Test Report

Report No. ..... :	SUER240700079371	**Release date..... :**	2024-08-26
Applicant's name ..... :	CROSSCALL		
	245, Rue Paul Langevin 13290, Aix-en-Provence, France		
Laboratory name and address..... :	SGS-CSTC Standards Technical Services Co.,Ltd. Suzhou Branch		
	No.10, Weiye Road, Kunshan Development Zone, Suzhou, Jiangsu, China		
Product Description..... :	Mobile phone		
Product Model No ..... :	Stellar-M6E		
S/N No..... :	-		
Sample status ..... :	Normal		
Sample receipt date ..... :	2024-07-26		
Date of Test ..... :	2024-07-26 to 2024-08-26		
Test Standard..... :	See following pages		
Conclusion ..... :	See following pages		
Remark /Note ..... :	1) The test results presented in this report relate only to the object tested.		
	2) The report shall not be reproduced except in full, without approval of the laboratory.		
	3) The test report shall only be used for client scientific research, teaching, internal quality control, product research and development, etc… and just for client internal reference.		

Tested by: Leo Li

Approved by: Frank Fang

Summary of Results

No	Test Item	Test Standard	Conclusion	Sample number
1	Low Pressure	MIL-STD-810H: 2019 Method 500.6 Procedure III	Pass	1#
2	High Temperature Storage	MIL-STD-810H: 2019 Method 501.7 Procedure I	Pass	2#
3	Low Temperature Storage	MIL-STD-810H: 2019 Method 502.7 Procedure I	Pass	2#
4	Low Temperature Operation	MIL-STD-810H: 2019 Method 502.7 Procedure II	Pass	3#
5	Temperature Shock	MIL-STD-810H: 2019 Method 503.7 Procedure I-C IEC 60529:1989/AMD2:2013/COR1:2019 Degrees of protection provided by enclosures (IP Code)	Pass	4#
6	Solar Radiation	MIL-STD-810H: 2019 Method 505.7 Procedure I	Pass	5#
7	Humidity	MIL-STD-810H Method 507.6 Procedure II	Pass	6#
8	Salt Fog	MIL-STD-810H: 2019 Method 509.7	Pass	7#
9	Acceleration	MIL-STD-810H: 2019 Method 513.8 Procedure I	Pass	8#
10	Vibration	MIL-STD-810H w/Change 1 Method 514.8 Annex C Section 2 Category 4–Common carrier and client's requirement	Pass	9#
11	Shock	MIL-STD-810H w/Change 1 Method 516.8 Functional Shock Procedure I	Pass	10#
12	IP6X Dustproof Test	IEC 60529:1989/AMD2:2013/COR1:2019 Degrees of protection provided by enclosures (IP Code)	Pass	11#
13	IPX8 Test	IEC 60529:1989/AMD2:2013/COR1:2019 Degrees of protection provided by enclosures (IP Code)	Pass	12#
14	IK05 Test	IEC 62262:2002/AMD1:2021 Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code)	Pass	13#

Note: Pass: Meet the requirements;

Fail: Does not meet the requirements;

/: Not apply to the judgment.

Test site:

Item 1, 9: Chongqing Beibei Caijia Town Jiade Avenue Building 4 NO.42

Item 2~8: No.10, Weiye Road, Kunshan Development Zone, Suzhou, Jiangsu, China

Item 10, 11: Building 12, New Industry Square, No.78 Xinglin Street, SIP, Suzhou, China

Item 12~14: No.588 West Jindu Road, Xinqiao, Songjiang, Shanghai, China

1. Test Item: Low Pressure

Environmental requirement:

Ambient Temperature: (15~35) ℃; Relative Humidity: (25~75) %RH; Atmos: (86~106) kPa.

Reference standard:

MIL-STD-810H: 2019 Environmental Engineering Considerations and Laboratory Tests Method 500.6 Procedure III

Test condition:

Procedure III: Rapid Decompression

1) Put the sample in the chamber and adjust the chamber air pressure at a rate not to exceed 3℃/min, to the cabin altitude(2438m);
2) Reduce the chamber air pressure to that which corresponds to the required test altitude of 12192m/18.8kPa,in not more than 15 seconds
3) Maintain this stabilized reduced pressure for at least 10 minutes
4) Adjust the chamber air to standard ambient conditions using a pressure change rate not greater than 10m/s, and a temperature change rate not to exceed 3℃/min.

Test acceptance requirements:

The sample has no cosmetic defects or malfunction.

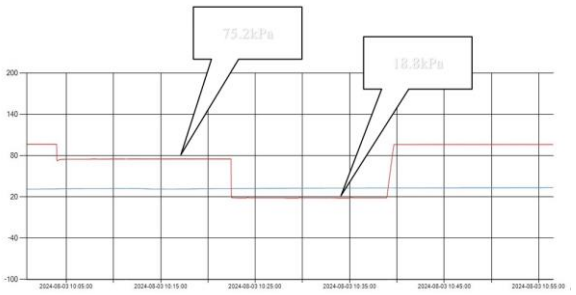
Test result:

Sample Number	Test Result
1#	The samples have no cosmetic defects or malfunction.

Conclusion: Pass

Photographs of the Test Configuration

	
Before test	After test

	
During test	Test curve

2. Test Item: High Temperature Storage

Environmental requirement:

Ambient Temperature: (15~35) ℃; Relative Humidity: (25~75) %RH; Atmos: (86~106) kPa.

Reference standard:

MIL-STD-810H: 2019 Environmental Engineering Considerations and Laboratory Tests Method 501.7 Procedure I

Test condition:

Procedure I: Storage

Temperature	71℃
Duration	2h
Operating mode	Power off

Test acceptance requirements:

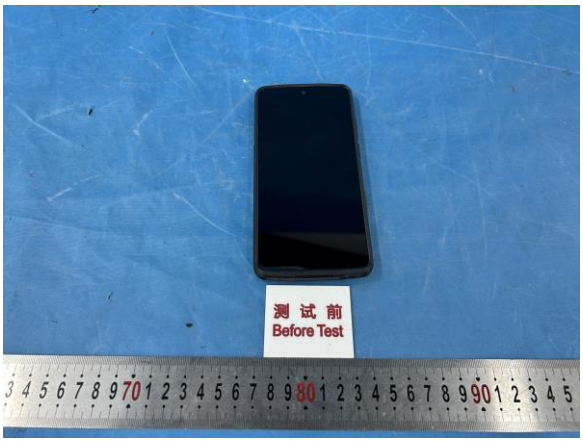
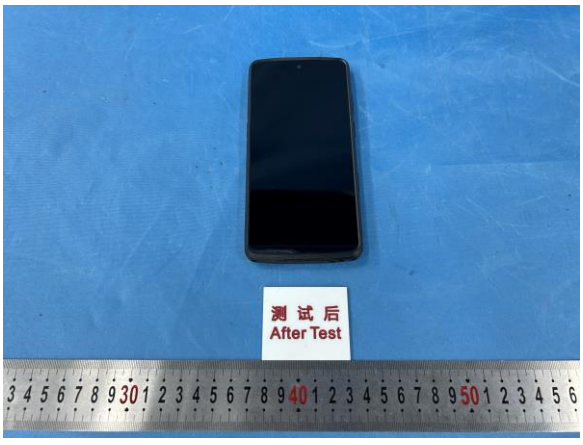
The appearance and function of the sample should be normal.

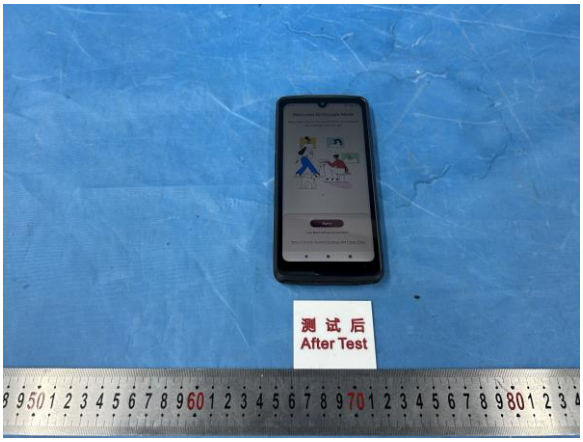
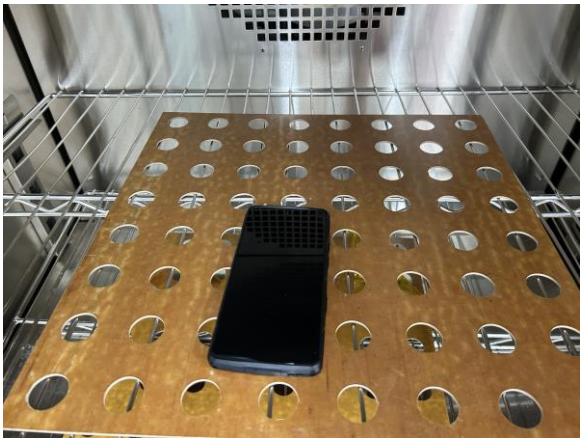
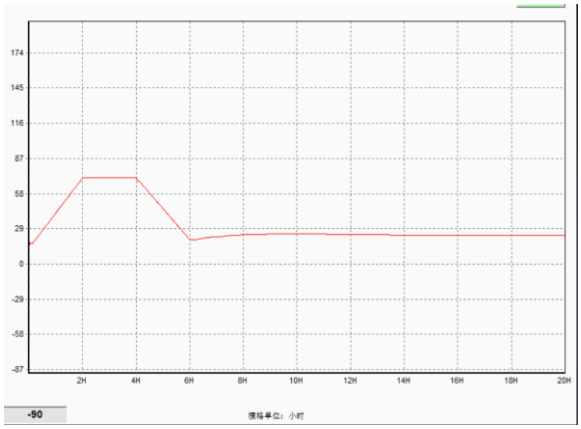
Test result:

Sample Number	Test Result
2#	The appearance and function of the sample was normal.

Conclusion: Pass

Photographs of the Test Configuration

	
Before test	After test

	
Before test	After test
	
After test-functional check	During test
	/
Test curve	/

3. Test Item: Low Temperature Storage

Environmental requirement:

Ambient Temperature: (15~35) ℃; Relative Humidity: (25~75) %RH; Atmos: (86~106) kPa.

Reference standard:

MIL-STD-810H: 2019 Environmental Engineering Considerations and Laboratory Tests Method 502.7 Procedure I

Test condition:

Procedure I: Storage

Temperature	-51℃
Duration	2h
Operating mode	Power off

Test acceptance requirements:

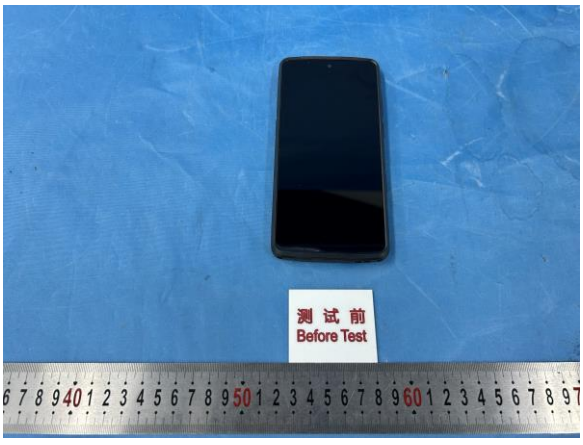
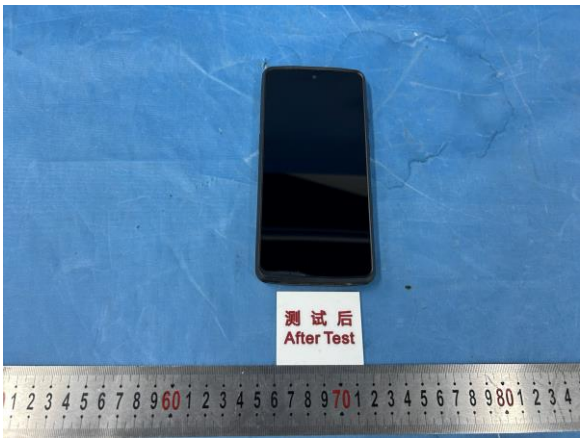
The appearance and function of the sample should be normal.

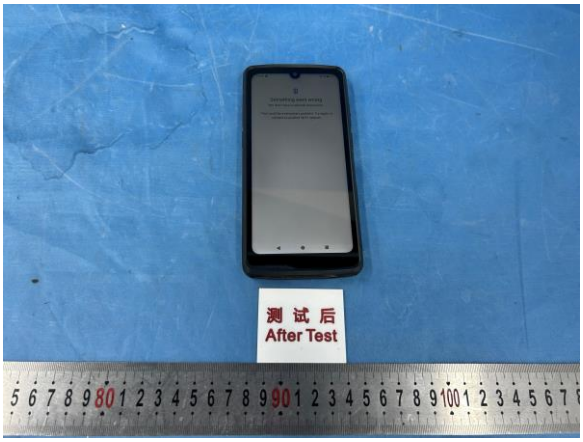
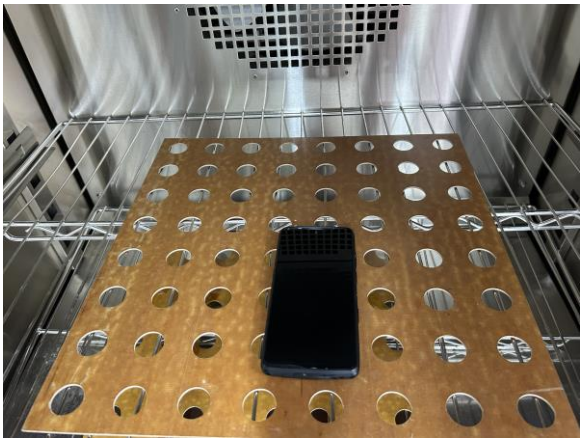
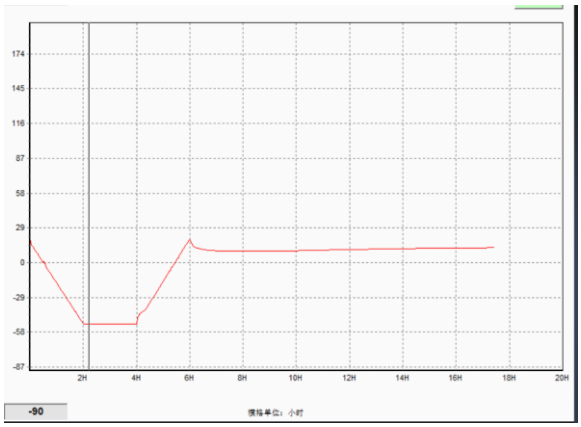
Test result:

Sample Number	Test Result
2#	The appearance and function of the sample was normal.

Conclusion: Pass

Photographs of the Test Configuration

	
Before test	After test

	
Before test	After test
	
After test-functional check	During test
	/
Test curve	/

4. Test Item: Low Temperature Operation

Environmental requirement:

Ambient Temperature: (15~35) ℃; Relative Humidity: (25~75) %RH; Atmos: (86~106) kPa.

Reference standard:

MIL-STD-810H: 2019 Environmental Engineering Considerations and Laboratory Tests Method 502.7 Procedure II

Test condition:

Procedure II: Operation, Basic Cold (C1)

Lowest temperature	-25°C
Operating mode	Power on

Test acceptance requirements:

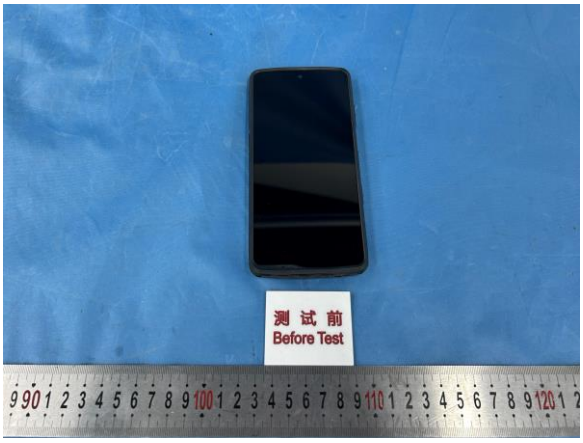
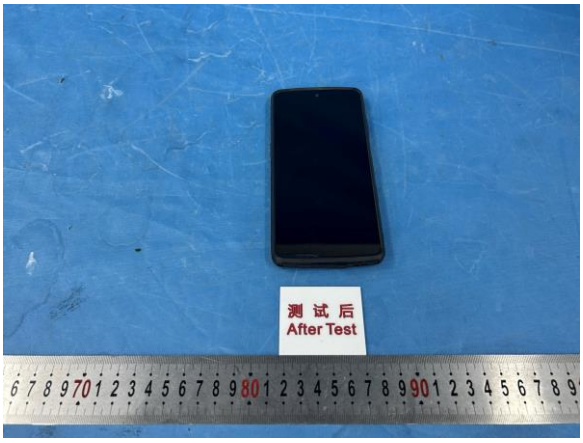
The appearance and function of the sample should be normal.

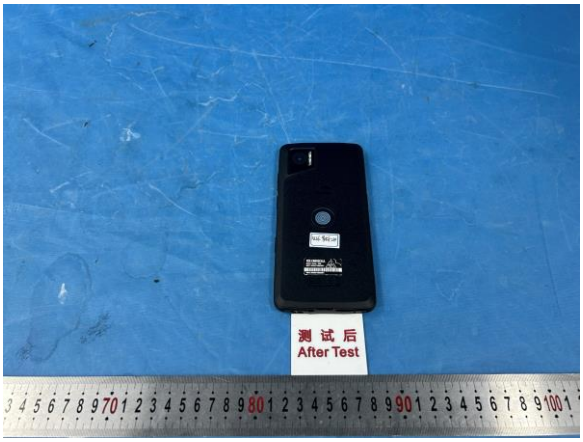
Test result:

Sample Number	Test Result
3#	The appearance and function of the sample was normal.

Conclusion: Pass

Photographs of the Test Configuration

	
Before test	After test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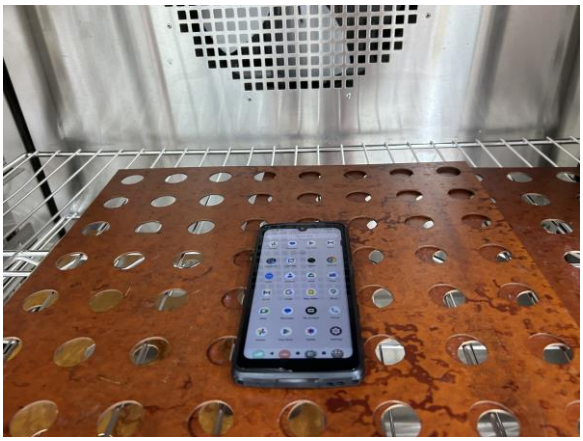
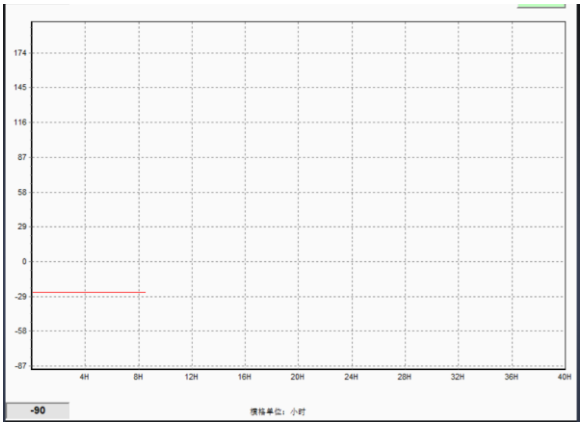
	
After test-functional check	During test
	/
Test curve	/

5. Test Item: Temperature Shock

Environmental requirement:

Ambient Temperature: (15~35) ℃; Relative Humidity: (25~75) %RH; Atmos: (86~106) kPa.

Reference standard:

MIL-STD-810H: 2019 Environmental Engineering Considerations and Laboratory Tests Method 503.7 Procedure I-C

IEC 60529:1989/AMD2:2013/COR1:2019 Degrees of protection provided by enclosures (IP Code)

Test condition:

Step 1: Procedure I-C: Multi-Cycle Shock from Constant Extreme Temperature

Low temperature	-40℃
High temperature	60℃
Temperature stabilized duration	2h
Temperature transfer time	≤ 1min
Cycle times	3
Operating mode	Power off

Step 2: IPX8 test:

Simulated water depth: 2m

Test Duration: 30min

Test acceptance requirements:

Step 1: The appearance and function of the sample should be normal.

Step 2: After test, there should be no water ingress, and function should be normal.

Test result:

Sample Number	Test Result	
4#	Step 1	The appearance and function of the sample was normal.
	Step 2	After test, there was no water ingress, and function was normal.

Conclusion: Pass

Photographs of the Test Configuration

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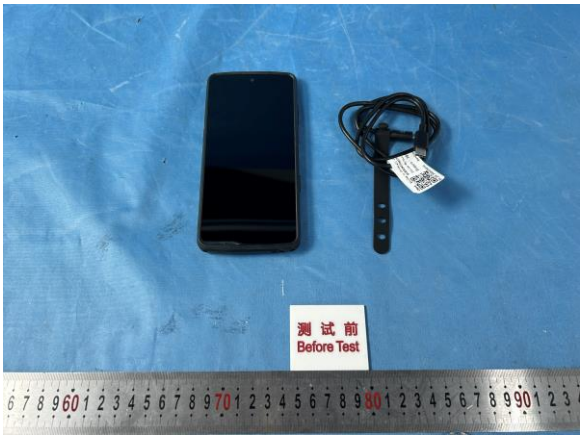
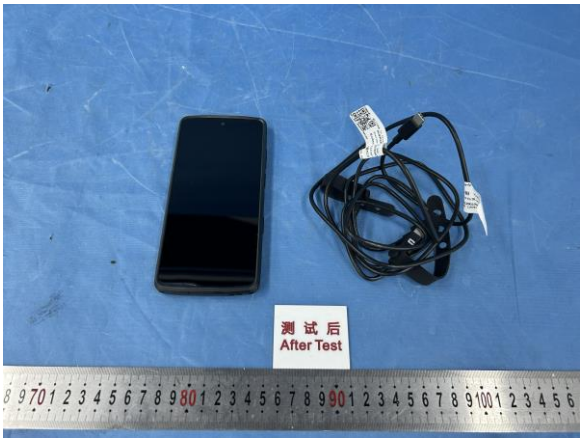
<tr><td> 
</td><td> 
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<tr><td>Before test - Temperature shock</td><td>After test - Temperature shock</td></tr>
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<tr><td>Before test - Temperature shock</td><td>After test - Temperature shock</td></tr>
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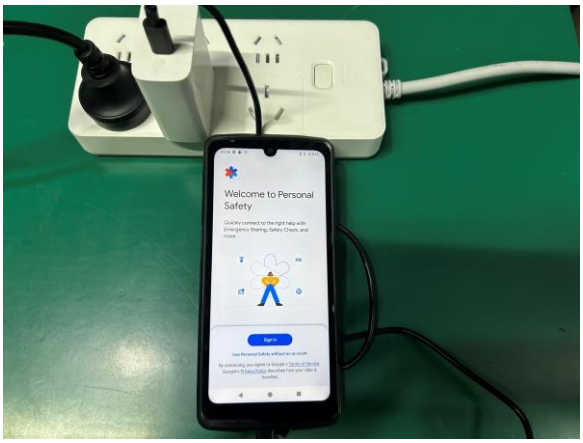
</td><td> 
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<tr><td>After test- Temperature shock (functional check)</td><td>After test- Temperature shock (functional check)</td></tr>
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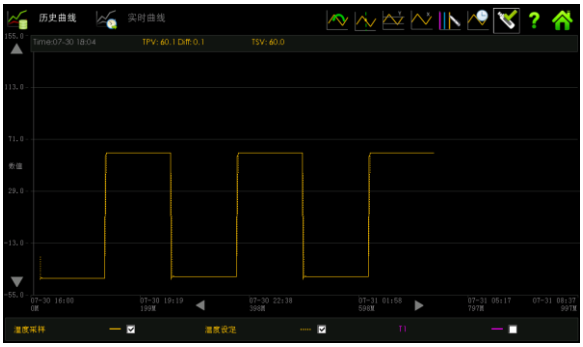
	
During test - Temperature shock	Test curve - Temperature shock
	
Before test – IPX8	After test - IPX8
	
After test - IPX8 (functional check)	After test - IPX8 (disassembly inspection)

	/
During test - IPX8	/

6. Test Item: Solar Radiation

Environmental requirement:

Ambient Temperature: (15~35) ℃; Relative Humidity: (25~75) %RH; Atmos: (86~106) kPa.

Reference standard:

MIL-STD-810H: 2019 Environmental Engineering Considerations and Laboratory Tests Method 505.7 Procedure I

Test condition:

Procedure I: Cycling (heating and/or minimal actinic effects)

Adjust the chamber air temperature to 49°C.

Adjust the solar radiation source to a radiant energy rate of（1120 ± 47） W/m^2.

Maintain these conditions for 20 hours. Turn off the solar radiation source for four hours.

One cycle only.

Test acceptance requirements:

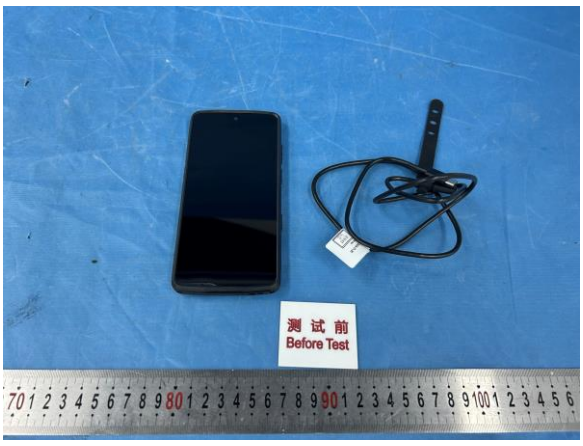
The appearance and function of the sample should be normal.

Test result:

Sample Number	Test Result
5#	The appearance and function of the sample was normal.

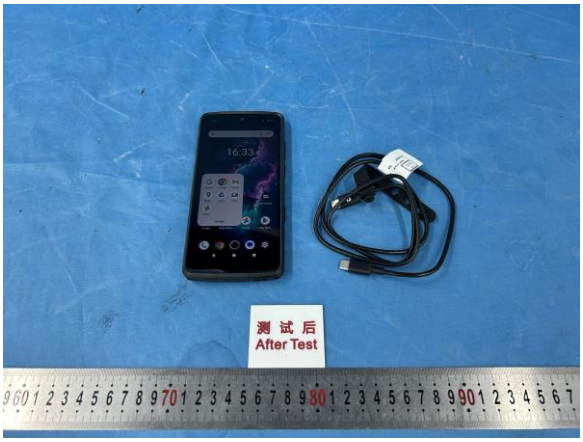
Conclusion: Pass

Photographs of the Test Configuration



Before test

After test

	
Before test	After test
	
After test-functional check	After test-functional check
	/
During test	/

7. Test Item: Humidity

Environmental requirement:

Ambient Temperature: (15~35) ℃; Relative Humidity: (25~75) %RH; Atmos: (86~106) kPa.

Reference standard:

MIL-STD-810H: 2019 Environmental Engineering Considerations and Laboratory Tests Method Method 507.6 Procedure II

Test condition:

Procedure II: Aggravated

Power on the phone. Maintain the relative humidity at (95±4) percent at all times except that during the descending temperature periods the relative humidity may drop to as low as 85 percent. Do the cycle corresponding to the table (during 24 hours). Perform operational checks near the end of the tenth cycle.

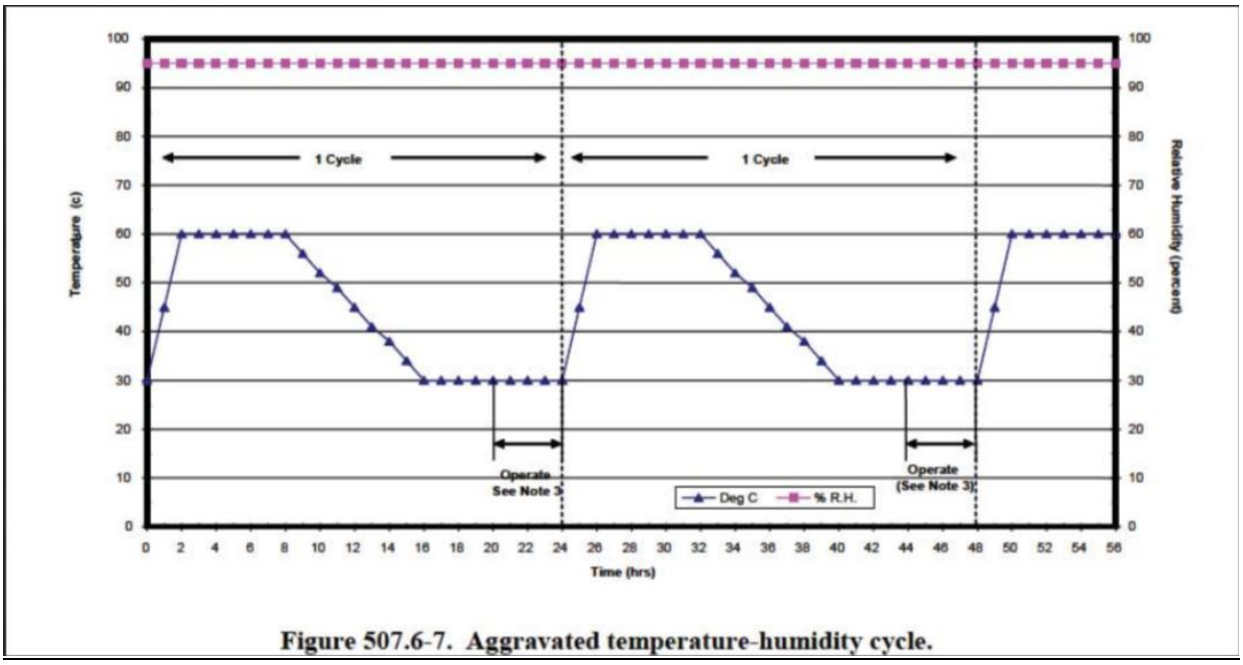


Figure 507.6-7. Aggravated temperature-humidity cycle.

Test acceptance requirements:

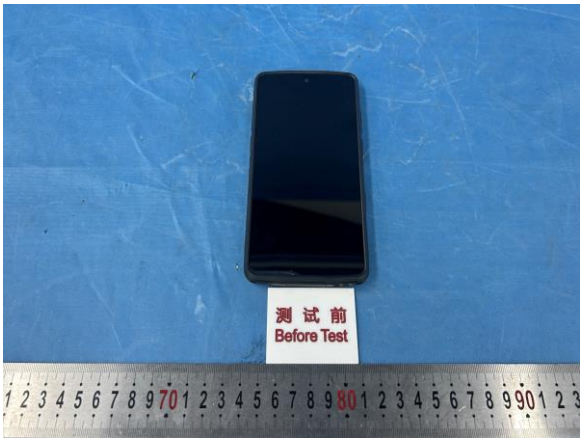
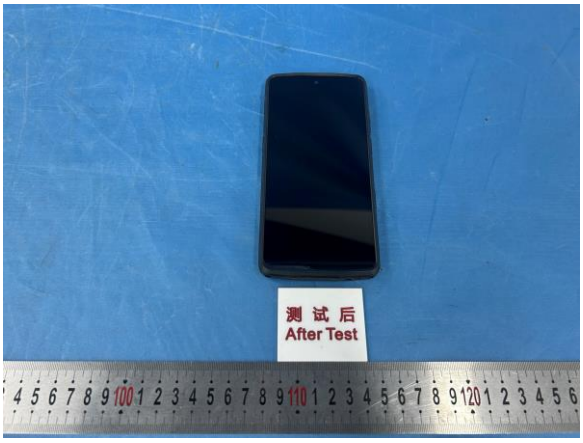
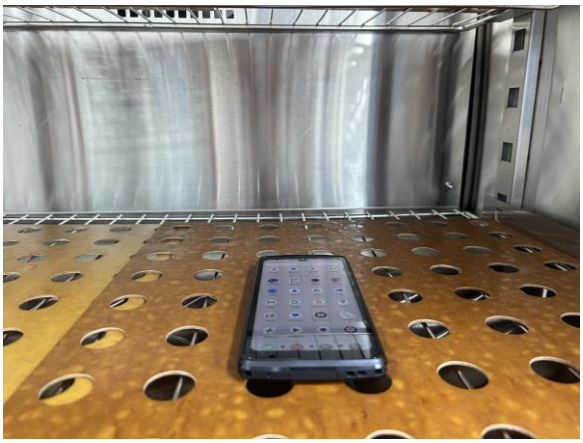
The appearance and function of the sample should be normal.

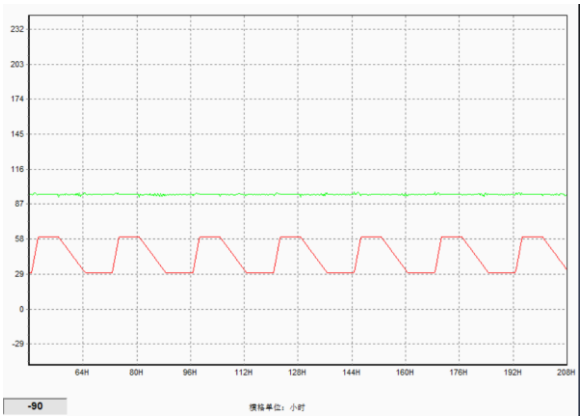
Test result:

Sample Number	Test Result
6#	The appearance and function of the sample was normal.

Conclusion: Pass

Photographs of the Test Configuration

	
Before test	After test
	
Before test	After test
	
After test-functional check	During test

	/
Test curve (details)	/

8. Test Item: Salt Fog

Environmental requirement:

Ambient Temperature: (15~35) ℃; Relative Humidity: (25~75) %RH; Atmos: (86~106) kPa.

Reference standard:

MIL-STD-810H: 2019 Environmental Engineering Considerations and Laboratory Tests Method Method 509.7

Test condition:

Acceleration	2g
Test temperature	35℃
Salt solution concentration	5%
Salt solution pH	6.5~7.2
Salt solution fallout rate	(1.0~3.0ml)/h•80cm^2
Test duration	2 cycles with each cycle of 24h of salt fog exposure and 24h of drying condition, which is 96h in total.
Operating mode	Power on

Test acceptance requirements:

The appearance and function of the sample should be normal.

Test result:

Sample Number	Test Result
7#	The appearance and function of the sample was normal.

Conclusion: Pass

Photographs of the Test Configuration

	
Before test	After test

	
Before test	After test
	
After test-functional check	After test-functional check
	/
During test	/

9. Test Item: Acceleration

Environmental requirement:

Ambient Temperature: (15~35) ℃; Relative Humidity: (25~75) %RH; Atmos: (86~106) kPa.

Reference standard:

MIL-STD-810H: 2019 Environmental Engineering Considerations and Laboratory Tests Method 513.8 Procedure I

Test condition:

Procedure I: Structural Test

Acceleration	2g
Test orientation	6 orientations
Test duration	1min/orientation
Operating mode	Power on

Test acceptance requirements:

The sample has no cosmetic defects or malfunction.

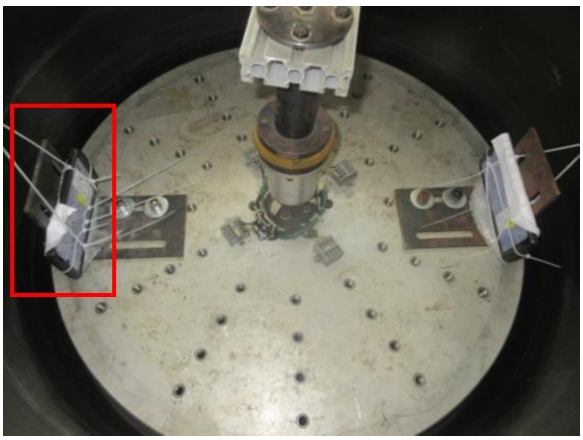
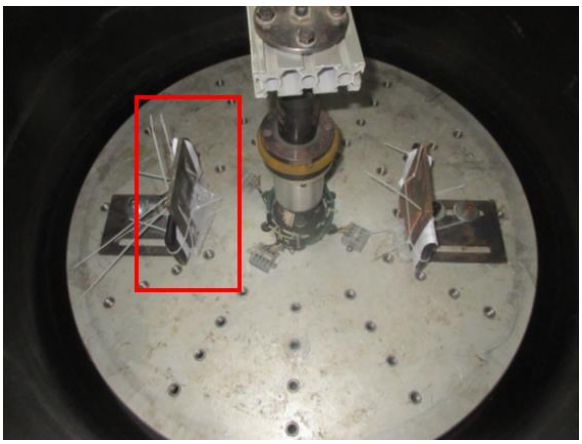
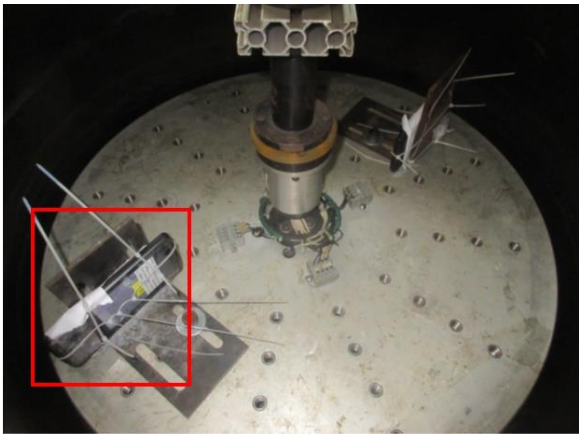
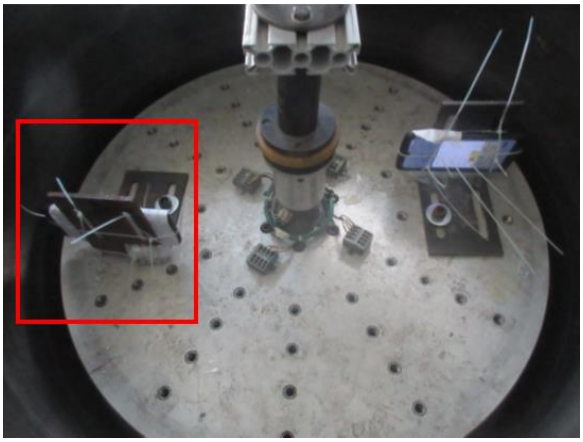
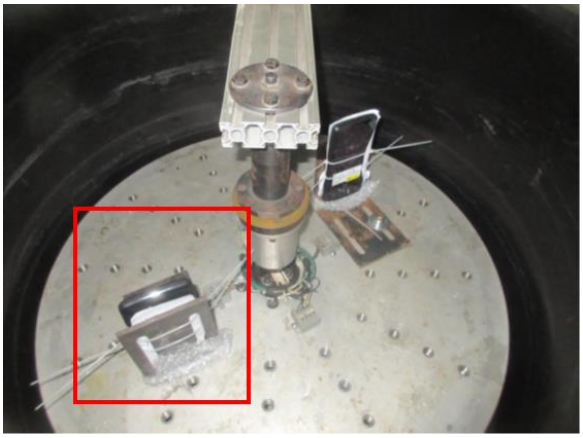
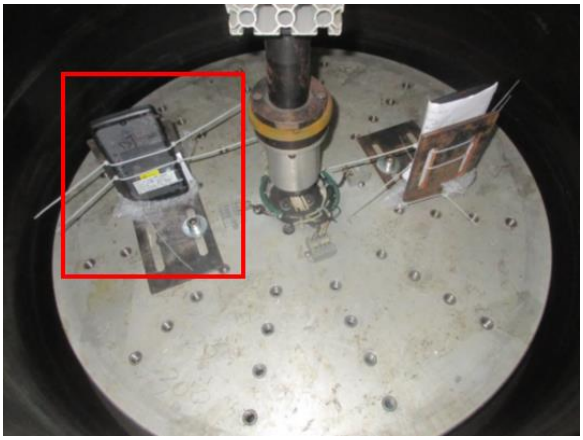
Test result:

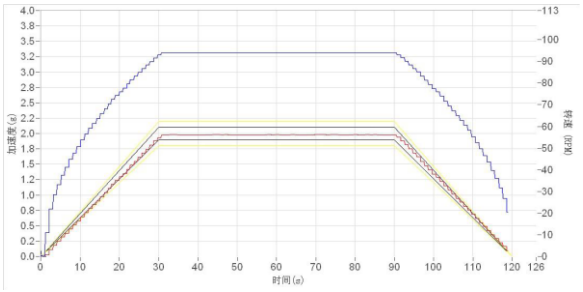
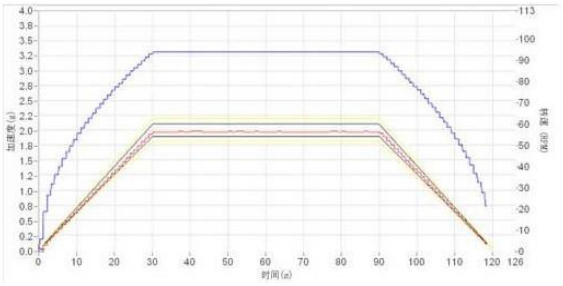
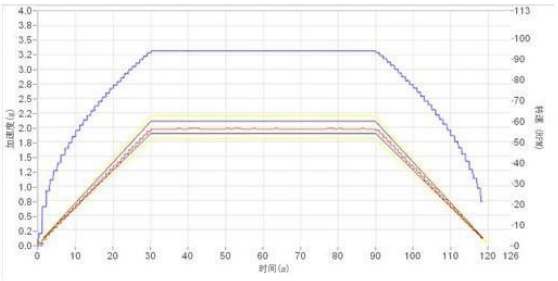
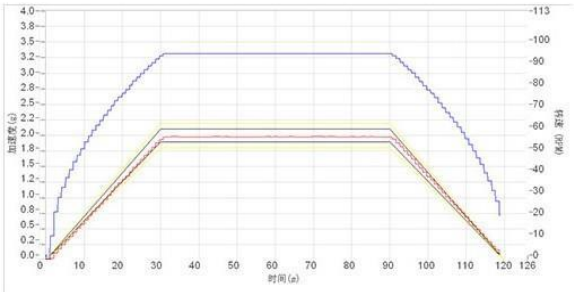
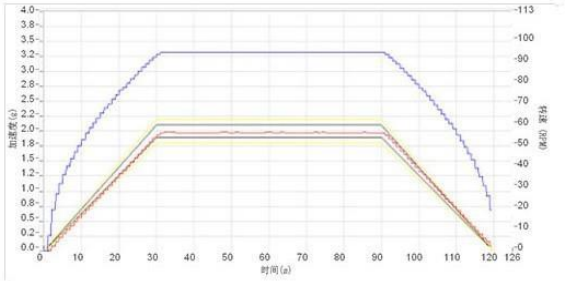
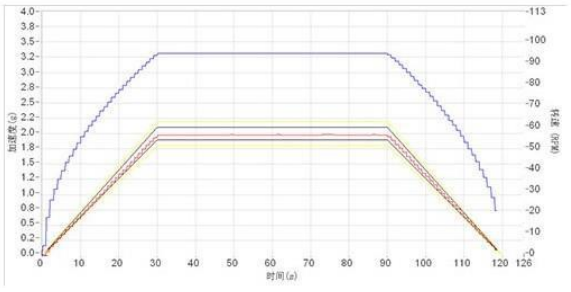
Sample Number	Test Result
8#	The samples have no cosmetic defects or malfunction.

Conclusion: Pass

Photographs of the Test Configuration

	
Before test	After test

	
During test - in the first direction	During test - in the second direction
	
During test - in the third direction	During test - in the fourth direction
	
During test - in the fifth direction	During test - in the sixth direction

	
Test curve - in the first direction	Test curve - in the second direction
	
Test curve - in the third direction	Test curve - in the fouth direction
	
Test curve - in the fifth direction	Test curve - in the sixth direction

10. Test Item: Vibration

Environmental requirement:

Ambient Temperature: (15~35) ℃; Relative Humidity: (25~75) %RH; Atmos: (86~106) kPa.

Reference standard:

MIL-STD-810H w/Change 1 Environmental Engineering Considerations and Laboratory Tests Method 514.8 Annex C Section 2 Category 4–Common carrier

Test condition:

Z axis		X axis		Y axis	
Frequency (Hz)	Power Spectral Density Level(g^2/Hz)	Frequency (Hz)	Power Spectral Density Level(g^2/Hz)	Frequency (Hz)	Power Spectral Density Level(g^2/Hz)
5	0.015	5	0.00013	5	0.0065
40	0.015	10	0.00013	20	0.0065
500	0.00015	20	0.00065	120	0.0002
		30	0.00065	121	0.003
		78	0.00002	200	0.003
		79	0.00019	240	0.0015
		120	0.00019	340	0.00003
		500	0.00001	500	0.00015

Keep the device powered off during the test

Test acceptance requirements:

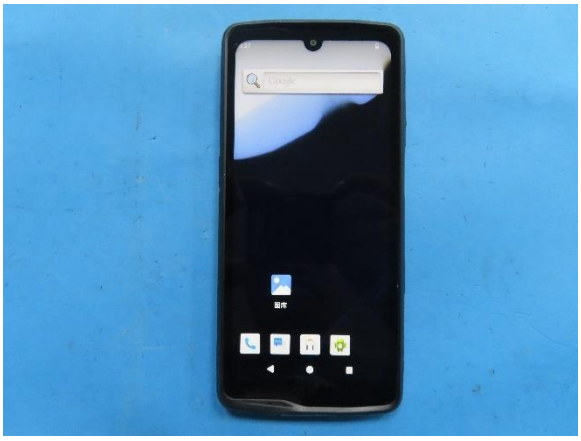
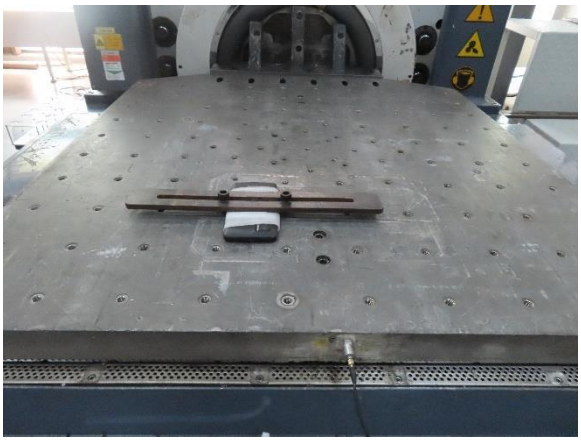
Can be turned on, touch normal

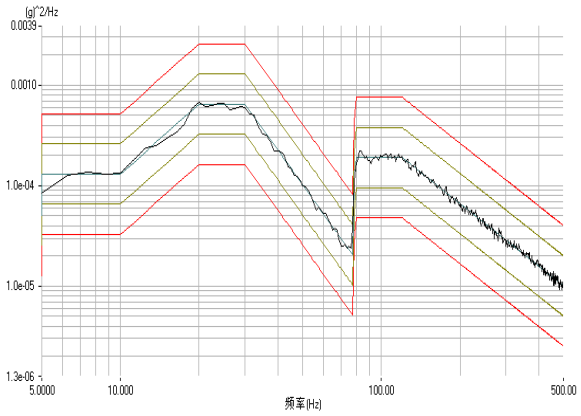
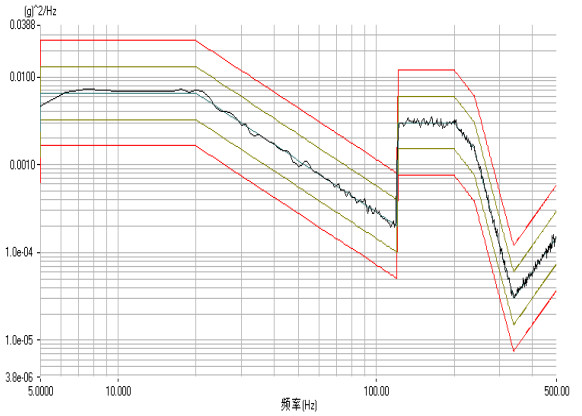
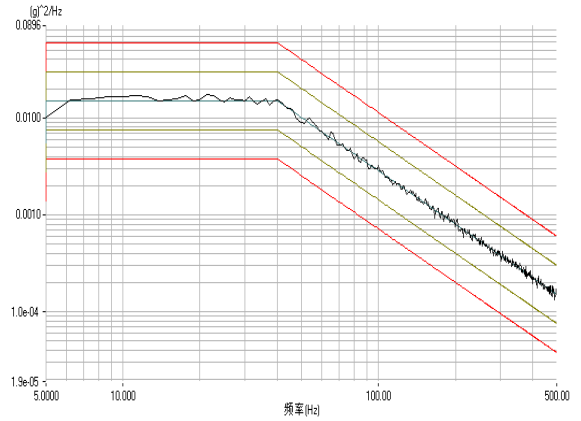
Test result:

Sample Number	Test Result
9#	Can be turned on, touch normal.

Conclusion: Pass

Photographs of the Test Configuration

	
Before test	After test
	
After test – Functional check	During test (X axis)
	
During test (Y axis)	During test (Z axis)

	
Test curve (X axis)	Test curve (Y axis)
	/
Test curve (Z axis)	/

11. Test Item: Shock

Environmental requirement:

Ambient Temperature: (15~35) ℃; Relative Humidity: (25~75) %RH; Atmos: (86~106) kPa.

Reference standard:

MIL-STD-810H w/Change 1 Environmental Engineering Considerations and Laboratory Tests Method 516.8 Procedures I

Test condition:

Procedures I: Functional Shock

Pulse Shape	Terminal peak sawtooth
Acceleration	40 g
Pulse Duration	11 ms
Shock Direction	±X, ±Y, ±Z axes
Shock times	18 (3 times/direction)
Operating mode	Power on

Test acceptance requirements:

Can be turned on, touch normal

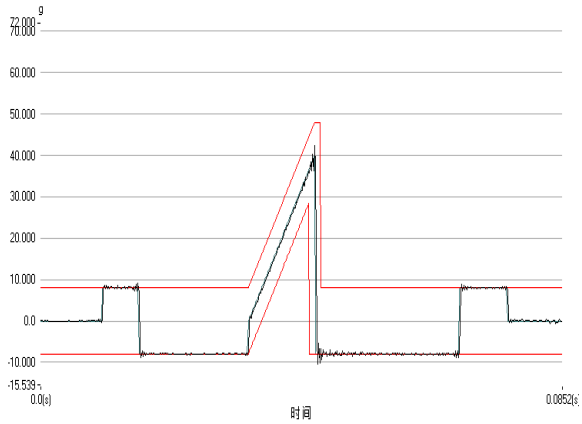
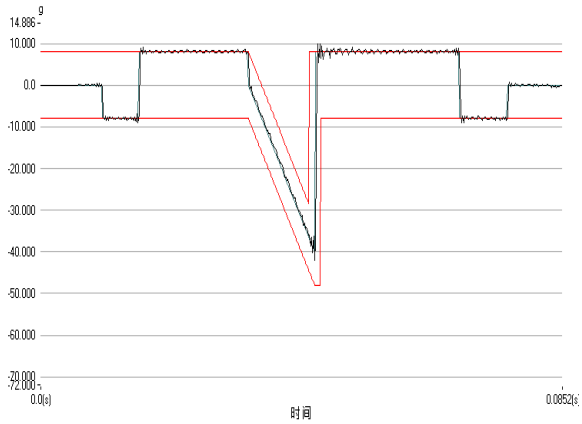
Test result:

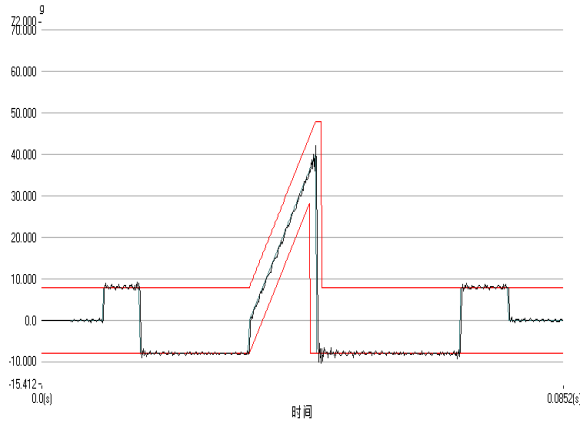
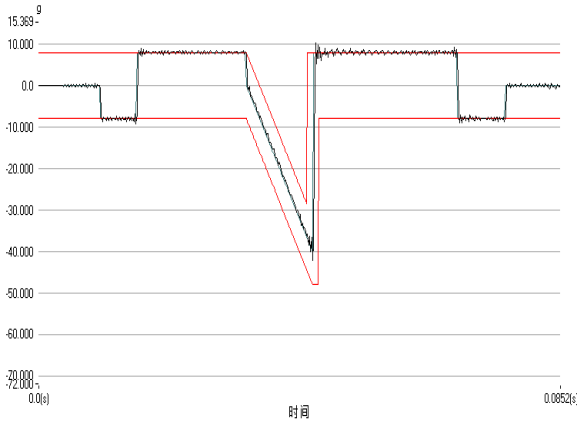
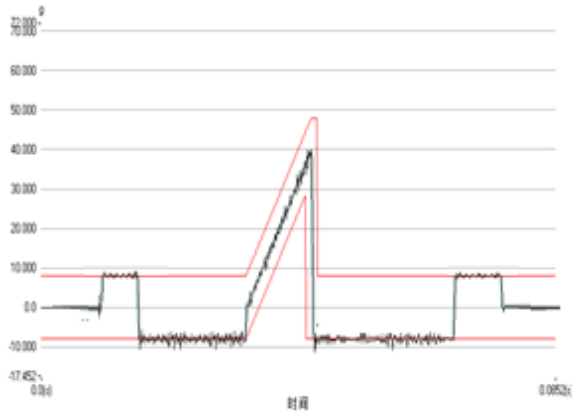
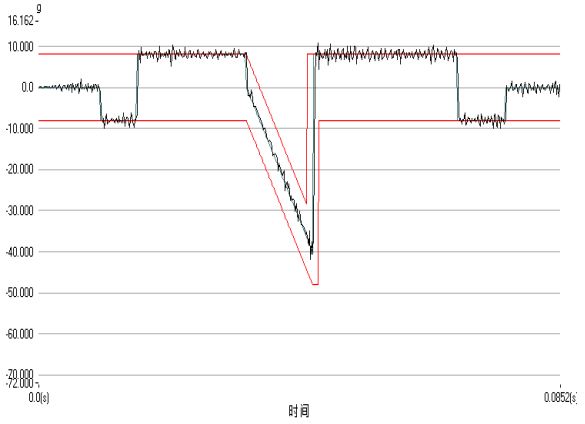
Sample Number	Test Result
10#	Can be turned on, touch normal

Conclusion: Pass

Photographs of the Test Configuration

	
Before test	After test

	
After test – Functional check	During test (X axis)
	
During test (Y axis)	During test (Z axis)
	
Test curve (+X axis)	Test curve (-X axis)

	
Test curve (+Y axis)	Test curve (-Y axis)
	
Test curve (+Z axis)	Test curve (-Z axis)

12. Test Item: IP6X Dustproof Test

Environmental requirement:

Ambient Temperature: (15~35) ℃; Relative Humidity: (25~75) %RH; Atmos: (86~106) kPa

Reference standard:

IEC 60529:1989/AMD2:2013/COR1:2019 Degrees of protection provided by enclosures (IP Code)

Test condition:

Simulated dust: Talcum powder

Maximum depression: 2kPa

Dust Concentration: 2kg/m³ chamber volume and be kept in suspension during the test

Extraction rate: The extraction rate of 40 to 60 volumes per hour

Test duration: 2h

Test acceptance requirements:

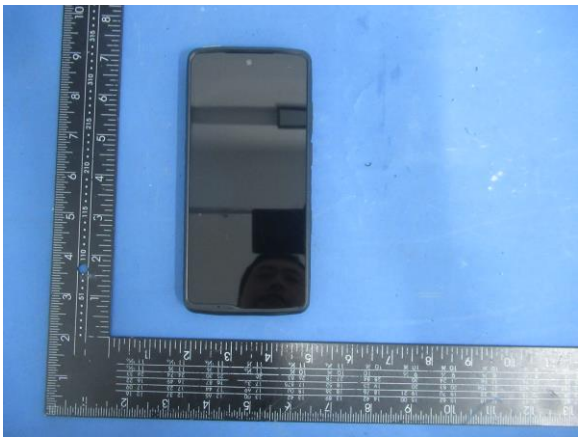
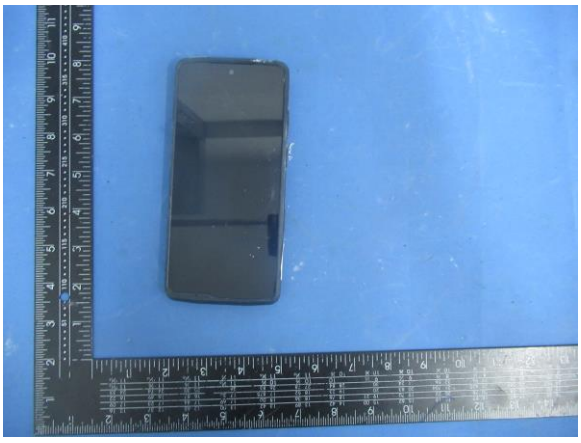
After test, there should be no dust ingress and function should be normal.

Test result:

Sample Number	Test Result
11#	After test, there was no dust ingress, and function was normal.

Conclusion: Pass

Photographs of the Test Configuration

	
Before test	After test

	
After test – Functional check	After test –Disassembly inspection
	/
During test	/

13. Test Item: IPX8 Test

Environmental requirement:

Ambient Temperature: (15~35) ℃; Relative Humidity: (25~75) %RH; Atmos: (86~106) kPa

Reference standard:

IEC 60529:1989/AMD2:2013/COR1:2019 Degrees of protection provided by enclosures (IP Code)

Test condition:

Simulated water depth: 2m

Test Duration: 30min

Test acceptance requirements:

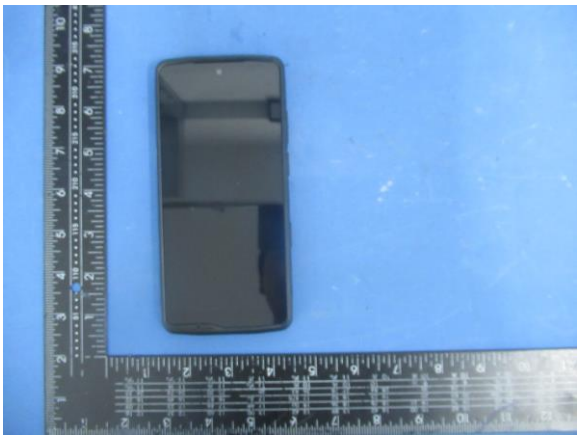
After test, there should be no water ingress and function should be normal.

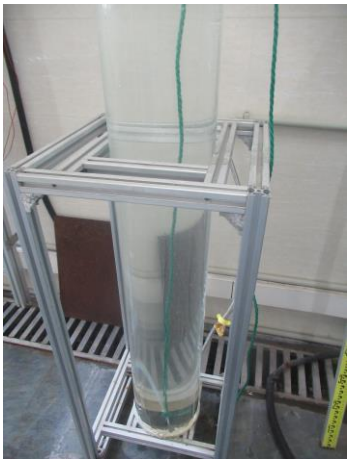
Test result:

Sample Number	Test Result
12#	After test, there was no water ingress, and function was normal.

Conclusion: Pass

Photographs of the Test Configuration

	
Before test	After test

	
After test – Functional check	After test –Disassembly inspection
	/
During test	/

14. Test Item: IK05 Test

Environmental requirement:

Ambient Temperature: (15~35) ℃; Relative Humidity: (25~75) %RH; Atmos: (86~106) kPa

Reference standard:

IEC 62262:2002/AMD1:2021 Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code)

Test condition:

Test level: IK05

Impact energy: 0.7J

Impact head: 0.25kg

Impact distance: 280mm

Impact point: center of screen & 4 conners

Number of impacts: 3 times at each point

Test acceptance requirements:

After test, there should be no crack or other damage in appearance.

Test result:

Sample Number	Test Result
13#	After test, there was no crack or other damage in appearance.

Conclusion: Pass

Photographs of the Test Configuration

Before test

After test

	
After test-Functional check	During test

Testing Instrument and Equipment

Equipment	Model	Equipment No.	Calibration Date	Next Calibration Date
Centrifuge	ZP-05A	15011	/	2025-03-12
High-Low Temperature and Low pressure Test Chamber	SDP710SH-F-LN	211300018	/	2025-03-28
Electronic scale	TCS-300	X377585	/	2025-05-18
Temperature&Humidity Chamber	GDWJS-300	KSES204901	2024-03-12	2025-03-11
Temperature&Humidity Chamber	GDWJS-300	KSES204905	2024-03-12	2025-03-11
Temperature&Humidity Chamber	GDWJS-300	KSES204906	2024-03-12	2025-03-11
Thermal shock test chamber	AZTS200U-2T	KSES204920	2024-03-13	2025-03-12
Salt spray test chamber	SH-CCT-160	KSES205801	2024-07-29	2025-07-28
Solar-Temperature Chamber	STH-3000	KSES204923	2024-03-22	2025-03-21
Dust chamber	JYSD-500	SHES806101	2023-12-23	2024-12-22
Digital temperature and humidity meter	175H1	SHES201708	2024-01-13	2025-01-12
Tape measure	5 m	SHES132601	2023-08-29	2024-08-28
Digital temperature and humidity meter	175H1	SHES201724	2024-01-13	2025-01-12
Thermometer	52II	SHES404401	2024-02-18	2025-02-17
Impact hammer	/	SHES306801	2024-06-20	2025-06-19
Digital temperature and humidity meter	175H1	SHES201749	2023-08-28	2024-08-27
Vibrator	ES-50LS3-445-LT1010	SUZMR-001	2024-03-02	2025-03-01

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