

Prüfbericht-Nr.: Test report no.:	CN25PBZ0 002	Auftrags-Nr.: Order no.:	168542349	Seite 1 von 27 Page 1 of 27	
Kunden-Referenz-Nr.: Client reference no.:	N/A	Auftragsdatum: Order date:	2025-03-10		
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:	2.0-Channel Soundbar For NS-SB20, TB643 2.0-Channel Mini Soundbar For NS-SB20S, TB643C				
Bezeichnung / Typ-Nr.: Identification / Type no.:	2.0-Channel Soundbar: NS-SB20, TB643 2.0-Channel Mini Soundbar: NS-SB20S, TB643C (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:	2025-03-17	Please refer to Photo Document			
Prüfmuster-Nr.: Test sample no.:	A003942000-001~004 A003951812-001~002				
Prüfzeitraum: Testing period:	2025-03-24 - 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:	2025-06-04	Signed by: Jonathan Li		Ausstellungsdatum: Issue date:	2025-06-04
Stellung / Position:	Sachverständige(r)/Expert		Stellung / Position:	Sachverständige(r)/Expert	
Sonstiges / Other:	FCC ID: Z8M-NSSB20				
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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Prüfbericht-Nr.: CN25PBZ0 002
Test report no.:

Seite 2 von 27
Page 2 of 27

Anmerkungen
Remarks

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4	Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnissen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2023, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen bezüglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019. <i>The decision rule for statements of conformity, based on numerical measurement results, in this test report is based on the "Zero Guard Band Rule" and "Simple Acceptance" in accordance with ILAC G8:2019 and IEC Guide 115:2023, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019.</i>

Test Summary

5.1.1 ANTENNA REQUIREMENT

RESULT: Pass

5.1.2 MAXIMUM PEAK CONDUCTED OUTPUT POWER

RESULT: Pass

5.1.3 CONDUCTED POWER SPECTRAL DENSITY

RESULT: Pass

5.1.4 6dB BANDWIDTH

RESULT: Pass

5.1.5 99% BANDWIDTH

RESULT: Pass

5.1.6 20dB BANDWIDTH

RESULT: Pass

5.1.7 CARRIER FREQUENCY SEPARATION

RESULT: Pass

5.1.8 NUMBER OF HOPPING FREQUENCY

RESULT: Pass

5.1.9 TIME OF OCCUPANCY

RESULT: Pass

5.1.10 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 kHz BANDWIDTH

RESULT: Pass

5.1.11 RADIATED SPURIOUS EMISSION

RESULT: Pass

5.1.12 CONDUCTED EMISSION ON AC MAINS

RESULT: Pass

Contents

1	GENERAL REMARKS	5
1.1	COMPLEMENTARY MATERIALS.....	5
2	TEST SITES.....	6
2.1	TEST FACILITIES	6
2.2	LIST OF TEST AND MEASUREMENT INSTRUMENTS	6
2.3	TRACEABILITY	7
2.4	CALIBRATION.....	7
2.5	MEASUREMENT UNCERTAINTY	7
2.6	LOCATION OF ORIGINAL DATA	8
2.7	STATUS OF FACILITY USED FOR TESTING	8
3	GENERAL PRODUCT INFORMATION	9
3.1	PRODUCT FUNCTION AND INTENDED USE	9
3.2	RATINGS AND SYSTEM DETAILS.....	9
3.3	INDEPENDENT OPERATION MODES.....	11
3.4	NOISE GENERATING AND NOISE SUPPRESSING PARTS	11
3.5	SUBMITTED DOCUMENTS.....	11
4	TEST SET-UP AND OPERATION MODES.....	12
4.1	PRINCIPLE OF CONFIGURATION SELECTION	12
4.2	TEST OPERATION AND TEST SOFTWARE	12
4.3	SPECIAL ACCESSORIES AND AUXILIARY EQUIPMENT	12
4.4	COUNTERMEASURES TO ACHIEVE EMC COMPLIANCE	12
4.5	TEST SETUP DIAGRAM	13
5	TEST RESULTS	15
5.1	TRANSMITTER REQUIREMENT & TEST SUITES.....	15
5.1.1	<i>Antenna Requirement.....</i>	<i>15</i>
5.1.2	<i>Maximum Peak Conducted Output Power</i>	<i>16</i>
5.1.3	<i>Conducted Power Spectral Density.....</i>	<i>17</i>
5.1.4	<i>6dB Bandwidth</i>	<i>18</i>
5.1.5	<i>99% Bandwidth.....</i>	<i>19</i>
5.1.6	<i>20dB Bandwidth</i>	<i>20</i>
5.1.7	<i>Carrier Frequency Separation</i>	<i>21</i>
5.1.8	<i>Number of Hopping Frequency</i>	<i>22</i>
5.1.9	<i>Time of Occupancy.....</i>	<i>23</i>
5.1.10	<i>Conducted Spurious Emissions Measured in 100 kHz Bandwidth</i>	<i>24</i>
5.1.11	<i>Radiated Spurious Emission</i>	<i>25</i>
5.1.12	<i>Conducted Emission on AC Mains.....</i>	<i>26</i>
6	PHOTOGRAPHS OF THE TEST SET-UP	27
7	LIST OF TABLES.....	27

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

Prüfbericht - Nr.: CN25PBZ0 002
Test Report No.:

Seite 8 von 27
Page 8 of 27

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 2.0 Mini Soundbar & 2.0 Soundbar. The Soundbar supports Bluetooth dual mode wireless technology.

Model difference as below table:

Product Name	Model
2.0-Channel Soundbar	NS-SB20, TB643 all the same except for model name
2.0-Channel Mini Soundbar	NS-SB20S, TB643C all the same except for model name

2.0-Channel Soundbar and 2.0-Channel Mini Soundbar are the same except for appearance size and rating Power (Different AMP IC).

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:	2.0-Channel Soundbar For NS-SB20, TB643 2.0-Channel Mini Soundbar For NS-SB20S, TB643C
Type Designation:	2.0-Channel Soundbar: NS-SB20, TB643 2.0-Channel Mini Soundbar: NS-SB20S, TB643C
Trademark:	INSIGNIA, RSR
FCC ID:	Z8M-NSSB20
Operating Voltage:	AC 100-240V, 50-60Hz
Testing Voltage:	AC 120V, 60Hz
Technical Specification of Bluetooth (dual mode)	
Operating Frequency:	2402 MHz to 2480 MHz
Type of Modulation:	GFSK, $\pi/4$ -DQPSK, 8DPSK
Channel Number:	BR & EDR mode:79 channels, Low Energy mode:40 channels
Channel Separation:	BR & EDR mode:1MHz, Low Energy mode:2MHz
Data Rate:	BR & EDR mode: (1Mbps, 2Mbps, 3Mbps) Low Energy mode: (1Mbps, 2Mbps)
Antenna Type:	Integral Antenna
Antenna Gain:	2.64 dBi max (Provided by the Client)

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

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

RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
0	2402.00	20	2422.00	40	2442.00	60	2462.00
1	2403.00	21	2423.00	41	2443.00	61	2463.00
2	2404.00	22	2424.00	42	2444.00	62	2464.00
3	2405.00	23	2425.00	43	2445.00	63	2465.00
4	2406.00	24	2426.00	44	2446.00	64	2466.00
5	2407.00	25	2427.00	45	2447.00	65	2467.00
6	2408.00	26	2428.00	46	2448.00	66	2468.00
7	2409.00	27	2429.00	47	2449.00	67	2469.00
8	2410.00	28	2430.00	48	2450.00	68	2470.00
9	2411.00	29	2431.00	49	2451.00	69	2471.00
10	2412.00	30	2432.00	50	2452.00	70	2472.00
11	2413.00	31	2433.00	51	2453.00	71	2473.00
12	2414.00	32	2434.00	52	2454.00	72	2474.00
13	2415.00	33	2435.00	53	2455.00	73	2475.00
14	2416.00	34	2436.00	54	2456.00	74	2476.00
15	2417.00	35	2437.00	55	2457.00	75	2477.00
16	2418.00	36	2438.00	56	2458.00	76	2478.00
17	2419.00	37	2439.00	57	2459.00	77	2479.00
18	2420.00	38	2440.00	58	2460.00	78	2480.00
19	2421.00	39	2441.00	59	2461.00		

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

Table 5: RF Channel and Frequency of Bluetooth LE

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

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

3.3 Independent Operation Modes

The basic operation modes are:

- A. On, Bluetooth transmitting mode (BR & EDR mode)
 - 1) Low Channel
 - 2) Middle Channel
 - 3) High Channel
- B. On, Bluetooth transmitting mode (BLE)
 - 1) Low Channel
 - 2) Middle Channel
 - 3) High Channel
- C. On, Transmitting on Hopping channel
- D. On, Normal working
- 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-SB20 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
Display	Lenovo	N/A	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)

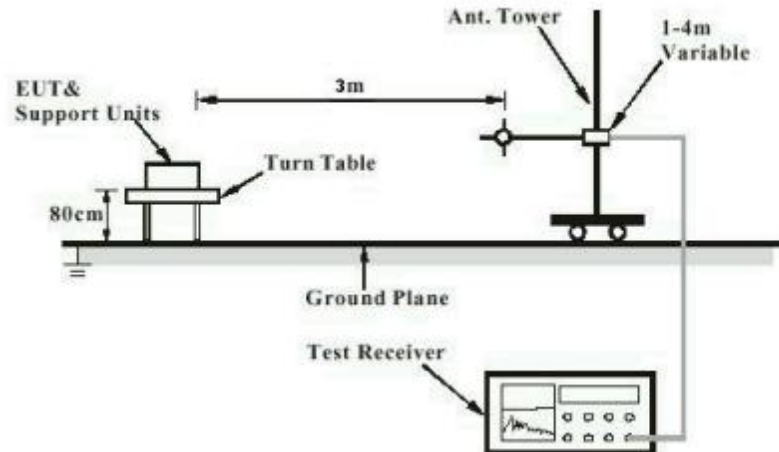


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

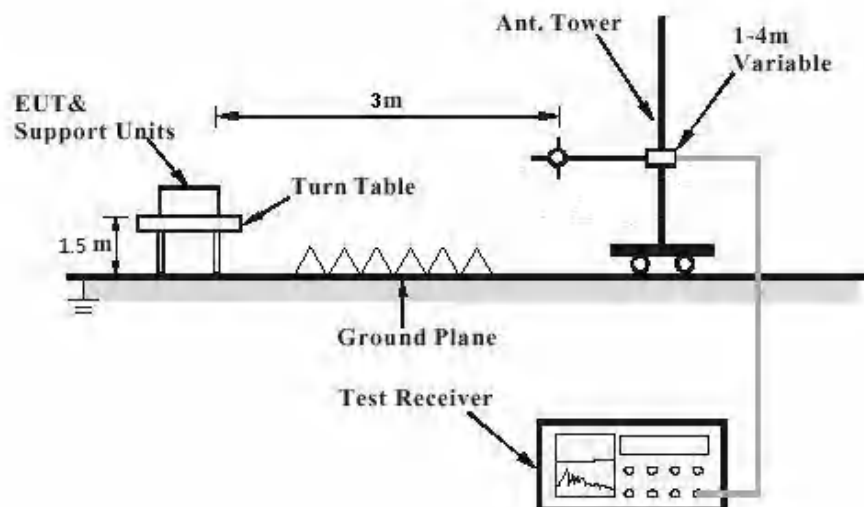


Diagram of Measurement Configuration for Mains Conduction Measurement

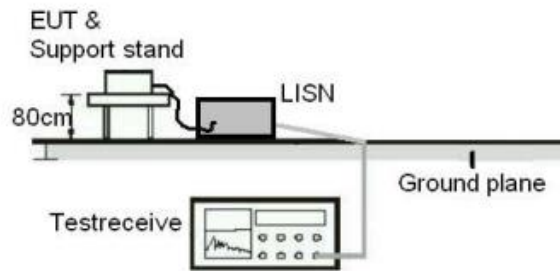
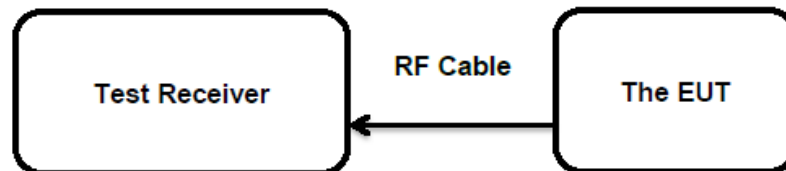


Diagram of Measurement Configuration for Conducted Transmitter Measurement



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, DSSS < 1.0 Watts
Kind of test site : Shielded Room

Test Setup

Date of testing : 2025-04-08
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	3.98	0.0025	< 0.125
	2441.0	3.51	0.0022	
	2480.0	2.82	0.0019	
8DPSK (EDR)	2402.0	4.95	0.0031	
	2441.0	4.17	0.0026	
	2480.0	3.74	0.0024	
Maximum Measured Value		4.95	0.0031	

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	3.81	0.0024	< 1.0
	2440	3.38	0.0022	
	2480	2.66	0.0018	
Bluetooth LE (2 Mbps)	2402	3.72	0.0024	
	2440	3.19	0.0021	
	2480	2.55	0.0018	
Max. Measured Value		3.81	0.0024	

Note:

- 1) The cable loss is taken into account in results.
- 2) Antenna gain(G): 2.64 dBi
e.i.r.p.=P_(Peak power)+ G, which is far below the 4 W

Prüfbericht - Nr.: CN25PBZ0 002
Test Report No.:

Seite 17 von 27
Page 17 of 27

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 : 2025-04-08
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.: CN25PBZ0 002
Test Report No.:

Seite 18 von 27
Page 18 of 27

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 : 2025-04-08
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.: CN25PBZ0 002
Test Report No.:

Seite 19 von 27
Page 19 of 27

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 : 2025-04-08
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.: CN25PBZ0 002
Test Report No.:

Seite 20 von 27
Page 20 of 27

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 : 2025-04-08
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.: CN25PBZ0 002
Test Report No.:

Seite 21 von 27
Page 21 of 27

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	: 2025-04-08
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.: CN25PBZ0 002
Test Report No.:

Seite 22 von 27
Page 22 of 27

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	: 2025-04-08
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.: CN25PBZ0 002
Test Report No.:

Seite 23 von 27
Page 23 of 27

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 : 2025-04-08
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.: CN25PBZ0 002
Test Report No.:Seite 24 von 27
Page 24 of 27

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 : 2025-04-08
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.: CN25PBZ0 002
Test Report No.:Seite 25 von 27
Page 25 of 27

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.: CN25PBZ0 002
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	: 2025-03-24
Input voltage	: AC 120V, 60Hz
Operation mode	: D
Earthing	: Not connected
Ambient temperature	: 23.7 °C
Relative humidity	: 50.3 %
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.

7 List of Tables

Table 1: List of Test and Measurement Equipment.....	6
Table 2: Measurement Uncertainty	7
Table 3: Technical Specification of EUT.....	9
Table 4: RF Channel and Frequency of Bluetooth BR/EDR.....	10
Table 5: RF Channel and Frequency of Bluetooth LE.....	10
Table 6: List of Accessories and Auxiliary Equipment.....	12
Table 7: Test Result of Maximum Peak Conducted Output Power, BR & EDR	16
Table 8: Test Result of Maximum Peak Conducted Output Power, Bluetooth LE.....	16

Appendix A: Test Results of Bluetooth BR & EDR

APPENDIX A: TEST RESULTS OF BLUETOOTH BR & EDR.....	1
APPENDIX A.1: TEST RESULTS OF 20DB BANDWIDTH	2
Test Result	2
Test Graphs	3
APPENDIX A.2: TEST RESULTS OF 99% BANDWIDTH	5
Test Result	5
Test Graphs	6
APPENDIX A.3: TEST RESULTS OF CARRIER FREQUENCY SEPARATION	8
Test Result	8
Test Graphs	9
APPENDIX A.4: TEST RESULTS OF TIME OF OCCUPANCY	10
Test Result	10
Test Graphs	11
APPENDIX A.5: TEST RESULTS OF NUMBER OF HOPPING FREQUENCY	15
Test Result	15
Test Graphs	16
APPENDIX A.6: TEST RESULTS OF BAND EDGE MEASUREMENTS	17
Test Result	17
Test Graphs	18
APPENDIX A.7: TEST RESULTS OF CONDUCTED SPURIOUS EMISSION	21
Test Result	21
Test Graphs	22
APPENDIX A.8: TEST RESULTS OF RADIATED SPURIOUS EMISSIONS	28
30 MHz - 1GHz.....	28
1GHz - 18GHz	30
APPENDIX A.9: TEST RESULTS OF RADIATED EMISSIONS IN RESTRICTED BANDS	42

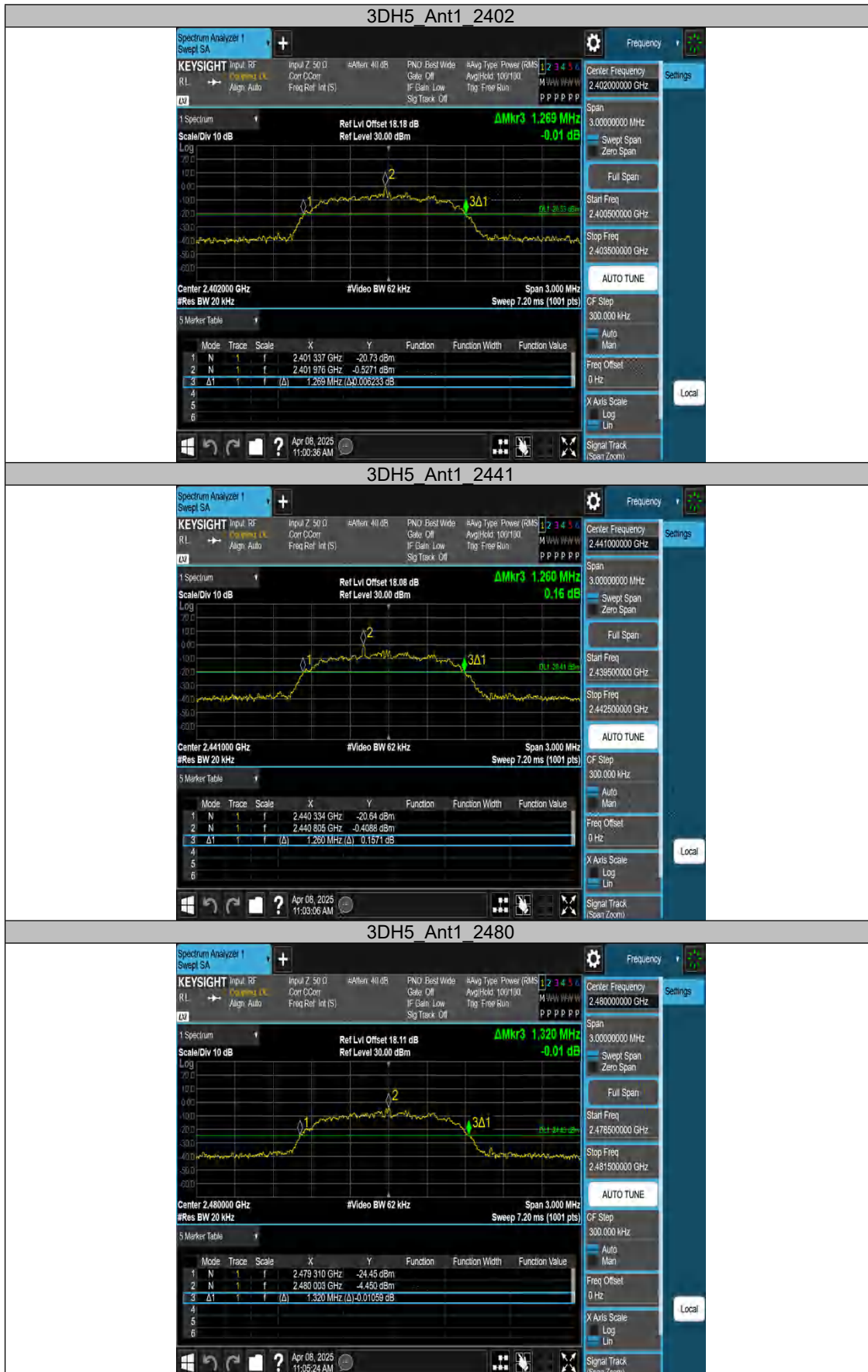
Appendix A.1: Test Results of 20dB Bandwidth

Test Result

TestMode	Antenna	Channel	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.945	2401.517	2402.462	---	PASS
		2441	1.014	2440.469	2441.483	---	PASS
		2480	0.897	2479.517	2480.414	---	PASS
3DH5	Ant1	2402	1.269	2401.337	2402.606	---	PASS
		2441	1.260	2440.334	2441.594	---	PASS
		2480	1.320	2479.310	2480.630	---	PASS

Test Graphs



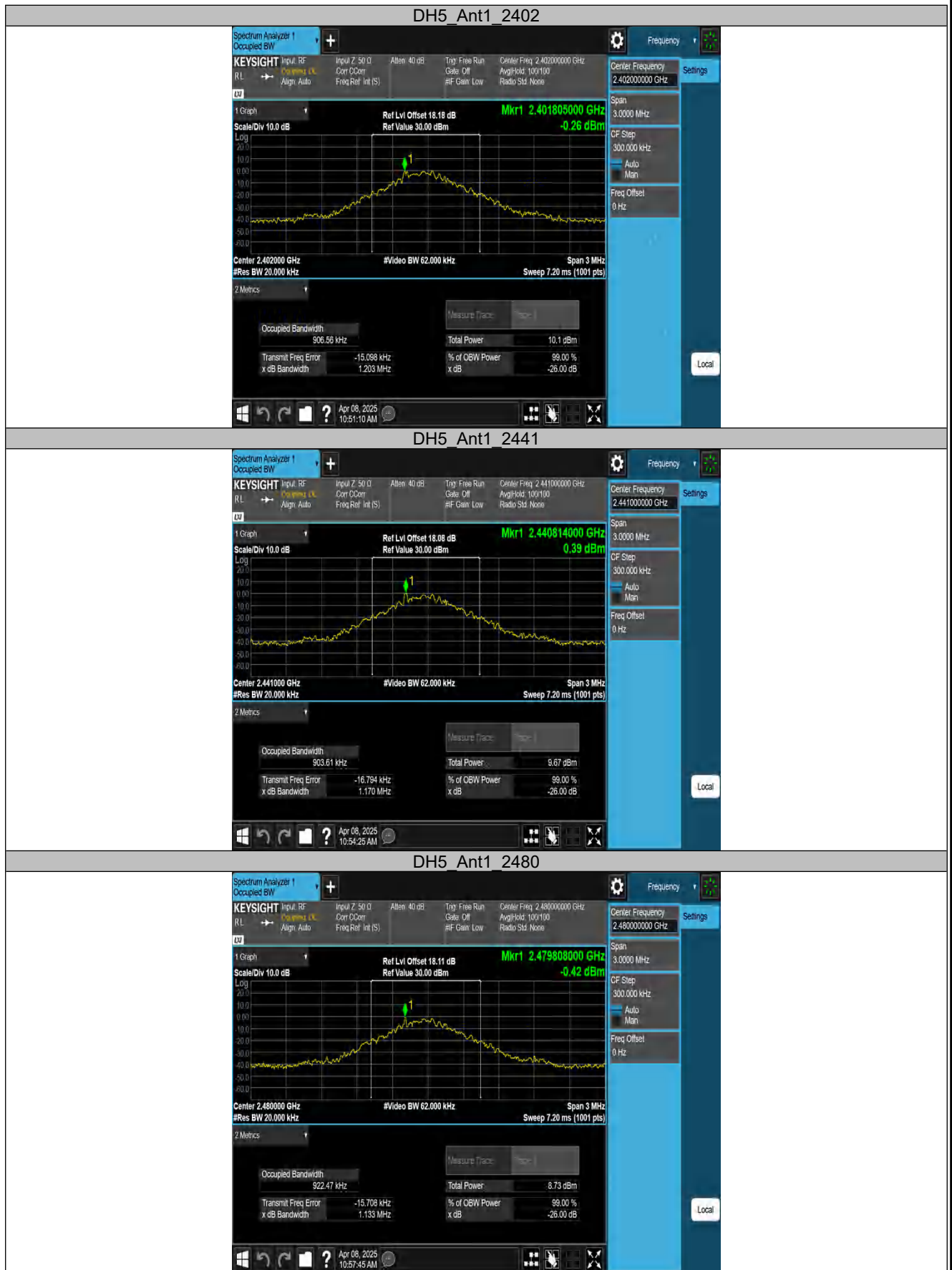


Appendix A.2: Test Results of 99% Bandwidth

Test Result

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.90656	2401.5316	2402.4382	---	PASS
		2441	0.90361	2440.5314	2441.4350	---	PASS
		2480	0.92247	2479.5231	2480.4455	---	PASS
3DH5	Ant1	2402	1.1990	2401.3745	2402.5735	---	PASS
		2441	1.1848	2440.3831	2441.5679	---	PASS
		2480	1.1832	2479.3810	2480.5642	---	PASS

Test Graphs





Appendix A.3: Test Results of Carrier Frequency Separation

Test Result

TestMode	Antenna	Channel	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	1.178	≥1.014	PASS
3DH5	Ant1	Hop	0.962	≥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	0.371	319	0.118	≤0.4	PASS
DH3	Ant1	Hop	1.620	159	0.258	≤0.4	PASS
DH5	Ant1	Hop	2.866	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	2.880	107	0.308	≤0.4	PASS

Test Graphs





DH5_Ant1_Hop

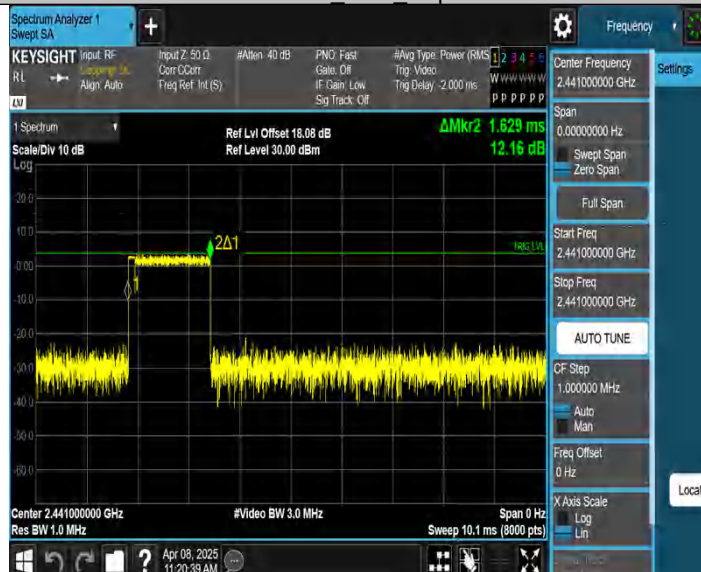


3DH1_Ant1_Hop



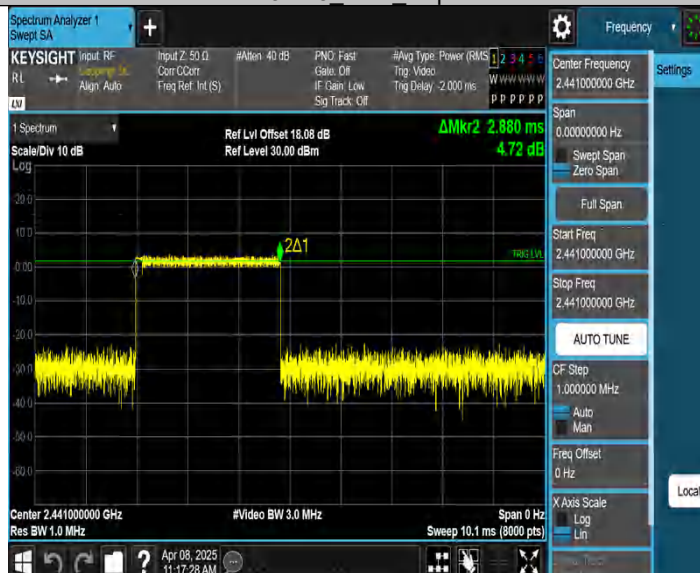


3DH3_Ant1_Hop





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



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	3.04	-42.81	≤-16.96	PASS
		High	2480	2.31	-43.82	≤-17.69	PASS
3DH5	Ant1	Low	2402	3.48	-39.78	≤-16.52	PASS
		High	2480	2.16	-42.93	≤-17.84	PASS
DH5	Ant1	Hopping	2402	2.47	-43.77	≤-17.53	PASS
		Hopping	2480	1.31	-43.87	≤-18.69	PASS
3DH5	Ant1	Hopping	2402	-0.95	-43.98	≤-20.95	PASS
		Hopping	2480	-2.14	-44.25	≤-22.14	PASS

Test Graphs







3DH5 Ant1 Hopping 2480



Appendix A.7: Test Results of Conducted Spurious Emission

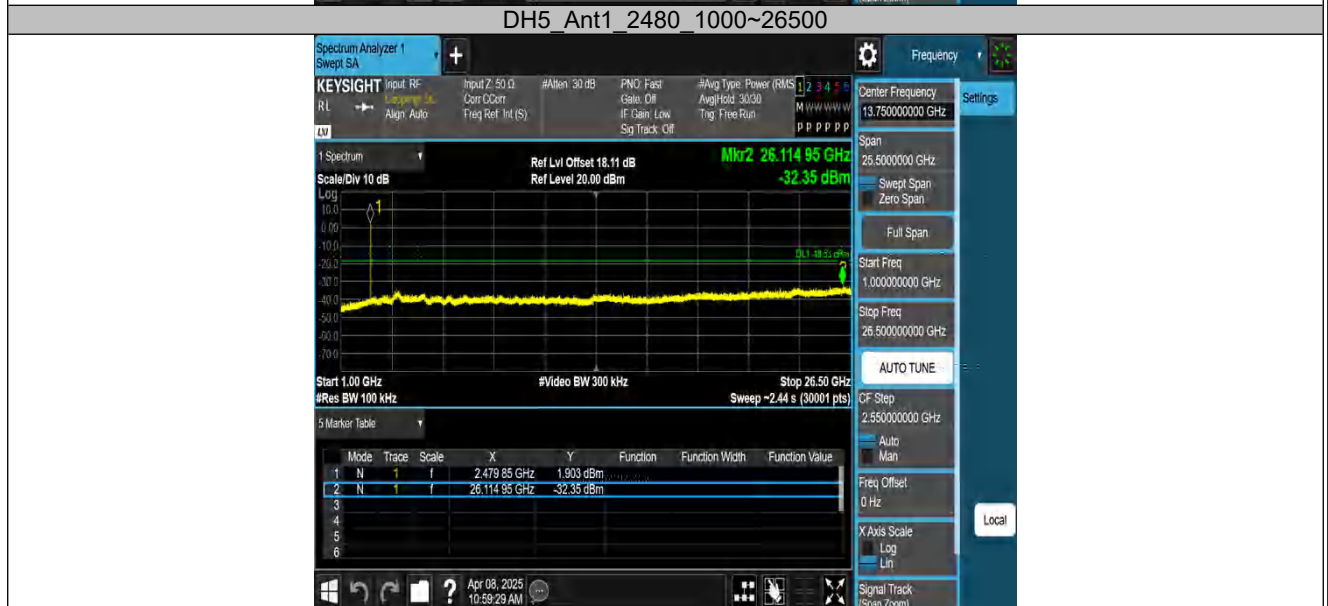
Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	2.48	2.48	---	PASS
			30~1000	2.48	-41.12	≤-17.52	PASS
			1000~26500	2.48	-32.43	≤-17.52	PASS
		2441	Reference	1.92	1.92	---	PASS
			30~1000	1.92	-39.5	≤-18.08	PASS
			1000~26500	1.92	-32.69	≤-18.08	PASS
		2480	Reference	1.47	1.47	---	PASS
			30~1000	1.47	-41.47	≤-18.53	PASS
			1000~26500	1.47	-32.35	≤-18.53	PASS
3DH5	Ant1	2402	Reference	0.03	0.03	---	PASS
			30~1000	0.03	-41.1	≤-19.97	PASS
			1000~26500	0.03	-32.4	≤-19.97	PASS
		2441	Reference	2.28	2.28	---	PASS
			30~1000	2.28	-40.66	≤-17.72	PASS
			1000~26500	2.28	-32.27	≤-17.72	PASS
		2480	Reference	-2.09	-2.09	---	PASS
			30~1000	-2.09	-41.43	≤-22.09	PASS
			1000~26500	-2.09	-31.47	≤-22.09	PASS

Test Graphs







3DH5_Ant1_2402_0~Reference



3DH5_Ant1_2402_30~1000



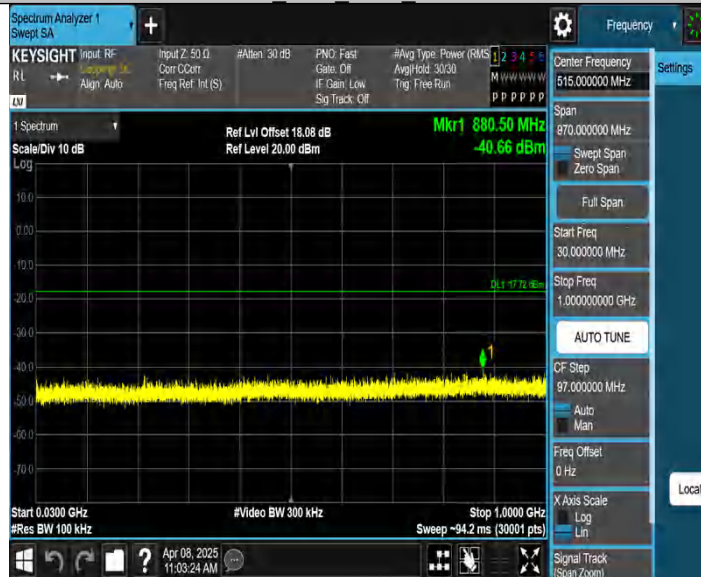
3DH5_Ant1_2402_1000~26500



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

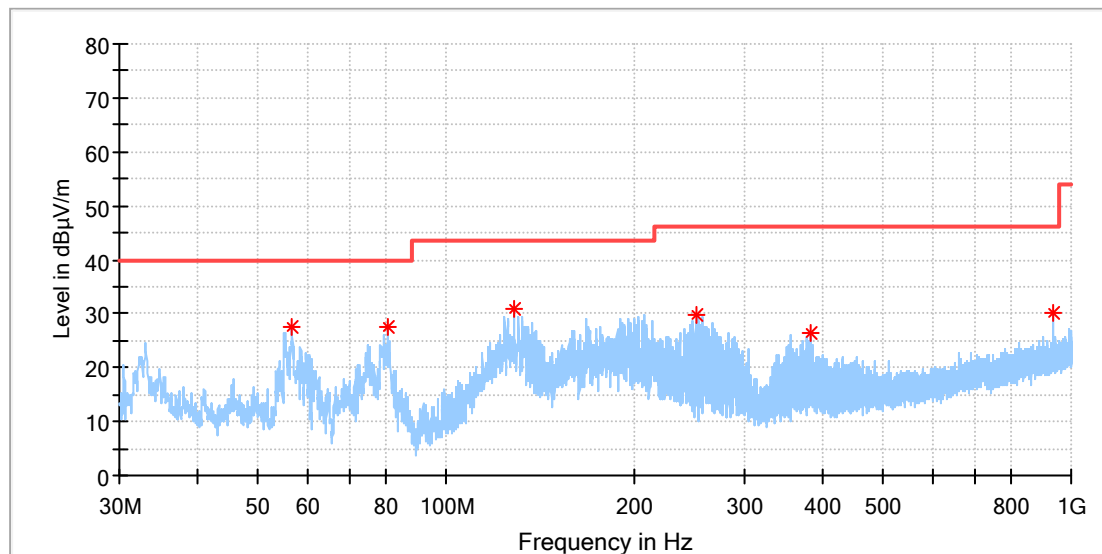
Note:

- 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:	2.0 Soundbar
Model:	NS-SB20
Test Mode:	BR_DH5_Mid channel
Order No/Sample No:	168542349/A003942000-002
Test Voltage:	120V/60Hz
Remark:	Temp 24 Humi:50%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

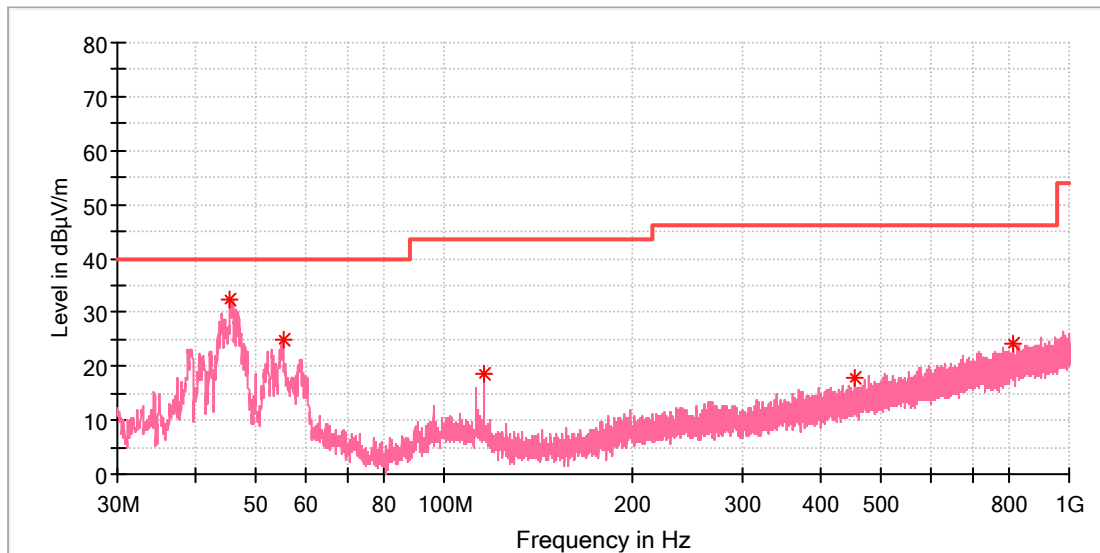
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
56.712308	27.50	40.00	12.50	100.0	H	295.0	-18.9
80.514615	27.56	40.00	12.44	100.0	H	222.0	-23.6
128.753462	30.77	43.50	12.73	100.0	H	254.0	-22.0
252.353846	29.66	46.00	16.34	100.0	H	278.0	-17.6
383.751539	26.55	46.00	19.45	100.0	H	230.0	-14.5
937.546923	30.04	46.00	15.96	100.0	H	68.0	-5.0

Final_Result

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

EUT Information

EUT Name: 2.0 Soundbar
Model: NS-SB20
Test Mode: BR_DH5_Mid channel
Order No/Sample No: 168542349/A003942000-002
Test Voltage: 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)
45.482692	32.35	40.00	7.65	100.0	V	120.0	-19.1
55.182692	24.78	40.00	15.22	100.0	V	237.0	-18.8
115.621154	18.49	43.50	25.01	100.0	V	211.0	-20.2
455.456923	18.02	46.00	27.98	100.0	V	253.0	-13.2
814.506154	24.23	46.00	21.77	100.0	V	211.0	-6.5

Final Result

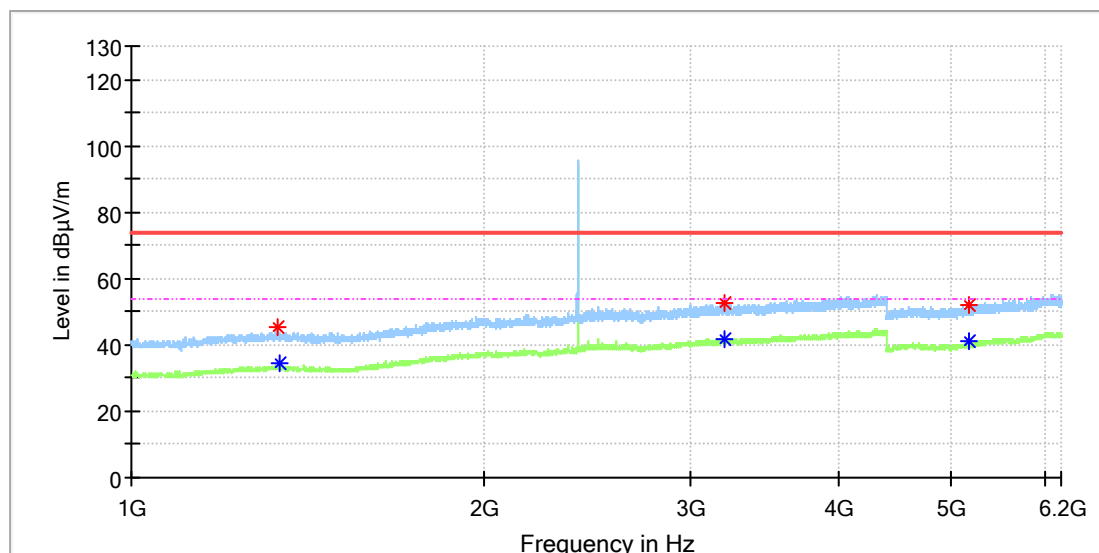
Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

1GHz - 18GHz

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

EUT Information

EUT Name:	2.0 Soundbar
Model:	NS-SB20
Test Mode:	BR_DH5_Low channel
Order No/Sample No:	168542349/A003942000-002
Test Voltage:	120V/60Hz
Remark:	Temp 24 Humi:50%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

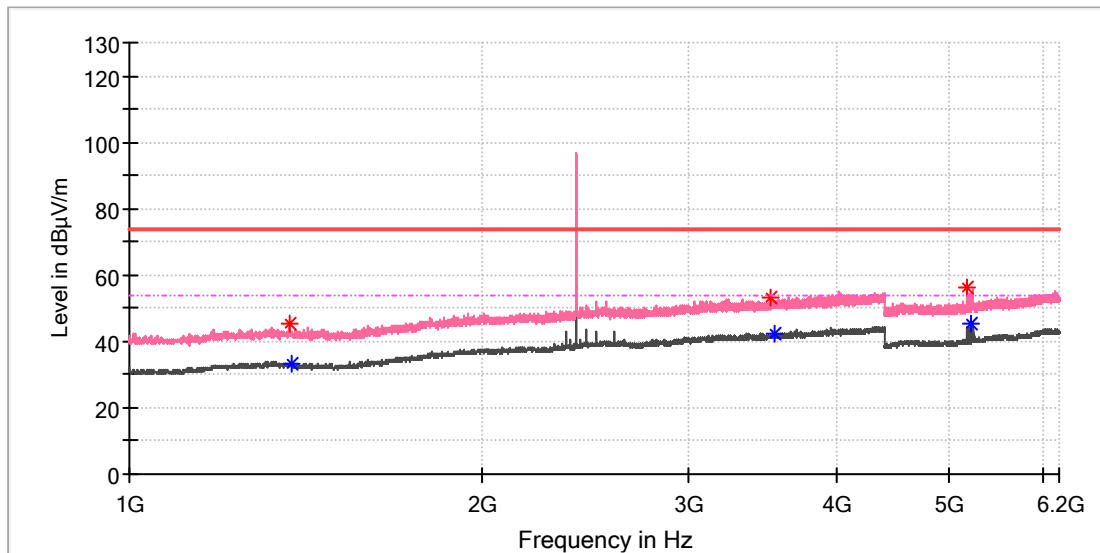
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1331.000000	45.10	---	74.00	28.90	150.0	H	106.0	2.1
1338.500000	---	34.22	54.00	19.78	150.0	H	14.0	2.1
3198.000000	---	42.01	54.00	11.99	150.0	H	92.0	8.6
3206.500000	52.64	---	74.00	21.36	150.0	H	150.0	8.6
5170.000000	51.89	---	74.00	22.11	150.0	H	187.0	12.5
5175.500000	---	41.35	54.00	12.65	150.0	H	298.0	12.5

Final_Result

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

EUT Information

EUT Name: 2.0 Soundbar
Model: NS-SB20
Test Mode: BR_DH5_Low channel
Order No/Sample No: 168542349/A003942000-002
Test Voltage: 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

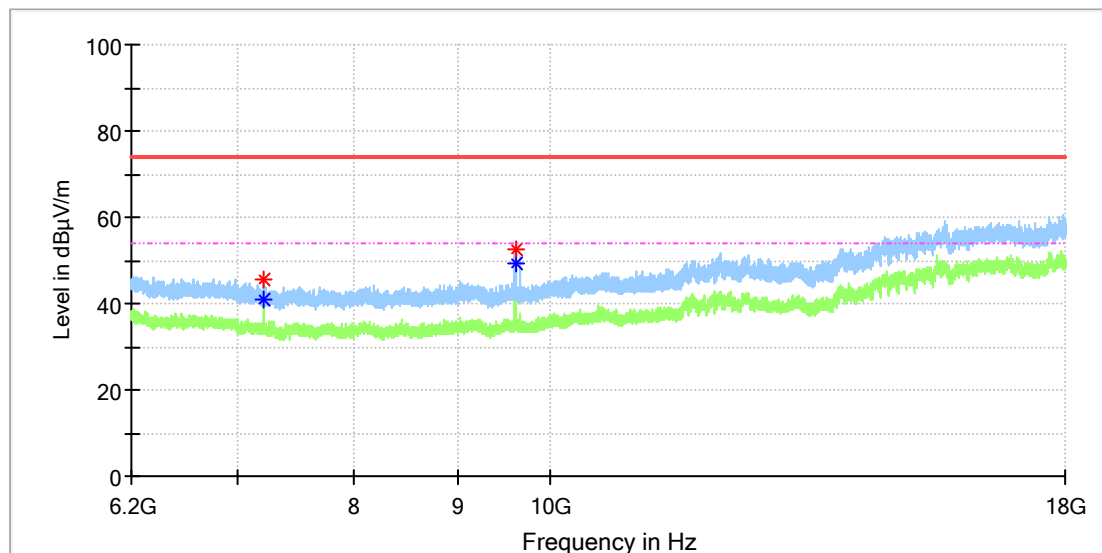
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1368.000000	45.14	---	74.00	28.86	150.0	V	99.0	2.0
1374.000000	---	33.30	54.00	20.70	150.0	V	161.0	1.9
3524.500000	53.38	---	74.00	20.62	150.0	V	55.0	9.1
3550.000000	---	42.47	54.00	11.53	150.0	V	9.0	9.2
5178.500000	56.37	---	74.00	17.63	150.0	V	191.0	12.6
5219.000000	---	45.60	54.00	8.40	150.0	V	203.0	12.7

Final Result

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

EUT Information

EUT Name:	2.0 Soundbar
Model:	NS-SB20
Test Mode:	BR_DH5_Low channel
Order No/Sample No:	168542349/A003942000-002
Test Voltage:	120V/60Hz
Remark:	Temp 24 Humi:50%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

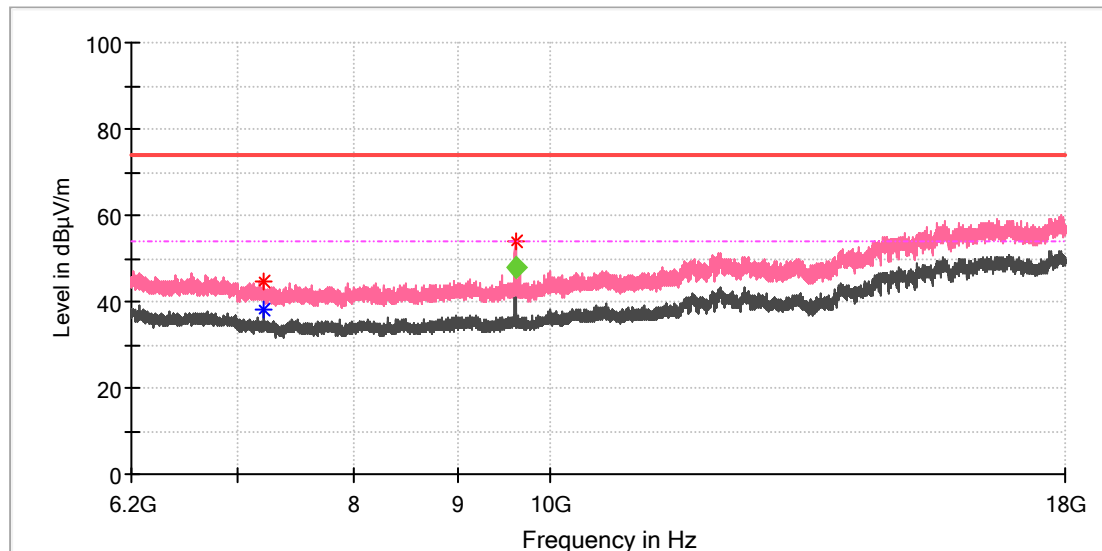
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7205.458333	---	40.94	54.00	13.06	150.0	H	32.0	8.8
7205.950000	45.68	---	74.00	28.32	150.0	H	32.0	8.8
9607.741667	52.77	---	74.00	21.23	150.0	H	348.0	10.4
9608.233333	---	49.33	54.00	4.67	150.0	H	348.0	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: 2.0 Soundbar
Model: NS-SB20
Test Mode: BR_DH5_Low channel
Order No/Sample No: 168542349/A003942000-002
Test Voltage: 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

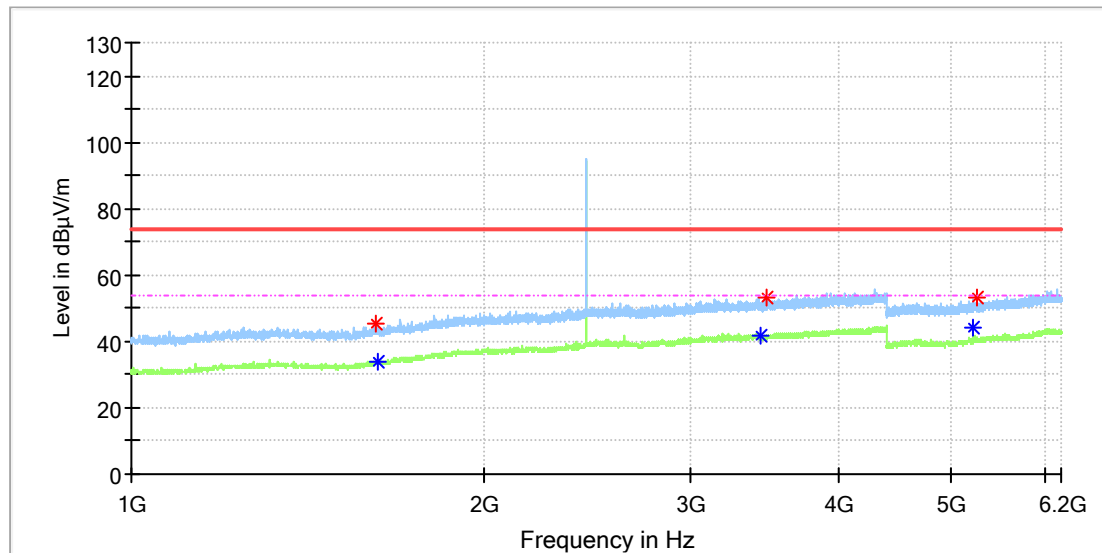
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7205.950000	44.57	---	74.00	29.43	150.0	V	0.0	8.8
7205.950000	---	38.06	54.00	15.94	150.0	V	0.0	8.8
9607.741667	54.15	---	74.00	19.85	150.0	V	300.0	10.4

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
9607.805834	---	47.73	54.00	6.27	150.0	V	300.0	10.4

EUT Information

EUT Name: 2.0 Soundbar
Model: NS-SB20
Test Mode: BR_DH5_Mid channel
Order No/Sample No: 168542349/A003942000-002
Test Voltage: 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

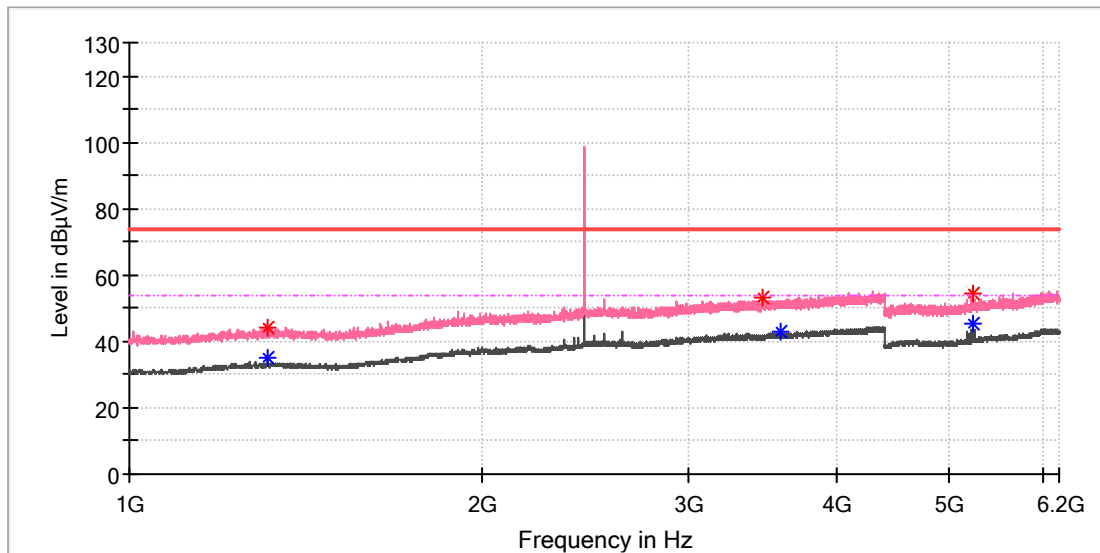
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1613.000000	45.14	---	74.00	28.86	150.0	H	102.0	2.2
1619.000000	---	33.95	54.00	20.05	150.0	H	102.0	2.3
3432.500000	---	41.94	54.00	12.06	150.0	H	211.0	8.8
3473.000000	53.34	---	74.00	20.66	150.0	H	136.0	8.9
5206.500000	---	43.96	54.00	10.04	150.0	H	83.0	12.7
5259.000000	53.14	---	74.00	20.86	150.0	H	0.0	12.9

Final Result

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

EUT Information

EUT Name: 2.0 Soundbar
Model: NS-SB20
Test Mode: BR_DH5_Mid channel
Order No/Sample No: 168542349/A003942000-002
Test Voltage: 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

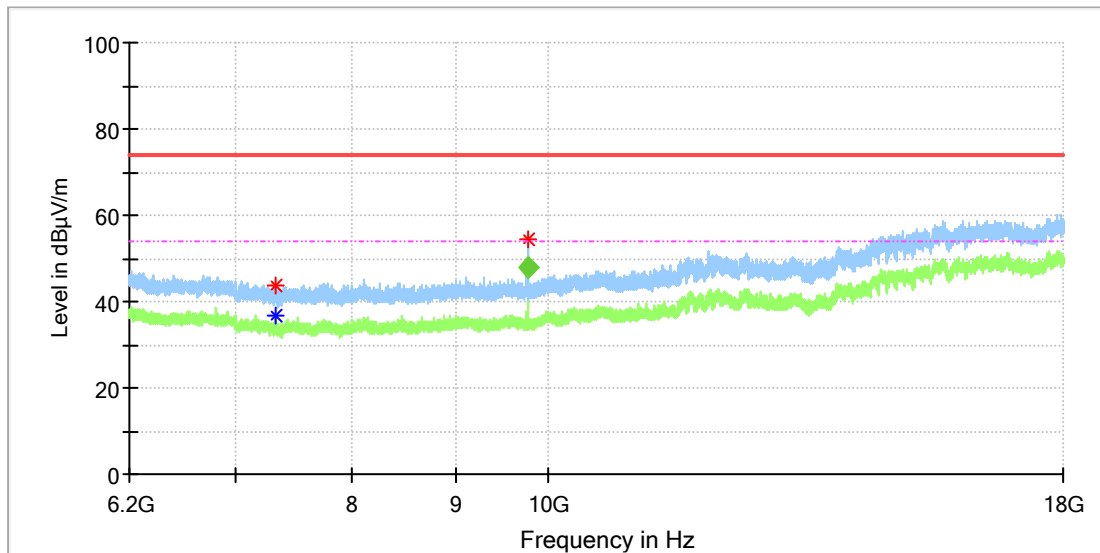
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1312.000000	---	35.22	54.00	18.78	150.0	V	114.0	2.0
1312.500000	44.10	---	74.00	29.90	150.0	V	107.0	2.0
3463.500000	52.93	---	74.00	21.07	150.0	V	183.0	8.8
3595.500000	---	43.02	54.00	10.98	150.0	V	303.0	9.3
5238.500000	54.59	---	74.00	19.41	150.0	V	359.0	12.8
5238.500000	---	45.18	54.00	8.82	150.0	V	359.0	12.8

Final Result

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

EUT Information

EUT Name: 2.0 Soundbar
Model: NS-SB20
Test Mode: BR_DH5_Mid channel
Order No/Sample No: 168542349/A003942000-002
Test Voltage: 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

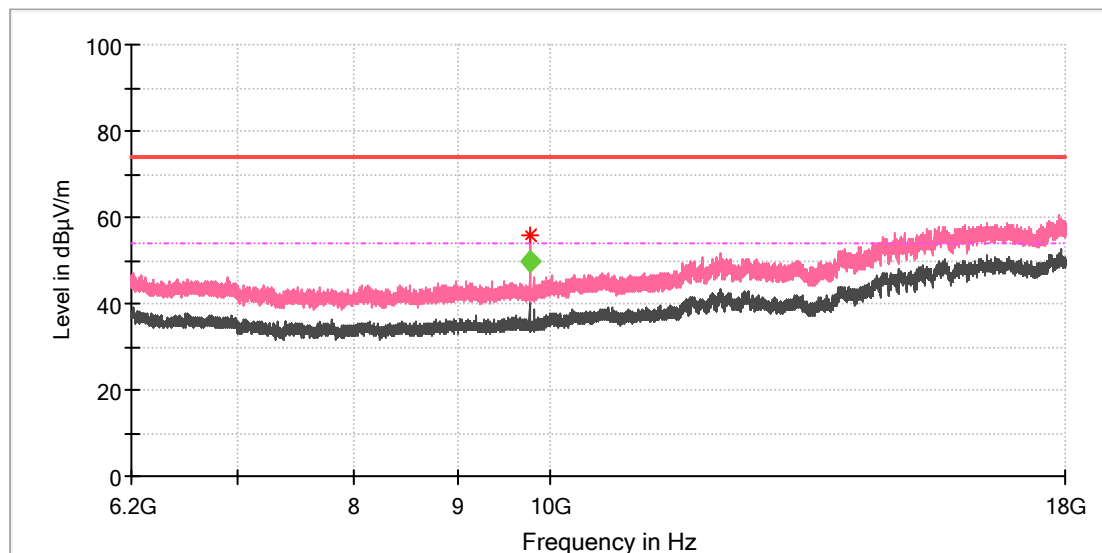
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7322.475000	---	36.78	54.00	17.22	150.0	H	304.0	8.2
7324.933333	43.54	---	74.00	30.46	150.0	H	249.0	8.2
9763.600000	54.52	---	74.00	19.48	150.0	H	249.0	10.4

Final Result

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
9763.913750	---	47.75	54.00	6.25	150.0	H	249.0	10.4

EUT Information

EUT Name: 2.0 Soundbar
Model: NS-SB20
Test Mode: BR_DH5_Mid channel
Order No/Sample No: 168542349/A003942000-002
Test Voltage: 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

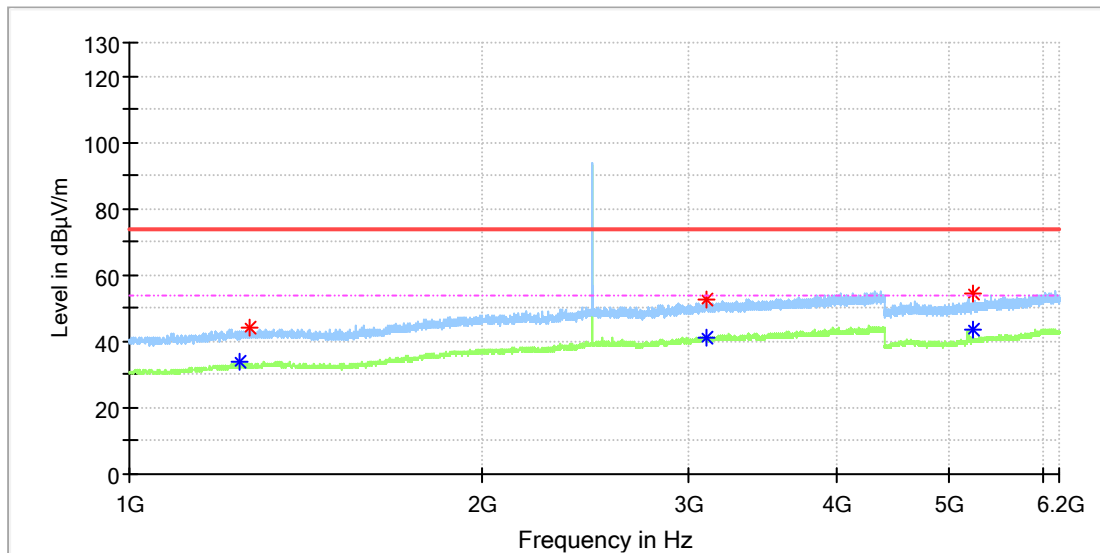
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
9764.091667	55.89	---	74.00	18.11	150.0	V	82.0	10.4

Final Result

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
9763.923750	---	49.88	54.00	4.12	150.0	V	82.0	10.4

EUT Information

EUT Name: 2.0 Soundbar
Model: NS-SB20
Test Mode: BR_DH5_High channel
Order No/Sample No: 168542349/A003942000-002
Test Voltage: 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

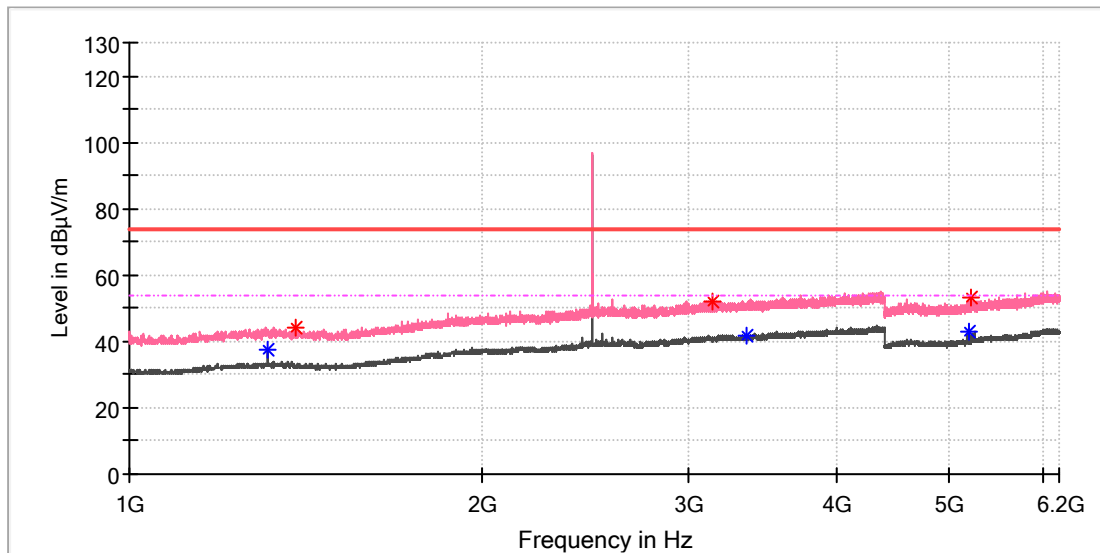
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1240.000000	---	33.70	54.00	20.30	150.0	H	295.0	1.7
1267.000000	44.17	---	74.00	29.83	150.0	H	217.0	1.9
3097.500000	---	41.16	54.00	12.84	150.0	H	191.0	8.7
3098.500000	52.47	---	74.00	21.53	150.0	H	0.0	8.7
5233.000000	---	43.46	54.00	10.54	150.0	H	353.0	12.8
5233.000000	54.12	---	74.00	19.88	150.0	H	353.0	12.8

Final Result

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

EUT Information

EUT Name: 2.0 Soundbar
Model: NS-SB20
Test Mode: BR_DH5_High channel
Order No/Sample No: 168542349/A003942000-002
Test Voltage: 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

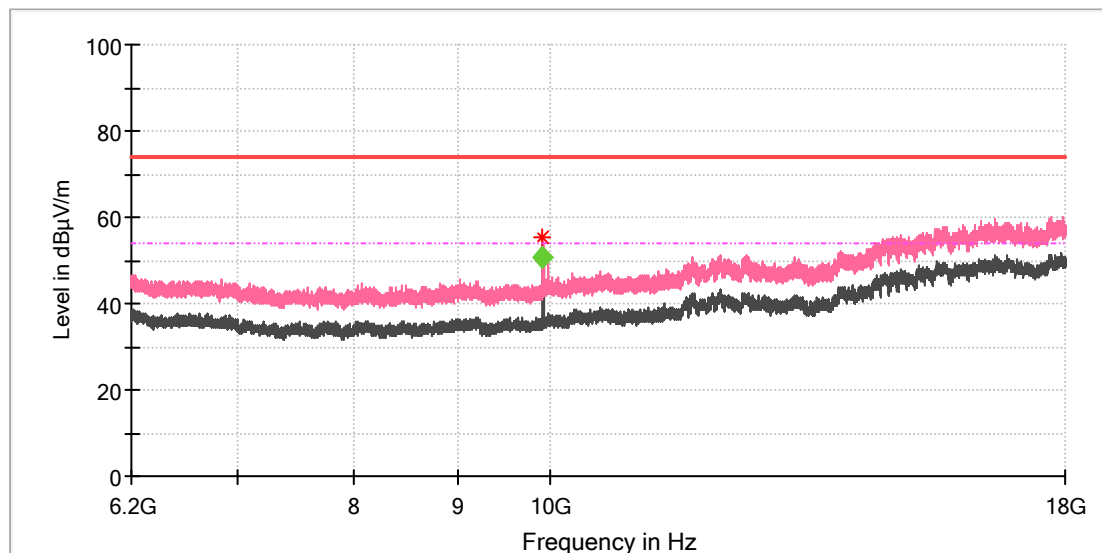
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1312.500000	---	37.74	54.00	16.26	150.0	V	263.0	2.0
1385.500000	44.29	---	74.00	29.71	150.0	V	218.0	1.8
3144.000000	51.92	---	74.00	22.08	150.0	V	39.0	8.6
3361.500000	---	41.68	54.00	12.32	150.0	V	145.0	8.6
5186.000000	---	42.79	54.00	11.21	150.0	V	212.0	12.6
5219.500000	53.22	---	74.00	20.78	150.0	V	49.0	12.7

Final Result

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

EUT Information

EUT Name: 2.0 Soundbar
Model: NS-SB20
Test Mode: BR_DH5_High channel
Order No/Sample No: 168542349/A003942000-002
Test Voltage: 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)
9919.458333	55.22	---	74.00	18.78	150.0	V	314.0	10.8

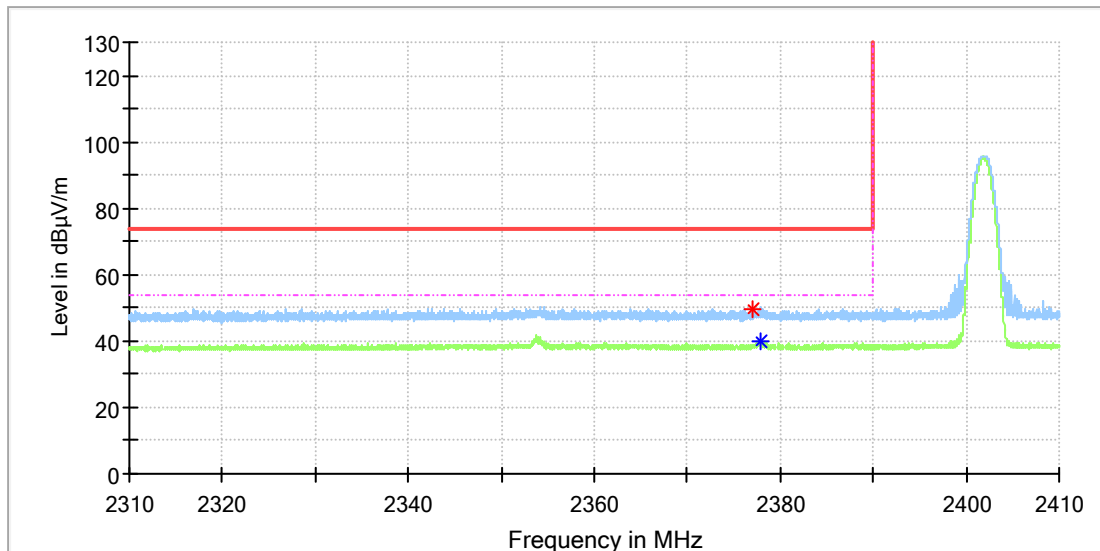
Final Result

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
9919.828750	---	50.85	54.00	3.15	150.0	V	314.0	10.8

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

EUT Information

EUT Name: 2.0 Soundbar
Model: NS-SB20
Test Mode: BR_DH5_Low channel
Order No/Sample No: 168542349/A003942000-002
Test Voltage: 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

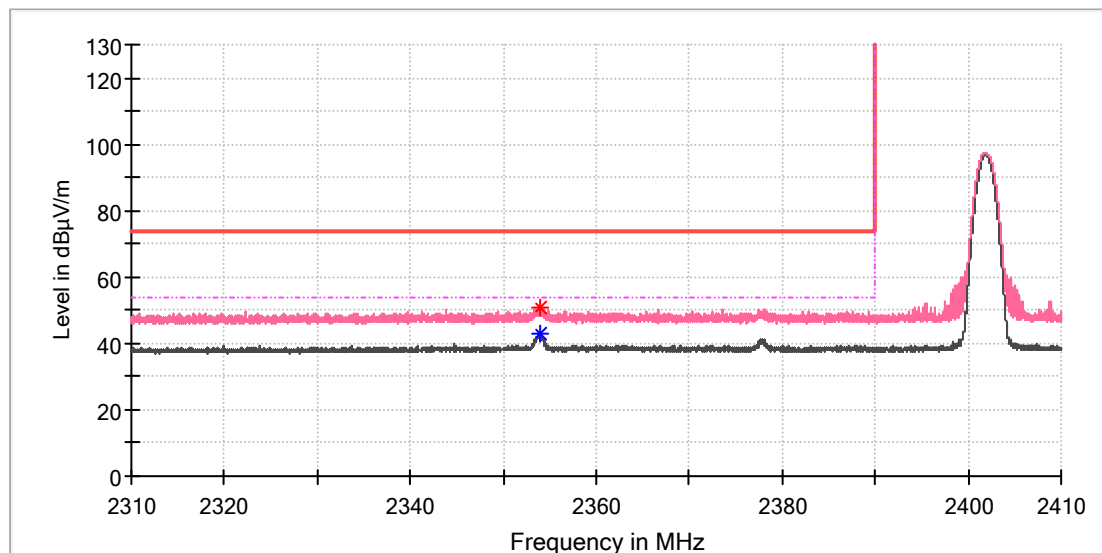
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2377.132353	49.61	---	74.00	24.39	150.0	H	162.0	6.9
2377.926471	---	40.08	54.00	13.92	150.0	H	322.0	6.9

Final_Result

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

EUT Information

EUT Name: 2.0 Soundbar
Model: NS-SB20
Test Mode: BR_DH5_Low channel
Order No/Sample No: 168542349/A003942000-002
Test Voltage: 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

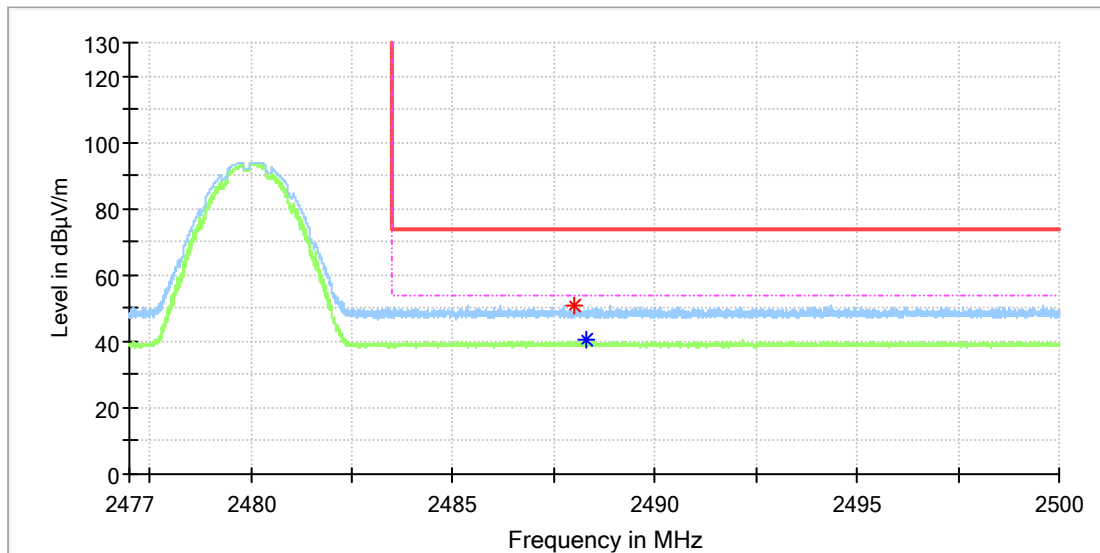
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2353.941177	---	42.73	54.00	11.27	150.0	V	176.0	6.9
2354.044118	50.57	---	74.00	23.43	150.0	V	318.0	6.9

Final Result

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

EUT Information

EUT Name: 2.0 Soundbar
Model: NS-SB20
Test Mode: BR_DH5_High channel
Order No/Sample No: 168542349/A003942000-002
Test Voltage: 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

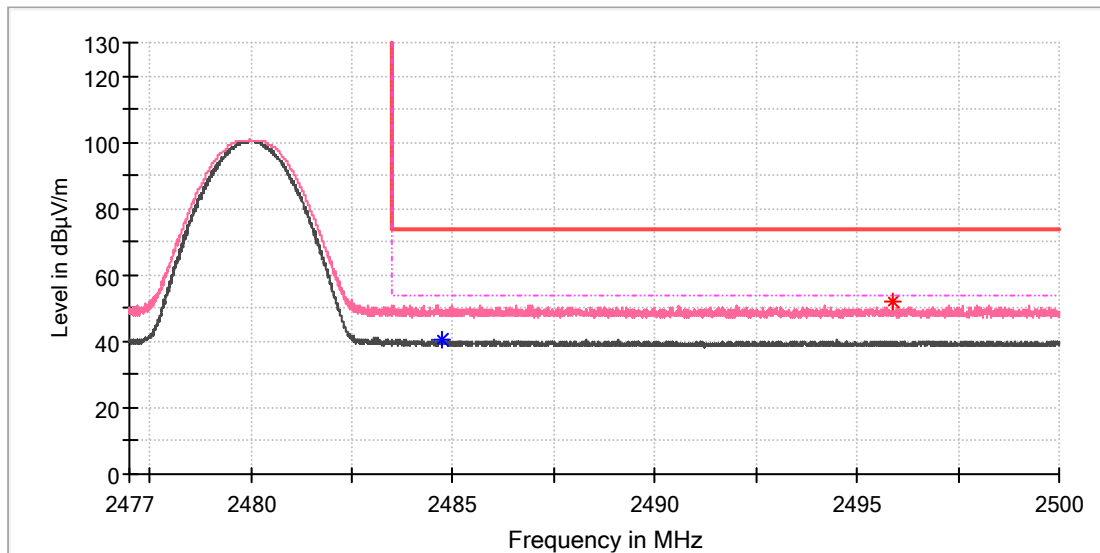
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2488.013235	50.99	---	74.00	23.01	150.0	H	237.0	7.4
2488.317647	---	40.23	54.00	13.77	150.0	H	172.0	7.4

Final Result

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

EUT Information

EUT Name: 2.0 Soundbar
Model: NS-SB20
Test Mode: BR_DH5_High channel
Order No/Sample No: 168542349/A003942000-002
Test Voltage: 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)
2484.739706	---	40.43	54.00	13.57	150.0	V	346.0	7.4
2495.875000	51.94	---	74.00	22.06	150.0	V	205.0	7.4

Final Result

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

Appendix B: Test Results of Bluetooth LE

APPENDIX B: TEST RESULTS OF BLUETOOTH LE	1
APPENDIX B.1: TEST RESULTS OF 6dB BANDWIDTH.....	2
Test Result.....	2
Test Graphs.....	3
APPENDIX B.2: TEST RESULTS OF 99% BANDWIDTH.....	5
Test Result.....	5
Test Graphs.....	6
APPENDIX B.3: TEST RESULTS OF CONDUCTED POWER SPECTRAL DENSITY	8
Test Result.....	8
Test Graphs.....	9
APPENDIX B.4: TEST RESULTS OF BAND EDGE MEASUREMENTS.....	11
Test Result.....	11
Test Graphs.....	12
APPENDIX B.5: TEST RESULTS OF CONDUCTED SPURIOUS EMISSION.....	14
Test Result.....	14
Test Graphs.....	15
APPENDIX B.6: TEST RESULTS OF RADIATED SPURIOUS EMISSIONS	21
30 MHz - 1GHz	21
1GHz - 18GHz.....	23
APPENDIX B.7: TEST RESULTS OF RADIATED EMISSIONS IN RESTRICTED BANDS	35
APPENDIX B.8: TEST RESULTS OF CONDUCTED EMISSION ON AC MAINS.....	43

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	0.724	2401.624	2402.348	0.5	PASS
		2440	0.720	2439.628	2440.348	0.5	PASS
		2480	0.696	2479.628	2480.324	0.5	PASS
BLE_2M	Ant1	2402	1.172	2401.396	2402.568	0.5	PASS
		2440	1.164	2439.404	2440.568	0.5	PASS
		2480	1.172	2479.396	2480.568	0.5	PASS

Test Graphs

BLE 1M Ant1 2402

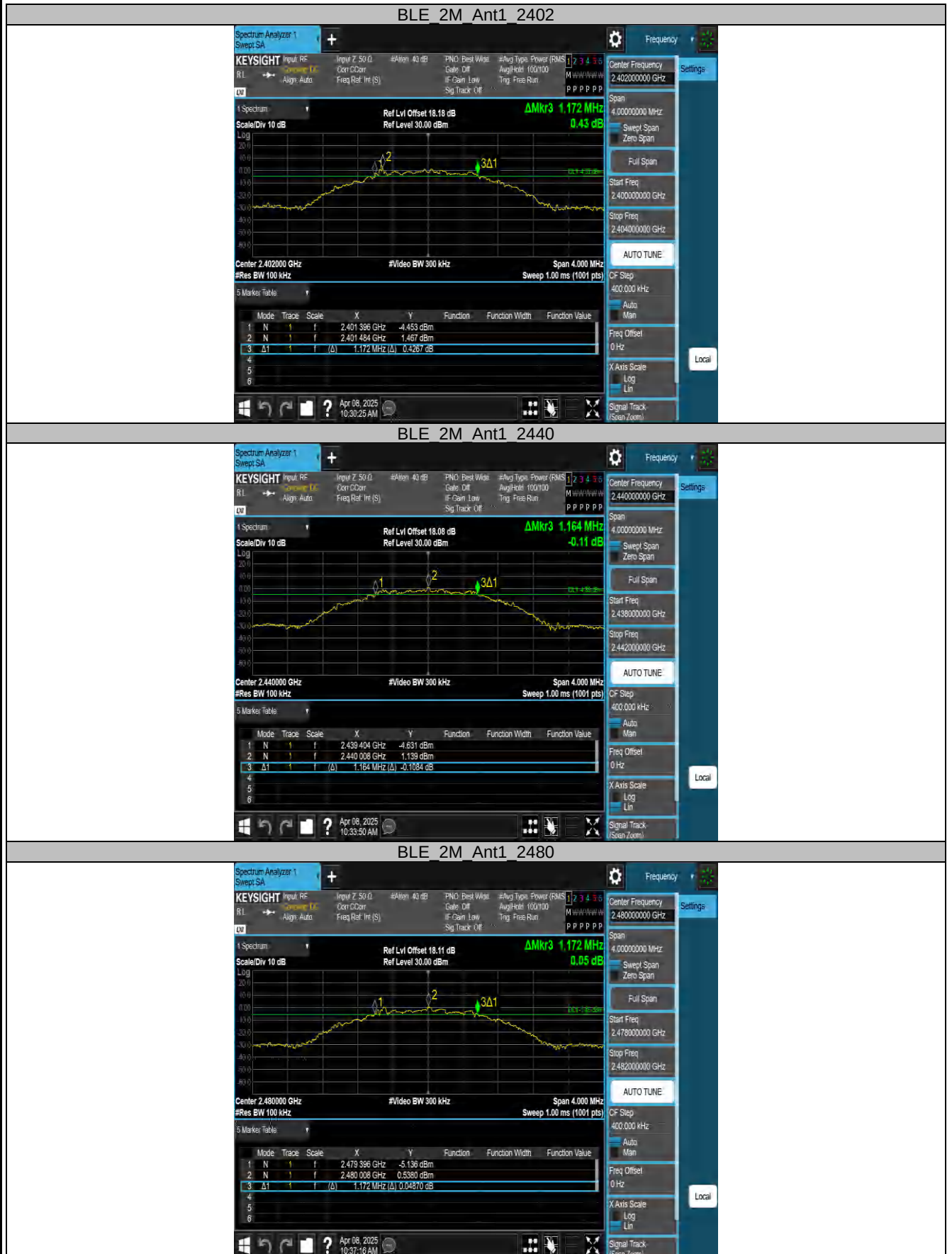


BLE 1M Ant1 2440



BLE 1M Ant1 2480



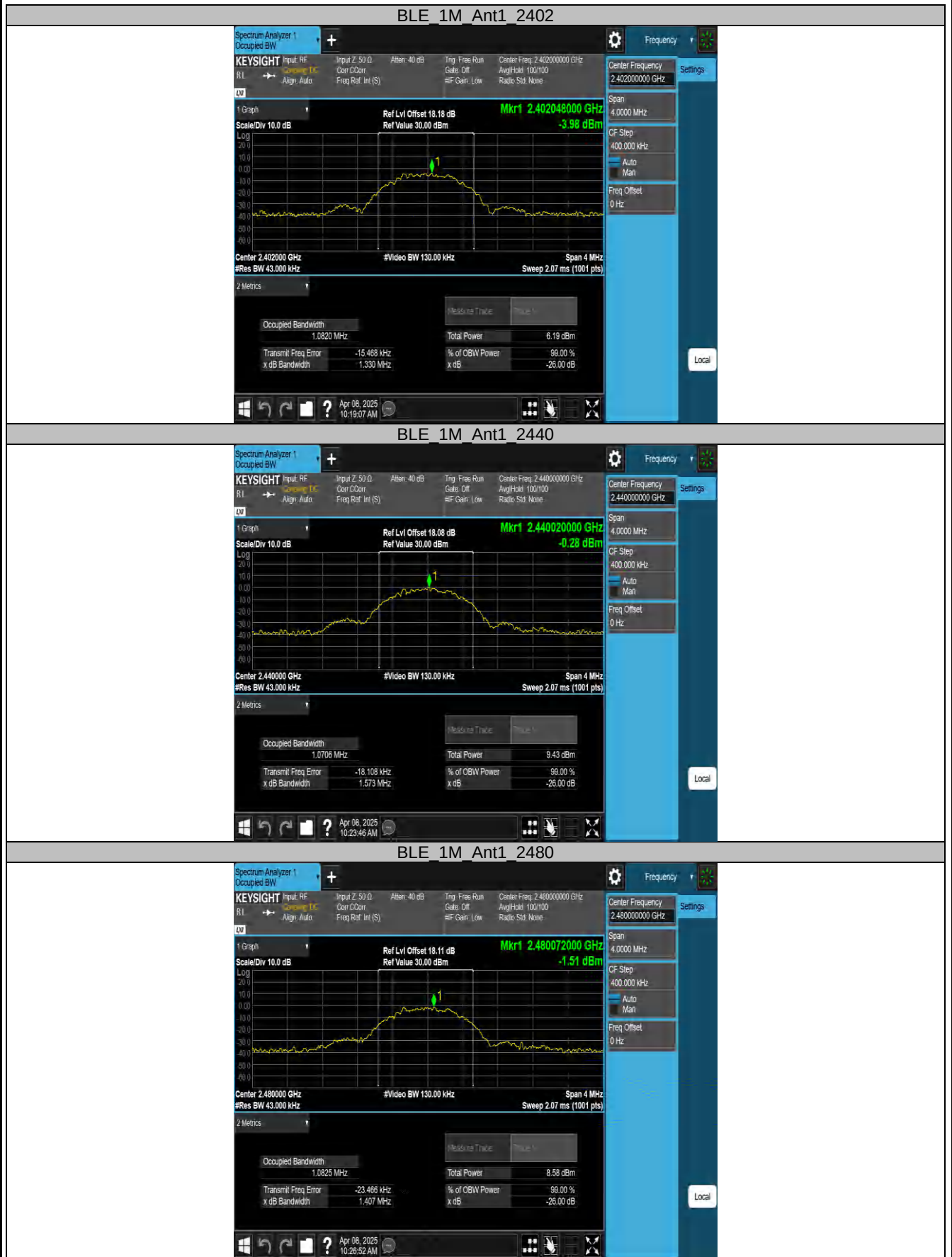


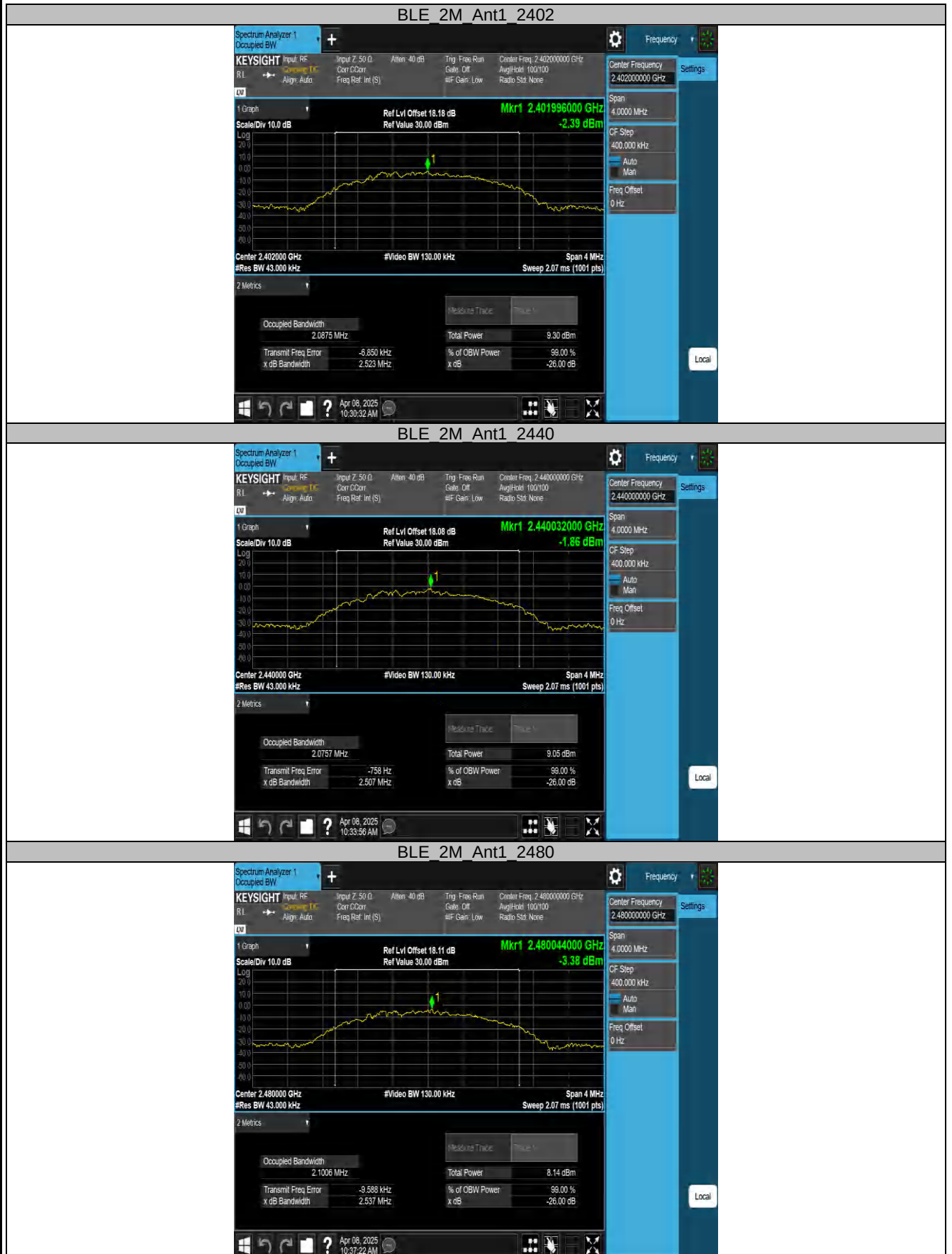
Appendix B.2: Test Results of 99% Bandwidth

Test Result

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0820	2401.4435	2402.5255	---	PASS
		2440	1.0706	2439.4466	2440.5172	---	PASS
		2480	1.0825	2479.4353	2480.5178	---	PASS
BLE_2M	Ant1	2402	2.0875	2400.9494	2403.0369	---	PASS
		2440	2.0757	2438.9614	2441.0371	---	PASS
		2480	2.1006	2478.9401	2481.0407	---	PASS

Test Graphs



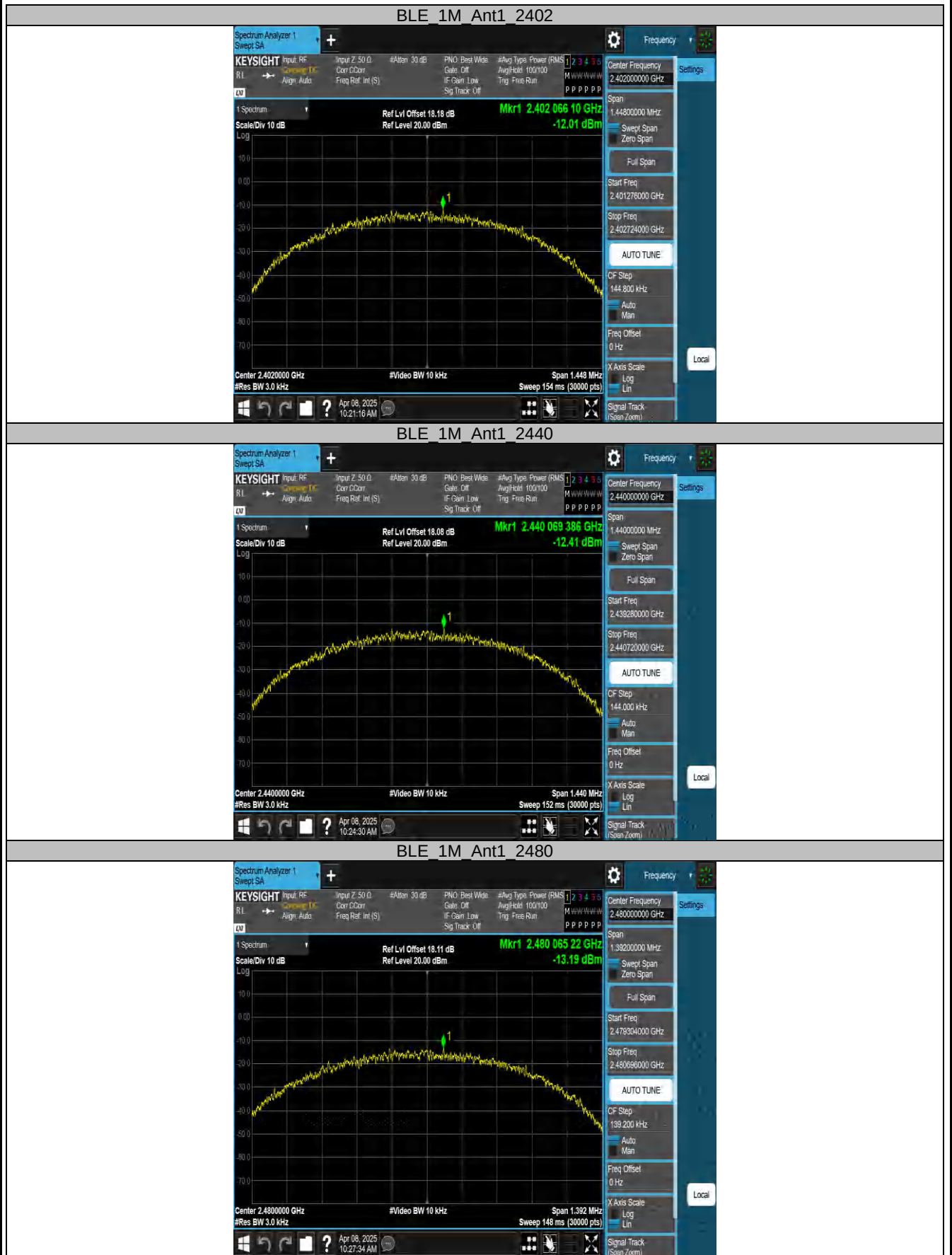


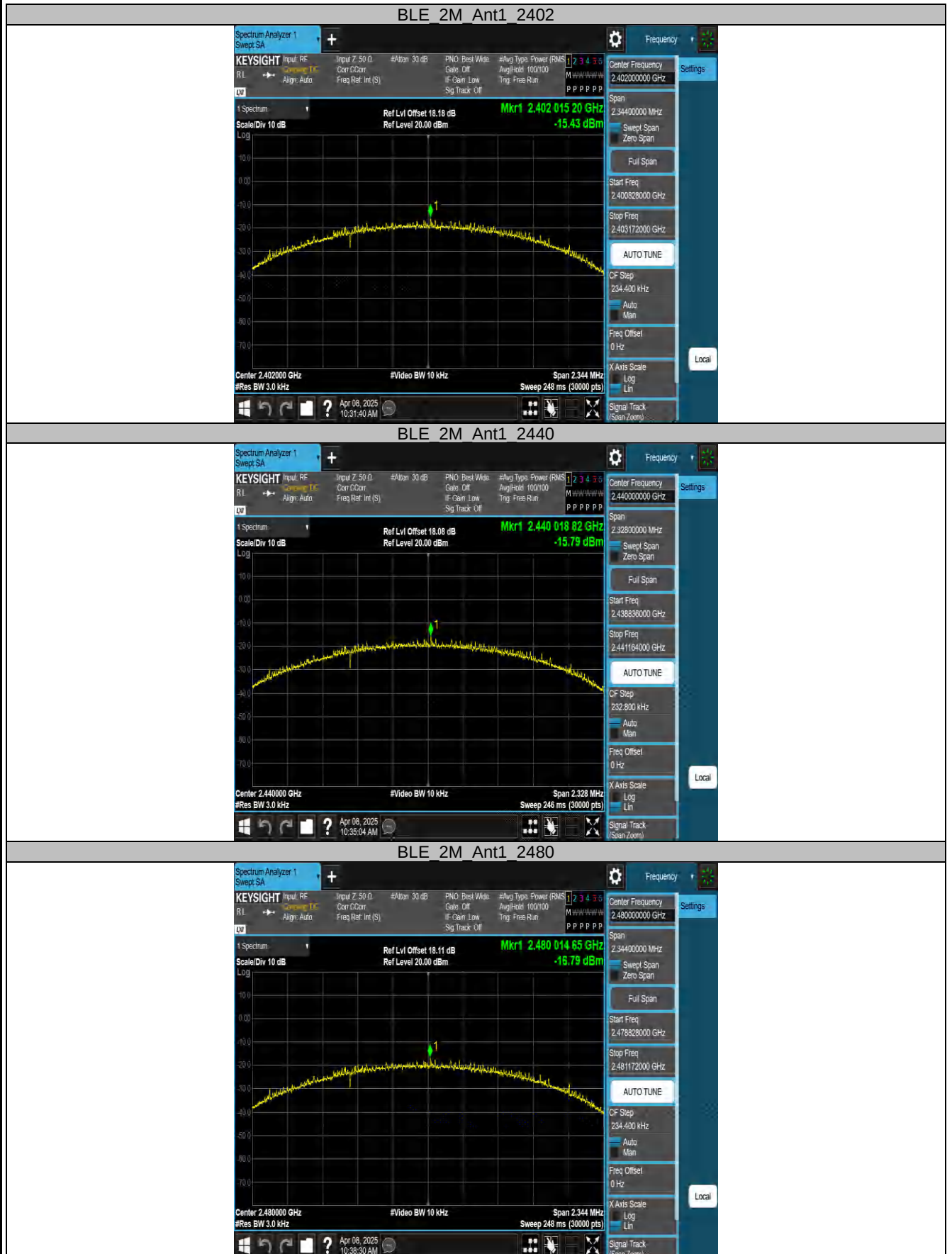
Appendix B.3: Test Results of Conducted Power Spectral Density

Test Result

TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-12.01	≤8.00	PASS
		2440	-12.41	≤8.00	PASS
		2480	-13.20	≤8.00	PASS
BLE_2M	Ant1	2402	-15.43	≤8.00	PASS
		2440	-15.79	≤8.00	PASS
		2480	-16.79	≤8.00	PASS

Test Graphs





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	2.69	-43.39	≤-17.31	PASS
		High	2480	1.29	-44.87	≤-18.72	PASS
BLE_2M	Ant1	Low	2402	2.05	-31.52	≤-17.95	PASS
		High	2480	0.75	-44.70	≤-19.25	PASS

Test Graphs





Appendix B.5: Test Results of Conducted Spurious Emission

Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	2.65	2.65	---	PASS
			30~1000	2.65	-41.5	≤-17.35	PASS
			1000~26500	2.65	-32.66	≤-17.35	PASS
		2440	Reference	2.08	2.08	---	PASS
			30~1000	2.08	-39.72	≤-17.92	PASS
			1000~26500	2.08	-32.35	≤-17.92	PASS
		2480	Reference	1.41	1.41	---	PASS
			30~1000	1.41	-40.67	≤-18.59	PASS
			1000~26500	1.41	-32.45	≤-18.59	PASS
BLE_2M	Ant1	2402	Reference	1.69	1.69	---	PASS
			30~1000	1.69	-41.44	≤-18.31	PASS
			1000~26500	1.69	-32.98	≤-18.31	PASS
		2440	Reference	1.61	1.61	---	PASS
			30~1000	1.61	-41.42	≤-18.39	PASS
			1000~26500	1.61	-32.25	≤-18.39	PASS
		2480	Reference	0.71	0.71	---	PASS
			30~1000	0.71	-41.45	≤-19.29	PASS
			1000~26500	0.71	-32.25	≤-19.29	PASS

Test Graphs

BLE 1M Ant1 2402 0~Reference



BLE 1M Ant1 2402 30~1000



BLE 1M Ant1 2402 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

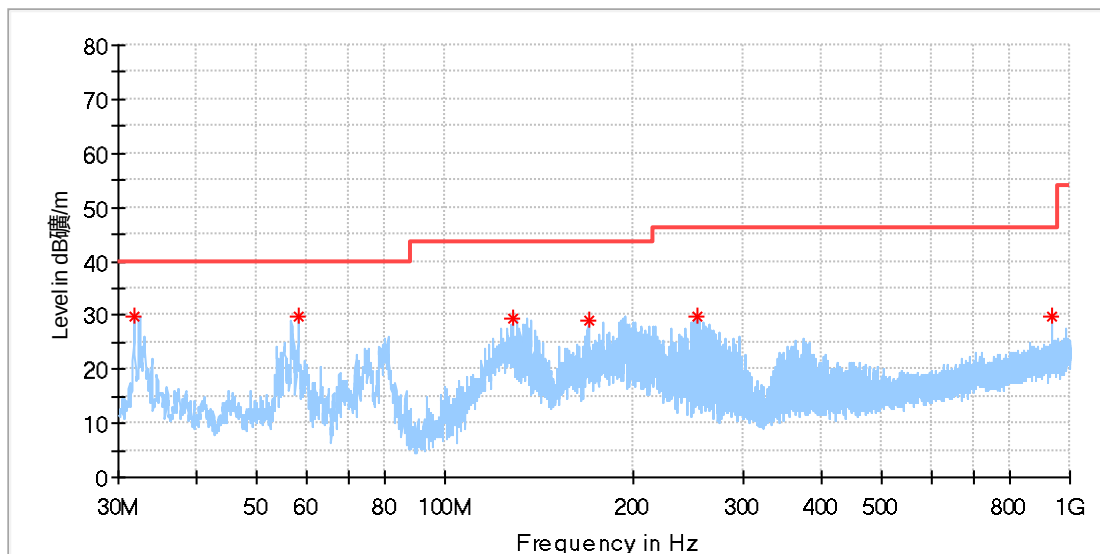
Note:

- 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: 2.0 Soundbar
Model: NS-SB20
Test Mode: BLE 1M_Mid channel
Order No/Sample No: 168542349/A003942000-002
Test Voltage: 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

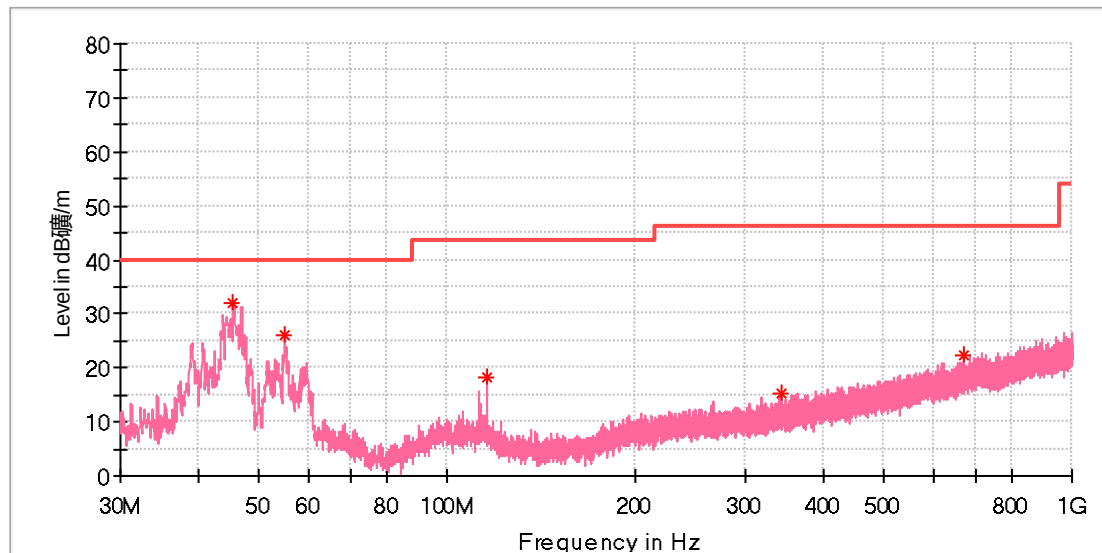
Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
31.828077	29.74	40.00	10.26	100.0	H	293.0	-23.0
58.204615	29.84	40.00	10.16	100.0	H	302.0	-19.1
128.716154	29.49	43.50	14.01	100.0	H	278.0	-22.0
169.456154	28.90	43.50	14.60	100.0	H	40.0	-21.6
253.696923	29.86	46.00	16.14	100.0	H	278.0	-17.6
937.546923	29.67	46.00	16.33	100.0	H	302.0	-5.0

Final Result

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

EUT Information

EUT Name: 2.0 Soundbar
Model: NS-SB20
Test Mode: BLE 1M_Mid channel
Order No/Sample No: 168542349/A003942000-002
Test Voltage: 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)
45.445385	31.87	40.00	8.13	100.0	V	3.0	-19.1
54.921539	25.87	40.00	14.13	100.0	V	253.0	-18.7
115.621154	18.38	43.50	25.12	100.0	V	338.0	-20.2
342.936923	15.10	46.00	30.90	100.0	V	90.0	-15.3
669.192692	22.44	46.00	23.56	100.0	V	310.0	-9.0

Final_Result

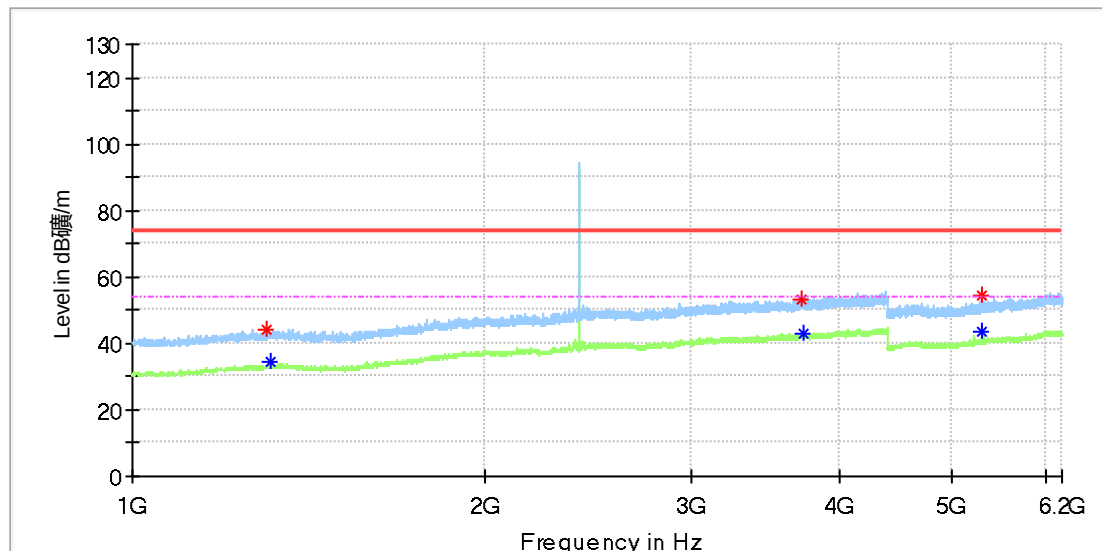
Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

1GHz - 18GHz

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

EUT Information

EUT Name:	2.0 Soundbar
Model:	NS-SB20
Test Mode:	BLE 1M_Low channel
Order No/Sample No:	168542349/A003942000-002
Test Voltage:	120V/60Hz
Remark:	Temp 24 Humi:50%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

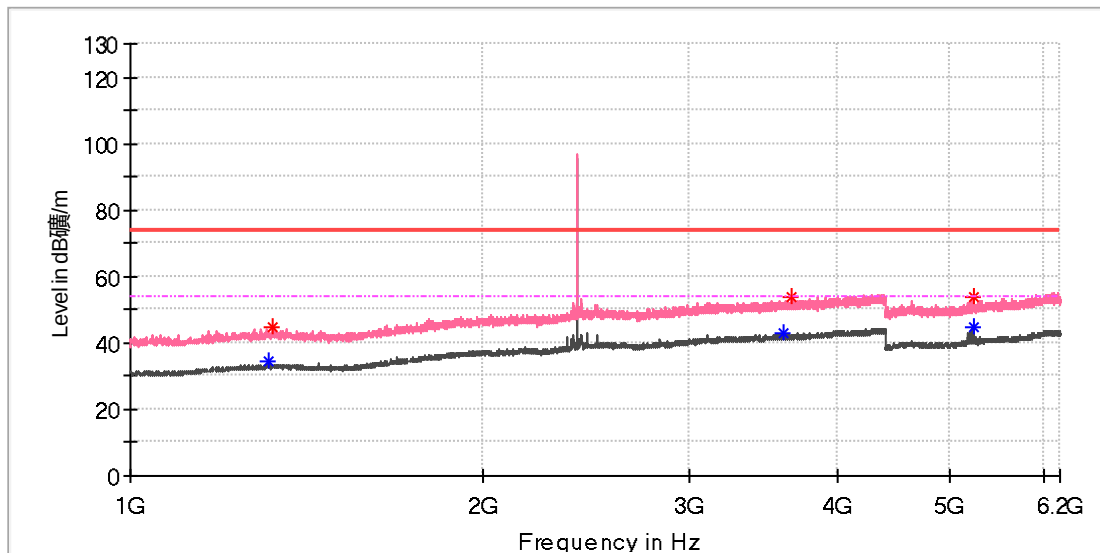
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1299.000000	43.88	---	74.00	30.12	150.0	H	115.0	1.9
1312.000000	---	34.35	54.00	19.65	150.0	H	314.0	2.0
3711.500000	53.25	---	74.00	20.75	150.0	H	189.0	9.6
3732.000000	---	42.84	54.00	11.16	150.0	H	165.0	9.6
5295.000000	---	43.25	54.00	10.75	150.0	H	60.0	13.0
5295.000000	54.13	---	74.00	19.87	150.0	H	60.0	13.0

Final Result

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

EUT Information

EUT Name: 2.0 Soundbar
Model: NS-SB20
Test Mode: BLE 1M_Low channel
Order No/Sample No: 168542349/A003942000-002
Test Voltage: 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

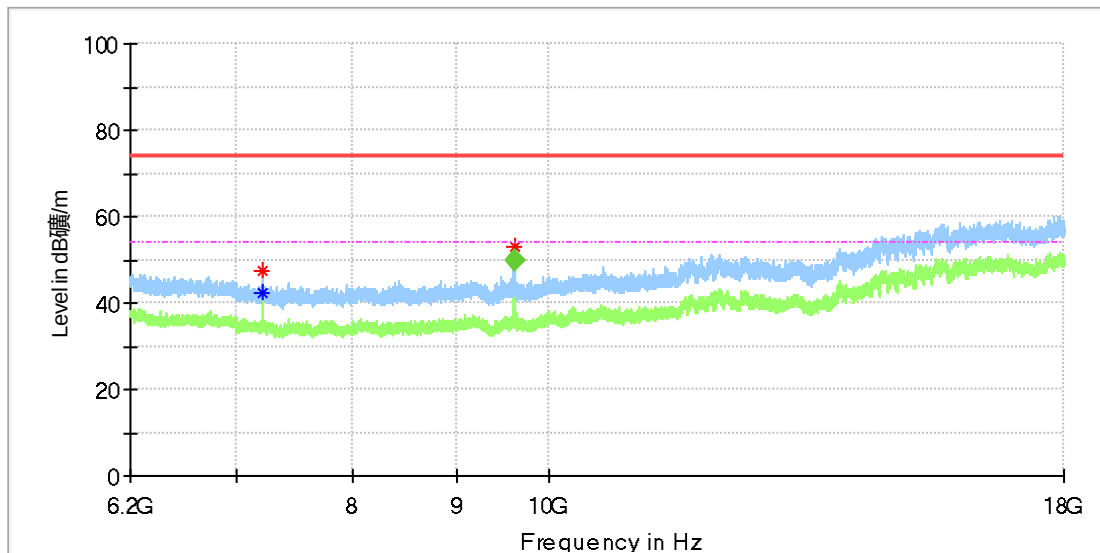
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1313.000000	---	34.46	54.00	19.54	150.0	V	301.0	2.0
1324.000000	44.85	---	74.00	29.15	150.0	V	359.0	2.0
3598.500000	---	42.79	54.00	11.21	150.0	V	111.0	9.3
3665.500000	54.11	---	74.00	19.89	150.0	V	355.0	9.5
5227.500000	---	45.04	54.00	8.96	150.0	V	125.0	12.8
5228.000000	53.87	---	74.00	20.13	150.0	V	125.0	12.8

Final_Result

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

EUT Information

EUT Name: 2.0 Soundbar
Model: NS-SB20
Test Mode: BLE 1M_Low channel
Order No/Sample No: 168542349/A003942000-002
Test Voltage: 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

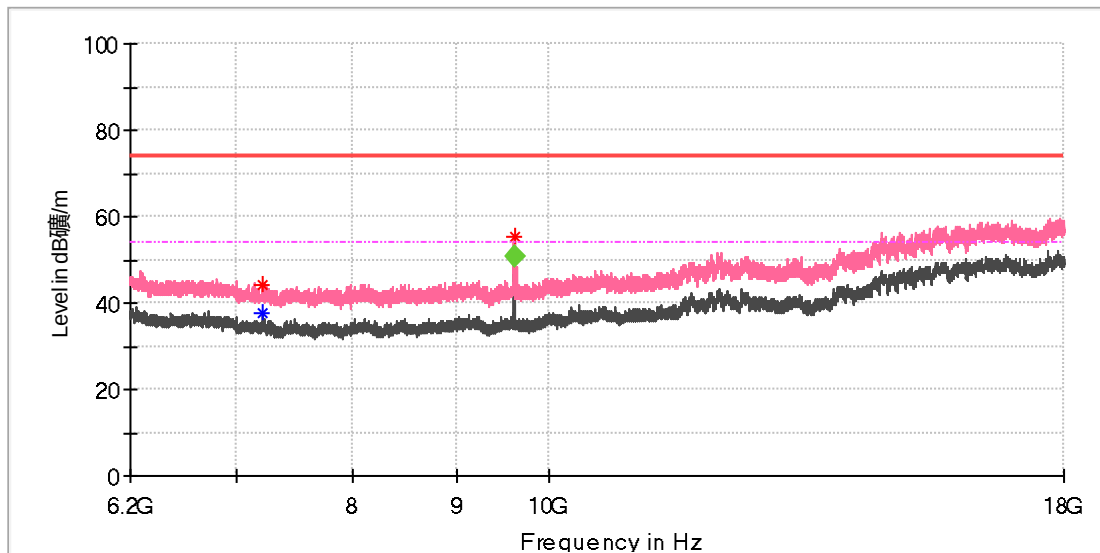
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7205.458333	47.65	---	74.00	26.35	150.0	H	298.0	8.8
7205.458333	---	42.12	54.00	11.88	150.0	H	298.0	8.8
9607.741667	53.12	---	74.00	20.88	150.0	H	57.0	10.4

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
9607.837917	---	49.63	54.00	4.37	150.0	H	57.0	10.4

EUT Information

EUT Name: 2.0 Soundbar
Model: NS-SB20
Test Mode: BLE 1M_Low channel
Order No/Sample No: 168542349/A003942000-002
Test Voltage: 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

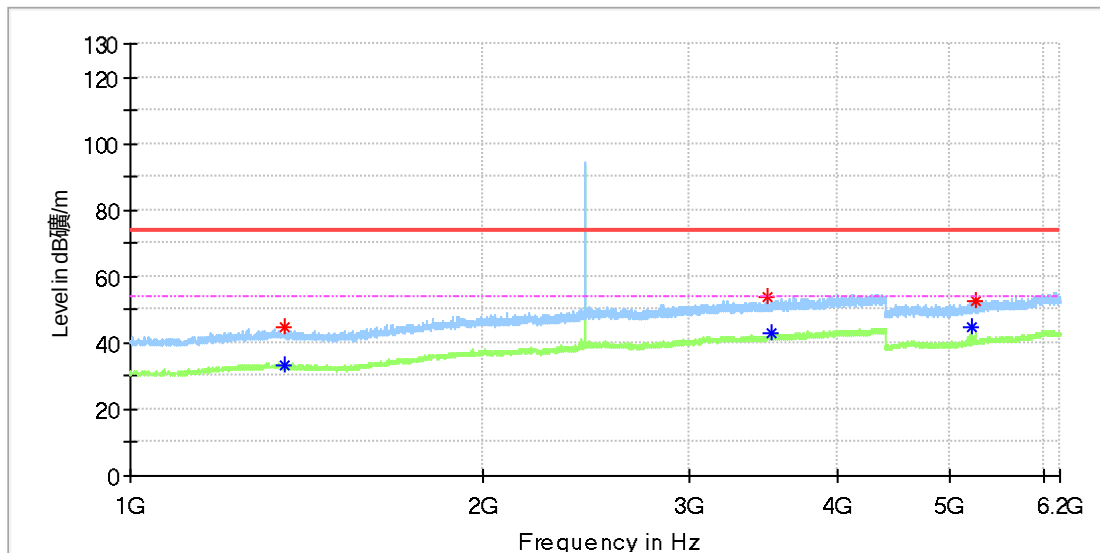
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7205.950000	---	37.85	54.00	16.15	150.0	V	52.0	8.8
7209.391667	43.98	---	74.00	30.02	150.0	V	299.0	8.8
9607.741667	55.19	---	74.00	18.81	150.0	V	65.0	10.4

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
9607.985834	---	50.51	54.00	3.49	150.0	V	65.0	10.4

EUT Information

EUT Name: 2.0 Soundbar
Model: NS-SB20
Test Mode: BLE 1M_Mid channel
Order No/Sample No: 168542349/A003942000-002
Test Voltage: 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

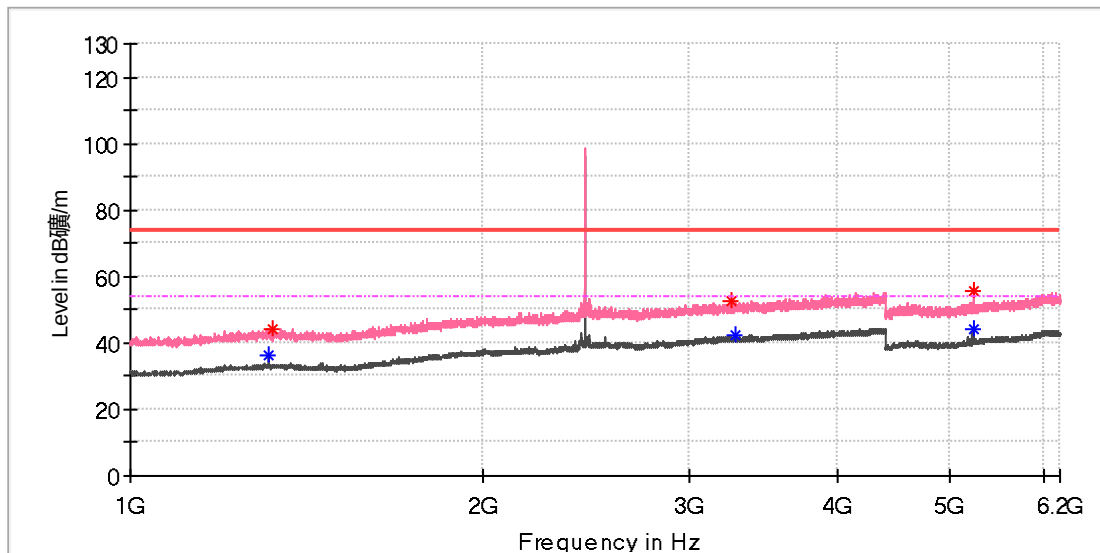
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1351.000000	---	33.49	54.00	20.51	150.0	H	85.0	2.1
1352.000000	44.80	---	74.00	29.20	150.0	H	30.0	2.1
3488.000000	53.69	---	74.00	20.31	150.0	H	9.0	8.9
3523.500000	---	42.72	54.00	11.28	150.0	H	0.0	9.1
5221.500000	---	44.48	54.00	9.52	150.0	H	343.0	12.7
5247.500000	52.42	---	74.00	21.58	150.0	H	163.0	12.8

Final_Result

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

EUT Information

EUT Name: 2.0 Soundbar
Model: NS-SB20
Test Mode: BLE 1M_Mid channel
Order No/Sample No: 168542349/A003942000-002
Test Voltage: 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

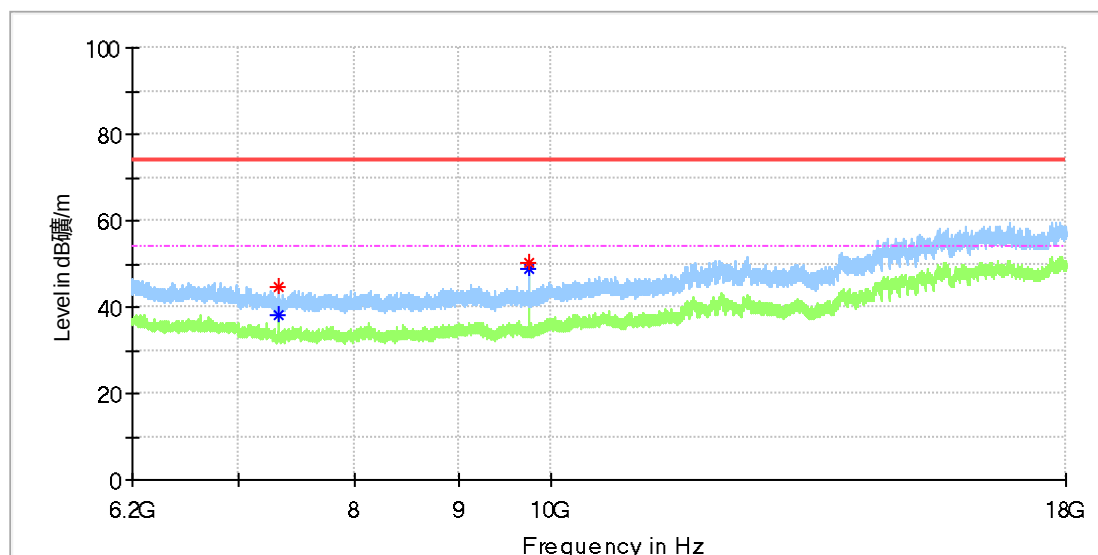
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1312.500000	---	36.36	54.00	17.64	150.0	V	302.0	2.0
1322.500000	44.38	---	74.00	29.63	150.0	V	252.0	2.0
3259.000000	52.46	---	74.00	21.54	150.0	V	119.0	8.5
3278.000000	---	42.40	54.00	11.60	150.0	V	39.0	8.5
5227.500000	---	44.41	54.00	9.59	150.0	V	14.0	12.8
5242.000000	55.84	---	74.00	18.16	150.0	V	28.0	12.8

Final_Result

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

EUT Information

EUT Name:	2.0 Soundbar
Model:	NS-SB20
Test Mode:	BLE 1M_Mid channel
Order No/Sample No:	168542349/A003942000-002
Test Voltage:	120V/60Hz
Remark:	Temp 24 Humi:50%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

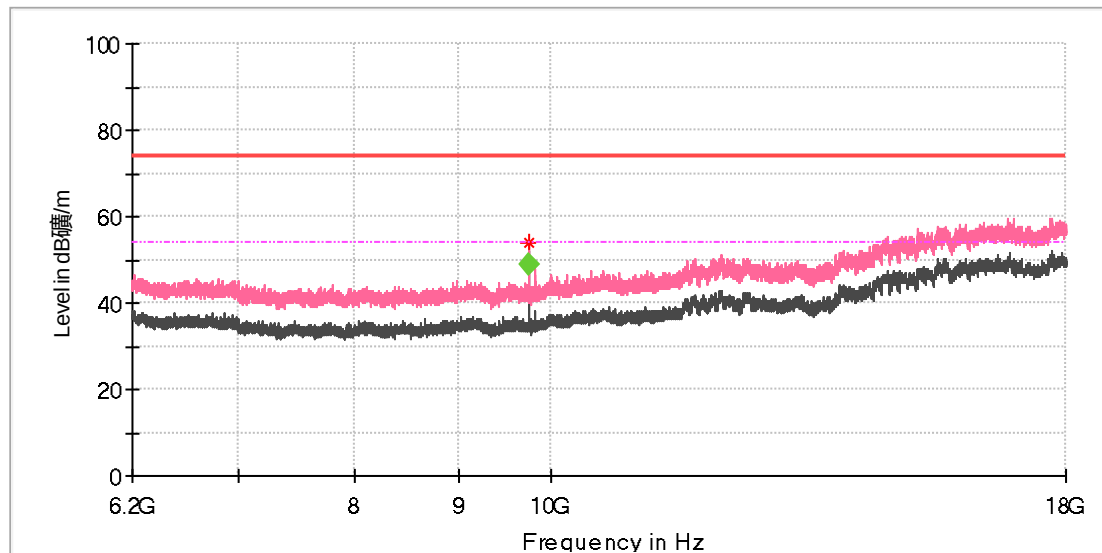
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7320.016667	---	38.23	54.00	15.77	150.0	H	298.0	8.2
7320.508333	44.68	---	74.00	29.32	150.0	H	298.0	8.2
9759.666667	---	48.63	54.00	5.37	150.0	H	251.0	10.4
9760.158333	50.27	---	74.00	23.73	150.0	H	251.0	10.4

Final Result

[illegible]

EUT Information

EUT Name: 2.0 Soundbar
Model: NS-SB20
Test Mode: BLE 1M_Mid channel
Order No/Sample No: 168542349/A003942000-002
Test Voltage: 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

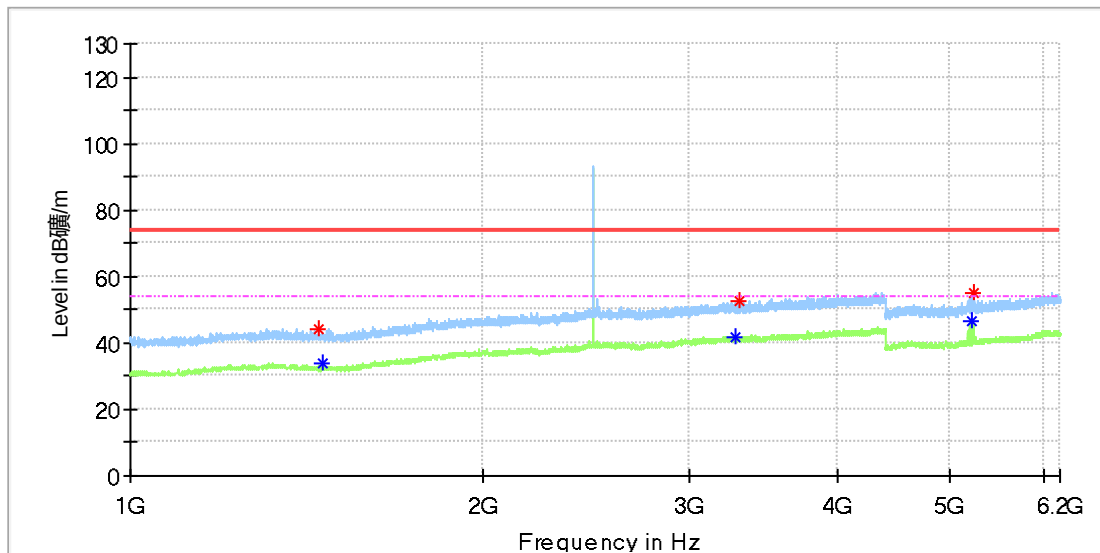
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
9759.666667	54.04	---	74.00	19.96	150.0	V	303.0	10.4

Final_Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
9759.997084	---	48.95	54.00	5.05	150.0	V	303.0	10.4

EUT Information

EUT Name: 2.0 Soundbar
Model: NS-SB20
Test Mode: BLE 1M_High channel
Order No/Sample No: 168542349/A003942000-002
Test Voltage: 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

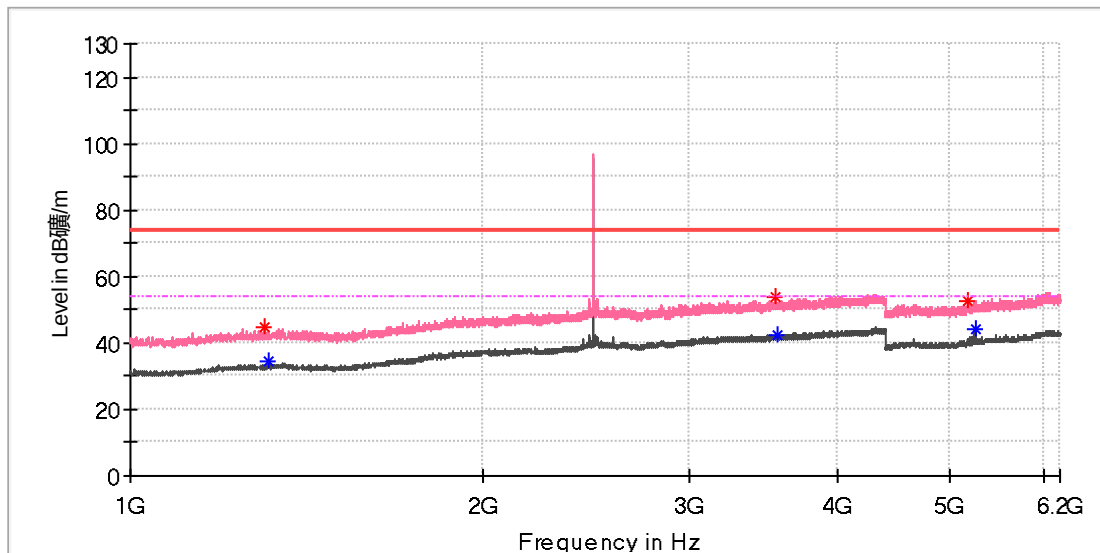
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1449.000000	44.04	---	74.00	29.96	150.0	H	96.0	1.5
1456.000000	---	33.76	54.00	20.24	150.0	H	149.0	1.4
3284.000000	---	41.87	54.00	12.13	150.0	H	119.0	8.5
3304.000000	52.85	---	74.00	21.15	150.0	H	82.0	8.6
5222.000000	---	46.64	54.00	7.36	150.0	H	336.0	12.7
5235.500000	55.30	---	74.00	18.70	150.0	H	255.0	12.8

Final_Result

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

EUT Information

EUT Name: 2.0 Soundbar
Model: NS-SB20
Test Mode: BLE 1M_High channel
Order No/Sample No: 168542349/A003942000-002
Test Voltage: 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

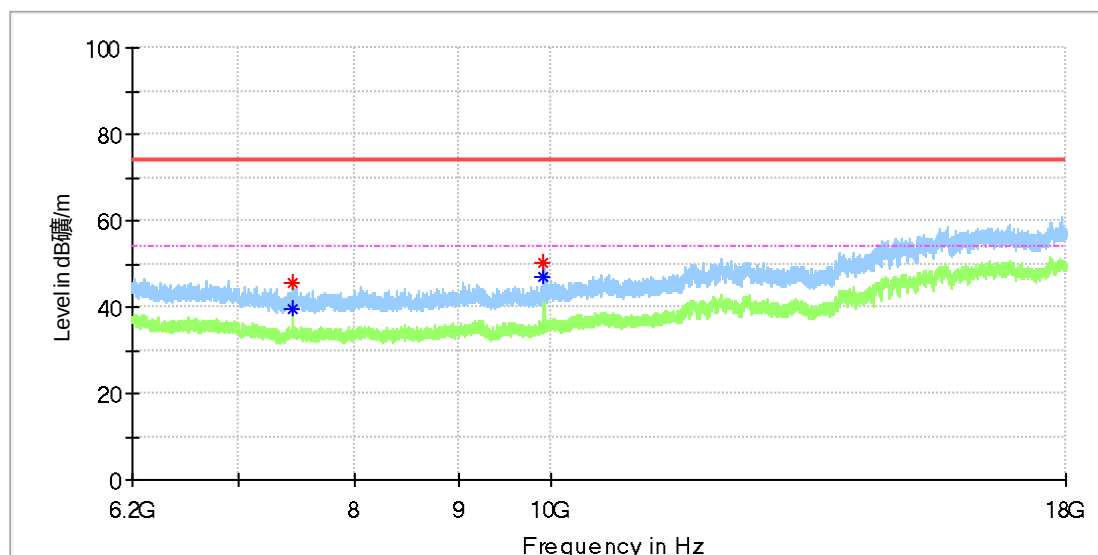
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1302.500000	44.69	---	74.00	29.31	150.0	V	276.0	1.9
1312.500000	---	34.28	54.00	19.72	150.0	V	195.0	2.0
3546.500000	53.71	---	74.00	20.29	150.0	V	327.0	9.2
3558.500000	---	42.20	54.00	11.80	150.0	V	73.0	9.2
5179.000000	52.61	---	74.00	21.39	150.0	V	352.0	12.6
5246.500000	---	44.39	54.00	9.61	150.0	V	6.0	12.8

Final_Result

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

EUT Information

EUT Name:	2.0 Soundbar
Model:	NS-SB20
Test Mode:	BLE 1M_High channel
Order No/Sample No:	168542349/A003942000-002
Test Voltage:	120V/60Hz
Remark:	Temp 24 Humi:50%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

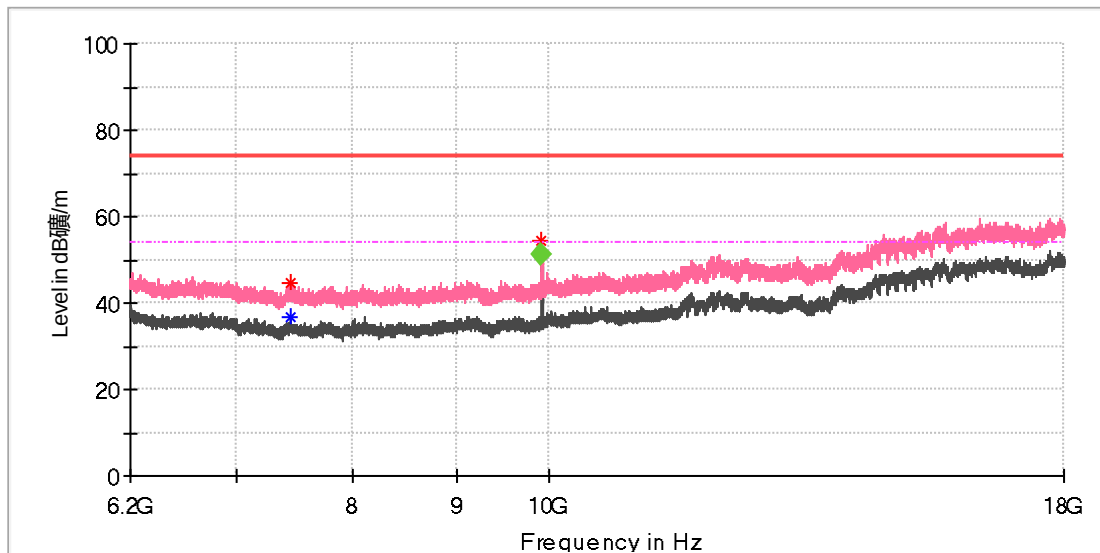
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7439.491667	45.36	---	74.00	28.64	150.0	H	292.0	8.4
7439.983333	---	39.43	54.00	14.57	150.0	H	292.0	8.4
9919.950000	50.32	---	74.00	23.68	150.0	H	243.0	10.8
9919.950000	---	46.91	54.00	7.09	150.0	H	243.0	10.8

Final Result

[illegible]

EUT Information

EUT Name: 2.0 Soundbar
Model: NS-SB20
Test Mode: BLE 1M_High channel
Order No/Sample No: 168542349/A003942000-002
Test Voltage: 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	---	36.94	54.00	17.06	150.0	V	58.0	8.4
7453.258333	44.59	---	74.00	29.41	150.0	V	276.0	8.5
9919.950000	54.53	---	74.00	19.47	150.0	V	286.0	10.8

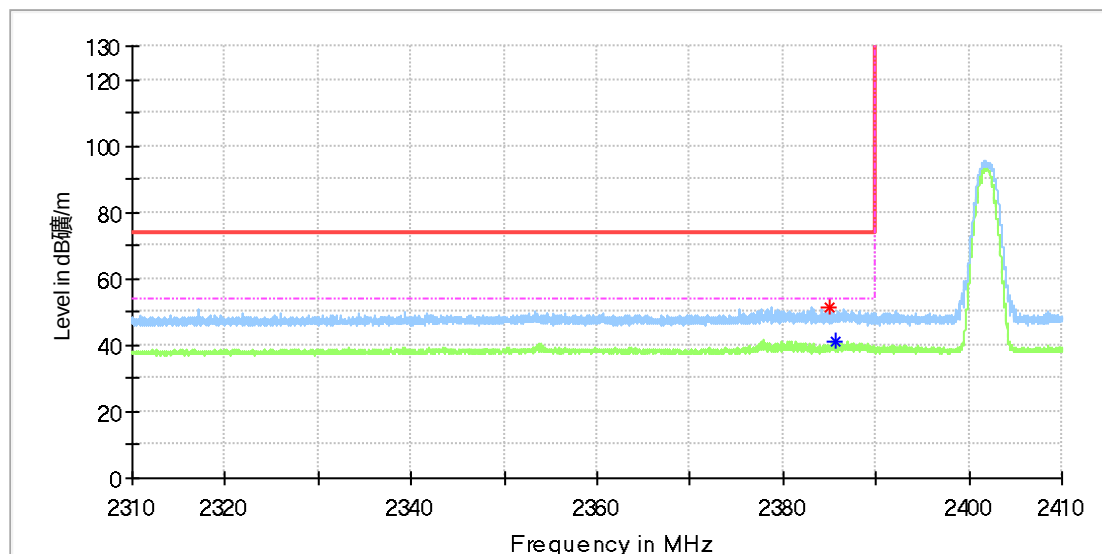
Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
9919.864167	---	50.94	54.00	3.06	150.0	V	286.0	10.8

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

EUT Information

EUT Name: 2.0 Soundbar
Model: NS-SB20
Test Mode: BLE 1M_Low channel
Order No/Sample No: 168542349/A003942000-002
Test Voltage: 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

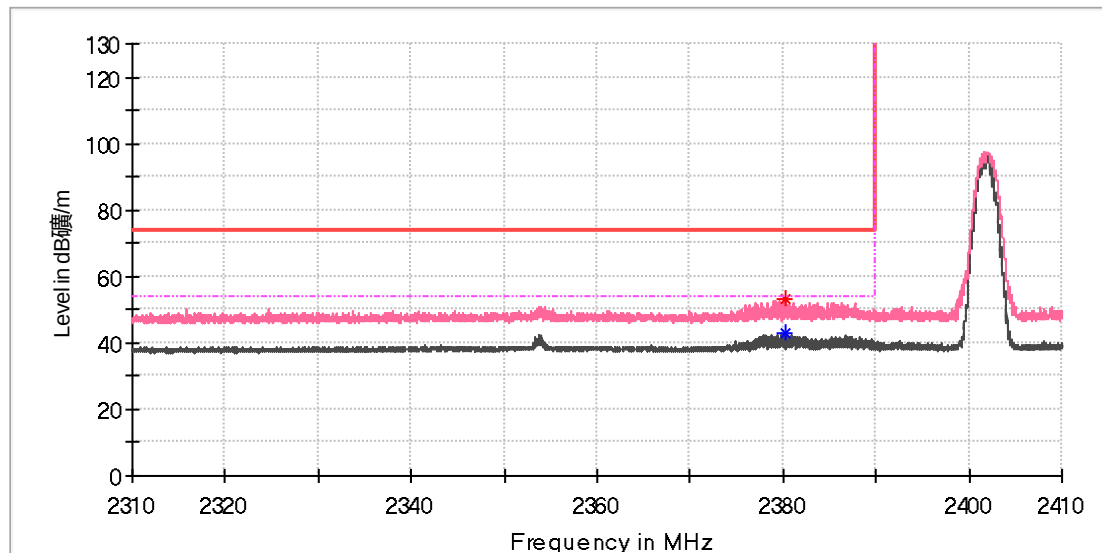
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2384.941177	51.43	---	74.00	22.57	150.0	H	314.0	7.0
2385.750000	---	41.32	54.00	12.68	150.0	H	308.0	7.0

Final Result

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

EUT Information

EUT Name: 2.0 Soundbar
Model: NS-SB20
Test Mode: BLE 1M_Low channel
Order No/Sample No: 168542349/A003942000-002
Test Voltage: 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

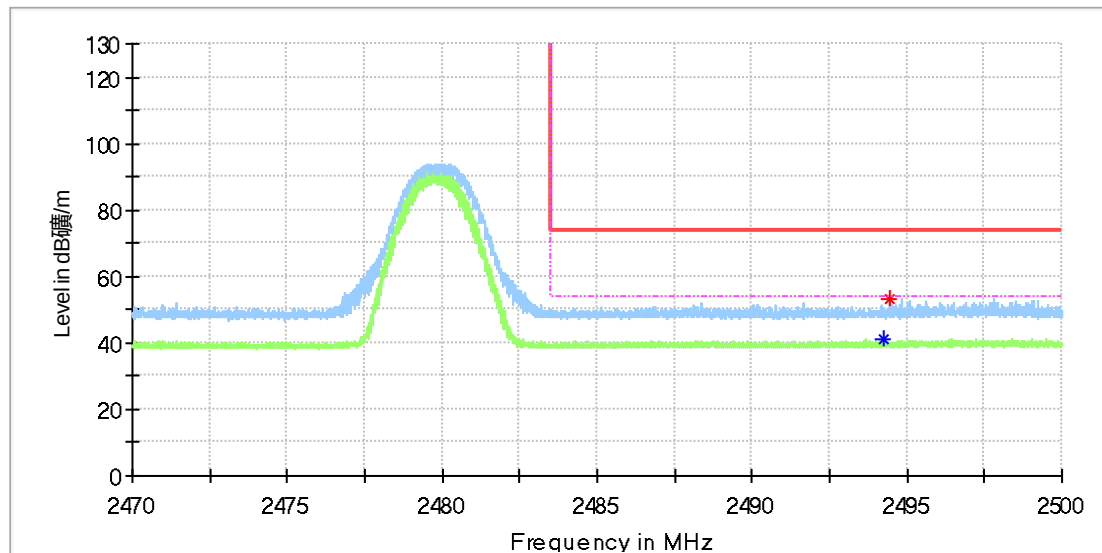
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2380.323529	---	42.79	54.00	11.21	150.0	V	298.0	7.0
2380.323529	53.01	---	74.00	20.99	150.0	V	298.0	7.0

Final Result

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

EUT Information

EUT Name: 2.0 Soundbar
Model: NS-SB20
Test Mode: BLE 1M_High channel
Order No/Sample No: 168542349/A003942000-002
Test Voltage: 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

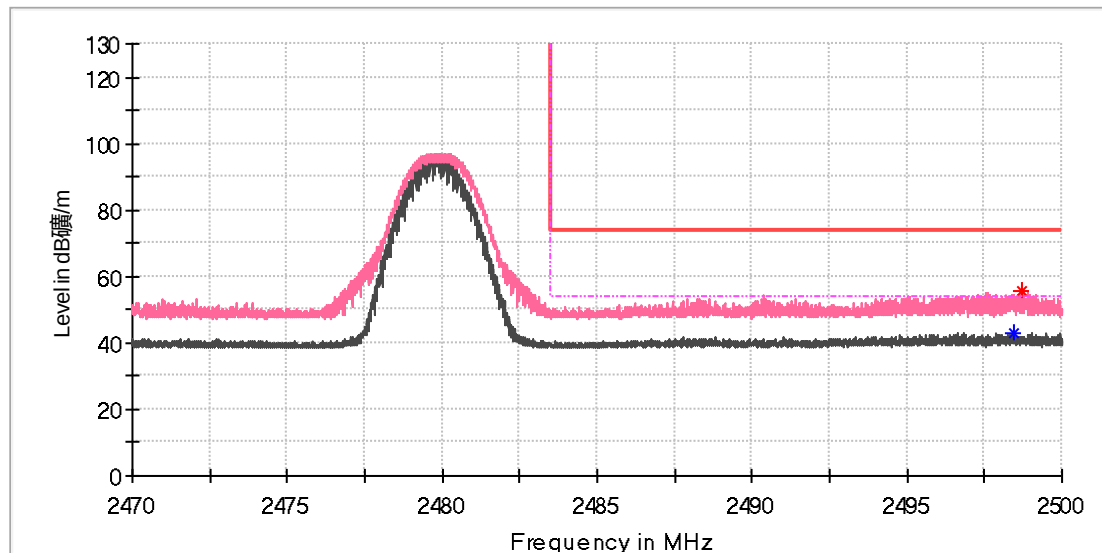
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2494.269118	---	40.92	54.00	13.08	150.0	H	280.0	7.4
2494.414706	53.16	---	74.00	20.84	150.0	H	324.0	7.4

Final Result

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

EUT Information

EUT Name: 2.0 Soundbar
Model: NS-SB20
Test Mode: BLE 1M_High channel
Order No/Sample No: 168542349/A003942000-002
Test Voltage: 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

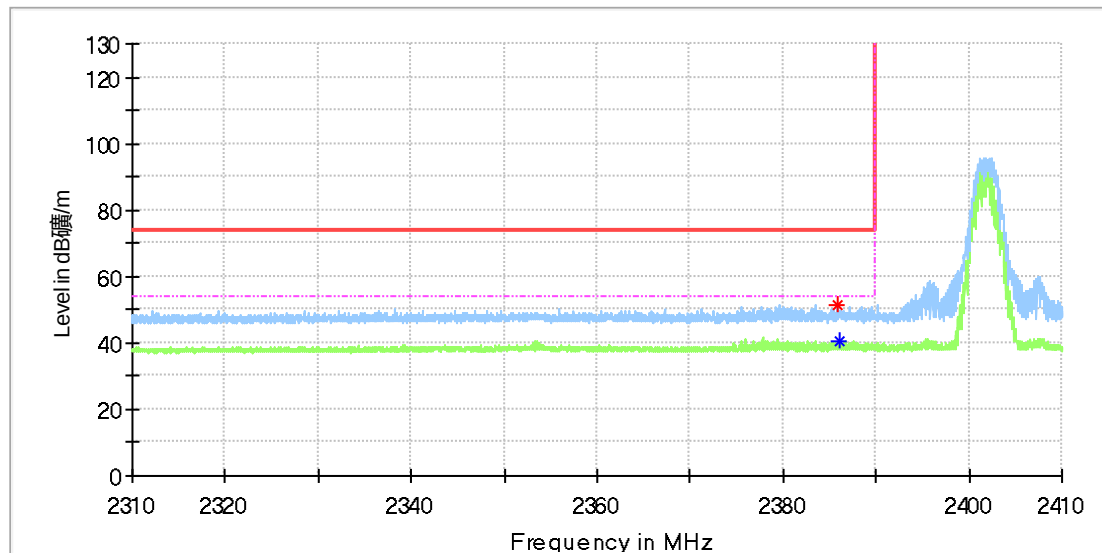
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2498.433824	---	43.02	54.00	10.98	150.0	V	319.0	7.4
2498.694118	55.90	---	74.00	18.10	150.0	V	319.0	7.4

Final Result

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

EUT Information

EUT Name: 2.0 Soundbar
Model: NS-SB20
Test Mode: BLE 2M_Low channel
Order No/Sample No: 168542349/A003942000-002
Test Voltage: 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

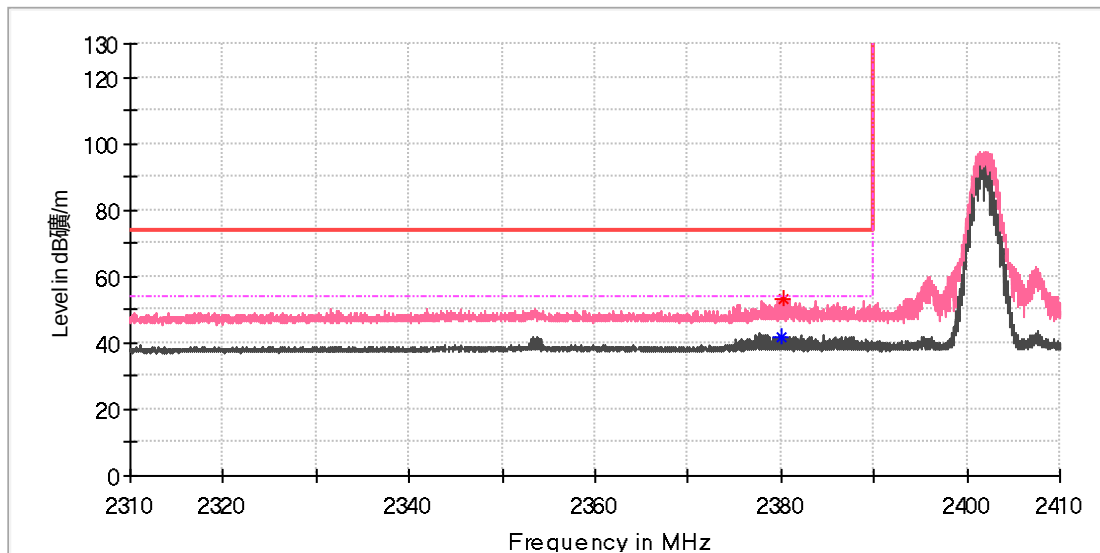
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2385.882353	51.64	---	74.00	22.36	150.0	H	243.0	7.0
2386.058824	---	40.49	54.00	13.51	150.0	H	327.0	7.0

Final_Result

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

EUT Information

EUT Name: 2.0 Soundbar
Model: NS-SB20
Test Mode: BLE 2M_Low channel
Order No/Sample No: 168542349/A003942000-002
Test Voltage: 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

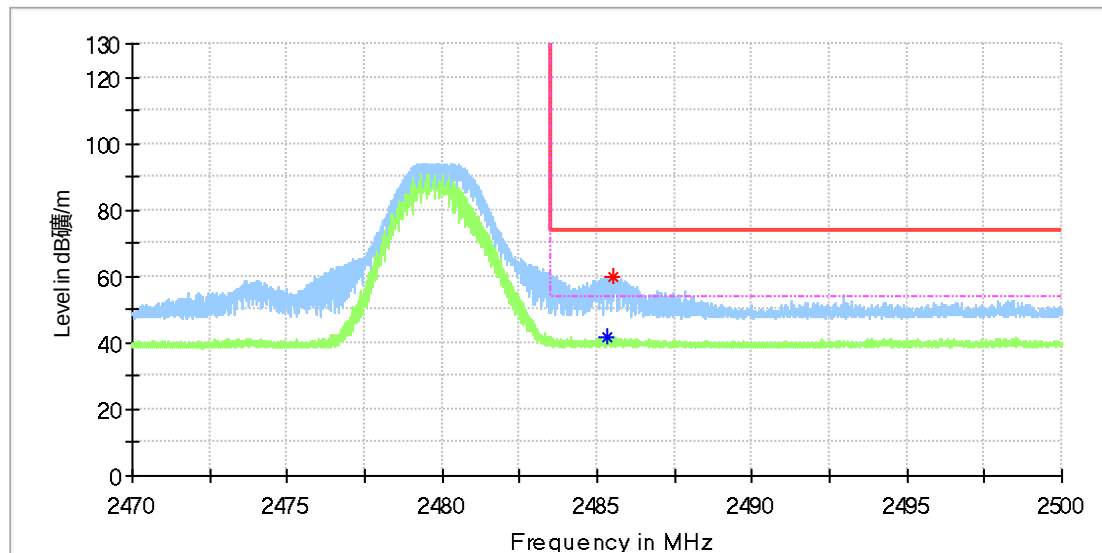
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2380.102941	---	41.98	54.00	12.02	150.0	V	300.0	7.0
2380.279412	52.99	---	74.00	21.01	150.0	V	308.0	7.0

Final Result

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

EUT Information

EUT Name: 2.0 Soundbar
Model: NS-SB20
Test Mode: BLE 2M_High channel
Order No/Sample No: 168542349/A003942000-002
Test Voltage: 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

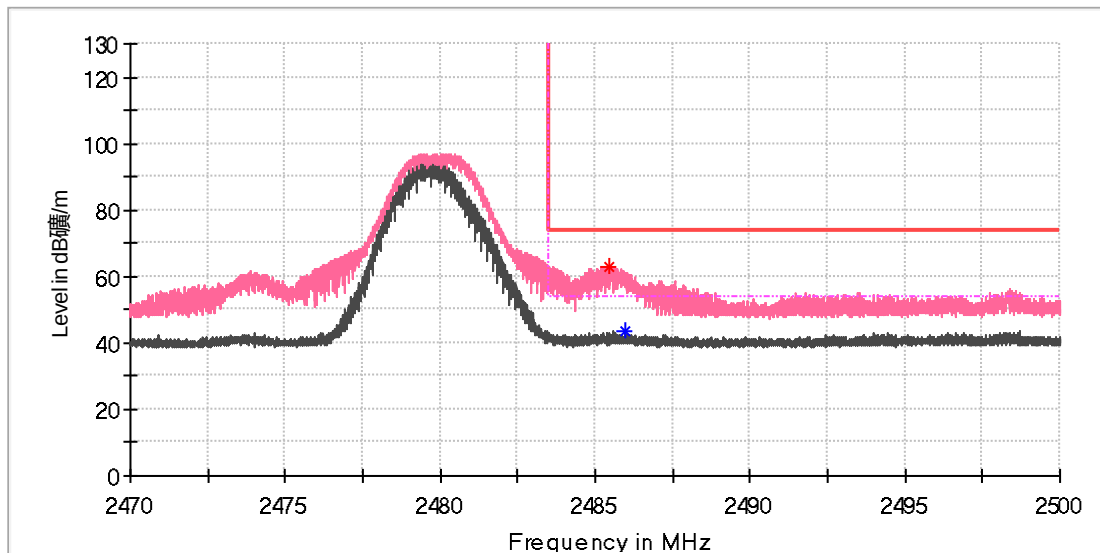
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2485.317647	---	41.91	54.00	12.09	150.0	H	314.0	7.4
2485.502941	59.59	---	74.00	14.41	150.0	H	314.0	7.4

Final Result

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

EUT Information

EUT Name: 2.0 Soundbar
Model: NS-SB20
Test Mode: BLE 2M_High channel
Order No/Sample No: 168542349/A003942000-002
Test Voltage: 120V/60Hz
Remark: Temp 24 Humi:50%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2485.450000	62.65	---	74.00	11.35	150.0	V	316.0	7.4
2485.992647	---	43.30	54.00	10.70	150.0	V	322.0	7.4

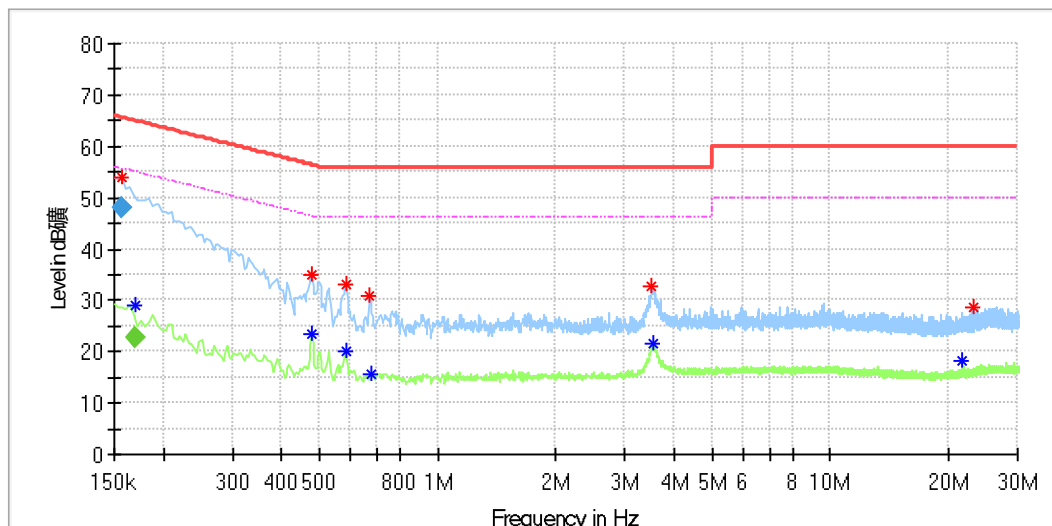
Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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Appendix B.8: Test Results of Conducted Emission on AC Mains

EUT Information

EUT Name: 2.0 Soundbar
Order Number: 168542349
Model: NS-SB20
Test Mode: Normal Working+BT Link
Test Voltage: AC 120V/60Hz
Test Standard: FCC Part 15C
Test By./Review By: Junhua / Shower Dai
Tem./Hum./Pressure: 23.7°C/50.3%/101kPa
Remark: SR2



Critical Freqs

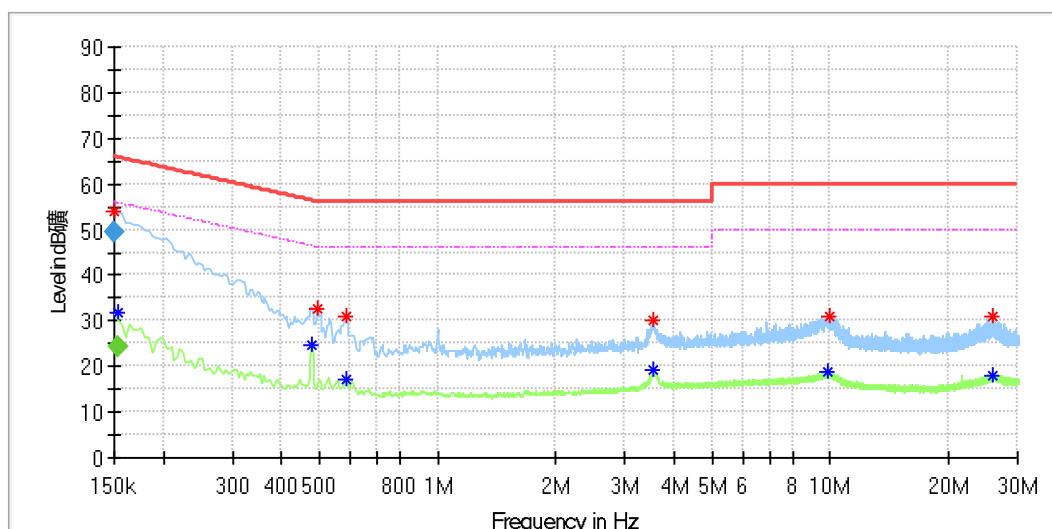
Frequency (MHz)	MaxPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)
0.156962	53.91	---	65.60	11.69	L1	9.8
0.169425	---	29.15	55.21	26.06	L1	9.8
0.478350	---	23.40	46.37	22.96	L1	9.9
0.478350	34.83	---	56.37	21.54	L1	9.9
0.582825	33.09	---	56.00	22.91	L1	9.9
0.582825	---	20.20	46.00	25.80	L1	9.9
0.672375	30.96	---	56.00	25.04	L1	9.9
0.679838	---	15.57	46.00	30.43	L1	9.9
3.508125	32.58	---	56.00	23.42	L1	10.1
3.549169	---	21.65	46.00	24.35	L1	10.1
21.664388	---	18.40	50.00	31.60	L1	10.2
23.160619	28.50	---	60.00	31.50	L1	10.1

Final Result

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.156962	48.04	---	65.62	17.58	1000.0	9.000	L1	9.8
0.169425	---	22.62	54.99	32.37	1000.0	9.000	L1	9.8

EUT Information

EUT Name: 2.0 Soundbar
Order Number: 168542349
Model: NS-SB20
Test Mode: Normal Working+BT Link
Test Voltage: AC 120V/60Hz
Test Standard: FCC Part 15C
Test By:/Review By: Junhua / Shower Dai
Tem./Hum./Pressure: 23.7°C/50.3%/101kPa
Remark: SR2



Critical Freqs

Frequency (MHz)	MaxPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)
0.150000	53.89	---	66.00	12.11	N	9.7
0.154000	---	31.85	56.00	24.15	N	9.7
0.478350	---	24.84	46.37	21.52	N	9.7
0.493275	32.61	---	56.11	23.50	N	9.7
0.582825	---	17.08	46.00	28.92	N	9.7
0.582825	31.07	---	56.00	24.93	N	9.7
3.530513	29.99	---	56.00	26.01	N	9.8
3.549169	---	19.09	46.00	26.91	N	9.8
9.810206	---	18.66	50.00	31.34	N	9.9
9.981844	31.04	---	60.00	28.96	N	9.9
25.988906	30.86	---	60.00	29.14	N	10.1
26.022488	---	18.00	50.00	32.00	N	10.1

Final Result

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.150000	49.29	---	66.00	16.71	1000.0	9.000	N	9.7
0.154000	---	24.12	55.78	31.66	1000.0	9.000	N	9.7