FCC Part 15C TEST REPORT

FCC ID: 2BFFA-L100C0

Product	:	**Laser sweep and mop integrated robot**
Model Name	:	**L100C0, L100W0**
Brand	:	**N/A**
Report No.	:	**NCT24029456**

Prepared for

Dongguan Huicheng intelligent technology Co., LTD

Room 101, No. 13, Jinling Road, Jinhe, Zhangmutou Town, Dongguan City, Guangdong Province, China

Prepared by

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1 TEST RESULT CERTIFICATION

Applicant's name	:	Dongguan Huicheng intelligent technology Co., LTD
Address	:	Room 101, No. 13, Jinling Road, Jinhe, Zhangmutou Town, Dongguan City, Guangdong Province, China
Manufacture's name	:	Dongguan Huicheng intelligent technology Co., LTD
Address	:	Room 101, No. 13, Jinling Road, Jinhe, Zhangmutou Town, Dongguan City, Guangdong Province, China
Product name	:	Laser sweep and mop integrated robot
Model name	:	L100C0, L100W0
Standards	:	FCC CFR47 Part 15 Section 15.247 RSS-247 Issue 3, February 2017 RSS-GEN Issue 5 April 2018 Amendment 2(February 2021)
Test procedure	:	ANSI C63.10:2013
Date of test	:	Jun. 26, 2024 to Sep. 05, 2024
Date of Issue	:	Sep. 06, 2024

This device described above has been tested by NCT, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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Test Engineer:

Hugh Zhang

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2 Test Summary

Test Items	Test Requirement	Result
Conduct Emission	FCC part 15.207 RSS-Gen § 8.8 RSS-247 § 3.1	PASS
Radiated Spurious Emissions	FCC part 15.205/15.209 RSS-Gen § 8.9&8.10	PASS
Conducted Spurious Emission	FCC part 15.205/15.209 RSS-247 § 5.5	PASS
Band edge	FCC part 15.247(d) RSS-247 § 5.5	PASS
6dB&99% Bandwidth	FCC part 15.247 (a)(2) RSS-GEN § 6.7 RSS-247 § 5.2	PASS
Maximum Peak Output Power	FCC part 15.247 (b)(3) RSS-247 § 5.4	PASS
Power Spectral Density	FCC part 15.247 (e) RSS-247 § 5.2	PASS
Antenna Requirement	FCC part 15.203/15.247 (c) RSS-GEN § 6.8	PASS

Remark:

"N/A" denotes test is not applicable in this Test Report.

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3 General Information

3.1 General Description of E.U.T.

Product Name	:	Laser sweep and mop integrated robot
Model Name	:	L100C0, L100W0
HVIN	:	L100C0, L100W0
Series Model	:	L100X0, L101X0, D10S, D10S MAX, BL20, DL20, BL40 Max, DL40 Max, T20+, L20+, Q10 Pro, Cleanova W11, Cleanova W11 Lite, Cleanova W11 omni, Cleanova W11 Pro, Cleanova W10, Cleanova W10 Pro, Cleanova W10 max, Cleanova W10 +, Cleanova W10 Elite, D1, D1S, D1pro, D2, D2S, D2pro, D3, D3S, D3pro, D4, D4S, D4pro, D5, D5S, D5pro, D6, D6S, D6pro, D7, D7S, D7pro, D8, D8S, D8pro, D9, D9S, D9pro, D10, D10S, D10pro, D11, D11S, D11pro, D12, D12S, D12pro, D13, D13S, D13pro, D14, D14S, D14pro, D15, D15S, D15pro, D16, D16S, D16pro, D17, D17S, D17pro, D18, D18S, D18pro, D19, D19S, D19pro, D20, D20S, D20pro, D1 MAX, D1S MAX, D1pro MAX, D2 MAX, D2S MAX, D2pro MAX, D3 MAX, D3S MAX, D3pro MAX, D4 MAX, D4S MAX, D4pro MAX, D5 MAX, D5S MAX, D5pro MAX, D6 MAX, D6S MAX, D6pro MAX, D7 MAX, D7S MAX, D7pro MAX, D8 MAX, D8S MAX, D8pro MAX, D9 MAX, D9S MAX, D9pro MAX, D10 MAX, D10S MAX, D10pro MAX, D11 MAX, D11S MAX, D11pro MAX, D12 MAX, D12S MAX, D12pro MAX, D13 MAX, D13S MAX, D13pro MAX, D14 MAX, D14S MAX, D14pro MAX, D15 MAX, D15S MAX, D15pro MAX, D16 MAX, D16S MAX, D16pro MAX, D17 MAX, D17S MAX, D17pro MAX, D18 MAX, D18S MAX, D18pro MAX, D19 MAX, D19S MAX, D19pro MAX, D20 MAX, D20S MAX, D20pro MAX, T7S, T8S, D8S, D8S max, S6, S6 Plus, EV3420, EV3430, EV3427, EV3840, EV3640SE, EV3620RL, T10S max, T10S, T12S max, T12S
Model difference	:	All models have same circuits diagram, PCB Layout, construction and rated power,Only the model name, exterior color, and accessories are different.
Sample ID	:	240627109, 240627110
Sample(s) Status:	:	Engineer sample
Specification	:	802.11b/g/n HT20;n HT40
Operation Frequency	:	2412-2462MHz for 802.11b/g/n20; 2422-2452MHz for 802.11n40;
Number of Channel	:	11 channels for 802.11b/g/n20; 7 channels for 802.11n40;
Type of Modulation	:	802.11b: DSSS (CCK, DQPSK, DBPSK) 802.11g/n(20)/ n(40): OFDM (QPSK, BPSK, 16-QAM, 64-QAM)

Antenna installation	:	Internal Antenna
Antenna Gain	:	3.62dBi
Power supply	:	L100C0: DC 14.4V By Rechargeable Li-ion Battery Charge through a charging dock, which is powered by an adapter: Adapter 1: Model No.: AD-0121900060US Input: 100-240V~, 50/60Hz, 0.5A Output: 19.0V ⎓ 0.6A Adapter 2: Model No.: GQ12-190060-AU Input: 100-240V~, 50/60Hz, 0.4A Max Output: 19.0V ⎓ 0.6A L100W0: DC 14.4V By Rechargeable Li-ion Battery Charging via integrated case: Integrated Case: Input: 100-240V~, 50/60Hz Output: 19.0V ⎓ 1.2A
Hardware Version	:	N/A
Software Version	:	N/A
Remark：the Antenna gain is provided by customer from Antenna spec. and the laboratory will not be responsible for the accumulated calculation results which covers the information provided by the applicant.		

3.2 Channel List

The EUT has been tested under its typical operating condition.

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

Test of channel included the lowest and middle and highest frequency to perform the test, then record on this report.

Those data rates (802.11b: 1 Mbps; 802.11g: 6 Mbps; 802.11n (HT20): MCS0; 802.11n (HT40): MCS0; were used for all test.

Pre-defined engineering program for regulatory testing used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

Frequency and Channel list for 802.11 b/g/n (HT20)/n (HT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	5	2432	9	2452
2	2417	6	2437	10	2457
3	2422	7	2442	11	2462
4	2427	8	2447		

Test Frequency and Channel for 802.11 b/g/n (HT20)/n (HT40):

Lowest Frequency		Middle Frequency		Highest Frequency	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	6	2437	11	2462
3	2422	9	2452		

3.3 Test Site

Site Description

EMC Lab. : Accredited by CNAS, 2022-09-27

The certificate is valid until 2028.01.07

The Laboratory has been assessed and proved to be in compliance with CNAS-CL01:2006 (identical to ISO/IEC 17025:2017)

The Certificate Registration Number is L8251

Designation Number: CN1347

Test Firm Registration Number: 894804

Accredited by A2LA, June 14, 2023

The Certificate Registration Number is 6837.01

Accredited by Industry Canada, November 09, 2018

The Conformity Assessment Body Identifier is CN0150

Company Number: 30806

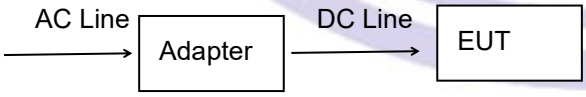
Name of Firm : Shenzhen NCT Testing Technology Co., Ltd.

Site Location : A101&2F B2, Fuqiao 6th Area, Xintian Community, Fuhai Street, Baoan District, Shenzhen, People's Republic of China

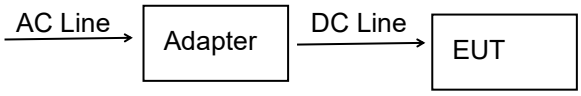
3.4 Test Setup Configuration

Conducted Emission

Radiated Emission



Conducted Spurious



3.5 Test Mode

Transmitting mode	Keep the EUT in continuously transmitting mode.
Remark: During the test, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.	

Test Software	RfTest.exe
Power level setup	< 0 dBm

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4 Equipment During Test

4.1 Equipments List

Conducted emission Test Equipment

Name	Model No.	Serial No.	Manufacturer	Date of Cal.	Due Date
944 Shielded Room	944 Room	/	EMToni	2022/5/31	2025/5/30
EMI Test Receiver	ESPI	101604	Rohde & Schwarz	2024/6/17	2025/6/16
LISN	ENV 216	102796	Rohde & Schwarz	2024/6/17	2025/6/16
LISN	VN1-13S	004023	CRANAGE	2024/6/17	2025/6/16
Cable	RG223-1500MM	NA	RG	2024/6/17	2025/6/16

Radiated emission & Radio Frequency Test Equipment

Name	Model No.	Serial No.	Manufacturer	Date of Cal.	Due Date
966 Shielded Room	966 Room	/	EMToni	2022/5/31	2025/5/30
EMI Test Receiver	ESCI	101178	Rohde & Schwarz	2024/6/17	2025/6/16
Spectrum Analyze （10Hz-26.5GHz）	N9020A	MY50510202	Agilent	2024/6/17	2025/6/16
Amplifi （30MHz-1GHz）	BBV 9743 B	00374	SCHNWARZBECK	2024/6/17	2025/6/16
Bilog Antenna （30MHz-1GHz）	VULB9162	00473	SCHNWARZBECK	2023/3/19	2025/3/18
Horn antenna （1GHz-18GHz）	BBHA 9120 D	02622	SCHNWARZBECK	2023/3/19	2025/3/18
Pream plifier （1GHz-18GHz）	BBV 9718D	00042	SCHNWARZBECK	2024/6/17	2025/6/16
Spectrum Analyze （1GHz-40GHz）	FSV 40	100952	Rohde & Schwarz	2024/6/17	2025/6/16
Pream plifier （15GHz-40GHz）	BBV 9718D	0024	SCHNWARZBECK	2024/6/17	2025/6/16
Broadband Antenna （15GHz-40GHz）	SAS-574	588	A.H.System	2023/3/19	2025/3/18
Loop Antenna (9KHz-30MHz)	FMZB1519B	014	SCHNWARZBECK	2024/6/20	2025/6/19

Amplifier (9KHz-30MHz)	CVP 9222 C	00109	CHNWARZBECK	2024/6/18	2025/6/17
MXG Signal Analyzer	N9020A	MY50510202	Agilent	2024/6/17	2025/6/16
MXG Vector Signal Generator	N5182A	MY50140020	Agilent	2024/6/17	2025/6/16
MXG Analog Signal Generator	N5181A	MY47420919	Agilent	2024/6/17	2025/6/16
Power Sensor	TR1029-2	512364	Techoy	2024/6/17	2025/6/16
RF Swith	TR1029-1	512364	Techoy	2024/6/17	2025/6/16
Cable	DA800-4000MM	NA	DA	2024/6/17	2025/6/16
Cable	DA800-11000MM	NA	DA	2024/6/17	2025/6/16

Other

Item	Name	Manufacturer	Model	Software version
1	EMC Conduction Test System	AUDIX	e3	6.120718
2	EMC radiation test system	AUDIX	e3	6.120718
3	RF test system	TACHOY	RFTest	V1.0.0
4	RF communication test system	TACHOY	RFTest	V1.0.0

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4.2 Measurement Uncertainty

Parameter	Uncertainty
RF output power, conducted	±1.0dB
Power Spectral Density, conducted	±2.2dB
Radio Frequency	± 1 x 10^{-6}
Bandwidth	± 1.5 x 10^{-6}
Time	±2%
Duty Cycle	±2%
Temperature	±1°C
Humidity	±5%
DC and low frequency voltages	±3%
Conducted Emissions (150kHz~30MHz)	±3.64dB
Radiated Emission(9KHz~30MHz)	±4.51dB
Radiated Emission(30MHz~1GHz)	±5.03dB
Radiated Emission(1GHz~25GHz)	±4.74dB
Radiated Emission(25GHz~40GHz)	±3.38dB
Remark: The coverage Factor (k=2), and measurement Uncertainty for a level of Confidence of 95%	

4.3 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
E-1	Laser sweep and mop integrated robot	N/A	L100C0, L100W0	N/A	EUT
E-2	Notebook	Lenovo	LN-A0403A3C	36001672	AE

Note:

(1) The support equipment was authorized by Declaration of Confirmation.

(2) For detachable type I/O cable should be specified the length in cm in『Length』column.

5 Conducted Emission

Test Requirement:	:	FCC CFR 47 Part 15 Section 15.207, RSS-Gen§8.8, RSS-247§ 3.1
Test Method	:	ANSI C63.10: 2013
Test Result	:	PASS
Frequency Range	:	150kHz to 30MHz
Class/Severity	:	Class B

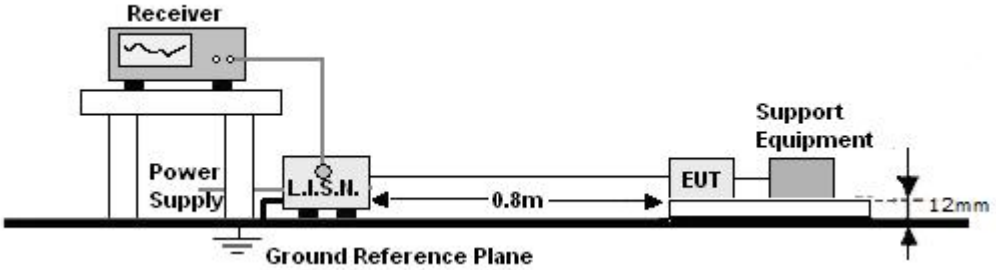
5.1 E.U.T. Operation

Operating Environment :

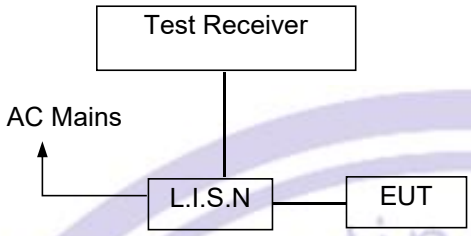
Temperature	:	24.5 °C
Humidity	:	51.3 % RH
Atmospheric Pressure	:	101.11kPa

5.2 EUT Setup

The conducted emission tests were performed using the setup accordance with the ANSI C63.10:2013.



5.3 Test SET-UP (Block Diagram of Configuration)



5.4 Measurement Procedure

1. The EUT was placed on a table, which is 0.1m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured was complete.

5.5 Conducted Emission Limit

Conducted Emission

Frequency(MHz)	Quasi-peak	Average
0.15-0.5	66-56	56-46
0.5-5.0	56	46
5.0-30.0	60	50

Note:

1. The lower limit shall apply at the transition frequencies

2.The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

5.6 Measurement Description

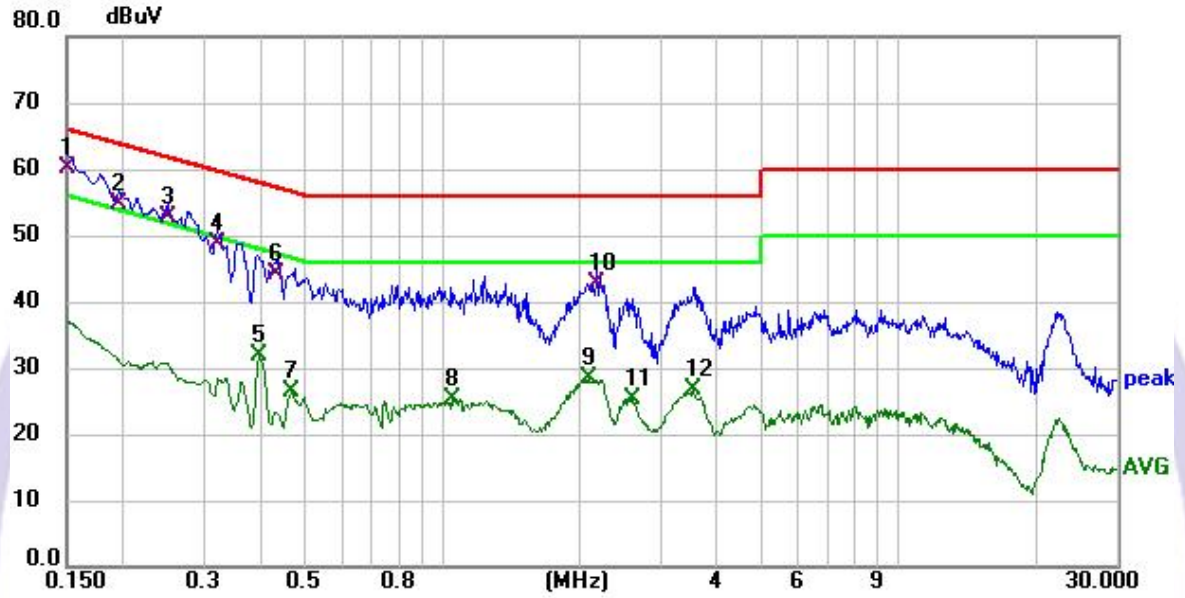
The maximised peak emissions from the EUT was scanned and measured for both the Live and Neutral Lines. Quasi-peak & average measurements were performed if peak emissions were within 6dB of the average limit line.

5.7 Conducted Emission Test Result

Pass.

Please refer to the following pages.

Temperature:	26°C	Relative Humidity:	54%
Pressure:	101kPa	Phase :	L
Test Voltage :	AC 120V/60Hz	Note :	L100C0 + Adapter 5



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1 *	0.150	50.38	9.81	60.19	66.00	-5.81	QP	P	
2	0.195	44.57	10.03	54.60	63.83	-9.23	QP	P	
3	0.249	42.58	10.01	52.59	61.79	-9.20	QP	P	
4	0.321	38.99	9.81	48.80	59.68	-10.88	QP	P	
5	0.398	21.80	9.97	31.77	47.90	-16.13	AVG	P	
6	0.433	34.33	9.87	44.20	57.19	-12.99	QP	P	
7	0.465	16.72	9.77	26.49	46.60	-20.11	AVG	P	
8	1.054	15.80	9.54	25.34	46.00	-20.66	AVG	P	
9	2.107	18.18	10.11	28.29	46.00	-17.71	AVG	P	
10	2.188	32.66	10.06	42.72	56.00	-13.28	QP	P	
11	2.611	15.43	9.88	25.31	46.00	-20.69	AVG	P	
12	3.529	16.99	9.60	26.59	46.00	-19.41	AVG	P	

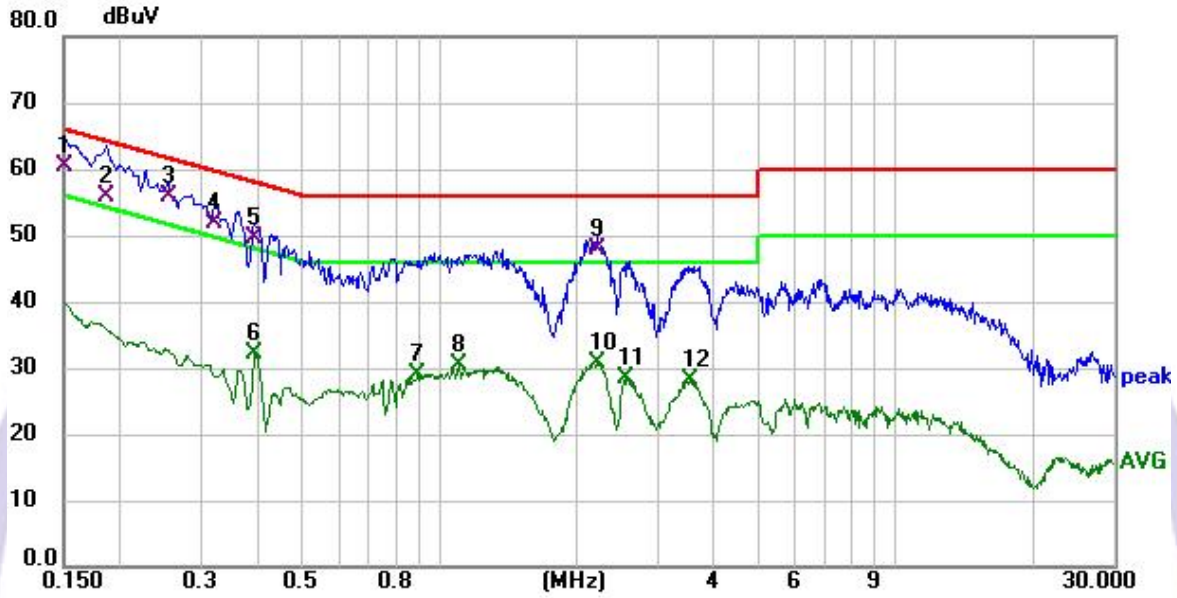
Notes: 1.An initial pre-scan was performed on the line and neutral lines with peak detector.

2.Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.

3.Mesurement Level = Reading level + Correct Factor

Temperature:	26°C	Relative Humidity:	54%

Pressure:	101kPa	Phase :	N
Test Voltage :	AC 120V/60Hz	L100C0 + Adapter 2	L100C0 + Adapter 5



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1 *	0.150	50.61	9.81	60.42	66.00	-5.58	QP	P	
2	0.186	46.13	9.80	55.93	64.21	-8.28	QP	P	
3	0.254	46.15	9.80	55.95	61.63	-5.68	QP	P	
4	0.321	42.06	9.80	51.86	59.68	-7.82	QP	P	
5	0.393	39.70	9.81	49.51	58.00	-8.49	QP	P	
6	0.393	22.28	9.81	32.09	48.00	-15.91	AVG	P	
7	0.897	19.25	9.70	28.95	46.00	-17.05	AVG	P	
8	1.099	20.66	9.68	30.34	46.00	-15.66	AVG	P	
9	2.215	38.09	9.67	47.76	56.00	-8.24	QP	P	
10	2.215	21.14	9.67	30.81	46.00	-15.19	AVG	P	
11	2.557	18.77	9.59	28.36	46.00	-17.64	AVG	P	
12	3.538	18.48	9.77	28.25	46.00	-17.75	AVG	P	

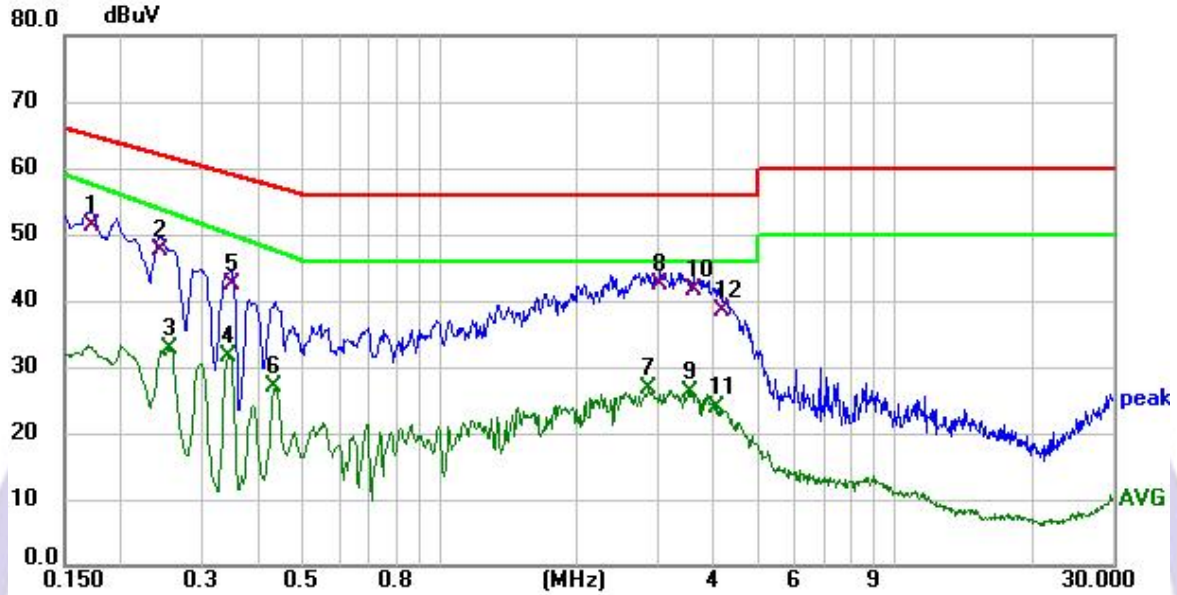
Notes: 1.An initial pre-scan was performed on the line and neutral lines with peak detector.

2.Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.

3.Mesurement Level = Reading level + Correct Factor

Temperature:	26°C	Relative Humidity:	54%
Pressure:	101kPa	Phase :	L

Test Voltage ：	AC 120V/60Hz	Note ：	L100W0



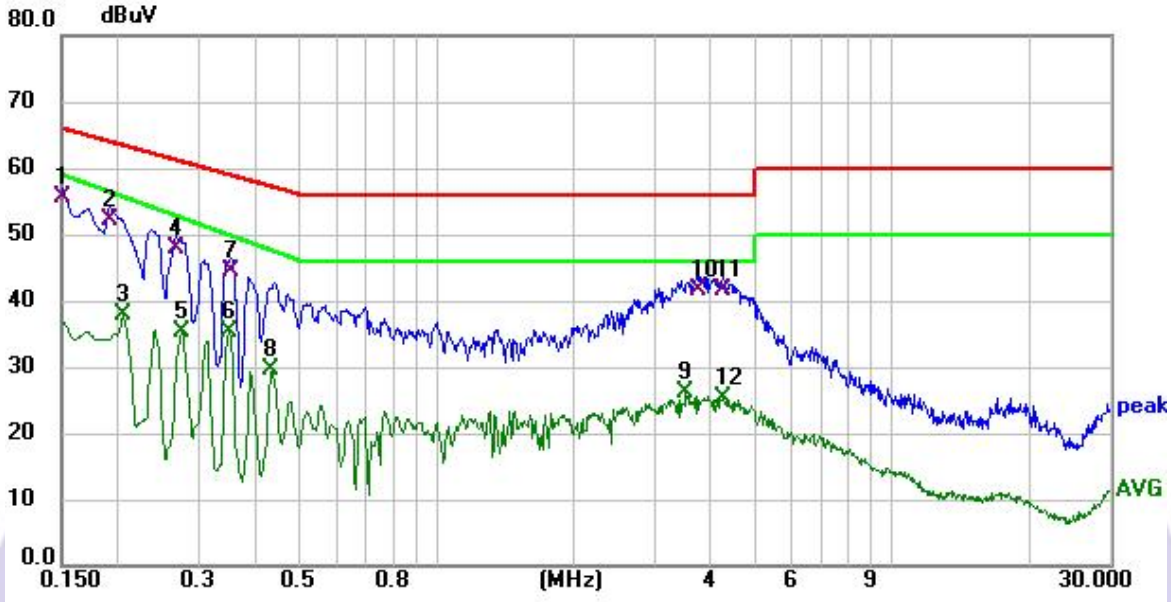
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1 *	0.172	41.35	9.92	51.27	64.86	-13.59	QP	P	
2	0.244	37.54	10.02	47.56	61.96	-14.40	QP	P	
3	0.254	22.58	10.01	32.59	53.31	-20.72	AVG	P	
4	0.344	21.85	9.65	31.50	50.04	-18.54	AVG	P	
5	0.348	32.74	9.62	42.36	59.01	-16.65	QP	P	
6	0.433	16.99	9.87	26.86	47.55	-20.69	AVG	P	
7	2.872	17.05	9.76	26.81	46.00	-19.19	AVG	P	
8	3.052	32.61	9.70	42.31	56.00	-13.69	QP	P	
9	3.538	16.64	9.59	26.23	46.00	-19.77	AVG	P	
10	3.619	31.96	9.57	41.53	56.00	-14.47	QP	P	
11	4.060	14.28	9.52	23.80	46.00	-22.20	AVG	P	
12	4.159	28.93	9.57	38.50	56.00	-17.50	QP	P	

Notes: 1.An initial pre-scan was performed on the line and neutral lines with peak detector.

2.Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.

3.Mesurement Level = Reading level + Correct Factor

Temperature：	26°C	Relative Humidity：	54%
Pressure：	101kPa	Phase ：	N
Test Voltage ：	AC 120V/60Hz	L100C0 + Adapter 2	L100W0



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1 *	0.150	45.82	9.81	55.63	66.00	-10.37	QP	P	
2	0.191	42.43	9.79	52.22	63.99	-11.77	QP	P	
3	0.204	27.98	9.79	37.77	55.68	-17.91	AVG	P	
4	0.267	38.03	9.80	47.83	61.21	-13.38	QP	P	
5	0.276	25.62	9.80	35.42	52.42	-17.00	AVG	P	
6	0.348	25.55	9.81	35.36	49.91	-14.55	AVG	P	
7	0.352	34.67	9.81	44.48	58.92	-14.44	QP	P	
8	0.433	19.70	9.81	29.51	47.55	-18.04	AVG	P	
9	3.520	16.25	9.76	26.01	46.00	-19.99	AVG	P	
10	3.745	31.75	9.88	41.63	56.00	-14.37	QP	P	
11	4.258	31.54	9.92	41.46	56.00	-14.54	QP	P	
12	4.258	15.26	9.92	25.18	46.00	-20.82	AVG	P	

Notes: 1.An initial pre-scan was performed on the line and neutral lines with peak detector.

2.Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.

3.Mesurement Level = Reading level + Correct Factor

6 Radiated Spurious Emissions

Test Requirement	:	FCC CFR47 Part 15 Section 15.209 & 15.247 RSS-Gen §8.9, RSS-Gen §8.10
Test Method	:	ANSI C63.10:2013
Test Result	:	PASS
Measurement Distance	:	3m
Limit	:	See the follow table

Frequency (MHz)	Field Strength		Field Strength Limit at 3m Measurement Dist	
	uV/m	Distance (m)	uV/m	dBuV/m
0.009 ~ 0.490	2400/F(kHz)	300	10000 * 2400/F(kHz)	$20\log^{(2400/F(kHz))} + 80$
0.490 ~ 1.705	24000/F(kHz)	30	100 * 24000/F(kHz)	$20\log^{(24000/F(kHz))} + 40$
1.705 ~ 30	30	30	100 * 30	$20\log^{(30)} + 40$
30 ~ 88	100	3	100	$20\log^{(100)}$
88 ~ 216	150	3	150	$20\log^{(150)}$
216 ~ 960	200	3	200	$20\log^{(200)}$
Above 960	500	3	500	$20\log^{(500)}$

6.1 EUT Operation

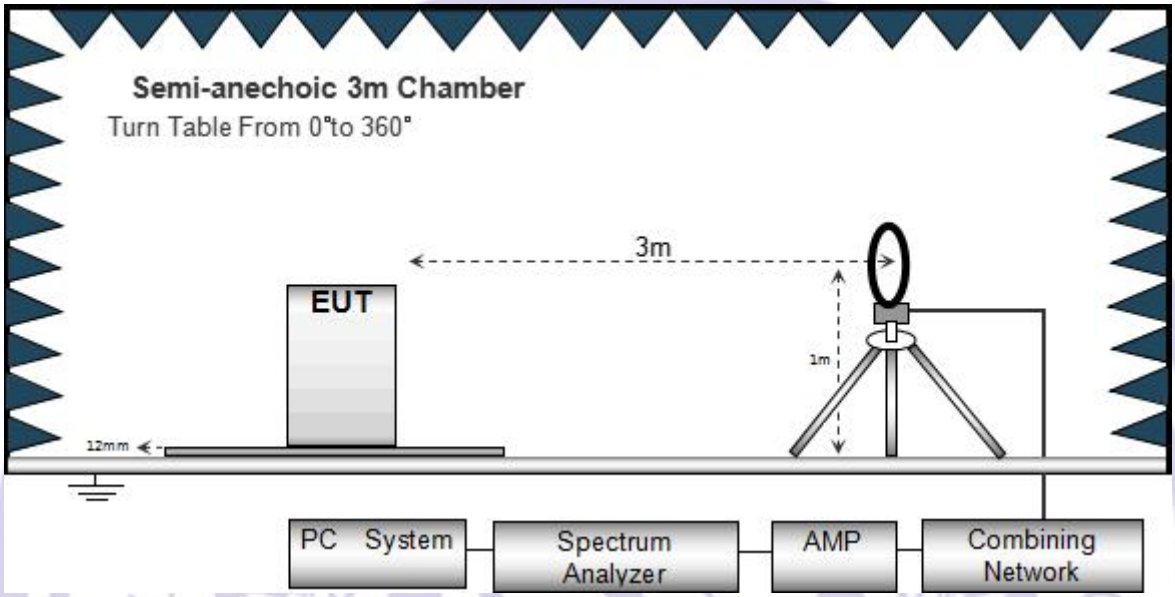
Operating Environment :

Temperature:	:	24.5°C
Humidity:	:	52 % RH
Atmospheric Pressure:	:	101.11kPa
Test Voltage	:	DC 22V From adapter input AC 120V/60Hz

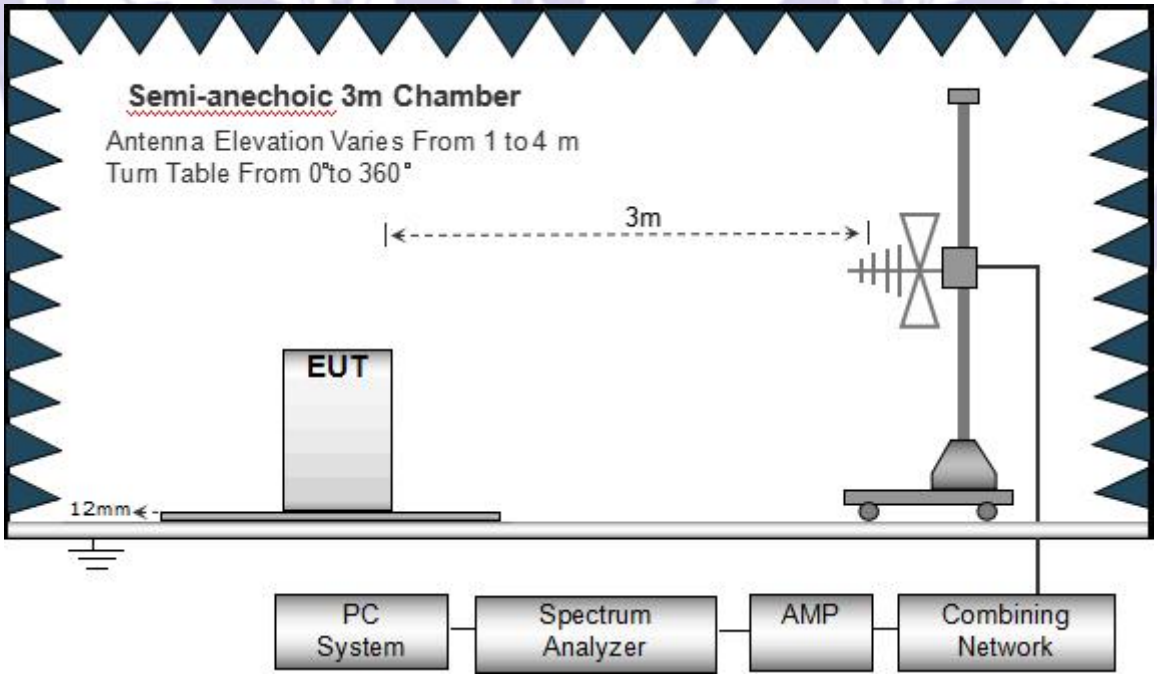
6.2 Test Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site

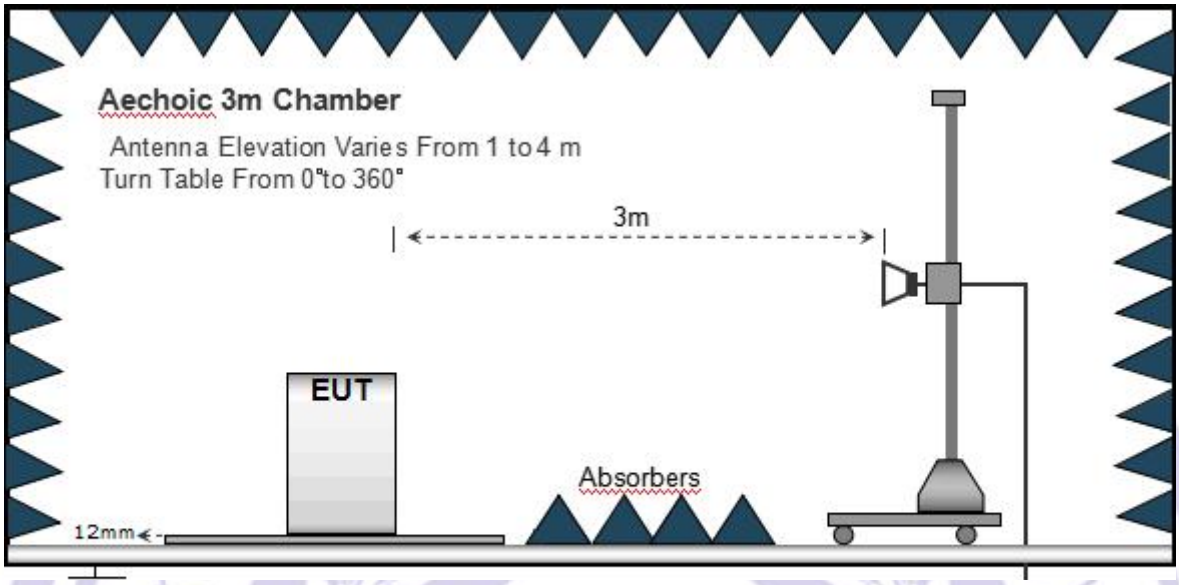
The test setup for emission measurement below 30MHz



The test setup for emission measurement from 30 MHz to 1 GHz.



The test setup for emission measurement above 1 GHz



6.3 Spectrum Analyzer Setup

Below 30MHz			
IF Bandwidth	:	10kHz	
Resolution Bandwidth	:	10kHz	
Video Bandwidth	:	10kHz	
30MHz ~ 1GHz			
Detector	:	PK	QP
Resolution Bandwidth	:	100kHz	120kHz
Video Bandwidth	:	300kHz	300kHz
Above 1GHz			
Detector	:	PK	AV
Resolution Bandwidth	:	1MHz	1MHz
Video Bandwidth	:	3MHz	10Hz

6.4 Test Procedure

1. The testing follows the guidelines in Spurious Radiated Emissions of ANSI C63.10-2013.

2. Below 1000MHz, The EUT was placed on a turn table which is 0.1m above ground plane. And above 1000MHz, The EUT was placed on a styrofoam table which is 0.1m above ground plane.

3. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

4. For each suspected emission, the EUT was arranged to its worst case and then tune the Antenna tower (From 1m to 4m) and turntable (from 0 degree to 360 degree) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level to comply with the guidelines.

5. Set to the maximum power setting and enable the EUT transmit continuously.

6. Final measurement (Above 1GHz): The frequency range will be divided into different sub ranges depending of the frequency range of the used horn antenna. The EMI Receiver set to peak and average mode and a resolution bandwidth of 1MHz. The measurement will be performed in horizontal and vertical polarization of the measuring antenna and while rotating the EUT in its vertical axis in the range of 0 degree to 360 degree in order to have the antenna inside the cone of radiation.

7. Test Procedure of measurement (For Above 1GHz):

1) Monitor the frequency range at horizontal polarization and move the antenna over all sides of the EUT(if necessary move the EUT to another orthogonal axis).

2) Change the antenna polarization and repeat 1) with vertical polarization.

3) Make a hardcopy of the spectrum.

4) Measure the frequency of the detected emissions with a lower span and resolution bandwidth to increase the accuracy and note the frequency value.

5) Change the analyser mode to Clear/ Write and found the cone of emission.

6) Rotate and move the EUT, so that the measuring distance can be enlarged to 3m and the antenna will be still inside the cone of emission.

7) Measure the level of the detected frequency with the correct resolution bandwidth, with the antenna polarization and azimuth and the peak and average detector, which causes the maximum emission.

8) Repeat steps 1) to 7) for the next antenna spot if the EUT is larger than the antenna beamwidth.

8. The radiation measurements are tested under 3-axes(X,Y,Z) position(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand), After pre-test, It was found that the worse radiation emission was get at the X position. So the data shown was the X position only.

6.5 Summary of Test Results

Test Frequency: 9KHz-30MHz

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV/m)	Limit 3m (dBuV/m)	Over (dB)
--	--	--	--	>20

Note:

The amplitude of spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.

Distance extrapolation factor =40log(Specific distance/ test distance)(dB);
Limit line=Specific limits(dBuV) + distance extrapolation factor.

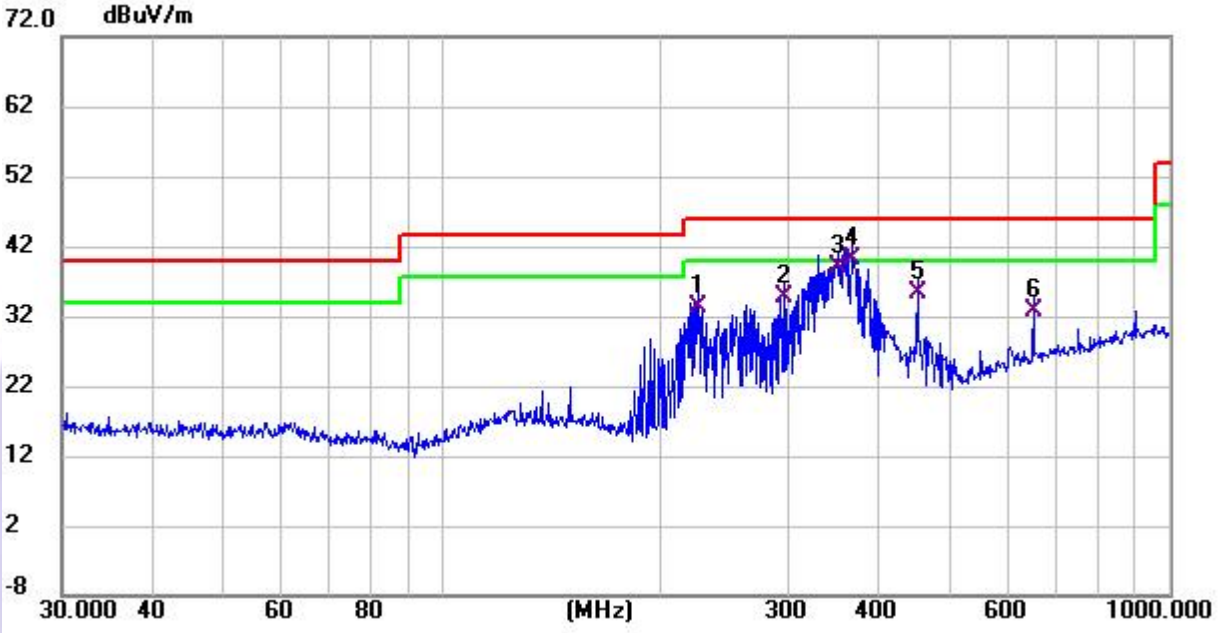
Test Frequency: 30MHz ~ 1GHz

All the modulation modes were tested the data of the worst mode (TX 802.11b Low Channel) are recorded in the following pages and the others modulation methods do not exceed the limits.

Please refer to the following test plots:

Hotline: 400-8868-419 Fax: 86-755-27790922
http://www.ncttesting.cn

Temperature:	26℃	Relative Humidity:	54%
Pressure:	101 kPa	Polarization:	Horizontal
Test Voltage:	DC 14.4V	Note:	L100C0 + Adapter 5



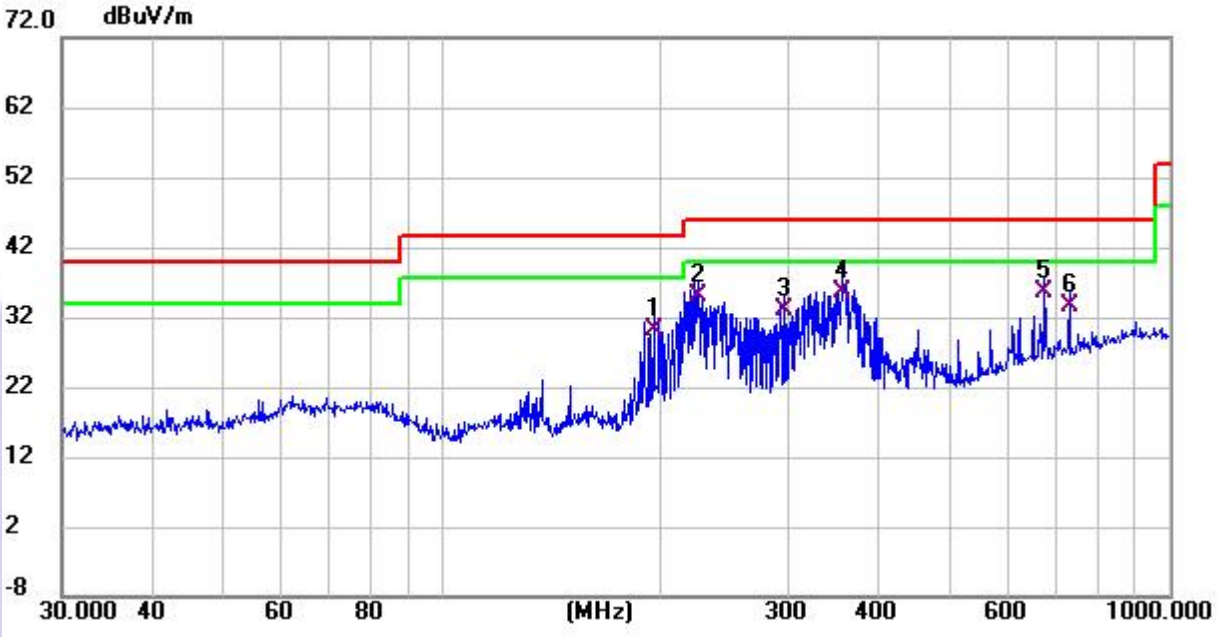
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	225.308	21.82	11.34	33.16	46.00	-12.84	QP			P	
2	295.147	21.14	13.56	34.70	46.00	-11.30	QP			P	
3	350.477	24.04	14.92	38.96	46.00	-7.04	QP			P	
4 *	365.539	24.83	15.30	40.13	46.00	-5.87	QP			P	
5	451.135	18.03	17.16	35.19	46.00	-10.81	QP			P	
6	651.942	11.37	21.48	32.85	46.00	-13.15	QP			P	

Remark:

Emission Level=Reading+Factor

Factor=Cable Loss+ANT Factor-Preamp Factor

Temperature:	26℃	Relative Humidity:	54%
Pressure:	101kPa	Polarization:	Vertical
Test Voltage:	DC 14.4V	Note:	L100C0 + Adapter 5



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	195.822	19.61	10.66	30.27	43.50	-13.23	QP			P	
2	225.308	23.54	11.34	34.88	46.00	-11.12	QP			P	
3	295.147	19.54	13.56	33.10	46.00	-12.90	QP			P	
4 *	354.183	20.53	15.01	35.54	46.00	-10.46	QP			P	
5	675.208	13.62	21.87	35.49	46.00	-10.51	QP			P	
6	729.358	10.97	22.62	33.59	46.00	-12.41	QP			P	

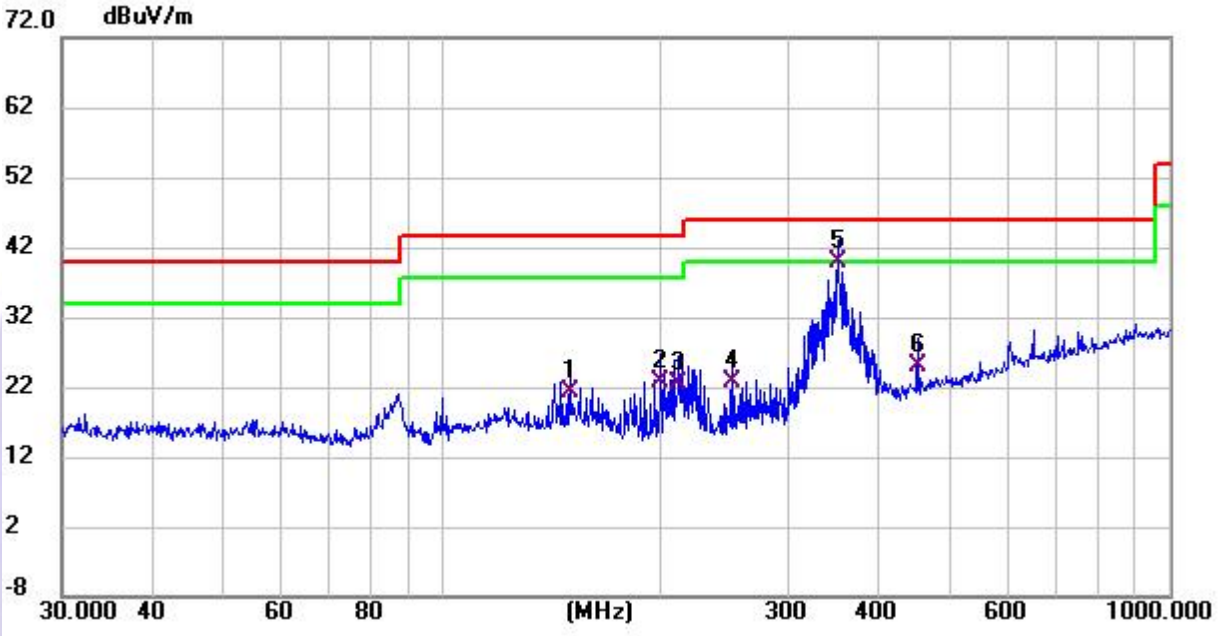
Remark:

Emission Level=Reading+Factor

Factor=Cable Loss+ANT Factor-Preamp Factor

Hotline: 400-8868-419 Fax: 86-755-27790922
http://www.ncttesting.cn

Temperature:	26℃	Relative Humidity:	54%
Pressure:	101 kPa	Polarization:	Horizontal
Test Voltage:	DC 14.4V	Note:	L100W0



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	150.011	7.88	13.33	21.21	43.50	-22.29	QP			P	
2	199.986	12.20	10.40	22.60	43.50	-20.90	QP			P	
3	211.526	11.68	10.76	22.44	43.50	-21.06	QP			P	
4	250.301	10.47	12.35	22.82	46.00	-23.18	QP			P	
5 *	350.477	24.94	14.92	39.86	46.00	-6.14	QP			P	
6	451.135	7.96	17.16	25.12	46.00	-20.88	QP			P	

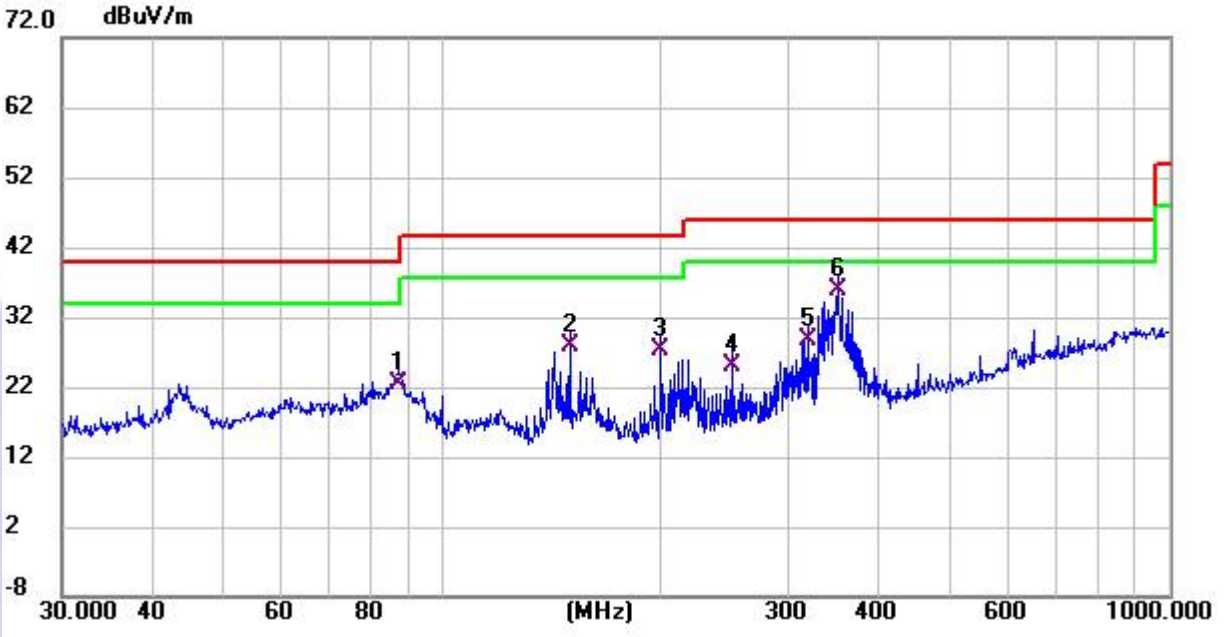
Remark:

Emission Level=Reading+Factor

Factor=Cable Loss+ANT Factor-Preamp Factor

Hotline: 400-8868-419 Fax: 86-755-27790922
http://www.ncttesting.cn

Temperature:	26℃	Relative Humidity:	54%
Pressure:	101kPa	Polarization:	Vertical
Test Voltage:	DC 14.4V	Note:	L100W0



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	87.418	7.64	14.65	22.29	40.00	-17.71	QP			P	
2	150.011	15.49	12.29	27.78	43.50	-15.72	QP			P	
3	199.986	16.75	10.40	27.15	43.50	-16.35	QP			P	
4	250.301	12.56	12.35	24.91	46.00	-21.09	QP			P	
5	318.817	14.65	14.10	28.75	46.00	-17.25	QP			P	
6 *	350.477	20.95	14.92	35.87	46.00	-10.13	QP			P	

Remark:

Emission Level=Reading+Factor

Factor=Cable Loss+ANT Factor-Preamp Factor

Hotline: 400-8868-419 Fax: 86-755-27790922
http://www.ncttesting.cn

Test Frequency: From 1GHz to 25GHz

Temperature:	26℃	Relative Humidity:	54%
Pressure:	101kPa	Note:	L100C0
Test Voltage:	DC 14.4V		

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel:2412MHz									
V	4804	50.65	30.55	5.77	24.66	50.53	74	-23.47	PK
V	4804	40.49	30.55	5.77	24.66	40.37	54	-13.63	AV
V	7206	44.27	30.33	6.32	24.55	44.81	74	-29.19	PK
V	7206	33.41	30.33	6.32	24.55	33.95	54	-20.05	AV
V	9608	47.02	30.85	7.45	24.69	48.31	74	-25.69	PK
V	9608	33.94	30.85	7.45	24.69	35.23	54	-18.77	AV
V	12010	41.70	31.02	8.99	25.57	45.24	74	-28.76	PK
V	12010	31.95	31.02	8.99	25.57	35.49	54	-18.51	AV
H	4804	49.49	30.55	5.77	24.66	49.37	74	-24.63	PK
H	4804	37.70	30.55	5.77	24.66	37.58	54	-16.42	AV
H	7206	48.01	30.33	6.32	24.55	48.55	74	-25.45	PK
H	7206	35.62	30.33	6.32	24.55	36.16	54	-17.84	AV
H	9608	43.33	30.85	7.45	24.69	44.62	74	-29.38	PK
H	9608	32.47	30.85	7.45	24.69	33.76	54	-20.24	AV
H	12010	39.18	31.02	8.99	25.57	42.72	74	-31.28	PK
H	12010	31.97	31.02	8.99	25.57	35.51	54	-18.49	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Middle Channel:2437MHz									
V	4882	47.05	30.55	5.77	24.66	46.93	74	-27.07	PK
V	4882	35.58	30.55	5.77	24.66	35.46	54	-18.54	AV
V	7323	46.16	30.33	6.32	24.55	46.70	74	-27.30	PK
V	7323	33.32	30.33	6.32	24.55	33.86	54	-20.14	AV
V	9764	40.31	30.85	7.45	24.69	41.60	74	-32.40	PK
V	9764	27.66	30.85	7.45	24.69	28.95	54	-25.05	AV
V	12205	37.52	31.02	8.99	25.57	41.06	74	-32.94	PK
V	12205	25.35	31.02	8.99	25.57	28.89	54	-25.11	AV
H	4882	49.19	30.55	5.77	24.66	49.07	74	-24.93	PK
H	4882	36.63	30.55	5.77	24.66	36.51	54	-17.49	AV
H	7323	44.19	30.33	6.32	24.55	44.73	74	-29.27	PK
H	7323	33.12	30.33	6.32	24.55	33.66	54	-20.34	AV
H	9764	38.93	30.85	7.45	24.69	40.22	74	-33.78	PK
H	9764	26.91	30.85	7.45	24.69	28.20	54	-25.80	AV
H	12205	39.54	31.02	8.99	25.57	43.08	74	-30.92	PK
H	12205	29.36	31.02	8.99	25.57	32.90	54	-21.10	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
High Channel:2462MHz									
V	4960	45.92	30.55	5.77	24.66	45.80	74	-28.20	PK
V	4960	37.18	30.55	5.77	24.66	37.06	54	-16.94	AV
V	7440	42.53	30.33	6.32	24.55	43.07	74	-30.93	PK
V	7440	33.24	30.33	6.32	24.55	33.78	54	-20.22	AV
V	9920	41.06	30.85	7.45	24.69	42.35	74	-31.65	PK
V	9920	29.11	30.85	7.45	24.69	30.40	54	-23.60	AV
V	12400	38.38	31.02	8.99	25.57	41.92	74	-32.08	PK
V	12400	29.78	31.02	8.99	25.57	33.32	54	-20.68	AV
H	4960	47.96	30.55	5.77	24.66	47.84	74	-26.16	PK
H	4960	36.45	30.55	5.77	24.66	36.33	54	-17.67	AV
H	7440	46.57	30.33	6.32	24.55	47.11	74	-26.89	PK
H	7440	32.01	30.33	6.32	24.55	32.55	54	-21.45	AV
H	9920	42.60	30.85	7.45	24.69	43.89	74	-30.11	PK
H	9920	30.67	30.85	7.45	24.69	31.96	54	-22.04	AV
H	12400	41.12	31.02	8.99	25.57	44.66	74	-29.34	PK
H	12400	27.59	31.02	8.99	25.57	31.13	54	-22.87	AV

Note:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss − Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
4. We test all the mode and recorded the worst mode (802.11b) in the report.

Radiated Band Emission Measuremen:

	Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission level (dBuV/m)	Limit (dBuV/m)	Detector Type	Result
802.11b	Low Channel 2412MHz									
	H	2390	57.26	30.22	4.85	23.98	55.87	74	PK	PASS
	H	2390	49.60	30.22	4.85	23.98	48.21	54	AV	PASS
	H	2400	60.86	30.22	4.85	23.98	59.47	74	PK	PASS
	H	2400	49.45	30.22	4.85	23.98	48.06	54	AV	PASS
	V	2390	58.01	30.22	4.85	23.98	56.62	74	PK	PASS
	V	2390	49.26	30.22	4.85	23.98	47.87	54	AV	PASS
	V	2400	60.44	30.22	4.85	23.98	59.05	74	PK	PASS
	V	2400	50.84	30.22	4.85	23.98	49.45	54	AV	PASS
	High Channel 2462MHz									
	H	2483.5	57.93	35.11	3.56	27.75	54.13	74	PK	PASS
	H	2485.5	49.12	35.11	3.56	27.75	45.32	54	AV	PASS
	H	2483.5	59.53	35.1	3.57	27.8	55.80	74	PK	PASS
	H	2485.5	49.71	35.1	3.57	27.8	45.98	54	AV	PASS
	V	2483.5	58.73	35.11	3.56	27.75	54.93	74	PK	PASS
	V	2485.5	51.29	35.11	3.56	27.75	47.49	54	AV	PASS
	V	2483.5	58.35	35.1	3.57	27.8	54.62	74	PK	PASS
	V	2485.5	50.06	35.1	3.57	27.8	46.33	54	AV	PASS
802.11g	Low Channel 2412MHz									
	H	2390	57.66	30.22	4.85	23.98	56.27	74	PK	PASS
	H	2390	48.87	30.22	4.85	23.98	47.48	54	AV	PASS
	H	2400	58.53	30.22	4.85	23.98	57.14	74	PK	PASS
	H	2400	49.17	30.22	4.85	23.98	47.78	54	AV	PASS

	V	2390	57.22	30.22	4.85	23.98	55.83	74	PK	PASS
	V	2390	50.13	30.22	4.85	23.98	48.74	54	AV	PASS
	V	2400	59.40	30.22	4.85	23.98	58.01	74	PK	PASS
	V	2400	49.35	30.22	4.85	23.98	47.96	54	AV	PASS
	High Channel 2462MHz									
	H	2483.5	56.67	35.11	3.56	27.75	52.87	74	PK	PASS
	H	2485.5	48.05	35.11	3.56	27.75	44.25	54	AV	PASS
	H	2483.5	59.19	35.1	3.57	27.8	55.46	74	PK	PASS
	H	2485.5	48.90	35.1	3.57	27.8	45.17	54	AV	PASS
	V	2483.5	58.40	35.11	3.56	27.75	54.60	74	PK	PASS
	V	2485.5	49.73	35.11	3.56	27.75	45.93	54	AV	PASS
	V	2483.5	57.80	35.1	3.57	27.8	54.07	74	PK	PASS
	V	2485.5	48.89	35.1	3.57	27.8	45.16	54	AV	PASS
802.11 n20	Low Channel 2412MHz									
	H	2390	58.14	30.22	4.85	23.98	56.75	74	PK	PASS
	H	2390	50.07	30.22	4.85	23.98	48.68	54	AV	PASS
	H	2400	59.78	30.22	4.85	23.98	58.39	74	PK	PASS
	H	2400	50.29	30.22	4.85	23.98	48.90	54	AV	PASS
	V	2390	57.74	30.22	4.85	23.98	56.35	74	PK	PASS
	V	2390	51.05	30.22	4.85	23.98	49.66	54	AV	PASS
	V	2400	60.36	30.22	4.85	23.98	58.97	74	PK	PASS
	V	2400	49.85	30.22	4.85	23.98	48.46	54	AV	PASS
	High Channel 2462MHz									
	H	2483.5	59.01	35.11	3.56	27.75	55.21	74	PK	PASS
	H	2485.5	48.60	35.11	3.56	27.75	44.80	54	AV	PASS
	H	2483.5	59.26	35.1	3.57	27.8	55.53	74	PK	PASS

	H	2485.5	50.46	35.1	3.57	27.8	46.73	54	AV	PASS
	V	2483.5	58.30	35.11	3.56	27.75	54.50	74	PK	PASS
	V	2485.5	50.68	35.11	3.56	27.75	46.88	54	AV	PASS
	V	2483.5	59.76	35.1	3.57	27.8	56.03	74	PK	PASS
	V	2485.5	50.51	35.1	3.57	27.8	46.78	54	AV	PASS
802.11 n40	Low Channel 2422MHz									
	H	2390	58.79	30.22	4.85	23.98	57.40	74	PK	PASS
	H	2390	49.89	30.22	4.85	23.98	48.50	54	AV	PASS
	H	2400	59.94	30.22	4.85	23.98	58.55	74	PK	PASS
	H	2400	50.34	30.22	4.85	23.98	48.95	54	AV	PASS
	V	2390	59.00	30.22	4.85	23.98	57.61	74	PK	PASS
	V	2390	50.54	30.22	4.85	23.98	49.15	54	AV	PASS
	V	2400	58.59	30.22	4.85	23.98	57.20	74	PK	PASS
	V	2400	51.62	30.22	4.85	23.98	50.23	54	AV	PASS
	High Channel 2452MHz									
	H	2483.5	57.98	35.11	3.56	27.75	54.18	74	PK	PASS
	H	2485.5	51.55	35.11	3.56	27.75	47.75	54	AV	PASS
	H	2483.5	61.14	35.1	3.57	27.8	57.41	74	PK	PASS
	H	2485.5	51.97	35.1	3.57	27.8	48.24	54	AV	PASS
	V	2483.5	58.60	35.11	3.56	27.75	54.80	74	PK	PASS
	V	2485.5	51.24	35.11	3.56	27.75	47.44	54	AV	PASS
	V	2483.5	60.45	35.1	3.57	27.8	56.72	74	PK	PASS
	V	2485.5	51.62	35.1	3.57	27.8	47.89	54	AV	PASS

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit

Temperature:	26℃	Relative Humidity:	54%
Pressure:	101kPa	Note:	L100W0
Test Voltage:	DC 14.4V		

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel:2412MHz									
V	4804	50.17	30.55	5.77	24.66	50.05	74	-23.95	PK
V	4804	41.00	30.55	5.77	24.66	40.88	54	-13.12	AV
V	7206	44.39	30.33	6.32	24.55	44.93	74	-29.07	PK
V	7206	33.19	30.33	6.32	24.55	33.73	54	-20.27	AV
V	9608	48.56	30.85	7.45	24.69	49.85	74	-24.15	PK
V	9608	34.77	30.85	7.45	24.69	36.06	54	-17.94	AV
V	12010	42.50	31.02	8.99	25.57	46.04	74	-27.96	PK
V	12010	31.88	31.02	8.99	25.57	35.42	54	-18.58	AV
H	4804	49.28	30.55	5.77	24.66	49.16	74	-24.84	PK
H	4804	37.27	30.55	5.77	24.66	37.15	54	-16.85	AV
H	7206	47.66	30.33	6.32	24.55	48.20	74	-25.80	PK
H	7206	35.39	30.33	6.32	24.55	35.93	54	-18.07	AV
H	9608	44.33	30.85	7.45	24.69	45.62	74	-28.38	PK
H	9608	32.87	30.85	7.45	24.69	34.16	54	-19.84	AV
H	12010	37.77	31.02	8.99	25.57	41.31	74	-32.69	PK
H	12010	31.76	31.02	8.99	25.57	35.30	54	-18.70	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Middle Channel:2437MHz									
V	4882	47.63	30.55	5.77	24.66	47.51	74	-26.49	PK
V	4882	36.83	30.55	5.77	24.66	36.71	54	-17.29	AV
V	7323	45.25	30.33	6.32	24.55	45.79	74	-28.21	PK
V	7323	33.88	30.33	6.32	24.55	34.42	54	-19.58	AV
V	9764	41.07	30.85	7.45	24.69	42.36	74	-31.64	PK
V	9764	29.33	30.85	7.45	24.69	30.62	54	-23.38	AV
V	12205	37.96	31.02	8.99	25.57	41.50	74	-32.50	PK
V	12205	24.44	31.02	8.99	25.57	27.98	54	-26.02	AV
H	4882	48.95	30.55	5.77	24.66	48.83	74	-25.17	PK
H	4882	37.06	30.55	5.77	24.66	36.94	54	-17.06	AV
H	7323	43.78	30.33	6.32	24.55	44.32	74	-29.68	PK
H	7323	31.91	30.33	6.32	24.55	32.45	54	-21.55	AV
H	9764	38.28	30.85	7.45	24.69	39.57	74	-34.43	PK
H	9764	28.46	30.85	7.45	24.69	29.75	54	-24.25	AV
H	12205	38.99	31.02	8.99	25.57	42.53	74	-31.47	PK
H	12205	29.74	31.02	8.99	25.57	33.28	54	-20.72	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
High Channel:2462MHz									
V	4960	47.68	30.55	5.77	24.66	47.56	74	-26.44	PK
V	4960	37.22	30.55	5.77	24.66	37.10	54	-16.90	AV
V	7440	42.06	30.33	6.32	24.55	42.60	74	-31.40	PK
V	7440	33.38	30.33	6.32	24.55	33.92	54	-20.08	AV
V	9920	41.10	30.85	7.45	24.69	42.39	74	-31.61	PK
V	9920	29.11	30.85	7.45	24.69	30.40	54	-23.60	AV
V	12400	38.77	31.02	8.99	25.57	42.31	74	-31.69	PK
V	12400	27.98	31.02	8.99	25.57	31.52	54	-22.48	AV
H	4960	47.97	30.55	5.77	24.66	47.85	74	-26.15	PK
H	4960	37.70	30.55	5.77	24.66	37.58	54	-16.42	AV
H	7440	46.77	30.33	6.32	24.55	47.31	74	-26.69	PK
H	7440	33.15	30.33	6.32	24.55	33.69	54	-20.31	AV
H	9920	42.57	30.85	7.45	24.69	43.86	74	-30.14	PK
H	9920	30.28	30.85	7.45	24.69	31.57	54	-22.43	AV
H	12400	40.54	31.02	8.99	25.57	44.08	74	-29.92	PK
H	12400	26.87	31.02	8.99	25.57	30.41	54	-23.59	AV

Note:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss − Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
4. We test all the mode and recorded the worst mode (802.11b) in the report.

Radiated Band Emission Measuremen:

	Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission level (dBuV/m)	Limit (dBuV/m)	Detector Type	Result
802.11b	Low Channel 2412MHz									
	H	2390	57.25	30.22	4.85	23.98	55.86	74	PK	PASS
	H	2390	48.32	30.22	4.85	23.98	46.93	54	AV	PASS
	H	2400	61.00	30.22	4.85	23.98	59.61	74	PK	PASS
	H	2400	49.66	30.22	4.85	23.98	48.27	54	AV	PASS
	V	2390	58.45	30.22	4.85	23.98	57.06	74	PK	PASS
	V	2390	50.26	30.22	4.85	23.98	48.87	54	AV	PASS
	V	2400	59.69	30.22	4.85	23.98	58.30	74	PK	PASS
	V	2400	49.37	30.22	4.85	23.98	47.98	54	AV	PASS
	High Channel 2462MHz									
	H	2390	58.28	30.22	4.85	23.98	56.89	74	PK	PASS
	H	2390	48.34	30.22	4.85	23.98	46.95	54	AV	PASS
	H	2400	59.80	30.22	4.85	23.98	58.41	74	PK	PASS
	H	2400	49.88	30.22	4.85	23.98	48.49	54	AV	PASS
	V	2390	59.60	30.22	4.85	23.98	58.21	74	PK	PASS
	V	2390	50.06	30.22	4.85	23.98	48.67	54	AV	PASS
	V	2400	58.36	30.22	4.85	23.98	56.97	74	PK	PASS
	V	2400	49.54	30.22	4.85	23.98	48.15	54	AV	PASS
802.11g	Low Channel 2412MHz									
	H	2483.5	57.36	35.11	3.56	27.75	53.56	74	PK	PASS
	H	2485.5	48.65	35.11	3.56	27.75	44.85	54	AV	PASS
	H	2483.5	58.15	35.1	3.57	27.8	54.42	74	PK	PASS
	H	2485.5	48.86	35.1	3.57	27.8	45.13	54	AV	PASS
	V	2483.5	56.96	35.11	3.56	27.75	53.16	74	PK	PASS

	V	2485.5	49.86	35.11	3.56	27.75	46.06	54	AV	PASS
	V	2483.5	58.01	35.1	3.57	27.8	54.28	74	PK	PASS
	V	2485.5	49.95	35.1	3.57	27.8	46.22	54	AV	PASS
	High Channel 2462MHz									
	H	2390	58.07	30.22	4.85	23.98	56.68	74	PK	PASS
	H	2390	48.52	30.22	4.85	23.98	47.13	54	AV	PASS
	H	2400	58.10	30.22	4.85	23.98	56.71	74	PK	PASS
	H	2400	48.67	30.22	4.85	23.98	47.28	54	AV	PASS
	V	2390	57.13	30.22	4.85	23.98	55.74	74	PK	PASS
	V	2390	49.29	30.22	4.85	23.98	47.90	54	AV	PASS
	V	2400	58.54	30.22	4.85	23.98	57.15	74	PK	PASS
	V	2400	49.89	30.22	4.85	23.98	48.50	54	AV	PASS
802.11 n20	Low Channel 2412MHz									
	H	2483.5	56.65	35.11	3.56	27.75	52.85	74	PK	PASS
	H	2485.5	50.46	35.11	3.56	27.75	46.66	54	AV	PASS
	H	2483.5	60.11	35.1	3.57	27.8	56.38	74	PK	PASS
	H	2485.5	49.12	35.1	3.57	27.8	45.39	54	AV	PASS
	V	2483.5	57.97	35.11	3.56	27.75	54.17	74	PK	PASS
	V	2485.5	50.92	35.11	3.56	27.75	47.12	54	AV	PASS
	V	2483.5	59.43	35.1	3.57	27.8	55.70	74	PK	PASS
	V	2485.5	49.68	35.1	3.57	27.8	45.95	54	AV	PASS
	High Channel 2462MHz									
	H	2390	57.37	30.22	4.85	23.98	55.98	74	PK	PASS
	H	2390	49.01	30.22	4.85	23.98	47.62	54	AV	PASS
	H	2400	59.75	30.22	4.85	23.98	58.36	74	PK	PASS
	H	2400	50.10	30.22	4.85	23.98	48.71	54	AV	PASS

	V	2390	58.32	30.22	4.85	23.98	56.93	74	PK	PASS
	V	2390	50.19	30.22	4.85	23.98	48.80	54	AV	PASS
	V	2400	58.28	30.22	4.85	23.98	56.89	74	PK	PASS
	V	2400	50.06	30.22	4.85	23.98	48.67	54	AV	PASS
802.11 n40	Low Channel 2422MHz									
	H	2483.5	59.35	35.11	3.56	27.75	55.55	74	PK	PASS
	H	2485.5	50.69	35.11	3.56	27.75	46.89	54	AV	PASS
	H	2483.5	59.82	35.1	3.57	27.8	56.09	74	PK	PASS
	H	2485.5	50.09	35.1	3.57	27.8	46.36	54	AV	PASS
	V	2483.5	59.72	35.11	3.56	27.75	55.92	74	PK	PASS
	V	2485.5	50.46	35.11	3.56	27.75	46.66	54	AV	PASS
	V	2483.5	59.49	35.1	3.57	27.8	55.76	74	PK	PASS
	V	2485.5	51.17	35.1	3.57	27.8	47.44	54	AV	PASS
	High Channel 2452MHz									
	H	2390	57.87	30.22	4.85	23.98	56.48	74	PK	PASS
	H	2390	50.96	30.22	4.85	23.98	49.57	54	AV	PASS
	H	2400	61.84	30.22	4.85	23.98	60.45	74	PK	PASS
	H	2400	51.66	30.22	4.85	23.98	50.27	54	AV	PASS
	V	2390	59.99	30.22	4.85	23.98	58.60	74	PK	PASS
	V	2390	51.96	30.22	4.85	23.98	50.57	54	AV	PASS
	V	2400	60.16	30.22	4.85	23.98	58.77	74	PK	PASS
	V	2400	51.50	30.22	4.85	23.98	50.11	54	AV	PASS

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit

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7 Conduct Band Edge And Spurious Emissions Measurement

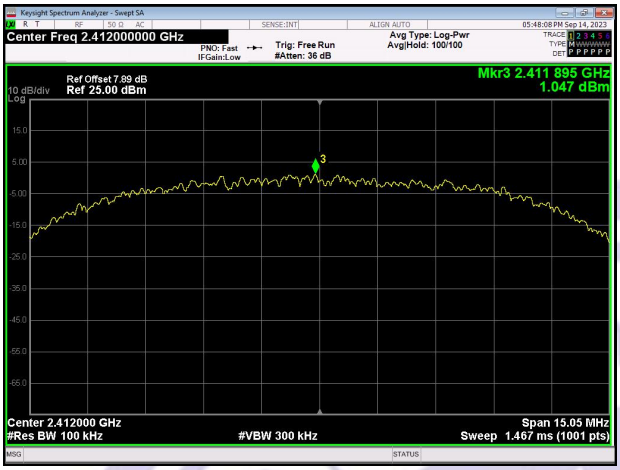
Test Requirement	:	FCC CFR47 Part 15 Section 15.247, RSS-247 § 5.5
Test Method	:	ANSI C63.10:2013
Test Limit	:	Regulation 15.247 (d),In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)). RSS-247 § 5.5: In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under section 5.4(d), the attenuation required shall be30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

7.1 Test Procedure

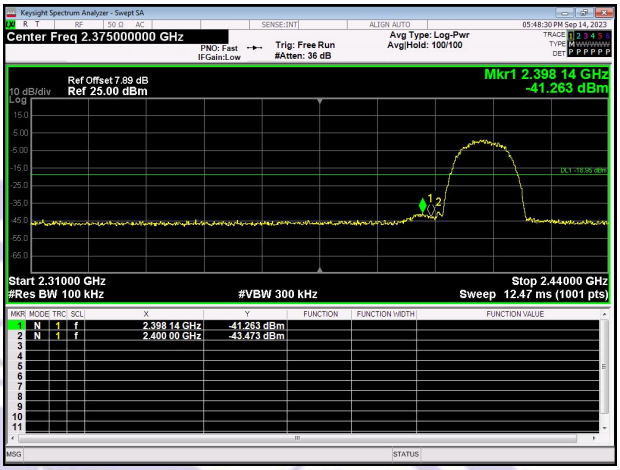
1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer: RBW = 100kHz, VBW = 300kHz, Sweep = auto
Detector function = peak, Trace = max hold

7.2 Test Result

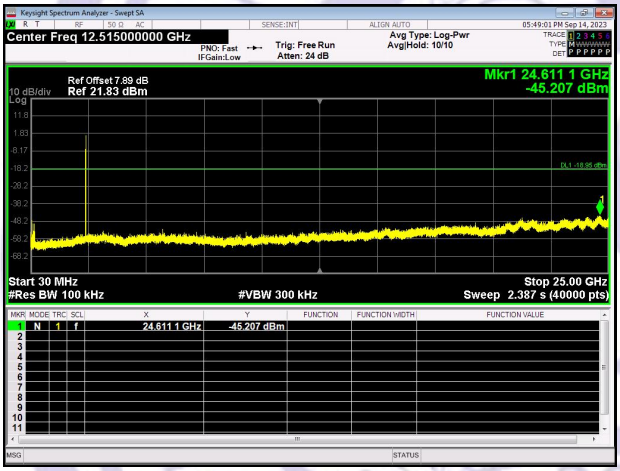
Mode	Channel	Ant.	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
IEEE 802.11b	1	0	2400.00	-43.473	-18.95	-24.523	PASS
			2398.14	-41.263	-18.95	-22.313	PASS
			24611.1	-45.207	-18.95	-26.257	PASS
	6		24579.9	-45.184	-18.26	-26.924	PASS
	11		2483.50	-46.157	-17.61	-29	PASS
			24537.4	-44.918	-17.61	-27.308	PASS
IEEE 802.11g	1		2400.00	-39.105	-19.36	-19.745	PASS
			2396.97	-36.171	-19.36	-16.811	PASS
			24531.8	-44.191	-19.36	-24.831	PASS
	6		24546.2	-43.456	-18.81	-24.646	PASS
	11		2483.50	-42.191	-18.49	-24	PASS
			24595.5	-44.279	-18.49	-25.789	PASS
IEEE 802.11n_20	1		2400.00	-35.951	-18.76	-17.191	PASS
			2398.92	-35.915	-18.76	-17.155	PASS
			24508.7	-44.956	-18.76	-26.195	PASS
	6		24569.9	-44.944	-18.94	-26.004	PASS
	11		2483.50	-42.440	-18.3	-24	PASS
			24593.0	-45.855	-18.3	-27.555	PASS
IEEE 802.11n_40	3		2400.00	-39.997	-22.2	-17.797	PASS
			2388.26	-36.041	-22.2	-13.841	PASS
			24611.1	-45.096	-22.2	-22.896	PASS
	6		24592.4	-45.671	-20.97	-24.701	PASS
	9		2483.50	-28.229	-20.84	-27	PASS
			23652.2	-45.421	-20.84	-24.581	PASS



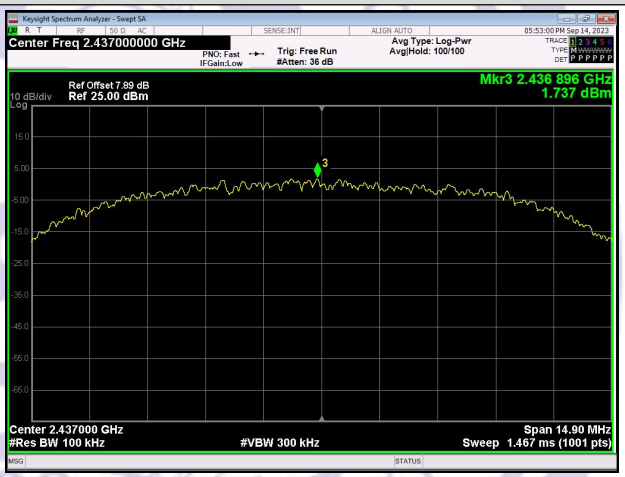
In-Band Reference Level
IEEE 802.11b_Channel 1_20MHz_Antenna 0



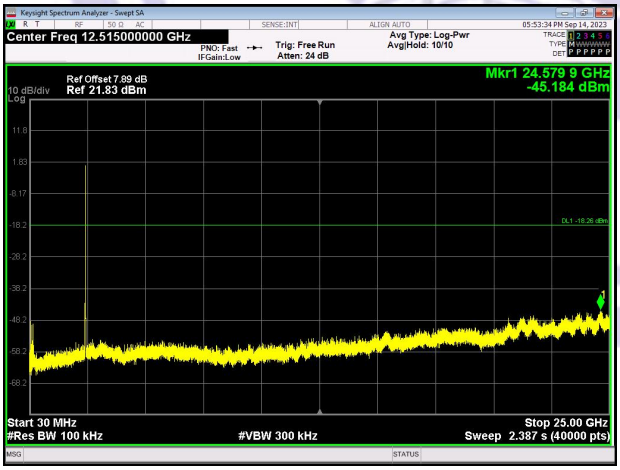
Out Of Band Emission
IEEE 802.11b_Channel 1_20MHz_Antenna 0



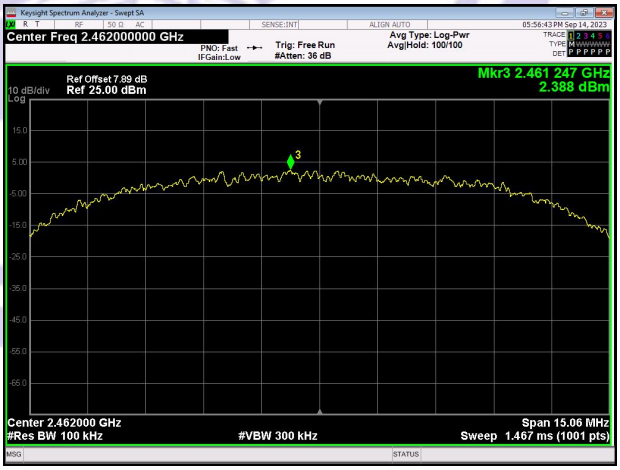
Spurious Emission
IEEE 802.11b_Channel 1_20MHz_Antenna 0



In-Band Reference Level
IEEE 802.11b_Channel 6_20MHz_Antenna 0

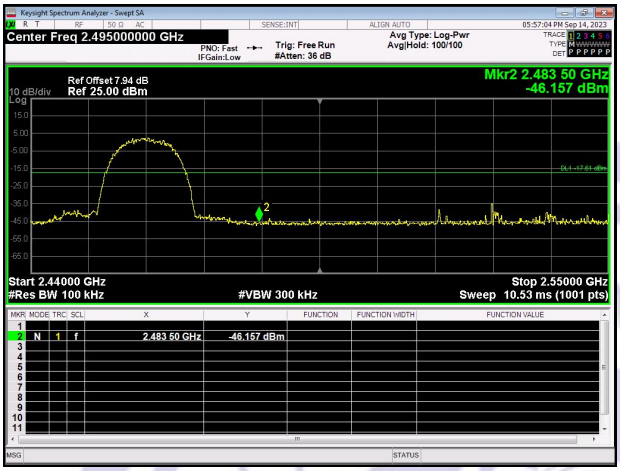


Spurious Emissions

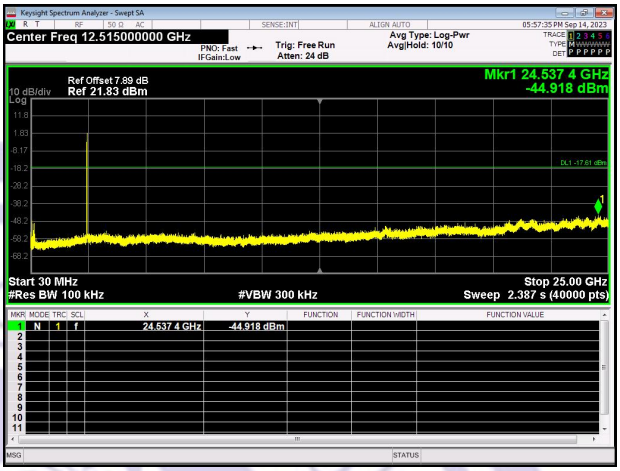


In-Band Reference Level

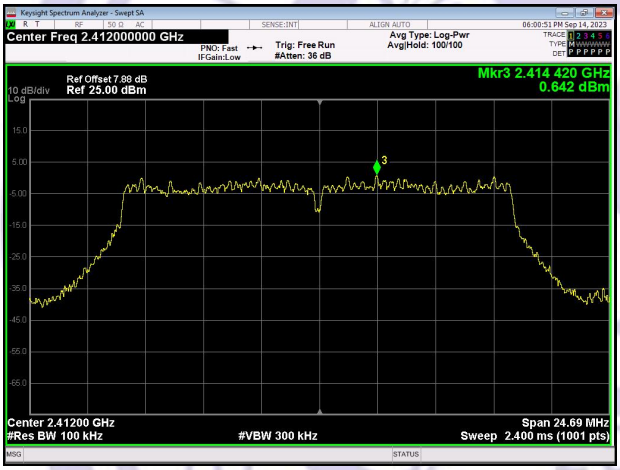
IEEE 802.11b_Channel 6_20MHz_Antenna 0



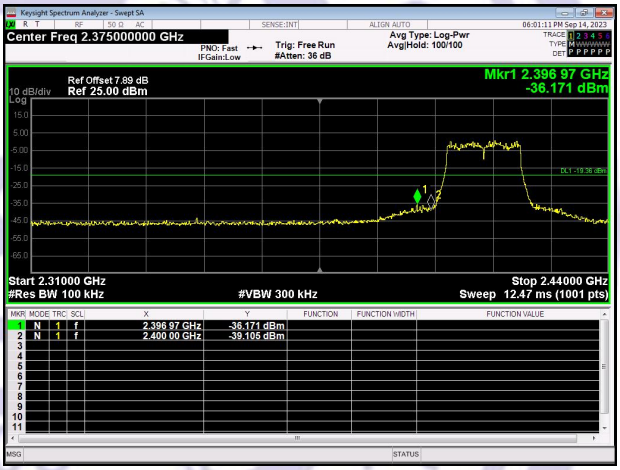
IEEE 802.11b_Channel 11_20MHz_Antenna 0



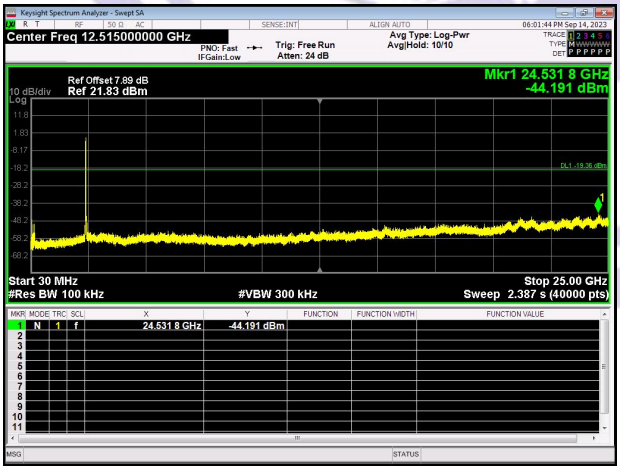
Out Of Band Emission
IEEE 802.11b_Channel 11_20MHz_Antenna 0



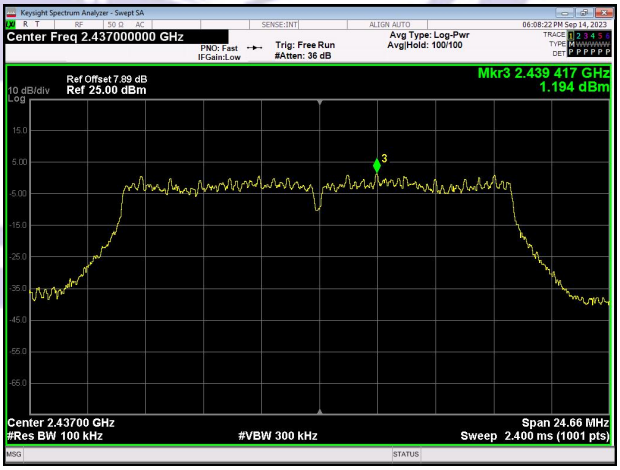
Spurious Emission
IEEE 802.11b_Channel 11_20MHz_Antenna 0



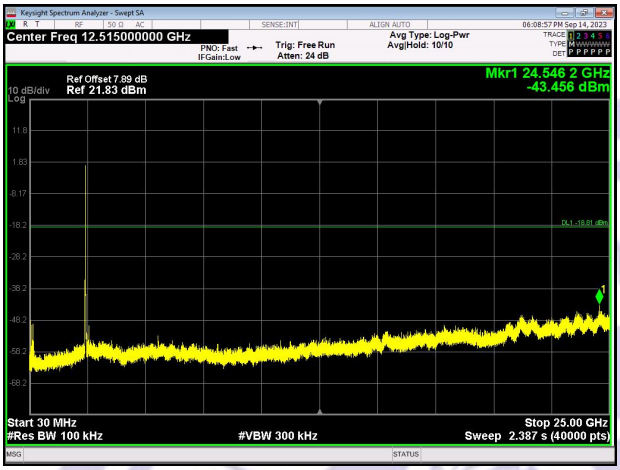
In-Band Reference Level
IEEE 802.11g_Channel 1_20MHz_Antenna 0



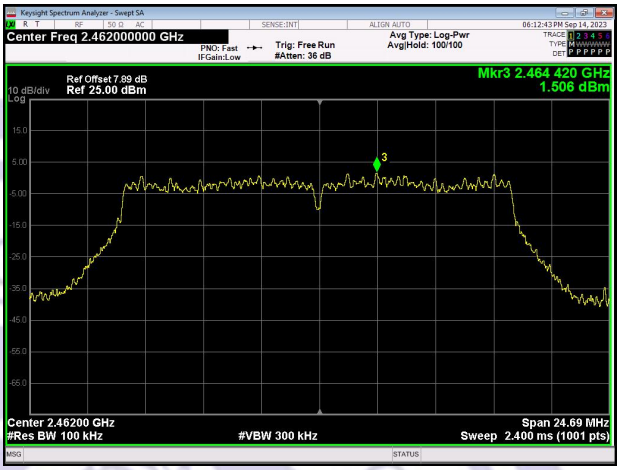
Out Of Band Emission
IEEE 802.11g_Channel 1_20MHz_Antenna 0



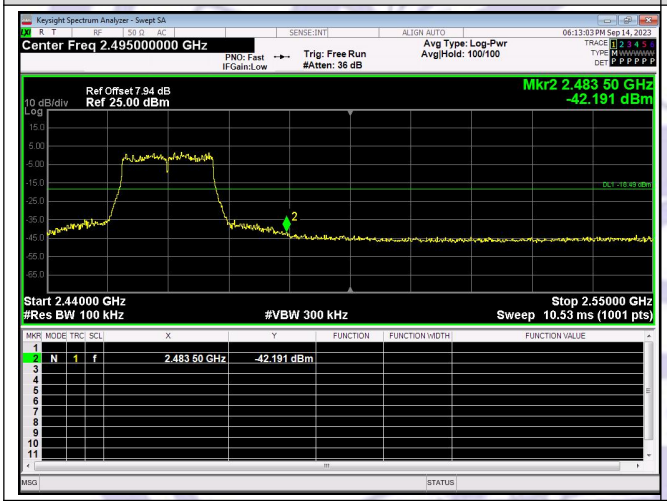
Spurious Emission
IEEE 802.11g_Channel 1_20MHz_Antenna 0



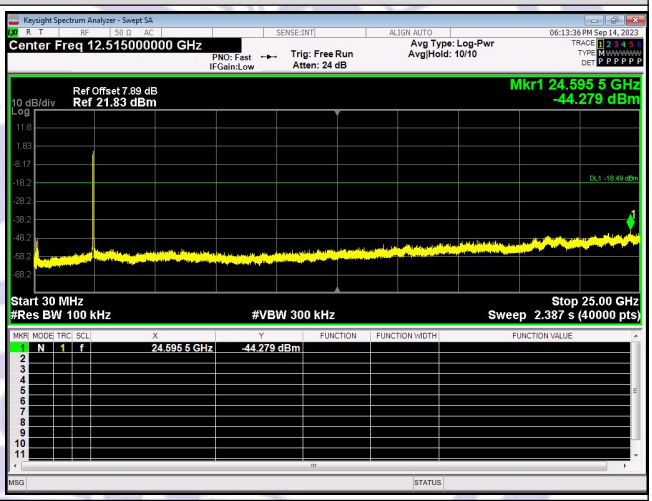
In-Band Reference Level
IEEE 802.11g_Channel 6_20MHz_Antenna 0



Spurious Emissions
IEEE 802.11g_Channel 6_20MHz_Antenna 0

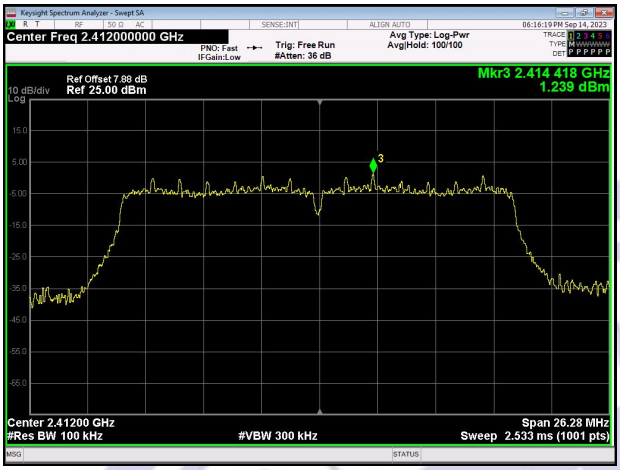


In-Band Reference Level
IEEE 802.11g_Channel 11_20MHz_Antenna 0

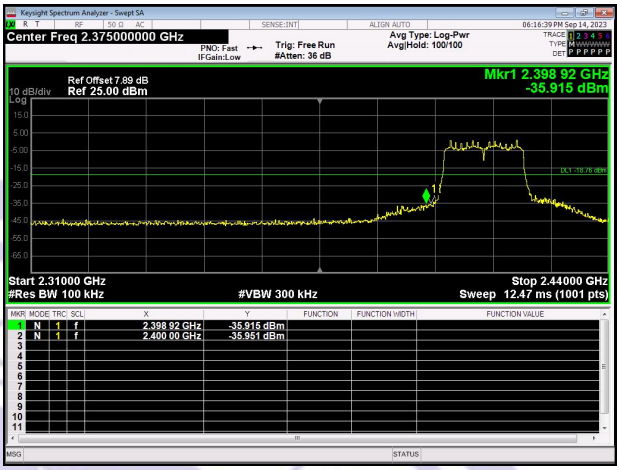


Out Of Band Emission
IEEE 802.11g_Channel 11_20MHz_Antenna 0

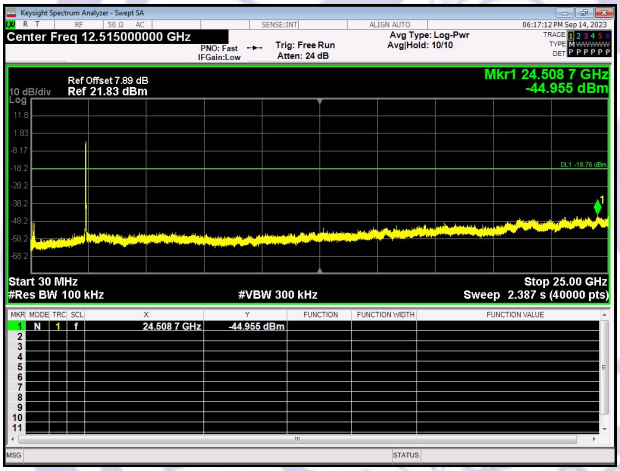
Spurious Emission
IEEE 802.11g_Channel 11_20MHz_Antenna 0



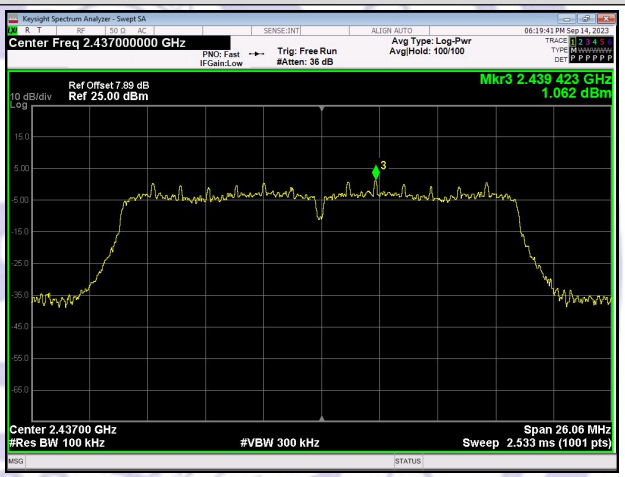
In-Band Reference Level
IEEE 802.11n_Channel 1_20MHz_Antenna 0



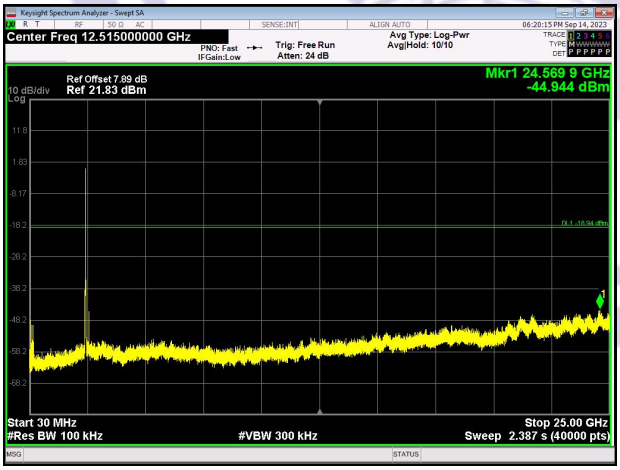
Out Of Band Emission
IEEE 802.11n_Channel 1_20MHz_Antenna 0



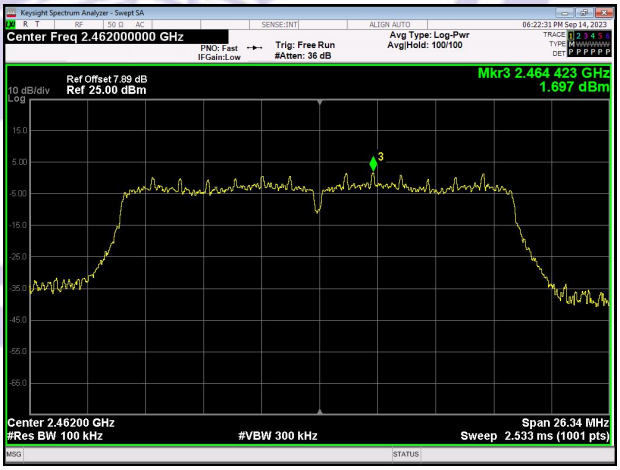
Spurious Emission
IEEE 802.11n_Channel 1_20MHz_Antenna 0



In-Band Reference Level
IEEE 802.11n_Channel 6_20MHz_Antenna 0



Spurious Emissions



In-Band Reference Level

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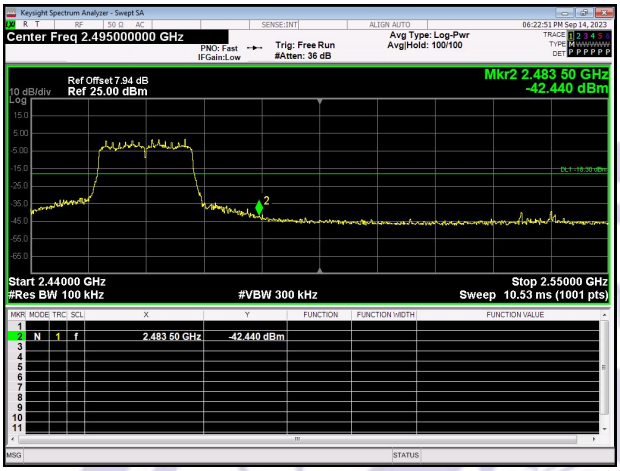
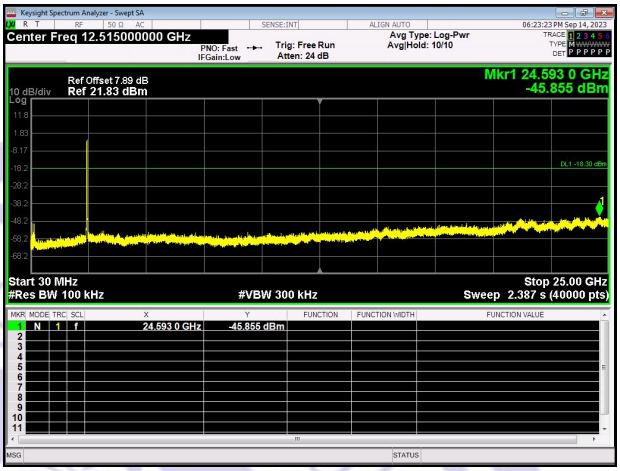
Fax: 86-755-27790922
http://www.ncttesting.cn

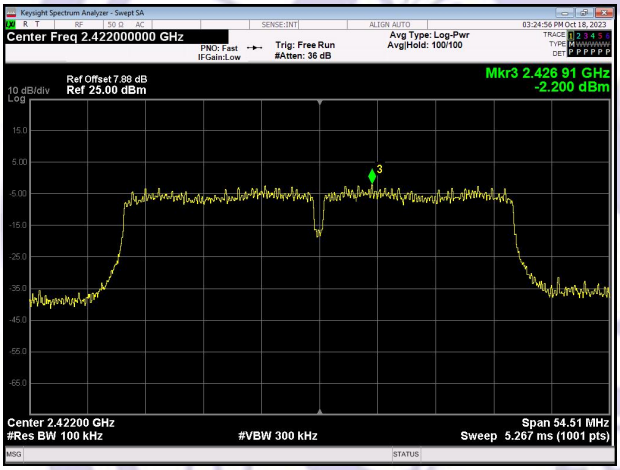
IEEE 802.11n_Channel 6_20MHz_Antenna 0



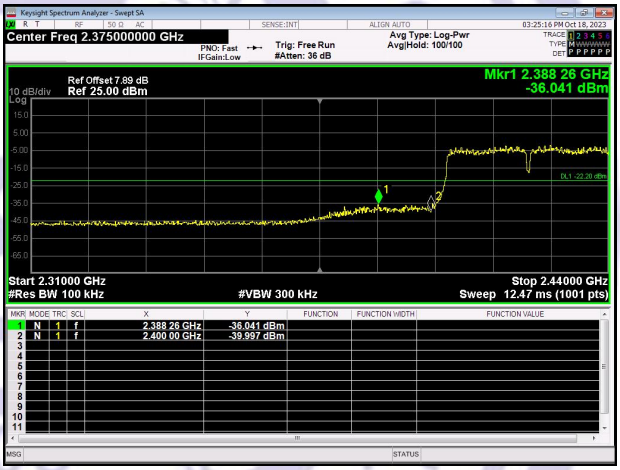
IEEE 802.11n_Channel 11_20MHz_Antenna 0



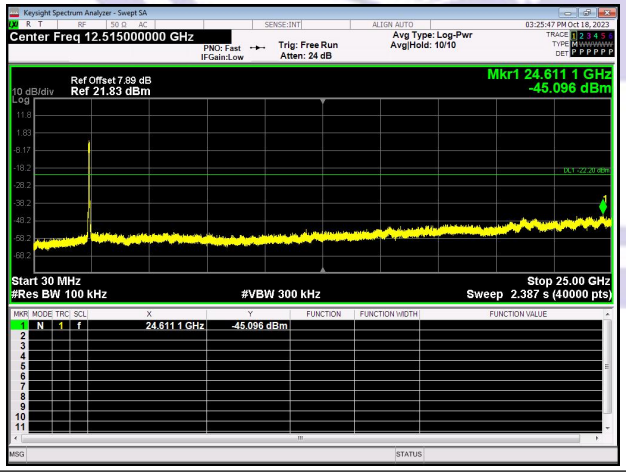
Out Of Band Emission
IEEE 802.11n_Channel 11_20MHz_Antenna 0



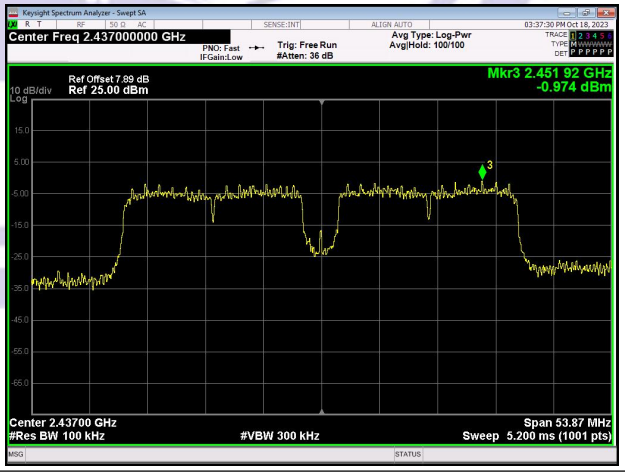
Spurious Emission
IEEE 802.11n_Channel 11_20MHz_Antenna 0



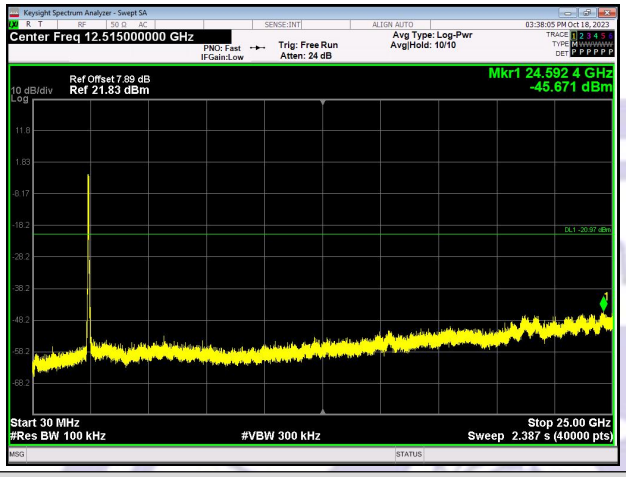
In-Band Reference Level
IEEE 802.11n_Channel 3_40MHz_Antenna 0



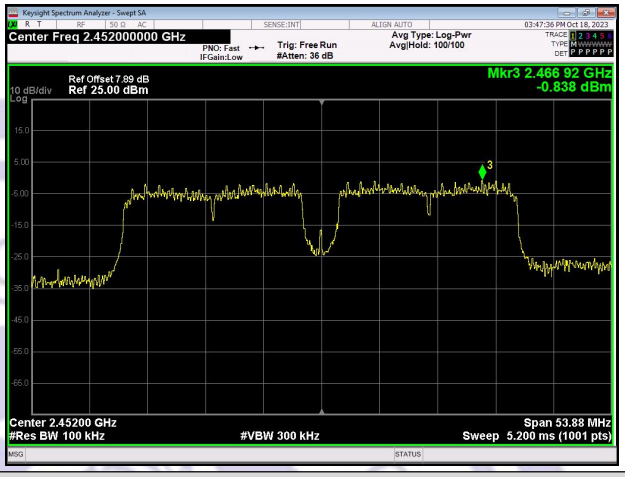
Out Of Band Emission
IEEE 802.11n_Channel 3_40MHz_Antenna 0



Spurious Emission
IEEE 802.11n_Channel 3_40MHz_Antenna 0

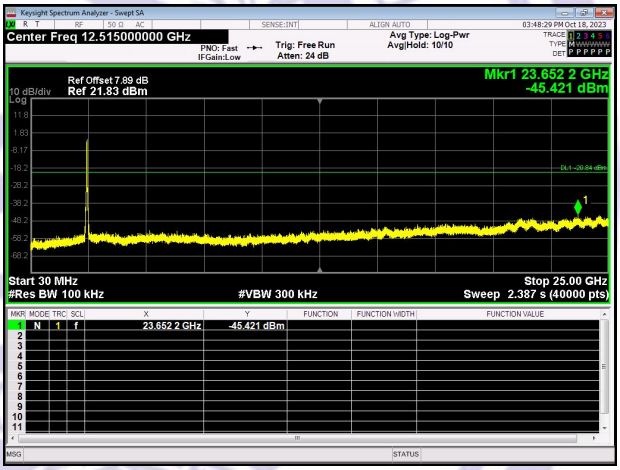


In-Band Reference Level
IEEE 802.11n_Channel 6_40MHz_Antenna 0



Spurious Emissions
IEEE 802.11n_Channel 6_40MHz_Antenna 0

In-Band Reference Level
IEEE 802.11n_Channel 9_40MHz_Antenna 0



Out Of Band Emission
IEEE 802.11n_Channel 9_40MHz_Antenna 0

Spurious Emission
IEEE 802.11n_Channel 9_40MHz_Antenna 0

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8 6dB&99% Bandwidth Measurement

Test Requirement	:	FCC CFR47 Part 15 Section 15.247, RSS-GEN §6.7& RSS-247 §5.2
Test Method	:	ANSI C63.10:2013
Test Limit		Systems using digital modulation techniques may operate in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

8.1 Test Procedure

For 6dB Bandwidth Measurement

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer: RBW = 100kHz, VBW = 300kHz

For 99% Bandwidth Measurement

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer: RBW = 1%-5% OBW, VBW ≥ 3RBW

8.2 Test Result

Test CH	-6dB Occupy Bandwidth (MHz)					
	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)	Limit(KHz)	Result
Lowest	11.08	15.72	16.03	35.16	>500	Pass
Middle	11.08	15.75	17.29	35.16		
Highest	11.07	15.75	17.27	35.17		

Test CH	99% Occupy Bandwidth (MHz)					
	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)	Limit(KHz)	Result
Lowest	13.035	16.398	17.617	35.705	/	Pass
Middle	12.954	16.470	17.593	35.646		
Highest	12.974	16.435	17.611	35.705		

Test Graphs