



## Compliance Certification Services (Kunshan) Inc. Shenzhen Branch

SZCCS-TRF-01 Rev. A/0 Aug01,2022

Report No.: FYCR220900037708

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# TEST REPORT

**Application No.:** FYCR2209000377AT  
**Applicant:** Navico Inc.  
**Address of Applicant:** 4500 S. 129th East Avenue, Ste. 200, Tulsa, Oklahoma, 74134 United States  
**Manufacturer:** Navico Auckland Ltd.  
**Address of Manufacturer:** 44 Arrenway Drive, Rosedale, Auckland 0632, New Zealand  
**Factory:** Shenzhen Fastrain Technology Co., Ltd.  
**Address of Factory:** No.3 Baolong 4th Rd., Baolong Industrial Area, Longgang District, Shenzhen, China  
**Equipment Under Test (EUT):**  
**EUT Name:** MARINE BLACK BOX DSC/AIS VHF RADIO SYSTEM  
**Model No.:** NRS-2  
**Trade mark:** NAVICO  
**FCC ID:** RAYVHFNR2  
**Standard(s) :** 47 CFR Part 15, Subpart C 15.247  
**Date of Receipt:** 2022-09-21  
**Date of Test:** 2022-11-07 to 2022-11-22  
**Date of Issue:** 2022-11-30

<b>Test Result:</b>	<b>Pass*</b>
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\* In the configuration tested, the EUT complied with the standards specified above.

*Winkey Wang*

Winkey Wang  
EMC Technical Manager



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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2022-11-30		Original

Authorized for issue by:				
		Tree Zhan		
		Tree Zhan/Project Engineer		
		Winkey Wang		
		Winkey Wang/Reviewer		



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## 2 Test Summary

Radio Spectrum Technical Requirement				
Item	Standard	Method	Requirement	Result
Antenna Requirement	47 CFR Part 15, Subpart C 15.247	N/A	47 CFR Part 15, Subpart C 15.203 & 15.247(b)(4)	Pass

Radio Spectrum Matter Part				
Item	Standard	Method	Requirement	Result
Radiated Emissions which fall in the restricted bands	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.10.5	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass
Radiated Spurious Emissions Below 1GHz		ANSI C63.10 (2013) Section 6.4,6.5	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass
Radiated Spurious Emissions Above 1GHz		ANSI C63.10 (2013) Section 6.6	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass

Remark:

Model No.: NRS-2

This report is prepared for FCC class II permissive change.

The modular approval by TCB, FCC ID:RAYVHFNRS2, Granted on 12/01/2020.

According to the declaration from the applicant, review this report and original report, this report just replaces the MCU, but the specification is the same as previous, the models in this report and models in original report were identical, only difference with being the supplier of the MCU, considering to the difference, pre-scan were performed on the sample in this report to find the items which can be influential to the result in the original test report for fully retest.

Therefore in this report, the test items in the above table were fully retested on Model NRS-2 and shown the data in this report.



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## Compliance Certification Services (Kunshan) Inc. Shenzhen Branch

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## 4 General Information

### 4.1 Details of E.U.T.

Power supply:	DC 12V
Cable:	DC cable: longer than 300cm unshielded
Sample Type:	Mobile device
Transmitter Frequency Range:	2412MHz-2462MHz
Modulation Type:	802.11b: DSSS(CCK, DQPSK, DBPSK) 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK) 802.11n(HT20): OFDM (BPSK, QPSK, 16QAM, 64QAM)
Frequency Spacing:	5MHz
Channel Numbers:	11 Channels
WiFi Antenna Type:	External
WiFi Antenna Gain:	5.3dBi

Remark: The information in this section is provided by the applicant or manufacturer, CCS is not liable to the accuracy, suitability, reliability or/and integrity of the information.

### 4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
DC power	ZHAOXIN	RXN-305D	REF. No.SEA2700
Coaxial Attenuator	Provided by client	TS4	HYT168793
Wired Handset	SIMRAD	HS100	/

### 4.3 Measurement Uncertainty

Test Item	Measurement Uncertainty
Radiated Emissions which fall in the restricted bands	± 4.4dB (Above 1GHz)
Radiated Spurious Emissions Below 1GHz	± 3.1dB (Below 1GHz)
Radiated Spurious Emissions Above 1GHz	± 4.4dB (Above 1GHz)



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### 4.4 Test Location

All tests were performed at:

Compliance Certification Services (Kunshan) Inc. Shenzhen branch.

Fuyong lab. Xinlong TechnoPark, Fengtang Road, Fuyong Subdistrict, Bao'an, Shenzhen, China

Tel: +86 755 8866 3988 Fax: +86 755 2671 0594

No tests were sub-contracted.

### 4.5 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

#### • A2LA (Certificate No. 6606.01)

Compliance Certification Services (Kunshan) Inc. Shenzhen branch is accredited by the American Association for Laboratory Accreditation (A2LA). Certificate No. 6606.01.

#### • FCC –Designation Number: CN1322

Compliance Certification Services (Kunshan) Inc. Shenzhen branch has been recognized as an accredited testing laboratory.

Designation Number: CN1322. Test Firm Registration Number: 718073

#### • Innovation, Science and Economic Development Canada

Compliance Certification Services (Kunshan) Inc. Shenzhen branch has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0129.

IC#: 28189.

### 4.6 Deviation from Standards

None

### 4.7 Abnormalities from Standard Conditions

None



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### 5 Equipment List

Radiated Emissions which fall in the restricted bands					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
3m Anechoic Chamber	CRT	N/A	SEM001-13	2021/7/13	2024/7/12
Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	SEM003-15	2021/7/11	2024/7/10
Broad-Band Horn Antenna	Schwarzbeck	BBHA 9120D	SEM003-32	2021/9/26	2024/9/25
MXA Signal Analyzer	KEYSIGHT	N9020A	SEM004-23	2022/4/24	2023/4/23
Pre-amplifier	Compliance Directions Systems Inc.	PAP-2640-50	SEM005-08	2022/7/12	2023/7/11
Pre-amplifier	Rohde & Schwarz	CH14-H052	SEM005-17	2022/7/12	2023/7/11
Coaxial Cable	CCS	N/A	SEM035-02	2022/5/16	2023/5/15
Coaxial Cable	CCS	N/A	SEM035-03	2022/5/16	2023/5/15
Pre-amplifier	TST PASS	LNA04080G30	SEM005-27	2022/4/15	2023/4/14
Pre-amplifier	TST PASS	LNA10180G45	SEM005-28	2022/4/15	2023/4/14
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A

Radiated Spurious Emissions Below 1GHz					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
3m Anechoic Chamber	CRT	N/A	SEM001-13	2021/7/13	2024/7/12
Trilog-Broadband Antenna	Schwarzbeck	VULB9168	SEM003-33	2021/9/25	2024/9/24
MXE EMI receiver	Agilent	N9038A	SEM004-05	2022/7/12	2023/7/11
Pre-amplifier	HP	8447D	SEM005-02	2022/7/12	2023/7/11
Coaxial Cable	CCS	N/A	SEM035-01	2022/5/16	2023/5/15
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Loop Antenna(9kHz-30MHz)	ETS-LINDGREN	6502	SEM003-08	2021/11/30	2023/11/29



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Radiated Spurious Emissions Above 1GHz					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
3m Anechoic Chamber	CRT	N/A	SEM001-13	2021/7/13	2024/7/12
Broad-Band Horn Antenna	Schwarzbeck	BBHA 9120D	SEM003-32	2021/9/26	2024/9/25
MXA Signal Analyzer	KEYSIGHT	N9020A	SEM004-23	2022/4/24	2023/4/23
Coaxial Cable	CCS	N/A	SEM035-03	2022/5/16	2023/5/15
Pre-amplifier	TST PASS	LNA04080G30	SEM005-27	2022/4/15	2023/4/14
Pre-amplifier	TST PASS	LNA10180G45	SEM005-28	2022/4/15	2023/4/14
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A

General used equipment					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Humidity/ Temperature Indicator	Mingle	TH607	SEM002-22	2022-07-12	2023-07-11
Humidity/ Temperature Indicator	Mingle	TH607	SEM002-23	2022-07-12	2023-07-11
Barometer	DUMAI	DYM3	SEM002-24	2022-07-12	2023-07-11



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## 6 Radio Spectrum Technical Requirement

### 6.1 Antenna Requirement

#### 6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203 & 15.247(b)(4)

#### 6.1.2 Conclusion

Standard Requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

15.247(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

EUT Antenna:

The 212860's WiFi antenna is an external antenna connected to the module's antenna port via an RF cable. The best case gain of the antenna is 5.3dBi.

Antenna location: Refer to external photo.



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## 7 Radio Spectrum Matter Test Results

### 7.1 Radiated Emissions which fall in the restricted bands

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10 (2013) Section 6.10.5

Measurement Distance: 3m

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

#### 7.1.1 E.U.T. Operation

Operating Environment:

Temperature: 22.2 °C

Humidity: 55.5 % RH

Atmospheric Pressure: 1020 mbar

#### 7.1.2 Test Mode Description

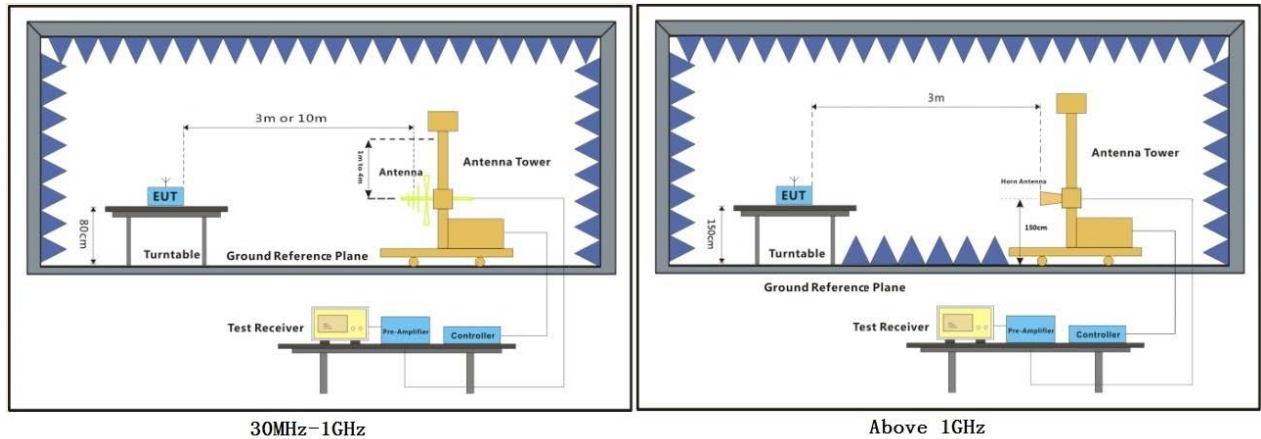
Pre-scan / Final test	Mode Code	Description
Final test	18	TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.



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### 7.1.3 Test Setup Diagram



### 7.1.4 Measurement Procedure and Data

- For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
- Test the EUT in the lowest channel, the middle channel, the Highest channel.
- The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- Repeat above procedures until all frequencies measured was complete.

Remark 1: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

Remark 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.



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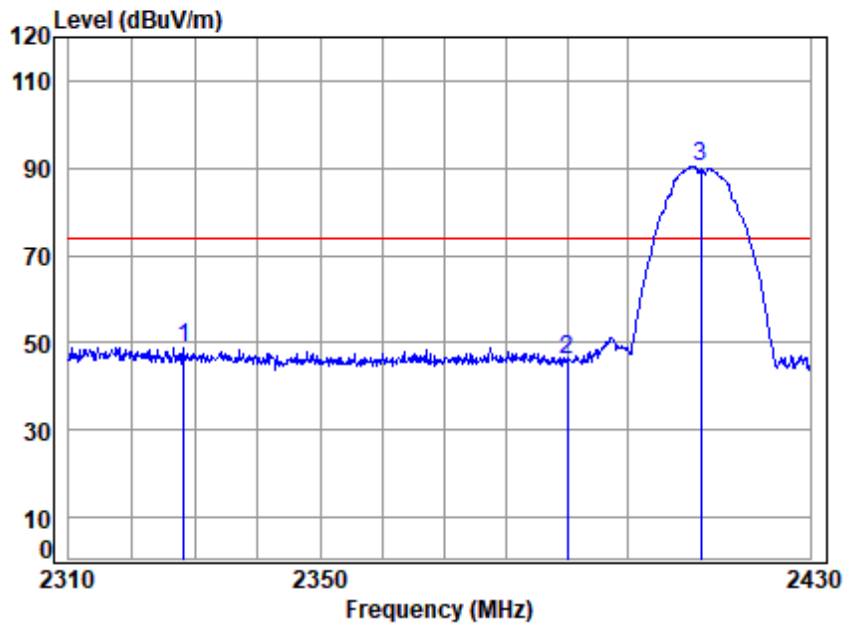
## Compliance Certification Services (Kunshan) Inc. Shenzhen Branch

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Test Mode: 18; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:Low



Site : chamber  
Condition: 3m HORIZONTAL  
Job No : 00377AT  
Mode : 2412 Band edge  
Note : 2.4G WIFI 11B

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2328.322	5.01	27.02	32.50	49.46	48.99	74.00	-25.01	peak
2	2390.000	5.05	27.16	32.50	46.54	46.25	74.00	-27.75	peak
3	2412.000	5.07	27.21	32.50	90.45	90.23	74.00	16.23	peak



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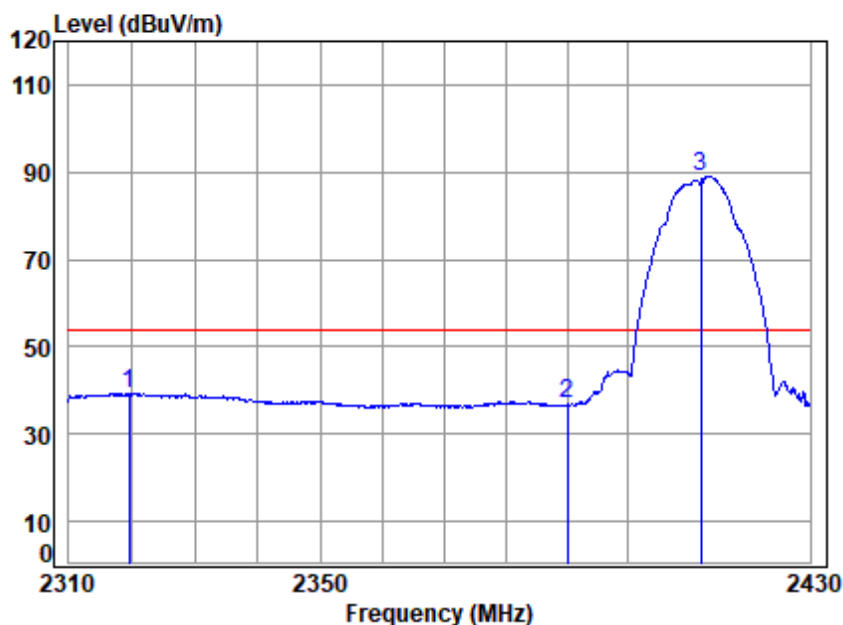
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Test Mode: 18; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:Low



Site : chamber  
Condition: 3m HORIZONTAL  
Job No : 00377AT  
Mode : 2412 Band edge  
Note : 2.4G WIFI 11B

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2319.495	5.00	27.00	32.50	39.79	39.29	54.00	-14.71	Average
2	2390.000	5.05	27.16	32.50	37.05	36.76	54.00	-17.24	Average
3	2412.000	5.07	27.21	32.50	89.34	89.12	54.00	35.12	Average



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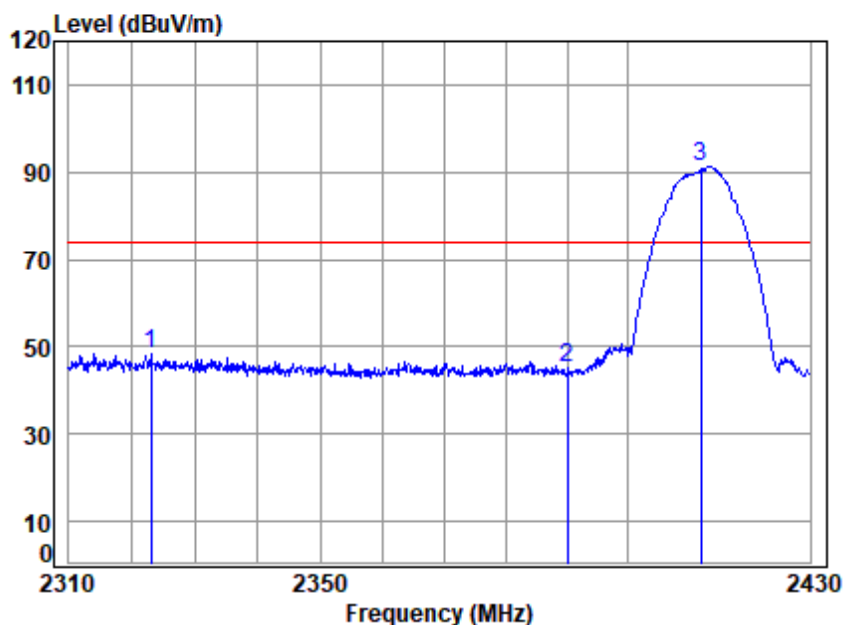
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Test Mode: 18; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:Low



Site : chamber  
Condition: 3m VERTICAL  
Job No : 00377AT  
Mode : 2412 Band edge  
Note : 2.4G WIFI 11B

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2323.022	5.00	27.01	32.50	48.90	48.41	74.00	-25.59	Peak
2	2390.000	5.05	27.16	32.50	45.57	45.28	74.00	-28.72	Peak
3	2412.000	5.07	27.21	32.50	91.63	91.41	74.00	17.41	Peak



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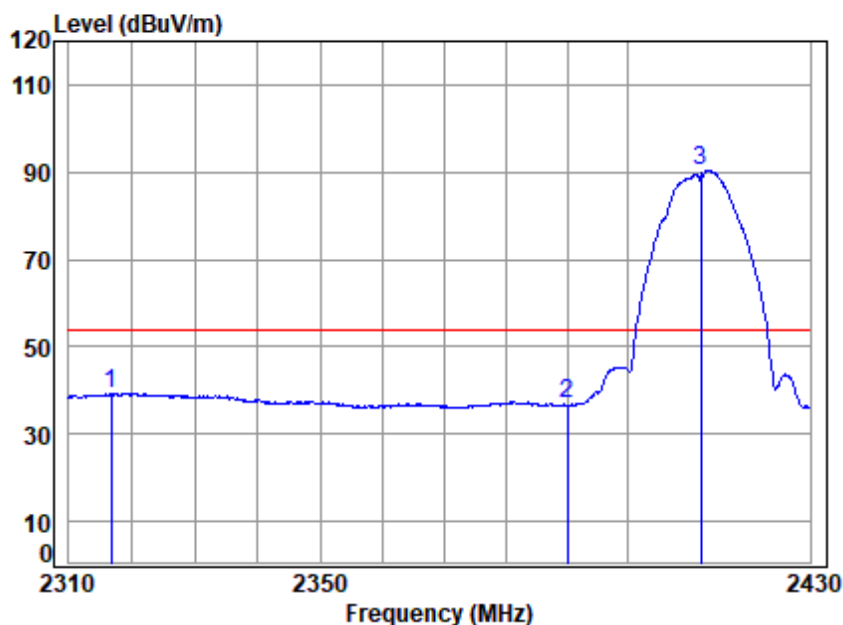
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Test Mode: 18; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:Low



Site : chamber  
Condition: 3m VERTICAL  
Job No : 00377AT  
Mode : 2412 Band edge  
Note : 2.4G WIFI 11B

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2316.678	5.00	26.99	32.50	39.92	39.41	54.00	-14.59	Average
2	2390.000	5.05	27.16	32.50	37.36	37.07	54.00	-16.93	Average
3	2412.000	5.07	27.21	32.50	90.58	90.36	54.00	36.36	Average



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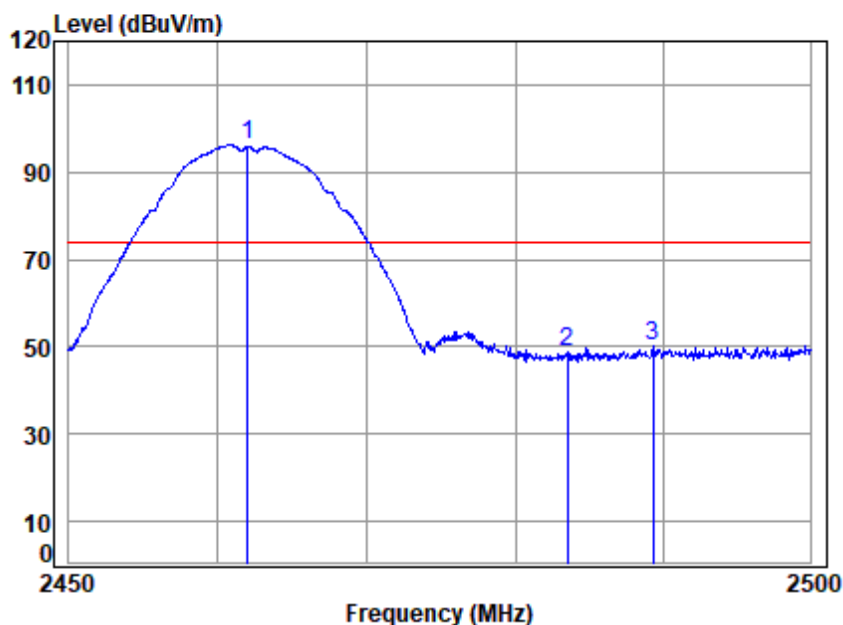
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Test Mode: 18; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:High



Site : chamber  
Condition: 3m HORIZONTAL  
Job No : 00377AT  
Mode : 2462 Band edge  
Note : 2.4G WIFI 11B

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2462.000	5.10	27.32	32.50	96.24	96.16	74.00	22.16	peak
2	2483.500	5.12	27.36	32.50	48.80	48.78	74.00	-25.22	peak
3	2489.315	5.12	27.38	32.50	50.13	50.13	74.00	-23.87	peak



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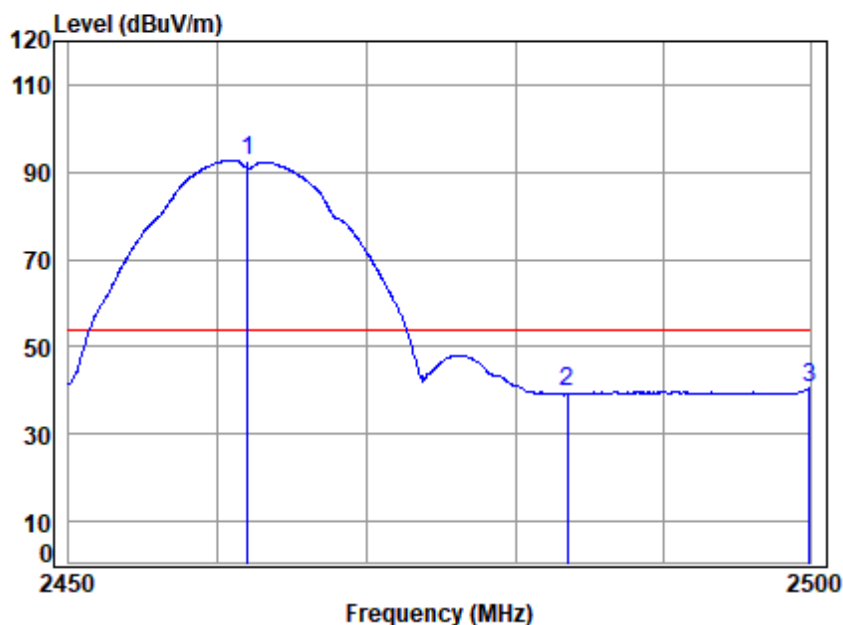
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Test Mode: 18; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:High



Site : chamber  
Condition: 3m HORIZONTAL  
Job No : 00377AT  
Mode : 2462 Band edge  
Note : 2.4G WIFI 11B

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2462.000	5.10	27.32	32.50	92.85	92.77	54.00	38.77	Average
2	2483.500	5.12	27.36	32.50	39.53	39.51	54.00	-14.49	Average
3	2499.949	5.13	27.40	32.50	40.36	40.39	54.00	-13.61	Average



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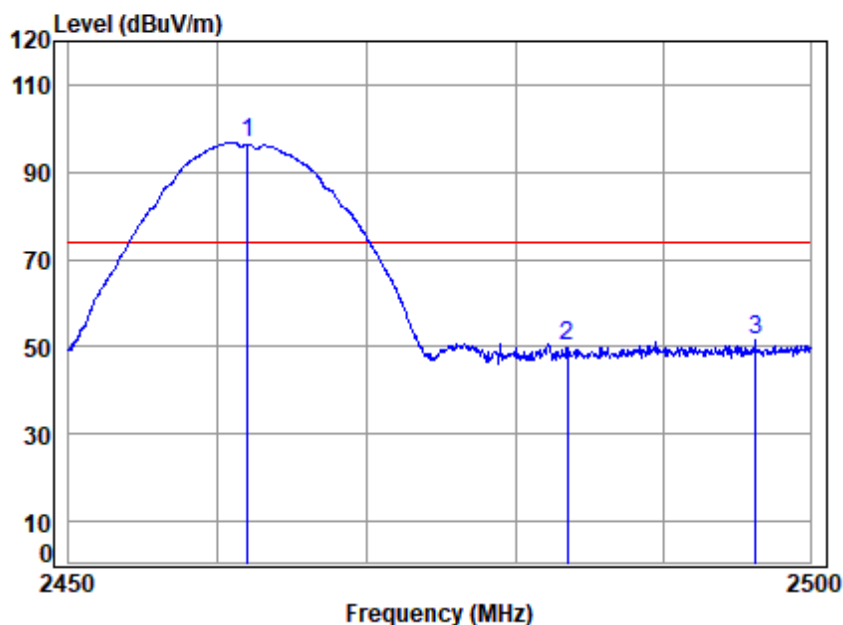
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Test Mode: 18; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:High



Site : chamber  
Condition: 3m VERTICAL  
Job No : 00377AT  
Mode : 2462 Band edge  
Note : 2.4G WIFI 11B

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2462.000	5.10	27.32	32.50	96.88	96.80	74.00	22.80	Peak
2	2483.500	5.12	27.36	32.50	50.34	50.32	74.00	-23.68	Peak
3	2496.265	5.13	27.39	32.50	51.67	51.69	74.00	-22.31	Peak



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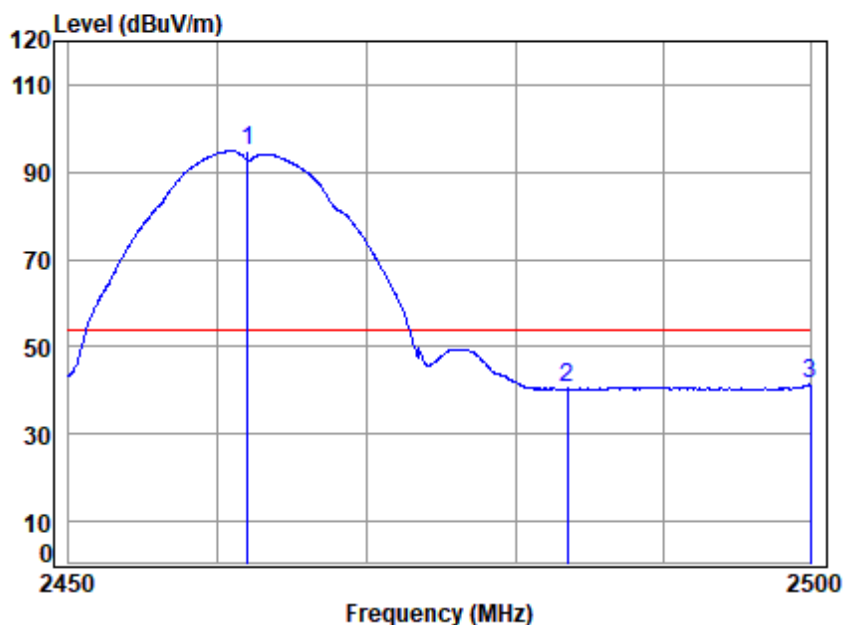
## Compliance Certification Services (Kunshan) Inc. Shenzhen Branch

SZCCS-TRF-01 Rev. A/0 Aug01,2022

Report No.: FYCR220900037708

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Test Mode: 18; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:High



Site : chamber  
Condition: 3m VERTICAL  
Job No : 00377AT  
Mode : 2462 Band edge  
Note : 2.4G WIFI 11B

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2462.000	5.10	27.32	32.50	94.92	94.84	54.00	40.84	Average
2	2483.500	5.12	27.36	32.50	40.51	40.49	54.00	-13.51	Average
3	2500.000	5.13	27.40	32.50	41.32	41.35	54.00	-12.65	Average



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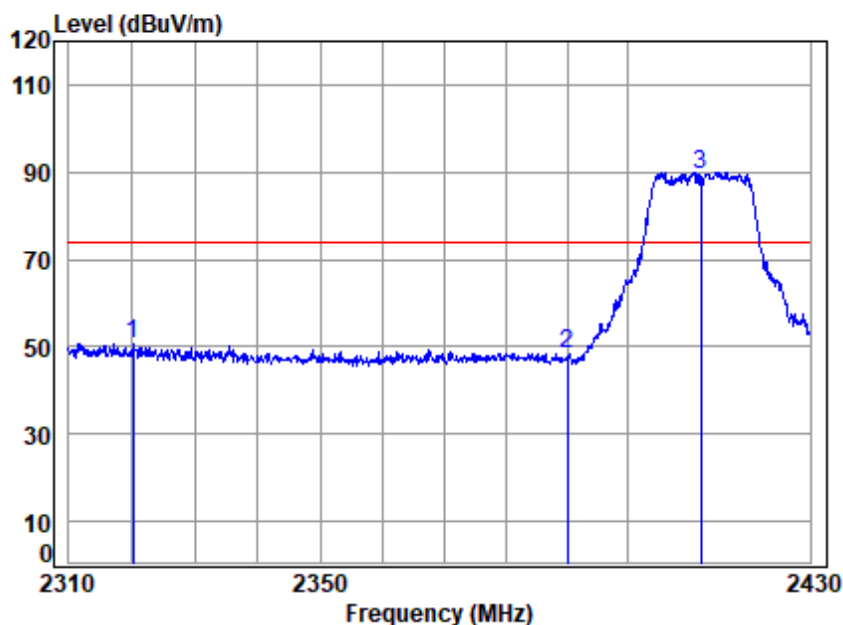
## Compliance Certification Services (Kunshan) Inc. Shenzhen Branch

SZCCS-TRF-01 Rev. A/0 Aug01,2022

Report No.: FYCR220900037708

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Test Mode: 18; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:Low



Site : chamber  
Condition: 3m HORIZONTAL  
Job No : 00377AT  
Mode : 2412 Band edge  
Note : 2.4G WIFI 11G

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2320.200	5.00	27.00	32.50	51.30	50.80	74.00	-23.20	peak
2	2390.000	5.05	27.16	32.50	48.75	48.46	74.00	-25.54	peak
3	2412.000	5.07	27.21	32.50	89.87	89.65	74.00	15.65	peak



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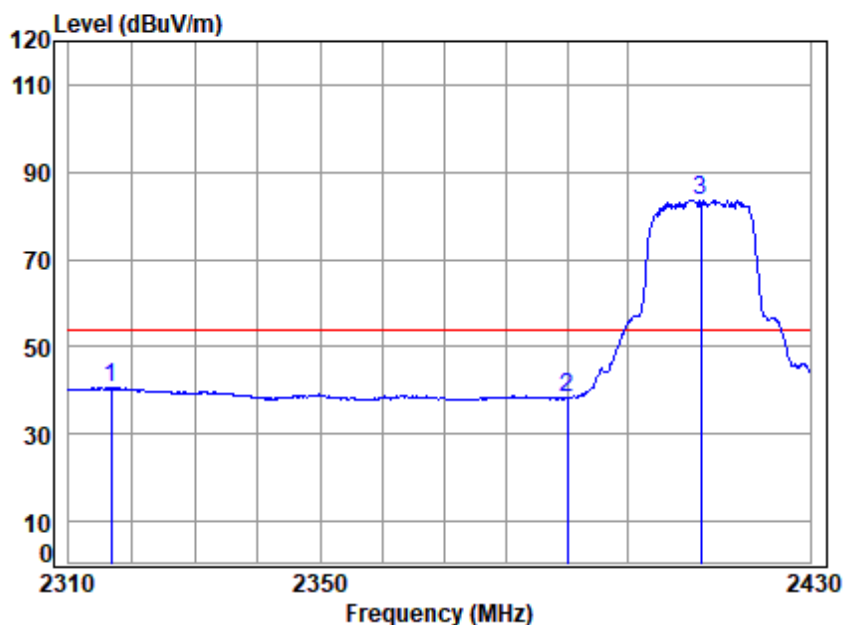
## Compliance Certification Services (Kunshan) Inc. Shenzhen Branch

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Report No.: FYCR220900037708

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Test Mode: 18; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:Low



Site : chamber  
Condition: 3m HORIZONTAL  
Job No : 00377AT  
Mode : 2412 Band edge  
Note : 2.4G WIFI 11G

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2316.678	5.00	26.99	32.50	41.28	40.77	54.00	-13.23	Average
2	2390.000	5.05	27.16	32.50	38.79	38.50	54.00	-15.50	Average
3	2412.000	5.07	27.21	32.50	83.77	83.55	54.00	29.55	Average



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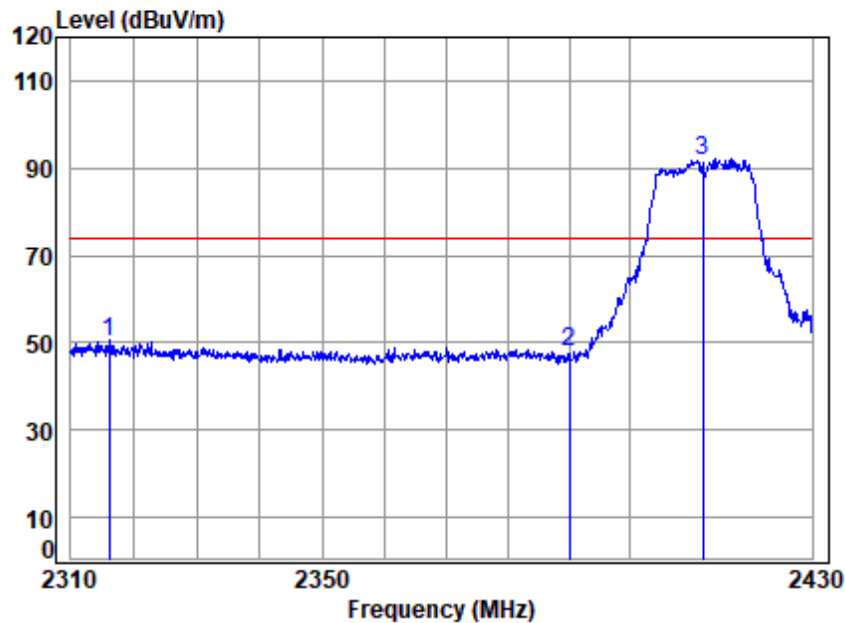
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Report No.: FYCR220900037708

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Test Mode: 18; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:Low



Site : chamber  
Condition: 3m VERTICAL  
Job No : 00377AT  
Mode : 2412 Band edge  
Note : 2.4G WIFI 11G

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2316.091	5.00	26.99	32.50	50.61	50.10	74.00	-23.90	Peak
2	2390.000	5.05	27.16	32.50	47.99	47.70	74.00	-26.30	Peak
3	2412.000	5.07	27.21	32.50	91.94	91.72	74.00	17.72	Peak



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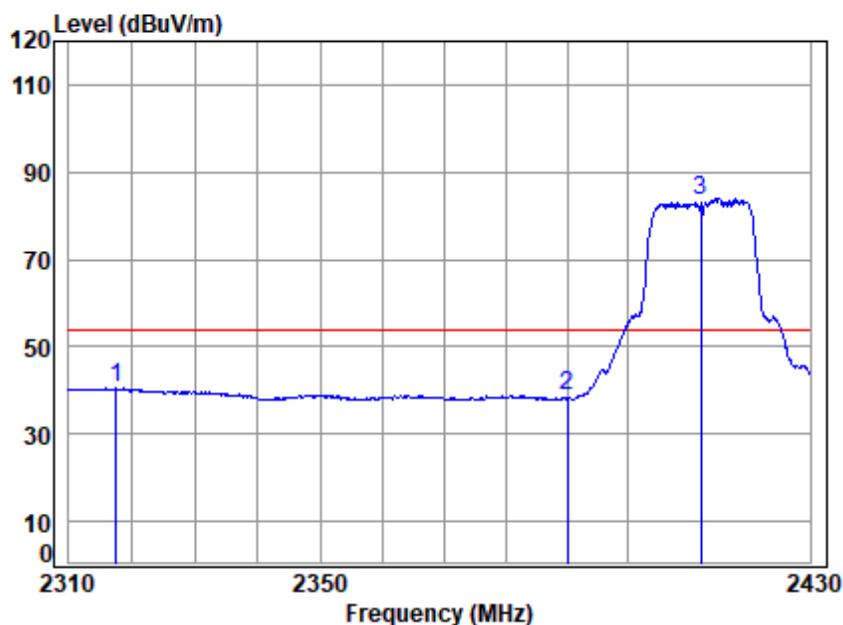
## Compliance Certification Services (Kunshan) Inc. Shenzhen Branch

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Report No.: FYCR220900037708

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Test Mode: 18; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:Low



Site : chamber  
Condition: 3m VERTICAL  
Job No : 00377AT  
Mode : 2412 Band edge  
Note : 2.4G WIFI 11G

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2317.499	5.00	26.99	32.50	41.27	40.76	54.00	-13.24	Average
2	2390.000	5.05	27.16	32.50	39.02	38.73	54.00	-15.27	Average
3	2412.000	5.07	27.21	32.50	83.82	83.60	54.00	29.60	Average



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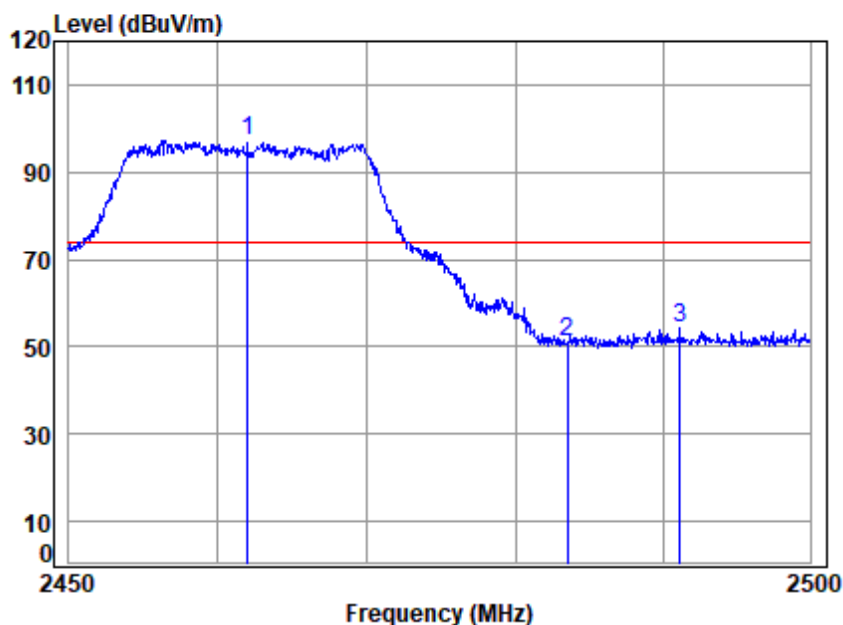
## Compliance Certification Services (Kunshan) Inc. Shenzhen Branch

SZCCS-TRF-01 Rev. A/0 Aug01,2022

Report No.: FYCR220900037708

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Test Mode: 18; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:High



Site : chamber  
Condition: 3m HORIZONTAL  
Job No : 00377AT  
Mode : 2462 Band edge  
Note : 2.4G WIFI 11G

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2462.000	5.10	27.32	32.50	97.13	97.05	74.00	23.05	peak
2	2483.500	5.12	27.36	32.50	50.92	50.90	74.00	-23.10	peak
3	2491.127	5.12	27.38	32.50	54.39	54.39	74.00	-19.61	peak



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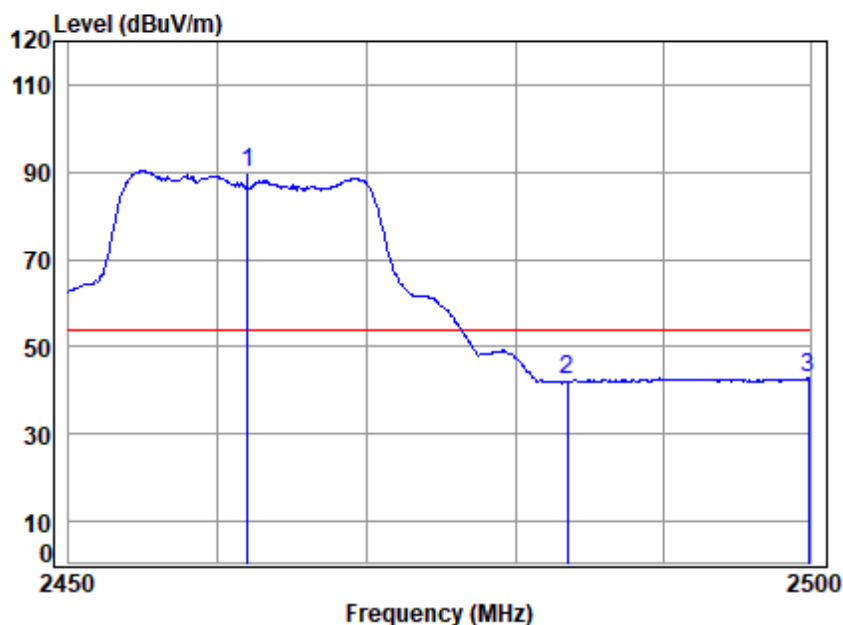
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Test Mode: 18; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:High



Site : chamber  
Condition: 3m HORIZONTAL  
Job No : 00377AT  
Mode : 2462 Band edge  
Note : 2.4G WIFI 11G

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2462.000	5.10	27.32	32.50	90.07	89.99	54.00	35.99	Average
2	2483.500	5.12	27.36	32.50	42.63	42.61	54.00	-11.39	Average
3	2499.899	5.13	27.40	32.50	42.74	42.77	54.00	-11.23	Average



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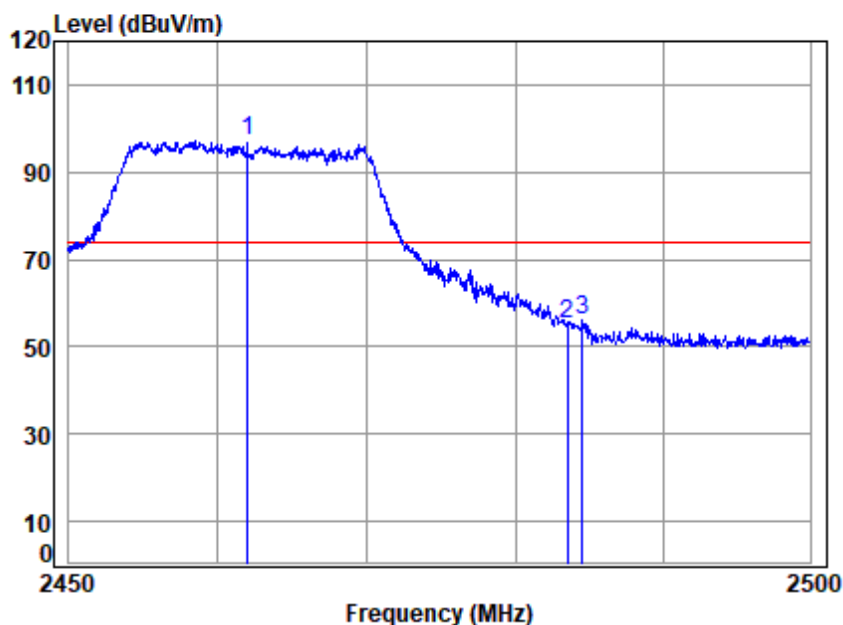
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Test Mode: 18; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:High



Site : chamber  
Condition: 3m VERTICAL  
Job No : 00377AT  
Mode : 2462 Band edge  
Note : 2.4G WIFI 11G

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2462.000	5.10	27.32	32.50	97.11	97.03	74.00	23.03	Peak
2	2483.500	5.12	27.36	32.50	55.36	55.34	74.00	-18.66	Peak
3	2484.542	5.12	27.37	32.50	56.27	56.26	74.00	-17.74	Peak



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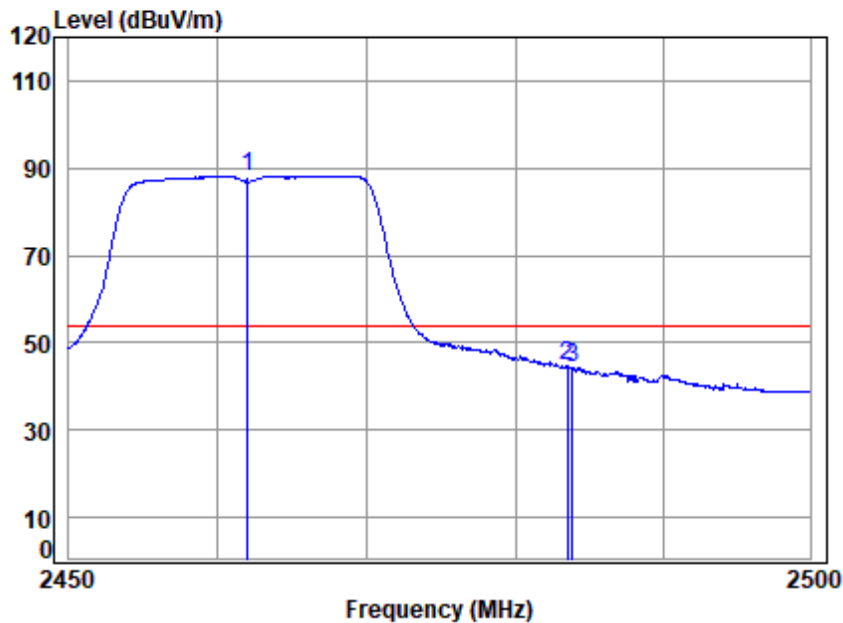
## Compliance Certification Services (Kunshan) Inc. Shenzhen Branch

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Test Mode: 18; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:High



Site : chamber  
Condition: 3m VERTICAL  
Job No : 00377AT  
Mode : 2462 Band edge  
Note : 2.4G WIFI 11G

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2462.000	5.10	27.32	32.50	88.21	88.13	54.00	34.13	Average
2	2483.500	5.12	27.36	32.50	44.56	44.54	54.00	-9.46	Average
3	2483.840	5.12	27.37	32.50	44.48	44.47	54.00	-9.53	Average



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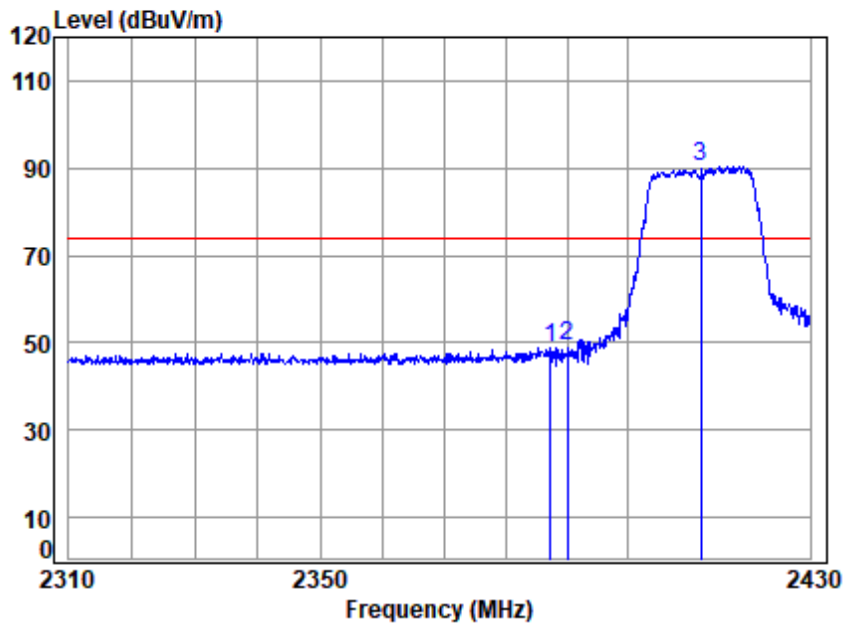
## Compliance Certification Services (Kunshan) Inc. Shenzhen Branch

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Report No.: FYCR220900037708

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Test Mode: 18; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



Site : chamber  
Condition: 3m HORIZONTAL  
Job No : 00377AT  
Mode : 2412 Band edge  
Note : 2.4G WIFI 11N20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2387.307	5.05	27.15	32.50	49.05	48.75	74.00	-25.25	Peak
2	2390.000	5.05	27.16	32.50	49.72	49.43	74.00	-24.57	peak
3	2412.000	5.07	27.21	32.50	90.61	90.39	74.00	16.39	peak



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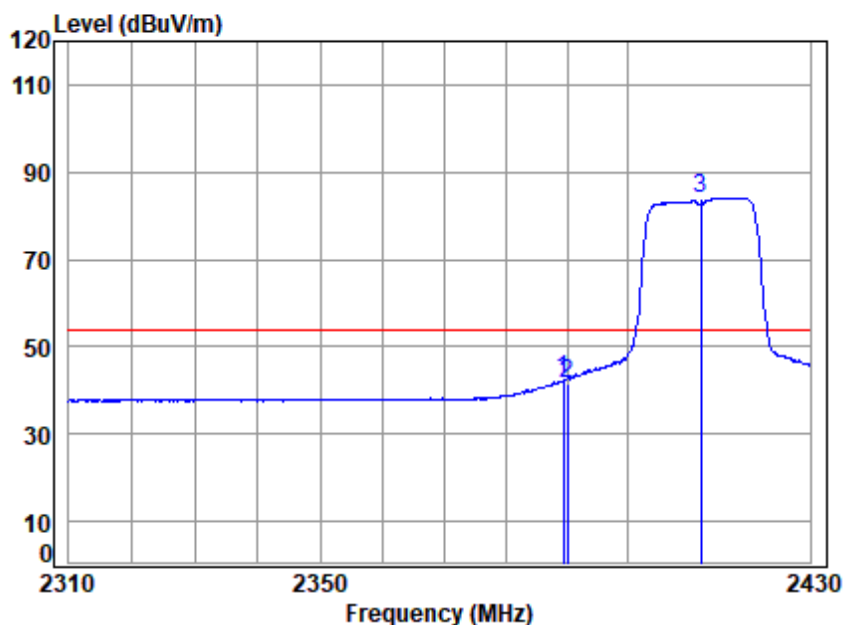
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SZCCS-TRF-01 Rev. A/0 Aug01,2022

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Test Mode: 18; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



Site : chamber  
Condition: 3m HORIZONTAL  
Job No : 00377AT  
Mode : 2412 Band edge  
Note : 2.4G WIFI 11N20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2389.363	5.05	27.16	32.50	42.64	42.35	54.00	-11.65	Average
2	2390.000	5.05	27.16	32.50	41.98	41.69	54.00	-12.31	Average
3	2412.000	5.07	27.21	32.50	84.28	84.06	54.00	30.06	Average



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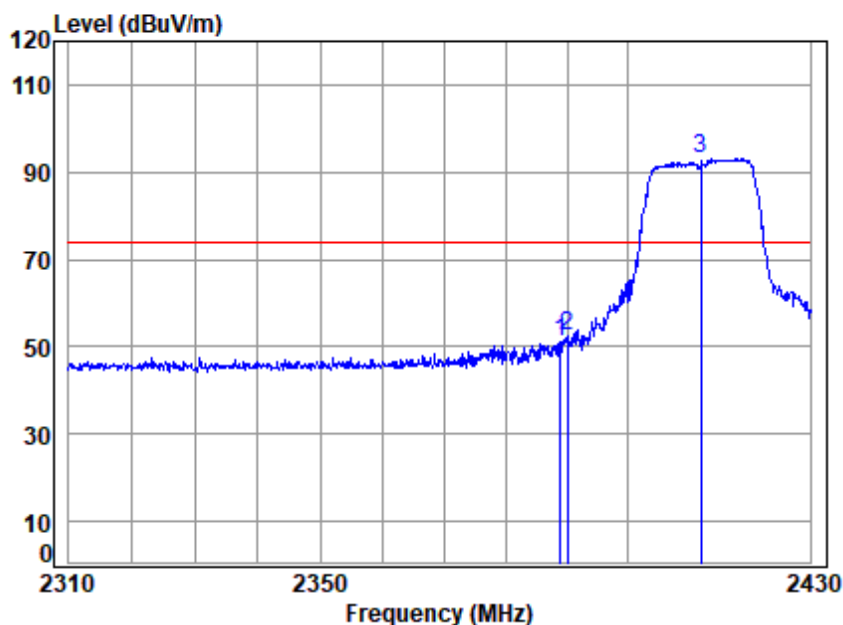
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Test Mode: 18; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



Site : chamber  
Condition: 3m VERTICAL  
Job No : 00377AT  
Mode : 2412 Band edge  
Note : 2.4G WIFI 11N20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2388.879	5.05	27.16	32.50	51.59	51.30	74.00	-22.70	Peak
2	2390.000	5.05	27.16	32.50	52.68	52.39	74.00	-21.61	Peak
3	2412.000	5.07	27.21	32.50	93.19	92.97	74.00	18.97	Peak



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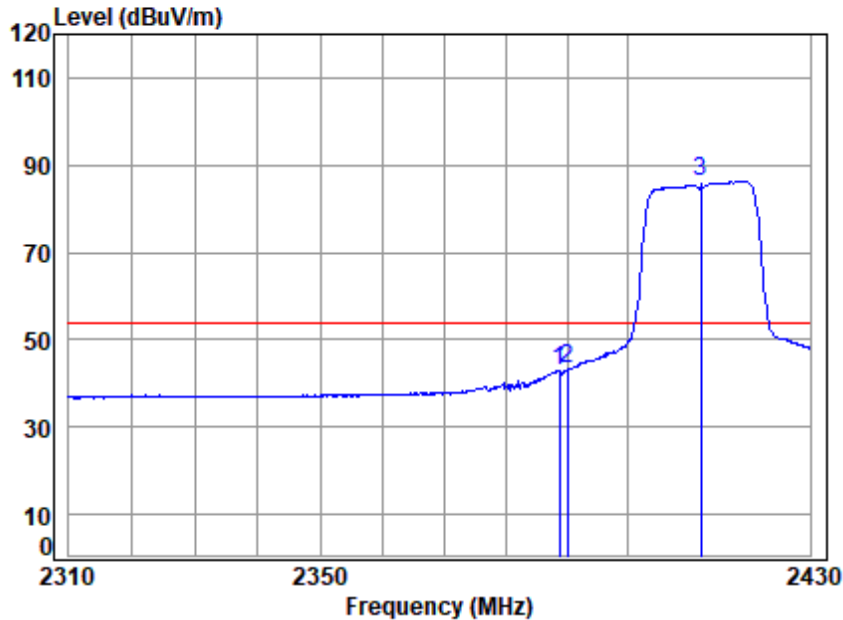
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Test Mode: 18; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



Site : chamber  
Condition: 3m VERTICAL  
Job No : 00377AT  
Mode : 2412 Band edge  
Note : 2.4G WIFI 11N20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Limit Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2388.758	5.05	27.16	32.50	43.36	43.07	54.00	-10.93	Average
2	2390.000	5.05	27.16	32.50	43.78	43.49	54.00	-10.51	Average
3	2412.000	5.07	27.21	32.50	86.37	86.15	54.00	32.15	Average



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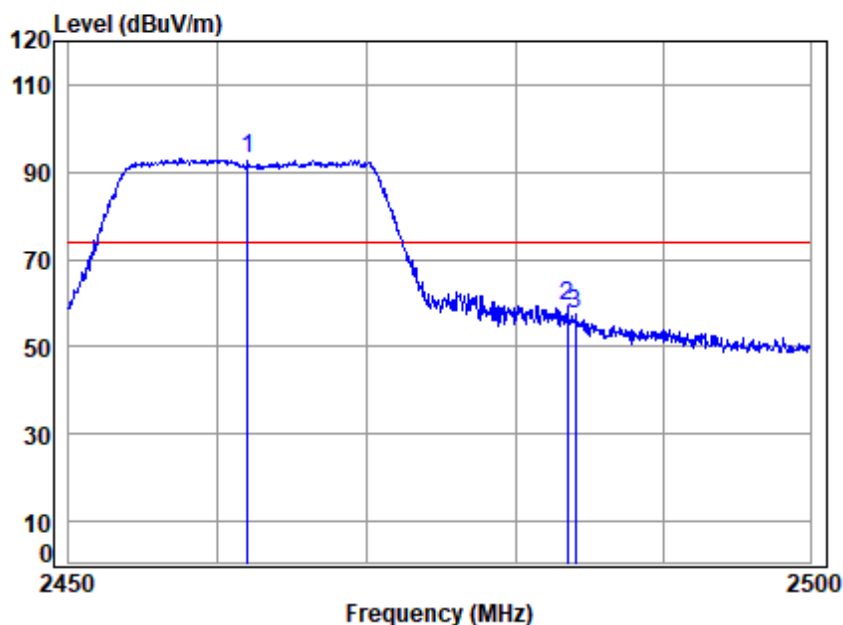
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Test Mode: 18; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High



Site : chamber  
Condition: 3m HORIZONTAL  
Job No : 00377AT  
Mode : 2462 Band edge  
Note : 2.4G WIFI 11N20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2462.000	5.10	27.32	32.50	93.12	93.04	74.00	19.04	peak
2	2483.500	5.12	27.36	32.50	59.53	59.51	74.00	-14.49	peak
3	2484.091	5.12	27.37	32.50	57.42	57.41	74.00	-16.59	peak



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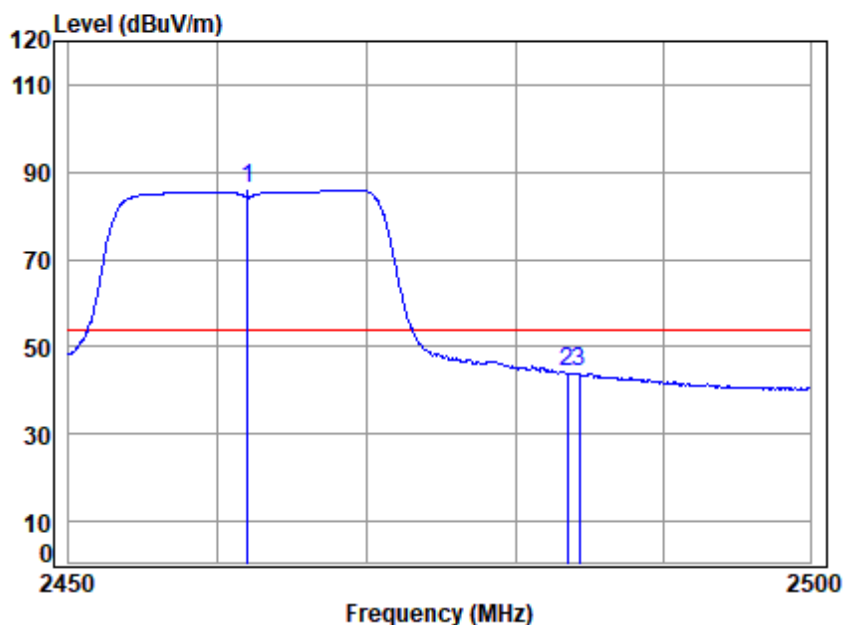
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Test Mode: 18; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High



Site : chamber

Condition: 3m HORIZONTAL

Job No : 00377AT

Mode : 2462 Band edge

Note : 2.4G WIFI 11N20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2462.000	5.10	27.32	32.50	86.25	86.17	54.00	32.17	Average
2	2483.500	5.12	27.36	32.50	44.24	44.22	54.00	-9.78	Average
3	2484.342	5.12	27.37	32.50	44.15	44.14	54.00	-9.86	Average



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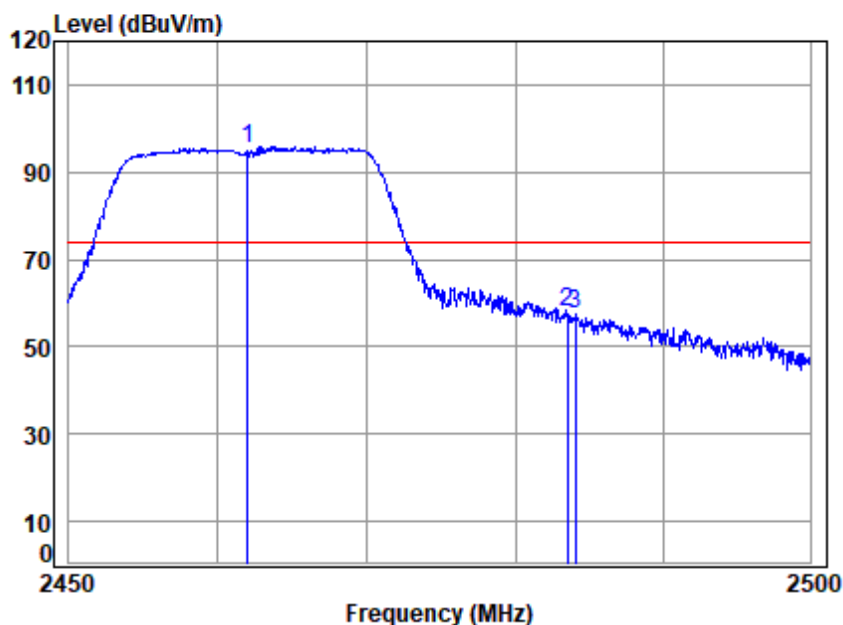
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Test Mode: 18; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High



Site : chamber  
Condition: 3m VERTICAL  
Job No : 00377AT  
Mode : 2462 Band edge  
Note : 2.4G WIFI 11N20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Limit Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2462.000	5.10	27.32	32.50	95.55	95.47	74.00	21.47	Peak
2	2483.500	5.12	27.36	32.50	58.15	58.13	74.00	-15.87	Peak
3	2484.041	5.12	27.37	32.50	57.68	57.67	74.00	-16.33	Peak



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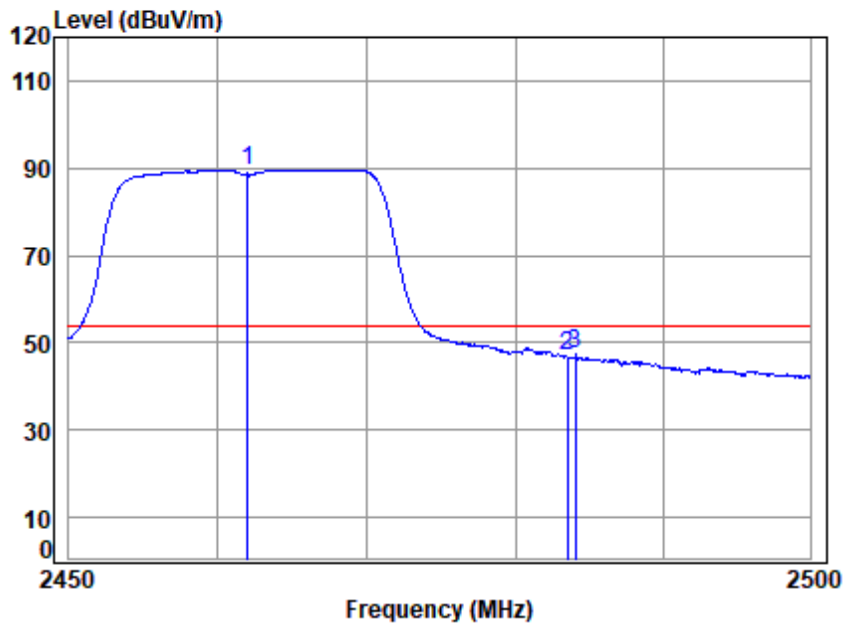
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Test Mode: 18; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High



Site : chamber  
Condition: 3m VERTICAL  
Job No : 00377AT  
Mode : 2462 Band edge  
Note : 2.4G WIFI 11N20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2462.000	5.10	27.32	32.50	89.67	89.59	54.00	35.59	Average
2	2483.500	5.12	27.36	32.50	46.93	46.91	54.00	-7.09	Average
3	2484.091	5.12	27.37	32.50	47.49	47.48	54.00	-6.52	Average



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### 7.2 Radiated Spurious Emissions Below 1GHz

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10 (2013) Section 6.4,6.5

Measurement Distance: 3m

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
960-1000	500	3

#### 7.2.1 E.U.T. Operation

Operating Environment:

Temperature: 23.2 °C

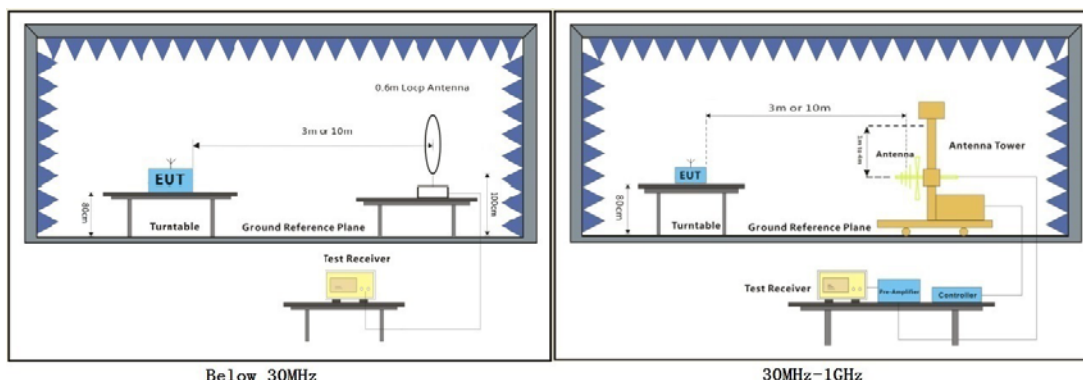
Humidity: 52.6 % RH

Atmospheric Pressure: 1020 mbar

#### 7.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	18	TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.

#### 7.2.3 Test Setup Diagram



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### 7.2.4 Measurement Procedure and Data

- a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using quasi-peak method as specified and then reported in a data sheet.
- g. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- i. Repeat above procedures until all frequencies measured was complete.

Remark:

1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor
2. Scan from 9kHz to 30MHz, the disturbance below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.
3. The disturbance below 1GHz was very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.



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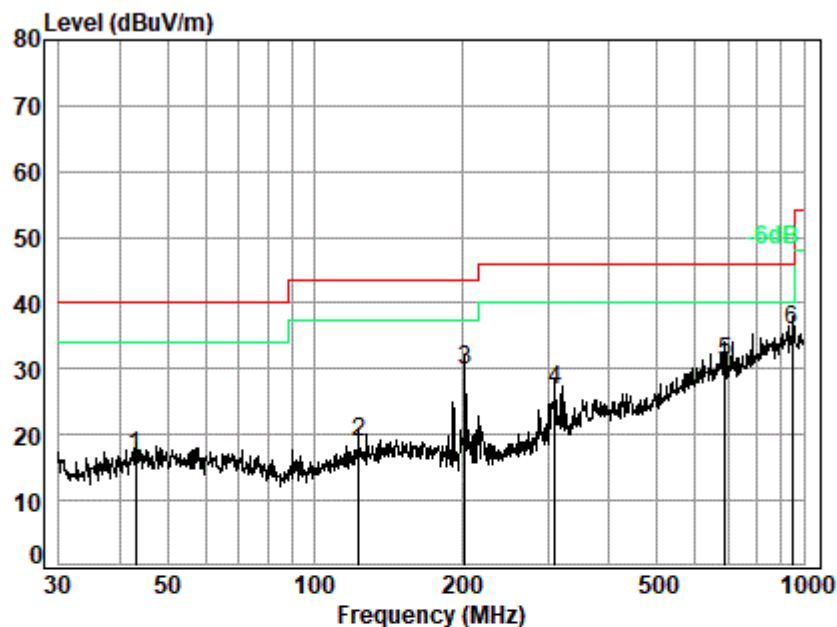
## Compliance Certification Services (Kunshan) Inc. Shenzhen Branch

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Test Mode: 18; Polarity: Horizontal



Site : chamber  
Condition: 3m HORIZONTAL  
Job No : 00377AT  
Mode : 18

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	43.050	0.22	17.23	26.01	25.41	16.85	40.00	-23.15	QP
2	122.834	0.98	15.97	25.56	27.42	18.81	43.50	-24.69	QP
3	202.810	0.70	15.22	25.47	39.38	29.83	43.50	-13.67	QP
4	309.998	1.12	18.76	25.41	32.24	26.71	46.00	-19.29	QP
5	691.987	1.78	25.63	24.60	28.19	31.00	46.00	-15.00	QP
6	948.761	2.18	29.26	24.05	28.54	35.93	46.00	-10.07	QP



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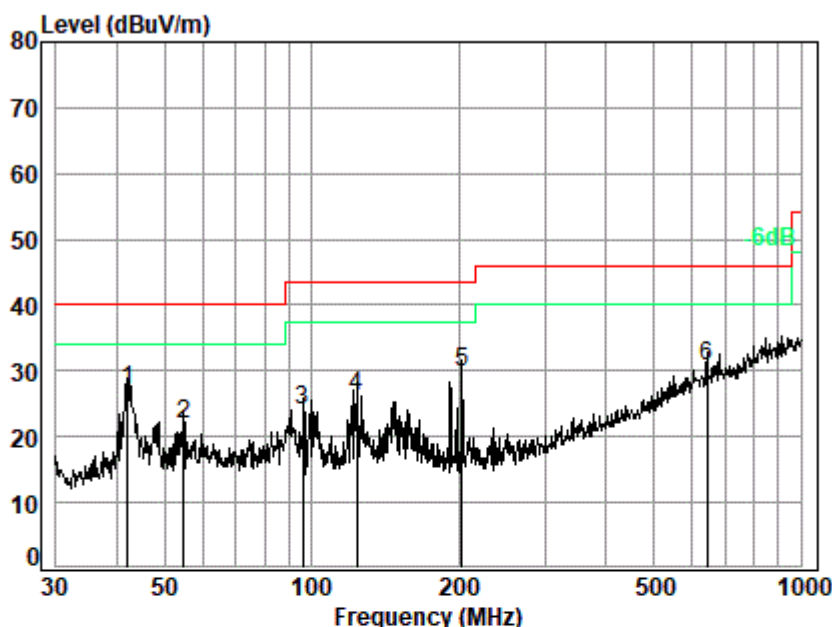
## Compliance Certification Services (Kunshan) Inc. Shenzhen Branch

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Test Mode: 18; Polarity: Vertical



Site : chamber  
Condition: 3m VERTICAL  
Job No : 00377AT  
Mode : 18

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	42.007	0.21	17.16	26.01	35.61	26.97	40.00	-13.03	QP
2	54.643	0.25	17.25	25.96	30.22	21.76	40.00	-18.24	QP
3	96.099	0.80	14.00	25.64	34.83	23.99	43.50	-19.51	QP
4	123.699	0.98	16.05	25.56	34.67	26.14	43.50	-17.36	QP
5	202.810	0.70	15.22	25.47	39.27	29.72	43.50	-13.78	QP
6	642.861	2.12	25.07	24.80	28.36	30.75	46.00	-15.25	QP



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### 7.3 Radiated Spurious Emissions Above 1GHz

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10 (2013) Section 6.6

Measurement Distance: 3m

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
Above 1000	500	3

#### 7.3.1 E.U.T. Operation

Operating Environment:

Temperature: 21.5 °C

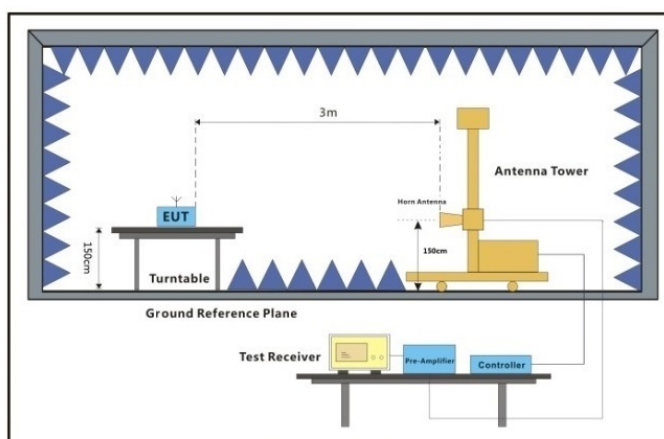
Humidity: 54.0 % RH

Atmospheric Pressure: 1020 mbar

#### 7.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	18	TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.

#### 7.3.3 Test Setup Diagram



Above 1GHz



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### 7.3.4 Measurement Procedure and Data

- a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak or average method as specified and then reported in a data sheet.
- g. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- i. Repeat above procedures until all frequencies measured was complete.

Remark:

1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor
2. Scan from 1GHz to 25GHz, the disturbance above 18GHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.
3. As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.



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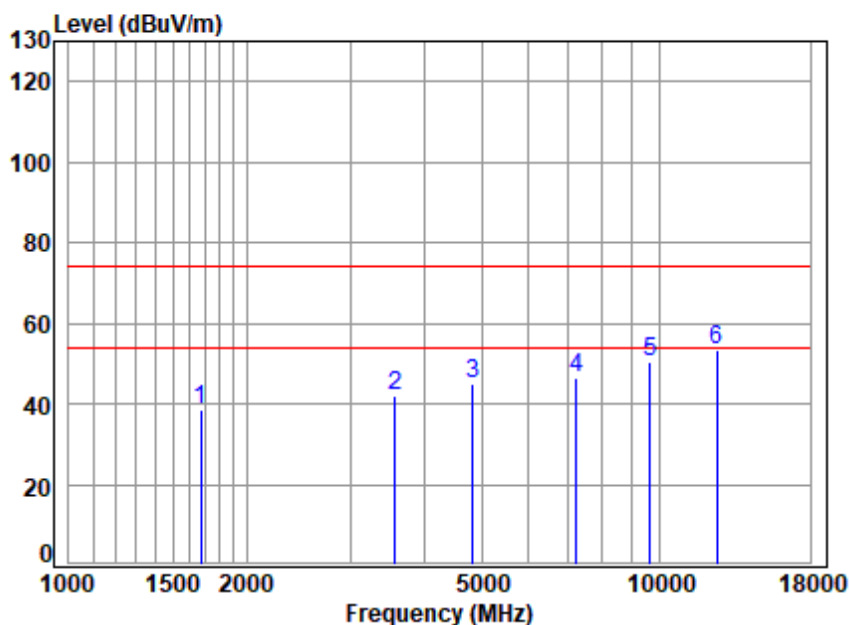
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Test Mode: 18; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:Low



Site : chamber  
Condition: 3m HORIZONTAL  
Job No : 00377AT  
Mode : 2412 TX RSE  
Note : 2.4G WIFI 11B

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1672.779	4.14	24.95	52.95	62.19	38.33	74.00	-35.67	peak
2	3567.138	7.06	28.81	52.92	59.17	42.12	74.00	-31.88	Peak
3	4824.000	8.02	30.99	53.05	59.23	45.19	74.00	-28.81	peak
4	7236.000	8.31	36.09	53.52	55.63	46.51	74.00	-27.49	peak
5	9648.000	11.38	37.62	53.54	54.86	50.32	74.00	-23.68	peak
6	12505.710	12.45	39.75	54.10	55.10	53.20	74.00	-20.80	Peak



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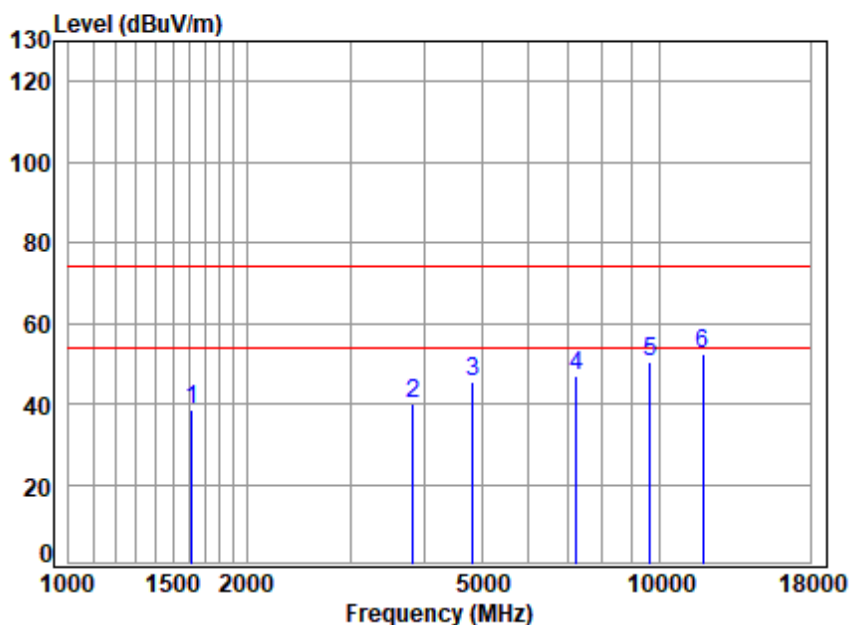
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Test Mode: 18; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:Low



Site : chamber  
Condition: 3m VERTICAL  
Job No : 00377AT  
Mode : 2412 TX RSE  
Note : 2.4G WIFI 11B

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1615.754	4.02	24.83	52.92	62.81	38.74	74.00	-35.26	peak
2	3834.438	7.33	29.25	52.84	56.39	40.13	74.00	-33.87	peak
3	4824.000	8.02	30.99	53.05	59.48	45.44	74.00	-28.56	peak
4	7236.000	8.31	36.09	53.52	56.05	46.93	74.00	-27.07	peak
5	9648.000	11.38	37.62	53.54	55.09	50.55	74.00	-23.45	peak
6	11871.710	11.60	39.78	53.95	55.14	52.57	74.00	-21.43	Peak



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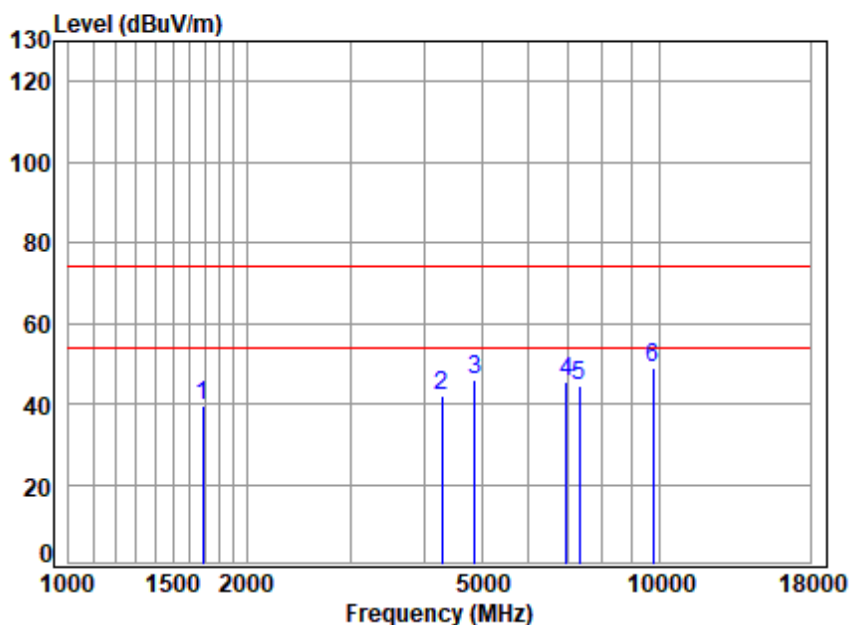
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Test Mode: 18; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:middle



Site : chamber  
Condition: 3m HORIZONTAL  
Job No : 00377AT  
Mode : 2437 TX RSE  
Note : 2.4G WIFI 11B

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1687.347	4.17	24.98	52.95	63.50	39.70	74.00	-34.30	peak
2	4291.977	7.48	29.92	52.89	57.75	42.26	74.00	-31.74	peak
3	4874.000	8.10	31.11	53.07	59.86	46.00	74.00	-28.00	peak
4	6954.852	8.15	35.70	53.47	55.24	45.62	74.00	-28.38	peak
5	7311.000	8.34	36.18	53.53	53.37	44.36	74.00	-29.64	peak
6	9748.000	11.30	37.84	53.44	53.19	48.89	74.00	-25.11	peak



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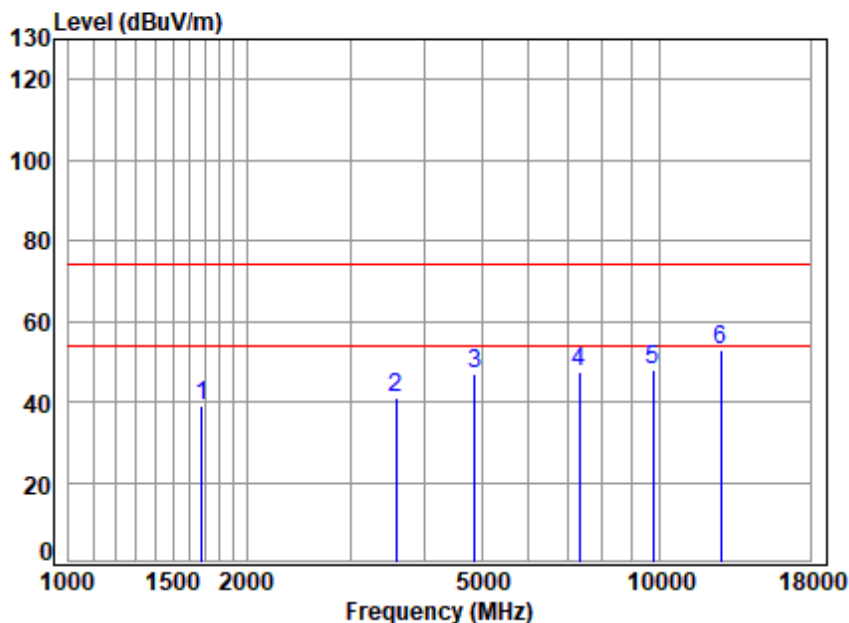
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Test Mode: 18; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:middle



Site : chamber  
Condition: 3m VERTICAL  
Job No : 00377AT  
Mode : 2437 TX RSE  
Note : 2.4G WIFI 11B

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1677.621	4.15	24.96	52.95	62.92	39.08	74.00	-34.92	peak
2	3587.818	7.08	28.85	52.91	58.05	41.07	74.00	-32.93	Peak
3	4874.000	8.10	31.11	53.07	61.03	47.17	74.00	-26.83	peak
4	7311.000	8.34	36.18	53.53	56.44	47.43	74.00	-26.57	peak
5	9748.000	11.30	37.84	53.44	52.02	47.72	74.00	-26.28	peak
6	12724.470	12.47	39.73	54.15	55.06	53.11	74.00	-20.89	Peak



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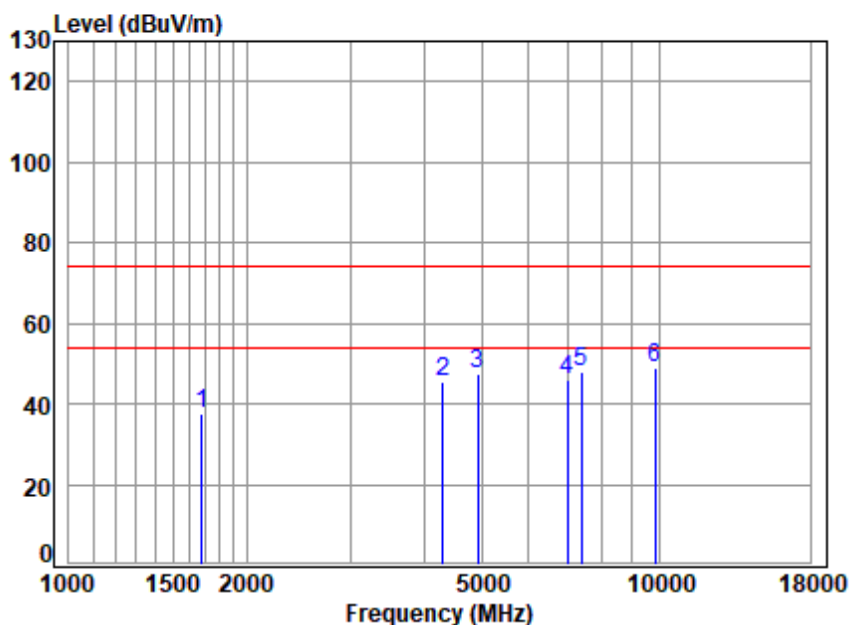
## Compliance Certification Services (Kunshan) Inc. Shenzhen Branch

SZCCS-TRF-01 Rev. A/0 Aug01,2022

Report No.: FYCR220900037708

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Test Mode: 18; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:High



Site : chamber  
Condition: 3m HORIZONTAL  
Job No : 00377AT  
Mode : 2462 TX RSE  
Note : 2.4G WIFI 11B

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1677.621	4.15	24.96	52.95	61.24	37.40	74.00	-36.60	peak
2	4304.400	7.48	29.94	52.90	60.74	45.26	74.00	-28.74	peak
3	4924.000	8.18	31.23	53.08	60.91	47.24	74.00	-26.76	peak
4	6995.172	8.19	35.79	53.50	55.62	46.10	74.00	-27.90	peak
5	7386.000	8.38	36.27	53.54	56.68	47.79	74.00	-26.21	peak
6	9848.000	11.23	38.07	53.35	53.18	49.13	74.00	-24.87	peak



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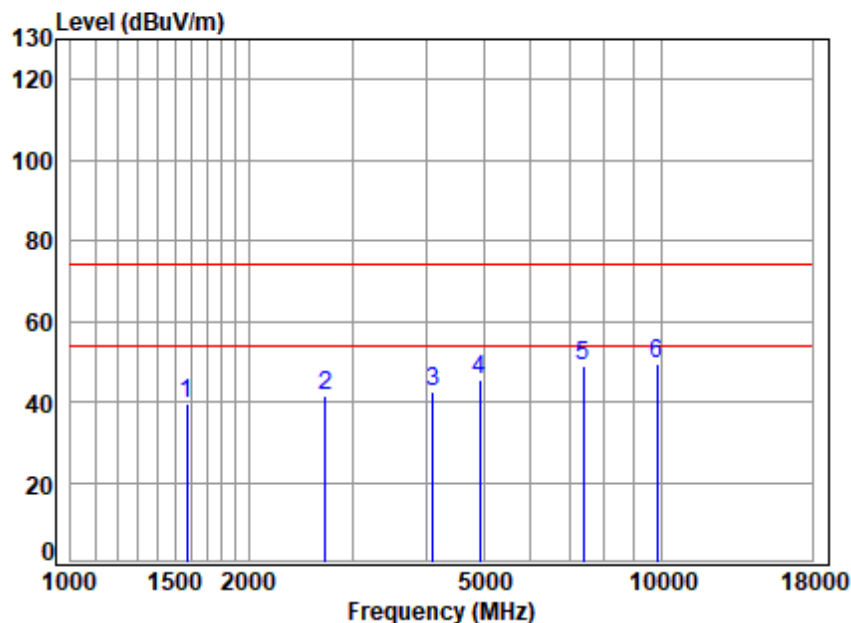
## Compliance Certification Services (Kunshan) Inc. Shenzhen Branch

SZCCS-TRF-01 Rev. A/0 Aug01,2022

Report No.: FYCR220900037708

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Test Mode: 18; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:High



Site : chamber  
Condition: 3m VERTICAL  
Job No : 00377AT  
Mode : 2462 TX RSE  
Note : 2.4G WIFI 11B

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1574.265	3.93	24.73	52.89	63.66	39.43	74.00	-34.57	peak
2	2694.998	5.37	27.89	53.10	61.19	41.35	74.00	-32.65	Peak
3	4109.872	7.49	29.66	52.84	58.05	42.36	74.00	-31.64	peak
4	4924.000	8.18	31.23	53.08	59.26	45.59	74.00	-28.41	peak
5	7386.000	8.38	36.27	53.54	57.77	48.88	74.00	-25.12	peak
6	9848.000	11.23	38.07	53.35	53.33	49.28	74.00	-24.72	peak



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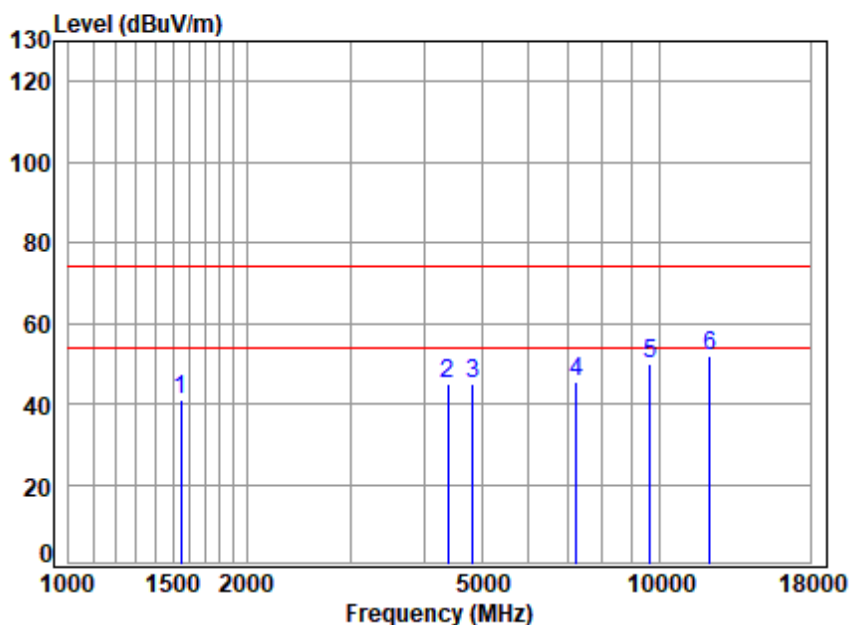
## Compliance Certification Services (Kunshan) Inc. Shenzhen Branch

SZCCS-TRF-01 Rev. A/0 Aug01,2022

Report No.: FYCR220900037708

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Test Mode: 18; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:Low



Site : chamber  
Condition: 3m HORIZONTAL  
Job No : 00377AT  
Mode : 2412 TX RSE  
Note : 2.4G WIFI 11G

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1547.199	3.88	24.65	52.88	65.55	41.20	74.00	-32.80	peak
2	4379.699	7.47	30.04	52.92	60.54	45.13	74.00	-28.87	peak
3	4824.000	8.02	30.99	53.05	58.91	44.87	74.00	-29.13	peak
4	7236.000	8.31	36.09	53.52	54.45	45.33	74.00	-28.67	peak
5	9648.000	11.38	37.62	53.54	54.27	49.73	74.00	-24.27	peak
6	12184.580	11.92	39.78	54.04	54.00	51.66	74.00	-22.34	Peak



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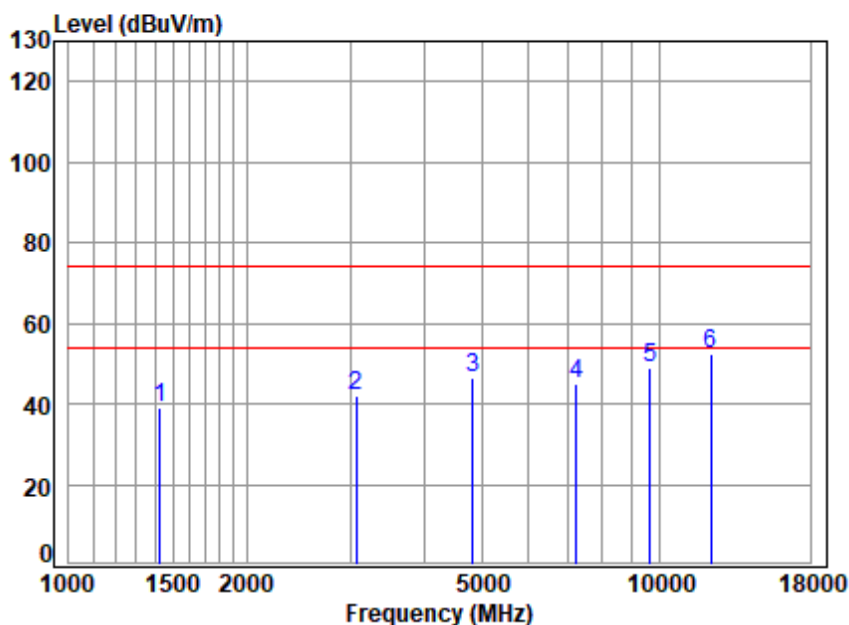
## Compliance Certification Services (Kunshan) Inc. Shenzhen Branch

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Report No.: FYCR220900037708

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Test Mode: 18; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:Low



Site : chamber  
Condition: 3m VERTICAL  
Job No : 00377AT  
Mode : 2412 TX RSE  
Note : 2.4G WIFI 11G

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1426.916	3.63	24.29	52.81	64.13	39.24	74.00	-34.76	Peak
2	3069.345	5.91	28.61	53.08	60.76	42.20	74.00	-31.80	Peak
3	4824.000	8.02	30.99	53.05	60.28	46.24	74.00	-27.76	peak
4	7236.000	8.31	36.09	53.52	54.21	45.09	74.00	-28.91	peak
5	9648.000	11.38	37.62	53.54	53.71	49.17	74.00	-24.83	peak
6	12219.850	11.98	39.78	54.05	54.69	52.40	74.00	-21.60	Peak



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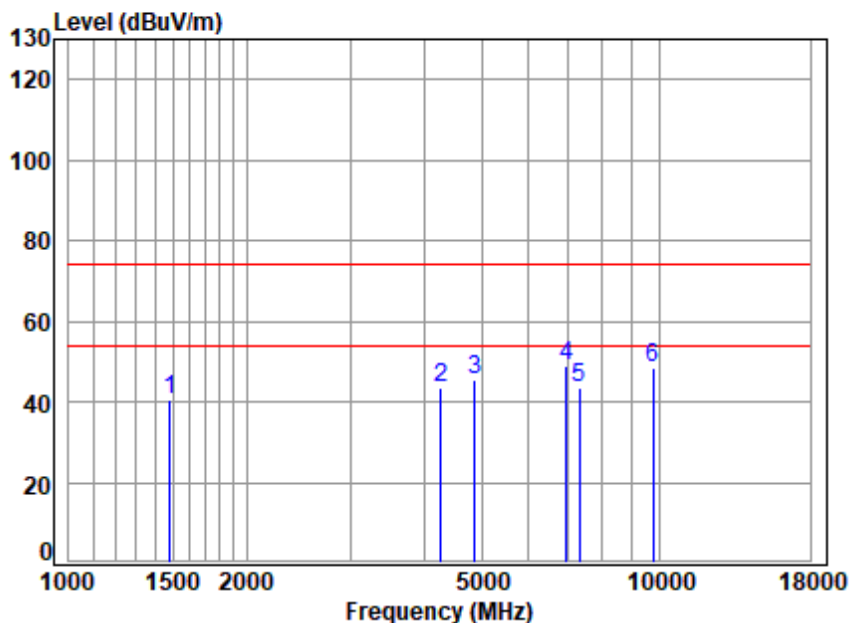
## Compliance Certification Services (Kunshan) Inc. Shenzhen Branch

SZCCS-TRF-01 Rev. A/0 Aug01,2022

Report No.: FYCR220900037708

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Test Mode: 18; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:middle



Site : chamber  
Condition: 3m HORIZONTAL  
Job No : 00377AT  
Mode : 2437 TX RSE  
Note : 2.4G WIFI 11G

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1485.841	3.74	24.47	52.84	65.10	40.47	74.00	-33.53	peak
2	4267.237	7.48	29.88	52.89	58.81	43.28	74.00	-30.72	peak
3	4874.000	8.10	31.11	53.07	59.50	45.64	74.00	-28.36	peak
4	6954.852	8.15	35.70	53.47	58.61	48.99	74.00	-25.01	peak
5	7311.000	8.34	36.18	53.53	52.75	43.74	74.00	-30.26	peak
6	9748.000	11.30	37.84	53.44	52.66	48.36	74.00	-25.64	peak



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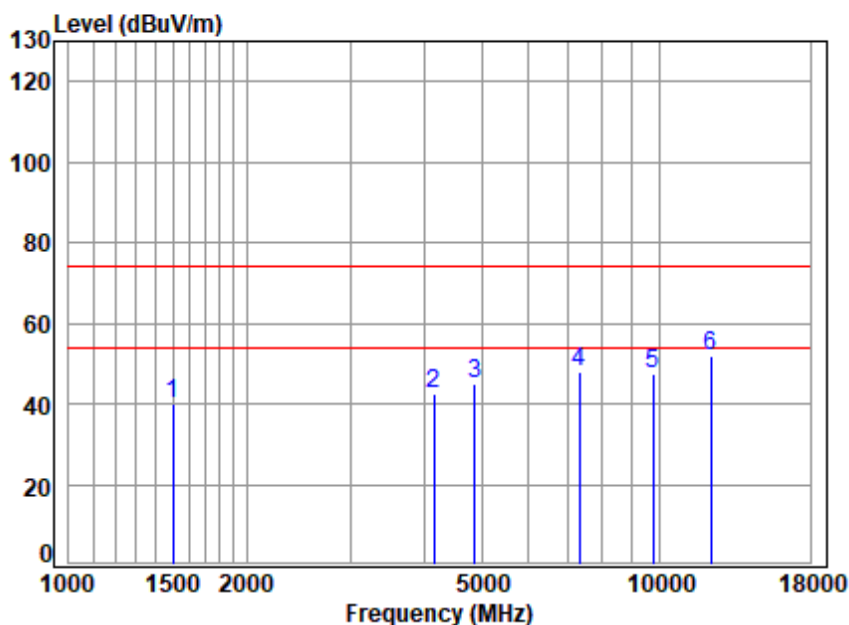
## Compliance Certification Services (Kunshan) Inc. Shenzhen Branch

SZCCS-TRF-01 Rev. A/0 Aug01,2022

Report No.: FYCR220900037708

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Test Mode: 18; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:middle



Site : chamber  
Condition: 3m VERTICAL  
Job No : 00377AT  
Mode : 2437 TX RSE  
Note : 2.4G WIFI 11G

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1498.781	3.77	24.51	52.85	64.74	40.17	74.00	-33.83	peak
2	4157.664	7.48	29.73	52.85	58.12	42.48	74.00	-31.52	peak
3	4874.000	8.10	31.11	53.07	58.61	44.75	74.00	-29.25	peak
4	7311.000	8.34	36.18	53.53	56.95	47.94	74.00	-26.06	peak
5	9748.000	11.30	37.84	53.44	51.93	47.63	74.00	-26.37	peak
6	12219.850	11.98	39.78	54.05	53.97	51.68	74.00	-22.32	Peak



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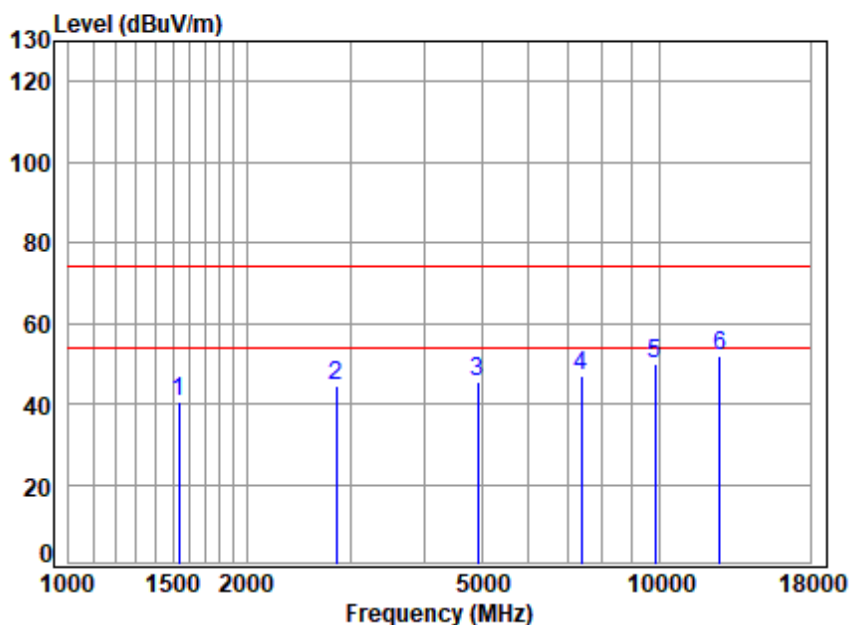
## Compliance Certification Services (Kunshan) Inc. Shenzhen Branch

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Test Mode: 18; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:High



Site : chamber  
Condition: 3m HORIZONTAL  
Job No : 00377AT  
Mode : 2462 TX RSE  
Note : 2.4G WIFI 11G

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1533.841	3.85	24.61	52.87	64.71	40.30	74.00	-33.70	peak
2	2838.921	5.54	28.24	53.10	63.88	44.56	74.00	-29.44	Peak
3	4924.000	8.18	31.23	53.08	58.93	45.26	74.00	-28.74	peak
4	7386.000	8.38	36.27	53.54	55.81	46.92	74.00	-27.08	peak
5	9848.000	11.23	38.07	53.35	53.77	49.72	74.00	-24.28	peak
6	12651.130	12.46	39.73	54.13	53.97	52.03	74.00	-21.97	Peak



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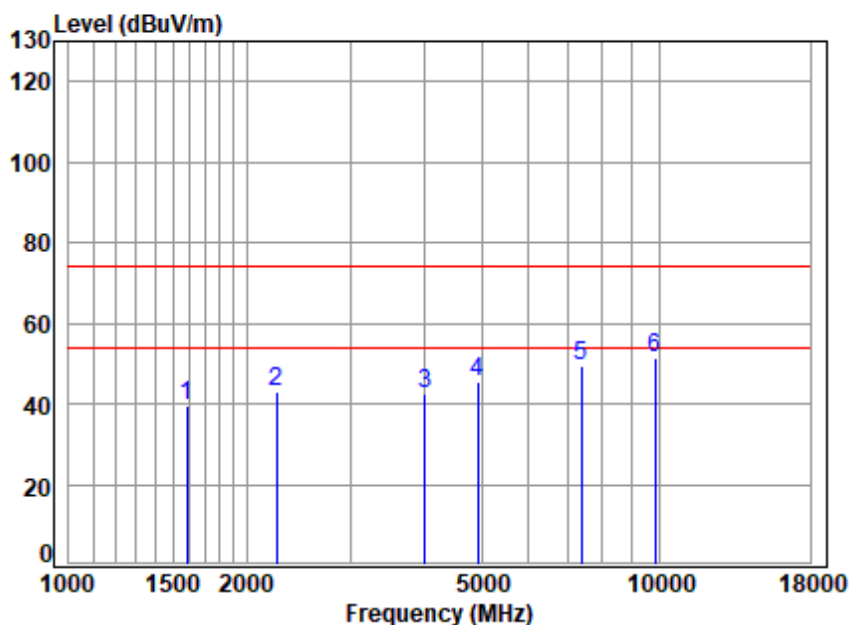
## Compliance Certification Services (Kunshan) Inc. Shenzhen Branch

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Report No.: FYCR220900037708

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Test Mode: 18; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:High



Site : chamber  
Condition: 3m VERTICAL  
Job No : 00377AT  
Mode : 2462 TX RSE  
Note : 2.4G WIFI 11G

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1587.975	3.96	24.77	52.90	63.63	39.46	74.00	-34.54	peak
2	2246.344	4.95	26.82	53.10	64.45	43.12	74.00	-30.88	Peak
3	4004.339	7.49	29.51	52.80	58.42	42.62	74.00	-31.38	peak
4	4924.000	8.18	31.23	53.08	59.08	45.41	74.00	-28.59	peak
5	7386.000	8.38	36.27	53.54	58.35	49.46	74.00	-24.54	peak
6	9848.000	11.23	38.07	53.35	55.49	51.44	74.00	-22.56	peak



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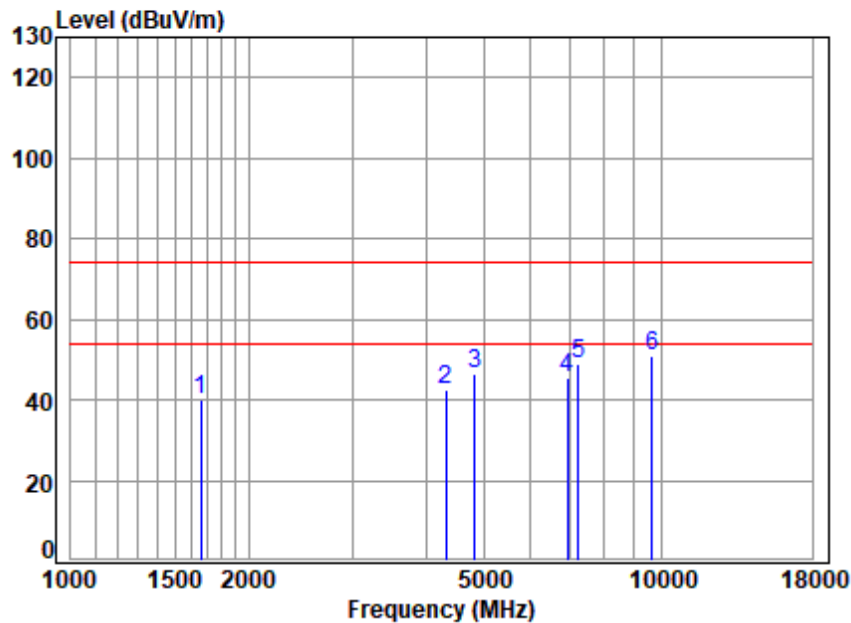
## Compliance Certification Services (Kunshan) Inc. Shenzhen Branch

SZCCS-TRF-01 Rev. A/0 Aug01,2022

Report No.: FYCR220900037708

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Test Mode: 18; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



Site : chamber

Condition: 3m HORIZONTAL

Job No : 00377AT

Mode : 2412 TX RSE

Note : 2.4G WIFI 11N20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1658.337	4.11	24.92	52.94	63.84	39.93	74.00	-34.07	peak
2	4316.859	7.48	29.95	52.90	57.96	42.49	74.00	-31.51	peak
3	4824.000	8.02	30.99	53.05	60.70	46.66	74.00	-27.34	peak
4	6934.778	8.13	35.65	53.46	55.05	45.37	74.00	-28.63	peak
5	7236.000	8.31	36.09	53.52	58.23	49.11	74.00	-24.89	peak
6	9648.000	11.38	37.62	53.54	55.47	50.93	74.00	-23.07	peak



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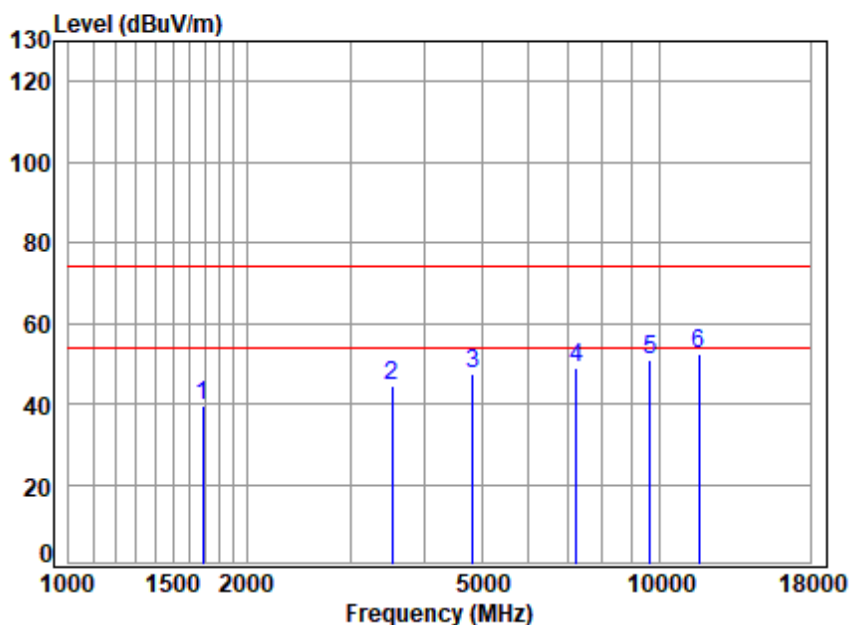
## Compliance Certification Services (Kunshan) Inc. Shenzhen Branch

SZCCS-TRF-01 Rev. A/0 Aug01,2022

Report No.: FYCR220900037708

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Test Mode: 18; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



Site : chamber  
Condition: 3m VERTICAL  
Job No : 00377AT  
Mode : 2412 TX RSE  
Note : 2.4G WIFI 11N20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1687.347	4.17	24.98	52.95	63.38	39.58	74.00	-34.42	peak
2	3526.134	7.02	28.74	52.93	61.86	44.69	74.00	-29.31	Peak
3	4824.000	8.02	30.99	53.05	61.71	47.67	74.00	-26.33	peak
4	7236.000	8.31	36.09	53.52	58.16	49.04	74.00	-24.96	peak
5	9648.000	11.38	37.62	53.54	55.22	50.68	74.00	-23.32	peak
6	11667.600	11.60	39.74	53.87	55.17	52.64	74.00	-21.36	Peak



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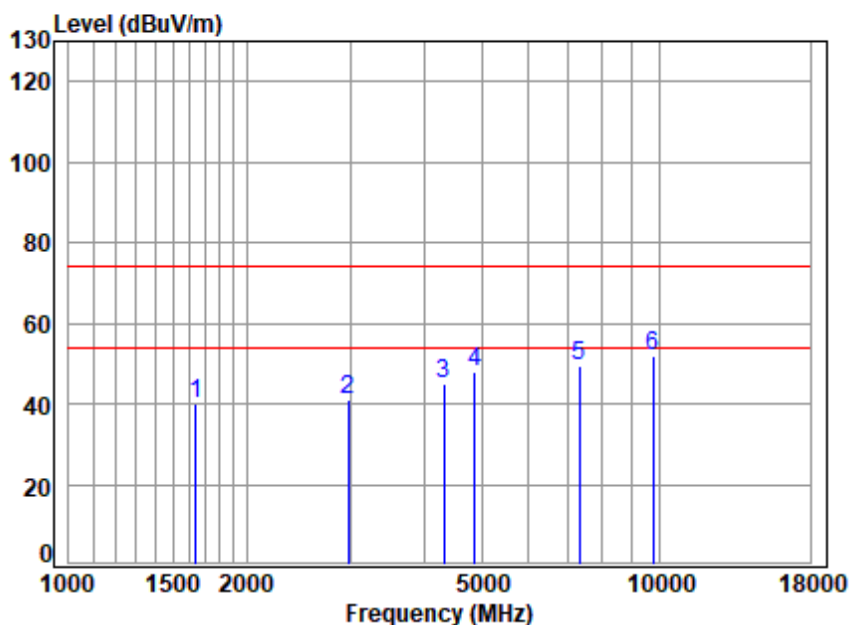
## Compliance Certification Services (Kunshan) Inc. Shenzhen Branch

SZCCS-TRF-01 Rev. A/0 Aug01,2022

Report No.: FYCR220900037708

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Test Mode: 18; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:middle



Site : chamber

Condition: 3m HORIZONTAL

Job No : 00377AT

Mode : 2437 TX RSE

Note : 2.4G WIFI 11N20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1644.019	4.08	24.89	52.93	63.84	39.88	74.00	-34.12	peak
2	2973.293	5.69	28.54	53.10	59.99	41.12	74.00	-32.88	Peak
3	4316.859	7.48	29.95	52.90	60.30	44.83	74.00	-29.17	peak
4	4874.000	8.10	31.11	53.07	62.03	48.17	74.00	-25.83	peak
5	7311.000	8.34	36.18	53.53	58.57	49.56	74.00	-24.44	peak
6	9748.000	11.30	37.84	53.44	56.11	51.81	74.00	-22.19	peak



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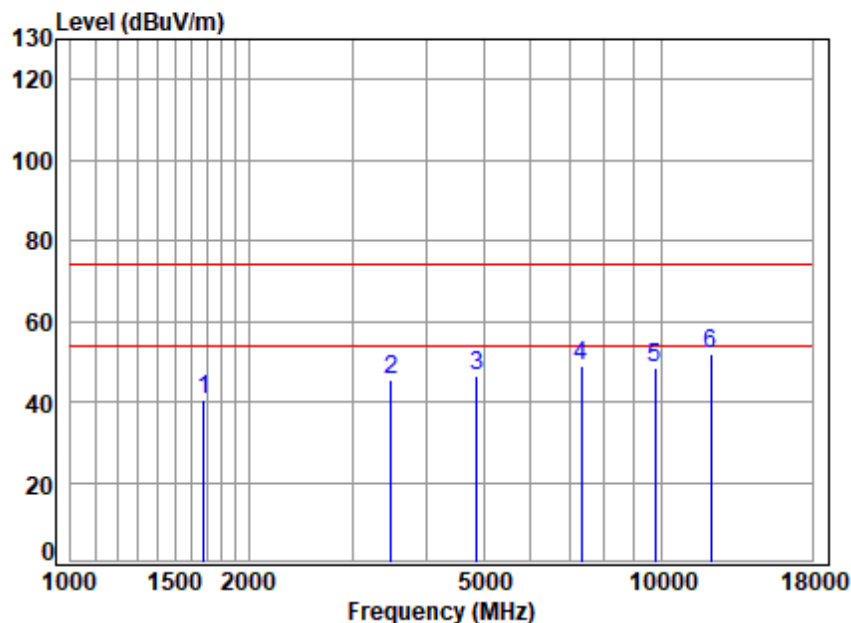
## Compliance Certification Services (Kunshan) Inc. Shenzhen Branch

SZCCS-TRF-01 Rev. A/0 Aug01,2022

Report No.: FYCR220900037708

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Test Mode: 18; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:middle



Site : chamber

Condition: 3m VERTICAL

Job No : 00377AT

Mode : 2437 TX RSE

Note : 2.4G WIFI 11N20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1682.477	4.16	24.97	52.95	64.56	40.74	74.00	-33.26	peak
2	3485.601	6.96	28.70	52.94	62.62	45.34	74.00	-28.66	Peak
3	4874.000	8.10	31.11	53.07	60.44	46.58	74.00	-27.42	peak
4	7311.000	8.34	36.18	53.53	57.79	48.78	74.00	-25.22	peak
5	9748.000	11.30	37.84	53.44	52.77	48.47	74.00	-25.53	peak
6	12149.420	11.86	39.78	54.03	54.53	52.14	74.00	-21.86	Peak



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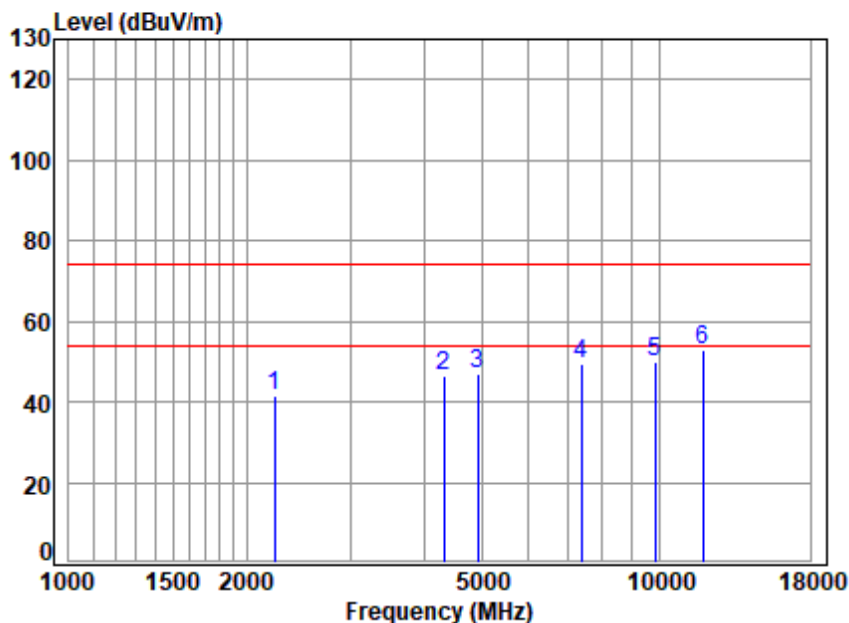
## Compliance Certification Services (Kunshan) Inc. Shenzhen Branch

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Report No.: FYCR220900037708

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Test Mode: 18; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High



Site : chamber

Condition: 3m HORIZONTAL

Job No : 00377AT

Mode : 2462 TX RSE

Note : 2.4G WIFI 11N20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2226.950	4.93	26.78	53.10	62.98	41.59	74.00	-32.41	Peak
2	4316.859	7.48	29.95	52.90	62.13	46.66	74.00	-27.34	peak
3	4924.000	8.18	31.23	53.08	60.68	47.01	74.00	-26.99	peak
4	7386.000	8.38	36.27	53.54	58.31	49.42	74.00	-24.58	peak
5	9848.000	11.23	38.07	53.35	54.21	50.16	74.00	-23.84	peak
6	11871.710	11.60	39.78	53.95	55.68	53.11	74.00	-20.89	Peak



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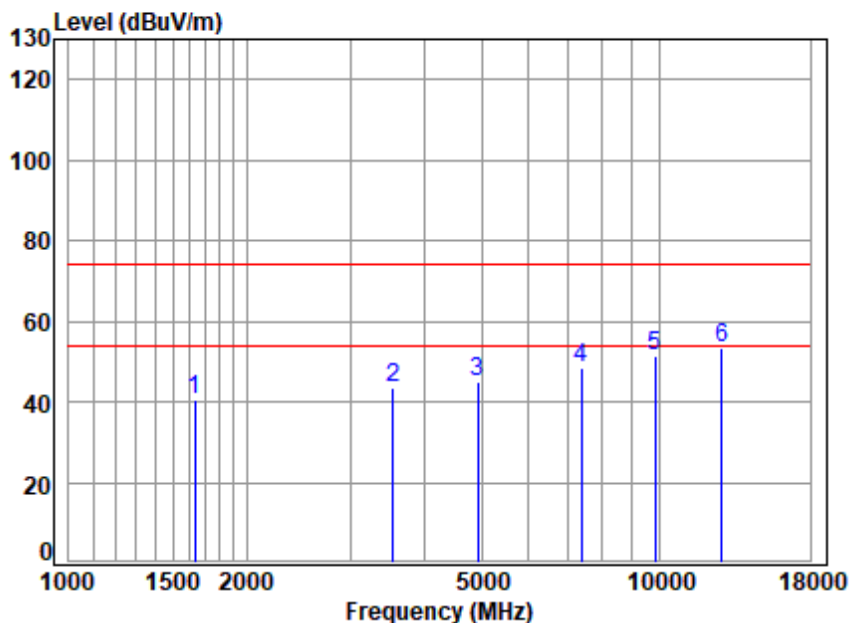
## Compliance Certification Services (Kunshan) Inc. Shenzhen Branch

SZCCS-TRF-01 Rev. A/0 Aug01,2022

Report No.: FYCR220900037708

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Test Mode: 18; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High



Site : chamber  
Condition: 3m VERTICAL  
Job No : 00377AT  
Mode : 2462 TX RSE  
Note : 2.4G WIFI 11N20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1634.543	4.06	24.87	52.93	64.31	40.31	74.00	-33.69	peak
2	3546.577	7.04	28.78	52.93	60.53	43.42	74.00	-30.58	Peak
3	4924.000	8.18	31.23	53.08	58.77	45.10	74.00	-28.90	peak
4	7386.000	8.38	36.27	53.54	57.20	48.31	74.00	-25.69	peak
5	9848.000	11.23	38.07	53.35	55.25	51.20	74.00	-22.80	peak
6	12761.300	12.47	39.72	54.15	55.49	53.53	74.00	-20.47	Peak



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## 8 Test Setup Photo

Please refer to "FYCR2209000377AT Appendix\_SetupPhoto NRS-2".

## 9 EUT Constructional Details (EUT Photos)

Please Refer to "FYCR2209000377AT Appendix\_ExternalPhoto NRS-2" and "FYCR2209000377AT Appendix\_InternalPhoto NRS-2" photos for details.

- End of the Report -



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