

ESD (HUMAN BODY MODE) TEST REPORT

Company : Vango Technologies, Inc.
Address : F/9, Haiyue Building, 788 Danfeng Rd, Binjiang District,
Hangzhou, Zhejiang, P.R.China, 310051
Model Name : V9811A
Date Received : November 11, 2016
Date Tested : November 11, 2016

TESTING LABORATORY IS ACCREDITED BY:

IEC/IECQ 17025 certificate of independent test laboratory approval



CB Certificate No.: 1.72.0031/B IECQ Certificate No.: IECQ-L NSAIUS 09.0005
ISO 9001 certificate is approved by TUV CERT certification body of TUV NORD Cert GmbH

WE HEREBY CERTIFY THAT:

The test(s) shown in the attachment were conducted according to the indicating procedures. We assume full responsibility for the accuracy and completeness of these tests and vouch for the qualifications of all personnel performing them.

	Name	Signature	Date
Testing Engineer	Jian shen	<i>Jian shen</i>	2016/11/11
Approving Manager	Jianbo Song	<i>Jianbo Song</i>	2016/11/11

Note :

1. This report will be invalid if reproduced in whole or in part.
2. This report refers only to the specimen(s) submitted to test, and is invalid if used separately.
3. This report is ONLY valid with the examination seal and signature of this institute.
4. The tested specimen(s) will only be preserved for thirty days from the date issued, if not collected by the applicant.
5. The failure criteria of all ESD tests should be based on the result of parametric and functional testing conducted by the customer, which follows the statement of international standards. Thus, the judgment of the curve traces provided in this report is for reference ONLY.



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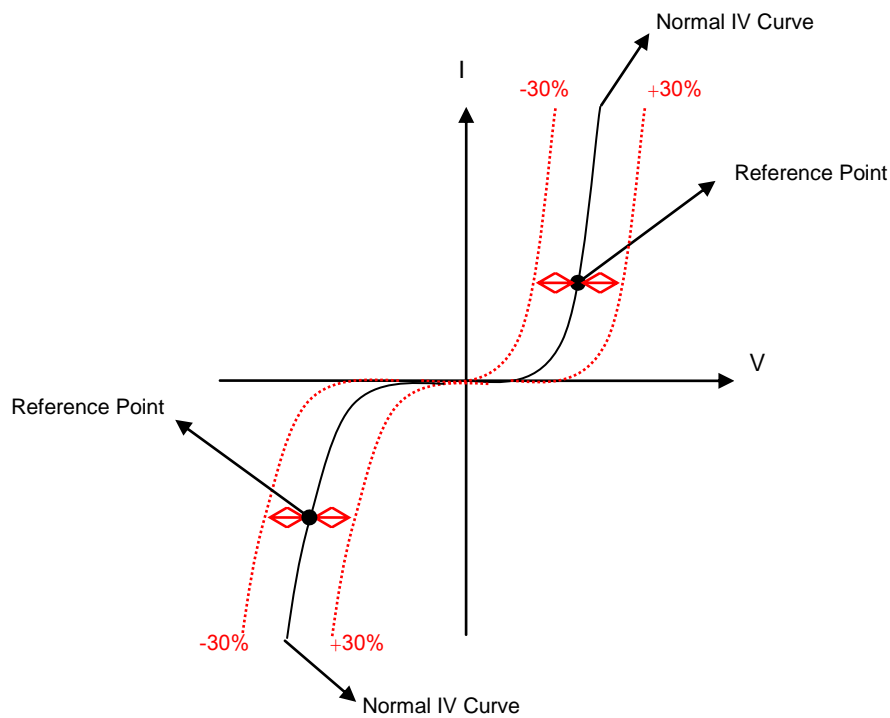
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1. GENERAL INFORMATION

1.1 DESCRIPTION OF UNIT

MANUFACTURER : Vango Technologies, Inc.
 DEVICE NAME : V9811A
 PACKAGED / PIN COUNT : QFP64
 REFERENCE DOCUMENT : JEDEC EIA/JESD22-A114F Zap 1 pulse(s), Interval: 0.3 Sec.
 TEST VOLTAGE : 4000V(±);
 SAMPLE QUANTITY : 24 pcs
 FAILURE CRITERIA : ±30% voltage shift at reference point before/after zapping
 (Reference Only)

※Failure Judgment: Voltage shift over ±30% at reference point.



2. ESD (HUMAN BODY MODE) TEST

2.1 TEST EQUIPMENT

Test Equipment	Equipment S/N	Calibration Date:	Recommended Due Date:
KEYTEK ZAPMASTER 7/4	0008189	July28, 2016	July27, 2017

2.2 LABORATORY AMBIENCE CONDITION

Temperature : 23±5°C

Relative humidity : 55%±10% (RH)

2.3 REFERENCE DOCUMENT

The test is based on JEDEC EIA/JESD22-A114F

2.4 TEST CONDITION

ALL_VSS TO VSS (+)
Step:4000V

ALL_VSS TO VSS (-)
Step:4000V

ALL_DVCC TO DVCC (+)
Step:4000V

ALL_DVCC TO DVCC (-)
Step:4000V

ALL_LDO33 TO LDO33 (+)
Step:4000V

ALL_LDO33 TO LDO33 (-)
Step:4000V

IO TO IO (+)
Step:4000V

IO TO IO (-)
Step:4000V

2.5 SUMMARY OF TEST

Test Model : HBM	ESD Sensitivity Passed : +/-4000V		JEDEC EIA/JESD22-A114F Class : <u>3A</u>
Test condition	Sample Quantity	Passed Volts	Class 0 : < 250V. Class 1A : \cong 250V , < 500V Class 1B : \cong 500V , < 1000V Class 1C : \cong 1000V , < 2000V Class 2 : \cong 2000V , < 4000V Class 3A : \cong 4000V , < 8000V Class 3B : \cong 8000V
ALL_VSS TO VSS (+) Step:4000V	3	+4000V	
ALL_VSS TO VSS (-) Step:4000V	3	-4000V	
ALL_DVCC TO DVCC (+) Step:4000V	3	+4000V	
ALL_DVCC TO DVCC (-) Step:4000V	3	-4000V	
ALL_LDO33 TO LDO33 (+) Step:4000V	3	+4000V	
ALL_LDO33 TO LDO33 (-) Step:4000V	3	-4000V	
IO TO IO (+) Step:4000V	3	+4000V	
IO TO IO (-) Step:4000V	3	-4000V	

Group	Pins
ALL_DVCC	1-4,6-64
ALL_LDO33	1-5,7-64
ALL_VSS	1-7,9-41,43-64
DVCC	5
GND	8,42
I/O	9,17-62
I/P	2-3,10-16,63-64
IO	1-4,7,9-41,43-64
IP-L	4
LDO33	6
O/P	1,5-6
POWER	5-7
VCC	2,7
VSS	8,42

2.6 CONTENTS OF TEST

No	1		
	ALL_VSS TO VSS (+) Step:4000V		
Tested Pins	Sample No. & Failed Volt		
	#1-1	#1-2	#1-3
1	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
2	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
3	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
4	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
5	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
6	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
7	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
9	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
10	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
11	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
12	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
13	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
14	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
15	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
16	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
17	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
18	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
19	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
20	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
21	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
22	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
23	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
24	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
25	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
26	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
27	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
28	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
29	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
30	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
31	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
32	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
33	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
34	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
35	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
36	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
37	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
38	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
39	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
40	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
41	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
43	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
44	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
45	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)



46	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
47	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
48	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
49	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
50	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
51	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
52	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
53	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
54	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
55	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
56	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
57	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
58	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
59	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
60	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
61	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
62	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
63	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
64	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)

No	2		
ALL_VSS TO VSS (-) Step:4000V			
Tested Pins	Sample No. & Failed Volt		
	#2-1	#2-2	#2-3
1	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
2	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
3	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
4	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
5	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
6	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
7	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
9	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
10	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
11	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
12	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
13	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
14	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
15	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
16	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
17	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
18	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
19	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
20	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
21	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
22	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
23	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
24	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
25	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
26	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
27	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
28	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
29	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
30	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
31	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
32	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
33	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
34	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
35	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
36	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
37	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
38	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
39	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
40	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
41	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
43	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
44	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
45	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
46	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)



47	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
48	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
49	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
50	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
51	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
52	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
53	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
54	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
55	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
56	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
57	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
58	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
59	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
60	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
61	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
62	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
63	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
64	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)

No	3		
ALL_DVCC TO DVCC (+) Step:4000V			
Tested Pins	Sample No. & Failed Volt		
	#3-1	#3-2	#3-3
1	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
2	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
3	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
4	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
6	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
7	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
8	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
9	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
10	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
11	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
12	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
13	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
14	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
15	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
16	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
17	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
18	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
19	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
20	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
21	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
22	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
23	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
24	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
25	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
26	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
27	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
28	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
29	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
30	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
31	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
32	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
33	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
34	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
35	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
36	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
37	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
38	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
39	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
40	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
41	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
42	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
43	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
44	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
45	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)



46	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
47	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
48	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
49	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
50	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
51	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
52	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
53	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
54	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
55	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
56	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
57	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
58	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
59	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
60	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
61	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
62	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
63	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
64	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)

No	4		
ALL_DVCC TO DVCC (-) Step:4000V			
Tested Pins	Sample No. & Failed Volt		
	#4-1	#4-2	#4-3
1	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
2	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
3	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
4	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
6	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
7	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
8	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
9	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
10	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
11	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
12	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
13	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
14	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
15	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
16	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
17	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
18	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
19	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
20	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
21	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
22	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
23	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
24	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
25	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
26	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
27	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
28	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
29	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
30	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
31	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
32	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
33	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
34	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
35	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
36	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
37	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
38	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
39	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
40	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
41	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
42	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
43	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
44	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
45	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)



46	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
47	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
48	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
49	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
50	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
51	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
52	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
53	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
54	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
55	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
56	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
57	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
58	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
59	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
60	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
61	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
62	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
63	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
64	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)

No	5		
ALL_LDO33 TO LDO33 (+) Step:4000V			
Tested Pins	Sample No. & Failed Volt		
	#5-1	#5-2	#5-3
1	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
2	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
3	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
4	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
5	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
7	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
8	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
9	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
10	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
11	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
12	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
13	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
14	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
15	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
16	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
17	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
18	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
19	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
20	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
21	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
22	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
23	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
24	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
25	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
26	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
27	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
28	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
29	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
30	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
31	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
32	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
33	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
34	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
35	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
36	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
37	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
38	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
39	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
40	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
41	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
42	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
43	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
44	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
45	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)



46	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
47	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
48	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
49	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
50	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
51	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
52	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
53	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
54	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
55	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
56	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
57	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
58	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
59	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
60	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
61	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
62	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
63	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
64	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)

No	6		
ALL_LDO33 TO LDO33 (-) Step:4000V			
Tested Pins	Sample No. & Failed Volt		
	#6-1	#6-2	#6-3
1	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
2	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
3	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
4	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
5	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
7	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
8	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
9	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
10	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
11	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
12	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
13	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
14	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
15	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
16	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
17	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
18	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
19	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
20	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
21	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
22	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
23	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
24	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
25	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
26	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
27	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
28	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
29	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
30	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
31	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
32	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
33	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
34	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
35	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
36	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
37	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
38	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
39	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
40	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
41	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
42	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
43	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
44	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
45	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)



46	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
47	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
48	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
49	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
50	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
51	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
52	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
53	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
54	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
55	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
56	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
57	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
58	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
59	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
60	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
61	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
62	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
63	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
64	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)

No	7		
	IO TO IO (+) Step:4000V		
Tested Pins	Sample No. & Failed Volt		
	#7-1	#7-2	#7-3
1	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
2	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
3	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
4	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
7	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
9	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
10	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
11	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
12	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
13	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
14	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
15	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
16	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
17	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
18	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
19	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
20	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
21	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
22	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
23	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
24	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
25	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
26	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
27	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
28	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
29	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
30	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
31	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
32	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
33	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
34	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
35	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
36	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
37	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
38	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
39	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
40	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
41	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
43	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
44	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
45	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
46	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
47	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
48	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)



49	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
50	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
51	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
52	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
53	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
54	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
55	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
56	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
57	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
58	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
59	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
60	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
61	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
62	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
63	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)
64	PASS(+4000V)	PASS(+4000V)	PASS(+4000V)

No	8		
	IO TO IO (-) Step:4000V		
Tested Pins	Sample No. & Failed Volt		
	#8-1	#8-2	#8-3
1	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
2	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
3	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
4	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
7	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
9	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
10	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
11	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
12	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
13	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
14	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
15	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
16	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
17	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
18	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
19	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
20	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
21	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
22	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
23	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
24	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
25	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
26	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
27	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
28	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
29	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
30	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
31	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
32	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
33	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
34	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
35	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
36	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
37	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
38	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
39	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
40	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
41	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
43	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
44	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
45	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
46	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
47	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
48	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)



49	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
50	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
51	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
52	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
53	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
54	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
55	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
56	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
57	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
58	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
59	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
60	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
61	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
62	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
63	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)
64	PASS(-4000V)	PASS(-4000V)	PASS(-4000V)