Reliability Test Report

Verified code:300019

Customer:	Allwinner Technology Co., Ltd.
Address:	No. 9 Technology Road 2, High-Tech Zone, Zhuhai, Guangdong, P. R. C
Sample Name:	XR806
Sample Model / Type:	XR806
Test Method:	R202104168308 Requirement
Date of Receipt:	2021/06/02
Test Period:	2021/06/04~2021/06/05
Test Address:	Shanghai FA Laboratory: No. 958, East Kangqiao Rd, Pudong New Area, Shanghai&Shanghai Failure Analysis Laboratory.
Test Result:	For further details, please refer to the following page-4《Test Result Summary》

Prepared by	Chen Boyu	Checked by	Wang Chunliang	Authorized by	Lu Yudong
(signature)	Chen Boyu	(signature)	Wang Chunliang	(signature)	Lu Yudong

Director

GUANGZHOU GRG METROLOGY & TEST CO., LTD

Issued Date: 2021/6/10

GUANGZHOU GRG METROLOGY & TEST CO., LTD
Address: 163 Pingyun Rd., West of Huangpu Ave., Guangzhou, China
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Reliability Test Report

Statement

1. The report is invalid without "special stamp for inspection and testing".

2. Failure to affix "special seal for inspection and testing" to the copy report is invalid, and some copies are invalid.

3. The report is invalid without the signature and seal of the person preparing, reviewing and approving it.

4. The report is invalid if altered.

5. If there is any objection concerning the report, please inform us within 15 days from the date of receiving the report.

6. This test is only responsible for incoming samples, and the report is only valid for this test.

7. This report R202104168308-01EN-G2 is modified from the R202104168308-01EN-G1. The report R202104168308-01EN and R202104168308-01EN-G1 is superseded and invalid.

Reliability Test Report

Contents

Reliability Test Report

1. Test Result Summary

#	Test Description	Test Conditions	Sample Size/lot	# of Lots	Total # Units	# Failed	IV Result
1	Electrostatic Discharge Charged Device Model (ESD-CDM)	a) ANSI/ESDA/JEDEC JS-002 2018 b) Stress Voltage: ±500V;	8	1	8	0	PASS (±500V)

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Reliability Test Report

2. Sample Information

Sample name:	XR806
Sample model/ type:	XR806
Sample description:	QFN chips with 32 pins
Supplier:	Allwinner Technology CO., Ltd.
Supplier address	No.9 Technology Road 2,High-Tech Zone, Zhuhai, Guangdong, P.R.C
Manufacturer	/
Manufacturer address	/

Fig 2-1 The typical receiving state of the test sample (front)

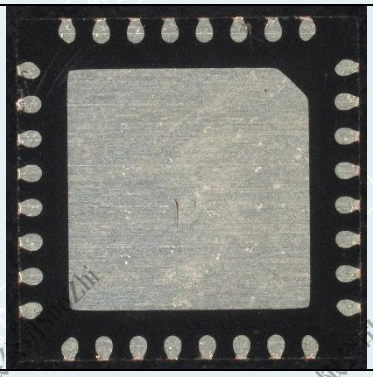

Fig 2-2 The typical receiving state of the test sample (back)

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Reliability Test Report

2.1 Pin Definition

Pin Group	Type	Pin(s)
EPAD	GROUND	33
VDD_DIG(1.4)	POWER	14
VDD_PA(3.6)	POWER	2
VDD_TX(3.6)	POWER	3
VDD_TX(3.6) (2)	POWER	32
VDD_IO(3.6)	POWER	12
VDD_EXT(3.6)	POWER	17
VDD_LX(3.6)	POWER	18
VDD_SENSE(3.6)	POWER	19
VDD_IO_5V(5.5)	POWER	13
VBAT(5.5)	POWER	16
ANT	OUTPUT	1
HXTAL1(1.4)	OUTPUT	30
HXTAL2(1.4)	OUTPUT	31
PA11(3.6)	OUTPUT	4
PA12(3.6)	OUTPUT	5
PA13(3.6)	OUTPUT	6
PA19(3.6)	OUTPUT	7
PA20(3.6)	OUTPUT	8
PA21(3.6)	OUTPUT	9
PA22(3.6)	OUTPUT	10
PA23(3.6)	OUTPUT	11
PB06(3.6)	OUTPUT	20
PB05(3.6)	OUTPUT	21
PB04(3.6)	OUTPUT	22
PB07(3.6)	OUTPUT	23
PB03(3.6)	OUTPUT	24
PB02(3.6)	OUTPUT	25
CHIP_PWD(5.5)	OUTPUT	15
PB15(5.5)	OUTPUT	26
PB14(5.5)	OUTPUT	27
PB01(5.5)	OUTPUT	28
PB00(5.5)	OUTPUT	29

2.2 Pin Categorization

/

Fig. 2-3 Pin map for the test sample

Note:

1. *The sample information in section 2 were submitted and confirmed completely by the client. GRGTEST assumes no responsibility for the accuracy, completeness or authenticity of any sample information provided by Client.*

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Reliability Test Report

3. Acceptance Criteria

3.1 Final Electrical Test

Test item	Acceptance criteria
ESD-CDM	All the test samples should pass the Final electrical test

Note: The Final electrical test (initial and final ATE verification) is performed by Client and the result is Un-known(No results is provided by Client). GRGTEST assumes no responsibility for the accuracy, completeness or authenticity of the result.

3.2 Acceptance Criteria for Other Test Item

Test item	Acceptance criteria
ESD-CDM	Voltage shift shall be small than 30% at reference point and I-V curve compliance of ±10% envelope before / after zapping

Note: Acceptance criteria above were confirmed by Client.

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Reliability Test Report

4. Electrostatic Discharge Charged Device Model (ESD-CDM)

4.1 Test Information

Sample size:	1 lot 8 pcs each
Test period:	2021/06/04~2021/06/05
Reference document:	ANSI/ESDA/JEDEC JS-002 2018
Number of pulses	3 time(s)
Test voltage:	±500V
Classification Level:	Pass C2a(±500 V)
Test duration:	Not applicable
TEST point:	Final electrical test
Acceptance criteria:	Per Section 3

4.2 Environmental Conditions

Environmental temperature:	(20.3~25.0) °C
Environmental humidity:	(49.8~52.3)% RH

4.3 Equipment and Instrument

No.	Equipment and instrument	Serial No.	Due date	Test item
1	ORION3	1909229	2022/03/04	ESD-CDM
2	Oscilloscope	B011117	2022/04/18	ESD-CDM
3	ZapMaster Mk.2 TE	1911214	2022/01/10	ESD-CDM-IV

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4.4 Test Photo

4.4.1 Test Setup Photo

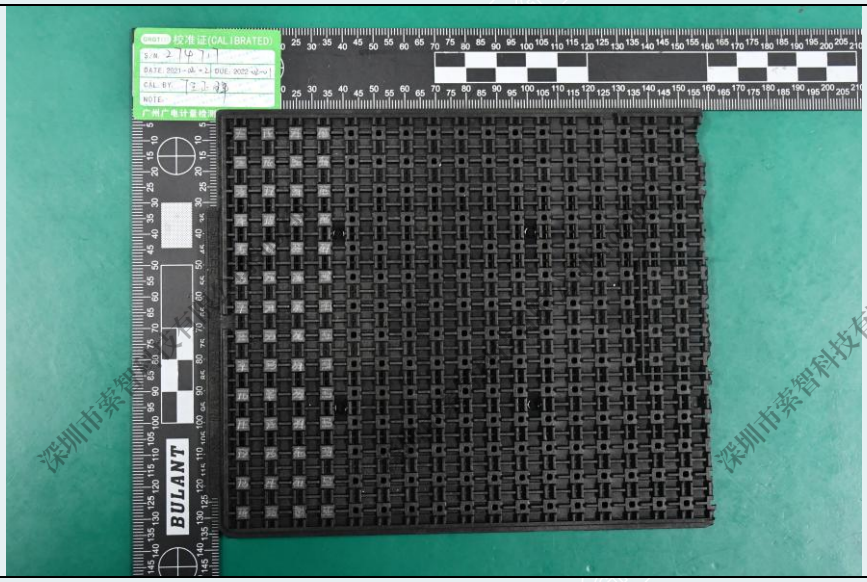

Fig. 4-1 The receiving state of test samples

Fig. 4-2 The test samples in the chamber

Reliability Test Report

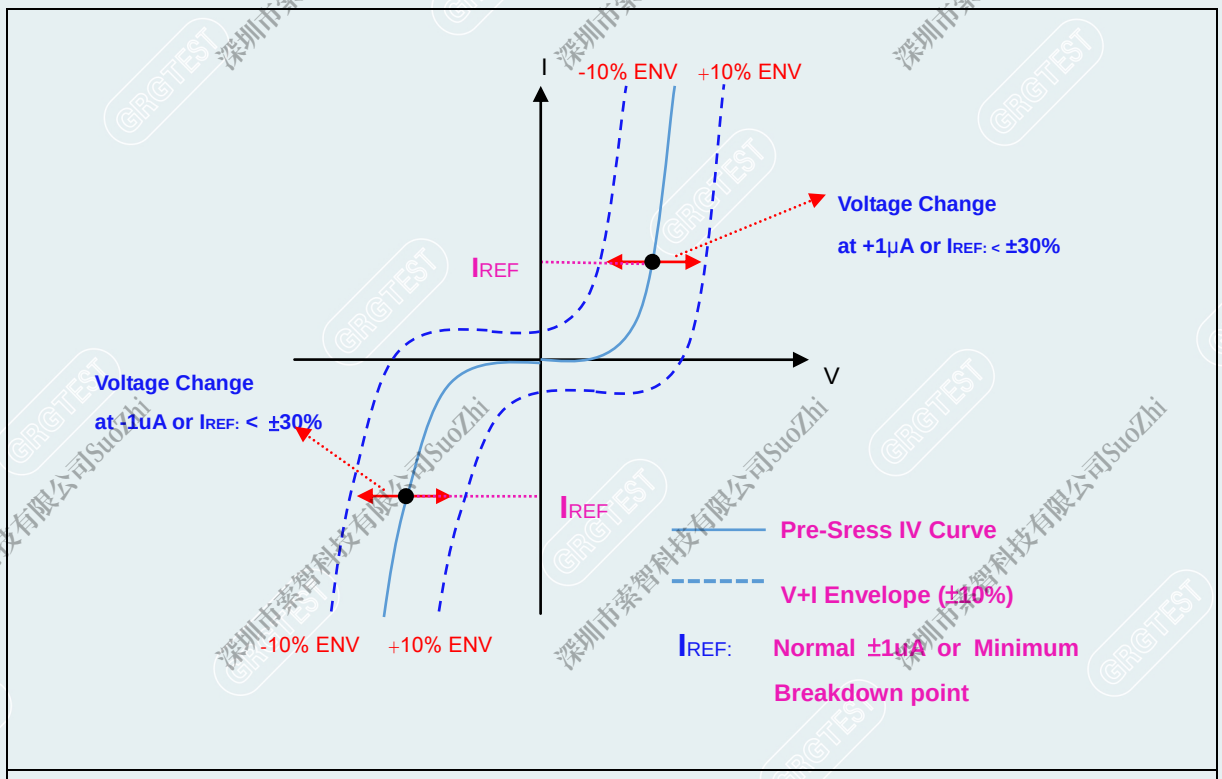

Fig. 4-3 Voltage shift for Failure criteria (Schematic Diagram)

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4.5 ESD-CDM Component Classification Levels

Classification	Voltage Range (V)
C0a	< 125
C0b	125 to < 250
C1	250 to < 500
C2a	500 to < 750
C2b	750 to < 1000
C3	≥ 1000

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Reliability Test Report

4.6 Pin Group Definition

Refer to Section 2.1.

4. 7. Test data

4. 7.1 Summary

Sample No.	Test condition	Sample Size	Passed Volts	IV Results Description
R202104168308-25# ~ R202104168308-28#	ESD-CDM +500V FOR ALL 33 PINS	4	Pass +500V	IV Pass
R202104168308-29# ~ R202104168308-32#	ESD-CDM -500V FOR ALL 33 PINS	4	Pass -500V	IV Pass

Reliability Test Report

4. 7.2 Test content

Table 4-1 ESD-CDM test Results							
ESD-ESD-CDM +500V FOR ALL 33 PINS							
Pin No.	Pin Name	R202104168308-25#		R202104168308-26#		R202104168308-27#	
		Zap Level	Results	Zap Level	Results	Zap Level	Results
33	EPAD	+500 V	IV Pass	+500 V	IV Pass	+500 V	IV Pass
14	VDD_DIG	+500 V	IV Pass	+500 V	IV Pass	+500 V	IV Pass
2	VDD_PA	+500 V	IV Pass	+500 V	IV Pass	+500 V	IV Pass
3	VDD_TX	+500 V	IV Pass	+500 V	IV Pass	+500 V	IV Pass
32	VDD_TX	+500 V	IV Pass	+500 V	IV Pass	+500 V	IV Pass
12	VDD_IO	+500 V	IV Pass	+500 V	IV Pass	+500 V	IV Pass
17	VDD_EXT	+500 V	IV Pass	+500 V	IV Pass	+500 V	IV Pass
18	VDD_LX	+500 V	IV Pass	+500 V	IV Pass	+500 V	IV Pass
19	VDD_SENSE	+500 V	IV Pass	+500 V	IV Pass	+500 V	IV Pass
13	VDD_IO_5V	+500 V	IV Pass	+500 V	IV Pass	+500 V	IV Pass
16	VBAT	+500 V	IV Pass	+500 V	IV Pass	+500 V	IV Pass
1	ANT	+500 V	IV Pass	+500 V	IV Pass	+500 V	IV Pass
30	HXTAL1	+500 V	IV Pass	+500 V	IV Pass	+500 V	IV Pass
31	HXTAL2	+500 V	IV Pass	+500 V	IV Pass	+500 V	IV Pass
4	PA11	+500 V	IV Pass	+500 V	IV Pass	+500 V	IV Pass
5	PA12	+500 V	IV Pass	+500 V	IV Pass	+500 V	IV Pass
6	PA13	+500 V	IV Pass	+500 V	IV Pass	+500 V	IV Pass
7	PA19	+500 V	IV Pass	+500 V	IV Pass	+500 V	IV Pass
8	PA20	+500 V	IV Pass	+500 V	IV Pass	+500 V	IV Pass
9	PA21	+500 V	IV Pass	+500 V	IV Pass	+500 V	IV Pass
10	PA22	+500 V	IV Pass	+500 V	IV Pass	+500 V	IV Pass
11	PA23	+500 V	IV Pass	+500 V	IV Pass	+500 V	IV Pass
20	PB06	+500 V	IV Pass	+500 V	IV Pass	+500 V	IV Pass
21	PB05	+500 V	IV Pass	+500 V	IV Pass	+500 V	IV Pass
22	PB04	+500 V	IV Pass	+500 V	IV Pass	+500 V	IV Pass
23	PB07	+500 V	IV Pass	+500 V	IV Pass	+500 V	IV Pass
24	PB03	+500 V	IV Pass	+500 V	IV Pass	+500 V	IV Pass
25	PB02	+500 V	IV Pass	+500 V	IV Pass	+500 V	IV Pass
15	CHIP_PWD	+500 V	IV Pass	+500 V	IV Pass	+500 V	IV Pass
26	PB15	+500 V	IV Pass	+500 V	IV Pass	+500 V	IV Pass
27	PB14	+500 V	IV Pass	+500 V	IV Pass	+500 V	IV Pass
28	PB01	+500 V	IV Pass	+500 V	IV Pass	+500 V	IV Pass
29	PB00	+500 V	IV Pass	+500 V	IV Pass	+500 V	IV Pass

Reliability Test Report

Table 4-2 ESD-CDM test Results							
ESD-ESD-CDM +500V FOR ALL 33 PINS							
Pin No.	Pin Name	R202104168308-28#		/		/	
		Zap Level	Results	Zap Level	Results	Zap Level	Results
33	EPAD	+500 V	IV Pass	/	/	/	/
14	VDD_DIG	+500 V	IV Pass	/	/	/	/
2	VDD_PA	+500 V	IV Pass	/	/	/	/
3	VDD_TX	+500 V	IV Pass	/	/	/	/
32	VDD_TX	+500 V	IV Pass	/	/	/	/
12	VDD_IO	+500 V	IV Pass	/	/	/	/
17	VDD_EXT	+500 V	IV Pass	/	/	/	/
18	VDD_LX	+500 V	IV Pass	/	/	/	/
19	VDD_SENSE	+500 V	IV Pass	/	/	/	/
13	VDD_IO_5V	+500 V	IV Pass	/	/	/	/
16	VBAT	+500 V	IV Pass	/	/	/	/
1	ANT	+500 V	IV Pass	/	/	/	/
30	HXTAL1	+500 V	IV Pass	/	/	/	/
31	HXTAL2	+500 V	IV Pass	/	/	/	/
4	PA11	+500 V	IV Pass	/	/	/	/
5	PA12	+500 V	IV Pass	/	/	/	/
6	PA13	+500 V	IV Pass	/	/	/	/
7	PA19	+500 V	IV Pass	/	/	/	/
8	PA20	+500 V	IV Pass	/	/	/	/
9	PA21	+500 V	IV Pass	/	/	/	/
10	PA22	+500 V	IV Pass	/	/	/	/
11	PA23	+500 V	IV Pass	/	/	/	/
20	PB06	+500 V	IV Pass	/	/	/	/
21	PB05	+500 V	IV Pass	/	/	/	/
22	PB04	+500 V	IV Pass	/	/	/	/
23	PB07	+500 V	IV Pass	/	/	/	/
24	PB03	+500 V	IV Pass	/	/	/	/
25	PB02	+500 V	IV Pass	/	/	/	/
15	CHIP_PWD	+500 V	IV Pass	/	/	/	/
26	PB15	+500 V	IV Pass	/	/	/	/
27	PB14	+500 V	IV Pass	/	/	/	/
28	PB01	+500 V	IV Pass	/	/	/	/
29	PB00	+500 V	IV Pass	/	/	/	/

Reliability Test Report

Table 4-3 ESD-CDM test Results							
ESD-CDM -500V FOR ALL 33 PINS							
Pin No.	Pin Name	R202104168308-29#		R202104168308-30#		R202104168308-31#	
		Zap Level	Results	Zap Level	Results	Zap Level	Results
33	EPAD	-500 V	IV Pass	-500 V	IV Pass	-500 V	IV Pass
14	VDD_DIG	-500 V	IV Pass	-500 V	IV Pass	-500 V	IV Pass
2	VDD_PA	-500 V	IV Pass	-500 V	IV Pass	-500 V	IV Pass
3	VDD_TX	-500 V	IV Pass	-500 V	IV Pass	-500 V	IV Pass
32	VDD_TX	-500 V	IV Pass	-500 V	IV Pass	-500 V	IV Pass
12	VDD_IO	-500 V	IV Pass	-500 V	IV Pass	-500 V	IV Pass
17	VDD_EXT	-500 V	IV Pass	-500 V	IV Pass	-500 V	IV Pass
18	VDD_LX	-500 V	IV Pass	-500 V	IV Pass	-500 V	IV Pass
19	VDD_SENSE	-500 V	IV Pass	-500 V	IV Pass	-500 V	IV Pass
13	VDD_IO_5V	-500 V	IV Pass	-500 V	IV Pass	-500 V	IV Pass
16	VBAT	-500 V	IV Pass	-500 V	IV Pass	-500 V	IV Pass
1	ANT	-500 V	IV Pass	-500 V	IV Pass	-500 V	IV Pass
30	HXTAL1	-500 V	IV Pass	-500 V	IV Pass	-500 V	IV Pass
31	HXTAL2	-500 V	IV Pass	-500 V	IV Pass	-500 V	IV Pass
4	PA11	-500 V	IV Pass	-500 V	IV Pass	-500 V	IV Pass
5	PA12	-500 V	IV Pass	-500 V	IV Pass	-500 V	IV Pass
6	PA13	-500 V	IV Pass	-500 V	IV Pass	-500 V	IV Pass
7	PA19	-500 V	IV Pass	-500 V	IV Pass	-500 V	IV Pass
8	PA20	-500 V	IV Pass	-500 V	IV Pass	-500 V	IV Pass
9	PA21	-500 V	IV Pass	-500 V	IV Pass	-500 V	IV Pass
10	PA22	-500 V	IV Pass	-500 V	IV Pass	-500 V	IV Pass
11	PA23	-500 V	IV Pass	-500 V	IV Pass	-500 V	IV Pass
20	PB06	-500 V	IV Pass	-500 V	IV Pass	-500 V	IV Pass
21	PB05	-500 V	IV Pass	-500 V	IV Pass	-500 V	IV Pass
22	PB04	-500 V	IV Pass	-500 V	IV Pass	-500 V	IV Pass
23	PB07	-500 V	IV Pass	-500 V	IV Pass	-500 V	IV Pass
24	PB03	-500 V	IV Pass	-500 V	IV Pass	-500 V	IV Pass
25	PB02	-500 V	IV Pass	-500 V	IV Pass	-500 V	IV Pass
15	CHIP_PWD	-500 V	IV Pass	-500 V	IV Pass	-500 V	IV Pass
26	PB15	-500 V	IV Pass	-500 V	IV Pass	-500 V	IV Pass
27	PB14	-500 V	IV Pass	-500 V	IV Pass	-500 V	IV Pass
28	PB01	-500 V	IV Pass	-500 V	IV Pass	-500 V	IV Pass
29	PB00	-500 V	IV Pass	-500 V	IV Pass	-500 V	IV Pass

Reliability Test Report

Table 4-4 ESD-CDM test Results							
ESD-CDM -500V FOR ALL 33 PINS							
Pin No.	Pin Name	R202104168308-32#		/		/	
		Zap Level	Results	Zap Level	Results	Zap Level	Results
33	EPAD	-500 V	IV Pass	/	/	/	/
14	VDD_DIG	-500 V	IV Pass	/	/	/	/
2	VDD_PA	-500 V	IV Pass	/	/	/	/
3	VDD_TX	-500 V	IV Pass	/	/	/	/
32	VDD_TX	-500 V	IV Pass	/	/	/	/
12	VDD_IO	-500 V	IV Pass	/	/	/	/
17	VDD_EXT	-500 V	IV Pass	/	/	/	/
18	VDD_LX	-500 V	IV Pass	/	/	/	/
19	VDD_SENSE	-500 V	IV Pass	/	/	/	/
13	VDD_IO_5V	-500 V	IV Pass	/	/	/	/
16	VBAT	-500 V	IV Pass	/	/	/	/
1	ANT	-500 V	IV Pass	/	/	/	/
30	HXTAL1	-500 V	IV Pass	/	/	/	/
31	HXTAL2	-500 V	IV Pass	/	/	/	/
4	PA11	-500 V	IV Pass	/	/	/	/
5	PA12	-500 V	IV Pass	/	/	/	/
6	PA13	-500 V	IV Pass	/	/	/	/
7	PA19	-500 V	IV Pass	/	/	/	/
8	PA20	-500 V	IV Pass	/	/	/	/
9	PA21	-500 V	IV Pass	/	/	/	/
10	PA22	-500 V	IV Pass	/	/	/	/
11	PA23	-500 V	IV Pass	/	/	/	/
20	PB06	-500 V	IV Pass	/	/	/	/
21	PB05	-500 V	IV Pass	/	/	/	/
22	PB04	-500 V	IV Pass	/	/	/	/
23	PB07	-500 V	IV Pass	/	/	/	/
24	PB03	-500 V	IV Pass	/	/	/	/
25	PB02	-500 V	IV Pass	/	/	/	/
15	CHIP_PWD	-500 V	IV Pass	/	/	/	/
26	PB15	-500 V	IV Pass	/	/	/	/
27	PB14	-500 V	IV Pass	/	/	/	/
28	PB01	-500 V	IV Pass	/	/	/	/
29	PB00	-500 V	IV Pass	/	/	/	/

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Reliability Test Report

Appendix 1 Equipment List

No.	Equipment and instrument	Serial No.	Due date	Test item
1	ORION3	1909229	2022/03/04	ESD-CDM
2	Oscilloscope	B011117	2022/04/18	ESD-CDM
3	ZapMaster Mk.2 TE	1911214	2022/01/10	ESD-CDM-IV

----------End of Report----------