Prüfbericht-Nr.: *Test report no.*:	**JP23VU3C 002**	**Auftrags-Nr.:** *Order no.*:	**168457367**	Seite 1 von 21 *Page 1 of 21*
Kunden-Referenz-Nr.: *Client reference no.*:	N/A	**Auftragsdatum:** *Order date:*	2024-01-05	
Auftraggeber: *Client*:	**Faurecia Clarion Electronics Co., Ltd.** 7-2 Shintoshin, Chuo-ku, Saitama-shi, Saitama 330-0081 Japan			
Prüfgegenstand: *Test item*:	Car Audio			
Bezeichnung / Typ-Nr.: *Identification / Type no.*:	P2301			
Auftrags-Inhalt: *Order content*:	Test Report			
Prüfgrundlage: *Test specification*:	CFR47 FCC Part 15: Subpart C Section 15.247 RSS-247 Issue 3 August 2023 RSS-Gen Issue 5 February 2021			

Wareneingangsdatum: *Date of sample receipt*:	2024-01-10	Please refer to Photo Document
Prüfmuster-Nr.: *Test sample no:*	A003635657-001~002	
Prüfzeitraum: *Testing period*:	2024-01-10 - 2024-02-29	
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 Jonathan Li Signed by: Jonathan Li	**genehmigt von:** *authorized by*:	x Bell Hu Signed by: Bell Hu
Datum: *Date:* 2024-03-06		**Ausstellungsdatum:** *Issue date:* 2024-03-06	
Stellung / Position:	Sachverständige(r)/Expert	**Stellung** / Position:	Sachverständige(r)/Expert

Sonstiges / *Other*:	FCC ID: AX2P2301 IC: 419C-P2301, HVIN: P2301 This report is for 2.4G Wi-Fi 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 115:2021, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen 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 115:2021, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019.

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 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 KHZ BANDWIDTH
RESULT: Pass

5.1.7 RADIATED SPURIOUS EMISSION
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 2.4GHz Wi-Fi

Appendix B: Photographs of the Test Set-up.

2 Test Sites

2.1 Test Facilities

TÜV Rheinland (Shenzhen) Co., Ltd.

No. 362 Huanguan Road Middle, Longhua District, 518110, Shenzhen, P. R. China.

FCC Accreditation Designation 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	2023-09-22	2024-09-21
MXG X-Series RF Vector Signal Generator	Keysight	N5182B	MY61250137	2023-09-22	2024-09-21
EXG X-Series Microwave Analog Signal Generator	Keysight	N5173B	MY61250141	2023-09-22	2024-09-21
DC power supply	Keysight	E3642A	MY61276100	2023-09-22	2024-09-21
Power Control Unit	Tonscend	JS0806-4ADC	N/A	2023-09-22	2024-09-21
Automation Control Unit	Tonscend	JS0806-2	21C8060396	2023-09-22	2024-09-21
Test Software	Tonscend	JS1120-3	N/A	N/A	N/A
Control PC	Lenovo	TianYi510S-071MB	YLX23JMF	N/A	N/A
Shielding Room 8#	Albatross	SR8	APC17151-SR8	2021-06-22	2024-06-22
Unwanted Emission Testing (TS9975)					
Equipment	**Manufacturer**	**Model**	**Serial No.**	**Cal. Date**	**Cal. until**
EMI Test Receiver	R&S	ESR 7	102021	2023-07-26	2024-07-25
Signal Analyzer	R&S	FSV 40	101439	2023-07-26	2024-07-25
System Controller Interface	R&S	SCI-100	S10010038	N/A	N/A
Filterbank	R&S	Wlan	100759	2023-07-26	2024-07-25
OSP	R&S	OSP 120	102040	N/A	N/A
Pre-amplifier	R&S	SCU08F1	08320031	2023-07-26	2024-07-25
Amplifier	R&S	SCU-18F	180070	2023-07-26	2024-07-25
Amplifier	R&S	SCU40A	100475	2023-07-26	2024-07-25
Trilog Broadband Antenna	Schwarzbeck	VULB 9162	193	2022-08-07	2024-08-06

(30 MHz - 7 GHz)					
Double-Ridged Antenna (1 -18 GHz)	ETS-LINDGREN	3117	00218717	2022-08-07	2024-08-06
Wideband Ridged Horn Antenna (18-40 GHz)	Steatite	QMS-00880	19067	2022-08-28	2024-08-27
Active Loop Antenna	Schwarzbeck	FMZB 1513	302	2022-08-07	2024-08-06
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	2021-06-22	2024-06-22

Conducted Emission				
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Until**
EMI Test Receiver	R&S	ESR3	102428	2024-07-30
Artificial Mains Network	R&S	ENV216	102333	2024-07-31
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 %
RF power density, conducted	± 0.99 dB
Unwanted Emissions, conducted	± 0.89 dB
All emissions, radiated	±4.17 dB
Conducted Emission, (9kHz to 150kHz)/(150kHz to 30MHz)	± 3.70 dB / ± 3.30 dB

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A & B of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) file for certification follow-up purposes.

2.7 Status of Facility Used for Testing

The TÜV Rheinland (Shenzhen) Co., Ltd. Test facility located at No. 362 Huanguan Road Middle, Longhua District, 518110, Shenzhen, P. R. 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 a Car Audio, which supports Bluetooth(BDR/EDR)and 2.4GHz/5GHz Wi-Fi wireless technologies.

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:	Car Audio
Type Designation:	P2301
FCC ID:	AX2P2301
IC:	419C-P2301
PMN:	Car Audio
HVIN:	P2301
Operating Voltage:	DC14V
Technical Specification of 2.4GHz Wi-Fi	
Operating Frequency:	2412 - 2462 MHz for 802.11b/g/n(HT20)
Type of Modulation:	DSSS(DBPSK/DQPSK/CCK) OFDM(BPSK/QPSK/16QAM/64QAM)
Data Rate:	1/2/5.5/11 Mbps for 802.11b 6/9/12/18/24/36/48/54 Mbps for 802.11g MCS0 ~ MCS7 for 802.11n
Channel Number:	11 channels for 802.11b/g/n(HT20)
Channel Separation:	5 MHz
Antenna Type:	Integral antenna
Antenna Gain:	-1.15dBi (Provided by the Client)

Table 4: RF Channel and Frequency of Wi-Fi 802.11 b/g/n

RF Channel	802.11 b/g/n(HT20)	802.11 n(HT40)
	Frequency (MHz)	Frequency (MHz)
01	**2412**	/
02	2417	/
03	2422	/
04	2427	/
05	2432	/
06	**2437**	/
07	2442	/
08	2447	/
09	2452	/

10	2457	/
11	**2462**	**/**

Note: The device does not support 802.11 n(HT40).

3.3 Independent Operation Modes

The basic operation modes are:

A. On, 2.4GHz Wi-Fi wireless transmitting mode
   1) Low Channel
   2) Middle Channel
   3) High Channel

B. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

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

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Radio Spectrum: The equipment under test (EUT) was configured at its highest power output in order to measure its highest possible radiation and conducted level. The test modes were adapted accordingly in reference to the instructions for use.

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All testing were performed according to the procedures in ANSI C63.10: 2013.

According to clause 3.1, all tests were performed on model P2301 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

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)

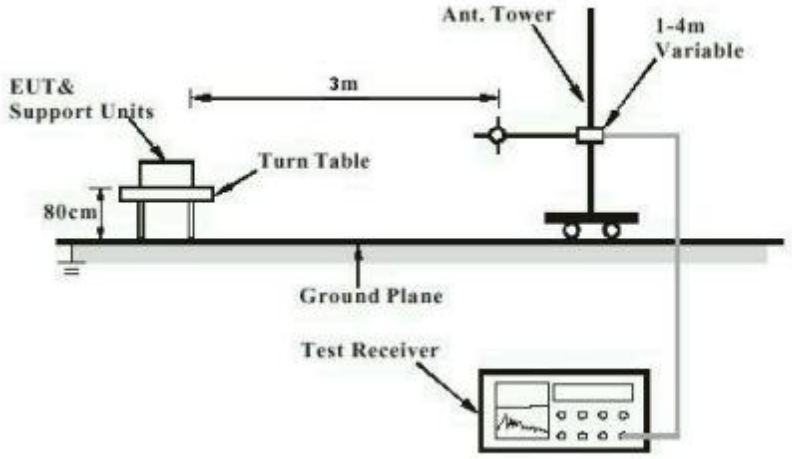


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

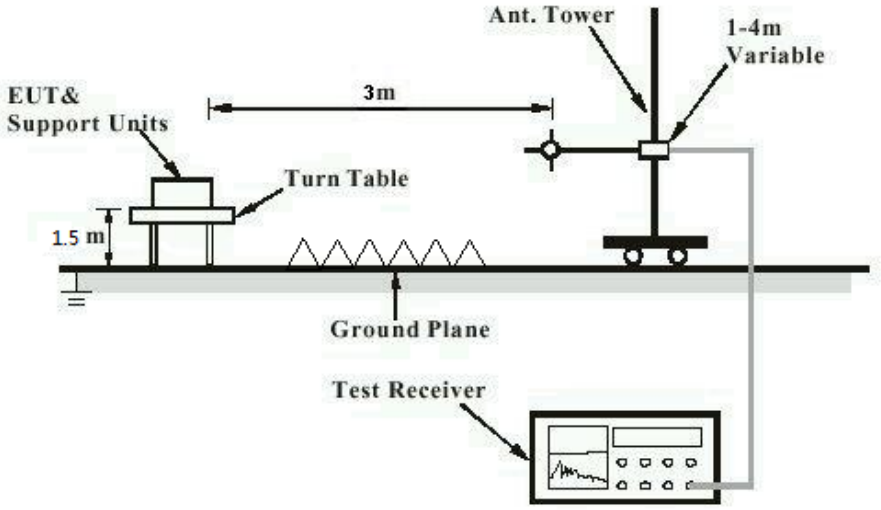
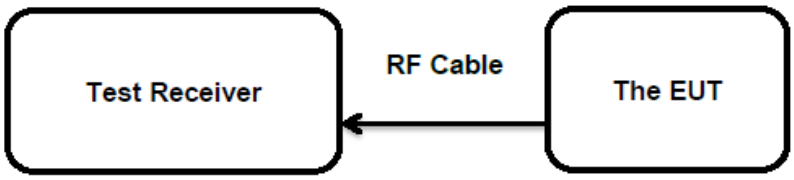


Diagram of Measurement Configuration for Conducted Transmitter Measurement



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 RSS-Gen Clause 6.8
Limit	:	the use of antennas with directional gains that do not exceed 6 dBi

According to the manufacturer declared, the EUT has an Integral Antenna, the directional gain of antenna is -1.15dBi, and the antenna connector is designed with permanent attachment and no consideration of replacement.

Therefore the EUT is considered sufficient to comply with the provision.

Refer to EUT Photo for further details.

5.1.2 Maximum Peak Conducted Output Power

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(b)(3) RSS-247 Clause 5.4(d)
Basic standard	:	ANSI C63.10: 2013
Limits	:	< 1 W (Maximum Conducted Peak Power) e.i.r.p. <4W
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2024-01-10 - 2024-02-29
Input voltage	:	DC 14V
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	22.4 ℃
Relative humidity	:	38 %
Atmospheric pressure	:	101 kPa

For details refer to following test result.

Table 6: Test Result of Maximum Conducted Output Power

Test Mode	Data Rate	Test Channel (MHz)	Measured Peak Power		Limit (W)
			(dBm)	(W)	
802.11b	1 Mbps	2412	18.26	0.0670	< 1.0
		2437	18.25	0.0668	
		2462	18.02	0.0634	
802.11g	6 Mbps	2412	18.9	0.0776	
		2437	18.52	0.0711	
		2462	19.21	0.0834	
802.11n (HT20)	MCS0	2412	18.50	0.0708	
		2437	18.66	0.0735	
		2462	18.84	0.0766	
Maximum Measured Value			**19.21**	**0.0834**	
Max. e.i.r.p.=19.21dBm-1.15dBi=18.06dBm, which is less than 36dBm=4W.					

Note:
1) The cable loss is taken into account in results, e.i.r.p.=$P_{(Peak\ power)}$+ G
2) Antenna gain(G): -0.4dBi

5.1.3 Conducted Power Spectral Density

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(e) RSS-247 Clause 5.2(b)
Basic standard	:	ANSI C63.10: 2013
Limits	:	8 dBm / 3kHz
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2024-01-10 - 2024-02-29
Input voltage	:	DC 14V
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	22.4 ℃
Relative humidity	:	38 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

5.1.4 6dB Bandwidth

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(a)(2) RSS-247 Clause 5.2(a)
Basic standard	:	ANSI C63.10: 2013
Limits	:	> 500 KHz
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2024-01-10 - 2024-02-29
Input voltage	:	DC 14V
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	22.4 ℃
Relative humidity	:	38 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

5.1.5 99% Bandwidth

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(a) RSS-Gen clause 6.7
Basic standard	:	ANSI C63.10: 2013
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2024-01-10 - 2024-02-29
Input voltage	:	DC 14V
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	22.4 ℃
Relative humidity	:	38 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

5.1.6 Conducted Spurious Emissions Measured in 100 kHz Bandwidth

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(d) RSS-247 Clause 5.5
Basic standard	:	ANSI C63.10: 2013
Limits	:	20dB (below that in the 100kHz bandwidth within the band that contains the highest level of the desired power); 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	:	2024-01-10 - 2024-02-29
Input voltage	:	DC 14V
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	22.4 ℃
Relative humidity	:	38 %
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.

5.1.7 Radiated Spurious Emission

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(d) & FCC Part 15.205 RSS-247 Clause 3.3 & 5.5
Basic standard	:	ANSI C63.10: 2013
Limits	:	Refer to 15.209(a) of FCC part 15.247(d) RSS-Gen Table 5
Kind of test site	:	3m Semi-anechoic Chamber

Test Setup

Date of testing	:	2024-01-10 - 2024-02-29
Input voltage	:	DC 14V
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.

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 2.4GHz Wi-Fi

Appendix A.1: Test Results of Conducted Power Spectral Density

TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-4.81	≤8.00	PASS
		2437	-5.47	≤8.00	PASS
		2462	-6.32	≤8.00	PASS
11G	Ant1	2412	-12.28	≤8.00	PASS
		2437	-12.10	≤8.00	PASS
		2462	-11.51	≤8.00	PASS
11N20SISO	Ant1	2412	-12.69	≤8.00	PASS
		2437	-12.51	≤8.00	PASS
		2462	-12.84	≤8.00	PASS

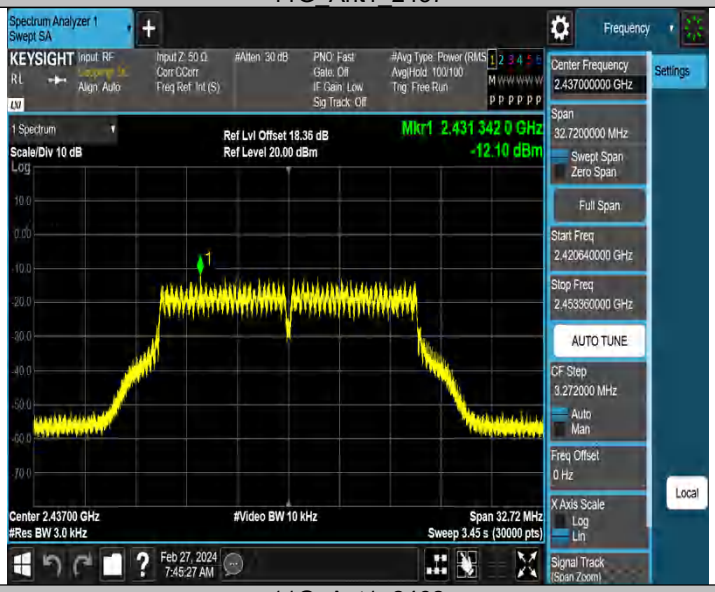
11B_Ant1_2412

11B_Ant1_2437

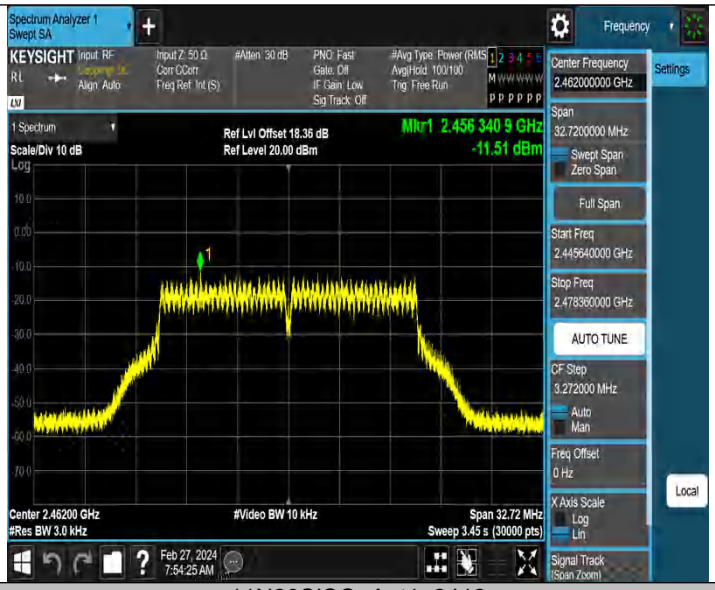
11B_Ant1_2462

11G_Ant1_2412

11G_Ant1_2437

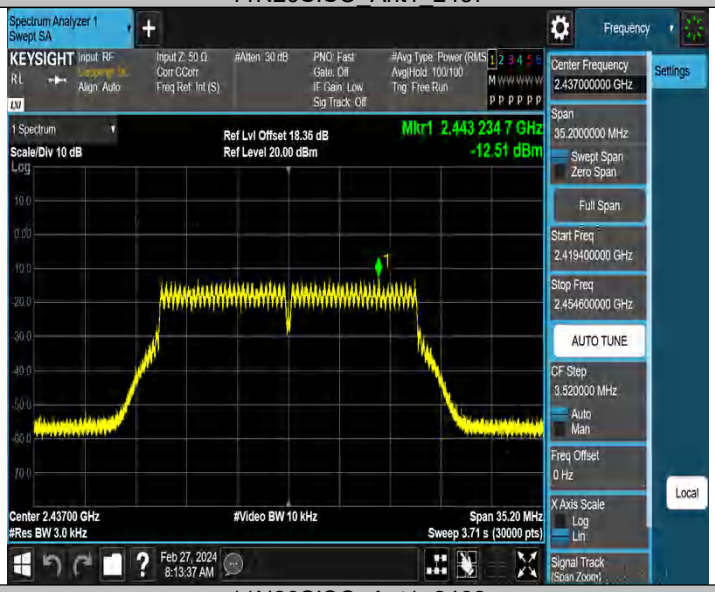


11G_Ant1_2462



11N20SISO_Ant1_2412

11N20SISO_Ant1_2437



11N20SISO_Ant1_2462


Spectrum Analyzer 1
Swept SA
KEYSIGHT
Input: RF
Align: Auto
Input Z: 50 Ω
Corr CCorr
Freq Ref: Int (S)
#Atten: 30 dB
PNO: Fast
Gate: Off
IF Gain: Low
Sig Track: Off
#Avg Type: Power (RMS)
Avg|Hold: 100/100
Trig: Free Run
1 Spectrum
Scale/Div 10 dB
Log
Ref Lvl Offset 18.36 dB
Ref Level 20.00 dBm
Mkr1 2.458 860 8 GHz
-12.84 dBm
Center 2.46200 GHz
#Res BW 3.0 kHz
#Video BW 10 kHz
Span 35.12 MHz
Sweep 3.70 s (30000 pts)
Feb 27, 2024
8:22:54 AM
Frequency
Center Frequency
2.462000000 GHz
Settings
Span
35.1200000 MHz
Swept Span
Zero Span
Full Span
Start Freq
2.444440000 GHz
Stop Freq
2.479560000 GHz
AUTO TUNE
CF Step
3.512000 MHz
Auto
Man
Freq Offset
0 Hz
X Axis Scale
Log
Lin
Signal Track
(Span Zoom)
Local

Appendix A.2: Test Results of 6dB Bandwidth

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	8.480	2408.000	2416.480	0.5	PASS
		2437	8.080	2432.960	2441.040	0.5	PASS
		2462	8.120	2457.920	2466.040	0.5	PASS
11G	Ant1	2412	16.360	2403.800	2420.160	0.5	PASS
		2437	16.360	2428.800	2445.160	0.5	PASS
		2462	16.360	2453.800	2470.160	0.5	PASS
11N20SISO	Ant1	2412	17.600	2403.200	2420.800	0.5	PASS
		2437	17.600	2428.200	2445.800	0.5	PASS
		2462	17.560	2453.200	2470.760	0.5	PASS

11B_Ant1_2412

11B_Ant1_2437

11B_Ant1_2462

11G_Ant1_2412

11G_Ant1_2437

11G_Ant1_2462

11N20SISO_Ant1_2412

11N20SISO_Ant1_2437

11N20SISO_Ant1_2462

Appendix A.3: Test Results of 99% Bandwidth

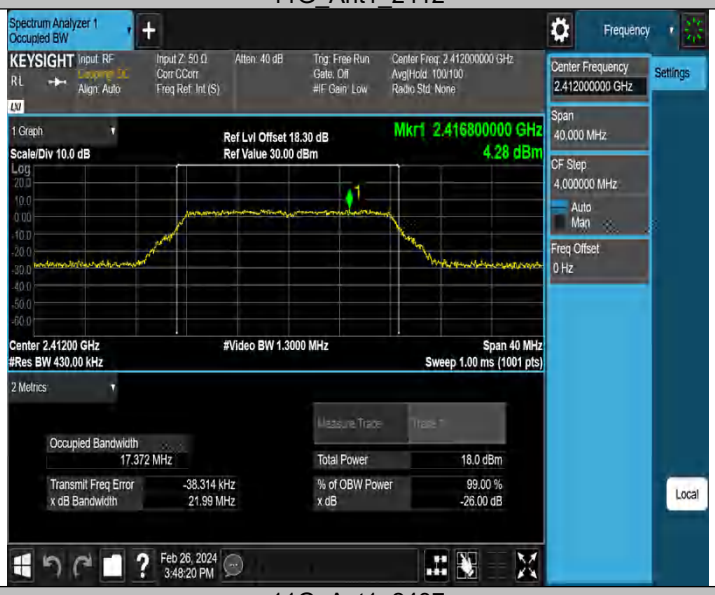
TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	12.291	2405.8546	2418.1456	---	---
		2437	12.309	2430.8575	2443.1665	---	---
		2462	12.308	2455.8485	2468.1565	---	---
11G	Ant1	2412	17.372	2403.2757	2420.6477	---	---
		2437	17.408	2428.2845	2445.6925	---	---
		2462	17.376	2453.3166	2470.6926	---	---
11N20SISO	Ant1	2412	18.373	2402.8267	2421.1997	---	---
		2437	18.467	2427.7678	2446.2348	---	---
		2462	18.379	2452.8112	2471.1902	---	---

11B_Ant1_2412

11B_Ant1_2437

11B_Ant1_2462

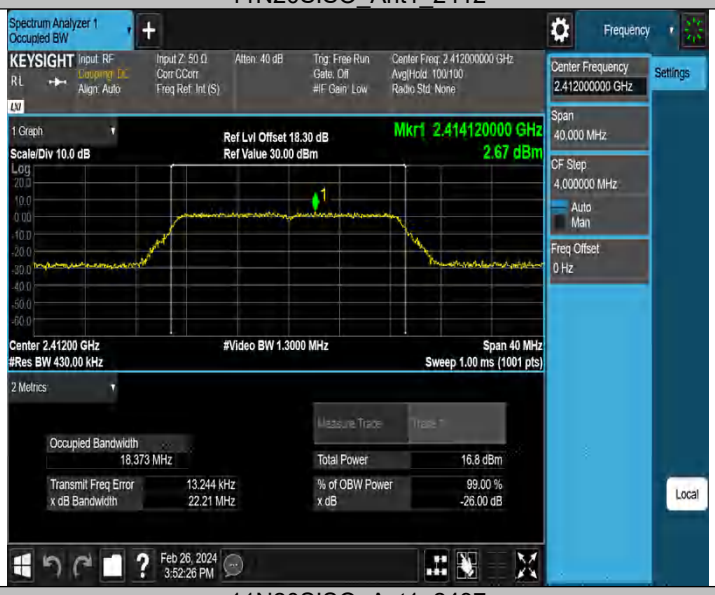
11G_Ant1_2412



11G_Ant1_2437

11G_Ant1_2462

11N20SISO_Ant1_2412



11N20SISO_Ant1_2437

11N20SISO_Ant1_2462

Appendix A.4: Test Results of Conducted Spurious Emissions Measured in 100 kHz Bandwidth

Band Edge

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	6.91	-31.81	≤-13.09	PASS
		High	2462	7.05	-40.81	≤-12.95	PASS
11G	Ant1	Low	2412	0.09	-37.73	≤-19.91	PASS
		High	2462	1.57	-38.68	≤-18.43	PASS
11N20SISO	Ant1	Low	2412	-0.29	-38.93	≤-20.29	PASS
		High	2462	0.27	-40.1	≤-19.73	PASS

11B_Ant1_Low_2412

11B_Ant1_High_2462

11G_Ant1_Low_2412

11G_Ant1_High_2462

11N20SISO_Ant1_Low_2412

11N20SISO_Ant1_High_2462

Conducted Spurious Emission

TestMode	Antenna	Channel	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	4.70	4.70	---	PASS
			30~1000	4.70	-41.2	≤-15.3	PASS
			1000~26500	4.70	-31.96	≤-15.3	PASS
		2437	Reference	6.69	6.69	---	PASS
			30~1000	6.69	-40.98	≤-13.31	PASS
			1000~26500	6.69	-32.65	≤-13.31	PASS
		2462	Reference	5.70	5.70	---	PASS
			30~1000	5.70	-42.6	≤-14.3	PASS
			1000~26500	5.70	-32.3	≤-14.3	PASS
11G	Ant1	2412	Reference	-2.41	-2.41	---	PASS
			30~1000	-2.41	-41.8	≤-22.41	PASS
			1000~26500	-2.41	-32.51	≤-22.41	PASS
		2437	Reference	0.74	0.74	---	PASS
			30~1000	0.74	-42.06	≤-19.26	PASS
			1000~26500	0.74	-32.47	≤-19.26	PASS
		2462	Reference	-1.98	-1.98	---	PASS
			30~1000	-1.98	-41.71	≤-21.98	PASS
			1000~26500	-1.98	-32.22	≤-21.98	PASS
11N20SISO	Ant1	2412	Reference	-0.30	-0.30	---	PASS
			30~1000	-0.30	-41.71	≤-20.3	PASS
			1000~26500	-0.30	-33.08	≤-20.3	PASS
		2437	Reference	-0.80	-0.80	---	PASS
			30~1000	-0.80	-41.11	≤-20.8	PASS
			1000~26500	-0.80	-32.4	≤-20.8	PASS
		2462	Reference	-2.05	-2.05	---	PASS
			30~1000	-2.05	-42	≤-22.05	PASS
			1000~26500	-2.05	-32.46	≤-22.05	PASS

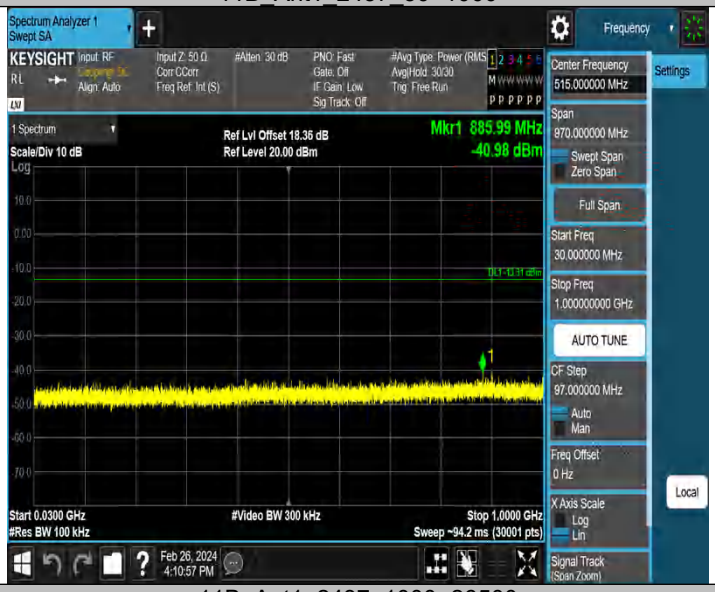
11B_Ant1_2412_0~Reference

11B_Ant1_2412_30~1000

11B_Ant1_2412_1000~26500

11B_Ant1_2437_0~Reference

11B_Ant1_2437_30~1000



11B_Ant1_2437_1000~26500

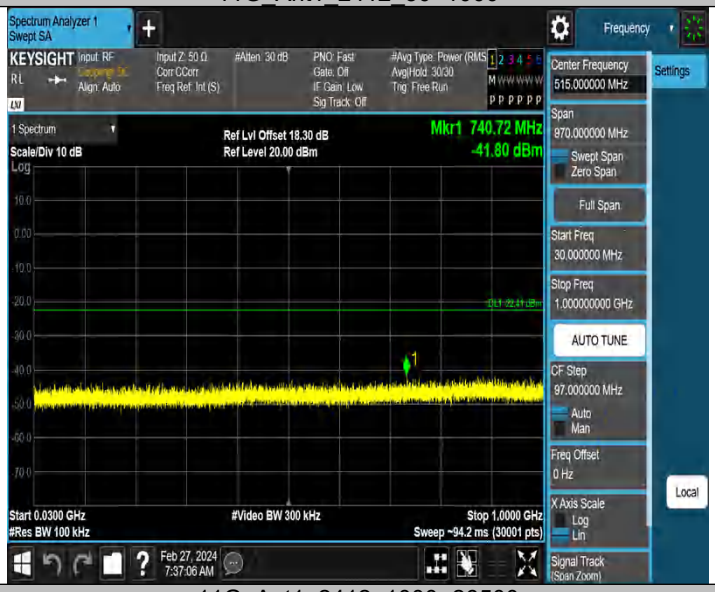
11B_Ant1_2462_0~Reference

11B_Ant1_2462_30~1000

11B_Ant1_2462_1000~26500

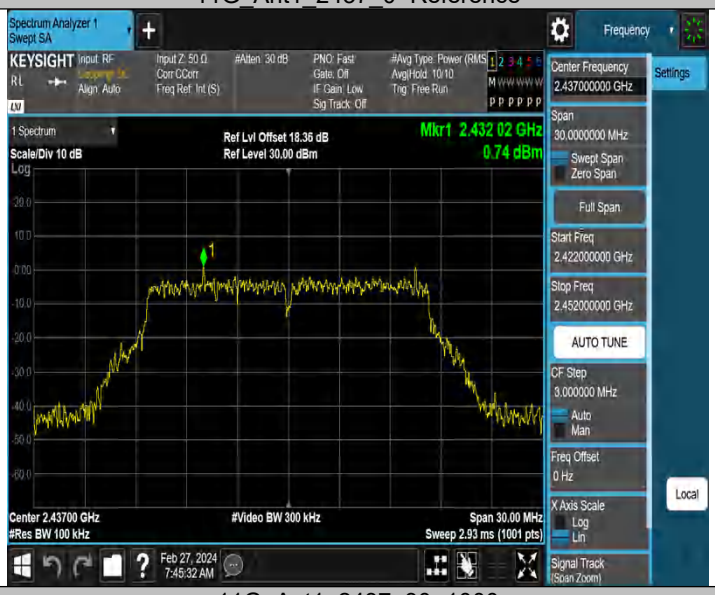
11G_Ant1_2412_0~Reference

11G_Ant1_2412_30~1000

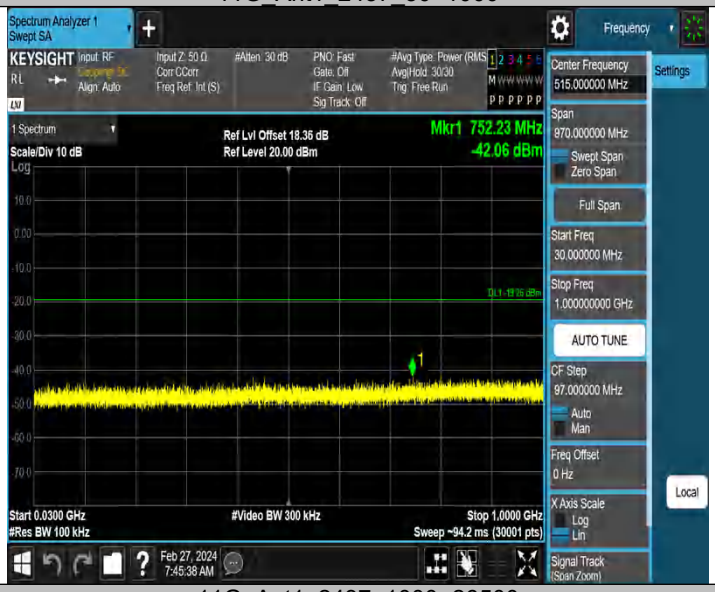


11G_Ant1_2412_1000~26500

11G_Ant1_2437_0~Reference



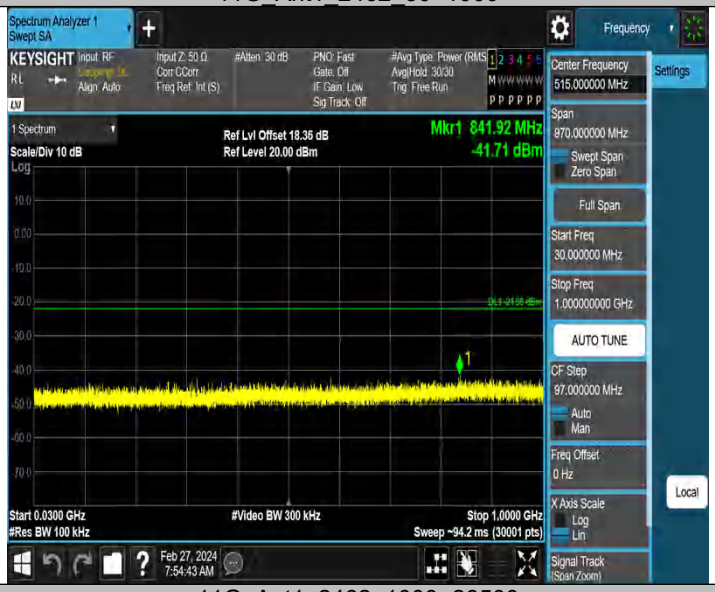
11G_Ant1_2437_30~1000



11G_Ant1_2437_1000~26500

11G_Ant1_2462_0~Reference

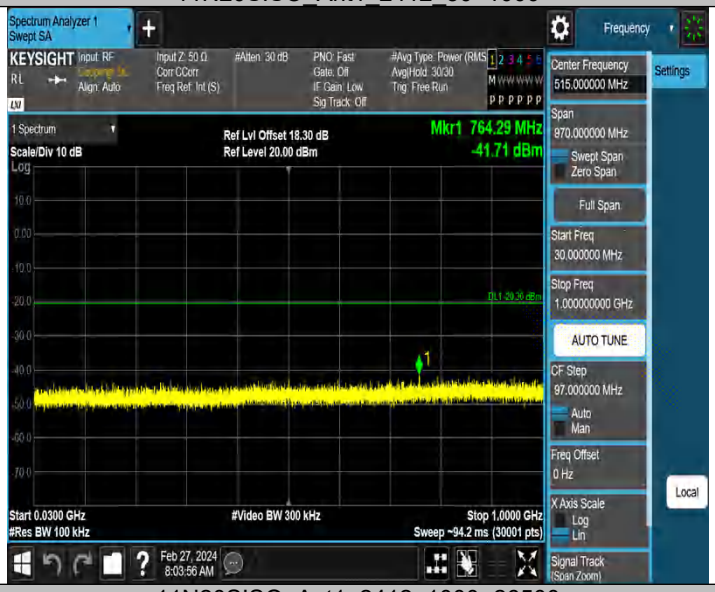
11G_Ant1_2462_30~1000



11G_Ant1_2462_1000~26500

11N20SISO_Ant1_2412_0~Reference

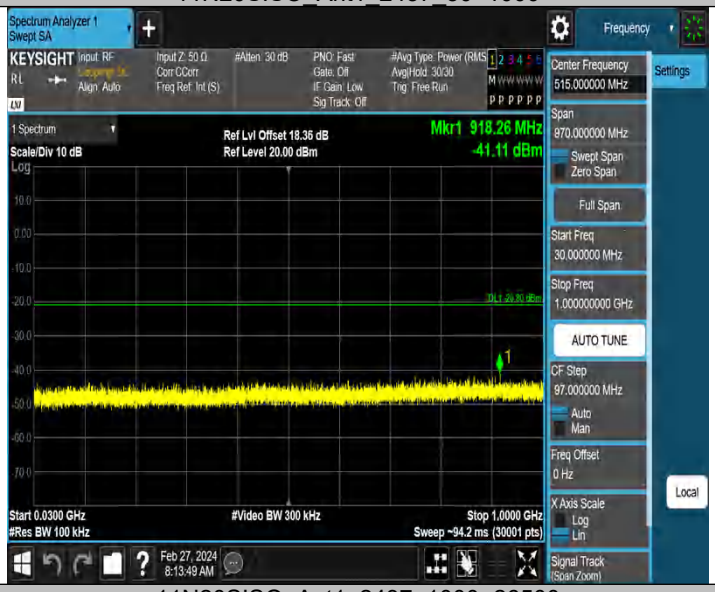
11N20SISO_Ant1_2412_30~1000



11N20SISO_Ant1_2412_1000~26500

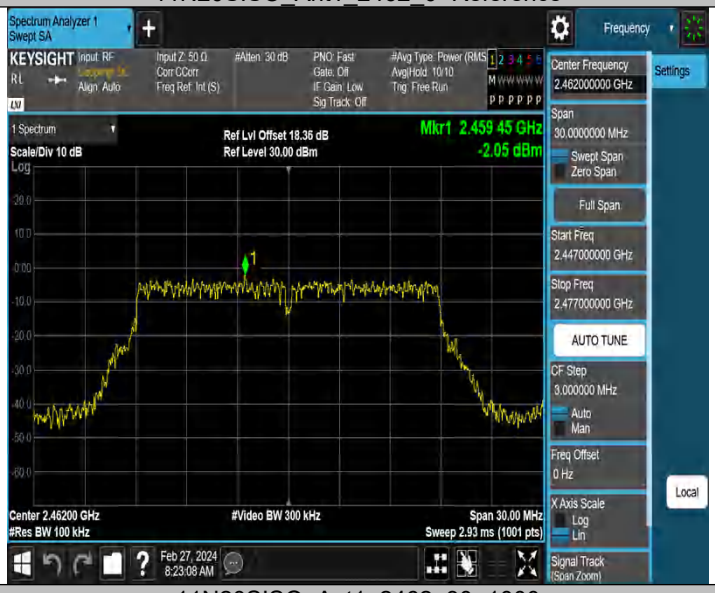
11N20SISO_Ant1_2437_0~Reference

11N20SISO_Ant1_2437_30~1000

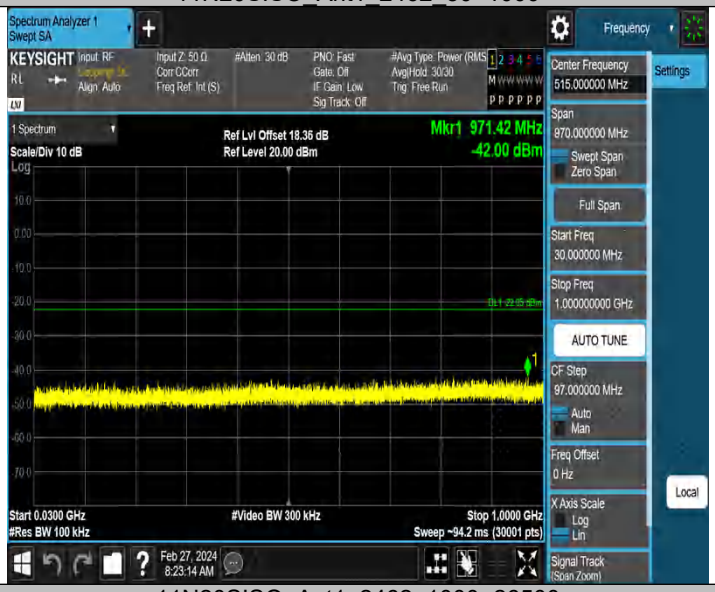


11N20SISO_Ant1_2437_1000~26500

11N20SISO_Ant1_2462_0~Reference



11N20SISO_Ant1_2462_30~1000



11N20SISO_Ant1_2462_1000~26500

Appendix A.5: Test Results of Radiated Spurious Emissions

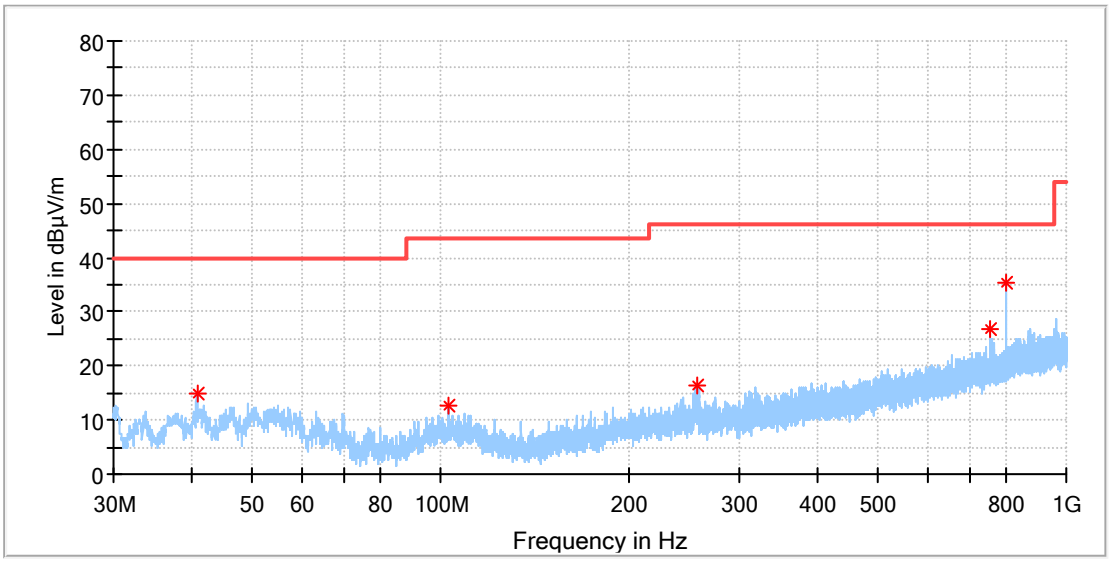
Note:
1) This testing was carried out on different modulations, but only the worst case was presented in this report.
2) Testing was carried out within frequency range 9kHz to the tenth harmonics. The measurement results below 30MHz and above 18GHz were greater than 20dB below the limit, so only the radiated spurious emissions from 30MHz to 18GHz were reported.

30MHz - 1GHz (Worst case)

Test Report

EUT Information

EUT Name:	Car Audio
Model:	P2301
Test Mode:	WIFI 2.4G_11b_Ch6
Order No/Sample No:	168457367/A003635657-002
Test Voltage::	DC 14V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
40.781923	14.82	40.00	25.18	100.0	H	292.0	-20.2
103.123077	12.68	43.50	30.82	100.0	H	356.0	-19.2
256.644231	16.26	46.00	29.74	100.0	H	320.0	-17.5
754.328846	26.74	46.00	19.27	100.0	H	35.0	-7.5
800.030769	35.43	46.00	10.57	100.0	H	133.0	-6.8

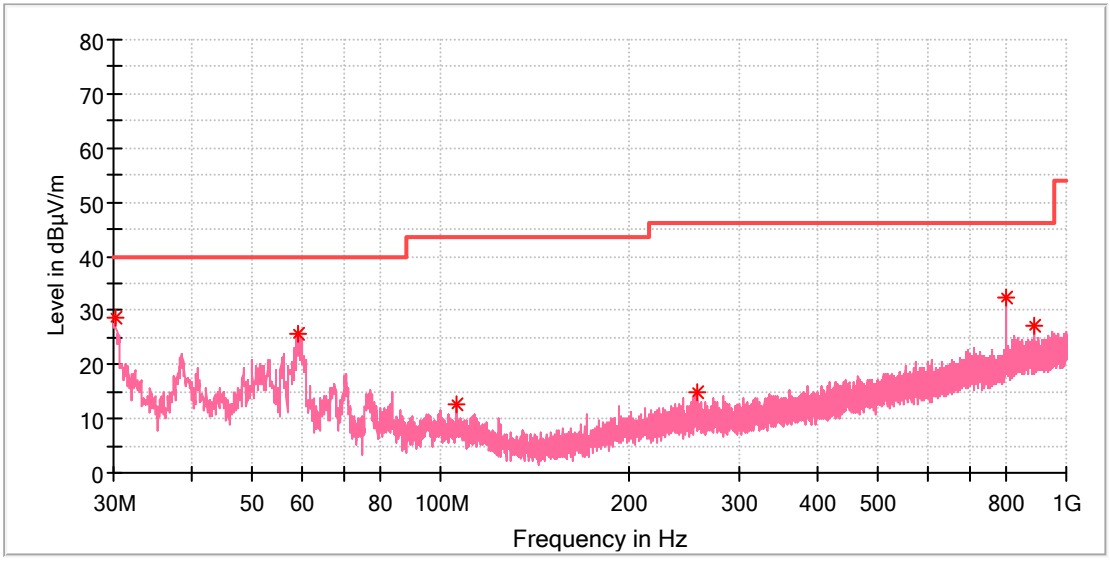
Final_Result

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

Test Report

EUT Information

EUT Name:	Car Audio
Model:	P2301
Test Mode:	WIFI 2.4G_11b_Ch6
Order No/Sample No:	168457367/A003635657-002
Test Voltage::	DC 14V From DC Source
Remark:	Temp 23 Humi:56%
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)
30.186539	28.54	40.00	11.46	100.0	V	0.0	-23.3
59.323846	25.62	40.00	14.38	100.0	V	4.0	-19.2
106.256923	12.65	43.50	30.85	100.0	V	42.0	-19.2
256.532308	15.04	46.00	30.96	100.0	V	19.0	-17.5
800.030769	32.21	46.00	13.79	100.0	V	4.0	-6.8
891.471923	27.27	46.00	18.73	100.0	V	240.0	-5.5

Final_Result

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

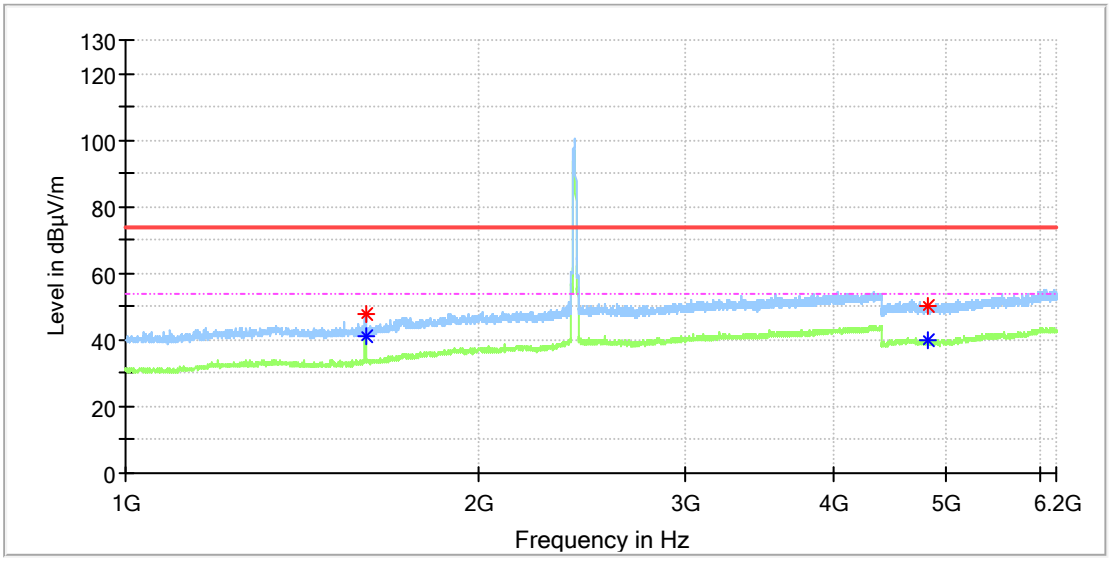
1GHz - 18GHz

Note: The highest waveform in the figure is Wi-Fi Fundamental.

Test Report

EUT Information

EUT Name:	Car Audio
Model:	P2301
Test Mode:	WIFI 2.4G_11b_Ch1
Order No/Sample No:	168457367/A003635657-002
Test Voltage::	DC 14V From DC Source
Remark:	Temp 23 Humi:56%
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)
1600.000000	47.64	---	74.00	26.36	150.0	H	334.0	2.1
1600.000000	---	40.91	54.00	13.09	150.0	H	334.0	2.1
4813.500000	---	39.98	54.00	14.02	150.0	H	286.0	11.8
4828.500000	50.22	---	74.00	23.78	150.0	H	169.0	11.8

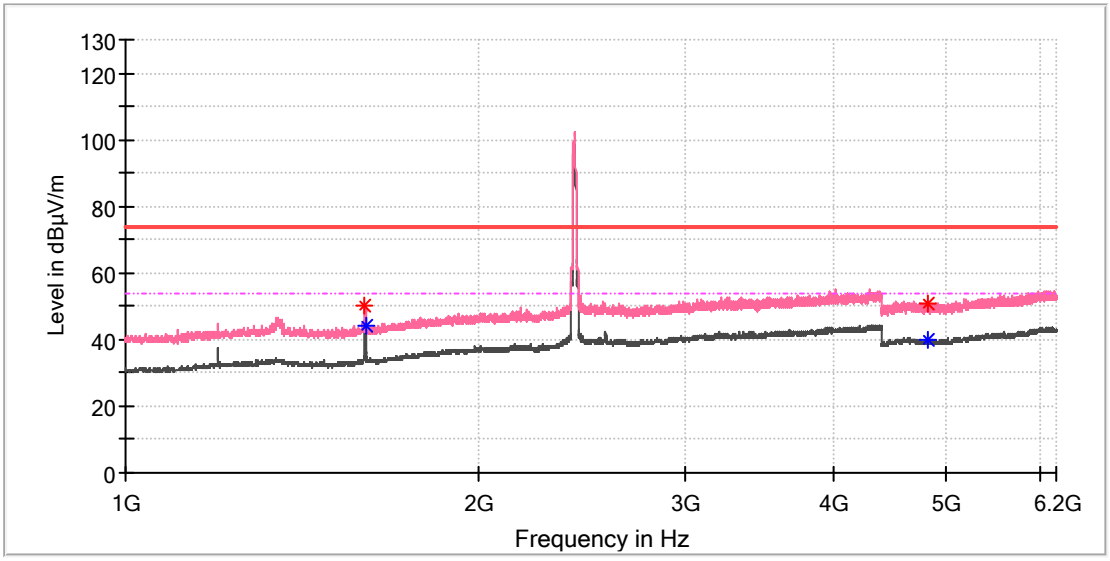
Final_Result

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

Test Report

EUT Information

EUT Name:	Car Audio
Model:	P2301
Test Mode:	WIFI 2.4G_11b_Ch1
Order No/Sample No:	168457367/A003635657-002
Test Voltage::	DC 14V From DC Source
Remark:	Temp 23 Humi:56%
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)
1599.500000	49.95	---	74.00	24.05	150.0	V	150.0	2.1
1600.000000	---	44.18	54.00	9.82	150.0	V	150.0	2.1
4814.500000	---	40.01	54.00	13.99	150.0	V	101.0	11.8
4817.000000	50.78	---	74.00	23.22	150.0	V	71.0	11.8

Final_Result

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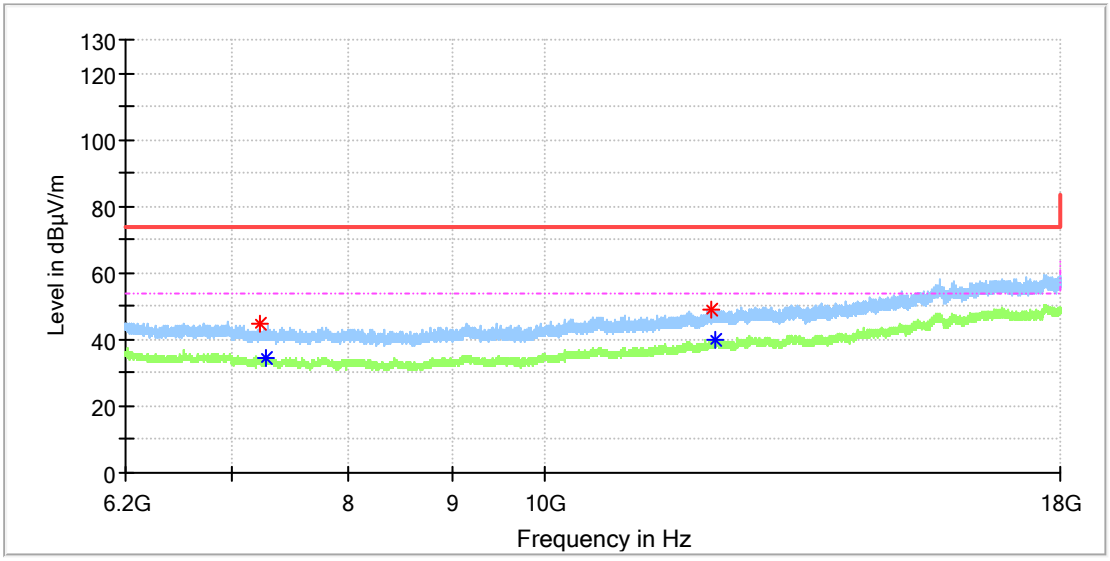
Test Report

EUT Information

EUT Name:	Car Audio
Model:	P2301
Test Mode:	WIFI 2.4G_11b_Ch1
Order No/Sample No:	168457367/A003635657-002
Test Voltage::	DC 14V From DC Source
Remark:	Temp 23 Humi:56%
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)
7221.683333	44.67	---	74.00	29.33	150.0	H	257.0	8.7
7270.850000	---	34.66	54.00	19.34	150.0	H	160.0	8.5
12089.675000	48.85	---	74.00	25.15	150.0	H	0.0	14.1
12135.891667	---	40.07	54.00	13.93	150.0	H	0.0	14.3

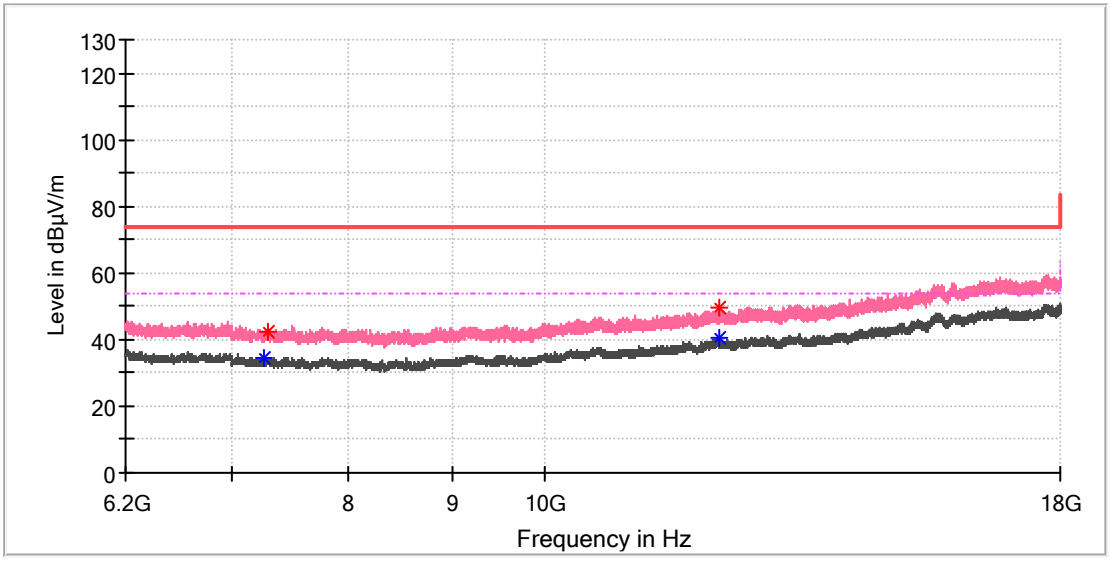
Final_Result

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

Test Report

EUT Information

EUT Name:	Car Audio
Model:	P2301
Test Mode:	WIFI 2.4G_11b_Ch1
Order No/Sample No:	168457367/A003635657-002
Test Voltage::	DC 14V From DC Source
Remark:	Temp 23 Humi:56%
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)
7264.950000	---	34.62	54.00	19.38	150.0	V	284.0	8.5
7293.466667	42.62	---	74.00	31.38	150.0	V	140.0	8.3
12192.925000	49.48	---	74.00	24.52	150.0	V	225.0	14.6
12192.925000	---	40.29	54.00	13.71	150.0	V	225.0	14.6

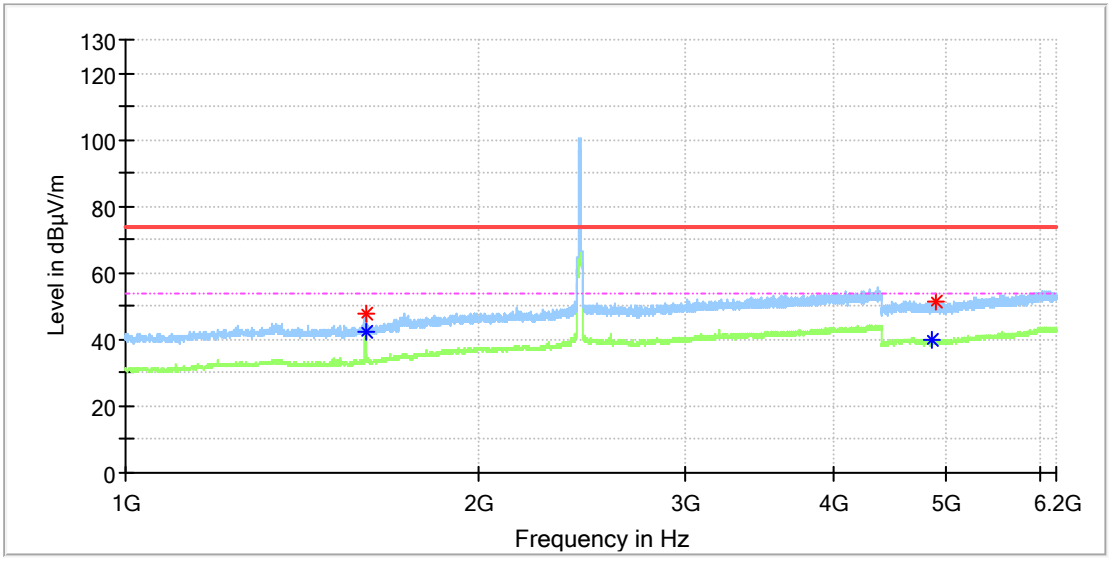
Final_Result

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

Test Report

EUT Information

EUT Name:	Car Audio
Model:	P2301
Test Mode:	WIFI 2.4G_11b_Ch6
Order No/Sample No:	168457367/A003635657-002
Test Voltage::	DC 14V From DC Source
Remark:	Temp 23 Humi:56%
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)
1600.000000	47.48	---	74.00	26.52	150.0	H	250.0	2.1
1600.000000	---	42.57	54.00	11.43	150.0	H	250.0	2.1
4853.500000	---	40.09	54.00	13.91	150.0	H	106.0	11.8
4901.000000	51.17	---	74.00	22.83	150.0	H	145.0	11.8

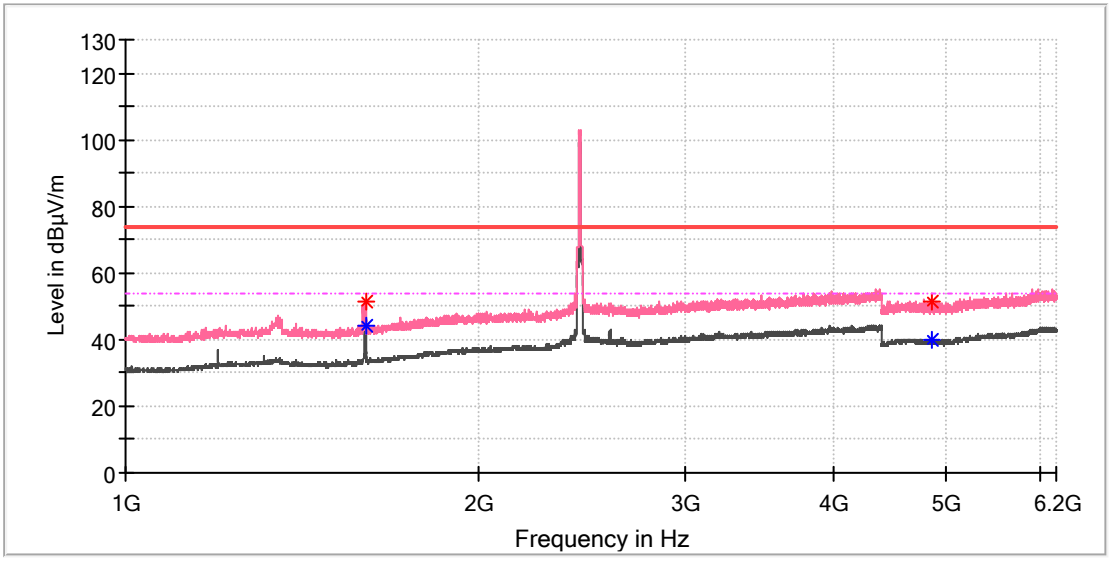
Final_Result

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

Test Report

EUT Information

EUT Name:	Car Audio
Model:	P2301
Test Mode:	WIFI 2.4G_11b_Ch6
Order No/Sample No:	168457367/A003635657-002
Test Voltage::	DC 14V From DC Source
Remark:	Temp 23 Humi:56%
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)
1600.000000	51.28	---	74.00	22.72	150.0	V	351.0	2.1
1600.000000	---	44.38	54.00	9.62	150.0	V	351.0	2.1
4858.500000	51.25	---	74.00	22.75	150.0	V	129.0	11.8
4863.000000	---	39.65	54.00	14.35	150.0	V	2.0	11.8

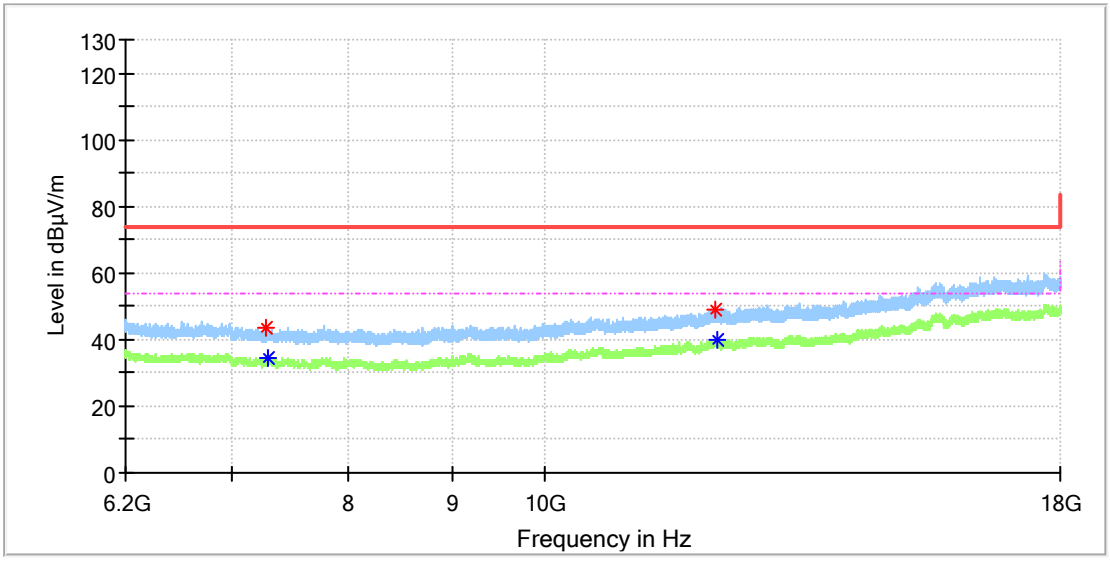
Final_Result

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

Test Report

EUT Information

EUT Name:	Car Audio
Model:	P2301
Test Mode:	WIFI 2.4G_11b_Ch6
Order No/Sample No:	168457367/A003635657-002
Test Voltage::	DC 14V From DC Source
Remark:	Temp 23 Humi:56%
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)
7281.175000	43.33	---	74.00	30.67	150.0	H	288.0	8.4
7289.533333	---	34.60	54.00	19.40	150.0	H	78.0	8.4
12156.050000	48.75	---	74.00	25.25	150.0	H	139.0	14.4
12169.816667	---	39.91	54.00	14.09	150.0	H	91.0	14.5

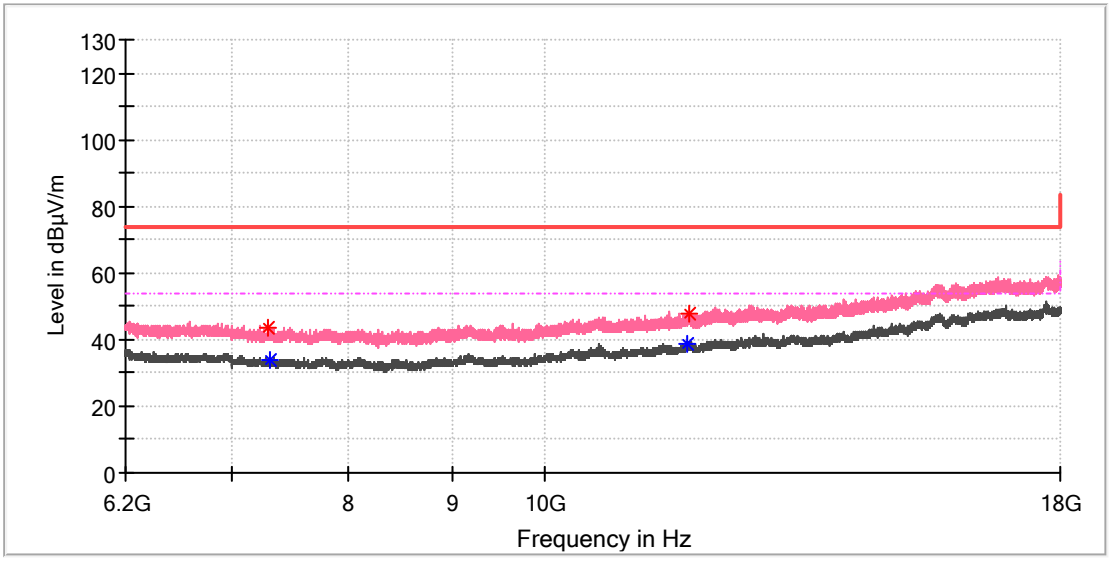
Final_Result

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

Test Report

EUT Information

EUT Name:	Car Audio
Model:	P2301
Test Mode:	WIFI 2.4G_11b_Ch6
Order No/Sample No:	168457367/A003635657-002
Test Voltage::	DC 14V From DC Source
Remark:	Temp 23 Humi:56%
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)
7300.350000	43.59	---	74.00	30.41	150.0	V	357.0	8.3
7306.741667	---	34.05	54.00	19.95	150.0	V	180.0	8.3
11775.008333	---	38.96	54.00	15.04	150.0	V	335.0	13.4
11787.300000	48.04	---	74.00	25.96	150.0	V	348.0	13.4

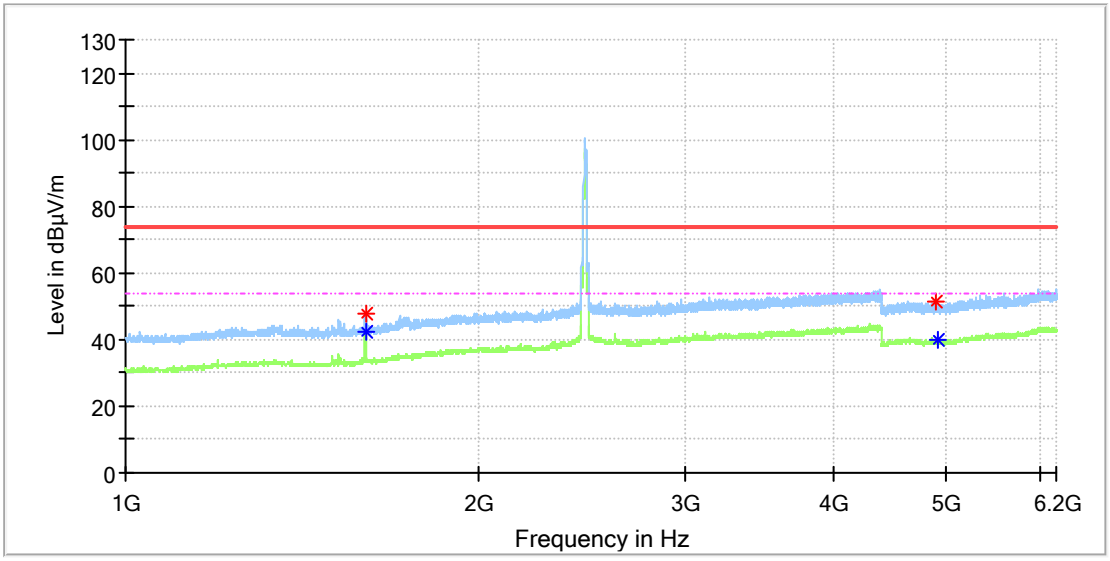
Final_Result

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

Test Report

EUT Information

EUT Name:	Car Audio
Model:	P2301
Test Mode:	WIFI 2.4G_11b_Ch11
Order No/Sample No:	168457367/A003635657-002
Test Voltage::	DC 14V From DC Source
Remark:	Temp 23 Humi:56%
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)
1600.000000	47.92	---	74.00	26.08	150.0	H	332.0	2.1
1600.000000	---	42.15	54.00	11.85	150.0	H	332.0	2.1
4896.500000	51.11	---	74.00	22.89	150.0	H	61.0	11.8
4924.500000	---	39.70	54.00	14.30	150.0	H	68.0	11.8

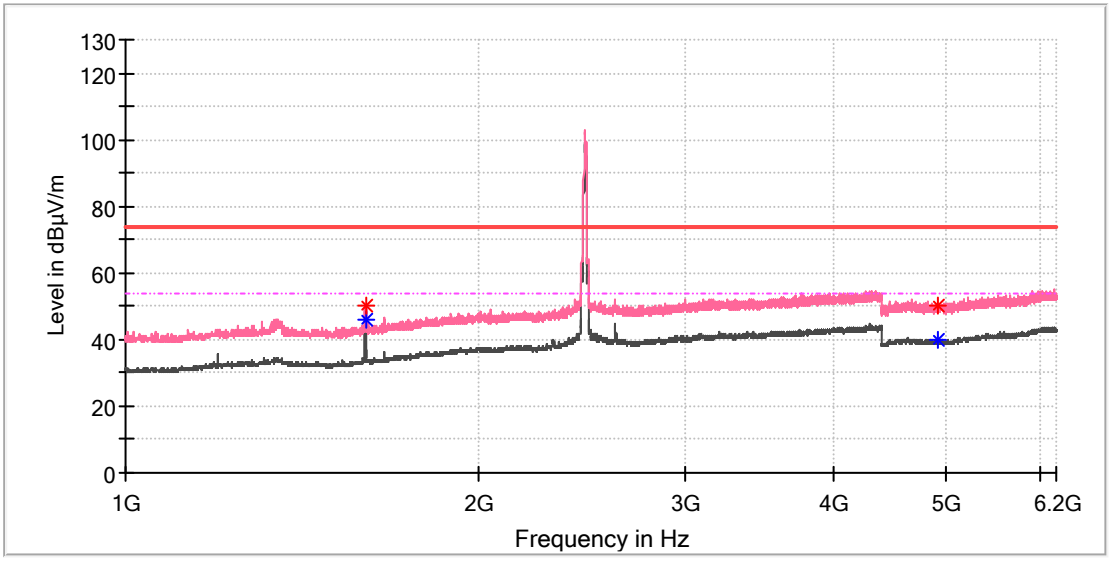
Final_Result

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

Test Report

EUT Information

EUT Name:	Car Audio
Model:	P2301
Test Mode:	WIFI 2.4G_11b_Ch11
Order No/Sample No:	168457367/A003635657-002
Test Voltage::	DC 14V From DC Source
Remark:	Temp 23 Humi:56%
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)
1600.000000	50.21	---	74.00	23.79	150.0	V	178.0	2.1
1600.000000	---	45.99	54.00	8.01	150.0	V	178.0	2.1
4918.500000	50.45	---	74.00	23.55	150.0	V	21.0	11.8
4924.000000	---	39.82	54.00	14.18	150.0	V	74.0	11.8

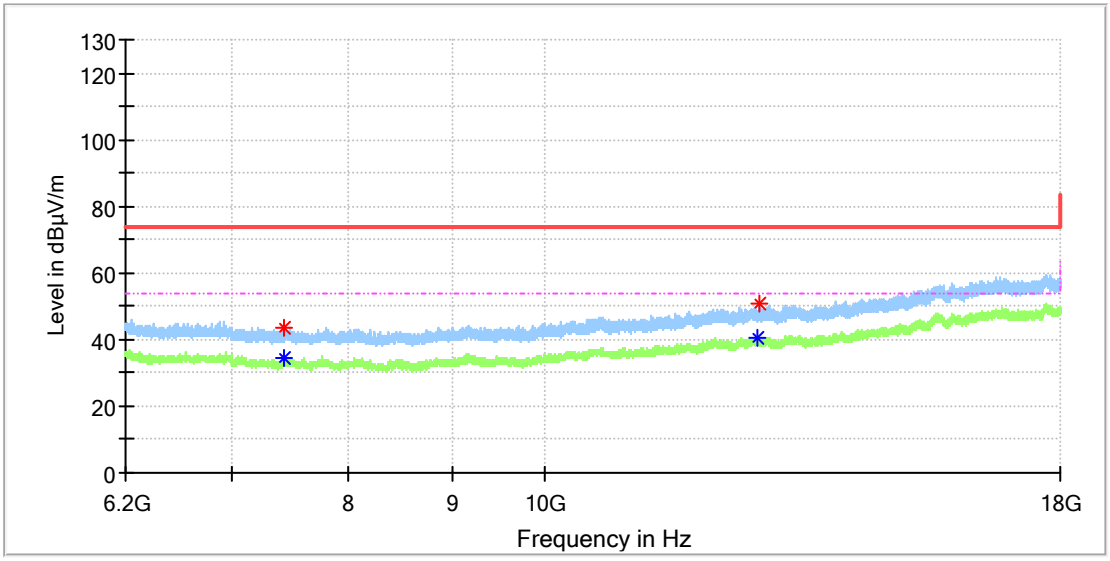
Final_Result

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

Test Report

EUT Information

EUT Name:	Car Audio
Model:	P2301
Test Mode:	WIFI 2.4G_11b_Ch11
Order No/Sample No:	168457367/A003635657-002
Test Voltage::	DC 14V From DC Source
Remark:	Temp 23 Humi:56%
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)
7428.675000	43.27	---	74.00	30.73	150.0	H	277.0	8.4
7430.641667	---	34.46	54.00	19.54	150.0	H	302.0	8.4
12743.100000	---	40.61	54.00	13.39	150.0	H	3.0	15.2
12780.466667	50.75	---	74.00	23.25	150.0	H	238.0	15.2

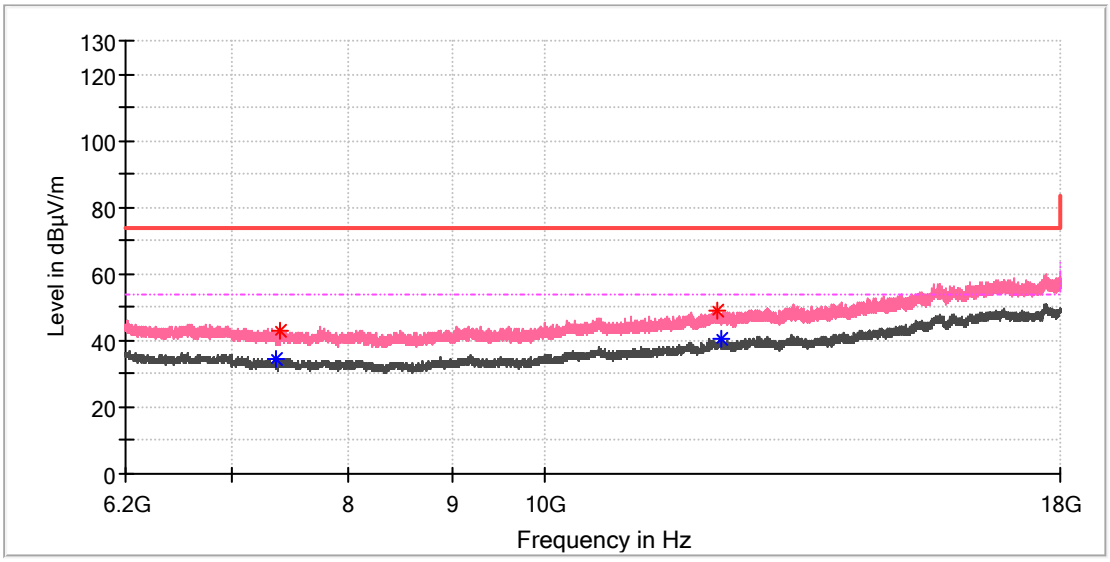
Final_Result

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

Test Report

EUT Information

EUT Name:	Car Audio
Model:	P2301
Test Mode:	WIFI 2.4G_11b_Ch11
Order No/Sample No:	168457367/A003635657-002
Test Voltage::	DC 14V From DC Source
Remark:	Temp 23 Humi:56%
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)
7352.958333	---	34.69	54.00	19.31	150.0	V	200.0	8.1
7396.716667	42.80	---	74.00	31.20	150.0	V	347.0	8.3
12170.308333	48.79	---	74.00	25.21	150.0	V	238.0	14.5
12219.966667	---	40.43	54.00	13.57	150.0	V	225.0	14.7

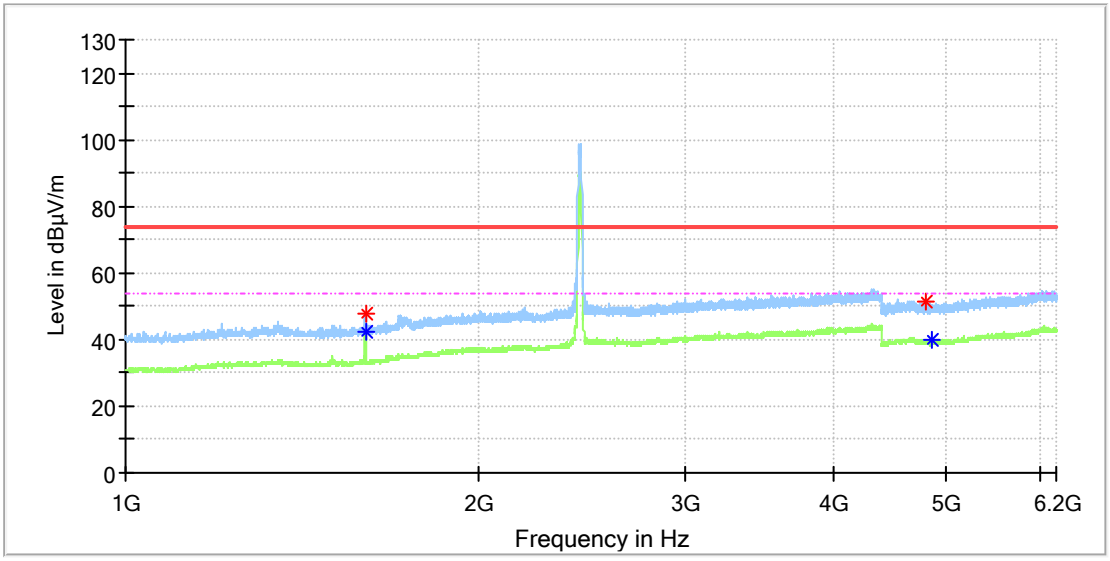
Final_Result

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

Test Report

EUT Information

EUT Name:	Car Audio
Model:	P2301
Test Mode:	WIFI 2.4G_11g_Ch6
Order No/Sample No:	168457367/A003635657-002
Test Voltage::	DC 14V From DC Source
Remark:	Temp 23 Humi:56%
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)
1600.000000	47.68	---	74.00	26.32	150.0	H	255.0	2.1
1600.000000	---	42.49	54.00	11.51	150.0	H	255.0	2.1
4796.500000	51.43	---	74.00	22.57	150.0	H	302.0	11.8
4858.500000	---	39.88	54.00	14.12	150.0	H	5.0	11.8

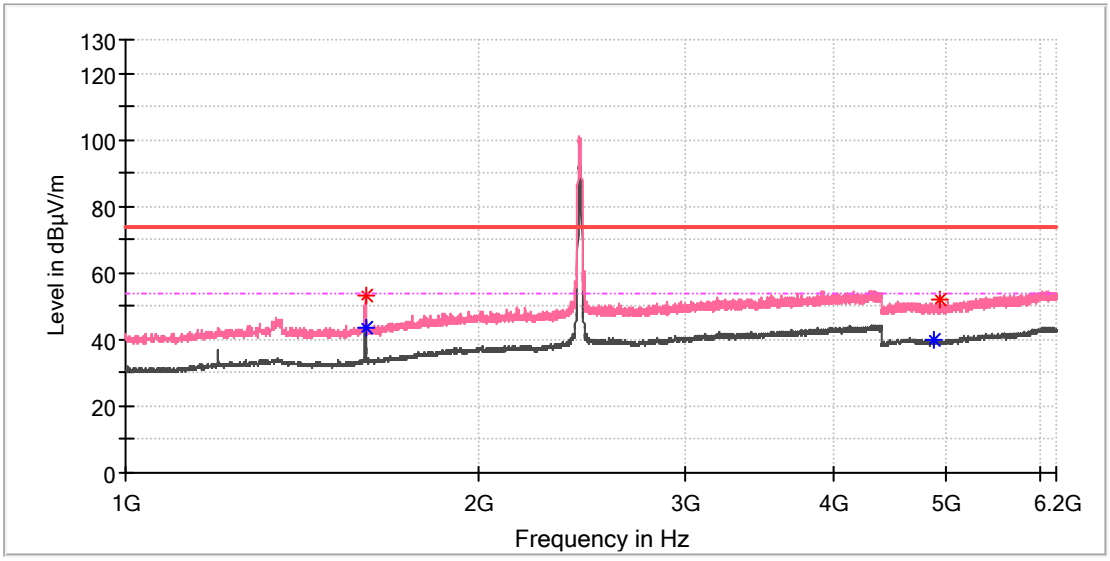
Final_Result

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

Test Report

EUT Information

EUT Name:	Car Audio
Model:	P2301
Test Mode:	WIFI 2.4G_11g_Ch6
Order No/Sample No:	168457367/A003635657-002
Test Voltage::	DC 14V From DC Source
Remark:	Temp 23 Humi:56%
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)
1600.000000	52.91	---	74.00	21.09	150.0	V	248.0	2.1
1600.000000	---	43.83	54.00	10.17	150.0	V	248.0	2.1
4868.500000	---	39.66	54.00	14.34	150.0	V	82.0	11.8
4926.000000	52.15	---	74.00	21.85	150.0	V	215.0	11.8

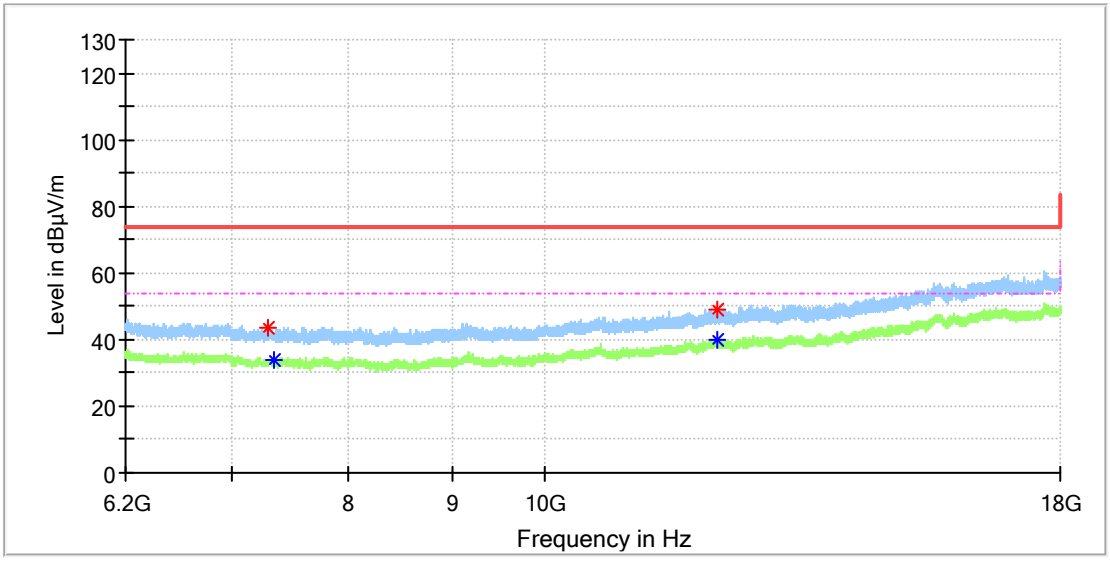
Final_Result

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

Test Report

EUT Information

EUT Name:	Car Audio
Model:	P2301
Test Mode:	WIFI 2.4G_11g_Ch6
Order No/Sample No:	168457367/A003635657-002
Test Voltage::	DC 14V From DC Source
Remark:	Temp 23 Humi:56%
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)
7290.025000	43.56	---	74.00	30.44	150.0	H	342.0	8.4
7336.241667	---	34.08	54.00	19.92	150.0	H	283.0	8.1
12177.683333	49.26	---	74.00	24.74	150.0	H	342.0	14.6
12182.108333	---	40.19	54.00	13.81	150.0	H	120.0	14.6

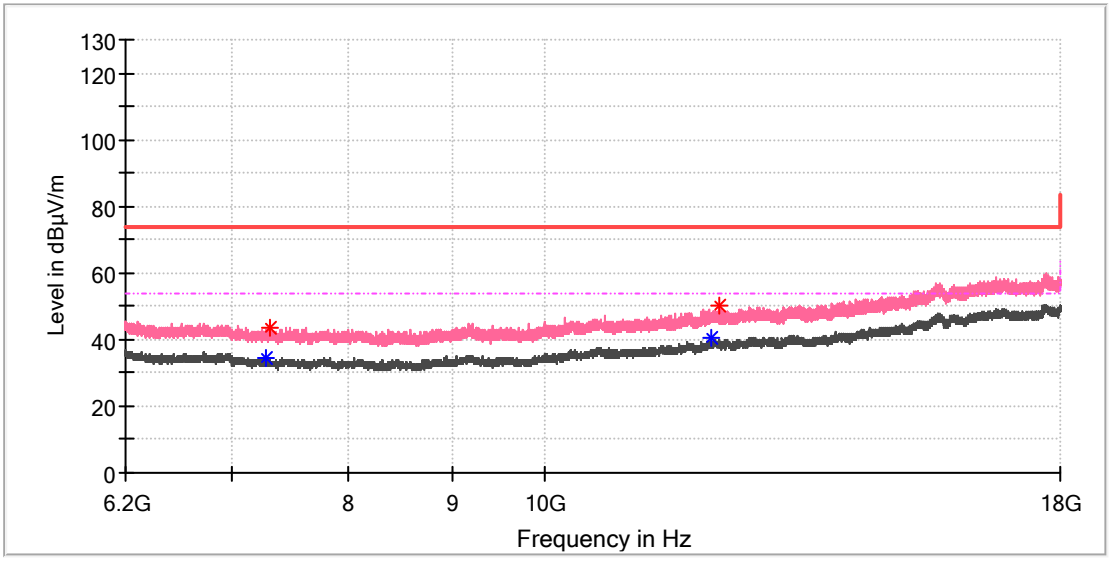
Final_Result

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

Test Report

EUT Information

EUT Name:	Car Audio
Model:	P2301
Test Mode:	WIFI 2.4G_11g_Ch6
Order No/Sample No:	168457367/A003635657-002
Test Voltage::	DC 14V From DC Source
Remark:	Temp 23 Humi:56%
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)
7272.816667	---	34.38	54.00	19.62	150.0	V	170.0	8.4
7302.808333	43.69	---	74.00	30.31	150.0	V	205.0	8.3
12101.475000	---	40.68	54.00	13.32	150.0	V	85.0	14.2
12210.625000	50.43	---	74.00	23.57	150.0	V	341.0	14.7

Final_Result

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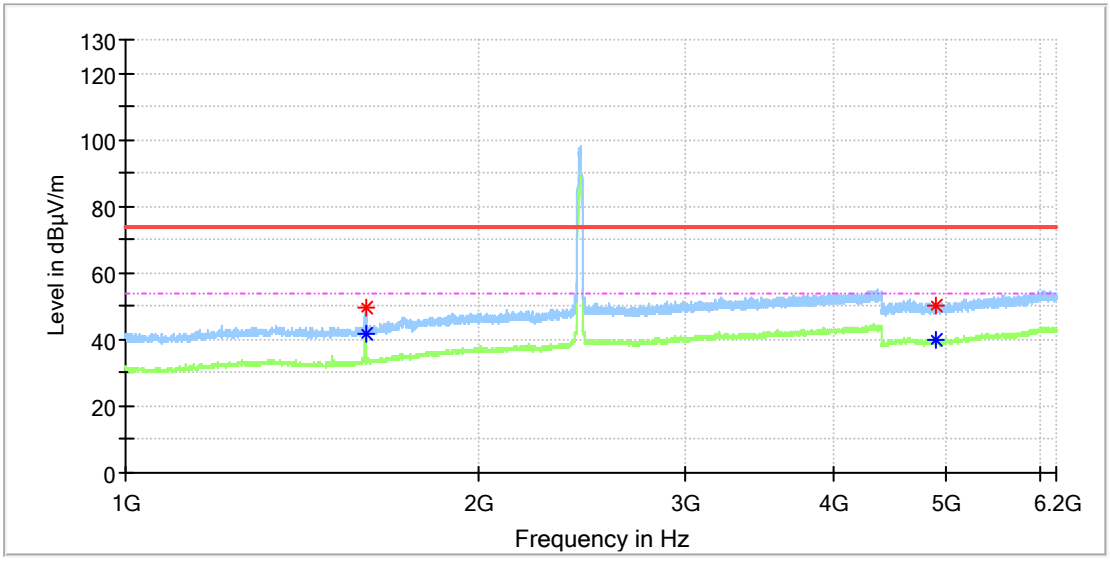
Test Report

EUT Information

EUT Name:	Car Audio
Model:	P2301
Test Mode:	WIFI 2.4G_11n20_Ch6
Order No/Sample No:	168457367/A003635657-002
Test Voltage::	DC 14V From DC Source
Remark:	Temp 23 Humi:56%
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)
1600.000000	49.32	---	74.00	24.68	150.0	H	93.0	2.1
1600.000000	---	41.77	54.00	12.23	150.0	H	93.0	2.1
4897.000000	---	39.70	54.00	14.30	150.0	H	60.0	11.8
4897.500000	50.28	---	74.00	23.72	150.0	H	163.0	11.8

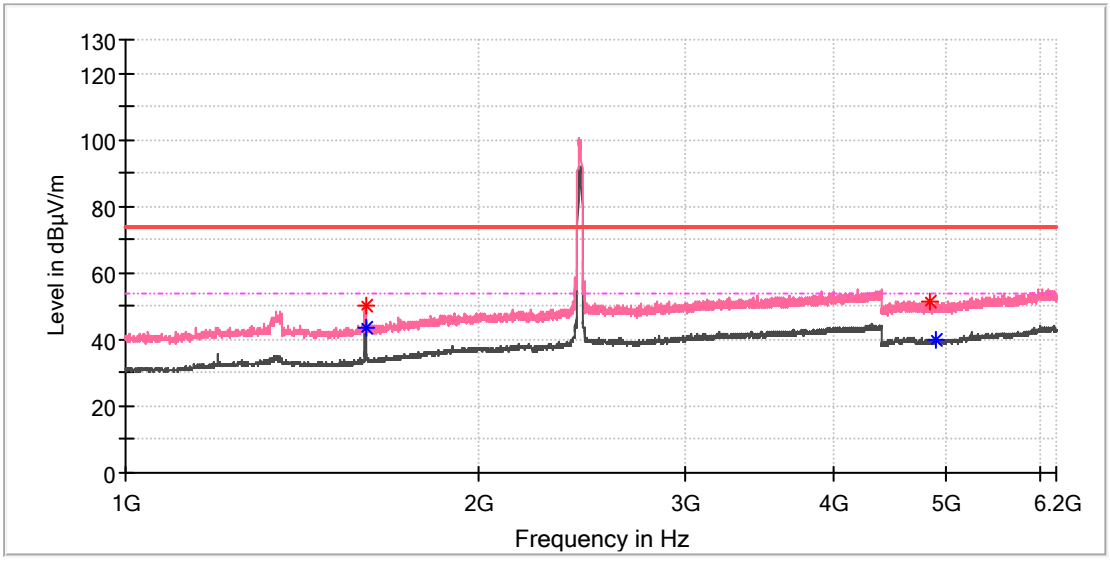
Final_Result

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

Test Report

EUT Information

EUT Name:	Car Audio
Model:	P2301
Test Mode:	WIFI 2.4G_11n20_Ch6
Order No/Sample No:	168457367/A003635657-002
Test Voltage::	DC 14V From DC Source
Remark:	Temp 23 Humi:56%
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)
1600.000000	50.26	---	74.00	23.74	150.0	V	356.0	2.1
1600.000000	---	43.52	54.00	10.48	150.0	V	356.0	2.1
4842.000000	51.46	---	74.00	22.54	150.0	V	137.0	11.8
4890.500000	---	40.14	54.00	13.86	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)
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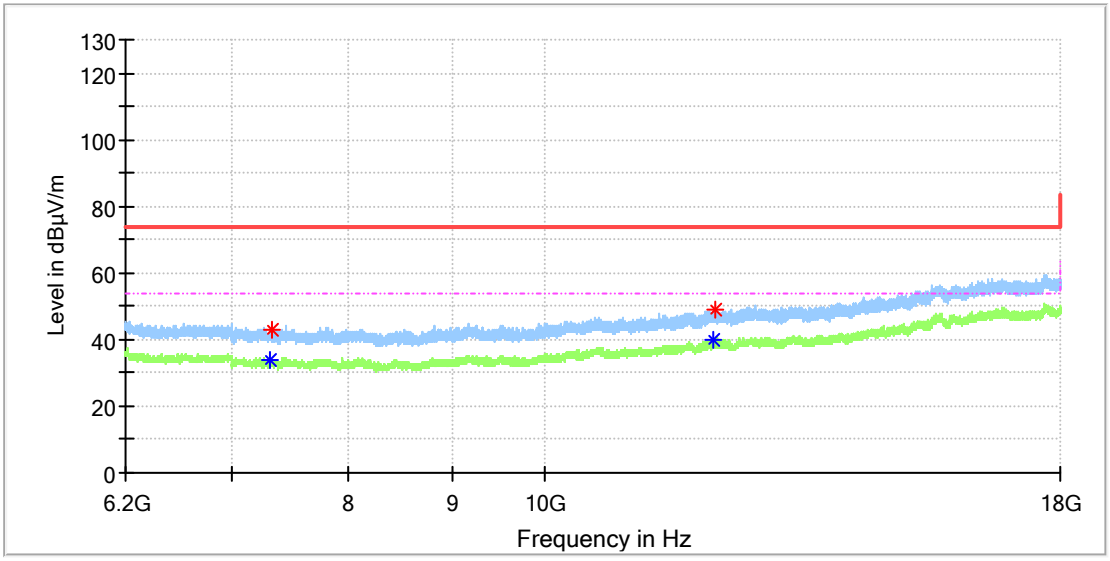
Test Report

EUT Information

EUT Name:	Car Audio
Model:	P2301
Test Mode:	WIFI 2.4G_11n20_Ch6
Order No/Sample No:	168457367/A003635657-002
Test Voltage::	DC 14V From DC Source
Remark:	Temp 23 Humi:56%
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)
7316.575000	---	33.66	54.00	20.34	150.0	H	358.0	8.2
7326.900000	43.19	---	74.00	30.81	150.0	H	338.0	8.1
12129.500000	---	39.86	54.00	14.14	150.0	H	214.0	14.3
12138.350000	48.78	---	74.00	25.22	150.0	H	250.0	14.4

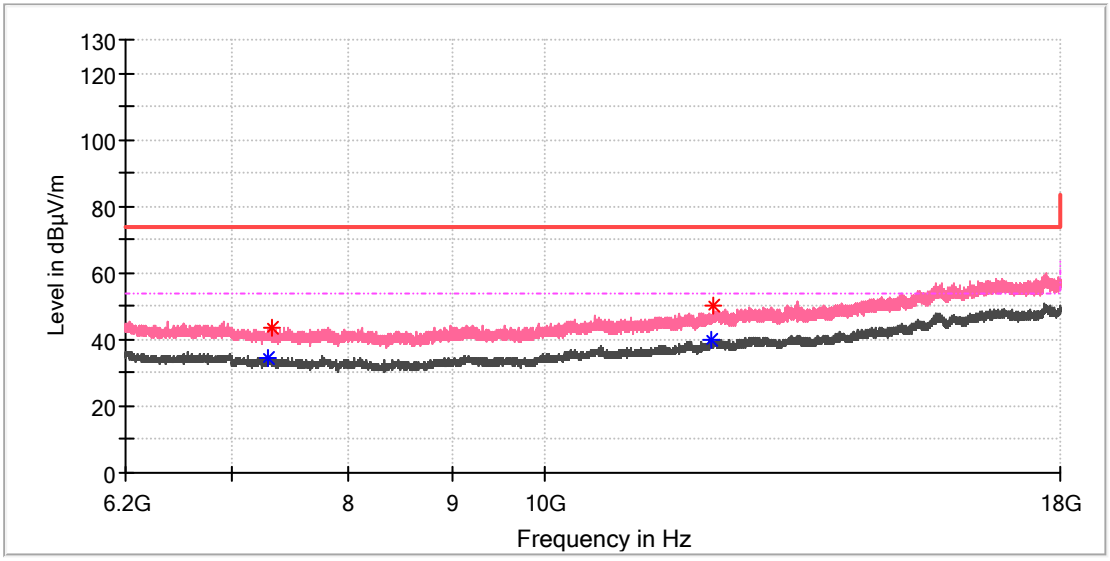
Final_Result

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

Test Report

EUT Information

EUT Name:	Car Audio
Model:	P2301
Test Mode:	WIFI 2.4G_11n20_Ch6
Order No/Sample No:	168457367/A003635657-002
Test Voltage::	DC 14V From DC Source
Remark:	Temp 23 Humi:56%
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)
7301.333333	---	34.53	54.00	19.47	150.0	V	68.0	8.3
7319.525000	43.57	---	74.00	30.43	150.0	V	126.0	8.2
12100.983333	---	40.15	54.00	13.85	150.0	V	56.0	14.2
12121.633333	50.06	---	74.00	23.94	150.0	V	0.0	14.3

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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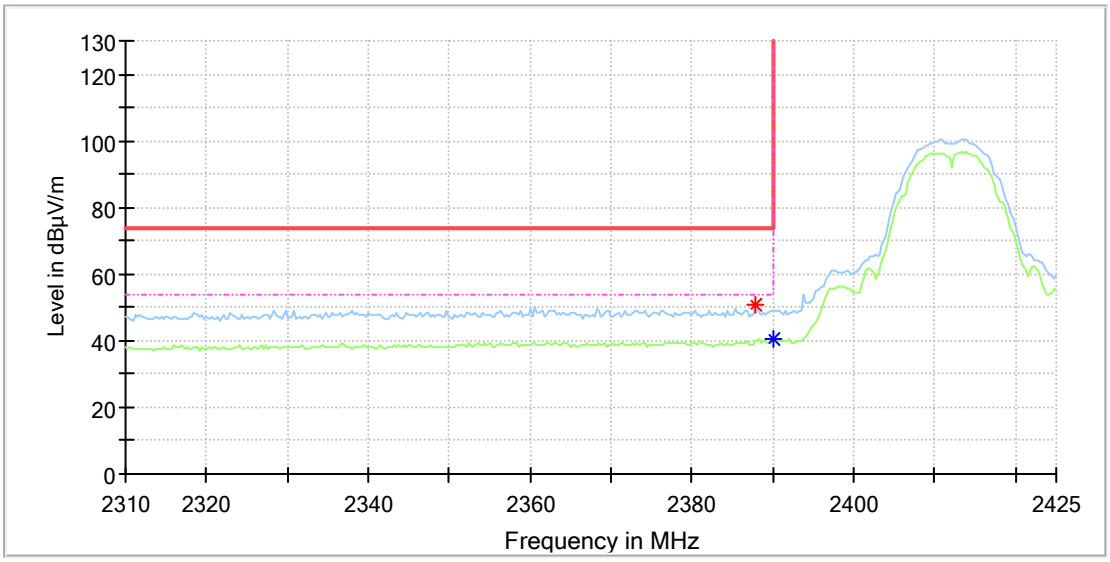
Appendix A.6: Test Results of Radiated Emissions in Restricted Bands

Wi-Fi 802.11 b mode

Test Report

EUT Information

EUT Name:	Car Audio
Model:	P2301
Test Mode:	WIFI 2.4G_11b_Ch1
Order No/Sample No:	168457367/A003635657-002
Test Voltage::	DC 14V From DC Source
Remark:	Temp 23 Humi:56%
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)
2387.941177	50.57	---	74.00	23.43	150.0	H	167.0	7.0
2390.000000	---	40.53	54.00	13.47	150.0	H	231.0	7.0

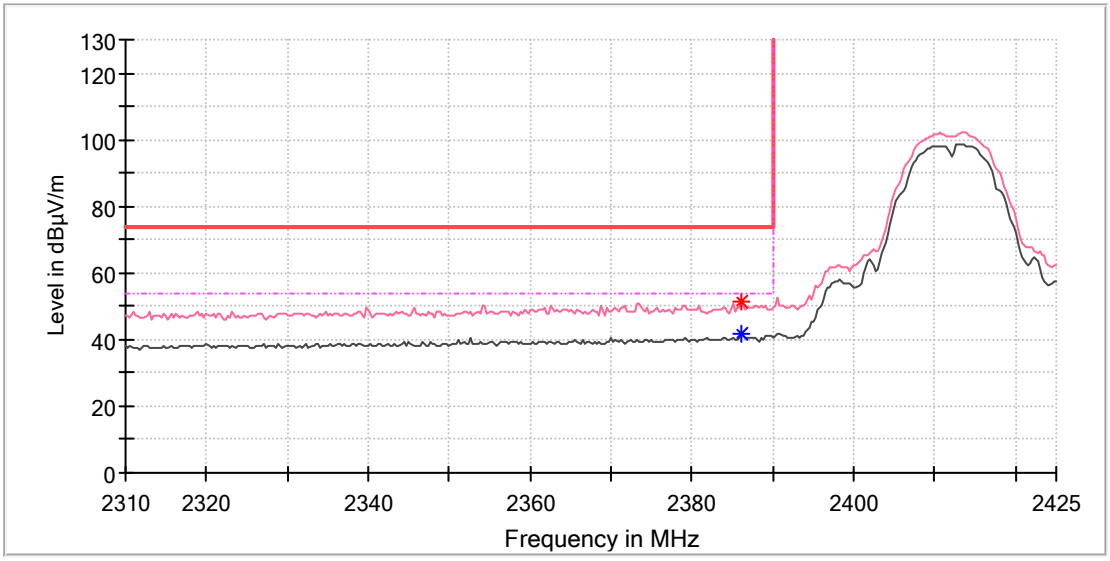
Final_Result

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

Test Report

EUT Information

EUT Name:	Car Audio
Model:	P2301
Test Mode:	WIFI 2.4G_11b_Ch1
Order No/Sample No:	168457367/A003635657-002
Test Voltage::	DC 14V From DC Source
Remark:	Temp 23 Humi:56%
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)
2386.176471	51.21	---	74.00	22.79	150.0	V	281.0	7.0
2386.176471	---	41.84	54.00	12.16	150.0	V	281.0	7.0

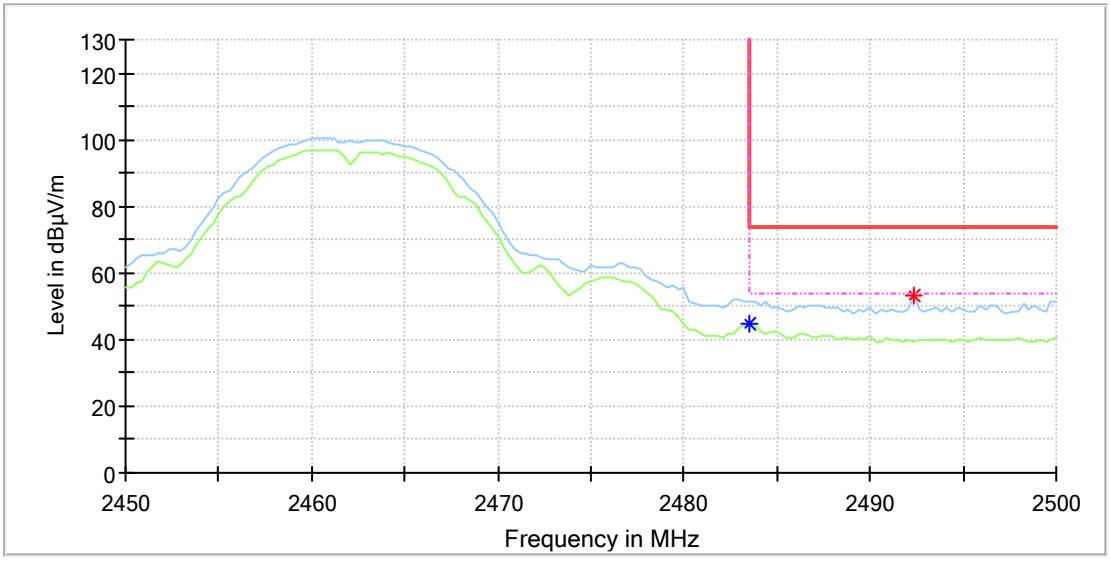
Final_Result

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

Test Report

EUT Information

EUT Name:	Car Audio
Model:	P2301
Test Mode:	WIFI 2.4G_11b_Ch11
Order No/Sample No:	168457367/A003635657-002
Test Voltage::	DC 14V From DC Source
Remark:	Temp 23 Humi:56%
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)
2483.529412	---	44.88	54.00	9.12	150.0	H	239.0	7.4
2492.352941	53.38	---	74.00	20.62	150.0	H	327.0	7.4

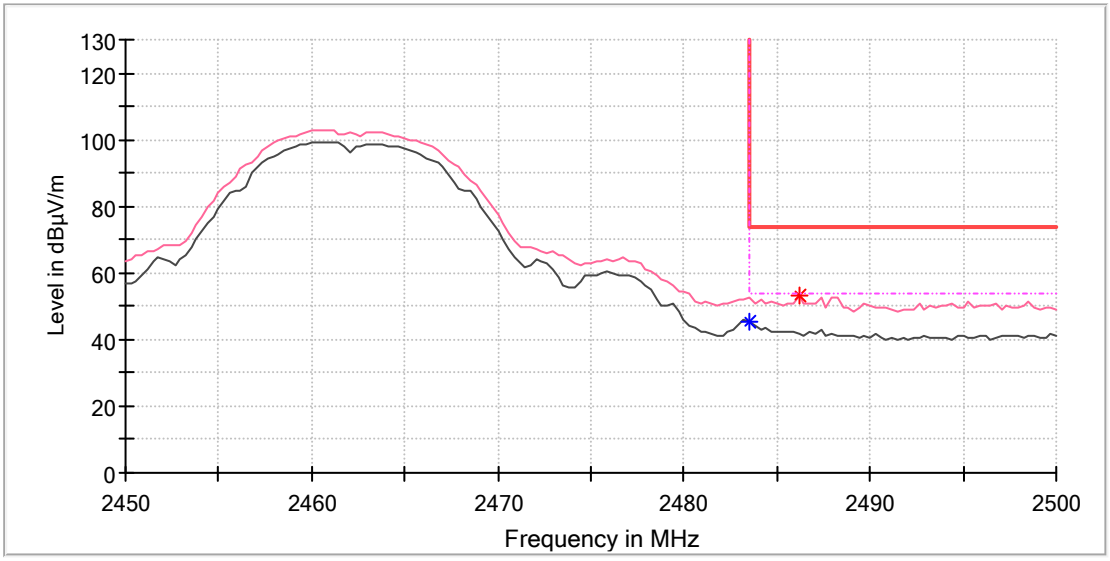
Final_Result

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

Test Report

EUT Information

EUT Name:	Car Audio
Model:	P2301
Test Mode:	WIFI 2.4G_11b_Ch11
Order No/Sample No:	168457367/A003635657-002
Test Voltage::	DC 14V From DC Source
Remark:	Temp 23 Humi:56%
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)
2483.529412	---	45.15	54.00	8.85	150.0	V	113.0	7.4
2486.176471	53.00	---	74.00	21.00	150.0	V	113.0	7.4

Final_Result

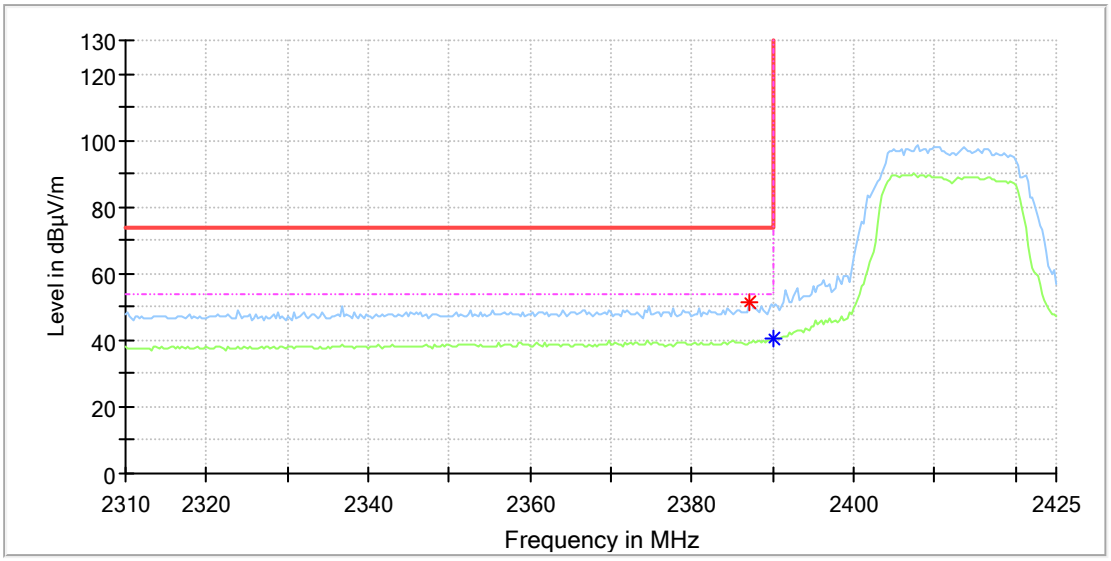
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

Wi-Fi 802.11 g mode

Test Report

EUT Information

EUT Name:	Car Audio
Model:	P2301
Test Mode:	WIFI 2.4G_11g_Ch1
Order No/Sample No:	168457367/A003635657-002
Test Voltage::	DC 14V From DC Source
Remark:	Temp 23 Humi:56%
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)
2387.058824	51.30	---	74.00	22.70	150.0	H	343.0	7.0
2390.000000	---	40.51	54.00	13.49	150.0	H	232.0	7.0

Final_Result

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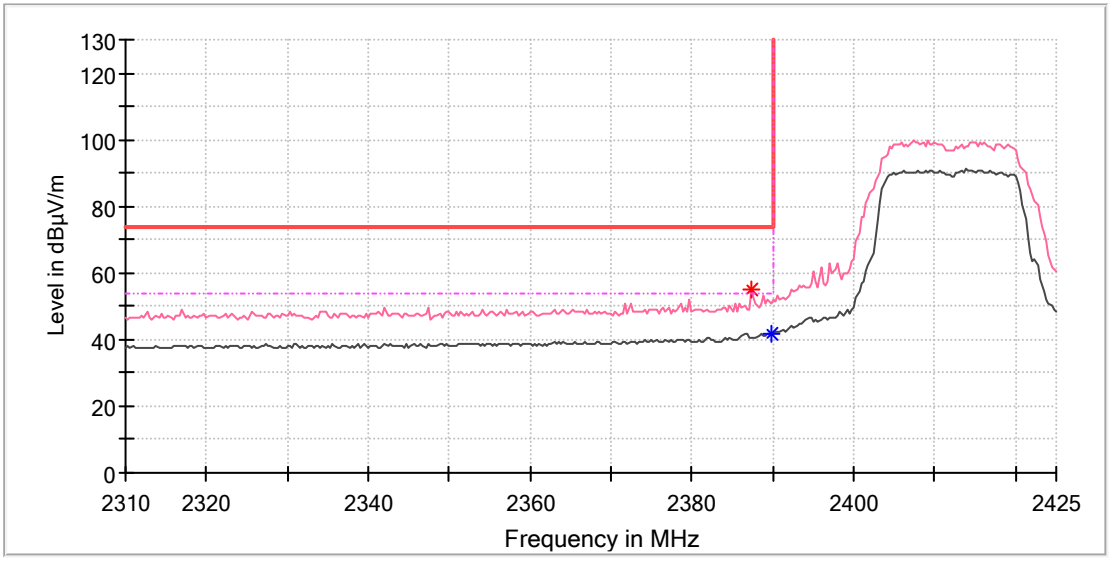
Test Report

EUT Information

EUT Name:	Car Audio
Model:	P2301
Test Mode:	WIFI 2.4G_11g_Ch1
Order No/Sample No:	168457367/A003635657-002
Test Voltage::	DC 14V From DC Source
Remark:	Temp 23 Humi:56%
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)
2387.352941	54.81	---	74.00	19.19	150.0	V	321.0	7.0
2389.705882	---	41.87	54.00	12.13	150.0	V	286.0	7.0

Final_Result

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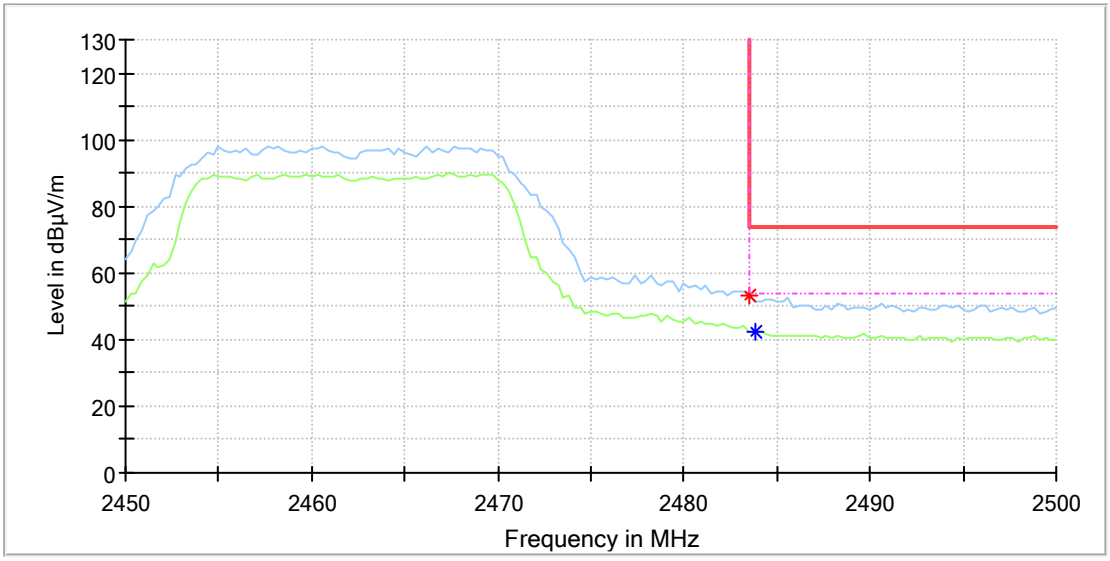
Test Report

EUT Information

EUT Name:	Car Audio
Model:	P2301
Test Mode:	WIFI 2.4G_11g_Ch11
Order No/Sample No:	168457367/A003635657-002
Test Voltage::	DC 14V From DC Source
Remark:	Temp 23 Humi:56%
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)
2483.529412	53.25	---	74.00	20.75	150.0	H	267.0	7.4
2483.823529	---	42.51	54.00	11.49	150.0	H	144.0	7.4

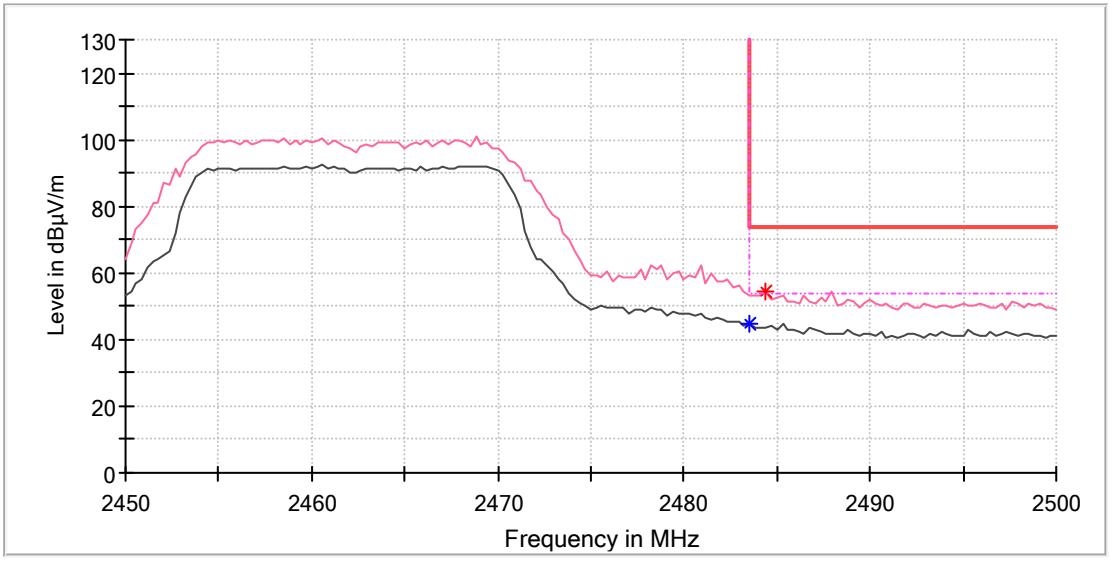
Final_Result

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

Test Report

EUT Information

EUT Name:	Car Audio
Model:	P2301
Test Mode:	WIFI 2.4G_11g_Ch11
Order No/Sample No:	168457367/A003635657-002
Test Voltage::	DC 14V From DC Source
Remark:	Temp 23 Humi:56%
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)
2483.529412	---	44.95	54.00	9.05	150.0	V	111.0	7.4
2484.411765	54.56	---	74.00	19.44	150.0	V	111.0	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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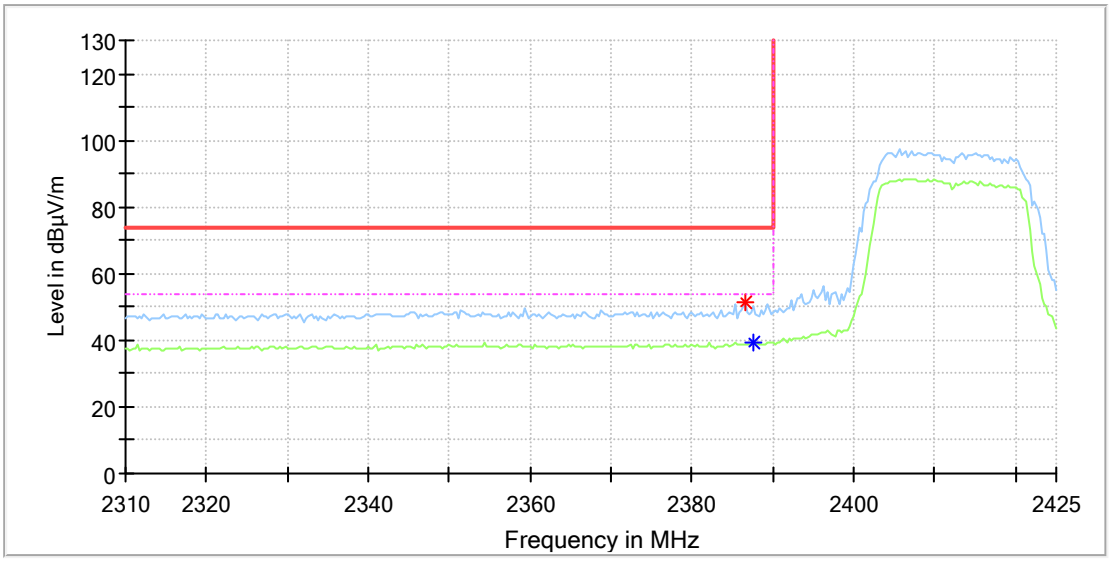
Wi-Fi 802.11 n(HT20) mode

Test Report

EUT Information

EUT Name:	Car Audio
Model:	P2301
Test Mode:	WIFI 2.4G_11n20_Ch1
Order No/Sample No:	168457367/A003635657-002
Test Voltage::	DC 14V From DC Source
Remark:	Temp 23 Humi:56%
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)
2386.470588	51.56	---	74.00	22.44	150.0	H	102.0	7.0
2387.647059	---	39.48	54.00	14.52	150.0	H	233.0	7.0

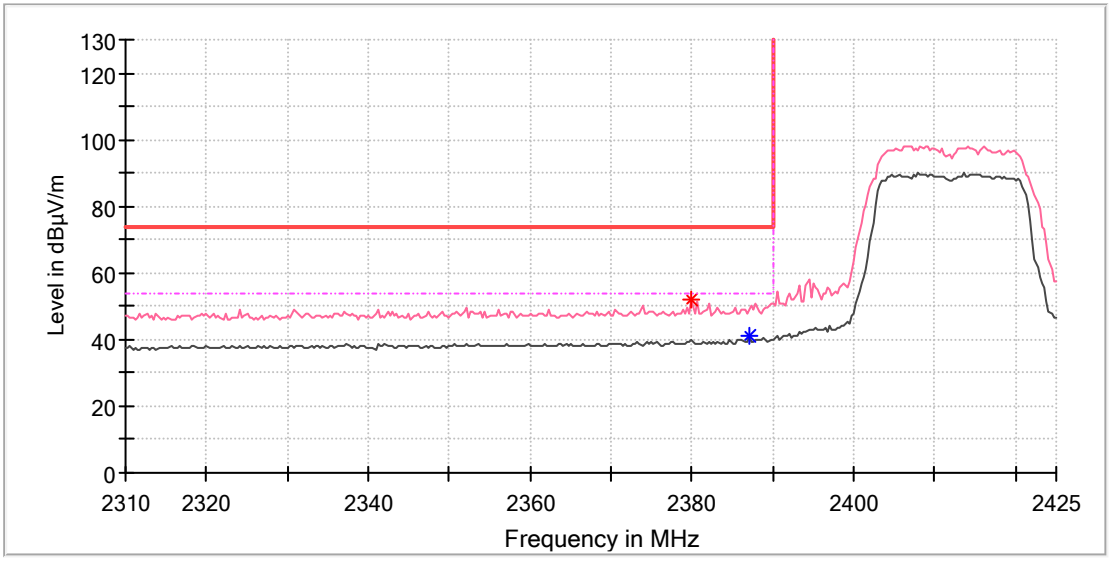
Final_Result

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

Test Report

EUT Information

EUT Name:	Car Audio
Model:	P2301
Test Mode:	WIFI 2.4G_11n20_Ch1
Order No/Sample No:	168457367/A003635657-002
Test Voltage::	DC 14V From DC Source
Remark:	Temp 23 Humi:56%
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)
2380.000000	52.24	---	74.00	21.76	150.0	V	282.0	7.0
2387.058824	---	41.10	54.00	12.90	150.0	V	274.0	7.0

Final_Result

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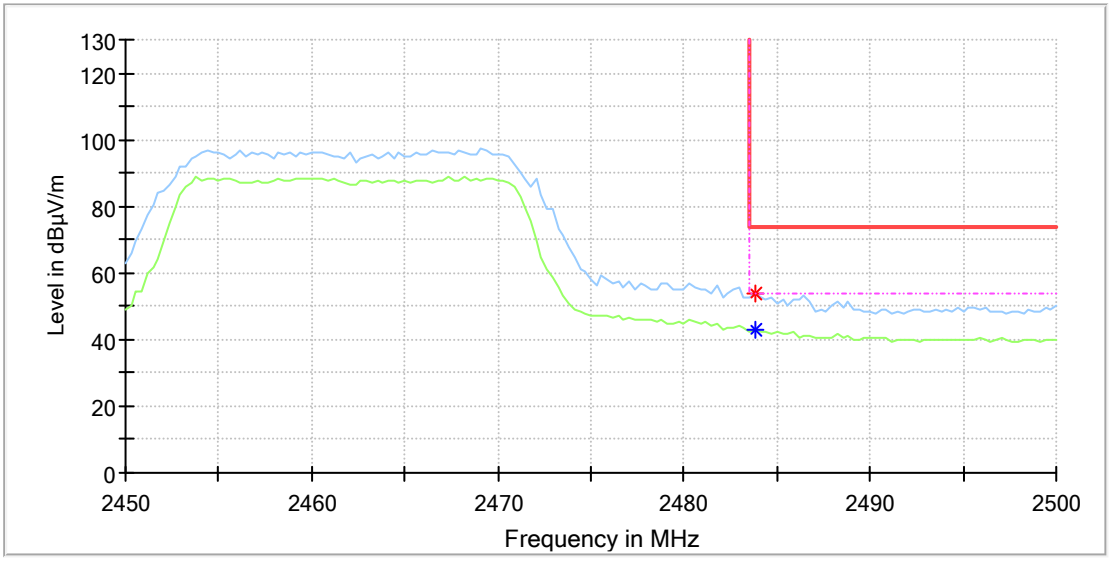
Test Report

EUT Information

EUT Name:	Car Audio
Model:	P2301
Test Mode:	WIFI 2.4G_11n20_Ch11
Order No/Sample No:	168457367/A003635657-002
Test Voltage::	DC 14V From DC Source
Remark:	Temp 23 Humi:56%
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)
2483.823529	---	42.79	54.00	11.21	150.0	H	339.0	7.4
2483.823529	53.61	---	74.00	20.39	150.0	H	339.0	7.4

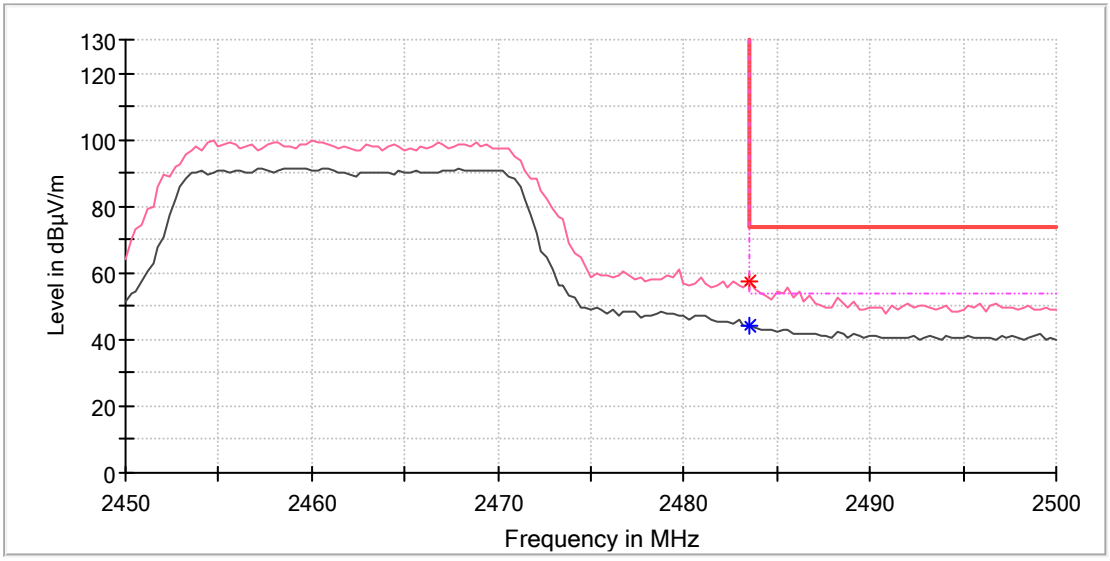
Final_Result

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

Test Report

EUT Information

EUT Name:	Car Audio
Model:	P2301
Test Mode:	WIFI 2.4G_11n20_Ch11
Order No/Sample No:	168457367/A003635657-002
Test Voltage::	DC 14V From DC Source
Remark:	Temp 23 Humi:56%
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)
2483.529412	---	44.31	54.00	9.69	150.0	V	108.0	7.4
2483.529412	57.20	---	74.00	16.80	150.0	V	108.0	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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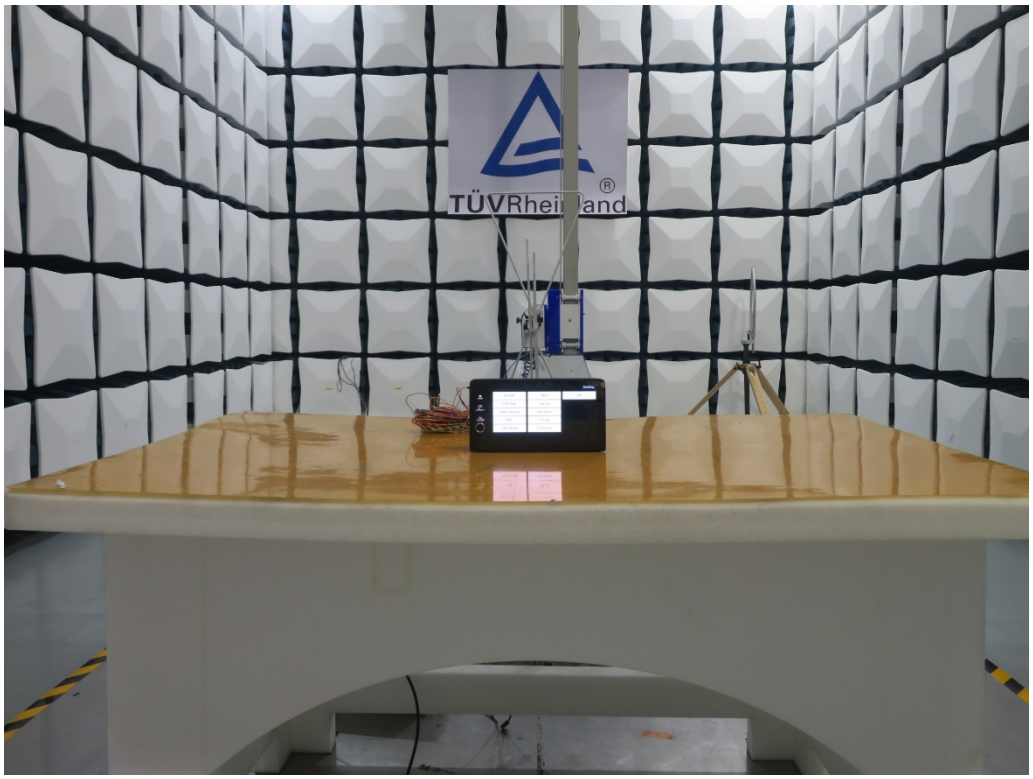
Appendix B: Photographs of the Test Set-Up

Photograph 1: Set-up photo for Radiated Spurious Emission, below 1GHz



Photograph 2: Set-up photo for Radiated Spurious Emission, above 1GHz