

# FCC TEST REPORT

For

Shenzhen SQT Electronics Co., Ltd.

2.4GHz Wireless Mouse

Model No.: SM-382AG, SM-383AG, SM-335AG, SM-350SAG, SM-351AG, SM-355AG, SM-357AG, SM-359AG, SM-364AG, SM-367SAG

Prepared For : Shenzhen SQT Electronics Co., Ltd.

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Date of Test : Jan. 22~Feb. 15, 2019

Date of Report : Feb. 15, 2019



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# **TEST REPORT**

Applicant : Shenzhen SQT Electronics Co., Ltd.

Manufacturer : Shenzhen SQT Electronics Co., Ltd.

Product Name : 2.4GHz Wireless Mouse

Model No. : SM-382AG, SM-383AG, SM-335AG, SM-350SAG, SM-351AG, SM-355AG,

SM-357AG, SM-359AG, SM-364AG, SM-367SAG

Trade Mark : N.A.

Rating(s) : Input: DC 1.5V, 12mA "AA"

Test Standard(s) : FCC Part15 Subpart C, Paragraph 15.249

**Test Method(s)** : **ANSI C63.10: 2013** 

The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the FCC Part 15 Subpart C requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen Anbotek Compliance Laboratory Limited.

Date of Test	-liance		Jan. 22~Feb.	15, 2019	
Prepared by	Anbotek Product Safety	Anbotek Anbotek	And Olivay	arg Anbor	
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botek Anbore	* Approved *	otek Anboro	(Engineer / O	liay Yang)	
Anbotek Anbotek			Snavy	Meng	
Reviewer	hotek Anbotek	Anbor	An D	Anbo	stek subotek
			(Supervisor / Sr	nowy Meng)	
			k hotek		
			Sally Z	houng	
Approved & Authorized	d Signer		botek Anbor	Au.	
	botek Anbotek	Anbotek	(Manager / Sa	lly Zhang)	otek Anbotek



## 1. General Information

### 1.1. Client Information

Applicant	Shenzhen SQT Electronics Co., Ltd.	Anbotek Anbotek An
Address	ZhengChengFeng TechnologyZone Xinsha Road, Sh Baoan Area, Shenzhen, China 518104	aYi Village, Sha jing Town,
Manufacturer	Shenzhen SQT Electronics Co., Ltd.	potek Anbotek Anbo
Address	ZhengChengFeng TechnologyZone Xinsha Road, Sh Baoan Area, Shenzhen, China 518104	aYi Village, Sha jing Town,
Factory	Shenzhen SQT Electronics Co., Ltd.	Anbotek Anbotek A
Address	ZhengChengFeng TechnologyZone Xinsha Road, Sh Baoan Area, Shenzhen, China 518104	aYi Village, Sha jing Town,

### 1.2. Description of Device (EUT)

not not	01,	181	A COLO MIL
Product Name	:	2.4GHz Wireless Mouse	
Model No.	:	SM-357AG, SM-359AG, SM-36	55AG, SM-350SAG, SM-351AG, SM-355AG, 54AG, SM-367SAG except the model name, so we prepare
Trade Mark	:	N.A.	Anbotek Anbotek Anbotek Anb
Test Power Supply	:	DC 1.5V battery inside	otek Anbotek Anbotek Anbotek
Test Sample No.	:	S1(Normal Sample), S2(Enginee	ering Sample)
		Operation Frequency:	2408-2474MHz
5		Number of Channel:	34 Channels
Product Description	:	Modulation Type:	FSK Anbotek Anbotek Anbotek
		Antenna Type:	PCB Antenna
		Antenna Gain(Peak):	-0.61 dBi

**Remark:** 1)For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

### 1.3. Auxiliary Equipment Used During Test

N/A	Anbore	Ann	Anbotek	Anbo	A. abotek	Anbore.	



#### 1.4. Description of Test Modes

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			I	Description	on		
	Mode 1	botek	Anbotek	Aupo	CH01	hotek	Anbore	Ann
N.	Mode 2	Allotek	Anboten	Anbo	CH17	anbotek	Anbore	Yu.
otek	Mode 3	A. nbotek	Anbote.	K VUI	CH34	Anbotek	Anbott	* 6K

	For Radiated Emission									
	Final Test Mo	ode			Description	on				
	Mode 1	nbotek	Anbolo	Ann	CH01	Aupor	abotek	Anbo		
164	Mode 2	Anbotek	Anbolo	Ann	CH17	Anbountek	Anbotek	P		
upote.	Mode 3	Anbotek	Anboto	k abotek	СН34	Anbo	k anbote	K		

#### Note:

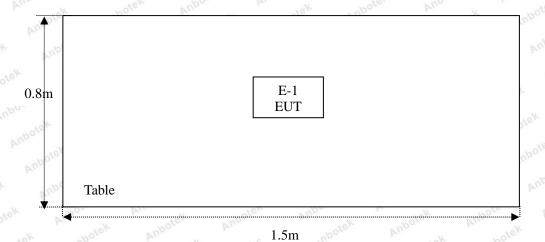
- 1. The engineering test program was provided and the EUT was programmed to be in continuously transmitting
- 2. EUT built-in battery-powered, fully-charged battery use of the test battery.

#### 1.5. List of Channels

183		1/		V.1.	10.	Mo	Pr.
Channel	Freq.	Channel	Freq.	Channel	Freq.	Channel	Freq.
	(MHz)		(MHz)		(MHz)		(MHz)
Aupo	2408	100000	2426	× 19 nbots	2444	28	2462
2 Anbo	2410	otek 11 Anbo	2428	20	2446	29	2464
ootek 3 An	2412	12 N	2430	21	2448	30	2466
nbote4	2414	13	2432	22	2450	Anboat	2468
anb5.ek	2416	14	2434	23	2452	32	2470
6 otek	2418	15 notek	2436	24	2454	33	2472
K 7 abote	2420	16	2438	25	2456	<sup>16</sup> 34 <sub>M</sub> hool	2474
8 8 A	2422	17 Ans	2440	o <sup>tell</sup> 26 Mab	2458	notek An	ooten An
9	2424	18 A	2442	27	2460	hotek	Anbotek

### 1.6. Description of Test Setup

RE





### 1.7. Test Equipment List

1/-	-V	V///-	100	Y'	46.	C 1
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
otek 1. nbotek	L.I.S.N. Artificial Mains Network	Rohde & Schwarz	ENV216	100055	Nov. 05, 2018	1 Year
2.00	EMI Test Receiver	Rohde & Schwarz	ESPI3	101604	Nov. 05, 2018	1 Year
3.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Nov. 05, 2018	1 Year
4.	Spectrum Analysis	Agilent	E4407B	US39390582	Nov. 05, 2018	1 Year
5. Sk	MAX Spectrum Analysis	Agilent	N9020A	MY51170037	Nov. 05, 2018	1 Year
6.	Preamplifier	SKET Electronic	BK1G18G30D	KD17503	Nov. 05, 2018	1 Year
Anbox 7.	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	Nov. 20, 2018	1 Year
8.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	Nov. 19, 2018	1 Year
9.	Loop Antenna	Schwarzbeck	FMZB1519B	00053	Nov. 20, 2018	1 Year
10.	Horn Antenna	A-INFO	LB-180400-KF	J211060628	Nov. 20, 2018	1 Year
AT.	Pre-amplifier	SONOMA	310N	186860	Nov. 05, 2018	1 Year
12.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A
13.	RF Test Control System	YIHENG	YH3000	2017430	Nov. 05, 2018	1 Year
14.	Power Sensor	DAER	RPR3006W	15I00041SN045	Nov. 05, 2018	1 Year
15.	Power Sensor	DAER	RPR3006W	15I00041SN046	Nov. 05, 2018	1 Year
16.	MXA Spectrum Analysis	Agilent	N9020A	MY51170037	Nov. 05, 2018	1 Year
17.	MXG RF Vector Signal Generator	Agilent	N5182A	MY48180656	Nov. 05, 2018	1 Year
18.	Signal Generator	Agilent	E4421B	MY41000743	Nov. 05, 2018	1 Year
19.	DC Power Supply	IVYTECH	IV3605	1804D360510	Apr. 02, 2018	1 Year
20.	Constant Temperature Humidity Chamber	ZHONGJIAN	ZJ-KHWS80B	N/A	Nov. 01, 2018	1 Year

### 1.8. Measurement Uncertainty

10, 10,		Arr ster and have an arranged	D
Radiation Uncertainty	:	Ur = 3.9 dB (Horizontal)	
		Ur = 3.8 dB (Vertical)	
		otek Anbote, Wunder Aupotek Whole Will Police	eN
Conduction Uncertainty	:	Uc = 3.4  dB	a <sup>s</sup>

#### 1.9. Description of Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

#### FCC-Registration No.: 184111

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registed and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No. 184111, July 31, 2017.

#### ISED-Registration No.: 8058A-1

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (ISED) Innovation, Science and Economic Development Canada. The acceptance letter from the ISED is maintained in our files. Registration 8058A-1, June 13, 2016.

#### **Test Location**

Shenzhen Anbotek Compliance Laboratory Limited.

1/F, Building D, Sogood Science and Technology Park, Sanwei community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.518102



# 2. Summary of Test Results

Standard Section	Test Item	Result
15.203	Antenna Requirement	PASS
15.207	Conducted Emission	N/A
15.249	Radiated Emission	PASS
15.215(c)	20dB Bandwidth	PASS
15.249(c)	Band Edge	PASS
Remark: "N/A" is an abbrev	viation for Not Applicable.	K Anboten A



### 3. Conducted Emission Test

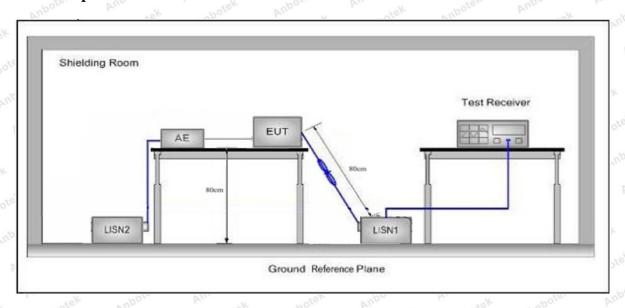
#### 3.1. Test Standard and Limit

Test Standard	FCC Part15 Section 15.207	Anbote All hotek	Anbotek Anbo stek	
	E	Maximum RF I	Line Voltage (dBuV)	
	Frequency	Quasi-peak Level	Average Level	
Test Limit	150kHz~500kHz	66 ~ 56 *	56 ~ 46 *	
	500kHz~5MHz	56	46	
	5MHz~30MHz	60	50	

**Remark:** (1) \*Decreasing linearly with logarithm of the frequency.

(2) The lower limit shall apply at the transition frequency.

#### 3.2. Test Setup



#### 3.3. Test Procedure

The EUT system is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC ANSI C63.10-2013 on Conducted Emission Measurement.

The bandwidth of test receiver (ESCI) set at 9kHz.

The frequency range from 150kHz to 30MHz is checked.

#### 3.4. Test Data

The EUT is powered by DC 1.5V battery inside, so there is no need to conduct this test.



## 4. Radiated Emission and Band Edge

### 4.1. Test Standard and Limit

Test Standard	FCC Part15 C Section 15.20	99 and 15.205	An	Anboten	Tupo stek
	Frequency (MHz)	Field strength (microvolt/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)
	0.009MHz~0.490MHz	2400/F(kHz)	obotek - Anbo	co Fun	300
	0.490MHz-1.705MHz	24000/F(kHz)	Anbotek Ar	Pose Vin	30 And
	1.705MHz-30MHz	30	Anbatek	Anbore A	30
Test Limit	30MHz~88MHz	100	40.0	Quasi-peak	3.ek
	88MHz~216MHz	150	43.5	Quasi-peak	3 abotek
	216MHz~960MHz	200	46.0	Quasi-peak	rek 3 nbotek
	960MHz~1000MHz	500	54.0	Quasi-peak	tek 3
	AL . 1000MI	500	54.0	Average	nbo atel3
	Above 1000MHz	botek - Anbote	74.0	Peak	Anbo 3ek

#### Remark:

- (1) The lower limit shall apply at the transition frequency.
- (2) 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.

Test Standard	FCC Part15 C	Section 15.249	Al abotek A	'upote.' k	'up otek	Anbotek
	Frequency (MHz)	Field Strength of fundamental ((millivolts /meter)	Field Strength of Harmonics (microvolts/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)
Test Limit	2400~2483.5	50	Anbotek - Anbo	114.0	Peak	3 And
	2400~2483.5	50	Anbotek Anbo	94.0	Average	3
	2400~2483.5	ore Am	500	74.0	Peak	Anbox 3
	2400~2483.5	upote Aup	500	54.0	Average	3

#### Remark:

(1) 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.

#### 4.2. Test Setup



Figure 1. Below 30MHz

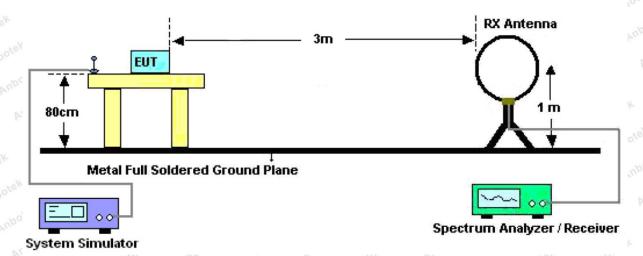


Figure 2. 30MHz to 1GHz

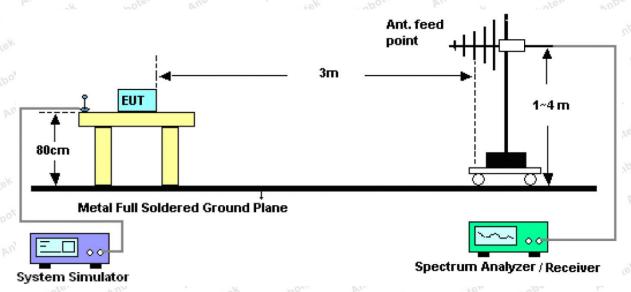
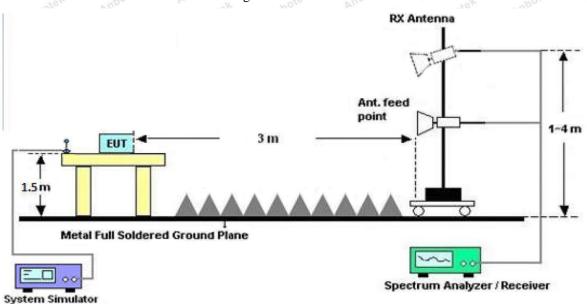


Figure 3. Above 1 GHz





#### 4.3. Test Procedure

For below 1GHz: The EUT is placed on a turntable, which is 0.8m above the ground plane. For above 1GHz: The EUT is placed on a turntable, which is 1.5m above the ground plane.

The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. Rotated the EUT through three orthogonal axes to determine the maximum emissions, both horizontal and vertical polarization of the antenna are set on test. The EUT is tested in 9\*6\*6 Chamber. The device is evaluated in xyz orientation.

For the radiated emission test above 1GHz:

Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.

For 9kHz to 150kHz, Set the spectrum analyzer as:

RBW = 200Hz, VBW = 1kHz, Detector= Quasi-Peak, Trace mode= Max hold, Sweep- auto couple.

For 150kHz to 30MHz, Set the spectrum analyzer as:

RBW = 9KHz, VBW = 30kHz, Detector= Quasi-Peak, Trace mode= Max hold, Sweep- auto couple.

For 30MHz to 1000MHz, Set the spectrum analyzer as:

RBW = 100kHz, VBW = 300kHz, Detector= Quasi-Peak, Trace mode= Max hold, Sweep- auto couple.

For above 1GHz,Set the spectrum analyzer as:

RBW =1MHz, VBW =1MHz, Detector= Peak, Trace mode= Max hold, Sweep- auto couple.

RBW =1MHz, VBW =10Hz, Detector= Average, Trace mode= Max hold, Sweep- auto couple.

#### 4.4. Test Data

#### **PASS**

During the test, Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the X-axis is the worst case.

The test results of 9kHz-30MHz was attenuated more than 20dB below the permissible limits, so the results don't record in the report.

During the test, pre-scan all the mode, and found the Middle channel which is the worst case, only the worst case is recorded in the report

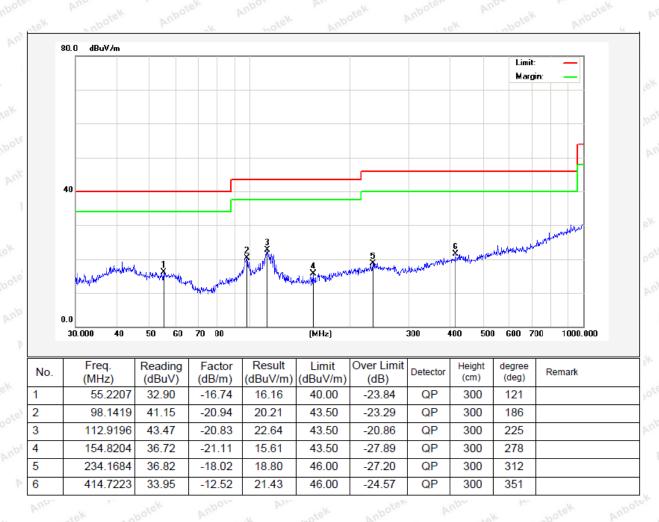


#### Test Results (30~1000MHz)

Job No.: SZAWW190122011-01 Temp.(°C)/Hum.(%RH): 24.3°C/54%RH

Standard: FCC PART 15C Power Source: DC 1.5V battery inside

Test Mode: Mode 2 Polarization: Horizontal



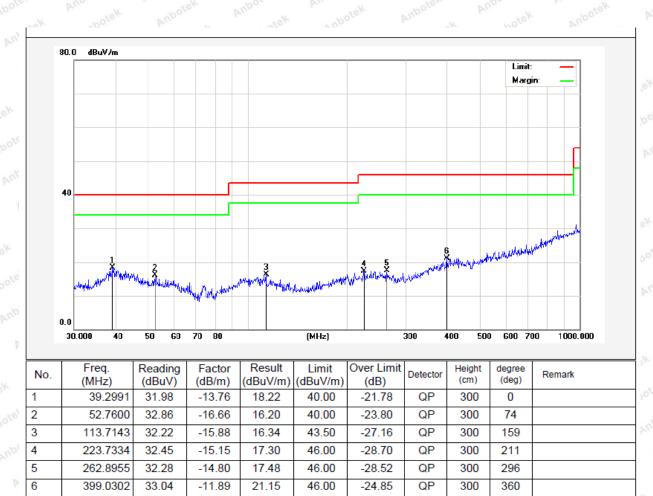


#### Test Results (30~1000MHz)

Job No.: SZAWW190122011-01 Temp.(°C)/Hum.(%RH): 24.3°C/54%RH

Standard: FCC PART 15C Power Source: DC 1.5V battery inside

Test Mode: Mode 2 Polarization: Vertical



#### **Test Results (1GHz-25GHz)**

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.	Detector
2408.0000	93.94	31.12	2.18	35.33	91.91	114.00	-22.09	V	Peak
2408.0000	85.76	31.12	2.18	35.33	83.73	94.00	-10.27	V	AVG
4816.0000	50.08	34.01	2.58	34.65	52.02	74.00	-21.98	V	Peak
4816.0000	38.08	34.01	2.58	34.65	40.02	54.00	-13.98	V	AVG
7224.0000	48.74	36.16	2.97	35.07	52.80	74.00	-21.20	V	Peak
7224.0000	36.39	36.16	2.97	35.07	40.45	54.00	-13.55	V	AVG
9632.0000	nbote*	Anbo otek	nbotek	Anbo	re. Vu.	notek	Anbotek	Anb	rek
12040.0000	Anbotek	Anb	k Nook	8K M	poter.	Yun	Anbotek	P	upor
14448.0000	Ai* otek	Aupor	rek w	potek	Anboton	Ann	, vupo	ek	Aupore
16856.0000	*Anbote	K And	0. br.	abotek	Anboten	N AUDO	rek vi	potek	Anbox
2408.0000	94.87	31.12	2.18	35.33	92.84	114.00	-21.16	Hiek	Peak
2408.0000	82.88	31.12	2.18	35.33	80.85	94.00	-13.15	Habo	AVG
4816.0000	48.24	34.01	2.58	34.65	50.18	74.00	-23.82	Н	Peak
4816.0000	40.21	34.01	2.58	34.65	42.15	54.00	-11.85	ĕ H	AVG
7224.0000	47.55	36.16	2.97	35.07	51.61	74.00	-22.39	Н	Peak
7224.0000	36.80	36.16	2.97	35.07	40.86	54.00	-13.14	H	AVG
9632.0000	*	otek P	anbotek	Anbote	rk bur	otek A	botek	Vupo.	ek Air
12040.0000	bote* *	noo	abotek	Anbot	V. Vun	abotek	Anbotek	Aupo	*ek
14448.0000	Anbote*	Anbo	nbote	K An'	ooge, b	motek wotek	Anbotek	PL	bor
16856.0000	* u*otek	Anbor	V P2.	Nek	Lupoten.	Pup.	you.	H	Aupolo

#### Note:

- 1. Level =Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor
- 2. "\*" means the test results were attenuated more than 20dB below the permissible limits, so the results don't record in the report.

				_	1				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.	Detector
2440.0000	95.83	31.12	2.20	34.51	94.64	114.00	-19.36	Vote	Peak
2440.0000	85.36	31.22	2.20	34.51	84.27	94.00	-9.73	V	AVG
4880.0000	47.34	34.98	2.49	34.14	50.67	74.00	-23.33	V	Peak
4880.0000	40.77	34.98	2.49	34.14	44.10	54.00	-9.90	V	AVG
7320.0000	46.93	36.01	3.01	34.56	51.39	74.00	-22.61	V	Peak
7320.0000	36.44	36.01	3.01	34.56	40.90	54.00	-13.10	V	AVG
9760.0000	ster * Ani	tek	abotek	Aupote	K VIII	otek	nbotek	Aupore	rek br
12200.0000	nbote*	Anbo otek	nbotek	Anbo	ren Vu	notek	Anbotek	Anb.	, o.K
14640.0000	*	Aupor	K woot	ex Pr	pole	YUBS	Anbotek	P	upor
17080.0000	***************************************	Aupor	eek a	potek	Anboten	Vupe ofe,	, nbo	.ek	Anbore
2440.0000	93.03	31.12	2.20	34.51	91.84	114.00	-22.16	hod.	Peak
2440.0000	82.79	31.12	2.20	34.51	81.60	94.00	-12.40	Hick	AVG
4880.0000	48.96	34.98	2.49	34.14	52.29	74.00	-21.71	Habe	Peak
4880.0000	40.94	34.98	2.49	34.14	44.27	54.00	-9.73	Н	AVG
7320.0000	45.39	36.01	3.01	34.56	49.85	74.00	-24.15	e√ H	Peak
7320.0000	35.31	36.01	3.01 May	34.56	39.77	54.00	-14.23	Н	AVG
9760.0000	*	tek A.	obotek	Anbote	And work	K Anb	rek Yu	por	br.
12200.0000	* And	-otek	nbotek	Anboten	k Pun	otek A	botek	Aupor	ek bu
14640.0000	* P	nbo	abotek	Anbot	K MUD	-botek	Anbotek	Anbo	Lax 1
17080.0000	*	Vupor.	, hote	K An	Joseph D	mbotek	abotek	AT	born

#### Note:

- 1. Level =Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor
- 2. "\*" means the test results were attenuated more than 20dB below the permissible limits, so the results don't record in the report.



Test Mode: O	CH34 (High cl	hannel)							
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.	Detector
2474.0000	96.09	31.65	2.23	36.07	93.90	114.00	-20.10	Vote	Peak
2474.0000	85.62	31.65	2.23	36.07	83.43	94.00	-10.57	V	AVG
4948.0000	47.06	35.06	2.60	34.93	49.79	74.00	-24.21	V	Peak
4948.0000	40.87	35.06	2.60	34.93	43.60	54.00	-10.40	V	AVG
7422.0000	47.85	36.19	3.12	35.11	52.05	74.00	-21.95	V	Peak
7422.0000	37.47	36.19	3.12	35.11	41.67	54.00	-12.33	V	AVG
9896.0000	* An	, tek	nbotek	Aupote	K Vun	otek	nbotek	Aupore	rak bu
12370.0000	nbotel*	Yupo, otek	abotek	Anbo	ion Vu	notek	Anbotek	Aup.	, o.K
14844.0000	Anbotek	Aupor	K NOOK	ex by	Pole	Yup - Otek	Anbotek	P	<sup>u</sup> pos
17318.0000	Al*xotek	Aupor	rek w	ootek	Anboren	Ana	, nbo	.ek	Anbore
2474.0000	95.96	31.65	2.23	36.07	93.77	114.00	-20.23	hoo!	Peak
2474.0000	83.01	31.65	2.23	36.07	80.82	94.00	-13.18	Hiel	AVG
4948.0000	49.49	35.06	2.60	34.93	52.22	74.00	-21.78	Habo	Peak
4948.0000	38.77	35.06	2.60	34.93	41.50	54.00	-12.50	Н	AVG
7422.0000	47.60	36.19	3.12	35.11	51.80	74.00	-22.20	ek H	Peak
7422.0000	37.28	36.19	3.12	35.11	41.48	54.00	-12.52	Н	AVG
9896.0000	*	*ek	obotek	Anbote	Anu vote	K Anb	rek Mu	rek Ves	b7),
12370.0000	* Anb	rotek b	abotek	Anboten	K Pup	otek A	botek	Vupor	ek bu
14844.0000	ibotek * P	'up	A" abotek	Anbot	r Vulp	botek	anbotek	Aupo	· ak
17318.0000	Anbotek	Anbore	An	K An	oter b	up.	abotek	AY	Polo

#### Note:

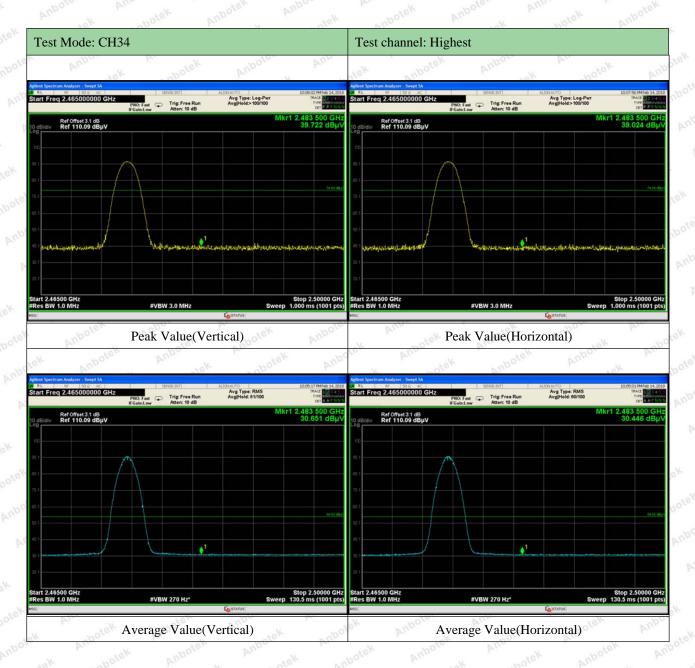
- 1. Level =Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor
- 2. "\*" means the test results were attenuated more than 20dB below the permissible limits, so the results don't record in the report.



#### **Radiated Band Edge:**





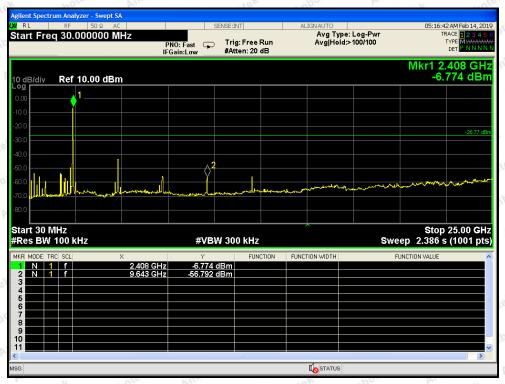


#### Remark:

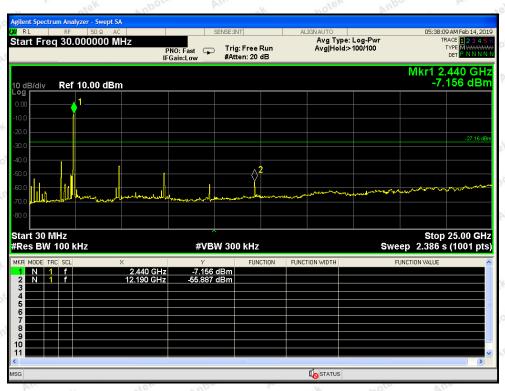
1. Level = Receiver Read level + Antenna Factor + Cable Loss - Preamplifier Factor



#### Conducted Emission Method

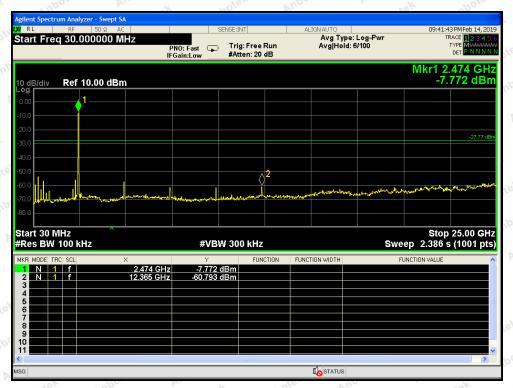


CH: Low



CH: Middle





CH: High



### 5. 20dB Bandwidth Test

#### 5.1. Test Standard and Limit

TD ( C) 1 1	ECC D 415 C C 41 15 040	Ans	18K	
Test Standard	FCC Part15 C Section 15.249			
V.				

### 5.2. Test Setup



### 5.3. Test Procedure

- 1. Place the EUT on the table and set it in the transmitting mode.
- 2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 3. Set the spectrum analyzer as:

 $RBW = 30kHz, VBW \ge 3*RBW = 100kHz,$ 

Detector= Average

Trace mode= Max hold.

Sweep- auto couple.

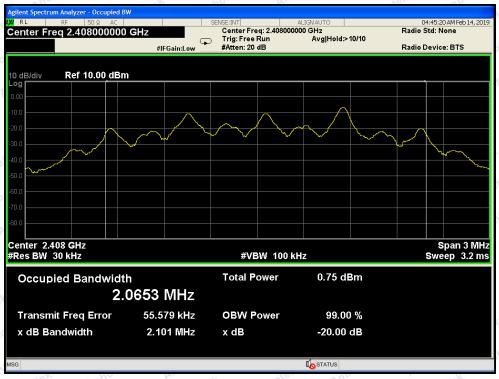
- 4. Mark the peak frequency and -20dB (upper and lower) frequency.
- 5. Repeat until all the rest channels are investigated.

#### 5.4. Test Data

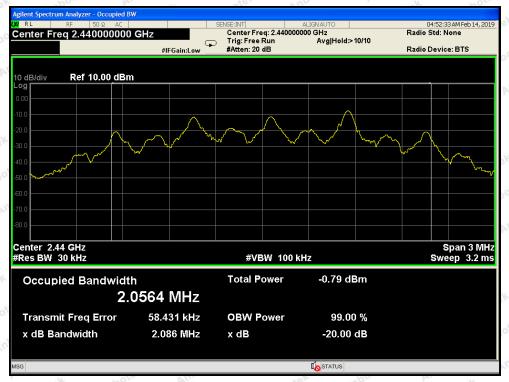
Test Item	:	20dB Bandwidth	Test Mode :	Mode 1
Test Voltage	:	DC 1.5V battery inside	Temperature :	24°C
Test Result	:	PASS	Humidity :	55%RH

	Frequency (MHz)		В	andwidth (kHz)	100		Result	N.
A. abotek	2408MHZ	Anbo	Anbotek	2101	Anabote	K Anbo	PASS	Anbo.
br.	2440MHZ	Anb	Anbotek	2086	VIII.	otek Ar	PASS	Anbo
84	2474MHZ	Ans	lek vupotek	2091	V. Vi	notek	PASS	Anbo



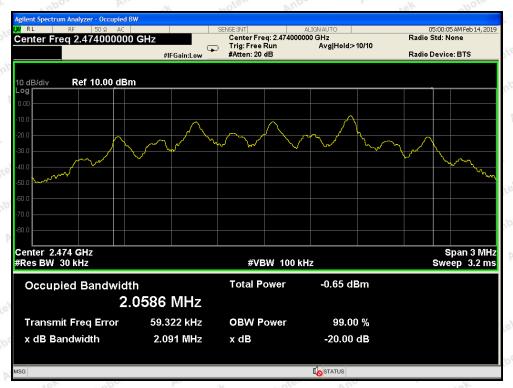


Test Mode: Low



Test Mode: Middle





Test Mode: High



# 6. Antenna Requirement

### 6.1. Test Standard and Requirement

Test Standard	FCC Part15 Section 15.203
Requirement	1) 15.203 requirement:  An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

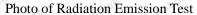
#### 6.2. Antenna Connected Construction

The antenna is a PCB Antenna which permanently attached, and the best case gain of the antenna is -0.61 dBi. It complies with the standard requirement.





# APPENDIX I -- TEST SETUP PHOTOGRAPH

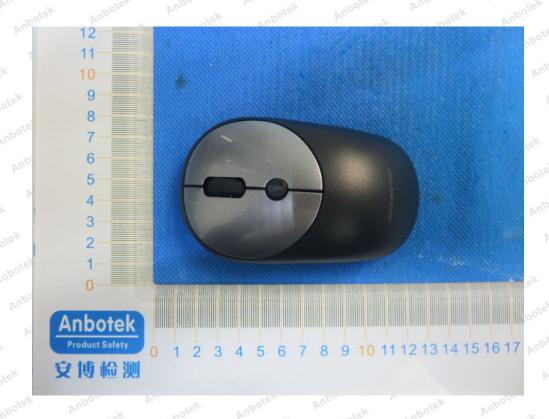








# APPENDIX II -- EXTERNAL PHOTOGRAPH



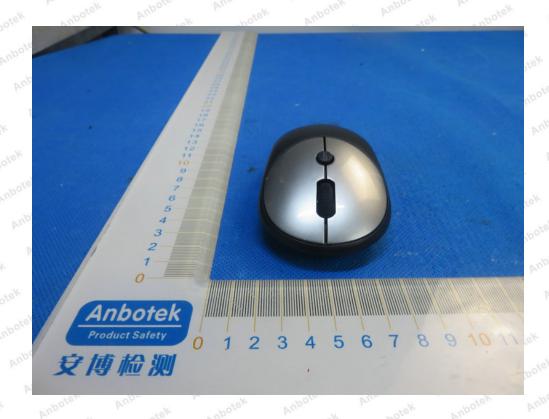








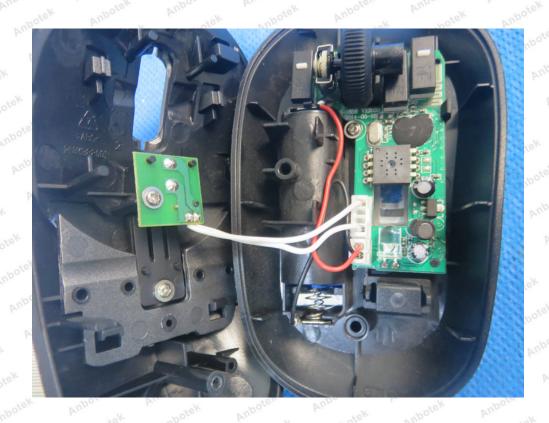








# APPENDIX III -- INTERNAL PHOTOGRAPH



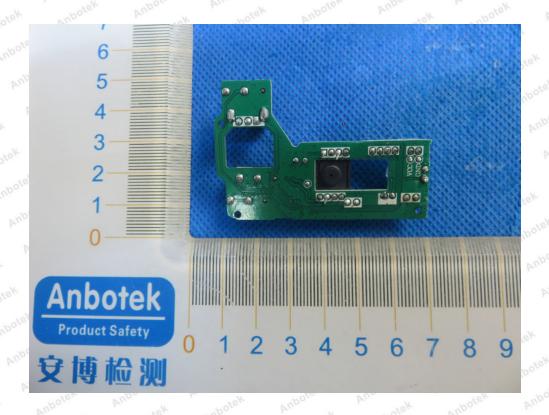


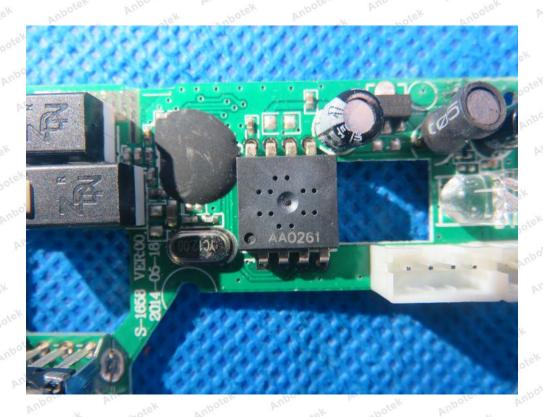




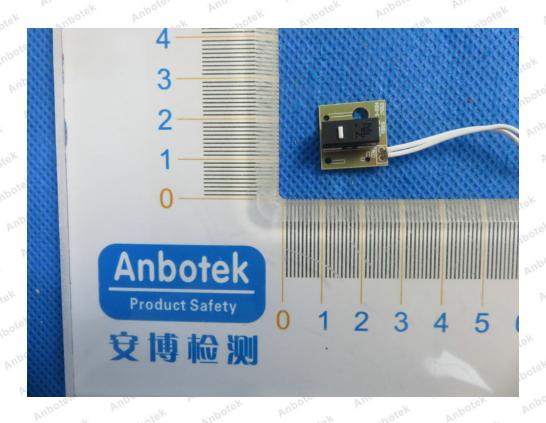


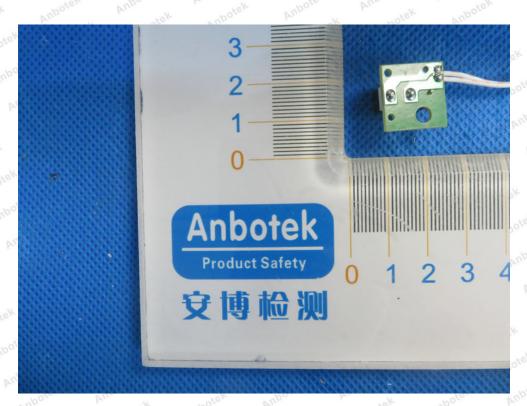












-- End of Report -----