
FCC Test Report

Report No.: AGC01895161201FE01

FCC ID : 2AJYS-YLAB
APPLICATION PURPOSE : Original Equipment
PRODUCT DESIGNATION : Bluetooth Earphone
BRAND NAME : YEVO
MODEL NAME : YLAB01, YLAB02, YLAB03
CLIENT : Happy Plugs AB
DATE OF ISSUE : Apr.21, 2017
STANDARD(S) : FCC Part 15 Subpart C
REPORT VERSION : V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd

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Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Apr.21, 2017	Valid	Original Report

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1. VERIFICATION OF CONFORMITY

Applicant	Happy Plugs AB
Address	Kungsgatan 4B, 1 tr, 111 43 Stockholm, Sweden
Manufacturer	Happy Plugs AB
Address	Kungsgatan 4B, 1 tr, 111 43 Stockholm, Sweden
Product Designation	Bluetooth Earphone
Brand Name	YEVO
Test Model	YLAB01
Series Model	YLAB02, YLAB03
Difference description	All the same except for the appearance color
Date of test	Mar.9,2017 to Apr.10, 2017
Deviation	None
Condition of Test Sample	Normal
Report Template	AGCRT-US-IT/AC

We hereby certify that:

The above equipment was tested by Dongguan Precise Testing Service Co., Ltd. The test data, the energy emitted by the sample tested as described in this report is in compliance with the requirements of FCC Rules Part 15C.

The test results of this report relate only to the tested sample identified in this report.



Tested By _____
Time Huang(Huang Nanhui) Apr.10, 2017



Reviewed By _____
Forrest Lei(Lei Yonggang) Apr.21, 2017



Approved By _____
Solger Zhang(Zhang Hongyi) Apr.21, 2017
Authorized Officer

2. PRODUCT INFORMATION

Operation Frequency	10.579MHz
RF Output Power	41.75dBμ V/m
Bluetooth Version	N/A
Modulation	AM
Number of channels	1
Hardware Version	V1.5
Software Version	V3.18
Antenna Designation	Fixed Antenna
Antenna Gain	-10dBi
Housing Type	Plastic And Metal
Voltage	DC 3.7V by battery

Note: The EUT comprises left and right channel earphone. The right one is with Bluetooth chip but the left one isn't. The left one only work in RX mode.

I/O Port Information (☒Applicable ☐Not Applicable)

I/O Port of EUT			
I/O Port Type	Q'TY	Cable	Tested with
Charging Port	1	0	1
USB Port(charging case)	1	0.2m Unshielded	1

3. SYSTEM DESCRIPTION

EUT set up procedure:

1. Let the EUT work in the 10.579MHz test mode.
2. Make sure the EUT operates normally during the test (10.579MHz)

Test Mode

TEST MODE DESCRIPTION		
NO.	TEST MODE DESCRIPTION	WORST
1	10.579MHz TX	V
Note: 1. V means EMI worst mode.		

4. MEASUREMENT UNCERTAINTY

The uncertainty is calculated using the methods suggested in the “Guide to the Expression of Uncertainty in Measurement” (GUM) published by ISO.

Conducted measurement: +/- 2.62dB

Radiated measurement: +/- 3.4dB

Summary Of Test Results

FCC Rules	Description Of Test	Result
§15.209	Conduction Emission	N/A
§15.209	Radiated Emission	Compliant
§15.215	Bandwidth	Compliant

Note : N/A means it's not applicable to this item.

5. SUPPORT EQUIPMENT

Device Type	Manufacturer	Model Name	Serial No.	Power Cable
Ipod	Apple	A1367	--	--

6. TEST FACILITY

Site	Dongguan Precise Testing Service Co., Ltd.
Location	Building D, Baoding Technology Park, Guangming Road2,Dongcheng District, Dongguan, Guangdong, China,
FCC Registration No.	371540
Description	The test site is constructed and calibrated to meet the FCC requirements in documents ANSI C63.4:2014.

7. ALL TEST EQUIPMENT LIST

FOR RADIATED EMISSION TEST (BELOW 1GHz)

Radiated Emission Test Site					
Name of Equipment	Manufacturer	Model Number	Serial Number	Last Calibration	Due Calibration
EMI Test Receiver	ROHDE & SCHWARZBECK	ESCI	101417	July 4, 2016	July 3, 2017
Active loop antenna (9K-30MHz)	LAPLACE	RF300	1520153	July 4, 2016	July 3, 2017
Trilog Broadband Antenna (25M-1GHz)	SCHWARZBECK	VULB9160	9160-3355	July 4, 2016	July 3, 2017
Signal Amplifier	SCHWARZBECK	BBV 9475	9745-0013	July 4, 2016	July 3, 2017
RF Cable	SCHWARZBECK	AK9515E	96221	July 4, 2016	July 3, 2017
3m Anechoic Chamber	CHENGYU	966	PTS-001	June 6, 2016	June 5, 2017
MULTI-DEVICE Positioning Controller	MAX-FULL	MF-7802	MF780208339	N/A	N/A
Spectrum analyzer	AGILENT	E4407B	MY46185649	June 6, 2016	June 5, 2017

8. FCCLINE CONDUCTED EMISSION TEST

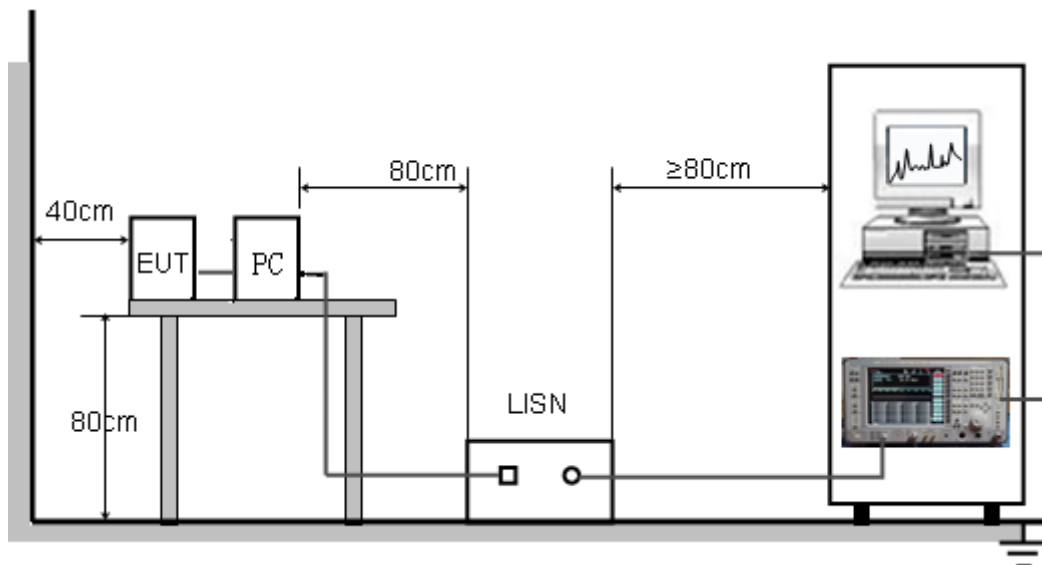
8.1. LIMITS OF LINE CONDUCTED EMISSION TEST

Frequency	Maximum RF Line Voltage	
	Q.P.(dBuV)	Average(dBuV)
150kHz-500kHz	66-56	56-46
500kHz-5MHz	56	46
5MHz-30MHz	60	50

Note:

1. The lower limit shall apply at the transition frequency.
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50MHz.

8.2. BLOCK DIAGRAM OF TEST SETUP



8.3. PROCEDURE OF LINE CONDUCTED EMISSION TEST

- (1) The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
- (2) Support equipment, if needed, was placed as per ANSI C63.10.
- (3) All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.
- (4) The EUT received DC charging voltage by PC which receive AC120V/60Hz power from a LISN.
- (5) The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- (6) Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
- (7) During the above scans, the emissions were maximized by cable manipulation.
- (8) A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions.
- (9) 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. If EUT emission level was less -2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.

The test data of the worst case condition (mode 1) was reported on the Summary Data page.

8.4. TEST RESULT OF LINE CONDUCTED EMISSION TEST

N/A

Note: The sample didn't work when charging.

9. FCC RADIATED EMISSION TEST

9.1. LIMITS OF RADIATED EMISSION TEST

Frequency (MHz)	Distance Meters	Field Strengths Limit	
		μ V/m	dB(μV)/m
0.009 ~ 0.490	300	2400/F(kHz)	---
0.490 ~ 1.705	30	24000/F(kHz)	---
1.705 ~ 30	30	30	---
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	Other:74.0 dB(μV)/m (Peak) 54.0 dB(μV)/m (Average)	
Remark: (1) Emission level dBμ V = 20 log Emission level μ V/m (2) The smaller limit shall apply at the cross point between two frequency bands. (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.			

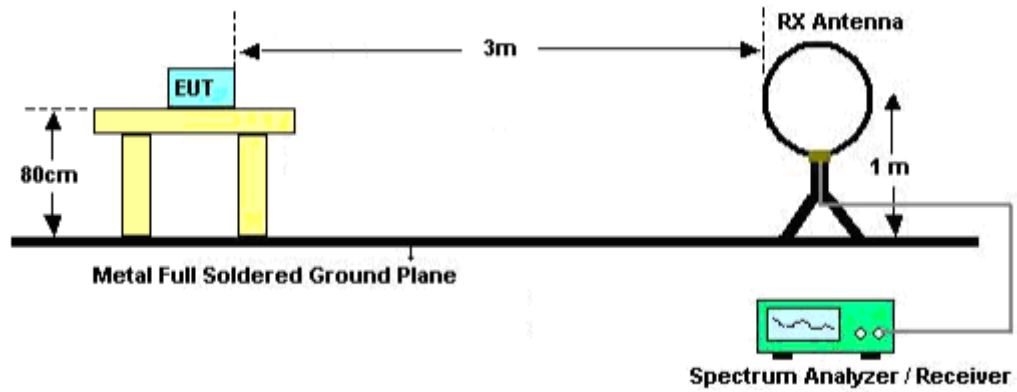
9.1.1 THE FOLLOWING TABLE IS THE SETTING OF SPECTRUM ANALYZER AND RECEIVER:

Spectrum Parameter	Setting
Start ~Stop Frequency	9KHz~150KHz/RB 200Hz for QP
Start ~Stop Frequency	150KHz~30MHz/RB 9KHz for QP
Start ~Stop Frequency	30MHz~1000MHz/RB 120KHz for QP

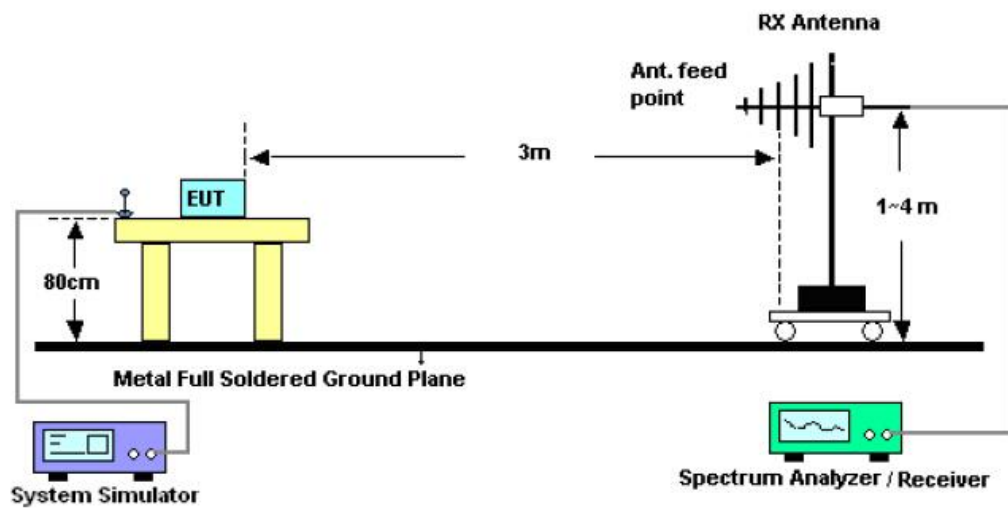
Receiver Parameter	Setting
Start ~Stop Frequency	9KHz~150KHz/RB 200Hz for QP
Start ~Stop Frequency	150KHz~30MHz/RB 9KHz for QP
Start ~Stop Frequency	30MHz~1000MHz/RB 120KHz for QP

9.2. BLOCK DIAGRAM OF TEST SETUP

RADIATED EMISSION TEST SETUP BELOW 30MHz



RADIATED EMISSION TEST SETUP 30MHz-1000MHz



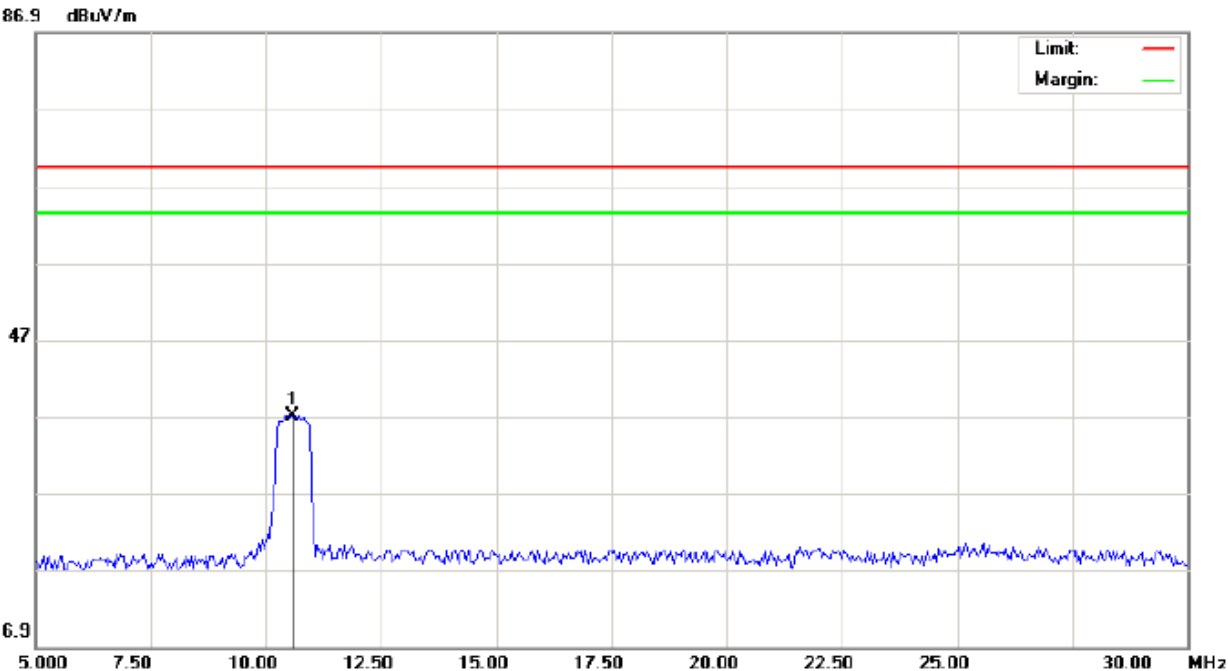
9.3. PROCEDURE OF RADIATED EMISSION TEST

1. The measuring distance of 3m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation(Below 1GHz)
2. The height of the test antenna shall vary between 1m to 4m.Both horizontal and vertical polarization Of the antenna are set to make the measurement.
- 3The initial step in collecting radiated emission data is a receive peak detector mode. Pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
4. All readings are peak unless otherwise stated QP in column of Note. Peak denoted that the Peak reading compliance with the QP limits and then QP Mode measurement didn't perform(Below 1GHz)

9.4. TEST RESULT OF RADIATED EMISSION TEST

RADIATED EMISSION BELOW 30MHz

Radiated Emission Test at 3m Distance-Horizontal



Site: site #1

Limit: FCC Part 15.209

EUT: Bluetooth Earphone

M/N: YLAB01

Mode: 10.579MHz TX

Note:

Polarization: *Horizontal*

Power:

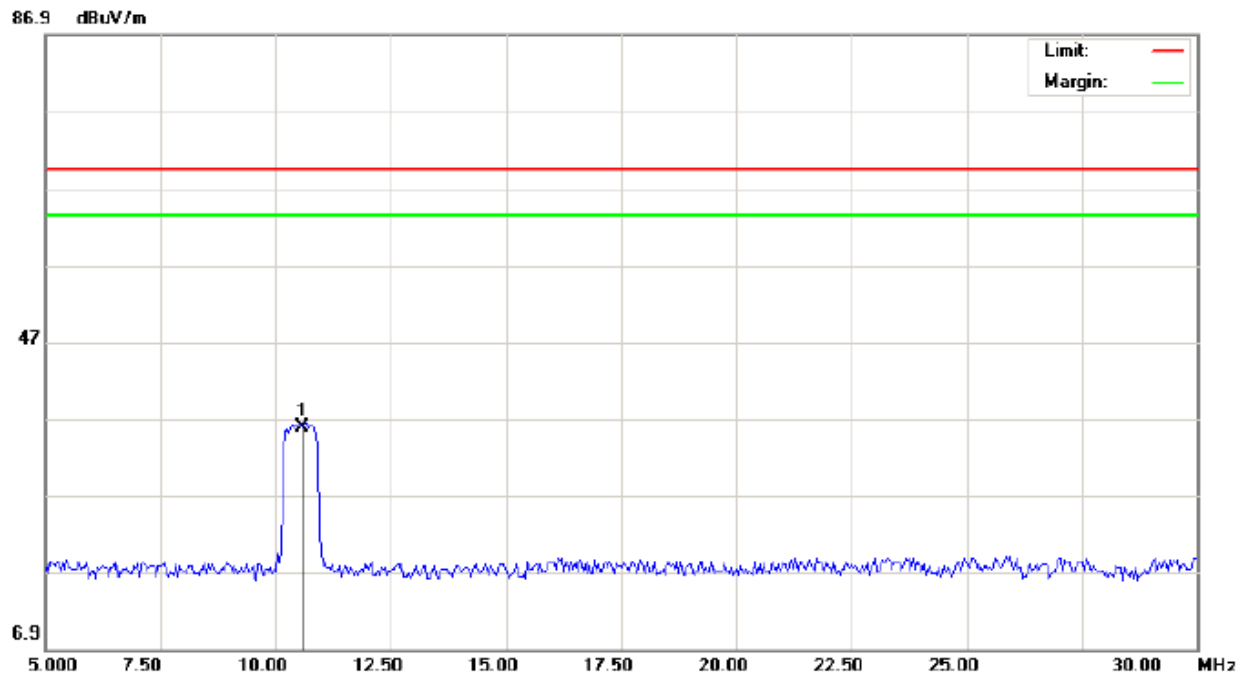
Distance:

Temperature: 23.6

Humidity: 53.6 %

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	10.5790	36.95	4.80	41.75	69.50	-27.75	peak			

Radiated Emission Test at 3m Distance-Vertical



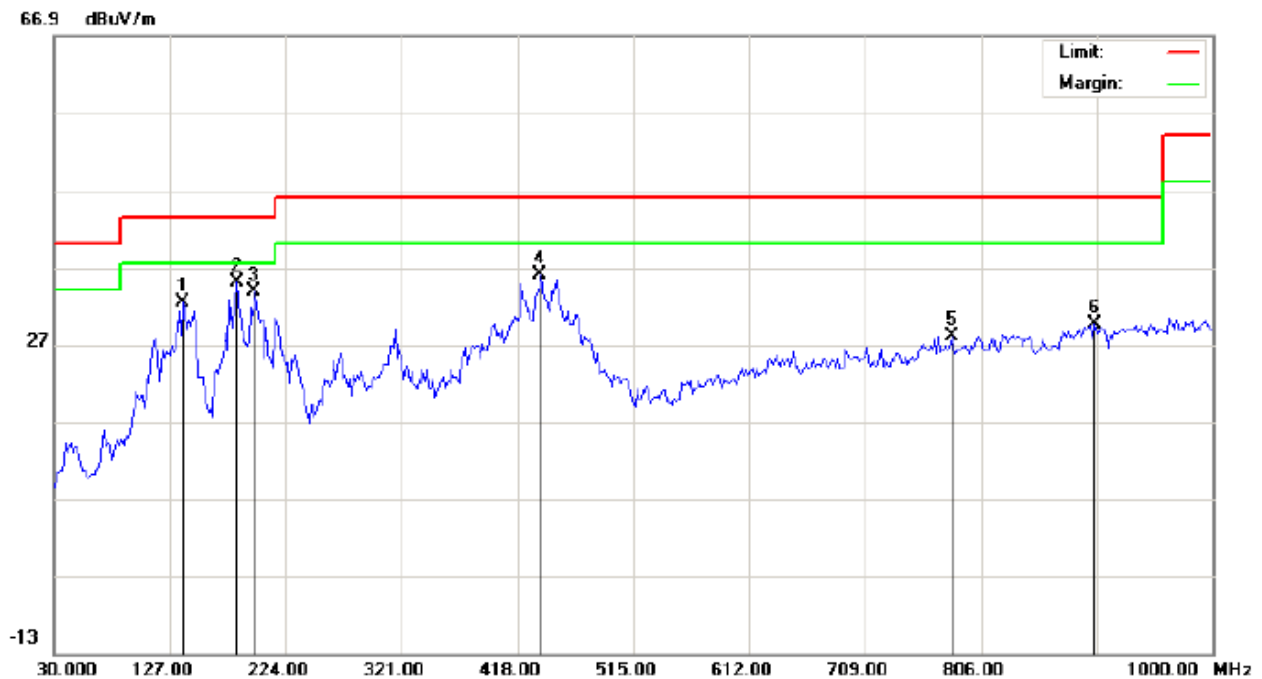
Site: site #1	Polarization: Vertical	Temperature: 23.6
Limit: FCC Part 15.209	Power:	Humidity: 53.6 %
EUT: Bluetooth Earphone	Distance:	
M/N: YLAB01		
Mode: 10.579MHz TX		
Note:		

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	10.5790	35.89	4.80	40.69	69.50	-28.81	peak			

Note: No any emission were found below 5MHz, no recording in the test report.

RADIATED EMISSION BELOW 1GHz

Radiated Emission Test at 3m Distance-Horizontal



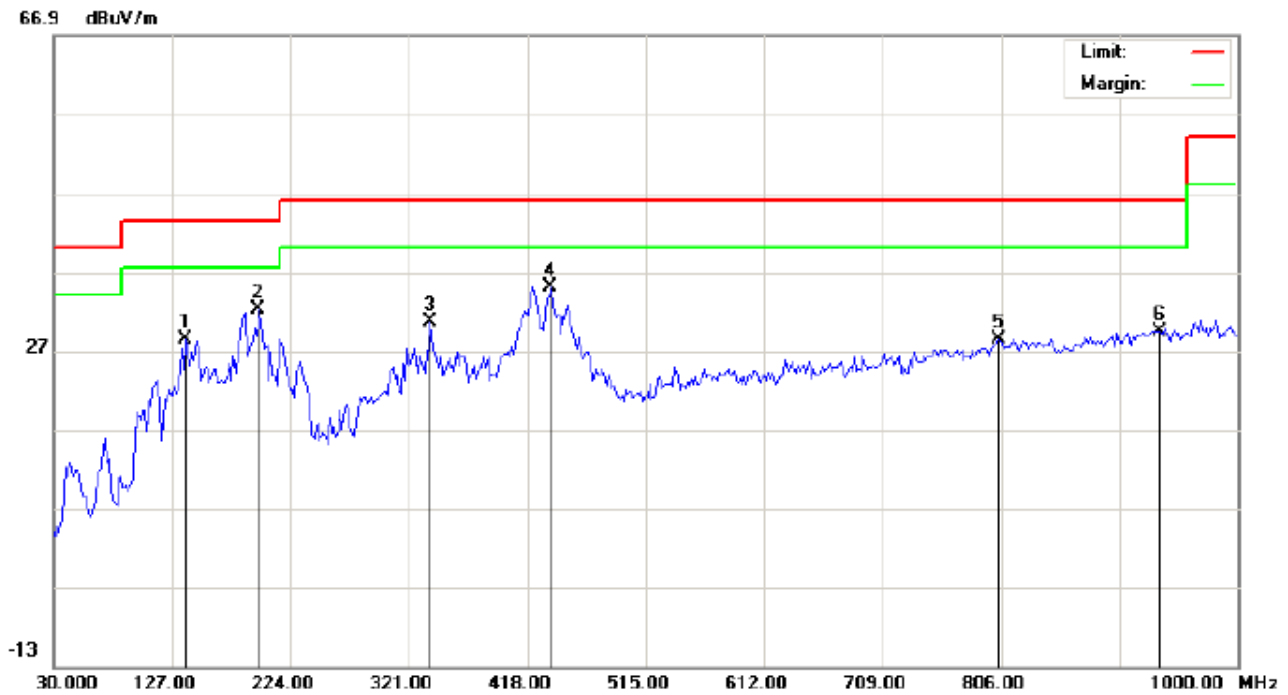
Site: site #1
Limit: FCC Class B 3M Radiation
EUT: Bluetooth Earphone
M/N: YLAB01
Mode: 10.579MHz TX
Note:

Polarization: *Horizontal*
Power:
Distance:

Temperature: 24.9
Humidity: 53.7 %

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		138.3164	17.97	14.41	32.38	43.50	-11.12	peak			
2	*	183.5833	23.69	11.24	34.93	43.50	-8.57	peak			
3		198.1331	21.85	11.91	33.76	43.50	-9.74	peak			
4		437.3999	15.78	20.21	35.99	46.00	-10.01	peak			
5		781.7500	0.98	27.07	28.05	46.00	-17.95	peak			
6		901.3831	0.99	28.65	29.64	46.00	-16.36	peak			

Radiated Emission Test at 3m Distance-Vertical



Site: site #1	Polarization: <i>Vertical</i>	Temperature: 24.9
Limit: FCC Class B 3M Radiation	Power:	Humidity: 53.7 %
EUT: Bluetooth Earphone	Distance:	
M/N: YLAB01		
Mode: 10.579MHz TX		
Note:		

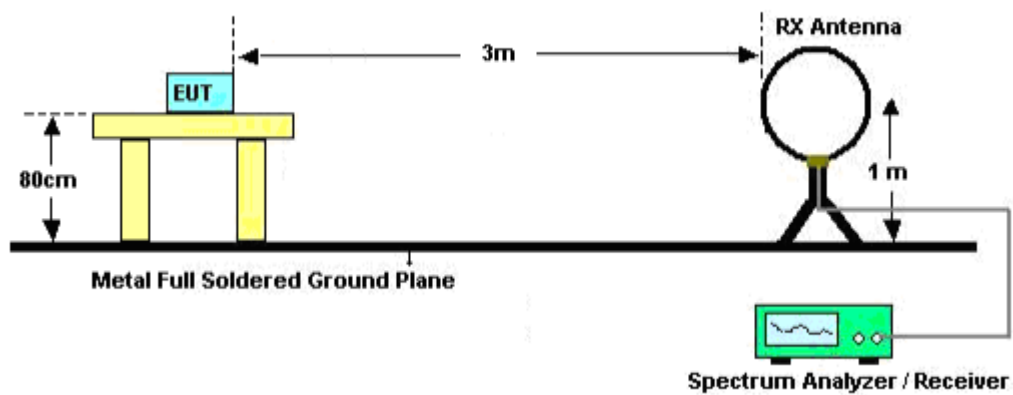
No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		138.3164	13.97	14.41	28.38	43.50	-15.12	peak			
2		198.1331	20.35	11.91	32.26	43.50	-11.24	peak			
3		338.7832	12.70	17.99	30.69	46.00	-15.31	peak			
4	*	437.3999	14.78	20.21	34.99	46.00	-11.01	peak			
5		804.3831	1.09	27.32	28.41	46.00	-17.59	peak			
6		935.3333	-0.10	29.59	29.49	46.00	-16.51	peak			

10. 20DB BANDWIDTH

10.1. MEASUREMENT PROCEDURE

1. Set the EUT Work on the operation frequency individually.
2. Set Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel
RBW \geq 1% of the 20 dB bandwidth, VBW \geq RBW; Sweep = auto; Detector function = peak
3. Set SPA Trace 1 Max hold, then View.

10.2. TEST SET-UP



10.3. LIMITS AND MEASUREMENT RESULTS



----END OF REPORT----