

RELIABILITY TEST REPORT

TEST REPORT

Company : RAIO TECHNOLOGY INC.
 Model Name : RA0086L3N
 Date Received : 2009.07.24
 Date Tested : 2009.07.28

TESTING LABORATORY IS ACCREDITED BY:

IEC/IECQ 17025 certificate of independent test laboratory approval
 Certificate No. : T1091

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
Test Engineer	Jay Fang	Reliability Test Engineer <i>Jay Fang</i>	2009/07/24
Section Manager	Even Lin	Reliability Test Engineer <i>Even Lin</i>	2009/07/28

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.





Integrated Service Technology Inc.
Reliability & Failure Analysis Group
1F, No.19, Pu-ding Rd., Hsin - chu City, Taiwan, R.O.C.
Tel: 886-3-578-2266, Fax: 886-3-5770988
<http://www.istgroup.com>



No.:T1091
Revision:A

Report No. : HS0907240038A

Report No. : RAC9802419-E

Page 1 of 7

RELIABILITY TEST REPORT

Applicant/Department: RAI0 TECHNOLOGY INC.	
Product	: RA0086L3N
Testing Item	: ESD-HBM
	Package/Pin Count: LQFP-100
Test Method	: MIL-STD-883G Method 3015.7
Failure Criteria	: FOR V CHANGE AT 1 μ A \pm 30%
Test Voltage	: 3000V ~ 5000V (\pm), Step: 1000V (\pm)



ESD-HBM Testing Report

Test Equipment:

KEYTEK ZAPMASTER #2-6447

Environmental Condition of Laboratory:

Temperature: 25°C±5°C
 Humidity: 55%±10% RH

Test Condition:

- VSS (+)
- VSS (-)
- VCC (+)
- VCC (-)
- VCC – VSS (+)
- VCC – VSS (-)

Test Result:

MODEL: HBM	ESD SENSITIVITY PASS : ±5000V		V CLASS: <u>3A</u>
PIN COMBINATION	SAMPLE SIZE	PASSED VOLTS	NOTE:
VSS (+)	3	+5000V	FOR EIAJ TEST NO CLASSIFICATION
VSS (-)	3	-5000V	CLASS 0: < 250V
VCC (+)	3	+5000V	CLASS 1A: 250V TO 499V
VCC (-)	3	-5000V	CLASS 1B: 500V TO 999V
VCC – VSS (+)	3	+5000V	CLASS 1C: 1000V TO 1999V
VCC – VSS (-)	3	-5000V	CLASS 2: 2000V TO 3999V
			CLASS 3A: 4000V TO 7999V
			CLASS 3B: ≥ 8000V

ALL:1-54,56-58,60-62,64,66-100
 I/O:54,66-69,73
 I/P:56-58,60-62,64,70-72

O/P:1-53,74-100
 VCC:59,63
 VSS:55,65



Integrated Service Technology Inc.
 Reliability & Failure Analysis Group
 1F, No.19, Pu-ding Rd., Hsin - chu City, Taiwan, R.O.C.
 Tel: 886-3-578-2266, Fax: 886-3-5770988
<http://www.istgroup.com>



No.:T1091
Revision:A

Report No. : HS0907240038A
 Report No. : RAC9802419-E
 Page 3 of 7

VSS (+)									
(UNIT:V)									
Test Pin	FAIL VOLTAGE	#1	#2	#3	Test Pin	FAIL VOLTAGE	#1	#2	#3
1	PASS	PASS	PASS	PASS	49	PASS	PASS	PASS	PASS
2	PASS	PASS	PASS	PASS	50	PASS	PASS	PASS	PASS
3	PASS	PASS	PASS	PASS	51	PASS	PASS	PASS	PASS
4	PASS	PASS	PASS	PASS	52	PASS	PASS	PASS	PASS
5	PASS	PASS	PASS	PASS	53	PASS	PASS	PASS	PASS
6	PASS	PASS	PASS	PASS	54	PASS	PASS	PASS	PASS
7	PASS	PASS	PASS	PASS	56	PASS	PASS	PASS	PASS
8	PASS	PASS	PASS	PASS	57	PASS	PASS	PASS	PASS
9	PASS	PASS	PASS	PASS	58	PASS	PASS	PASS	PASS
10	PASS	PASS	PASS	PASS	60	PASS	PASS	PASS	PASS
11	PASS	PASS	PASS	PASS	61	PASS	PASS	PASS	PASS
12	PASS	PASS	PASS	PASS	62	PASS	PASS	PASS	PASS
13	PASS	PASS	PASS	PASS	64	PASS	PASS	PASS	PASS
14	PASS	PASS	PASS	PASS	66	PASS	PASS	PASS	PASS
15	PASS	PASS	PASS	PASS	67	PASS	PASS	PASS	PASS
16	PASS	PASS	PASS	PASS	68	PASS	PASS	PASS	PASS
17	PASS	PASS	PASS	PASS	69	PASS	PASS	PASS	PASS
18	PASS	PASS	PASS	PASS	70	PASS	PASS	PASS	PASS
19	PASS	PASS	PASS	PASS	71	PASS	PASS	PASS	PASS
20	PASS	PASS	PASS	PASS	72	PASS	PASS	PASS	PASS
21	PASS	PASS	PASS	PASS	73	PASS	PASS	PASS	PASS
22	PASS	PASS	PASS	PASS	74	PASS	PASS	PASS	PASS
23	PASS	PASS	PASS	PASS	75	PASS	PASS	PASS	PASS
24	PASS	PASS	PASS	PASS	76	PASS	PASS	PASS	PASS
25	PASS	PASS	PASS	PASS	77	PASS	PASS	PASS	PASS
26	PASS	PASS	PASS	PASS	78	PASS	PASS	PASS	PASS
27	PASS	PASS	PASS	PASS	79	PASS	PASS	PASS	PASS
28	PASS	PASS	PASS	PASS	80	PASS	PASS	PASS	PASS
29	PASS	PASS	PASS	PASS	81	PASS	PASS	PASS	PASS
30	PASS	PASS	PASS	PASS	82	PASS	PASS	PASS	PASS
31	PASS	PASS	PASS	PASS	83	PASS	PASS	PASS	PASS
32	PASS	PASS	PASS	PASS	84	PASS	PASS	PASS	PASS
33	PASS	PASS	PASS	PASS	85	PASS	PASS	PASS	PASS
34	PASS	PASS	PASS	PASS	86	PASS	PASS	PASS	PASS
35	PASS	PASS	PASS	PASS	87	PASS	PASS	PASS	PASS
36	PASS	PASS	PASS	PASS	88	PASS	PASS	PASS	PASS
37	PASS	PASS	PASS	PASS	89	PASS	PASS	PASS	PASS
38	PASS	PASS	PASS	PASS	90	PASS	PASS	PASS	PASS
39	PASS	PASS	PASS	PASS	91	PASS	PASS	PASS	PASS
40	PASS	PASS	PASS	PASS	92	PASS	PASS	PASS	PASS
41	PASS	PASS	PASS	PASS	93	PASS	PASS	PASS	PASS
42	PASS	PASS	PASS	PASS	94	PASS	PASS	PASS	PASS
43	PASS	PASS	PASS	PASS	95	PASS	PASS	PASS	PASS
44	PASS	PASS	PASS	PASS	96	PASS	PASS	PASS	PASS
45	PASS	PASS	PASS	PASS	97	PASS	PASS	PASS	PASS
46	PASS	PASS	PASS	PASS	98	PASS	PASS	PASS	PASS
47	PASS	PASS	PASS	PASS	99	PASS	PASS	PASS	PASS
48	PASS	PASS	PASS	PASS	100	PASS	PASS	PASS	PASS



Integrated Service Technology Inc.
 Reliability & Failure Analysis Group
 1F, No.19, Pu-ding Rd., Hsin - chu City, Taiwan, R.O.C.
 Tel: 886-3-578-2266, Fax: 886-3-5770988
<http://www.istgroup.com>



No.:T1091
Revision:A

Report No. : HS0907240038A

Report No. : RAC9802419-E

Page 4 of 7

VSS (-)									
(UNIT:V)									
Test Pin	FAIL VOLTAGE	#1	#2	#3	Test Pin	FAIL VOLTAGE	#1	#2	#3
1		PASS	PASS	PASS	49		PASS	PASS	PASS
2		PASS	PASS	PASS	50		PASS	PASS	PASS
3		PASS	PASS	PASS	51		PASS	PASS	PASS
4		PASS	PASS	PASS	52		PASS	PASS	PASS
5		PASS	PASS	PASS	53		PASS	PASS	PASS
6		PASS	PASS	PASS	54		PASS	PASS	PASS
7		PASS	PASS	PASS	56		PASS	PASS	PASS
8		PASS	PASS	PASS	57		PASS	PASS	PASS
9		PASS	PASS	PASS	58		PASS	PASS	PASS
10		PASS	PASS	PASS	60		PASS	PASS	PASS
11		PASS	PASS	PASS	61		PASS	PASS	PASS
12		PASS	PASS	PASS	62		PASS	PASS	PASS
13		PASS	PASS	PASS	64		PASS	PASS	PASS
14		PASS	PASS	PASS	66		PASS	PASS	PASS
15		PASS	PASS	PASS	67		PASS	PASS	PASS
16		PASS	PASS	PASS	68		PASS	PASS	PASS
17		PASS	PASS	PASS	69		PASS	PASS	PASS
18		PASS	PASS	PASS	70		PASS	PASS	PASS
19		PASS	PASS	PASS	71		PASS	PASS	PASS
20		PASS	PASS	PASS	72		PASS	PASS	PASS
21		PASS	PASS	PASS	73		PASS	PASS	PASS
22		PASS	PASS	PASS	74		PASS	PASS	PASS
23		PASS	PASS	PASS	75		PASS	PASS	PASS
24		PASS	PASS	PASS	76		PASS	PASS	PASS
25		PASS	PASS	PASS	77		PASS	PASS	PASS
26		PASS	PASS	PASS	78		PASS	PASS	PASS
27		PASS	PASS	PASS	79		PASS	PASS	PASS
28		PASS	PASS	PASS	80		PASS	PASS	PASS
29		PASS	PASS	PASS	81		PASS	PASS	PASS
30		PASS	PASS	PASS	82		PASS	PASS	PASS
31		PASS	PASS	PASS	83		PASS	PASS	PASS
32		PASS	PASS	PASS	84		PASS	PASS	PASS
33		PASS	PASS	PASS	85		PASS	PASS	PASS
34		PASS	PASS	PASS	86		PASS	PASS	PASS
35		PASS	PASS	PASS	87		PASS	PASS	PASS
36		PASS	PASS	PASS	88		PASS	PASS	PASS
37		PASS	PASS	PASS	89		PASS	PASS	PASS
38		PASS	PASS	PASS	90		PASS	PASS	PASS
39		PASS	PASS	PASS	91		PASS	PASS	PASS
40		PASS	PASS	PASS	92		PASS	PASS	PASS
41		PASS	PASS	PASS	93		PASS	PASS	PASS
42		PASS	PASS	PASS	94		PASS	PASS	PASS
43		PASS	PASS	PASS	95		PASS	PASS	PASS
44		PASS	PASS	PASS	96		PASS	PASS	PASS
45		PASS	PASS	PASS	97		PASS	PASS	PASS
46		PASS	PASS	PASS	98		PASS	PASS	PASS
47		PASS	PASS	PASS	99		PASS	PASS	PASS
48		PASS	PASS	PASS	100		PASS	PASS	PASS



Integrated Service Technology Inc.
 Reliability & Failure Analysis Group
 1F, No.19, Pu-ding Rd., Hsin - chu City, Taiwan, R.O.C.
 Tel: 886-3-578-2266, Fax: 886-3-5770988
<http://www.istgroup.com>



No.:T1091
Revision:A

Report No. : HS0907240038A

Report No. : RAC9802419-E

Page 5 of 7

VCC (+)									
(UNIT:V)									
Test Pin	FAIL VOLTAGE	#1	#2	#3	Test Pin	FAIL VOLTAGE	#1	#2	#3
1		PASS	PASS	PASS	49		PASS	PASS	PASS
2		PASS	PASS	PASS	50		PASS	PASS	PASS
3		PASS	PASS	PASS	51		PASS	PASS	PASS
4		PASS	PASS	PASS	52		PASS	PASS	PASS
5		PASS	PASS	PASS	53		PASS	PASS	PASS
6		PASS	PASS	PASS	54		PASS	PASS	PASS
7		PASS	PASS	PASS	56		PASS	PASS	PASS
8		PASS	PASS	PASS	57		PASS	PASS	PASS
9		PASS	PASS	PASS	58		PASS	PASS	PASS
10		PASS	PASS	PASS	60		PASS	PASS	PASS
11		PASS	PASS	PASS	61		PASS	PASS	PASS
12		PASS	PASS	PASS	62		PASS	PASS	PASS
13		PASS	PASS	PASS	64		PASS	PASS	PASS
14		PASS	PASS	PASS	66		PASS	PASS	PASS
15		PASS	PASS	PASS	67		PASS	PASS	PASS
16		PASS	PASS	PASS	68		PASS	PASS	PASS
17		PASS	PASS	PASS	69		PASS	PASS	PASS
18		PASS	PASS	PASS	70		PASS	PASS	PASS
19		PASS	PASS	PASS	71		PASS	PASS	PASS
20		PASS	PASS	PASS	72		PASS	PASS	PASS
21		PASS	PASS	PASS	73		PASS	PASS	PASS
22		PASS	PASS	PASS	74		PASS	PASS	PASS
23		PASS	PASS	PASS	75		PASS	PASS	PASS
24		PASS	PASS	PASS	76		PASS	PASS	PASS
25		PASS	PASS	PASS	77		PASS	PASS	PASS
26		PASS	PASS	PASS	78		PASS	PASS	PASS
27		PASS	PASS	PASS	79		PASS	PASS	PASS
28		PASS	PASS	PASS	80		PASS	PASS	PASS
29		PASS	PASS	PASS	81		PASS	PASS	PASS
30		PASS	PASS	PASS	82		PASS	PASS	PASS
31		PASS	PASS	PASS	83		PASS	PASS	PASS
32		PASS	PASS	PASS	84		PASS	PASS	PASS
33		PASS	PASS	PASS	85		PASS	PASS	PASS
34		PASS	PASS	PASS	86		PASS	PASS	PASS
35		PASS	PASS	PASS	87		PASS	PASS	PASS
36		PASS	PASS	PASS	88		PASS	PASS	PASS
37		PASS	PASS	PASS	89		PASS	PASS	PASS
38		PASS	PASS	PASS	90		PASS	PASS	PASS
39		PASS	PASS	PASS	91		PASS	PASS	PASS
40		PASS	PASS	PASS	92		PASS	PASS	PASS
41		PASS	PASS	PASS	93		PASS	PASS	PASS
42		PASS	PASS	PASS	94		PASS	PASS	PASS
43		PASS	PASS	PASS	95		PASS	PASS	PASS
44		PASS	PASS	PASS	96		PASS	PASS	PASS
45		PASS	PASS	PASS	97		PASS	PASS	PASS
46		PASS	PASS	PASS	98		PASS	PASS	PASS
47		PASS	PASS	PASS	99		PASS	PASS	PASS
48		PASS	PASS	PASS	100		PASS	PASS	PASS



Integrated Service Technology Inc.
 Reliability & Failure Analysis Group
 1F, No.19, Pu-ding Rd., Hsin - chu City, Taiwan, R.O.C.
 Tel: 886-3-578-2266, Fax: 886-3-5770988
<http://www.istgroup.com>



No.:T1091
Revision:A

Report No. : HS0907240038A

Report No. : RAC9802419-E

Page 6 of 7

VCC (-)									
(UNIT:V)									
Test Pin	FAIL VOLTAGE	#1	#2	#3	Test Pin	FAIL VOLTAGE	#1	#2	#3
1		PASS	PASS	PASS	49		PASS	PASS	PASS
2		PASS	PASS	PASS	50		PASS	PASS	PASS
3		PASS	PASS	PASS	51		PASS	PASS	PASS
4		PASS	PASS	PASS	52		PASS	PASS	PASS
5		PASS	PASS	PASS	53		PASS	PASS	PASS
6		PASS	PASS	PASS	54		PASS	PASS	PASS
7		PASS	PASS	PASS	56		PASS	PASS	PASS
8		PASS	PASS	PASS	57		PASS	PASS	PASS
9		PASS	PASS	PASS	58		PASS	PASS	PASS
10		PASS	PASS	PASS	60		PASS	PASS	PASS
11		PASS	PASS	PASS	61		PASS	PASS	PASS
12		PASS	PASS	PASS	62		PASS	PASS	PASS
13		PASS	PASS	PASS	64		PASS	PASS	PASS
14		PASS	PASS	PASS	66		PASS	PASS	PASS
15		PASS	PASS	PASS	67		PASS	PASS	PASS
16		PASS	PASS	PASS	68		PASS	PASS	PASS
17		PASS	PASS	PASS	69		PASS	PASS	PASS
18		PASS	PASS	PASS	70		PASS	PASS	PASS
19		PASS	PASS	PASS	71		PASS	PASS	PASS
20		PASS	PASS	PASS	72		PASS	PASS	PASS
21		PASS	PASS	PASS	73		PASS	PASS	PASS
22		PASS	PASS	PASS	74		PASS	PASS	PASS
23		PASS	PASS	PASS	75		PASS	PASS	PASS
24		PASS	PASS	PASS	76		PASS	PASS	PASS
25		PASS	PASS	PASS	77		PASS	PASS	PASS
26		PASS	PASS	PASS	78		PASS	PASS	PASS
27		PASS	PASS	PASS	79		PASS	PASS	PASS
28		PASS	PASS	PASS	80		PASS	PASS	PASS
29		PASS	PASS	PASS	81		PASS	PASS	PASS
30		PASS	PASS	PASS	82		PASS	PASS	PASS
31		PASS	PASS	PASS	83		PASS	PASS	PASS
32		PASS	PASS	PASS	84		PASS	PASS	PASS
33		PASS	PASS	PASS	85		PASS	PASS	PASS
34		PASS	PASS	PASS	86		PASS	PASS	PASS
35		PASS	PASS	PASS	87		PASS	PASS	PASS
36		PASS	PASS	PASS	88		PASS	PASS	PASS
37		PASS	PASS	PASS	89		PASS	PASS	PASS
38		PASS	PASS	PASS	90		PASS	PASS	PASS
39		PASS	PASS	PASS	91		PASS	PASS	PASS
40		PASS	PASS	PASS	92		PASS	PASS	PASS
41		PASS	PASS	PASS	93		PASS	PASS	PASS
42		PASS	PASS	PASS	94		PASS	PASS	PASS
43		PASS	PASS	PASS	95		PASS	PASS	PASS
44		PASS	PASS	PASS	96		PASS	PASS	PASS
45		PASS	PASS	PASS	97		PASS	PASS	PASS
46		PASS	PASS	PASS	98		PASS	PASS	PASS
47		PASS	PASS	PASS	99		PASS	PASS	PASS
48		PASS	PASS	PASS	100		PASS	PASS	PASS



Integrated Service Technology Inc.
Reliability & Failure Analysis Group
1F, No.19, Pu-ding Rd., Hsin - chu City, Taiwan, R.O.C.
Tel: 886-3-578-2266, Fax: 886-3-5770988
<http://www.istgroup.com>



No.:T1091
Revision:A

Report No. : HS0907240038A

Report No. : RAC9802419-E

Page 7 of 7

VCC – VSS (+)				
(UNIT: V)				
Test Pin	FAIL VOLTAGE	#1	#2	#3
59		PASS	PASS	PASS
63		PASS	PASS	PASS

VCC – VSS (-)				
(UNIT: V)				
Test Pin	FAIL VOLTAGE	#1	#2	#3
59		PASS	PASS	PASS
63		PASS	PASS	PASS