

Report No.: SZCR210402079902

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# TEST REPORT

Application No.: SZCR2104020799AT

Applicant: SHENZHEN ELECTRON TECHNOLOGY CO., LTD.

Address of Applicant: Bld.2, Yingfeng Industrial Zone, Tantou Community, Songgang Street,

Baoan, Shenzhen, China

Manufacturer: SHENZHEN ELECTRON TECHNOLOGY CO., LTD.

Address of Manufacturer: Bld.2, Yingfeng Industrial Zone, Tantou Community, Songgang Street,

Baoan, Shenzhen, China

Factory: SHENZHEN ELECTRON TECHNOLOGY CO., LTD.

Address of Factory: Bld.2, Yingfeng Industrial Zone, Tantou Community, Songgang Street,

Baoan, Shenzhen, China

**Equipment Under Test (EUT):** 

**EUT Name:** Wifi Digital photo frame **Model No.:** W10K, W10M •

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

actually tested and which were electrically identical.

**FCC ID**: 2ABC5-W0550

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

**Date of Receipt:** 2021-04-28

**Date of Test:** 2021-04-30 to 2021-05-25

**Date of Issue:** 2021-06-03

Test Result: Pass\*

Keny Xu EMC Laboratory Manager



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<sup>\*</sup> In the configuration tested, the EUT complied with the standards specified above.



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Revision Record						
Version	Chapter	Date	Modifier	Remark		
01		2021-06-03		Original		

Authorized for issue by:		
	Benson Wong	
	Benson Wang/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		

<b>Emission Part</b>				
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

#### **Declaration of EUT Family Grouping:**

Model No.: W10K, W10M

Only the model W10K was tested. According to the declaration from the applicant, the electrical circuit design, layout, components used, internal wiring and functions were identical for the above models, with only difference on model names.



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### **General Information**

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

Power supply:	Powered by AC adapter		
	Adapter model: S012-1B050200VU		
	Input: AC 100-240V, 50/60Hz,0.3A;		
	Output: DC 5.0V, 2.0A		
Cable(s):	DC cable of adapter: 200cm 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)		
Channel Spacing:	5MHz		
Number of Channels:	802.11b/g/n(HT20): 11, 802.11n(HT40):7		
Antenna Type:	Integral Antenna		
Antenna Gain:	2.87dBi		

4.2 Description of Support Units

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



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### 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 U<sub>lab</sub> (lab Uncertainty) is less than U<sub>cispr</sub> (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

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. 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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### **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	r Supply Rohde & Schwarz		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



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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
Attenuator	Huber+Suhner	6620_SMA-50- 1	SEM021-09	2021-04-08	2022-04-07

Conducted Band Edges Measurement					
Equipment	Manufacturer	Model No	Inventory No	o Cal Date Cal Due	
Shielding Room	SAEMC	MSR733	SEM001-09	2019-06-13	2022-06-12
DC Power Supply	Supply Rohde & Schwarz		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 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	PAP-0126	SEM004-11	2020-09-23	2021-09-22



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	Inc.				
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

Radiated Spurious Emissions Below 1GHz					
Equipment	Manufacturer	Model No	<b>Inventory No</b>	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



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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)

#### Standard Requirement:

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

#### 15.247(b) (4) requirement:

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

#### **EUT Antenna:**

The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 2.87dBi.

Antenna location: Refer to Internal photos.





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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 modulatio		

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

Operating Environment:

Temperature: Humidity: 42.5 % RH Atmospheric Pressure: 1010 mbar 28.6 °C

#### 7.1.2 Test Mode Description

7.1.2 Test mode besorption				
Pre-scan / Final test	Mode Code	Description		
Final test	02	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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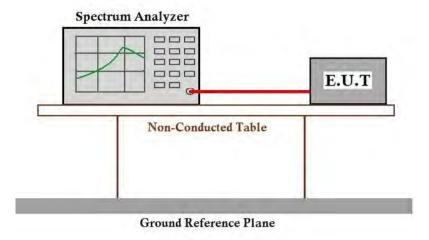
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#### 7.1.3 Test Setup Diagram



#### 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

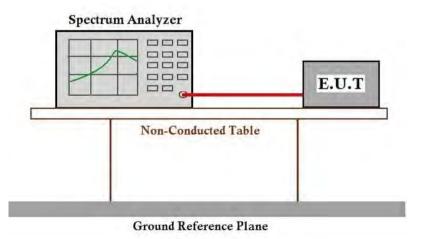
Operating Environment:

Temperature: 28.6 °C Humidity: 42.5 % RH Atmospheric Pressure: 1010 mbar

#### 7.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	02	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

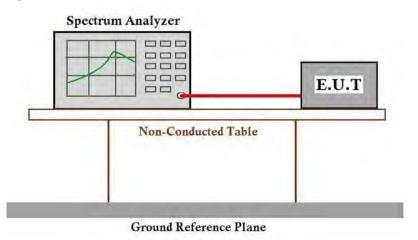
Operating Environment:

Temperature: 28.6 °C Humidity: 42.5 % RH Atmospheric Pressure: 1010 mbar

#### 7.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	02	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

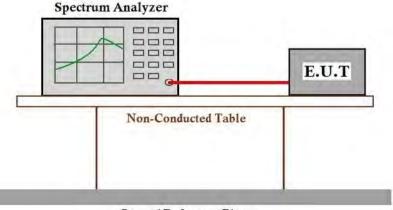
Operating Environment:

Temperature: 28.6 °C Humidity: 42.5 % RH Atmospheric Pressure: 1010 mbar

7.4.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	02	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

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

#### 7.5.1 E.U.T. Operation

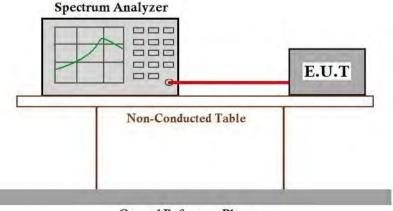
Operating Environment:

Temperature: 28.6 °C Humidity: 42.5 % RH Atmospheric Pressure: 1010 mbar

7.5.2 Test Mode Description

		·
Pre-scan / Final test	Mode Code	Description
Final test	02	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



Ground Reference Plane



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#### 7.5.4 Measurement Procedure and Data

Please Refer to Appendix for Details



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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:

Humidity: 54.3 % RH Temperature: 21.5 °C Atmospheric Pressure: 1010 mbar

#### 7.6.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description								
Final test	02	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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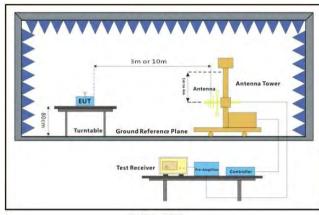
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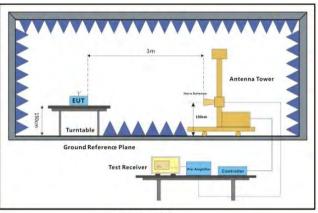


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#### 7.6.3 Test Setup Diagram





30MHz-1GHz

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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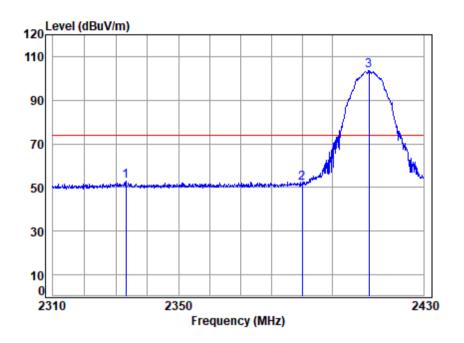
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Test Mode: 02; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:Low



Site : chamber

Condition: 3m HORIZONTAL Job No : 20799AT/20800AT 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		
2333.162	4.25	28.76	40.39	60.24	52.86	74.00	-21.14	peak	
2390.000	4.34	28.88	40.42	59.13	51.93	74.00	-22.07	peak	
2412.000								•	



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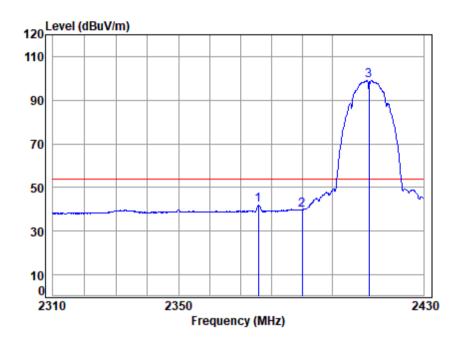
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Test Mode: 02; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:Low



Site : chamber

Condition: 3m HORIZONTAL Job No : 20799AT/20800AT 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		
2375.729	4.32	28.85	40.41	49.00	41.76	54.00	-12.24	Average	
								Average	
2412.000								_	



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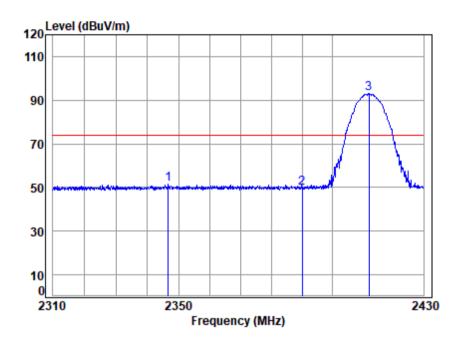
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Test Mode: 02; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:Low



Site : chamber

Condition: 3m VERTICAL

Job No : 20799AT/20800AT 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		
2346.671	4.27	28.79	40.40	58.84	51.50	74.00	-22.50	Peak	
2390.000	4.34	28.88	40.42	57.04	49.84	74.00	-24.16	Peak	
2412,000	4.38	28.92	40.43	100.26	93.13	74.00	19.13	Peak	



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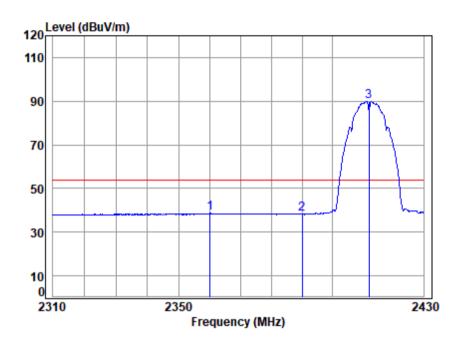
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Test Mode: 02; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:Low



Site : chamber

Condition: 3m VERTICAL

Job No : 20799AT/20800AT 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	
	2360.139	4.30	28.82	40.40	45.90	38.62	54.00	-15.38	Average
	2390.000	4.34	28.88	40.42	45.49	38.29	54.00	-15.71	Average
	2412,000	4.38	28.92	40.43	97.22	90.09	54.00	36.09	Δverage



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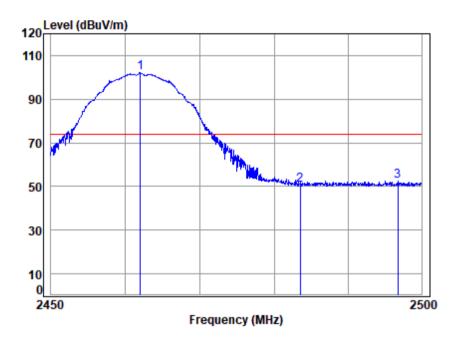
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Test Mode: 02; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:High



Site : chamber

Condition: 3m HORIZONTAL Job No : 20799AT/20800AT Mode : 2462 Band edge : 2.4G WiFi 11B 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	109.13	102.15	74.00	28.15	peak
2	2483.500	4.49	29.07	40.47	57.65	50.74	74.00	-23.26	peak
3	2496.770	4.51	29.09	40.47	59.55	52.68	74.00	-21.32	peak



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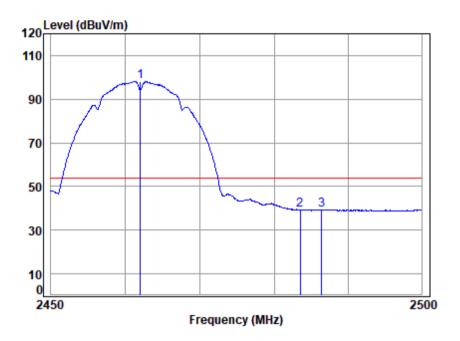
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Report No.: SZCR210402079902

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Test Mode: 02; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:High



Site : chamber

Condition: 3m HORIZONTAL : 20799AT/20800AT Job No Mode : 2462 Band edge : 2.4G WiFi 11B Note

						Read					
		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	105.23	98.25	54.00	44.25	Average	
2		2483.500	4.49	29.07	40.47	46.16	39.25	54.00	-14.75	Average	
3		2486.450	4.50	29.07	40.47	46.33	39.43	54.00	-14.57	Average	



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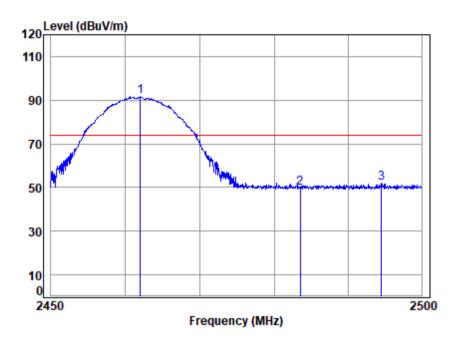
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Report No.: SZCR210402079902

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Test Mode: 02; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:High



Site : chamber

Condition: 3m VERTICAL

: 20799AT/20800AT 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	98.55	91.57	74.00	17.57	Peak	
	2483.500	4.49	29.07	40.47	56.50	49.59	74.00	-24.41	Peak	
	2494 551	4 51	29 09	40 47	58 94	52 07	74 00	-21 93	Peak	



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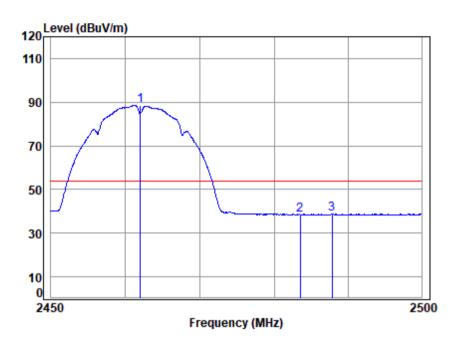
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Test Mode: 02; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:High



Site : chamber

Condition: 3m VERTICAL

: 20799AT/20800AT 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	95.60	88.62	54.00	34.62	Average	
2	2483.500	4.49	29.07	40.47	45.37	38.46	54.00	-15.54	Average	
3	2487.807	4.50	29.08	40.47	45.62	38.73	54.00	-15.27	Average	



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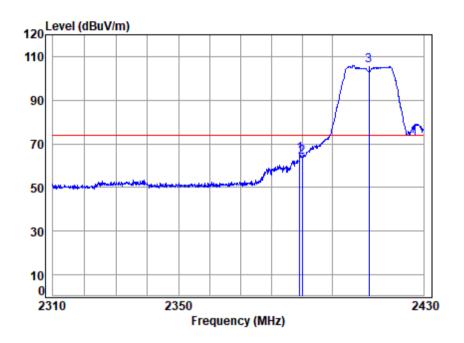
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Test Mode: 02; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:Low



Site : chamber

Condition: 3m HORIZONTAL Job No : 20799AT/20800AT Mode : 2412 Band edge : 2.4G WiFi 11G Note

Freq						Limit Line		Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
2389.242	4.34	28.88	40.42	72.25	65.05	74.00	-8.95	peak
2390.000	4.34	28.88	40.42	71.10	63.90	74.00	-10.10	peak
2412.000	4.38	28.92	40.43	113.06	105.93	74.00	31.93	peak



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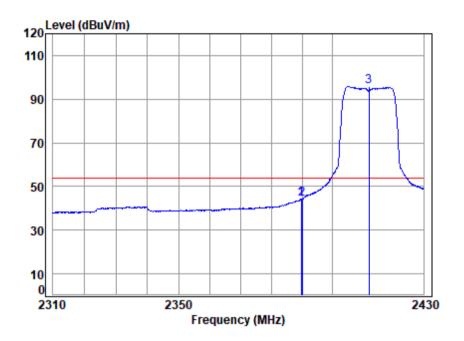
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Test Mode: 02; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:Low



Site : chamber

Condition: 3m HORIZONTAL Job No : 20799AT/20800AT 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	51.47	44.27	54.00	-9.73	Average	
2390.000	4.34	28.88	40.42	51.42	44.22	54.00	-9.78	Average	
2412.000	4.38	28.92	40.43	102.82	95.69	54.00	41.69	Average	



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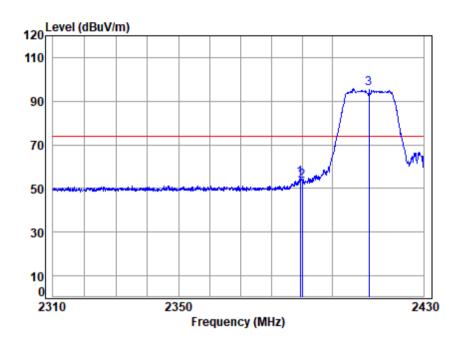
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Test Mode: 02; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:Low



Site : chamber

Condition: 3m VERTICAL

Job No : 20799AT/20800AT 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		
	2389.363	4.34	28.88	40.42	62.00	54.80	74.00	-19.20	Peak	
	2390.000	4.34	28.88	40.42	60.67	53.47	74.00	-20.53	Peak	
	2412.000	4.38	28.92	40.43	102.90	95.77	74.00	21.77	Peak	



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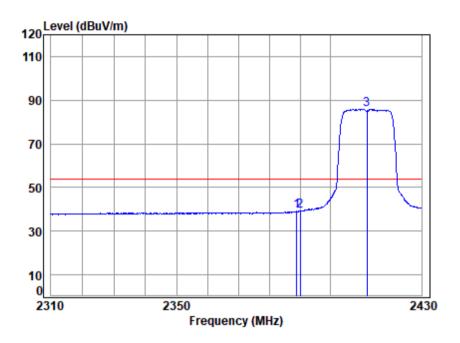
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Test Mode: 02; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:Low



Site : chamber

Condition: 3m VERTICAL

Job No : 20799AT/20800AT 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		
2388.879	4.34	28.88	40.42	46.49	39.29	54.00	-14.71	Average	
2390.000	4.34	28.88	40.42	46.43	39.23	54.00	-14.77	Average	
2412,000	4.38	28.92	40.43	93.07	85.94	54.00	31.94	Average	



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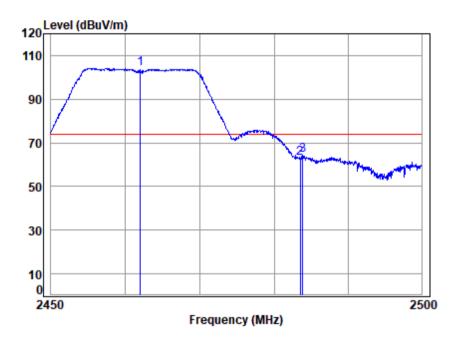
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Test Mode: 02; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:High



Site : chamber

Condition: 3m HORIZONTAL : 20799AT/20800AT 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	111.21	104.23	74.00	30.23	peak
2483.500								•
2483.840								•



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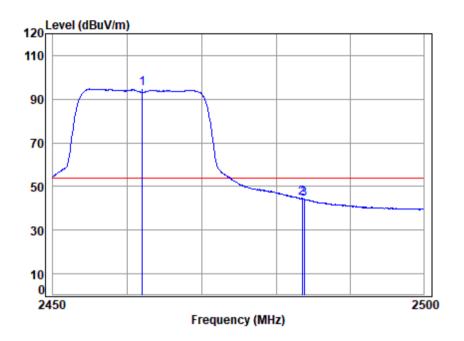
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Test Mode: 02; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:High



Site : chamber

Condition: 3m HORIZONTAL : 20799AT/20800AT 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	101.67	94.69	54.00	40.69	Average	
2483.500	4.49	29.07	40.47	51.44	44.53	54.00	-9.47	Average	
2483.790	4.49	29.07	40.47	51.20	44.29	54.00	-9.71	Average	



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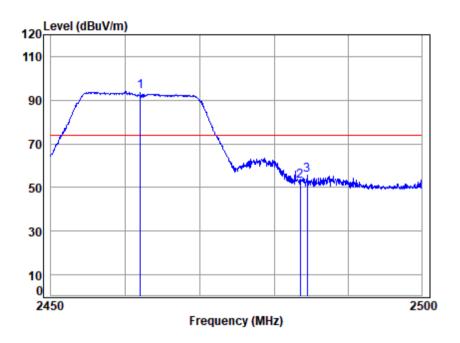
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Test Mode: 02; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:High



Site : chamber

Condition: 3m VERTICAL

: 20799AT/20800AT 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		_
1.	2462.000	4.46	29.02	40.46	100.81	93.83	74.00	19.83	Peak	
2	2483.500	4.49	29.07	40.47	59.77	52.86	74.00	-21.14	Peak	
3	2484.442	4.50	29.07	40.47	62.56	55.66	74.00	-18.34	Peak	



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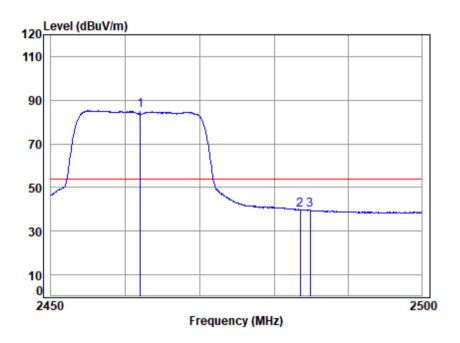
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Report No.: SZCR210402079902

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Test Mode: 02; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:High



Site : chamber

Condition: 3m VERTICAL

Job No : 20799AT/20800AT Mode : 2462 Band edge : 2.4G WiFi 11G Note

. 2	TO WILL	1 110							
	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	92.10	85.12	54.00	31.12	Average	
2483.500	4.49	29.07	40.47	46.67	39.76	54.00	-14.24	Average	
2484.894	4.50	29.07	40.47	46.62	39.72	54.00	-14.28	Average	



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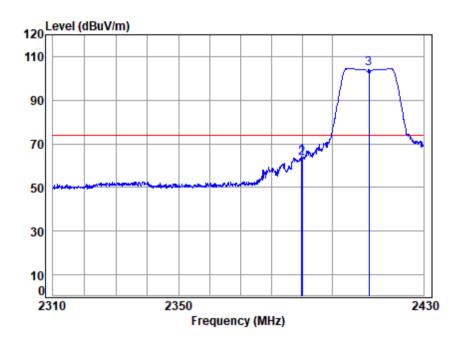
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Report No.: SZCR210402079902

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Test Mode: 02; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



Site : chamber

Condition: 3m HORIZONTAL Job No : 20799AT/20800AT Mode : 2412 Band edge : 2.4G WiFi 11N20 Note

	Freq					Level			Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2389.847	4.34	28.88	40.42	71.37	64.17	74.00	-9.83	peak
2	2390.000	4.34	28.88	40.42	70.44	63.24	74.00	-10.76	peak
3.	2412.000	4.38	28.92	40.43	111.82	104.69	74.00	30.69	peak



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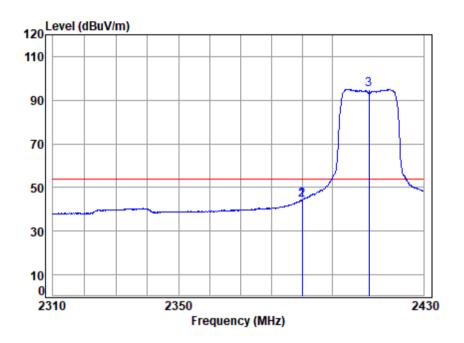
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Test Mode: 02; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



Site : chamber

Condition: 3m HORIZONTAL Job No : 20799AT/20800AT 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	51.40	44.20	54.00	-9.80	Average	
2	2390.000	4.34	28.88	40.42	51.40	44.20	54.00	-9.80	Average	
	2412.000	4.38	28.92	40.43	102.09	94.96	54.00	40.96	Average	



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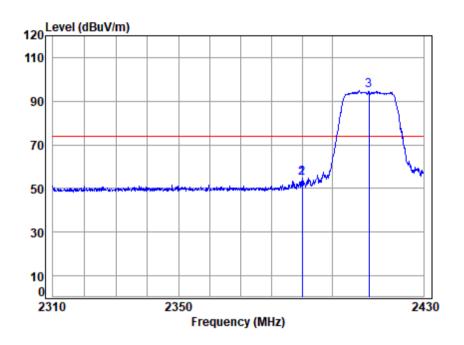
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Test Mode: 02; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



Site : chamber

Condition: 3m VERTICAL

Job No : 20799AT/20800AT 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	61.78	54.58	74.00	-19.42	Peak	
2390.000	4.34	28.88	40.42	61.78	54.58	74.00	-19.42	Peak	
2412,000	4.38	28.92	40.43	101.86	94.73	74.00	20.73	Peak	



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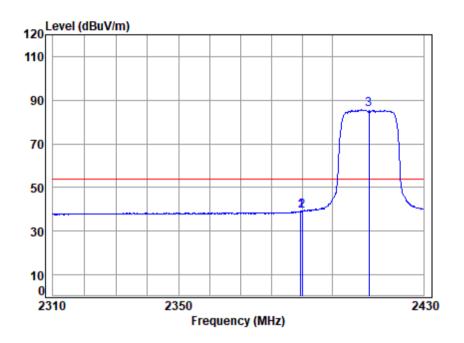
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Test Mode: 02; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



Site : chamber

Condition: 3m VERTICAL

Job No : 20799AT/20800AT 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	46.26	39.06	54.00	-14.94	Average	
2390.000	4.34	28.88	40.42	46.22	39.02	54.00	-14.98	Average	
2412.000	4.38	28.92	40.43	92.71	85.58	54.00	31.58	Average	



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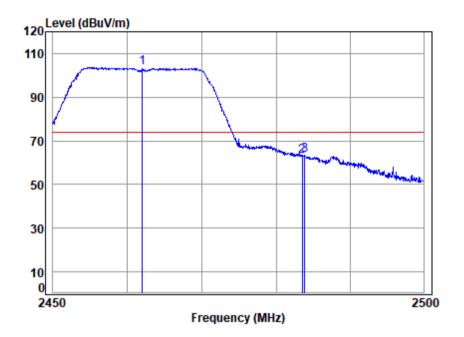
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Test Mode: 02; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High



Site : chamber

Condition: 3m HORIZONTAL Job No : 20799AT/20800AT 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	110.61	103.63	74.00	29.63	peak	
2	2483.500	4.49	29.07	40.47	69.84	62.93	74.00	-11.07	peak	
3	2483.840	4.49	29.07	40.47	70.13	63.22	74.00	-10.78	peak	



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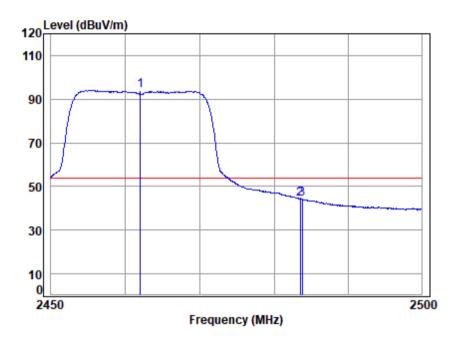
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Test Mode: 02; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High



Site : chamber

Condition: 3m HORIZONTAL : 20799AT/20800AT Job No Mode : 2462 Band edge : 2.4G WiFi 11N20 Note

	Freq						Limit Line		Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1.	2462.000	4.46	29.02	40.46	101.09	94.11	54.00	40.11	Average
2	2483.500	4.49	29.07	40.47	51.24	44.33	54.00	-9.67	Average
3	2483.790	4.49	29.07	40.47	50.96	44.05	54.00	-9.95	Average



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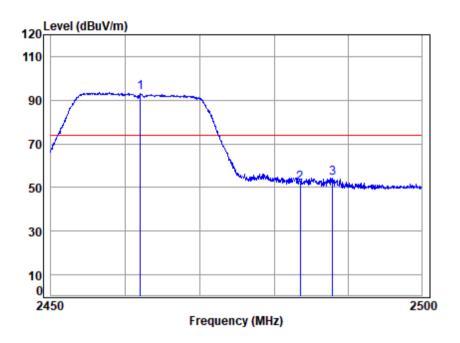
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Test Mode: 02; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High



Site : chamber

Condition: 3m VERTICAL

: 20799AT/20800AT Job No 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	100.41	93.43	74.00	19.43	Peak	
2483.500	4.49	29.07	40.47	58.84	51.93	74.00	-22.07	Peak	
2487 908	4.50	29.08	49 47	61.34	54.45	74.00	-19.55	Peak	



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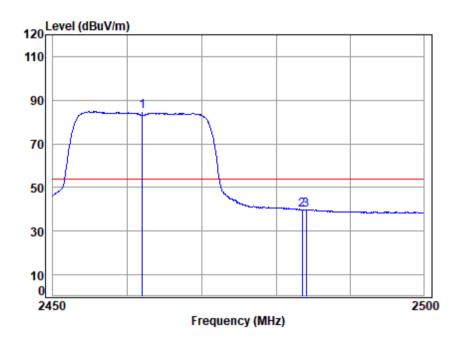
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Test Mode: 02; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High



Site : chamber

Condition: 3m VERTICAL

Job No : 20799AT/20800AT 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	91.71	84.73	54.00	30.73	Average	
2483.500	4.49	29.07	40.47	46.59	39.68	54.00	-14.32	Average	
2484.041	4.50	29.07	40.47	46.80	39.90	54.00	-14.10	Average	



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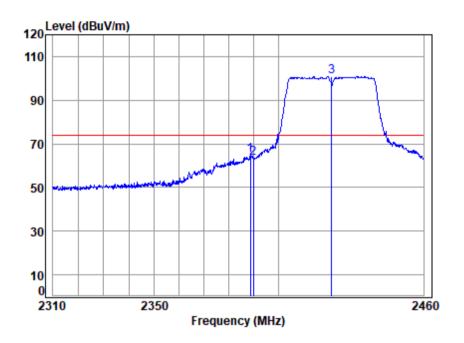
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Test Mode: 02; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



Site : chamber

Condition: 3m HORIZONTAL Job No : 20799AT/20800AT Mode : 2422 Band edge : 2.4G WiFi 11N40 Note

	Freq		Ant Factor						Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2388.775	4.34	28.88	40.42	72.21	65.01	74.00	-8.99	peak
2	2390.000	4.34	28.88	40.42	70.69	63.49	74.00	-10.51	peak
3	. 2422.000	4.40	28.94	40.44	108.06	100.96	74.00	26.96	peak



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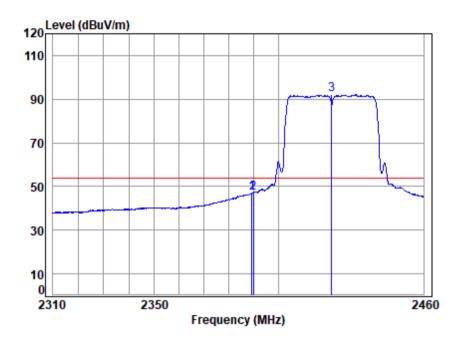
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Test Mode: 02; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



Site : chamber

Condition: 3m HORIZONTAL Job No : 20799AT/20800AT 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		
2389.376	4.34	28.88	40.42	54.42	47.22	54.00	-6.78	Average	
2390.000	4.34	28.88	40.42	54.33	47.13	54.00	-6.87	Average	
2422.000	4.40	28.94	40.44	99.17	92.07	54.00	38.07	Average	



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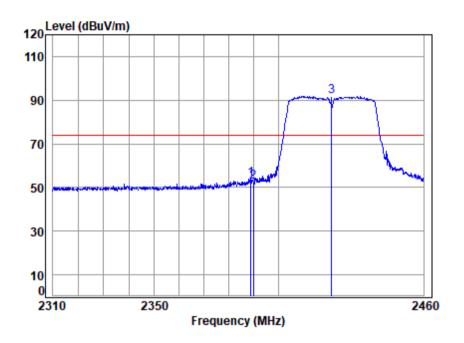
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Test Mode: 02; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



Site : chamber

Condition: 3m VERTICAL

Job No : 20799AT/20800AT Mode : 2422 Band edge : 2.4G WiFi 11N40 Note

0.00		10 111								
		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	2388.925	4.34	28.88	40.42	61.11	53.91	74.00	-20.09	Peak	
2	2390.000	4.34	28.88	40.42	59.65	52.45	74.00	-21.55	Peak	
3.	2422.000	4.40	28.94	40.44	98.95	91.85	74.00	17.85	Peak	



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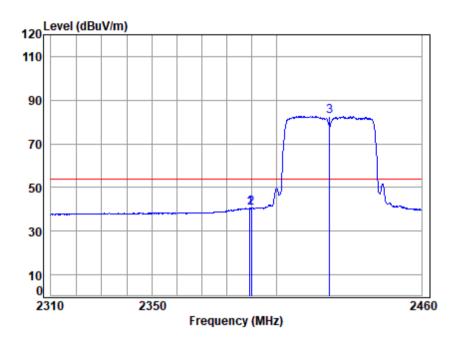
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Test Mode: 02; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



Site : chamber

Condition: 3m VERTICAL

Job No : 20799AT/20800AT Mode : 2422 Band edge : 2.4G WiFi 11N40 Note

_		10 111								
		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		
	2389.376	4.34	28.88	40.42	47.76	40.56	54.00	-13.44	Average	
2	2390.000	4.34	28.88	40.42	47.74	40.54	54.00	-13.46	Average	
	2422.000	4.40	28.94	40.44	89.74	82.64	54.00	28.64	Average	



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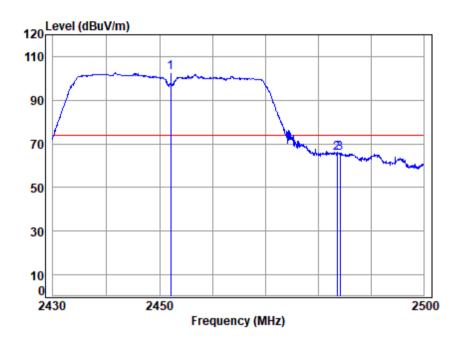
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Report No.: SZCR210402079902

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Test Mode: 02; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High



Site : chamber

Condition: 3m HORIZONTAL : 20799AT/20800AT 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	109.52	102.51	74.00	28.51	peak
2	2483.500	4.49	29.07	40.47	72.55	65.64	74.00	-8.36	peak
3	2484.076	4.50	29.07	40.47	72.79	65.89	74.00	-8.11	peak



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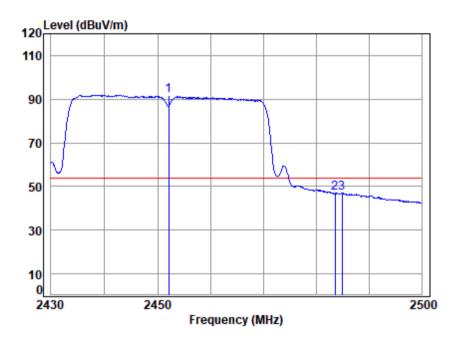
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Test Mode: 02; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High



Site : chamber

Condition: 3m HORIZONTAL : 20799AT/20800AT Job No Mode : 2452 Band edge : 2.4G WiFi 11N40 Note

	Freq			Preamp Factor					Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1.	2452.000	4.44	29.00	40.45	98.90	91.89	54.00	37.89	Average
2	2483.500	4.49	29.07	40.47	53.89	46.98	54.00	-7.02	Average
3	2484.852	4.50	29.07	40.47	53.81	46.91	54.00	-7.09	Average



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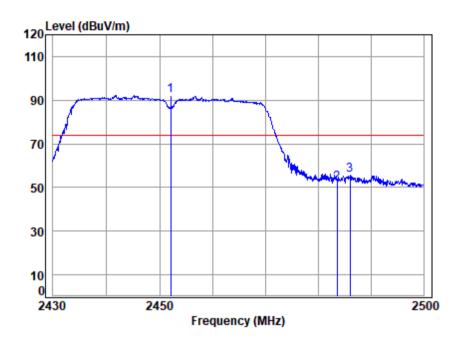
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Test Mode: 02; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:High



Site : chamber

Condition: 3m VERTICAL

: 20799AT/20800AT 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		
	2452.000	4.44	29.00	40.45	99.12	92.11	74.00	18.11	Peak	
	2483.500	4.49	29.07	40.47	59.13	52.22	74.00	-21.78	Peak	
	2485.911	4.50	29.07	40.47	62.55	55.65	74.00	-18.35	Peak	



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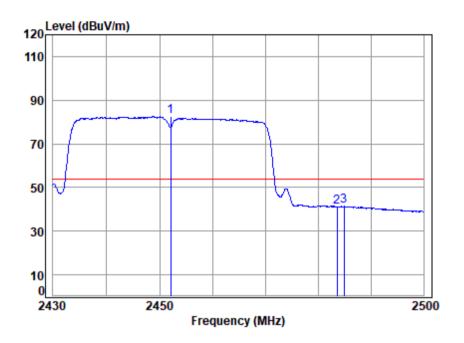
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Test Mode: 02; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:High



Site : chamber

Condition: 3m VERTICAL

Job No : 20799AT/20800AT 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	89.49	82.48	54.00	28.48	Average	
2483.500	4.49	29.07	40.47	48.02	41.11	54.00	-12.89	Average	
2484.782	4.50	29.07	40.47	48.35	41.45	54.00	-12.55	Average	



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### 7.7 Radiated Spurious Emissions Below 1GHz

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

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

Measurement Distance: 3m

#### Limit:

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

#### 7.7.1 E.U.T. Operation

Operating Environment:

Temperature: 24.8 °C Humidity: 66.9 % RH Atmospheric Pressure: 1010 mbar

#### 7.7.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	02	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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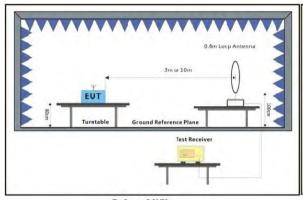
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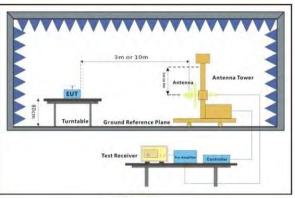


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#### 7.7.3 Test Setup Diagram





Below 30MHz

30MHz-1GHz

#### 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 the highest radiation.
- b. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using quasi-peak method as specified and then reported in a data sheet.
- g. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- i. Repeat above procedures until all frequencies measured was complete.
- 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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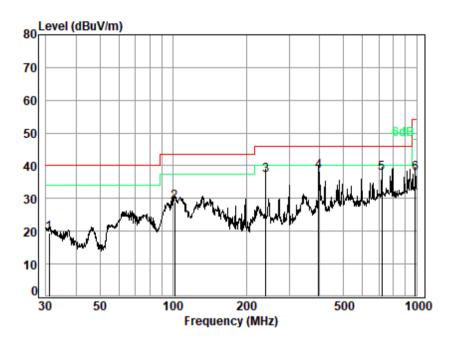
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Test Mode: 02; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:Low



Site : chamber

Condition: 3m HORIZONTAL

Job No. : 20799AT

: 02 Mode

ouc	. 02								
		Read	Ant	Cable	Preamp		Limit	0ver	
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
_									
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	30.96	24.63	21.95	0.61	27.73	19.46	40.00	-20.54	QP
2	101.29	41.34	13.94	1.10	27.63	28.75	43.50	-14.75	QP
3	239.99	43.68	18.80	1.56	27.04	37.00	46.00	-9.00	QP
4 q	396.24	41.14	22.31	2.29	27.40	38.34	46.00	-7.66	QP
5	719.20	34.55	28.02	2.98	27.89	37.66	46.00	-8.34	QP
6	989.54	30.86	30.25	3.59	26.95	37.75	54.00	-16.25	OP



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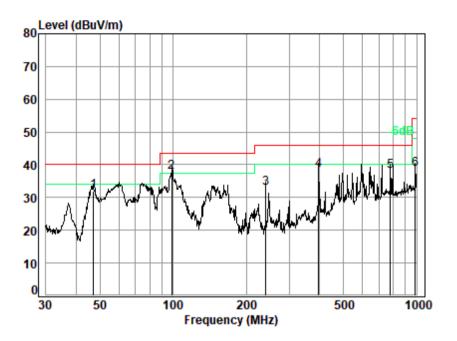
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Report No.: SZCR210402079902

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Test Mode: 02; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:Low



Site : chamber

Condition: 3m VERTICAL

Job No. : 20799AT

: 02 Mode

IOUC	. 02								
		Read	Ant	Cable	Preamp		Limit	0ver	
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
_									
	MHZ	dBuV	dB/m	dВ	dB	dBuV/m	dBuV/m	dB	
1	46.99	43.93	15.12	0.70	27.70	32.05	40.00	-7.95	QP
2 q	98.83	50.33	13.90	1.12	27.64	37.71	43.50	-5.79	QP
3	239.99	39.48	18.80	1.56	27.04	32.80	46.00	-13.20	QP
4	396.24	41.21	22.31	2.29	27.40	38.41	46.00	-7.59	QP
5	779.61	34.26	28.38	3.22	27.76	38.10	46.00	-7.90	QP
6	989.54	31.70	30.25	3.59	26.95	38.59	54.00	-15.41	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

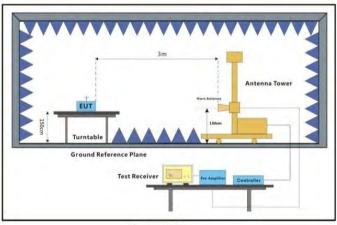
Operating Environment:

Temperature: 21.5 °C Atmospheric Pressure: 1010 mbar Humidity: 54.9 % RH

#### 7.8.2 Test Mode Description

		·
Pre-scan / Final test	Mode Code	Description
Final test	02	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



Above 1GHz



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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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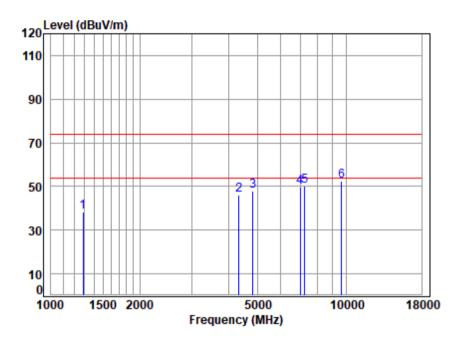
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Test Mode: 02; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:Low



Site : chamber

Condition: 3m HORIZONTAL Job No : 20798AT/20800AT

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	1285.904	2.92	25.28	39.82	49.93	38.31	74.00	-35.69	peak
2	4341.886	6.61	32.88	41.73	48.41	46.17	74.00	-27.83	peak
3	4824.000	7.12	33.66	42.16	49.40	48.02	74.00	-25.98	peak
4	6995.172	8.54	35.49	41.70	47.49	49.82	74.00	-24.18	peak
5	7236.000	8.77	35.69	41.48	47.26	50.24	74.00	-23.76	peak
6	9648.000	10.79	37.36	37.69	41.92	52.38	74.00	-21.62	peak



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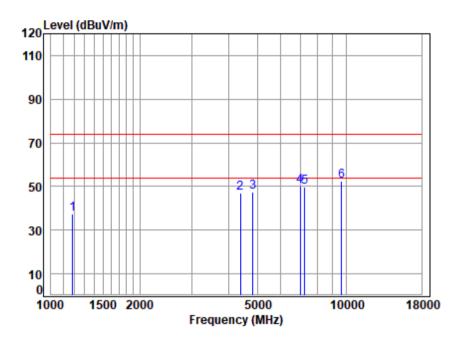
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Test Mode: 02; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:Low



Site : chamber

Condition: 3m VERTICAL

Job No : 20798AT/20800AT

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	1185.936	2.74	25.06	39.75	49.20	37.25	74.00	-36.75	peak
2	4379.699	6.65	32.91	41.77	49.04	46.83	74.00	-27.17	peak
3	4824.000	7.12	33.66	42.16	48.77	47.39	74.00	-26.61	peak
4	6995.172	8.54	35.49	41.70	47.75	50.08	74.00	-23.92	peak
5	7236.000	8.77	35.69	41.48	46.83	49.81	74.00	-24.19	peak
6	9648.000	10.79	37.36	37.69	41.97	52.43	74.00	-21.57	peak



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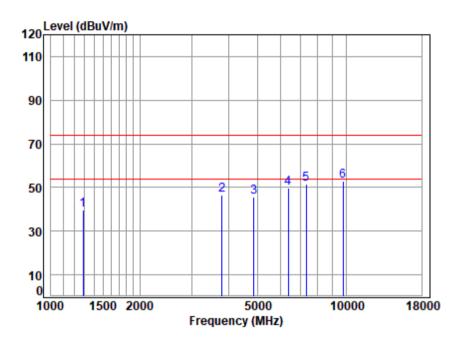
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Test Mode: 02; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:middle



Site : chamber

Condition: 3m HORIZONTAL Job No : 20798AT/20800AT

: 2437 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	1285.904	2.92	25.28	39.82	51.15	39.53	74.00	-34.4/	peak
2	3801.333	5.99	32.26	41.28	49.36	46.33	74.00	-27.67	peak
3	4874.000	7.17	33.76	42.20	46.95	45.68	74.00	-28.32	peak
4	6358.789	8.27	34.60	42.14	49.21	49.94	74.00	-24.06	peak
5	7311.000	8.84	35.75	41.41	48.30	51.48	74.00	-22.52	peak
6	9748.000	10.76	37.40	37.52	42.27	52.91	74.00	-21.09	peak



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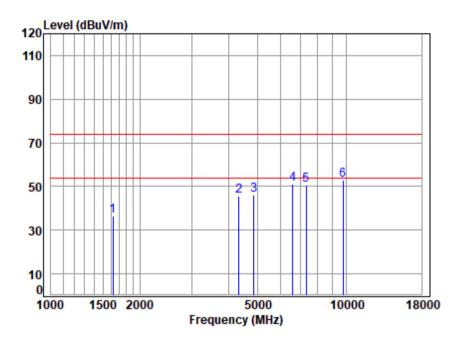
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Report No.: SZCR210402079902

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Test Mode: 02; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:middle



Site : chamber

Condition: 3m VERTICAL

Job No : 20798AT/20800AT

: 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	1620.431	3.36	26.32	40.02	46.80	36.46	74.00	-37.54	peak
2	4341.886	6.61	32.88	41.73	47.76	45.52	74.00	-28.48	peak
3	4874.000	7.17	33.76	42.20	47.28	46.01	74.00	-27.99	peak
4	6602.265	8.33	34.79	41.97	49.85	51.00	74.00	-23.00	peak
5	7311.000	8.84	35.75	41.41	47.30	50.48	74.00	-23.52	peak
6	9748.000	10.76	37.40	37.52	42.28	52.92	74.00	-21.08	peak



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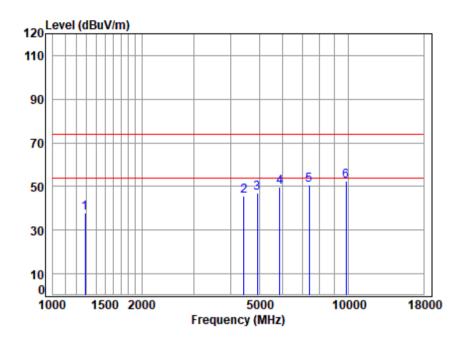
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Report No.: SZCR210402079902

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Test Mode: 02; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:High



Site : chamber

Condition: 3m HORIZONTAL Job No : 20798AT/20800AT

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	
1	1285.904	2.92	25.28	39.82	49.56	37.94	74.00	-36.06	peak
2	4443.453	6.71	32.96	41.82	47.74	45.59	74.00	-28.41	peak
3	4924.000	7.22	33.85	42.24	48.01	46.84	74.00	-27.16	peak
4	5864.443	8.24	34.49	42.39	49.51	49.85	74.00	-24.15	peak
5	7386.000	8.91	35.81	41.34	47.36	50.74	74.00	-23.26	peak
6	9848.000	10.73	37.44	37.35	41.56	52.38	74.00	-21.62	peak



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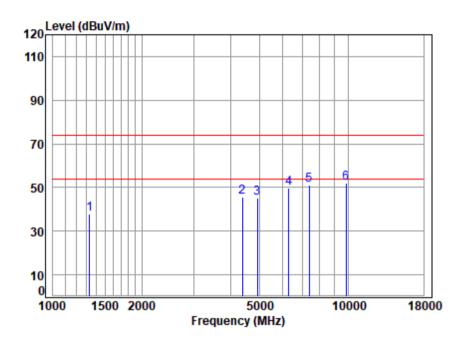
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Report No.: SZCR210402079902

Page: 67 of 136

Test Mode: 02; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:High



Site : chamber

Condition: 3m VERTICAL

Job No : 20798AT/20800AT

Mode : 2462 TX RSE : 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	1331.288	3.00	25.38	39.85	49.26	37.79	74.00	-36.21	peak
2	4392.376	6.66	32.92	41.78	47.97	45.77	74.00	-28.23	peak
3	4924.000	7.22	33.85	42.24	46.32	45.15	74.00	-28.85	peak
4	6285.695	8.27	34.60	42.19	49.03	49.71	74.00	-24.29	peak
5	7386.000	8.91	35.81	41.34	47.74	51.12	74.00	-22.88	peak
6	9848.000	10.73	37.44	37.35	41.37	52.19	74.00	-21.81	peak



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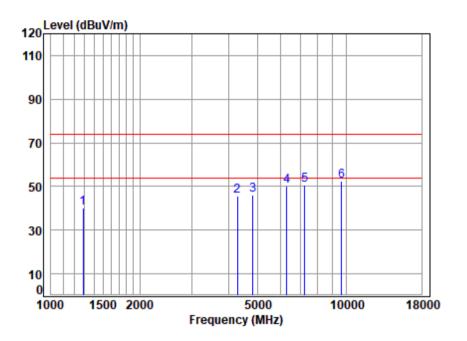
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Report No.: SZCR210402079902

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Test Mode: 02; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:Low



Site : chamber

Condition: 3m HORIZONTAL Job No : 20798AT/20800AT

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

	Freq			Preamp Factor					Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	——dB	
1	1285.904	2.92	25.28	39.82	51.98	40.36	74.00	-33.64	peak
2	4291.977	6.57	32.84	41.68	48.12	45.85	74.00	-28.15	peak
3	4824.000	7.12	33.66	42.16	47.37	45.99	74.00	-28.01	peak
4	6285.695	8.27	34.60	42.19	49.42	50.10	74.00	-23.90	peak
5	7236.000	8.77	35.69	41.48	47.53	50.51	74.00	-23.49	peak
6	9648.000	10.79	37.36	37.69	42.00	52.46	74.00	-21.54	peak



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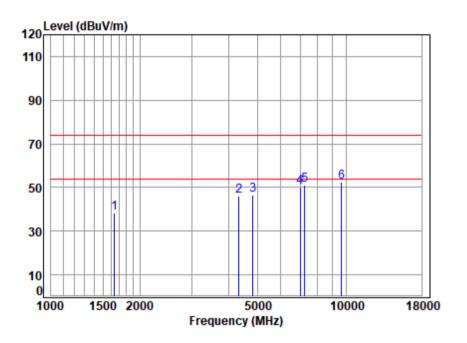
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Test Mode: 02; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:Low



Site : chamber

Condition: 3m VERTICAL

Job No : 20798AT/20800AT

Mode : 2412 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	2 20	26 43	40.03	10 17	30 35	74 00	25 75	nook
1	1044.019	3.30	20.43	40.03	40.4/	30.23	74.00	-33.73	peak
2	4329.354	6.60	32.87	41.72	48.47	46.22	74.00	-27.78	peak
3	4824.000	7.12	33.66	42.16	47.73	46.35	74.00	-27.65	peak
4	6995.172	8.54	35.49	41.70	47.93	50.26	74.00	-23.74	peak
5	7236.000	8.77	35.69	41.48	48.07	51.05	74.00	-22.95	peak
6	9648.000	10.79	37.36	37.69	41.98	52.44	74.00	-21.56	peak



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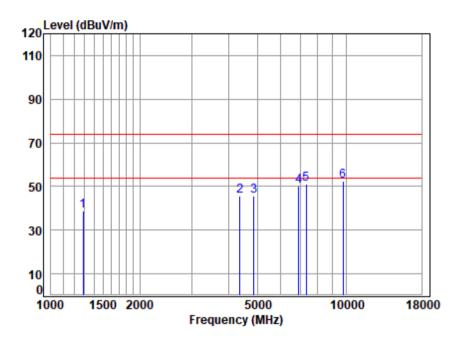
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Report No.: SZCR210402079902

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Test Mode: 02; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:middle



Site : chamber

Condition: 3m HORIZONTAL Job No : 20798AT/20800AT

: 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	
1285.904	2.92	25.28	39.82	50.45	38.83	74.00	-35.17	peak
4367.058	6.64	32.90	41.75	47.79	45.58	74.00	-28.42	peak
4874.000	7.17	33.76	42.20	46.75	45.48	74.00	-28.52	peak
6914.763	8.50	35.35	41.76	48.20	50.29	74.00	-23.71	peak
7311.000	8.84	35.75	41.41	47.98	51.16	74.00	-22.84	peak
9748.000	10.76	37.40	37.52	41.75	52.39	74.00	-21.61	peak
	MHz 1285.904 4367.058 4874.000 6914.763 7311.000	Freq Loss  MHz dB  1285.904 2.92 4367.058 6.64 4874.000 7.17 6914.763 8.50 7311.000 8.84	Freq         Loss Factor           MHz         dB         dB/m           1285.904         2.92         25.28           4367.058         6.64         32.90           4874.000         7.17         33.76           6914.763         8.50         35.35           7311.000         8.84         35.75	Freq         Loss Factor Factor           MHz         dB         dB/m         dB           1285.904         2.92         25.28         39.82           4367.058         6.64         32.90         41.75           4874.000         7.17         33.76         42.20           6914.763         8.50         35.35         41.76           7311.000         8.84         35.75         41.41	Freq         Loss Factor Factor         Level           MHz         dB         dB/m         dB         dBuV           1285.904         2.92         25.28         39.82         50.45           4367.058         6.64         32.90         41.75         47.79           4874.000         7.17         33.76         42.20         46.75           6914.763         8.50         35.35         41.76         48.20           7311.000         8.84         35.75         41.41         47.98	Freq         Loss Factor Factor         Level         Level           MHz         dB         dB/m         dB         dBuV         dBuV/m           1285.904         2.92         25.28         39.82         50.45         38.83           4367.058         6.64         32.90         41.75         47.79         45.58           4874.000         7.17         33.76         42.20         46.75         45.48           6914.763         8.50         35.35         41.76         48.20         50.29           7311.000         8.84         35.75         41.41         47.98         51.16	Freq         Loss Factor         Factor         Level         Level         Line           MHz         dB         dB/m         dB         dBuV         dBuV/m         dBuV/m           1285.904         2.92         25.28         39.82         50.45         38.83         74.00           4367.058         6.64         32.90         41.75         47.79         45.58         74.00           4874.000         7.17         33.76         42.20         46.75         45.48         74.00           6914.763         8.50         35.35         41.76         48.20         50.29         74.00           7311.000         8.84         35.75         41.41         47.98         51.16         74.00	



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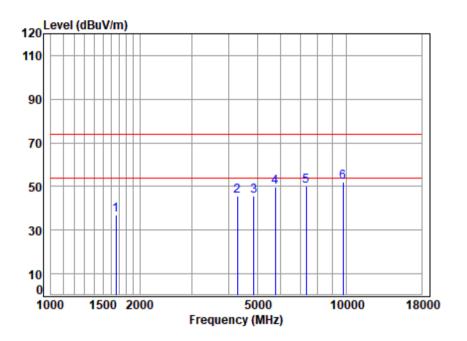
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Report No.: SZCR210402079902

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Test Mode: 02; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:middle



Site : chamber

Condition: 3m VERTICAL

Job No : 20798AT/20800AT

: 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	
4662 427	2 40	26 52	40.04	47 47	37.06	74.00	36.04	
1663.13/	3.40	26.53	40.04	4/.1/	37.06	74.00	-36.94	реак
4279.589	6.56	32.83	41.67	47.78	45.50	74.00	-28.50	peak
4874.000	7.17	33.76	42.20	46.73	45.46	74.00	-28.54	peak
5763.617	8.22	34.42	42.38	49.36	49.62	74.00	-24.38	peak
7311.000	8.84	35.75	41.41	47.21	50.39	74.00	-23.61	peak
9748.000	10.76	37.40	37.52	41.40	52.04	74.00	-21.96	peak
	MHz 1663.137 4279.589 4874.000 5763.617 7311.000	Freq Loss  MHz dB  1663.137 3.40 4279.589 6.56 4874.000 7.17 5763.617 8.22 7311.000 8.84	Freq         Loss Factor           MHz         dB         dB/m           1663.137         3.40         26.53           4279.589         6.56         32.83           4874.000         7.17         33.76           5763.617         8.22         34.42           7311.000         8.84         35.75	Freq         Loss         Factor         Factor           MHz         dB         dB/m         dB           1663.137         3.40         26.53         40.04           4279.589         6.56         32.83         41.67           4874.000         7.17         33.76         42.20           5763.617         8.22         34.42         42.38           7311.000         8.84         35.75         41.41	Freq         Loss Factor Factor         Level           MHz         dB         dB/m         dB         dBuV           1663.137         3.40         26.53         40.04         47.17           4279.589         6.56         32.83         41.67         47.78           4874.000         7.17         33.76         42.20         46.73           5763.617         8.22         34.42         42.38         49.36           7311.000         8.84         35.75         41.41         47.21	Freq         Loss Factor Factor         Level         Level           MHz         dB         dB/m         dB         dBuV         dBuV/m           1663.137         3.40         26.53         40.04         47.17         37.06           4279.589         6.56         32.83         41.67         47.78         45.50           4874.000         7.17         33.76         42.20         46.73         45.46           5763.617         8.22         34.42         42.38         49.36         49.62           7311.000         8.84         35.75         41.41         47.21         50.39	Freq         Loss Factor         Factor         Level         Level         Line           MHz         dB         dB/m         dB         dBuV         dBuV/m         dBuV/m           1663.137         3.40         26.53         40.04         47.17         37.06         74.00           4279.589         6.56         32.83         41.67         47.78         45.50         74.00           4874.000         7.17         33.76         42.20         46.73         45.46         74.00           5763.617         8.22         34.42         42.38         49.36         49.62         74.00           7311.000         8.84         35.75         41.41         47.21         50.39         74.00	



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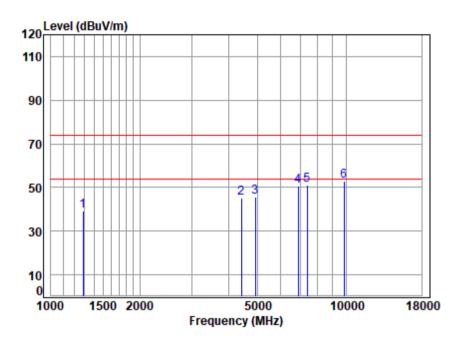
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Report No.: SZCR210402079902

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Test Mode: 02; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:High



Site : chamber

Condition: 3m HORIZONTAL Job No : 20798AT/20800AT

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	1285.904	2.92	25.28	39.82	50.74	39.12	74.00	-34.88	peak
2	4417.841	6.68	32.94	41.80	47.53	45.35	74.00	-28.65	peak
3	4924.000	7.22	33.85	42.24	46.77	45.60	74.00	-28.40	peak
4	6874.906	8.48	35.28	41.78	48.51	50.49	74.00	-23.51	peak
5	7386.000	8.91	35.81	41.34	47.93	51.31	74.00	-22.69	peak
6	9848.000	10.73	37.44	37.35	41.93	52.75	74.00	-21.25	peak



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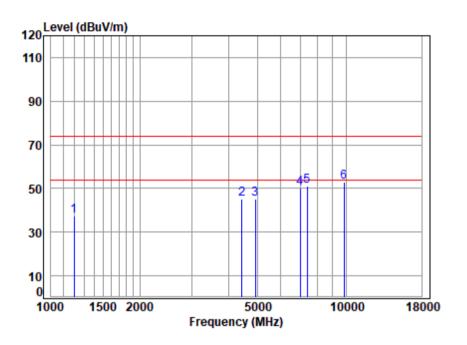
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Report No.: SZCR210402079902

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Test Mode: 02; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:High



Site : chamber

Condition: 3m VERTICAL

Job No : 20798AT/20800AT

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	1196.264	2.76	25.09	39.76	49.42	37.51	74.00	-36.49	peak
2	4443.453	6.71	32.96	41.82	47.33	45.18	74.00	-28.82	peak
3	4924.000	7.22	33.85	42.24	46.40	45.23	74.00	-28.77	peak
4	6995.172	8.54	35.49	41.70	47.96	50.29	74.00	-23.71	peak
5	7386.000	8.91	35.81	41.34	47.81	51.19	74.00	-22.81	peak
6	9848.000	10.73	37.44	37.35	42.13	52.95	74.00	-21.05	peak



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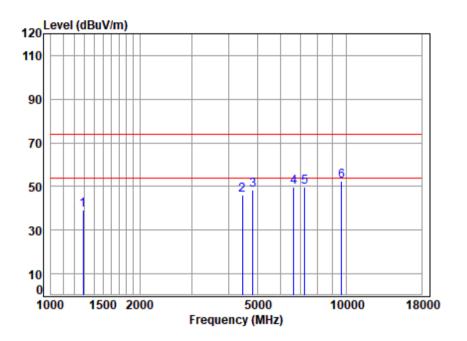
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Test Mode: 02; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



Site : chamber

Condition: 3m HORIZONTAL Job No : 20798AT/20800AT

Mode : 2412 TX RSE Note : 2.4G WIFI 11N20

		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	1285.904	2.92	25.28	39.82	50.73	39.11	74.00	-34.89	peak
2	4456.315	6.72	32.97	41.84	48.30	46.15	74.00	-27.85	peak
3	4824.000	7.12	33.66	42.16	49.72	48.34	74.00	-25.66	peak
4	6640.542	8.36	34.86	41.94	48.62	49.90	74.00	-24.10	peak
5	7236.000	8.77	35.69	41.48	46.68	49.66	74.00	-24.34	peak
6	9648.000	10.79	37.36	37.69	42.14	52.60	74.00	-21.40	peak



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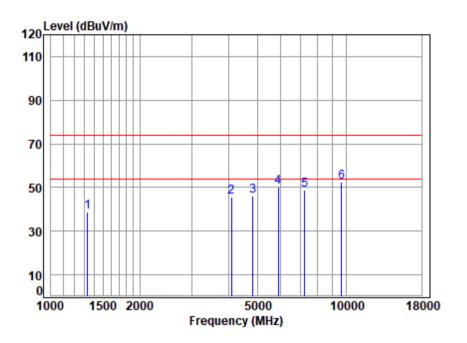
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Test Mode: 02; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



Site : chamber

Condition: 3m VERTICAL

Job No : 20798AT/20800AT

Mode : 2412 TX RSE

Note : 2.4G WIFI 11N20

	-			Preamp			Limit		
	Freq	Loss	Factor	Factor	revel	revel	Line	Limit	Kemark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1331.288	3.00	25.38	39.85	50.40	38.93	74.00	-35.07	peak
2	4086.182	6.37	32.67	41.49	48.02	45.57	74.00	-28.43	peak
3	4824.000	7.12	33.66	42.16	47.33	45.95	74.00	-28.05	peak
4	5881.418	8.24	34.51	42.39	49.65	50.01	74.00	-23.99	peak
5	7236.000	8.77	35.69	41.48	45.74	48.72	74.00	-25.28	peak
6	9648.000	10.79	37.36	37.69	42.10	52.56	74.00	-21.44	peak



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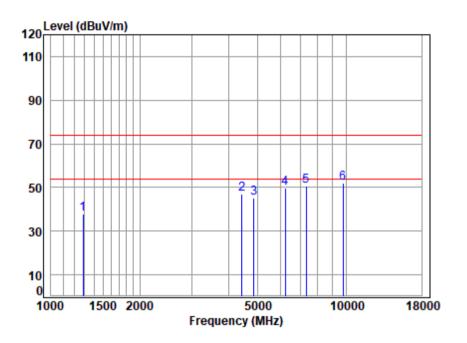
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Test Mode: 02; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:middle



Site : chamber

Condition: 3m HORIZONTAL Job No : 20798AT/20800AT

: 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	1285.904	2.92	25.28	39.82	49.45	37.83	74.00	-36.17	peak
2	4443.453	6.71	32.96	41.82	49.03	46.88	74.00	-27.12	peak
3	4874.000	7.17	33.76	42.20	46.64	45.37	74.00	-28.63	peak
4	6231.427	8.27	34.60	42.23	48.91	49.55	74.00	-24.45	peak
5	7311.000	8.84	35.75	41.41	47.35	50.53	74.00	-23.47	peak
6	9748.000	10.76	37.40	37.52	41.60	52.24	74.00	-21.76	peak



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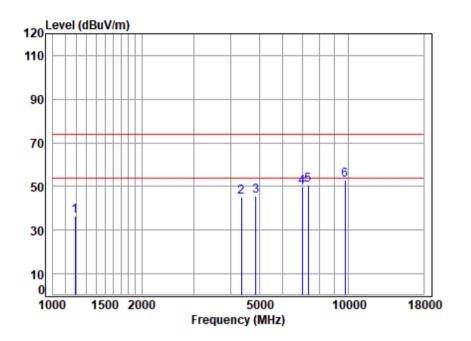
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Test Mode: 02; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:middle



Site : chamber

Condition: 3m VERTICAL

: 20798AT/20800AT Job No

: 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	1189.368	2.74	25.07	39.75	48.51	36.57	74.00	-37.43	peak
2	4354.454	6.63	32.89	41.74	47.61	45.39	74.00	-28.61	peak
3	4874.000	7.17	33.76	42.20	46.97	45.70	74.00	-28.30	peak
4	6995.172	8.54	35.49	41.70	47.26	49.59	74.00	-24.41	peak
5	7311.000	8.84	35.75	41.41	47.59	50.77	74.00	-23.23	peak
6	9748.000	10.76	37.40	37.52	42.12	52.76	74.00	-21.24	peak



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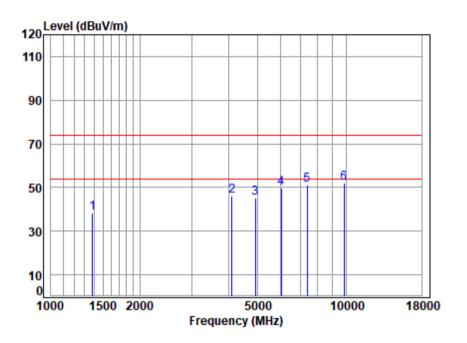
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Test Mode: 02; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High



Site : chamber

Condition: 3m HORIZONTAL Job No : 20798AT/20800AT

Mode : 2462 TX RSE

Note : 2.4G WIFI 11N20

		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	1386.264	3.08	25.49	39.88	49.78	38.47	74.00	-35.53	peak
2	4109.872	6.39	32.69	41.51	48.33	45.90	74.00	-28.10	peak
3	4924.000	7.22	33.85	42.24	46.56	45.39	74.00	-28.61	peak
4	6036.421	8.26	34.60	42.37	49.35	49.84	74.00	-24.16	peak
5	7386.000	8.91	35.81	41.34	47.64	51.02	74.00	-22.98	peak
6	9848.000	10.73	37.44	37.35	41.37	52.19	74.00	-21.81	peak



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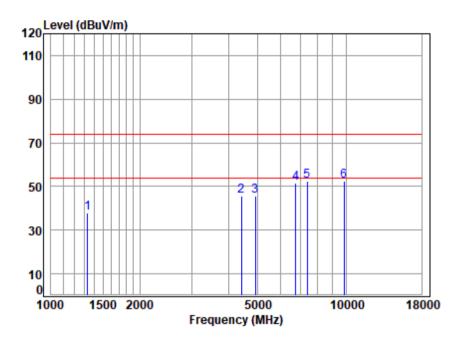
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Test Mode: 02; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High



Site : chamber

Condition: 3m VERTICAL

Job No : 20798AT/20800AT

Mode : 2462 TX RSE

Note : 2.4G WIFI 11N20

		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	
	1331.288	3.00	25.38	39.85	49.49	38.02	74.00	-35.98	peak
2	4417.841	6.68	32.94	41.80	47.96	45.78	74.00	-28.22	peak
}	4924.000	7.22	33.85	42.24	46.80	45.63	74.00	-28.37	peak
ļ	6737.207	8.41	35.04	41.87	50.08	51.66	74.00	-22.34	peak
,	7386.000	8.91	35.81	41.34	48.90	52.28	74.00	-21.72	peak
)	9848.000	10.73	37.44	37.35	41.58	52.40	74.00	-21.60	peak



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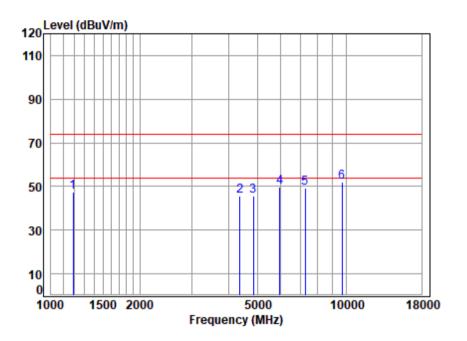
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Test Mode: 02; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



Site : chamber

Condition: 3m HORIZONTAL Job No : 20798AT/20800AT

Mode : 2422 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/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1189.368	2.74	25.07	39.75	59.42	47.48	74.00	-26.52	peak
2	4367.058	6.64	32.90	41.75	47.64	45.43	74.00	-28.57	peak
3	4844.000	7.14	33.70	42.17	46.74	45.41	74.00	-28.59	peak
4	5967.033	8.25	34.57	42.40	49.25	49.67	74.00	-24.33	peak
5	7266.000	8.79	35.72	41.45	46.32	49.38	74.00	-24.62	peak
6	9688.000	10.78	37.38	37.63	41.66	52.19	74.00	-21.81	peak



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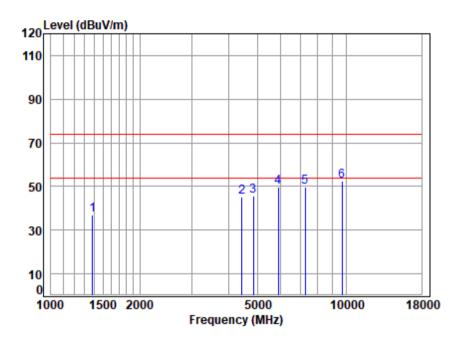
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Test Mode: 02; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



Site : chamber

Condition: 3m VERTICAL

Job No : 20798AT/20800AT

Mode : 2422 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/m	dB	dBuV	dBuV/m	dBuV/m	dB	
4	1396 364	2 00	25 40	20.00	40.07	36.06	74.00	27.04	
1	1386.264	3.08	25.49	39.88	48.2/	36.96	74.00	-37.04	реак
2	4443.453	6.71	32.96	41.82	47.29	45.14	74.00	-28.86	peak
3	4844.000	7.14	33.70	42.17	46.93	45.60	74.00	-28.40	peak
4	5881.418	8.24	34.51	42.39	49.55	49.91	74.00	-24.09	peak
5	7266.000	8.79	35.72	41.45	46.67	49.73	74.00	-24.27	peak
6	9688.000	10.78	37.38	37.63	41.93	52.46	74.00	-21.54	peak



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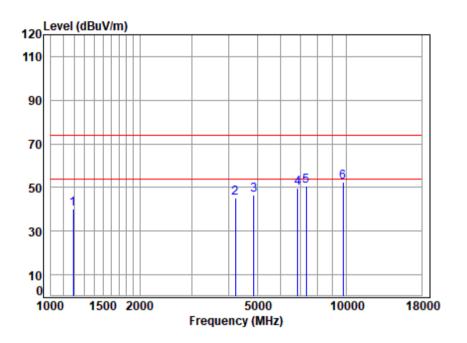
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Test Mode: 02; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:middle



Site : chamber

Condition: 3m HORIZONTAL Job No : 20798AT/20800AT

: 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	1189.368	2.74	25.07	39.75	51.95	40.01	74.00	-33.99	peak
2	4218.186	6.50	32.78	41.61	47.63	45.30	74.00	-28.70	peak
3	4874.000	7.17	33.76	42.20	47.70	46.43	74.00	-27.57	peak
4	6855.063	8.47	35.25	41.80	47.76	49.68	74.00	-24.32	peak
5	7311.000	8.84	35.75	41.41	47.36	50.54	74.00	-23.46	peak
6	9748.000	10.76	37.40	37.52	41.72	52.36	74.00	-21.64	peak



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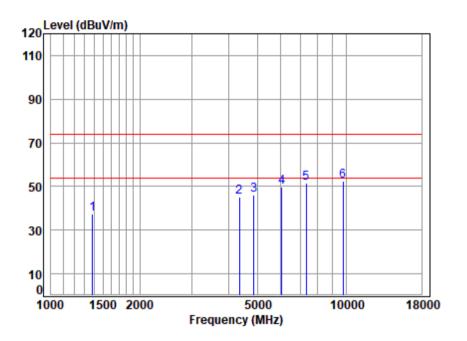
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Test Mode: 02; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:middle



Site : chamber

Condition: 3m VERTICAL

Job No : 20798AT/20800AT

: 2437 TX RSE Mode

: 2.4G WIFI 11N40 Note

	Freq			Preamp Factor					Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1386.264	3.08	25.49	39.88	48.56	37.25	74.00	-36.75	peak
2	4354.454	6.63	32.89	41.74	47.49	45.27	74.00	-28.73	peak
3	4874.000	7.17	33.76	42.20	47.15	45.88	74.00	-28.12	peak
4	6053.894	8.26	34.60	42.36	49.14	49.64	74.00	-24.36	peak
5	7311.000	8.84	35.75	41.41	48.17	51.35	74.00	-22.65	peak
6	9748.000	10.76	37.40	37.52	41.83	52.47	74.00	-21.53	peak



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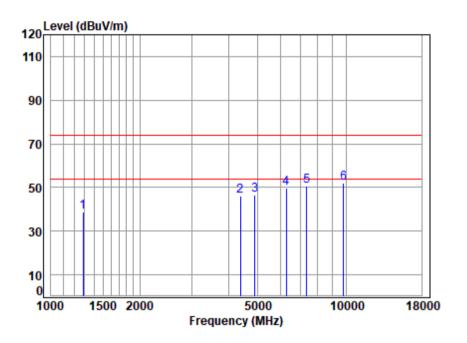
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Test Mode: 02; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High



Site : chamber

Condition: 3m HORIZONTAL Job No : 20798AT/20800AT

Mode : 2452 TX RSE

Note : 2.4G WIFI 11N40

		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	1285.904	2.92	25.28	39.82	50.29	38.67	74.00	-35.33	peak
2	4379.699	6.65	32.91	41.77	48.10	45.89	74.00	-28.11	peak
3	4904.000	7.20	33.82	42.22	47.62	46.42	74.00	-27.58	peak
4	6267.553	8.27	34.60	42.20	49.21	49.88	74.00	-24.12	peak
5	7356.000	8.88	35.79	41.37	47.19	50.49	74.00	-23.51	peak
6	9808.000	10.75	37.42	37.42	41.43	52.18	74.00	-21.82	peak



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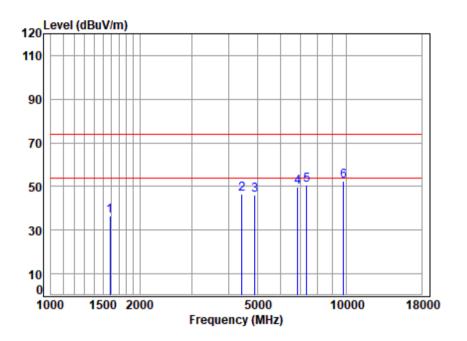
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Test Mode: 02; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:High



Site : chamber

Condition: 3m VERTICAL

Job No : 20798AT/20800AT

Mode : 2452 TX RSE

Note : 2.4G WIFI 11N40

		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	1587.975	3.34	26.16	40.00	47.11	36.61	74.00	-37.39	peak
2	4443.453	6.71	32.96	41.82	48.65	46.50	74.00	-27.50	peak
3	4904.000	7.20	33.82	42.22	47.10	45.90	74.00	-28.10	peak
4	6855.063	8.47	35.25	41.80	47.73	49.65	74.00	-24.35	peak
5	7356.000	8.88	35.79	41.37	47.32	50.62	74.00	-23.38	peak
6	9808.000	10.75	37.42	37.42	41.72	52.47	74.00	-21.53	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:

Erequency of emission/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 3	0MHz				

#### 8.1.1 E.U.T. Operation

Operating Environment:

Temperature: 21.0 °C Humidity: 57.6 % RH Atmospheric Pressure: 1010 mbar

### 8.1.2 Test Mode Description

0.1.2 103	C. 1.2 Test mode bescription									
Pre-scan Final test		Description								
Final test	02	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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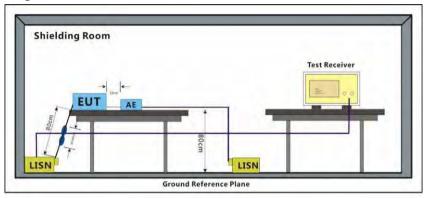
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### 8.1.3 Test Setup Diagram



#### 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



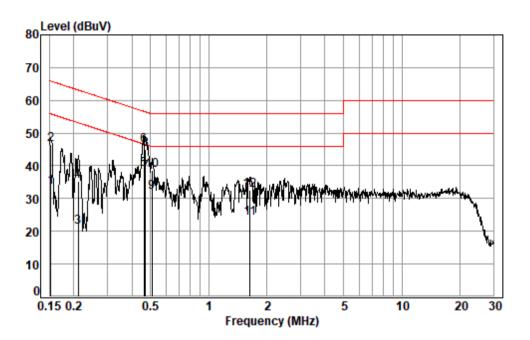
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Test Mode: 02; Line: Live line; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



: Shielding Room

Condition: Line Job No. : 20799AT

Test mode: 02

		Cable	LISN	Read		Limit	0ver	
	Freq	Loss	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.1524	0 02	0.70	22 01	22 E4	EE 07	22 22	Augnoss
1	0.1524	0.03	9.70	23.81	33.54	33.67	-22.33	Average
2	0.1524	0.03	9.70	36.84	46.57	65.87	-19.30	QP
3	0.2117	0.04	9.73	11.65	21.42	53.14	-31.72	Average
4	0.2117	0.04	9.73	25.53	35.30	63.14	-27.84	QP
5	0.4612	0.07	9.77	29.22	39.06	46.67	-7.61	Average
6	0.4612	0.07	9.77	36.26	46.10	56.67	-10.57	QP
7	0.4711	0.07	9.77	28.07	37.91	46.49	-8.58	Average
8	0.4711	0.07	9.77	35.16	45.00	56.49	-11.49	QP
9	0.5101	0.07	9.77	21.99	31.83	46.00	-14.17	Average
10	0.5101	0.07	9.77	28.66	38.50	56.00	-17.50	QP
11	1.6363	0.12	9.80	14.24	24.16	46.00	-21.84	Average
12	1.6363	0.12	9.80	22.64	32.56	56.00	-23.44	QP



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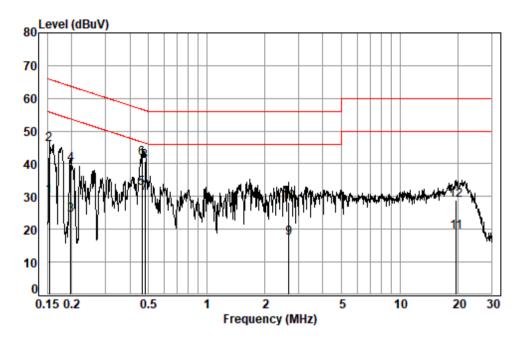
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Test Mode: 02; Line: Neutral Line; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



: Shielding Room

Condition: Neutral Job No. : 20799AT

Test mode: 02

		Cable	LISN	Read		Limit	0ver	
	Freq	Loss	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.1532	0.03	9.71	20.52	30.26	55.82	-25.56	Average
2	0.1532	0.03	9.71	36.05	45.79		-20.03	_
3	0.1976	0.04	9.72	14.47	24.23	53.71	-29.48	Äverage
4	0.1976	0.04	9.72	30.09	39.85	63.71	-23.86	QP
5	0.4637	0.07	9.76	22.58	32.41	46.63	-14.22	Average
6	0.4637	0.07	9.76	31.73	41.56	56.63	-15.07	QP
7	0.4786	0.07	9.76	21.27	31.10	46.36	-15.26	Average
8	0.4786	0.07	9.76	30.95	40.78	56.36	-15.58	QP
9	2.6641	0.14	9.83	7.26	17.23	46.00	-28.77	Average
10	2.6641	0.14	9.83	18.33	28.30	56.00	-27.70	QP
11	19.6354	0.17	10.83	8.11	19.11	50.00	-30.89	Average
12	19.6354	0.17	10.83	17.82	28.82	60.00	-31.18	QP



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#### **Test Setup Photo** 9

Refer to Setup Photos

# 10 EUT Constructional Details (EUT Photos)

Refer to External and Internal Photos for SZCR2104020799AT



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# 11 Appendix

### Appendix for 15.247

### 1. Duty Cycle

#### 1.1 Test Result

Test Mode	Channel Frequency (MHz)	ТХ Туре	ANT No.	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
	2412	SISO	1	12.420	12.570	98.81	0.05
802.11b	2437	SISO	1	12.420	12.560	98.89	0.05
	2462	SISO	1	12.410	12.540	98.96	0.05
	2412	SISO	1	2.064	2.227	92.68	0.33
802.11g	2437	SISO	1	2.063	2.217	93.05	0.31
	2462	SISO	1	2.034	2.185	93.09	0.31
	2412	SISO	1	1.890	2.060	91.75	0.37
802.11n(HT20)	2437	SISO	1	1.895	2.065	91.77	0.37
	2462	SISO	1	1.890	2.050	92.20	0.35
802.11n(HT40)	2422	SISO	1	0.943	1.115	84.57	0.73
	2437	SISO	1	0.916	1.065	86.01	0.65
	2452	SISO	1	0.944	1.116	84.59	0.73



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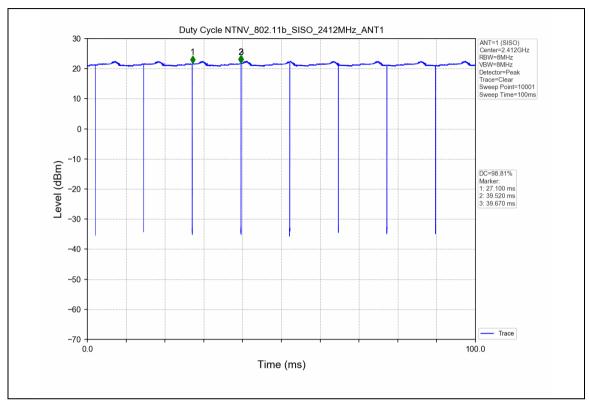
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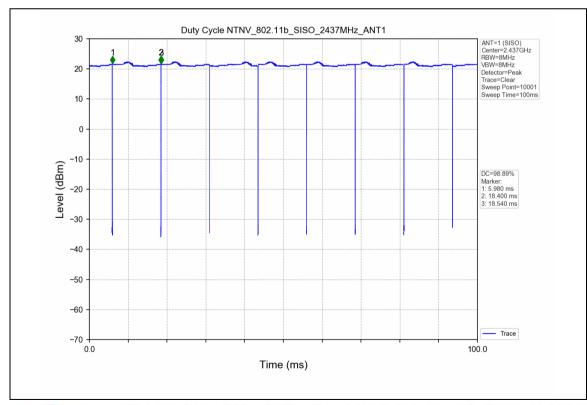


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### 1.2 Test Graph







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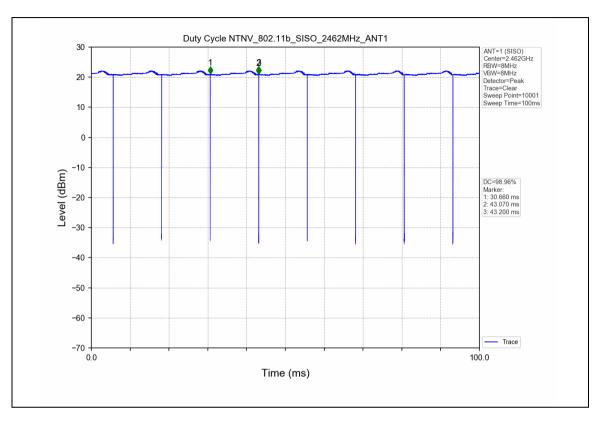
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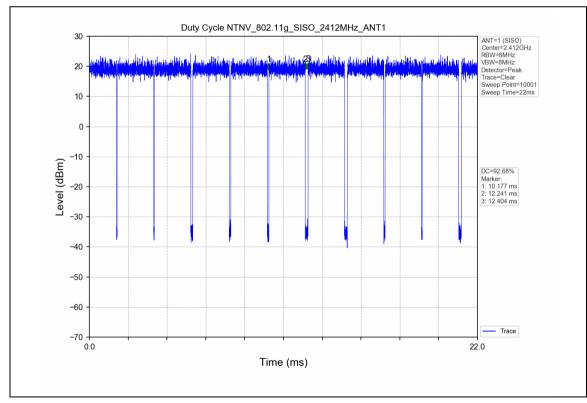
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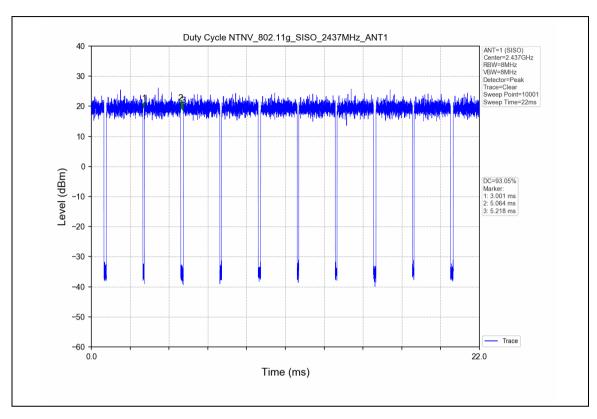
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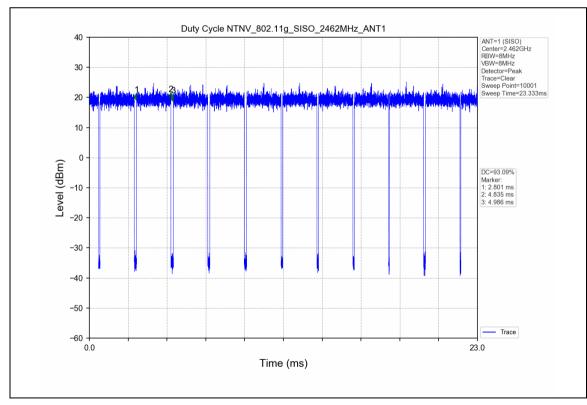
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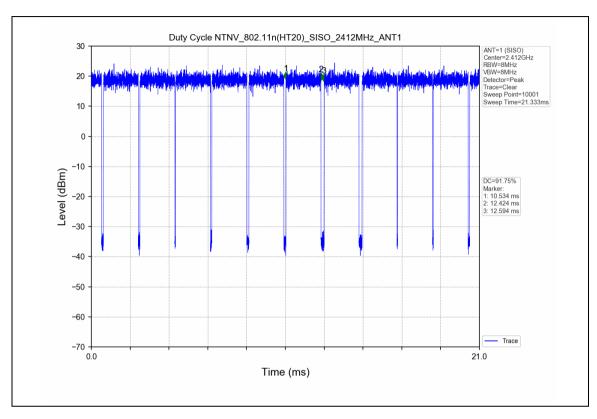
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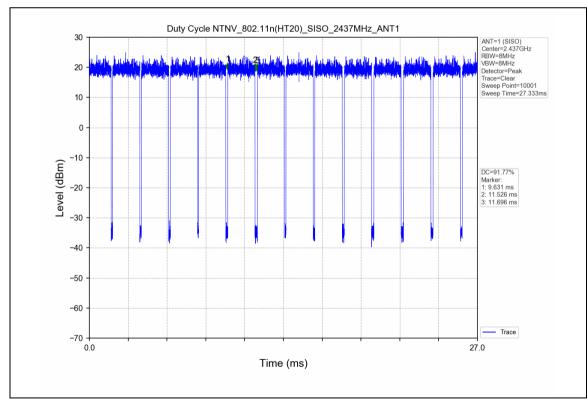
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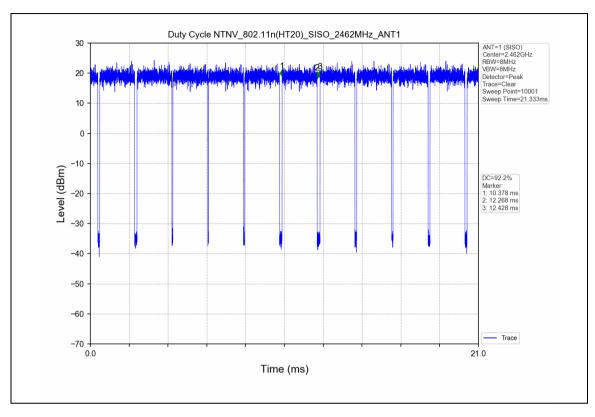
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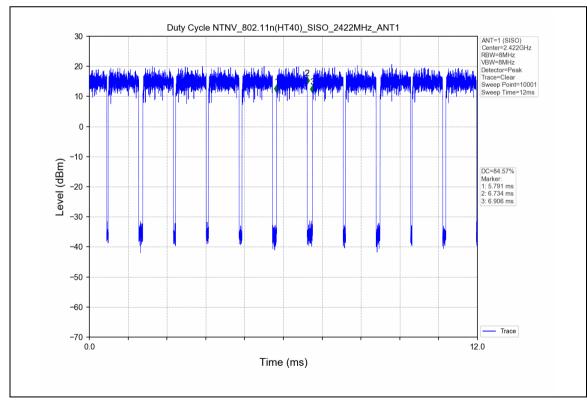
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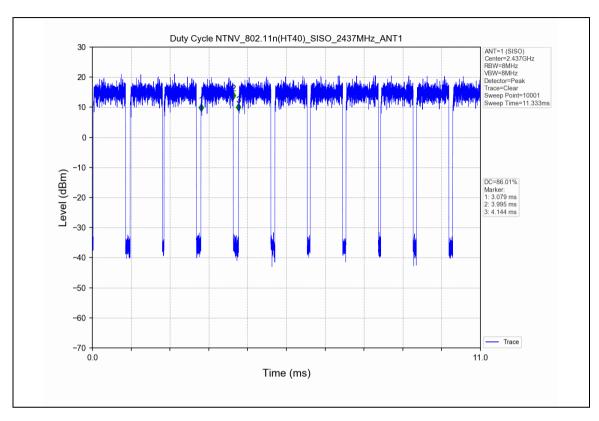
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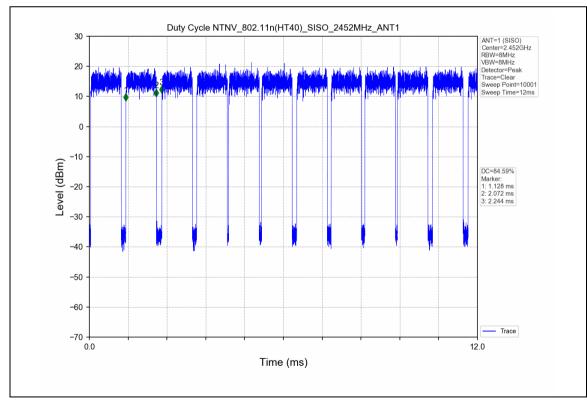
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#### 2. Bandwidth

#### 2.1 Test Result

Took Mode	Frequency	TV Turns	ANT No	6dB Bar	Verdict		
Test Mode	(MHz)	TX Type	ANT No.	Test Result (MHz)	Limits (MHz)	verdict	
	2412	SISO	1	8.589	≥0.5	PASS	
802.11b	2437	SISO	1	8.603	≥0.5	PASS	
	2462	SISO	1	8.590	≥0.5	PASS	
	2412	SISO	1	16.405	≥0.5	PASS	
802.11g	2437	SISO	1	16.397	≥0.5	PASS	
	2462	SISO	1	16.392	≥0.5	PASS	
802.11n(HT20)	2412	SISO	1	17.595	≥0.5	PASS	
	2437	SISO	1	17.413	≥0.5	PASS	
	2462	SISO	1	17.603	≥0.5	PASS	
802.11n(HT40)	2422	SISO	1	35.850	≥0.5	PASS	
	2437	SISO	1	35.889	≥0.5	PASS	
	2452	SISO	1	35.999	≥0.5	PASS	

Test Mode	Frequency	TV Type	ANT No.	99% Occupied Bandwidth Test Result (MHz)				
rest Mode	(MHz)	TX Type	ANT NO.					
	2412	SISO	1	13.389	Only for Report Use			
802.11b	2437	SISO	1	13.379	Only for Report Use			
	2462	SISO	1	13.355	Only for Report Use			
	2412	SISO	1	16.860	Only for Report Use			
802.11g	2437	SISO	1	16.897	Only for Report Use			
	2462	SISO	1	16.852	Only for Report Use			
802.11n(HT20)	2412	SISO	1	17.885	Only for Report Use			
	2437	SISO	1	17.977	Only for Report Use			
	2462	SISO	1	17.868	Only for Report Use			
	2422	SISO	1	36.667	Only for Report Use			
802.11n(HT40)	2437	SISO	1	36.702	Only for Report Use			
	2452	SISO	1	36.723	Only for Report Use			



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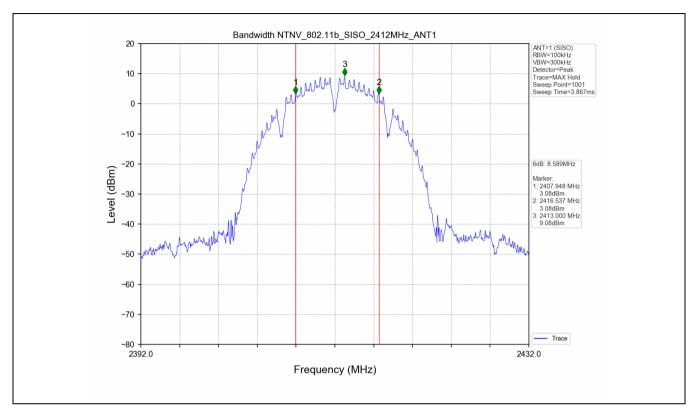
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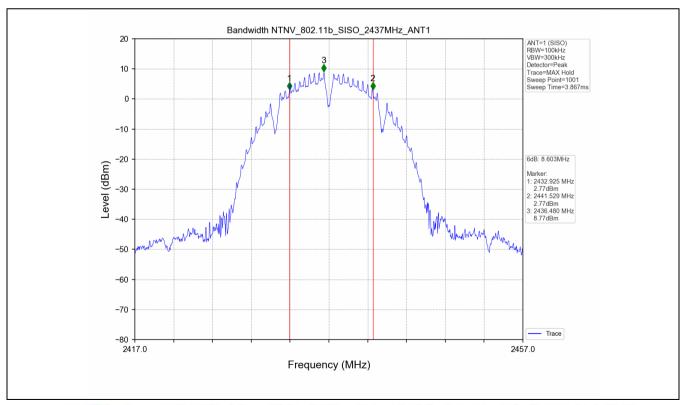


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### 2.2 Test Graph - 6dB Bandwidth







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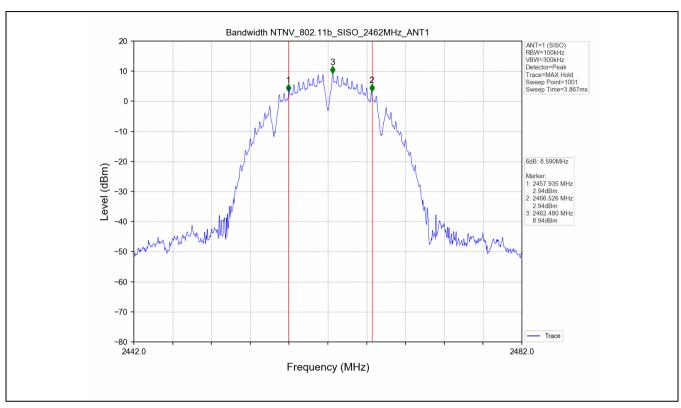
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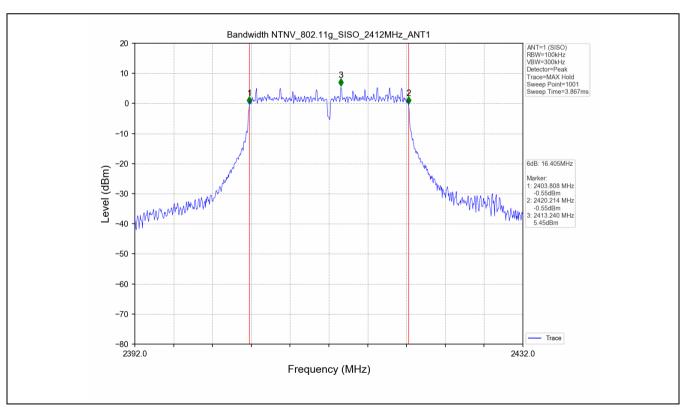
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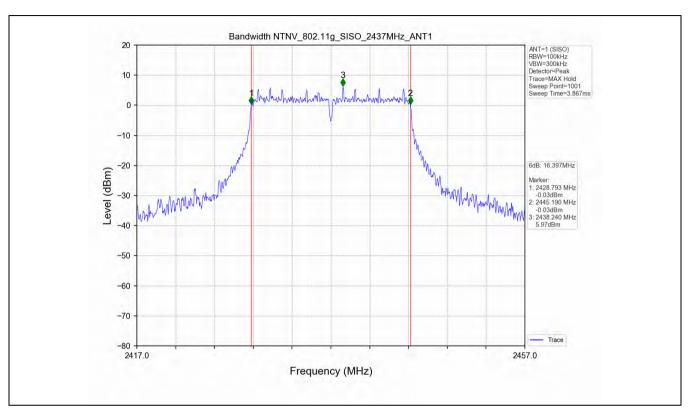
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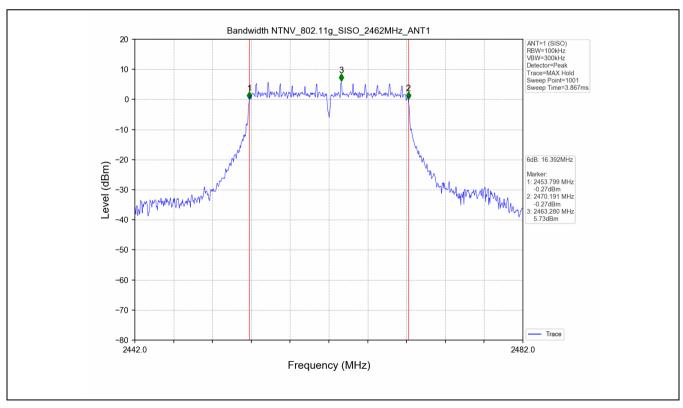
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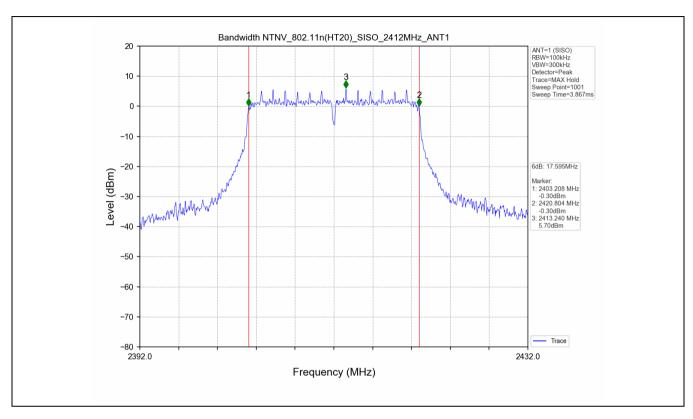
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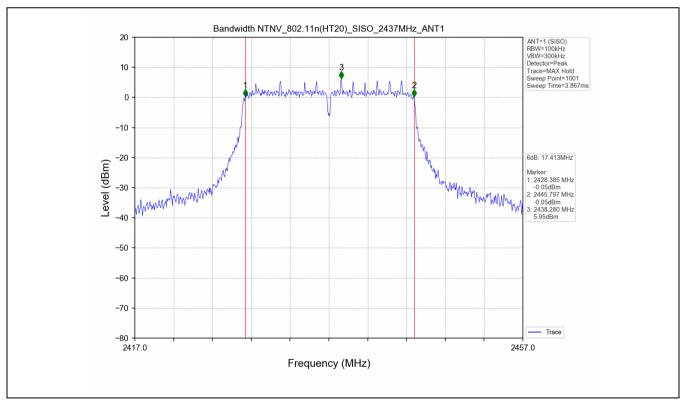
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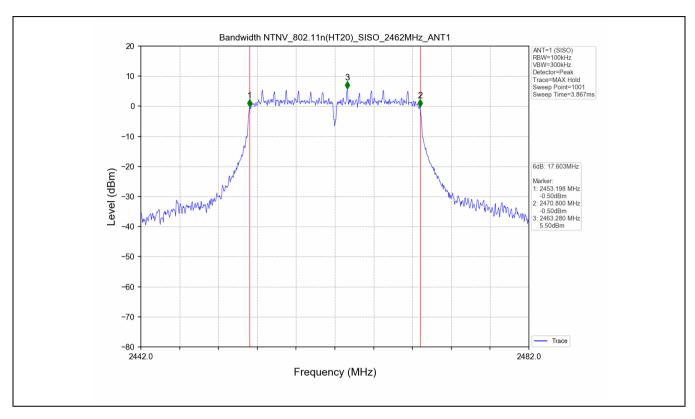
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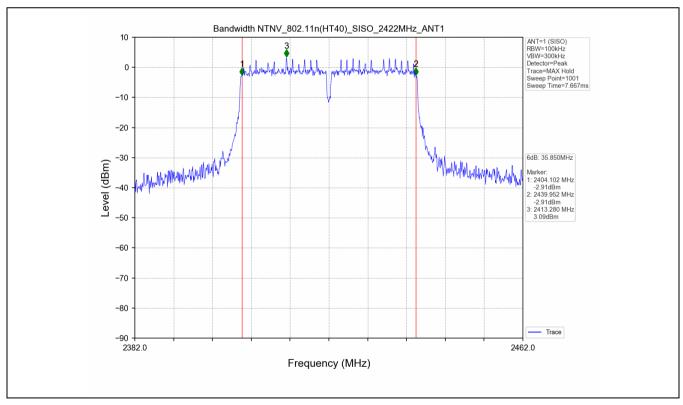
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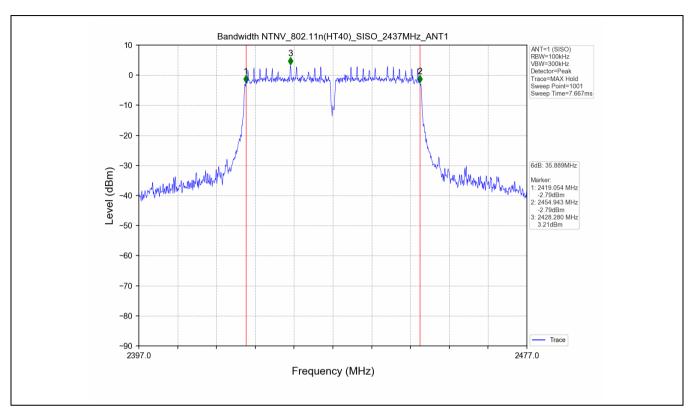
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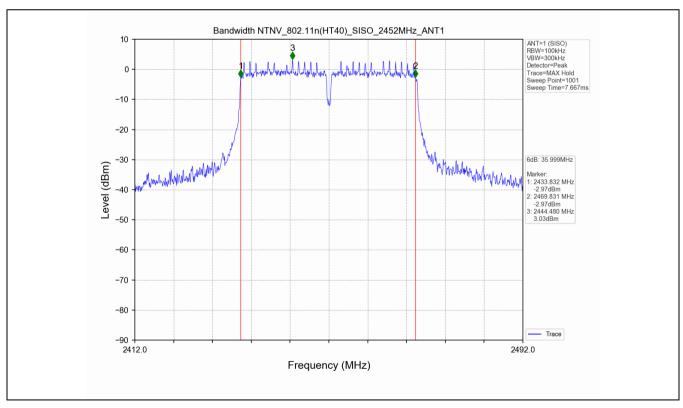
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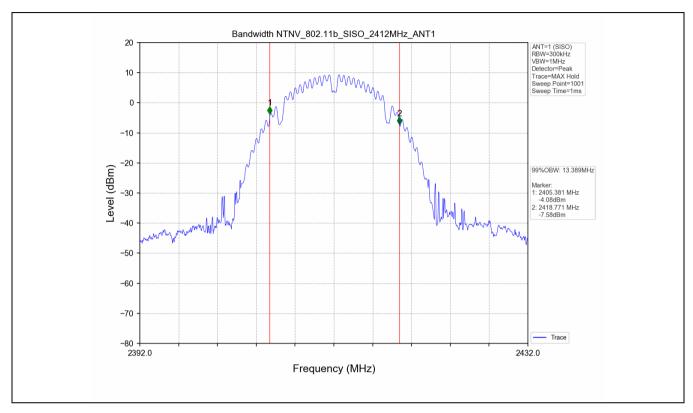
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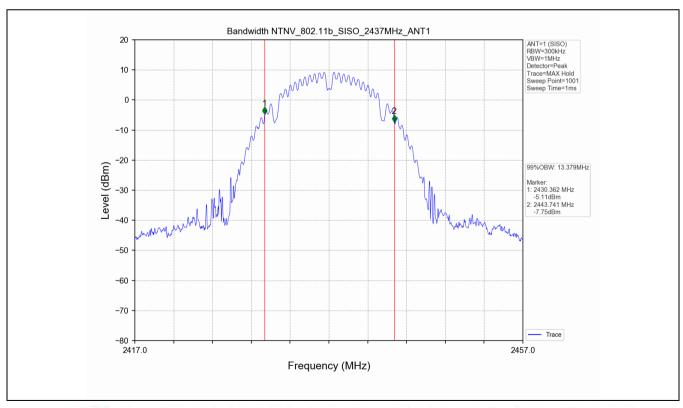


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### 2.3 Test Graph - 99% Occupied Bandwidth







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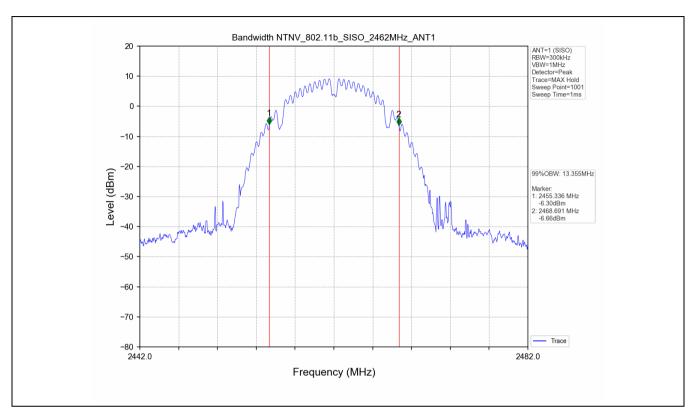
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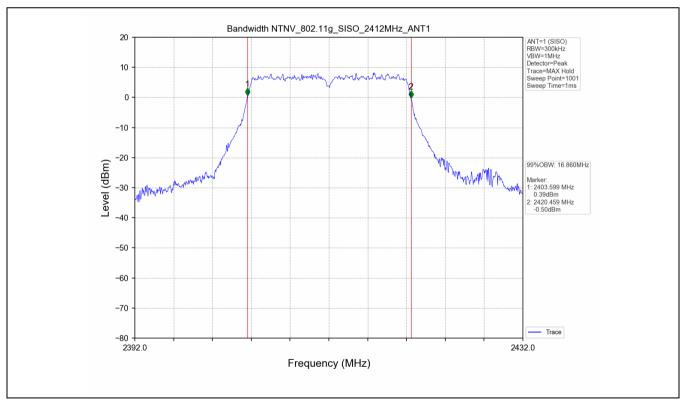
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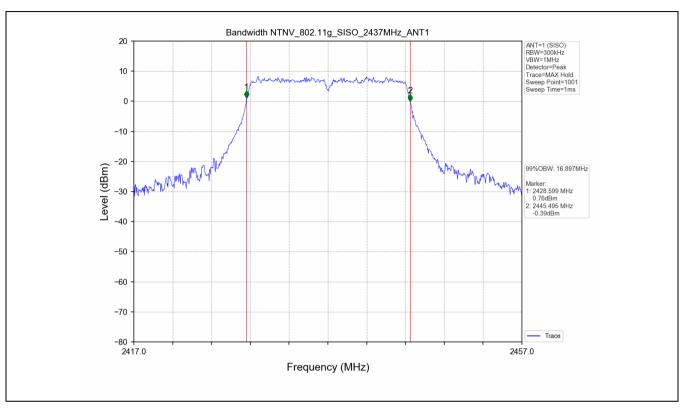
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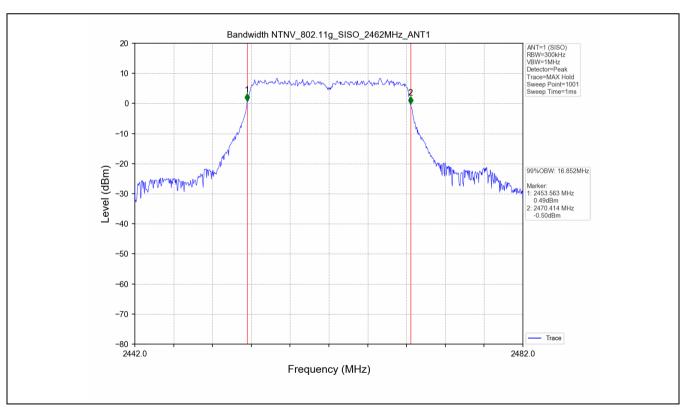
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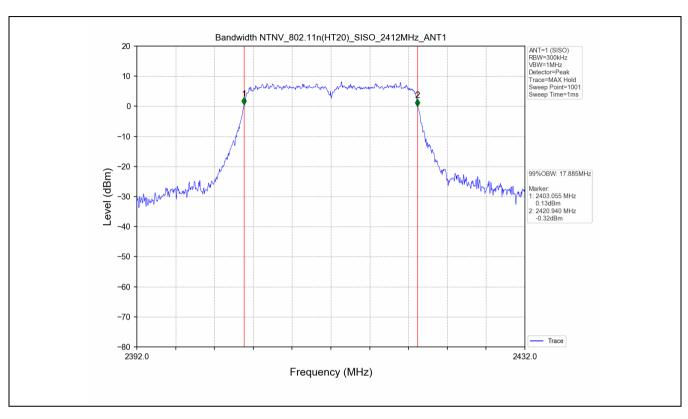
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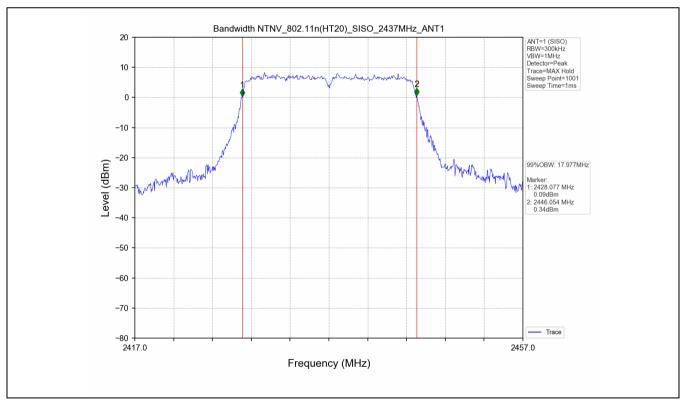
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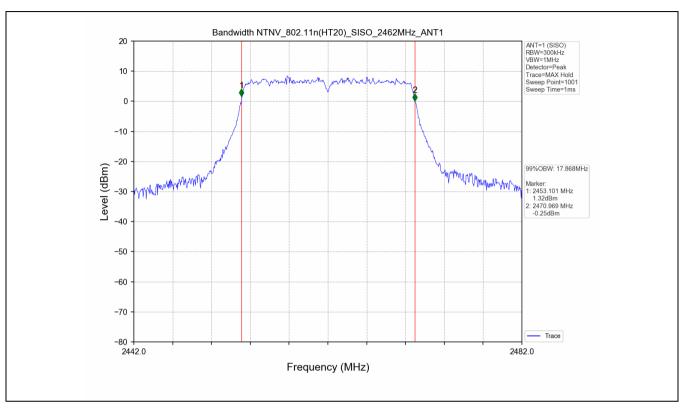
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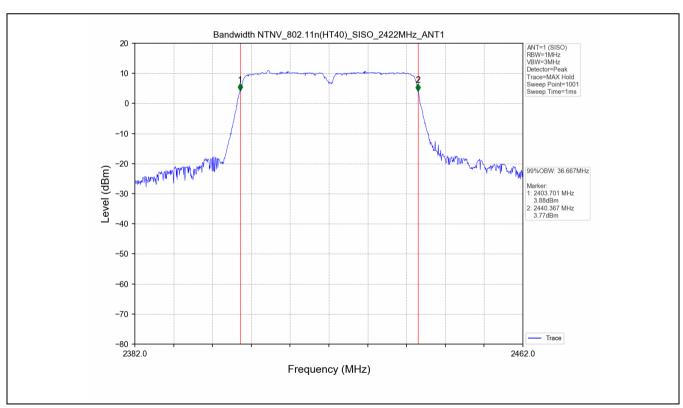
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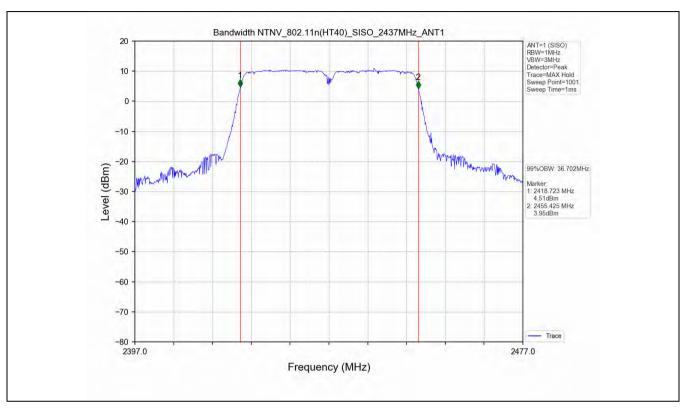
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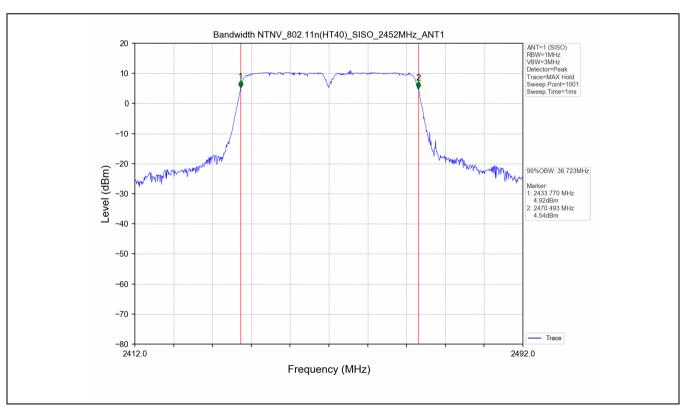
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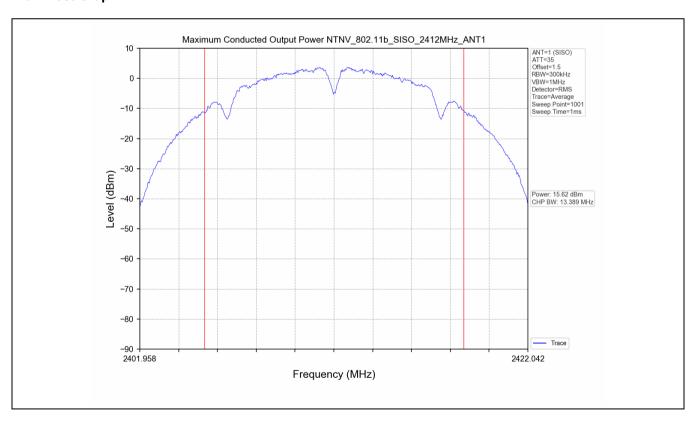
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#### 3. Maximum Conducted Output Power

#### 3.1 Test Result

Test Mode	Frequency (MHz)	Тх Туре	Measured Average Output Power (dBm)	Limits (dBm)	Verdict
			Ant 1		
802.11b	2412	SISO	15.62	30	PASS
	2437	SISO	15.45	30	PASS
	2462	SISO	15.24	30	PASS
802.11g	2412	SISO	16.78	30	PASS
	2437	SISO	16.98	30	PASS
	2462	SISO	16.83	30	PASS
802.11n(HT20)	2412	SISO	16.80	30	PASS
	2437	SISO	16.93	30	PASS
	2462	SISO	16.88	30	PASS
802.11n(HT40)	2422	SISO	17.09	30	PASS
	2437	SISO	17.20	30	PASS
	2452	SISO	17.18	30	PASS

#### 3.2 Test Graph





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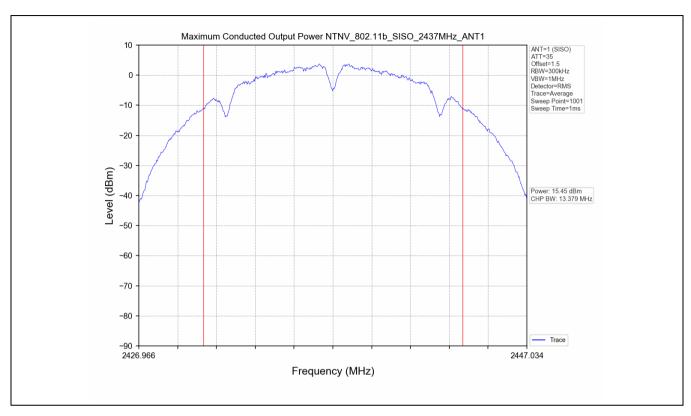
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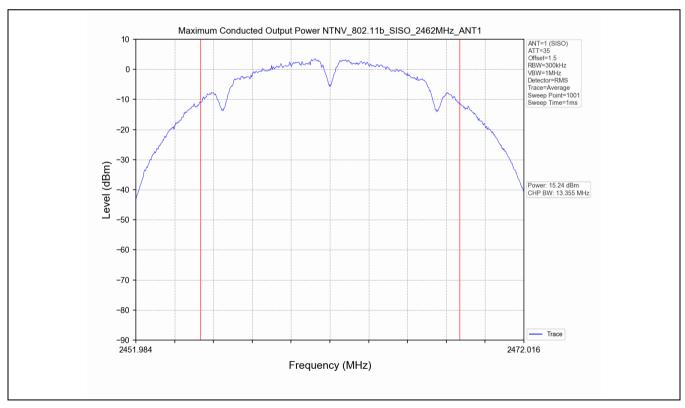
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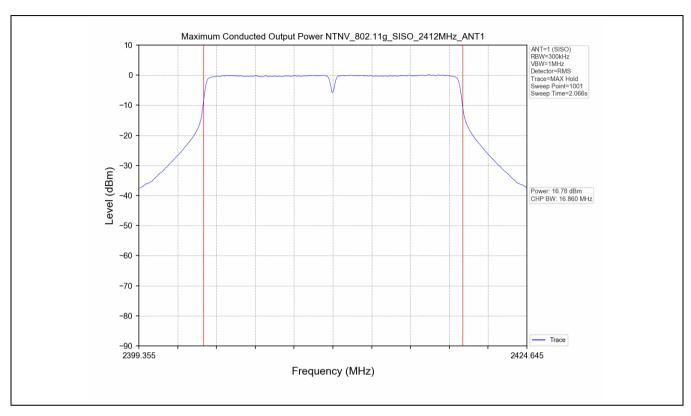
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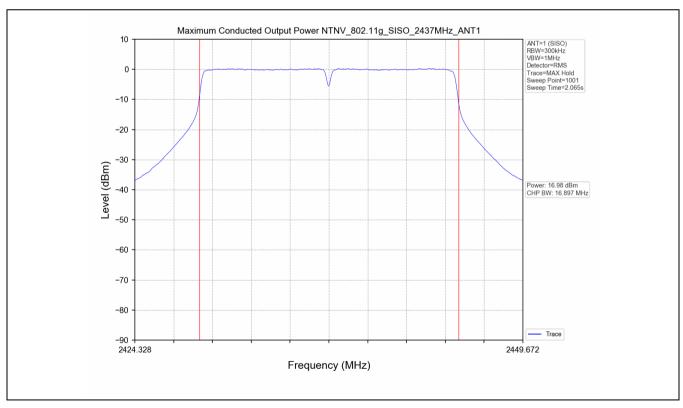
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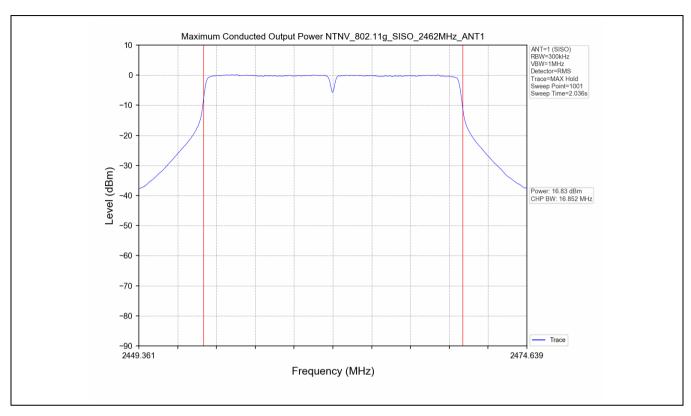
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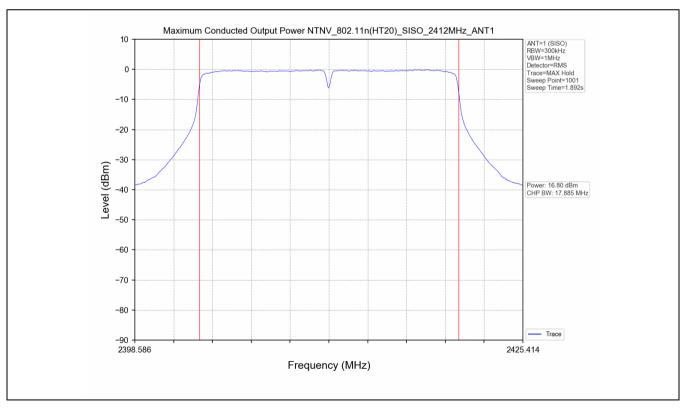
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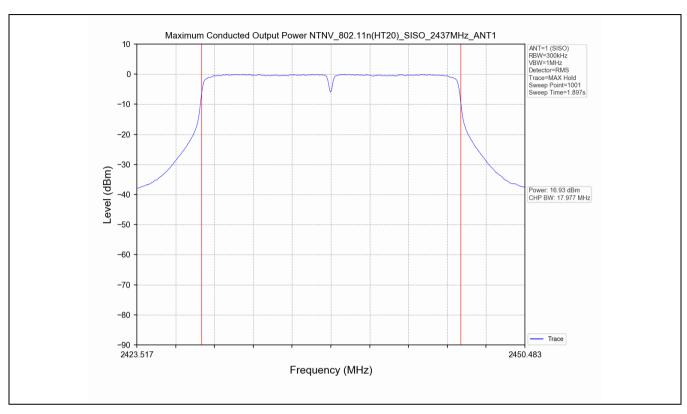
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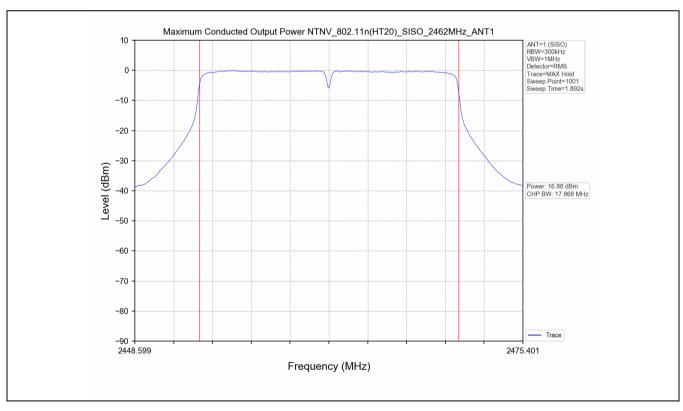
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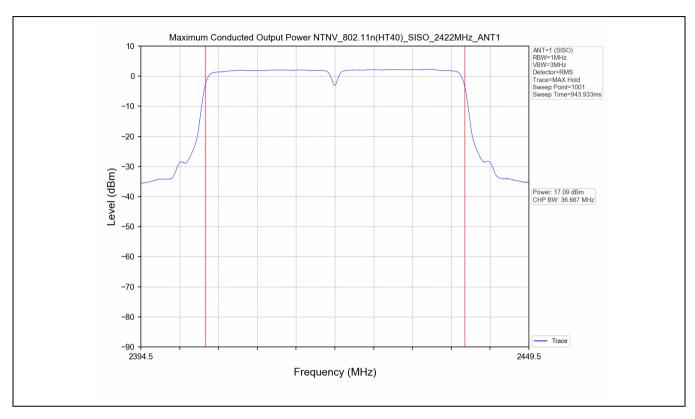
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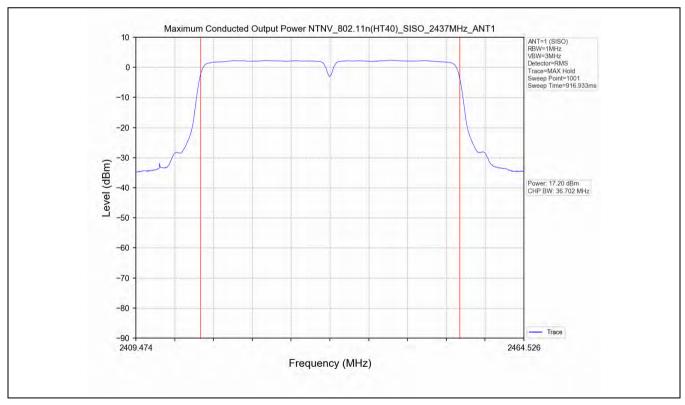
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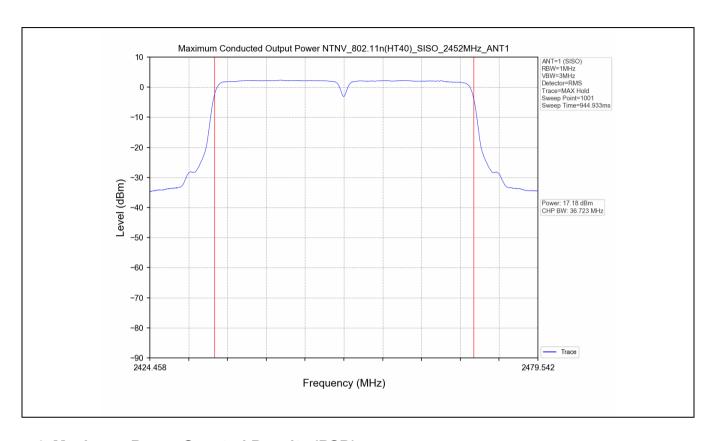
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#### 4. Maximum Power Spectral Density (PSD)

#### 4.1 Test Result

Test Mode	Frequency (MHz)	Тх Туре	Maximum Power Spectral Density (dBm/3KHz) Ant 1	Limits (dBm/3kHz)	Verdict	
802.11b	2412	SISO	-6.70	≤8	PASS	
	2437	SISO	-6.36	≤8	PASS	
	2462	SISO	-7.05	≤8	PASS	
802.11g	2412	SISO	-7.90	≤8	PASS	
	2437	SISO	-6.50	≤8	PASS	
	2462	SISO	-7.53	≤8	PASS	
802.11n(HT20)	2412	SISO	-7.97	≤8	PASS	
	2437	SISO	-8.48	≤8	PASS	
	2462	SISO	-8.12	≤8	PASS	
802.11n(HT40)	2422	SISO	-11.34	≤8	PASS	
	2437	SISO	-10.89	≤8	PASS	
	2452	SISO	-9.87	≤8	PASS	



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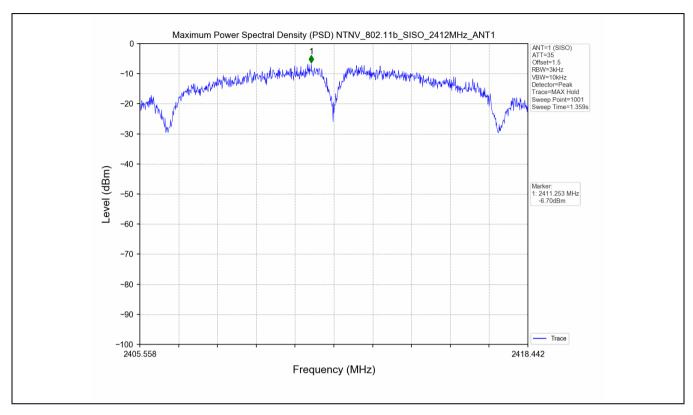


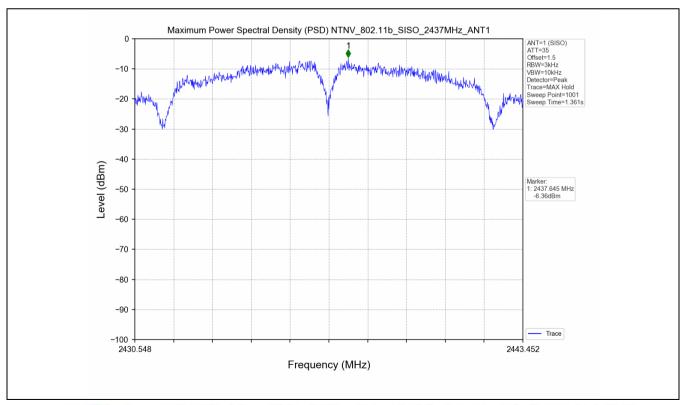
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#### 4.2 Test Graph







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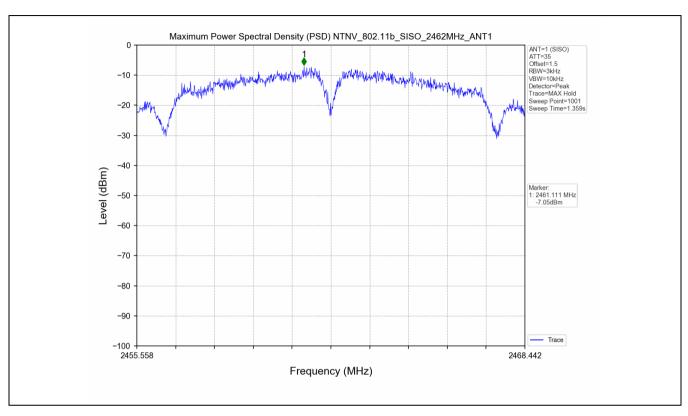
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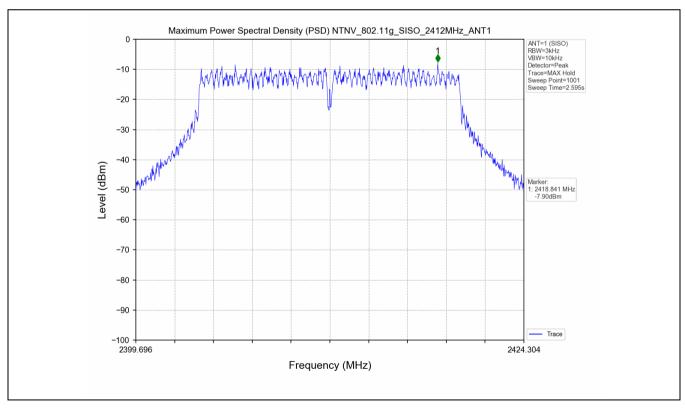
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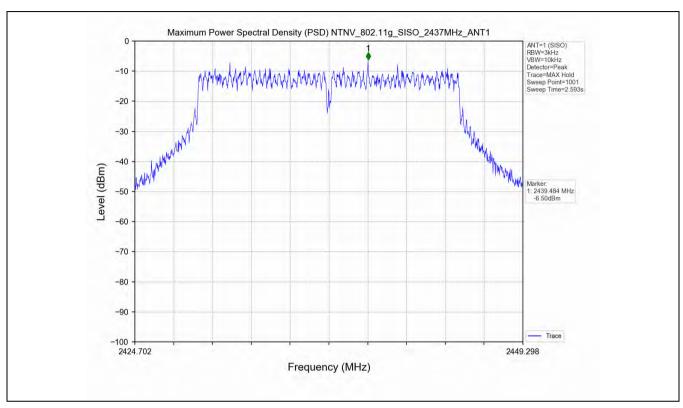
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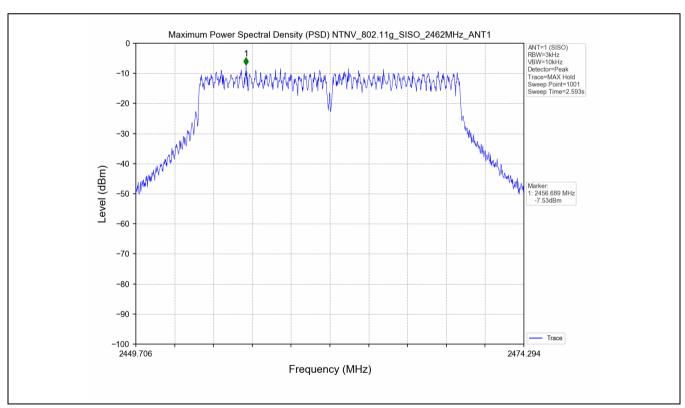
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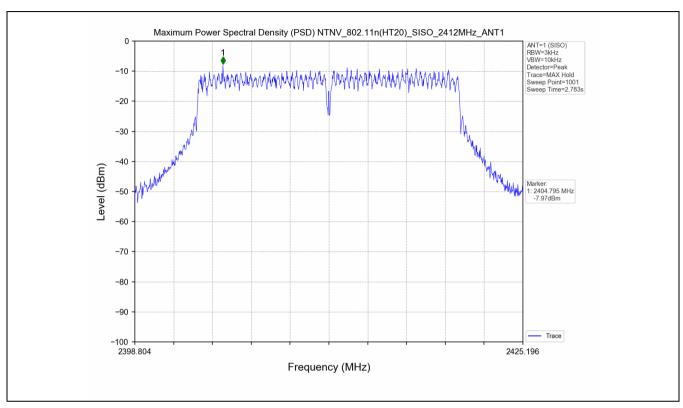
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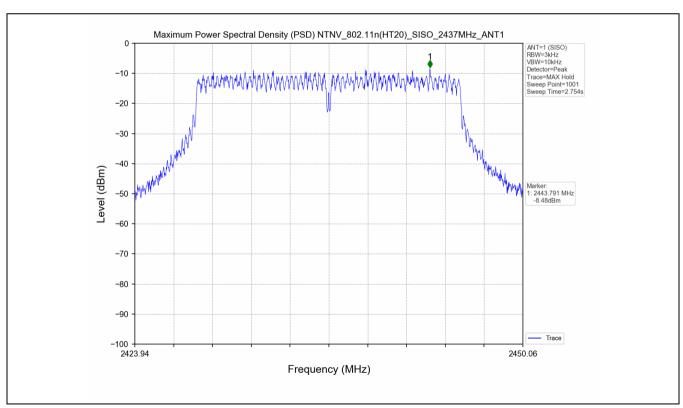
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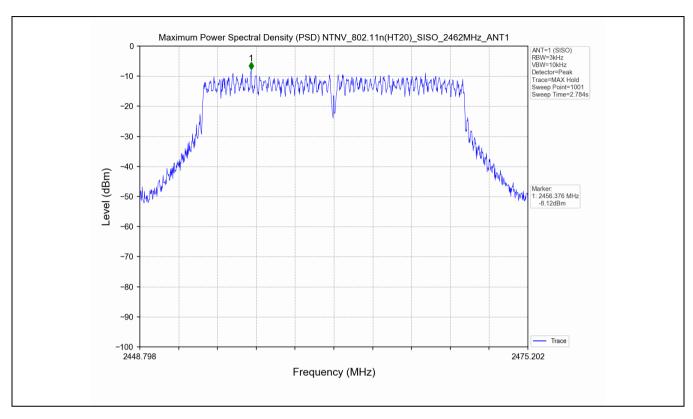
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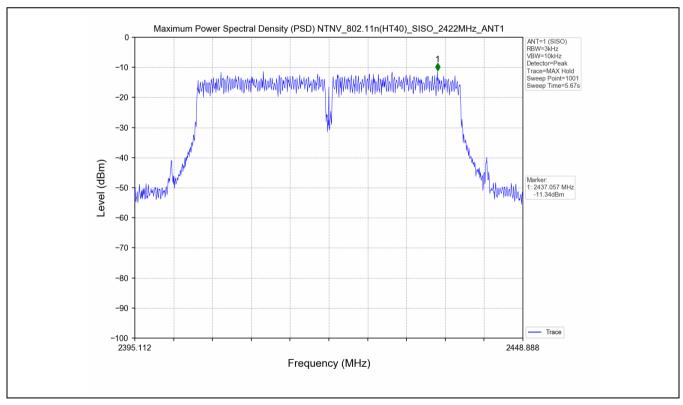
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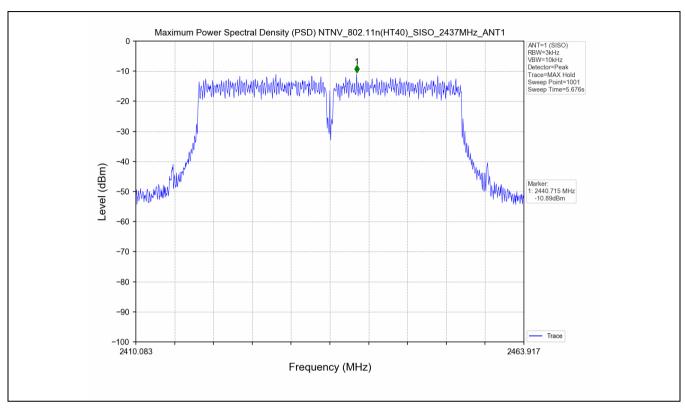
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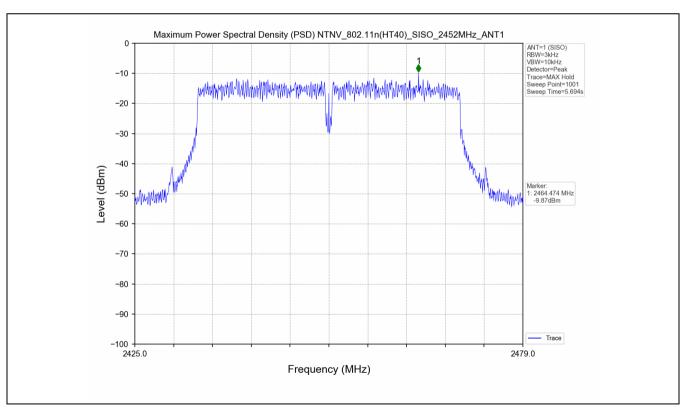
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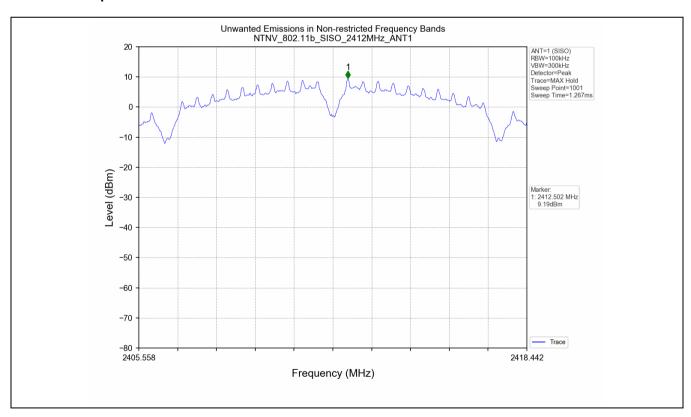
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#### 5. Unwanted Emissions in Non-restricted Frequency Bands

#### 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	-20.81	PASS
	2437	SISO	1	Refer to test graph	-20.81	PASS
	2462	SISO	1	Refer to test graph	-20.81	PASS
802.11g	2412	SISO	1	Refer to test graph	-24.11	PASS
	2437	SISO	1	Refer to test graph	-24.11	PASS
	2462	SISO	1	Refer to test graph	-24.11	PASS
802.11n(HT20)	2412	SISO	1	Refer to test graph	-24.22	PASS
	2437	SISO	1	Refer to test graph	-24.22	PASS
	2462	SISO	1	Refer to test graph	-24.22	PASS
802.11n(HT40)	2422	SISO	1	Refer to test graph	-26.70	PASS
	2437	SISO	1	Refer to test graph	-26.70	PASS
	2452	SISO	1	Refer to test graph	-26.70	PASS

#### 5.2 Test Graph





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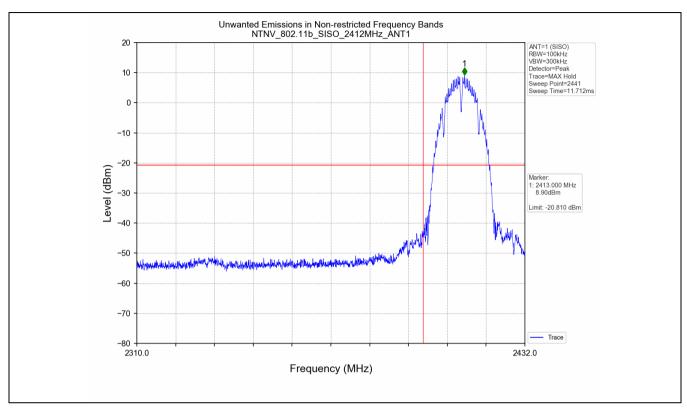
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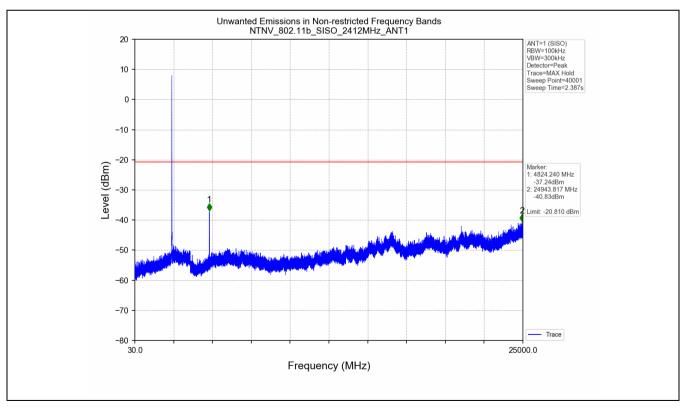
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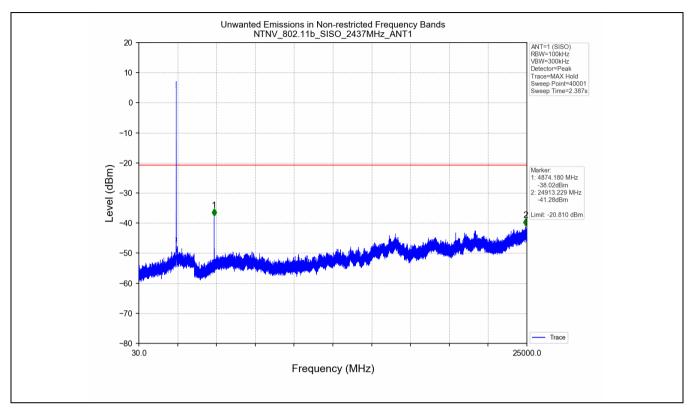
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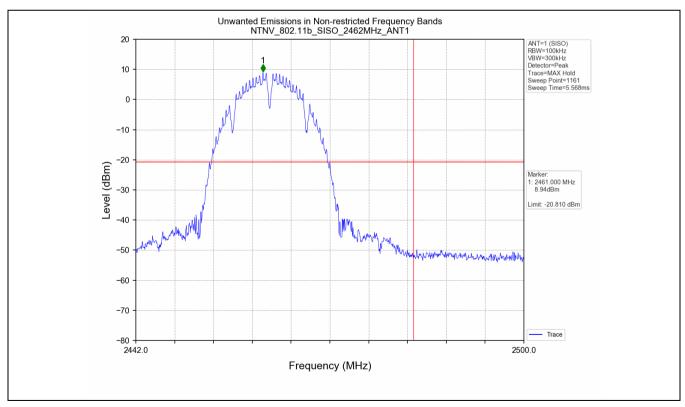
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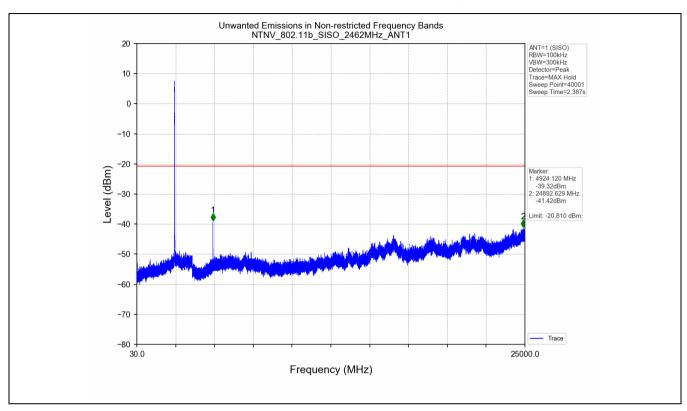
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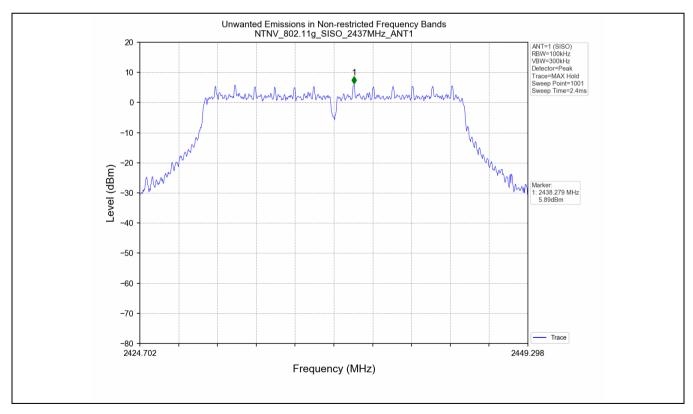
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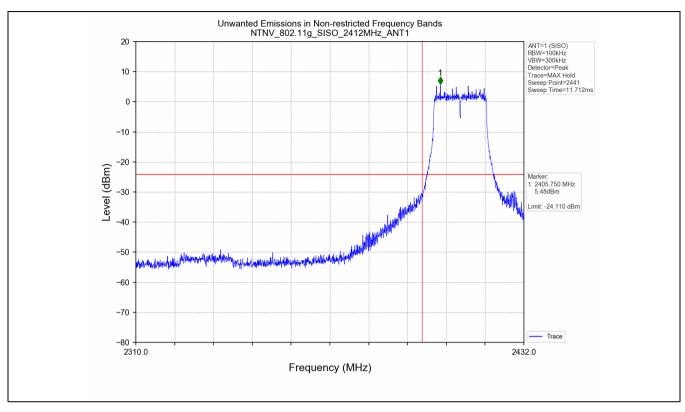
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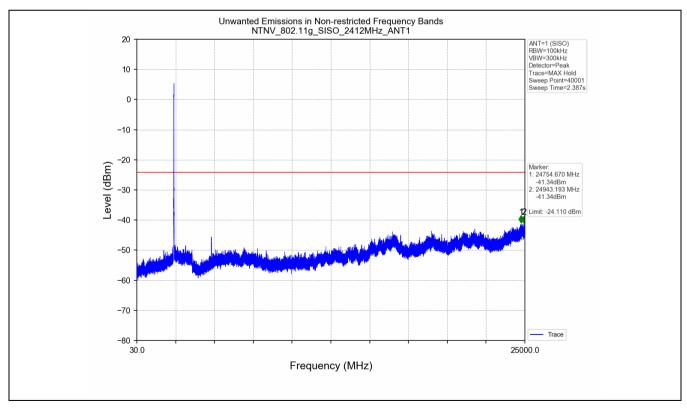
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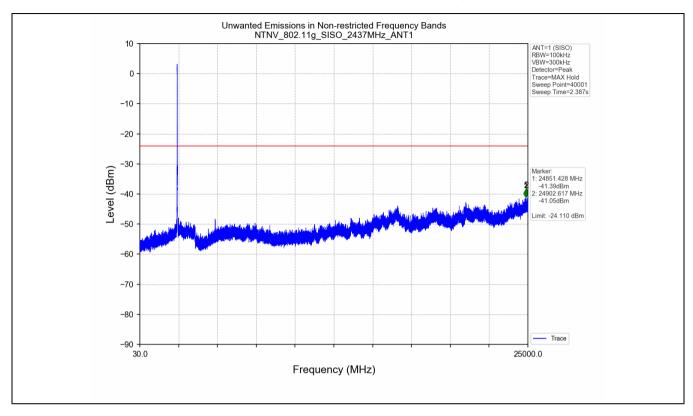
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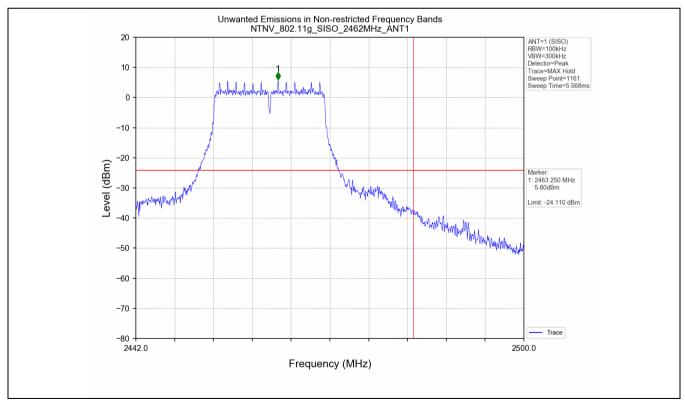
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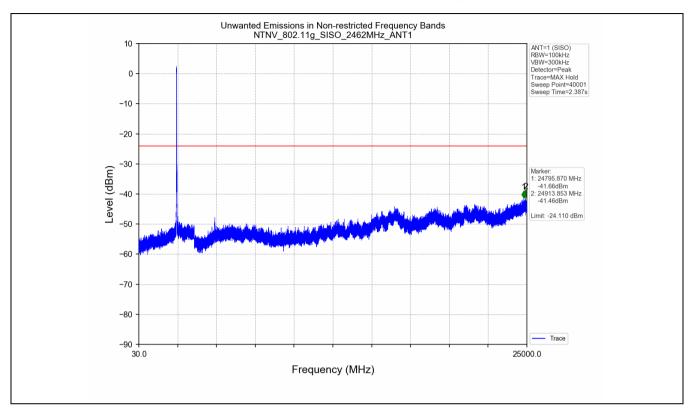
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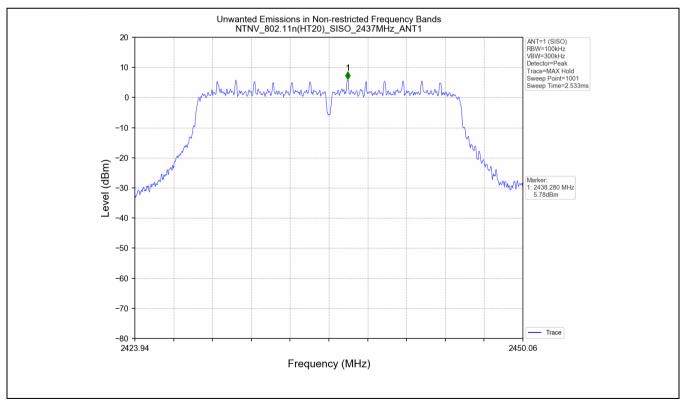
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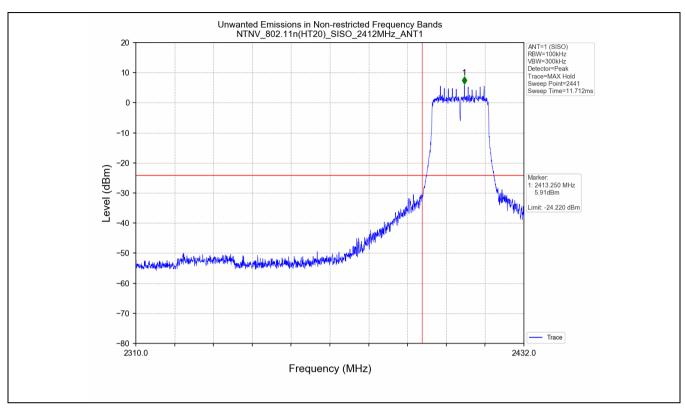
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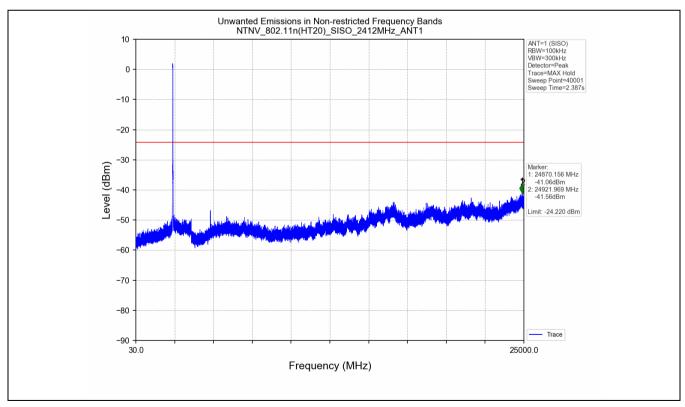
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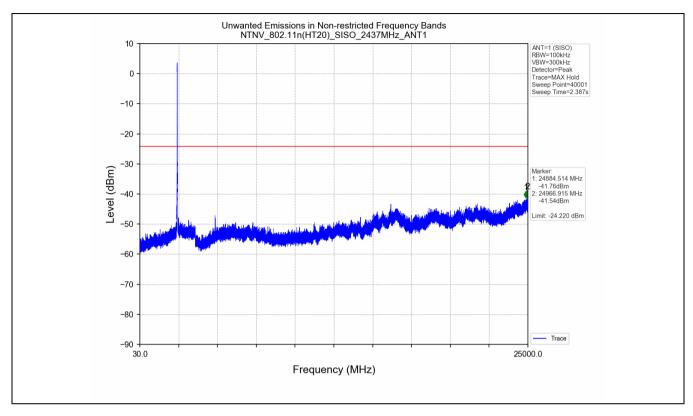
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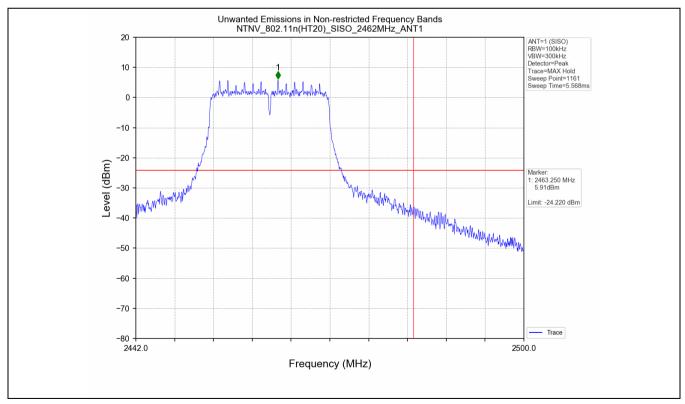
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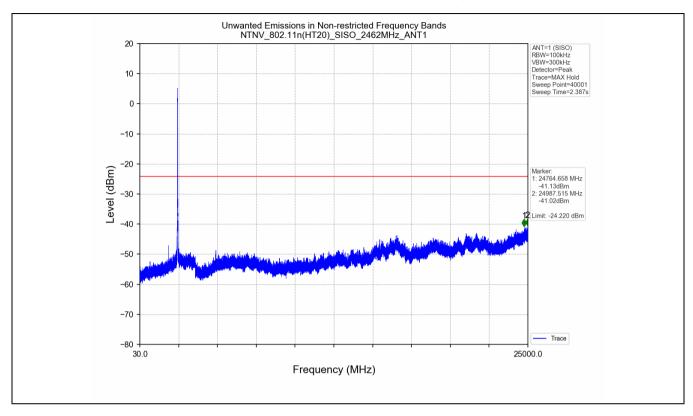
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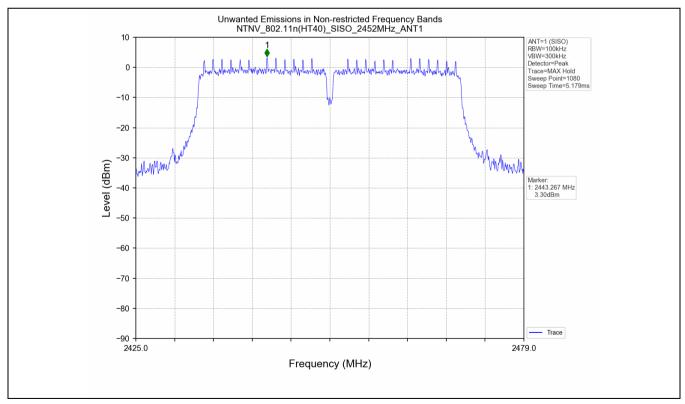
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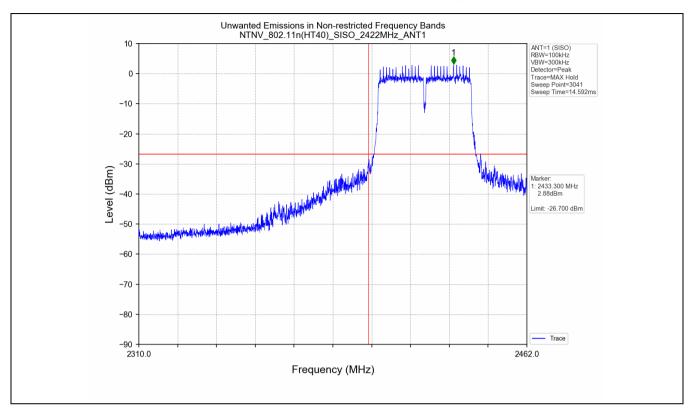
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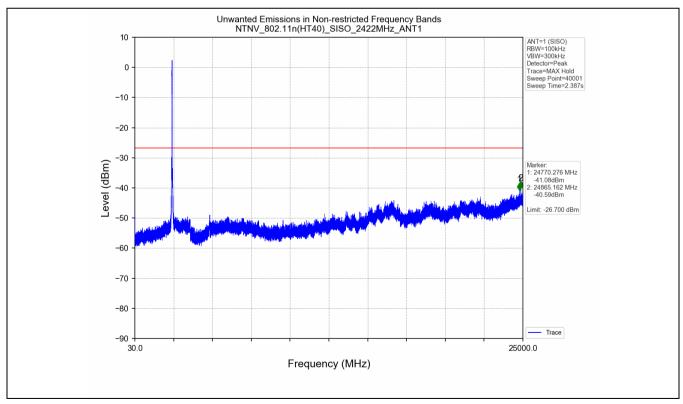
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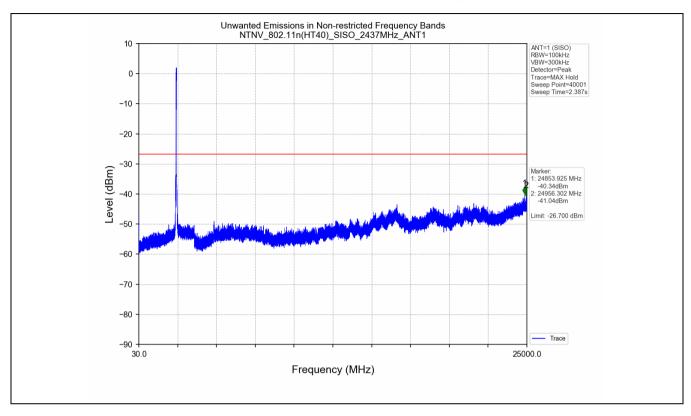
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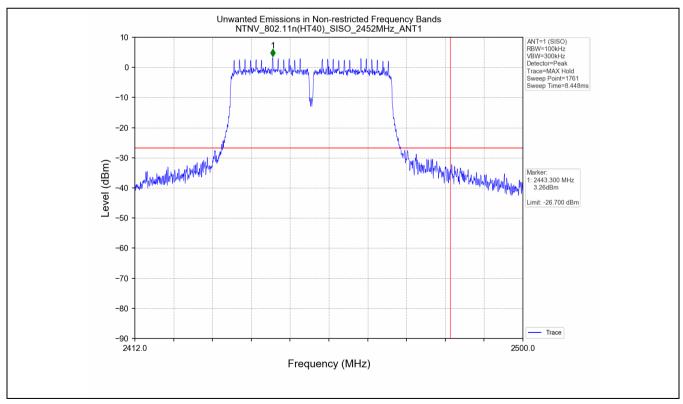
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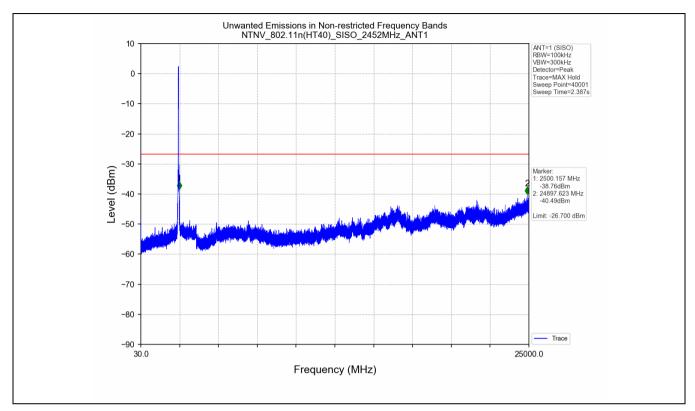
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