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Report No.：E202312287263-1E

Silicone keyboard Electromagnetic compatibility Test Report

144 pages in total

GRG METROLOGY & TEST (CHENGDU) CO., LTD.

August,2024

Silicone keyboard
Electromagnetic compatibility
Test Report

Applicant	:	Key Technology (China) Limited
Manufacturer	:	Key Technology (China) Limited
Model	:	K-TEK-M275TP-FN-BL-ANA-151B
Sample Description	:	Silicone keyboard
Date of Test	:	February 18,2024 to July 19,2024

Silicone keyboard Electromagnetic compatibility Test Report

Signature page

Prepared by: Wang Peng Date: 2024.8.6

Reviewed by: Zhang Xudong Date: 2024.8.7

Approved by: Chen Yuxia Date: 2024.8.7

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Conclusion

From February 18,2024 to July 19,2024, the Electromagnetic Compatibility Laboratory of GRG METROLOGY & TEST (CHENGDU) CO., LTD.(herein"after referred to as the "Laboratory") is in accordance with E202312287263-1E Test conditions specified in the Test Status Confirmation Form and GJB 151B-2013"Electromagnetic emission and sensitivity requirements and measurements for military equipment and subsystems" of the test conditions and test methods,Silicone keyboard （Quantity:one piece， Model:K-TEK-M275TP-FN-BL-ANA-151B，S/N:M275TP-FN-BL-ANA-151B-20240123000001） has completed the following tests.

No.	Test Item	Working State	Test Result	Report chapter	Limit requirement	Notes
1	CE101	Working State 1	Pass	2.1	Test frequency: 25Hz to 10kHz; According to the requirements of the entrusting party: GJB151B in Figure 8,I≤3A.	Test position: Positive power cable, Negative power cable.
2	CE102	Working State 1	Pass	2.2	Test frequency: 10kHz to 10MHz; Basic Curve	Test position: Positive power cable, Negative power cable.
3	CS101	Working State 1	Pass	2.3	Test frequency: 25Hz to 150kHz; Curve #2	Test position: Positive power cable.
4	CS106	Working State 2	Pass	2.4	V_p=400V; t_d=5μs	Test position: Positive power cable.

No.	Test Item	Working State	Test Result	Report chapter	Limit requirement	Notes
5	CS112	Working State 1	Pass	2.5	Class A	Customer's required test position: Contact discharge, Surface of key caps,Key's gap,surface of touchpad; Air discharge： Surface of key caps,Key's gap;surface of touchpad.
6	CS114	Working State 1	Pass	2.6	According to the requirements of the entrusting party: 4kHz to 208kHz： 77dBμA 208kHz to 1MHz： 77dBμA to 109 dBμA 1MHz to 30MHz： 109 dBμA 30MHz to 400MHz： 109dBμA to 97 dBμA	Test position: Complete power cables , Positive power cable, Cable bundle.
7	CS115	Working State 2	Pass	2.7	5A	Test position: Complete power cables , Positive power cable, Cable bundle.
8	CS116	Working State 1	Pass	2.8	I_{max}=10A	Test position: Complete power cables , Positive power cable, Cable bundle.

No.	Test Item	Working State	Test Result	Report chapter	Limit requirement	Notes
9	RE101	Working State 1	Pass	2.9	Test frequency: 25Hz to 100kHz According to the requirements of the entrusting party: 25Hz to 450Hz:160.5 dBpT to 114dBpT 450Hz to 30kHz: 114 dBpT to 76dBpT 30kHz to 100kHz: 76dBpT	Test position: According to the requirements of the entrusting party,take the keyboard surface of the tested object as the front,Test its front,back,left,right,top and cable harnss.
10	RE102	Working State 3	Pass	2.10	10kHz to 18GHz According to the requirements of the entrusting party: GJB151B in Figure 56,Submarin（outside the pressure cabin）	Test position: Test configuration boundary center, test device.
11	RS101	Working State 1	Pass	2.11	25Hz to 100kHz According to the requirements of the entrusting party: 25Hz to 60Hz:182dBpT 60Hz to 100kHz:182 dBpT to 116dBpT	Test position: According to the requirements of the entrusting party,take the keyboard surface of the tested object as the front,Test its front,back, left,right,top and cable harnss.
12	RS103	Working State 1	Pass	2.12	Test frequency: 10kHz to 40GHz： 200V/m	Test position: Test configuration boundary center, test device.

Tips：1.CS106,CS115 and RE102 After rectification,the test results meet the requirements,See Chapter 3 for specific rectification measures.

2.According to the requirements of the entrusting party,This time ,the most stringent limit value in the corresponding standards of GJB151B-2013 and MIL-STD-461G is comprehensively selected.

During the test, the test results all met the requirements of conformity criteria.

In summary,Silicone keyboard pass this electromagnetic compatibility test.

GRG METROLOGY & TEST(CHENGDU) CO., LTD

August 7, 2024

Contents

K-TEK-M275TP-FN-BL-ANA-151B Silicone keyboard EMC Test Report

1 Test Overview

1.1 Source of the mandate and basis for its preparation

1.1.1 Normative referencens

GJB 151B-2013	Electromagnetic emission and susceptibility requirements and measurements for military equipment and subsystems
MIL-STD-461G：2015	Requirements for the Control of Electromagnetic Interference Characteristics of Subsystems and Equipment
E202312287263-1E	Test Status Confirmation Form

1.2 Nature and purpose of the test

1. 2. 1 Test type

Diagnostic test.

1. 2. 2 purpose of the test

Check whether the electromagnetic compatibility of type K-TEK-M275TP-FN-BL-ANA-151B Silicone keyboard meets the requirements of relevant regulations .

1.3 EUT

Test Equipment is Silicone keyboard，the manufacturer is Key Technology (China) Limited(Address: Floor 7, Building S8, Fenggang Tianan Cyber Park, No. 208 Fenggang Section, Dongshen Road, Fenggang Town,DongGuan City,Guang Dong Province, P.R. China.)，The quantity is one piece,the product set composition table see Table 1-1.

Table 1-1 Composition of the Silicone keyboard

No.	Name	Model	S/N	Manufacturer	Specifications	Quantity	Technical status
1	Silicone keyboard	K-TEK-M275TP-FN-BL-ANA-151B	M275TP-FN-BL-ANA-151B-20240123000001	Key Technology (China) Limited	pcs	1	S

The connection relationship is shown in the figure 1-1 to figure 1-2：

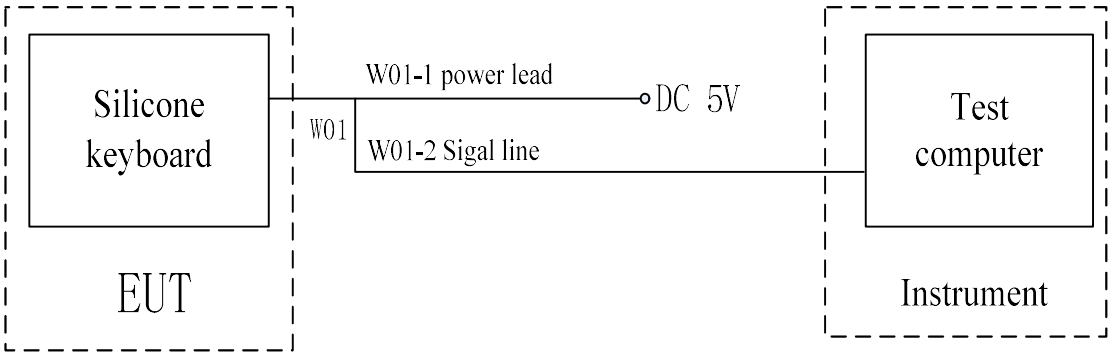

Figure 1-1 Schematic diagram of the connection relationship of the test equipment(Working State 1and 2)

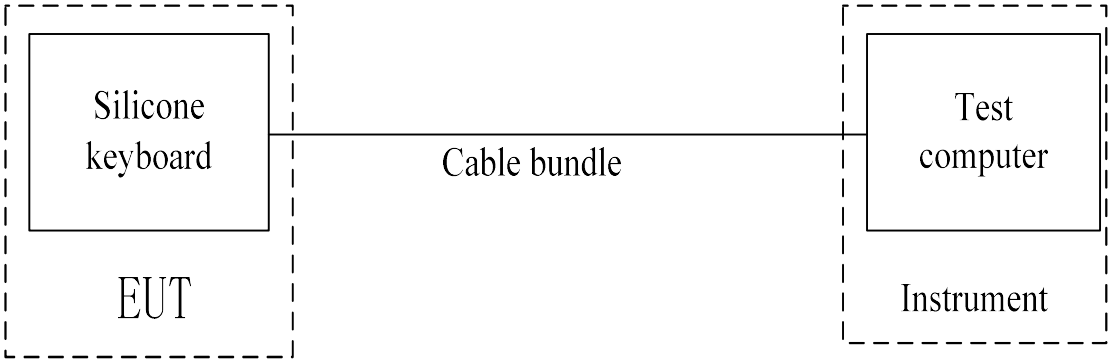

Figure 1-2 Schematic diagram of the connection relationship of the test equipment(Working State 3）

Photos of EUT are shown in Figure 1-3.

Figure 1-3 Silicone keyboard photo

1.3.1 EUT cables

Table 1-2 EUT cables

No.	Name	Code name	Model	Technical status	Length	Whether to shield	Notes
1	Cable bundle	W01	/	self-restraint	2.3m	Yes	Used in CE101,CE102,CS101,CS106,CS112,CS114,CS115,CS116,RE101,RS101,RS103 tests.
1.1	power lead	W01-1	/	self-restraint	2.3m	Not	
1.2	Sigal line	W01-2	/	self-restraint	0.5m	Yes	
2	Cable bundle	W02	/	self-restraint	6m	Not	Used in RE102 test.

1.3.2 EUT power supply

Working State1 and Working State2：EUT DC5V power supply,current 0.03A;

Working State3：EUT is powered by instruments.

1.3.3 EUT working state

The working state of EUT during the test is shown in Table 1-3.

Table 1-3 EUT working state

No.	Working State	Status description	Notes
1	Working State1	EUT equipment DC5V supplies power and communicates with the test computer normally.	Used in CE101,CE102,CS101, CS112,CS114, CS116,RE101, RS101,RS103 tests.
2	Working State2	EUT equipment DC5V supplies power and communicates with the test computer normally.	EUT and cables are used for CS106 and CS115 tests after rectification.
3	Working State3	EUT is powered by the test computer and communicates with the test computer normally.	EUT and cables are used for RE102 test after rectification.

1.3.4 Susceptibility criteria and monitoring methods of EUT

The susceptibility criteria and monitoring methods of EUT are shown in table 1-4.

Table 1-4 Susceptibility criteria and monitoring methodS

No.	Monitoring Content	Monitor	Acceptance criterion	Notes
1	EUT function	Monitor the test software display of test computer	The communication between the keyboard and the test computer is normal. When the keys are tapped,the corresponding keys on the keyboard test software turns green to be in conformity,otherwise it is not in conformity.	Per customer's requirement, CS106 was not assessed in this EMC test.

1.4 Associated Equipment

This Electromagnetic compatibility test has no associated equipment.

1.5 Instruments

The testing instruments and accessory equipment are provided by Key Technology (China) Limited , as shown in Table 1-5.

Table 1-5 Instruments

NO.	Name	Model	Serial Number	Company	Unit	Quantity	Calibration Due
1	Test computer	Ideacentre AIO 310-20ASR	YJ008F0L	Key Technology (China) Limited	pcs	1	/

1.6 Test Date and Test locations

1.6.1 Test Date

The test has began on February 18,2024 and ended on July 19,2024.

1.6.2 Test locations

Test location: Electromagnetic Compatibility testing Laboratory of GRG METROLOGY & TEST（CHENGDU）CO., LTD.

Test address: No.9 Wuke Dongsanlu, Wuhou District, Chengdu, Sichuan,China.

1.7 Test environment and conditions

The actual atmospheric conditions of this electromagnetic compatibility test are：

a) Temperature：16℃～19℃.

b) Relative humidity：45%～68%.

c) Atmospheric pressure：95.8kPa～96.1kPa.

1.8 Completion of the Test items

All the projects required by the entrusting party have been completed.

1.9 Changes of test outline

None.

1.10 Test outsourcing and Data acceptance

None.

1.11 Informationof participating units and personnel

Table 1-6 Information of participating units and personnel

No.	Company name	Personnel name	Notes
1	GRG METROLOGY & TEST （CHENGDU）CO., LTD	Wang Peng,Li Shunfan,You Li, Zhao Mengyuan,You Lei,Deng Taotao	Test lab.
2	Key Technology (China) Limited	Caesar Chen	Customer/Manufacturer

1.12 Additional notes

1.12.1 Test equipment

The main test equipment used in the test is shown in Table 1-7, and the test software information is shown in table 1-8.Additional notes.

Table 1-7 Test equipment

No.	Test item	EquipmentName	Model	Serial Number	Calibration Due
1	CE101	Anechoic chamber	10×8×6.4m	SA180320	2024-09-15
		Receiver	ESW26	100506	2024-08-23
		Current probe	9209-1	218190-10B	2024-05-25
		Function Generator	33511B	MY52303587	2023-12-16
		Digital oscilloscope	MD03052	C031874	2024-11-18
		1Ωresistance box	9224-1.0	498749	2024-10-27
		LISN	NNBL 8226	8226#505	2024-12-15

No.	Test item	EquipmentName	Model	Serial Number	Calibration Due
1	CE101	LISN	NNBL 8226	8226#507	2024-12-15
2	CE102	Anechoic chamber	10×8×6.4m	SA180320	2024-09-15
		Receiver	ESW26	100506	2024-08-23
		Attenuator	DTS50-20dB-3G-A	16111001	2024-11-03
		Signal Generator	N5171B	MY56200493	2024-10-27
		Digital Oscilloscope	MDO3052	C031874	2024-11-18
		LISN	NNBL 8226	8226#505	2024-12-15
		LISN	NNBL 8226	8226#507	2024-12-15
3	CS101	Shielded enclosure 2#	MSR653	SAS161105-02	2027-06-28
		Industrial grade audio amplifier	7224	7224-0117-1717	2024-11-23
		Audio Isolation Transformer	6220-1A	498751	2024-11-18
		Isolation Transformer	7032-2	498753	2024-11-03
		Function Generator	33511B	MY52303557	2024-10-27
		Digital Oscilloscope	MDO3052	C031874	2024-11-18
		Precision high power shunt resistor without inductance	NH250R5000FJ01	1550	2024-10-27
		Capacitor	6512-106R	218190-1B	2024-10-27
		LISN	NNBL 8226	8226#505	2024-12-15
		LISN	NNBL 8226	8226#507	2024-12-15
4	CS106	Shielded Enclosure1#	MSR853	SAS161105-02	2027-06-28
		Transient Spike generator	TPS-CS106	ES5101801	2025-02-02
		5 ohm non-inductive Resistor	NH0055R0	1548	2024-10-27
		Capacitor	6512-106R	218190-1B	2024-10-27
		Oscilloscope	MDO3032	C054462	2024-11-18
		Isolation Transformer	7032-2	498754	2024-10-27
		LISN	LISN J50	ES3911702	2024-12-10
		LISN	LISN J50	ES3911703	2024-12-10

No.	Test item	EquipmentName	Model	Serial Number	Calibration Due
5	CS112	ESD Generator	ESD 30T	ES0131905	2024-06-26
6	CS114	Shielded Enclosure2#	MSR653	SAS161105-02	2027-06-28
		Signal Generator	N5171B	MY56200493	2024-10-27
		Function Generator	33511B	MY52303587	2024-10-27
		USB power sensor	U8481A	MY56440003	2024-11-18
		USB power sensor	U8481A	MY56440004	2024-11-18
		Injection Probe	IP-DR250	1811-2431	2024-04-14
		Current Monitor Probe	9123-1N	218190-12A	2024-04-14
		Current Monitor Probe	9209-1	218190-10B	2024-05-25
		Injection Probe’s Calibration Fixture	CJ-DR250	1811-2436	2024-04-14
		Power Amplifier	NTWPAS-4K04200E	16129073	2024-10-27
		Spectrum analyzer	N9010B-503	MY56460128	2024-10-27
		Coaxial Load	TF100-3	16111001	2024-10-28
		Attenuator	DTS50-20dB-3G-A	16111001	2024-11-03
		LISN	NNBL 8226	8226#505	2024-12-15
		LISN	NNBL 8226	8226#507	2024-12-15
7	CS115	Shielded Enclosure1#	MSR853	SAS161105-02	2027-06-28
		Pulse signal generator	9355-1	218190-14B	2024-11-17
		High voltage Attenuator	9410-1	218190-16A	2024-10-27
		High voltage load	9841-1	218190-5A	2024-11-17
		Oscilloscope	MDO3032	C054462	2024-11-18
		Current injection probe	9142-1N	218190-3C	2024-10-27
		Current Monitor Probe	9123-1N	218190-12A	2025-03-15
		Injection Probe’s Calibration Fixture	9125-1	218190-7B	2024-10-28
		LISN	LISN J50	ES3911702	2024-12-10
		LISN	LISN J50	ES3911703	2024-12-10

No.	Test item	EquipmentName	Model	Serial Number	Calibration Due
8	CS116	Shielded Enclosure2#	MSR653	SAS161105-02	2027-06-28
		Damped sinusoid transient generator	DOS-CS116	ES1381802	2024-07-21
		Attenuator	TFB100	ES6301801	2024-07-17
		High voltage Attenuator	9410-1	218190-16A	2024-10-27
		High voltage load	9841-1	218190-5A	2024-11-17
		Calibration fixture	BCICF-400	ES4761803	2025-02-01
		Current injection probe	BCIP-200	ES4721803	2025-02-01
		Current probe	TWCM-200	ES6601802	2024-03-30
		Digital Oscilloscope	MDO3052	C031874	2024-11-18
		LISN	NNBL 8226	8226#505	2024-12-15
		LISN	NNBL 8226	8226#507	2024-12-15
9	RE101	Shielded Enclosure2#	MSR653	SAS161105-02	2027-06-28
		Receiver	ESW26	100506	2024-08-23
		Loop sensor	FESP 5133-7/41	#286	2024-08-10
		Function Generator	33511B	MY52303557	2024-10-27
		LISN	NNBL 8226	8226#505	2024-12-15
		LISN	NNBL 8226	8226#507	2024-12-15
10	RE102	EMC Anechoic chamber	ASAC	SA210810-01	2026-08-09
		Receiver	ESW44	101783	2024-09-01
		Signal generator	N5173B	MY53271076	2025-04-06
		Preamplifier	BBV9745	9745#76	2025-02-01
		Preamplifier	BBV 9718C	00074	2025-05-11
		Rod antenna	VAMP9243B	01278	2024-11-04
		Biconical antenna	VHBB9124+BBA9106	00943	2025-12-03
		Double ridge horn antenna	BBHA 9120 F-7/16	03013	2024-11-12
		Double ridge horn antenna	BBHA 9120D	01668	2025-12-03
11	RS101	Shielded Enclosure1#	MSR653	SAS161105-02	2027-06-28
		Loop sensor	FESP 5133-7/41	#286	2024-08-10
		Radiating loop antenna	FESP 5132	#273	2024-07-03

No.	Test item	EquipmentName	Model	Serial Number	Calibration Due
11	RS101	Function Generator	33511B	MY52303557	2024-10-27
		Industrial grade Audio amplifier	7224	7224-0117-1717	2024-11-23
		Spectrum analyzer	N9010B-503	MY56460128	2024-10-27
		Current probe	9209-1	218190-10B	2024-05-25
		LISN	NNBL 8226	8226#505	2024-12-15
		LISN	NNBL 8226	8226#507	2024-12-15
12	RS103	Anechoic chamber	ASAC	SAS161105-01	2027-06-28
		Signal generator	N5171B	MY56200494	2024-10-28
		Signal generator	N5173B	MY53271076	2024-10-28
		Broadband continuous wave Power amplifiers	NTWPAS-000001013500E	17029017+17029018	2024-10-27
		Broadband continuous wave Power amplifiers	NTWPAS-008102000700E	16123279	2024-10-27
		Power amplifiers	NTWPAS-10250250	16123275	2024-10-27
		Power amplifiers	NTWPAS-2560250	17019008	2024-04-24
		Power amplifiers	NTWPA-60180200	19079033	2024-05-26
		Power amplifiers	NTWPA-18026550	18089063	2024-08-24
		Power amplifiers	NTWPA-26540040	18099068	2024-08-24
		Electric field generator	ATE10k30MAM2	0348347	2024-12-05
		High Power biconical antenna	HPBA-2510	131070	2025-12-03
		Log-periodic broadband antenna	ATL80M1GM1	0348689	2025-12-03
12	RS103	High gain broadband horn antenna	BBHA 9120E	9120E#702	2025-12-03
		Taper standard gain horn antenna	HA9250-48	9250-48#17	2025-12-03
		Double ridge horn antenna	HWRD750	00022	2025-12-03
		Double ridge horn antenna	HL18G27	190353010001	2024-03-29

No.	Test item	EquipmentName	Model	Serial Number	Calibration Due
12	RS103	Double ridge horn antenna	HL26G40	190353020001	2024-03-29
		Electric field probe	FL7030/kit	0352747	2024-12-03
		Electric field probe	FL7040/kit	0353126	2024-12-07
		USB power sensor	U2004A	MY56490005	2024-11-18
		USB power sensor	U2004A	MY56350006	2024-11-18
		Power probe	57540	9787	2024-10-28
		Power probe	57540	9786	2024-10-28
		Dual channel power meter	4532	16378	2024-10-28
		LISN	NNBL 8226	8226#505	2024-12-15
		LISN	NNBL 8226	8226#507	2024-12-15

Table 1-8 Test software

NO.	Test Item	Manufacturer	Model	version
1	CE101、CE102、RE101、RE102	JINDONGXINXI	JD-EMI-RECE	5.2.5.31
2	CS101、CS114、RS101、RS103	NEXIO	BAT-EMC	3.19.1.20

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2 Test contents and results

2.1 CE101 Conducted emissions, power leads, 25 Hz to 10 kHz

2.1.1 Test purpose

This test procedure is used to verify that electromagnetic emissions from the EUT do not exceed the specified requirements for power input leads including returns.

2.1.2 Test limit

Table 1 Test limit

Frequency(kHz)	Limits(dBμA)
0.025 to 2.6	95
2.6 to 10	95 to 76
Note:The limit decreases linearly in logarithmic form of frequency within the frequency range of 2.6kHz to 10kHz.	

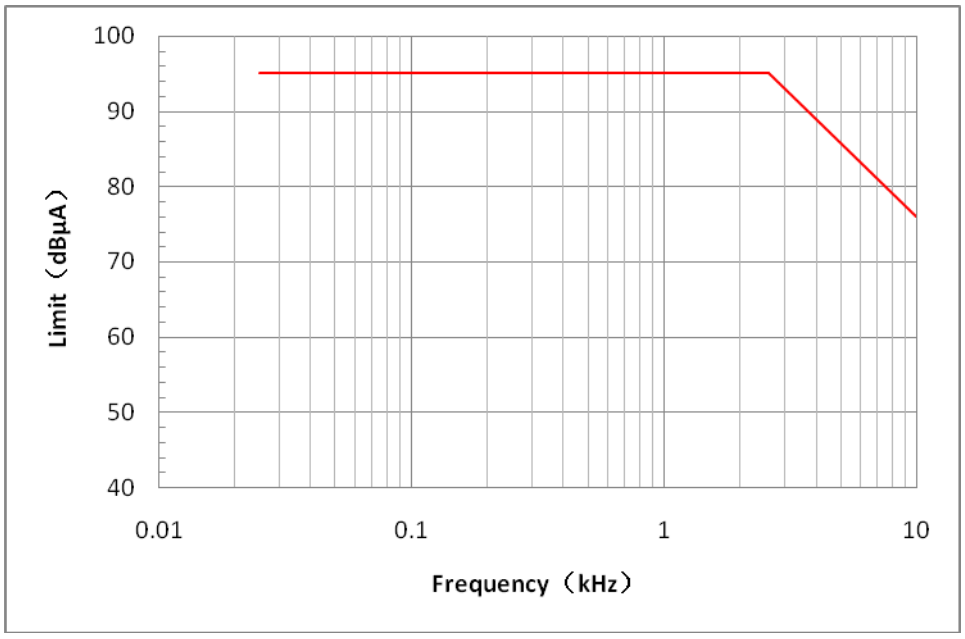

Figure 1 CE101 limit curve

2.1.3 Test setup

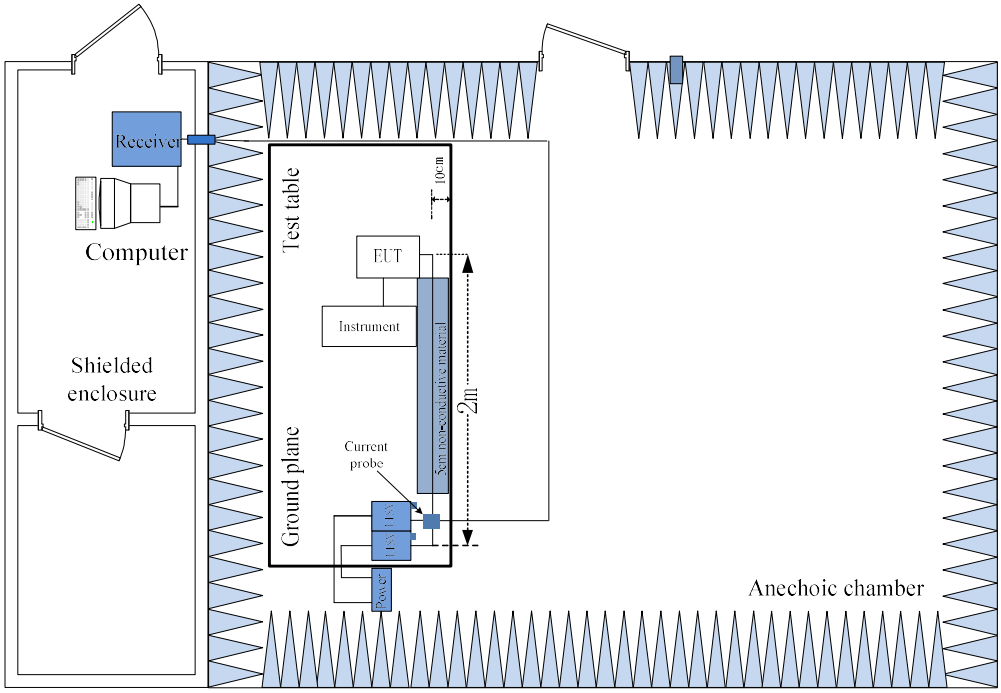

Figure 2 CE101Test setup

2.1.4 Test status and test position

Table 2 working state and test position

No.	Working State	Test position
1	Working State 1	Positive power cable, Negative power cable.

2.1.5 Test procedures

a、 Turn on the measurement equipment and allow a sufficient time for stabilization.

b、 Next calibration. Apply a calibrated signal level, which is at least 6 dB below the applicable limit at 1 kHz, 3 kHz, and 10 kHz, to the current probe.

c、 Verify the current level, using the oscilloscope and load resistor; also, verify that the current waveform is sinusoidal.

d、 Scan the measurement receiver for each frequency in the same manner as a normal data scan. Verify that the data recording device indicates a level within ±3 dB of the injected level. If readings are obtained which deviate by more than ±3 dB, locate the source of the error and correct the deficiency prior to proceeding with the testing.

e、 Maintain a basic test setup for the EUT as shown and described in Figures 2.

f、 Turn on the EUT and allow sufficient time for stabilization.

g、 Select an appropriate lead for testing and clamp the current probe into position.

h、 Scan the measurement receiver over the applicable frequency range, using the bandwidths and minimum measurement times specified in the standard requirements. Record the test data.

i、 Repeat g) through h) for each power lead.

2.1.6 Test Data

Table 3 Test Data

Test site：Anechoic chamber					
Environmental conditions：Temperature：18.3℃； Humidity：59%RH； Atmospheric pressure：96.1kPa					
No.	Working State	Test position	Data graph	Test result	Exceed standard
1	Working State 1	Positive power cable	See Annex A1, CE101-Record number 1)	Pass	None
2		Negative power cable	See Annex A1, CE101-Record number 2)	Pass	None
Tested by/Tested date:Li Shunfan Febuary 18, 2024			Reviewed by/date: Wang Peng Febuary 18, 2024		

2.1.7 Test result

The test result is pass.

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2.2 CE102 Conducted emissions, power leads, 10 kHz to 10 MHz

2.2.1 Test purpose

This test procedure is used to verify that electromagnetic emissions from the EUT do not exceed the specified requirements for power input leads, including returns.

2.2.2 Test limit

Table 4 Test limit

Frequency（MHz）	Limit（dBμV）
0.01 to 0.5	94 to 60
0.5 to 10	60
Note:The limit decreases linearly in logarithmic form of frequency within the frequency range of 0.01MHz to 0.5MHz.	

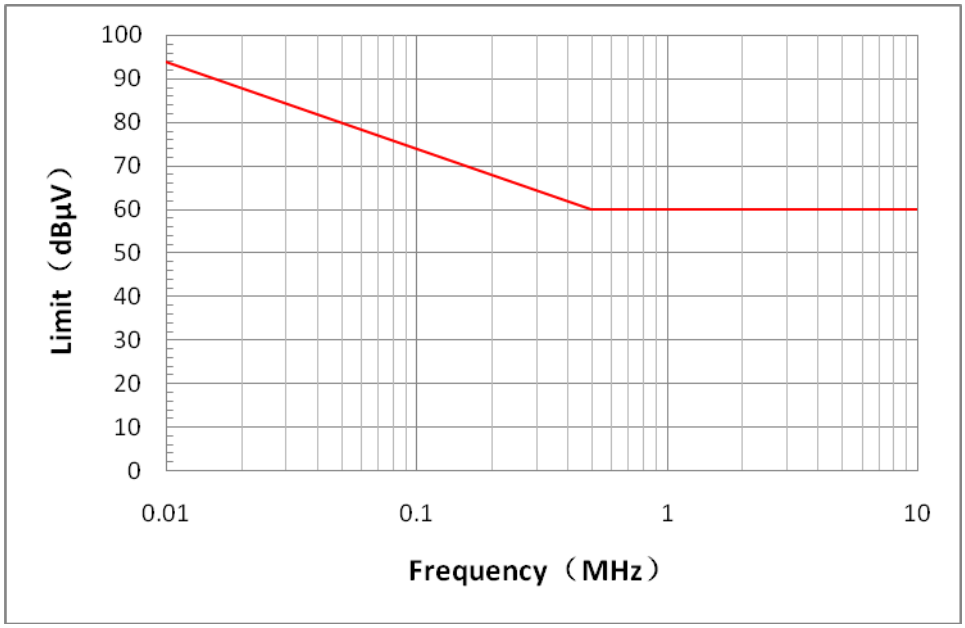

Figure 3 CE102 limit curve

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2.2.3 Test setup

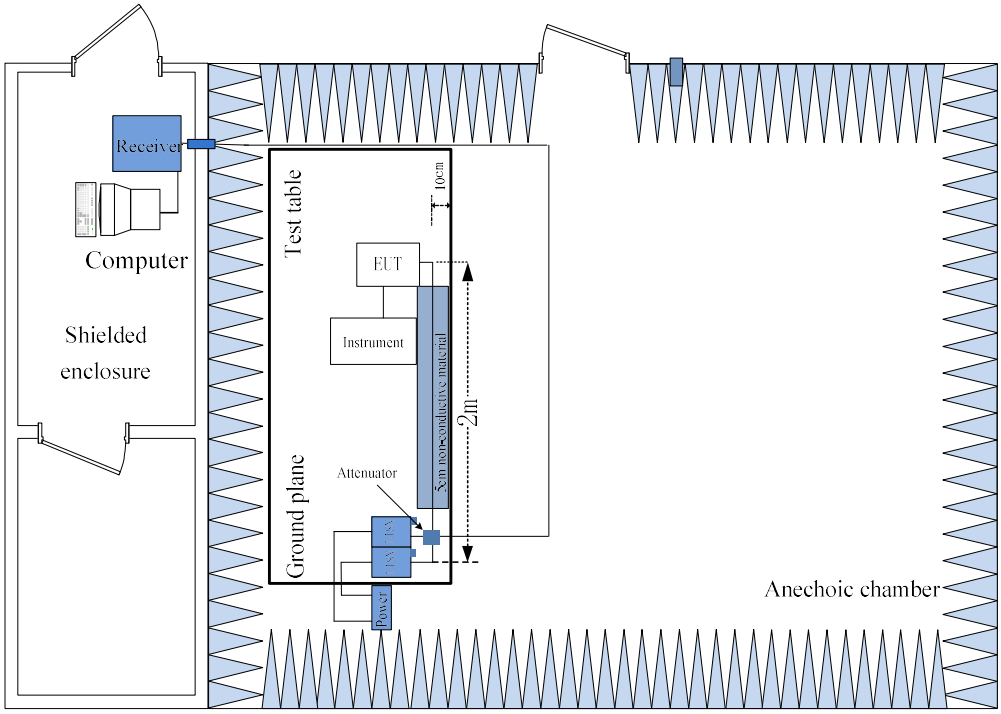

Figure 4 CE102 Test setup

2.2.4 Test status and test position

Table 5 Working state and test position

No.	Working State	Test position
1	Working State 1	Positive power cable, Negative power cable.

2.2.5 Test procedures

a、 Turn on the measurement equipment and allow a sufficient time for stabilization.

b、 Next calibration. Apply a signal level that is at least 6 dB below the limit at 10 kHz, 100 kHz, 2 MHz and 10 MHz to the power output terminal of the LISN. At 10 kHz and 100 kHz, use an oscilloscope to calibrate the signal level and verify that it is sinusoidal. At 2 MHz and 10 MHz, use a calibrated output level directly from a 50 Ω signal generator.

c、 Scan the measurement receiver for each frequency in the same manner as a normal data scan. Verify that the measurement receiver indicates a level within ±3 dB of the injected level. Correction factors shall be applied for the 20 dB attenuator and the voltage drop due to the LISN 0.25 μF coupling capacitor. If readings are obtained which deviate by more than ±3 dB, locate the source of

the error and correct the deficiency prior to proceeding with the testing.

d、 Repeat b) through c) for each LISN.

e、 Maintain a basic test setup for the EUT as shown and described in Figures 4.

f、 Turn on the EUT and allow a sufficient time for stabilization.

g、 Select an appropriate lead for testing.

h、 Scan the measurement receiver over the applicable frequency range, using the bandwidths and minimum measurement times in the standard requirements. Record the test data.

i、 Repeat g and h for each power lead.

2.2.6 Test Data

Table 6 Test Data

Test site：Anechoic chamber					
Environmental conditions：Temperature.：18.3℃； Humidity：59%RH； Atmospheric pressure：96.0kPa					
No.	Working State	Test position	Data graph	Test result	Exceed standard
1	Working State 1	Positive power cable	See Annex A2, CE102- Record number 1)	Pass	None
2		Negative power cable	See Annex A2, CE102- Record number 2)	Pass	None
Tested by/Tested date:Li Shunfan Febuary 18, 2024			Reviewed by/date: Wang Peng Febuary 18, 2024		

2.2.7 Test result

The test result is pass.

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2.3 CS101 Conducted susceptibility, power leads, 25 Hz to 150 kHz

2.3.1 Test purpose

This test procedure is used to verify the ability of EUT to withstand low-frequency continuous wave signals coupled onto input power leads, in accordance with the specifications of standard.

2.3.2 Test limit

Table 7 Test limit

Frequency（kHz）	Limit(dBμV)
0.025 to 5	126
5 to 150	126 to 96.5
Note:The limit decreases linearly in logarithmic form of frequency within the frequency range of 5kHz to 150kHz.	

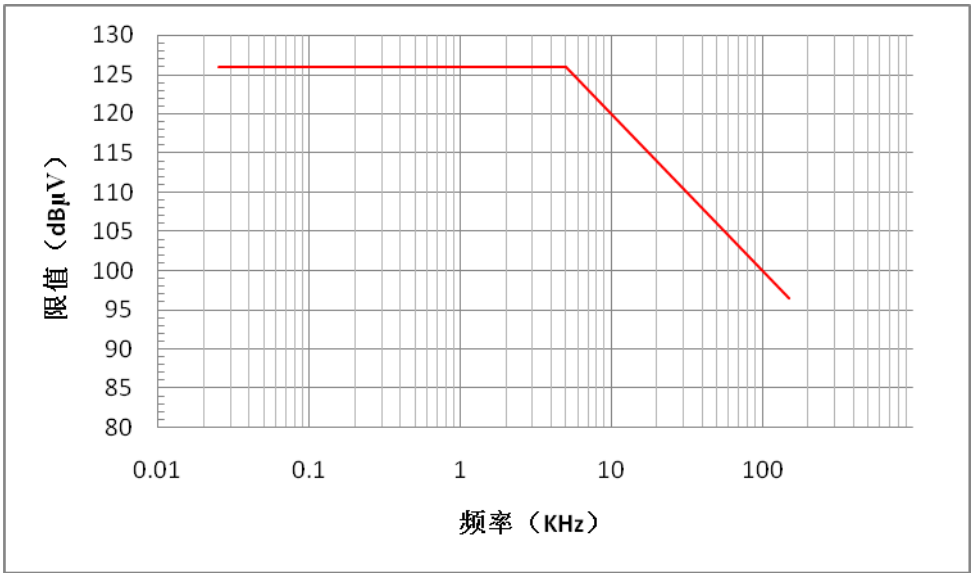

Figure 5 CS101Test limit curve

2.3.3 Test setup

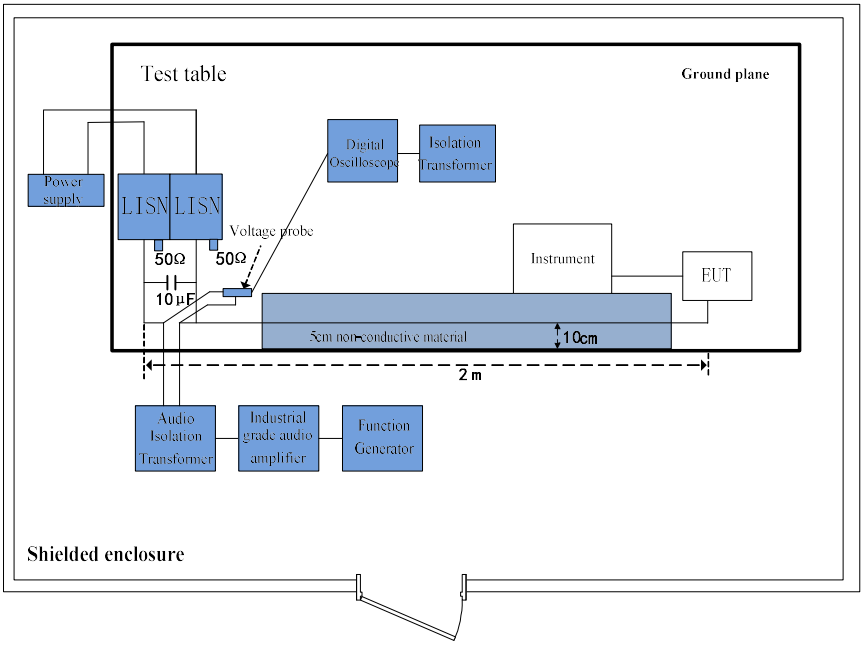

Figure 6 CS101 Test setup

2.3.4 Test status and test position

Table 8 Test status and test position

No.	Working State	Test position
1	Working State 1	Positive power cable.

2.3.5 Test procedures

a、 Turn on the measurement equipment and allow sufficient time for stabilization.

b、 Next calibration, set the signal generator to the lowest test frequency, increase the applied signal until the oscilloscope indicates the voltage level corresponding to the maximum required power level specified for the limit in Standard. Verify the output waveform is sinusoidal.

c、 Record the setting of the signal source.

d、 Scan the required frequency range for testing and record the signal source setting needed to maintain the required power level.

e、 Configure the test environment according to the CS101 test setup.

f、 Turn on the EUT and allow sufficient time for stabilization. Select a power lead for testing.

g、 Set the signal generator to the lowest test frequency. Increase the signal level until the required voltage or power level is reached on the power lead.

h、 While maintaining at least the required signal level, scan through the required frequency range at a rate no greater than specified by the standard.

i、 During test, monitor the EUT for degradation of performance and record.

2.3.6 Test Data

Table 9 Test Data

Test site：Shieled room				
Environmental conditions：Temperature.：18.3℃； Humidity：49%RH； Atmospheric pressure：95.8kPa				
Working State	Actual phenomenon		Data graph	Test result
Working State 1	Before testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	/	Pass
	During testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	See Annex A3 and figure A3.1	Pass
	After testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	/	Pass
Tested by/Tested date:Li Shunfan Febuary 19, 2024			Reviewed by/date: Wang Peng Febuary 19, 2024	

2.3.7 Test result

The test result is pass.

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2.4 CS106 Conducted susceptibility, transients, power leads

2.4.1 Test purpose

This test procedure is used to verify the ability of the EUT to withstand transients coupled onto input power leads.

2.4.2 Test limit

Limit :Vpeak = 400 volt peak, t_d=5.0 (1±22%)μsec.

2.4.3 Test setup

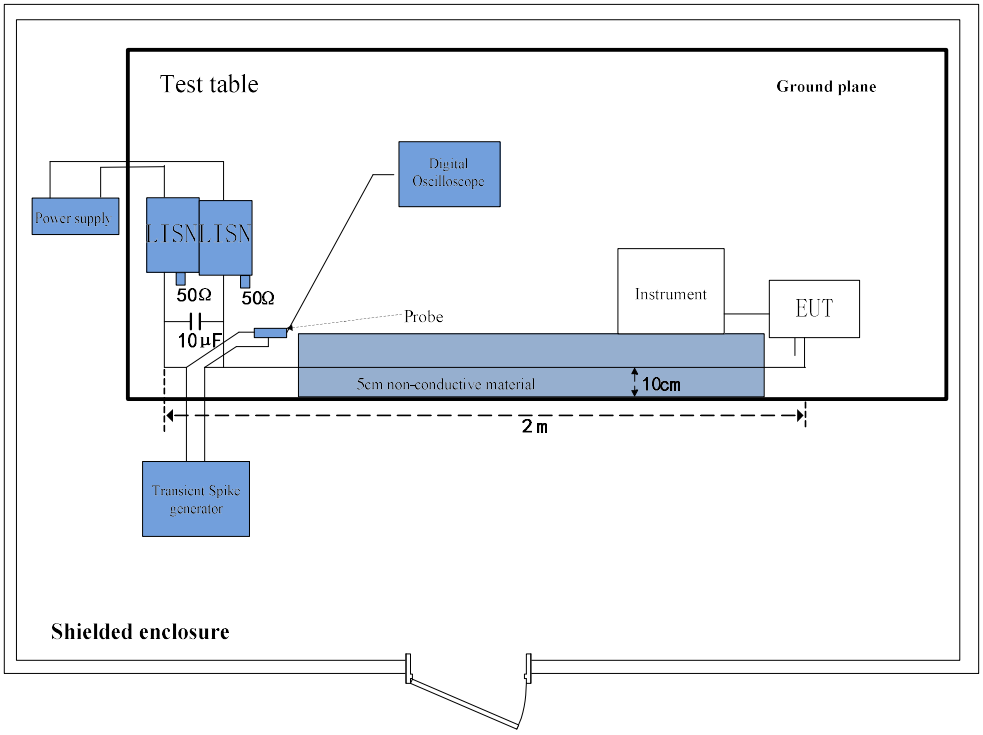

Figure 7 CS106 Test setup

2.4.4 Test status and test position

Table 10 Test status and test position

No.	Working State	Test position
1	Working State 2	Positive power cable

2.4.5 Test procedures

a、 Turn on the measurement equipment and allow sufficient time for stabilization.

b、 Next calibration. Set the transient generator to minimum output. Increase the applied signal until the oscilloscope indicates the voltage level corresponding to the limit. Verify the output waveform and pulse width. Record the setting of

the transient generator.

c、 Maintain a basic test setup for the EUT as shown and described in Figures 7. Turn on the EUT and allow sufficient time for stabilization. Select a power lead for testing.

d、 Set the transient generator to minimum output. Increase the signal level until the required voltage is reached on the power lead or spike generator calibration set point is obtained. Note: Calibration set point is that obtained in b).

e、 While maintaining at least the required signal level, apply transient pulses to the test sample's ungrounded input lines at a pulse repetition rate of 8 pulses per second for 5 minutes.

f、 During test, monitor the EUT for degradation of performance and record.

2.4.6 Test Data

Table 11 Test Data

Test site：Shieled room					
Environmental conditions：Temperature：19.6℃； Humidity：58%RH； Atmospheric pressure：95.3kPa					
Working State	Spike polarity	Actual phenomenon		Data graph	Test result
Working State 2	Positive	Before testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	/	Pass
		During testing	Keyboard case indicator flashes green and goes out.	See Annex A4 and figure A4.3	/
		After testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	/	Pass

Test site：Shieled room					
Environmental conditions：Temperature：19.6℃； Humidity：58%RH； Atmospheric pressure：95.3kPa					
Working State	Spike polarity	Actual phenomenon		Data graph	Test result
Working State 2	Negative	Before testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	/	Pass
		During testing	Keyboard case indicator flashes green and goes out.	See Annex A4 and figure A4.4	/
		After testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	/	Pass
Tested by/Tested date:You Lei，Zhao Mengyuan April 15, 2024				Reviewed by/date: Wang Peng April 15, 2024	

2.4.7 Test result

The test result is pass.

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2.5 CS112 Electrostatic discharge susceptibility

2.5.1 Test purpose

Assess the ability of EUT to withstand the interference of human electrostatic discharge.

2.5.2 Test limit

Table 12 Test limit

Experiment category	Discharge Working State	Test voltage	Discharge times
A	Contact discharge	±2kV、±4kV、±6kV、±8kV	Positive and negative polarity ten times each
	Air discharge	±2kV、±4kV、±8kV、±15kV	Positive and negative polarity ten times each

2.5.3 Test setup

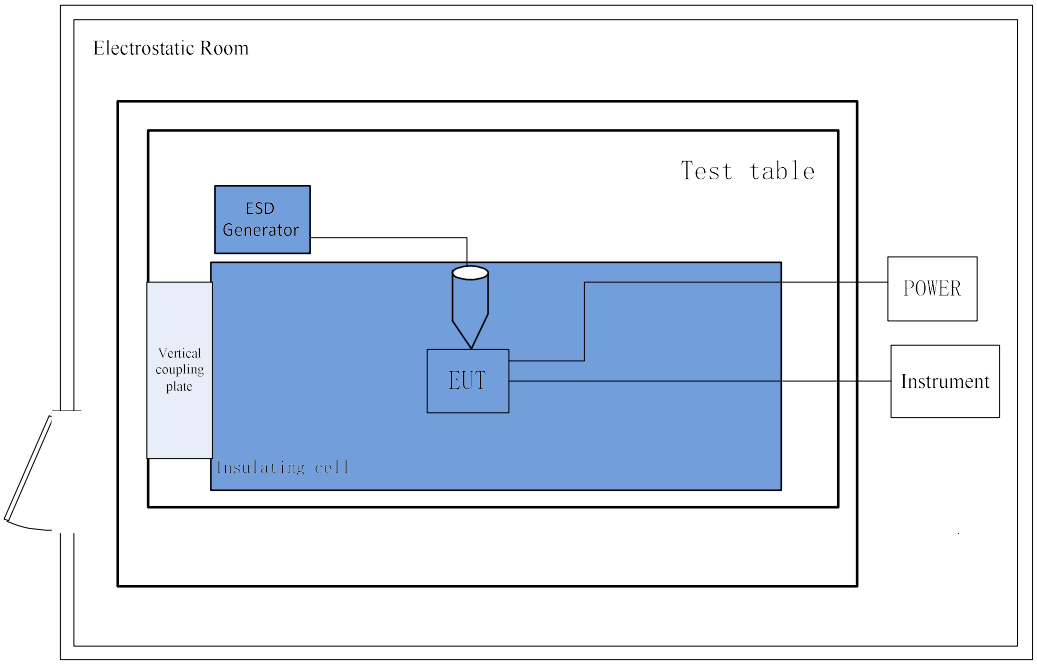

Figure 8 CS112 Test setup

2.5.4 Test status and test position

Table 13 Test status and test position

No.	Working State	Test Position	Discharge voltage	Discharge Working State
1	Working State 1	Surface of key caps,Key's gap;surface of touchpad	±2kV,±4kV,±8kV,±15kV	Direct discharge: Air discharge
2		Surface of key caps,Key's gap,surface of touchpad	±2kV,±4kV,±6kV,±8kV	Direct discharge: Contact discharge

2.5.5 Test procedures

a、 Test configuration as shown in Figure 8.

b、 The tested equipment is energized and preheated to achieve a stable working state.

c、 Select the test point and apply the voltage according to the standard requirements.

d、 Monitor the working status of the tested equipment according to the monitoring method required by the test status confirmation table during the test and make a record.

2.5.6 Test Data

Table 14 Test Data

Test site:Electrostatic Room			
Environmental conditions：Temperature：16.3℃； Humidity：45%RH； Atmospheric pressure：95.9kPa			
Working State	Actual phenomenon		Test Result
Working State 1	Before testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	Pass
	During testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.（The surface of the EUT is made of insulating material ,and neither contact discharge nor air discharge occurs.）	Pass

Test site:Electrostatic Room			
Environmental conditions：Temperature：16.3℃； Humidity：45%RH； Atmospheric pressure：95.9kPa			
Working State	Actual phenomenon		Test Result
Working State 1	After testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	Pass
Tested by/Tested date:Li Shunfan Febuary 20, 2024		Reviewed by/date: Wang Peng Febuary 20, 2024	

2.5.7 Test result

The test result is pass.

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2.6 CS114 Conducted susceptibility, bulk cable injection, 4 kHz to 400 MHz

2.6.1 Test purpose

This test procedure is used to verify the ability of the EUT to withstand RF signals coupled onto EUT associated cabling.

2.6.2 Test limit

Table 15 Test limit

Frequency（MHz）	Limit (Apply the forward power level determined under pre-calibrated, or the maximum current level for the applicable limit, whichever is less stringent.)	
	Calibration current limit (dBμA)	Actual current induced limit (dBμA)
0.004 to 0.208	77	The actual current induced is 6 dB than the calibration limit.
0.208 to 1	77 to 109	
1 to 30	109	
30 to 400	109 to 97	
Note:The limit increases linearly in logarithmic form of frequency within the frequency range of 0.208MHz to 1MHz. The limit decreases linearly in logarithmic form of frequency within the frequency range of 30MHz to 400MHz.		

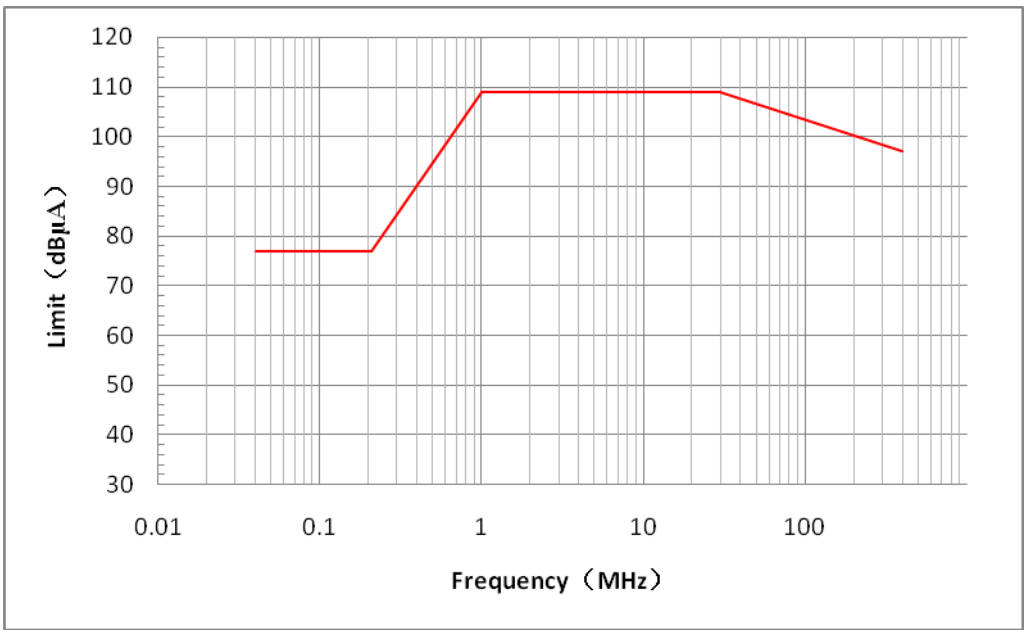

Figure 9 CS114 Test limit curve

2.6.3 Test setup

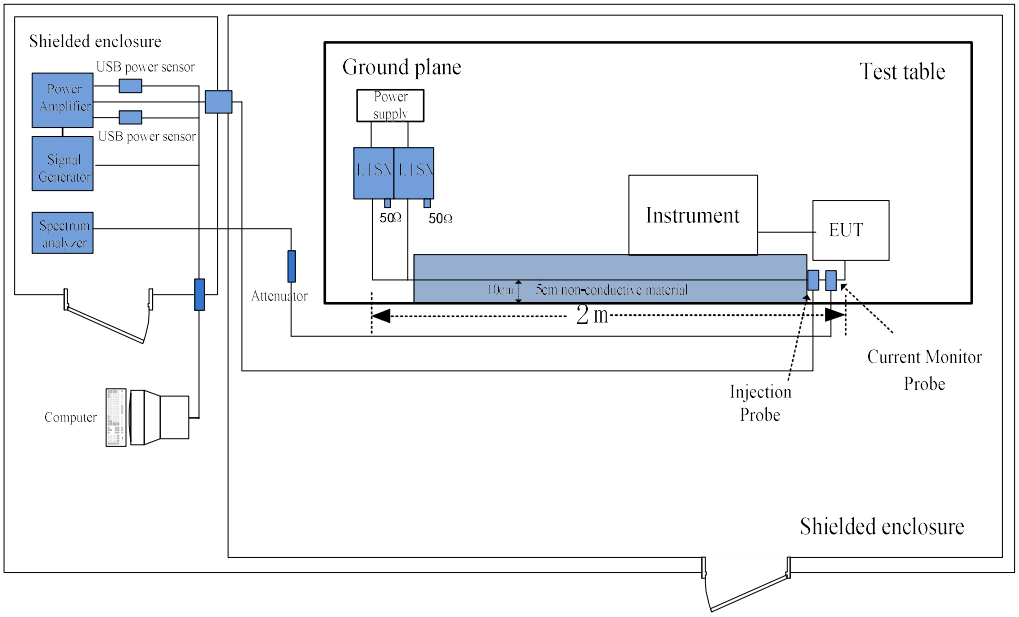

Figure 10 CS114 Test setup

2.6.4 Test status and test position

Table 16 Test status and test position

No.	Working State	Test position
1	Working State 1	Complete power cables,Positive power cable,Cable bundle.

2.6.5 Test procedures

a、 Turn on the measurement equipment and allow sufficient time for stabilization.

b、 Next Calibration. Set the signal generator to 10 kHz, unmodulated.

c、 Increase the applied signal until measurement Spectrum analyzer indicates the current level specified in the applicable limit is flowing in the center conductor of the calibration fixture.

d、 Record the "forward power" to the injection probe indicated on measurement power sensor.

e、 Scan the required frequency band and record the forward power needed to maintain the required current amplitude.

f、 Maintain a basic test setup for the EUT as shown and described in Figures 10.

g、 Turn on the EUT and allow sufficient time for stabilization.

h、 Set the signal generator to 10 kHz with 1 kHz pulse modulation, 50% duty cycle.

i、 Apply the forward power level determined under e to the injection probe while monitoring the induced current.

j、 Scan the required frequency range in accordance with the the standard requirements while maintaining the forward power level at the calibration level determined under e , or the maximum current level for the applicable limit, whichever is less stringent.

k、 Monitor the EUT for degradation of performance during testing and record.

l、 Repeat h) through k) for other requirements test cable.

2.6.6 Test Data

Table 17 Test Data

Test site：Shieled room					
Environmental conditions：Temperature：18.3℃； Humidity：49%RH； Atmospheric pressure：96.1kPa					
Working State	Test position	Actual phenomenon		Data graph	Test result
Working State 1	Complete power cables	Before testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	/	Pass
		During testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	See Annex A5 and from figure A5.1 to figure A5.2	Pass
		After testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	/	Pass

Test site：Shieled room					
Environmental conditions：Temperature：18.3℃； Humidity：49%RH； Atmospheric pressure：96.1kPa					
Working State	Test position	Actual phenomenon		Data graph	Test result
Working State 1	Positive power cable	Before testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	/	Pass
		During testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	See Annex A5 and from figure A5.3 to figure A5.4	Pass
		After testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	/	Pass
	Cable bundle	Before testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	/	Pass

Test site：Shieled room					
Environmental conditions：Temperature：18.3℃； Humidity：49%RH； Atmospheric pressure：96.1kPa					
Working State	Test position	Actual phenomenon		Data graph	Test result
Working State 1	Cable bundle	During testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	See Annex A5 and from figure A5.5 to figure A5.6	Pass
		After testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	/	Pass
Tested by/Tested date:Li Shunfan Febuary 20, 2024			Reviewed by/date: Wang Peng Febuary 20, 2024		

2.6.7 Test result

The test result is pass.

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2.7 CS115 Conducted susceptibility,bulk cable injection,impulse excitation

2.7.1 Test purpose

Check whether the EUT's ability to withstand rapid pulse interference meets the requirements.

2.7.2 Test limit

Table 18 Test limit

Inject strength	Pulse width	Rise time	Drop time	Repeat rate	Injection time
5A	≥30ns	≤2ns	≤2ns	30Hz	one minute

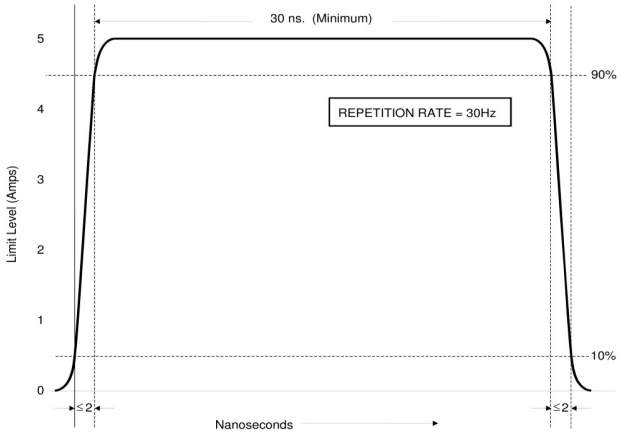

Figure 11 CS115 Test limi tcurve

2.7.3 Test setup

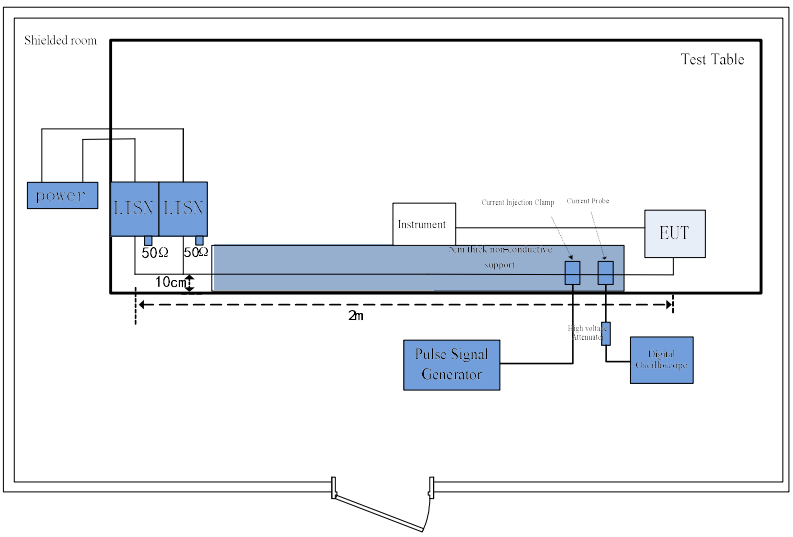

Figure 12 CS115 Test setup

2.7.4 Test status and test position

Table 19 CS115 Test status and test position

No.	Working State	Test position
1	Working State 2	Complete power cables,Positive power cable,Cable bundle.

2.7.5 Test procedures

a、 The test equipment is energized and preheated and reaches a stable working state.

b、 Perform calibration, adjust the pulse signal generator, increase the signal level, and use the oscilloscope to monitor the current flowing through the conductor of the center of the calibration device until the current specified in the standard.

c、 Confirm the rise time, fall time, pulse width and repetition rate of the pulse waveform.

d、 Record the amplitude setting value of the pulse signal generator.

e、 Test configuration according to Figure 12 test configuration diagram.

f、 The tested equipment is energized and preheated and reaches a stable working state.

g、 Adjust the amplitude value of the output d) of the pulse signal generator.

h、 Apply the test signal according to the specified pulse repetition rate and test duration.

i、 During the test, monitor whether the tested equipment is sensitive and record according to the requirements of the test status confirmation table.

j、 Repeat g~i steps for other required test cables to complete all tests.

2.7.6 Test Data

Table 20 Test Data

Test site：Shieled room					
Environmental conditions：Temperature：18.3℃； Humidity：64%RH； Atmospheric pressure：95.4kPa					
Working State	Test position	Actual phenomenon		Data graph	Test result
Working State 2	Complete power cables	Before testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	/	Pass

Test site：Shieled room					
Environmental conditions：Temperature：18.3℃； Humidity：64%RH； Atmospheric pressure：95.4kPa					
Working State	Test position	Actual phenomenon		Data graph	Test result
Working State 2	Complete power cables	During testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	See Annex A6 and from figure A6.3 to figure A6.4	Pass
		After testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	/	Pass
	Positive power cable	Before testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	/	Pass
	Positive power cable	During testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	See Annex A6 and from figure A6.5 to figure A6.6	Pass
		After testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	/	Pass

Test site：Shieled room					
Environmental conditions：Temperature：18.3℃； Humidity：64%RH； Atmospheric pressure：95.4kPa					
Working State	Test position	Actual phenomenon		Data graph	Test result
Working State 2	Cable bundle	Before testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	/	Pass
Working State 2	Cable bundle	During testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	See Annex A6 and from figure A6.7 to figure A6.8	Pass
		After testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	/	Pass
Tested by/Tested date:You Lei，Zhao Mengyuan April 15, 2024			Reviewed by/date: Wang Peng April 15, 2024		

2.7.7 Test result

The test result is pass.

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2.8 CS116 Conducted susceptibility, damped sinusoidal transients, cables and power leads, 10 kHz to 100 MHz

2.8.1 Test purpose

This test procedure is used to verify the ability of the EUT to withstand damped sinusoidal transients coupled onto EUT associated cables and power leads.

2.8.2 Test limit

Table 21 Test limit

Frequency（MHz）	Peak current (Amperes)	Repetition rate	Dwell time
0.01	0.1	0.5 to 1pps	A period of five minutes.
0.1	1.0		
1	10		
10	10		
30	10		
100	3.0		

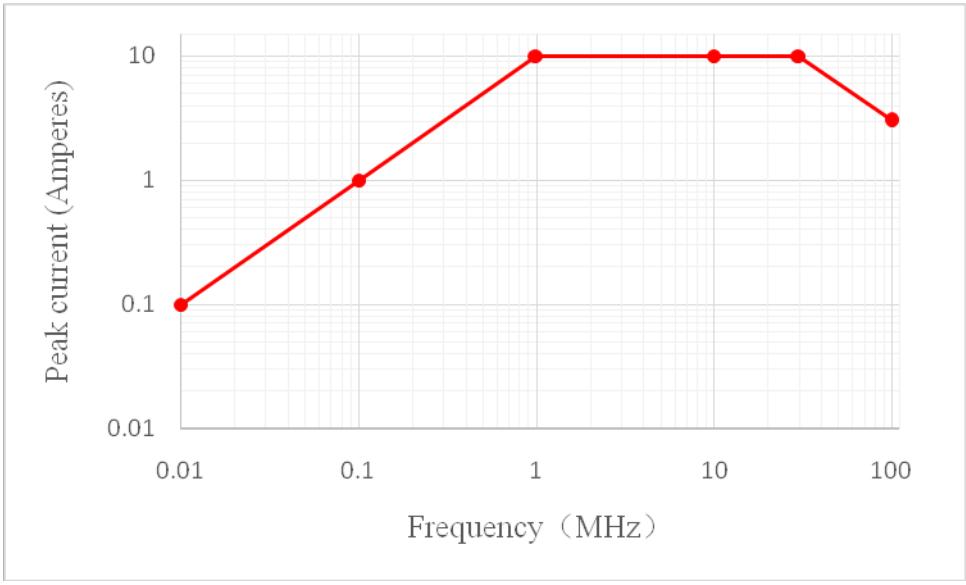

Figure 13 CS116 Test limit curve

2.8.3 Test setup

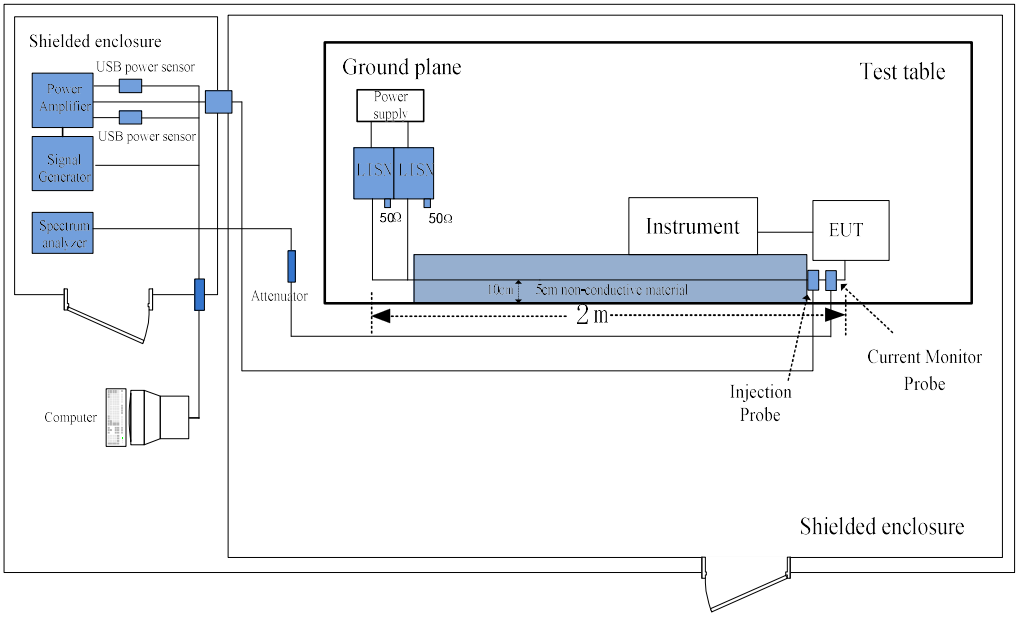

Figure 14 CS116 Test setup

2.8.4 Test status and test position

Table 22 Test status and test position

No.	Working State	Test position
1	Working State 1	Complete power cables,Positive power cable,Cable bundle.

2.8.5 Test procedures

a、 Turn on the measurement equipment and allow sufficient time for stabilization.

b、 Next calibration. Set the frequency of the damped sine generator at 10 kHz. Adjust the amplitude of the signal from the damped sine generator to the level specified in the requirement.

c、 Record the damped sine generator settings. Verify that the waveform complies with the requirements.

d、 Repeat b through c for each frequency specified in the requirement.

e、 Maintain a basic test setup for the EUT as shown and described in Figures 14.

f、 Turn on the EUT and measurement equipment to allow sufficient time for stabilization.

g、 Set the frequency of the damped sine generator at 10 kHz.

h、 Apply the calibrated test signals to each cable or power lead of the EUT sequentially. Reduce the signal, if necessary, to produce the required current.For shielded cables or low impedance circuits, it may be preferable to

increase the signal gradually to limit the current. Record the peak current obtained.

i、 Monitor the EUT for degradation of performance during testing and record.

j、 Repeat h through i for each test frequency as specified in the requirement.

k、 Repeat h through j for other requirements test cable.

2.8.6 Test Data

Table 23 Test Data

Test site：Shieled room					
Environmental conditions：Temperature：18.5℃； Humidity：50%RH； Atmospheric pressure：96.0kPa					
Working State	Test position	Actual phenomenon		Data graph	Test result
Working State 1	Complete power cables	Before testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	/	Pass
		During testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	See Annex A7 and from figure A7.7 to figure A7.12	Pass
		After testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	/	Pass

Test site：Shieled room					
Environmental conditions：Temperature：18.5℃； Humidity：50%RH； Atmospheric pressure：96.0kPa					
Working State	Test position	Actual phenomenon		Data graph	Test result
Working State 1	Positive power cable	Before testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	/	Pass
		During testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	See Annex A7 and from figure A7.13 to figure A7.18	Pass
		After testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	/	Pass
	Cable bundle	Before testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	/	Pass

Test site：Shieled room					
Environmental conditions：Temperature：18.5℃； Humidity：50%RH； Atmospheric pressure：96.0kPa					
Working State	Test position	Actual phenomenon		Data graph	Test result
Working State 1	Cable bundle	During testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	See Annex A7 and from figure A7.19 to figure A7.24	Pass
		After testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	/	Pass
Tested by/Tested date:Li Shunfan Febuary 19, 2024			Reviewed by/date: Wang Peng Febuary 19, 2024		

2.8.7 Test result

The test result is pass.

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2.9 RE101 Radiated emissions, magnetic field, 25 Hz to 100 kHz

2.9.1 Test purpose

This test procedure is used to verify that the magnetic field emissions from the EUT and its associated electrical interfaces do not exceed specified requirements.

2.9.2 Test limit

Table 24 Test limit

Frequency（kHz）	Limit（dBpT）	Notes
0.025 to 0.45	160.5 to 114	At a distance of 7 cm
0.45 to 30	114 to 76	
30 to 100	76	
Note:The limit decreases linearly in logarithmic form of frequency within the frequency range of 25Hz to 450Hz. The limit decreases linearly in logarithmic form of frequency within the frequency range of 450Hz to 30kHz.		

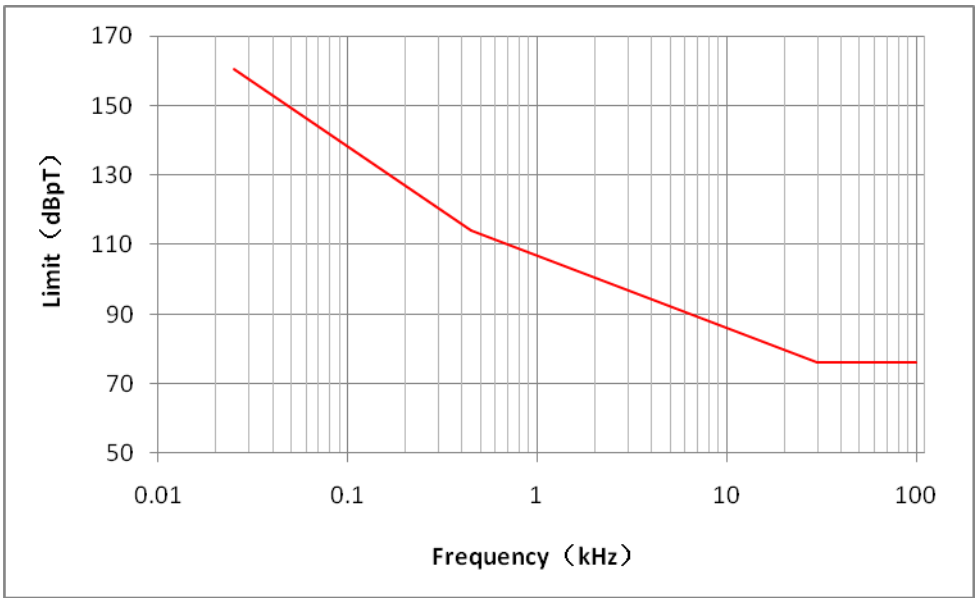

Figure 15 RE101 Test limit curve

2.9.3 Test setup

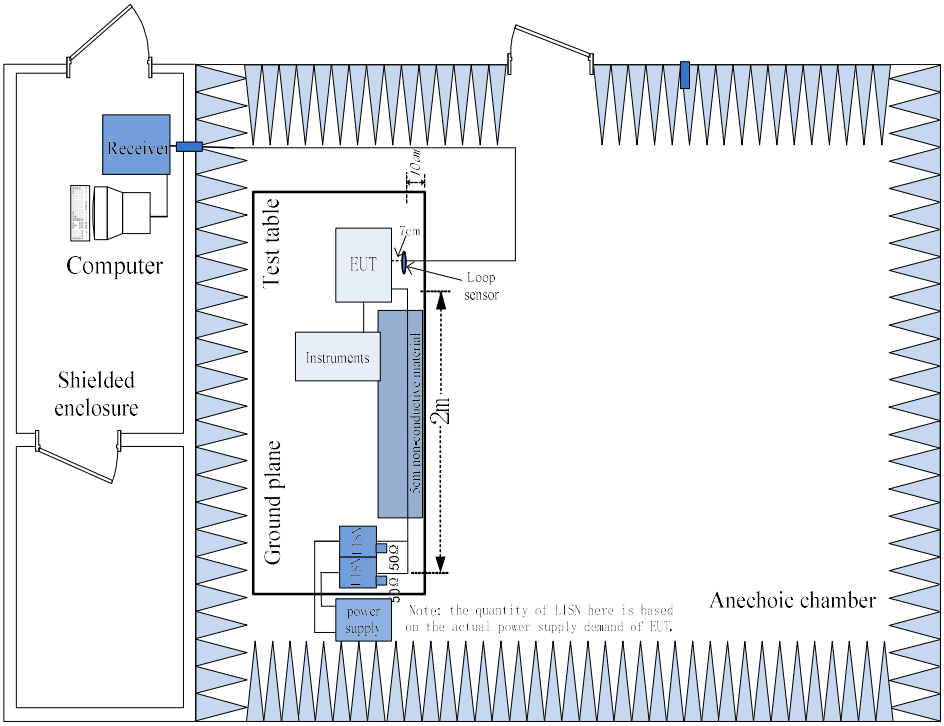

Figure 16 RE101Test setup

2.9.4 Test status and test position

Table 25 Test status and test position

No.	Working State	Test position	Notes
1	Working State 1	The front face of EUT	Take the keyboard surface as the front
2		The back face of EUT	
3		The left face of EUT	
4		The right face of EUT	
5		The top face of EUT	
6		The harness face of EUT	

2.9.5 Test procedures

a、 Turn on the measurement equipment and allow sufficient time for stabilization.

b、 Calibration. Apply a calibrated signal level, which is at least 6 dB below the limit (limit minus the loop sensor correction factor), at a frequency of 50 kHz. Tune the measurement receiver to a center frequency of 50 kHz. Record the measured level.

c、 Verify that the measurement receiver indicates a level within ±3 dB of the injected signal level. If readings are obtained which deviate by more than ±3

dB, locate the source of the error and correct the deficiency prior to proceeding with the testing.

d、 Maintain a basic test setup for the EUT as shown and described in Figures 20.

e、 Turn on the EUT and allow sufficient time for stabilization.

f、 Locate the loop sensor 7 cm from the EUT face or electrical interface connector being probed. Orient the plane of the loop sensor parallel to the EUT faces and parallel to the axis of connectors.

g、 Scan the measurement receiver over the applicable frequency range to determine whether exceed the specified limit, using the bandwidths and minimum measurement times of the standard requirement.

h、 Repeat f through g for each face of the EUT and for each EUT electrical connector.

2.9.6 Test Data

Table 26 Test Data

Test site：Anechoic chamber					
Environmental conditions：Temperature：18.4℃； Humidity：59%RH； Atmospheric pressure：96.1kPa					
No.	Working State	Test position	Data graph	Test result	Exceed standard
1	Working State 1	The front face of EUT	See Annex A8, RE101-Record number 1)	Pass	None
2		The back face of EUT	See Annex A8, RE101-Record number 2)	Pass	None
3		The left face of EUT	See Annex A8, RE101-Record number 3)	Pass	None
4		The right face of EUT	See Annex A8, RE101-Record number 4)	Pass	None
5		The top face of EUT	See Annex A8, RE101-Record number 5)	Pass	None
6		The harness face of EUT	See Annex A8, RE101-Record number 6)	Pass	None
Tested by/Tested date:Li Shunfan,You Li Febuary 18, 2024			Reviewed by/date: Wang Peng Febuary 18, 2024		

2.9.7 Test result

The test result is pass.

2.10 RE102 Radiated emissions, electric field, 10 kHz to 18 GHz

2.10.1 Test purpose

This test procedure is used to verify that electric field emissions from the EUT and its associated cabling do not exceed specified requirements.

2.10.2 Test limit

Table 27 Test limit

Frequency（MHz）	Limit（dBμV/m）
0.01 to 2	60 to 24
2 to 100	24
100 to 18000	24 to 69
Note: The limit decreases linearly in logarithmic form of frequency within the frequency range of 0.01MHz to 2MHz. The limit increases linearly in logarithmic form of frequency within the frequency range of 100MHz to 18GHz.	

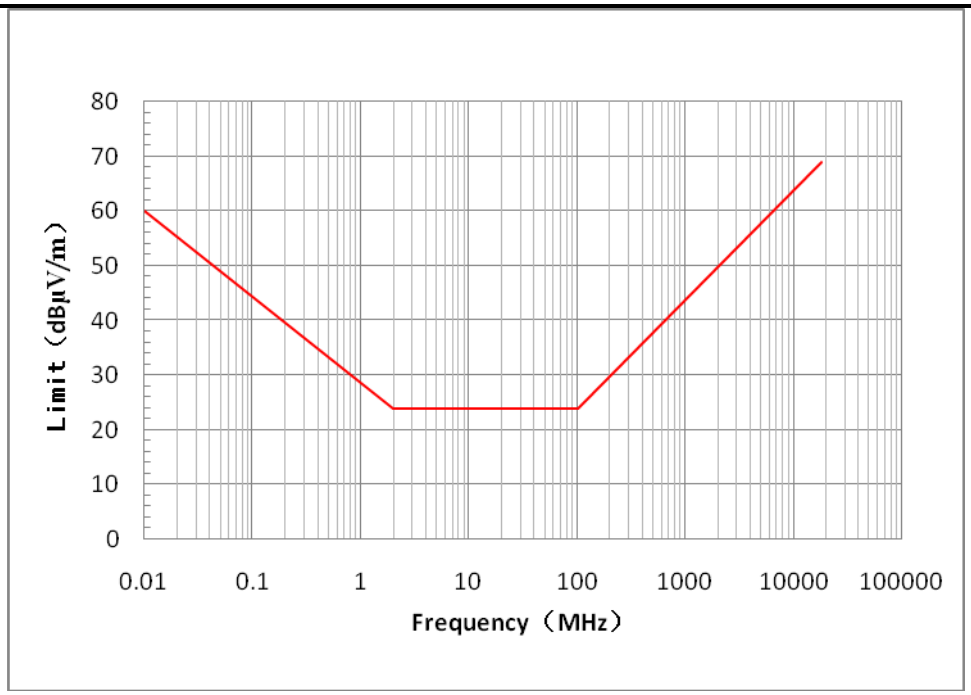

Figure 17 RE102 Test limit curve

2.10.3 Test setup

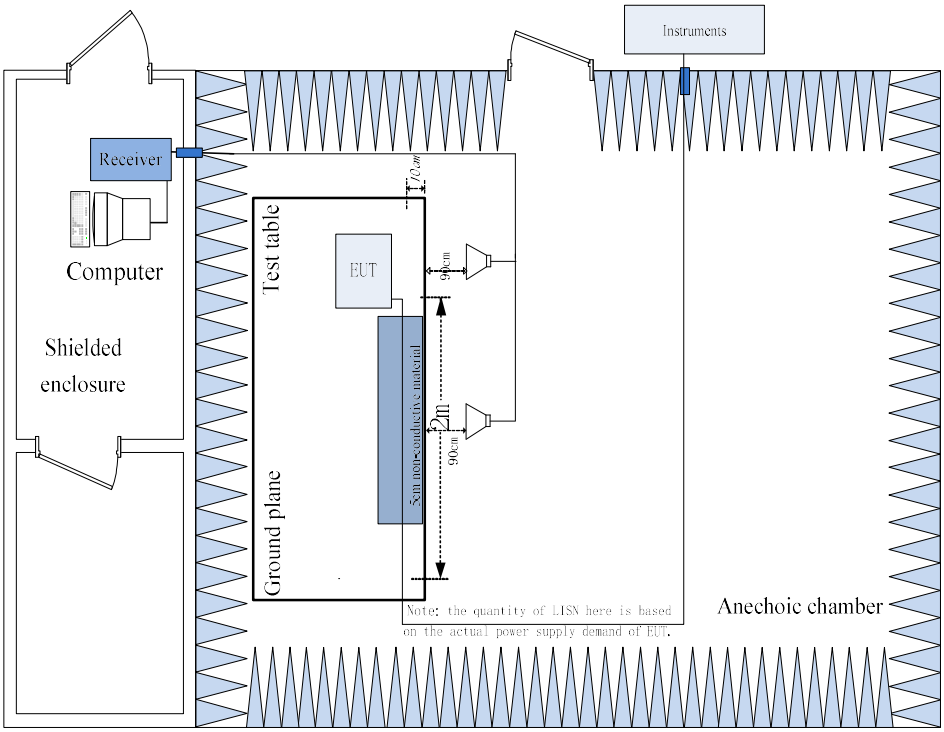

Figure 18 RE102 Test setup

2.10.4 Test status and test position

Table 28 Test status and test position

No.	Working State	Test position
1	Working State 3	Test configuration boundary center（10kHz to 200MHz）,EUT（200MHz to 18GHz）

2.10.5 Test procedures

a、 Verify that the ambient requirements specified in standard are met.

b、 Turn on the measurement equipment and allow a sufficient time for stabilization.

c、 Using the system check path. Apply a calibrated signal level, which is at least 6 dB below the limit (limit minus antenna factor), to the coaxial cable at the antenna connection point.

d、 Scan the measurement receiver in the same manner as a normal data scan. Verify that the data recording device indicates a level within ±3 dB of the injected signal level. If readings are obtained which deviate by more than ±3 dB, locate the source of the error and correct the deficiency prior to proceeding with the testing.

e、 Maintain a basic test setup for the EUT as shown and described in Figures 18.

f、 Turn on the EUT and allow sufficient time for stabilization.

g、 Scan the measurement receiver for each applicable frequency range to determine whether exceed the specified limit, using the bandwidths and minimum measurement times in standard requirement.

h、 Below 30 MHz, orient the antennas for vertically polarized fields. Above 30 MHz, orient the antennas for both horizontally and vertically polarized fields.

i、 Take measurements for each antenna position determined.

2.10.6 Test Data

Table 29 Test Data

Test site：Anechoic chamber						
Environmental conditions：Temperature：18.4℃； Humidity：50%RH； Atmospheric pressure：96.1kPa						
No.	Working State	Test position	Test frequency	Data graph	Test result	Exceed standard
1	Working State 3	Test configuration boundary center	10kHz～200MHz	See Annex A9, RE102-Record number 1) to 3)	Pass	None
2		EUT	200MHz～18GHz	See Annex A9, RE102-Record number 4) to 7)	Pass	None
Tested by/Tested date:Deng Taotao July 19, 2024				Reviewed by/date: Wang Peng July 19, 2024		

2.10.7 Test result

The test result is pass.

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2.11 RS101 Radiated susceptibility, magnetic field, 25 Hz to 100 kHz

2.11.1 Test purpose

This test procedure is used to verify the ability of the EUT to withstand radiated magnetic fields.

2.11.2 Test limit

Table 30 Test limit

Frequency（kHz）	Limit（dBpT）	Notes
0.025 to 0.06	182	At a distance of 5 cm
0.06 to 100	182 to 116	
Note: The limit decreases linearly in logarithmic form of frequency within the frequency range of 0.06kHz to 100kHz.		

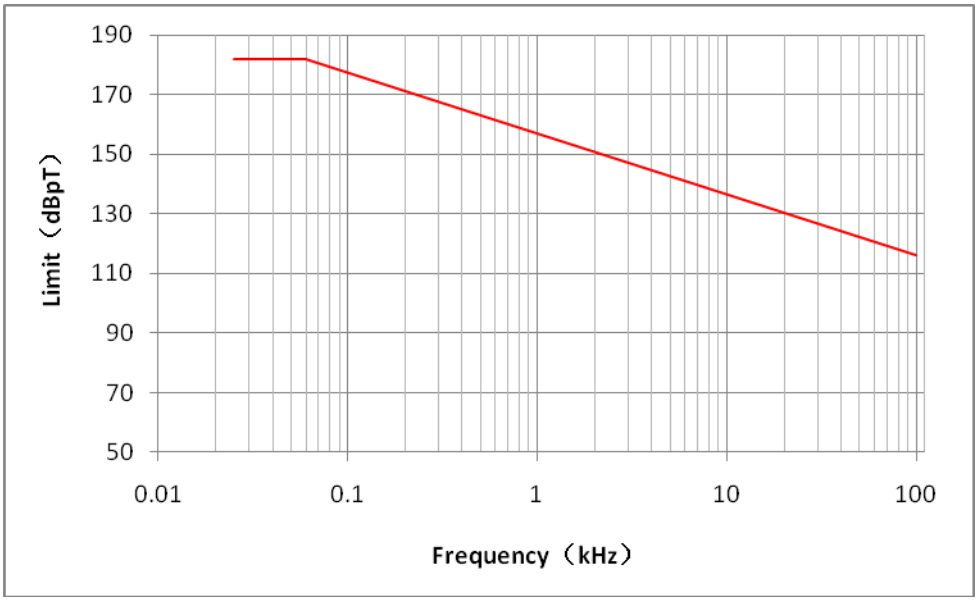

Figure 19 RS101Test limit curve

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2.11.3 Test setup

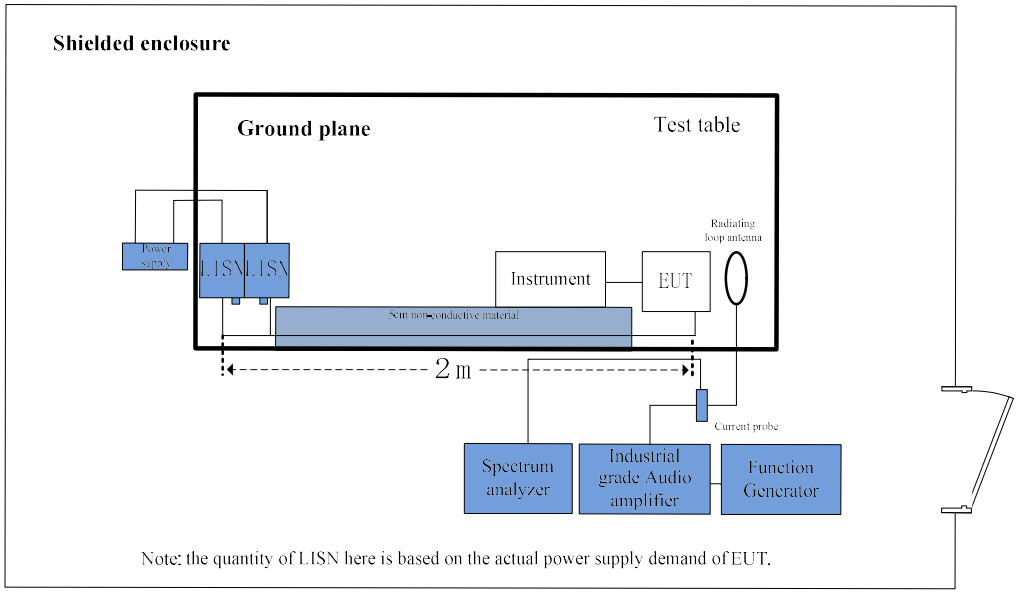

Figure 20 RS101 Test setup

2.11.4 Test status and test position

Table 31 Test status and test position

No.	Working State	Test position	Notes
1	Working State 1	The front face of EUT	Take the keyboard surface as the front
2		The back face of EUT	
3		The left face of EUT	
4		The right face of EUT	
5		The top face of EUT	
6		The harness face of EUT	

2.11.5 Test procedures

a、 Turn on the measurement equipment and allow sufficient time for stabilization.

b、 Next calibration. Set the signal source to a frequency of 1 kHz and adjust the output to provide a magnetic flux density of 110 dB above one picotesla as determined by the reading obtained on measurement spectrum analyzer and the relationship given in standard.

c、 Measure the voltage output from the loop sensor using measurement receiver.

d、 Verify that the output on measurement receiver is within ±3 dB of the expected value based on the antenna factor and record this value.

e、 Maintain a basic test setup for the EUT as shown and described in Figures 20.

f、 Turn on the EUT and allow sufficient time for stabilization.

g、Locate the loop sensor 5 cm from the EUT face or electrical interface connector being probed. Orient the plane of the loop sensor parallel to the EUT faces and parallel to the axis of connectors.

h、Supply the loop with sufficient current to produce magnetic field strengths at least 10 dB greater than the applicable limit but not to exceed 19 amps (185 dBpT).

i、Scan the applicable frequency range using the requirements specified in standard.

j、Monitor the EUT for degradation of performance during testing and record.

k、Repeat g through j for each face of the EUT and for each EUT electrical connector.

2.11.6 Test Data

Table 32 Test Data

Test site：Shieled room					
Environmental conditions：Temperature：18.4℃； Humidity：49%RH； Atmospheric pressure：95.9kPa					
Working State	Test position	Actual phenomenon		Data graph	Test result
Working State 1	The front face of EUT	Before testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	See Annex A10 and figure A10.1	Pass
		During testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.		Pass
		After testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.		Pass
	The back face of EUT	Before testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	See Annex A10 and figure A10.2	Pass

Test site：Shieled room					
Environmental conditions：Temperature：18.4℃； Humidity：49%RH； Atmospheric pressure：95.9kPa					
Working State	Test position	Actual phenomenon		Data graph	Test result
Working State 1	The back face of EUT	During testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	See Annex A10 and figure A10.2	Pass
		After testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.		Pass
	The left face of EUT	Before testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	See Annex A10 and figure A10.3	Pass
		During testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.		Pass
		After testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.		Pass
	The right face of EUT	Before testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	See Annex A10 and figure A10.4	Pass
		During testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.		Pass

Test site：Shieled room					
Environmental conditions：Temperature：18.4℃； Humidity：49%RH； Atmospheric pressure：95.9kPa					
Working State	Test position	Actual phenomenon		Data graph	Test result
Working State 1	The right face of EUT	After testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	See Annex A10 and figure A10.4	Pass
	The top face of EUT	Before testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	See Annex A10 and figure A10.5	Pass
		During testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.		Pass
		After testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.		Pass
	The harness face of EUT	Before testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	See Annex A10 and figure A10.6	Pass
		During testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.		Pass
		After testing	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.		Pass
Tested by/Tested date:Li Shunfan,You Li Febuary 19, 2024			Reviewed by/date: Wang Peng Febuary 19, 2024		

2.11.7 Test result

The test result is pass.

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2.12 RS103 Radiated susceptibility, electric field, 10 kHz to 40 GHz

2.12.1 Test purpose

This test procedure is used to verify the ability of the EUT and associated cabling to withstand electric fields.

2.12.2 Test limit

Table 33 Test limit

Frequency range	Limit level（V/m）
10kHz to 40GHz	200

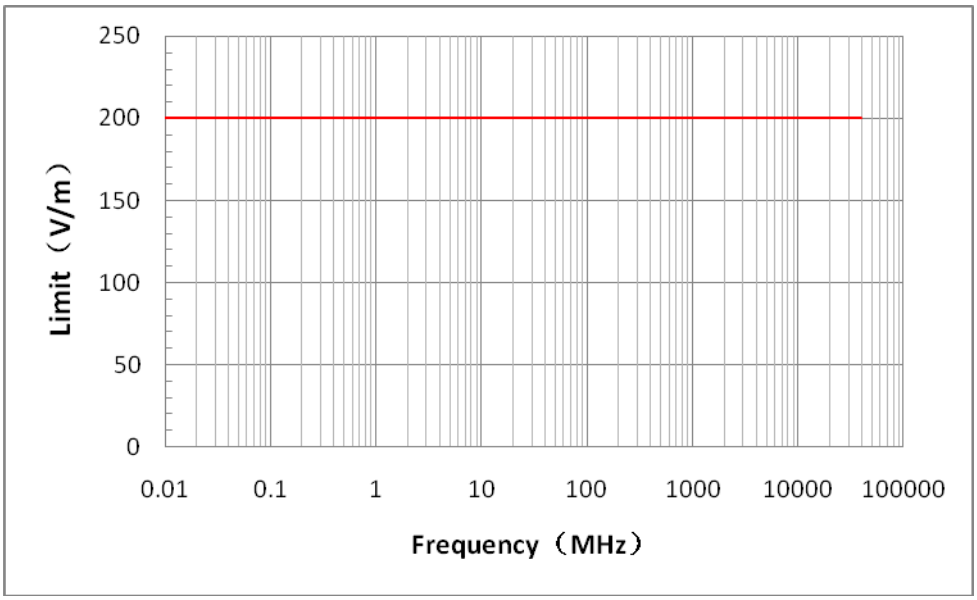

Figure 21 RS103 Test limit curve

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2.12.3 Test setup

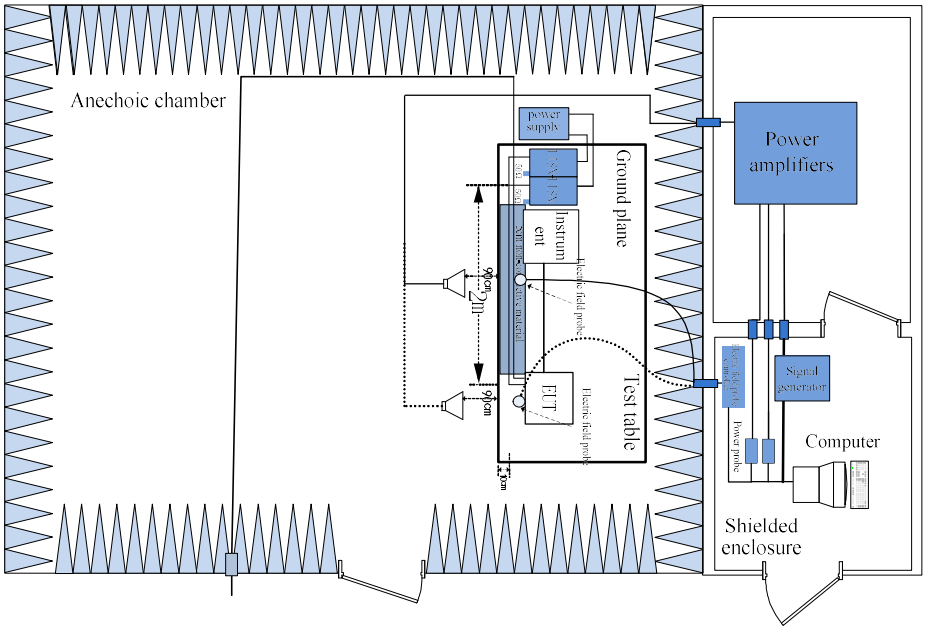

Figure 22 RS103 Test setup

2.12.4 Test status and test position

Table 34 Test status and test position

No.	Working State	Test position
1	Working State 1	Test configuration boundary center（10kHz to 200MHz）,EUT（200MHz to 40GHz）

2.12.5 Test procedures

a、 Maintain a basic test setup for the EUT as shown and described in Figures 22.

b、 Turn on the measurement equipment and EUT and allow a sufficient time for stabilization.

c、 Record the amplitude shown on the electric field sensor display unit due to EUT ambient. Reposition the sensor, as necessary, until this level is < 10% of the applicable field strength to be used for testing.

d、 Using E-Field sensor procedure. Set the signal source to 1 kHz pulse modulation, 50% duty cycle. Using an appropriate transmit antenna and amplifier, establish an electric field at the test start frequency. Gradually increase the electric field level until it reaches the applicable limit.

e、 Scan the test frequency range and record the required input power levels to the transmit antenna to maintain the required field.

f、 Monitor the EUT for degradation of performance during testing and record.

g、 Repeat procedures d through f whenever the test setup is modified or an antenna is changed.

2.12.6 Test Data

Table 35 Test Data

Test site：Anechoic chamber					
Environmental conditions：Temperature：18.3℃； Humidity：49%RH； Atmospheric pressure：95.9kPa					
Working State	Actual phenomenon			Data graph	Test result
Working State 1	Before testing		The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	/	Pass
	During testing, Test configuration boundary center （0.01MHz to 200 MHz）	Horizontal polarization	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	See Annex A11 and figure A11.1	Pass
		Vertical polarization	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	See Annex A11 and figure A11.2	Pass

Test site：Anechoic chamber					
Environmental conditions：Temperature：18.3℃； Humidity：49%RH； Atmospheric pressure：95.9kPa					
Working State	Actual phenomenon			Data graph	Test result
Working State 1	During testing, EUT （200MHz to 40000MHz）	Horizontal polarization	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	See Annex A11 and figure A11.1	Pass
	During testing, EUT （200MHz to 40000MHz）	Vertical polarization	The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	See Annex A11 and figure A11.2	Pass
	After testing		The communication between the keyboard and the test computer is normal. When you hit the keys, the corresponding keys on the keyboard test software turn green.	/	Pass
Tested by/Tested date:Li Shunfan Febuary 18, 2024			Reviewed by/date: Wang Peng Febuary 18, 2024		

2.12.7 Test result

The test result is pass.

3 The main problems in the test and their treatment

3.1 Problem description

On Febuary 18,2024,during the RE102 project test,the test curve of the Silicone keyboard in the frequency band of 10 kHz to 18 GHz exceeded the standard.

On Febuary 19,2024, during the CS106 and CS115 projects test,The Silicone keyboard went out after the green light of keyboard case flashed,and the corresponding keys on the keyboard test software did not respond.

3.2 Problem analysis

After analysis and test, Key Technology (China) Limited confirmed that the main reason for the above problems is that EUT and cable shielding treatment are not good enough.

3.3 Soulution measure

In view of the shielding problem,the fllowing measures have been taken：

1. The PCB circuit is revised,and the inductor and PCB are integrated into a whole,
2. Add a circle of exposed copper area at the contact position between PCB and shielding box ,
3. The knitting density of USB wire harness is changed from single layer 72 to double layer 128,
4. Add a shielding box at the bottom of the keyboard.

3.4 Experimental verification

On April 15,2024，CS106 and CS115 tests have been carried out in the GRG METROLOGY & TEST（CHENGDU）CO., LTD for the EUT with the above disposal measure.EUT works normally during CS115 test, EUT works normally before and after CS106 test，Silicone keyboard indicators met the specified requirements.

On July 19,2024,EUT has been verified by RE102 test,and the test results met the requirements of standard limit value.

4 Conclusion

According to the E202312287263-1E Test conditions specified in the Test Status Confirmation Form and GJB 151B-2013"Electromagnetic emission and sensitivity requirements and measurements for military equipment and subsystems" of the test conditions and test methods， to Silicone keyboardA CE101,CE102,CS101,CS106, CS112,CS114,CS115,CS116,RE101,RE102,RS101 and RS103 are completed. In the course of the test, the test results of the EUT all meet the requirements of the qualified criteria.

To sum up,Silicone keyboard pass this Electromagnetic compatibility test.

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5 Existing problems and suggestions

None.

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6 Annex

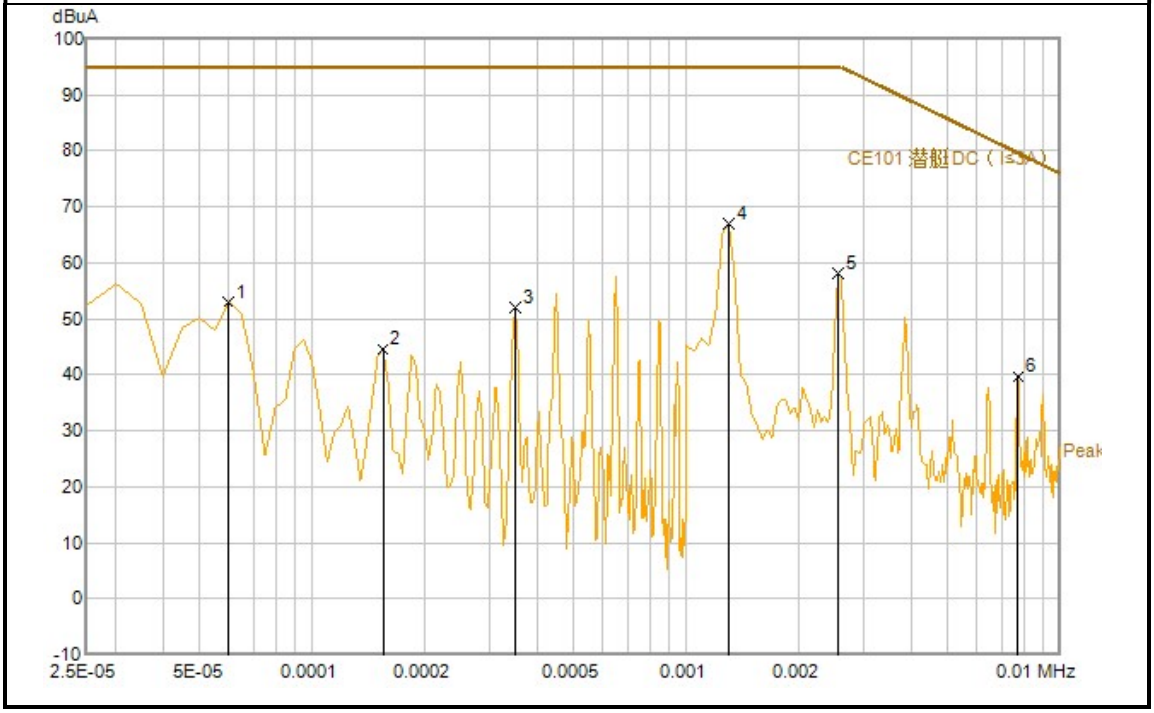
Annex A Test data

A1 CE101 Conducted emissions, power leads, 25 Hz to 10 kHz test data

CE101- Record number 1）

Test Result:	Pass	Test Position:	Positive power cable
Standard:	GJB 151B-2013	Date:	2024-02-18
Test Item:	CE101	Temp./Hum.(%RH):	18.3℃/59%RH
Sample Name:	Silicone keyboard	Model:	K-TEK-M275TP-FN-BL-ANA-151B
Sample No.	M275TP-FN-BL-ANA-151B-20240123000001	Working State:	Working State 1
Test Engineer:	Li Shunfan	Reviewers:	Wang Peng
Note:	/		

2.5E-05 - 0.001MHz: RBW = 10Hz; 0.001 - 0.01MHz: RBW = 100Hz



N0.	Frequency (MHz)	Reading (dBuA)	Correct Factor (dB)	Result (dBuA)	Limit (dBuA)	Margin (dB)	Remark
1	6E-05	-33.02	86.03	53.01	95	41.99	Peak
2	0.000155	-33.52	78.13	44.61	95	50.39	Peak

3	0.00035	-18.32	70.39	52.07	95	42.93	Peak
4	0.0013	8.05	59	67.05	95	27.95	Peak
5	0.00255	4.52	53.6	58.12	95	36.88	Peak
6	0.0077	-4.94	44.64	39.7	79.69	39.99	Peak
Note: Result = Reading + Correct factor, Margin = Limit - Result							

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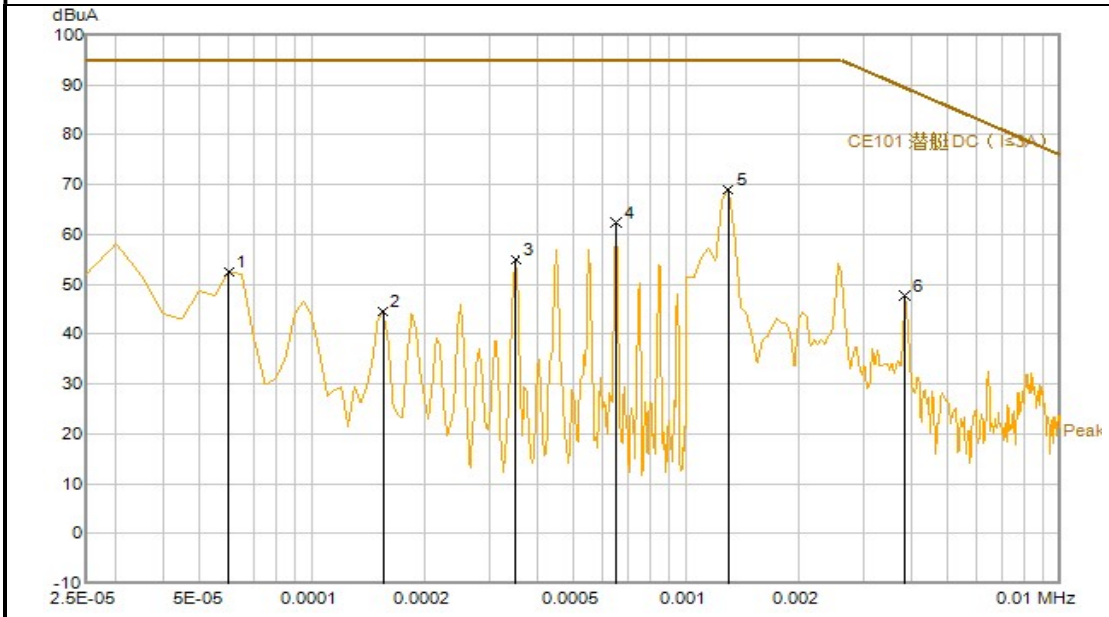
CE101- Record number 2）

Test Result:	Pass	Test Position:	Negative power cable
Standard:	GJB 151B-2013	Date:	2024-02-18
Test Item:	CE101	Temp./Hum.(%RH):	18.3℃/59%RH
Sample Name:	Silicone keyboard	Model:	K-TEK-M275TP-FN-BL-ANA-151B
Sample No.	M275TP-FN-BL-ANA-151B-20240123000001	Working State:	Working State 1
Test Engineer:	Li Shunfan	Reviewers:	Wang Peng
Note:	/		

2.5E-05 - 0.001MHz: RBW = 10Hz; 0.001 - 0.01MHz: RBW = 100Hz



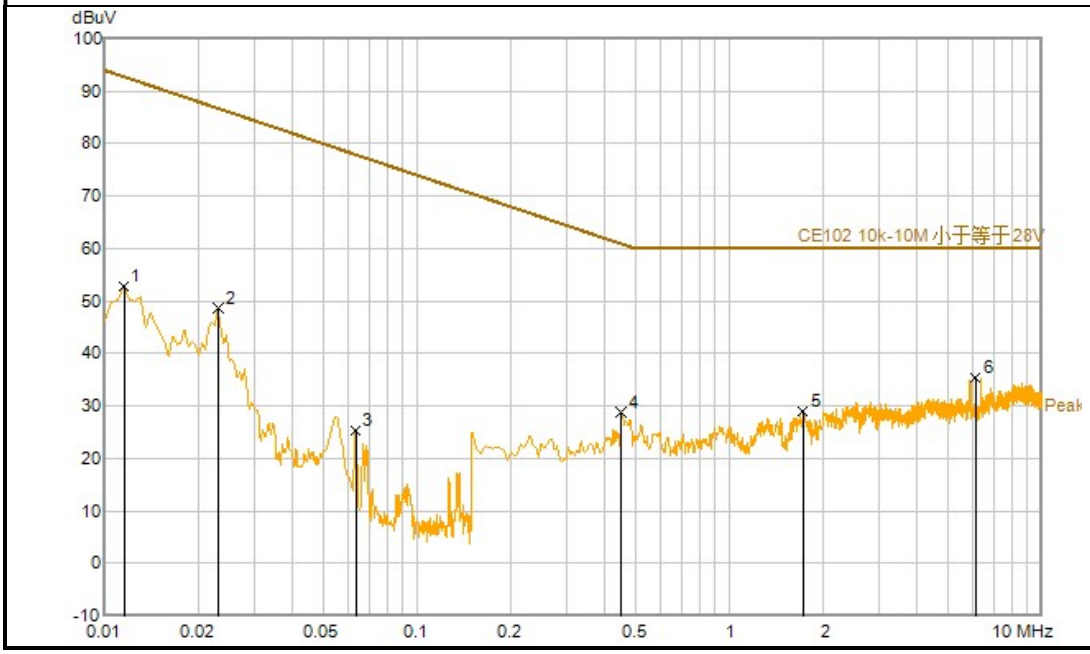
N0.	Frequency (MHz)	Reading (dBuA)	Correct Factor (dB)	Result (dBuA)	Limit (dBuA)	Margin (dB)	Remark
1	6E-05	-33.45	86.03	52.58	95	42.42	Peak
2	0.000155	-33.5	78.13	44.63	95	50.37	Peak
3	0.00035	-15.42	70.39	54.97	95	40.03	Peak
4	0.00065	-3.35	65.67	62.32	95	32.68	Peak
5	0.0013	10.02	59	69.02	95	25.98	Peak
6	0.00385	-2.49	50.31	47.82	89.46	41.64	Peak
Note: Result = Reading + Correct factor, Margin = Limit - Result							

A2 CE102 Conducted emissions, power leads, 10 kHz to 10 MHz test data

CE102- Record number 1）

Test Result:	Pass	Test Position:	Positive power cable
Standard:	GJB 151B-2013	Date:	2024-02-18
Test Item:	CE102	Temp./Hum.(%RH):	18.3℃/59%RH
Sample Name:	Silicone keyboard	Model:	K-TEK-M275TP-FN-BL-ANA-151B
Sample No.	M275TP-FN-BL-ANA-151B-20240123000001	Working State:	Working State 1
Test Engineer:	Li Shunfan	Reviewers:	Wang Peng
Note:	/		

0.01 - 0.15MHz: RBW = 1kHz; 0.15 - 10MHz: RBW = 10kHz



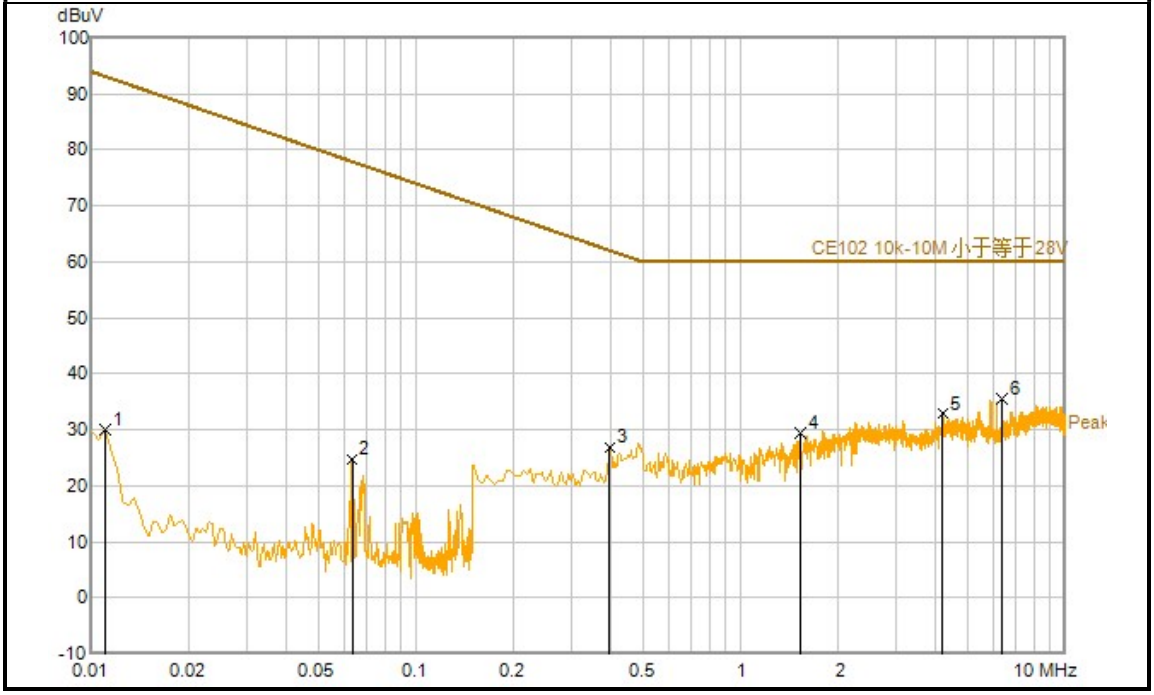
N0.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.0115	27.64	25.28	52.92	92.79	39.87	Peak
2	0.023	26.23	22.47	48.7	86.76	38.06	Peak
3	0.0635	4.92	20.49	25.41	77.93	52.52	Peak
4	0.45	8.39	20.33	28.72	60.92	32.2	Peak
5	1.72	8.56	20.44	29	60	31	Peak
6	6.145	14.61	20.78	35.39	60	24.61	Peak

Note: Result = Reading + Correct factor, Margin = Limit - Result

CE102- Record number 2）

Test Result:	Pass	Test Position:	Negative power cable
Standard:	GJB 151B-2013	Date:	2024-02-18
Test Item:	CE102	Temp./Hum.(%RH):	18.3℃/59%RH
Sample Name:	Silicone keyboard	Model:	K-TEK-M275TP-FN-BL-ANA-151B
Sample No.	M275TP-FN-BL-ANA-151B-20240123000001	Working State:	Working State 1
Test Engineer:	Li Shunfan	Reviewers:	Wang Peng
Note:	/		

0.01 - 0.15MHz: RBW = 1kHz; 0.15 - 10MHz: RBW = 10kHz



N0.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.011	4.54	25.46	30	93.17	63.17	Peak
2	0.0635	4.26	20.49	24.75	77.93	53.18	Peak
3	0.395	6.56	20.33	26.89	62.05	35.16	Peak
4	1.53	9.01	20.43	29.44	60	30.56	Peak
5	4.2	12.2	20.65	32.85	60	27.15	Peak
6	6.395	14.72	20.8	35.52	60	24.48	Peak

Note: Result = Reading + Correct factor, Margin = Limit - Result

A3 CS101 Conducted susceptibility, power leads, 25 Hz to 150 kHz test data

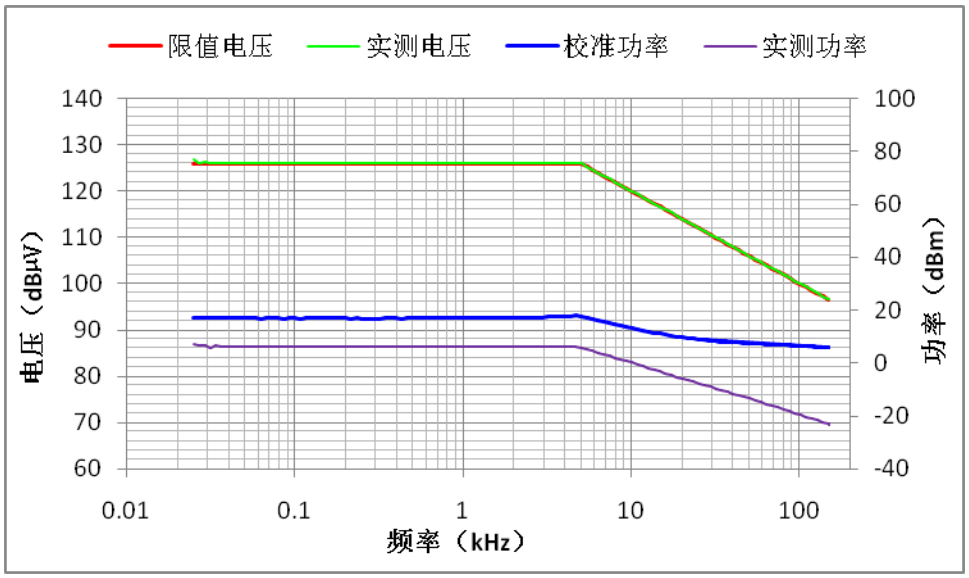


Figure A3.1 Positive power cable test curve

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A4 CS106 Conducted susceptibility, transients, power leads test data

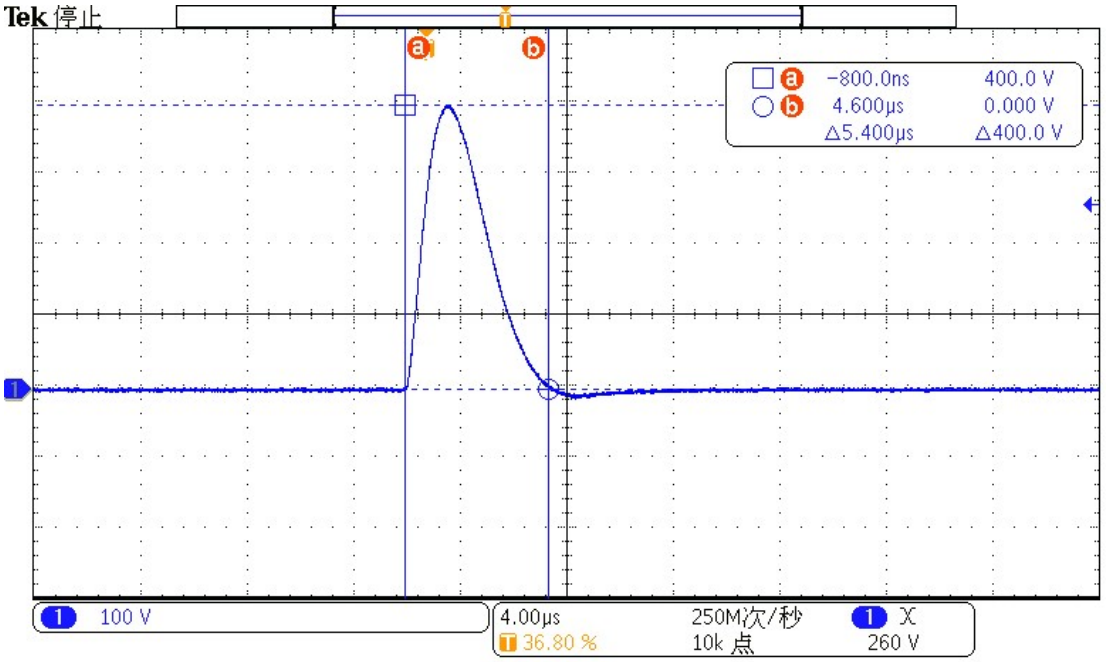

Figure A4.1 CS106 positive polarity calibration waveform

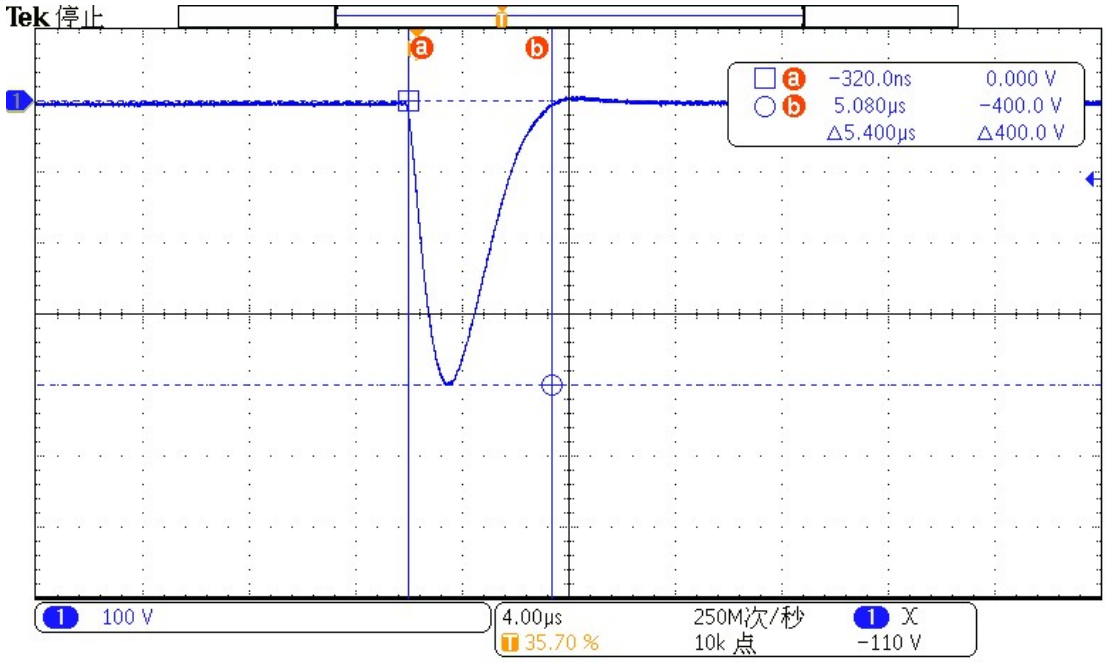

Figure A4.2 CS106 negative polarity calibration waveform

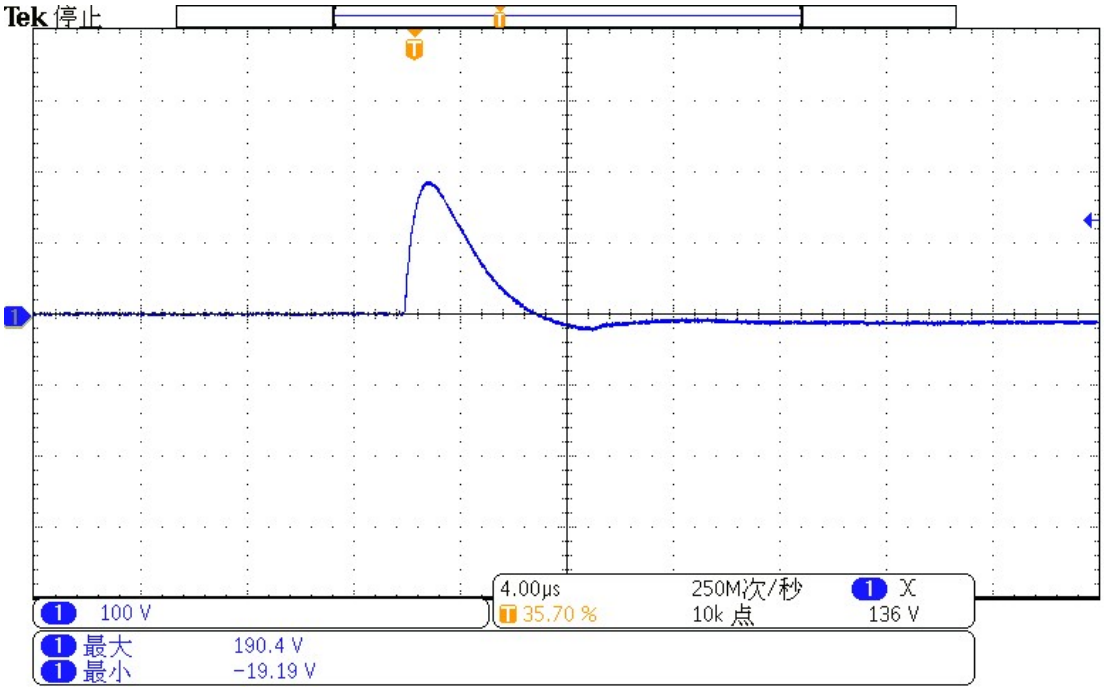

Figure A4.3 Positive power cable positive polarity test waveform

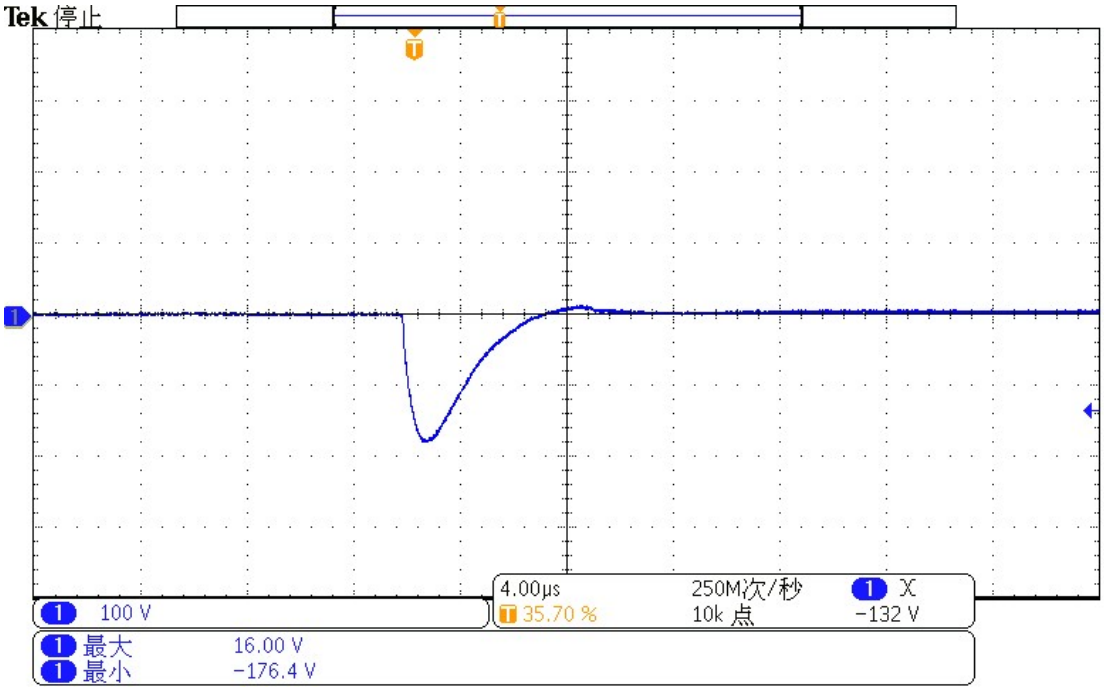

Figure A4.4 Positive power cable negative polarity test waveform

A5 CS114

Conducted susceptibility, bulk cable injection, 4 kHz to 400 MHz test data

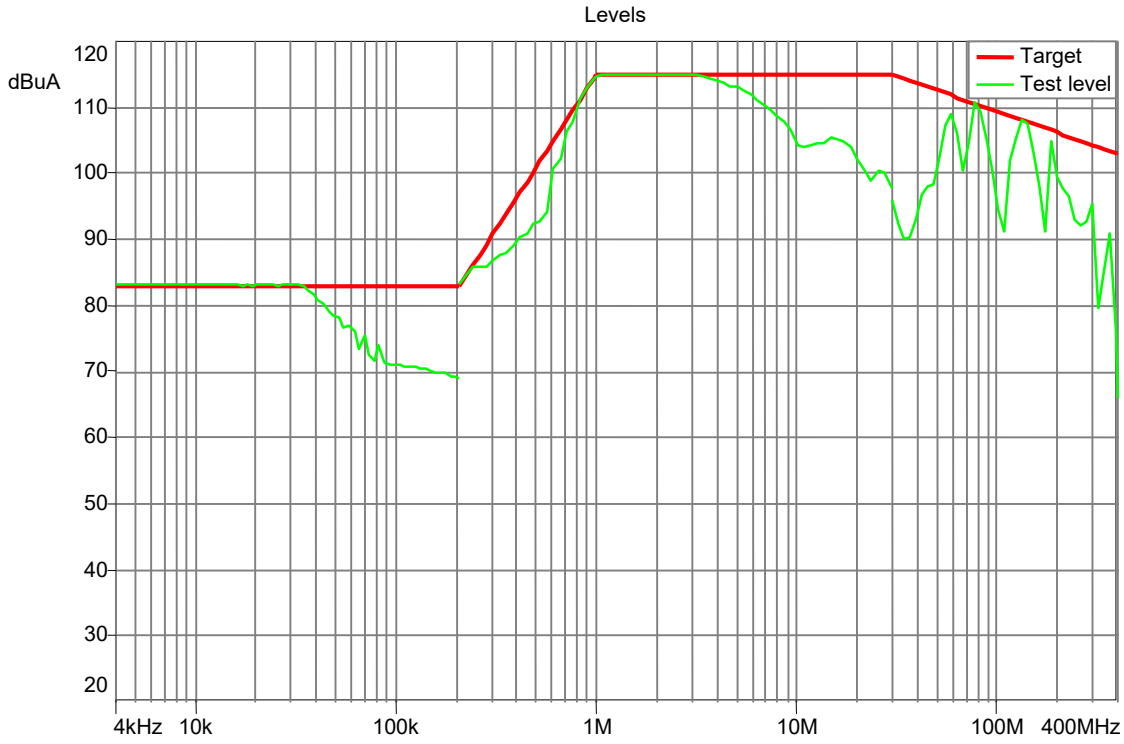

Figure A5.1 Complete power cables current test curve

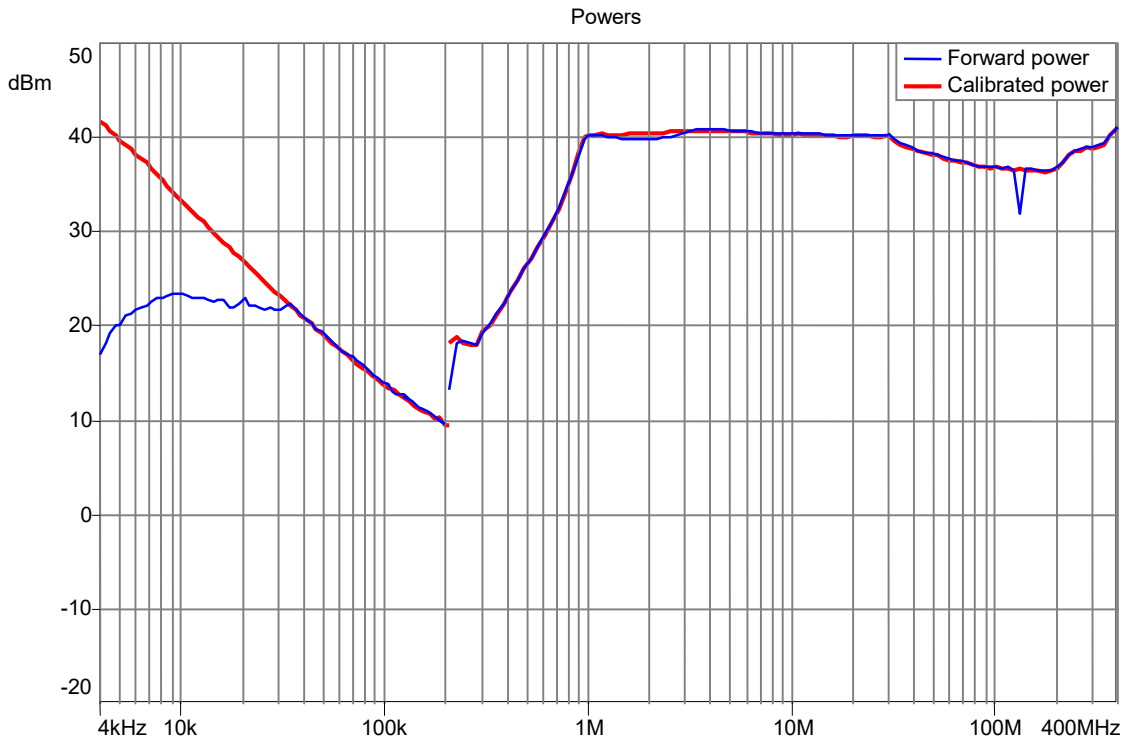

Figure A5.2 Complete power cables power test curve

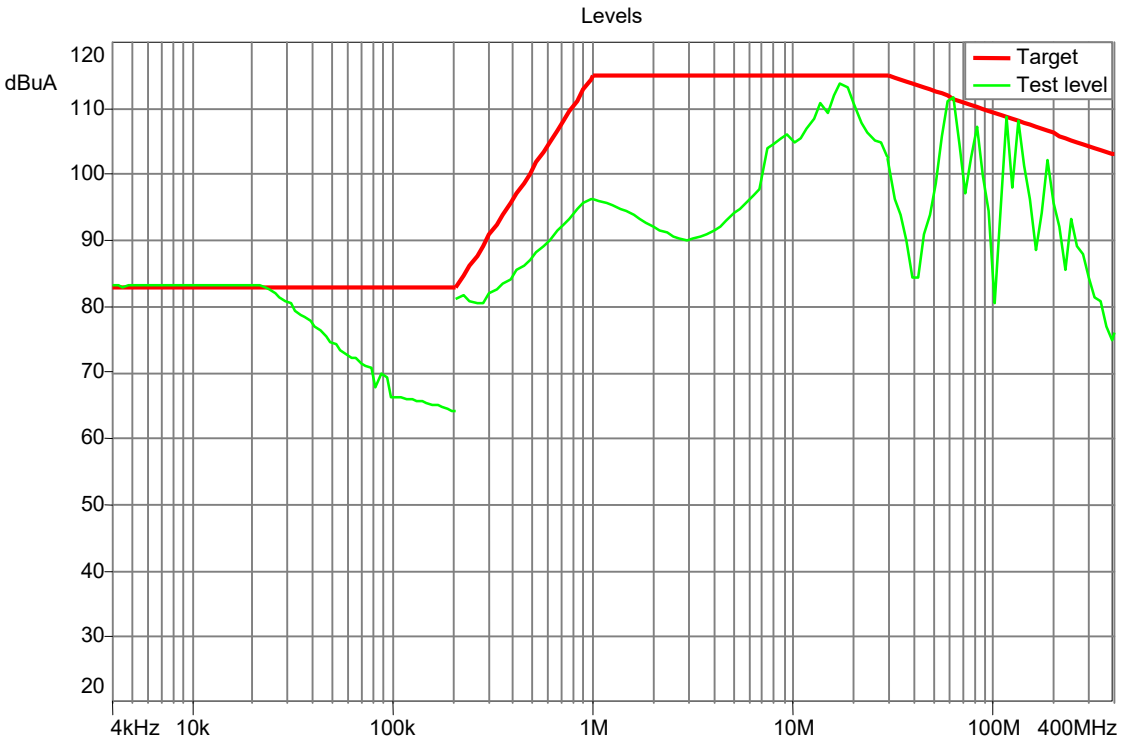

Figure A5.3 Positive power cable current test curve

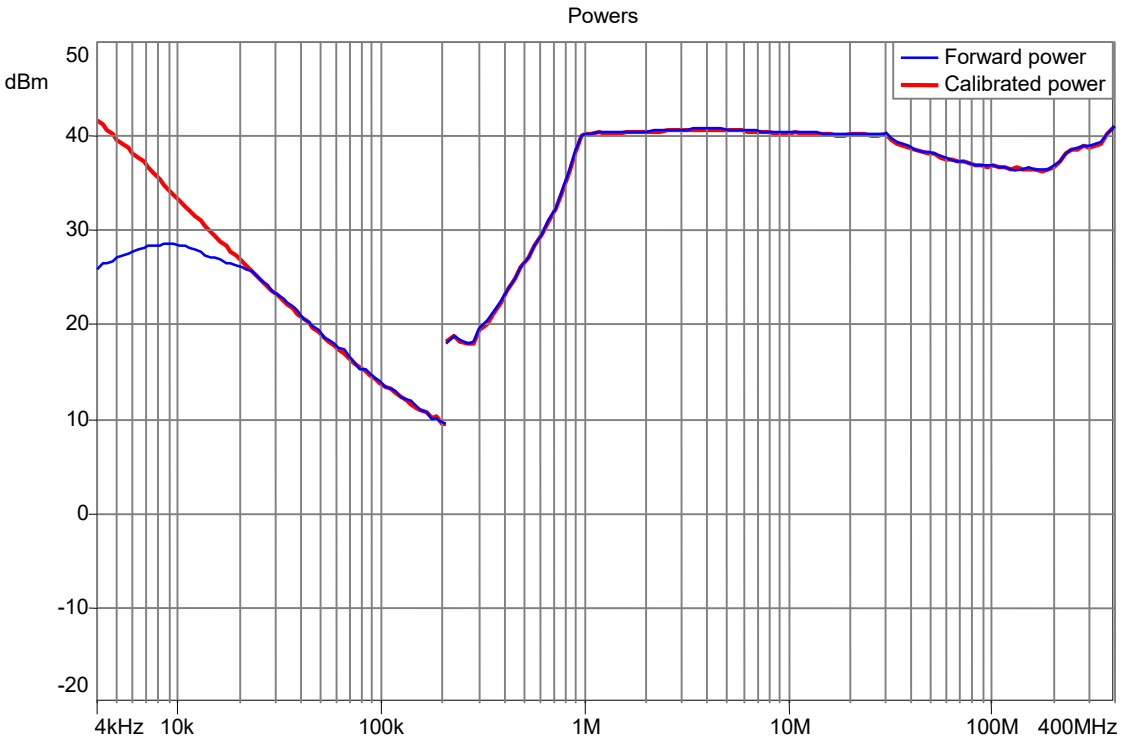

Figure A5.4 Positive power cable power test curve

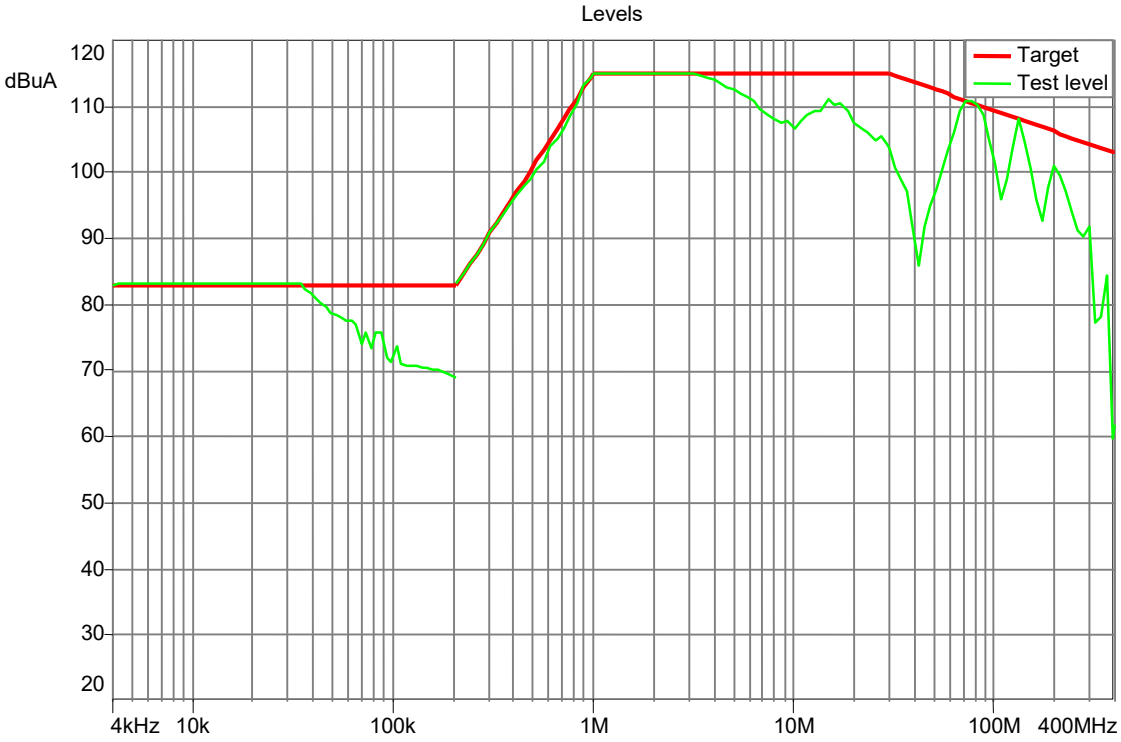

Figure A5.5 Cable bundle current test curve

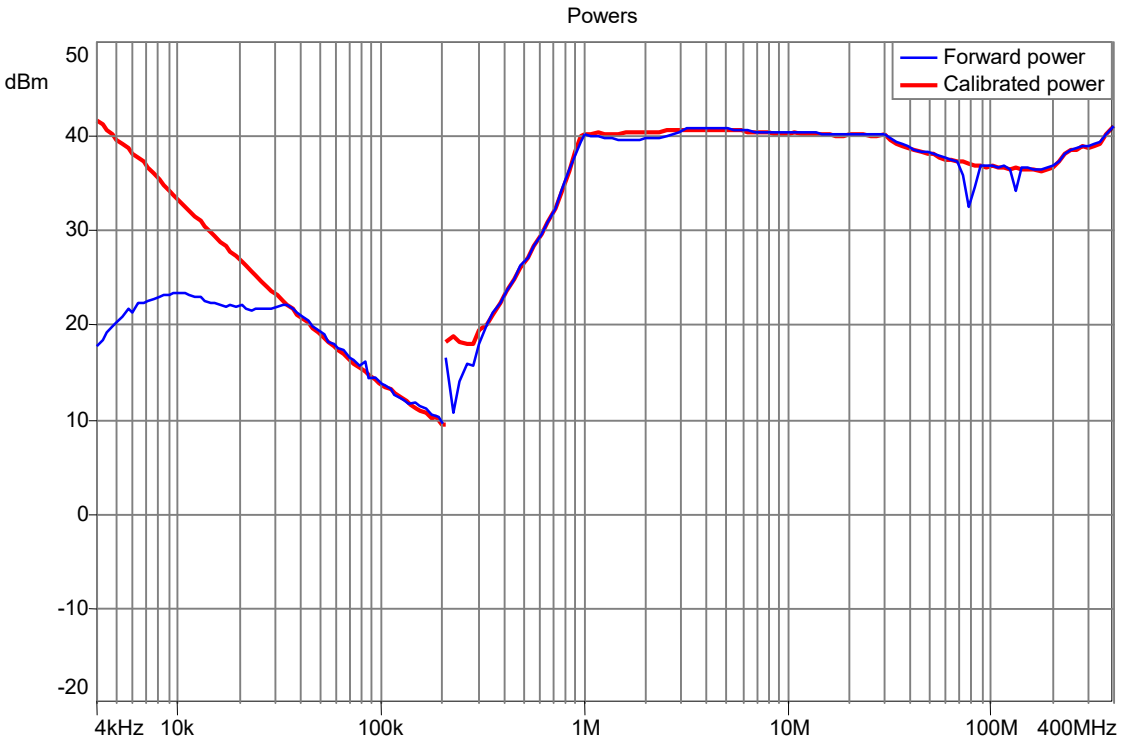

Figure A5.6 Cable bundle power test curve

A6 CS115 Conducted susceptibility,bulk cable injection,impulse excitation Test data

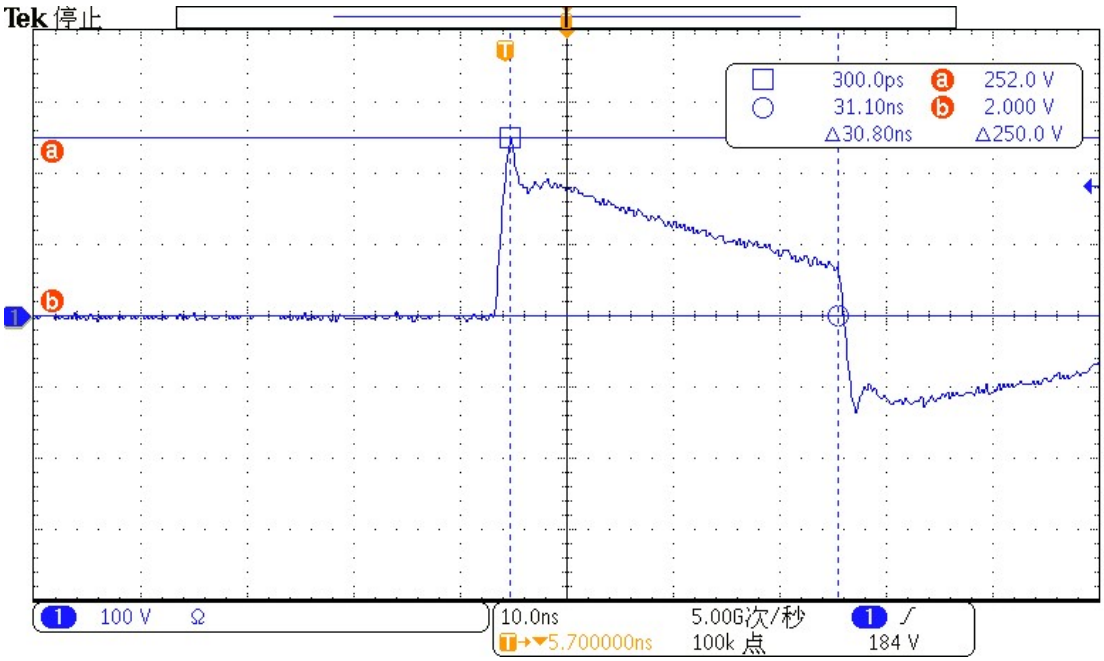

Figure A6.1 positive polarity calibration waveform

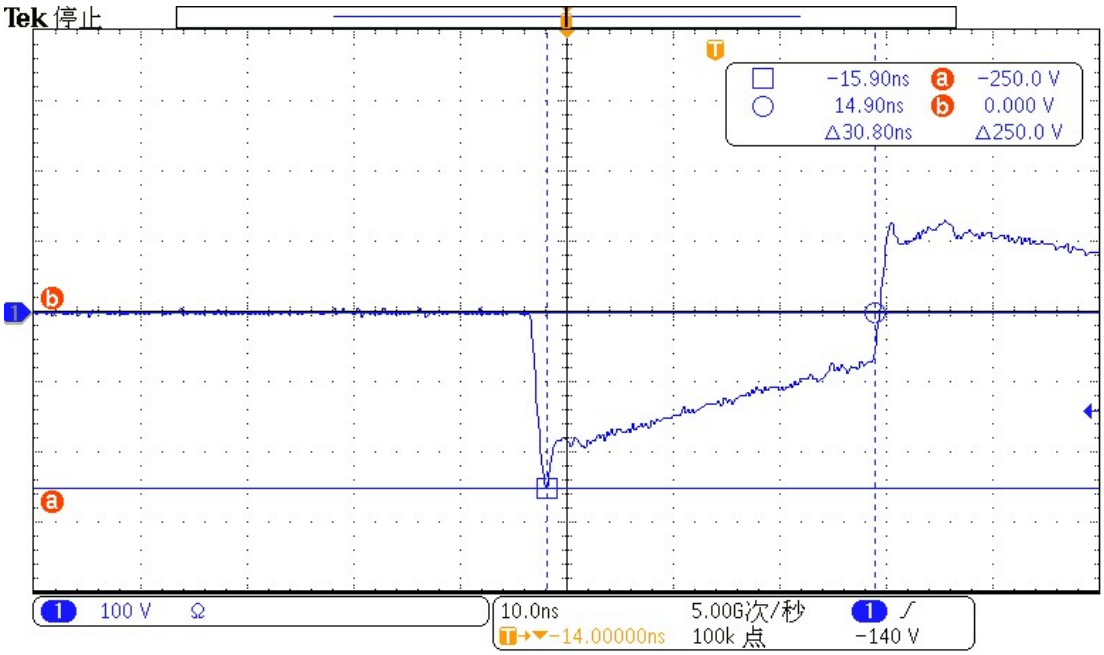

Figure A6.2 negative polarity calibration waveform

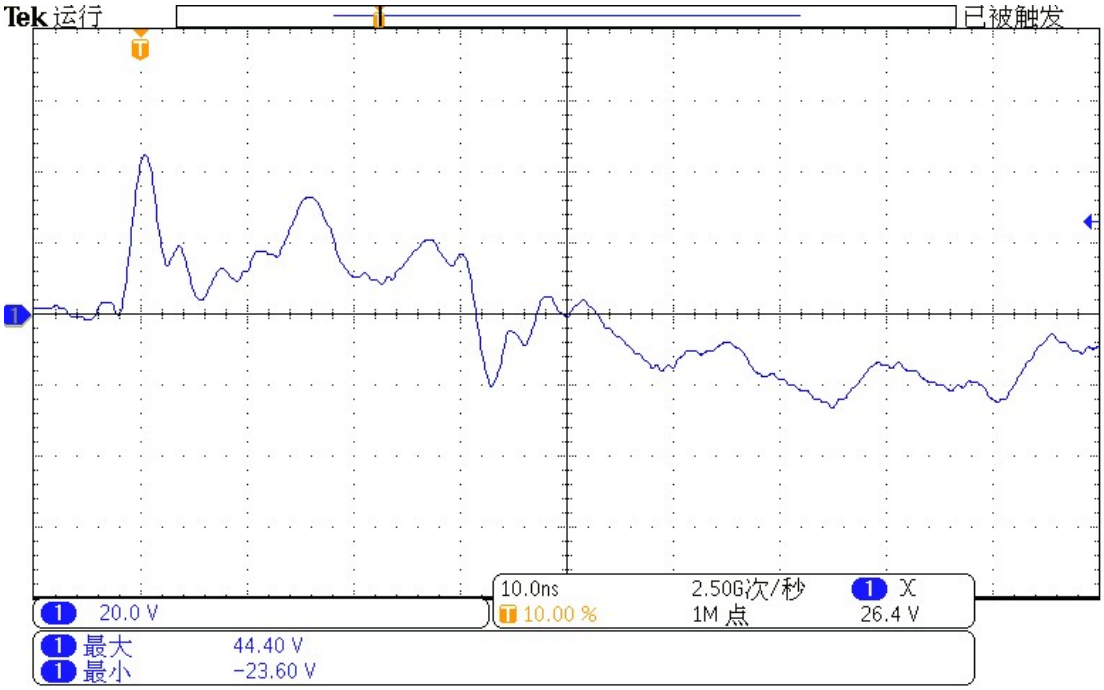

Figure A6.3 Complete power cables positive polarity test curve

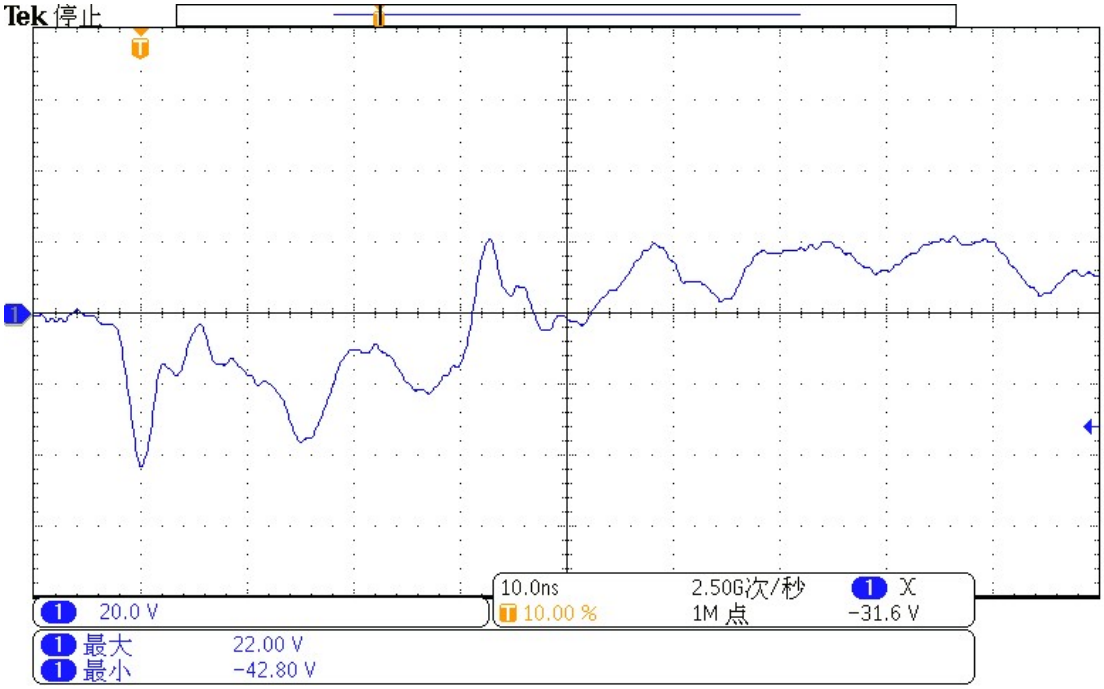

Figure A6.4 Complete power cables negative polarity test curve

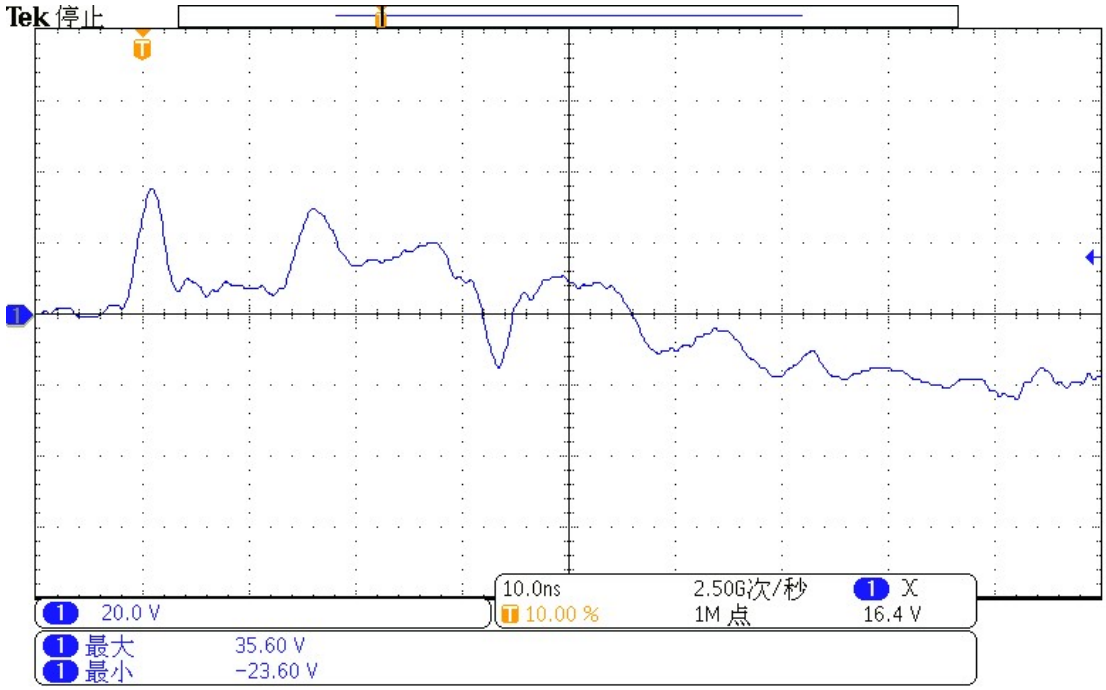

Figure A6.5 Positive power cable positive polarity test curve

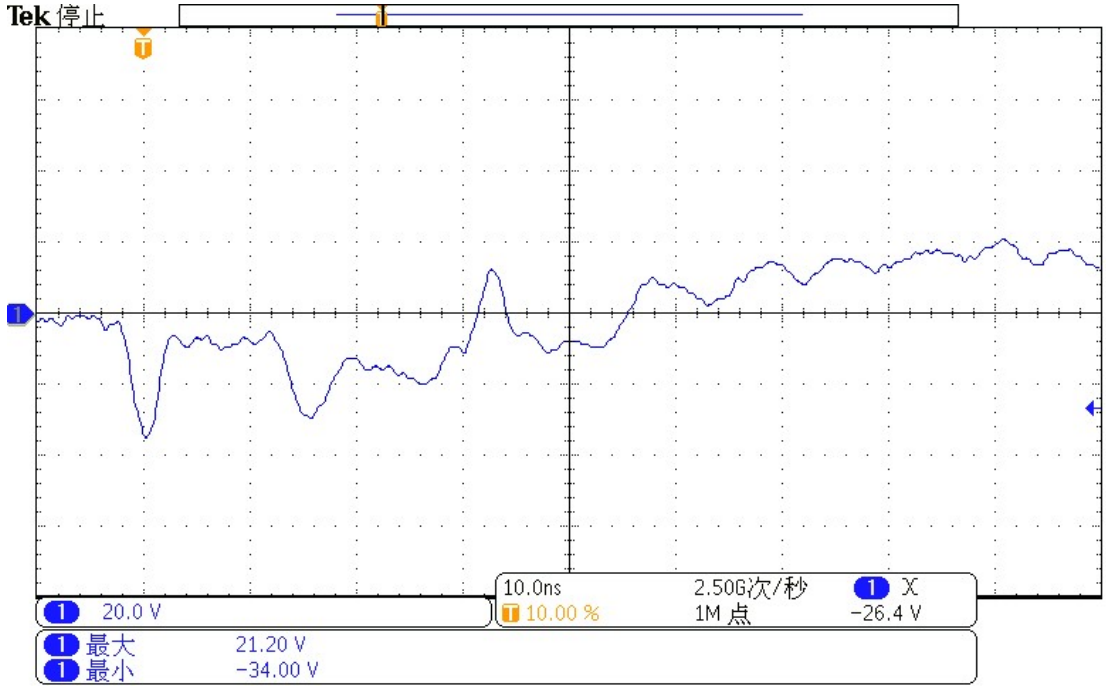

Figure A6.6 Positive power cable negative polarity test curve

Figure A6.7 Cable bundle positive polarity test curve

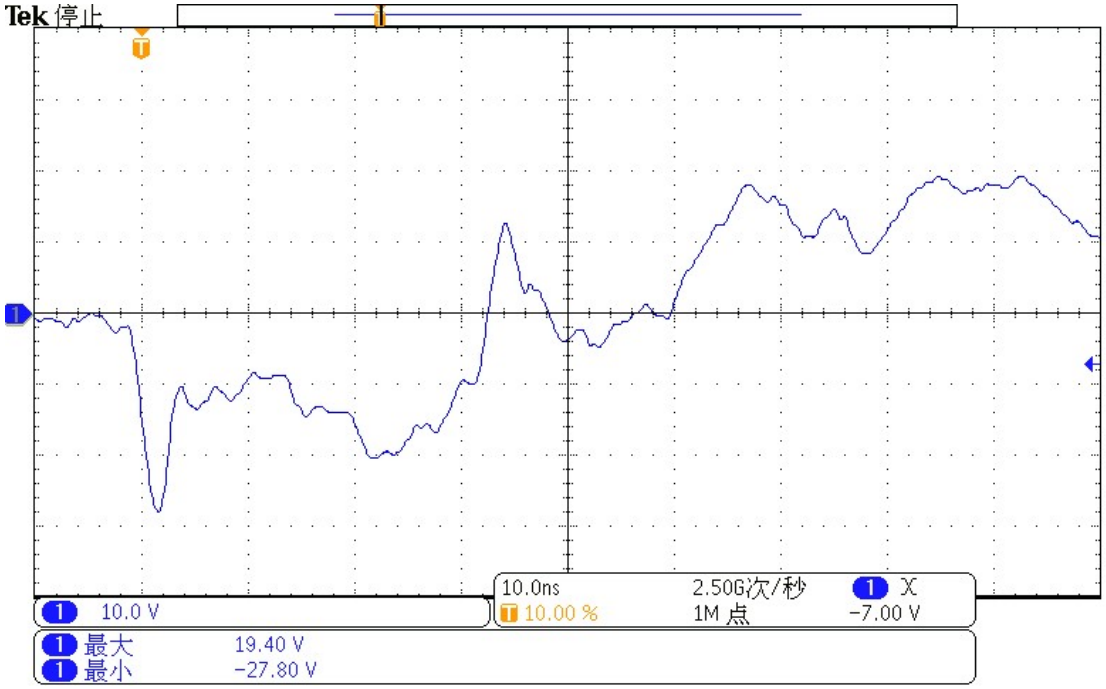

Figure A6.8 Cable bundle negative polarity test curve

A7 CS116 Conducted susceptibility, damped sinusoidal transients, cables and power leads, 10 kHz to 100 MHz test data

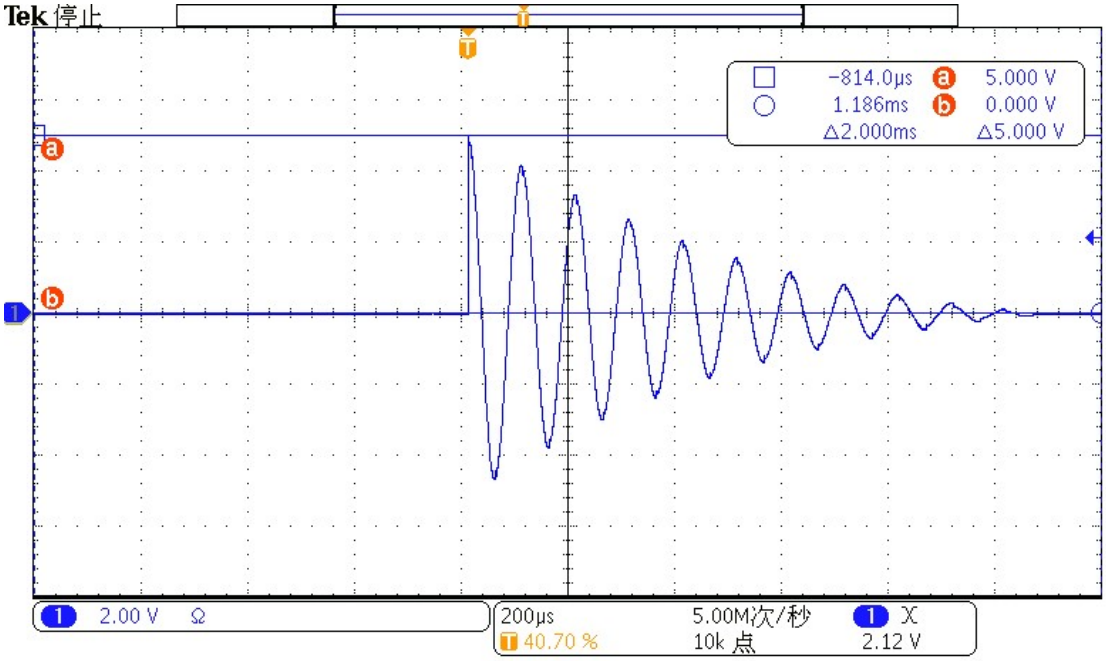

Figure A7.1 Calibration waveform（10kHz）

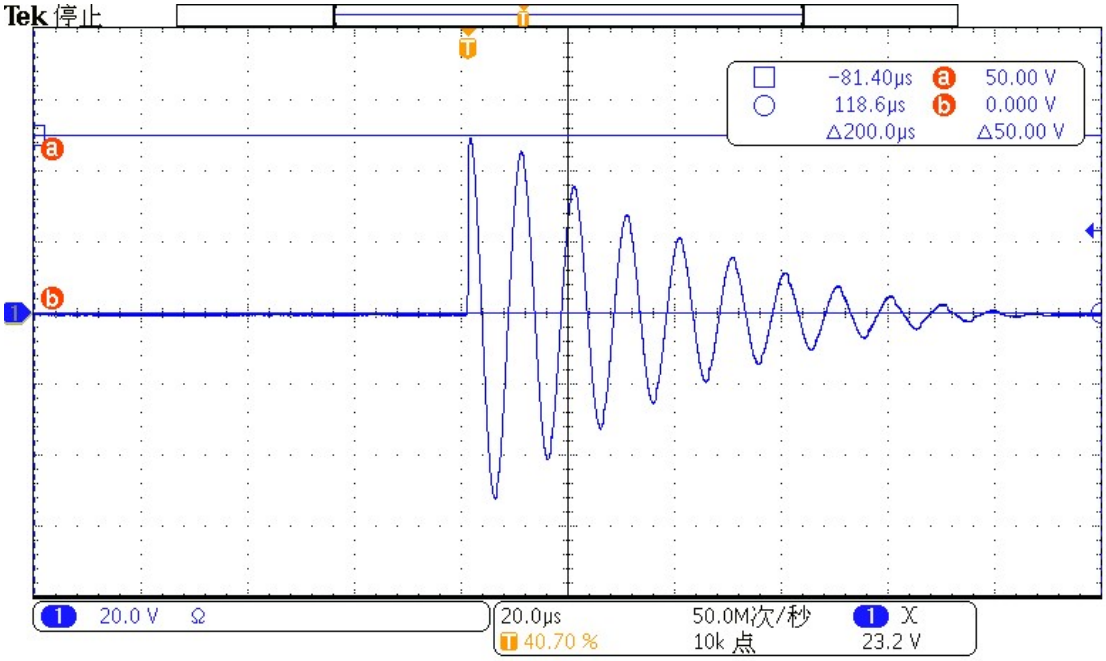

Figure A7.2 Calibration waveform（100kHz）

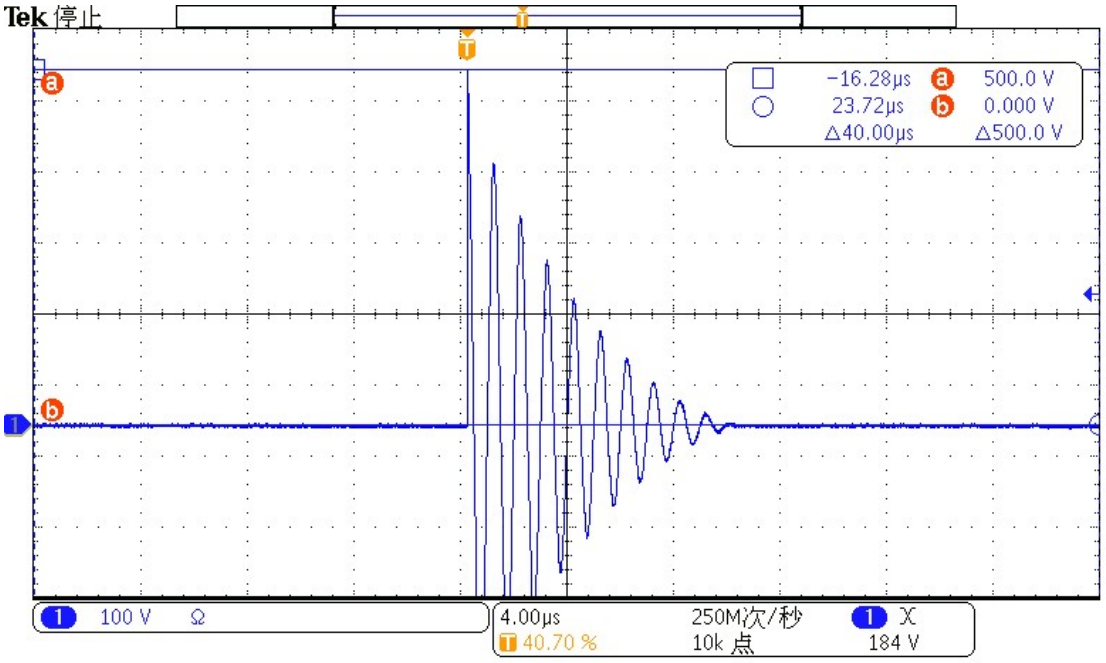

Figure A7.3 Calibration waveform（1MHz）

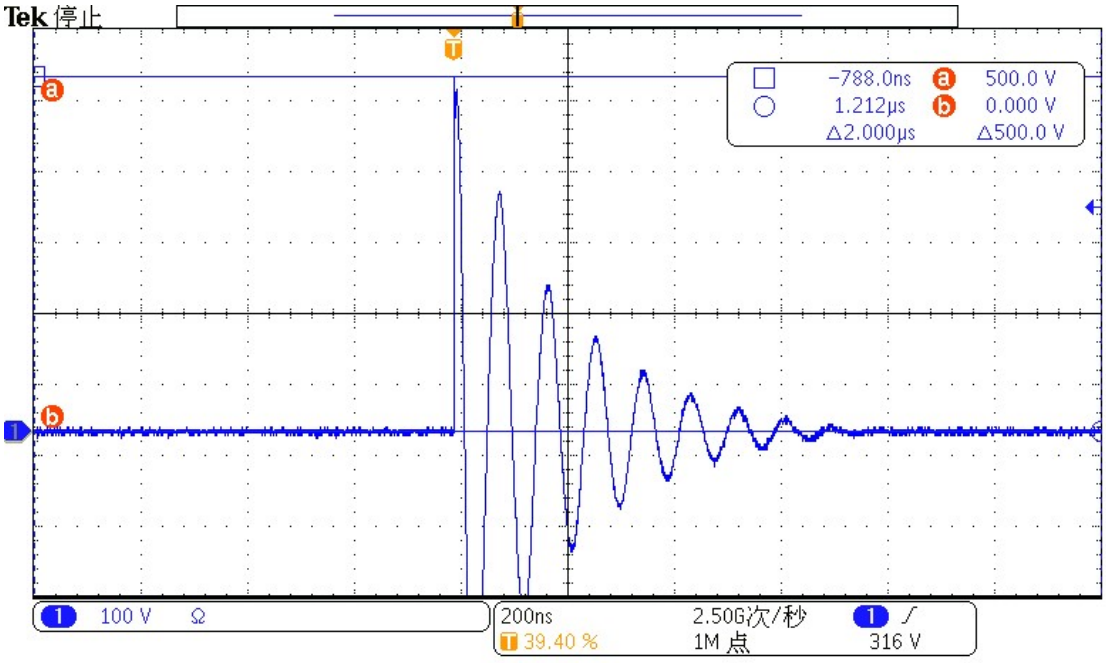

Figure A7.4 Calibration waveform（10MHz）

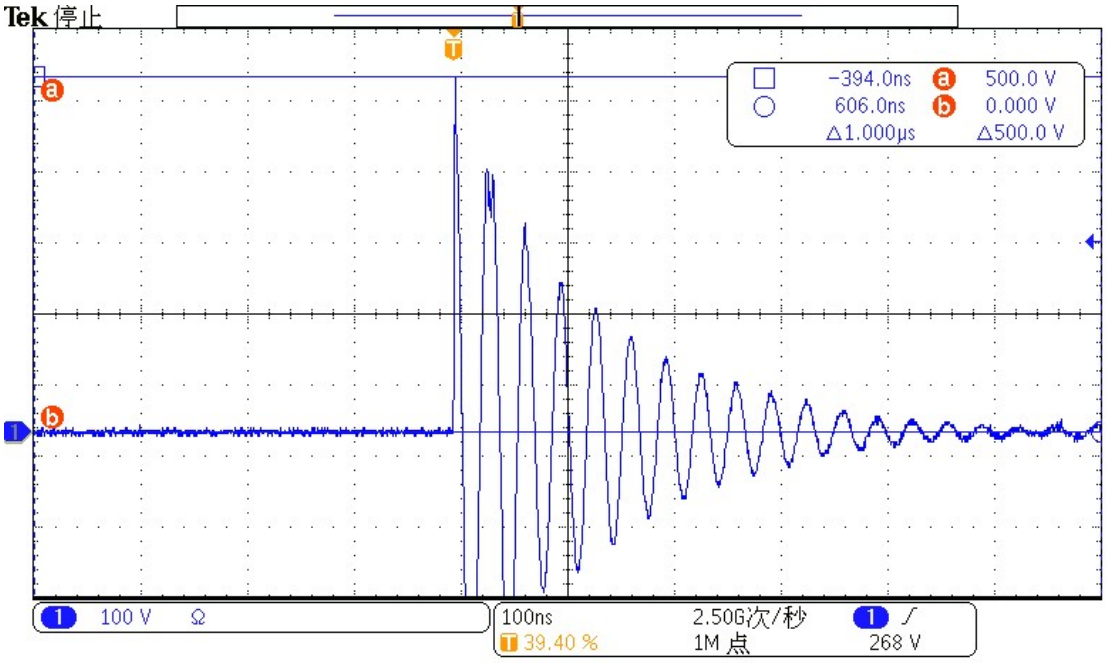

Figure A7.5 Calibration waveform（30MHz）

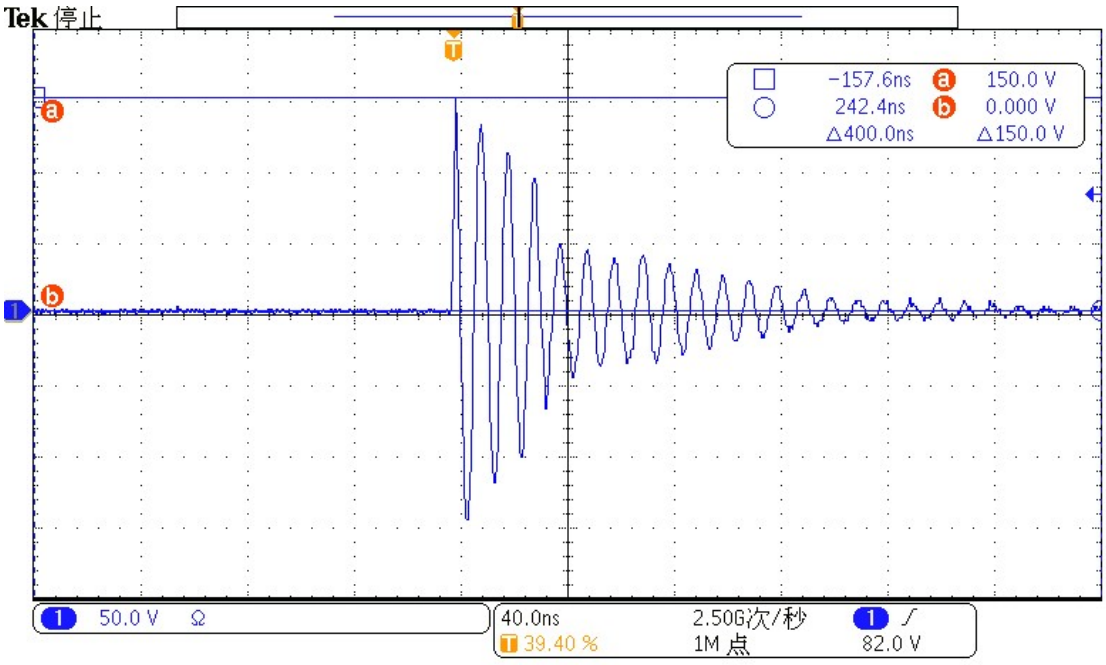

Figure A7.6 Calibration waveform（100MHz）

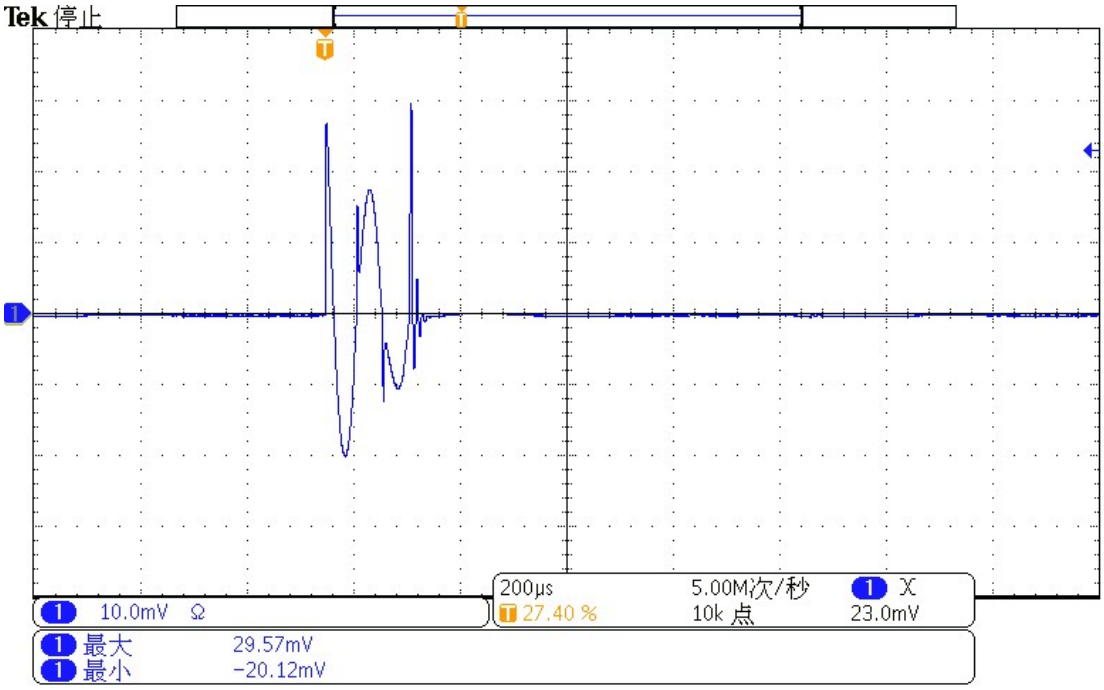

Figure A7.7 Complete power cables test waveform（10kHz）

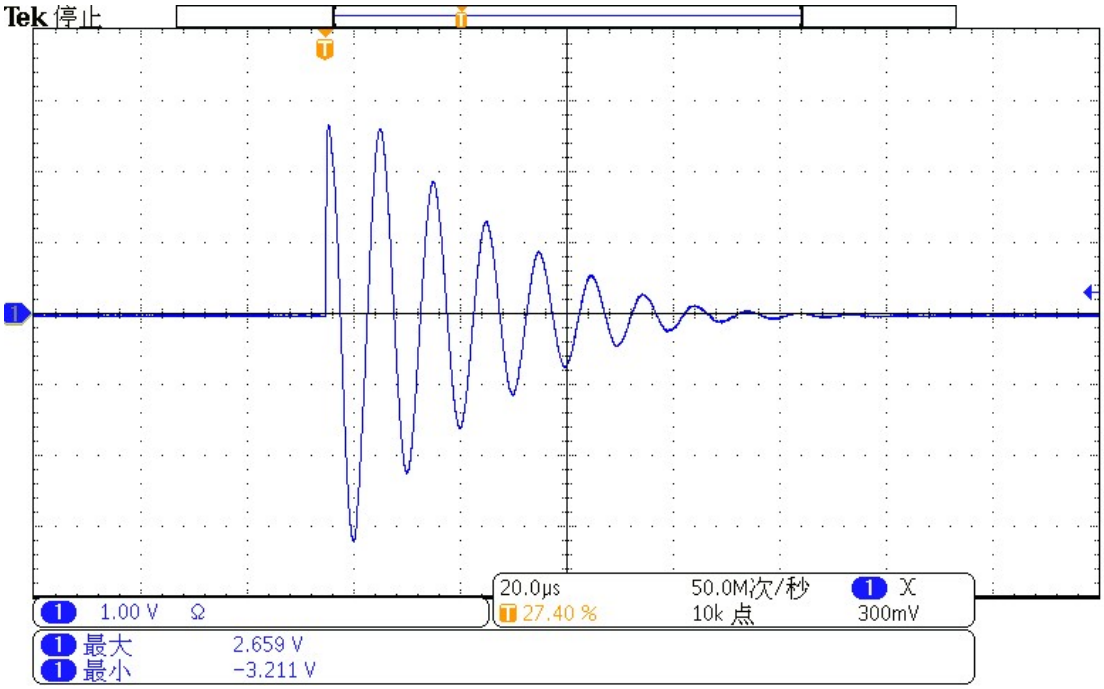

Figure A7.8 Complete power cables test waveform（100kHz）

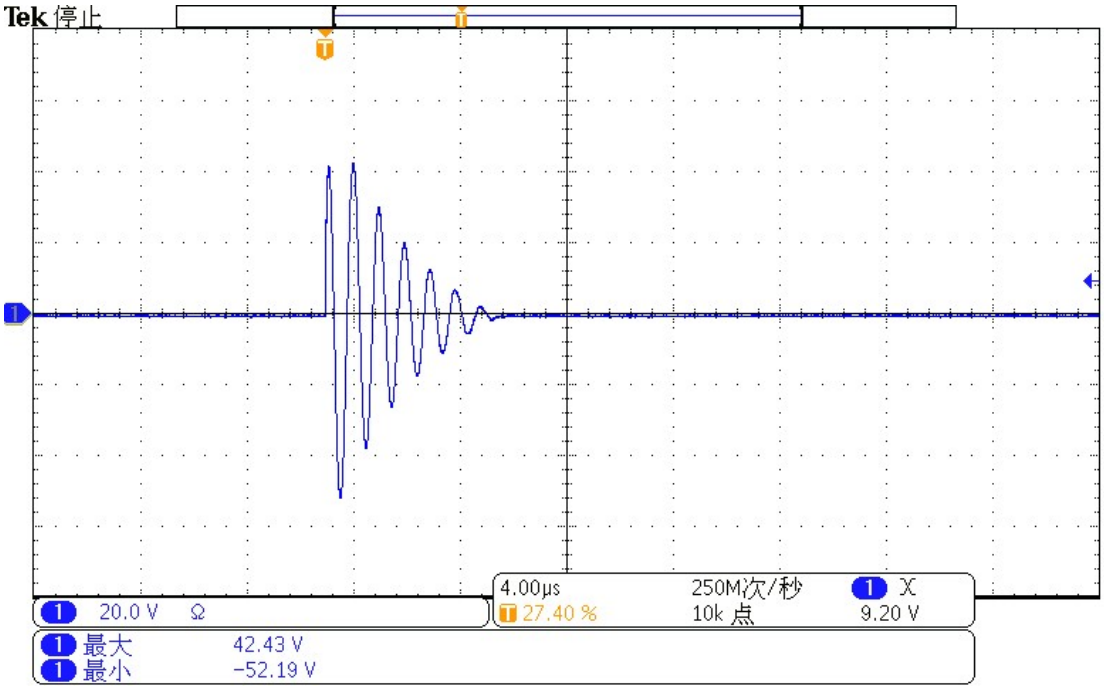

Figure A7.9 Complete power cables test waveform（1MHz）

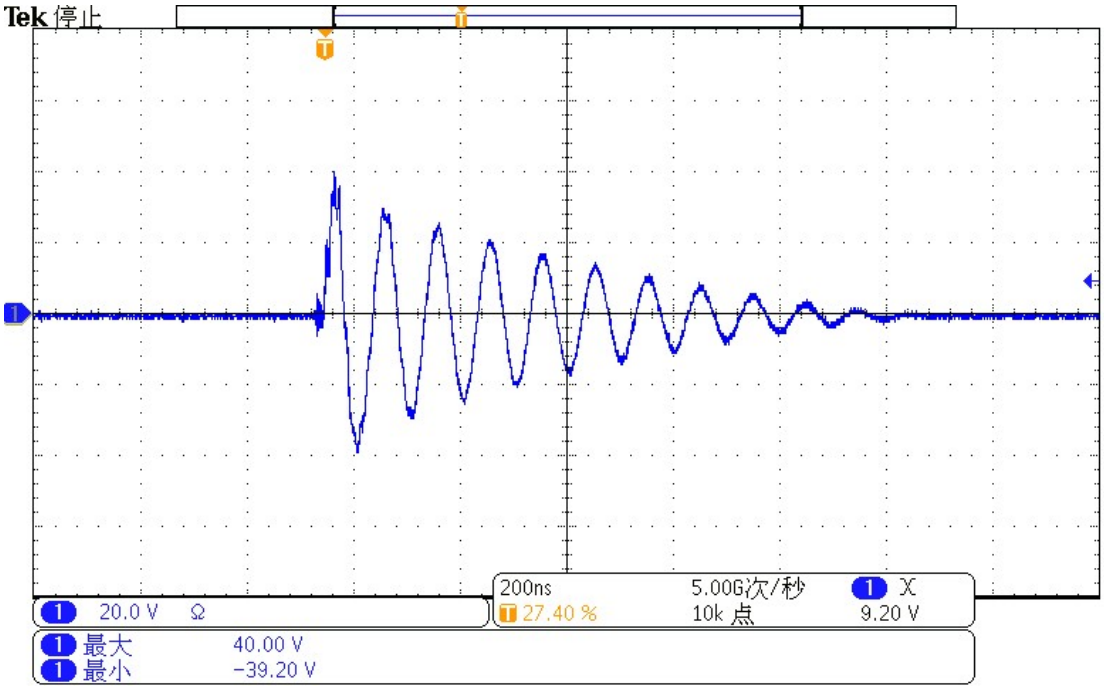

Figure A7.10 Complete power cables test waveform（10MHz）

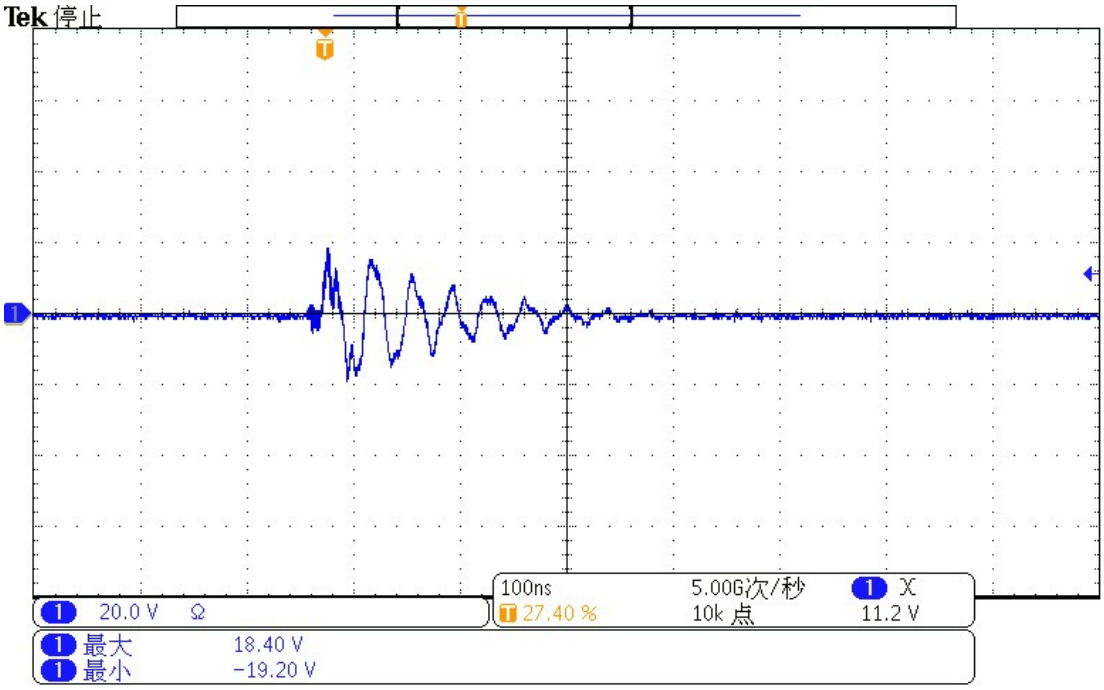

Figure A7.11 Complete power cables test waveform（30MHz）

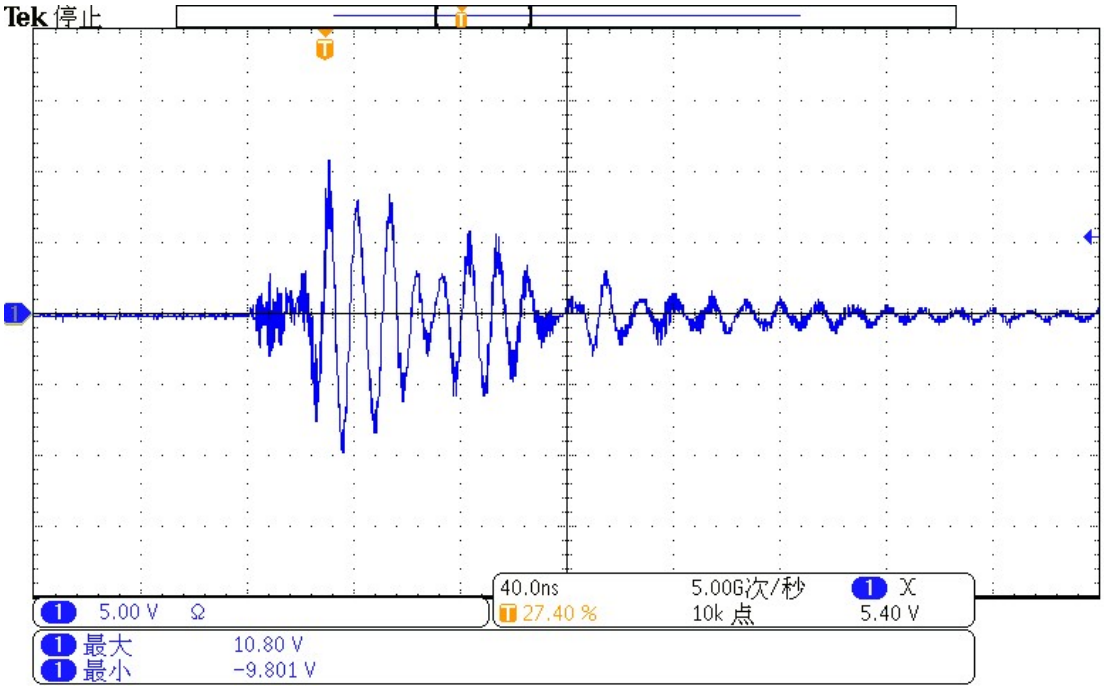

Figure A7.12 Complete power cables test waveform（100MHz）

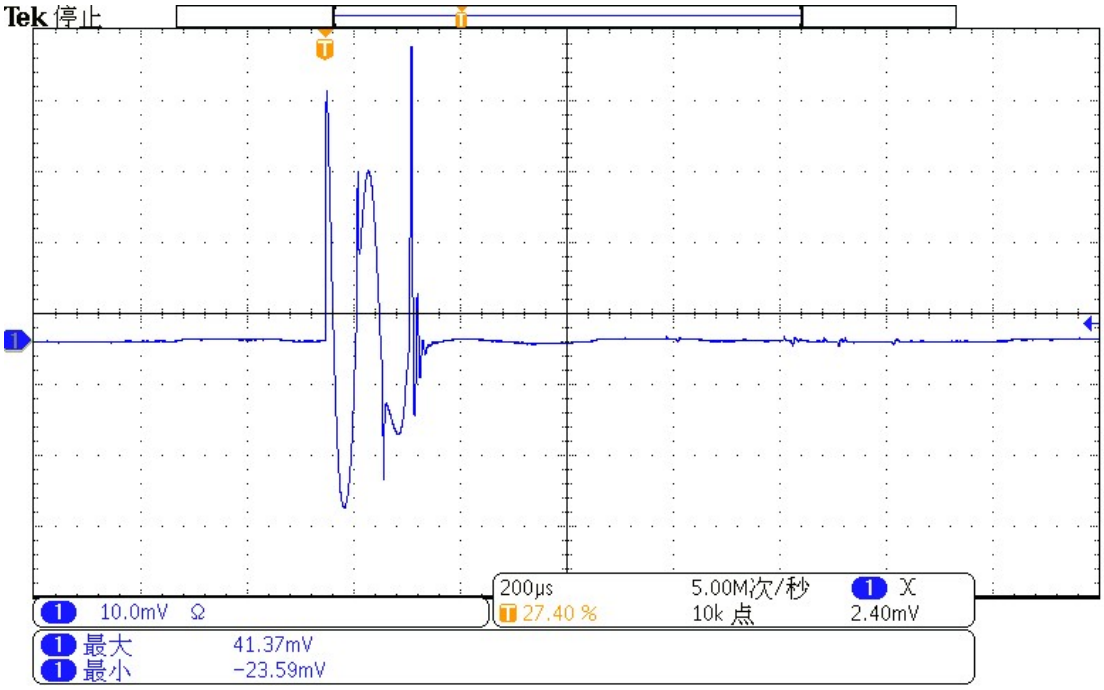

Figure A7.13 Positive power cable test waveform（10kHz）

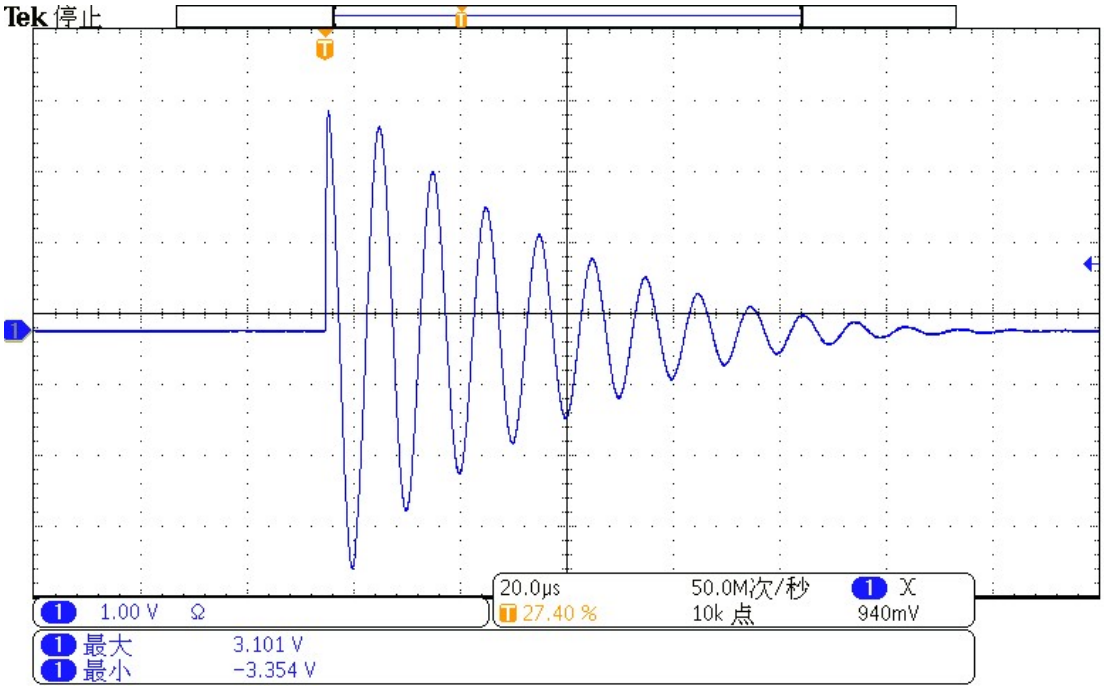

Figure A7.14 Positive power cable test waveform（100kHz）

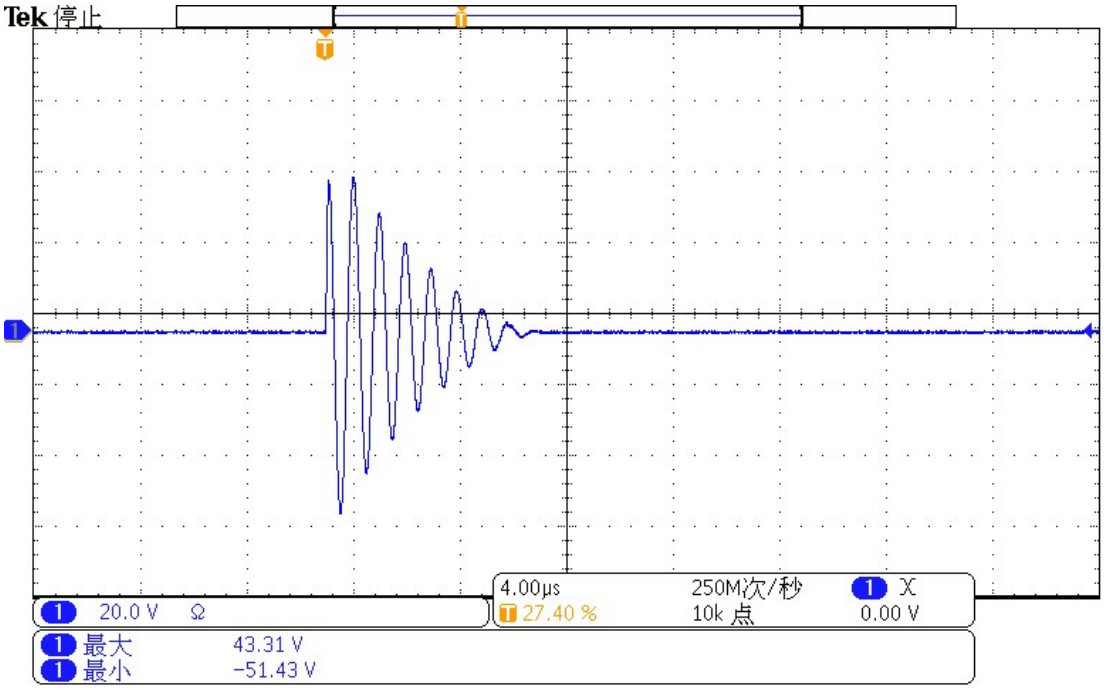

Figure A7.15 Positive power cable test waveform（1MHz）

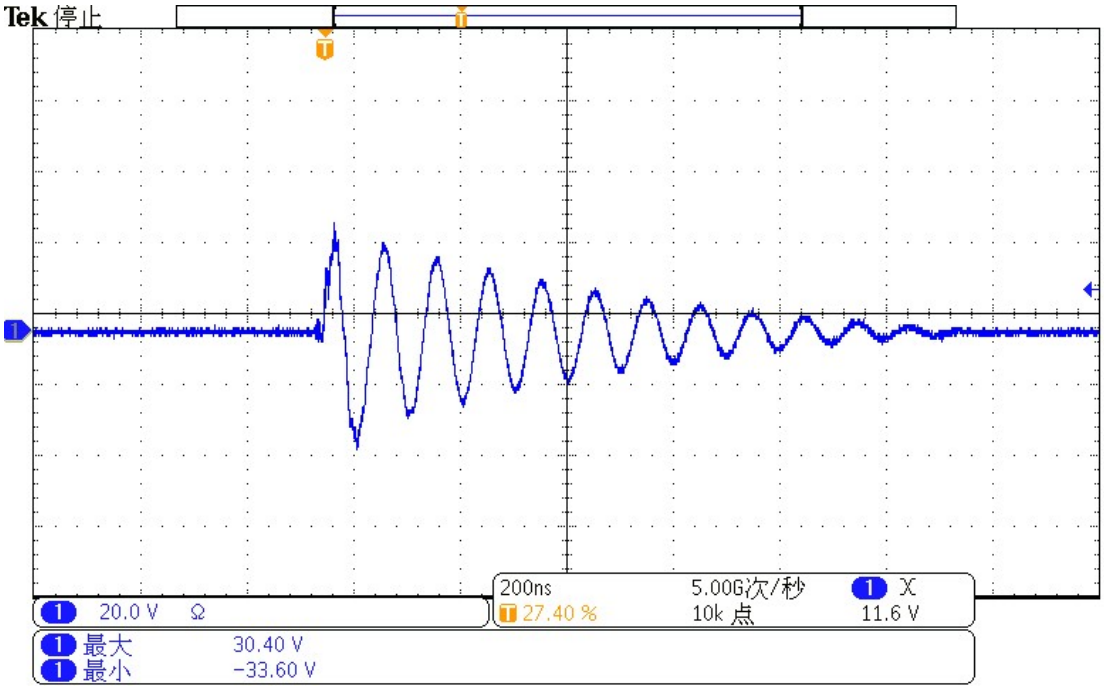

Figure A7.16 Positive power cable test waveform（10MHz）

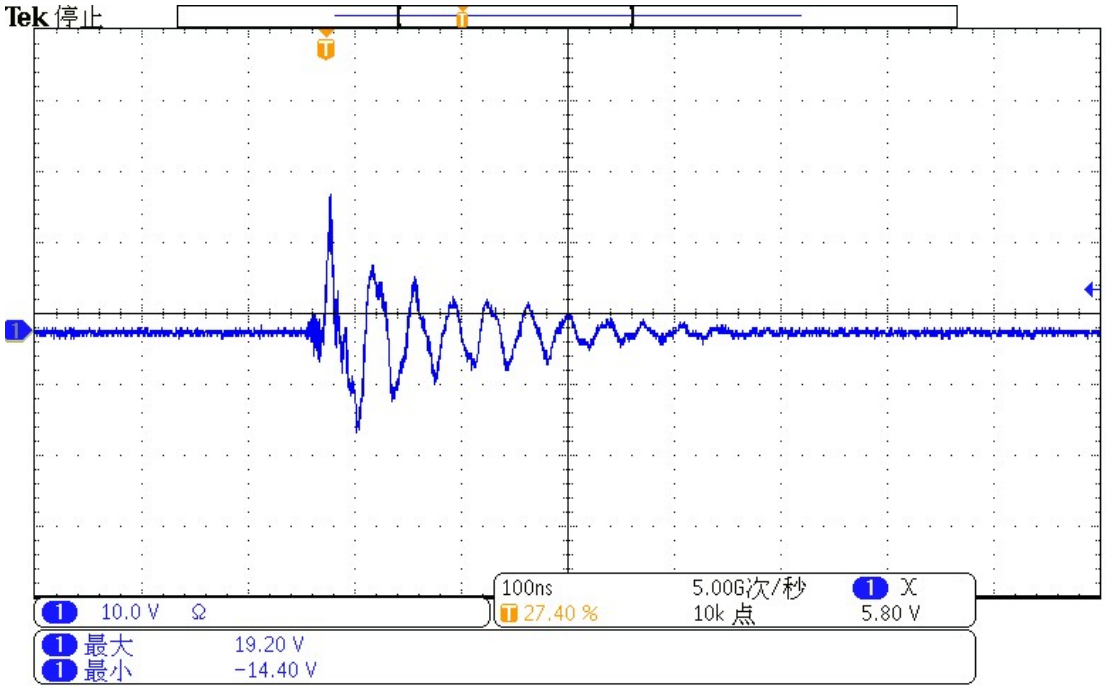

Figure A7.17 Positive power cable test waveform（30MHz）

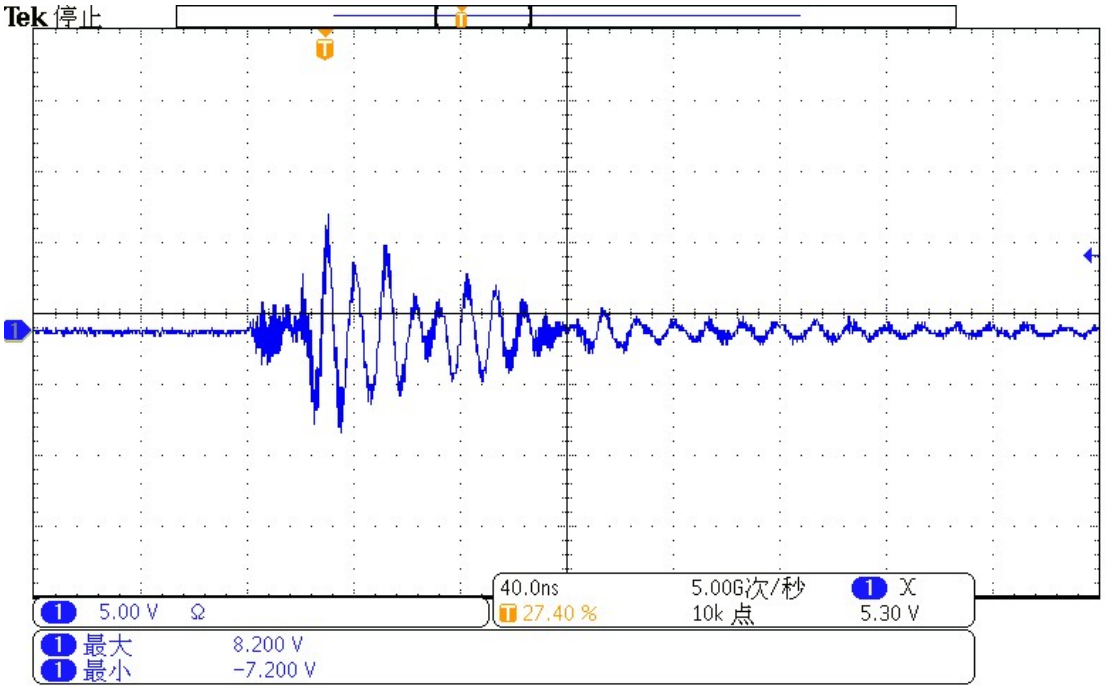

Figure A7.18 Positive power cable test waveform（100MHz）

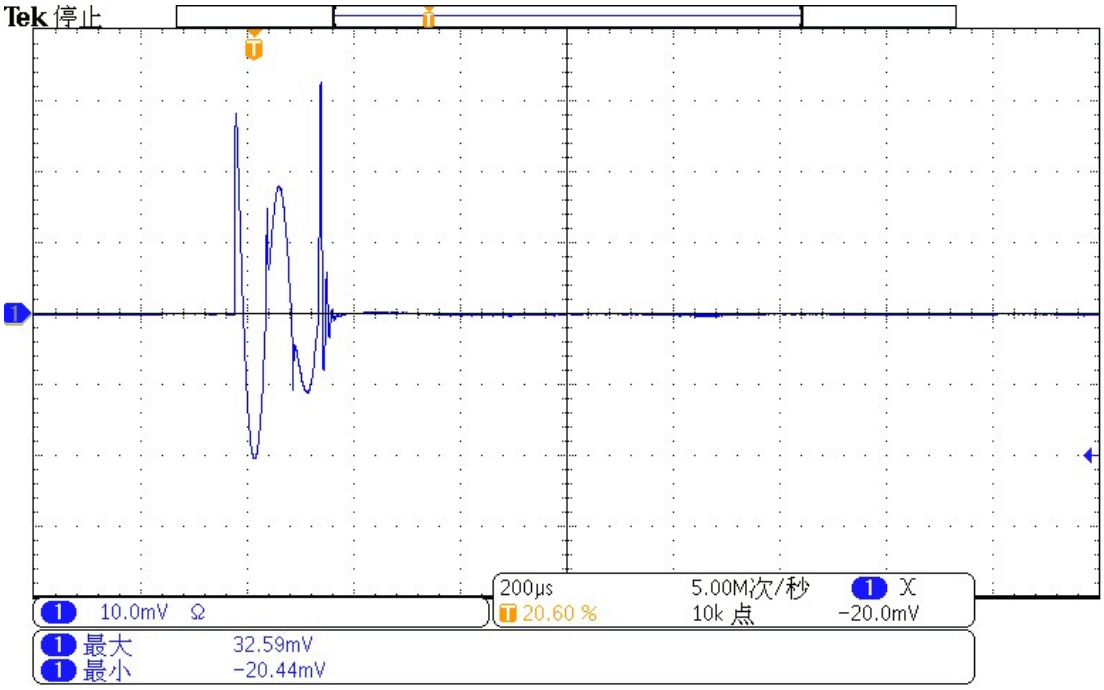

Figure A7.19 Cable bundle test waveform（10kHz）

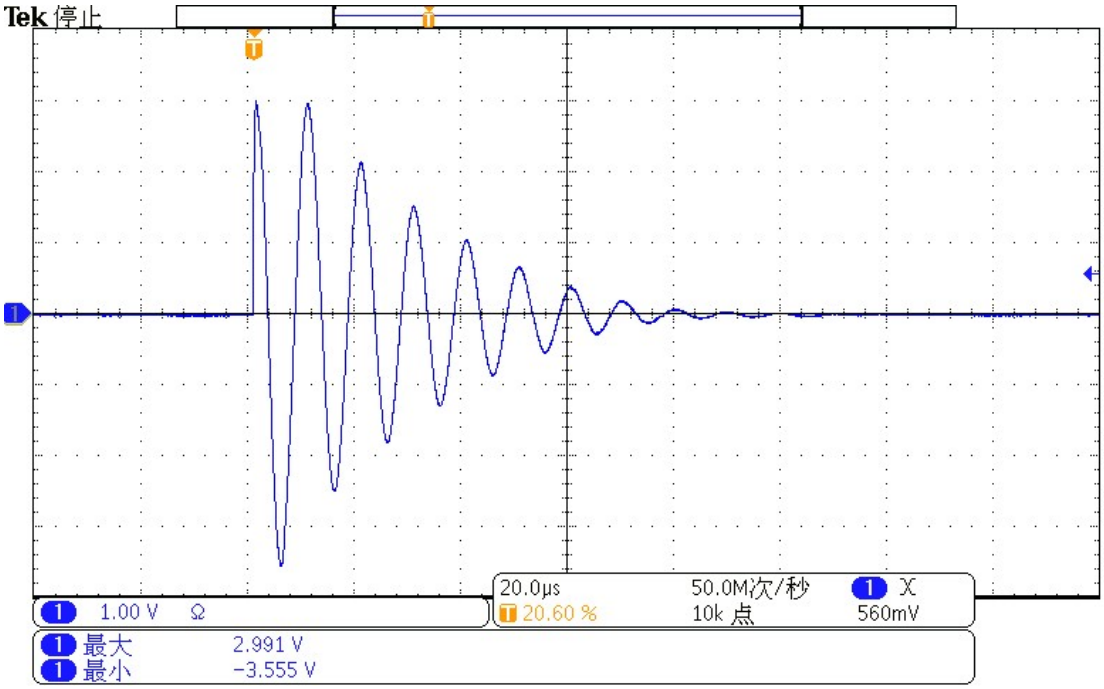

Figure A7.20 Cable bundle test waveform（100kHz）

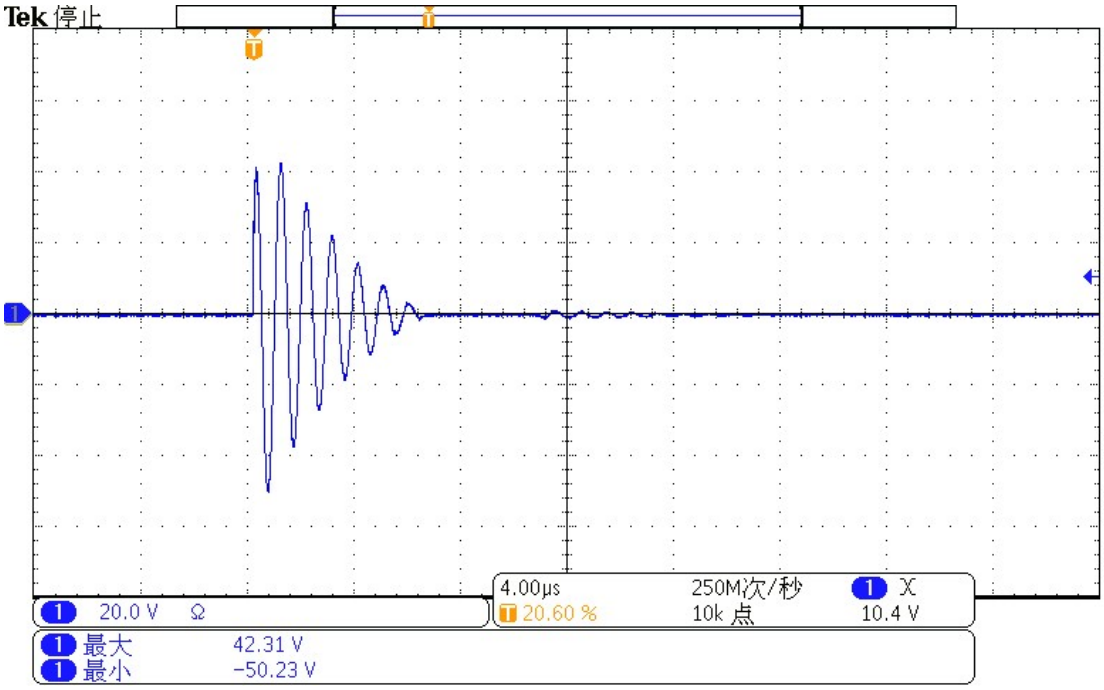

Figure A7.21 Cable bundle test waveform（1MHz）

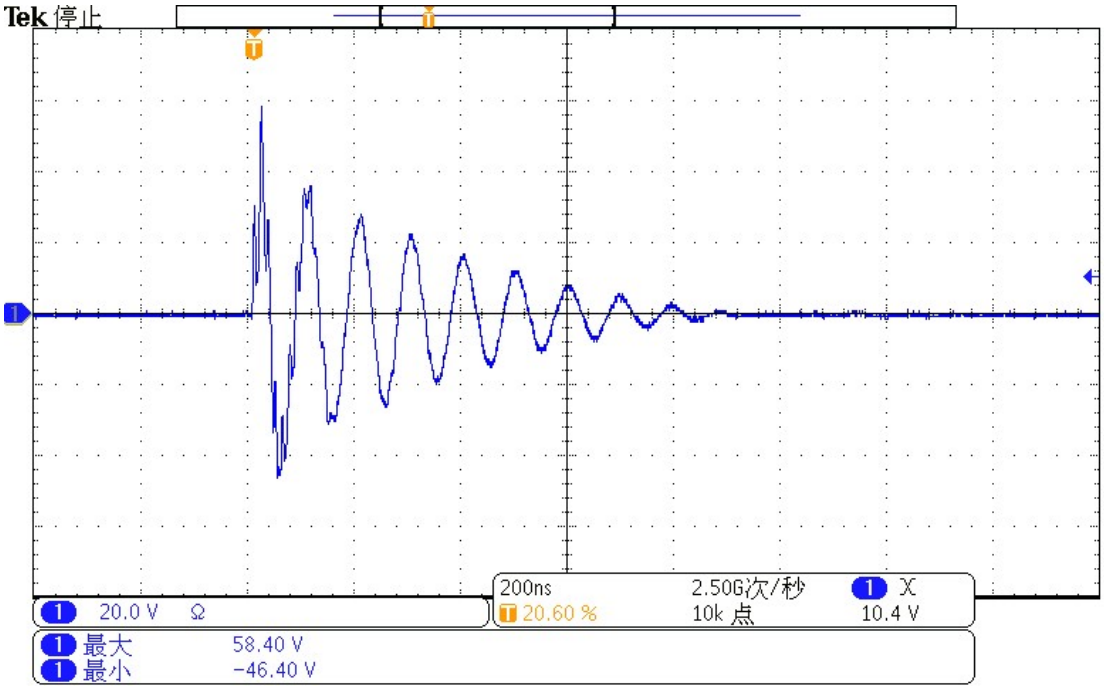

Figure A7.22 Cable bundle test waveform（10MHz）

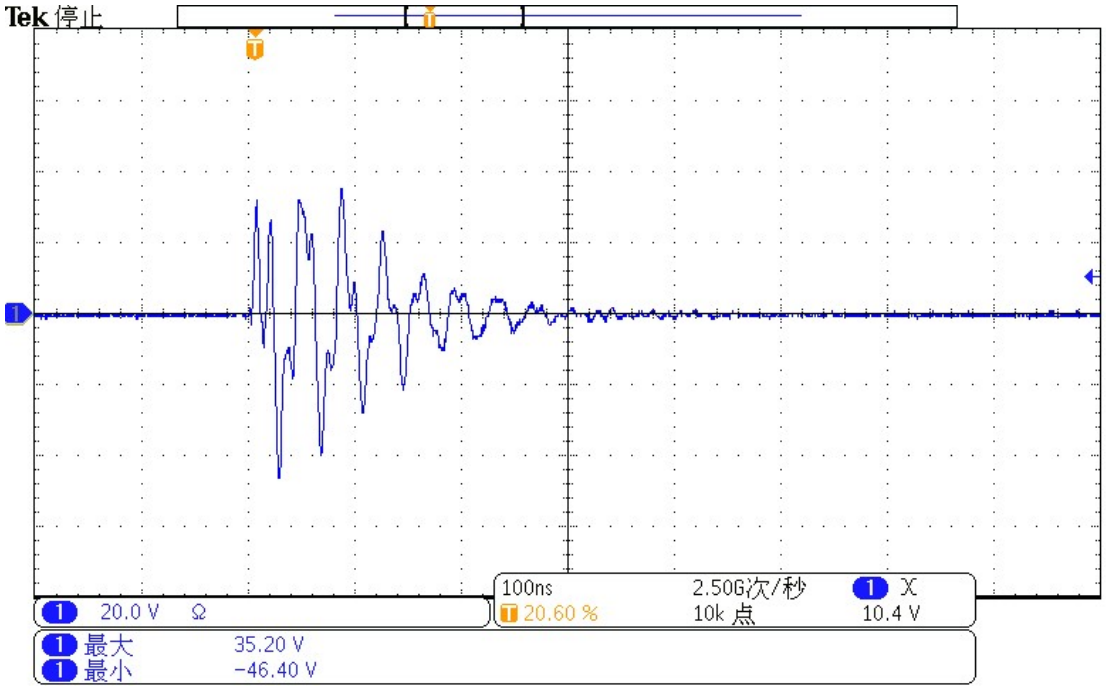

Figure A7.23 Cable bundle test waveform（30MHz）

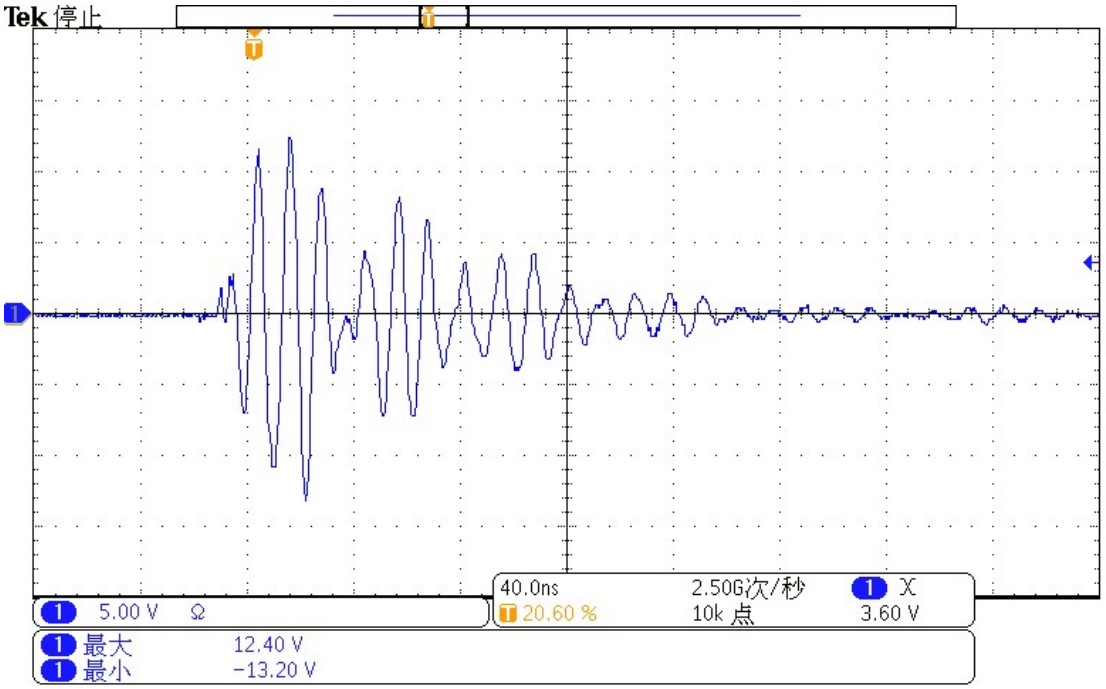

Figure A7.24 Cable bundle test waveform（100MHz）

Table A7.1 Measured peak current

Working State	Test position	Frequency（MHz）	Current Limit（A）	Measured peak current（A）
Working State 1	Complete power cables	0.01	0.1	0.05
		0.1	1.0	0.79
		1	10	9.72
		10	10	7.45
		30	10	3.70
		100	3.0	2.11
	Positive power cable	0.01	0.1	0.07
		0.1	1.0	0.82
		1	10	9.58
		10	10	6.26
		30	10	3.70
		100	3.0	1.60
	Cable bundle	0.01	0.1	0.05
		0.1	1.0	0.87
		1	10	9.35
		10	10	9.87
		30	10	8.94
		100	3.0	2.57

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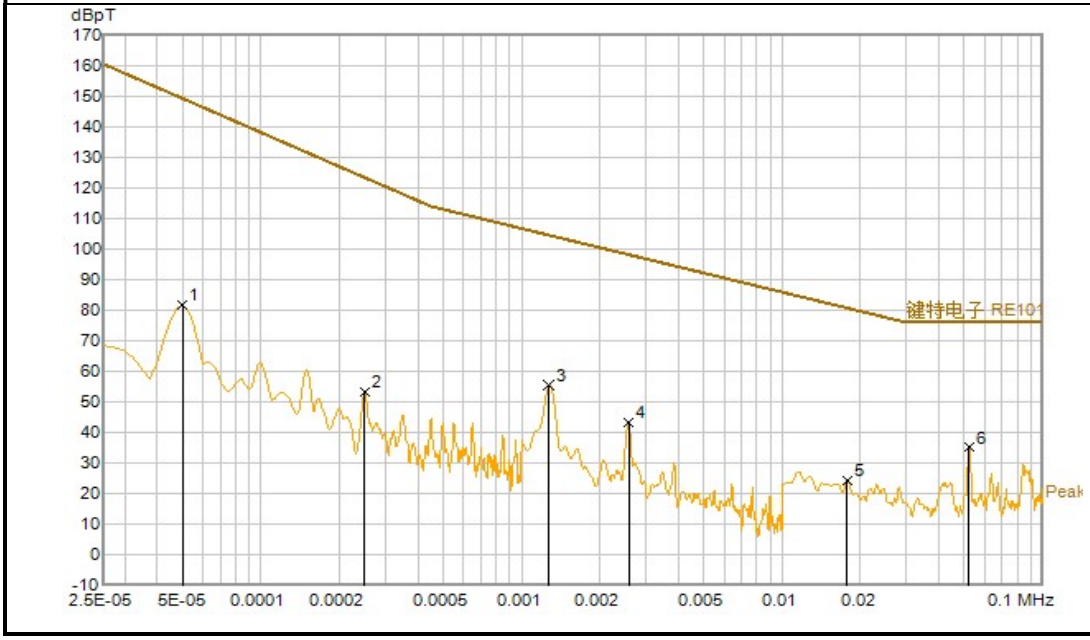
A8 RE101 Radiated emissions, magnetic field, 25 Hz to 100 kHz test data

RE101- Record number 1)

Test Result:	Pass	Test Position:	/
Standard:	GJB 151B-2013	Date:	2024-02-18
Test Item:	RE101	Temp./Hum.(%RH):	18.4℃/59%RH
Sample Name:	Silicone keyboard	Model:	K-TEK-M275TP-FN-BL-ANA-151B
Sample No.	M275TP-FN-BL-ANA-151B-20240123000001	Working State:	Working State 1
Test Engineer:	Li Shunfan,You Li	Reviewers:	Wang Peng
Note:	The front face of EUT		

2.5E-05 - 0.001MHz: RBW = 10Hz; 0.001 - 0.01MHz: RBW = 100Hz; 0.01 - 0.1MHz: RBW = 1kHz

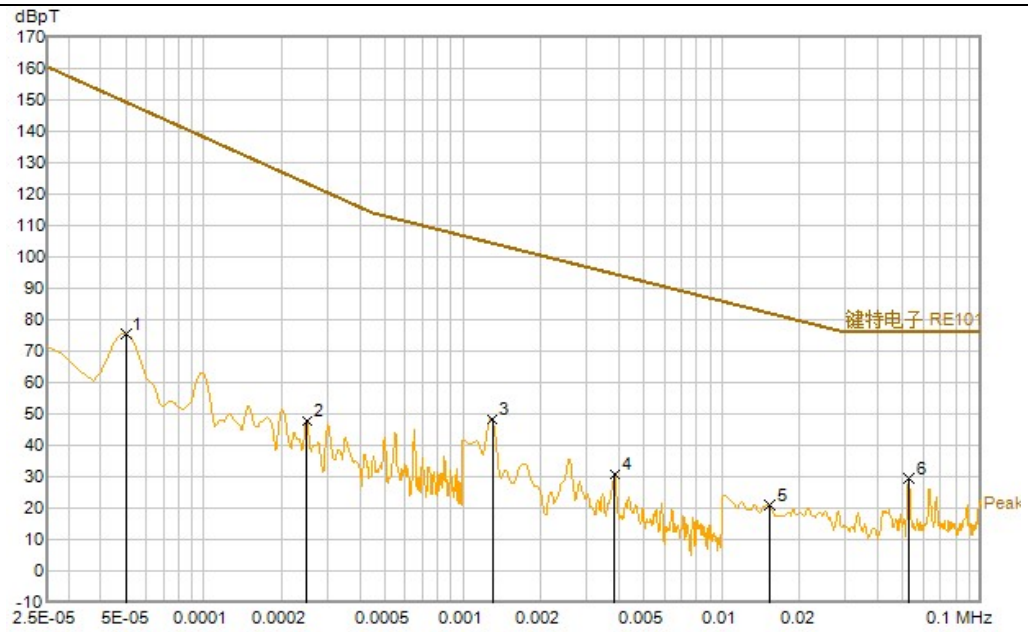


N0.	Frequency (MHz)	Reading (dBpT)	Correct Factor (dB)	Result (dBpT)	Limit (dBpT)	Margin (dB)	Remark
1	5E-05	4.14	77.65	81.79	149.35	67.56	Peak
2	0.00025	-10.22	63.53	53.31	123.46	70.15	Peak
3	0.001275	5.93	49.63	55.56	104.58	49.02	Peak
4	0.002575	-0.4	43.81	43.41	98.22	54.81	Peak
5	0.01775	-4.72	28.98	24.26	80.75	56.49	Peak
6	0.05225	11.03	24.22	35.25	76	40.75	Peak
Note: Result = Reading + Correct factor, Margin = Limit - Result							

RE101- Record number 2)

Test Result:	Pass	Test Position:	/
Standard:	GJB 151B-2013	Date:	2024-02-18
Test Item:	RE101	Temp./Hum.(%RH):	18.4℃/59%RH
Sample Name:	Silicone keyboard	Model:	K-TEK-M275TP-FN-BL-ANA-151B
Sample No.	M275TP-FN-BL-ANA-151B-20240123000001	Working State:	Working State 1
Test Engineer:	Li Shunfan,You Li	Reviewers:	Wang Peng
Note:	The back face of EUT		

2.5E-05 - 0.001MHz: RBW = 10Hz; 0.001 - 0.01MHz: RBW = 100Hz; 0.01 - 0.1MHz: RBW = 1kHz

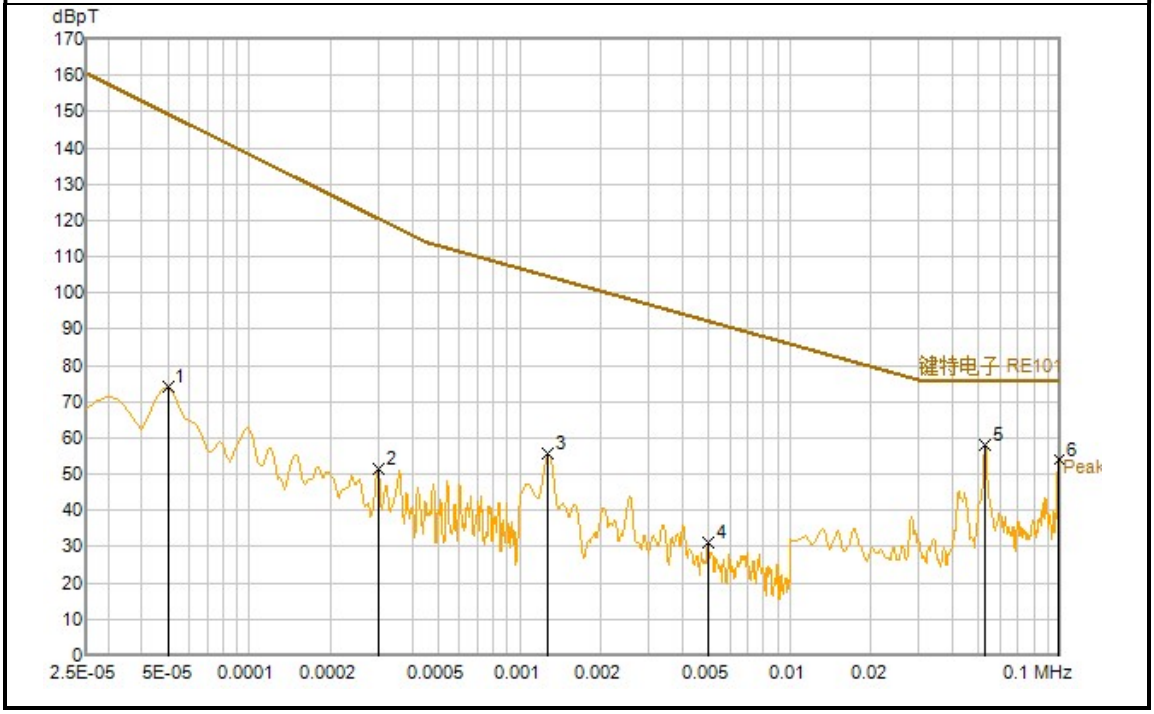


N0.	Frequency (MHz)	Reading (dBpT)	Correct Factor (dB)	Result (dBpT)	Limit (dBpT)	Margin (dB)	Remark
1	5E-05	-2.13	77.65	75.52	149.35	73.83	Peak
2	0.00025	-15.67	63.53	47.86	123.46	75.6	Peak
3	0.0013	-1.19	49.46	48.27	104.4	56.13	Peak
4	0.00385	-9.71	40.48	30.77	94.58	63.81	Peak
5	0.01525	-8.97	29.98	21.01	82.12	61.11	Peak
6	0.05275	5.5	24.2	29.7	76	46.3	Peak
Note: Result = Reading + Correct factor, Margin = Limit - Result							

RE101- Record number 3)

Test Result:	Pass	Test Position:	/
Standard:	GJB 151B-2013	Date:	2024-02-18
Test Item:	RE101	Temp./Hum.(%RH):	18.4℃/59%RH
Sample Name:	Silicone keyboard	Model:	K-TEK-M275TP-FN-BL-ANA-151B
Sample No.	M275TP-FN-BL-ANA-151B-20240123000001	Working State:	Working State 1
Test Engineer:	Li Shunfan,You Li	Reviewers:	Wang Peng
Note:	The left face of EUT		

2.5E-05 - 0.001MHz: RBW = 10Hz; 0.001 - 0.01MHz: RBW = 100Hz; 0.01 - 0.1MHz: RBW = 1kHz



N0.	Frequency (MHz)	Reading (dBpT)	Correct Factor (dB)	Result (dBpT)	Limit (dBpT)	Margin (dB)	Remark
1	5E-05	-3.55	77.65	74.1	149.35	75.25	Peak
2	0.0003	-10.44	61.96	51.52	120.52	69	Peak
3	0.001275	6.02	49.63	55.65	104.58	48.93	Peak
4	0.004975	-7.29	38.4	31.11	92.26	61.15	Peak
5	0.05275	33.93	24.2	58.13	76	17.87	Peak

6	0.099	30.79	23.23	54.02	76	21.98	Peak
Note: Result = Reading + Correct factor, Margin = Limit - Result							

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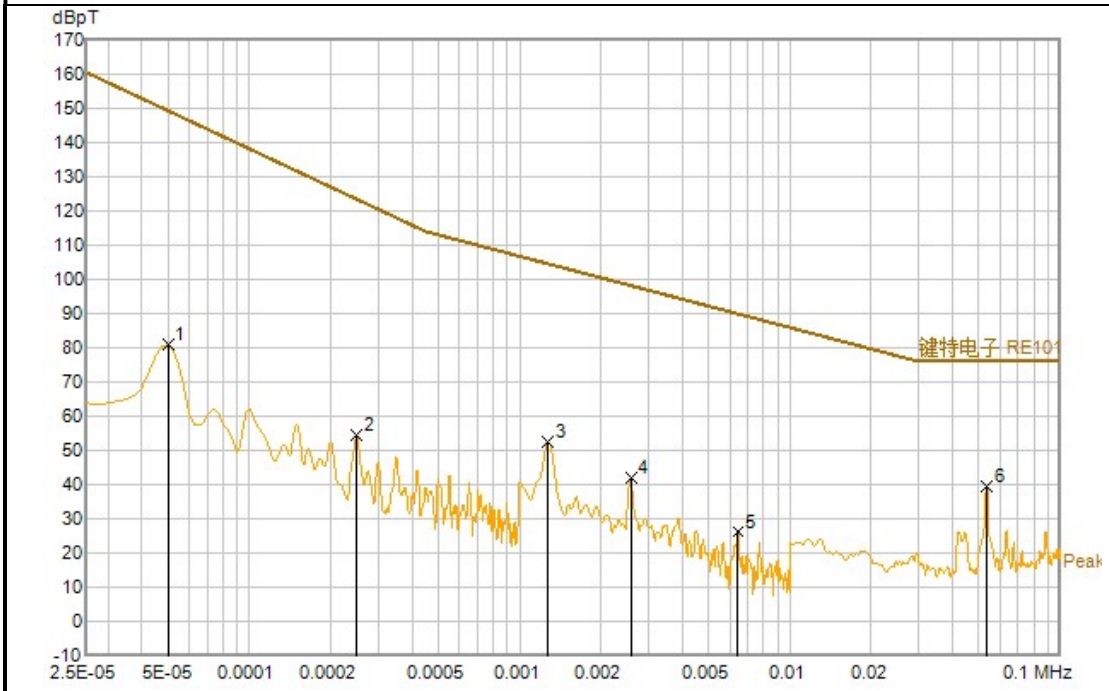
RE101- Record number 4)

Test Result:	Pass	Test Position:	/
Standard:	GJB 151B-2013	Date:	2024-02-18
Test Item:	RE101	Temp./Hum.(%RH):	18.4℃/59%RH
Sample Name:	Silicone keyboard	Model:	K-TEK-M275TP-FN-BL-ANA-151B
Sample No.	M275TP-FN-BL-ANA-151B-20240123000001	Working State:	Working State 1
Test Engineer:	Li Shunfan,You Li	Reviewers:	Wang Peng
Note:	The right face of EUT		

2.5E-05 - 0.001MHz: RBW = 10Hz; 0.001 - 0.01MHz: RBW = 100Hz; 0.01 - 0.1MHz: RBW = 1kHz

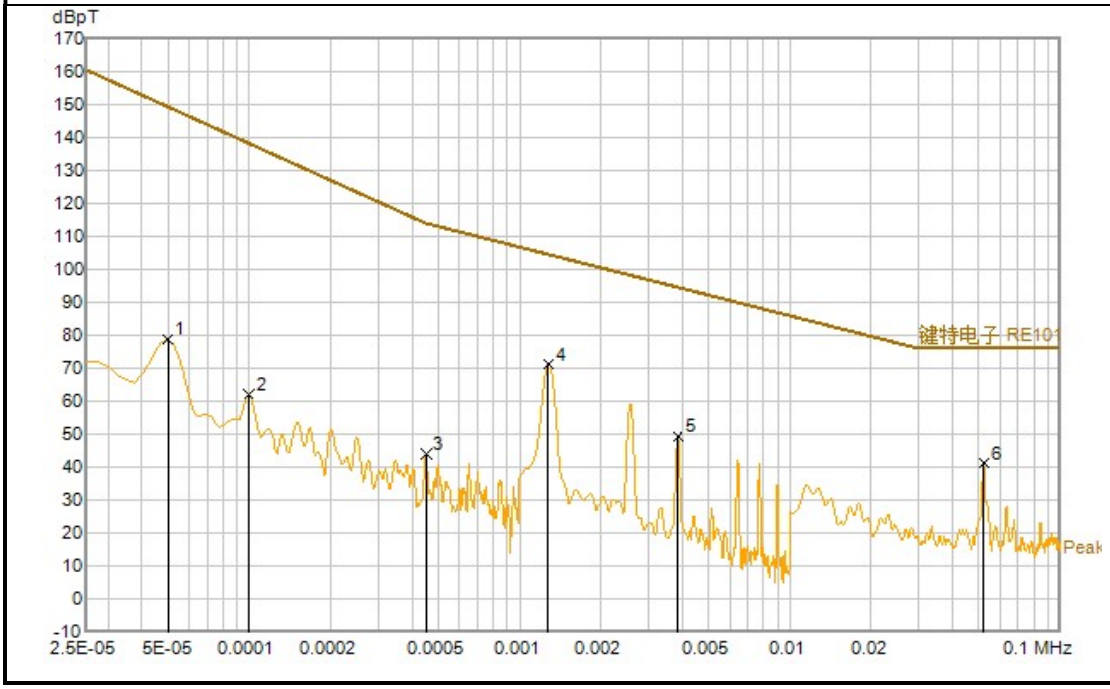


N0.	Frequency (MHz)	Reading (dBpT)	Correct Factor (dB)	Result (dBpT)	Limit (dBpT)	Margin (dB)	Remark
1	5E-05	3.33	77.65	80.98	149.35	68.37	Peak
2	0.00025	-9.08	63.53	54.45	123.46	69.01	Peak
3	0.001275	2.91	49.63	52.54	104.58	52.04	Peak
4	0.002575	-1.81	43.81	42	98.22	56.22	Peak
5	0.006425	-10.14	36.33	26.19	89.94	63.75	Peak
6	0.0535	15.39	24.17	39.56	76	36.44	Peak
Note: Result = Reading + Correct factor, Margin = Limit - Result							

RE101- Record number 5)

Test Result:	Pass	Test Position:	/
Standard:	GJB 151B-2013	Date:	2024-02-18
Test Item:	RE101	Temp./Hum.(%RH):	18.4℃/59%RH
Sample Name:	Silicone keyboard	Model:	K-TEK-M275TP-FN-BL-ANA-151B
Sample No.	M275TP-FN-BL-ANA-151B-20240123000001	Working State:	Working State 1
Test Engineer:	Li Shunfan,You Li	Reviewers:	Wang Peng
Note:	The top face of EUT		

2.5E-05 - 0.001MHz: RBW = 10Hz; 0.001 - 0.01MHz: RBW = 100Hz; 0.01 - 0.1MHz: RBW = 1kHz



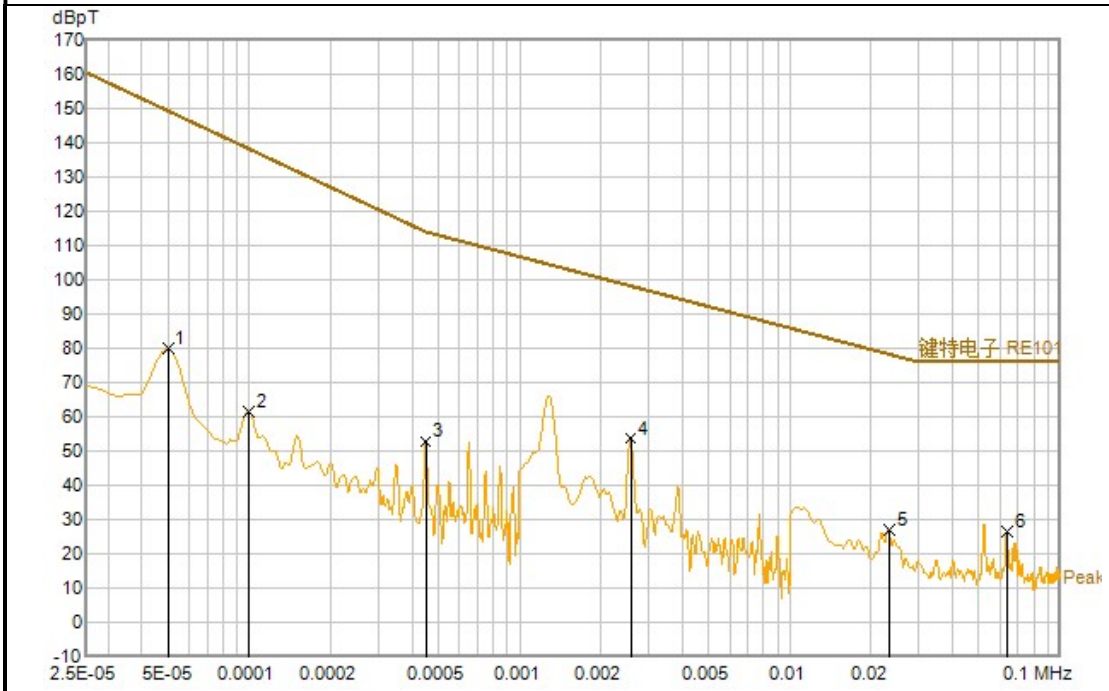
N0.	Frequency (MHz)	Reading (dBpT)	Correct Factor (dB)	Result (dBpT)	Limit (dBpT)	Margin (dB)	Remark
1	5E-05	1.14	77.65	78.79	149.35	70.56	Peak
2	0.0001	-9.34	71.45	62.11	138.2	76.09	Peak
3	0.00045	-14.47	58.51	44.04	114	69.96	Peak
4	0.001275	21.61	49.63	71.24	104.58	33.34	Peak
5	0.00385	8.89	40.48	49.37	94.58	45.21	Peak
6	0.05225	16.94	24.22	41.16	76	34.84	Peak

Note: Result = Reading + Correct factor, Margin = Limit - Result

RE101- Record number 6)

Test Result:	Pass	Test Position:	/
Standard:	GJB 151B-2013	Date:	2024-02-18
Test Item:	RE101	Temp./Hum.(%RH):	18.4℃/59%RH
Sample Name:	Silicone keyboard	Model:	K-TEK-M275TP-FN-BL-ANA-151B
Sample No.	M275TP-FN-BL-ANA-151B-20240123000001	Working State:	Working State 1
Test Engineer:	Li Shunfan,You Li	Reviewers:	Wang Peng
Note:	The harness face of EUT		

2.5E-05 - 0.001MHz: RBW = 10Hz; 0.001 - 0.01MHz: RBW = 100Hz; 0.01 - 0.1MHz: RBW = 1kHz



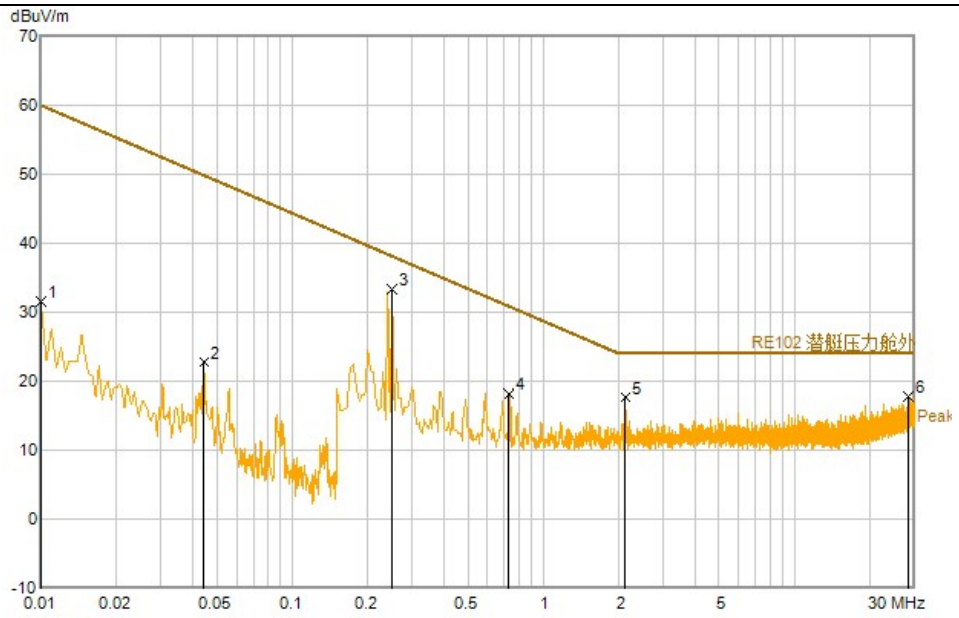
N0.	Frequency (MHz)	Reading (dBpT)	Correct Factor (dB)	Result (dBpT)	Limit (dBpT)	Margin (dB)	Remark
1	5E-05	2.36	77.65	80.01	149.35	69.34	Peak
2	0.0001	-9.87	71.45	61.58	138.2	76.62	Peak
3	0.00045	-5.67	58.51	52.84	114	61.16	Peak
4	0.002575	9.86	43.81	53.67	98.22	44.55	Peak
5	0.02325	-0.41	27.41	27	78.31	51.31	Peak
6	0.0635	2.68	23.81	26.49	76	49.51	Peak
Note: Result = Reading + Correct factor, Margin = Limit - Result							

A9 RE102 Radiated emissions, electric field, 10 kHz to 18 GHz test data

RE102- Record number 1)

Test Result:	Pass	Test Position:	Vertical
Standard:	GJB 151B-2013	Date:	2024-07-19
Test Item:	RE102	Temp./Hum.(%RH):	19.8℃/68%RH
Sample Name:	Silicone keyboard	Model:	K-TEK-M275TP-FN-BL-ANA-151B
Sample No.	M275TP-FN-BL-ANA-151B-20240123000001	Working State:	Working State 3
Test Engineer:	Deng Taotao	Reviewers:	Wang Peng
Note:	/		

0.01 - 0.15MHz: RBW = 1kHz; 0.15 - 30MHz: RBW = 10kHz

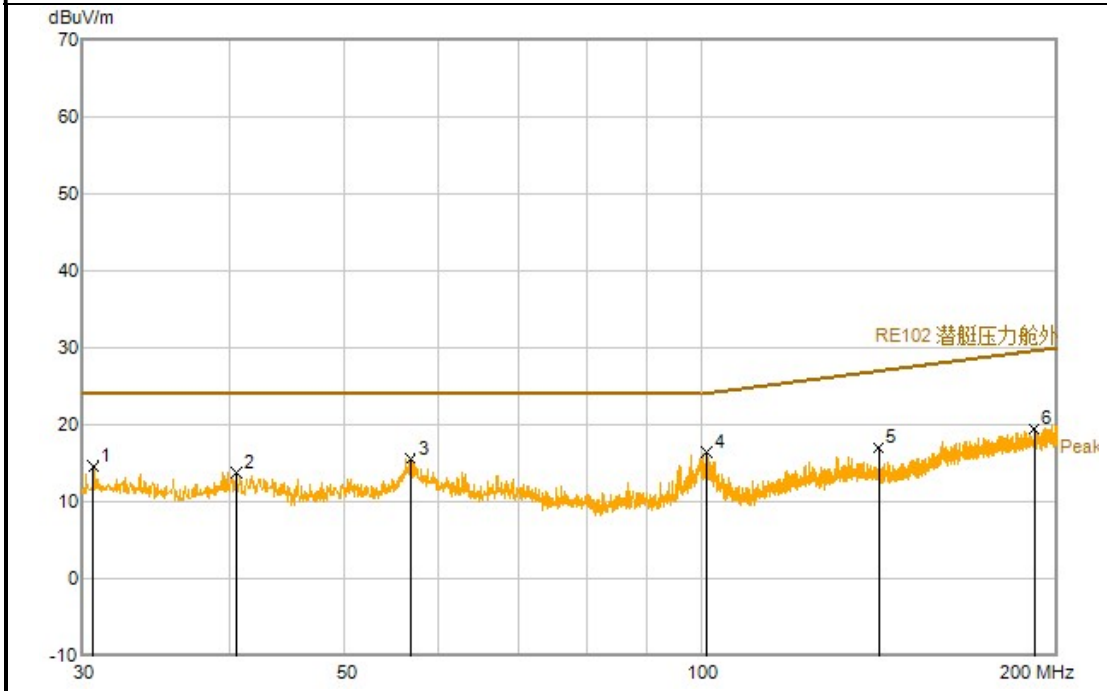


N0.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.01	21.51	9.97	31.48	60	28.52	Peak
2	0.0445	11.92	10.81	22.73	49.86	27.13	Peak
3	0.25	22.63	10.71	33.34	38.13	4.79	Peak
4	0.73	7.62	10.61	18.23	30.85	12.62	Peak
5	2.12	7.01	10.64	17.65	24	6.35	Peak
6	28.385	5.84	11.96	17.8	24	6.2	Peak
Note: Result = Reading + Correct factor, Margin = Limit - Result							

RE102- Record number 2)

Test Result:	Pass	Test Position:	Vertical
Standard:	GJB 151B-2013	Date:	2024-07-19
Test Item:	RE102	Temp./Hum.(%RH):	19.8℃/68%RH
Sample Name:	Silicone keyboard	Model:	K-TEK-M275TP-FN-BL-ANA-151B
Sample No.	M275TP-FN-BL-ANA-151B-20240123000001	Working State:	Working State 3
Test Engineer:	Deng Taotao	Reviewers:	Wang Peng
Note:	/		

30 - 200MHz: RBW = 100kHz



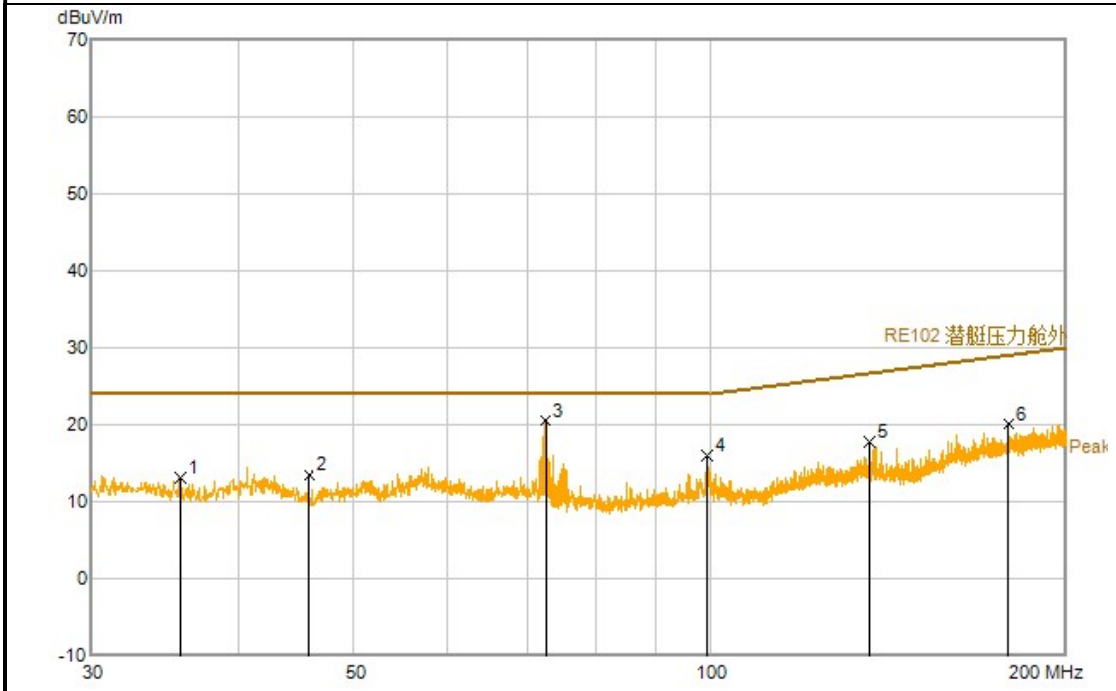
N0.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	30.65	26.34	-11.67	14.67	24	9.33	Peak
2	40.5	25.54	-11.74	13.8	24	10.2	Peak
3	56.8	27.87	-12.24	15.63	24	8.37	Peak
4	101.1	29.68	-13.24	16.44	24.09	7.65	Peak
5	141.3	27.59	-10.51	17.08	27	9.92	Peak
6	191.35	25.88	-6.41	19.47	29.62	10.15	Peak

Note: Result = Reading + Correct factor, Margin = Limit - Result

RE102- Record number 3)

Test Result:	Pass	Test Position:	Horizontal
Standard:	GJB 151B-2013	Date:	2024-07-19
Test Item:	RE102	Temp./Hum.(%RH):	19.8℃/68%RH
Sample Name:	Silicone keyboard	Model:	K-TEK-M275TP-FN-BL-ANA-151B
Sample No.	M275TP-FN-BL-ANA-151B-20240123000001	Working State:	Working State 3
Test Engineer:	Deng Taotao	Reviewers:	Wang Peng
Note:	/		

30 - 200MHz: RBW = 100kHz

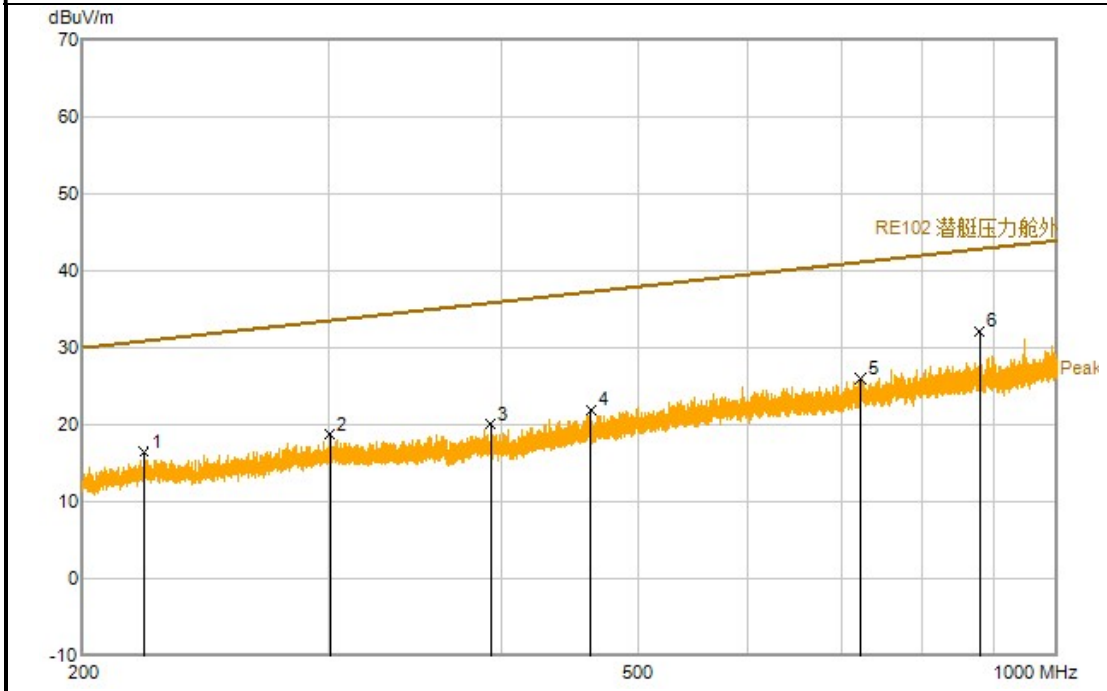


N0.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	35.65	24.9	-11.71	13.19	24	10.81	Peak
2	45.8	25.38	-11.9	13.48	24	10.52	Peak
3	72.6	33.35	-12.82	20.53	24	3.47	Peak
4	99.5	29.25	-13.28	15.97	24	8.03	Peak
5	136.5	28.52	-10.76	17.76	26.7	8.94	Peak
6	178.8	26.74	-6.65	20.09	29.04	8.95	Peak
Note: Result = Reading + Correct factor, Margin = Limit - Result							

RE102- Record number 4)

Test Result:	Pass	Test Position:	Vertical
Standard:	GJB 151B-2013	Date:	2024-07-19
Test Item:	RE102	Temp./Hum.(%RH):	19.8℃/68%RH
Sample Name:	Silicone keyboard	Model:	K-TEK-M275TP-FN-BL-ANA-151B
Sample No.	M275TP-FN-BL-ANA-151B-20240123000001	Working State:	Working State 3
Test Engineer:	Deng Taotao	Reviewers:	Wang Peng
Note:	/		

200 - 1000MHz: RBW = 100kHz

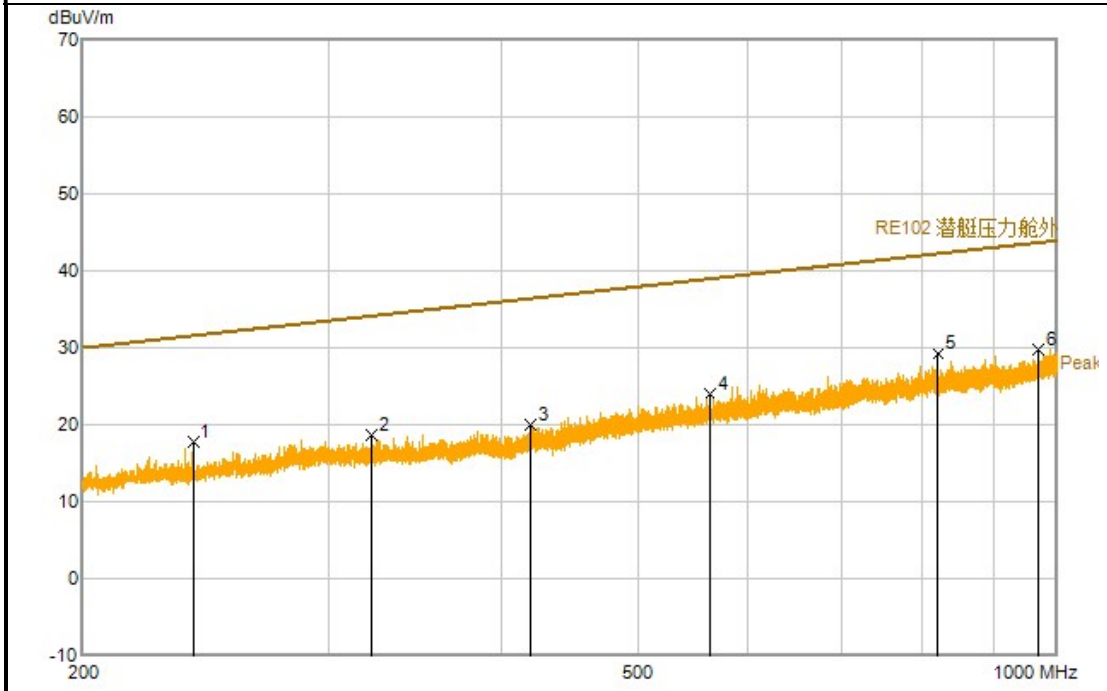


N0.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	221.3	27.61	-11.08	16.53	30.88	14.35	Peak
2	300.825	27.66	-8.88	18.78	33.54	14.76	Peak
3	392.375	27.98	-7.88	20.1	35.85	15.75	Peak
4	463	27.91	-6	21.91	37.28	15.37	Peak
5	723.2	27.9	-1.88	26.02	41.14	15.12	Peak
6	879.625	32.18	0	32.18	42.84	10.66	Peak
Note: Result = Reading + Correct factor, Margin = Limit - Result							

RE102- Record number 5)

Test Result:	Pass	Test Position:	Horizontal
Standard:	GJB 151B-2013	Date:	2024-07-19
Test Item:	RE102	Temp./Hum.(%RH):	19.8℃/68%RH
Sample Name:	Silicone keyboard	Model:	K-TEK-M275TP-FN-BL-ANA-151B
Sample No.	M275TP-FN-BL-ANA-151B-20240123000001	Working State:	Working State 3
Test Engineer:	Deng Taotao	Reviewers:	Wang Peng
Note:	/		

200 - 1000MHz: RBW = 100kHz

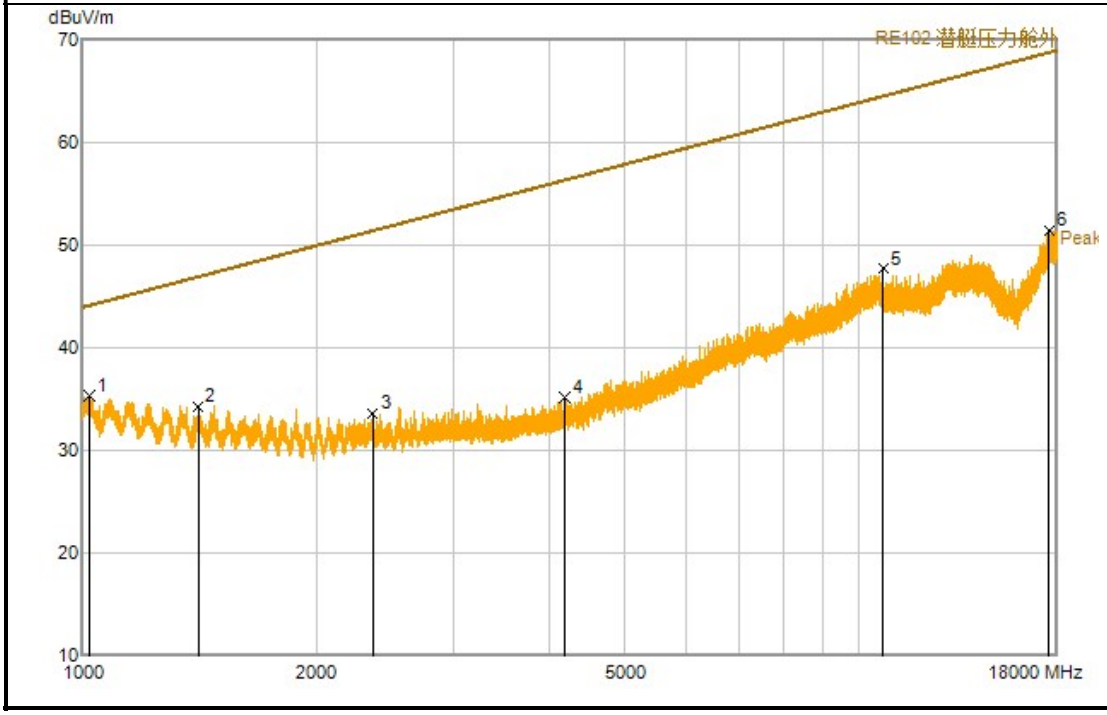


N0.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	240	28.28	-10.51	17.77	31.59	13.82	Peak
2	322.4	27.28	-8.62	18.66	34.14	15.48	Peak
3	419	27.2	-7.23	19.97	36.42	16.45	Peak
4	563.8	27.98	-3.88	24.1	38.99	14.89	Peak
5	821.75	29.82	-0.49	29.33	42.25	12.92	Peak
6	969.5	28.57	1.28	29.85	43.68	13.83	Peak
Note: Result = Reading + Correct factor, Margin = Limit - Result							

RE102- Record number 6)

Test Result:	Pass	Test Position:	Vertical
Standard:	GJB 151B-2013	Date:	2024-07-19
Test Item:	RE102	Temp./Hum.(%RH):	19.8℃/68%RH
Sample Name:	Silicone keyboard	Model:	K-TEK-M275TP-FN-BL-ANA-151B
Sample No.	M275TP-FN-BL-ANA-151B-20240123000001	Working State:	Working State 3
Test Engineer:	Deng Taotao	Reviewers:	Wang Peng
Note:	/		

1000 - 18000MHz: RBW = 1MHz



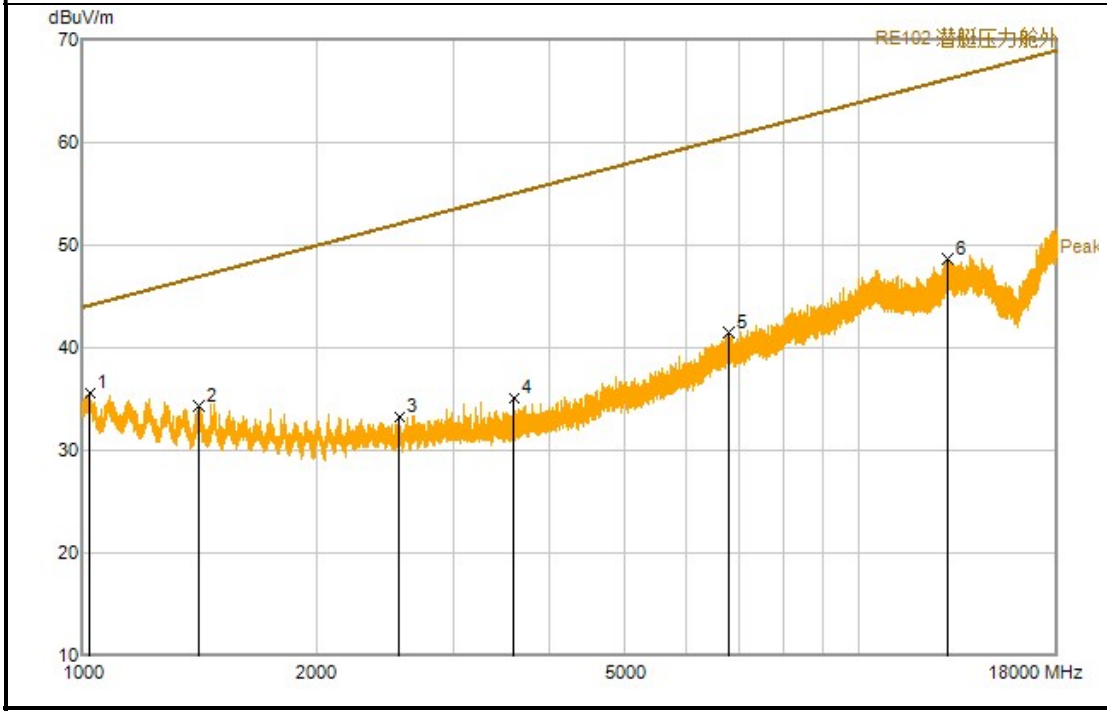
N0.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1019.25	42.89	-7.51	35.38	44.12	8.74	Peak
2	1409.5	40.97	-6.68	34.29	46.93	12.64	Peak
3	2365.25	38.21	-4.6	33.61	51.41	17.8	Peak
4	4181	35.48	-0.26	35.22	56.35	21.13	Peak
5	10745.25	33.95	13.76	47.71	64.53	16.82	Peak
6	17570.75	31.1	20.33	51.43	68.79	17.36	Peak

Note: Result = Reading + Correct factor, Margin = Limit - Result

RE102- Record number 7)

Test Result:	Pass	Test Position:	Horizontal
Standard:	GJB 151B-2013	Date:	2024-07-19
Test Item:	RE102	Temp./Hum.(%RH):	19.8℃/68%RH
Sample Name:	Silicone keyboard	Model:	K-TEK-M275TP-FN-BL-ANA-151B
Sample No.	M275TP-FN-BL-ANA-151B-20240123000001	Working State:	Working State 3
Test Engineer:	Deng Taotao	Reviewers:	Wang Peng
Note:	/		

1000 - 18000MHz: RBW = 1MHz



N0.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1021.25	43.11	-7.51	35.6	44.14	8.54	Peak
2	1413	41.02	-6.68	34.34	46.95	12.61	Peak
3	2557	37.2	-3.94	33.26	52.09	18.83	Peak
4	3591.25	36.84	-1.74	35.1	55.03	19.93	Peak
5	6799.25	32.94	8.6	41.54	60.56	19.02	Peak
6	13022.75	32.41	16.27	48.68	66.2	17.52	Peak
Note: Result = Reading + Correct factor, Margin = Limit - Result							

A10 RS101 Radiated susceptibility, magnetic field, 25 Hz to 100 kHz test data

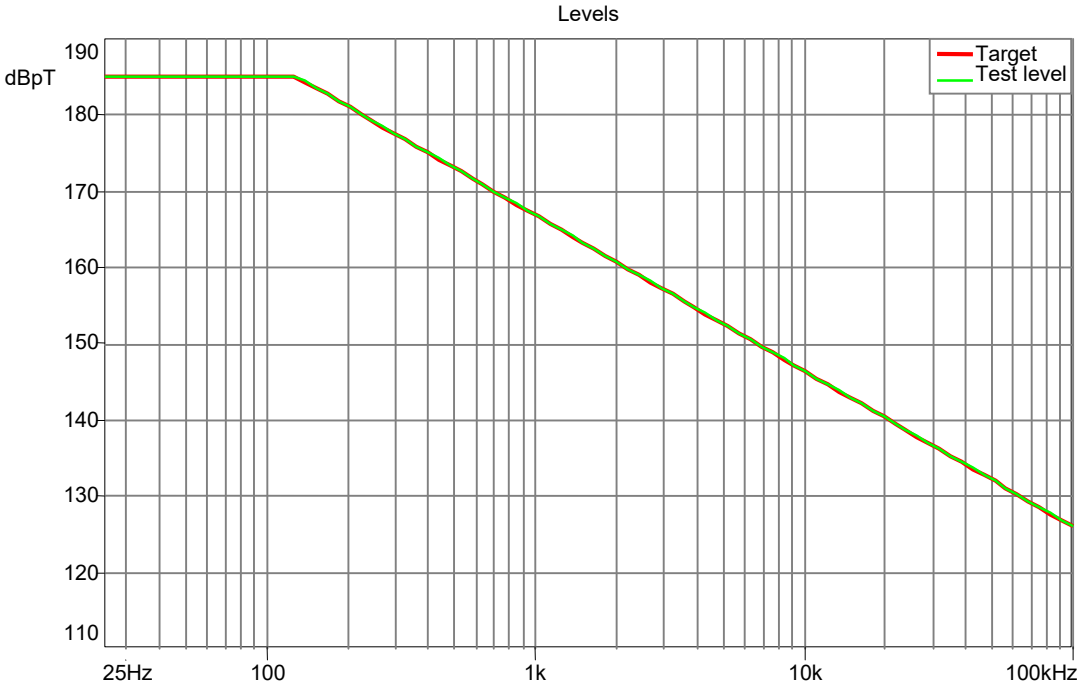


Figure A10.1 The front face of EUT test curve

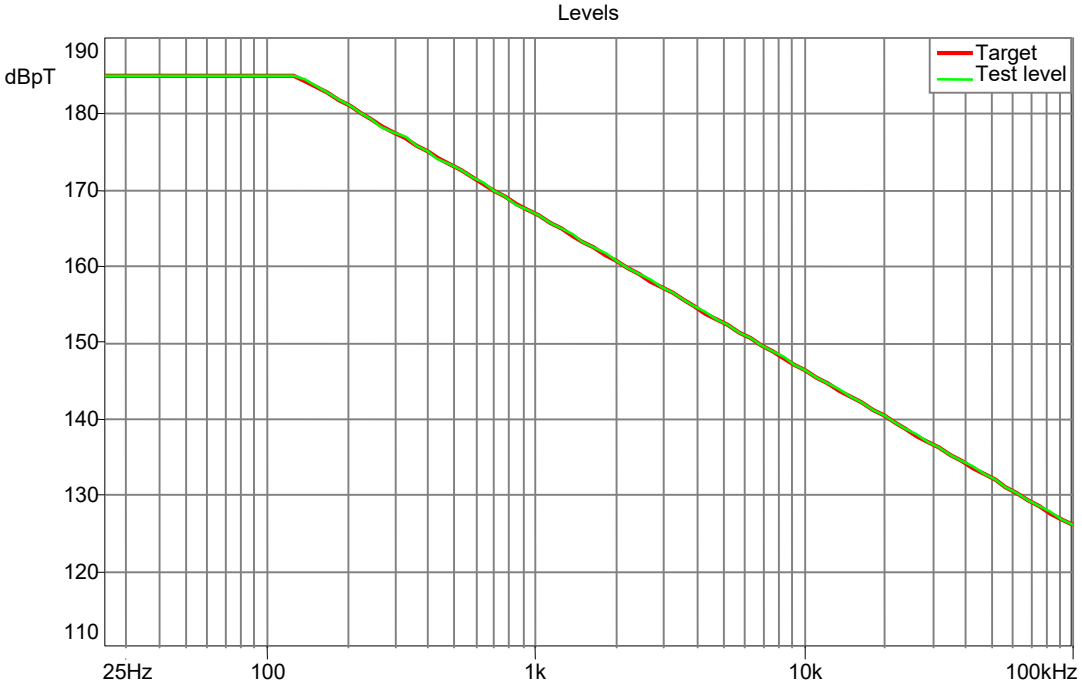


Figure A10.2 The back face of EUT test curve

Figure A10.3 The left face of EUT test curve

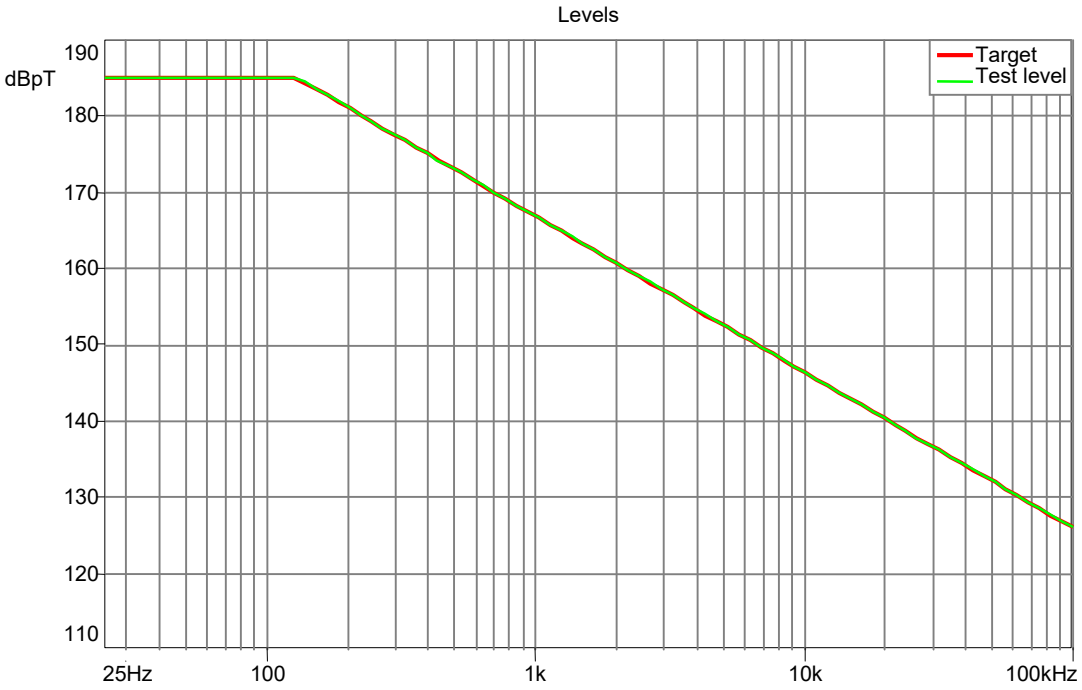


Figure A10.4 The right face of EUT test curve

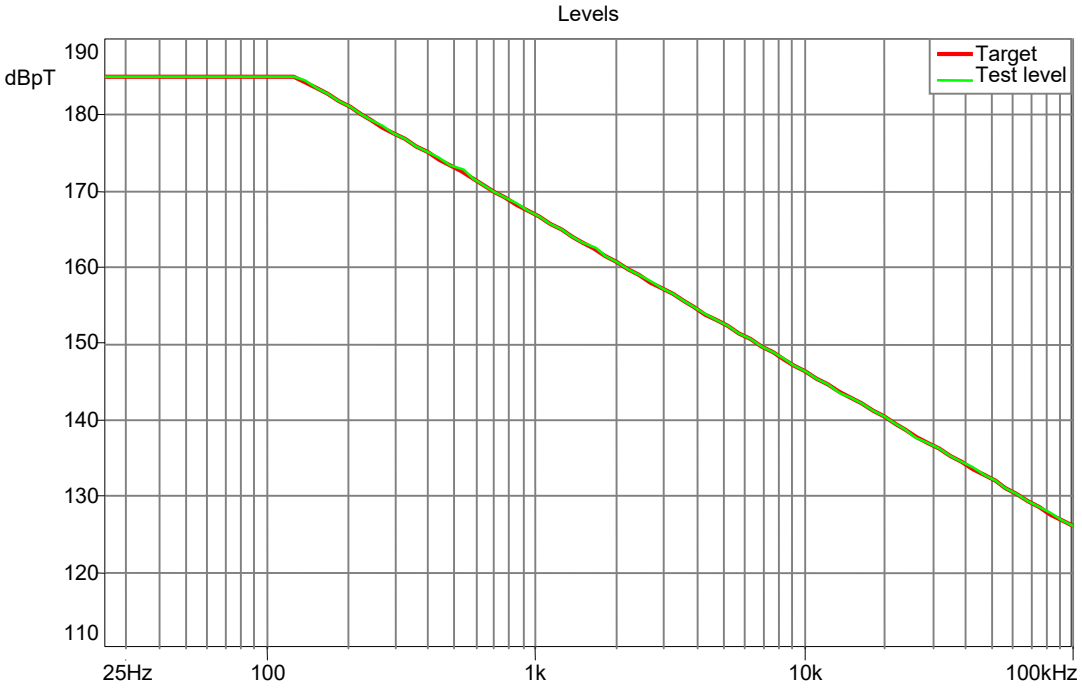


Figure A10.5 The top face of EUT test curve

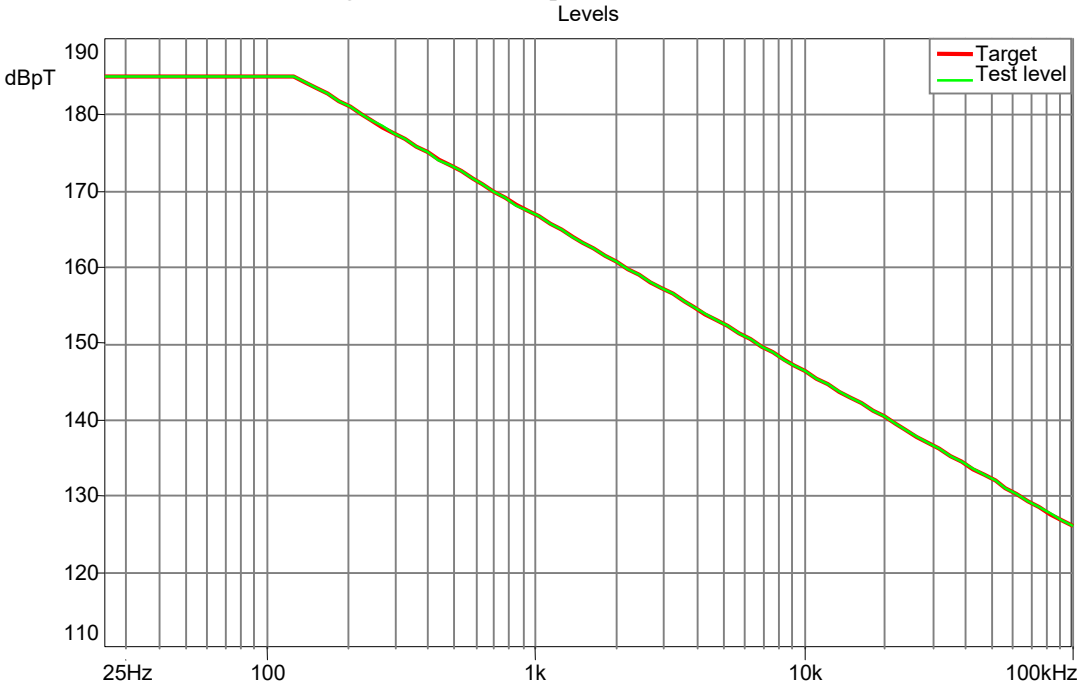


Figure A10.6 The harness face of EUT test curve

A11 RS103 Radiated susceptibility, electric field, 10 kHz to 40 GHz test data

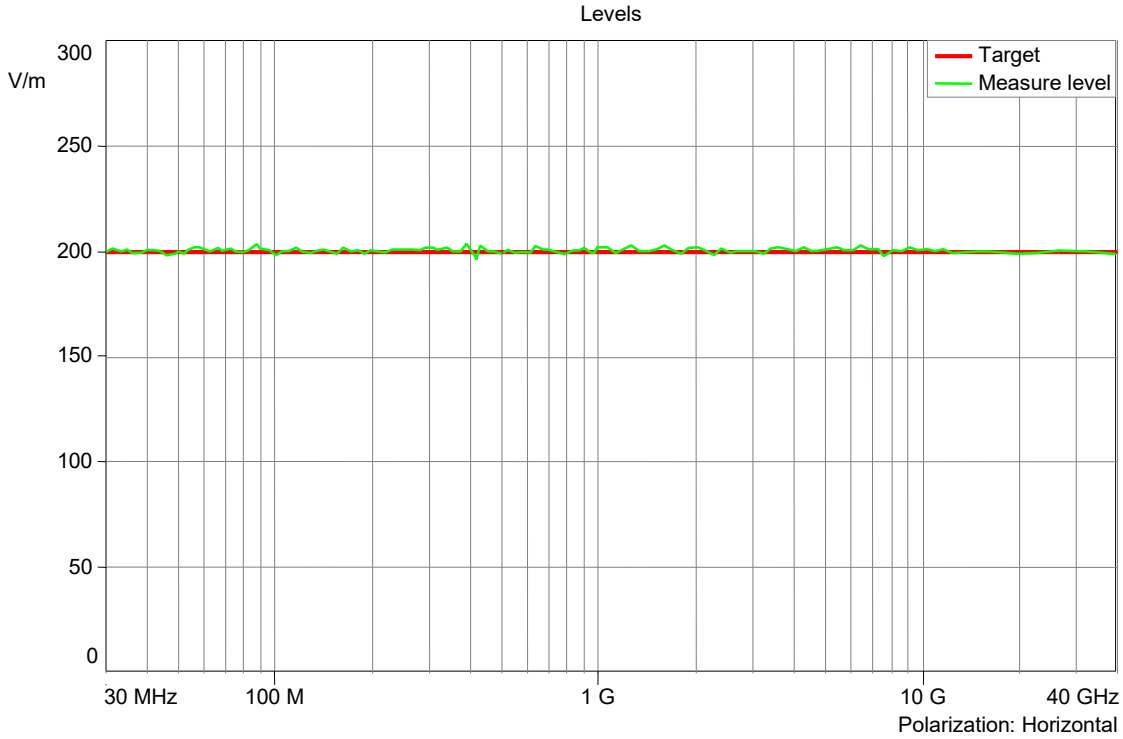


Figure A11.1 Horizontal polarization test curve from 30MHz to 40GHz

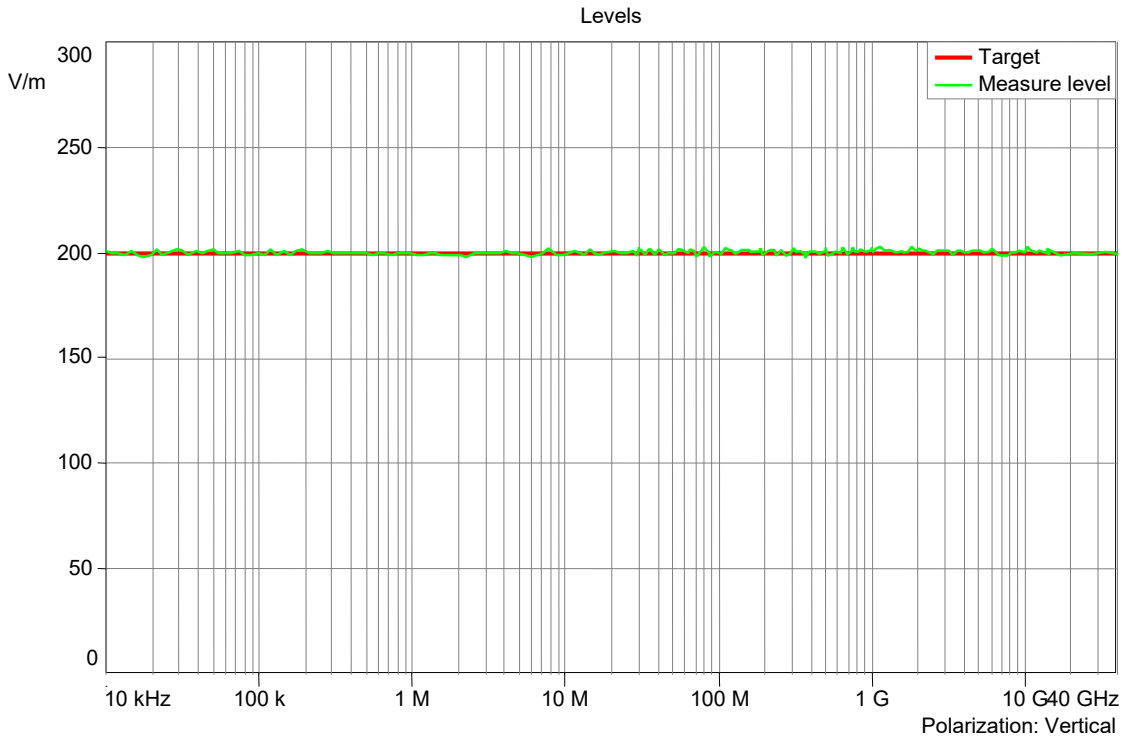


Figure A11.2 Vertical polarization test curve from 10kHz to 40GHz

Annex B Test setup Photo

Figure B1.1 CE101 test photo

Figure B2.1 CE102 test photo

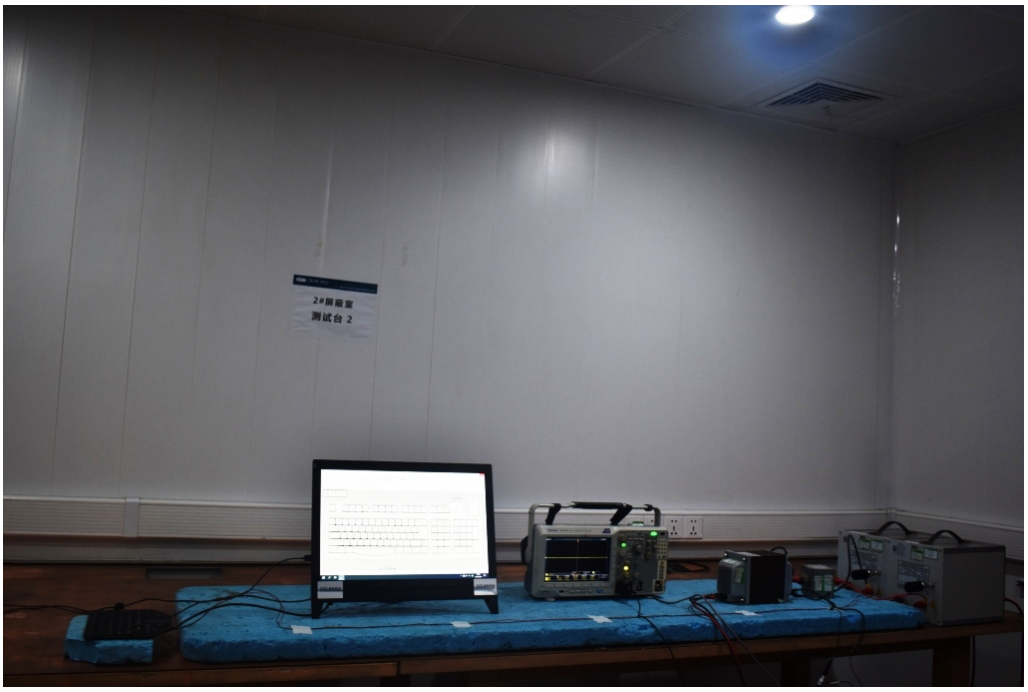


Figure B3.1 CS101 test photo

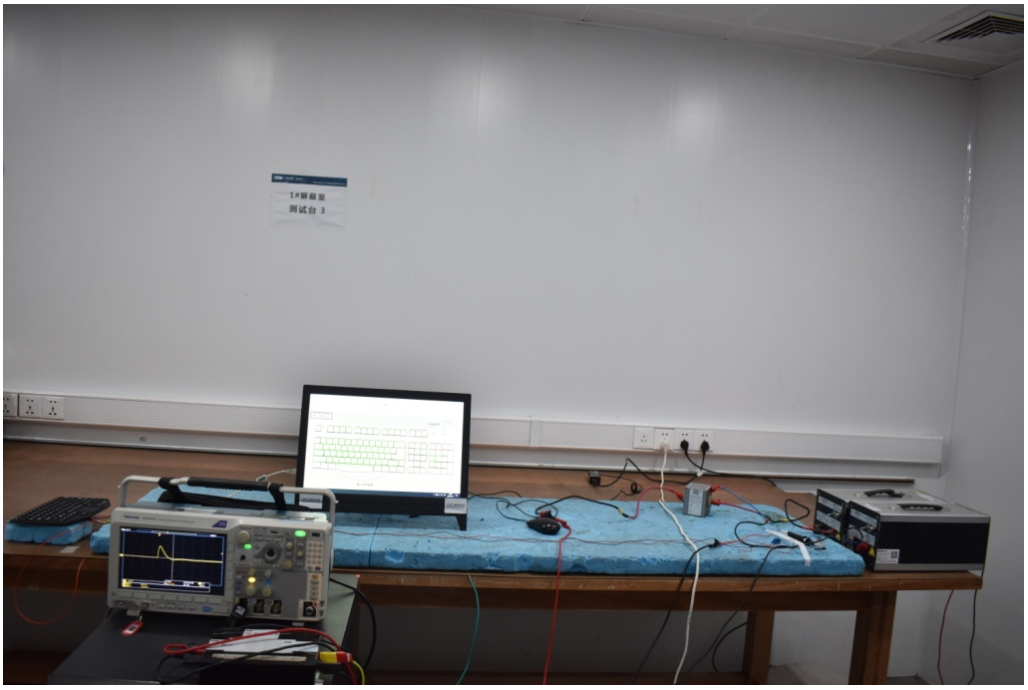


Figure B4.1 CS106 test photo

Figure B5.1 CS112 test photo

Figure B6.1 CS114 test photo

Figure B7.1 CS115 test photo

Figure B8.1 CS116 test photo

Figure B9.1 RE101 test photo

Figure B10.1 RE102 test photo（Vertical polarization from 10kHz to 30MHz）

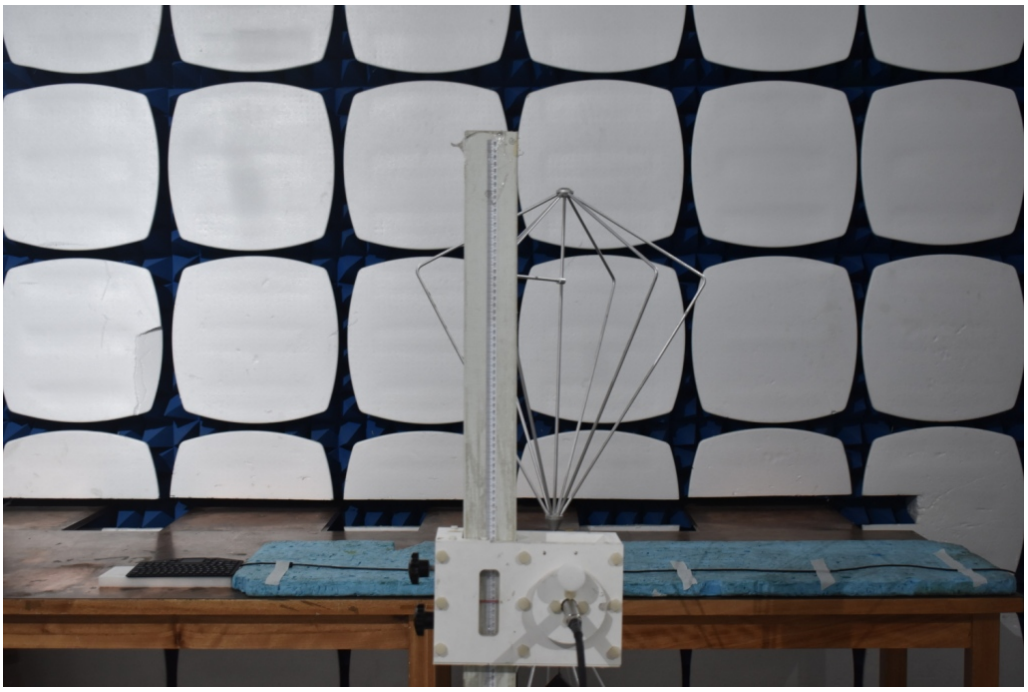


Figure B10.2 RE102 test photo（Vertical polarization from 30MHz to 200MHz）

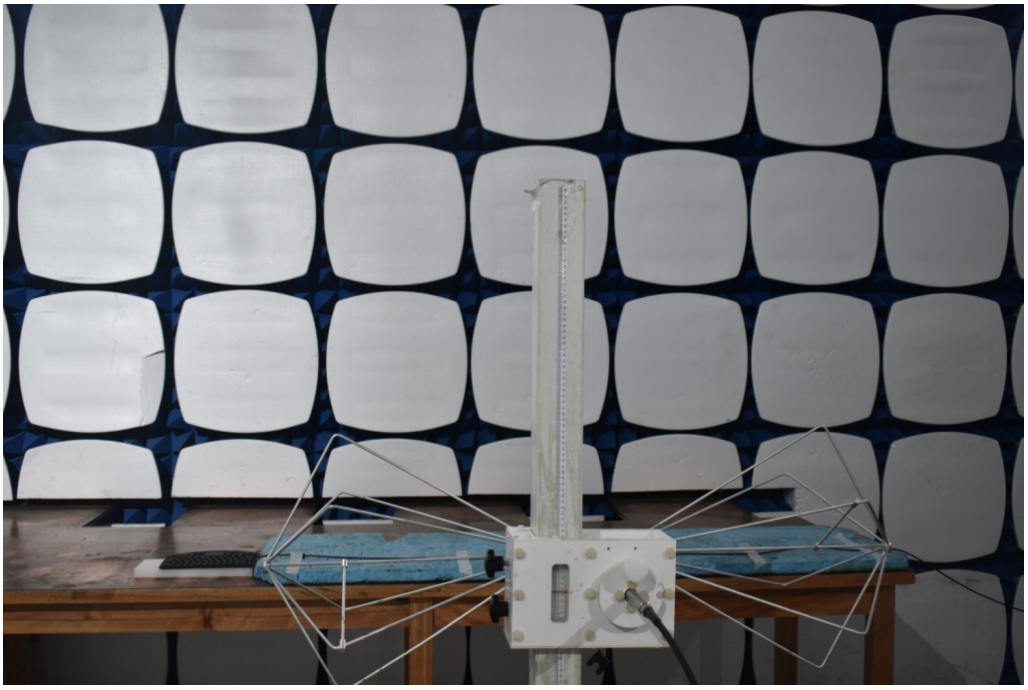


Figure B10.3 RE102 test photo（Horizontal polarization from 30MHz to 200MHz）

Figure B10.4 RE102 test photo（Vertical polarization from 200MHz to 1GHz）

Figure B10.5 RE102 test photo（Horizontal polarization from 200MHz to 1GHz）

Figure B10.6 RE102 test photo（Vertical polarization from 1GHz to 18GHz）

Figure B10.7 RE102 test photo（Horizontal polarization from 1GHz to 18GHz）

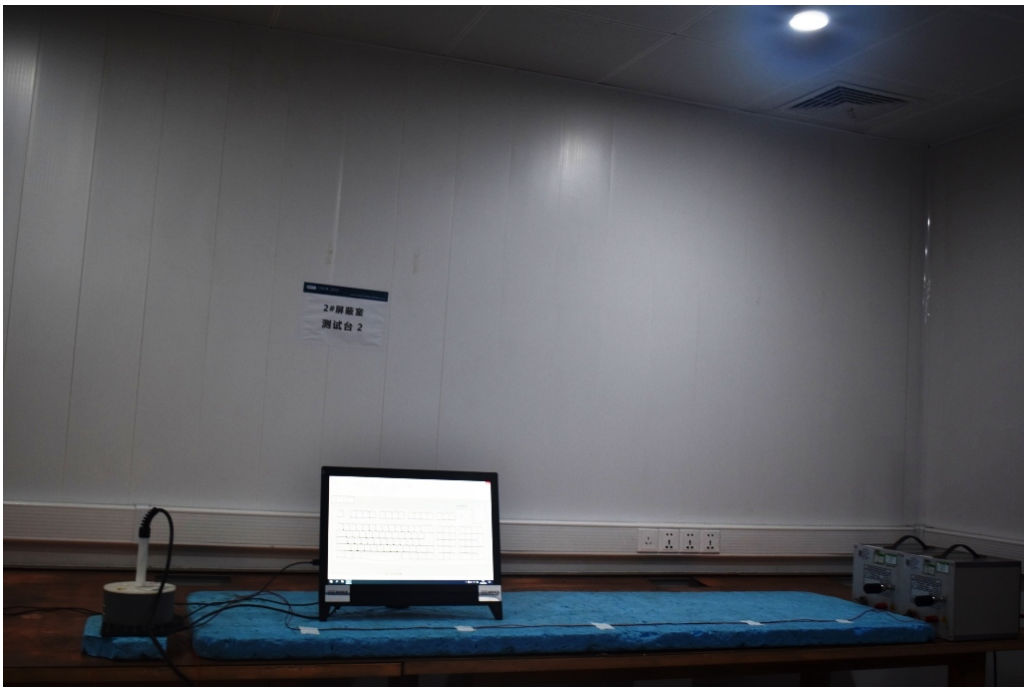


Figure B11.1 RS101 test photo

Figure B12.1 RS103 test photo（Vertical polarization from 10kHz to 30MHz）

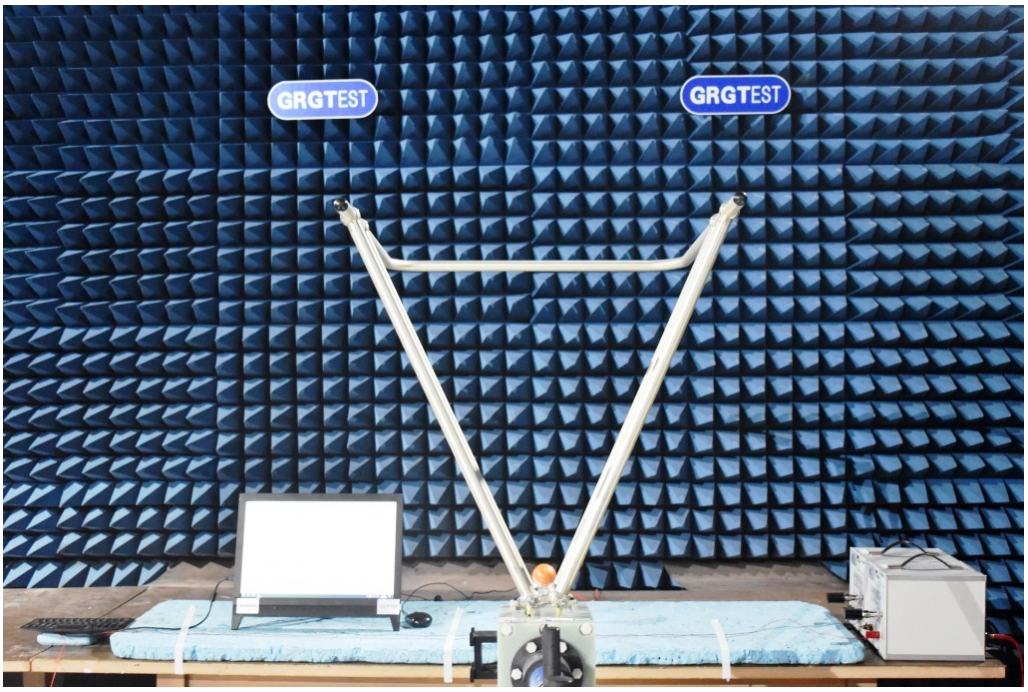


Figure B12.2 RS103 test photo（Vertical polarization from 30MHz to 100MHz）

Figure B12.3 RS103 test photo（Horizontal polarization from 30MHz to 100MHz）

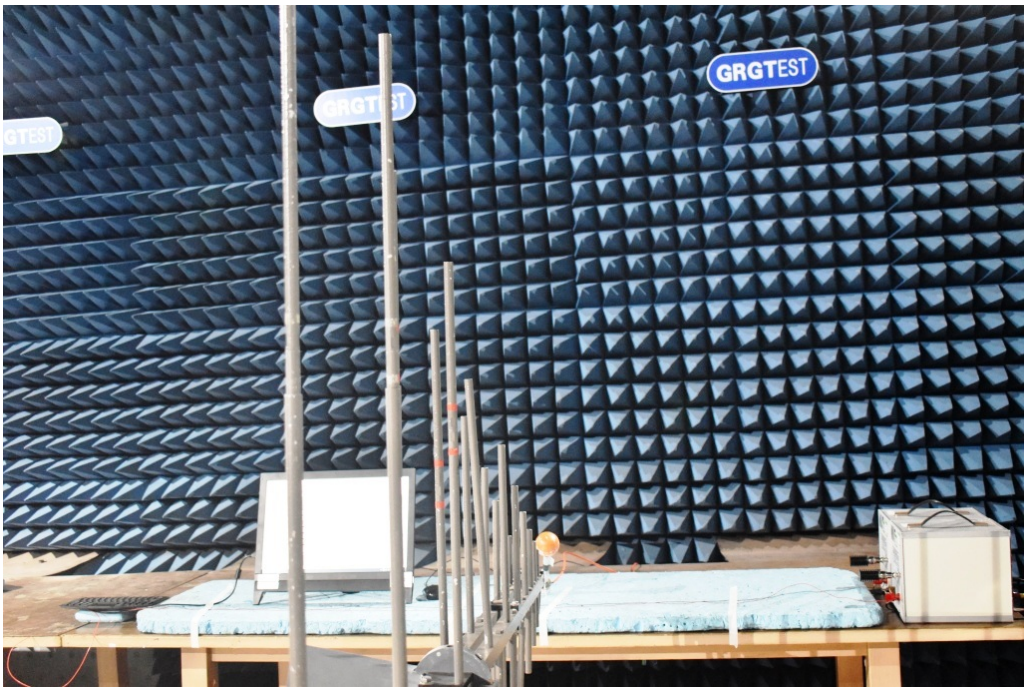


Figure B12.4 RS103 test photo（Vertical polarization from 100MHz to 200MHz）

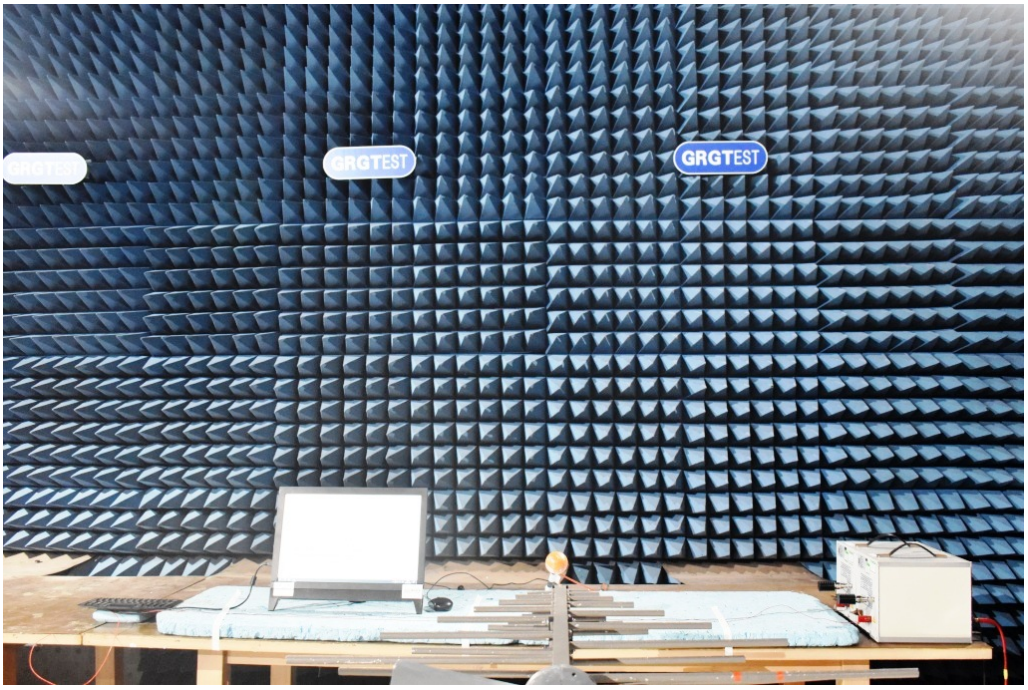


Figure B12.5 RS103 test photo（Horizontal polarization from 100MHz to 200MHz）

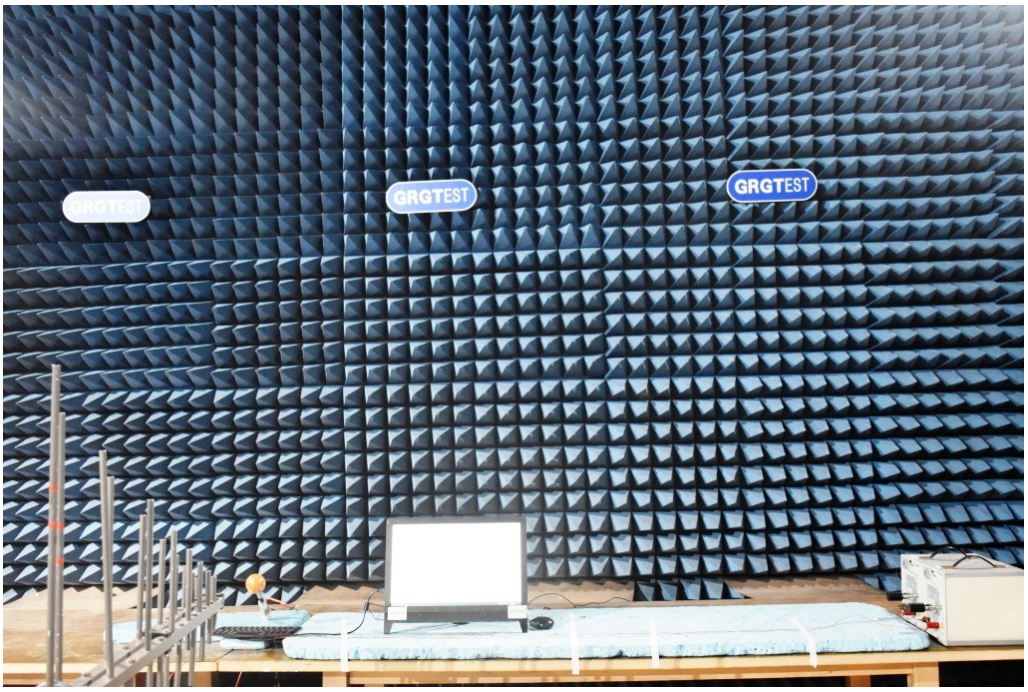


Figure B12.6 RS103 test photo（Vertical polarization from 200MHz to 1GHz）

Figure B12.7 RS103 test photo（Horizontal polarization from 200MHz to 1GHz）

Figure B12.8 RS103 test photo（Vertical polarization from 1GHz to 6GHz）

Figure B12.9 RS103 test photo（Horizontal polarization from 1GHz to 6GHz）

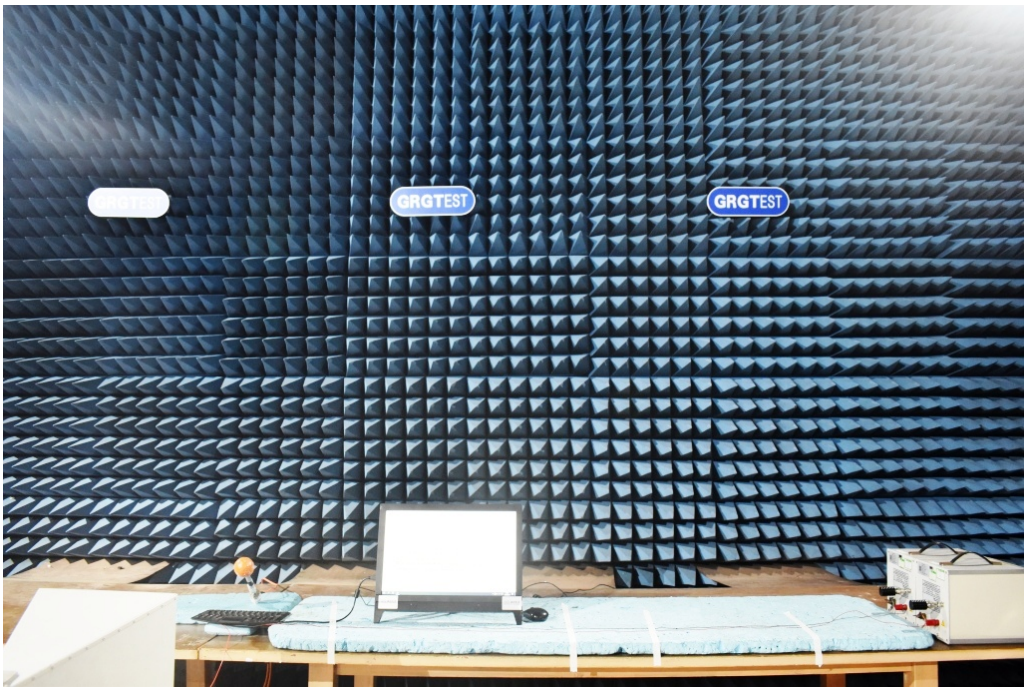


Figure B12.10 RS103 test photo（Vertical polarization from 6GHz to 8GHz）

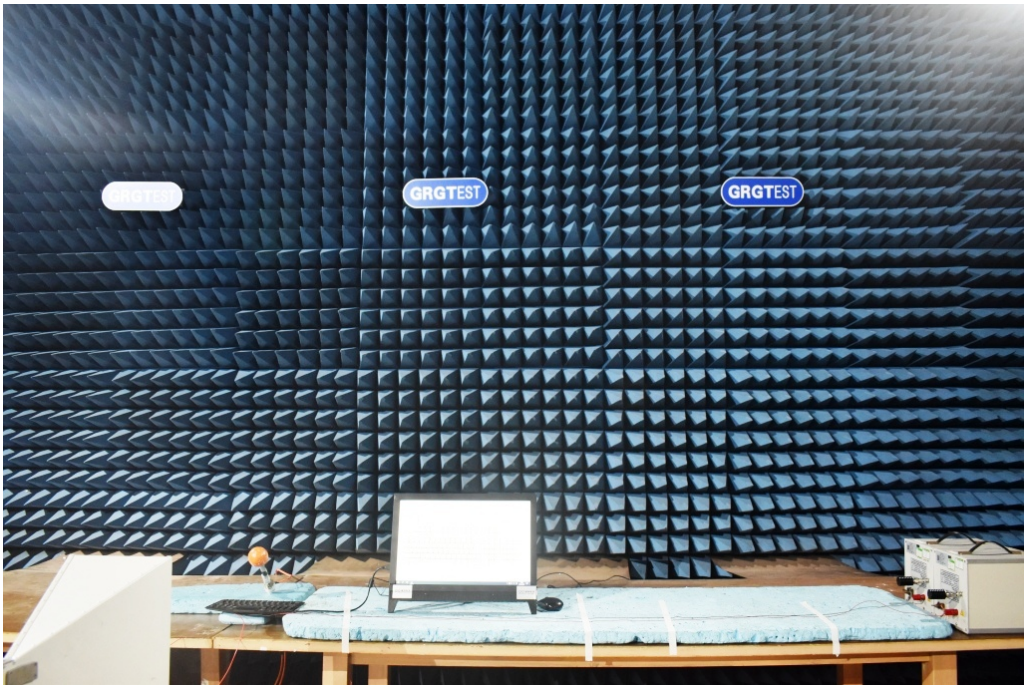


Figure B12.11 RS103 test photo（Horizontal polarization from 6GHz to 8GHz）

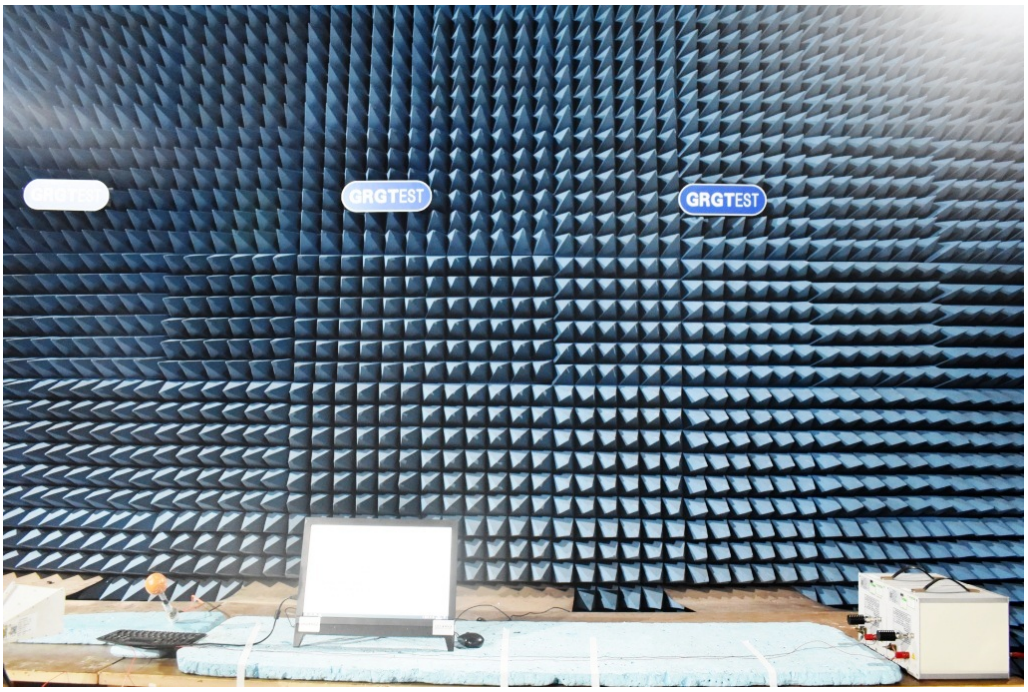


Figure B12.12 RS103 test photo（Vertical polarization from 8GHz to 18GHz）

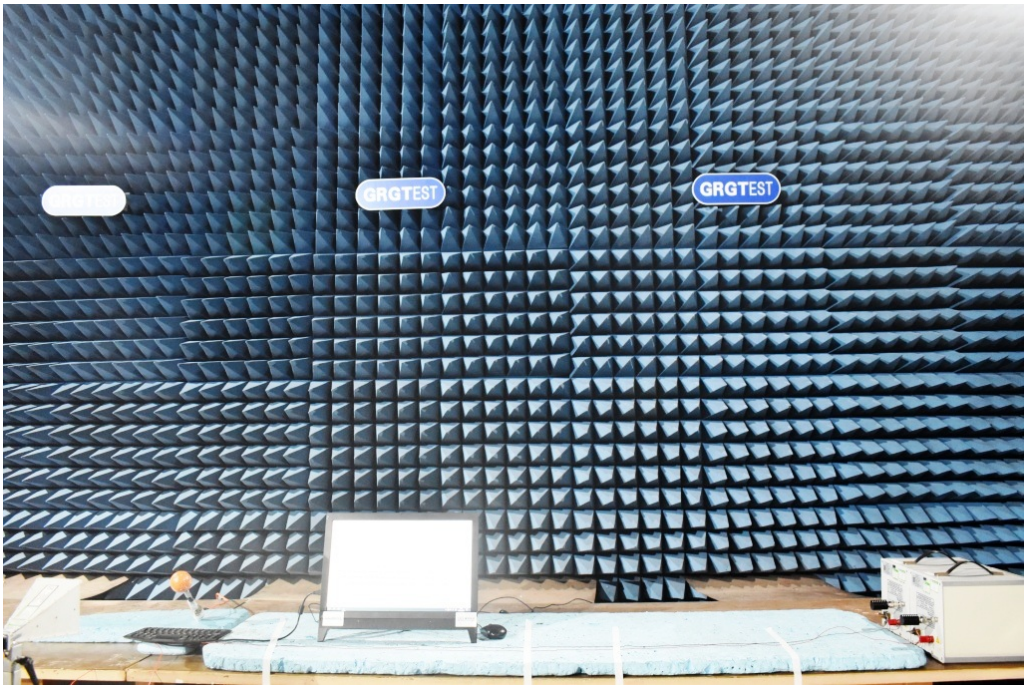


Figure B12.13 RS103 test photo（Horizontal polarization from 8GHz to 18GHz）

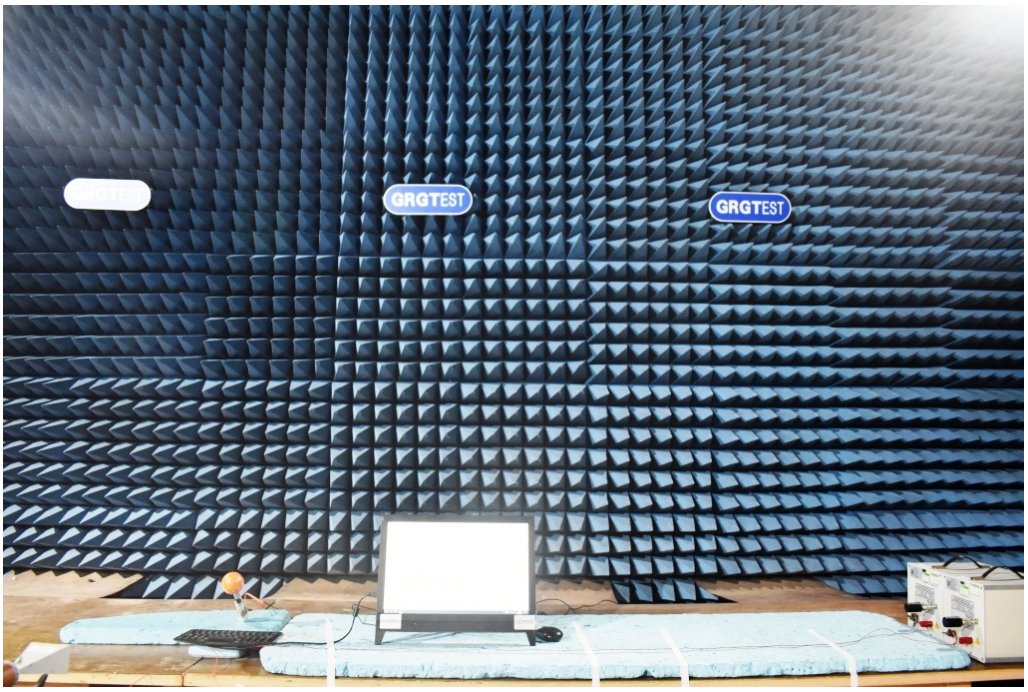


Figure B12.14 RS103 test photo（Vertical polarization from 18GHz to 26.5GHz）

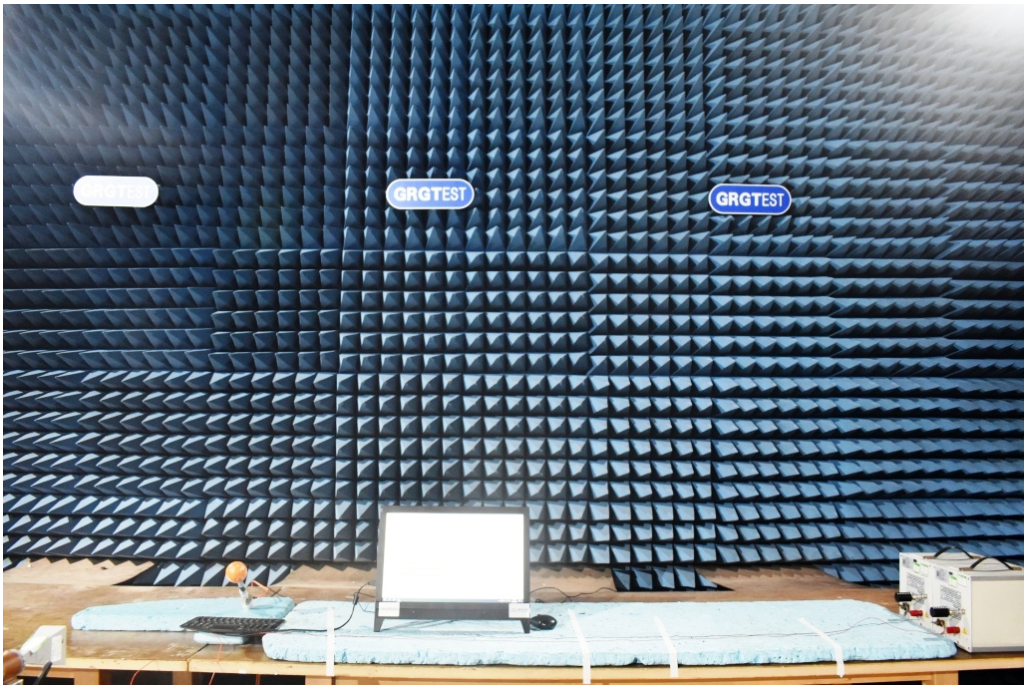


Figure B12.15 RS103 test photo（Horizontal polarization from 18GHz to 26.5GHz）

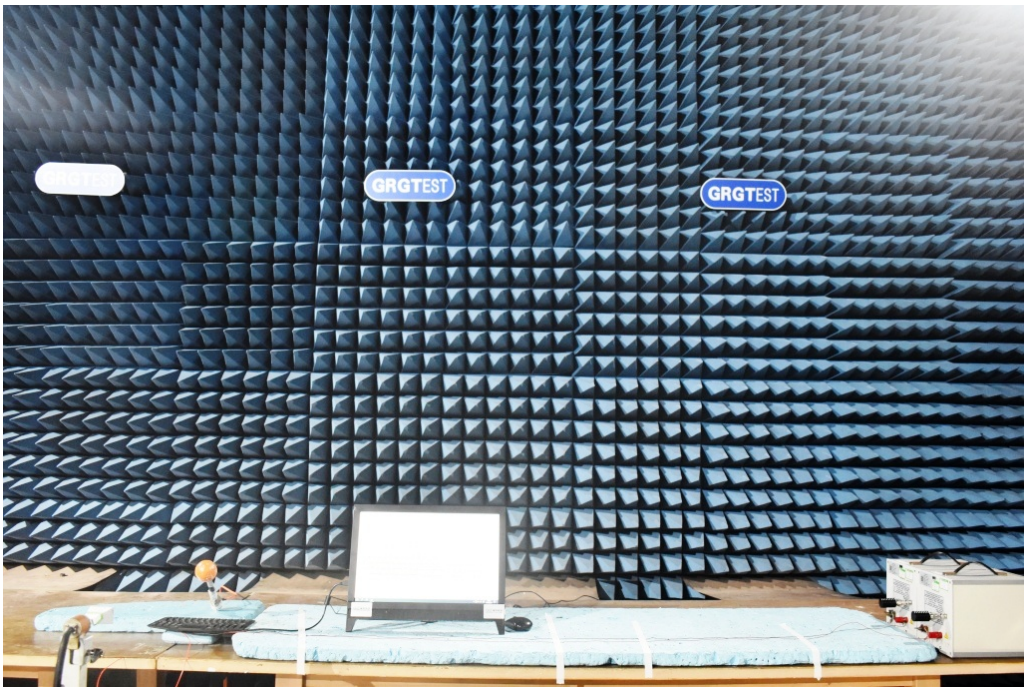


Figure B12.16 RS103 test photo（Vertical polarization from 26.5GHz to 40GHz）

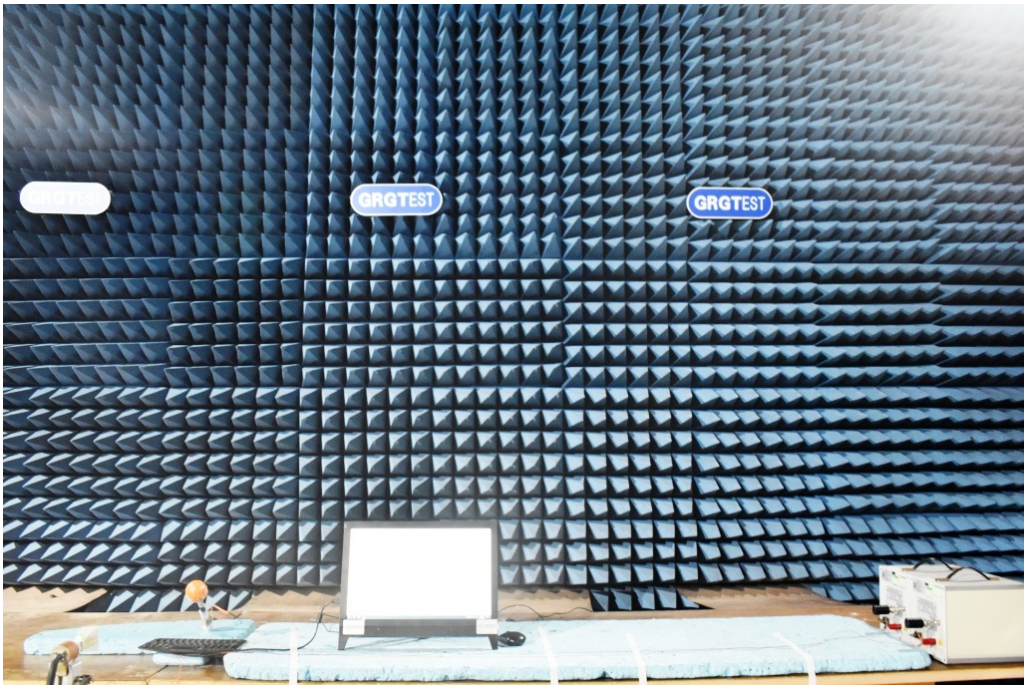


Figure B12.17 RS103 test photo（Horizontal polarization from 26.5GHz to 40GHz）

Annex C EUT Photo

Figure C.1 Silicone keyboard photo

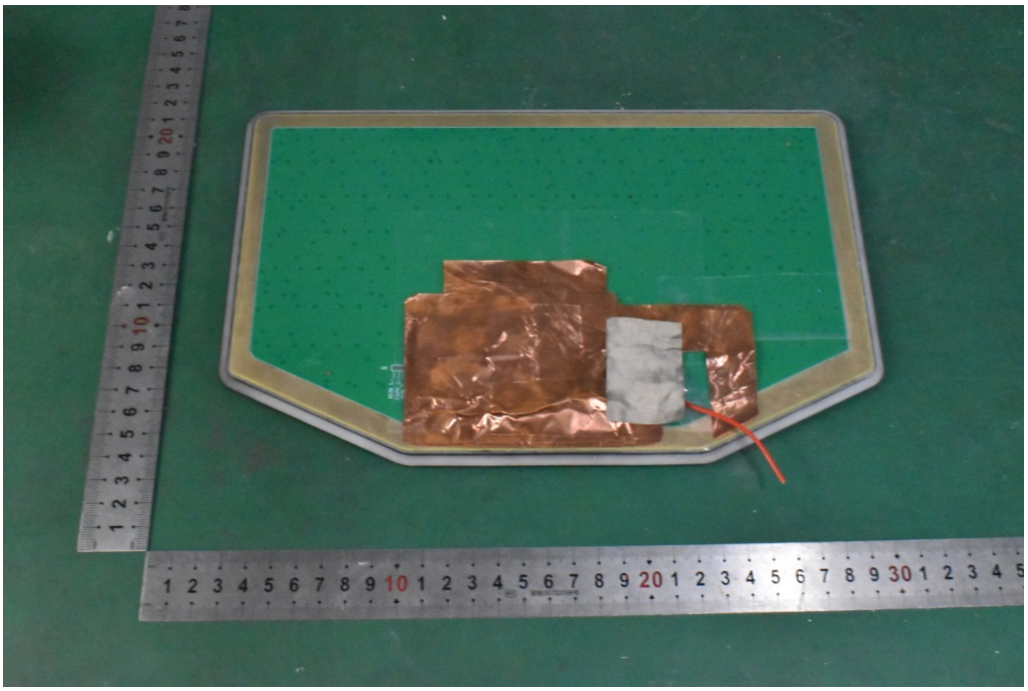


Figure C.2 Silicone keyboard Rectified photo（Working State 2）

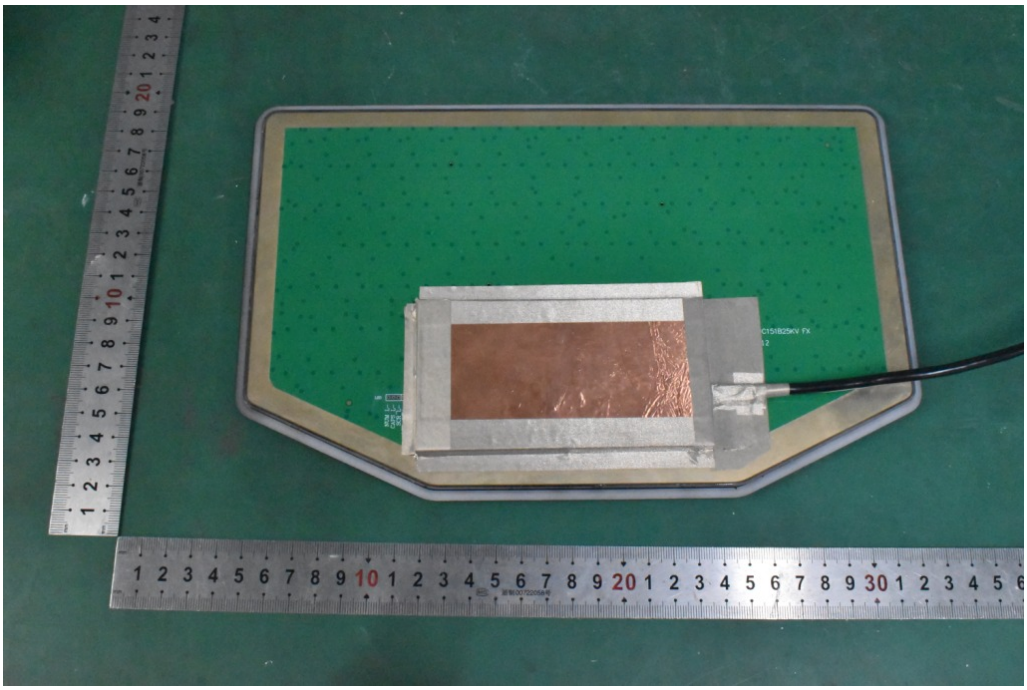


Figure C.3 Silicone keyboard Rectified photo（Working State 3）

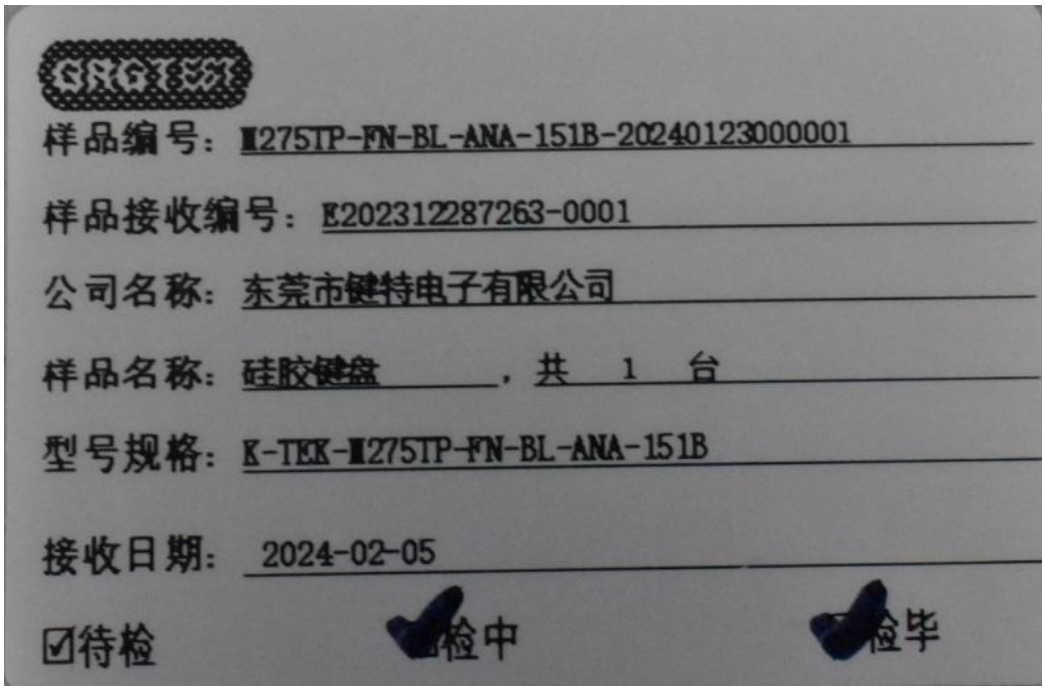


Figure C.4 Silicone keyboard label photo

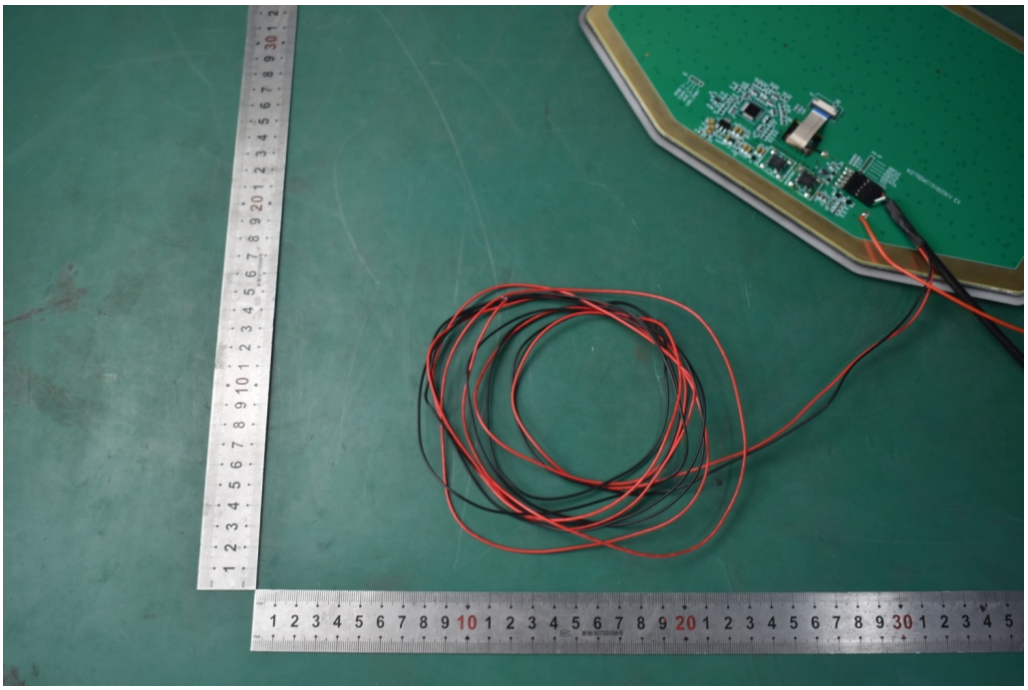


Figure C.5 power lead photo

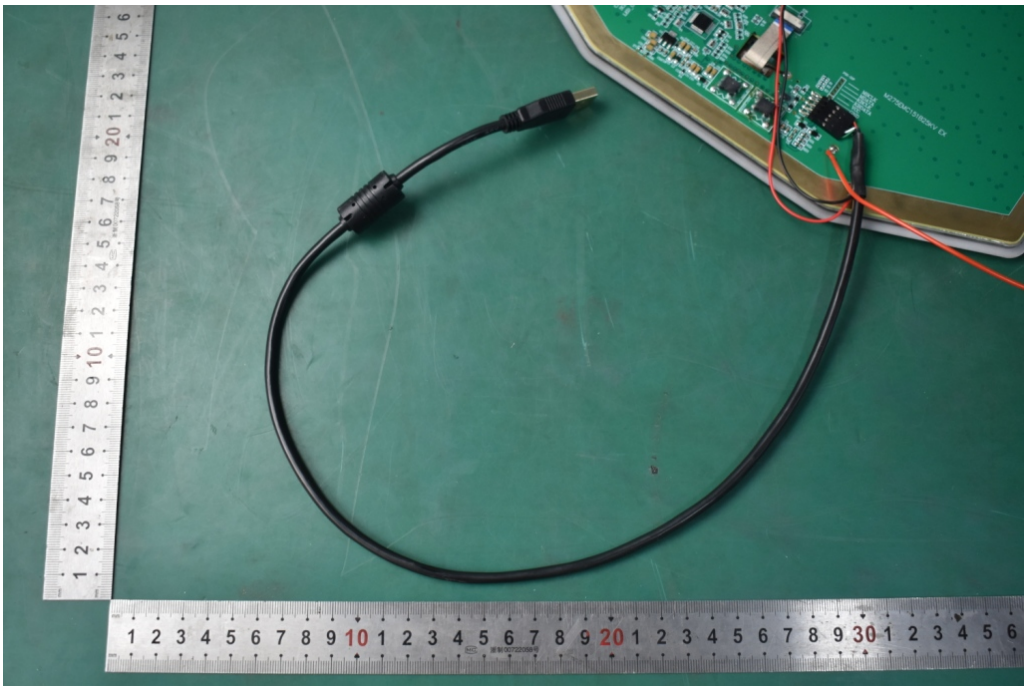


Figure C.6 Sigal line photo

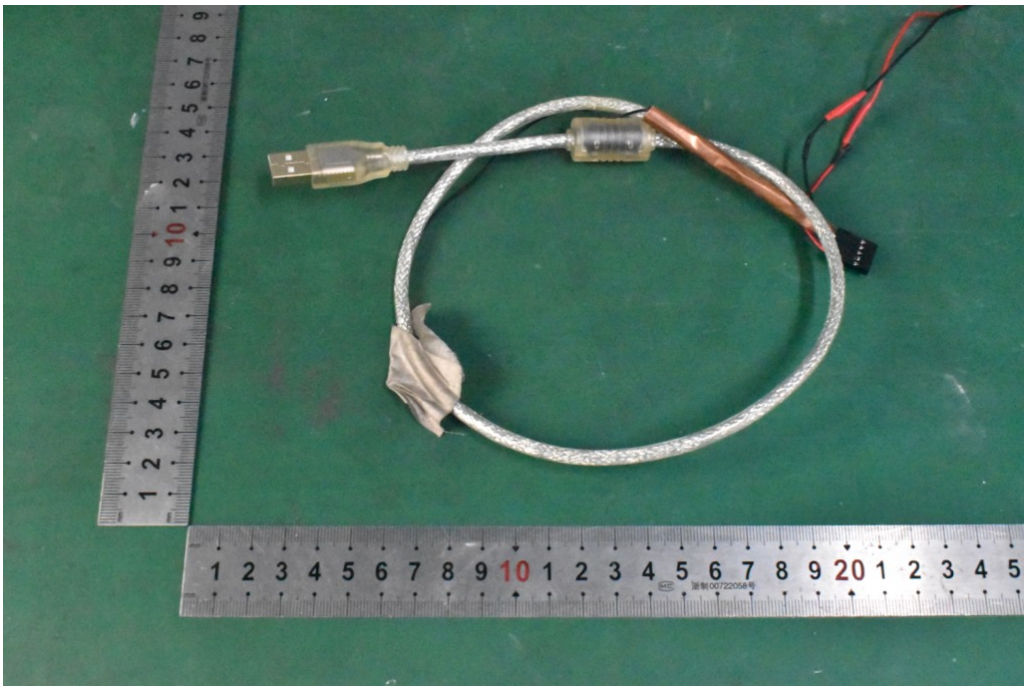


Figure C.7 Sigal line Rectified photo（Working State 2）

Figure C.8 Cable bundle Rectified photo（Working State 3）

Annex D Associated equipment Photo

None.

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Annex E Instruments Photo

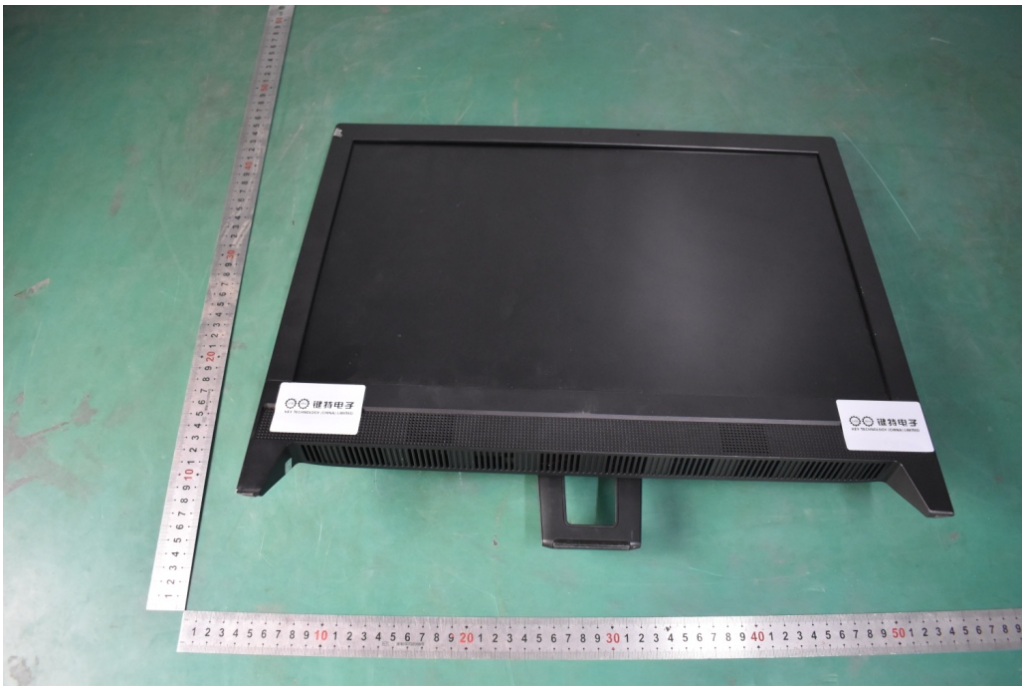

Figure E.1 Test computer photo

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Annex F Monitoring Photo

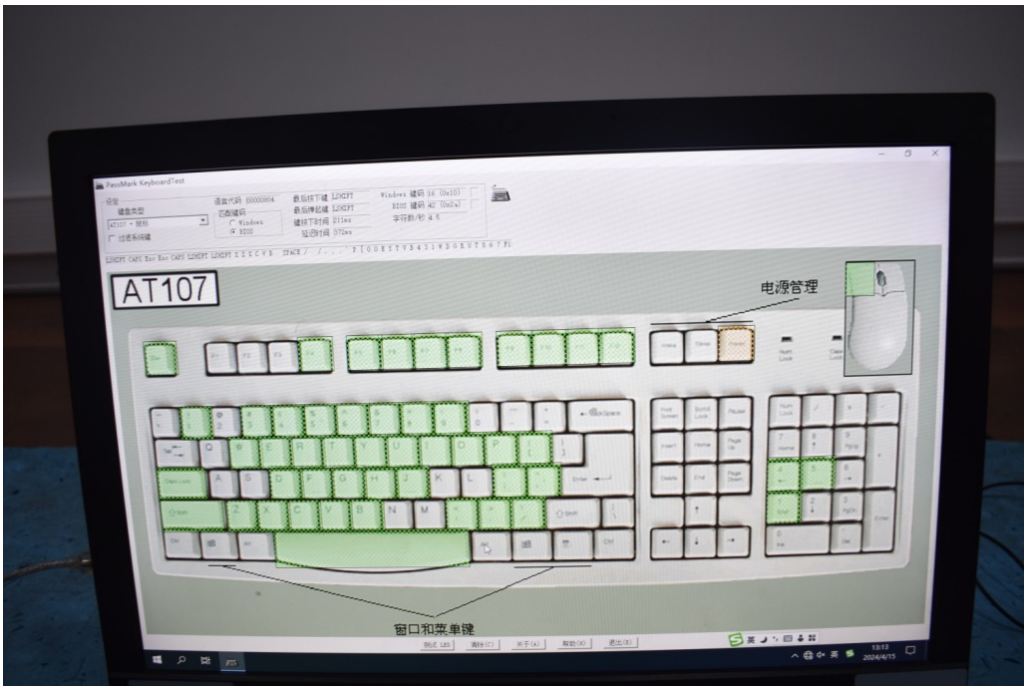

Figure F.1 Pre-test check photo

Figure F.2 Testing check photo

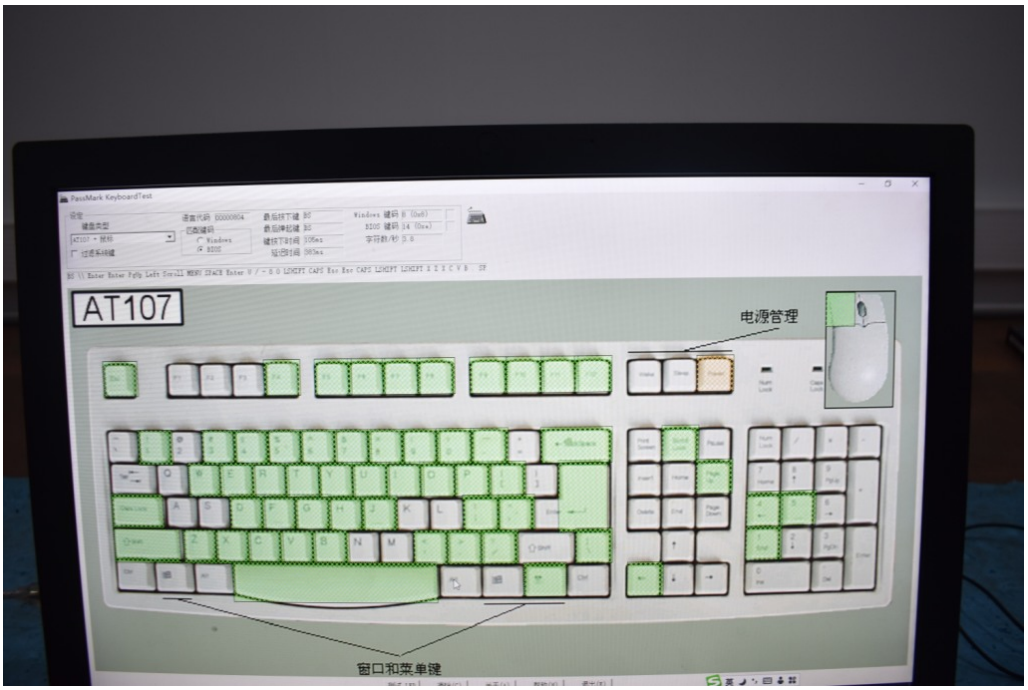

Figure F.3 Post-test check photo

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Annex G Test conditions specified in the Test Status Confirmation Form

Report No.: E202312287263-1E

TEST STATUS CONFIRMATION FORM

Application No.	E202312287263
Client Name	Key Technology (China) Limited
Client Test Participant	Caesar Chen
Test Method/Basic Standard	GJB151B-2013

Table 1 Description of EUT

No.	EUT Name	Working statel	S/N	Manufacture	Specifications	quantity	Technical status
1	Silicone keyboard	K-TEK-M275TP-FN-BL-ANA-151B	M275TP-FN-BL-ANA-151B-20240123000001	Key Technology (China) Limited	Pcs	1	S

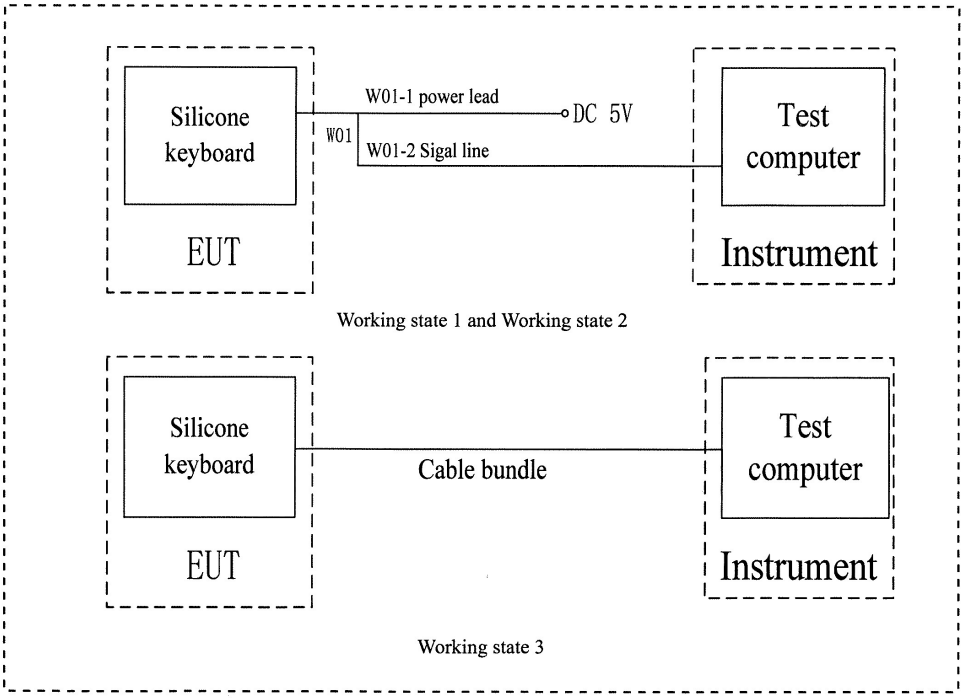

Figure 1 EUT Test Setup

Table 2 Summary of Connecting Wires

No.	Name	Code name	Working statel	Technical status	Length	Whether to block	Notes
1	Cable bundle	W01	/	self-restraint	2.3m	Yes	Used in CE101,CE102,CS101,CS106,CS112,CS114,CS115,CS116,RE101, RS101,RS103 tests.
1.1	power lead	W01-1	/	self-restraint	2.3m	Not	
1.2	Sigal line	W01-2	/	self-restraint	0.5m	Yes	
2	Cable bundle	W02	/	self-restraint	6m	Not	Used in RE102 test.
Power Supply	Working state 1 and Working state 2: DC 5 V, current: 0.03 A. Working state 3: EUT is powered by instruments.						
Grounding conditions	□Shell Grounding □Earth Terminal Grounding ☑Unground □Other:						
Other descriptions such as chassic cabinets	☑Desktop □Floor Type □Other:						
Application Platform	☑Surface Ships □Submarines □Army aircraft □Navy aircraft □Air Force aircraft □space systems □Navy ground ☑Air Force ground ☑Army ground □Other:						

Table 3 Summary of Paternity Equipments

No.	Name	Working statel	S/N	Provider	Specifications	quantity	Technical status
/	/	/	/	/	/	/	/

Table 4 Instrumentation Summary

No.	Name	Working statel	S/N	Client Name	Specifications	Quantity	Calibration Due Date
1	Test computer	Ideacentre AIO 310-20ASR	YJ008F0L	Key Technology (China) Limited	pcs	1	/

Table 5 Working State of EUT（RS103 items are critical process G）

No.	Working state	Status description	Notes
1	Working statel	EUT equipment DC5V supplies power and communicates with the test computer normally.	Used in CE101,CE102,CS101, CS112,CS114, CS116,RE101,RS101,RS103 tests.
2	Working state2	EUT equipment DC5V supplies power and communicates with the test computer normally.	EUT and cables are used for CS106 and CS115 tests after rectification.
3	Working state3	EUT is powered by the test computer and communicates with the test computer normally.	EUT and cables are used for RE102 test after rectification.

Table 6 Test Item

No.	Test Items	Working State	Limits	Notes
1	CE101	Working state 1	Test frequency: 25Hz to 10kHz; According to the requirements of the entrusting party: GJB151B in Figure 8,I≤3A.	Test position: Positive power cable, Negative power cable.
2	CE102	Working state 1	Test frequency: 10kHz to 10MHz; Basic Curve	Test position: Positive power cable, Negative power cable.
3	CS101	Working state 1	Test frequency: 25Hz to 150kHz; Curve #2	Test position: Positive power cable.
4	CS106	Working state 2	V_p=400V; t_d=5.0 (1±22%)μsec	Test position: Positive power cable.
5	CS112	Working state 1	Class A	Customer's required test position: Contact discharge, Surface of key caps,Key's gap,surface of touchpad; Air discharge: Surface of key caps,Key's gap;surface of touchpad.
6	CS114	Working state 1	According to the requirements of the entrusting party: 4kHz to 208kHz: 77dBμA 208kHz to 1MHz: 77dBμA to 109 dBμA 1MHz to 30MHz: 109 dBμA 30MHz to 400MHz: 109dBμA to 97 dBμA	Test position: Complete power cables, Positive power cable, Cable bundle.
7	CS115	Working state 2	5A	Test position: Complete power cables, Positive power cable, Cable bundle.

8	CS116	Working state 1	I_{max}=10A	Test position: Complete power cables, Positive power cable, Cable bundle.
9	RE101	Working state 1	Test frequency: 25Hz to 100kHz According to the requirements of the entrusting party: 25Hz to 450Hz:160.5 dBpT to 114dBpT 450Hz to 30kHz: 114 dBpT to 76dBpT 30kHz to 100kHz: 76dBpT	Test position: According to the requirements of the entrusting party,take the keyboard surface of the tested object as the front,Test its front,back, left,right,top and cable harnss.
10	RE102	Working state 3	10kHz to 18GHz According to the requirements of the entrusting party: GJB151B in Figure 56,Submarin（outside the pressure cabin）	Test position: Test configuration boundary center, test device.
11	RS101	Working state 1	25Hz to 100kHz According to the requirements of the entrusting party: 25Hz to 60Hz:182dBpT 60Hz～100kHz:182 dBpT to 116dBpT	Test position: According to the requirements of the entrusting party,take the keyboard surface of the tested object as the front,Test its front,back, left,right,top and cable harnss.
12	RS103	Working state 1	Test frequency: 10kHz to 40GHz: 200V/m	Test position: Test configuration boundary center, test device.

Table 7 Functional Check of EUT（RS103 items are critical process G）

No.	Monitor content	Monitor	Eligibility criteria
1	EUT function	Monitor the test software display of test computer	The communication between the keyboard and the test computer is normal. When the keys are tapped,the corresponding keys on the keyboard test software turns green to be in conformity,otherwise it is not in conformity.
Note:Per customer's requirement, CS106 was not assessed in this EMC test.			

GRGT Confirm: We agree to test according to the requirement. Sign: Wang Peng 2024.7.25	**Customer Confirm:** We agree to test according to the requirement. Sign: Caesar Chen 2024.7.25

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