

FCC REPORT

Applicant: SHENZHEN JR-MA ELECTRONICS CO., LTD.

Address of Applicant: Rm1712,Baoyunda Logistics information Building,Bao'an District,Shenzhen,518102,China

Equipment Under Test (EUT)

Product Name: Bluetooth Headphones

Model No.: i10s, Boyeera, JM

Trade mark: JR-MA

FCC ID: 2AS6A-I10S

Applicable standards: FCC CFR Title 47 Part 15 Subpart B

Date of sample receipt: 19 Mar., 2019

Date of Test: 19 Mar., to 08 Apr., 2019

Date of report issued: 08 Apr., 2019

Test Result: PASS *

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

Authorized Signature:



Bruce Zhang
Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the CCIS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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2 Version

Version No.	Date	Description
00	08 Apr., 2019	Original

Tested by:



Date:

08 Apr., 2019

Test Engineer

Reviewed by:



Date:

08 Apr., 2019

Project Engineer

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4 Test Summary

Test Item	Section in CFR 47	Result
Conducted Emission	Part 15.107	Pass
Radiated Emission	Part 15.109	Pass

Remark:
Pass: The EUT complies with the essential requirements in the standard.
N/A: The EUT not applicable of the test item.

5 General Information

5.1 Client Information

Applicant:	SHENZHEN JR-MA ELECTRONICS CO., LTD.
Address:	Rm1712,Baoyunda Logistics information Building,Bao'an District,Shenzhen,518102,China
Manufacturer/Factory:	SHENZHEN JR-MA ELECTRONICS CO., LTD.
Address:	Rm1712,Baoyunda Logistics information Building,Bao'an District,Shenzhen,518102,China

5.2 General Description of E.U.T.

Product Name:	Bluetooth Headphones
Model No.:	i10s, Boyeera, JM
Power supply:	Rechargeable Li-ion polymer Battery : Battery capacity of Headset : DC3.7V/30mAh Battery capacity of Box: DC3.7V/300mAh
DC adapter:	Battery capacity of Box: Input: 5V/2A Output: 5V/1A
Test Sample Condition:	The test samples were provided in good working order with no visible defects.
Remarks:	item No.: i10s, Boyeera, JM were identical inside, the electrical circui design, layout, components used and internal wiring, with only difference being model name.

5.3 Test Mode

Operating mode	Detail description
Charging mode	Keep the EUT in Charging mode(Worst case)
Playing mode	Keep the EUT in Playing mode
Wireless charging mode	Keep the EUT in Wireless charging mode

The sample was placed 0.8m above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.

5.4 Measurement Uncertainty

Parameters	Expanded Uncertainty
Conducted Emission (9kHz ~ 30MHz)	±2.22 dB (k=2)
Radiated Emission (9kHz ~ 30MHz)	±2.76 dB (k=2)
Radiated Emission (30MHz ~ 1000MHz)	±4.28 dB (k=2)
Radiated Emission (1GHz ~ 18GHz)	±5.72 dB (k=2)
Radiated Emission (18GHz ~ 40GHz)	±2.88 dB (k=2)

5.5 Description of Support Units

Manufacturer	Description	Model	Serial Number	FCC ID/DoC
NAKAMICHI	Bluetooth earphone	T8	N/A	FCC ID
DELL	PC	OPTIPLEX745	N/A	DoC
DELL	MONITOR	E178FPC	N/A	DoC
DELL	KEYBOARD	SK-8115	N/A	DoC
DELL	MOUSE	MOC5UO	N/A	DoC
ulefone	Wireless Charger	UF002	N/A	N/A

5.6 Related Submittal(s) / Grant (s)

This is an original grant, no related submittals and grants.

5.7 Description of Cable Used

Cable Type	Description	Length	From	To
Detached USB Cable	Unshielded	0.5m	EUT	Adapter

5.8 Laboratory Facility

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

- **FCC - Registration No.: 727551**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been accredited as a testing laboratory by FCC (Federal Communications Commission). The Registration No. is 727551.

- **IC - Registration No.: 10106A-1**

The 3m Semi-anechoic chamber of Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

- **CNAS - Registration No.: CNAS L6048**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L6048.

- **A2LA - Registration No.: 4346.01**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: <https://portal.a2la.org/scopepdf/4346-01.pdf>

5.9 Laboratory Location

Shenzhen Zhongjian Nanfang Testing Co., Ltd.

Address: No. B-C, 1/F., Building 2, Laodong No.2 Industrial Park, Xixiang Road, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755-23118282, Fax: +86-755-23116366

Email: info@ccis-cb.com, Website: http://www.ccis-cb.com

5.10 Test Instruments list

Radiated Emission:					
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
3m SAC	SAEMC	9m*6m*6m	966	07-22-2017	07-21-2020
Loop Antenna	SCHWARZBECK	FMZB1519B	00044	03-18-2019	03-17-2020
BiConiLog Antenna	SCHWARZBECK	VULB9163	497	03-18-2019	03-17-2020
Horn Antenna	SCHWARZBECK	BBHA9120D	916	03-18-2019	03-17-2020
Horn Antenna	SCHWARZBECK	BBHA9120D	1805	06-22-2017	06-21-2020
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170582	11-21-2018	11-20-2019
EMI Test Software	AUDIX	E3	Version: 6.110919b		
Pre-amplifier	HP	8447D	2944A09358	03-18-2019	03-17-2020
Pre-amplifier	CD	PAP-1G18	11804	03-18-2019	03-17-2020
Spectrum analyzer	Rohde & Schwarz	FSP30	101454	03-18-2019	03-17-2020
Spectrum analyzer	Rohde & Schwarz	FSP40	100363	11-21-2018	11-20-2019
EMI Test Receiver	Rohde & Schwarz	ESRP7	101070	03-18-2019	03-17-2020
Cable	ZDECL	Z108-NJ-NJ-81	1608458	03-18-2019	03-17-2020
Cable	MICRO-COAX	MFR64639	K10742-5	03-18-2019	03-17-2020
Cable	SUHNER	SUCOFLEX100	58193/4PE	03-18-2019	03-17-2020

Conducted Emission:					
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
EMI Test Receiver	Rohde & Schwarz	ESCI	101189	03-18-2019	03-17-2020
Pulse Limiter	SCHWARZBECK	OSRAM 2306	9731	03-18-2019	03-17-2020
LISN	CHASE	MN2050D	1447	03-18-2019	03-17-2020
LISN	Rohde & Schwarz	ESH3-Z5	8438621/010	07-21-2018	07-20-2019
Cable	HP	10503A	N/A	03-18-2019	03-17-2020
EMI Test Software	AUDIX	E3	Version: 6.110919b		

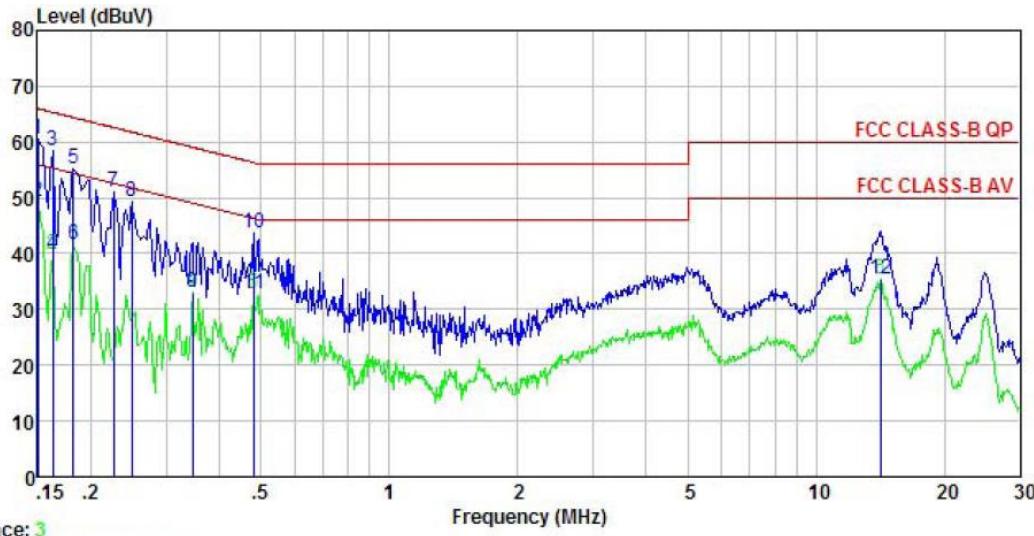
6 Test results and Measurement Data

6.1 Conducted Emission

Test Requirement:	FCC Part 15 B Section 15.107		
Test Method:	ANSI C63.4:2014		
Test Frequency Range:	150kHz to 30MHz		
Class / Severity:	Class B		
Receiver setup:	RBW=9kHz, VBW=30kHz		
Limit:	Frequency range (MHz)	Limit (dB μ V)	
		Quasi-peak	Average
	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	0.5-30	60	50
* Decreases with the logarithm of the frequency.			
Test setup:	<p>Reference Plane</p> <p>LISN</p> <p>AUX Equipment</p> <p>E.U.T.</p> <p>Test table/Insulation plane</p> <p>EMI Receiver</p> <p>Filter</p> <p>AC power</p> <p>Remark E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m</p>		
Test procedure	<ol style="list-style-type: none"> 1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network(L.I.S.N.). They provide a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2014 on conducted measurement. 		
Test Instruments:	Refer to section 5.9 for details		
Test mode:	Refer to section 5.3 for details		
Test results:	Pass		

Measurement data:

Product name:	Bluetooth Headphones	Product model:	i10s
Test by:	Yaro	Test mode:	PC mode
Test frequency:	150 kHz ~ 30 MHz	Phase:	Line
Test voltage:	AC 120 V/60 Hz	Environment:	Temp: 22.5°C Huni: 55%



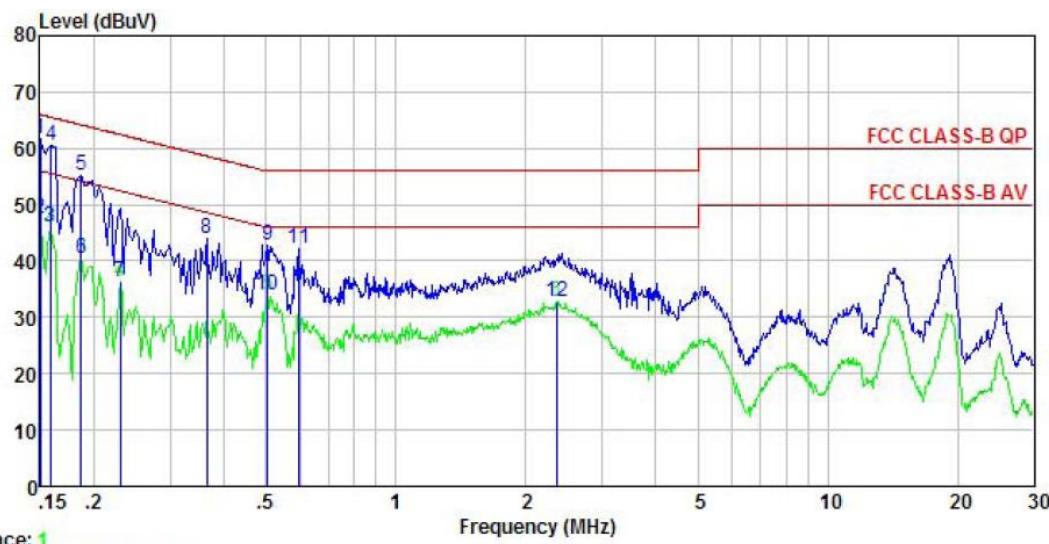
Remark :

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.150	49.69	0.18	10.78	60.65	66.00	-5.35	QP
2	0.150	38.42	0.18	10.78	49.38	56.00	-6.62	Average
3	0.162	47.39	0.17	10.77	58.33	65.34	-7.01	QP
4	0.162	28.99	0.17	10.77	39.93	55.34	-15.41	Average
5	0.182	44.28	0.16	10.77	55.21	64.42	-9.21	QP
6	0.182	30.56	0.16	10.77	41.49	54.42	-12.93	Average
7	0.226	40.04	0.14	10.75	50.93	62.61	-11.68	QP
8	0.249	38.39	0.14	10.75	49.28	61.78	-12.50	QP
9	0.346	22.31	0.12	10.73	33.16	49.05	-15.89	Average
10	0.481	32.72	0.12	10.75	43.59	56.32	-12.73	QP
11	0.481	21.85	0.12	10.75	32.72	46.32	-13.60	Average
12	14.138	24.18	0.32	10.91	35.41	50.00	-14.59	Average

Notes:

- An initial pre-scan was performed on the line and neutral lines with peak detector.
- Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
- Final Level = Receiver Read level + LISN Factor + Cable Loss.

Product name:	Bluetooth Headphones	Product model:	i10s
Test by:	Yaro	Test mode:	PC mode
Test frequency:	150 kHz ~ 30 MHz	Phase:	Neutral
Test voltage:	AC 120 V/60 Hz	Environment:	Temp: 22.5°C Huni: 55%



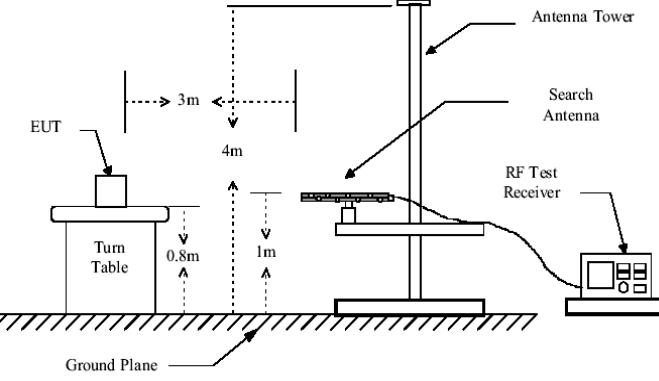
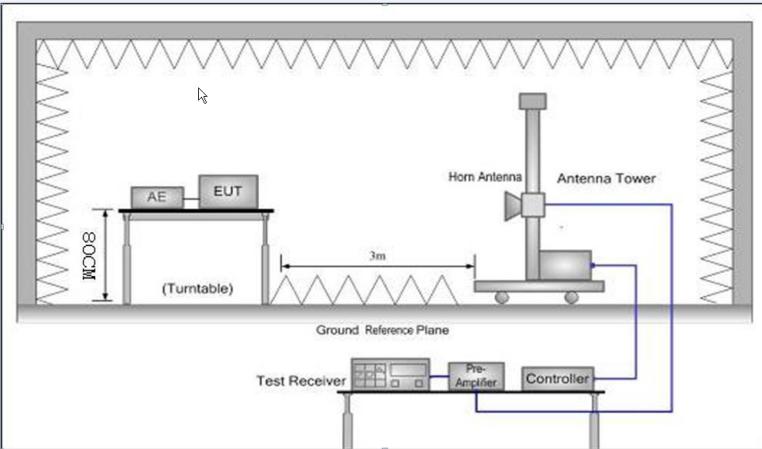
Remark :

Freq	Read	LISN	Cable	Limit	Over	Over	
	Level	Factor	Loss				Remark
	MHz	dBuV	dB	dB	dBuV	dB	dB
1	0.150	49.84	0.99	10.78	61.61	66.00	-4.39 QP
2	0.150	35.81	0.99	10.78	47.58	56.00	-8.42 Average
3	0.158	34.26	0.98	10.77	46.01	55.56	-9.55 Average
4	0.159	48.73	0.98	10.77	60.48	65.52	-5.04 QP
5	0.186	43.53	0.94	10.76	55.23	64.20	-8.97 QP
6	0.186	28.80	0.94	10.76	40.50	54.20	-13.70 Average
7	0.230	24.54	0.94	10.75	36.23	52.44	-16.21 Average
8	0.365	32.35	0.97	10.73	44.05	58.61	-14.56 QP
9	0.505	31.10	0.97	10.76	42.83	56.00	-13.17 QP
10	0.505	22.18	0.97	10.76	33.91	46.00	-12.09 Average
11	0.595	30.45	0.97	10.77	42.19	56.00	-13.81 QP
12	2.358	20.88	0.98	10.94	32.80	46.00	-13.20 Average

Notes:

- An initial pre-scan was performed on the line and neutral lines with peak detector.
- Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
- Final Level =Receiver Read level + LISN Factor + Cable Loss.

6.2 Radiated Emission

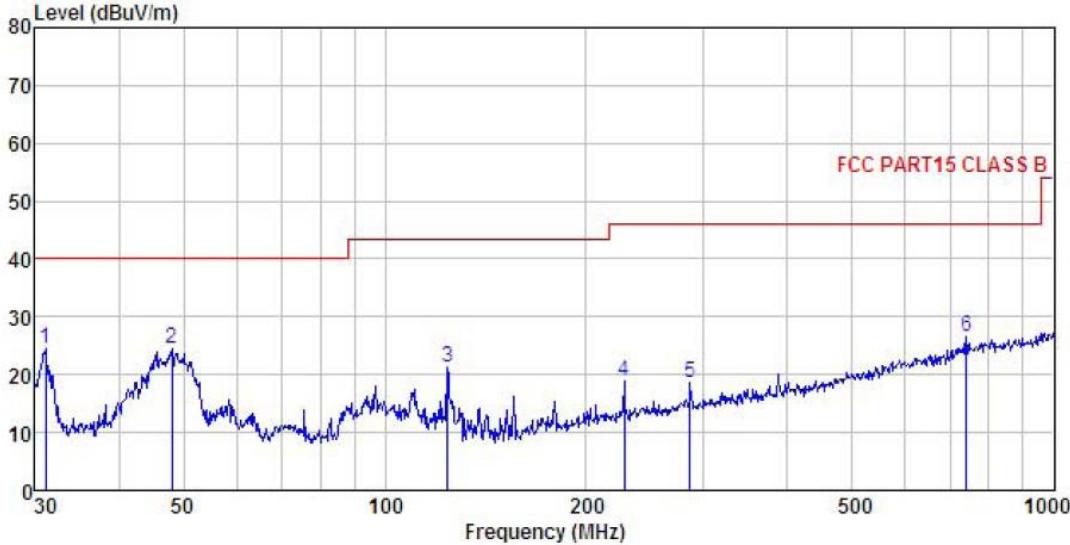
Test Requirement:	FCC Part 15 B Section 15.109			
Test Method:	ANSI C63.4:2014			
Test Frequency Range:	30MHz to 6000MHz			
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)			
Receiver setup:	Frequency	Detector	RBW	VBW
	30MHz-1GHz	Quasi-peak	120kHz	300kHz
	Above 1GHz	Peak	1MHz	3MHz
Limit:	RMS	1MHz	3MHz	Average Value
	Frequency	Limit (dBuV/m @3m)		Remark
	30MHz-88MHz	40.0		Quasi-peak Value
88MHz-216MHz		43.5		Quasi-peak Value
216MHz-960MHz		46.0		Quasi-peak Value
960MHz-1GHz		54.0		Quasi-peak Value
Above 1GHz		54.0		Average Value
		74.0		Peak Value
Test setup:	<p>Below 1GHz</p>  <p>Above 1GHz</p> 			

Test Procedure:	<ol style="list-style-type: none">1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
Test Instruments:	Refer to section 5.9 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed
Remark:	All of the observed value above 6GHz were the noise floor , which were no recorded

Measurement Data:

Below 1GHz:

Product Name:	Bluetooth Headphones			Product model:	i10s		
Test By:	Yaro			Test mode:	PC mode		
Test Frequency:	30 MHz ~ 1 GHz			Polarization:	Vertical		
Test Voltage:	AC 120V/60Hz			Environment:	Temp: 24°C Huni: 57%		



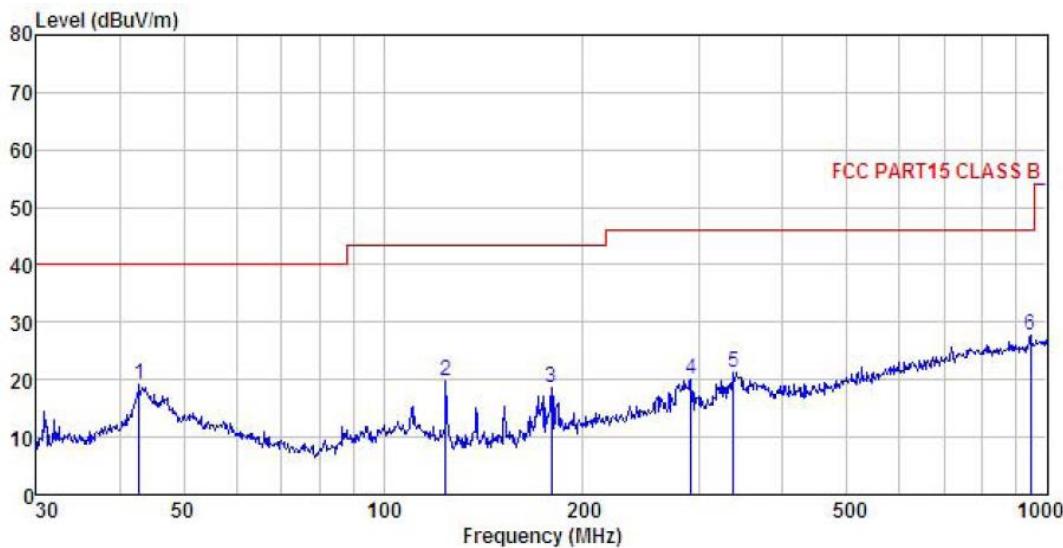
REMARK :

Freq	ReadAntenna Level	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	31.071	42.91	10.85	0.78	29.97	24.57	40.00 -15.43 QP
2	47.994	39.07	13.94	1.27	29.84	24.44	40.00 -15.56 QP
3	124.133	38.89	9.57	2.21	29.36	21.31	43.50 -22.19 QP
4	227.691	32.17	12.55	2.84	28.66	18.90	46.00 -27.10 QP
5	285.978	30.67	13.52	2.90	28.47	18.62	46.00 -27.38 QP
6	739.661	30.04	20.76	4.32	28.52	26.60	46.00 -19.40 QP

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product Name:	Bluetooth Headphones	Product model:	i10s
Test By:	Yaro	Test mode:	PC mode
Test Frequency:	30 MHz ~ 1 GHz	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24°C Huni: 57%

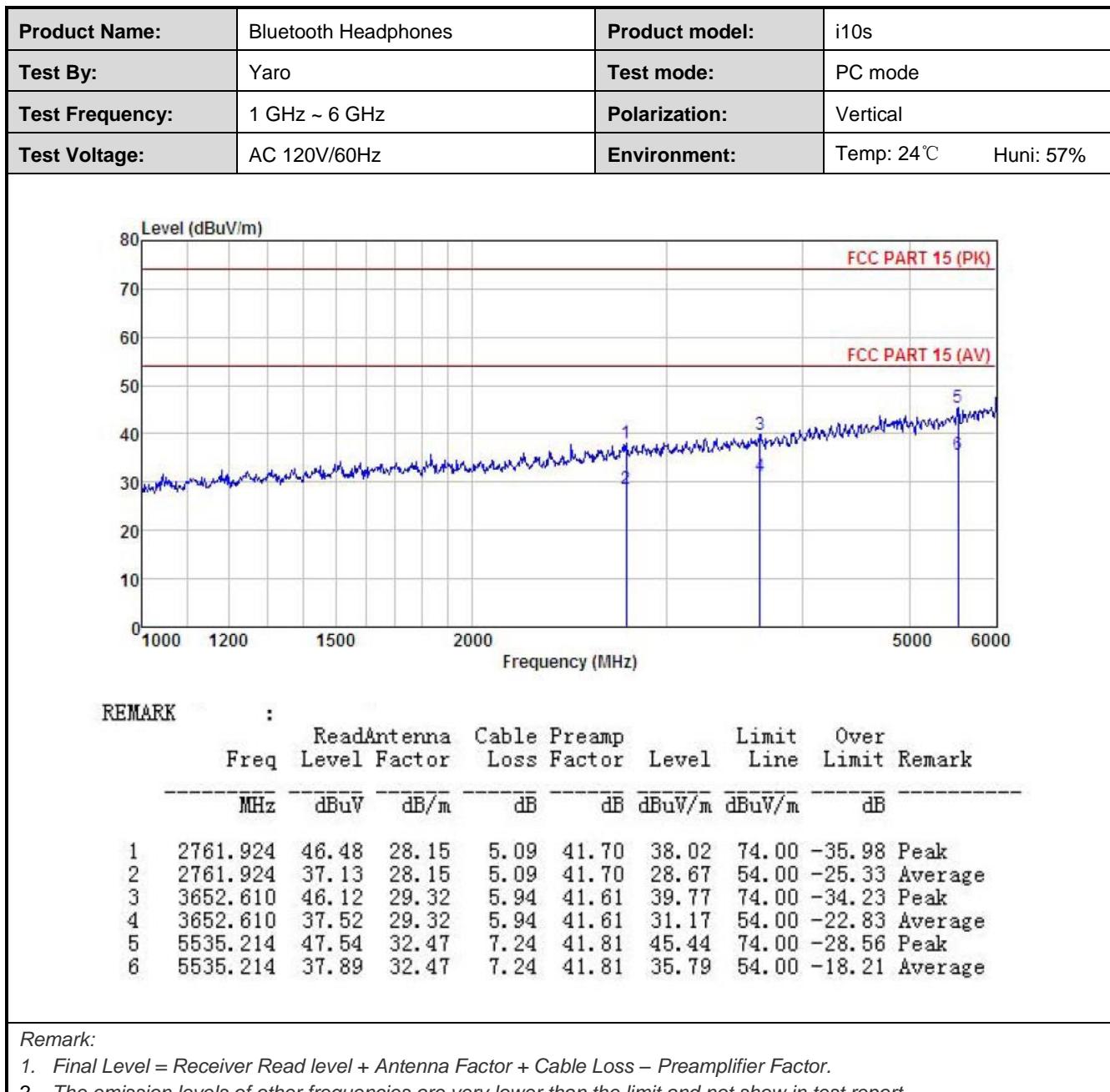
**REMARK**

Freq	ReadAntenna		Cable		Level	Limit	Over	Remark
	Freq	Level	Antenna	Preamp				
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	42.900	34.50	13.33	1.25	29.88	19.20	40.00	-20.80 QP
2	124.133	37.33	9.57	2.21	29.36	19.75	43.50	-23.75 QP
3	179.386	34.99	9.78	2.73	28.98	18.52	43.50	-24.98 QP
4	291.036	32.03	13.55	2.92	28.47	20.03	46.00	-25.97 QP
5	337.216	32.48	14.36	3.06	28.53	21.37	46.00	-24.63 QP
6	945.440	28.97	22.39	4.16	27.74	27.78	46.00	-18.22 QP

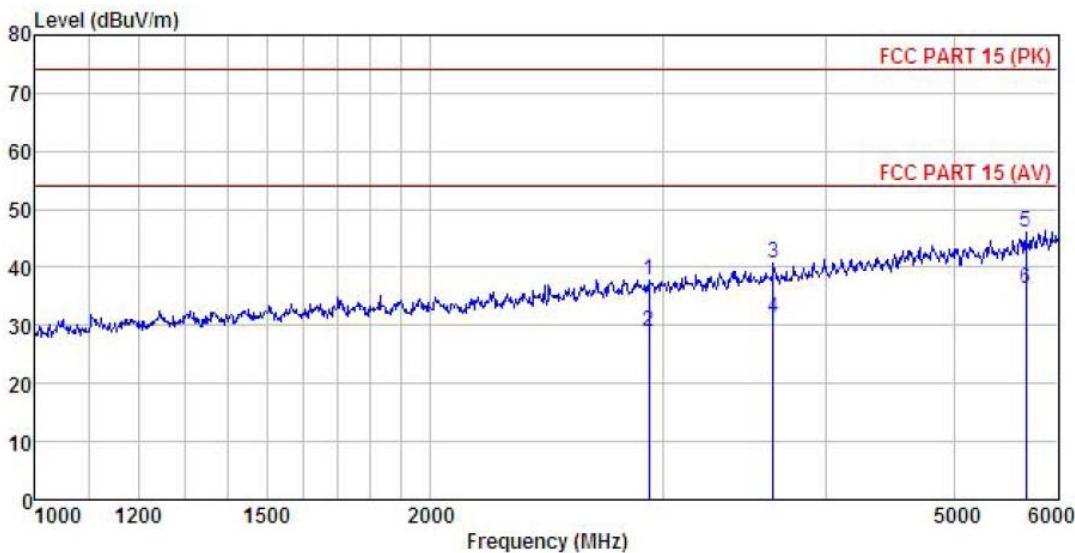
Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

Above 1GHz:



Product Name:	Bluetooth Headphones	Product model:	i10s
Test By:	Yaro	Test mode:	PC mode
Test Frequency:	1 GHz ~ 6 GHz	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24°C Huni: 57%



REMARK :		Read	Antenna	Cable	Preamp	Limit	Over		
Freq		Level	Factor	Loss	Factor	Level	Line	Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2930.156	45.64	28.47	5.28	41.56	37.83	74.00	-36.17	Peak
2	2930.156	36.72	28.47	5.28	41.56	28.91	54.00	-25.09	Average
3	3646.072	47.25	29.30	5.94	41.61	40.88	74.00	-33.12	Peak
4	3646.072	37.58	29.30	5.94	41.61	31.21	54.00	-22.79	Average
5	5675.819	47.55	32.73	7.55	41.89	45.94	74.00	-28.06	Peak
6	5675.819	37.96	32.73	7.55	41.89	36.35	54.00	-17.65	Average

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.
2. The emission levels of other frequencies are very lower than the limit and not show in test report.