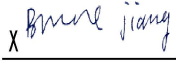


Prüfbericht-Nr.: <i>Test report no.:</i>	CN22JPD6 002	Auftrags-Nr.: <i>Order no.:</i>	168394818	Seite 1 von 51 <i>Page 1 of 51</i>
Kunden-Referenz-Nr.: <i>Client reference no.:</i>	N/A	Auftragsdatum: <i>Order date:</i>	2022-10-17	
Auftraggeber: <i>Client:</i>	DONGGUAN CASTLE MARK FURNITURE CO., LTD. 267 Guan Chang road, DongCheng, DongGuan 523128, Guangdong, China.			
Prüfgegenstand: <i>Test item:</i>	ZG CHAIR			
Bezeichnung / Typ-Nr.: <i>Identification / Type no.:</i>	CIRCA			
Auftrags-Inhalt: <i>Order content:</i>	Test Report			
Prüfgrundlage: <i>Test specification:</i>	FCC CFR Title 47, Part 15, Subpart C, Section 15.247			
Wareneingangsdatum: <i>Date of sample receipt:</i>	2022-12-14	Please refer to Photo Document		
Prüfmuster-Nr.: <i>Test sample no:</i>	A003388414-001 A003388414-003			
Prüfzeitraum: <i>Testing period:</i>	2022-12-14 to 2022-12-30			
Ort der Prüfung: <i>Place of testing:</i>	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüfergebnis*: <i>Test result*:</i>	Pass			
geprüft von: <i>tested by:</i>	 Signed by: Breeze Jiang	genehmigt von: <i>authorized by:</i>	 Signed by: Hanbu Guo	
Datum: <i>Date:</i>	2023-01-16	Ausstellungsdatum: <i>Issue date:</i>	2023-01-16	
Stellung / Position:	Assistant Project Manager	Stellung / Position:	Reviewer	
Sonstiges / Other:	FCC ID: 2A87F-CIRCA			
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>	Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>			
* Legende:	1 = sehr gut P(ass) = entspricht o.g. Prüfgrundlage(n)	2 = gut F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	3 = befriedigend F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	4 = ausreichend N/A = nicht anwendbar
* Legend:	1 = very good P(ass) = passed a.m. test specification(s)	2 = good F(ail) = failed a.m. test specification(s)	3 = satisfactory F(ail) = failed a.m. test specification(s)	4 = sufficient N/A = not applicable
5 = mangelhaft N/T = nicht getestet				
5 = poor N/T = not tested				
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>				

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Test Summary

5.1.1 ANTENNA REQUIREMENT

RESULT: Pass

5.1.2 MAXIMUM PEAK CONDUCTED OUTPUT POWER

RESULT: Pass

5.1.3 CONDUCTED POWER SPECTRAL DENSITY

RESULT: Pass

5.1.4 6dB BANDWIDTH

RESULT: Pass

5.1.5 99% BANDWIDTH

RESULT: Pass

5.1.6 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 kHz BANDWIDTH

RESULT: Pass

5.1.7 RADIATED SPURIOUS EMISSION

RESULT: Pass

5.1.18 CONDUCTED EMISSION ON AC MAINS

RESULT: Pass

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1 General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: Photographs of the Test Set-up

2 Test Sites

2.1 Test Facilities

TÜV Rheinland (Shenzhen) Co., Ltd.

362 Huanguan Road Middle Longhua District, Shenzhen 518110 People's Republic of China

FCC Registration No.: 694916

A2LA Certificate Number: 5162.01

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. until
EXA Signal Analyzer, Multi-touch	Keysight	N9010B	MY60241175	10.10.2023
MXG X-Series RF Vector Signal Generator	Keysight	N5182B	MY61250137	10.10.2023
EXG X-Series Microwave Analog Signal Generator	Keysight	N5173B	MY61250141	10.10.2023
DC Power Supply	Keysight	E3642A	MY61276100	10.10.2023
Wireless Connectivity Tester	R&S	CMW270	102505	10.10.2023
Power Control Unit	Tonscend	JS0806-4ADC	N/A	10.10.2023
Automation Control Unit	Tonscend	JS0806-2	21C8060396	10.10.2023
Test Software	Tonscend	JS1120-3	N/A	N/A
Control PC	Lenovo	TianYi510S-071MB	Y LX23JMF	N/A
Unwanted Emission Testing (TS9975)				
Equipment	Manufacturer	Model	Serial No.	Cal. until
EMI Test Receiver	R&S	ESR 7	102021	02.08.2023
Signal Analyzer	R&S	FSV 40	101439	01.08.2023
System Controller Interface	R&S	SCI-100	S10010038	N/A
Filterbank	R&S	Wlan	100759	01.08.2023
OSP	R&S	OSP 120	102040	N/A
Pre-amplifier	R&S	SCU08F1	08320031	02.08.2023
Amplifier	R&S	SCU-18F	180070	02.08.2023
Amplifier	R&S	SCU40A	100475	02.08.2023

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Trilog Broadband Antenna (30 MHz - 7 GHz)	Schwarzbeck	VULB 9162	193	06.08.2024
Double-Ridged Antenna (1 -18 GHz)	ETS-LINDGREN	3117	00218717	06.08.2024
Wideband Ridged Horn Antenna (18-40 GHz)	Steatite	QMS-00880	19067	27.08.2024
Active Loop Antenna	Schwarzbeck	FMZB 1513	302	06.08.2024
Test software	R&S	EMC32 (V10.60.10)	N/A	N/A
Control PC	Dell	OptiPlex 7050	36NV9P2	N/A
3m Semi-Anechoic Chamber	Albatross	SAC-3m	APC17151-SAC	22.06.2024

Conducted Emission				
Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
EMI Test Receiver	R&S	ESR3	102680	27.02.2023
Artificial Mains Network	R&S	ENV216	101445	27.02.2023
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.

Parameter	Uncertainty
Radio Frequency	$\pm 1 \times 10^{-7}$
RF Power (conducted)	± 2.5 dB
Radiated Emission of Transmitter, valid up to 26.5 GHz	± 6 dB
Radiated Emission of Receiver, valid up to 26.5 GHz	± 6 dB
Conducted Emission, (9kHz to 150kHz)/(150kHz to 30MHz)	± 3.70 dB / ± 3.30 dB
Radiated Emission (3m SAC), 30MHz to 1000MHz	± 4.52 dB
Radiated Emission (3m SAC), above 1000MHz	± 4.37 dB
Temperature	± 1 °C
Humidity	± 5 %
Voltage (DC)	± 1 %
Voltage (AC, <10kHz)	± 2 %

2.6 Location of Original Data

The original copies of all test data taken during actual testing were showed in 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 362 Huanguan Road Middle Longhua District, Shenzhen 518110 People's Republic of 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 EUT is a ZG CHAIR, it supports Bluetooth BLE(1Mbps) wireless technology.

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

Remarks: The EUT has two color.

3.2 Ratings and System Details

Table 2: Technical Specification of EUT

General Information of EUT	Value
Kind of Equipment:	ZG CHAIR
Type Designation:	CIRCA
Trademark:	N/A
FCC ID:	2A87F-CIRCA
Operating Voltage:	AC 110-120V 60Hz
Cable	
Technical Specification of Bluetooth LE	
Frequency Range:	2402 MHz to 2480 MHz
Type of Modulation:	GFSK
Channel Number:	40 channels
Data Rate:	1 Mbps
Channel Separation:	2 MHz
Antenna Type:	PCB Antenna
Antenna Gain:	5.3 dBi

3.3 Independent Operation Modes

The basic operation modes are:

- A. On, Bluetooth LE transmitting mode
 - 1) Low Channel
 - 2) Middle Channel
 - 3) High Channel
- B. On, Normal operation with Bluetooth mode
- C. 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 |
| - Instruction Manual | - Schematics |
| - Block Diagram | - 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 tests were performed according to the procedures in ANSI C63.10: 2013.

Table 3: Test environments

Environment Parameter	Values During Tests		
	Temperature	Voltage	Relative Humidity
NTNV	25°C±2°C	AC120V 60Hz	Ambient
NTNV	25°C±2°C	AC120V 60Hz	Ambient

Table 4: Test channel and frequency

Mode	Test Channels (MHz)	Remark
Transmitting	L/M/H: 2402MHz, 2440MHz, 2480MHz	--

4.3 Special Accessories and Auxiliary Equipment

Table 5: Auxiliary Equipment Used during Test

Description	Manufacturer	Model	S/N	Rating
Laptop	Lenovo	T480	PF-16A6N8	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 30MHz)

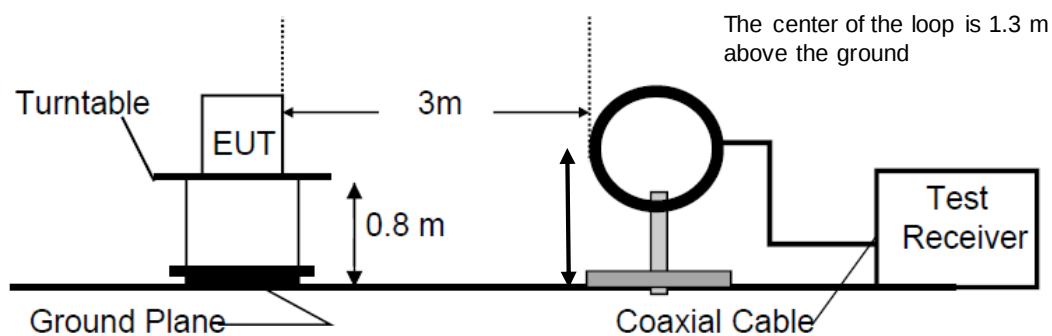


Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

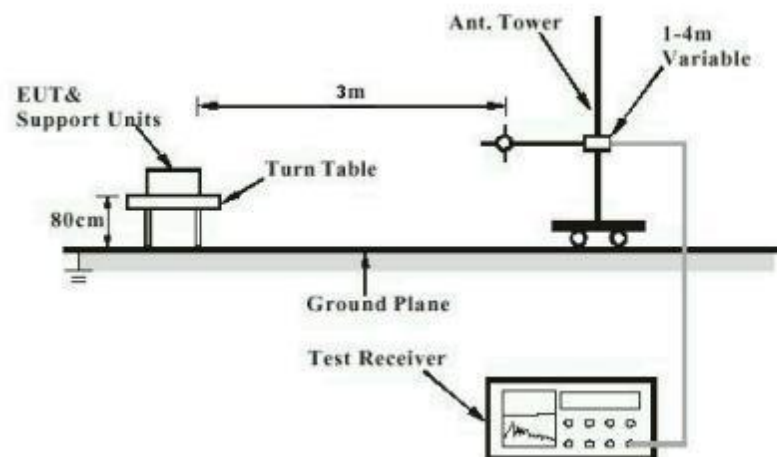


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

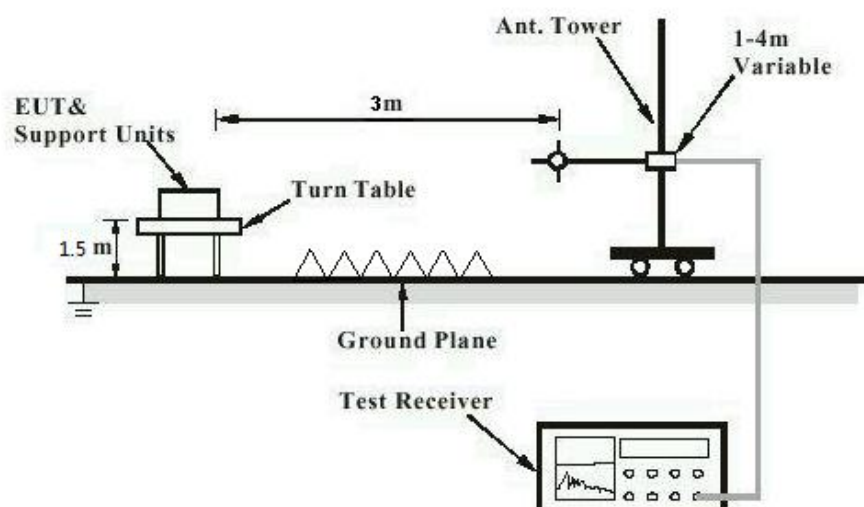


Diagram of Measurement Configuration for Mains Conduction Measurement

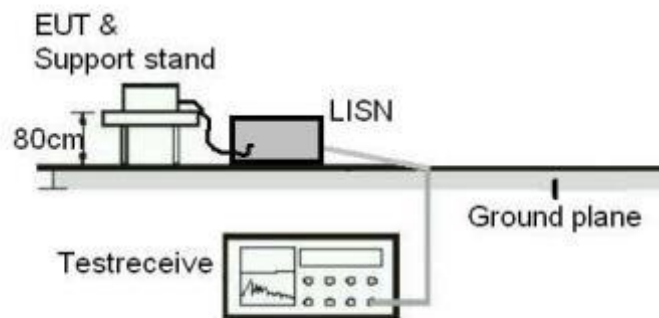
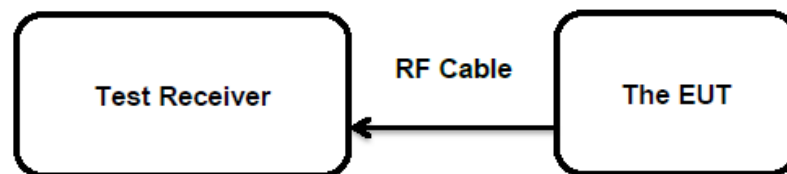


Diagram of Measurement Configuration for Conducted Transmitter Measurement



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 a PCB Antenna, the gain of antenna is 5.3 dBi, which that 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)
 Basic standard : ANSI C63.10: 2013
 Limits : 1.0 Watts
 Kind of test site : Shielded Room

Test Setup

Date of testing : 2022-12-30
 Input voltage : DC 3.3V by USB Port of Laptop(Laptop Input AC120V 60Hz)
 Operation mode : A
 Test channel : Low / Middle / High
 Ambient temperature : 24.5 °C
 Relative humidity : 43 %
 Atmospheric pressure : 101 kPa

Table 6: Test Result of Maximum Peak Conducted Output Power, BLE

Test Mode	Test Channel (MHz)	Measured Peak Power		Limit (W)
		(dBm)	(W)	
BLE_1Mbps	2402	8.02	0.00634	< 1.0
	2440	8.07	0.00641	
	2480	8.32	0.00679	
Max. Measured Value		8.32	0.00679	

Note:

- 1) The cable loss is taken into account in results.
- 2) Antenna gain(G): 3.0 dBi

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5.1.3 Conducted Power Spectral Density

RESULT:
Pass
Test Specification

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

Test Setup

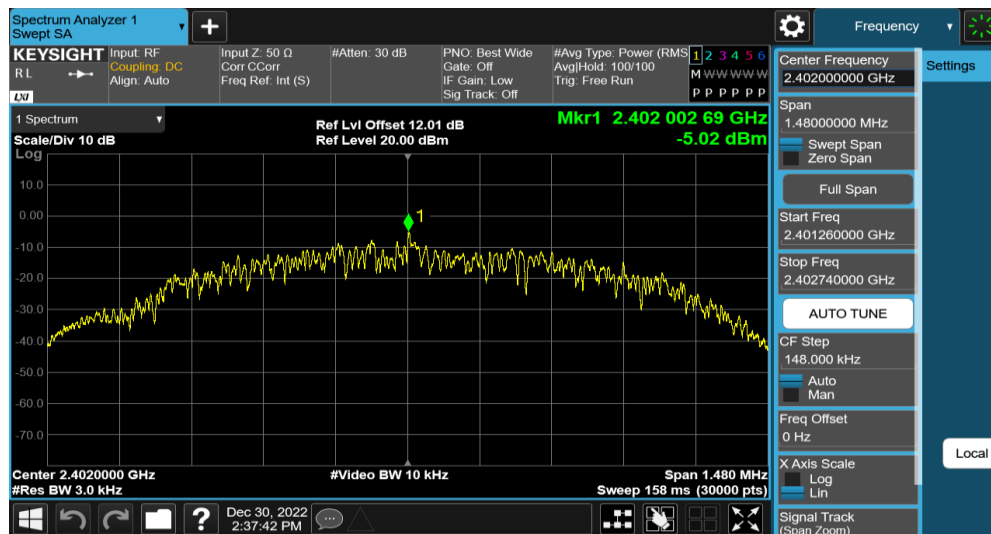
Date of testing : 2022-12-30
 Input voltage : DC 3.3V by USB Port of Laptop(Laptop Input AC120V 60Hz)
 Operation mode : A
 Test channel : Low / Middle / High
 Ambient temperature : 24.5 °C
 Relative humidity : 43 %
 Atmospheric pressure : 101 kPa

Table 7: Test Result of Maximum Power Spectral Density, BLE

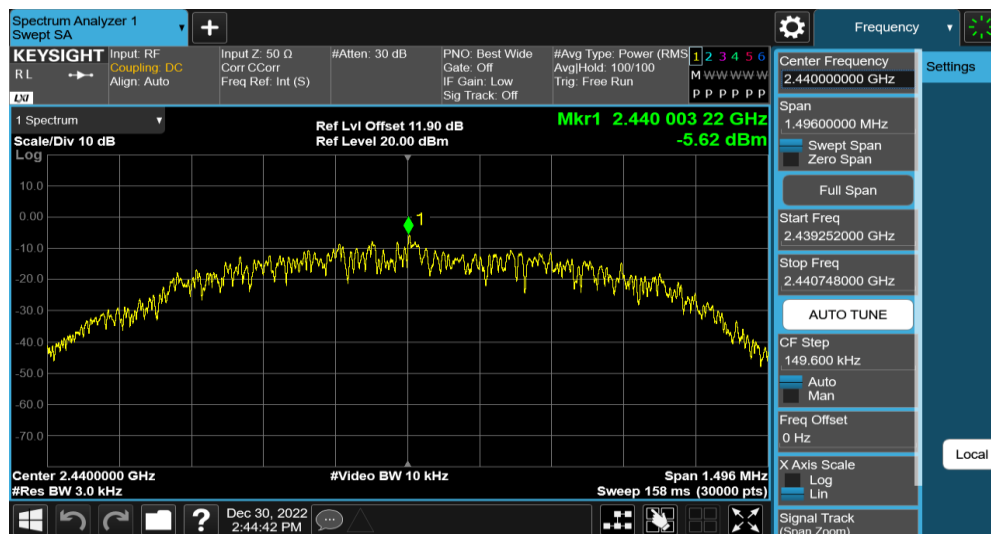
Test Mode	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
BLE_1Mbps	2402	-5.02	≤8.00	PASS
	2440	-5.62	≤8.00	PASS
	2480	-6.03	≤8.00	PASS

Test Results of Conducted Power Spectral Density

Low Channel



Middle Channel



High Channel



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 : 2022-12-30
Input voltage : DC 3.3V by USB Port of Laptop(Laptop Input AC120V 60Hz)
Operation mode : A
Test channel : Low / Middle / High
Ambient temperature : 24.5 °C
Relative humidity : 43 %
Atmospheric pressure : 101 kPa

Table 8: Test Result of 6dB Bandwidth, BLE

Test Mode	Channel	DTS BW [MHz]	Limit[MHz]	Verdict
BLE_1Mbps	2402	0.740	0.5	PASS
	2440	0.748	0.5	PASS
	2480	0.712	0.5	PASS

Test Results of 6dB Bandwidth

Low Channel



Middle Channel



High Channel



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 : 2022-12-30
Input voltage : DC 3.3V by USB Port of Laptop(Laptop Input AC120V 60Hz)
Operation mode : A
Test channel : Low / Middle / High
Ambient temperature : 24.5 °C
Relative humidity : 43 %
Atmospheric pressure : 101 kPa

Table 9: Test Result of 99% Bandwidth, BLE

Test Mode	Channel	OCB [MHz]	FL[MHz]	FH[MHz]
BLE_1Mbps	2402	1.3300	2401.3680	2402.6980
	2440	1.2871	2439.3779	2440.6650
	2480	1.2433	2479.4189	2480.6622

Test Results of 99% Bandwidth

Low Channel



Middle Channel



High Channel



5.1.6 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

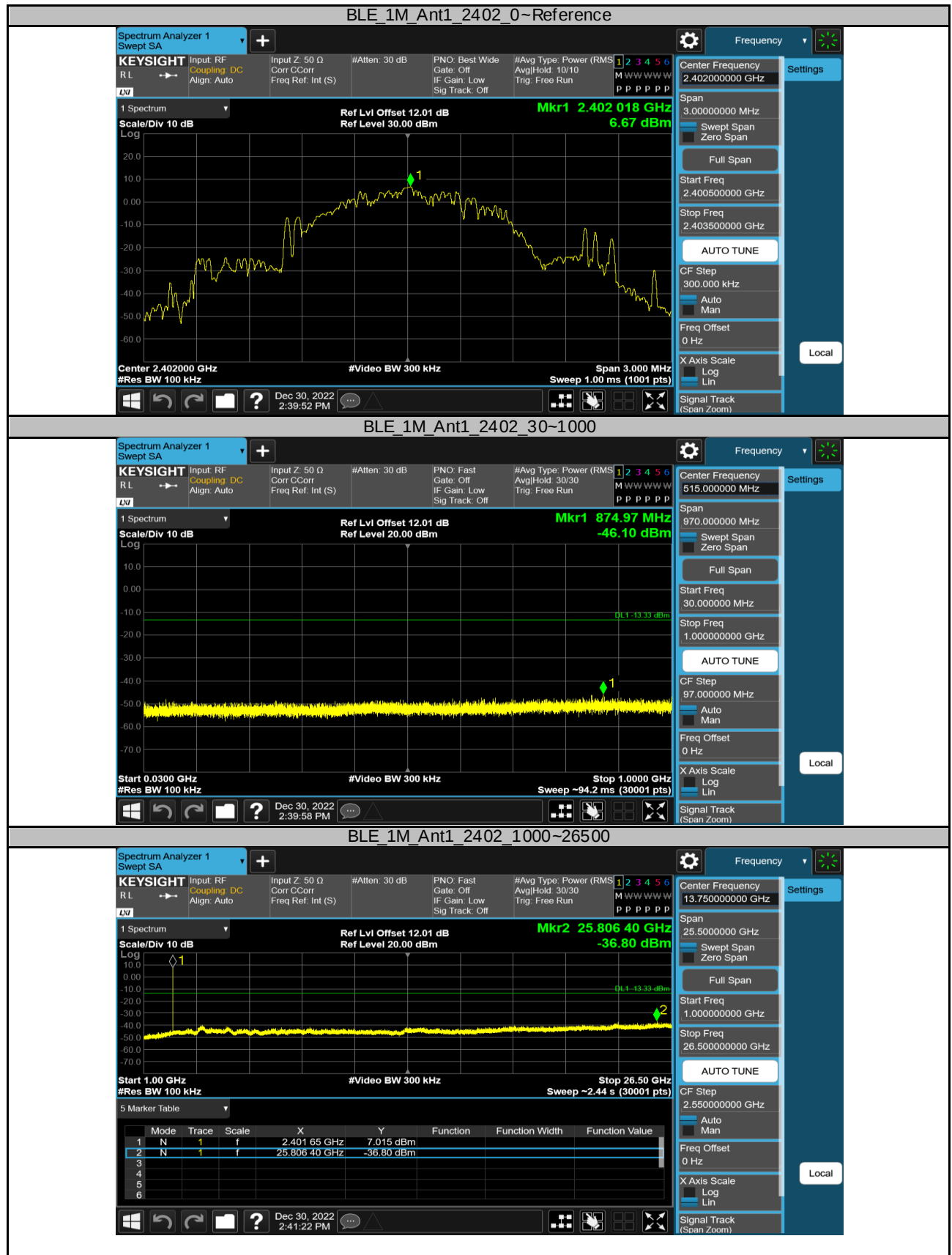
Date of testing	: 2022-12-30
Input voltage	: DC 3.3V by USB Port of Laptop(Laptop Input AC120V 60Hz)
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: 24.5 °C
Relative humidity	: 43 %
Atmospheric pressure	: 101 kPa

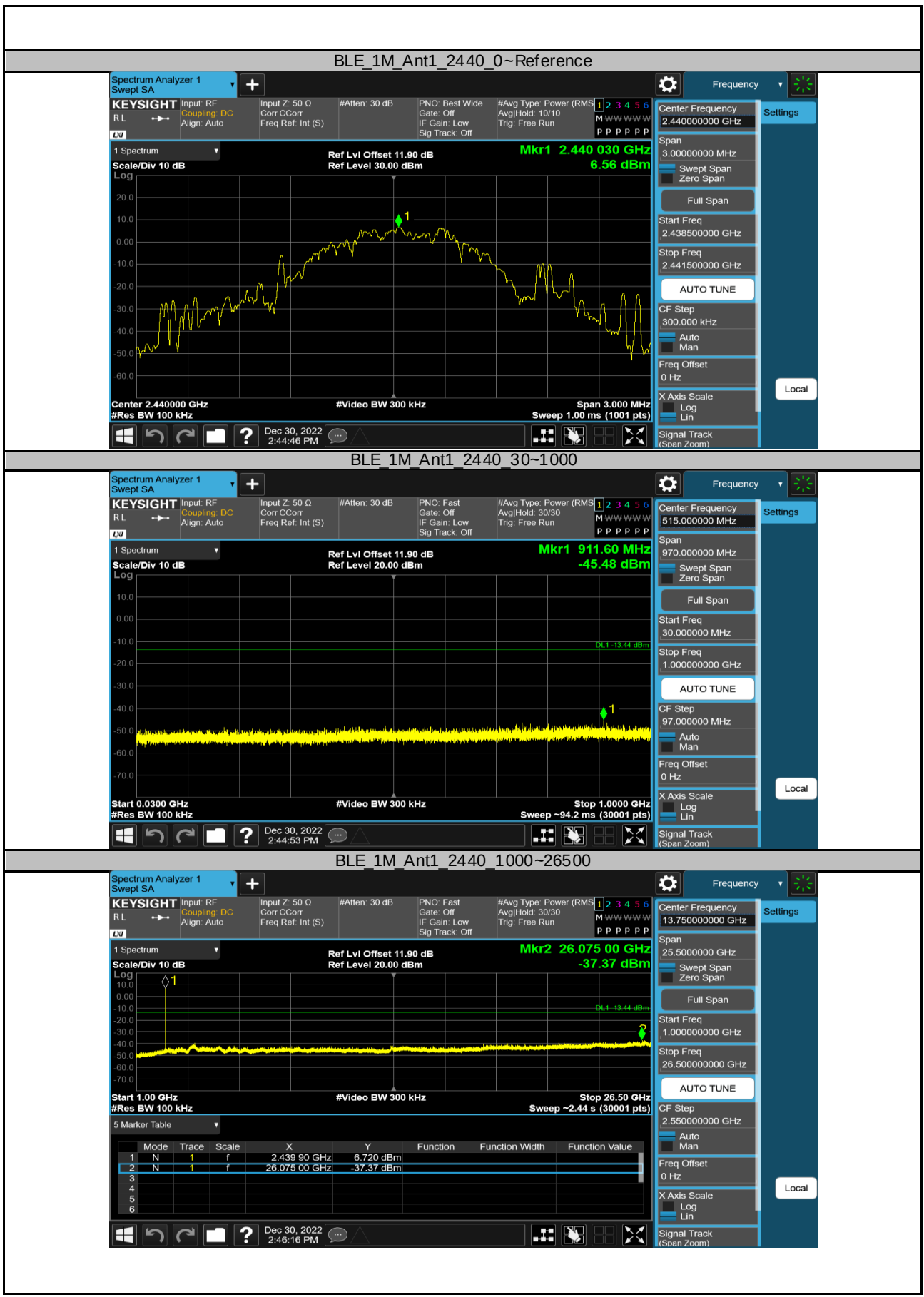
Test results of 100kHz Bandwidth of Frequency Band Edge by Conducted method refer to test plots, and compliance is achieved as well.

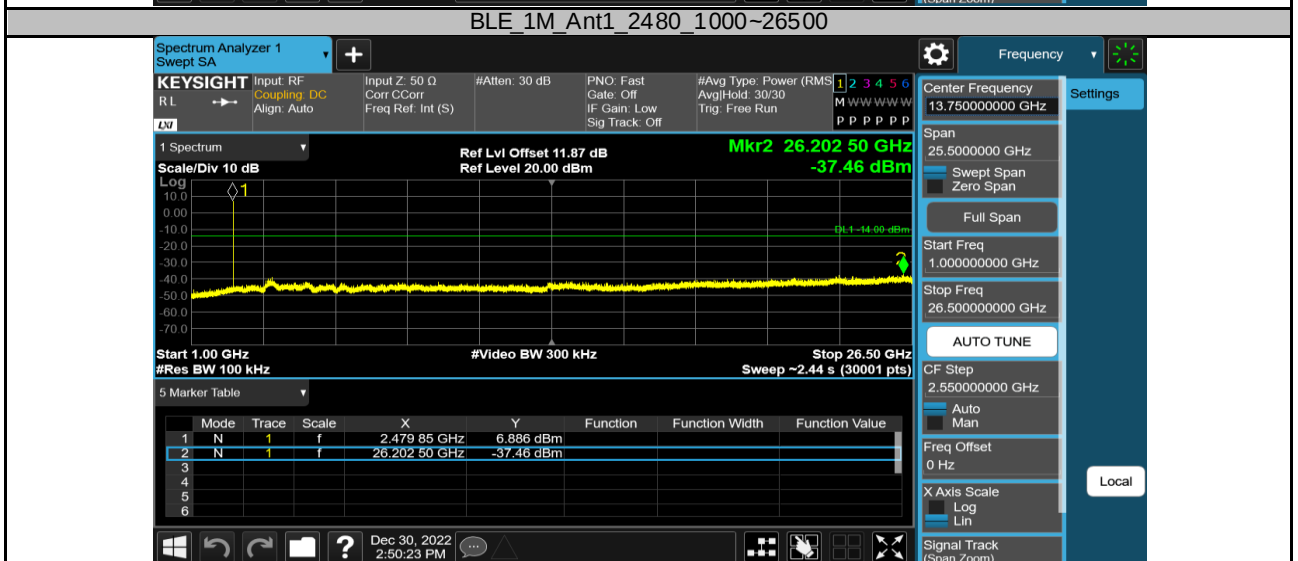
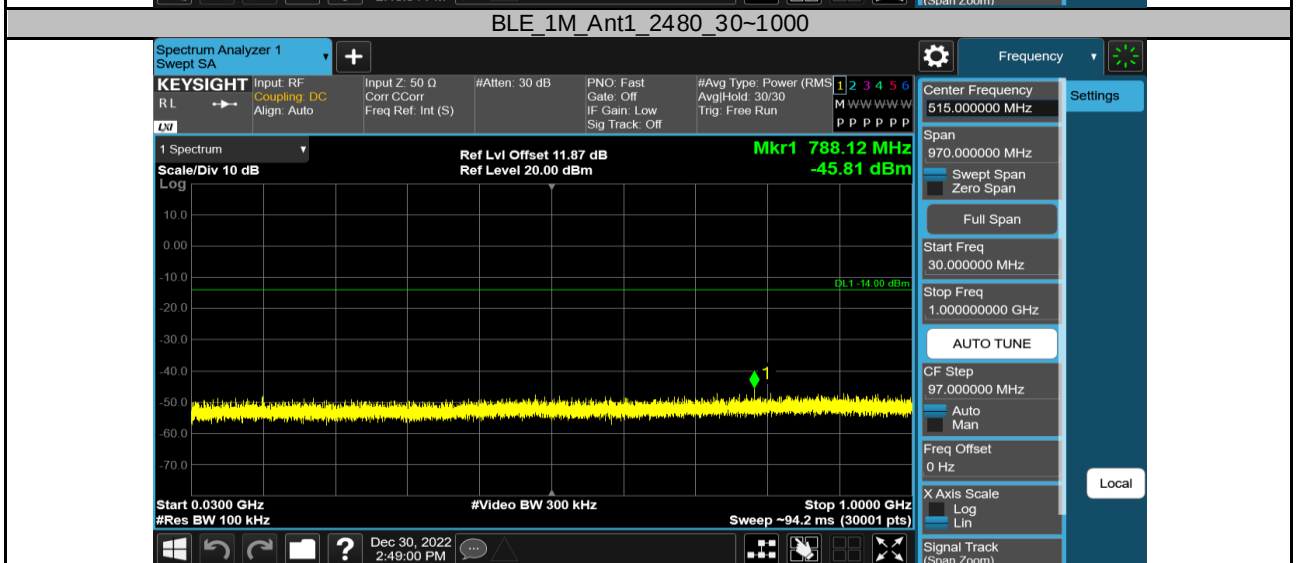
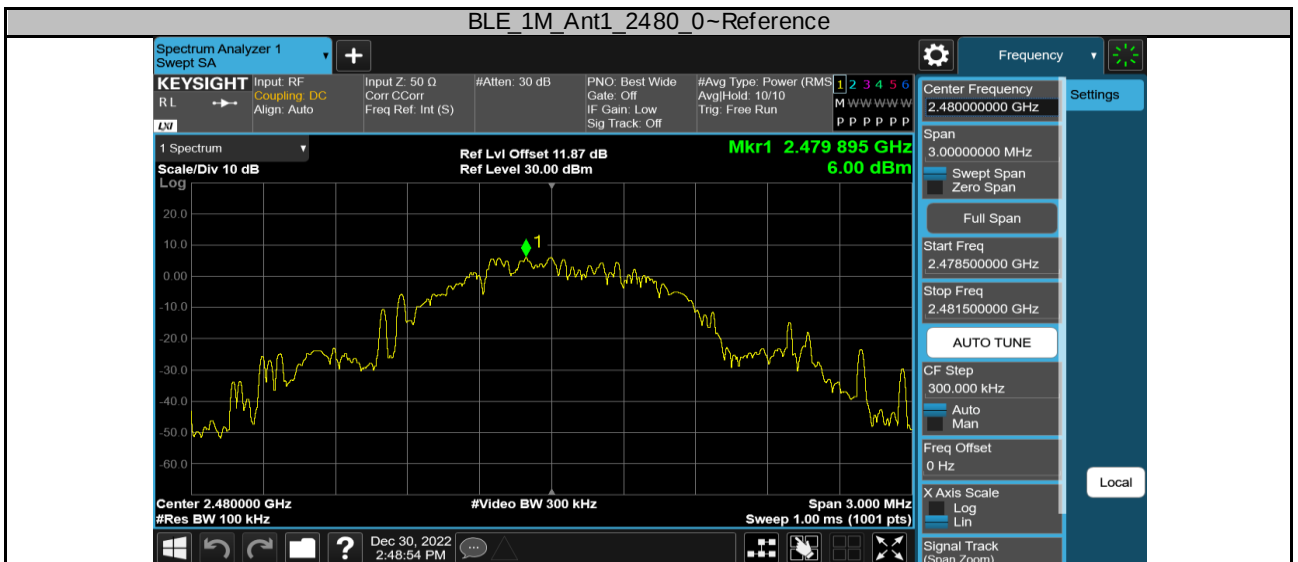
Table 10: Test Result of Conducted Spurious Emission, BLE

TestMode	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1Mbps	2402	Reference	6.67	6.67	---	PASS
		30~1000	6.67	-46.1	≤-13.33	PASS
		1000~26500	6.67	-36.8	≤-13.33	PASS
	2440	Reference	6.56	6.56	---	PASS
		30~1000	6.56	-45.48	≤-13.44	PASS
		1000~26500	6.56	-37.37	≤-13.44	PASS
	2480	Reference	6.00	6.00	---	PASS
		30~1000	6.00	-45.81	≤-14	PASS
		1000~26500	6.00	-37.47	≤-14	PASS

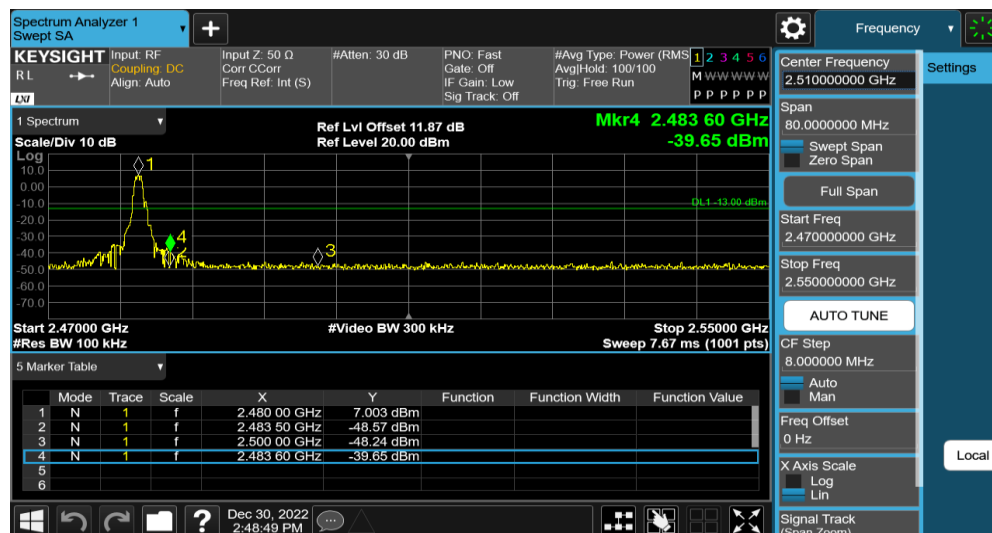
Test Results of Conducted Spurious Emissions Measured in 100 kHz Bandwidth







Band Edge



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5.1.7 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	: 2022-12-30
Input voltage	: DC 5V by USB Port of Laptop(Laptop Input AC120V 60Hz)
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: Refer to test result
Relative humidity	: Refer to test result
Atmospheric pressure	: 101 kPa

Remark:

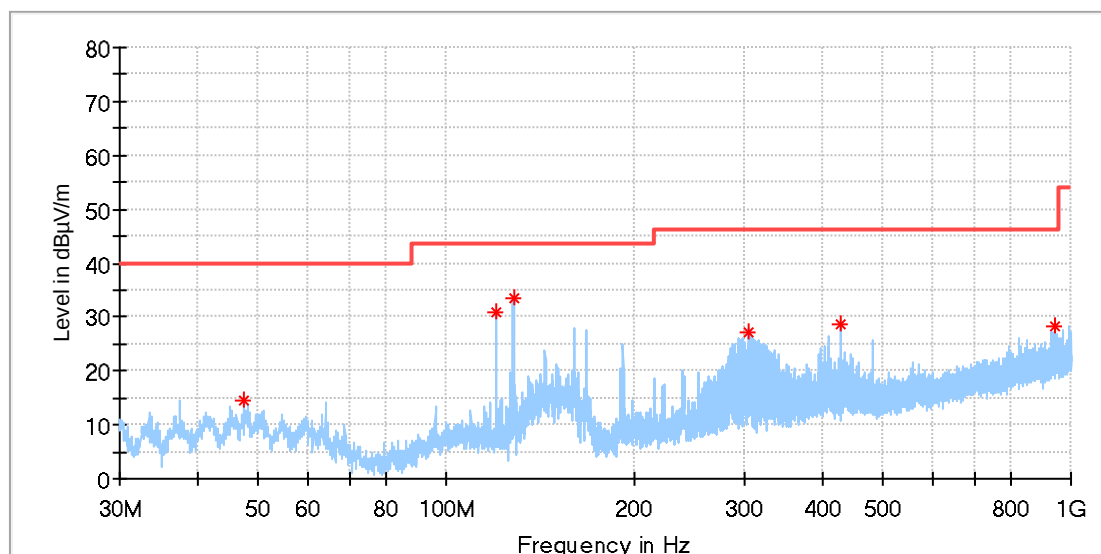
- 1) This testing was carried out on different modulations, but only the worst case was presented in this report.
- 2) Testing was carried out within frequency range 9kHz to the tenth harmonics. The measurement results below 30MHz and 18GHz - 26.5GHz were greater than 20dB below the limit, so only the radiated spurious emissions from 30MHz to 18GHz were reported.

Test Results of Radiated Spurious Emissions

30 MHz to 1GHz

EUT Information

EUT Name:	ZG CHAIR
Model:	CIRCA
TestMode:	BLE 1M_Mid channel
Order No/Sample No:	168394818/A003388414-002
Test Voltage::	DC 5V From USB
Remark:	Temp 22 Humi:52%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

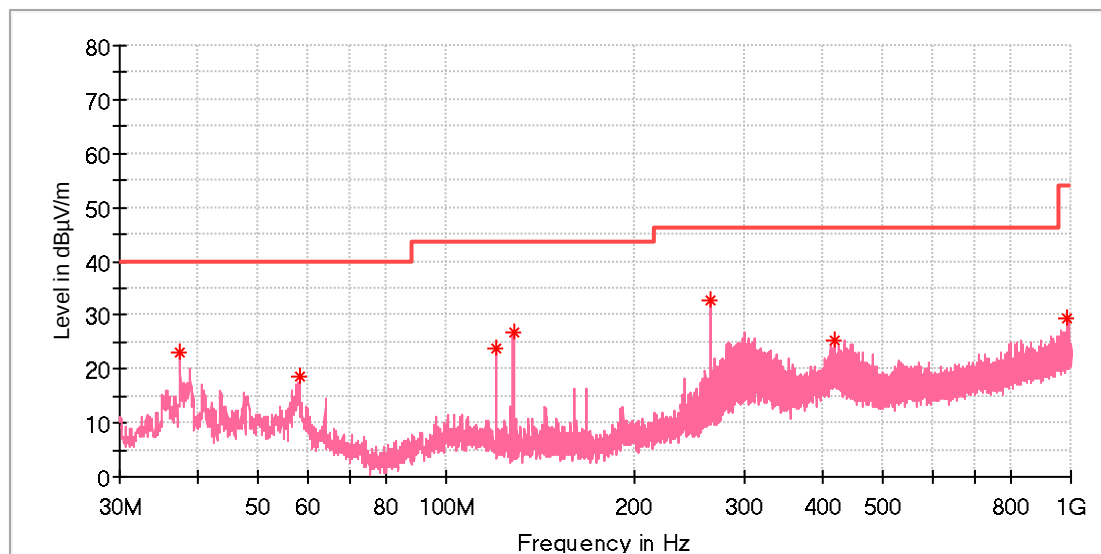
Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
47.422692	14.55	40.00	25.45	100.0	H	147.0	-18.8
119.986154	30.90	43.50	12.60	100.0	H	171.0	-21.1
128.007308	33.63	43.50	9.87	100.0	H	331.0	-22.0
304.957692	27.33	46.00	18.67	100.0	H	225.0	-16.5
428.558077	28.72	46.00	17.28	100.0	H	67.0	-13.6
946.015769	28.36	46.00	17.64	100.0	H	243.0	-4.9

Final Result

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

EUT Information

EUT Name:	ZG CHAIR
Model:	CIRCA
Test Mode:	BLE 1M_Mid channel
Order No/Sample No:	168394818/A003388414-002
Test Voltage::	DC 5V From USB
Remark:	Temp 22 Humi:52%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
37.498846	23.16	40.00	16.84	100.0	V	306.0	-21.2
58.167308	18.78	40.00	21.22	100.0	V	14.0	-19.1
119.986154	23.81	43.50	19.69	100.0	V	264.0	-21.1
128.007308	26.91	43.50	16.59	100.0	V	248.0	-22.0
265.635385	32.69	46.00	13.31	100.0	V	0.0	-17.3
419.716154	25.15	46.00	20.85	100.0	V	170.0	-13.7
987.054231	29.23	54.00	24.77	100.0	V	240.0	-4.3

Final_Result

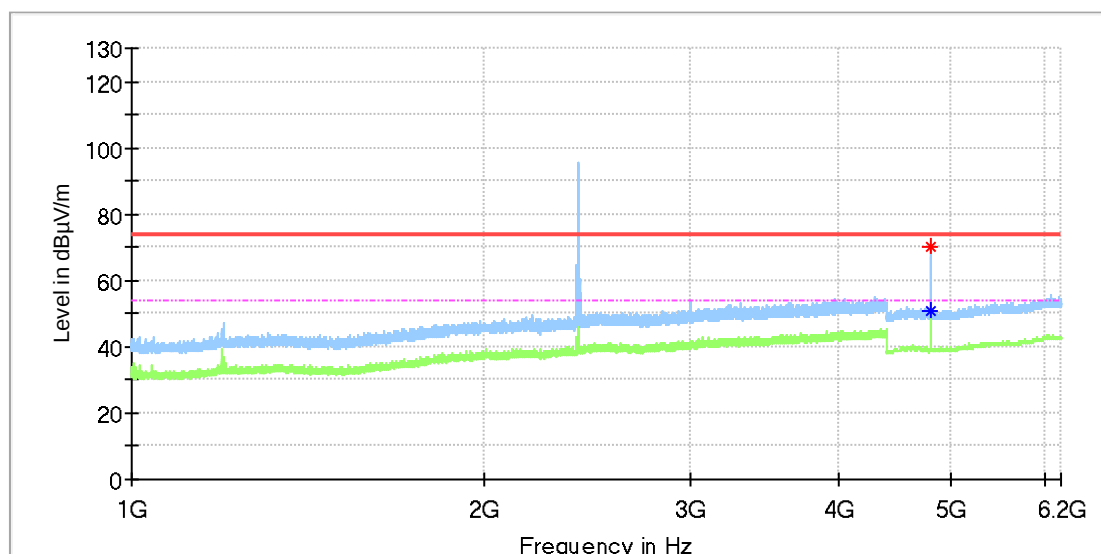
Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---	---	---

Above 1GHz

Note: The highest waveform in the figure is 2.4GHz BLE Fundamental.

EUT Information

EUT Name:	ZG CHAIR
Model:	CIRCA
TestMode:	BLE 1M_Low channel
Order No./Sample No:	168394818/A003388414-002
Test Voltage::	DC 5V From USB
Remark:	Temp 22 Humi:52%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

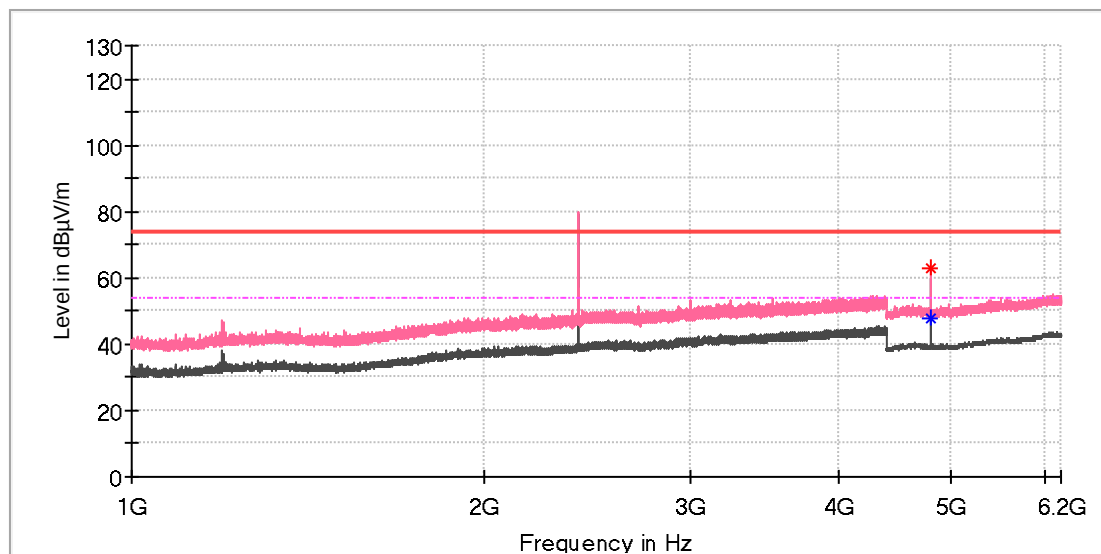
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4803.500000	70.14	---	74.00	3.86	100.0	H	158.0	11.8
4805.500000	---	50.78	54.00	3.22	100.0	H	151.0	11.8

Final_Result

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

EUT Information

EUT Name:	ZG CHAIR
Model:	CIRCA
Test Mode:	BLE 1M_Low channel
Order No/Sample No:	168394818/A003388414-002
Test Voltage::	DC 5V From USB
Remark:	Temp 22 Humi:52%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

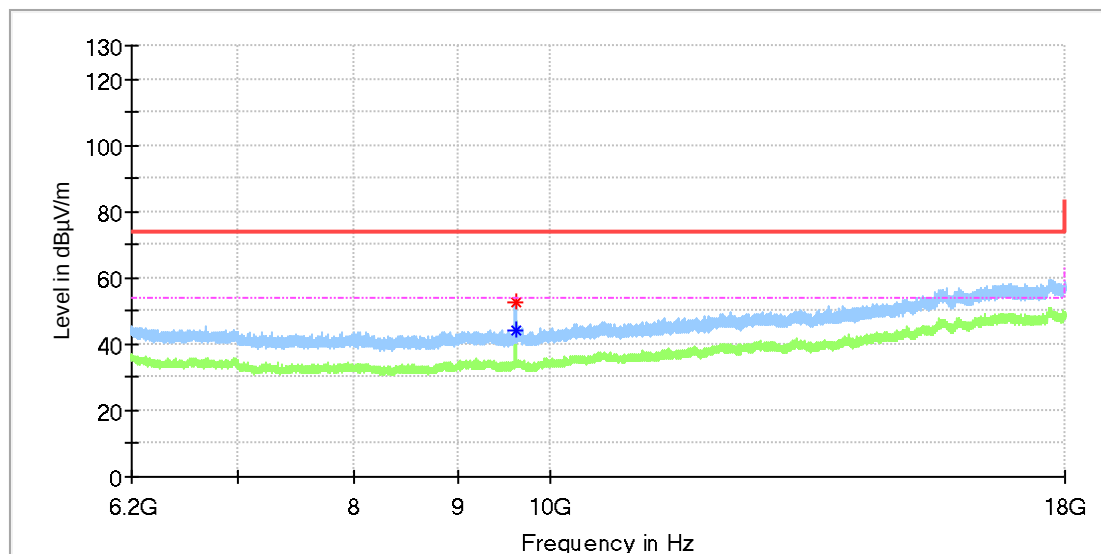
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4802.500000	---	47.47	54.00	6.53	100.0	V	46.0	11.8
4803.500000	62.93	---	74.00	11.07	100.0	V	46.0	11.8

Final Result

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

EUT Information

EUT Name:	ZG CHAIR
Model:	CIRCA
Test Mode:	BLE 1M_Low channel
Order No/Sample No:	168394818/A003388414-002
Test Voltage::	DC 5V From USB
Remark:	Temp 22 Humi:52%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

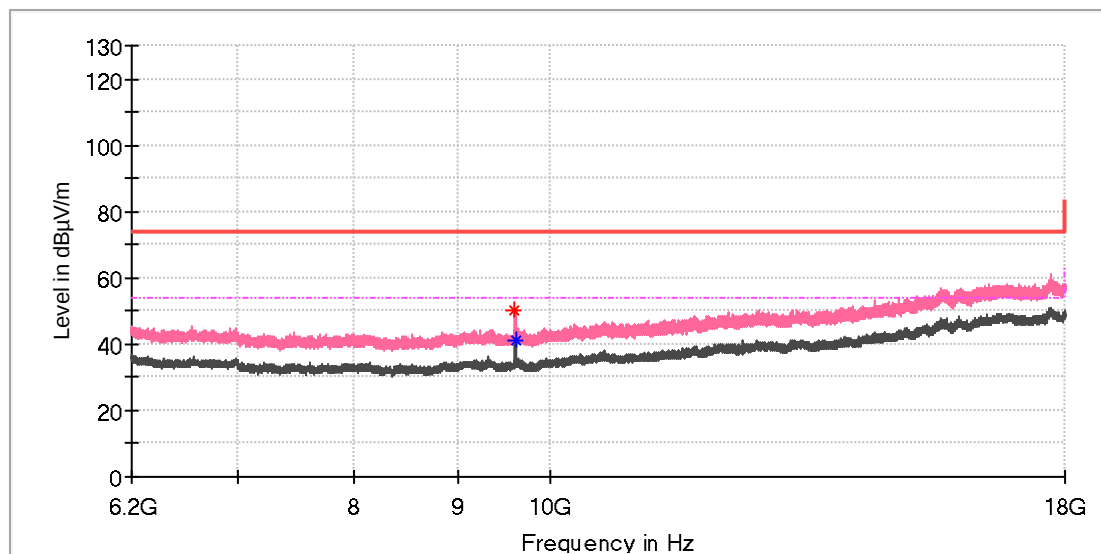
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
9607.741667	---	43.92	54.00	10.08	100.0	H	117.0	10.4
9609.216667	52.31	---	74.00	21.69	100.0	H	117.0	10.4

Final Result

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

EUT Information

EUT Name:	ZG CHAIR
Model:	CIRCA
Test Mode:	BLE 1M_Low channel
Order No/Sample No:	168394818/A003388414-002
Test Voltage::	DC 5V From USB
Remark:	Temp 22 Humi:52%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

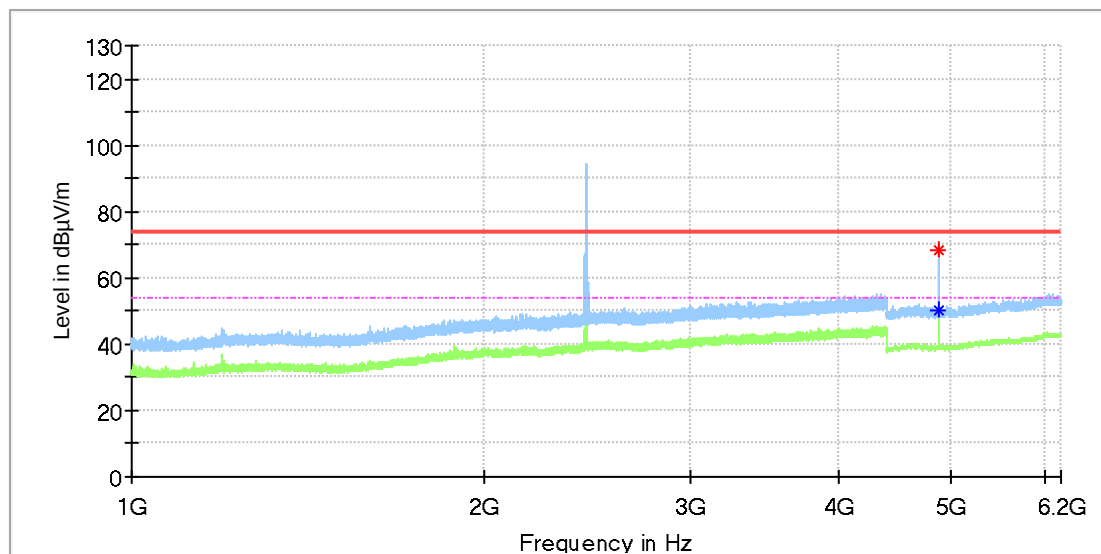
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
9607.250000	50.48	---	74.00	23.52	100.0	V	91.0	10.4
9608.233333	---	41.41	54.00	12.59	100.0	V	80.0	10.4

Final Result

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

EUT Information

EUT Name:	ZG CHAIR
Model:	CIRCA
Test Mode:	BLE 1M_Mid channel
Order No/Sample No:	168394818/A003388414-002
Test Voltage::	DC 5V From USB
Remark:	Temp 22 Humi:52%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

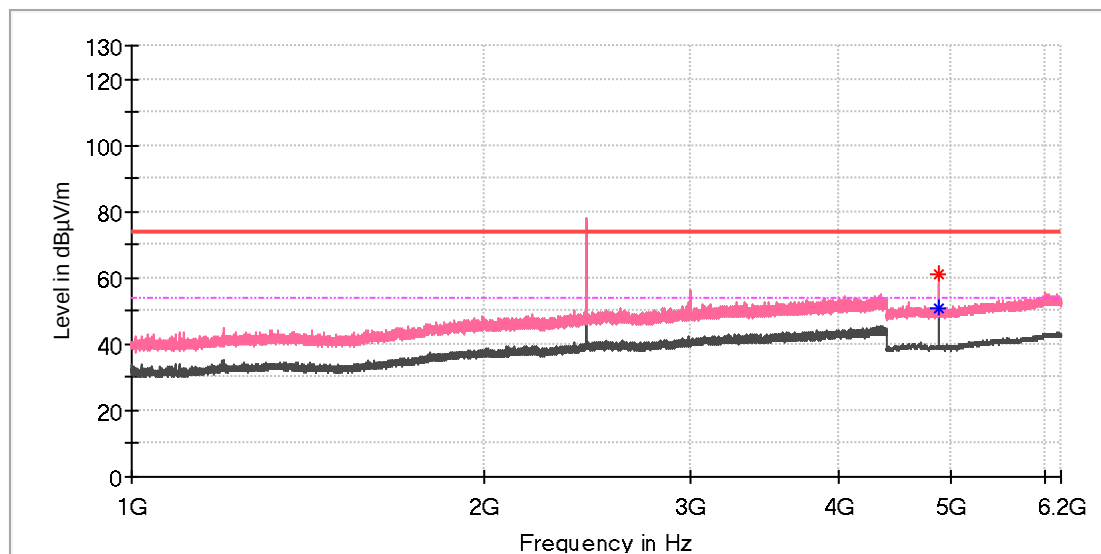
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4879.500000	68.38	---	74.00	5.62	100.0	H	152.0	11.8
4881.500000	---	49.99	54.00	4.01	100.0	H	143.0	11.8

Final Result

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

EUT Information

EUT Name:	ZG CHAIR
Model:	CIRCA
Test Mode:	BLE 1M_Mid channel
Order No/Sample No:	168394818/A003388414-002
Test Voltage::	DC 5V From USB
Remark:	Temp 22 Humi:52%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

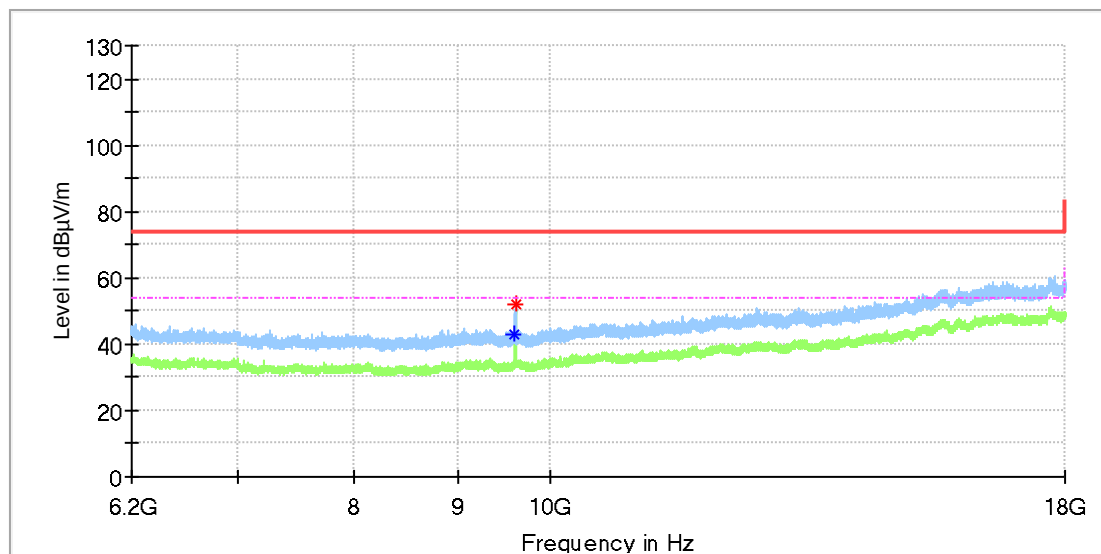
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4879.500000	61.26	---	74.00	12.74	100.0	V	289.0	11.8
4881.000000	---	50.71	54.00	3.29	100.0	V	289.0	11.8

Final Result

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

EUT Information

EUT Name: ZG CHAIR
Model: CIRCA
Test Mode: BLE 1M_Mid channel
Order No/Sample No: 168394818/A003388414-002
Test Voltage:: DC 5V From USB
Remark: Temp 22 Humi:52%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

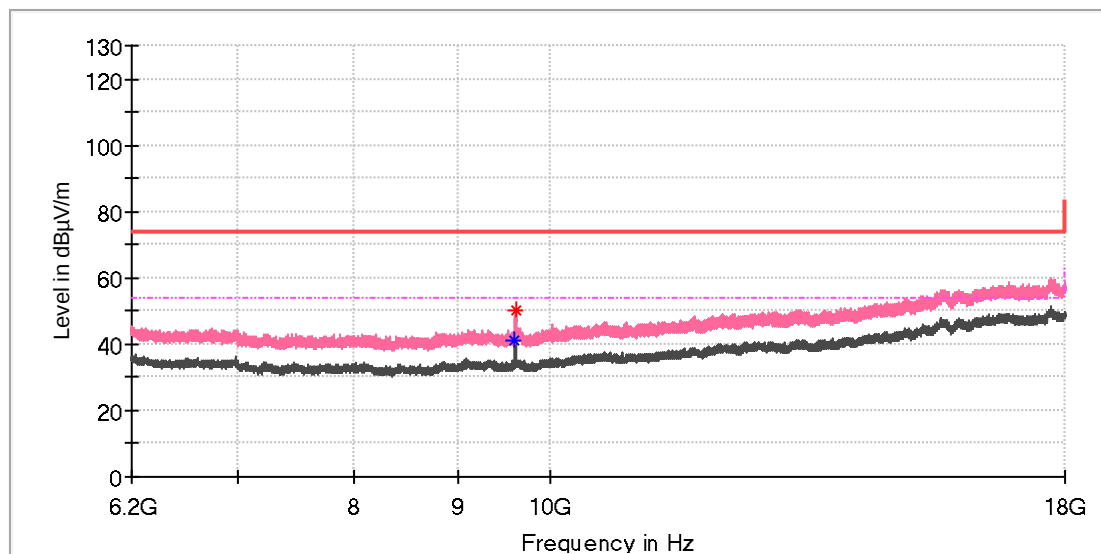
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
9607.250000	---	43.12	54.00	10.88	100.0	H	115.0	10.4
9608.233333	51.82	---	74.00	22.18	100.0	H	128.0	10.4

Final Result

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

EUT Information

EUT Name:	ZG CHAIR
Model:	CIRCA
Test Mode:	BLE 1M_Mid channel
Order No/Sample No:	168394818/A003388414-002
Test Voltage::	DC 5V From USB
Remark:	Temp 22 Humi:52%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

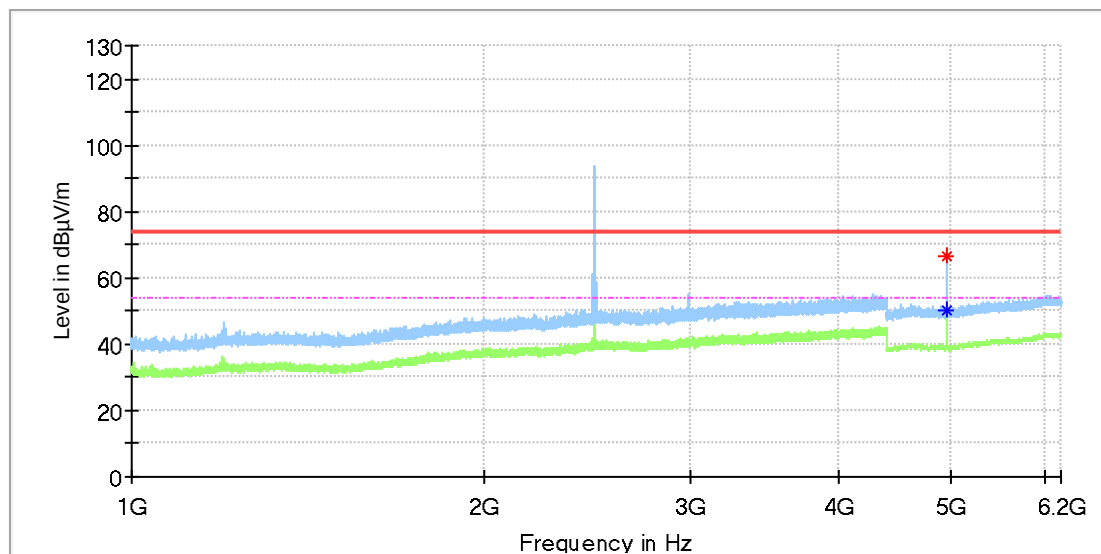
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
9607.250000	---	41.36	54.00	12.64	100.0	V	87.0	10.4
9607.741667	50.01	---	74.00	23.99	100.0	V	87.0	10.4

Final Result

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

EUT Information

EUT Name:	ZG CHAIR
Model:	CIRCA
Test Mode:	BLE 1M_High channel
Order No/Sample No:	168394818/A003388414-002
Test Voltage::	DC 5V From USB
Remark:	Temp 22 Humi:52%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

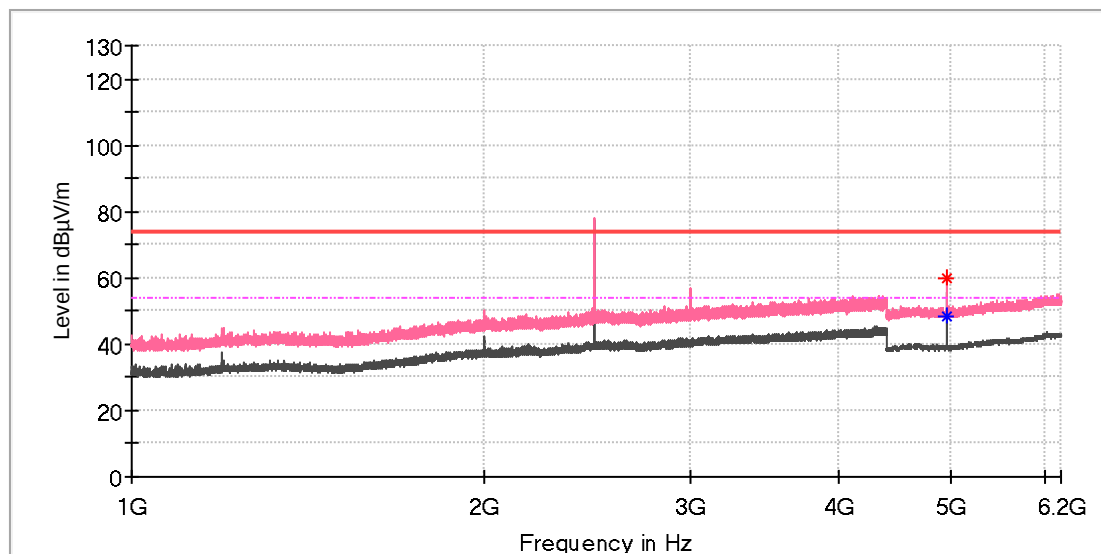
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4958.500000	---	50.47	54.00	3.53	100.0	H	135.0	11.8
4959.500000	66.24	---	74.00	7.76	100.0	H	141.0	11.8

Final Result

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

EUT Information

EUT Name:	ZG CHAIR
Model:	CIRCA
Test Mode:	BLE 1M_High channel
Order No/Sample No:	168394818/A003388414-002
Test Voltage::	DC 5V From USB
Remark:	Temp 22 Humi:52%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

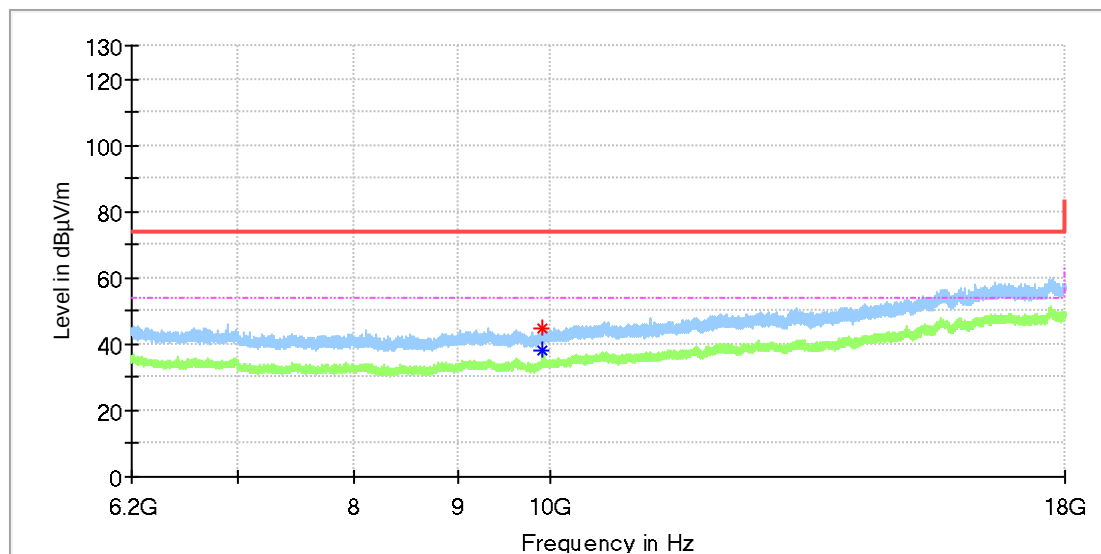
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4960.500000	59.69	---	74.00	14.31	100.0	V	62.0	11.8
4961.000000	---	48.32	54.00	5.68	100.0	V	62.0	11.8

Final Result

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

EUT Information

EUT Name:	ZG CHAIR
Model:	CIRCA
Test Mode:	BLE 1M_High channel
Order No/Sample No:	168394818/A003388414-002
Test Voltage::	DC 5V From USB
Remark:	Temp 22 Humi:52%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

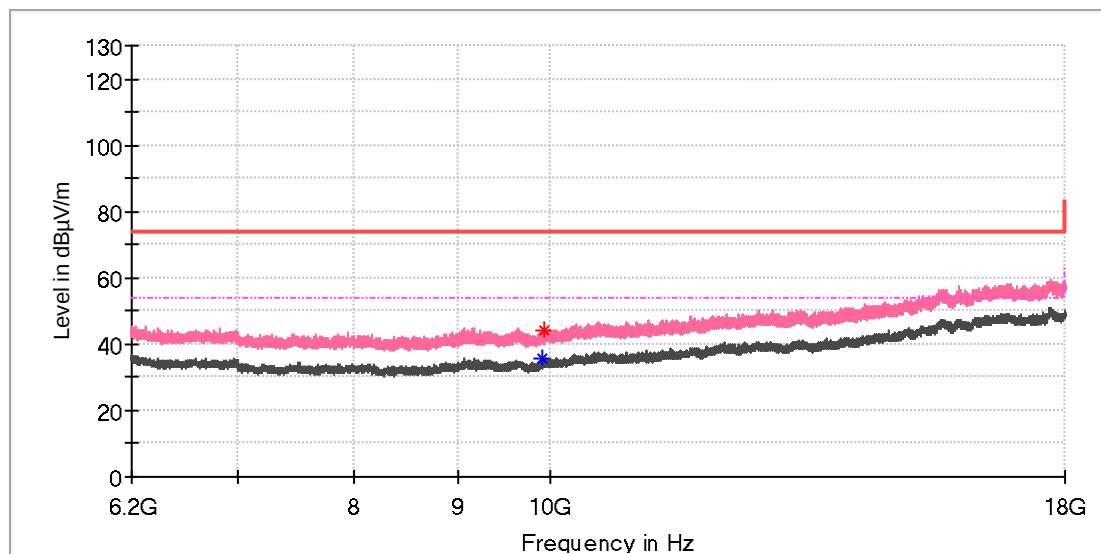
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
9918.966667	44.56	---	74.00	29.44	100.0	H	111.0	10.8
9918.966667	---	37.96	54.00	16.04	100.0	H	111.0	10.8

Final Result

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

EUT Information

EUT Name:	ZG CHAIR
Model:	CIRCA
Test Mode:	BLE 1M_High channel
Order No/Sample No:	168394818/A003388414-002
Test Voltage::	DC 5V From USB
Remark:	Temp 22 Humi:52%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

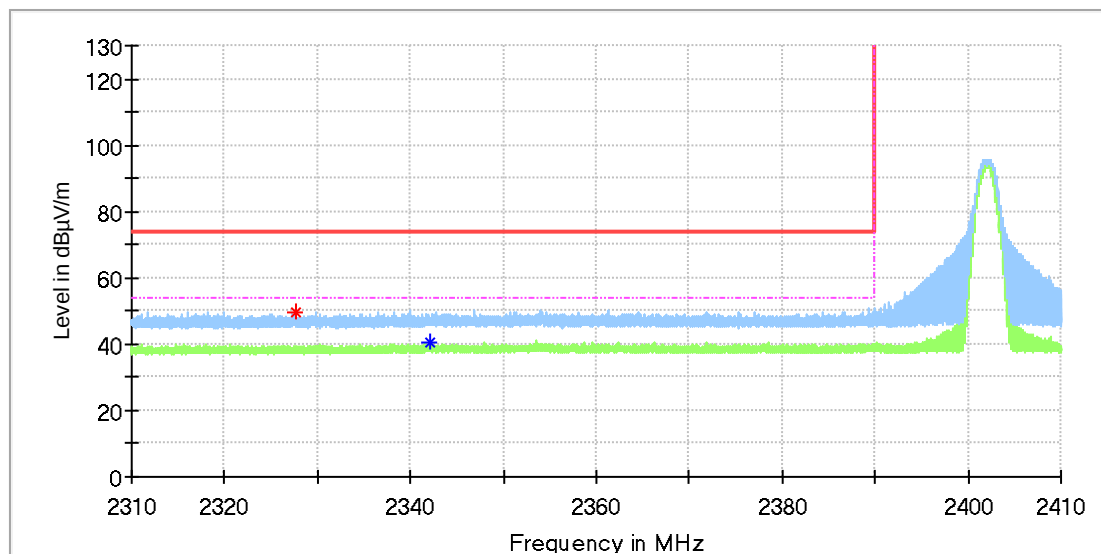
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
9919.458333	---	35.59	54.00	18.41	100.0	V	85.0	10.8
9927.816667	44.07	---	74.00	29.93	100.0	V	24.0	10.9

Final Result

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

EUT Information

EUT Name:	ZG CHAIR
Model:	CIRCA
Test Mode:	BLE 1M_Low channel
Order No/Sample No:	168394818/A003388414-002
Test Voltage::	DC 5V From USB
Remark:	Temp 22 Humi:52%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

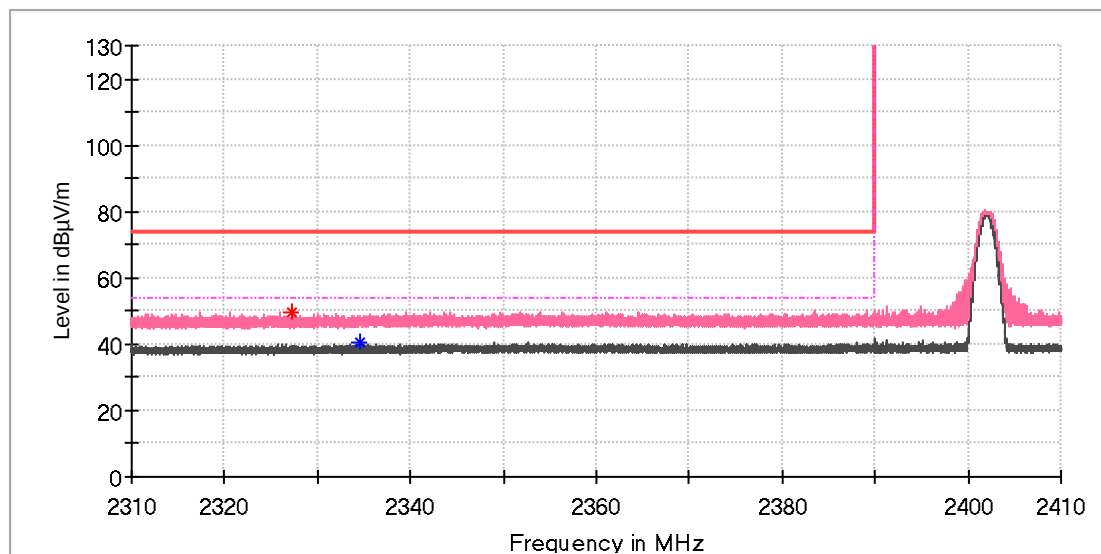
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2327.755000	49.86	---	74.00	24.14	100.0	H	140.0	6.7
2342.125000	---	40.50	54.00	13.50	100.0	H	173.0	6.8

Final Result

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

EUT Information

EUT Name:	ZG CHAIR
Model:	CIRCA
Test Mode:	BLE 1M_Low channel
Order No/Sample No:	168394818/A003388414-002
Test Voltage::	DC 5V From USB
Remark:	Temp 22 Humi:52%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

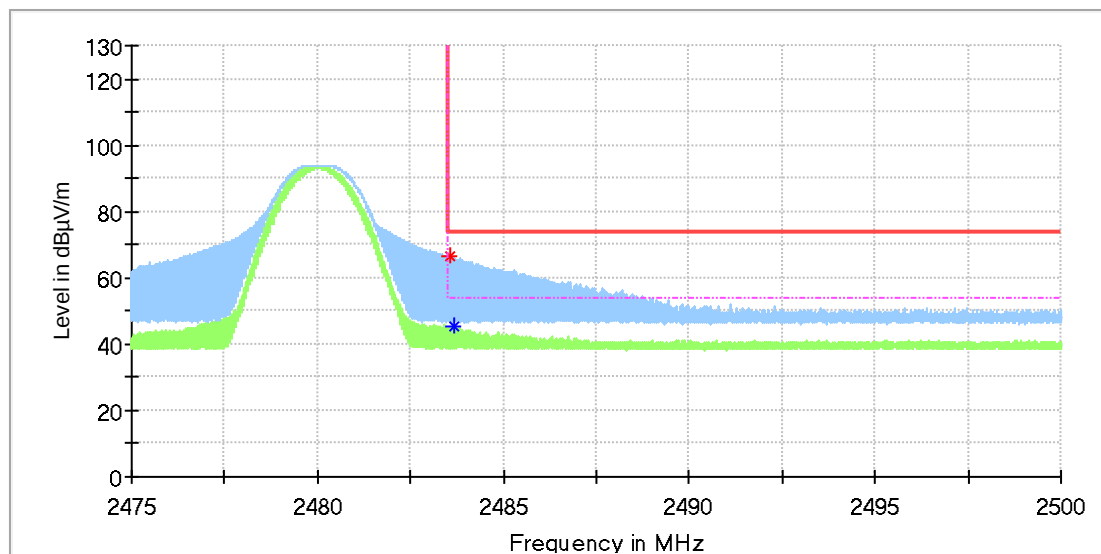
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2327.270000	49.64	---	74.00	24.36	100.0	V	304.0	6.7
2334.620000	---	40.24	54.00	13.76	100.0	V	188.0	6.8

Final Result

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

EUT Information

EUT Name:	ZG CHAIR
Model:	CIRCA
Test Mode:	BLE 1M_High channel
Order No/Sample No:	168394818/A003388414-002
Test Voltage::	DC 5V From USB
Remark:	Temp 22 Humi:52%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

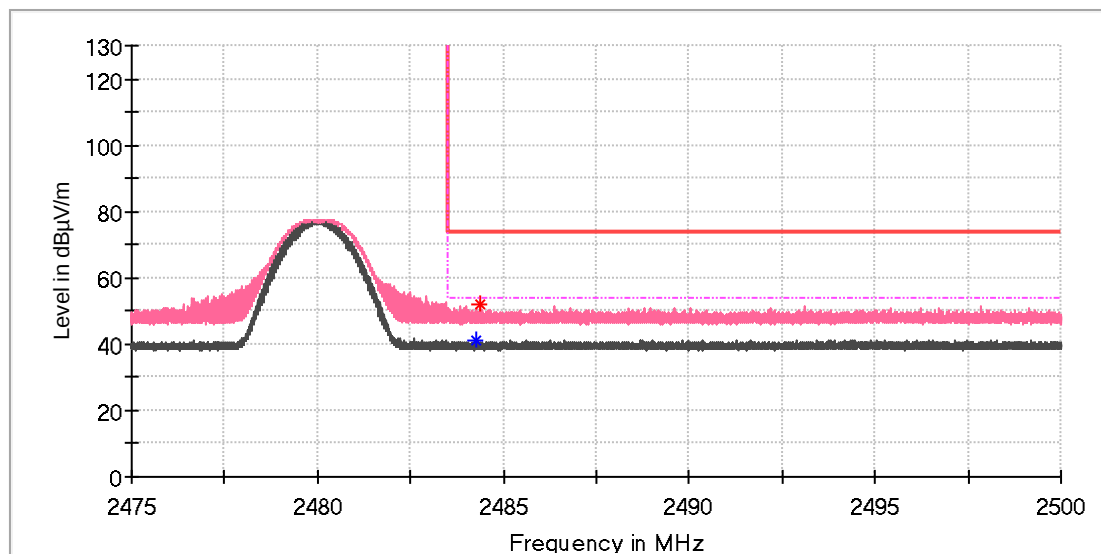
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.543750	66.32	---	74.00	7.68	100.0	H	191.0	7.4
2483.680000	---	45.49	54.00	8.51	100.0	H	202.0	7.4

Final Result

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

EUT Information

EUT Name:	ZG CHAIR
Model:	CIRCA
Test Mode:	BLE 1M_High channel
Order No/Sample No:	168394818/A003388414-002
Test Voltage::	DC 5V From USB
Remark:	Temp 22 Humi:52%
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)
2484.250000	---	41.32	54.00	12.68	100.0	V	49.0	7.4
2484.395000	51.86	---	74.00	22.14	100.0	V	107.0	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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5.1.8 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 : 2022-12-30

Input voltage : AC 120V/60Hz

Operation mode : B

Earthing : Not connected

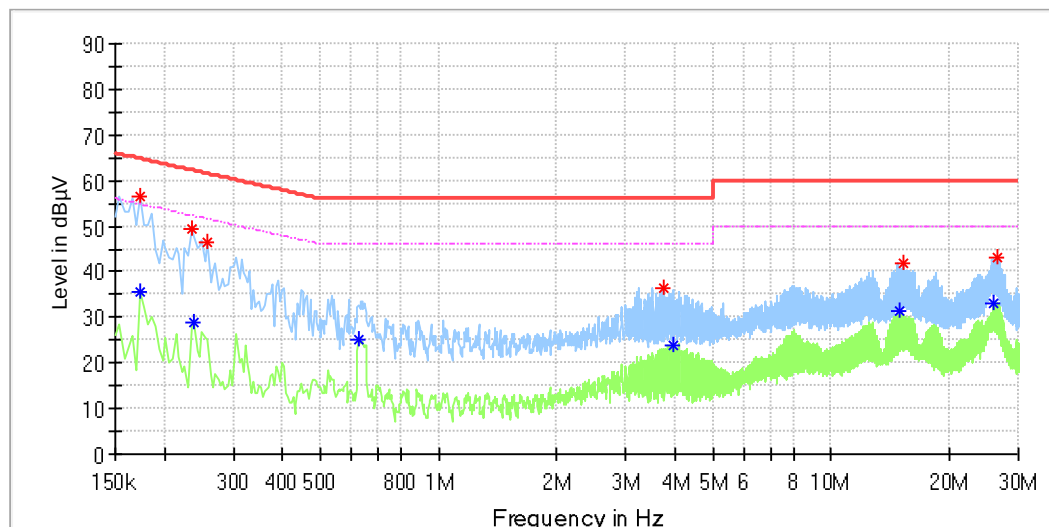
Ambient temperature : 24.55 °C

Relative humidity : 431.2 %

Atmospheric pressure : 101 kPa

EUT Information

EUT Name: ZG CHAIR
 Model: CIRCA
 Test Mode: B
 Test Voltage: AC 120V/60Hz
 Test By./Review By: Eric Guo/Gary Chen
 Test Standard: FCC Part 15
 Tem./Hum./Pressure: 21.5°C/51.2%/101kPa
 Remark: SR2

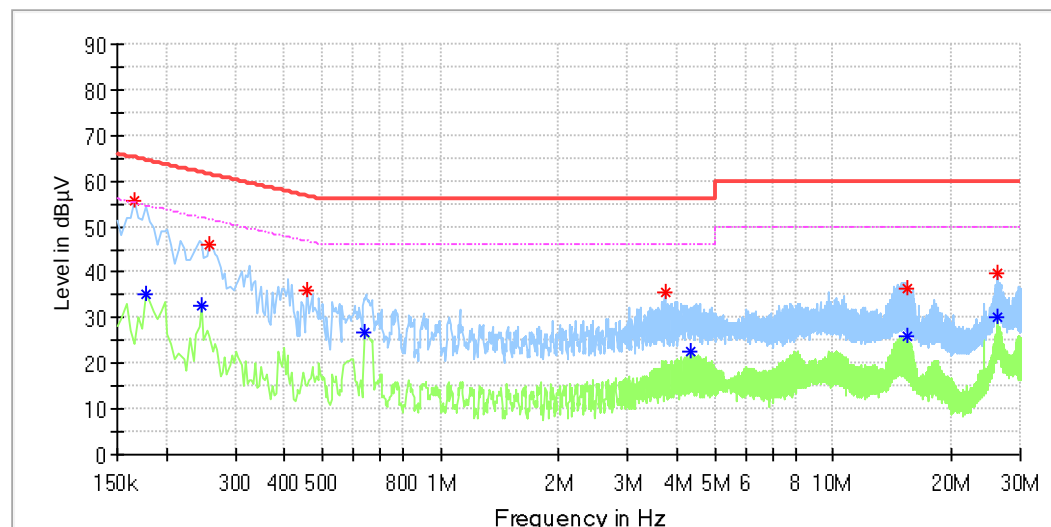


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.174000	56.55	---	64.77	8.22	L1	9.9
0.174000	---	35.43	54.77	19.33	L1	9.9
0.234000	49.31	---	62.31	13.00	L1	9.9
0.238000	---	29.05	52.17	23.12	L1	9.9
0.258000	46.46	---	61.50	15.03	L1	9.9
0.626000	---	25.00	46.00	21.00	L1	10.0
3.726000	36.28	---	56.00	19.72	L1	10.2
3.946000	---	24.02	46.00	21.98	L1	10.2
14.974000	---	31.29	50.00	18.71	L1	10.4
15.350000	41.83	---	60.00	18.17	L1	10.4
25.982000	---	33.19	50.00	16.81	L1	10.4
26.478000	42.97	---	60.00	17.03	L1	10.4

EUT Information

EUT Name: ZG CHAIR
Model: CIRCA
Test Mode: B
Test Voltage: AC 120V/60Hz
Test By./Review By: Eric Guo/Gary Chen
Test Standard: FCC Part 15
Tem./Hum./Pressure: 21.5°C/51.2%/101kPa
Remark: SR2



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.166000	55.54	---	65.16	9.62	N	9.8
0.178000	---	35.20	54.58	19.38	N	9.8
0.246000	---	32.76	51.89	19.13	N	9.8
0.258000	46.01	---	61.50	15.48	N	9.8
0.458000	36.19	---	56.73	20.54	N	9.8
0.642000	---	26.84	46.00	19.16	N	9.8
3.726000	35.46	---	56.00	20.54	N	9.9
4.310000	---	22.46	46.00	23.54	N	9.9
15.434000	---	25.75	50.00	24.25	N	10.1
15.446000	36.40	---	60.00	23.60	N	10.1
26.214000	---	30.21	50.00	19.79	N	10.4
26.214000	39.69	---	60.00	20.31	N	10.4

6 Photographs of the Test Set-Up

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