

FCC TEST REPORT

For

Autel Intelligent Tech. Corp., Ltd.

Professional Scan Tool

Model No.: TS201

Prepared For : Autel Intelligent Tech. Corp., Ltd.

Address : 6th - 10th Floor, Bldg. B1, Zhiyuan, Xueyuan Rd., Xili, Nanshan,

Shenzhen, China

Prepared By : Shenzhen Anbotek Compliance Laboratory Limited

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Date of Receipt : Nov. 09, 2018

Date of Test : Nov. 09~26, 2018

Date of Report : Nov. 26, 2018



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TEST REPORT

Applicant : Autel Intelligent Tech. Corp., Ltd.

Manufacturer : Autel Intelligent Tech. Corp., Ltd.

Product Name : Professional Scan Tool

Model No. : TS201

Trade Mark : AUTEL

Rating(s) : Input: DC 5V, 1A(with DC 3.7V, 1050 mAh Battery inside)

Test Standard(s) : FCC Part15 Subpart C 2018, Paragraph 15.209

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.

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		Sally zhou	Anbotek Anbotek	
		Swill Zo.	hotek Anbots	
Approved & Authorized Signer		K Anboten	Kupo ok	
	ek Anboten Anbo	(Manager / Sally Z	Chang)	Anbotek



1. General Information

1.1. Client Information

Applicant	:	Autel Intelligent Tech. Corp., Ltd.
Address	:	6th - 10th Floor, Bldg. B1, Zhiyuan, Xueyuan Rd., Xili, Nanshan, Shenzhen, China
Manufacturer	:	Autel Intelligent Tech. Corp., Ltd.
Address	:	6th - 10th Floor, Bldg. B1, Zhiyuan, Xueyuan Rd., Xili, Nanshan, Shenzhen, China
Factory	:	Autel Intelligent Technology Corp.,Ltd.
Address	:	6 th Floor, Building 1, Yanxiang Zhigu, NO.11 Gaoxin West Rd., Guangming New District, Shenzhen City, Guangdong Province, China.
Factory	:	AUTEL VIETNAM COMPANY LIMITED
Address	:	4th Floor, Factory#6, Land#CN1, An Duong Industrial Zone, Hong Phong Township, An Duong County, Hai Phong, Viet Nam

1.2. Description of Device (EUT)

Product Name	:	Professional Scan Tool	K Anbotek Anbotek Anbotek An
Model No.	:	TS201	otek Anbotek Anbotek Anbotek
Trade Mark	:	AUTEL	Inbotek Anbotek Anbotek Anbotek
Test Power Supply	:	AC 240V, 60Hz for adapter/ AC DC 3.7V By battery	120V, 60Hz for adapter
Test Sample No.	:	S1(Normal Sample), S2(Engineer	ring Sample)
		Operation Frequency:	125KHz
Product	Modulation Type: Antenna Type:	Modulation Type:	RFID
Description		Antenna Type:	Inductive loop coil Antenna
		Antenna Gain(Peak):	0 dBi Anbotek Anbotek Anbotek An

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

Adapter	:	Manufacturer: ZTE M/N: STC-A2050I1000USBA-C S/N: 201202102100876 Input: 100-240V~50/60Hz 0.3A Output: DC 5V, 1000mA
2		otek Anbotek Anbotek Anbotek Anbotek Anbotek Anbotek Anbotek Anbotek

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			Description					
nbotek	Mode 1	VII.	rex	Anbotek	Anbo	TX Mode	Anbore	Anc

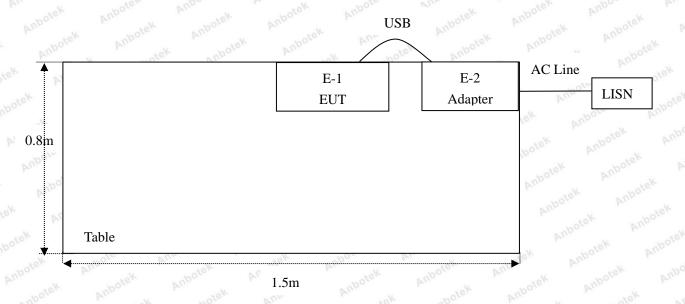
			For Condu	acted Emi	ssion			
	Final Test Mode				Description			
le/k	Mode 1	vek.	nbotek	Aupor	TX Mode	K DE	poter	Anbo

For Radiated Emission								
Final Test Mode	Description							
Mode 1	TX Mode							

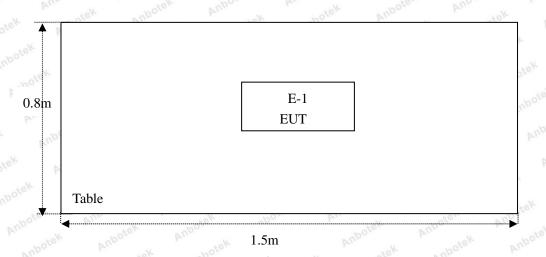


1.5. Description Of Test Setup

CE



RE





1.6. Test Equipment List

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
1e ^K 5.	MAX Spectrum Analysis	Agilent	N9020A	MY51170037	Nov. 05, 2018	1 Year
6.	Preamplifier	SKET Electronic	BK1G18G30D	KD17503	Nov. 05, 2018	1 Year
Anbot 7.	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	Nov. 19, 2018	1 Year
8.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	Nov. 19, 2018	1 Year
9.	Loop Antenna	Schwarzbeck	FMZB1519B	00053	Nov. 19, 2018	1 Year
10.	Horn Antenna	A-INFO	LB-180400-KF	J211060628	Nov. 20, 2018	1 Year
M1.	Pre-amplifier	SONOMA	310N	186860	Nov. 05, 2018	1 Year
12.	EMI Test Software EZ-EMC	SHURPLE	N/A Anbox	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



1.7. 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
FCC Part 15, Paragraph 15.207	Conducted Emission Test	PASS
FCC Part 15, Paragraph 15.209(a)(f)	Spurious Emission	PASS
Part 15.203	Antenna Requirement	PASS



3. Conducted Emission Test

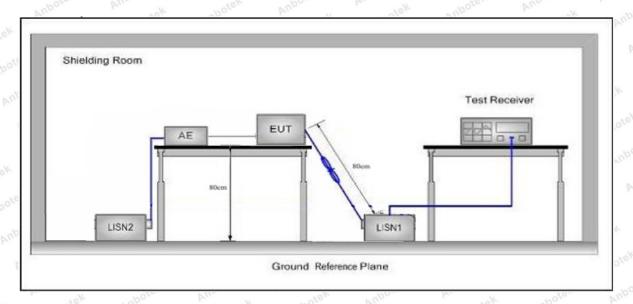
3.1. Test Standard and Limit

Test Standard	FCC Part15 Section 15.20	07 Anbore Answer	Anbotek Anbo tek				
	E	Maximum RF Line Voltage (dBuV)					
	Frequency	Quasi-peak Level	Average Level				
Test Limit	150kHz~500kHz	66 ~ 56 *	56 ~ 46 *				
*	500kHz~5MHz	56 Sept.	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

Please to see the following pages

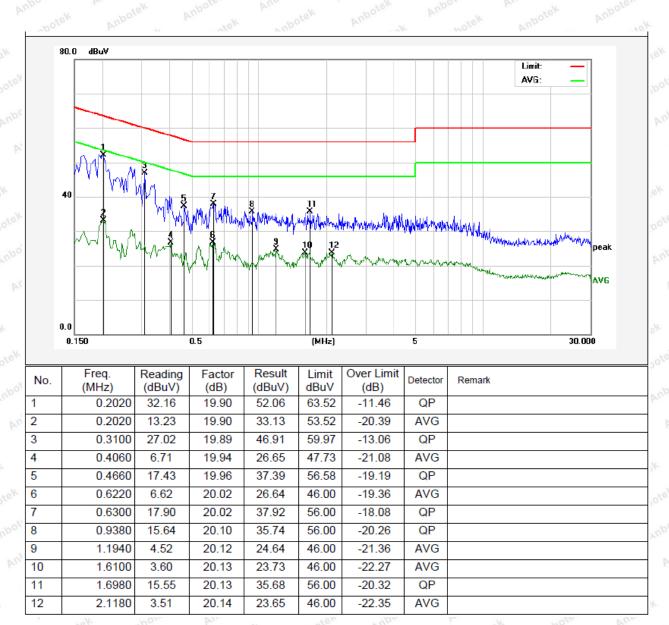


Test Site: 1# Shielded Room

Operating Condition: TX Mode

Test Specification: AC 240V, 60Hz for adapter

Comment: Live Line



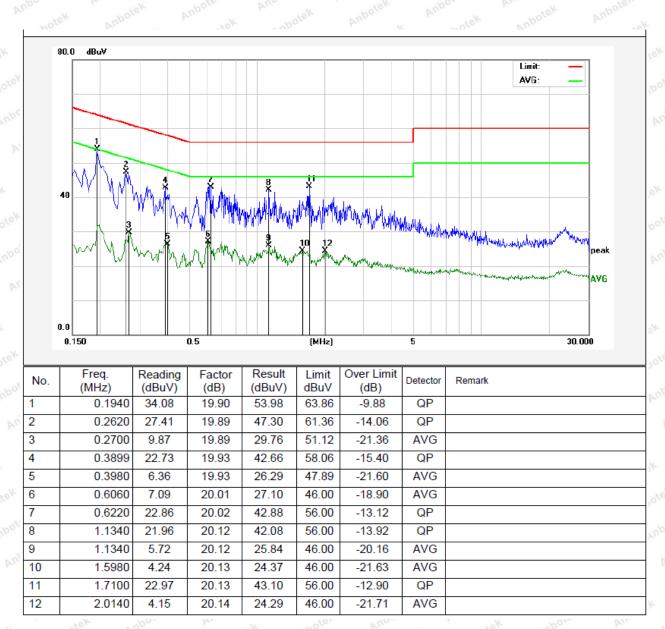


Test Site: 1# Shielded Room

Operating Condition: TX Mode

Test Specification: AC 240V, 60Hz for adapter

Comment: Neutral Line



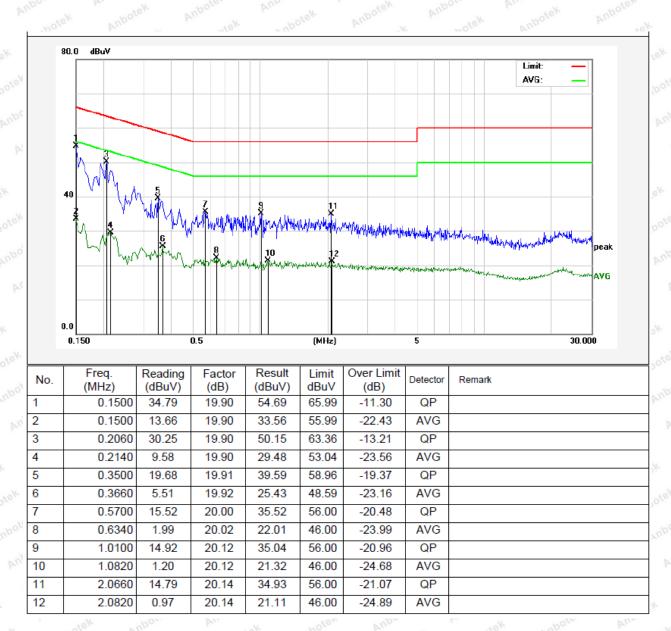


Test Site: 1# Shielded Room

Operating Condition: TX Mode

Test Specification: AC 120V, 60Hz for adapter

Comment: Live Line



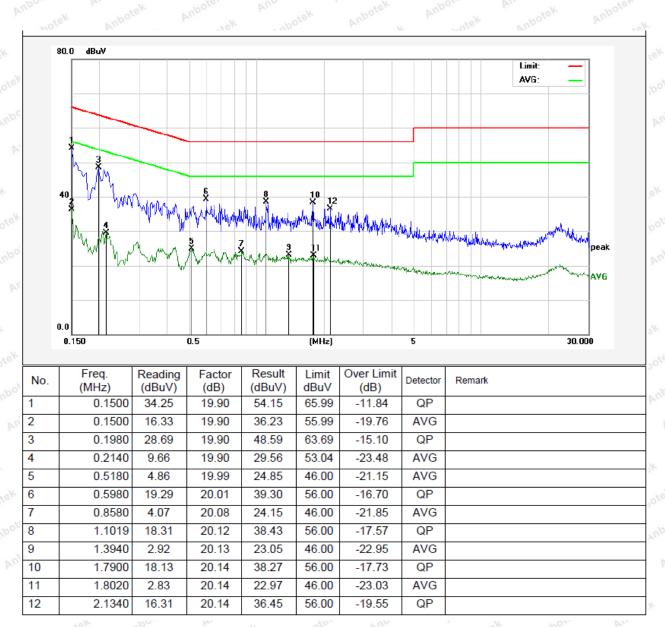


Test Site: 1# Shielded Room

Operating Condition: TX Mode

Test Specification: AC 120V, 60Hz for adapter

Comment: Neutral Line





4. Radiation Spurious Emission and Band Edge

4.1. Test Standard and Limit

Test Standard	FCC Part15 C Section 15.20	09 and 15.205				
	Frequency (MHz)	Field strength (microvolt/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)	
	0.009MHz~0.490MHz	2400/F(kHz)	tek - Whose W		300	
	0.490MHz-1.705MHz	24000/F(kHz)	nbotek Anbo	rek by	30	
	1.705MHz-30MHz	30	Anbotek A	loo tele	30	
Гest Limit	30MHz~88MHz	100	40.0	Quasi-peak	3	
	88MHz~216MHz	150	43.5	Quasi-peak	3	
	216MHz~960MHz	200	46.0	Quasi-peak	3	
	960MHz~1000MHz	500	54.0	Quasi-peak	tek 3 Anbote	
	Al 1000MI	500	54.0	Average	botek 3 Anb	
	Above 1000MHz	And Andrew	74.0	Peak	anbote 3	

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.

4.2. Test Setup

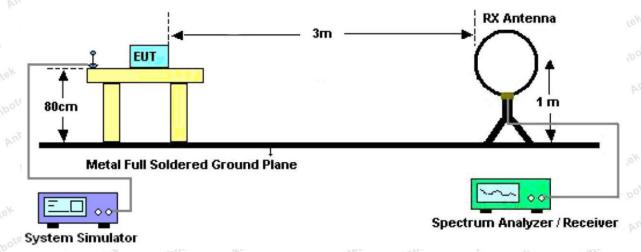


Figure 1. Below 30MHz

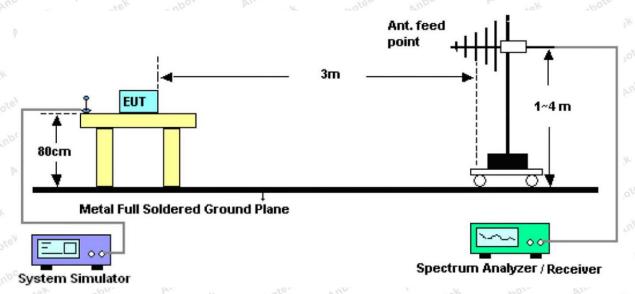


Figure 2. 30MHz to 1GHz

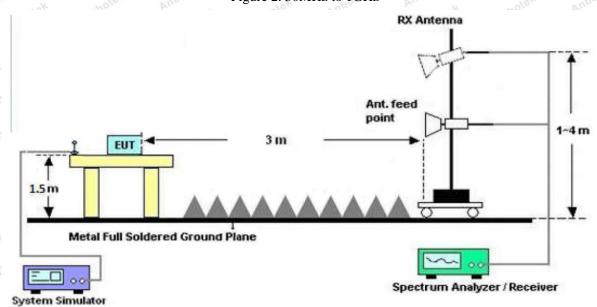


Figure 3. Above 1 GHz

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 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.

4.4. Test Data

PASS



Test Results

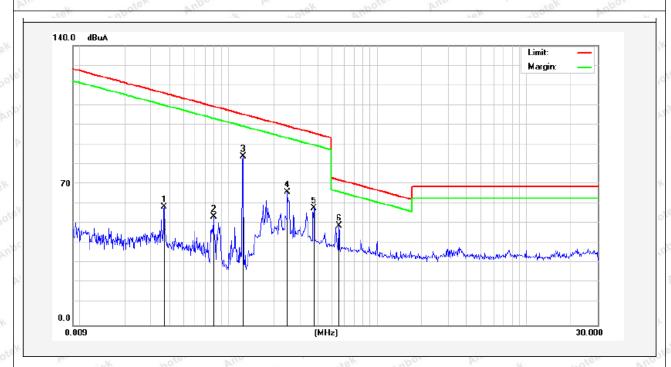
(Between 9KHz - 30MHz)

Job No.: SZAWW181109005-01

Standard: FCC PART15 C _3m Power Source: AC 120V, 60Hz for adapter

Test item: Radiation Test Temp.(C)/Hum.(%RH): 24.7°C/51%RH

Test Mode: Mode 1 Distance: 3m



0	Frequency (MHz)	Read Level (dBuV)	Antenna Factor	Cable Loss (dB)	Preamp Factor	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	degree
×	()	(/	(dB/m)	(/	(dB)	(((/		(dge)
	0.0371	-14.65	19.28	2.53	0	7.16	136.09	-128.93	Peak	127
	0.0371	37.39	19.28	2.53	0	59.20	116.09	-56.89	AV	127
	0.0792	41.46	19.53	2.59	0	63.58	129.54	-65.96	Peak	254
Ī	0.0792	32.23	19.53	2.59	0	54.35	109.54	-55.19	AV	254
1	0.1250	70.49	19.30	2.54	0	92.33	125.60	-33.27	Peak	89
	0.1250	62.64	19.30	2.54	0	84.48	105.60	-21.12	AV	89
Š	0.2500	52.24	19.53	2.59	0	74.36	119.61	-45.25	Peak	328
	0.2500	44.45	19.53	2.59	0	66.57	99.61	-33.04	AV	328
0	0.3750	45.80	19.53	2.59	0	67.92	116.11	-48.19	Peak	220
	0.3750	36.51	19.53	2.59	0	58.63	96.11	-37.48	AV	220
1	0.5540	26.98	20.34	2.59	0	49.91	72.73	-22.82	QP	103
-					- To Acc. 1					

Remark: According to FCC PART 15.209 (d), the emission limits for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz, Radiated emission limits in these three bands are based on measurements employing an average detector.

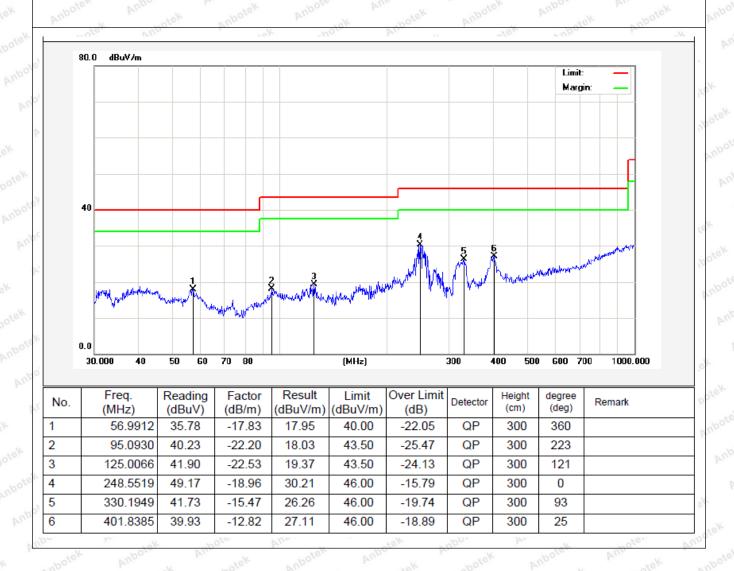


(Between 30MHz -1000 MHz)

Job No.: SZAWW181109005-01 Polarization: Horizontal

Standard: FCC PART15 C _3m Power Source: AC 120V, 60Hz for adapter

Test item: Radiation Test Temp.(C)/Hum.(%RH): 24.7 °C/54%RH

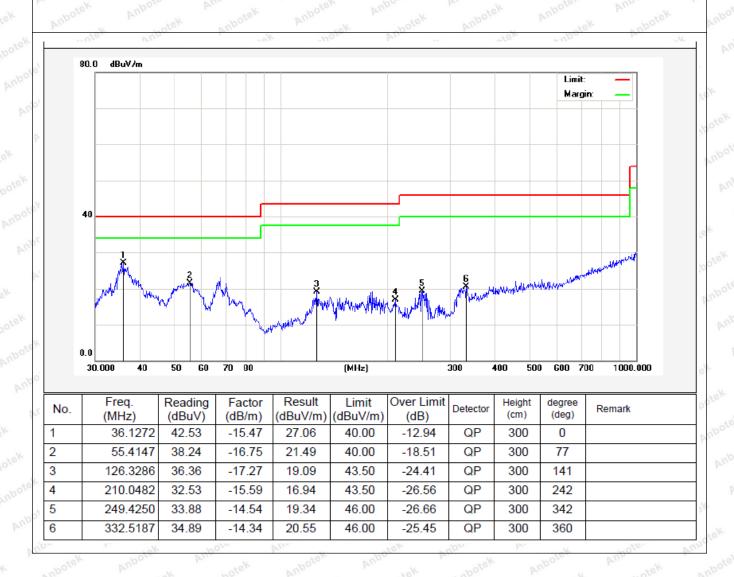




Job No.: SZAWW181109005-01 Polarization: Vertical

Standard: FCC PART15 C _3m Power Source: AC 120V, 60Hz for adapter

Test item: Radiation Test Temp.(C)/Hum.(%RH): 24.7 °C/54%RH

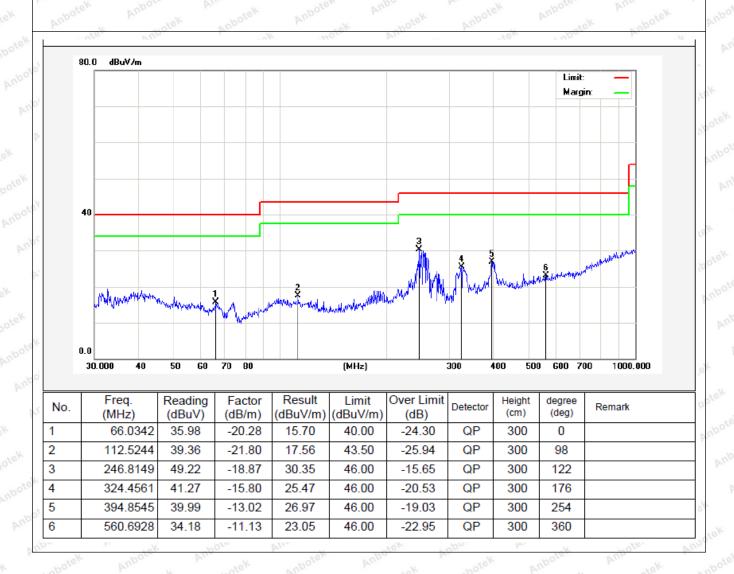




Job No.: SZAWW181109005-01 Polarization: Horizontal

Standard: FCC PART15 C _3m Power Source: AC 240V, 60Hz for adapter

Test item: Radiation Test Temp.(C)/Hum.(%RH): 24.7 °C/54%RH

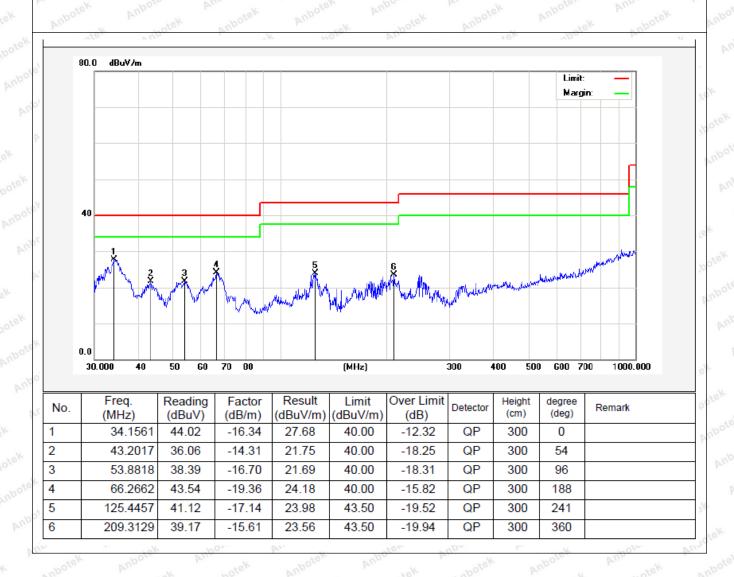




Job No.: SZAWW181109005-01 Polarization: Vertical

Standard: FCC PART15 C _3m Power Source: AC 240V, 60Hz for adapter

Test item: Radiation Test Temp.(C)/Hum.(%RH): 24.7 °C/54%RH





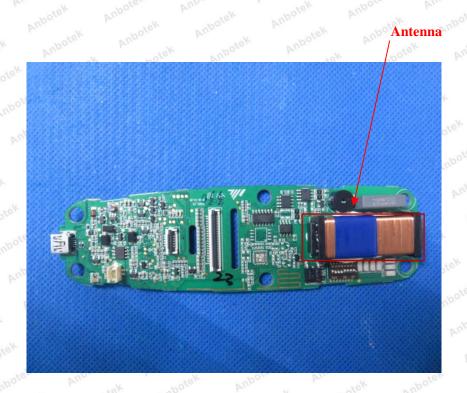
5. Antenna Requirement

5.1. Test Standard and Requirement

Test Standard	FCC Part15 Section 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

5.2. Antenna Connected Construction

The antenna is a Inductive loop coil Antenna which permanently attached, and the best case gain of the antenna is 0 dBi. It complies with the standard requirement.



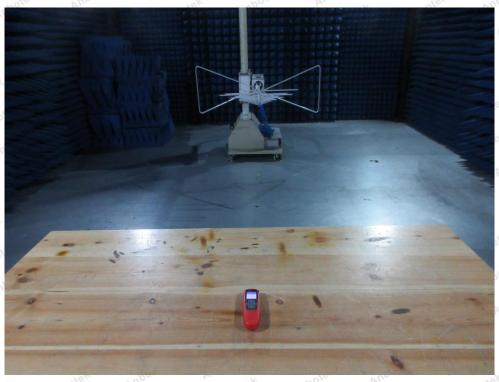


APPENDIX I -- TEST SETUP PHOTOGRAPH

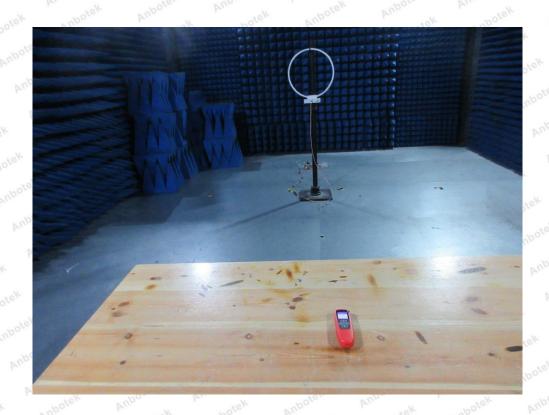




Photo of Radiation Emission Test









APPENDIX II -- EXTERNAL PHOTOGRAPH





















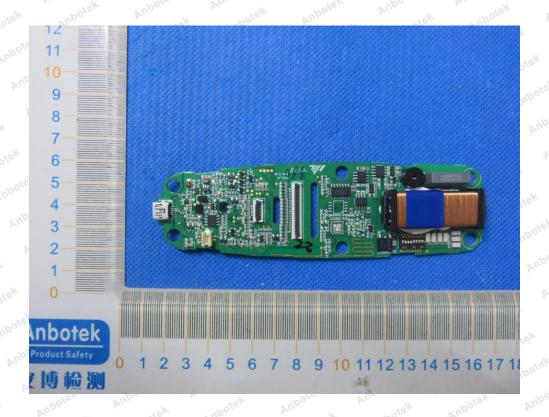




APPENDIX III -- INTERNAL PHOTOGRAPH



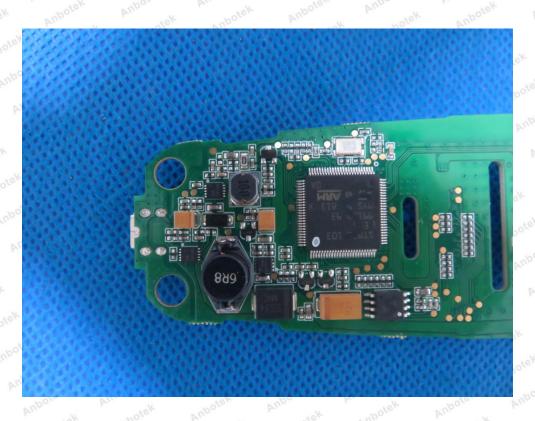


















----- End of Report -----