

Prüfbericht-Nr.: Test report no.:	CN25HW95 003	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 - 2025-04-15			
Ort der Prüfung: Place of testing:	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüflaboratorium: Testing laboratory:	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüfergebnis*: Test result*:	Pass			
geprüft von: tested by:	genehmigt von: authorized by:			
Datum: Date:	Ausstellungsdatum: Issue date:			
Stellung / Position:	Stellung / Position:			
Sonstiges / Other:	FCC ID: Z8M-NSSB21 This report is for Bluetooth dual mode(module BT8961) function.			
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			
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Anmerkungen
Remarks

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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>

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Test Summary

5.1.1 ANTENNA REQUIREMENT

RESULT: Pass

5.1.2 MAXIMUM PEAK CONDUCTED OUTPUT POWER

RESULT: Pass

5.1.3 CONDUCTED POWER SPECTRAL DENSITY

RESULT: Pass

5.1.4 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	Y LX23JMF	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

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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 2.1 Soundbar 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-NSSB21
Operating Voltage:	AC 100-240V, 50-60Hz
Testing Voltage:	AC 120V, 60Hz
Technical Specification of Classic Bluetooth (Module ATS2853)	
Operating Frequency:	2402 MHz to 2480 MHz
Type of Modulation:	GFSK, $\pi/4$ -DQPSK, 8DPSK
Channel Number:	79 channels
Channel Separation:	1MHz
Data Rate:	1Mbps, 2Mbps, 3Mbps
Antenna Type:	Integral Antenna
Antenna Gain:	4.91 dBi max (Provided by the Client)
Technical Specification of Bluetooth dual mode (Module BT8961)	
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:	5.21 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
Subwoofer	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)

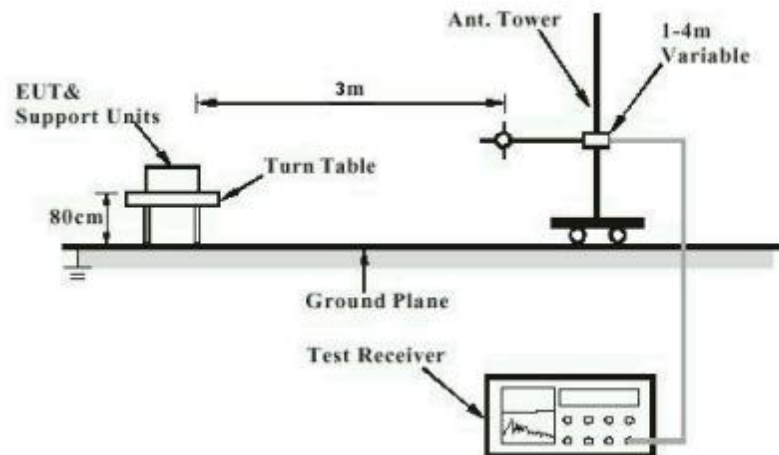


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

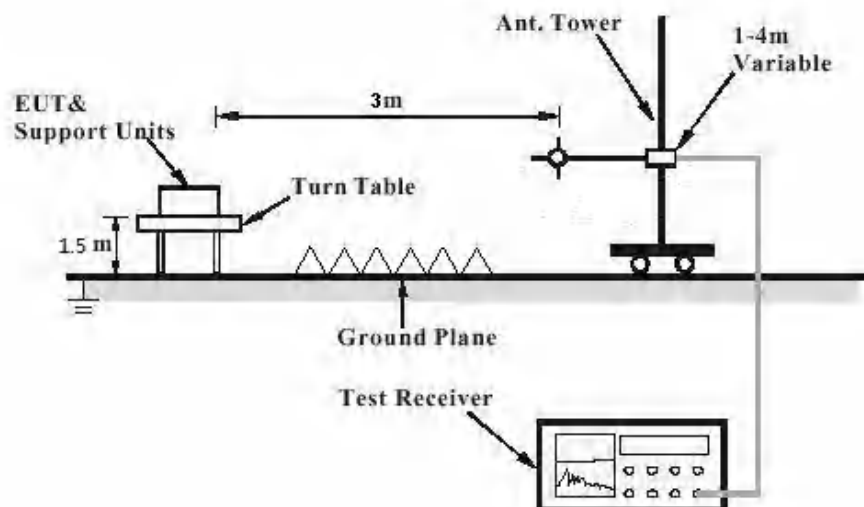


Diagram of Measurement Configuration for Mains Conduction Measurement

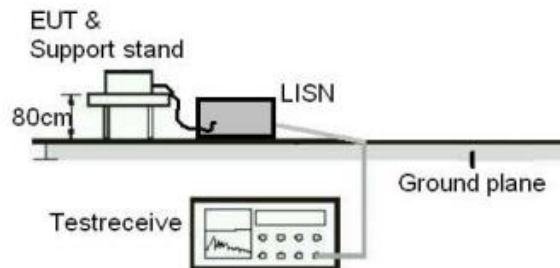
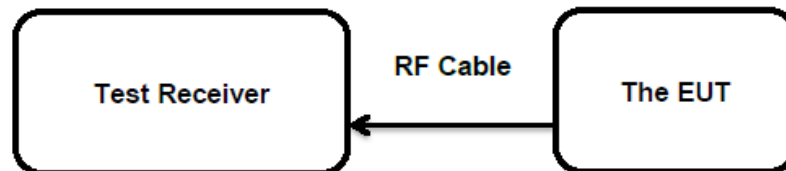


Diagram of Measurement Configuration for Conducted Transmitter Measurement



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	9.37	0.0086	< 0.125
	2441.0	9.09	0.0081	
	2480.0	8.47	0.0070	
8DPSK (EDR)	2402.0	11.47	0.0140	
	2441.0	11.14	0.0130	
	2480.0	10.76	0.0119	
Maximum Measured Value		11.47	0.0140	

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	9.43	0.0088	< 1.0
	2440	9.15	0.0082	
	2480	8.57	0.0072	
Bluetooth LE (2 Mbps)	2402	9.28	0.0085	
	2440	9.06	0.0081	
	2480	8.43	0.0070	
Max. Measured Value		9.43	0.0088	

Note:

- 1) The cable loss is taken into account in results.
- 2) Antenna gain(G): 5.21 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.

Prüfbericht - Nr.: CN25HW95 003
Test Report No.:

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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.: CN25HW95 003
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.: CN25HW95 003
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	: $25\text{ }^{\circ}\text{C}$
Relative humidity	: 45 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix A.

Prüfbericht - Nr.: CN25HW95 003
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.: CN25HW95 003
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.: CN25HW95 003
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	: 2025-04-14 to 2025-04-15
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.: **CN25HW95 003**
Test Report No.:Seite 26 von 27
Page 26 of 27**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	: D
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	0.867	2401.523	2402.390	---	PASS
		2441	0.906	2440.508	2441.414	---	PASS
		2480	0.969	2479.499	2480.468	---	PASS
3DH5	Ant1	2402	1.257	2401.343	2402.600	---	PASS
		2441	1.263	2440.340	2441.603	---	PASS
		2480	1.320	2479.316	2480.636	---	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	0.86470	2401.5493	2402.4140	---	PASS
		2441	0.87560	2440.5404	2441.4160	---	PASS
		2480	0.86431	2479.5462	2480.4105	---	PASS
3DH5	Ant1	2402	1.1964	2401.3801	2402.5765	---	PASS
		2441	1.1989	2440.3761	2441.5750	---	PASS
		2480	1.2032	2479.3750	2480.5782	---	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	0.984	≥0.969	PASS
3DH5	Ant1	Hop	1.17	≥0.880	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



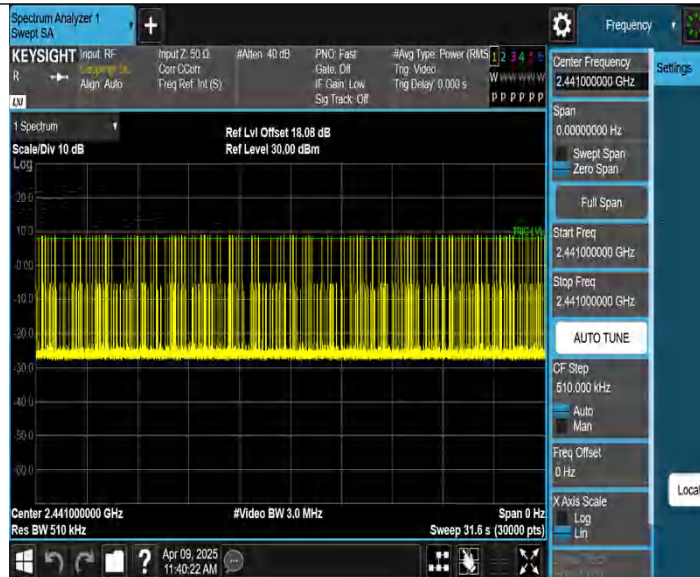


DH5 Ant1 Hop



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	8.91	-43.78	≤-11.09	PASS
		High	2480	7.98	-43.41	≤-12.02	PASS
3DH5	Ant1	Low	2402	8.92	-36.92	≤-11.08	PASS
		High	2480	8.14	-42.90	≤-11.87	PASS
DH5	Ant1	Hopping	2402	6.00	-44.39	≤-14.00	PASS
		Hopping	2480	6.46	-45.18	≤-13.54	PASS
3DH5	Ant1	Hopping	2402	6.39	-39.82	≤-13.62	PASS
		Hopping	2480	4.34	-43.69	≤-15.66	PASS

Test Graphs





DH5_Ant1_Hopping_2402



DH5_Ant1_Hopping_2480



3DH5_Ant1_Hopping_2402



3DH5_Ant1_Hopping 2480



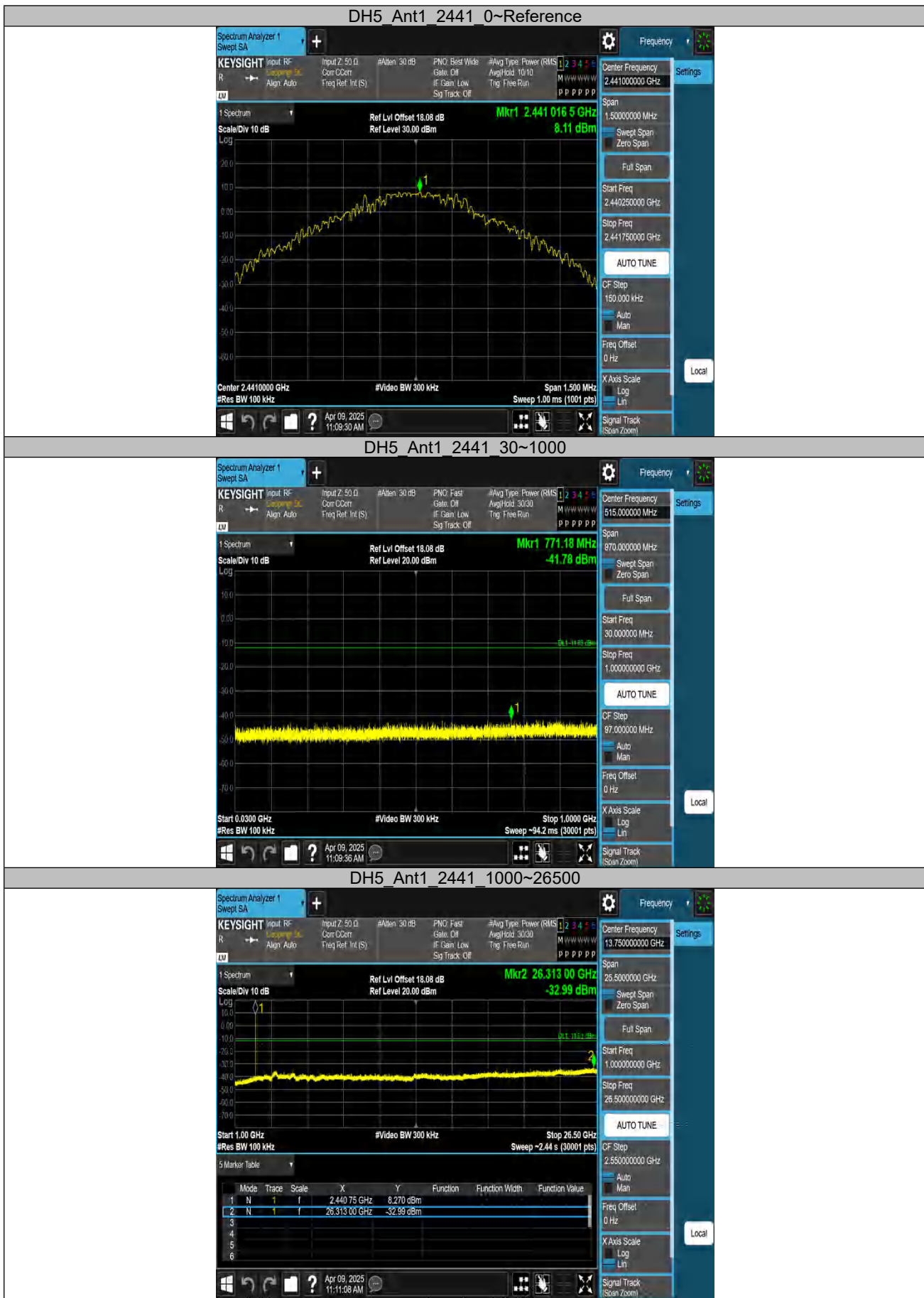
Appendix A.7: Test Results of Conducted Spurious Emission

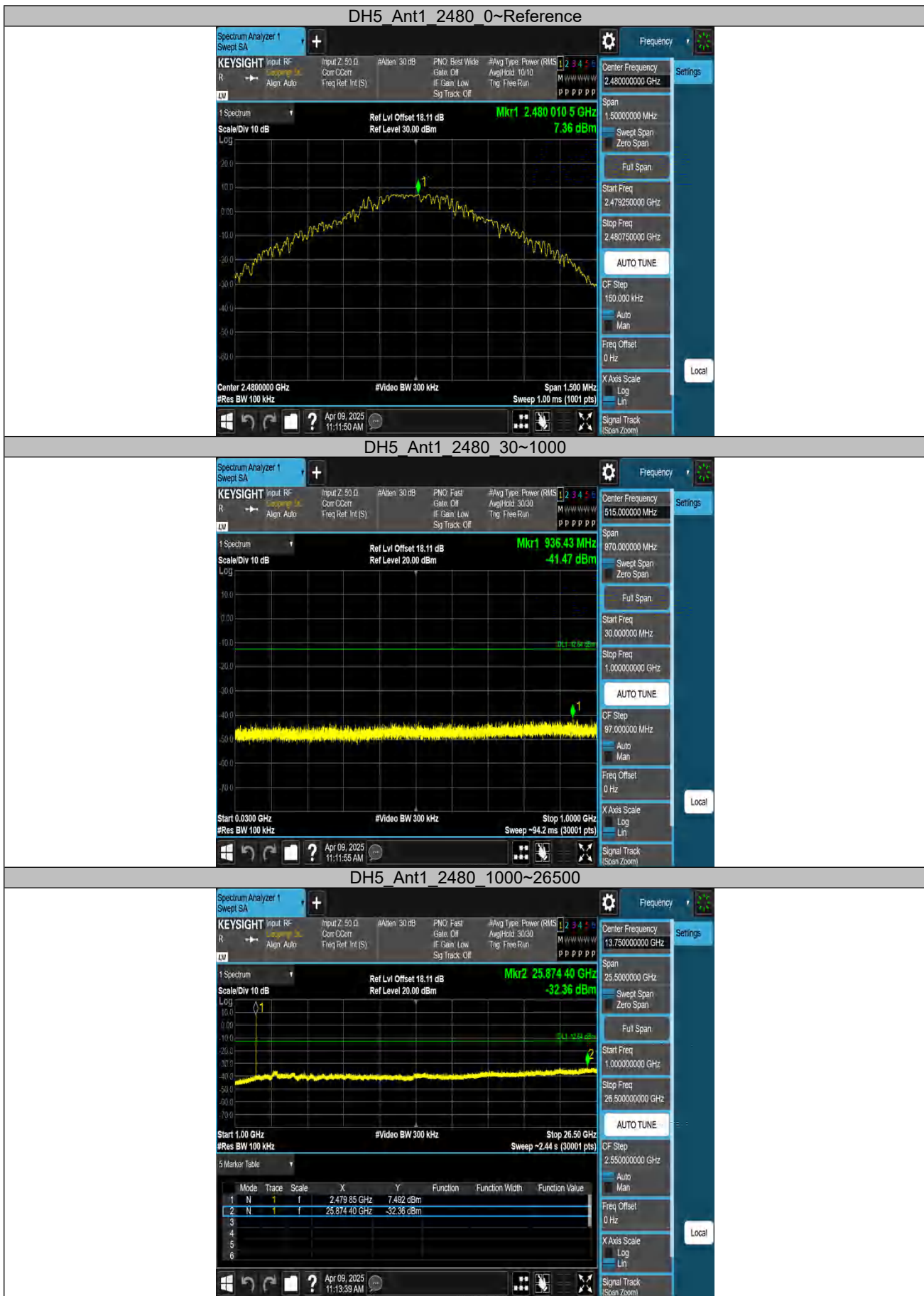
Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	8.02	8.02	---	PASS
			30~1000	8.02	-41.18	≤-11.98	PASS
			1000~26500	8.02	-32.53	≤-11.98	PASS
		2441	Reference	8.11	8.11	---	PASS
			30~1000	8.11	-41.78	≤-11.89	PASS
			1000~26500	8.11	-33	≤-11.89	PASS
		2480	Reference	7.36	7.36	---	PASS
			30~1000	7.36	-41.48	≤-12.64	PASS
			1000~26500	7.36	-32.36	≤-12.64	PASS
3DH5	Ant1	2402	Reference	7.84	7.84	---	PASS
			30~1000	7.84	-41.5	≤-12.16	PASS
			1000~26500	7.84	-32.35	≤-12.16	PASS
		2441	Reference	8.46	8.46	---	PASS
			30~1000	8.46	-41.43	≤-11.54	PASS
			1000~26500	8.46	-33.13	≤-11.54	PASS
		2480	Reference	5.89	5.89	---	PASS
			30~1000	5.89	-41.87	≤-14.11	PASS
			1000~26500	5.89	-33.34	≤-14.11	PASS

Test Graphs













Appendix A.8: Test Results of Radiated Spurious Emissions

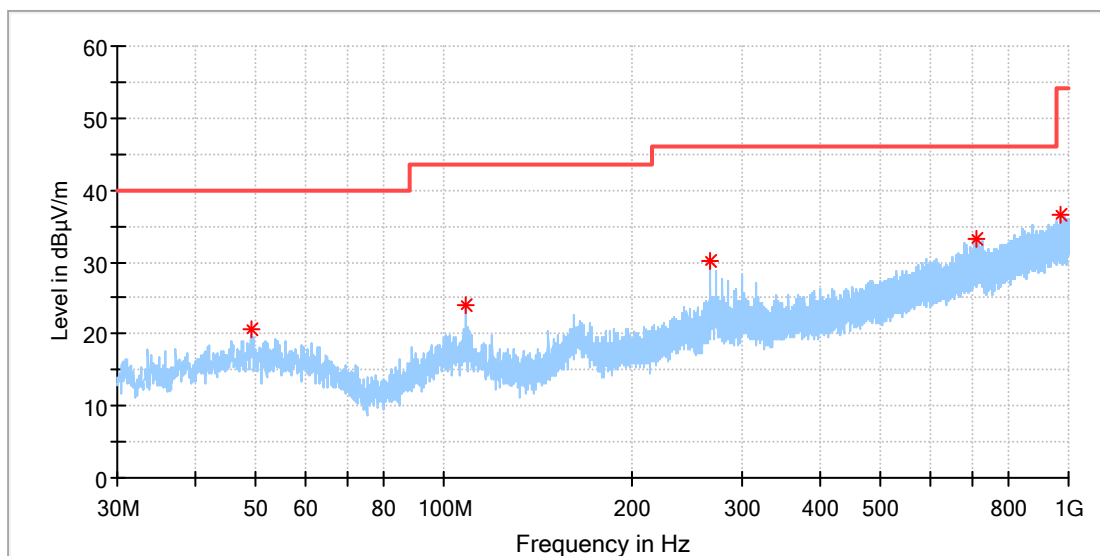
Note:

- 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

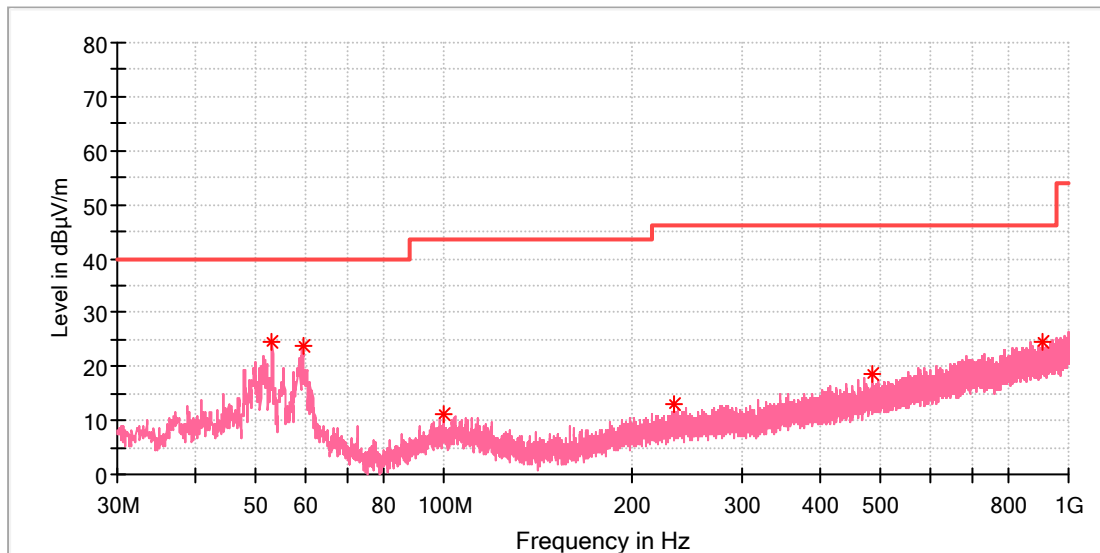
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
49.064231	20.59	40.00	19.41	100.0	H	0.0	-18.4
108.308846	24.11	43.50	19.39	100.0	H	269.0	-19.1
267.276923	30.25	46.00	15.75	100.0	H	16.0	-17.0
714.073846	33.11	46.00	12.89	100.0	H	16.0	-7.7
972.392308	36.55	54.00	17.45	100.0	H	177.0	-3.9

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)
53.093462	24.58	40.00	15.42	100.0	V	119.0	-18.7
59.435769	23.97	40.00	16.03	100.0	V	315.0	-19.2
99.951923	11.33	43.50	32.17	100.0	V	55.0	-19.3
233.588077	12.91	46.00	33.09	100.0	V	14.0	-18.3
485.377692	18.54	46.00	27.46	100.0	V	315.0	-12.4
908.260385	24.65	46.00	21.35	100.0	V	250.0	-5.3

Final Result

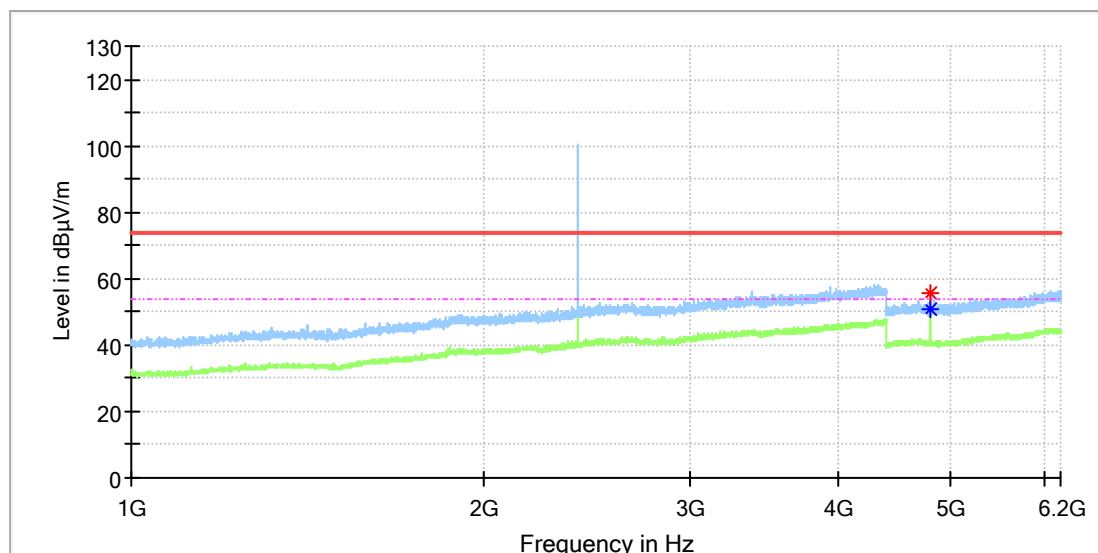
Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

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

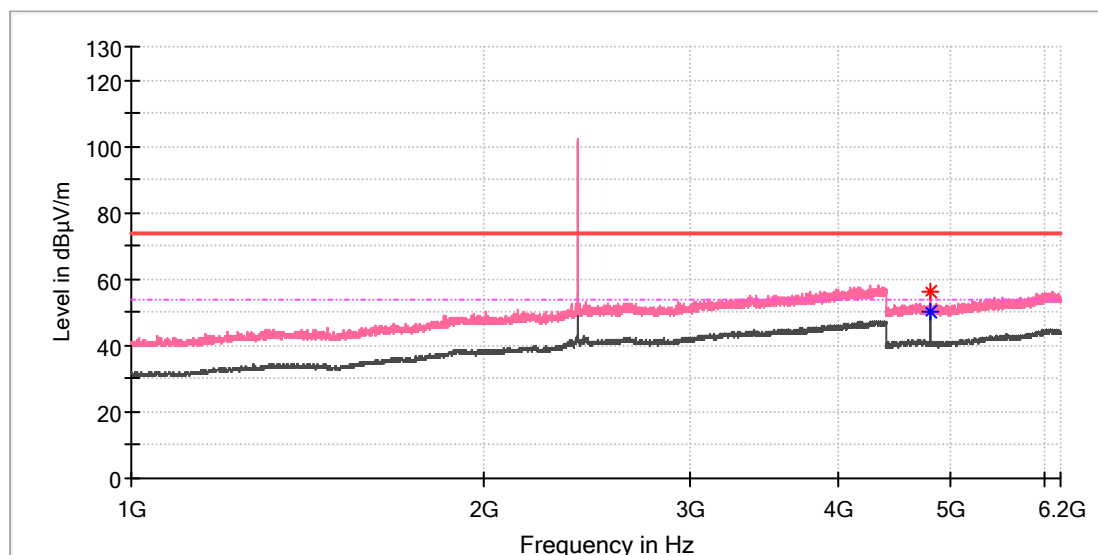
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4804.000000	55.51	---	74.00	18.49	150.0	H	249.0	13.3
4804.000000	---	50.73	54.00	3.27	150.0	H	249.0	13.3

Final Result

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

EUT Information

EUT Name:	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

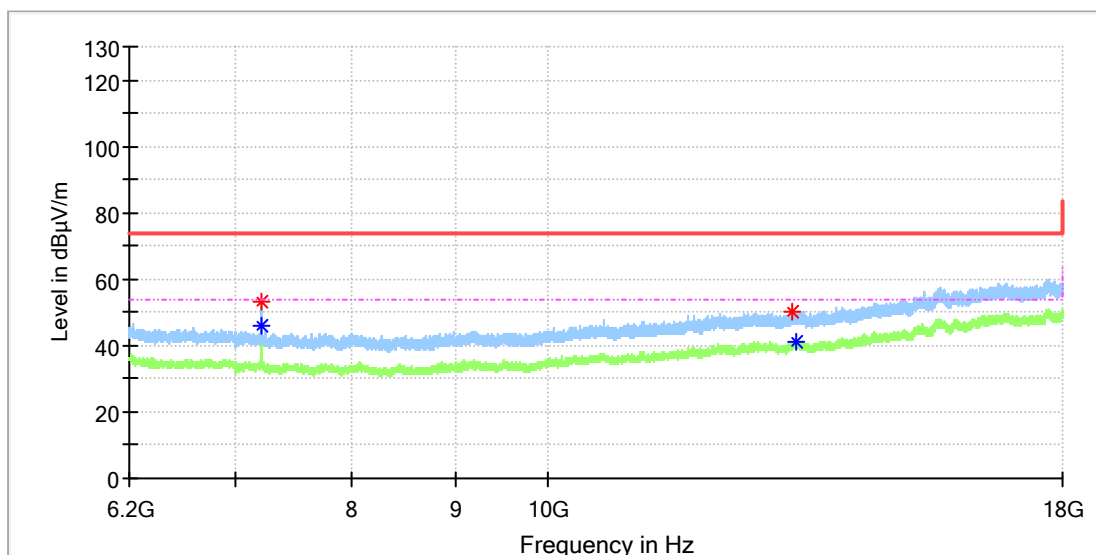
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4804.000000	55.95	---	74.00	18.05	150.0	V	262.0	13.3
4804.000000	---	50.31	54.00	3.69	150.0	V	262.0	13.3

Final Result

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

EUT Information

EUT Name: 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

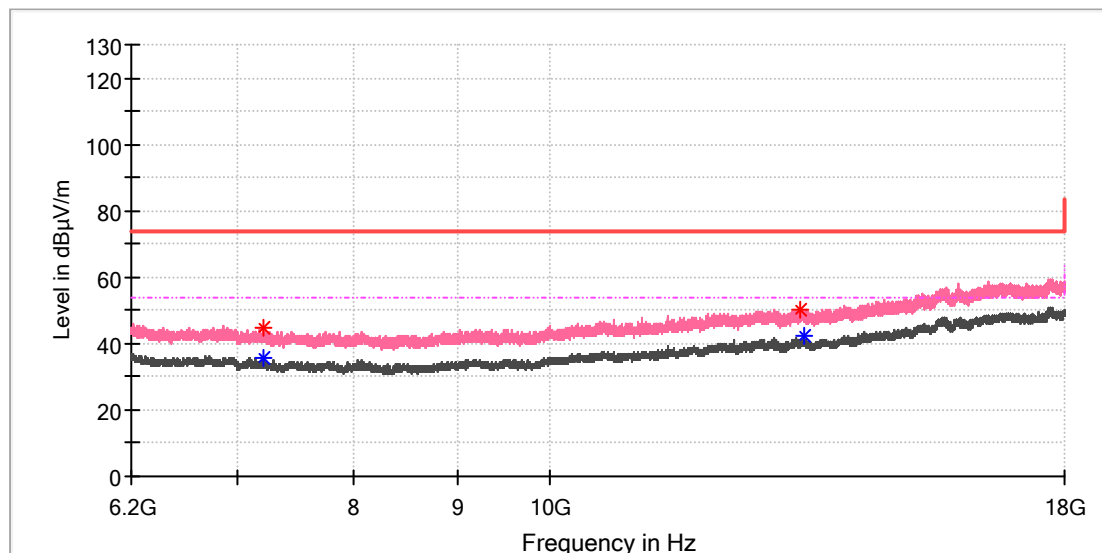
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7204.966667	---	45.92	54.00	8.08	150.0	H	209.0	8.8
7205.458333	53.22	---	74.00	20.78	150.0	H	209.0	8.8
13219.525000	50.22	---	74.00	23.78	150.0	H	209.0	15.5
13286.391667	---	41.42	54.00	12.58	150.0	H	336.0	15.5

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_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

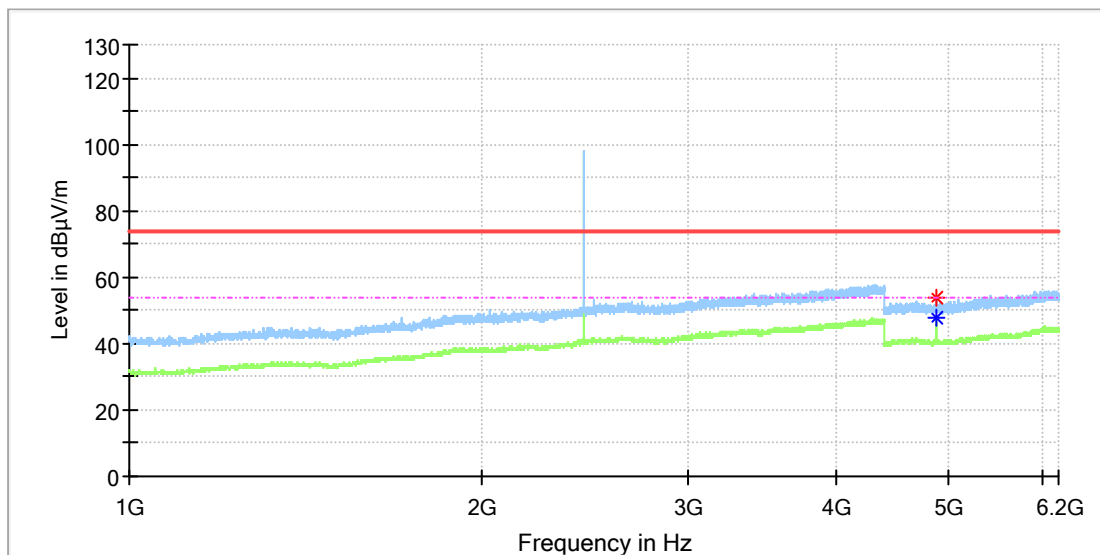
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7205.458333	44.72	---	74.00	29.28	150.0	V	0.0	8.8
7206.441667	---	35.87	54.00	18.13	150.0	V	82.0	8.8
13320.316667	50.24	---	74.00	23.76	150.0	V	326.0	15.5
13356.700000	---	42.08	54.00	11.92	150.0	V	22.0	15.5

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_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

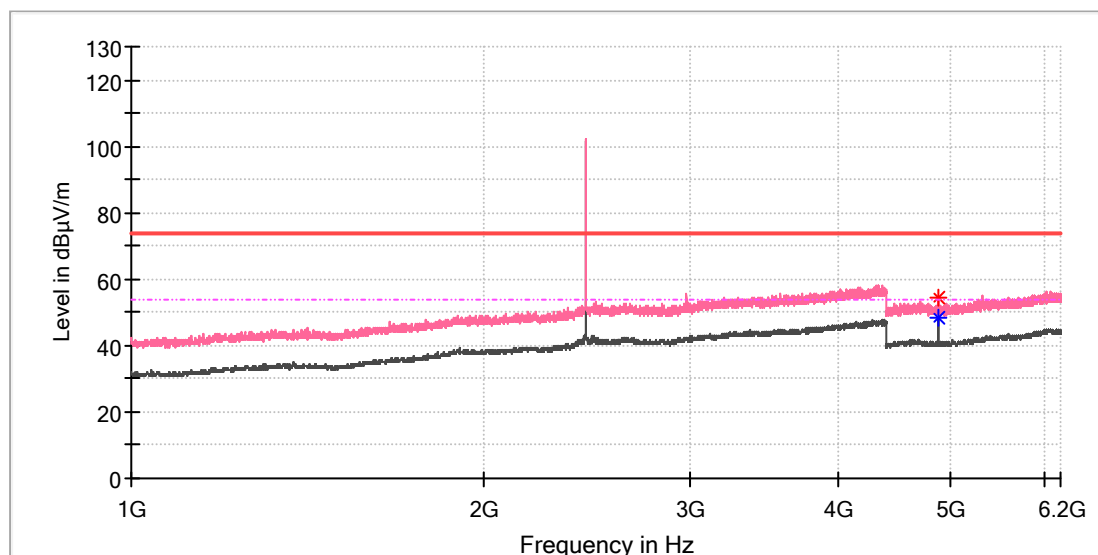
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4882.000000	---	48.01	54.00	5.99	150.0	H	247.0	13.3
4882.500000	53.87	---	74.00	20.13	150.0	H	247.0	13.3

Final Result

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

EUT Information

EUT Name:	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

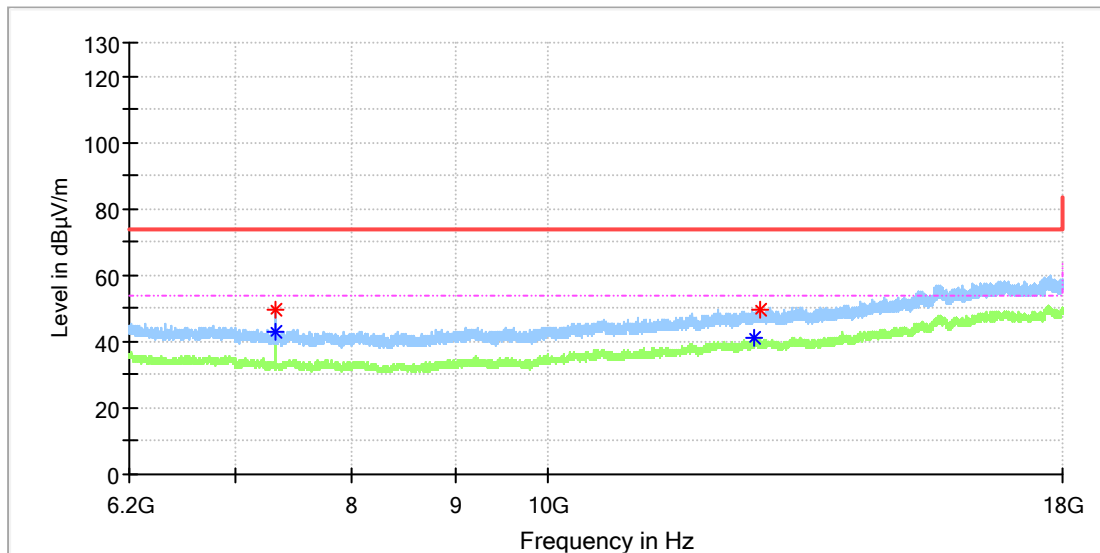
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4882.000000	54.45	---	74.00	19.55	150.0	V	266.0	13.3
4882.000000	---	48.24	54.00	5.76	150.0	V	266.0	13.3

Final Result

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

EUT Information

EUT Name: 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

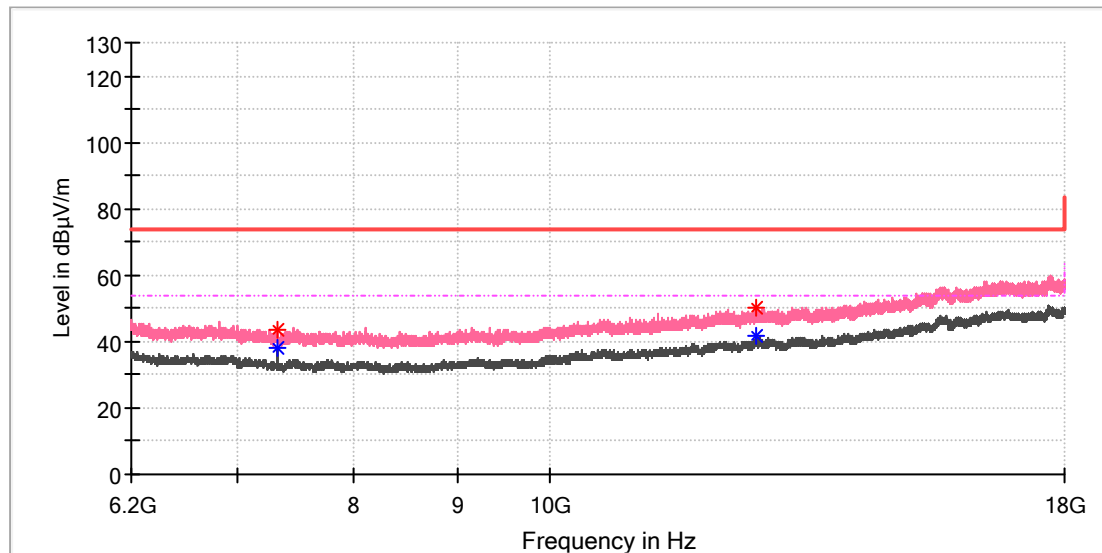
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7322.475000	49.85	---	74.00	24.15	150.0	H	294.0	8.2
7323.458333	---	43.09	54.00	10.91	150.0	H	97.0	8.2
12665.416667	---	40.91	54.00	13.09	150.0	H	359.0	15.1
12745.558333	49.54	---	74.00	24.46	150.0	H	0.0	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

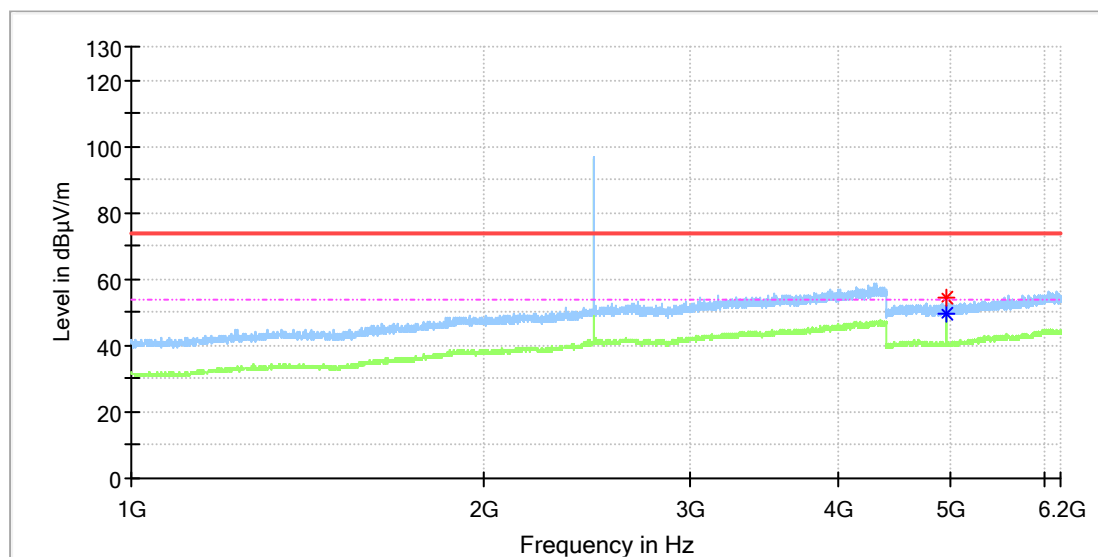
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7322.966667	43.77	---	74.00	30.23	150.0	V	130.0	8.2
7322.966667	---	38.24	54.00	15.76	150.0	V	130.0	8.2
12644.275000	50.07	---	74.00	23.93	150.0	V	355.0	15.0
12650.666667	---	41.71	54.00	12.29	150.0	V	42.0	15.0

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

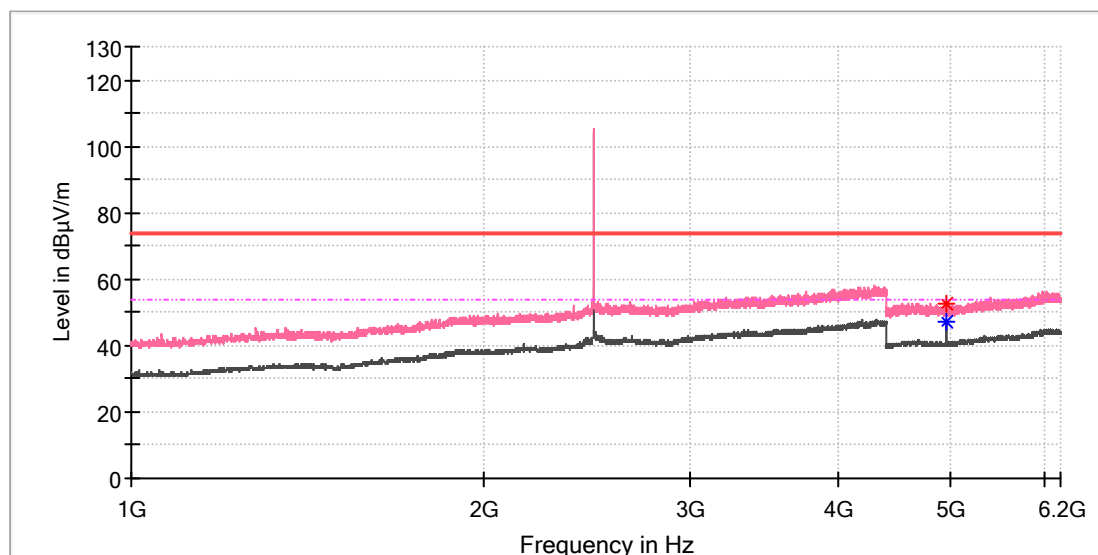
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4959.500000	54.38	---	74.00	19.62	150.0	H	256.0	13.3
4960.000000	---	49.33	54.00	4.67	150.0	H	250.0	13.3

Final Result

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

EUT Information

EUT Name:	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

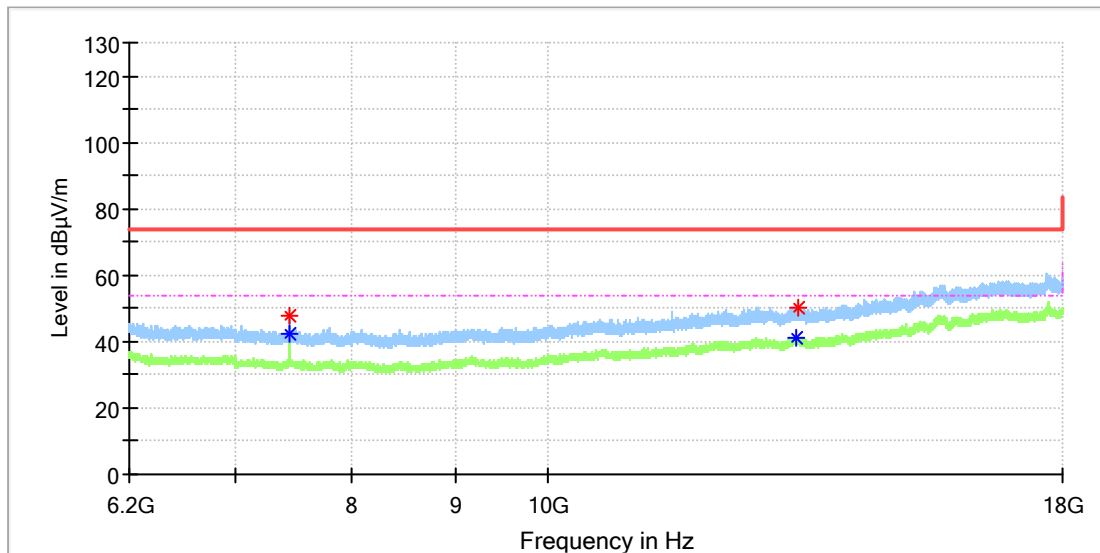
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4960.000000	52.73	---	74.00	21.27	150.0	V	268.0	13.3
4960.000000	---	47.28	54.00	6.72	150.0	V	268.0	13.3

Final Result

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

EUT Information

EUT Name: 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

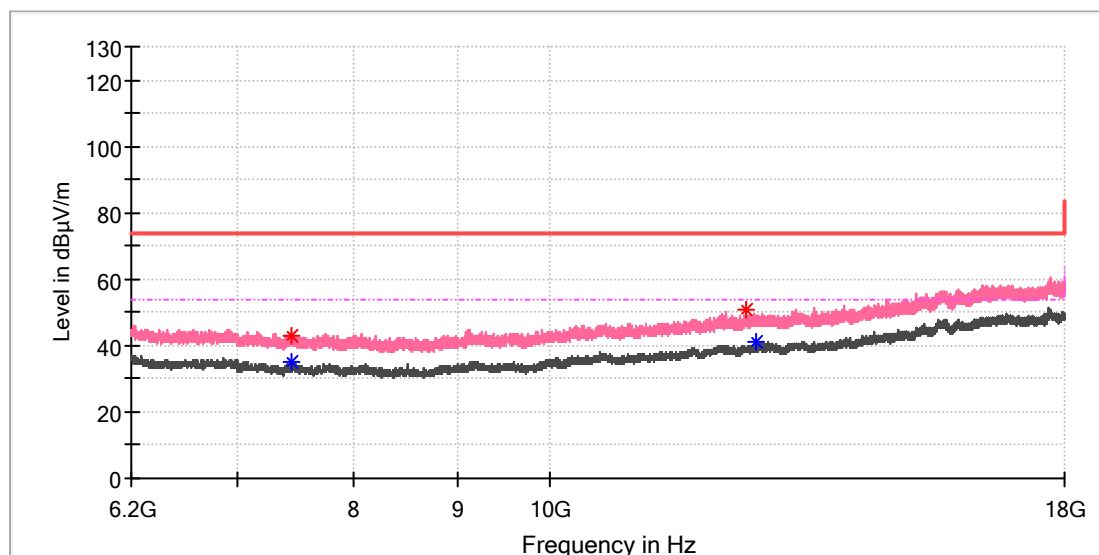
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7439.491667	---	42.49	54.00	11.51	150.0	H	107.0	8.4
7439.983333	47.93	---	74.00	26.07	150.0	H	57.0	8.4
13278.525000	---	41.31	54.00	12.69	150.0	H	156.0	15.5
13307.041667	50.20	---	74.00	23.80	150.0	H	45.0	15.5

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)
7439.983333	---	35.09	54.00	18.91	150.0	V	108.0	8.4
7451.783333	42.93	---	74.00	31.07	150.0	V	275.0	8.5
12517.916667	50.89	---	74.00	23.11	150.0	V	300.0	14.7
12670.333333	---	40.97	54.00	13.03	150.0	V	60.0	15.1

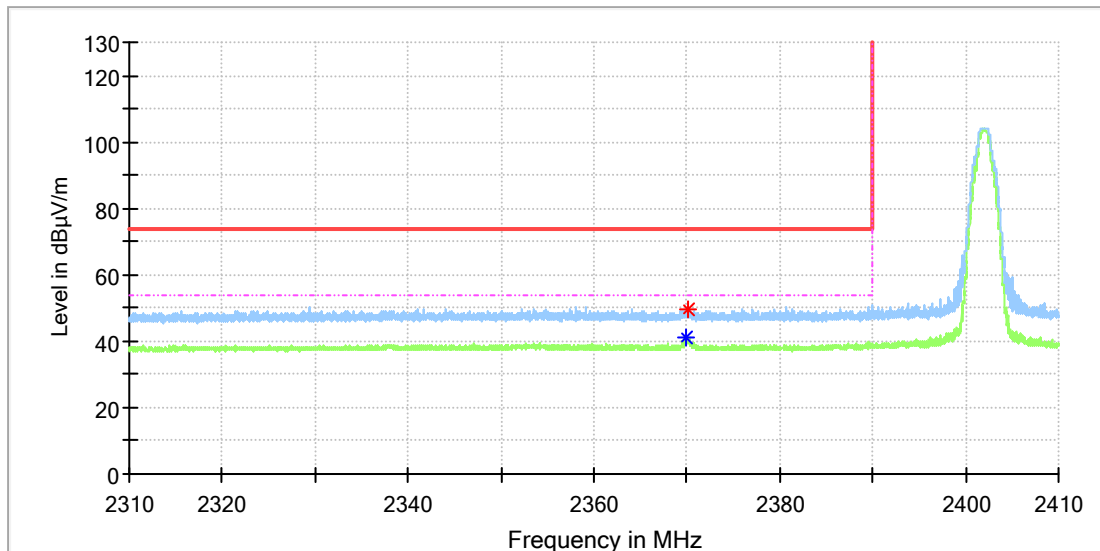
Final Result

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

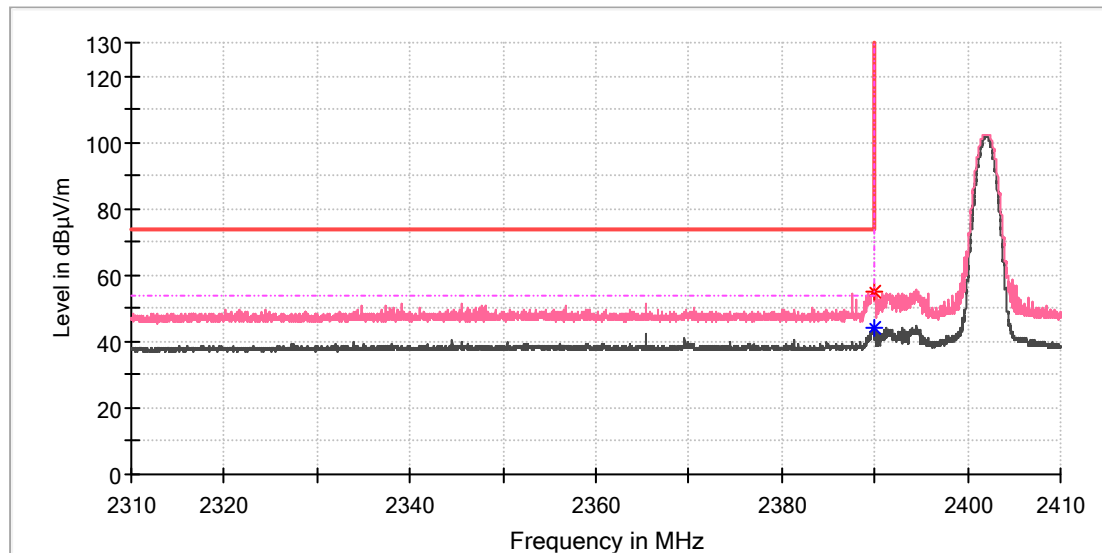
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2369.882353	---	40.96	54.00	13.04	150.0	H	212.0	6.9
2370.102941	49.83	---	74.00	24.17	150.0	H	212.0	6.9

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: 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

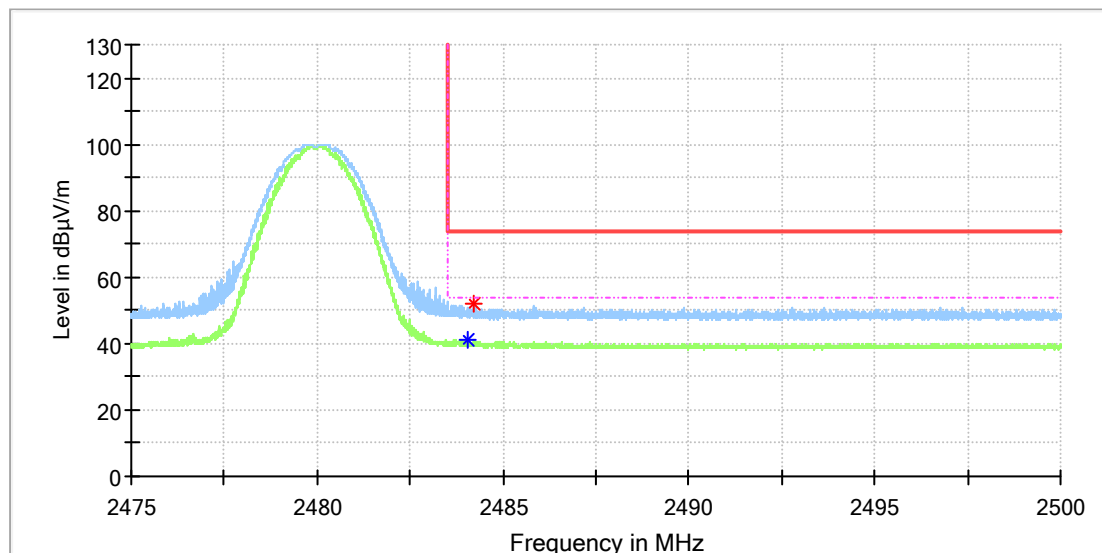
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2389.882353	55.15	---	74.00	18.85	150.0	V	264.0	7.0
2389.926471	---	44.41	54.00	9.59	150.0	V	264.0	7.0

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

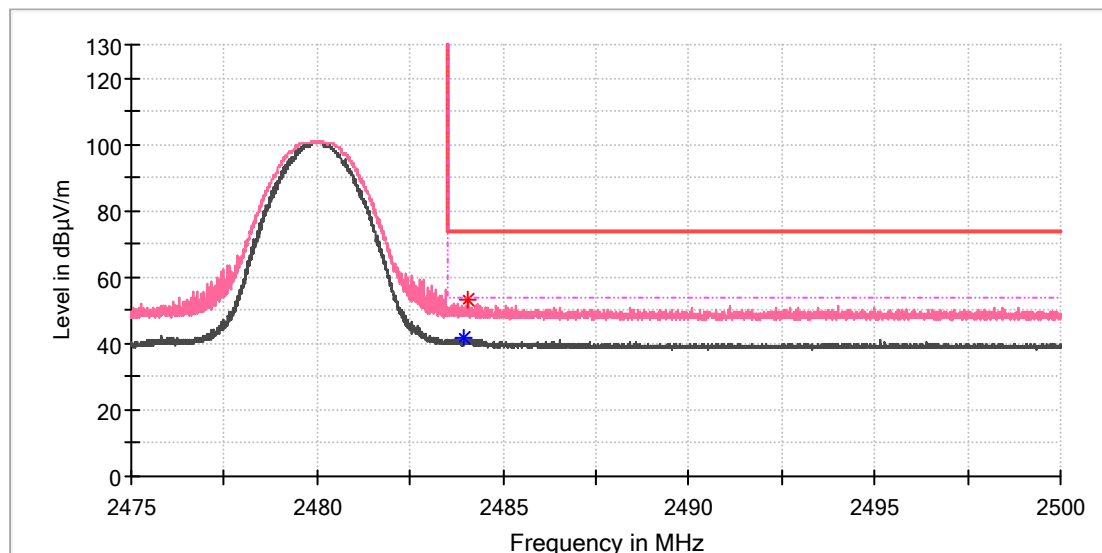
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2484.073530	---	41.30	54.00	12.70	150.0	H	256.0	7.4
2484.205882	51.83	---	74.00	22.17	150.0	H	358.0	7.4

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_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)
2483.966912	---	41.98	54.00	12.02	150.0	V	110.0	7.4
2484.077206	53.27	---	74.00	20.73	150.0	V	110.0	7.4

Final Result

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

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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	0.652	2401.672	2402.324	0.5	PASS
		2440	0.652	2439.664	2440.316	0.5	PASS
		2480	0.664	2479.652	2480.316	0.5	PASS
BLE_2M	Ant1	2402	1.128	2401.420	2402.548	0.5	PASS
		2440	1.108	2439.412	2440.520	0.5	PASS
		2480	1.096	2479.412	2480.508	0.5	PASS

BLE_1M_Ant1_2402



BLE	1M	Ant1	2440
-----	----	------	------



BLE	1M	Ant1	2480
-----	----	------	------



BLE 2M Ant1 2402



BLE 2M Ant1 2440



BLE 2M Ant1 2480



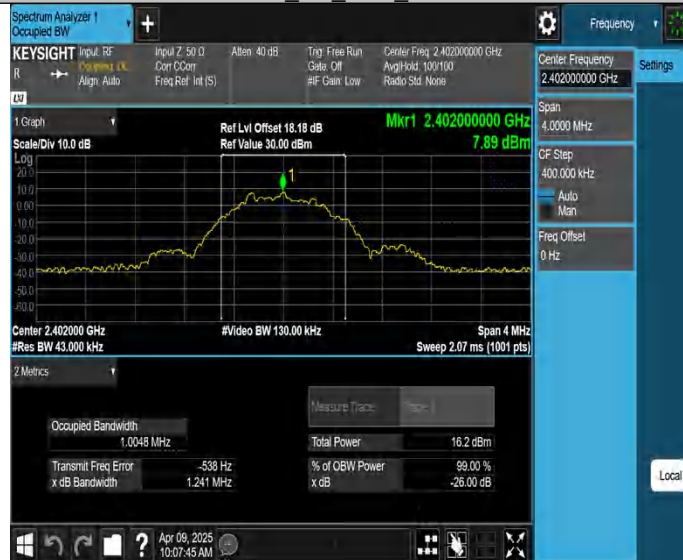
Appendix B.2: Test Results of 99% Bandwidth

Test Result

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0048	2401.4971	2402.5019	---	PASS
		2440	1.0144	2439.4891	2440.5035	---	PASS
		2480	1.0088	2479.4952	2480.5040	---	PASS
BLE_2M	Ant1	2402	2.0032	2400.9956	2402.9988	---	PASS
		2440	2.0280	2438.9917	2441.0197	---	PASS
		2480	1.9966	2479.0071	2481.0037	---	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

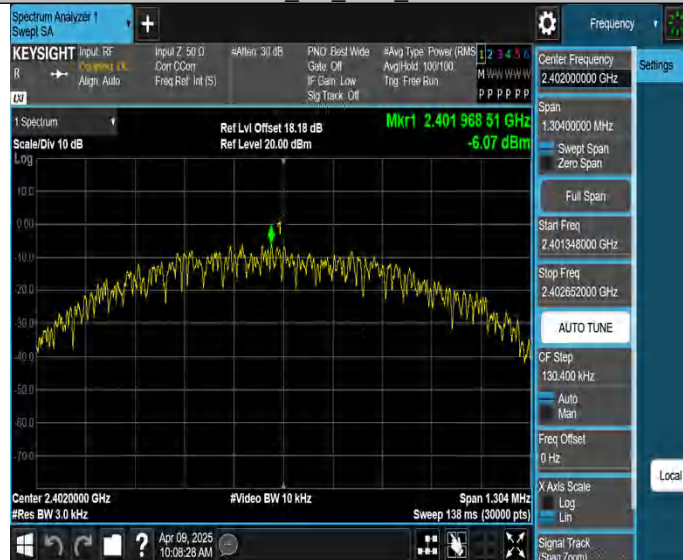


Appendix B.3: Test Results of Conducted Power Spectral Density

Test Result

TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-6.07	≤8.00	PASS
		2440	-6.17	≤8.00	PASS
		2480	-6.91	≤8.00	PASS
BLE_2M	Ant1	2402	-9.14	≤8.00	PASS
		2440	-9.19	≤8.00	PASS
		2480	-9.93	≤8.00	PASS

BLE_1M_Ant1_2402



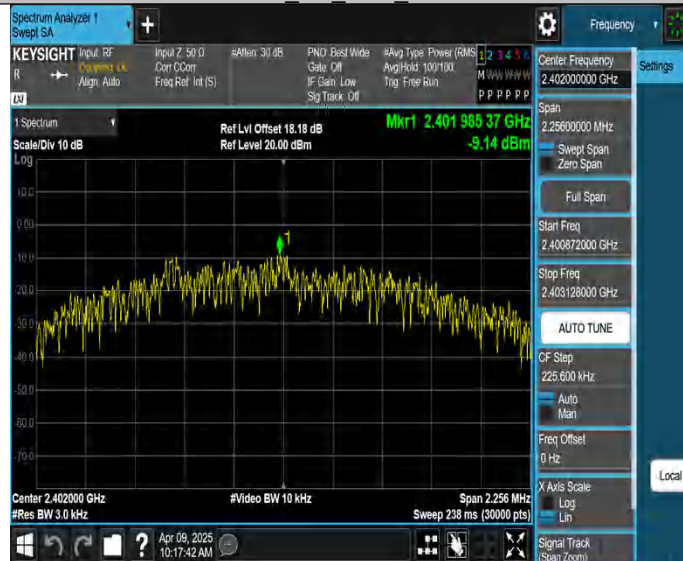
BLE 1M Ant1 2440



BLE 1M Ant1 2480



BLE 2M Ant1 2402



BLE 2M Ant1 2440



BLE 2M Ant1 2480



Appendix B.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	8.80	-44.12	≤-11.20	PASS
		High	2480	8.06	-45.30	≤-11.94	PASS
BLE_2M	Ant1	Low	2402	8.90	-25.34	≤-11.10	PASS
		High	2480	7.89	-45.05	≤-12.11	PASS

Test Graphs

BLE_1M_Ant1_Low_2402



BLE_1M_Ant1_High_2480



BLE_2M_Ant1_Low_2402



BLE_2M_Ant1_High_2480



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	9.01	9.01	---	PASS
			30~1000	9.01	-41.54	≤-10.99	PASS
			1000~26500	9.01	-32.56	≤-10.99	PASS
		2440	Reference	8.80	8.80	---	PASS
			30~1000	8.80	-41.77	≤-11.2	PASS
			1000~26500	8.80	-32.74	≤-11.2	PASS
		2480	Reference	8.05	8.05	---	PASS
			30~1000	8.05	-41.23	≤-11.95	PASS
			1000~26500	8.05	-33.05	≤-11.95	PASS
BLE_2M	Ant1	2402	Reference	8.94	8.94	---	PASS
			30~1000	8.94	-41.53	≤-11.06	PASS
			1000~26500	8.94	-32.67	≤-11.06	PASS
		2440	Reference	8.74	8.74	---	PASS
			30~1000	8.74	-41.69	≤-11.26	PASS
			1000~26500	8.74	-32.28	≤-11.26	PASS
		2480	Reference	7.90	7.90	---	PASS
			30~1000	7.90	-41.71	≤-12.1	PASS
			1000~26500	7.90	-32.6	≤-12.1	PASS

Test Graphs

BLE 1M_Ant1_2402_0~Reference



BLE 1M_Ant1_2402_30~1000



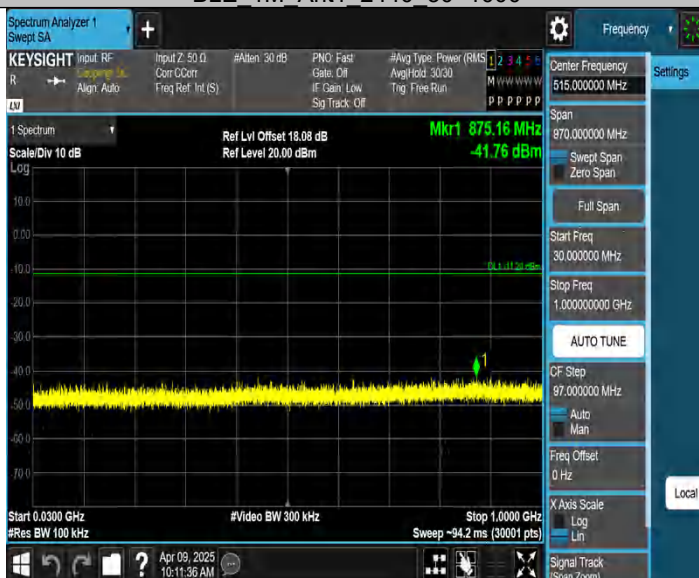
BLE 1M_Ant1_2402_1000~26500



BLE 1M Ant1 2440 0~Reference



BLE 1M Ant1 2440 30~1000



BLE 1M Ant1 2440 1000~26500

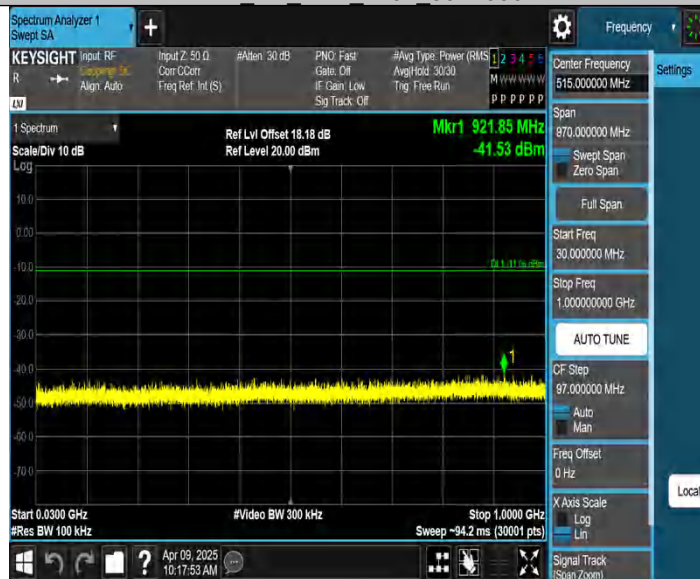




BLE 2M Ant1 2402 0~Reference



BLE 2M Ant1 2402 30~1000



BLE 2M Ant1 2402 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

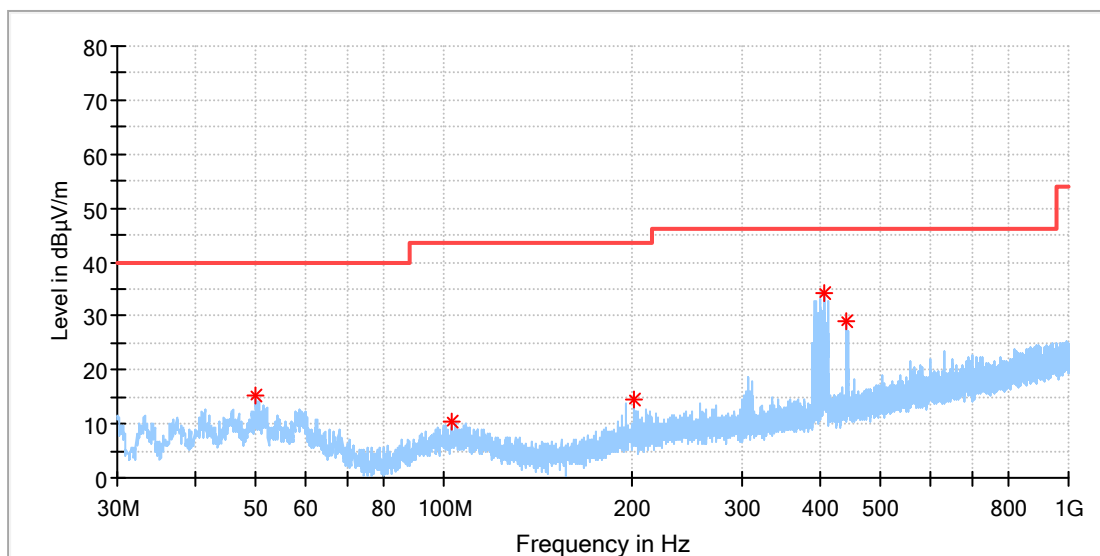
Note:

- 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

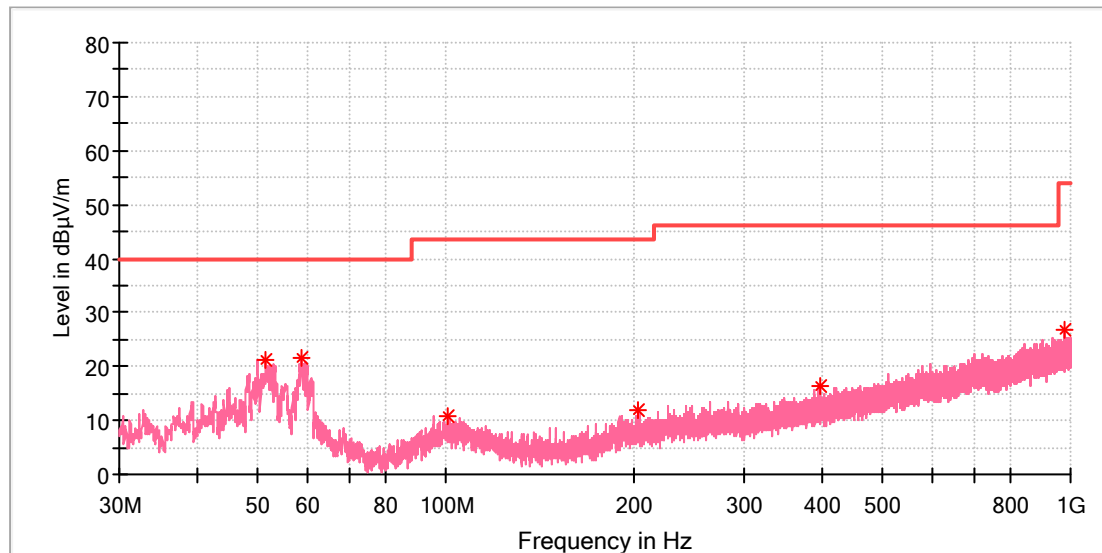
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
49.996923	15.33	40.00	24.67	100.0	H	258.0	-18.6
103.123077	10.52	43.50	32.98	100.0	H	298.0	-19.2
201.205000	14.44	43.50	29.06	100.0	H	119.0	-19.3
406.807692	34.31	46.00	11.69	100.0	H	152.0	-14.0
440.832308	28.98	46.00	17.02	100.0	H	307.0	-13.4

Final_Result

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

EUT Information

EUT Name: 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)
51.489231	21.20	40.00	18.80	100.0	V	146.0	-18.6
58.801539	21.66	40.00	18.34	100.0	V	336.0	-19.2
100.996539	10.95	43.50	32.55	100.0	V	328.0	-19.3
202.361539	12.06	43.50	31.44	100.0	V	180.0	-19.3
396.548077	16.38	46.00	29.62	100.0	V	0.0	-14.2
979.182308	26.70	54.00	27.30	100.0	V	236.0	-4.4

Final Result

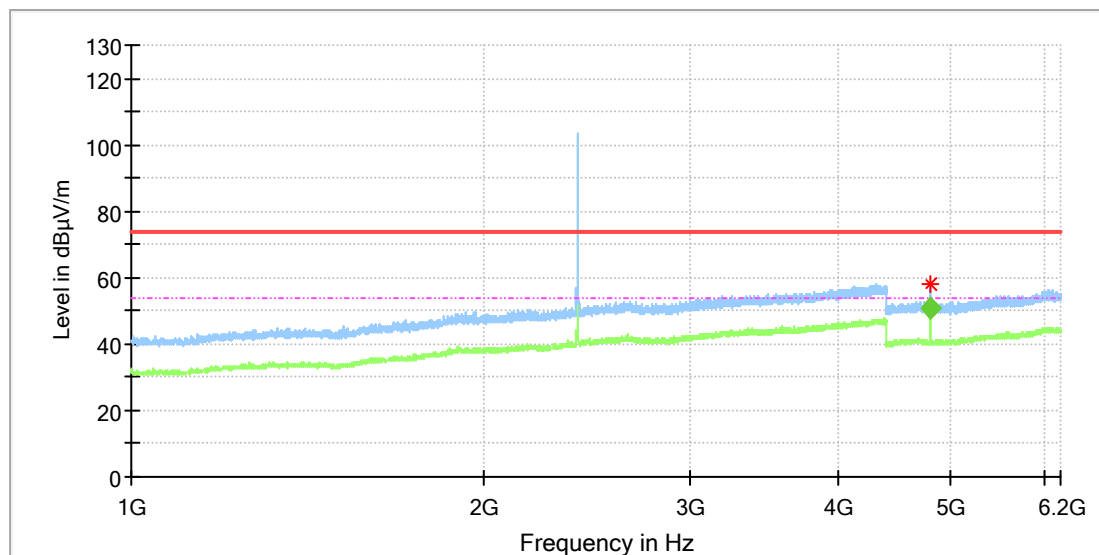
Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

1GHz - 18GHz

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

EUT Information

EUT Name:	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

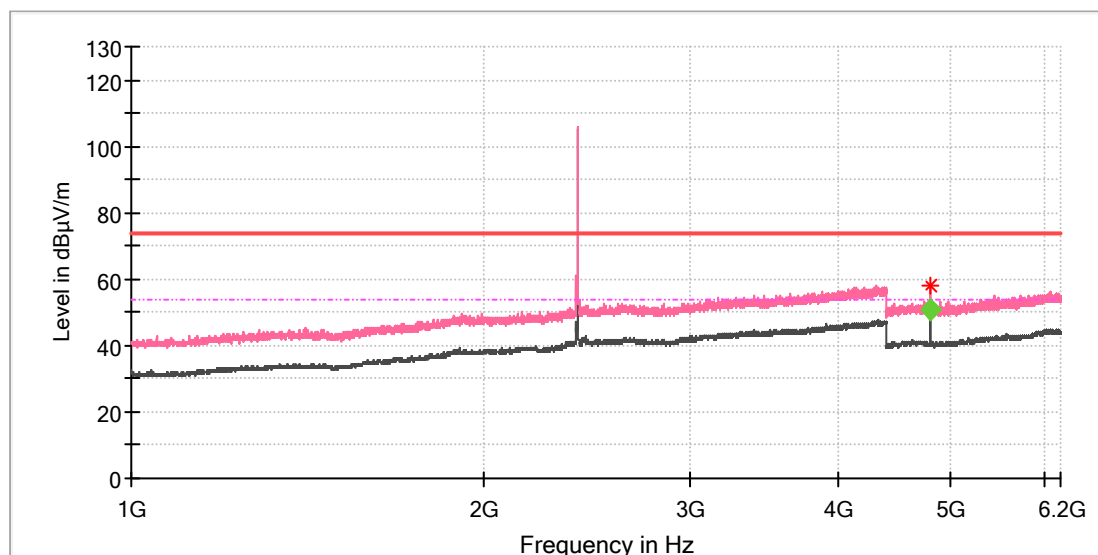
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4804.500000	57.97	---	74.00	16.03	150.0	H	247.0	13.3

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4804.027778	---	50.70	54.00	3.30	150.0	H	247.0	13.3

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

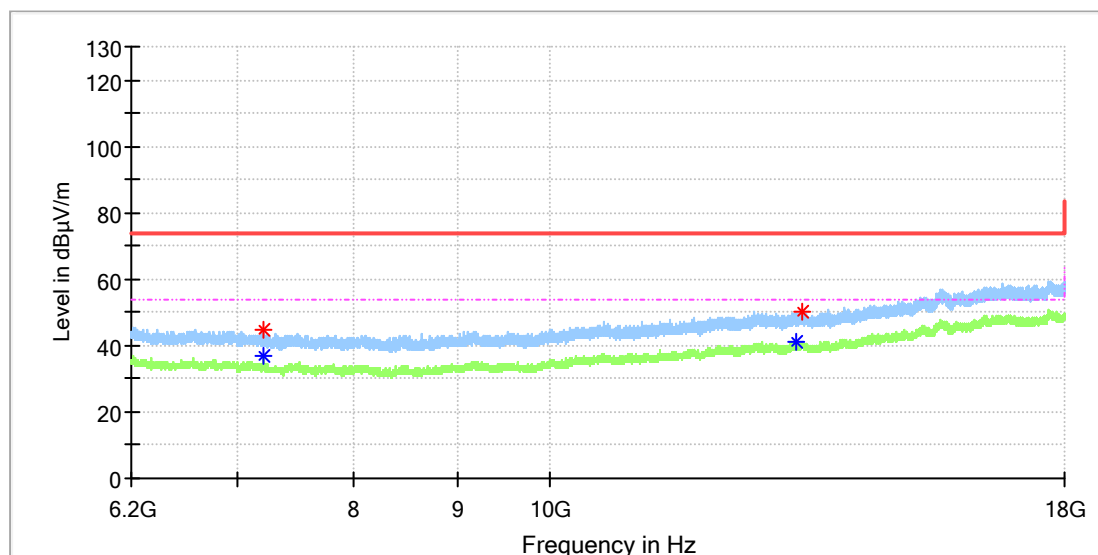
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4803.500000	57.86	---	74.00	16.14	150.0	V	266.0	13.3

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4803.700000	---	50.96	54.00	3.04	150.0	V	255.0	13.3

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

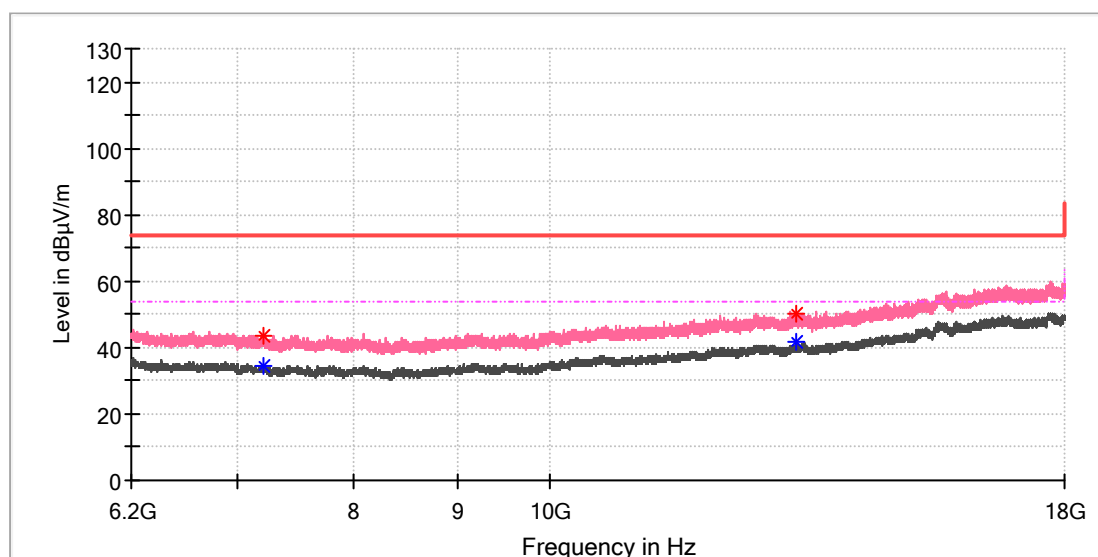
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7205.458333	---	36.88	54.00	17.12	150.0	H	2.0	8.8
7206.441667	44.79	---	74.00	29.21	150.0	H	2.0	8.8
13253.941667	---	40.88	54.00	13.12	150.0	H	11.0	15.5
13347.358333	50.38	---	74.00	23.62	150.0	H	119.0	15.5

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

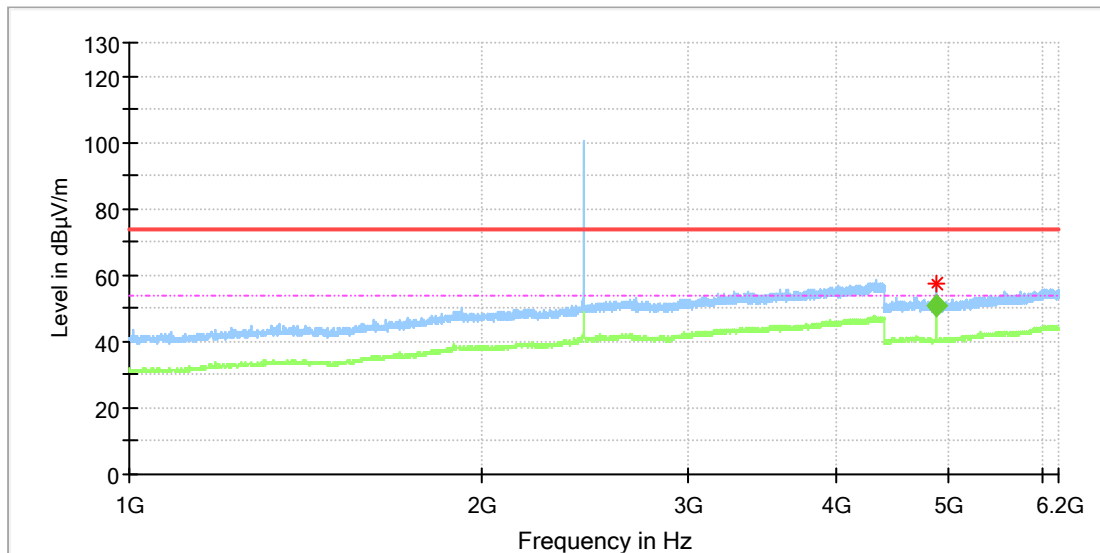
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7206.933333	---	34.47	54.00	19.53	150.0	V	275.0	8.8
7213.325000	43.82	---	74.00	30.18	150.0	V	322.0	8.7
13235.750000	---	41.74	54.00	12.26	150.0	V	358.0	15.5
13242.633333	50.38	---	74.00	23.62	150.0	V	298.0	15.5

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_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

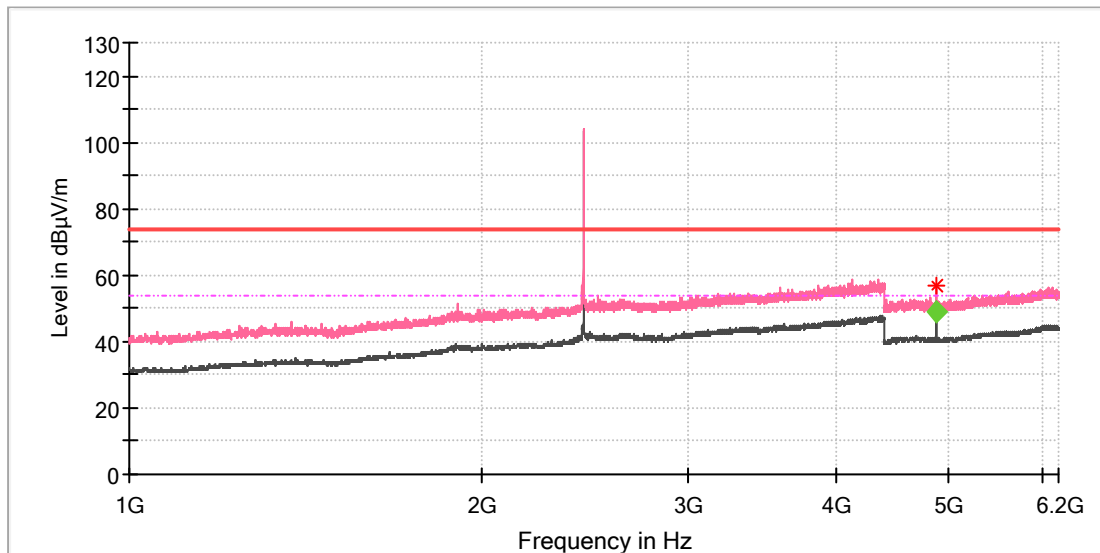
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4879.500000	57.69	---	74.00	16.31	150.0	H	252.0	13.3

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4879.941667	---	50.89	54.00	3.11	150.0	H	252.0	13.3

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

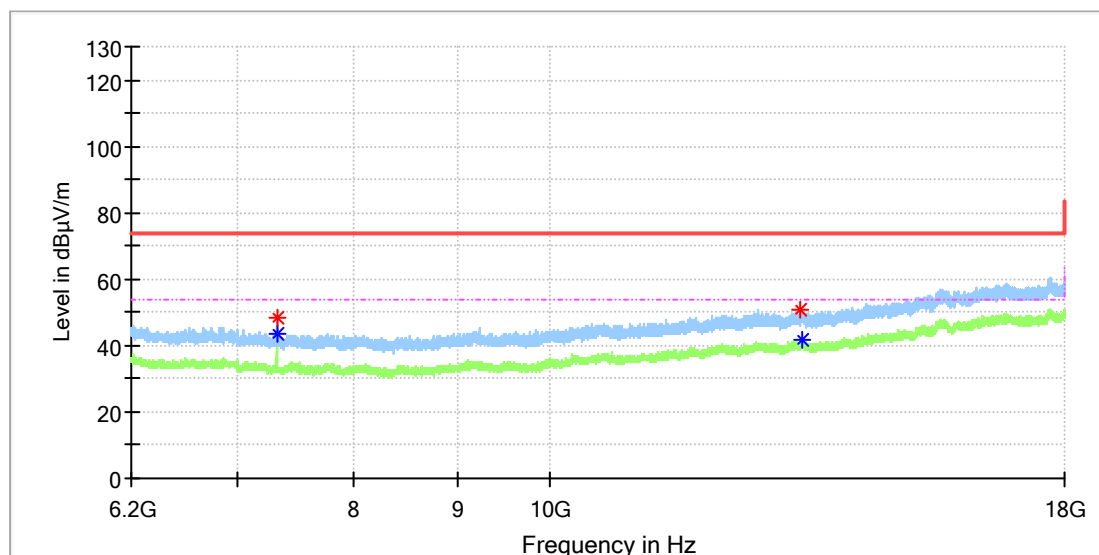
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4879.500000	56.62	---	74.00	17.38	150.0	V	250.0	13.3

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4880.038889	---	48.95	54.00	5.05	150.0	V	250.0	13.3

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

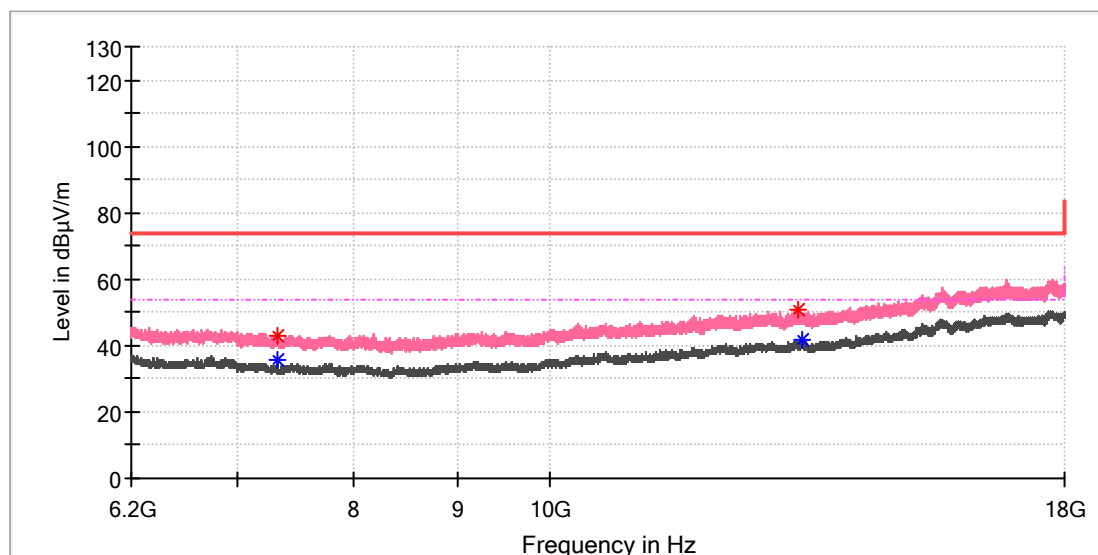
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7319.033333	48.53	---	74.00	25.47	150.0	H	118.0	8.2
7320.016667	---	43.56	54.00	10.44	150.0	H	11.0	8.2
13306.058333	50.80	---	74.00	23.20	150.0	H	118.0	15.5
13335.066667	---	41.48	54.00	12.52	150.0	H	200.0	15.5

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_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

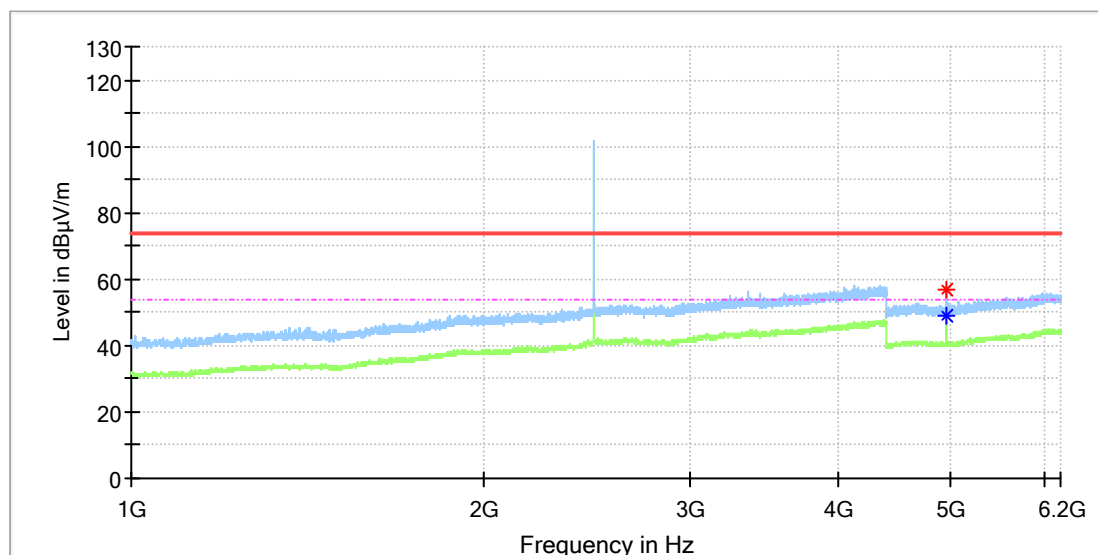
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7319.033333	---	35.89	54.00	18.12	150.0	V	270.0	8.2
7321.000000	43.14	---	74.00	30.86	150.0	V	172.0	8.2
13272.625000	50.56	---	74.00	23.44	150.0	V	270.0	15.5
13353.750000	---	41.76	54.00	12.24	150.0	V	295.0	15.5

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

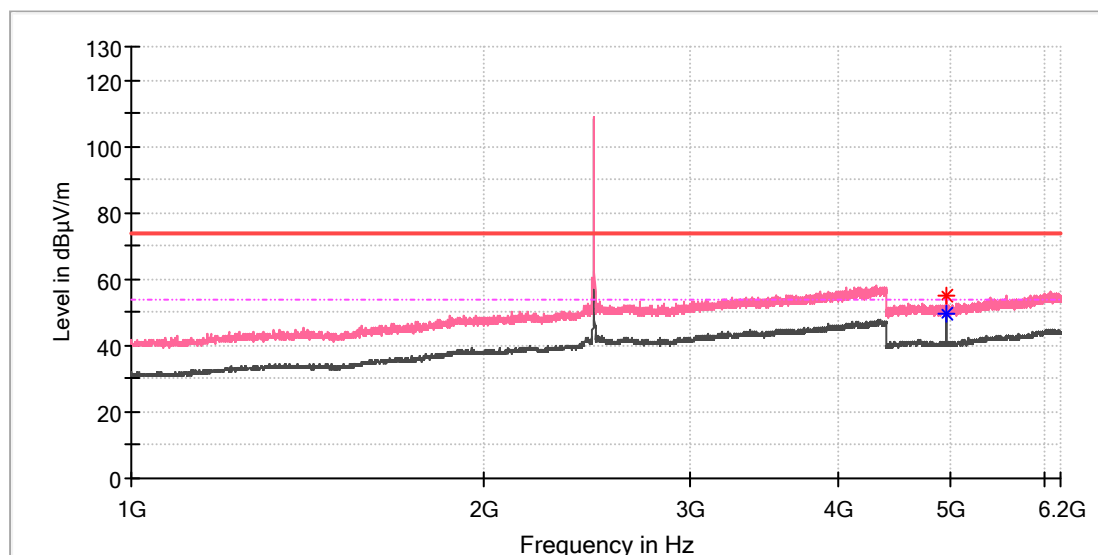
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4960.000000	56.95	---	74.00	17.05	150.0	H	253.0	13.3
4960.500000	---	49.05	54.00	4.95	150.0	H	253.0	13.3

Final Result

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

EUT Information

EUT Name:	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

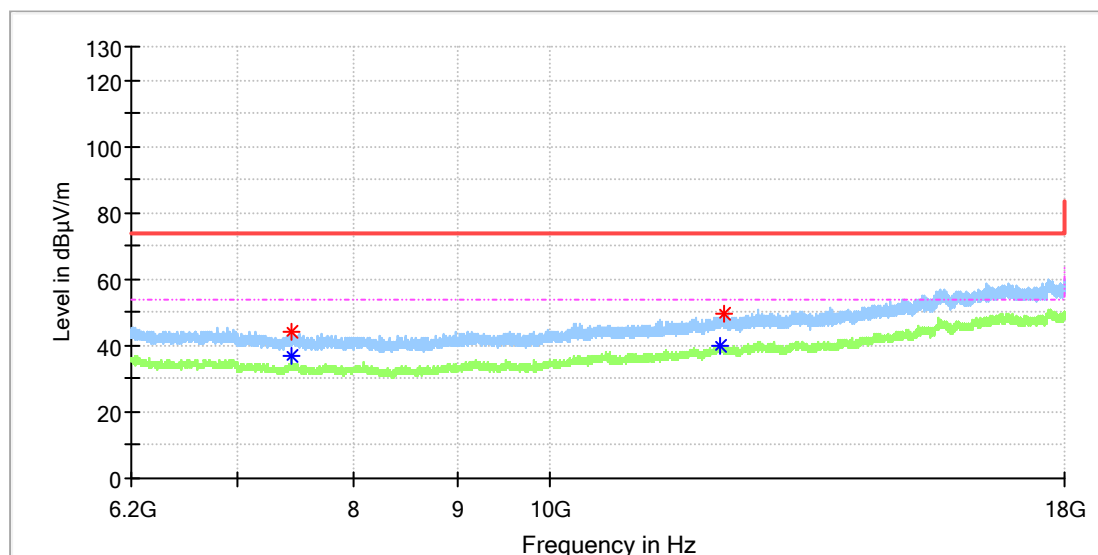
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4960.000000	55.30	---	74.00	18.70	150.0	V	265.0	13.3
4960.000000	---	49.55	54.00	4.45	150.0	V	265.0	13.3

Final Result

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

EUT Information

EUT Name: 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

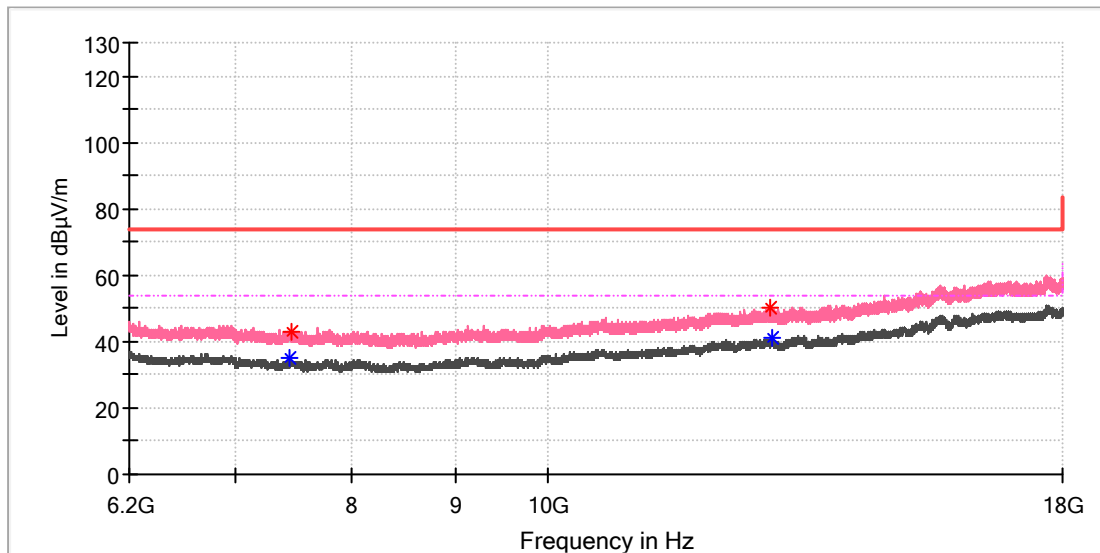
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7439.491667	---	36.61	54.00	17.39	150.0	H	74.0	8.4
7440.475000	44.20	---	74.00	29.80	150.0	H	0.0	8.4
12153.591667	---	39.94	54.00	14.06	150.0	H	271.0	14.4
12203.250000	49.59	---	74.00	24.41	150.0	H	307.0	14.7

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: 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)
7439.000000	---	34.92	54.00	19.08	150.0	V	108.0	8.4
7458.666667	43.03	---	74.00	30.97	150.0	V	143.0	8.5
12881.258333	50.04	---	74.00	23.96	150.0	V	190.0	15.4
12915.183333	---	41.18	54.00	12.82	150.0	V	263.0	15.5

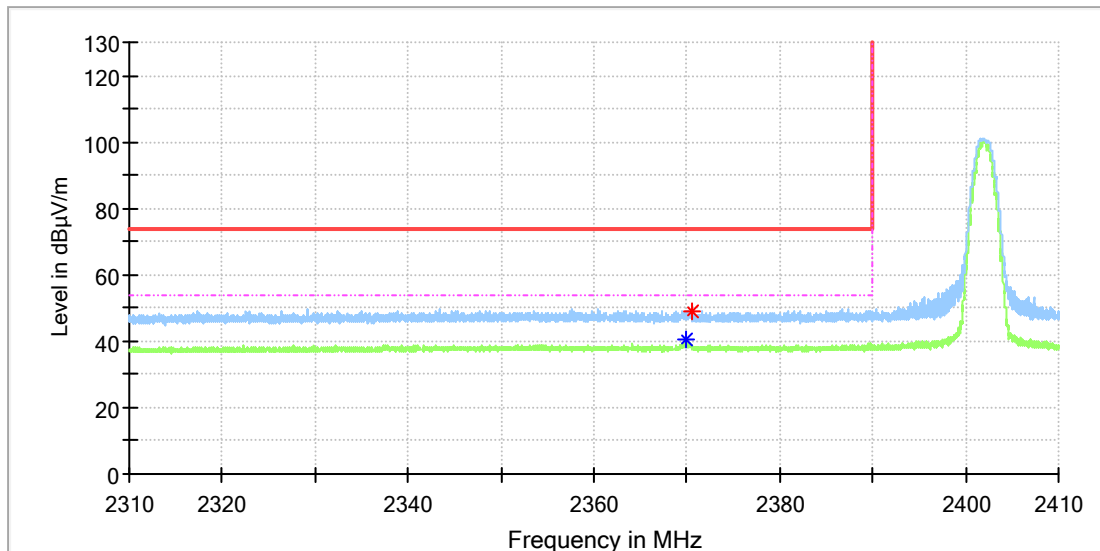
Final_Result

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

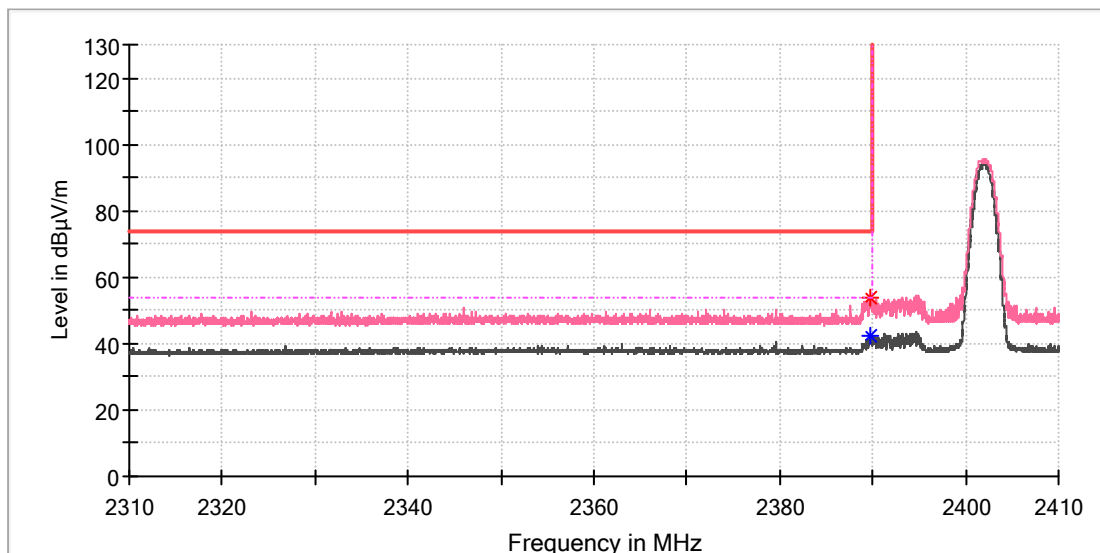
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2369.852941	---	40.26	54.00	13.74	150.0	H	303.0	6.9
2370.647059	48.96	---	74.00	25.04	150.0	H	357.0	6.9

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_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

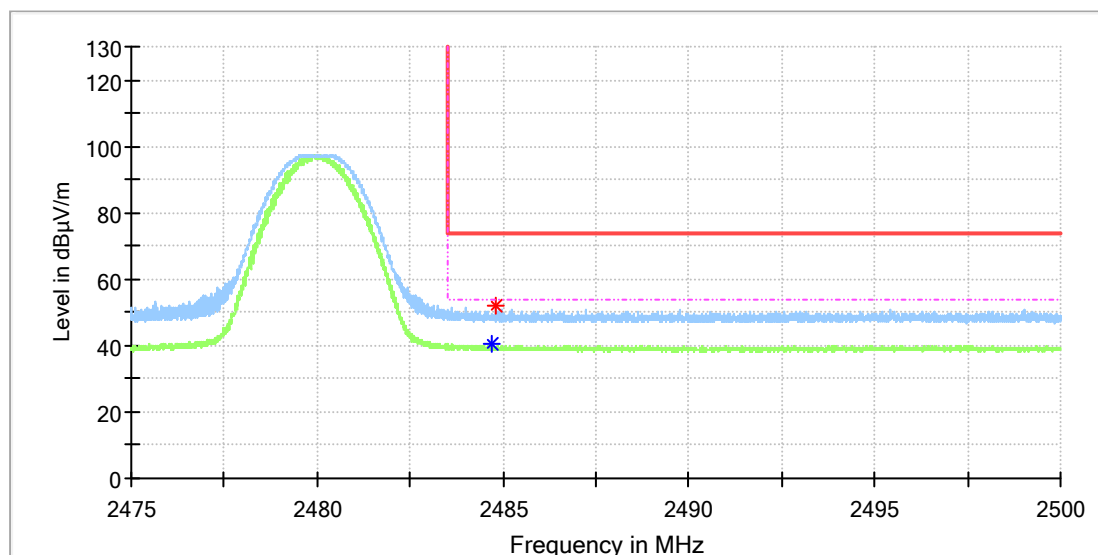
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2389.808824	---	42.46	54.00	11.54	150.0	V	260.0	7.0
2389.838235	53.51	---	74.00	20.49	150.0	V	267.0	7.0

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

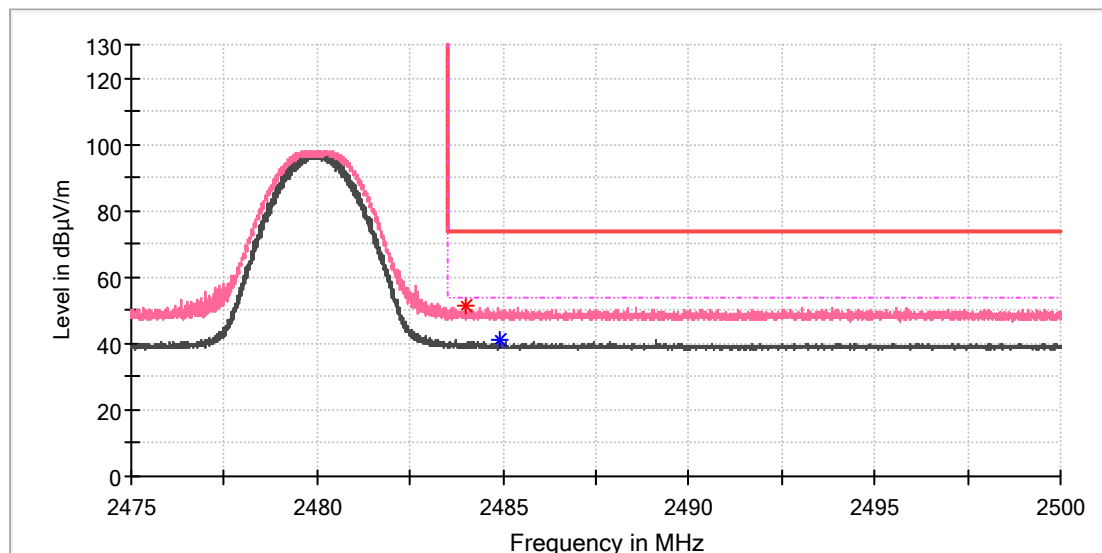
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2484.691177	---	40.37	54.00	13.63	150.0	H	328.0	7.4
2484.827206	51.87	---	74.00	22.13	150.0	H	314.0	7.4

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_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)
2483.992647	51.16	---	74.00	22.84	150.0	V	86.0	7.4
2484.919118	---	40.90	54.00	13.10	150.0	V	106.0	7.4

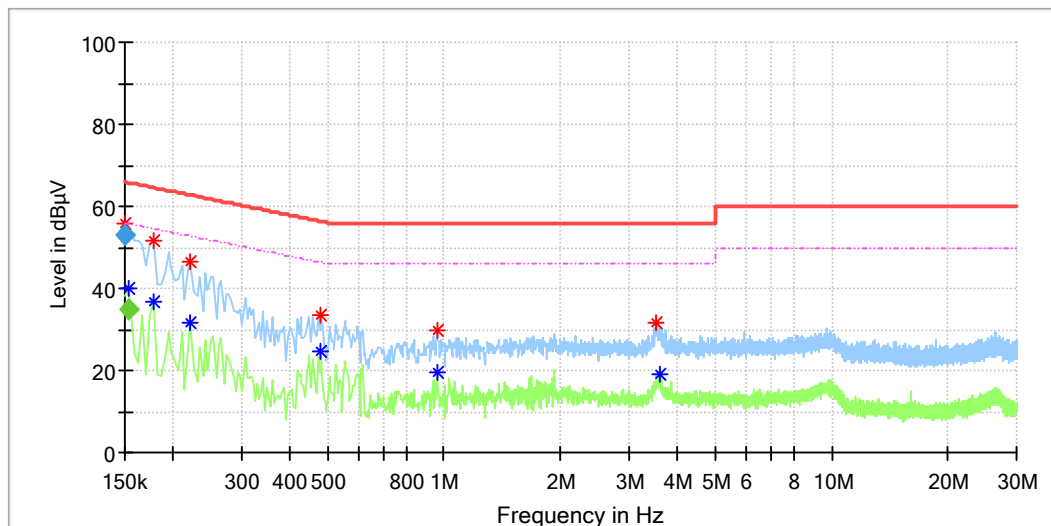
Final Result

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

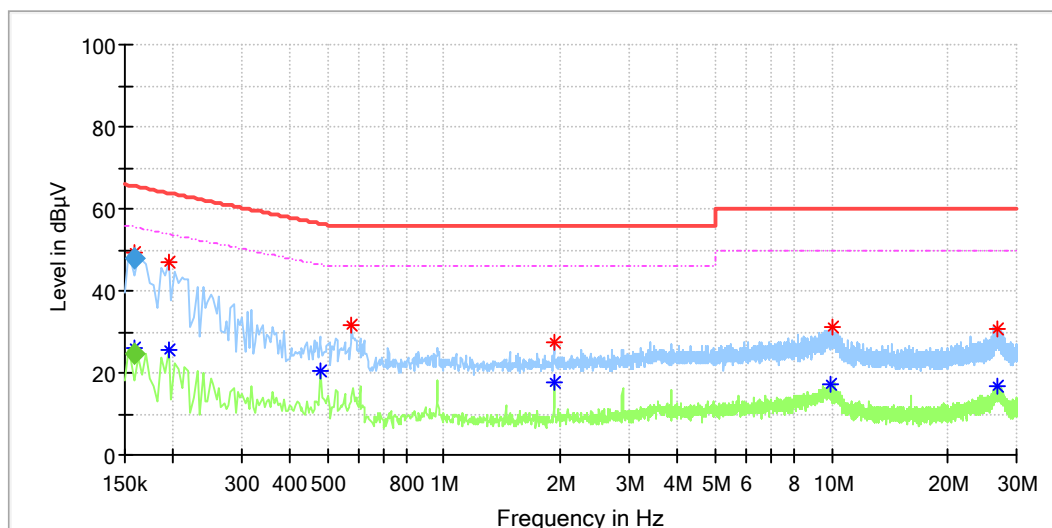
Frequency (MHz)	MaxPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)
0.150000	55.91	---	66.00	10.09	L1	9.8
0.154000	---	40.10	55.78	15.68	L1	9.8
0.178000	---	36.55	54.58	18.02	L1	9.8
0.178000	51.56	---	64.58	13.02	L1	9.8
0.222000	---	31.56	52.74	21.19	L1	9.8
0.222000	46.41	---	62.74	16.33	L1	9.8
0.482000	---	24.53	46.31	21.77	L1	9.9
0.482000	33.37	---	56.31	22.94	L1	9.9
0.962000	---	19.40	46.00	26.60	L1	9.9
0.962000	29.60	---	56.00	26.40	L1	9.9
3.534000	31.72	---	56.00	24.28	L1	10.1
3.586000	---	19.09	46.00	26.91	L1	10.1

Final Result

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.150000	52.98	---	66.00	13.02	1000.0	9.000	L1	9.8
0.154000	---	34.90	55.78	20.88	1000.0	9.000	L1	9.8

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)
0.158000	49.52	---	65.78	16.27	N	9.7
0.158500	---	26.18	55.78	29.60	N	9.7
0.194000	---	25.61	53.86	28.25	N	9.7
0.194000	46.87	---	63.86	17.00	N	9.7
0.482000	---	20.68	46.31	25.62	N	9.7
0.578000	31.62	---	56.00	24.38	N	9.7
1.922000	---	17.53	46.00	28.47	N	9.8
1.922000	27.48	---	56.00	28.52	N	9.8
9.898000	---	17.05	50.00	32.95	N	9.9
10.078000	31.14	---	60.00	28.86	N	9.9
26.918000	---	16.89	50.00	33.11	N	10.1
26.918000	30.51	---	60.00	29.49	N	10.1

Final_Result

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.158000	48.13	---	65.57	17.44	1000.0	9.000	N	9.7
0.158500	---	24.67	55.54	30.87	1000.0	9.000	N	9.7