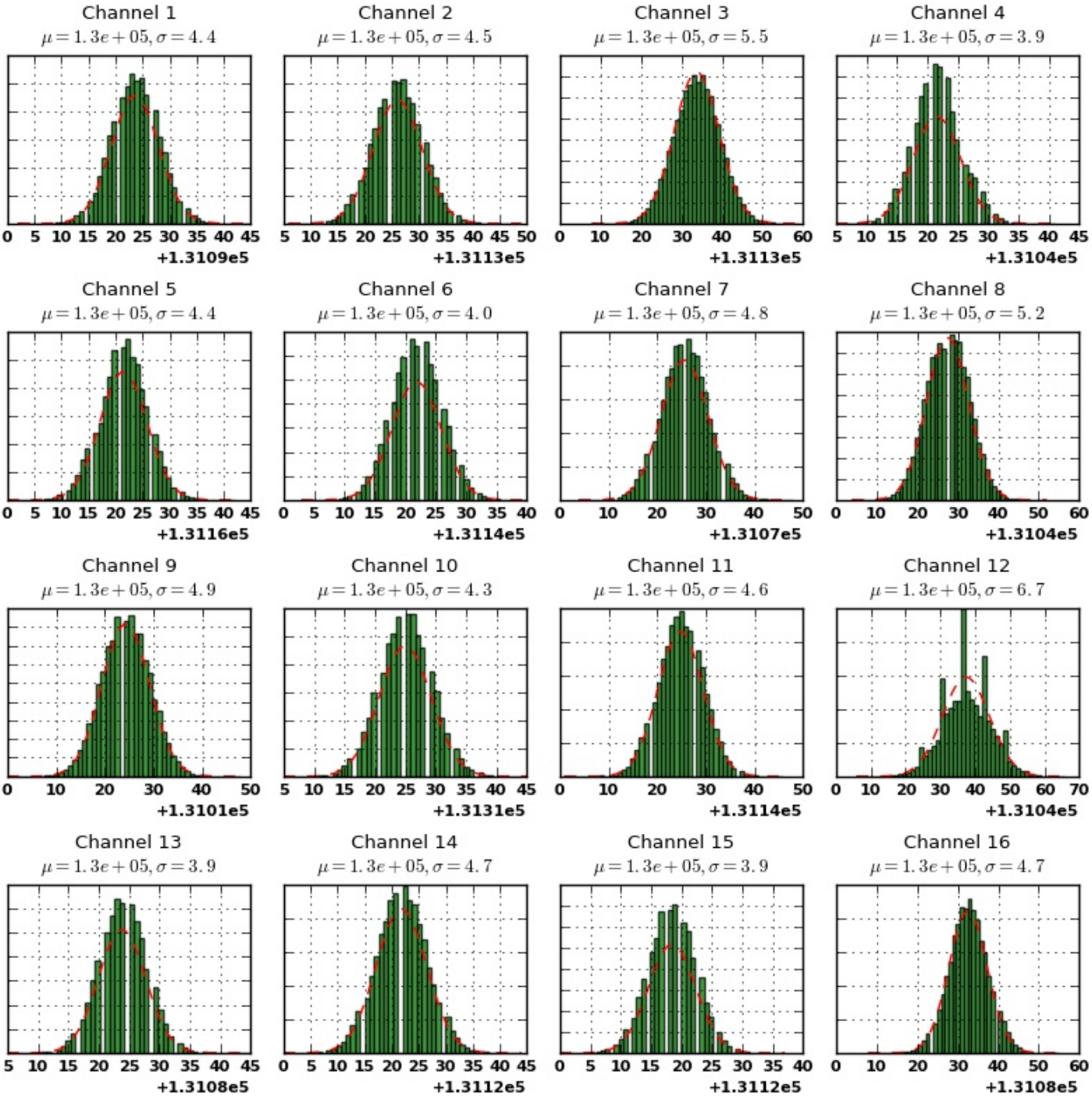
Test FAILED.

Clamped ASPIC Noise Test



Test FAILED.

Reset ASPIC Noise Test



Test FAILED.