



FCC 47 CFR PART 15 SUBPART B

TEST REPORT

FOR

Pocket HiFi

Model : AP60, AP60 PRO
Trade Name : Hidizs

Issued to
Hidizs Technology Company Limited
8th Floor, Weisheng Business Building, No.18, Yanhedongsan
Road, Changping Town, Dongguan City, Guangdong Province, China

Issued by
WH Technology Corp.

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TABLE OF CONTENTS	2
1. GENERAL INFORMATION	3
1.1 DESCRIPTION OF THE TESTED SAMPLES	4
1.2 TEST RESULT	4
1.3 TEST METHODOLOGY	5
1.4 DESCRIPTION OF THE SUPPORT EQUIPMENTS	5
1.5 FEATURES OF EUT: PLEASE REFER TO USER MANUAL OR PRODUCT SPECIFICATION.	6
2. INSTRUMENT AND CALIBRATION	6
2.1 MEASURING INSTRUMENT CALIBRATION	6
2.2 TEST AND MEASUREMENT EQUIPMENT	6
2.3 TEST PERFORMED	8
2.4 APPENDIX	8
3. CONDUCTED EMISSION MEASUREMENT	11
3.1 TEST SET-UP (PLEASE REFER TO APPENDIX 1)	11
3.2 LIMIT	11
3.3 TEST PROCEDURE	11
3.4 TEST SPECIFICATION	12
3.5 RESULT: PASSED	12
3.6 TEST DATA:	12
4. RADIATED EMISSION MEASUREMENT	13
4.1 TEST SETUP (PLEASE REFER TO APPENDIX 1)	13
4.2 LIMIT	14
4.3 TEST PROCEDURE	14
4.4 TEST SPECIFICATION	15
4.5 RESULT: PASSED	15
4.6 TEST DATA:	15
5. MEASUREMENT UNCERTAINTY	16

APPENDIX 1 PHOTOS OF TEST CONFIGURATION

APPENDIX 2 TEST DATA

PHOTOS OF EUT



1. GENERAL INFORMATION

Applicant : Hidizs Technology Company Limited
Address : 8th Floor, Weisheng Business Building, No.18, Yanhedongsan Road, Changping Town, Dongguan City, Guangdong
Manufacturer : Same as applicant
Address : Same as applicant
Factory : Same as applicant
Address : Same as applicant
EUT : Pocket HiFi
Trade Name : Hidizs
Model Name : AP60, AP60 PRO
Model Differences : All the same except color and model name

Is herewith confirmed to comply with the requirements set out in the FCC Rules and Regulations Part 15 Subpart B and CISPR PUB. 22 and the measurement procedures were according to ANSI C63.4-2014. The said equipment in the configuration described in this report shows the maximum emission levels emanating from equipment are within the compliance requirements.

FCC part 15 subpart B

Class B

Receipt Date : 09/29/2017

Final Test Date : 11/24/2017

Tested By:

Reviewed by:

Nov. 28, 2017
Date



Bell wei / Engineer

Nov. 28, 2017
Date




Mike Lee / Manager
Designation Number: TW1083



1.1 DESCRIPTION OF THE TESTED SAMPLES

EUT

EUT Type : ☒ Engineer Type
Condition when received : ☒ Good ☐ Damage :
EUT Name : Pocket HiFi
Trade Name : Hidizs
Model Number : AP60, AP60 PRO
Receipt Date : Nov. 24, 2017
EUT Power Rating : ☒ DC Power from Computer
AC Power Cord Type : N/A
:

1.2 TEST RESULT

Emission		
Test Standard	Test Item	Test Result
FCC Part 15B	Conducted Emission	Pass
FCC Part 15B	Radiated Emission	Pass



1.3 TEST METHODOLOGY

EUT SYSTEM OPERATION

1. The EUT was configured according to ANSI C63.4 – 2014 & CISPR 22.
2. Photos of test configuration please refer to appendix 1.
3. Perform the EMC testing procedures, and measure the maximum emission noise.

1.4 DESCRIPTION OF THE SUPPORT EQUIPMENTS

Setup Diagram

See test photographs attached in appendix I for the actual connections between EUT and support equipment.

Support Equipment

Peripherals Devices:

OUTSIDE SUPPORT EQUIPMENT							
No.	Equipment	Model	Serial No.	FCC ID/ BSMI ID	Trade name	Data Cable	Power Cord
1	Computer	3010MT	N/A	FCC DOC	DELL	N/A	N/A
2	Monitor	G220AW	N/A	FCC DOC	DELL	N/A	N/A
3	Keyboard	KB216	N/A	FCC DOC	DELL	N/A	N/A
4	Mouse	1600DPI	N/A	FCC DOC	DELL	N/A	N/A
5	Printer	2132	N/A	FCC DOC	HP	N/A	N/A
6	Headphone	DT-216	N/A	FCC VOC	danyin	N/A	N/A

Note: All the above equipment /cable were placed in worse case position to maximize emission signals during emission test.

Grounding: Grounding was in accordance with the manufacturer's requirement and conditions for the intended use.

**1.5 FEATURES OF EUT: PLEASE REFER TO USER MANUAL OR PRODUCT SPECIFICATION.****2. INSTRUMENT AND CALIBRATION****2.1 MEASURING INSTRUMENT CALIBRATION**

The measuring equipment utilized to perform the tests documented in the report has been calibrated once a year or in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

2.2 TEST AND MEASUREMENT EQUIPMENT

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.

TABLELIST OF TEST AND MEASUREMENT EQUIPMENT

Test Site	Instrument	Manufacturer	Model No.	S/N	Next Cal. Date	Cal. Interval
Conduction	Receiver	R&S	ESHS10	830223/008	Nov. 23, 2018	1 Year
	Spectrum Analyzer	ADVANTEST	R3261C	87120343	Mar. 18, 2018	1 Year
	RF Cable	MIYAZAKI & Anritsu	RG58A0 & MP59B	M79094	Apr. 08, 2018	1 Year
	L.I.S.N	Rolf Heine Hochfrequenztechnik	NNB-2/16z	98062	Jan. 16, 2018	1 Year
	EMI Test Receiver	R&S	EAHS-10	1093.4495.03	Mar. 21, 2018	1Year
	Click Analyzer	Schaffner	DIA1512C	5218	June 15, 2018	1 Year
Radiation	Spectrum Analyzer	Nex1	NS-265	NO5044006	Aug. 04, 2018	1 Year
	Antenna	Schwarzbeck	VULB 9161	4077	Feb. 02, 2018	1 Year
	Antenna	Schwarzbeck	VULB 9160	3206	Feb. 02, 2018	1 Year
	RF Cable	N/A	N/A	N/A	Jan. 18, 2018	1 Year
	Pre-Amp	Schaffner	CPA-9232	1012	Jan. 20, 2018	1 Year



Radiation	Double Ridged Guide Horn antenna(1G-18G)	ETC	MCTD 1209	DRH15N0 2009	Nov. 23, 2018	1 Year
	Broadband Horn Antenna	Schwarzbeck	BBHA 9120D	452	Nov. 23, 2018	1 Year
	Microwave Preamplifier (1G-18G)	EMC INSTRUMENT	EMC051845	980108&AT -18001	Oct. 23, 2018	1 Year
	RF CABLE (1~26.5G)	HARBOUT INDUSTRIES	LL142MI(4M+4 M)	NA	Mar. 08, 2018	1 Year
	RF CABLE (1~26.5G)	HARBOUR INDUSTRIES	LL142MI(7M)	NA	Aug. 08, 2018	1 Year
	Spectrum (9K--7GHz)	R&S	FSP7	830180/006	Mar. 25, 2018	1 Year
	Spectrum (9K--40GHz)	AGILENT	8564EC	4046A0032	Mar. 01, 2018	1Year
	Microwave Preamplifier (1G-18G)	EMC INSTRUMENT	EMC051845	980108&AT -18001	Oct. 23, 2018	1 Year
	Pre amplifier (18G~26G)	MITEQ	JS4-18002600 -30-5A	808329	Aug. 10, 2018	1 Year
	EMI Test Receiver	R&S	ESVS30 (20M-1000MH z)	826006/002	Nov. 28, 2018	1 Year

● CALIBRATION INTERVAL OF INSTRUMENTS LISTED ABOVE IS ONE YEAR.



2.3 TEST PERFORMED

Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver which bandwidth is set at 9KHz.

Radiated emissions were investigated over the frequency range from 30MHz to 1000MHz using a receiver which bandwidth is set at 120KHz. For above 1GHz using a spectrum which bandwidth is set at 1MHz. Radiated measurement was performed at distance that from an antenna to EUT is 3 meters.

2.4 APPENDIX

Appendix A: Measurement Procedure for Main Power Port Conducted Emissions

Power to the EUT was provided through the LISN which has the Impedance (50ohm/50uH) vs. Frequency Characteristic in accordance with the standard. Powers to the LISNs were filtered to eliminate ambient signal interference and these filters were bonded to the ground plane. Peripheral equipment required to provide a functional system (support equipment) for EUT testing was powered from the second LISN through a ganged, metal power outlet box which is bonded to the ground plane at the LISN.

If the EUT is supplied with a flexible power cord, the power cord length in excess of the distance separating the EUT from the LISN shall be folded back and forth at the center of the lead so as to form a bundle not exceeding 40cm in length. If the EUT is provided with a permanently coiled power cord, bundling of the cord is not required. If the EUT is supplied without a power cord, the EUT shall be connected to the LISN by a power cord of the type specified by the manufacturer which shall not be longer than 1 meter. The excess power cord shall be bundled as described above. If a non-flexible power cord is provided with the EUT, it shall be cut to the length necessary to attach the EUT to the LISN and shall not be bundled.

The interconnecting cables were arranged and moved to get the maximum measurement. Both the line of power cord, hot and neutral, were measured.

The highest emissions were analyzed in details by operating the spectrum analyzer in fixed tuned mode to determine the nature of the emissions and to provide information which could be useful in reducing their amplitude.



Appendix B: Test Procedure for Radiated Emissions

Preliminary Measurements in the Anechoic Chamber

The radiated emissions are initially measured in the anechoic chamber at a measurement distance of 3 meters. Desktop EUT are placed on a wooden stand 0.8 meter in height. The measurement antenna is 3 meters from the EUT. The test setup in anechoic chamber is the same as open site. The turntable rotated 360°. The antenna height is 1m. The primary objective of the radiated measurements in the anechoic chamber is to identify the frequency spectrum in the absence of the electromagnetic environment existing on the open test site. The frequencies can then be pre-selected on the open test site to obtain the corresponding amplitude. The initial scan is made with the spectrum analyzer in automatic sweep mode. The spectrum peaks are then measured manually to determine the exact frequencies.

Measurements on the Open Site or Chamber

The radiated emissions test will then be repeated on the open site or chamber to measure the amplitudes accurately and without the multiple reflections existing in the shielded room. The EUT and support equipments are set up on the turntable. Desktop EUT are set up on a wooden stand 0.8 meter above the ground.

For the initial measurements, the receiving antenna is varied from 1-4 meter height and is changed in the vertical plane from vertical to horizontal polarization at each frequency. Both reading are recorded with the quasi-peak detector with 120KHz bandwidth when the frequency range is below 1GHz. For frequency between 30 MHz and 1000MHz, the reading is recorded with peak detector or quasi-peak detector.

The bandwidth set on the field strength is 1 MHz when the frequency range is above 1GHz. For frequency between 1000 MHz and 18000MHz, the reading is recorded with peak detector and average-peak detector.

At the highest amplitudes observed, the EUT is rotated in the horizontal plane while changing the antenna polarization in the vertical plane to maximize the reading. The interconnecting cables were arranged and moved to get the maximum measurement. Once the maximum reading is obtained, the antenna elevation and polarization will be varied between specified limits to maximize the readings.



Appendix C: Warning Labels

Label Requirements

A Class B digital device subject to certification by the FCC shall carry a warning label which includes the following statement:

***** WARNING *****

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Appendix D: Warning Statement

Statement Requirements

For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

***** WARNING *****

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

* * * * *

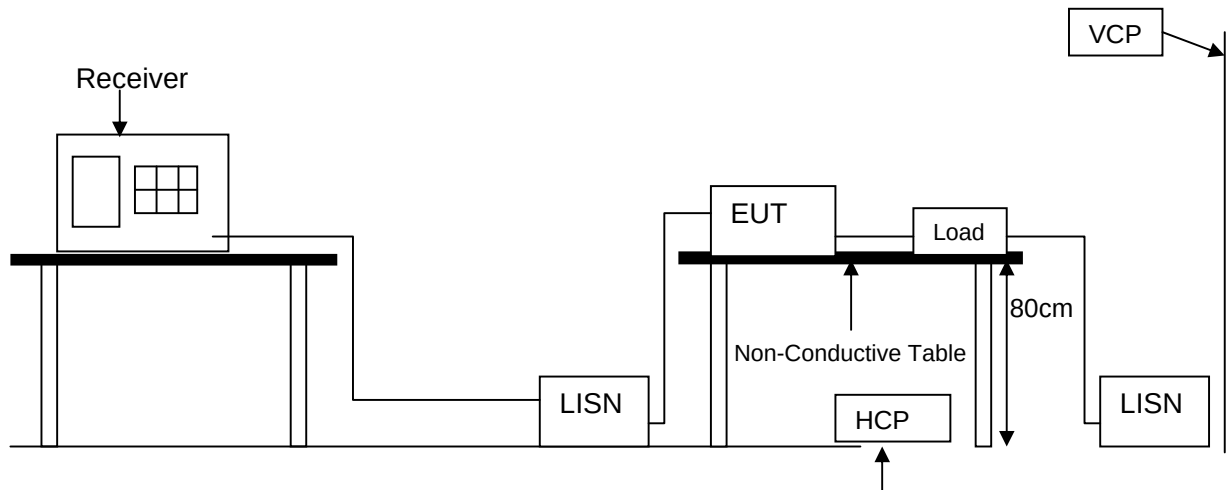
If the EUT was tested with special shielded cables the operator's manual for such product shall also contain the following statements or their equivalent:

Shielded interface cables and/or AC power cord, if any, must be used in order to comply with the emission limits.



3. CONDUCTED EMISSION MEASUREMENT

3.1 TEST SET-UP (PLEASE REFER TO APPENDIX 1)



3.2 LIMIT

Frequency range (MHz)	CLASS A		CLASS B	
	QP dB(uV)	Average dB(uV)	QP dB(uV)	Average dB(uV)
0.15-0.5	79 dBuV	66 dBuV	66 - 56 dBuV	56 - 46 dBuV
0.5-5.0	73 dBuV	60 dBuV	56 dBuV	46 dBuV
5.0-30.0	73 dBuV	60 dBuV	60 dBuV	50 dBuV

Remark: In the above table, the tighter limit applies at the band edges.

3.3 TEST PROCEDURE

The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). It provides a 50 ohm / 50 μ H coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50 ohm / 50 μ H coupling impedance with 50 ohm termination. (Please refer to the block diagram of the test setup and photograph.)

Both sides of AC line are checked for the maximum conducted emission interference. In order to find the maximum emissions, the relating positions of equipment and all of the interference cables must be changed according to CISPR22 regulation: The measurement procedure on conducted emission interference.



The resolution bandwidth of the field strength meter is set at 9KHz.

3.4 TEST SPECIFICATION

ANSI C63.4 – 2014 Section 5.2, 7.2, 7.3

3.5 RESULT: PASSED

EMI Receiver/Spectrum Analyzer Configuration (for the frequencies tested)

Frequency Range:	150KHz--30MHz
Detector Function:	Quasi-Peak / Average Mode
Resolution Bandwidth:	9KHz

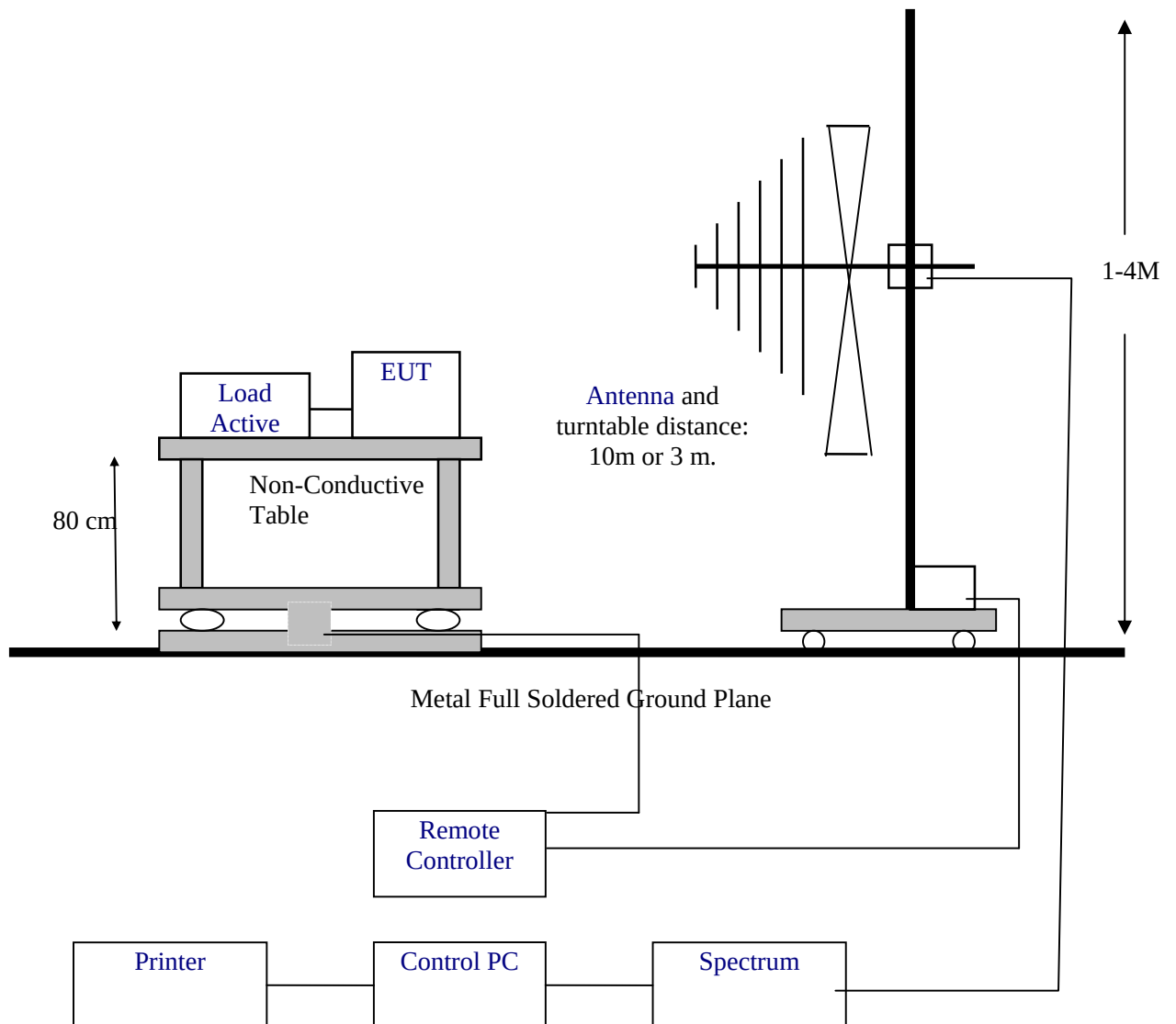
3.6 TEST DATA:

Please refer to appendix 2.



4. RADIATED EMISSION MEASUREMENT

4.1 TEST SETUP (PLEASE REFER TO APPENDIX 1)





4.2 LIMIT

- (a) Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency of emission (MHz)	Quasi-peak limits dB(μ V/m)
30–88	40
88–216	43.5
216–960	46.0
Above 960	54

- (b) The field strength of radiated emissions from a Class A digital device, as determined at a distance of 10 meters, shall not exceed the following:

Frequency of emission (MHz)	Quasi-peak limits dB(μ V/m)
30–88	39
88–216	43.5
216–960	46.4
Above 960	49.5

Frequency of emission (GHz)	Average limit dB(μ V/m)	Peak limit dB(μ V/m)
Above 1000	54	74

Remark: In the above table, the tighter limit applies at the band edges

4.3 TEST PROCEDURE

The EUT and its simulators are placed on turn table, non-conductive and wooden table, which is 0.8 meter above ground. The turn table rotates 360 degree to determine the position of the maximum emission level. The EUT was positioned such that distance from antenna to the EUT is 3 meters.

The antenna is moved up and down between 1 meter to 4 meter to receive the maximum emission level.

Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission, all of the interference cables must be manipulated according to CISPR22 regulation: the test procedure of the radiated emission measurement.



The bandwidth set on the field strength is 120 KHz when the frequency range is below 1GHz

4.4 TEST SPECIFICATION

ANSI C63.4 – 2014 Section 5.4, 5.5, 8.1, 8.3

4.5 RESULT: PASSED

4.6 TEST DATA:

Please refer to appendix 2.



5. MEASUREMENT UNCERTAINTY

Measurement Item	Measurement Frequency	Polarization	Uncertainty
Conducted Emission	9 kHz ~ 30. MHz	LINE/NEUTRAL	1.30 dB
Radiated Emission	30 MHz ~ 1,000 MHz	Vertical / Horizontal	5.06 dB
	1,000 MHz ~ 18,000 MHz	Vertical / Horizontal	5.06 dB



SAMPLE OF FCC VERIFICATION LABEL 1

This device complies with part 15 of the FCC Rules.
Operation is subject to the following two conditions: (1)
This device may not cause harmful interference. And
(2) this device must accept any interference received,
including interference that may cause undesired
operation.

SAMPLE OF FCC DOC LABEL 2



Trade Name
Model Number



Appendix 1

PHOTOS OF CONDUCTED EMISSION CONFIGURATION





PHOTOS OF RADIATED EMISSION CONFIGURATION

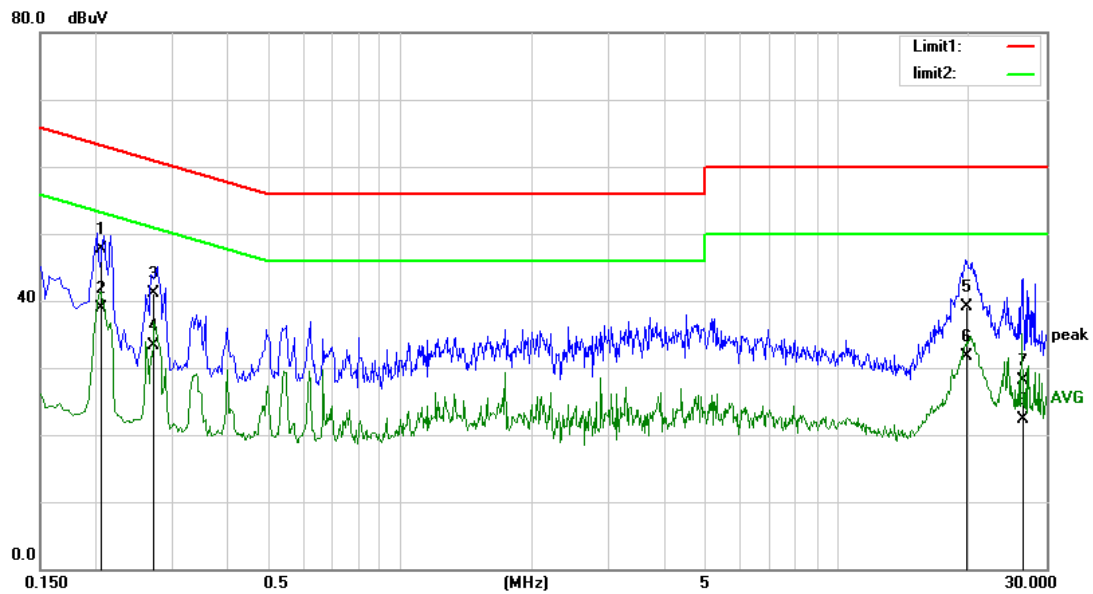




Appendix 2

TEST DATA OF CONDUCTED EMISSION:

Test mode: Connected PC (L)

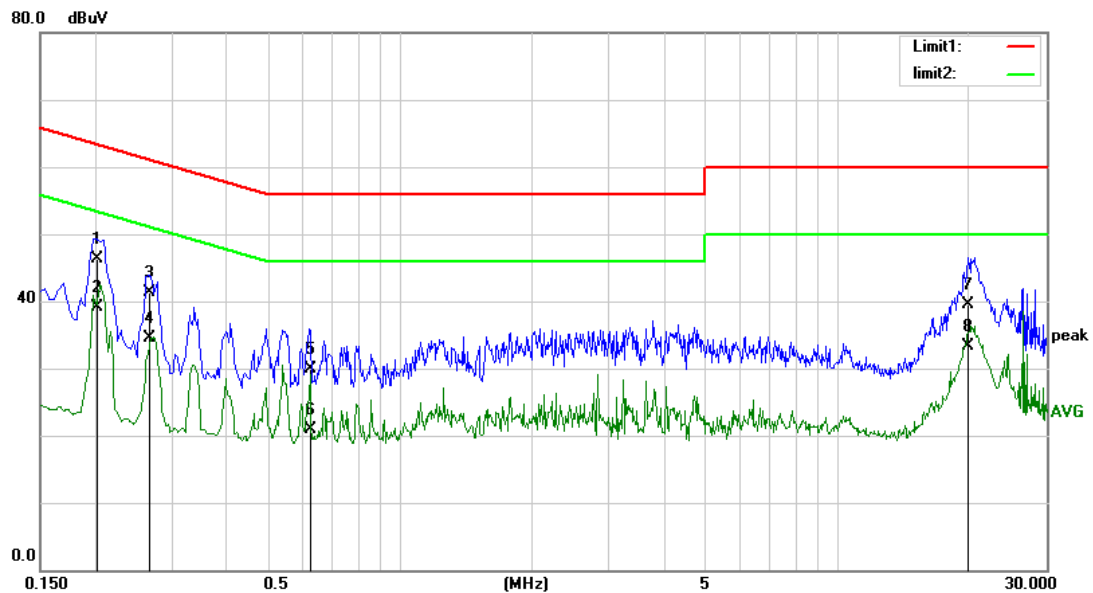


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dB	Over dB	Detector	Comment
1		0.2068	37.72	10.02	47.74	64.37	-16.63	QP	
2	*	0.2068	28.84	10.02	38.86	54.37	-15.51	AVG	
3		0.2734	31.13	10.01	41.14	62.47	-21.33	QP	
4		0.2734	23.23	10.01	33.24	52.47	-19.23	AVG	
5		19.6822	22.03	17.16	39.19	60.00	-20.81	QP	
6		19.6822	14.52	17.16	31.68	50.00	-18.32	AVG	
7		26.3844	10.83	17.22	28.05	60.00	-31.95	QP	
8		26.3844	5.08	17.22	22.30	50.00	-27.70	AVG	



TEST DATA OF CONDUCTED EMISSION:

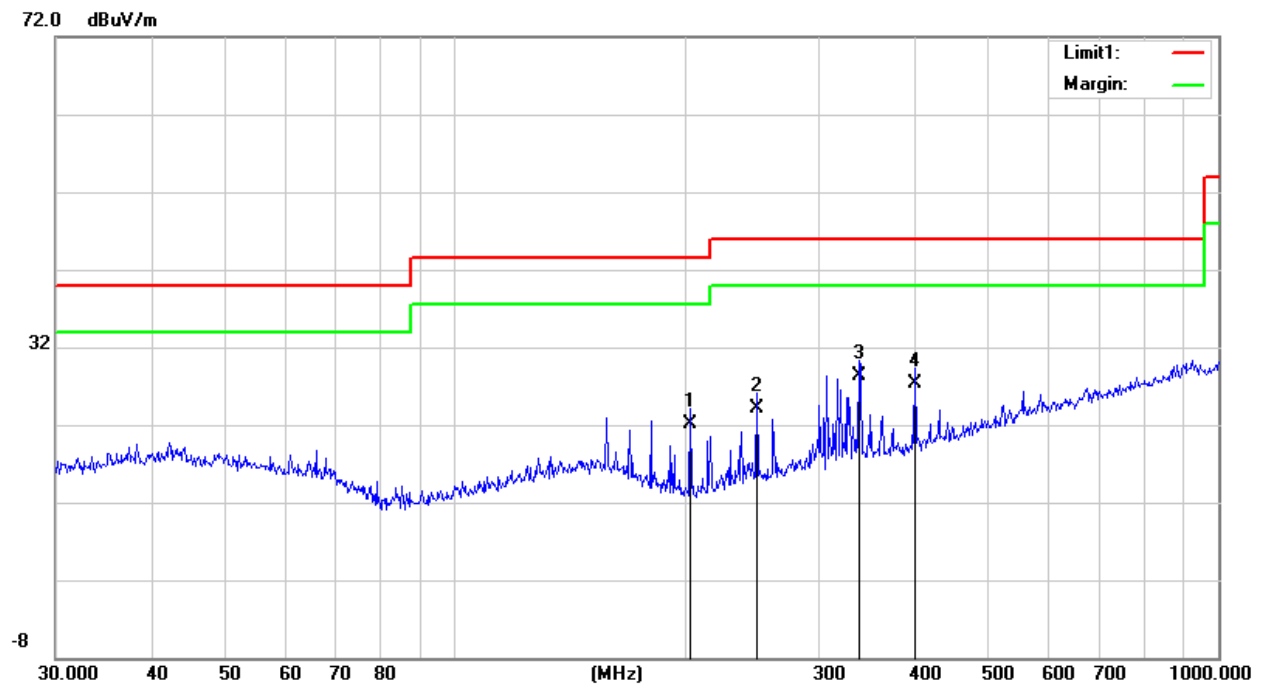
Test mode: Connected PC (N)



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dB	Over dB	Detector	Comment
1		0.2007	36.24	10.02	46.26	64.55	-18.29	QP	
2	*	0.2007	29.04	10.02	39.06	54.55	-15.49	AVG	
3		0.2646	31.32	10.01	41.33	62.72	-21.39	QP	
4		0.2646	24.54	10.01	34.55	52.72	-18.17	AVG	
5		0.6276	20.03	9.93	29.96	56.00	-26.04	QP	
6		0.6276	11.02	9.93	20.95	46.00	-25.05	AVG	
7		19.8103	22.25	17.17	39.42	60.00	-20.58	QP	
8		19.8103	16.08	17.17	33.25	50.00	-16.75	AVG	



TEST DATA OF RADIATED EMISSION 30MHz-1GHz:
Test mode: Playing (Vertical)

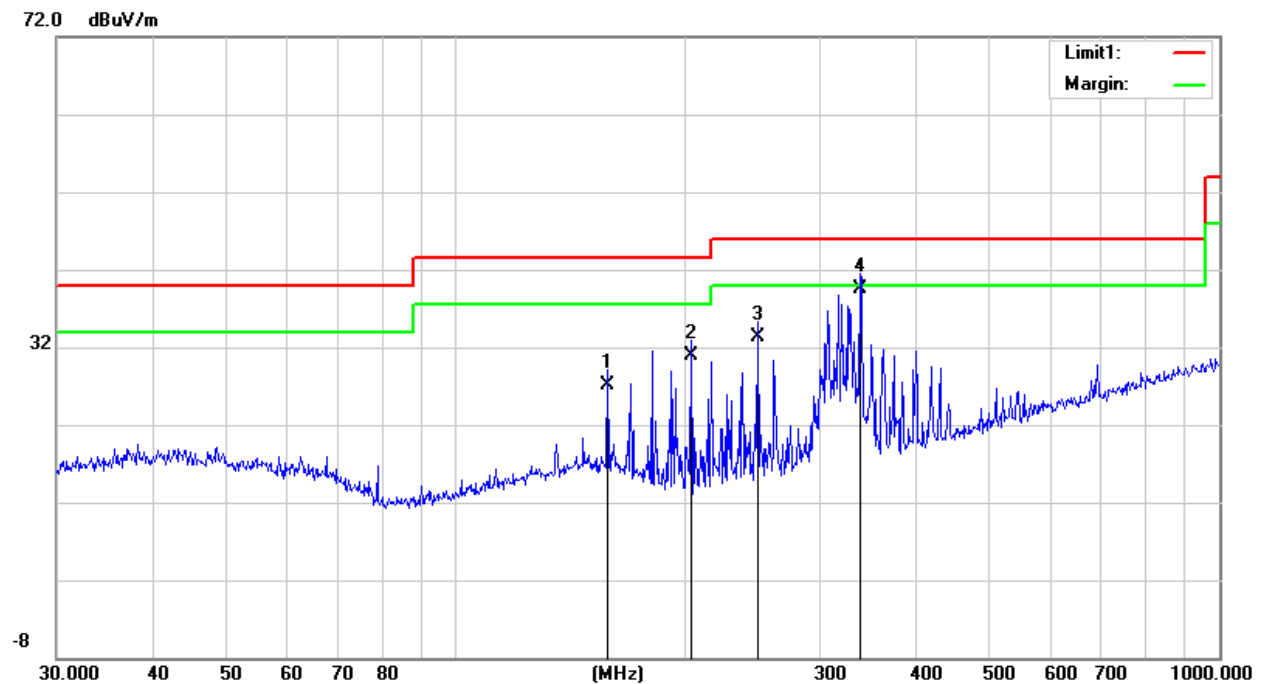


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
		MHz	Level	Factor	ment			Detector	Comment
			dBuV	dB	dBuV/m	dB/m	dB		
1		203.5227	12.57	9.52	22.09	43.50	-21.41	QP	
2		248.5518	12.59	11.47	24.06	46.00	-21.94	QP	
3	*	338.4001	14.54	13.82	28.36	46.00	-17.64	QP	
4		400.4318	12.08	15.31	27.39	46.00	-18.61	QP	



TEST DATA OF RADIATED EMISSION 30MHz-1GHz:

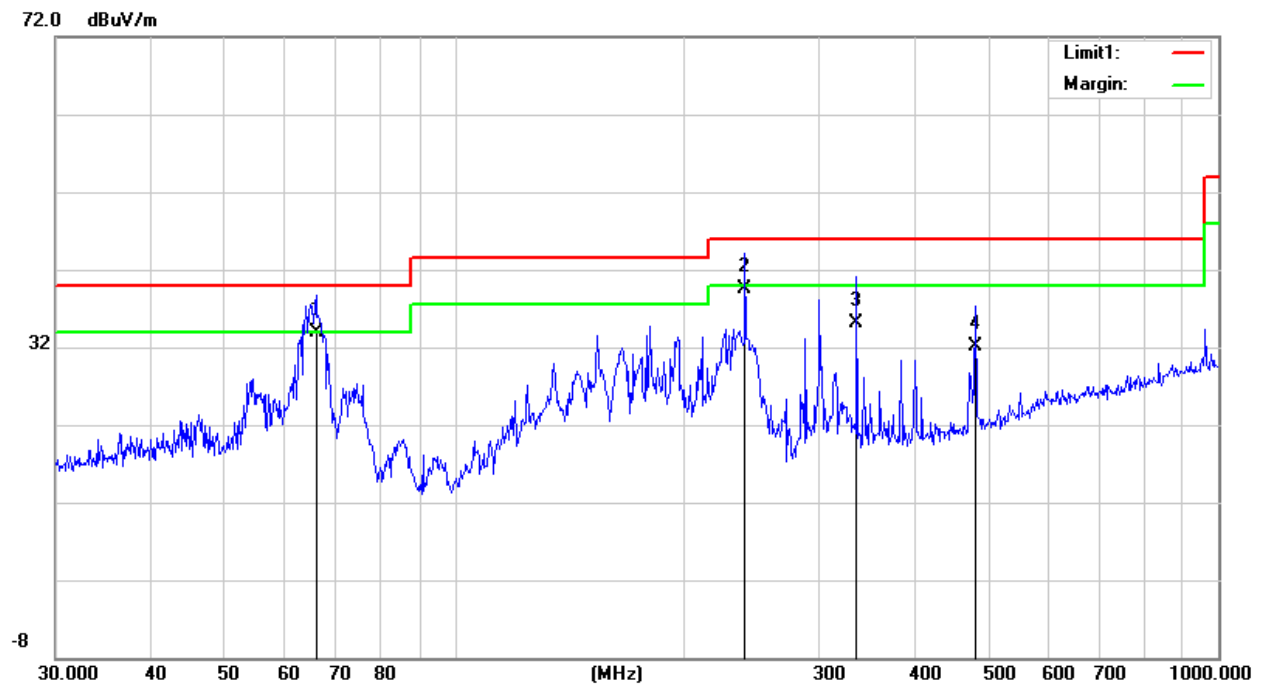
Test mode: Playing (Horizontal)



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
		MHz	Level	Factor	ment			Detector	Comment
			dBuV	dB	dBuV/m	dB/m	dB		
1		158.1123	14.49	12.66	27.15	43.50	-16.35	QP	
2		203.5228	21.46	9.52	30.98	43.50	-12.52	QP	
3		248.5519	21.87	11.47	33.34	46.00	-12.66	QP	
4	*	338.4001	25.69	13.82	39.51	46.00	-6.49	QP	



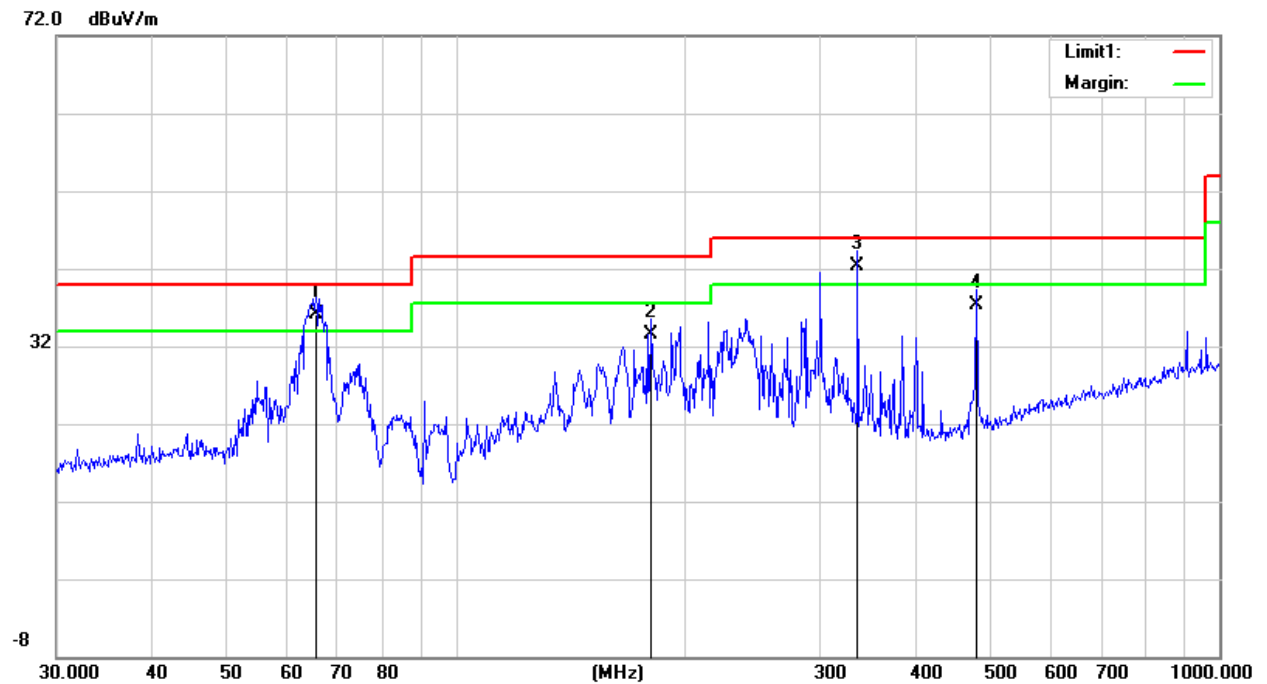
TEST DATA OF RADIATED EMISSION 30MHz-1GHz:
Test mode: Connected PC (Vertical)



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector	Comment
1	*	65.8481	22.65	11.26	33.91	40.00	-6.09	QP	
2		239.9974	28.11	11.30	39.41	46.00	-6.59	QP	
3		336.0351	21.36	13.76	35.12	46.00	-10.88	QP	
4		480.5276	15.23	16.91	32.14	46.00	-13.86	QP	



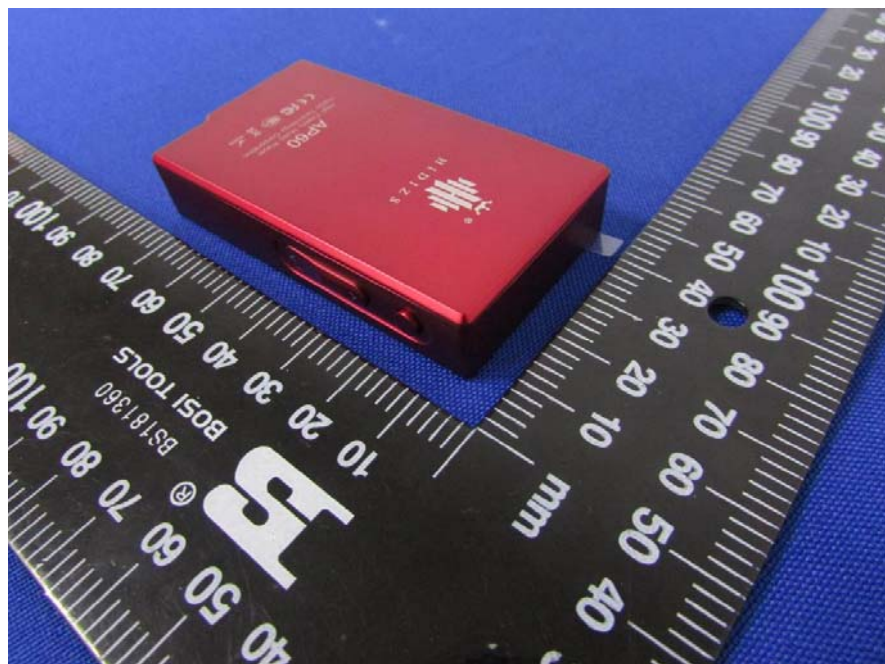
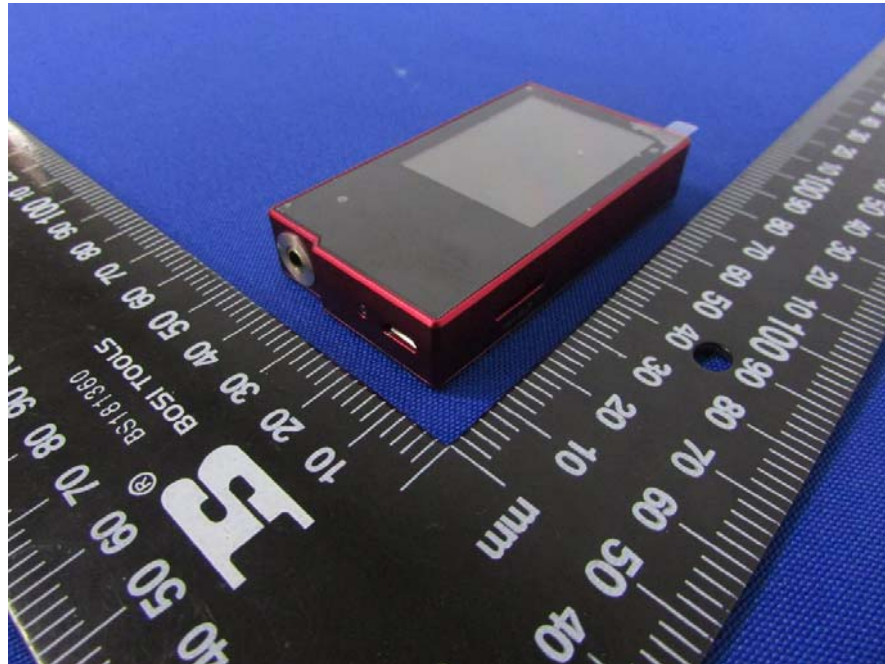
TEST DATA OF RADIATED EMISSION 30MHz-1GHz:
Test mode: Connected PC (Horizontal)

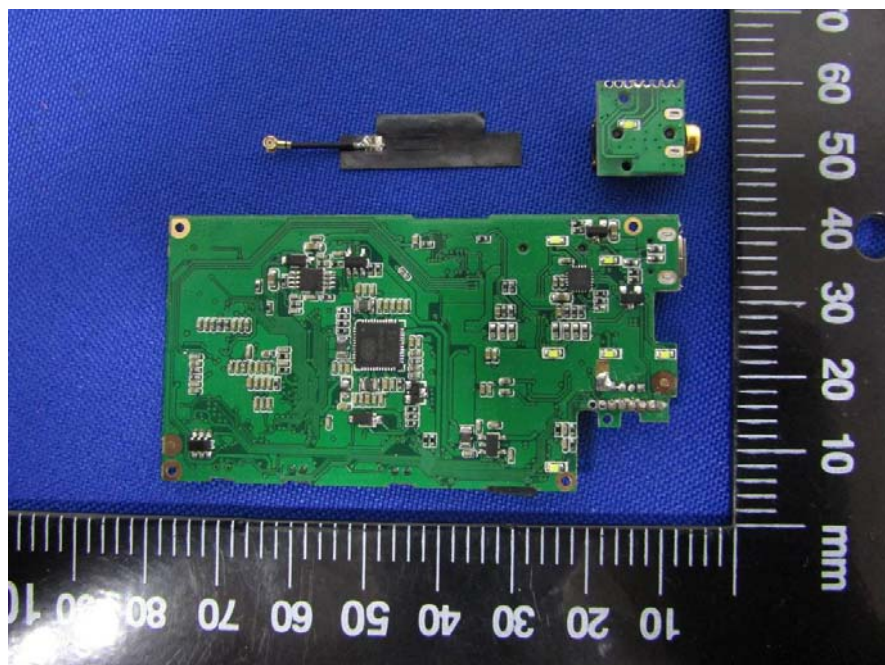
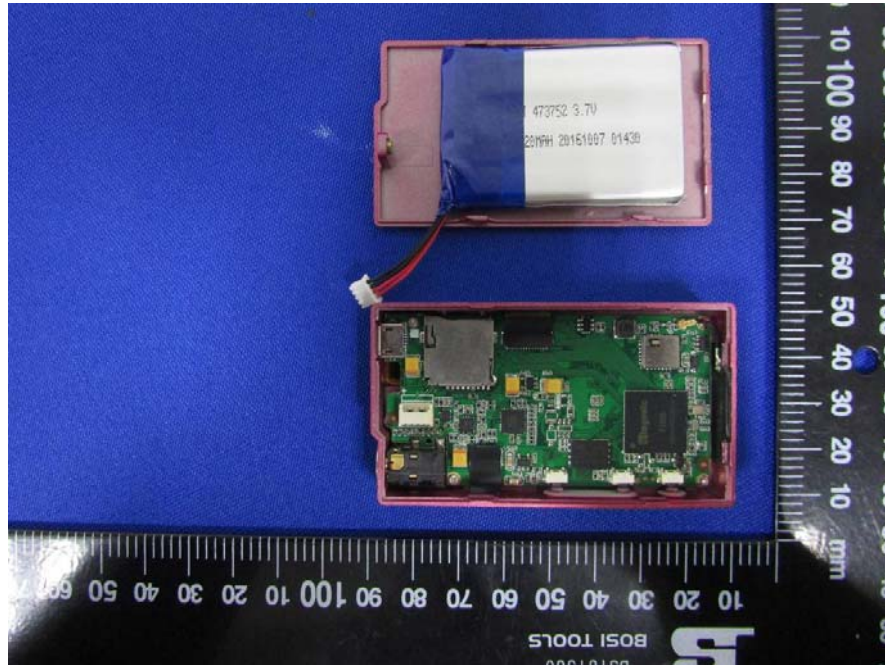


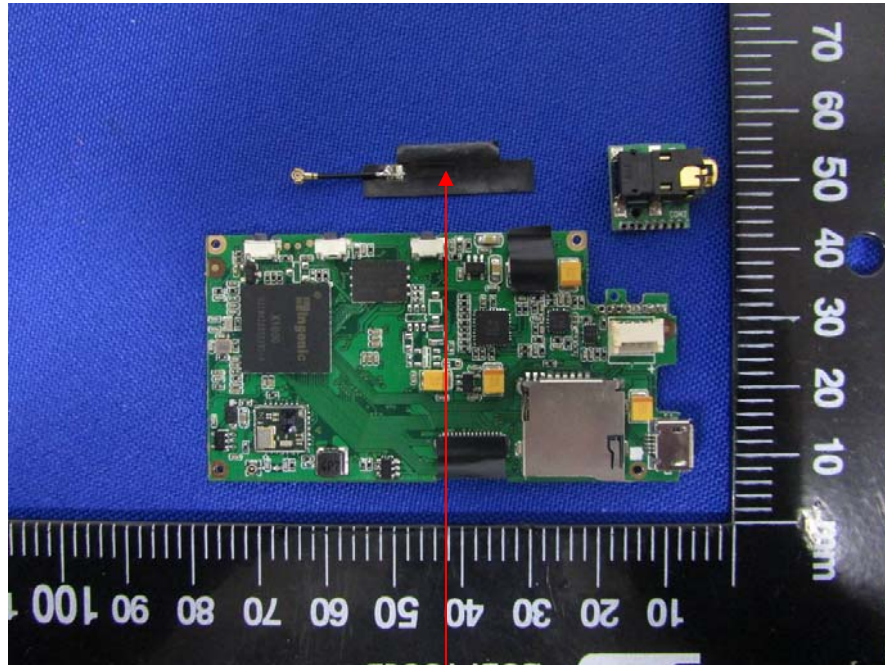
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dB/m	dB		
1	!	65.5727	24.84	11.29	36.13	40.00	-3.87	QP	
2		180.0165	22.78	10.70	33.48	43.50	-10.02	QP	
3	*	336.0351	28.56	13.76	42.32	46.00	-3.68	QP	
4		480.5276	20.33	16.91	37.24	46.00	-8.76	QP	



PHOTOS OF EUT







BT Antenna

****End of report****