TEST REPORT

Application No.:	SHCR2504001038ME
FCC ID:	2BO7DEM5
Applicant:	Changzhou Sifary Medical Technology Co., Ltd.
Address of Applicant:	No. 26 Yandanghe Road, Xinbei District 213000 Changzhou Jiangsu, China
Manufacturer:	Changzhou Sifary Medical Technology Co., Ltd.
Address of Manufacturer:	No. 26 Yandanghe Road, Xinbei District 213000 Changzhou Jiangsu, China
Factory:	Changzhou Sifary Medical Technology Co., Ltd.
Address of Factory:	No. 26 Yandanghe Road, Xinbei District 213000 Changzhou Jiangsu, China
Equipment Under Test (EUT):	
EUT Name:	Intraoral Scanner
Model No.:	Helios 700, Helios 780, MyScanner-W, Helios 7X Pro
Remark:	Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.
Trade Mark:	Eighteeth for Helios 700 and Helios 780 MyScanner-W has no trade mark Eighteeth and PRECISION TECH for Helios 7X Pro
Standard(s) :	47 CFR Part 15, Subpart C 15.247
Date of Receipt:	2025-04-28
Date of Test:	2025-04-29 to 2025-05-29
Date of Issue:	2025-06-23
Test Result:	**Pass***

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

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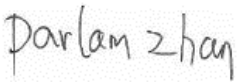
Member of the SGS Group (SGS SA)

Revision Record			
Version	**Description**	**Date**	**Remark**
00	Original	2025-06-23	/

Authorized for issue by:				
Tested By		 **Wade Zhang/Project Engineer**		
Approved By		 **Parlam Zhan / Reviewer**		

2 Test Summary

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

Radio Spectrum Matter Part				
Item	**Standard**	**Method**	**Requirement**	**Result**
Conducted Peak Output Power	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 11.9.2	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		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
Conducted Emissions at AC Power Line (150kHz-30MHz)		ANSI C63.10 (2013) Section 6.2	47 CFR Part 15, Subpart C 15.207	Pass

Note: There are series models mentioned in this report, and they are the similar in electrical and electronic characters. Only the model Helios 700 was tested since their differences were the model number and appearance.

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4 General Information

4.1 Details of E.U.T.

Power supply:	DC 3.6V 3300mAh Battery Charger Power supply: AC100-240V 50/60Hz Charger Power output: DC 6V 3A
Test voltage:	AC 120V 60Hz & DC 3.6V
Operation Frequency:	802.11b/g/n(HT20): 2412MHz to 2462MHz
Modulation Type:	802.11b: DSSS (DBPSK, DQPSK, CCK) 802.11g/n: OFDM (BPSK, QPSK, 16QAM, 64QAM)
Number of Channels:	802.11b/g/n(HT20):11
Channel Spacing:	5MHz
Antenna Type:	FPC Antenna
Antenna Gain:	2.32dBi (Provided by manufacturer)
Antenna Number:	1

4.2 Power level setting using in test:

Channel	802.11b	802.11g	802.11n(HT20)
1	17	15	14
6	17	15	14
11	17	15	14

4.3 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Laptop	LENOVO	ThinkPad T14p	-
Router	NETGEAR	RAX50	-
SecureCRT	VanDyke	V 6.2.0	-
Serial port adapter plate	-	Test Plate 3	-

4.4 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Radio Frequency	8.4×10^{-8}
2	Timeout	2s
3	Duty cycle	0.4%
4	Occupied Bandwidth	3%
5	RF conducted power	0.6dB
6	RF power density	2.9dB
7	Conducted Spurious emissions	0.75dB
8	RF Radiated power	5.2dB (Below 1GHz)
		5.9dB (Above 1GHz)
9	Radiated Spurious emission test	4.2dB (Below 30MHz)
		4.5dB (30MHz-1GHz)
		5.1dB (1GHz-6GHz)
		5.4dB (6GHz-18GHz)

10	Temperature test	1°C
11	Humidity test	3%
12	Supply voltages	1.5%
13	Time	3%

Note: The measurement uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

4.5 Test Location

All tests were performed at:
SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. E&E Lab
588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China
Tel: +86 21 6191 5666 Fax: +86 21 6191 5678
No tests were sub-contracted.
Note:
1. SGS is not responsible for wrong test results due to incorrect information (e.g. max. clock frequency, highest internal frequency, antenna gain, cable loss, etc) is provided by the applicant. (if applicable).
2. SGS is not responsible for the authenticity, integrity and the validity of the conclusion based on results of the data provided by applicant. (if applicable).
3. Sample source: sent by customer.

4.6 Test Facility

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

• A2LA (Certificate No. 6332.01)

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. is accredited by the American Association for Laboratory Accreditation(A2LA).

• FCC (Designation Number: CN1301)

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been recognized as an accredited testing laboratory.

• ISED (CAB Identifier: CN0020)

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. EMC Laboratory has been recognized by Innovation, Science and Economic Development Canada (ISED) as an accredited testing laboratory.
Company Number: 8617A

• VCCI (Member No.: 3061)

The 3m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-13868, C-14336, T-12221, G-10830 respectively.

4.7 Deviation from Standards

None

4.8 Abnormalities from Standard Conditions

None

5 Equipment List

Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
RF Conducted Test					
Spectrum Analyzer	R&S	FSP-30	SHEM002-1	2024/12/18	2025-12-17
Spectrum Analyzer	Keysight	N9020B	SHEM241-1	2024/12/18	2025-12-17
Spectrum Analyzer	Agilent	N9020A	SHEM181-1	2025-04-30	2026-04-29
Signal Generator	R&S	SMR20	SHEM006-1	2024-07-31	2025-07-30
Signal Generator	Agilent	N5182A	SHEM182-1	2024-07-31	2025-07-30
Communication Tester	R&S	CMW270	SHEM183-1	2025-04-30	2026-04-29
Communication Tester	R&S	CMW500	SHEM268-1	2025-04-30	2026-04-29
Power Sensor	Keysight	U2021XA * 4	SHEM293-1	2024-07-31	2025-07-30
Splitter	Anritsu	MA1612A	SHEM185-1	/	/
Coupler	e-meca	803-S-1	SHEM186-1	/	/
High-low Temp Cabinet	Suzhou Zhihe	TL-40	SHEM087-1	2024-11-05	2026-11-04
AC Power Stabilizer	APC	KDF-31020T-V0-F0	SHEM216-1	2024/12/18	2025-12-17
DC Power Supply	HP	6010A	SHEM222-1	2024/12/18	2025-12-17
Conducted test Cable	/	RF01~RF04	/	2024/12/18	2025-12-17
Switcher	Tonscend	JS0806	SHEM293-1	2024-07-31	2025-07-30
Test software	Tonscend	JS Tonscend BT/WIFI System	Version: 2.6	/	/
Switcher+Power Sensor	TST	TSPS2023R	SHEM263-1	2024-07-31	2025-07-30
Test software	TST	TST PASS	Version: 2.0	/	/
RF Radiated Test					
EMI test Receiver	R&S	ESU40	SHEM051-1	2024/12/18	2025-12-17
Spectrum Analyzer	R&S	FSP-30	SHEM002-1	2024/12/18	2025-12-17
Communication Tester	R&S	CMW500	SHEM268-1	2025-04-30	2026-04-29
Loop Antenna (9kHz-30MHz)	Schwarzbeck	FMZB1519	SHEM135-1	2024/12/18	2025-12-17
Antenna (25MHz-2GHz)	Schwarzbeck	VULB9168	SHEM048-1	2023-09-03	2025-09-02
Antenna (25MHz-2GHz)	Schwarzbeck	VULB9168	SHEM202-1	2025-04-12	2027-04-11
Horn Antenna (1-18GHz)	Schwarzbeck	HF906	SHEM009-1	2024-08-05	2026-08-04
Horn Antenna (1-18GHz)	Schwarzbeck	BBHA9120D	SHEM050-1	2023-09-03	2025-09-02
Horn Antenna (14-40GHz)	Schwarzbeck	BBHA 9170	SHEM049-1	2023-09-03	2025-09-02
Pre-Amplifier	HP	8447D	SHEM236-1	2024/12/18	2025-12-17
High-amplifier (14-40GHz)	Schwarzbeck	10001	SHEM049-2	2024/12/18	2025-12-17
Band Filter	LORCH	9BRX-875/X150	SHEM156-1	/	/
Band Filter	LORCH	13BRX-1950/X500	SHEM083-2	/	/
Band Filter	LORCH	5BRX-2400/X200	SHEM155-1	/	/
Band Filter	LORCH	5BRX-5500/X1000	SHEM157-2	/	/
High pass Filter	Wainwright	WHK3.0/18G	SHEM157-1	/	/
High pass Filter	Wainwright	WHKS1700	SHEM157-3	/	/
Semi/Fully Anechoic	ST	11*6*6M	SHEM078-2	2023-05-06	2026-05-05
RE test Cable	/	PT18-NMNM-10M	SHEM217-2	2024/12/18	2025-12-17
Test software	ESE	E3	Version: 6.111221a	/	/

6 Radio Spectrum Technical Requirement

6.1 Antenna Requirement

6.1.1 Test Requirement:

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

6.1.2 Conclusion

Standard Requirement:

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

15.247(b) (4) requirement:

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

EUT Antenna:

The antenna is FPC Antenna and no consideration of replacement. The best case gain of the antenna is 2.32 dBi.

Antenna location: Refer to internal photo.

7 Radio Spectrum Matter Test Results

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 11.9.2

Limit:

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

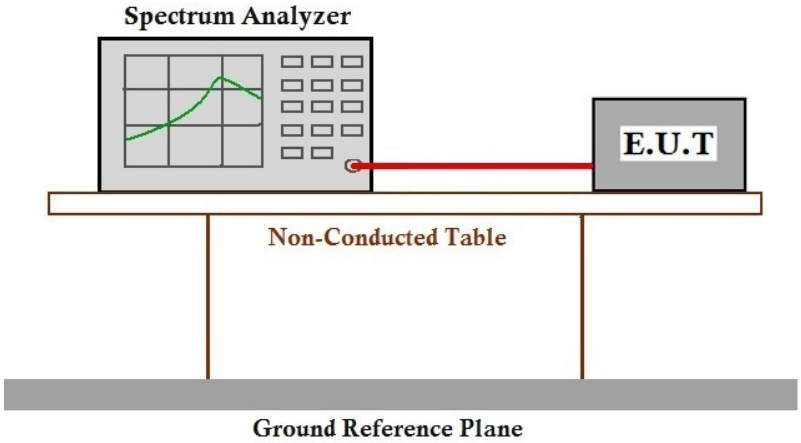
7.1.1 E.U.T. Operation

Operating Environment:
Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1010 mbar

7.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.

7.1.3 Test Setup Diagram



7.1.4 Measurement Procedure and Data

Note: Since the verify power the same operating range bandwidth and smaller power can be covered by the higher power.

Please Refer to Appendix for Details

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

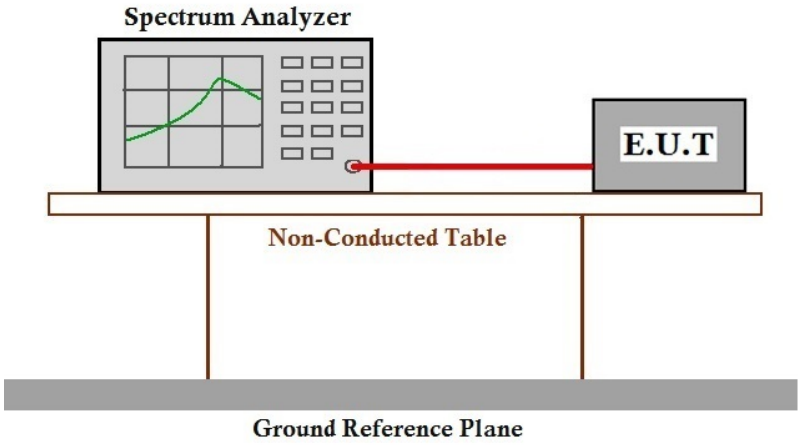
7.2.1 E.U.T. Operation

Operating Environment:
Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1010 mbar

7.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.

7.2.3 Test Setup Diagram



7.2.4 Measurement Procedure and Data

Please Refer to Appendix for Details

7.3 Power Spectrum Density

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

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

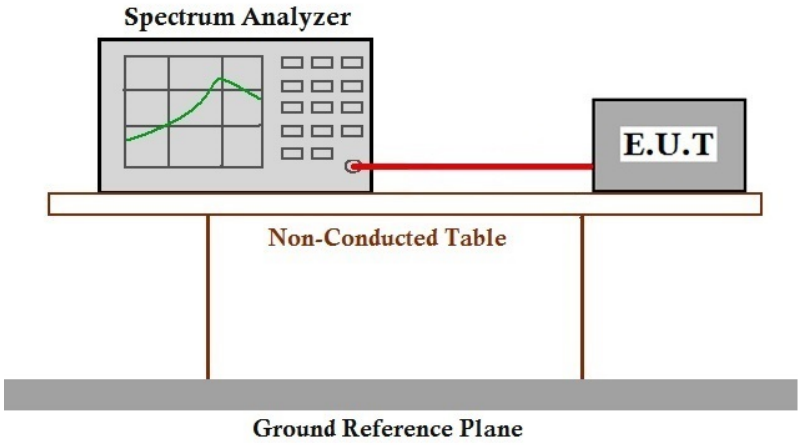
7.3.1 E.U.T. Operation

Operating Environment:
Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1010 mbar

7.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.

7.3.3 Test Setup Diagram



7.3.4 Measurement Procedure and Data

Please Refer to Appendix for Details

7.4 Conducted Band Edges Measurement

Test Requirement 47 CFR Part 15, Subpart C 15.247(d)

Test Method: ANSI C63.10 (2013) Section 11.13.3.2

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

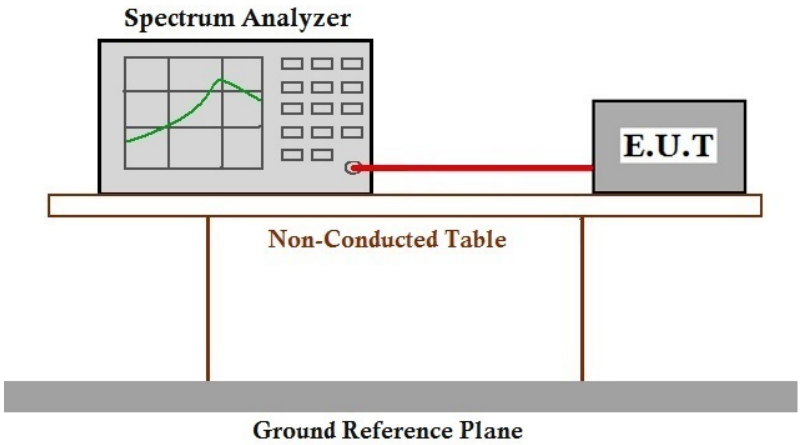
Operating Environment:

Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1010 mbar

7.4.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.

7.4.3 Test Setup Diagram



7.4.4 Measurement Procedure and Data

Please Refer to Appendix for Details

7.5 Conducted Spurious Emissions

Test Requirement 47 CFR Part 15, Subpart C 15.247(d)

Test Method: ANSI C63.10 (2013) Section 11.11

Limit:

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c).

7.5.1 E.U.T. Operation

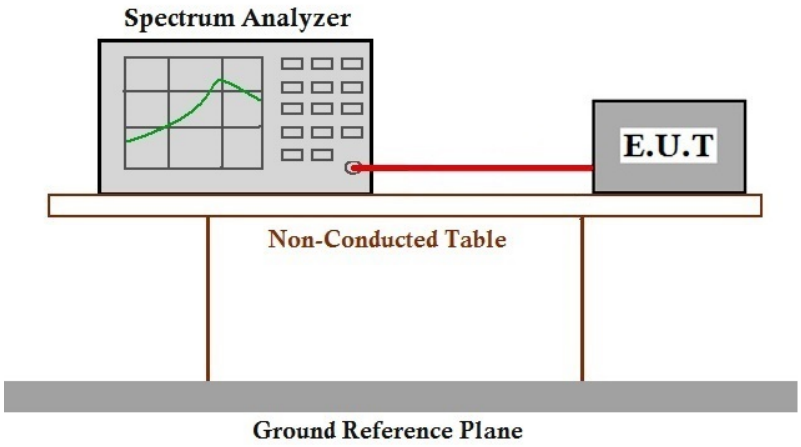
Operating Environment:

Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1010 mbar

7.5.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.

7.5.3 Test Setup Diagram



7.5.4 Measurement Procedure and Data

Please Refer to Appendix for Details

7.6 Radiated Emissions which fall in the restricted bands

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

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

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3
Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.		

7.6.1 E.U.T. Operation

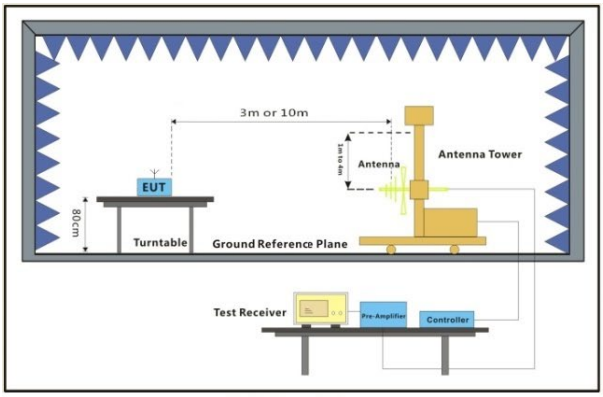
Operating Environment:

Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1010 mbar

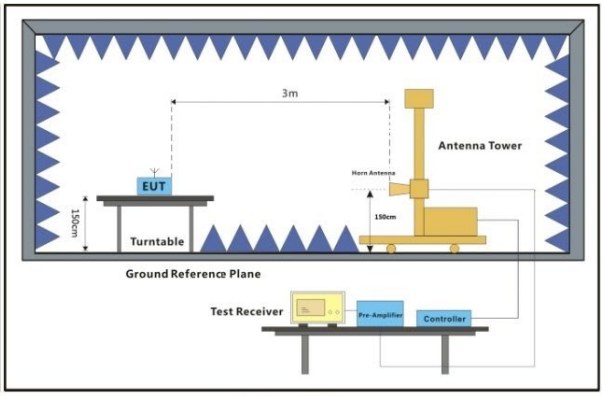
7.6.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.

7.6.3 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.

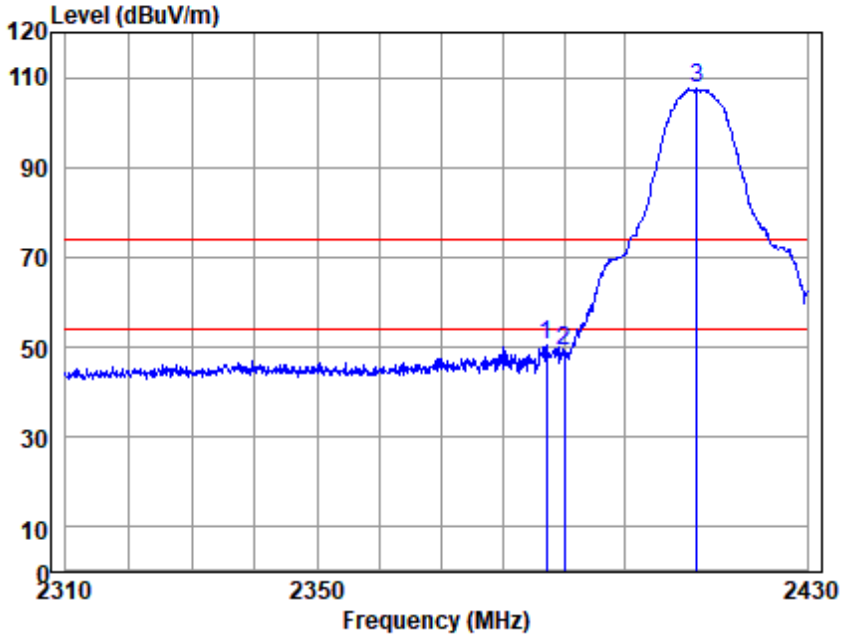
Remark 1: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

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.

Remark 3: The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for Peak detection (PK) and Average detection (AV) at frequency above 1GHz.

Remark 4:For fundamental and harmonic signal measurement, the resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geqslant$1/T (Duty cycle$<$98%) or 10Hz (Duty cycle$\geqslant$98%) for Average detection (AV) at frequency above 1GHz.

Test Mode: 00; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:Low

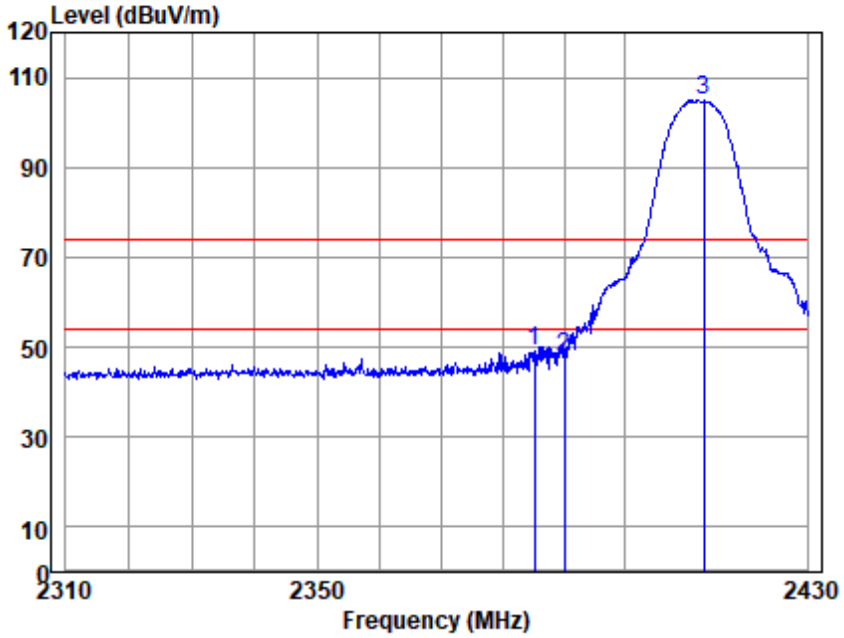


Antenna Polarity :HORIZONTAL
EUT/Project :1038ME

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
2387.065	53.54	28.80	3.33	35.18	50.49	74.00	-23.51	Peak
2390.000	52.06	28.80	3.33	35.18	49.01	74.00	-24.99	Peak
2411.732	110.49	28.90	3.35	35.20	107.54	74.00	33.54	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:Low

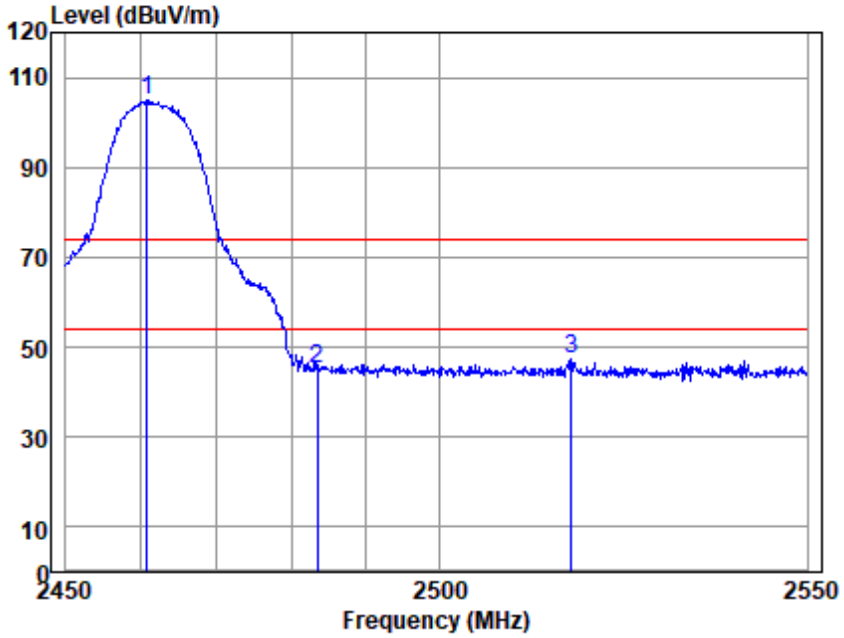


Antenna Polarity :VERTICAL
EUT/Project :1038ME

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
2385.252	52.28	28.80	3.33	35.18	49.23	74.00	-24.77	Peak
2390.000	50.93	28.80	3.33	35.18	47.88	74.00	-26.12	Peak
2412.954	107.90	28.90	3.35	35.20	104.95	74.00	30.95	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:High

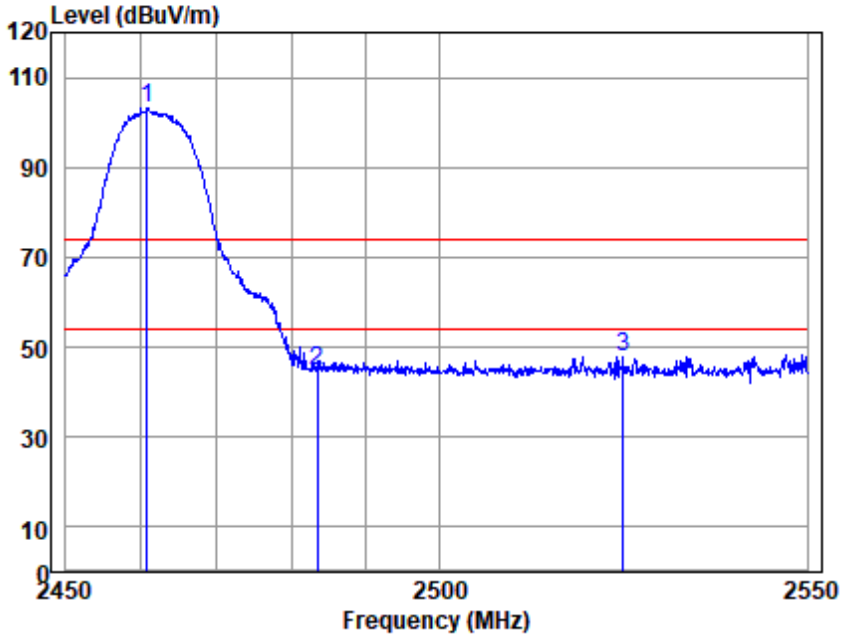


Antenna Polarity :HORIZONTAL
EUT/Project :1038ME

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
2460.707	107.74	29.05	3.39	35.24	104.94	74.00	30.94	Peak
2483.500	48.04	29.09	3.41	35.26	45.28	74.00	-28.72	Peak
2517.765	50.07	29.13	3.43	35.29	47.34	74.00	-26.66	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:High

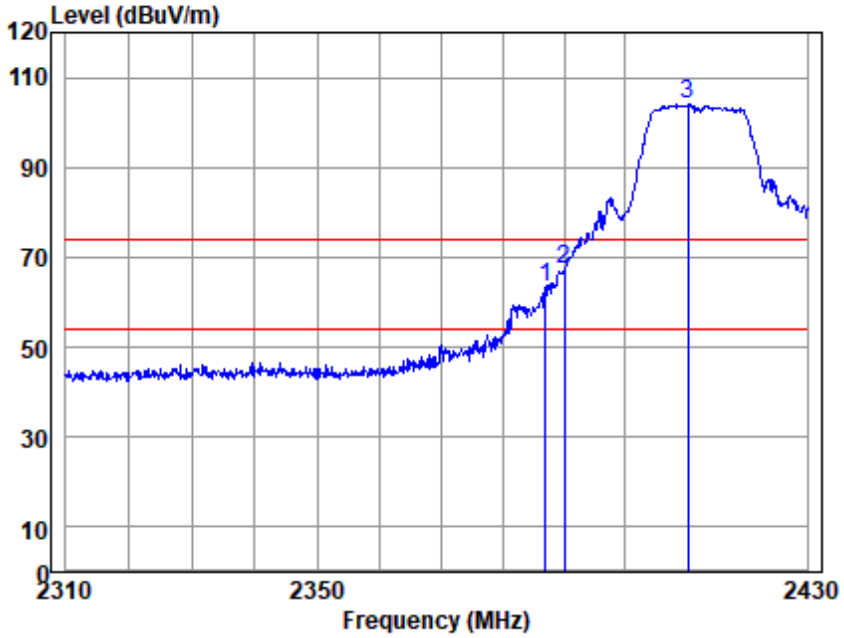


Antenna Polarity :VERTICAL
EUT/Project :1038ME

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
2460.805	105.92	29.05	3.39	35.24	103.12	74.00	29.12	Peak
2483.500	47.55	29.09	3.41	35.26	44.79	74.00	-29.21	Peak
2524.826	50.76	29.13	3.44	35.30	48.03	74.00	-25.97	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:Low

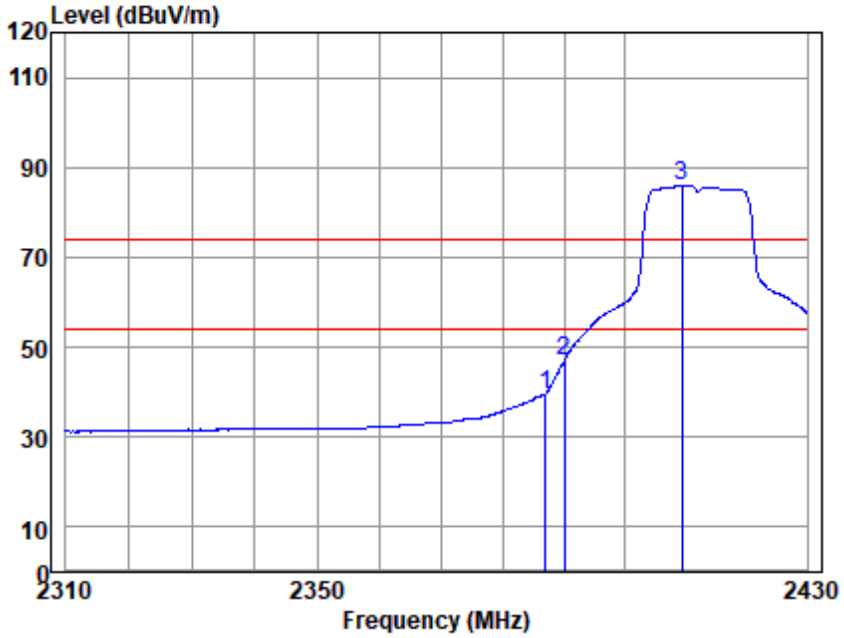


Antenna Polarity :HORIZONTAL
EUT/Project :1038ME

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
2386.944	66.37	28.80	3.33	35.18	63.32	74.00	-10.68	Peak
2390.000	70.50	28.80	3.33	35.18	67.45	74.00	-6.55	Peak
2410.267	107.03	28.89	3.34	35.20	104.06	74.00	30.06	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:Low

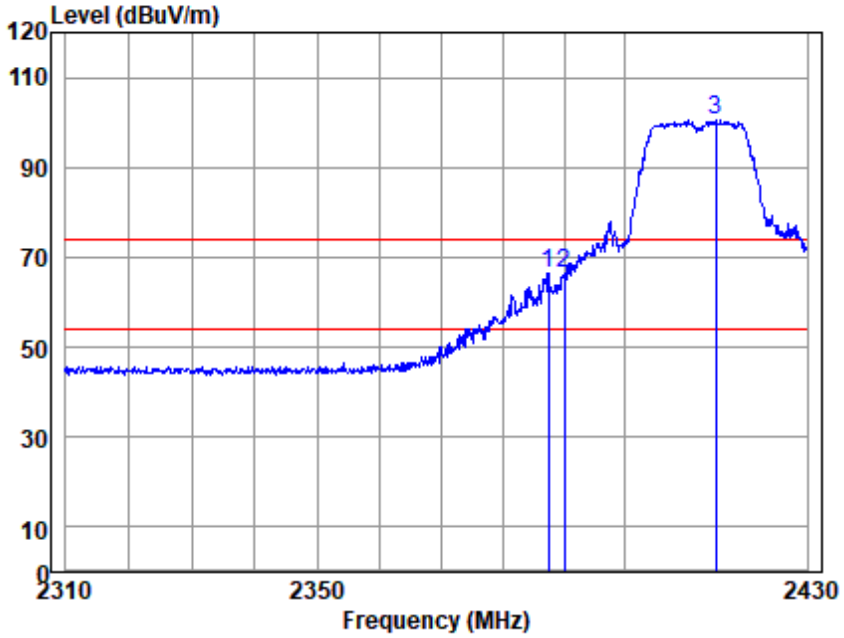


Antenna Polarity :HORIZONTAL
EUT/Project :1038ME

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
2386.944	42.61	28.80	3.33	35.18	39.56	54.00	-14.44	Average
2390.000	49.89	28.80	3.33	35.18	46.84	54.00	-7.16	Average
2409.291	88.94	28.89	3.34	35.20	85.97	54.00	31.97	Average

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:Low

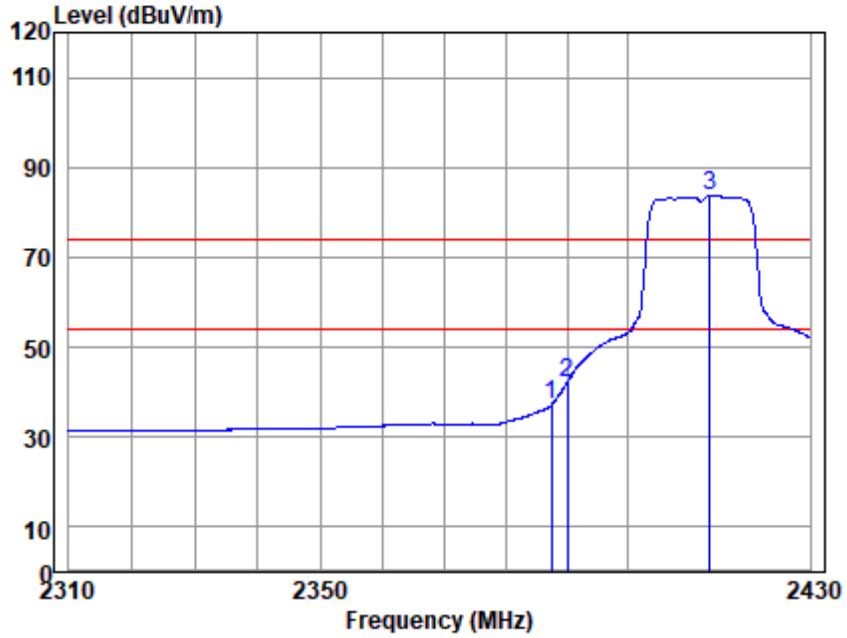


Antenna Polarity :VERTICAL
EUT/Project :1038ME

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
2387.428	69.36	28.80	3.33	35.18	66.31	74.00	-7.69	Peak
2390.000	69.52	28.80	3.33	35.18	66.47	74.00	-7.53	Peak
2414.910	103.36	28.90	3.35	35.20	100.41	74.00	26.41	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:Low

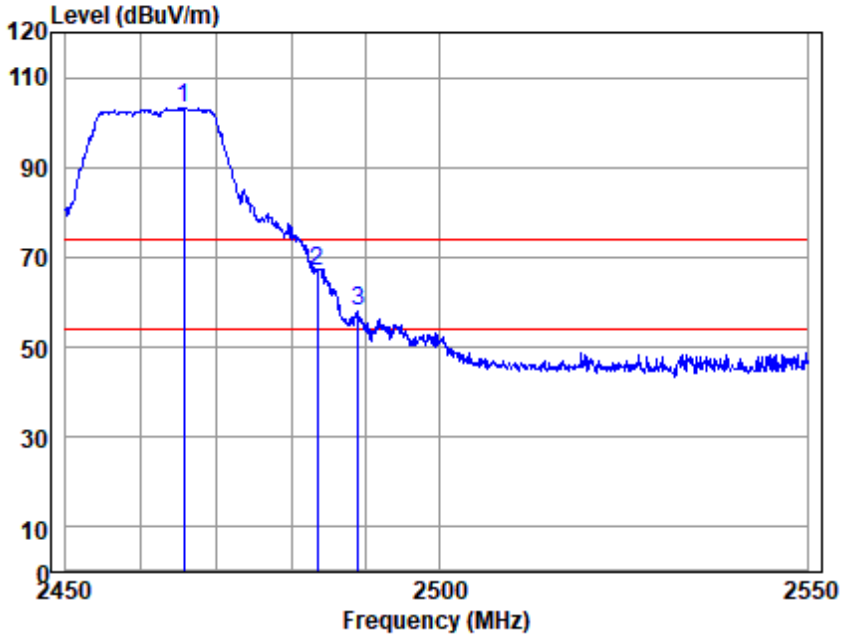


Antenna Polarity :VERTICAL
EUT/Project :1038ME

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
2387.428	40.08	28.80	3.33	35.18	37.03	54.00	-16.97	Average
2390.000	45.20	28.80	3.33	35.18	42.15	54.00	-11.85	Average
2413.443	86.52	28.90	3.35	35.20	83.57	54.00	29.57	Average

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:High

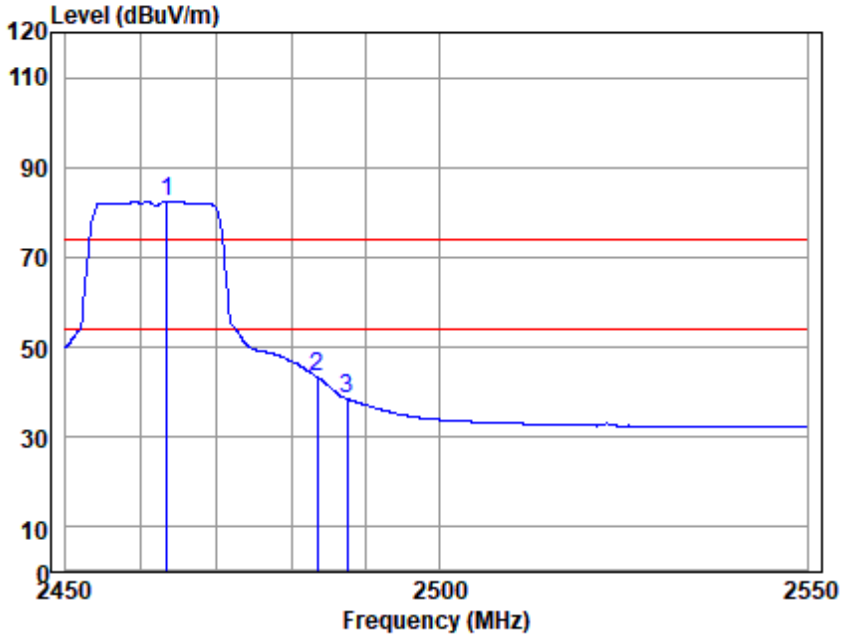


Antenna Polarity :HORIZONTAL
EUT/Project :1038ME

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
2465.732	106.04	29.05	3.39	35.24	103.24	74.00	29.24	Peak
2483.500	69.82	29.09	3.41	35.26	67.06	74.00	-6.94	Peak
2489.023	60.59	29.09	3.41	35.26	57.83	74.00	-16.17	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:High

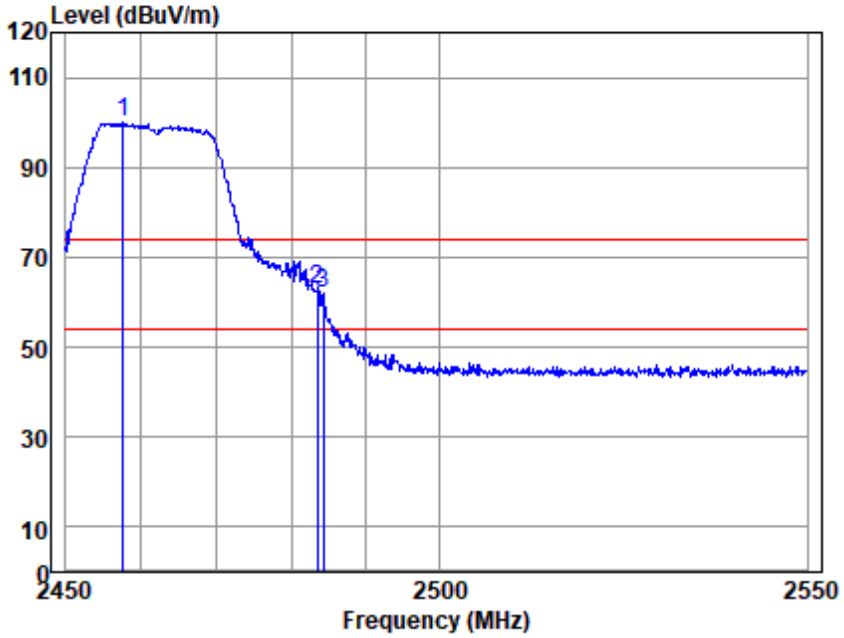


Antenna Polarity :HORIZONTAL
EUT/Project :1038ME

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
2463.366	85.20	29.05	3.39	35.24	82.40	54.00	28.40	Average
2483.500	46.12	29.09	3.41	35.26	43.36	54.00	-10.64	Average
2487.530	41.26	29.09	3.41	35.26	38.50	54.00	-15.50	Average

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:High

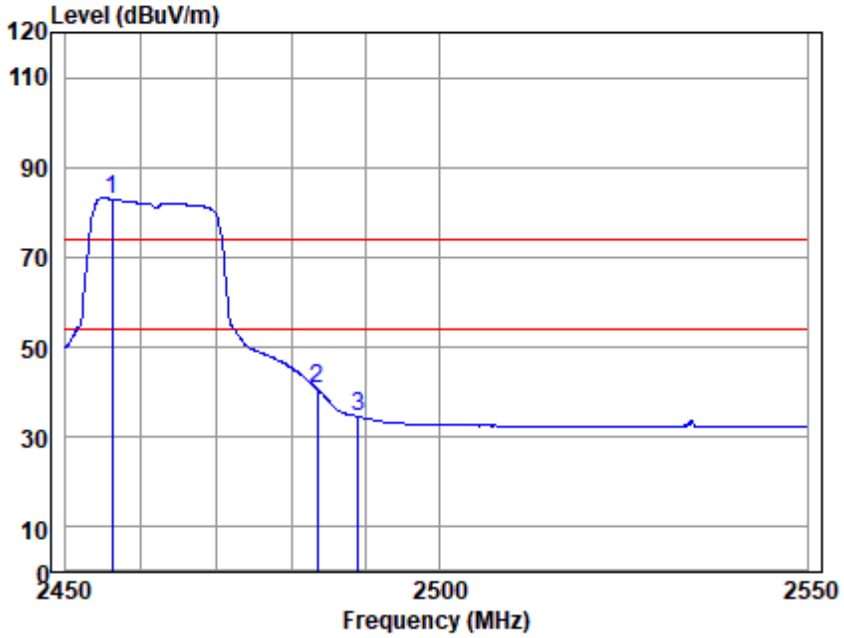


Antenna Polarity :VERTICAL
EUT/Project :1038ME

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
2457.657	102.68	29.04	3.38	35.24	99.86	74.00	25.86	Peak
2483.500	65.67	29.09	3.41	35.26	62.91	74.00	-11.09	Peak
2484.248	64.75	29.09	3.41	35.26	61.99	74.00	-12.01	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:High

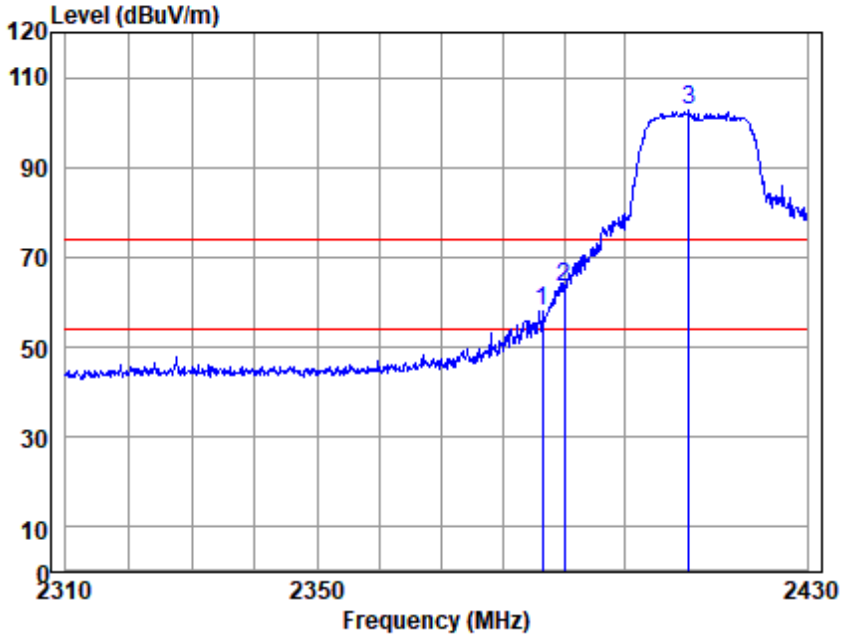


Antenna Polarity :VERTICAL
EUT/Project :1038ME

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
2456.084	85.81	29.04	3.38	35.24	82.99	54.00	28.99	Average
2483.500	43.53	29.09	3.41	35.26	40.77	54.00	-13.23	Average
2488.923	37.32	29.09	3.41	35.26	34.56	54.00	-19.44	Average

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low

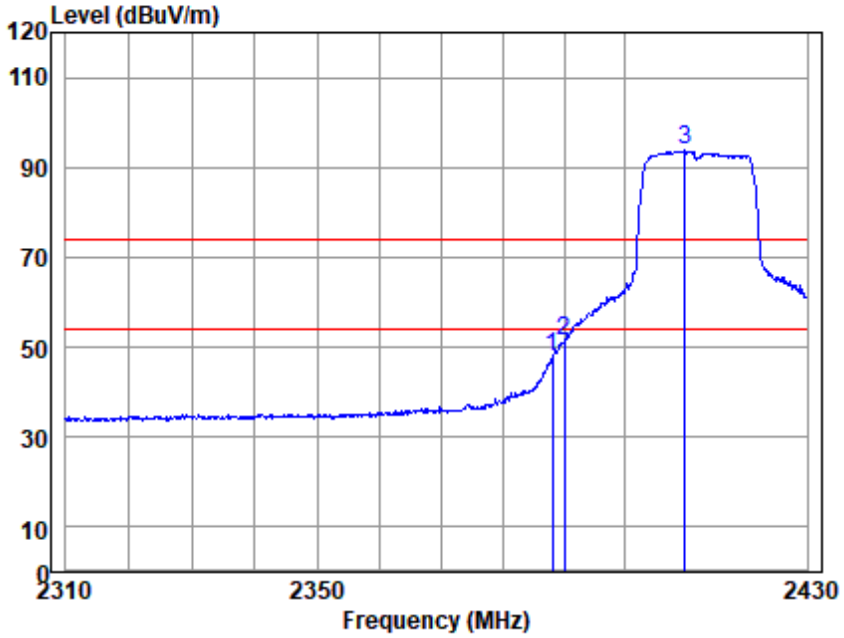


Antenna Polarity :HORIZONTAL
EUT/Project :1038ME

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
2386.461	61.23	28.80	3.33	35.18	58.18	74.00	-15.82	Peak
2390.000	66.56	28.80	3.33	35.18	63.51	74.00	-10.49	Peak
2410.389	105.79	28.89	3.34	35.20	102.82	74.00	28.82	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low

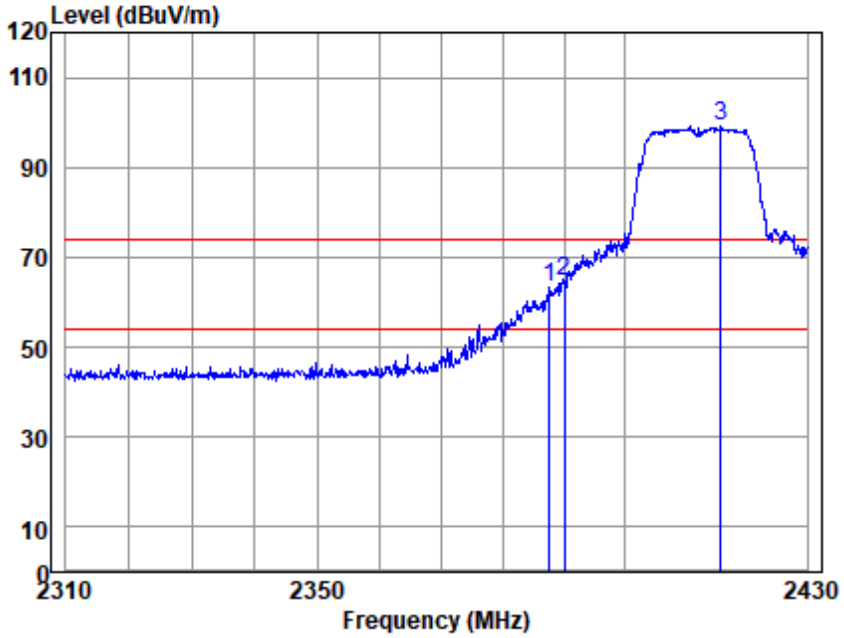


Antenna Polarity :HORIZONTAL
EUT/Project :1038ME

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
2388.032	50.66	28.80	3.33	35.18	47.61	54.00	-6.39	Average
2390.000	54.55	28.80	3.33	35.18	51.50	54.00	-2.50	Average
2409.779	96.83	28.89	3.34	35.20	93.86	54.00	39.86	Average

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low

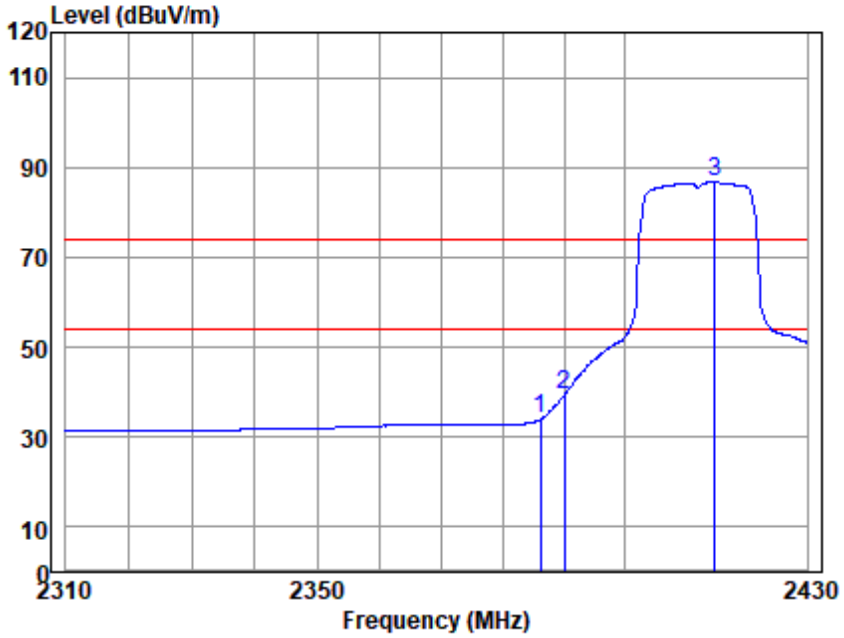


Antenna Polarity :VERTICAL
EUT/Project :1038ME

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
2387.549	66.40	28.80	3.33	35.18	63.35	74.00	-10.65	Peak
2390.000	67.52	28.80	3.33	35.18	64.47	74.00	-9.53	Peak
2415.644	102.22	28.90	3.35	35.20	99.27	74.00	25.27	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low

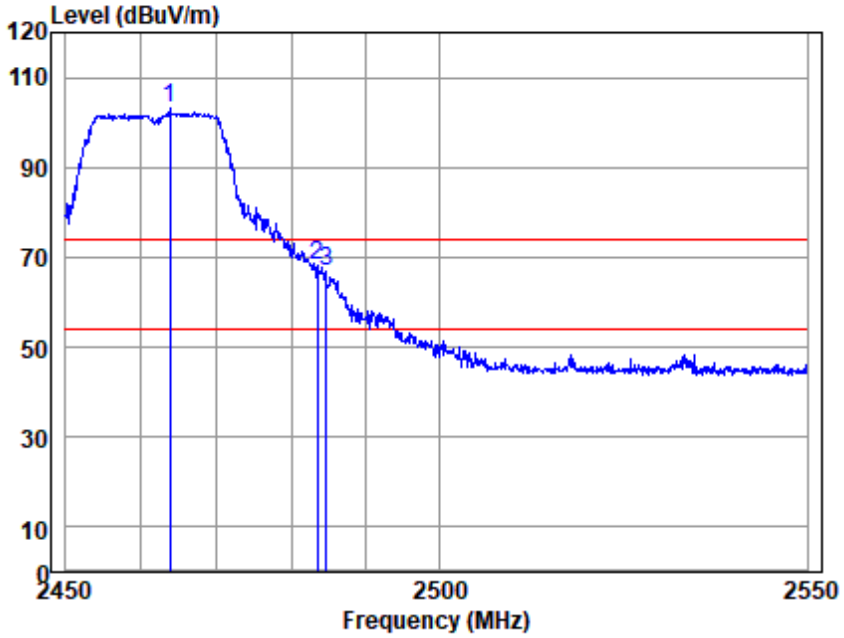


Antenna Polarity :VERTICAL
EUT/Project :1038ME

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
2386.219	37.08	28.80	3.33	35.18	34.03	54.00	-19.97	Average
2390.000	42.34	28.80	3.33	35.18	39.29	54.00	-14.71	Average
2414.666	89.61	28.90	3.35	35.20	86.66	54.00	32.66	Average

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High

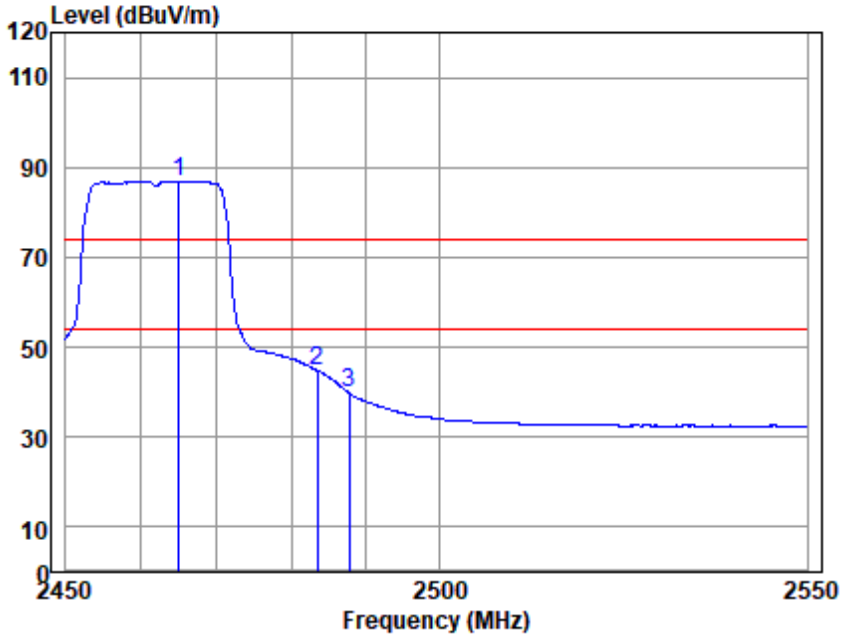


Antenna Polarity :HORIZONTAL
EUT/Project :1038ME

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
2463.760	105.78	29.05	3.39	35.24	102.98	74.00	28.98	Peak
2483.500	70.86	29.09	3.41	35.26	68.10	74.00	-5.90	Peak
2484.645	69.84	29.09	3.41	35.26	67.08	74.00	-6.92	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High

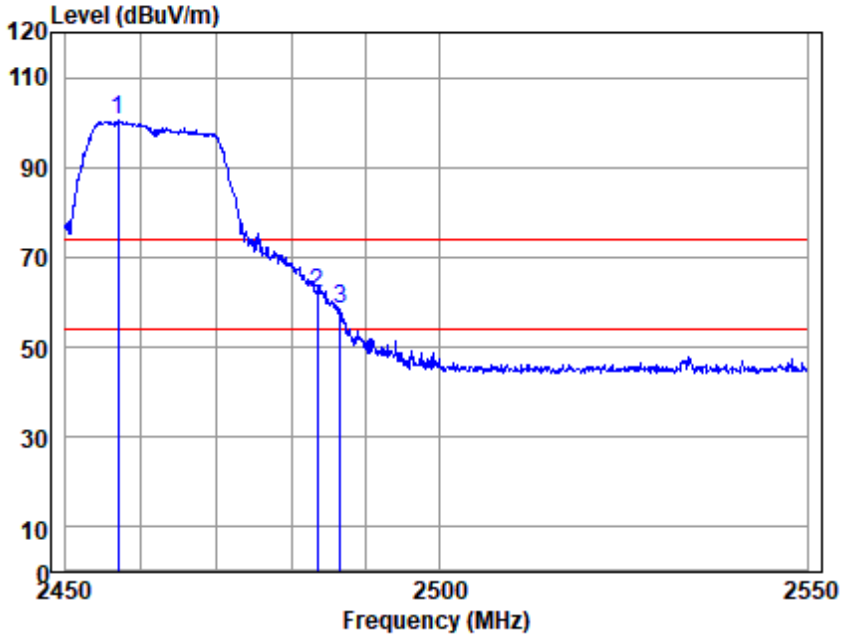


Antenna Polarity :HORIZONTAL
EUT/Project :1038ME

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
2464.943	89.72	29.05	3.39	35.24	86.92	54.00	32.92	Average
2483.500	47.64	29.09	3.41	35.26	44.88	54.00	-9.12	Average
2487.729	42.61	29.09	3.41	35.26	39.85	54.00	-14.15	Average

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High

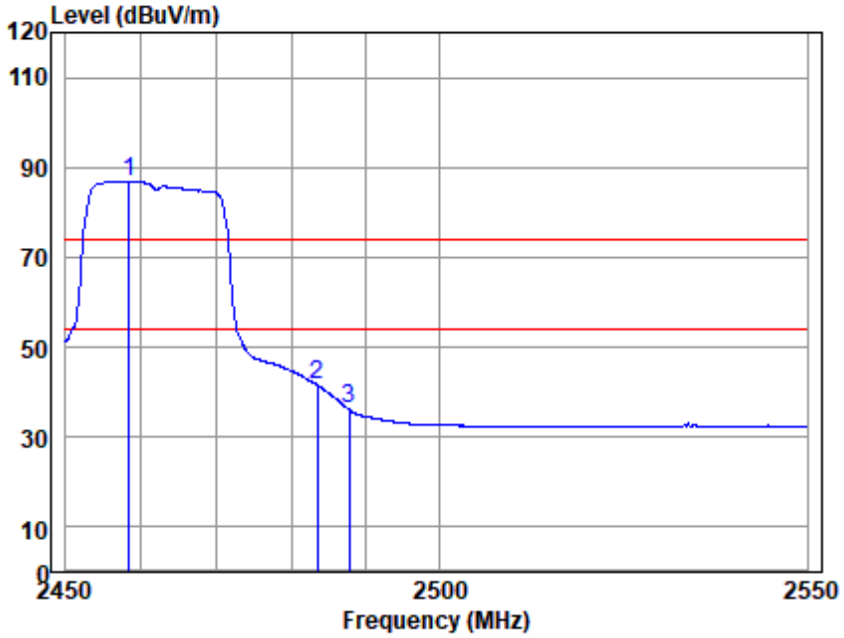


Antenna Polarity :VERTICAL
EUT/Project :1038ME

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
2456.969	103.40	29.04	3.38	35.24	100.58	74.00	26.58	Peak
2483.500	64.69	29.09	3.41	35.26	61.93	74.00	-12.07	Peak
2486.634	61.31	29.09	3.41	35.26	58.55	74.00	-15.45	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High



Antenna Polarity :VERTICAL
EUT/Project :1038ME

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
2458.444	89.78	29.04	3.38	35.24	86.96	54.00	32.96	Average
2483.500	44.34	29.09	3.41	35.26	41.58	54.00	-12.42	Average
2487.729	38.89	29.09	3.41	35.26	36.13	54.00	-17.87	Average

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

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

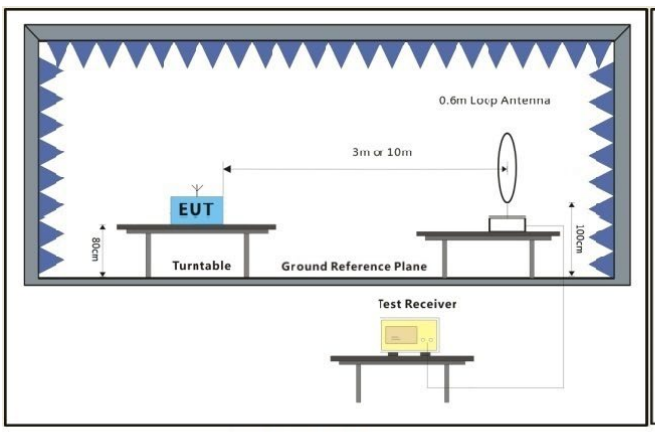
7.7.1 E.U.T. Operation

Operating Environment:
Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1010 mbar

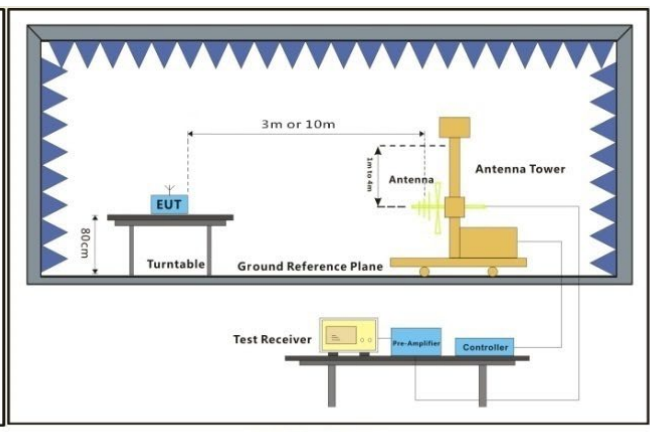
7.7.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.

7.7.3 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 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using quasi-peak method as specified and then reported in a data sheet.

g. Test the EUT in the lowest channel, the middle channel, the Highest channel.

h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

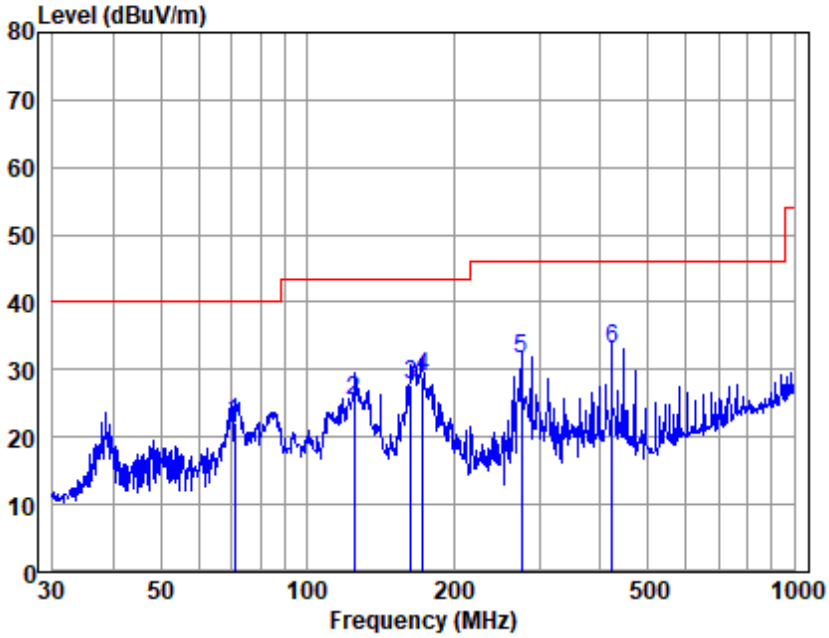
i. Repeat above procedures until all frequencies measured was complete.

Remark:

1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

2. Scan from 9kHz to 30MHz, the disturbance below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

Test Mode: 00; Polarity: Horizontal

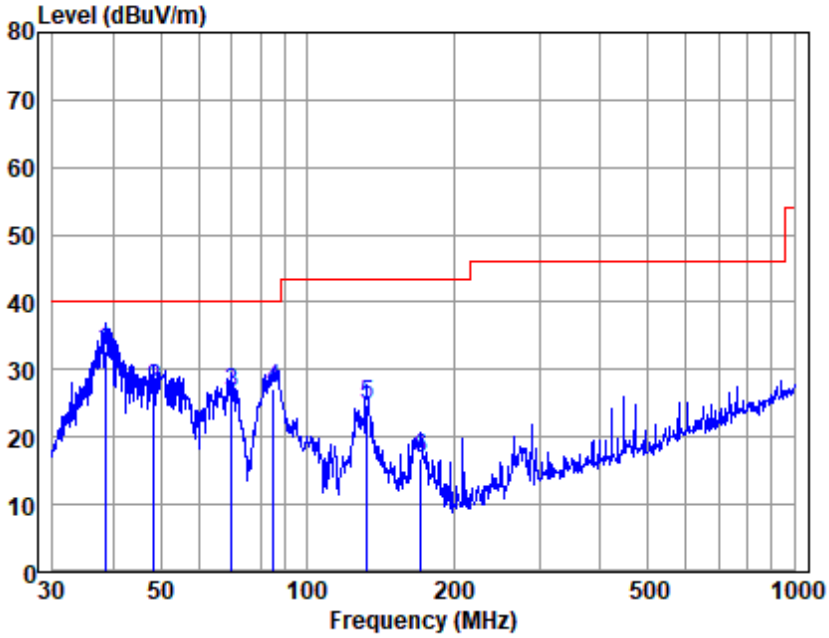


Antenna Polarity :HORIZONTAL
EUT/Project :1038ME
Test mode :00

	Freq	Read Level	Antenna Factor	Cable Loss	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	
1	71.080	38.21	10.30	0.78	22.10	40.00	-17.90	QP
2	125.007	39.90	11.50	1.16	25.51	43.50	-17.99	QP
3	163.182	40.79	12.60	1.33	27.80	43.50	-15.70	QP
4	172.599	42.19	12.20	1.41	28.94	43.50	-14.56	QP
5	275.157	44.63	11.80	1.75	31.68	46.00	-14.32	QP
6	422.058	43.03	15.12	2.26	32.93	46.00	-13.07	QP

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical



Antenna Polarity :VERTICAL
EUT/Project :1038ME
Test mode :00

	Freq	Read Level	Antenna Factor	Cable Loss	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	
1	38.481	46.50	13.10	0.48	32.88	40.00	-7.12	QP
2	48.332	40.84	13.00	0.63	27.27	40.00	-12.73	QP
3	70.090	42.26	10.60	0.78	26.44	40.00	-13.56	QP
4	85.298	44.89	8.40	0.93	27.12	40.00	-12.88	QP
5	132.685	38.99	11.70	1.16	24.82	43.50	-18.68	QP
6	170.793	29.93	12.40	1.33	16.78	43.50	-26.72	QP

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

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

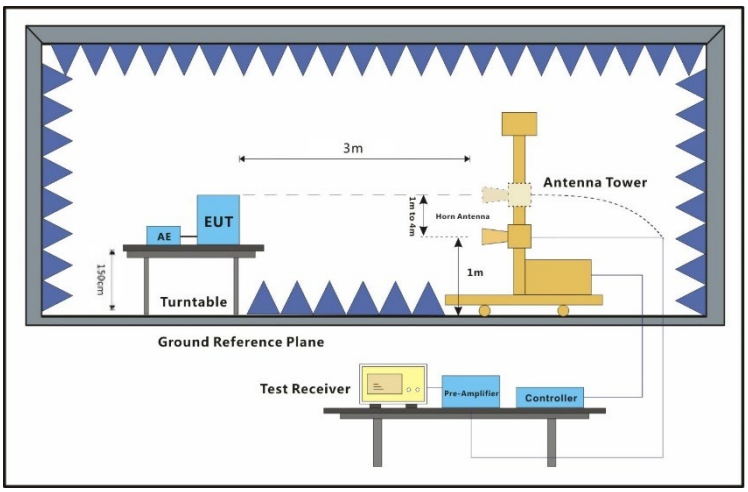
7.8.1 E.U.T. Operation

Operating Environment:
Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1010 mbar

7.8.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.

7.8.3 Test Setup Diagram



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.

Remark:

1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

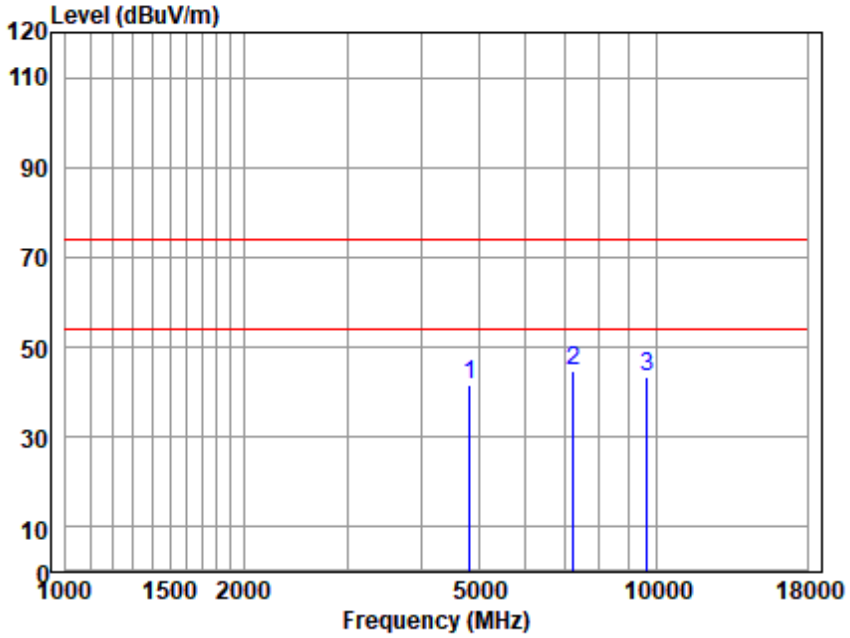
2. Scan from 1GHz to 25GHz, the disturbance above 18GHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

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

4: The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for Peak detection (PK) and Average detection (AV) at frequency above 1GHz.

5:For fundamental and harmonic signal measurement, the resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geqslant$1/T (Duty cycle$<$98%) or 10Hz (Duty cycle$\geqslant$98%) for Average detection (AV) at frequency above 1GHz.

Test Mode: 00; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:Low

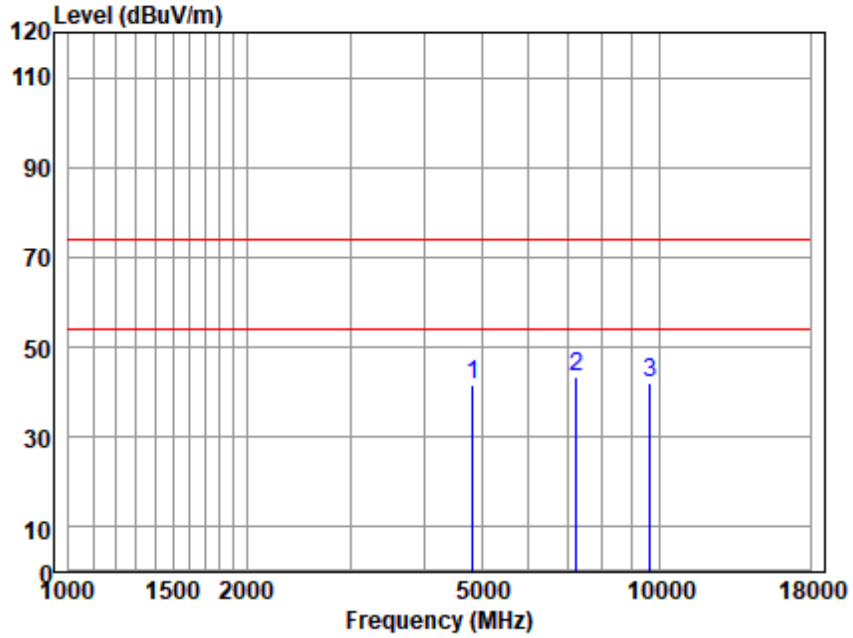


Antenna Polarity :HORIZONTAL
EUT/Project :1038ME

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
4824.016	39.57	33.60	5.24	36.79	41.62	74.00	-32.38	Peak
7242.052	36.35	36.29	7.36	35.50	44.50	74.00	-29.50	Peak
9641.257	30.56	37.71	8.76	33.56	43.47	74.00	-30.53	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:Low

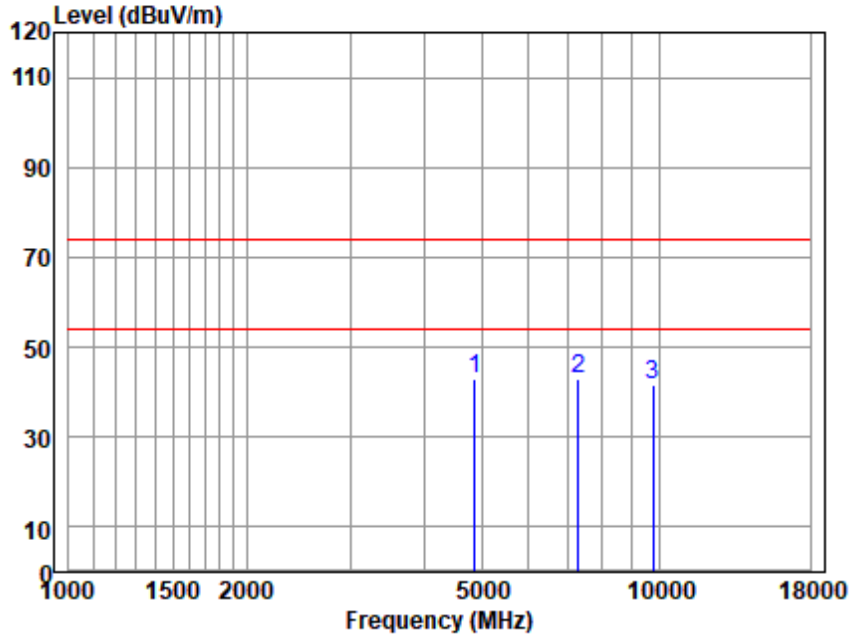


Antenna Polarity :VERTICAL
EUT/Project :1038ME

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
4824.016	39.41	33.60	5.24	36.79	41.46	74.00	-32.54	Peak
7242.052	35.14	36.29	7.36	35.50	43.29	74.00	-30.71	Peak
9641.257	29.23	37.71	8.76	33.56	42.14	74.00	-31.86	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:middle

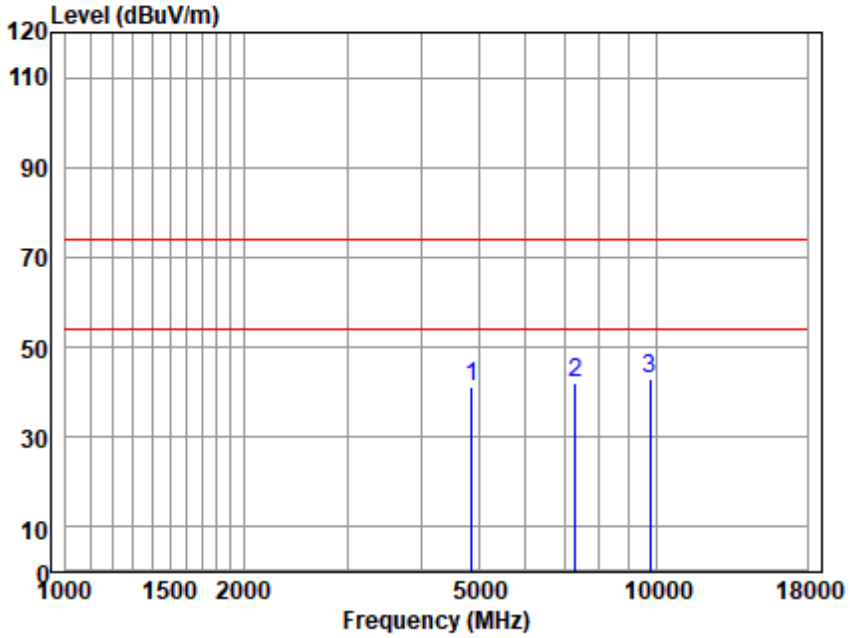


Antenna Polarity :HORIZONTAL
EUT/Project :1038ME

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
4874.043	40.79	33.66	5.28	36.81	42.92	74.00	-31.08	Peak
7305.122	34.45	36.32	7.42	35.44	42.75	74.00	-31.25	Peak
9753.371	28.61	37.54	8.80	33.50	41.45	74.00	-32.55	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:middle

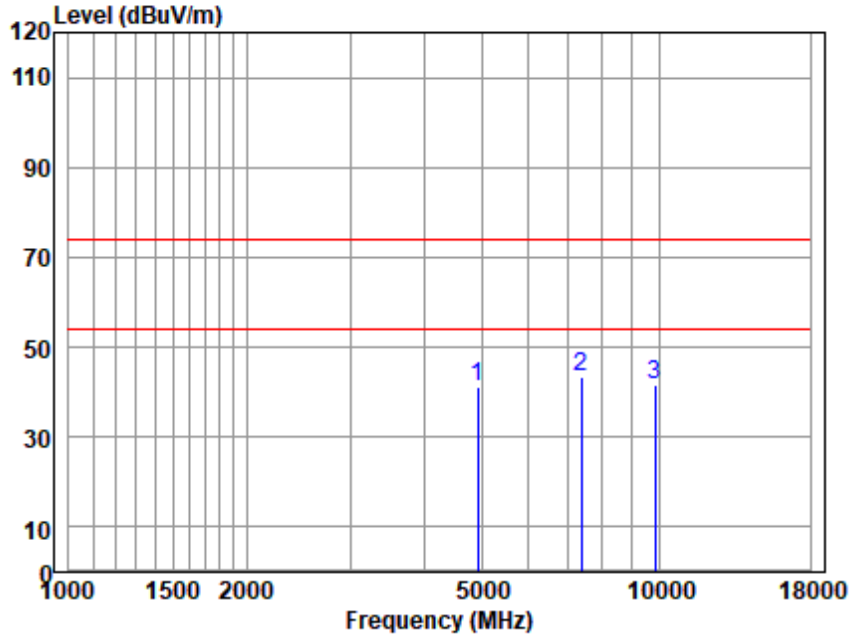


Antenna Polarity :VERTICAL
EUT/Project :1038ME

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
4874.043	39.23	33.66	5.28	36.81	41.36	74.00	-32.64	Peak
7305.122	33.64	36.32	7.42	35.44	41.94	74.00	-32.06	Peak
9753.371	30.01	37.54	8.80	33.50	42.85	74.00	-31.15	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:High

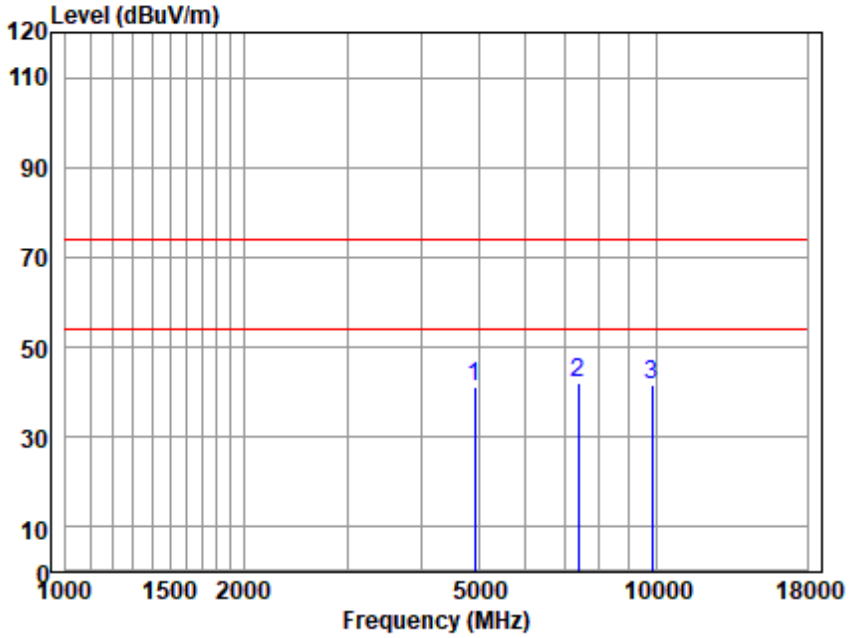


Antenna Polarity :HORIZONTAL
EUT/Project :1038ME

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
4924.721	38.89	33.64	5.32	36.82	41.03	74.00	-32.97	Peak
7390.070	34.91	36.36	7.49	35.37	43.39	74.00	-30.61	Peak
9838.312	28.85	37.60	8.84	33.45	41.84	74.00	-32.16	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:High

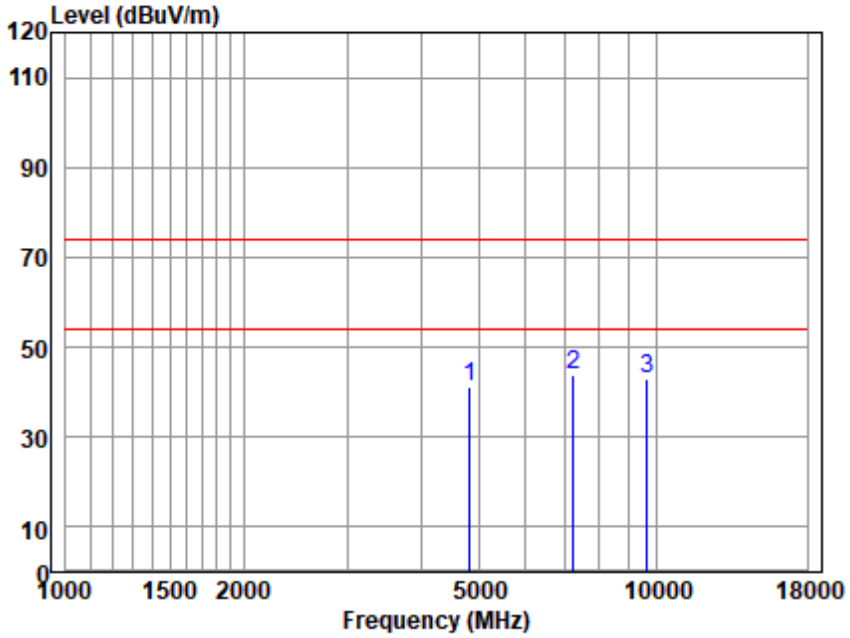


Antenna Polarity :VERTICAL
EUT/Project :1038ME

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
4924.721	39.26	33.64	5.32	36.82	41.40	74.00	-32.60	Peak
7390.070	33.71	36.36	7.49	35.37	42.19	74.00	-31.81	Peak
9838.312	28.84	37.60	8.84	33.45	41.83	74.00	-32.17	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:Low

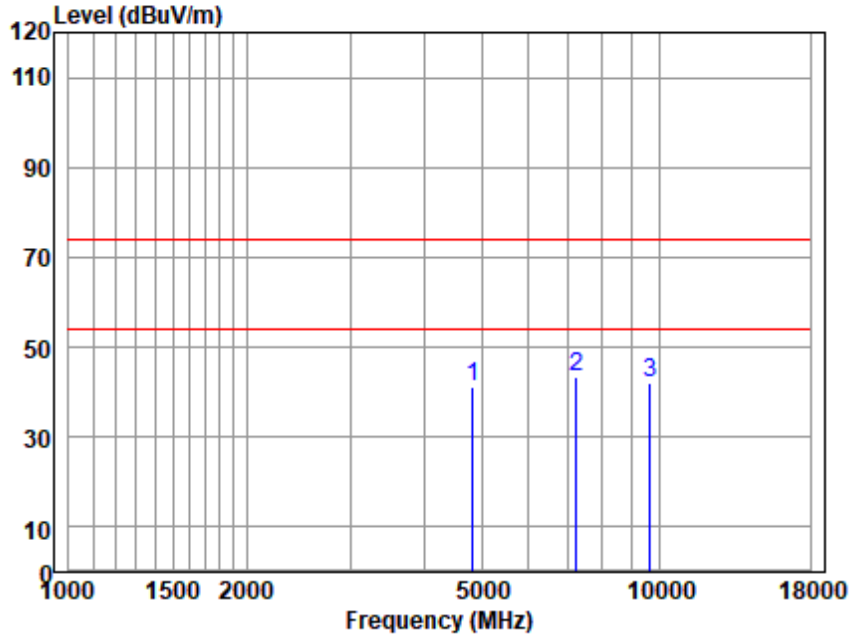


Antenna Polarity :HORIZONTAL
EUT/Project :1038ME

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
4824.016	38.95	33.60	5.24	36.79	41.00	74.00	-33.00	Peak
7242.052	35.55	36.29	7.36	35.50	43.70	74.00	-30.30	Peak
9641.257	30.01	37.71	8.76	33.56	42.92	74.00	-31.08	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:Low

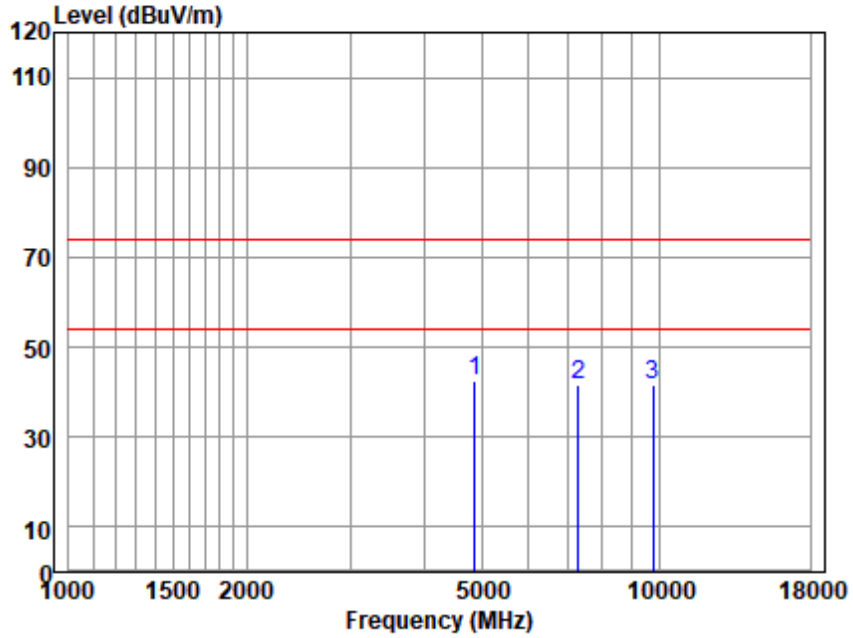


Antenna Polarity :VERTICAL
EUT/Project :1038ME

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
4824.016	39.18	33.60	5.24	36.79	41.23	74.00	-32.77	Peak
7242.052	35.44	36.29	7.36	35.50	43.59	74.00	-30.41	Peak
9641.257	29.03	37.71	8.76	33.56	41.94	74.00	-32.06	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:middle

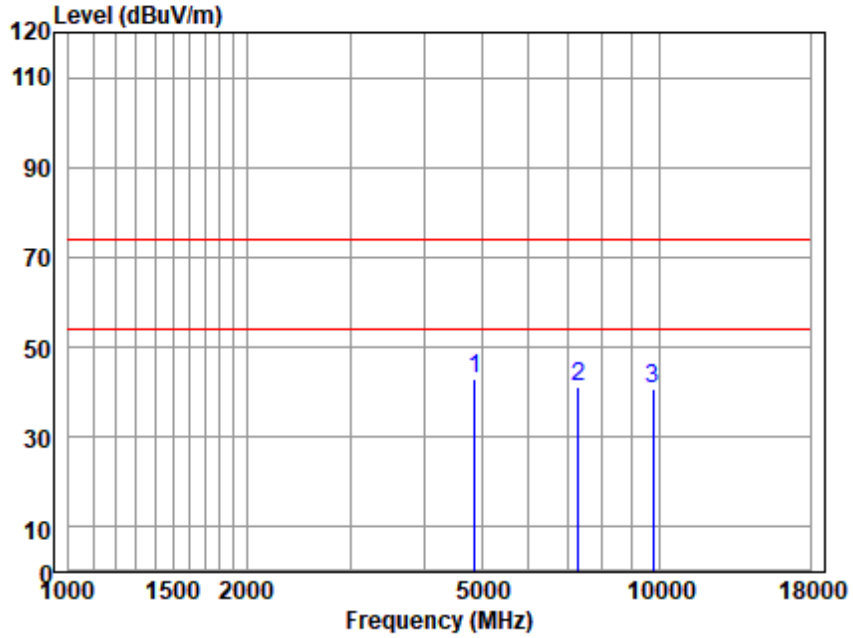


Antenna Polarity :HORIZONTAL
EUT/Project :1038ME

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
4874.043	40.35	33.66	5.28	36.81	42.48	74.00	-31.52	Peak
7305.122	33.24	36.32	7.42	35.44	41.54	74.00	-32.46	Peak
9753.371	29.00	37.54	8.80	33.50	41.84	74.00	-32.16	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:middle

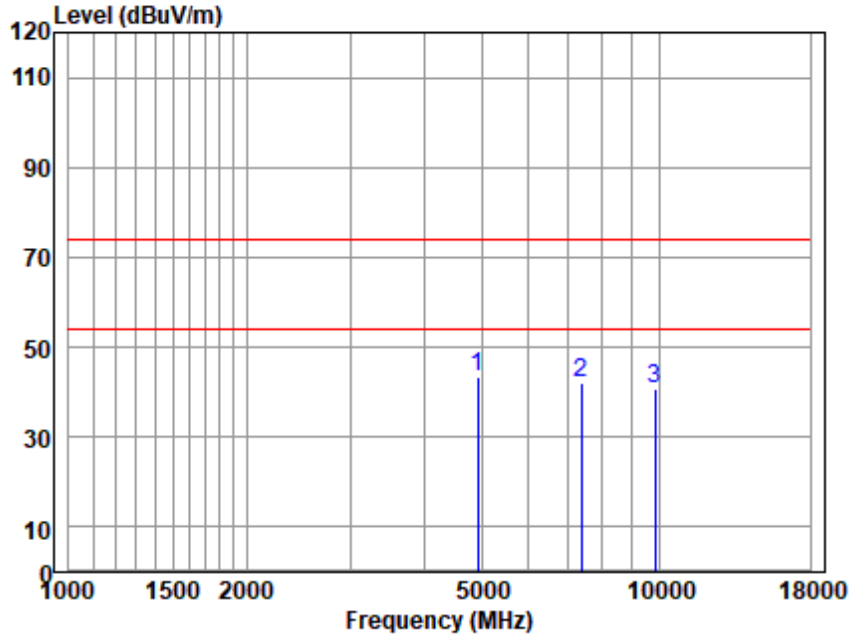


Antenna Polarity :VERTICAL
EUT/Project :1038ME

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
4874.043	41.00	33.66	5.28	36.81	43.13	74.00	-30.87	Peak
7305.122	32.76	36.32	7.42	35.44	41.06	74.00	-32.94	Peak
9753.371	27.78	37.54	8.80	33.50	40.62	74.00	-33.38	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:High

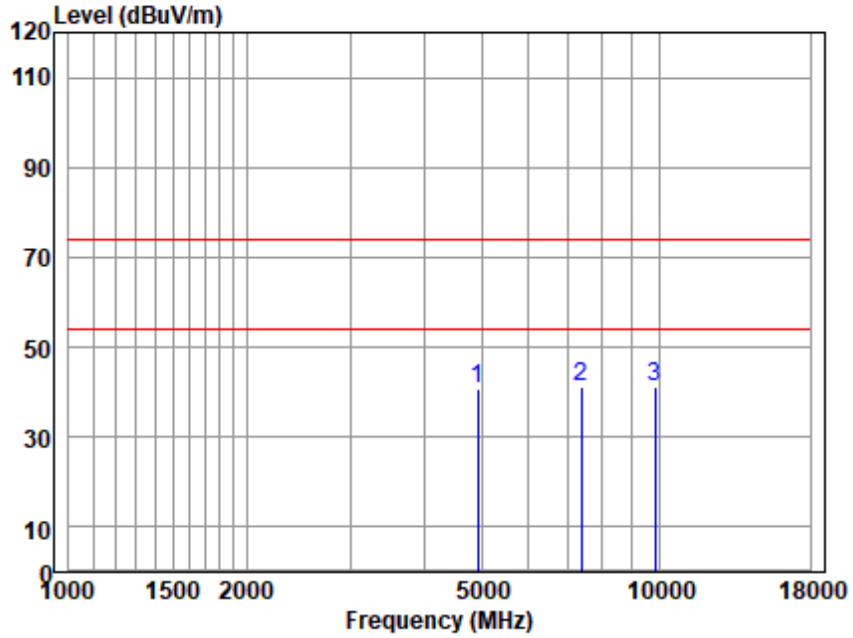


Antenna Polarity :HORIZONTAL
EUT/Project :1038ME

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
4924.721	41.04	33.64	5.32	36.82	43.18	74.00	-30.82	Peak
7390.070	33.70	36.36	7.49	35.37	42.18	74.00	-31.82	Peak
9838.312	27.82	37.60	8.84	33.45	40.81	74.00	-33.19	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:High

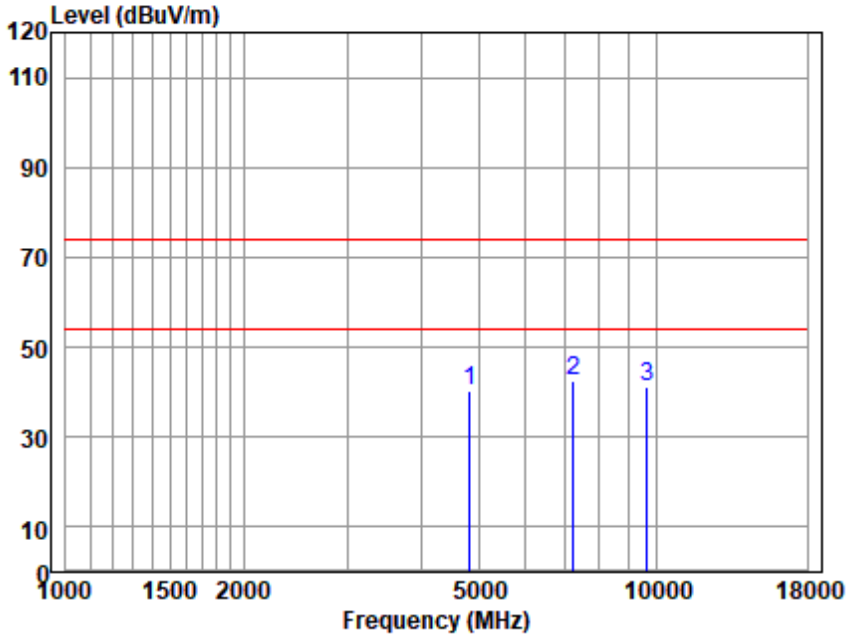


Antenna Polarity :VERTICAL
EUT/Project :1038ME

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
4924.721	38.69	33.64	5.32	36.82	40.83	74.00	-33.17	Peak
7390.070	32.71	36.36	7.49	35.37	41.19	74.00	-32.81	Peak
9838.312	28.00	37.60	8.84	33.45	40.99	74.00	-33.01	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low

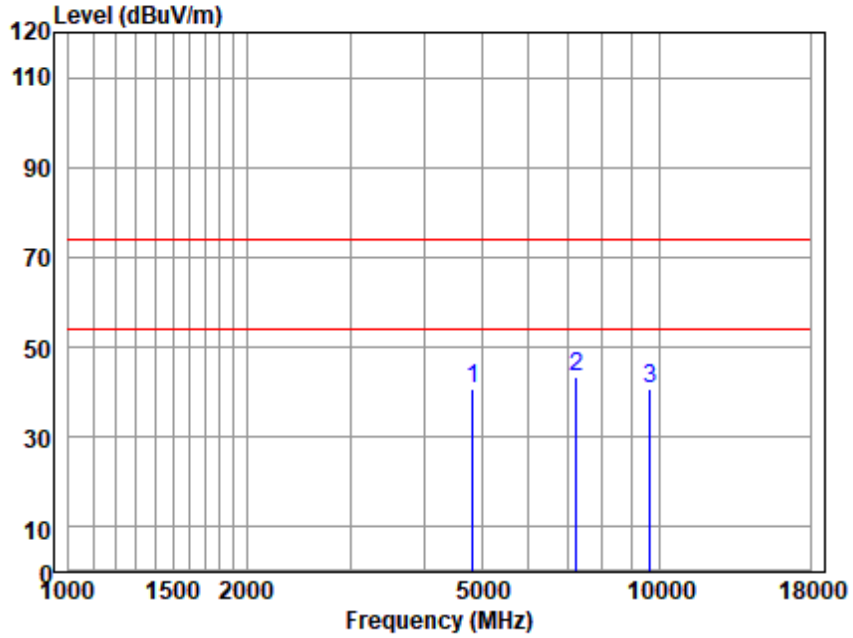


Antenna Polarity :HORIZONTAL
EUT/Project :1038ME

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
4824.016	38.23	33.60	5.24	36.79	40.28	74.00	-33.72	Peak
7242.052	34.29	36.29	7.36	35.50	42.44	74.00	-31.56	Peak
9641.257	28.19	37.71	8.76	33.56	41.10	74.00	-32.90	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low

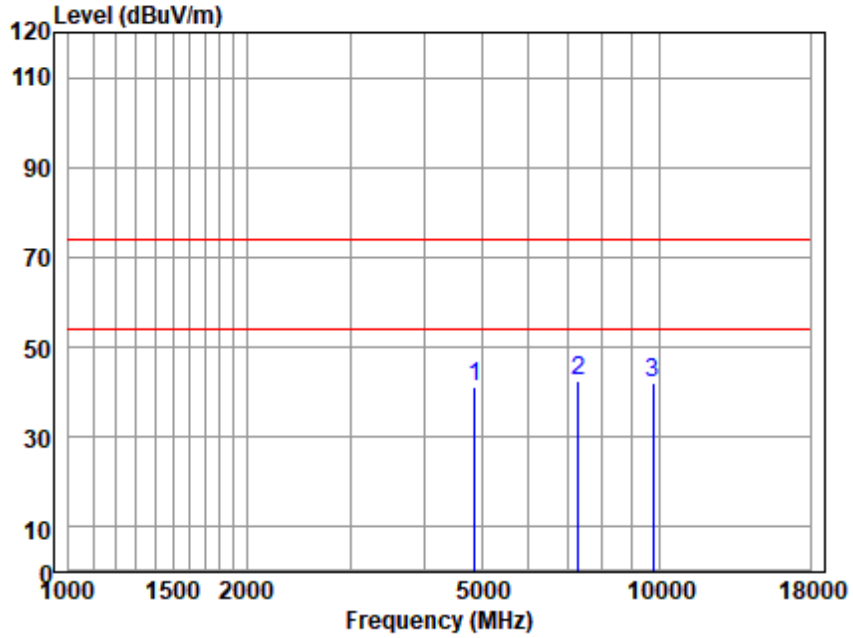


Antenna Polarity :VERTICAL
EUT/Project :1038ME

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
4824.016	38.73	33.60	5.24	36.79	40.78	74.00	-33.22	Peak
7242.052	35.07	36.29	7.36	35.50	43.22	74.00	-30.78	Peak
9641.257	27.73	37.71	8.76	33.56	40.64	74.00	-33.36	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:middle

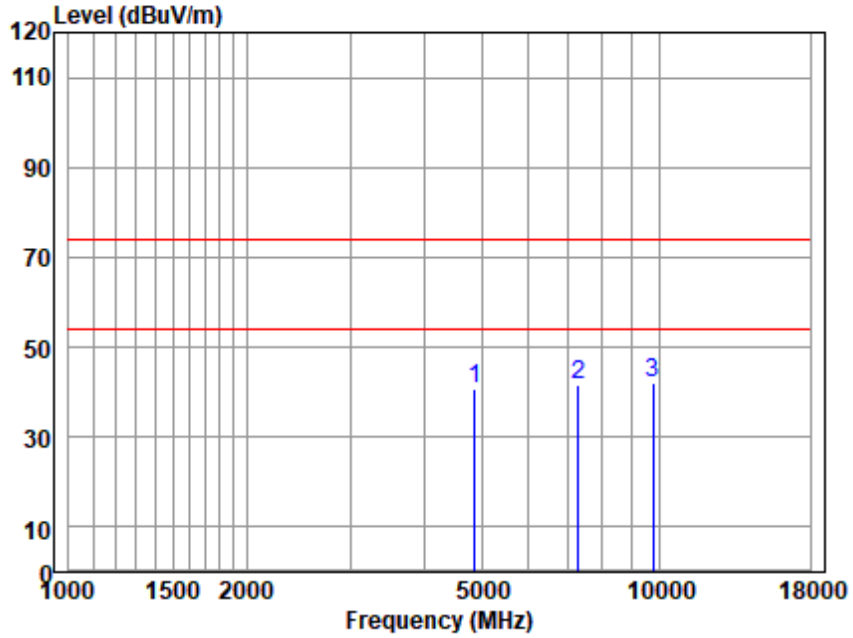


Antenna Polarity :HORIZONTAL
EUT/Project :1038ME

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
4874.043	38.98	33.66	5.28	36.81	41.11	74.00	-32.89	Peak
7305.122	33.99	36.32	7.42	35.44	42.29	74.00	-31.71	Peak
9753.371	29.05	37.54	8.80	33.50	41.89	74.00	-32.11	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:middle

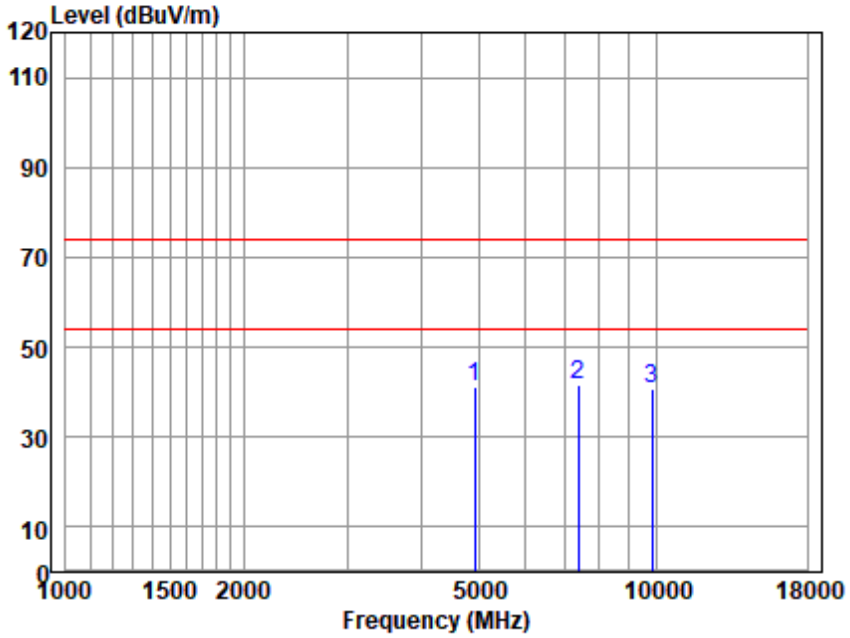


Antenna Polarity :VERTICAL
EUT/Project :1038ME

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
4874.043	38.76	33.66	5.28	36.81	40.89	74.00	-33.11	Peak
7305.122	33.18	36.32	7.42	35.44	41.48	74.00	-32.52	Peak
9753.371	29.21	37.54	8.80	33.50	42.05	74.00	-31.95	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High

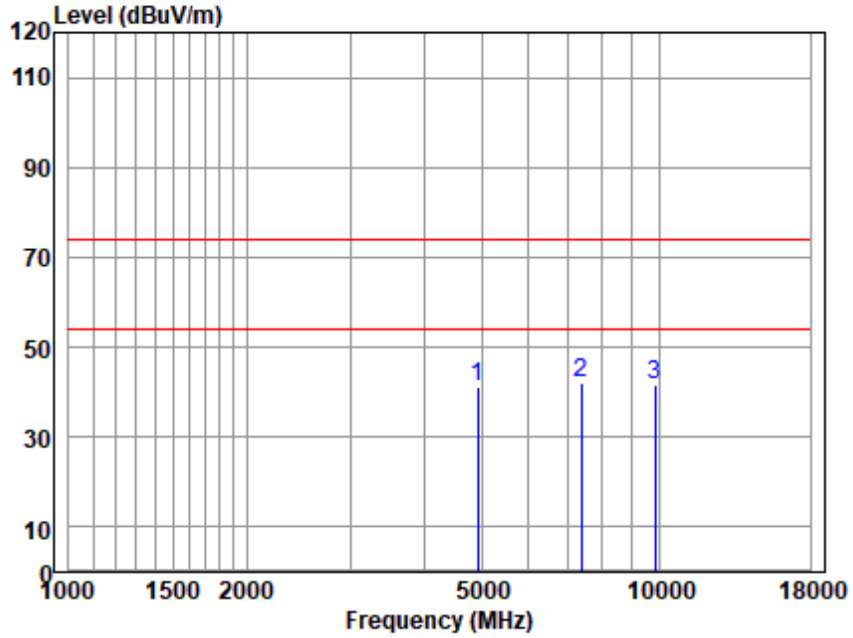


Antenna Polarity :HORIZONTAL
EUT/Project :1038ME

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
4924.721	39.02	33.64	5.32	36.82	41.16	74.00	-32.84	Peak
7390.070	33.06	36.36	7.49	35.37	41.54	74.00	-32.46	Peak
9838.312	27.89	37.60	8.84	33.45	40.88	74.00	-33.12	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 00; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High



Antenna Polarity :VERTICAL
EUT/Project :1038ME

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
4924.721	39.11	33.64	5.32	36.82	41.25	74.00	-32.75	Peak
7390.070	33.57	36.36	7.49	35.37	42.05	74.00	-31.95	Peak
9838.312	28.80	37.60	8.84	33.45	41.79	74.00	-32.21	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

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

Test Requirement 47 CFR Part 15, Subpart C 15.207

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

Limit:

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

7.9.1 E.U.T. Operation

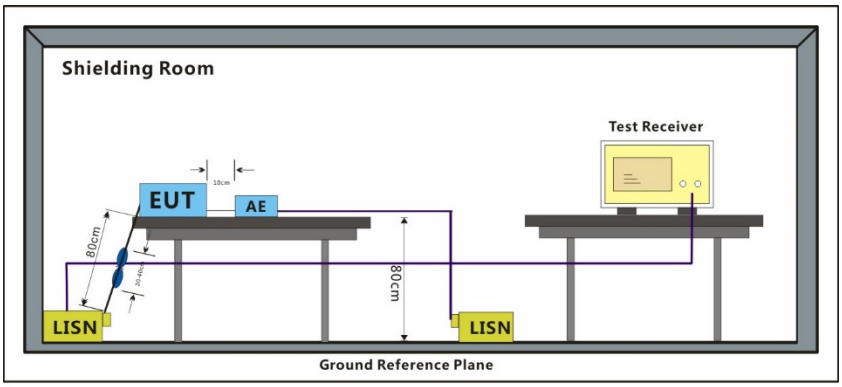
Operating Environment:

Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1010 mbar

7.9.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.

7.9.3 Test Setup Diagram



7.9.4 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.

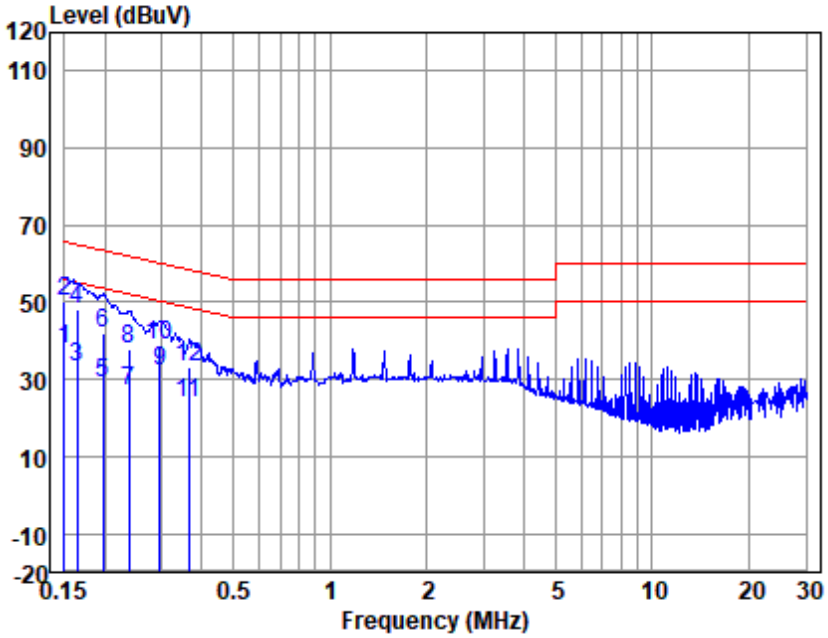
3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane.

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 : Level=Read Level+ Cable Loss+ LISN Factor

Test Mode: 00; Line: Live line

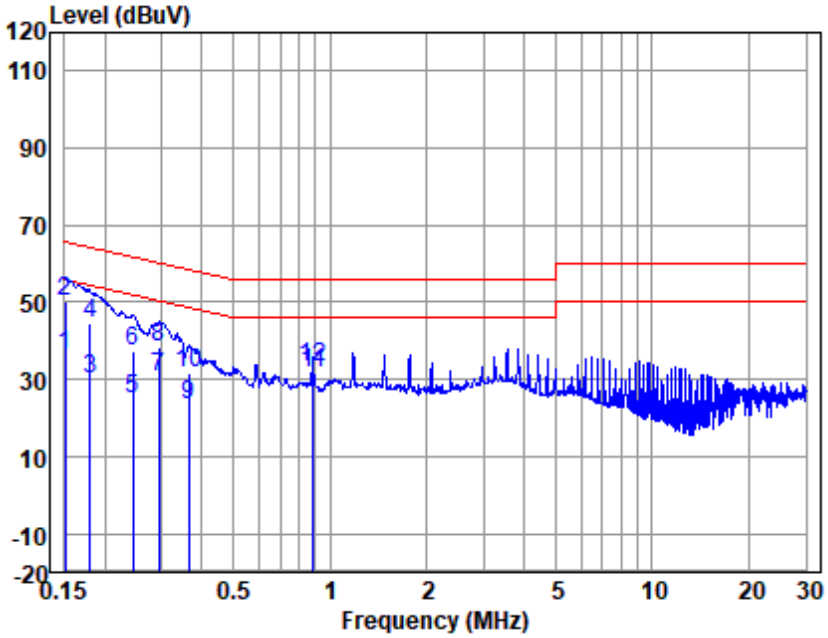


LISN : LINE
EUT/Project No : 1038ME
Test Mode : 00

	Freq	Read level	LISN Factor	Cable Loss	Emission Level	Limit	Over Limit	Remark
	(MHz)	(dBuV)	(dB)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.15	27.40	0.50	9.90	37.80	56.00	-18.20	Average
2	0.15	39.95	0.50	9.90	50.35	66.00	-15.65	QP
3	0.16	22.56	0.50	9.90	32.96	55.25	-22.29	Average
4	0.16	37.90	0.50	9.90	48.30	65.25	-16.95	QP
5	0.20	18.45	0.50	9.90	28.85	53.71	-24.86	Average
6	0.20	31.82	0.50	9.90	42.22	63.71	-21.49	QP
7	0.24	16.53	0.46	9.90	26.89	52.17	-25.28	Average
8	0.24	27.71	0.46	9.90	38.07	62.17	-24.10	QP
9	0.30	21.67	0.42	9.90	31.99	50.37	-18.38	Average
10	0.30	28.37	0.42	9.90	38.69	60.37	-21.68	QP
11	0.37	13.72	0.37	9.90	23.99	48.61	-24.62	Average
12	0.37	22.72	0.37	9.90	32.99	58.61	-25.62	QP

Notes: Emission Level = Read Level +LISN Factor + Cable loss

Test Mode: 00; Line: Neutral Line



LISN : NEUTRAL
EUT/Project No : 1038ME
Test Mode : 00

	Freq	Read level	LISN Factor	Cable Loss	Emission Level	Limit	Over Limit	Remark
	(MHz)	(dBuV)	(dB)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.15	26.16	0.44	9.90	36.50	55.96	-19.46	Average
2	0.15	39.90	0.44	9.90	50.24	65.96	-15.72	QP
3	0.18	19.60	0.42	9.90	29.92	54.50	-24.58	Average
4	0.18	34.25	0.42	9.90	44.57	64.50	-19.93	QP
5	0.24	14.82	0.40	9.90	25.12	51.95	-26.83	Average
6	0.24	26.83	0.40	9.90	37.13	61.95	-24.82	QP
7	0.29	20.23	0.40	9.90	30.53	50.41	-19.88	Average
8	0.29	27.88	0.40	9.90	38.18	60.41	-22.23	QP
9	0.37	13.05	0.40	9.90	23.35	48.61	-25.26	Average
10	0.37	21.46	0.40	9.90	31.76	58.61	-26.85	QP
11	0.88	21.34	0.30	9.90	31.54	46.00	-14.46	Average
12	0.88	22.94	0.30	9.90	33.14	56.00	-22.86	QP

Notes: Emission Level = Read Level +LISN Factor + Cable loss

8 Test Setup Photo

Refer to Appendix - Test Setup Photo for SHCR2504001038ME

9 EUT Constructional Details (EUT Photos)

Refer to Appendix - Photographs of EUT Constructional Details for SHCR2504001038ME

10 Appendix

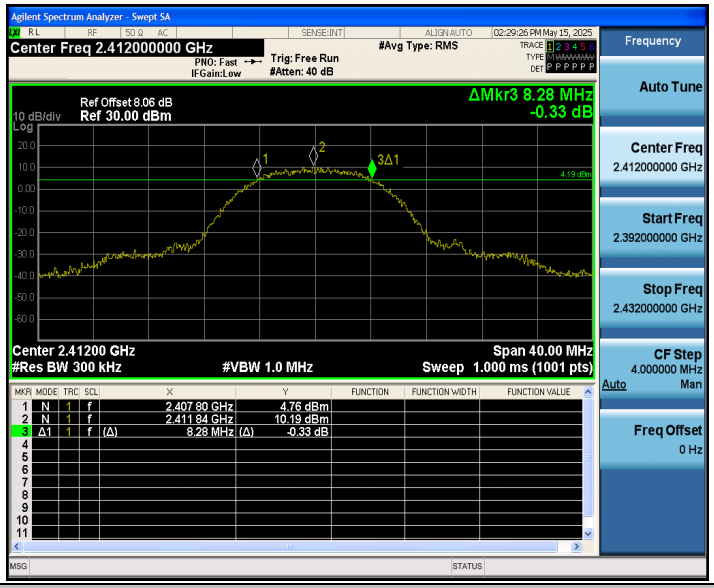
10.1 Appendix A: DTS Bandwidth

10.1.1 Test Result

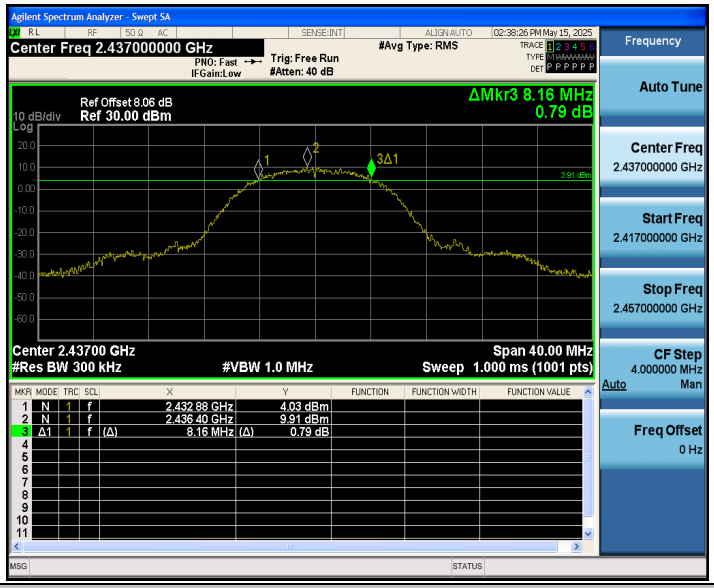
Test Mode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	8.280	2407.800	2416.080	≥0.5	PASS
		2437	8.160	2432.880	2441.040	≥0.5	PASS
		2462	8.480	2457.720	2466.200	≥0.5	PASS
11G	Ant1	2412	16.360	2403.840	2420.200	≥0.5	PASS
		2437	16.480	2428.760	2445.240	≥0.5	PASS
		2462	16.400	2453.760	2470.160	≥0.5	PASS
11N20SISO	Ant1	2412	17.680	2403.120	2420.800	≥0.5	PASS
		2437	17.640	2428.160	2445.800	≥0.5	PASS
		2462	17.720	2453.120	2470.840	≥0.5	PASS

10.1.2 Test Graphs

11B_Ant1_2412

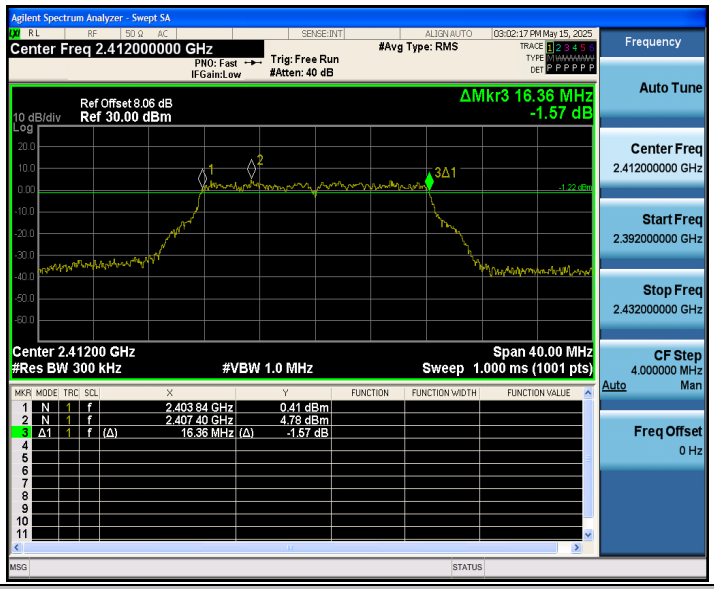


11B_Ant1_2437

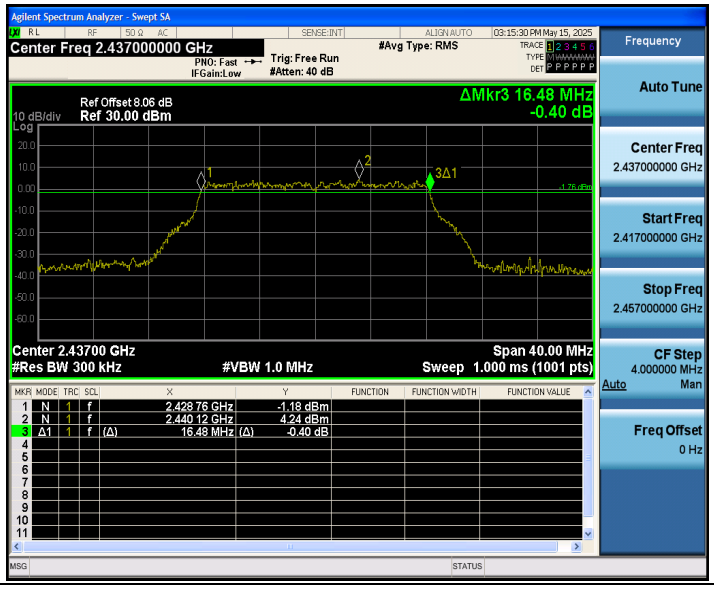


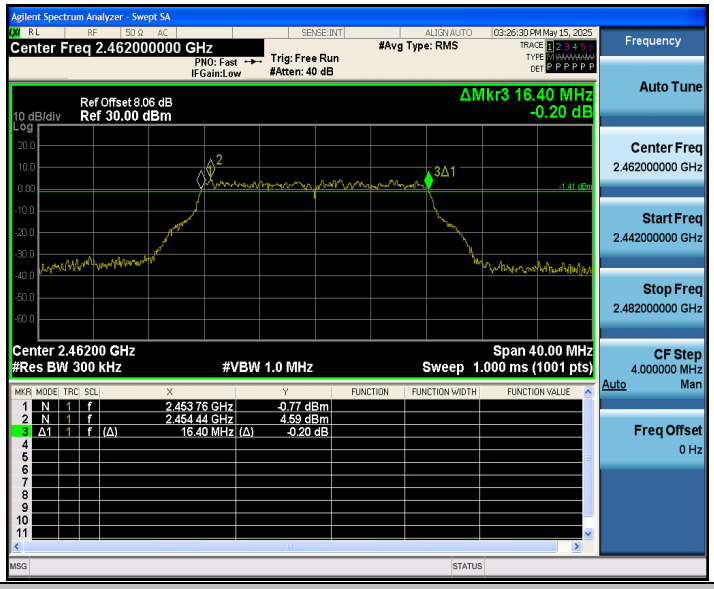
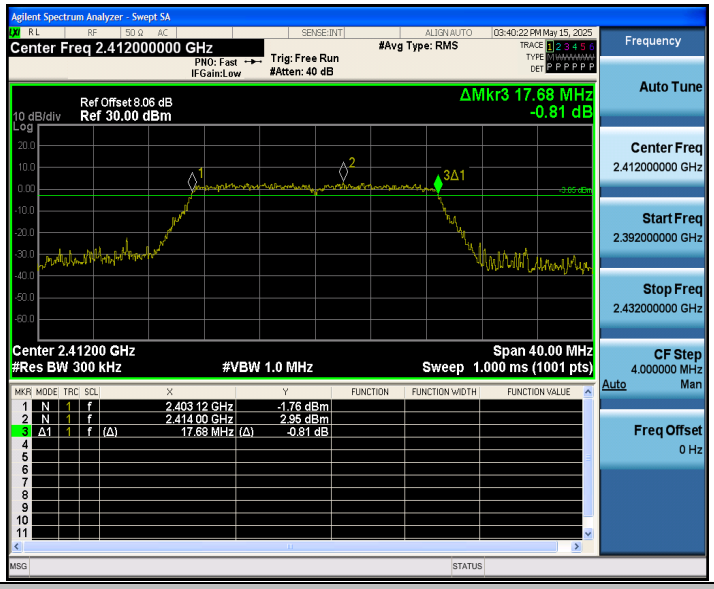
11B_Ant1_2462

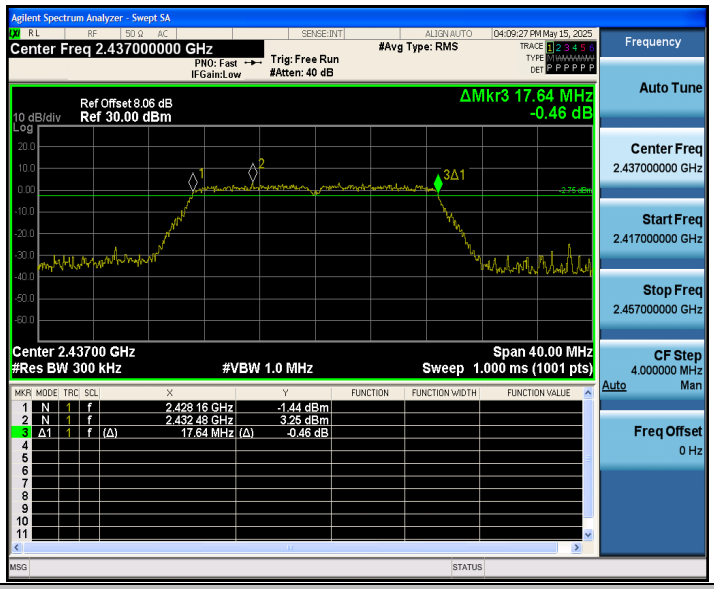
11G_Ant1_2412



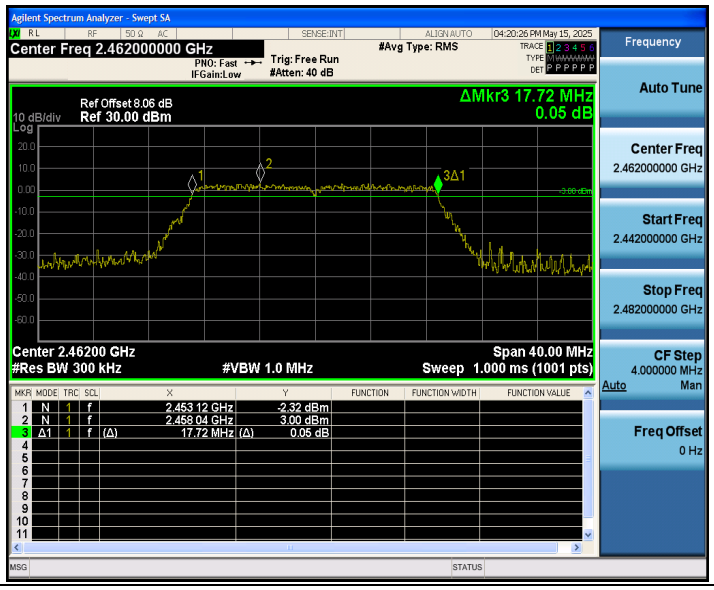
11G_Ant1_2437



11G_Ant1_2462

11N20SISO_Ant1_2412

11N20SISO_Ant1_2437



11N20SISO_Ant1_2462



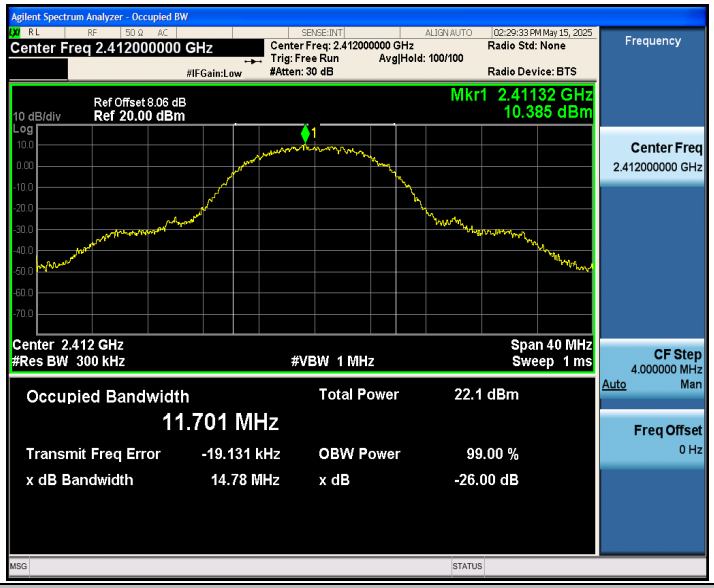
10.2 Appendix B: Occupied Channel Bandwidth

10.2.1 Test Result

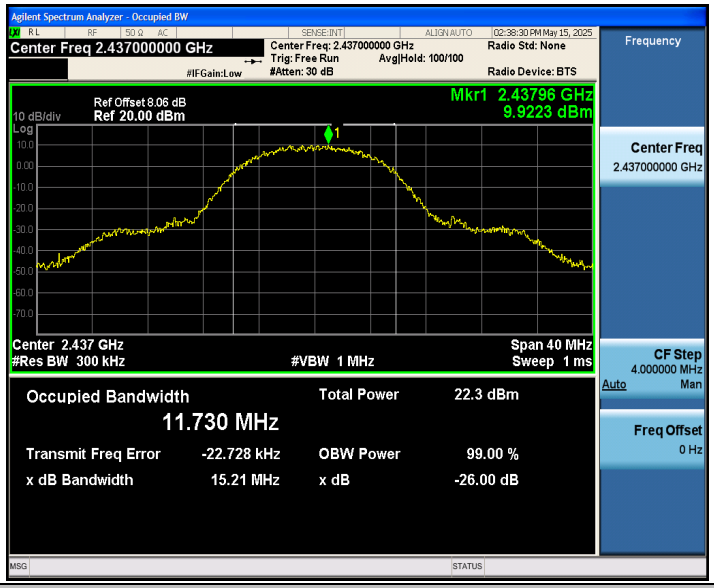
Test Mode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	11.701	2406.1304	2417.8314	---	---
		2437	11.730	2431.1123	2442.8423	---	---
		2462	11.824	2456.0504	2467.8744	---	---
11G	Ant1	2412	16.714	2403.6380	2420.3520	---	---
		2437	16.689	2428.6536	2445.3426	---	---
		2462	16.651	2453.6387	2470.2897	---	---
11N20SISO	Ant1	2412	18.104	2402.9046	2421.0086	---	---
		2437	18.093	2427.9616	2446.0546	---	---
		2462	18.081	2452.9058	2470.9868	---	---

10.2.2 Test Graphs

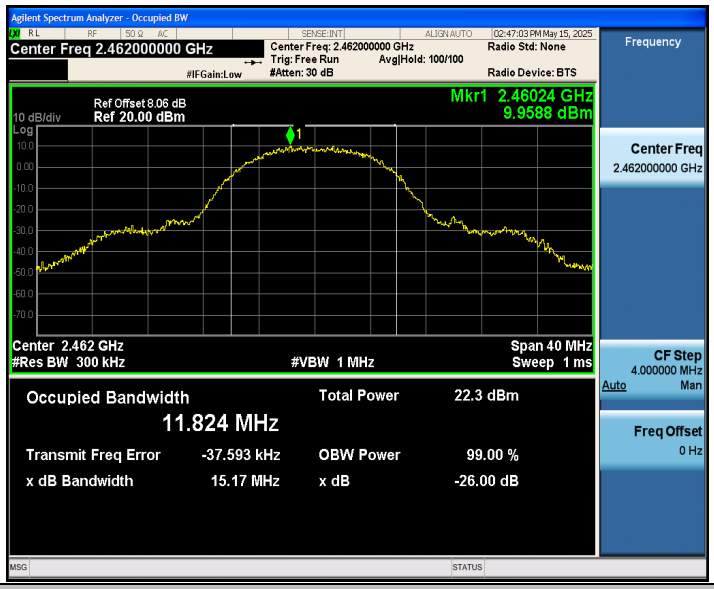
11B_Ant1_2412



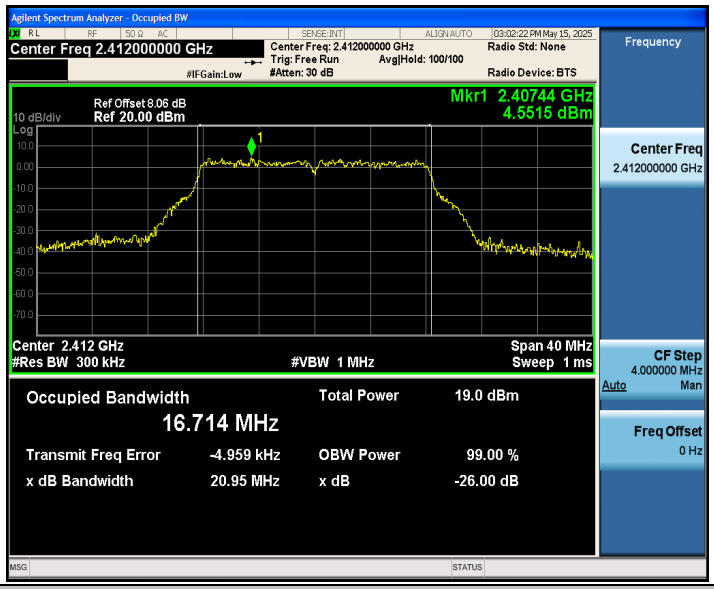
11B_Ant1_2437



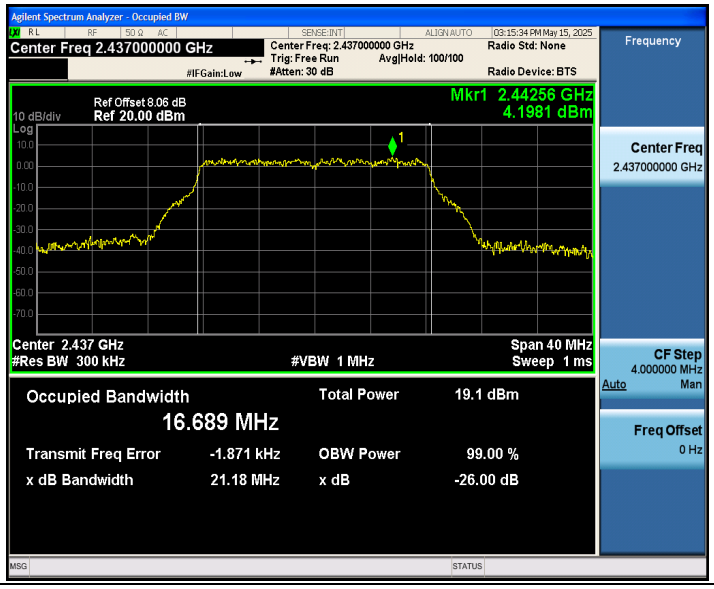
11B_Ant1_2462

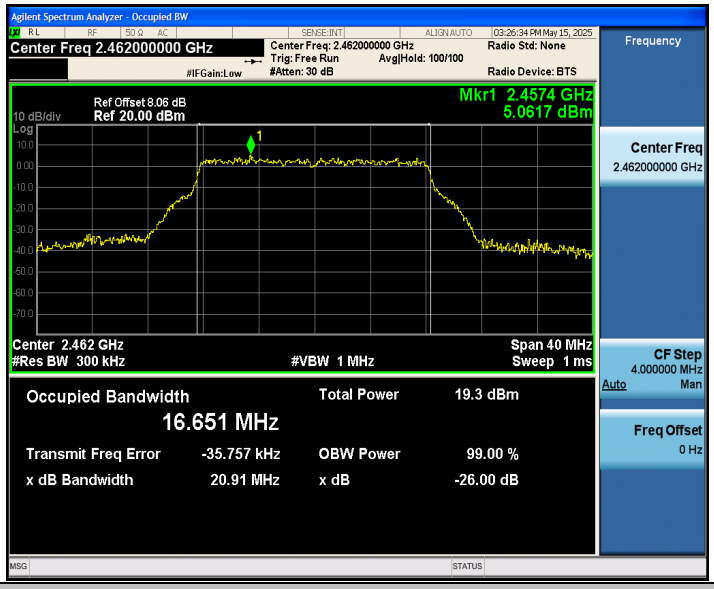
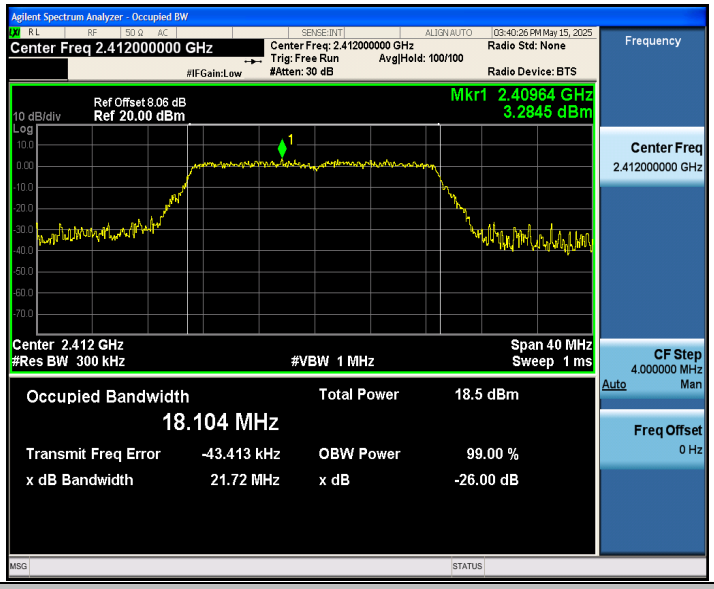


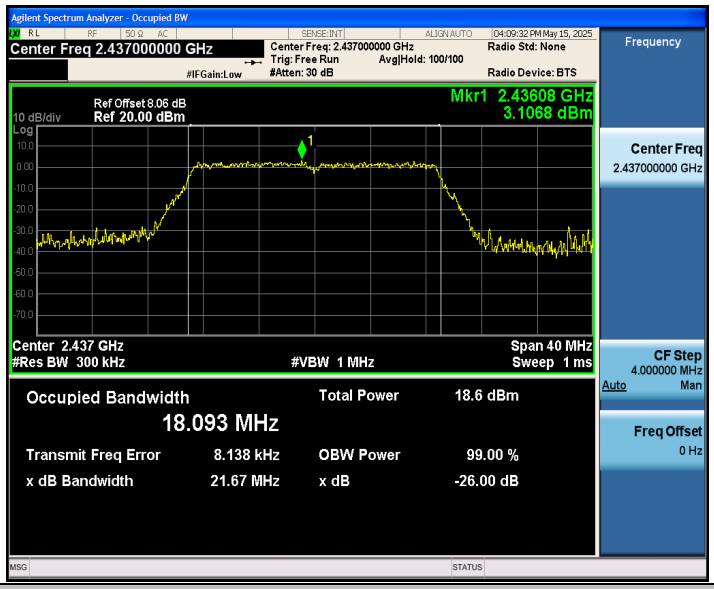
11G_Ant1_2412



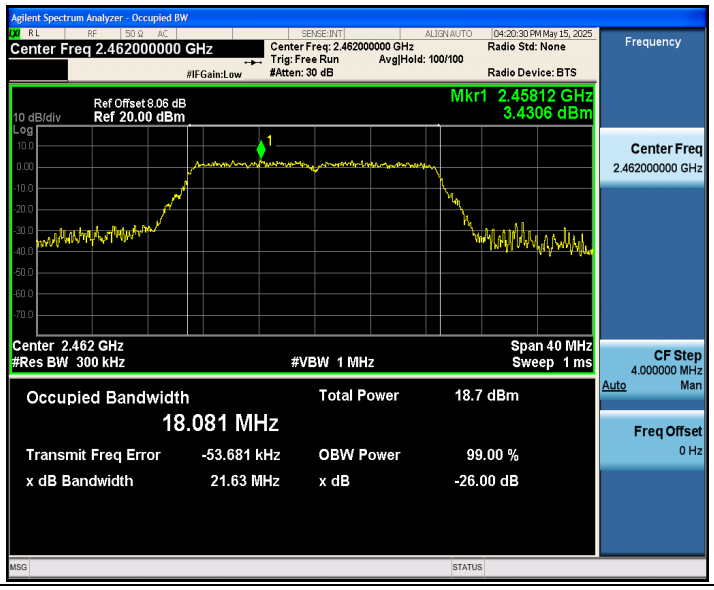
11G_Ant1_2437



11G_Ant1_2462

11N20SISO_Ant1_2412

11N20SISO_Ant1_2437



11N20SISO_Ant1_2462



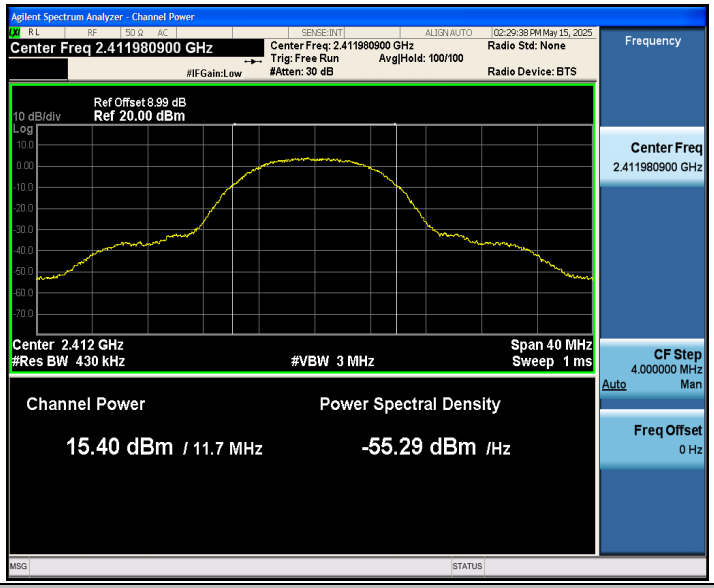
10.3 Appendix C: Maximum conducted output power

10.3.1 Test Result

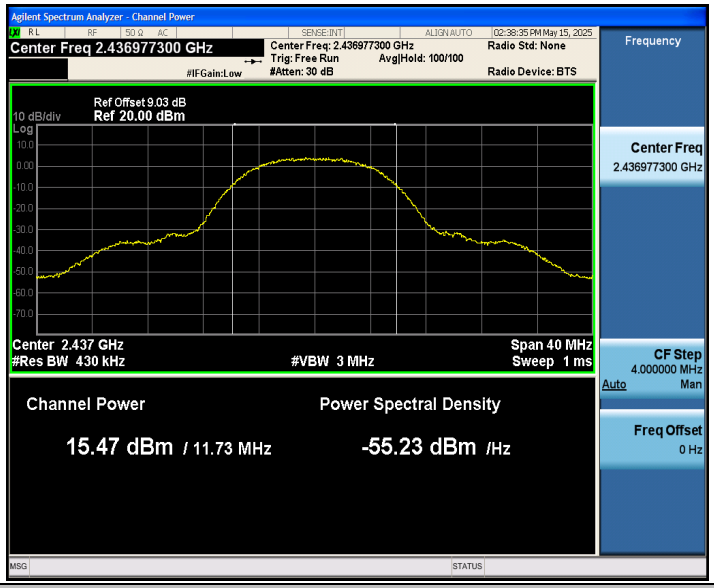
Test Mode	Antenna	Channel	Level [dBm]	10Log(1/X) Factor [dB]	Power [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	14.47	0.93	15.40	≤30.00	PASS
		2437	14.50	0.97	15.47	≤30.00	PASS
		2462	14.82	0.97	15.79	≤30.00	PASS
11G	Ant1	2412	9.83	3.52	13.35	≤30.00	PASS
		2437	9.85	3.42	13.27	≤30.00	PASS
		2462	9.82	3.42	13.24	≤30.00	PASS
11N20SISO	Ant1	2412	12.30	0.19	12.49	≤30.00	PASS
		2437	12.30	0.19	12.49	≤30.00	PASS
		2462	12.53	0.19	12.72	≤30.00	PASS

10.3.2 Test Graphs

11B_Ant1_2412

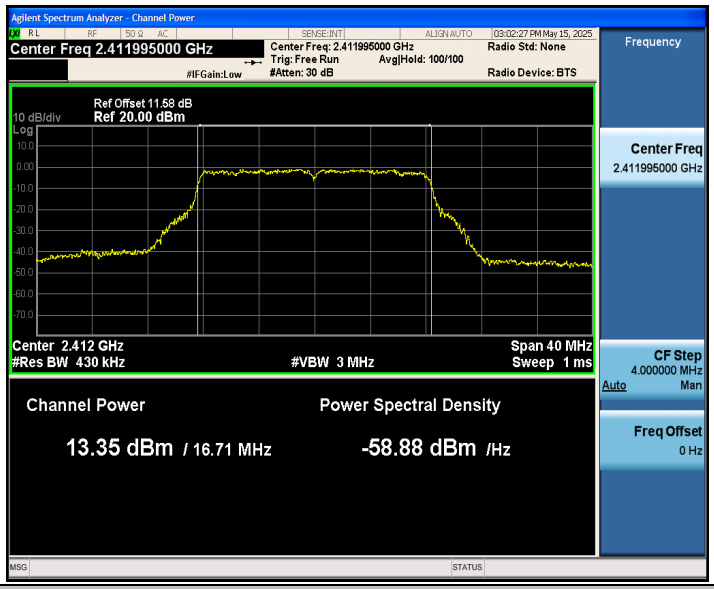


11B_Ant1_2437

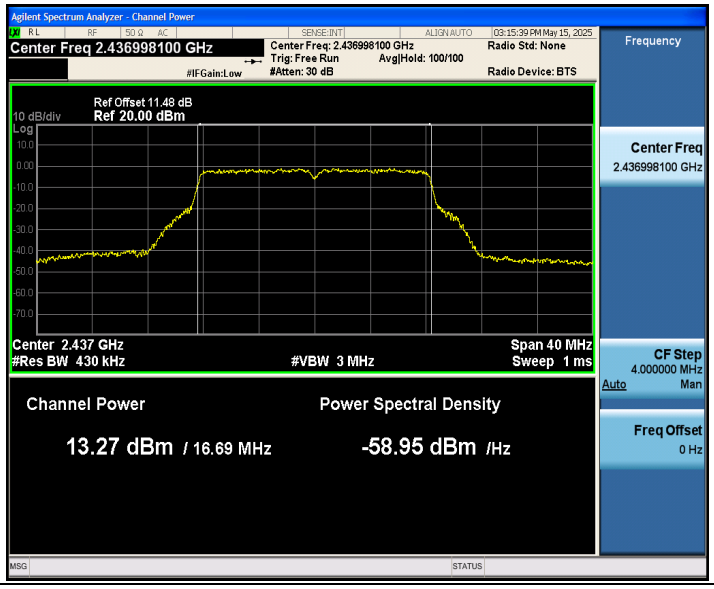


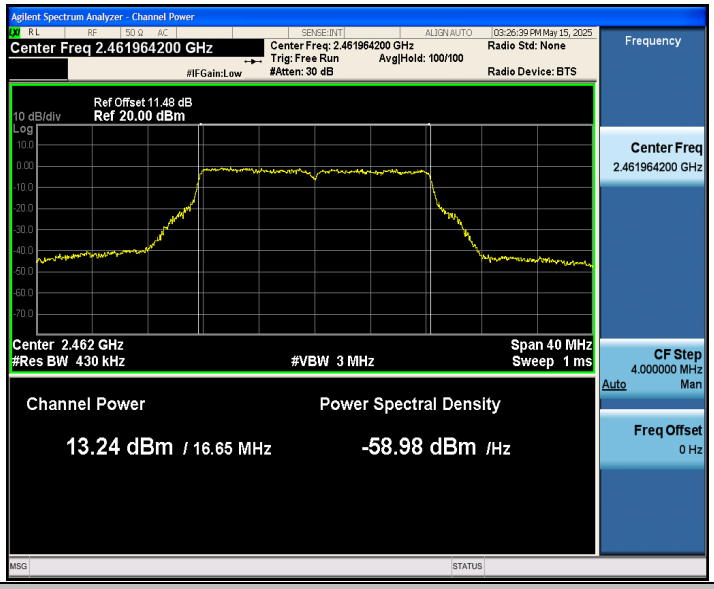
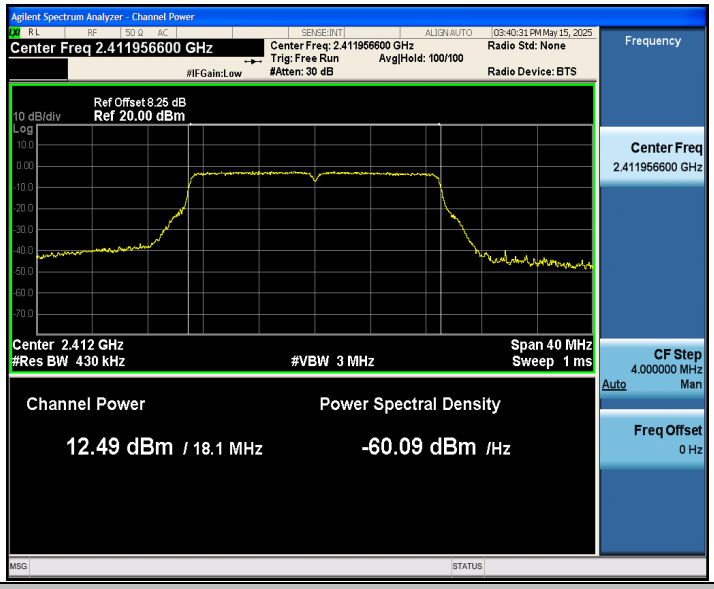
11B_Ant1_2462

11G_Ant1_2412

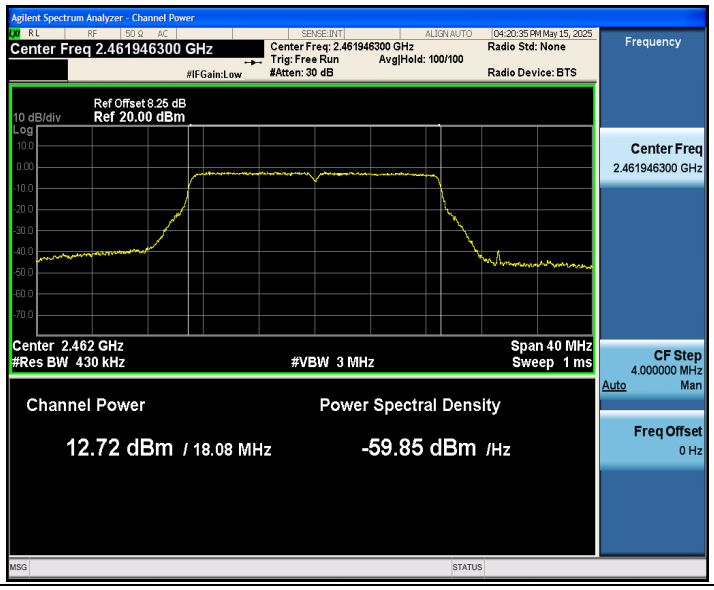


11G_Ant1_2437



11G_Ant1_2462

11N20SISO_Ant1_2412

11N20SISO_Ant1_2437

11N20SISO_Ant1_2462



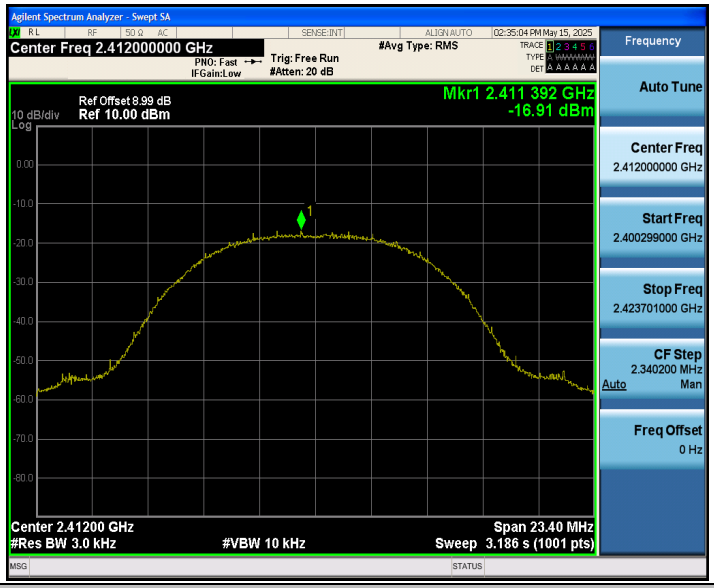
10.4 Appendix D: Maximum power spectral density

10.4.1 Test Result

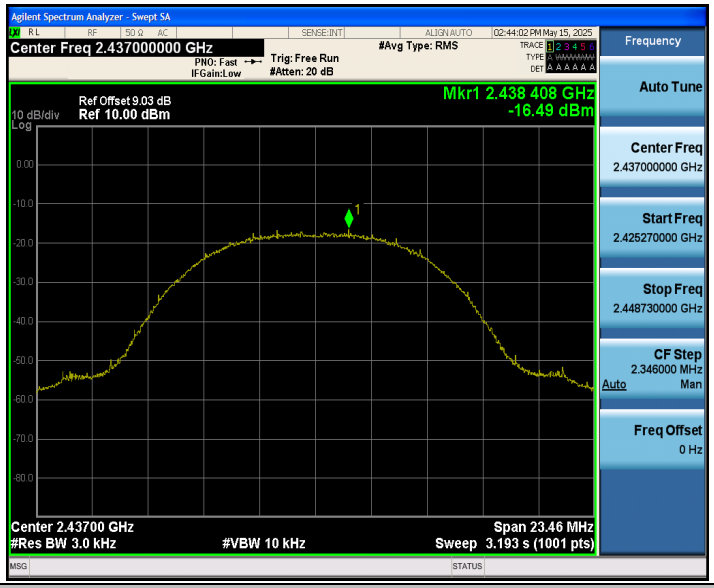
Test Mode	Antenna	Channel	Level [dBm/3-100kHz]	10Log(1/X) Factor [dB]	PSD [dBm/3-100kHz]	Limit [dBm/3kHz]	Verdict
11B	Ant1	2412	-17.84	0.93	-16.91	≤8.00	PASS
		2437	-17.46	0.97	-16.49	≤8.00	PASS
		2462	-17.73	0.97	-16.76	≤8.00	PASS
11G	Ant1	2412	-22.96	3.52	-19.44	≤8.00	PASS
		2437	-22.67	3.42	-19.25	≤8.00	PASS
		2462	-22.77	3.42	-19.35	≤8.00	PASS
11N20SISO	Ant1	2412	-22.95	0.19	-22.76	≤8.00	PASS
		2437	-22.79	0.19	-22.60	≤8.00	PASS
		2462	-22.65	0.19	-22.46	≤8.00	PASS

10.4.2 Test Graphs

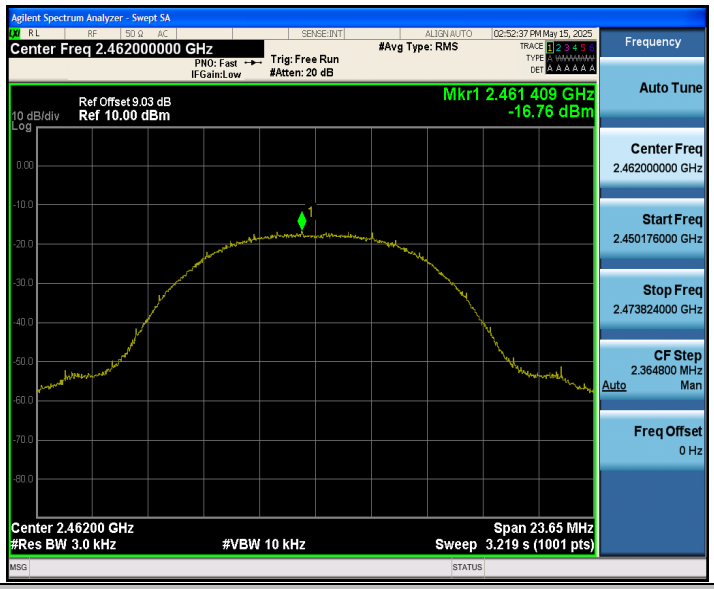
11B_Ant1_2412



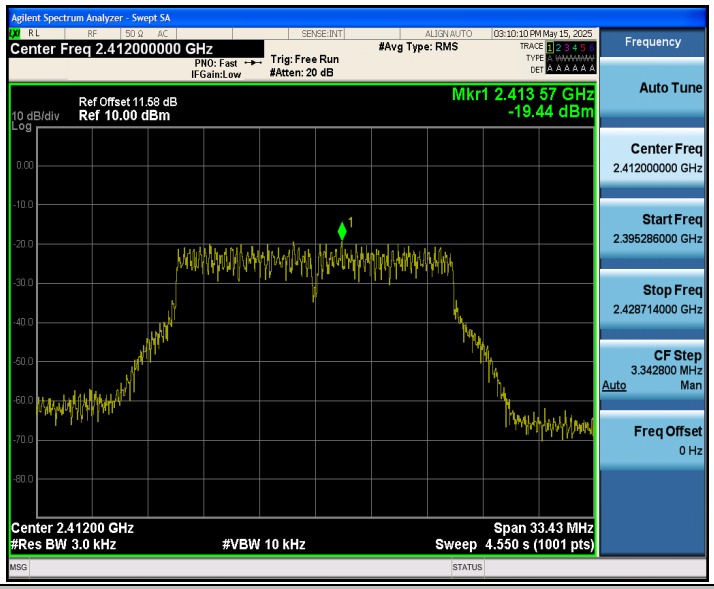
11B_Ant1_2437



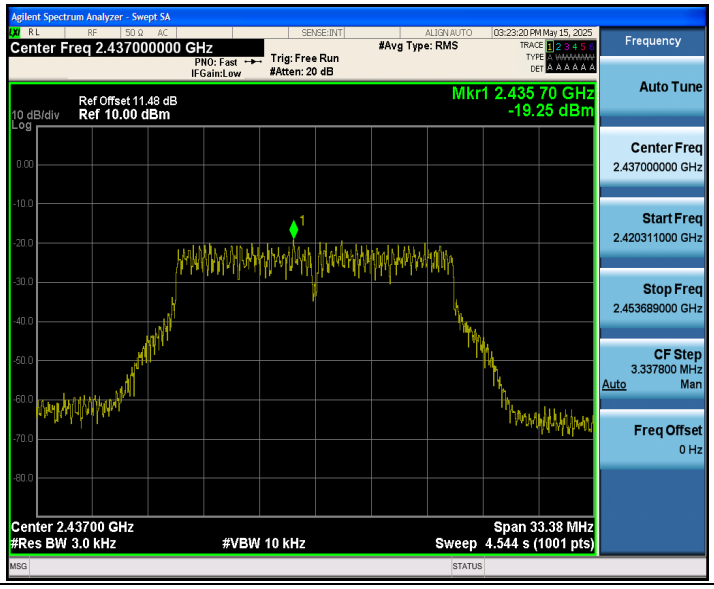
11B_Ant1_2462

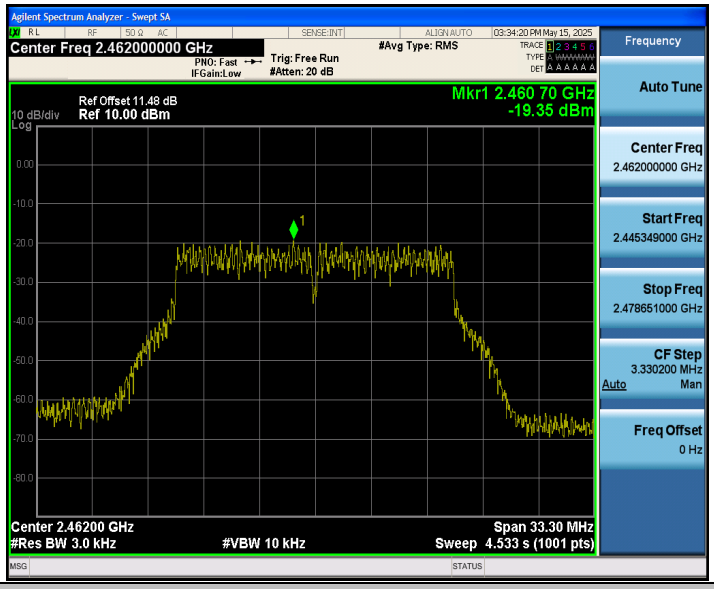
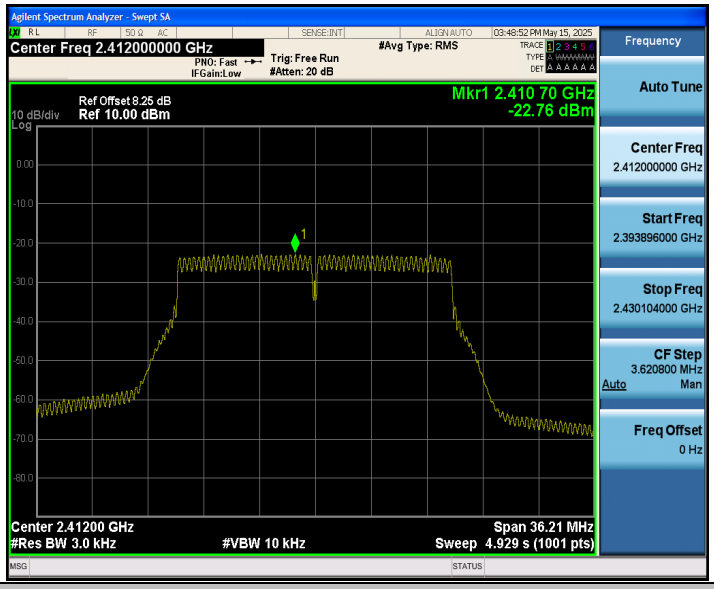


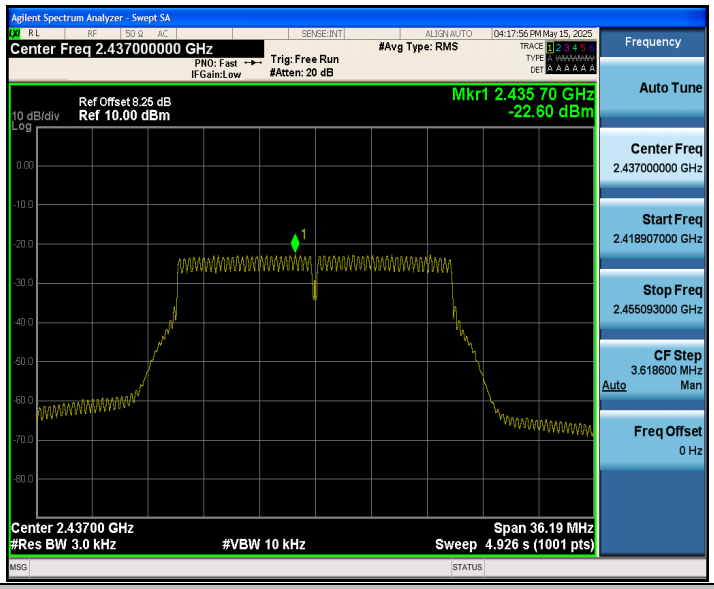
11G_Ant1_2412



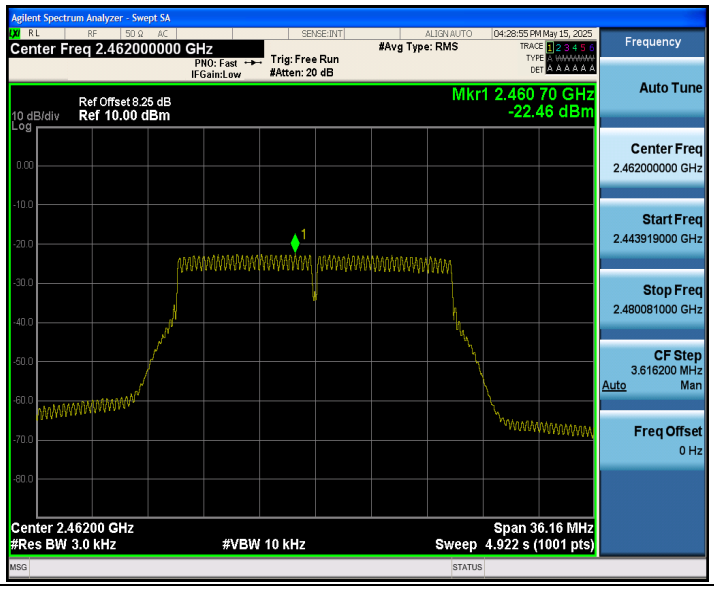
11G_Ant1_2437



11G_Ant1_2462

11N20SISO_Ant1_2412

11N20SISO_Ant1_2437



11N20SISO_Ant1_2462



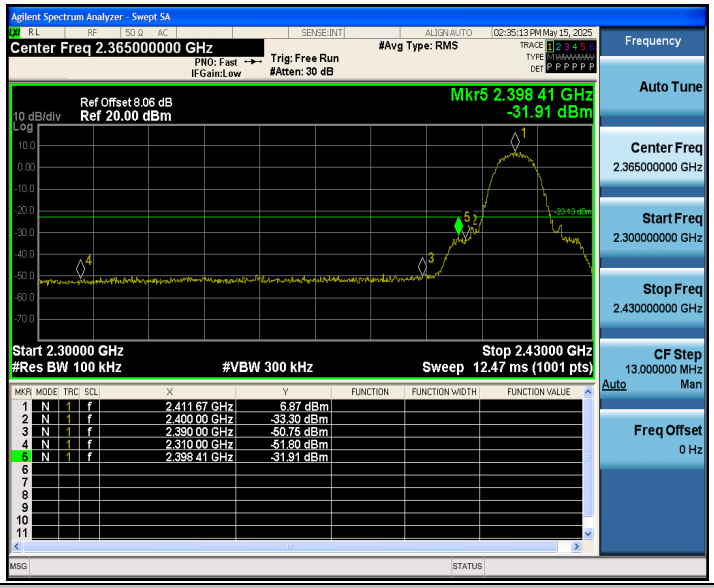
10.5 Appendix E: Band edge measurements

10.5.1 Test Result

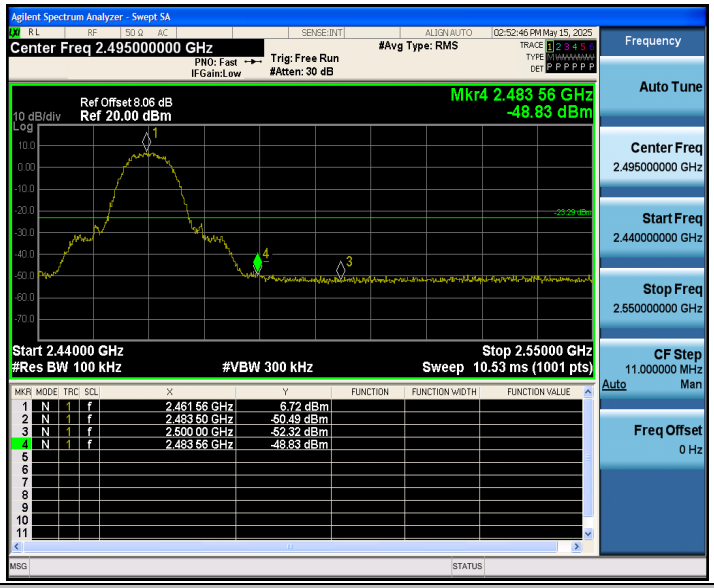
Test Mode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	6.87	-31.91	≤-23.13	PASS
		High	2462	6.72	-48.83	≤-23.29	PASS
11G	Ant1	Low	2412	2.15	-33.24	≤-27.85	PASS
		High	2462	2.37	-44.82	≤-27.64	PASS
11N20SISO	Ant1	Low	2412	0.91	-30.95	≤-29.09	PASS
		High	2462	1.68	-39.3	≤-28.32	PASS

10.5.2 Test Graphs

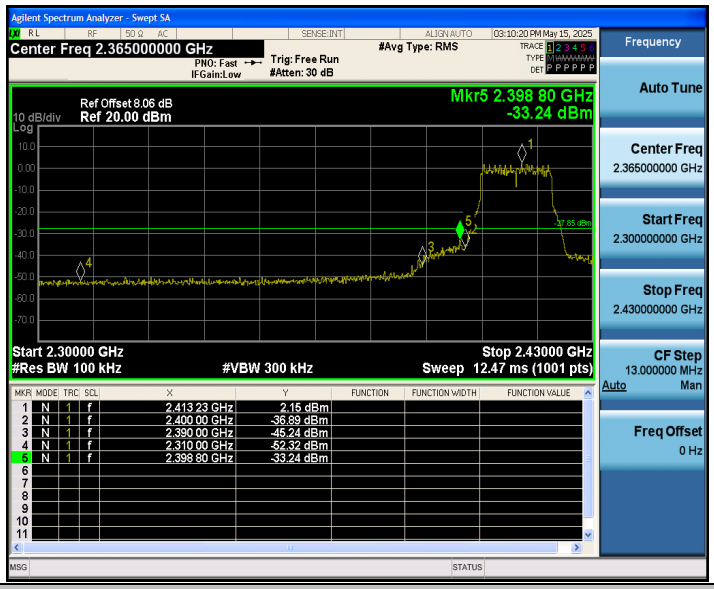
11B_Ant1_Low_2412



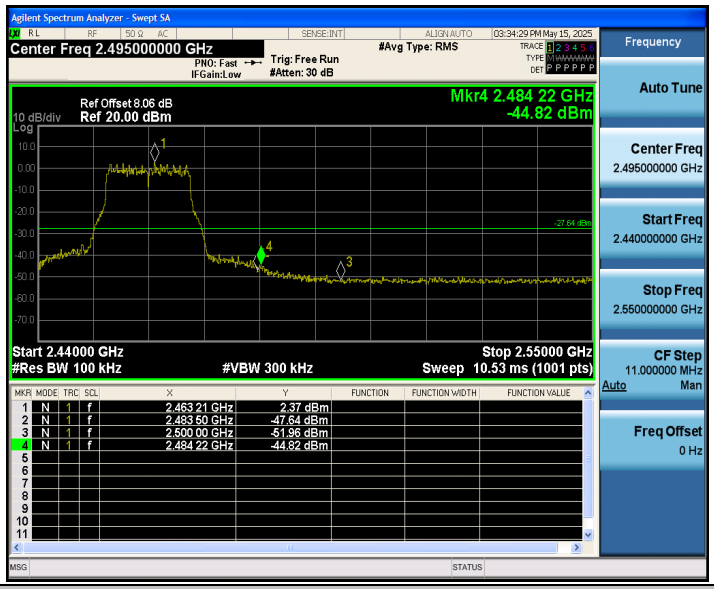
11B_Ant1_High_2462



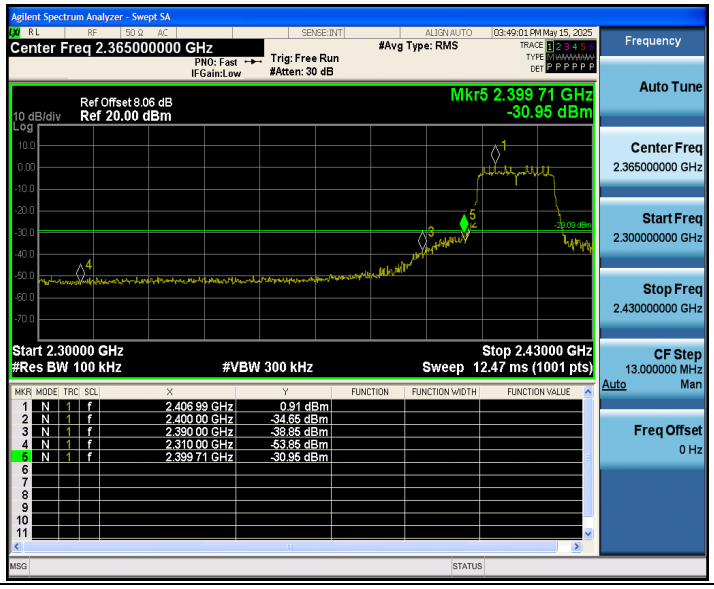
11G_Ant1_Low_2412

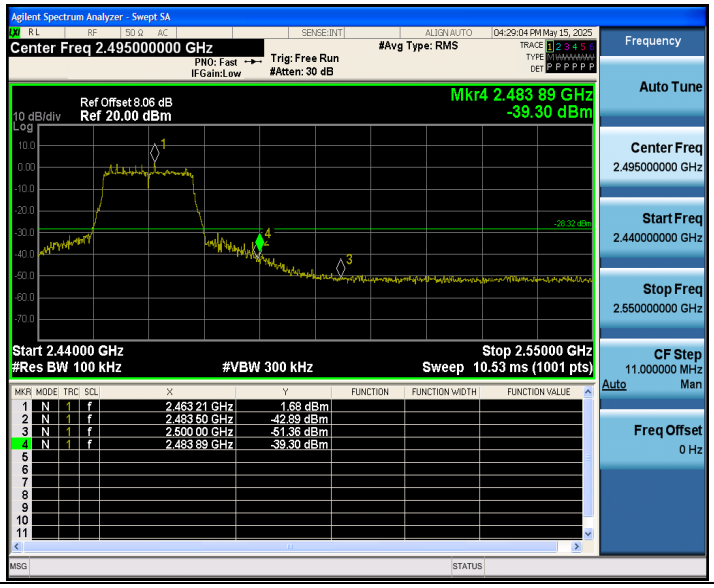


11G_Ant1_High_2462



11N20SISO_Ant1_Low_2412



11N20SISO_Ant1_High_2462


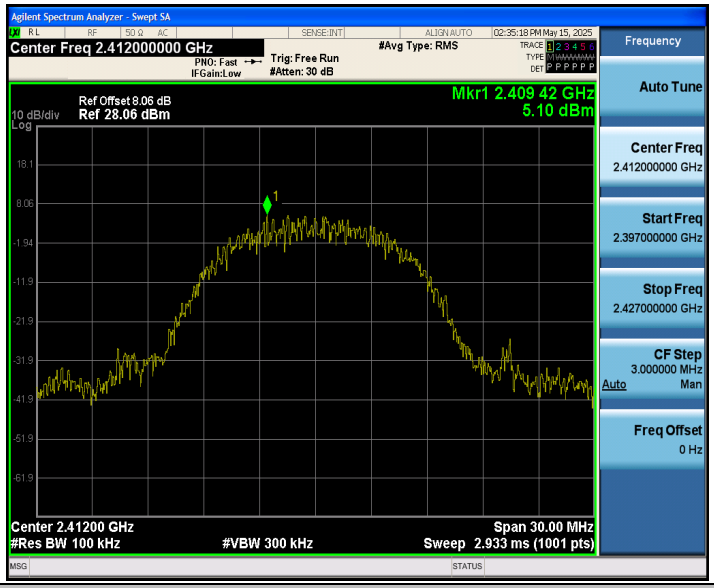
10.6 Appendix F: Conducted Spurious Emission

10.6.1 Test Result

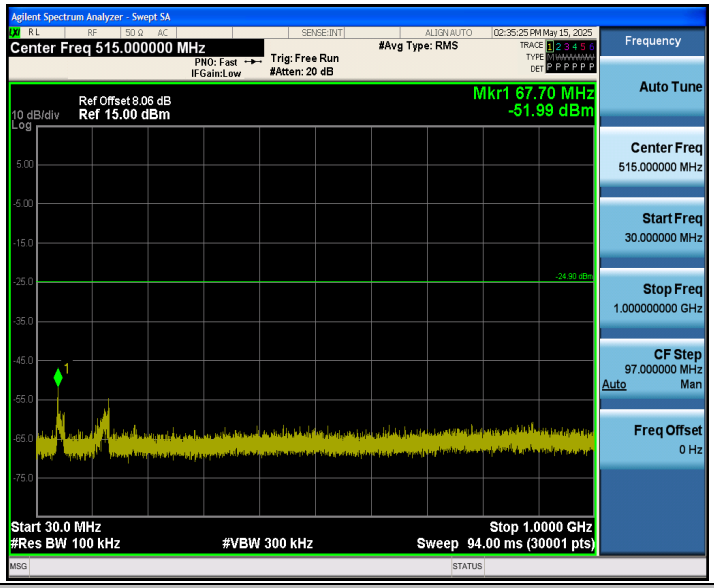
Test Mode	Antenna	Channel	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	5.10	5.10	---	PASS
			30~1000	5.10	-51.99	≤-24.9	PASS
			1000~26500	5.10	-43.33	≤-24.9	PASS
		2437	Reference	4.94	4.94	---	PASS
			30~1000	4.94	-53.97	≤-25.06	PASS
			1000~26500	4.94	-42.91	≤-25.06	PASS
		2462	Reference	5.46	5.46	---	PASS
			30~1000	5.46	-51.62	≤-24.54	PASS
			1000~26500	5.46	-41.94	≤-24.54	PASS
11G	Ant1	2412	Reference	1.89	1.89	---	PASS
			30~1000	1.89	-51.76	≤-28.11	PASS
			1000~26500	1.89	-42.87	≤-28.11	PASS
		2437	Reference	0.57	0.57	---	PASS
			30~1000	0.57	-52.63	≤-29.43	PASS
			1000~26500	0.57	-43.39	≤-29.43	PASS
		2462	Reference	1.84	1.84	---	PASS
			30~1000	1.84	-51.97	≤-28.16	PASS
			1000~26500	1.84	-42.83	≤-28.16	PASS
11N20SISO	Ant1	2412	Reference	-0.85	-0.85	---	PASS
			30~1000	-0.85	-52.05	≤-30.85	PASS
			1000~26500	-0.85	-42.72	≤-30.85	PASS
		2437	Reference	-2.07	-2.07	---	PASS
			30~1000	-2.07	-49.81	≤-32.07	PASS
			1000~26500	-2.07	-43.16	≤-32.07	PASS
		2462	Reference	0.96	0.96	---	PASS
			30~1000	0.96	-47.45	≤-29.04	PASS
			1000~26500	0.96	-42.87	≤-29.04	PASS

10.6.2 Test Graphs

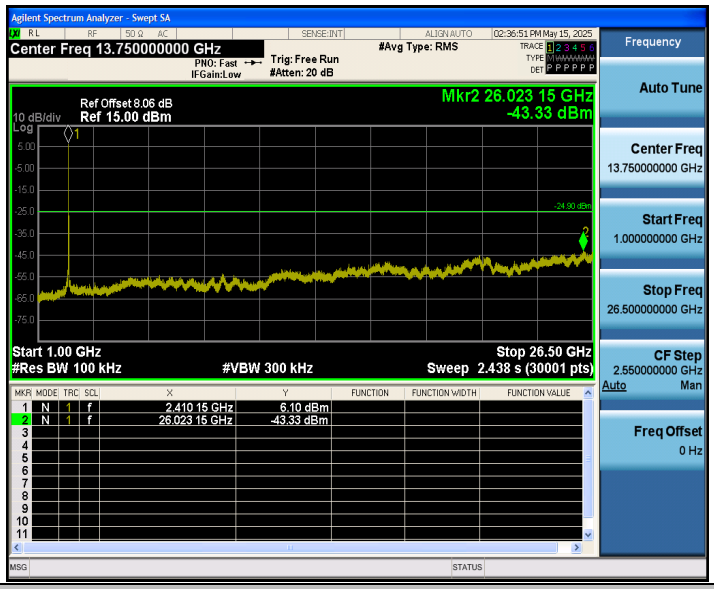
11B_Ant1_2412_0~Reference



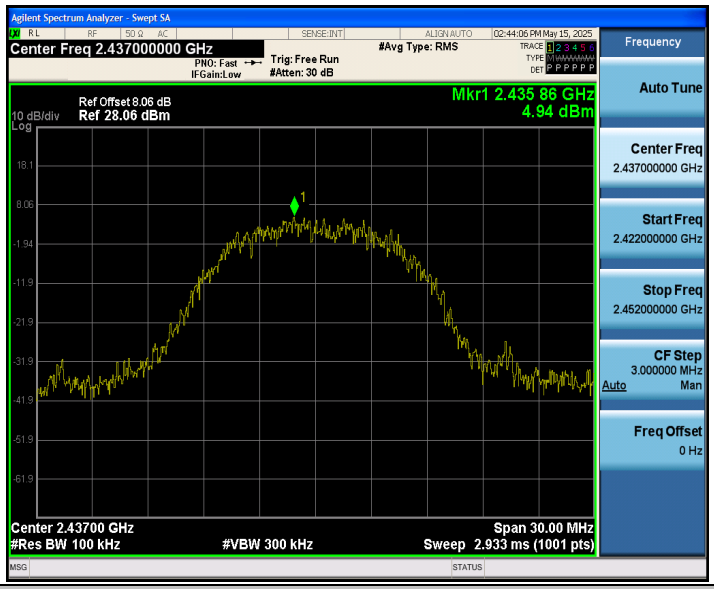
11B_Ant1_2412_30~1000



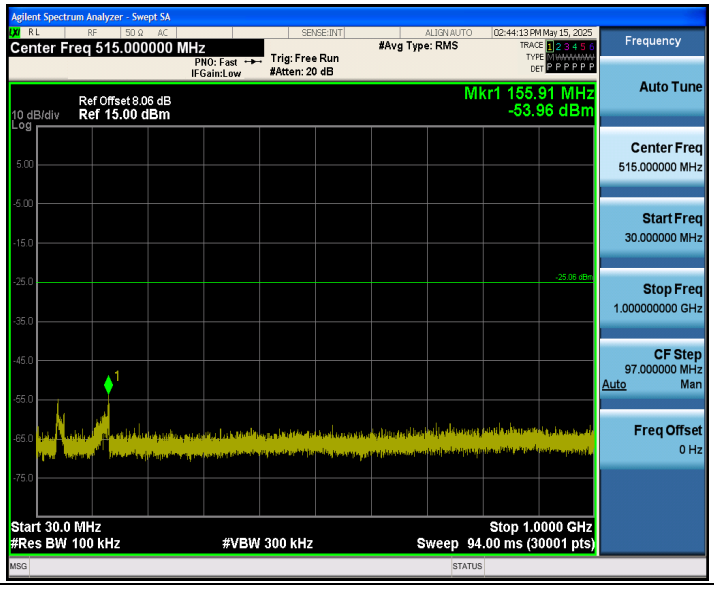
11B_Ant1_2412_1000~26500

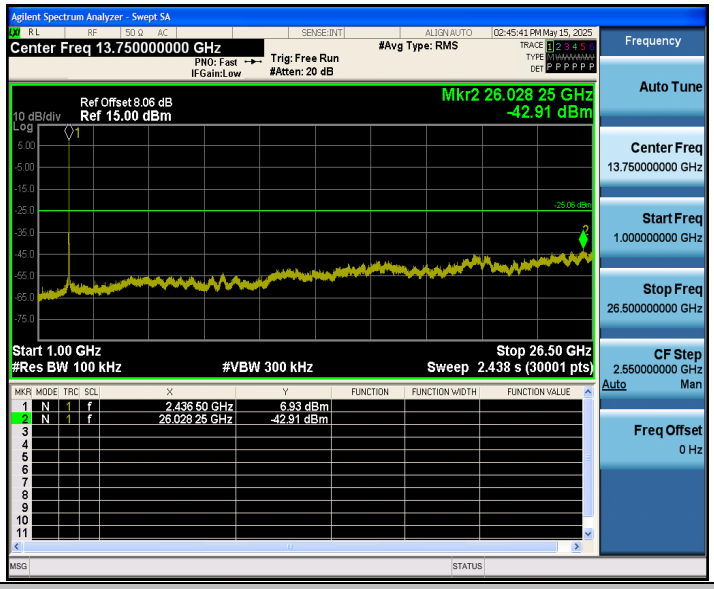
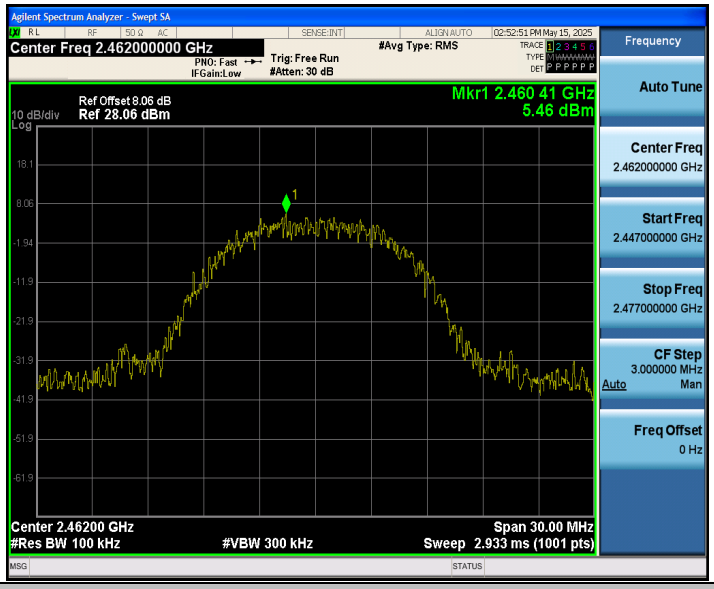


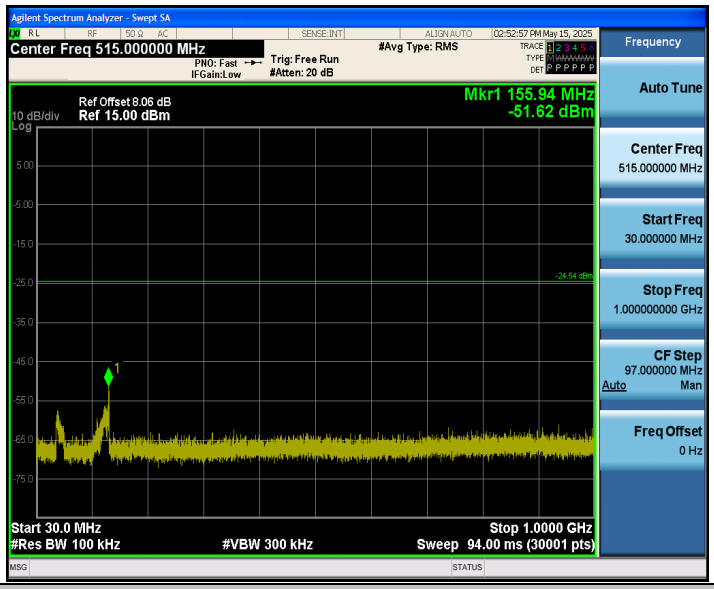
11B_Ant1_2437_0~Reference



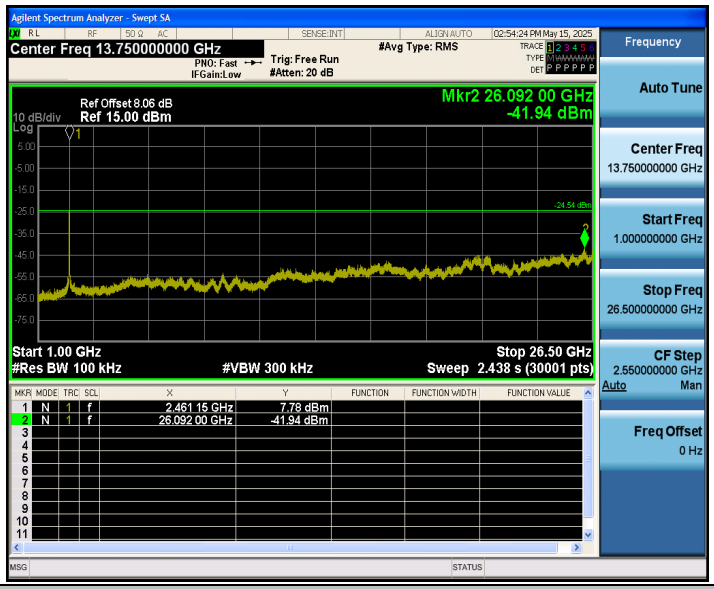
11B_Ant1_2437_30~1000



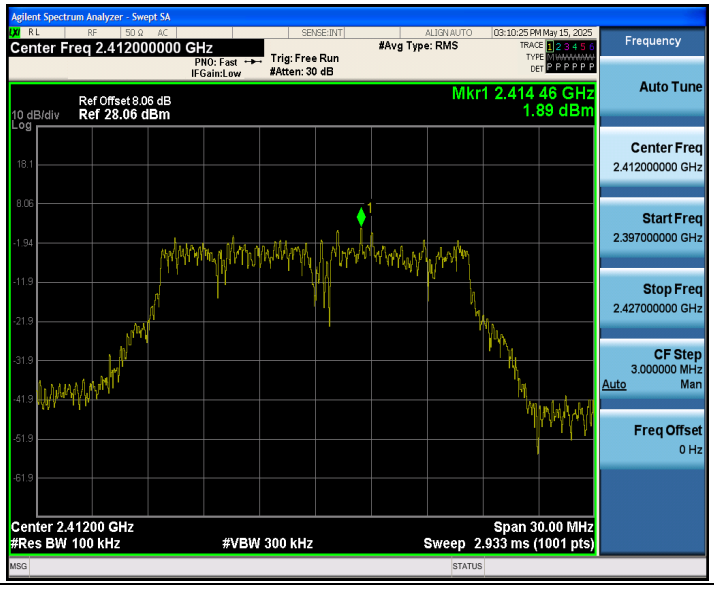
11B_Ant1_2437_1000~26500

11B_Ant1_2462_0~Reference

11B_Ant1_2462_30~1000

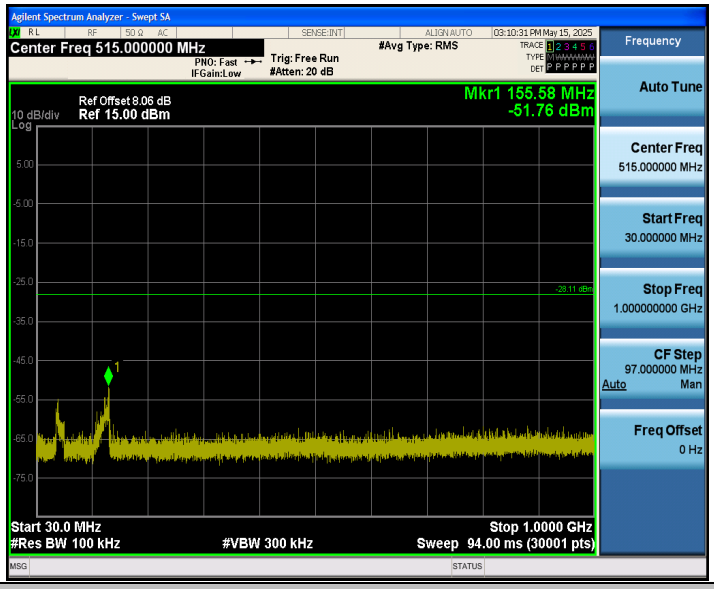
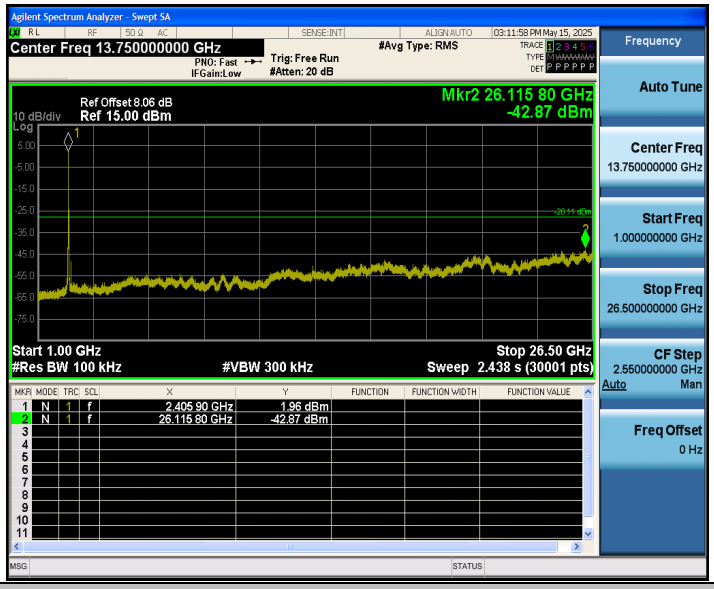


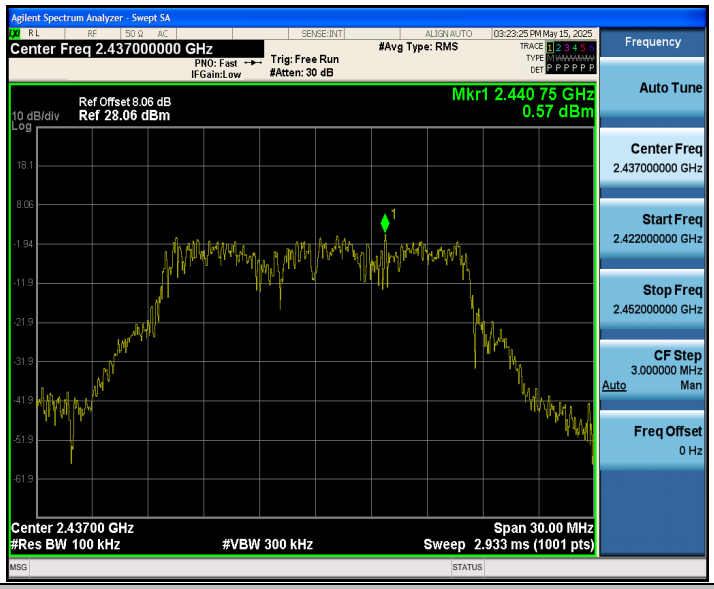
11B_Ant1_2462_1000~26500



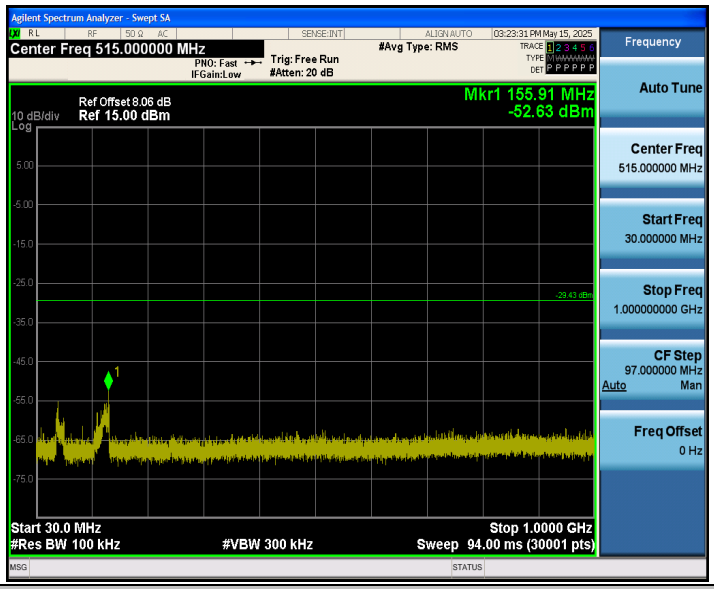
11G_Ant1_2412_0~Reference



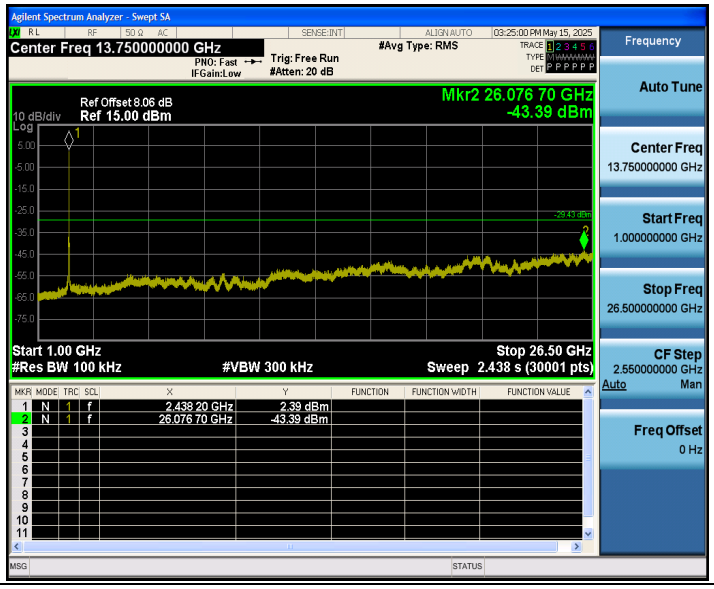
11G_Ant1_2412_30~1000

11G_Ant1_2412_1000~26500

11G_Ant1_2437_0~Reference



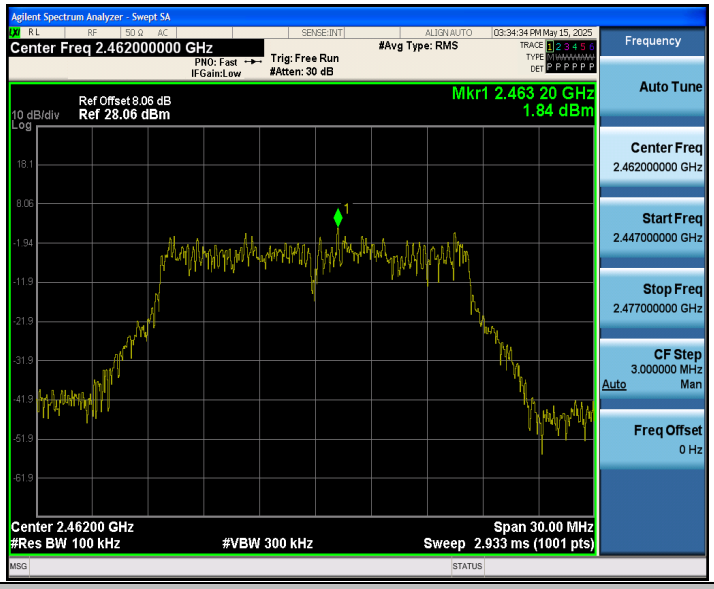
11G_Ant1_2437_30~1000



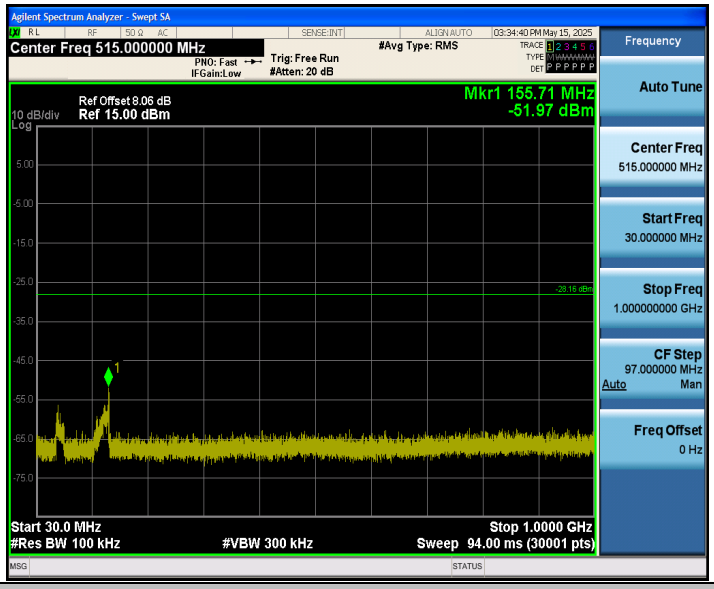
11G_Ant1_2437_1000~26500



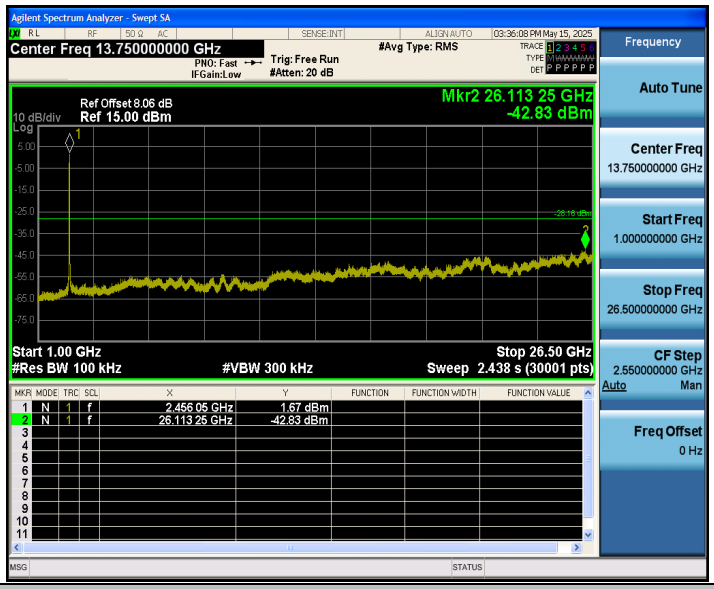
11G_Ant1_2462_0~Reference



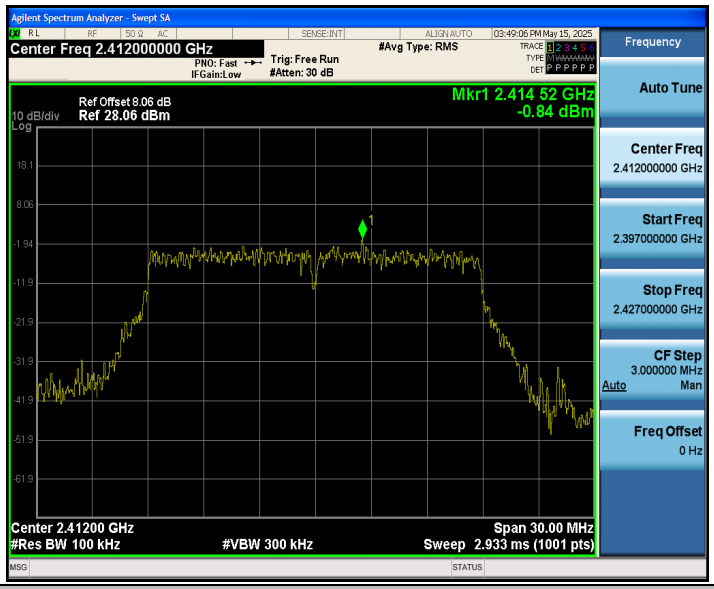
11G_Ant1_2462_30~1000



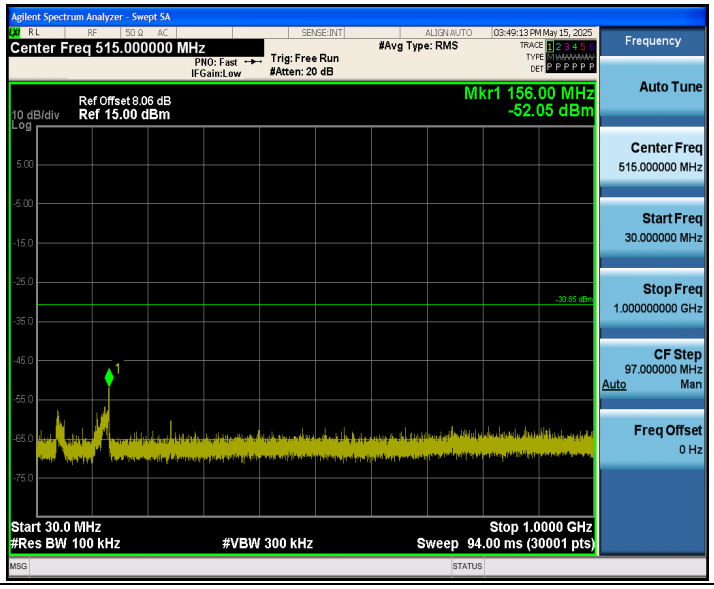
11G_Ant1_2462_1000~26500



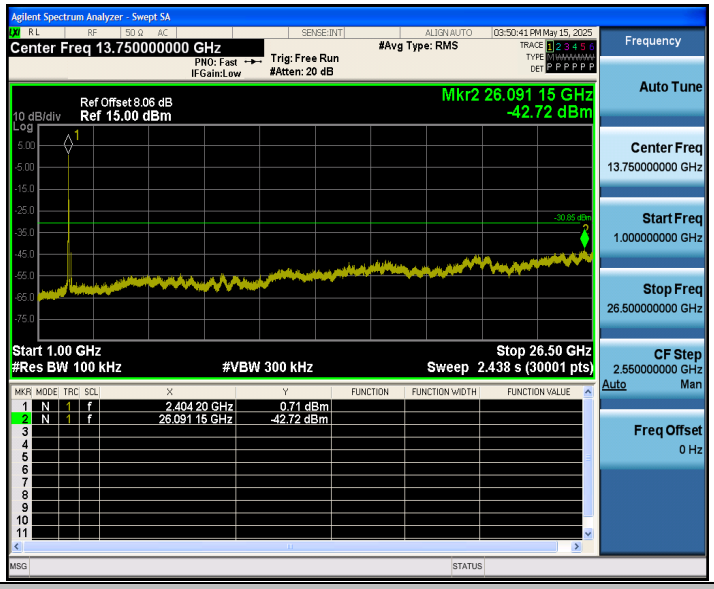
11N20SISO_Ant1_2412_0~Reference



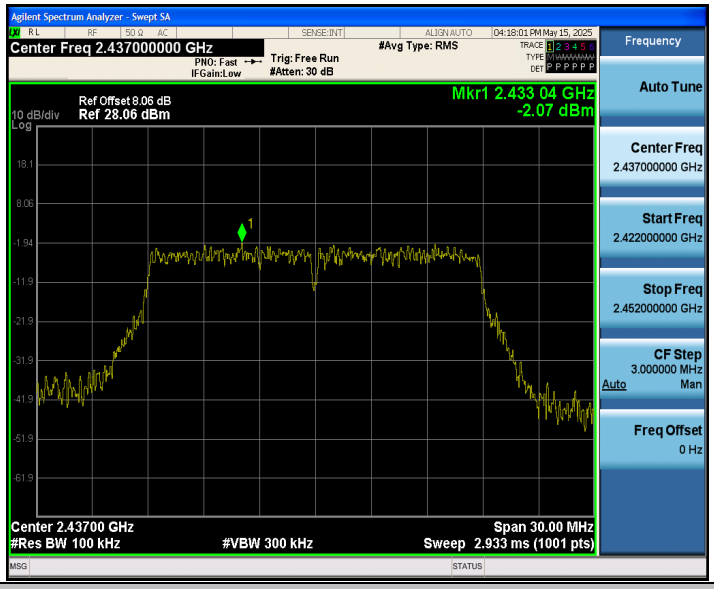
11N20SISO_Ant1_2412_30~1000



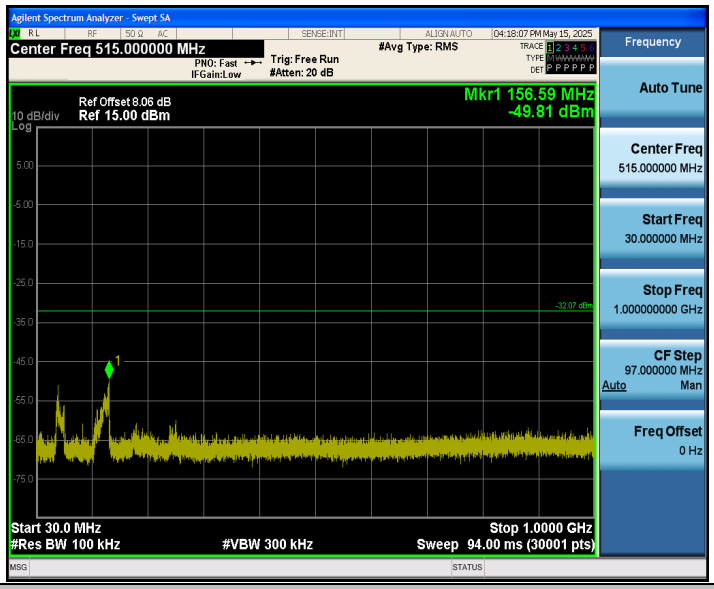
11N20SISO_Ant1_2412_1000~26500



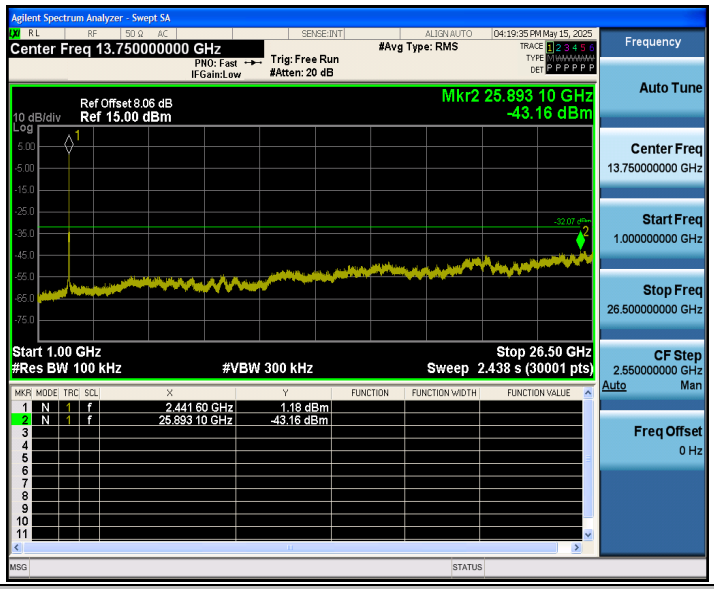
11N20SISO_Ant1_2437_0~Reference



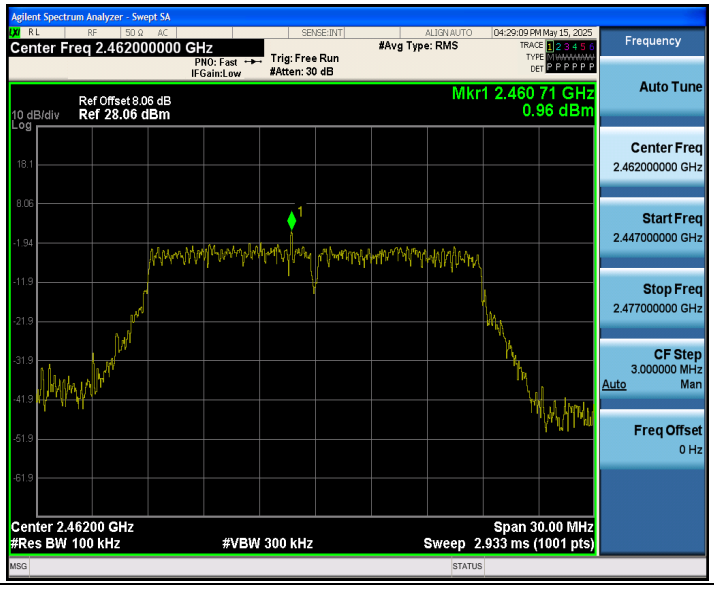
11N20SISO_Ant1_2437_30~1000

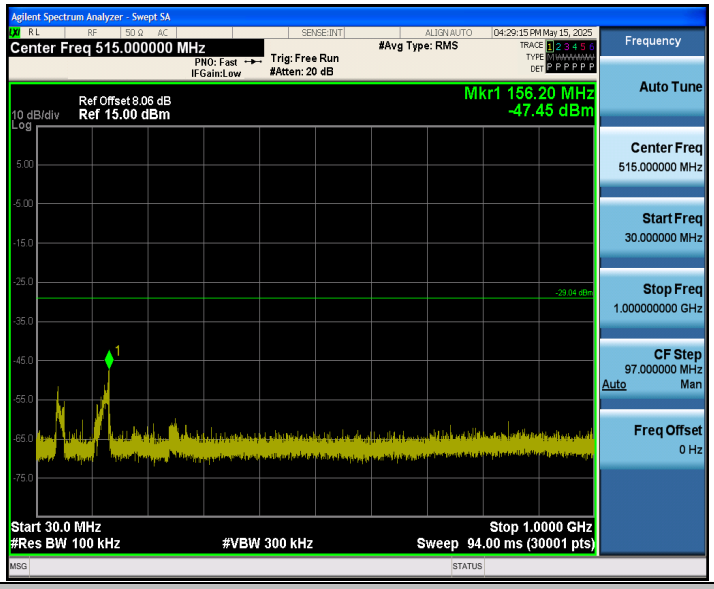
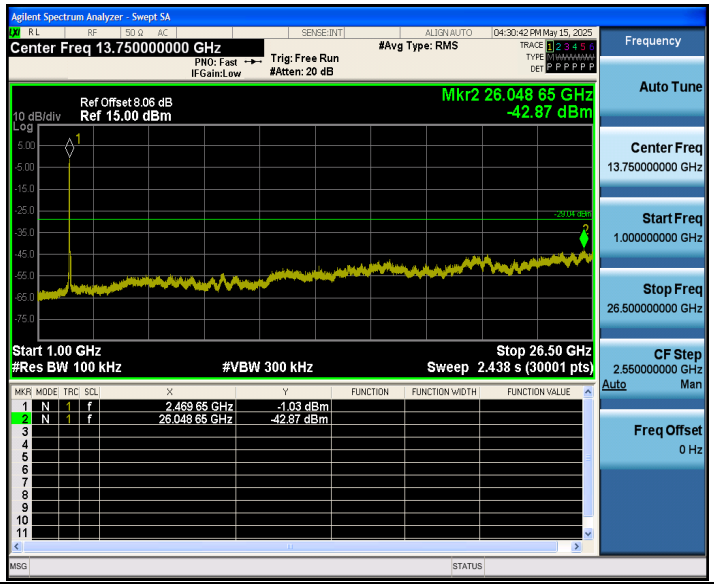


11N20SISO_Ant1_2437_1000~26500



11N20SISO_Ant1_2462_0~Reference



11N20SISO_Ant1_2462_30~1000

11N20SISO_Ant1_2462_1000~26500


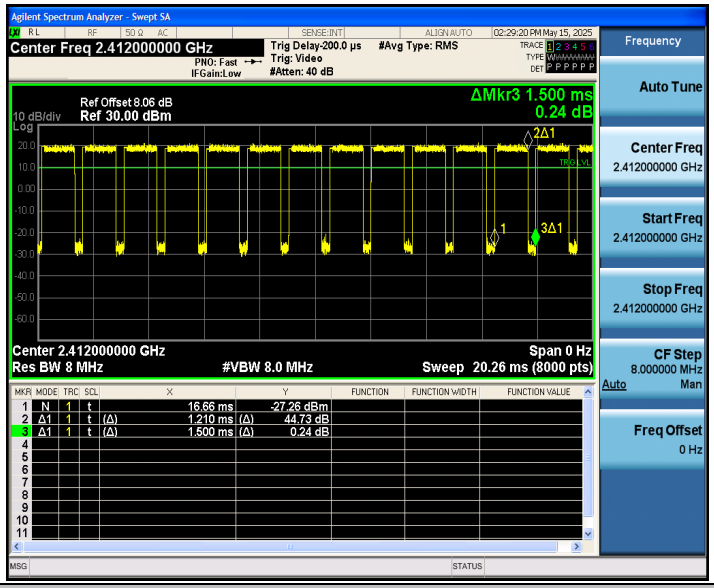
10.7 Appendix G: Duty Cycle

10.7.1 Test Result

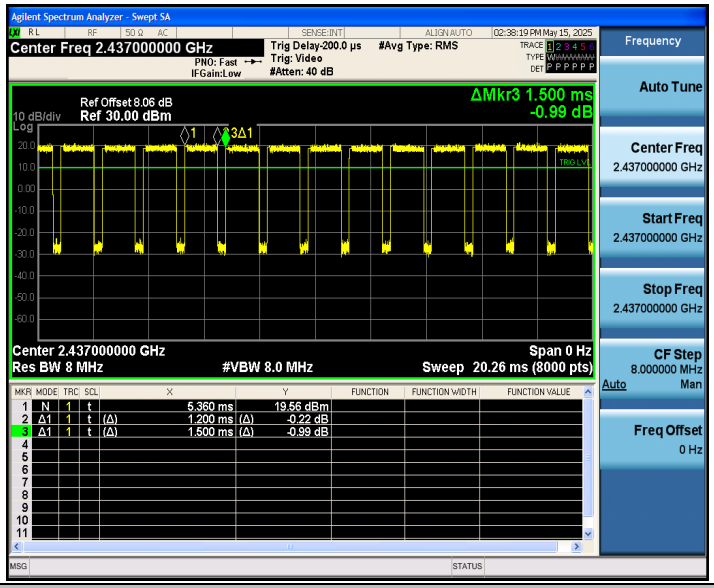
Test Mode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Limit	Verdict
11B	Ant1	2412	1.21	1.50	80.67	---	---
		2437	1.20	1.50	80.00	---	---
		2462	1.20	1.50	80.00	---	---
11G	Ant1	2412	0.24	0.54	44.44	---	---
		2437	0.25	0.55	45.45	---	---
		2462	0.25	0.55	45.45	---	---
11N20SISO	Ant1	2412	1.33	1.39	95.68	---	---
		2437	1.33	1.39	95.68	---	---
		2462	1.34	1.40	95.71	---	---

10.7.2 Test Graphs

11B_Ant1_2412



11B_Ant1_2437



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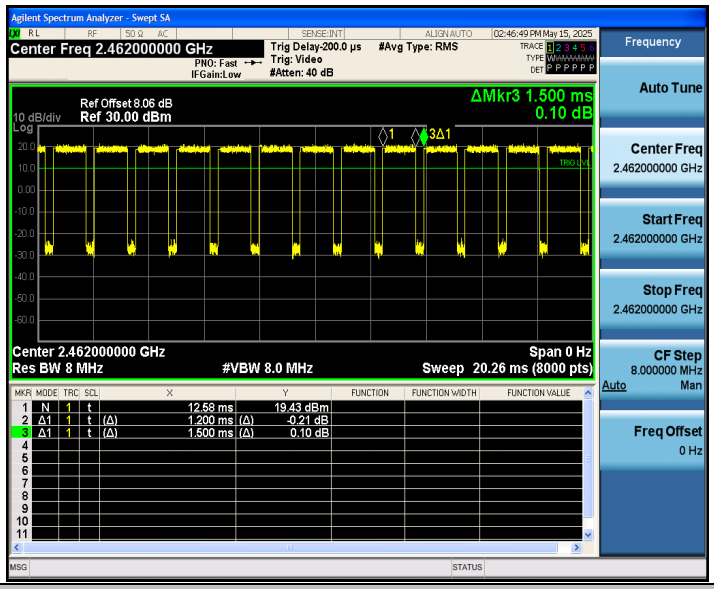

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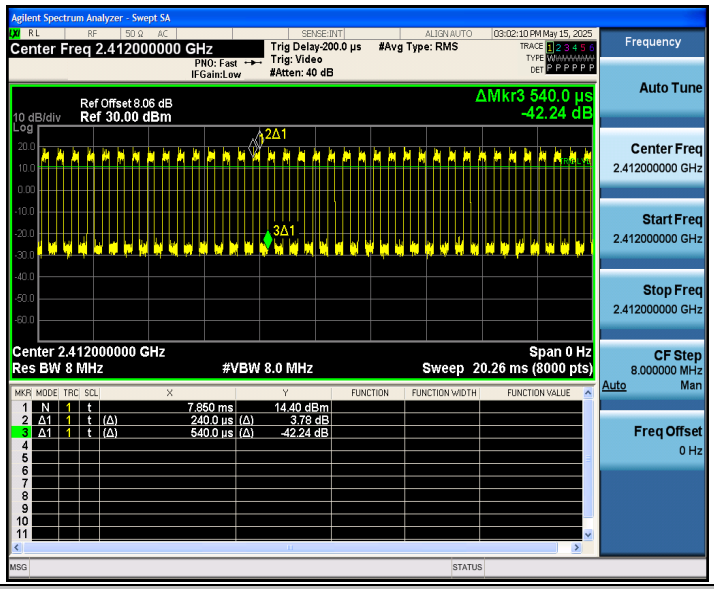

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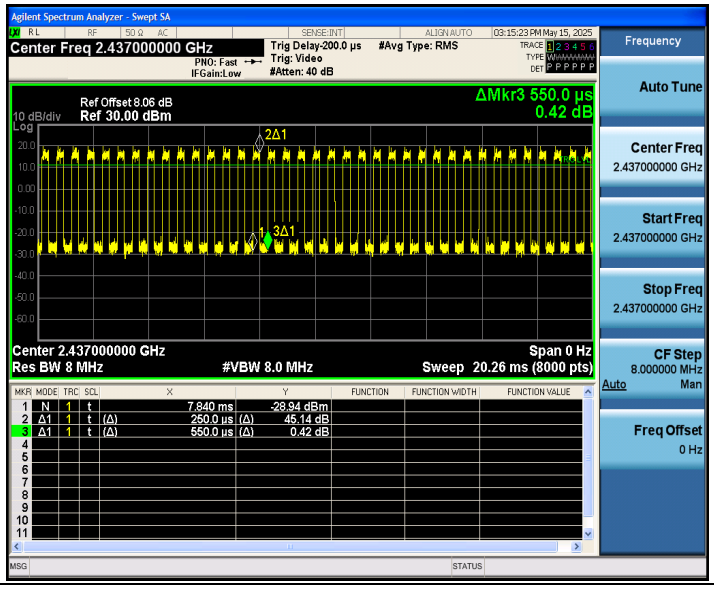

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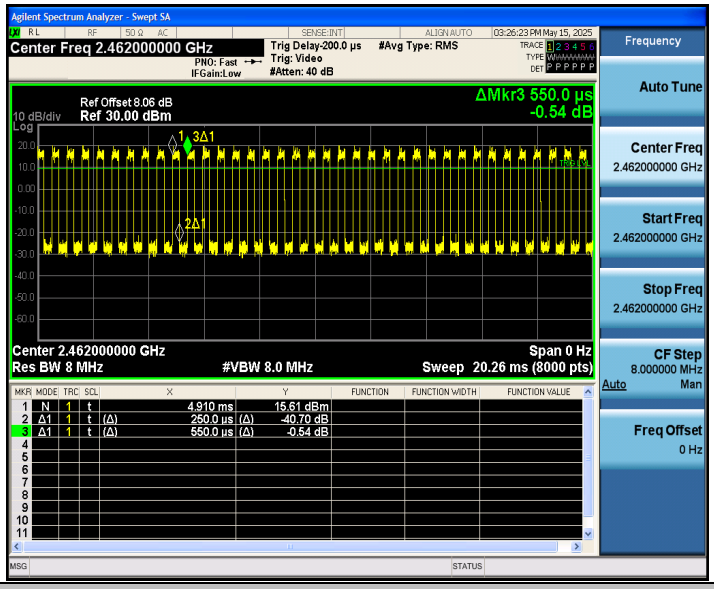
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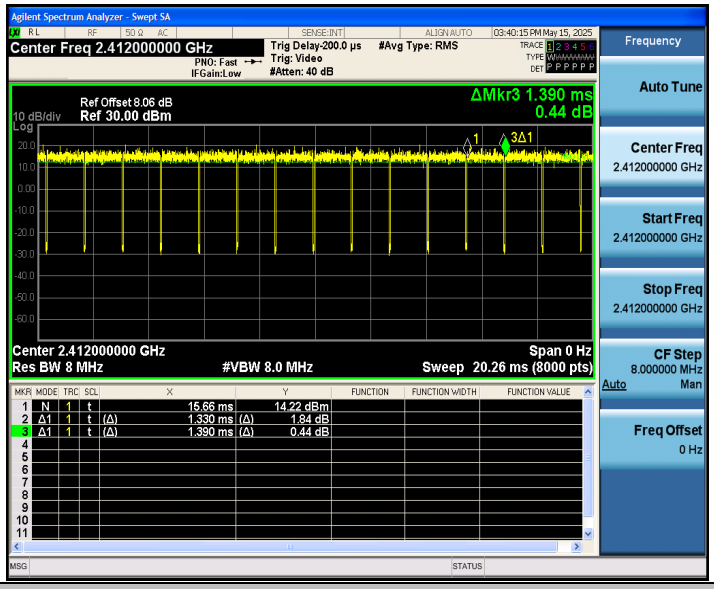
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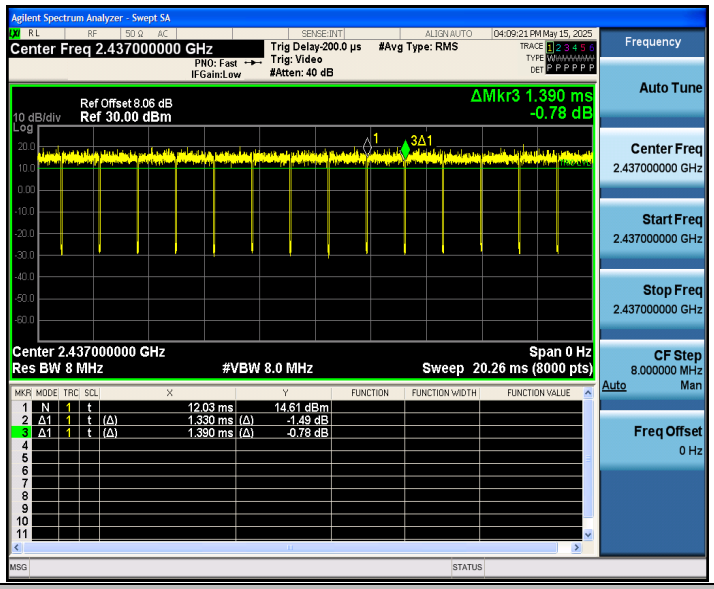

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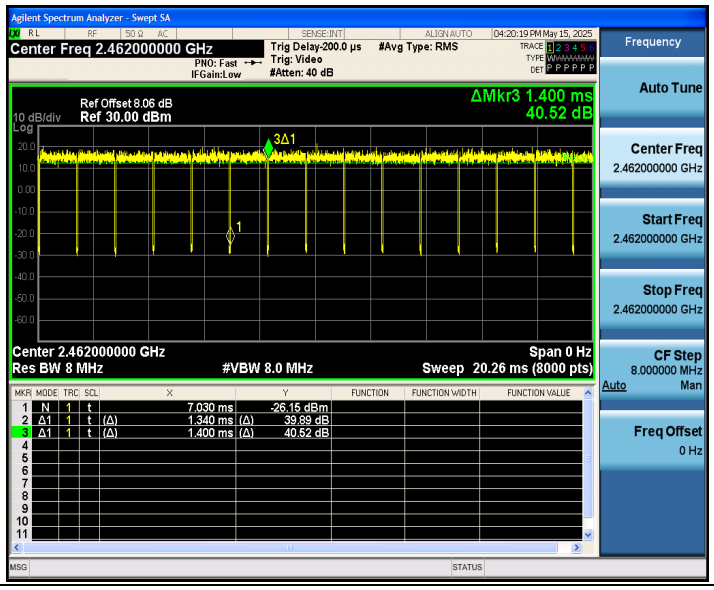

- End of the Report -