

Report No. : HS1704050197A RA No . : 1701374-E Version : A

LATCH UP TEST REPORT

Company	: RAIO Technology Inc.
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Model Name : <u>RA8871M</u>

Date Received : <u>APR 05, 2017</u>

Date Tested : <u>APR 06, 2017</u>

TESTING LABORATORY IS ACCREDITED BY:

IEC/IECQ 17025 certificate of independent test laboratory approval

EC 🧱 Certificate No. : 1.72.0031

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	YI Tseng	yl tseng	Apr 10, 2017	
Manager	Even Lin	Tunte	Apr 10, 2017	

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 instructs
- 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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1. GENERAL INFORMATION

1.1 DESCRIPTION OF UNIT

MANUFACTURER	: RAIO Technology Inc.
DEVICE NAME	: RA8871M
PACKAGE / PIN COUNT	: LQFP-128
REFERENCE DOCUMENT	: JEDEC STANDARD EIA/JESD78
TRIGGER CURRENT	: 50 mA (±) ~ 100 mA (±), Step: 50 mA (±)
	100 mA (±) ~ 150 mA (±), Step: 25 mA (±)
V SUPPLY OVER VOLTAGE TEST	: VCC3.3V: 3.5V ~ 5.5V (+), Step: 0.5V (+), limit at 500mA
MAXIMUM RATED TEMPERATURE	: 85 °C
SAMPLE QUANTITY	: 9 ea
FAILURE CRITERIA	: < 25mA 10mA + I normal
	> 25mA 1.4 x I normal
INORMAL	: VCC3.3V: 30 mA
※PIN1,2 are not tested in latch up.	



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2. LATCH UP TEST

2.1 TEST EQUIPMENT

Test Equipment	Equipment Number	Tester	
KEYTEK ZAPMASTER	#MK1	15104	

2.2 LABORATORY AMBIENCE CONDITION

Temperature : 85 °C

2.3 REFERENCE DOCUMENT

The test is based on JEDEC STANDARD EIA/JESD78

2.4 TEST CONDITION

POSITIVE I

NEGATIVE I

Vsupply OVER VOLTAGE TEST

2.5 BIAS DESCRIPTION

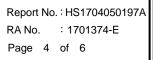
VCC3.3V = 3.63V (MAX) GND = 0V

2.6 SUMMARY OF TEST

Trigger Mode	Test Pin	Sample Quantity	Tested Result	JESD78 Classification		
	IP3.3V		PASS(+150mA)	Class Class I	: II Latch-up testing performed at	
I Trigger (+)	OP3.3V	3	PASS(+150mA)	Class II	room temperature. Latch-up testing performed at	
	IO3.3V		PASS(+150mA)		maximum rated temperature.	
	IP3.3V		PASS(-150mA)	Level Level A	: <u>A</u> The trigger current value shall	
I Trigger (-)	OP3.3V	OP3.3V 3	PASS(-150mA)		be "(Inom+100mA) or 1.5xInom","-100mA or	
	IO3.3V		PASS(-150mA)		-0.5xlnom" whichever is	
Over Volt Test V _{supply}	VCC3.3V	3	PASS(+5.5V)	greater". Level B Special failure criteria. Su shall provide definition of failure criteria used.		
GND:5,24,43,64	4,76,89,98,11	0,122			35,37-41,90,91,93-96,99-108	
IP3.3V:6-16,92 OP3.3V:17,36,4	63 111 128		,112,113,116-120,123-127,114,115 VCC3.3V:3,23,42,62,75,88,97,109,121			
01 0.0 v.17,00,4	r,00,111,120		NC:44-61,65-74,77-87,1,2			



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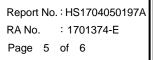


2.7 CONTENTS OF TEST

POSITIVE I (UNIT: mA							
Test TRIGGER Pin CURRENT	#46	#47	#48	Test TRIGGER Pin CURRENT	#46	#47	#48
6	PASS	PASS	PASS	41	PASS	PASS	PASS
7	PASS	PASS	PASS	90	PASS	PASS	PASS
8	PASS	PASS	PASS	91	PASS	PASS	PASS
9	PASS	PASS	PASS	92	PASS	PASS	PASS
10	PASS	PASS	PASS	93	PASS	PASS	PASS
11	PASS	PASS	PASS	94	PASS	PASS	PASS
12	PASS	PASS	PASS	95	PASS	PASS	PASS
13	PASS	PASS	PASS	96	PASS	PASS	PASS
14	PASS	PASS	PASS	99	PASS	PASS	PASS
15	PASS	PASS	PASS	100	PASS	PASS	PASS
16	PASS	PASS	PASS	101	PASS	PASS	PASS
17	PASS	PASS	PASS	102	PASS	PASS	PASS
18	PASS	PASS	PASS	103	PASS	PASS	PASS
19	PASS	PASS	PASS	104	PASS	PASS	PASS
20	PASS	PASS	PASS	105	PASS	PASS	PASS
21	PASS	PASS	PASS	106	PASS	PASS	PASS
22	PASS	PASS	PASS	107	PASS	PASS	PASS
25	PASS	PASS	PASS	108	PASS	PASS	PASS
26	PASS	PASS	PASS	112	PASS	PASS	PASS
27	PASS	PASS	PASS	113	PASS	PASS	PASS
28	PASS	PASS	PASS	114	PASS	PASS	PASS
29	PASS	PASS	PASS	115	PASS	PASS	PASS
30	PASS	PASS	PASS	116	PASS	PASS	PASS
31	PASS	PASS	PASS	117	PASS	PASS	PASS
32	PASS	PASS	PASS	118	PASS	PASS	PASS
33	PASS	PASS	PASS	119	PASS	PASS	PASS
34	PASS	PASS	PASS	120	PASS	PASS	PASS
35	PASS	PASS	PASS	123	PASS	PASS	PASS
36	PASS	PASS	PASS	124	PASS	PASS	PASS
37	PASS	PASS	PASS	125	PASS	PASS	PASS
38	PASS	PASS	PASS	126	PASS	PASS	PASS
39	PASS	PASS	PASS	127	PASS	PASS	PASS
40	PASS	PASS	PASS	128	PASS	PASS	PASS



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NEGATIVE (UNIT:							
Test TRIGGER Pin CURRENT	#49	#50	#51	Test TRIGGER Pin CURRENT	#49	#50	#51
6	PASS	PASS	PASS	41	PASS	PASS	PASS
7	PASS	PASS	PASS	90	PASS	PASS	PASS
8	PASS	PASS	PASS	91	PASS	PASS	PASS
9	PASS	PASS	PASS	92	PASS	PASS	PASS
10	PASS	PASS	PASS	93	PASS	PASS	PASS
11	PASS	PASS	PASS	94	PASS	PASS	PASS
12	PASS	PASS	PASS	95	PASS	PASS	PASS
13	PASS	PASS	PASS	96	PASS	PASS	PASS
14	PASS	PASS	PASS	99	PASS	PASS	PASS
15	PASS	PASS	PASS	100	PASS	PASS	PASS
16	PASS	PASS	PASS	101	PASS	PASS	PASS
17	PASS	PASS	PASS	102	PASS	PASS	PASS
18	PASS	PASS	PASS	103	PASS	PASS	PASS
19	PASS	PASS	PASS	104	PASS	PASS	PASS
20	PASS	PASS	PASS	105	PASS	PASS	PASS
21	PASS	PASS	PASS	106	PASS	PASS	PASS
22	PASS	PASS	PASS	107	PASS	PASS	PASS
25	PASS	PASS	PASS	108	PASS	PASS	PASS
26	PASS	PASS	PASS	112	PASS	PASS	PASS
27	PASS	PASS	PASS	113	PASS	PASS	PASS
28	PASS	PASS	PASS	114	PASS	PASS	PASS
29	PASS	PASS	PASS	115	PASS	PASS	PASS
30	PASS	PASS	PASS	116	PASS	PASS	PASS
31	PASS	PASS	PASS	117	PASS	PASS	PASS
32	PASS	PASS	PASS	118	PASS	PASS	PASS
33	PASS	PASS	PASS	119	PASS	PASS	PASS
34	PASS	PASS	PASS	120	PASS	PASS	PASS
35	PASS	PASS	PASS	123	PASS	PASS	PASS
36	PASS	PASS	PASS	124	PASS	PASS	PASS
37	PASS	PASS	PASS	125	PASS	PASS	PASS
38	PASS	PASS	PASS	126	PASS	PASS	PASS
39	PASS	PASS	PASS	127	PASS	PASS	PASS
40	PASS	PASS	PASS	128	PASS	PASS	PASS



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V _{supply} OVERVOLTAGE TEST (UNIT: V)									
Test TRIGGER Pin VOLTAGE	#52	#53	#54	Test TRIGGER Pin VOLTAGE	#52	#53	#54		
3	PASS	PASS	PASS	75	PASS	PASS	PASS		
4	PASS	PASS	PASS	88	PASS	PASS	PASS		
23	PASS	PASS	PASS	97	PASS	PASS	PASS		
42	PASS	PASS	PASS	109	PASS	PASS	PASS		
62	PASS	PASS	PASS	121	PASS	PASS	PASS		
63	PASS	PASS	PASS	111	PASS	PASS	PASS		

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