

## FCC AND IC CERTIFICATION TEST REPORT

### FOR

<b>Applicant</b>	:	ION Audio, LLC
<b>Address</b>	:	200 Scenic View Drive, Cumberland, RI 02864 U.S.A.
<b>Equipment under Test</b>	:	Compact iPX7 Wireless Speaker
<b>Model No.</b>	:	iSP74 Dunk
<b>Project Code</b>	:	iSP74
<b>Trade Mark</b>	:	ION
<b>FCC ID</b>	:	2AB3E-ISP74
<b>IC</b>	:	10541A-ISP74
<b>Manufacturer</b>	:	ION Audio, LLC
<b>Address</b>	:	200 Scenic View Drive, Cumberland, RI 02864 U.S.A.

**Issued By: Dongguan Dongdian Testing Service Co., Ltd.**

**Add:** No. 17, Zongbu Road 2, Songshan Lake Sci&Tech, Industry Park, Dongguan  
City, Guangdong Province, China, 523808

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# REPORT

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## TEST REPORT DECLARE

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<b>Model No.</b>	:	iSP74 Dunk
<b>Trade Mark</b>	:	ION
<b>Manufacturer</b>	:	ION Audio, LLC
<b>Address</b>	:	200 Scenic View Drive, Cumberland, RI 02864 U.S.A.

**Test Standard Used:**

FCC Rules and Regulations Part 15 Subpart C, RSS-247 Issue 2 February 2017.

**Test procedure used:**

ANSI C63.10:2013, RSS-Gen Issue 5, Apr. 2018.

**We Declare:**

The equipment described above is tested by Dongguan Dongdian Testing Service Co., Ltd and in the configuration tested the equipment complied with the standards specified above. The test results are contained in this test report and Dongguan Dongdian Testing Service Co., Ltd is assumed of full responsibility for the accuracy and completeness of these tests.

**After test and evaluation, our opinion is that the equipment provided for test compliance with the requirement of the above FCC standards.**

<b>Report No.:</b>	DDT-R18051508-1E2		
<b>Date of Receipt:</b>	May 29, 2018	<b>Date of Test:</b>	May 29, 2018 ~ Jun. 08, 2018

**Prepared By:**

*Sam Li*

**Sam Li/Engineer**

**Approved By:**



**Damon Hu/EMC Manager**

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Dongguan Dongdian Testing Service Co., Ltd.

## Revision history

Rev.	Revisions	Issue Date	Revised By
---	Initial issue	Jun. 08, 2018	

## 1. Summary of test results

Description of Test Item	Standard	Results
Radiated Emission	FCC Part 15: 15.209 FCC Part 15: 15.247(d) ANSI C63.10:2013 RSS-247 Issue 2 RSS-Gen Issue 5 RSS-Gen Issue 5	PASS
Power Line Conducted Emissions	FCC Part 15: 15.207 ANSI C63.10:2013 RSS-Gen Issue 5	PASS

Note: This report change the IC of power amplifier base on the original report: STS1606054F01-01(tested by Shenzhen STS Test Services Co., Ltd) and DDT-R17Q0104-4E2, This change don't influence the RF performance, so radiated emission(below 1GHz) and power line conducted emissions were tested and recorded in this report only, and the original test data were retained in this report.

## 2. General test information

### 2.1. Description of EUT

EUT* Name	: Compact iPX7 Wireless Speaker
Model Number	: iSP74 Dunk
EUT function description	: Please reference user manual of this device
Power supply	: DC 5V from external AC Adapter Lithium-ion polymer (3.7V/ 1500mAh) built-in battery
Radio Specification	: Bluetooth V2.1+EDR
Operation frequency	: 2402MHz-2480MHz
Modulation	: GFSK, $\pi/4$ DQPSK, 8-DPSK
Data rate	: 1Mbps, 2Mbps, 3Mbps
Antenna Type	: Integrated antenna, maximum PK gain: 0dBi
Sample Type	: Series production

Note: EUT is the ab. of equipment under test.

Channel information					
Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2402MHz	28	2429MHz	55	2456MHz
2	2403MHz	29	2430MHz	56	2457MHz
3	2404MHz	30	2431MHz	57	2458MHz
4	2405MHz	31	2432MHz	58	2459MHz
5	2406MHz	32	2433MHz	59	2460MHz
6	2407MHz	33	2434MHz	60	2461MHz
7	2408MHz	34	2435MHz	61	2462MHz
8	2409MHz	35	2436MHz	62	2463MHz
9	2410MHz	36	2437MHz	63	2464MHz
10	2411MHz	37	2438MHz	64	2465MHz
11	2412MHz	38	2439MHz	65	2466MHz
12	2413MHz	39	2440MHz	66	2467MHz
13	2414MHz	40	2441MHz	67	2468MHz
14	2415MHz	41	2442MHz	68	2469MHz
15	2416MHz	42	2443MHz	69	2470MHz
16	2417MHz	43	2444MHz	70	2471MHz
17	2418MHz	44	2445MHz	71	2472MHz
18	2419MHz	45	2446MHz	72	2473MHz
19	2420MHz	46	2447MHz	73	2474MHz
20	2421MHz	47	2448MHz	74	2475MHz
21	2422MHz	48	2449MHz	75	2476MHz
22	2423MHz	49	2450MHz	76	2477MHz
23	2424MHz	50	2451MHz	77	2478MHz
24	2425MHz	51	2452MHz	78	2479MHz
25	2426MHz	52	2453MHz	79	2480MHz
26	2427MHz	53	2454MHz		
27	2428MHz	54	2455MHz		

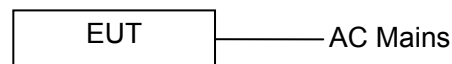
## 2.2. Accessories of EUT

Description of Accessories	Manufacturer	Model number	Parameter	Remark
N/A	N/A	N/A	N/A	N/A

## 2.3. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	EMC Compliance	Other
AC Adapter	Harman	GH5V-1C-1U-N	N/A	Input: AC 100-240V, 50/60Hz Output: DC 5V 1A

## 2.4. Block diagram of EUT configuration for test



The test software was used to control EUT work in Continuous Tx mode, and select test channel, wireless mode as below table.

Test software: BlueSuite2.6.0.exe.

Tested mode, channel, information		
Mode	Channel	Frequency (MHz)
GFSK hopping on Tx mode	CH0 to CH78	2402 to 2480
$\pi/4$ DQPSK hopping on Tx mode	CH0 to CH78	2402 to 2480
8-DPSK hopping on Tx mode	CH0 to CH78	2402 to 2480
GFSK hopping off Tx mode	CH0	2402
	CH39	2441
	CH78	2480
$\pi/4$ DQPSK hopping off Tx mode	CH0	2402
	CH39	2441
	CH78	2480
8-DPSK hopping off Tx mode	CH0	2402
	CH39	2441
	CH78	2480

Note: For  $\pi/4$  DQPSK its same modulation type with 8-DPSK, and based exploratory test, there is no significant difference of that two types test result, so except output power, all other items final test was only performed with the worse case 8-DPSK and GFSK.

## 2.5. Deviations of test standard

No Deviation.

## 2.6. Test environment conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature range:	21-25℃
Humidity range:	40-75%
Pressure range:	86-106kPa

## 2.7. Test laboratory

Dongguan Dongdian Testing Service Co., Ltd

Add: No. 17, Zongbu Road 2, Songshan Lake Sci&Tech, Industry Park, Dongguan City,  
Guangdong Province, China, 523808

Tel: +86-0769-89201699, <http://www.dgddt.com>, Email: ddt@dgddt.com

CNAS Accreditation No. L6451; A2LA Accreditation No. 3870.01

Designation Number: CN1182; Test Firm Registration Number: 540522

Industry Canada site registration number: 10288A-1

## 2.8. Measurement uncertainty

Test Item	Uncertainty
Bandwidth	1.1%
Peak Output Power(Conducted)(Spectrum analyzer)	0.86dB(10 MHz ≤ f < 3.6GHz); 1.38dB(3.6GHz ≤ f < 8GHz)
Peak Output Power(Conducted)(Power Sensor)	0.74dB
Power Spectral Density	0.74dB(10 MHz ≤ f < 3.6GHz); 1.38dB(3.6GHz ≤ f < 8GHz)
Frequencies Stability	6.7 × 10 <sup>-8</sup> (Antenna couple method) 5.5 × 10 <sup>-8</sup> (Conducted method)
Conducted spurious emissions	0.86dB(10 MHz ≤ f < 3.6GHz); 1.40dB(3.6GHz ≤ f < 8GHz) 1.66dB(8GHz ≤ f < 22GHz)
Uncertainty for radio frequency (RBW<20KHz)	3×10-8
Temperature	0.4℃
Humidity	2%
Uncertainty for Radiation Emission test (30MHz-1GHz)	4.70 dB (Antenna Polarize: V) 4.84 dB (Antenna Polarize: H)
Uncertainty for Radiation Emission test (1GHz-26GHz)	4.10dB(1-6GHz) 4.40dB (6GHz-18GHz) 3.54dB (18GHz-26GHz)
Uncertainty for Power line conduction emission test	3.32dB (150KHz-30MHz)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	



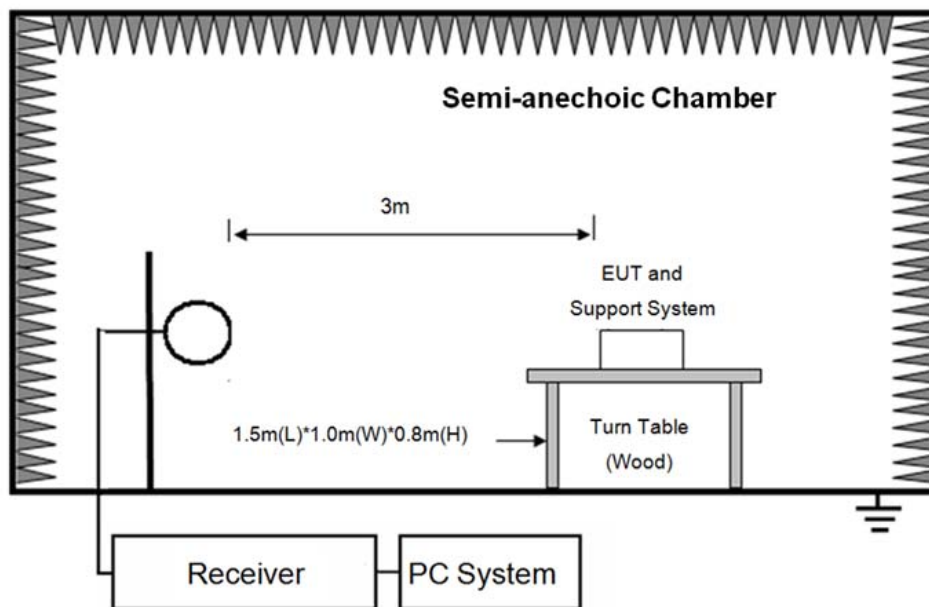
### 3. Equipment used during test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
<b>Radiation 2#chamber (below 1G)</b>					
Test Receiver	R&S	ESCI	100551	Oct. 21, 2017	1 Year
Trilog Broadband Antenna	Schwarzbeck	VULB 9163	9163-994	Oct. 17, 2017	1 Year
Pre-amplifier	SONOMA	310N	187133	Jun. 16, 2017	1 Year
RF Cable	MI Cable	N/A	DDT-F02-233	Oct. 21, 2017	1 Year
RF Cable	MI Cable	N/A	DDT-F02-234	Oct. 21, 2017	1 Year
RF Cable	MI Cable	N/A	DDT-F02-235	Oct. 21, 2017	1 Year
Test software	Audix	E3	V 6.11111b	N/A	N/A
<b>Power Line Conducted Emissions Test</b>					
Test Receiver	R&S	ESU8	100316	Oct. 21, 2017	1 Year
LISN 1	R&S	ENV216	101109	Oct. 21, 2017	1 Year
LISN 2	R&S	ESH2-Z5	100309	Oct. 21, 2017	1 Year
Pulse Limiter	R&S	ESH3-Z2	101242	Oct. 21, 2017	1 Year
CE Cable 1	HUBSER	ESU8/RF2	W10.01	Oct. 21, 2017	1 Year
Test software	Audix	E3	V 6.11111b	N/A	N/A

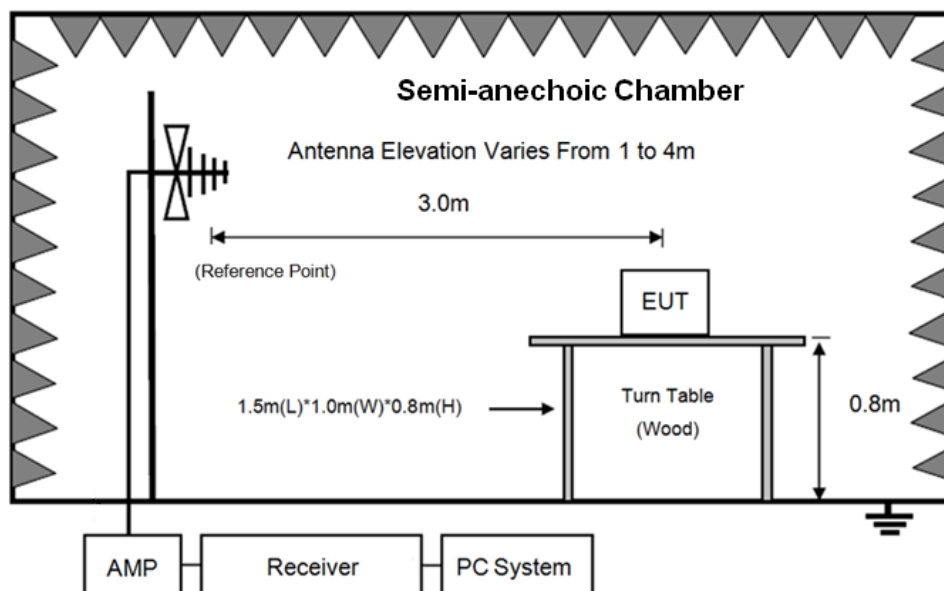
## 4. Radiated emission

### 4.1. Block diagram of test setup

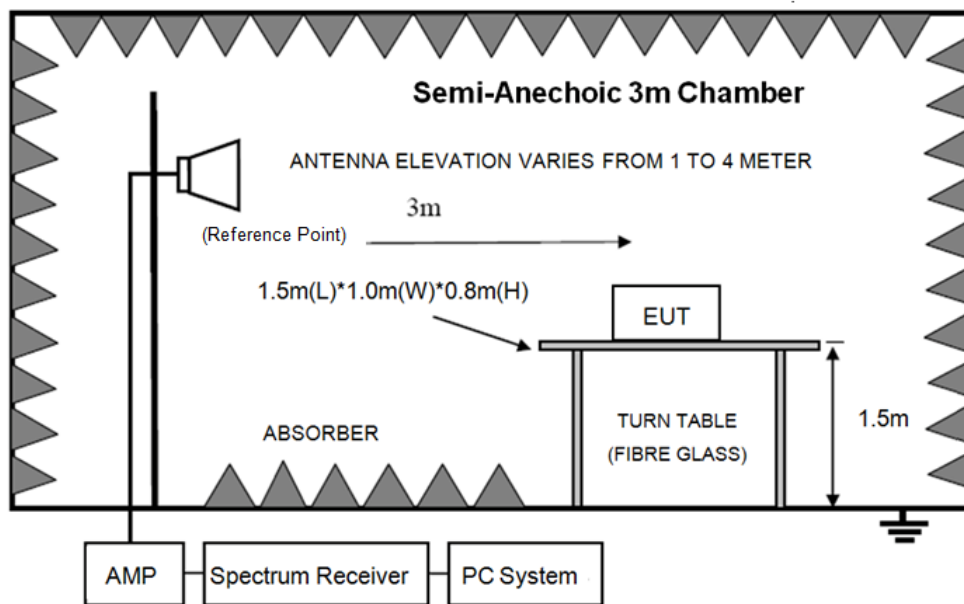
In 3m Anechoic Chamber Test Setup Diagram for 9kHz-30MHz



In 3m Anechoic Chamber Test Setup Diagram for below 1GHz



In 3m Anechoic Chamber Test Setup Diagram for frequency above 1GHz



Note: For harmonic emissions test a appropriate high pass filter was inserted in the input port of AMP.

## 4.2. Limit

(1) FCC 15.205 Restricted frequency band

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
10.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.1772&4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.2072&4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.G
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	( <sup>2</sup> )
13.36-13.41			

## (2) FCC 15.209 Limit.

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		$\mu\text{V/m}$	$\text{dB}(\mu\text{V})/\text{m}$
0.009 ~ 0.490	300	$2400/F(\text{KHz})$	$67.6-20\log(F)$
0.490 ~ 1.705	30	$24000/F(\text{KHz})$	$87.6-20\log(F)$
1.705 ~ 30.0	30	30	29.54
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000	3	74.0 $\text{dB}(\mu\text{V})/\text{m}$ (Peak) 54.0 $\text{dB}(\mu\text{V})/\text{m}$ (Average)	

Note: (1) The emission limits shown in the above table are based on measurements employing a CISPR QP detector except for the frequency bands 9-90KHz, 110-490KHz and above 1000MHz. Radiated emissions limits in these three bands are based on measurements employing an average detector.

(2) At frequencies below 30MHz, measurement may be performed at a distance closer than that specified, and the limit at closer measurement distance can be extrapolated by below formula:

$$\text{Limit}_{3\text{m}}(\text{dB}\mu\text{V}/\text{m}) = \text{Limit}_{30\text{m}}(\text{dB}\mu\text{V}/\text{m}) + 40\log(30\text{m}/3\text{m})$$

## (3) Limit for this EUT

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

#### 4.3. Test Procedure

(1) EUT was placed on a non-metallic table, 150 cm above the ground plane inside a semi-anechoic chamber.

(2) Test antenna was located 3m from the EUT on an adjustable mast, and the antenna used as below table.

Test frequency range	Test antenna used
9kHz-30MHz	Active Loop antenna
30MHz-1GHz	Trilog Broadband Antenna
1GHz-18GHz	Double Ridged Horn Antenna(1GHz-18GHz)
18GHz-40GHz	Horn Antenna(18GHz-40GHz)

According ANSI C63.10:2013 clause 6.4.4.2 and 6.5.3, for measurements below 30 MHz, the loop antenna was positioned with its plane vertical from the EUT and rotated about its vertical axis for maximum response at each azimuth position around the EUT. And the loop antenna also be positioned with its plane horizontal at the specified distance from the EUT. The center of the loop is 1 m above the ground. For measurement above 30MHz, the Trilog Broadband Antenna or Horn Antenna was located 3m from EUT, Measurements were made with the antenna positioned in both the horizontal and vertical planes of Polarization, and the measurement antenna was

varied from 1 m to 4 m. in height above the reference ground plane to obtain the maximum signal strength.

(3) Below pre-scan procedure was first performed in order to find prominent frequency spectrum radiated emissions from 9kHz to 25GHz:

(a) Scanning the peak frequency spectrum with the antenna specified in step (3), and the EUT was rotated 360 degrees, the antenna height was varied from 1m to 4m (Except loop antenna, it's fixed 1m above ground.)

(b) Change work frequency or channel of device if practicable.

(c) Change modulation type of device if practicable.

(d) Change power supply range from 85% to 115% of the rated supply voltage

(e) Rotated EUT though three orthogonal axes to determine the attitude of EUT arrangement produces highest emissions.

Spectrum frequency from 9kHz to 25GHz (tenth harmonic of fundamental frequency) was investigated, and no any obvious emission were detected from 18GHz to 25GHz, so below final test was performed with frequency range from 9kHz to 18GHz.

(4) For final emissions measurements at each frequency of interest, the EUT was rotated and the antenna height was varied between 1m and 4m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.10 2013 on Radiated Emission test.

(5) The emissions from 9kHz to 1GHz were measured based on CISPR QP detector except for the frequency bands 9-90kHz, 110-490kHz, for emissions from 9kHz-90kHz,110kHz-490kHz and above 1GHz were measured based on average detector, for emissions above 1GHz, peak emissions also be measured and need comply with Peak limit.

(6) The emissions from 9kHz to 1GHz, QP or average values were measured with EMI receiver with below RBW.

Frequency band	RBW
9kHz-150kHz	200Hz
150kHz-30MHz	9kHz
30MHz-1GHz	120kHz

(7) For emissions above 1GHz, both Peak and Average level were measured with Spectrum Analyzer, and the RBW is set at 1MHz, VBW is set at 3MHz for Peak measure; RMS detector RBW 1MHz VBW 3MHz for Average measure (according ANSI C63.10:2013 clause 4.2.3.2.3 procedure for average measure).

(8) X axis, Y axis, Z axis are tested, and worse setup X axis is reported.

#### 4.4. Test result

**PASS. (See below detailed test result)**

All the emissions except fundamental emission from 9 kHz to 25GHz were comply with 15.209 limits.

Note1: According exploratory test no any obvious emission was detected from 9kHz to 30MHz and 18GHz to 25GHz, so the final test was performed with frequency range from 30MHz to 18GHz and recorded in below.

Note2: For emissions below 1GHz, according exploratory explorer test, when change Tx mode and channel, have no distinct influence on emissions level, so for emissions below 1GHz, the final test was only performed with EUT working in GFSK, Tx 2441MHz mode.

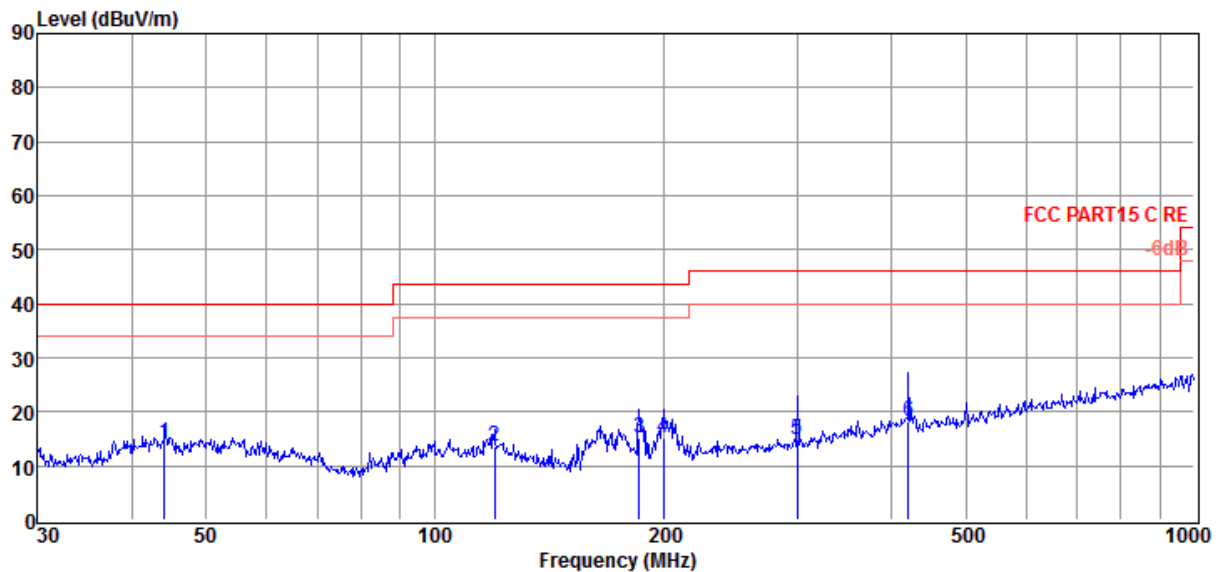
Note3: For emissions above 1GHz. If peak results comply with AV limit, AV Result is deemed to comply with AV limit.

**Radiated Emission test (below 1GHz)**

## **TR-4-E-009 Radiated Emission Test Result**

**Test Site** : DDT 3m Chamber 2# **E:\2018 RE2# Report Data\Y20180515-1\RE.EM6**  
**Test Date** : 2018-06-01 **Tested By** : Shaul  
**EUT** : Compact iPX7 Wireless Speaker **Model Number** : iSP74 Dunk  
**Power Supply** : DC 3.7V **Test Mode** : Tx mode  
**Condition** : Temp:24.5°C, Humi:55%,  
 Press:100.1kPa **Antenna/Distance** : 2017 VULB9163 2#/3m/HORIZONTAL  
**Memo** :

Data: 2



Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	44.12	28.30	14.37	32.04	3.67	14.30	40.00	-25.70	QP	HORIZONTAL
2	119.86	31.06	10.45	31.91	4.14	13.74	43.50	-29.76	QP	HORIZONTAL
3	185.79	30.33	12.49	31.91	4.38	15.29	43.50	-28.21	QP	HORIZONTAL
4	199.99	31.32	11.40	31.91	4.45	15.26	43.50	-28.24	QP	HORIZONTAL
5	300.37	28.87	13.05	31.79	4.65	14.78	46.00	-31.22	QP	HORIZONTAL
6	420.58	29.17	15.38	31.69	5.34	18.20	46.00	-27.80	QP	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.

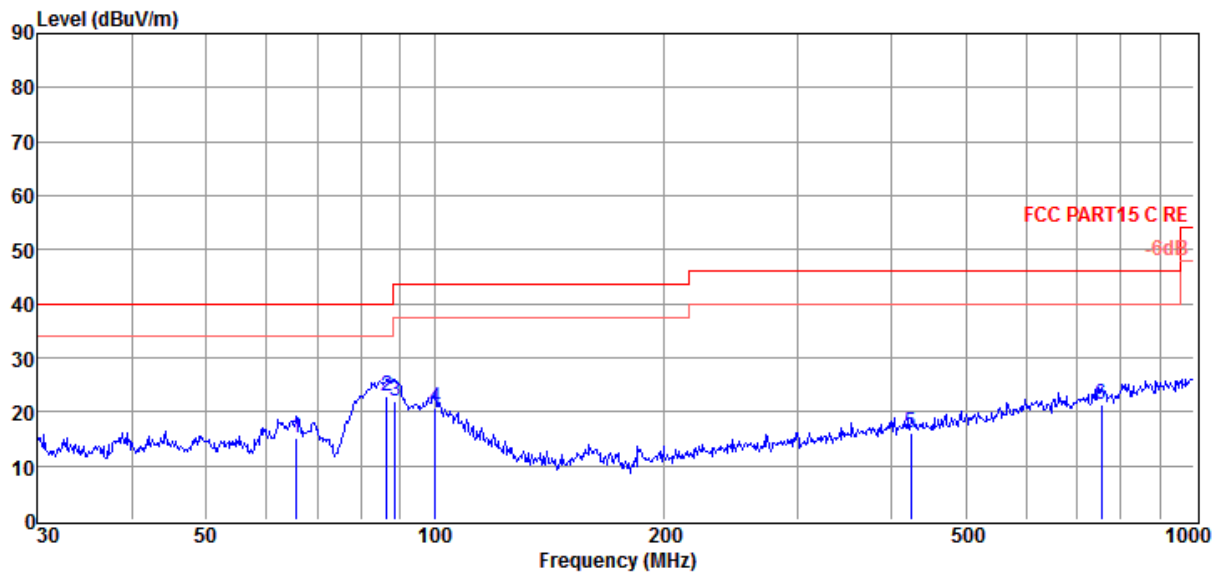
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

## TR-4-E-009 Radiated Emission Test Result

**Test Site** : DDT 3m Chamber 2# **E:\2018 RE2# Report Data\Y20180515-1\RE.EM6**  
**Test Date** : 2018-06-01 **Tested By** : Shaul  
**EUT** : Compact iPX7 Wireless Speaker **Model Number** : iSP74 Dunk  
**Power Supply** : DC 3.7V **Test Mode** : Tx mode  
**Condition** : Temp:24.5'C, Humi:55%,  
 Press:100.1kPa **Antenna/Distance** : 2017 VULB9163 2#/3m/VERTICAL  
**Memo** :

Data: 1



Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	65.80	31.22	11.96	31.98	3.87	15.07	40.00	-24.93	QP	VERTICAL
2	86.50	41.26	9.64	31.91	4.01	23.00	40.00	-17.00	QP	VERTICAL
3	88.65	39.65	10.26	31.91	4.02	22.02	43.50	-21.48	QP	VERTICAL
4	100.23	36.20	12.25	31.92	4.10	20.63	43.50	-22.87	QP	VERTICAL
5	423.54	26.96	15.41	31.69	5.34	16.02	46.00	-29.98	QP	VERTICAL
6	755.39	27.25	19.76	31.81	6.29	21.49	46.00	-24.51	QP	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.

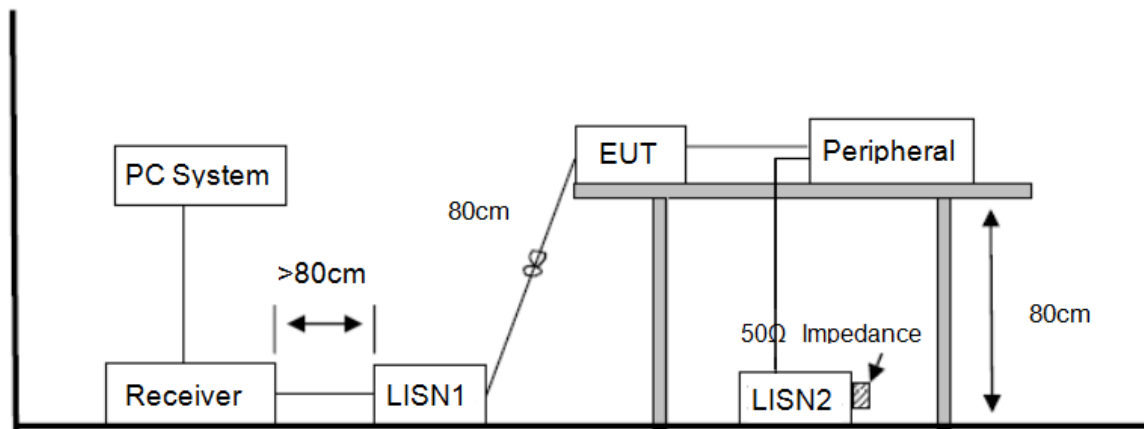
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.



## 5. Power Line Conducted Emission

### 5.1. Block diagram of test setup



### 5.2. Power Line Conducted Emission Limits (Class B)

Frequency	Quasi-Peak Level dB( $\mu$ V)	Average Level dB( $\mu$ V)
150kHz ~ 500kHz	66 ~ 56*	56 ~ 46*
500kHz ~ 5MHz	56	46
5MHz ~ 30MHz	60	50

Note 1: \* Decreasing linearly with logarithm of frequency.

Note 2: The lower limit shall apply at the transition frequencies.

### 5.3. Test Procedure

The EUT and Support equipment, if needed, were put placed on a non-metallic table, 80cm above the ground plane.

Configuration EUT to simulate typical usage as described in clause 2.4 and test equipment as described in clause 3 of this report.

All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.

All support equipment power received from a second LISN.

Emissions were measured on each current carrying line of the EUT using an EMI Test Receiver connected to the LISN powering the EUT.

The Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.

During the above scans, the emissions were maximized by cable manipulation.

The test mode(s) described in clause 2.4 were scanned during the preliminary test.

After the preliminary scan, we found the test mode producing the highest emission level.

The EUT configuration and worse cable configuration of the above highest emission levels were recorded for reference of the final test.

EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test.

A scan was taken on both power lines, Neutral and Line, 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.

The test data of the worst-case condition(s) was recorded.

The bandwidth of test receiver is set at 9 kHz.

#### **5.4. Test Result**

##### **PASS. (See below detailed test result)**

Note 1: All emissions not reported below are too low against the prescribed limits.

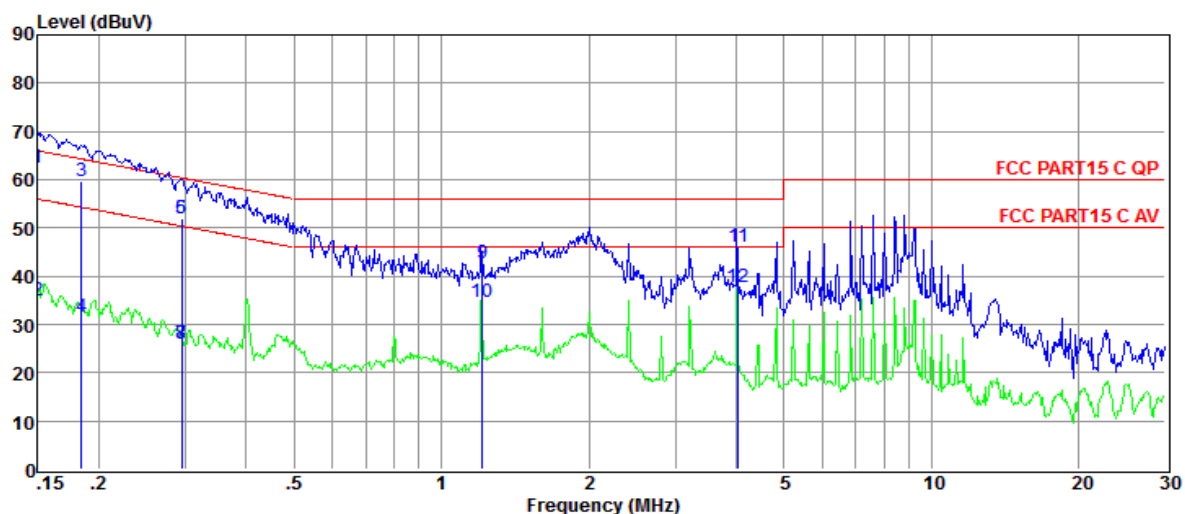
Note 2: "----" means Peak detection; "----" means Average detection

Note3: Pre-test AC conducted emission at both voltage AC 120V/60Hz and AC 240V/60Hz, recorded worst case (AC 120V/60Hz).

## TR-4-E-010 Conducted Emission Test Result

**Test Site** : DDT 6# Shield Room **C:\3# 2018 report test data\5月\Y20180515-1\RE.EM6**  
**Test Date** : 2018-06-01 **Tested By** : Aaron  
**EUT** : Compact iPX7 Wireless Speaker **Model Number** : iSP74 Dunk  
**Power Supply** : DC 3.7V **Test Mode** : Tx mode  
**Condition** : Temp:24.5°C, Humi:55%,  
 Press:100.1kPa **LISN** : 2017 ENV216/LINE  
**Memo** :

Data: 2



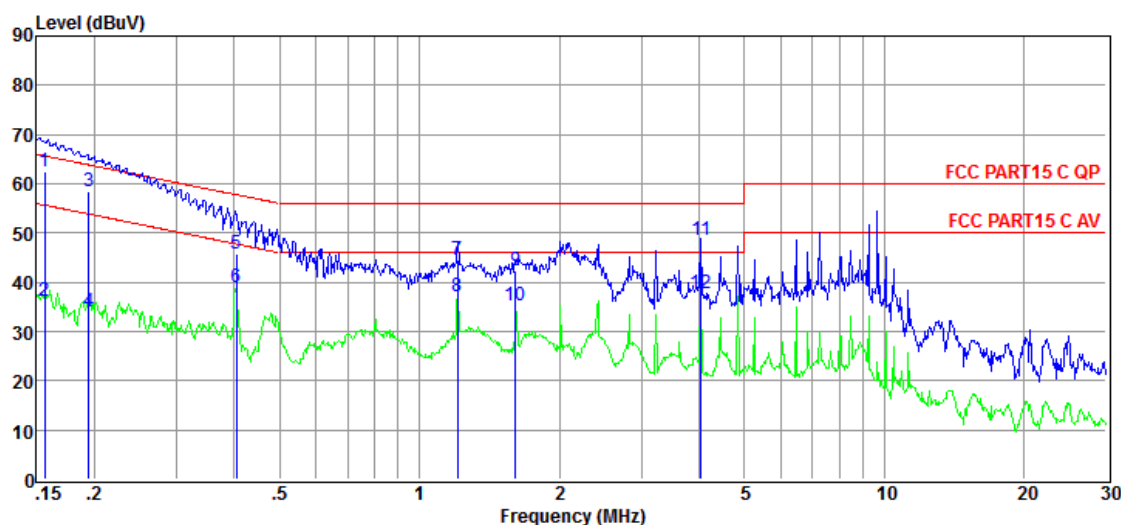
Item	Freq.	Read Level	LISN Factor	Cable Loss	Pulse Limiter Factor	Result Level	Limit Line	Over Limit	Detector	Phase
(Mark)	(MHz)	(dBμV)	(dB)	(dB)	(dB)	(dBμV)	(dBμV)	(dB)		
1	0.15	42.99	9.52	0.09	9.77	62.37	66.00	-3.63	QP	LINE
2	0.15	15.58	9.52	0.09	9.77	34.96	56.00	-21.04	Average	LINE
3	0.18	40.17	9.51	0.09	9.78	59.55	64.28	-4.73	QP	LINE
4	0.18	12.01	9.51	0.09	9.78	31.39	54.28	-22.89	Average	LINE
5	0.30	32.68	9.53	0.09	9.81	52.11	60.37	-8.26	QP	LINE
6	0.30	32.65	9.53	0.09	9.81	52.08	60.37	-8.29	QP	LINE
7	0.30	6.48	9.53	0.09	9.81	25.91	50.37	-24.46	Average	LINE
8	0.30	6.53	9.53	0.09	9.81	25.96	50.37	-24.41	Average	LINE
9	1.21	23.11	9.57	0.09	10.04	42.81	56.00	-13.19	QP	LINE
10	1.21	14.82	9.57	0.09	10.04	34.52	46.00	-11.48	Average	LINE
11	4.04	26.34	9.63	0.10	10.03	46.10	56.00	-9.90	QP	LINE
12	4.04	17.96	9.63	0.10	10.03	37.72	46.00	-8.28	Average	LINE

Note: 1. Result Level = Read Level + LISN Factor + Pulse Limiter Factor + Cable loss.  
 2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.  
 3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).  
 4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

# TR-4-E-010 Conducted Emission Test Result

**Test Site** : DDT 6# Shield Room **C:\3# 2018 report test data\5月\Y20180515-1\RE.EM6**  
**Test Date** : 2018-06-01 **Tested By** : Aaron  
**EUT** : Compact iPX7 Wireless Speaker **Model Number** : iSP74 Dunk  
**Power Supply** : DC 3.7V **Test Mode** : Tx mode  
**Condition** : Temp:24.5°C, Humi:55%,  
 Press:100.1kPa **LISN** : 2017 ENV216/NEUTRAL  
**Memo** :

Data: 4



Item	Freq.	Read Level	LISN Factor	Cable Loss	Pulse Limiter Factor	Result Level	Limit Line	Over Limit	Detector	Phase
(Mark)	(MHz)	(dBμV)	(dB)	(dB)	(dB)	(dBμV)	(dBμV)	(dB)		
1	0.16	43.10	9.48	0.09	9.77	62.44	65.65	-3.21	QP	NEUTRAL
2	0.16	16.76	9.48	0.09	9.77	36.10	55.65	-19.55	Average	NEUTRAL
3	0.19	39.28	9.45	0.09	9.78	58.60	63.84	-5.24	QP	NEUTRAL
4	0.19	14.70	9.45	0.09	9.78	34.02	53.84	-19.82	Average	NEUTRAL
5	0.40	26.43	9.37	0.09	9.85	45.74	57.77	-12.03	QP	NEUTRAL
6	0.40	19.56	9.37	0.09	9.85	38.87	47.77	-8.90	Average	NEUTRAL
7	1.21	25.11	9.29	0.09	10.04	44.53	56.00	-11.47	QP	NEUTRAL
8	1.21	17.66	9.29	0.09	10.04	37.08	46.00	-8.92	Average	NEUTRAL
9	1.61	22.90	9.28	0.09	10.04	42.31	56.00	-13.69	QP	NEUTRAL
10	1.61	15.70	9.28	0.09	10.04	35.11	46.00	-10.89	Average	NEUTRAL
11	4.04	29.28	9.27	0.10	10.03	48.68	56.00	-7.32	QP	NEUTRAL
12	4.04	18.45	9.27	0.10	10.03	37.85	46.00	-8.15	Average	NEUTRAL

Note: 1. Result Level = Read Level + LISN Factor + Pulse Limiter Factor + Cable loss.  
 2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.  
 3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).  
 4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

## END OF REPORT