



Declaration of conformity

Certification No.: ATJC21082580004700F

Reference report No. : ATJC21082580004700F

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

Product Name : USB Flash Drive

Model No. : RKLEDV4UDP2ZN, RKLEDV4UDP3ZN, GKLEDV4UDP3ZN,
AULEDV4UDP3ZN, PLEDV4UDP3ZN, OLEDV4UDP3ZN,
MLEDV4UDP3ZN, WLEDV4UDP3ZN, QLEDV4UDP3ZN

Rating(s) : 5V_{max}, 1A

Trademark : N/A

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

Test Standards	: CFR47, FCC Part 15 Subpart B, ANSI C63.4: 2014
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The certification holder above has the right to fix FCC marking on the products complying with the specified standards.

The certificate is based on a single evaluation of sample of above mentioned product. It does not imply an assessment of the whole production process.



Authorized Signer : _____



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

FCC 47 CFR PART 15 Subpart B TEST REPORT

Equipment USB Flash Drive

Trademark N/A

Model No. RKLEDV4UDP2ZN, RKLEDV4UDP3ZN, GKLEDV4UDP3ZN,
AULEDV4UDP3ZN, PLEDV4UDP3ZN, OLEDV4UDP3ZN,
MLEDV4UDP3ZN, WLEDV4UDP3ZN, QLEDV4UDP3ZN

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Applicant Redkey USB LTD

Kemp House, 160 City Road, London, EC1V 2NX, United Kingdom

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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 Test August 23 - August 25, 2021

Date of Issue August 25, 2021

Test Standard(s) CFR47, FCC Part 15 Subpart B, ANSI C63.4: 2014

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

Tested : Cris Song
Cris Song / Engineer

Date : August 25, 2021

Approved : Henry Tran
Henry Tran / 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.



Report No.: ATJC21082580004700F

Revision History

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

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1. GENERAL INFORMATION

1.1. Description of EUT

Equipment	USB Flash Drive
Trade Mark	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
I/O Port	N/A
Rated Power Supply	5V _{DC} , 1A
Testing Voltage	5V _{DC} , 1A
EUT Power Rating	5W
Configuration	<input checked="" type="checkbox"/> Table-top <input type="checkbox"/> Floor-standing
Accessory Device	N/A
Cable Supplied	N/A

1. The EUT uses following adapter

Adapter	--	--
Manufacturer	--	--
Model	--	--
AC Input Power	--	--
DC Output Power	--	--
Plug Type	--	--
Power Cord	--	--

2. Other Accessory Device List and Details

Description	Manufacturer	Model	Note
--	--	--	--
--	--	--	--

External I/O Cable

Cable Description	Shielded Type	Ferrite Core	Length(m)	Note
--	<input type="checkbox"/> Shielded <input checked="" type="checkbox"/> Non-shielded	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	--	--
--	--	--	--	--

3. 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. TEST SUMMARY

Test procedures according to the technical standards:

FCC Rules	Test Item	Test Result
§15.107	Conducted Emission	PASS
§15.109	Radiated Emission	PASS

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.

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

The following list contains measurement equipment used for testing. The equipment conforms to the requirement of CISPR 16-1, ANSI C63.2 and other required standards.

Calibration of all test and measurement, including any accessories that may effect such calibration, is checked frequently to ensure the accuracy. Adjustments are made and correction factors are applied in accordance with the instructions contained in the respective.

Table list of the test and measurement equipment

Conducted Emission Measurement

Item	Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	AMN	R&S	ESH3-Z5	831551852	2021.10.30
2	Pulse limiter	R&S	ESH3Z2	357881052	2021.10.30
3	EMI test Receiver	R&S	ESCI	834115/006	2021.11.01
4	Coaxial cable	ZDECL	Z302S-BNCJ-BNCJ-1.5M	18091904	2021.10.30
5	CE Test software	FALA	EZ-EMC	Ver. EMC-con3A1 .1	N/A

Radiated Emission Measurement

Item	Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	869	2021.11.02
2	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA 9120 D	1911	2021.11.02
3	Preamplifier	Agilent	8449B	3008A01838	2021.11.01
4	Amplifier	HP	8447E	2945A02747	2021.11.01
5	Coaxial cable	ETS	RFC-SNS-100-NMS-80 NI	/	2021.11.01
6	Coaxial cable	ETS	RFC-SNS-100-NMS-20 NI	/	2021.11.01
7	Coaxial cable	ETS	RFC-SNS-100-SMS-20 NI	/	2021.11.01
8	Coaxial cable	ETS	RFC-NNS-100-NMS-300 NI	/	2021.11.01
9	EMI test Receiver	R&S	ESPI	100362	2021.11.01
10	MXA signal analyzer	Agilent	N9020A	MY52090073	2021.11.01
11	RE Test software	FALA	EZ-EMC	Ver. FA-03A2 RE	N/A

4. Measurement uncertainty

The following table is for the measurement uncertainty, which is calculated as per the document CISPR 16-4 and ANSI C63.4.

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.

4.1. Operating condition of EUT

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively

Pretest Mode	Description
Mode	Running

For Conducted Test	
Final Test Mode	Description
Mode	Running

For Conducted Test	
Final Test Mode	Description
Mode	Running

4.2. Test conditions

Temperature: 15-25°C
 Relative Humidity: 30-60 %
 Atmospheric pressure: 800hPa-1060hPa

5. Conducted Emission

5.1.Limit

Except for Class A devices:

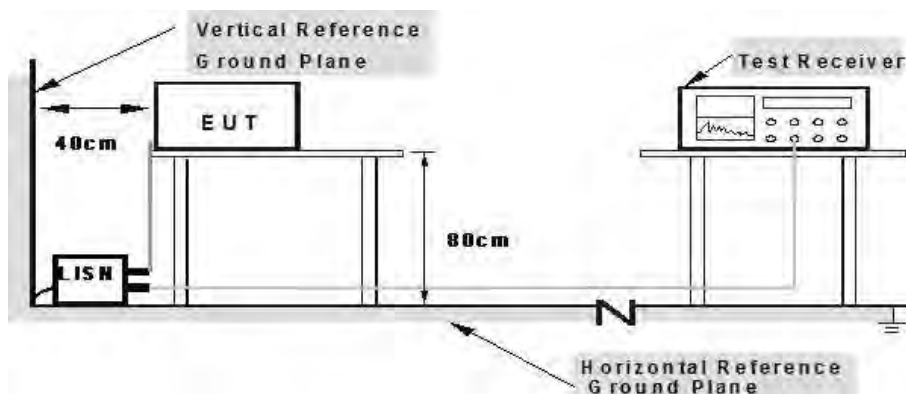
Frequency of emission (MHz)	Conducted limit (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

For Class A devices:

Frequency of emission (MHz)	Conducted limit (dB μ V)	
	Quasi-peak	Average
0.15-0.5	79	66
0.5-30	73	60

5.2.Test setup



**Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes**

The setup of EUT is according with ANSI C63.4 measurement procedure. Specification used with FCC Part 15 limits.

5.3.EMI Test Receiver Setup

Frequency Range	9kHz-30MHz
Resolution Bandwidth	200Hz (9kHz-150kHz) 9kHz (150kHz-30MHz)

5.4. Test procedure

Measurement was performed in shielded room, and instruments used were followed clause 4 of ANSI C63.4.

Detailed test procedure was following clause 7 of ANSI C63.4.

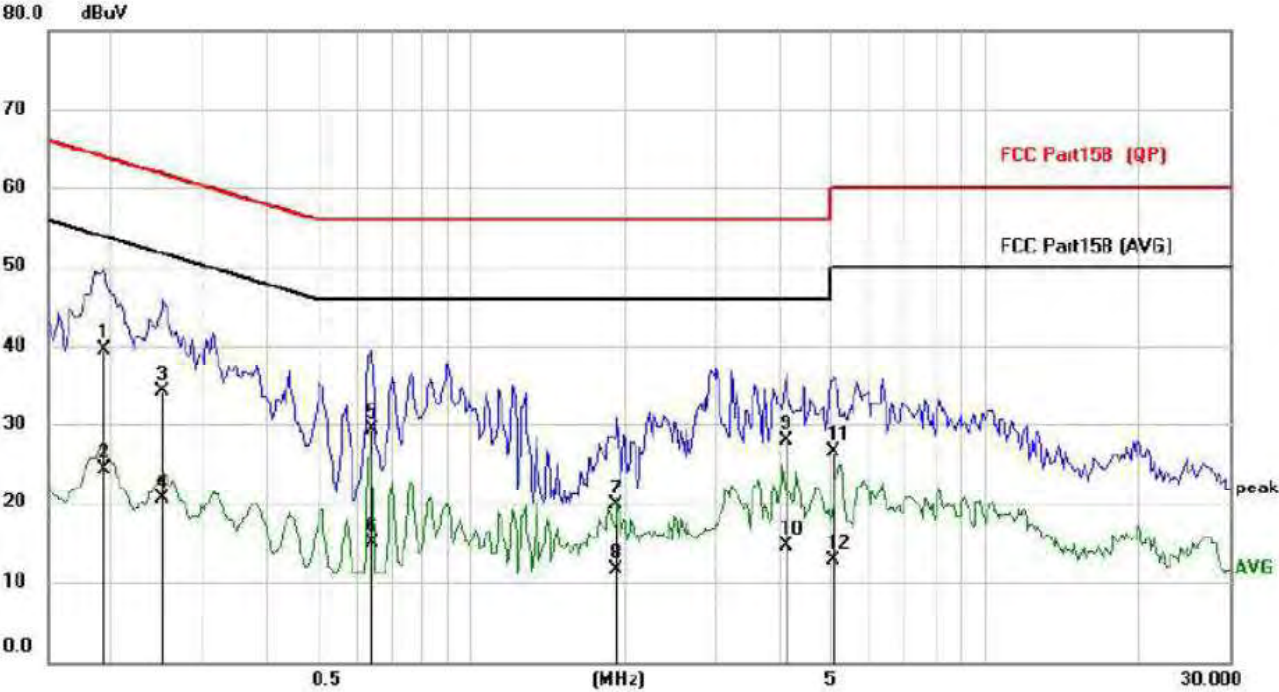
Frequency range 150kHz – 30MHz was checked and EMI receiver measurement bandwidth was set to 9 kHz.

5.5. Test results

PASS

Please refer to the following page.

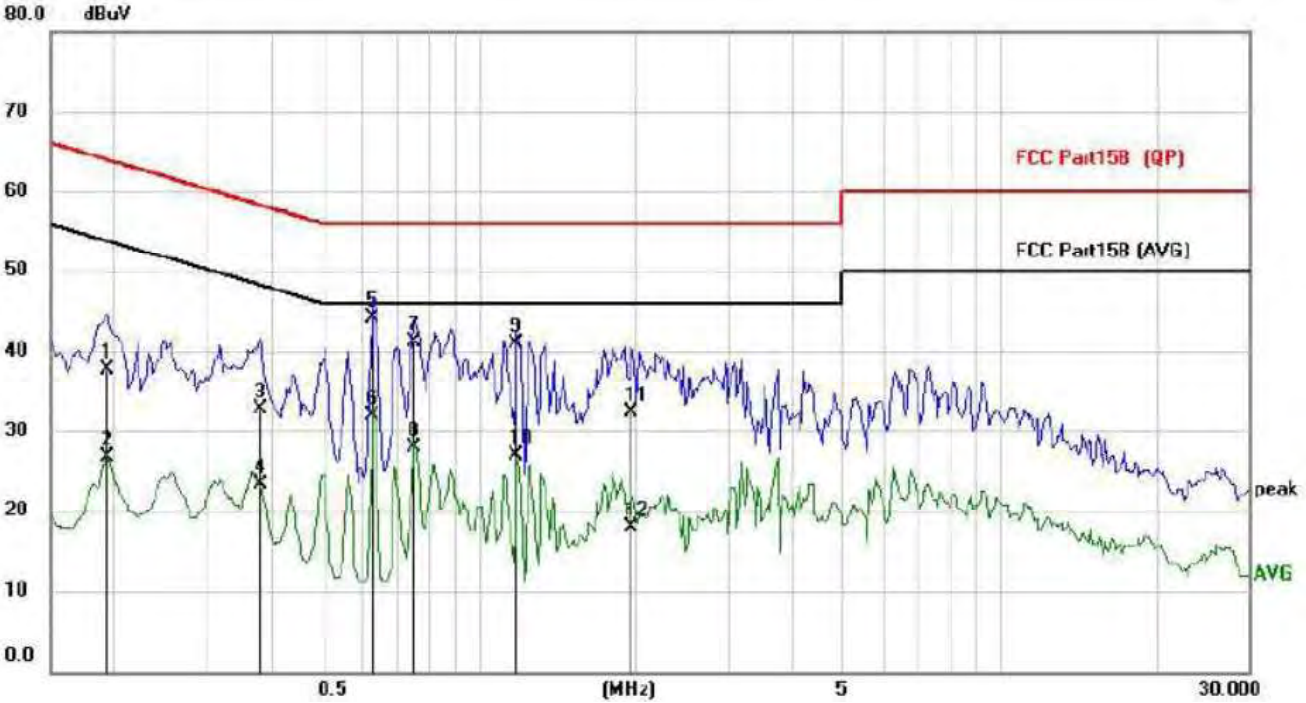
Polarization: L



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	0.1929	28.57	10.92	39.49	63.91	-24.42	QP	
2		0.1929	13.45	10.92	24.37	53.91	-29.54	AVG	
3		0.2514	23.26	10.92	34.18	61.71	-27.53	QP	
4		0.2514	9.58	10.92	20.50	51.71	-31.21	AVG	
5		0.6414	18.46	10.92	29.38	56.00	-26.62	QP	
6		0.6414	4.04	10.92	14.96	46.00	-31.04	AVG	
7		1.9206	8.68	10.96	19.64	56.00	-36.36	QP	
8		1.9206	0.49	10.96	11.45	46.00	-34.55	AVG	
9		4.0959	16.85	11.06	27.91	56.00	-28.09	QP	
10		4.0959	3.45	11.06	14.51	46.00	-31.49	AVG	
11		5.1020	15.38	11.10	26.48	60.00	-33.52	QP	
12		5.1020	1.54	11.10	12.64	50.00	-37.36	AVG	

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

Polarization: N



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.1929	26.78	10.92	37.70	63.91	-26.21	QP	
2		0.1929	15.72	10.92	26.64	53.91	-27.27	AVG	
3		0.3800	21.69	10.92	32.61	58.28	-25.67	QP	
4		0.3800	12.37	10.92	23.29	48.28	-24.99	AVG	
5	*	0.6258	33.11	10.92	44.03	56.00	-11.97	QP	
6		0.6258	20.92	10.92	31.84	46.00	-14.16	AVG	
7		0.7506	30.25	10.92	41.17	56.00	-14.83	QP	
8		0.7506	17.08	10.92	28.00	46.00	-18.00	AVG	
9		1.1835	30.00	10.92	40.92	56.00	-15.08	QP	
10		1.1835	15.89	10.92	26.81	46.00	-19.19	AVG	
11		1.9674	21.27	10.96	32.23	56.00	-23.77	QP	
12		1.9674	6.88	10.96	17.84	46.00	-28.16	AVG	

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

6. Radiated emissions

6.1.Limit

Except for Class A devices (at 3m):

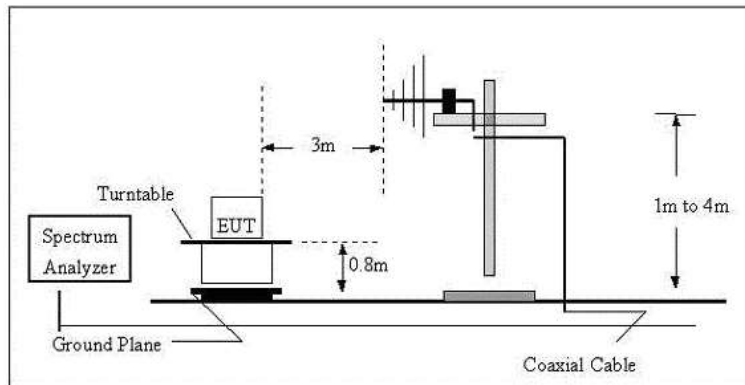
Frequency of emission (MHz)	Field strength (microvolts/meter)	
	(microvolts/meter)	(dB μ V/m)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

For Class A devices (at 10m):

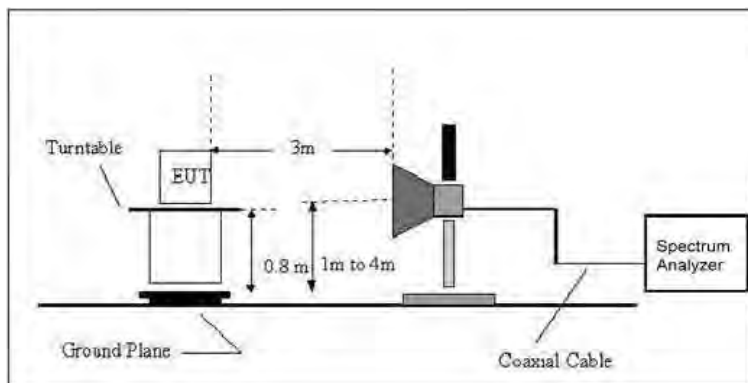
Frequency of emission (MHz)	Field strength (microvolts/meter)	
	(microvolts/meter)	(dB μ V/m)
30-88	90	39
88-216	150	43.5
216-960	210	46.4
Above 960	300	49.5

6.2. Test setup

Radiated Emission Test Set-Up Frequency Below 1 GHz



Radiated Emission Test Set-Up Frequency Above 1GHz



The radiated tests wer performed in 3 meter3 Charmber test site, using the setup accordance with the ANSI C63.4:2014.

EMI Test Receiver Setup and Spectrum Analyzer Setup

During the radiated emission test, the EMI test receiver and Spectrum Analyzer were set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Detector
30MHz-1000MHz	100kHz	300kHz	120kHz	QP
Above 1GHz	1MHz	3MHz	/	PK
	1MHz	10Hz	/	AVG

6.3. Test procedure

The measurement was performed in a semi-anechoic chamber, and instruments used were followed clause 4 of ANSI C63.4.

Detailed test procedure was following clause 8 of ANSI C63.4.

6.4. Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

The "Margin" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

6.5. Test results

PASS

Please refer to the following page.

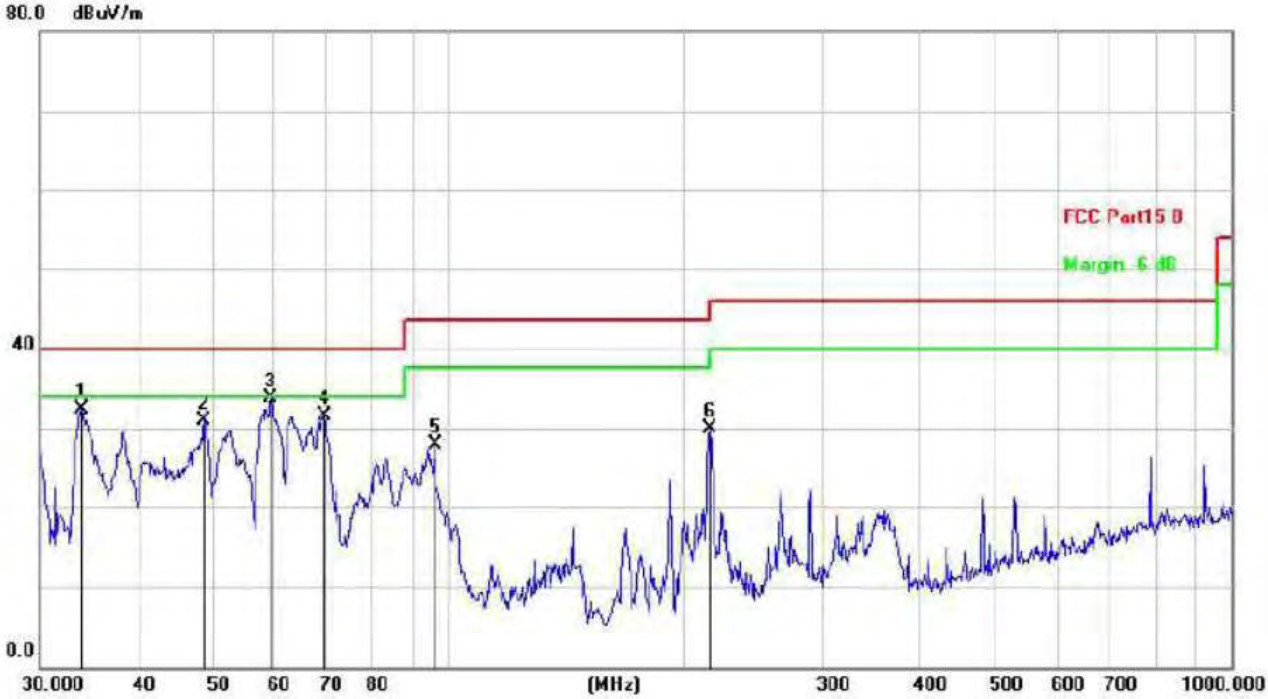
Polarization: H



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1		33.4449	39.67	-18.38	21.29	40.00	-18.71	QP
2		58.2030	41.17	-18.70	22.47	40.00	-17.53	QP
3		69.8450	46.11	-19.91	26.20	40.00	-13.80	QP
4		96.0986	44.53	-20.82	23.71	43.50	-19.79	QP
5	*	216.7828	53.60	-19.52	34.08	46.00	-11.92	QP
6		289.0021	49.34	-18.94	30.40	46.00	-15.60	QP

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

Polarization: V



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1		33.9174	50.60	-18.35	32.25	40.00	-7.75	QP
2		48.6719	49.39	-18.42	30.97	40.00	-9.03	QP
3	*	59.2325	52.50	-18.73	33.77	40.00	-6.23	QP
4		69.3568	51.33	-19.85	31.48	40.00	-8.52	QP
5		96.0986	48.65	-20.82	27.83	43.50	-15.67	QP
6		216.0240	49.51	-19.55	29.96	46.00	-16.04	QP

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

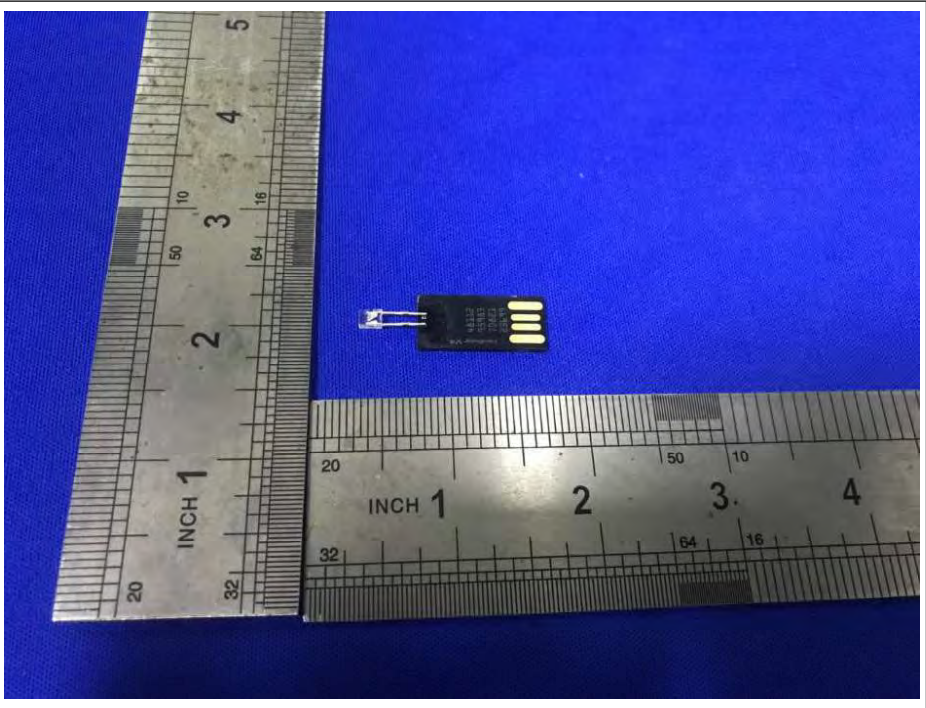
7. Photographs of EUT



Photo 3

View:

- Front
- Rear
- Right side
- Left side
- Top
- Bottom
- Internal



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



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Manufacturer : Redkey USB LTD

Address : Kemp House, 160 City Road, London, EC1V 2NX, United Kingdom

Product Name : USB Flash Drive

Model No. : RKUSBCV4PCBA3AL, BKUSBCV4PCBA3AL,
GKUSBCV4PCBA3AL, AUKUSBCV4PCBA3AL,
PKUSBCV4PCBA3AL, OKUSBCV4PCBA3AL,
MKUSBCV4PCBA3AL, WKUSBCV4PCBA3AL,
QKUSBCV4PCBA3AL

Rating(s) : 5V $\overline{=}$, 1A

Trademark : N/A

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

Test Standards	: CFR47, FCC Part 15 Subpart B, ANSI C63.4: 2014
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The certification holder above has the right to fix FCC marking on the products complying with the specified standards.

The certificate is based on a single evaluation of sample of above mentioned product. It does not imply an assessment of the whole production process.



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

FCC 47 CFR PART 15 Subpart B TEST REPORT

Equipment USB Flash Drive
Trademark N/A
Model No. RKUSBCV4PCBA3AL, BKUSBCV4PCBA3AL, GKUSBCV4PCBA3AL,
AUKUSBCV4PCBA3AL, PKUSBCV4PCBA3AL,
OKUSBCV4PCBA3AL, MKUSBCV4PCBA3AL,
WKUSBCV4PCBA3AL, QKUSBCV4PCBA3AL
Report No. ATJC21090980002700F
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 Test Sep. 06 - Sep. 09, 2021

Date of Issue Sep. 09, 2021

Test Standard(s) CFR47, FCC Part 15 Subpart B, ANSI C63.4: 2014

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

Tested : Cris Song
Cris Song / Engineer

Date : Sep. 09, 2021

Approved : Henry Tran
Henry Tran / Manager

Date : Sep. 09, 2021

Note:

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

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1. GENERAL INFORMATION

1.1. Description of EUT

Equipment	USB Flash Drive
Trade Mark	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
I/O Port	N/A
Rated Power Supply	5V _{DC} , 1A
Testing Voltage	5V _{DC} , 1A
EUT Power Rating	5W
Configuration	<input checked="" type="checkbox"/> Table-top <input type="checkbox"/> Floor-standing
Accessory Device	N/A
Cable Supplied	N/A

1. The EUT uses following adapter

Adapter	--	--
Manufacturer	--	--
Model	--	--
AC Input Power	--	--
DC Output Power	--	--
Plug Type	--	--
Power Cord	--	--

2. Other Accessory Device List and Details

Description	Manufacturer	Model	Note
--	--	--	--
--	--	--	--

External I/O Cable

Cable Description	Shielded Type	Ferrite Core	Length(m)	Note
--	<input type="checkbox"/> Shielded <input checked="" type="checkbox"/> Non-shielded	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	--	--
--	--	--	--	--

3. 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. TEST SUMMARY

Test procedures according to the technical standards:

FCC Rules	Test Item	Test Result
§15.107	Conducted Emission	PASS
§15.109	Radiated Emission	PASS

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.

3. FACILITIES

3.1. Test Facility

ATJC-LAB

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3.2. Test Instruments

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3	EMI test Receiver	R&S	ESCI	834115/006	2021.11.01
4	Coaxial cable	ZDECL	Z302S-BNCJ-BNCJ-1.5M	18091904	2021.10.30
5	CE Test software	FALA	EZ-EMC	Ver. EMC-con3A1 .1	N/A

Radiated Emission Measurement

Item	Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	869	2021.11.02
2	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA 9120 D	1911	2021.11.02
3	Preamplifier	Agilent	8449B	3008A01838	2021.11.01
4	Amplifier	HP	8447E	2945A02747	2021.11.01
5	Coaxial cable	ETS	RFC-SNS-100-NMS-80 NI	/	2021.11.01
6	Coaxial cable	ETS	RFC-SNS-100-NMS-20 NI	/	2021.11.01
7	Coaxial cable	ETS	RFC-SNS-100-SMS-20 NI	/	2021.11.01
8	Coaxial cable	ETS	RFC-NNS-100-NMS-300 NI	/	2021.11.01
9	EMI test Receiver	R&S	ESPI	100362	2021.11.01
10	MXA signal analyzer	Agilent	N9020A	MY52090073	2021.11.01
11	RE Test software	FALA	EZ-EMC	Ver. FA-03A2 RE	N/A

4. Measurement uncertainty

The following table is for the measurement uncertainty, which is calculated as per the document CISPR 16-4 and ANSI C63.4.

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.

4.1. Operating condition of EUT

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively

Pretest Mode	Description
Mode	Running

For Conducted Test	
Final Test Mode	Description
Mode	Running

For Conducted Test	
Final Test Mode	Description
Mode	Running

4.2. Test conditions

Temperature: 15-25°C
 Relative Humidity: 30-60 %
 Atmospheric pressure: 800hPa-1060hPa

5. Conducted Emission

5.1. Limit

Except for Class A devices:

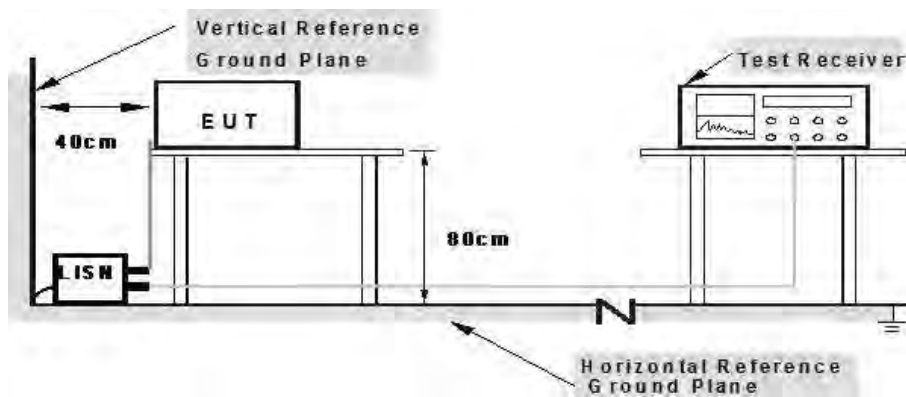
Frequency of emission (MHz)	Conducted limit (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

For Class A devices:

Frequency of emission (MHz)	Conducted limit (dB μ V)	
	Quasi-peak	Average
0.15-0.5	79	66
0.5-30	73	60

5.2. Test setup



**Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes**

The setup of EUT is according with ANSI C63.4 measurement procedure. Specification used with FCC Part 15 limits.

5.3. EMI Test Receiver Setup

Frequency Range	9kHz-30MHz
Resolution Bandwidth	200Hz (9kHz-150kHz) 9kHz (150kHz-30MHz)

5.4. Test procedure

Measurement was performed in shielded room, and instruments used were followed clause 4 of ANSI C63.4.

Detailed test procedure was following clause 7 of ANSI C63.4.

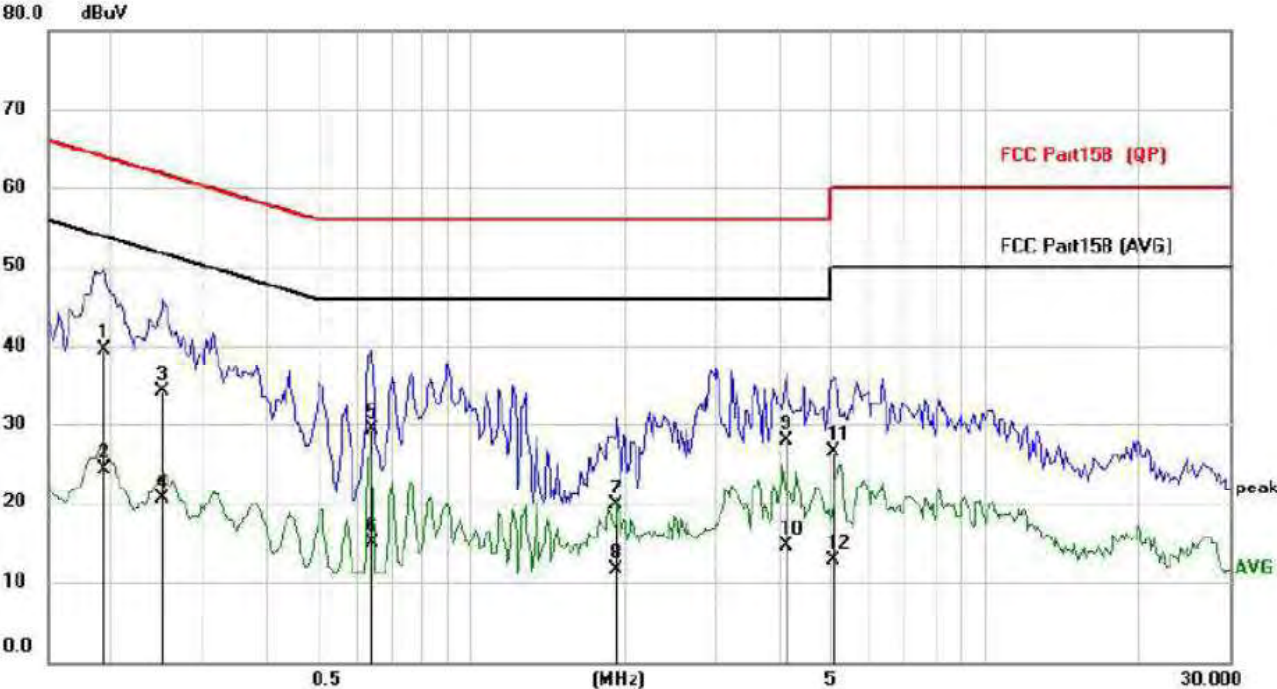
Frequency range 150kHz – 30MHz was checked and EMI receiver measurement bandwidth was set to 9 kHz.

5.5. Test results

PASS

Please refer to the following page.

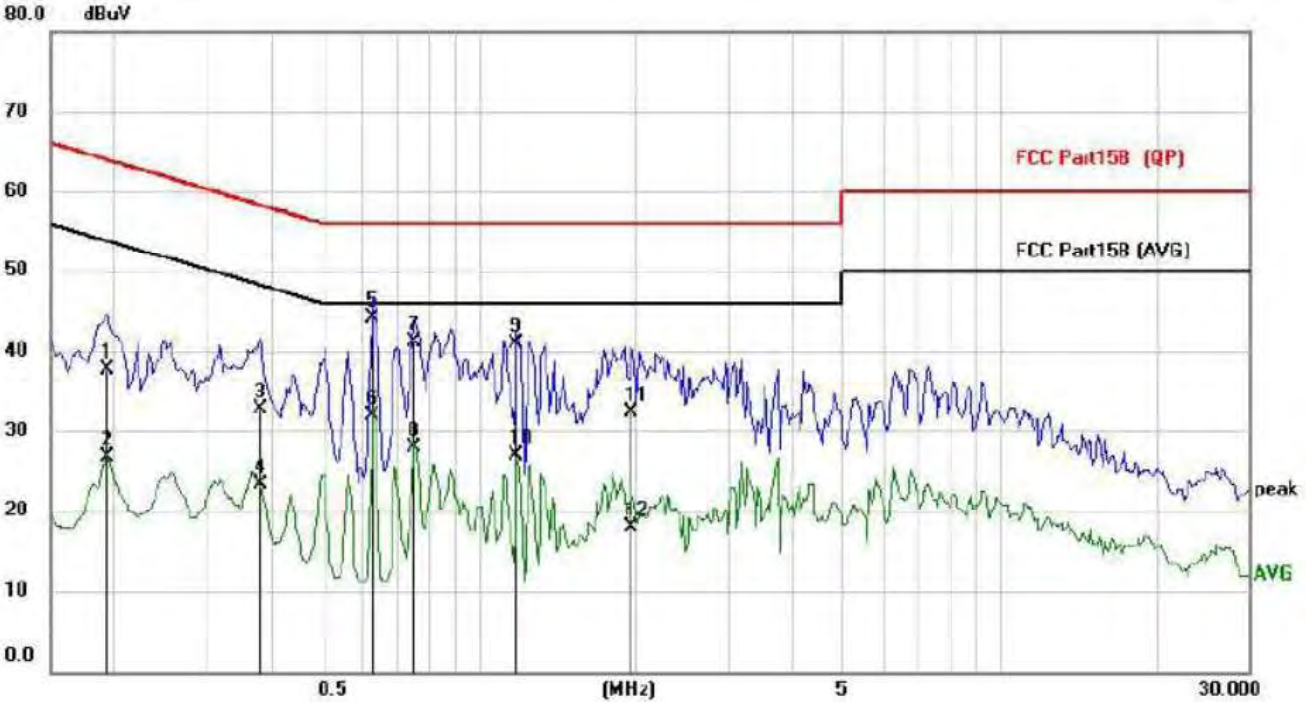
Polarization: L



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	0.1929	28.57	10.92	39.49	63.91	-24.42	QP	
2		0.1929	13.45	10.92	24.37	53.91	-29.54	AVG	
3		0.2514	23.26	10.92	34.18	61.71	-27.53	QP	
4		0.2514	9.58	10.92	20.50	51.71	-31.21	AVG	
5		0.6414	18.46	10.92	29.38	56.00	-26.62	QP	
6		0.6414	4.04	10.92	14.96	46.00	-31.04	AVG	
7		1.9206	8.68	10.96	19.64	56.00	-36.36	QP	
8		1.9206	0.49	10.96	11.45	46.00	-34.55	AVG	
9		4.0959	16.85	11.06	27.91	56.00	-28.09	QP	
10		4.0959	3.45	11.06	14.51	46.00	-31.49	AVG	
11		5.1020	15.38	11.10	26.48	60.00	-33.52	QP	
12		5.1020	1.54	11.10	12.64	50.00	-37.36	AVG	

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

Polarization: N



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1929	26.78	10.92	37.70	63.91	-26.21	QP	
2		0.1929	15.72	10.92	26.64	53.91	-27.27	AVG	
3		0.3800	21.69	10.92	32.61	58.28	-25.67	QP	
4		0.3800	12.37	10.92	23.29	48.28	-24.99	AVG	
5	*	0.6258	33.11	10.92	44.03	56.00	-11.97	QP	
6		0.6258	20.92	10.92	31.84	46.00	-14.16	AVG	
7		0.7506	30.25	10.92	41.17	56.00	-14.83	QP	
8		0.7506	17.08	10.92	28.00	46.00	-18.00	AVG	
9		1.1835	30.00	10.92	40.92	56.00	-15.08	QP	
10		1.1835	15.89	10.92	26.81	46.00	-19.19	AVG	
11		1.9674	21.27	10.96	32.23	56.00	-23.77	QP	
12		1.9674	6.88	10.96	17.84	46.00	-28.16	AVG	

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

6. Radiated emissions

6.1. Limit

Except for Class A devices (at 3m):

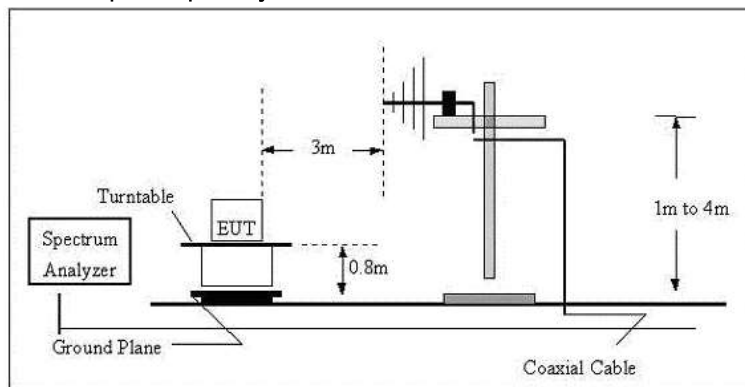
Frequency of emission (MHz)	Field strength (microvolts/meter)	
	(microvolts/meter)	(dB μ V/m)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

For Class A devices (at 10m):

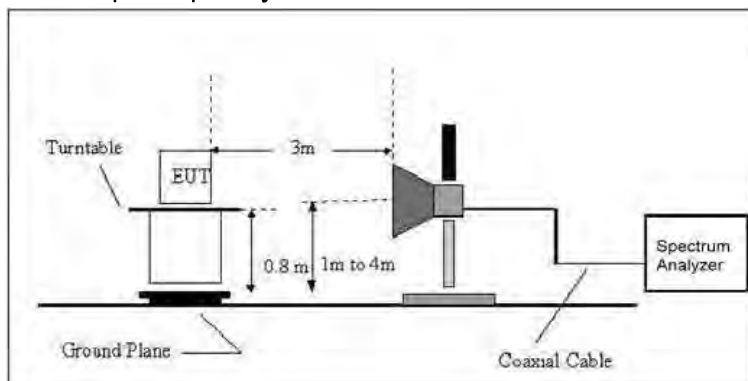
Frequency of emission (MHz)	Field strength (microvolts/meter)	
	(microvolts/meter)	(dB μ V/m)
30-88	90	39
88-216	150	43.5
216-960	210	46.4
Above 960	300	49.5

6.2. Test setup

Radiated Emission Test Set-Up Frequency Below 1 GHz



Radiated Emission Test Set-Up Frequency Above 1GHz



The radiated tests were performed in 3 meter³ Chamber test site, using the setup accordance with the ANSI C63.4:2014.

EMI Test Receiver Setup and Spectrum Analyzer Setup

During the radiated emission test, the EMI test receiver and Spectrum Analyzer were set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Detector
30MHz-1000MHz	100kHz	300kHz	120kHz	QP
Above 1GHz	1MHz	3MHz	/	PK
	1MHz	10Hz	/	AVG

6.3. Test procedure

The measurement was performed in a semi-anechoic chamber, and instruments used were followed clause 4 of ANSI C63.4.

Detailed test procedure was following clause 8 of ANSI C63.4.

6.4. Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

The “Margin” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

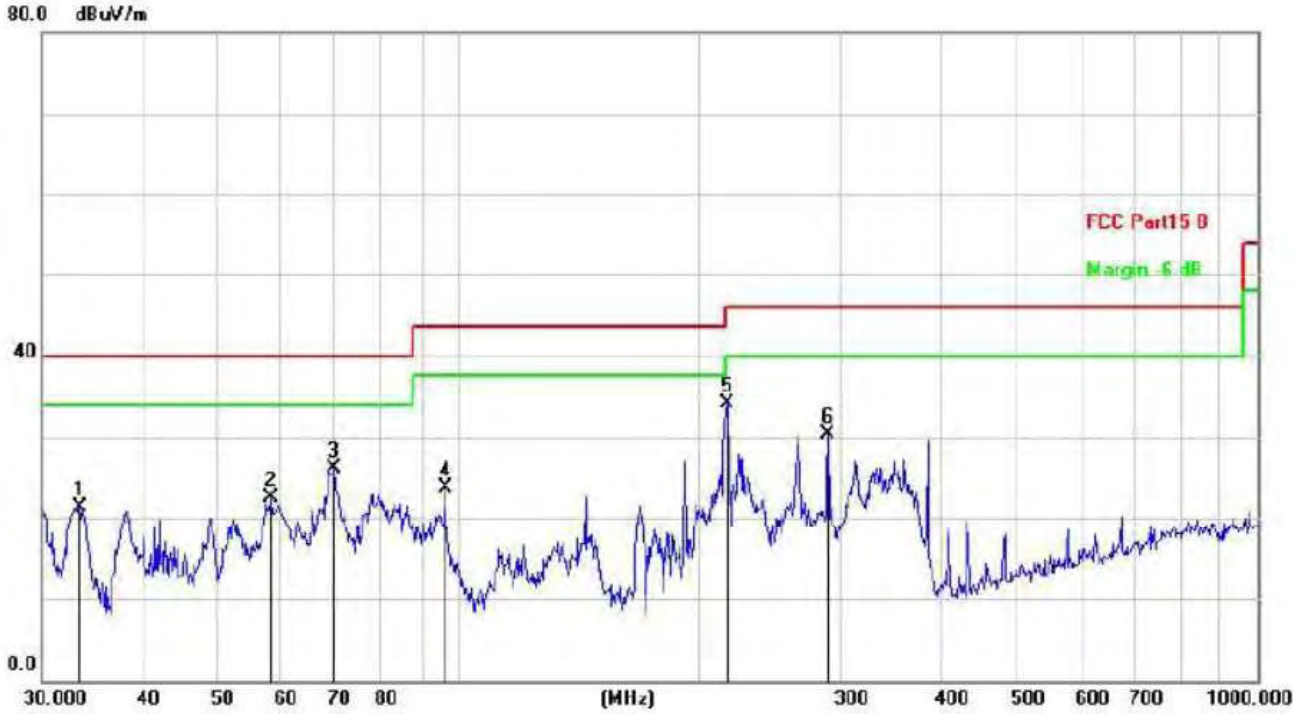
$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

6.5. Test results

PASS

Please refer to the following page.

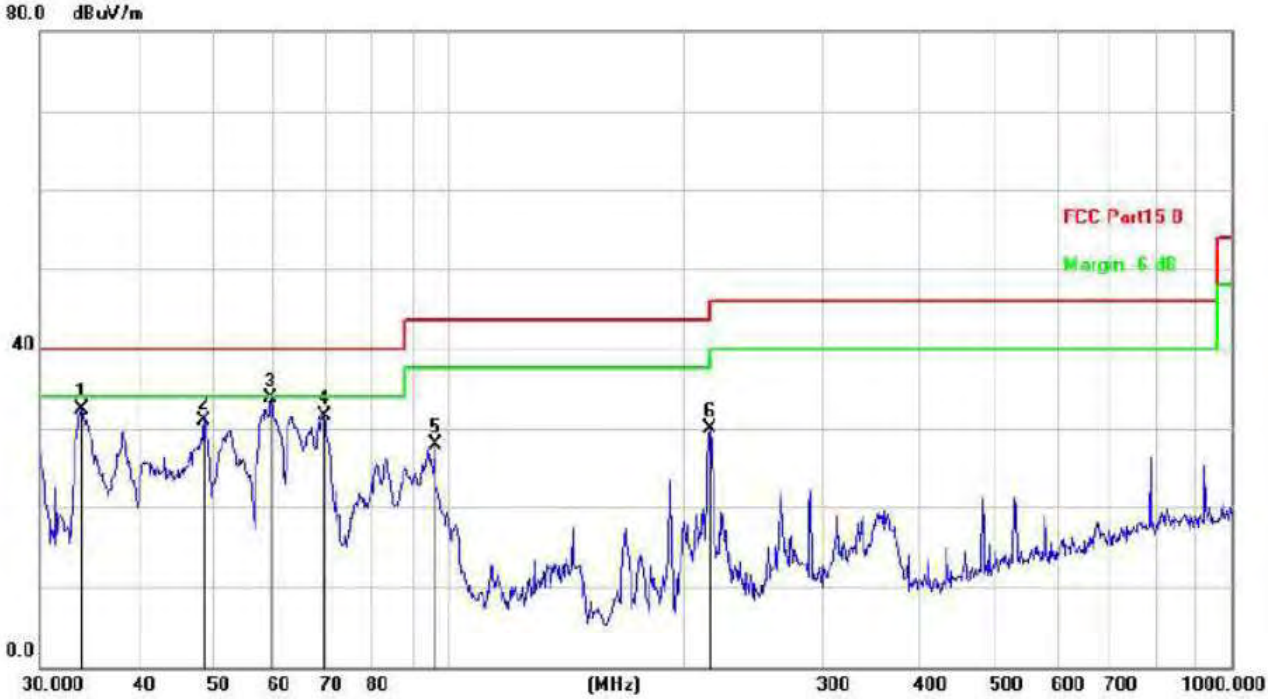
Polarization: H



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1		33.4449	39.67	-18.38	21.29	40.00	-18.71	QP
2		58.2030	41.17	-18.70	22.47	40.00	-17.53	QP
3		69.8450	46.11	-19.91	26.20	40.00	-13.80	QP
4		96.0986	44.53	-20.82	23.71	43.50	-19.79	QP
5	*	216.7828	53.60	-19.52	34.08	46.00	-11.92	QP
6		289.0021	49.34	-18.94	30.40	46.00	-15.60	QP

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

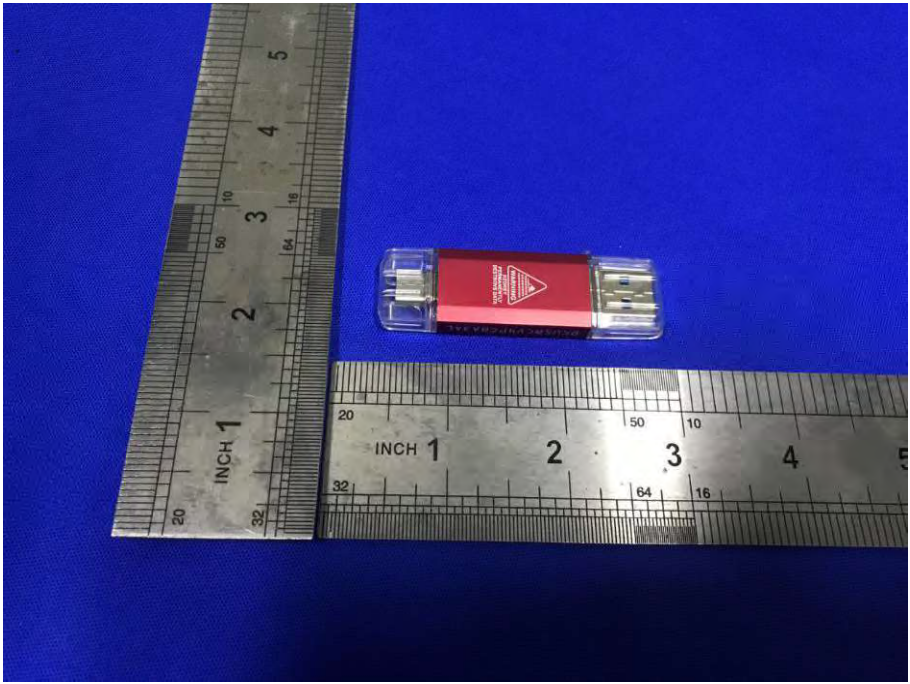
Polarization: V



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1		33.9174	50.60	-18.35	32.25	40.00	-7.75	QP
2		48.6719	49.39	-18.42	30.97	40.00	-9.03	QP
3	*	59.2325	52.50	-18.73	33.77	40.00	-6.23	QP
4		69.3568	51.33	-19.85	31.48	40.00	-8.52	QP
5		96.0986	48.65	-20.82	27.83	43.50	-15.67	QP
6		216.0240	49.51	-19.55	29.96	46.00	-16.04	QP

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

7. Photographs of EUT

<p>Photo 1</p> <p>View:</p> <p><input checked="" type="checkbox"/> Front</p> <p><input type="checkbox"/> Rear</p> <p><input type="checkbox"/> Right side</p> <p><input type="checkbox"/> Left side</p> <p><input type="checkbox"/> Top</p> <p><input type="checkbox"/> Bottom</p> <p><input type="checkbox"/> Internal</p>	
--	---


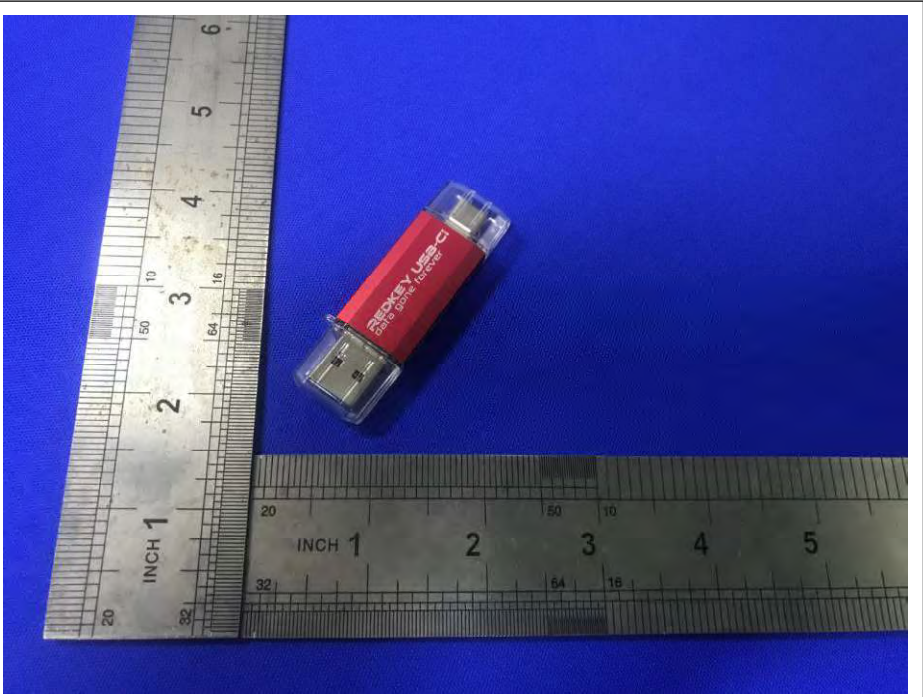
<p>Photo 2</p> <p>View:</p> <p><input checked="" type="checkbox"/> Front</p> <p><input type="checkbox"/> Rear</p> <p><input type="checkbox"/> Right side</p> <p><input type="checkbox"/> Left side</p> <p><input type="checkbox"/> Top</p> <p><input type="checkbox"/> Bottom</p> <p><input type="checkbox"/> Internal</p>	
--	--

Photo 3

View:

- Front
- Rear
- Right side
- Left side
- Top
- Bottom
- Internal



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

Declaration of conformity

Certification No.: ATJC21091680004200F

Reference report No. : ATJC21091680004200F

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

Product Name : USB Flash Drive

Model No. : RKUSBV3UDP2AL, RKUSBV4UDP2AL, GKUSBV4UDP2AL,
PKUSBV4UDP2AL, OKUSBV4UDP2AL, MKUSBV4UDP2AL,
WKUSBV4UDP2AL, QKUSBV4UDP2AL

Rating(s) : 5V_{max}, 1A

Trademark : N/A

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

Test Standards	: CFR47, FCC Part 15 Subpart B, ANSI C63.4: 2014
----------------	--

The certification holder above has the right to fix FCC marking on the products complying with the specified standards.

The certificate is based on a single evaluation of sample of above mentioned product. It does not imply an assessment of the whole production process.



Authorized Signer : _____



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

FCC 47 CFR PART 15 Subpart B TEST REPORT

Equipment USB Flash Drive

Trademark N/A

Model No. RKUSBV3UDP2AL, RKUSBV4UDP2AL, GKUSBV4UDP2AL,
PKUSBV4UDP2AL, OKUSBV4UDP2AL, MKUSBV4UDP2AL,
WKUSBV4UDP2AL, QKUSBV4UDP2AL

Report No. ATJC21091680004200F

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 Test Sep. 16 - Sep. 22, 2021

Date of Issue Sep. 22, 2021

Test Standard(s) CFR47, FCC Part 15 Subpart B, ANSI C63.4: 2014

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

Tested :

Cris Song

Cris Song / Engineer

Date : Sep. 22, 2021

Approved :

Henry Tran
Henry Tran / 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.



Report No.: ATJC21091680004200F

Revision History

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

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1. GENERAL INFORMATION

1.1. Description of EUT

Equipment	USB Flash Drive
Trade Mark	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.
I/O Port	N/A
Rated Power Supply	5V _{DC} , 1A
Testing Voltage	5V _{DC} , 1A
EUT Power Rating	5W
Configuration	<input checked="" type="checkbox"/> Table-top <input type="checkbox"/> Floor-standing
Accessory Device	N/A
Cable Supplied	N/A

1. The EUT uses following adapter

Adapter	--	--
Manufacturer	--	--
Model	--	--
AC Input Power	--	--
DC Output Power	--	--
Plug Type	--	--
Power Cord	--	--

2. Other Accessory Device List and Details

Description	Manufacturer	Model	Note
--	--	--	--
--	--	--	--

External I/O Cable

Cable Description	Shielded Type	Ferrite Core	Length(m)	Note
--	<input type="checkbox"/> Shielded <input checked="" type="checkbox"/> Non-shielded	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	--	--
--	--	--	--	--

3. 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. TEST SUMMARY

Test procedures according to the technical standards:

FCC Rules	Test Item	Test Result
§15.107	Conducted Emission	PASS
§15.109	Radiated Emission	PASS

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.

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

The following list contains measurement equipment used for testing. The equipment conforms to the requirement of CISPR 16-1, ANSI C63.2 and other required standards.

Calibration of all test and measurement, including any accessories that may effect such calibration, is checked frequently to ensure the accuracy. Adjustments are made and correction factors are applied in accordance with the instructions contained in the respective.

Table list of the test and measurement equipment

Conducted Emission Measurement

Item	Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	AMN	R&S	ESH3-Z5	831551852	2021.10.30
2	Pulse limiter	R&S	ESH3Z2	357881052	2021.10.30
3	EMI test Receiver	R&S	ESCI	834115/006	2021.11.01
4	Coaxial cable	ZDECL	Z302S-BNCJ-BNCJ-1.5M	18091904	2021.10.30
5	CE Test software	FALA	EZ-EMC	Ver. EMC-con3A1 .1	N/A

Radiated Emission Measurement

Item	Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	869	2021.11.02
2	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA 9120 D	1911	2021.11.02
3	Preamplifier	Agilent	8449B	3008A01838	2021.11.01
4	Amplifier	HP	8447E	2945A02747	2021.11.01
5	Coaxial cable	ETS	RFC-SNS-100-NMS-80 NI	/	2021.11.01
6	Coaxial cable	ETS	RFC-SNS-100-NMS-20 NI	/	2021.11.01
7	Coaxial cable	ETS	RFC-SNS-100-SMS-20 NI	/	2021.11.01
8	Coaxial cable	ETS	RFC-NNS-100-NMS-300 NI	/	2021.11.01
9	EMI test Receiver	R&S	ESPI	100362	2021.11.01
10	MXA signal analyzer	Agilent	N9020A	MY52090073	2021.11.01
11	RE Test software	FALA	EZ-EMC	Ver. FA-03A2 RE	N/A

4. Measurement uncertainty

The following table is for the measurement uncertainty, which is calculated as per the document CISPR 16-4 and ANSI C63.4.

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.

4.1. Operating condition of EUT

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively

Pretest Mode	Description
Mode	Running

For Conducted Test	
Final Test Mode	Description
Mode	Running

For Conducted Test	
Final Test Mode	Description
Mode	Running

4.2. Test conditions

Temperature: 15-25°C
 Relative Humidity: 30-60 %
 Atmospheric pressure: 800hPa-1060hPa

5. Conducted Emission

5.1.Limit

Except for Class A devices:

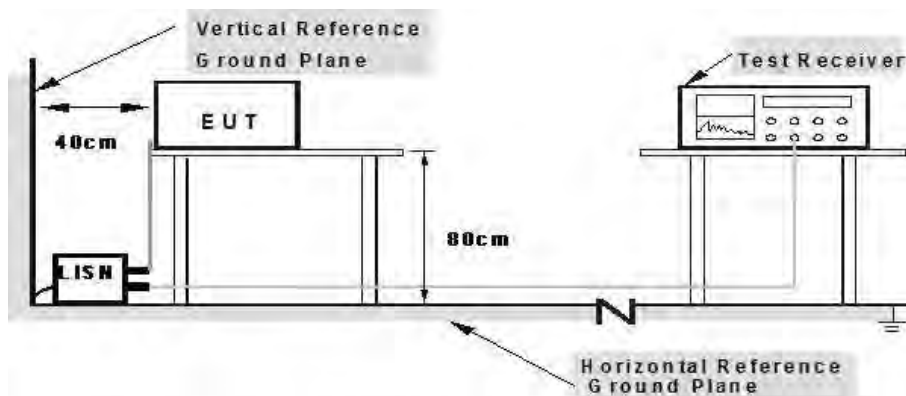
Frequency of emission (MHz)	Conducted limit (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

For Class A devices:

Frequency of emission (MHz)	Conducted limit (dB μ V)	
	Quasi-peak	Average
0.15-0.5	79	66
0.5-30	73	60

5.2. Test setup



**Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes**

The setup of EUT is according with ANSI C63.4 measurement procedure. Specification used with FCC Part 15 limits.

5.3.EMI Test Receiver Setup

Frequency Range	9kHz-30MHz
Resolution Bandwidth	200Hz (9kHz-150kHz) 9kHz (150kHz-30MHz)

5.4. Test procedure

Measurement was performed in shielded room, and instruments used were followed clause 4 of ANSI C63.4.

Detailed test procedure was following clause 7 of ANSI C63.4.

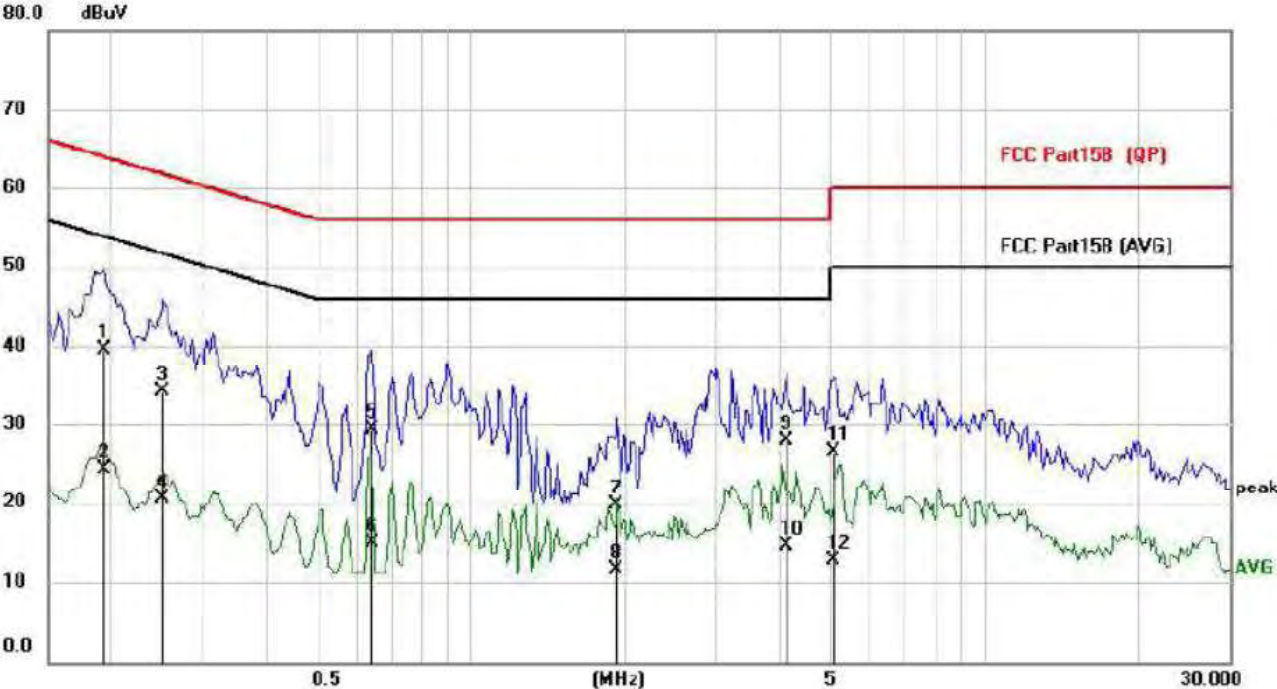
Frequency range 150kHz – 30MHz was checked and EMI receiver measurement bandwidth was set to 9 kHz.

5.5. Test results

PASS

Please refer to the following page.

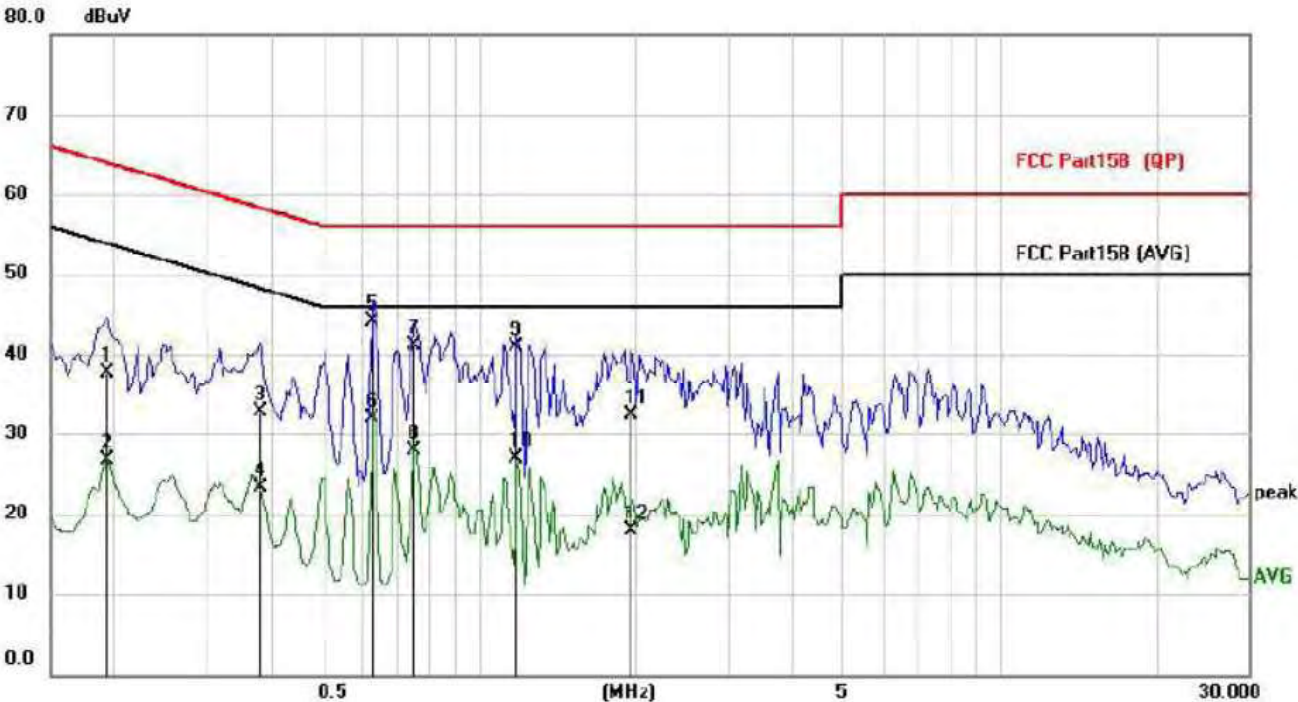
Polarization: L



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	0.1929	28.57	10.92	39.49	63.91	-24.42	QP	
2		0.1929	13.45	10.92	24.37	53.91	-29.54	AVG	
3		0.2514	23.26	10.92	34.18	61.71	-27.53	QP	
4		0.2514	9.58	10.92	20.50	51.71	-31.21	AVG	
5		0.6414	18.46	10.92	29.38	56.00	-26.62	QP	
6		0.6414	4.04	10.92	14.96	46.00	-31.04	AVG	
7		1.9206	8.68	10.96	19.64	56.00	-36.36	QP	
8		1.9206	0.49	10.96	11.45	46.00	-34.55	AVG	
9		4.0959	16.85	11.06	27.91	56.00	-28.09	QP	
10		4.0959	3.45	11.06	14.51	46.00	-31.49	AVG	
11		5.1020	15.38	11.10	26.48	60.00	-33.52	QP	
12		5.1020	1.54	11.10	12.64	50.00	-37.36	AVG	

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

Polarization: N



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1929	26.78	10.92	37.70	63.91	-26.21	QP	
2		0.1929	15.72	10.92	26.64	53.91	-27.27	AVG	
3		0.3800	21.69	10.92	32.61	58.28	-25.67	QP	
4		0.3800	12.37	10.92	23.29	48.28	-24.99	AVG	
5	*	0.6258	33.11	10.92	44.03	56.00	-11.97	QP	
6		0.6258	20.92	10.92	31.84	46.00	-14.16	AVG	
7		0.7506	30.25	10.92	41.17	56.00	-14.83	QP	
8		0.7506	17.08	10.92	28.00	46.00	-18.00	AVG	
9		1.1835	30.00	10.92	40.92	56.00	-15.08	QP	
10		1.1835	15.89	10.92	26.81	46.00	-19.19	AVG	
11		1.9674	21.27	10.96	32.23	56.00	-23.77	QP	
12		1.9674	6.88	10.96	17.84	46.00	-28.16	AVG	

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

6. Radiated emissions

6.1.Limit

Except for Class A devices (at 3m):

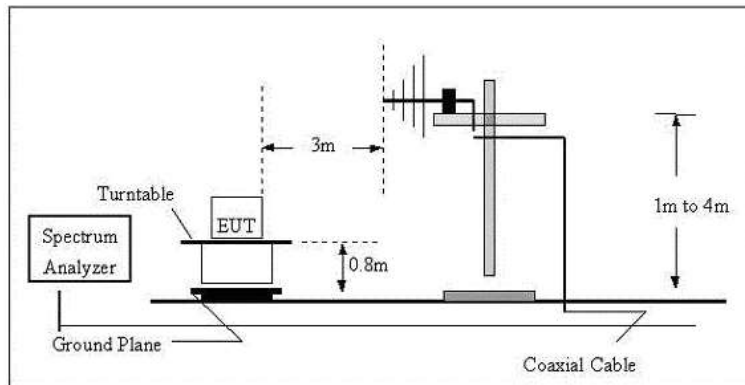
Frequency of emission (MHz)	Field strength (microvolts/meter)	
	(microvolts/meter)	(dB μ V/m)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

For Class A devices (at 10m):

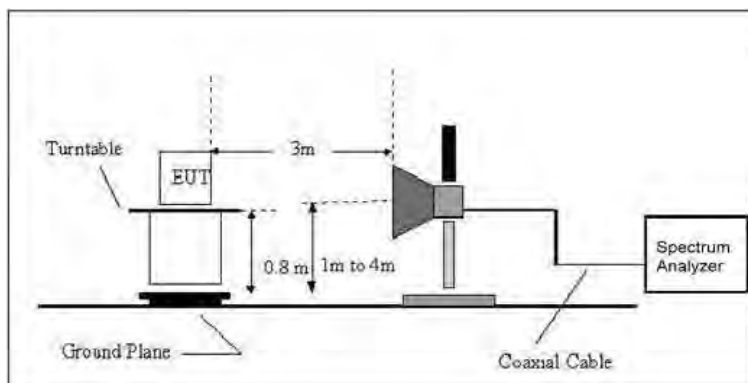
Frequency of emission (MHz)	Field strength (microvolts/meter)	
	(microvolts/meter)	(dB μ V/m)
30-88	90	39
88-216	150	43.5
216-960	210	46.4
Above 960	300	49.5

6.2. Test setup

Radiated Emission Test Set-Up Frequency Below 1 GHz



Radiated Emission Test Set-Up Frequency Above 1GHz



The radiated tests were performed in 3 meter³ Chamber test site, using the setup accordance with the ANSI C63.4:2014.

EMI Test Receiver Setup and Spectrum Analyzer Setup

During the radiated emission test, the EMI test receiver and Spectrum Analyzer were set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Detector
30MHz-1000MHz	100kHz	300kHz	120kHz	QP
Above 1GHz	1MHz	3MHz	/	PK
	1MHz	10Hz	/	AVG

6.3. Test procedure

The measurement was performed in a semi-anechoic chamber, and instruments used were followed clause 4 of ANSI C63.4.

Detailed test procedure was following clause 8 of ANSI C63.4.

6.4. Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

The "Margin" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

6.5. Test results

PASS

Please refer to the following page.

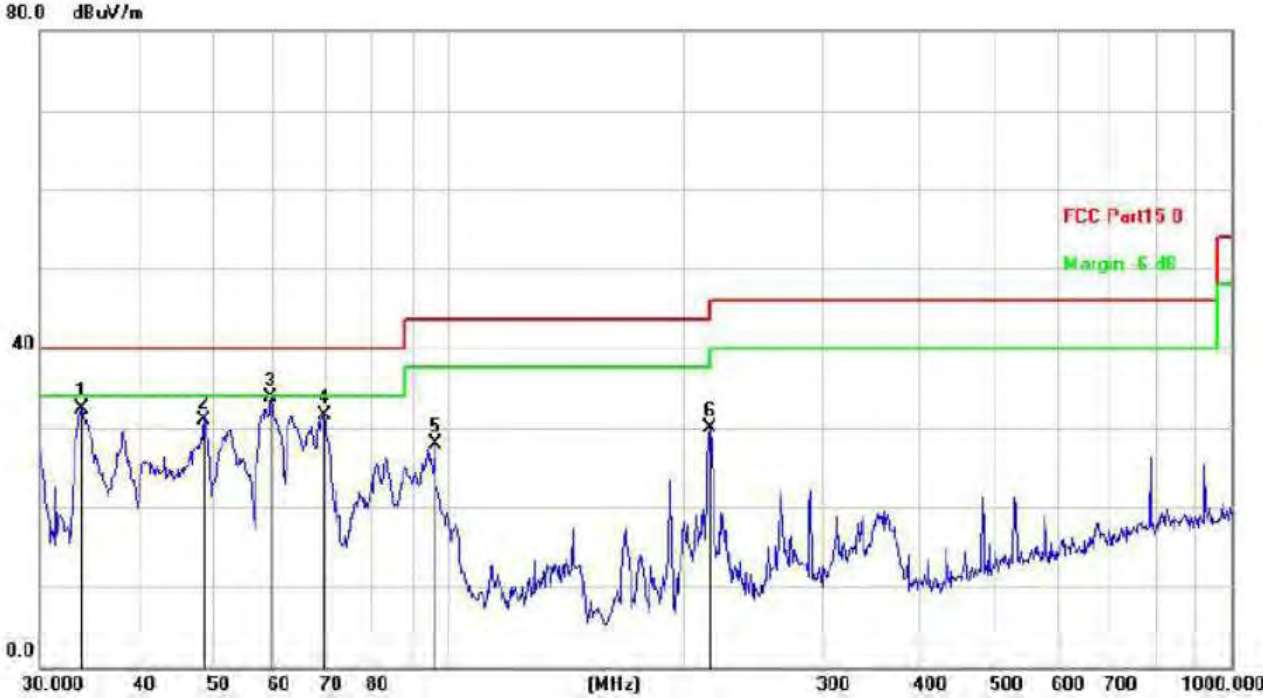
Polarization: H



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1		33.4449	39.67	-18.38	21.29	40.00	-18.71	QP
2		58.2030	41.17	-18.70	22.47	40.00	-17.53	QP
3		69.8450	46.11	-19.91	26.20	40.00	-13.80	QP
4		96.0986	44.53	-20.82	23.71	43.50	-19.79	QP
5	*	216.7828	53.60	-19.52	34.08	46.00	-11.92	QP
6		289.0021	49.34	-18.94	30.40	46.00	-15.60	QP

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

Polarization: V



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1		33.9174	50.60	-18.35	32.25	40.00	-7.75	QP
2		48.6719	49.39	-18.42	30.97	40.00	-9.03	QP
3	*	59.2325	52.50	-18.73	33.77	40.00	-6.23	QP
4		69.3568	51.33	-19.85	31.48	40.00	-8.52	QP
5		96.0986	48.65	-20.82	27.83	43.50	-15.67	QP
6		216.0240	49.51	-19.55	29.96	46.00	-16.04	QP

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

7. Photographs of EUT

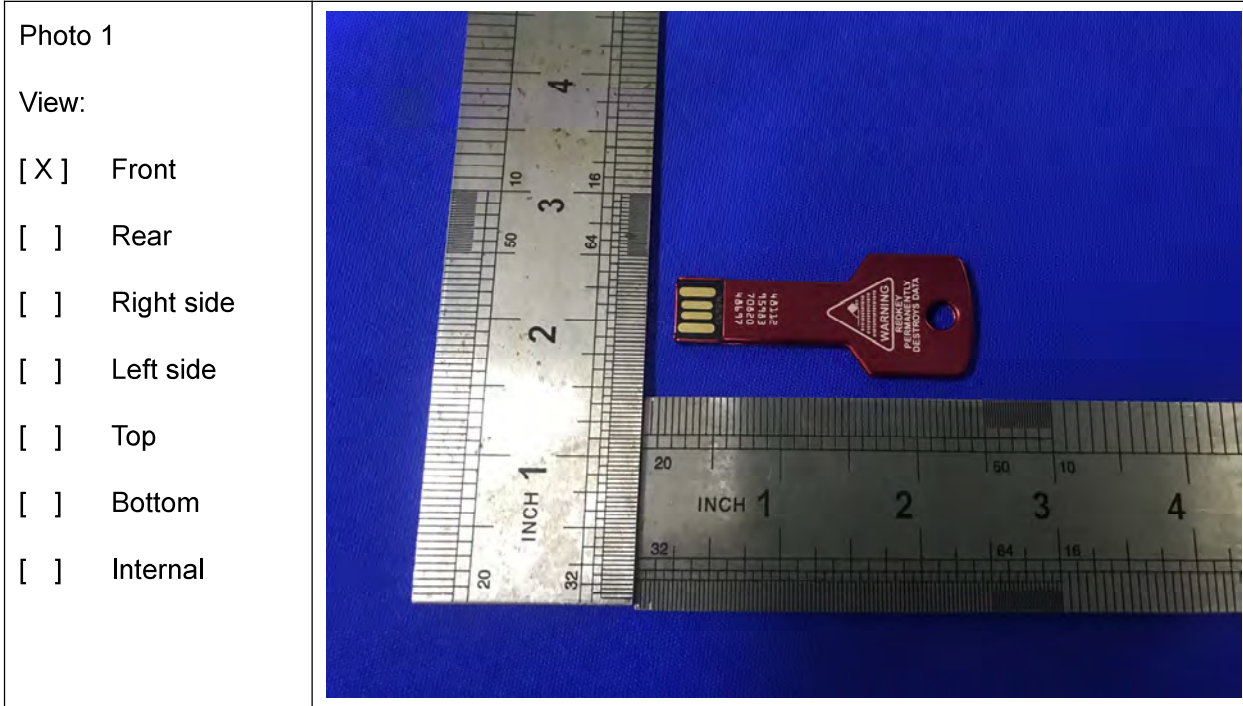


Photo 3

View:

- Front
- Rear
- Right side
- Left side
- Top
- Bottom
- Internal



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

Declaration of conformity

Certification No.: ATJC21091680004300F

Reference report No. : ATJC21091680004300F

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

Product Name : USB Flash Drive

Model No. : RKUSBV1UDP2FE, RKUSBV2UDP2FE, RKESDV2UDP2FE, RKUSBV3UDP2FE, RKUSBV4UDP2FE, BKUSBV1UDP3FE, BKUSBV2UDP3FE, BKUSBV4UDP3FE, GKUSBV1UDP3FE, GKUSBV2UDP3FE, GKUSBV4UDP3FE, AUUSBV4UDP3FE, PUSBV4UDP3FE, OUSBV4UDP3FE, MUSBV4UDP3FE, WUSBV4UDP3FE, QUSBV4UDP3FE

Rating(s) : 5V $\overline{=}$, 1A

Trademark : N/A

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

Test Standards	: CFR47, FCC Part 15 Subpart B, ANSI C63.4: 2014
----------------	--

The certification holder above has the right to fix FCC marking on the products complying with the specified standards.

The certificate is based on a single evaluation of sample of above mentioned product. It does not imply an assessment of the whole production process.



Authorized Signer : _____



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

FCC 47 CFR PART 15 Subpart B 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. ATJC21091680004300F
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 Test Sep. 16 - Sep. 22, 2021
Date of Issue Sep. 22, 2021
Test Standard(s) CFR47, FCC Part 15 Subpart B, ANSI C63.4: 2014
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.



Report No.: ATJC21091680004300F

Revision History

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

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1. GENERAL INFORMATION

1.1. Description of EUT

Equipment	USB Flash Drive
Trade Mark	N/A
Model Name	RKUSBV4UDP2FE
Serial No.	RKUSBV1UDP2FE, RKUSBV2UDP2FE, RKESDV2UDP2FE, RKUSBV3UDP2FE, BKUSBV1UDP3FE, BKUSBV2UDP3FE, BKUSBV4UDP3FE, GKUSBV1UDP3FE, GKUSBV2UDP3FE, GKUSBV4UDP3FE, AUUSBV4UDP3FE, PUBSV4UDP3FE, OUSBV4UDP3FE, MUSBV4UDP3FE, WUSBV4UDP3FE, QUSBV4UDP3FE
Model Difference	All models are the same except for the difference in appearance.
I/O Port	N/A
Rated Power Supply	5V _{DC} , 1A
Testing Voltage	5V _{DC} , 1A
EUT Power Rating	5W
Configuration	<input checked="" type="checkbox"/> Table-top <input type="checkbox"/> Floor-standing
Accessory Device	N/A
Cable Supplied	N/A

1. The EUT uses following adapter

Adapter	--	--
Manufacturer	--	--
Model	--	--
AC Input Power	--	--
DC Output Power	--	--
Plug Type	--	--
Power Cord	--	--

2. Other Accessory Device List and Details

Description	Manufacturer	Model	Note
--	--	--	--
--	--	--	--

External I/O Cable

Cable Description	Shielded Type	Ferrite Core	Length(m)	Note
--	<input type="checkbox"/> Shielded <input checked="" type="checkbox"/> Non-shielded	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	--	--
--	--	--	--	--

3. 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. TEST SUMMARY

Test procedures according to the technical standards:

FCC Rules	Test Item	Test Result
§15.107	Conducted Emission	PASS
§15.109	Radiated Emission	PASS

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.

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

The following list contains measurement equipment used for testing. The equipment conforms to the requirement of CISPR 16-1, ANSI C63.2 and other required standards.

Calibration of all test and measurement, including any accessories that may effect such calibration, is checked frequently to ensure the accuracy. Adjustments are made and correction factors are applied in accordance with the instructions contained in the respective.

Table list of the test and measurement equipment

Conducted Emission Measurement

Item	Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	AMN	R&S	ESH3-Z5	831551852	2021.10.30
2	Pulse limiter	R&S	ESH3Z2	357881052	2021.10.30
3	EMI test Receiver	R&S	ESCI	834115/006	2021.11.01
4	Coaxial cable	ZDECL	Z302S-BNCJ-BNCJ-1.5M	18091904	2021.10.30
5	CE Test software	FALA	EZ-EMC	Ver. EMC-con3A1 .1	N/A

Radiated Emission Measurement

Item	Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	869	2021.11.02
2	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA 9120 D	1911	2021.11.02
3	Preamplifier	Agilent	8449B	3008A01838	2021.11.01
4	Amplifier	HP	8447E	2945A02747	2021.11.01
5	Coaxial cable	ETS	RFC-SNS-100-NMS-80 NI	/	2021.11.01
6	Coaxial cable	ETS	RFC-SNS-100-NMS-20 NI	/	2021.11.01
7	Coaxial cable	ETS	RFC-SNS-100-SMS-20 NI	/	2021.11.01
8	Coaxial cable	ETS	RFC-NNS-100-NMS-300 NI	/	2021.11.01
9	EMI test Receiver	R&S	ESPI	100362	2021.11.01
10	MXA signal analyzer	Agilent	N9020A	MY52090073	2021.11.01
11	RE Test software	FALA	EZ-EMC	Ver. FA-03A2 RE	N/A

4. Measurement uncertainty

The following table is for the measurement uncertainty, which is calculated as per the document CISPR 16-4 and ANSI C63.4.

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.

4.1. Operating condition of EUT

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively

Pretest Mode	Description
Mode	Running

For Conducted Test	
Final Test Mode	Description
Mode	Running

For Conducted Test	
Final Test Mode	Description
Mode	Running

4.2. Test conditions

Temperature: 15-25°C
 Relative Humidity: 30-60 %
 Atmospheric pressure: 800hPa-1060hPa

5. Conducted Emission

5.1.Limit

Except for Class A devices:

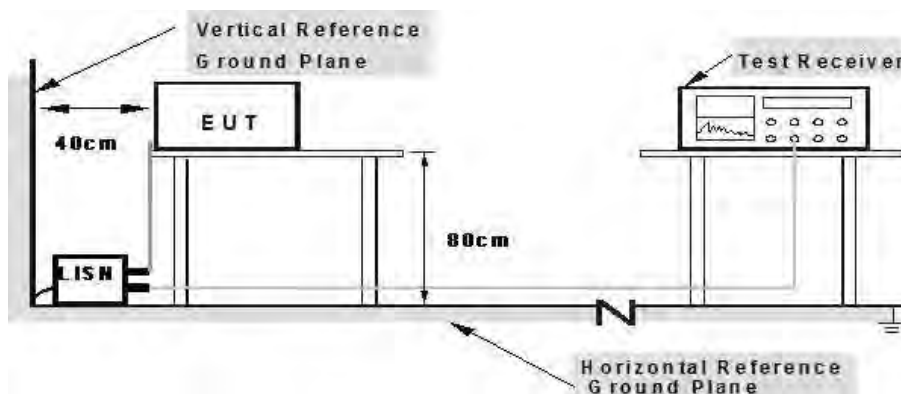
Frequency of emission (MHz)	Conducted limit (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

For Class A devices:

Frequency of emission (MHz)	Conducted limit (dB μ V)	
	Quasi-peak	Average
0.15-0.5	79	66
0.5-30	73	60

5.2.Test setup



**Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes**

The setup of EUT is according with ANSI C63.4 measurement procedure. Specification used with FCC Part 15 limits.

5.3.EMI Test Receiver Setup

Frequency Range	9kHz-30MHz
Resolution Bandwidth	200Hz (9kHz-150kHz) 9kHz (150kHz-30MHz)

5.4. Test procedure

Measurement was performed in shielded room, and instruments used were followed clause 4 of ANSI C63.4.

Detailed test procedure was following clause 7 of ANSI C63.4.

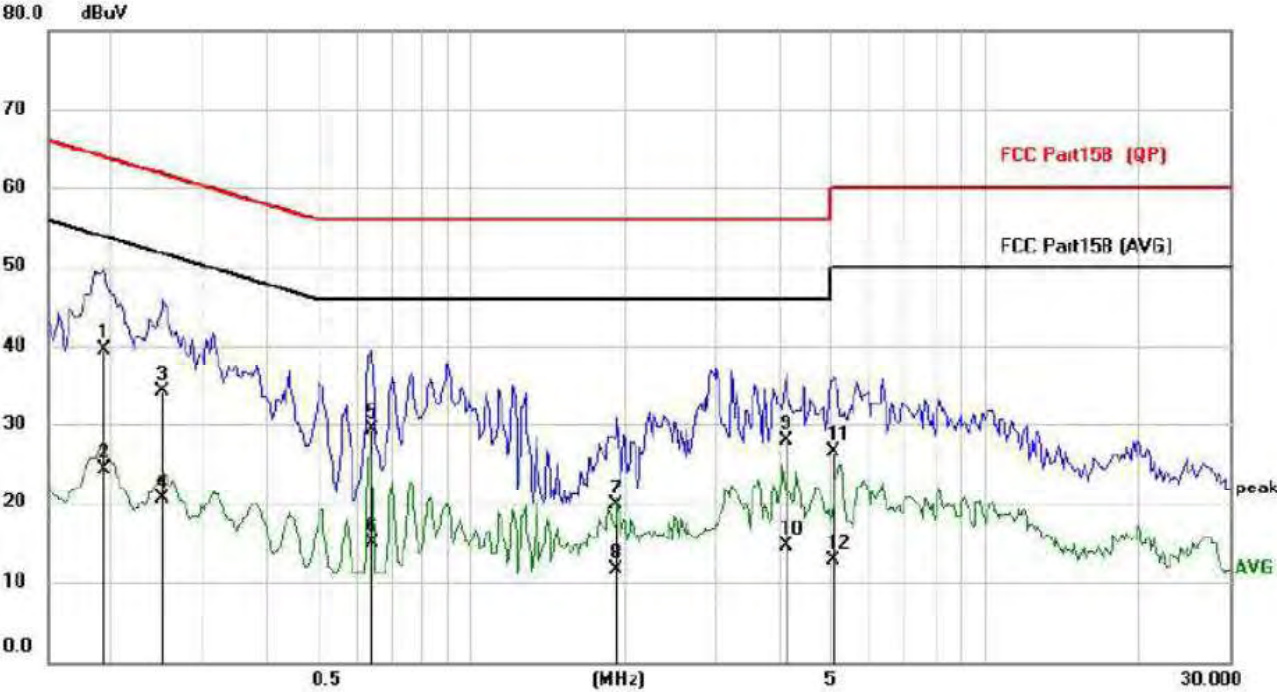
Frequency range 150kHz – 30MHz was checked and EMI receiver measurement bandwidth was set to 9 kHz.

5.5. Test results

PASS

Please refer to the following page.

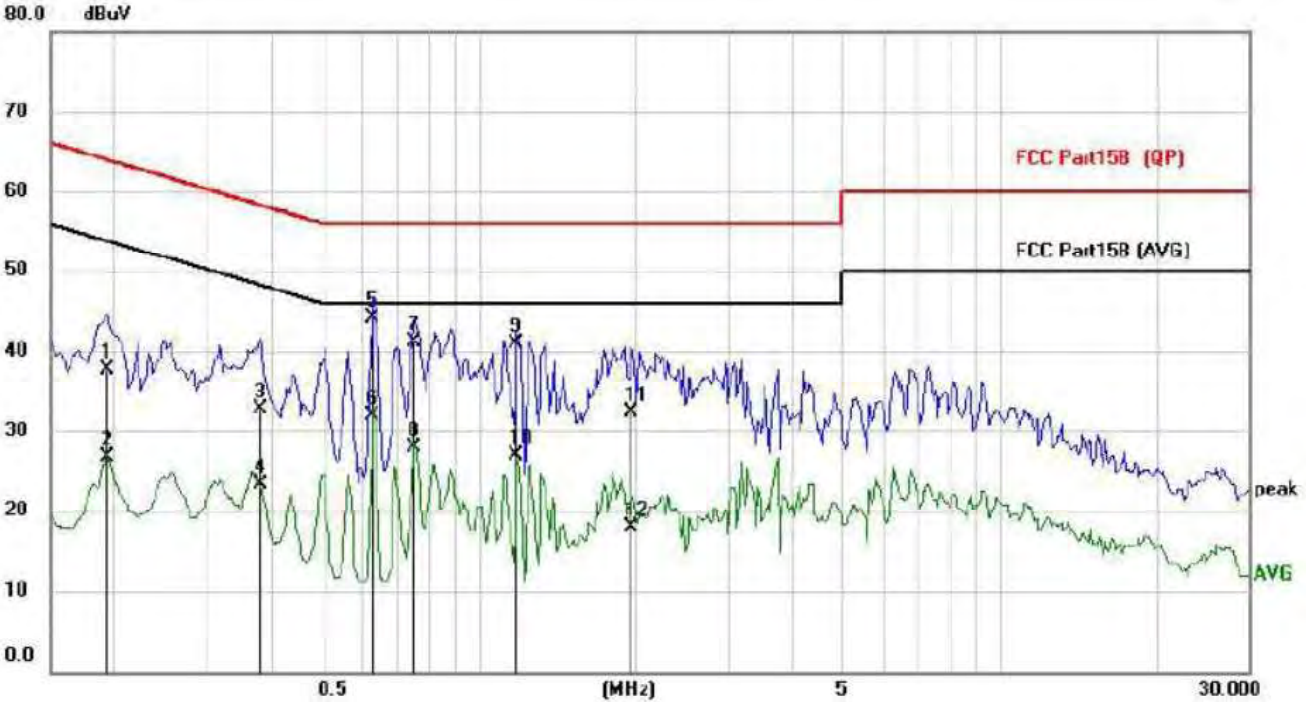
Polarization: L



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	0.1929	28.57	10.92	39.49	63.91	-24.42	QP	
2		0.1929	13.45	10.92	24.37	53.91	-29.54	AVG	
3		0.2514	23.26	10.92	34.18	61.71	-27.53	QP	
4		0.2514	9.58	10.92	20.50	51.71	-31.21	AVG	
5		0.6414	18.46	10.92	29.38	56.00	-26.62	QP	
6		0.6414	4.04	10.92	14.96	46.00	-31.04	AVG	
7		1.9206	8.68	10.96	19.64	56.00	-36.36	QP	
8		1.9206	0.49	10.96	11.45	46.00	-34.55	AVG	
9		4.0959	16.85	11.06	27.91	56.00	-28.09	QP	
10		4.0959	3.45	11.06	14.51	46.00	-31.49	AVG	
11		5.1020	15.38	11.10	26.48	60.00	-33.52	QP	
12		5.1020	1.54	11.10	12.64	50.00	-37.36	AVG	

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

Polarization: N



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.1929	26.78	10.92	37.70	63.91	-26.21	QP	
2		0.1929	15.72	10.92	26.64	53.91	-27.27	AVG	
3		0.3800	21.69	10.92	32.61	58.28	-25.67	QP	
4		0.3800	12.37	10.92	23.29	48.28	-24.99	AVG	
5	*	0.6258	33.11	10.92	44.03	56.00	-11.97	QP	
6		0.6258	20.92	10.92	31.84	46.00	-14.16	AVG	
7		0.7506	30.25	10.92	41.17	56.00	-14.83	QP	
8		0.7506	17.08	10.92	28.00	46.00	-18.00	AVG	
9		1.1835	30.00	10.92	40.92	56.00	-15.08	QP	
10		1.1835	15.89	10.92	26.81	46.00	-19.19	AVG	
11		1.9674	21.27	10.96	32.23	56.00	-23.77	QP	
12		1.9674	6.88	10.96	17.84	46.00	-28.16	AVG	

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

6. Radiated emissions

6.1.Limit

Except for Class A devices (at 3m):

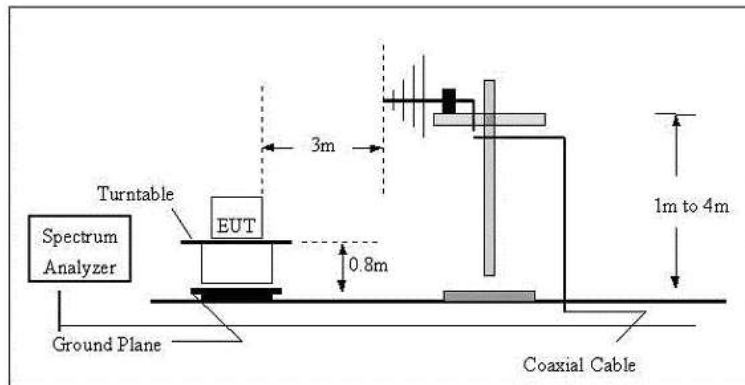
Frequency of emission (MHz)	Field strength (microvolts/meter)	
	(microvolts/meter)	(dB μ V/m)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

For Class A devices (at 10m):

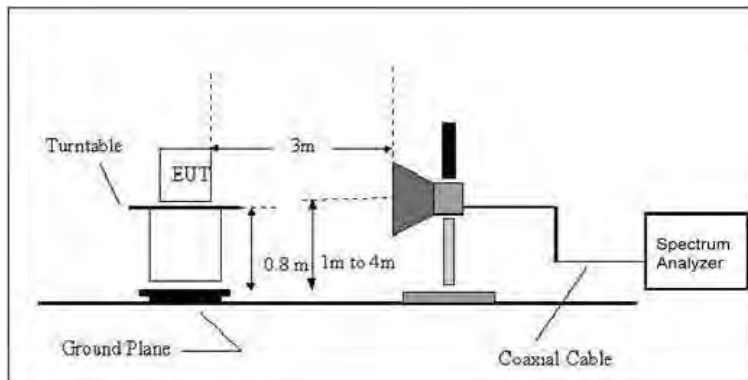
Frequency of emission (MHz)	Field strength (microvolts/meter)	
	(microvolts/meter)	(dB μ V/m)
30-88	90	39
88-216	150	43.5
216-960	210	46.4
Above 960	300	49.5

6.2. Test setup

Radiated Emission Test Set-Up Frequency Below 1 GHz



Radiated Emission Test Set-Up Frequency Above 1GHz



The radiated tests wer performed in 3 meter3 Charmber test site, using the setup accordance with the ANSI C63.4:2014.

EMI Test Receiver Setup and Spectrum Analyzer Setup

During the radiated emission test, the EMI test receiver and Spectrum Analyzer were set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Detector
30MHz-1000MHz	100kHz	300kHz	120kHz	QP
Above 1GHz	1MHz	3MHz	/	PK
	1MHz	10Hz	/	AVG

6.3. Test procedure

The measurement was performed in a semi-anechoic chamber, and instruments used were followed clause 4 of ANSI C63.4.

Detailed test procedure was following clause 8 of ANSI C63.4.

6.4. Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

The "Margin" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

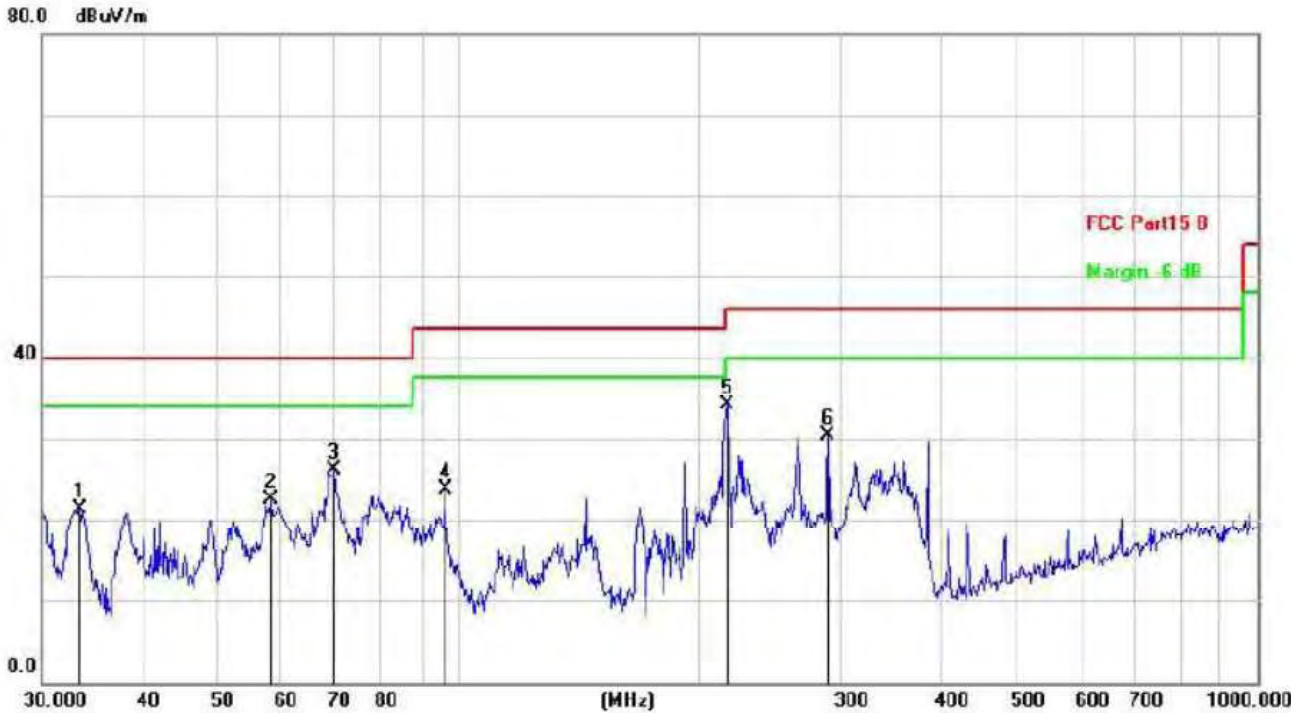
$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

6.5. Test results

PASS

Please refer to the following page.

Polarization: H



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1		33.4449	39.67	-18.38	21.29	40.00	-18.71	QP
2		58.2030	41.17	-18.70	22.47	40.00	-17.53	QP
3		69.8450	46.11	-19.91	26.20	40.00	-13.80	QP
4		96.0986	44.53	-20.82	23.71	43.50	-19.79	QP
5	*	216.7828	53.60	-19.52	34.08	46.00	-11.92	QP
6		289.0021	49.34	-18.94	30.40	46.00	-15.60	QP

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

Polarization: V



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1		33.9174	50.60	-18.35	32.25	40.00	-7.75	QP
2		48.6719	49.39	-18.42	30.97	40.00	-9.03	QP
3	*	59.2325	52.50	-18.73	33.77	40.00	-6.23	QP
4		69.3568	51.33	-19.85	31.48	40.00	-8.52	QP
5		96.0986	48.65	-20.82	27.83	43.50	-15.67	QP
6		216.0240	49.51	-19.55	29.96	46.00	-16.04	QP

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

7. Photographs of EUT

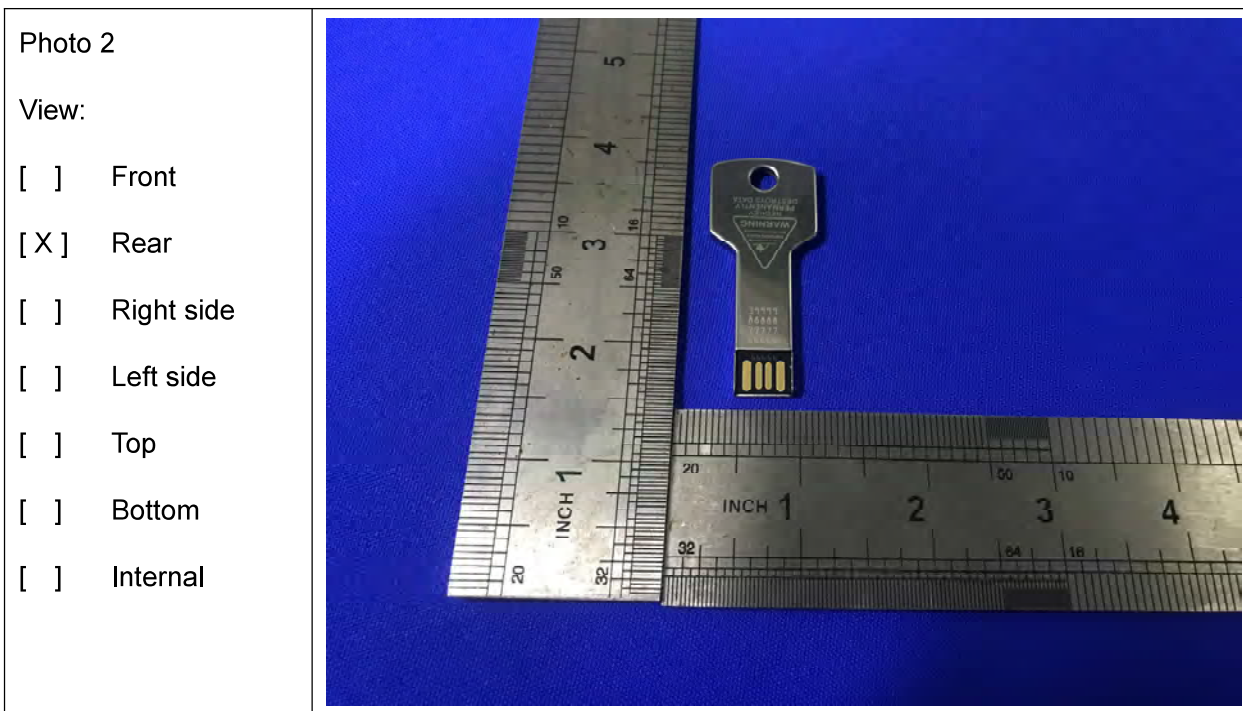


Photo 3

View:

- Front
- Rear
- Right side
- Left side
- Top
- Bottom
- Internal



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