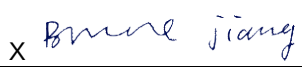


Prüfbericht-Nr.: Test report no.:	CN255NOZ 001	Auftrags-Nr.: Order no.:	168543945	Seite 1 von 27 Page 1 of 27
Kunden-Referenz-Nr.: Client reference no.:	N/A	Auftragsdatum: Order date:	2025-03-18	
Auftraggeber: Client:	Zhong Shan City Richsound Electronic Industrial Ltd. No. 16, East Shagang Road, Gangkou Town, Zhongshan City, 528447 Guangdong, P.R. China			
Prüfgegenstand: Test item:	2.1 Soundbar with wireless Subwoofer			
Bezeichnung / Typ-Nr.: Identification / Type no.:	NS-SB21, NS-SB21-C, TB643DWW (Trademark: INSIGNIA, RSR)			
Auftrags-Inhalt: Order content:	Test Report			
Prüfgrundlage: Test specification:	CFR Title 47 FCC Part 15: Subpart C Section 15.247			
Wareneingangsdatum: Date of sample receipt:	2025-03-21	Please refer to Photo Document		
Prüfmuster-Nr.: Test sample no:	A003948759-001 A003948759-003~004			
Prüfzeitraum: Testing period:	2025-04-09 - 2025-04-16			
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:	X 	genehmigt von: authorized by:	X 	
Datum: Date:	2025-06-05 Signed by: Breeze Jiang	Ausstellungsdatum: Issue date:	2025-06-05 Signed by: Jonathan Li	
Stellung / Position:	Sachverständige(r)/Expert	Stellung / Position:	Sachverständige(r)/Expert	
Sonstiges / Other:	FCC ID: Z8M-NSSB21SW			
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>				

Prüfbericht-Nr.: CN255NOZ 001
Test report no.:

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Anmerkungen
Remarks

1	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. Detaillierte Informationen bezüglich Prüfbedingungen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden. <i>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>
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3	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>Test clauses with remark of * are subcontracted to qualified subcontractors and described under the respective test clause in the report.</i> <i>Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.</i>
4	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 115:2023, 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>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 115:2023, 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>

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 6dB BANDWIDTH

RESULT: Pass

5.1.5 99% BANDWIDTH

RESULT: Pass

5.1.6 20dB BANDWIDTH

RESULT: Pass

5.1.7 CARRIER FREQUENCY SEPARATION

RESULT: Pass

5.1.8 NUMBER OF HOPPING FREQUENCY

RESULT: Pass

5.1.9 TIME OF OCCUPANCY

RESULT: Pass

5.1.10 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 KHz BANDWIDTH

RESULT: Pass

5.1.11 RADIATED SPURIOUS EMISSION

RESULT: Pass

5.1.12 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 Bluetooth BR & EDR

Appendix B: Test Results of Bluetooth LE

Appendix C: Photographs of the Test Set-up

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, China

A2LA Certificate Number: 5162.01

FCC Registration No.: 694916

ISED Wireless Device Testing Laboratory: 25069

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Radio Spectrum Testing (SRD-Tonscend)					
Equipment	Manufacturer	Model	Serial No.	Cal. Date	Cal. until
EXA Signal Analyzer, Multi-touch	Keysight	N9010B	MY60241175	2024-09-26	2025-09-25
MXG X-Series RF Vector Signal Generator	Keysight	N5182B	MY61250137	2024-09-26	2025-09-25
EXG X-Series Microwave Analog Signal Generator	Keysight	N5173B	MY61250141	2024-09-26	2025-09-25
DC power supply	Keysight	E3642A	MY61276100	2024-09-26	2025-09-25
Power Control Unit	Tonscend	JS0806-4ADC	N/A	2024-09-26	2025-09-25
Automation Control Unit	Tonscend	JS0806-2	21C8060396	2024-09-26	2025-09-25
Test Software	Tonscend	JS1120-3	N/A	N/A	N/A
Control PC	Lenovo	TianYi510S-071MB	YLX23JMF	N/A	N/A
Shielding Room	Albatross	SR1	APC17151-SR1	2024-09-14	2027-09-13
Unwanted Emission Testing (TS9975)					
Equipment	Manufacturer	Model	Serial No.	Cal. Date	Cal. until
EMI Test Receiver	R&S	ESR 7	102021	2024-09-29	2025-09-28
Signal Analyzer	R&S	FSV 40	101439	2024-09-29	2025-09-28
System Controller Interface	R&S	SCI-100	S10010038	N/A	N/A
Filterbank	R&S	Wlan	100759	2024-09-29	2025-09-28
OSP	R&S	OSP 120	102040	N/A	N/A
Pre-amplifier	R&S	SCU08F1	08320031	2024-09-29	2025-09-28
Amplifier	R&S	SCU-18F	180070	2024-09-29	2025-09-28
Amplifier	R&S	SCU40A	100475	2024-09-29	2025-09-28
Trilog Broadband Antenna (30 MHz - 7 GHz)	Schwarzbeck	VULB 9162	193	2024-09-28	2025-09-27

Double-Ridged Antenna (1-18 GHz)	ETS-LINDGREN	3117	00218717	2024-09-28	2025-09-27
Wideband Ridged Horn Antenna (18-40 GHz)	Steatite	QMS-00880	19067	2024-09-28	2025-09-27
Active Loop Antenna	Schwarzbeck	FMZB 1513	302	2024-09-28	2025-09-27
Test software	R&S	EMC32 (V10.60.10)	N/A	N/A	N/A
Control PC	Dell	OptiPlex 7050	36NV9P2	N/A	N/A
3m Semi-Anechoic Chamber	Albatross	SAC-3m	APC17151-SAC	2024-09-14	2027-09-13

Conducted Emission				
Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
EMI Test Receiver	R&S	ESR3	102428	2025-07-22
Artificial Mains Network	R&S	ENV432	101546	2026-02-09
LISN ENV432-Receiver cable in SR2	Calibration frequency range: 9 kHz~30 MHz			2025-12-20
EMC32 test software	R&S	EMC32(Ver.10.50.00)	N/A	N/A

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.

Table 2: Measurement Uncertainty

Parameter	Uncertainty (k=2)
RF output power, conducted	± 0.99 dB
Occupied Channel Bandwidth	± 2.08 %
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 & C of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) Co., Ltd. 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, 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 Subwoofer which supports Bluetooth dual mode wireless technology.

According to the declaration of the applicant, the schematics, PCB layout and electronic components are identical, only the model no. is different for market strategy.

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

3.2 Ratings and System Details

Table 3: Technical Specification of EUT

General Information of EUT	Value
Kind of Equipment:	2.1 Soundbar with wireless Subwoofer
Type Designation:	NS-SB21, NS-SB21-C, TB643DWW
Trademark:	INSIGNIA, RSR
FCC ID:	Z8M-NSSB21SW
Operating Voltage:	AC 100-240V, 50-60Hz
Testing Voltage:	AC 120V, 60Hz
Technical Specification of Bluetooth dual mode	
Operating Frequency:	2402 MHz to 2480 MHz
Type of Modulation:	GFSK, $\pi/4$ -DQPSK, 8DPSK
Channel Number:	BR & EDR mode:79 channels, Low Energy mode:40 channels
Channel Separation:	BR & EDR mode:1MHz, Low Energy mode:2MHz
Data Rate:	BR & EDR mode: (1Mbps, 2Mbps, 3Mbps) Low Energy mode: (1Mbps, 2Mbps)
Antenna Type:	Integral Antenna
Antenna Gain:	0.64 dBi max (Provided by the Client)

Note: The correctness of all data provided by customer in the test report is ensured and responsible of the customer. Any misjudgment of the test results caused by the use of incorrect data provided by customer shall be borne by the customer.

Table 4: RF Channel and Frequency of Bluetooth BR/EDR

RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
0	2402.00	20	2422.00	40	2442.00	60	2462.00
1	2403.00	21	2423.00	41	2443.00	61	2463.00
2	2404.00	22	2424.00	42	2444.00	62	2464.00
3	2405.00	23	2425.00	43	2445.00	63	2465.00
4	2406.00	24	2426.00	44	2446.00	64	2466.00
5	2407.00	25	2427.00	45	2447.00	65	2467.00
6	2408.00	26	2428.00	46	2448.00	66	2468.00
7	2409.00	27	2429.00	47	2449.00	67	2469.00
8	2410.00	28	2430.00	48	2450.00	68	2470.00
9	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		

Test frequencies are lowest channel: 2402 MHz, middle channel: 2441 MHz and highest channel: 2480 MHz for Bluetooth BR/EDR

Table 5: RF Channel and Frequency of Bluetooth LE

RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
0	2402	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	19	2440	29	2460	39	2480

Test frequencies are lowest channel: 2402 MHz, middle channel: 2440 MHz and highest channel: 2480 MHz for Bluetooth LE

3.3 Independent Operation Modes

The basic operation modes are:

- A. On, Bluetooth transmitting mode (BR & EDR mode)
 - 1) Low Channel
 - 2) Middle Channel
 - 3) High Channel
- B. On, Bluetooth transmitting mode (BLE)
 - 1) Low Channel
 - 2) Middle Channel
 - 3) High Channel
- C. On, Transmitting on Hopping channel
- D. On, Normal working + BT Link
- E. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

- | | |
|-------------------------|------------------------------|
| - Application Form | - User Manual |
| - Operation Description | - ID Label and Location Info |

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 tests were performed according to the procedures in ANSI C63.10: 2013.

According to clause 3.1, all tests were performed on model NS-SB21 in this report.

4.3 Special Accessories and Auxiliary Equipment

Table 6: List of Accessories and Auxiliary Equipment

Description	Manufacturer	Model	S/N
Laptop	Lenovo	T480	PF-16A6N8
Portable Laptop	Lenovo	ThinkPad T480	10Q67059
Soundbar	INSIGNIA	NS-SB21	N/A

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 1GHz)

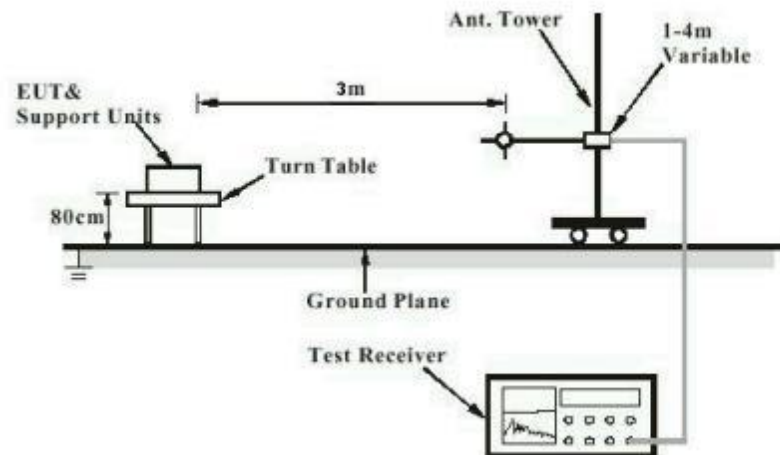


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

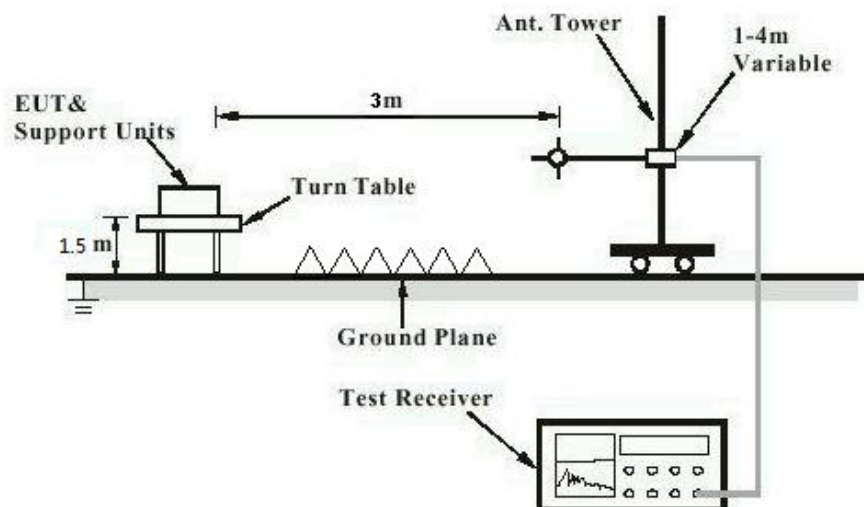


Diagram of Measurement Configuration for Mains Conduction Measurement

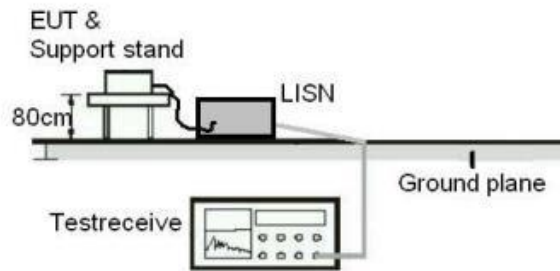
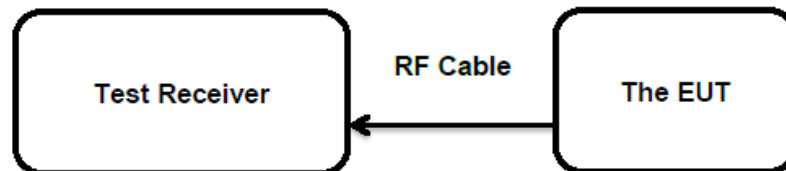


Diagram of Measurement Configuration for Conducted Transmitter Measurement



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

According to the manufacturer declared, the EUT has Integral Antenna, permanent attachment and no consideration of replacement, refer to section 3.2 for details.

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)(1)&(3)
Basic standard : ANSI C63.10: 2013
Limits : FHSS < 0.125 Watts, DSSS < 1.0 Watts
Kind of test site : Shielded Room

Test Setup

Date of testing : 2025-04-09
Input voltage : AC 120V, 60Hz
Operation mode : A, B
Test channel : Low / Middle / High
Ambient temperature : 25 °C
Relative humidity : 45 %
Atmospheric pressure : 101 kPa

For details refer to following test result.

Table 7: Test Result of Maximum Peak Conducted Output Power, BR & EDR

Test Mode	Test Channel (MHz)	Measured Peak Power		Limit (W)
		(dBm)	(W)	
GFSK (BR)	2402.0	8.15	0.0065	< 0.125
	2441.0	7.96	0.0063	
	2480.0	7.57	0.0057	
8DPSK (EDR)	2402.0	8.38	0.0069	
	2441.0	8.20	0.0066	
	2480.0	7.97	0.0063	
Maximum Measured Value		8.38	0.0069	

Table 8: Test Result of Maximum Peak Conducted Output Power, Bluetooth LE

Test Mode	Test Channel (MHz)	Measured Peak Power		Limit (W)
		(dBm)	(W)	
Bluetooth LE (1 Mbps)	2402	7.86	0.0061	< 1.0
	2440	7.67	0.0058	
	2480	7.35	0.0054	
Bluetooth LE (2 Mbps)	2402	7.92	0.0062	
	2440	7.74	0.0059	
	2480	7.38	0.0055	
Max. Measured Value		7.92	0.0062	

Note:

- 1) The cable loss is taken into account in results.
- 2) Antenna gain(G): 0.64 dBi
e.i.r.p.=P_(Peak power)+ G, which is far below the 4 W

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5.1.3 Conducted Power Spectral Density

RESULT:

Pass

Test Specification

Test standard	: FCC Part 15.247(e)
Basic standard	: ANSI C63.10: 2013
Limits	: < 8 dBm / 3kHz
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2025-04-09
Input voltage	: AC 120V, 60Hz
Operation mode	: B
Test channel	: Low / Middle / High
Ambient temperature	: 25 °C
Relative humidity	: 45 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix B.

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5.1.4 6dB Bandwidth

RESULT:

Pass

Test Specification

Test standard	: FCC Part 15.247(a)(2)
Basic standard	: ANSI C63.10: 2013
Limits	: > 500 kHz
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2025-04-09
Input voltage	: AC 120V, 60Hz
Operation mode	: B
Test channel	: Low / Middle / High
Ambient temperature	: 25 °C
Relative humidity	: 45 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix B.

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5.1.5 99% Bandwidth

RESULT:

Pass

Test Specification

Test standard	: FCC Part 15.247(a)
Basic standard	: ANSI C63.10: 2013
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2025-04-09
Input voltage	: AC 120V, 60Hz
Operation mode	: A, B
Test channel	: Low / Middle / High
Ambient temperature	: 25 °C
Relative humidity	: 45 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix A, B.

Prüfbericht - Nr.: CN255NOZ 001
Test Report No.:

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5.1.6 20dB Bandwidth

RESULT:

Pass

Test Specification

Test standard : FCC Part 15.247(a)(1)
Basic standard : ANSI C63.10: 2013
Kind of test site : Shielded Room

Test Setup

Date of testing : 2025-04-09
Input voltage : AC 120V, 60Hz
Operation mode : A
Test channel : Low / Middle / High
Ambient temperature : 25 °C
Relative humidity : 45 %
Atmospheric pressure : 101 kPa

For the measurement records, refer to the appendix A.

Prüfbericht - Nr.: CN255NOZ 001
Test Report No.:

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5.1.7 Carrier Frequency Separation

RESULT:

Pass

Test Specification

Test standard	: FCC Part 15.247(a)(1)
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	: 2025-04-09
Input voltage	: AC 120V, 60Hz
Operation mode	: C
Ambient temperature	: 25 °C
Relative humidity	: 45 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix A.

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Test Report No.:

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5.1.8 Number of Hopping Frequency

RESULT:

Pass

Test Specification

Test standard	: FCC part 15.247(a)(1)(iii)
Basic standard	: ANSI C63.10: 2013
Limits	: ≥ 15 non-overlapping channels
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2025-04-09
Input voltage	: AC 120V, 60Hz
Operation mode	: C
Ambient temperature	: 25 °C
Relative humidity	: 45 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix A.

Prüfbericht - Nr.: CN255NOZ 001
Test Report No.:

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5.1.9 Time of Occupancy

RESULT:

Pass

Test Specification

Test standard	: FCC part 15.247(a)(1)(iii)
Basic standard	: ANSI C63.10: 2013
Limits	: < 0.4s
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2025-04-09
Input voltage	: AC 120V, 60Hz
Operation mode	: C
Ambient temperature	: 25 °C
Relative humidity	: 45 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix A.

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5.1.10 Conducted Spurious Emissions Measured in 100 kHz Bandwidth

RESULT:

Pass

Test Specification

Test standard	: FCC Part 15.247(d)
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); 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	: 2025-04-09
Input voltage	: AC 120V, 60Hz
Operation mode	: A, B, C
Test channel	: Low / Middle / High
Ambient temperature	: 25 °C
Relative humidity	: 45 %
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 A, B.

Prüfbericht - Nr.: CN255NOZ 001
Test Report No.:Seite 25 von 27
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5.1.11 Radiated Spurious Emission

RESULT:

Pass

Test Specification

Test standard	: FCC Part 15.247(d) & FCC Part 15.205
Basic standard	: ANSI C63.10: 2013
Limits	: Refer to 15.209(a) of FCC part 15.247(d)
Kind of test site	: 3m Semi-anechoic Chamber

Test Setup

Date of testing	: 2025-04-15 to 2025-04-16
Input voltage	: AC 120V, 60Hz
Operation mode	: A, B
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 A, B.

Prüfbericht - Nr.: CN255NOZ 001
Test Report No.:

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5.1.12 Conducted Emission on AC Mains

RESULT:

Pass

Test Specification

Test standard	: FCC Part 15.207(a)
Basic standard	: ANSI C63.10: 2013
Frequency range	: 0.15 – 30MHz
Limits	: FCC Part 15.207(a)
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2025-04-09
Input voltage	: AC 120V, 60Hz
Operation mode	: C
Earthing	: Not connected
Ambient temperature	: 24.9 °C
Relative humidity	: 50.4 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix B.

6 Photographs of the Test Set-Up

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

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Appendix A: Test Results of Bluetooth BR & EDR

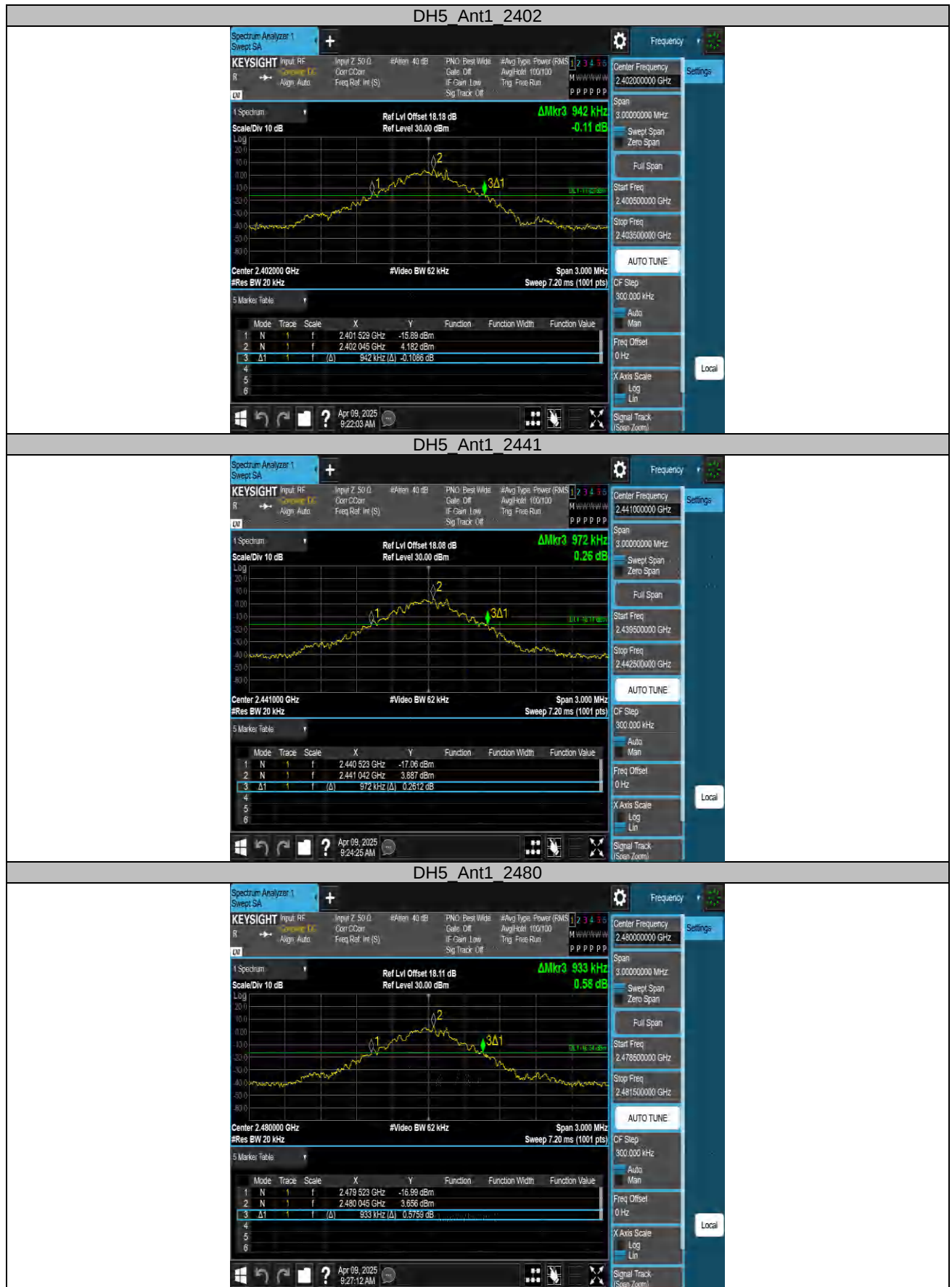
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Appendix A.1: Test Results of 20dB Bandwidth

Test Result

TestMode	Antenna	Channel	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.942	2401.529	2402.471	---	PASS
		2441	0.972	2440.523	2441.495	---	PASS
		2480	0.933	2479.523	2480.456	---	PASS
3DH5	Ant1	2402	1.344	2401.316	2402.660	---	PASS
		2441	1.350	2440.310	2441.660	---	PASS
		2480	1.347	2479.313	2480.660	---	PASS

Test Graphs



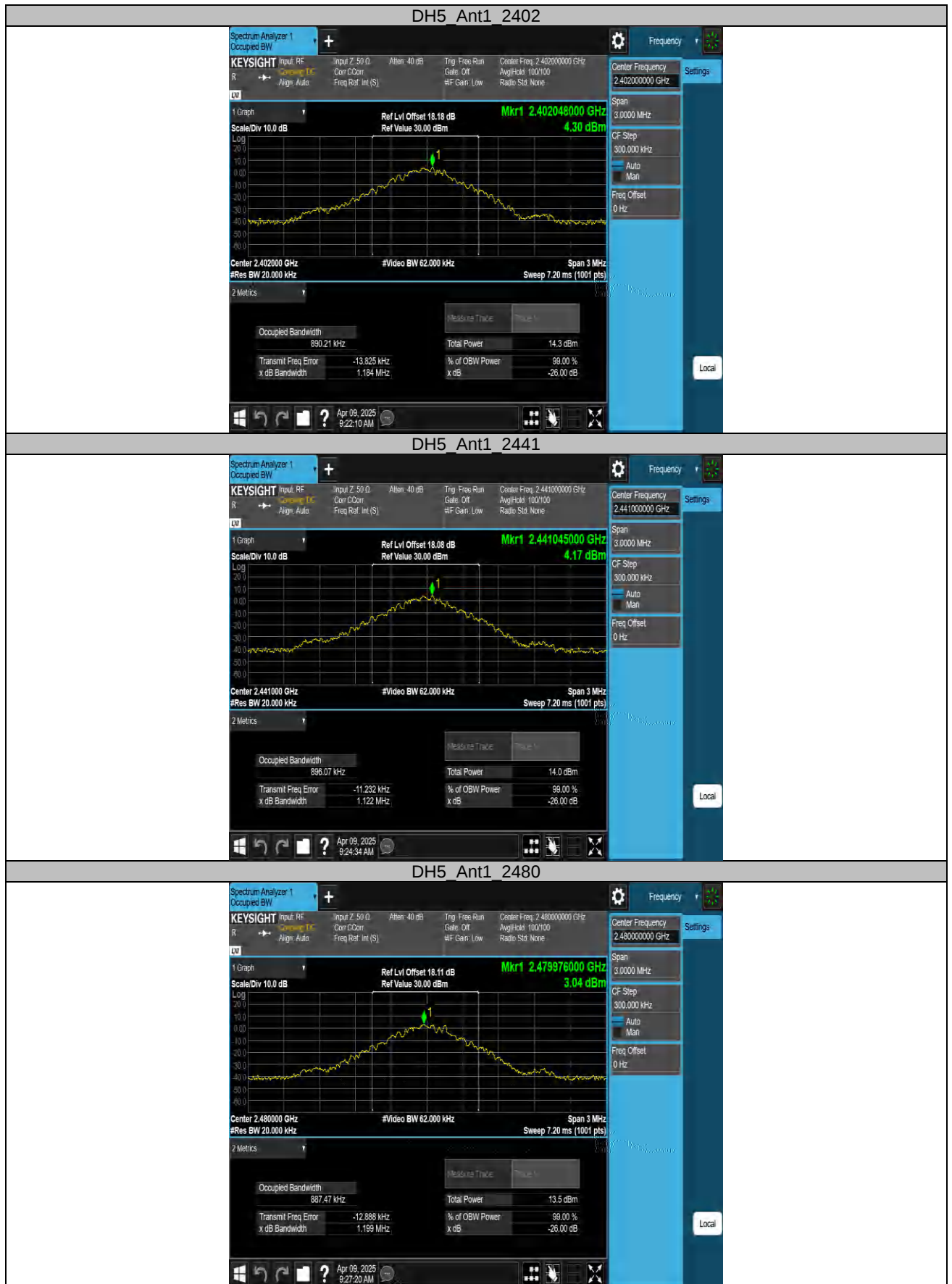


Appendix A.2: Test Results of 99% Bandwidth

Test Result

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.89021	2401.5411	2402.4313	---	PASS
		2441	0.89607	2440.5407	2441.4368	---	PASS
		2480	0.88747	2479.5434	2480.4308	---	PASS
3DH5	Ant1	2402	1.5656	2401.2261	2402.7917	---	PASS
		2441	1.3844	2440.3103	2441.6947	---	PASS
		2480	1.3665	2479.3125	2480.6790	---	PASS

Test Graphs





Appendix A.3: Test Results of Carrier Frequency Separation

Test Result

TestMode	Antenna	Channel	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	1.004	≥ 0.972	PASS
3DH5	Ant1	Hop	1.17	≥ 0.900	PASS

Test Graphs

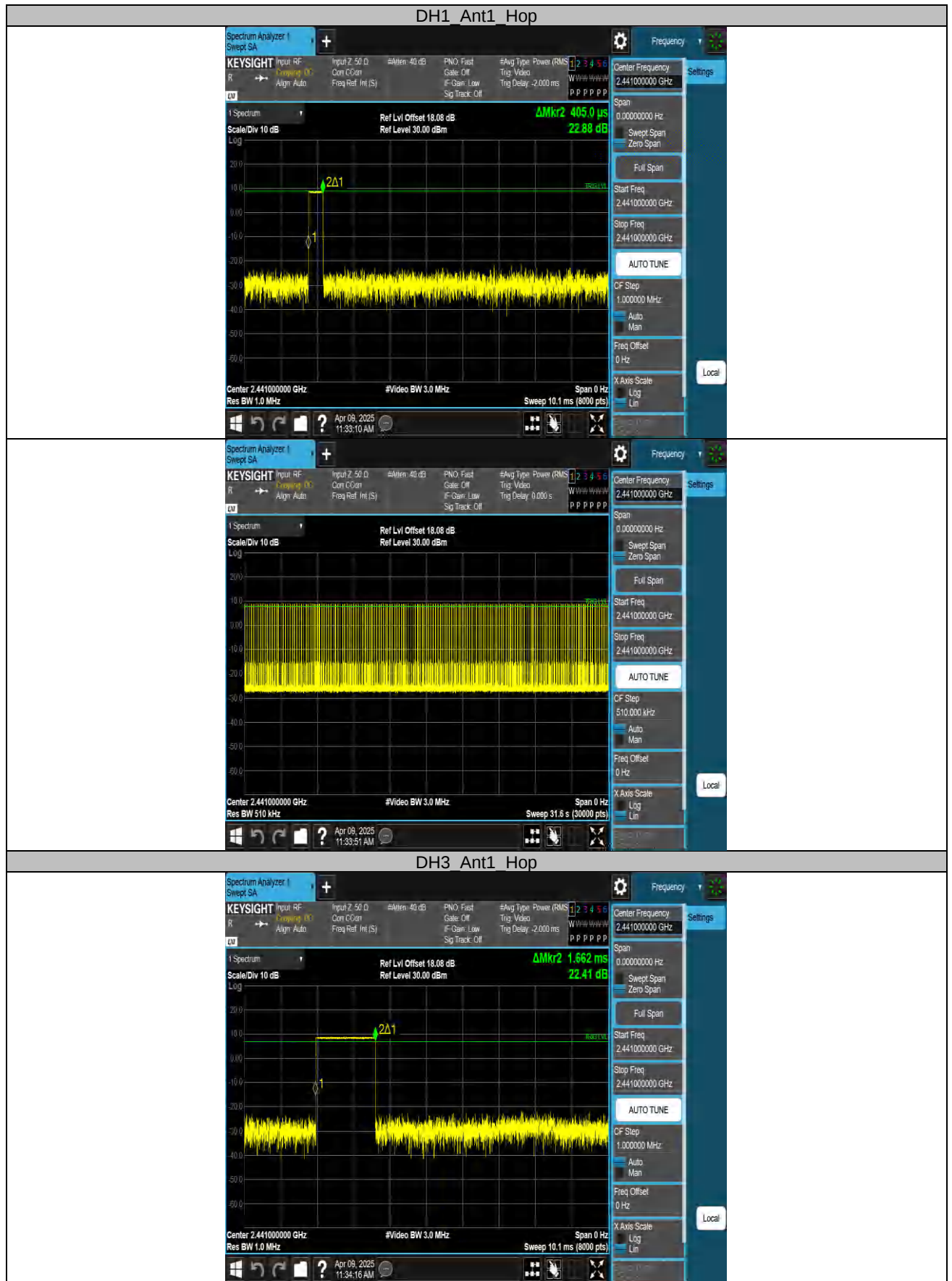


Appendix A.4: Test Results of Time of Occupancy

Test Result

TestMode	Antenna	Channel	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH1	Ant1	Hop	0.405	318	0.129	≤0.4	PASS
DH3	Ant1	Hop	1.662	160	0.266	≤0.4	PASS
DH5	Ant1	Hop	2.908	112	0.326	≤0.4	PASS
3DH1	Ant1	Hop	0.414	316	0.131	≤0.4	PASS
3DH3	Ant1	Hop	1.664	165	0.275	≤0.4	PASS
3DH5	Ant1	Hop	2.915	128	0.373	≤0.4	PASS

Test Graphs





DH5 Ant1 Hop

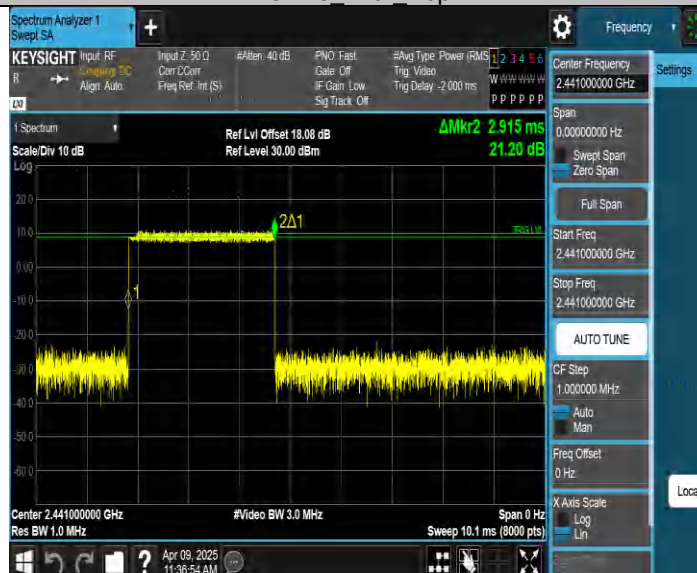


3DH1 Ant1 Hop





3DH5 Ant1 Hop



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

Test Result

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

Test Graphs



Appendix A.6: Test Results of Band Edge Measurements

Test Result

TestMode	Antenna	ChName	Channel	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	7.78	-42.03	≤-12.22	PASS
		High	2480	6.73	-44.50	≤-13.27	PASS
3DH5	Ant1	Low	2402	7.73	-25.97	≤-12.27	PASS
		High	2480	7.17	-38.05	≤-12.83	PASS
DH5	Ant1	Hopping	2402	7.00	-44.32	≤-13.00	PASS
		Hopping	2480	6.50	-43.75	≤-13.50	PASS
3DH5	Ant1	Hopping	2402	4.51	-30.80	≤-15.49	PASS
		Hopping	2480	5.30	-43.53	≤-14.70	PASS

Test Graphs





DH5 Ant1 Hopping 2402



DH5 Ant1 Hopping 2480



3DH5 Ant1 Hopping 2402



3DH5 Ant1 Hopping 2480



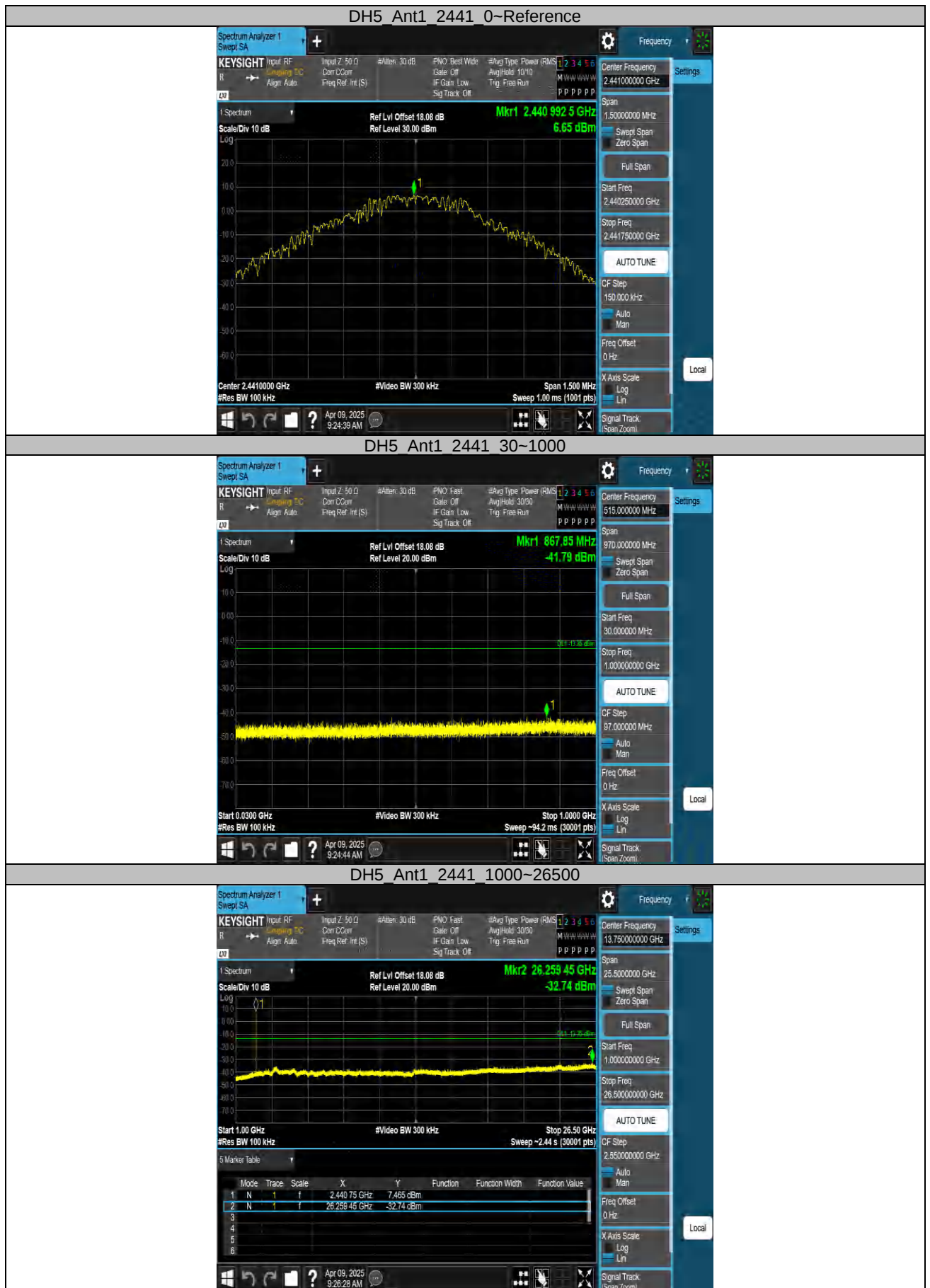
Appendix A.7: Test Results of Conducted Spurious Emission

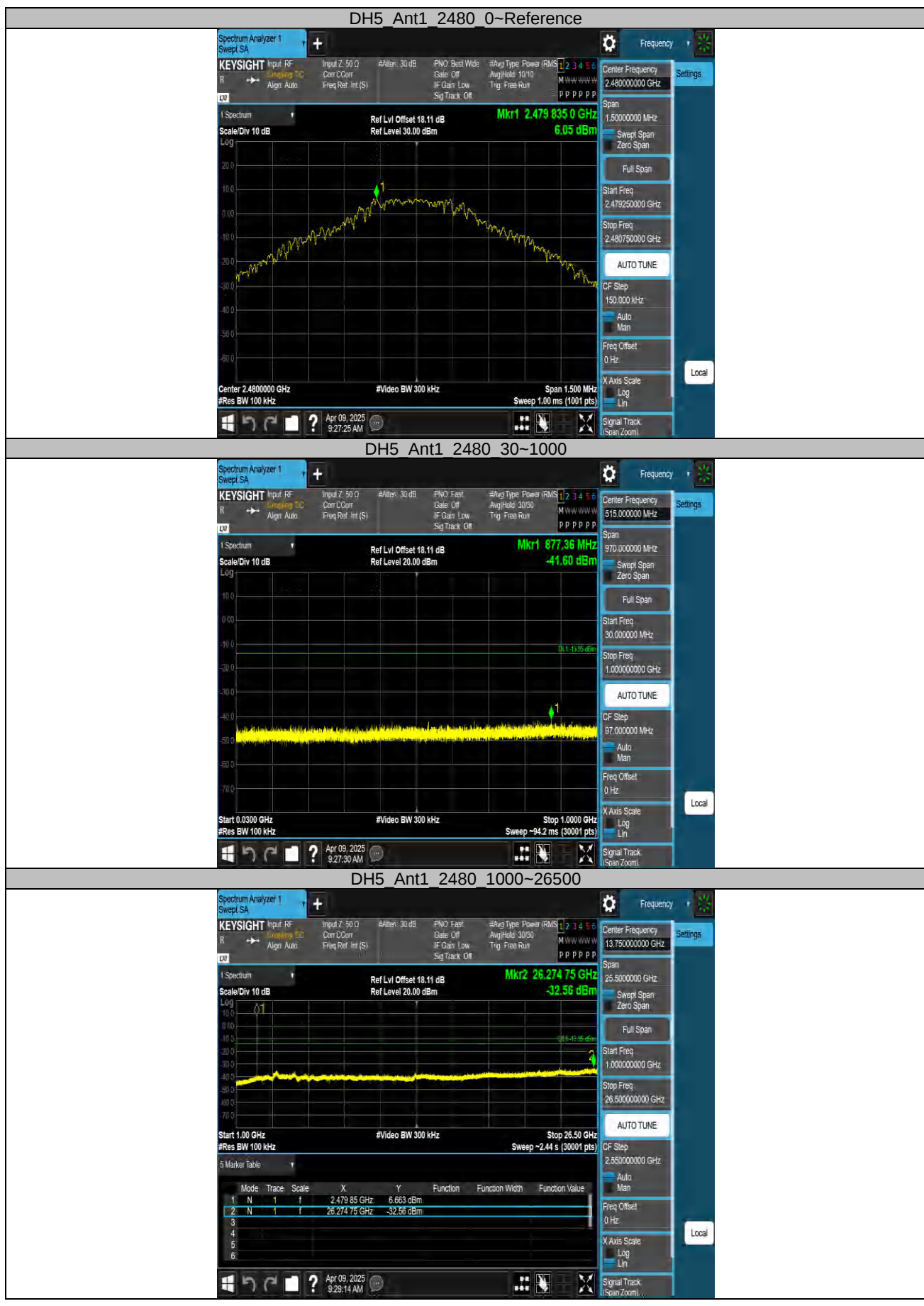
Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	6.85	6.85	---	PASS
			30~1000	6.85	-41.47	≤-13.15	PASS
			1000~26500	6.85	-32.64	≤-13.15	PASS
		2441	Reference	6.65	6.65	---	PASS
			30~1000	6.65	-41.79	≤-13.35	PASS
			1000~26500	6.65	-32.74	≤-13.35	PASS
		2480	Reference	6.05	6.05	---	PASS
			30~1000	6.05	-41.6	≤-13.95	PASS
			1000~26500	6.05	-32.56	≤-13.95	PASS
3DH5	Ant1	2402	Reference	5.35	5.35	---	PASS
			30~1000	5.35	-41.48	≤-14.65	PASS
			1000~26500	5.35	-32.24	≤-14.65	PASS
		2441	Reference	5.41	5.41	---	PASS
			30~1000	5.41	-41.64	≤-14.59	PASS
			1000~26500	5.41	-32.51	≤-14.59	PASS
		2480	Reference	4.65	4.65	---	PASS
			30~1000	4.65	-41.28	≤-15.35	PASS
			1000~26500	4.65	-32.48	≤-15.35	PASS

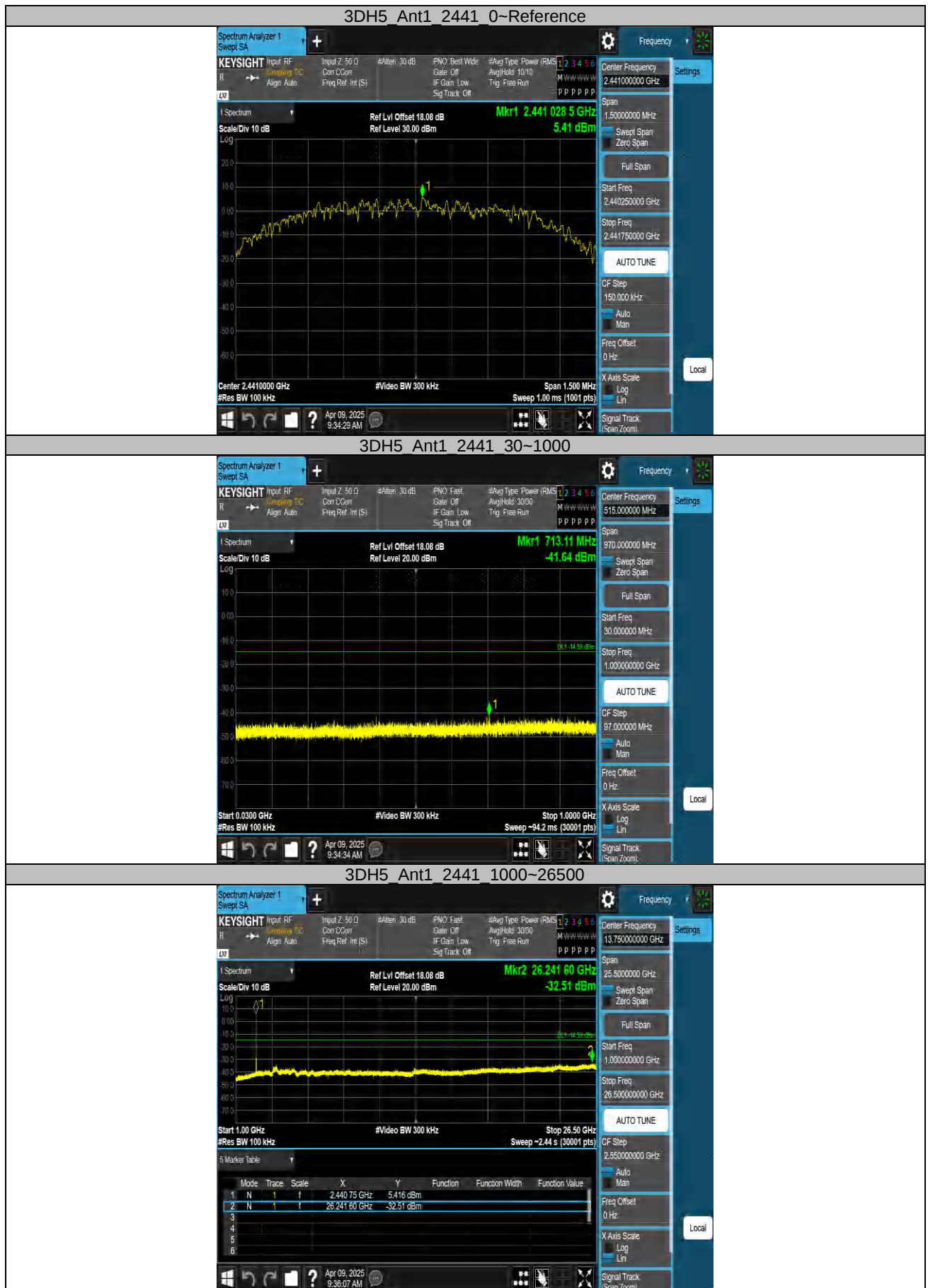
Test Graphs













Appendix A.8: Test Results of Radiated Spurious Emissions

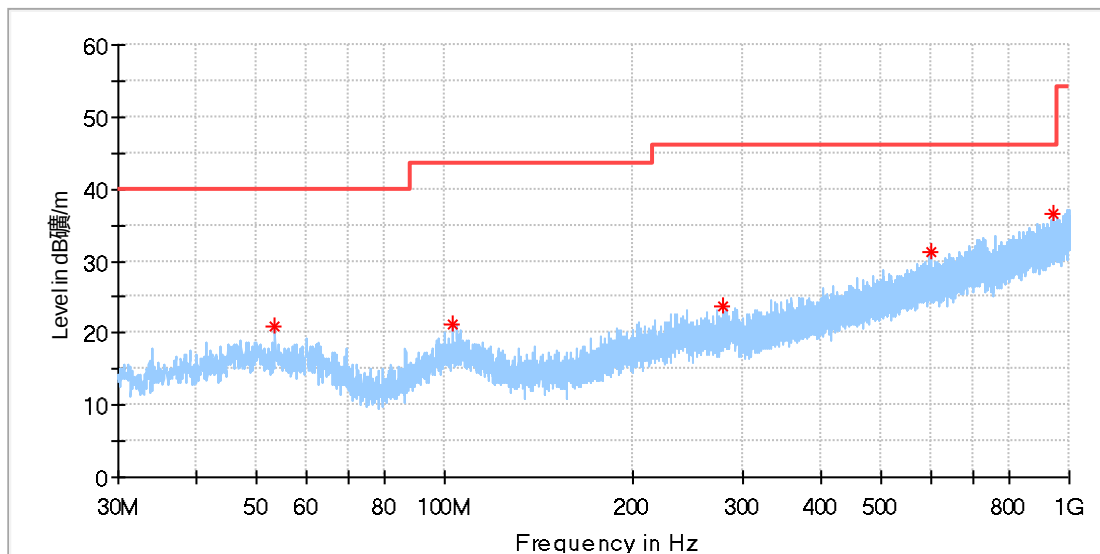
Note:

- 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:	2.1 Soundbar with wireless Subwoofer
Model:	NS-SB21
Test Mode:	BR_DH5_Mid channel
Order No/Sample No:	168543945/A003948759-004
Test Voltage:	AC 120V/60Hz
Remark:	Temp 24 Humi:50%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

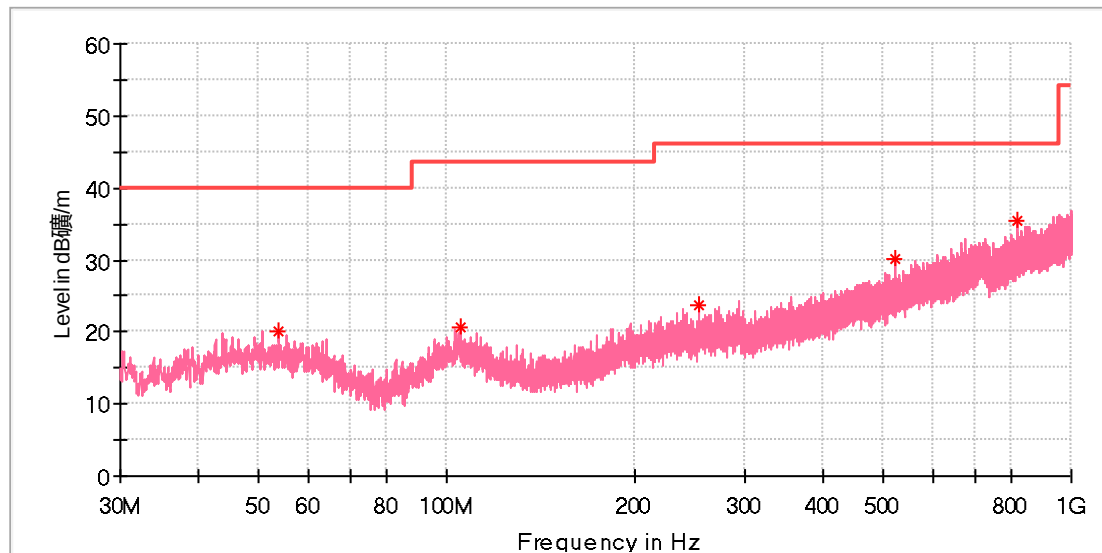
Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
53.503846	20.90	40.00	19.10	100.0	H	66.0	-18.5
103.197692	21.18	43.50	22.32	100.0	H	280.0	-19.0
278.506539	23.69	46.00	22.31	100.0	H	188.0	-16.8
600.173462	31.22	46.00	14.78	100.0	H	357.0	-9.7
944.038462	36.46	46.00	9.54	100.0	H	343.0	-4.3

Final Result

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

EUT Information

EUT Name: 2.1 Soundbar with wireless Subwoofer
Model: NS-SB21
Test Mode: BR_DH5_Mid channel
Order No/Sample No: 168543945/A003948759-004
Test Voltage: AC 120V/60Hz
Remark: Temp 24 Humi:50%
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)
53.876923	20.20	40.00	19.80	100.0	V	313.0	-18.5
104.951154	20.71	43.50	22.79	100.0	V	142.0	-18.9
252.689615	23.66	46.00	22.34	100.0	V	165.0	-17.3
522.573462	30.13	46.00	15.87	100.0	V	149.0	-11.4
820.475385	35.35	46.00	10.65	100.0	V	173.0	-5.8

Final_Result

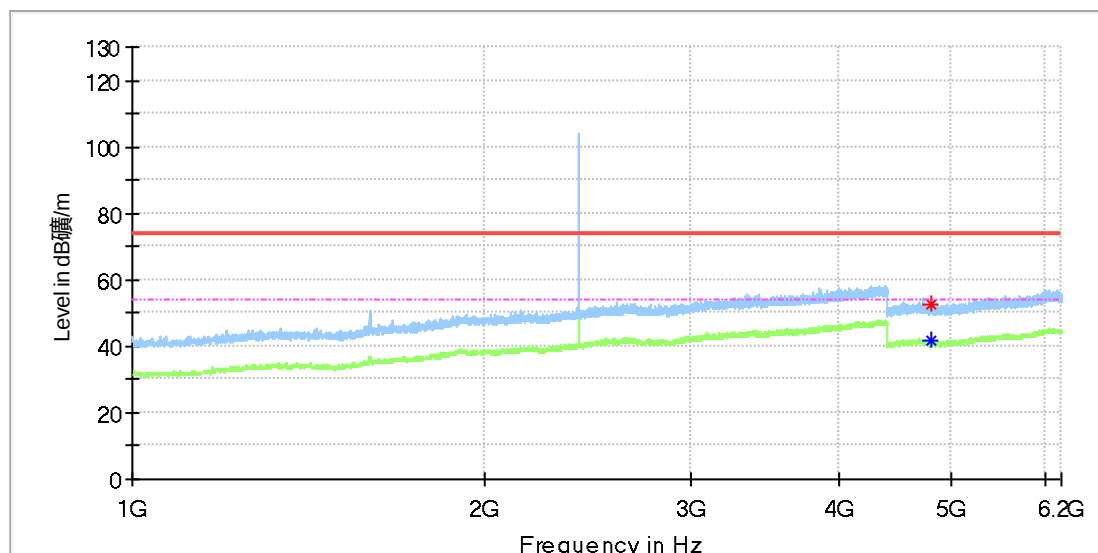
Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

1GHz - 18GHz

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

EUT Information

EUT Name:	2.1 Soundbar with wireless Subwoofer
Model:	NS-SB21
Test Mode:	BR_DH5_Low channel
Order No/Sample No:	168543945/A003948759-004
Test Voltage:	AC 120V/60Hz
Remark:	Temp 24 Humi:50%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

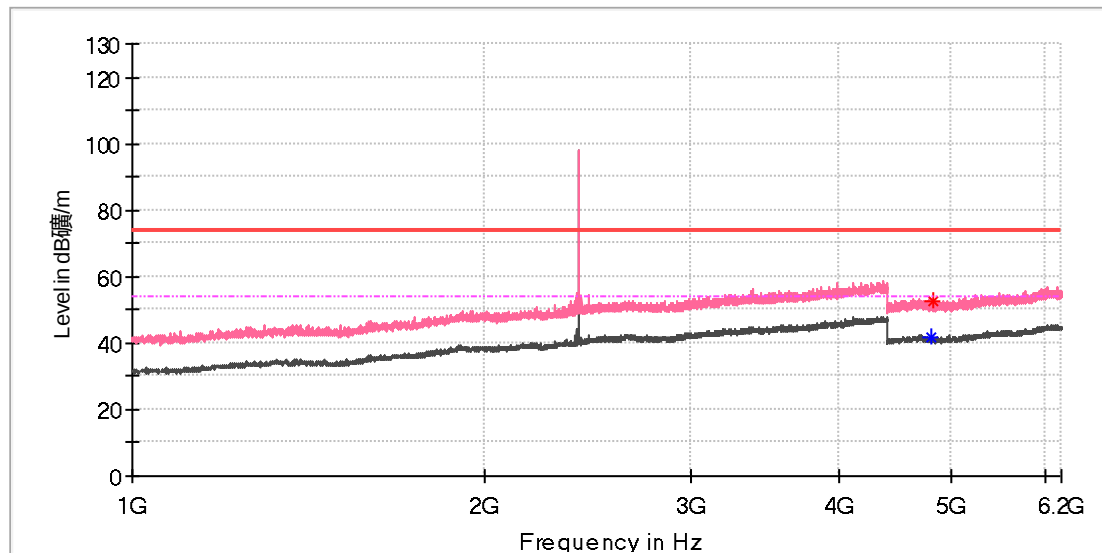
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4808.500000	52.39	---	74.00	21.61	150.0	H	73.0	13.3
4808.500000	---	41.74	54.00	12.26	150.0	H	73.0	13.3

Final_Result

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

EUT Information

EUT Name: 2.1 Soundbar with wireless Subwoofer
Model: NS-SB21
Test Mode: BR_DH5_Low channel
Order No/Sample No: 168543945/A003948759-004
Test Voltage: AC 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

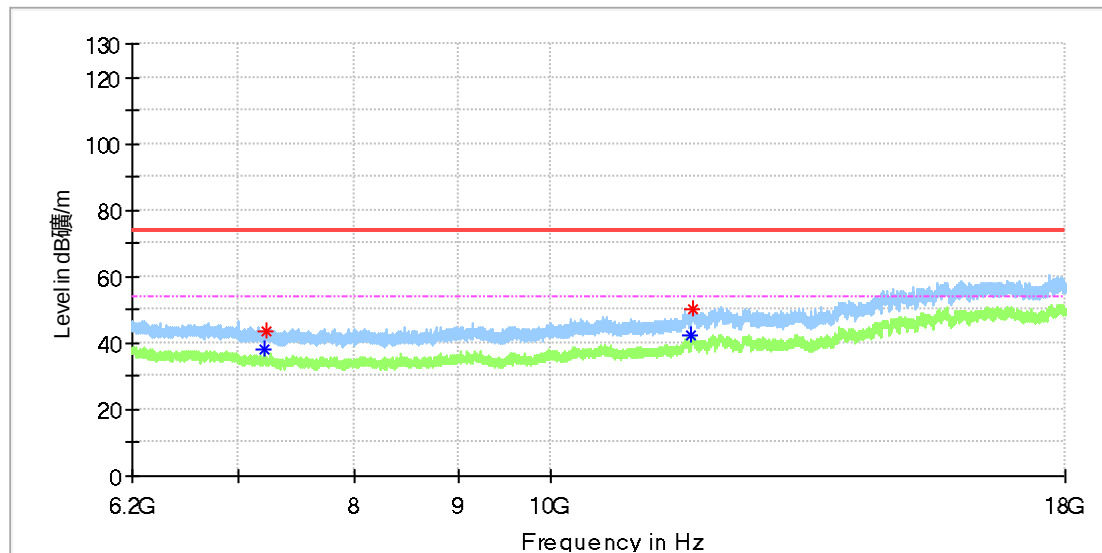
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4802.500000	---	41.67	54.00	12.33	150.0	V	98.0	13.3
4811.500000	52.56	---	74.00	21.44	150.0	V	87.0	13.3

Final_Result

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

EUT Information

EUT Name: 2.1 Soundbar with wireless Subwoofer
Model: NS-SB21
Test Mode: BR_DH5_Low channel
Order No/Sample No: 168543945/A003948759-004
Test Voltage: AC 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

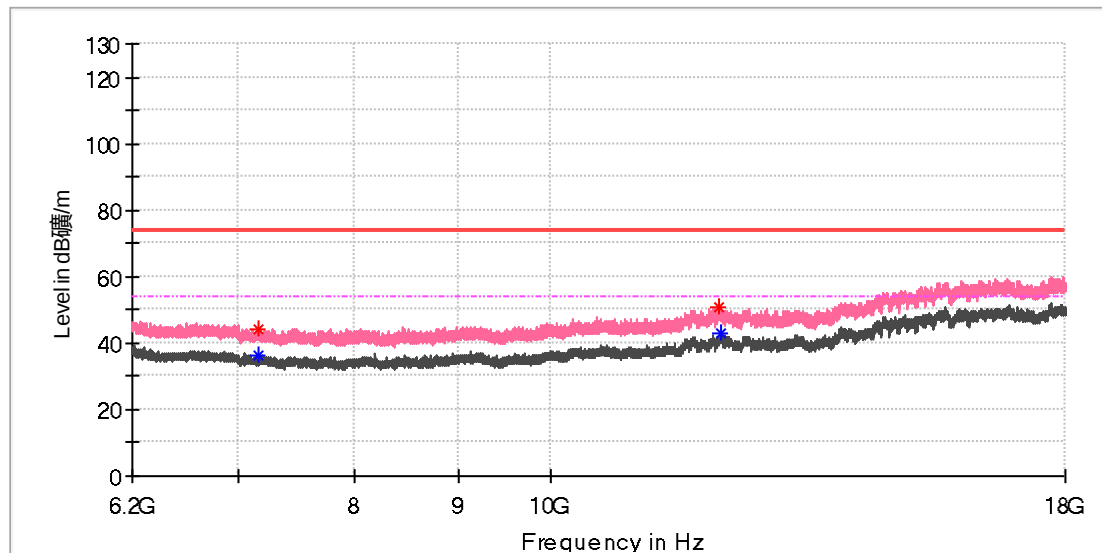
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7206.441667	---	37.92	54.00	16.08	150.0	H	186.0	8.8
7223.650000	43.80	---	74.00	30.20	150.0	H	286.0	8.7
11743.050000	---	42.29	54.00	11.71	150.0	H	347.0	15.1
11756.816667	50.34	---	74.00	23.66	150.0	H	309.0	15.4

Final_Result

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

EUT Information

EUT Name: 2.1 Soundbar with wireless Subwoofer
Model: NS-SB21
Test Mode: BR_DH5_Low channel
Order No/Sample No: 168543945/A003948759-004
Test Voltage: AC 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

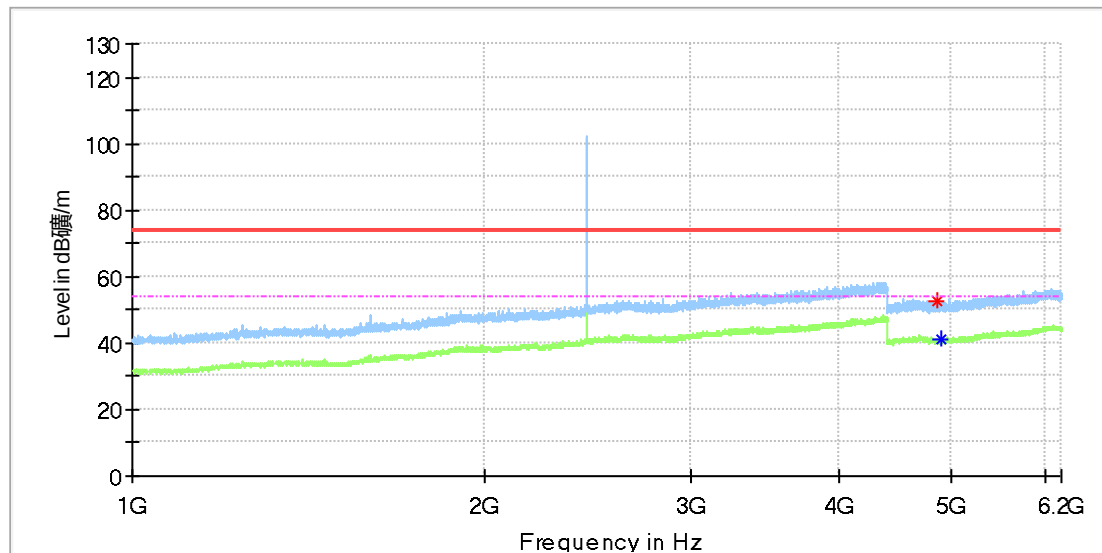
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7161.700000	44.35	---	74.00	29.65	150.0	V	29.0	8.7
7161.700000	---	36.54	54.00	17.46	150.0	V	29.0	8.7
12131.466667	50.49	---	74.00	23.51	150.0	V	258.0	16.2
12144.741667	---	42.92	54.00	11.08	150.0	V	218.0	16.6

Final_Result

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

EUT Information

EUT Name: 2.1 Soundbar with wireless Subwoofer
Model: NS-SB21
Test Mode: BR_DH5_Mid channel
Order No/Sample No: 168543945/A003948759-004
Test Voltage: AC 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

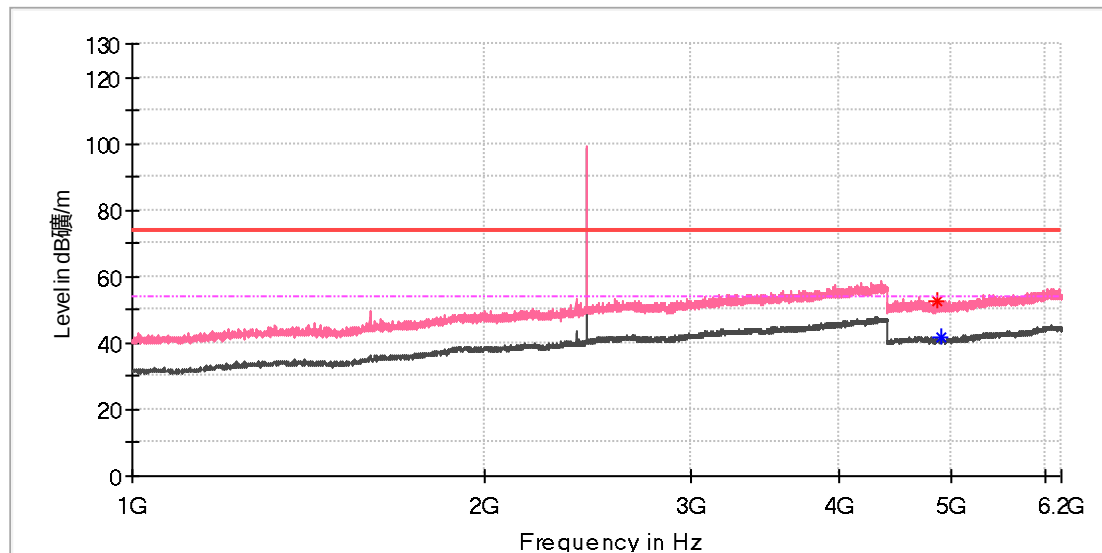
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4864.000000	52.50	---	74.00	21.50	150.0	H	62.0	13.3
4899.500000	---	41.29	54.00	12.71	150.0	H	3.0	13.3

Final_Result

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

EUT Information

EUT Name: 2.1 Soundbar with wireless Subwoofer
Model: NS-SB21
Test Mode: BR_DH5_Mid channel
Order No/Sample No: 168543945/A003948759-004
Test Voltage: AC 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

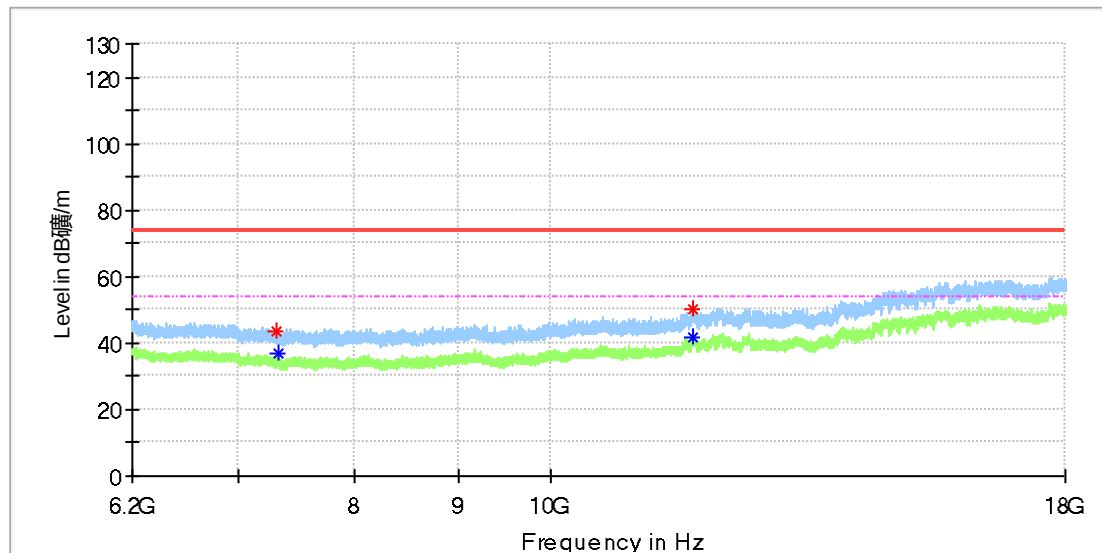
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4865.500000	52.33	---	74.00	21.67	150.0	V	2.0	13.3
4903.500000	---	41.58	54.00	12.42	150.0	V	175.0	13.3

Final_Result

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

EUT Information

EUT Name: 2.1 Soundbar with wireless Subwoofer
Model: NS-SB21
Test Mode: BR_DH5_Mid channel
Order No/Sample No: 168543945/A003948759-004
Test Voltage: AC 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

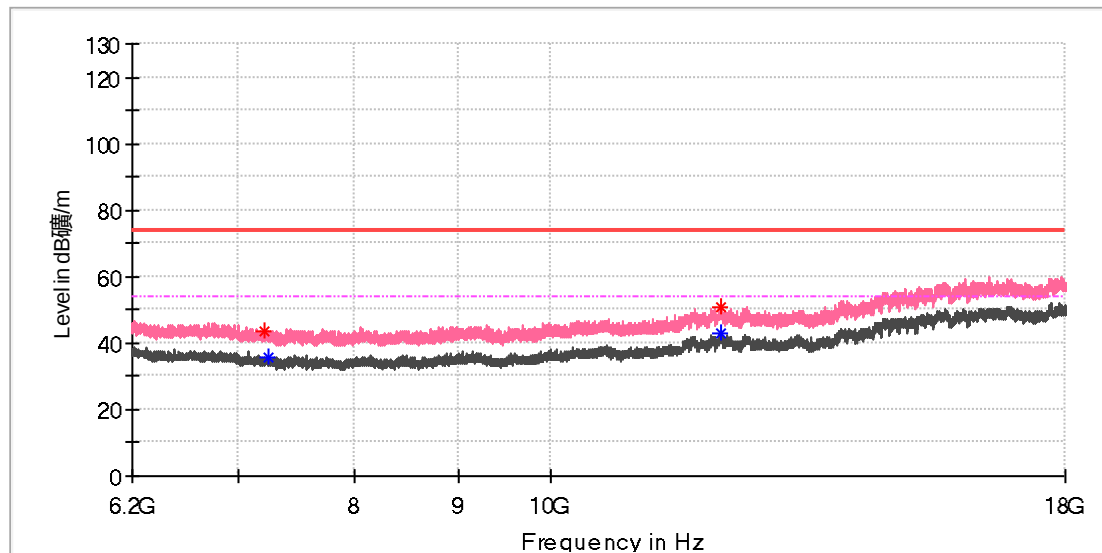
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7305.266667	43.47	---	74.00	30.53	150.0	H	86.0	8.3
7323.458333	---	36.71	54.00	17.29	150.0	H	186.0	8.2
11752.883333	50.49	---	74.00	23.51	150.0	H	312.0	15.5
11772.058333	---	41.51	54.00	12.49	150.0	H	152.0	15.2

Final_Result

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

EUT Information

EUT Name: 2.1 Soundbar with wireless Subwoofer
Model: NS-SB21
Test Mode: BR_DH5_Mid channel
Order No/Sample No: 168543945/A003948759-004
Test Voltage: AC 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

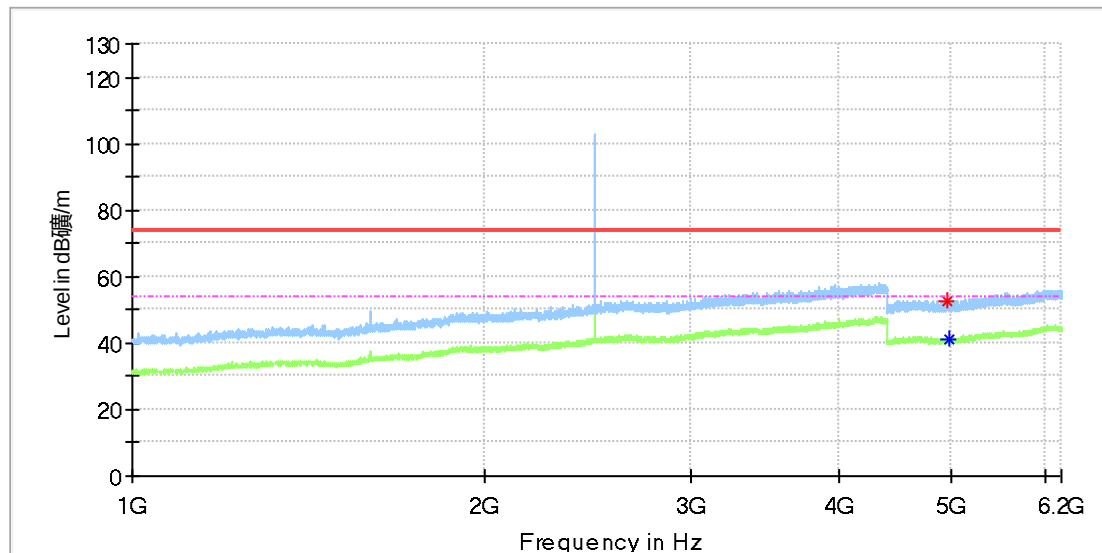
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7216.275000	43.81	---	74.00	30.19	150.0	V	270.0	8.7
7235.941667	---	35.51	54.00	18.49	150.0	V	346.0	8.6
12143.758333	---	42.79	54.00	11.21	150.0	V	312.0	16.6
12148.675000	51.09	---	74.00	22.91	150.0	V	312.0	16.7

Final_Result

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

EUT Information

EUT Name: 2.1 Soundbar with wireless Subwoofer
Model: NS-SB21
Test Mode: BR_DH5_High channel
Order No/Sample No: 168543945/A003948759-004
Test Voltage: AC 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

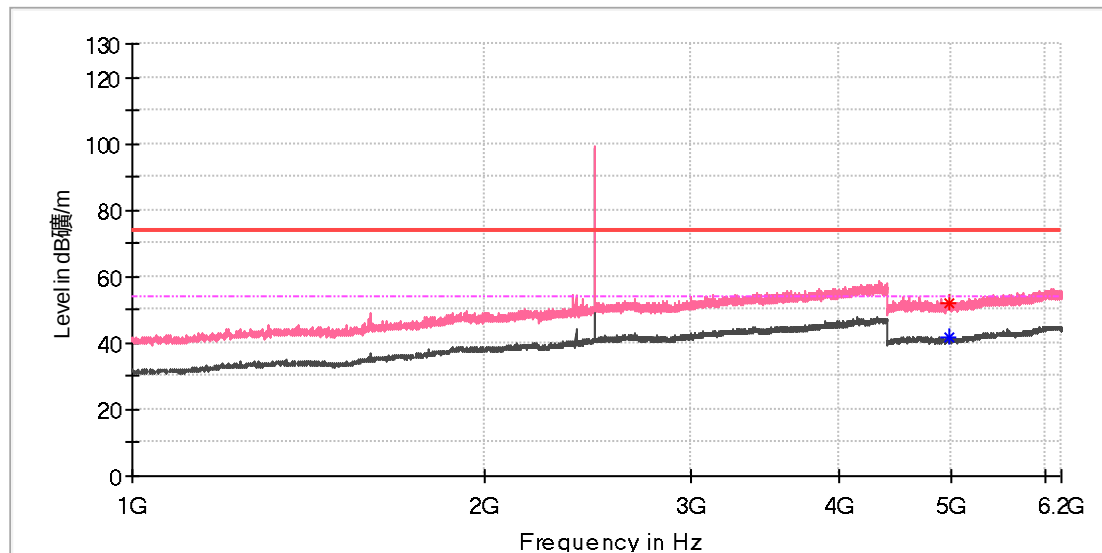
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4960.000000	52.86	---	74.00	21.14	150.0	H	296.0	13.3
4965.500000	---	41.39	54.00	12.61	150.0	H	58.0	13.3

Final_Result

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

EUT Information

EUT Name: 2.1 Soundbar with wireless Subwoofer
Model: NS-SB21
Test Mode: BR_DH5_High channel
Order No/Sample No: 168543945/A003948759-004
Test Voltage: AC 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

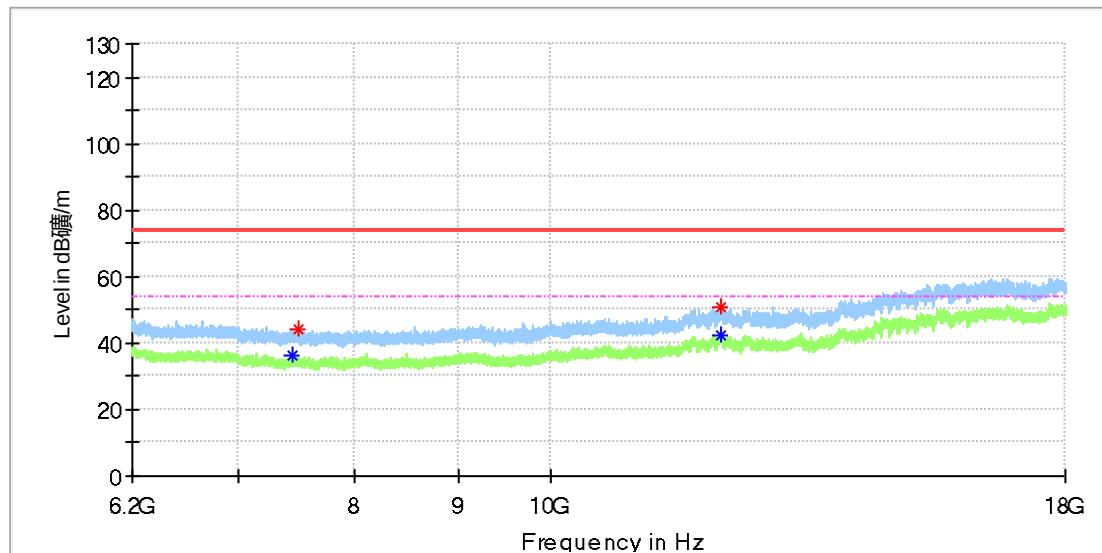
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4971.500000	51.94	---	74.00	22.06	150.0	V	282.0	13.3
4974.500000	---	41.62	54.00	12.38	150.0	V	213.0	13.3

Final_Result

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

EUT Information

EUT Name: 2.1 Soundbar with wireless Subwoofer
Model: NS-SB21
Test Mode: BR_DH5_High channel
Order No/Sample No: 168543945/A003948759-004
Test Voltage: AC 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

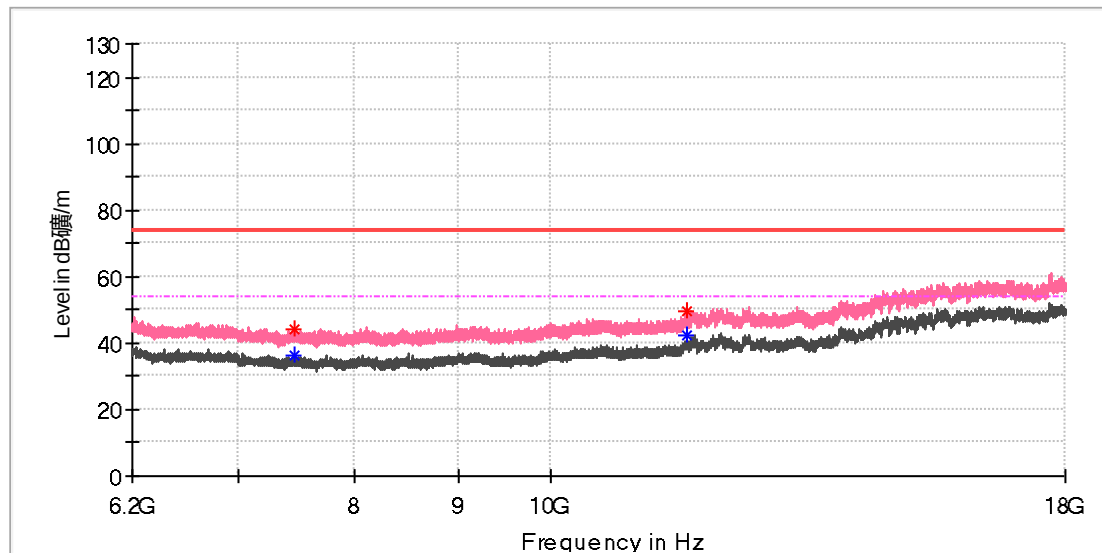
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7439.491667	---	36.45	54.00	17.55	150.0	H	19.0	8.4
7490.133333	44.06	---	74.00	29.94	150.0	H	91.0	8.7
12136.383333	50.91	---	74.00	23.09	150.0	H	261.0	16.4
12149.658333	---	42.55	54.00	11.45	150.0	H	1.0	16.7

Final_Result

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

EUT Information

EUT Name: 2.1 Soundbar with wireless Subwoofer
Model: NS-SB21
Test Mode: BR_DH5_High channel
Order No/Sample No: 168543945/A003948759-004
Test Voltage: AC 120V/60Hz
Remark: Temp 24 Humi:50%
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)
7458.175000	---	36.49	54.00	17.51	150.0	V	249.0	8.5
7461.125000	44.10	---	74.00	29.90	150.0	V	93.0	8.5
11672.250000	49.87	---	74.00	24.13	150.0	V	33.0	15.0
11672.250000	---	42.44	54.00	11.56	150.0	V	33.0	15.0

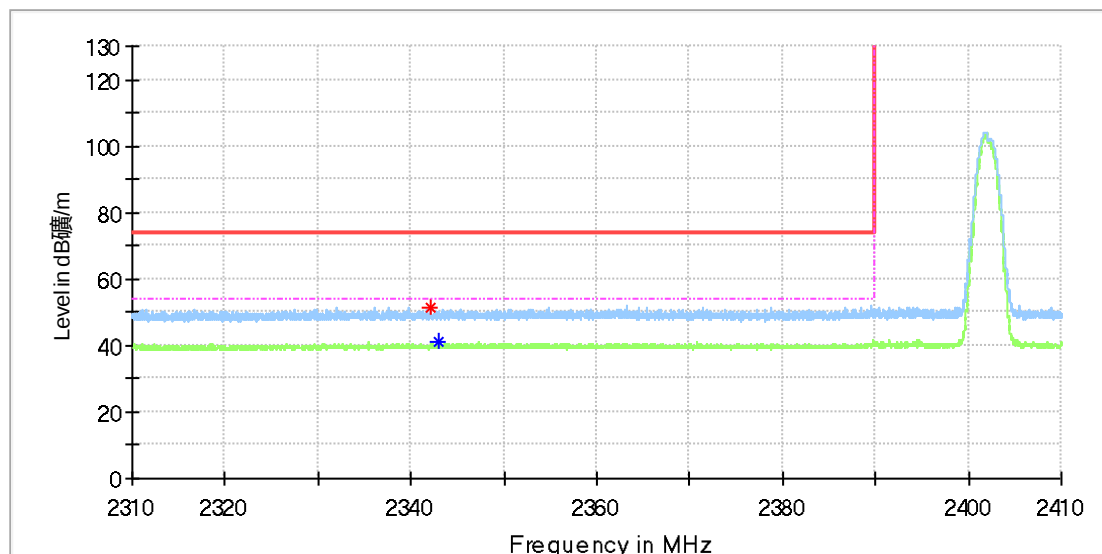
Final_Result

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

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

EUT Information

EUT Name:	2.1 Soundbar with wireless Subwoofer
Model:	NS-SB21
Test Mode:	BR_DH5_Low channel
Order No/Sample No:	168543945/A003948759-004
Test Voltage:	AC 120V/60Hz
Remark:	Temp 24 Humi:50%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

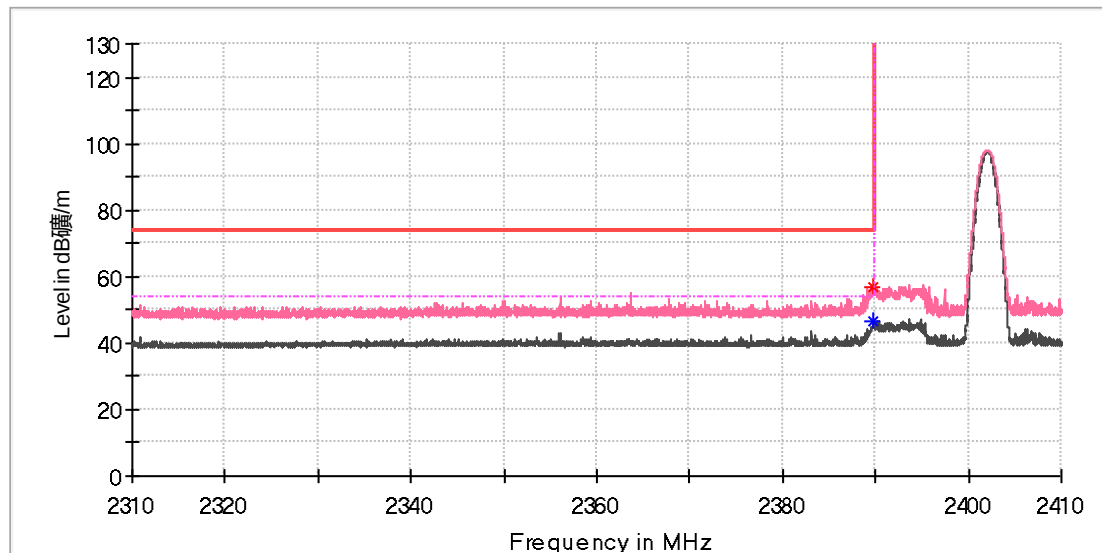
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2342.102941	51.34	---	74.00	22.66	150.0	H	38.0	8.4
2343.058824	---	40.84	54.00	13.16	150.0	H	6.0	8.4

Final Result

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

EUT Information

EUT Name: 2.1 Soundbar with wireless Subwoofer
Model: NS-SB21
Test Mode: BR_DH5_Low channel
Order No/Sample No: 168543945/A003948759-004
Test Voltage: AC 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

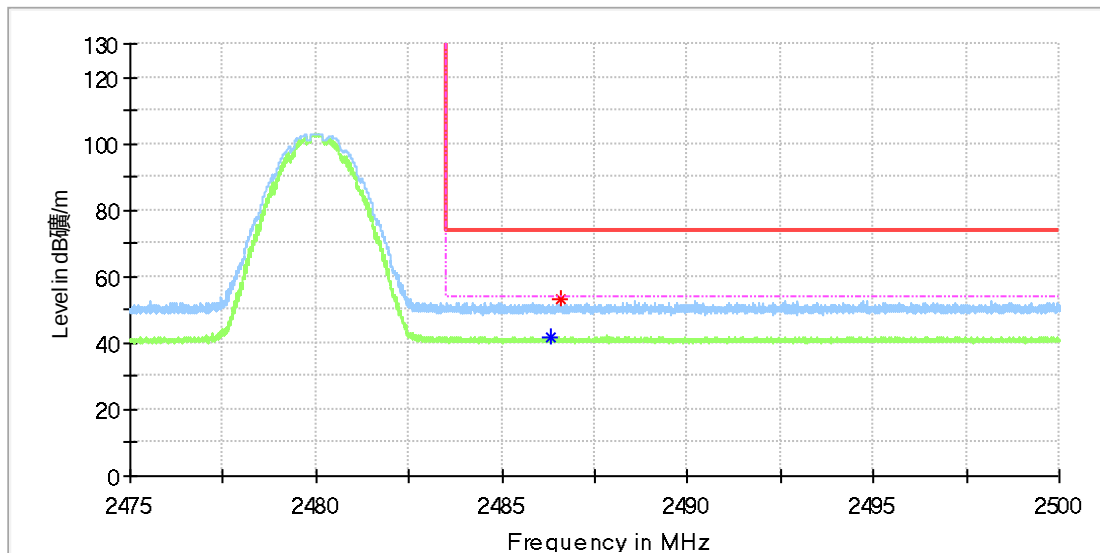
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2389.750000	---	46.28	54.00	7.72	150.0	V	261.0	8.5
2389.779412	56.84	---	74.00	17.16	150.0	V	261.0	8.5

Final_Result

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

EUT Information

EUT Name: 2.1 Soundbar with wireless Subwoofer
Model: NS-SB21
Test Mode: BR_DH5_High channel
Order No/Sample No: 168543945/A003948759-004
Test Voltage: AC 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

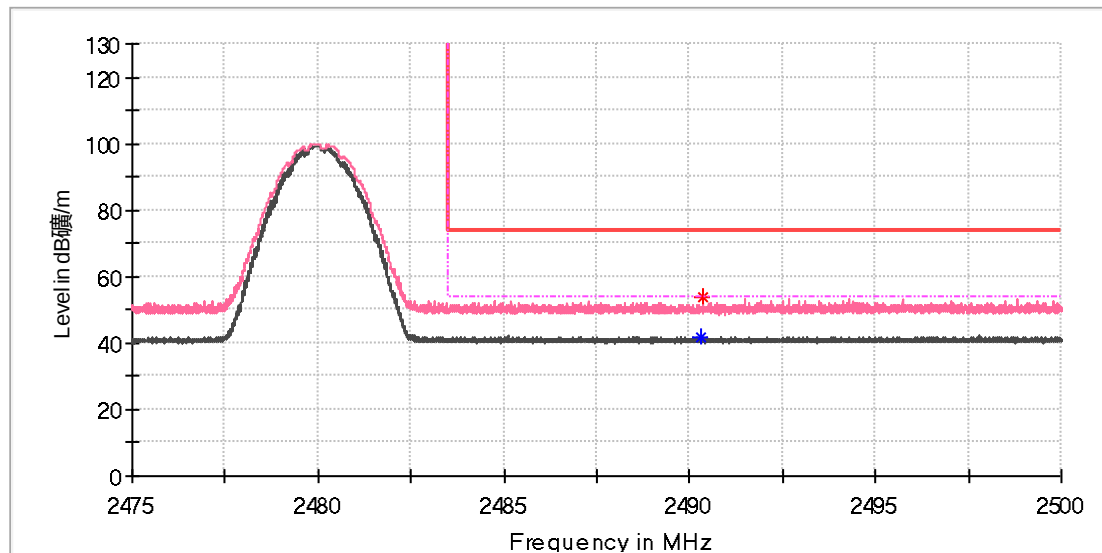
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2486.319853	---	41.92	54.00	12.08	150.0	H	48.0	9.0
2486.577206	53.28	---	74.00	20.72	150.0	H	7.0	9.0

Final_Result

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

EUT Information

EUT Name: 2.1 Soundbar with wireless Subwoofer
Model: NS-SB21
Test Mode: BR_DH5_High channel
Order No/Sample No: 168543945/A003948759-004
Test Voltage: AC 120V/60Hz
Remark: Temp 24 Humi:50%
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)
2490.327206	---	41.78	54.00	12.22	150.0	V	224.0	9.0
2490.341912	54.08	---	74.00	19.92	150.0	V	244.0	9.0

Final_Result

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

Appendix B: Test Results of Bluetooth LE

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Appendix B.1: Test Results of 6dB Bandwidth

Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.644	2401.656	2402.300	0.5	PASS
		2440	0.652	2439.656	2440.308	0.5	PASS
		2480	0.660	2479.652	2480.312	0.5	PASS
BLE_2M	Ant1	2402	1.136	2401.408	2402.544	0.5	PASS
		2440	1.152	2439.408	2440.560	0.5	PASS
		2480	1.116	2479.440	2480.556	0.5	PASS

Test Graphs

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480



BLE 2M Ant1 2402



BLE 2M Ant1 2440



BLE 2M Ant1 2480

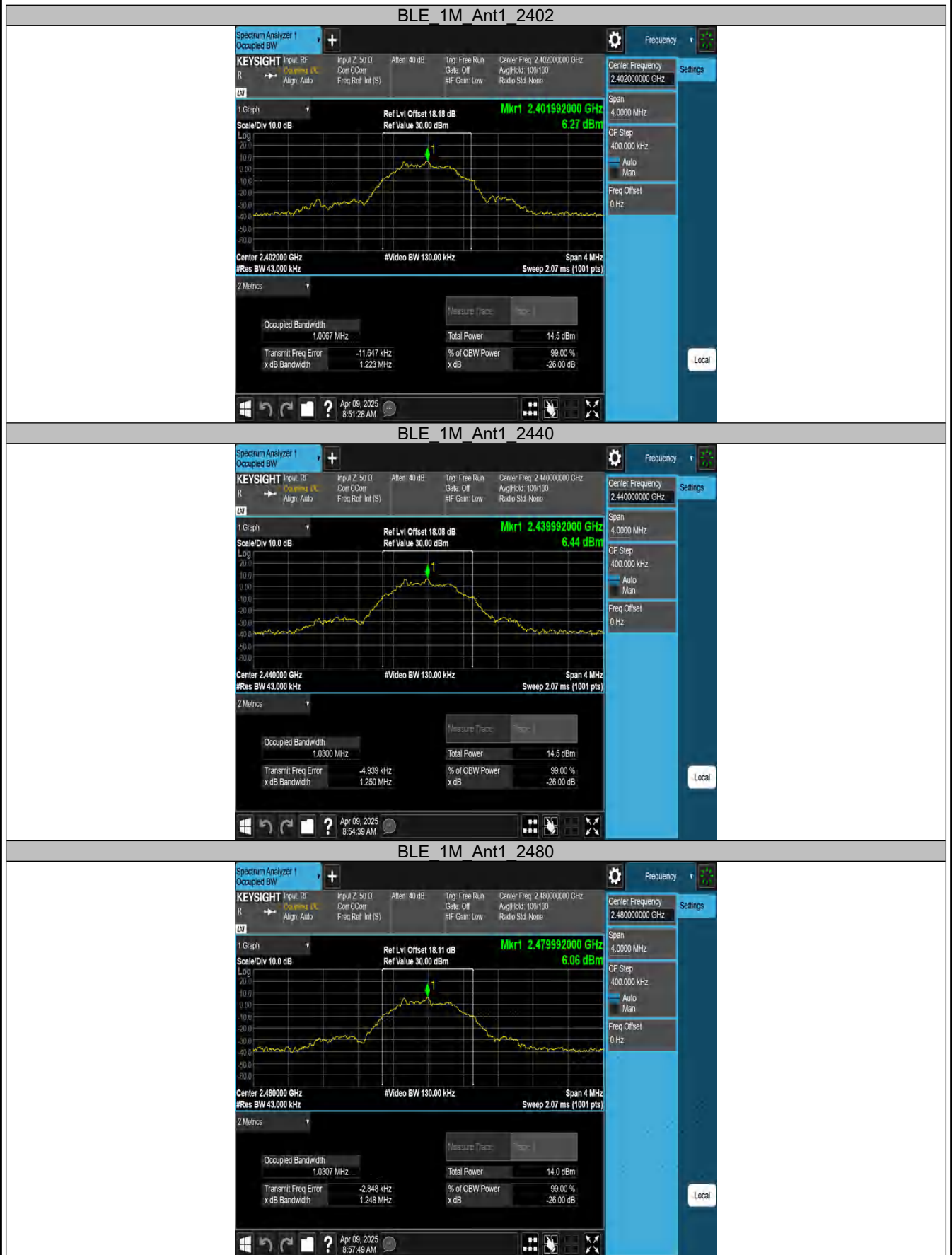


Appendix B.2: Test Results of 99% Bandwidth

Test Result

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0067	2401.4850	2402.4917	---	PASS
		2440	1.0300	2439.4801	2440.5101	---	PASS
		2480	1.0307	2479.4818	2480.5125	---	PASS
BLE_2M	Ant1	2402	2.0022	2401.0071	2403.0093	---	PASS
		2440	2.0263	2438.9968	2441.0231	---	PASS
		2480	2.0309	2478.9963	2481.0272	---	PASS

Test Graphs



BLE 2M Ant1 2402



BLE 2M Ant1 2440



BLE 2M Ant1 2480



Appendix B.3: Test Results of Conducted Power Spectral Density

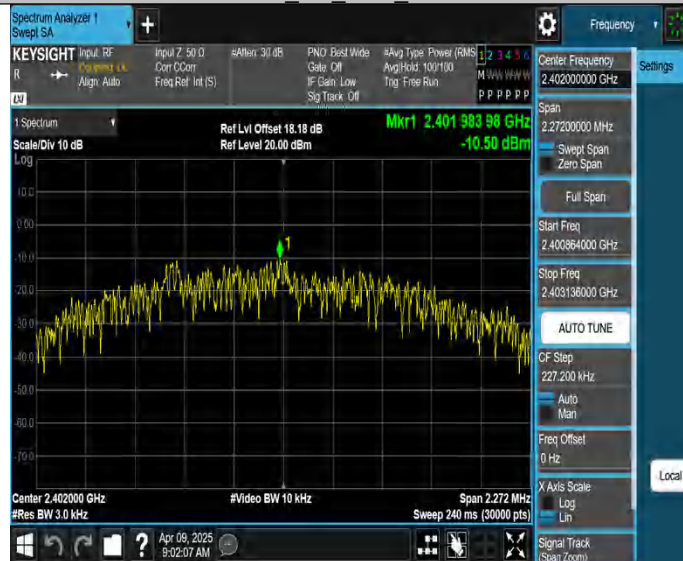
Test Result

TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-7.89	≤8.00	PASS
		2440	-7.51	≤8.00	PASS
		2480	-7.98	≤8.00	PASS
BLE_2M	Ant1	2402	-10.50	≤8.00	PASS
		2440	-10.30	≤8.00	PASS
		2480	-10.84	≤8.00	PASS

Test Graphs



BLE 2M Ant1 2402



BLE 2M Ant1 2440



BLE 2M Ant1 2480



Appendix B.4: Test Results of Band Edge Measurements

Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	7.75	-44.17	≤-12.25	PASS
		High	2480	7.16	-42.92	≤-12.84	PASS
BLE_2M	Ant1	Low	2402	7.77	-25.08	≤-12.23	PASS
		High	2480	7.20	-45.40	≤-12.80	PASS

Test Graphs





Appendix B.5: Test Results of Conducted Spurious Emission

Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	7.47	7.47	---	PASS
			30~1000	7.47	-41.92	≤-12.53	PASS
			1000~26500	7.47	-32.89	≤-12.53	PASS
		2440	Reference	7.39	7.39	---	PASS
			30~1000	7.39	-42.01	≤-12.61	PASS
			1000~26500	7.39	-32.44	≤-12.61	PASS
		2480	Reference	6.98	6.98	---	PASS
			30~1000	6.98	-42.05	≤-13.02	PASS
			1000~26500	6.98	-32.67	≤-13.02	PASS
BLE_2M	Ant1	2402	Reference	7.49	7.49	---	PASS
			30~1000	7.49	-40.54	≤-12.51	PASS
			1000~26500	7.49	-33.08	≤-12.51	PASS
		2440	Reference	7.44	7.44	---	PASS
			30~1000	7.44	-42.28	≤-12.56	PASS
			1000~26500	7.44	-32.82	≤-12.56	PASS
		2480	Reference	7.03	7.03	---	PASS
			30~1000	7.03	-41.25	≤-12.97	PASS
			1000~26500	7.03	-32.76	≤-12.97	PASS

Test Graphs

BLE 1M_Ant1_2402_0~Reference



BLE 1M_Ant1_2402_30~1000



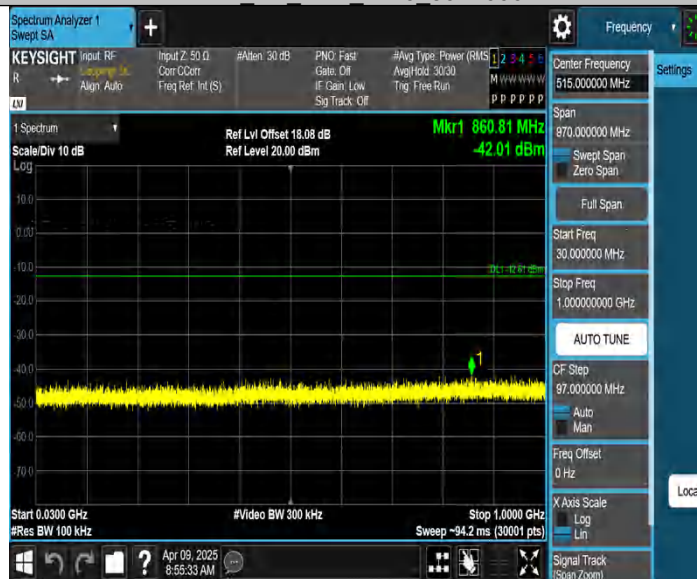
BLE 1M_Ant1_2402_1000~26500



BLE_1M_Ant1_2440_0~Reference



BLE_1M_Ant1_2440_30~1000



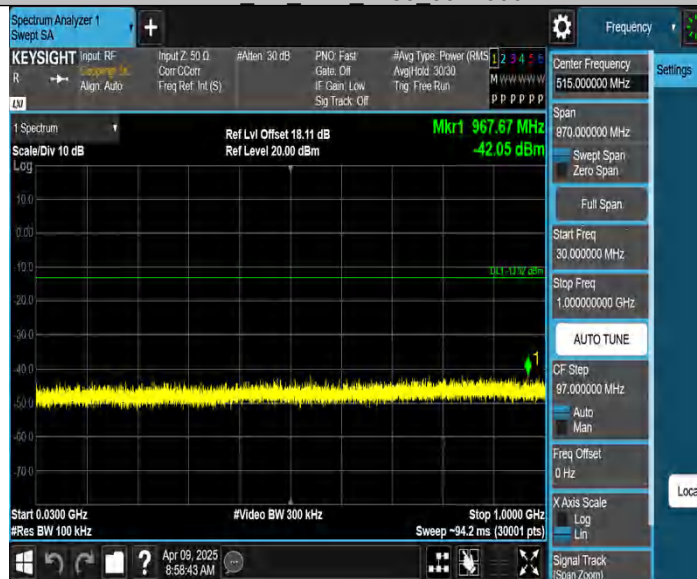
BLE_1M_Ant1_2440_1000~26500



BLE_1M_Ant1_2480_0~Reference



BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500



BLE 2M Ant1 2402 0~Reference



BLE 2M Ant1 2402 30~1000



BLE 2M Ant1 2402 1000~26500



BLE 2M Ant1 2440 0~Reference



BLE 2M Ant1 2440 30~1000



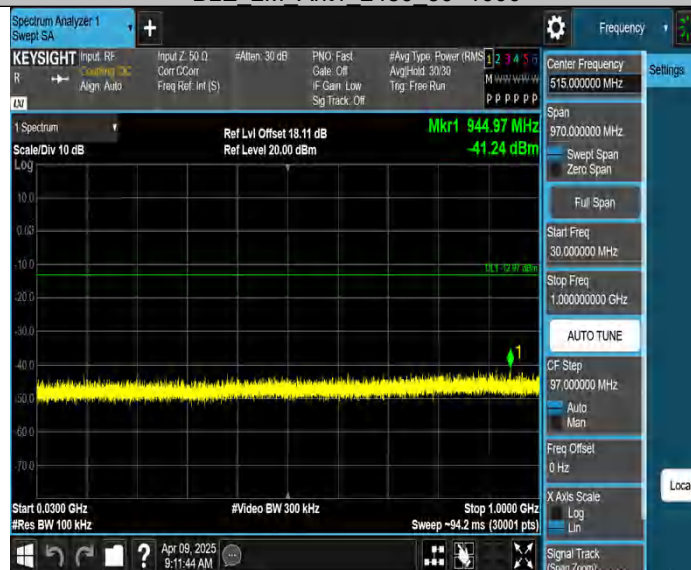
BLE 2M Ant1 2440 1000~26500



BLE 2M Ant1 2480 0~Reference



BLE 2M Ant1 2480 30~1000



BLE 2M Ant1 2480 1000~26500



Appendix B.6: Test Results of Radiated Spurious Emissions

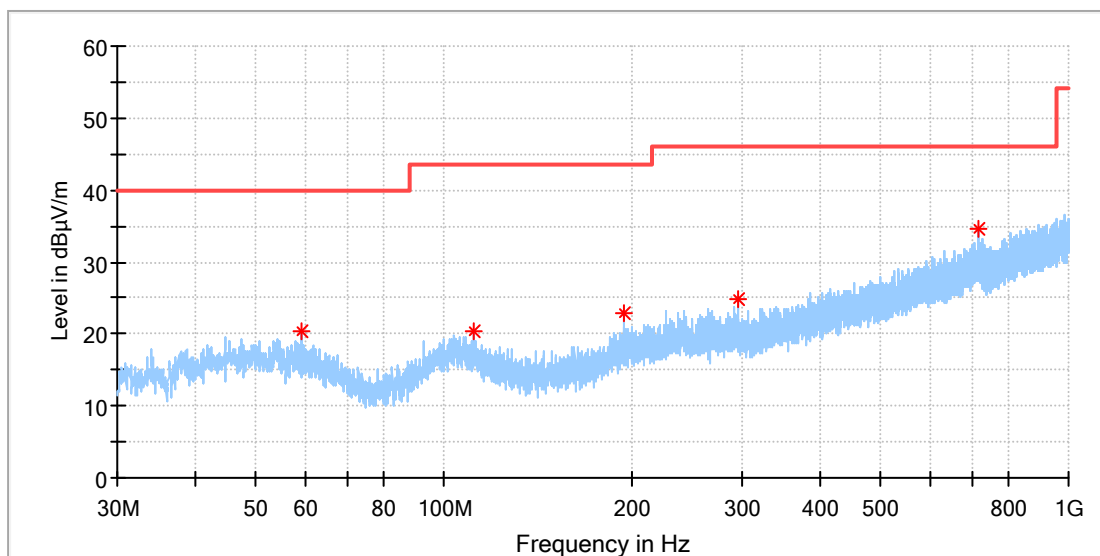
Note:

- 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:	2.1 Soundbar with wireless Subwoofer
Model:	NS-SB21
Test Mode:	BLE_1M_Mid channel
Order No/Sample No:	168543945/A003948759-004
Test Voltage:	AC 120V/60Hz
Remark:	Temp 24 Humi:50%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

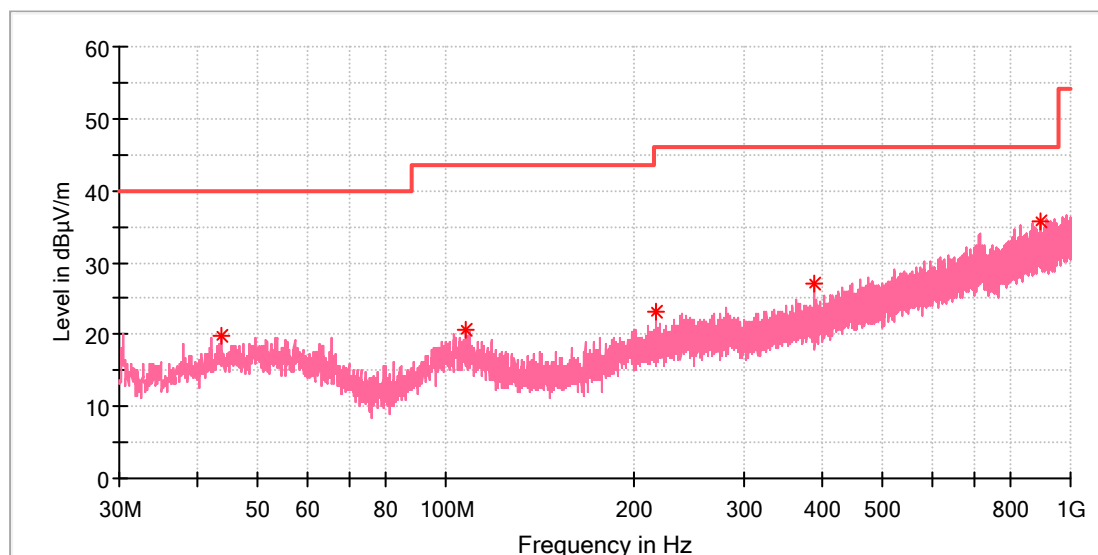
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
59.323846	20.34	40.00	19.66	100.0	H	266.0	-19.0
111.703846	20.49	43.50	23.01	100.0	H	5.0	-19.4
194.452308	22.77	43.50	20.73	100.0	H	314.0	-19.3
294.996539	24.84	46.00	21.16	100.0	H	101.0	-16.4
717.431539	34.48	46.00	11.52	100.0	H	22.0	-7.6

Final Result

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

EUT Information

EUT Name: 2.1 Soundbar with wireless Subwoofer
Model: NS-SB21
Test Mode: BLE_1M_Mid channel
Order No/Sample No: 168543945/A003948759-004
Test Voltage: AC 120V/60Hz
Remark: Temp 24 Humi:50%
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)
43.803846	19.68	40.00	20.32	100.0	V	286.0	-19.2
107.898462	20.61	43.50	22.89	100.0	V	280.0	-19.1
216.725000	23.19	46.00	22.81	100.0	V	0.0	-18.7
388.489615	27.17	46.00	18.83	100.0	V	91.0	-14.0
897.478462	35.72	46.00	10.28	100.0	V	302.0	-4.8

Final Result

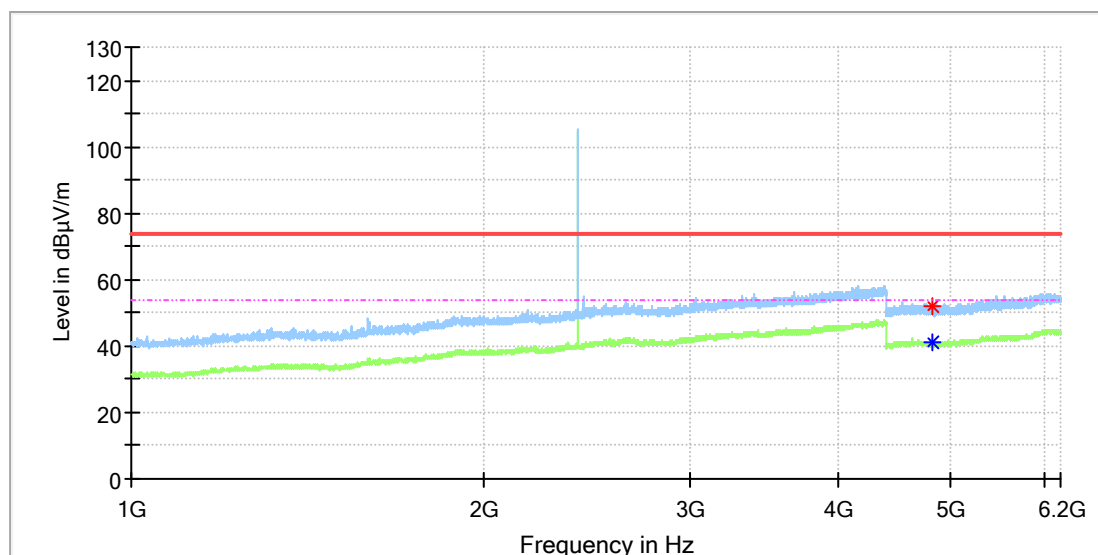
Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

1GHz - 18GHz

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

EUT Information

EUT Name:	2.1 Soundbar with wireless Subwoofer
Model:	NS-SB21
Test Mode:	BLE_1M_Low channel
Order No/Sample No:	168543945/A003948759-004
Test Voltage:	AC 120V/60Hz
Remark:	Temp 24 Humi:50%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

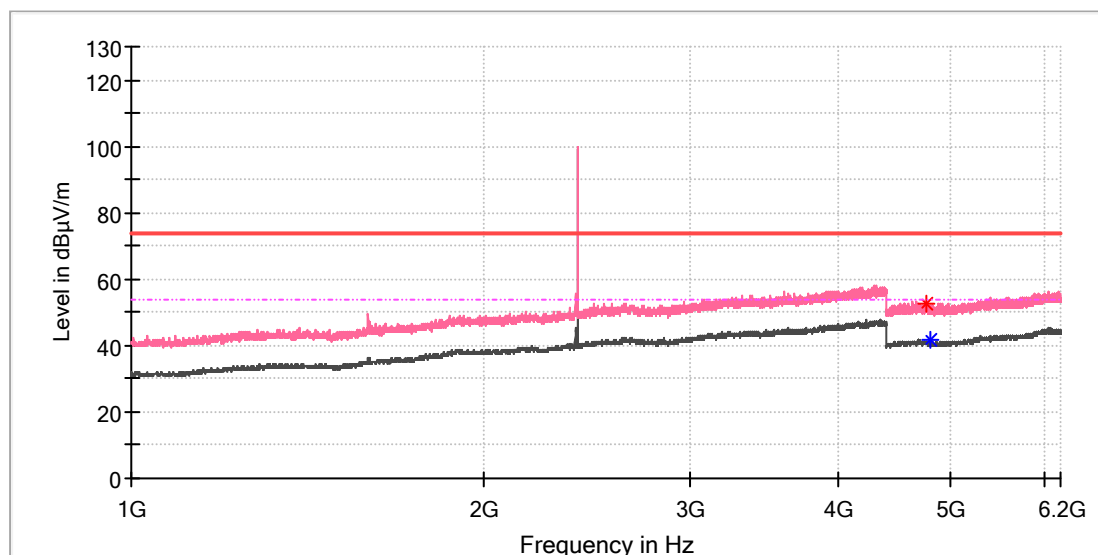
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4815.500000	---	41.09	54.00	12.91	150.0	H	27.0	13.3
4818.000000	51.99	---	74.00	22.01	150.0	H	319.0	13.3

Final_Result

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

EUT Information

EUT Name: 2.1 Soundbar with wireless Subwoofer
Model: NS-SB21
Test Mode: BLE_1M_Low channel
Order No/Sample No: 168543945/A003948759-004
Test Voltage: AC 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

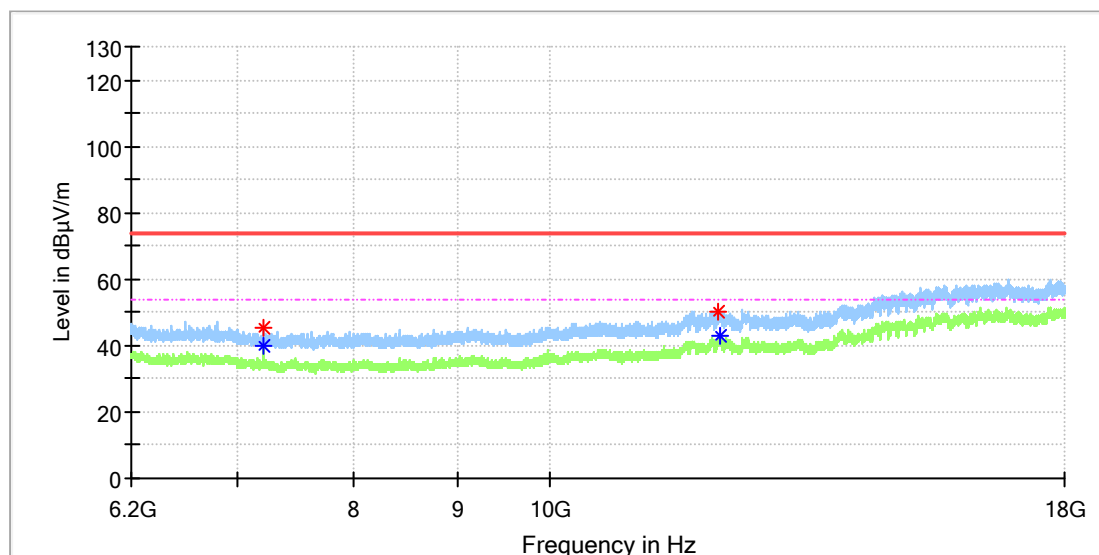
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4771.000000	52.56	---	74.00	21.44	150.0	V	346.0	13.3
4802.500000	---	41.43	54.00	12.57	150.0	V	322.0	13.3

Final Result

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

EUT Information

EUT Name: 2.1 Soundbar with wireless Subwoofer
Model: NS-SB21
Test Mode: BLE_1M_Low channel
Order No/Sample No: 168543945/A003948759-004
Test Voltage: AC 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

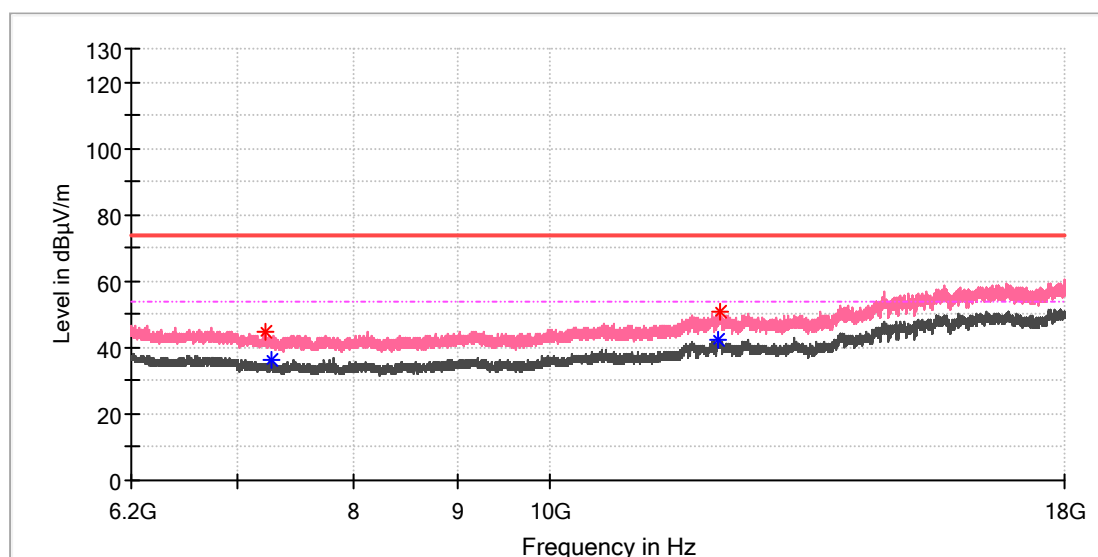
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7205.458333	45.62	---	74.00	28.38	150.0	H	170.0	8.8
7205.950000	---	39.88	54.00	14.12	150.0	H	0.0	8.8
12123.108333	50.27	---	74.00	23.73	150.0	H	47.0	16.0
12146.708333	---	42.68	54.00	11.32	150.0	H	192.0	16.6

Final_Result

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

EUT Information

EUT Name: 2.1 Soundbar with wireless Subwoofer
Model: NS-SB21
Test Mode: BLE_1M_Low channel
Order No/Sample No: 168543945/A003948759-004
Test Voltage: AC 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

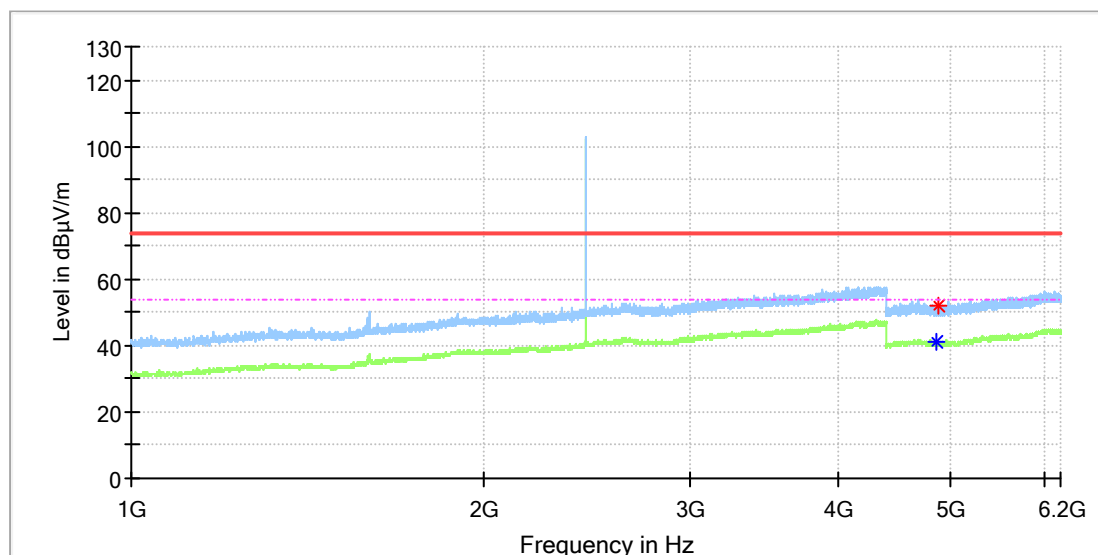
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7222.666667	44.52	---	74.00	29.48	150.0	V	146.0	8.7
7272.325000	---	36.09	54.00	17.91	150.0	V	0.0	8.4
12125.075000	---	42.26	54.00	11.74	150.0	V	340.0	16.1
12138.350000	50.88	---	74.00	23.12	150.0	V	272.0	16.4

Final Result

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

EUT Information

EUT Name: 2.1 Soundbar with wireless Subwoofer
Model: NS-SB21
Test Mode: BLE_1M_Mid channel
Order No/Sample No: 168543945/A003948759-004
Test Voltage: AC 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

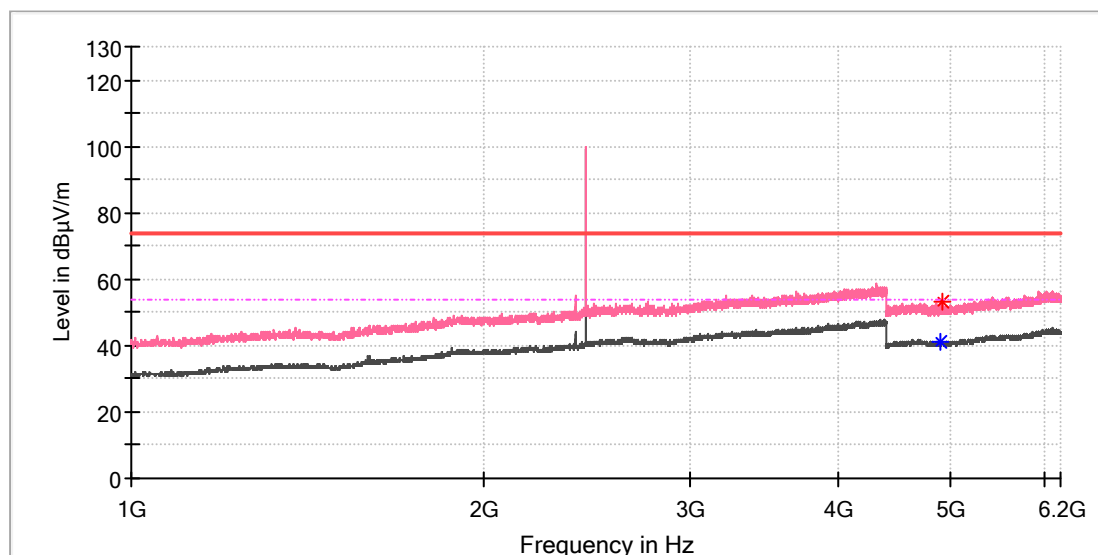
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4868.000000	---	40.83	54.00	13.18	150.0	H	221.0	13.3
4873.500000	51.96	---	74.00	22.04	150.0	H	28.0	13.3

Final Result

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

EUT Information

EUT Name: 2.1 Soundbar with wireless Subwoofer
Model: NS-SB21
Test Mode: BLE_1M_Mid channel
Order No/Sample No: 168543945/A003948759-004
Test Voltage: AC 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

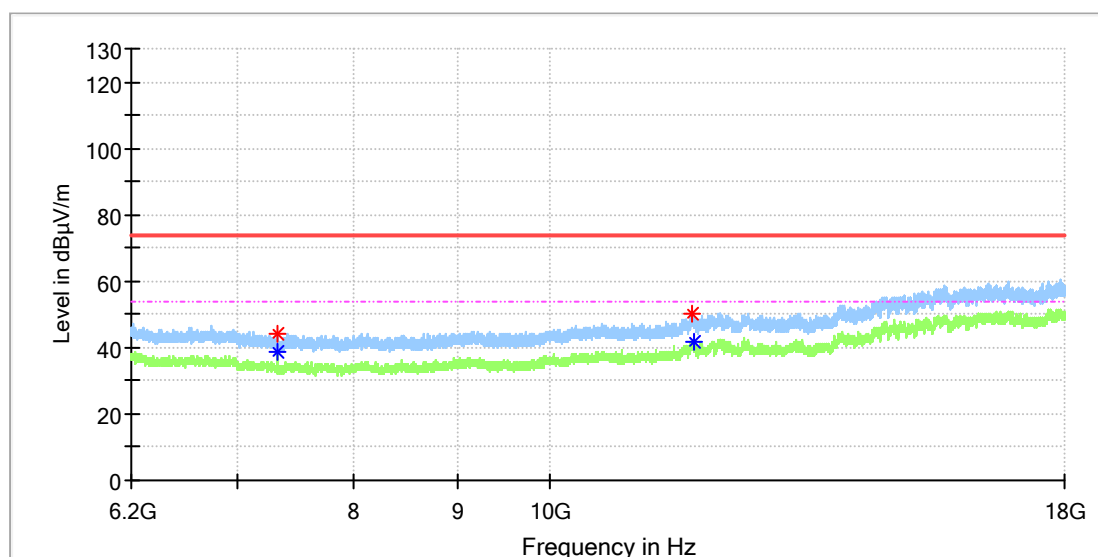
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4902.000000	---	41.00	54.00	13.00	150.0	V	36.0	13.3
4913.000000	53.38	---	74.00	20.62	150.0	V	183.0	13.3

Final Result

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

EUT Information

EUT Name: 2.1 Soundbar with wireless Subwoofer
Model: NS-SB21
Test Mode: BLE_1M_Mid channel
Order No/Sample No: 168543945/A003948759-004
Test Voltage: AC 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

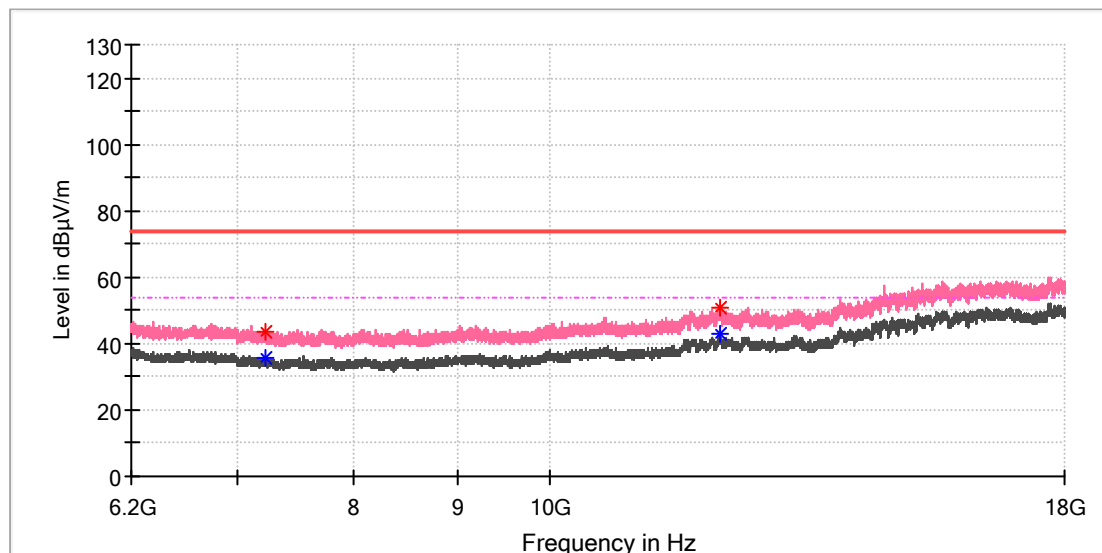
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7319.525000	44.43	---	74.00	29.57	150.0	H	163.0	8.2
7320.016667	---	38.70	54.00	15.30	150.0	H	0.0	8.2
11771.566667	50.11	---	74.00	23.89	150.0	H	239.0	15.2
11796.150000	---	41.92	54.00	12.08	150.0	H	328.0	14.9

Final_Result

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

EUT Information

EUT Name: 2.1 Soundbar with wireless Subwoofer
Model: NS-SB21
Test Mode: BLE_1M_Mid channel
Order No/Sample No: 168543945/A003948759-004
Test Voltage: AC 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

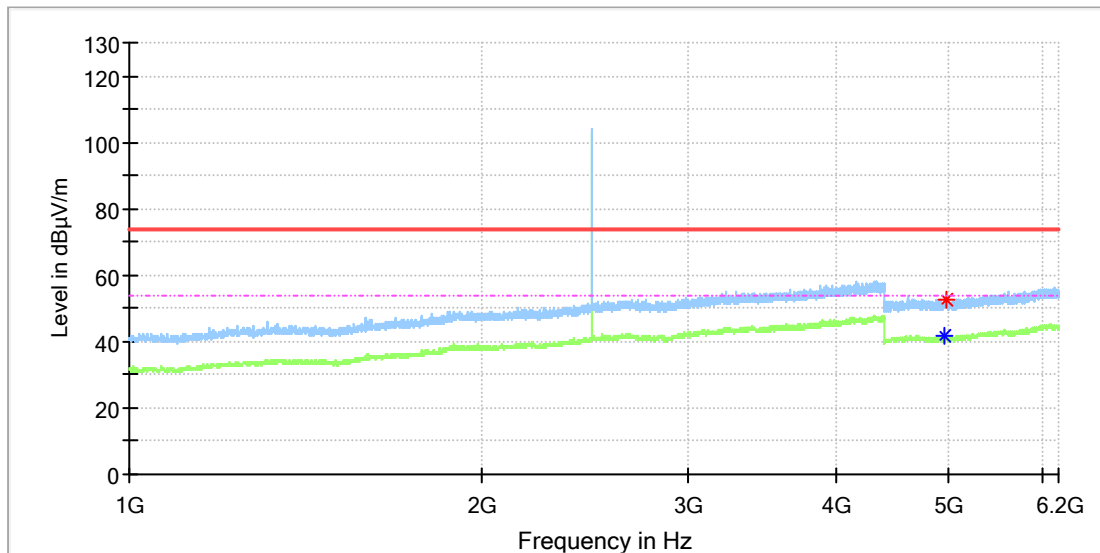
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7230.533333	---	35.78	54.00	18.22	150.0	V	4.0	8.6
7232.008333	43.83	---	74.00	30.17	150.0	V	198.0	8.6
12143.758333	---	42.95	54.00	11.05	150.0	V	0.0	16.6
12145.233333	50.78	---	74.00	23.22	150.0	V	37.0	16.6

Final Result

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

EUT Information

EUT Name: 2.1 Soundbar with wireless Subwoofer
Model: NS-SB21
Test Mode: BLE_1M_High channel
Order No/Sample No: 168543945/A003948759-004
Test Voltage: AC 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

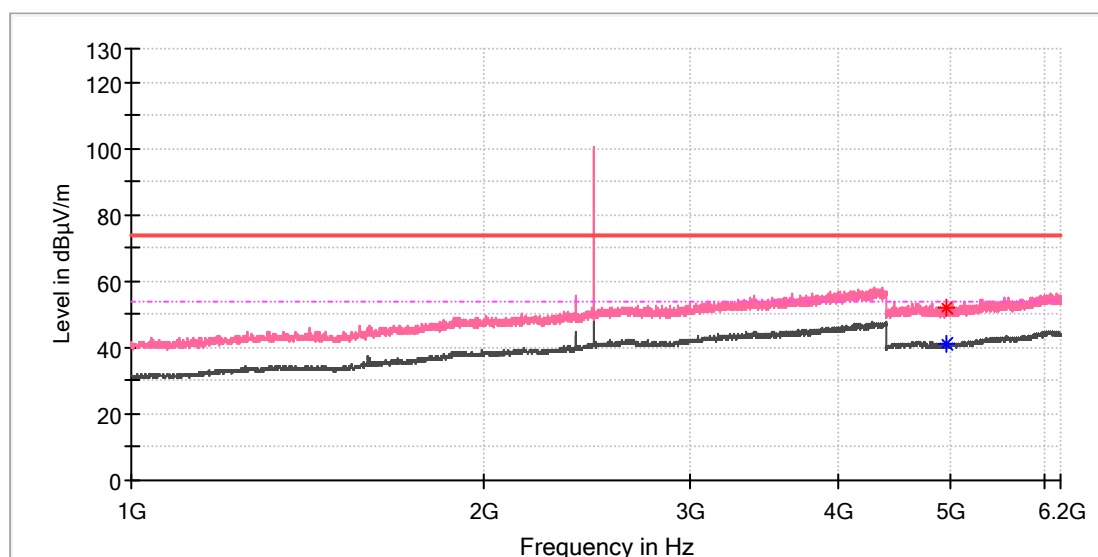
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4956.000000	---	41.47	54.00	12.53	150.0	H	357.0	13.3
4965.000000	52.76	---	74.00	21.24	150.0	H	298.0	13.3

Final Result

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

EUT Information

EUT Name: 2.1 Soundbar with wireless Subwoofer
Model: NS-SB21
Test Mode: BLE_1M_High channel
Order No/Sample No: 168543945/A003948759-004
Test Voltage: AC 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

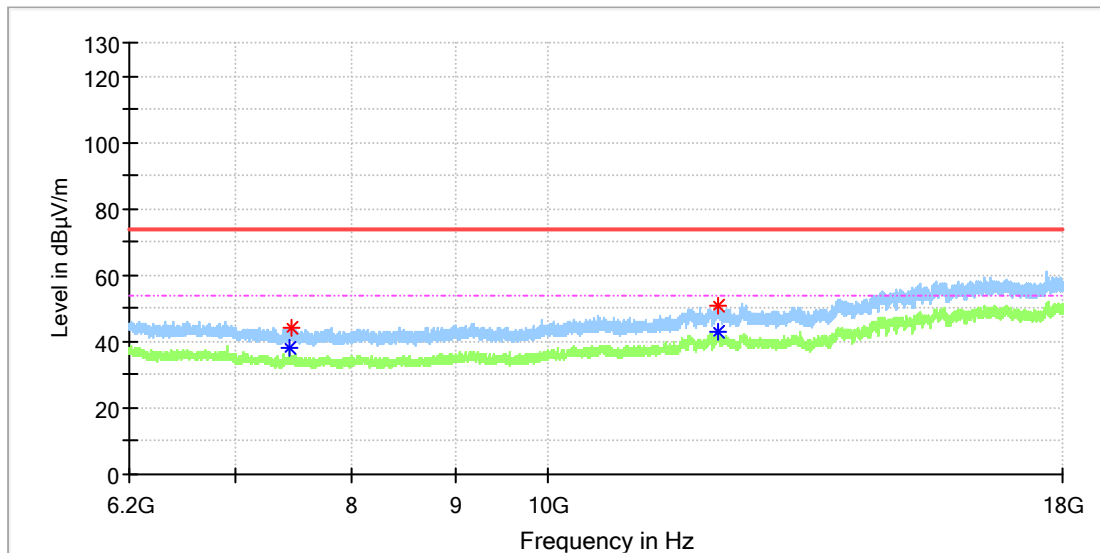
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4951.500000	---	41.28	54.00	12.72	150.0	V	226.0	13.3
4959.500000	52.06	---	74.00	21.94	150.0	V	326.0	13.3

Final Result

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

EUT Information

EUT Name: 2.1 Soundbar with wireless Subwoofer
Model: NS-SB21
Test Mode: BLE_1M_High channel
Order No/Sample No: 168543945/A003948759-004
Test Voltage: AC 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

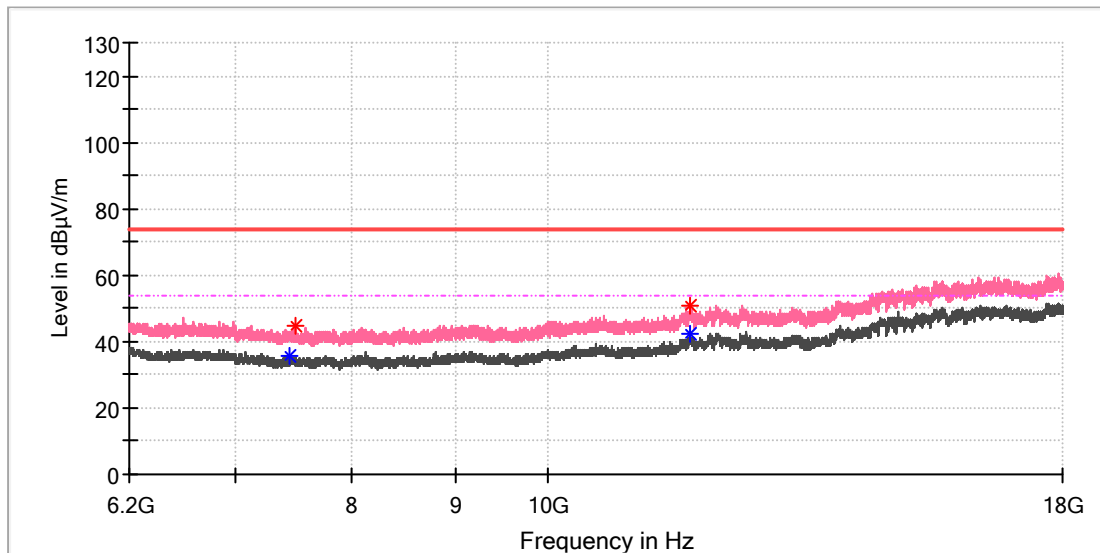
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7439.983333	---	37.93	54.00	16.07	150.0	H	0.0	8.4
7457.683333	44.30	---	74.00	29.70	150.0	H	228.0	8.5
12133.433333	50.73	---	74.00	23.27	150.0	H	195.0	16.3
12140.316667	---	42.64	54.00	11.36	150.0	H	358.0	16.5

Final_Result

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

EUT Information

EUT Name: 2.1 Soundbar with wireless Subwoofer
Model: NS-SB21
Test Mode: BLE_1M_High channel
Order No/Sample No: 168543945/A003948759-004
Test Voltage: AC 120V/60Hz
Remark: Temp 24 Humi:50%
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)
7441.950000	---	35.64	54.00	18.36	150.0	V	178.0	8.4
7502.916667	44.49	---	74.00	29.51	150.0	V	136.0	8.7
11753.375000	---	42.11	54.00	11.89	150.0	V	86.0	15.5
11764.683333	50.58	---	74.00	23.42	150.0	V	214.0	15.3

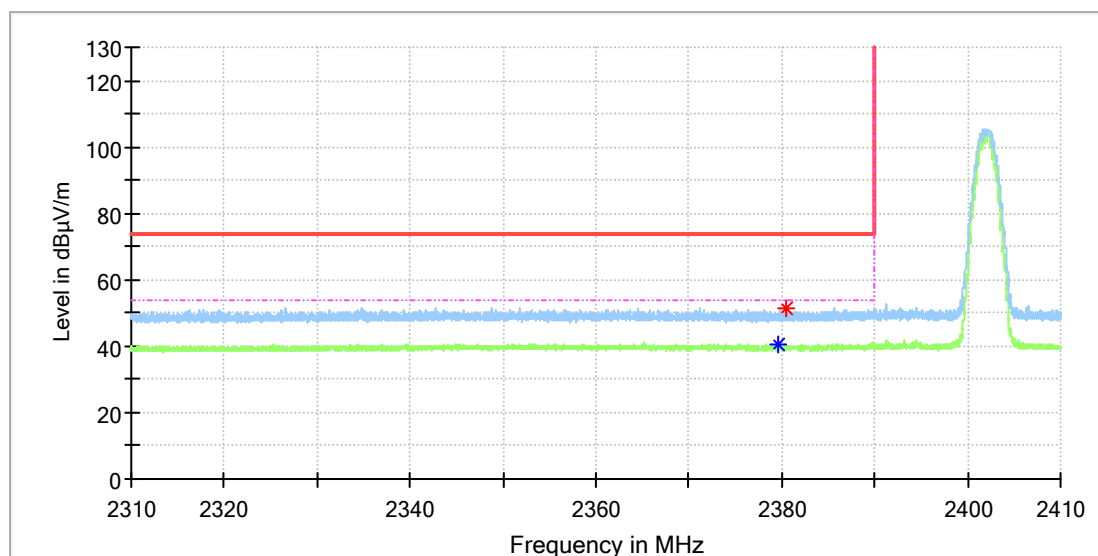
Final_Result

Frequency (MHz)	MaxPeak (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:	2.1 Soundbar with wireless Subwoofer
Model:	NS-SB21
Test Mode:	BLE_1M_Low channel
Order No/Sample No:	168543945/A003948759-004
Test Voltage:	AC 120V/60Hz
Remark:	Temp 24 Humi:50%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

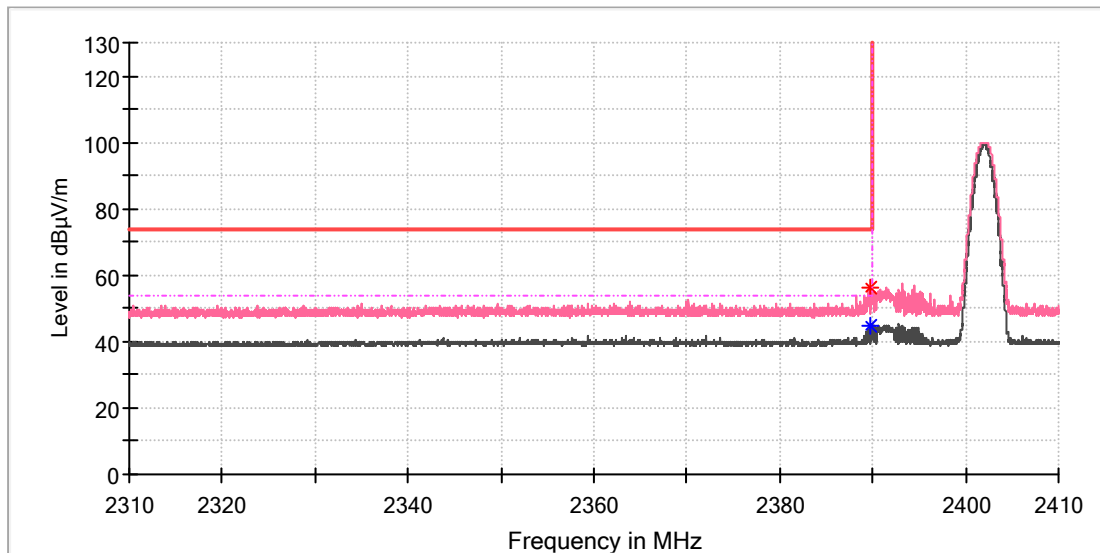
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2379.558824	---	40.44	54.00	13.56	150.0	H	327.0	8.5
2380.367647	51.40	---	74.00	22.60	150.0	H	47.0	8.5

Final Result

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

EUT Information

EUT Name: 2.1 Soundbar with wireless Subwoofer
Model: NS-SB21
Test Mode: BLE_1M_Low channel
Order No/Sample No: 168543945/A003948759-004
Test Voltage: AC 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

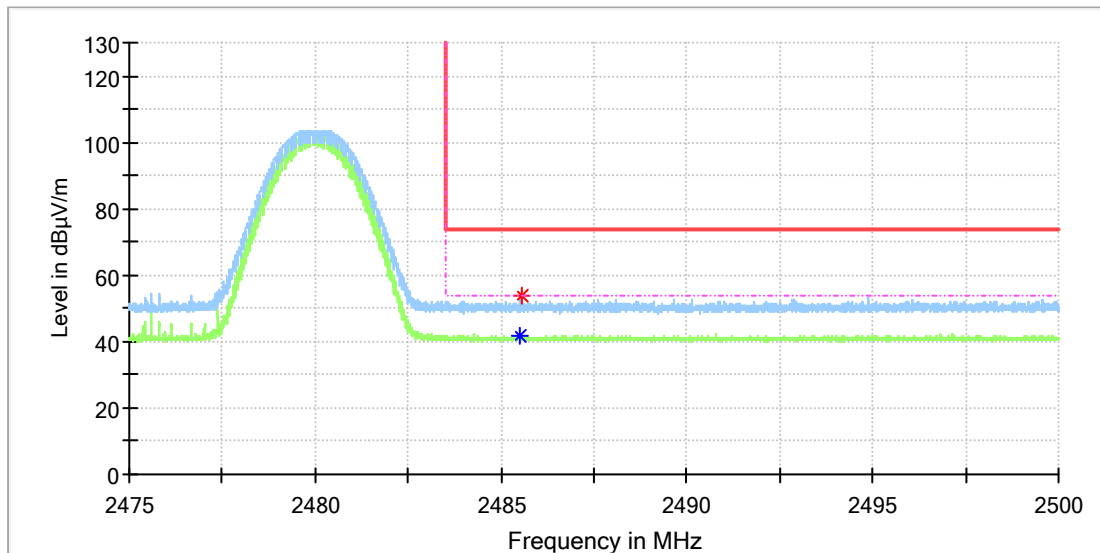
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2389.705882	---	44.73	54.00	9.27	150.0	V	268.0	8.5
2389.808824	56.13	---	74.00	17.87	150.0	V	268.0	8.5

Final Result

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

EUT Information

EUT Name: 2.1 Soundbar with wireless Subwoofer
Model: NS-SB21
Test Mode: BLE_1M_High channel
Order No/Sample No: 168543945/A003948759-004
Test Voltage: AC 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

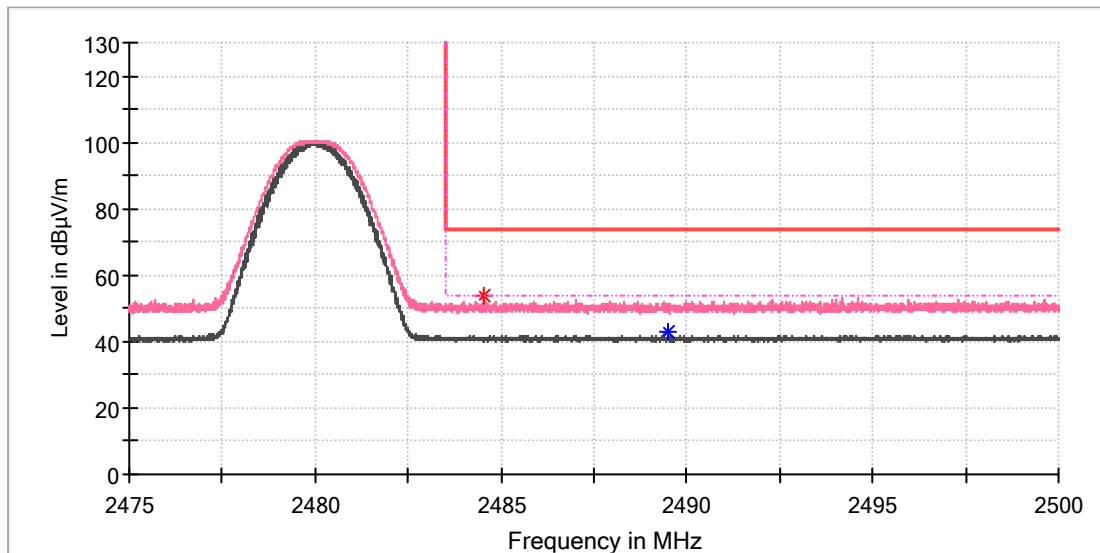
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2485.481618	---	41.44	54.00	12.56	150.0	H	307.0	9.0
2485.547794	53.51	---	74.00	20.49	150.0	H	172.0	9.0

Final_Result

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

EUT Information

EUT Name: 2.1 Soundbar with wireless Subwoofer
Model: NS-SB21
Test Mode: BLE_1M_High channel
Order No/Sample No: 168543945/A003948759-004
Test Voltage: AC 120V/60Hz
Remark: Temp 24 Humi:50%
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)
2484.547794	53.51	---	74.00	20.49	150.0	V	93.0	9.0
2489.492647	---	43.00	54.00	11.00	150.0	V	272.0	9.0

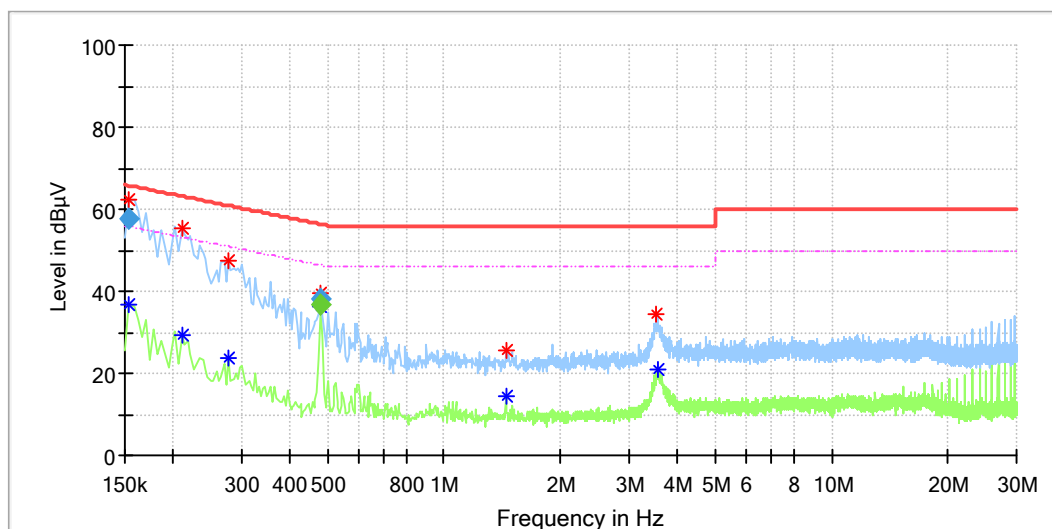
Final Result

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

Appendix B.8: Test Results of Conducted Emission on AC Mains

EUT Information

EUT Name:	2.1 Soundbar with wireless Subwoofer
Order Number:	168543945
Model:	NS-SB21
Test Mode:	Normal Working+ BT Link
Test Voltage:	AC 120V/60Hz
Test Standard:	FCC Part 15C
Test By:/Review By:	Simon Feng/Shower Dai
Tem./Hum./Pressure:	24.9°C/50.4%/101kPa
Remark:	SR2



Critical_Freqs

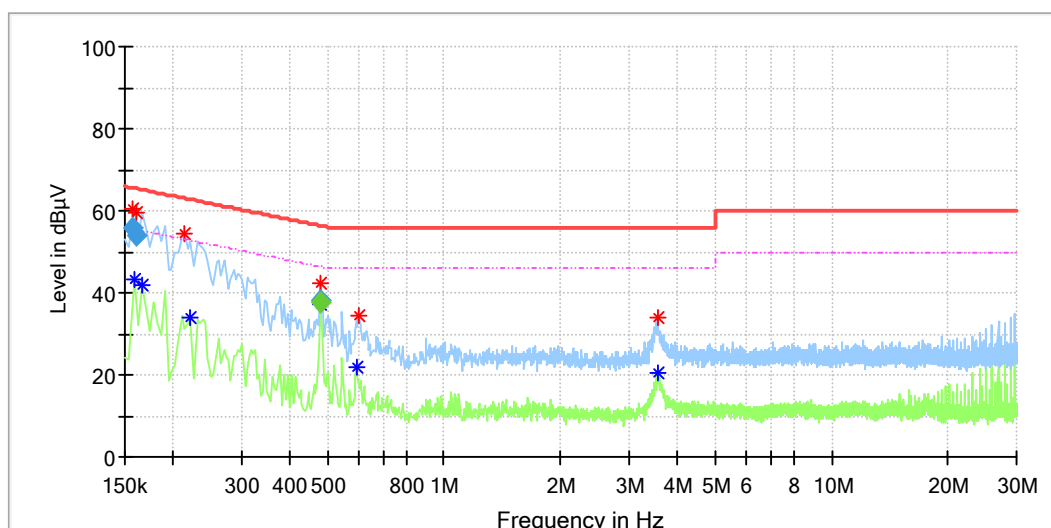
Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.153500	62.36	---	65.57	3.21	L1	9.8
0.154000	---	36.92	55.78	18.86	L1	9.8
0.210000	---	29.23	53.21	23.97	L1	9.8
0.210000	55.30	---	63.21	7.90	L1	9.8
0.278000	---	23.65	50.88	27.23	L1	9.8
0.278000	47.55	---	60.88	13.33	L1	9.8
0.481500	---	36.31	46.31	10.00	L1	9.9
0.481500	39.34	---	56.31	16.97	L1	9.9
1.442000	---	14.24	46.00	31.76	L1	10.0
1.450000	25.62	---	56.00	30.38	L1	10.0
3.534000	34.47	---	56.00	21.53	L1	10.1
3.582000	---	21.08	46.00	24.92	L1	10.1

Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.153500	57.59	---	65.81	8.22	1000.0	9.000	L1	9.8
0.481500	---	36.80	46.31	9.51	1000.0	9.000	L1	9.9
0.481500	37.91	---	56.31	18.40	1000.0	9.000	L1	9.9

EUT Information

EUT Name: 2.1 Soundbar with wireless Subwoofer
Order Number: 168543945
Model: NS-SB21
Test Mode: Normal Working+ BT Link
Test Voltage: AC 120V/60Hz
Test Standard: FCC Part 15C
Test By./Review By: Simon Feng/Shower Dai
Tem./Hum./Pressure: 24.9°C/50.4%/101kPa
Remark: SR2



Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)
0.157500	60.34	---	65.57	5.23	N	9.7
0.158000	---	43.44	55.57	12.12	N	9.7
0.161500	59.33	---	65.16	5.83	N	9.7
0.166000	---	41.84	55.16	13.32	N	9.7
0.214000	54.39	---	63.05	8.66	N	9.7
0.222000	---	34.18	52.74	18.56	N	9.7
0.481500	---	37.43	46.31	8.87	N	9.7
0.481500	42.35	---	56.31	13.95	N	9.7
0.594000	---	21.65	46.00	24.35	N	9.7
0.602000	34.52	---	56.00	21.48	N	9.7
3.558000	33.84	---	56.00	22.16	N	9.8
3.582000	---	20.42	46.00	25.58	N	9.8

Final_Result

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.157500	55.96	---	65.60	9.64	1000.0	9.000	N	9.7
0.161500	53.93	---	65.39	11.45	1000.0	9.000	N	9.7
0.481500	---	37.63	46.31	8.69	1000.0	9.000	N	9.7
0.481500	38.24	---	56.31	18.07	1000.0	9.000	N	9.7