Prüfbericht-Nr.: *Test report no.*:	**CN25HW95 002**	**Auftrags-Nr.:** *Order no.*:	168543945	Seite 1 von 25 *Page 1 of 25*
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 Breeze Jiang Signed by: Breeze Jiang	**genehmigt von:** *authorized by*:	X Jonathan Li Signed by: Jonathan Li
Datum: *Date:* 2025-06-05		**Ausstellungsdatum:** *Issue date:* 2025-06-05	
Stellung / Position:	Sachverständige(r)/Expert	**Stellung** / Position:	Sachverständige(r)/Expert

Sonstiges / *Other*: FCC ID: Z8M-NSSB21

This report is for Classic Bluetooth(module ATS2853) 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*

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 Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden. *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.*
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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. *Test clauses with remark of * are subcontracted to qualified subcontractors and descripted under the respective test clause in the report.* *Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.*
4	Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnisen 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 bezueglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019. *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.*

Test Summary

5.1.1 ANTENNA REQUIREMENT
RESULT: Pass

5.1.2 MAXIMUM PEAK CONDUCTED OUTPUT POWER
RESULT: Pass

5.1.3 99% BANDWIDTH
RESULT: Pass

5.1.4 20DB BANDWIDTH
RESULT: Pass

5.1.5 CARRIER FREQUENCY SEPARATION
RESULT: Pass

5.1.6 NUMBER OF HOPPING FREQUENCY
RESULT: Pass

5.1.7 TIME OF OCCUPANCY
RESULT: Pass

5.1.8 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 KHZ BANDWIDTH
RESULT: Pass

5.1.9 RADIATED SPURIOUS EMISSION
RESULT: Pass

5.1.10 CONDUCTED EMISSION ON AC MAINS
RESULT: Pass

Contents

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: 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 basics 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 %
Unwanted Emissions, conducted	± 0.89 dB
All emissions, radiated	± 4.17 dB
Conducted Emission, (9kHz to 150kHz)/(150kHz to 30MHz)	± 3.70 dB / ± 3.30 dB

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A & B of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) 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, Chinais 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 appearance and model no. are 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
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, π/4-DQPSK, 8DPSK
Channel Number:	79 channels
Channel Separation:	1MHz
Data Rate:	1Mbps, 2Mbps, 3Mbps
Antenna Type:	Integral Antenna
Antenna Gain:	4.91 dBi (Provided by the Client)
Technical Specification of Bluetooth dual mode (Module BT8961)	
Operating Frequency:	2402 MHz to 2480 MHz
Type of Modulation:	GFSK, π/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 (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

3.3 Independent Operation Modes

The basic operation modes are:

A. On, Bluetooth transmitting mode
    1) Low Channel
    2) Middle Channel
    3) High Channel

B. On, Transmitting on Hopping channel

C. On, Normal working + BT Link

D. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

- Application Form
- Operation Description
- User Manual
- 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 5: 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)

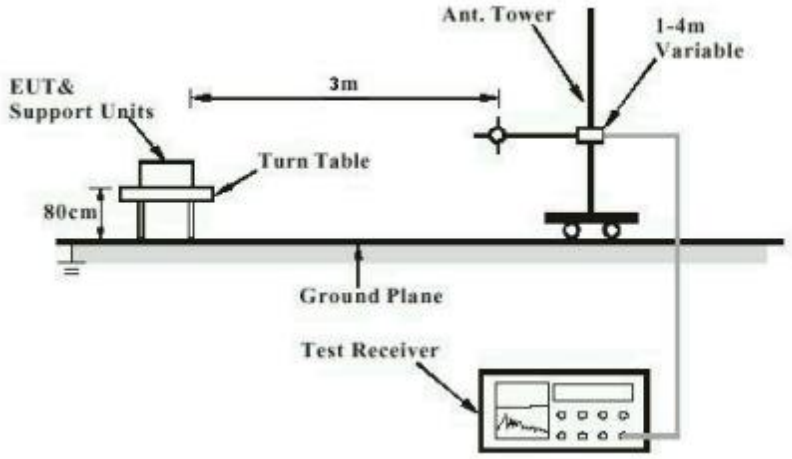


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

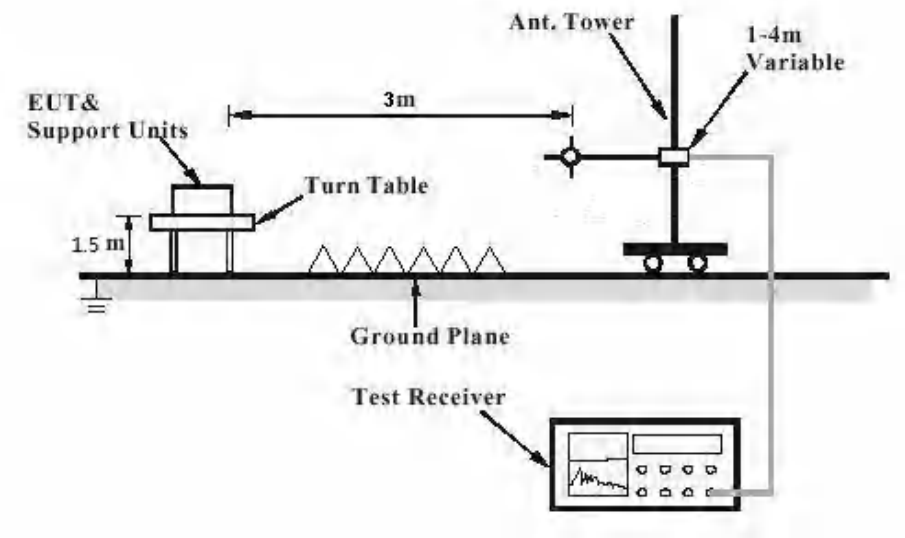


Diagram of Measurement Configuration for Mains Conduction Measurement

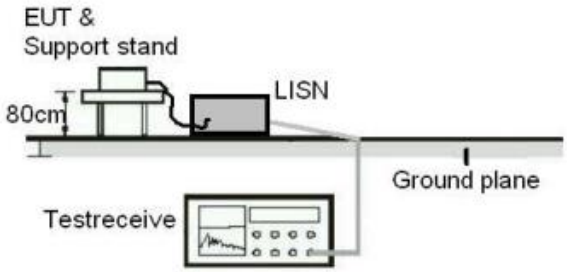
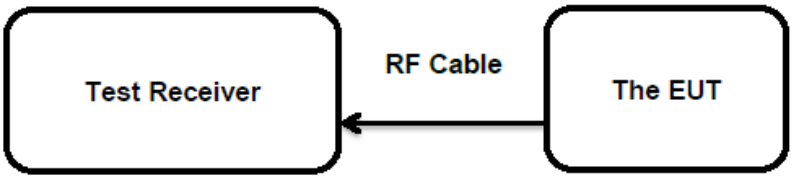


Diagram of Measurement Configuration for Conducted Transmitter Measurement



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.

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
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 ℃
Relative humidity	:	45 %
Atmospheric pressure	:	101 kPa

For details refer to following test result.

Table 6: 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	3.93	0.0025	< 0.125
	2441.0	3.63	0.0023	
	2480.0	3.31	0.0021	
8DPSK (EDR)	2402.0	4.38	0.0027	
	2441.0	4.28	0.0027	
	2480.0	4.16	0.0026	
Maximum Measured Value		**4.38**	**0.0027**	

Note:
1) The cable loss is taken into account in results.
2) Antenna gain(G): 4.91 dBi
e.i.r.p.=$P_{(Peak\ power)}$+ G, which is far below the 4 W

5.1.3 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
Test channel	:	Low / Middle / High
Ambient temperature	:	25 ℃
Relative humidity	:	45 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

5.1.4 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 ℃
Relative humidity	:	45 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

5.1.5 Carrier Frequency Separation

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(a)(1)
Basic standard	:	ANSI C63.10: 2013
Limits	:	≥ 25kHz 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	:	B
Ambient temperature	:	25 ℃
Relative humidity	:	45 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

5.1.6 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	:	B
Ambient temperature	:	25 ℃
Relative humidity	:	45 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

5.1.7 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	:	B
Ambient temperature	:	25 ℃
Relative humidity	:	45 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

5.1.8 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
Test channel	:	Low / Middle / High
Ambient temperature	:	25 ℃
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.

5.1.9 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
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.

Note: This test were performed on Bluetooth (Module ATS2853) + Bluetooth (Module BT8961) mode, here just the worst case were shown.

For the measurement records, refer to the appendix A.

5.1.10 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 ℃
Relative humidity	:	50.4 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

6 Photographs of the Test Set-Up

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

7 List of Tables

Appendix A: Test Results of Bluetooth BR & EDR

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	0.939	2401.535	2402.474	---	PASS
		2441	0.933	2440.538	2441.471	---	PASS
		2480	0.945	2479.532	2480.477	---	PASS
3DH5	Ant1	2402	1.245	2401.361	2402.606	---	PASS
		2441	1.260	2440.355	2441.615	---	PASS
		2480	1.254	2479.355	2480.609	---	PASS

Test Graphs

DH5_Ant1_2402

DH5_Ant1_2441

DH5_Ant1_2480

3DH5_Ant1_2402

3DH5_Ant1_2441

3DH5_Ant1_2480

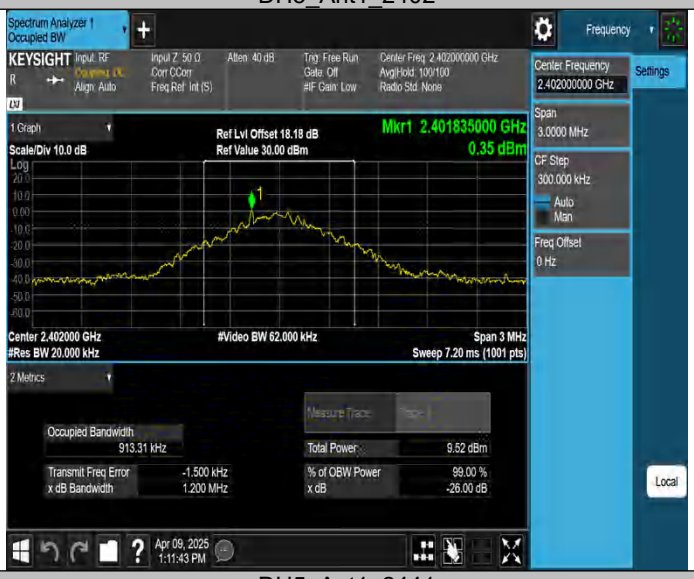
Appendix A.2: Test Results of 99% Bandwidth

Test Result

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.91331	2401.5418	2402.4552	---	PASS
		2441	0.90581	2440.5436	2441.4494	---	PASS
		2480	0.91068	2479.5412	2480.4518	---	PASS
3DH5	Ant1	2402	1.1820	2401.4018	2402.5838	---	PASS
		2441	1.1929	2440.3928	2441.5857	---	PASS
		2480	1.1815	2479.3984	2480.5799	---	PASS

Test Graphs

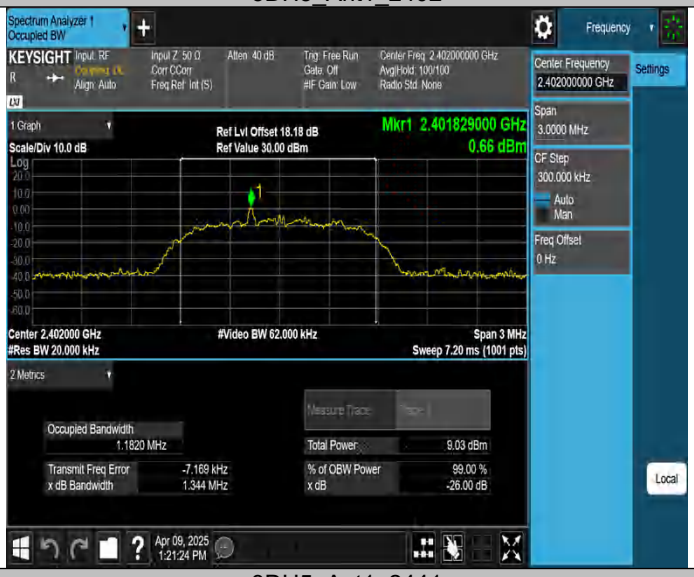
DH5_Ant1_2402



DH5_Ant1_2441

DH5_Ant1_2480

3DH5_Ant1_2402



3DH5_Ant1_2441

3DH5_Ant1_2480

Appendix A.3: Test Results of Carrier Frequency Separation

Test Result

TestMode	Antenna	Channel	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	1.004	≥0.945	PASS
3DH5	Ant1	Hop	1.024	≥0.840	PASS

Test Graphs

DH5_Ant1_Hop

3DH5_Ant1_Hop

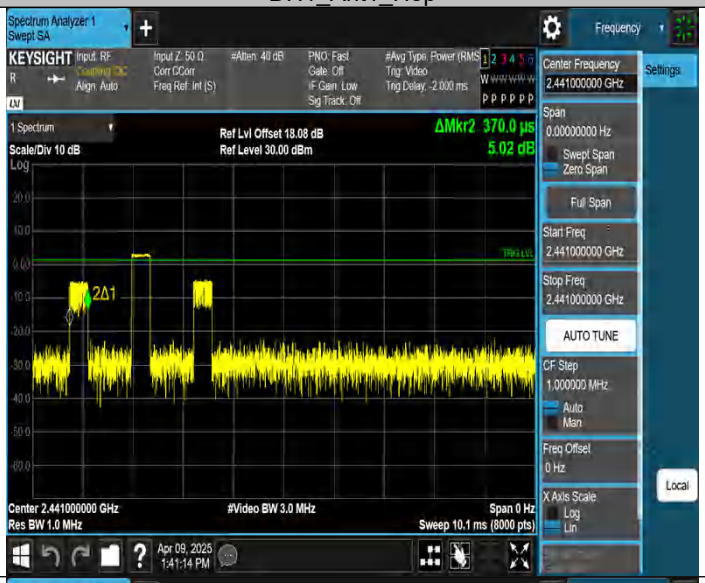
Appendix A.4: Test Results of Time of Occupancy

Test Result

TestMode	Antenna	Channel	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH1	Ant1	Hop	0.370	319	0.118	≤0.4	PASS
DH3	Ant1	Hop	1.620	159	0.258	≤0.4	PASS
DH5	Ant1	Hop	2.865	107	0.307	≤0.4	PASS
3DH1	Ant1	Hop	0.377	319	0.12	≤0.4	PASS
3DH3	Ant1	Hop	1.629	159	0.259	≤0.4	PASS
3DH5	Ant1	Hop	2.879	107	0.308	≤0.4	PASS

Test Graphs

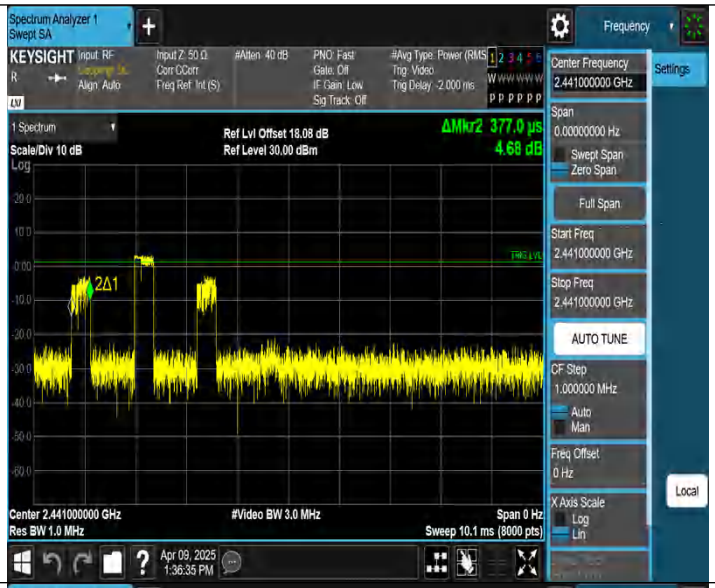
DH1_Ant1_Hop



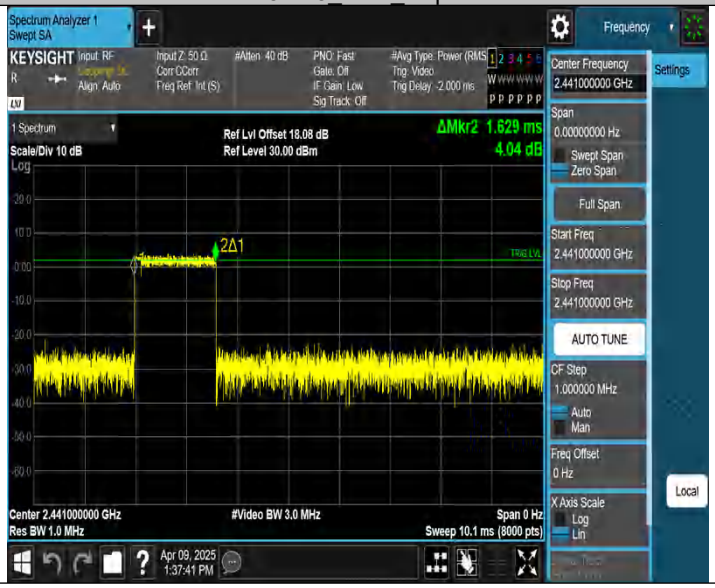
DH3_Ant1_Hop

DH5_Ant1_Hop

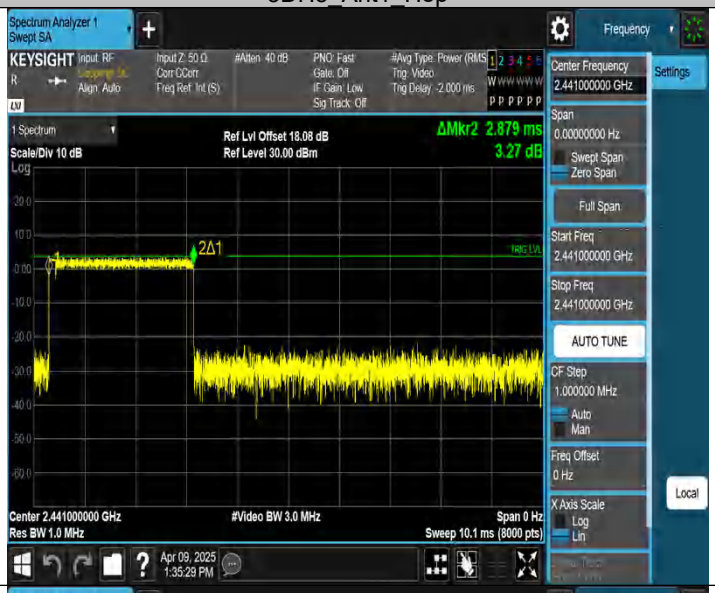
3DH1_Ant1_Hop



3DH3_Ant1_Hop



3DH5_Ant1_Hop



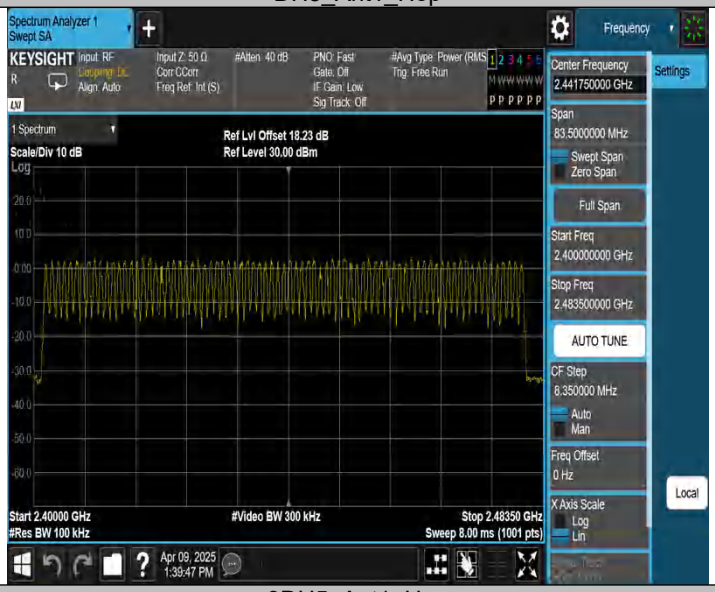
Appendix A.5: Test Results of Number of Hopping Frequency

Test Result

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

Test Graphs

DH5_Ant1_Hop



3DH5_Ant1_Hop

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	2.97	-42.65	≤-17.03	PASS
		High	2480	2.52	-43.61	≤-17.48	PASS
3DH5	Ant1	Low	2402	2.97	-42.75	≤-17.03	PASS
		High	2480	2.50	-43.03	≤-17.50	PASS
DH5	Ant1	Hopping	2402	2.37	-43.34	≤-17.63	PASS
		Hopping	2480	1.59	-43.96	≤-18.41	PASS
3DH5	Ant1	Hopping	2402	2.13	-44.89	≤-17.87	PASS
		Hopping	2480	-1.71	-44.36	≤-21.71	PASS

Test Graphs

DH5_Ant1_Low_2402

DH5_Ant1_High_2480

3DH5_Ant1_Low_2402

3DH5_Ant1_High_2480

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

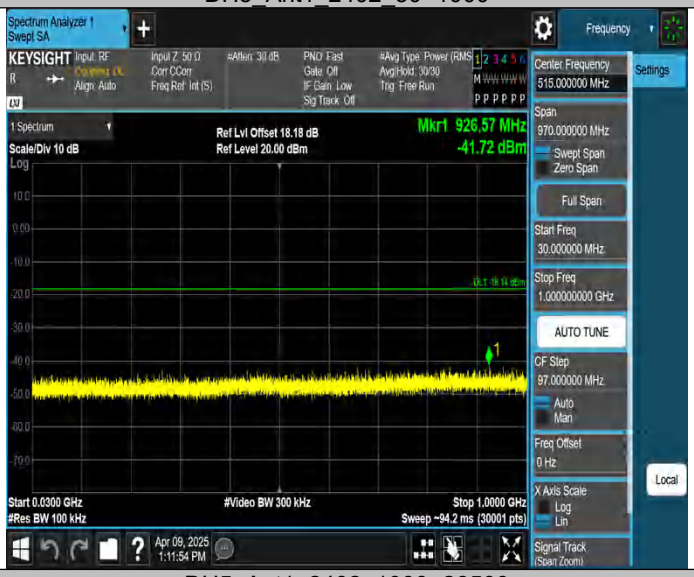
Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	1.86	1.86	---	PASS
			30~1000	1.86	-41.72	≤-18.14	PASS
			1000~26500	1.86	-32.31	≤-18.14	PASS
		2441	Reference	2.07	2.07	---	PASS
			30~1000	2.07	-41.5	≤-17.93	PASS
			1000~26500	2.07	-32.78	≤-17.93	PASS
		2480	Reference	1.61	1.61	---	PASS
			30~1000	1.61	-41.87	≤-18.39	PASS
			1000~26500	1.61	-32.16	≤-18.39	PASS
3DH5	Ant1	2402	Reference	-0.61	-0.61	---	PASS
			30~1000	-0.61	-41.78	≤-20.61	PASS
			1000~26500	-0.61	-32.15	≤-20.61	PASS
		2441	Reference	-0.71	-0.71	---	PASS
			30~1000	-0.71	-42.26	≤-20.71	PASS
			1000~26500	-0.71	-32.21	≤-20.71	PASS
		2480	Reference	-0.03	-0.03	---	PASS
			30~1000	-0.03	-42.57	≤-20.03	PASS
			1000~26500	-0.03	-32.23	≤-20.03	PASS

Test Graphs

DH5_Ant1_2402_0~Reference

DH5_Ant1_2402_30~1000



DH5_Ant1_2402_1000~26500

DH5_Ant1_2441_0~Reference

DH5_Ant1_2441_30~1000

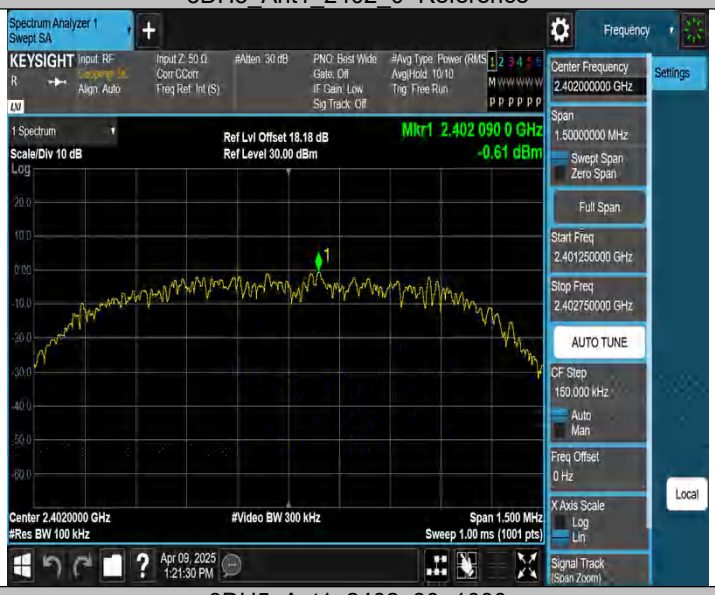
DH5_Ant1_2441_1000~26500

DH5_Ant1_2480_0~Reference

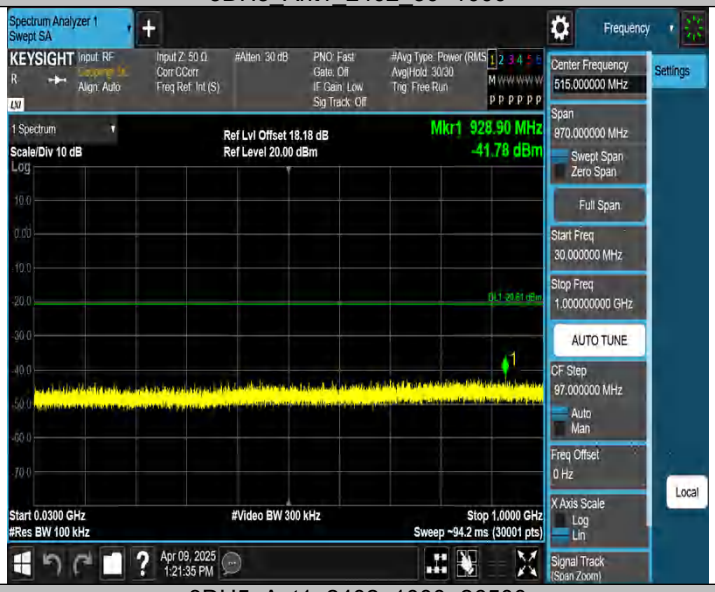
DH5_Ant1_2480_30~1000

DH5_Ant1_2480_1000~26500

3DH5_Ant1_2402_0~Reference



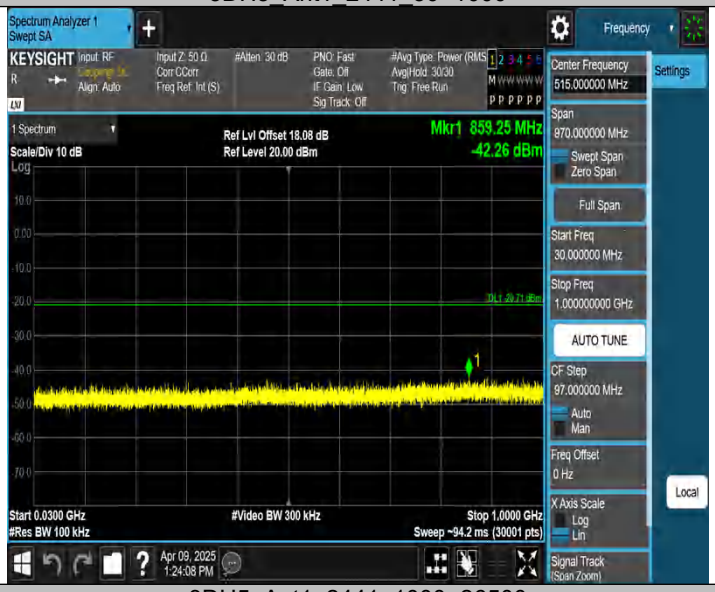
3DH5_Ant1_2402_30~1000



3DH5_Ant1_2402_1000~26500

3DH5_Ant1_2441_0~Reference

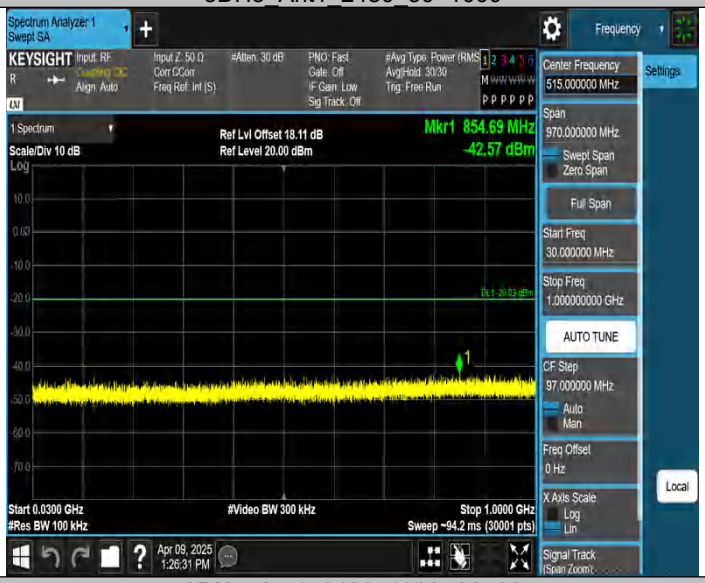
3DH5_Ant1_2441_30~1000



3DH5_Ant1_2441_1000~26500

3DH5_Ant1_2480_0~Reference

3DH5_Ant1_2480_30~1000



3DH5_Ant1_2480_1000~26500

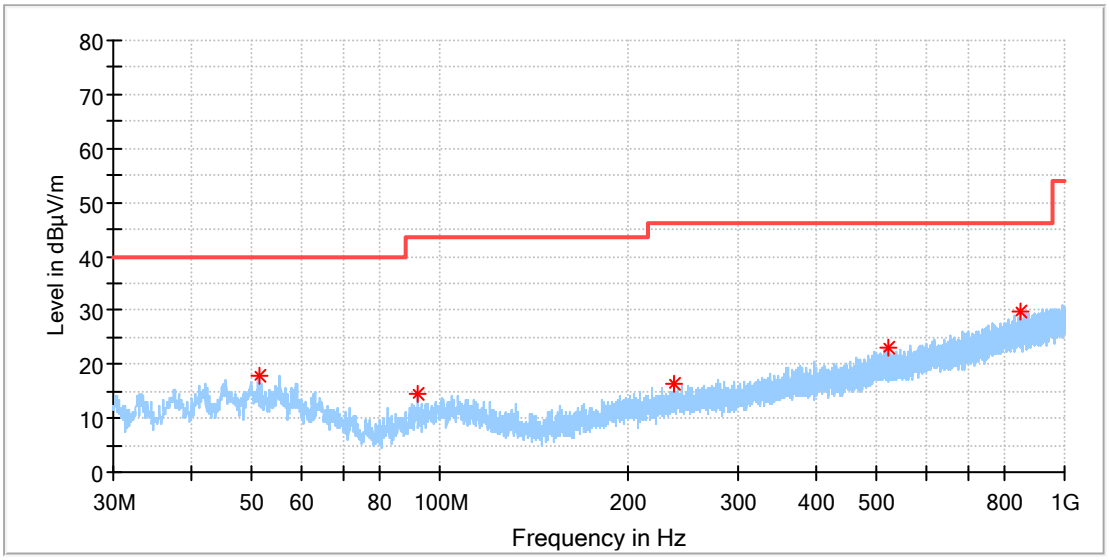
Appendix A.8: Test Results of Radiated Spurious Emissions

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

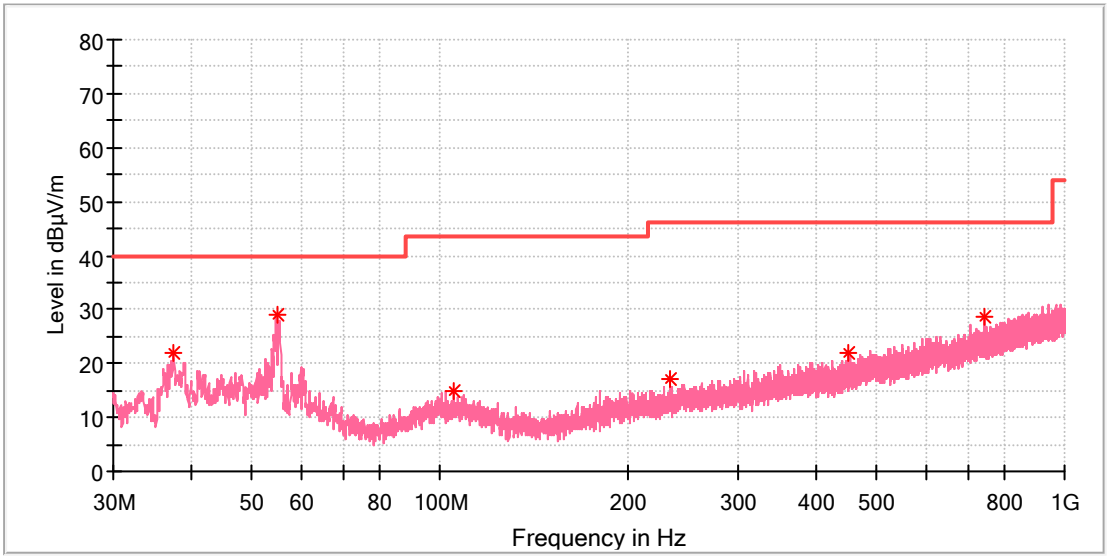
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
51.291500	17.82	40.00	22.18	100.0	H	24.0	-18.3
92.322500	14.39	43.50	29.11	100.0	H	256.0	-20.4
236.319000	16.28	46.00	29.72	100.0	H	12.0	-17.8
521.693000	22.90	46.00	23.10	100.0	H	63.0	-11.5
847.516000	29.78	46.00	16.22	100.0	H	97.0	-5.5

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)
37.517500	22.12	40.00	17.88	100.0	V	239.0	-21.0
54.783500	28.95	40.00	11.05	100.0	V	51.0	-18.4
105.126500	14.82	43.50	28.68	100.0	V	119.0	-18.8
233.069500	17.08	46.00	28.92	100.0	V	65.0	-17.9
450.398000	22.08	46.00	23.92	100.0	V	302.0	-12.9
745.035500	28.83	46.00	17.17	100.0	V	183.0	-7.3

Final_Result

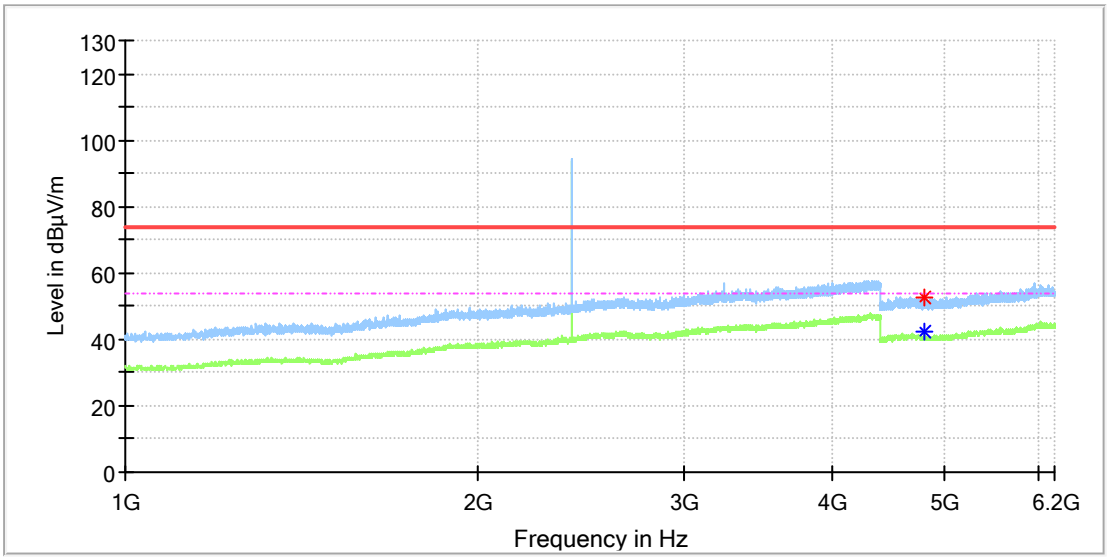
Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

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

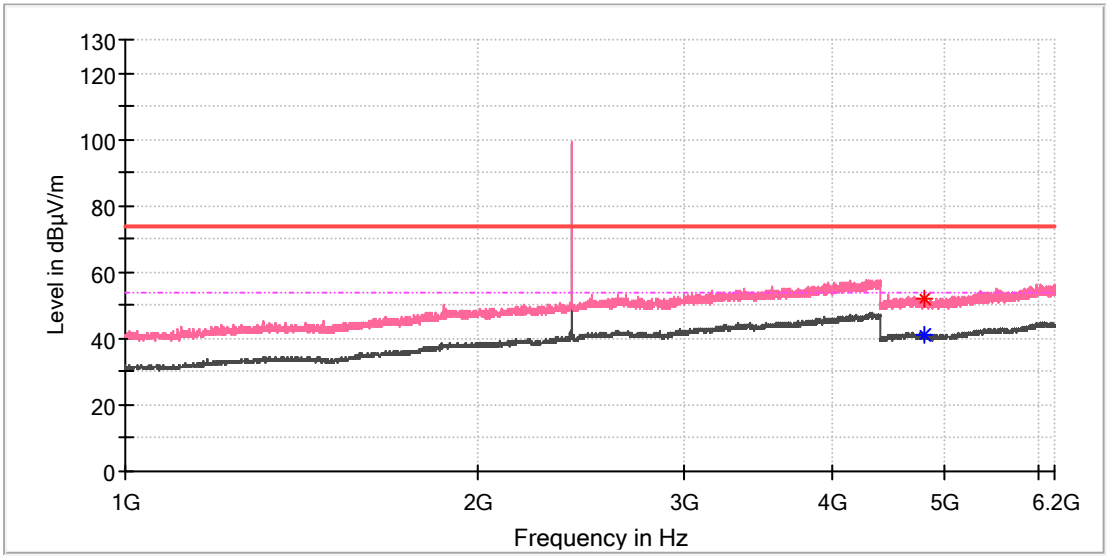
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4803.500000	52.72	---	74.00	21.28	150.0	H	287.0	13.3
4804.000000	---	42.54	54.00	11.46	150.0	H	3.0	13.3

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

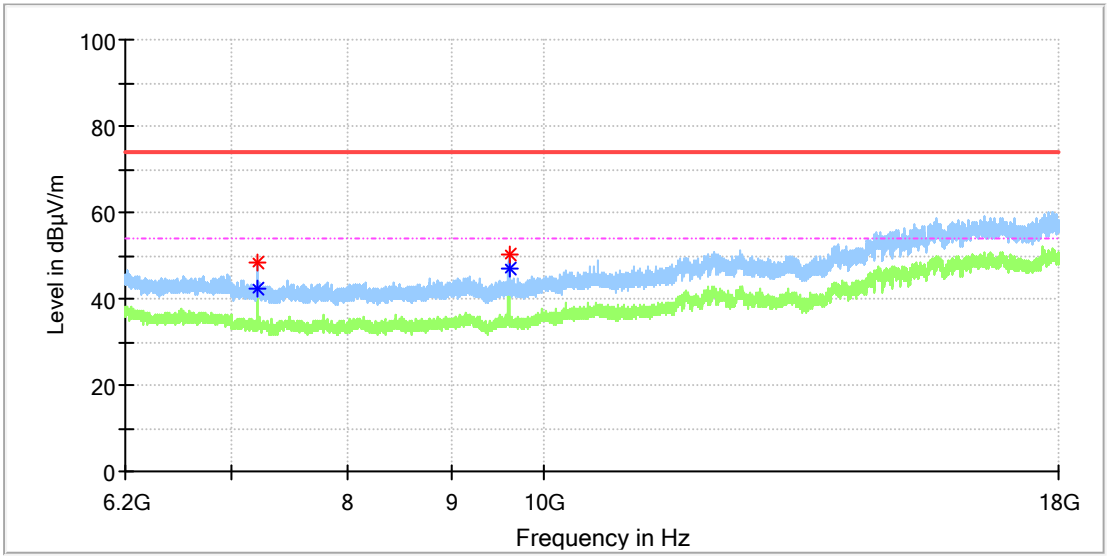
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4804.000000	---	41.40	54.00	12.60	150.0	V	284.0	13.3
4805.500000	52.09	---	74.00	21.91	150.0	V	122.0	13.3

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

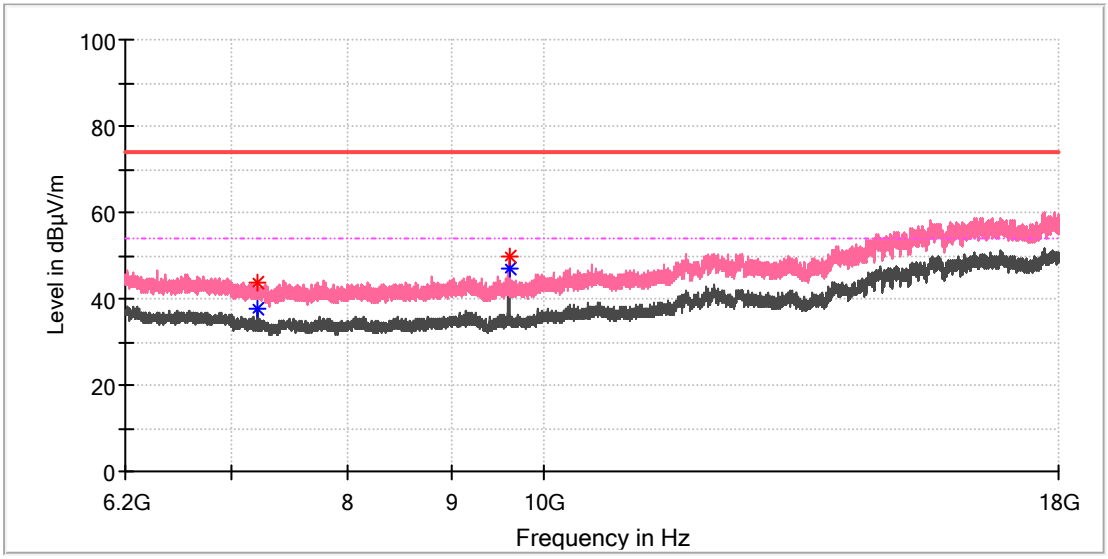
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7205.950000	48.56	---	74.00	25.44	150.0	H	95.0	8.8
7205.950000	---	42.32	54.00	11.68	150.0	H	95.0	8.8
9607.741667	50.17	---	74.00	23.83	150.0	H	342.0	10.4
9607.741667	---	46.94	54.00	7.06	150.0	H	342.0	10.4

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

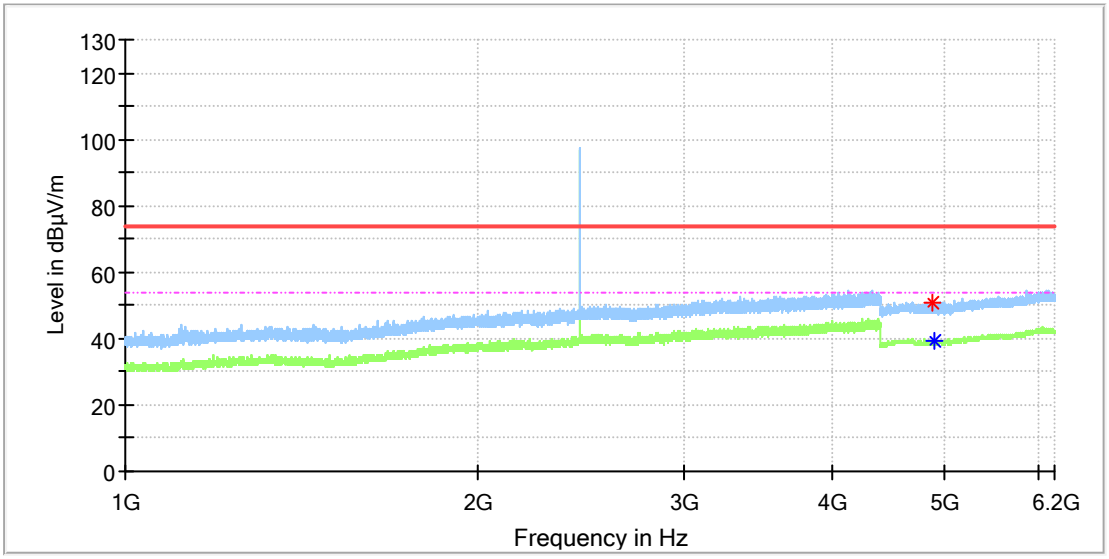
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7205.950000	43.74	---	74.00	30.26	150.0	V	64.0	8.8
7205.950000	---	37.65	54.00	16.35	150.0	V	64.0	8.8
9607.741667	---	47.16	54.00	6.84	150.0	V	76.0	10.4
9608.233333	49.54	---	74.00	24.46	150.0	V	76.0	10.4

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

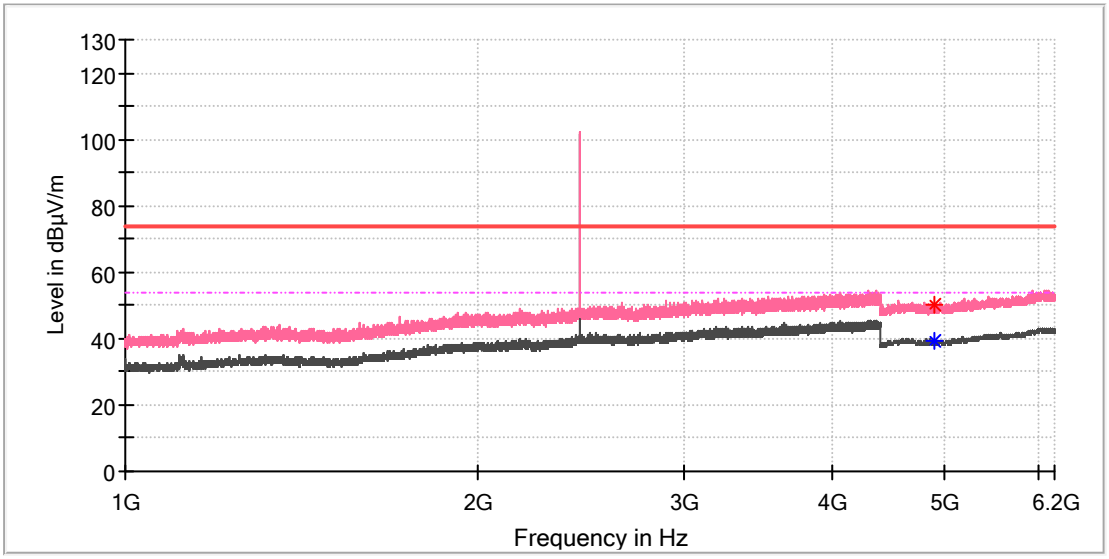
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4875.500000	50.83	---	74.00	23.17	150.0	H	174.0	11.8
4894.500000	---	39.21	54.00	14.79	150.0	H	31.0	11.8

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

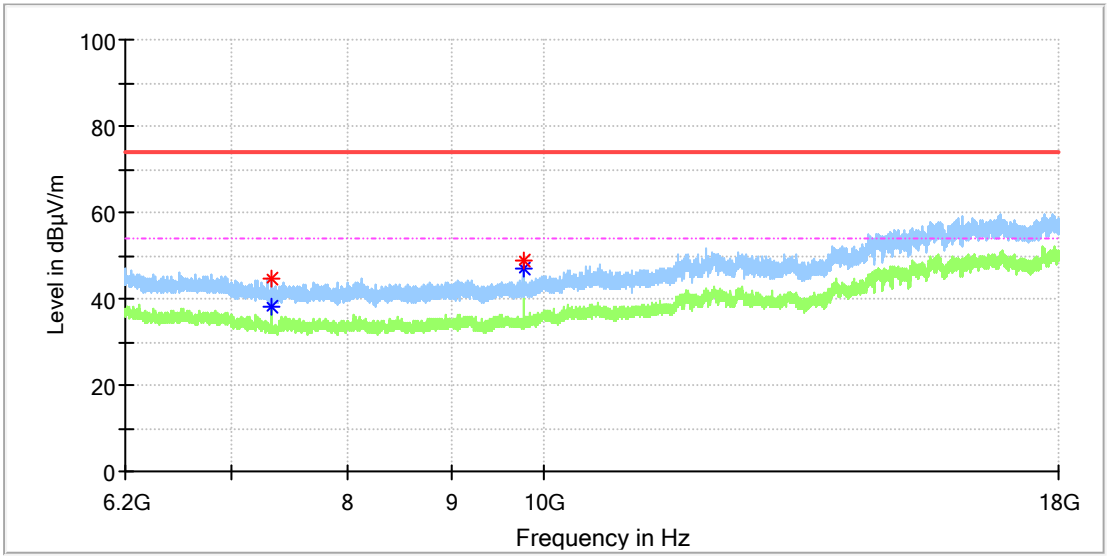
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4903.000000	---	39.28	54.00	14.72	150.0	V	103.0	11.8
4906.500000	50.15	---	74.00	23.85	150.0	V	49.0	11.8

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

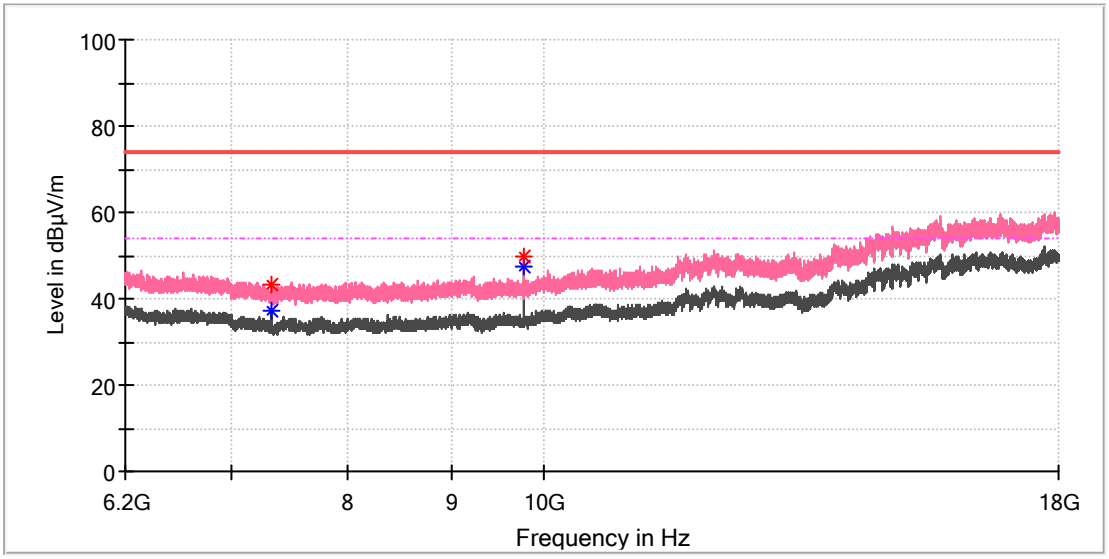
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7322.475000	---	38.34	54.00	15.66	150.0	H	305.0	8.2
7322.966667	44.58	---	74.00	29.42	150.0	H	305.0	8.2
9764.091667	48.84	---	74.00	25.16	150.0	H	0.0	10.4
9764.091667	---	46.80	54.00	7.20	150.0	H	0.0	10.4

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

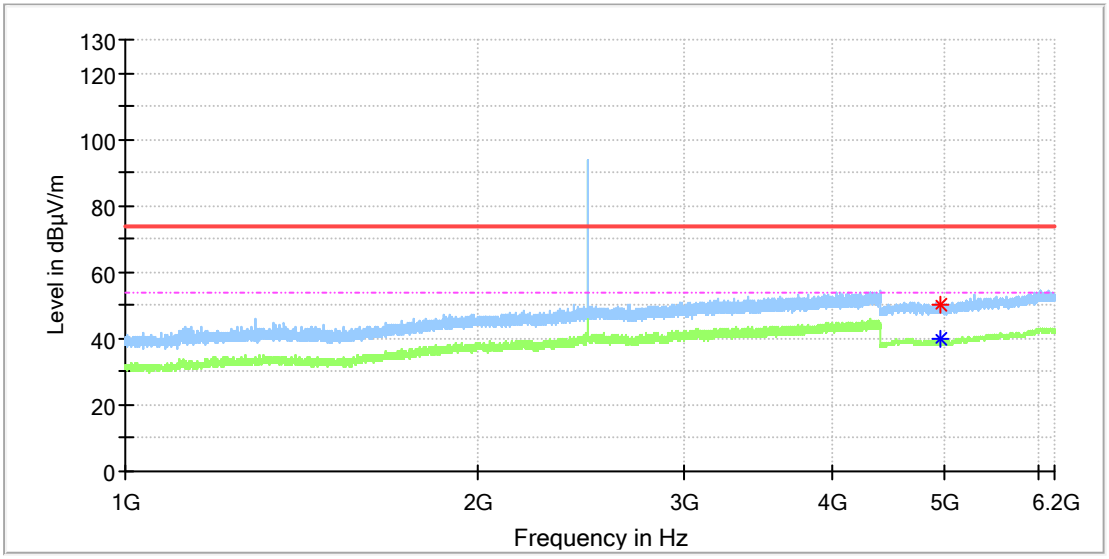
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7322.475000	---	37.25	54.00	16.75	150.0	V	21.0	8.2
7322.475000	43.36	---	74.00	30.64	150.0	V	21.0	8.2
9763.600000	49.55	---	74.00	24.45	150.0	V	69.0	10.4
9764.091667	---	47.26	54.00	6.74	150.0	V	69.0	10.4

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

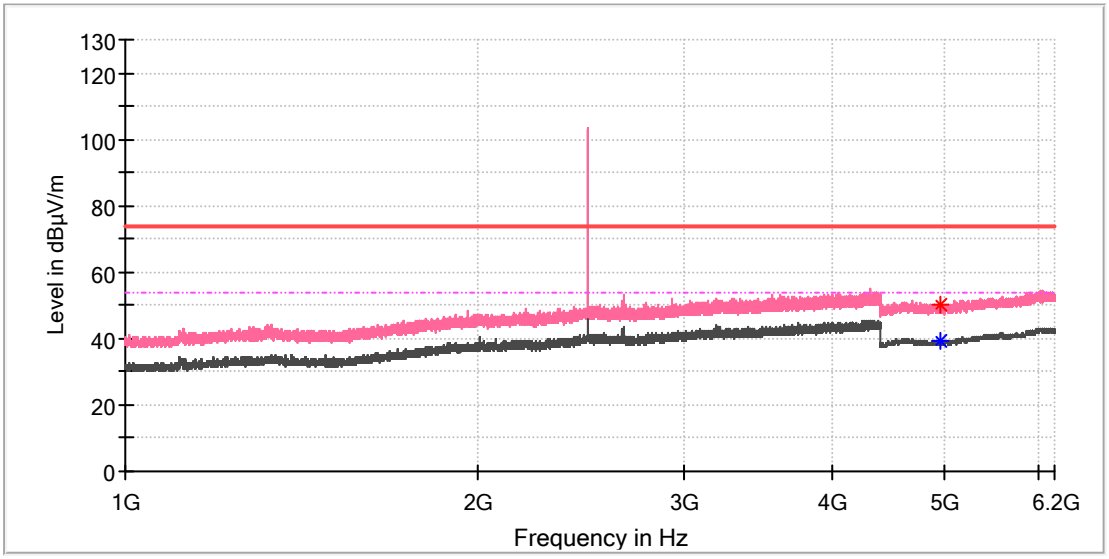
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4958.000000	---	39.63	54.00	14.37	150.0	H	334.0	11.8
4964.000000	50.28	---	74.00	23.72	150.0	H	169.0	11.8

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

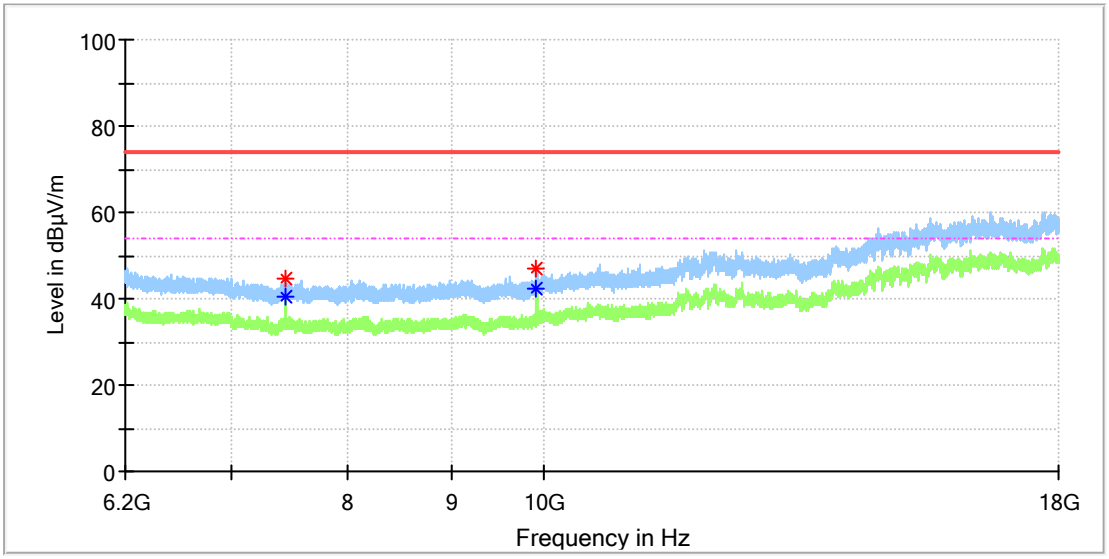
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4949.000000	50.18	---	74.00	23.82	150.0	V	196.0	11.8
4950.500000	---	39.24	54.00	14.76	150.0	V	182.0	11.8

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

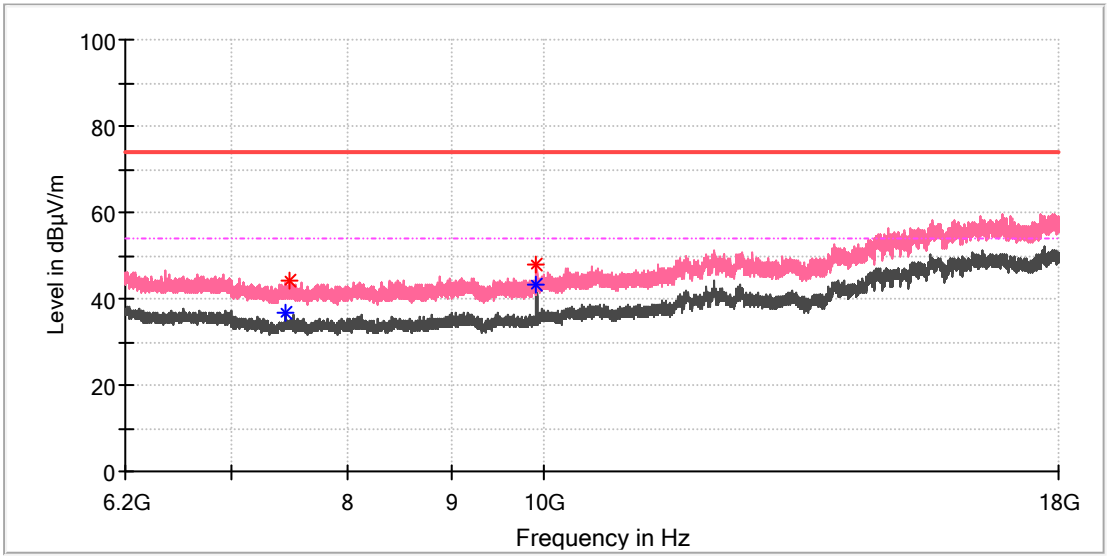
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7439.491667	44.77	---	74.00	29.23	150.0	H	303.0	8.4
7439.983333	---	40.55	54.00	13.45	150.0	H	303.0	8.4
9919.458333	---	42.26	54.00	11.74	150.0	H	166.0	10.8
9919.950000	46.90	---	74.00	27.10	150.0	H	0.0	10.8

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	---	36.73	54.00	17.27	150.0	V	0.0	8.4
7478.333333	44.03	---	74.00	29.97	150.0	V	197.0	8.7
9919.950000	47.71	---	74.00	26.29	150.0	V	321.0	10.8
9919.950000	---	43.40	54.00	10.60	150.0	V	321.0	10.8

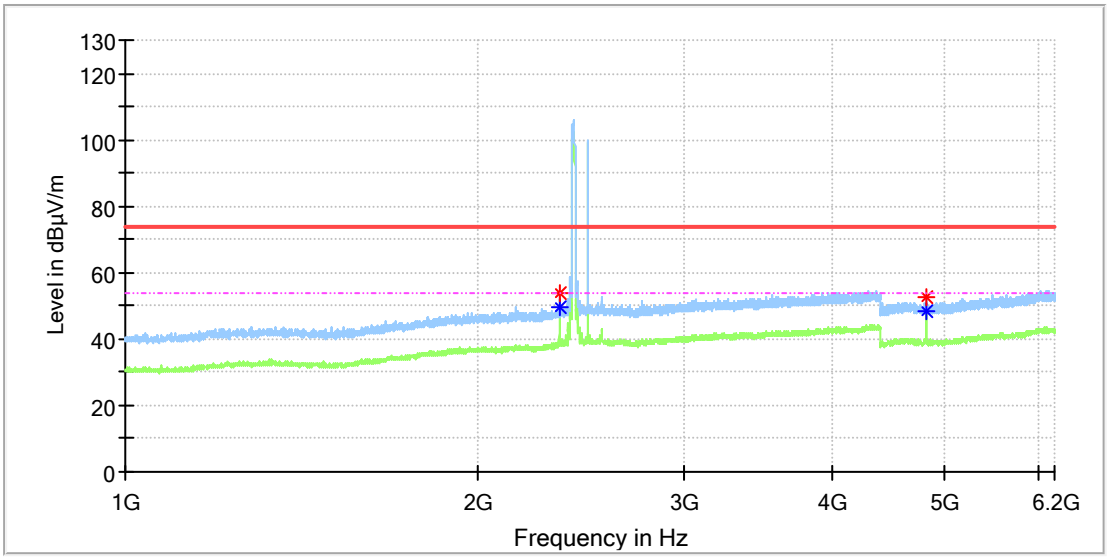
Final_Result

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

Co-location test

EUT Information

EUT Name:	2.1 Soundbar with wireless Subwoofer
Model:	NS-SB21
Test Mode:	Module ATS2853+ Module BT8961
Order No/Sample No:	168543945/A003948759-004
Test Voltage::	120V/60Hz
Remark:	Temp 22 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

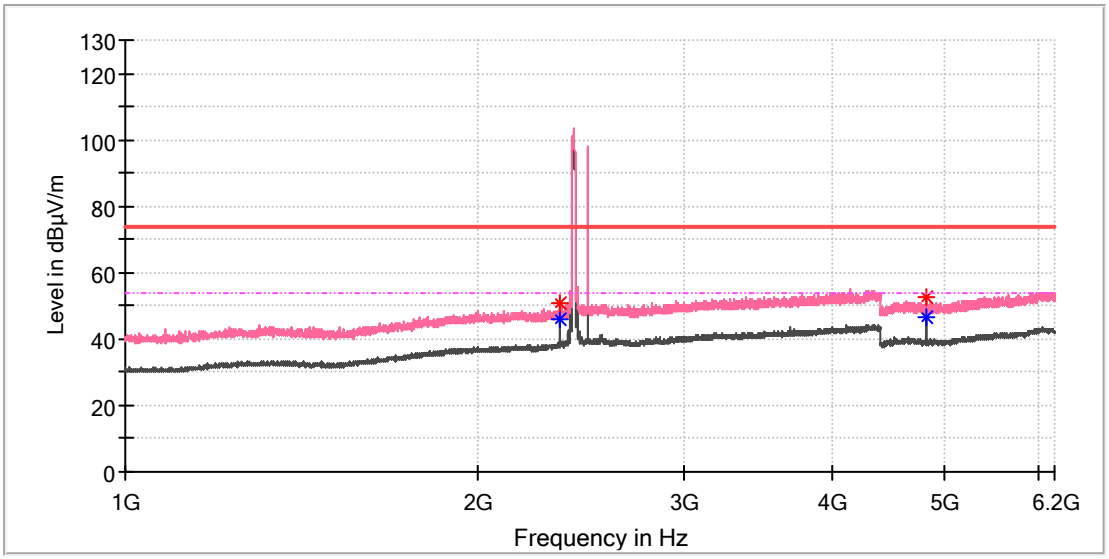
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2344.000000	53.64	---	74.00	20.36	150.0	H	158.0	6.9
2344.000000	---	49.66	54.00	4.34	150.0	H	158.0	6.9
4824.000000	52.71	---	74.00	21.29	150.0	H	283.0	11.8
4824.000000	---	48.41	54.00	5.59	150.0	H	283.0	11.8

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:	Module ATS2853+ Module BT8961
Order No/Sample No:	168543945/A003948759-004
Test Voltage::	AC 120V/60Hz
Remark:	Temp 22 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

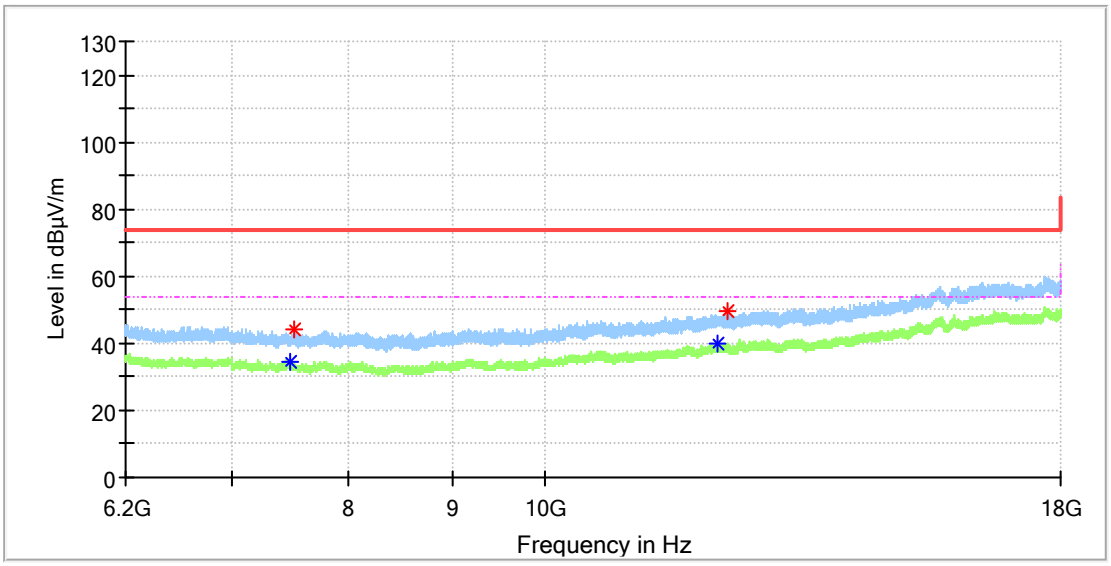
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2344.000000	50.69	---	74.00	23.31	150.0	V	280.0	6.9
2344.000000	---	46.04	54.00	7.96	150.0	V	280.0	6.9
4824.000000	52.50	---	74.00	21.50	150.0	V	17.0	11.8
4824.000000	---	46.75	54.00	7.25	150.0	V	17.0	11.8

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:	Module ATS2853+ Module BT8961
Order No/Sample No:	168543945/A003948759-004
Test Voltage::	120V/60Hz
Remark:	Temp 22 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

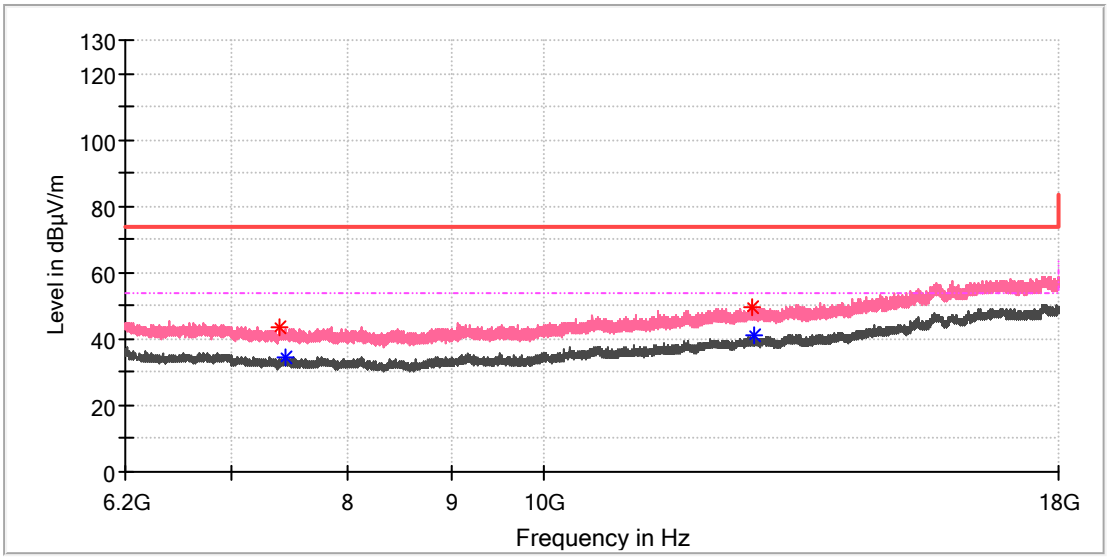
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7478.333333	---	34.26	54.00	19.74	150.0	H	336.0	8.7
7507.341667	43.97	---	74.00	30.03	150.0	H	206.0	8.7
12170.308333	---	39.88	54.00	14.12	150.0	H	0.0	14.5
12310.433333	49.59	---	74.00	24.41	150.0	H	110.0	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:	Module ATS2853+ Module BT8961
Order No/Sample No:	168543945/A003948759-004
Test Voltage::	120V/60Hz
Remark:	Temp 22 Humi:55%
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)
7397.208333	43.24	---	74.00	30.76	150.0	V	161.0	8.3
7438.508333	---	34.52	54.00	19.48	150.0	V	104.0	8.4
12684.591667	49.49	---	74.00	24.51	150.0	V	279.0	15.1
12707.208333	---	41.03	54.00	12.97	150.0	V	0.0	15.1

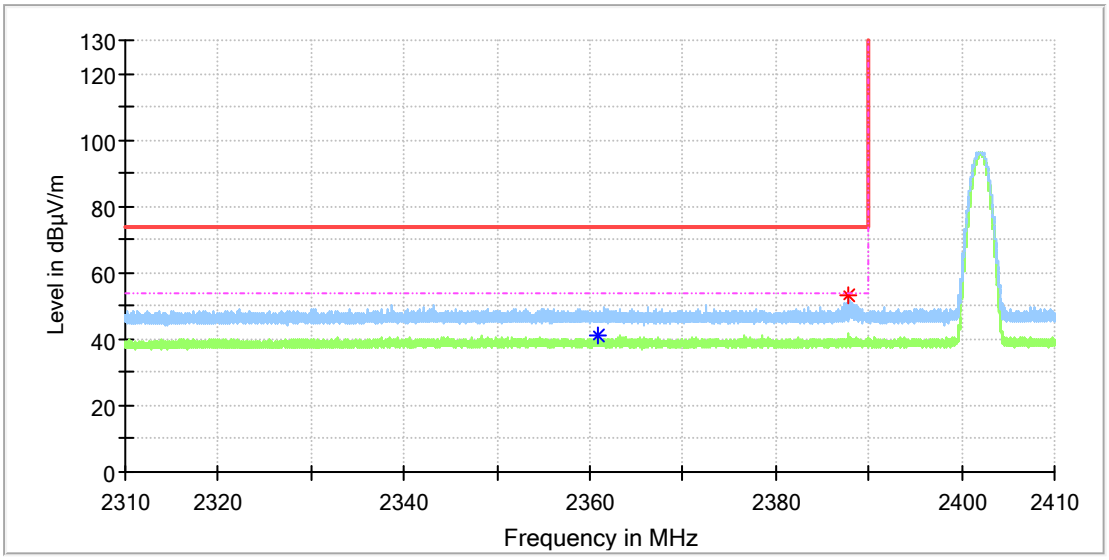
Final_Result

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

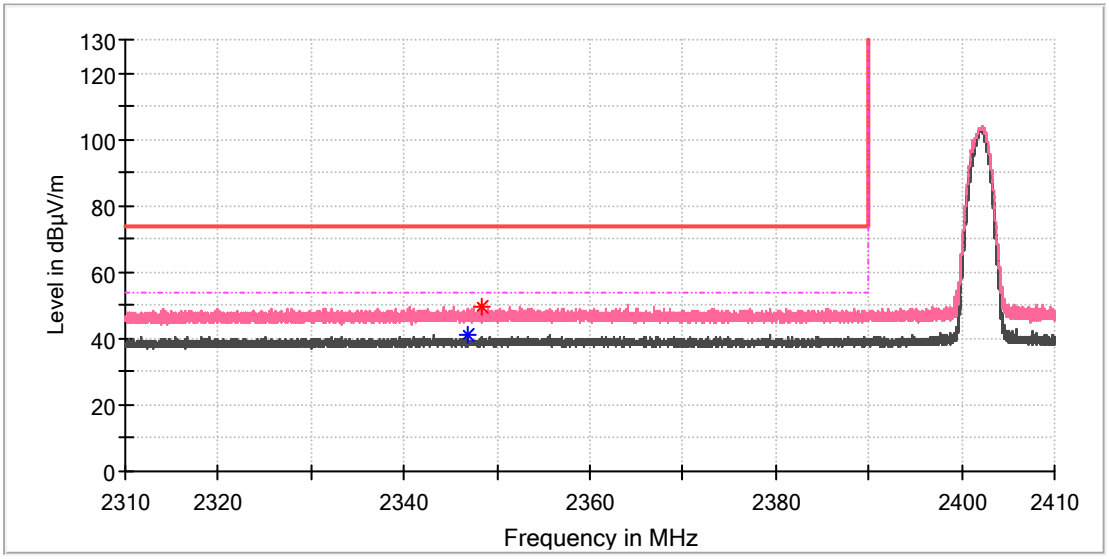
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2360.910000	---	41.02	54.00	12.98	150.0	H	284.0	6.9
2387.765000	52.93	---	74.00	21.07	150.0	H	258.0	7.0

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_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

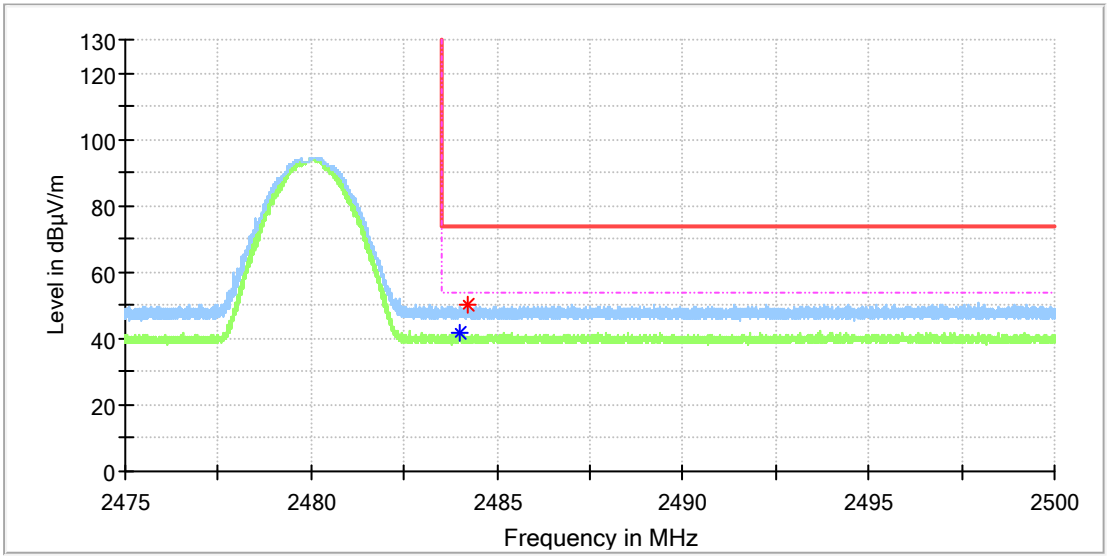
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2346.890000	---	41.17	54.00	12.83	150.0	V	329.0	6.9
2348.465000	49.55	---	74.00	24.45	150.0	V	359.0	6.9

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_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

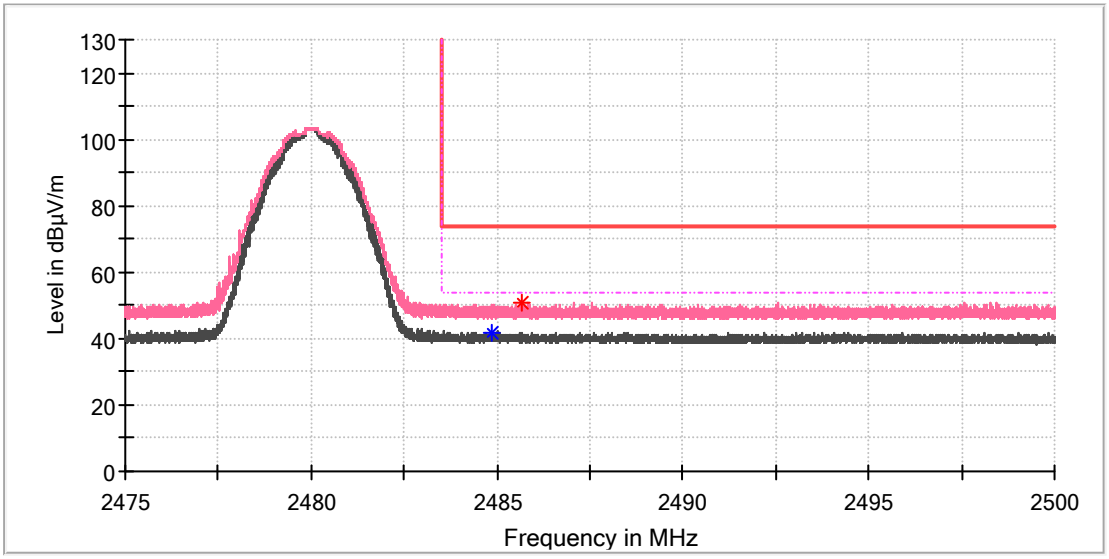
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.973750	---	41.59	54.00	12.41	150.0	H	245.0	7.4
2484.192500	50.08	---	74.00	23.92	150.0	H	351.0	7.4

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)
2484.855000	---	41.90	54.00	12.10	150.0	V	60.0	7.4
2485.675000	50.98	---	74.00	23.02	150.0	V	199.0	7.4

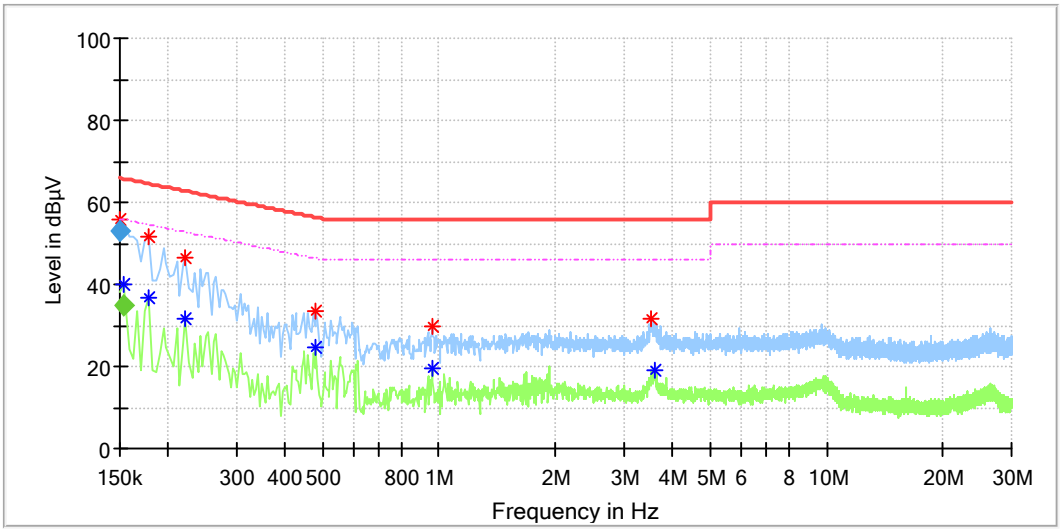
Final_Result

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

Appendix A.10: 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

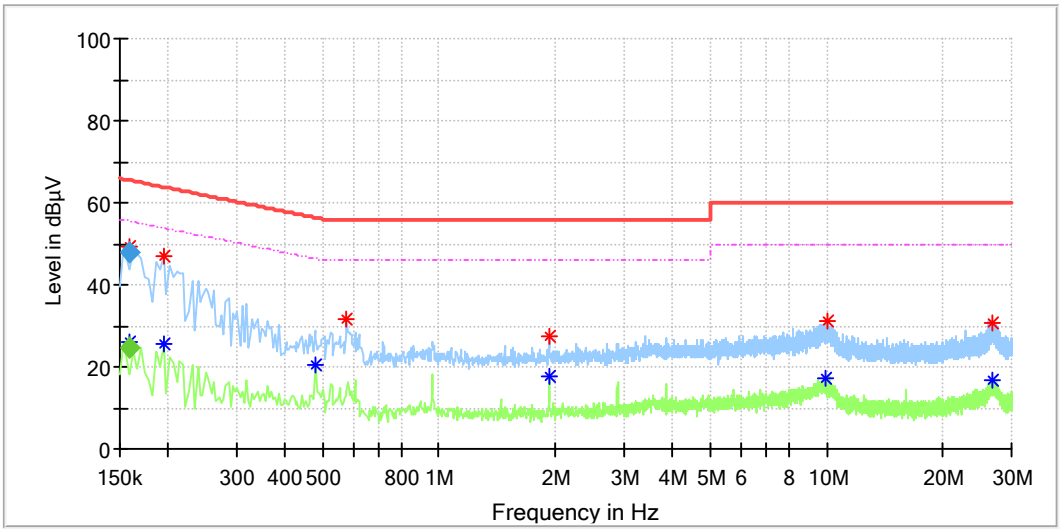
Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.150000	55.91	---	66.00	10.09	L1	9.8
0.154000	---	40.10	55.78	15.68	L1	9.8
0.178000	---	36.55	54.58	18.02	L1	9.8
0.178000	51.56	---	64.58	13.02	L1	9.8
0.222000	---	31.56	52.74	21.19	L1	9.8
0.222000	46.41	---	62.74	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