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Kunden-Referenz-Nr.: Client reference no.:	N/A	Auftragsdatum: Order date:	2023-11-24		
Auftraggeber: Client:	Harman International Industries, Incorporated 8500 Balboa Blvd, Northridge, California, 91329, United States				
Prüfgegenstand: Test item:	PORTABLE BLUETOOTH SPEAKER				
Bezeichnung / Typ-Nr.: Identification / Type no.:	CLIP5G (Trademark: JBL)				
Auftrags-Inhalt: Order content:	Type test				
Prüfgrundlage: Test specification:	CFR47 FCC Part 15: Subpart C Section 15.247 RSS-247-Issue 3 August 2023 CFR47 FCC Part 15: Subpart C Section 15.207 RSS-Gen Issue 5 March 2019 CFR47 FCC Part 15: Subpart C Section 15.209				
Wareneingangsdatum: Date of sample receipt:	2023-11-27	Refer to photos document			
Prüfmuster-Nr.: Test sample no.:	A003610626				
Prüfzeitraum: Testing period:	2023-11-27 – 2023-12-12				
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:	 Signed by: Harry W. C. Wu		genehmigt von: authorized by:	 Signed by: Alex Lan	
Datum: Date:	2023-12-20		Ausstellungsdatum: Issue date:	2023-12-21	
Stellung / Position:	Project Manager		Stellung / Position:	Reviewer	
Sonstiges / <i>Other:</i>	FCC ID: APIJBLCLIP5G HVIN: CLIP5G IC: 6132A-JBLCLIP5G				
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. 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.					

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Remarks
Anmerkungen

1	<p>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.</p> <p>Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.</p> <p><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></p> <p><i>Detaillierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden.</i></p>
2	<p>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.</p> <p><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></p>
3	<p>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.</p> <p><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></p>
4	<p>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.</p> <p><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></p>

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Test Summary

5.1.1 ANTENNA REQUIREMENT

RESULT: Pass

5.1.2 MAXIMUM CONDUCTED OUTPUT POWER

RESULT: Pass

5.1.3 99% BANDWIDTH

RESULT: Pass

5.1.4 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 KHz BANDWIDTH

RESULT: Pass

5.1.5 RADIATED SPURIOUS EMISSION

RESULT: Pass

5.1.6 20dB BANDWIDTH

RESULT: Pass

5.1.7 CARRIER FREQUENCY SEPARATION

RESULT: Pass

5.1.8 FREQUENCY STABILITY

RESULT: Pass

5.1.9 NUMBER OF HOPPING FREQUENCY

RESULT: Pass

5.1.10 TIME OF OCCUPANCY

RESULT: Pass

5.1.11 CONDUCTED EMISSION ON AC MAINS

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: Test Results of Classical Bluetooth.

Appendix B: Photographs of the Test Set-up.

2 Test Sites

2.1 Test Facilities

TÜV Rheinland (Shenzhen) Co., Ltd.

No.362, Huanguan Middle Road, Songyuansha Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China/518110

FCC Registration No.: 694916

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 (TS8997)				
Equipment	Manufacturer	Model	Serial No.	Cal. until
EXA Signal Analyzer, Multi-touch	Keysight	N9010B	MY60241175	21.09.2024
MXG X-Series RF Vector Signal Generator	Keysight	N5182B	MY61250137	21.09.2024
EXG X-Series Microwave Analog Signal Generator	Keysight	N5173B	MY61250141	21.09.2024
DC Power Supply	Keysight	E3642A	MY61276100	21.09.2024
Wireless Connectivity Tester	R&S	CMW270	102505	21.09.2024
Power Control Unit	Tonscend	JS0806-4ADC	N/A	21.09.2024
Automation Control Unit	Tonscend	JS0806-2	21C8060396	21.09.2024
Test Software	Tonscend	JS1120-3	N/A	N/A
Control PC	Lenovo	TianYi510S-071MB	YLX23JMF	N/A
Unwanted Emission Testing (TS9975)				
Equipment	Manufacturer	Model	Serial No.	Cal. until
EMI Test Receiver	R&S	ESR 7	102021	25.07.2024
Signal Analyzer	R&S	FSV 40	101439	25.07.2024
System Controller Interface	R&S	SCI-100	S10010038	N/A
Filterbank	R&S	Wlan	100759	25.07.2024
OSP	R&S	OSP 120	102040	N/A
Pre-amplifier	R&S	SCU08F1	08320031	25.07.2024
Amplifier	R&S	SCU-18F	180070	25.07.2024
Amplifier	R&S	SCU40A	100475	25.07.2024
Trilog Broadband Antenna (30 MHz - 7 GHz)	Schwarzbeck	VULB 9162	193	06.08.2024
Double-Ridged Antenna (1 -18 GHz)	ETS-LINDGREN	3117	00218717	06.08.2024
Wideband Ridged Horn Antenna (18-40 GHz)	Steatite	QMS-00880	19067	27.08.2024
Active Loop Antenna	Schwarzbeck	FMZB 1513	302	06.08.2024
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	22.06.2024
Conducted Emission on AC Mains				
Equipment	Manufacturer	Model	Serial No.	Cal. until
EMI Test Receiver	R&S	ESR3	102428	31.07.2024
Artificial Mains Network	R&S	ENV216	102333	01.08.2024
Impedance Stabilisation Network	R&S	ENY81-CA6	101810	01.08.2024
EMC32 test software	R&S	EMC32(Ver.10.50.00)	N/A	N/A

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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
Conducted Emission, (9kHz to 150kHz)/(150kHz to 30MHz)	± 3.70 dB / ± 3.30 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 No.362, Huanguan Middle Road, Songyuansha Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China/518110 is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

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3 General Product Information

3.1 Product Function and Intended Use

The EUT is a portable Bluetooth speaker, which supports Bluetooth dual mode technology, this speaker has different color of enclosure.

For details refer to the User Manual, Technical Description and Circuit Diagram.

3.2 Ratings and System Details

Table 2: Technical Specification of EUT

General Information of EUT	Value
Kind of Equipment	PORTABLE BLUETOOTH SPEAKER
Type Designation	CLIP5G
Trademark	JBL
FCC ID	APIJBLCLIP5G
IC	6132A-JBLCLIP5G
HVIN	CLIP5G
Extreme Temperature Range	0°C to +45°C
Operating Voltage	DC 3.8V, 1400mAh via built-in lithium-ion battery DC 5V, 1A via Type-C port
Technical Specification of Classical Bluetooth	
Bluetooth Core Version	Bluetooth 5.3
Operating Frequency band	2402 ~ 2480 MHz
Channel Number	79 channels
Channel separation	1MHz
Modulation	GFSK, $\pi/4$ DQPSK, 8DPSK
Antenna Type	PCB Antenna
Antenna Gain	3.13 dBi (Provided by the Client)
Technical Specification of Bluetooth Low Energy	
Bluetooth Core Version	Bluetooth 5.3
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 38 channels for data rate 2Mbps
Channel separation	2MHz
Data rate	1Mbps, 2Mbps
Modulation	GFSK
Antenna Type	PCB Antenna
Antenna Gain	3.13 dBi (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

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3.3 Independent Operation Modes

The basic operation modes are:

- A. On
 - 1. Bluetooth transmitting mode (BR & EDR mode)
 - a) Low Channel
 - b) Middle Channel
 - c) High Channel
- B. On, Transmitting on Hopping channel
- C. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

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

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: 2013.

According to clause 3.1, all test items were applied on model CLIP5G with black color of enclosure.

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)

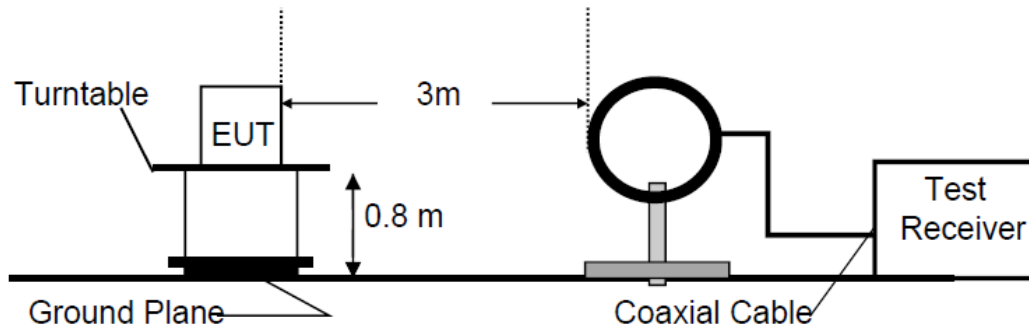


Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

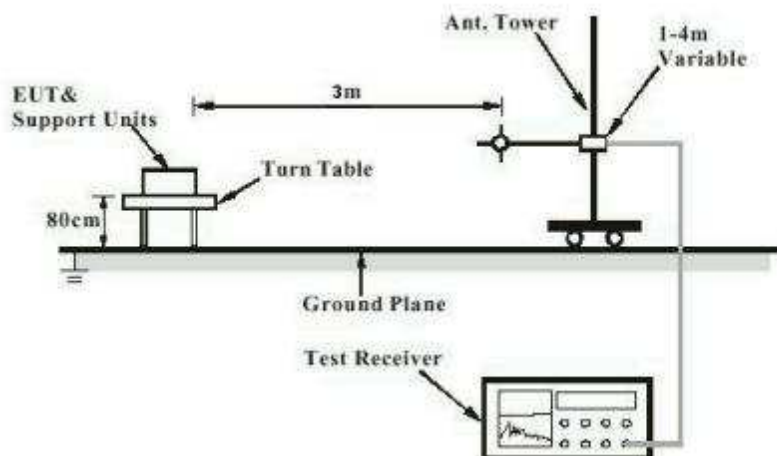


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

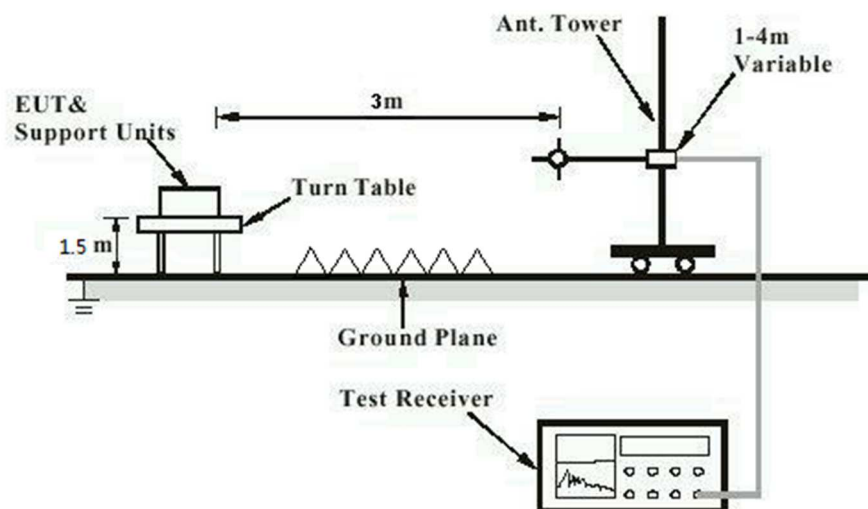


Diagram of Measurement Configuration for Conducted Transmitter Measurement

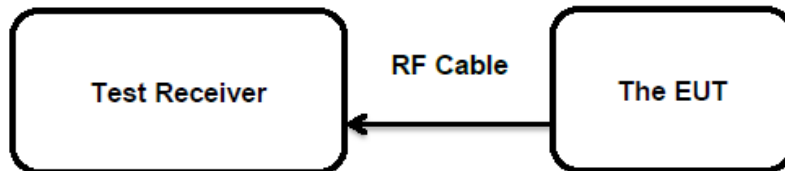
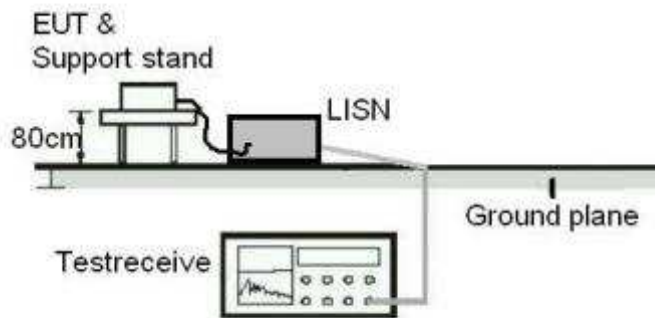


Diagram of Measurement Configuration for Mains Conduction Measurement



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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 8.3

According to the manufacturer declared, the EUT has one PCB antenna , the directional gain of antennas is 3.13 dBi, 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 Conducted Output Power

RESULT: **Pass**
Test Specification

Test standard	FCC Part 15.247(b)(1) RSS-247 Clause 5.4(b)
Basic standard	ANSI C63.10: 2013
Limits	FHSS<0.125W(Maximum peak conducted output power) < 4 W (e.i.r.p.)
Kind of test site	Shielded Room

Test Setup

Date of testing	2023-11-27 to 2023-12-12
Input voltage	DC 3.8V
Operation mode	A.1
Test channel	Low / Middle / High
Ambient temperature	25.1 °C
Relative humidity	56 %
Atmospheric pressure	101 kPa

Table 6: Test Result of Maximum Conducted Output Power

Test Mode	Channel Frequency (MHz)	Measured Peak Output Power		Limit (W)
		(dBm)	(W)	
BR	2402	5.91	0.00390	< 0.125
	2441	5.75	0.00376	
	2480	5.39	0.00346	
EDR	2402	4.32	0.00270	< 0.125
	2441	4.17	0.00261	
	2480	3.83	0.00242	

Note: The cable loss is taken into account in results and the maximum e.i.r.p. is 9.04 dBm less than 4W(36dBm).

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5.1.3 99% Bandwidth

RESULT: **Pass**
Test Specification

 Test standard : RSS-Gen Clause 6.7
 Basic standard : ANSI C63.10: 2013
 Kind of test site : Shielded Room

Test Setup

 Date of testing : 2023-11-27 to 2023-12-12
 Input voltage : DC 3.8V
 Operation mode : A.1
 Test channel : Low / Middle / High
 Ambient temperature : 25.1 °C
 Relative humidity : 56 %
 Atmospheric pressure : 101 kPa

For the measurement records, refer to the appendix A

Table 7: Test Result of 99% Bandwidth

Test Mode	Channel Frequency (MHz)	Measured 99% Bandwidth	Limit
		(MHz)	
BR	2402	0.89453	/
	2441	0.88628	
	2480	0.89649	
EDR	2402	1.1929	/
	2441	1.1977	
	2480	1.2002	

Note: The fundamental emissions stay within the allocated band 2400-2483.5MHz.

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5.1.4 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: 2013

Limits : 20dB (below that in the 100kHz bandwidth within the band that contains the highest level of the desired power);

Kind of test site : Shielded Room

Test Setup

Date of testing : 2023-11-27 to 2023-12-12

Input voltage : DC 3.8V

Operation mode : A.1

Test channel : Low / Middle / High

Ambient temperature : 25.1 °C

Relative humidity : 56 %

Atmospheric pressure : 101 kPa

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

For the measurement records, refer to the appendix A

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Test report no.:Seite 18 von 25
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5.1.5 Radiated Spurious Emission

RESULT:**Pass****Test Specification**

Test standard : FCC Part 15.247(d) & FCC Part 15.205
RSS-247 Clause 3.3

Basic standard : ANSI C63.10: 2013

Limits : Refer to 15.209(a) of FCC part 15.247(d)
RSS-Gen Table 6 & Table 7

Kind of test site : 3m Semi-anechoic Chamber

Test Setup

Date of testing : 2023-11-27 to 2023-12-12

Input voltage : DC 3.8V

Operation mode : A.1

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.

For the measurement records, refer to the appendix A

Prüfbericht-Nr.: CN23SW85 001
Test report no.:

Seite 19 von 25
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5.1.6 20dB Bandwidth

RESULT:
Pass
Test Specification

Test standard : FCC Part 15.247(a)(1)
RSS-247 Clause 5.1(a)

Basic standard : ANSI C63.10: 2013

Kind of test site : Shielded Room

Test Setup

Date of testing : 2023-11-27 to 2023-12-12

Input voltage : DC 3.8V

Operation mode : A.1

Test channel : Low / Middle / High

Ambient temperature : 25.1 °C

Relative humidity : 56 %

Atmospheric pressure : 101 kPa

For the measurement records, refer to the appendix A

Table 8: Test Result of -20dB Bandwidth

Test Mode	Channel Frequency (MHz)	20dB Bandwidth (kHz)	2/3 of 20dB Bandwidth (kHz)	Limit (MHz)
BR	2402	939	626.000	/
	2441	945	630.000	
	2480	945	630.000	
EDR	2402	1311	874.000	/
	2441	1296	864.000	
	2480	1269	846.000	

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5.1.7 Carrier Frequency Separation

RESULT: Pass**Test Specification**

Test standard : FCC Part 15.247(a)(1)
RSS-247 Clause 5.1(b)

Basic standard : ANSI C63.10: 2013

Limits : $\geq 25\text{kHz}$ or $2/3$ of 20dB bandwidth, whichever is greater

Kind of test site : Shielded Room

Test Setup

Date of testing : 2023-11-27 to 2023-12-12

Input voltage : DC 3.8V

Operation mode : B

Test channel : Low / Middle / High

Ambient temperature : 25.1 °C

Relative humidity : 56 %

Atmospheric pressure : 101 kPa

For the measurement records, refer to the appendix A

Table 9: Test Result of Carrier Frequency Separation

Test Mode	Channel	Result[MHz]	Limit[MHz]	Verdict
BR-DH5	Hop	0.668	≥ 0.630	PASS
EDR-3DH5	Hop	1.2	≥ 0.874	PASS

Note:

The limit is maximum $2/3$ of the 20 dB bandwidth: 874KHz.

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Test report no.:Seite 21 von 25
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5.1.8 Frequency stability

RESULT:**Pass****Test Specification**

Test standard : RSS-247 Clause 8.11
Basic standard : ANSI C63.10: 2013
Limits : within at least the central 80% of its permitted operating frequency band (2400-2483.5MHz)
Kind of test site : Shielded Room

Test Setup

Date of testing : 2023-11-27 to 2023-12-12
Input voltage : DC 3.8V
Operation mode : B
Ambient temperature : 25.1 °C
Relative humidity : 56 %
Atmospheric pressure : 101 kPa

For the measurement records, refer to the appendix A

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5.1.9 Number of Hopping Frequency

RESULT: **Pass****Test Specification**

Test standard : FCC part 15.247(a)(1)(iii)
RSS-247 Clause 5.1(d)

Basic standard : ANSI C63.10: 2013

Limits : ≥ 15 non-overlapping channels

Kind of test site : Shielded Room

Test Setup

Date of testing : 2023-11-27 to 2023-12-12

Input voltage : DC 3.8V

Operation mode : B

Ambient temperature : 25.1 °C

Relative humidity : 56 %

Atmospheric pressure : 101 kPa

For the measurement records, refer to the appendix A.

Table 10: Test Result of Number of Hopping Frequency

Frequency Range	Measured Quantity of Hopping Channel	Limit	Result
2402 to 2480 MHz	79	≥ 15	Pass

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5.1.10 Time of Occupancy

RESULT: **Pass****Test Specification**

Test standard : FCC part 15.247(a)(1)(iii)
RSS-247 Clause 5.1(d)

Basic standard : ANSI C63.10: 2013

Limits : < 0.4s

Kind of test site : Shielded Room

Test Setup

Date of testing : 2023-11-27 to 2023-12-12

Input voltage : DC 3.8V

Operation mode : B

Test channel : Low / Middle / High

Ambient temperature : 25.1 °C

Relative humidity : 56 %

Atmospheric pressure : 101 kPa

For the measurement records, refer to the appendix A.

Prüfbericht-Nr.: CN23SW85 001
Test report no.:Seite 24 von 25
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5.1.11 Conducted Emission on AC Mains

RESULT: **Pass****Test Specification**

Test standard : FCC Part 15.207(a)
RSS-Gen Clause 8.8

Basic standard : ANSI C63.10: 2013

Frequency range : 0.15 – 30MHz

Limits : FCC Part 15.207(a)
RSS-Gen Table 4

Kind of test site : Shielded Room

Test Setup

Date of testing : 2023-11-27 to 2023-12-12

Input voltage : DC 5V via Type-C interface

Operation mode : B

Earthing : Not connected

Ambient temperature : 25.0 °C

Relative humidity : 51.2 %

Atmospheric pressure : 101 kPa

For the measurement records, refer to the appendix A.

Prüfbericht-Nr.: CN23SW85 001
Test report no.:Seite 25 von 25
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6 Photographs of the Test Set-Up

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

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Appendix A: Test Results of Classical Bluetooth

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Appendix A.1: Test Results of 99% Bandwidth

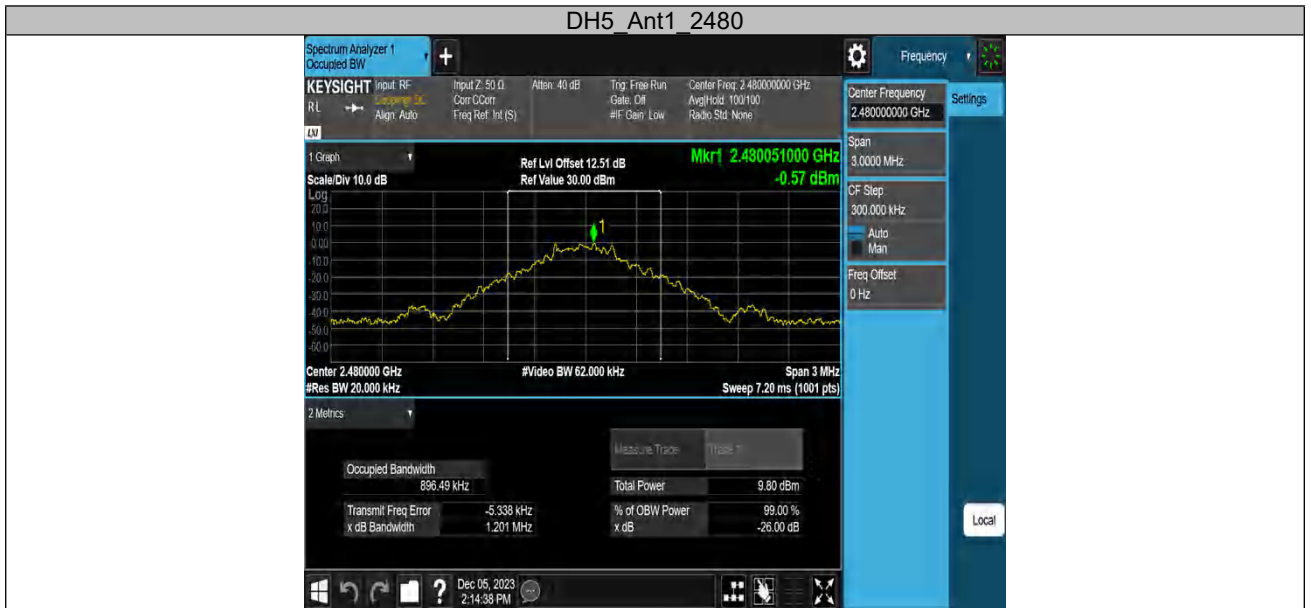
TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.89453	2401.5496	2402.4442	---	---
		2441	0.88628	2440.5506	2441.4369	---	---
		2480	0.89649	2479.5464	2480.4429	---	---
3DH5	Ant1	2402	1.1929	2401.3886	2402.5815	---	---
		2441	1.1977	2440.3893	2441.5870	---	---
		2480	1.2002	2479.3860	2480.5862	---	---

DH5 Ant1 2402



DH5 Ant1 2441







Appendix A.2: Test Results of 20dB Bandwidth

TestMode	Antenna	Channel	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.939	2401.538	2402.477	---	---
		2441	0.945	2440.532	2441.477	---	---
		2480	0.945	2479.532	2480.477	---	---
3DH5	Ant1	2402	1.311	2401.340	2402.651	---	---
		2441	1.296	2440.346	2441.642	---	---
		2480	1.269	2479.349	2480.618	---	---

DH5 Ant1 2402



DH5 Ant1 2441

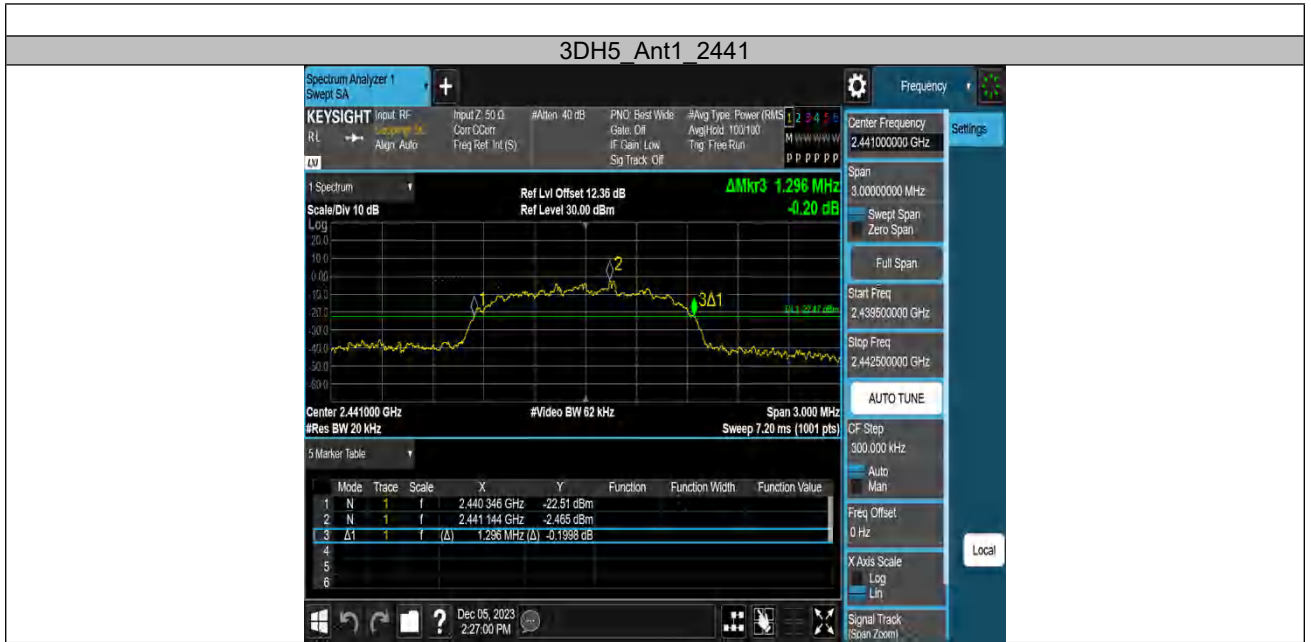


DH5_Ant1_2480



3DH5_Ant1_2402





Appendix A.3: 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 3.8V	2401.9969	-3.1	-1.29	10
DC 3.42V	2401.9965	-3.5	-1.46	
DC 4.18V	2401.9973	-2.7	-1.12	

Test result of frequency tolerance of temperature variation

Temperature (°C)	Test result (MHz)	Deviation Frequency (KHz)	Test result (ppm)	Limit (ppm)
-30	2401.9961	-3.9	-1.62	10
-20	2401.9962	-3.8	-1.58	
-10	2401.9965	-3.5	-1.46	
0	2401.9969	-3.1	-1.29	
10	2401.9969	-3.1	-1.29	
20	2401.9970	-3	-1.25	
30	2401.9971	-2.9	-1.21	
40	2401.9971	-2.9	-1.21	
50	2401.9972	-2.8	-1.17	
55	2401.9975	-2.5	-1.04	

Test Channel (MHz)	2441
--------------------	------

Test result of frequency tolerance of voltage variation

Voltage	Test result (MHz)	Deviation Frequency (KHz)	Test result (ppm)	Limit (ppm)
DC 3.8V	2440.9937	-6.3	-2.58	10
DC 3.42V	2440.9933	-6.7	-2.74	
DC 4.18V	2440.9946	-5.4	-2.21	

Test result of frequency tolerance of temperature variation

Temperature (°C)	Test result (MHz)	Deviation Frequency (KHz)	Test result (ppm)	Limit (ppm)
-30	2440.9929	-7.1	-2.91	10
-20	2440.9932	-6.8	-2.79	
-10	2440.9933	-6.7	-2.74	
0	2440.9937	-6.3	-2.58	
10	2440.9937	-6.3	-2.58	
20	2440.9938	-6.2	-2.54	
30	2440.9939	-6.1	-2.50	
40	2440.9941	-5.9	-2.42	
50	2440.9944	-5.6	-2.29	
55	2440.9946	-5.4	-2.21	

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 3.8V	2479.9947	-5.3	-2.14	10
DC 3.42V	2479.9944	-5.6	-2.26	
DC 4.18V	2479.9956	-4.4	-1.77	

Test result of frequency tolerance of temperature variation

Temperature (°C)	Test result (MHz)	Deviation Frequency (KHz)	Test result (ppm)	Limit (ppm)
-30	2479.9940	-6	-2.42	10
-20	2479.9941	-5.9	-2.38	
-10	2479.9943	-5.7	-2.30	
0	2479.9946	-5.4	-2.18	
10	2479.9947	-5.3	-2.14	
20	2479.9949	-5.1	-2.06	
30	2479.9950	-5	-2.02	
40	2479.9951	-4.9	-1.98	
50	2479.9955	-4.5	-1.81	
55	2479.9957	-4.3	-1.73	

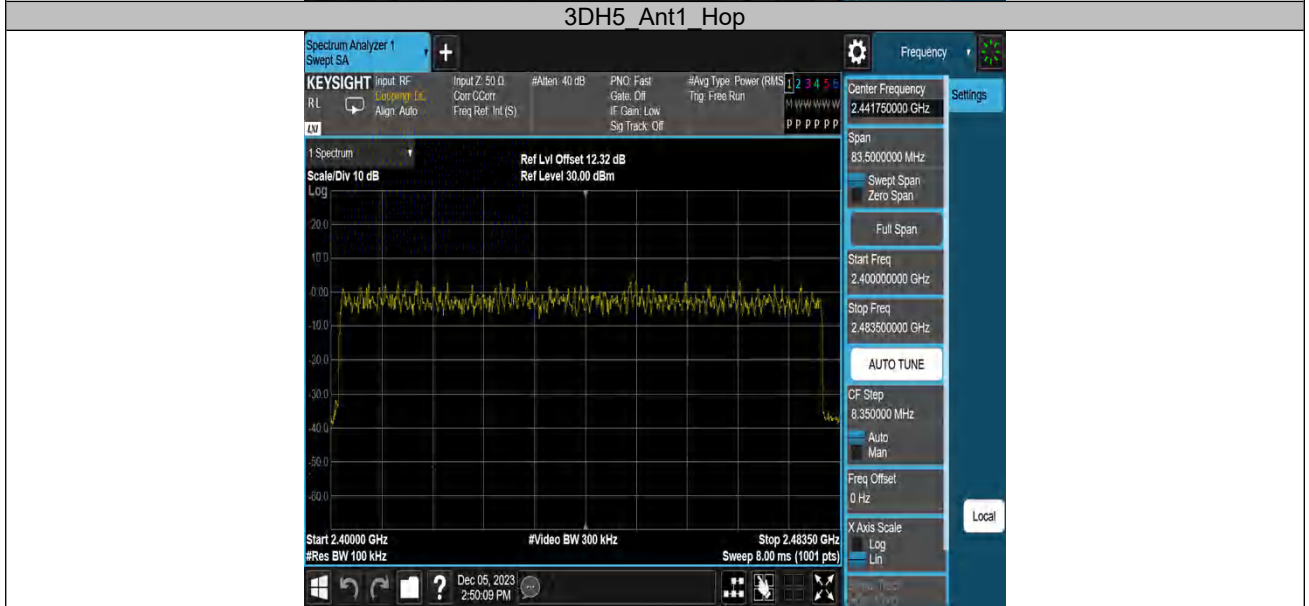
Appendix A.4: Test Results of Carrier Frequency Separation

TestMode	Antenna	Channel	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	0.668	≥0.630	PASS
3DH5	Ant1	Hop	1.2	≥0.874	PASS



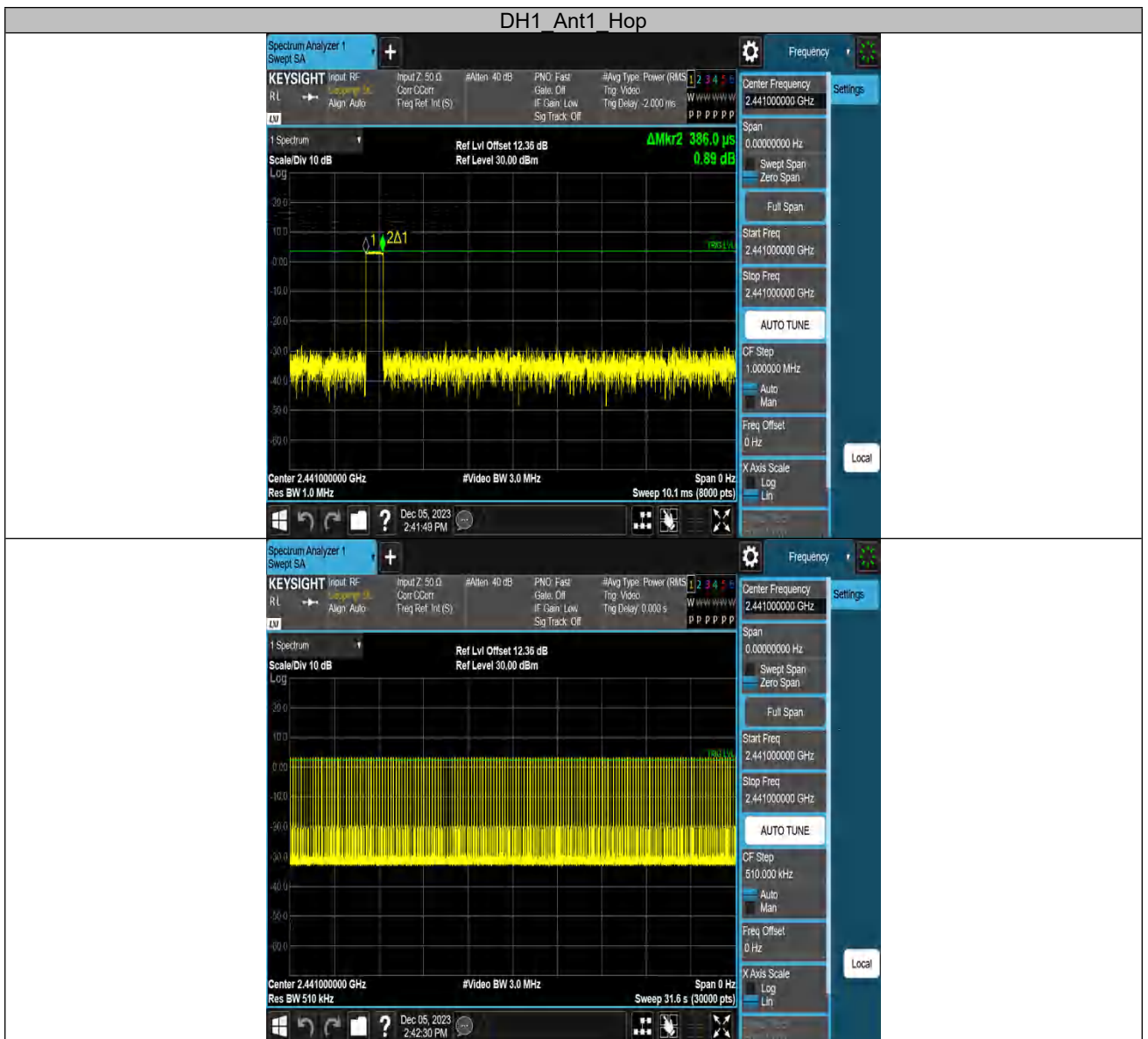
Appendix A.5: Test Results of Number of Hopping Frequency

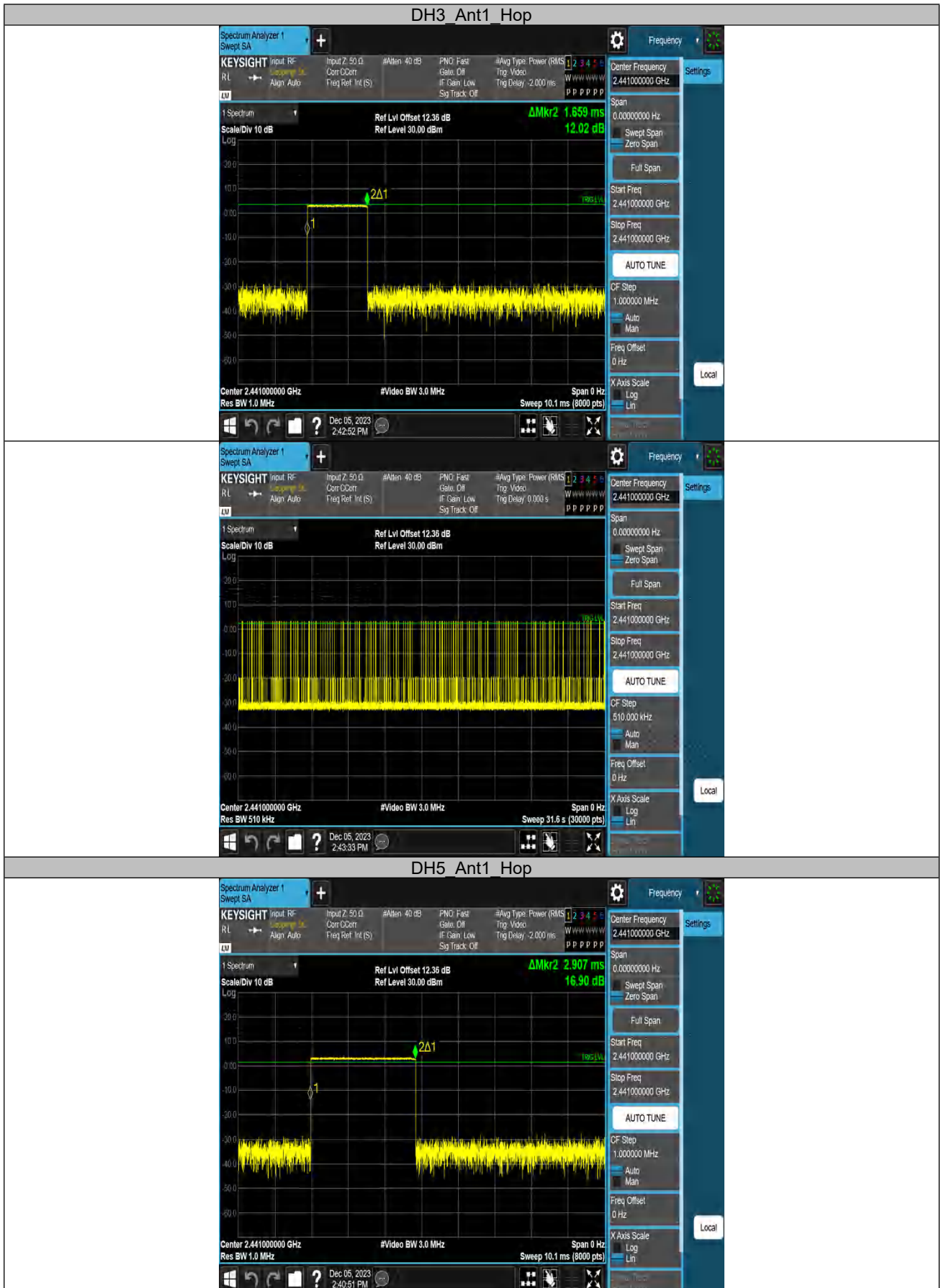
TestMode	Antenna	Channel	Result[Num]	Limit[Num]	Verdict
DH5	Ant1	Hop	79	≥15	PASS
3DH5	Ant1	Hop	79	≥15	PASS



Appendix A.6: Test Results of Time of Occupancy

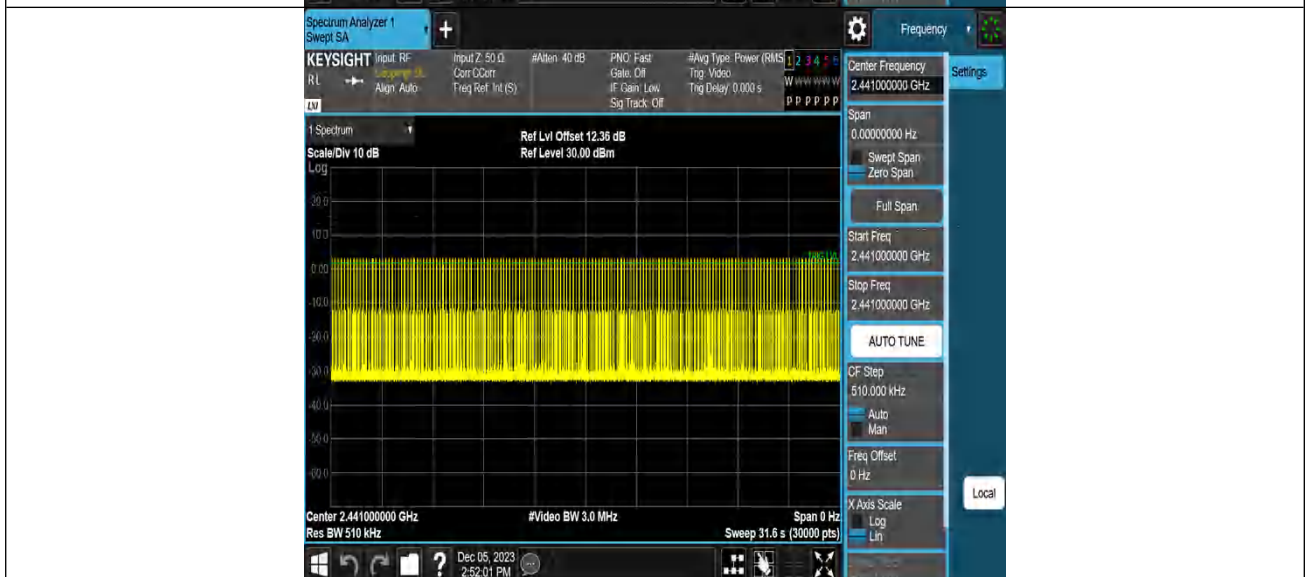
TestMode	Antenna	Channel	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH1	Ant1	Hop	0.386	312	0.12	≤0.4	PASS
DH3	Ant1	Hop	1.659	157	0.26	≤0.4	PASS
DH5	Ant1	Hop	2.907	109	0.317	≤0.4	PASS
3DH1	Ant1	Hop	0.393	313	0.123	≤0.4	PASS
3DH3	Ant1	Hop	1.640	157	0.257	≤0.4	PASS
3DH5	Ant1	Hop	2.893	113	0.327	≤0.4	PASS

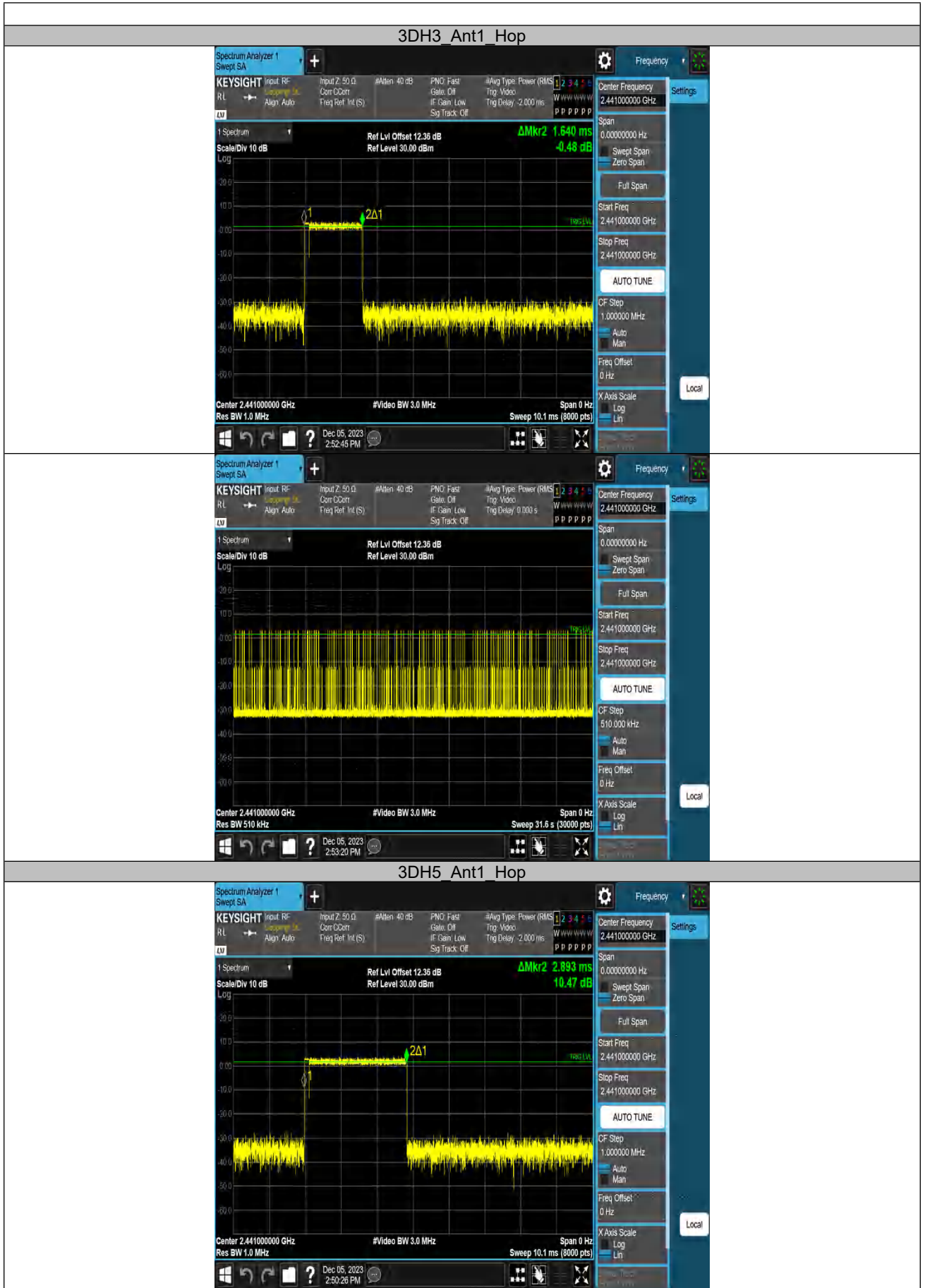






3DH1 Ant1 Hop







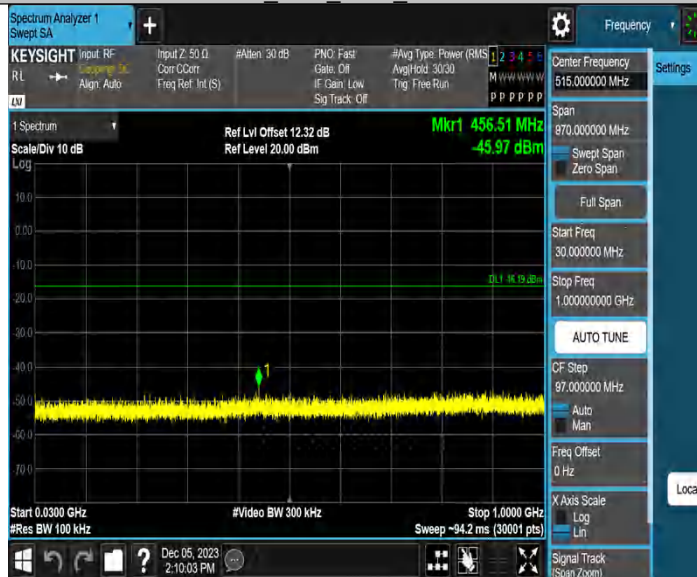
Appendix A.7: Test Results of Conducted Spurious Emissions Measured in 100 kHz Bandwidth

Conducted measurements

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	3.81	3.81	---	PASS
			30~1000	3.81	-45.97	≤-16.19	PASS
			1000~26500	3.81	-36.82	≤-16.19	PASS
		2441	Reference	3.40	3.40	---	PASS
			30~1000	3.40	-46.47	≤-16.6	PASS
			1000~26500	3.40	-37.36	≤-16.6	PASS
		2480	Reference	3.10	3.10	---	PASS
			30~1000	3.10	-45.93	≤-16.9	PASS
			1000~26500	3.10	-37.3	≤-16.9	PASS
3DH5	Ant1	2402	Reference	0.65	0.65	---	PASS
			30~1000	0.65	-46.92	≤-19.35	PASS
			1000~26500	0.65	-38.07	≤-19.35	PASS
		2441	Reference	0.08	0.08	---	PASS
			30~1000	0.08	-46.09	≤-19.92	PASS
			1000~26500	0.08	-37.66	≤-19.92	PASS
		2480	Reference	3.06	3.06	---	PASS
			30~1000	3.06	-45.89	≤-16.94	PASS
			1000~26500	3.06	-36.88	≤-16.94	PASS



DH5_Ant1_2402_30~1000



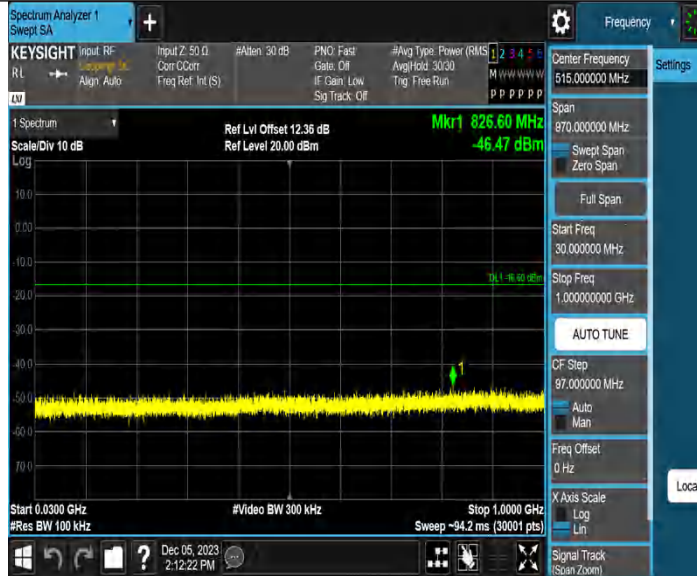
DH5_Ant1_2402_1000~26500



DH5_Ant1_2441_0~Reference



DH5_Ant1_2441_30~1000



DH5_Ant1_2441_1000~26500



DH5_Ant1_2480_0~Reference



DH5_Ant1_2480_30~1000



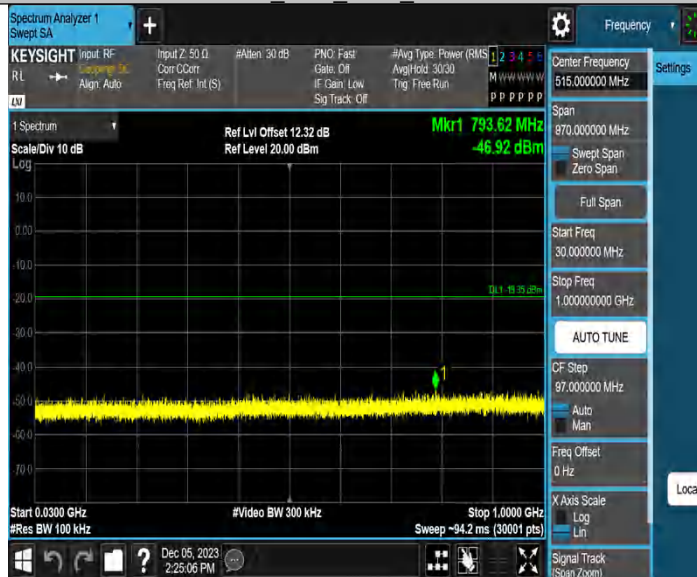
DH5_Ant1_2480_1000~26500



3DH5_Ant1_2402_0~Reference



3DH5_Ant1_2402_30~1000



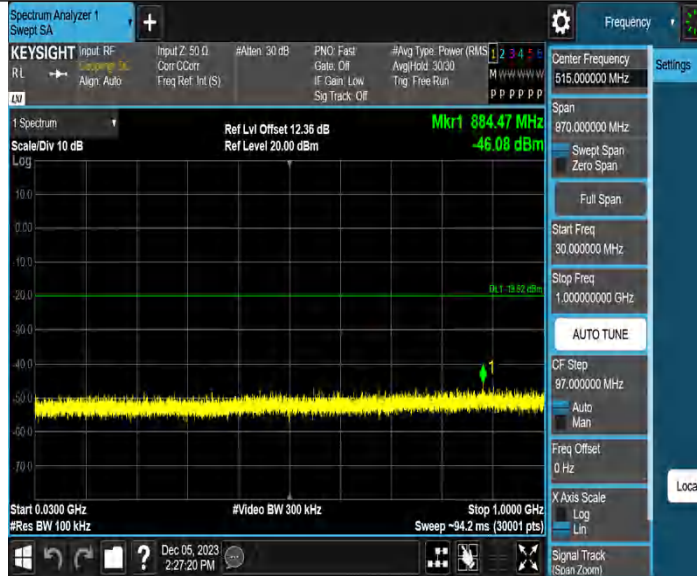
3DH5_Ant1_2402_1000~26500



3DH5_Ant1_2441_0~Reference



3DH5_Ant1_2441_30~1000



3DH5_Ant1_2441_1000~26500



3DH5_Ant1_2480_0~Reference



3DH5_Ant1_2480_30~1000

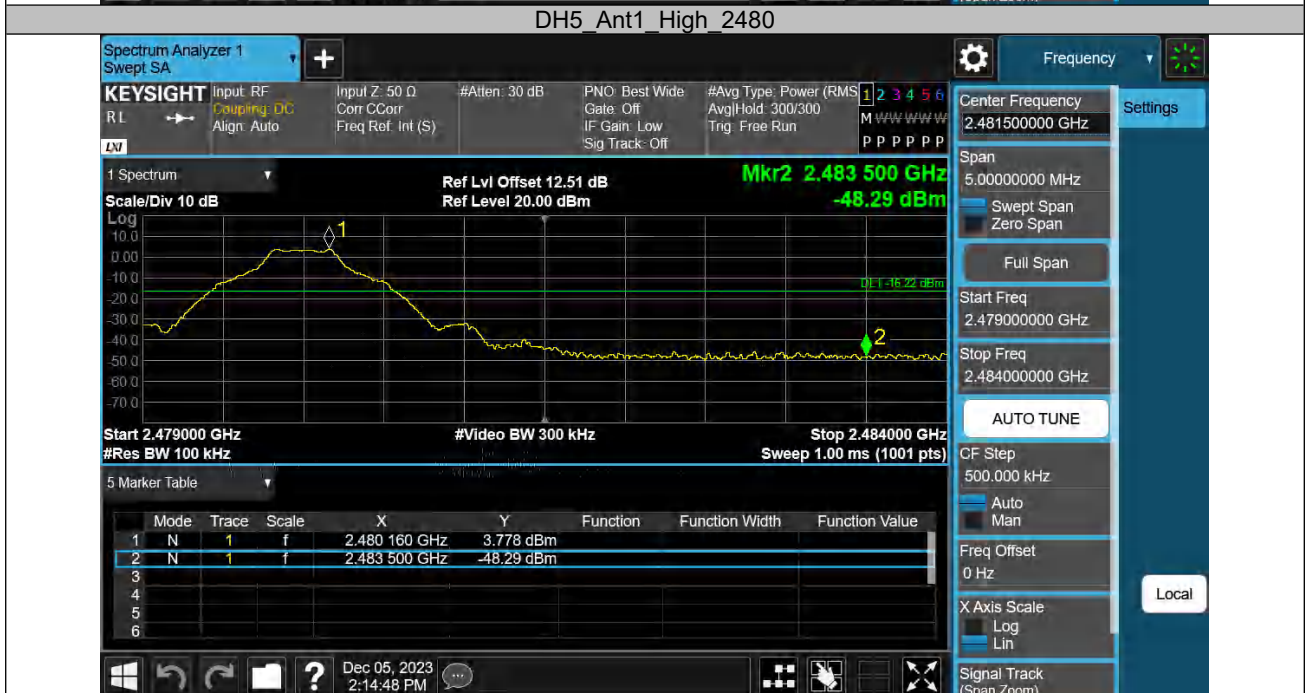


3DH5_Ant1_2480_1000~26500



Band edge measurements

TestMode	Antenna	ChName	Channel	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	4.116	-47.11	≤-15.88	PASS
		High	2480	3.778	-48.29	≤-16.22	PASS
3DH5	Ant1	Low	2402	3.777	-39.43	≤-16.22	PASS
		High	2480	3.381	-45.12	≤-16.62	PASS
DH5	Ant1	Hopping	2402	1.982	-46.11	≤-18.92	PASS
		Hopping	2480	3.349	-48.42	≤-16.65	PASS
3DH5	Ant1	Hopping	2402	3.295	-48.38	≤-16.71	PASS
		Hopping	2480	0.3394	-46.68	≤-19.66	PASS





DH5 Ant1 Hopping 2402



DH5 Ant1 Hopping 2480



3DH5_Ant1_Hopping_2402



3DH5_Ant1_Hopping_2480



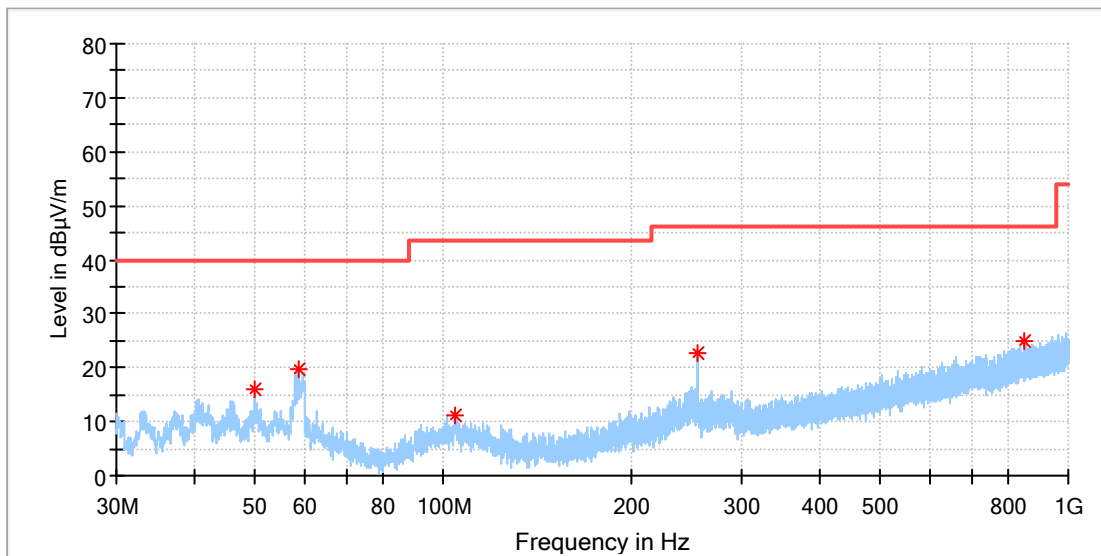
Appendix A.8: Test Results of Radiated Spurious Emissions

Note: 1. 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. 2. This testing was carried out on different modulations, but only the worst case (GFSK) was presented in this report.

30MHz - 1GHz

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	CLIP5G
Test Mode:	BR_DH5_Mid channel
Order No/Sample No:	168450870/A003611357-008
Test Voltage:::	Battery
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

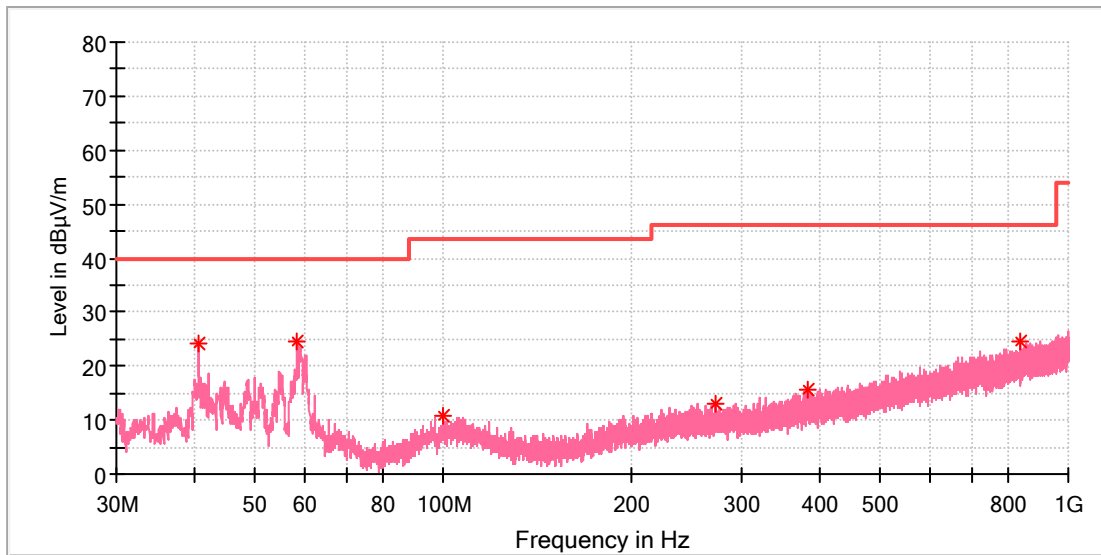


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
49.996923	15.94	40.00	24.06	100.0	H	226.0	-18.6
58.726923	19.72	40.00	20.28	100.0	H	135.0	-19.2
104.839231	11.19	43.50	32.31	100.0	H	209.0	-19.1
255.972692	22.75	46.00	23.25	100.0	H	1.0	-17.6
847.523462	24.77	46.00	21.23	100.0	H	150.0	-6.0

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	CLIP5G
Test Mode:	BR_DH5_Mid channel
Order No/Sample No:	168450870/A003611357-008
Test Voltage:::	Battery
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

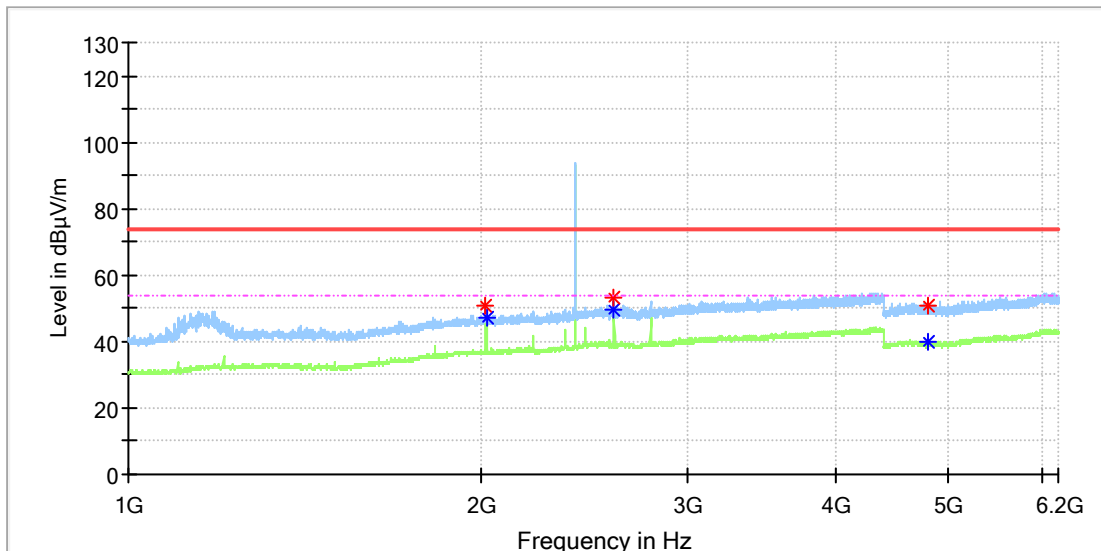
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
40.632692	24.37	40.00	15.63	100.0	V	166.0	-20.2
58.428462	24.61	40.00	15.39	100.0	V	261.0	-19.1
100.213077	10.98	43.50	32.52	100.0	V	149.0	-19.3
272.313462	13.07	46.00	32.93	100.0	V	104.0	-17.2
381.625000	15.79	46.00	30.21	100.0	V	0.0	-14.5
838.196539	24.49	46.00	21.51	100.0	V	336.0	-6.1

1GHz - 18GHz

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

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	CLIP5G
Test Mode:	BR_DH5_Low channel
Order No/Sample No:	168450870/A003611357-008
Test Voltage::	Battery
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

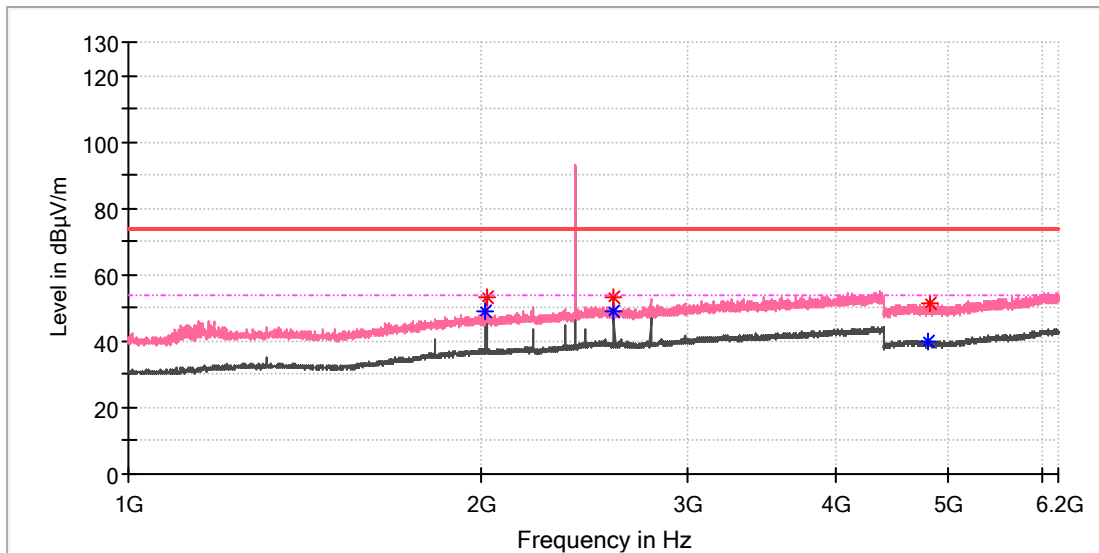


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2017.500000	50.98	---	74.00	23.02	150.0	H	180.0	6.0
2018.000000	---	47.25	54.00	6.75	150.0	H	167.0	6.0
2594.000000	53.12	---	74.00	20.88	150.0	H	203.0	7.4
2594.000000	---	49.34	54.00	4.66	150.0	H	203.0	7.4
4802.000000	51.07	---	74.00	22.93	150.0	H	38.0	11.8
4804.000000	---	40.15	54.00	13.85	150.0	H	144.0	11.8

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	CLIP5G
Test Mode:	BR_DH5_Low channel
Order No/Sample No:	168450870/A003611357-008
Test Voltage::	Battery
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

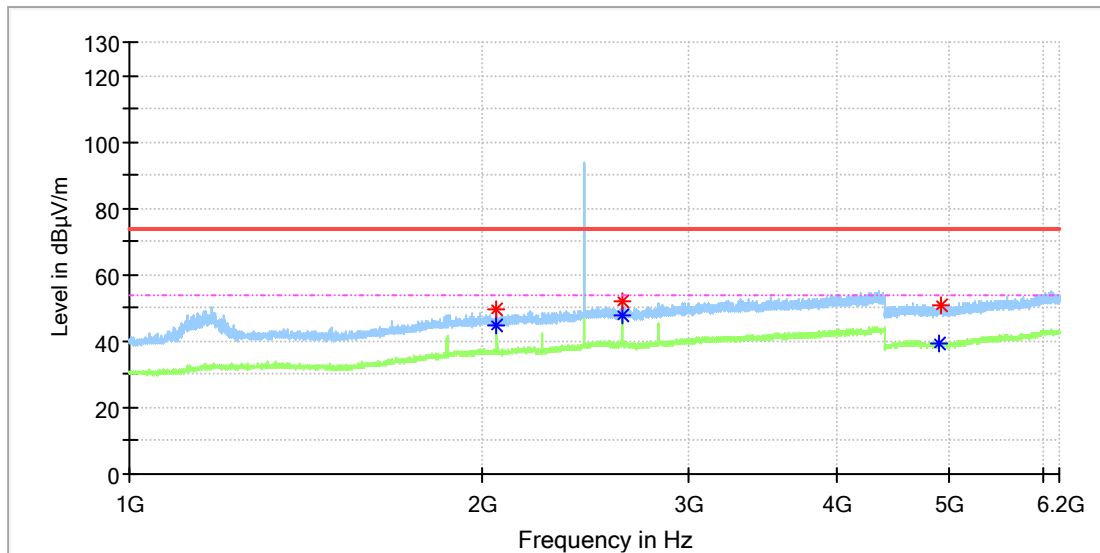


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2017.500000	---	49.17	54.00	4.83	150.0	V	102.0	6.0
2018.000000	53.23	---	74.00	20.77	150.0	V	96.0	6.0
2594.000000	52.99	---	74.00	21.01	150.0	V	89.0	7.4
2594.000000	---	48.76	54.00	5.24	150.0	V	89.0	7.4
4804.000000	---	40.18	54.00	13.82	150.0	V	62.0	11.8
4814.000000	51.29	---	74.00	22.71	150.0	V	119.0	11.8

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	CLIP5G
Test Mode:	BR_DH5_Mid channel
Order No/Sample No:	168450870/A003611357-008
Test Voltage::	Battery
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

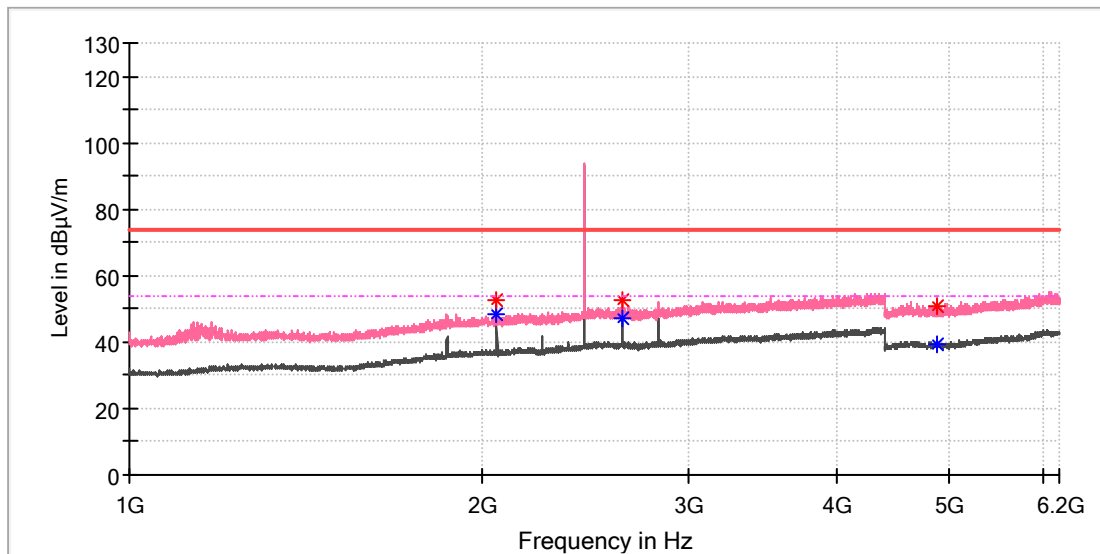


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2057.000000	49.64	---	74.00	24.36	150.0	H	166.0	5.9
2057.000000	---	44.97	54.00	9.03	150.0	H	166.0	5.9
2633.000000	52.03	---	74.00	21.97	150.0	H	205.0	7.5
2633.000000	---	47.60	54.00	6.40	150.0	H	205.0	7.5
4902.000000	---	39.57	54.00	14.43	150.0	H	237.0	11.8
4909.000000	51.08	---	74.00	22.92	150.0	H	166.0	11.8

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	CLIP5G
Test Mode:	BR_DH5_Mid channel
Order No/Sample No:	168450870/A003611357-008
Test Voltage::	Battery
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

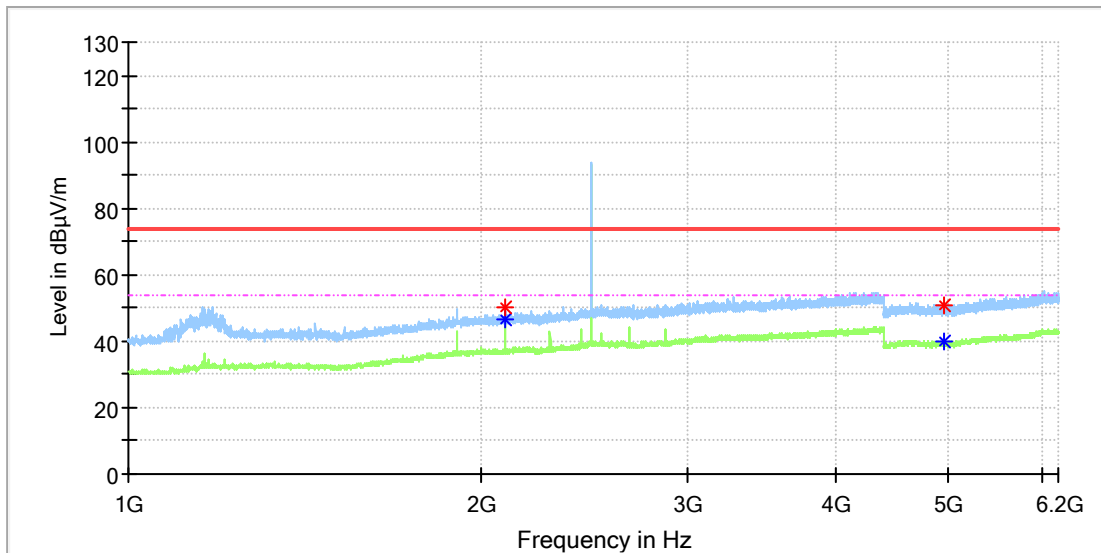


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2057.000000	52.61	---	74.00	21.39	150.0	V	151.0	5.9
2057.000000	---	48.24	54.00	5.76	150.0	V	151.0	5.9
2633.000000	52.46	---	74.00	21.54	150.0	V	93.0	7.5
2633.000000	---	47.05	54.00	6.95	150.0	V	93.0	7.5
4874.500000	50.60	---	74.00	23.40	150.0	V	307.0	11.8
4877.500000	---	39.38	54.00	14.62	150.0	V	237.0	11.8

EUT Information

EUT Name: Portable Bluetooth Speaker
 Model: CLIP5G
 Test Mode: BR_DH5_High channel
 Order No/Sample No: 168450870/A003611357-008
 Test Voltage:: Battery
 Remark: Temp 23 Humi:53%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin

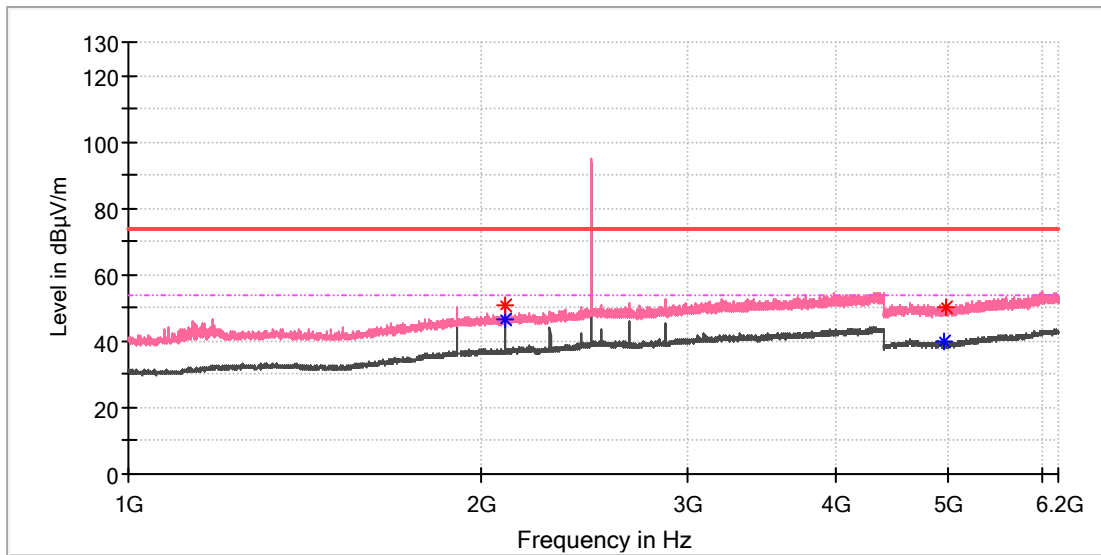


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2096.000000	---	46.30	54.00	7.70	150.0	H	342.0	6.0
2096.500000	50.38	---	74.00	23.62	150.0	H	342.0	6.0
4952.500000	50.89	---	74.00	23.11	150.0	H	347.0	11.8
4959.000000	---	39.63	54.00	14.37	150.0	H	114.0	11.8

EUT Information

EUT Name: Portable Bluetooth Speaker
 Model: CLIP5G
 Test Mode: BR_DH5_High channel
 Order No/Sample No: 168450870/A003611357-008
 Test Voltage:: Battery
 Remark: Temp 23 Humi:53%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin

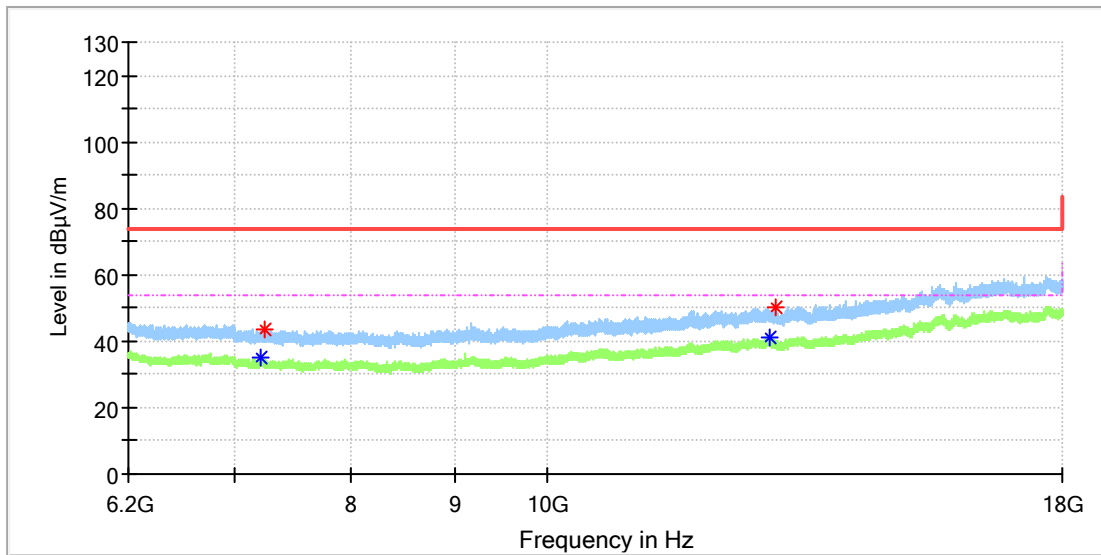


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2096.000000	50.93	---	74.00	23.07	150.0	V	142.0	6.0
2096.000000	---	46.43	54.00	7.57	150.0	V	142.0	6.0
4960.000000	---	39.96	54.00	14.04	150.0	V	141.0	11.8
4969.500000	50.25	---	74.00	23.75	150.0	V	292.0	11.8

EUT Information

EUT Name: Portable Bluetooth Speaker
 Model: CLIP5G
 Test Mode: BR_DH5_Low channel
 Order No/Sample No: 168450870/A003611357-008
 Test Voltage:: Battery
 Remark: Temp 23 Humi:53%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin

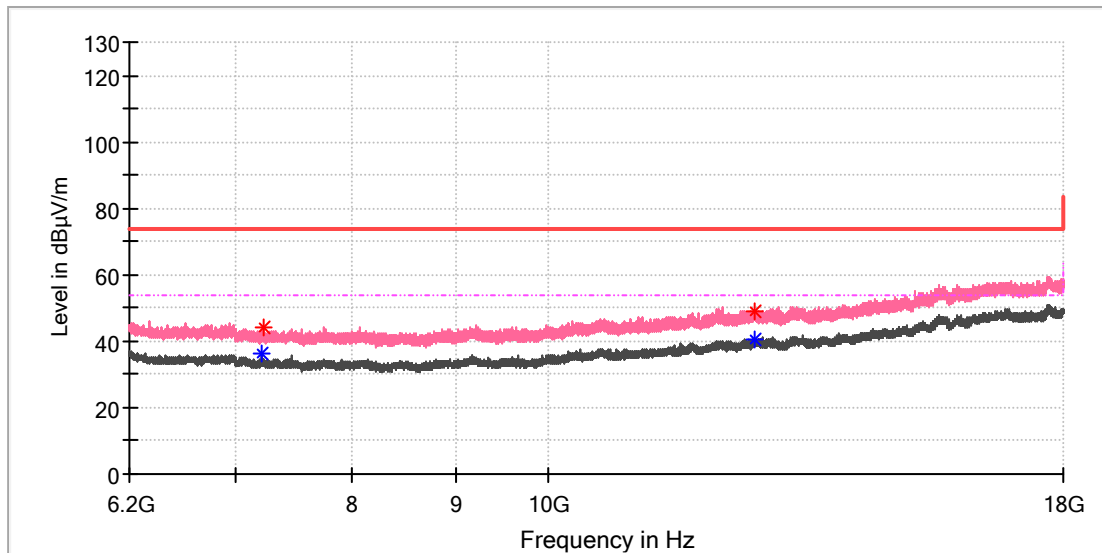


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7215.783333	---	34.84	54.00	19.16	150.0	H	209.0	8.7
7235.450000	43.44	---	74.00	30.56	150.0	H	257.0	8.6
12878.308333	---	41.06	54.00	12.94	150.0	H	147.0	15.4
12966.808333	50.41	---	74.00	23.59	150.0	H	113.0	15.5

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	CLIP5G
Test Mode:	BR_DH5_Low channel
Order No/Sample No:	168450870/A003611357-008
Test Voltage::	Battery
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

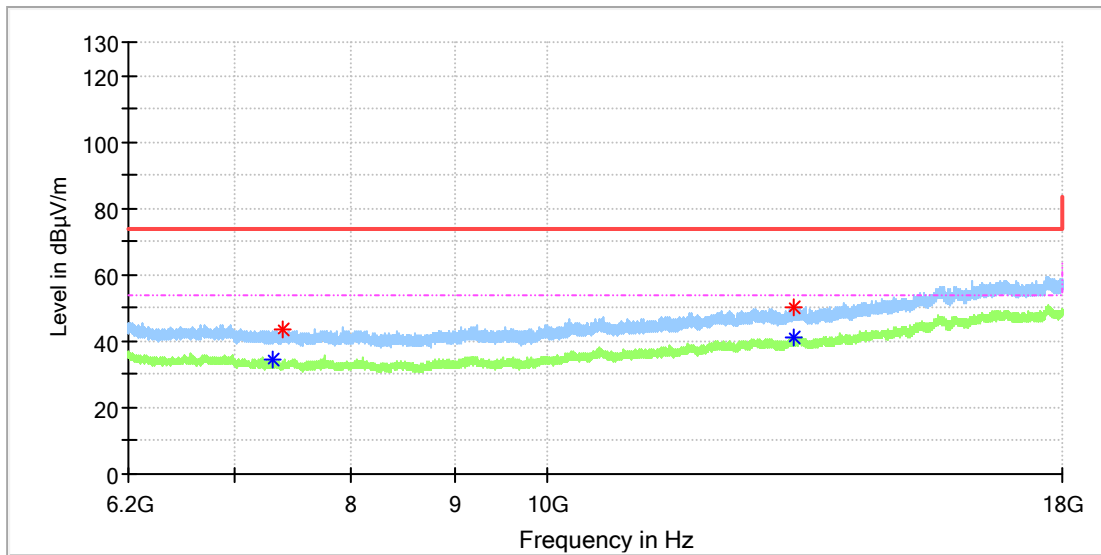


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7205.950000	---	36.22	54.00	17.78	150.0	V	6.0	8.8
7225.616667	43.93	---	74.00	30.07	150.0	V	270.0	8.7
12664.925000	---	40.73	54.00	13.27	150.0	V	134.0	15.0
12666.400000	48.97	---	74.00	25.03	150.0	V	0.0	15.1

EUT Information

EUT Name: Portable Bluetooth Speaker
 Model: CLIP5G
 Test Mode: BR_DH5_Mid channel
 Order No/Sample No: 168450870/A003611357-008
 Test Voltage:: Battery
 Remark: Temp 23 Humi:53%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin

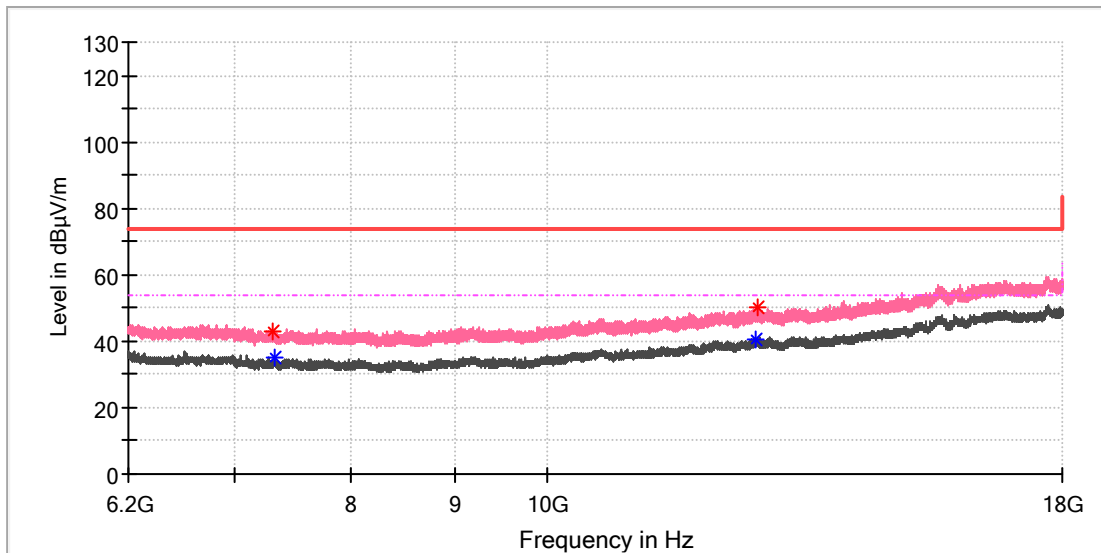


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7317.066667	---	34.33	54.00	19.67	150.0	H	263.0	8.2
7391.308333	43.68	---	74.00	30.32	150.0	H	120.0	8.3
13240.175000	50.12	---	74.00	23.88	150.0	H	179.0	15.5
13259.841667	---	41.08	54.00	12.92	150.0	H	26.0	15.5

EUT Information

EUT Name: Portable Bluetooth Speaker
 Model: CLIP5G
 Test Mode: BR_DH5_Mid channel
 Order No/Sample No: 168450870/A003611357-008
 Test Voltage:: Battery
 Remark: Temp 23 Humi:53%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin

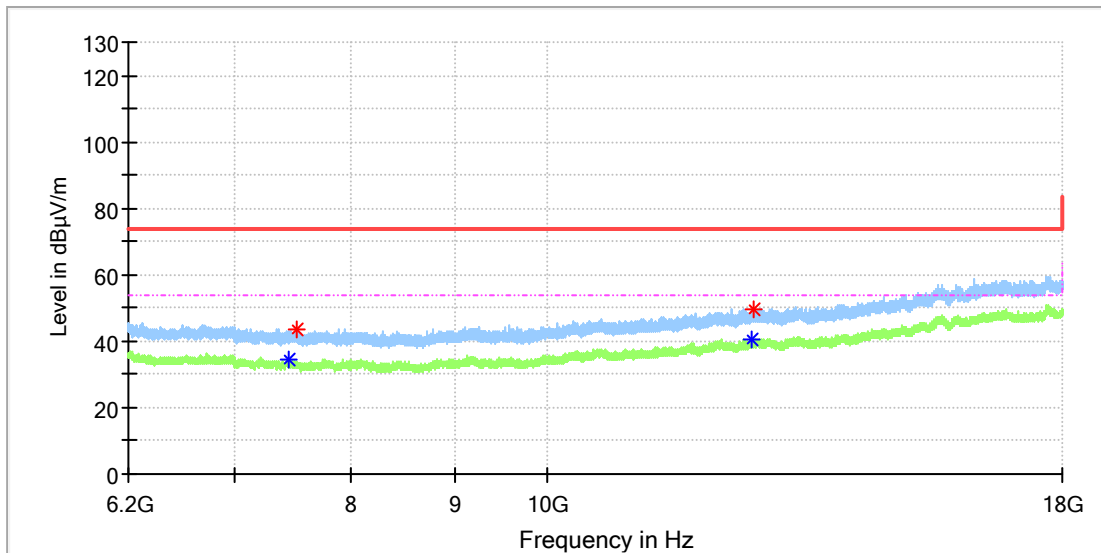


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7317.558333	42.79	---	74.00	31.21	150.0	V	354.0	8.2
7322.966667	---	35.13	54.00	18.87	150.0	V	185.0	8.2
12688.525000	---	40.68	54.00	13.32	150.0	V	47.0	15.1
12706.716667	50.07	---	74.00	23.93	150.0	V	0.0	15.1

EUT Information

EUT Name: Portable Bluetooth Speaker
 Model: CLIP5G
 Test Mode: BR_DH5_High channel
 Order No/Sample No: 168450870/A003611357-008
 Test Voltage:: Battery
 Remark: Temp 23 Humi:53%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin

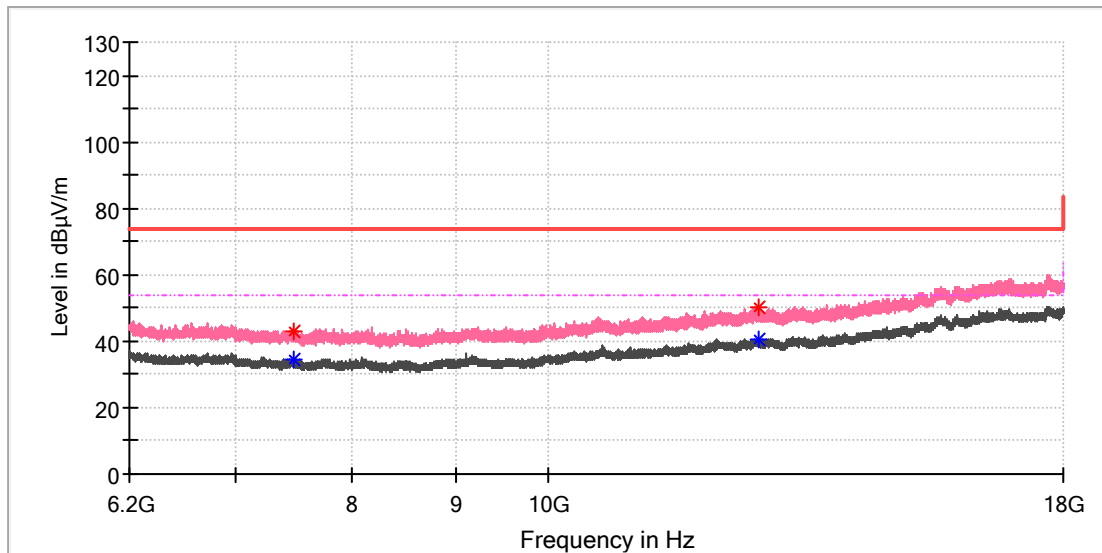


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7439.983333	---	34.34	54.00	19.66	150.0	H	110.0	8.4
7509.308333	43.30	---	74.00	30.70	150.0	H	340.0	8.7
12639.358333	---	40.80	54.00	13.20	150.0	H	293.0	15.0
12660.991667	49.71	---	74.00	24.29	150.0	H	352.0	15.0

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	CLIP5G
Test Mode:	BR_DH5_High channel
Order No/Sample No:	168450870/A003611357-008
Test Voltage::	Battery
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



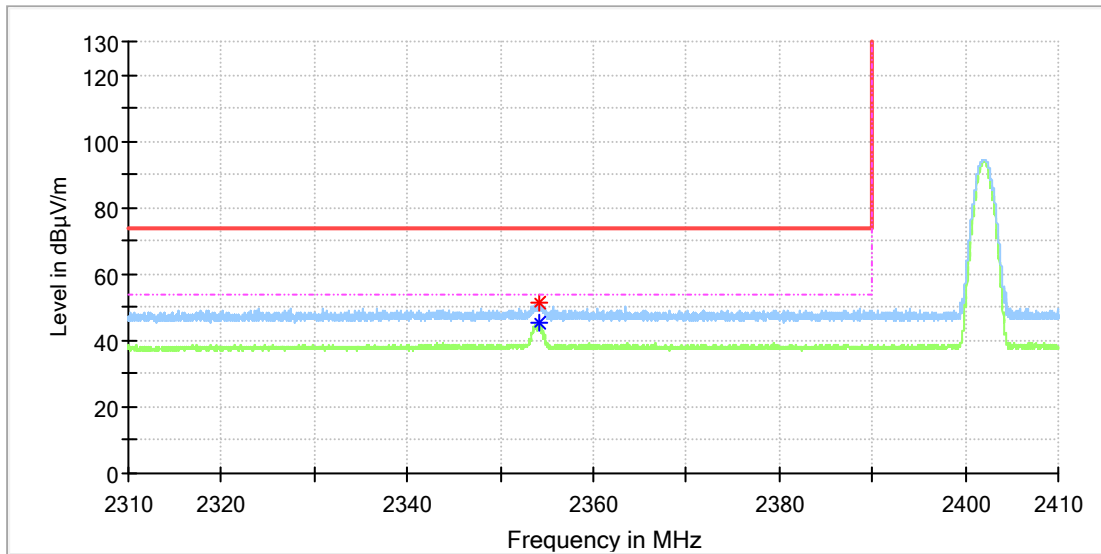
Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7476.366667	---	34.18	54.00	19.82	150.0	V	313.0	8.6
7480.300000	43.09	---	74.00	30.91	150.0	V	263.0	8.7
12703.766667	---	40.53	54.00	13.47	150.0	V	170.0	15.1
12727.858333	50.27	---	74.00	23.73	150.0	V	48.0	15.2

Appendix A.9: Test Results of Radiated Emissions in Restricted Bands

EUT Information

EUT Name: Portable Bluetooth Speaker
 Model: CLIP5G
 Test Mode: BR_DH5_Low channel
 Order No/Sample No: 168450870/A003611357-008
 Test Voltage:: Battery
 Remark: Temp 23 Humi:53%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin

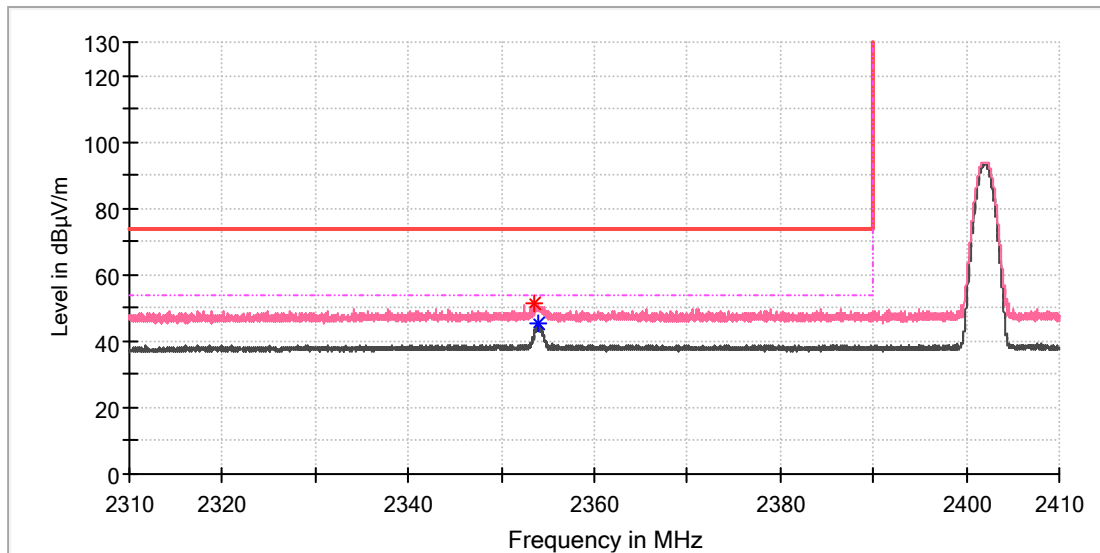


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2354.147059	---	45.25	54.00	8.75	150.0	H	329.0	6.9
2354.176471	51.13	---	74.00	22.87	150.0	H	329.0	6.9

EUT Information

EUT Name:	Portable Bluetooth Speaker
Model:	CLIP5G
Test Mode:	BR_DH5_Low channel
Order No/Sample No:	168450870/A003611357-008
Test Voltage::	Battery
Remark:	Temp 23 Humi:53%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

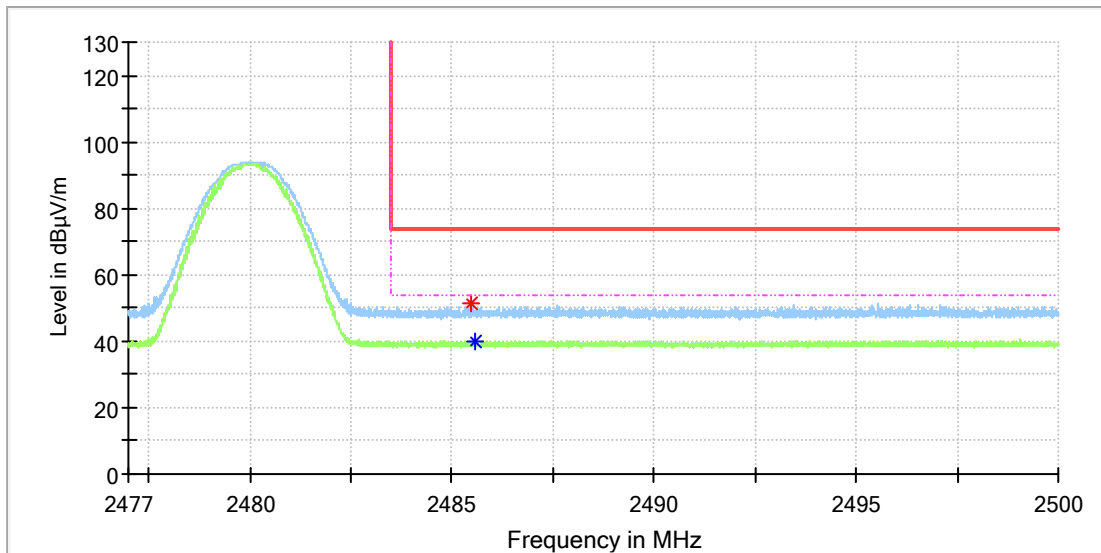


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2353.602941	51.12	---	74.00	22.88	150.0	V	169.0	6.9
2353.911765	---	45.18	54.00	8.82	150.0	V	125.0	6.9

EUT Information

EUT Name: Portable Bluetooth Speaker
 Model: CLIP5G
 Test Mode: BR_DH5_High channel
 Order No/Sample No: 168450870/A003611357-008
 Test Voltage:: Battery
 Remark: Temp 23 Humi:53%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin

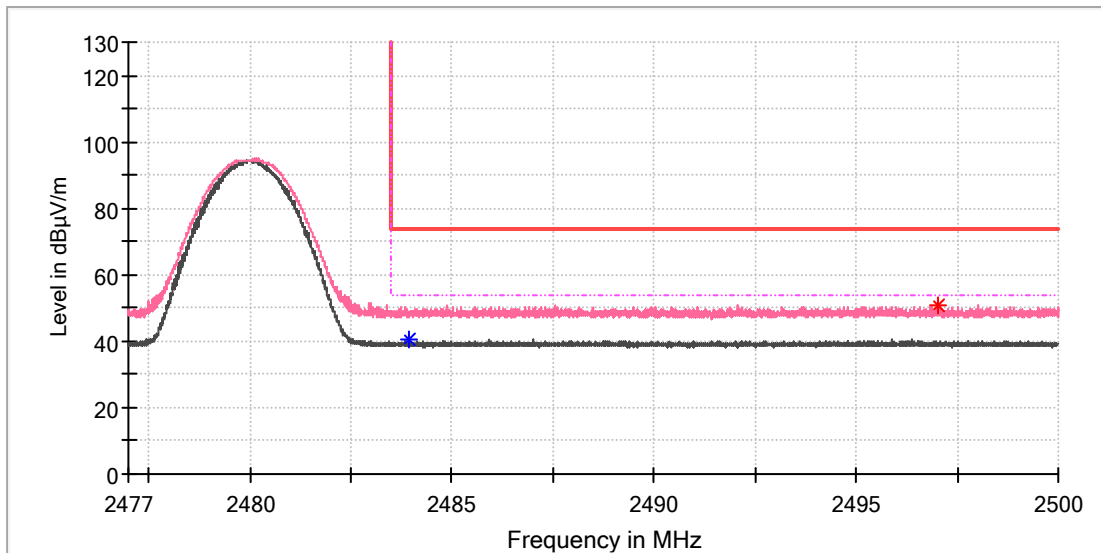


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2485.489706	51.44	---	74.00	22.56	150.0	H	325.0	7.4
2485.573530	---	39.94	54.00	14.06	150.0	H	339.0	7.4

EUT Information

EUT Name: Portable Bluetooth Speaker
 Model: CLIP5G
 Test Mode: BR_DH5_High channel
 Order No/Sample No: 168450870/A003611357-008
 Test Voltage:: Battery
 Remark: Temp 23 Humi:53%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin



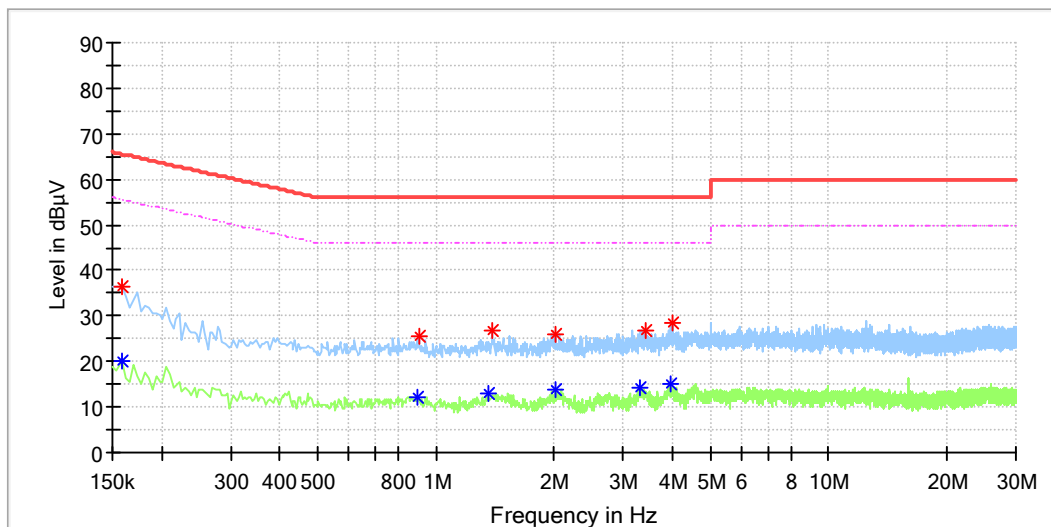
Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.963235	---	40.32	54.00	13.68	150.0	V	127.0	7.4
2497.008824	50.87	---	74.00	23.13	150.0	V	283.0	7.4

Appendix A.10: Test Results of Conducted Emissions on AC Mains

EUT Information

EUT Name: portable bluetooth speaker
 Order Number: 168454748 290
 Model: CLIP5G
 Test Mode: Charging + Bluetooth playing + multi speaker
 Test Voltage: AC 230V/50Hz
 Test By:/Review By: Charlie Zha / Gary Chen
 Tem./Hum./Pressure: 25.0°C/51.2%/101kPa
 Remark: SR1

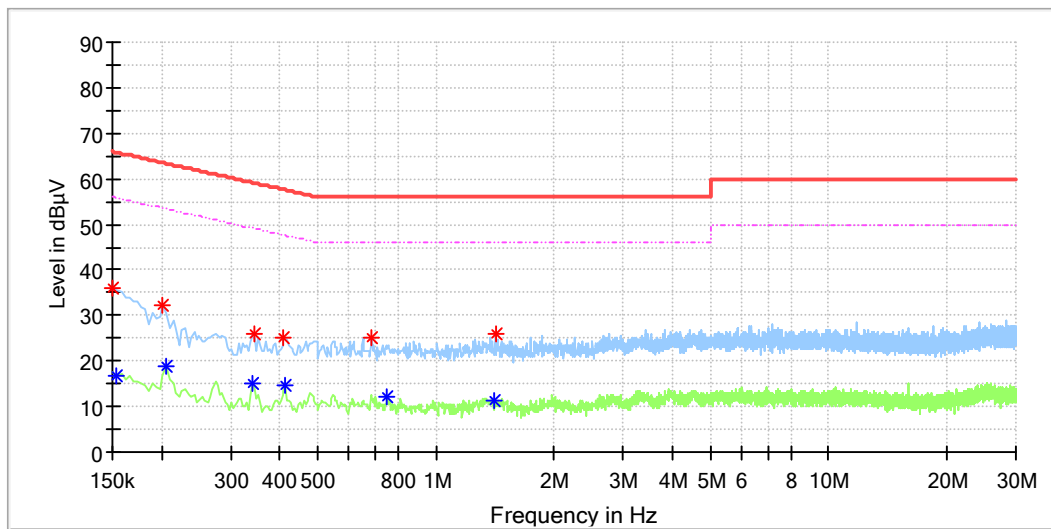


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.158000	36.33	---	65.57	29.24	L1	9.9
0.158000	---	19.98	55.57	35.59	L1	9.9
0.902000	---	12.31	46.00	33.69	L1	10.0
0.906000	25.49	---	56.00	30.51	L1	10.0
1.362000	---	13.17	46.00	32.83	L1	10.1
1.394000	26.61	---	56.00	29.39	L1	10.1
2.010000	---	13.66	46.00	32.34	L1	10.1
2.010000	25.92	---	56.00	30.08	L1	10.1
3.314000	---	14.42	46.00	31.58	L1	10.2
3.430000	26.87	---	56.00	29.13	L1	10.2
3.950000	---	14.89	46.00	31.11	L1	10.2
3.990000	28.66	---	56.00	27.34	L1	10.2

EUT Information

EUT Name: portable bluetooth speaker
 Order Number: 168454748 290
 Model: CLIP5G
 Test Mode: Charging + Bluetooth playing + multi speaker
 Test Voltage: AC 230V/50Hz
 Test By:/Review By: Charlie Zha / Gary Chen
 Tem./Hum./Pressure: 25.0°C/51.2%/101kPa
 Remark: SR1



Critical Freqs

Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.150000	35.96	---	66.00	30.04	N	9.8
0.154000	---	16.77	55.78	39.01	N	9.8
0.202000	32.04	---	63.53	31.49	N	9.8
0.206000	---	18.74	53.37	34.63	N	9.8
0.342000	---	15.18	49.16	33.97	N	9.8
0.346000	26.06	---	59.06	33.00	N	9.8
0.410000	24.97	---	57.65	32.68	N	9.8
0.414000	---	14.64	47.57	32.93	N	9.8
0.686000	24.99	---	56.00	31.01	N	9.8
0.750000	---	12.00	46.00	34.00	N	9.8
1.414000	---	11.50	46.00	34.50	N	9.8
1.418000	25.97	---	56.00	30.03	N	9.8