

Test Report No:
23A0721R-RFUSV01S-A

TEST REPORT

FCC Rules&Regulations

Product Name	DOCSIS Gateway
Brand Name	ARRIS
Model No.	G20
FCC ID	UIDG20
Applicant's Name / Address	ARRIS 3871 Lakefield Drive Suite 300 SUWANEE Georgia United States 30024
Manufacturer's Name / Address	ARRIS 3871 Lakefield Drive Suite 300 SUWANEE Georgia United States 30024
Test Method Requested, Standard	FCC CFR Title 47 Part 15 Subpart C Section 15.247 ANSI C63.10-2013
Verdict Summary	IN COMPLIANCE
Documented By	 Hailey Peng
Approved By	 Rueyyan Lin
Date of Receipt	Oct. 27, 2023
Date of Issue	Dec. 18, 2023
Report Version	V1.0

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Competences and Guarantees

DEKRA is a testing laboratory competent to carry out the tests described in this report.

In order to assure the traceability to other national and international laboratories, DEKRA has a calibration and maintenance program for its measurement equipment.

DEKRA guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated in the report and it is based on the knowledge and technical facilities available at DEKRA at the time of performance of the test.

DEKRA is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

IMPORTANT: No parts of this report may be reproduced or quoted out of context, in any form or by any means, except in full, without the previous written permission of DEKRA.

General Conditions

1. The test results relate only to the samples tested.
2. The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.
3. This report must not be used to claim product endorsement by TAF or any agency of the government.
4. The test report shall not be reproduced without the written approval of DEKRA Testing and Certification Co., Ltd.
5. Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

Revision History

Version	Description	Issued Date
V1.0	Initial issue of report	Dec. 18, 2023

Summary of Test Result

Report Clause	Test Items	Result (PASS/FAIL)	Remark
3	AC Power Line Conducted Emission	PASS	-
4	Occupied Bandwidth & DTS Bandwidth	PASS	-
5	Maximum Conducted Output Power	PASS	-
6	Maximum Power Spectral Density	PASS	-
7	Antenna Port Conducted Emission	PASS	-
8	Transmitter Radiated Spurious Emission	PASS	-

Comments and Explanations

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Comments and Remarks

The product specification and testing instructions for the EUT declared in the report are provided by the manufacturer who will take all responsibilities for the accuracy.

1. General Information

1.1. EUT Description

Frequency Range	2400 ~ 2483.5 MHz	
Operating Frequency	IEEE 802.11b/g IEEE 802.11n/ac/ax (20 MHz)	2412 ~ 2462 MHz
	IEEE 802.11n/ac/ax (40 MHz)	2422 ~ 2452 MHz
Channel Number	IEEE 802.11b/g IEEE 802.11n/ac/ax (20 MHz)	11 Channels
	IEEE 802.11n/ac/ax (40 MHz)	7 Channels
Type of Modulation	IEEE 802.11b	DSSS-DBPSK, DQPSK, CCK
	IEEE 802.11g/n	OFDM-BPSK, QPSK, 16QAM, 64QAM
	IEEE 802.11ac	OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM
	IEEE 802.11ax	OFDMA-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM
Chip	Manufacturer	MaxLinear
	Model No.	WAV654A1MC

Accessories Information				
No.	Equipment Name	Brand Name	Model No.	Rating
1	Adapter 1	FRECOM	F24L15-120200SPA	INPUT: 100-240V, 50/60Hz, 0.6A OUTPUT: 12.0V, 2.0A, 24.0W
2	Adapter 2	MOSO®	MS-V2000R120-024Q 0-US	INPUT: 100-240V, 50/60Hz, 0.7A max. OUTPUT: 12.0V, 2.0A

Antenna Information					
Ant.	Brand Name	Model No.	Type	Antenna Gain (dBi)	Beamforming Gain (dBi)
1	Wanshih	S21WFI0072A	PIFA	2.03	0
2	Wanshih	S21WFI0073A	PIFA	2.00	

For 802.11b mode: (1TX/1RX)

Only Ant. 1 can be use as transmit and receive antenna.

For IEEE 802.11g/n/ac/ax mode: (2TX, 2RX)

Both Ant. 1 and Ant. 2 can be used as transmitting/receiving antennas, and they can transmit/receive signal simultaneously.

1.2. EUT Information

EUT Power Type	From Adapter			
EUT Function	☒	Point-to-multipoint	☐	Point-to-point
Beamforming Function	☒	With beamforming	☐	Without beamforming
Resource Unit of 802.11ax	☒	Full RU	☐	Partial RU

1.3. Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ 47 CFR FCC Part 15
- ♦ ANSI C63.10-2013

The following reference test guidance is not within the scope of accreditation of TAF:

- ♦ KDB 558074 D01 v05r02
- ♦ KDB 662911 D01 v02r01
- ♦ KDB 414788 D01 v01r01

1.4. Testing Location Information

Testing Location Information		
Test Laboratory : DEKRA Testing and Certification Co., Ltd.		
1 (TAF: 3024)	ADD: No.372-2, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 31061, Taiwan, R.O.C. TEL: +886-3-582-8001 FAX: +886-3-582-8958	
2 (TAF: 3024)	ADD: No.372, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 31061, Taiwan, R.O.C. TEL: +886-3-582-8001 FAX: +886-3-582-8958	
Test site number for address 1 includes HC-SR02. Test site number for address 2 includes HC-CB02, HC-CB03, HC-CB04, HC-SR10 and HC-SR12.		

Test Condition	Test Site No.	Test Engineer	Test Environment (°C / %)	Test Date
AC Conduction Emission	HC-SR02	Igor Tseng	20.5~21.5 / 53~56	2023/12/05
RF Conducted Emission	HC-SR12	Scott Chang	20.5~21.5 / 53~55	2023/12/01~2023/12/05
Radiated Emission	HC-CB04	Cyril Chen Ling Chen	23~25 / 63~65	2023/11/13~2023/12/08

1.5. Measurement Uncertainty

Uncertainties have been calculated according to the DEKRA internal document with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)).

Test Item	Uncertainty
AC Power Line Conducted Emission	± 2.34 dB
Occupied Bandwidth & DTS Bandwidth	± 282.55 Hz
Maximum Conducted Output Power	± 1.16 dB
Maximum Power Spectral Density	± 2.47 dB
Antenna Port Conducted Emission	± 2.47 dB
Transmitter Radiated Spurious Emission	± 3.52 dB below 1 GHz ± 3.56 dB above 1 GHz

1.6. List of Test Equipment

HC-SR02

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Cal. Date	Next Cal. Date
Artificial Mains Network	R&S	ENV4200	848411/010	9kHz-30MHz, 4line/100A	2022/12/19	2023/12/18
EMI Test Receiver	R&S	ESR3	102608	9 kHz - 3.6 GHz	2023/09/19	2024/09/18
Two-Line V-Network	R&S	ENV216	100096	9kHz-30MHz	2023/06/02	2024/06/01
Coaxial Cable(9 m)	Harbour	RG-400	HC-SR02	9 kHz-2500 MHz	2023/08/04	2024/08/03
EMI Testing System	AUDIX	e3 210616 dekra V9	HC-SR02	N/A	N/A	N/A

HC-SR12

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Cal. Date	Next Cal. Date
High Speed Peak Power Meter Dual Input	Anritsu	ML2496A	1602004	0.3-40 GHz	2023/10/25	2024/10/24
Pulse Power Sensor	Anritsu	MA2411B	1531043	0.3-40 GHz	2023/10/25	2024/10/24
Pulse Power Sensor	Anritsu	MA2411B	1531044	0.3-40 GHz	2023/10/25	2024/10/24
Signal & Spectrum Analyzer	R&S	FSV40	101869	10Hz-40GHz	2023/07/03	2024/07/02

HC-CB04

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Cal. Date	Next Cal. Date
Signal and Spectrum Analyzer	R&S	FSVA40	101435	10 Hz-40 GHz	2023/05/29	2024/05/28
Trilog Broadband Antenna	Schwarzbeck	VULB 9168	1209	30 MHz-2 GHz	2023/06/13	2024/06/12
Double Ridged Horn Antenna	RF SPIN	DRH18-E	211211A18EN	1G-18GHz	2023/11/09	2024/11/08
Horn Antenna	Schwarzbeck	BBHA 9170	203	18G-40GHz	2023/02/13	2024/02/12
Pre-Amplifier	EMCI	EMC01820I	980364	30M-8 GHz,20 dB	2023/06/06	2024/06/05
Pre-Amplifier	EMEC	EM01G18GA	060835	1-18 GHz,50 dB	2023/07/24	2024/07/23
Pre-Amplifier	DEKRA	AP-400C	201801231	18G-40 GHz,48 dB	2023/10/03	2024/10/02
EMI Test Receiver	R&S	ESR7	102260	10 Hz-7 GHz	2023/11/27	2024/11/26
Magnetic Loop Antenna	Teseq	HLA 6121	44287	0.01-30 MHz	2023/10/13	2024/10/12
Coaxial Cable(11m)	Suhner	SF102_SF104	HC-CB04	30M-18 GHz	2023/08/08	2024/08/07
Coaxial Cable(3m)	Suhner,Rosnol	SF102_UP0264	HC-CB04-1	18G-40 GHz	2023/08/14	2024/08/13
Radiated Software	AUDIX	e3 V9	HC-CB04_1	N/A	N/A	N/A

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

2. Test Configuration of EUT

2.1. Test Condition

EUT Operational Condition	
Testing Voltage	AC 120V/60Hz

2.2. Test Frequency Mode

Test Software Version	DUT GUI v610.59
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<Non-beamforming function>

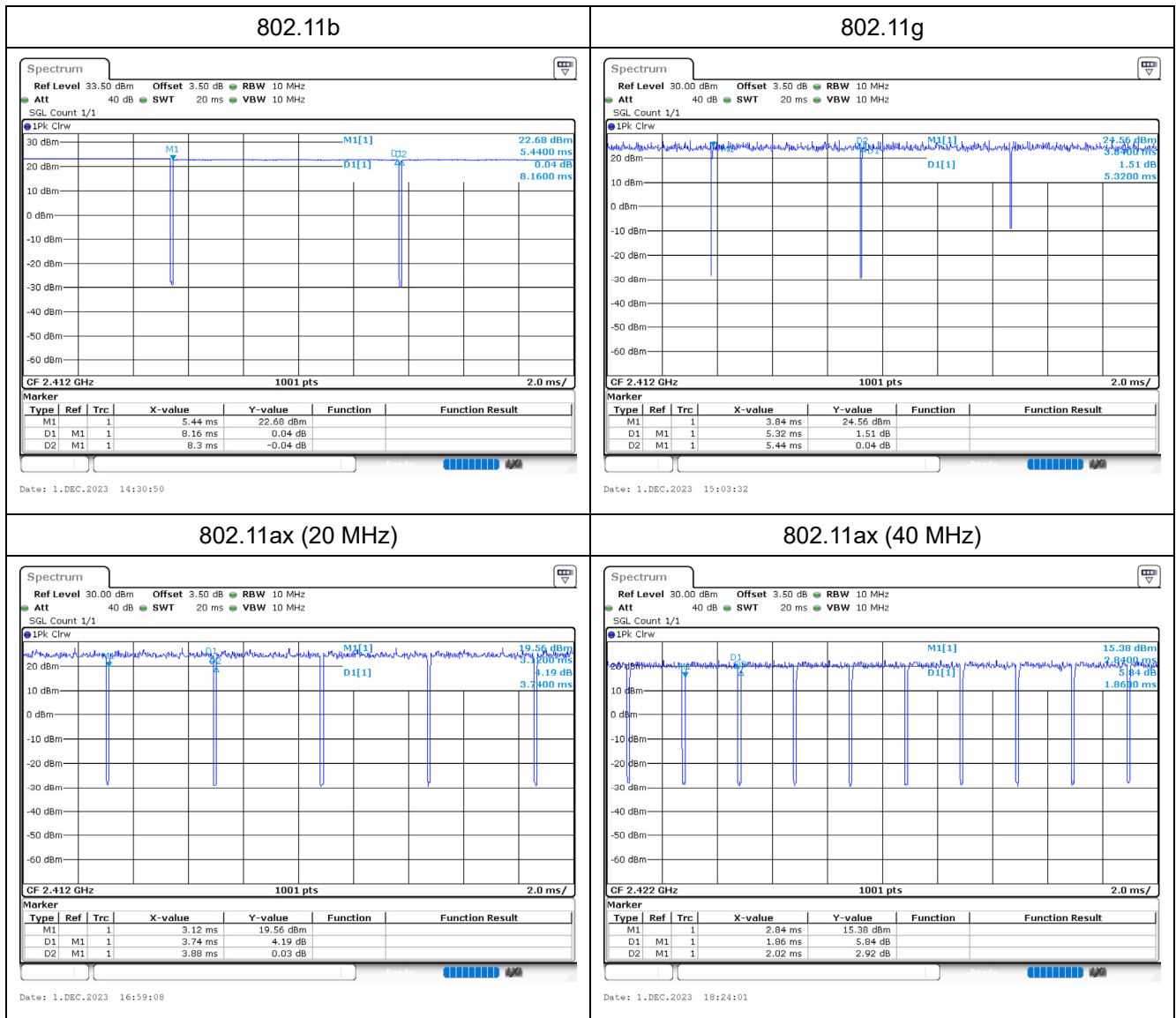
Modulation	Frequency (MHz)	Power Setting
802.11b	2412	19
	2437	19
	2462	19
802.11g	2412	18
	2437	21
	2462	18
802.11ax (20 MHz)	2412	17
	2417	21
	2437	21
	2457	21
	2462	17
802.11ax (40 MHz)	2422	16
	2427	19
	2437	20
	2447	19
	2452	17

<Beamforming function>

Modulation	Frequency (MHz)	Power Setting
802.11ax (20 MHz)	2412	17
	2417	21
	2437	21
	2457	21
	2462	17
802.11ax (40 MHz)	2422	16
	2427	19
	2437	20
	2447	19
	2452	17

2.3. Duty Cycle

Modulation	On Times (ms)	On+Off Times (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11b	8.160	8.300	98.31	0.074	0.010
802.11g	5.320	5.440	97.79	0.097	0.188
802.11ax (20 MHz)	3.740	3.880	96.39	0.160	0.267
802.11ax (40 MHz)	1.860	2.020	92.08	0.358	0.538



2.4. The Worst Case Measurement Configuration

Tests Item	AC Power Line Conducted Emission
Test Condition	AC power line conducted measurement for line and neutral
Operating Mode	Transmit
1	EUT + Adapter 1
2	EUT + Adapter 2
Mode 1 is the worst case and it was record in this test report.	

Tests Item	Occupied Bandwidth & DTS Bandwidth Maximum Conducted Output Power Maximum Power Spectral Density Antenna Port Conducted Emission
Test Condition	Conducted measurement at transmit chains

Tests Item	Transmitter Radiated Spurious Emission
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.
Operating Mode < 1GHz	Transmit
1	EUT + Adapter 1
2	EUT + Adapter 2
Mode 1 is the worst case and it was record in this test report.	
Operating Mode > 1GHz	Transmit

Tests Item	Simultaneous Transmission Analysis - Radiated Emission Co-location
Test Condition	Radiated measurement
Operating Mode	Transmit
1	WiFi 2.4 GHz + WiFi 5 GHz
Refer to Appendix G for Radiated Emission Co-location.	

Tests Item	Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation
Operating Mode	Transmit
1	WiFi 2.4 GHz + WiFi 5 GHz
Refer to DEKRA Test Report No.: 23A0721R-RFUSV17S-A for Co-location RF Exposure Evaluation.	

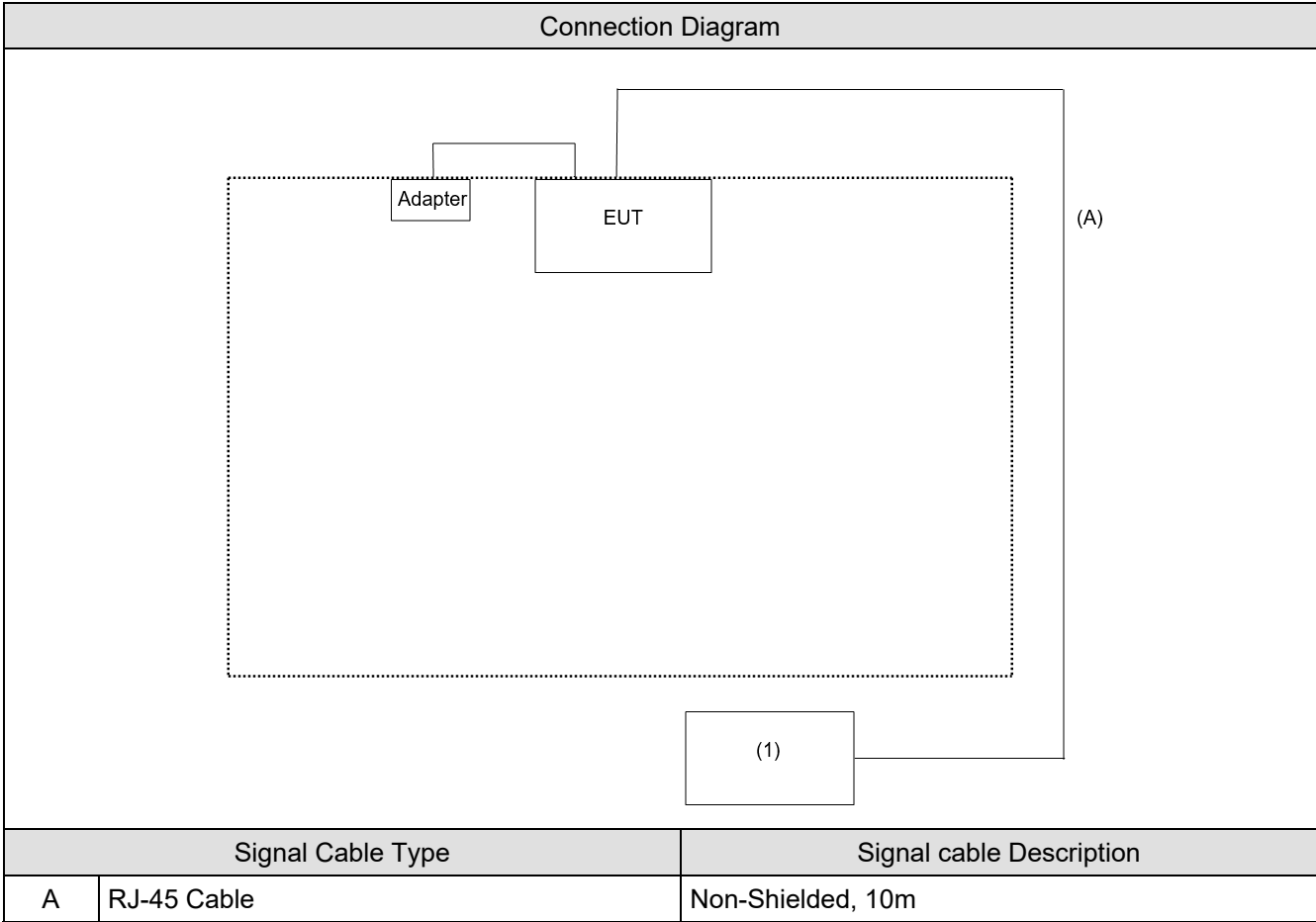
Note:

1. Determining compliance shall be based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. For radiated spurious emission below 1 GHz and AC power line conducted emission have performed all modes of operation were investigated and the worst-case emissions are reported.
3. The modulation and bandwidth are similar for 802.11n mode for HT20/HT40, 802.11ac mode for VHT20/VHT40 and 802.11ax mode for HEW20/HEW40, therefore investigated worst case to representative mode in test report.
4. The EUT was performed at X axis, Y axis and Z axis position for transmitter radiated spurious emission test. The worst case was found at Z axis, so the measurement will follow this same test configuration.

2.5. Tested System Details

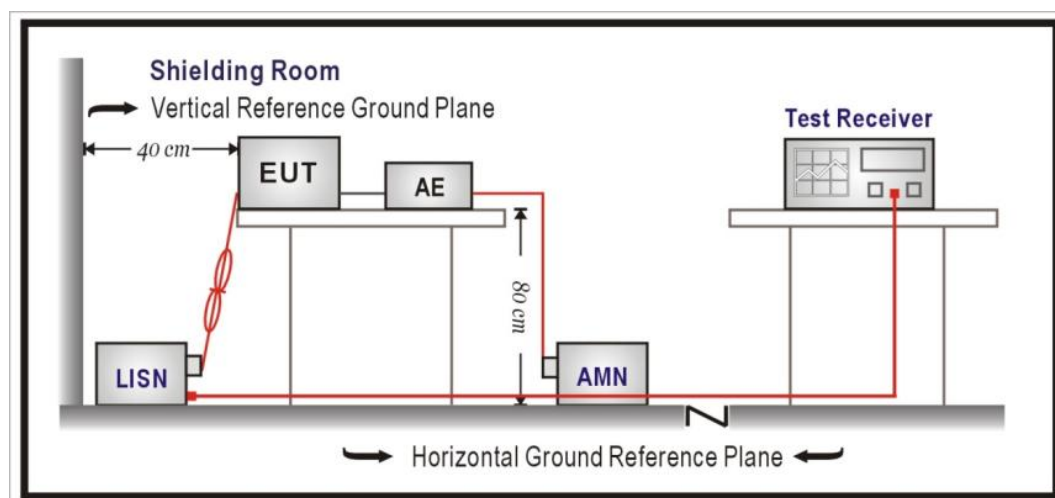
No.	Equipment	Brand Name	Model No.	Serial No.
1	Notebook	Lenovo	Lenovo Ideapad 110 15IBR	PF01EUZD

2.6. Configuration of Tested System



3. AC Power Line Conducted Emission

3.1. Test Setup



3.2. Test Limit

Frequency (MHz)	QP (dBuV)	AV (dBuV)
0.15 - 0.50	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30	60	50

Remarks: In the above table, the tighter limit applies at the band edges.

3.3. Test Procedure

The EUT was setup according to ANSI C63.10: 2013. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs.)

Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.

The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.

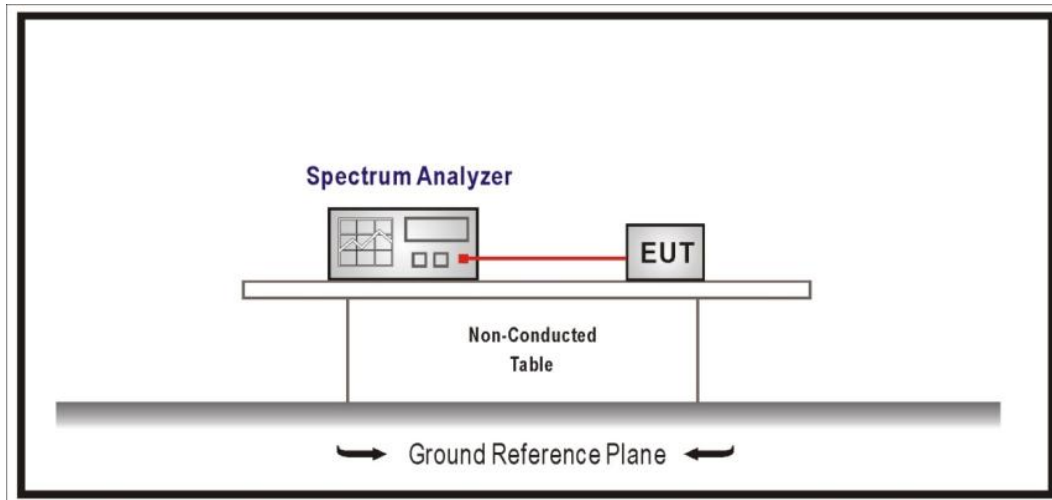
Conducted emissions were investigated over the frequency range from 0.15 MHz to 30 MHz using a receiver bandwidth of 9 kHz.

3.4. Test Result of AC Power Line Conducted Emission

Refer as Appendix A

4. Occupied Bandwidth & DTS Bandwidth

4.1. Test Setup



4.2. Test Limit

The 6 dB bandwidth: ≥ 0.50 MHz.

Occupied Bandwidth: N/A

4.3. Test Procedures

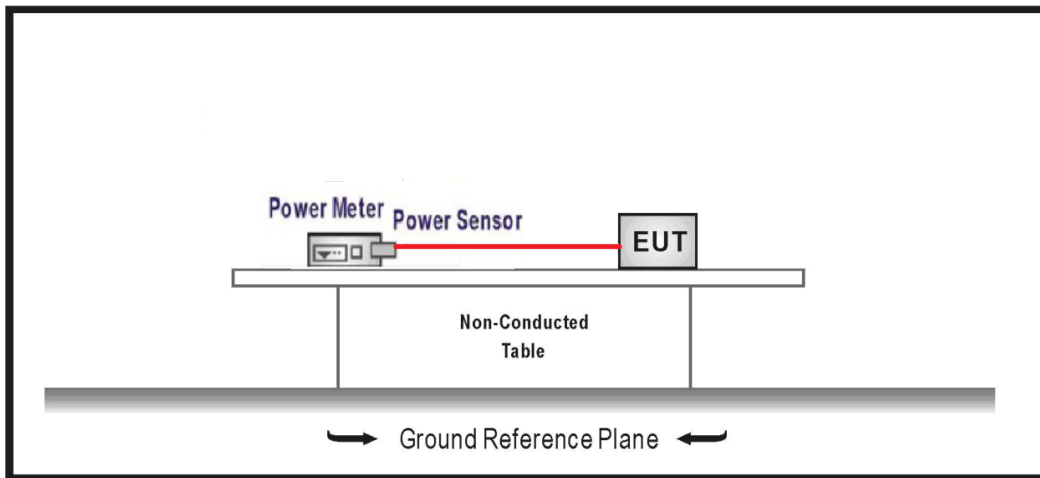
The EUT was setup according to ANSI C63.10: 2013; tested according to DTS test procedure of KDB 558074.

4.4. Test Result of Occupied Bandwidth & DTS Bandwidth

Refer as Appendix B

5. Maximum Conducted Output Power

5.1. Test Setup



5.2. Test Limit

The maximum conducted output power shall be less 30 dBm (1 Watt).

5.3. Test Procedures

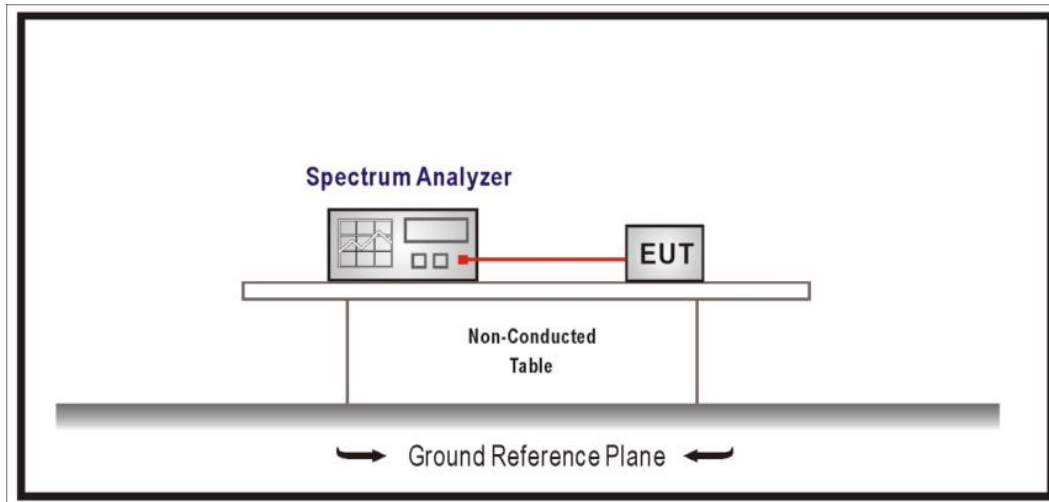
The EUT was setup according to ANSI C63.10: 2013; tested according to DTS test procedure of KDB 558074.

5.4. Test Result of Maximum Conducted Output Power

Refer as Appendix C

6. Maximum Power Spectral Density

6.1. Test Setup



6.2. Test Limit

The peak power spectral density conducted from the intentional radiated to the antenna shall not be greater than +8 dBm in any 3 kHz band during any time interval of continuous transmission.

6.3. Test Procedures

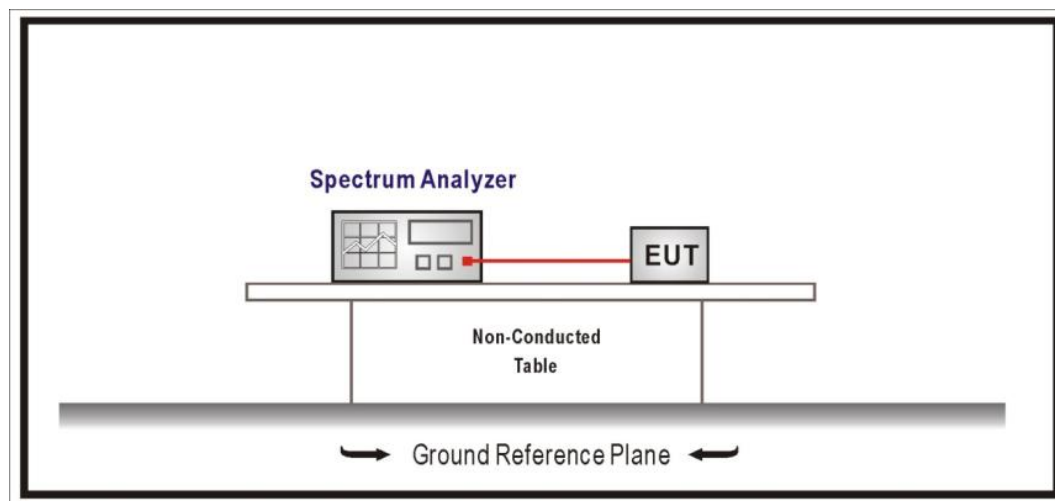
The EUT was setup according to ANSI C63.10: 2013; tested according to DTS test procedure of KDB 558074.

6.4. Test Result of Maximum Power Spectral Density

Refer as Appendix D

7. Antenna Port Conducted Emission

7.1. Test Setup



7.2. Test Limit

RF output power procedure	Limit (dBc)
Peak output power procedure	20
Average output power procedure	30

Remarks:

1. 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 limit.
2. If the transmitter complies with the conducted power limit based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

7.3. Test Procedure

The EUT was setup according to ANSI C63.10: 2013 and tested according to DTS test procedure of KDB 558074.

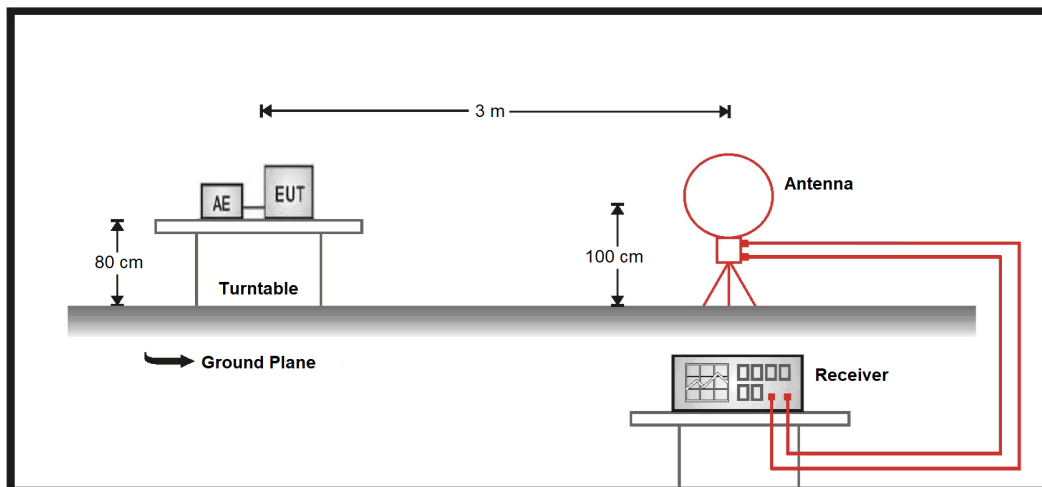
7.4. Test Result of Antenna Port Conducted Emission

Refer as Appendix E

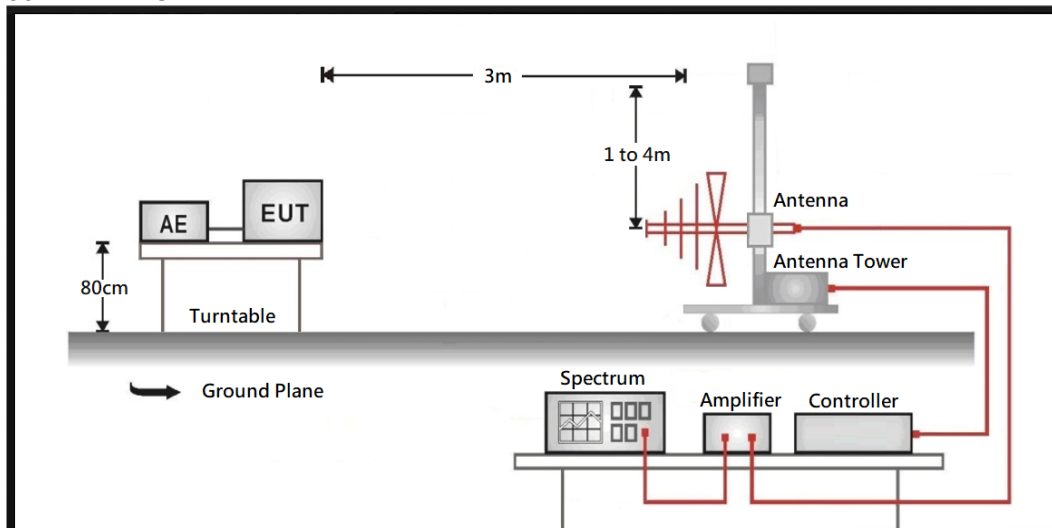
8. Transmitter Radiated Spurious Emission

8.1. Test Setup

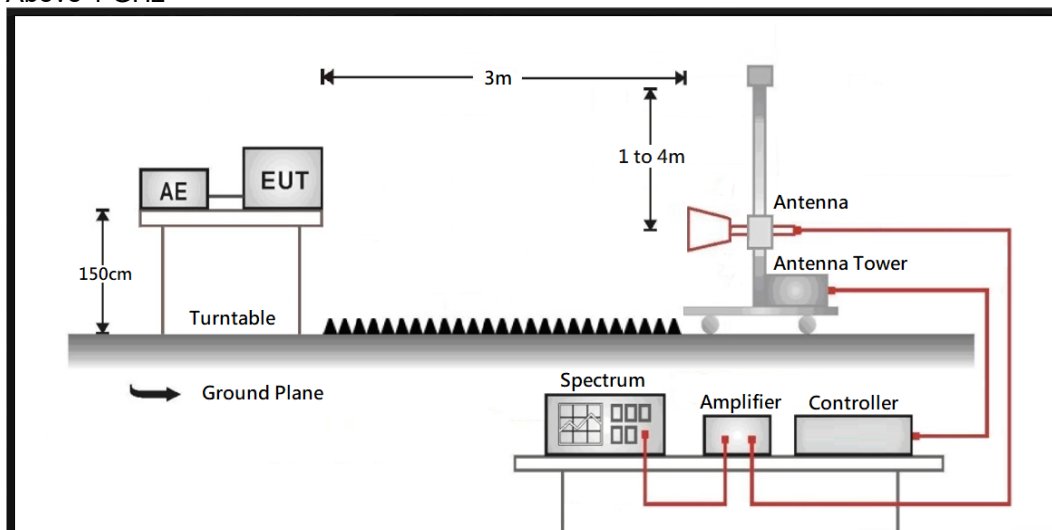
9 kHz ~ 30 MHz



30 MHz ~ 1 GHz



Above 1 GHz



8.2. Test Limit

Frequency (MHz)	Field strength (uV/m)	Field strength (dBuV/m)	Measurement distance (m)
0.009 – 0.490	2400/F(kHz)	20 log (2400/F(kHz))	300
0.490 – 1.705	24000/F(kHz)	20 log (24000/F(kHz))	30
1.705 - 30	30	29.5	30
30 - 88	100	40	3
88 - 216	150	43.5	3
216 - 960	200	46	3
Above 960	500	54	3

Remarks:

1. Field strength (dBuV/m) = 20 log Field strength (uV/m)
2. In the Above Table, the tighter limit applies at the band edges.
3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

8.3. Test Procedure

The EUT was setup according to ANSI C63.10: 2013 and tested according to DTS test procedure of KDB 558074.

The EUT and its simulators are placed on a turn table which is 0.8 or 1.5 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10: 2013 on radiated measurement.

On any frequency or frequencies from 9 kHz(include The the lowest oscillator frequency generated within the device up to the 10th harmonic) to 1000 MHz, the limit shown are based on measuring equipment employing a quasi-peak detector function and on any frequency or frequencies above 1000 MHz the radiated limit shown are based upon the use of measurement instrumentation employing an average detector function. When average radiated emission measurement are included emission measurement below 1000 MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.

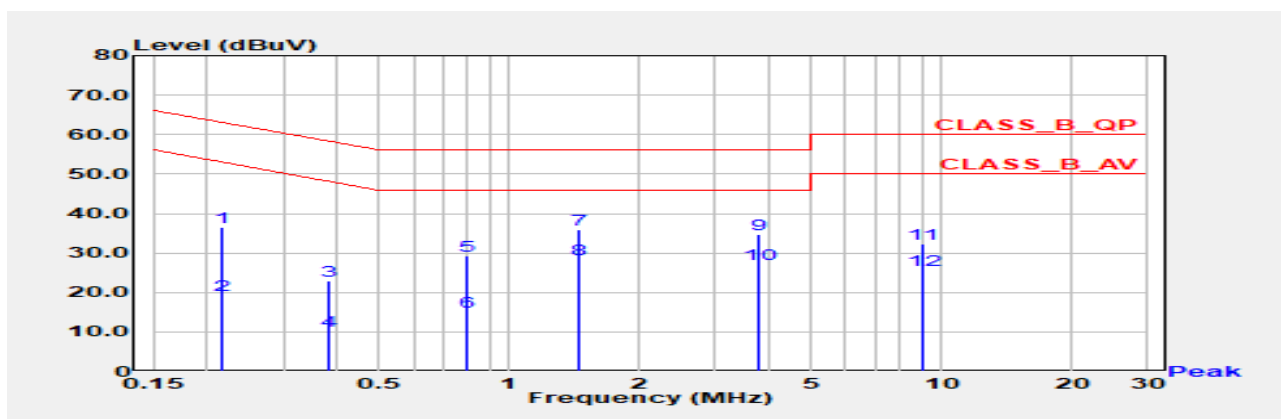
The bandwidth below 1 GHz setting on the field strength meter is 120 kHz and above 1 GHz is 1 MHz.

8.4. Test Result of Transmitter Radiated Spurious Emission

Refer as Appendix F

Appendix A. Test Result of AC Power Line Conducted Emission

Test Mode	Mode 1: EUT + Adapter 1	Phase	Line
Test Condition	802.11g / Ant. 1 + Ant. 2 / 2462 MHz		

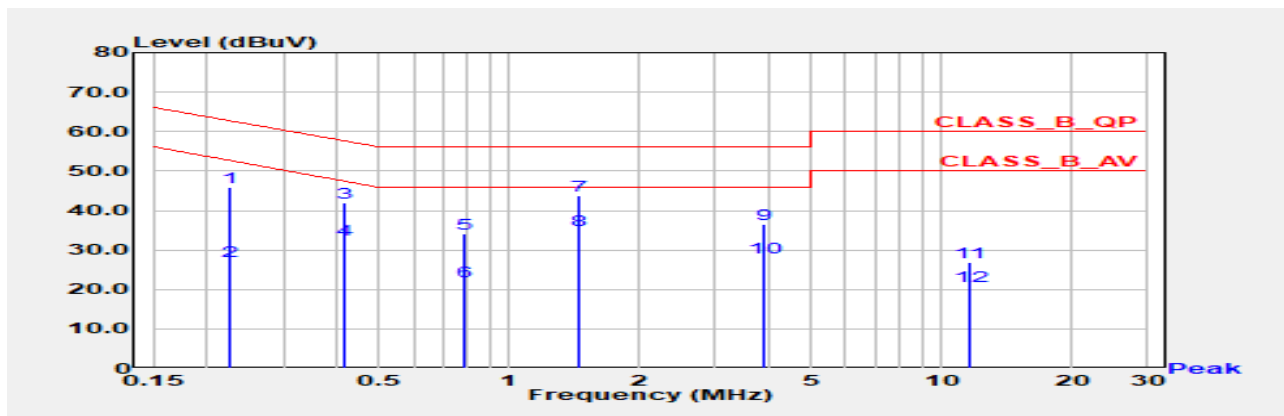


No	Frequency (MHz)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.215	36.41	63.00	-26.59	26.80	9.62	QP
2	0.215	19.42	53.00	-33.58	9.80	9.62	AV
3	0.382	23.06	58.24	-35.18	13.42	9.64	QP
4	0.382	10.15	48.24	-38.09	0.51	9.64	AV
5	0.793	29.24	56.00	-26.76	19.56	9.68	QP
6	0.793	15.15	46.00	-30.85	5.47	9.68	AV
7	1.444	36.03	56.00	-19.97	26.30	9.72	QP
*8	1.444	28.23	46.00	-17.77	18.51	9.72	AV
9	3.777	34.75	56.00	-21.25	24.92	9.83	QP
10	3.777	27.13	46.00	-18.87	17.29	9.83	AV
11	9.031	32.39	60.00	-27.61	22.34	10.05	QP
12	9.031	25.76	50.00	-24.24	15.71	10.05	AV

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Test Mode	Mode 1: EUT + Adapter 1	Phase	Neutral
Test Condition	802.11g / Ant. 1 + Ant. 2 / 2462 MHz		



No	Frequency (MHz)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.226	46.03	62.58	-16.55	36.41	9.62	QP
2	0.226	27.20	52.58	-25.38	17.58	9.62	AV
3	0.418	41.97	57.49	-15.52	32.34	9.63	QP
4	0.418	32.59	47.49	-14.91	22.95	9.63	AV
5	0.784	33.97	56.00	-22.03	24.29	9.68	QP
6	0.784	22.01	46.00	-23.99	12.33	9.68	AV
7	1.441	43.72	56.00	-12.28	34.00	9.72	QP
*8	1.441	35.11	46.00	-10.89	25.39	9.72	AV
9	3.865	36.53	56.00	-19.47	26.68	9.85	QP
10	3.865	27.93	46.00	-18.07	18.08	9.85	AV
11	11.577	26.79	60.00	-33.21	16.60	10.19	QP
12	11.577	20.91	50.00	-29.09	10.73	10.19	AV

Note:

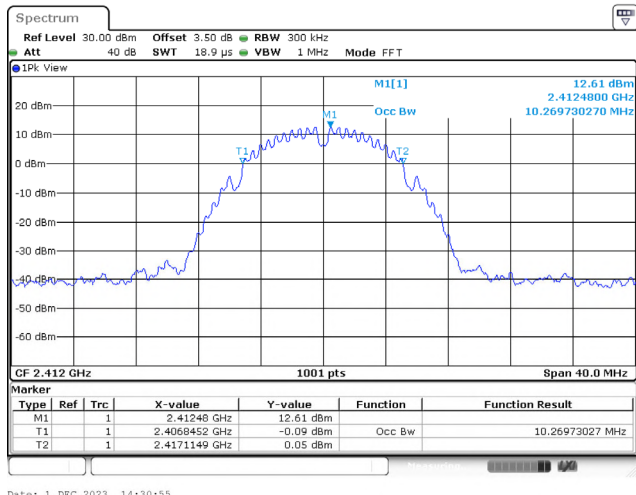
1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Appendix B.1 Test Result of Occupied Bandwidth

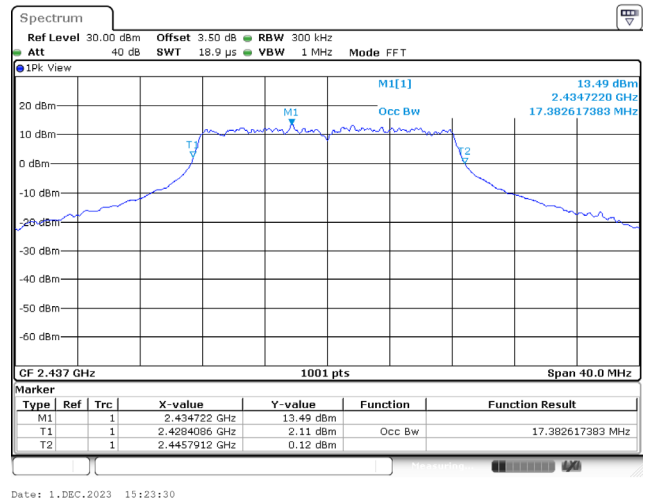
Modulation	Frequency (MHz)	Occupied Bandwidth (MHz)		Limit (MHz)
		Ant. 1		
802.11b	2412	10.269		-
	2437	10.269		-
	2462	10.269		-
Modulation	Frequency (MHz)	Occupied Bandwidth (MHz)		Limit (MHz)
		Ant. 1	Ant. 2	
802.11g	2412	16.983	16.823	-
	2437	17.382	17.022	-
	2462	17.142	16.863	-
802.11ax (20 MHz)	2412	19.340	19.220	-
	2417	19.460	19.380	-
	2437	19.380	19.100	-
	2457	19.460	19.380	-
	2462	19.380	19.180	-
802.11ax (40 MHz)	2422	38.521	38.761	-
	2427	38.521	38.361	-
	2437	38.521	38.681	-
	2447	38.601	38.361	-
	2452	38.281	38.441	-

Spectrum plot of maximum value

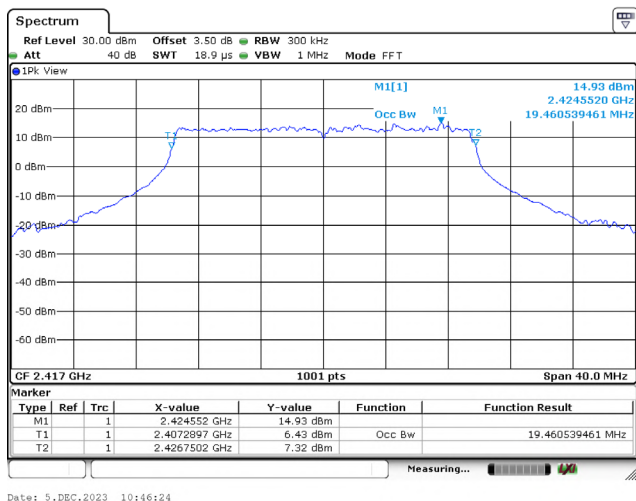
802.11b / Ant. 1 / 2412 MHz



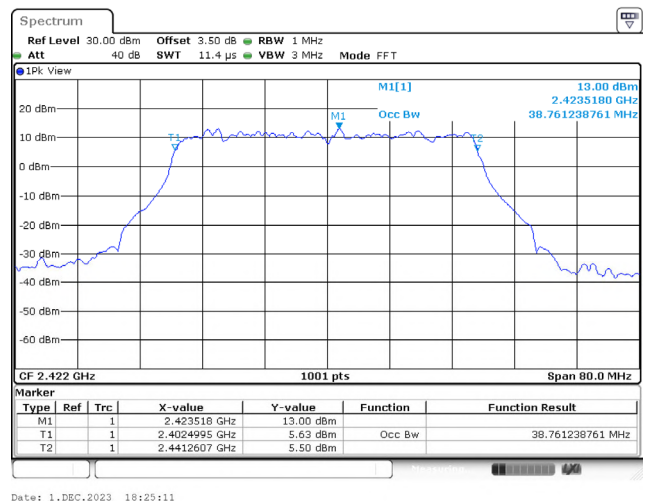
802.11g / Ant. 1 / 2437 MHz



802.11ax (20 MHz) / Ant. 1 / 2417 MHz



802.11ax (40 MHz) / Ant. 2 / 2422 MHz

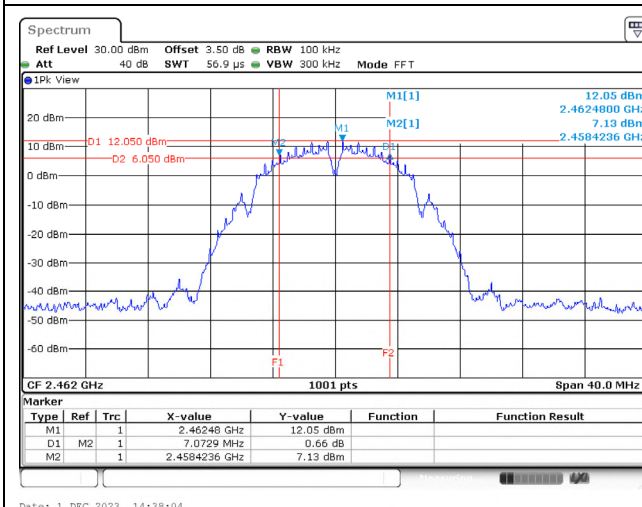


Appendix B.2 Test Result of DTS Bandwidth

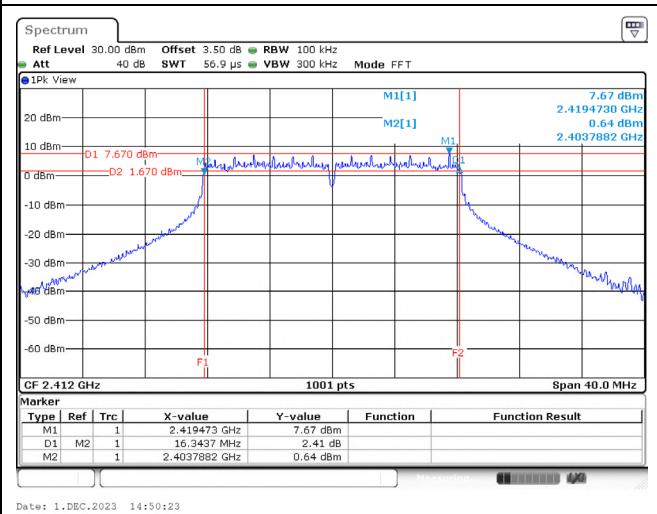
Modulation	Frequency (MHz)	DTS Bandwidth (MHz)		Limit (MHz)
		Ant. 1		
802.11b	2412	7.552		0.50
	2437	8.032		0.50
	2462	7.072		0.50
Modulation	Frequency (MHz)	DTS Bandwidth (MHz)		Limit (MHz)
		Ant. 1	Ant. 2	
802.11g	2412	16.343	16.423	0.50
	2437	16.343	16.343	0.50
	2462	16.343	16.343	0.50
802.11ax (20 MHz)	2412	18.981	18.981	0.50
	2417	19.011	19.011	0.50
	2437	19.021	18.981	0.50
	2457	19.021	19.021	0.50
	2462	18.981	19.021	0.50
802.11ax (40 MHz)	2422	38.042	38.201	0.50
	2427	38.202	38.042	0.50
	2437	38.121	38.121	0.50
	2447	38.042	38.042	0.50
	2452	38.121	38.042	0.50

Spectrum plot of worst value

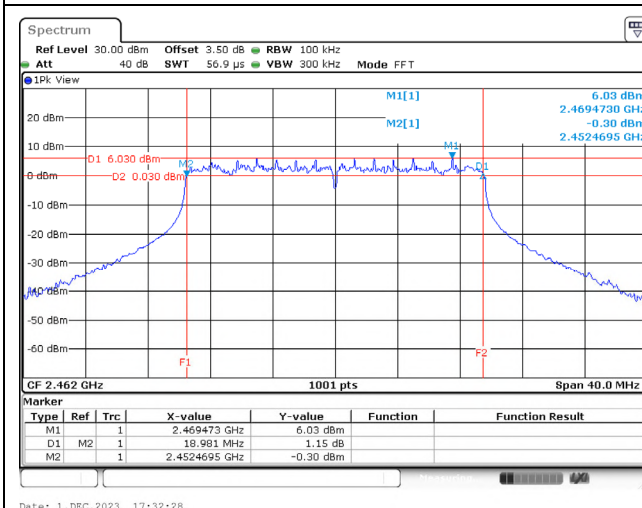
802.11b / Ant. 1 / 2462 MHz



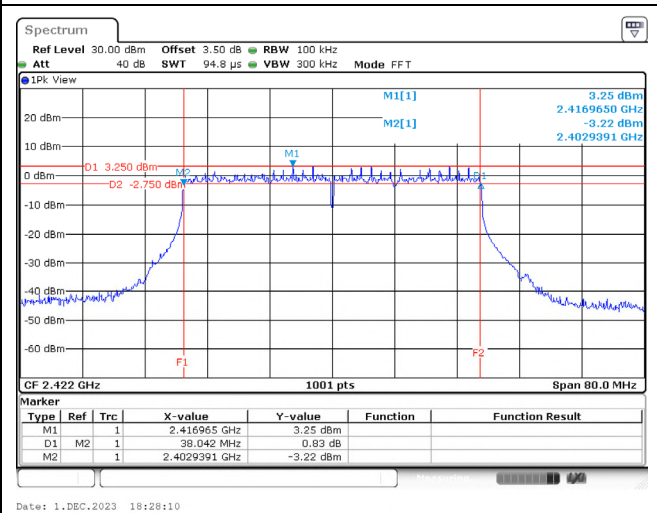
802.11g / Ant. 1 / 2412 MHz



802.11ax (20 MHz) / Ant. 1 / 2412 MHz



802.11ax (40 MHz) / Ant. 1 / 2422 MHz



Appendix C. Test Result of Maximum Conducted Output Power

<Non-beamforming function>

Modulation	Frequency (MHz)	Maximum Conducted Average Output Power (dBm)			
		Ant. 1			Limit
802.11b	2412	19.450			30.00
	2437	19.490			30.00
	2462	19.460			30.00
Modulation	Frequency (MHz)	Maximum Conducted Average Output Power (dBm)			
		Ant. 1	Ant. 2	Total	Limit
802.11g	2412	18.830	19.220	22.040	30.00
	2437	21.550	21.810	24.692	30.00
	2462	18.910	18.790	21.861	30.00
802.11ax (20 MHz)	2412	18.110	18.520	21.330	30.00
	2417	21.910	22.110	25.021	30.00
	2437	21.750	22.050	24.913	30.00
	2457	21.810	21.720	24.776	30.00
	2462	18.110	17.920	21.026	30.00
802.11ax (40 MHz)	2422	16.770	17.190	19.995	30.00
	2427	20.130	20.210	23.180	30.00
	2437	20.950	21.030	24.000	30.00
	2447	20.010	20.110	23.071	30.00
	2452	17.720	17.850	20.796	30.00

<Beamforming function>

Modulation	Frequency (MHz)	Maximum Conducted Average Output Power (dBm)			
		Ant. 1	Ant. 2	Total	Limit
802.11ax (20 MHz)	2412	18.110	18.520	21.330	30.00
	2417	21.910	22.110	25.021	30.00
	2437	21.750	22.050	24.913	30.00
	2457	21.810	21.720	24.776	30.00
	2462	18.110	17.920	21.026	30.00
802.11ax (40 MHz)	2422	16.770	17.190	19.995	30.00
	2427	20.130	20.210	23.180	30.00
	2437	20.950	21.030	24.000	30.00
	2447	20.010	20.110	23.071	30.00
	2452	17.720	17.850	20.796	30.00

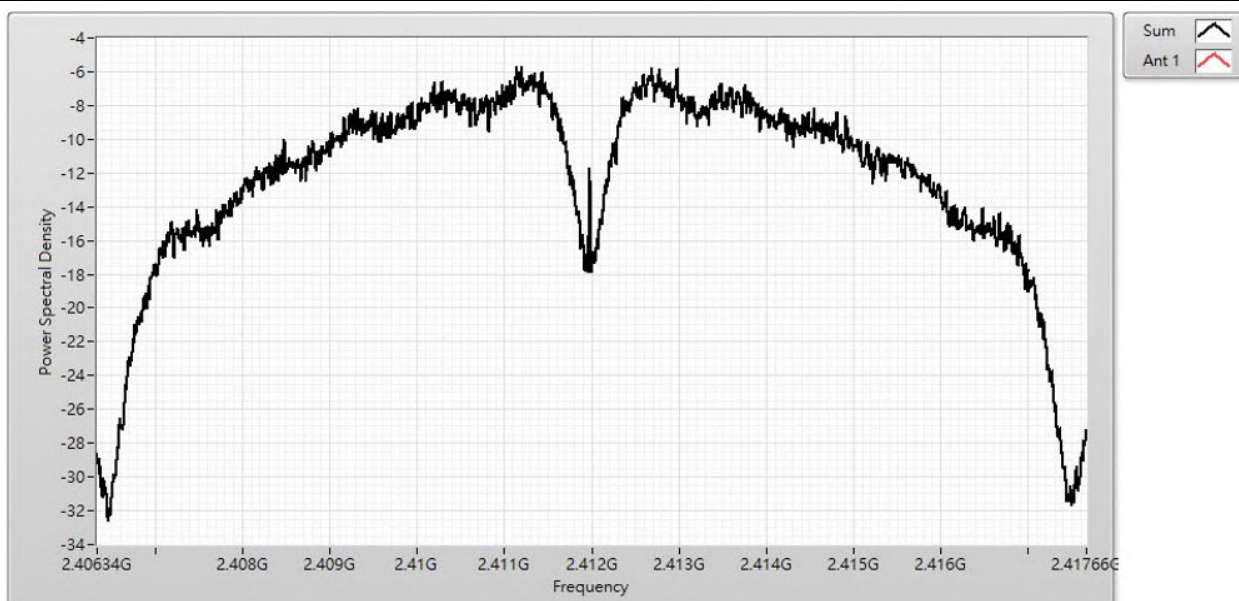
Appendix D. Test Result of Maximum Power Spectral Density

Modulation	Frequency (MHz)	Power Spectral Density (dBm/3kHz)		Limit (dBm/3kHz)
		Ant. 1	Total	
802.11b	2412	-5.700	-5.626	8.00
	2437	-5.950	-5.876	8.00
	2462	-5.730	-5.656	8.00
Modulation	Frequency (MHz)	Power Spectral Density (dBm/3kHz)		Limit (dBm/3kHz)
		Ant. 1 + Ant. 2	Total	
802.11g	2412	-8.640	-8.543	8.00
	2437	-6.850	-6.753	8.00
	2462	-9.130	-9.033	8.00
802.11ax (20 MHz)	2412	-9.890	-9.730	8.00
	2417	-6.430	-6.270	8.00
	2437	-7.250	-7.090	8.00
	2457	-6.930	-6.770	8.00
	2462	-10.420	-10.260	8.00
802.11ax (40 MHz)	2422	-14.540	-14.182	8.00
	2427	-11.620	-11.262	8.00
	2437	-12.330	-11.972	8.00
	2447	-11.700	-11.342	8.00
	2452	-13.750	-13.392	8.00

Note: Total power spectral density = power spectral density + duty factor, and the duty factor refer to section 2.3.

Spectrum plot of worst value

802.11b / Ant. 1 / 2412 MHz



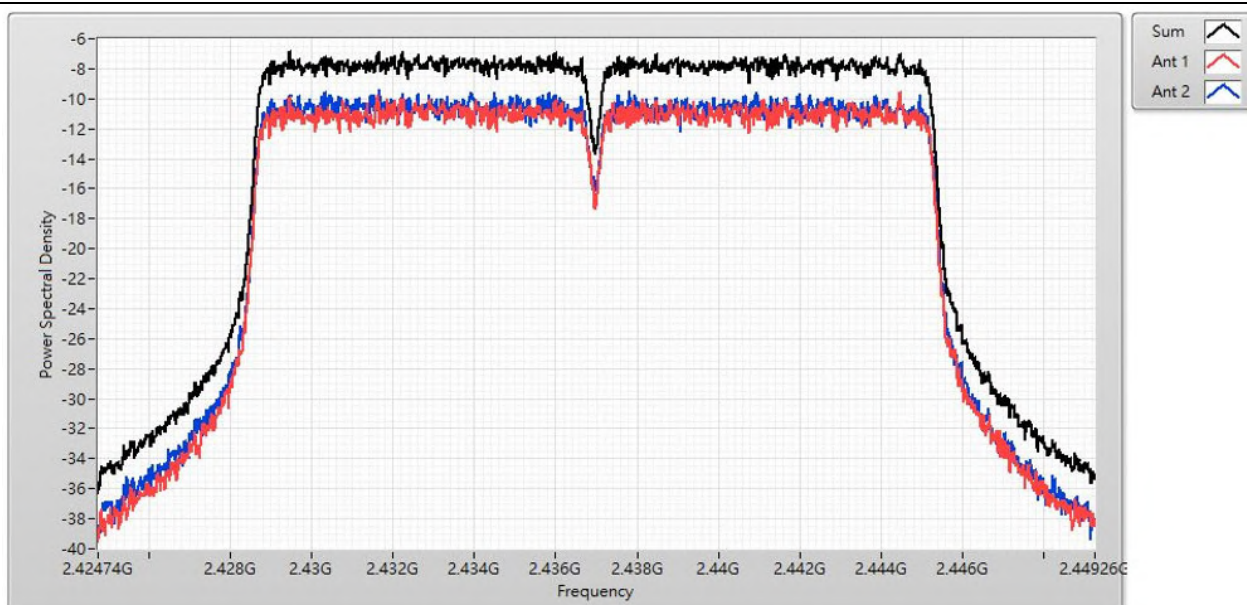
Sum (dBm/RBW)

-5.70

Ant. 1 (dBm/RBW)

-5.70

802.11g / Ant. 1 + Ant. 2 / 2437 MHz



Sum (dBm/RBW)

-6.85

Ant. 1 (dBm/RBW)

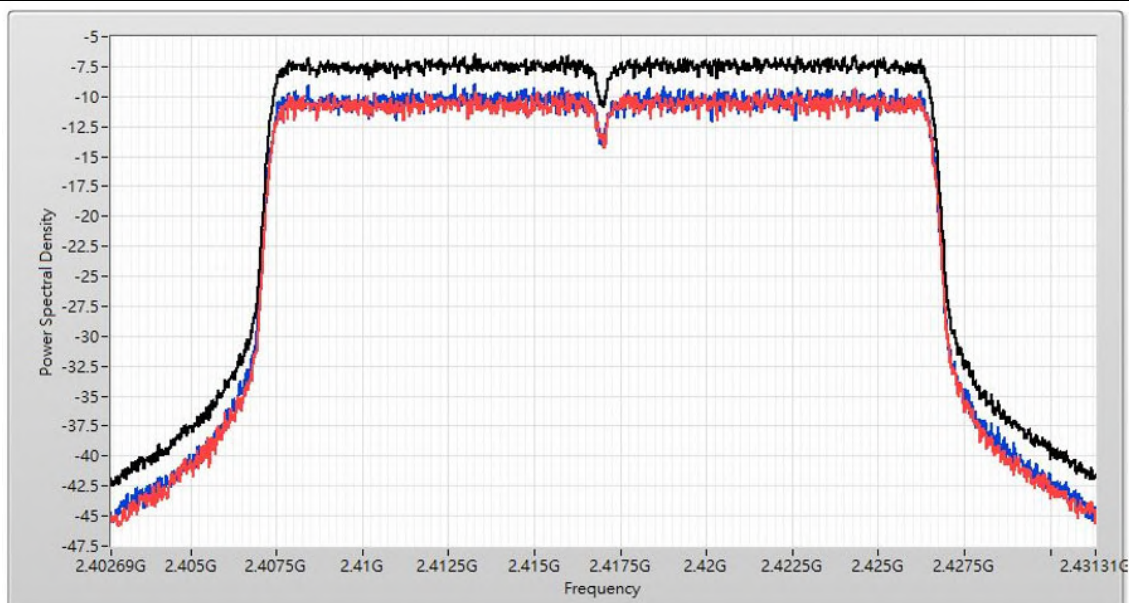
-9.59

Ant. 2 (dBm/RBW)

-9.42

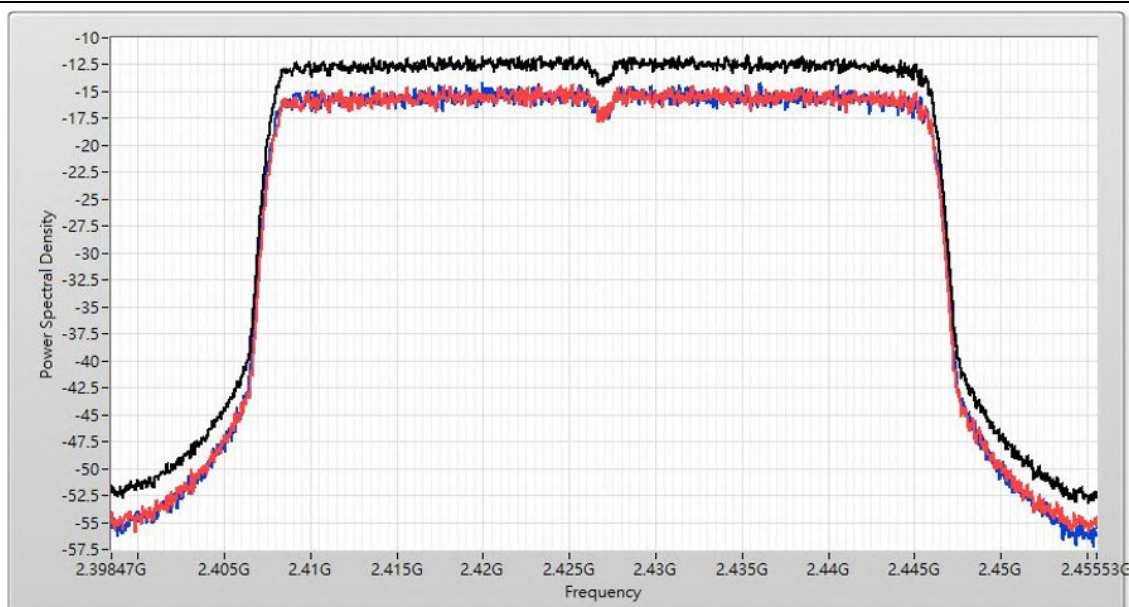
Spectrum plot of worst value

802.11ax (20 MHz) / Ant. 1 + Ant. 2 / 2417 MHz



Sum (dBm/Hz)	Ant. 1 (dBm/Hz)	Ant. 2 (dBm/Hz)
-6.43	-9.35	-8.97

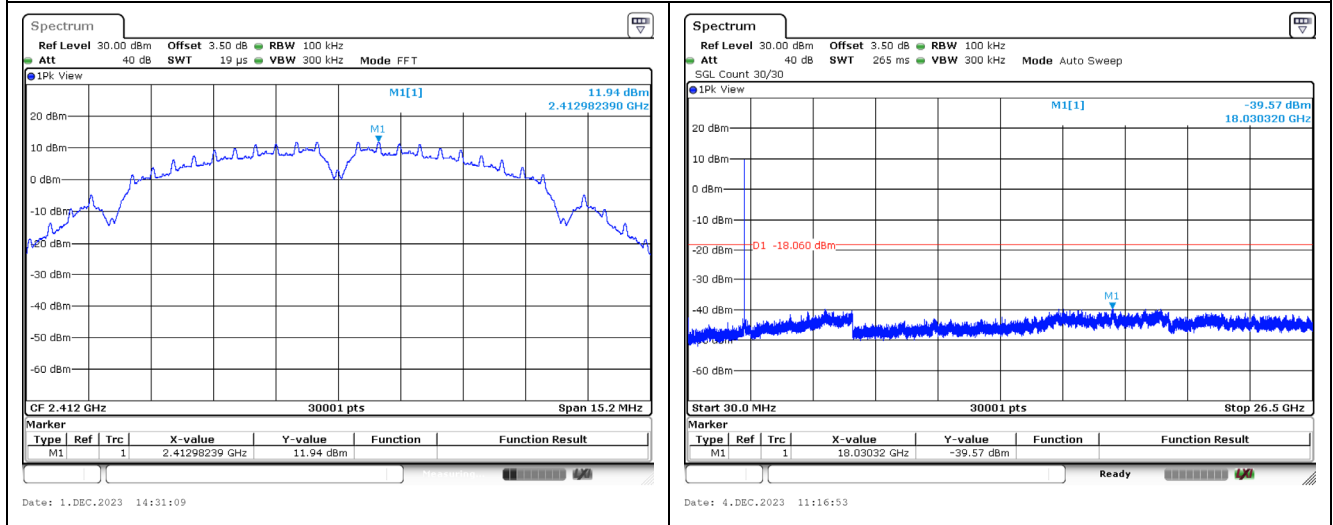
802.11ax (40 MHz) / Ant. 1 + Ant. 2 / 2427 MHz



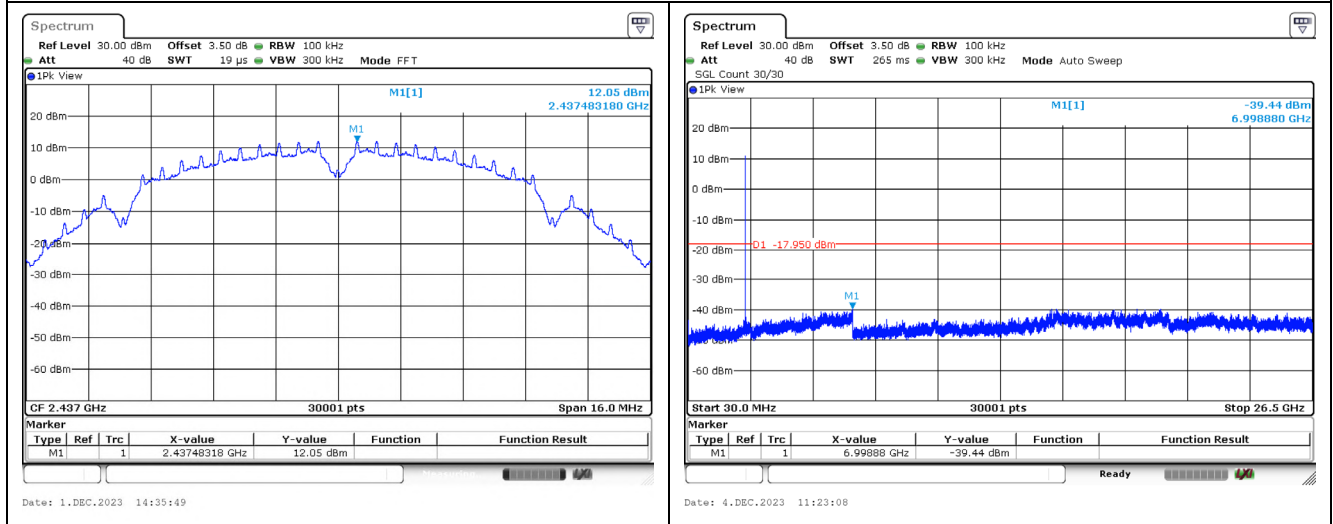
Sum (dBm/Hz)	Ant. 1 (dBm/Hz)	Ant. 2 (dBm/Hz)
-11.62	-14.43	-14.19

Appendix E. Test Result of Antenna Port Conducted Emission

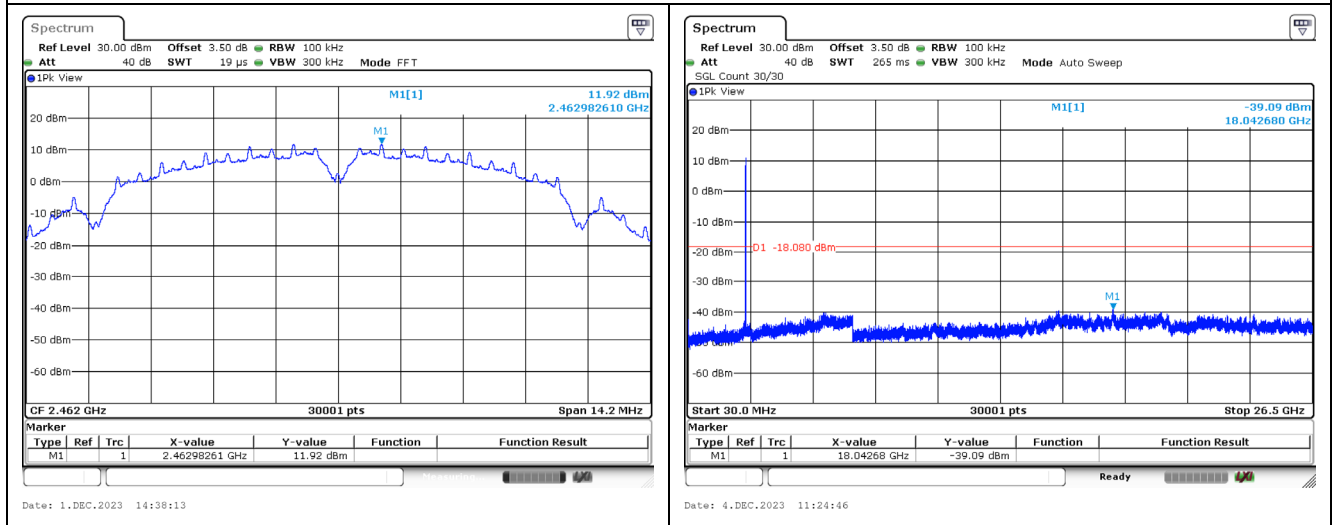
802.11b / Ant. 1 / 2412 MHz



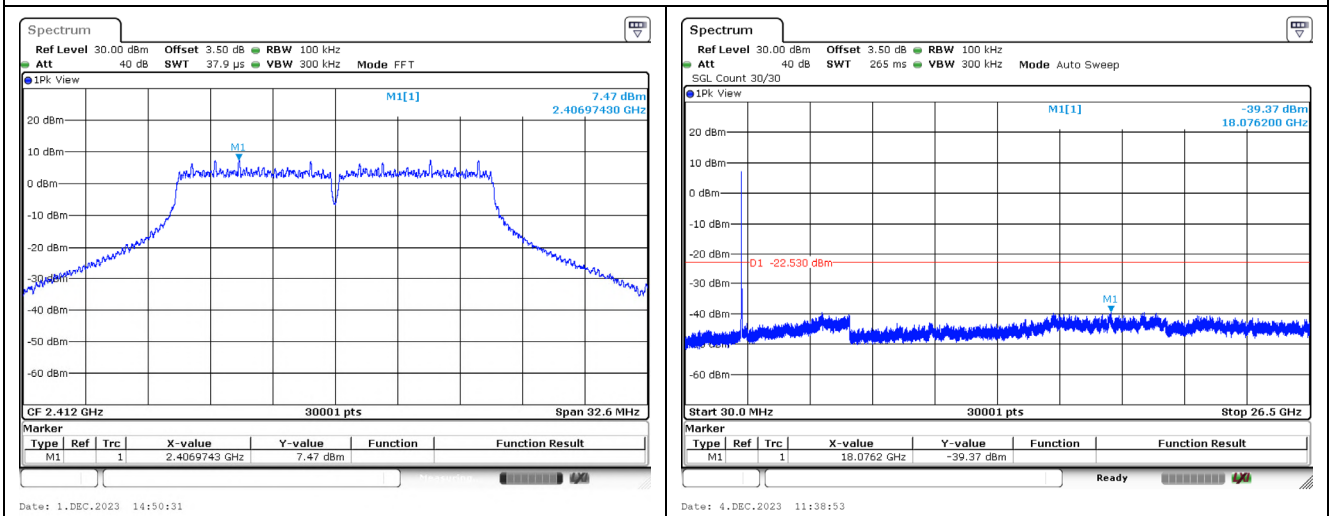
802.11b / Ant. 1 / 2437 MHz



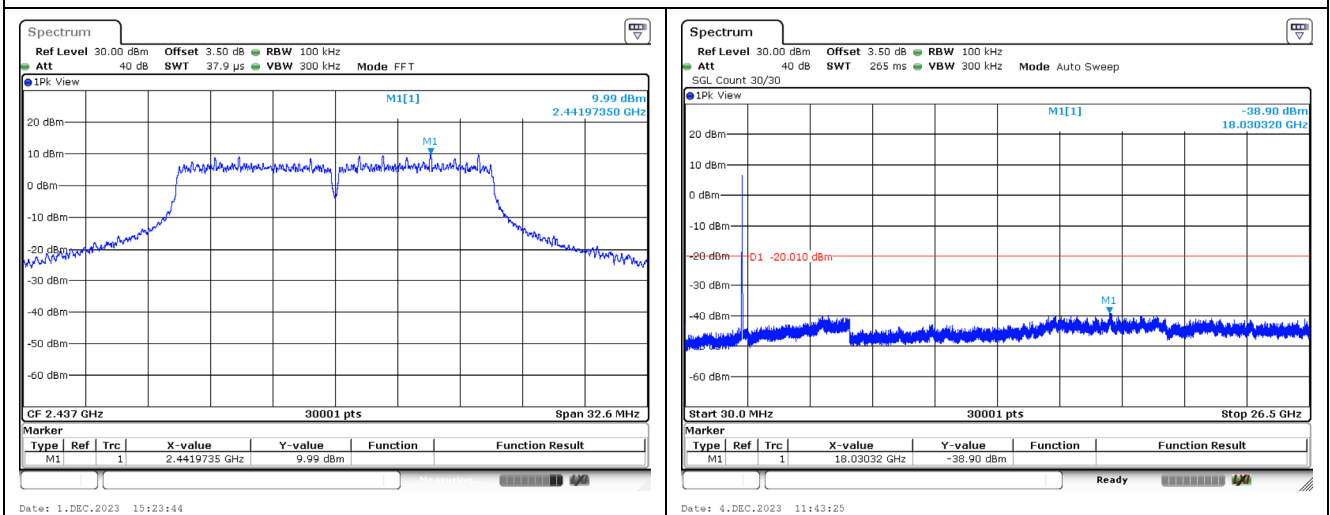
802.11b / Ant. 1 / 2462 MHz



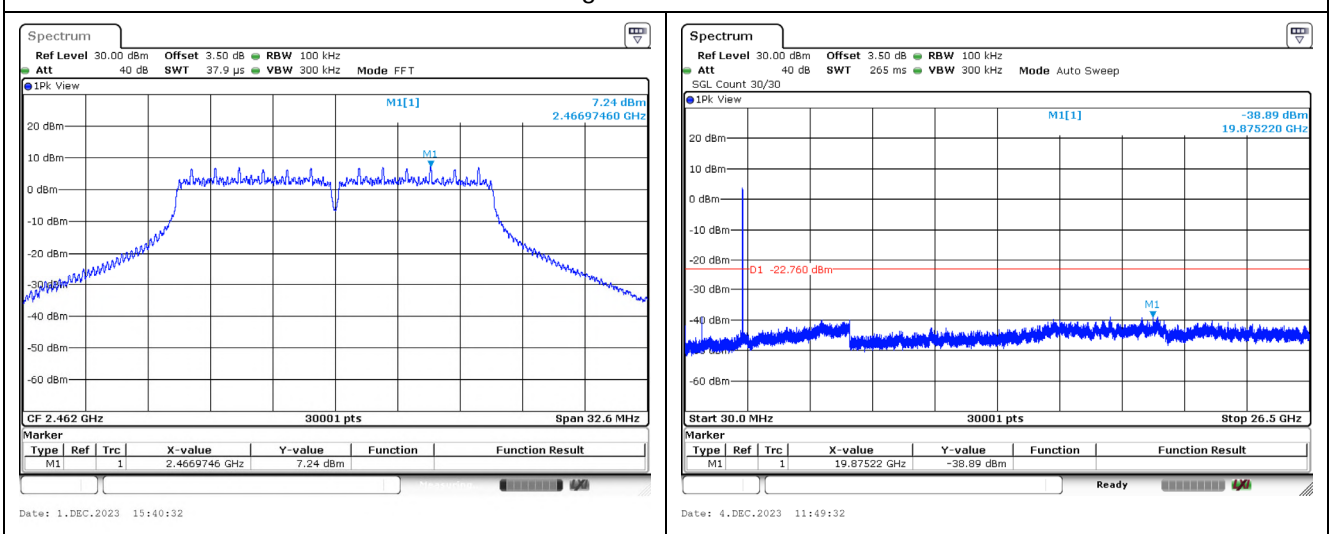
802.11g / Ant. 1 / 2412 MHz



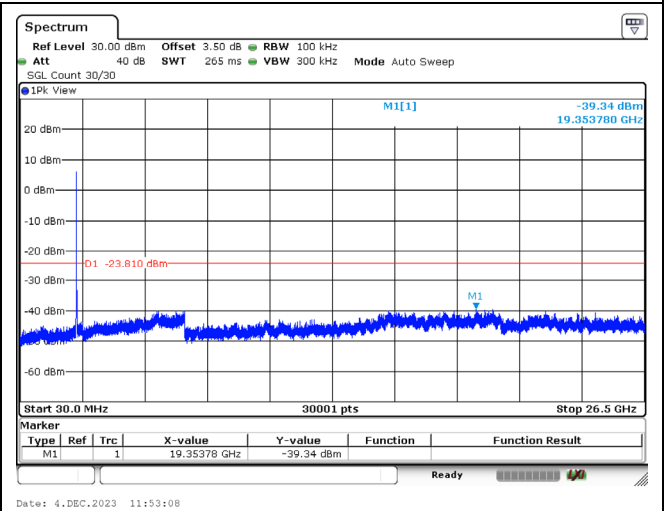
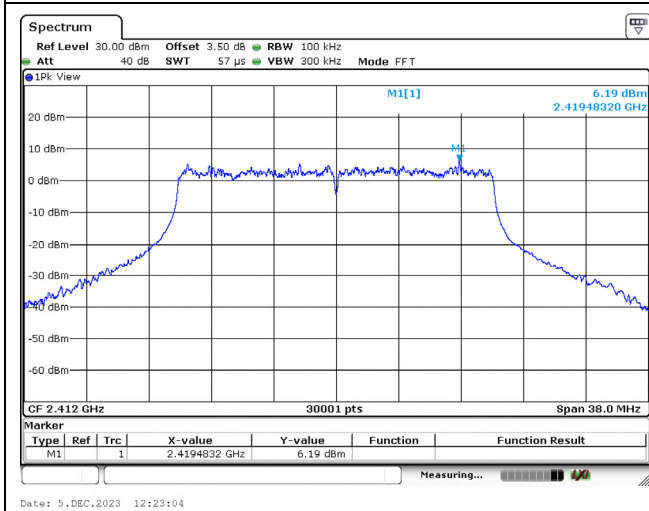
802.11g / Ant. 1 / 2437 MHz



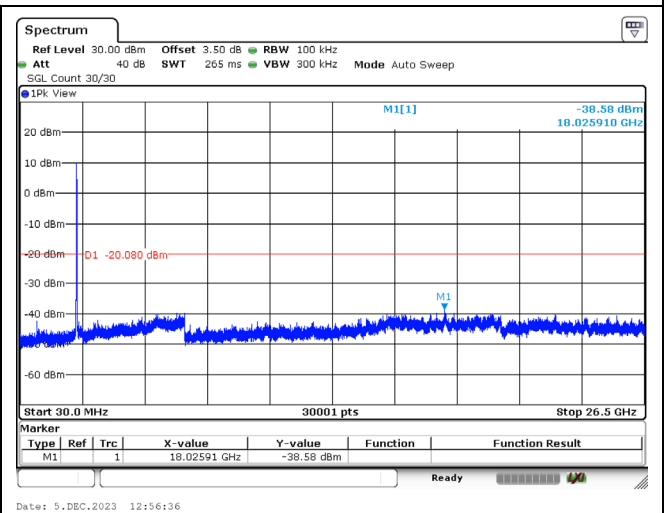
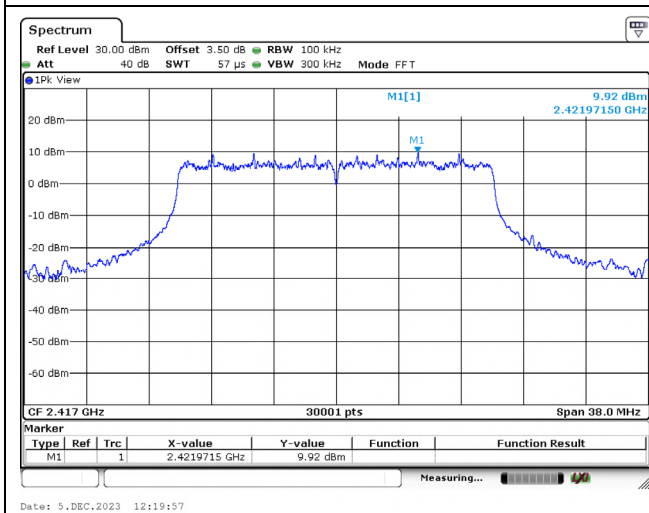
802.11g / Ant. 1 / 2462 MHz



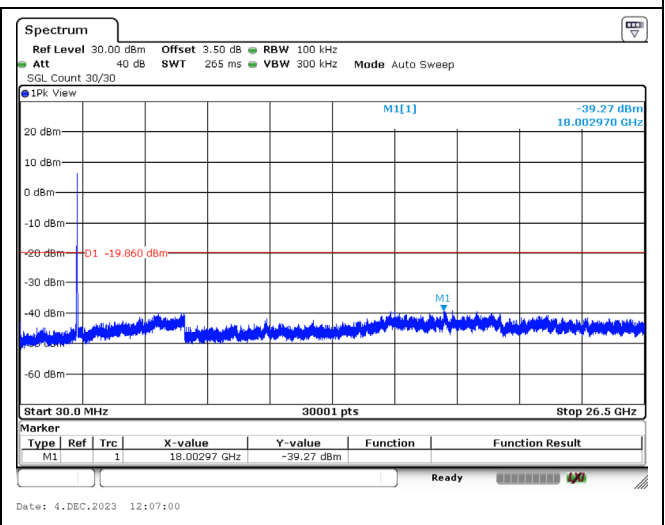
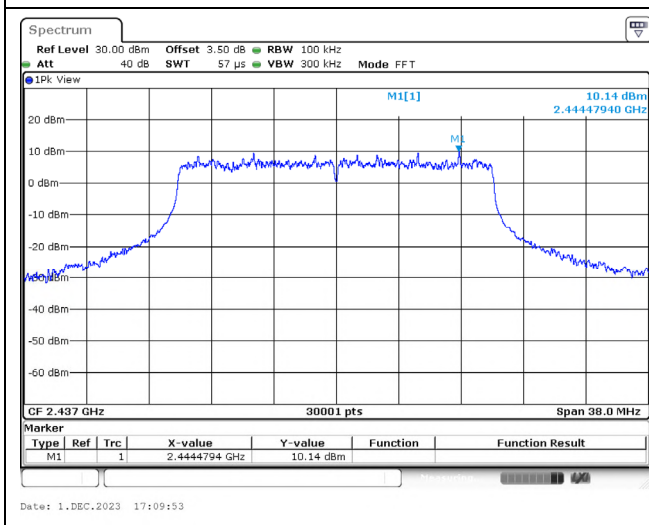
802.11ax (20 MHz) / Ant. 1 / 2412 MHz



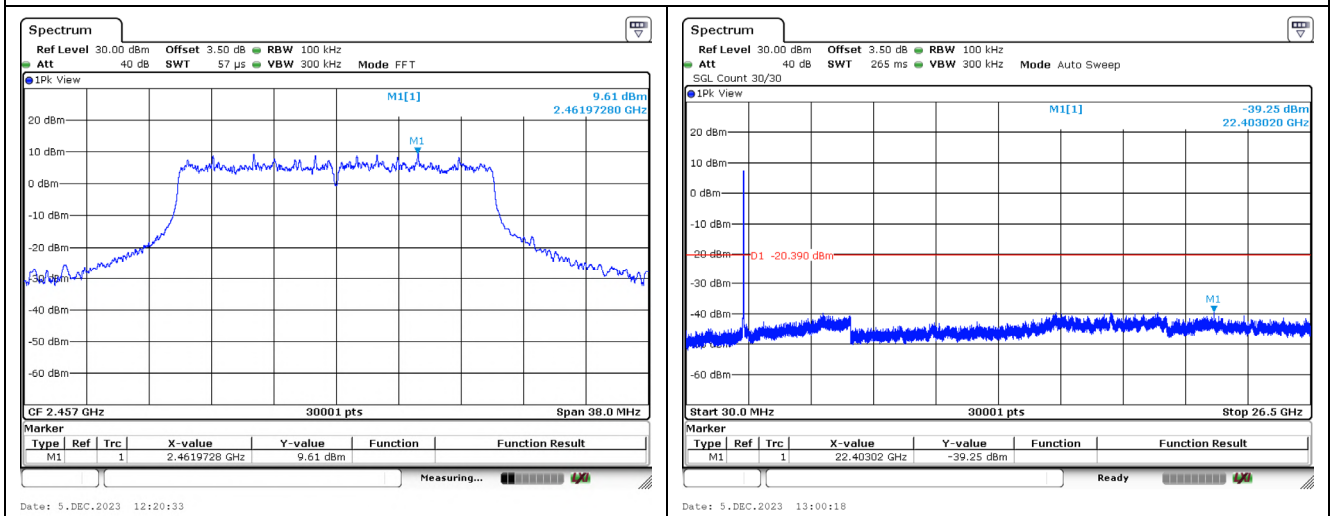
802.11ax (20 MHz) / Ant. 1 / 2417 MHz



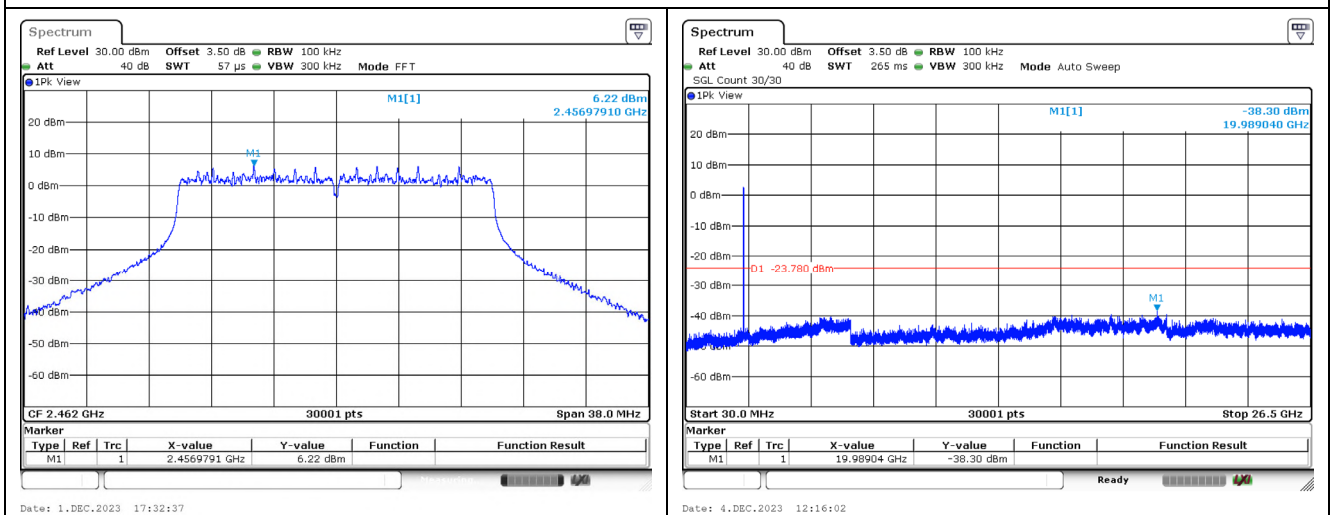
802.11ax (20 MHz) / Ant. 1 / 2437 MHz



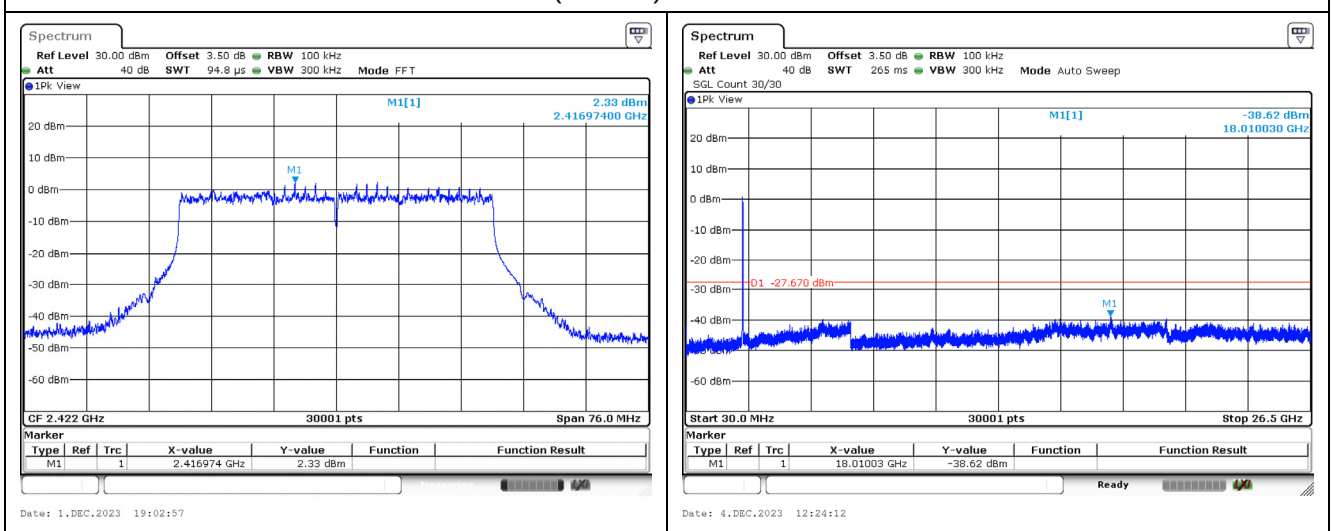
802.11ax (20 MHz) / Ant. 1 / 2457 MHz



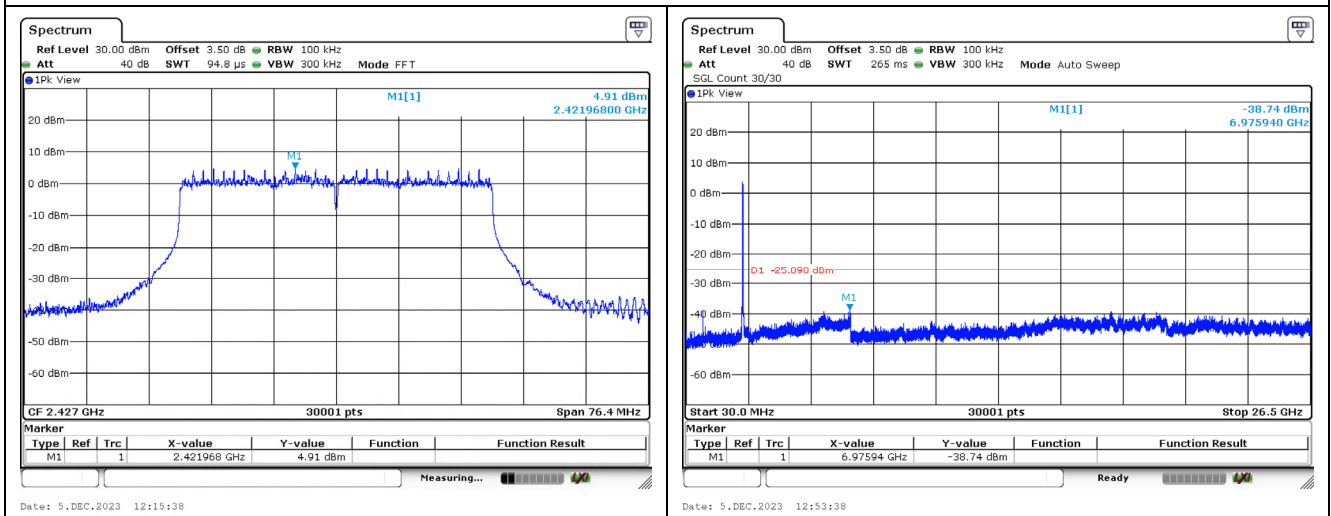
802.11ax (20 MHz) / Ant. 1 / 2462 MHz



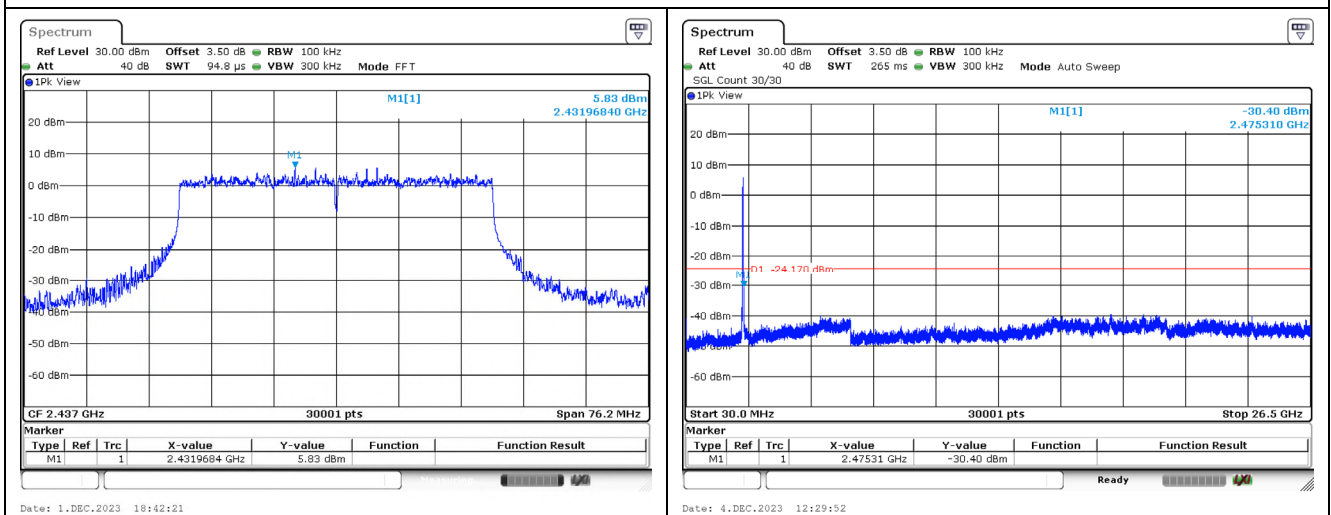
802.11ax (40 MHz) / Ant. 1 / 2422 MHz



802.11ax (40 MHz) / Ant. 1 / 2427 MHz



802.11ax (40 MHz) / Ant. 1 / 2437 MHz



802.11ax (40 MHz) / Ant. 1 / 2447 MHz

