

Report No.: SZCR210502116504

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TEST REPORT

Application No.: SZCR2105021165AT **Applicant:** Arovast Corporation

Address of Applicant: 1202 N. Miller St. Suite A, Anaheim, CA 92806, USA

Manufacturer: Arovast Corporation

Address of Manufacturer: 1202 N. Miller St. Suite A, Anaheim, CA 92806, USA Factory: UNI-SPLENDOR TECHNOLOGY(HUI ZHOU)CORP.

Address of Factory: Lidong Village, Baihua, Huidong county, Huizhou, Guangdong province,

China

Equipment Under Test (EUT):

EUT Name: Levoit Smart Top-fill Humidifier

Model No.: Dual 200S, LUH-D301S-WUSR, LUH-D301S-XXXX

(X can represent 0 to 9, A to Z) .

Please refer to section 2 of this report which indicates which model was

actually tested and which were electrically identical.

Trade Mark: Levoit

FCC ID: 2ARBY-DUAL200S

Standard(s): 47 CFR Part 15, Subpart C 15.247

Date of Receipt: 2021-05-26

Date of Test: 2021-05-27 to 2021-06-08

Date of Issue: 2021-06-16

Test Result: Pass*

Keny Xu EMC Laboratory Manager

Ceny. Ku



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^{*} In the configuration tested, the EUT complied with the standards specified above.



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	Revision Record						
Version	Chapter	Date	Modifier	Remark			
01		2021-06-16		Original			

Authorized for issue by:		
	(eo-li	
	Leo Li/Project Engineer	
	Exic Fu	
	Eric Fu/Reviewer	—



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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	
Conducted Peak Output Power		ANSI C63.10 (2013) Section 11.9.1	47 CFR Part 15, Subpart C 15.247(b)(3)	Pass	
Minimum 6dB Bandwidth		ANSI C63.10 (2013) Section 11.8.1	47 CFR Part 15, Subpart C 15.247a(2)	Pass	
Power Spectrum Density		ANSI C63.10 (2013) Section 11.10.2	47 CFR Part 15, Subpart C 15.247(e)	Pass	
Conducted Band Edges Measurement		ANSI C63.10 (2013) Section 11.13.3.2	47 CFR Part 15, Subpart C 15.247(d)	Pass	
Conducted Spurious Emissions	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 11.11	47 CFR Part 15, Subpart C 15.247(d)	Pass	
Radiated Emissions which fall in the restricted bands		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	

Emission Part						
Item	Standard	Method	Requirement	Result		
Conducted Emissions at AC Power Line (150kHz-30MHz)	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.2	47 CFR Part 15, Subpart C 15.207	Pass		

Remark:

Model No.: Dual 200S, LUH-D301S-WUSR, LUH-D301S-XXXX (X can represent 0 to 9, A to Z)

Only the model Dual 200S and LUH-D301S- WUSR were tested, since according to the declaration from the applicant, the electrical circuit design, layout, components used, internal wiring and functions were identical for all the above models, with only different as below:

Dual 200S with two touch button control (Power & Mist Level) ,but LUH-D301S-WUSR with four touch button control (Power, Mist Level, sleep mode, night light)

Dual 200S without Nightlight, But LUH-D301S-WUSR with Nightlight, under such a difference will caused the PCB layout and the circuitry design are not exactly the same.



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General Information

4.1 Details of E.U.T.

Power supply:	DC 24V from adapter input AC 120V/60Hz
	Adapter Model: GQ24-240100-AU
	Input: 100-240V~50/60Hz 1.0A Max
	Output: 24.0V 1.0A
Cable(s):	DC Cable: 180cm unshielded
Operation Frequency:	802.11b/g/n(HT20): 2412MHz to 2462MHz;802.11n(HT40): 2422MHz to 2452MHz
Modulation Type:	802.11b: DSSS (CCK, DQPSK, DBPSK);802.11g/n: OFDM (64QAM, 16QAM, QPSK, BPSK)
Number of Channels:	802.11b/g/n(HT20):11;802.11n(HT40):7
Channel Spacing:	5MHz
Antenna Type:	PCB Antenna
Antenna Gain:	3.28dBi

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.			
The EUT has been tested as an independent unit.						

4.3 Measurement Uncertainty

Test Item	Measurement Uncertainty
Conducted Emissions at AC Power Line (150kHz-30MHz)	± 3.0dB (150kHz to 30MHz)
Conducted Peak Output Power	± 0.75dB
Minimum 6dB Bandwidth	± 3%
Power Spectrum Density	± 2.84dB
Conducted Band Edges Measurement	± 0.75dB
Conducted Spurious Emissions	± 0.75dB
Radiated Emissions which fall in the restricted bands	± 4.5dB (Below 1GHz);± 4.8dB (Above 1GHz)
Radiated Spurious Emissions Below 1GHz	± 4.5dB
Radiated Spurious Emissions Above 1GHz	± 4.8dB

Remark:

The Ulab (lab Uncertainty) is less than Ucispr (CISPR Uncertainty), so the test results

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.



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4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China, 518057.

Tel: +86 755 2601 2053 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. 3816.01)

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

VCCI (Member No. 1937)

The 3m Fully-anechoic chamber for above 1GHz. 10m Semi-anechoic chamber for below 1GHz. Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen EMC laboratory have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

• FCC -Designation Number: CN1178

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

Innovation, Science and Economic Development Canada

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None



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5 Equipment List

Conducted Emissions at AC Power Line (150kHz-30MHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Shielding Room	ZhongYu Electron	GB-88	SEM001-06	2019-06-13	2022-06-12
EMI Test Receiver	Rohde&Schwarz	ESCI	SEM004-02	2021-03-24	2022-03-23
Measurement Software	AUDIX	e3 V8.2014-6- 27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM024-01	2020-07-10	2021-07-09
LISN	Rohde&Schwarz	ENV216	SEM007-01	2020-09-23	2021-09-22
LISN	ETS-LINDGREN	3816/2	SEM007-02	2021-03-24	2022-03-25

Conducted Peak Output Power					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Shielding Room	SAEMC	MSR733	SEM001-09	2019-06-13	2022-06-12
DC Power Supply	Rohde & Schwarz	NGSM 32/10	SEM011-04	2021-03-23	2022-03-22
MXA Signal Analyzer	KEYSIGHT	N9020A	SEM004-17	2021-04-08	2022-04-07
Measurement Software	TST	TST PASS V1.0.5	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM031-01	2020-07-10	2021-07-09
Attenuator	Huber+Suhner	6620_SMA-50- 1	SEM021-09	2021-04-08	2022-04-07

Minimum 6dB Bandwidth					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Shielding Room	SAEMC	MSR733	SEM001-09	2019-06-13	2022-06-12
DC Power Supply	Rohde & Schwarz	NGSM 32/10	SEM011-04	2021-03-23	2022-03-22
MXA Signal Analyzer	KEYSIGHT	N9020A	SEM004-17	2021-04-08	2022-04-07
Measurement Software	TST	TST PASS V1.0.5	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM031-01	2020-07-10	2021-07-09
Attenuator	Huber+Suhner	6620_SMA-50- 1	SEM021-09	2021-04-08	2022-04-07

Power Spectrum Density					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Shielding Room	SAEMC	MSR733	SEM001-09	2019-06-13	2022-06-12
DC Power Supply	Rohde & Schwarz	NGSM 32/10	SEM011-04	2021-03-23	2022-03-22
MXA Signal Analyzer	KEYSIGHT	N9020A	SEM004-17	2021-04-08	2022-04-07
Measurement Software	TST	TST PASS V1.0.5	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM031-01	2020-07-10	2021-07-09



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Attenuator	Huber+Suhner	6620_SMA-50- 1	SEM021-09	2021-04-08	2022-04-07
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Conducted Band Edges Measurement					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Shielding Room	SAEMC	MSR733	SEM001-09	2019-06-13	2022-06-12
DC Power Supply	Rohde & Schwarz	NGSM 32/10	SEM011-04	2021-03-23	2022-03-22
MXA Signal Analyzer	KEYSIGHT	N9020A	SEM004-17	2021-04-08	2022-04-07
Measurement Software	TST	TST PASS V1.0.5	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM031-01	2020-07-10	2021-07-09
Attenuator	Huber+Suhner	6620_SMA-50- 1	SEM021-09	2021-04-08	2022-04-07

Conducted Spurious Emissions					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Shielding Room	SAEMC	MSR733	SEM001-09	2019-06-13	2022-06-12
DC Power Supply	Rohde & Schwarz	NGSM 32/10	SEM011-04	2021-03-23	2022-03-22
MXA Signal Analyzer	KEYSIGHT	N9020A	SEM004-17	2021-04-08	2022-04-07
Measurement Software	TST	TST PASS V1.0.5	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM031-01	2020-07-10	2021-07-09
Attenuator	Huber+Suhner	6620_SMA-50- 1	SEM021-09	2021-04-08	2022-04-07

Radiated Emissions which fall in the restricted bands					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
3m Semi-Anechoic Chamber	AUDIX	N/A	SEM001-02	2021-03-26	2024-03-25
EXA Signal Analyzer Agilent Technologies N9010A SEM004-12 2021-0		2021-02-01	2022-01-31		
Horn Antenna	Rohde&Schwarz	HF907	SEM003-07	2021-04-14	2024-04-13
Pre-Amplifier	Compliance Directions Systems Inc.	PAP-0126	SEM004-11	2020-09-23	2021-09-22
Measurement Software	AUDIX	e3 V8.2014-6- 27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM026-01	2020-07-10	2021-07-09
Horn Antenna	Schwarzbeck	BBHA 9170	SEM003-15	2020-11-14	2023-11-13
Pre-Amplifier	Compliance Directions Systems Inc.	PAP-2640-50	SEM005-08	2021-03-24	2022-03-23



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Radiated Spurious Emissions Below 1GHz					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEM001-01	2020-07-19	2023-07-18
MXE EMI Receiver	Agilent Technologies	N9038A	SEM004-15	2020-11-02	2021-11-01
BiConiLog Antenna	ETS-LINDGREN	3142C	SEM003-02	2019-05-24	2022-05-23
Pre-Amplifier	Agilent Technologies	8447D	SEM005-01	2021-03-24	2022-03-23
Measurement Software	AUDIX	e3 V8.2014-6- 27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM025-01	2020-07-10	2021-07-09

Radiated Spurious Emissions Above 1GHz					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
3m Semi-Anechoic Chamber	AUDIX	N/A	SEM001-02	2021-03-26	2024-03-25
EXA Signal Analyzer	Agilent Technologies Inc	N9010A	SEM004-12	2021-02-01	2022-01-31
Horn Antenna	Rohde&Schwarz	HF907	SEM003-07	2021-04-14	2024-04-13
Pre-Amplifier	Compliance Directions Systems Inc.	PAP-0126	SEM004-11	2020-09-23	2021-09-22
Measurement Software	AUDIX	e3 V8.2014-6- 27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM026-01	2020-07-10	2021-07-09

General used equipmen	General used equipment					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date	
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-04	2020-09-15	2021-09-14	
Humidity/ Temperature Indicator	Mingle	N/A	SEM002-08	2020-09-15	2021-09-14	
Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2021-03-30	2022-03-29	



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Radio Spectrum Technical Requirement 6

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.

FUT Antenna:

The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 3.28dBi.

Antenna location: Refer to internal photo.





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Radio Spectrum Matter Test Results 7

7.1 Conducted Peak Output Power

Test Requirement 47 CFR Part 15, Subpart C 15.247(b)(3) Test Method: ANSI C63.10 (2013) Section 11.9.1

Limit:

Frequency range(MHz)	Output power of the intentional radiator(watt)	
	1 for ≥50 hopping channels	
902-928	0.25 for 25≤ hopping channels <50	
	1 for digital modulation	
	1 for ≥75 non-overlapping hopping channels	
2400-2483.5	0.125 for all other frequency hopping systems	
	1 for digital modulation	
5725-5850 1 for frequency hopping systems and digital modulation		

7.1.1 E.U.T. Operation

Operating Environment:

Temperature: 23.5 °C Humidity: 45.7 % RH Atmospheric Pressure: 1010 mbar

7.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	04	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); data rate @ 13.5Mbps is the worst case of IEEE 802.11n(HT40). Only the data of worst case is recorded in the report.



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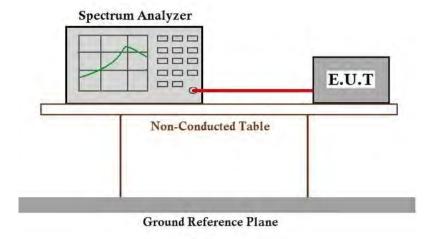
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7.1.3 Test Setup Diagram



7.1.4 Measurement Procedure and Data

Please Refer to Appendix for Details





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7.2 Minimum 6dB Bandwidth

Test Requirement 47 CFR Part 15, Subpart C 15.247a(2) Test Method: ANSI C63.10 (2013) Section 11.8.1

Limit: ≥500 kHz

7.2.1 E.U.T. Operation

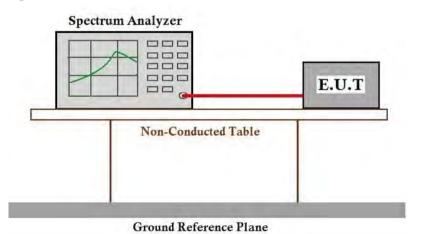
Operating Environment:

23.5 °C Temperature: Humidity: 45.7 % RH Atmospheric Pressure: 1010 mbar

7.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	04	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); data rate @ 13.5Mbps is the worst case of IEEE 802.11n(HT40). Only the data of worst case is recorded in the report.

7.2.3 Test Setup Diagram



7.2.4 Measurement Procedure and Data

Please Refer to Appendix for Details



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7.3 Power Spectrum Density

47 CFR Part 15, Subpart C 15.247(e) Test Requirement Test Method: ANSI C63.10 (2013) Section 11.10.2

Limit:

≤8dBm in any 3 kHz band during any time interval of continuous transmission

7.3.1 E.U.T. Operation

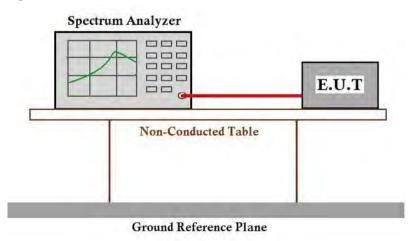
Operating Environment:

Temperature: 23.5 °C Humidity: 45.7 % RH Atmospheric Pressure: 1010 mbar

7.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	04	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); data rate @ 13.5Mbps is the worst case of IEEE 802.11n(HT40). Only the data of worst case is recorded in the report.

7.3.3 Test Setup Diagram



7.3.4 Measurement Procedure and Data

Please Refer to Appendix for Details



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7.4 Conducted Band Edges Measurement

47 CFR Part 15, Subpart C 15.247(d) Test Requirement ANSI C63.10 (2013) Section 11.13.3.2 Test Method:

Limit:

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).

7.4.1 E.U.T. Operation

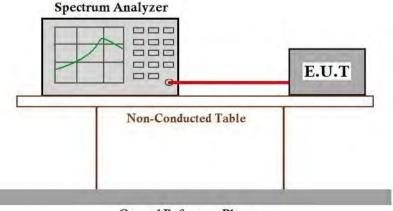
Operating Environment:

Temperature: 23.5 °C Humidity: 45.7 % RH Atmospheric Pressure: 1010 mbar

7.4.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	04	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); data rate @ 13.5Mbps is the worst case of IEEE 802.11n(HT40). Only the data of worst case is recorded in the report.

7.4.3 Test Setup Diagram



Ground Reference Plane



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7.4.4 Measurement Procedure and Data

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7.5 Conducted Spurious Emissions

Test Requirement 47 CFR Part 15, Subpart C 15.247(d)
Test Method: ANSI C63.10 (2013) Section 11.11

Limit:

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).

7.5.1 E.U.T. Operation

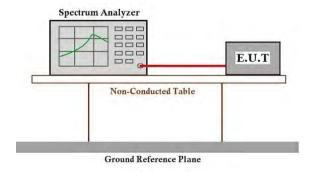
Operating Environment:

Temperature: 23.5 °C Humidity: 45.7 % RH Atmospheric Pressure: 1010 mbar

7.5.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description							
Final test	04	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); data rate @ 13.5Mbps is the worst case of IEEE 802.11n(HT40). Only the data of worst case is recorded in the report.							

7.5.3 Test Setup Diagram



7.5.4 Measurement Procedure and Data

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7.6 Radiated Emissions which fall in the restricted bands

47 CFR Part 15, Subpart C 15,205 & 15,209 Test Requirement

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.

7.6.1 E.U.T. Operation

Operating Environment:

Temperature: 21.4 °C Humidity: 54.7 % RH Atmospheric Pressure: 1010 mbar

7.6.2 Test Mode Description

	Pre-scan / Mode							
Pre-scan / Final test	Mode Code	Description						
Final test	04	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); data rate @ 13.5Mbps is the worst case of IEEE 802.11n(HT40). Only the data of worst case is recorded in the report.						



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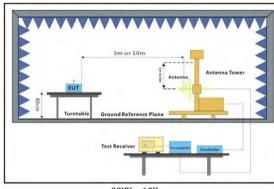
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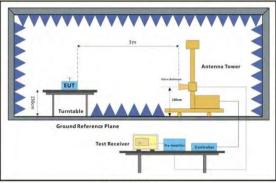


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7.6.3 Test Setup Diagram





30MHz-1CHz Above 1GHz

7.6.4 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. 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.
- c. 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.
- d. 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.
- e. 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.
- f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- g. 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.
- h. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- i. 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.
- j. 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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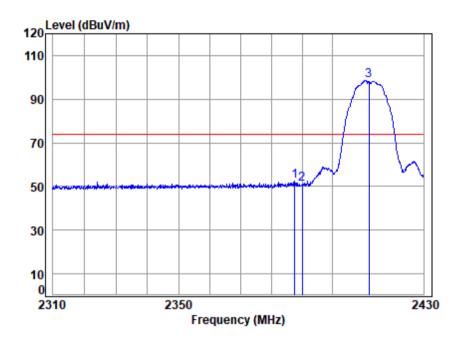
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Test Mode: 04; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:Low



Site : chamber

Condition: 3m HORIZONTAL Job No : 21165AT/21166AT Mode : 2412 Band edge : 2.4G WIFI 11B Note

	Cable	Ant	Preamp	Read		Limit	0ver	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
2387.670	4.34	28.87	40.42	59.84	52.63	74.00	-21.37	peak
2390.000	4.34	28.88	40.42	58.21	51.01	74.00	-22.99	peak
. 2412.000	4.38	28.92	40.43	105.59	98.46	74.00	24.46	peak



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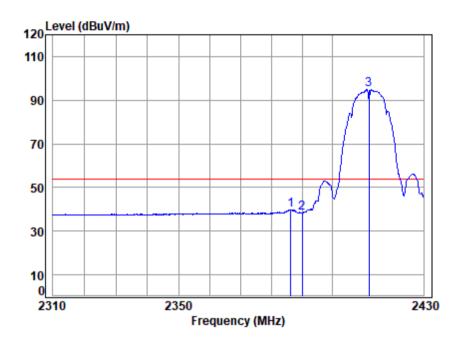
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Test Mode: 04; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:Low



Site : chamber

Condition: 3m HORIZONTAL Job No : 21165AT/21166AT Mode : 2412 Band edge : 2.4G WIFI 11B Note

	Cable	Ant	Preamp	Read		Limit	0ver		
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark	
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
2386.340	4.34	28.87	40.42	46.92	39.71	54.00	-14.29	Average	
2390.000	4.34	28.88	40.42	45.50	38.30	54.00	-15.70	Average	
2412.000	4.38	28.92	40.43	102.14	95.01	54.00	41.01	Average	



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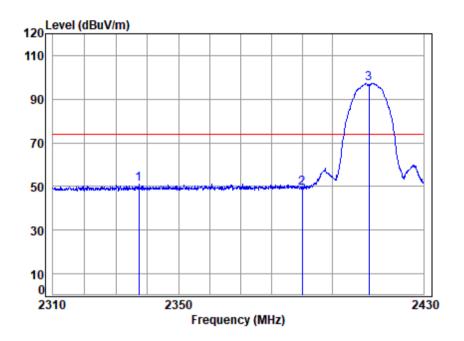
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Test Mode: 04; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:Low



Site : chamber

Condition: 3m VERTICAL

: 21165AT/21166AT Job No Mode : 2412 Band edge : 2.4G WIFI 11B Note

_									
		Cable	Ant	Preamp	Read		Limit	0ver	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
	2337.301	4.26	28.77	40.39	58.42	51.06	74.00	-22.94	Peak
	2390.000	4.34	28.88	40.42	56.65	49.45	74.00	-24.55	Peak
	2412 000	4 38	28 92	40 43	104 50	97 37	74 99	23 37	Peak



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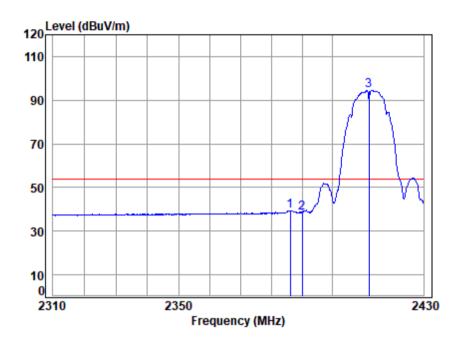
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Test Mode: 04; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:Low



Site : chamber

Condition: 3m VERTICAL

Job No : 21165AT/21166AT Mode : 2412 Band edge : 2.4G WIFI 11B Note

	Cable	Ant	Preamp	Read		Limit	0ver	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
2386.219	4.34	28.87	40.42	46.63	39.42	54.00	-14.58	Average
2390.000	4.34	28.88	40.42	45.64	38.44	54.00	-15.56	Average
2/12 000	4 38	28 92	40 43	101 69	94 56	54 00	40 56	Λυρρασρ



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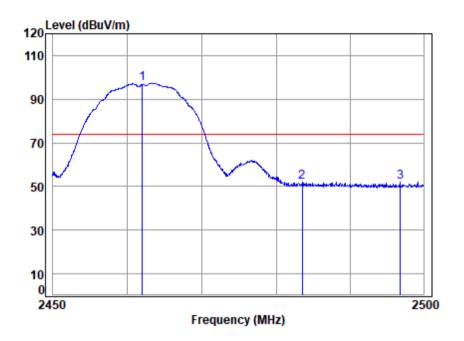
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Test Mode: 04; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:High



Site : chamber

Condition: 3m HORIZONTAL Job No : 21165AT/21166AT Mode : 2462 Band edge : 2.4G WIFI 11B Note

Cable Ant Preamp Read Limit 0ver Loss Factor Factor Line Limit Remark Freq Level Level MHz dBuV dBuV/m dBuV/m dB dB/m 1 . 2462.000 4.46 29.02 40.46 104.34 97.36 74.00 23.36 peak 2483.500 4.49 29.07 40.47 58.94 52.03 74.00 -21.97 peak 2496.820 4.52 29.09 40.47 58.92 52.06 74.00 -21.94 peak



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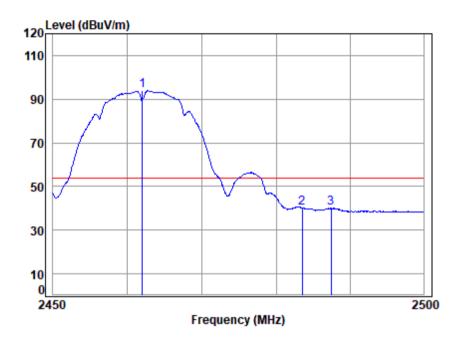
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Test Mode: 04; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:High



Site : chamber

Condition: 3m HORIZONTAL Job No : 21165AT/21166AT Mode : 2462 Band edge : 2.4G WIFI 11B Note

	Cable	Ant	Preamp	Read		Limit	0ver		
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark	
									_
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
2462.000	4.46	29.02	40.46	100.86	93.88	54.00	39.88	Average	
2483.500	4.49	29.07	40.47	47.12	40.21	54.00	-13.79	Average	
2487.405	4.50	29.08	40.47	47.15	40.26	54.00	-13.74	Average	



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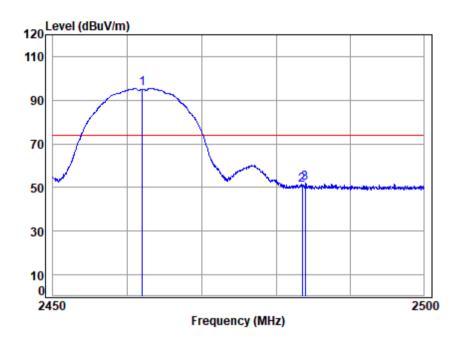
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Test Mode: 04; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:High



Site : chamber

Condition: 3m VERTICAL

: 21165AT/21166AT Job No Mode : 2462 Band edge : 2.4G WIFI 11B Note

	Cable	Ant	Preamp	Read		Limit	0ver	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
. 2462.000	4.46	29.02	40.46	102.39	95.41	74.00	21.41	Peak
2483.500	4.49	29.07	40.47	57.98	51.07	74.00	-22.93	Peak
2483.940	4.49	29.07	40.47	59.02	52.11	74.00	-21.89	Peak



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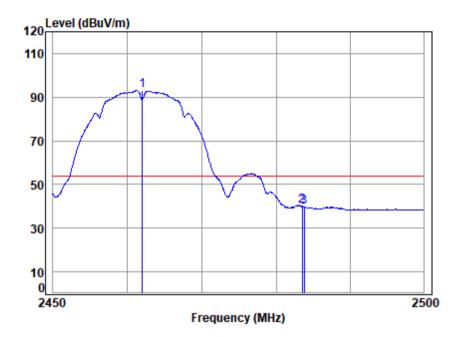
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Test Mode: 04; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:High



Site : chamber

Condition: 3m VERTICAL

Job No : 21165AT/21166AT Mode : 2462 Band edge : 2.4G WIFI 11B Note

_									
		Cable	Ant	Preamp	Read		Limit	0ver	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
	2462.000	4.46	29.02	40.46	100.04	93.06	54.00	39.06	Average
	2483.500	4.49	29.07	40.47	46.90	39.99	54.00	-14.01	Average
	2483.790	4 49	29.07	49.47	46.57	39.66	54.00	-14.34	Average



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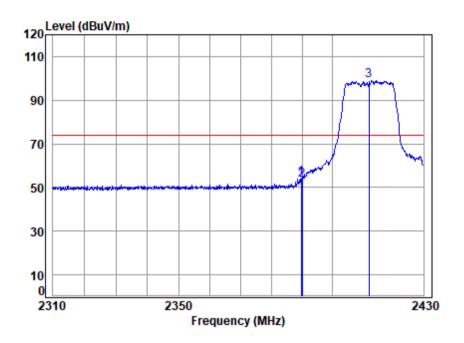
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Test Mode: 04; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:Low



Site : chamber

Condition: 3m HORIZONTAL Job No : 21165AT/21166AT Mode : 2412 Band edge : 2.4G WIFI 11G Note

	Cable	Ant	Preamp	Read		Limit	0ver	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
2389.726	4.34	28.88	40.42	61.33	54.13	74.00	-19.87	peak
2390.000	4.34	28.88	40.42	60.76	53.56	74.00	-20.44	peak
2412.000	4.38	28.92	40.43	106.15	99.02	74.00	25.02	peak



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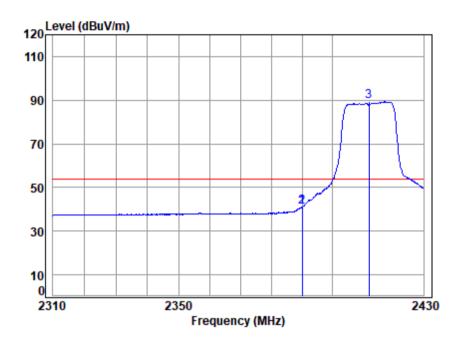
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Report No.: SZCR210502116504

Page: 30 of 135

Test Mode: 04; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:Low



Site : chamber

Condition: 3m HORIZONTAL Job No : 21165AT/21166AT Mode : 2412 Band edge : 2.4G WIFI 11G Note

Cable Ant Preamp Read Limit 0ver Loss Factor Factor Limit Remark Freq Level Level Line MHz dBuV dBuV/m dBuV/m dΒ dB/m 2389.968 4.34 28.88 40.42 48.21 41.01 54.00 -12.99 Average 2390,000 4.34 28.88 40.42 48.21 41.01 54.00 -12.99 Average 3 . 2412.000 4.38 28.92 40.43 96.41 89.28 54.00 35.28 Average



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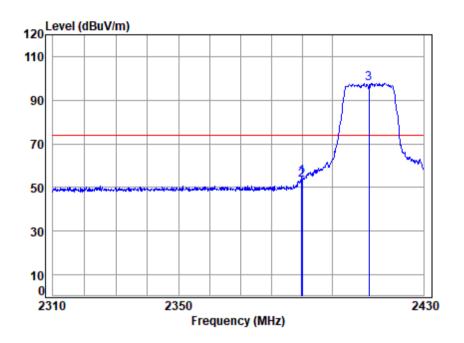
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Report No.: SZCR210502116504

Page: 31 of 135

Test Mode: 04; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:Low



Site : chamber

Condition: 3m VERTICAL

Job No : 21165AT/21166AT Mode : 2412 Band edge : 2.4G WIFI 11G Note

		Cable	Ant	Preamp	Read		Limit	0ver		
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark	
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
	2389.847	4.34	28.88	40.42	62.16	54.96	74.00	-19.04	Peak	
2	2390.000	4.34	28.88	40.42	60.49	53.29	74.00	-20.71	Peak	
	2412.000	4.38	28.92	40.43	104.97	97.84	74.00	23.84	Peak	



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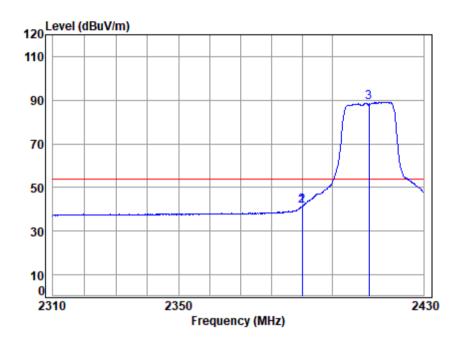
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Report No.: SZCR210502116504

Page: 32 of 135

Test Mode: 04; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:Low



Site : chamber

Condition: 3m VERTICAL

Job No : 21165AT/21166AT Mode : 2412 Band edge : 2.4G WIFI 11G Note

	Cable	Ant	Preamp	Read		Limit	0ver	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
2389.968	4.34	28.88	40.42	48.63	41.43	54.00	-12.57	Average
2390.000	4.34	28.88	40.42	48.63	41.43	54.00	-12.57	Average
2/12 000	4 38	28 92	40 43	96 31	89 18	54 00	35 18	Λυρρασρ



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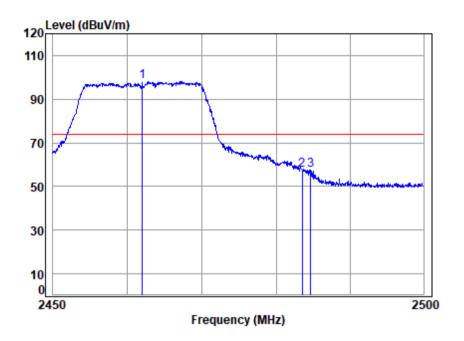
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Report No.: SZCR210502116504

Page: 33 of 135

Test Mode: 04; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:High



Site : chamber

Condition: 3m HORIZONTAL Job No : 21165AT/21166AT Mode : 2462 Band edge : 2.4G WIFI 11G Note

		Cable	Ant	Preamp	Read		Limit	0ver		
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark	
										_
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
	. 2462.000	4.46	29.02	40.46	105.03	98.05	74.00	24.05	peak	
2	2483.500	4.49	29.07	40.47	64.60	57.69	74.00	-16.31	peak	
;	2484.693	4.50	29.07	40.47	64.56	57.66	74.00	-16.34	peak	



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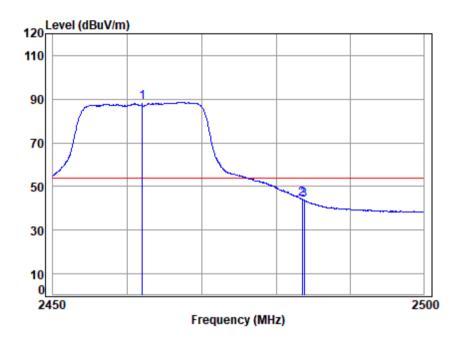
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Report No.: SZCR210502116504

Page: 34 of 135

Test Mode: 04; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:High



Site : chamber

Condition: 3m HORIZONTAL Job No : 21165AT/21166AT Mode : 2462 Band edge : 2.4G WIFI 11G Note

Cable Ant Preamp Read Limit 0ver Loss Factor Factor Line Limit Remark Freq Level Level MHz dBuV dBuV/m dBuV/m dB dB/m dB 1 . 2462.000 4.46 29.02 40.46 95.66 88.68 54.00 34.68 Average 2483.500 4.49 29.07 40.47 50.99 44.08 54.00 -9.92 Average 2483.790 4.49 29.07 40.47 50.57 43.66 54.00 -10.34 Average



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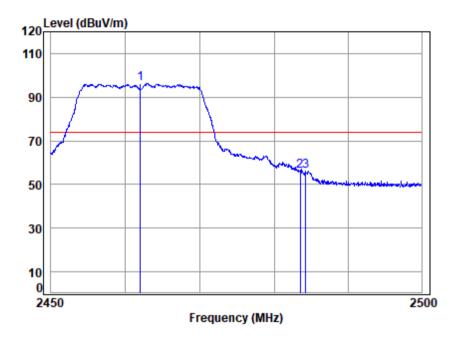
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Report No.: SZCR210502116504

Page: 35 of 135

Test Mode: 04; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:High



Site : chamber

Condition: 3m VERTICAL

: 21165AT/21166AT Job No Mode : 2462 Band edge : 2.4G WIFI 11G Note

	Cable	Ant	Preamp	Read		Limit	0ver		
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark	
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
2462.000	4.46	29.02	40.46	103.22	96.24	74.00	22.24	Peak	
2483.500	4.49	29.07	40.47	63.12	56.21	74.00	-17.79	Peak	
2484 292	4.50	29.07	49.47	63.13	56.23	74 00	-17.77	Peak	



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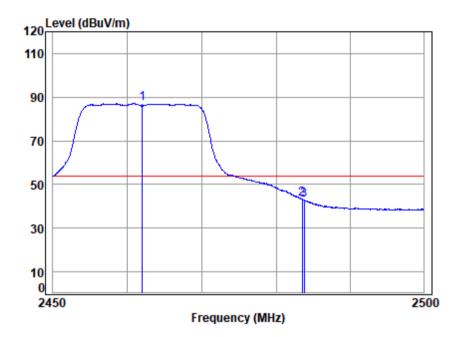
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Report No.: SZCR210502116504

Page: 36 of 135

Test Mode: 04; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:High



Site : chamber

Condition: 3m VERTICAL

Job No : 21165AT/21166AT Mode : 2462 Band edge : 2.4G WIFI 11G Note

_									
		Cable	Ant	Preamp	Read		Limit	0ver	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
	2462.000	4.46	29.02	40.46	94.07	87.09	54.00	33.09	Average
	2483.500	4.49	29.07	40.47	50.29	43.38	54.00	-10.62	Average
	2483.790	4 49	29.07	49 47	49.72	42 81	54.00	-11.19	Average



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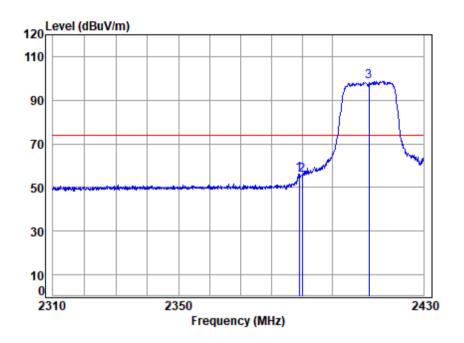
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Report No.: SZCR210502116504

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Test Mode: 04; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



Site : chamber

Condition: 3m HORIZONTAL Job No : 21165AT/21166AT Mode : 2412 Band edge : 2.4G WIFI 11N20 Note

	Cable	Ant	Preamp	Read		Limit	0ver		
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark	
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
2389.000	4.34	28.88	40.42	63.51	56.31	74.00	-17.69	peak	
2390.000	4.34	28.88	40.42	63.01	55.81	74.00	-18.19	peak	
2412.000	4.38	28.92	40.43	105.84	98.71	74.00	24.71	peak	



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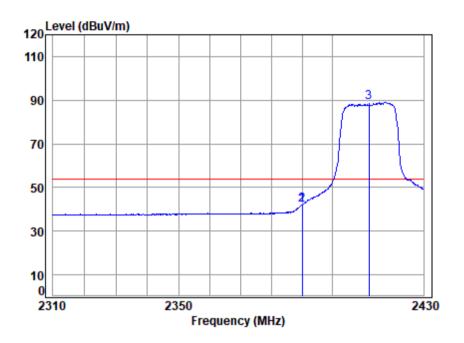
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Report No.: SZCR210502116504

Page: 38 of 135

Test Mode: 04; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



Site : chamber

Condition: 3m HORIZONTAL Job No : 21165AT/21166AT Mode : 2412 Band edge : 2.4G WIFI 11N20 Note

	Cable	Ant	Preamp	Read		Limit	0ver		
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark	
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
2389.968	4.34	28.88	40.42	49.22	42.02	54.00	-11.98	Average	
2390.000	4.34	28.88	40.42	49.22	42.02	54.00	-11.98	Average	
2412.000	4.38	28.92	40.43	96.22	89.09	54.00	35.09	Average	



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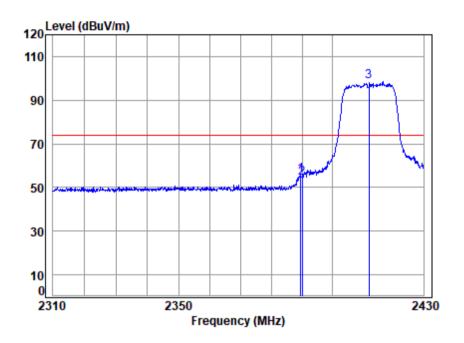
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Report No.: SZCR210502116504

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Test Mode: 04; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



Site : chamber

Condition: 3m VERTICAL

Job No : 21165AT/21166AT Mode : 2412 Band edge : 2.4G WIFI 11N20 Note

_				_					
		Cable	Ant	Preamp	Read		Limit	0ver	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
	2389.605	4.34	28.88	40.42	62.69	55.49	74.00	-18.51	Peak
	2390.000	4.34	28.88	40.42	61.67	54.47	74.00	-19.53	Peak
	2412,000	4.38	28.92	40.43	105.47	98.34	74.00	24.34	Peak



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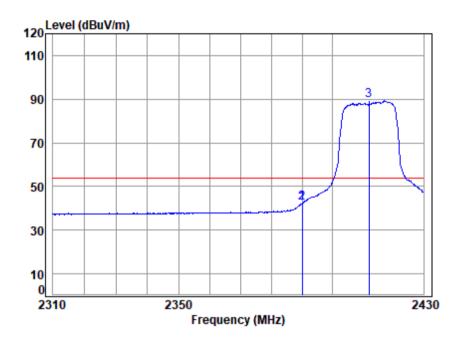
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Report No.: SZCR210502116504

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Test Mode: 04; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



Site : chamber

Condition: 3m VERTICAL

Job No : 21165AT/21166AT Mode : 2412 Band edge : 2.4G WIFI 11N20 Note

	Cable	Ant	Preamp	Read		Limit	0ver		
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark	
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
2389.968	4.34	28.88	40.42	49.44	42.24	54.00	-11.76	Average	
2390.000	4.34	28.88	40.42	49.44	42.24	54.00	-11.76	Average	
2412.000	4.38	28.92	40.43	96.35	89.22	54.00	35.22	Average	



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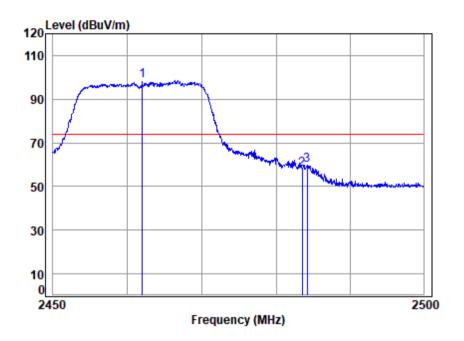
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Report No.: SZCR210502116504

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Test Mode: 04; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High



Site : chamber

Condition: 3m HORIZONTAL Job No : 21165AT/21166AT Mode : 2462 Band edge : 2.4G WIFI 11N20 Note

		Cable	Ant	Preamp	Read		Limit	0ver		
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark	
										_
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	2462.000	4.46	29.02	40.46	105.71	98.73	74.00	24.73	peak	
2	2483.500	4.49	29.07	40.47	64.64	57.73	74.00	-16.27	peak	
3	2484.191	4.50	29.07	40.47	66.75	59.85	74.00	-14.15	peak	



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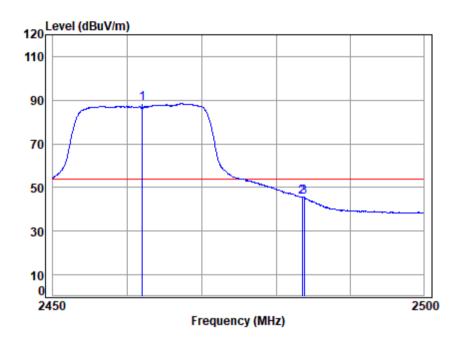
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Report No.: SZCR210502116504

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Test Mode: 04; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High



Site : chamber

Condition: 3m HORIZONTAL Job No : 21165AT/21166AT Mode : 2462 Band edge : 2.4G WIFI 11N20 Note

	Cable	Ant	Preamp	Read		Limit	0ver		
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark	
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
2462.000	4.46	29.02	40.46	95.65	88.67	54.00	34.67	Average	
2483.500	4.49	29.07	40.47	52.73	45.82	54.00	-8.18	Average	
2483.790	4.49	29.07	40.47	52.38	45.47	54.00	-8.53	Average	



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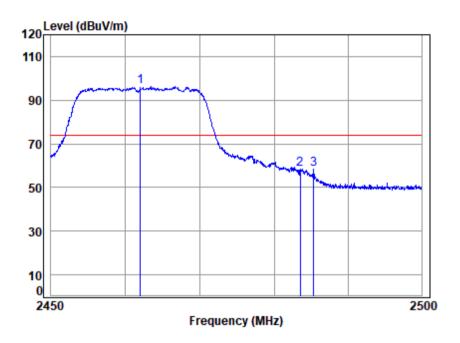
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Test Mode: 04; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High



Site : chamber

Condition: 3m VERTICAL

Job No : 21165AT/21166AT Mode : 2462 Band edge : 2.4G WIFI 11N20 Note

		Freq				Read Level				Remark
	-	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1		2462.000	4.46	29.02	40.46	103.26	96.28	74.00	22.28	Peak
2		2483.500	4.49	29.07	40.47	65.12	58.21	74.00	-15.79	Peak
3		2485.346	4.50	29.07	40.47	65.23	58.33	74.00	-15.67	Peak



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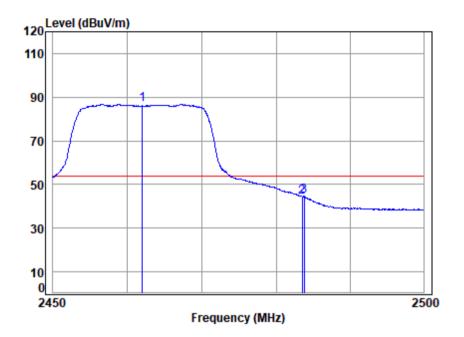
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Test Mode: 04; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High



Site : chamber

Condition: 3m VERTICAL

Job No : 21165AT/21166AT Mode : 2462 Band edge : 2.4G WIFI 11N20 Note

_				_						
		Cable	Ant	Preamp	Read		Limit	0ver		
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark	
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
	2462.000	4.46	29.02	40.46	93.64	86.66	54.00	32.66	Average	
	2483.500	4.49	29.07	40.47	51.38	44.47	54.00	-9.53	Average	
	2483.790	4.49	29.07	40.47	51.43	44.52	54.00	-9.48	Average	



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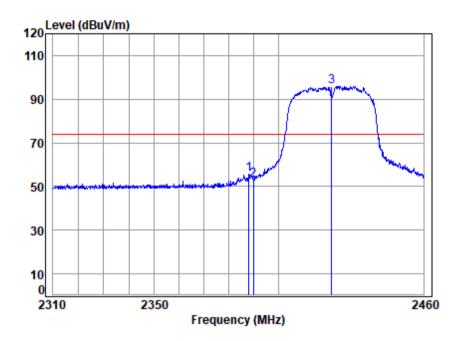
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Test Mode: 04; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



Site : chamber

Condition: 3m HORIZONTAL Job No : 21165AT/21166AT Mode : 2422 Band edge : 2.4G WIFI 11N40 Note

		Cable	Ant	Preamp	Read		Limit	0ver	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2388.174	4.34	28.87	40.42	62.75	55.54	74.00	-18.46	peak
2	2390.000	4.34	28.88	40.42	60.13	52.93	74.00	-21.07	peak
3.	2422.000	4.40	28.94	40.44	103.03	95.93	74.00	21.93	peak



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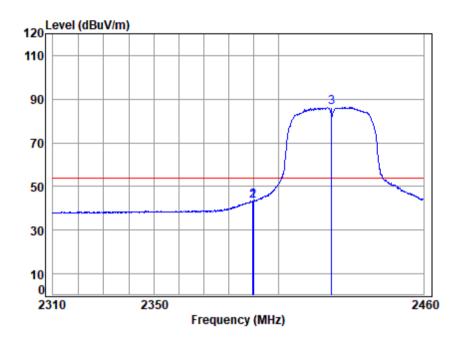
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Test Mode: 04; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



Site : chamber

Condition: 3m HORIZONTAL Job No : 21165AT/21166AT Mode : 2422 Band edge : 2.4G WIFI 11N40 Note

	Cable	Ant	Preamp	Read		Limit	0ver		
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark	
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
2389.677	4.34	28.88	40.42	50.58	43.38	54.00	-10.62	Average	
2390.000	4.34	28.88	40.42	50.38	43.18	54.00	-10.82	Average	
2422.000	4.40	28.94	40.44	93.30	86.20	54.00	32.20	Average	



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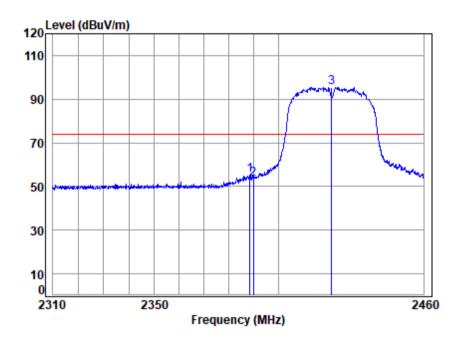
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Test Mode: 04; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



Site : chamber

Condition: 3m VERTICAL

Job No : 21165AT/21166AT Mode : 2422 Band edge : 2.4G WIFI 11N40 Note

	Freq				Read Level				Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2388.474	4.34	28.88	40.42	62.27	55.07	74.00	-18.93	Peak
2	2390.000	4.34	28.88	40.42	60.53	53.33	74.00	-20.67	Peak
3.	2422.000	4.40	28.94	40.44	102.61	95.51	74.00	21.51	Peak



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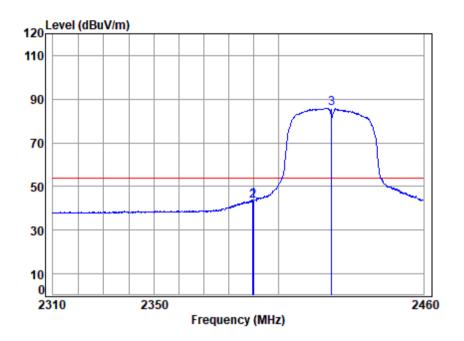
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Test Mode: 04; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



: chamber Site

Condition: 3m VERTICAL

Job No : 21165AT/21166AT Mode : 2422 Band edge : 2.4G WIFI 11N40 Note

 			-						
	Cable	Ant	Preamp	Read		Limit	0ver		
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark	
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
2389.677	4.34	28.88	40.42	51.02	43.82	54.00	-10.18	Average	
2390.000	4.34	28.88	40.42	50.66	43.46	54.00	-10.54	Average	
2422 000	4 40	28 94	49 44	92 98	85 88	54 00	31 88	Average	



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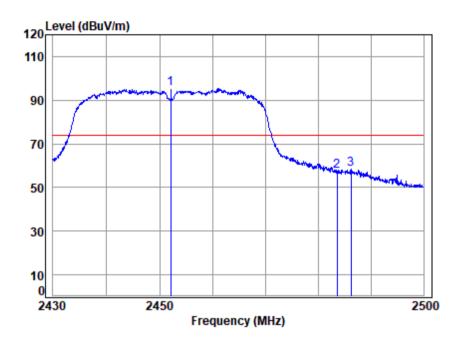
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Test Mode: 04; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High



Site : chamber

Condition: 3m HORIZONTAL Job No : 21165AT/21166AT Mode : 2452 Band edge : 2.4G WIFI 11N40 Note

		Cable	Ant	Preamp	Read		Limit	0ver		
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark	
										_
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
	. 2452.000	4.44	29.00	40.45	102.22	95.21	74.00	21.21	peak	
2	2483.500	4.49	29.07	40.47	64.27	57.36	74.00	-16.64	peak	
;	2486.123	4.50	29.07	40.47	65.25	58.35	74.00	-15.65	peak	



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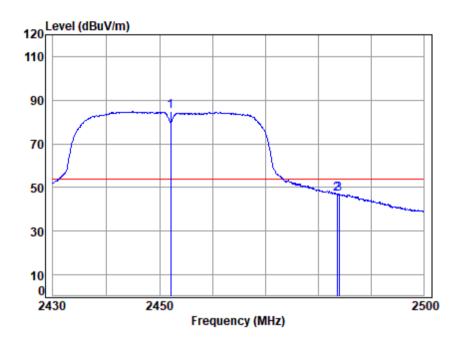
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Test Mode: 04; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High



Site : chamber

Condition: 3m HORIZONTAL Job No : 21165AT/21166AT Mode : 2452 Band edge : 2.4G WIFI 11N40 Note

		Cable	Ant	Preamp	Read		Limit	0ver		
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark	
										_
	MHz	dВ	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
	. 2452.000	4.44	29.00	40.45	91.71	84.70	54.00	30.70	Average	
	2483.500								_	
;	2483.865	4.49	29.07	40.47	53.72	46.81	54.00	-7.19	Average	



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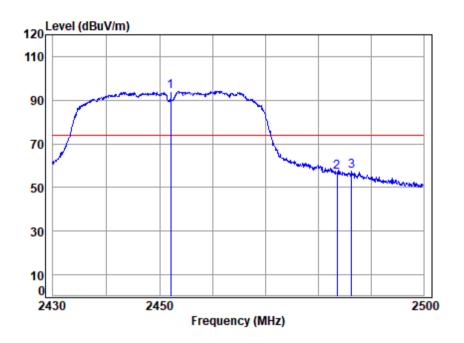
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Test Mode: 04; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:High



Site : chamber

Condition: 3m VERTICAL

: 21165AT/21166AT Job No Mode : 2452 Band edge : 2.4G WIFI 11N40 Note

				_						
		Cable	Ant	Preamp	Read		Limit	0ver		
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark	
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1.	2452.000	4.44	29.00	40.45	101.17	94.16	74.00	20.16	Peak	
2	2483.500	4.49	29.07	40.47	63.98	57.07	74.00	-16.93	Peak	
3	2486.264	4.50	29.07	40.47	64.32	57.42	74.00	-16.58	Peak	



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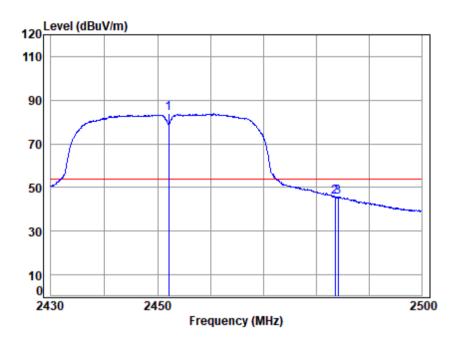
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Test Mode: 04; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:High



Site : chamber

Condition: 3m VERTICAL

Job No : 21165AT/21166AT Mode : 2452 Band edge : 2.4G WIFI 11N40 Note

		Cable	Ant	Preamp	Read		Limit	0ver	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1.	2452.000	4.44	29.00	40.45	90.75	83.74	54.00	29.74	Average
2	2483.500	4.49	29.07	40.47	52.58	45.67	54.00	-8.33	Average
3	2484.076	4.50	29.07	40.47	52.50	45.60	54.00	-8.40	Average



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7.7 Radiated Spurious Emissions Below 1GHz

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

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

7.7.1 E.U.T. Operation

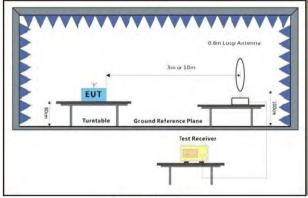
Operating Environment:

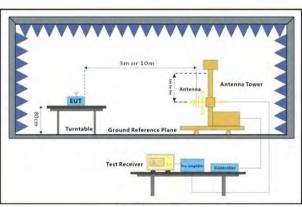
Temperature: Humidity: 61.7 % RH 24.6 °C Atmospheric Pressure: 1010 mbar

7.7.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	04	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); data rate @ 13.5Mbps is the worst case of IEEE 802.11n(HT40). Only the data of worst case is recorded in the report.

7.7.3 Test Setup Diagram





Below 30MHz 30MHz-1GHz



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7.7.4 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 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of
- 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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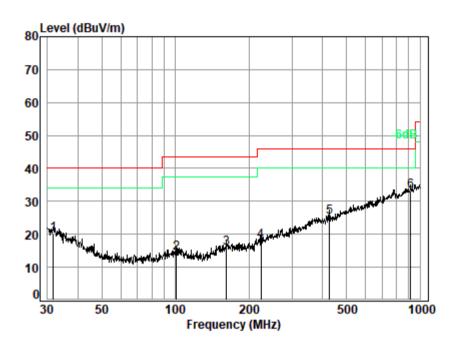
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Test Mode: 04; Polarity: Horizontal



Site : chamber

Condition: 3m HORIZONTAL

Job No. : 21165AT

Test Mode: 04

: without night light

			0						
		Ant	Cable	Preamp	Read		Limit	0ver	
	Freq	Factor	Loss	Factor	Level	Level	Line	Limit	Remark
_									
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB	
	24 60				05.50	47		40.00	
1	31.62	21./8	0.62	2/./3	25.50	20.1/	40.00	-19.83	QР
2	100.93	13.97	1.10	27.60	26.91	14.38	43.50	-29.12	QP
3	162.04	15.44	1.17	27.28	26.63	15.96	43.50	-27.54	QP
4	223.73	16.99	1.42	27.07	26.55	17.89	46.00	-28.11	QP
5	426.52	22.13	2.36	27.51	28.39	25.37	46.00	-20.63	QP
6 g	916.07	29.14	3.52	27.08	27.52	33.10	46.00	-12.90	OP



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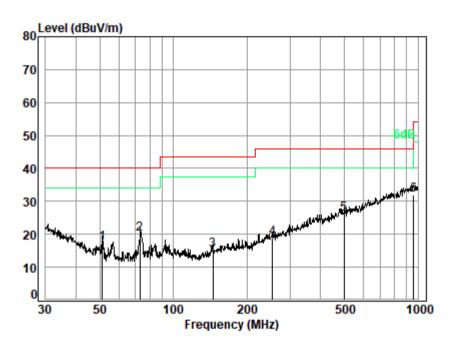
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Test Mode: 04; Polarity: Vertical



Site : chamber Condition: 3m VERTICAL Job No. : 21165AT

Test Mode: 04

: without night light

	Freq		Cable Loss						
_	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB	
1	51.12	13.76	0.71	27.68	30.54	17.33	40.00	-22.67	QP
2	73.10	12.44	0.93	27.64	34.24	19.97	40.00	-20.03	QP
3	145.35	14.11	1.15	27.36	27.23	15.13	43.50	-28.37	QP
4	254.73	18.15	1.68	26.98	25.98	18.83	46.00	-27.17	QP
5 q	499.42	24.11	2.50	27.80	27.35	26.16	46.00	-19.84	QΡ
6	962.16	29.50	3.56	26.84	25.67	31.89	54.00	-22.11	OP



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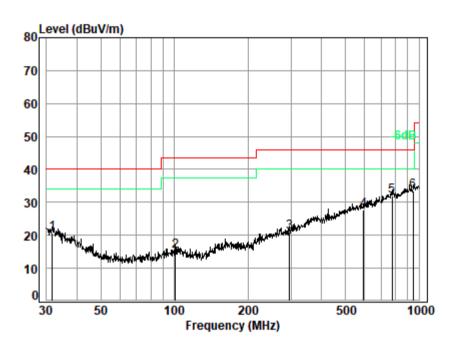
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Test Mode: 04; Polarity: Horizontal



Site : chamber

Condition: 3m HORIZONTAL

Job No. : 21165AT

Test Mode: 04

: with night light

		Ant	Cable	Preamp	Read		Limit	0ver	
	Freq	Factor	Loss	Factor	Level	Level	Line	Limit	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB	
1	31.62	21.78	0.62	27.73	25.97	20.64	40.00	-19.36	QP
2	100.93								_
3	296.18	18.80	1.97	26.88	27.01	20.90	46.00	-25.10	QP
4	593.05	25.66	2.69	28.11	27.39	27.63	46.00	-18.37	QP
5	776.88	28.07	3.21	27.77	28.47	31.98	46.00	-14.02	QP
6 q	948.76								-



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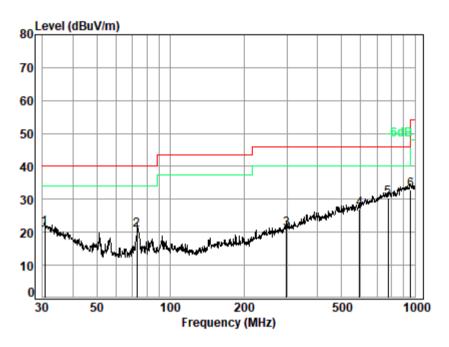
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Test Mode: 04; Polarity: Vertical



Site : chamber Condition: 3m VERTICAL Job No. : 21165AT

Test Mode: 04

: with night light

				Preamp					
	Freq	Factor	Loss	Factor	Level	Level	Line	Limit	Remark
_	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB	
1	30.64	22.51	0.61	27.73	25.96	21.35	40.00	-18.65	QP
2	73.10	12.44	0.93	27.64	34.99	20.72	40.00	-19.28	QP
3	298.27	18.96	1.99	26.87	27.06	21.14	46.00	-24.86	QP
4	595.13	25.70	2.69	28.12	26.76	27.03	46.00	-18.97	QP
5 q	776.88	28.07	3.21	27.77	26.80	30.31	46.00	-15.69	QP
6	962.16	29.50	3.56	26.84	26.53	32.75	54.00	-21.25	OP



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7.8 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

7.8.1 E.U.T. Operation

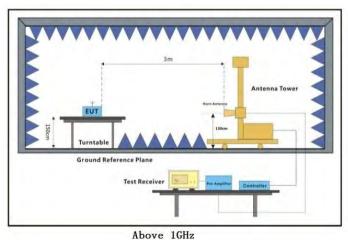
Operating Environment:

Temperature: 21.2 °C Humidity: 54.2 % RH Atmospheric Pressure: 1010 mbar

7.8.2 Test Mode Description

		·
Pre-scan / Final test	Mode Code	Description
Final test	04	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); data rate @ 13.5Mbps is the worst case of IEEE 802.11n(HT40). Only the data of worst case is recorded in the report.

7.8.3 Test Setup Diagram





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7.8.4 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.

- 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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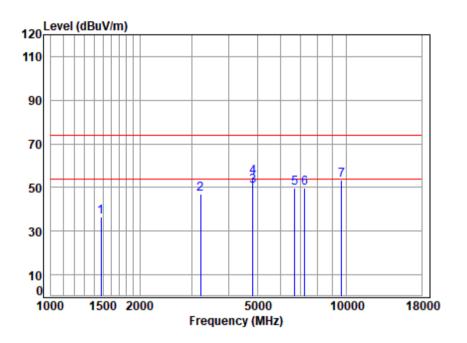
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Report No.: SZCR210502116504

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Test Mode: 04; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:Low



Site : chamber

Condition: 3m HORIZONTAL Job No : 21165AT/21166AT

Mode : 2412 TX RSE Note : 2.4G WIFI 11B

		Cable	Ant	Preamp	Read		Limit	0ver	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1477.276	3.23	25.66	39.94	47.65	36.60	74.00	-37.40	peak
2	3214.623	5.16	30.98	40.87	51.93	47.20	74.00	-26.80	peak
3	4824.000	7.11	33.65	42.15	52.21	50.82	54.00	-3.18	Average
4	4824.000	7.11	33.65	42.15	55.93	54.54	74.00	-19.46	Peak
5	6698.373	8.39	34.97	41.90	48.17	49.63	74.00	-24.37	peak
6	7236.000	8.77	35.69	41.48	46.94	49.92	74.00	-24.08	peak
7	9648.000	10.79	37.36	37.69	42.92	53.38	74.00	-20.62	peak



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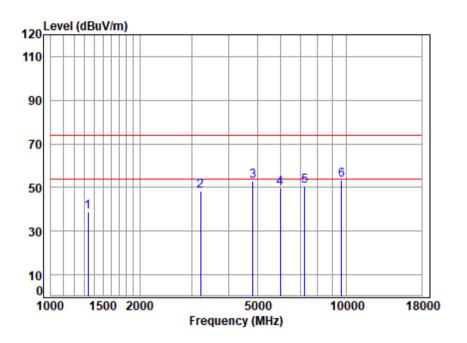
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Test Mode: 04; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:Low



Site : chamber

Condition: 3m VERTICAL

Job No : 21165AT/21166AT

: 2412 TX RSE Mode Note : 2.4G WIFI 11B

		Cable	Ant	Preamp	Read		Limit	0ver	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1335.141	3.00	25.38	39.85	50.24	38.77	74.00	-35.23	peak
2	3214.623	5.16	30.98	40.87	53.28	48.55	74.00	-25.45	peak
3	4824.000	7.12	33.66	42.16	54.18	52.80	74.00	-21.20	peak
4	5984.305	8.26	34.59	42.40	49.27	49.72	74.00	-24.28	peak
5	7236.000	8.77	35.69	41.48	47.48	50.46	74.00	-23.54	peak
6	9648.000	10.79	37.36	37.69	42.76	53.22	74.00	-20.78	peak



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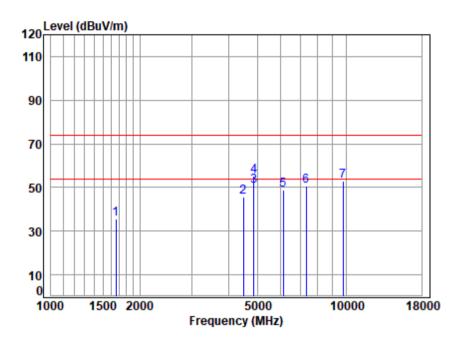
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Test Mode: 04; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:middle



Site : chamber

Condition: 3m HORIZONTAL Job No : 21165AT/21166AT

: 2437 TX RSE Mode : 2.4G WIFI 11B Note

		Cable	Ant	Preamp	Read		Limit	0ver	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1658.337	3.40	26.50	40.04	45.72	35.58	74.00	-38.42	peak
2	4495.125	6.76	33.00	41.87	47.90	45.79	74.00	-28.21	peak
3	4874.000	7.17	33.76	42.20	52.02	50.75	54.00	-3.25	Average
4	4874.000	7.17	33.76	42.20	56.34	55.07	74.00	-18.93	Peak
5	6124.292	8.27	34.60	42.31	48.13	48.69	74.00	-25.31	peak
6	7311.000	8.84	35.75	41.41	47.33	50.51	74.00	-23.49	peak
7	9748.000	10.76	37.40	37.52	42.46	53.10	74.00	-20.90	peak



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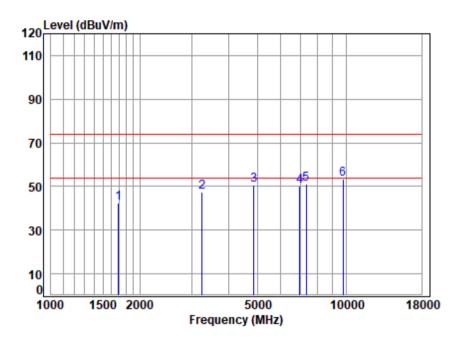
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Test Mode: 04; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:middle



Site : chamber

Condition: 3m VERTICAL

Job No : 21165AT/21166AT

: 2437 TX RSE Mode : 2.4G WIFI 11B Note

		Cable	Ant	Preamp	Read		Limit	0ver	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1692.231	3.42	26.66	40.06	52.46	42.48	74.00	-31.52	peak
2	3252.005	5.21	31.08	40.90	52.19	47.58	74.00	-26.42	peak
3	4874.000	7.17	33.76	42.20	51.84	50.57	74.00	-23.43	peak
4	6954.852	8.52	35.42	41.73	47.93	50.14	74.00	-23.86	peak
5	7311.000	8.84	35.75	41.41	47.76	50.94	74.00	-23.06	peak
6	9748.000	10.76	37.40	37.52	42.69	53.33	74.00	-20.67	peak



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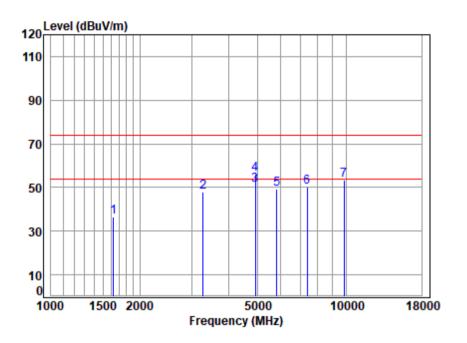
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Test Mode: 04; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:High



Site : chamber

Condition: 3m HORIZONTAL Job No : 21165AT/21166AT

Mode : 2462 TX RSE Note : 2.4G WIFI 11B

	_			Preamp					
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Kemark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1629.825	3.37	26.36	40.02	46.75	36.46	74.00	-37.54	peak
2	3280.326	5.24	31.15	40.92	52.29	47.76	74.00	-26.24	peak
3	4924.000	7.21	33.84	42.23	52.13	50.95	54.00	-3.05	Average
4	4924.000	7.21	33.84	42.23	57.22	56.04	74.00	-17.96	Peak
5	5813.812	8.23	34.46	42.38	49.15	49.46	74.00	-24.54	peak
6	7386.000	8.91	35.81	41.34	47.04	50.42	74.00	-23.58	peak
7	9848.000	10.73	37.44	37.35	42.66	53.48	74.00	-20.52	peak



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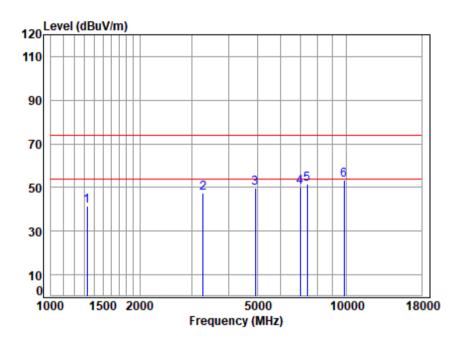
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Test Mode: 04; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:High



Site : chamber

Condition: 3m VERTICAL

Job No : 21165AT/21166AT

Mode : 2462 TX RSE Note : 2.4G WIFI 11B

	Cable	Ant	Preamp	Read		Limit	0ver	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
4202 644		05.36	20.04	F0 06		74.00	20.64	
1323.614	2.98	25.36	39.84	52.86	41.36	/4.00	-32.64	peak
3280.326	5.24	31.15	40.92	52.07	47.54	74.00	-26.46	peak
4924.000	7.22	33.85	42.24	51.01	49.84	74.00	-24.16	peak
6995.172	8.54	35.49	41.70	47.93	50.26	74.00	-23.74	peak
7386.000	8.91	35.81	41.34	48.11	51.49	74.00	-22.51	peak
9848.000	10.73	37.44	37.35	42.48	53.30	74.00	-20.70	peak
	MHz 1323.614 3280.326 4924.000 6995.172 7386.000	Freq Loss MHz dB 1323.614 2.98 3280.326 5.24 4924.000 7.22 6995.172 8.54 7386.000 8.91	Freq Loss Factor MHz dB dB/m 1323.614 2.98 25.36 3280.326 5.24 31.15 4924.000 7.22 33.85 6995.172 8.54 35.49 7386.000 8.91 35.81	Freq Loss Factor Factor MHz dB dB/m dB 1323.614 2.98 25.36 39.84 3280.326 5.24 31.15 40.92 4924.000 7.22 33.85 42.24 6995.172 8.54 35.49 41.70 7386.000 8.91 35.81 41.34	Freq Loss Factor Factor Level MHz dB dB/m dB dBuV 1323.614 2.98 25.36 39.84 52.86 3280.326 5.24 31.15 40.92 52.07 4924.000 7.22 33.85 42.24 51.01 6995.172 8.54 35.49 41.70 47.93 7386.000 8.91 35.81 41.34 48.11	Freq Loss Factor Factor Level Level MHz dB dB/m dB dBuV dBuV/m 1323.614 2.98 25.36 39.84 52.86 41.36 3280.326 5.24 31.15 40.92 52.07 47.54 4924.000 7.22 33.85 42.24 51.01 49.84 6995.172 8.54 35.49 41.70 47.93 50.26 7386.000 8.91 35.81 41.34 48.11 51.49	Freq Loss Factor Factor Level Level Line MHz dB dB/m dB dBuV dBuV/m dBuV/m 1323.614 2.98 25.36 39.84 52.86 41.36 74.00 3280.326 5.24 31.15 40.92 52.07 47.54 74.00 4924.000 7.22 33.85 42.24 51.01 49.84 74.00 6995.172 8.54 35.49 41.70 47.93 50.26 74.00 7386.000 8.91 35.81 41.34 48.11 51.49 74.00	Cable Ant Preamp Freq Loss Factor Factor Read Level Level Limit Limit Over Limit MHz dB dB/m dB dBuV dBuV/m dBuV/m dBuV/m dB 1323.614 2.98 25.36 39.84 52.86 41.36 74.00 -32.64 3280.326 5.24 31.15 40.92 52.07 47.54 74.00 -26.46 4924.000 7.22 33.85 42.24 51.01 49.84 74.00 -24.16 6995.172 8.54 35.49 41.70 47.93 50.26 74.00 -23.74 7386.000 8.91 35.81 41.34 48.11 51.49 74.00 -22.51 9848.000 10.73 37.44 37.35 42.48 53.30 74.00 -20.70



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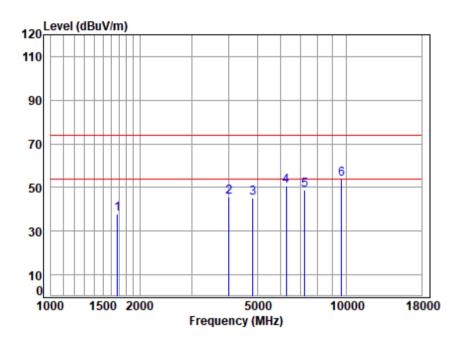
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Test Mode: 04; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:Low



Site : chamber

Condition: 3m HORIZONTAL Job No : 21165AT/21166AT

Mode : 2412 TX RSE Note : 2.4G WIFI 11G

	-	Cable		Preamp	Read		Limit		
	Freq	Loss	Factor	Factor	revel	revel	Line	Limit	Kemark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1682.477	3.42	26.62	40.05	47.97	37.96	74.00	-36.04	peak
2	4004.339	6.28	32.60	41.40	48.00	45.48	74.00	-28.52	peak
3	4824.000	7.12	33.66	42.16	46.61	45.23	74.00	-28.77	peak
4	6267.553	8.27	34.60	42.20	50.10	50.77	74.00	-23.23	peak
5	7236.000	8.77	35.69	41.48	45.97	48.95	74.00	-25.05	peak
6	9648.000	10.79	37.36	37.69	43.26	53.72	74.00	-20.28	peak



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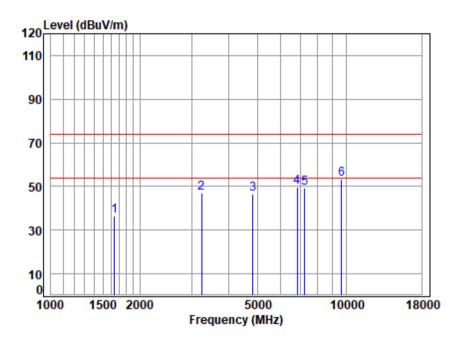
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Test Mode: 04; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:Low



Site : chamber

Condition: 3m VERTICAL

Job No : 21165AT/21166AT

: 2412 TX RSE Mode : 2.4G WIFI 11G Note

		Cable	Ant	Preamp	Read		Limit	0ver	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1644.019	3.38	26.43	40.03	46.56	36.34	74.00	-37.66	peak
2	3233.260	5.18	31.03	40.88	51.59	46.92	74.00	-27.08	peak
3	4824.000	7.12	33.66	42.16	47.87	46.49	74.00	-27.51	peak
4	6835.278	8.46	35.21	41.81	47.72	49.58	74.00	-24.42	peak
5	7236.000	8.77	35.69	41.48	46.21	49.19	74.00	-24.81	peak
6	9648.000	10.79	37.36	37.69	42.96	53.42	74.00	-20.58	peak



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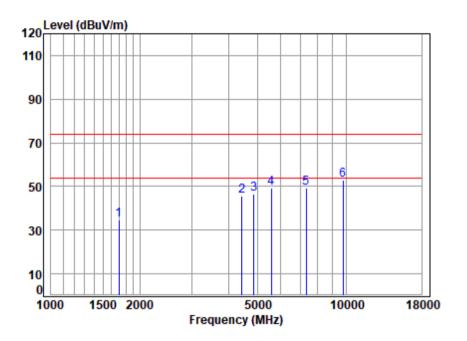
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Report No.: SZCR210502116504

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Test Mode: 04; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:middle



Site : chamber

Condition: 3m HORIZONTAL Job No : 21165AT/21166AT

: 2437 TX RSE Mode : 2.4G WIFI 11G Note

	Cable	Ant	Preamp	Read		Limit	0ver	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
4607 400	2.42	26.60	40.00	44.75	24.04	74.00	30.40	
1697.129	3.43	26.69	40.06	44.75	34.81	74.00	-39.19	реак
4443.453	6.71	32.96	41.82	47.71	45.56	74.00	-28.44	peak
4874.000	7.17	33.76	42.20	48.00	46.73	74.00	-27.27	peak
5583.251	8.19	34.27	42.36	49.34	49.44	74.00	-24.56	peak
7311.000	8.84	35.75	41.41	46.26	49.44	74.00	-24.56	peak
9748.000	10.76	37.40	37.52	42.33	52.97	74.00	-21.03	peak
	MHz 1697.129 4443.453 4874.000 5583.251 7311.000	Freq Loss MHz dB 1697.129 3.43 4443.453 6.71 4874.000 7.17 5583.251 8.19 7311.000 8.84	Freq Loss Factor MHz dB dB/m 1697.129 3.43 26.69 4443.453 6.71 32.96 4874.000 7.17 33.76 5583.251 8.19 34.27 7311.000 8.84 35.75	Freq Loss Factor Factor MHz dB dB/m dB 1697.129 3.43 26.69 40.06 4443.453 6.71 32.96 41.82 4874.000 7.17 33.76 42.20 5583.251 8.19 34.27 42.36 7311.000 8.84 35.75 41.41	Freq Loss Factor Factor Level MHz dB dB/m dB dBuV 1697.129 3.43 26.69 40.06 44.75 4443.453 6.71 32.96 41.82 47.71 4874.000 7.17 33.76 42.20 48.00 5583.251 8.19 34.27 42.36 49.34 7311.000 8.84 35.75 41.41 46.26	Freq Loss Factor Factor Level Level MHz dB dB/m dB dBuV dBuV/m 1697.129 3.43 26.69 40.06 44.75 34.81 4443.453 6.71 32.96 41.82 47.71 45.56 4874.000 7.17 33.76 42.20 48.00 46.73 5583.251 8.19 34.27 42.36 49.34 49.44 7311.000 8.84 35.75 41.41 46.26 49.44	Freq Loss Factor Factor Level Level Line MHz dB dB/m dB dBuV dBuV/m dBuV/m 1697.129 3.43 26.69 40.06 44.75 34.81 74.00 4443.453 6.71 32.96 41.82 47.71 45.56 74.00 4874.000 7.17 33.76 42.20 48.00 46.73 74.00 5583.251 8.19 34.27 42.36 49.34 49.44 74.00 7311.000 8.84 35.75 41.41 46.26 49.44 74.00	



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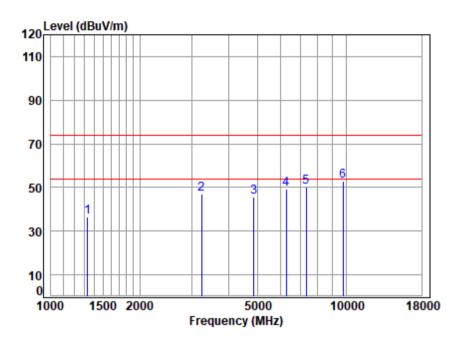
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Report No.: SZCR210502116504

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Test Mode: 04; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:middle



Site : chamber

Condition: 3m VERTICAL

Job No : 21165AT/21166AT

: 2437 TX RSE Mode : 2.4G WIFI 11G Note

		Cable	Ant	Preamp	Read		Limit	0ver	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1331.288	3.00	25.38	39.85	48.11	36.64	74.00	-37.36	peak
2	3233.260	5.18	31.03	40.88	51.73	47.06	74.00	-26.94	peak
3	4874.000	7.17	33.76	42.20	47.01	45.74	74.00	-28.26	peak
4	6267.553	8.27	34.60	42.20	48.50	49.17	74.00	-24.83	peak
5	7311.000	8.84	35.75	41.41	46.86	50.04	74.00	-23.96	peak
6	9748.000	10.76	37.40	37.52	42.35	52.99	74.00	-21.01	peak



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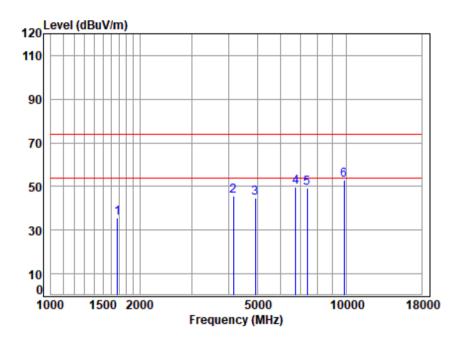
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Report No.: SZCR210502116504

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Test Mode: 04; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:High



Site : chamber

Condition: 3m HORIZONTAL
Job No : 21165AT/21166AT

Mode : 2462 TX RSE Note : 2.4G WIFI 11G

	Frea		Ant Factor	Preamp Factor		Level			Remark
-		dB		dB					
	MHz					-			
1	1682.477			40.05					•
2	4157.664								•
3	4924.000								•
4	6737.207	8.41	35.04	41.87	48.00	49.58	74.00	-24.42	peak
5	7386.000	8.91	35.81	41.34	45.95	49.33	74.00	-24.67	peak
6	9848.000	10.73	37.44	37.35	42.32	53.14	74.00	-20.86	peak



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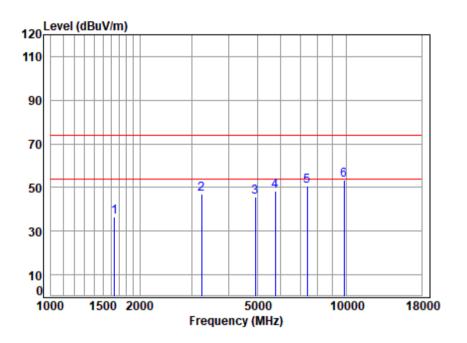
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Report No.: SZCR210502116504

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Test Mode: 04; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:High



Site : chamber

Condition: 3m VERTICAL

Job No : 21165AT/21166AT

Mode : 2462 TX RSE : 2.4G WIFI 11G Note

		Cable	Ant	Preamp	Read		Limit	0ver		
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark	
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	1644.019	3.38	26.43	40.03	46.49	36.27	74.00	-37.73	peak	
2	3233.260	5.18	31.03	40.88	51.72	47.05	74.00	-26.95	peak	
3	4924.000	7.22	33.85	42.24	46.87	45.70	74.00	-28.30	peak	
4	5746.982	8.22	34.40	42.38	48.30	48.54	74.00	-25.46	peak	
5	7386.000	8.91	35.81	41.34	47.13	50.51	74.00	-23.49	peak	
6	9848.000	10.73	37.44	37.35	42.58	53.40	74.00	-20.60	peak	



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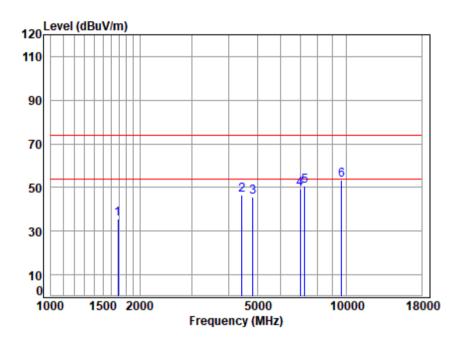
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Report No.: SZCR210502116504

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Test Mode: 04; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



Site : chamber

Condition: 3m HORIZONTAL Job No : 21165AT/21166AT

: 2412 TX RSE Mode

: 2.4G WIFI 11N20 Note

		Cable	Ant	Preamp	Read		Limit	0ver	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1687.347	3.42	26.64	40.05	45.54	35.55	74.00	-38.45	peak
2	4443.453	6.71	32.96	41.82	48.70	46.55	74.00	-27.45	peak
3	4824.000	7.12	33.66	42.16	47.06	45.68	74.00	-28.32	peak
4	6995.172	8.54	35.49	41.70	46.85	49.18	74.00	-24.82	peak
5	7236.000	8.77	35.69	41.48	47.63	50.61	74.00	-23.39	peak
6	9648.000	10.79	37.36	37.69	42.94	53.40	74.00	-20.60	peak



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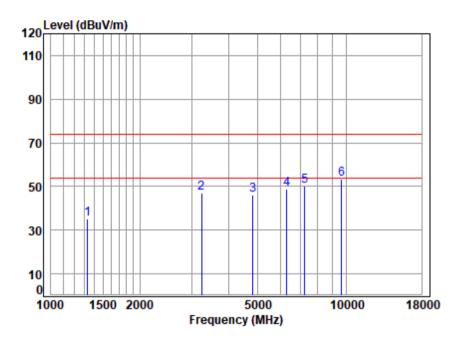
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Test Mode: 04; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



Site : chamber

Condition: 3m VERTICAL

Job No : 21165AT/21166AT

: 2412 TX RSE Mode

: 2.4G WIFI 11N20 Note

		Cable	Ant	Preamp	Read		Limit	0ver	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	——dB	
1	1331.288	3.00	25.38	39.85	46.83	35.36	74.00	-38.64	peak
2	3233.260	5.18	31.03	40.88	51.73	47.06	74.00	-26.94	peak
3	4824.000	7.12	33.66	42.16	47.50	46.12	74.00	-27.88	peak
4	6285.695	8.27	34.60	42.19	48.14	48.82	74.00	-25.18	peak
5	7236.000	8.77	35.69	41.48	47.03	50.01	74.00	-23.99	peak
6	9648.000	10.79	37.36	37.69	42.74	53.20	74.00	-20.80	peak



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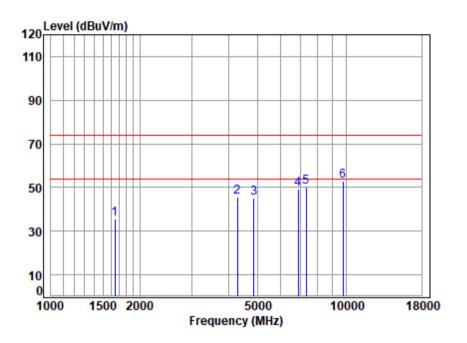
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Test Mode: 04; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:middle



Site : chamber

Condition: 3m HORIZONTAL Job No : 21165AT/21166AT

: 2437 TX RSE Mode : 2.4G WIFI 11N20 Note

	Freq			Preamp Factor					Remark
	MHz	dB	dB/m	——dB	dBuV	dBuV/m	dBuV/m	——dB	
1	1648.778	3.39	26.46	40.03	45.80	35.62	74.00	-38.38	peak
2	4291.977	6.57	32.84	41.68	47.76	45.49	74.00	-28.51	peak
3	4874.000	7.17	33.76	42.20	46.46	45.19	74.00	-28.81	peak
4	6874.906	8.48	35.28	41.78	47.08	49.06	74.00	-24.94	peak
5	7311.000	8.84	35.75	41.41	47.08	50.26	74.00	-23.74	peak
6	9748.000	10.76	37.40	37.52	42.09	52.73	74.00	-21.27	peak



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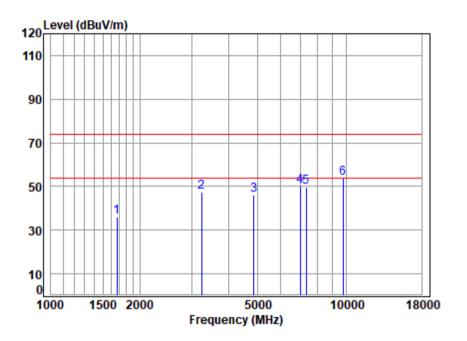
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Report No.: SZCR210502116504

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Test Mode: 04; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:middle



Site : chamber

Condition: 3m VERTICAL

Job No : 21165AT/21166AT

: 2437 TX RSE Mode

: 2.4G WIFI 11N20 Note

		Cable	Ant	Preamp	Read		Limit	0ver	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	——dB	
1	1672.779	3.41	26.57	40.05	46.28	36.21	74.00	-37.79	peak
2	3233.260	5.18	31.03	40.88	52.13	47.46	74.00	-26.54	peak
3	4874.000	7.17	33.76	42.20	47.55	46.28	74.00	-27.72	peak
4	6995.172	8.54	35.49	41.70	47.76	50.09	74.00	-23.91	peak
5	7311.000	8.84	35.75	41.41	46.67	49.85	74.00	-24.15	peak
6	9748.000	10.76	37.40	37.52	43.05	53.69	74.00	-20.31	peak



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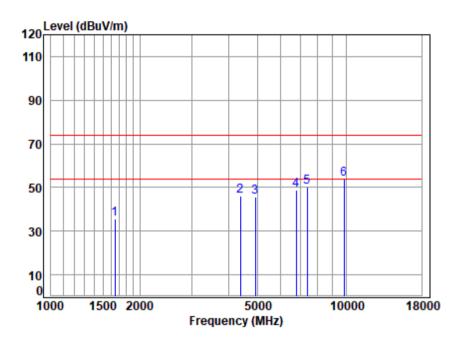
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Test Mode: 04; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High



Site : chamber

Condition: 3m HORIZONTAL Job No : 21165AT/21166AT

Mode : 2462 TX RSE

: 2.4G WIFI 11N20 Note

		Cable	Ant	Preamp	Read		Limit	0ver	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
						JD: 3//	JD: 3//		
	MHz	dB	ab/m	dB	abuv	abuv/m	abuv/m	dB	
1	1648.778	3.39	26.46	40.03	45.61	35.43	74.00	-38.57	peak
2	4392.376	6.66	32.92	41.78	48.29	46.09	74.00	-27.91	peak
3	4924.000	7.22	33.85	42.24	46.58	45.41	74.00	-28.59	peak
4	6776.265	8.43	35.11	41.85	47.15	48.84	74.00	-25.16	peak
5	7386.000	8.91	35.81	41.34	47.01	50.39	74.00	-23.61	peak
6	9848.000	10.73	37.44	37.35	42.87	53.69	74.00	-20.31	peak



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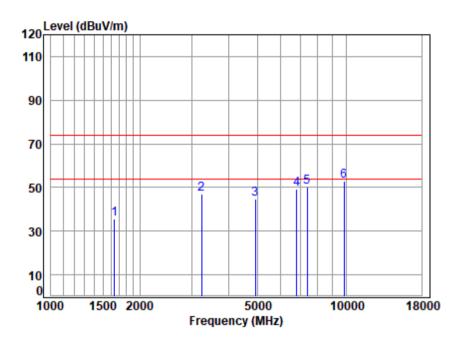
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Test Mode: 04; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High



Site : chamber

Condition: 3m VERTICAL

Job No : 21165AT/21166AT

Mode : 2462 TX RSE

: 2.4G WIFI 11N20 Note

		Cable	Ant	Preamp	Read		Limit	0ver	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1644.019	3.38	26.43	40.03	45.79	35.57	74.00	-38.43	peak
2	3233.260	5.18	31.03	40.88	51.84	47.17	74.00	-26.83	peak
3	4924.000	7.22	33.85	42.24	45.74	44.57	74.00	-29.43	peak
4	6795.879	8.44	35.14	41.83	47.69	49.44	74.00	-24.56	peak
5	7386.000	8.91	35.81	41.34	46.84	50.22	74.00	-23.78	peak
6	9848.000	10.73	37.44	37.35	42.27	53.09	74.00	-20.91	peak



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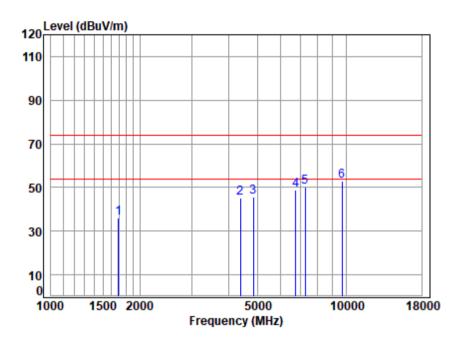
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Test Mode: 04; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



Site : chamber

Condition: 3m HORIZONTAL Job No : 21165AT/21166AT

: 2422 TX RSE Mode

: 2.4G WIFI 11N40 Note

		Cable	Ant	Preamp	Read		Limit	0ver	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1692.231	3.42	26.66	40.06	46.02	36.04	74.00	-37.96	peak
2	4379.699	6.65	32.91	41.77	47.20	44.99	74.00	-29.01	peak
3	4844.000	7.14	33.70	42.17	47.09	45.76	74.00	-28.24	peak
4	6737.207	8.41	35.04	41.87	47.40	48.98	74.00	-25.02	peak
5	7266.000	8.79	35.72	41.45	47.27	50.33	74.00	-23.67	peak
6	9688.000	10.78	37.38	37.63	42.20	52.73	74.00	-21.27	peak



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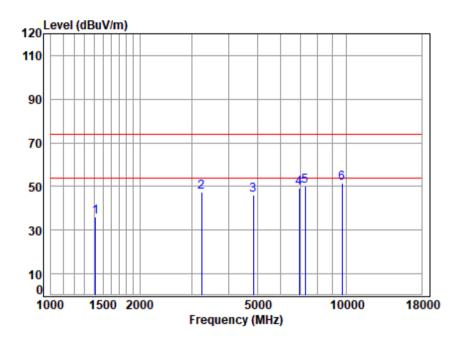
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Test Mode: 04; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



Site : chamber

Condition: 3m VERTICAL

Job No : 21165AT/21166AT

: 2422 TX RSE Mode

: 2.4G WIFI 11N40 Note

		Cable	Ant	Preamp	Read		Limit	0ver	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	——dB	
1	1418.692	3.14	25.55	39.90	47.19	35.98	74.00	-38.02	peak
2	3233.260	5.18	31.03	40.88	51.92	47.25	74.00	-26.75	peak
3	4844.000	7.14	33.70	42.17	47.31	45.98	74.00	-28.02	peak
4	6934.778	8.51	35.39	41.74	47.16	49.32	74.00	-24.68	peak
5	7266.000	8.79	35.72	41.45	47.17	50.23	74.00	-23.77	peak
6	9688.000	10.78	37.38	37.63	41.23	51.76	74.00	-22.24	peak



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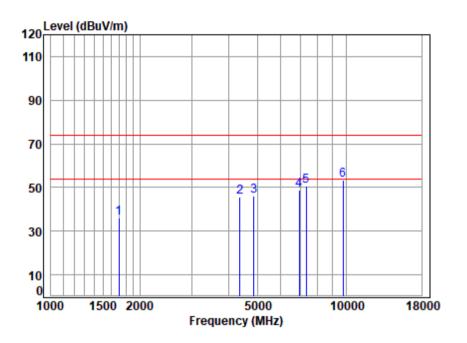
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Test Mode: 04; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:middle



Site : chamber

Condition: 3m HORIZONTAL Job No : 21165AT/21166AT

: 2437 TX RSE Mode

: 2.4G WIFI 11N40 Note

		Cable	Ant	Preamp	Read		Limit	0ver	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1702.042	3.43	26.71	40.06	45.79	35.87	74.00	-38.13	peak
2	4367.058	6.64	32.90	41.75	47.75	45.54	74.00	-28.46	peak
3	4874.000	7.17	33.76	42.20	47.40	46.13	74.00	-27.87	peak
4	6934.778	8.51	35.39	41.74	46.83	48.99	74.00	-25.01	peak
5	7311.000	8.84	35.75	41.41	47.65	50.83	74.00	-23.17	peak
6	9748.000	10.76	37.40	37.52	42.58	53.22	74.00	-20.78	peak



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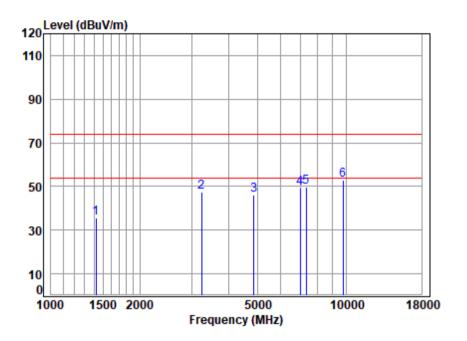
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Test Mode: 04; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:middle



Site : chamber

Condition: 3m VERTICAL

Job No : 21165AT/21166AT

: 2437 TX RSE Mode

: 2.4G WIFI 11N40 Note

		Cable	Ant	Preamp	Read		Limit	0ver	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
						4D: A//	JD: 3//		
	MHz	ав	ab/m	dB	abuv	abuv/m	abuv/m	dB	
1	1422.798	3.14	25.56	39.91	46.59	35.38	74.00	-38.62	peak
2	3233.260	5.18	31.03	40.88	52.25	47.58	74.00	-26.42	peak
3	4874.000	7.17	33.76	42.20	47.21	45.94	74.00	-28.06	peak
4	6974.982	8.53	35.46	41.72	46.96	49.23	74.00	-24.77	peak
5	7311.000	8.84	35.75	41.41	46.65	49.83	74.00	-24.17	peak
6	9748.000	10.76	37.40	37.52	42.47	53.11	74.00	-20.89	peak



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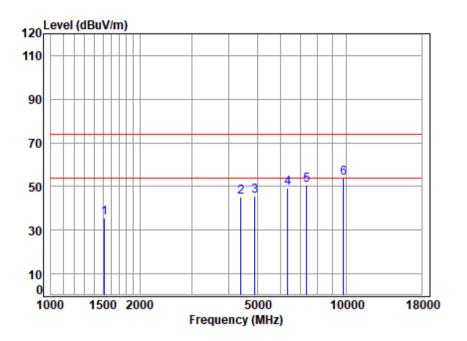
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Test Mode: 04; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High



Site : chamber

Condition: 3m HORIZONTAL Job No : 21165AT/21166AT

: 2452 TX RSE Mode

: 2.4G WIFI 11N40 Note

		Cable	Ant	Preamp	Read		Limit	0ver	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
	4500 500	2.00	05.04	20.06		35.44	74.00	20.55	
1	1520.598	3.28	25.81	39.96	46.31	35.44	/4.00	-38.56	peak
2	4405.090	6.67	32.93	41.79	47.45	45.26	74.00	-28.74	peak
3	4904.000	7.20	33.82	42.22	47.03	45.83	74.00	-28.17	peak
4	6340.436	8.27	34.60	42.15	48.40	49.12	74.00	-24.88	peak
5	7356.000	8.88	35.79	41.37	47.55	50.85	74.00	-23.15	peak
6	9808.000	10.75	37.42	37.42	42.95	53.70	74.00	-20.30	peak



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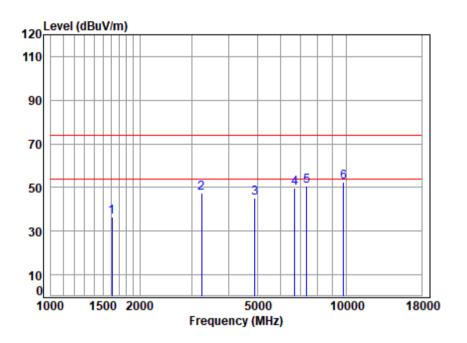
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Test Mode: 04; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:High



Site : chamber

Condition: 3m VERTICAL

Job No : 21165AT/21166AT

Mode : 2452 TX RSE

: 2.4G WIFI 11N40 Note

		Cable	Ant	Preamp	Read		Limit	0ver	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB		dB		dBuV/m	dBuV/m	——dB	
	FILIZ	ub	ub/iii	ub	ubuv	ubuv/III	ubuv/III	ub	
1	1611.091	3.36	26.27	40.01	46.86	36.48	74.00	-37.52	peak
2	3233.260	5.18	31.03	40.88	52.10	47.43	74.00	-26.57	peak
3	4904.000	7.20	33.82	42.22	46.55	45.35	74.00	-28.65	peak
4	6698.373	8.39	34.97	41.90	48.32	49.78	74.00	-24.22	peak
5	7356.000	8.88	35.79	41.37	47.51	50.81	74.00	-23.19	peak
6	9808.000	10.75	37.42	37.42	41.85	52.60	74.00	-21.40	peak



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Emission Test Results 8

8.1 Conducted Emissions at AC Power Line (150kHz-30MHz)

47 CFR Part 15, Subpart C 15.247 Test Requirement:

47 CFR Part 15, Subpart C 15.207

Test Method: ANSI C63.10 (2013) Section 6.2

Limit:

Eraguanay of amission/MU=\	Conducted limit(dBµV)					
Frequency of emission(MHz)	Quasi-peak	Average				
0.15-0.5	66 to 56*	56 to 46*				
0.5-5	56	46				
5-30	60	50				
*Decreases with the logarithm of the frequency.						
Detector: Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz						

8.1.1 E.U.T. Operation

Operating Environment:

Temperature: 23.2 °C Humidity: 44.5 % RH Atmospheric Pressure: 1010 mbar

8.1.2 Test Mode Description

0.1.2	0.1.2 Test mode bescription									
	scan / I test	Mode Code	Description							
Fina	l test	04	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); data rate @ 13.5Mbps is the worst case of IEEE 802.11n(HT40). Only the data of worst case is recorded in the report.							



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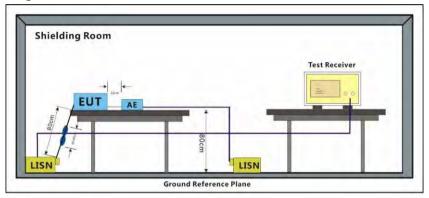
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8.1.3 Test Setup Diagram



8.1.4 Measurement Procedure and Data

- 1) The mains terminal disturbance voltage test was conducted in a shielded room.
- 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50ohm/50µH + 5ohm linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
- 3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane.
- 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.
- 5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.

Remark: LISN=Read Level+ Cable Loss+ LISN Factor



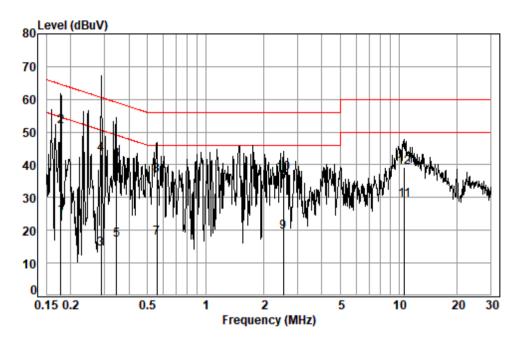
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Test Mode: 04; Line: Live line; Modulation:802.11n; Channel:Low



: Shielding Room

Condition: Line Job No. : 21165AT

Test mode: 04

mouc. or							
	Cable	LISN	Read		Limit	0ver	
Freq	Loss	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB	dBuV	dBuV	dBuV	dB	
0 1777	0 03	9 71	14 45	24 19	54 59	-30 40	Average
							_
0.1///	0.03	9.71	42.09	51.83			•
0.2878	0.05	9.74	4.61	14.40	50.59	-36.19	Average
0.2878	0.05	9.74	33.46	43.25	60.59	-17.34	QP
0.3465	0.06	9.75	7.16	16.97	49.05	-32.08	Average
0.3465	0.06	9.75	31.70	41.51	59.05	-17.54	QP
0.5581	0.08	9.77	7.84	17.69	46.00	-28.31	Average
0.5581	0.08	9.77	26.97	36.82	56.00	-19.18	QP
2.5266	0.13	9.82	9.63	19.58	46.00	-26.42	Average
2.5266	0.13	9.82	27.41	37.36	56.00	-18.64	QP
10.6763	0.16	10.24	18.68	29.08	50.00	-20.92	Average
10.6763	0.16	10.24	28.85	39.25	60.00	-20.75	QP
	MHz 0.1777 0.1777 0.2878 0.2878 0.3465 0.3465 0.5581 0.5581 2.5266 2.5266 10.6763	Freq Loss MHz dB 0.1777 0.03 0.1777 0.03 0.2878 0.05 0.2878 0.05 0.3465 0.06 0.3465 0.06 0.5581 0.08 0.5581 0.08 2.5266 0.13 2.5266 0.13 10.6763 0.16	Freq Loss Factor MHz dB dB 0.1777 0.03 9.71 0.1777 0.03 9.71 0.2878 0.05 9.74 0.2878 0.05 9.74 0.3465 0.06 9.75 0.3465 0.06 9.75 0.5581 0.08 9.77 2.5266 0.13 9.82 2.5266 0.13 9.82 10.6763 0.16 10.24	Freq Loss Factor Level MHz dB dB dBuV 0.1777 0.03 9.71 14.45 0.1777 0.03 9.71 42.09 0.2878 0.05 9.74 4.61 0.2878 0.05 9.74 33.46 0.3465 0.06 9.75 7.16 0.3465 0.06 9.75 31.70 0.5581 0.08 9.77 7.84 0.5581 0.08 9.77 26.97 2.5266 0.13 9.82 9.63 2.5266 0.13 9.82 27.41 10.6763 0.16 10.24 18.68	Freq Loss Factor Level Level MHz dB dB dBuV dBuV 0.1777 0.03 9.71 14.45 24.19 0.1777 0.03 9.71 42.09 51.83 0.2878 0.05 9.74 4.61 14.40 0.2878 0.05 9.74 33.46 43.25 0.3465 0.06 9.75 7.16 16.97 0.3465 0.06 9.75 31.70 41.51 0.5581 0.08 9.77 7.84 17.69 0.5581 0.08 9.77 26.97 36.82 2.5266 0.13 9.82 9.63 19.58 2.5266 0.13 9.82 27.41 37.36 10.6763 0.16 10.24 18.68 29.08	MHz dB dB dBuV dBuV dBuV 0.1777 0.03 9.71 14.45 24.19 54.59 0.1777 0.03 9.71 42.09 51.83 64.59 0.2878 0.05 9.74 4.61 14.40 50.59 0.2878 0.05 9.74 33.46 43.25 60.59 0.3465 0.06 9.75 7.16 16.97 49.05 0.3465 0.06 9.75 31.70 41.51 59.05 0.5581 0.08 9.77 7.84 17.69 46.00 0.5581 0.08 9.77 26.97 36.82 56.00 2.5266 0.13 9.82 9.63 19.58 46.00 2.5266 0.13 9.82 27.41 37.36 56.00 10.6763 0.16 10.24 18.68 29.08 50.00	Freq Loss Factor Level Level Line Limit MHz dB dB dBuV dBuV dBuV dB 0.1777 0.03 9.71 14.45 24.19 54.59 -30.40 0.1777 0.03 9.71 42.09 51.83 64.59 -12.76 0.2878 0.05 9.74 4.61 14.40 50.59 -36.19 0.2878 0.05 9.74 33.46 43.25 60.59 -17.34 0.3465 0.06 9.75 7.16 16.97 49.05 -32.08 0.3465 0.06 9.75 31.70 41.51 59.05 -17.54 0.5581 0.08 9.77 7.84 17.69 46.00 -28.31 0.5581 0.08 9.77 26.97 36.82 56.00 -19.18 2.5266 0.13 9.82 9.63 19.58 46.00 -26.42 2.5266 0.13 9.82 27.41



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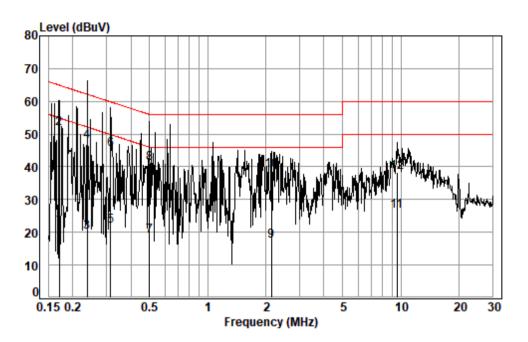
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Test Mode: 04; Line: Neutral Line; Modulation:802.11n; Channel:Low



: Shielding Room

Condition: Neutral Job No. : 21165AT

Test mode: 04

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.1703	0.03	9.71	12.18	21.92	54.94	-33.02	Average
2	0.1703	0.03	9.71	41.84	51.58	64.94	-13.36	QP
3	0.2378	0.04	9.73	10.43	20.20	52.17	-31.97	Average
4	0.2378	0.04	9.73	38.13	47.90	62.17	-14.27	QP
5	0.3149	0.05	9.74	12.26	22.05	49.84	-27.79	Average
6	0.3149	0.05	9.74	35.49	45.28	59.84	-14.56	QP
7	0.4994	0.07	9.76	8.93	18.76	46.01	-27.25	Average
8	0.4994	0.07	9.76	31.09	40.92	56.01	-15.09	QP
9	2.1439	0.13	9.81	7.48	17.42	46.00	-28.58	Average
10	2.1439	0.13	9.81	29.14	39.08	56.00	-16.92	QP
11	9.5521	0.16	10.19	16.04	26.39	50.00	-23.61	Average
12	9.5521	0.16	10.19	27.93	38.28	60.00	-21.72	QP



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Test Setup Photo 9

Refer to setup photos for SZCR2105021165AT

10 EUT Constructional Details (EUT Photos)

Refer to External and Internal Photos for SZCR2105021165AT



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11 Appendix

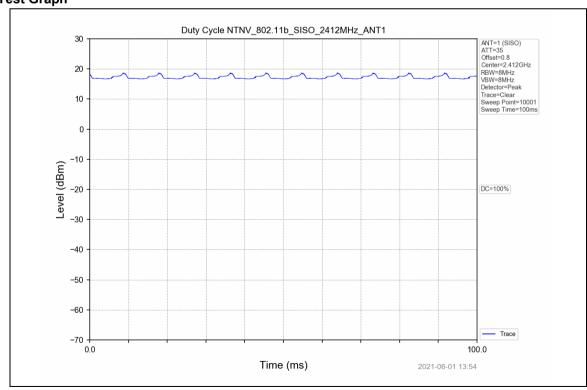
Appendix for 15.247

1. Duty Cycle

1.1 Test Result

1.1 Test Nesult								
Test Mode	Channel Frequency (MHz)	TX Type	ANT No.	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	
	2412	SISO	1	100.000	100.000	100.00	0.00	
802.11b	2437	SISO	1	100.000	100.000	100.00	0.00	
	2462	SISO	1	100.000	100.000	100.00	0.00	
	2412	SISO	1	100.000	100.000	100.00	0.00	
802.11g	2437	SISO	1	100.000	100.000	100.00	0.00	
	2462	SISO	1	100.000	100.000	100.00	0.00	
	2412	SISO	1	100.000	100.000	100.00	0.00	
802.11n(HT20)	2437	SISO	1	100.000	100.000	100.00	0.00	
	2462	SISO	1	100.000	100.000	100.00	0.00	
802.11n(HT40)	2422	SISO	1	100.000	100.000	100.00	0.00	
	2437	SISO	1	100.000	100.000	100.00	0.00	
	2452	SISO	1	100.000	100.000	100.00	0.00	

1.2 Test Graph





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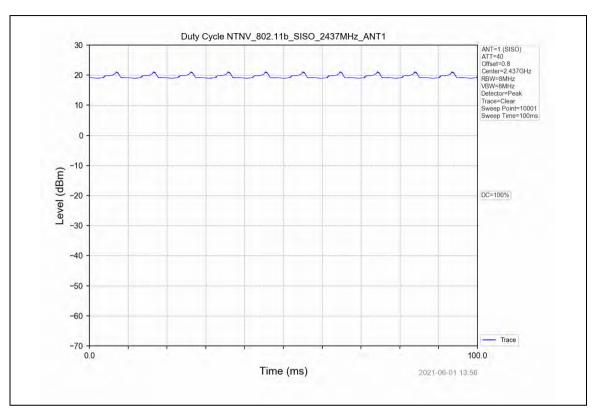
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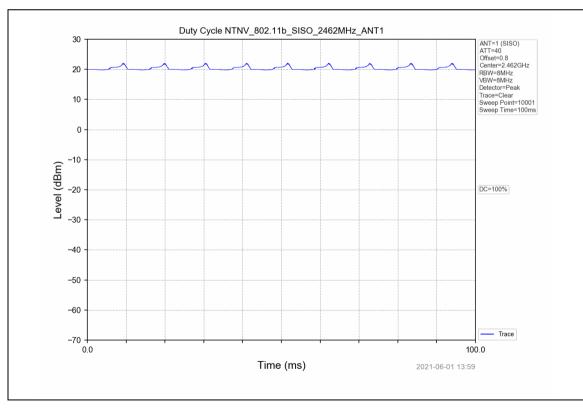
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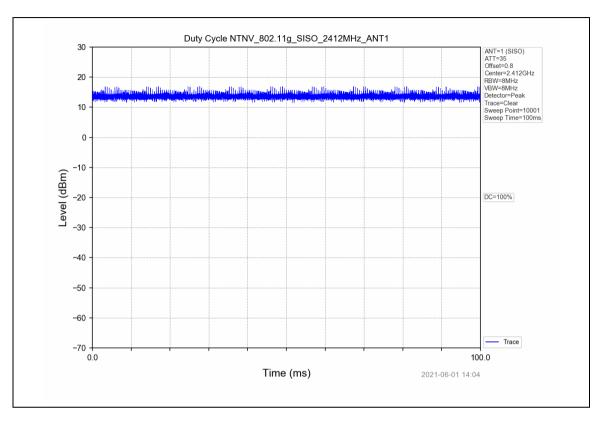
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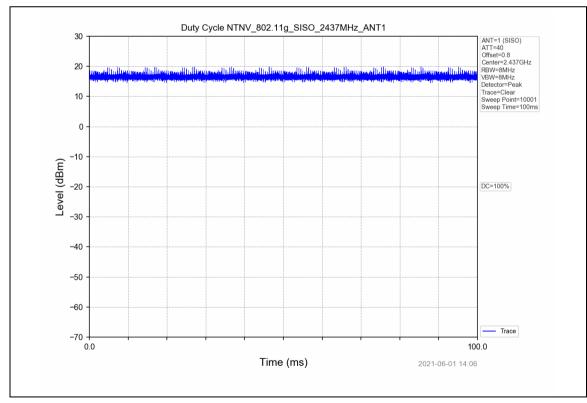
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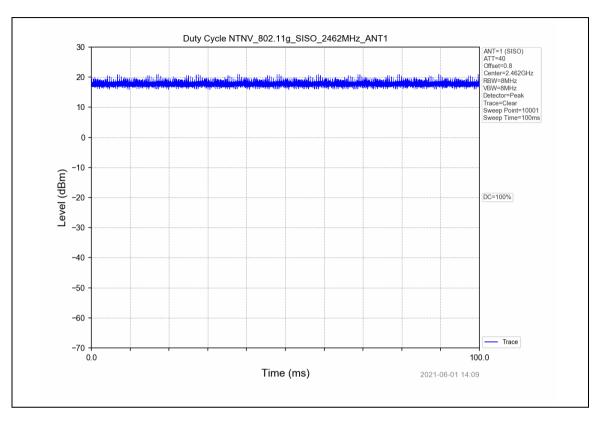
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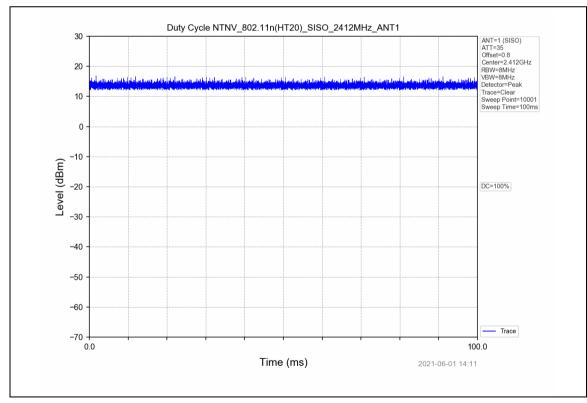
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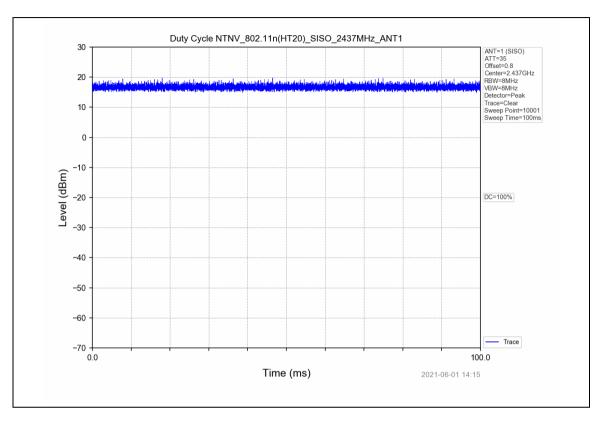
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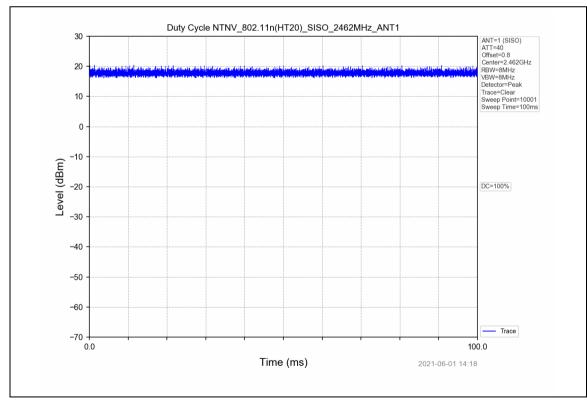
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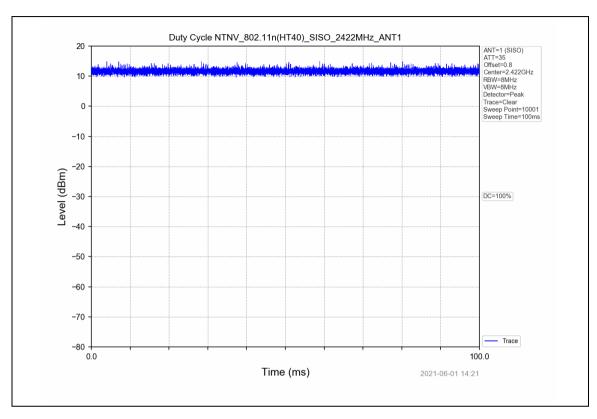
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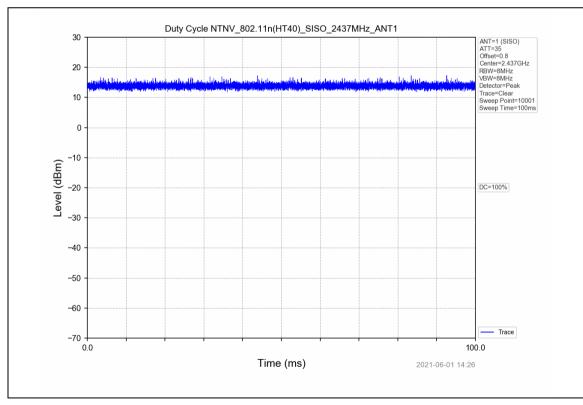
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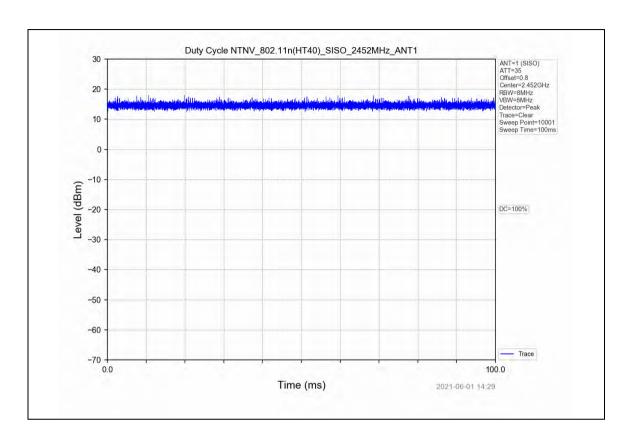
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2. Bandwidth

2.1 Test Result

T 4 NA I .	Frequency	T)/ T	Гуре ANT No.	6dB Bandwidth	Manage 4
Test Mode	(MHz)	TX Type		Test Result (MHz)	Verdict
	2412	SISO	1	9.141	PASS
802.11b	2437	SISO	1	9.125	PASS
	2462	SISO	1	9.152	PASS
	2412	SISO	1	16.431	PASS
802.11g	2437	SISO	1	16.429	PASS
	2462	SISO	1	16.418	PASS
	2412	SISO	1	17.051	PASS
802.11n(HT20)	2437	SISO	1	17.052	PASS
	2462	SISO	1	17.035	PASS
802.11n(HT40)	2422	SISO	1	32.317	PASS
	2437	SISO	1	32.962	PASS
	2452	SISO	1	32.554	PASS

Test Mode	Frequency	TX Type	ANT No.	99% Occupied Bandwidth		
rest Mode	(MHz)	1 × 1 ype		Test Res	ult (MHz)	
	2412	SISO	1	13.180	Only for Report Use	
802.11b	2437	SISO	1	13.213	Only for Report Use	
	2462	SISO	1	13.226	Only for Report Use	
	2412	SISO	1	16.466	Only for Report Use	
802.11g	2437	SISO	1	16.468	Only for Report Use	
	2462	SISO	1	16.471	Only for Report Use	
	2412	SISO	1	17.272	Only for Report Use	
802.11n(HT20)	2437	SISO	1	17.279	Only for Report Use	
	2462	SISO	1	17.269	Only for Report Use	
802.11n(HT40)	2422	SISO	1	34.525	Only for Report Use	
	2437	SISO	1	34.500	Only for Report Use	
	2452	SISO	1	34.504	Only for Report Use	



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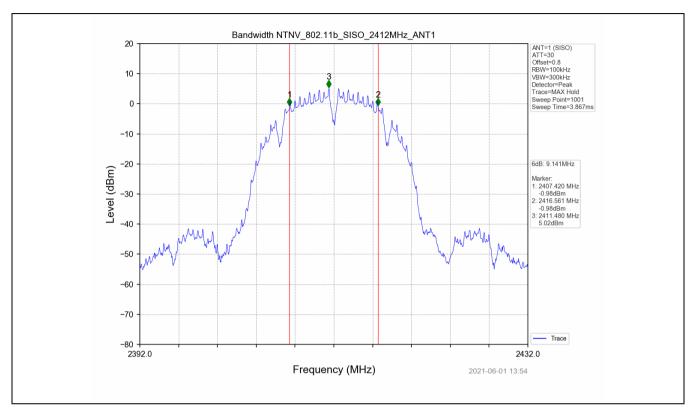
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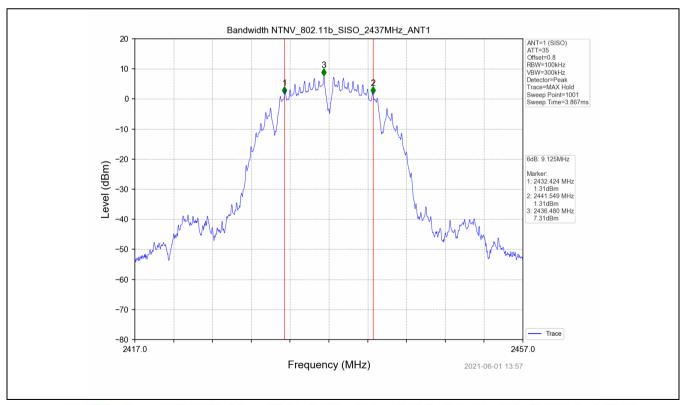


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2.2 Test Graph - 6dB Bandwidth







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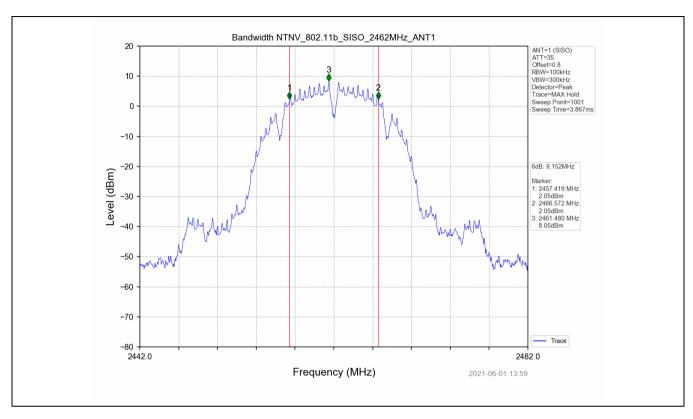
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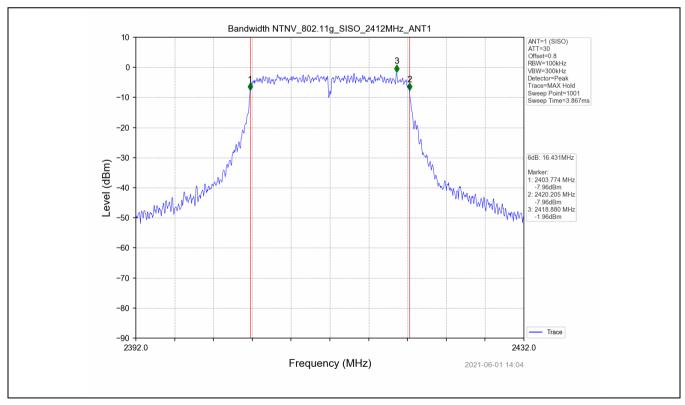
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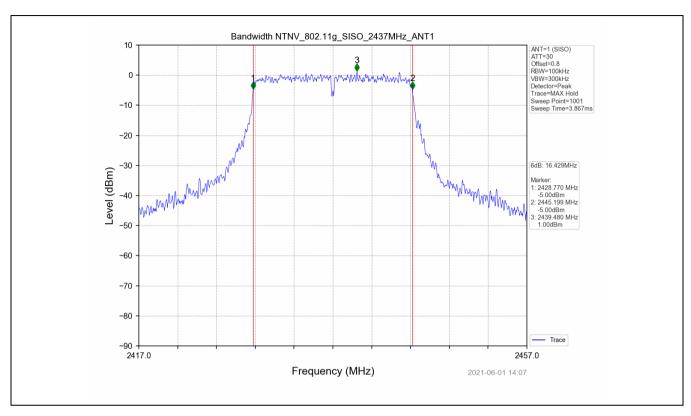
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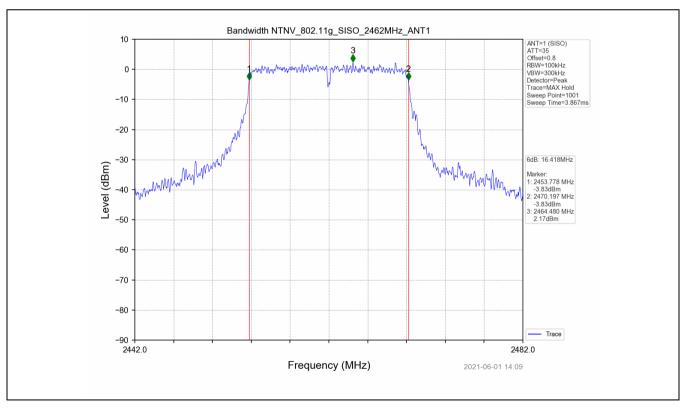
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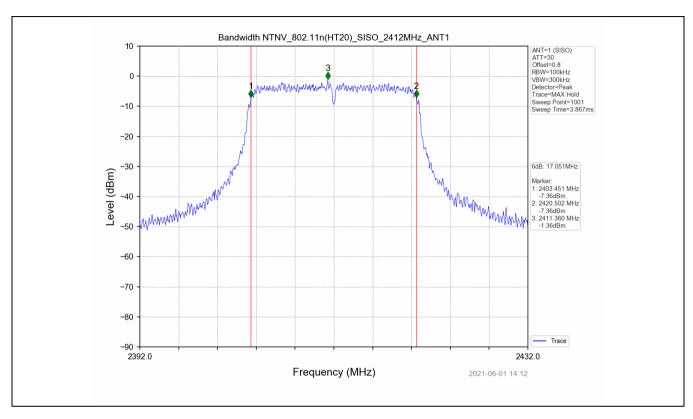
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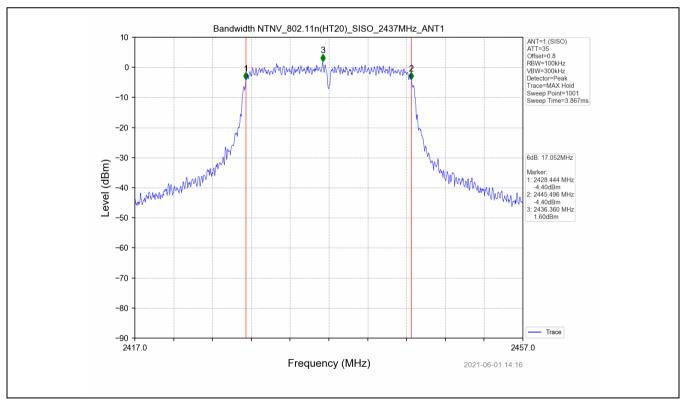
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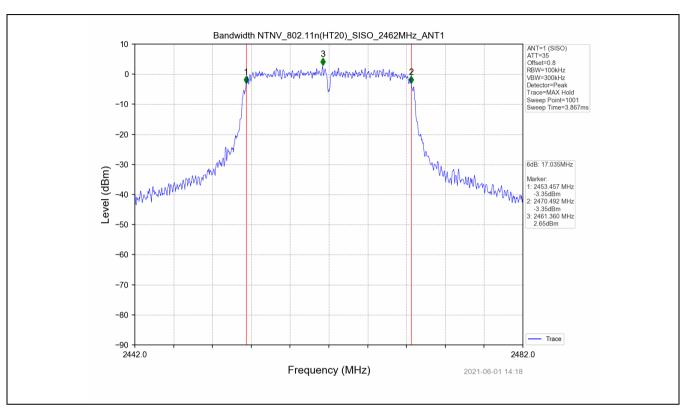
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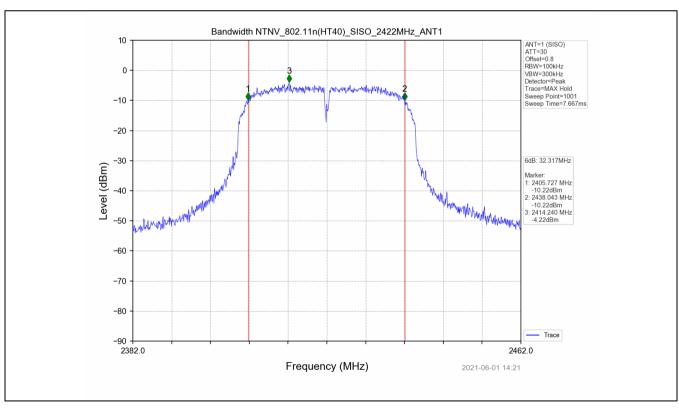
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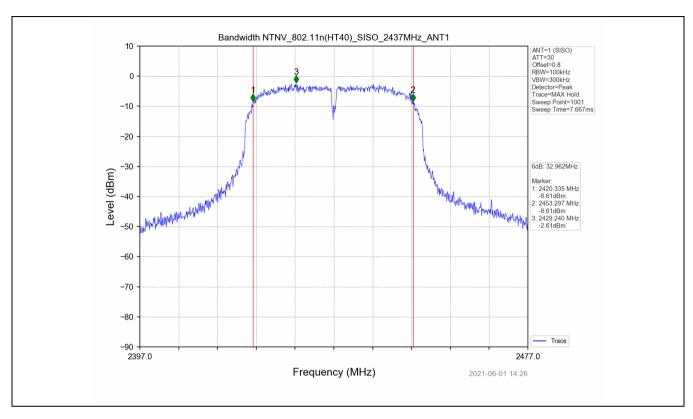
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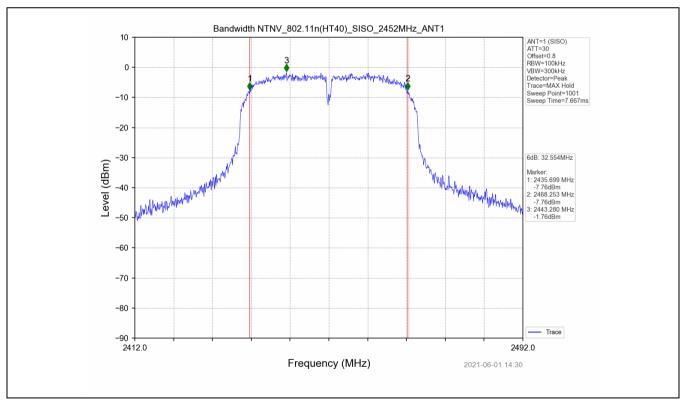
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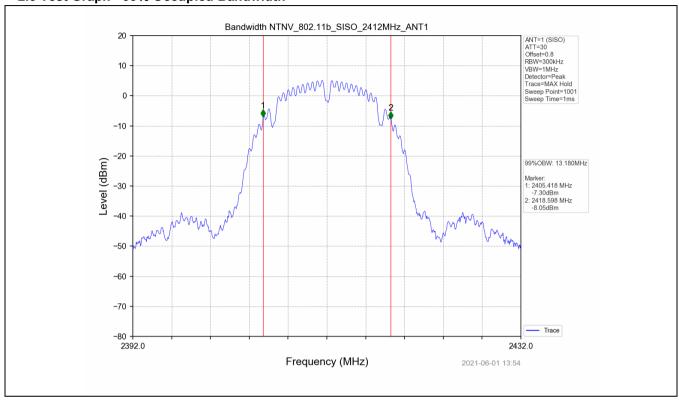
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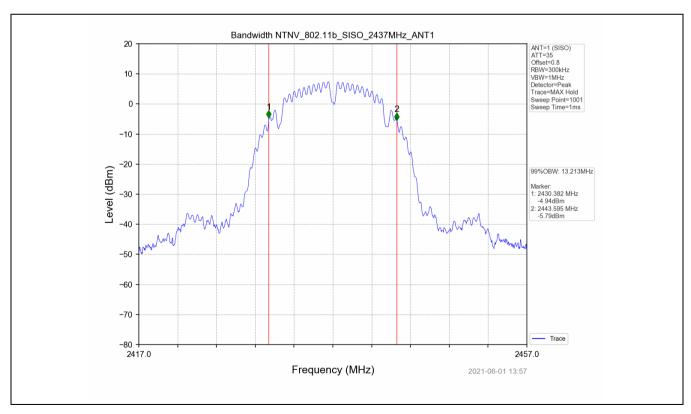


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2.3 Test Graph - 99% Occupied Bandwidth







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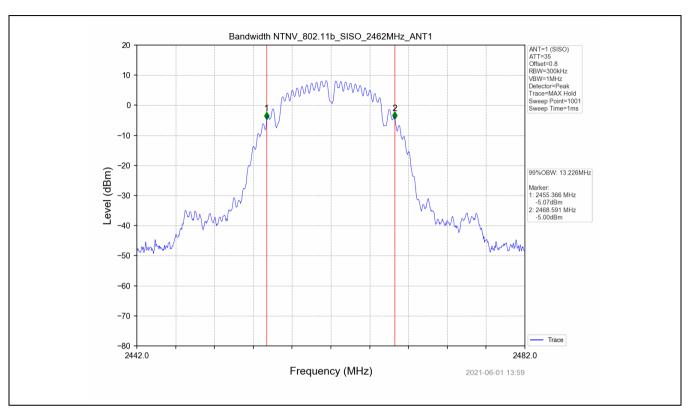
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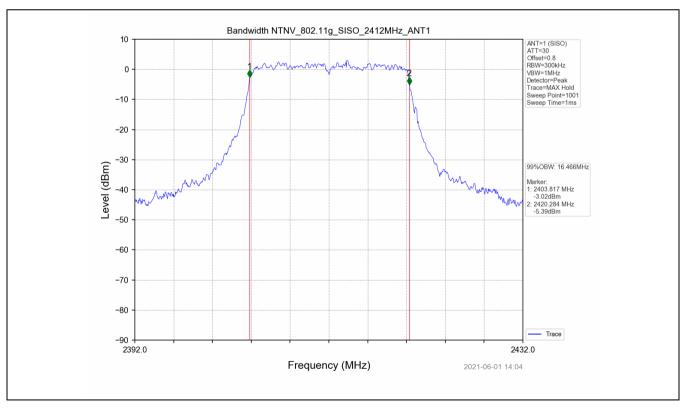
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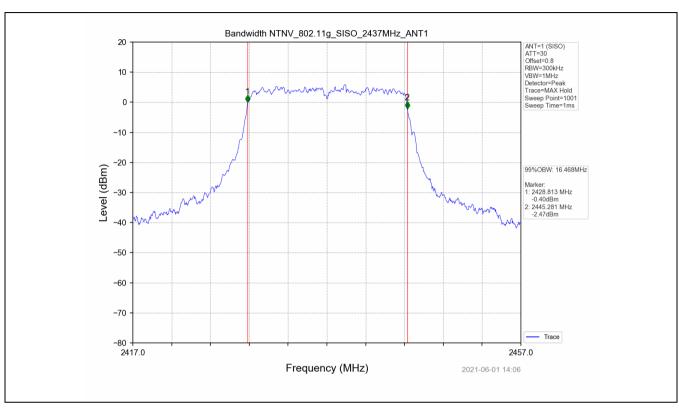
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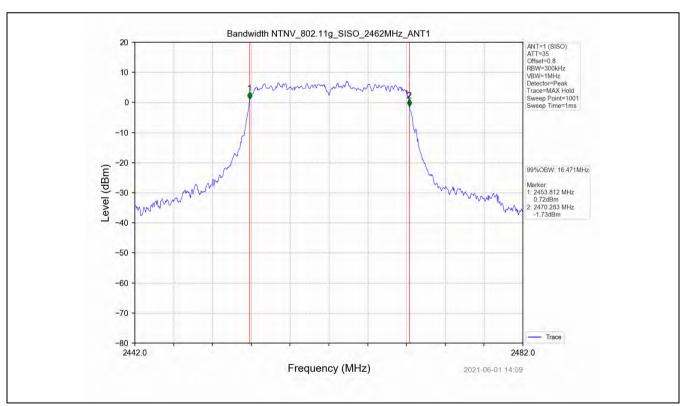
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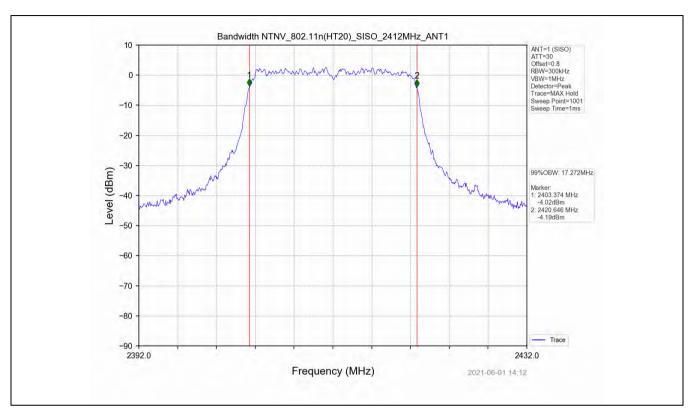
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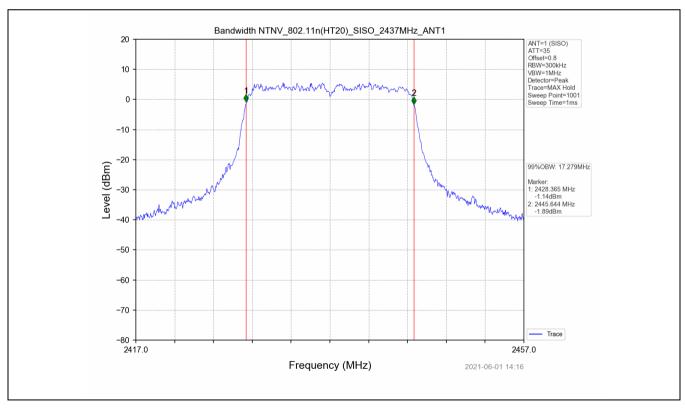
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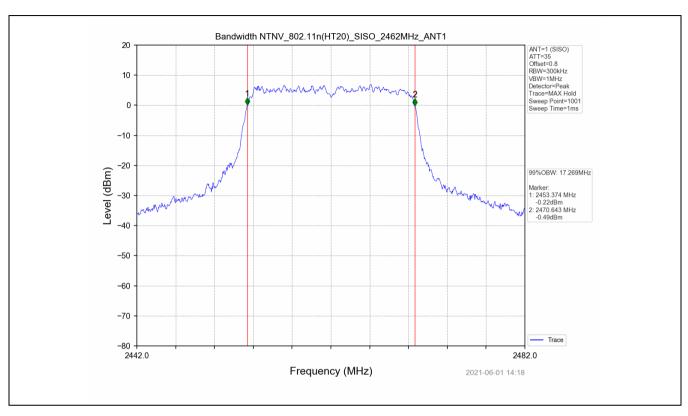
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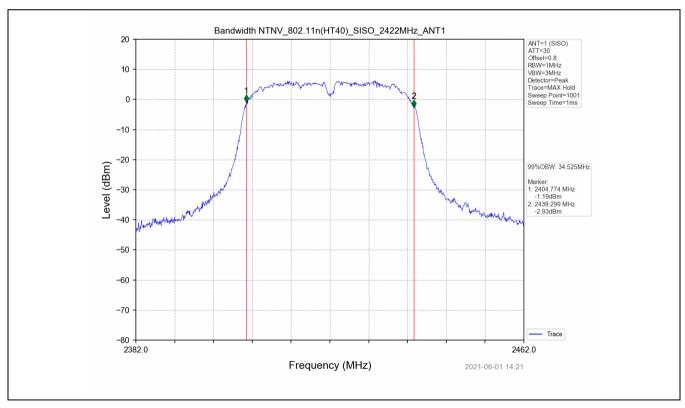
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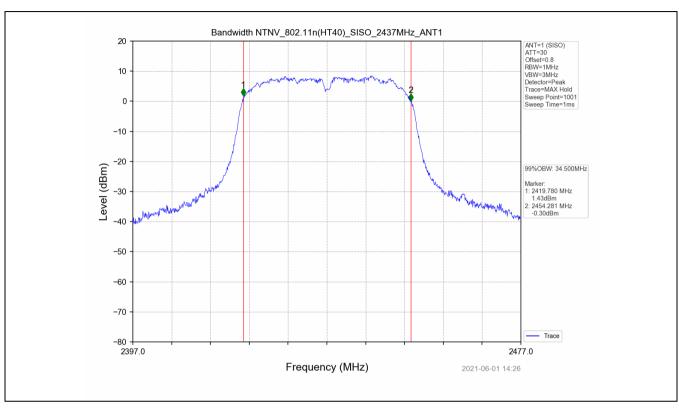
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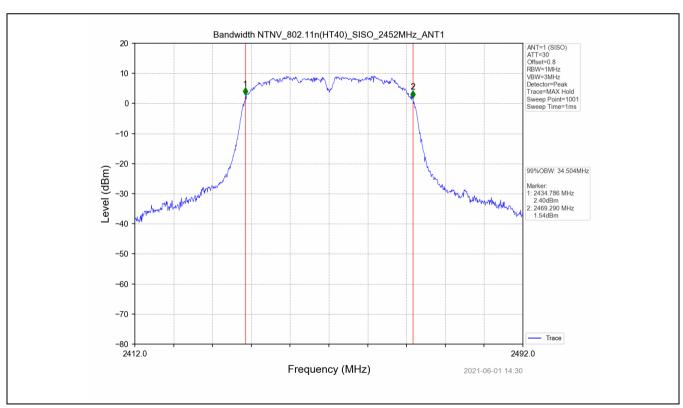
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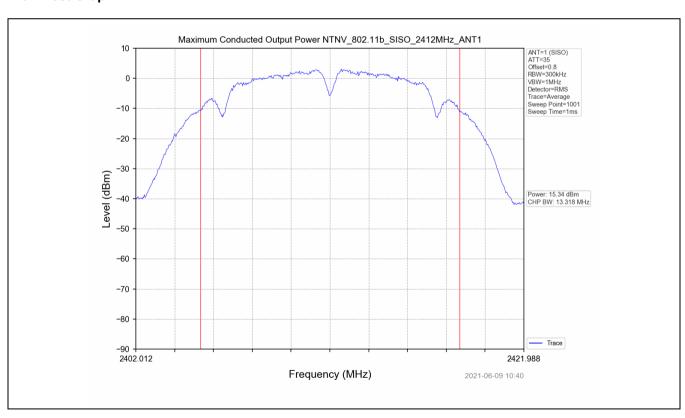
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3. Maximum Conducted Output Power

3.1 Test Result

Test Mode	Frequency (MHz)	Тх Туре	Measured Average Output Power (dBm)	Limits (dBm)	Verdict
			Ant 1	, ,	
802.11b	2412	SISO	15.34	30	PASS
	2437	SISO	14.87	30	PASS
	2462	SISO	14.37	30	PASS
802.11g	2412	SISO	11.10	30	PASS
	2437	SISO	13.94	30	PASS
	2462	SISO	15.15	30	PASS
802.11n(HT20)	2412	SISO	11.00	30	PASS
	2437	SISO	13.89	30	PASS
	2462	SISO	15.02	30	PASS
802.11n(HT40)	2422	SISO	11.20	30	PASS
	2437	SISO	13.28	30	PASS
	2452	SISO	14.07	30	PASS

3.2 Test Graph





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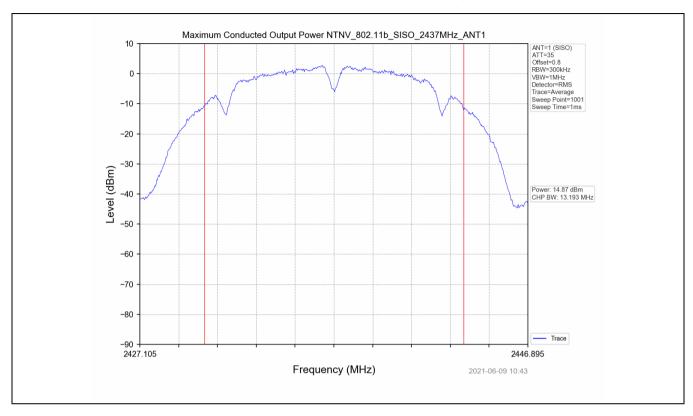
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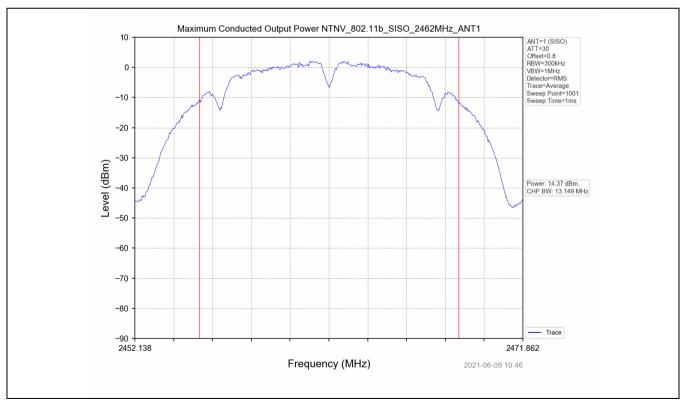
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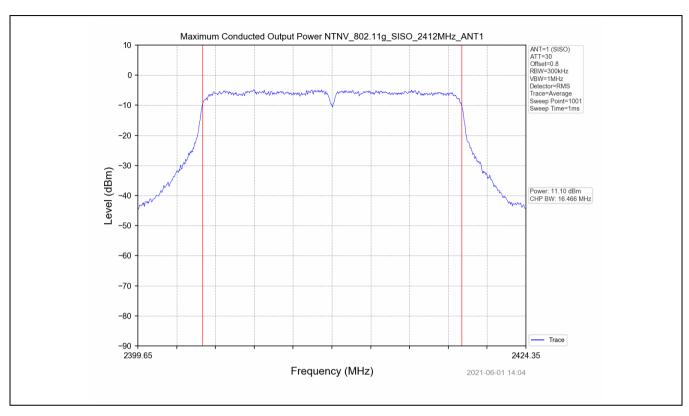
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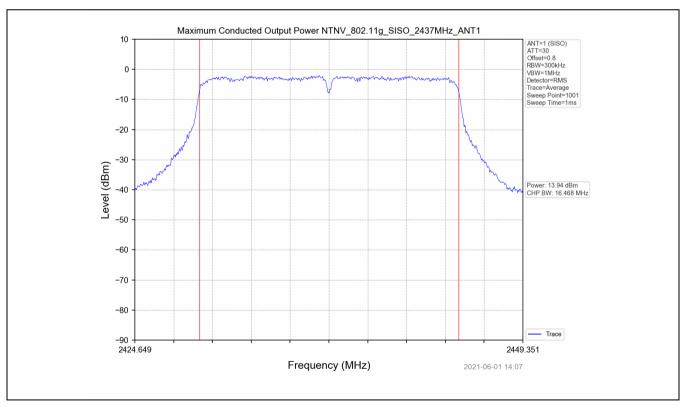
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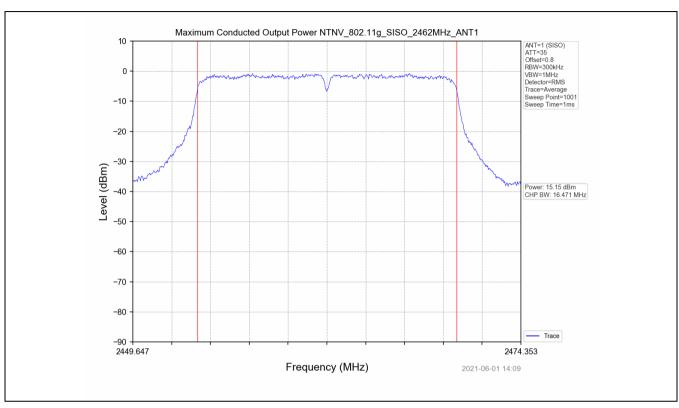
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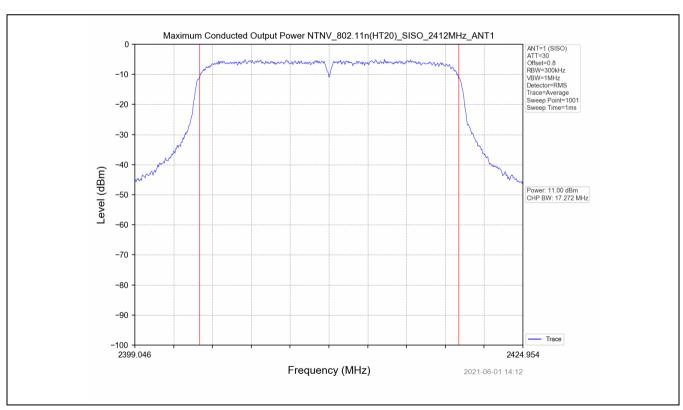
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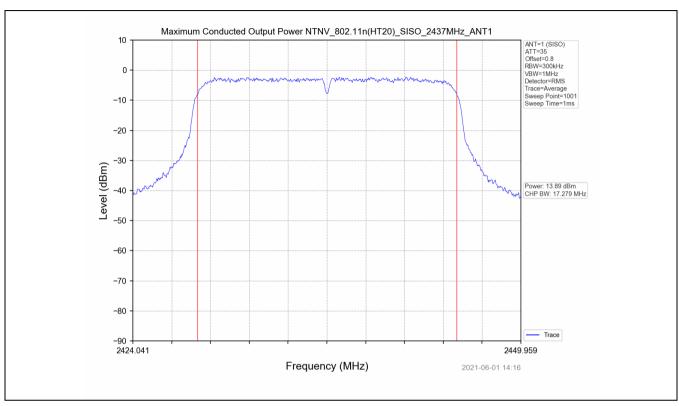
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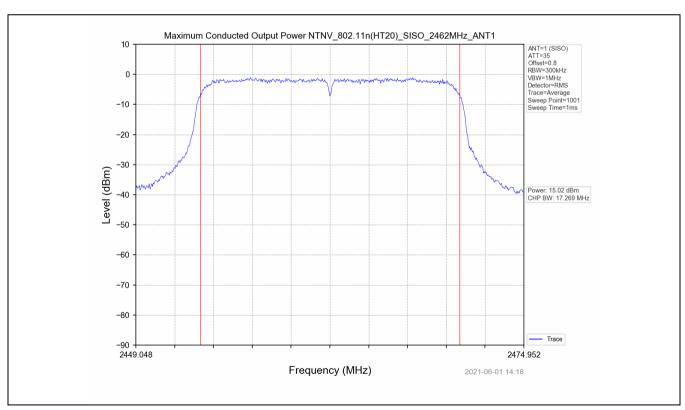
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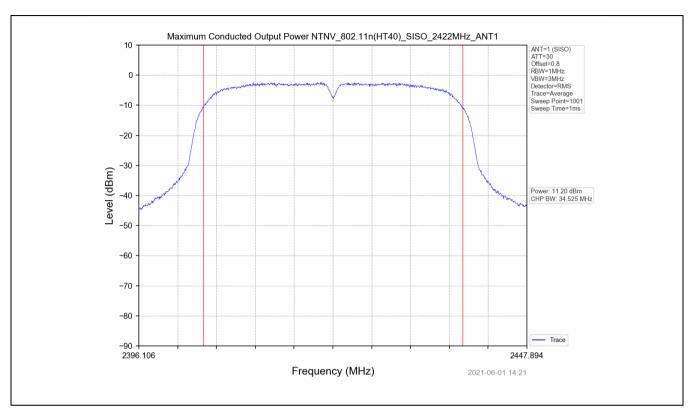
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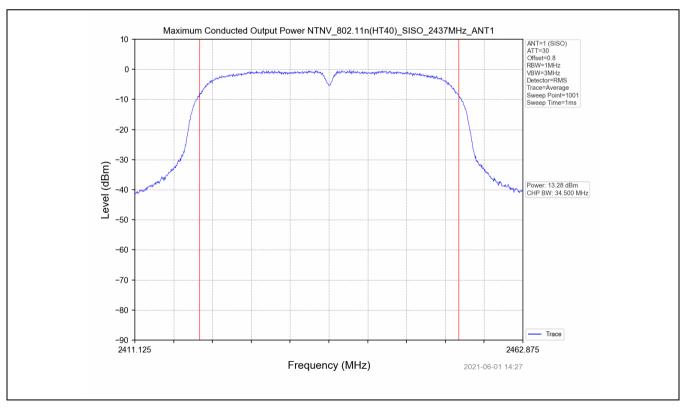
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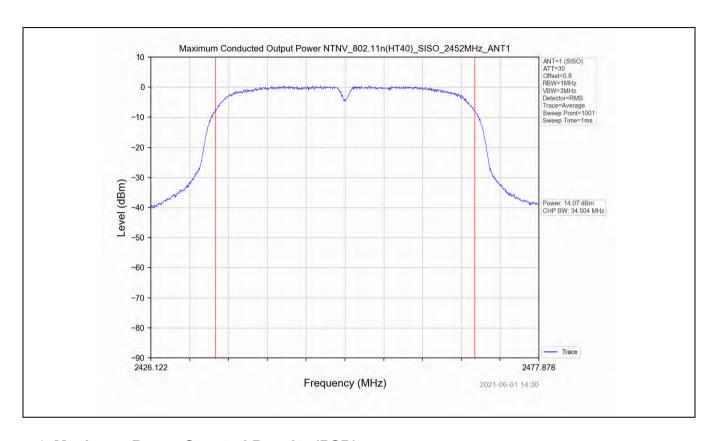
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4. Maximum Power Spectral Density (PSD)

4.1 Test Result

Test Mode	Frequency (MHz) Tx Type		Maximum Power Spectral Density (dBm/3KHz) Ant 1	Limits (dBm/3kHz)	Verdict	
802.11b	2412	SISO	-8.96	≤8	PASS	
	2437	SISO	-9.20	≤8	PASS	
	2462	SISO	-9.66	≤8	PASS	
802.11g	2412	SISO	-16.65	≤8	PASS	
	2437	SISO	-13.86	≤8	PASS	
	2462	SISO	-12.86	≤8	PASS	
802.11n(HT20)	2412	SISO	-16.71	≤8	PASS	
	2437	SISO	-13.71	≤8	PASS	
	2462	SISO	-12.72	≤8	PASS	
802.11n(HT40)	2422	SISO	-17.62	≤8	PASS	
	2437	SISO	-15.68	≤8	PASS	
	2452	SISO	-15.02	≤8	PASS	



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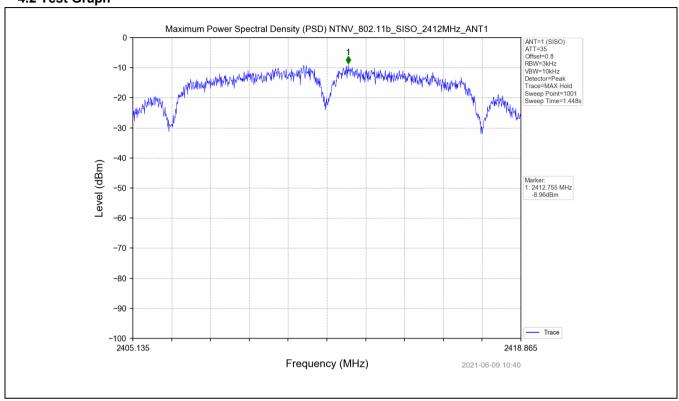
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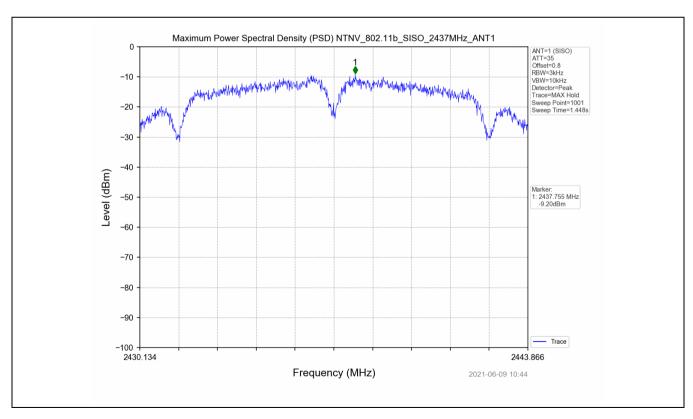


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4.2 Test Graph







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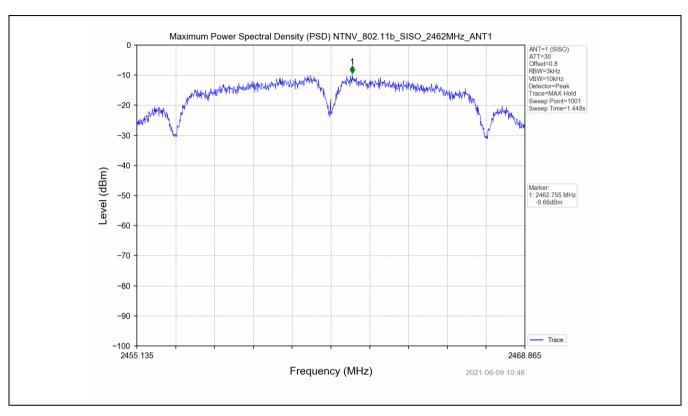
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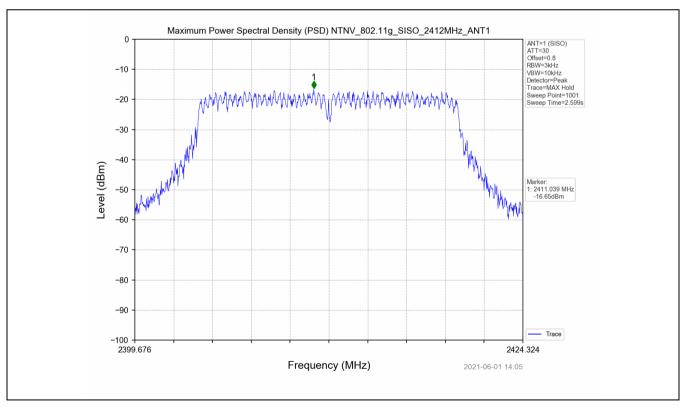
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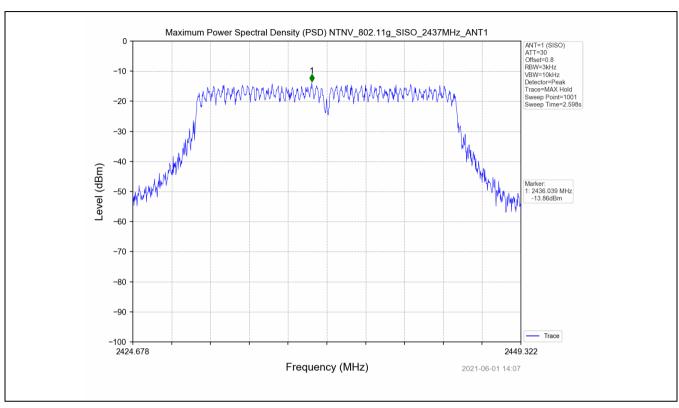
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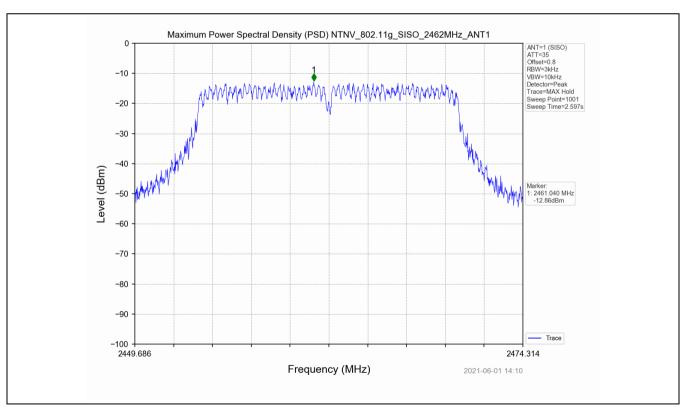
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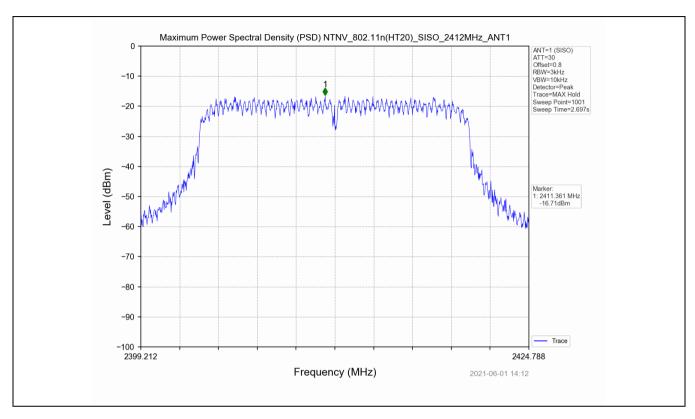
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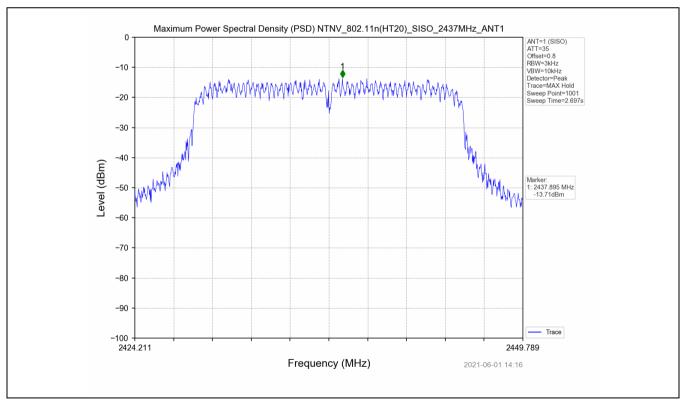
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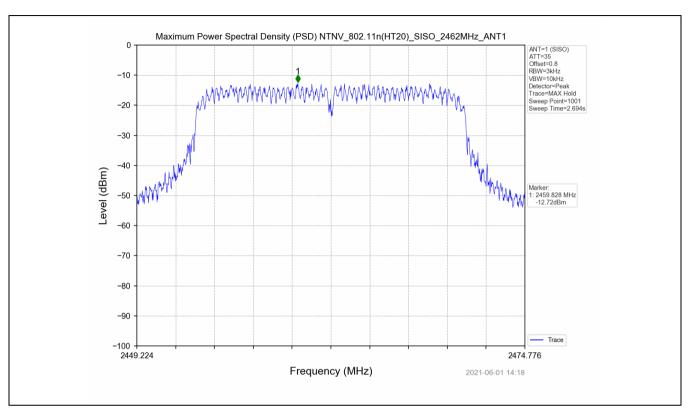
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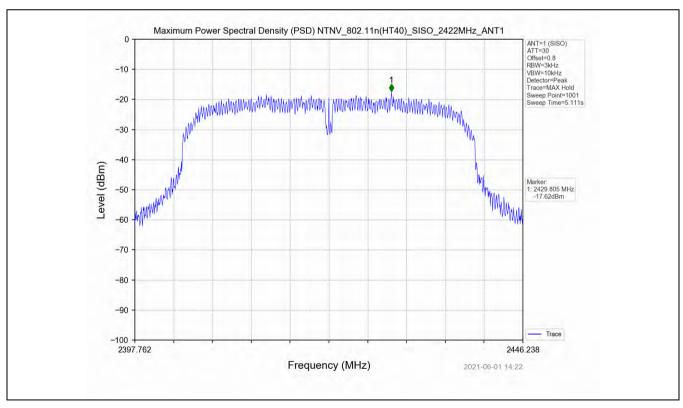
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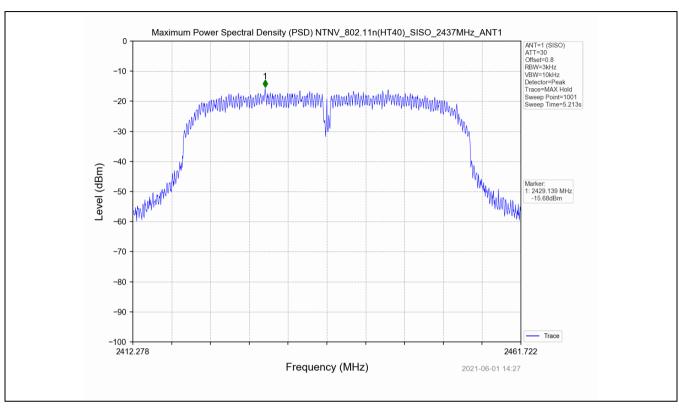
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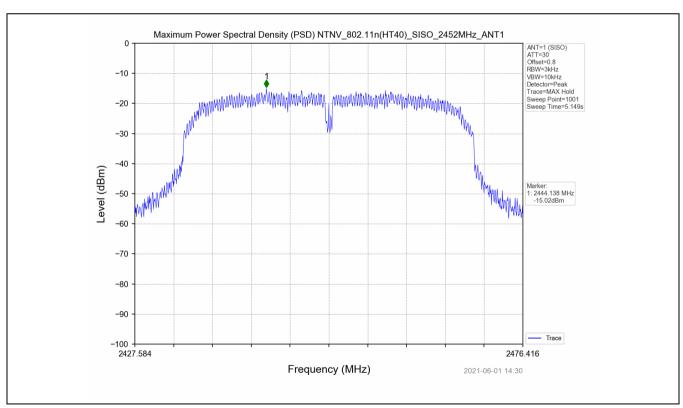
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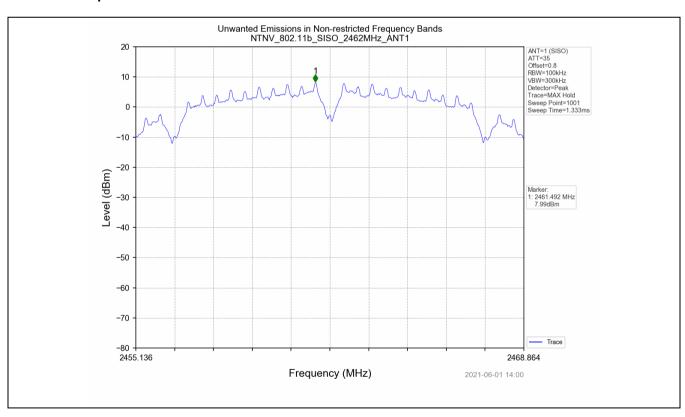
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5. Unwanted Emissions in Non-restricted Frequency Bands

5.1 Test Result

Test Mode	Frequency (MHz)	TX Type	ANT No.	Spurious Conducted Emission (dBm)	Limits (dBm)	Verdict
802.11b	2412	SISO	1	Refer to test graph	-22.73	PASS
	2437	SISO	1	Refer to test graph	-22.73	PASS
	2462	SISO	1	Refer to test graph	-22.73	PASS
802.11g	2412	SISO	1	Refer to test graph	-27.88	PASS
	2437	SISO	1	Refer to test graph	-27.88	PASS
	2462	SISO	1	Refer to test graph	-27.88	PASS
802.11n(HT20)	2412	SISO	1	Refer to test graph	-27.47	PASS
	2437	SISO	1	Refer to test graph	-27.47	PASS
	2462	SISO	1	Refer to test graph	-27.47	PASS
802.11n(HT40)	2422	SISO	1	Refer to test graph	-31.51	PASS
	2437	SISO	1	Refer to test graph	-31.51	PASS
	2452	SISO	1	Refer to test graph	-31.51	PASS

5.2 Test Graph





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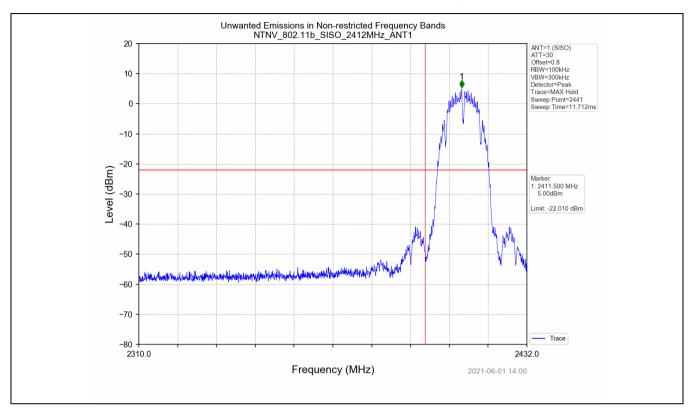
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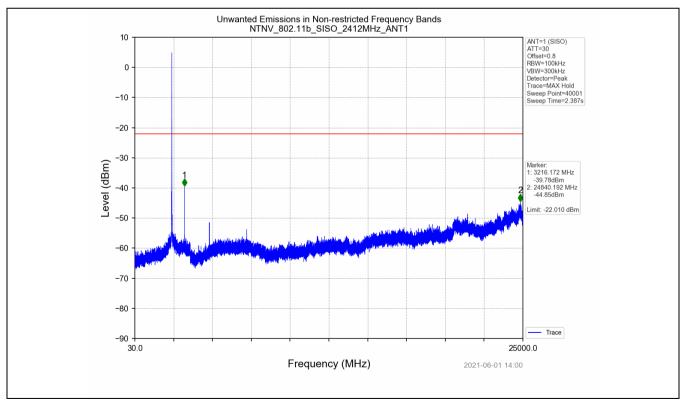
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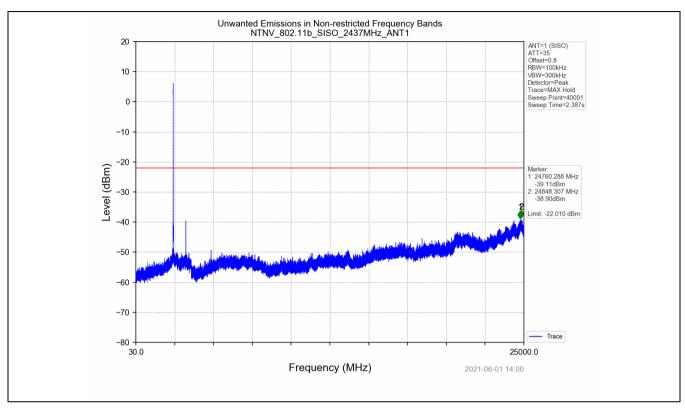
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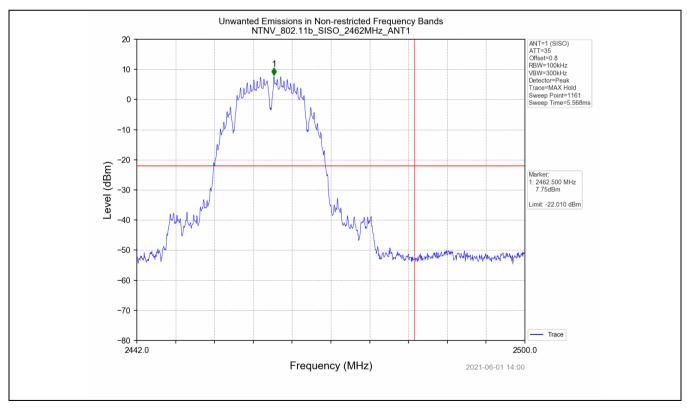
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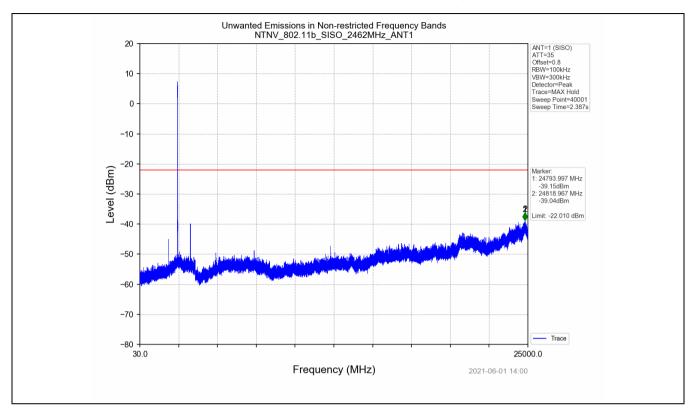
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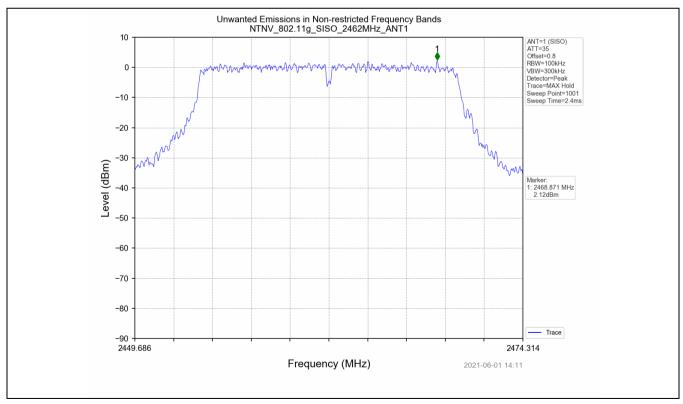
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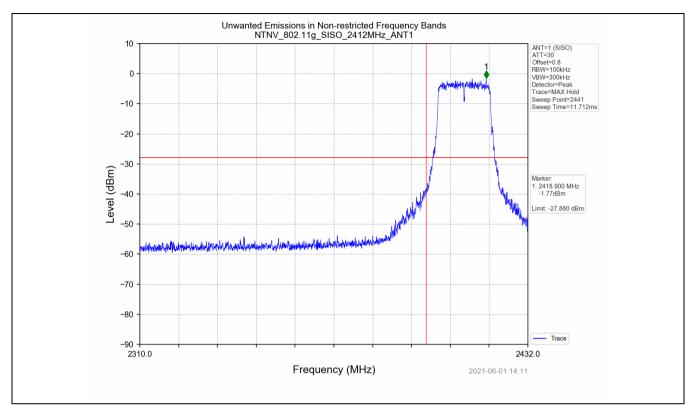
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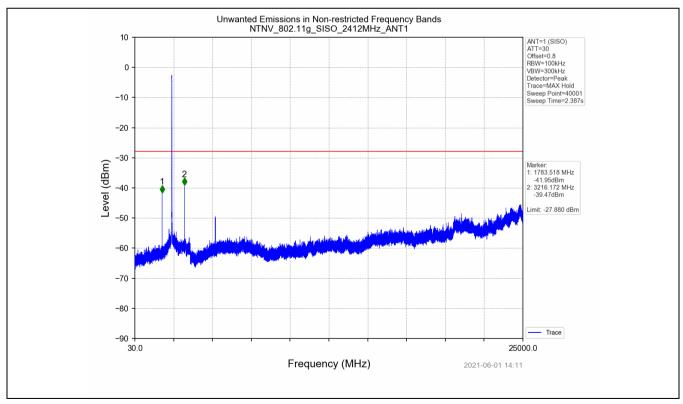
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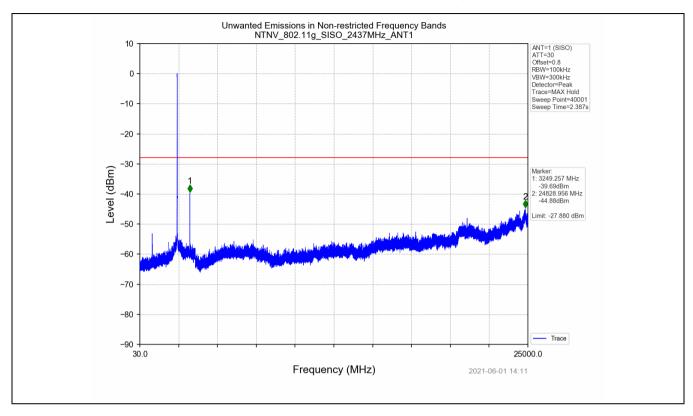
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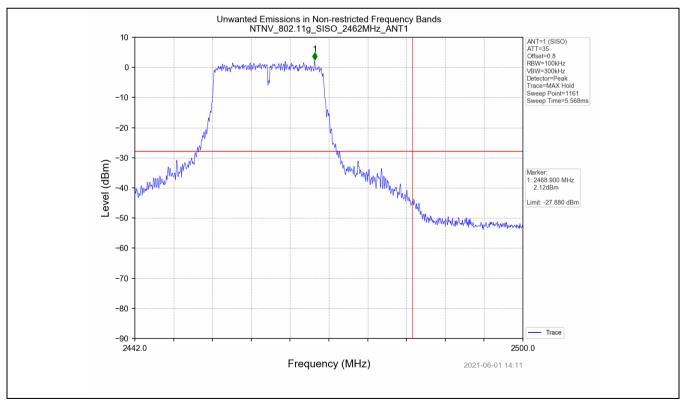
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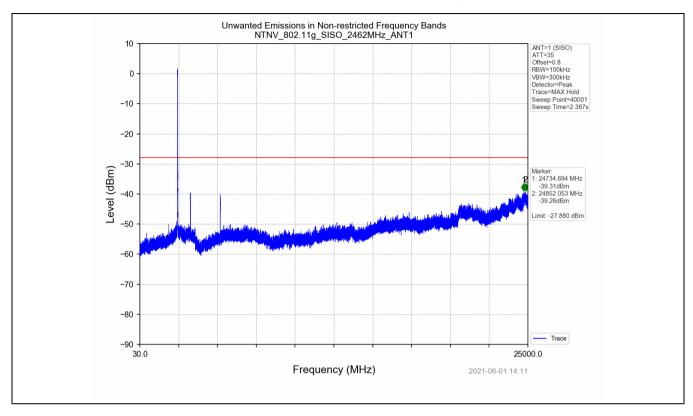
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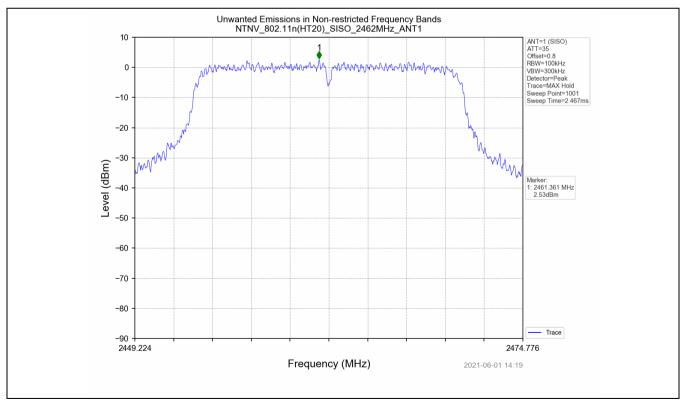
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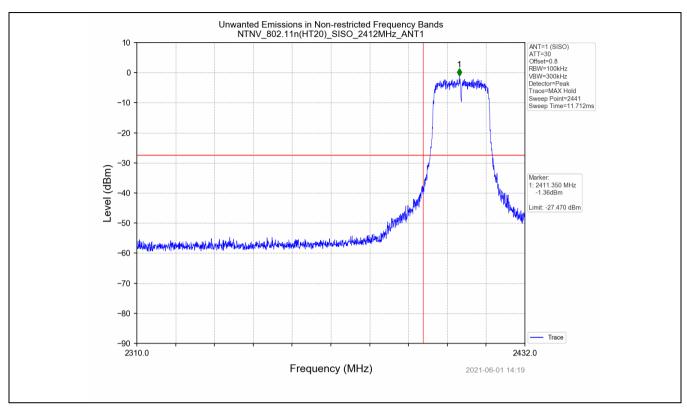
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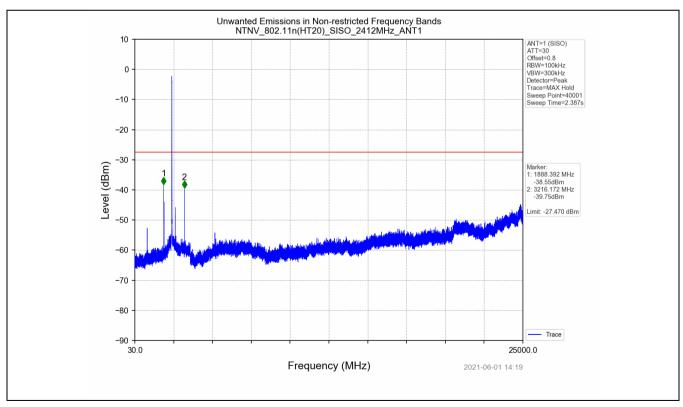
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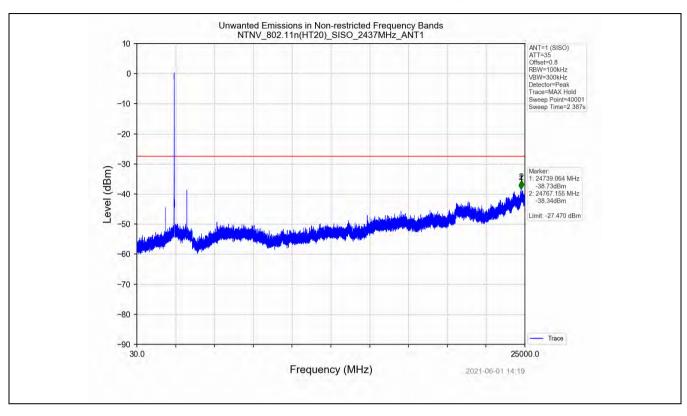
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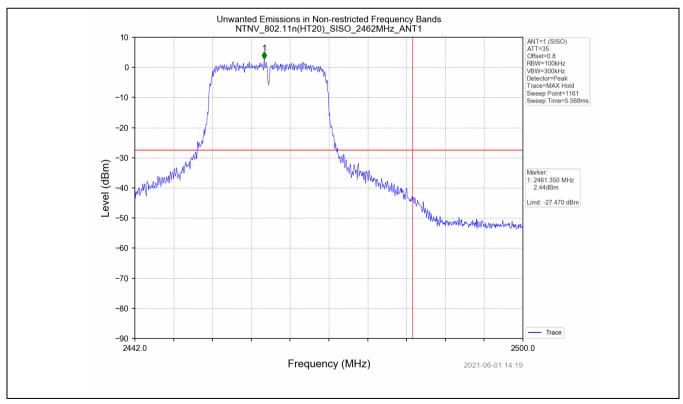
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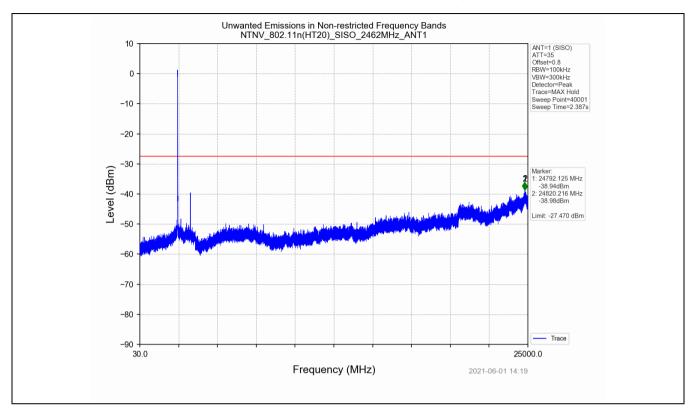
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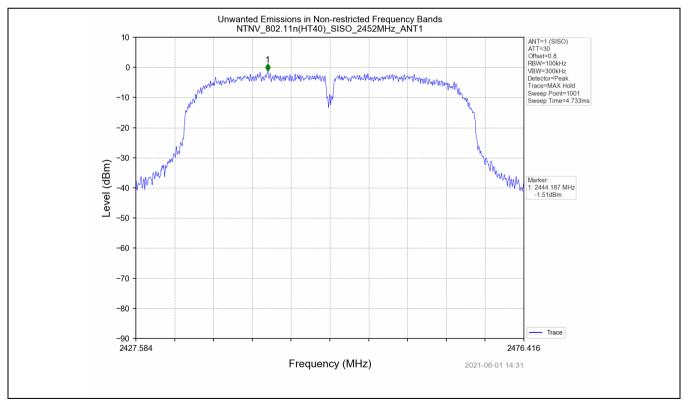
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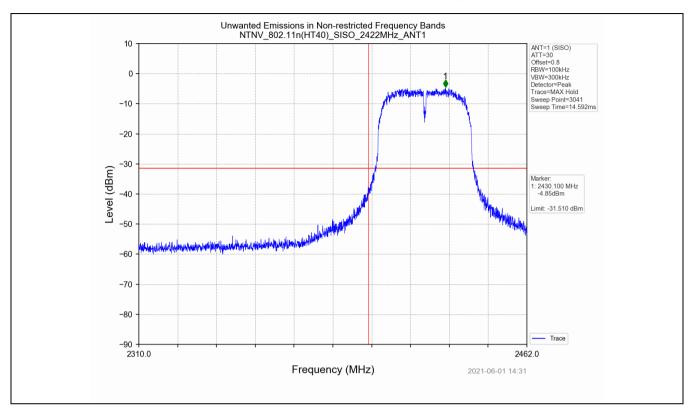
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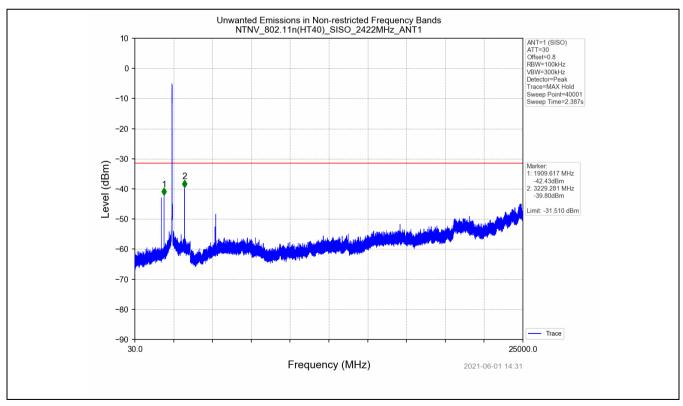
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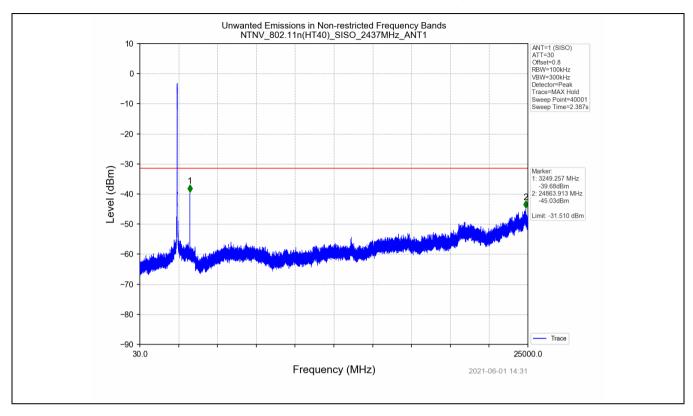
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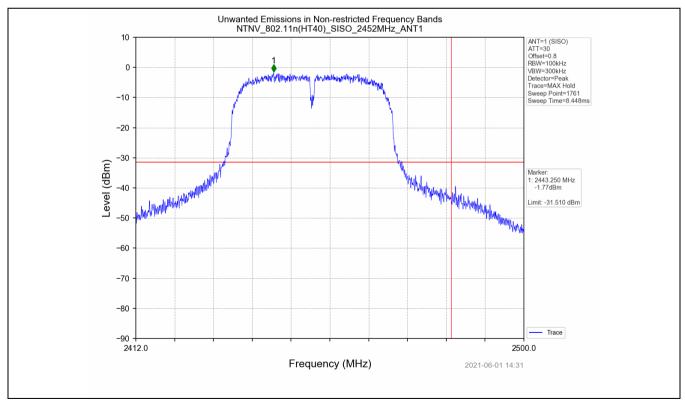
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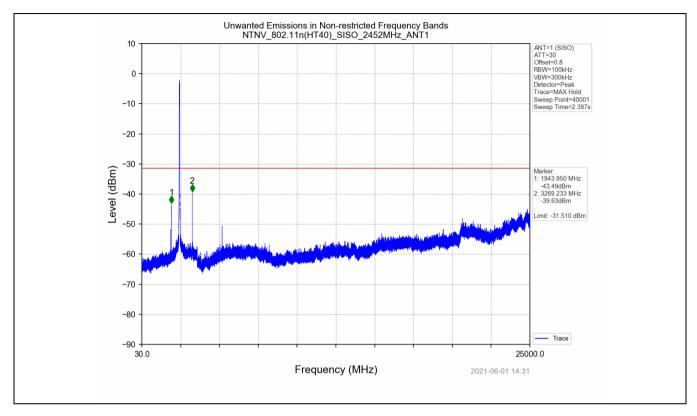
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