Test Report

Verified code: 994519

Report No.: E20221011998501-2

Customer:	OnePlus Technology (Shenzhen) Co., Ltd.
Address:	18C02, 18C03, 18C04 and 18C05, Shum Yip Terra Building, Binhe Avenue North, Futian District, Shenzhen, China
Sample Name:	Wireless Earbuds
Sample Model:	E507A
Receive Sample Date:	Oct.12,2022
Test Date:	Oct.19,2022 ~ Oct.25,2022
Reference Document:	CFR 47, FCC Part 15 Subpart C RADIO FREQUENCY DEVICES:Subpart C—Intentional Radiators
Test Result:	Pass

Prepared by: Reviewed by: Approved by:

GUANGZHOU GRG METROLOGY & TEST CO., LTD

Issued Date: 2022-11-04

GUANGZHOU GRG METROLOGY & TEST CO., LTD.
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Statement

1. The report is invalid without "special seal for inspection and testing"; some copies are invalid; The report is invalid if it is altered or missing; The report is invalid without the signature of the person who prepared, reviewed and approved it.

2. The sample information is provided by the client and responsible for its authenticity; The content of the report is only valid for the samples sent this time.

3. When there are reports in both Chinese and English, the Chinese version will prevail when the language problems are inconsistent.

4. If there is any objection concerning the report, please inform us within 15 days from the date of receiving the report.

5. Without the agreement of the laboratory, the client is not authorized to use the test results for unapproved propaganda.

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REPORT ISSUED HISTORY

Report Version	Report No.	Description	Compile Date
1.0	E20221011998501-2	Original Issue	2022-10-26

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1. TEST RESULT SUMMARY

Technical Requirements		
FCC 47 CFR Part 15 Subpart C 15.247 ANSI C63.10-2013 KDB 558074 D01 15.247 measurement guidance v05r02		
Limit / Severity	**Item**	**Result**
§15.203	Antenna Requirement	Pass
§15.207(a)	Conducted Emission	Pass
§15.247(d)&15.205& 15.209	Radiated Spurious Emission	Pass
§15.247(b)(3)	Maximum Peak Output Power	Pass
§15.247(e)	Power Spectral Density	Pass
§15.247(a)(2)	6dB bandwidth	Pass
§15.247(d)	Conducted band edges and Spurious Emission	Pass
§15.247(d)&15.205& 15.209	Restricted bands of operation	Pass

Note: The antenna is Integrated antenna. The max gain of antenna is-2.0dBi for left wireless earbuds and -2.6dBi for right wireless earbuds .which accordance 15.203 is considered sufficient to comply with the provisions of this section.

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2. GENERAL DESCRIPTION OF EUT

2.1 APPLICANT

Name:	OnePlus Technology (Shenzhen) Co., Ltd.
Address:	18C02, 18C03, 18C04 and 18C05, Shum Yip Terra Building, Binhe Avenue North, Futian District, Shenzhen, China

2.2 MANUFACTURER

Name:	OnePlus Technology (Shenzhen) Co., Ltd.
Address:	18C02, 18C03, 18C04 and 18C05, Shum Yip Terra Building, Binhe Avenue North, Futian District, Shenzhen, China

2.3 BASIC DESCRIPTION OF EQUIPMENT UNDER TEST

Equipment:	Wireless Earbuds
Model No.:	E507A
Adding Model:	/
Trade Name:	ONEPLUS
FCC ID:	2ABZ2-E507A
Power supply:	3.85Vdc supplied by an internal rechargeable Li-ion battery. DC 5V supplied by Adapter.
Earbuds Battery Specification:	Model:122540 Nominal Voltage:3.85Vdc Rated Capacity: 0.231Wh
Charging case Battery Specification:	Model:631940-1 1ICP7/19/40 Nominal Voltage:3.80Vdc Rated Capacity: 520mAh 1.976Wh Typical Capacity: 525mAh 1.995Wh Limited Charging Voltage: 4.35Vdc
Frequency Band:	2402-2480MHz
Transmit Power:	Left earphone: For BLE 1M:7.30dBm For BLE 2M:7.54dBm Right earphone: For BLE 1M:7.55dBm For BLE 2M:7.86dBm
Modulation type:	GFSK
Channel space:	2MHz
Antenna Specification:	Integrated antenna with Left earphone:-2.0dBi Right earphone:-2.6dBi
Temperature Range:	0℃~+35℃
Hardware Version:	X22E2_0
Software Version:	V087

Sample No: E20221011998501-0001,E20221011998501-0003

Note: The charging case has a wireless charging receiving function only, has no transmitting.

2.4 CHANNELLIST

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
***00**	**2402**	10	2422	20	2442	30	2462
01	2404	11	2424	21	2444	31	2464
02	2406	12	2426	22	2446	32	2466
03	2408	13	2428	23	2448	33	2468
04	2410	14	2430	24	2450	34	2470
05	2412	15	2432	25	2452	35	2472
06	2414	16	2434	26	2454	36	2474
07	2416	17	2436	27	2456	37	2476
08	2418	18	2438	28	2458	38	2478
09	2420	***19**	**2440**	29	2460	***39**	**2480**

* is the test frequency

2.5 TEST OPERATION MODE

Mode No.	Description of the modes
1	Bluetooth (BLE) fixed frequency transmitting

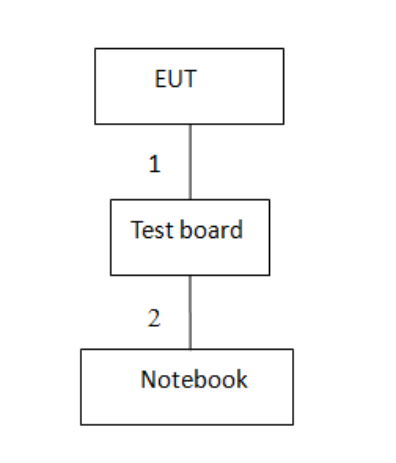
2.6 LOCAL SUPPORTIVE

Name of equipment	Manufacturer	Model	Serial number	Note
Notebook	DELL	Latitude3490	5GSXKP2	/
Test board	/	/	/	/
Adapter	Dongguan Aohai power technology Co., Ltd.	A8A-050200U-US1	/	/

No.	Cable Type	Manufacturer	Model	Qty.	Shielded Type	Ferrite Core(Qty.)	Length
1	DC cable	/	/	1	No	0	Unshielded 0.15m
2	USB extension cable	/	/	1	No	0	Unshielded 1m
3	USB cable	Freeport Resources Enterprises Corp.	KFU522042501	1	No	0	Unshielded 0.20m

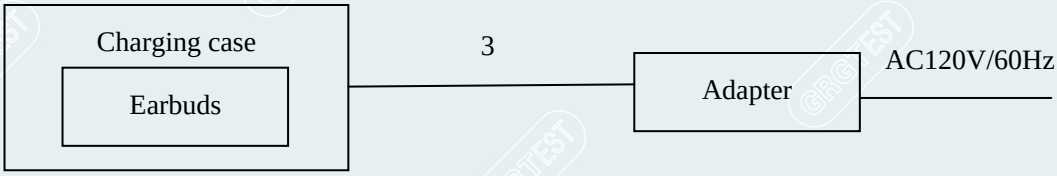
2.7 CONFIGURATION OF SYSTEM UNDER TEST

For 6dB bandwidth, Maximum Peak Output Power, Power Spectral Density ,Conducted band edges and Spurious Emission:



For Radiated Spurious Emission, Restricted bands of operation:

For Conducted Emission:



Test software:

Software version	Test level
BQB	Default

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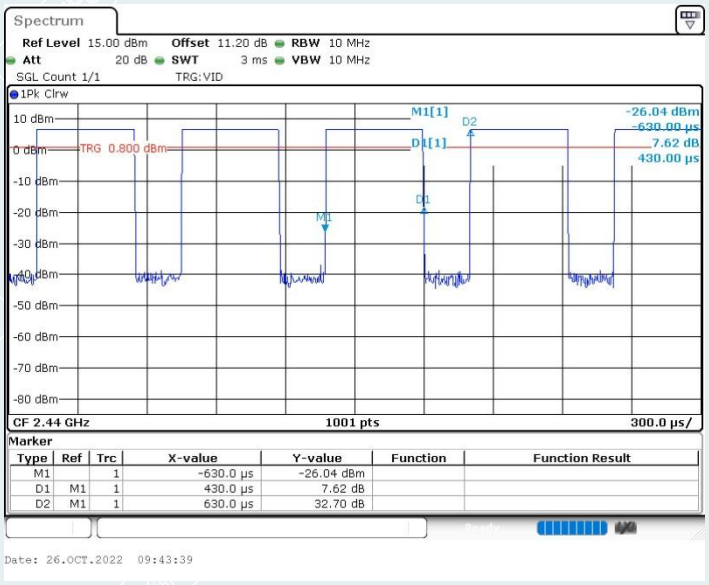
2.8 DUTY CYCLE

Environment: 24.2℃/48%RH/101.0kPa Voltage: DC 3.85V
Tested By: Yang Zhaoyun Date: 2022-10-26

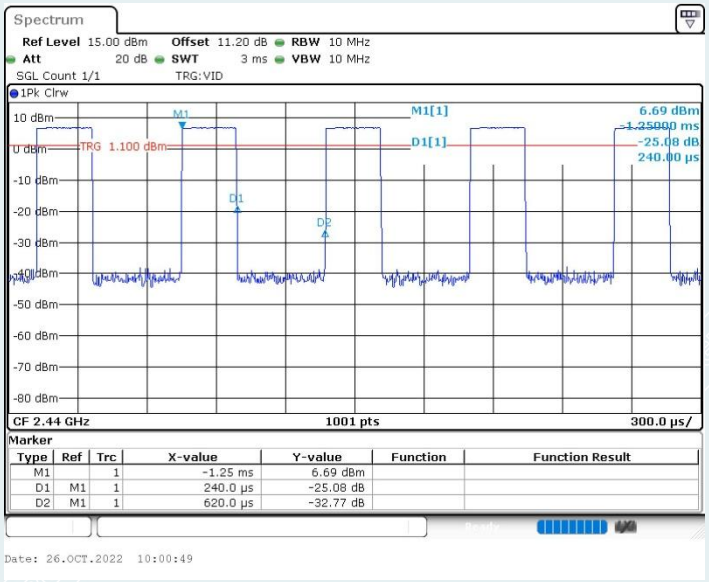
Left earphone

Test Mode	Antenna	Frequency [MHz]	ON Time [ms]	Period [ms]	DC [%]	T [s]
BLE_1M	Ant1	2440	0.43	0.63	68.25	0.00043
BLE_2M	Ant1	2440	0.24	0.62	38.71	0.00024

BLE_1M _2440MHz



BLE_2M _2440MHz



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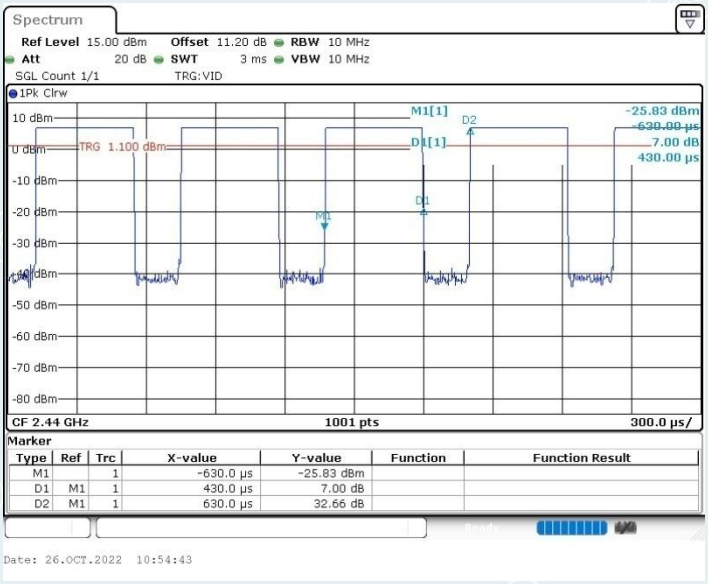
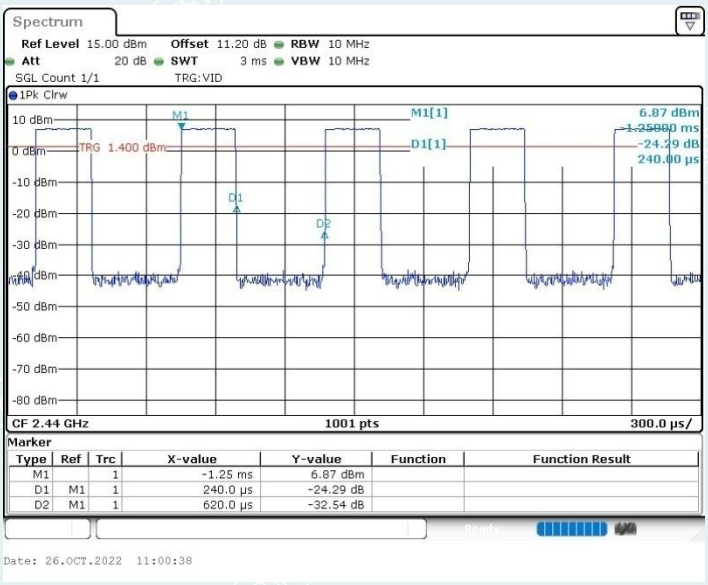
Right earphone

Test Mode	Antenna	Frequency [MHz]	ON Time [ms]	Period [ms]	DC [%]	T [s]
BLE_1M	Ant1	2440	0.43	0.63	68.25	0.00043
BLE_2M	Ant1	2440	0.24	0.62	38.71	0.00024

BLE_1M _2440MHz



BLE_2M _2440MHz



3. LABORATORY AND ACCREDITATIONS

3.1 LABORATORY

The tests & measurements refer to this report were performed by Shenzhen EMC Laboratory of Guangzhou GRG Metrology & Test Co., Ltd.

Add	:	No.1301 Guanguang Road Xinlan Community, Guanlan Street, Longhua District Shenzhen, 518110, People's Republic of China
P.C.	:	518110
Tel	:	0755-61180008
Fax	:	0755-61180008

3.2 ACCREDITATIONS

Our laboratories are accredited and approved by the following approval agencies according to GB/T 27025(ISO/IEC 17025:2017)

USA	A2LA(Certificate #2861.01)

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

Canada	ISED (Company Number: 24897，CAB identifier:CN0069)
USA	FCC (Registration Number: 759402，Designation Number:CN1198)

Copies of granted accreditation certificates are available for downloading from our web site, http://www.grgtest.com

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4. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement		Frequency	Uncertainty
Radiated Emission	Horizontal	9kHz～30MHz	5.1dB
		30MHz～200MHz	4.5dB
		200MHz～1000MHz	4.4dB
		1GHz～18GHz	5.6dB
		18GHz～26.5GHz	3.7dB
	Vertical	9kHz～30MHz	5.1dB
		30MHz～200MHz	4.4dB
		200MHz～1000MHz	4.5dB
		1GHz～18GHz	5.6dB
		18GHz～26.5GHz	3.7dB
Conduction Emission		150kHz～30MHz	3.40dB

Measurement	Uncertainty
RF frequency	6.0×10^{-6}
RF power conducted	0.78dB
Occupied channel bandwidth	0.4dB
Unwanted emission, conducted	0.68dB
Humidity	6%
Temperature	2℃

Note:This uncertainty represents an expanded uncertainty expressed at approximately the 95%.This uncertainty represents an expanded uncertainty factor of *k*=2.

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5. LIST OF USED TEST EQUIPMENT AT GRGT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Conducted Emissions				
EMI TEST RECEIVER	R&S	ESCI	100783	2023-08-28
LISN(EUT)	R&S	ENV216	101543	2023-09-13
Test S/W	EZ	CCS-3A1-CE		
Radiated Spurious Emission&Restricted bands of operation				
Test S/W	EZ	CCS-03A1		
Test Receiver	R&S	ESR7	102444	2023-09-02
Preamplifier	EMEC	EM330	I00426	2023-03-05
Bi-log Antenna	Schwarzbeck	VULB9160	VULB9160-3401	2022-10-27
LoopAntenna	TESEQ	HLA6121	52599	2023-04-02
Spectrum Analyzer	KEYSIGHT	N9010A	MY52221469	2023-06-29
Horn Antenna	Schwarzbeck	BBHA9120D	02143	2023-10-15
Board-Band Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170-497	2023-10-14
Amplifier	Tonscend	TAP01018048	AP20E8060075	2023-05-05
Amplifier	Tonscend	TAP184050	AP20E806071	2023-05-05
Amplifier	SHIRONG ELECTRONIC	DLNA-1G18G-G40	20200928005	2023-05-08
Test S/W	Tonscend	JS36-RE/2.5.1.5		
6dB Bandwidth&Conducted band edges and Spurious Emission&Power Spectral Density				
Spectrum Analyzer	R&S	FSW43	102072	2023-09-02
Maximum Peak Output Power				
Pulse power sensor	Anritsu	MA2411B	1126150	2023-03-01
Power meter	Anritsu	ML2495A	1204003	2023-02-28

Note: The calibration interval of the above test instruments is 12 months.

6. CONDUCTED EMISSION MEASUREMENT

6.1 LIMITS

Frequency range	Limits (dBμV)	
	Quasi-peak	Average
150kHz～0.5MHz	66～56	56～46
0.5MHz～5MHz	56	46
5MHz～30MHz	60	50

NOTE: (1) The lower limit shall apply at the transition frequencies.
(2) The limit decreases in line with the logarithm of the frequency in the range of 150kHz to 0.5MHz.

6.2 TEST PROCEDURES

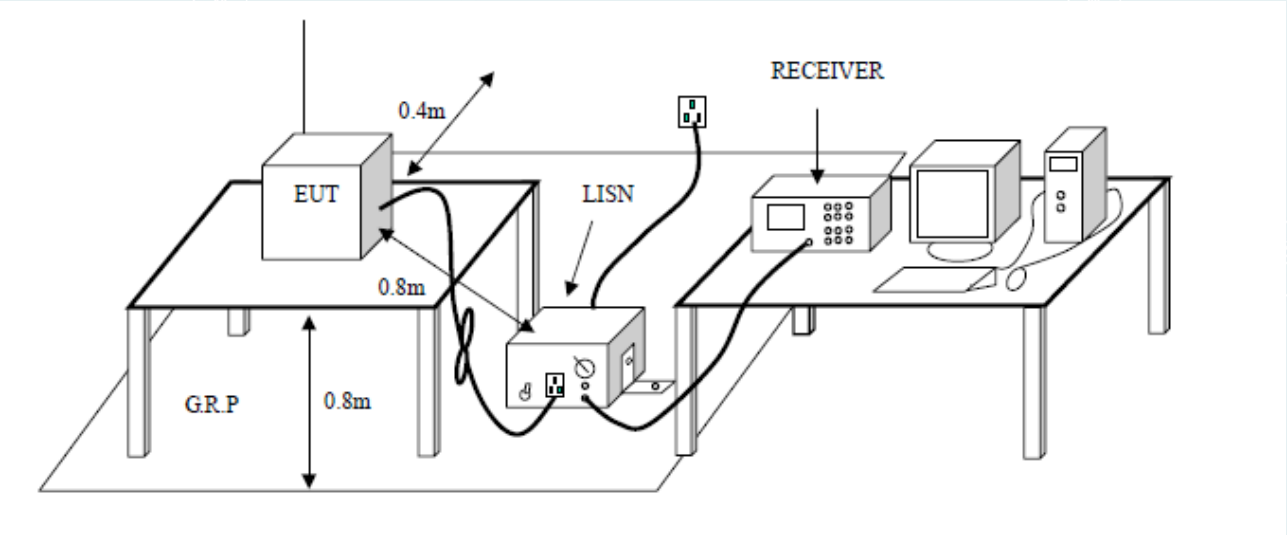
Procedure of Preliminary Test

Test procedures follow ANSI C63.10:2013.
For measurement of the disturbance voltage the equipment under test (EUT) is connected to the power supply mains and any other extended network via one or more artificial network(s). An EUT, whether intended to be grounded or not, and which is to be used on a table is configured as follows:
– Either the bottom or the rear of the EUT shall be at a controlled distance of 40 cm from a reference ground plane. This ground plane is normally the wall or floor of a shielded room. It may also be a grounded metal plane of at least 2 m by 2 m. This is physically accomplished as follows:
1) place the EUT on a table of non-conducting material which is at least 80 cm high. Place the EUT so that it is 40 cm from the wall of the shielded room, or
2) place the EUT on a table of non-conducting material which is 40 cm high so that the bottom of the EUT is 40 cm above the ground plane;
– All other conductive surfaces of the EUT shall be at least 80 cm from the reference ground plane;
– The EUT are placed on the floor that one side of the housings is 40 cm from the vertical reference ground plane and other metallic parts;
– Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth forming a bundle 30 cm to 40 cm long, hanging approximately in the middle between the ground plane and the table.
– I/O cables that are connected to a peripheral shall be bundled in the centre. The end of the cable may be terminated if required using correct terminating impedance. The total length shall not exceed 1 m.
The test mode(s) described in Item 2.6 were scanned during the preliminary test. After the preliminary scan, we found the test mode described in Item 2.6 producing the highest emission level.The EUT configuration and cable configuration of the above highest emission levels were recorded for reference of the final test.

Procedure of 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, 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.

6.3 TEST SETUP



6.4 DATA SAMPLE

Frequency (MHz)	QuasiPeak Reading (dBuV)	Average Reading (dBuV)	Correction Factor (dB)	QuasiPeak Result (dBuV)	Average Result (dBuV)	QuasiPeak Limit (dBuV)	Average Limit (dBuV)	QuasiPeak Margin (dB)	Average Margin (dB)	Remark (Pass/Fail)
X.XXXX	32.69	25.65	11.52	44.21	37.17	65.78	55.79	-21.57	-18.62	Pass

Factor = Insertion loss of LISN + Cable Loss
Result = Quasi-peak Reading/ Average Reading + Factor
Limit =Limit stated in standard
Margin = Result (dBuV) – Limit (dBuV)

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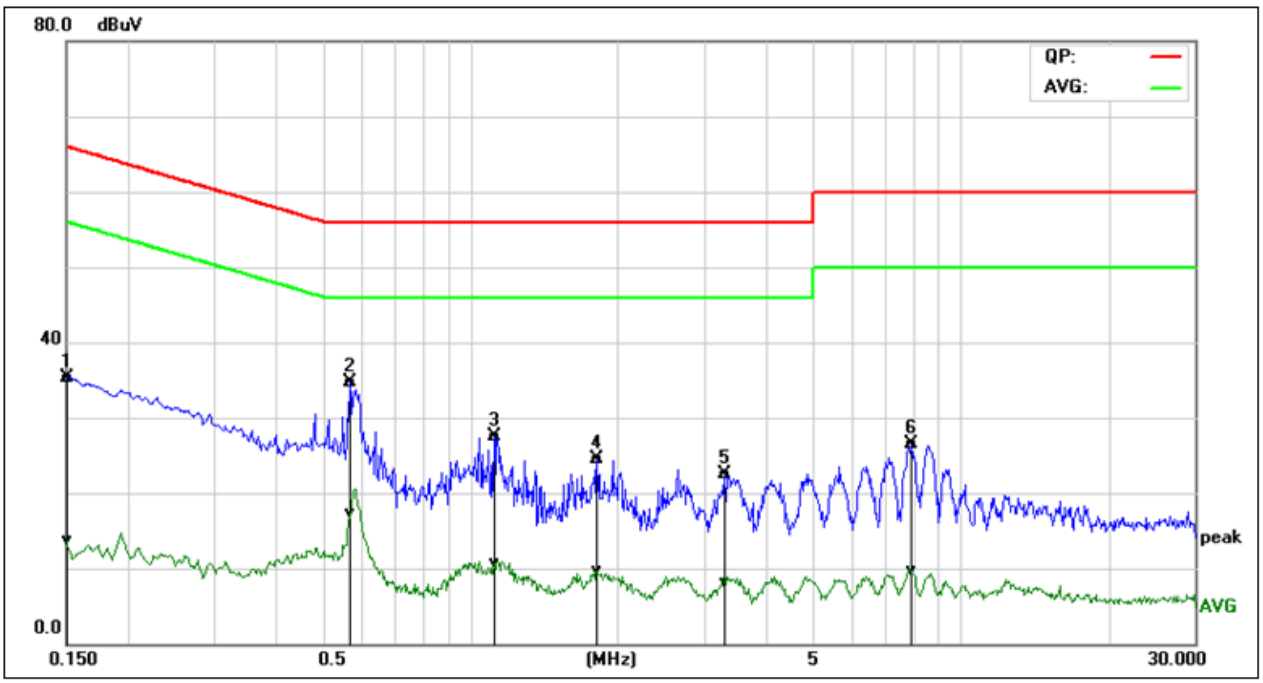
6.5 TEST RESULTS

Pre-test all test mode and recorded the worst case BLE 2440MHz test results in the report.

Left earphone

EUT Name	Wireless Earbuds	Model	E507A
Environmental Conditions	25.7℃/43%RH/101.0kPa	Test Mode	BLE 1M 2440MHz
Tested By	Tang Shenghui	Line	L
Tested Date	2022-10-25	Test Voltage	AC 120V/ 60Hz

(The chart below shows the highest readings taken from the final data.)

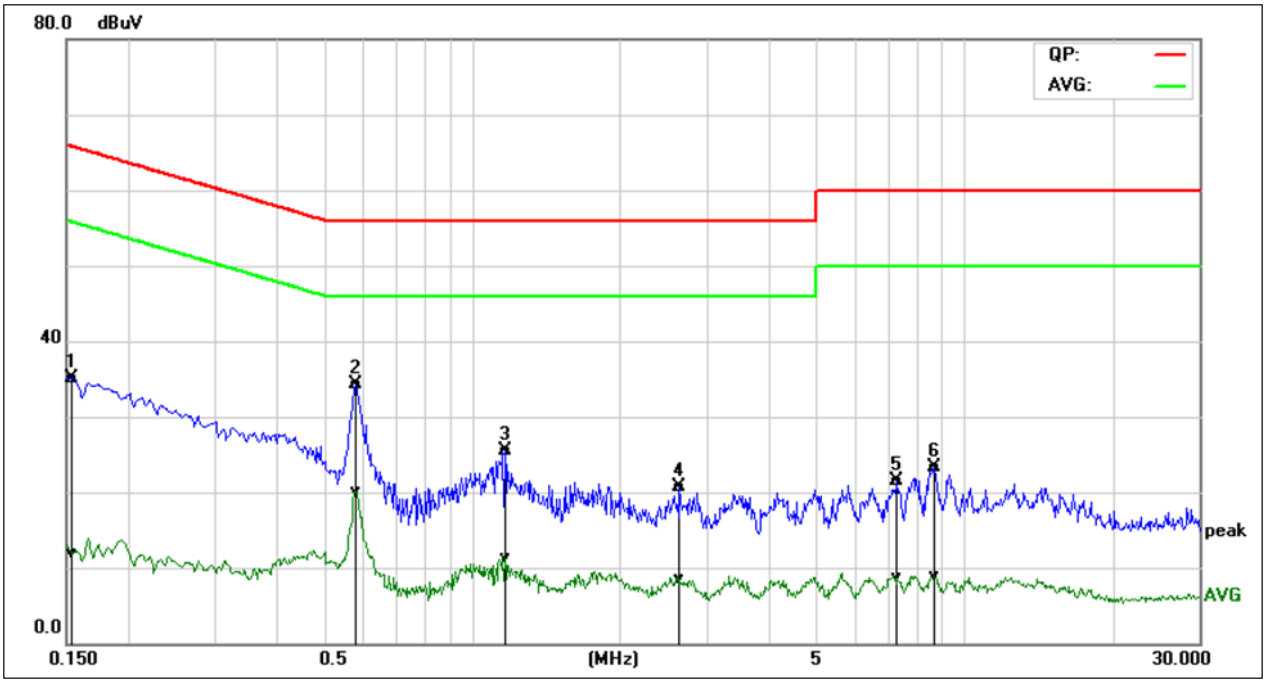


No.	Frequency	QuasiPeak reading	Average reading	Correction factor	QuasiPeak result	Average result	QuasiPeak limit	Average limit	QuasiPeak margin	Average margin	Remark
	(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)	
1	0.1500	25.78	4.07	9.61	35.39	13.68	65.99	56.00	-30.60	-42.32	Pass
2*	0.5700	25.07	7.67	9.60	34.67	17.27	56.00	46.00	-21.33	-28.73	Pass
3	1.1220	17.86	1.05	9.61	27.47	10.66	56.00	46.00	-28.53	-35.34	Pass
4	1.8180	14.96	-0.01	9.63	24.59	9.62	56.00	46.00	-31.41	-36.38	Pass
5	3.2980	12.77	-1.47	9.64	22.41	8.17	56.00	46.00	-33.59	-37.83	Pass
6	7.9580	16.86	-0.03	9.69	26.55	9.66	60.00	50.00	-33.45	-40.34	Pass

REMARKS: *L = Live Line*

EUT Name	Wireless Earbuds	Model	E507A
Environmental Conditions	25.7℃/43%RH/101.0kPa	Test Mode	BLE 1M 2440MHz
Tested By	Tang Shenghui	Line	N
Tested Date	2022-10-25	Test Voltage	AC 120V/ 60Hz

(The chart below shows the highest readings taken from the final data.)



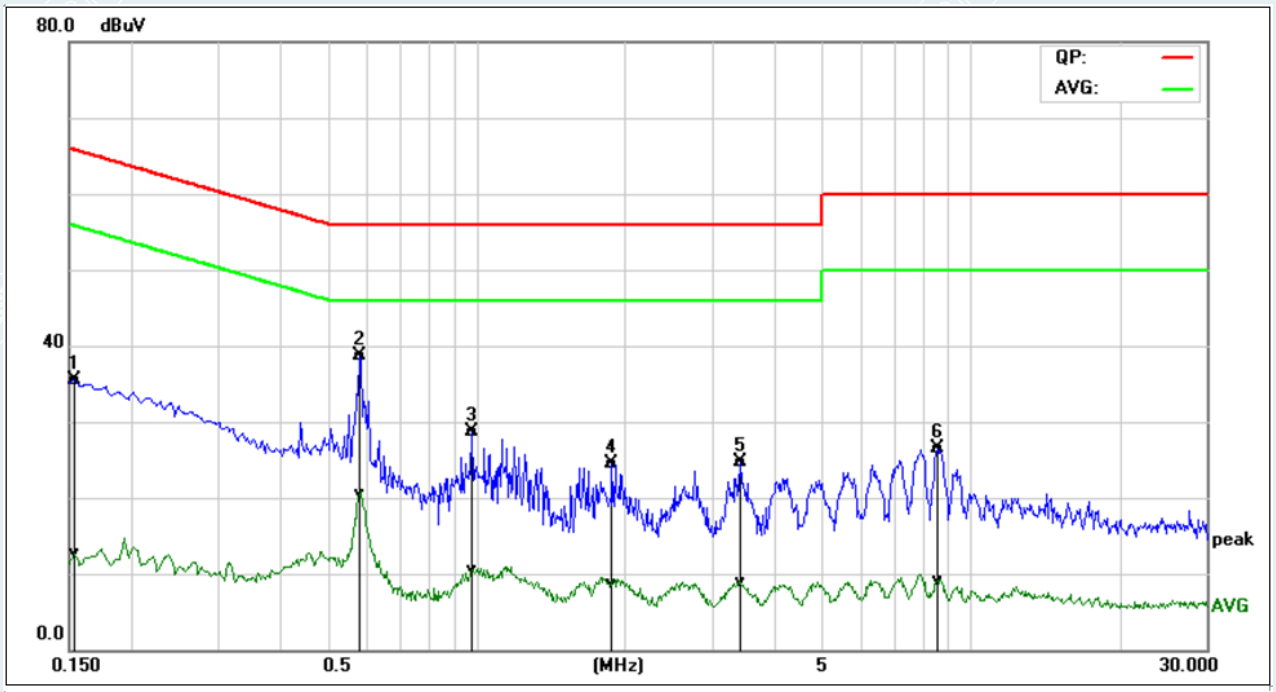
No.	Frequency	QuasiPeak reading	Average reading	Correction factor	QuasiPeak result	Average result	QuasiPeak limit	Average limit	QuasiPeak margin	Average margin	Remark
	(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)	
1	0.1539	25.51	2.26	9.60	35.11	11.86	65.78	55.79	-30.67	-43.93	Pass
2*	0.5820	24.67	10.61	9.59	34.26	20.20	56.00	46.00	-21.74	-25.80	Pass
3	1.1660	15.81	1.68	9.61	25.42	11.29	56.00	46.00	-30.58	-34.71	Pass
4	2.6460	10.98	-1.05	9.63	20.61	8.58	56.00	46.00	-35.39	-37.42	Pass
5	7.3100	11.74	-1.07	9.69	21.43	8.62	60.00	50.00	-38.57	-41.38	Pass
6	8.7140	13.62	-0.87	9.72	23.34	8.85	60.00	50.00	-36.66	-41.15	Pass

REMARKS: *N = Neutral Line.*

Right earphone

EUT Name	Wireless Earbuds	**Model**	E507A
Environmental Conditions	25.7℃/43%RH/101.0kPa	**Test Mode**	BLE 1M 2440MHz
Tested By	Tang Shenghui	**Line**	L
Tested Date	2022-10-25	**Test Voltage**	AC 120V/ 60Hz

(The chart below shows the highest readings taken from the final data.)

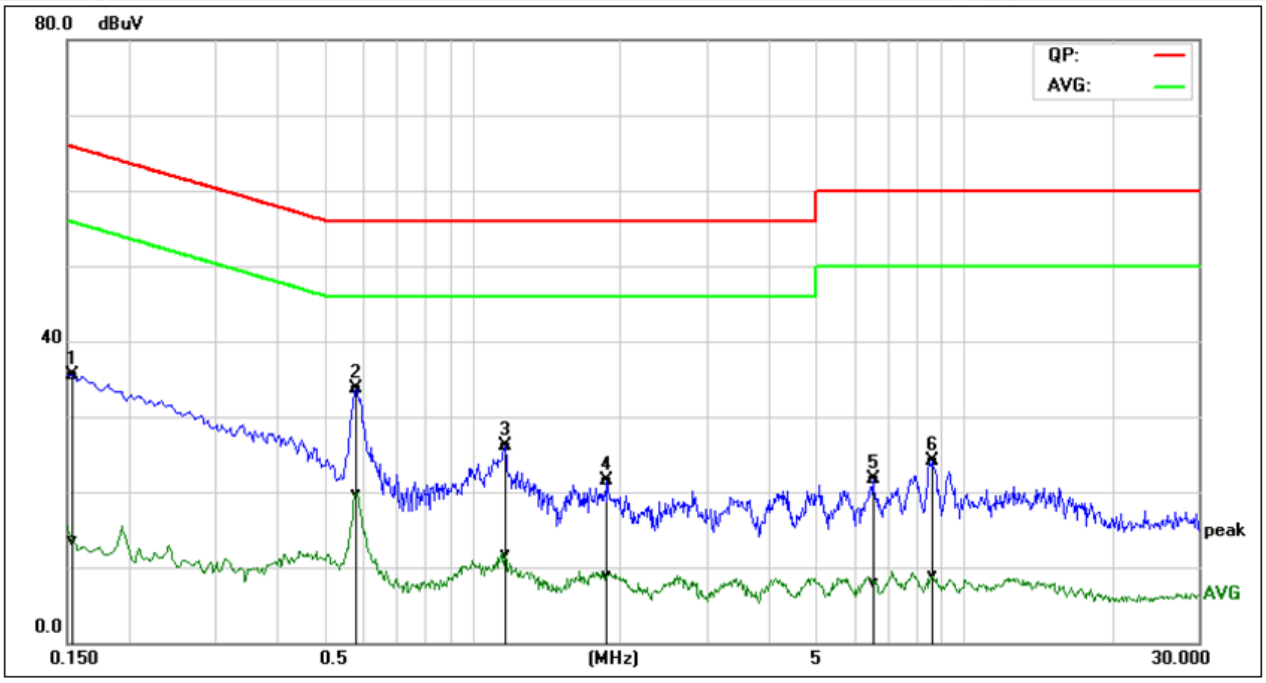


No.	Frequency	QuasiPeak reading	Average reading	Correction factor	QuasiPeak result	Average result	QuasiPeak limit	Average limit	QuasiPeak margin	Average margin	Remark
	(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)	
1	0.1539	25.98	3.08	9.61	35.59	12.69	65.78	55.79	-30.19	-43.10	Pass
2*	0.5820	29.13	10.86	9.60	38.73	20.46	56.00	46.00	-17.27	-25.54	Pass
3	0.9820	19.12	0.90	9.61	28.73	10.51	56.00	46.00	-27.27	-35.49	Pass
4	1.8860	14.78	-0.86	9.63	24.41	8.77	56.00	46.00	-31.59	-37.23	Pass
5	3.4220	15.02	-0.77	9.64	24.66	8.87	56.00	46.00	-31.34	-37.13	Pass
6	8.5659	16.81	-0.60	9.70	26.51	9.10	60.00	50.00	-33.49	-40.90	Pass

REMARKS: *L = Live Line*

EUT Name	Wireless Earbuds	Model	E507A
Environmental Conditions	25.7℃/43%RH/101.0kPa	Test Mode	BLE 1M 2440MHz
Tested By	Tang Shenghui	Line	N
Tested Date	2022-10-25	Test Voltage	AC 120V/ 60Hz

(The chart below shows the highest readings taken from the final data.)



No.	Frequency	QuasiPeak reading	Average reading	Correction factor	QuasiPeak result	Average result	QuasiPeak limit	Average limit	QuasiPeak margin	Average margin	Remark
	(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)	
1	0.1539	25.89	3.94	9.60	35.49	13.54	65.78	55.79	-30.29	-42.25	Pass
2*	0.5820	24.08	10.19	9.59	33.67	19.78	56.00	46.00	-22.33	-26.22	Pass
3	1.1660	16.41	2.03	9.61	26.02	11.64	56.00	46.00	-29.98	-34.36	Pass
4	1.8780	11.85	-0.78	9.62	21.47	8.84	56.00	46.00	-34.53	-37.16	Pass
5	6.5300	12.00	-1.77	9.69	21.69	7.92	60.00	50.00	-38.31	-42.08	Pass
6	8.6220	14.34	-0.88	9.72	24.06	8.84	60.00	50.00	-35.94	-41.16	Pass

REMARKS: *N = Neutral Line.*

7. RADIATED SPURIOUS EMISSIONS

7.1 LIMITS

In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30dB instead of 20dB. Attenuation below the general limits specified in §15.209(a) is not required.

Frequency (MHz)	Quasi-peak(μV/m)	Measurement distance(m)	Quasi-peak(dBμV/m)@distance 3m
0.009-0.490	2400/F(kHz)	300	128.5~93.8
0.490-1.705	24000/F(kHz)	30	73.8~63
1.705-30.0	30	30	69.5
30 ~ 88	100	3	40
88~216	150	3	43.5
216 ~ 960	200	3	46
Above 960	500	3	54

NOTE:

(1) The emission limits for the ranges 9-90kHz and 110-490kHz are based on measurements employing a linear average detector.

(2) The lower limit shall apply at the transition frequencies.

(3) Above 18GHz test distance is 1m, so the Peak Limit=74+20*log(3/1)=83.54 (dBμV/m). The Avg Limit=54+20*log(3/1)=63.54 (dBμV/m).

7.2 TEST PROCEDURES

1) Sequence of testing 9kHz to 30MHz

Setup:

--- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.

--- If the EUT is a tabletop system, a rotatable table with 0.8m height is used.

--- If the EUT is a floor standing device, it is placed on the ground.

--- Auxiliary equipment and cables were positioned to simulate normal operation conditions.

--- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.

--- The measurement distance is 3meter.

--- The EUT was set into operation.

Pre measurement:

--- The turntable rotates from 0 °to 360 °.

--- The antenna height is 1.0 meter.

--- The antenna is polarized X,Y and Z.

--- At each turntable position the analyzer sweeps with peak detection to find the maximum of all emissions

Final measurement:

--- Identified emissions during the pre measurement the software maximizes by rotating the turntable

position (0 °to 360 °) and by rotating the elevation axes (0 °to 360 °).

--- The final measurement will be done in the position (turntable and elevation) causing the highest emissions with QP detector.

--- The final levels, frequency, measuring time, bandwidth, turntable position, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the pre measurement and the limit will be stored.

2) Sequence of testing 30MHz to 1GHz

Setup:

--- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.

--- If the EUT is a tabletop system, a table with 0.8m height is used, which is placed on the ground plane.

--- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.

--- Auxiliary equipment and cables were positioned to simulate normal operation conditions

--- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.

--- The measurement distance is 3 meter.

--- The EUT was set into operation.

Pre measurement:

--- The turntable rotates from 0 °to 360 °.

--- The antenna is polarized vertical and horizontal.

--- The antenna height changes from 1 to 4 meter.

--- At each turntable position, antenna polarization and height the analyzer sweeps three times in peak to find the maximum of all emissions.

Final measurement:

--- The final measurement will be performed with minimum the six highest peaks.

--- According to the maximum antenna and turntable positions of premeasurement the software maximize the peaks by changing turntable rotates from 0 °to 360 °and antenna movement between 1 and 4 meter.

--- The final measurement will be done with QP detector with an EMI receiver.

--- The final levels, frequency, measuring time, bandwidth, antenna height, antenna polarization, turntable angle, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement with marked maximum final measurements and the limit will be stored.

3) Sequence of testing 1GHz to 18GHz

Setup:

--- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.

--- If the EUT is a tabletop system, a rotatable table with 1.5m height is used.

--- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.

--- Auxiliary equipment and cables were positioned to simulate normal operation conditions

--- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.

--- The measurement distance is 3 meter.

--- The EUT was set into operation.

Pre measurement:

--- The turntable rotates from 0 °to 360 °.

--- The antenna is polarized vertical and horizontal.

--- The antenna height scan range is 1 meter to 4 meter.

--- At each turntable position and antenna polarization the analyzer sweeps with peak detection to find the maximum of all emissions.

Final measurement:

--- The final measurement will be performed with minimum the six highest peaks.

--- According to the maximum antenna and turntable positions of premeasurement the software maximize the peaks by changing turntable rotates from 0 °to 360 °and antenna movement between 1 and 4 meter. This procedure is repeated for both antenna polarizations.

--- The final measurement will be done in the position (turntable, EUT-table and antenna polarization) causing the highest emissions with Peak and Average detector.
--- The final levels, frequency, measuring time, bandwidth, turntable position, EUT-table position, antenna polarization, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the pre measurement with marked maximum final measurements and the limit will be stored.

4) Sequence of testing above 18GHz
Setup:

--- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.

--- If the EUT is a tabletop system, a rotatable table with 1.5 m height is used.

--- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.

--- Auxiliary equipment and cables were positioned to simulate normal operation conditions

--- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.

--- The measurement distance is 1 meter.

--- The EUT was set into operation.

Pre measurement:

--- The antenna is moved spherical over the EUT in different polarisations of the antenna.

Final measurement:

--- The final measurement will be performed at the position and antenna orientation for all detected emissions that were found during the premeasurements with Peak and Average detector.
--- The final levels, frequency, measuring time, bandwidth, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement and the limit will be stored.

NOTE:
(a).The frequency from 9kHz to 150kHz, Set RBW=300Hz(for Peak&AVG), VBW=300Hz(for Peak&AVG). The frequency from 150kHz to 30MHz, Set RBW=9kHz, VBW=9kHz, (for QP Detector).
(b).The frequency from 30MHz to 1GHz, Set RBW=120kHz, VBW=300kHz, (for QP Detector).
(c).The frequency above 1GHz, for Peak detector: Set RBW=1MHz,VBW=3MHz.
(d). The frequency above 1GHz, for Avg detector: Set RBW=1MHz,if the EUT is configured to transmit with duty cycle ≥98%, set VBW≤RBW/100 (i.e.,10kHz) but not less than 10 Hz. If the EUT duty cycle is ＜98%，set VBW≥1/T, Where T is defined insection 2.8.

7.3 TEST SETUP

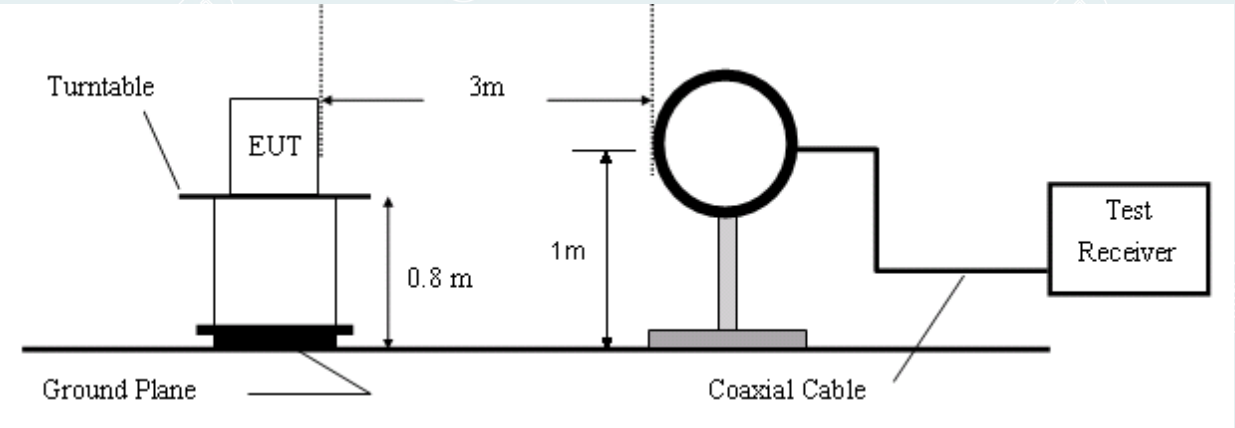


Figure 1. 9kHz to 30MHz radiated emissions test configuration

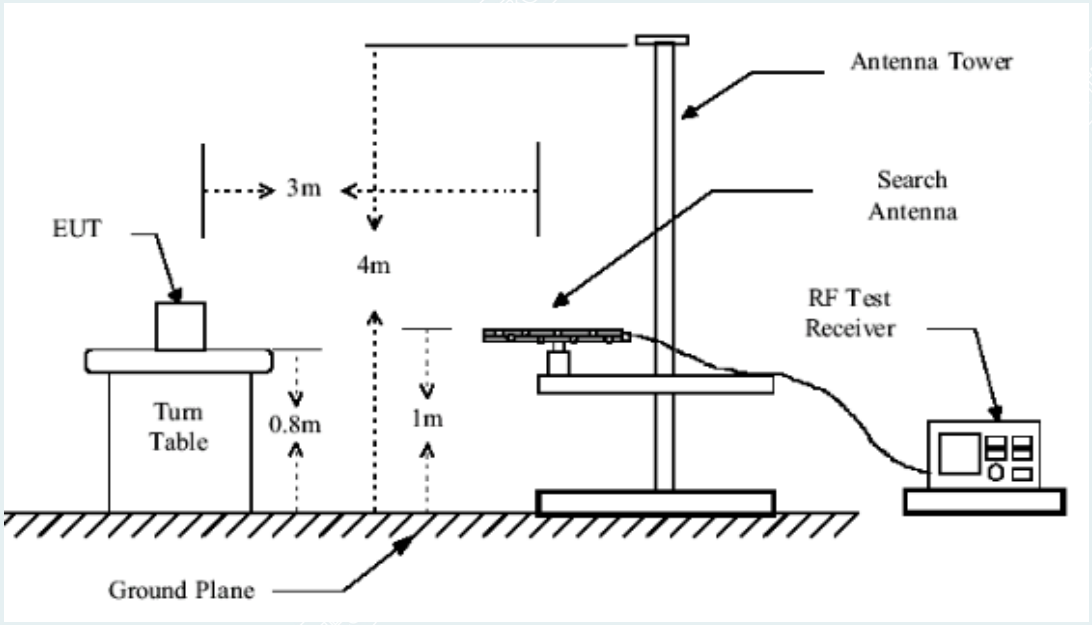


Figure 2. 30MHz to 1GHz radiated emissions test configuration

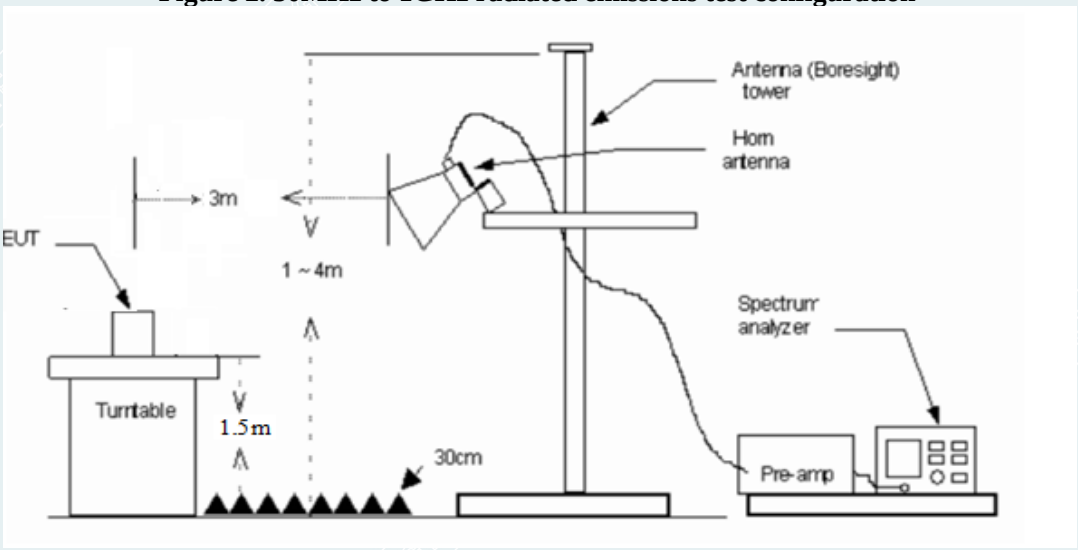


Figure 3. 1GHz to 18GHz radiated emissions test configuration

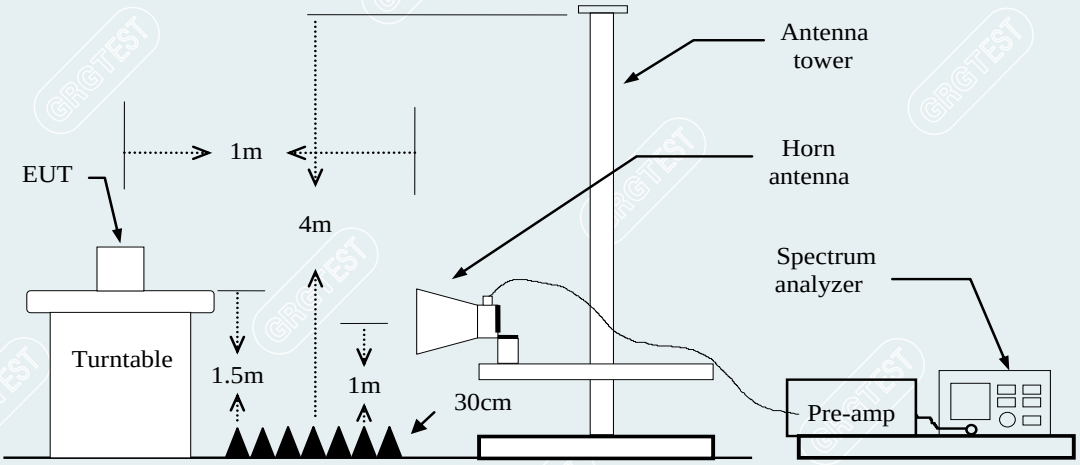


Figure 4. 18GHz to 26.5GHz radiated emissions test configuration

7.4 DATA SAMPLE

30MHz to 1GHz

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Pole
xxx	xxx	37.06	-15.48	21.58	40.00	-18.42	QP	Vertical

1GHz to 18GHz

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Pole
xxx	xxx	65.45	-11.12	54.33	74.00	-19.67	Peak	Vertical
xxx	xxx	63.00	-11.12	51.88	54.00	-2.12	AVG	Vertical

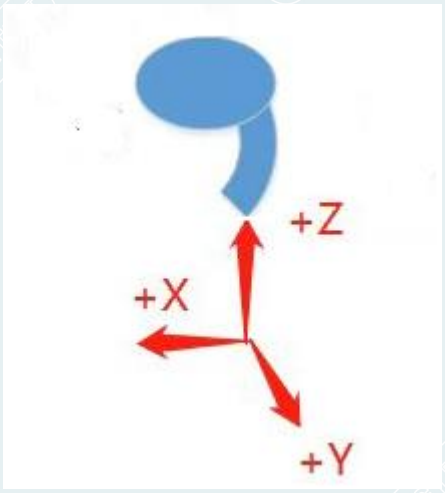
Above 18GHz

No.	Frequency (MHz)	Reading (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Pole
xxx	xxx	68.86	57.66	-11.20	83.54	25.88	peak	Vertical
xxx	xxx	68.89	-11.20	57.69	63.54	5.85	AVG	Vertical

Frequency (MHz)	= Emission frequency in MHz
Ant.Pol. (H/V)	= Antenna polarization
Reading (dBuV)	= Uncorrected Analyzer / Receiver reading
Correction Factor (dB/m)	= Antenna factor + Cable loss – Amplifier gain
Result (dBuV/m)	= Reading (dBuV) + Correction Factor (dB/m)
Limit (dBuV/m)	= Limit stated in standard
Margin (dB)	= Remark Result (dBuV/m) – Limit (dBuV/m)
Peak	= Peak Reading
QP	= Quasi-peak Reading
AVG	= Average Reading

7.5 TEST RESULTS

The test are under 3-axes(X,Y,Z) position(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand), After pre-test, It was found that the worse radiation emission was get at the Z position. So the data shown the Z position only.



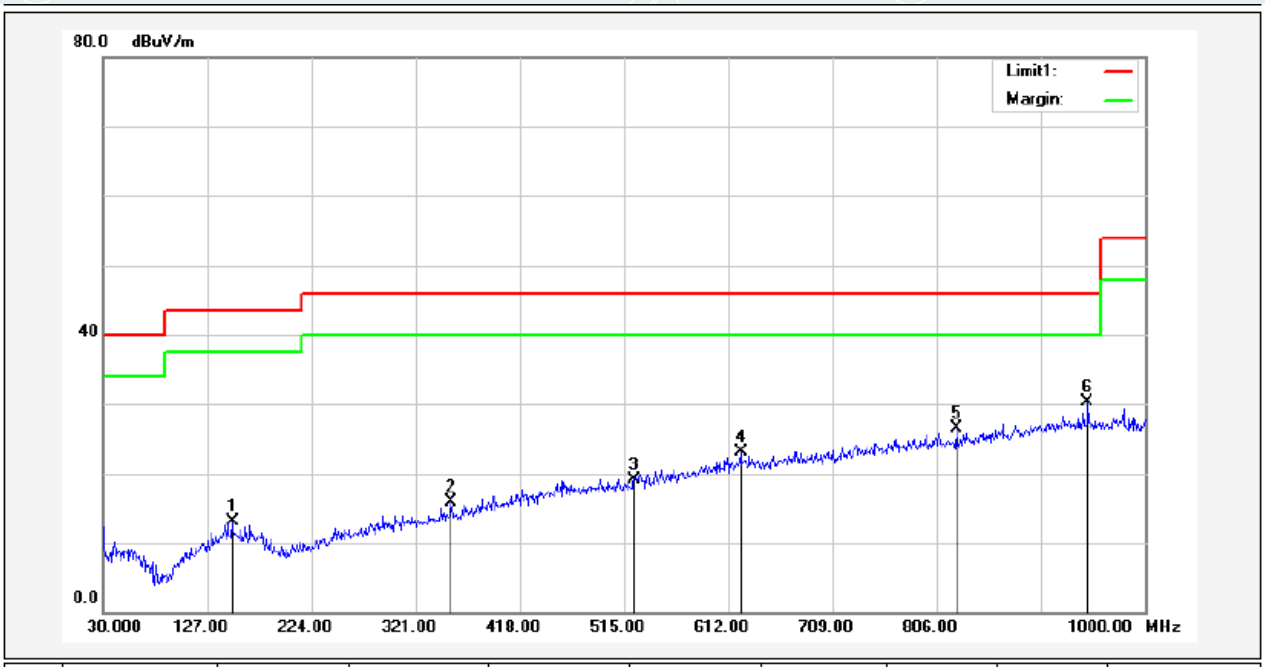
Pre-test all test mode and recorded the worst case BLE 1M 2440MHz test results in the report.

---------- **The following blanks** ----------

Left earphone

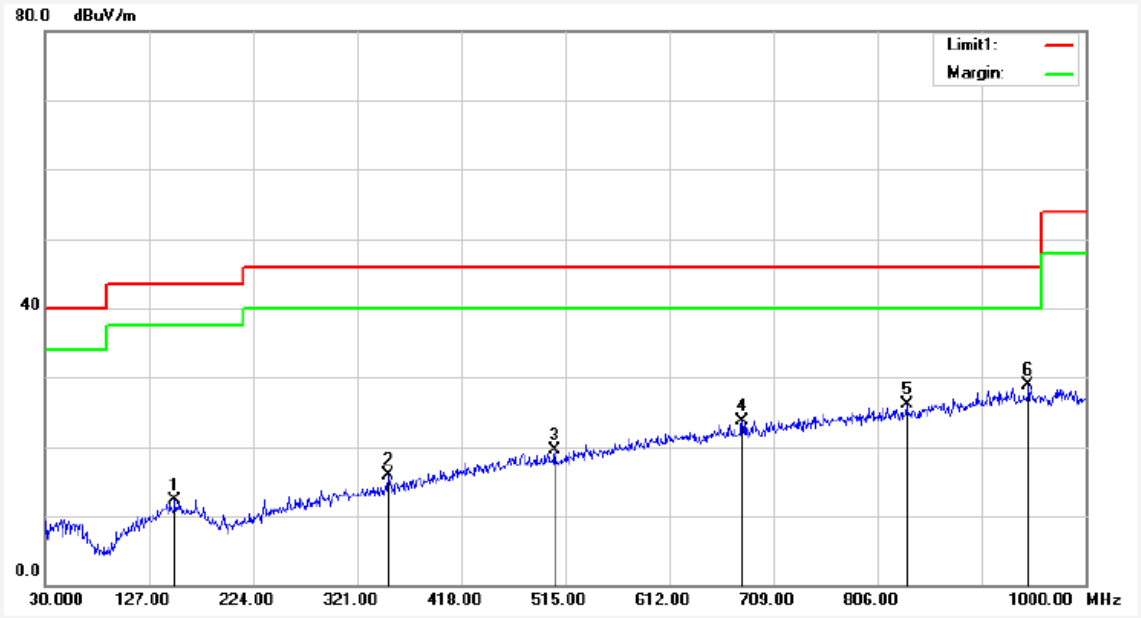
Below 1GHz

EUT Name	Wireless Earbuds	**Model**	E507A
Environmental Conditions	26.1℃/51%RH/101.0kPa	**Test Voltage**	DC 3.85V
Test Mode	TX/ BLE_1M (2440MHz)	**Polarity**	Vertical
Tested By	Huang Xinlong	**Tested Date**	2022-10-19



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over (dB)	Degree (deg.)	Height (cm)	Remark
1	150.2800	37.96	-24.82	13.14	43.50	-30.36	59	100	QP
2	353.9800	38.05	-22.20	15.85	46.00	-30.15	72	100	QP
3	524.7000	36.39	-17.28	19.11	46.00	-26.89	94	100	QP
4	623.6400	37.87	-14.68	23.19	46.00	-22.81	0	166	QP
5	824.4300	37.63	-11.22	26.41	46.00	-19.59	264	200	QP
6*	946.6500	39.75	-9.44	30.31	46.00	-15.69	320	300	QP

EUT Name	Wireless Earbuds	Model	E507A
Environmental Conditions	26.1℃/51%RH/101.0kPa	Test Voltage	DC 3.85V
Test Mode	TX/ BLE_1M (2440MHz)	Polarity	Horizontal
Tested By	Huang Xinlong	Tested Date	2022-10-19

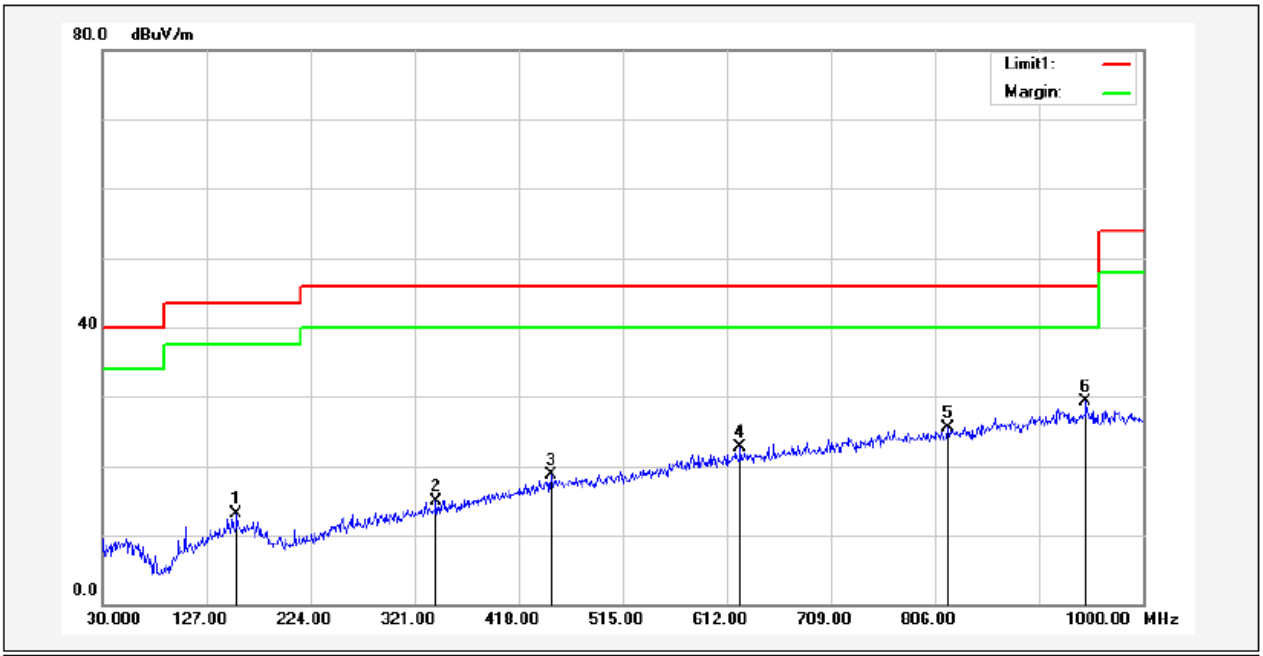


No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over (dB)	Degree (deg.)	Height (cm)	Remark
1	151.2500	37.19	-24.84	12.35	43.50	-31.15	0	151	QP
2	350.1000	38.26	-22.35	15.91	46.00	-30.09	198	300	QP
3	505.3000	37.25	-17.77	19.48	46.00	-26.52	50	300	QP
4	679.9000	37.37	-13.70	23.67	46.00	-22.33	311	400	QP
5	833.1600	37.28	-11.12	26.16	46.00	-19.84	19	400	QP
6*	946.6500	38.28	-9.44	28.84	46.00	-17.16	353	300	QP

Right earphone

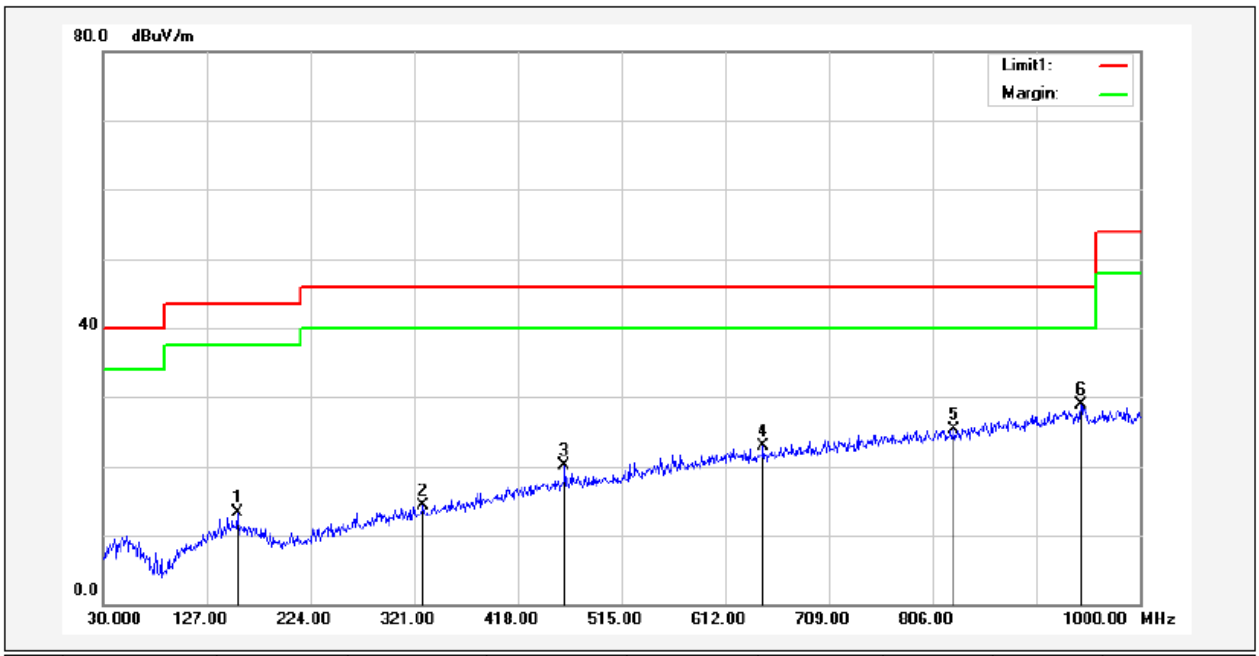
Below 1GHz

EUT Name	Wireless Earbuds	**Model**	E507A
Environmental Conditions	26.1℃/51%RH/101.0kPa	**Test Voltage**	DC 3.85V
Test Mode	TX/ BLE_1M (2440MHz)	**Polarity**	Vertical
Tested By	Huang Xinlong	**Tested Date**	2022-10-19



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over (dB)	Degree (deg.)	Height (cm)	Remark
1	155.1300	38.00	-24.90	13.10	43.50	-30.40	330	100	QP
2	341.3700	37.55	-22.56	14.99	46.00	-31.01	266	300	QP
3	448.0700	37.47	-18.80	18.67	46.00	-27.33	360	298	QP
4	624.6100	37.46	-14.67	22.79	46.00	-23.21	236	100	QP
5	818.6100	36.88	-11.29	25.59	46.00	-20.41	360	300	QP
6*	946.6500	38.66	-9.44	29.22	46.00	-16.78	1	100	QP

EUT Name	Wireless Earbuds	Model	E507A
Environmental Conditions	26.1℃/51%RH/101.0kPa	Test Voltage	DC 3.85V
Test Mode	TX/ BLE_1M (2440MHz)	Polarity	Horizontal
Tested By	Huang Xinlong	Tested Date	2022-10-19



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over (dB)	Degree (deg.)	Height (cm)	Remark
1	156.1000	38.22	-24.92	13.30	43.50	-30.20	360	201	QP
2	329.7300	37.20	-22.83	14.37	46.00	-31.63	65	200	QP
3	461.6500	38.74	-18.55	20.19	46.00	-25.81	307	200	QP
4	647.8900	37.19	-14.31	22.88	46.00	-23.12	245	100	QP
5	826.3700	36.54	-11.20	25.34	46.00	-20.66	141	400	QP
6*	944.7100	38.31	-9.47	28.84	46.00	-17.16	182	300	QP

Remark:

1 No emission found between lowest internal used/generated frequency to 30MHz.

2 Radiated emissions measured in frequency range from 9kHz to 1GHz were made with an instrument using Quasi-peak detector mode.

3 The IF bandwidth of Receiver between 30MHz to 1GHz was 120kHz.

Left earphone

1GHz-18GHz:

According to C63.10, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement, so AV emission value did not show in below table if the peak value complies with average limit.

Mode: TX/ BLE_1M
Lowest Frequency (2402MHz)
Environment: 24.5℃/43%RH/101.0kPa Voltage: DC 3.85V
Tested By:Zhang Zishan Date: 2022-10-21

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1248.0310	59.87	37.89	-21.98	74.00	36.11	100	283	Horizontal
2	1904.1130	62.47	41.45	-21.02	74.00	32.55	100	56	Horizontal
3	3221.2777	57.99	41.40	-16.59	74.00	32.60	100	169	Horizontal
4	5188.3986	55.92	44.83	-11.09	74.00	29.17	100	12	Horizontal
5	7403.0504	53.70	51.04	-2.66	74.00	22.96	100	22	Horizontal
6	8773.8467	52.94	52.16	-0.78	74.00	21.84	100	335	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1091.0114	60.80	38.41	-22.39	74.00	35.59	100	223	Vertical
2	1388.7986	59.98	38.36	-21.62	74.00	35.64	200	95	Vertical
3	2197.6497	60.12	41.03	-19.09	74.00	32.97	100	172	Vertical
4	3603.8255	59.71	44.21	-15.50	74.00	29.79	200	326	Vertical
5	5047.7560	56.50	45.41	-11.09	74.00	28.59	200	276	Vertical
6	7425.5532	54.90	51.62	-3.28	74.00	22.38	100	188	Vertical

Mode: TX/ BLE_1M
Middle Frequency (2440MHz)
Environment: 24.5℃/43%RH/101.0kPa Voltage: DC 3.85V
Tested By: Zhang Zishan Date: 2022-10-21

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1662.3328	63.29	40.16	-23.13	74.00	33.84	100	16	Horizontal
2	3210.0263	57.95	41.55	-16.40	74.00	32.45	100	265	Horizontal
3	4207.6510	57.05	41.83	-15.22	74.00	32.17	100	186	Horizontal
4	4818.9774	56.38	44.12	-12.26	74.00	29.88	200	187	Horizontal
5	5904.7381	55.06	46.05	-9.01	74.00	27.95	200	41	Horizontal
6	7016.7521	53.75	48.60	-5.15	74.00	25.40	100	285	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1401.0501	59.75	38.23	-21.52	74.00	35.77	100	310	Vertical
2	2342.4178	59.57	41.00	-18.57	74.00	33.00	100	174	Vertical
3	3660.0825	59.43	42.65	-16.78	74.00	31.35	100	69	Vertical
4	4642.7053	55.92	43.76	-12.16	74.00	30.24	100	256	Vertical
5	5190.2738	56.31	45.27	-11.04	74.00	28.73	100	345	Vertical
6	6949.2437	53.23	48.35	-4.88	74.00	25.65	200	98	Vertical

Mode: TX/ BLE_1M
Highest Frequency (2480MHz)
Environment: 24.5℃/43%RH/101.0kPa Voltage: DC 3.85V
Tested By: Zhang Zishan Date: 2022-10-21

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1285.0356	60.29	37.79	-22.50	74.00	36.21	100	247	Horizontal
2	2852.4816	58.76	42.39	-16.37	74.00	31.61	100	317	Horizontal
3	4389.5487	57.47	42.37	-15.10	74.00	31.63	200	135	Horizontal
4	5064.6331	56.03	44.70	-11.33	74.00	29.30	100	104	Horizontal
5	5668.4586	55.78	45.90	-9.88	74.00	28.10	100	164	Horizontal
6	6579.8225	54.10	47.27	-6.83	74.00	26.73	200	66	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1432.0540	60.13	38.39	-21.74	74.00	35.61	100	73	Vertical
2	2701.2127	58.85	41.58	-17.27	74.00	32.42	200	203	Vertical
3	3609.4512	57.56	41.93	-15.63	74.00	32.07	200	187	Vertical
4	4601.4502	55.97	42.83	-13.14	74.00	31.17	100	48	Vertical
5	5666.5833	55.98	46.05	-9.93	74.00	27.95	100	217	Vertical
6	6557.3197	54.33	47.97	-6.36	74.00	26.03	100	1	Vertical

Mode: TX/ BLE_2M
Lowest Frequency (2402MHz)
Environment: 24.5℃/43%RH/101.0kPa Voltage: DC 3.85V
Tested By:Zhang Zishan Date: 2022-10-21

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1258.2823	60.27	38.23	-22.04	74.00	35.77	100	153	Horizontal
2	2192.8991	59.93	41.67	-18.26	74.00	32.33	200	163	Horizontal
3	3588.8236	57.06	41.03	-16.03	74.00	32.97	100	109	Horizontal
4	5194.0243	56.59	45.48	-11.11	74.00	28.52	100	344	Horizontal
5	5981.6227	55.51	46.22	-9.29	74.00	27.78	100	20	Horizontal
6	6574.1968	54.23	47.43	-6.80	74.00	26.57	200	99	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1386.2983	59.92	38.27	-21.65	74.00	35.73	200	277	Vertical
2	2989.9988	58.48	41.98	-16.50	74.00	32.02	100	16	Vertical
3	3603.8255	59.45	43.95	-15.50	74.00	30.05	100	324	Vertical
4	4659.5824	56.27	44.03	-12.24	74.00	29.97	100	95	Vertical
5	5936.6171	55.12	45.87	-9.25	74.00	28.13	200	234	Vertical
6	6512.3140	55.62	48.57	-7.05	74.00	25.43	100	284	Vertical

Mode: TX/ BLE_2M
Middle Frequency (2440MHz)
Environment: 24.5℃/43%RH/101.0kPa Voltage: DC 3.85V
Tested By: Zhang Zishan Date: 2022-10-21

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1297.7872	60.65	37.93	-22.72	74.00	36.07	100	94	Horizontal
2	2849.4812	58.53	42.24	-16.29	74.00	31.76	100	133	Horizontal
3	3596.3245	58.04	42.16	-15.88	74.00	31.84	200	62	Horizontal
4	4817.1021	55.92	43.68	-12.24	74.00	30.32	100	257	Horizontal
5	6171.0214	55.20	46.82	-8.38	74.00	27.18	200	287	Horizontal
6	6838.6048	54.64	48.72	-5.92	74.00	25.28	200	181	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1371.0464	60.52	38.73	-21.79	74.00	35.27	200	113	Vertical
2	2989.2487	58.33	41.82	-16.51	74.00	32.18	100	360	Vertical
3	3660.0825	59.83	43.05	-16.78	74.00	30.95	100	195	Vertical
4	4841.4802	56.85	44.07	-12.78	74.00	29.93	200	305	Vertical
5	5634.7043	54.65	44.87	-9.78	74.00	29.13	200	247	Vertical
6	6178.5223	54.75	46.46	-8.29	74.00	27.54	200	296	Vertical

Mode: TX/ BLE_2M
Highest Frequency (2480MHz)
Environment: 24.5℃/43%RH/101.0kPa Voltage: DC 3.85V
Tested By: Zhang Zishan Date: 2022-10-21

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1269.7837	60.24	38.00	-22.24	74.00	36.00	100	172	Horizontal
2	2249.1561	59.43	40.82	-18.61	74.00	33.18	200	282	Horizontal
3	2835.7295	58.34	41.71	-16.63	74.00	32.29	100	15	Horizontal
4	3783.8480	57.66	40.88	-16.78	74.00	33.12	100	138	Horizontal
5	4817.1021	56.53	44.29	-12.24	74.00	29.71	100	344	Horizontal
6	5672.2090	55.35	45.45	-9.90	74.00	28.55	200	276	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1390.2988	60.04	38.43	-21.61	74.00	35.57	100	84	Vertical
2	1703.8380	59.71	38.32	-21.39	74.00	35.68	200	272	Vertical
3	2976.2470	58.59	41.88	-16.71	74.00	32.12	200	154	Vertical
4	3611.3264	57.17	41.49	-15.68	74.00	32.51	100	39	Vertical
5	4955.8695	55.03	43.58	-11.45	74.00	30.42	200	76	Vertical
6	6006.0008	55.61	46.84	-8.77	74.00	27.16	100	294	Vertical

Remark:

1 Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency.
2 Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3 Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4 Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.

Right earphone

1GHz-18GHz:

According to C63.10, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement, so AV emission value did not show in below table if the peak value complies with average limit.

Mode: TX/ BLE_1M
Lowest Frequency (2402MHz)
Environment: 24.5℃/43%RH/101.0kPa Voltage: DC 3.85V
Tested By:Zhang Zishan Date: 2022-10-21

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1893.3617	59.49	38.38	-21.11	74.00	35.62	200	196	Horizontal
2	2990.2488	58.98	41.80	-17.18	74.00	32.20	200	226	Horizontal
3	3215.6520	58.09	41.59	-16.50	74.00	32.41	200	155	Horizontal
4	3909.4887	57.60	41.92	-15.68	74.00	32.08	200	323	Horizontal
5	4817.1021	57.41	45.17	-12.24	74.00	28.83	200	26	Horizontal
6	7232.4041	53.81	49.97	-3.84	74.00	24.03	200	76	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1406.0508	60.93	39.37	-21.56	74.00	34.63	100	244	Vertical
2	2980.2475	58.16	41.50	-16.66	74.00	32.50	200	324	Vertical
3	3607.5759	57.34	41.76	-15.58	74.00	32.24	100	360	Vertical
4	5197.7747	56.69	45.66	-11.03	74.00	28.34	100	234	Vertical
5	5919.7400	55.61	46.55	-9.06	74.00	27.45	100	14	Vertical
6	6990.4988	54.09	48.86	-5.23	74.00	25.14	100	265	Vertical

Mode: TX/ BLE_1M
Middle Frequency (2440MHz)
Environment: 24.5℃/43%RH/101.0kPa Voltage: DC 3.85V
Tested By: Zhang Zishan Date: 2022-10-21

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1279.5349	60.48	38.08	-22.40	74.00	35.92	100	0	Horizontal
2	2221.1526	58.89	40.69	-18.20	74.00	33.31	100	276	Horizontal
3	2859.7325	59.32	42.68	-16.64	74.00	31.32	200	158	Horizontal
4	4076.3845	58.47	42.67	-15.80	74.00	31.33	100	194	Horizontal
5	5180.8976	56.32	45.26	-11.06	74.00	28.74	200	283	Horizontal
6	6201.0251	55.39	47.43	-7.96	74.00	26.57	100	253	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1402.5503	60.54	39.00	-21.54	74.00	35.00	100	116	Vertical
2	1717.8397	60.37	38.88	-21.49	74.00	35.12	100	136	Vertical
3	2850.4813	58.32	40.93	-17.39	74.00	33.07	200	326	Vertical
4	4316.4146	57.16	43.21	-13.95	74.00	30.79	100	341	Vertical
5	4670.8339	57.29	44.74	-12.55	74.00	29.26	200	332	Vertical
6	5885.9857	55.97	46.85	-9.12	74.00	27.15	200	114	Vertical

Mode: TX/ BLE_1M
Highest Frequency (2480MHz)
Environment: 24.5℃/43%RH/101.0kPa Voltage: DC 3.85V
Tested By: Zhang Zishan Date: 2022-10-21

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1280.5351	60.57	38.14	-22.43	74.00	35.86	200	196	Horizontal
2	2193.3992	59.33	41.10	-18.23	74.00	32.90	100	345	Horizontal
3	2856.4821	58.76	42.24	-16.52	74.00	31.76	100	128	Horizontal
4	4845.2307	57.08	44.46	-12.62	74.00	29.54	100	185	Horizontal
5	5885.9857	55.84	46.70	-9.14	74.00	27.30	200	36	Horizontal
6	6831.1039	54.94	48.96	-5.98	74.00	25.04	200	293	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1375.7970	60.59	38.85	-21.74	74.00	35.15	200	205	Vertical
2	2137.1421	60.63	39.90	-20.73	74.00	34.10	200	156	Vertical
3	4331.4164	56.73	42.87	-13.86	74.00	31.13	200	46	Vertical
4	4599.5749	57.51	44.34	-13.17	74.00	29.66	100	224	Vertical
5	5353.4192	55.99	45.00	-10.99	74.00	29.00	100	343	Vertical
6	6568.5711	53.91	47.59	-6.32	74.00	26.41	100	174	Vertical

Mode: TX/ BLE_2M
Lowest Frequency (2402MHz)
Environment: 24.5℃/43%RH/101.0kPa Voltage: DC 3.85V
Tested By:Zhang Zishan Date: 2022-10-21

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1249.7812	60.36	38.45	-21.91	74.00	35.55	100	315	Horizontal
2	2851.9815	59.04	42.69	-16.35	74.00	31.31	200	127	Horizontal
3	4179.5224	57.38	42.35	-15.03	74.00	31.65	100	23	Horizontal
4	5149.0186	55.84	44.86	-10.98	74.00	29.14	200	145	Horizontal
5	5653.4567	55.45	45.68	-9.77	74.00	28.32	100	44	Horizontal
6	6881.7352	53.95	48.28	-5.67	74.00	25.72	100	242	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1420.5526	60.37	38.70	-21.67	74.00	35.30	200	225	Vertical
2	1695.3369	59.67	38.18	-21.49	74.00	35.82	200	256	Vertical
3	2354.1693	59.44	40.83	-18.61	74.00	33.17	200	136	Vertical
4	3007.5009	58.23	41.10	-17.13	74.00	32.90	100	184	Vertical
5	5188.3986	55.39	44.35	-11.04	74.00	29.65	100	275	Vertical
6	7223.0279	54.64	51.57	-3.07	74.00	22.43	100	275	Vertical

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	7221.5111	-3.07	41.40	38.33	54.00	15.67	102	69	Vertical

Mode: TX/ BLE_2M
Middle Frequency (2440MHz)
Environment: 24.5℃/43%RH/101.0kPa Voltage: DC 3.85V
Tested By: Zhang Zishan Date: 2022-10-21

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1249.0311	60.47	38.53	-21.94	74.00	35.47	100	304	Horizontal
2	2995.7495	58.13	40.97	-17.16	74.00	33.03	200	342	Horizontal
3	4205.7757	57.22	42.03	-15.19	74.00	31.97	100	158	Horizontal
4	4683.9605	57.64	44.78	-12.86	74.00	29.22	200	206	Horizontal
5	5184.6481	56.50	45.42	-11.08	74.00	28.58	100	207	Horizontal
6	6384.7981	54.83	47.33	-7.50	74.00	26.67	100	99	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1392.7991	60.47	38.89	-21.58	74.00	35.11	100	56	Vertical
2	2365.9207	59.65	40.93	-18.72	74.00	33.07	100	254	Vertical
3	2995.4994	58.25	41.84	-16.41	74.00	32.16	100	264	Vertical
4	3596.3245	57.44	41.91	-15.53	74.00	32.09	100	186	Vertical
5	4331.4164	57.65	43.79	-13.86	74.00	30.21	200	26	Vertical
6	6589.1986	53.90	47.64	-6.26	74.00	26.36	100	296	Vertical

Mode: TX/ BLE_2M
Highest Frequency (2480MHz)
Environment: 25.1℃/51%RH/101.0kPa Voltage: DC 3.85V
Tested By: Zhang Zishan Date: 2022-10-21

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1250.0313	59.62	37.72	-21.90	74.00	36.28	200	64	Horizontal
2	2840.9801	58.50	42.00	-16.50	74.00	32.00	200	25	Horizontal
3	3609.4512	56.80	40.71	-16.09	74.00	33.29	200	72	Horizontal
4	4318.2898	56.43	42.09	-14.34	74.00	31.91	200	160	Horizontal
5	5109.6387	55.97	44.15	-11.82	74.00	29.85	100	187	Horizontal
6	6174.7718	55.04	46.72	-8.32	74.00	27.28	200	3	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1405.3007	60.28	38.73	-21.55	74.00	35.27	100	86	Vertical
2	1746.0933	60.31	38.59	-21.72	74.00	35.41	100	332	Vertical
3	2480.4351	60.43	40.85	-19.58	74.00	33.15	100	255	Vertical
4	3596.3245	57.36	41.83	-15.53	74.00	32.17	100	128	Vertical
5	4644.5806	55.94	43.83	-12.11	74.00	30.17	200	129	Vertical
6	5914.1143	55.61	46.62	-8.99	74.00	27.38	100	108	Vertical

Remark:

1 Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency.
2 Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3 Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4 Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.

Left earphone

18GHz to 26.5GHz

According to C63.10, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement, so AV emission value did not show in below table if the peak value complies with average limit.

Pre-test all test mode and recorded the worst case BLE 1M test results in the report.

Mode: TX/ BLE_1M
Lowest Frequency (2402MHz)
Environment: 24.8℃/54%RH/101.0kPa Voltage: DC 3.85V
Tested By: Zhang Zishan Date: 2022-10-24

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	18382.925	51.78	39.48	-12.30	83.54	44.06	150	39	Horizontal
2	19421.625	51.81	40.33	-11.48	83.54	43.21	150	182	Horizontal
3	20486.250	50.75	40.24	-10.51	83.54	43.30	150	103	Horizontal
4	21268.675	48.31	38.31	-10.00	83.54	45.23	150	135	Horizontal
5	22597.650	46.84	37.82	-9.02	83.54	45.72	150	72	Horizontal
6	23854.800	42.92	34.37	-8.55	83.54	49.17	150	8	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	18470.475	52.03	39.88	-12.15	83.54	43.66	150	64	Vertical
2	19600.125	51.22	39.95	-11.27	83.54	43.59	150	195	Vertical
3	20520.675	51.50	41.14	-10.36	83.54	42.40	150	17	Vertical
4	21836.900	47.30	37.63	-9.67	83.54	45.91	150	164	Vertical
5	23332.475	44.50	35.88	-8.62	83.54	47.66	150	17	Vertical
6	25721.400	41.18	33.53	-7.65	83.54	50.01	150	64	Vertical

Note:
Above 18G test distance is 1m, so the Peak Limit=74+20*log(3/1)=83.54 (dBμV/m).

Mode: TX/ BLE_1M
Middle Frequency (2440MHz)
Environment: 24.8℃/54%RH/101.0kPa Voltage: DC 3.85V
Tested By: Zhang Zishan Date: 2022-10-24

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	18399.075	51.32	39.03	-12.29	83.54	44.51	150	216	Horizontal
2	19494.725	52.02	40.59	-11.43	83.54	42.95	150	135	Horizontal
3	20478.175	50.23	39.71	-10.52	83.54	43.83	150	183	Horizontal
4	21893.000	49.36	39.59	-9.77	83.54	43.95	150	72	Horizontal
5	23474.850	45.24	36.53	-8.71	83.54	47.01	150	343	Horizontal
6	25730.325	41.55	33.79	-7.76	83.54	49.75	150	87	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	18388.450	52.26	40.02	-12.24	83.54	43.52	150	340	Vertical
2	19569.100	52.06	40.75	-11.31	83.54	42.79	150	257	Vertical
3	20685.575	49.58	39.41	-10.17	83.54	44.13	150	273	Vertical
4	21308.200	48.81	38.94	-9.87	83.54	44.60	150	193	Vertical
5	22819.500	45.65	36.93	-8.72	83.54	46.61	150	96	Vertical
6	24915.175	41.76	34.48	-7.28	83.54	49.06	150	292	Vertical

Note:
Above 18G test distance is 1m, so the Peak Limit=74+20*log(3/1)=83.54 (dBμV/m).

Mode: TX/ BLE_1M
Highest Frequency (2480MHz)
Environment: 24.8℃/54%RH/101.0kPa Voltage: DC 3.85V
Tested By: Zhang Zishan Date: 2022-10-24

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	18453.050	51.74	39.49	-12.25	83.54	44.05	150	56	Horizontal
2	19249.500	51.89	40.29	-11.60	83.54	43.25	150	312	Horizontal
3	20716.175	48.68	38.36	-10.32	83.54	45.18	150	40	Horizontal
4	21591.250	47.49	37.72	-9.77	83.54	45.82	150	136	Horizontal
5	23098.725	43.55	34.88	-8.67	83.54	48.66	150	185	Horizontal
6	24902.850	42.33	34.94	-7.39	83.54	48.60	150	200	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	18436.900	52.41	40.22	-12.19	83.54	43.32	150	208	Vertical
2	19623.925	51.28	40.03	-11.25	83.54	43.51	150	14	Vertical
3	20436.525	50.47	40.00	-10.47	83.54	43.54	150	160	Vertical
4	21352.400	47.93	38.08	-9.85	83.54	45.46	150	353	Vertical
5	22827.575	46.02	37.30	-8.72	83.54	46.24	150	160	Vertical
6	25095.800	41.06	33.96	-7.10	83.54	49.58	150	14	Vertical

Note:
Above 18G test distance is 1m, so the Peak Limit=74+20*log(3/1)=83.54 (dBμV/m).

Right earphone

18GHz to 26.5GHz

According to C63.10, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement, so AV emission value did not show in below table if the peak value complies with average limit.

Pre-test all test mode and recorded the worst case BLE 1M test results in the report.

Mode: TX/ BLE_1M
Lowest Frequency (2402MHz)
Environment: 24.8℃/54%RH/101.0kPa Voltage: DC 3.85V
Tested By: Zhang Zishan Date: 2022-10-24

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	18670.650	52.52	40.49	-12.03	83.54	43.05	100	356	Horizontal
2	19676.625	51.13	39.87	-11.26	83.54	43.67	100	340	Horizontal
3	20903.175	48.73	38.56	-10.17	83.54	44.98	100	80	Horizontal
4	21680.075	47.57	37.81	-9.76	83.54	45.73	100	192	Horizontal
5	22598.075	48.63	39.61	-9.02	83.54	43.93	100	322	Horizontal
6	23447.225	44.41	35.70	-8.71	83.54	47.84	100	130	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	18823.650	52.94	41.03	-11.91	83.54	42.51	100	54	Vertical
2	19691.925	51.31	40.14	-11.17	83.54	43.40	100	103	Vertical
3	20873.425	48.36	38.33	-10.03	83.54	45.21	100	344	Vertical
4	22078.725	46.51	36.92	-9.59	83.54	46.62	100	54	Vertical
5	23397.925	45.08	36.46	-8.62	83.54	47.08	100	250	Vertical
6	24812.325	41.30	33.91	-7.39	83.54	49.63	100	281	Vertical

Note:
Above 18G test distance is 1m, so the Peak Limit=74+20*log(3/1)=83.54 (dBμV/m).

Mode: TX/ BLE_1M
Middle Frequency (2440MHz)
Environment: 24.8℃/54%RH/101.0kPa Voltage: DC 3.85V
Tested By: Zhang Zishan Date: 2022-10-24

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	18647.700	52.59	40.53	-12.06	83.54	43.01	100	83	Horizontal
2	19701.700	51.57	40.32	-11.25	83.54	43.22	100	16	Horizontal
3	20654.550	48.55	38.18	-10.37	83.54	45.36	100	230	Horizontal
4	21794.400	48.36	38.60	-9.76	83.54	44.94	100	133	Horizontal
5	22703.900	46.75	37.90	-8.85	83.54	45.64	100	246	Horizontal
6	24351.625	41.22	33.20	-8.02	83.54	50.34	100	198	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	18442.000	53.55	41.36	-12.19	83.54	42.18	100	344	Vertical
2	19586.525	51.93	40.63	-11.30	83.54	42.91	100	19	Vertical
3	20212.125	51.23	40.48	-10.75	83.54	43.06	100	213	Vertical
4	21955.050	47.38	37.71	-9.67	83.54	45.83	100	294	Vertical
5	22861.575	46.18	37.47	-8.71	83.54	46.07	100	118	Vertical
6	24856.950	41.01	33.67	-7.34	83.54	49.87	100	344	Vertical

Note:
Above 18G test distance is 1m, so the Peak Limit=74+20*log(3/1)=83.54 (dBμV/m).

Mode: TX/ BLE_1M
Highest Frequency (2480MHz)
Environment: 24.8℃/54%RH/101.0kPa Voltage: DC 3.85V
Tested By: Zhang Zishan Date: 2022-10-24

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	18490.450	53.38	41.16	-12.22	83.54	42.38	100	127	Horizontal
2	19595.025	52.23	40.91	-11.32	83.54	42.63	100	178	Horizontal
3	21064.675	48.83	38.74	-10.09	83.54	44.80	100	64	Horizontal
4	22597.650	48.57	39.55	-9.02	83.54	43.99	100	15	Horizontal
5	23576.850	43.95	35.24	-8.71	83.54	48.30	100	291	Horizontal
6	25099.625	40.47	33.28	-7.19	83.54	50.26	100	64	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	18387.600	51.75	39.51	-12.24	83.54	44.03	100	134	Vertical
2	19371.050	51.49	39.97	-11.52	83.54	43.57	100	327	Vertical
3	20197.250	50.74	39.97	-10.77	83.54	43.57	100	20	Vertical
4	21179.850	50.01	40.05	-9.96	83.54	43.49	100	134	Vertical
5	21892.150	47.69	38.02	-9.67	83.54	45.52	100	199	Vertical
6	23320.575	43.90	35.28	-8.62	83.54	48.26	100	166	Vertical

Remark:

Above 18G test distance is 1m, so the Peak Limit=74+20*log(3/1)=83.54 (dBμV/m).

8. 6dB BANDWIDTH

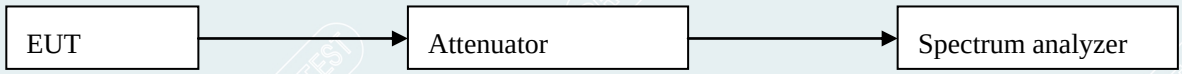
8.1 LIMITS

Systems using digital modulation techniques may operate in the 902–928MHz, 2400–2483.5MHz, and 5725–5850MHz bands. The minimum 6dB bandwidth shall be at least 500kHz.

8.2 TEST PROCEDURES

1) Remove the antenna from the EUT, and then connect a low loss RF cable from antenna port to the spectrum analyzer**.**
2) Set resolution bandwidth (RBW) = 100kHz.Set the video bandwidth (VBW) ≥ 3 x RBW. Detector = Peak. Trace mode = max hold. Sweep = auto couple. Allow the trace to stabilize, record 6dB bandwidth value.
3) Repeat above procedures until all frequencies measured were complete.

8.3 TEST SETUP



8.4 TEST RESULTS

Environment: 24.2℃/48%RH/101.0kPa Voltage: DC 3.85V
Tested By: Yang Zhaoyun Date: 2022-10-26

Left earphone

BLE_1M

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Lowest	2402	656	≥500	PASS
Middle	2440	656		PASS
Highest	2480	656		PASS

BLE_2M

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Lowest	2402	1116	≥500	PASS
Middle	2440	1112		PASS
Highest	2480	1112		PASS

Right earphone

BLE_1M

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Lowest	2402	660	≥500	PASS
Middle	2440	660		PASS
Highest	2480	660		PASS

BLE_2M

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Lowest	2402	1116	≥500	PASS
Middle	2440	1120		PASS
Highest	2480	1116		PASS

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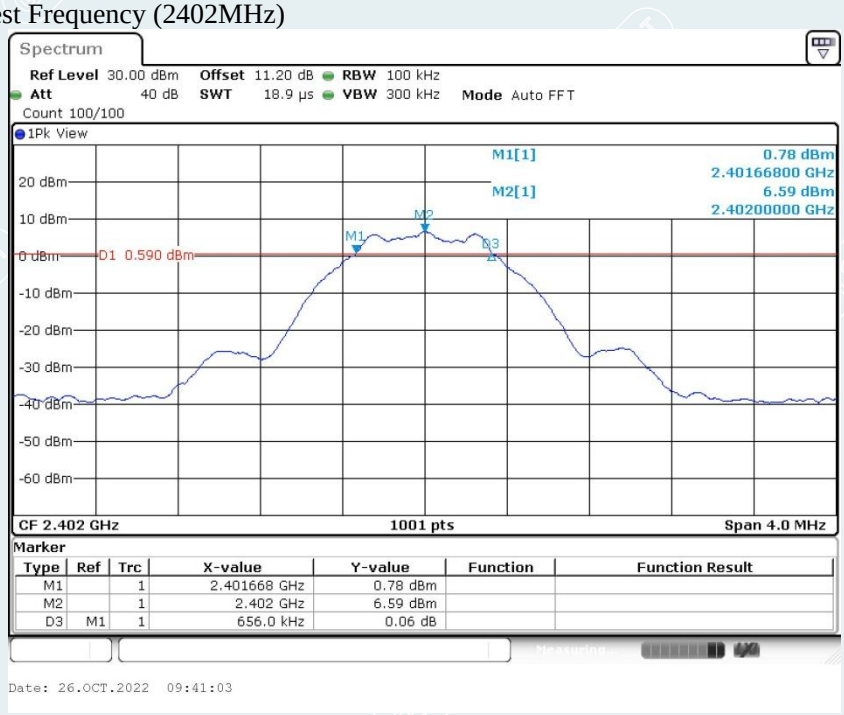
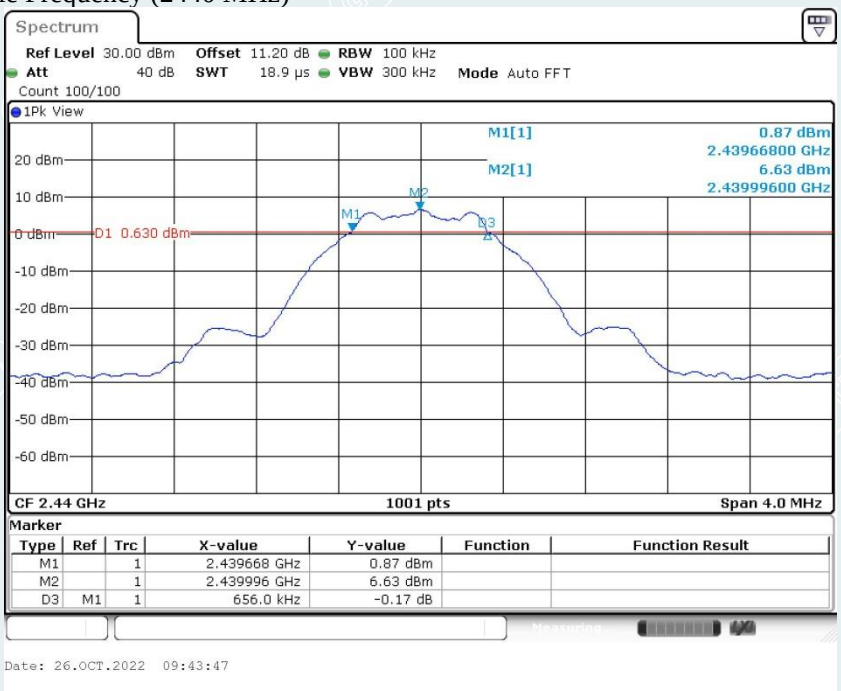
Left earphone

BLE_1M

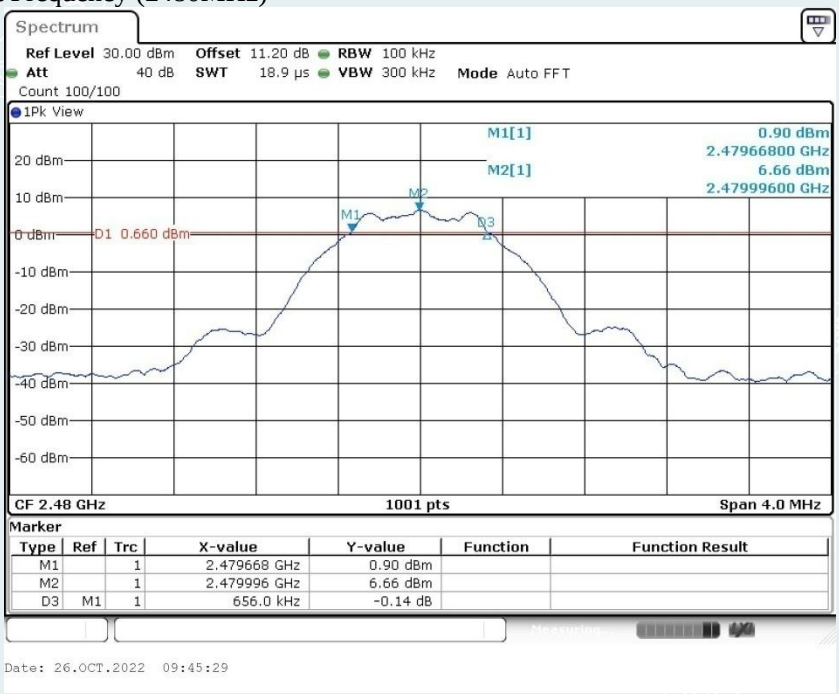
Lowest Frequency (2402MHz)



Middle Frequency (2440 MHz)



Highest Frequency (2480MHz)



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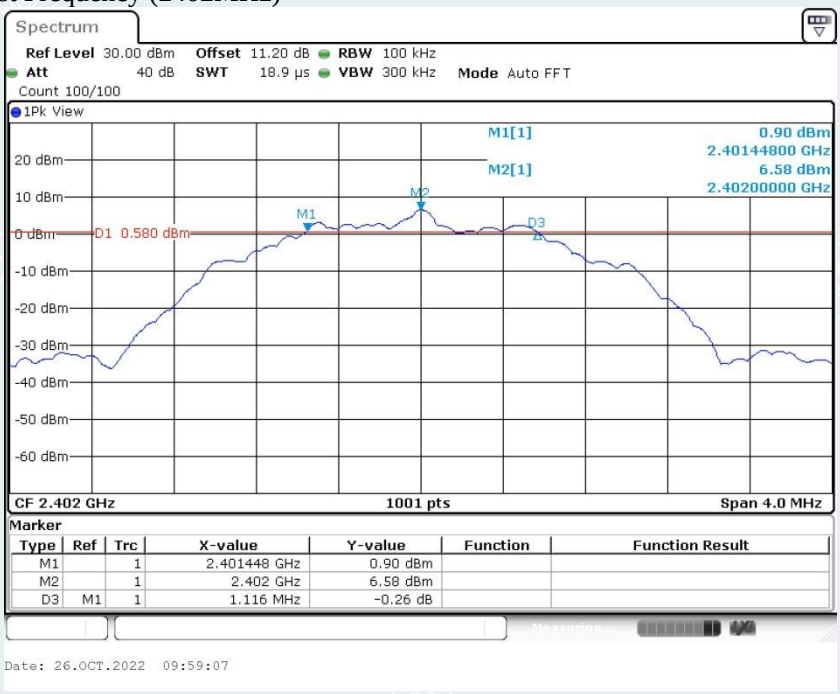
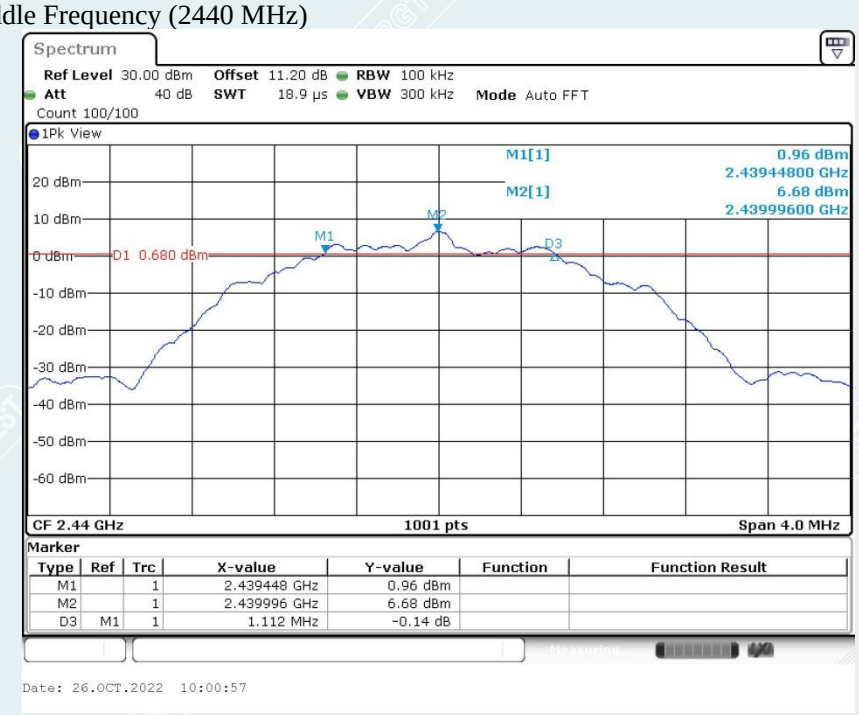
BLE_2M

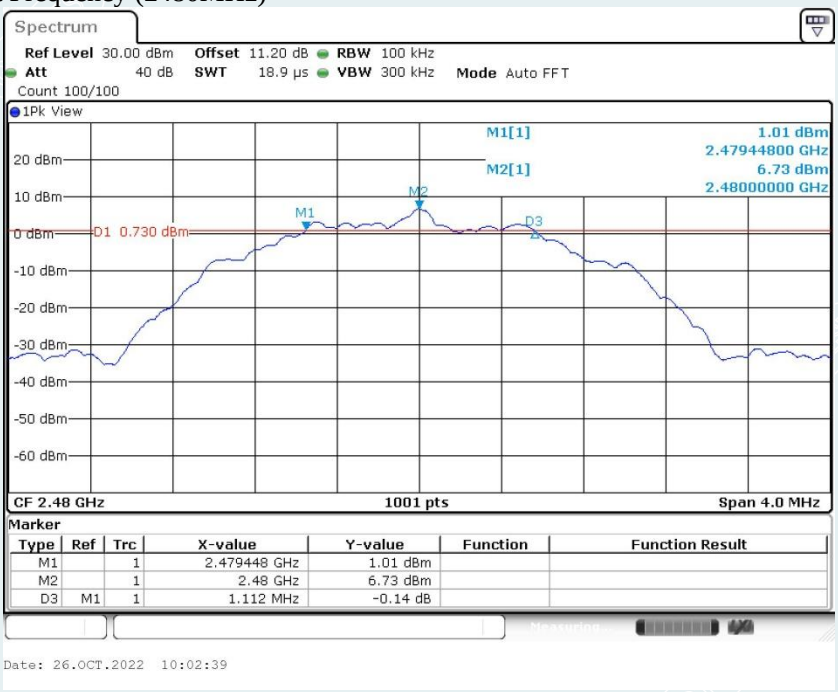
Lowest Frequency (2402MHz)



Middle Frequency (2440 MHz)



Highest Frequency (2480MHz)



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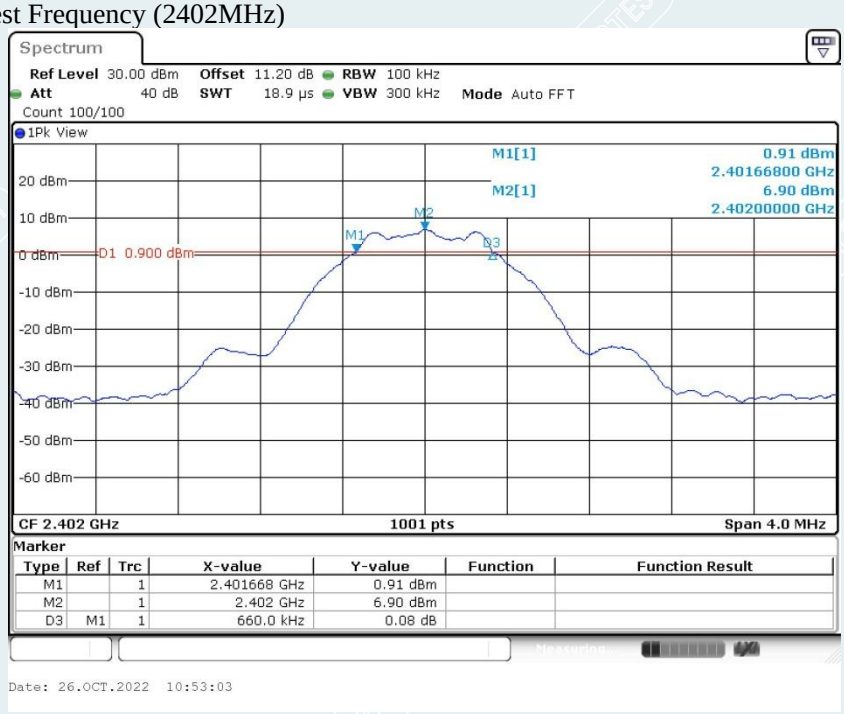
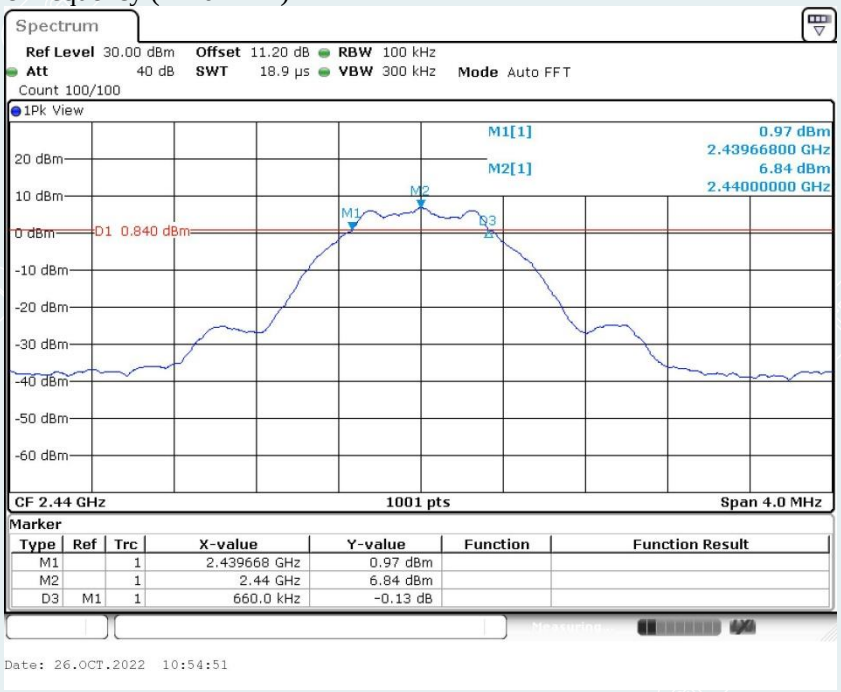
Right earphone

BLE_1M

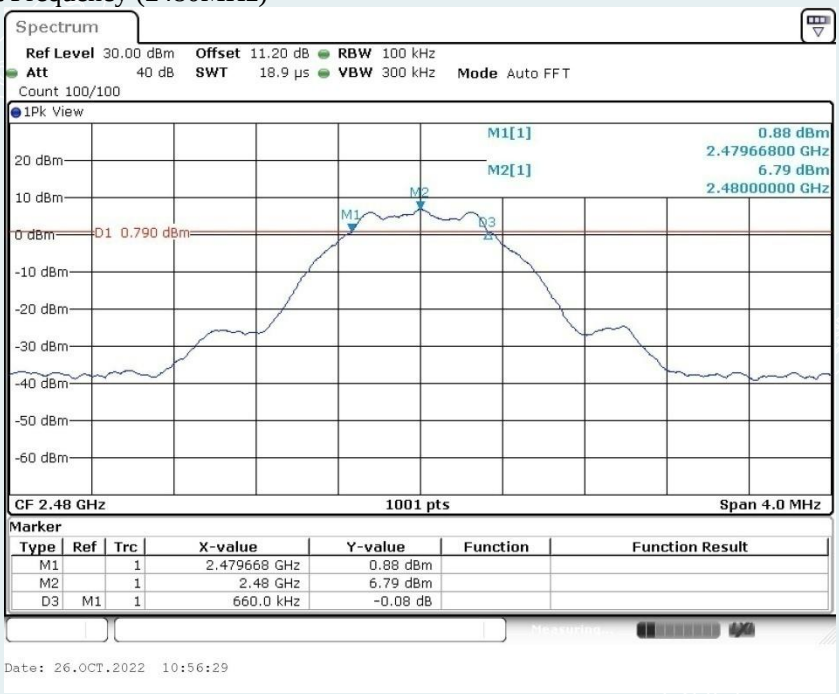
Lowest Frequency (2402MHz)



Middle Frequency (2440 MHz)



Highest Frequency (2480MHz)



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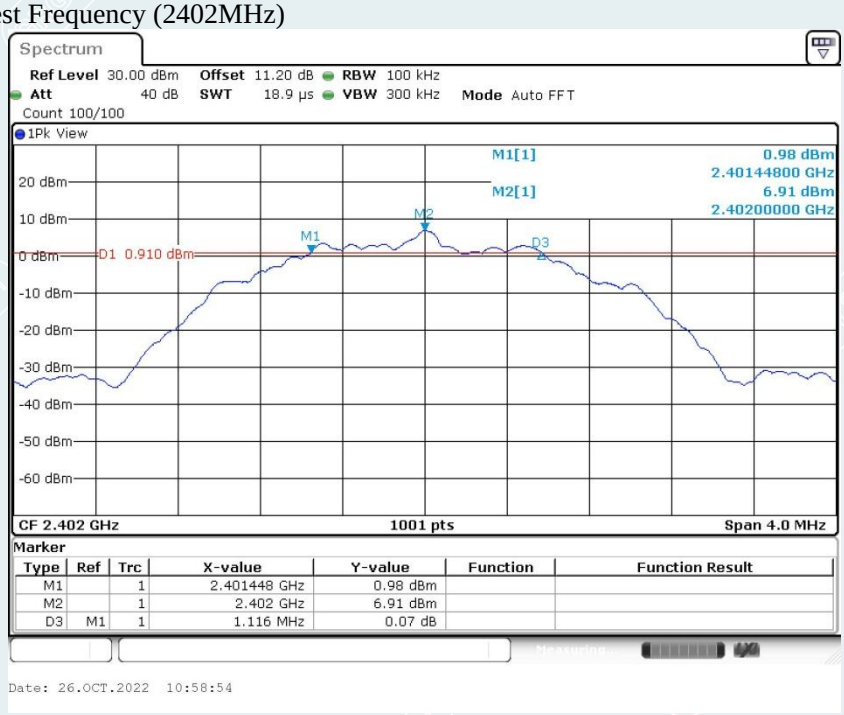
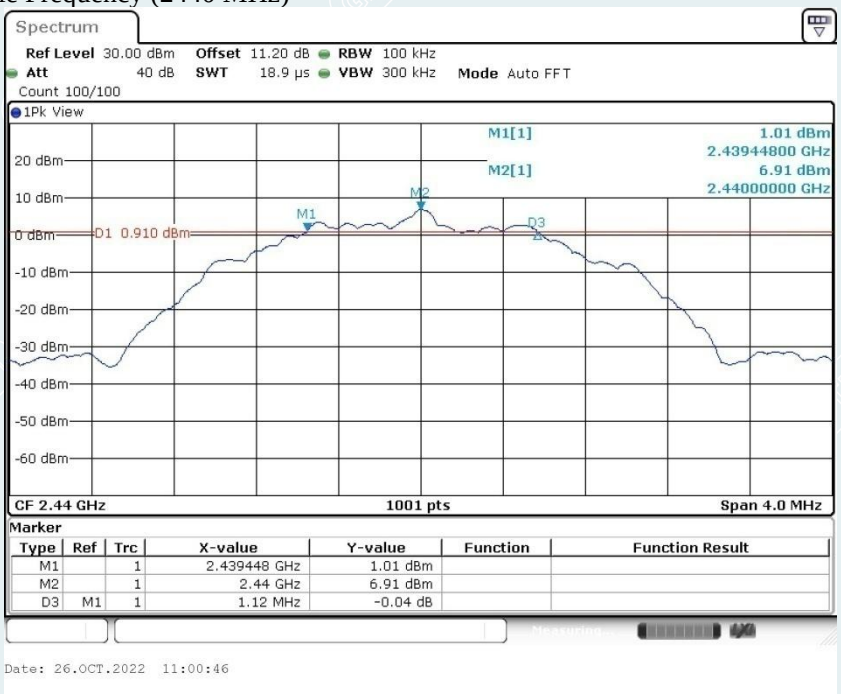
BLE_2M

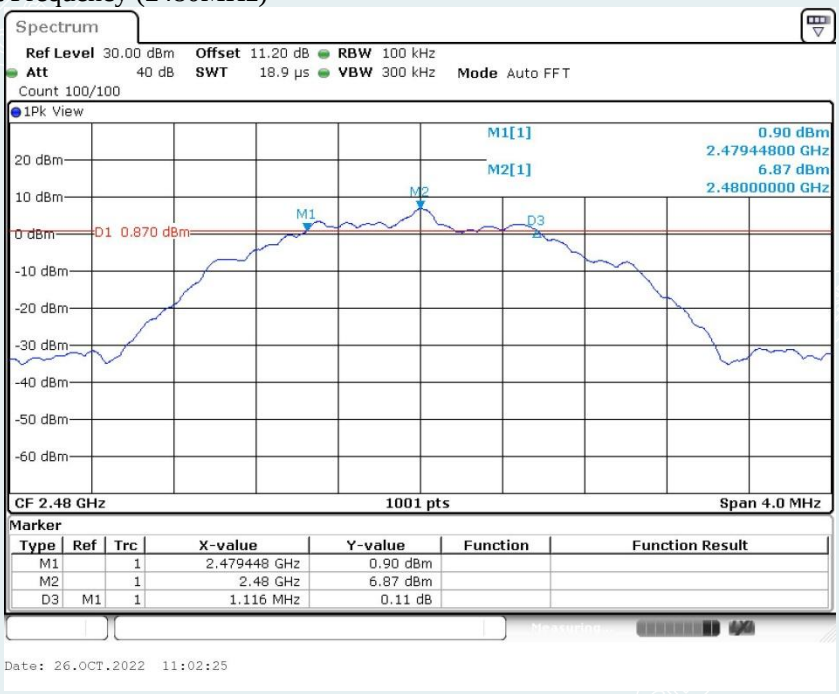
Lowest Frequency (2402MHz)



Middle Frequency (2440 MHz)



Highest Frequency (2480MHz)



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9. MAXIMUM PEAK OUTPUT POWER

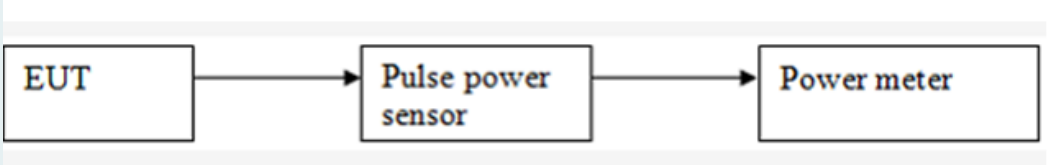
9.1 LIMITS

The maximum Peak output power measurement is 1W

9.2 TEST PROCEDURES

1) RF output of EUT was connected to the broadband peak RF power meter by RF cable. The path loss was compensated to the results for each measurement.
2) Set to the maximum power setting and enable the EUT transmit continuously.
3) Measure the conducted output power and record the results in the test report.

9.3 TEST SETUP



9.4 TEST RESULTS

Environment: 24.2℃/48%RH/101.0kPa Voltage: DC 3.85V
Tested By: Yang Zhaoyun Date: 2022-10-26

Left earphone

BLE_1M

Channel	Frequency (MHz)	Measured Channel Power (dBm)	Limit	Peak/ Average	Result
Lowest	2402	7.08	1W (30dBm)	Peak	Pass
Middle	2440	7.30			Pass
Highest	2480	7.28			Pass

BLE_2M

Channel	Frequency (MHz)	Measured Channel Power (dBm)	Limit	Peak/ Average	Result
Lowest	2402	7.32	1W (30dBm)	Peak	Pass
Middle	2440	7.54			Pass
Highest	2480	7.52			Pass

Right earphone

BLE_1M

Channel	Frequency (MHz)	Measured Channel Power (dBm)	Limit	Peak/ Average	Result
Lowest	2402	7.40	1W (30dBm)	Peak	Pass
Middle	2440	7.55			Pass
Highest	2480	7.44			Pass

BLE_2M

Channel	Frequency (MHz)	Measured Channel Power (dBm)	Limit	Peak/ Average	Result
Lowest	2402	7.66	1W (30dBm)	Peak	Pass
Middle	2440	7.86			Pass
Highest	2480	7.70			Pass

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