



# 宜特科技股份有限公司



## Integrated Service Technology Inc.

No.:A8799

TEL : (02) 2656-2289

TRA No: 9300089-E

FAX : (02) 2656-2285

Date : 10/19/2004

Email: [esd@isti.com.tw](mailto:esd@isti.com.tw)

Test Site Address: 1F,No. 9, Alley 2, Lane 35, Jihu Rd., Nei Hu District, Taipei City, Taiwan, R.O.C.

### 可靠度測試報告

### RELIABILITY TEST REPORT

<b>Applicant/Department:</b> Avant Electronic Corporation	
<b>Address</b> : 6F,No. 56,Ln.258,Jui Kuang Rd.,Nei Hu District,Taipei,Taiwan.	
<b>Product</b> : SAP1024B	
<b>Testing Item</b> : ESD-HBM	<b>Package/Pin Count:</b> QFP-67
<b>Application Date</b> : 10/18/2004	<b>Date Finished</b> : 10/19/2004
<b>Test Method</b> : MIL-STD-883E Method 3015.7	
<b>Failure Criteria</b> : FOR V CHANGE AT 1 $\mu$ A $\pm$ 30%	
<b>Test Voltage</b> : 3000V~8000V( $\pm$ ) , Step : 1000V( $\pm$ )	

#### Testing Item

Random ESD-HBM Test.....P2

#### Remark:

This report refers only to the specimen submitted to testing, and be invalid as separately used.

**Testing Engineer: Jay Fang**

**Report Review: Kosa Liu**

**Laboratory Head: Frank Wu**



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## ESD-HBM Testing Report

### Test Equipment:

KEYTEK ZAPMASTER

### 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>+4000V</b>		V CLASS: <u>3</u>
PIN COMBINATION	SAMPLE SIZE	PASSED VOLTS	NOTE:
VSS (+)	3	+4000V	FOR MIL-STD CLASS1: 0V-1999V CLASS2: 2000V-3999V CLASS3: 4000V-TO ABOVE
VSS (-)	3	-8000V	
VDD(+)	3	+7000V	
VDD (-)	3	-8000V	
VDD-VSS(+)	3	+8000V	
VDD-VSS(-)	3	-8000V	

ALL:2-22,26-30,32-36,42-63,67-72,74,76-79

I/O:11-18,26-30,32-34

I/P:2-10,19-22,63,74,76-78

O/P:35-36,42-62,67-72,79

VDD:31,73

VSS:75

VSS (+)									
(UNIT:V)									
Test Pin	FAIL VOLTAGE	#1	#2	#3	Test Pin	FAIL VOLTAGE	#1	#2	#3
2		PASS	PASS	PASS	43		+8000	PASS	PASS
3		PASS	PASS	PASS	44		PASS	+8000	PASS
4		PASS	PASS	PASS	45		PASS	+7000	PASS
5		PASS	PASS	PASS	46		PASS	+6000	PASS
6		PASS	+6000	PASS	47		+6000	+6000	+6000
7		PASS	PASS	PASS	48		PASS	+5000	+6000
8		PASS	PASS	PASS	49		PASS	+6000	+7000
9		PASS	PASS	PASS	50		+6000	+6000	+6000
10		PASS	PASS	PASS	51		PASS	+7000	PASS
11		PASS	PASS	PASS	52		PASS	+5000	PASS
12		PASS	PASS	+5000	53		PASS	+5000	PASS
13		PASS	PASS	PASS	54		PASS	+7000	PASS
14		PASS	+8000	PASS	55		PASS	+7000	PASS
15		PASS	PASS	PASS	56		PASS	+7000	PASS
16		PASS	PASS	PASS	57		PASS	+6000	PASS
17		PASS	PASS	PASS	58		PASS	PASS	PASS
18		PASS	PASS	PASS	59		PASS	PASS	PASS
19		PASS	PASS	PASS	60		+6000	+5000	+7000
20		PASS	PASS	PASS	61		+6000	+6000	+6000
21		PASS	PASS	PASS	62		+8000	+7000	+8000
22		PASS	PASS	PASS	63		PASS	PASS	PASS
26		PASS	PASS	PASS	67		PASS	PASS	PASS
27		PASS	PASS	PASS	68		PASS	+7000	+8000
28		PASS	PASS	PASS	69		PASS	PASS	PASS
29		PASS	PASS	PASS	70		PASS	+6000	+6000
30		PASS	PASS	+8000	71		PASS	+6000	+6000
32		PASS	PASS	PASS	72		PASS	PASS	PASS
33		PASS	PASS	PASS	74		PASS	PASS	PASS
34		PASS	PASS	PASS	76		PASS	PASS	PASS
35		PASS	PASS	PASS	77		PASS	PASS	PASS
36		PASS	+5000	PASS	78		PASS	PASS	PASS
42		+7000	+5000	PASS	79		PASS	PASS	PASS

VSS (-)									
(UNIT:V)									
Test Pin	FAIL VOLTAGE	#1	#2	#3	Test Pin	FAIL VOLTAGE	#1	#2	#3
2		PASS	PASS	PASS	43		PASS	PASS	PASS
3		PASS	PASS	PASS	44		PASS	PASS	PASS
4		PASS	PASS	PASS	45		PASS	PASS	PASS
5		PASS	PASS	PASS	46		PASS	PASS	PASS
6		PASS	PASS	PASS	47		PASS	PASS	PASS
7		PASS	PASS	PASS	48		PASS	PASS	PASS
8		PASS	PASS	PASS	49		PASS	PASS	PASS
9		PASS	PASS	PASS	50		PASS	PASS	PASS
10		PASS	PASS	PASS	51		PASS	PASS	PASS
11		PASS	PASS	PASS	52		PASS	PASS	PASS
12		PASS	PASS	PASS	53		PASS	PASS	PASS
13		PASS	PASS	PASS	54		PASS	PASS	PASS
14		PASS	PASS	PASS	55		PASS	PASS	PASS
15		PASS	PASS	PASS	56		PASS	PASS	PASS
16		PASS	PASS	PASS	57		PASS	PASS	PASS
17		PASS	PASS	PASS	58		PASS	PASS	PASS
18		PASS	PASS	PASS	59		PASS	PASS	PASS
19		PASS	PASS	PASS	60		PASS	PASS	PASS
20		PASS	PASS	PASS	61		PASS	PASS	PASS
21		PASS	PASS	PASS	62		PASS	PASS	PASS
22		PASS	PASS	PASS	63		PASS	PASS	PASS
26		PASS	PASS	PASS	67		PASS	PASS	PASS
27		PASS	PASS	PASS	68		PASS	PASS	PASS
28		PASS	PASS	PASS	69		PASS	PASS	PASS
29		PASS	PASS	PASS	70		PASS	PASS	PASS
30		PASS	PASS	PASS	71		PASS	PASS	PASS
32		PASS	PASS	PASS	72		PASS	PASS	PASS
33		PASS	PASS	PASS	74		PASS	PASS	PASS
34		PASS	PASS	PASS	76		PASS	PASS	PASS
35		PASS	PASS	PASS	77		PASS	PASS	PASS
36		PASS	PASS	PASS	78		PASS	PASS	PASS
42		PASS	PASS	PASS	79		PASS	PASS	PASS

VDD (+)									
(UNIT:V)									
Test Pin	FAIL VOLTAGE	#1	#2	#3	Test Pin	FAIL VOLTAGE	#1	#2	#3
2		PASS	PASS	PASS	43		PASS	PASS	PASS
3		PASS	PASS	PASS	44		PASS	PASS	PASS
4		PASS	PASS	PASS	45		PASS	PASS	PASS
5		PASS	PASS	PASS	46		PASS	PASS	PASS
6		PASS	PASS	PASS	47		PASS	PASS	PASS
7		PASS	PASS	PASS	48		PASS	PASS	PASS
8		PASS	PASS	PASS	49		PASS	PASS	PASS
9		PASS	PASS	PASS	50		PASS	PASS	PASS
10		PASS	PASS	PASS	51		PASS	PASS	PASS
11		PASS	PASS	PASS	52		PASS	PASS	PASS
12		PASS	PASS	PASS	53		PASS	PASS	PASS
13		PASS	PASS	PASS	54		PASS	PASS	PASS
14		PASS	PASS	PASS	55		PASS	PASS	+8000
15		PASS	PASS	PASS	56		PASS	PASS	PASS
16		PASS	PASS	PASS	57		PASS	PASS	PASS
17		PASS	PASS	PASS	58		PASS	PASS	PASS
18		PASS	PASS	PASS	59		PASS	PASS	PASS
19		PASS	PASS	PASS	60		PASS	PASS	PASS
20		PASS	PASS	PASS	61		PASS	PASS	PASS
21		PASS	PASS	PASS	62		PASS	PASS	PASS
22		PASS	PASS	PASS	63		PASS	PASS	PASS
26		PASS	PASS	PASS	67		PASS	PASS	PASS
27		PASS	PASS	PASS	68		PASS	PASS	PASS
28		PASS	PASS	PASS	69		PASS	PASS	PASS
29		PASS	PASS	PASS	70		PASS	PASS	PASS
30		PASS	PASS	PASS	71		PASS	PASS	PASS
32		PASS	PASS	PASS	72		PASS	PASS	PASS
33		PASS	PASS	PASS	74		PASS	PASS	PASS
34		PASS	PASS	PASS	76		PASS	PASS	PASS
35		PASS	PASS	PASS	77		PASS	PASS	PASS
36		PASS	PASS	PASS	78		PASS	PASS	PASS
42		PASS	PASS	PASS	79		PASS	PASS	PASS

VDD(-)									
(UNIT:V)									
Test Pin	FAIL VOLTAGE	#1	#2	#3	Test Pin	FAIL VOLTAGE	#1	#2	#3
2		PASS	PASS	PASS	43		PASS	PASS	PASS
3		PASS	PASS	PASS	44		PASS	PASS	PASS
4		PASS	PASS	PASS	45		PASS	PASS	PASS
5		PASS	PASS	PASS	46		PASS	PASS	PASS
6		PASS	PASS	PASS	47		PASS	PASS	PASS
7		PASS	PASS	PASS	48		PASS	PASS	PASS
8		PASS	PASS	PASS	49		PASS	PASS	PASS
9		PASS	PASS	PASS	50		PASS	PASS	PASS
10		PASS	PASS	PASS	51		PASS	PASS	PASS
11		PASS	PASS	PASS	52		PASS	PASS	PASS
12		PASS	PASS	PASS	53		PASS	PASS	PASS
13		PASS	PASS	PASS	54		PASS	PASS	PASS
14		PASS	PASS	PASS	55		PASS	PASS	PASS
15		PASS	PASS	PASS	56		PASS	PASS	PASS
16		PASS	PASS	PASS	57		PASS	PASS	PASS
17		PASS	PASS	PASS	58		PASS	PASS	PASS
18		PASS	PASS	PASS	59		PASS	PASS	PASS
19		PASS	PASS	PASS	60		PASS	PASS	PASS
20		PASS	PASS	PASS	61		PASS	PASS	PASS
21		PASS	PASS	PASS	62		PASS	PASS	PASS
22		PASS	PASS	PASS	63		PASS	PASS	PASS
26		PASS	PASS	PASS	67		PASS	PASS	PASS
27		PASS	PASS	PASS	68		PASS	PASS	PASS
28		PASS	PASS	PASS	69		PASS	PASS	PASS
29		PASS	PASS	PASS	70		PASS	PASS	PASS
30		PASS	PASS	PASS	71		PASS	PASS	PASS
32		PASS	PASS	PASS	72		PASS	PASS	PASS
33		PASS	PASS	PASS	74		PASS	PASS	PASS
34		PASS	PASS	PASS	76		PASS	PASS	PASS
35		PASS	PASS	PASS	77		PASS	PASS	PASS
36		PASS	PASS	PASS	78		PASS	PASS	PASS
42		PASS	PASS	PASS	79		PASS	PASS	PASS

VDD-VSS(+)				
(UNIT: V)				
Test Pin	FAIL VOLTAGE	#1	#2	#3
31		PASS	PASS	PASS
73		PASS	PASS	PASS

VDD-VSS (-)				
(UNIT: V)				
Test Pin	FAIL VOLTAGE	#1	#2	#3
31		PASS	PASS	PASS
73		PASS	PASS	PASS