ATJC
AN TENG TESTING

Declaration of Conformity

Certification No.	:	**ATJC21082580004700E**
Applicant	:	**Redkey USB LTD**
Address	:	**Kemp House, 160 City Road, London, EC1V 2NX, United Kingdom**
Manufacturer	:	**Redkey USB LTD**
Address	:	**Kemp House, 160 City Road, London, EC1V 2NX, United Kingdom**
Certification Marking	:	**CE-EMC**
Product Description	:	**USB Flash Drive**
Model	:	**RKLEDV4UDP2ZN, RKLEDV4UDP3ZN, GKLEDV4UDP3ZN, AULEDV4UDP3ZN, PLEDV4UDP3ZN, OLEDV4UDP3ZN, MLEDV4UDP3ZN, WLEDV4UDP3ZN, QLEDV4UDP3ZN**
Rating	:	**5V⎓, 1A**
Trademark	:	**N/A**

Sufficient samples of the product have been tested and found to be in conformity with

Test Standards	:	**EN 55032:2015, EN 55035:2017** **EN 61000-3-2:2019, EN61000-3-3:2013+A1:2019.**

When tested as specified, the submitted sample complies with EMC Directives 2014/30/EU
The certificate is based on a single evaluation of one sample of above-mentioned products. It does not imply an assessment of the whole production and does not permit the use of the test laboratory logo.

CE

Authorized Signer : _____

Shenzhen An-Teng Testing Service Co., Ltd

Henry Tian / Manager

August 25, 2021

Shenzhen An-Teng Testing Service Co., Ltd
Floor 5, No. 11, Hebei Industrial Zone, Hualian Community, Longhua Street, Longhua District, Shenzhen, China.
Tel: 86-755-2772452 Fax: 86-755-27724533 Web: www.antenglab.com

EMC TEST REPORT

Equipment	USB Flash Drive
Trademark	N/A
Model No.	RKLEDV4UDP2ZN, RKLEDV4UDP3ZN, GKLEDV4UDP3ZN, AULEDV4UDP3ZN, PLEDV4UDP3ZN, OLEDV4UDP3ZN, MLEDV4UDP3ZN, WLEDV4UDP3ZN, QLEDV4UDP3ZN
Report No.	ATJC21082580004700E
Applicant	Redkey USB LTD
	Kemp House, 160 City Road, London, EC1V 2NX, United Kingdom
Manufacturer	Redkey USB LTD
	Kemp House, 160 City Road, London, EC1V 2NX, United Kingdom
Prepared by	Shenzhen An-Teng Testing Service Co., Ltd.
	Floor 5, No. 11, Hebei Industrial Zone, Hualian Community, Longhua Street, Longhua District, Shenzhen, China.
Date of Receipt	August 23, 2021
Date of Test(s)	August 23 – August 25, 2021
Date of Issue	August 25, 2021
Test Standard(s)	EN 55032:2015, EN 55035:2017 EN 61000-3-2:2019, EN 61000-3-3:2013+A1:2019

In the configuration tested, the EUT complied with the standards specified above.

Tested : Cris Song/Engineer Date : August 25, 2021

:

Approved : Henry Tian/Manager Date : August 25, 2021

Note:

The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This test report shall not be reproduced except in full, without prior written approval of ATJC. This document may be altered or revised by ATJC, personnel only, and shall be noted in the revision of the document.

Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
0	August 25, 2021	Initial Issue	All Page	Bussia Chen

Table of Contents

1. TEST SUMMARY

Emission			
Requirement - Test	Test Method	Limit	Result
Conducted Emission	EN 55032:2015	Class B	N/A
Radiated emissions at frequencies up to 1 GHz		Class B	PASS
Radiated emissions at frequencies above 1 GHz		Class B	N/A
Harmonic current emissions	EN 61000-3-2:2019	Class A	N/A
Voltage changes, voltage fluctuations and flicker	EN 61000-3-3:2013+A1:2019	Clause 5	N/A
Immunity (EN 55035:2017)			
Requirement - Test	Test Method	Performance criteria	Result
Electrostatic discharges (ESD)	EN 61000-4-2:2009	B	PASS
Electromagnetic field	EN 61000-4-3:2006+A1:2008+A2:2010	A	PASS
Electrical fast transients/burst (EFT/B)	EN 61000-4-4:2004+A1:2010	B	N/A
Surges	EN 61000-4-5:2006	B	N/A
Conducted RF	EN 61000-4-6:2009	A	N/A
Power frequency magnetic field	EN 61000-4-8:2010	A	N/A
Voltage dips and Short interruptions	EN 61000-4-11:2009+A1:2010	B & C	N/A

Remark: N/A is abbreviation for Not Applicable.

The test was carried out in all the test modes, only the worst data are list in report.

2. GENERAL INFORMATION

2.1. Description of EUT

Equipment	USB Flash Drive
Trademark	N/A
Model Name	RKLEDV4UDP2ZN
Serial No.	RKLEDV4UDP3ZN, GKLEDV4UDP3ZN, AULEDV4UDP3ZN, PLEDV4UDP3ZN, OLEDV4UDP3ZN, MLEDV4UDP3ZN, WLEDV4UDP3ZN, QLEDV4UDP3ZN
Model Difference	All models are the same except for the difference in appearance, size and power
Rated Power Supply	5V⎓, 1A
Rated Power	5W
Normal Testing Voltage	5V⎓, 1A
Configuration	☒ Table-top ☐ Floor-standing
Accessory Device	N/A
Cable Supplied	N/A

Note:

1. Other Accessory Device List and Details

Description	Manufacturer	Model	Note

External I/O Cable

Cable Description	Shielded Type	Ferrite Core	Length(m)	Note
	☐ Shielded ☐ Non-shielded	☐ Yes ☐ No		

2. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

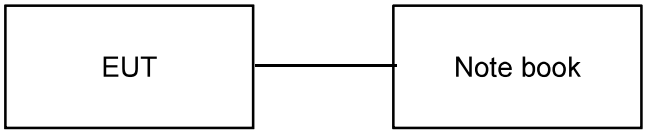
2.2. Operating condition of EUT

Test mode	Description
1	Working
2	
3	
4	

2.3. Test conditions

Temperature: 15-35℃
Relative Humidity: 30-60 %
Atmospheric pressure: 800hPa-1060hPa

2.4. Block diagram of EUT configuration



3. FACILITIES

3.1. Test Facility

ATJC-LAB

Floor 5, No. 11, Hebei Industrial Zone, Hualian Community, Longhua Street, Longhua District, Shenzhen, China.

3.2. Test Instruments

Radiated Emission Measurement (Test software: EZ-EMC Ver. FA-03A2 RE)

Item	Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA 9120D	1911	2021-11-02
2	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	869	2021-11-02
3	Amplifier	Agilent	8449B	3008A01838	2021-11-02
4	Amplifier	HP	8447E	2945A02747	2021-11-02
5	EMI TEST RECEIVER	ROHDE&SCHWARZ	ESPI7	100362	2021-11-02
6	Coaxial cable	ETS	RFC-SNS-100-NMS-80 NI	/	2021-11-02
7	Coaxial cable	ETS	RFC-SNS-100-NMS-20 NI	/	2021-11-02
8	Coaxial cable	ETS	RFC-SNS-100-SMS-20 NI	/	2021-11-02
9	Coaxial cable	ETS	RFC-NNS-100-NMS-300 NI	/	2021-11-02

Electrostatic Discharge Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	ESD Simulator	TESTQ	NSG437	329	2021-11-02

RF electromagnetic field Test

Item	Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Signal Generator	Agilent	N5182A	MY47420195	2021-11-02
2	Log-Bicon Antenna	Schwarzbeck	VULB9161	9128ES-128	2021-11-02
3	Power Amplifier	AR	150W1000M1	342526	2021-11-02
4	Microwave Horn Antenna	AR	AT4002A	322279	2021-11-02
5	Power Amplifier	AR	25S1G4A	321116	2021-11-02

4. Measurement uncertainty

The following table is for the measurement uncertainty, which is calculated as per the document CISPR 16-4.

Test	Parameters	Expanded Uncertainty (U_{Lab})	Expanded Uncertainty (U_{Cispr})
Conducted Emission	Level Accuracy: 150kHz to 30MHz	±1.22 dB	±3.6 dB
Radiated Emission	Level Accuracy: 30MHz to 1000 MHz	±3.67 dB	±5.2 dB
Radiated Emission	Level Accuracy: Above 1000MHz	±4.79 dB	N/A

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

5. Emission

5.1. Conducted Emission

5.1.1. Limit

Requirements for conducted emissions from the AC mains power ports of Class A equipment

Frequency range MHz	Coupling device	Detector type / bandwidth	Class A limits dB(μV)
0,15 to 0,5	AMN	Quasi Peak / 9 kHz	79
0,5 to 30			73
0,15 to 0,5		Average / 9 kHz	66
0,5 to 30			60

Requirements for conducted emissions from the AC mains power ports of Class B equipment

Frequency range MHz	Coupling device	Detector type / bandwidth	Class B limits dB(μV)
0,15 to 0,5	AMN	Quasi Peak / 9 kHz	66 to 56
0,5 to 5			56
5 to 30			60
0,15 to 0,5		Average / 9 kHz	56 to 46
0,5 to 5			46
5 to 30			50

Requirements for asymmetric mode conducted emissions from Class A equipment

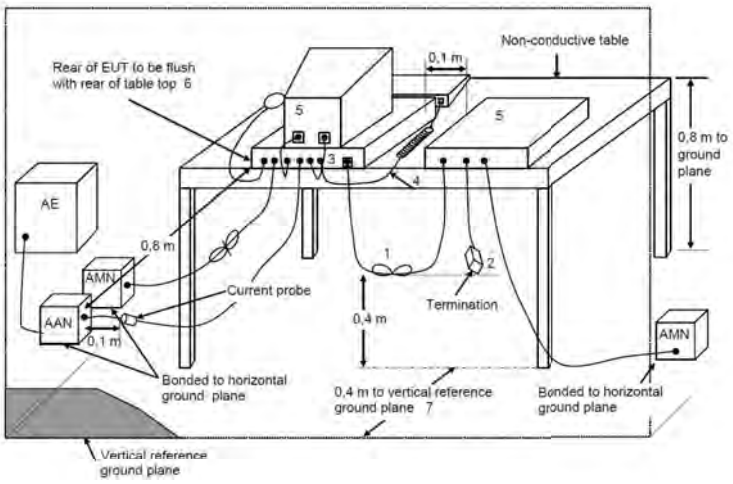
Frequency range MHz	Coupling device	Detector type / bandwidth	Class A limits dB(μV)
0,15 to 0,5	AAN	Quasi Peak / 9 kHz	97 to 87
0,5 to 30			87
0,15 to 0,5		Average / 9 kHz	84 to 74
0,5 to 30			74

Requirements for asymmetric mode conducted emissions from Class B equipment

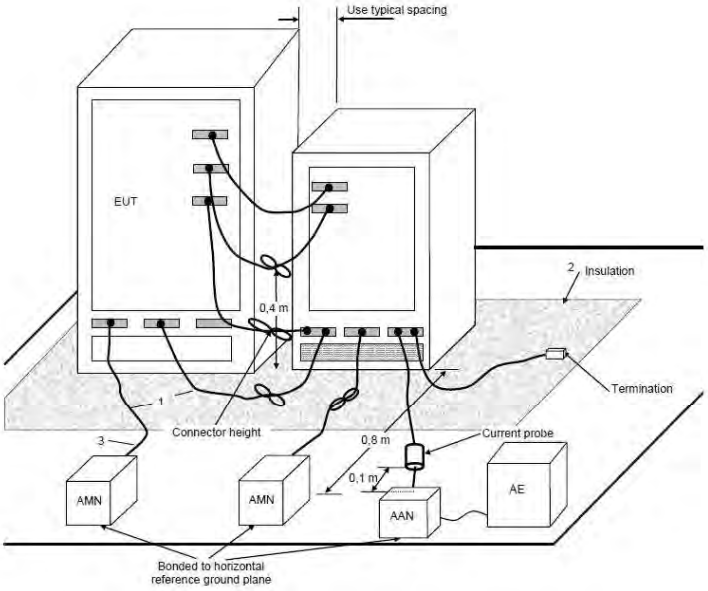
Frequency range MHz	Coupling device	Detector type / bandwidth	Class B limits dB(μV)
0,15 to 0,5	AAN	Quasi Peak / 9 kHz	84 to 74
0,5 to 30			74
0,15 to 0,5		Average / 9 kHz	74 to 64
0,5 to 30			64

5.1.2. Test setup

For table-top equipment



For floor standing equipment



5.1.3. Test procedure

Measurement was performed in shielded room, and instruments used were followed CISPR 16-2-1 clause7.
Detailed test procedure was following clause 7 of CISPR 16-2-1.
Frequency range 150kHz – 30MHz was checked and EMI receiver measurement bandwidth was set to 9 kHz.

5.1.4. Test results

N/A

5.2. Radiated emissions

5.2.1. Limit

Requirements for radiated emissions at frequencies up to 1 GHz for class A equipment

Frequency range MHz	Measurement			Class B limits dB(μV/m)
	Facility	Distance m	Detector type / bandwidth	
30 to 230	SAC	3	Quasi Peak / 120 kHz	50
230 to 1 000				57

Requirements for radiated emissions at frequencies above 1 GHz for class A equipment

Frequency range MHz	Measurement			Class B limits dB(μV/m)
	Facility	Distance m	Detector type / bandwidth	
1 000 to 3 000	FSOATS	3	Average / 1MHz	56
3 000 to 6 000				60
1 000 to 3 000		3	Average / 1MHz	76
3 000 to 6 000				80

Requirements for radiated emissions at frequencies up to 1 GHz for class B equipment

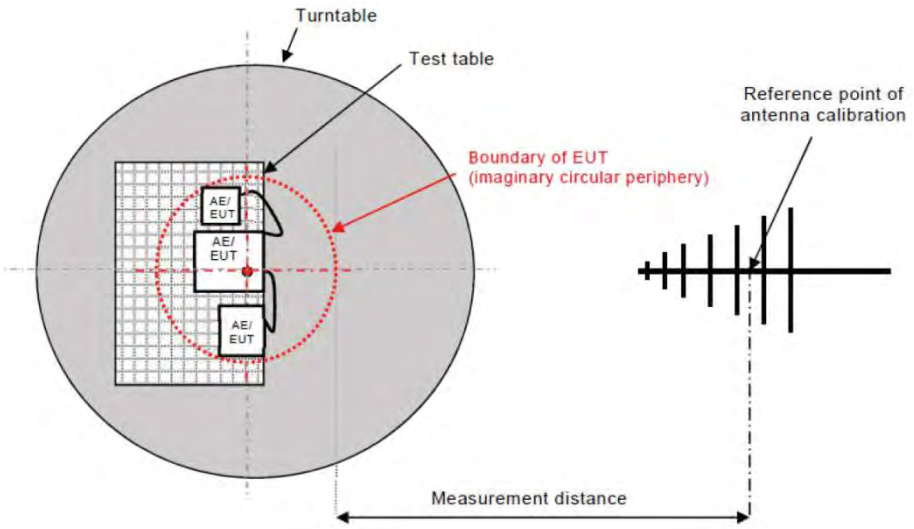
Frequency range MHz	Measurement			Class B limits dB(μV/m)
	Facility	Distance m	Detector type / bandwidth	
30 to 230	SAC	3	Quasi Peak / 120 kHz	40
230 to 1 000				47

Requirements for radiated emissions at frequencies above 1 GHz for class B equipment

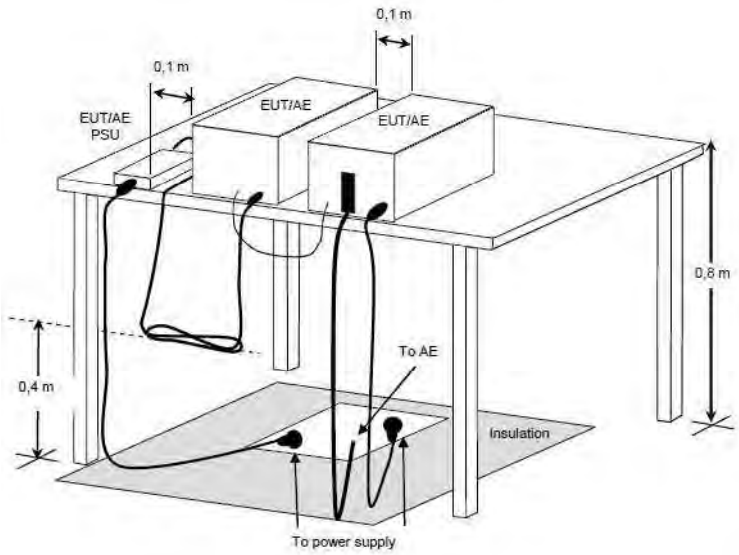
Frequency range MHz	Measurement			Class B limits dB(μV/m)
	Facility	Distance m	Detector type / bandwidth	
1 000 to 3 000	FSOATS	3	Average / 1MHz	50
3 000 to 6 000				54
1 000 to 3 000		3	Average / 1MHz	70
3 000 to 6 000				74

5.2.2. Block diagram of test setup

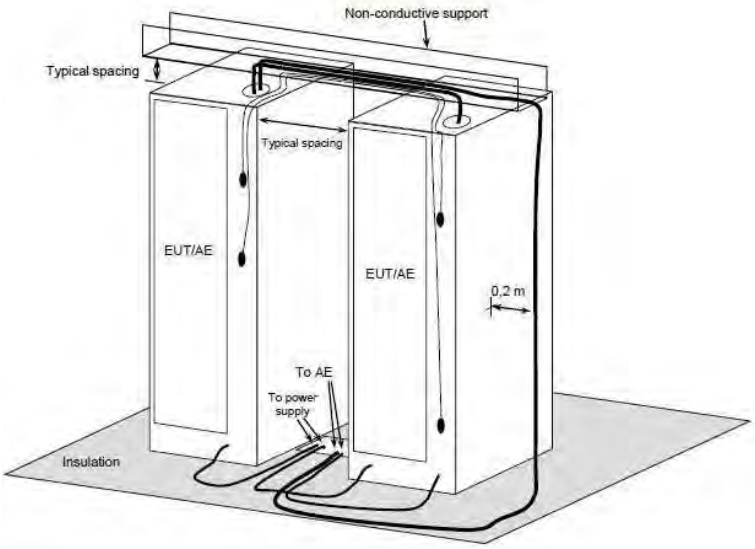
Measurement distance



For table-top equipment



For floor standing equipment



5.2.3. Test procedure

The measurement was performed in a semi-anechoic chamber.
The distance from EUT to receiving antenna is 3 meters.
Measurement was performed according to clause 7.3 of CISPR 16-2-3.

5.2.4. Test results

PASS

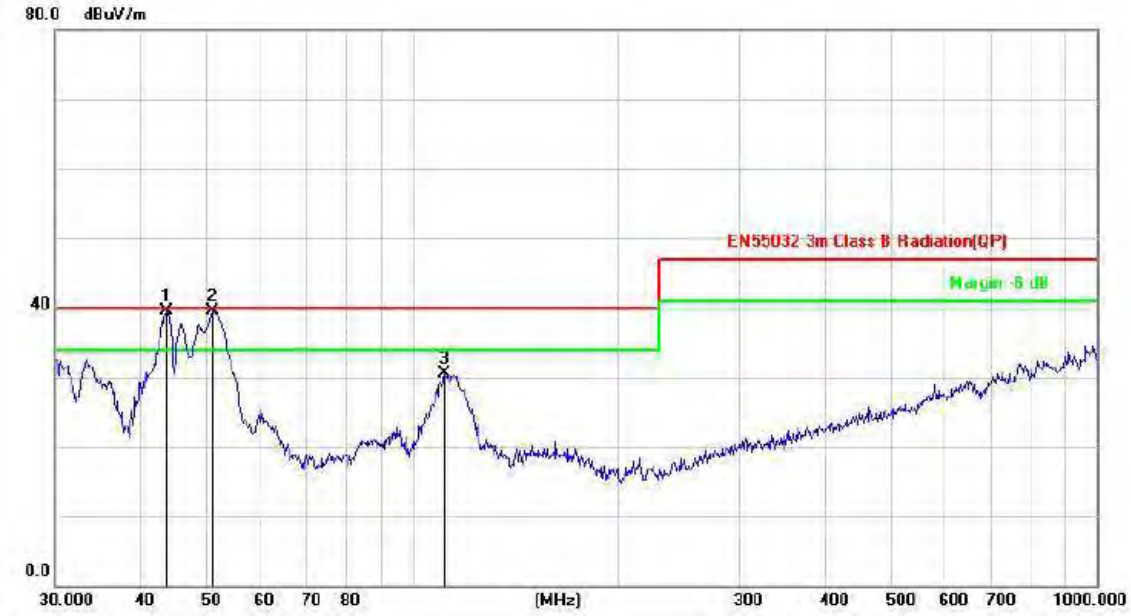
Please refer to the following page.

Polarization: H

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1	*	50.7637	35.19	-6.59	28.60	40.00	-11.40	peak
2		115.3205	35.70	-8.60	27.10	40.00	-12.90	peak

Note: Result=Reading+Factor
Over Limit=Result-Limit

Polarization: V



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1	*	43.6584	46.13	-6.61	39.52	40.00	-0.48	peak
2	!	50.9420	46.05	-6.61	39.44	40.00	-0.56	peak
3		111.3468	39.50	-9.07	30.43	40.00	-9.57	peak

Note: Result=Reading+Factor
Over Limit=Result-Limit

6. Immunity

Performance criteria

Performance criterion **A**

The equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss function is allowed below a performance level specified by the manufacturer, when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

Performance criterion **B**

The equipment shall continue to operate as intended after the test. No degradation of performance or loss function is allowed below a performance level specified by the manufacturer, when the equipment is used as intended. During the test, degradation of performance is however allowed. No change of actual operating state or stored data is allowed. If the minimum performance level or the permissible performance loss is specified by the manufacturer, either of these may be derived from the product description and documentation and what the user may reasonably expect from equipment if used as intended.

Performance criterion **C**

Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by operation of the controls.

6.1. Electrostatic discharges (ESD)

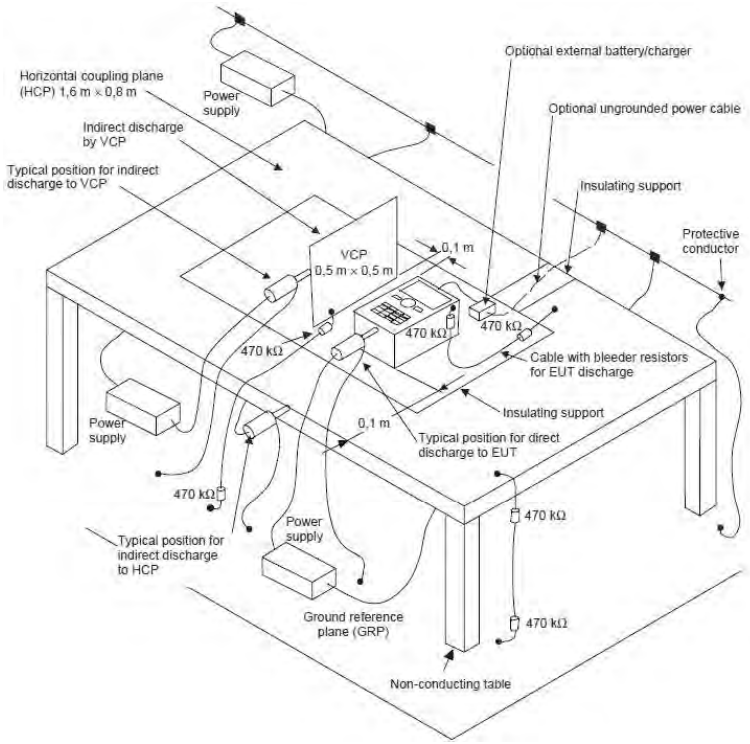
6.1.1. Test Levels and Performance Criterion

Characteristics	Test levels
Air discharge	±8 kV
Contact discharge	±4 kV

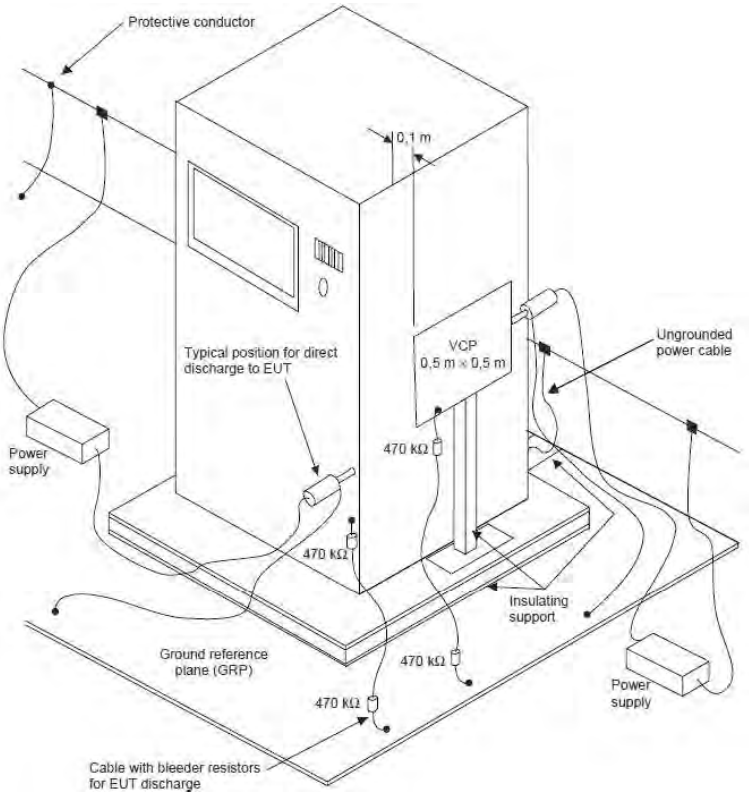
Performance criterion: **B**

6.1.2. Test setup

For table-top equipment



For floor standing equipment



6.1.3. Test Procedure

Measurement was performed in shielded room.
Measurement procedure was applied according to EN 61000-4-2 clause 8.
The test method and equipment were specified by EN 61000-4-2.

6.1.4. Test Result

PASS

Please refer to the following page.

No.	Location of discharge	Polarity	Discharge	Number of discharges	Test level kV	Result
1	HCP top side	P&N	C	25	4	PASS
3	HCP bottom side	P&N	C	25	4	PASS
5	VCP right side	P&N	C	25	4	PASS
7	VCP left side	P&N	C	25	4	PASS
9	Points on conductive surface	P&N	C	25	4	PASS
10	Points on non-conductive surface	P&N	A	10	8	PASS
HCP = Horizontal coupling plate VCP = Vertical coupling plate N = Negative P = Positive A = Air discharge C = Contact discharge						

6.2. Electromagnetic field

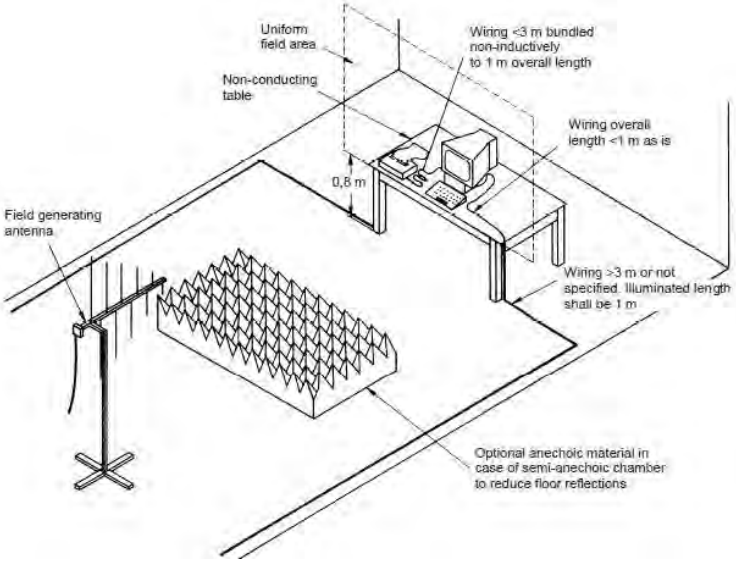
6.2.1. Test Levels and Performance Criterion

Characteristics	Test levels	Test levels
Frequency range	80 MHz to 1 000 MHz,	1 800MHz, 2 600MHz, 3 500MHz, 5 000MHz
Test level	3 V/m (unmodulated)	1 V/m (unmodulated)
Modulation	1 kHz, 80 % AM, sine wave	1 kHz, 80 % AM, sine wave

Performance criterion: **A**

6.2.2. Test setup

For table-top equipment



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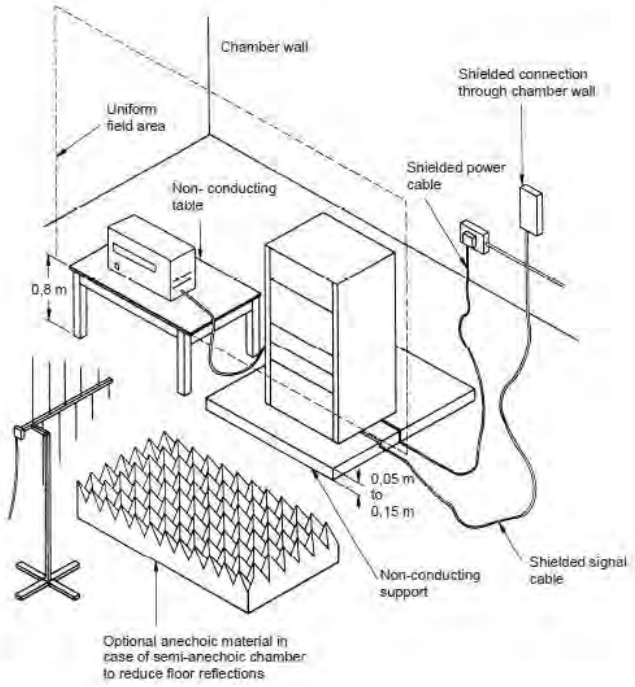


6.2.3. Test Procedure

Measurement was performed in full-anechoic chamber.
Measurement procedure was applied according to EN 61000-4-3 clause 8.
The test method and equipment was specified by EN 61000-4-3.

6.2.4. Test Result

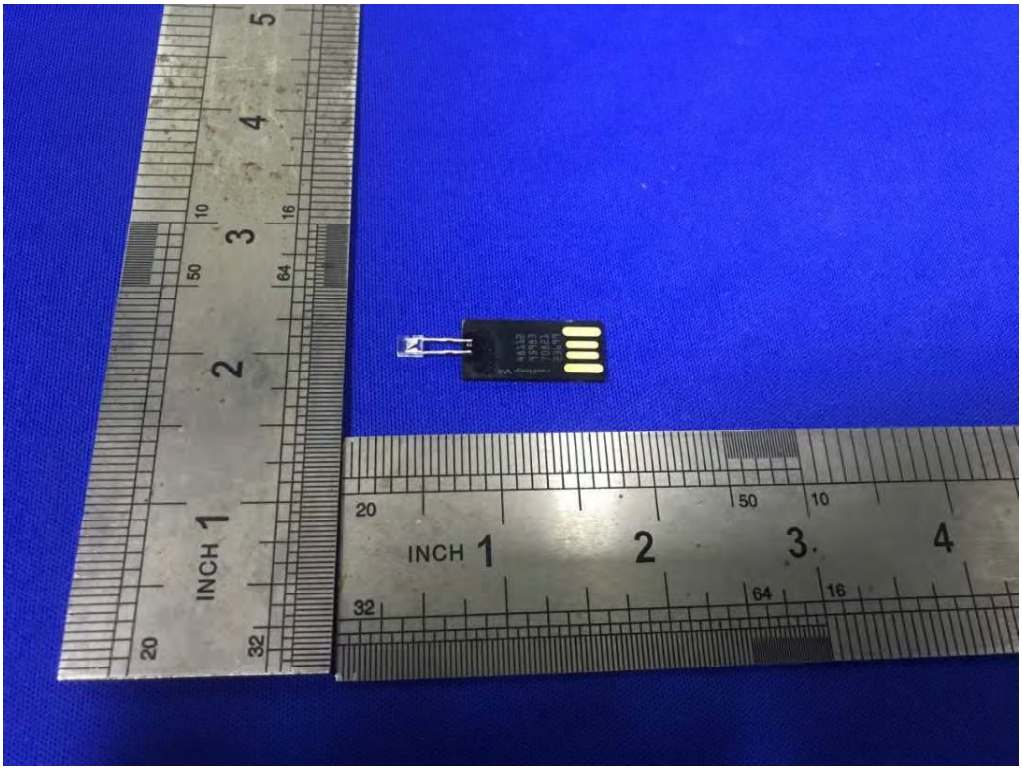
PASS

Enclosure	Horizontal	Vertical
Front	PASS	PASS
Right Side	PASS	PASS
Left Side	PASS	PASS
Rear	PASS	PASS

7. Photographs of EUT

Photographs of EUT

Photographs of EUT



------ End of report ------

AN TENG TESTING CERTIFICATION ▲▼ AN TENG TESTING CERTIFICATION ▲▼ AN TENG TESTING CERTIFICATION

ATJC
AN TENG TESTING

Declaration of Conformity

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Applicant	:	**Redkey USB LTD**
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Manufacturer	:	**Redkey USB LTD**
Address	:	**Kemp House, 160 City Road, London, EC1V 2NX, United Kingdom**
Certification Marking	:	**CE-EMC**
Product Description	:	**USB Flash Drive**
Model	:	**RKUSBCV4PCBA3AL, BKUSBCV4PCBA3AL, GKUSBCV4PCBA3AL, AUKUSBCV4PCBA3AL, PKUSBCV4PCBA3AL, OKUSBCV4PCBA3AL, MKUSBCV4PCBA3AL, WKUSBCV4PCBA3AL, QKUSBCV4PCBA3AL**
Rating	:	**5V⎓, 1A**
Trademark	:	**N/A**

Sufficient samples of the product have been tested and found to be in conformity with

Test Standards	:	**EN 55032:2015, EN 55035:2017** **EN 61000-3-2:2019, EN61000-3-3:2013+A1:2019.**

When tested as specified, the submitted sample complies with EMC Directives 2014/30/EU

The certificate is based on a single evaluation of one sample of above-mentioned products. It does not imply an assessment of the whole production and does not permit the use of the test laboratory logo.

CE

Authorized Signer : _____

Henry Tian / Manager

Sep. 09, 2021

Shenzhen An-Teng Testing Service Co., Ltd

Floor 5, No. 11, Hebei Industrial Zone, Hualian Community, Longhua Street, Longhua District, Shenzhen, China.

Tel: 86-755-2772452 Fax: 86-755-27724533 Web: www.antenglab.com

EMC TEST REPORT

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Trademark	N/A
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Report No.	ATJC21090980002700E
Applicant	Redkey USB LTD
	Kemp House, 160 City Road, London, EC1V 2NX, United Kingdom
Manufacturer	Redkey USB LTD
	Kemp House, 160 City Road, London, EC1V 2NX, United Kingdom
Prepared by	Shenzhen An-Teng Testing Service Co., Ltd.
	Floor 5, No. 11, Hebei Industrial Zone, Hualian Community, Longhua Street, Longhua District, Shenzhen, China.
Date of Receipt	Sep. 06, 2021
Date of Test(s)	Sep. 06 – Sep. 09, 2021
Date of Issue	Sep. 09, 2021
Test Standard(s)	EN 55032:2015, EN 55035:2017 EN 61000-3-2:2019, EN 61000-3-3:2013+A1:2019

In the configuration tested, the EUT complied with the standards specified above.

Tested : Cris Song/Engineer Date : Sep. 09, 2021

Approved : Henry Tian/Manager Date : Sep. 09, 2021

Note:

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Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
0	Sep. 09, 2021	Initial Issue	All Page	Cris Song

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Voltage changes, voltage fluctuations and flicker	EN 61000-3-3:2013+A1:2019	Clause 5	N/A
Immunity (EN 55035:2017)			
Requirement - Test	Test Method	Performance criteria	Result
Electrostatic discharges (ESD)	EN 61000-4-2:2009	B	PASS
Electromagnetic field	EN 61000-4-3:2006+A1:2008+A2:2010	A	PASS
Electrical fast transients/burst (EFT/B)	EN 61000-4-4:2004+A1:2010	B	N/A
Surges	EN 61000-4-5:2006	B	N/A
Conducted RF	EN 61000-4-6:2009	A	N/A
Power frequency magnetic field	EN 61000-4-8:2010	A	N/A
Voltage dips and Short interruptions	EN 61000-4-11:2009+A1:2010	B & C	N/A

Remark: N/A is abbreviation for Not Applicable.

The test was carried out in all the test modes, only the worst data are list in report.

2. GENERAL INFORMATION

2.1. Description of EUT

Equipment	USB Flash Drive
Trademark	N/A
Model Name	RKUSBCV4PCBA3AL
Serial No.	BKUSBCV4PCBA3AL, GKUSBCV4PCBA3AL, AUKUSBCV4PCBA3AL, PKUSBCV4PCBA3AL, OKUSBCV4PCBA3AL, MKUSBCV4PCBA3AL, WKUSBCV4PCBA3AL, QKUSBCV4PCBA3AL
Model Difference	All models are the same except for the difference in appearance, size and power
Rated Power Supply	5V⎓, 1A
Rated Power	5W
Normal Testing Voltage	5V⎓, 1A
Configuration	☒ Table-top ☐ Floor-standing
Accessory Device	N/A
Cable Supplied	N/A

Note:

1. Other Accessory Device List and Details

Description	Manufacturer	Model	Note

External I/O Cable

Cable Description	Shielded Type	Ferrite Core	Length(m)	Note
	☐ Shielded ☐ Non-shielded	☐ Yes ☐ No		

2. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

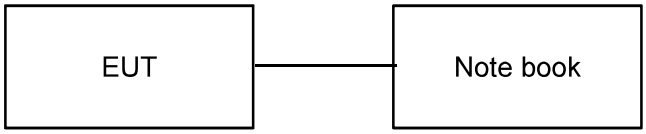
2.2. Operating condition of EUT

Test mode	Description
1	Working
2	
3	
4	

2.3. Test conditions

Temperature: 15-35℃
Relative Humidity: 30-60 %
Atmospheric pressure: 800hPa-1060hPa

2.4. Block diagram of EUT configuration



3. FACILITIES

3.1. Test Facility

ATJC-LAB

Floor 5, No. 11, Hebei Industrial Zone, Hualian Community, Longhua Street, Longhua District, Shenzhen, China.

3.2. Test Instruments

Radiated Emission Measurement (Test software: EZ-EMC Ver. FA-03A2 RE)

Item	Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA 9120D	1911	2021-11-02
2	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	869	2021-11-02
3	Amplifier	Agilent	8449B	3008A01838	2021-11-02
4	Amplifier	HP	8447E	2945A02747	2021-11-02
5	EMI TEST RECEIVER	ROHDE&SCHWARZ	ESPI7	100362	2021-11-02
6	Coaxial cable	ETS	RFC-SNS-100-NMS-80 NI	/	2021-11-02
7	Coaxial cable	ETS	RFC-SNS-100-NMS-20 NI	/	2021-11-02
8	Coaxial cable	ETS	RFC-SNS-100-SMS-20 NI	/	2021-11-02
9	Coaxial cable	ETS	RFC-NNS-100-NMS-300 NI	/	2021-11-02

Electrostatic Discharge Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	ESD Simulator	TESTQ	NSG437	329	2021-11-02

RF electromagnetic field Test

Item	Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Signal Generator	Agilent	N5182A	MY47420195	2021-11-02
2	Log-Bicon Antenna	Schwarzbeck	VULB9161	9128ES-128	2021-11-02
3	Power Amplifier	AR	150W1000M1	342526	2021-11-02
4	Microwave Horn Antenna	AR	AT4002A	322279	2021-11-02
5	Power Amplifier	AR	25S1G4A	321116	2021-11-02

4. Measurement uncertainty

The following table is for the measurement uncertainty, which is calculated as per the document CISPR 16-4.

Test	Parameters	Expanded Uncertainty (U_{Lab})	Expanded Uncertainty (U_{Cispr})
Conducted Emission	Level Accuracy: 150kHz to 30MHz	±1.22 dB	±3.6 dB
Radiated Emission	Level Accuracy: 30MHz to 1000 MHz	±3.67 dB	±5.2 dB
Radiated Emission	Level Accuracy: Above 1000MHz	±4.79 dB	N/A

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

5. Emission

5.1. Conducted Emission

5.1.1. Limit

Requirements for conducted emissions from the AC mains power ports of Class A equipment

Frequency range MHz	Coupling device	Detector type / bandwidth	Class A limits dB(μV)
0,15 to 0,5	AMN	Quasi Peak / 9 kHz	79
0,5 to 30			73
0,15 to 0,5		Average / 9 kHz	66
0,5 to 30			60

Requirements for conducted emissions from the AC mains power ports of Class B equipment

Frequency range MHz	Coupling device	Detector type / bandwidth	Class B limits dB(μV)
0,15 to 0,5	AMN	Quasi Peak / 9 kHz	66 to 56
0,5 to 5			56
5 to 30			60
0,15 to 0,5		Average / 9 kHz	56 to 46
0,5 to 5			46
5 to 30			50

Requirements for asymmetric mode conducted emissions from Class A equipment

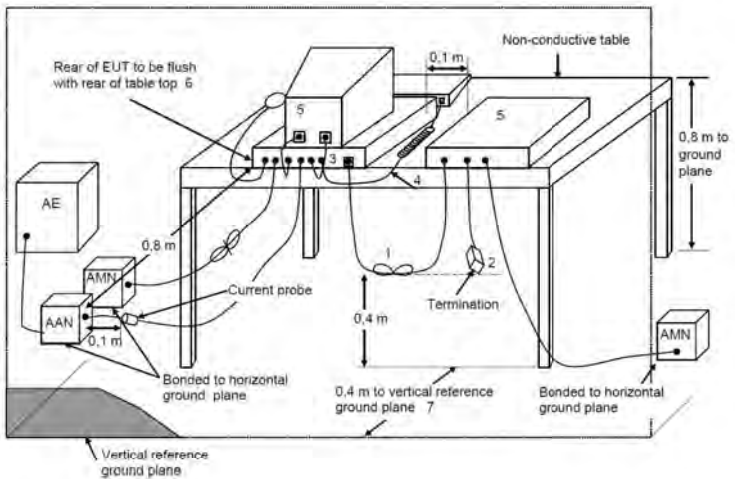
Frequency range MHz	Coupling device	Detector type / bandwidth	Class A limits dB(μV)
0,15 to 0,5	AAN	Quasi Peak / 9 kHz	97 to 87
0,5 to 30			87
0,15 to 0,5		Average / 9 kHz	84 to 74
0,5 to 30			74

Requirements for asymmetric mode conducted emissions from Class B equipment

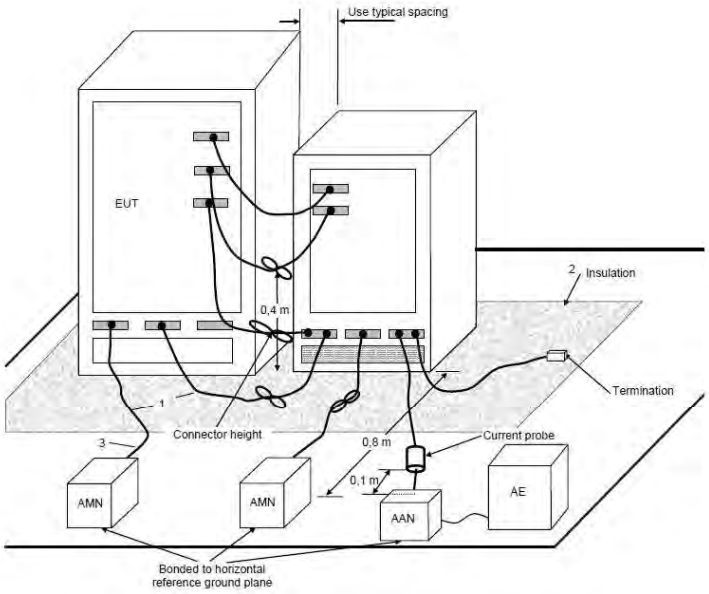
Frequency range MHz	Coupling device	Detector type / bandwidth	Class B limits dB(μV)
0,15 to 0,5	AAN	Quasi Peak / 9 kHz	84 to 74
0,5 to 30			74
0,15 to 0,5		Average / 9 kHz	74 to 64
0,5 to 30			64

5.1.2. Test setup

For table-top equipment



For floor standing equipment



5.1.3. Test procedure

Measurement was performed in shielded room, and instruments used were followed CISPR 16-2-1 clause7.
Detailed test procedure was following clause 7 of CISPR 16-2-1.
Frequency range 150kHz – 30MHz was checked and EMI receiver measurement bandwidth was set to 9 kHz.

5.1.4. Test results

N/A

5.2. Radiated emissions

5.2.1. Limit

Requirements for radiated emissions at frequencies up to 1 GHz for class A equipment

Frequency range MHz	Measurement			Class B limits dB(μV/m)
	Facility	Distance m	Detector type / bandwidth	
30 to 230	SAC	3	Quasi Peak / 120 kHz	50
230 to 1 000				57

Requirements for radiated emissions at frequencies above 1 GHz for class A equipment

Frequency range MHz	Measurement			Class B limits dB(μV/m)
	Facility	Distance m	Detector type / bandwidth	
1 000 to 3 000	FSOATS	3	Average / 1MHz	56
3 000 to 6 000				60
1 000 to 3 000		3	Average / 1MHz	76
3 000 to 6 000				80

Requirements for radiated emissions at frequencies up to 1 GHz for class B equipment

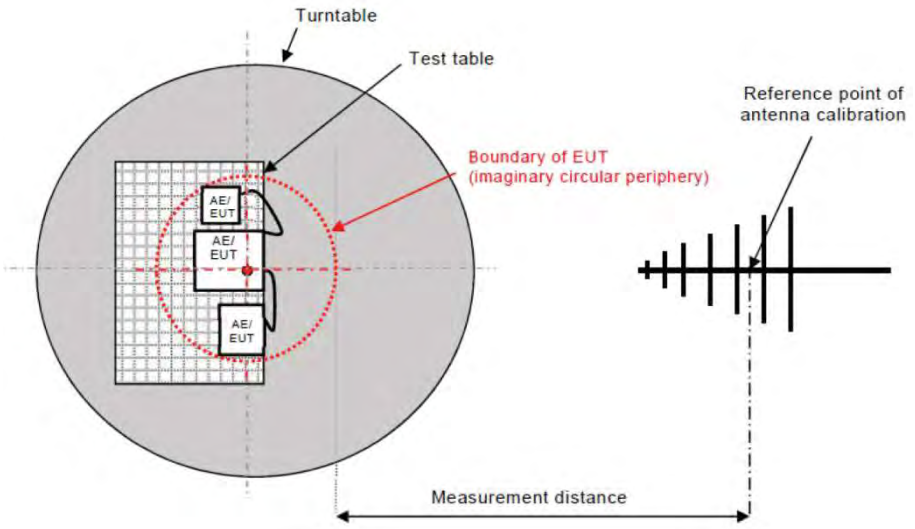
Frequency range MHz	Measurement			Class B limits dB(μV/m)
	Facility	Distance m	Detector type / bandwidth	
30 to 230	SAC	3	Quasi Peak / 120 kHz	40
230 to 1 000				47

Requirements for radiated emissions at frequencies above 1 GHz for class B equipment

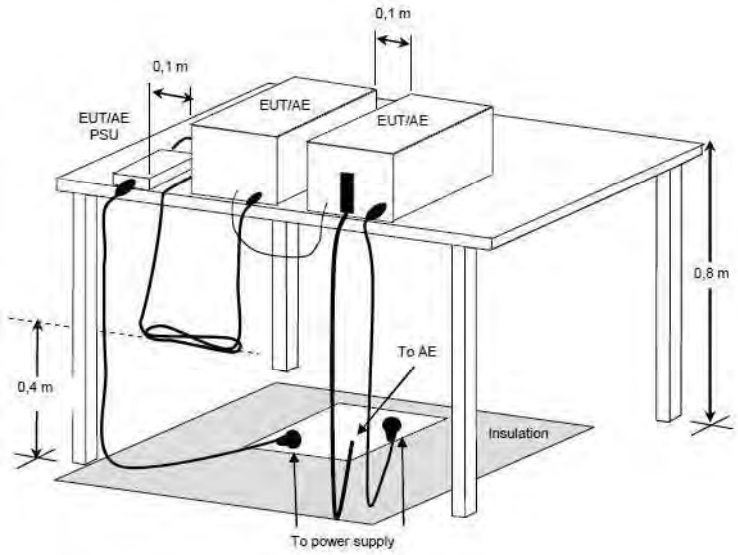
Frequency range MHz	Measurement			Class B limits dB(μV/m)
	Facility	Distance m	Detector type / bandwidth	
1 000 to 3 000	FSOATS	3	Average / 1MHz	50
3 000 to 6 000				54
1 000 to 3 000		3	Average / 1MHz	70
3 000 to 6 000				74

5.2.2. Block diagram of test setup

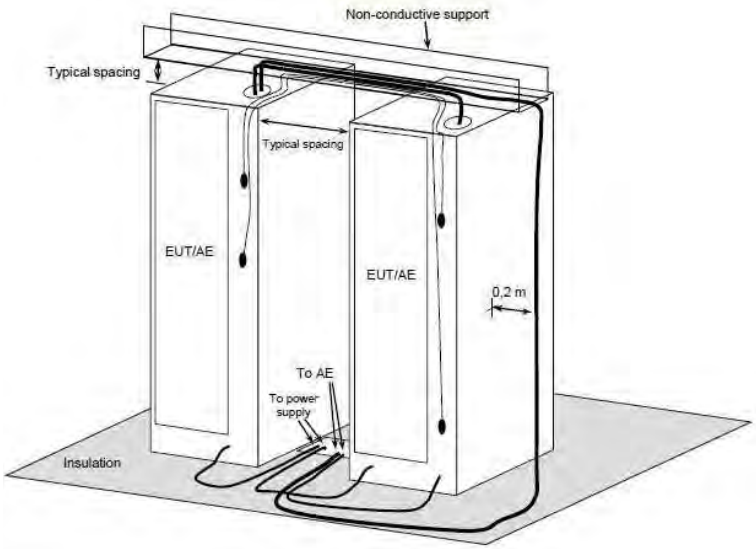
Measurement distance



For table-top equipment



For floor standing equipment



5.2.3. Test procedure

The measurement was performed in a semi-anechoic chamber.
The distance from EUT to receiving antenna is 3 meters.
Measurement was performed according to clause 7.3 of CISPR 16-2-3.

5.2.4. Test results

PASS

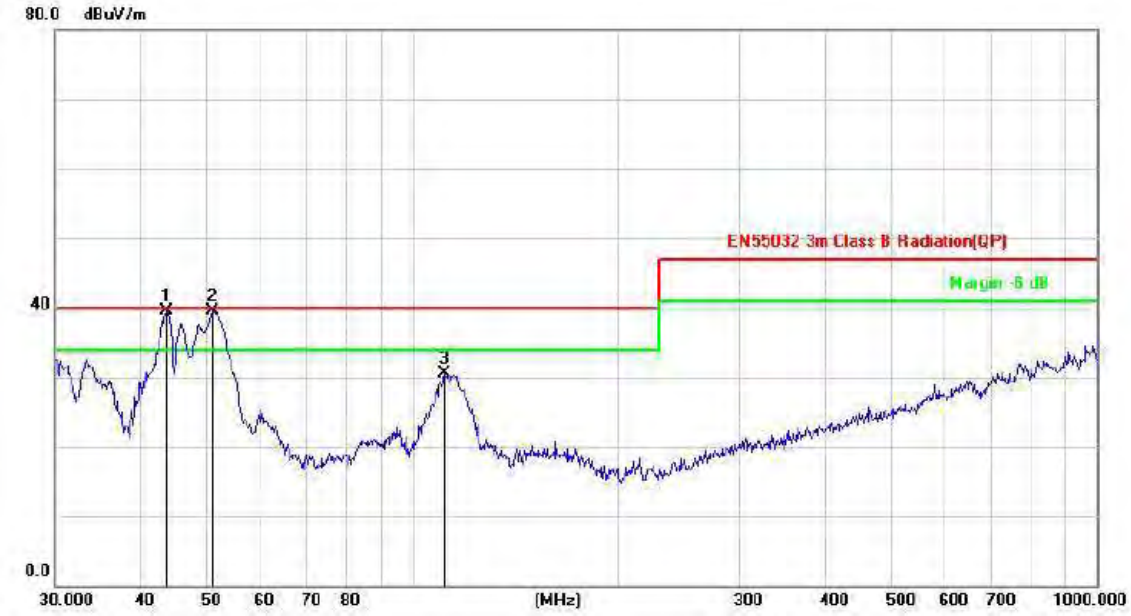
Please refer to the following page.

Polarization: H

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1	*	50.7637	35.19	-6.59	28.60	40.00	-11.40	peak
2		115.3205	35.70	-8.60	27.10	40.00	-12.90	peak

Note: Result=Reading+Factor
Over Limit=Result-Limit

Polarization: V



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1	*	43.6584	46.13	-6.61	39.52	40.00	-0.48	peak
2	!	50.9420	46.05	-6.61	39.44	40.00	-0.56	peak
3		111.3468	39.50	-9.07	30.43	40.00	-9.57	peak

Note: Result=Reading+Factor
Over Limit=Result-Limit

6. Immunity

Performance criteria

Performance criterion **A**

The equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss function is allowed below a performance level specified by the manufacturer, when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

Performance criterion **B**

The equipment shall continue to operate as intended after the test. No degradation of performance or loss function is allowed below a performance level specified by the manufacturer, when the equipment is used as intended. During the test, degradation of performance is however allowed. No change of actual operating state or stored data is allowed. If the minimum performance level or the permissible performance loss is specified by the manufacturer, either of these may be derived from the product description and documentation and what the user may reasonably expect from equipment if used as intended.

Performance criterion **C**

Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by operation of the controls.

6.1. Electrostatic discharges (ESD)

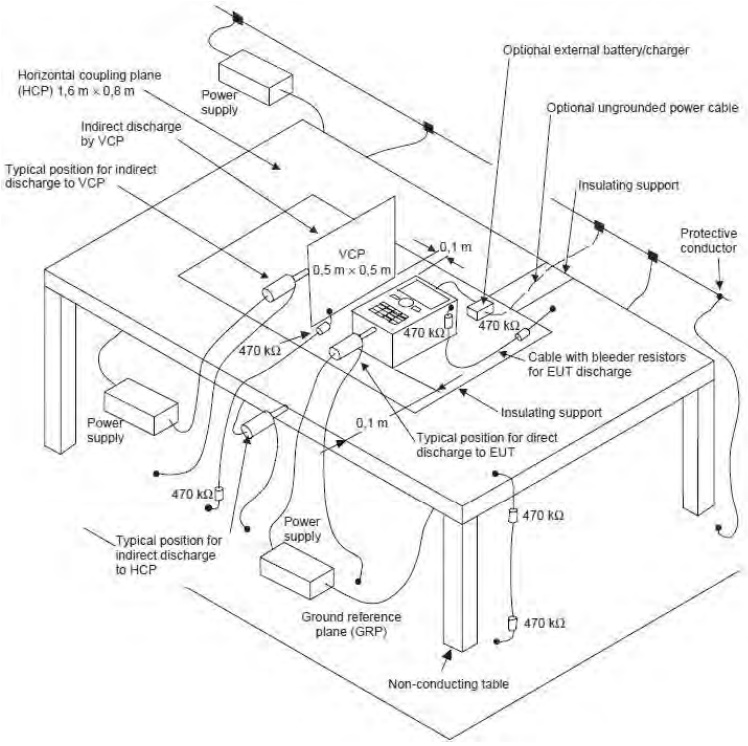
6.1.1. Test Levels and Performance Criterion

Characteristics	Test levels
Air discharge	±8 kV
Contact discharge	±4 kV

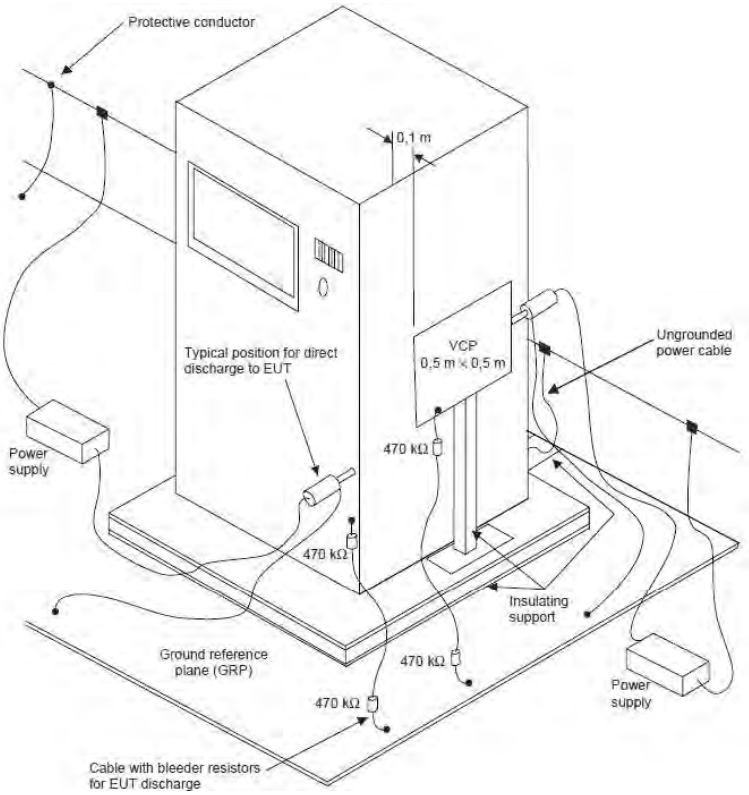
Performance criterion: **B**

6.1.2. Test setup

For table-top equipment



For floor standing equipment



6.1.3. Test Procedure

Measurement was performed in shielded room.
Measurement procedure was applied according to EN 61000-4-2 clause 8.
The test method and equipment were specified by EN 61000-4-2.

6.1.4. Test Result

PASS

Please refer to the following page.

No.	Location of discharge	Polarity	Discharge	Number of discharges	Test level kV	Result
1	HCP top side	P&N	C	25	4	PASS
3	HCP bottom side	P&N	C	25	4	PASS
5	VCP right side	P&N	C	25	4	PASS
7	VCP left side	P&N	C	25	4	PASS
9	Points on conductive surface	P&N	C	25	4	PASS
10	Points on non-conductive surface	P&N	A	10	8	PASS
HCP = Horizontal coupling plate VCP = Vertical coupling plate N = Negative P = Positive A = Air discharge C = Contact discharge						

6.2. Electromagnetic field

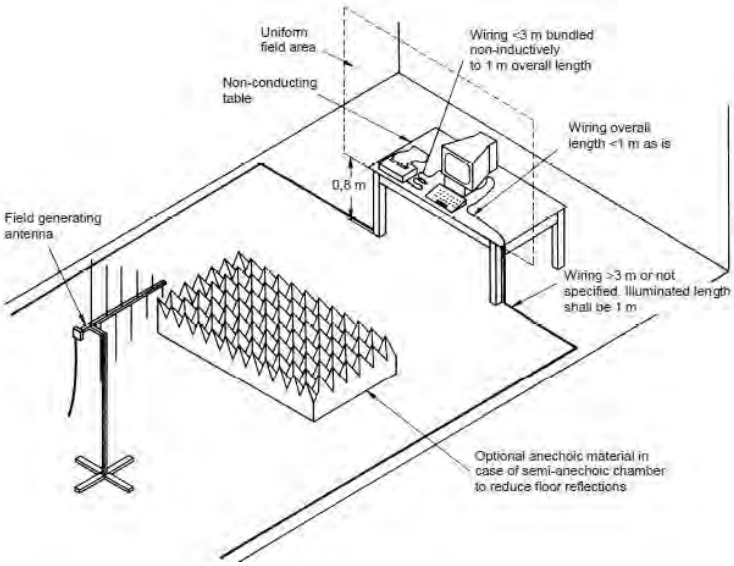
6.2.1. Test Levels and Performance Criterion

Characteristics	Test levels	Test levels
Frequency range	80 MHz to 1 000 MHz,	1 800MHz, 2 600MHz, 3 500MHz, 5 000MHz
Test level	3 V/m (unmodulated)	1 V/m (unmodulated)
Modulation	1 kHz, 80 % AM, sine wave	1 kHz, 80 % AM, sine wave

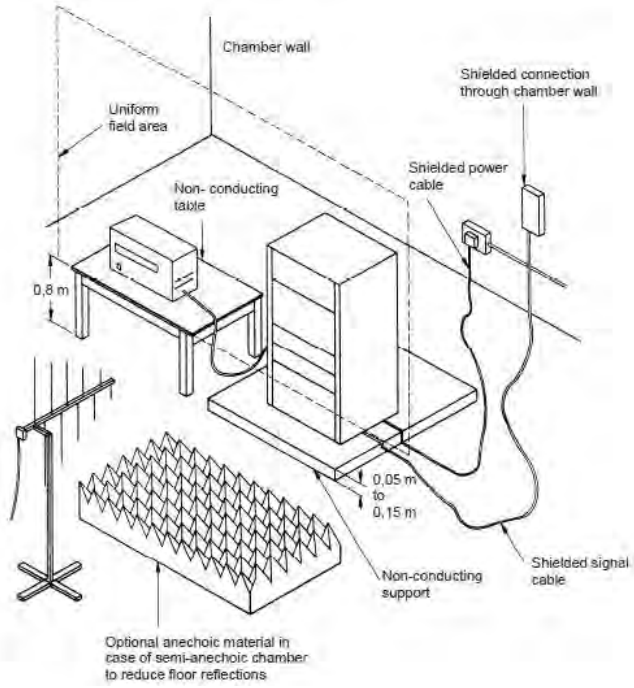
Performance criterion: **A**

6.2.2. Test setup

For table-top equipment



For floor standing equipment



6.2.3. Test Procedure

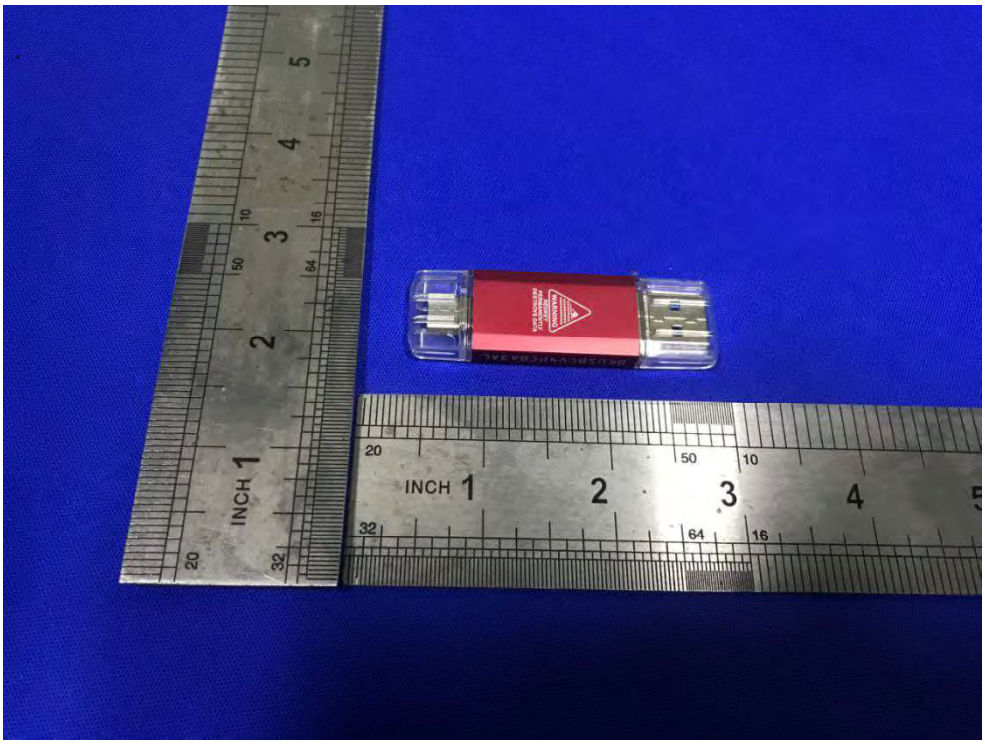
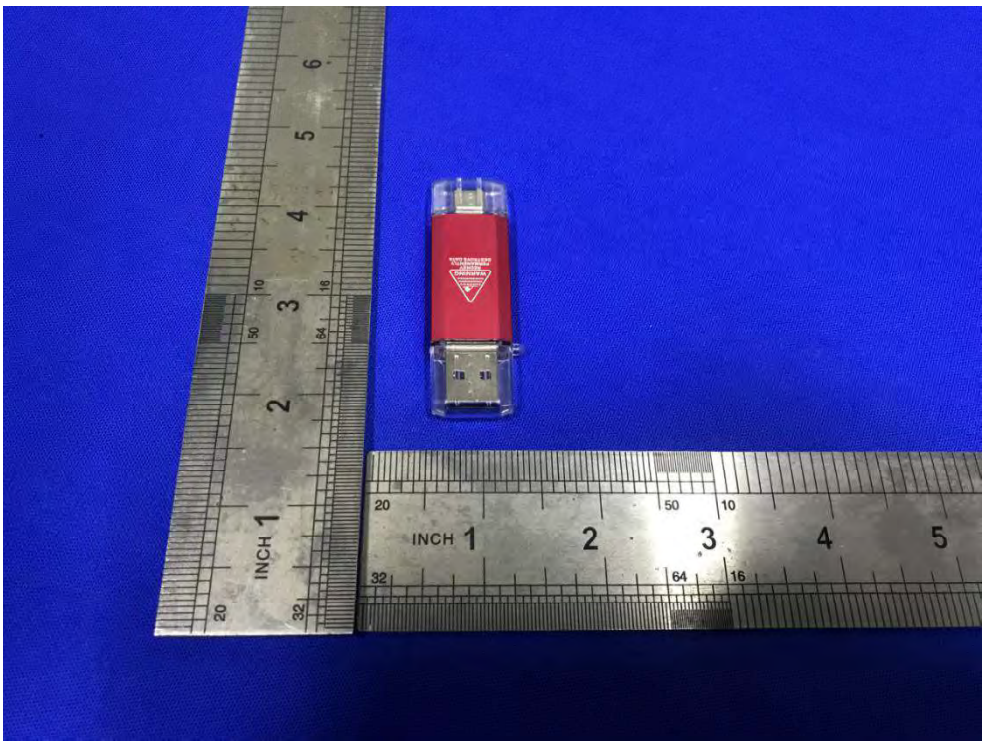
Measurement was performed in full-anechoic chamber.
Measurement procedure was applied according to EN 61000-4-3 clause 8.
The test method and equipment was specified by EN 61000-4-3.

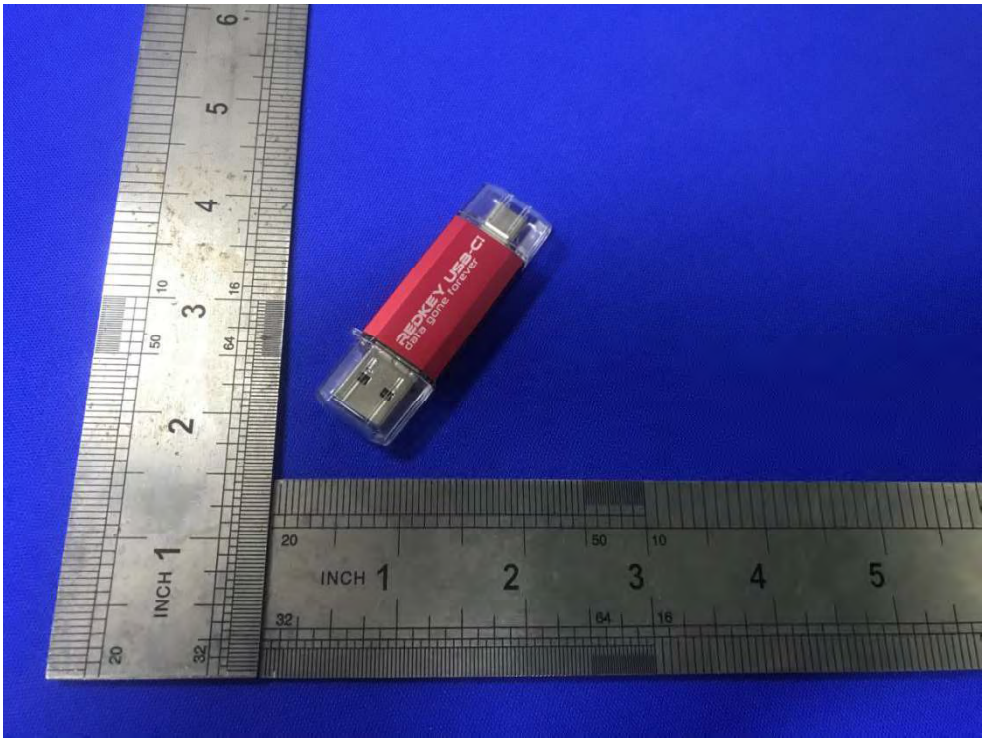
6.2.4. Test Result

PASS

Enclosure	Horizontal	Vertical
Front	PASS	PASS
Right Side	PASS	PASS
Left Side	PASS	PASS
Rear	PASS	PASS

7. Photographs of EUT

Photographs of EUT



Photographs of EUT


------ End of report ------

AN TENG TESTING CERTIFICATION ▲▼ AN TENG TESTING CERTIFICATION ▲▼ AN TENG TESTING CERTIFICATION

ATJC
AN TENG TESTING

Declaration of Conformity

Certification No.	:	**ATJC21091680004200E**
Applicant	:	**Redkey USB LTD**
Address	:	**Kemp House, 160 City Road, London, EC1V 2NX, United Kingdom**
Manufacturer	:	**Redkey USB LTD**
Address	:	**Kemp House, 160 City Road, London, EC1V 2NX, United Kingdom**
Certification Marking	:	**CE-EMC**
Product Description	:	**USB Flash Drive**
Model	:	**RKUSBV3UDP2AL, RKUSBV4UDP2AL, GKUSBV4UDP2AL, PKUSBV4UDP2AL, OKUSBV4UDP2AL, MKUSBV4UDP2AL, WKUSBV4UDP2AL, QKUSBV4UDP2AL**
Rating	:	**5V⎓, 1A**
Trademark	:	**N/A**

Sufficient samples of the product have been tested and found to be in conformity with

Test Standards	:	**EN 55032:2015, EN 55035:2017** **EN 61000-3-2:2019, EN61000-3-3:2013+A1:2019.**

When tested as specified, the submitted sample complies with EMC Directives 2014/30/EU
The certificate is based on a single evaluation of one sample of above-mentioned products. It does not imply an assessment of the whole production and does not permit the use of the test laboratory logo.

CE

Authorized Signer : _____

Shenzhen An-Teng Testing Service Co., Ltd
Henry Tian / Manager
Sep. 22, 2021

Shenzhen An-Teng Testing Service Co., Ltd
Floor 5, No. 11, Hebei Industrial Zone, Hualian Community, Longhua Street, Longhua District, Shenzhen, China.
Tel: 86-755-2772452 Fax: 86-755-27724533 Web: www.antenglab.com

EMC TEST REPORT

Equipment	USB Flash Drive
Trademark	N/A
Model No.	RKUSBV3UDP2AL, RKUSBV4UDP2AL, GKUSBV4UDP2AL, PKUSBV4UDP2AL, OKUSBV4UDP2AL, MKUSBV4UDP2AL, WKUSBV4UDP2AL, QKUSBV4UDP2AL
Report No.	ATJC21091680004200E
Applicant	Redkey USB LTD
	Kemp House, 160 City Road, London, EC1V 2NX, United Kingdom
Manufacturer	Redkey USB LTD
	Kemp House, 160 City Road, London, EC1V 2NX, United Kingdom
Prepared by	Shenzhen An-Teng Testing Service Co., Ltd.
	Floor 5, No. 11, Hebei Industrial Zone, Hualian Community, Longhua Street, Longhua District, Shenzhen, China.
Date of Receipt	Sep. 16, 2021
Date of Test(s)	Sep. 16 – Sep. 22, 2021
Date of Issue	Sep. 22, 2021
Test Standard(s)	EN 55032:2015, EN 55035:2017 EN 61000-3-2:2019, EN 61000-3-3:2013+A1:2019

In the configuration tested, the EUT complied with the standards specified above.

Tested : Cris Song/Engineer Date : Sep. 22, 2021

Approved : Henry Tian/Manager Date : Sep. 22, 2021

Note:

The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This test report shall not be reproduced except in full, without prior written approval of ATJC. This document may be altered or revised by ATJC, personnel only, and shall be noted in the revision of the document.

Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
0	Sep. 22, 2021	Initial Issue	All Page	Cris Song

Table of Contents

1. TEST SUMMARY

Emission			
Requirement - Test	Test Method	Limit	Result
Conducted Emission	EN 55032:2015	Class B	N/A
Radiated emissions at frequencies up to 1 GHz		Class B	PASS
Radiated emissions at frequencies above 1 GHz		Class B	N/A
Harmonic current emissions	EN 61000-3-2:2019	Class A	N/A
Voltage changes, voltage fluctuations and flicker	EN 61000-3-3:2013+A1:2019	Clause 5	N/A
Immunity (EN 55035:2017)			
Requirement - Test	Test Method	Performance criteria	Result
Electrostatic discharges (ESD)	EN 61000-4-2:2009	B	PASS
Electromagnetic field	EN 61000-4-3:2006+A1:2008+A2:2010	A	PASS
Electrical fast transients/burst (EFT/B)	EN 61000-4-4:2004+A1:2010	B	N/A
Surges	EN 61000-4-5:2006	B	N/A
Conducted RF	EN 61000-4-6:2009	A	N/A
Power frequency magnetic field	EN 61000-4-8:2010	A	N/A
Voltage dips and Short interruptions	EN 61000-4-11:2009+A1:2010	B & C	N/A

Remark: N/A is abbreviation for Not Applicable.

The test was carried out in all the test modes, only the worst data are list in report.

2. GENERAL INFORMATION

2.1. Description of EUT

Equipment	USB Flash Drive
Trademark	N/A
Model Name	RKUSBV4UDP2AL
Serial No.	RKUSBV3UDP2AL, GKUSBV4UDP2AL, PKUSBV4UDP2AL, OKUSBV4UDP2AL, MKUSBV4UDP2AL, WKUSBV4UDP2AL, QKUSBV4UDP2AL
Model Difference	All models are the same except for the difference in appearance.
Rated Power Supply	5V⎓, 1A
Rated Power	5W
Normal Testing Voltage	5V⎓, 1A
Configuration	☒ Table-top ☐ Floor-standing
Accessory Device	N/A
Cable Supplied	N/A

Note:

1. Other Accessory Device List and Details

Description	Manufacturer	Model	Note

External I/O Cable

Cable Description	Shielded Type	Ferrite Core	Length(m)	Note
	☐ Shielded ☐ Non-shielded	☐ Yes ☐ No		

2. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

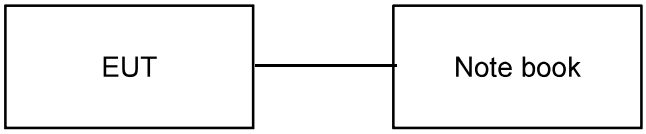
2.2. Operating condition of EUT

Test mode	Description
1	Working
2	
3	
4	

2.3. Test conditions

Temperature: 15-35℃
Relative Humidity: 30-60 %
Atmospheric pressure: 800hPa-1060hPa

2.4. Block diagram of EUT configuration



3. FACILITIES

3.1. Test Facility

ATJC-LAB

Floor 5, No. 11, Hebei Industrial Zone, Hualian Community, Longhua Street, Longhua District, Shenzhen, China.

3.2. Test Instruments

Radiated Emission Measurement (Test software: EZ-EMC Ver. FA-03A2 RE)

Item	Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA 9120D	1911	2021-11-02
2	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	869	2021-11-02
3	Amplifier	Agilent	8449B	3008A01838	2021-11-02
4	Amplifier	HP	8447E	2945A02747	2021-11-02
5	EMI TEST RECEIVER	ROHDE&SCHWARZ	ESPI7	100362	2021-11-02
6	Coaxial cable	ETS	RFC-SNS-100-NMS-80 NI	/	2021-11-02
7	Coaxial cable	ETS	RFC-SNS-100-NMS-20 NI	/	2021-11-02
8	Coaxial cable	ETS	RFC-SNS-100-SMS-20 NI	/	2021-11-02
9	Coaxial cable	ETS	RFC-NNS-100-NMS-300 NI	/	2021-11-02

Electrostatic Discharge Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	ESD Simulator	TESTQ	NSG437	329	2021-11-02

RF electromagnetic field Test

Item	Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Signal Generator	Agilent	N5182A	MY47420195	2021-11-02
2	Log-Bicon Antenna	Schwarzbeck	VULB9161	9128ES-128	2021-11-02
3	Power Amplifier	AR	150W1000M1	342526	2021-11-02
4	Microwave Horn Antenna	AR	AT4002A	322279	2021-11-02
5	Power Amplifier	AR	25S1G4A	321116	2021-11-02

4. Measurement uncertainty

The following table is for the measurement uncertainty, which is calculated as per the document CISPR 16-4.

Test	Parameters	Expanded Uncertainty (U_{Lab})	Expanded Uncertainty (U_{Cispr})
Conducted Emission	Level Accuracy: 150kHz to 30MHz	±1.22 dB	±3.6 dB
Radiated Emission	Level Accuracy: 30MHz to 1000 MHz	±3.67 dB	±5.2 dB
Radiated Emission	Level Accuracy: Above 1000MHz	±4.79 dB	N/A

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

5. Emission

5.1. Conducted Emission

5.1.1. Limit

Requirements for conducted emissions from the AC mains power ports of Class A equipment

Frequency range MHz	Coupling device	Detector type / bandwidth	Class A limits dB(μV)
0,15 to 0,5	AMN	Quasi Peak / 9 kHz	79
0,5 to 30			73
0,15 to 0,5		Average / 9 kHz	66
0,5 to 30			60

Requirements for conducted emissions from the AC mains power ports of Class B equipment

Frequency range MHz	Coupling device	Detector type / bandwidth	Class B limits dB(μV)
0,15 to 0,5	AMN	Quasi Peak / 9 kHz	66 to 56
0,5 to 5			56
5 to 30			60
0,15 to 0,5		Average / 9 kHz	56 to 46
0,5 to 5			46
5 to 30			50

Requirements for asymmetric mode conducted emissions from Class A equipment

Frequency range MHz	Coupling device	Detector type / bandwidth	Class A limits dB(μV)
0,15 to 0,5	AAN	Quasi Peak / 9 kHz	97 to 87
0,5 to 30			87
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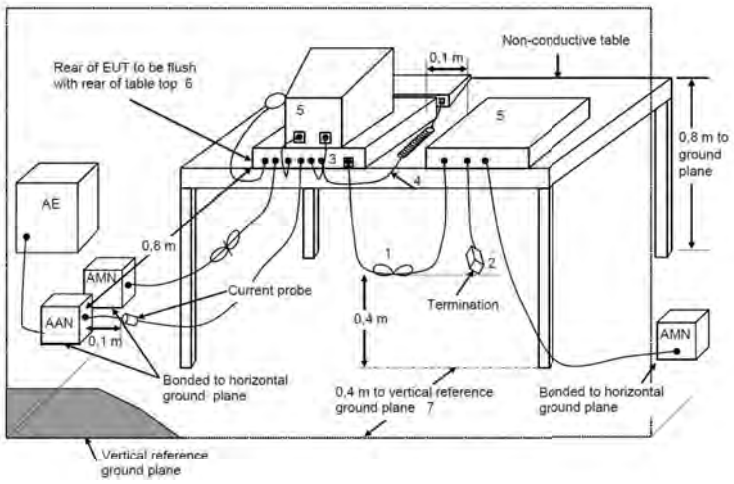
0,5 to 30			74

Requirements for asymmetric mode conducted emissions from Class B equipment

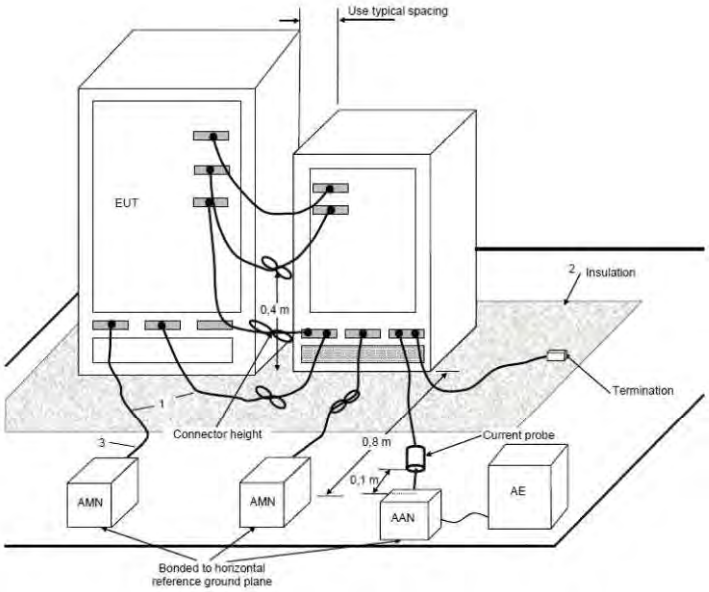
Frequency range MHz	Coupling device	Detector type / bandwidth	Class B limits dB(μV)
0,15 to 0,5	AAN	Quasi Peak / 9 kHz	84 to 74
0,5 to 30			74
0,15 to 0,5		Average / 9 kHz	74 to 64
0,5 to 30			64

5.1.2. Test setup

For table-top equipment



For floor standing equipment



5.1.3. Test procedure

Measurement was performed in shielded room, and instruments used were followed CISPR 16-2-1 clause7.
Detailed test procedure was following clause 7 of CISPR 16-2-1.
Frequency range 150kHz – 30MHz was checked and EMI receiver measurement bandwidth was set to 9 kHz.

5.1.4. Test results

N/A

5.2. Radiated emissions

5.2.1. Limit

Requirements for radiated emissions at frequencies up to 1 GHz for class A equipment

Frequency range MHz	Measurement			Class B limits dB(μV/m)
	Facility	Distance m	Detector type / bandwidth	
30 to 230	SAC	3	Quasi Peak / 120 kHz	50
230 to 1 000				57

Requirements for radiated emissions at frequencies above 1 GHz for class A equipment

Frequency range MHz	Measurement			Class B limits dB(μV/m)
	Facility	Distance m	Detector type / bandwidth	
1 000 to 3 000	FSOATS	3	Average / 1MHz	56
3 000 to 6 000				60
1 000 to 3 000		3	Average / 1MHz	76
3 000 to 6 000				80

Requirements for radiated emissions at frequencies up to 1 GHz for class B equipment

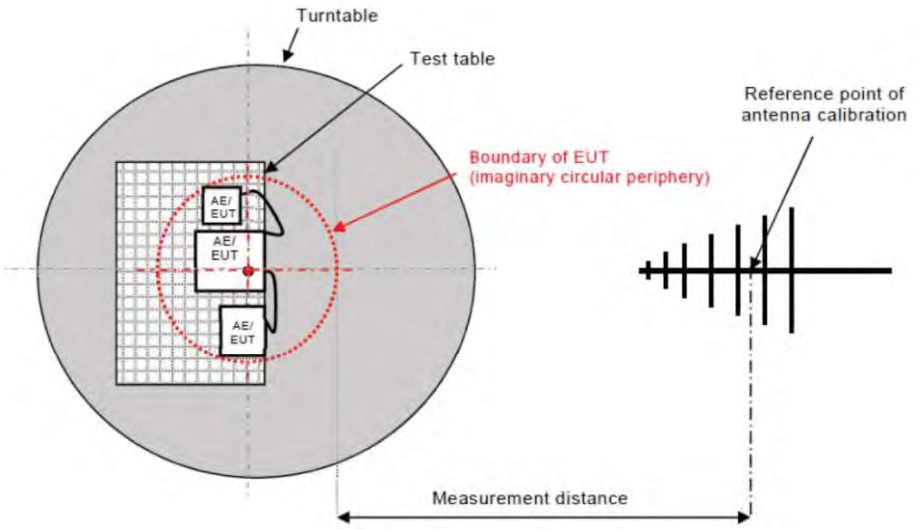
Frequency range MHz	Measurement			Class B limits dB(μV/m)
	Facility	Distance m	Detector type / bandwidth	
30 to 230	SAC	3	Quasi Peak / 120 kHz	40
230 to 1 000				47

Requirements for radiated emissions at frequencies above 1 GHz for class B equipment

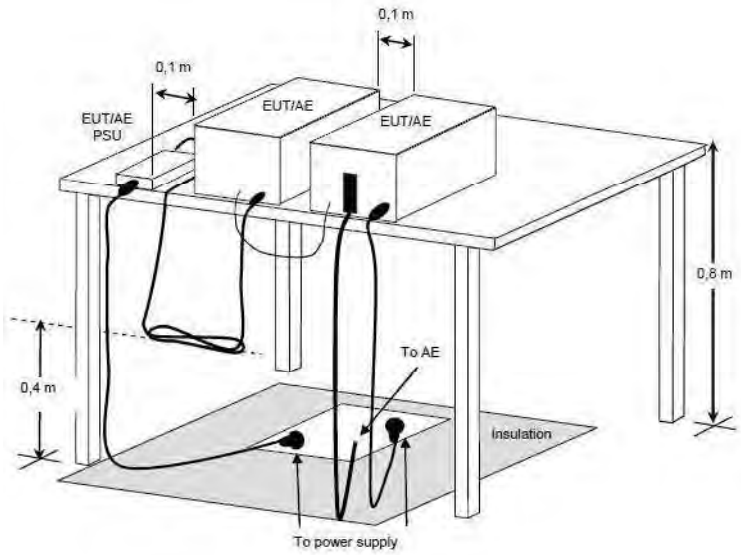
Frequency range MHz	Measurement			Class B limits dB(μV/m)
	Facility	Distance m	Detector type / bandwidth	
1 000 to 3 000	FSOATS	3	Average / 1MHz	50
3 000 to 6 000				54
1 000 to 3 000		3	Average / 1MHz	70
3 000 to 6 000				74

5.2.2. Block diagram of test setup

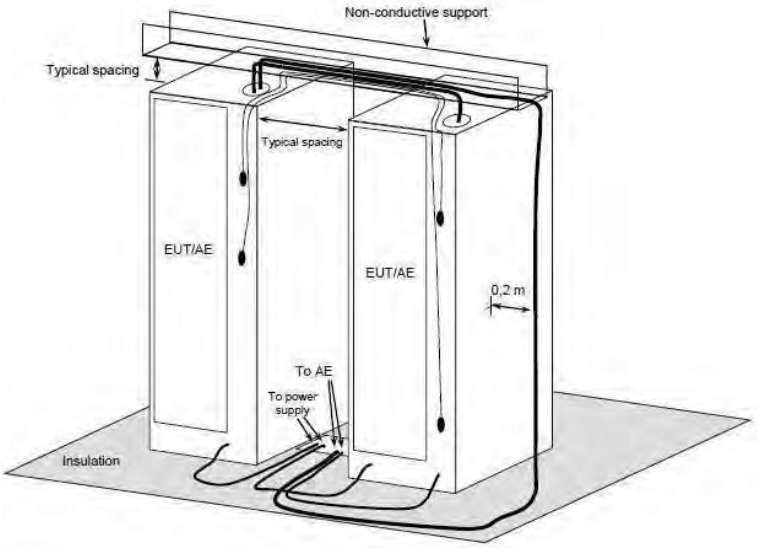
Measurement distance



For table-top equipment



For floor standing equipment



5.2.3. Test procedure

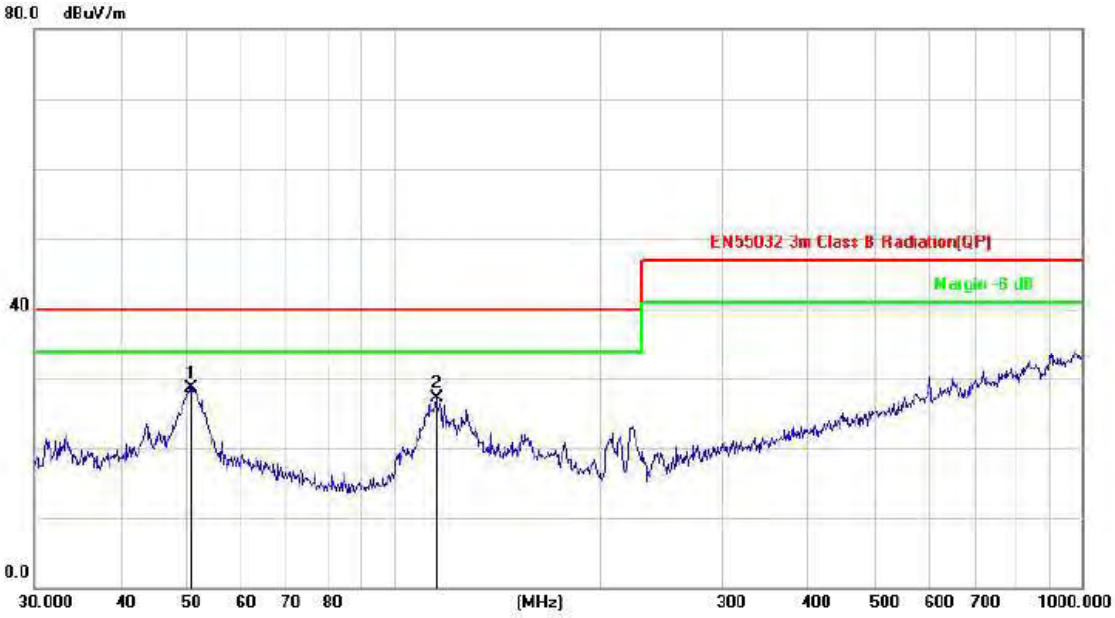
The measurement was performed in a semi-anechoic chamber.
The distance from EUT to receiving antenna is 3 meters.
Measurement was performed according to clause 7.3 of CISPR 16-2-3.

5.2.4. Test results

PASS

Please refer to the following page.

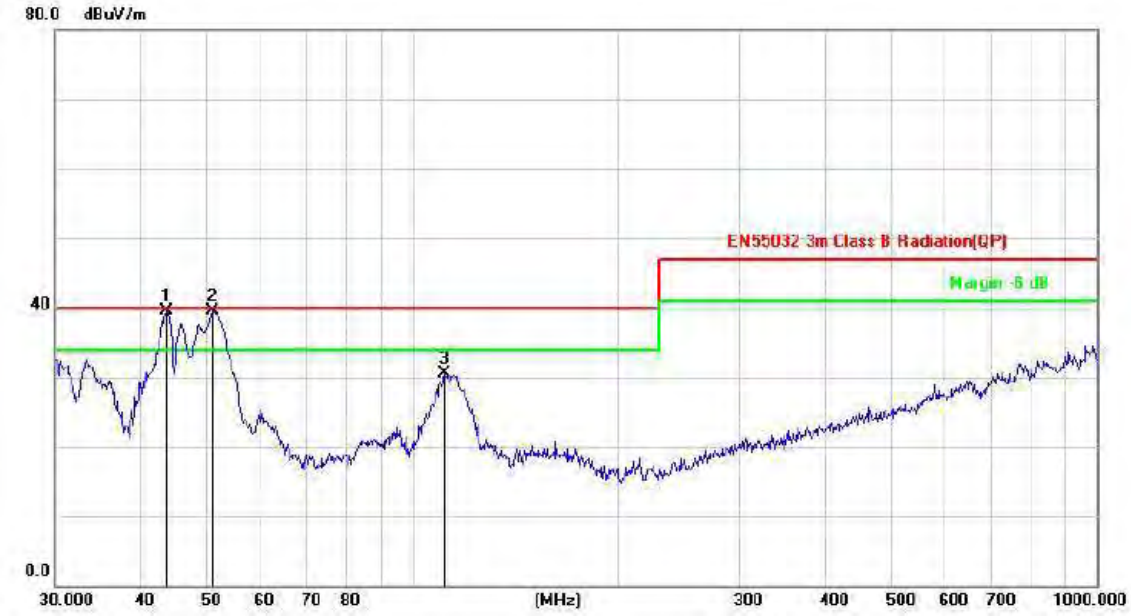
Polarization: H



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1	*	50.7637	35.19	-6.59	28.60	40.00	-11.40	peak
2		115.3205	35.70	-8.60	27.10	40.00	-12.90	peak

Note: Result=Reading+Factor
Over Limit=Result-Limit

Polarization: V



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1	*	43.6584	46.13	-6.61	39.52	40.00	-0.48	peak
2	!	50.9420	46.05	-6.61	39.44	40.00	-0.56	peak
3		111.3468	39.50	-9.07	30.43	40.00	-9.57	peak

Note: Result=Reading+Factor
Over Limit=Result-Limit

6. Immunity

Performance criteria

Performance criterion **A**

The equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss function is allowed below a performance level specified by the manufacturer, when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

Performance criterion **B**

The equipment shall continue to operate as intended after the test. No degradation of performance or loss function is allowed below a performance level specified by the manufacturer, when the equipment is used as intended. During the test, degradation of performance is however allowed. No change of actual operating state or stored data is allowed. If the minimum performance level or the permissible performance loss is specified by the manufacturer, either of these may be derived from the product description and documentation and what the user may reasonably expect from equipment if used as intended.

Performance criterion **C**

Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by operation of the controls.

6.1. Electrostatic discharges (ESD)

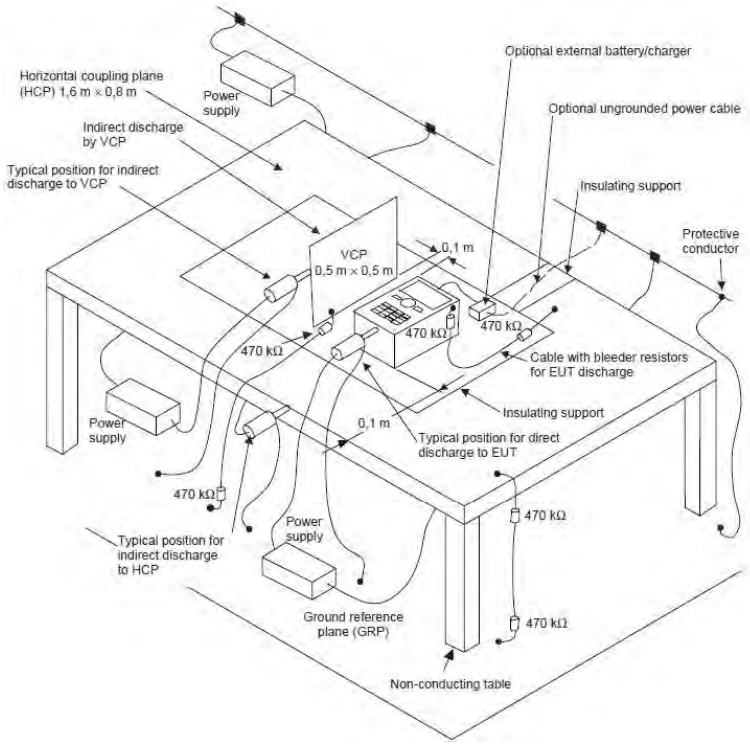
6.1.1. Test Levels and Performance Criterion

Characteristics	Test levels
Air discharge	±8 kV
Contact discharge	±4 kV

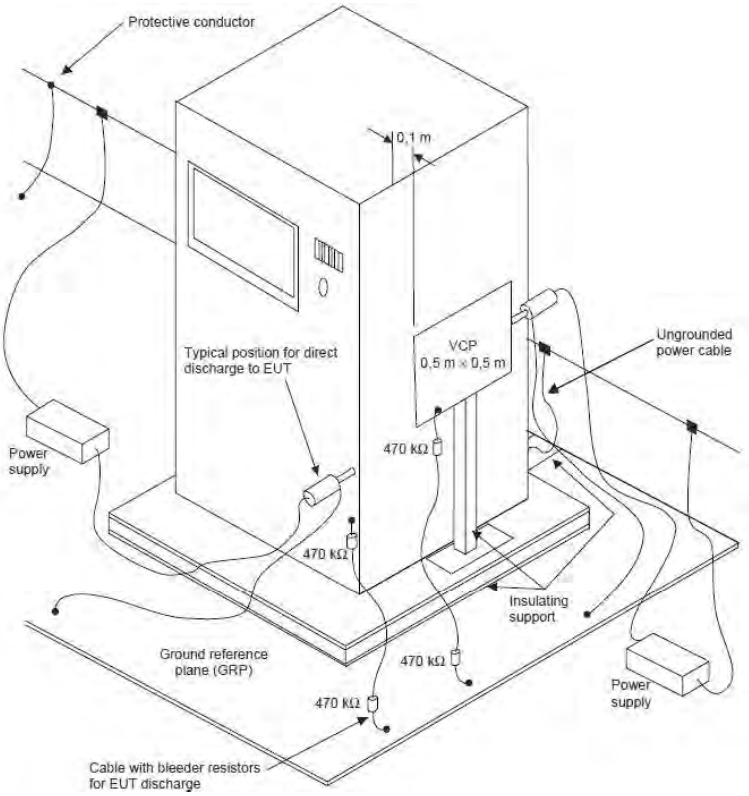
Performance criterion: **B**

6.1.2. Test setup

For table-top equipment



For floor standing equipment



6.1.3. Test Procedure

Measurement was performed in shielded room.
Measurement procedure was applied according to EN 61000-4-2 clause 8.
The test method and equipment were specified by EN 61000-4-2.

6.1.4. Test Result

PASS

Please refer to the following page.

No.	Location of discharge	Polarity	Discharge	Number of discharges	Test level kV	Result
1	HCP top side	P&N	C	25	4	PASS
3	HCP bottom side	P&N	C	25	4	PASS
5	VCP right side	P&N	C	25	4	PASS
7	VCP left side	P&N	C	25	4	PASS
9	Points on conductive surface	P&N	C	25	4	PASS
10	Points on non-conductive surface	P&N	A	10	8	PASS
HCP = Horizontal coupling plate VCP = Vertical coupling plate N = Negative P = Positive A = Air discharge C = Contact discharge						

6.2. Electromagnetic field

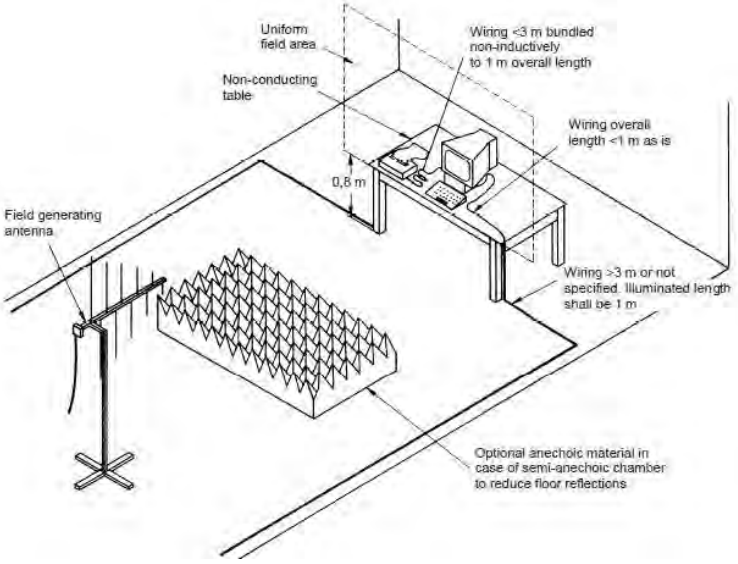
6.2.1. Test Levels and Performance Criterion

Characteristics	Test levels	Test levels
Frequency range	80 MHz to 1 000 MHz,	1 800MHz, 2 600MHz, 3 500MHz, 5 000MHz
Test level	3 V/m (unmodulated)	1 V/m (unmodulated)
Modulation	1 kHz, 80 % AM, sine wave	1 kHz, 80 % AM, sine wave

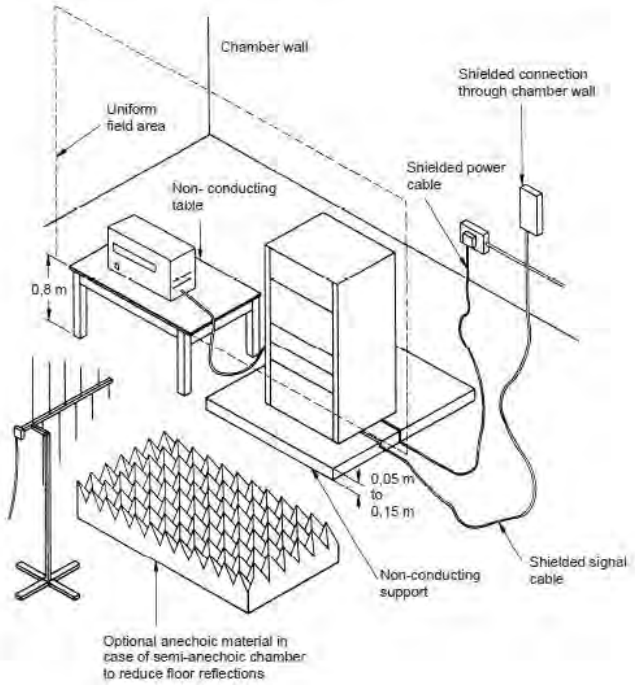
Performance criterion: **A**

6.2.2. Test setup

For table-top equipment



For floor standing equipment



6.2.3. Test Procedure

Measurement was performed in full-anechoic chamber.
Measurement procedure was applied according to EN 61000-4-3 clause 8.
The test method and equipment was specified by EN 61000-4-3.

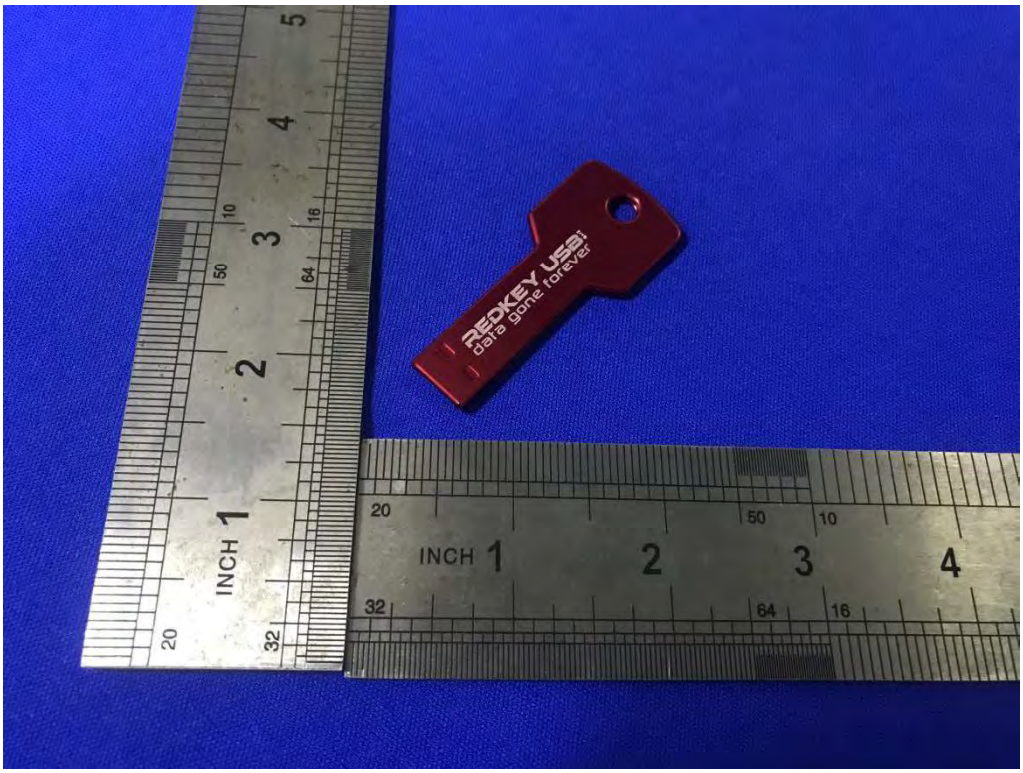
6.2.4. Test Result

PASS

Enclosure	Horizontal	Vertical
Front	PASS	PASS
Right Side	PASS	PASS
Left Side	PASS	PASS
Rear	PASS	PASS

7. Photographs of EUT

Photographs of EUT

Photographs of EUT


------ End of report ------

AN TENG TESTING CERTIFICATION ▲▼ AN TENG TESTING CERTIFICATION ▲▼ AN TENG TESTING CERTIFICATION

ATJC
AN TENG TESTING

Declaration of Conformity

Certification No.	:	**ATJC21091680004300E**
Applicant	:	**Redkey USB LTD**
Address	:	**Kemp House, 160 City Road, London, EC1V 2NX, United Kingdom**
Manufacturer	:	**Redkey USB LTD**
Address	:	**Kemp House, 160 City Road, London, EC1V 2NX, United Kingdom**
Certification Marking	:	**CE-EMC**
Product Description	:	**USB Flash Drive**
Model	:	**RKUSBV1UDP2FE, RKUSBV2UDP2FE, RKESDV2UDP2FE, RKUSBV3UDP2FE, RKUSBV4UDP2FE, BKUSBV1UDP3FE, BKUSBV2UDP3FE, BKUSBV4UDP3FE, GKUSBV1UDP3FE, GKUSBV2UDP3FE, GKUSBV4UDP3FE, AUUSBV4UDP3FE, PUSBV4UDP3FE, OUSBV4UDP3FE, MUSBV4UDP3FE, WUSBV4UDP3FE, QUSBV4UDP3FE**
Rating	:	**5V⎓, 1A**
Trademark	:	**N/A**

Sufficient samples of the product have been tested and found to be in conformity with

Test Standards	:	**EN 55032:2015, EN 55035:2017** **EN 61000-3-2:2019, EN61000-3-3:2013+A1:2019.**

When tested as specified, the submitted sample complies with EMC Directives 2014/30/EU

The certificate is based on a single evaluation of one sample of above-mentioned products. It does not imply an assessment of the whole production and does not permit the use of the test laboratory logo.

CE

Authorized Signer : _____

Shenzhen An-Teng Testing Service Co., Ltd

Henry Tian / Manager

Sep. 22, 2021

Shenzhen An-Teng Testing Service Co., Ltd
Floor 5, No. 11, Hebei Industrial Zone, Hualian Community, Longhua Street, Longhua District, Shenzhen, China.
Tel: 86-755-2772452 Fax: 86-755-27724533 Web: www.antenglab.com

EMC TEST REPORT

Equipment	USB Flash Drive
Trademark	N/A
Model No.	RKUSBV1UDP2FE, RKUSBV2UDP2FE, RKESDV2UDP2FE, RKUSBV3UDP2FE, RKUSBV4UDP2FE, BKUSBV1UDP3FE, BKUSBV2UDP3FE, BKUSBV4UDP3FE, GKUSBV1UDP3FE, GKUSBV2UDP3FE, GKUSBV4UDP3FE, AUUSBV4UDP3FE, PUSBV4UDP3FE, OUSBV4UDP3FE, MUSBV4UDP3FE, WUSBV4UDP3FE, QUSBV4UDP3FE
Report No.	ATJC21091680004300E
Applicant	Redkey USB LTD
	Kemp House, 160 City Road, London, EC1V 2NX, United Kingdom
Manufacturer	Redkey USB LTD
	Kemp House, 160 City Road, London, EC1V 2NX, United Kingdom
Prepared by	Shenzhen An-Teng Testing Service Co., Ltd.
	Floor 5, No. 11, Hebei Industrial Zone, Hualian Community, Longhua Street, Longhua District, Shenzhen, China.
Date of Receipt	Sep. 16, 2021
Date of Test(s)	Sep. 16 – Sep. 22, 2021
Date of Issue	Sep. 22, 2021
Test Standard(s)	EN 55032:2015, EN 55035:2017 EN 61000-3-2:2019, EN 61000-3-3:2013+A1:2019

In the configuration tested, the EUT complied with the standards specified above.

Tested : Cris Song/Engineer Date : Sep. 22, 2021

Approved : Henry Tian/Manager Date : Sep. 22, 2021

Note:

The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This test report shall not be reproduced except in full, without prior written approval of ATJC. This document may be altered or revised by ATJC, personnel only, and shall be noted in the revision of the document.

Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
0	Sep. 22, 2021	Initial Issue	All Page	Cris Song

Table of Contents

1. TEST SUMMARY

Emission			
Requirement - Test	Test Method	Limit	Result
Conducted Emission	EN 55032:2015	Class B	N/A
Radiated emissions at frequencies up to 1 GHz		Class B	PASS
Radiated emissions at frequencies above 1 GHz		Class B	N/A
Harmonic current emissions	EN 61000-3-2:2019	Class A	N/A
Voltage changes, voltage fluctuations and flicker	EN 61000-3-3:2013+A1:2019	Clause 5	N/A
Immunity (EN 55035:2017)			
Requirement - Test	Test Method	Performance criteria	Result
Electrostatic discharges (ESD)	EN 61000-4-2:2009	B	PASS
Electromagnetic field	EN 61000-4-3:2006+A1:2008+A2:2010	A	PASS
Electrical fast transients/burst (EFT/B)	EN 61000-4-4:2004+A1:2010	B	N/A
Surges	EN 61000-4-5:2006	B	N/A
Conducted RF	EN 61000-4-6:2009	A	N/A
Power frequency magnetic field	EN 61000-4-8:2010	A	N/A
Voltage dips and Short interruptions	EN 61000-4-11:2009+A1:2010	B & C	N/A

Remark: N/A is abbreviation for Not Applicable.

The test was carried out in all the test modes, only the worst data are list in report.

2. GENERAL INFORMATION

2.1. Description of EUT

Equipment	USB Flash Drive
Trademark	N/A
Model Name	RKUSBV4UDP2FE
Serial No.	RKUSBV1UDP2FE, RKUSBV2UDP2FE, RKESDV2UDP2FE, RKUSBV3UDP2FE, BKUSBV1UDP3FE, BKUSBV2UDP3FE, BKUSBV4UDP3FE, GKUSBV1UDP3FE, GKUSBV2UDP3FE, GKUSBV4UDP3FE, AUUSBV4UDP3FE, PUSBV4UDP3FE, OUSBV4UDP3FE, MUSBV4UDP3FE, WUSBV4UDP3FE, QUSBV4UDP3FE
Model Difference	All models are the same except for the difference in appearance.
Rated Power Supply	5V⎓, 1A
Rated Power	5W
Normal Testing Voltage	5V⎓, 1A
Configuration	☒ Table-top ☐ Floor-standing
Accessory Device	N/A
Cable Supplied	N/A

Note:

1. Other Accessory Device List and Details

Description	Manufacturer	Model	Note

External I/O Cable

Cable Description	Shielded Type	Ferrite Core	Length(m)	Note
	☐ Shielded ☐ Non-shielded	☐ Yes ☐ No		

2. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

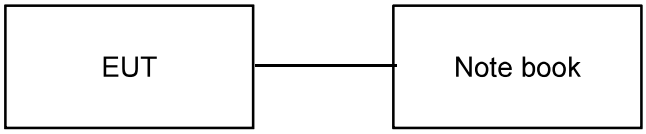
2.2. Operating condition of EUT

Test mode	Description
1	Working
2	
3	
4	

2.3. Test conditions

Temperature: 15-35℃
Relative Humidity: 30-60 %
Atmospheric pressure: 800hPa-1060hPa

2.4. Block diagram of EUT configuration



3. FACILITIES

3.1. Test Facility

ATJC-LAB

Floor 5, No. 11, Hebei Industrial Zone, Hualian Community, Longhua Street, Longhua District, Shenzhen, China.

3.2. Test Instruments

Radiated Emission Measurement (Test software: EZ-EMC Ver. FA-03A2 RE)

Item	Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA 9120D	1911	2021-11-02
2	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	869	2021-11-02
3	Amplifier	Agilent	8449B	3008A01838	2021-11-02
4	Amplifier	HP	8447E	2945A02747	2021-11-02
5	EMI TEST RECEIVER	ROHDE&SCHWARZ	ESPI7	100362	2021-11-02
6	Coaxial cable	ETS	RFC-SNS-100-NMS-80 NI	/	2021-11-02
7	Coaxial cable	ETS	RFC-SNS-100-NMS-20 NI	/	2021-11-02
8	Coaxial cable	ETS	RFC-SNS-100-SMS-20 NI	/	2021-11-02
9	Coaxial cable	ETS	RFC-NNS-100-NMS-300 NI	/	2021-11-02

Electrostatic Discharge Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	ESD Simulator	TESTQ	NSG437	329	2021-11-02

RF electromagnetic field Test

Item	Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Signal Generator	Agilent	N5182A	MY47420195	2021-11-02
2	Log-Bicon Antenna	Schwarzbeck	VULB9161	9128ES-128	2021-11-02
3	Power Amplifier	AR	150W1000M1	342526	2021-11-02
4	Microwave Horn Antenna	AR	AT4002A	322279	2021-11-02
5	Power Amplifier	AR	25S1G4A	321116	2021-11-02

4. Measurement uncertainty

The following table is for the measurement uncertainty, which is calculated as per the document CISPR 16-4.

Test	Parameters	Expanded Uncertainty (U_{Lab})	Expanded Uncertainty (U_{Cispr})
Conducted Emission	Level Accuracy: 150kHz to 30MHz	±1.22 dB	±3.6 dB
Radiated Emission	Level Accuracy: 30MHz to 1000 MHz	±3.67 dB	±5.2 dB
Radiated Emission	Level Accuracy: Above 1000MHz	±4.79 dB	N/A

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

5. Emission

5.1. Conducted Emission

5.1.1. Limit

Requirements for conducted emissions from the AC mains power ports of Class A equipment

Frequency range MHz	Coupling device	Detector type / bandwidth	Class A limits dB(μV)
0,15 to 0,5	AMN	Quasi Peak / 9 kHz	79
0,5 to 30			73
0,15 to 0,5		Average / 9 kHz	66
0,5 to 30			60

Requirements for conducted emissions from the AC mains power ports of Class B equipment

Frequency range MHz	Coupling device	Detector type / bandwidth	Class B limits dB(μV)
0,15 to 0,5	AMN	Quasi Peak / 9 kHz	66 to 56
0,5 to 5			56
5 to 30			60
0,15 to 0,5		Average / 9 kHz	56 to 46
0,5 to 5			46
5 to 30			50

Requirements for asymmetric mode conducted emissions from Class A equipment

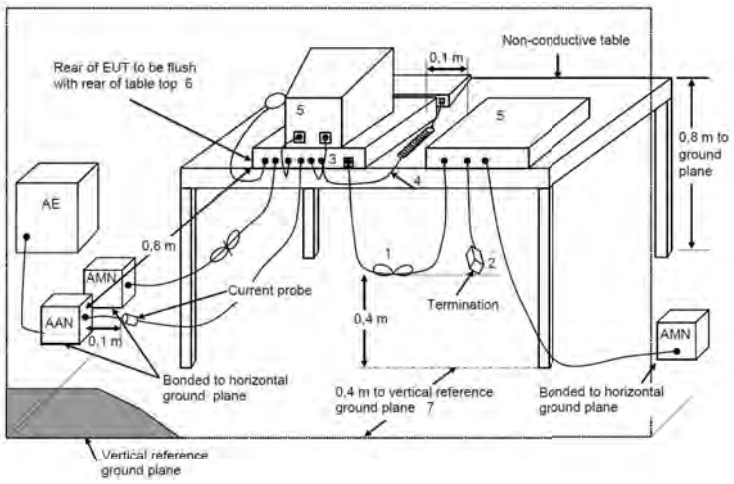
Frequency range MHz	Coupling device	Detector type / bandwidth	Class A limits dB(μV)
0,15 to 0,5	AAN	Quasi Peak / 9 kHz	97 to 87
0,5 to 30			87
0,15 to 0,5		Average / 9 kHz	84 to 74
0,5 to 30			74

Requirements for asymmetric mode conducted emissions from Class B equipment

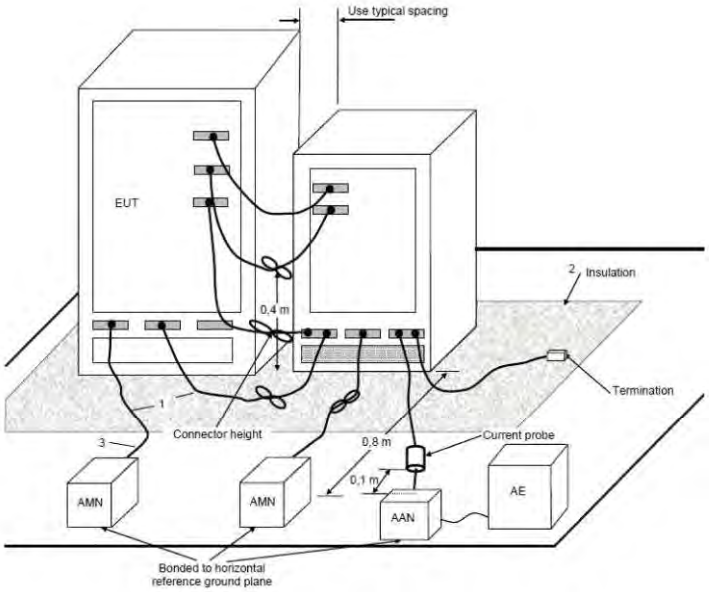
Frequency range MHz	Coupling device	Detector type / bandwidth	Class B limits dB(μV)
0,15 to 0,5	AAN	Quasi Peak / 9 kHz	84 to 74
0,5 to 30			74
0,15 to 0,5		Average / 9 kHz	74 to 64
0,5 to 30			64

5.1.2. Test setup

For table-top equipment



For floor standing equipment



5.1.3. Test procedure

Measurement was performed in shielded room, and instruments used were followed CISPR 16-2-1 clause7.
Detailed test procedure was following clause 7 of CISPR 16-2-1.
Frequency range 150kHz – 30MHz was checked and EMI receiver measurement bandwidth was set to 9 kHz.

5.1.4. Test results

N/A

5.2. Radiated emissions

5.2.1. Limit

Requirements for radiated emissions at frequencies up to 1 GHz for class A equipment

Frequency range MHz	Measurement			Class B limits dB(μV/m)
	Facility	Distance m	Detector type / bandwidth	
30 to 230	SAC	3	Quasi Peak / 120 kHz	50
230 to 1 000				57

Requirements for radiated emissions at frequencies above 1 GHz for class A equipment

Frequency range MHz	Measurement			Class B limits dB(μV/m)
	Facility	Distance m	Detector type / bandwidth	
1 000 to 3 000	FSOATS	3	Average / 1MHz	56
3 000 to 6 000				60
1 000 to 3 000		3	Average / 1MHz	76
3 000 to 6 000				80

Requirements for radiated emissions at frequencies up to 1 GHz for class B equipment

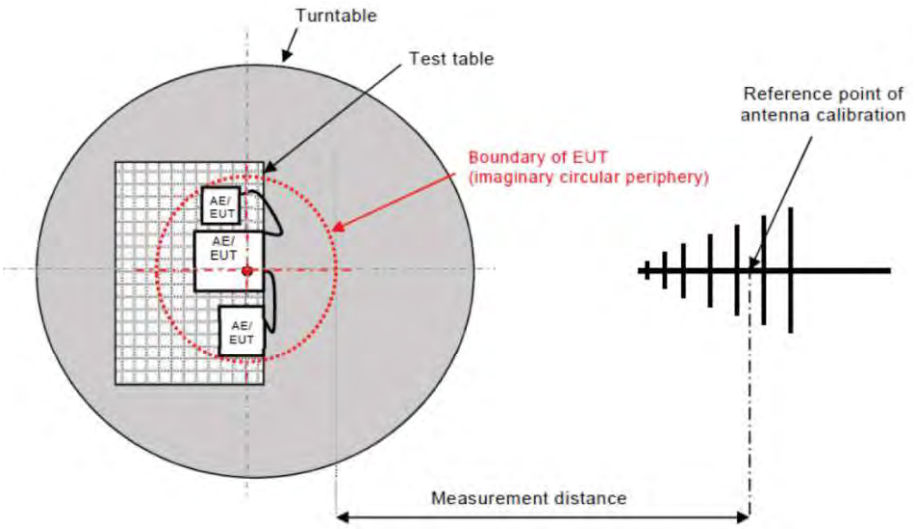
Frequency range MHz	Measurement			Class B limits dB(μV/m)
	Facility	Distance m	Detector type / bandwidth	
30 to 230	SAC	3	Quasi Peak / 120 kHz	40
230 to 1 000				47

Requirements for radiated emissions at frequencies above 1 GHz for class B equipment

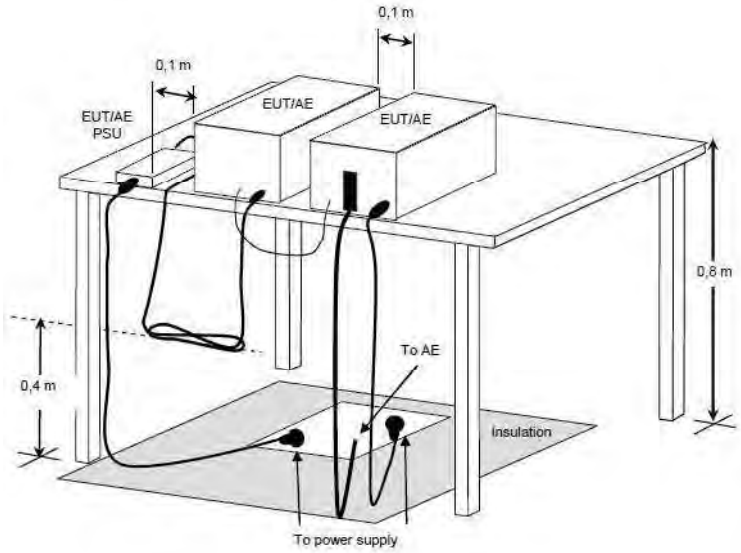
Frequency range MHz	Measurement			Class B limits dB(μV/m)
	Facility	Distance m	Detector type / bandwidth	
1 000 to 3 000	FSOATS	3	Average / 1MHz	50
3 000 to 6 000				54
1 000 to 3 000		3	Average / 1MHz	70
3 000 to 6 000				74

5.2.2. Block diagram of test setup

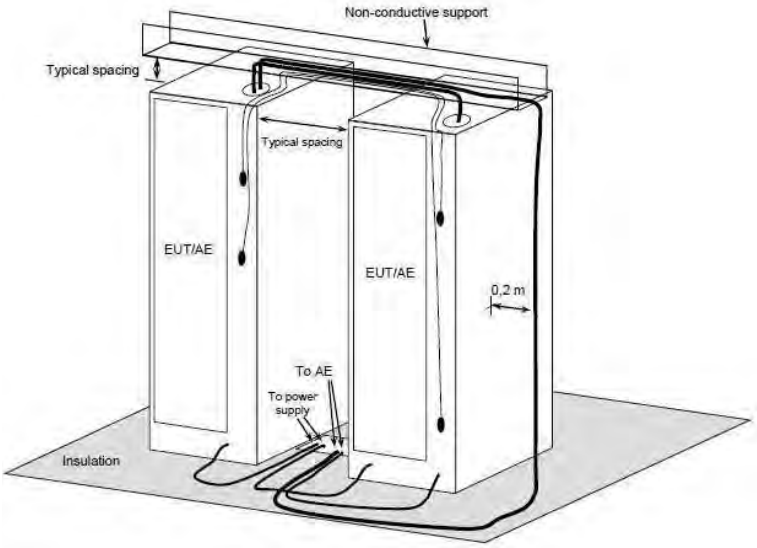
Measurement distance



For table-top equipment



For floor standing equipment



5.2.3. Test procedure

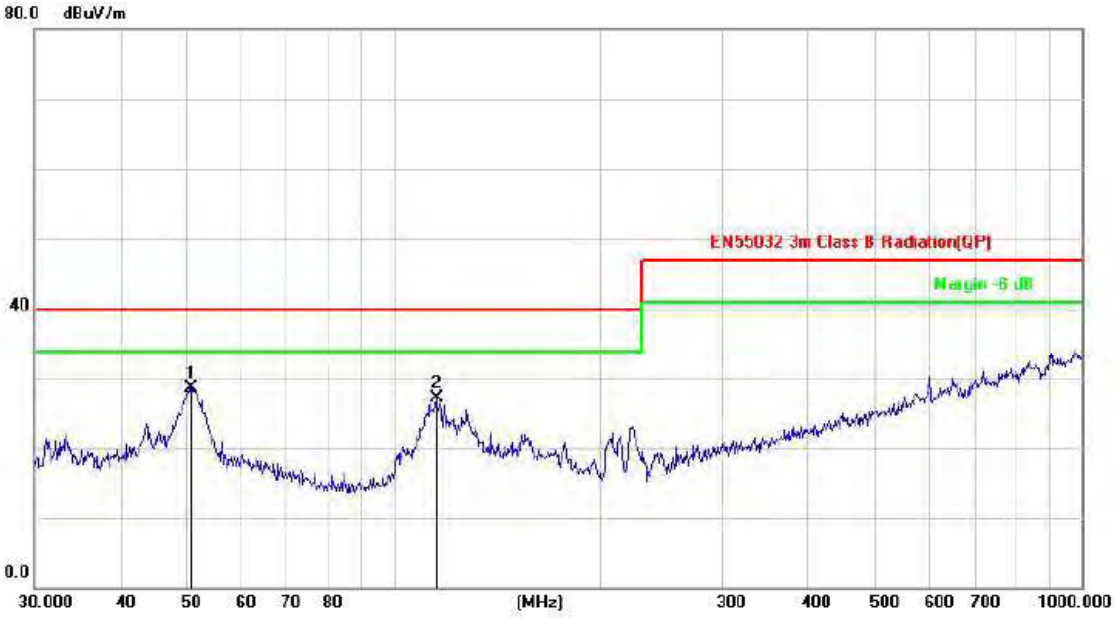
The measurement was performed in a semi-anechoic chamber.
The distance from EUT to receiving antenna is 3 meters.
Measurement was performed according to clause 7.3 of CISPR 16-2-3.

5.2.4. Test results

PASS

Please refer to the following page.

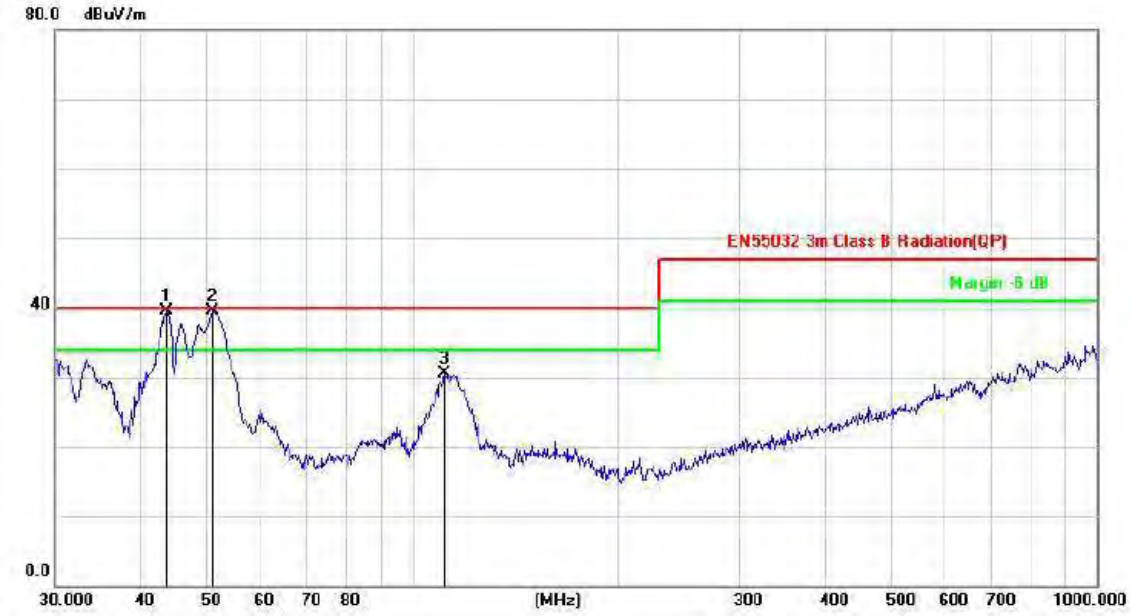
Polarization: H



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1	*	50.7637	35.19	-6.59	28.60	40.00	-11.40	peak
2		115.3205	35.70	-8.60	27.10	40.00	-12.90	peak

Note: Result=Reading+Factor
Over Limit=Result-Limit

Polarization: V



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1	*	43.6584	46.13	-6.61	39.52	40.00	-0.48	peak
2	!	50.9420	46.05	-6.61	39.44	40.00	-0.56	peak
3		111.3468	39.50	-9.07	30.43	40.00	-9.57	peak

Note: Result=Reading+Factor
Over Limit=Result-Limit

6. Immunity

Performance criteria

Performance criterion **A**

The equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss function is allowed below a performance level specified by the manufacturer, when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

Performance criterion **B**

The equipment shall continue to operate as intended after the test. No degradation of performance or loss function is allowed below a performance level specified by the manufacturer, when the equipment is used as intended. During the test, degradation of performance is however allowed. No change of actual operating state or stored data is allowed. If the minimum performance level or the permissible performance loss is specified by the manufacturer, either of these may be derived from the product description and documentation and what the user may reasonably expect from equipment if used as intended.

Performance criterion **C**

Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by operation of the controls.

6.1. Electrostatic discharges (ESD)

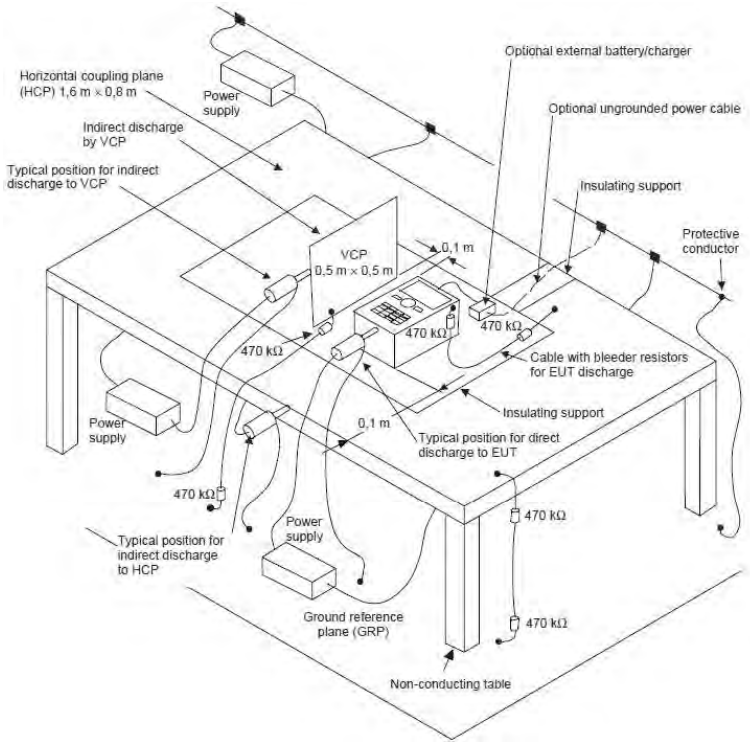
6.1.1. Test Levels and Performance Criterion

Characteristics	Test levels
Air discharge	±8 kV
Contact discharge	±4 kV

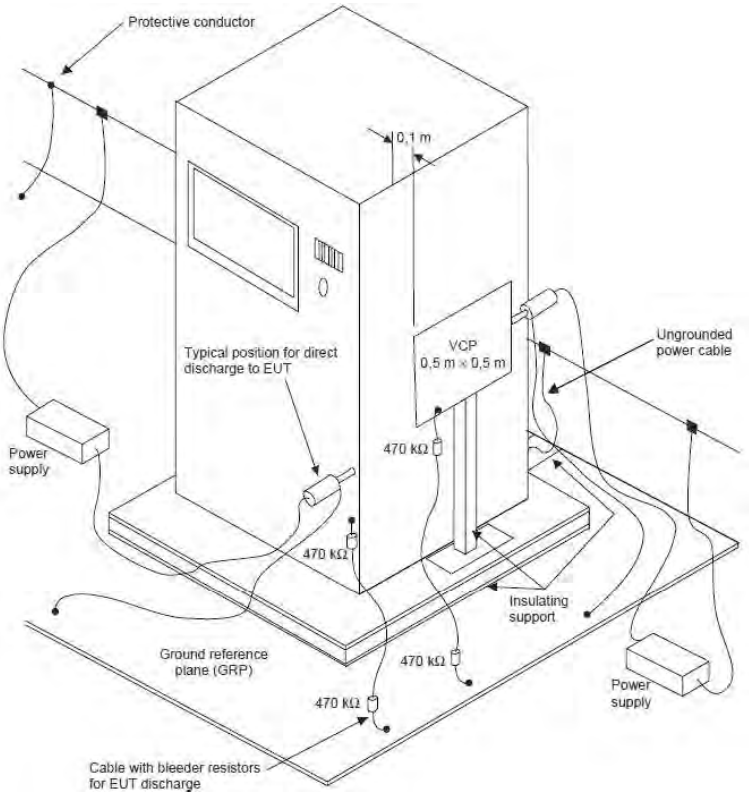
Performance criterion: **B**

6.1.2. Test setup

For table-top equipment



For floor standing equipment



6.1.3. Test Procedure

Measurement was performed in shielded room.
Measurement procedure was applied according to EN 61000-4-2 clause 8.
The test method and equipment were specified by EN 61000-4-2.

6.1.4. Test Result

PASS

Please refer to the following page.

No.	Location of discharge	Polarity	Discharge	Number of discharges	Test level kV	Result
1	HCP top side	P&N	C	25	4	PASS
3	HCP bottom side	P&N	C	25	4	PASS
5	VCP right side	P&N	C	25	4	PASS
7	VCP left side	P&N	C	25	4	PASS
9	Points on conductive surface	P&N	C	25	4	PASS
10	Points on non-conductive surface	P&N	A	10	8	PASS
HCP = Horizontal coupling plate VCP = Vertical coupling plate N = Negative P = Positive A = Air discharge C = Contact discharge						

6.2. Electromagnetic field

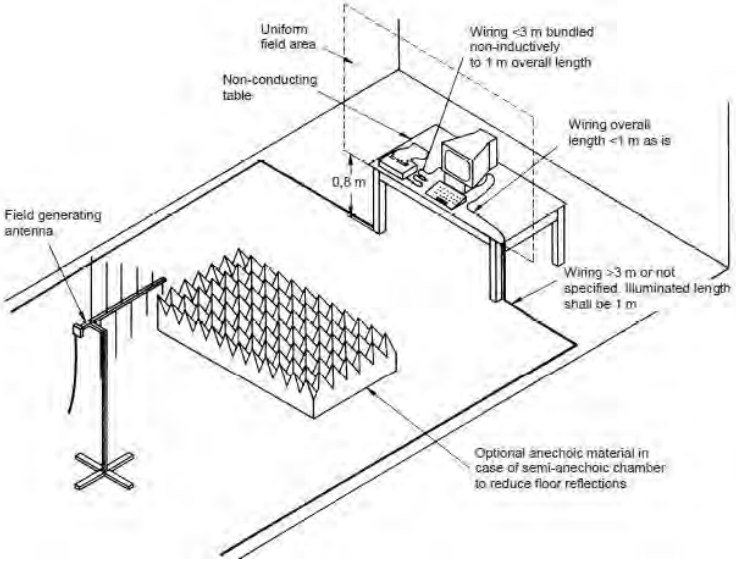
6.2.1. Test Levels and Performance Criterion

Characteristics	Test levels	Test levels
Frequency range	80 MHz to 1 000 MHz,	1 800MHz, 2 600MHz, 3 500MHz, 5 000MHz
Test level	3 V/m (unmodulated)	1 V/m (unmodulated)
Modulation	1 kHz, 80 % AM, sine wave	1 kHz, 80 % AM, sine wave

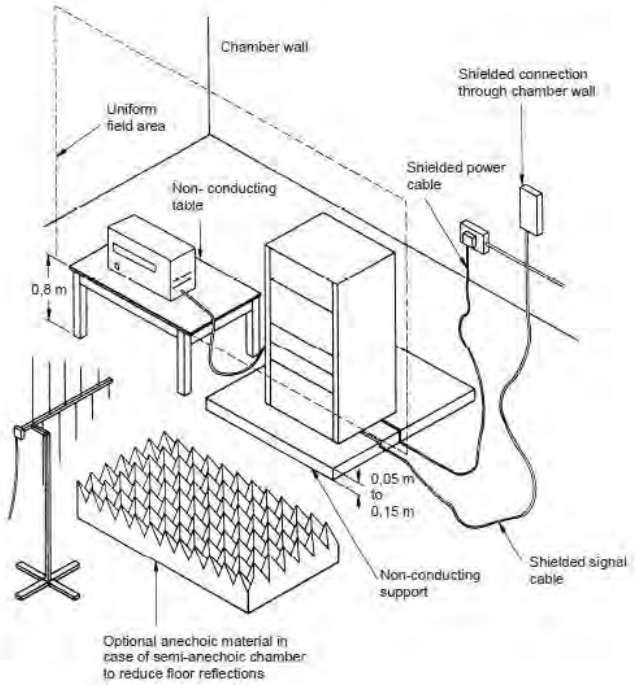
Performance criterion: **A**

6.2.2. Test setup

For table-top equipment



For floor standing equipment



6.2.3. Test Procedure

Measurement was performed in full-anechoic chamber.
Measurement procedure was applied according to EN 61000-4-3 clause 8.
The test method and equipment was specified by EN 61000-4-3.

6.2.4. Test Result

PASS

Enclosure	Horizontal	Vertical
Front	PASS	PASS
Right Side	PASS	PASS
Left Side	PASS	PASS
Rear	PASS	PASS

7. Photographs of EUT

Photographs of EUT

Photographs of EUT


------ End of report ------