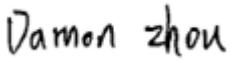
TEST REPORT

Application No.:	KSCR2410002068HS
FCC ID:	OU5MULW01
IC:	4048B-MULW01
Applicant:	GE Medical Systems Information Technologies, Inc.
Address of Applicant:	8200 West Tower Avenue, Milwaukee, Wisconsin, 53223, United States
Manufacturer:	GE Medical Systems Information Technologies, Inc.
Address of Manufacturer:	8200 West Tower Avenue, Milwaukee, Wisconsin, 53223, United States
Equipment Under Test (EUT):	
EUT Name:	WLAN Module
Model No.:	WLANCSMOD
Trade Mark:	GE healthcare
Standard(s) :	47 CFR Part 15, Subpart C 15.247 RSS-247 Issue 3, August 2023 RSS-Gen Issue 5 Amendment 2 (February 2021)
Date of Receipt:	2024-06-06
Date of Test:	2024-06-07 to 2024-07-10
Date of Issue:	2024-07-12
Test Result:	**Pass***

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

Revision Record			
Version	**Description**	**Date**	**Remark**
00	Original	2024-07-12	/

Authorized for issue by:				
Tested By		 **Damon_Zhou/Project Engineer**		
Approved By		 **Terry Hou /Reviewer**		

2 Test Summary

Radio Spectrum Technical Requirement				
Item	**FCC Requirement**	**IC Requirement**	**Method**	**Result**
Antenna Requirement	47 CFR Part 15, Subpart C 15.203 & 15.247(c)	RSS-Gen Clause 6.8	N/A	Customer Declaration

N/A: Not applicable

Radio Spectrum Matter Part				
Item	**FCC Requirement**	**IC Requirement**	**Method**	**Result**
Minimum 6dB Bandwidth	47 CFR Part 15, Subpart C 15.247a(2)	RSS-247 Clause 5.2(a)	ANSI C63.10 (2013) Section 11.8.1	Pass
Conducted Average Output Power	47 CFR Part 15, Subpart C 15.247(b)(3)	RSS-247 Clause 5.4(d)	ANSI C63.10 (2013) Section 11.9.2	Pass
Power Spectrum Density	47 CFR Part 15, Subpart C 15.247(e)	RSS-247 Clause 5.2(b)	ANSI C63.10 (2013) Section 11.10.3	Pass
Conducted Band Edges Measurement	47 CFR Part 15, Subpart C 15.247(d)	RSS-247 Clause 5.5	ANSI C63.10 (2013) Section 11.13.3.2	Pass
Conducted Spurious Emissions	47 CFR Part 15, Subpart C 15.247(d)	RSS-247 Clause 5.5	ANSI C63.10 (2013) Section 11.11	Pass
Radiated Emissions which fall in the restricted bands	47 CFR Part 15, Subpart C 15.209 & 15.247(d)	RSS-247 Section 3.3 & RSS-Gen Section 8.9	ANSI C63.10 (2013) Section 6.10.5	Pass
Radiated Spurious Emissions	47 CFR Part 15, Subpart C 15.209 & 15.247(d)	RSS-247 Section 3.3 & RSS-Gen Section 8.9	ANSI C63.10 (2013) Section 6.4,6.5,6.6	Pass
99% Bandwidth	-	RSS-Gen Section 6.7	ANSI C63.10 Section 6.9.3	Pass

3 Contents

4 General Information

4.1 Details of E.U.T.

Power supply:	DC 3.3V
Test voltage:	DC 3.3V
Operation Frequency:	802.11b/g/n(HT20): 2412MHz to 2462MHz;802.11n(HT40): 2422MHz to 2452MHz
Modulation Type:	802.11b: DSSS (CCK, DQPSK, DBPSK);802.11g/n: OFDM (64QAM, 16QAM, QPSK, BPSK)
Number of Channels:	802.11b/g/n(HT20):11;802.11n(HT40):7
Date Rate:	802.11b:1/2/5.5./11Mbps 802.11g:6/9/12/18/24/36/48/54Mbps 802.11n:MCS0-MCS7
Channel Spacing:	5MHz
Antenna Number:	2
Antenna Type:	Antenna 1: FPC Antenna Antenna 2: FPC Antenna
Antenna Gain:	Antenna 1: 2.71dBi; Antenna 2: 1.49dBi (Provided by manufacturer) Directional gain: 5.13dBi
S/N:	9180169-003
Firmware Version:	(FRev) Rev 8.9.0.0.90
Remark:	n20: MIMO; Other: SISO

Note: Only the 802.11n20 mode support antenna 2 port.

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
PC	Lenovo	-	-

4.3 Power level setting using in test

Channel	802.11b	802.11g	802.11n(HT20)
1	15000	15000	15000
6	15000	15000	15000
11	15000	15000	15000
Channel	802.11n(HT40)		
3	15000		
6	15000		
9	15000		

4.4 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Radio Frequency	8.4×10^{-8}
2	Timeout	2s
3	Duty Cycle	0.37%
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-18GHz)
		5.4dB (Above 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:

Compliance Certification Services (Kunshan) Inc.

No.10 Weiye Rd, Innovation park, Eco&Tec, Development Zone, Kunshan City, Jiangsu, China.

Tel: +86 512 5735 5888 Fax: +86 512 5737 0818

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

Compliance Certification Services (Kunshan) Inc. is accredited by the American Association for Laboratory Accreditation (A2LA). Certificate No. 2541.01.

• FCC

Compliance Certification Services (Kunshan) Inc. has been recognized as an accredited testing laboratory. Designation Number: CN1172.

• ISED

Compliance Certification Services (Kunshan) Inc. has been recognized by Innovation, Science and Economic Development Canada (ISED) as an accredited testing laboratory. Company Number: 2324E

• VCCI

The 3m and 10m Semi-anechoic chamber and Shielded Room of Compliance Certification Services (Kunshan) Inc. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-20134, R-11600, C-11707, T-11499, G-10216 respectively.

4.7 Deviation from Standards

None

4.8 Abnormalities from Standard Conditions

None

5 Equipment List

Item	Equipment	Manufacturer	Model	Inventory No	Cal Date	Cal. Due Date
RF Conducted Test						
1	Spectrum Analyzer	Keysight	N9020A	KUS1911E004-2	08/01/2024	07/31/2025
2	Spectrum Analyzer	Keysight	N9020A	KUS2001M001-2	08/01/2024	07/31/2025
3	Spectrum Analyzer	Keysight	N9030B	KSEM021-1	01/15/2024	01/14/2025
4	Signal Generator	R&S	SMBV100B	KSEM032	03/19/2024	03/18/2025
5	Signal Generator	R&S	SMW200A	KSEM020-1	08/02/2024	08/01/2025
6	Signal Generator	Agilent	N5182A	KUS2001M001-1	08/01/2024	07/31/2025
7	Signal Generator	Agilent	E8257C	KS301066	08/06/2024	08/05/2025
8	Radio Communication Test Station	Anritsu	MT8000A	KSEM001-1	08/01/2024	07/31/2025
9	Radio Communication Analyzer	Anritsu	MT8821C	KSEM002-1	03/19/2024	03/18/2025
10	Universal Radio Communication Tester	R&S	CMW500	KUS1911E004-1	08/12/2024	08/11/2025
11	Switcher	TST	FY562	KUS2001M001-4	01/15/2024	01/14/2025
12	Conducted Test Cable	Thermax	RF01-RF04	CZ301111-CZ301120	01/15/2024	01/14/2025
13	Temp. / Humidity Chamber	TERCHY	MHK-120AK	KS301190	08/26/2024	08/25/2025
14	Temperature & Humidity Recorder	Renke Control	RS-WS-N01-6J	KSEM024-5	03/19/2024	03/18/2025
15	Test software	Tonscend	JS Tonscend BT/WIFI System	Version: 2.6	NCR	NCR
RF Radiated Test						
1	Spectrum Analyzer	R&S	FSV40	KUS1806E003	08/06/2024	08/05/2025
2	Universal Radio Communication Tester	R&S	CMW500	KSEM009-1	03/19/2024	03/18/2025
4	Loop Antenna	COM-POWER	AL-130R	KUS1806E001	03/18/2023	03/17/2025
5	Bilog Antenna	TESEQ	CBL 6112D	KUS1806E005	06/29/2023	06/28/2025
6	Bilog Antenna	TESEQ	CBL 6112D	KUS1806E006	03/19/2024	03/18/2025
7	Horn-antenna(1-18GHz)	Schwarzbeck	BBHA9120D	KS301079	03/23/2024	08/22/2026
8	Horn-antenna(1-18GHz)	ETS-LINDGREN	3117	KS301186	04/07/2023	04/06/2025
9	Horn Antenna(18-40GHz)	Schwarzbeck	BBHA9170	CZ301058	01/07/2024	01/06/2026
10	Amplifier(30MHz~18GHz)	PANSHAN TECHNOLOGY	LNA:1~18G	KSEM010-1	01/15/2024	01/14/2025
11	Amplifier(18~40GHz)	PANSHAN TECHNOLOGY	LNA180400G40	KSEM038	08/12/2024	08/11/2025
12	RE Test Cable	REBES MICROWAVE	/	CZ301097	08/12/2024	08/11/2025
13	Temperature & Humidity Recorder	Renke Control	RS-WS-N01-6J	KSEM024-4	03/21/2024	03/20/2025
14	Software	Faratronic	EZ_EMC-v 3A1	/	NCR	NCR
15	Software	ESE	E3_V 6.111221a	/	NCR	NCR

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 1 and Antenna 2 is FPC antenna and no consideration of replacement. The best case gain of the antenna 1 is 2.71 dBi and antenna 2 is 1.49 dBi. The directional gain is 5.13 dBi.

Antenna location: Refer to internal photo.

7 Radio Spectrum Matter Test Results

7.1 Conducted Average 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

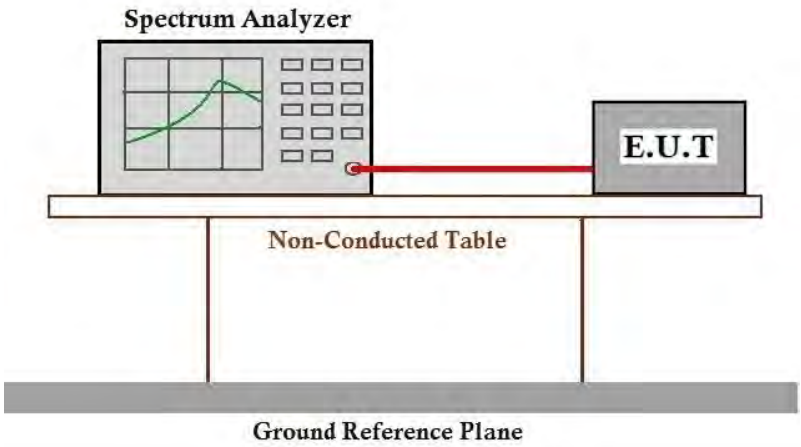
Operating Environment:

Temperature: 26.0 °C Humidity: 70.5 % RH Atmospheric Pressure: 1010 mbar

7.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	03	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), 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

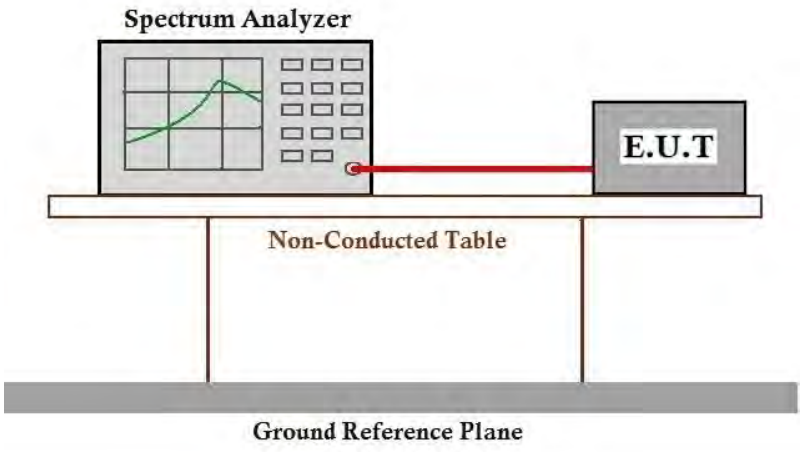
7.2.1 E.U.T. Operation

Operating Environment:
Temperature: 26.0 °C Humidity: 70.5 % RH Atmospheric Pressure: 1010 mbar

7.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	03	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), 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 11.10.3

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

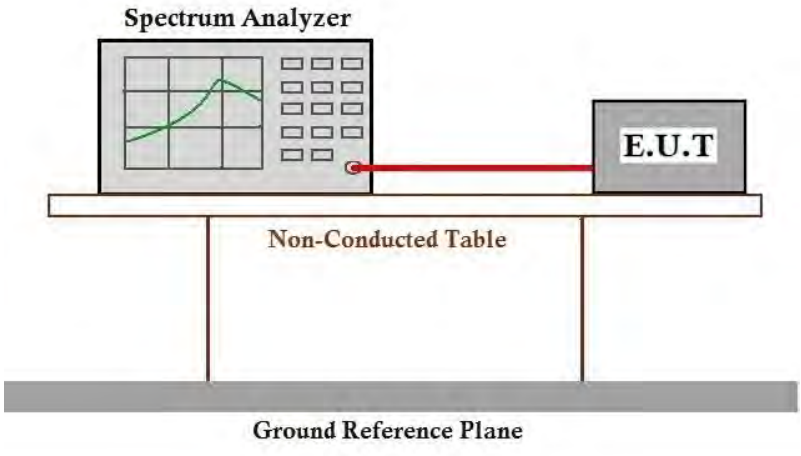
7.3.1 E.U.T. Operation

Operating Environment:
Temperature: 26.0 °C Humidity: 70.5 % RH Atmospheric Pressure: 1010 mbar

7.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	03	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), 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

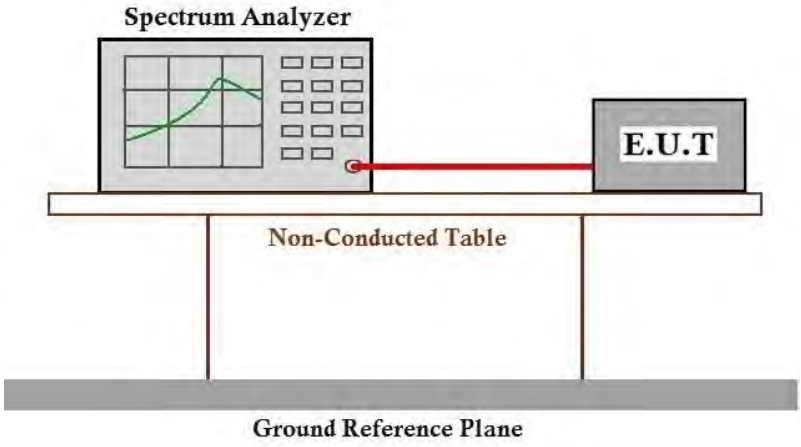
Operating Environment:

Temperature: 26.0 °C Humidity: 70.6 % RH Atmospheric Pressure: 1010 mbar

7.4.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	03	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), 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

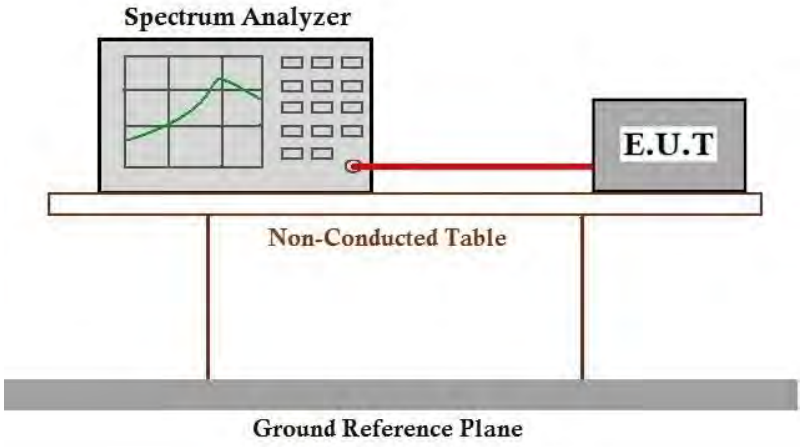
Operating Environment:

Temperature: 26.0 °C Humidity: 70.6 % RH Atmospheric Pressure: 1010 mbar

7.5.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	03	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), 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

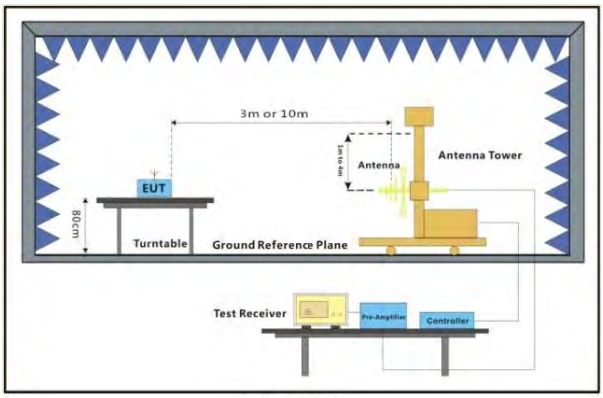
Operating Environment:

Temperature: 26.0 °C Humidity: 70.6 % RH Atmospheric Pressure: 1010 mbar

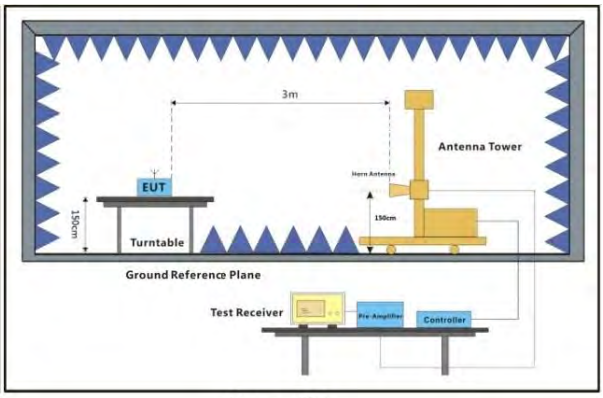
7.6.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	03	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), 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.

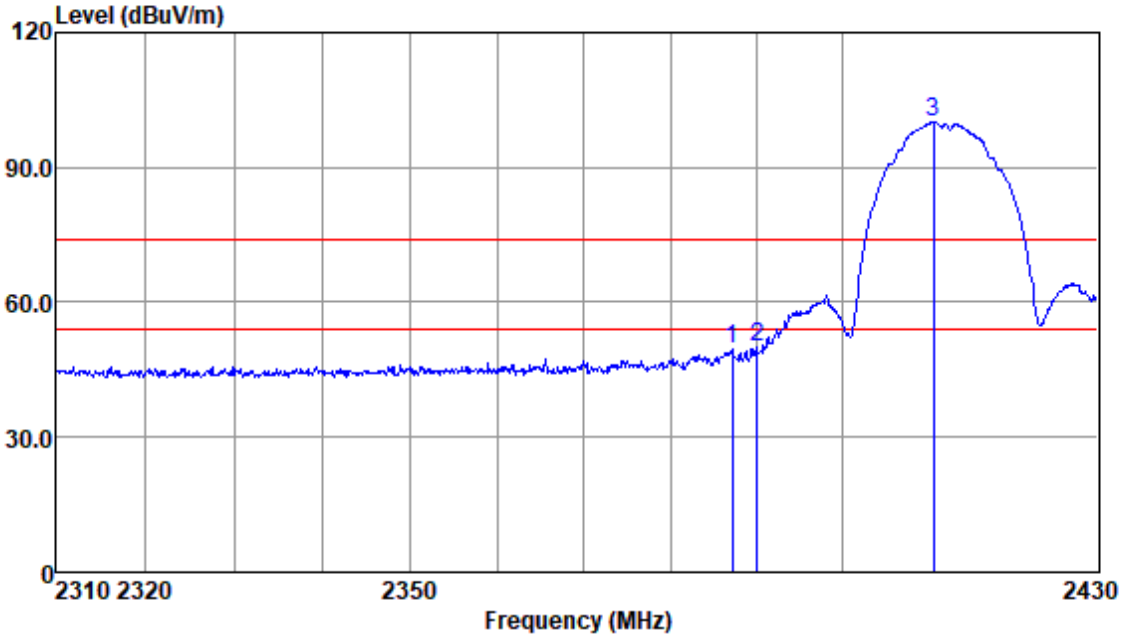
j. Repeat above procedures until all frequencies measured was complete.

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: This test item was investigated while operating in SISO and MIMO mode, however, it was determined that SISO antenna 1 operation for b/g modulation and MIMO antenna operation for n modulation produced the worst emissions. So the emissions produced from other operation are not recorded in report.

Test Mode: 03; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:Low

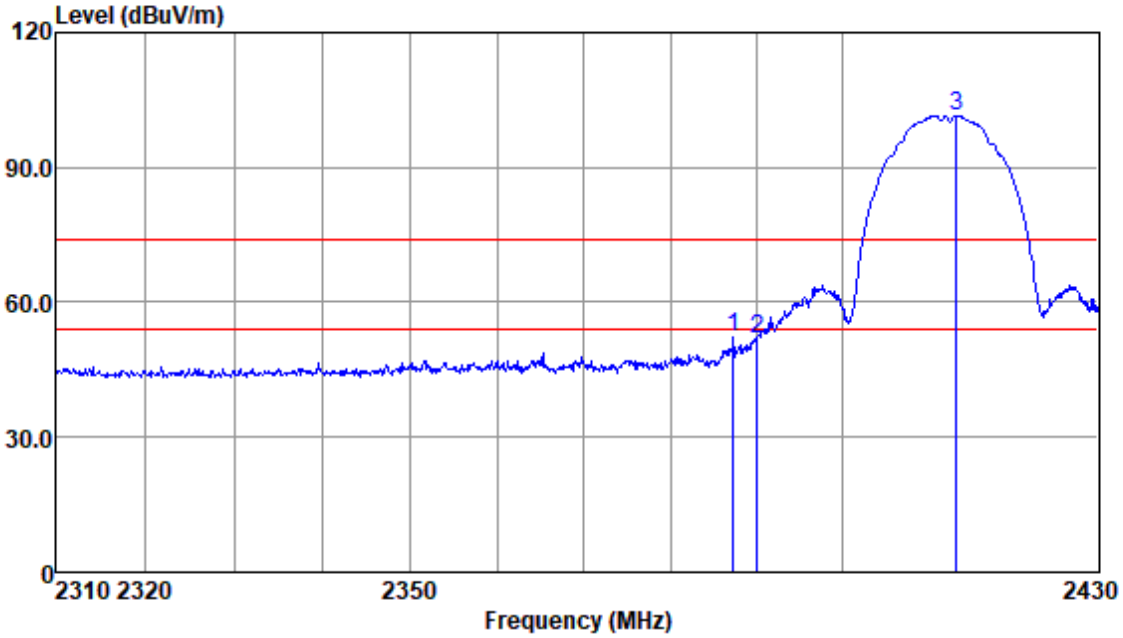


Antenna Polarity :HORIZONTAL
EUT/Project :1076ME

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	
2387.19	52.67	28.80	3.34	35.18	49.63	74.00	-24.37	Peak
2390.00	53.23	28.80	3.34	35.18	50.19	74.00	-23.81	Peak
2410.63	102.98	28.89	3.33	35.20	100.00	74.00	26.00	Peak

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

Test Mode: 03; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:Low

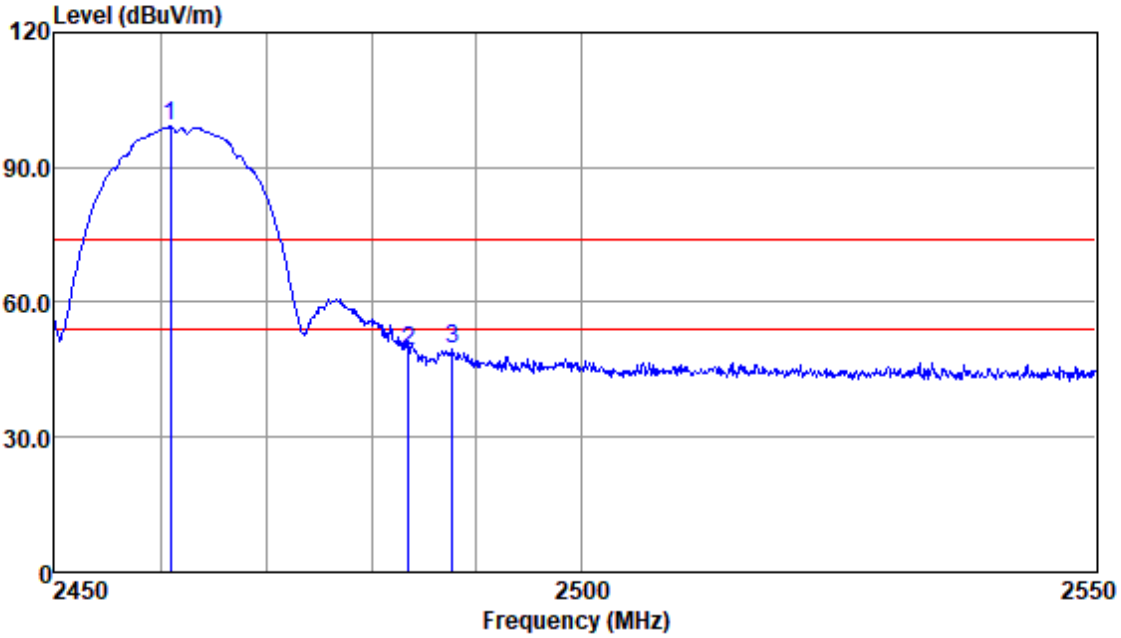


Antenna Polarity :VERTICAL
EUT/Project :1076ME

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	
2387.31	55.23	28.80	3.34	35.18	52.19	74.00	-21.81	Peak
2390.00	55.06	28.80	3.34	35.18	52.02	74.00	-21.98	Peak
2413.32	104.57	28.90	3.33	35.20	101.60	74.00	27.60	Peak

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

Test Mode: 03; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:High

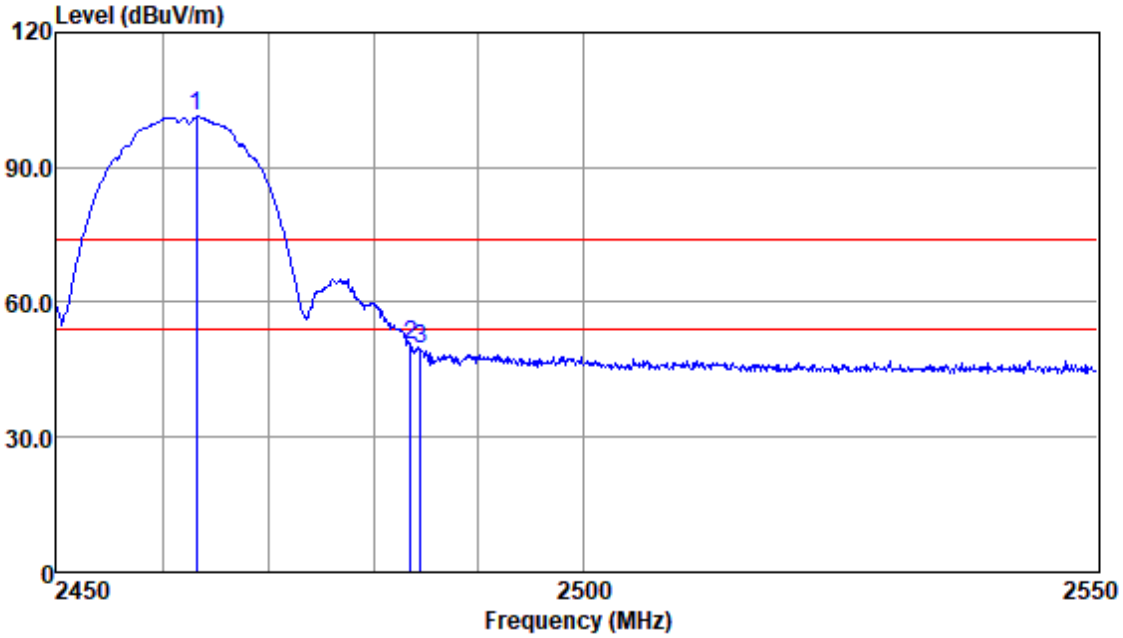


Antenna Polarity :HORIZONTAL
EUT/Project :1076ME

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	
2460.90	101.78	29.05	3.43	35.24	99.02	74.00	25.02	Peak
2483.50	51.92	29.09	3.36	35.26	49.11	74.00	-24.89	Peak
2487.73	52.37	29.09	3.36	35.26	49.56	74.00	-24.44	Peak

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

Test Mode: 03; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:High

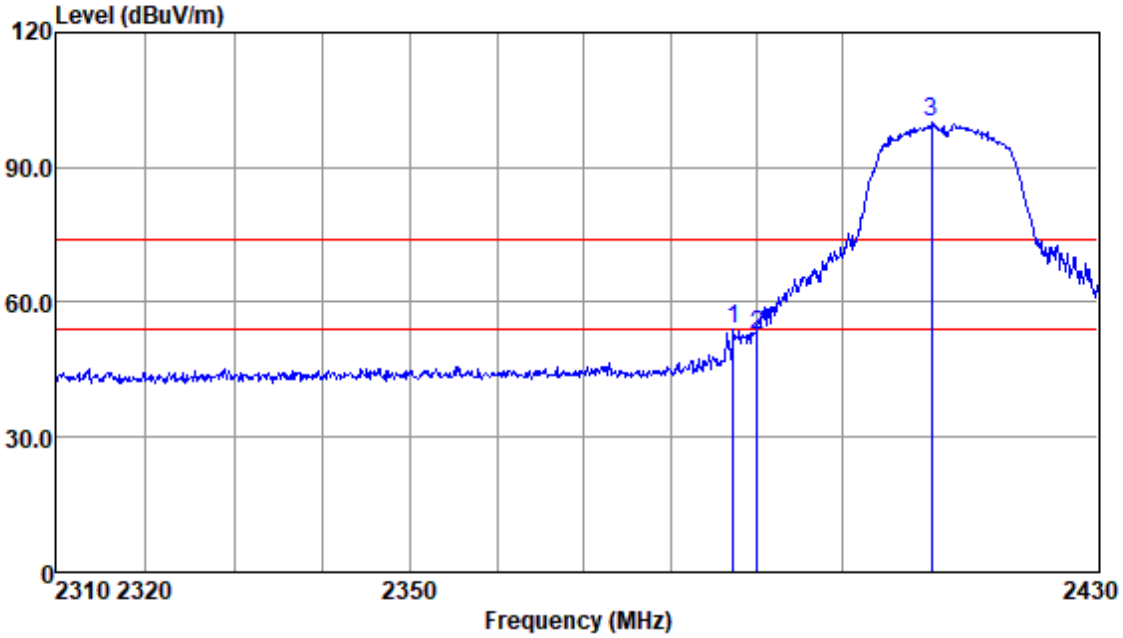


Antenna Polarity :VERTICAL
EUT/Project :1076ME

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	
2463.17	104.00	29.05	3.43	35.24	101.24	74.00	27.24	Peak
2483.50	53.28	29.09	3.36	35.26	50.47	74.00	-23.53	Peak
2484.45	52.25	29.09	3.36	35.26	49.44	74.00	-24.56	Peak

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

Test Mode: 03; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:Low

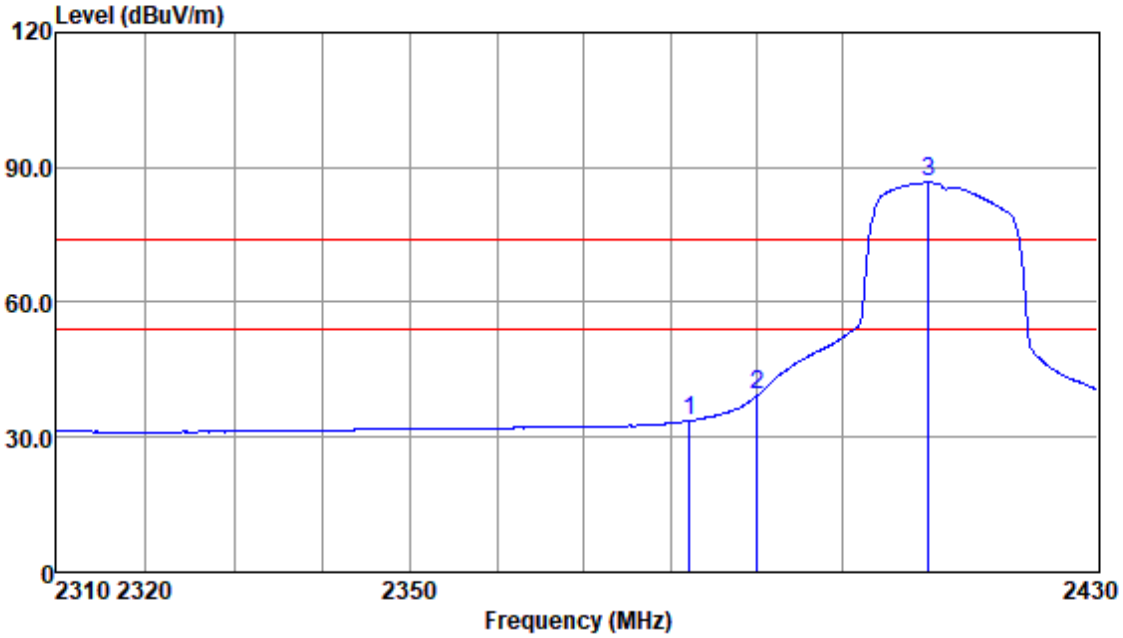


Antenna Polarity :HORIZONTAL
EUT/Project :1076ME

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	
2387.31	57.00	28.80	3.34	35.18	53.96	74.00	-20.04	Peak
2390.00	55.70	28.80	3.34	35.18	52.66	74.00	-21.34	Peak
2410.39	103.05	28.89	3.33	35.20	100.07	74.00	26.07	Peak

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

Test Mode: 03; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:Low

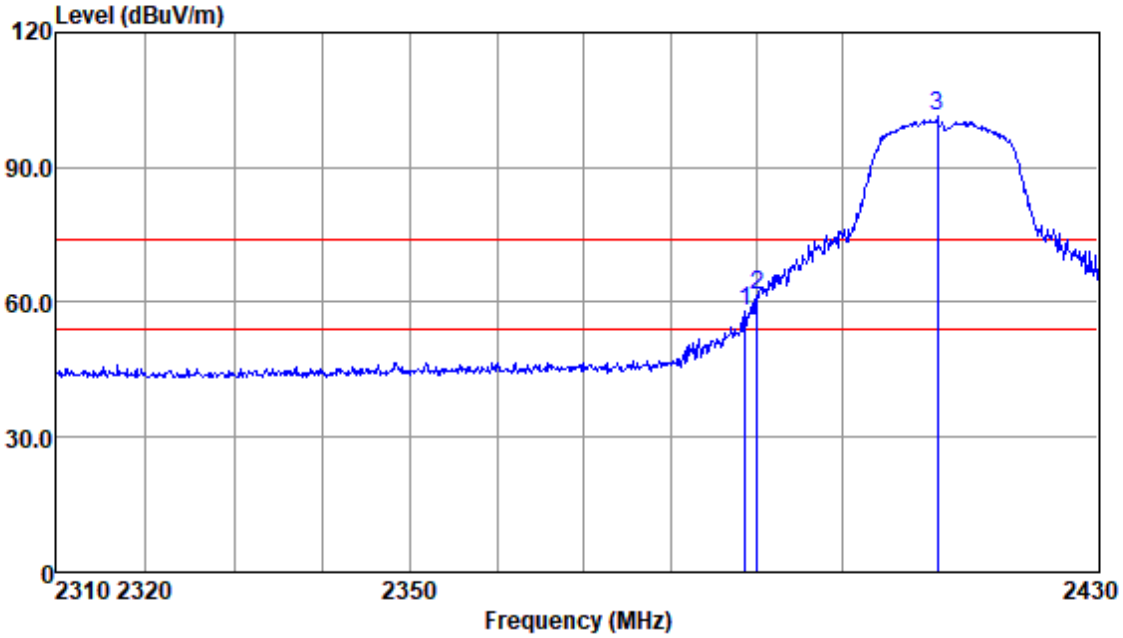


Antenna Polarity :HORIZONTAL
EUT/Project :1076ME

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	
2382.24	36.70	28.76	3.33	35.17	33.62	54.00	-20.38	Average
2390.00	42.29	28.80	3.34	35.18	39.25	54.00	-14.75	Average
2410.02	89.69	28.89	3.33	35.20	86.71	54.00	32.71	Average

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

Test Mode: 03; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:Low

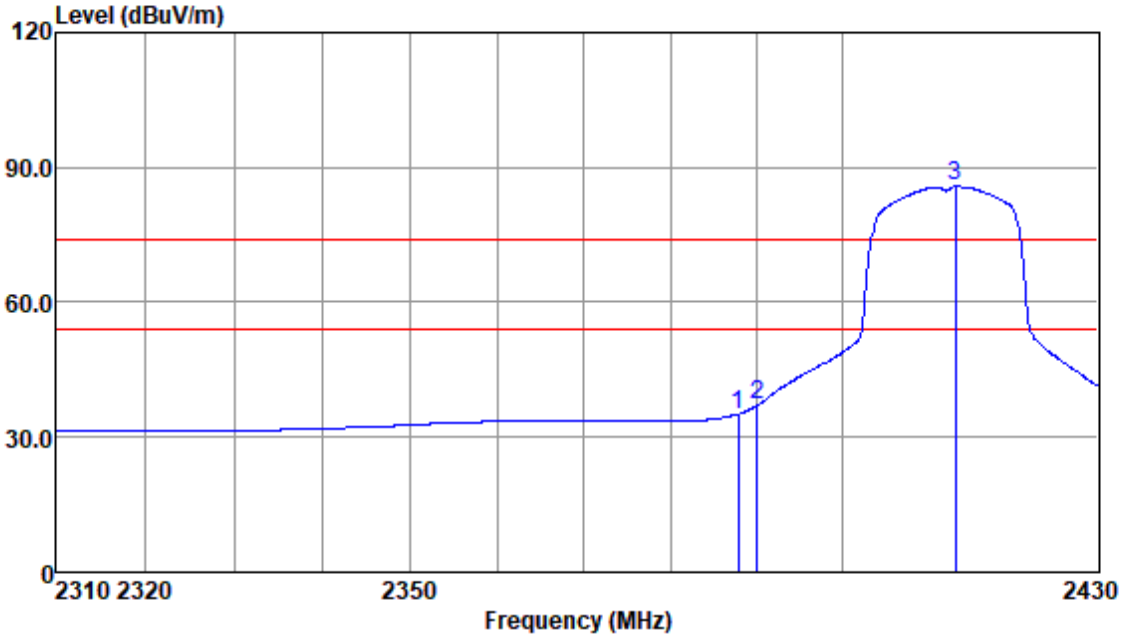


Antenna Polarity :VERTICAL
EUT/Project :1076ME

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	
2388.64	60.86	28.80	3.34	35.18	57.82	74.00	-16.18	Peak
2390.00	64.55	28.80	3.34	35.18	61.51	74.00	-12.49	Peak
2411.12	104.30	28.89	3.33	35.20	101.32	74.00	27.32	Peak

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

Test Mode: 03; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:Low

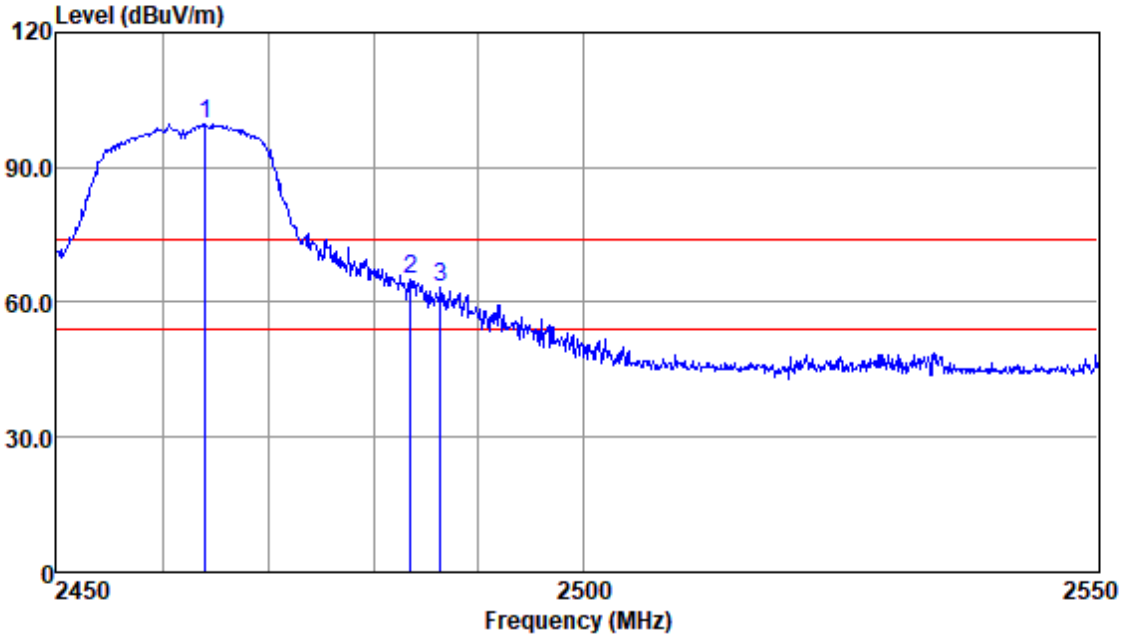


Antenna Polarity :VERTICAL
EUT/Project :1076ME

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	
2387.79	38.11	28.80	3.34	35.18	35.07	54.00	-18.93	Average
2390.00	40.10	28.80	3.34	35.18	37.06	54.00	-16.94	Average
2413.20	88.72	28.90	3.33	35.20	85.75	54.00	31.75	Average

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

Test Mode: 03; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:High

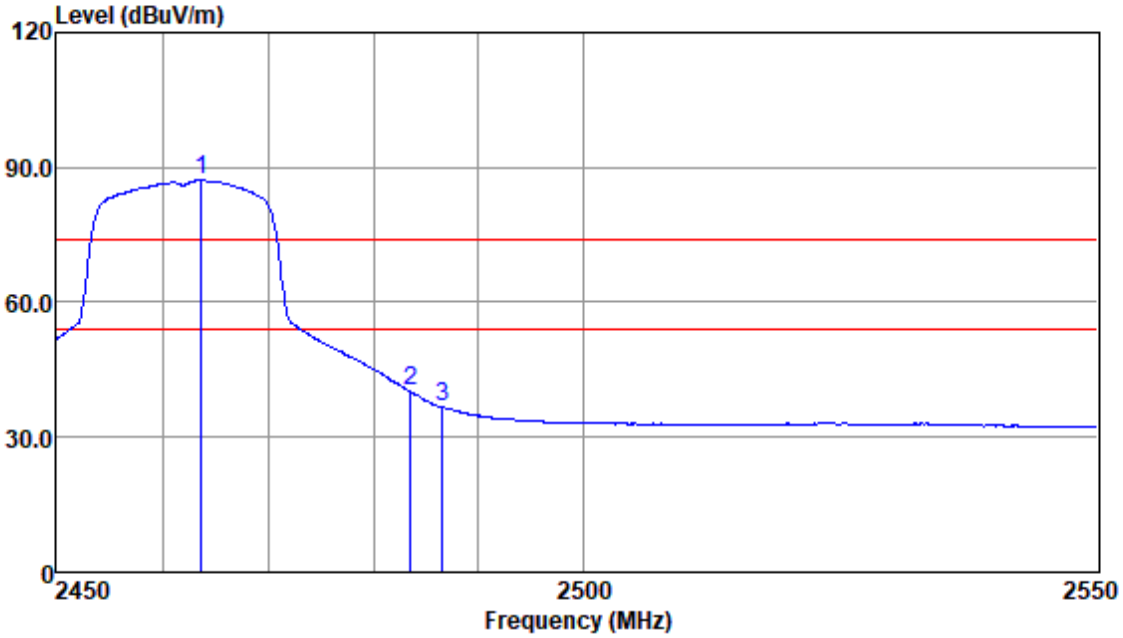


Antenna Polarity :HORIZONTAL
EUT/Project :1076ME

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	
2464.06	102.47	29.05	3.43	35.24	99.71	74.00	25.71	Peak
2483.50	67.90	29.09	3.36	35.26	65.09	74.00	-8.91	Peak
2486.44	66.35	29.09	3.36	35.26	63.54	74.00	-10.46	Peak

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

Test Mode: 03; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:High

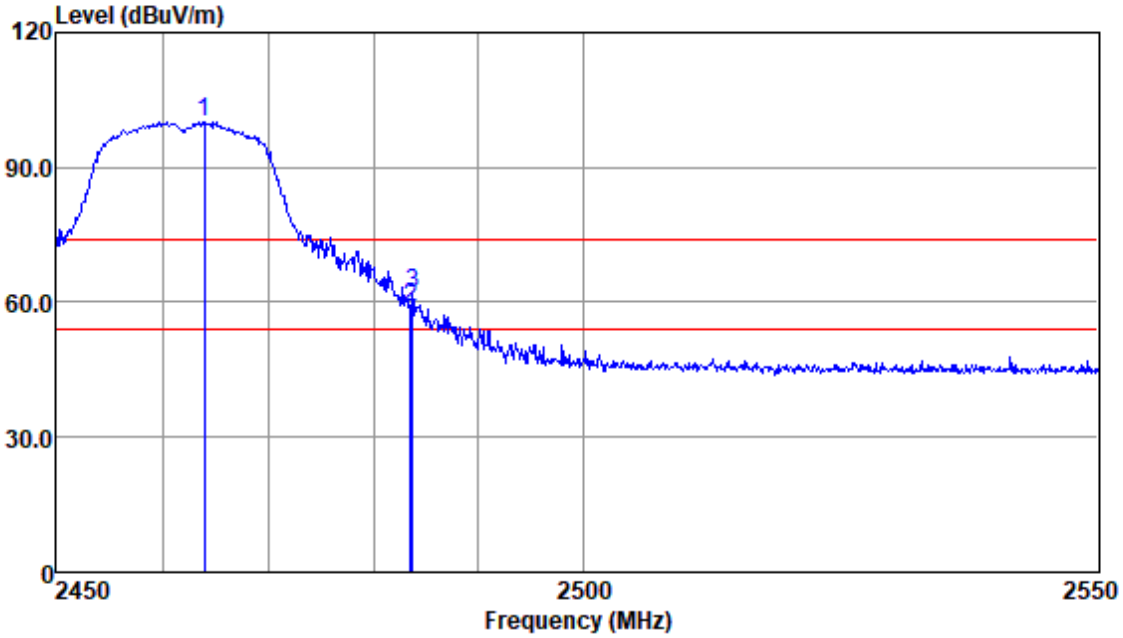


Antenna Polarity :HORIZONTAL
EUT/Project :1076ME

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	
2463.66	89.84	29.05	3.43	35.24	87.08	54.00	33.08	Average
2483.50	42.90	29.09	3.36	35.26	40.09	54.00	-13.91	Average
2486.54	39.56	29.09	3.36	35.26	36.75	54.00	-17.25	Average

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

Test Mode: 03; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:High

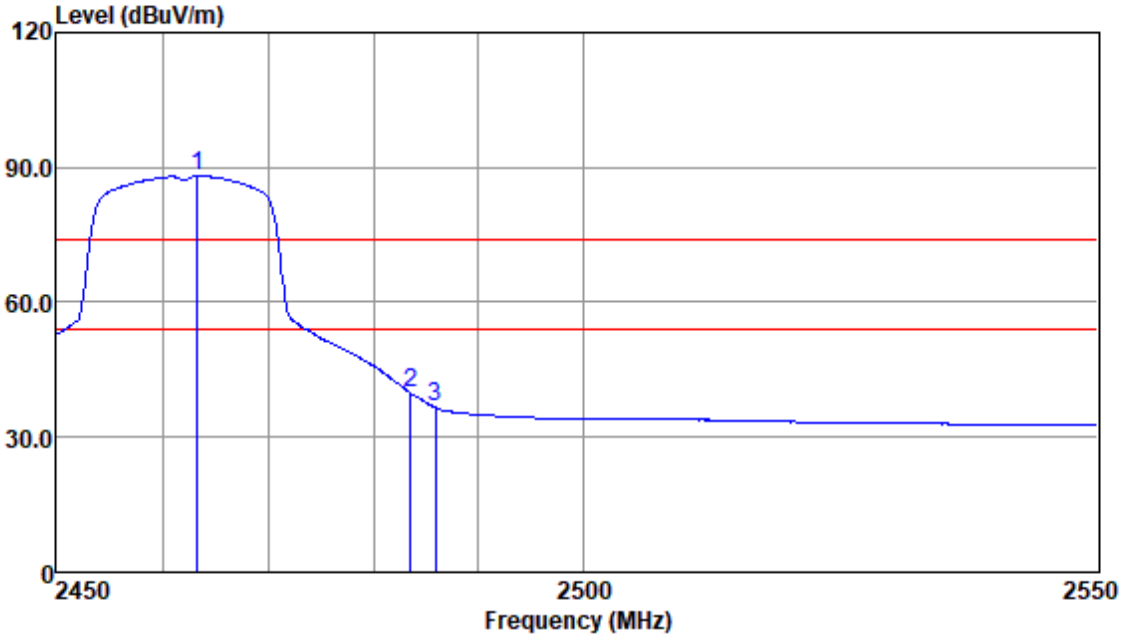


Antenna Polarity :VERTICAL
EUT/Project :1076ME

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	
2463.96	102.91	29.05	3.43	35.24	100.15	74.00	26.15	Peak
2483.50	61.80	29.09	3.36	35.26	58.99	74.00	-15.01	Peak
2483.75	64.72	29.09	3.36	35.26	61.91	74.00	-12.09	Peak

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

Test Mode: 03; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:High

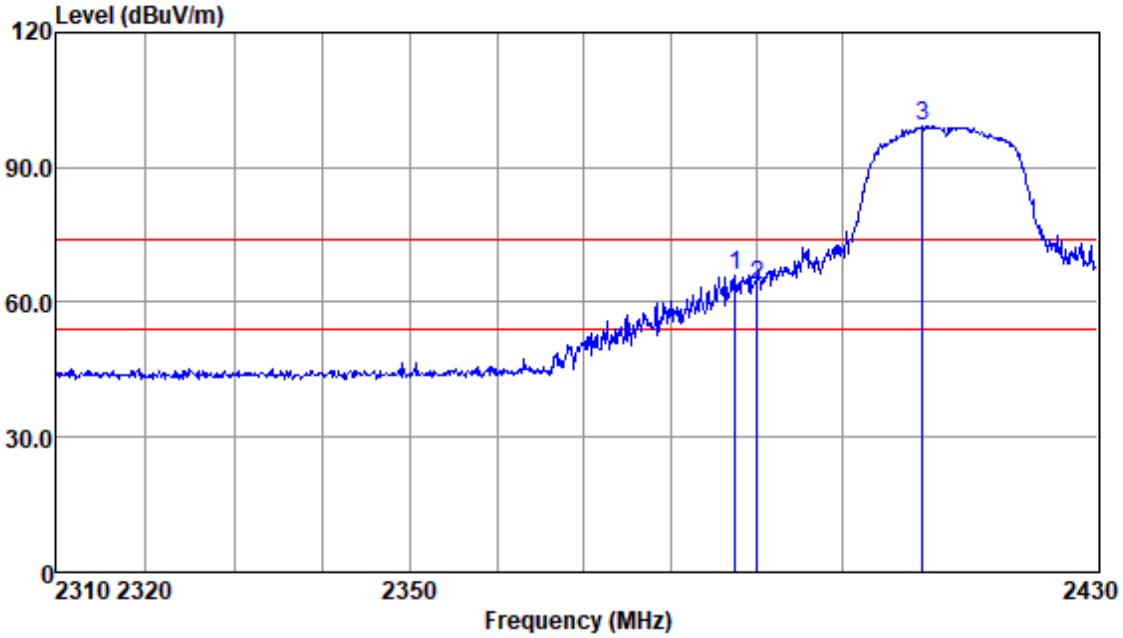


Antenna Polarity :VERTICAL
EUT/Project :1076ME

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	
2463.27	90.85	29.05	3.43	35.24	88.09	54.00	34.09	Average
2483.50	42.84	29.09	3.36	35.26	40.03	54.00	-13.97	Average
2485.94	39.37	29.09	3.36	35.26	36.56	54.00	-17.44	Average

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

Test Mode: 03; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low

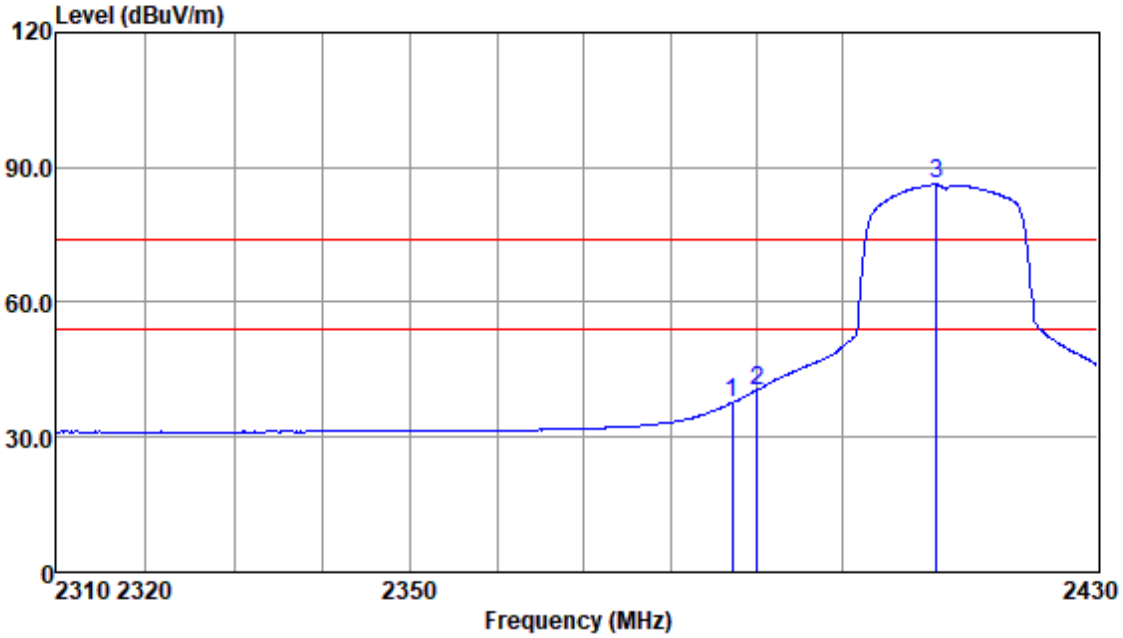


Antenna Polarity :HORIZONTAL
EUT/Project :1076ME

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	
2387.55	69.06	28.80	3.34	35.18	66.02	74.00	-7.98	Peak
2390.00	66.75	28.80	3.34	35.18	63.71	74.00	-10.29	Peak
2409.29	102.23	28.89	3.33	35.20	99.25	74.00	25.25	Peak

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

Test Mode: 03; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low

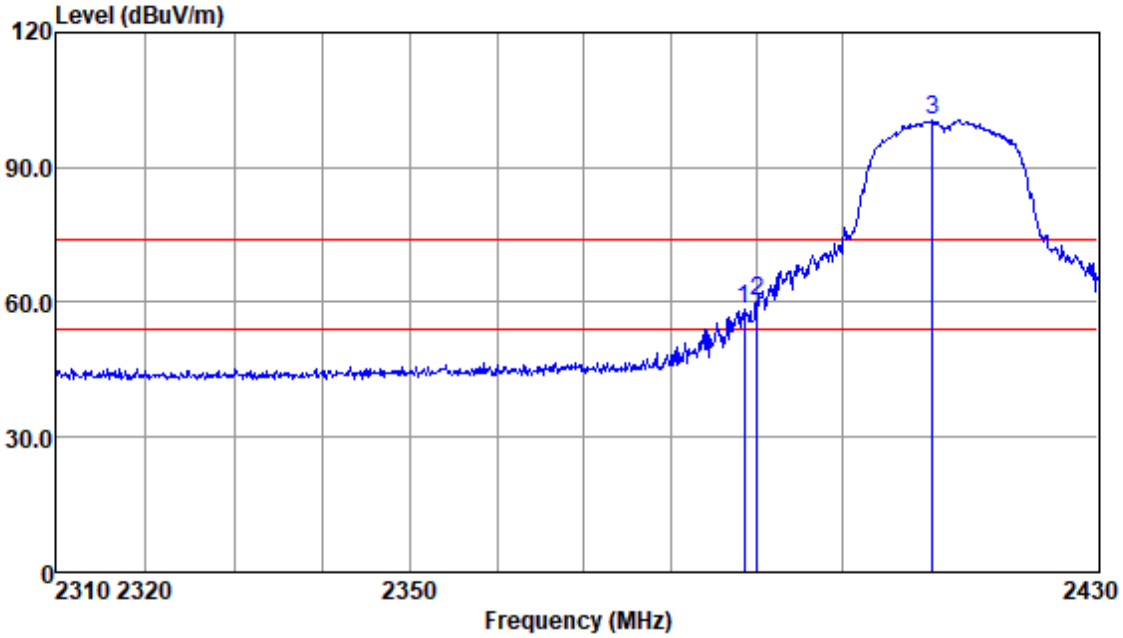


Antenna Polarity :HORIZONTAL
EUT/Project :1076ME

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	
2387.19	40.76	28.80	3.34	35.18	37.72	54.00	-16.28	Average
2390.00	43.52	28.80	3.34	35.18	40.48	54.00	-13.52	Average
2411.00	89.18	28.89	3.33	35.20	86.20	54.00	32.20	Average

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

Test Mode: 03; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low

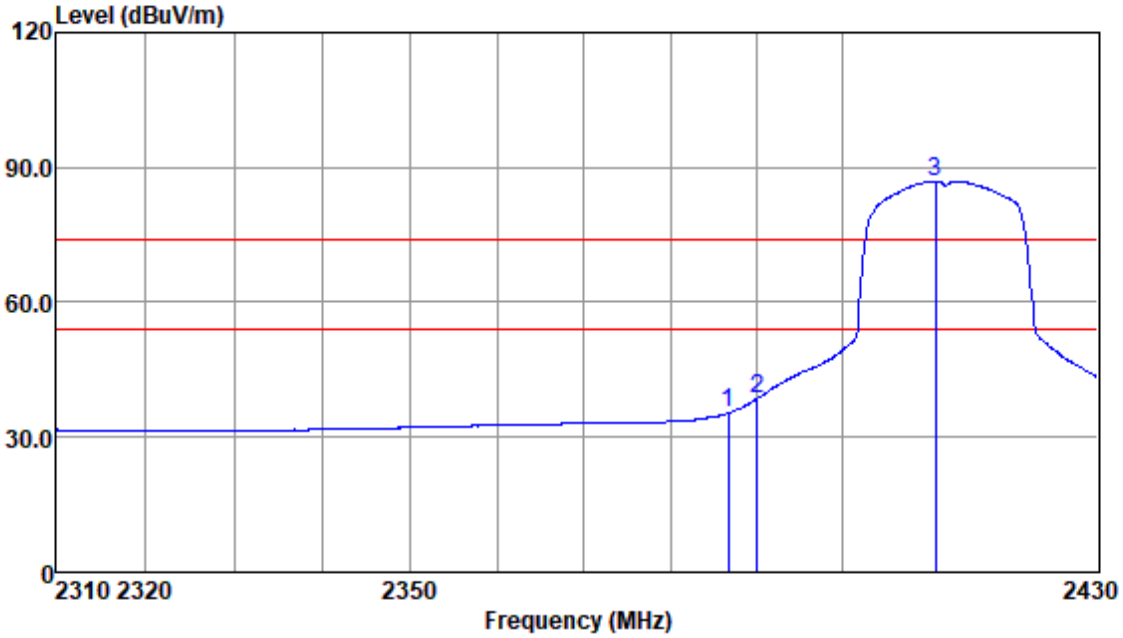


Antenna Polarity :VERTICAL
EUT/Project :1076ME

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	
2388.52	61.70	28.80	3.34	35.18	58.66	74.00	-15.34	Peak
2390.00	63.04	28.80	3.34	35.18	60.00	74.00	-14.00	Peak
2410.51	103.46	28.89	3.33	35.20	100.48	74.00	26.48	Peak

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

Test Mode: 03; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low

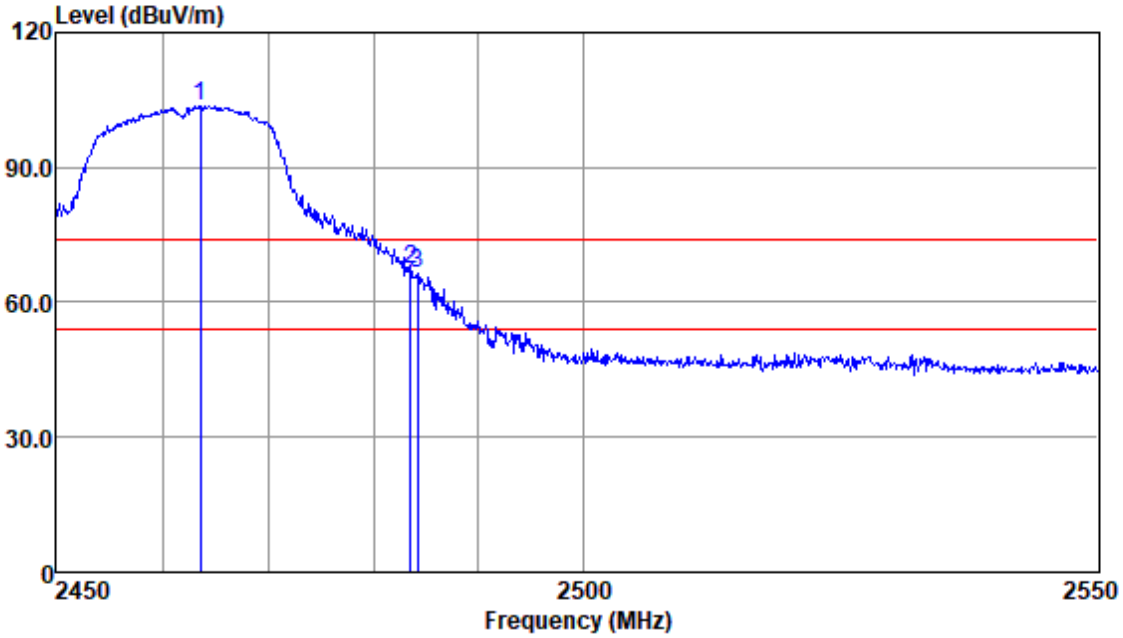


Antenna Polarity :VERTICAL
EUT/Project :1076ME

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	
2386.70	38.41	28.80	3.34	35.18	35.37	54.00	-18.63	Average
2390.00	41.59	28.80	3.34	35.18	38.55	54.00	-15.45	Average
2410.88	89.98	28.89	3.33	35.20	87.00	54.00	33.00	Average

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

Test Mode: 03; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High

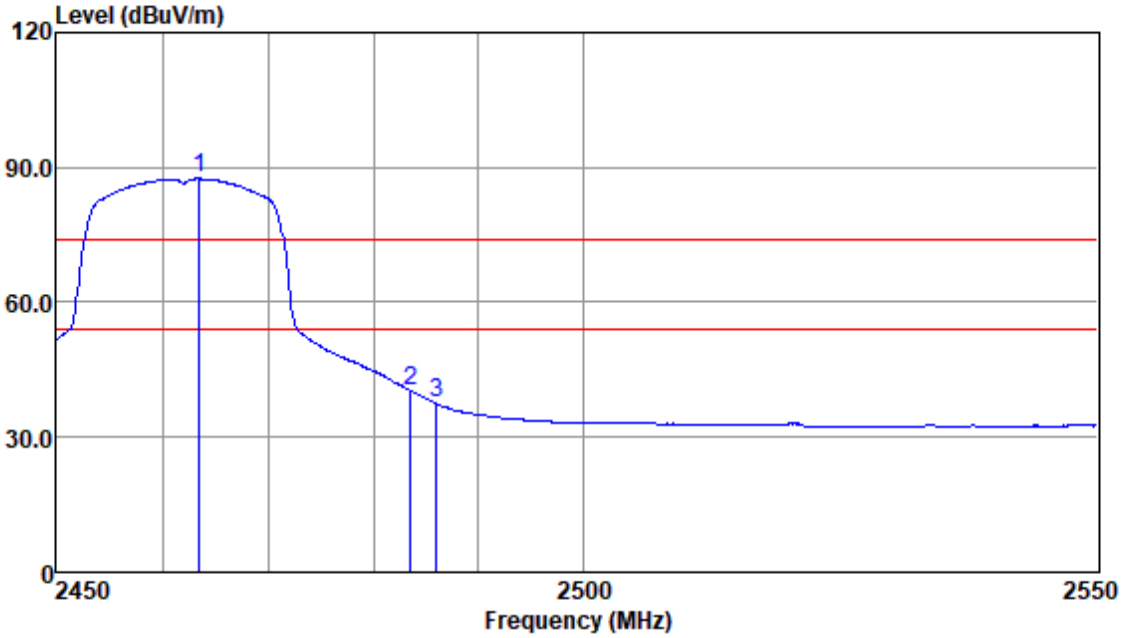


Antenna Polarity :HORIZONTAL
EUT/Project :1076ME

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	
2463.56	106.46	29.05	3.43	35.24	103.70	74.00	29.70	Peak
2483.50	70.27	29.09	3.36	35.26	67.46	74.00	-6.54	Peak
2484.25	69.25	29.09	3.36	35.26	66.44	74.00	-7.56	Peak

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

Test Mode: 03; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High

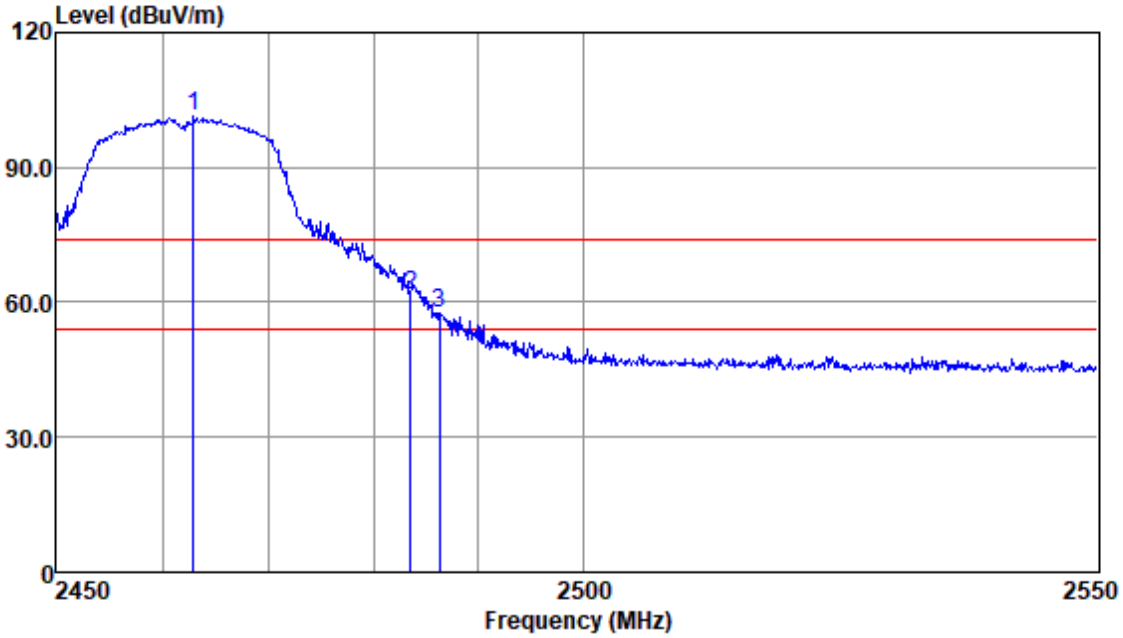


Antenna Polarity :HORIZONTAL
EUT/Project :1076ME

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	
2463.47	90.27	29.05	3.43	35.24	87.51	54.00	33.51	Average
2483.50	43.28	29.09	3.36	35.26	40.47	54.00	-13.53	Average
2486.04	40.30	29.09	3.36	35.26	37.49	54.00	-16.51	Average

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

Test Mode: 03; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High

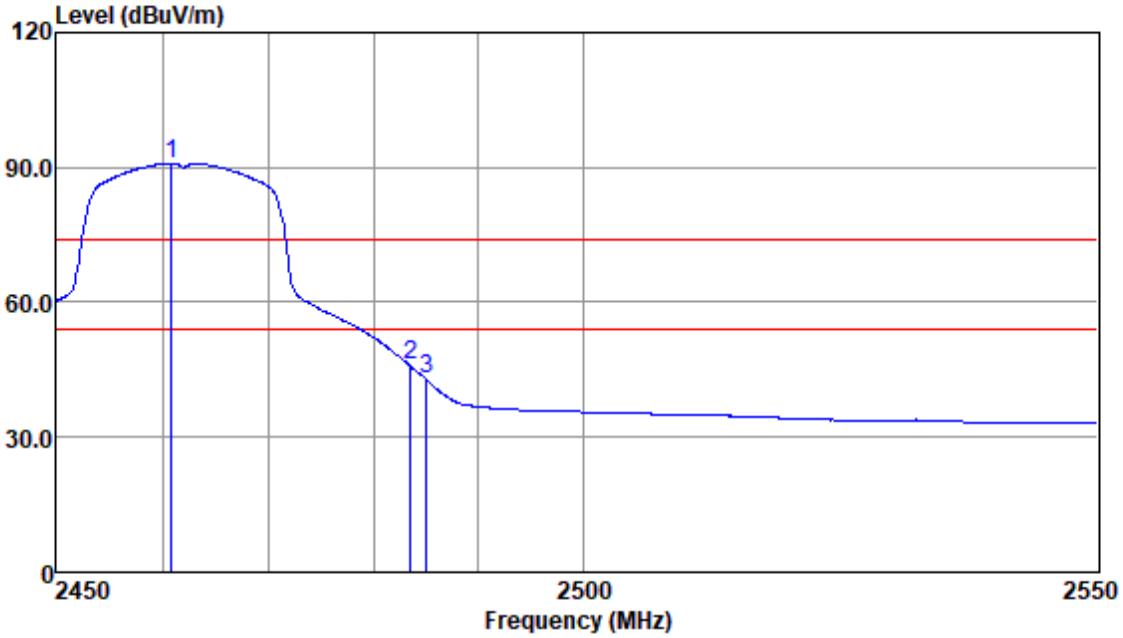


Antenna Polarity :VERTICAL
EUT/Project :1076ME

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	
2462.87	103.97	29.05	3.43	35.24	101.21	74.00	27.21	Peak
2483.50	64.56	29.09	3.36	35.26	61.75	74.00	-12.25	Peak
2486.34	60.57	29.09	3.36	35.26	57.76	74.00	-16.24	Peak

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

Test Mode: 03; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High

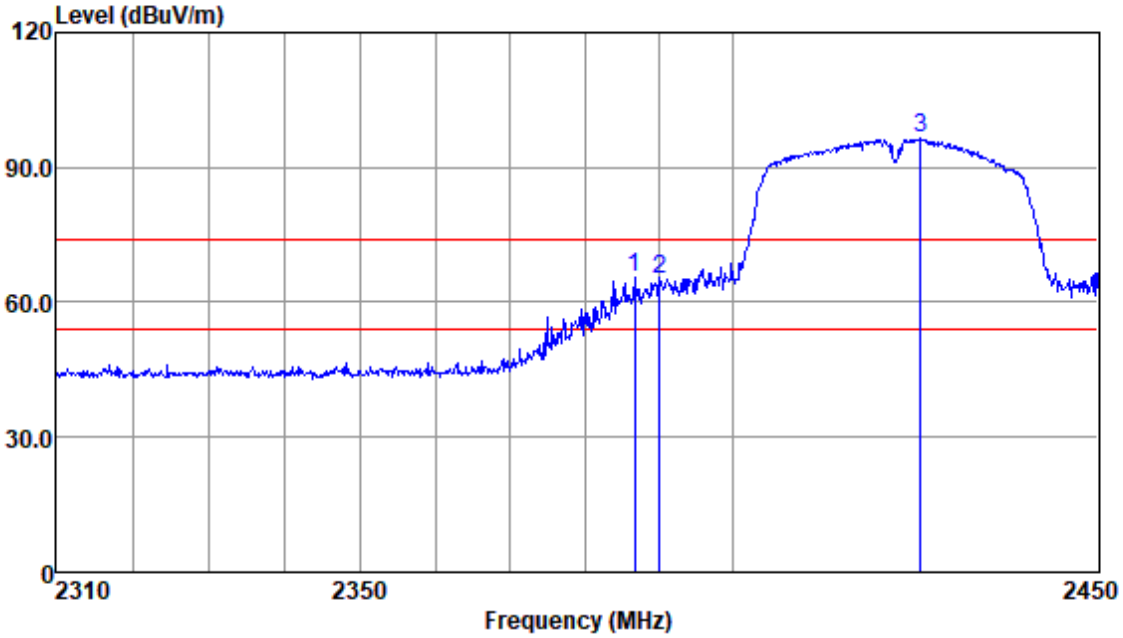


Antenna Polarity :VERTICAL
EUT/Project :1076ME

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	
2460.81	93.75	29.05	3.43	35.24	90.99	54.00	36.99	Average
2483.50	48.71	29.09	3.36	35.26	45.90	54.00	-8.10	Average
2485.04	45.60	29.09	3.36	35.26	42.79	54.00	-11.21	Average

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

Test Mode: 03; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low

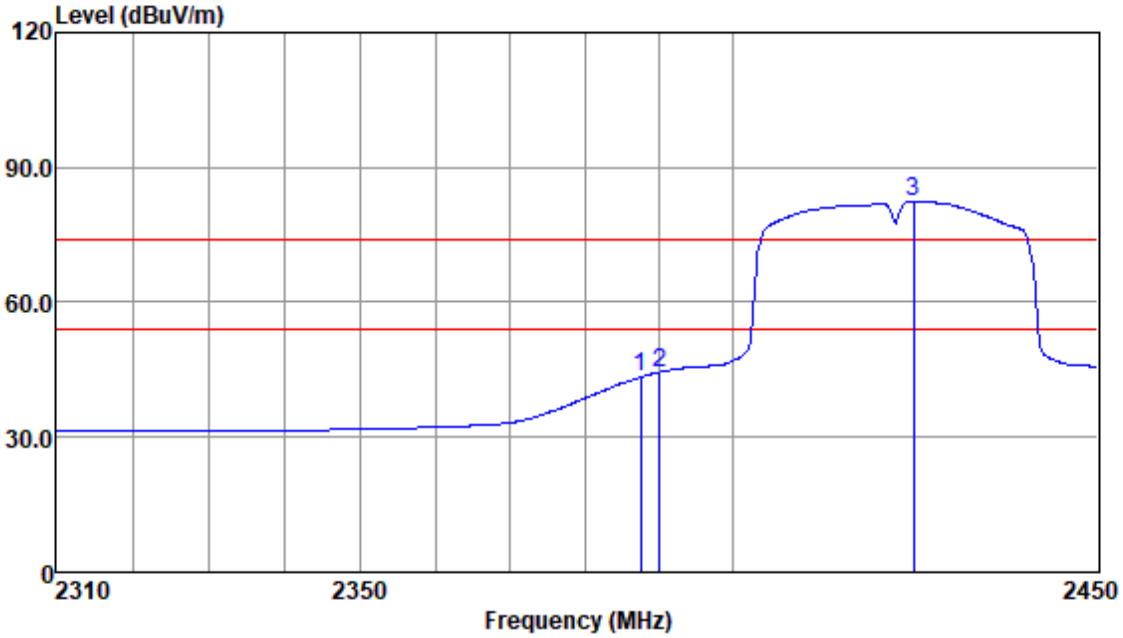


Antenna Polarity :HORIZONTAL
EUT/Project :1076ME

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	
2386.68	68.36	28.80	3.34	35.18	65.32	74.00	-8.68	Peak
2390.00	68.11	28.80	3.34	35.18	65.07	74.00	-8.93	Peak
2425.47	99.24	28.96	3.34	35.21	96.33	74.00	22.33	Peak

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

Test Mode: 03; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low

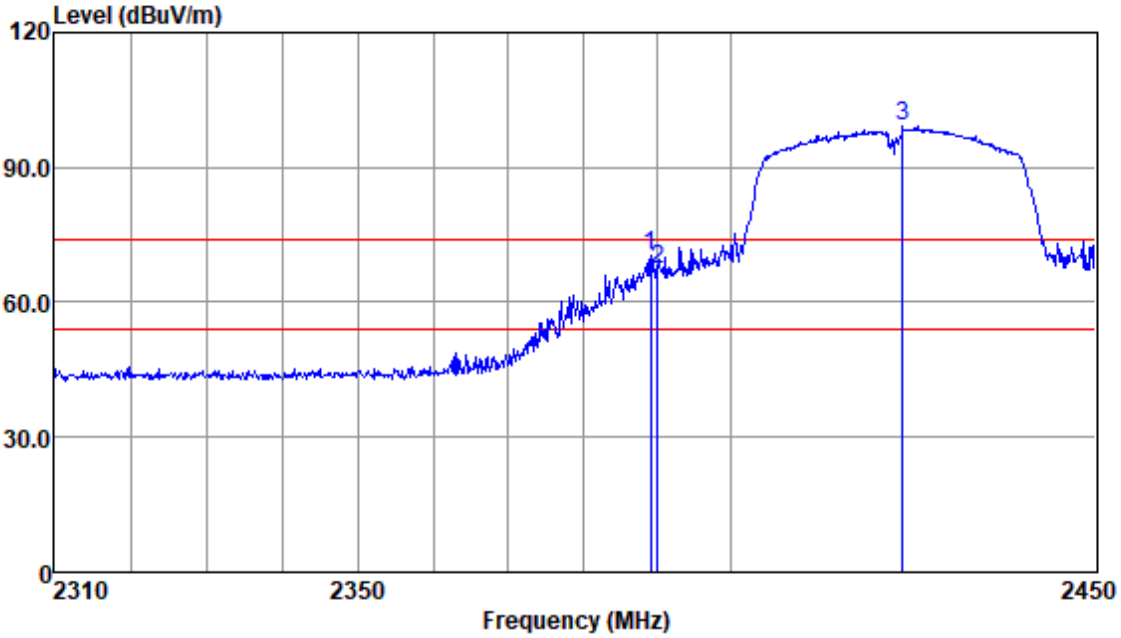


Antenna Polarity :HORIZONTAL
EUT/Project :1076ME

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	
2387.52	46.41	28.80	3.34	35.18	43.37	54.00	-10.63	Average
2390.00	47.52	28.80	3.34	35.18	44.48	54.00	-9.52	Average
2424.62	85.34	28.92	3.33	35.21	82.38	54.00	28.38	Average

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

Test Mode: 03; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low

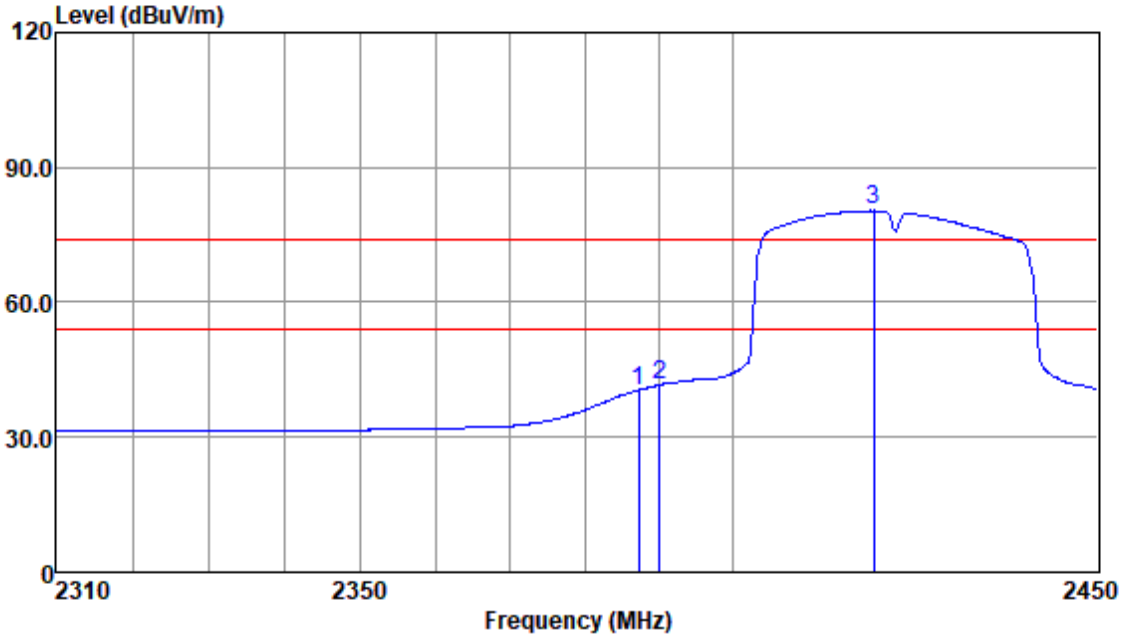


Antenna Polarity :VERTICAL
EUT/Project :1076ME

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	
2389.07	73.36	28.80	3.34	35.18	70.32	74.00	-3.68	Peak
2390.00	70.23	28.80	3.34	35.18	67.19	74.00	-6.81	Peak
2423.33	102.09	28.92	3.33	35.21	99.13	74.00	25.13	Peak

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

Test Mode: 03; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low

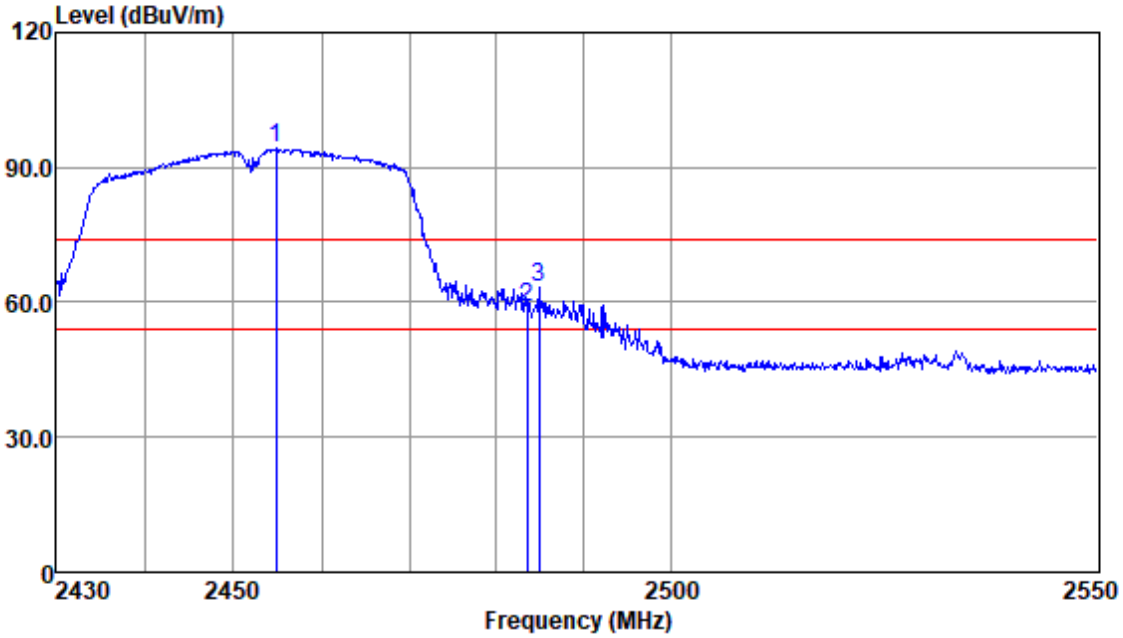


Antenna Polarity :VERTICAL
EUT/Project :1076ME

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	
2387.24	43.53	28.80	3.34	35.18	40.49	54.00	-13.51	Average
2390.00	44.64	28.80	3.34	35.18	41.60	54.00	-12.40	Average
2419.06	83.34	28.92	3.33	35.21	80.38	54.00	26.38	Average

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

Test Mode: 03; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High

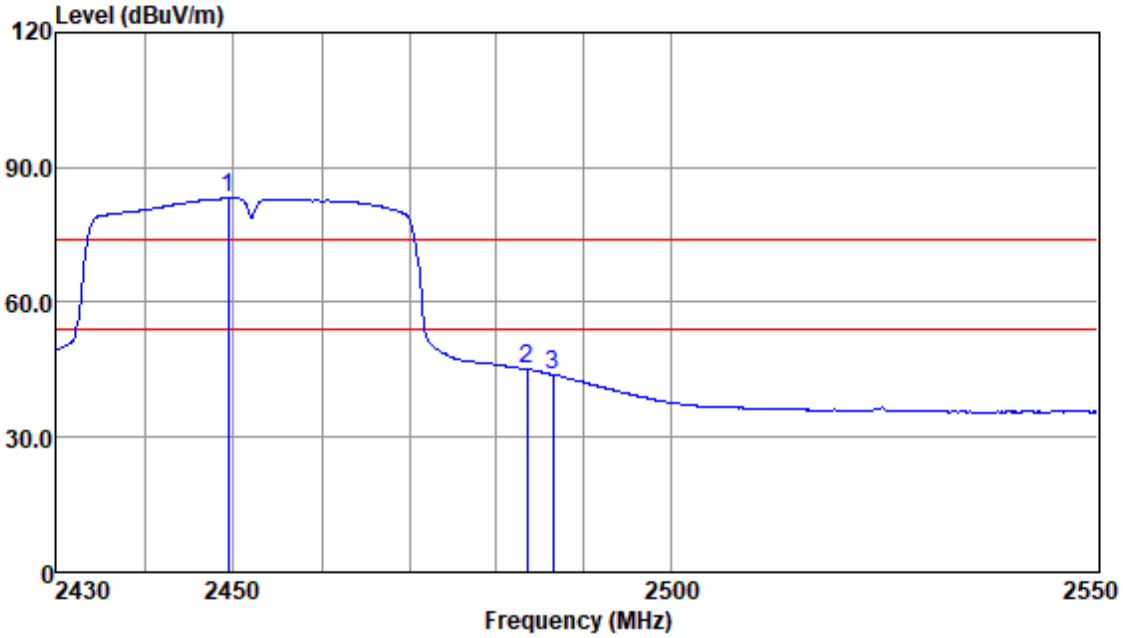


Antenna Polarity :HORIZONTAL
EUT/Project :1076ME

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	
2454.84	96.99	29.04	3.39	35.24	94.18	74.00	20.18	Peak
2483.50	61.82	29.09	3.36	35.26	59.01	74.00	-14.99	Peak
2484.84	66.18	29.09	3.36	35.26	63.37	74.00	-10.63	Peak

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

Test Mode: 03; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High

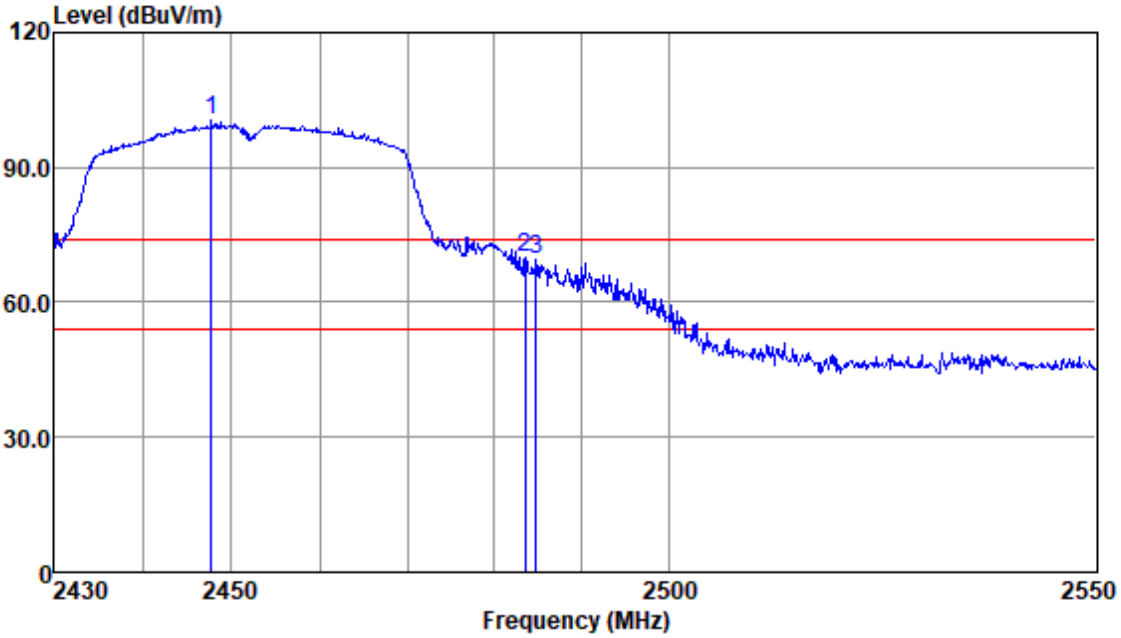


Antenna Polarity :HORIZONTAL
EUT/Project :1076ME

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	
2449.40	86.01	29.02	3.36	35.23	83.16	54.00	29.16	Average
2483.50	47.94	29.09	3.36	35.26	45.13	54.00	-8.87	Average
2486.52	46.71	29.09	3.36	35.26	43.90	54.00	-10.10	Average

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

Test Mode: 03; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:High

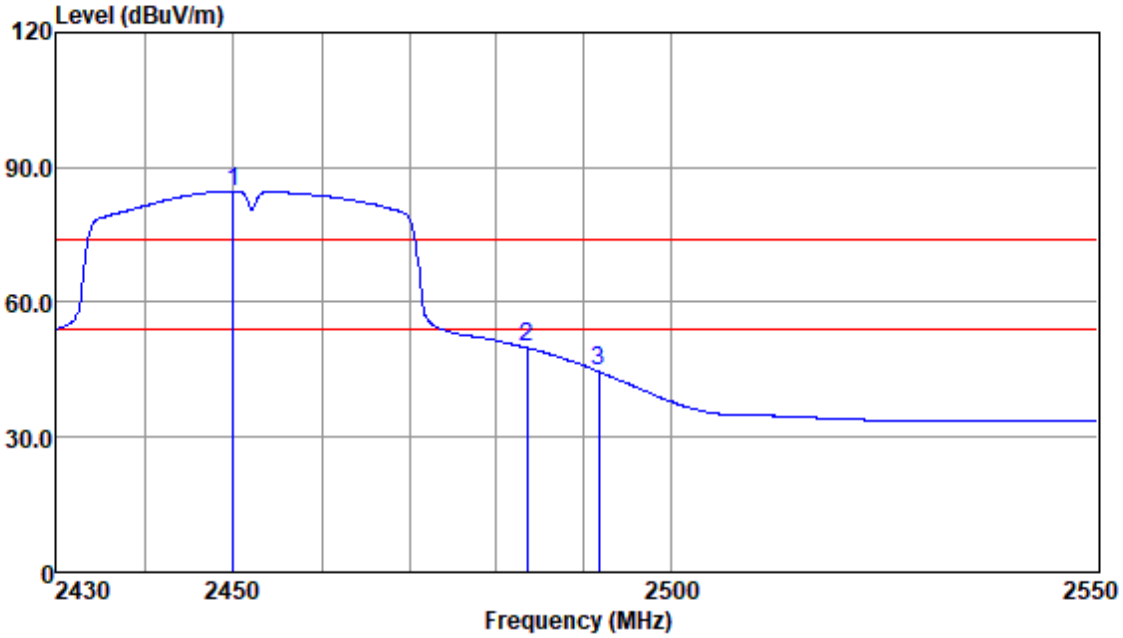


Antenna Polarity :VERTICAL
EUT/Project :1076ME

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	
2447.75	103.21	29.02	3.36	35.23	100.36	74.00	26.36	Peak
2483.50	72.98	29.09	3.36	35.26	70.17	74.00	-3.83	Peak
2484.72	72.39	29.09	3.36	35.26	69.58	74.00	-4.42	Peak

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

Test Mode: 03; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:High



Antenna Polarity :VERTICAL
EUT/Project :1076ME

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	
2449.99	87.60	29.02	3.36	35.23	84.75	54.00	30.75	Average
2483.50	52.71	29.09	3.36	35.26	49.90	54.00	-4.10	Average
2491.80	47.40	29.10	3.33	35.26	44.57	54.00	-9.43	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

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

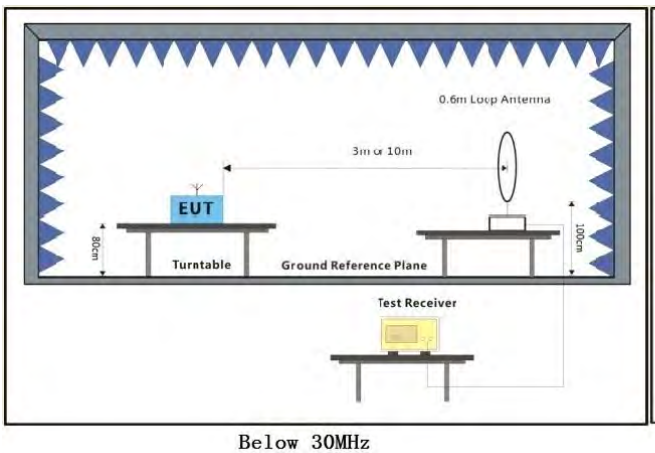
7.7.1 E.U.T. Operation

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

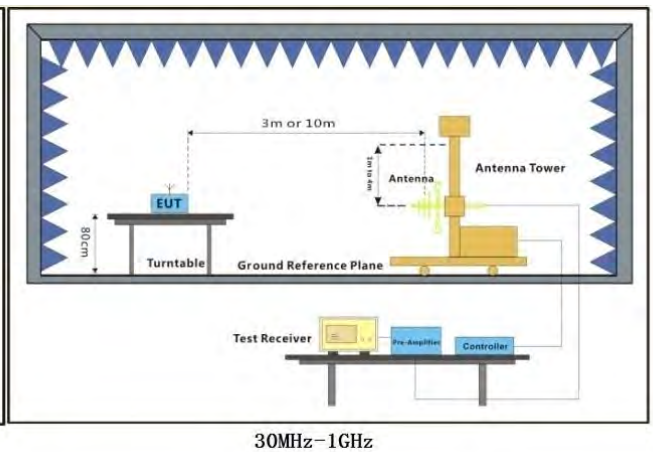
7.7.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	03	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), 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.

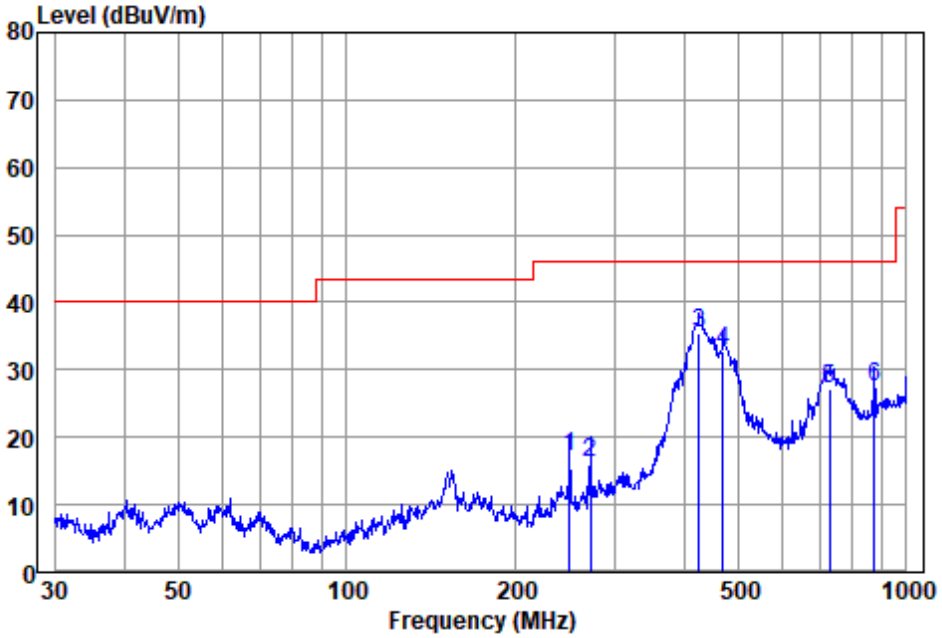
i. Repeat above procedures until all frequencies measured was complete.

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: 03; Polarity: Horizontal

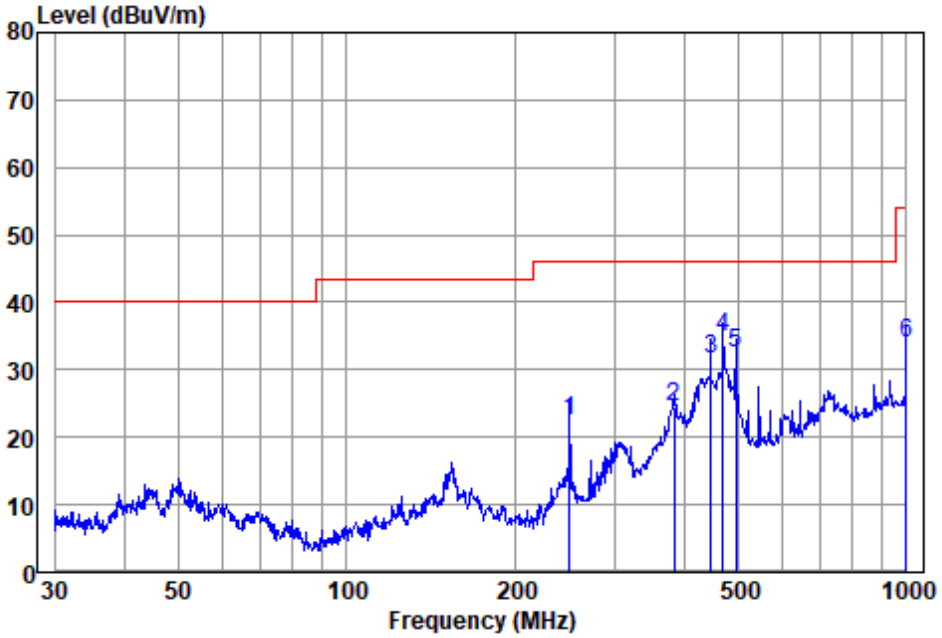


Antenna Polarity :HORIZONTAL
EUT/Project :1076ME
Test mode :03

	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	
1	250.301	34.96	11.70	3.35	32.80	17.21	46.00	-28.79	QP
2	272.278	32.96	12.40	3.58	32.80	16.14	46.00	-29.86	QP
3	426.521	47.20	16.53	4.50	32.75	35.48	46.00	-10.52	QP
4	470.523	43.16	17.50	4.79	32.70	32.75	46.00	-13.25	QP
5	729.358	31.97	21.80	6.07	32.57	27.27	46.00	-18.73	QP
6	875.247	29.10	23.40	6.77	31.84	27.43	46.00	-18.57	QP

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

Test Mode: 03; Polarity: Vertical



Antenna Polarity :VERTICAL
EUT/Project :1076ME
Test mode :03

	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	
1	250.301	40.16	11.70	3.35	32.80	22.41	46.00	-23.59	QP
2	383.932	37.44	15.47	4.24	32.77	24.38	46.00	-21.62	QP
3	446.414	42.49	17.13	4.70	32.71	31.61	46.00	-14.39	QP
4	470.523	45.21	17.50	4.79	32.70	34.80	46.00	-11.20	QP
5	495.934	42.41	17.92	4.90	32.70	32.53	46.00	-13.47	QP
6	1000.000	33.56	24.30	7.33	31.30	33.89	54.00	-20.11	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

Limit:

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

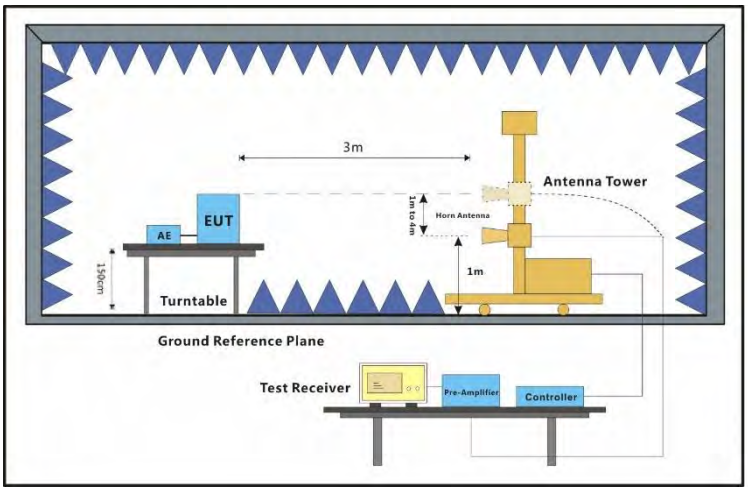
7.8.1 E.U.T. Operation

Operating Environment:
Temperature: 26.0 °C Humidity: 70.5 % RH Atmospheric Pressure: 1010 mbar

7.8.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	03	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), 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:

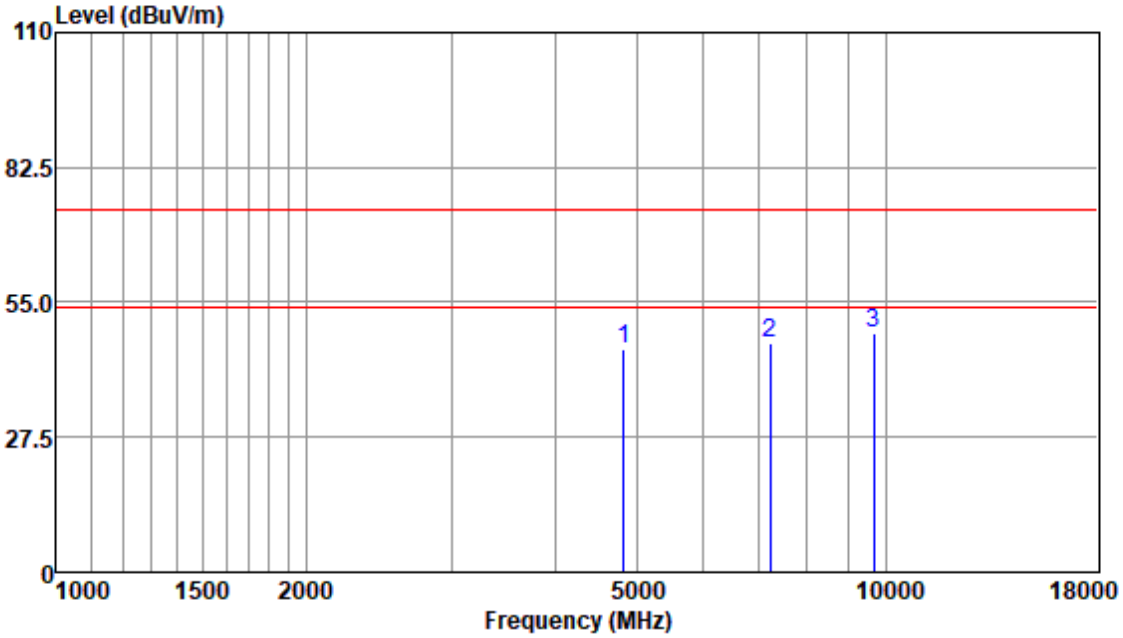
1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

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.

Remark: This test item was investigated while operating in SISO and MIMO mode, however, it was determined that SISO antenna 1 operation for b/g modulation and MIMO antenna operation for n modulation produced the worst emissions. So the emissions produced from other operation are not recorded in report.

Test Mode: 03; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:Low

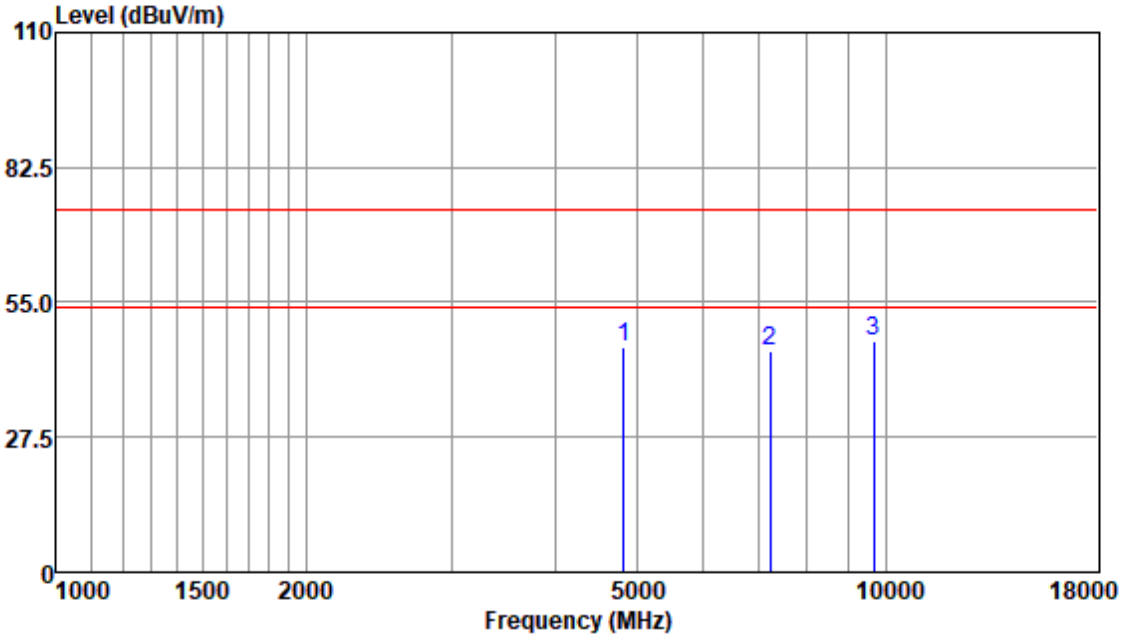


Antenna Polarity :HORIZONTAL
EUT/Project :1076ME

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	
4824.02	43.35	33.60	5.41	36.79	45.57	74.00	-28.43	Peak
7236.05	38.89	36.29	7.18	35.50	46.86	74.00	-27.14	Peak
9648.26	35.87	37.71	8.64	33.56	48.66	74.00	-25.34	Peak

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

Test Mode: 03; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:Low

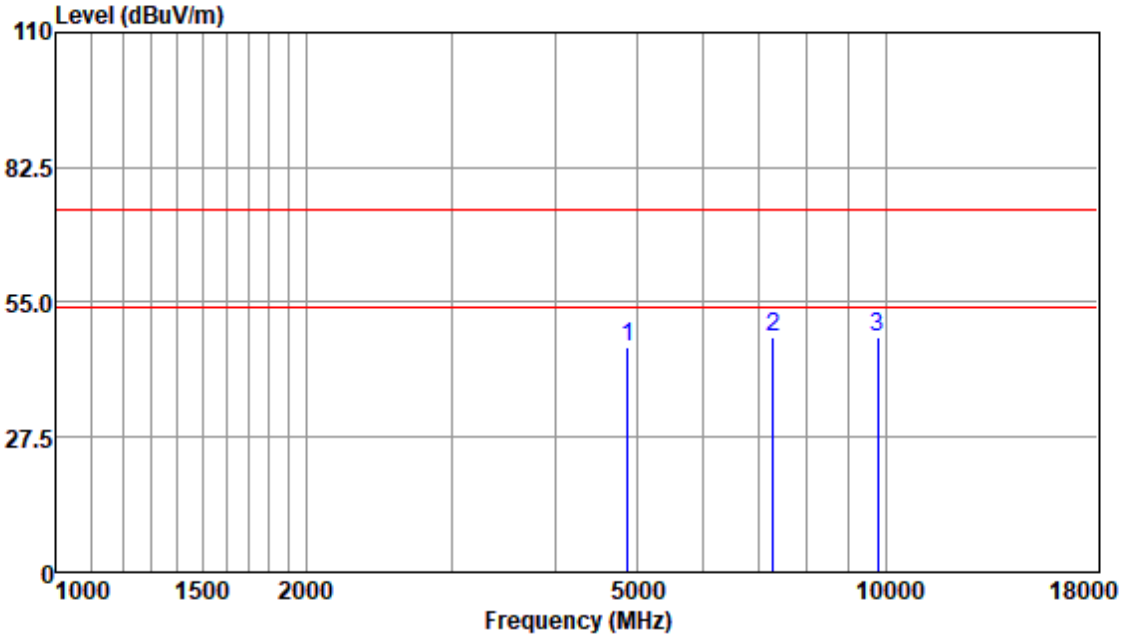


Antenna Polarity :VERTICAL
EUT/Project :1076ME

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	
4824.02	43.59	33.60	5.41	36.79	45.81	74.00	-28.19	Peak
7236.05	37.04	36.29	7.18	35.50	45.01	74.00	-28.99	Peak
9648.26	34.46	37.71	8.64	33.56	47.25	74.00	-26.75	Peak

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

Test Mode: 03; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:middle

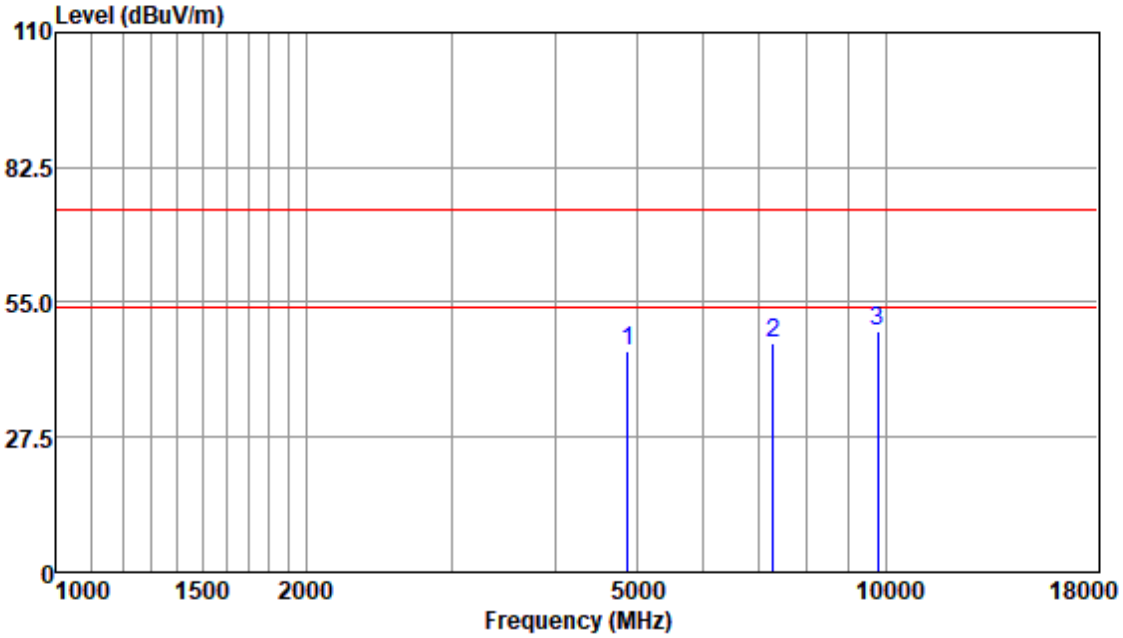


Antenna Polarity :HORIZONTAL
EUT/Project :1076ME

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	
4874.04	43.58	33.66	5.28	36.81	45.71	74.00	-28.29	Peak
7311.12	39.74	36.32	7.34	35.44	47.96	74.00	-26.04	Peak
9748.37	35.19	37.54	8.84	33.50	48.07	74.00	-25.93	Peak

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

Test Mode: 03; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:middle

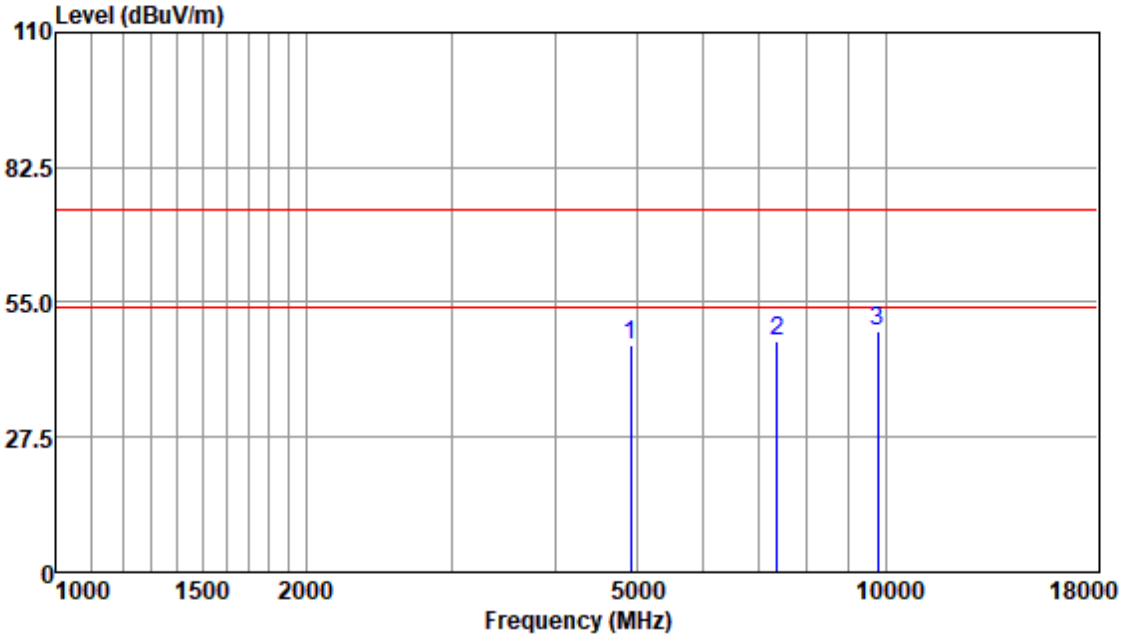


Antenna Polarity :VERTICAL
EUT/Project :1076ME

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	
4874.04	43.01	33.66	5.28	36.81	45.14	74.00	-28.86	Peak
7311.12	38.52	36.32	7.34	35.44	46.74	74.00	-27.26	Peak
9748.37	36.06	37.54	8.84	33.50	48.94	74.00	-25.06	Peak

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

Test Mode: 03; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:High

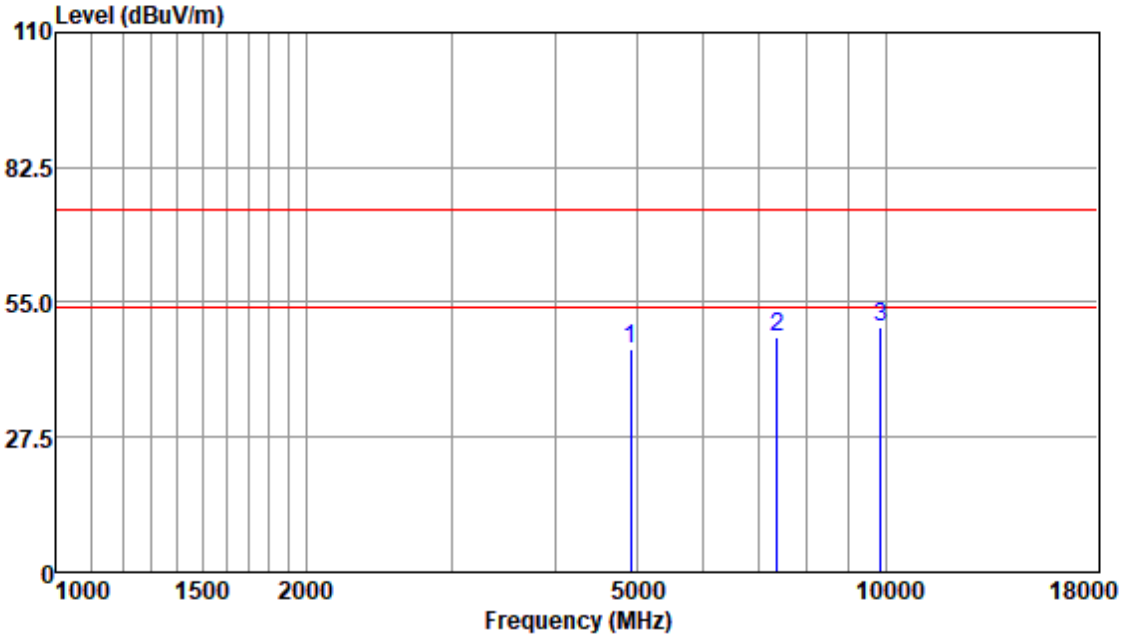


Antenna Polarity :HORIZONTAL
EUT/Project :1076ME

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	
4924.72	44.05	33.64	5.37	36.82	46.24	74.00	-27.76	Peak
7386.07	38.99	36.36	7.29	35.37	47.27	74.00	-26.73	Peak
9748.37	36.13	37.54	8.84	33.50	49.01	74.00	-24.99	Peak

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

Test Mode: 03; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:High

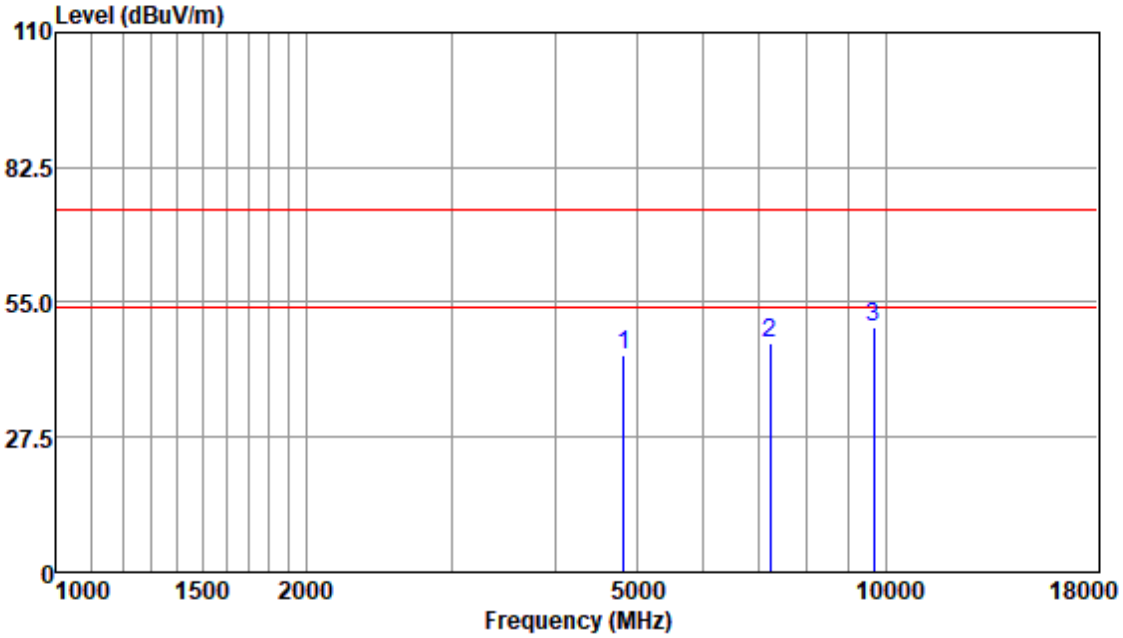


Antenna Polarity :VERTICAL
EUT/Project :1076ME

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	
4924.72	43.45	33.64	5.37	36.82	45.64	74.00	-28.36	Peak
7386.07	39.48	36.36	7.29	35.37	47.76	74.00	-26.24	Peak
9848.31	37.05	37.60	8.82	33.45	50.02	74.00	-23.98	Peak

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

Test Mode: 03; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:Low

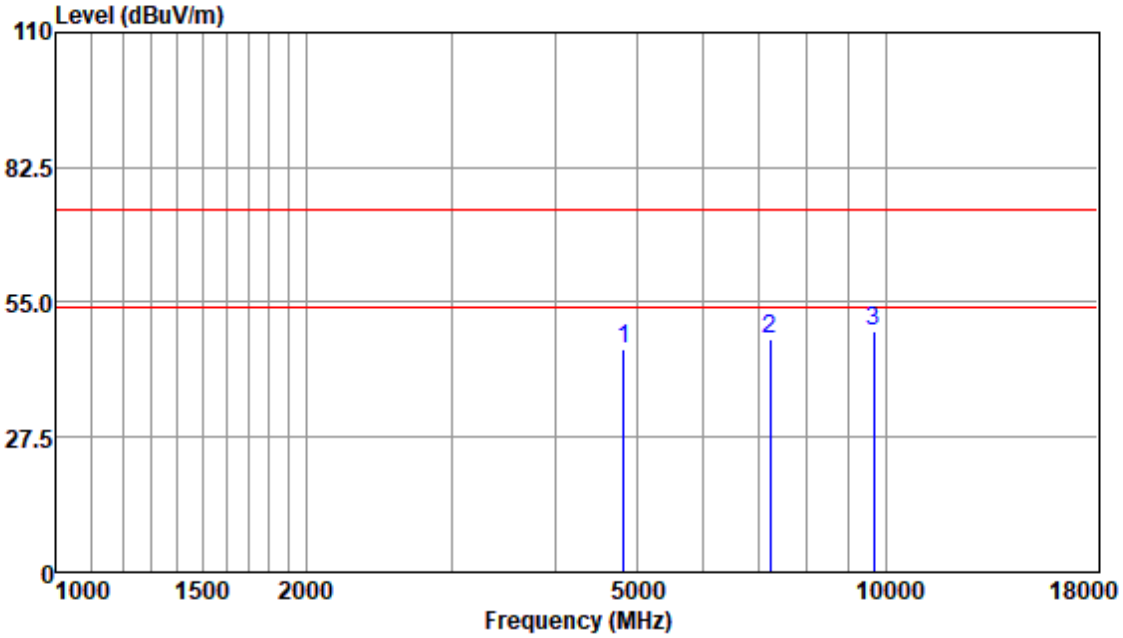


Antenna Polarity :HORIZONTAL
EUT/Project :1076ME

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	
4824.02	42.20	33.60	5.41	36.79	44.42	74.00	-29.58	Peak
7236.05	38.79	36.29	7.18	35.50	46.76	74.00	-27.24	Peak
9648.26	37.17	37.71	8.64	33.56	49.96	74.00	-24.04	Peak

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

Test Mode: 03; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:Low

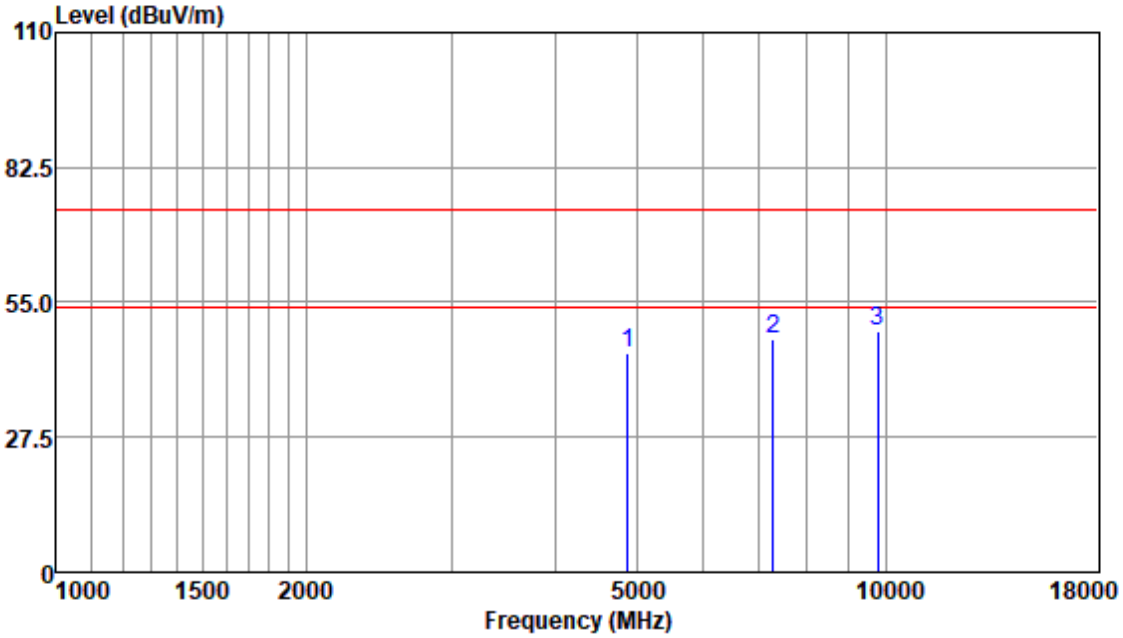


Antenna Polarity :VERTICAL
EUT/Project :1076ME

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	
4824.02	43.44	33.60	5.41	36.79	45.66	74.00	-28.34	Peak
7236.05	39.39	36.29	7.18	35.50	47.36	74.00	-26.64	Peak
9648.26	36.41	37.71	8.64	33.56	49.20	74.00	-24.80	Peak

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

Test Mode: 03; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:middle

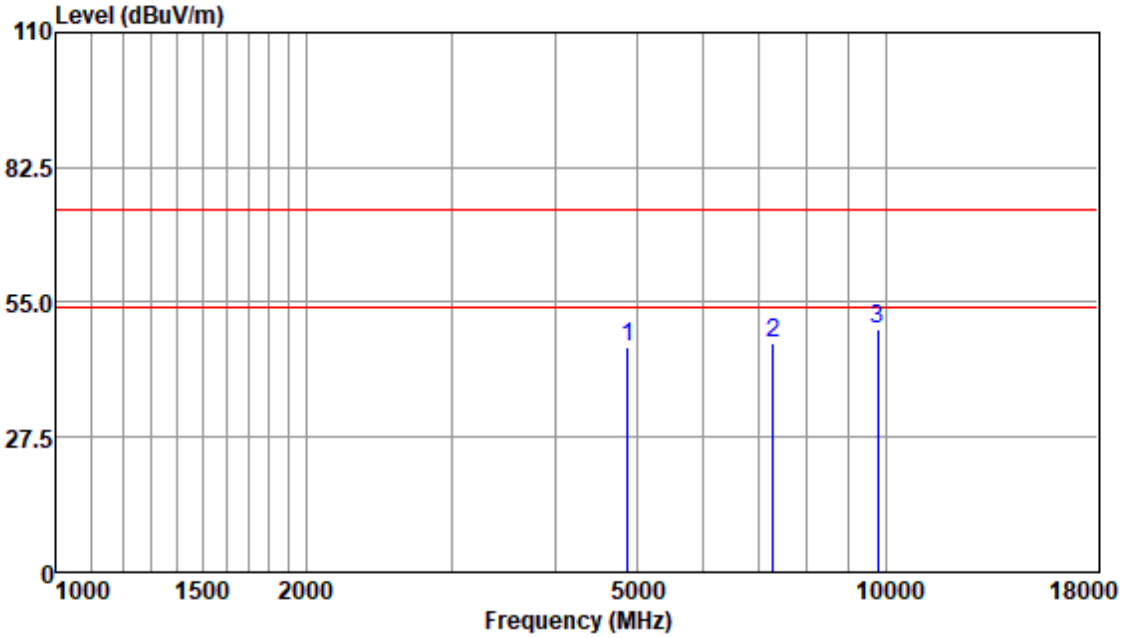


Antenna Polarity :HORIZONTAL
EUT/Project :1076ME

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	
4874.04	42.59	33.66	5.28	36.81	44.72	74.00	-29.28	Peak
7311.12	39.26	36.32	7.34	35.44	47.48	74.00	-26.52	Peak
9748.37	36.39	37.54	8.84	33.50	49.27	74.00	-24.73	Peak

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

Test Mode: 03; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:middle

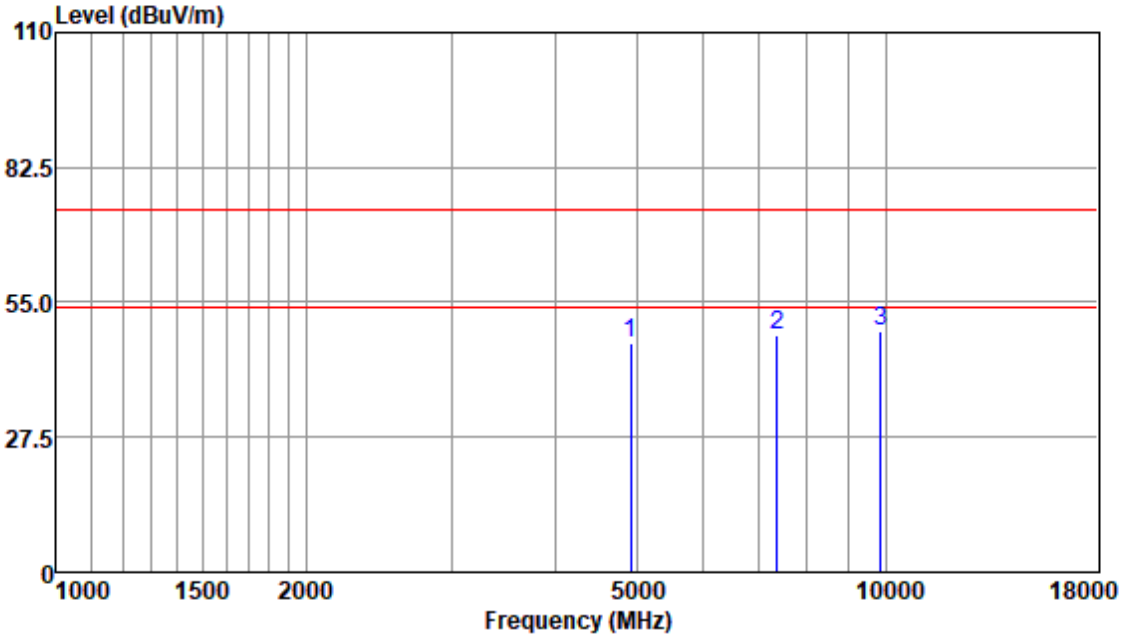


Antenna Polarity :VERTICAL
EUT/Project :1076ME

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	
4874.04	43.61	33.66	5.28	36.81	45.74	74.00	-28.26	Peak
7311.12	38.38	36.32	7.34	35.44	46.60	74.00	-27.40	Peak
9748.37	36.61	37.54	8.84	33.50	49.49	74.00	-24.51	Peak

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

Test Mode: 03; Polarity: Horizontal; Modulation:802.11g; Bandwidth:20MHz; Channel:High

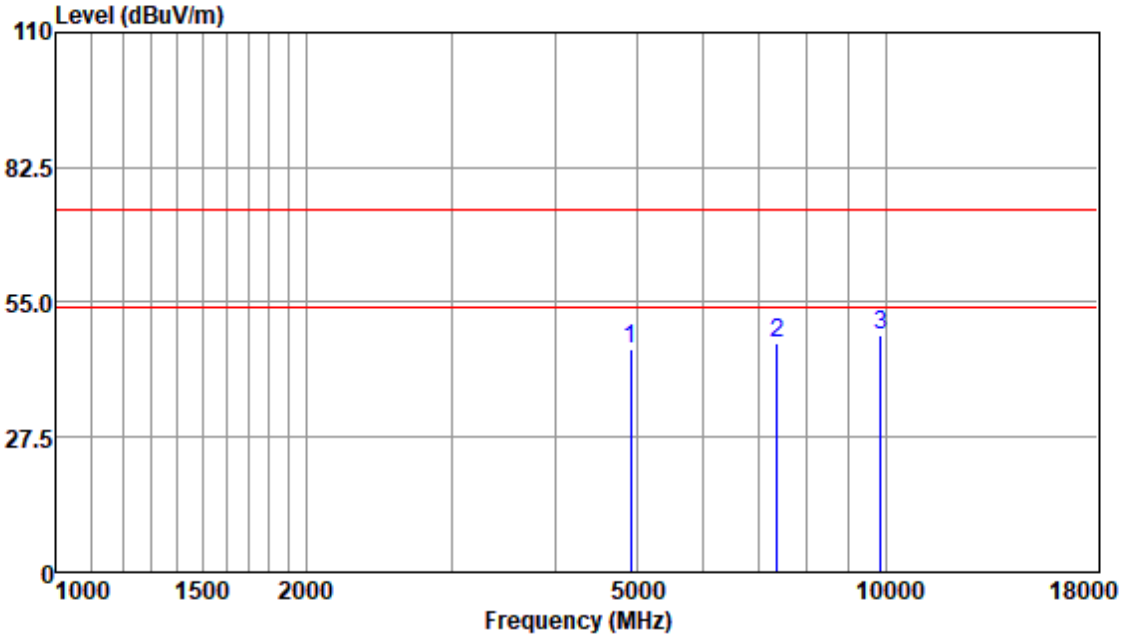


Antenna Polarity :HORIZONTAL
EUT/Project :1076ME

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	
4924.72	44.46	33.64	5.37	36.82	46.65	74.00	-27.35	Peak
7386.07	40.20	36.36	7.29	35.37	48.48	74.00	-25.52	Peak
9848.31	36.29	37.60	8.82	33.45	49.26	74.00	-24.74	Peak

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

Test Mode: 03; Polarity: Vertical; Modulation:802.11g; Bandwidth:20MHz; Channel:High

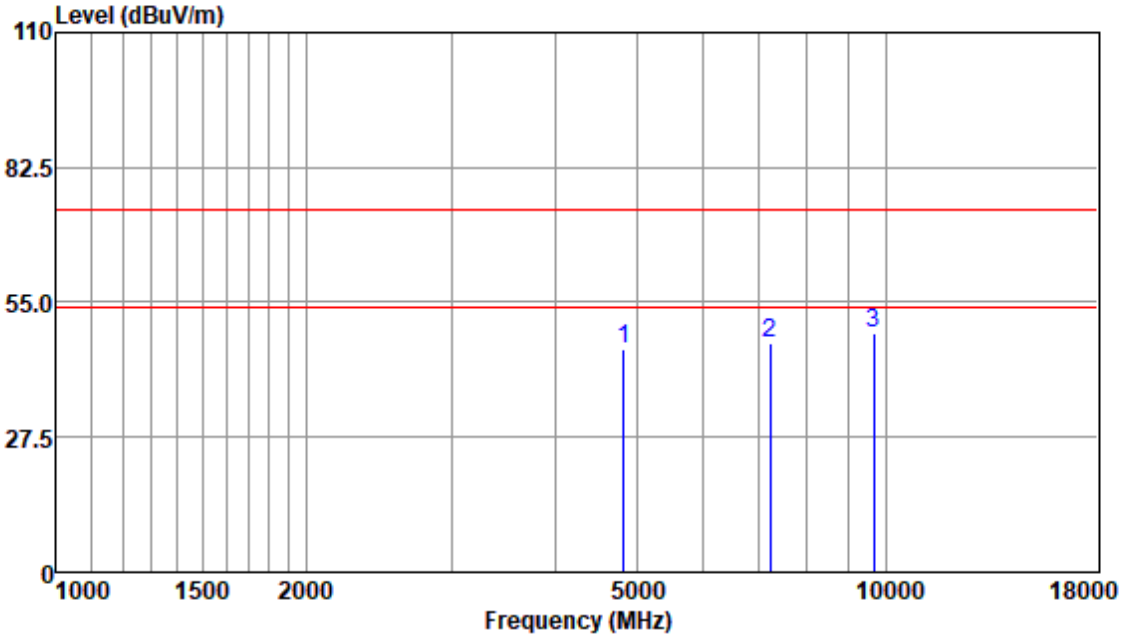


Antenna Polarity :VERTICAL
EUT/Project :1076ME

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	
4924.72	43.12	33.64	5.37	36.82	45.31	74.00	-28.69	Peak
7386.07	38.55	36.36	7.29	35.37	46.83	74.00	-27.17	Peak
9848.31	35.24	37.60	8.82	33.45	48.21	74.00	-25.79	Peak

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

Test Mode: 03; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low

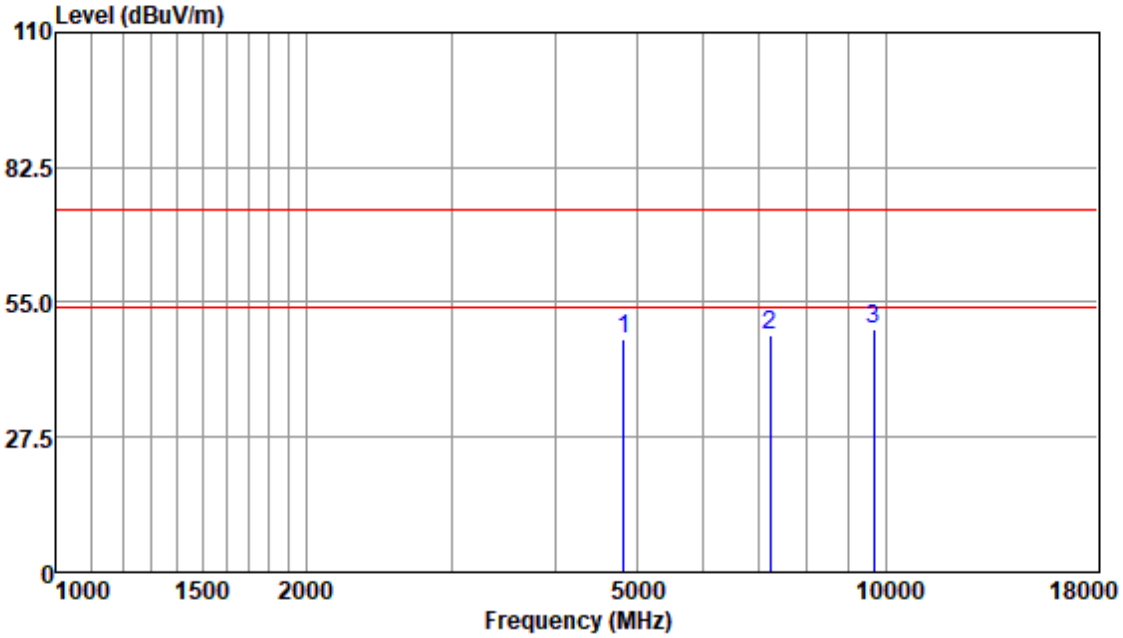


Antenna Polarity :HORIZONTAL
EUT/Project :1076ME

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	
4824.02	43.11	33.60	5.41	36.79	45.33	74.00	-28.67	Peak
7236.05	38.80	36.29	7.18	35.50	46.77	74.00	-27.23	Peak
9648.26	35.84	37.71	8.64	33.56	48.63	74.00	-25.37	Peak

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

Test Mode: 03; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low

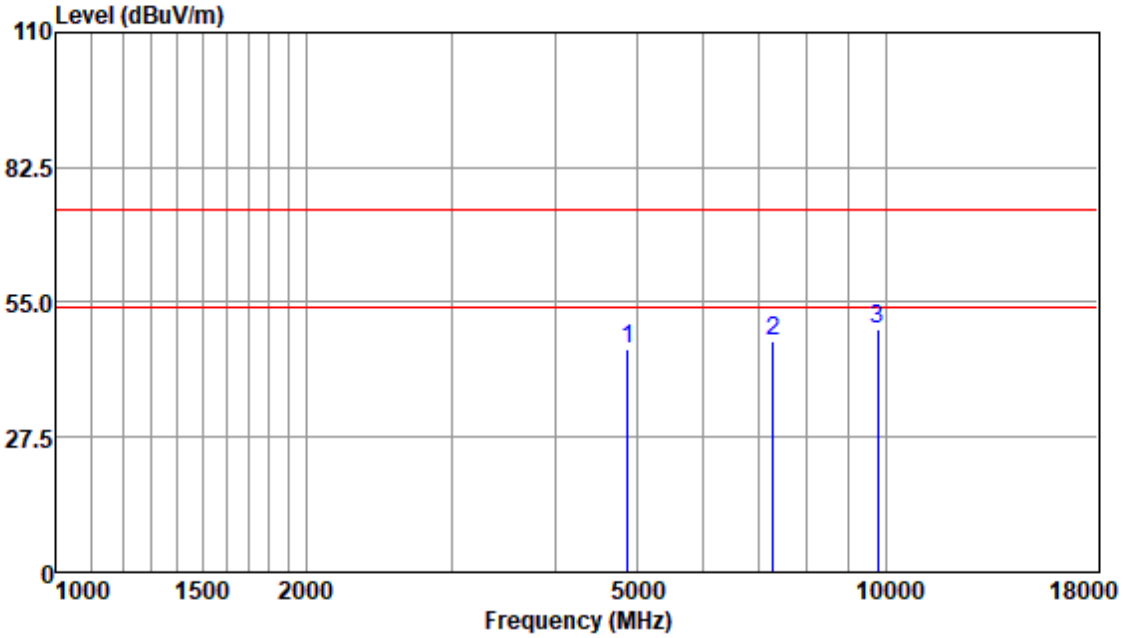


Antenna Polarity :VERTICAL
EUT/Project :1076ME

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	
4824.02	45.29	33.60	5.41	36.79	47.51	74.00	-26.49	Peak
7236.05	40.19	36.29	7.18	35.50	48.16	74.00	-25.84	Peak
9648.26	36.91	37.71	8.64	33.56	49.70	74.00	-24.30	Peak

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

Test Mode: 03; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:middle

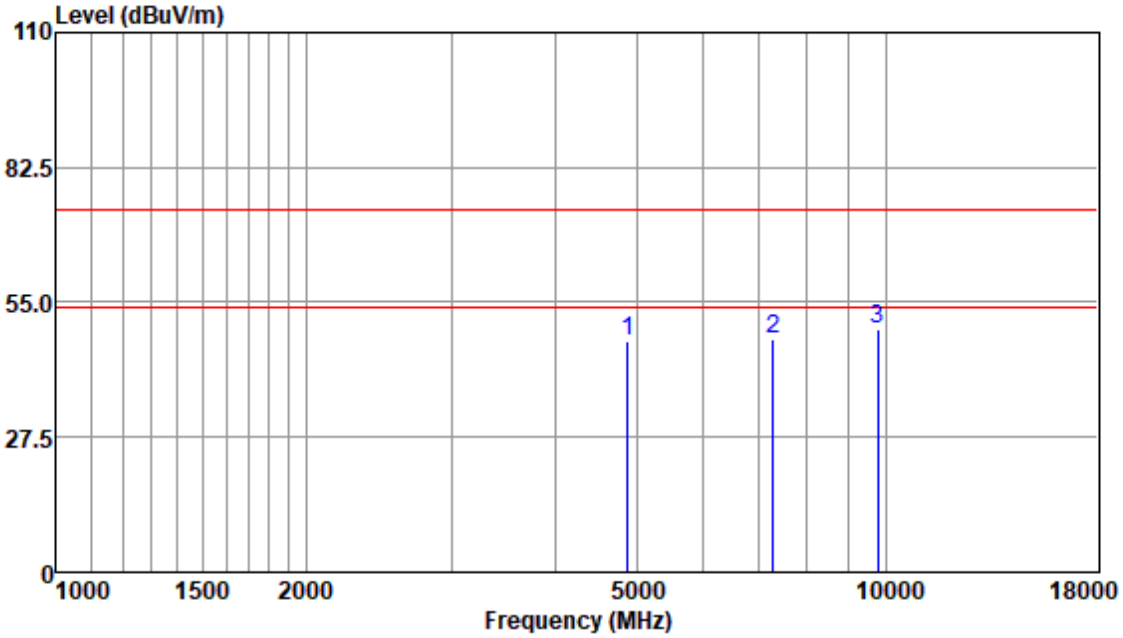


Antenna Polarity :HORIZONTAL
EUT/Project :1076ME

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	
4874.04	43.37	33.66	5.28	36.81	45.50	74.00	-28.50	Peak
7311.12	38.83	36.32	7.34	35.44	47.05	74.00	-26.95	Peak
9748.37	36.83	37.54	8.84	33.50	49.71	74.00	-24.29	Peak

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

Test Mode: 03; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:middle

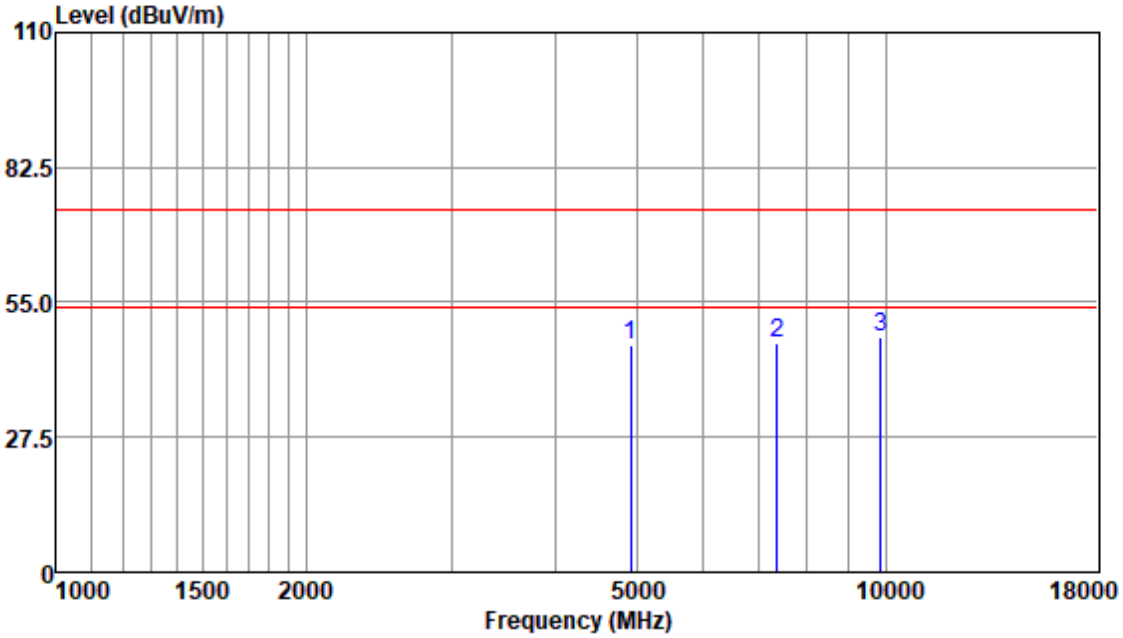


Antenna Polarity :VERTICAL
EUT/Project :1076ME

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	
4874.04	44.76	33.66	5.28	36.81	46.89	74.00	-27.11	Peak
7311.12	39.34	36.32	7.34	35.44	47.56	74.00	-26.44	Peak
9748.37	36.75	37.54	8.84	33.50	49.63	74.00	-24.37	Peak

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

Test Mode: 03; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High

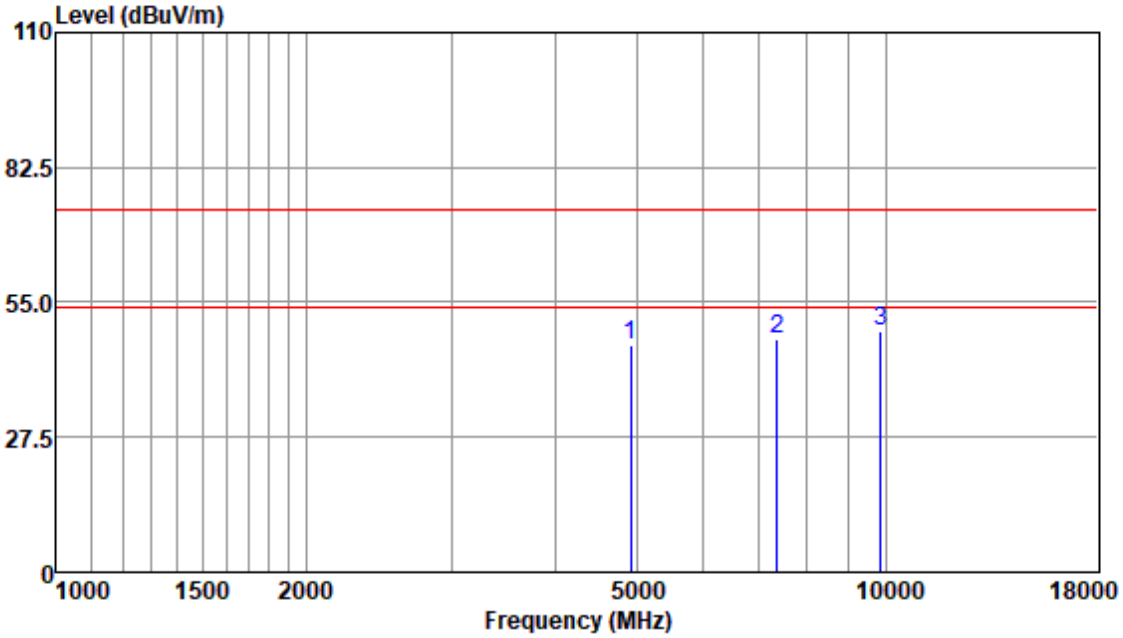


Antenna Polarity :HORIZONTAL
EUT/Project :1076ME

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	
4924.72	44.05	33.64	5.37	36.82	46.24	74.00	-27.76	Peak
7386.07	38.45	36.36	7.29	35.37	46.73	74.00	-27.27	Peak
9848.31	34.93	37.60	8.82	33.45	47.90	74.00	-26.10	Peak

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

Test Mode: 03; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High

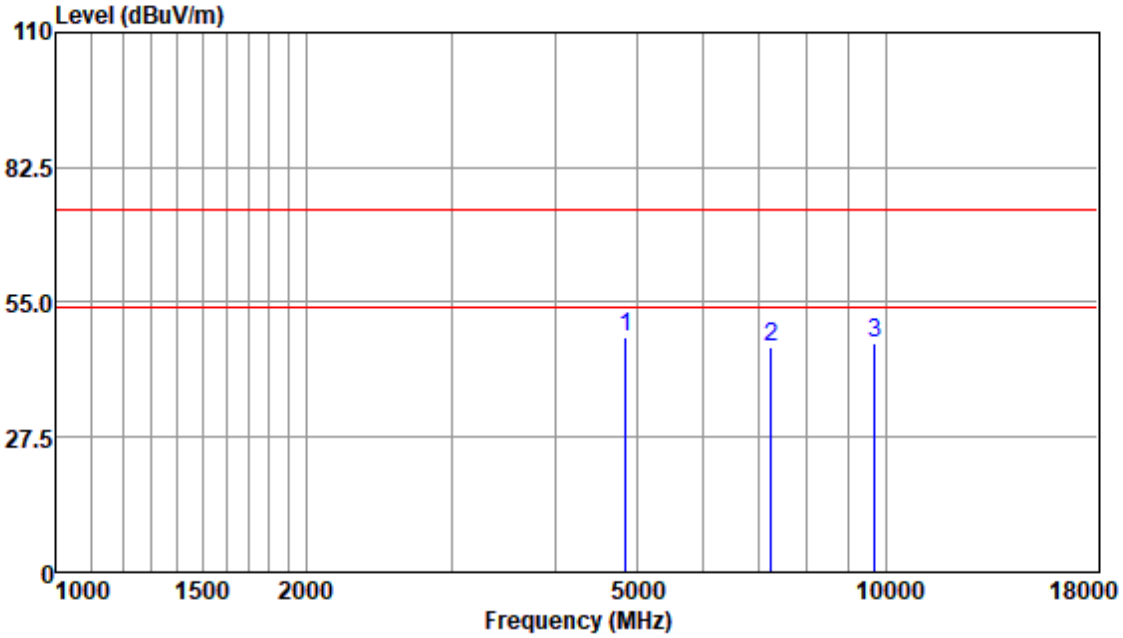


Antenna Polarity :VERTICAL
EUT/Project :1076ME

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	
4924.72	44.24	33.64	5.37	36.82	46.43	74.00	-27.57	Peak
7386.07	39.25	36.36	7.29	35.37	47.53	74.00	-26.47	Peak
9848.31	36.29	37.60	8.82	33.45	49.26	74.00	-24.74	Peak

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

Test Mode: 03; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low

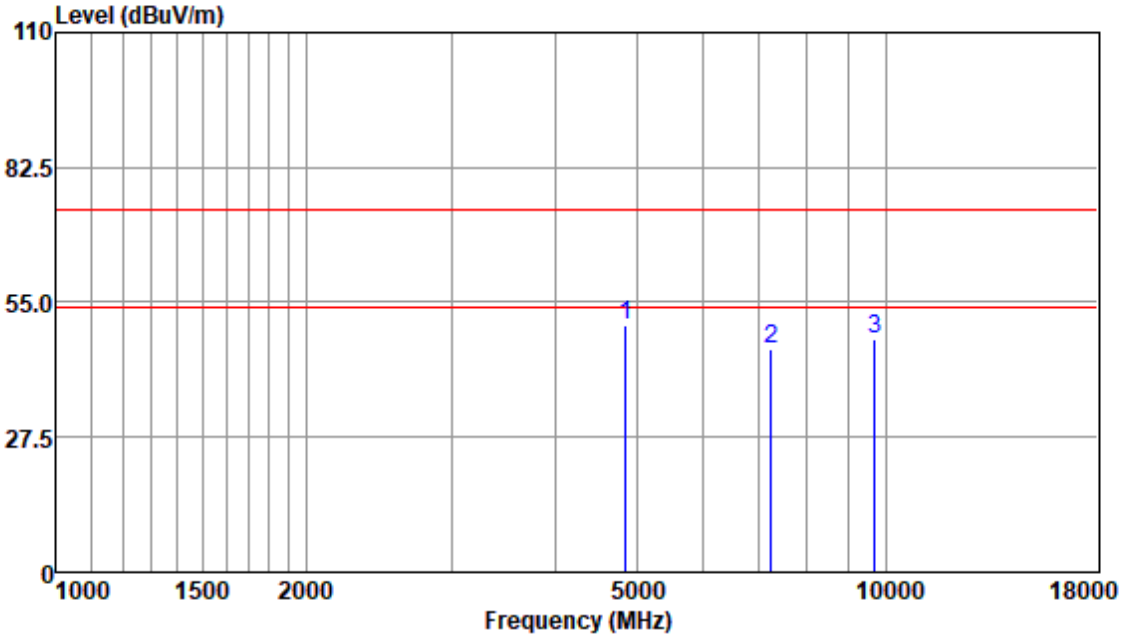


Antenna Polarity :HORIZONTAL
EUT/Project :1076ME

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	
4844.95	45.66	33.66	5.43	36.80	47.95	74.00	-26.05	Peak
7266.02	37.63	36.30	7.28	35.48	45.73	74.00	-28.27	Peak
9688.15	33.98	37.62	8.60	33.53	46.67	74.00	-27.33	Peak

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

Test Mode: 03; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low

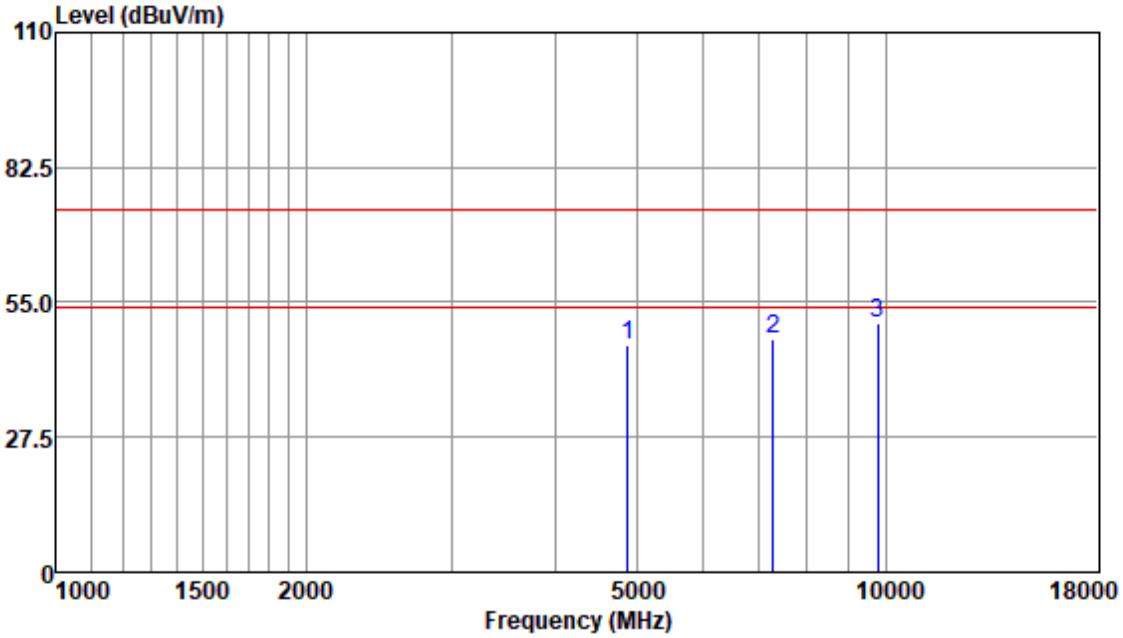


Antenna Polarity :VERTICAL
EUT/Project :1076ME

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	
4844.95	48.14	33.66	5.43	36.80	50.43	74.00	-23.57	Peak
7266.02	37.26	36.30	7.28	35.48	45.36	74.00	-28.64	Peak
9688.15	34.74	37.62	8.60	33.53	47.43	74.00	-26.57	Peak

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

Test Mode: 03; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:middle

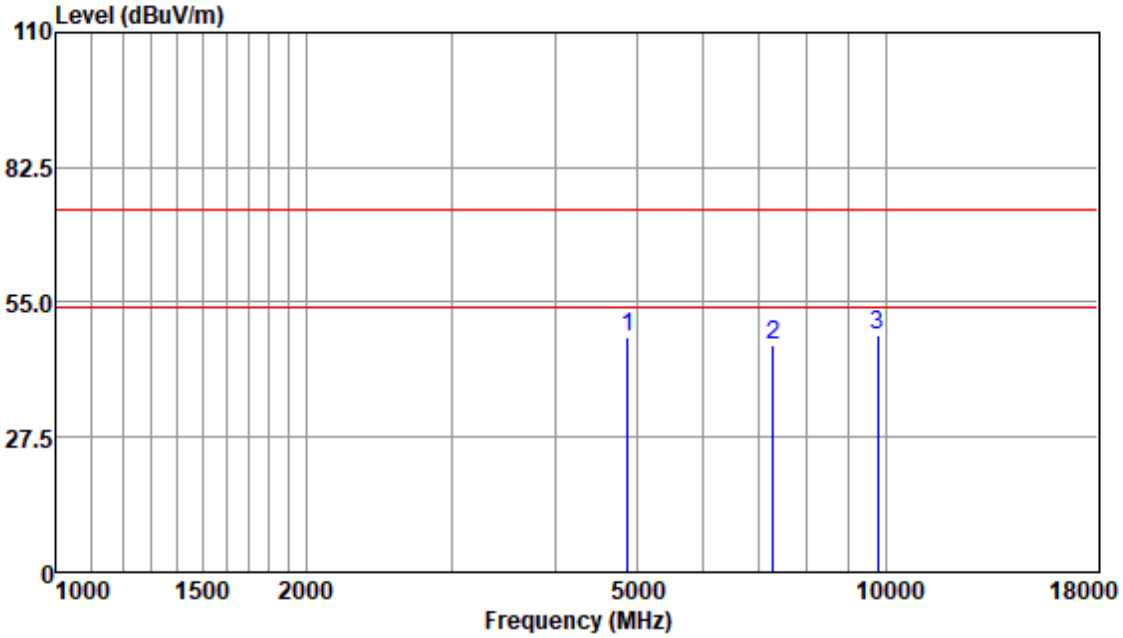


Antenna Polarity :HORIZONTAL
EUT/Project :1076ME

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	
4874.04	44.14	33.66	5.28	36.81	46.27	74.00	-27.73	Peak
7311.12	39.29	36.32	7.34	35.44	47.51	74.00	-26.49	Peak
9748.37	37.86	37.54	8.84	33.50	50.74	74.00	-23.26	Peak

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

Test Mode: 03; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:middle

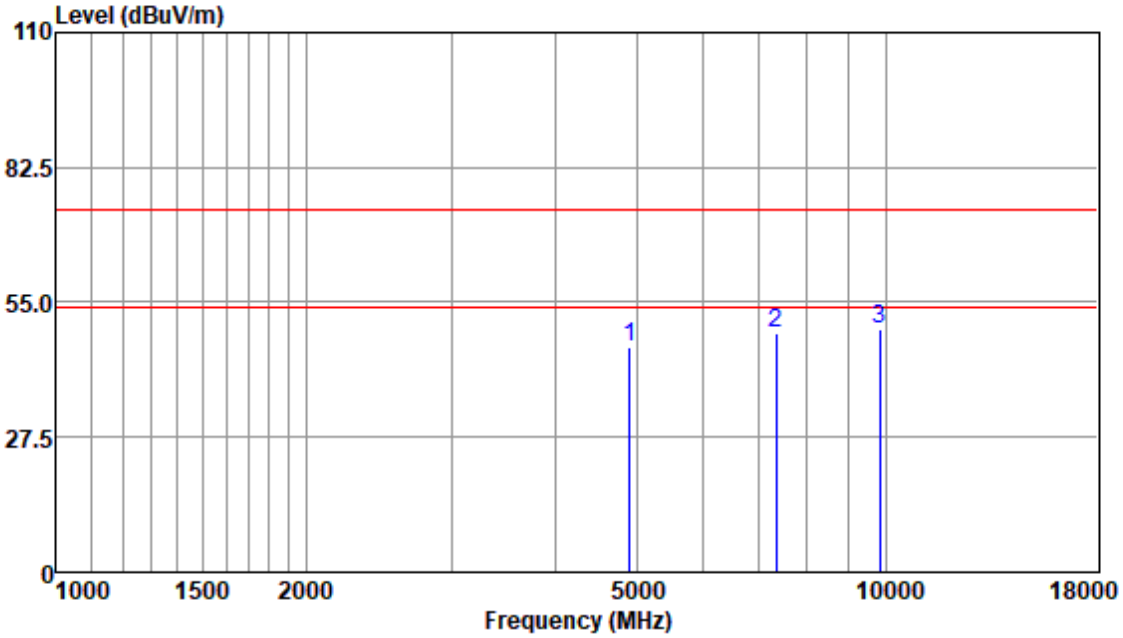


Antenna Polarity :VERTICAL
EUT/Project :1076ME

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	
4874.04	45.96	33.66	5.28	36.81	48.09	74.00	-25.91	Peak
7311.12	38.14	36.32	7.34	35.44	46.36	74.00	-27.64	Peak
9748.37	35.61	37.54	8.84	33.50	48.49	74.00	-25.51	Peak

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

Test Mode: 03; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High

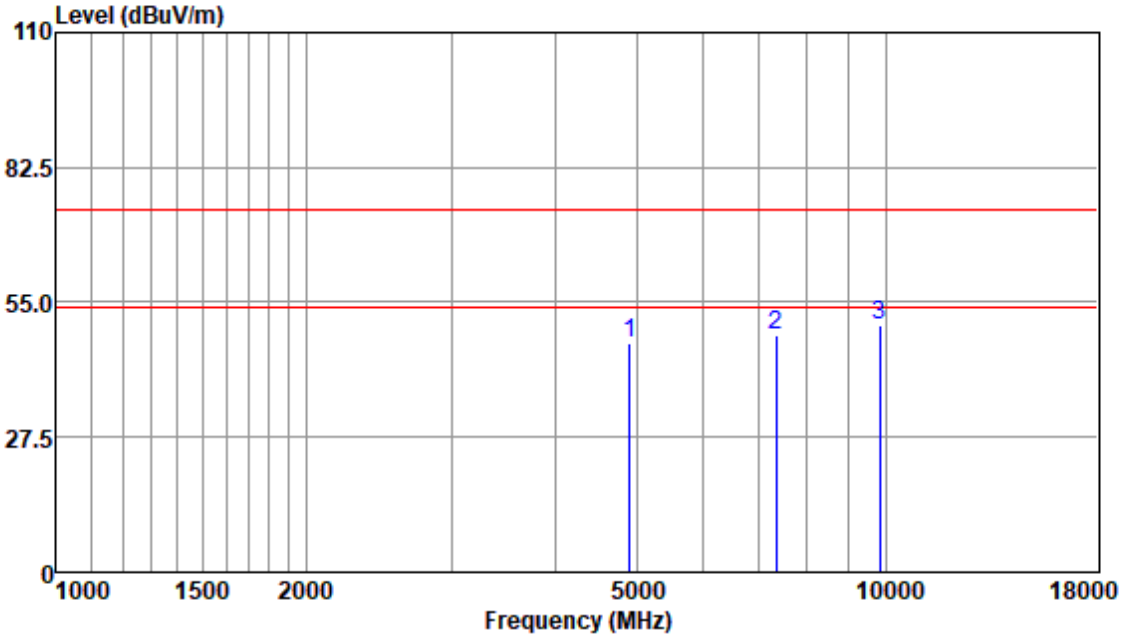


Antenna Polarity :HORIZONTAL
EUT/Project :1076ME

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	
4904.30	43.81	33.66	5.36	36.81	46.02	74.00	-27.98	Peak
7356.47	40.45	36.35	7.31	35.41	48.70	74.00	-25.30	Peak
9808.92	36.67	37.57	8.76	33.47	49.53	74.00	-24.47	Peak

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

Test Mode: 03; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:High



Antenna Polarity :VERTICAL
EUT/Project :1076ME

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	
4904.30	44.41	33.66	5.36	36.81	46.62	74.00	-27.38	Peak
7356.47	40.13	36.35	7.31	35.41	48.38	74.00	-25.62	Peak
9808.92	37.67	37.57	8.76	33.47	50.53	74.00	-23.47	Peak

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

7.9 99% Bandwidth

Test Requirement RSS-Gen Section 6.7
Test Method: ANSI C63.10 (2013) Section 6.9.3

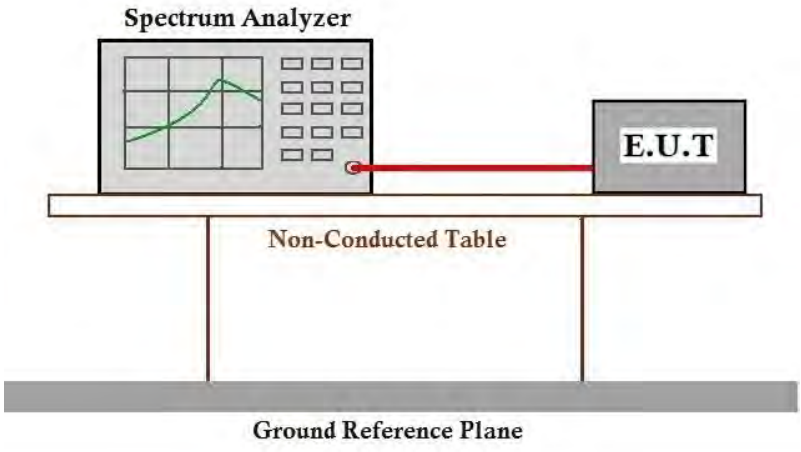
7.9.1 E.U.T. Operation

Operating Environment:
Temperature: 26.0 °C Humidity: 70.4 % RH Atmospheric Pressure: 1010 mbar

7.9.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	03	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), 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

Please Refer to Appendix for Details

8 Test Setup Photo

Refer to Appendix - Test Setup Photo for KSCR2410002068HS

9 EUT Constructional Details (EUT Photos)

Refer to Appendix - Photographs of EUT Constructional Details for KSCR2410002068HS

10 Appendix

10.1 Appendix A: DTS Bandwidth

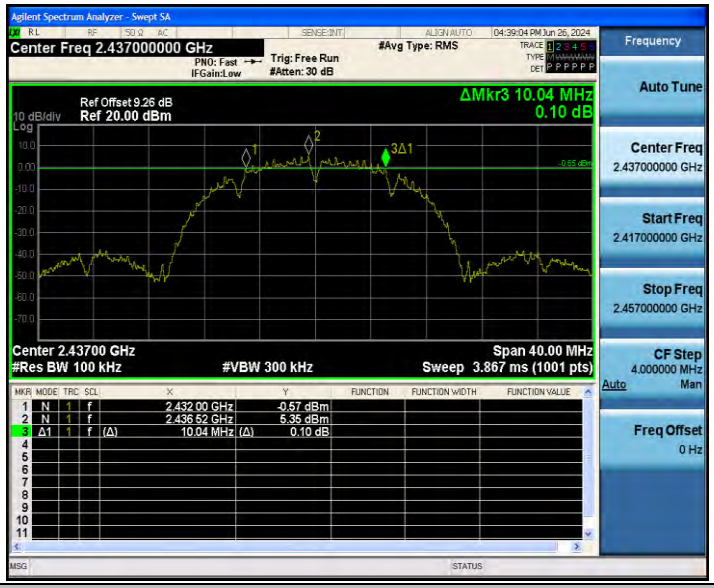
10.1.1 Test Result

Test Mode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	10.000	2407.000	2417.000	≥0.5	PASS
		2437	10.040	2432.000	2442.040	≥0.5	PASS
		2462	9.600	2456.960	2466.560	≥0.5	PASS
11G	Ant1	2412	14.760	2404.520	2419.280	≥0.5	PASS
		2437	16.120	2429.040	2445.160	≥0.5	PASS
		2462	16.280	2453.880	2470.160	≥0.5	PASS
11N40SISO	Ant1	2422	33.760	2405.760	2439.520	≥0.5	PASS
		2437	31.360	2420.680	2452.040	≥0.5	PASS
		2452	30.080	2436.960	2467.040	≥0.5	PASS
11N20MIMO	Ant1	2412	14.800	2404.480	2419.280	≥0.5	PASS
	Ant2	2412	11.920	2405.720	2417.640	≥0.5	PASS
	Ant1	2437	15.480	2429.280	2444.760	≥0.5	PASS
	Ant2	2437	15.680	2429.480	2445.160	≥0.5	PASS
	Ant1	2462	14.400	2455.120	2469.520	≥0.5	PASS
	Ant2	2462	13.840	2455.080	2468.920	≥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

11N40SISO_Ant1_2422

11N40SISO_Ant1_2437

11N40SISO_Ant1_2452

11N20MIMO_Ant1_2412

11N20MIMO_Ant2_2412

11N20MIMO_Ant1_2437

11N20MIMO_Ant2_2437

11N20MIMO_Ant1_2462

11N20MIMO_Ant2_2462


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.462000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
11:48:41 AM Jun 27, 2024
Ref Offset 9.29 dB
10 dB/div
Log
Ref 20.00 dBm
ΔMkr3 13.84 MHz
0.36 dB
Center 2.46200 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 40.00 MHz
Sweep 3.867 ms (1001 pts)
1 N 1 f 2.455 08 GHz -11.08 dBm
2 N 1 f 2.459 48 GHz -5.09 dBm
3 Δ1 1 f (Δ) 13.84 MHz (Δ) 0.36 dB
Frequency
Auto Tune
Center Freq
2.462000000 GHz
Start Freq
2.442000000 GHz
Stop Freq
2.482000000 GHz
CF Step
4.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

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	14.531	2404.7401	2419.2711	---	---
		2437	14.554	2429.7404	2444.2944	---	---
		2462	14.556	2454.7292	2469.2852	---	---
11G	Ant1	2412	16.366	2403.8320	2420.1980	---	---
		2437	17.063	2428.4693	2445.5323	---	---
		2462	16.323	2453.8650	2470.1880	---	---
11N40SISO	Ant1	2422	35.743	2404.1494	2439.8924	---	---
		2437	36.437	2418.8192	2455.2562	---	---
		2452	35.794	2434.1571	2469.9511	---	---
11N20MIMO	Ant1	2412	17.483	2403.2715	2420.7545	---	---
	Ant2	2412	17.435	2403.2990	2420.7340	---	---
	Ant1	2437	17.734	2428.1283	2445.8623	---	---
	Ant2	2437	17.691	2428.2081	2445.8991	---	---
	Ant1	2462	17.501	2453.2573	2470.7583	---	---
	Ant2	2462	17.469	2453.2717	2470.7407	---	---

10.2.2 Test Graphs

11B_Ant1_2412

11B_Ant1_2437

11B_Ant1_2462

11G_Ant1_2412

11G_Ant1_2437

11G_Ant1_2462

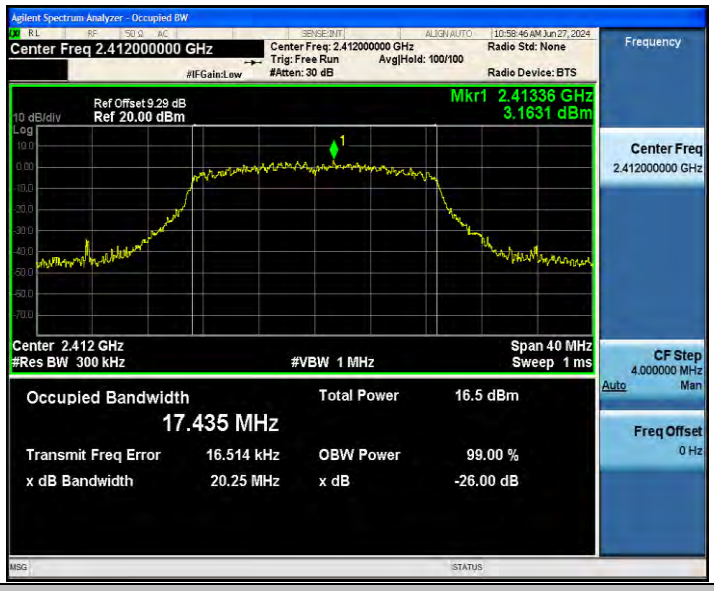
11N40SISO_Ant1_2422

11N40SISO_Ant1_2437

11N40SISO_Ant1_2452

11N20MIMO_Ant1_2412

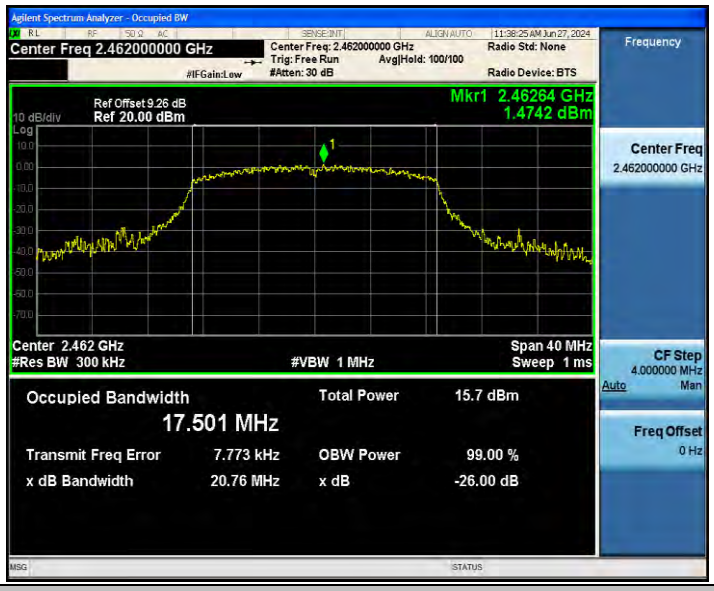
11N20MIMO_Ant2_2412



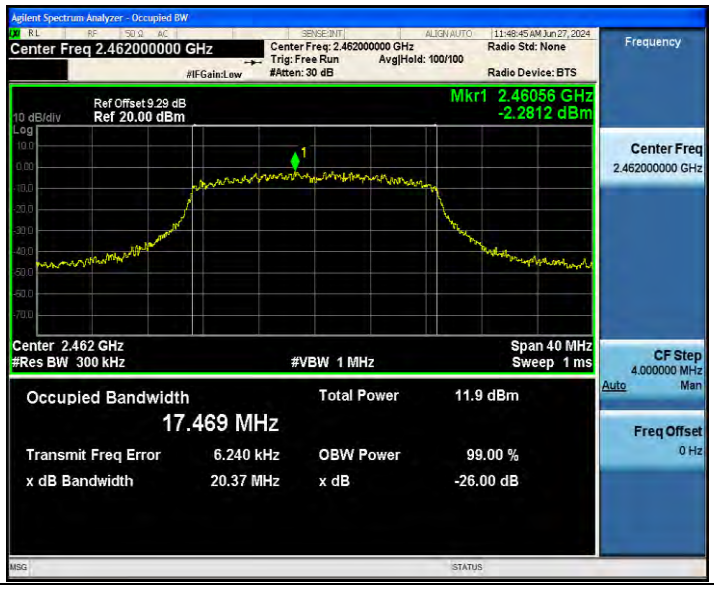
11N20MIMO_Ant1_2437

11N20MIMO_Ant2_2437

11N20MIMO_Ant1_2462



11N20MIMO_Ant2_2462

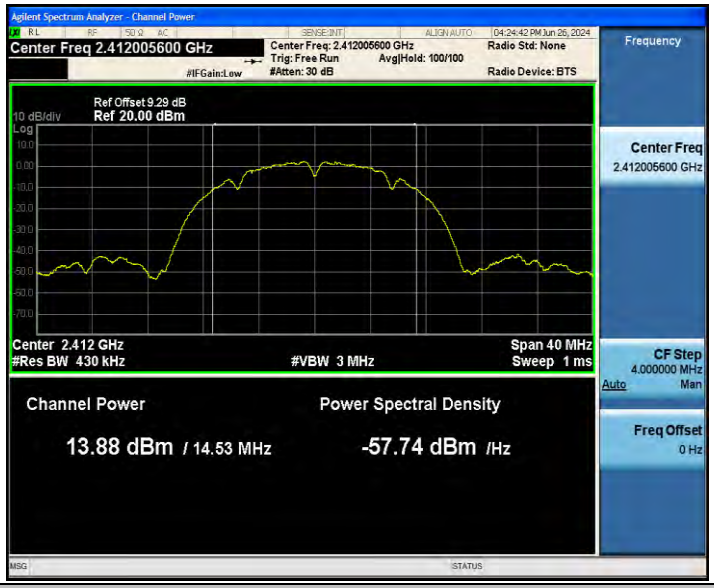
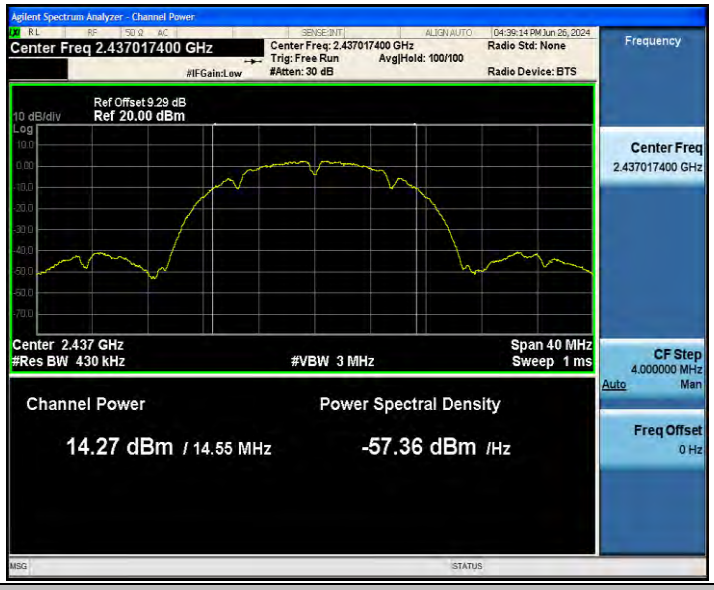

Agilent Spectrum Analyzer - Occupied BW
Center Freq 2.462000000 GHz
Center Freq: 2.462000000 GHz
Trig: Free Run
Avg|Hold: 100/100
#IFGain:Low
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Frequency
Ref Offset 9.29 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 2.46056 GHz
-2.2812 dBm
Center Freq
2.462000000 GHz
Center 2.462 GHz
#Res BW 300 kHz
#VBW 1 MHz
Span 40 MHz
Sweep 1 ms
CF Step
4.000000 MHz
Auto
Man
Occupied Bandwidth
17.469 MHz
Total Power
11.9 dBm
Transmit Freq Error
6.240 kHz
OBW Power
99.00 %
x dB Bandwidth
20.37 MHz
x dB
-26.00 dB
Freq Offset
0 Hz
MSG
STATUS

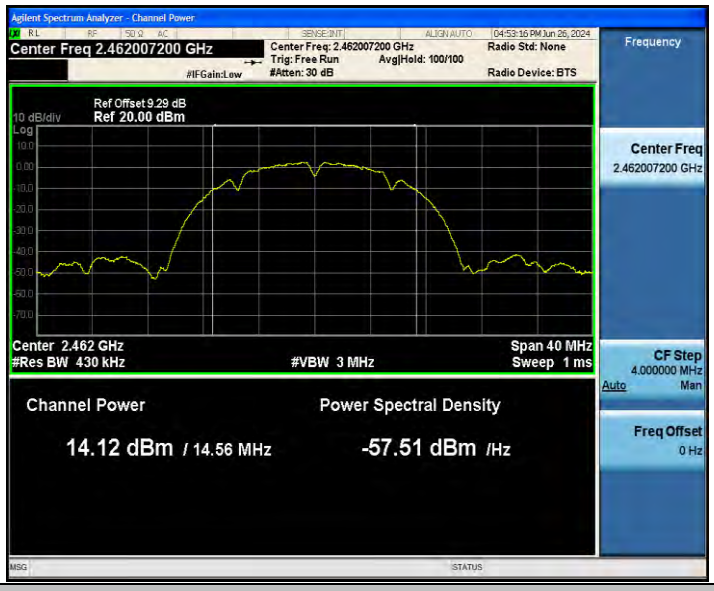
10.3 Appendix C: Maximum conducted output power

10.3.1 Test Result

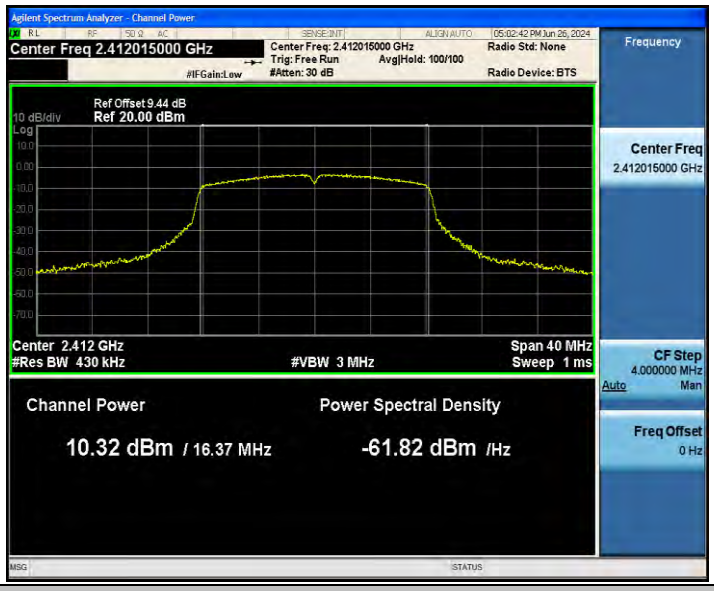
Test Mode	Antenna	Channel	Level [dBm]	10Log(1/X) Factor [dB]	Power [dBm]	Limit [dBm]	EIRP [dBm]	EIRP Limit [dBm]	Verdict
11B	Ant1	2412	13.85	0.03	13.88	≤30.00	16.59	≤36.02	PASS
		2437	14.24	0.03	14.27	≤30.00	16.98	≤36.02	PASS
		2462	14.09	0.03	14.12	≤30.00	16.83	≤36.02	PASS
11G	Ant1	2412	10.14	0.18	10.32	≤30.00	13.03	≤36.02	PASS
		2437	13.61	0.18	13.79	≤30.00	16.50	≤36.02	PASS
		2462	10.41	0.17	10.58	≤30.00	13.29	≤36.02	PASS
11N40SISO	Ant1	2422	7.79	0.51	8.30	≤30.00	11.01	≤36.02	PASS
		2437	12.86	0.51	13.37	≤30.00	16.08	≤36.02	PASS
		2452	8.29	0.51	8.80	≤30.00	11.51	≤36.02	PASS
11N20MIMO	Ant1	2412	7.88	0.36	8.24	≤30.00	10.95	≤36.02	PASS
	Ant2	2412	10.14	0.37	10.51	≤30.00	12.00	≤36.02	PASS
	total	2412	---	---	12.53	≤30.00	17.66	≤36.02	PASS
	Ant1	2437	9.97	0.36	10.33	≤30.00	13.04	≤36.02	PASS
	Ant2	2437	9.43	0.37	9.80	≤30.00	11.29	≤36.02	PASS
	total	2437	---	---	13.08	≤30.00	18.21	≤36.02	PASS
	Ant1	2462	9.26	0.37	9.63	≤30.00	12.34	≤36.02	PASS
	Ant2	2462	5.38	0.37	5.75	≤30.00	7.24	≤36.02	PASS
	total	2462	---	---	11.12	≤30.00	16.25	≤36.02	PASS

10.3.2 Test Graphs

11B_Ant1_2412

11B_Ant1_2437

11B_Ant1_2462

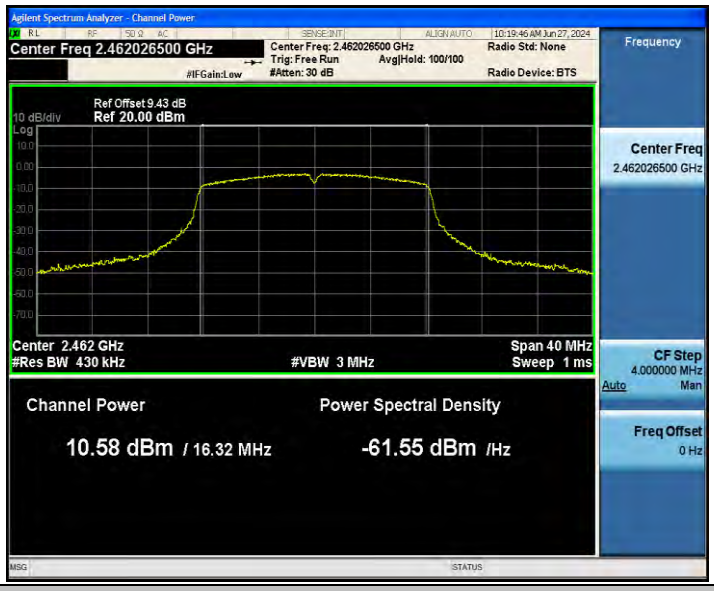


11G_Ant1_2412

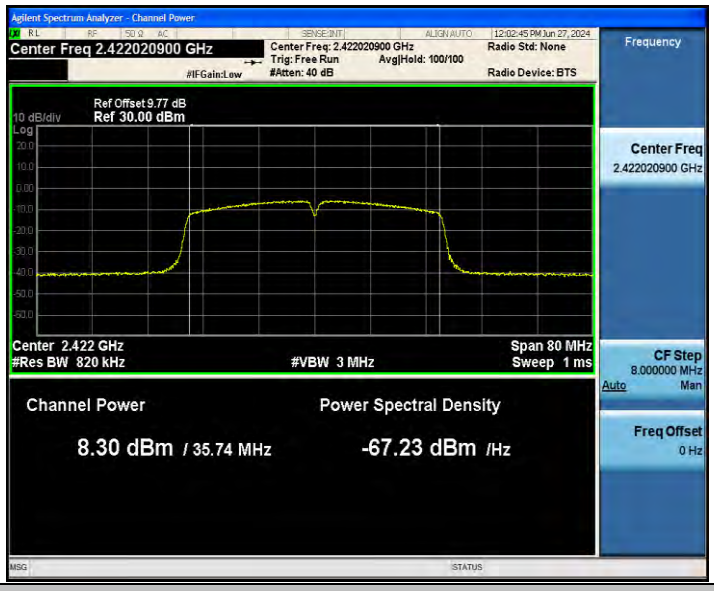


11G_Ant1_2437

11G_Ant1_2462

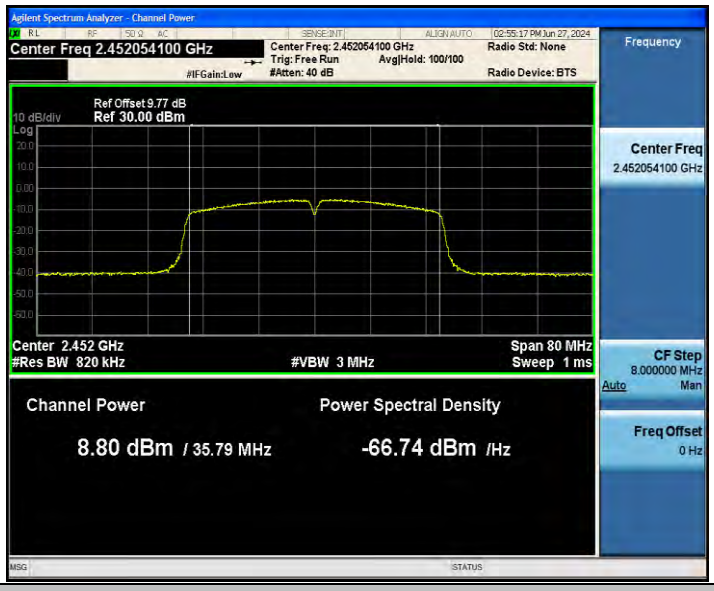


11N40SISO_Ant1_2422

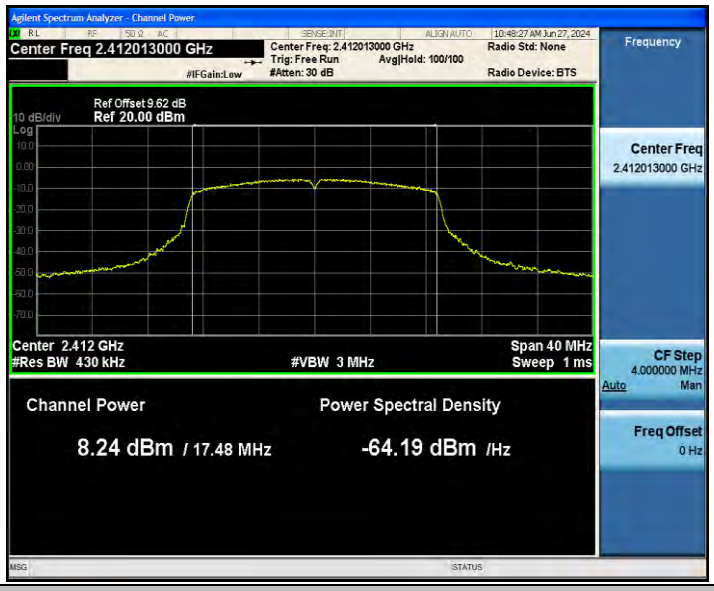


11N40SISO_Ant1_2437

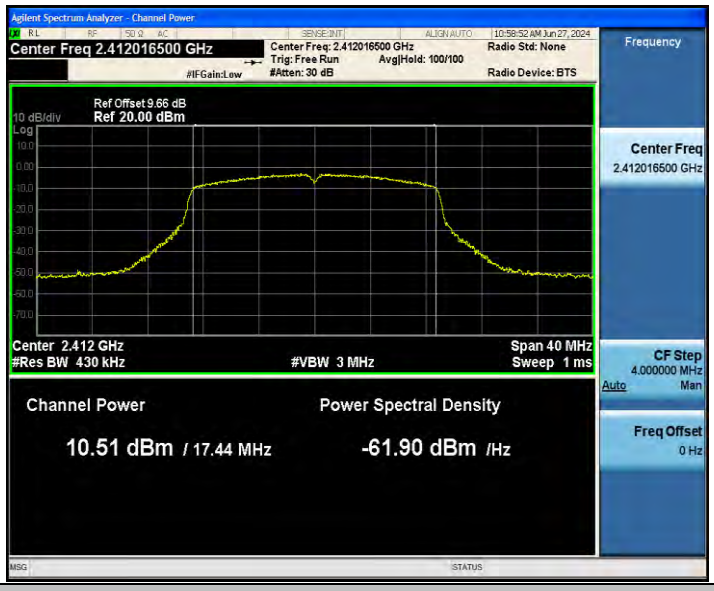
11N40SISO_Ant1_2452



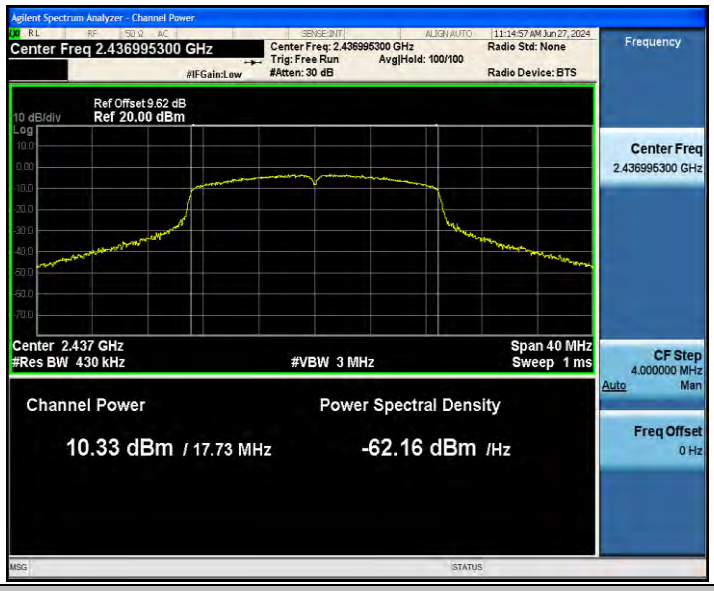
11N20MIMO_Ant1_2412



11N20MIMO_Ant2_2412



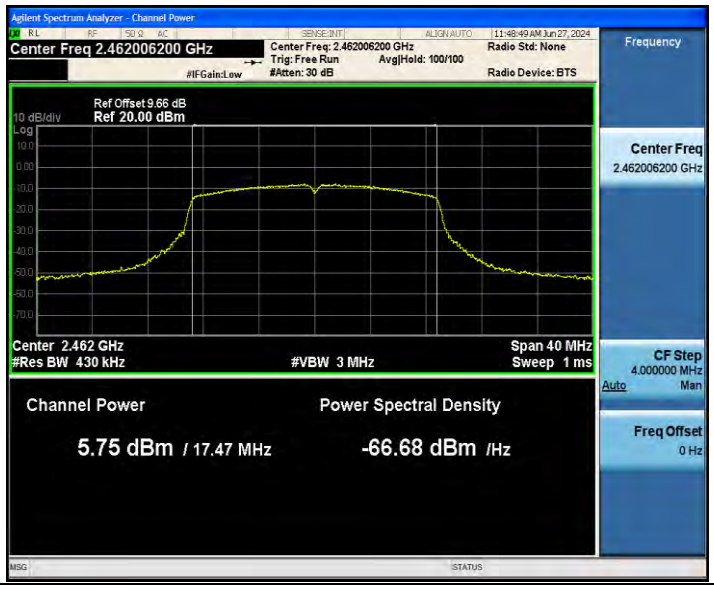
11N20MIMO_Ant1_2437



11N20MIMO_Ant2_2437

11N20MIMO_Ant1_2462

11N20MIMO_Ant2_2462


Agilent Spectrum Analyzer - Channel Power
Center Freq 2.462006200 GHz
Center Freq: 2.462006200 GHz
Trig: Free Run
Avg|Hold: 100/100
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
#IFGain:Low
Ref Offset 9.66 dB
10 dB/div
Ref 20.00 dBm
Log
Center 2.462 GHz
#Res BW 430 kHz
#VBW 3 MHz
Span 40 MHz
Sweep 1 ms
Channel Power
5.75 dBm / 17.47 MHz
Power Spectral Density
-66.68 dBm /Hz
Frequency
Center Freq
2.462006200 GHz
CF Step
4.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

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	-19.09	0.03	-19.06	≤8.00	PASS
		2437	-18.58	0.03	-18.55	≤8.00	PASS
		2462	-18.76	0.03	-18.73	≤8.00	PASS
11G	Ant1	2412	-23.90	0.18	-23.72	≤8.00	PASS
		2437	-20.48	0.18	-20.30	≤8.00	PASS
		2462	-23.85	0.17	-23.68	≤8.00	PASS
11N40SISO	Ant1	2422	-29.39	0.51	-28.88	≤8.00	PASS
		2437	-24.80	0.51	-24.29	≤8.00	PASS
		2452	-29.09	0.51	-28.58	≤8.00	PASS
11N20MIMO	Ant1	2412	-26.29	0.36	-25.93	≤8.00	PASS
	Ant2	2412	-23.86	0.37	-23.49	≤8.00	PASS
	total	2412	---	---	-21.53	≤8.00	PASS
	Ant1	2437	-24.06	0.36	-23.70	≤8.00	PASS
	Ant2	2437	-24.60	0.37	-24.23	≤8.00	PASS
	total	2437	---	---	-20.95	≤8.00	PASS
	Ant1	2462	-24.83	0.37	-24.46	≤8.00	PASS
	Ant2	2462	-28.87	0.37	-28.50	≤8.00	PASS
	total	2462	---	---	-23.02	≤8.00	PASS

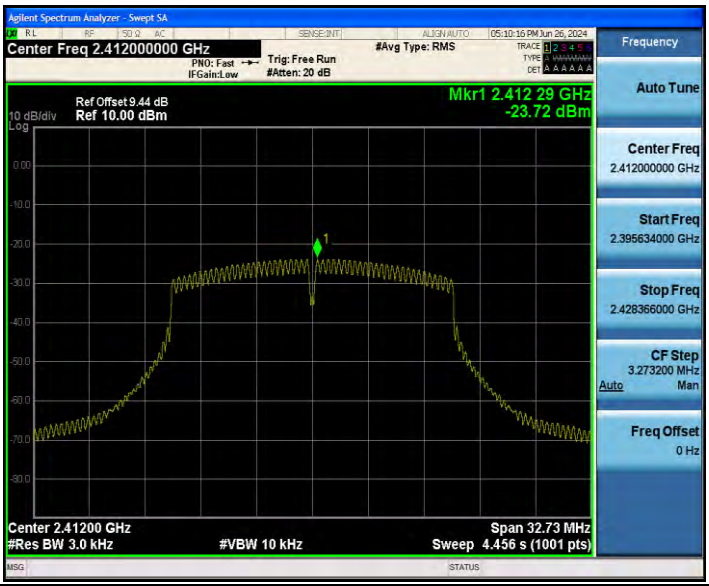
10.4.2 Test Graphs

11B_Ant1_2412

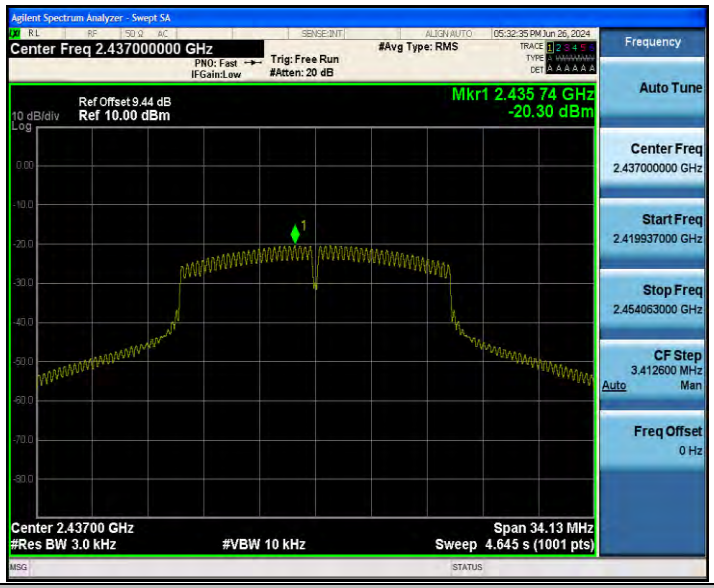
11B_Ant1_2437

11B_Ant1_2462

11G_Ant1_2412

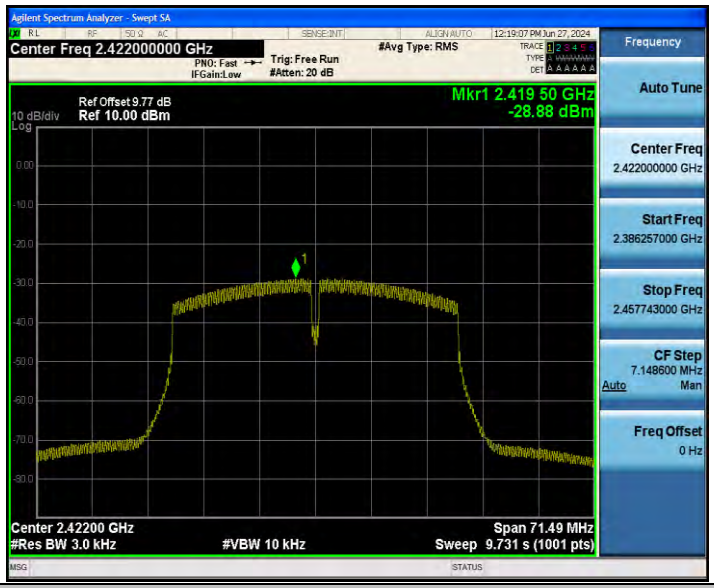


11G_Ant1_2437

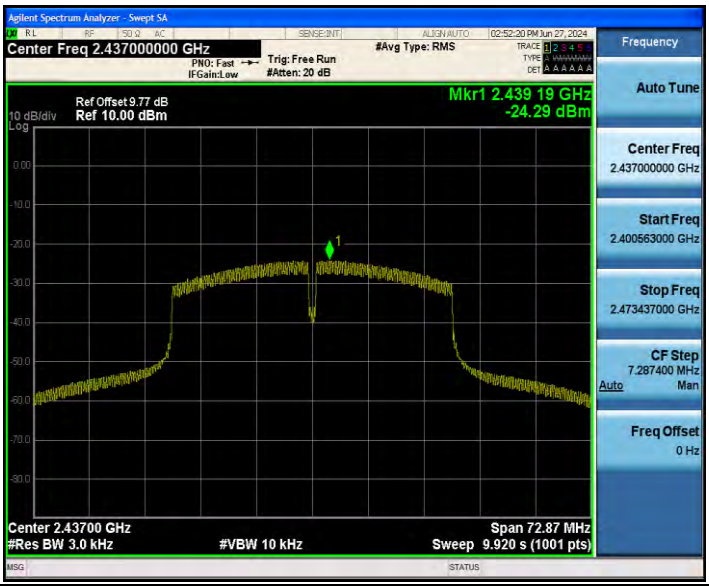


11G_Ant1_2462

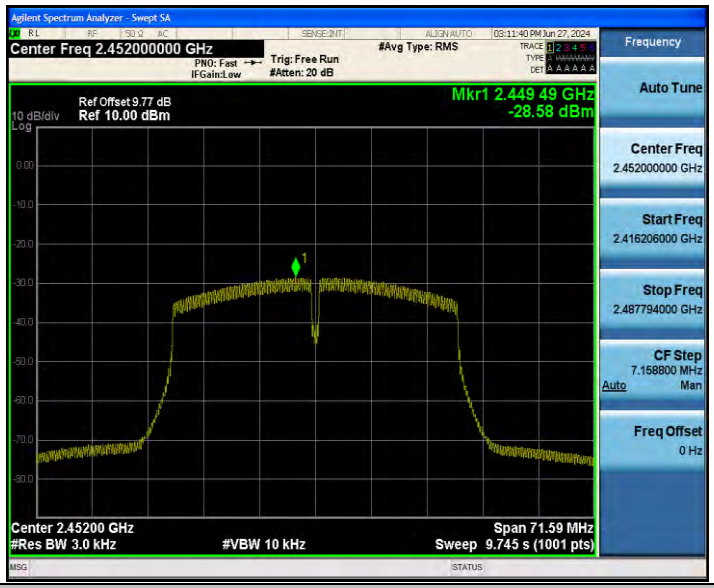
11N40SISO_Ant1_2422



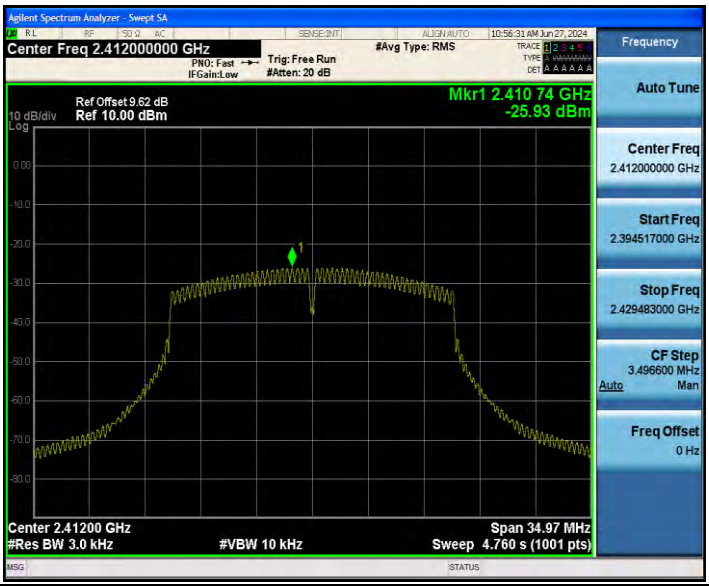
11N40SISO_Ant1_2437



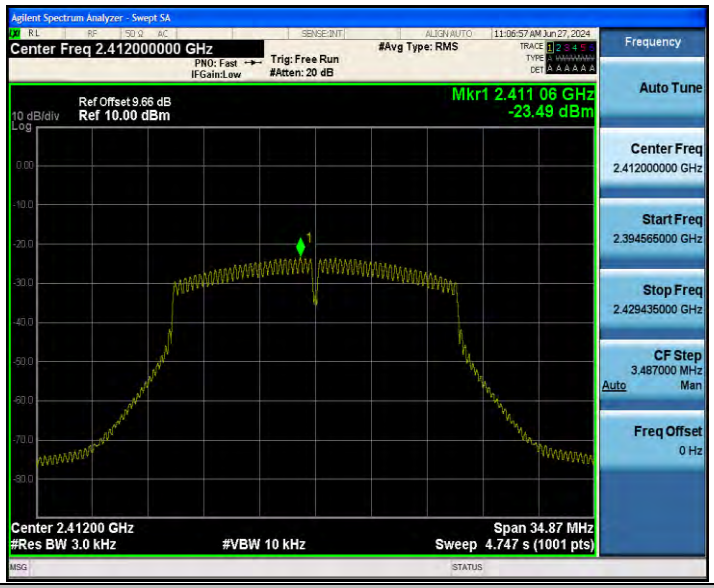
11N40SISO_Ant1_2452



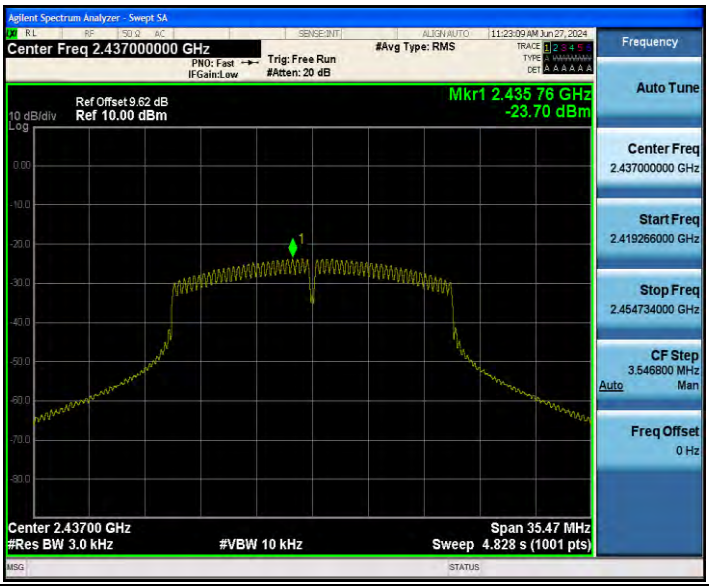
11N20MIMO_Ant1_2412



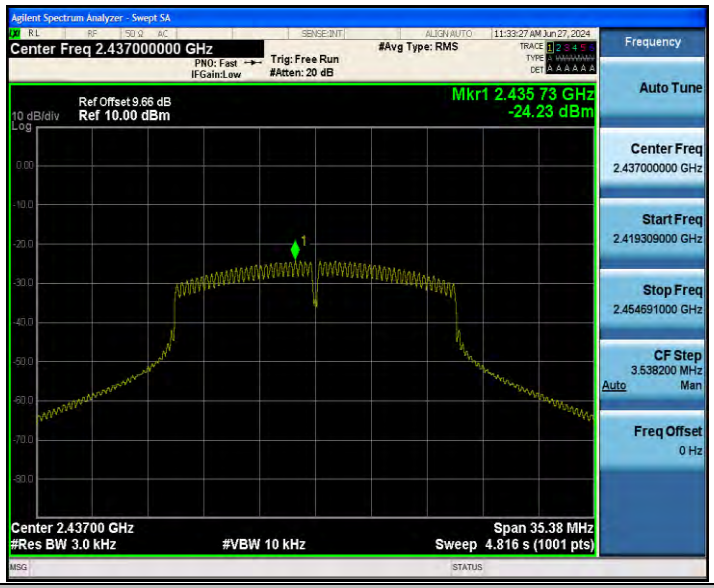
11N20MIMO_Ant2_2412



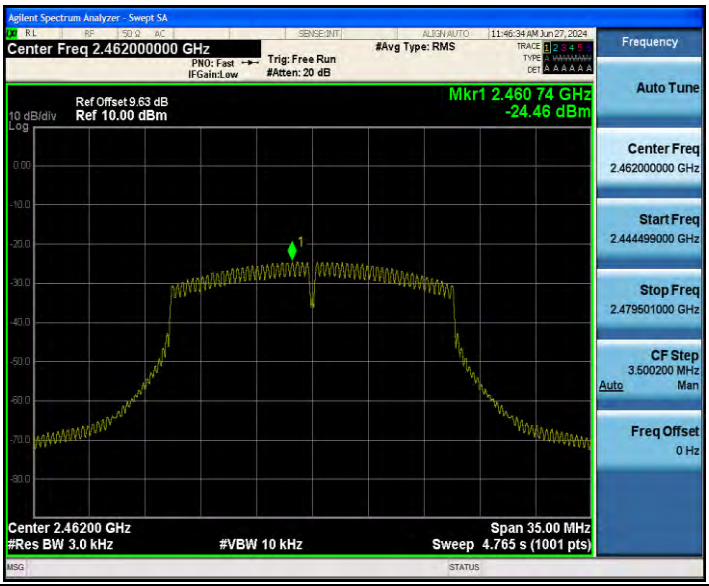
11N20MIMO_Ant1_2437



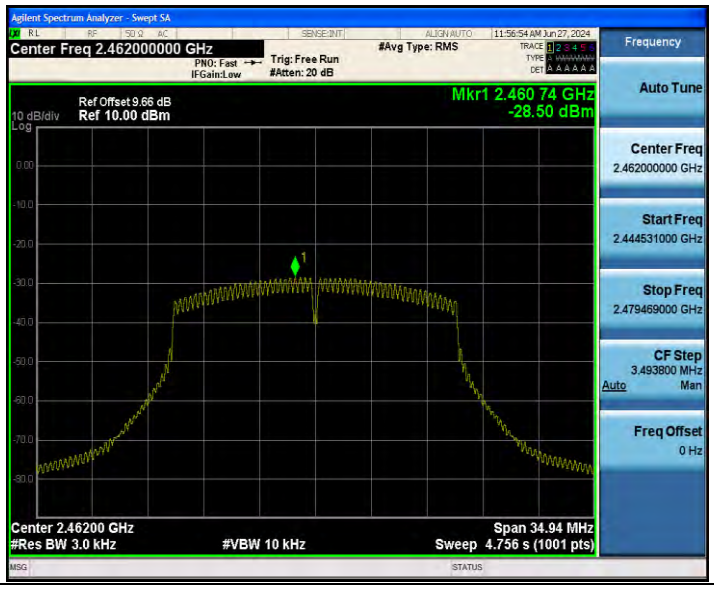
11N20MIMO_Ant2_2437



11N20MIMO_Ant1_2462



11N20MIMO_Ant2_2462



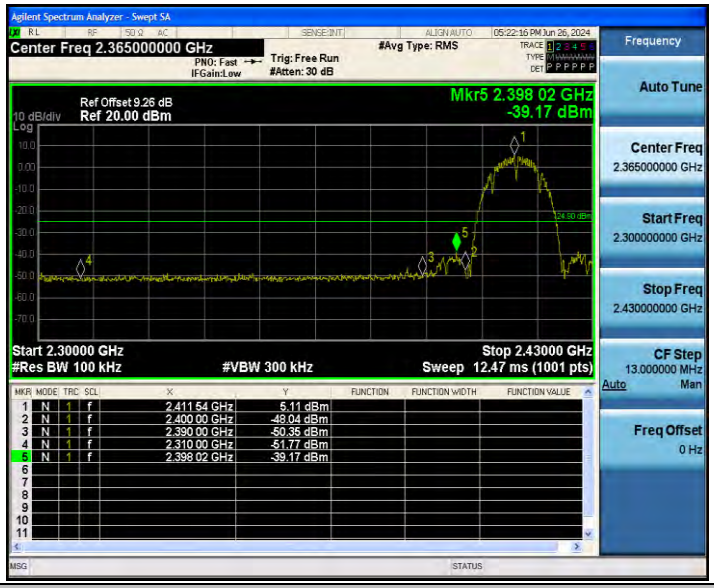
10.5 Appendix E: Band edge measurements

10.5.1 Test Result

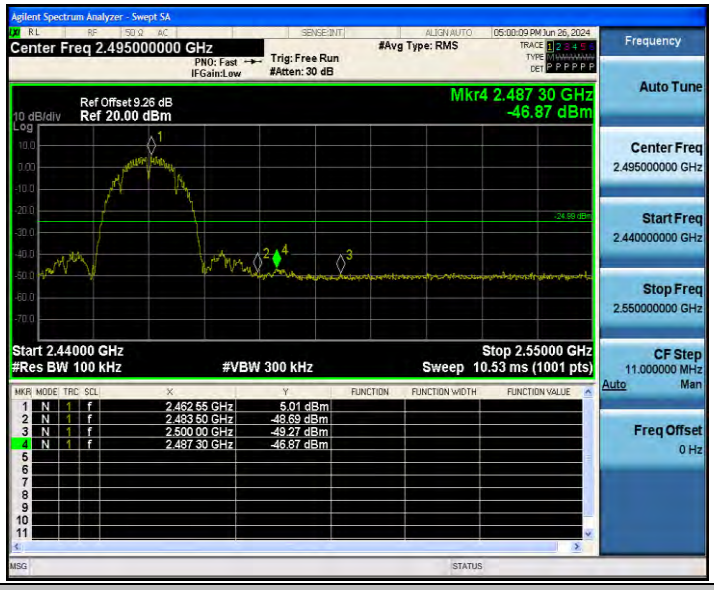
Test Mode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	5.11	-39.17	≤-24.9	PASS
		High	2462	5.01	-46.87	≤-24.99	PASS
11G	Ant1	Low	2412	-1.71	-35.63	≤-31.71	PASS
		High	2462	-0.40	-39.47	≤-30.4	PASS
11N40SISO	Ant1	Low	2422	-5.01	-39.53	≤-35.01	PASS
		High	2452	-5.39	-43.9	≤-35.39	PASS
11N20MIMO	Ant1	Low	2412	-1.86	-39.2	≤-31.86	PASS
	Ant2	Low	2412	-0.33	-39.31	≤-30.33	PASS
	Ant1	High	2462	-0.16	-42.66	≤-30.16	PASS
	Ant2	High	2462	-5.86	-48.09	≤-35.86	PASS

10.5.2 Test Graphs

11B_Ant1_Low_2412

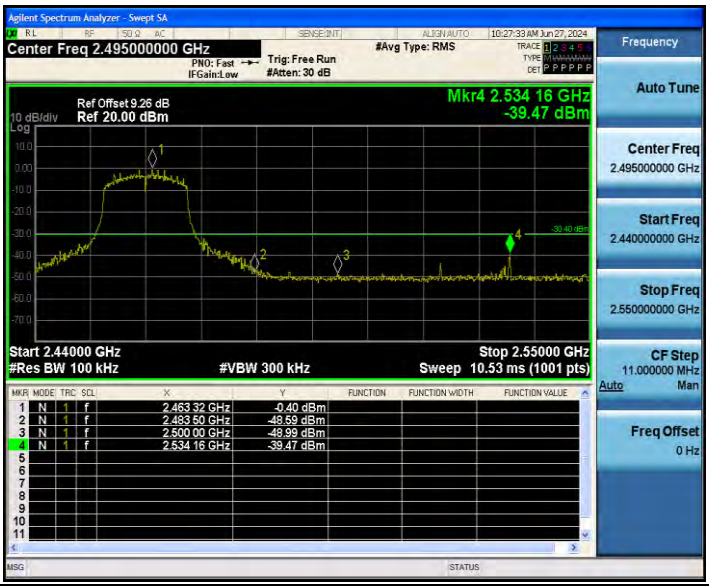


11B_Ant1_High_2462



11G_Ant1_Low_2412

11G_Ant1_High_2462



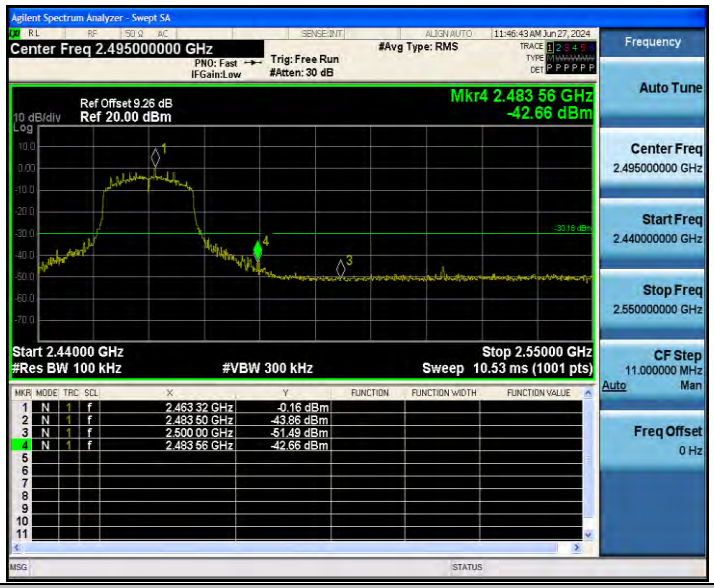
11N40SISO_Ant1_Low_2422

11N40SISO_Ant1_High_2452

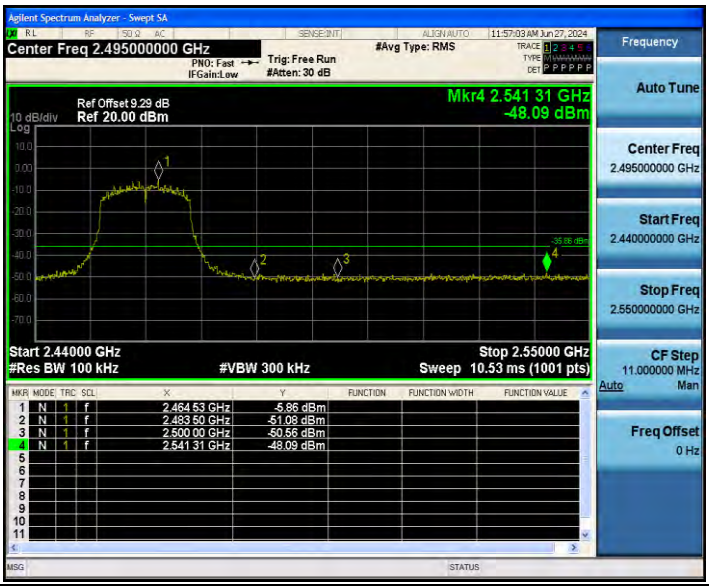
11N20MIMO_Ant1_Low_2412

11N20MIMO_Ant2_Low_2412

11N20MIMO_Ant1_High_2462



11N20MIMO_Ant2_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	5.01	5.01	---	PASS
			30~1000	5.01	-60.2	≤-24.99	PASS
			1000~26500	5.01	-41.49	≤-24.99	PASS
		2437	Reference	3.62	3.62	---	PASS
			30~1000	3.62	-59.68	≤-26.38	PASS
			1000~26500	3.62	-41.41	≤-26.38	PASS
		2462	Reference	4.47	4.47	---	PASS
			30~1000	4.47	-60.32	≤-25.53	PASS
			1000~26500	4.47	-41.31	≤-25.53	PASS
11G	Ant1	2412	Reference	-3.57	-3.57	---	PASS
			30~1000	-3.57	-59.9	≤-33.57	PASS
			1000~26500	-3.57	-41.72	≤-33.57	PASS
		2437	Reference	1.29	1.29	---	PASS
			30~1000	1.29	-58.79	≤-28.71	PASS
			1000~26500	1.29	-41.84	≤-28.71	PASS
		2462	Reference	-3.32	-3.32	---	PASS
			30~1000	-3.32	-60.36	≤-33.32	PASS
			1000~26500	-3.32	-42.18	≤-33.32	PASS
11N40SISO	Ant1	2422	Reference	-8.08	-8.08	---	PASS
			30~1000	-8.08	-60.28	≤-38.08	PASS
			1000~26500	-8.08	-40.95	≤-38.08	PASS
		2437	Reference	-1.06	-1.06	---	PASS
			30~1000	-1.06	-60.01	≤-31.06	PASS
			1000~26500	-1.06	-42.07	≤-31.06	PASS
		2452	Reference	-8.19	-8.19	---	PASS
			30~1000	-8.19	-59.41	≤-38.19	PASS
			1000~26500	-8.19	-41.13	≤-38.19	PASS
11N20MIMO	Ant1	2412	Reference	-5.68	-5.68	---	PASS
			30~1000	-5.68	-60.61	≤-35.68	PASS
			1000~26500	-5.68	-41.4	≤-35.68	PASS
	Ant2	2412	Reference	-1.66	-1.66	---	PASS
			30~1000	-1.66	-59.71	≤-31.66	PASS
			1000~26500	-1.66	-41.87	≤-31.66	PASS
	Ant1	2437	Reference	-3.92	-3.92	---	PASS
			30~1000	-3.92	-60.73	≤-33.92	PASS
			1000~26500	-3.92	-42.21	≤-33.92	PASS
	Ant2	2437	Reference	-2.96	-2.96	---	PASS
			30~1000	-2.96	-60.38	≤-32.96	PASS
			1000~26500	-2.96	-41.6	≤-32.96	PASS
	Ant1	2462	Reference	-4.30	-4.30	---	PASS
			30~1000	-4.30	-60.55	≤-34.3	PASS
			1000~26500	-4.30	-41.23	≤-34.3	PASS
	Ant2	2462	Reference	-8.25	-8.25	---	PASS

			30~1000	-8.25	-60.53	≤-38.25	PASS
			1000~26500	-8.25	-41.94	≤-38.25	PASS