

Prüfbericht-Nr.: Test report no.:	CN26L8MF 002	Auftrags-Nr.: Order no.:	27250745	Page 1 of 21 Seite 1 von 21
Kunden-Referenz-Nr.: Client reference no.:	N/A	Auftragsdatum: Order date:	2026-08-10	
Auftraggeber: Client:	Harman International Industries, Incorporated 8500 Balboa Blvd, Northridge, CA 91325, USA			
Prüfgegenstand: Test item:	BLUETOOTH HEADSET			
Bezeichnung / Typ-Nr.: Identification / Type no.:	LIVE BUDS 4 (Trademark: JBL)			
Auftrags-Inhalt: Order content:	Type test			
Prüfgrundlage: Test specification:	CFR Title 47 FCC Part 15: Subpart C Section 15.247 RSS-247 Issue 4 July 2025 RSS-Gen Issue 6 July 2026			
Wareneingangsdatum: Date of sample receipt:	2026-08-05	Refer to photos document		
Prüfmuster-Nr.: Test sample no.:	A004355370			
Prüfzeitraum: Testing period:	2026-08-05 – 2026-08-30			
Ort der Prüfung: Place of testing:	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüflaboratorium: Testing laboratory:	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüfergebnis*: Test result*:	Pass			
geprüft von: tested by:			genehmigt von: authorized by:	
Datum: Date:	2026-09-09	Ausstellungsdatum: Issue date:		2026-09-09
Signed by: Harry W. C. Wu		Signed by: Alex Lan		
Stellung / Position:	Project Manager	Stellung / Position:	Authorizer	
Sonstiges / Other:	This test report is for Bluetooth Low Energy function of LIVE BUDS 4. FCC ID: APILIVEBUDS4 IC: 6132A-LIVEBUDS4 HVIN: LIVE BUDS 4			
Zustand des Prüfgegenstandes bei Anlieferung: Condition of the test item at delivery:	Prüfmuster vollständig und unbeschädigt Test item complete and undamaged			
* Legende:	P(ass) = entspricht o.g. Prüfgrundlage(n)	F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
* Legend:	P(ass) = passed a.m. test specification(s)	F(ail) = failed a.m. test specification(s)	N/A = not applicable	N/T = not tested
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the above mentioned test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>				
TUV Rheinland (Shenzhen) Co., Ltd., 1-5F, Building 5, No. 1100 Huanli Road, Yungu Community, Xinhui Street, Guangming District, Shenzhen, China Mail: service-gc@tuv.com · Web: www.tuv.com				

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Remarks
Anmerkungen

1	The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system. Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request. <i>Alle eingesetzten Prüfmittel waren zum angegebenen Prüfzeitraum gemäß eines festgelegten Kalibrierungsprogramms unseres Prüfhauses kalibriert. Sie entsprechen den in den Prüfprogrammen hinterlegten Anforderungen. Die Rückverfolgbarkeit der eingesetzten Prüfmittel ist durch die Einhaltung der Regelungen unseres Managementsystems gegeben.</i> <i>Detaillierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden.</i>
2	As contractually agreed, this document has been signed digitally only. TÜV Rheinland has not verified and unable to verify which legal or other pertaining requirements are applicable for this document. Such verification is within the responsibility of the user of this document. Upon request by its client, TÜV Rheinland can confirm the validity of the digital signature by a separate document. Such request shall be addressed to our Sales department. An environmental fee for such additional service will be charged. <i>Wie vertraglich vereinbart, wurde dieses Dokument nur digital unterzeichnet. Der TÜV Rheinland hat nicht überprüft, welche rechtlichen oder sonstigen diesbezüglichen Anforderungen für dieses Dokument gelten. Diese Überprüfung liegt in der Verantwortung des Benutzers dieses Dokuments. Auf Verlangen des Kunden kann der TÜV Rheinland die Gültigkeit der digitalen Signatur durch ein gesondertes Dokument bestätigen. Diese Anfrage ist an unseren Vertrieb zu richten. Eine Umweltgebühr für einen solchen zusätzlichen Service wird erhoben.</i>
3	Test clauses with remark of * are subcontracted to qualified subcontractors and described under the respective test clause in the report. Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report. <i>Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben. Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt.</i>
4	The decision rule for statements of conformity, based on numerical measurement results, in this test report is based on the "Zero Guard Band Rule" and "Simple Acceptance" in accordance with ILAC G8:2019 and IEC Guide 115:2021, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019. <i>Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnissen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2021, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen bezüglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019.</i>

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Test Summary

5.1.1 ANTENNA REQUIREMENT

RESULT: Pass

5.1.2 MAXIMUM PEAK CONDUCTED OUTPUT POWER

RESULT: Pass

5.1.3 CONDUCTED POWER SPECTRAL DENSITY

RESULT: Pass

5.1.4 99%dB BANDWIDTH

RESULT: Pass

5.1.5 6dB BANDWIDTH

RESULT: Pass

5.1.6 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 KHz BANDWIDTH

RESULT: Pass

5.1.7 RADIATED SPURIOUS EMISSION

RESULT: Pass

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1 General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: Photographs of the Test Set-up

Appendix B: Test Results of Bluetooth Low Energy_Left Earbud.

Appendix C: Test Results of Bluetooth Low Energy_Right Earbud.

2 Test Sites

2.1 Test Facilities

TÜV Rheinland (Shenzhen) Co., Ltd.

2-3F, 101 & 102, No.2, Nuclear Power Industrial Park, Fuming Community, Fucheng Street, Longhua District, Shenzhen 518000, People's Republic of China

FCC Registration No.: CN1260

IC Registration No.: 25069 and the CAB identifier is CN0078.

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2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Radio Spectrum Testing				
Equipment	Manufacturer	Model	Serial No.	Cal. until
EXA Signal Analyzer, Multi-touch	Keysight	N9010B	MY60241175	22.09.2026
MXG X-Series RF Vector Signal Generator	Keysight	N5182B	MY61250137	22.09.2026
EXG X-Series Microwave Analog Signal Generator	Keysight	N5173B	MY61250141	22.09.2026
DC Power Supply	Keysight	E3642A	MY61276100	22.09.2026
Wireless Connectivity Tester	R&S	CMW270	102505	22.09.2026
Power Control Unit	Tonscend	JS0806-4ADC	N/A	22.09.2026
Automation Control Unit	Tonscend	JS0806-2	21C8060396	22.09.2026
Humid & Temp Programmable Tester	BOST	NTH090-60	19040801	22.09.2026
Test Software	Tonscend	JS1120-3	N/A	N/A
Control PC	Lenovo	TianYi510S-071MB	YLX23JMF	N/A
Shielding Room	Albatross	SR1	APC17151-SR1	13.09.2027
Unwanted Emission Testing				
Equipment	Manufacturer	Model	Serial No.	Cal. until
EMI Test Receiver	R&S	ESR 7	102021	21.09.2026
Signal Analyzer	R&S	FSV 40	101439	21.09.2026
System Controller Interface	R&S	SCI-100	S10010038	N/A
Filterbank	R&S	Wlan	100759	21.09.2026
OSP	R&S	OSP 120	102040	N/A
Pre-amplifier	R&S	SCU08F1	08320031	21.09.2026
Amplifier	R&S	SCU-18F	180070	21.09.2026
Amplifier	R&S	SCU40A	100475	21.09.2026
Trilog Broadband Antenna (30 MHz - 7 GHz)	Schwarzbeck	VULB 9162	193	27.09.2026
Double-Ridged Antenna (1 -18 GHz)	ETS-LINDGREN	3117	00218717	27.09.2026
Wideband Ridged Horn Antenna (18-40 GHz)	Steatite	QMS-00880	19067	27.09.2026
Active Loop Antenna	Schwarzbeck	FMZB 1513	302	27.09.2026
Test software	R&S	EMC32 (V10.60.10)	N/A	N/A
Control PC	Dell	OptiPlex 7050	36NV9P2	N/A
3m Semi-Anechoic Chamber	Albatross	SAC-3m	APC17151-SAC	13.09.2027

2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements as below table.

Parameter	Uncertainty (k=2)
Occupied Channel Bandwidth	± 2.08 %
RF output power, conducted	± 0.99 dB
RF power density, conducted	± 0.99 dB
Unwanted Emissions, conducted	± 0.89 dB
All emissions, radiated	± 4.17 dB

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A & B of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) file for certification follow-up purposes.

2.7 Status of Facility Used for Testing

The TÜV Rheinland (Shenzhen) Co., Ltd. Test facility located at 2-3F, 101 & 102, No.2, Nuclear Power Industrial Park, Fuming Community, Fucheng Street, Longhua District, Shenzhen 518000, People's Republic of China is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3 General Product Information

3.1 Product Function and Intended Use

The product is a Bluetooth Headset, which supports Bluetooth dual mode technology.

There is no difference except the PCB layout of left and right earbuds.

For details refer to the User Manual and Circuit Diagram.

3.2 Ratings and System Details

Table 2: Technical Specification of EUT

General Information of EUT	Value
Kind of Equipment	BLUETOOTH HEADSET
Type Designation	LIVE BUDS 4
Trademark	JBL
FCC ID	APILIVEBUDS4
IC	6132A-LIVEBUDS4
HVIN	LIVE BUDS 4
Extreme Temperature Range	0°C to +45°C
Operating Voltage	5Vdc;1A, Li-ion battery: 3.87Vdc, 57mAh
Technical Specification of Classical Bluetooth	
Operating Frequency band	2402 ~ 2480 MHz
Channel Number	79 channels
Channel separation	1MHz
Modulation	GFSK, $\pi/4$ DQPSK
Antenna Type	Integral antenna
Antenna Gain	-1.69 dBi for left earbud, -1.62 dBi for right earbud (Provided by the Client)
Technical Specification of Bluetooth Low Energy	
Operating Frequency band	2402 – 2480 MHz for data rate 1Mbps 2404 – 2478 MHz for data rate 2Mbps
Channel Number	40 channels for data rate 1Mbps 37 channels for data rate 2Mbps Note: 2402MHz/2426MHz/2480MHz will be disable via software for data rate 2Mbps.
Channel separation	2MHz
Data rate	1Mbps, 2Mbps
Modulation	GFSK
Antenna Type	Integral antenna
Antenna Gain	-1.69 dBi for left earbud, -1.62 dBi for right earbud (Provided by the Client)

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Table 3: RF Channel and Frequency of Classic Bluetooth

RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
00	2402.00	20	2422.00	40	2442.00	60	2462.00
01	2403.00	21	2423.00	41	2443.00	61	2463.00
02	2404.00	22	2424.00	42	2444.00	62	2464.00
03	2405.00	23	2425.00	43	2445.00	63	2465.00
04	2406.00	24	2426.00	44	2446.00	64	2466.00
05	2407.00	25	2427.00	45	2447.00	65	2467.00
06	2408.00	26	2428.00	46	2448.00	66	2468.00
07	2409.00	27	2429.00	47	2449.00	67	2469.00
08	2410.00	28	2430.00	48	2450.00	68	2470.00
09	2411.00	29	2431.00	49	2451.00	69	2471.00
10	2412.00	30	2432.00	50	2452.00	70	2472.00
11	2413.00	31	2433.00	51	2453.00	71	2473.00
12	2414.00	32	2434.00	52	2454.00	72	2474.00
13	2415.00	33	2435.00	53	2455.00	73	2475.00
14	2416.00	34	2436.00	54	2456.00	74	2476.00
15	2417.00	35	2437.00	55	2457.00	75	2477.00
16	2418.00	36	2438.00	56	2458.00	76	2478.00
17	2419.00	37	2439.00	57	2459.00	77	2479.00
18	2420.00	38	2440.00	58	2460.00	78	2480.00
19	2421.00	39	2441.00	59	2461.00	--	--

Table 4: RF Channel and Frequency of Bluetooth Low Energy

RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
00	2402.00	10	2422.00	20	2442.00	30	2462.00
01	2404.00	11	2424.00	21	2444.00	31	2464.00
02	2406.00	12	2426.00	22	2446.00	32	2466.00
03	2408.00	13	2428.00	23	2448.00	33	2468.00
04	2410.00	14	2430.00	24	2450.00	34	2470.00
05	2412.00	15	2432.00	25	2452.00	35	2472.00
06	2414.00	16	2434.00	26	2454.00	36	2474.00
07	2416.00	17	2436.00	27	2456.00	37	2476.00
08	2418.00	18	2438.00	28	2458.00	38	2478.00
09	2420.00	19	2440.00	29	2460.00	39	2480.00

3.3 Independent Operation Modes

The basic operation modes are:

- A. On, Bluetooth LE transmitting mode
 - 1. Low channel
 - 2. Middle channel
 - 3. High channel
- B. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

- | | |
|----------------------------------|------------------|
| - Application Form | - Photo Document |
| - Block Diagram | - Schematics |
| - FCC/IC Label and Location Info | - User Manual |
| - Operation Description | |

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Radio Spectrum: The equipment under test (EUT) was configured at its highest power output in order to measure its highest possible radiation and conducted level. The test modes were adapted accordingly in reference to the instructions for use.

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All testing were performed according to the procedures in ANSI C63.10-2020, ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024.

4.3 Special Accessories and Auxiliary Equipment

Table 5: List of Accessories and Auxiliary Equipment

Description	Manufacturer	Model	S/N or Rating
Laptop	Lenovo	T480	PF-16A6N8

4.4 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF).

No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test (Below 30MHz)

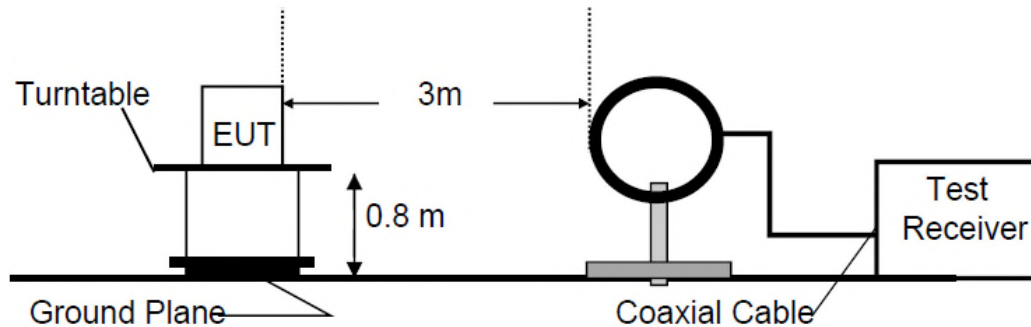


Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

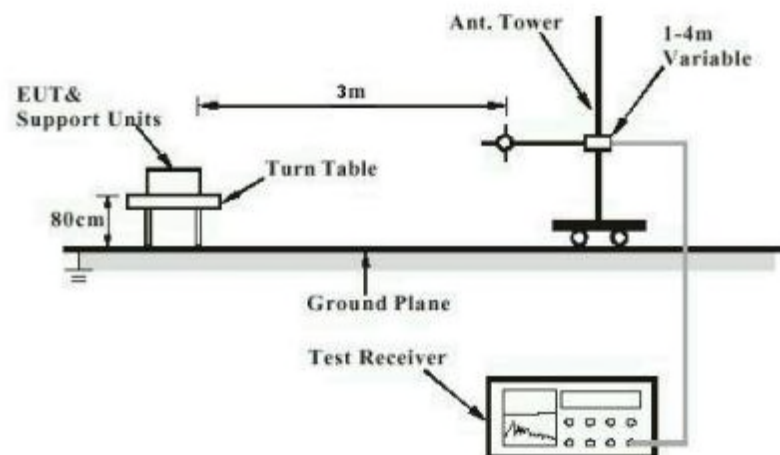


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

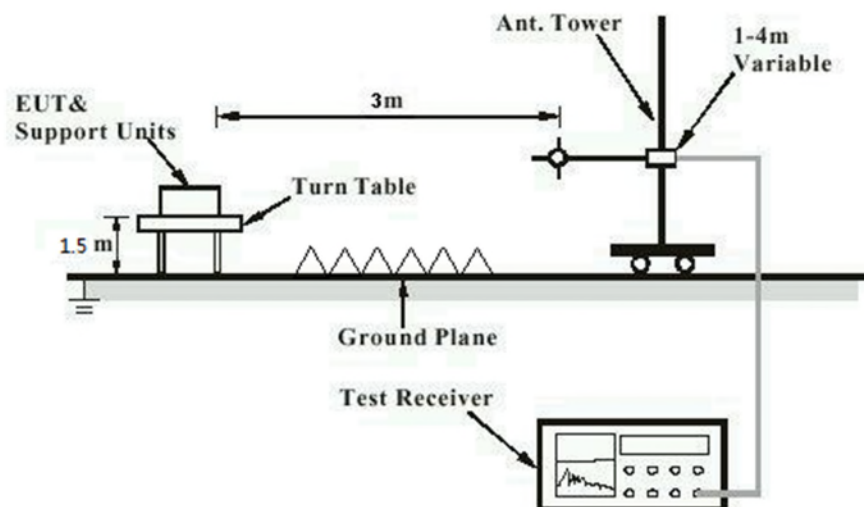


Diagram of Measurement Configuration for Mains Conduction Measurement

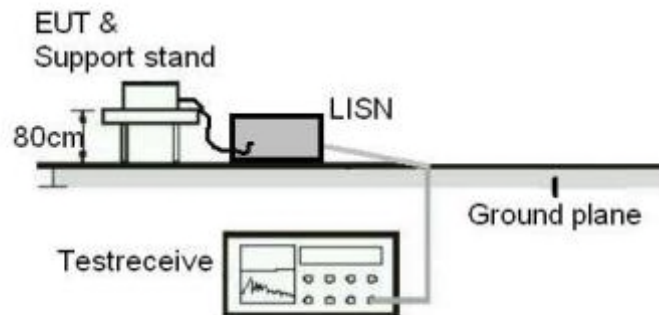
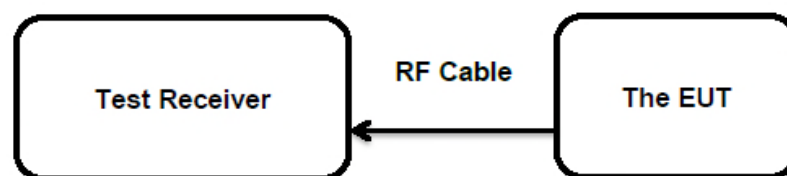


Diagram of Measurement Configuration for Conducted Transmitter Measurement



5 Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT:

Pass

Test Specification

Test standard	:	FCC Part 15.247(b)(4) and Part 15.203
	:	RSS-Gen Clause 6.7
Limit	:	the use of antennas with directional gains that do not exceed 6 dBi

According to the manufacturer declared, the EUT has two Integral antennas, the directional gain of antennas is -1.69 dBi for left earbud, -1.62 dBi for right earbud , and the antenna connector is designed with permanent attachment and no consideration of replacement. Therefore the EUT is considered sufficient to comply with the provision.

Refer to EUT Photo for further details.

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5.1.2 Maximum Peak Conducted Output Power

RESULT:
Pass
Test Specification

Test standard : FCC Part 15.247(b)(3)
RSS-247 Clause 5.4(d)
Basic standard : ANSI C63.10-2020, ANSI C63.10-2020+Cor. 1-
2023+C63.10a-2024
Limits : < 1 Watt (Maximum Conducted Peak Power)
e.i.r.p. <4W
Kind of test site : Shielded Room

Test Setup

Date of testing : 2026-08-05 to 2026-08-30
Input voltage : DC 3.87V
Operation mode : A
Test channel : Low / Middle / High
Ambient temperature : 25.4 °C
Relative humidity : 50.2 %
Atmospheric pressure : 101 kPa

For details refer to following test result.

Table 6: Test Result of Maximum Peak Conducted Output Power

Left Earbud:

Data Rate	Test Channel (MHz)	Measured Peak Power		Limit (W)
		(dBm)	(W)	
1 Mbps	2402	9.43	0.00877	< 1.0
	2440	9.16	0.00824	
	2480	9.30	0.00851	
2 Mbps	2404	9.30	0.00851	
	2440	9.05	0.00804	
	2478	9.26	0.00843	
Maximum Measured Value		9.43	0.00877	

Note: The cable loss is taken into account in results and the maximum e.i.r.p. is 7.74dBm less than 4W (36 dBm).

Right Earbud:

Data Rate	Test Channel (MHz)	Measured Peak Power		Limit (W)
		(dBm)	(W)	
1 Mbps	2402	9.44	0.00879	< 1.0
	2440	9.05	0.00804	
	2480	9.19	0.00830	
2 Mbps	2404	9.36	0.00863	
	2440	9.06	0.00805	
	2478	9.18	0.00828	
Maximum Measured Value		9.44	0.00879	

Note: The cable loss is taken into account in results and the maximum e.i.r.p. is 7.74dBm less than 4W (36 dBm).

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5.1.3 Conducted Power Spectral Density

RESULT:

Pass

Test Specification

Test standard	:	FCC Part 15.247(e) RSS-247 Clause 5.2(b)
Basic standard	:	ANSI C63.10-2020, ANSI C63.10-2020+Cor. 1- 2023+C63.10a-2024
Limits	:	8 dBm / 3kHz
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2026-08-05 to 2026-08-30
Input voltage	:	DC 3.87V
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	25.4 °C
Relative humidity	:	50.2 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix B & C .

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5.1.4 99%dB Bandwidth

RESULT:

Pass

Test Specification

Test standard : RSS-Gen clause 6.7
Basic standard : ANSI C63.10-2020, ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024
Kind of test site : Shielded Room

Test Setup

Date of testing : 2026-08-05 to 2026-08-30
Input voltage : DC 3.87V
Operation mode : A
Test channel : Low / Middle / High
Ambient temperature : 25.4 °C
Relative humidity : 50.2 %
Atmospheric pressure : 101 kPa

For the measurement records, refer to the appendix B & C .

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5.1.5 6dB Bandwidth

RESULT:

Pass

Test Specification

Test standard	:	FCC Part 15.247(a)(2) RSS-247 Clause 5.2(a)
Basic standard	:	ANSI C63.10-2020, ANSI C63.10-2020+Cor. 1- 2023+C63.10a-2024
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2026-08-05 to 2026-08-30
Input voltage	:	DC 3.87V
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	25.4 °C
Relative humidity	:	50.2 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix B & C .

Prüfbericht-Nr.: **CN26L8MF 002**
Test report no.:Seite 19 von 21
Page 19 of 21**5.1.6 Conducted Spurious Emissions Measured in 100 kHz Bandwidth****RESULT:****Pass****Test Specification**

Test standard	: FCC Part 15.247(d) RSS-247 Clause 5.5
Basic standard	: ANSI C63.10-2020, ANSI C63.10-2020+Cor. 1- 2023+C63.10a-2024
Limits	: 20dB (below that in the 100kHz bandwidth within the band that contains the highest level of the desired power); In addition, radiated emissions which fall in the restricted bands, must also comply with the radiated emission limits specified in 15.209(a)
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2026-08-05 to 2026-08-30
Input voltage	: DC 3.87V
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: 25.4 °C
Relative humidity	: 50.2 %
Atmospheric pressure	: 101 kPa

Test results of 100kHz Bandwidth of Frequency Band Edge by Conducted method refer to test plots, and compliance is achieved as well.

For the measurement records, refer to the appendix B & C .

Prüfbericht-Nr.: **CN26L8MF 002**
Test report no.:

Seite 20 von 21
Page 20 of 21

5.1.7 Radiated Spurious Emission

RESULT:

Pass

Test Specification

Test standard	: FCC Part 15.247(d) & FCC Part 15.205 RSS-247 Clause 3.3 & 5.5
Basic standard	: ANSI C63.10-2020, ANSI C63.10-2020+Cor. 1- 2023+C63.10a-2024
Limits	: Refer to 15.209(a) of FCC part 15.247(d) RSS-Gen Table 4 & Table 5
Kind of test site	: 3m Semi-anechoic Chamber

Test Setup

Date of testing	: 2026-08-05 to 2026-08-30
Input voltage	: DC 3.87V
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: Refer to test result
Relative humidity	: Refer to test result
Atmospheric pressure	: 101 kPa

Remark:

Testing was carried out within frequency range 9kHz to the tenth harmonics. Only the worst case spurious emissions configuration of the each mode were reported.

For the measurement records, refer to the appendix B & C .

6 Photographs of the Test Set-Up

For photographs of the test set-up, refer to the appendix A.

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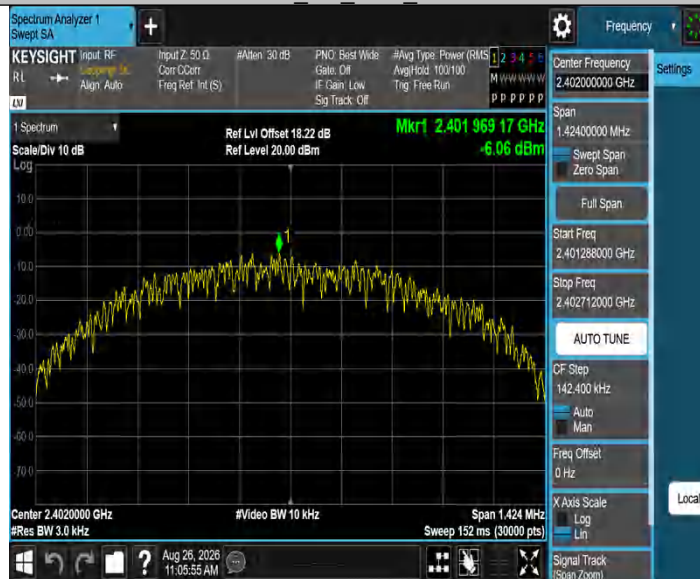
Appendix B: Test Results of Bluetooth Low Energy_Left Earbud

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Appendix B.1: Test Results of Conducted Power Spectral Density

TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-6.06	≤8.00	PASS
		2440	-6.30	≤8.00	PASS
		2480	-6.17	≤8.00	PASS
BLE_2M	Ant1	2404	-8.38	≤8.00	PASS
		2440	-8.52	≤8.00	PASS
		2478	-8.39	≤8.00	PASS

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE 1M Ant1 2480



BLE 2M Ant1 2404



BLE 2M Ant1 2440





Appendix B.2: Test Results of 6dB Bandwidth

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.712	2401.632	2402.344	0.5	PASS
		2440	0.700	2439.640	2440.340	0.5	PASS
		2480	0.700	2479.636	2480.336	0.5	PASS
BLE_2M	Ant1	2404	1.248	2403.344	2404.592	0.5	PASS
		2440	1.220	2439.336	2440.556	0.5	PASS
		2478	1.188	2477.392	2478.580	0.5	PASS

BLE_1M Ant1 2402



BLE_1M Ant1 2440



Appendix B CN26L8MF 002



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Test Report - Products

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BLE 1M Ant1 2480



BLE 2M Ant1 2404



BLE 2M Ant1 2440





Appendix B.3: Test Results of 99% Bandwidth

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0574	2401.4706	2402.5280	---	---
		2440	1.0586	2439.4694	2440.5280	---	---
		2480	1.0642	2479.4683	2480.5325	---	---
BLE_2M	Ant1	2404	2.1111	2402.9526	2405.0637	---	---
		2440	2.0961	2438.9643	2441.0604	---	---
		2478	2.1122	2476.9479	2479.0601	---	---

BLE_1M Ant1 2402



BLE_1M Ant1 2440



BLE 1M Ant1 2480



BLE 2M Ant1 2404



BLE 2M Ant1 2440





Appendix B.4: Test Results of Frequency stability

Test Channel (MHz)	2402
-----------------------	------

Test result of frequency tolerance of voltage variation

Voltage	Test result (MHz)	Deviation Frequency (KHz)	Test result (ppm)	Limit (ppm)
DC 3.80V	2402.008	8	3.33	10
DC 3.42V	2402.008	8	3.33	
DC 4.18V	2402.008	8	3.33	

Test result of frequency tolerance of temperature variation

Temperature (°C)	Test result (MHz)	Deviation Frequency (KHz)	Test result (ppm)	Limit (ppm)
-30	2402.013	13	5.41	10
-20	2402.012	12	5.00	
-10	2402.012	12	5.00	
0	2402.010	10	4.16	
10	2402.010	10	4.16	
20	2402.008	8	3.33	
30	2402.008	8	3.33	
40	2402.008	8	3.33	
50	2402.009	9	3.75	
55	2402.009	9	3.75	

Test Channel (MHz)	2440
-----------------------	------

Test result of frequency tolerance of voltage variation

Voltage	Test result (MHz)	Deviation Frequency (KHz)	Test result (ppm)	Limit (ppm)
DC 3.80V	2439.990	-10	-4.10	10
DC 3.42V	2439.990	-10	-4.10	
DC 4.18V	2439.990	-10	-4.10	

Test result of frequency tolerance of temperature variation

Temperature (°C)	Test result (MHz)	Deviation Frequency (KHz)	Test result (ppm)	Limit (ppm)
-30	2439.992	-8	-3.28	10
-20	2439.991	-9	-3.69	
-10	2439.991	-9	-3.69	
0	2439.993	-7	-2.87	
10	2439.990	-10	-4.10	
20	2439.990	-10	-4.10	
30	2439.990	-10	-4.10	
40	2439.990	-10	-4.10	
50	2439.994	-6	-2.46	
55	2439.995	-5	-2.05	

Test Channel (MHz)	2480
-----------------------	------

Test result of frequency tolerance of voltage variation

Voltage	Test result (MHz)	Deviation Frequency (KHz)	Test result (ppm)	Limit (ppm)
DC 3.80V	2479.993	-7	-2.82	10
DC 3.42V	2479.992	-8	-3.23	
DC 4.18V	2479.993	-7	-2.82	

Test result of frequency tolerance of temperature variation

Temperature (°C)	Test result (MHz)	Deviation Frequency (KHz)	Test result (ppm)	Limit (ppm)
-30	2479.995	-5	-2.02	10
-20	2479.995	-5	-2.02	
-10	2479.994	-6	-2.42	
0	2479.994	-6	-2.42	
10	2479.992	-8	-3.23	
20	2479.993	-7	-2.82	
30	2479.994	-6	-2.42	
40	2479.994	-6	-2.42	
50	2479.993	-7	-2.82	
55	2479.995	-5	-2.02	

Appendix B.5: Test Results of Conducted Spurious Emissions Measured in 100 kHz Bandwidth

Conducted Spurious Emission

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	8.32	8.32	---	PASS
			30~1000	8.32	-51.07	≤-11.68	PASS
			1000~26500	8.32	-52.01	≤-11.68	PASS
		2440	Reference	8.04	8.04	---	PASS
			30~1000	8.04	-51.74	≤-11.96	PASS
			1000~26500	8.04	-53.11	≤-11.96	PASS
		2480	Reference	8.18	8.18	---	PASS
			30~1000	8.18	-51.55	≤-11.82	PASS
			1000~26500	8.18	-52.57	≤-11.82	PASS
BLE_2M	Ant1	2404	Reference	7.85	7.85	---	PASS
			30~1000	7.85	-50.63	≤-12.15	PASS
			1000~26500	7.85	-52.98	≤-12.15	PASS
		2440	Reference	7.48	7.48	---	PASS
			30~1000	7.48	-51.59	≤-12.52	PASS
			1000~26500	7.48	-53.54	≤-12.52	PASS
		2478	Reference	7.81	7.81	---	PASS
			30~1000	7.81	-51.11	≤-12.19	PASS
			1000~26500	7.81	-53.35	≤-12.19	PASS

BLE 1M Ant1 2402 0~Reference



BLE 1M Ant1 2402 30~1000

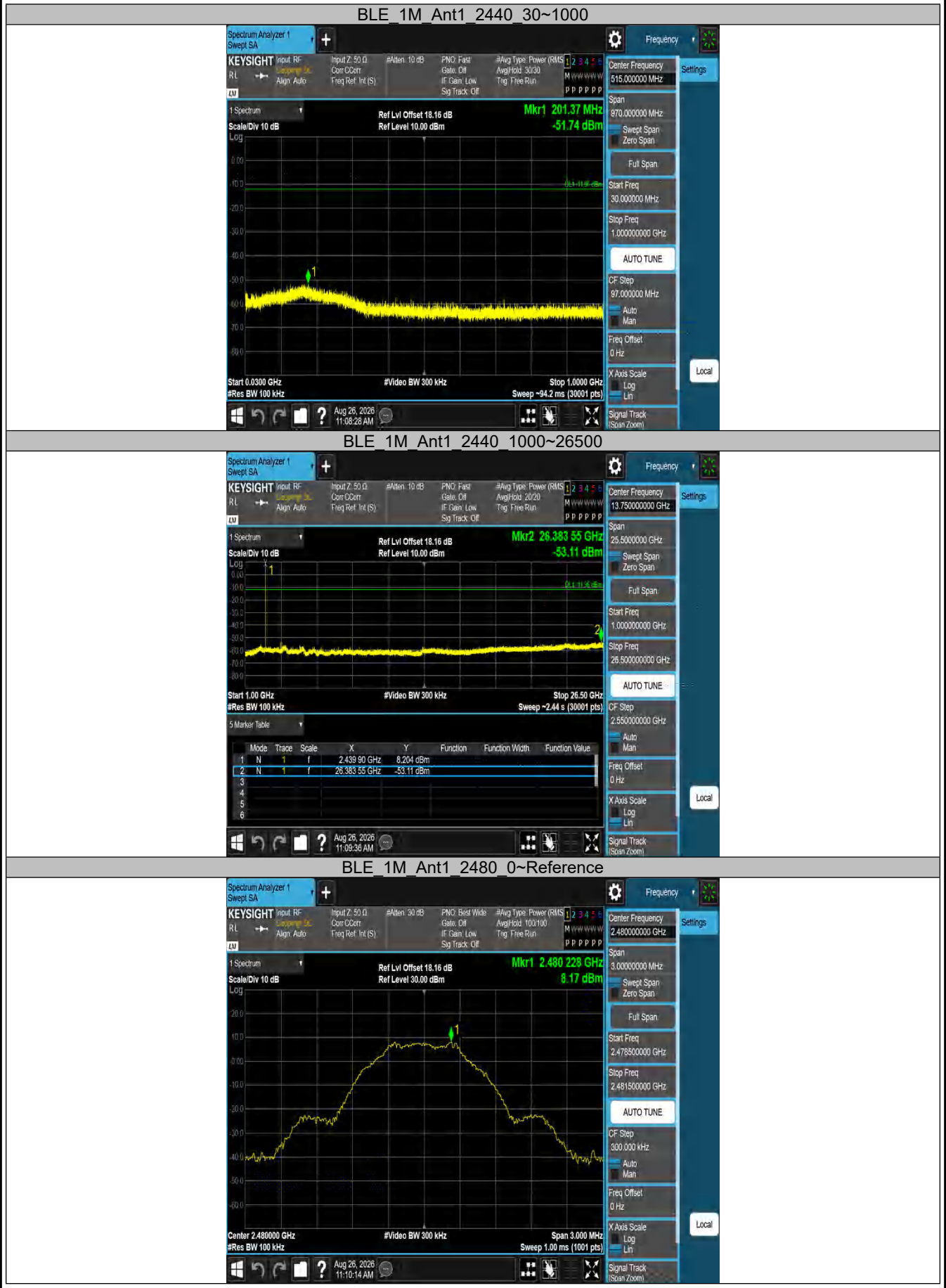


BLE 1M Ant1 2402 1000~26500



BLE 1M Ant1 2440 0~Reference







BLE 2M Ant1 2404 30~1000



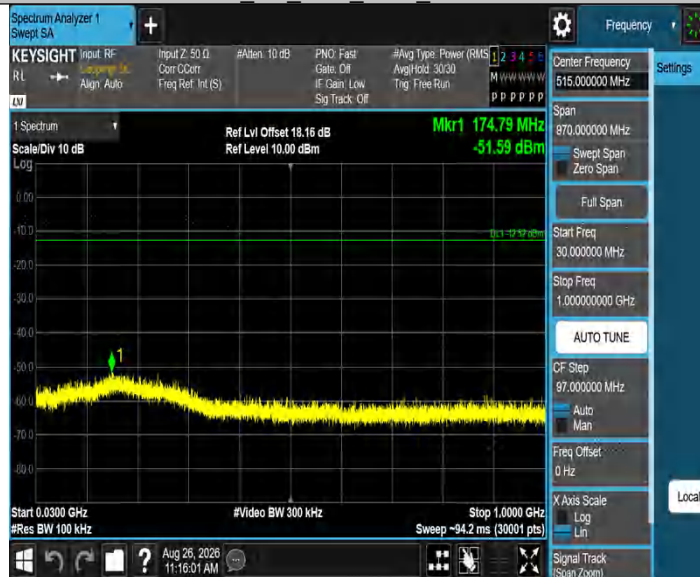
BLE 2M Ant1 2404 1000~26500



BLE 2M Ant1 2440 0~Reference



BLE 2M Ant1 2440 30~1000



BLE 2M Ant1 2440 1000~26500



BLE 2M Ant1 2478 0~Reference





Band edge measurements

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	8.37	-41.10	≤-11.63	PASS
		High	2480	8.28	-40.85	≤-11.72	PASS
BLE_2M	Ant1	Low	2404	7.27	-41.52	≤-12.73	PASS
		High	2478	7.89	-42.87	≤-12.11	PASS

BLE 1M Ant1 Low 2402



BLE 1M Ant1 High 2480



BLE 2M Ant1 Low 2404



BLE 2M Ant1 High 2478



Appendix B.6: Test Results of Radiated Spurious Emissions

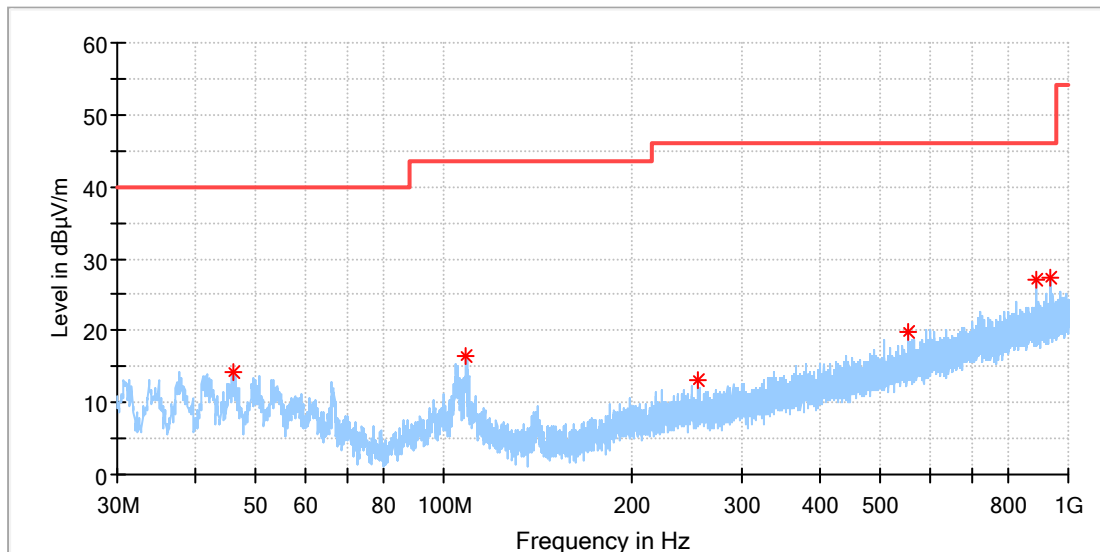
Note:

- 1) This testing was carried out on different modulations, but only the worst case was presented in this report.
- 2) Testing was carried out within frequency range 9kHz to the tenth harmonics. The measurement results below 30MHz and 18GHz - 26.5GHz were greater than 20dB below the limit, so only the radiated spurious emissions from 30MHz to 18GHz were reported.

30 MHz - 1GHz

EUT Information

EUT Name:	BLUETOOTH HEADSET
Model:	LIVE BUDS 4
Test Mode:	BLE 1M_Mid channel
Order No/Sample No:	A004355370-001
Test Voltage:	Battery
Remark:	Temp 21.8°C Humi:49%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

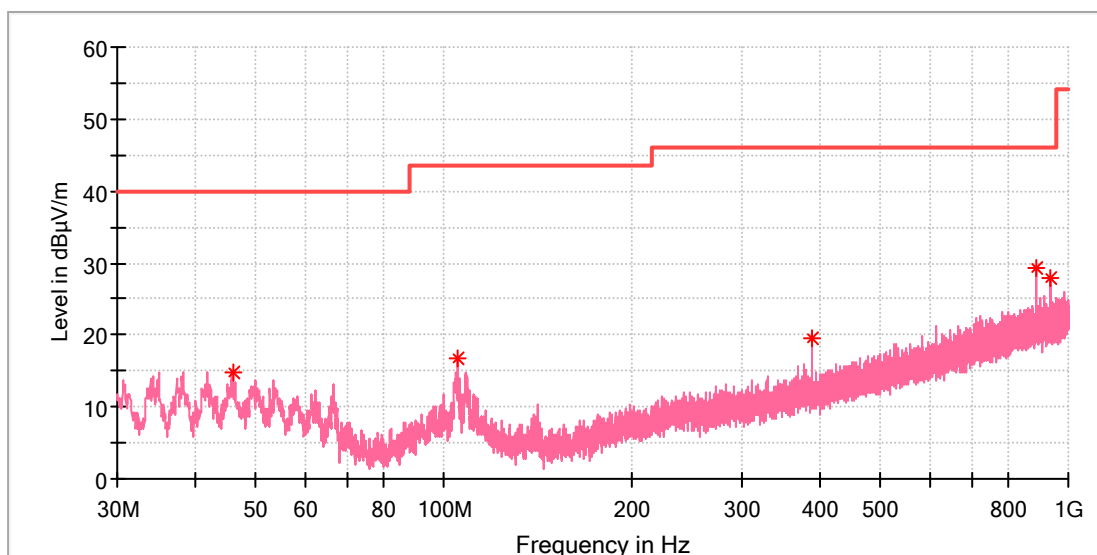
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
45.897222	14.33	40.00	25.67	100.0	H	137.0	-18.8
108.731667	16.53	43.50	26.97	100.0	H	340.0	-19.1
255.417222	13.22	46.00	32.78	100.0	H	114.0	-17.2
555.578333	19.76	46.00	26.24	100.0	H	129.0	-10.7
890.982778	27.16	46.00	18.84	100.0	H	293.0	-4.9
938.458889	27.39	46.00	18.61	100.0	H	16.0	-4.4

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---	---	---

EUT Information

EUT Name: BLUETOOTH HEADSET
Model: LIVE BUDS 4
Test Mode: BLE 1M_Mid channel
Order No/Sample No: A004355370-001
Test Voltage: Battery
Remark: Temp 21.8°C Humi:49%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
45.897222	14.79	40.00	25.21	100.0	V	199.0	-18.8
105.282778	16.83	43.50	26.67	100.0	V	43.0	-18.9
389.977778	19.54	46.00	26.46	100.0	V	282.0	-14.0
890.982778	29.35	46.00	16.65	100.0	V	306.0	-4.9
936.950000	27.92	46.00	18.08	100.0	V	237.0	-4.4

Final_Result

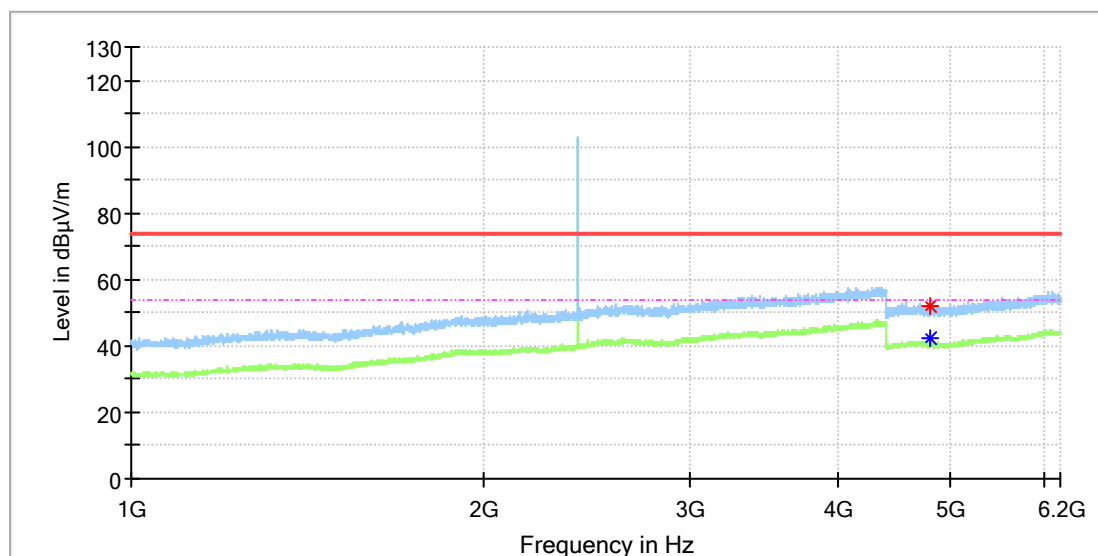
Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---	---	---

1GHz - 18GHz

Note: The highest waveform in the figure is Bluetooth Fundamental.

EUT Information

EUT Name:	BLUETOOTH HEADSET
Model:	LIVE BUDS 4
Test Mode:	BLE 1M_Low channel
Order No/Sample No:	A004355370-001
Test Voltage:	Battery
Remark:	Temp 21.8°C Humi:49%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

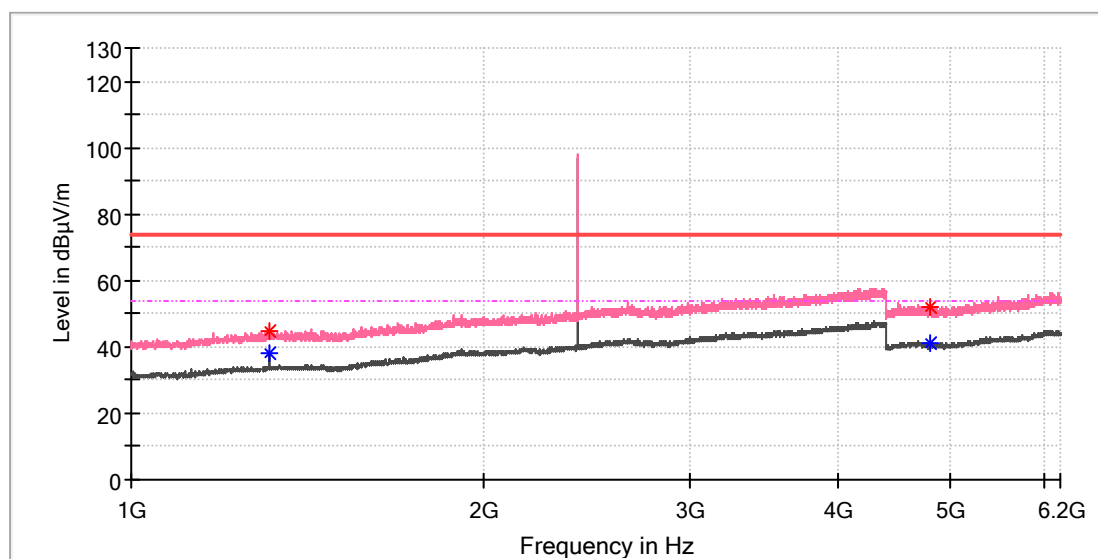
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4803.000000	51.93	---	74.00	22.07	150.0	H	256.0	13.3
4804.000000	---	42.58	54.00	11.42	150.0	H	323.0	13.3

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---		---	---

EUT Information

EUT Name:	BLUETOOTH HEADSET
Model:	LIVE BUDS 4
Test Mode:	BLE 1M_Low channel
Order No/Sample No:	A004355370-001
Test Voltage:	Battery
Remark:	Temp 21.8°C Humi:49%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

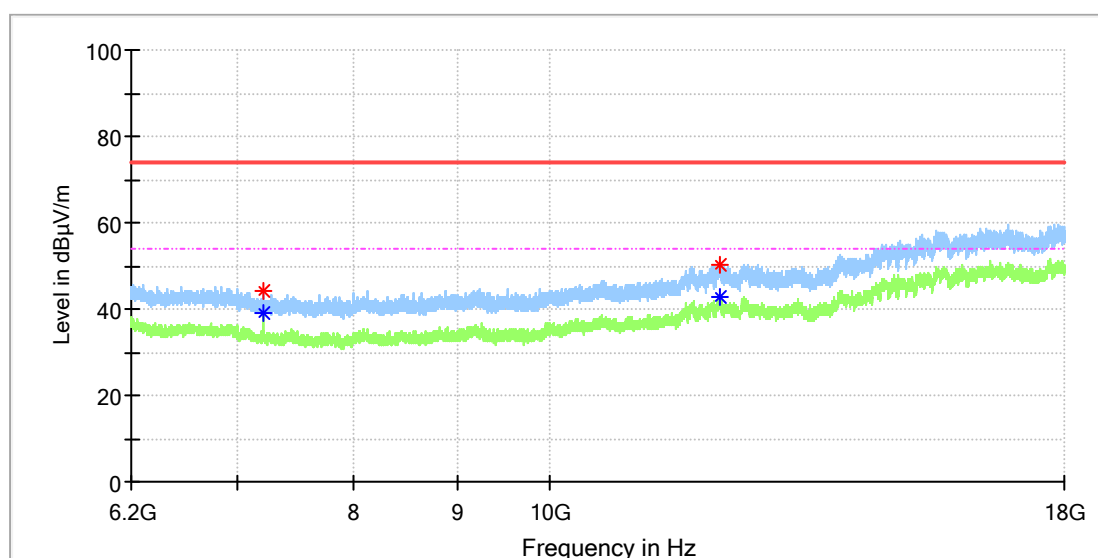
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	PoI	Azimuth (deg)	Corr. (dB/m)
1312.500000	44.78	---	74.00	29.22	150.0	V	273.0	2.8
1312.500000	---	38.00	54.00	16.00	150.0	V	273.0	2.8
4803.500000	---	41.33	54.00	12.67	150.0	V	218.0	13.3
4805.500000	52.21	---	74.00	21.79	150.0	V	24.0	13.3

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---		---	---

EUT Information

EUT Name:	BLUETOOTH HEADSET
Model:	LIVE BUDS 4
Test Mode:	BLE 1M_Low channel
Order No/Sample No:	A004355370-001
Test Voltage:	Battery
Remark:	Temp 21.8°C Humi:49%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

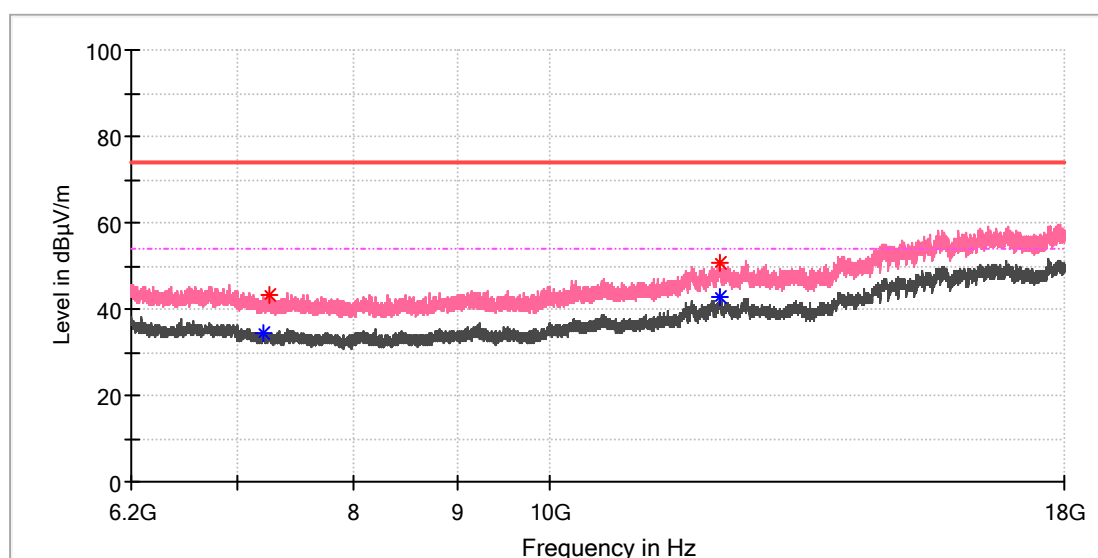
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	PoI	Azimuth (deg)	Corr. (dB/m)
7205.458333	44.30	---	74.00	29.70	150.0	H	179.0	8.8
7205.950000	---	39.06	54.00	14.94	150.0	H	212.0	8.8
12149.658333	---	42.59	54.00	11.41	150.0	H	56.0	16.7
12154.575000	50.21	---	74.00	23.79	150.0	H	100.0	16.5

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---		---	---

EUT Information

EUT Name:	BLUETOOTH HEADSET
Model:	LIVE BUDS 4
Test Mode:	BLE 1M_Low channel
Order No/Sample No:	A004355370-001
Test Voltage:	Battery
Remark:	Temp 21.8°C Humi:49%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

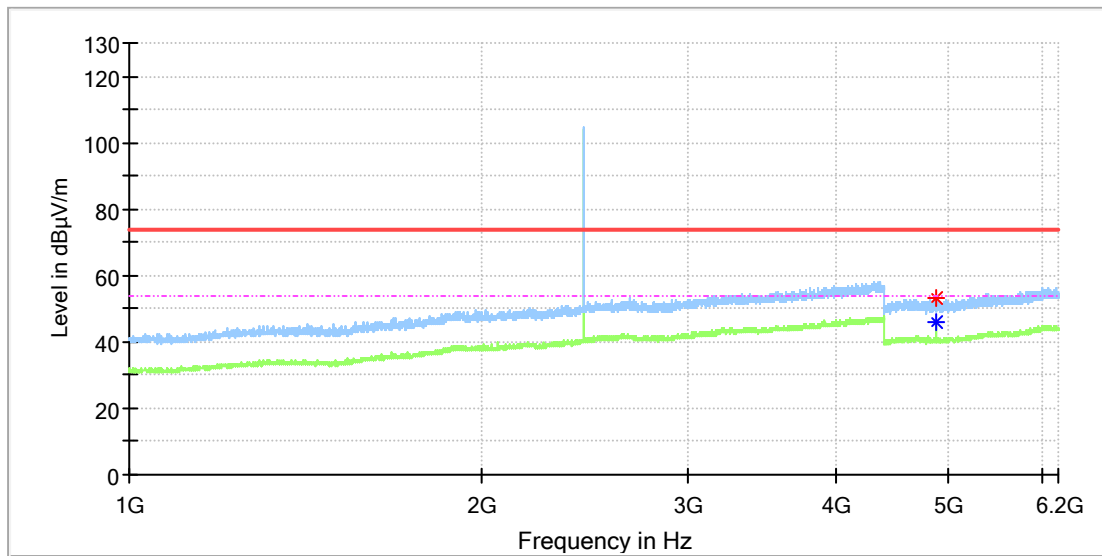
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	PoI	Azimuth (deg)	Corr. (dB/m)
7216.766667	---	34.47	54.00	19.53	150.0	V	165.0	8.7
7253.641667	43.47	---	74.00	30.53	150.0	V	109.0	8.5
12143.266667	---	42.75	54.00	11.25	150.0	V	155.0	16.6
12145.725000	50.49	---	74.00	23.51	150.0	V	303.0	16.6

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
100.0	100.0	100.0	100.0	100.0	100.0		100.0	100.0

EUT Information

EUT Name:	BLUETOOTH HEADSET
Model:	LIVE BUDS 4
Test Mode:	BLE 1M_Mid channel
Order No/Sample No:	A004355370-001
Test Voltage:	Battery
Remark:	Temp 21.8°C Humi:49%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4879.500000	53.23	---	74.00	20.77	150.0	H	276.0	13.3
4880.000000	---	45.99	54.00	8.01	150.0	H	276.0	13.3

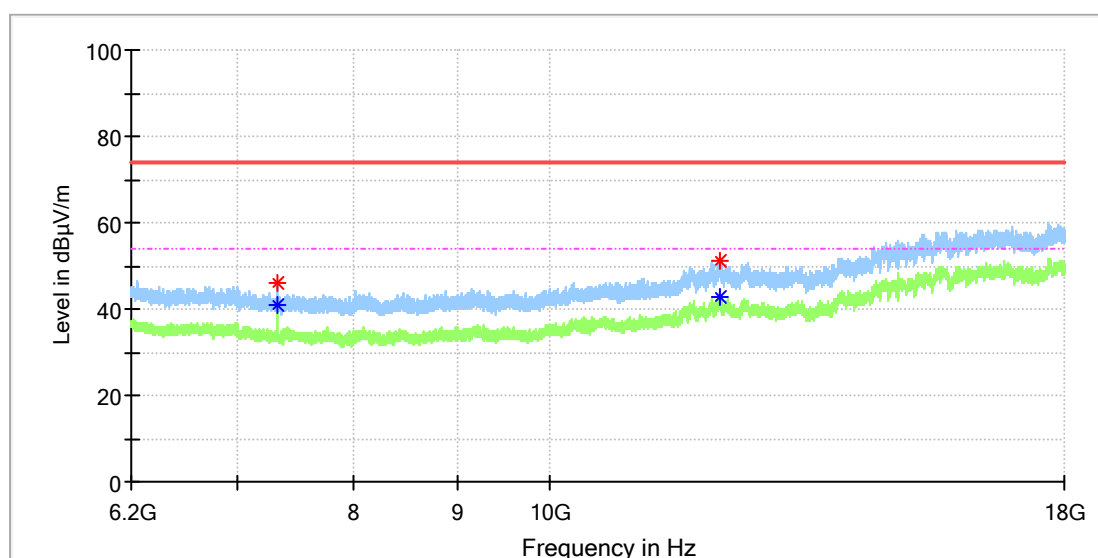
Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
----	----	----	----	----	----		----	----

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr (dB/m)
93.7	118.0	117.0	117.0	0.0	100.0	V	135.0	0.0

EUT Information

EUT Name:	BLUETOOTH HEADSET
Model:	LIVE BUDS 4
Test Mode:	BLE 1M_Mid channel
Order No/Sample No:	A004355370-001
Test Voltage:	Battery
Remark:	Temp 21.8°C Humi:49%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	PoI	Azimuth (deg)	Corr. (dB/m)
7319.525000	---	41.05	54.00	12.95	150.0	H	20.0	8.2
7320.016667	46.06	---	74.00	27.94	150.0	H	114.0	8.2
12137.366667	---	42.93	54.00	11.07	150.0	H	331.0	16.4
12158.016667	51.15	---	74.00	22.85	150.0	H	254.0	16.3

Final Result

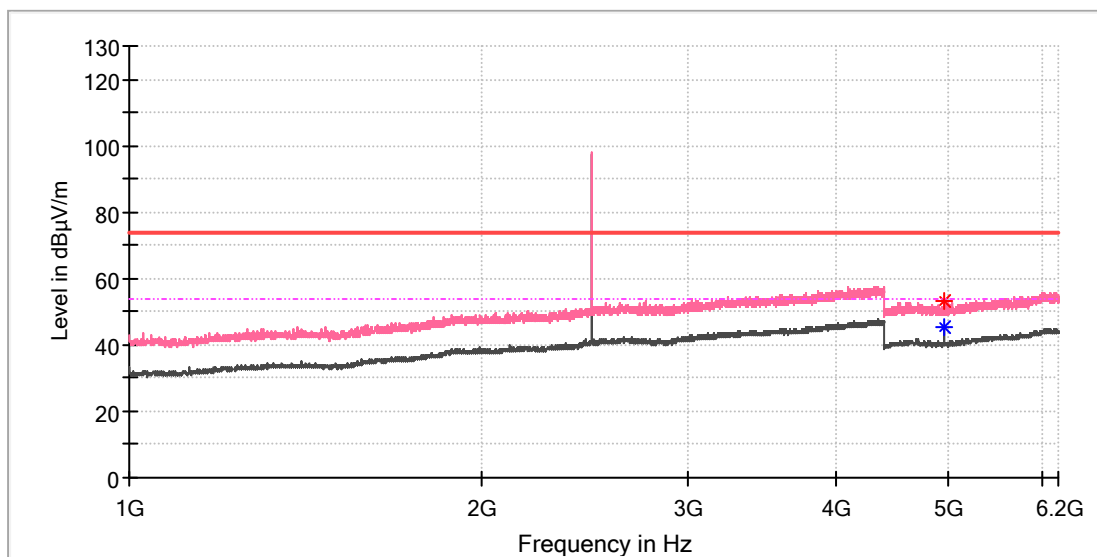
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---		---	---

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---		---	---

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr (dB/m)
93.750000	122.00	118.00	120.00	2.00	300.00	V	0.00	0.00

EUT Information

EUT Name:	BLUETOOTH HEADSET
Model:	LIVE BUDS 4
Test Mode:	BLE 1M_High channel
Order No/Sample No:	A004355370-001
Test Voltage:	Battery
Remark:	Temp 21.8°C Humi:49%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

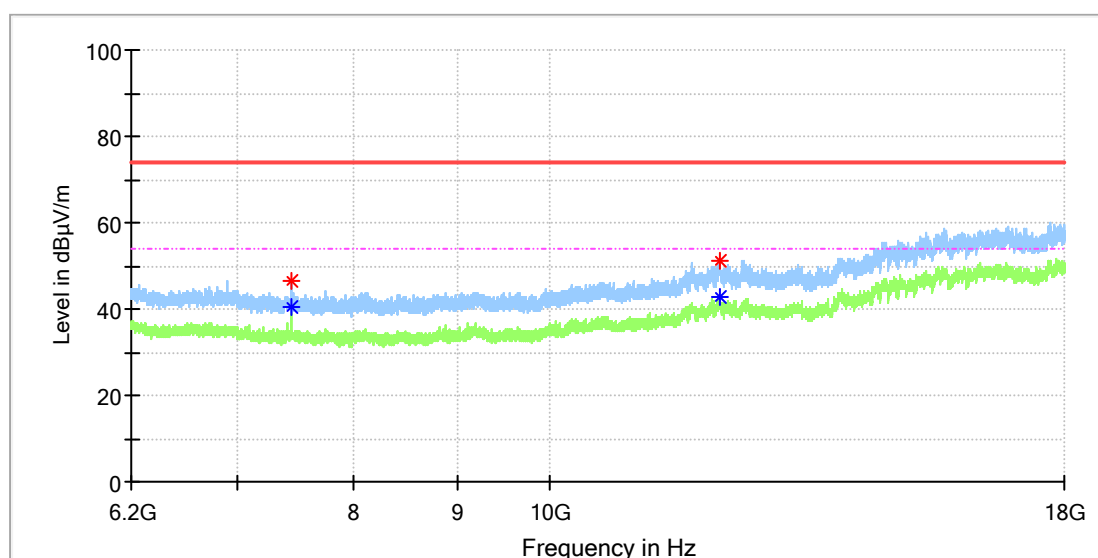
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4959.500000	---	45.49	54.00	8.51	150.0	V	286.0	13.3
4960.000000	53.11	---	74.00	20.89	150.0	V	286.0	13.3

Final_Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
----	----	----	----	----	----		----	-----

EUT Information

EUT Name:	BLUETOOTH HEADSET
Model:	LIVE BUDS 4
Test Mode:	BLE 1M_High channel
Order No/Sample No:	A004355370-001
Test Voltage:	Battery
Remark:	Temp 21.8°C Humi:49%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

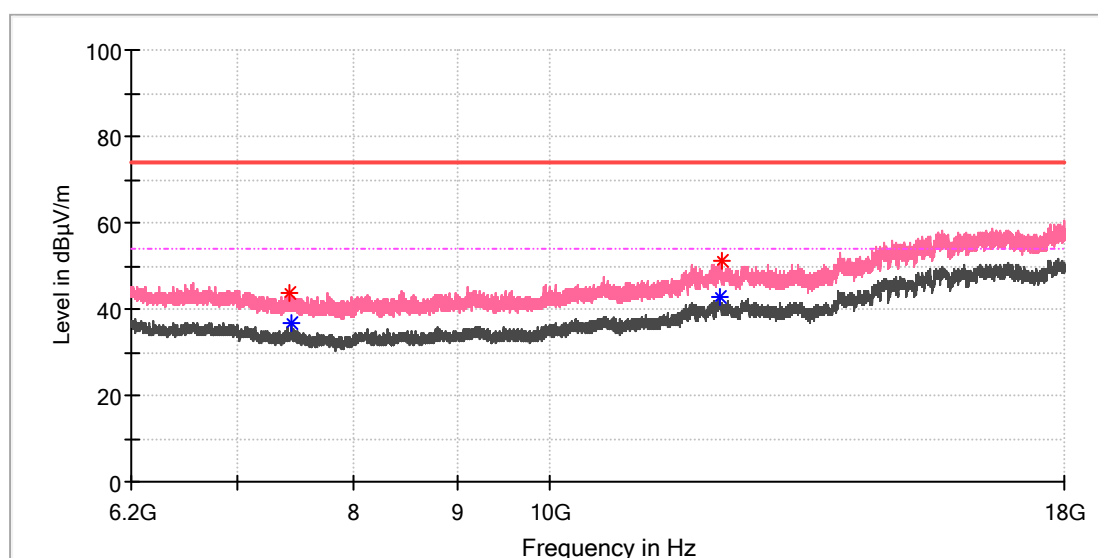
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	PoI	Azimuth (deg)	Corr. (dB/m)
7439.491667	46.38	---	74.00	27.62	150.0	H	115.0	8.4
7439.491667	---	40.53	54.00	13.47	150.0	H	115.0	8.4
12145.233333	---	42.58	54.00	11.42	150.0	H	0.0	16.6
12153.100000	50.97	---	74.00	23.03	150.0	H	315.0	16.6

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---		---	---

EUT Information

EUT Name:	BLUETOOTH HEADSET
Model:	LIVE BUDS 4
Test Mode:	BLE 1M_High channel
Order No/Sample No:	A004355370-001
Test Voltage:	Battery
Remark:	Temp 21.8°C Humi:49%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	PoI	Azimuth (deg)	Corr. (dB/m)
7421.300000	43.89	---	74.00	30.11	150.0	V	298.0	8.4
7439.983333	---	36.54	54.00	17.46	150.0	V	288.0	8.4
12150.150000	---	42.63	54.00	11.37	150.0	V	288.0	16.7
12164.900000	51.29	---	74.00	22.71	150.0	V	224.0	16.0

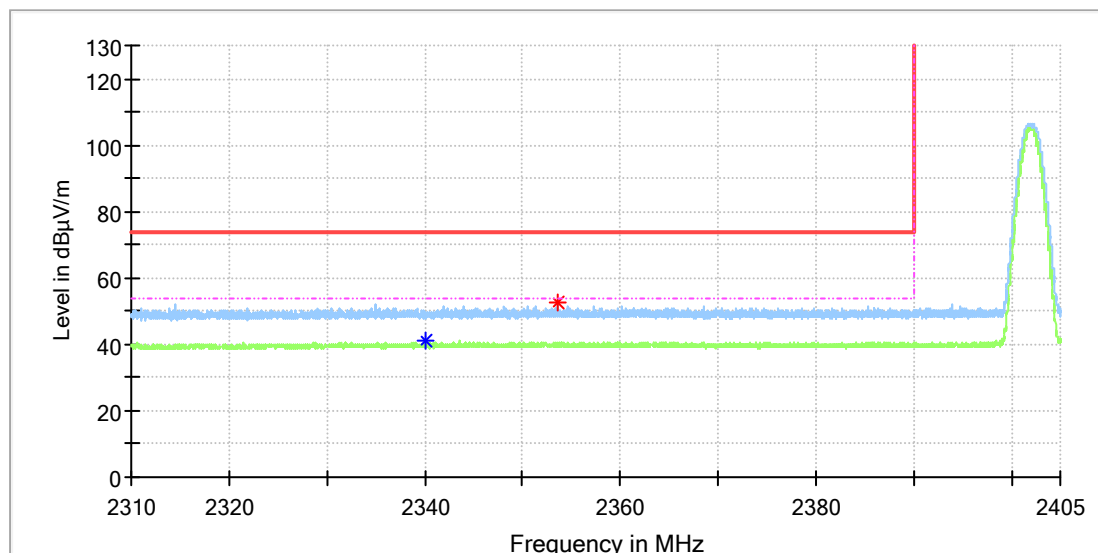
Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---		---	---

Appendix B.7: Test Results of Radiated Emissions in Restricted Bands

EUT Information

EUT Name:	BLUETOOTH HEADSET
Model:	LIVE BUDS 4
Test Mode:	BLE 1M_Low channel
Order No/Sample No:	A004355370-001
Test Voltage:	Battery
Remark:	Temp 21.8°C Humi:49%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

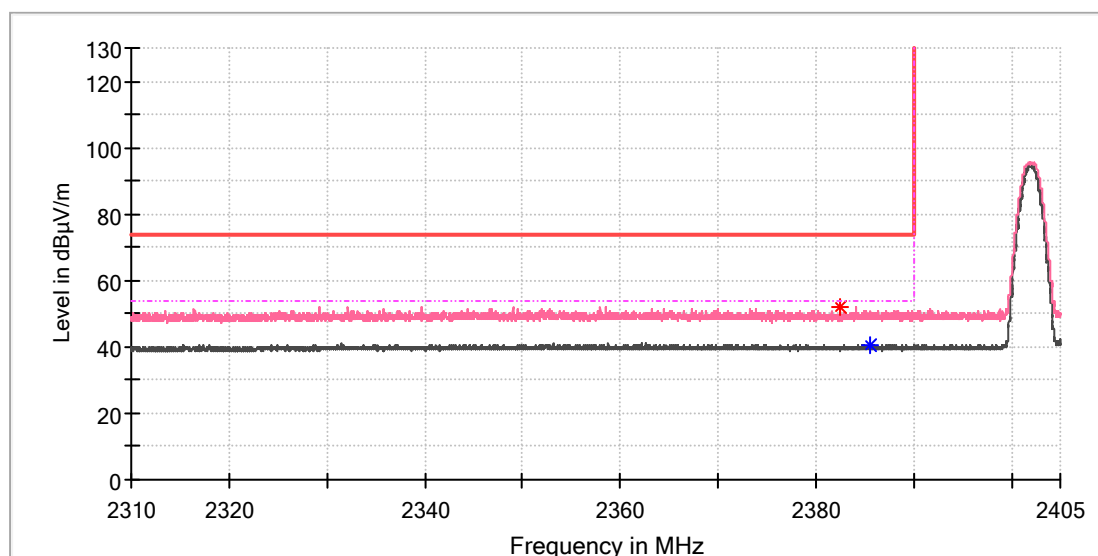
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2340.106177	---	41.16	54.00	12.84	150.0	H	36.0	8.4
2353.638824	52.46	---	74.00	21.54	150.0	H	71.0	8.5

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---		---	---

EUT Information

EUT Name:	BLUETOOTH HEADSET
Model:	LIVE BUDS 4
Test Mode:	BLE 1M_Low channel
Order No/Sample No:	A004355370-001
Test Voltage:	Battery
Remark:	Temp 21.8°C Humi:49%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

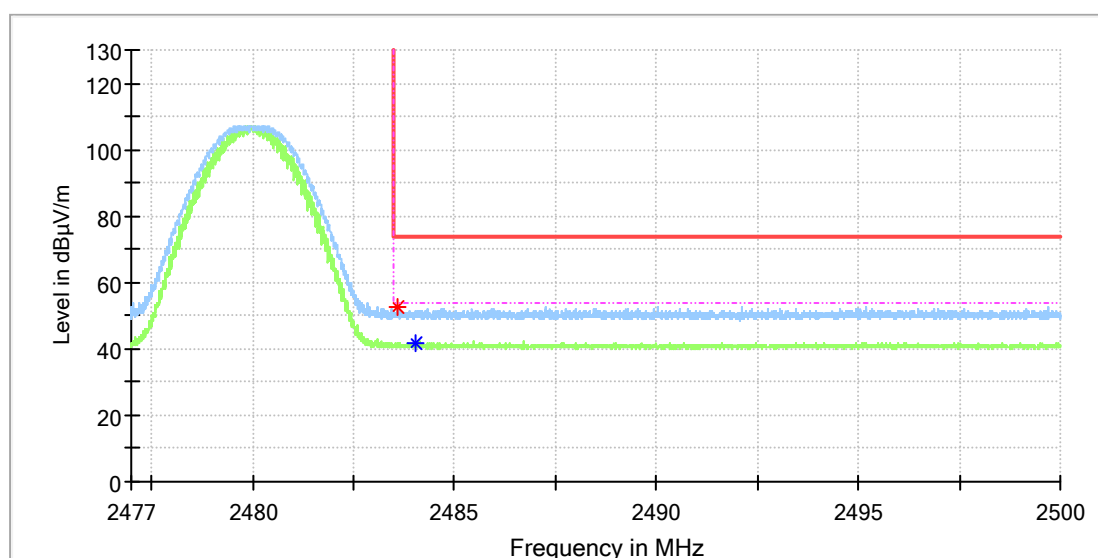
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2382.534412	52.24	---	74.00	21.76	150.0	V	206.0	8.5
2385.560882	---	40.50	54.00	13.50	150.0	V	251.0	8.5

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr (dB/m)
93.7	118.0	116.0	118.0	0.0	100.0	0	0	0

EUT Information

EUT Name:	BLUETOOTH HEADSET
Model:	LIVE BUDS 4
Test Mode:	BLE 1M_High channel
Order No/Sample No:	A004355370-001
Test Voltage:	Battery
Remark:	Temp 21.8°C Humi:49%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

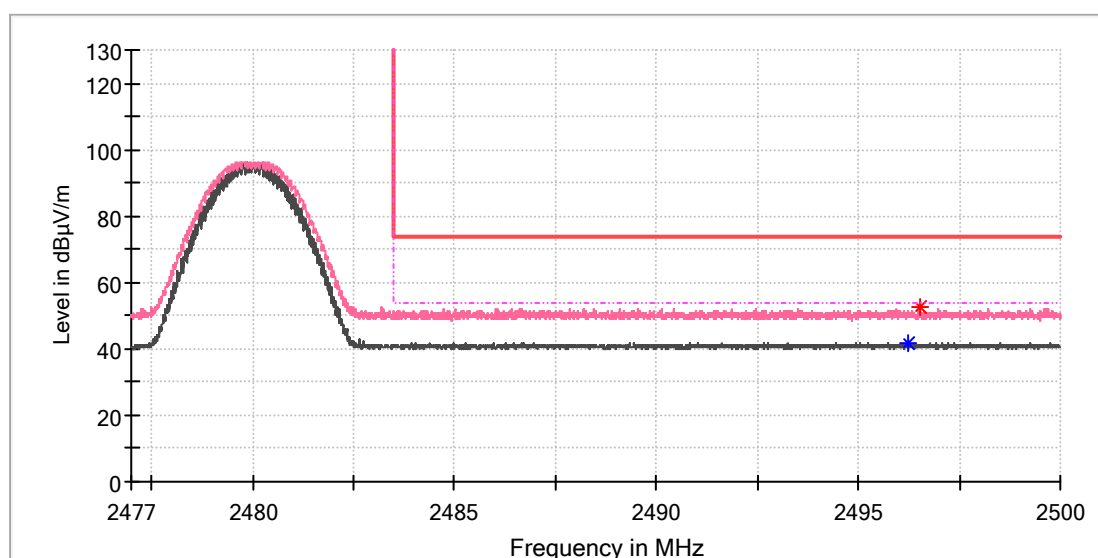
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.587059	52.78	---	74.00	21.22	150.0	H	165.0	9.0
2484.019412	---	41.96	54.00	12.04	150.0	H	242.0	9.0

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
93.7	122.0	118.0	120.0	2.0	100	V	135	0.0

EUT Information

EUT Name:	BLUETOOTH HEADSET
Model:	LIVE BUDS 4
Test Mode:	BLE 1M_High channel
Order No/Sample No:	A004355370-001
Test Voltage:	Battery
Remark:	Temp 21.8°C Humi:49%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

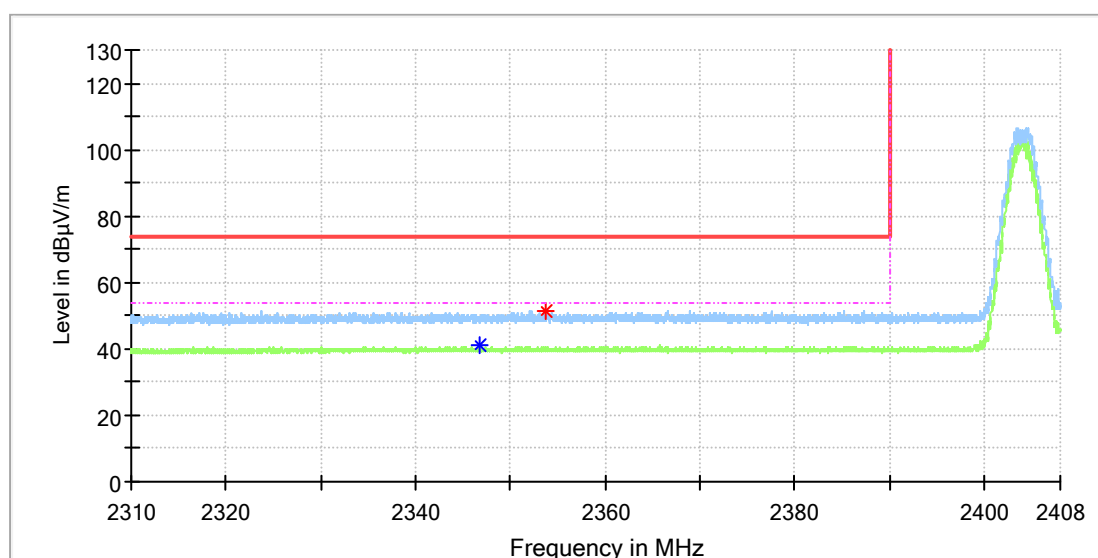
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2496.241177	---	41.95	54.00	12.05	150.0	V	242.0	9.0
2496.541177	52.37	---	74.00	21.63	150.0	V	0.0	9.0

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
93.7	122.0	118.0	120.0	2.0	100	V	135	0.0

EUT Information

EUT Name:	BLUETOOTH HEADSET
Model:	LIVE BUDS 4
Test Mode:	BLE 2M_Low channel
Order No/Sample No:	A004355370-001
Test Voltage:	Battery
Remark:	Temp 21.8°C Humi:49%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

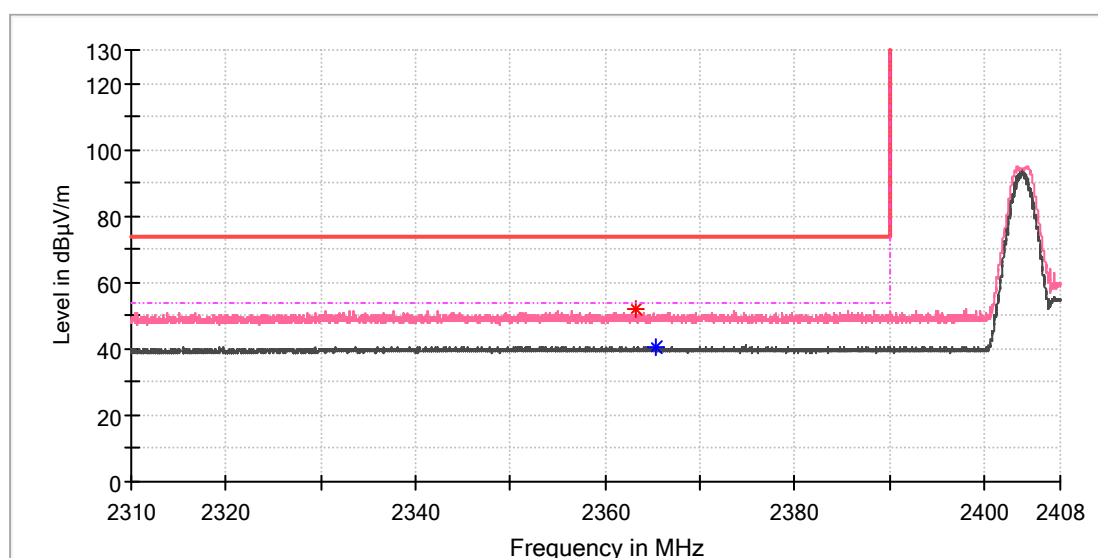
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2346.778824	---	41.04	54.00	12.96	150.0	H	320.0	8.5
2353.725294	51.70	---	74.00	22.30	150.0	H	214.0	8.5

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
93.7	122.5	118.5	120.0	1.5	100	V	135	0.0

EUT Information

EUT Name:	BLUETOOTH HEADSET
Model:	LIVE BUDS 4
Test Mode:	BLE 2M_Low channel
Order No/Sample No:	A004355370-001
Test Voltage:	Battery
Remark:	Temp 21.8°C Humi:49%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

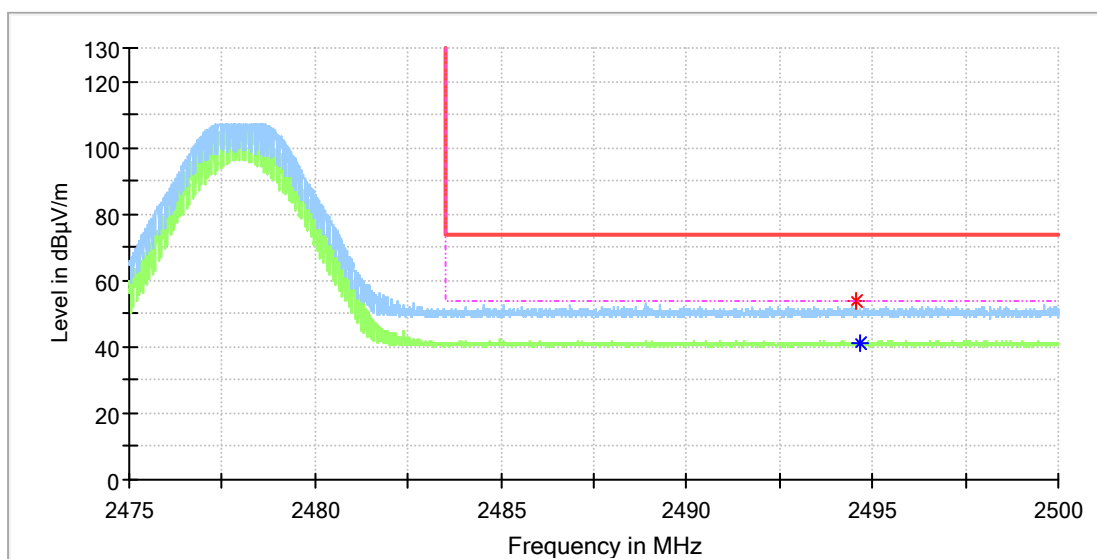
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2363.179412	51.74	---	74.00	22.26	150.0	V	17.0	8.5
2365.398824	---	40.66	54.00	13.34	150.0	V	190.0	8.5

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
93.7	122.0	118.0	120.0	2.0	100	V	135	0.0

EUT Information

EUT Name:	BLUETOOTH HEADSET
Model:	LIVE BUDS 4
Test Mode:	BLE 2M_High channel
Order No/Sample No:	A004355370-001
Test Voltage:	Battery
Remark:	Temp 21.8°C Humi:49%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

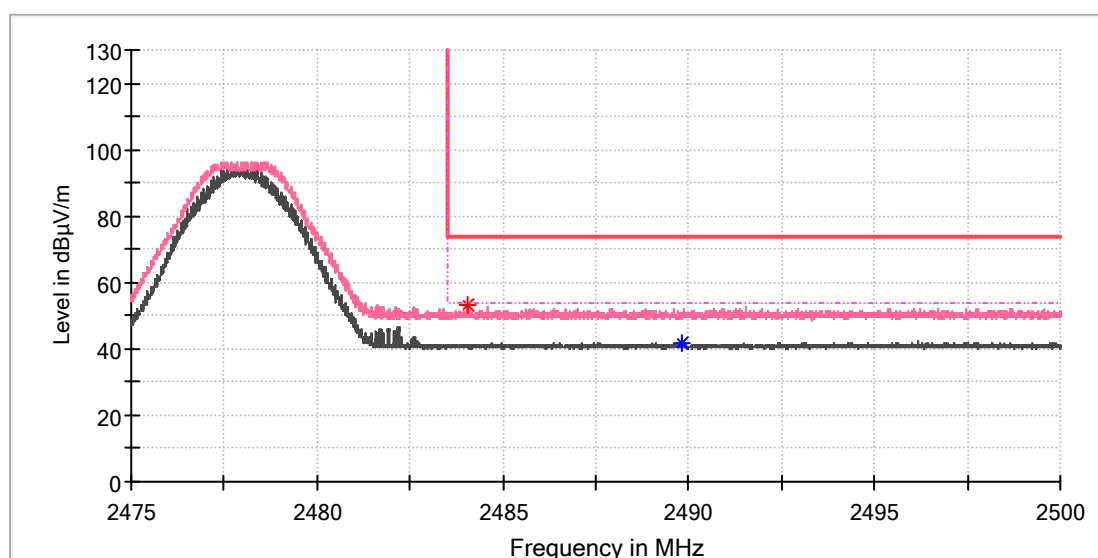
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2494.540000	53.74	---	74.00	20.26	150.0	H	122.0	9.0
2494.671765	---	41.42	54.00	12.58	150.0	H	242.0	9.0

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr (dB/m)
93.7	122.5	118.5	120.0	1.5	100	V	135	0

EUT Information

EUT Name:	BLUETOOTH HEADSET
Model:	LIVE BUDS 4
Test Mode:	BLE 2M_High channel
Order No/Sample No:	A004355370-001
Test Voltage:	Battery
Remark:	Temp 21.8°C Humi:49%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2484.073530	52.97	---	74.00	21.03	150.0	V	45.0	9.0
2489.830882	---	42.01	54.00	11.99	150.0	V	152.0	9.0

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
90.000 MHz	-68.7 dBμV/m	-68.7 dBμV/m	-68.7 dBμV/m	11.3 dB	1.0 cm	V	0 deg	0.0 dB/m

Appendix C: Test Results of Bluetooth Low Energy_Right Earbud

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Appendix C.1: Test Results of Conducted Power Spectral Density

TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-6.15	≤8.00	PASS
		2440	-6.41	≤8.00	PASS
		2480	-6.25	≤8.00	PASS
BLE_2M	Ant1	2404	-8.25	≤8.00	PASS
		2440	-8.59	≤8.00	PASS
		2478	-8.45	≤8.00	PASS

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



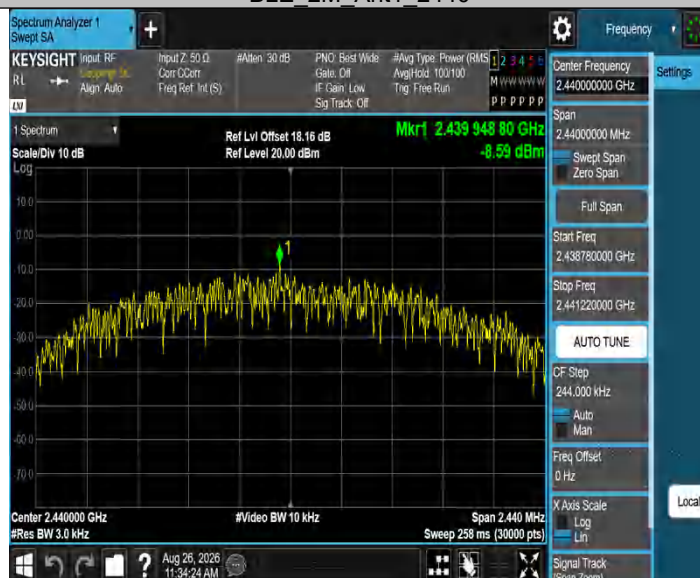
BLE 1M Ant1 2480



BLE 2M Ant1 2404



BLE 2M Ant1 2440





Appendix C.2: Test Results of 6dB Bandwidth

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.684	2401.640	2402.324	0.5	PASS
		2440	0.700	2439.644	2440.344	0.5	PASS
		2480	0.692	2479.644	2480.336	0.5	PASS
BLE_2M	Ant1	2404	1.240	2403.340	2404.580	0.5	PASS
		2440	1.220	2439.336	2440.556	0.5	PASS
		2478	1.216	2477.344	2478.560	0.5	PASS

BLE_1M Ant1 2402



BLE_1M Ant1 2440



Appendix C CN26L8MF 002



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BLE 2M Ant1 2404



BLE 2M Ant1 2440





Appendix C.3: Test Results of 99% Bandwidth

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0489	2401.4784	2402.5273	---	---
		2440	1.0528	2439.4740	2440.5268	---	---
		2480	1.0425	2479.4744	2480.5169	---	---
BLE_2M	Ant1	2404	2.0712	2402.9834	2405.0546	---	---
		2440	2.0866	2438.9631	2441.0497	---	---
		2478	2.0868	2476.9707	2479.0575	---	---

BLE_1M Ant1 2402



BLE_1M Ant1 2440



BLE 1M Ant1 2480



BLE 2M Ant1 2404



BLE 2M Ant1 2440





Appendix C.4: Test Results of Frequency stability

Test Channel (MHz)	2402
-----------------------	------

Test result of frequency tolerance of voltage variation

Voltage	Test result (MHz)	Deviation Frequency (KHz)	Test result (ppm)	Limit (ppm)
DC 3.87V	2402.000	0	0.00	10
DC 3.48V	2402.000	0	0.00	
DC 4.26V	2402.000	0	0.00	

Test result of frequency tolerance of temperature variation

Temperature (°C)	Test result (MHz)	Deviation Frequency (KHz)	Test result (ppm)	Limit (ppm)
-30	2402.004	4	1.67	10
-20	2402.002	2	0.83	
-10	2402.002	2	0.83	
0	2402.001	1	0.42	
10	2402.000	0	0.00	
20	2402.000	0	0.00	
30	2402.000	0	0.00	
40	2402.000	0	0.00	
50	2402.002	2	0.83	
55	2402.002	2	0.83	

Test Channel (MHz)	2440
-----------------------	------

Test result of frequency tolerance of voltage variation

Voltage	Test result (MHz)	Deviation Frequency (KHz)	Test result (ppm)	Limit (ppm)
DC 3.87V	2440.000	0	0.00	10
DC 3.48V	2439.999	-1	-0.41	
DC 4.26V	2439.999	-1	-0.41	

Test result of frequency tolerance of temperature variation

Temperature (°C)	Test result (MHz)	Deviation Frequency (KHz)	Test result (ppm)	Limit (ppm)
-30	2439.996	-4	-1.64	10
-20	2439.996	-4	-1.64	
-10	2439.998	-2	-0.82	
0	2439.999	-1	-0.41	
10	2440.000	0	0.00	
20	2440.000	0	0.00	
30	2440.000	0	0.00	
40	2439.999	-1	-0.41	
50	2439.999	-1	-0.41	
55	2439.999	-1	-0.41	

Test Channel (MHz)	2480
-----------------------	------

Test result of frequency tolerance of voltage variation

Voltage	Test result (MHz)	Deviation Frequency (KHz)	Test result (ppm)	Limit (ppm)
DC 3.87V	2480.000	0	0.00	10
DC 3.48V	2480.000	0	0.00	
DC 4.26V	2480.000	0	0.00	

Test result of frequency tolerance of temperature variation

Temperature (°C)	Test result (MHz)	Deviation Frequency (KHz)	Test result (ppm)	Limit (ppm)
-30	2480.003	3	1.21	10
-20	2480.003	3	1.21	
-10	2480.003	3	1.21	
0	2480.000	0	0.00	
10	2480.000	0	0.00	
20	2480.000	0	0.00	
30	2480.000	0	0.00	
40	2480.000	0	0.00	
50	2480.002	2	0.81	
55	2480.002	2	0.81	

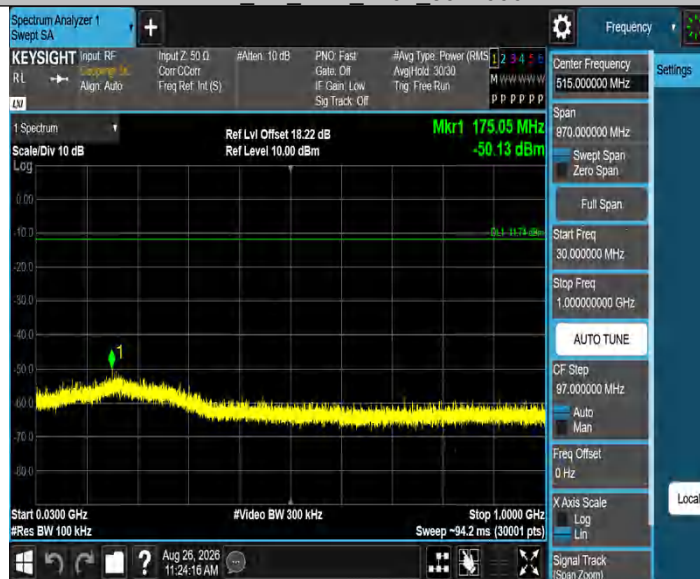
Appendix C.5: Test Results of Conducted Spurious Emissions Measured in 100 kHz Bandwidth

Conducted Spurious Emission

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	8.26	8.26	---	PASS
			30~1000	8.26	-50.13	≤-11.74	PASS
			1000~26500	8.26	-44	≤-11.74	PASS
		2440	Reference	7.93	7.93	---	PASS
			30~1000	7.93	-51.21	≤-12.07	PASS
			1000~26500	7.93	-53.09	≤-12.07	PASS
		2480	Reference	8.15	8.15	---	PASS
			30~1000	8.15	-50.39	≤-11.85	PASS
			1000~26500	8.15	-53.09	≤-11.85	PASS
BLE_2M	Ant1	2404	Reference	7.92	7.92	---	PASS
			30~1000	7.92	-50.39	≤-12.08	PASS
			1000~26500	7.92	-53.27	≤-12.08	PASS
		2440	Reference	7.56	7.56	---	PASS
			30~1000	7.56	-50.95	≤-12.44	PASS
			1000~26500	7.56	-52.18	≤-12.44	PASS
		2478	Reference	7.72	7.72	---	PASS
			30~1000	7.72	-50.32	≤-12.28	PASS
			1000~26500	7.72	-53.25	≤-12.28	PASS



BLE 1M Ant1 2402 30~1000



BLE 1M Ant1 2402 1000~26500



BLE 1M Ant1 2440 0~Reference













Band edge measurements

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	8.22	-39.82	≤-11.78	PASS
		High	2480	8.20	-41.49	≤-11.80	PASS
BLE_2M	Ant1	Low	2404	7.61	-43.34	≤-12.39	PASS
		High	2478	7.47	-41.10	≤-12.53	PASS

BLE 1M Ant1 Low 2402



BLE 1M Ant1 High 2480



BLE 2M Ant1 Low 2404



BLE 2M Ant1 High 2478



Appendix C.6: Test Results of Radiated Spurious Emissions

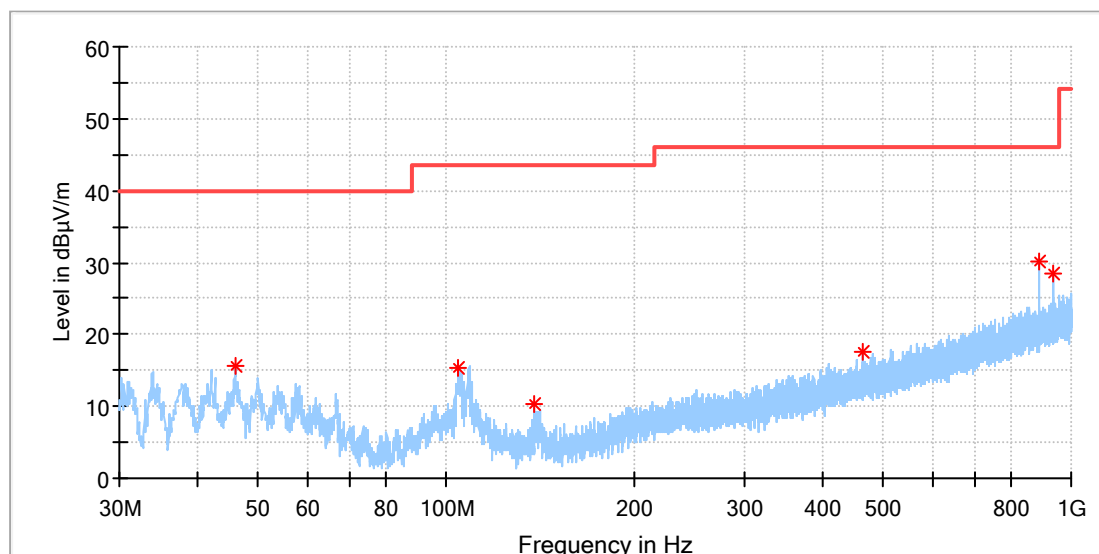
Note:

- 1) This testing was carried out on different modulations, but only the worst case was presented in this report.
- 2) Testing was carried out within frequency range 9kHz to the tenth harmonics. The measurement results below 30MHz and 18GHz - 26.5GHz were greater than 20dB below the limit, so only the radiated spurious emissions from 30MHz to 18GHz were reported.

30 MHz - 1GHz

EUT Information

EUT Name:	BLUETOOTH HEADSET
Model:	LIVE BUDS 4
Test Mode:	BLE 1M_Mid channel
Order No/Sample No:	A004355370-001
Test Voltage:	Battery
Remark:	Temp 21.8°C Humi:49%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

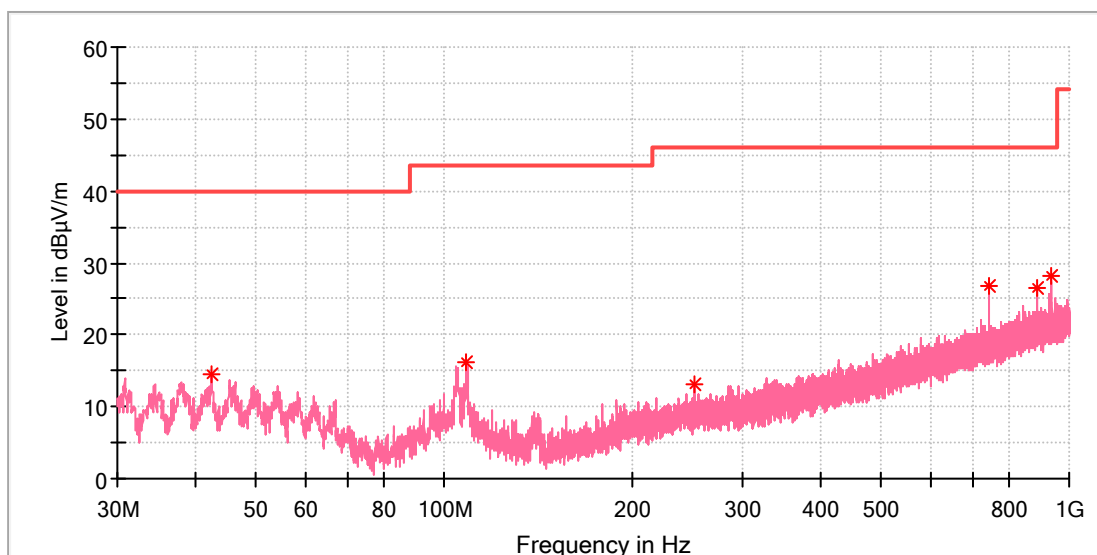
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
45.951111	15.61	40.00	24.39	100.0	H	66.0	-18.8
104.797778	15.47	43.50	28.03	100.0	H	224.0	-18.9
138.424444	10.41	43.50	33.09	100.0	H	87.0	-22.3
465.530000	17.52	46.00	28.48	100.0	H	301.0	-12.4
890.982778	30.16	46.00	15.84	100.0	H	254.0	-4.9
938.405000	28.49	46.00	17.51	100.0	H	152.0	-4.4

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---	---	---

EUT Information

EUT Name: BLUETOOTH HEADSET
Model: LIVE BUDS 4
Test Mode: BLE 1M_Mid channel
Order No/Sample No: A004355370-001
Test Voltage: Battery
Remark: Temp 21.8°C Humi:49%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
42.448333	14.53	40.00	25.47	100.0	V	92.0	-19.6
108.731667	16.12	43.50	27.38	100.0	V	101.0	-19.1
252.022222	13.20	46.00	32.80	100.0	V	36.0	-17.3
742.518889	26.76	46.00	19.24	100.0	V	44.0	-7.2
890.982778	26.57	46.00	19.43	100.0	V	13.0	-4.9
936.950000	28.11	46.00	17.89	100.0	V	76.0	-4.4

Final_Result

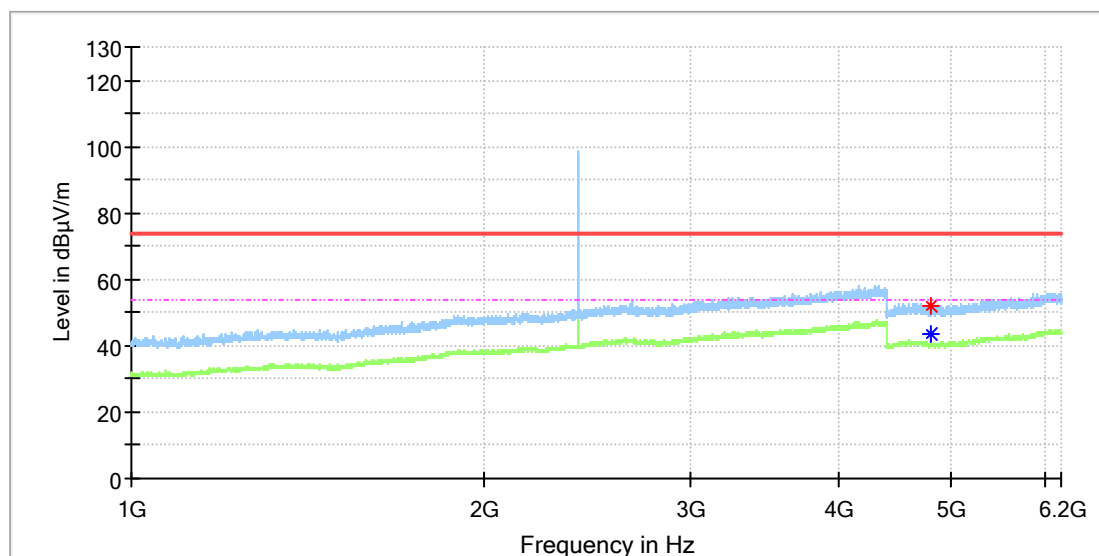
Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

1GHz - 18GHz

Note: The highest waveform in the figure is Bluetooth Fundamental.

EUT Information

EUT Name:	BLUETOOTH HEADSET
Model:	LIVE BUDS 4
Test Mode:	BLE 1M_Low channel
Order No/Sample No:	A004355370-001
Test Voltage:	Battery
Remark:	Temp 21.8°C Humi:49%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

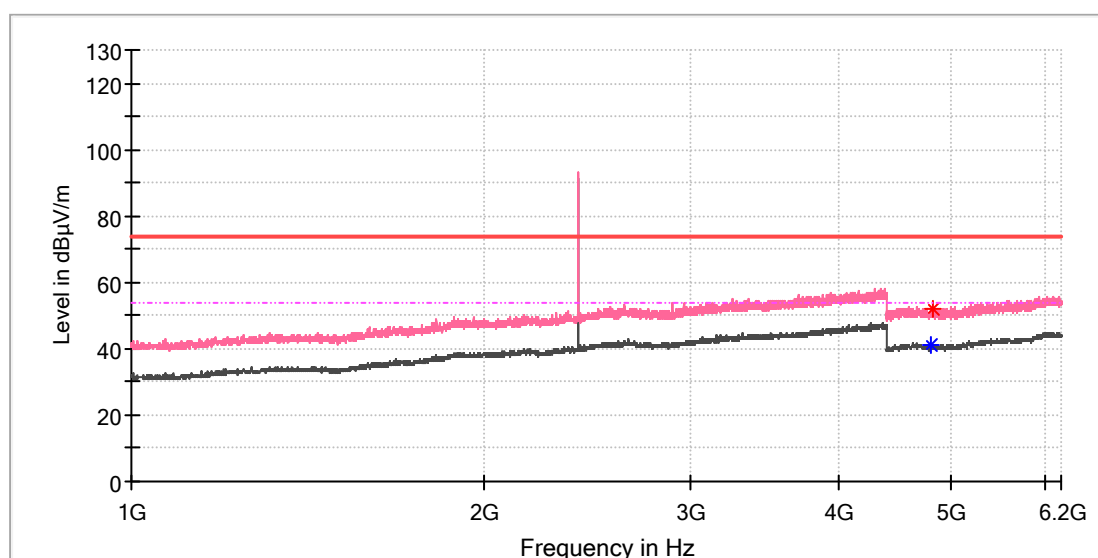
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4804.000000	---	43.44	54.00	10.56	150.0	H	140.0	13.3
4804.500000	51.73	---	74.00	22.27	150.0	H	185.0	13.3

Final_Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---		---	---

EUT Information

EUT Name:	BLUETOOTH HEADSET
Model:	LIVE BUDS 4
Test Mode:	BLE 1M_Low channel
Order No/Sample No:	A004355370-001
Test Voltage:	Battery
Remark:	Temp 21.8°C Humi:49%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

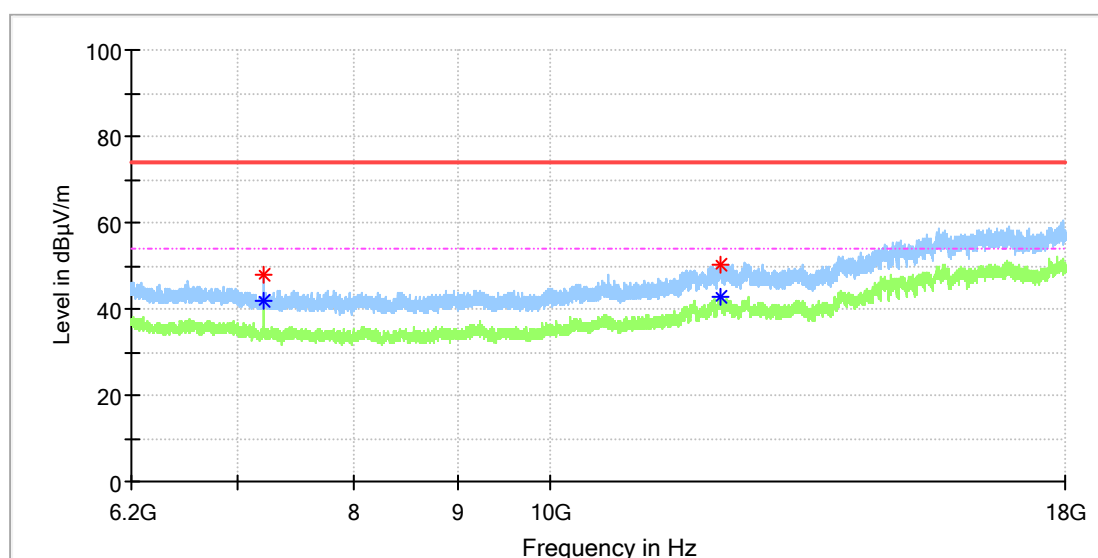
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4803.500000	---	41.34	54.00	12.66	150.0	V	239.0	13.3
4821.500000	52.02	---	74.00	21.98	150.0	V	352.0	13.3

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
93.7	122.5	118.5	120.0	1.5	100	V	135	0.0

EUT Information

EUT Name:	BLUETOOTH HEADSET
Model:	LIVE BUDS 4
Test Mode:	BLE 1M_Low channel
Order No/Sample No:	A004355370-001
Test Voltage:	Battery
Remark:	Temp 21.8°C Humi:49%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

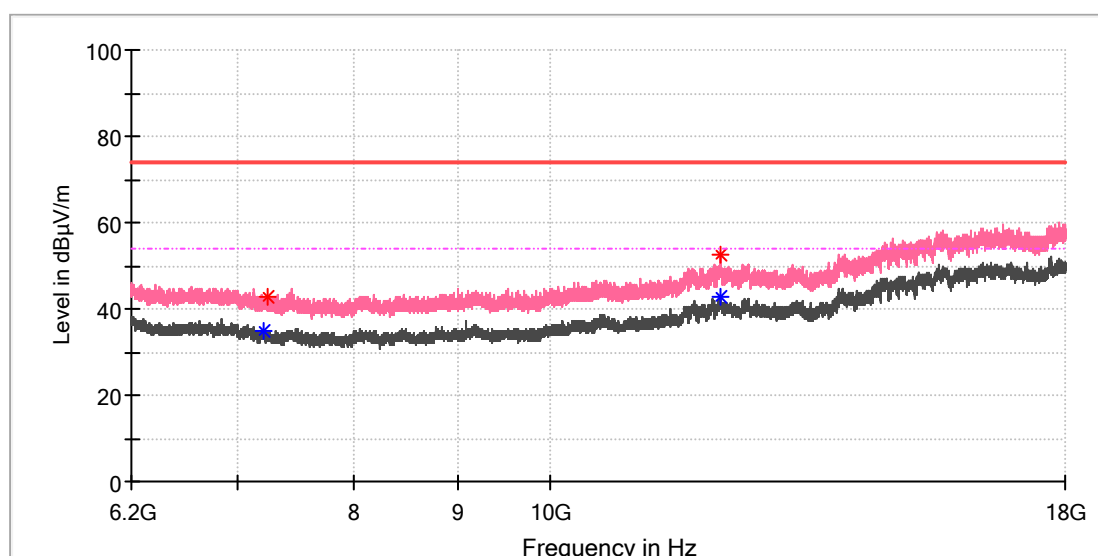
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	PoI	Azimuth (deg)	Corr. (dB/m)
7205.950000	---	41.68	54.00	12.32	150.0	H	286.0	8.8
7205.950000	47.90	---	74.00	26.10	150.0	H	286.0	8.8
12136.875000	50.33	---	74.00	23.67	150.0	H	192.0	16.4
12147.200000	---	43.00	54.00	11.00	150.0	H	308.0	16.7

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
----	----	----	----	----	----		----	-----

EUT Information

EUT Name:	BLUETOOTH HEADSET
Model:	LIVE BUDS 4
Test Mode:	BLE 1M_Low channel
Order No/Sample No:	A004355370-001
Test Voltage:	Battery
Remark:	Temp 21.8°C Humi:49%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	PoI	Azimuth (deg)	Corr. (dB/m)
7205.950000	---	34.75	54.00	19.25	150.0	V	62.0	8.8
7243.808333	42.98	---	74.00	31.02	150.0	V	62.0	8.6
12141.300000	52.60	---	74.00	21.40	150.0	V	1.0	16.5
12141.300000	---	42.58	54.00	11.42	150.0	V	1.0	16.5

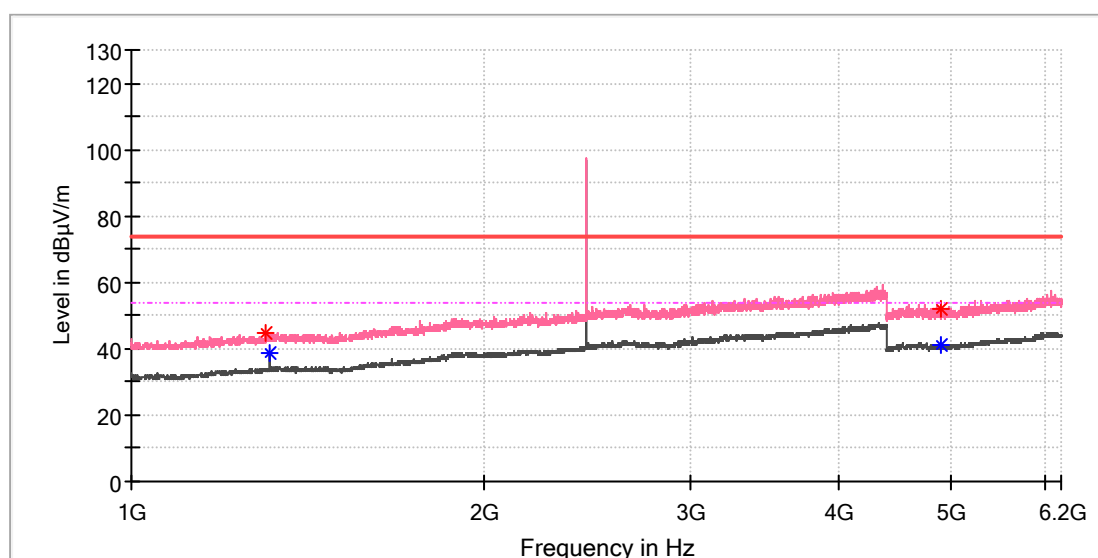
Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
----	----	----	----	----	----		----	----

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
93.7	59.5	59.5	60.0	-0.5	1.0	h	135	0.0

EUT Information

EUT Name:	BLUETOOTH HEADSET
Model:	LIVE BUDS 4
Test Mode:	BLE 1M_Mid channel
Order No/Sample No:	A004355370-001
Test Voltage:	Battery
Remark:	Temp 21.8°C Humi:49%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

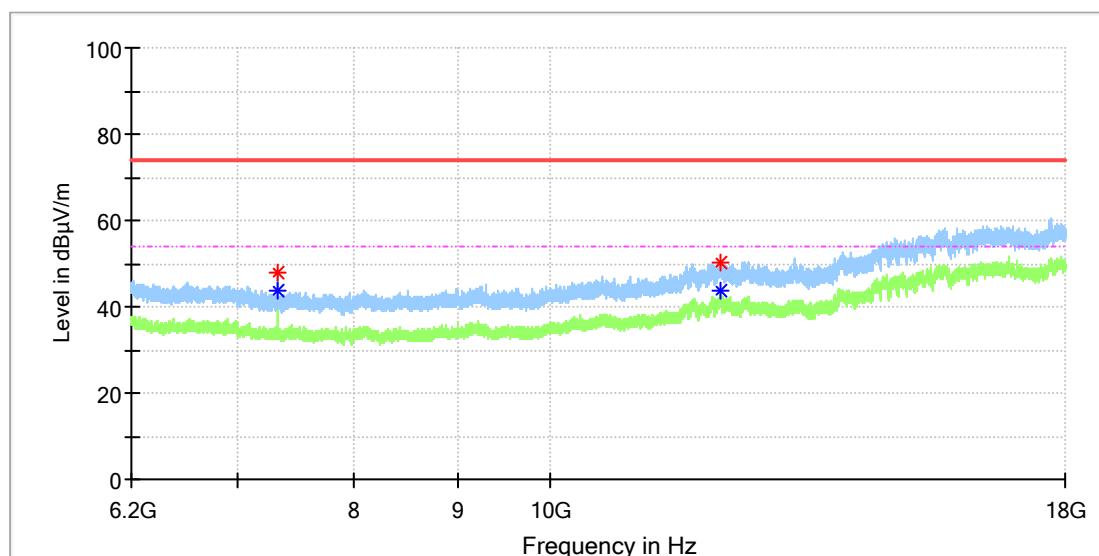
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	PoI	Azimuth (deg)	Corr. (dB/m)
1303.000000	44.78	---	74.00	29.22	150.0	V	264.0	2.8
1312.500000	---	38.52	54.00	15.48	150.0	V	271.0	2.8
4897.500000	51.76	---	74.00	22.24	150.0	V	310.0	13.3
4902.000000	---	40.92	54.00	13.08	150.0	V	127.0	13.3

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
----	----	----	----	----	----		----	-----

EUT Information

EUT Name:	BLUETOOTH HEADSET
Model:	LIVE BUDS 4
Test Mode:	BLE 1M_Mid channel
Order No/Sample No:	A004355370-001
Test Voltage:	Battery
Remark:	Temp 21.8°C Humi:49%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

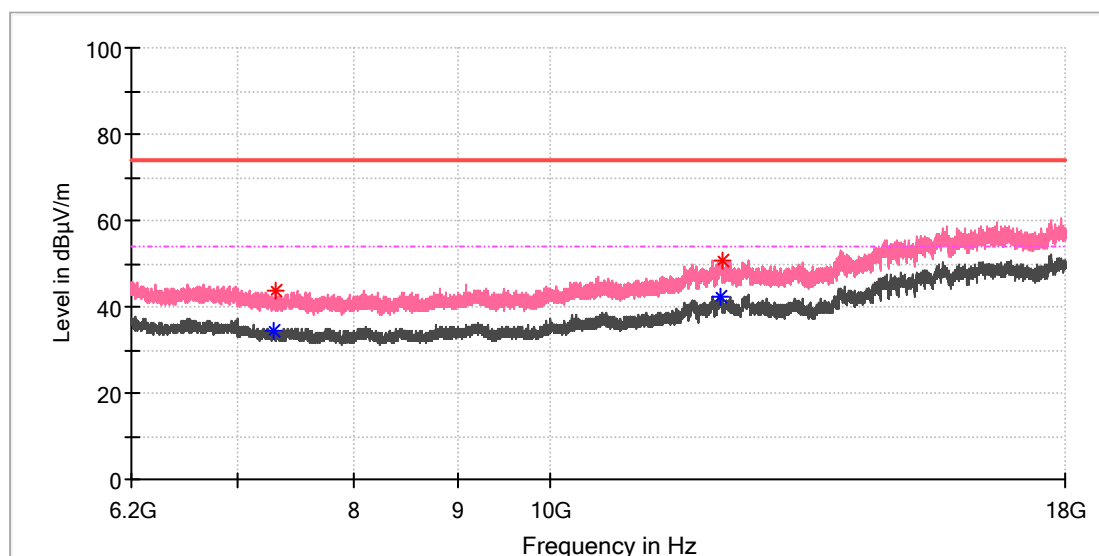
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7320.016667	47.76	---	74.00	26.24	150.0	H	26.0	8.2
7320.016667	---	43.60	54.00	10.40	150.0	H	26.0	8.2
12148.675000	50.30	---	74.00	23.70	150.0	H	26.0	16.7
12150.641667	---	43.56	54.00	10.44	150.0	H	127.0	16.7

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
93.7	122.5	118.5	118.5	0.0	100	h	135	0.0

EUT Information

EUT Name:	BLUETOOTH HEADSET
Model:	LIVE BUDS 4
Test Mode:	BLE 1M_Mid channel
Order No/Sample No:	A004355370-001
Test Voltage:	Battery
Remark:	Temp 21.8°C Humi:49%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

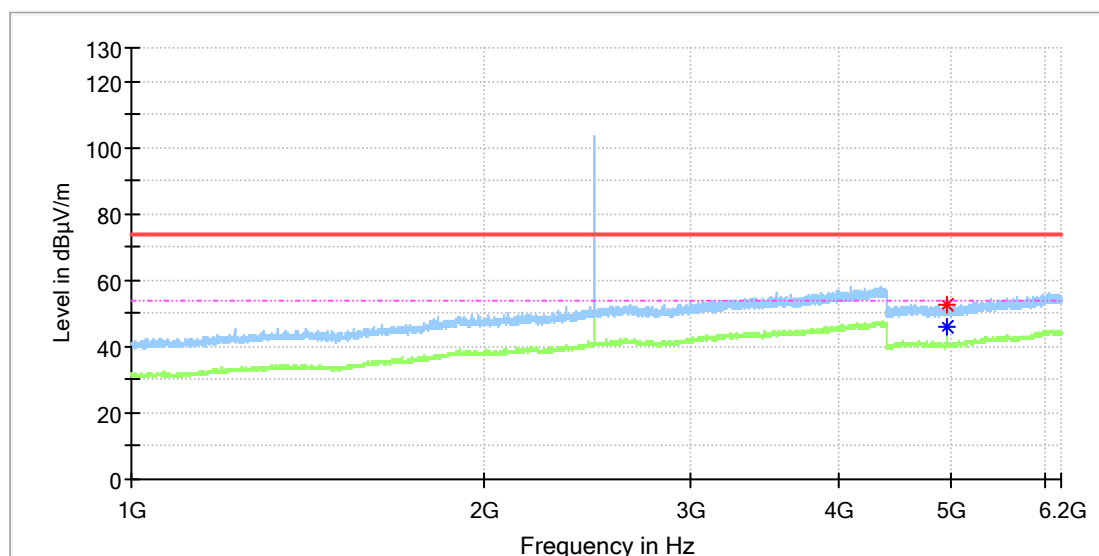
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7295.925000	---	34.60	54.00	19.40	150.0	V	189.0	8.3
7310.675000	43.58	---	74.00	30.42	150.0	V	29.0	8.2
12148.183333	---	42.55	54.00	11.45	150.0	V	341.0	16.7
12163.916667	50.51	---	74.00	23.49	150.0	V	359.0	16.0

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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EUT Information

EUT Name:	BLUETOOTH HEADSET
Model:	LIVE BUDS 4
Test Mode:	BLE 1M_High channel
Order No/Sample No:	A004355370-001
Test Voltage:	Battery
Remark:	Temp 21.8°C Humi:49%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4959.500000	52.70	---	74.00	21.30	150.0	H	209.0	13.3
4960.000000	---	46.18	54.00	7.82	150.0	H	181.0	13.3

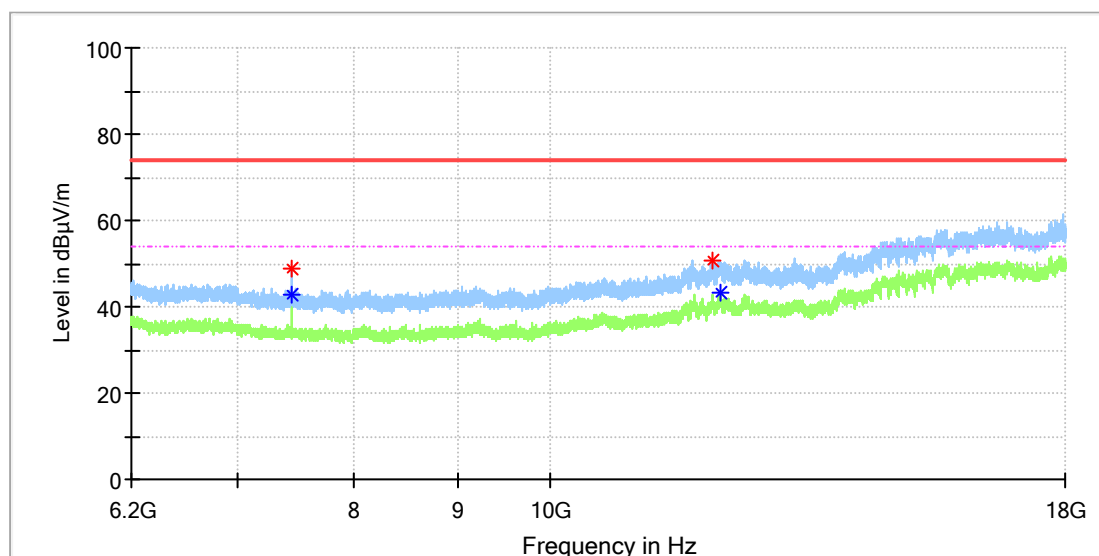
Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---		---	---

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
----	----	----	----	----	----		----	----

EUT Information

EUT Name:	BLUETOOTH HEADSET
Model:	LIVE BUDS 4
Test Mode:	BLE 1M_High channel
Order No/Sample No:	A004355370-001
Test Voltage:	Battery
Remark:	Temp 21.8°C Humi:49%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

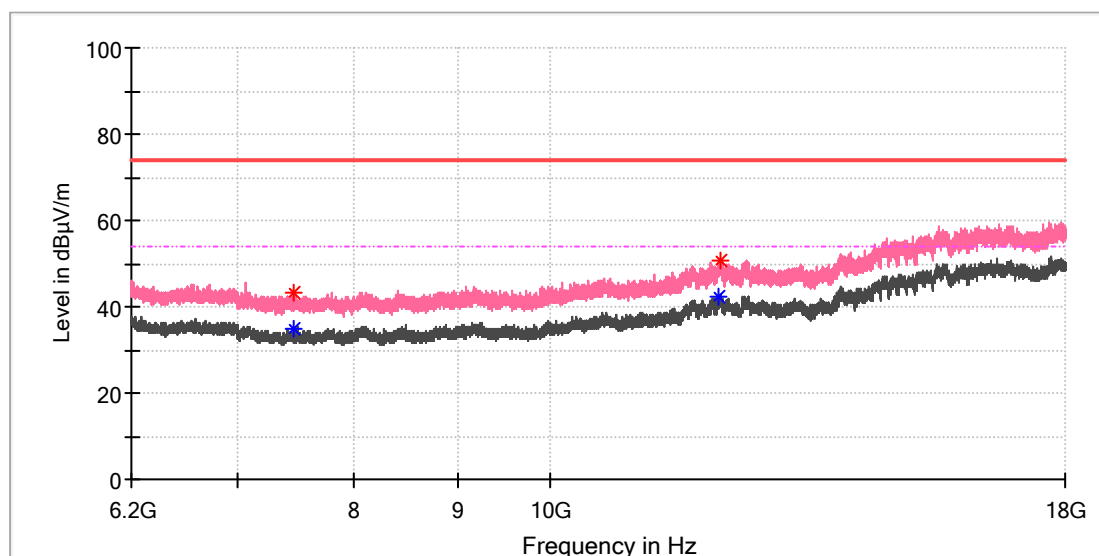
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	PoI	Azimuth (deg)	Corr. (dB/m)
7439.983333	---	42.70	54.00	11.30	150.0	H	120.0	8.4
7440.475000	48.63	---	74.00	25.37	150.0	H	120.0	8.4
12033.625000	50.89	---	74.00	23.11	150.0	H	250.0	8.0
12148.675000	---	43.20	54.00	10.80	150.0	H	2.0	16.7

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
----	----	----	----	----	----		----	----

EUT Information

EUT Name:	BLUETOOTH HEADSET
Model:	LIVE BUDS 4
Test Mode:	BLE 1M_High channel
Order No/Sample No:	A004355370-001
Test Voltage:	Battery
Remark:	Temp 21.8°C Humi:49%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7455.716667	---	34.95	54.00	19.05	150.0	V	100.0	8.5
7468.008333	43.45	---	74.00	30.55	150.0	V	213.0	8.6
12126.058333	---	42.19	54.00	11.81	150.0	V	192.0	16.1
12153.591667	50.91	---	74.00	23.09	150.0	V	290.0	16.5

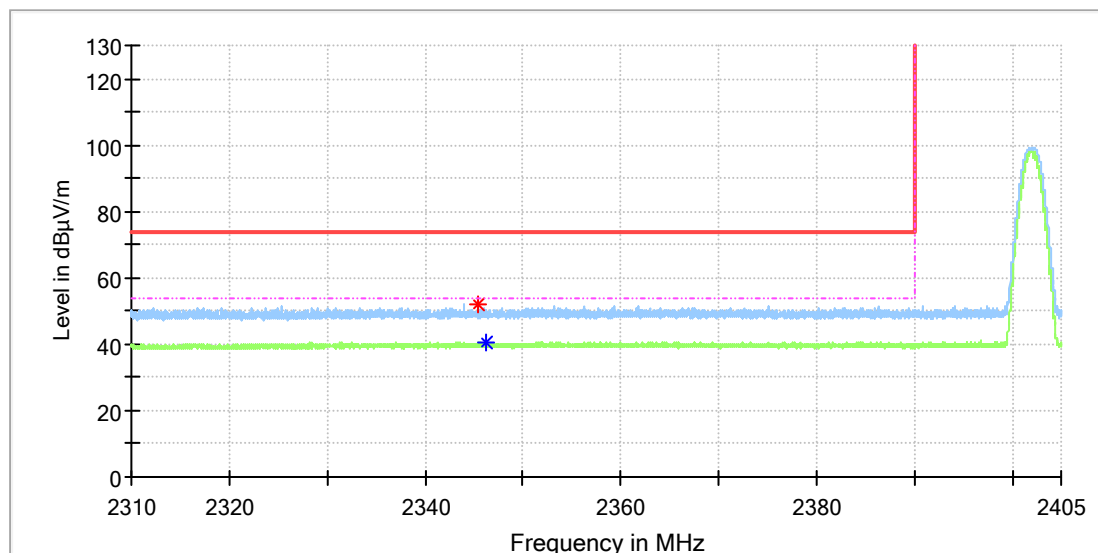
Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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Appendix C.7: Test Results of Radiated Emissions in Restricted Bands

EUT Information

EUT Name:	BLUETOOTH HEADSET
Model:	LIVE BUDS 4
Test Mode:	BLE 1M_Low channel
Order No/Sample No:	A004355370-001
Test Voltage:	Battery
Remark:	Temp 21.8°C Humi:49%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

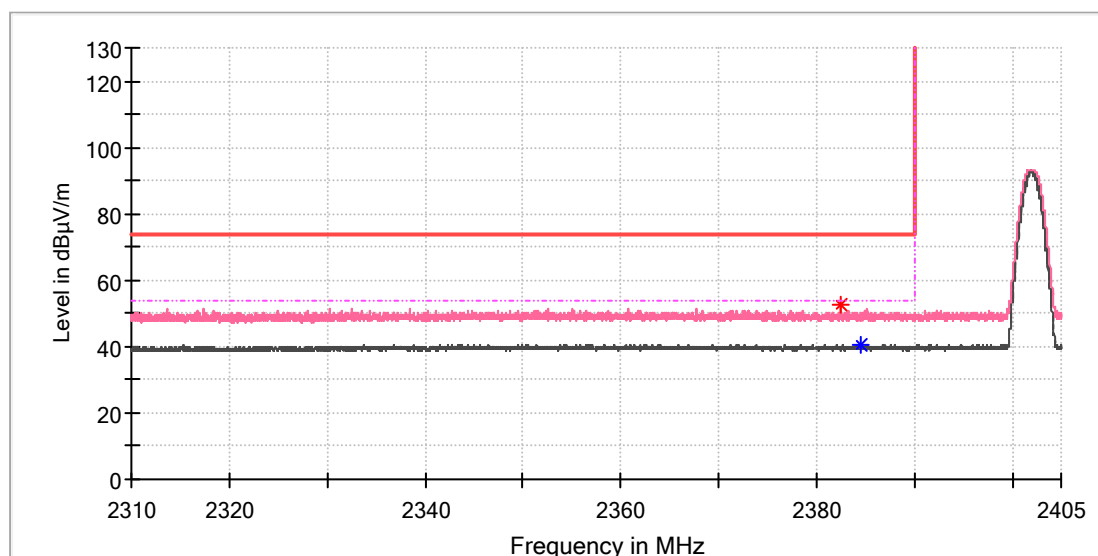
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2345.452941	52.18	---	74.00	21.82	150.0	H	337.0	8.4
2346.288824	---	40.77	54.00	13.23	150.0	H	187.0	8.5

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
100.0	100.0	100.0	100.0	100.0	100.0		100.0	

EUT Information

EUT Name:	BLUETOOTH HEADSET
Model:	LIVE BUDS 4
Test Mode:	BLE 1M_Low channel
Order No/Sample No:	A004355370-001
Test Voltage:	Battery
Remark:	Temp 21.8°C Humi:49%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2382.404706	52.48	---	74.00	21.52	150.0	V	337.0	8.5
2384.566471	---	40.47	54.00	13.53	150.0	V	157.0	8.5

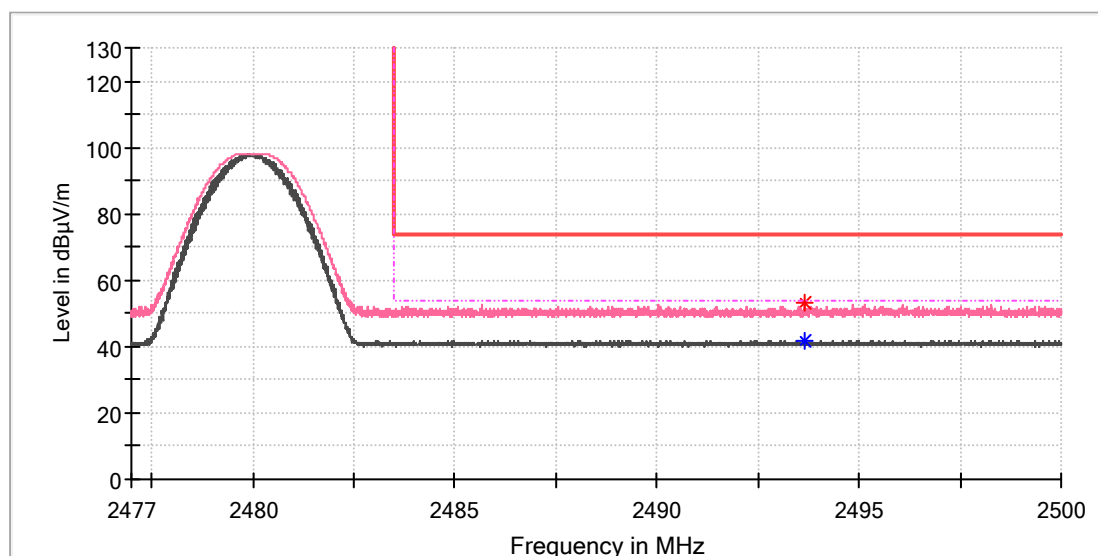
Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr (dB/m)
93.7	122.5	119.5	120.0	0.5	100	V	135	0.0

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---		---	---

EUT Information

EUT Name:	BLUETOOTH HEADSET
Model:	LIVE BUDS 4
Test Mode:	BLE 1M_High channel
Order No/Sample No:	A004355370-001
Test Voltage:	Battery
Remark:	Temp 21.8°C Humi:49%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

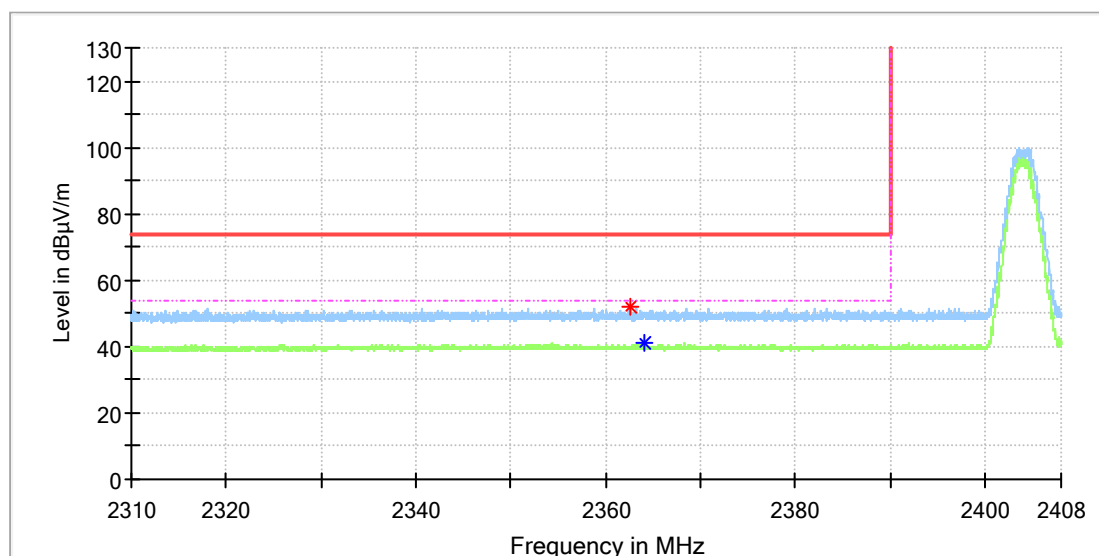
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2493.633824	---	41.68	54.00	12.32	150.0	V	0.0	9.0
2493.655882	53.09	---	74.00	20.91	150.0	V	314.0	9.0

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
93.7	122.5	118.5	118.5	0.0	100	V	135	0.0

EUT Information

EUT Name:	BLUETOOTH HEADSET
Model:	LIVE BUDS 4
Test Mode:	BLE 2M_Low channel
Order No/Sample No:	A004355370-001
Test Voltage:	Battery
Remark:	Temp 21.8°C Humi:49%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

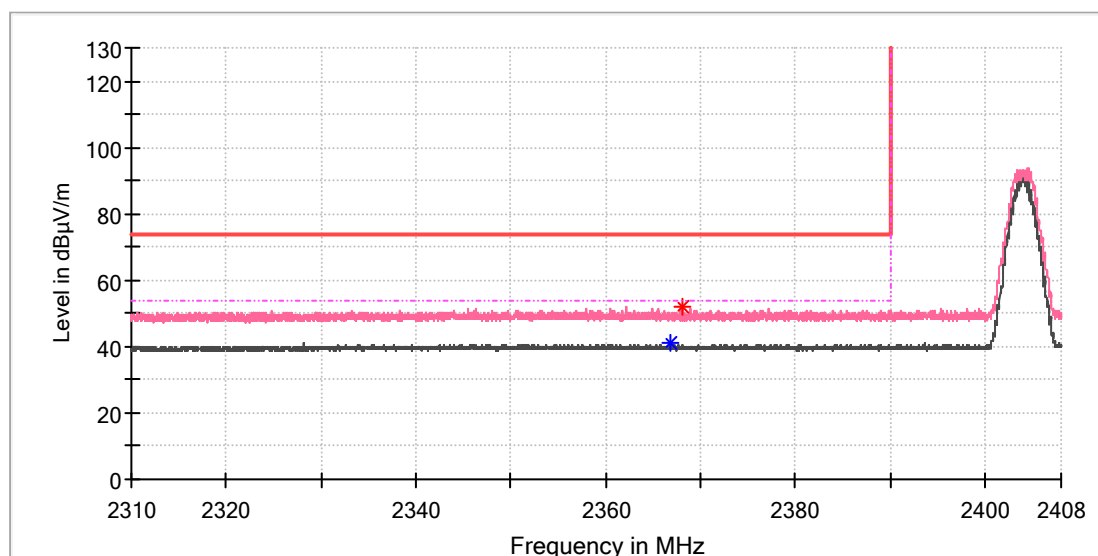
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2362.675000	52.17	---	74.00	21.83	150.0	H	102.0	8.5
2364.029706	---	40.82	54.00	13.18	150.0	H	330.0	8.5

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
----	----	----	----	----	----		----	----

EUT Information

EUT Name:	BLUETOOTH HEADSET
Model:	LIVE BUDS 4
Test Mode:	BLE 2M_Low channel
Order No/Sample No:	A004355370-001
Test Voltage:	Battery
Remark:	Temp 21.8°C Humi:49%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2366.782353	---	40.90	54.00	13.10	150.0	V	17.0	8.5
2368.007353	51.74	---	74.00	22.26	150.0	V	74.0	8.5

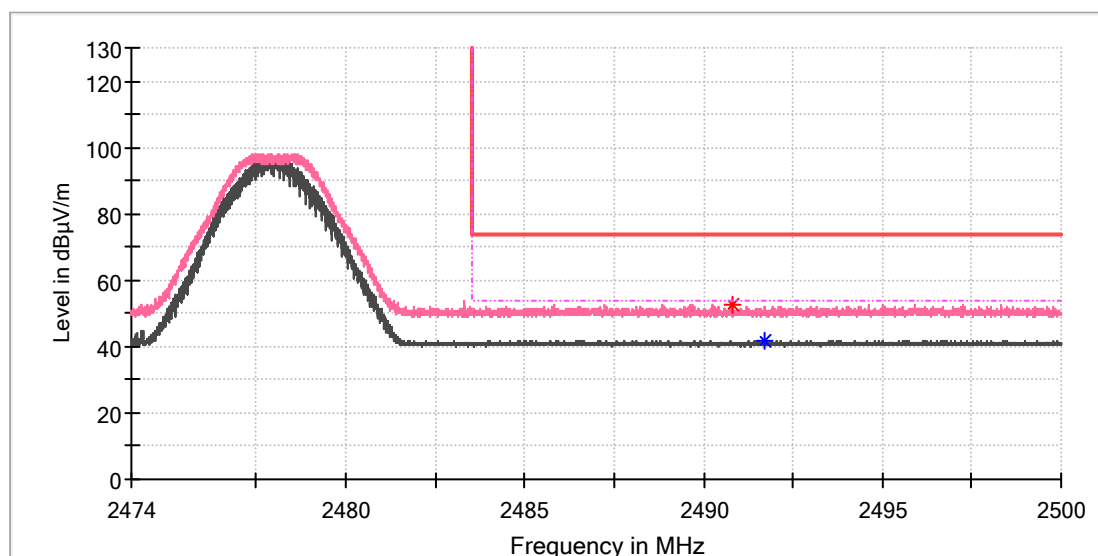
Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
93.7	122.0	118.0	120.0	2.0	100	V	135	0.0

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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EUT Information

EUT Name:	BLUETOOTH HEADSET
Model:	LIVE BUDS 4
Test Mode:	BLE 2M_High channel
Order No/Sample No:	A004355370-001
Test Voltage:	Battery
Remark:	Temp 21.8°C Humi:49%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2490.792647	52.85	---	74.00	21.15	150.0	V	0.0	9.0
2491.692647	---	41.64	54.00	12.36	150.0	V	165.0	9.0

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
93.7	122.0	118.0	120.0	2.0	300	V	135	0.0