

# ESD RELIABILITY TEST REPORT

## TEST REPORT

Company : RAIO TECHNOLOGY INC.  
 Model Name : RA6963  
 Date Received : 2007.07.25  
 Date Tested : 2007.08.09

**TESTING LABORATORY IS ACCREDITED BY:**

IEC/IECQ 17025 certificate of independent test laboratory approval

Certificate No. : T1091

ISO 17025 accredited in respect of laboratory is approved by TAF

Certificate No. : L0835-060321

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>	2007/07/25
Section Manager	Kosa Lin	Reliability Test Engineer <i>Kosa Lin</i>	2007/08/09

**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.



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**No.:T1091**

Report No. : HS0707250101A

Report No. : RAC9602499-E

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## ESD RELIABILITY TEST REPORT

<b>Applicant/Department:</b> RAI0 TECHNOLOGY INC.		
<b>Product</b>	: RA6963	
<b>Testing Item</b>	: ESD-HBM	<b>Package/Pin Count:</b> LQFP-67
<b>Test Method</b>	: MIL-STD-883G Method 3015.7	
<b>Failure Criteria</b>	: FOR V CHANGE AT 1 $\mu$ A $\pm$ 30%	
<b>Test Voltage</b>	: 4000( $\pm$ ) 6000V ~8000V ( $\pm$ ), Step : 500V ( $\pm$ )	

## ESD-HBM Testing Report

### Test Equipment:

KEYTEK ZAPMASTER #10-6066

### Environmental Condition of Laboratory:

Temperature: 25°C±5°C

Humidity: 55%±10% RH

### Test Condition:

VSS (+)

VSS (-)

VDD (+)

VDD (-)

VDD – VSS (+)

VDD – VSS (-)

### Test Result:

MODEL: HBM	ESD SENSITIVITY PASS : <b>+7000V</b>		V CLASS: <u>3A</u>
PIN COMBINATION	SAMPLE SIZE	PASSED VOLTS	<b>NOTE:</b>
VSS (+)	3	+7000V	FOR EIAJ TEST NO CLASSIFICATION
VSS (-)	3	-8000V	CLASS 0: < 250V
VDD (+)	3	+8000V	CLASS 1A: 250V TO 499V
VDD (-)	3	-7500V	CLASS 1B: 500V TO 999V
VDD – VSS (+)	3	+8000V	CLASS 1C: 1000V TO 1999V
VDD – VSS (-)	3	-8000V	CLASS 2: 2000V TO 3999V
			CLASS 3A: 4000V TO 7999V
			CLASS 3B: ≥ 8000V

ALL:1-26,28-60,62,64-67  
 GND:63  
 I/O:10-17,22-26,28-30

I/P:1-9,18-21,54,62,64-66  
 O/P:31-53,55-60,67  
 VDD:27,61

VSS (+)									
(UNIT:V)									
Test Pin	FAIL VOLTAGE	#1	#2	#3	Test Pin	FAIL VOLTAGE	#1	#2	#3
1		PASS	PASS	PASS	34		PASS	PASS	PASS
2		PASS	PASS	PASS	35		PASS	PASS	PASS
3		PASS	PASS	PASS	36		PASS	PASS	PASS
4		PASS	PASS	PASS	37		PASS	PASS	PASS
5		PASS	PASS	PASS	38		PASS	PASS	PASS
6		PASS	PASS	PASS	39		PASS	PASS	PASS
7		PASS	PASS	PASS	40		PASS	PASS	PASS
8		PASS	PASS	PASS	41		PASS	PASS	PASS
9		PASS	PASS	PASS	42		PASS	PASS	PASS
10		PASS	PASS	PASS	43		PASS	PASS	PASS
11		PASS	PASS	PASS	44		PASS	PASS	PASS
12		PASS	PASS	PASS	45		PASS	PASS	PASS
13		PASS	PASS	PASS	46		PASS	PASS	PASS
14		PASS	PASS	PASS	47		PASS	PASS	PASS
15		PASS	PASS	PASS	48		PASS	PASS	PASS
16		PASS	PASS	PASS	49		PASS	PASS	PASS
17		PASS	PASS	PASS	50		PASS	PASS	PASS
18		PASS	PASS	PASS	51		PASS	PASS	PASS
19		PASS	PASS	PASS	52		PASS	PASS	PASS
20		PASS	PASS	PASS	53		PASS	PASS	PASS
21		PASS	PASS	PASS	54		PASS	PASS	PASS
22		PASS	PASS	PASS	55		PASS	PASS	PASS
23		PASS	PASS	PASS	56		PASS	PASS	PASS
24		PASS	PASS	PASS	57		PASS	PASS	PASS
25		PASS	PASS	PASS	58		PASS	PASS	PASS
26		PASS	PASS	PASS	59		PASS	PASS	PASS
28		PASS	PASS	PASS	60		PASS	PASS	PASS
29		PASS	PASS	PASS	62		PASS	7500	PASS
30		PASS	PASS	PASS	64		PASS	7500	8000
31		PASS	PASS	PASS	65		PASS	PASS	PASS
32		PASS	PASS	PASS	66		PASS	PASS	PASS
33		PASS	PASS	PASS	67		PASS	PASS	PASS

VSS (-)									
(UNIT:V)									
Test Pin	FAIL VOLTAGE	#1	#2	#3	Test Pin	FAIL VOLTAGE	#1	#2	#3
1		PASS	PASS	PASS	34		PASS	PASS	PASS
2		PASS	PASS	PASS	35		PASS	PASS	PASS
3		PASS	PASS	PASS	36		PASS	PASS	PASS
4		PASS	PASS	PASS	37		PASS	PASS	PASS
5		PASS	PASS	PASS	38		PASS	PASS	PASS
6		PASS	PASS	PASS	39		PASS	PASS	PASS
7		PASS	PASS	PASS	40		PASS	PASS	PASS
8		PASS	PASS	PASS	41		PASS	PASS	PASS
9		PASS	PASS	PASS	42		PASS	PASS	PASS
10		PASS	PASS	PASS	43		PASS	PASS	PASS
11		PASS	PASS	PASS	44		PASS	PASS	PASS
12		PASS	PASS	PASS	45		PASS	PASS	PASS
13		PASS	PASS	PASS	46		PASS	PASS	PASS
14		PASS	PASS	PASS	47		PASS	PASS	PASS
15		PASS	PASS	PASS	48		PASS	PASS	PASS
16		PASS	PASS	PASS	49		PASS	PASS	PASS
17		PASS	PASS	PASS	50		PASS	PASS	PASS
18		PASS	PASS	PASS	51		PASS	PASS	PASS
19		PASS	PASS	PASS	52		PASS	PASS	PASS
20		PASS	PASS	PASS	53		PASS	PASS	PASS
21		PASS	PASS	PASS	54		PASS	PASS	PASS
22		PASS	PASS	PASS	55		PASS	PASS	PASS
23		PASS	PASS	PASS	56		PASS	PASS	PASS
24		PASS	PASS	PASS	57		PASS	PASS	PASS
25		PASS	PASS	PASS	58		PASS	PASS	PASS
26		PASS	PASS	PASS	59		PASS	PASS	PASS
28		PASS	PASS	PASS	60		PASS	PASS	PASS
29		PASS	PASS	PASS	62		PASS	PASS	PASS
30		PASS	PASS	PASS	64		PASS	PASS	PASS
31		PASS	PASS	PASS	65		PASS	PASS	PASS
32		PASS	PASS	PASS	66		PASS	PASS	PASS
33		PASS	PASS	PASS	67		PASS	PASS	PASS

VDD (+)									
(UNIT:V)									
Test Pin	FAIL VOLTAGE	#1	#2	#3	Test Pin	FAIL VOLTAGE	#1	#2	#3
1		PASS	PASS	PASS	34		PASS	PASS	PASS
2		PASS	PASS	PASS	35		PASS	PASS	PASS
3		PASS	PASS	PASS	36		PASS	PASS	PASS
4		PASS	PASS	PASS	37		PASS	PASS	PASS
5		PASS	PASS	PASS	38		PASS	PASS	PASS
6		PASS	PASS	PASS	39		PASS	PASS	PASS
7		PASS	PASS	PASS	40		PASS	PASS	PASS
8		PASS	PASS	PASS	41		PASS	PASS	PASS
9		PASS	PASS	PASS	42		PASS	PASS	PASS
10		PASS	PASS	PASS	43		PASS	PASS	PASS
11		PASS	PASS	PASS	44		PASS	PASS	PASS
12		PASS	PASS	PASS	45		PASS	PASS	PASS
13		PASS	PASS	PASS	46		PASS	PASS	PASS
14		PASS	PASS	PASS	47		PASS	PASS	PASS
15		PASS	PASS	PASS	48		PASS	PASS	PASS
16		PASS	PASS	PASS	49		PASS	PASS	PASS
17		PASS	PASS	PASS	50		PASS	PASS	PASS
18		PASS	PASS	PASS	51		PASS	PASS	PASS
19		PASS	PASS	PASS	52		PASS	PASS	PASS
20		PASS	PASS	PASS	53		PASS	PASS	PASS
21		PASS	PASS	PASS	54		PASS	PASS	PASS
22		PASS	PASS	PASS	55		PASS	PASS	PASS
23		PASS	PASS	PASS	56		PASS	PASS	PASS
24		PASS	PASS	PASS	57		PASS	PASS	PASS
25		PASS	PASS	PASS	58		PASS	PASS	PASS
26		PASS	PASS	PASS	59		PASS	PASS	PASS
28		PASS	PASS	PASS	60		PASS	PASS	PASS
29		PASS	PASS	PASS	62		PASS	PASS	PASS
30		PASS	PASS	PASS	64		PASS	PASS	PASS
31		PASS	PASS	PASS	65		PASS	PASS	PASS
32		PASS	PASS	PASS	66		PASS	PASS	PASS
33		PASS	PASS	PASS	67		PASS	PASS	PASS

VDD (-)									
(UNIT:V)									
Test Pin	FAIL VOLTAGE	#1	#2	#3	Test Pin	FAIL VOLTAGE	#1	#2	#3
1		PASS	PASS	PASS	34		PASS	PASS	PASS
2		PASS	PASS	PASS	35		PASS	PASS	PASS
3		PASS	PASS	PASS	36		PASS	PASS	PASS
4		PASS	PASS	PASS	37		PASS	PASS	PASS
5		PASS	PASS	PASS	38		PASS	PASS	PASS
6		PASS	PASS	PASS	39		PASS	PASS	PASS
7		PASS	PASS	PASS	40		PASS	PASS	PASS
8		PASS	PASS	PASS	41		PASS	PASS	PASS
9		PASS	-8000	PASS	42		PASS	PASS	PASS
10		PASS	PASS	PASS	43		PASS	PASS	PASS
11		-8000	PASS	PASS	44		PASS	PASS	PASS
12		PASS	-8000	PASS	45		PASS	PASS	PASS
13		PASS	PASS	-8000	46		PASS	PASS	PASS
14		PASS	PASS	PASS	47		PASS	PASS	PASS
15		PASS	PASS	PASS	48		PASS	PASS	PASS
16		PASS	PASS	-8000	49		PASS	PASS	PASS
17		PASS	-8000	PASS	50		PASS	PASS	PASS
18		PASS	PASS	PASS	51		PASS	PASS	PASS
19		PASS	PASS	PASS	52		PASS	PASS	PASS
20		PASS	PASS	PASS	53		PASS	PASS	PASS
21		PASS	PASS	PASS	54		PASS	PASS	PASS
22		PASS	PASS	PASS	55		PASS	PASS	PASS
23		PASS	PASS	PASS	56		PASS	PASS	PASS
24		PASS	PASS	PASS	57		-8000	-8000	-8000
25		PASS	PASS	PASS	58		PASS	PASS	PASS
26		PASS	PASS	PASS	59		PASS	PASS	PASS
28		PASS	PASS	PASS	60		PASS	PASS	PASS
29		PASS	PASS	PASS	62		PASS	PASS	PASS
30		PASS	PASS	PASS	64		PASS	PASS	PASS
31		PASS	PASS	PASS	65		PASS	PASS	PASS
32		PASS	-8000	PASS	66		PASS	PASS	PASS
33		PASS	PASS	PASS	67		PASS	PASS	PASS

VDD – VSS (+)					(UNIT: V)
Test Pin	FAIL VOLTAGE	#1	#2	#3	
	27	PASS	PASS	PASS	
	61	PASS	PASS	PASS	

VDD – VSS (-)					(UNIT: V)
Test Pin	FAIL VOLTAGE	#1	#2	#3	
	27	PASS	PASS	PASS	
	61	PASS	PASS	PASS	