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# FCC Test Report

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Report No.: AGC00742191201FE01

**APPLICATION PURPOSE** : Original Equipment  
**PRODUCT DESIGNATION** : Dual Band Wireless USB Adapter  
**BRAND NAME** : Techkey  
**MODEL NAME** : Techkey-6B06, Techkey-6B08  
**APPLICANT** : Shenzhen Denos Trade Co., Ltd.  
**DATE OF ISSUE** : Dec. 24, 2019  
**STANDARD(S)** : FCC Part 15 Rules  
**TEST PROCEDURE(S)**  
**REPORT VERSION** : V1.0

**Attestation of Global Compliance (Shenzhen) Co., Ltd**

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**REPORT REVISE RECORD**

<b>Report Version</b>	<b>Revise Time</b>	<b>Issued Date</b>	<b>Valid Version</b>	<b>Notes</b>
V1.0	/	Dec. 24, 2019	Valid	Initial Release

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## 1. VERIFICATION OF CONFORMITY

<b>Applicant</b>	Shenzhen Denos Trade Co., Ltd.
<b>Address</b>	Room 610, Shibida Building, No. 55 ZhenHua Rd, Futian District, Shen Zhen, GuangDong, China
<b>Manufacturer</b>	SHEN ZHEN SHI XIN HUA TIAN TECHNOLOGY CO., LTD
<b>Address</b>	3Foor, B Buliding, DaHong Industrial Park, GuangMin District, Shenzhen City, China
<b>Factory</b>	SHEN ZHEN SHI XIN HUA TIAN TECHNOLOGY CO., LTD
<b>Address</b>	3Foor, B Buliding, DaHong Industrial Park, GuangMin District, Shenzhen City, China
<b>Product Designation</b>	Dual Band Wireless USB Adapter
<b>Brand Name</b>	Techkey
<b>Test Model</b>	Techkey-6B06
<b>Series Model</b>	Techkey-6B08
<b>Difference Description</b>	All the same except for the model name and color of appearance
<b>Date of test</b>	Dec. 16, 2019 to Dec. 24, 2019
<b>Deviation</b>	No any deviation from the test method
<b>Condition of Test Sample</b>	Normal
<b>Test Result</b>	Pass
<b>Report Template</b>	AGCRT-US-BR/RF

We hereby certify that:

The above equipment was tested by Attestation of Global Compliance (Shenzhen) Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (2014) and the energy emitted by the sample EUT tested as described in this report is in compliance with radiated emission limits of FCC Rules Part 15 subpart B.

Prepared By



Erik Yang  
(Project Engineer)

Dec. 24, 2019

Reviewed By



Max Zhang  
(Reviewer)

Dec. 24, 2019

Approved By



Forrest Lei  
(Authorized Officer)

Dec. 24, 2019

## 2. GENERAL INFORMATION

### 2.1. PRODUCT DESCRIPTION

A major technical description of EUT is described as following

<b>Hardware Version</b>	V1.0
<b>Software Version</b>	V1.0
<b>Highest Operate Frequency</b>	5825MHZ(RADIATED EMISSION UP TO 30GHZ)
<b>Power Supply</b>	DC 5V

### 2.2. RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended to comply with Section 15.107&109 of the FCC Part 15, Subpart B Rules.

### 2.3. TEST METHODOLOGY

Both conducted and radiated testing was performed according to the procedures in ANSI C63.4 (2014). Radiated testing was performed at an antenna to EUT distance 3 meters.

### 2.4. SPECIAL ACCESSORIES

Refer to section 5.1.

### 2.5. EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

### **3. MEASUREMENT UNCERTAINTY**

The uncertainty is calculated using the methods suggested in the "Guide to the Expression of Uncertainty in measurement" (GUM) published by CISPR and ANSI.

- Uncertainty of Conducted Emission,  $U_c = \pm 3.2$  dB
- Uncertainty of Radiated Emission below 1GHz,  $U_c = \pm 3.9$  dB
- Uncertainty of Radiated Emission above 1GHz,  $U_c = \pm 4.8$  dB

#### 4. DESCRIPTION OF TEST MODES

NO.	TEST MODE DESCRIPTION
1	Date exchange with PC

Note: All the test modes had been tested, the mode 1 was the worst case recorded in the test report.

## 5. SYSTEM TEST CONFIGURATION

### 5.1. EQUIPMENT USED IN EUT SYSTEM

Item	Equipment	Model No.	Specification	Remark
1	Dual Band Wireless USB Adapter	Techkey-6B06	N/A	EUT
2	PC	XIAOMI	N/A	Support
3	PC adapter	XIAOMI ADC6501TM	DC5V/2A,9V/2A,12V/2A, 15V/3A,20V/3.25A, 65W Max	Support

### 5.2. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.109	Radiated Emission	Compliant
§15.107	Conducted Emission	Compliant



## 6. TEST FACILITY

<b>Test Site</b>	Attestation of Global Compliance (Shenzhen) Co., Ltd
<b>Location</b>	1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
<b>Designation Number</b>	CN1259
<b>FCC Test Firm Registration Number</b>	975832
<b>A2LA Cert. No.</b>	5054.02
<b>Description</b>	Attestation of Global Compliance(Shenzhen) Co., Ltd is accredited by A2LA

### TEST EQUIPMENT OF CONDUCTED EMISSION TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESPI	101206	Jun. 12, 2019	Jun. 11, 2020
LISN	R&S	ESH2-Z5	100086	Aug. 26, 2019	Aug. 25, 2020
Test software	R&S	ES-K1 (Ver. V1.71)	N/A	N/A	N/A

### TEST EQUIPMENT OF RADIATED EMISSION TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESCI	10096	Jun.12, 2019	Jun. 11, 2020
EXA Signal Analyzer	Aglient	N9010A	MY53470504	Dec. 12, 2019	Dec.11, 2020
Horn antenna	ETS-LINDGREN	3117	00154520	Oct. 26, 2019	Oct. 25, 2021
preamplifier	ChengYi	EMC184045SE	980508	Sep. 23, 2019	Sep. 22, 2020
Double-Ridged Waveguide Horn	ETS LINDGREN	3117	00034609	May 17, 2019	May 16, 2021
Broadband Preamplifier	ETS LINDGREN	3117PA	00225134	Oct. 15, 2019	Oct. 14, 2020
ANTENNA	SCHWARZBECK	VULB9168	494	Jan. 09, 2019	Jan. 08, 2021
Test software	FARA	EZ EMC (Ver. RA-03A)	N/A	N/A	N/A

## 7. RADIATED EMISSION

### 7.1. MEASUREMENT PROCEDURE

1. Configure the EUT according to ANSI C63.4. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions below 1GHz, use 120KHz RBW and  $VBW \geq 3RBW$  for QP reading.
7. For emissions above 1GHz, use 1MHz RBW and 3MHz VBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer.
8. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.
9. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
10. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
11. Only the worst case is reported.

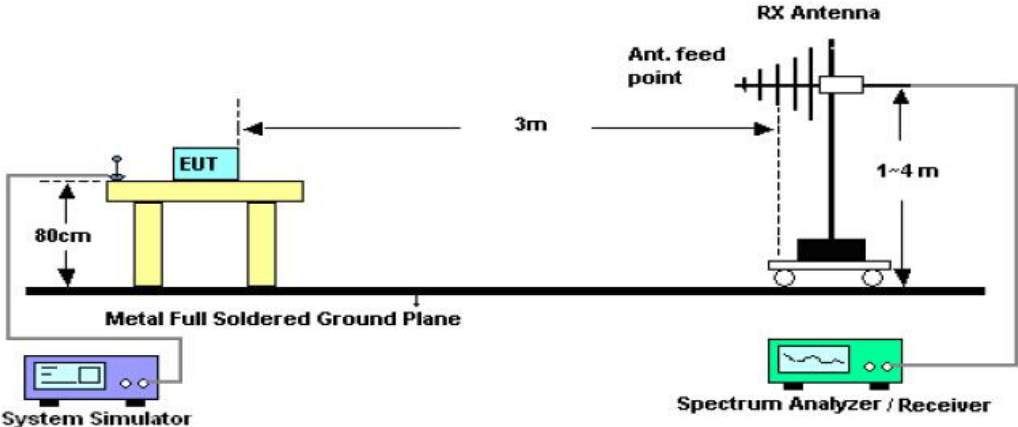
The following table is the setting of spectrum analyzer and receiver.

<b>Spectrum Parameter</b>	<b>Setting</b>
Start ~Stop Frequency	30MHz~1000MHz/RBW 120KHz for QP
Start ~Stop Frequency	1GHz~12.5GHz 1MHz/3MHz for Peak, 1MHz/10Hz for Average

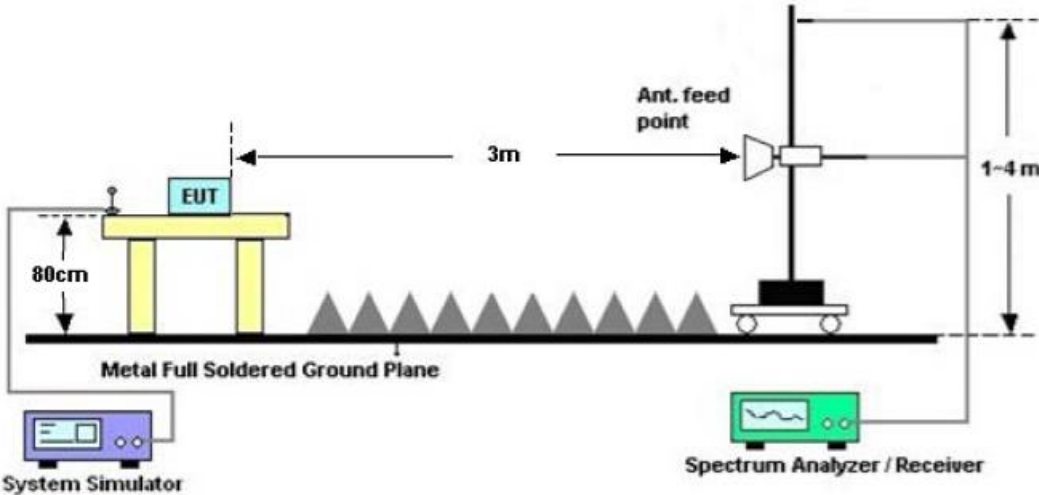
<b>Receiver Parameter</b>	<b>Setting</b>
Start ~Stop Frequency	30MHz~1000MHz/RBW 120KHz for QP

7.2. TEST SETUP

RADIATED EMISSION TEST SETUP 30MHz-1000MHz

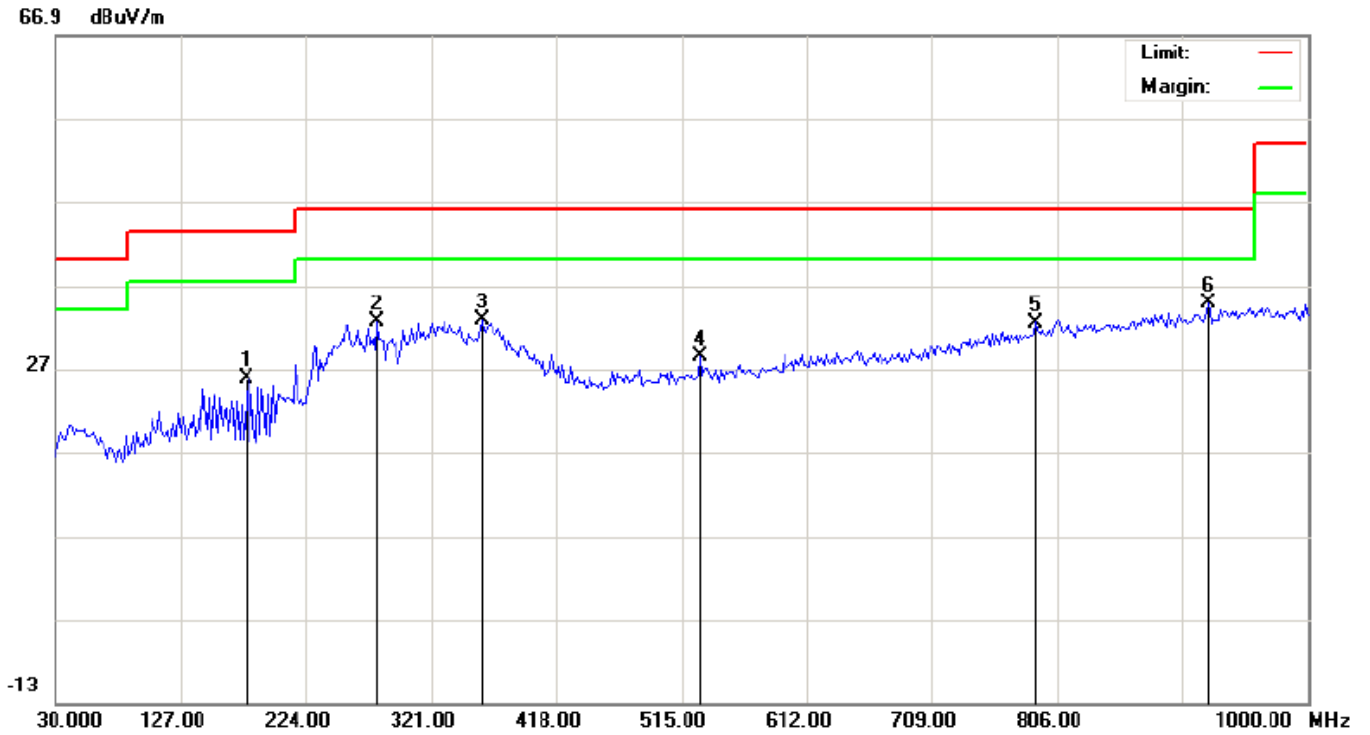


RADIATED EMISSION TEST SETUP ABOVE 1000MHz



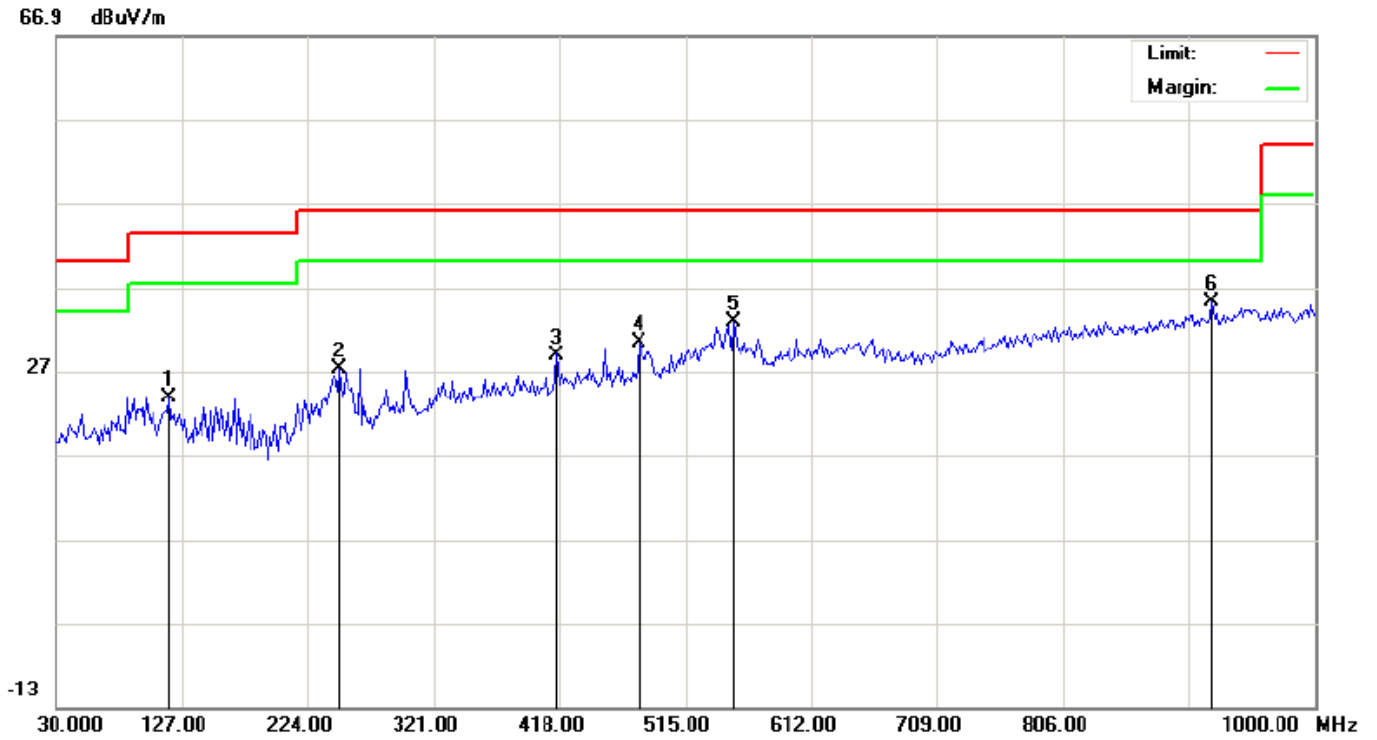
### 7.3. TEST RESULT

#### RADIATED EMISSION BELOW 1GHZ-Horizontal



No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		178.7332	8.57	17.26	25.83	43.50	-17.67	peak			
2		278.9667	12.68	19.86	32.54	46.00	-13.46	peak			
3		359.8000	11.18	21.57	32.75	46.00	-13.25	peak			
4		529.5500	2.91	25.57	28.48	46.00	-17.52	peak			
5		789.8333	2.32	30.18	32.50	46.00	-13.50	peak			
6	*	922.4000	2.98	31.89	34.87	46.00	-11.13	peak			

RADIATED EMISSION BELOW 1GHZ-Vertical



No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		117.3000	6.17	17.71	23.88	43.50	-19.62	peak			
2		248.2500	8.76	18.52	27.28	46.00	-18.72	peak			
3		416.3833	5.59	23.31	28.90	46.00	-17.10	peak			
4		479.4333	5.87	24.58	30.45	46.00	-15.55	peak			
5		552.1833	6.88	26.01	32.89	46.00	-13.11	peak			
6	*	920.7833	3.28	31.88	35.16	46.00	-10.84	peak			

**RESULT: PASS**

- Note:** 1. Factor=Antenna Factor + Cable loss - Amplifier gain, Margin=Measurement-Limit.  
2. The "Factor" value can be calculated automatically by software of measurement system.  
3. Emissions range from 1GHz to 30GHz have 20dB margin. No recording in the test report.

## 8. FCC LINE CONDUCTED EMISSION TEST

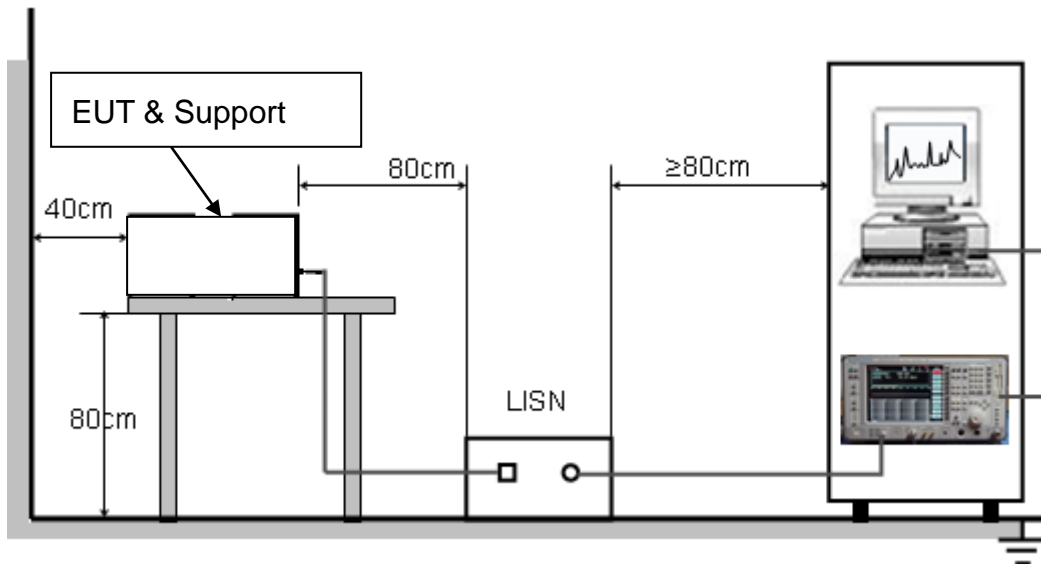
### 8.1. LIMITS OF LINE CONDUCTED EMISSION TEST

Frequency	Maximum RF Line Voltage	
	Q.P.( dBuV)	Average( dBuV)
150kHz~500kHz	66-56	56-46
500kHz~5MHz	56	46
5MHz~30MHz	60	50

Note:

1. The lower limit shall apply at the transition frequency.
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

### 8.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST



### **8.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST**

1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.4 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
2. Support equipment, if needed, was placed as per ANSI C63.4.
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
4. All support equipments received AC120V/60Hz power from a LISN, if any.
5. The EUT received DC charging voltage by PC which received 120V/60Hz power by a LISN..
6. The test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7. Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
8. During the above scans, the emissions were maximized by cable manipulation.
9. The test mode(s) were scanned during the preliminary test.

Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

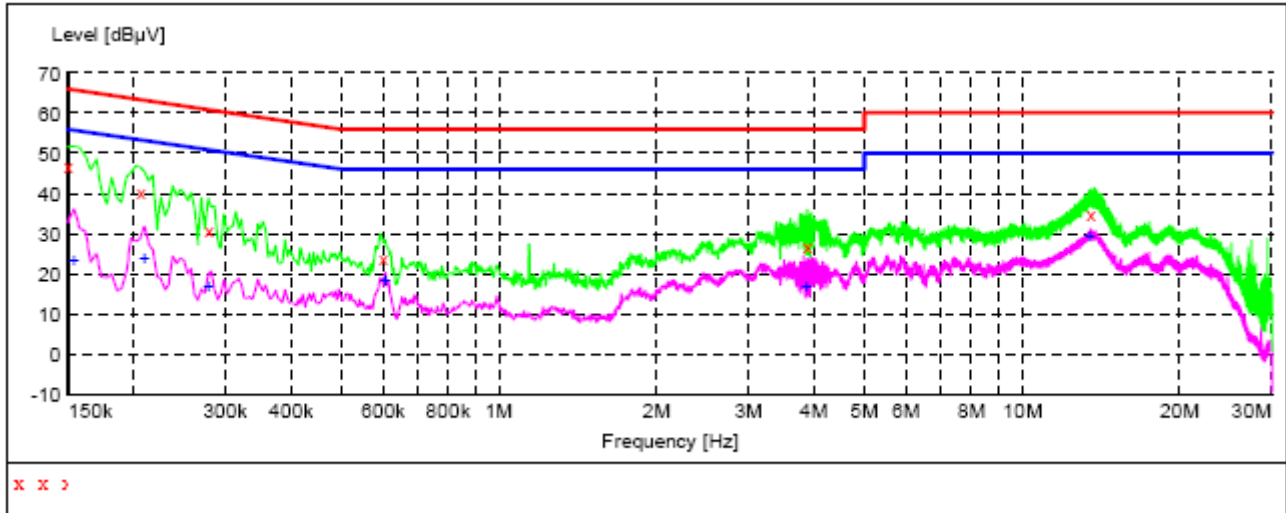
### **8.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST**

1. EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
2. A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less -2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.
3. The test data of the worst case condition(s) was reported on the Summary Data page.



**8.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST**

Line Conducted Emission Test Line 1-L



**MEASUREMENT RESULT**

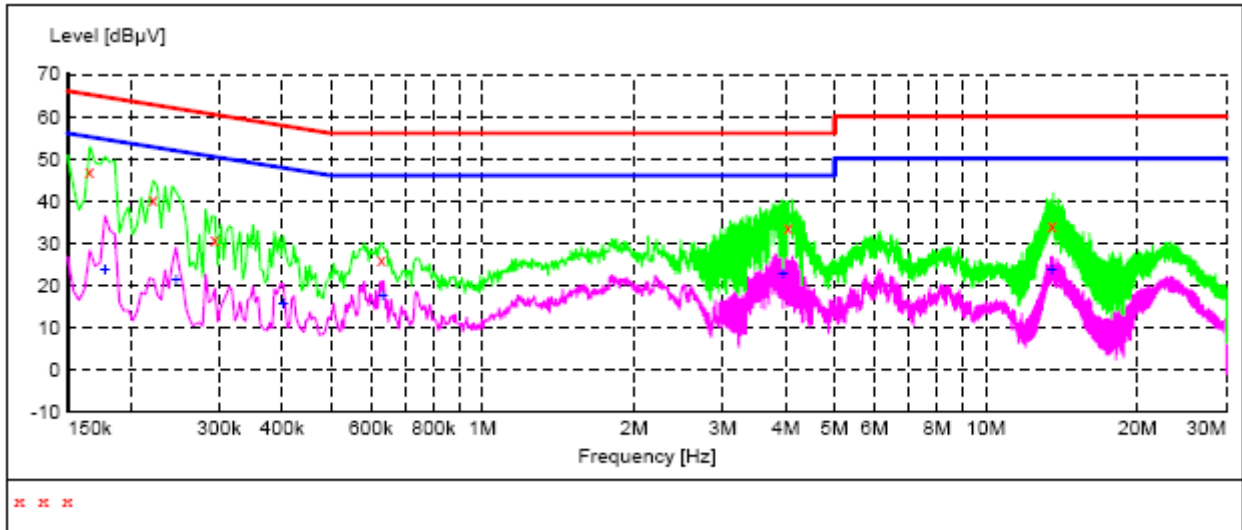
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.150000	47.10	10.3	66	18.9	QP	L1
0.206000	40.20	10.3	63	23.2	QP	L1
0.278000	31.20	10.2	61	29.7	QP	L1
0.598000	24.10	10.3	56	31.9	QP	L1
3.870000	26.80	10.4	56	29.2	QP	L1
13.462000	34.80	10.8	60	25.2	QP	L1

**MEASUREMENT RESULT**

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.154000	23.50	10.3	56	32.3	AV	L1
0.210000	24.10	10.3	53	29.1	AV	L1
0.278000	17.10	10.2	51	33.8	AV	L1
0.606000	18.60	10.3	46	27.4	AV	L1
3.874000	17.10	10.4	46	28.9	AV	L1
13.462000	29.20	10.8	50	20.8	AV	L1

**RESULT: PASS**

Line Conducted Emission Test Line 2-N



**MEASUREMENT RESULT**

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.166000	46.80	10.3	65	18.4	QP	N
0.222000	40.10	10.3	63	22.6	QP	N
0.294000	30.90	10.2	60	29.5	QP	N
0.630000	26.10	10.3	56	29.9	QP	N
4.046000	33.60	10.4	56	22.4	QP	N
13.514000	33.90	10.8	60	26.1	QP	N

**MEASUREMENT RESULT**

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.178000	23.70	10.3	55	30.9	AV	N
0.246000	21.20	10.3	52	30.7	AV	N
0.402000	15.80	10.3	48	32.0	AV	N
0.634000	17.70	10.3	46	28.3	AV	N
3.954000	22.60	10.4	46	23.4	AV	N
13.514000	23.70	10.8	50	26.3	AV	N

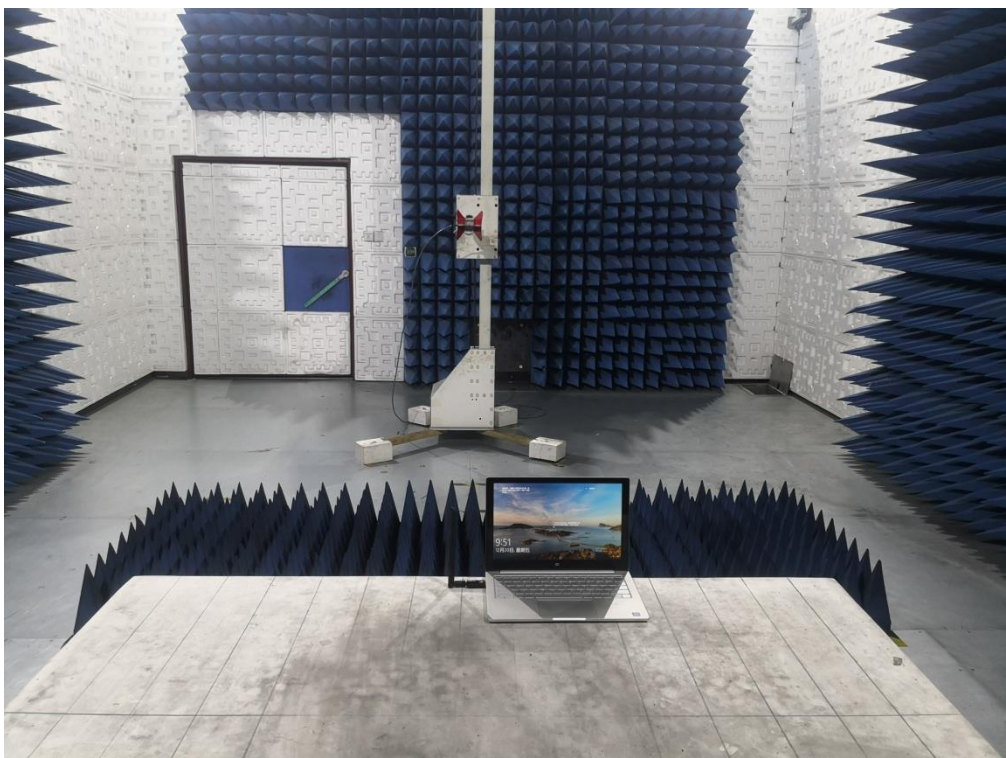
**RESULT: PASS**

Note: All the test modes had been tested, the mode 1 was the worst case. Only the data of the worst case would be record in this test report.

**APPENDIX A: PHOTOGRAPHS OF TEST SETUP**  
**FCC RADIATED EMISSION TEST SETUP BELOW 1GHZ**



**FCC RADIATED EMISSION TEST SETUP ABOVE 1GHZ**



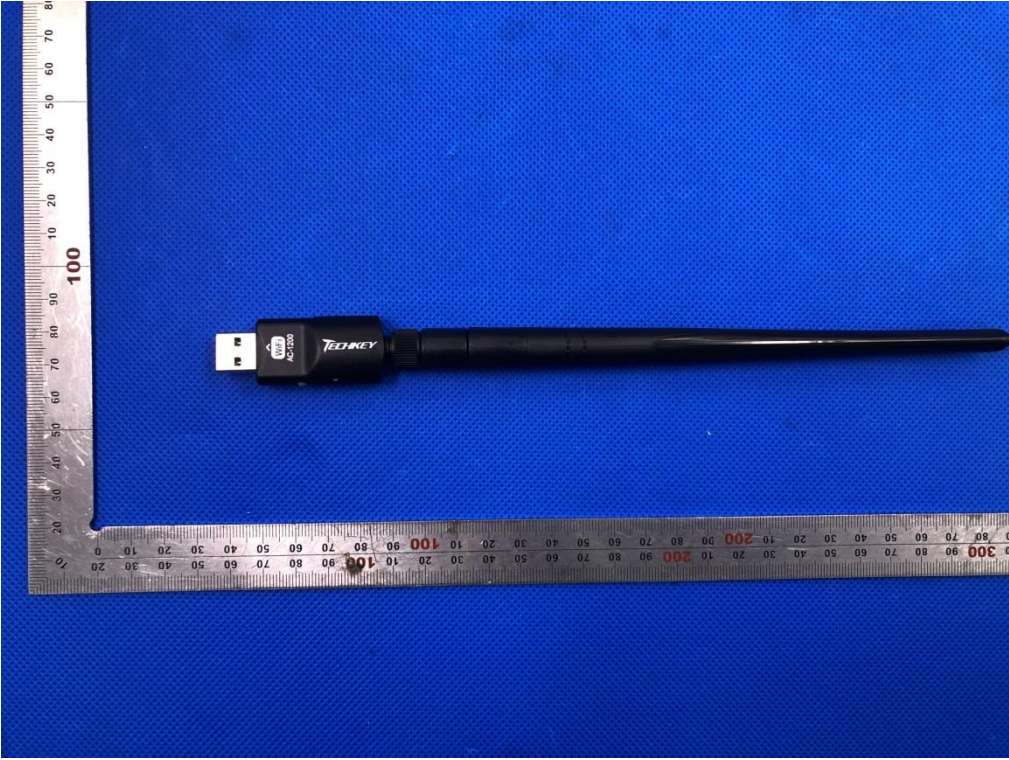
FCC LINE CONDUCTED EMISSION TEST SETUP



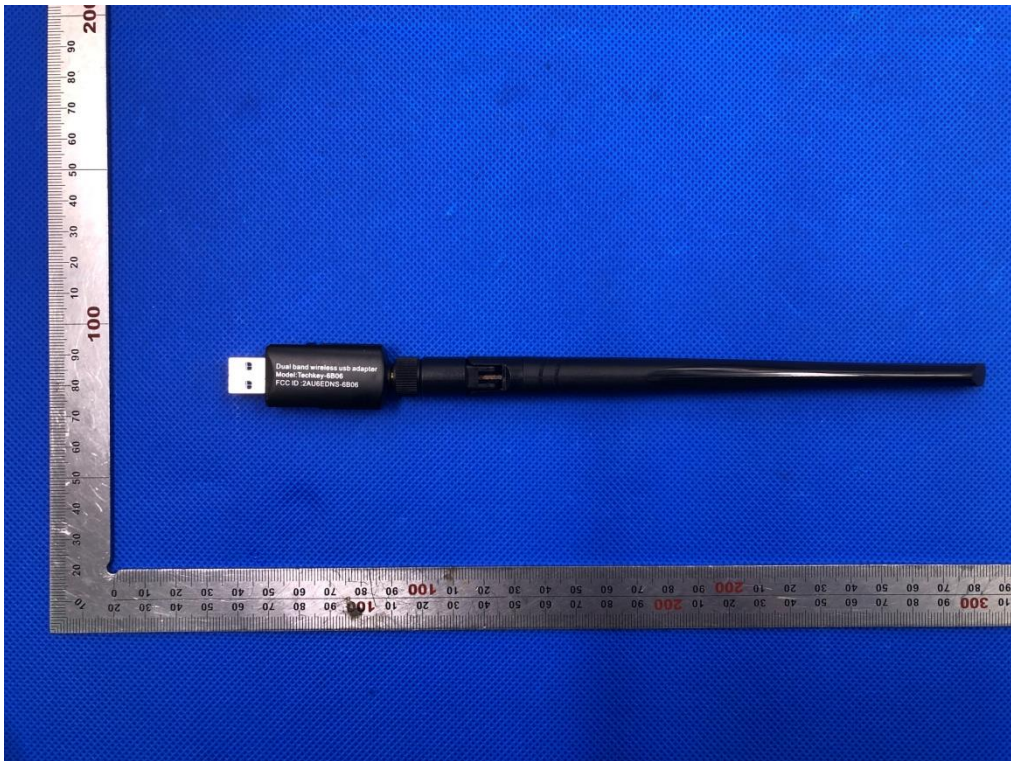
**APPENDIX B: PHOTOGRAPHS OF EUT**  
ALL VIEW OF EUT



TOP VIEW OF EUT



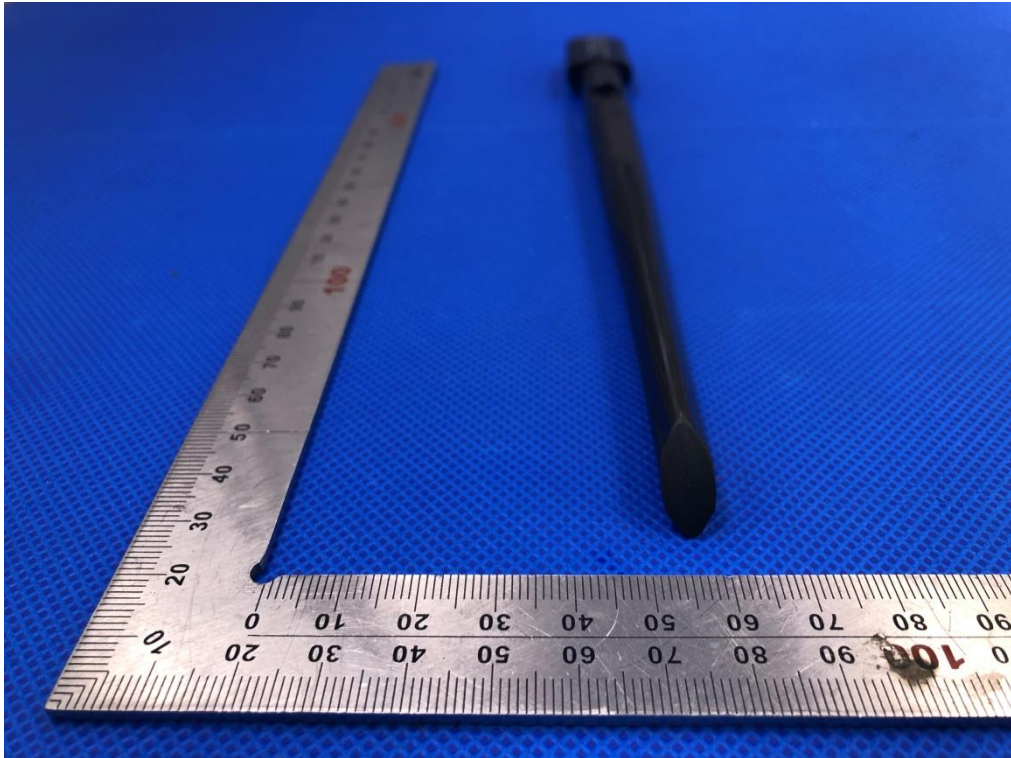
BOTTOM VIEW OF EUT



FRONT VIEW OF EUT



BACK VIEW OF EUT



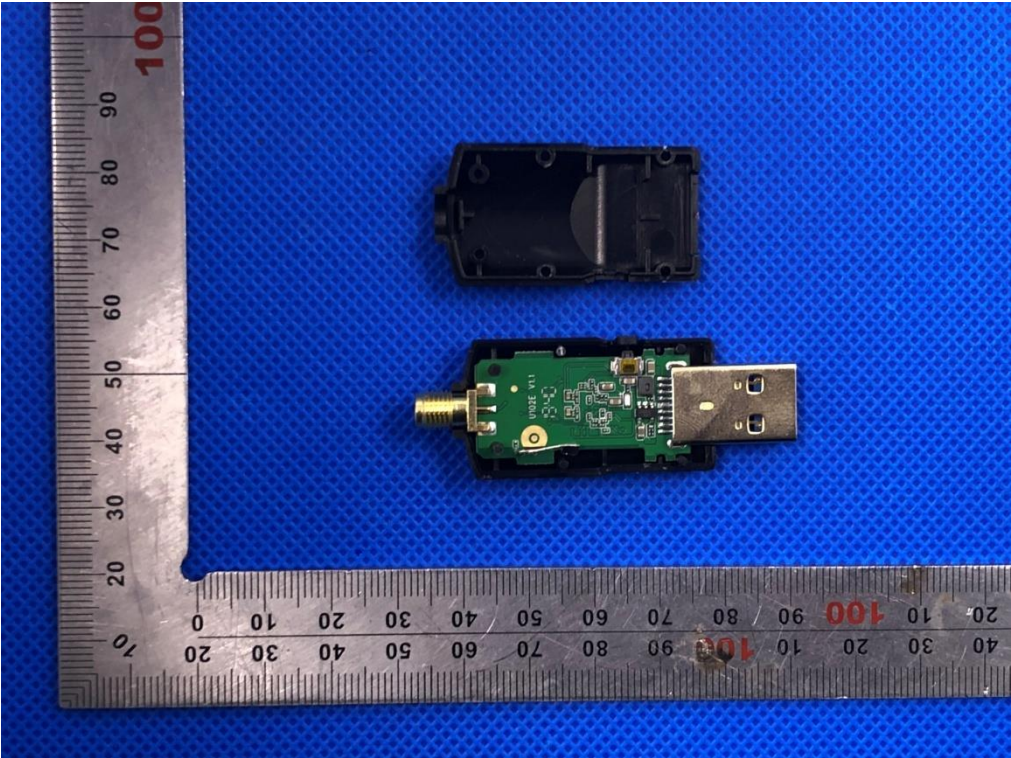
LEFT VIEW OF EUT



RIGHT VIEW OF EUT

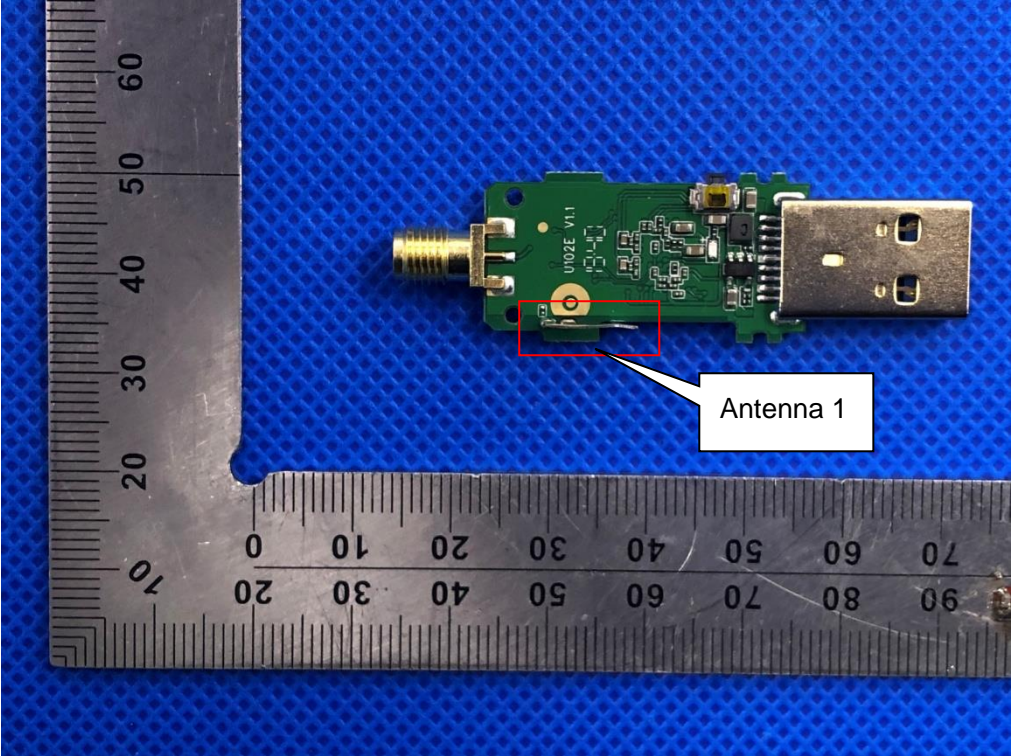


OPEN VIEW OF EUT

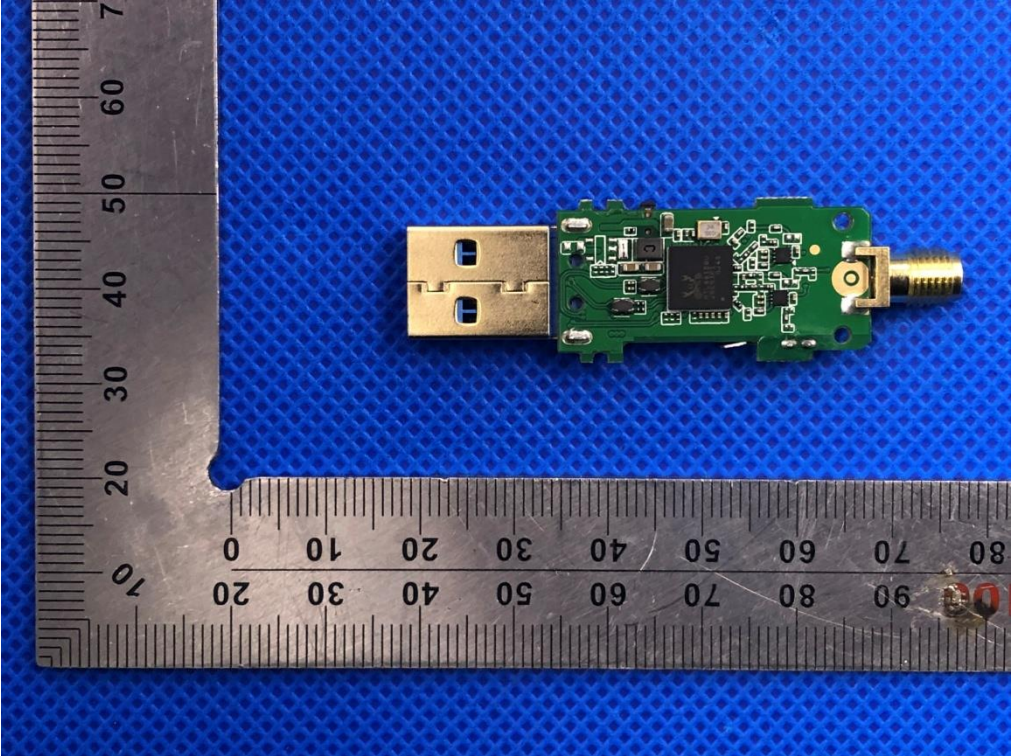




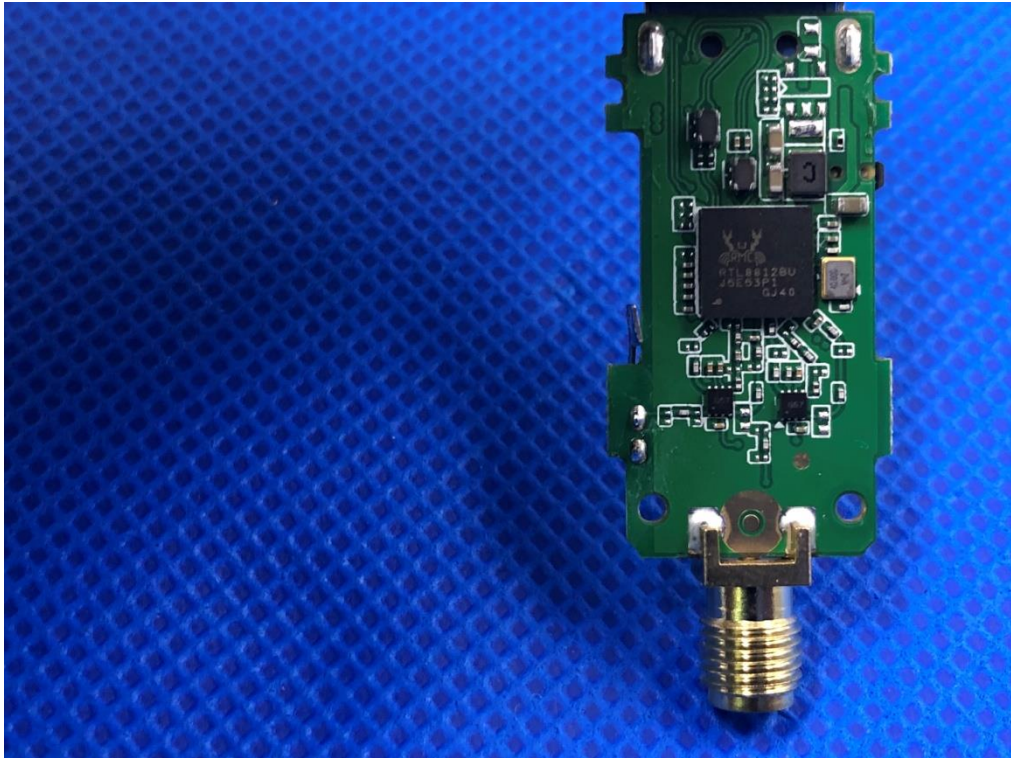
INTERNAL VIEW OF EUT-1



INTERNAL VIEW OF EUT-2



INTERNAL VIEW OF EUT-3



---END OF REPORT---