



FCC PART 15C TEST REPORT No.24T04Z101135-023

for

Schok LLC

ChronoVolt Smartwatch

ChronoVolt_CV16

FCC ID: 2AM9L-CV16

with

Hardware Version: 1V0

Software Version: CV16_01.02.01

Issued Date: 2024-09-23

Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of CTTL.

Test Laboratory:

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No.24T04Z101135-023

REPORT HISTORY

Report Number	Revision	Description	Issue Date
24T04Z101135-023	Rev.0	1st edition	2024-09-23

Note: the latest revision of the test report supersedes all previous version.

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1. Test Laboratory

1.1.Introduction & Accreditation

Telecommunication Technology Labs, CAICT is an ISO/IEC 17025:2017 accredited test laboratory under American Association for Laboratory Accreditation (A2LA) with lab code 7049.01, and is also an FCC accredited test laboratory (CN1349), and ISED accredited test laboratory (CAB identifier:CN0066). The detail accreditation scope can be found on A2LA website.

1.2. Testing Location

Location 1:CTTL(Huayuan North Road)

Address: No. 52, Huayuan North Road, Haidian District, Beijing,
P. R. China100191

Location 2:CTTL(huayuan North Road)

Address: No. 52, Huayuan North Road, Haidian District, Beijing,
100191, P. R. China

1.3. Testing Environment

Normal Temperature: 15-35°C

Relative Humidity: 20-75%

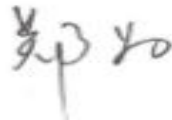
1.4. Project date

Testing Start Date: 2024-06-03

Testing End Date: 2024-09-20

1.5. Signature

Dong Jiaxuan
(Prepared this test report)



Zheng Wei
(Reviewed this test report)



Pang Shuai
(Approved this test report)



2. Client Information

2.1. Applicant Information

Company Name: Schok LLC
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Contact: Michael Harshbarger
Email: mike.harsh@schokgear.com
Telephone: +1-847-809-3294
Fax: /

2.2. Manufacturer Information

Company Name: ShenZhen Wellstec Communication Co., Ltd
Address: 1403, Block A, BOTON Science & Technology Park, No. 1044
Chaguang Road, Nanshan District, ShenZhen, China
Contact: Eli
Email: Eli.fan@wellstec.cn
Telephone: +86-755-82507083-8022
Fax: /

3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

Description	ChronoVolt Smartwatch
Model name	ChronoVolt_CV16
FCC ID	2AM9L-CV16
With WLAN Function	Yes
Frequency Band	ISM 2400MHz~2483.5MHz
Type of Modulation	DSSS/CCK/OFDM
Number of Channels	11
Antenna	Integral Antenna
MAX Conducted Power	23.97dBm
Nominal Voltage	3.8V

3.2. Internal Identification of EUT

EUT ID*	SN or IMEI	HW Version	SW Version
UT55a	357167500000738	1V0	CV16_01.02.01
UT27a	357167500002627	1V0	CV16_01.02.01

*EUT ID: is used to identify the test sample in the lab internally.

UT55a is used for Conduction test, UT27a is used for Radiation test.

3.3. Internal Identification of AE

AE ID*	Description	Model	Manufacturer
AE1	Battery1	572829A	HUATIAANTONG
AE2	Charger1	UT-681A-5100UY	Baijunda
AE3	USB Cable1	K1-USB	YONGQUANDA

*AE ID: is used to identify the test sample in the lab internally.

3.4. General Description

The Equipment under Test (EUT) is a model of ChronoVolt Smartwatch with integrated antenna and inbuilt battery.

It consists of normal options: travel charger, USB cable.

Manual and specifications of the EUT were provided to fulfil the test.

Samples undergoing test were selected by the client.

3.5. Interpretation of the Test Environment

For the test methods, the test environment uncertainty figures correspond to an expansion factor $k=2$.

Measurement Uncertainty

Parameter	Uncertainty
temperature	0.48°C
humidity	2 %
DC voltages	0.003V

4. Reference Documents

4.1. Documents supplied by applicant

EUT feature information is supplied by the applicant or manufacturer, which is the basis of testing.

4.2. Reference Documents for testing

The following documents listed in this section are referred for testing.

Reference	Title	Version
FCC Part15	FCC CFR 47, Part 15, Subpart C:	2021
	15.205 Restricted bands of operation;	
	15.209 Radiated emission limits, general requirements;	
ANSI C63.10	15.247 Operation within the bands 902-928MHz, 2400-2483.5 MHz, and 5725-5850 MHz.	2013
	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices	
	Federal Communications Commission Office of Engineering and Technology Laboratory Division	
KDB 558074 D01	GUIDANCE FOR COMPLIANCE MEASUREMENTS ON DIGITAL TRANSMISSION SYSTEM, FREQUENCY HOPPING SPREAD SPECTRUM SYSTEM, AND HYBRID SYSTEM DEVICES OPERATING UNDER SECTION 15.247 OF THE FCC RULES	2019

5. LABORATORY ENVIRONMENT

Conducted RF performance testing is performed in shielding room.

EMC performance testing is performed in Semi-anechoic chamber.

6. Test Results

6.1. Summary of Test Results

SUMMARY OF MEASUREMENT RESULTS	Sub-clause of Part15C	Sub-clause of IC	Verdict
Maximum Peak Output Power	15.247 (b)	/	P
Peak Power Spectral Density	15.247 (e)	/	P
Occupied 6dB Bandwidth	15.247 (a)	/	P
Band Edges Compliance	15.247 (d)	/	P
Transmitter Spurious Emission - Conducted	15.247 (d)	/	P
Radiated Unwanted Emission	15.247, 15.205, 15.209	/	P
AC Powerline Conducted Emission	15.107, 15.207	/	P

Please refer to **ANNEX A** for detail.

Terms used in Verdict column

P	Pass, The EUT complies with the essential requirements in the standard.
NP	Not Perform, The test was not performed by CTTL
NA	Not Applicable, The test was not applicable
F	Fail, The EUT does not comply with the essential requirements in the standard

6.2. Statements

CTTL has evaluated the test cases as listed in section 6.1 of this report for the EUT specified in section 3 according to the standards or reference documents listed in section 4.

This report only deals with the WLAN function among the features described in section 3.

6.3. Test Conditions

For this report, all the test cases are tested under normal temperature and normal voltage, and also under norm humidity, the specific condition is shown as follows:

Temperature	26°C
Voltage	3.8V
Humidity	44%

7. Test Facilities Utilized

Conducted test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibration Due date
1	Vector Signal Analyzer	FSQ40	200089	Rohde & Schwarz	1 year	2025-07-04
2	Vector Signal Analyzer	FSW67	104051	Rohde & Schwarz	1 year	2025-03-06
3	Test Receiver	ESCI 3	100344	R&S	1 year	2025-04-01
4	LISN	ENV216	101200	R&S	1 year	2025-05-16
5	Attenuator	10dB/2W	/	Rosenberger	/	/
6	Shielding Room	S81	/	ETS-Lindgren	/	/

Radiated emission test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibration Due date
1	Test Receiver	ESW44	103144	R&S	1 year	2024-11-26
2	EMI Antenna	VULB 9163	01223	SCHWARZBECK	1 year	2024-08-18
3	EMI Antenna	3115	00167250	ETS-Lindgren	1 year	2025-05-11

Note: The equipment was in Calibration Due date when used.

8. Measurement Uncertainty

8.1. Maximum Output Power

Measurement Uncertainty: 0.387dB,k=1.96

8.2. Peak Power Spectral Density

Measurement Uncertainty: 0.705dB,k=1.96

8.3. DTS 6-dB Signal Bandwidth

Measurement Uncertainty: 60.80Hz,k=1.96

8.4. Band Edges Compliance

Measurement Uncertainty : 0.62dB,k=1.96

8.5. Transmitter Spurious Emission

Conducted (k=1.96)

Frequency Range	Uncertainty(dB)
$30\text{MHz} \leq f \leq 2\text{GHz}$	1.22
$2\text{GHz} \leq f \leq 3.6\text{GHz}$	1.22
$3.6\text{GHz} \leq f \leq 8\text{GHz}$	1.22
$8\text{GHz} \leq f \leq 12.75\text{GHz}$	1.51
$12.75\text{GHz} \leq f \leq 26\text{GHz}$	1.51
$26\text{GHz} \leq f \leq 40\text{GHz}$	1.59

8.6. Radiated Unwanted Emission

Frequency Range	Uncertainty(dB) k=2
9kHz-30MHz	/
$30\text{MHz} \leq f \leq 1\text{GHz}$	4.72
$1\text{GHz} \leq f \leq 18\text{GHz}$	4.84
$18\text{GHz} \leq f \leq 40\text{GHz}$	5.12

8.7. AC Power-line Conducted Emission

Measurement Uncertainty : 3.08dB,k=2

ANNEX A: Detailed Test Results

A.1. Measurement Method

A.1.1. Conducted Measurements

Connect the EUT to the test system as Fig.A.1.1.1 shows.

Set the EUT to the required work mode.

Set the EUT to the required channel.

Set the Vector Signal Analyzer and start measurement.

Record the values. Vector Signal Analyzer

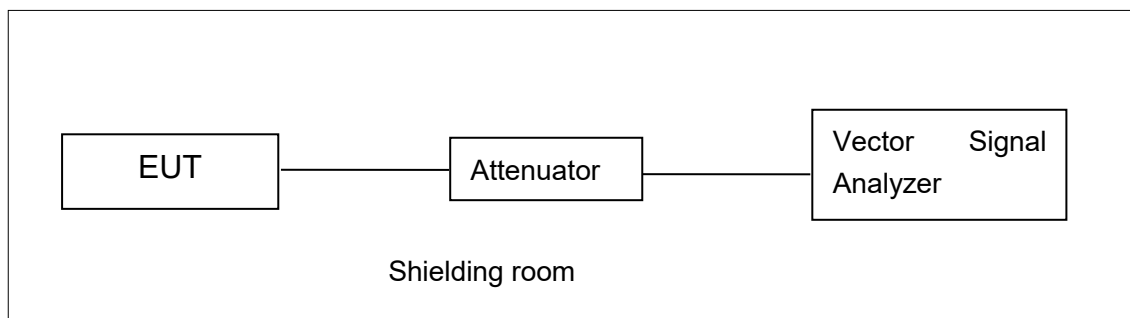


Fig.A.1.1.1: Test Setup Diagram for Conducted Measurements

A.1.2. Radiated Emission Measurements

The measurement is made according to ANSI C63.10

The radiated emission test is performed in semi-anechoic chamber. The EUT was placed on a non-conductive table with 80cm above the ground plane for measurement below 1GHz and 1.5m above the ground plane for measurement above 1GHz. The measurement antenna was placed at a distance of 3 meters from the EUT. The test is carried out on both vertical and horizontal polarization and only maximization result of both polarizations is kept. During the test, the turntable is rotated from 0° to 360° and the measurement antenna is moved from 1m to 4m to get the maximization result. The maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

A.2. Maximum Output Power

Method of Measurement: See ANSI C63.10-2013-clause 11.9.1.3

The maximum peak conducted output power may be measured using a broadband peak RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall use a fast-responding diode detector.

Measurement Limit:

Standard	Limit (dBm)
FCC CRF Part 15.247(b)	< 30

A.2.1. Peak Output Power-conducted

EUT ID: UT55a

Measurement Results:

802.11b/g mode

Mode	Data Rate (Mbps)	Test Result (dBm)		
		2412MHz (Ch1)	2437MHz (Ch6)	2462 MHz (Ch11)
802.11b	1	21.52	21.02	22.07
	2	21.43	/	/
	5.5	21.50	/	/
	11	21.24	/	/
802.11g	6	23.32	22.74	23.86
	9	23.31	/	/
	12	23.08	/	/
	18	23.16	/	/
	24	23.29	/	/
	36	23.32	/	/
	48	23.18	/	/
	54	23.11	/	/

The data rate 1Mbps and 6Mbps are selected as worst condition, and the following cases are performed with this condition.

802.11n-HT20 mode

Mode	Data Rate (Index)	Test Result (dBm)		
		2412MHz (Ch1)	2437MHz (Ch6)	2462 MHz (Ch11)
802.11n (20MHz)	MCS0	22.95	22.46	23.40
	MCS1	22.79	/	/
	MCS2	22.75	/	/
	MCS3	22.73	/	/
	MCS4	22.70	/	/
	MCS5	22.93	/	/
	MCS6	22.85	/	/
	MCS7	22.95	/	/

The data rate MCS0 is selected as worst condition, and the following cases are performed with this condition.

802.11n-HT40 mode

Mode	Data Rate (Index)	Test Result (dBm)		
		2422MHz (Ch3)	2437MHz (Ch6)	2452 MHz (Ch9)
802.11n (40MHz)	MCS0	23.57	23.97	23.78
	MCS1	23.55	/	/
	MCS2	23.45	/	/
	MCS3	23.00	/	/
	MCS4	23.12	/	/
	MCS5	23.51	/	/
	MCS6	23.33	/	/
	MCS7	23.24	/	/

The data rate MCS0 is selected as worst condition, and the following cases are performed with this condition.

The duty cycle of all mode are 100%

Conclusion: Pass

A.3. Peak Power Spectral Density

Method of Measurement: See ANSI C63.10-2013-clause 11.10.2

- a) Set analyzer center frequency to DTS channel center frequency.
- b) Set the span to 1.5 times the DTS bandwidth.
- c) Set the RBW to RBW = 3 kHz.
- d) Set the VBW = 10 kHz.
- e) Detector = peak.
- f) Sweep time = auto couple.
- g) Trace mode = max hold.
- h) Allow trace to fully stabilize.
- i) Use the peak marker function to determine the maximum amplitude level within the RBW.

Measurement Limit:

Standard	Limit
FCC CRF Part 15.247(e)	< 8 dBm/3 kHz

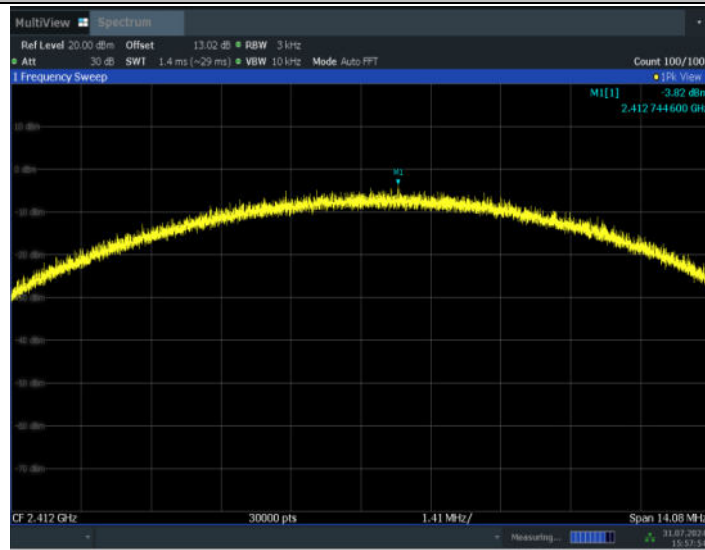
EUT ID: UT55a

Measurement Results:

TestMode	Antenna	Frequency[MHz]	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-3.82	≤8.00	PASS
		2437	-4.09	≤8.00	PASS
		2462	-3.98	≤8.00	PASS
11G	Ant1	2412	-8.15	≤8.00	PASS
		2437	-9.19	≤8.00	PASS
		2462	-8.13	≤8.00	PASS
11N20SISO	Ant1	2412	-9.16	≤8.00	PASS
		2437	-9.44	≤8.00	PASS
		2462	-8.51	≤8.00	PASS
11N40SISO	Ant1	2422	-11.88	≤8.00	PASS
		2437	-11.40	≤8.00	PASS
		2452	-12.08	≤8.00	PASS

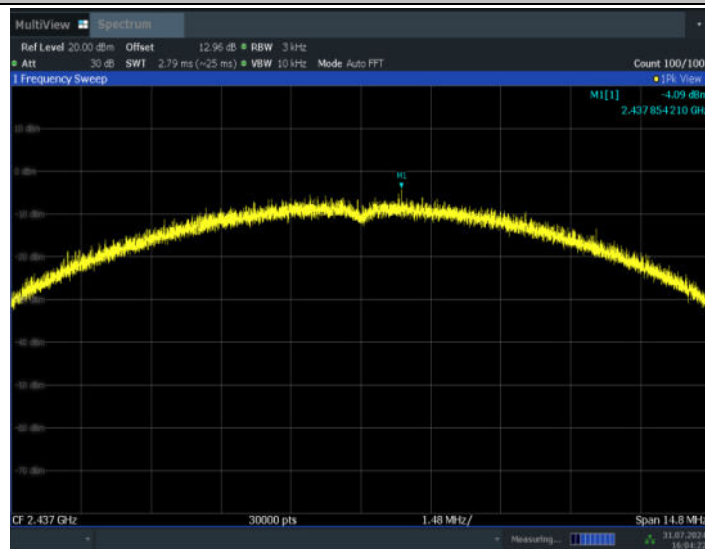
Test graphs as below:

11B_Ant1_2412



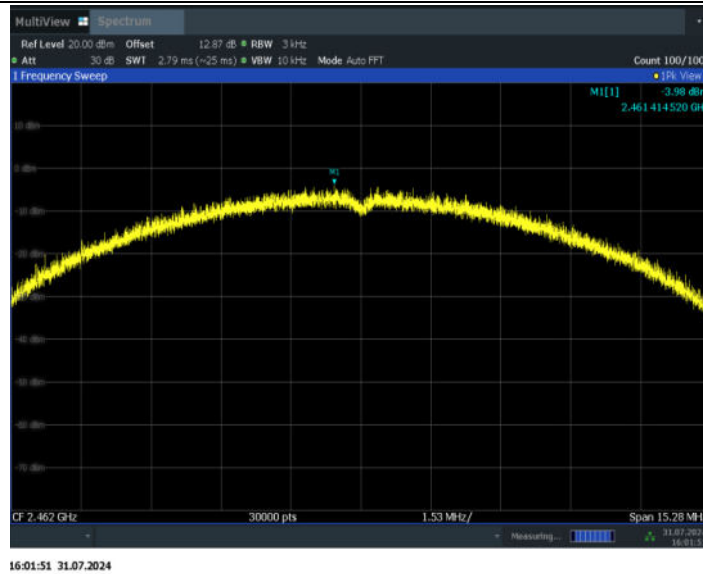
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11B_Ant1_2437



16:04:23 31.07.2024

11B_Ant1_2462



11G_Ant1_2412



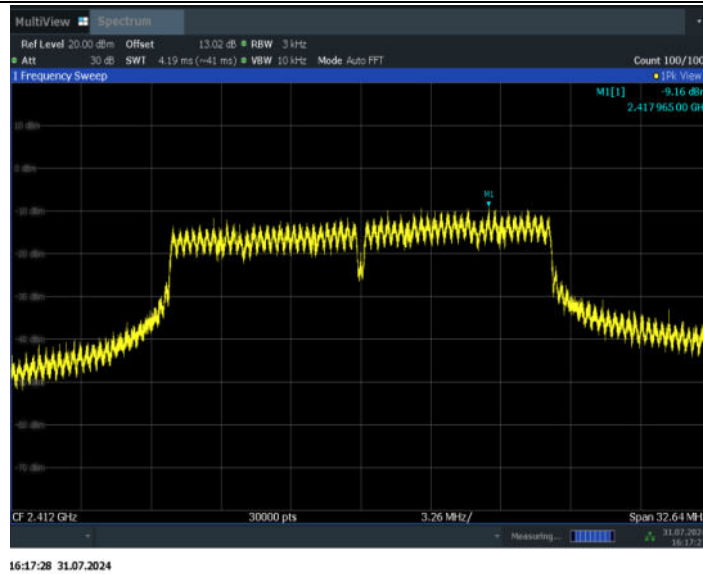
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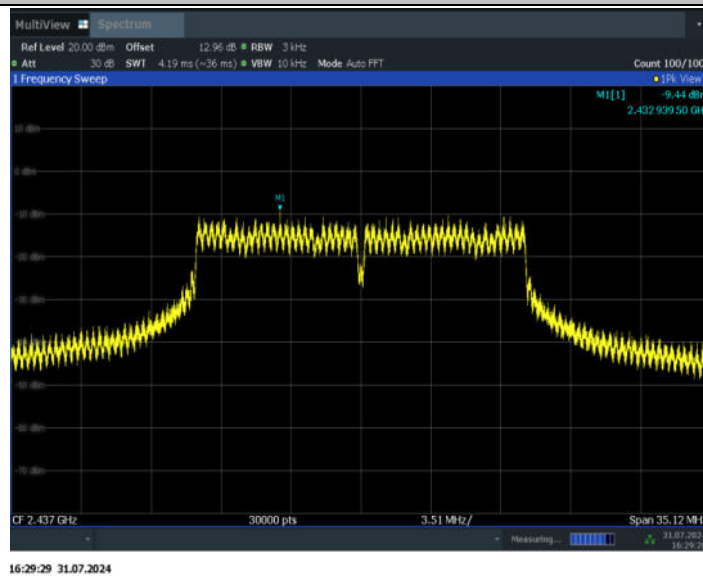
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11N20SISO_Ant1_2412



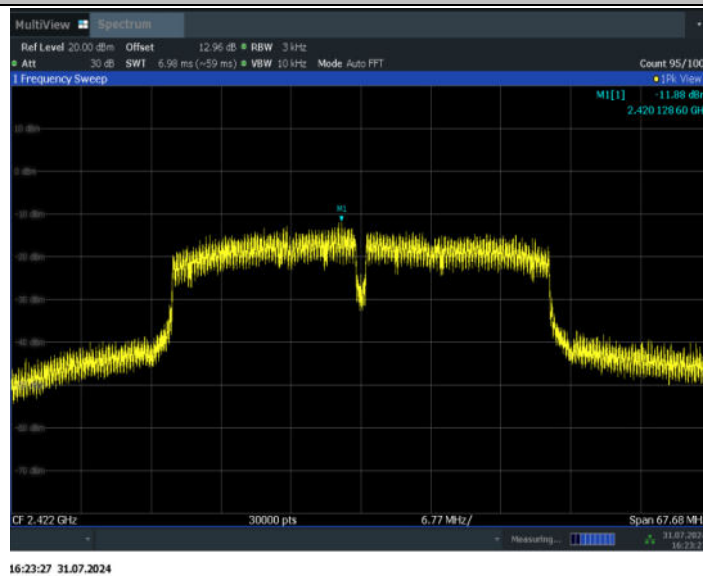
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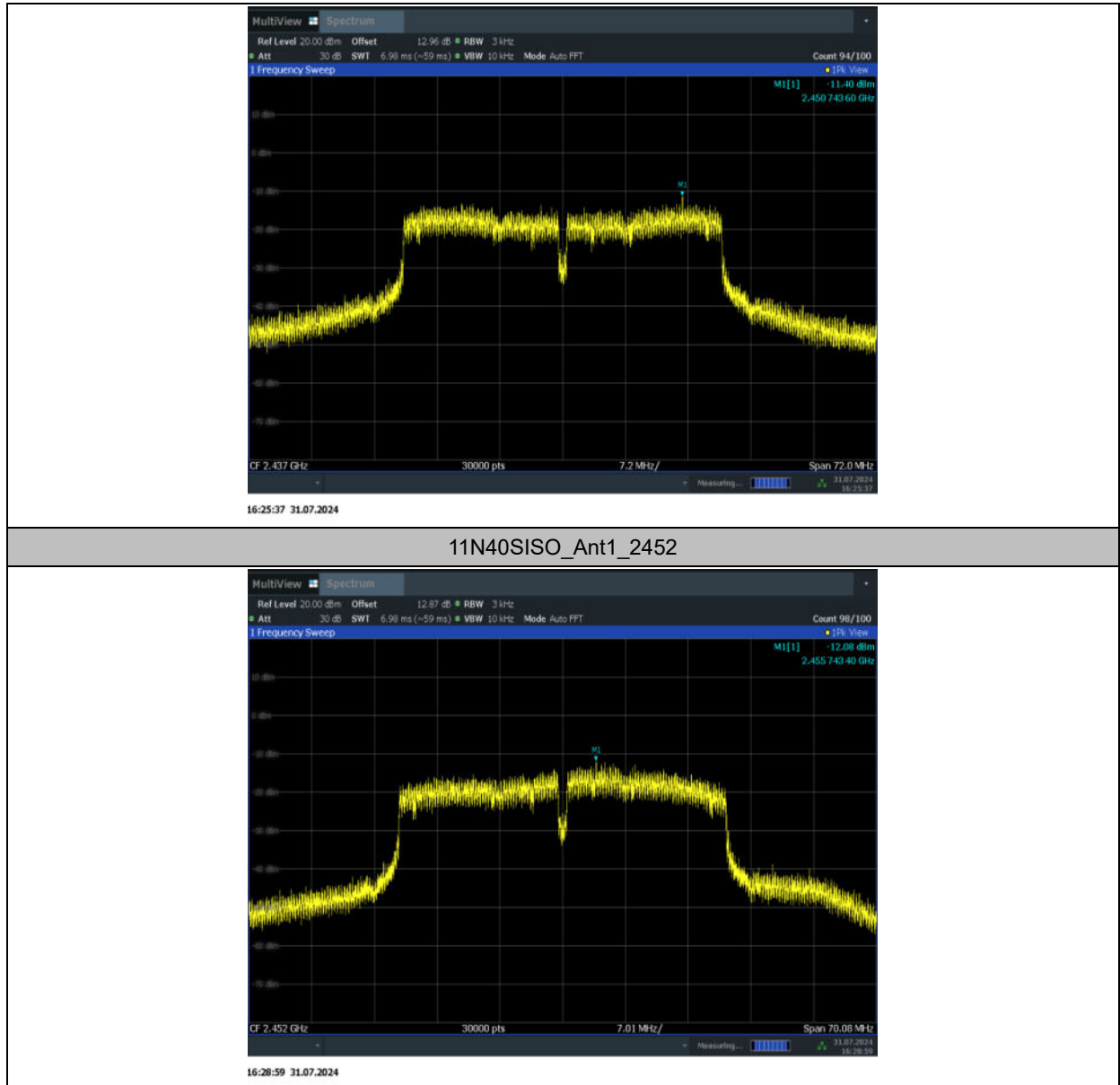
11N20SISO_Ant1_2462



11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



Conclusion: Pass

A.4. DTS 6-dB Signal Bandwidth

Method of Measurement: See ANSI C63.10-2013 section 11.8.1.

- Set RBW = 100 kHz.
- Set the video bandwidth (VBW) = 300 kHz.
- Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- Allow the trace to stabilize.
- Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

Measurement Limit:

Standard	Limit (kHz)
FCC 47 CFR Part 15.247 (a)	≥ 500

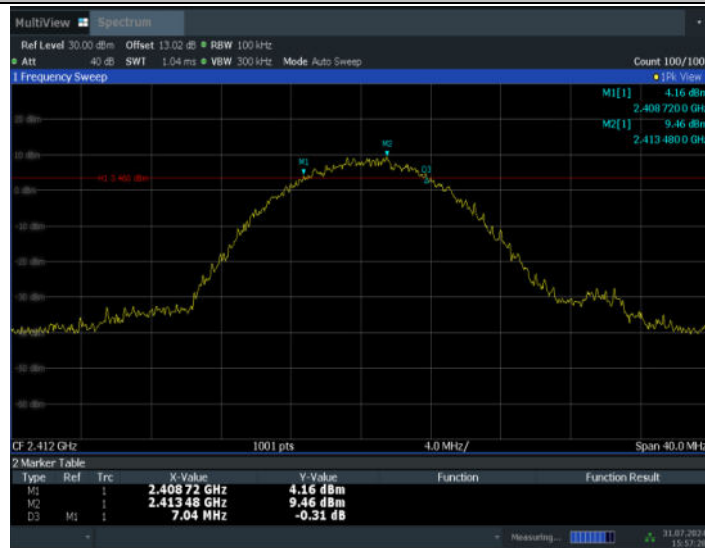
EUT ID: UT55a

Measurement Result:

TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	7.04	2408.72	2415.76	0.5	PASS
		2437	7.40	2433.08	2440.48	0.5	PASS
		2462	7.64	2457.84	2465.48	0.5	PASS
11G	Ant1	2412	15.72	2404.44	2420.16	0.5	PASS
		2437	16.36	2428.80	2445.16	0.5	PASS
		2462	15.76	2453.80	2469.56	0.5	PASS
11N20SISO	Ant1	2412	16.32	2404.44	2420.76	0.5	PASS
		2437	17.56	2428.20	2445.76	0.5	PASS
		2462	16.36	2453.20	2469.56	0.5	PASS
11N40SISO	Ant1	2422	33.84	2405.68	2439.52	0.5	PASS
		2437	36.00	2419.16	2455.16	0.5	PASS
		2452	35.04	2434.48	2469.52	0.5	PASS

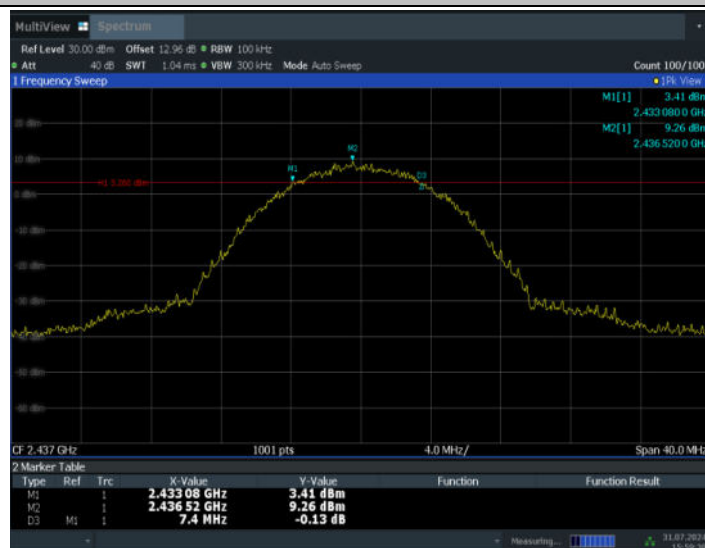
Test graphs as below:

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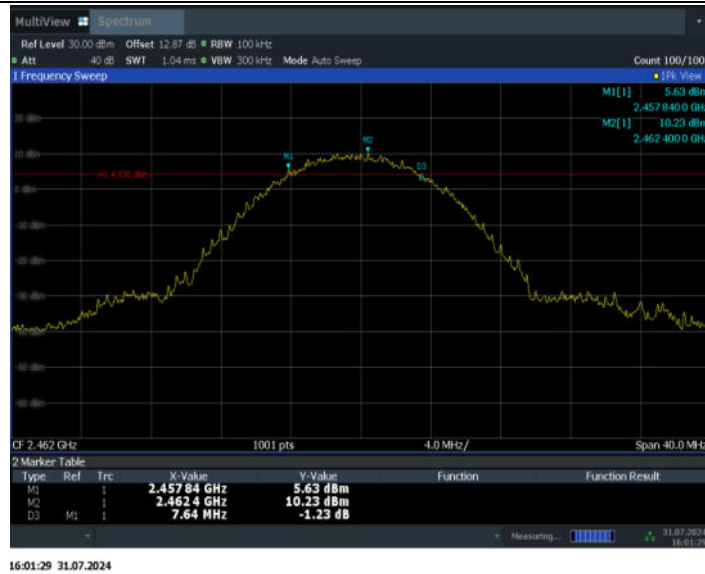
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11B_Ant1_2437

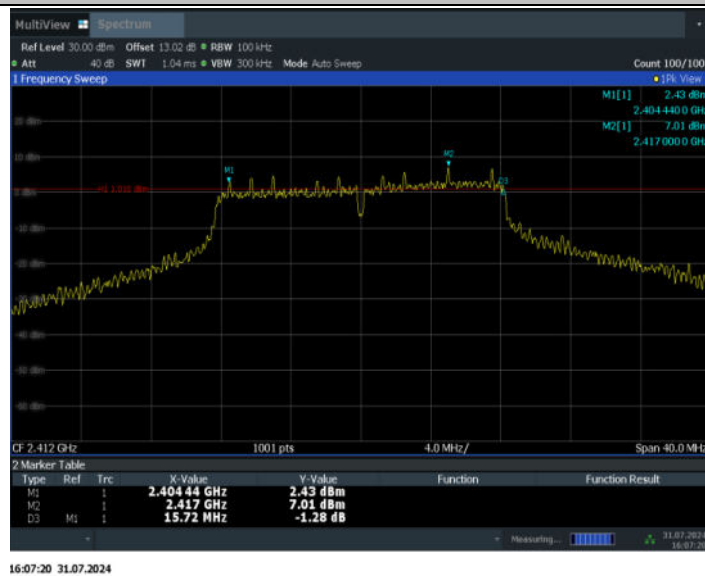


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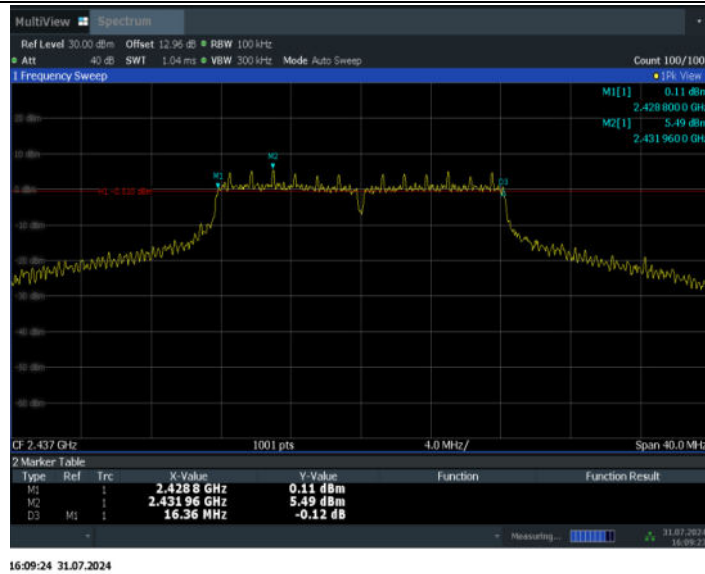
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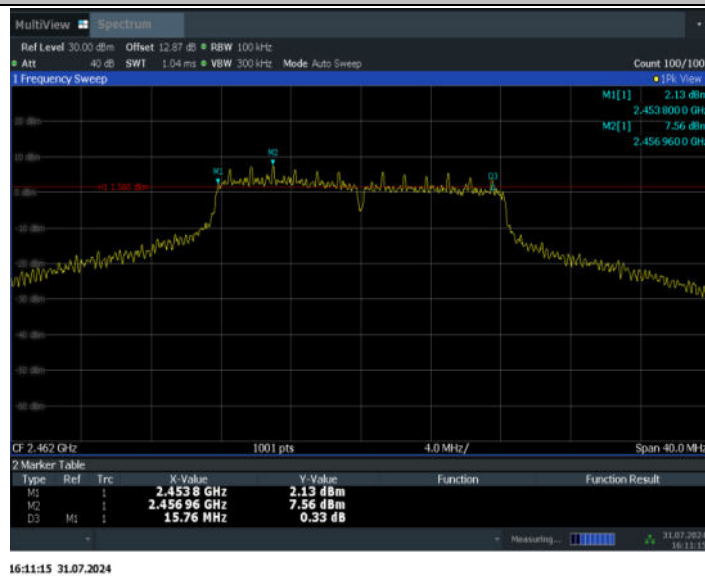
11G_Ant1_2412



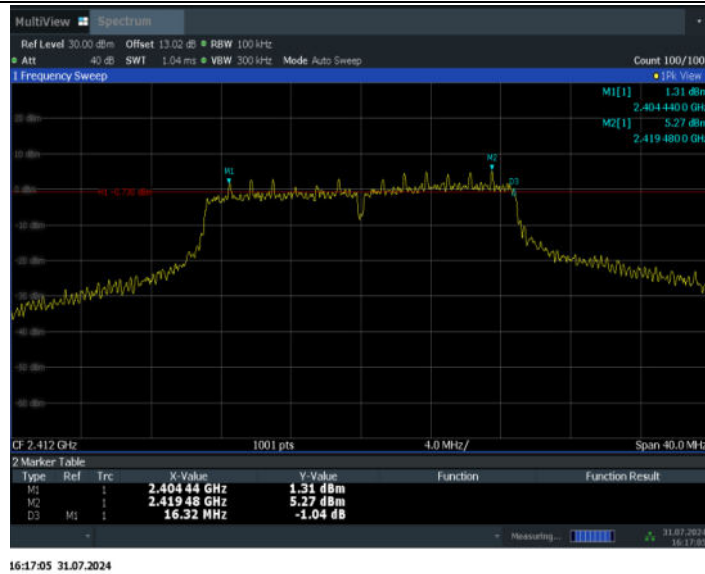
11G_Ant1_2437



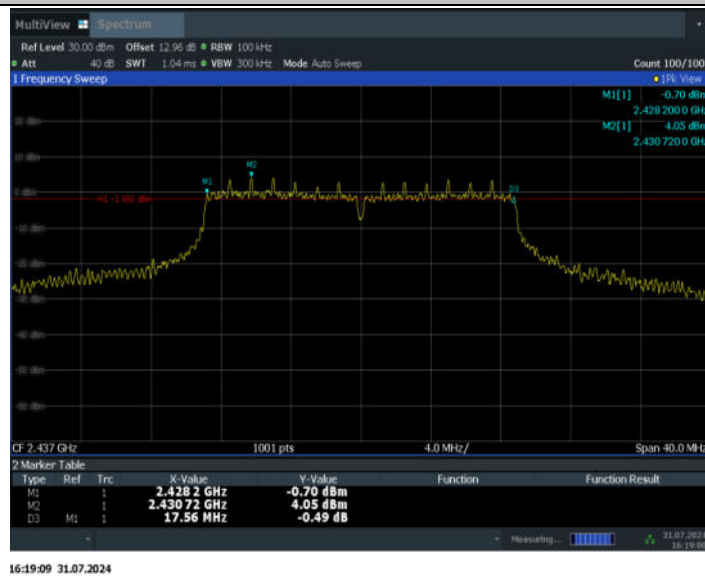
11G_Ant1_2462



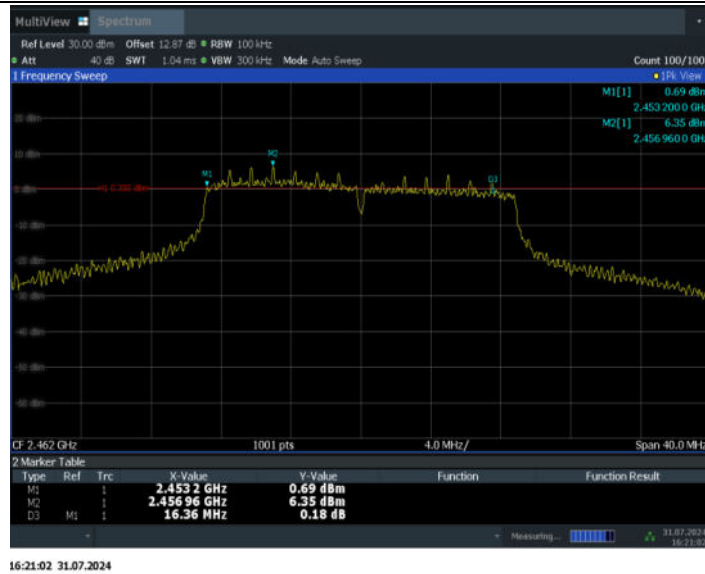
11N20SISO_Ant1_2412



11N20SISO_Ant1_2437



11N20SISO_Ant1_2462



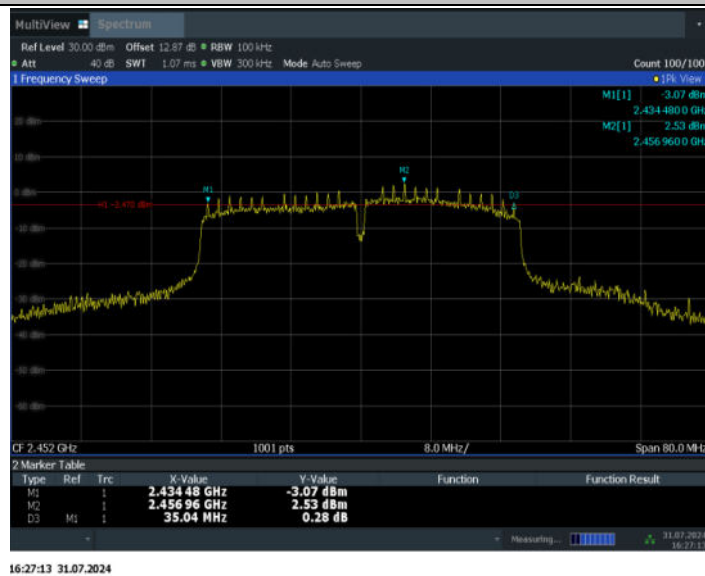
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



Conclusion: Pass

A.5. Band Edges Compliance

Method of Measurement: See ANSI C63.10-2013-clause 6.10.4

Connect the spectrum analyzer to the EUT using an appropriate RF cable connected to the EUT output. Configure the spectrum analyzer settings as described below.

- a) Set Span = 100MHz
- b) Sweep Time: coupled
- c) Set the RBW= 100 kHz
- c) Set the VBW= 300 kHz
- d) Detector: Peak
- e) Trace: Max hold

Measurement Limit:

Standard	Limit (dBc)
FCC 47 CFR Part 15.247 (d)	> 20

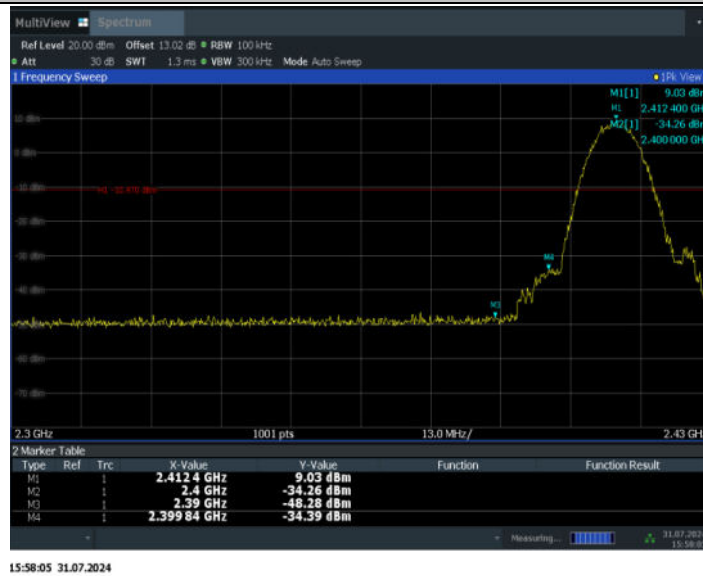
EUT ID: UT55a

Measurement Result:

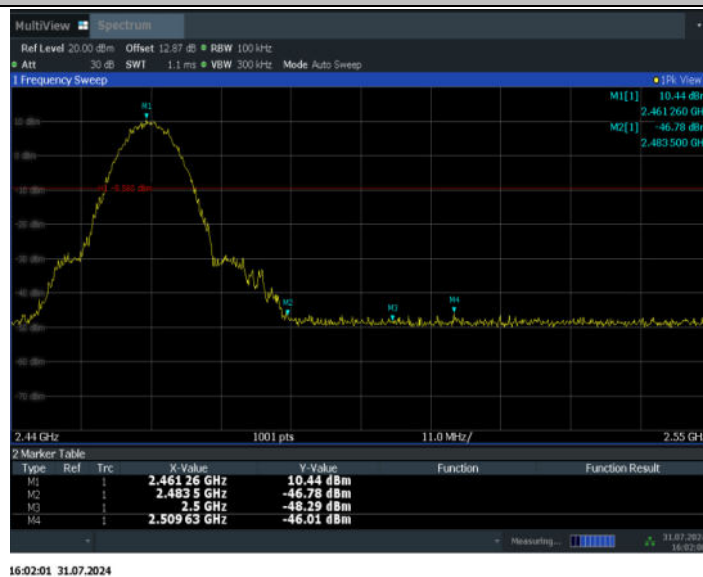
TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	9.03	-34.39	≤-10.97	PASS
		High	2462	10.44	-46.01	≤-9.56	PASS
11G	Ant1	Low	2412	6.34	-20.56	≤-13.66	PASS
		High	2462	7.46	-31.68	≤-12.54	PASS
11N20SISO	Ant1	Low	2412	5.34	-24.35	≤-14.66	PASS
		High	2462	6.23	-32.98	≤-13.77	PASS
11N40SISO	Ant1	Low	2422	2.47	-24.52	≤-17.53	PASS
		High	2452	2.54	-27.82	≤-17.46	PASS

Test graphs as below:

11B_Ant1_Low_2412



11B_Ant1_High_2462



11G_Ant1_Low_2412



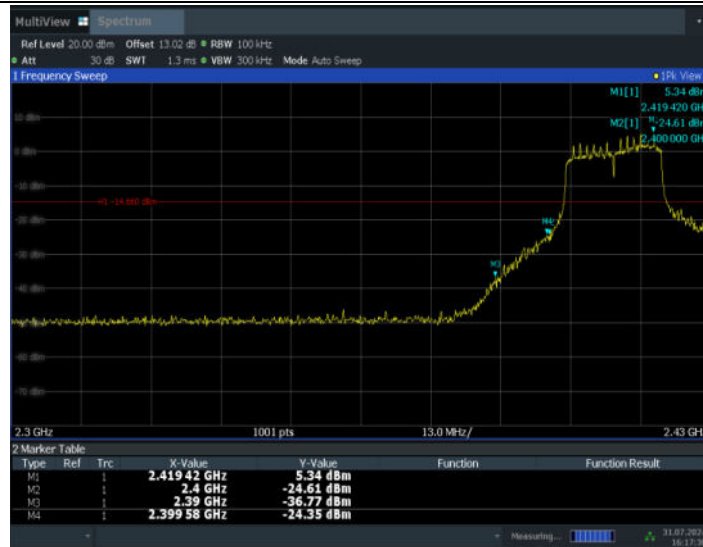
16:07:54 31.07.2024

11G_Ant1_High_2462



16:11:45 31.07.2024

11N20SISO_Ant1_Low_2412



16:17:38 31.07.2024

11N20SISO_Ant1_High_2462



16:21:33 31.07.2024

11N40SISO_Ant1_Low_2422



16:23:38 31.07.2024

11N40SISO_Ant1_High_2452



16:27:44 31.07.2024

Conclusion: Pass

A.6. Transmitter Spurious Emission

A.6.1 Transmitter Spurious Emission – Conducted

Method of Measurement: See ANSI C63.10-2013-clause 11.11

Establish a reference level by using the following procedure:

- a) Set instrument center frequency to DTS channel center frequency
- b) Set the span to ≥ 1.5 times the DTS bandwidth
- c) Set the RBW= 100 kHz
- d) Set the VBW= 300 kHz
- e) Detector = Peak
- f) Sweep time = auto couple
- g) Trace mode = max hold
- h) Allow trace to fully stabilize
- i) Use the peak marker function to determine the maximum PSD level

Note that the channel found to contain the maximum PSD level can be used to establish the reference level.

Establish an emission level by using the following procedure:

- a) Set the center frequency and span to encompass frequency range to be measured.
- b) Set the RBW = 100 kHz.
- c) Set the VBW = 300 kHz.
- d) Detector = peak.
- e) Sweep time = auto couple.
- f) Trace mode = max hold.
- g) Allow trace to fully stabilize.
- h) Use the peak marker function to determine the maximum amplitude level.

Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) is attenuated by at least the minimum requirements specified in 11.11. Report the three highest emissions relative to the limit.

Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.247 (d)	20dB below peak output power in 100 kHz bandwidth

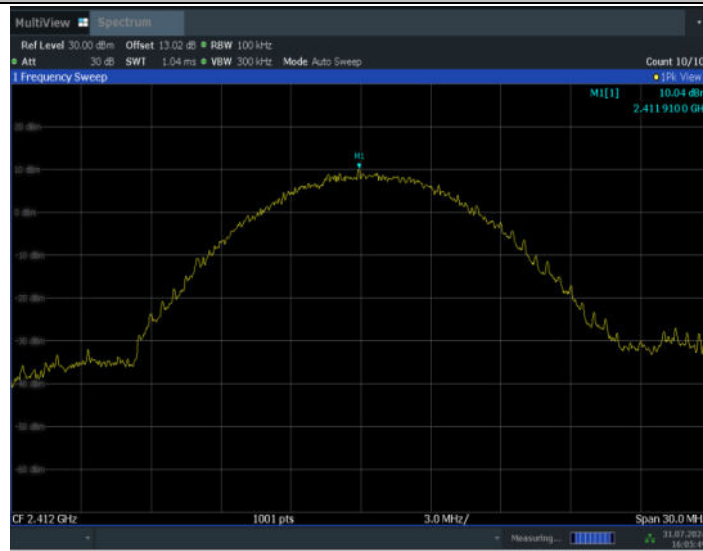
EUT ID: UT55a

Measurement Results:

TestMode	Antenna	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	10.04	10.04	---	PASS
			30~1000	10.04	-56.5	≤ -9.96	PASS
			1000~26500	10.04	-38.31	≤ -9.96	PASS
		2437	Reference	9.81	9.81	---	PASS
			30~1000	9.81	-56.79	≤ -10.19	PASS
			1000~26500	10.30	-43.4	≤ -9.7	PASS
		2462	Reference	10.53	10.53	---	PASS
			30~1000	10.53	-56.95	≤ -9.47	PASS
			1000~26500	10.53	-44.4	≤ -9.47	PASS
11G	Ant1	2412	Reference	6.85	6.85	---	PASS
			30~1000	6.85	-56.16	≤ -13.15	PASS
			1000~26500	6.85	-43.85	≤ -13.15	PASS
		2437	Reference	5.37	5.37	---	PASS
			30~1000	5.37	-56.27	≤ -14.63	PASS
			1000~26500	5.37	-44.33	≤ -14.63	PASS
		2462	Reference	7.41	7.41	---	PASS
			30~1000	7.41	-56.65	≤ -12.59	PASS
			1000~26500	7.41	-44.12	≤ -12.59	PASS
11N20SISO	Ant1	2412	Reference	5.57	5.57	---	PASS
			30~1000	5.57	-56.53	≤ -14.43	PASS
			1000~26500	5.57	-43.81	≤ -14.43	PASS
		2437	Reference	3.94	3.94	---	PASS
			30~1000	3.94	-57.28	≤ -16.06	PASS
			1000~26500	3.94	-44.32	≤ -16.06	PASS
		2462	Reference	6.11	6.11	---	PASS
			30~1000	6.11	-56.95	≤ -13.89	PASS
			1000~26500	6.11	-44.3	≤ -13.89	PASS
11N40SISO	Ant1	2422	Reference	2.51	2.51	---	PASS
			30~1000	2.51	-57.3	≤ -17.49	PASS
			1000~26500	2.51	-44.1	≤ -17.49	PASS
		2437	Reference	2.31	2.31	---	PASS
			30~1000	2.31	-56.82	≤ -17.69	PASS
			1000~26500	2.31	-44.18	≤ -17.69	PASS
		2452	Reference	2.45	2.45	---	PASS
			30~1000	2.45	-56.59	≤ -17.55	PASS
			1000~26500	2.45	-44.13	≤ -17.55	PASS

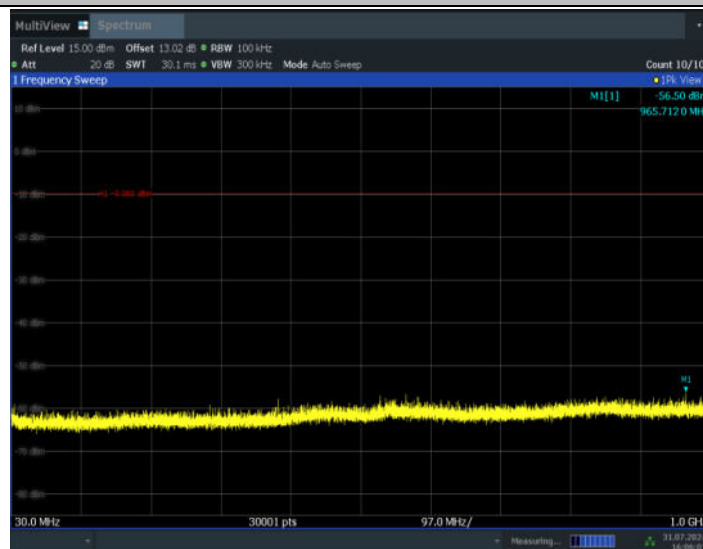
Test graphs as below:

11B_Ant1_2412_0~Reference



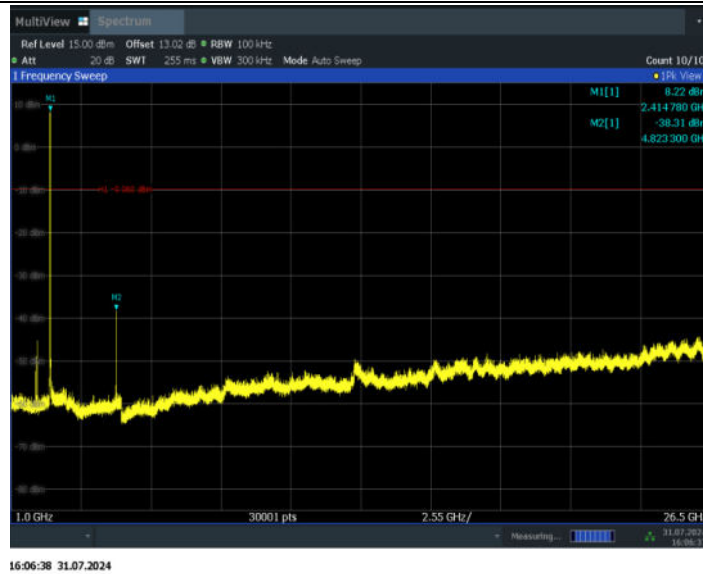
16:05:50 31.07.2024

11B_Ant1_2412_30~1000



16:06:01 31.07.2024

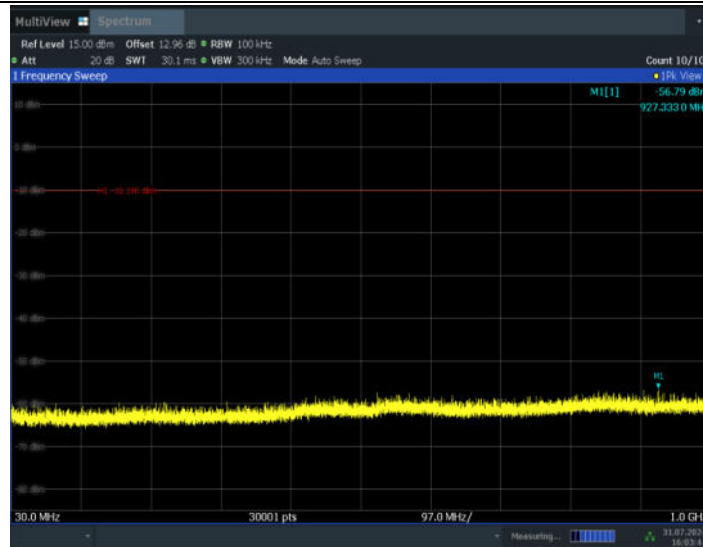
11B_Ant1_2412_1000~26500



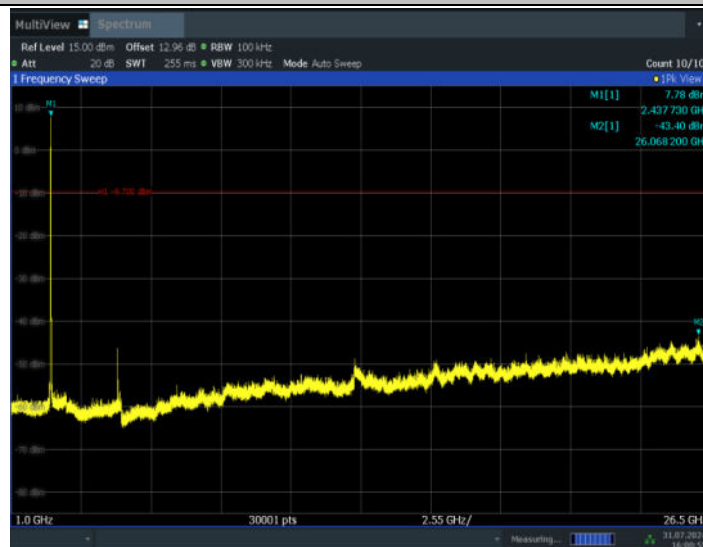
11B_Ant1_2437_0~Reference



11B_Ant1_2437_30~1000



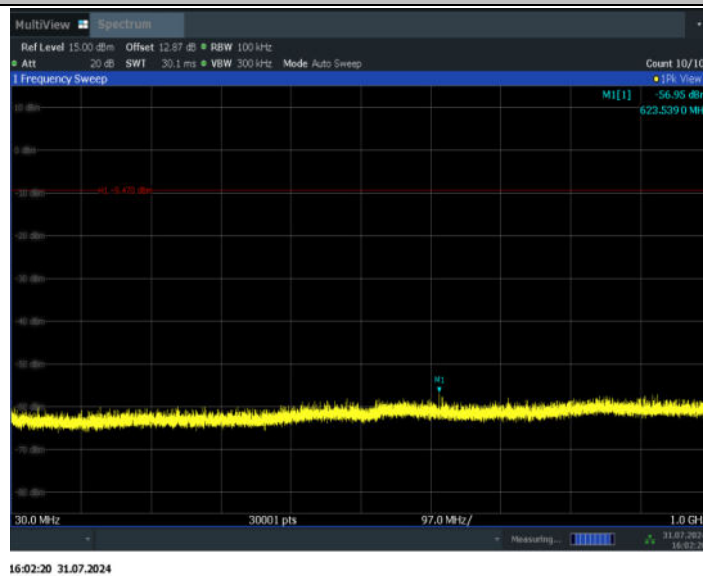
11B_Ant1_2437_1000~26500



11B_Ant1_2462_0~Reference



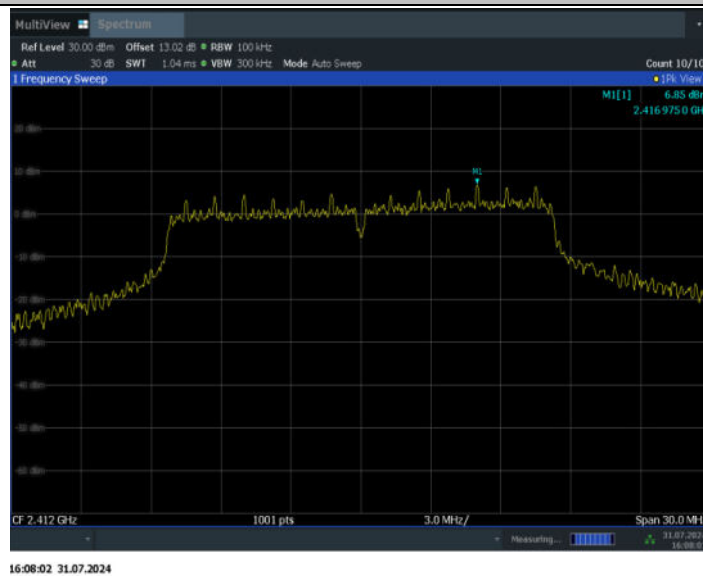
11B_Ant1_2462_30~1000



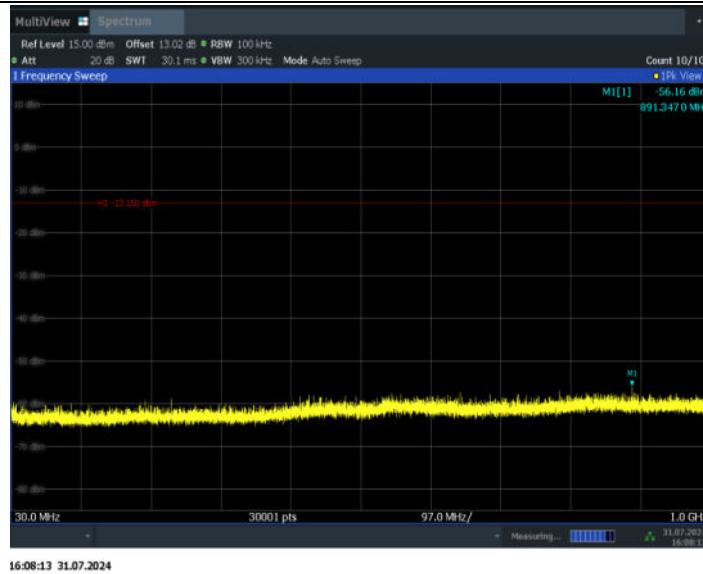
11B_Ant1_2462_1000~26500



11G_Ant1_2412_0~Reference



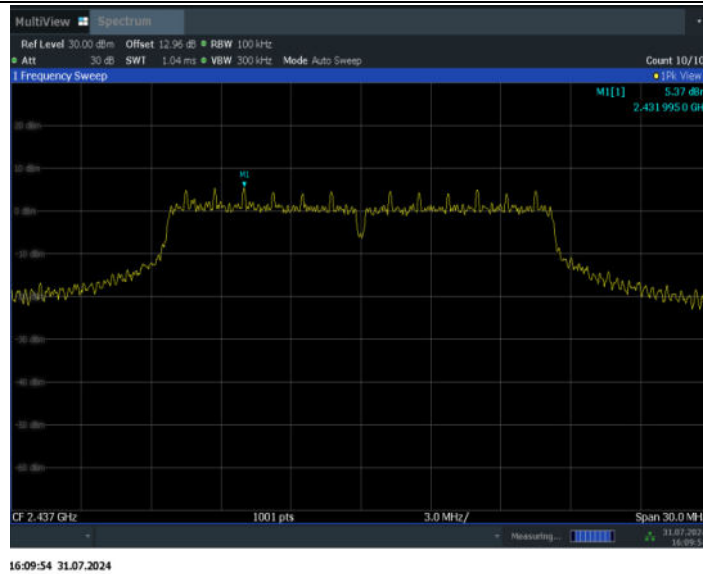
11G_Ant1_2412_30~1000



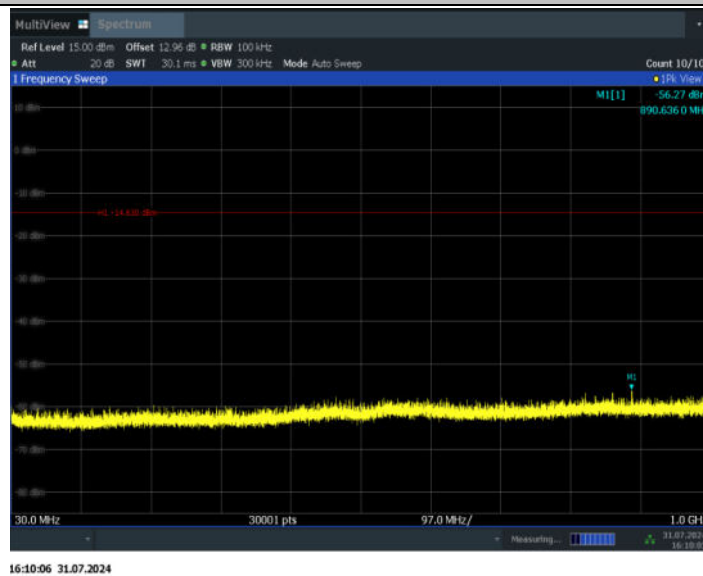
11G_Ant1_2412_1000~26500



11G_Ant1_2437_0~Reference



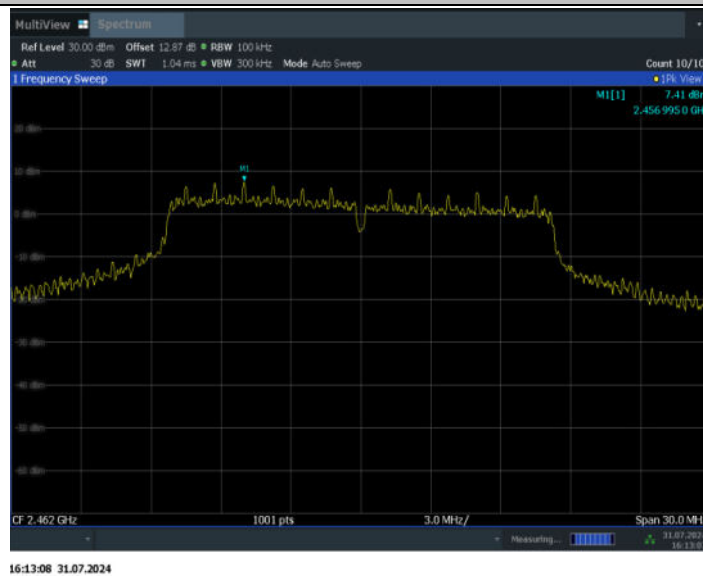
11G_Ant1_2437_30~1000



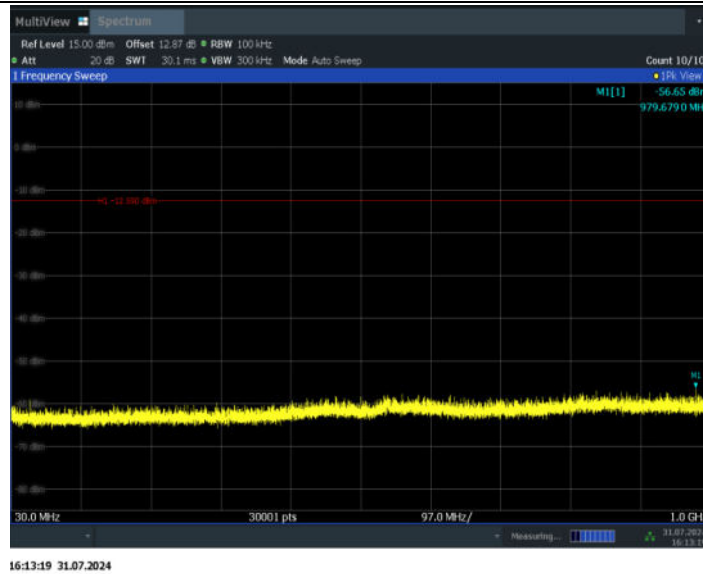
11G_Ant1_2437_1000~26500



11G_Ant1_2462_0~Reference



11G_Ant1_2462_30~1000



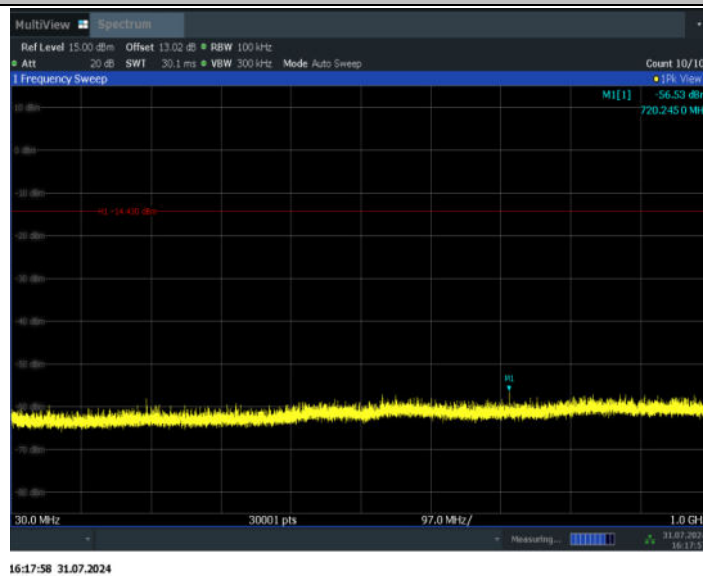
11G_Ant1_2462_1000~26500



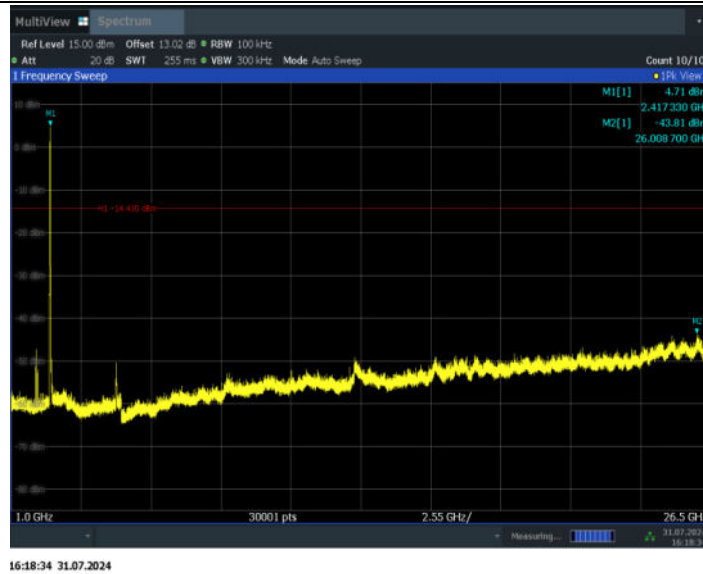
11N20SISO_Ant1_2412_0~Reference



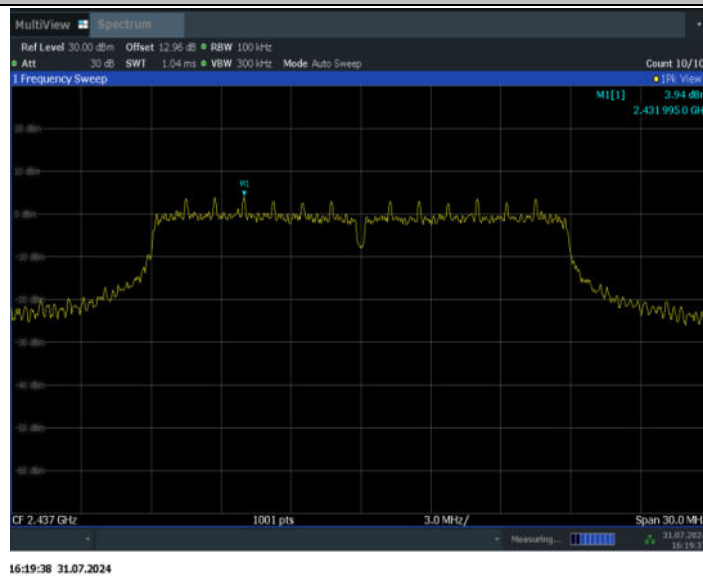
11N20SISO_Ant1_2412_30~1000



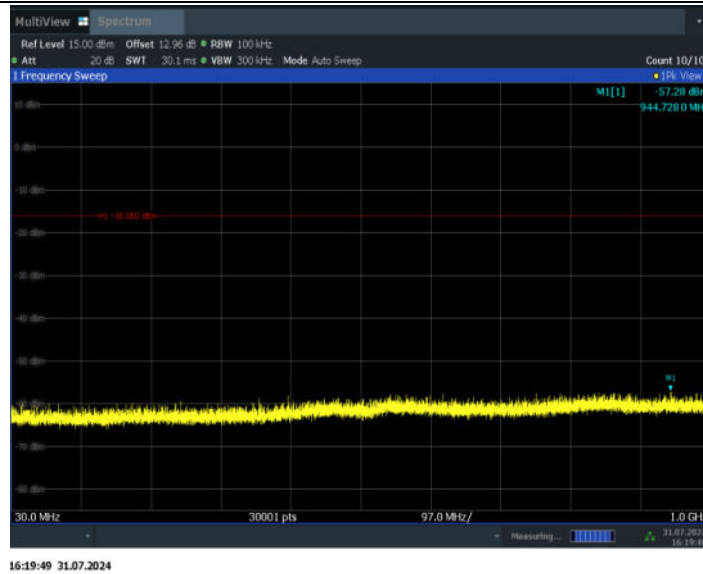
11N20SISO_Ant1_2412_1000~26500



11N20SISO_Ant1_2437_0~Reference



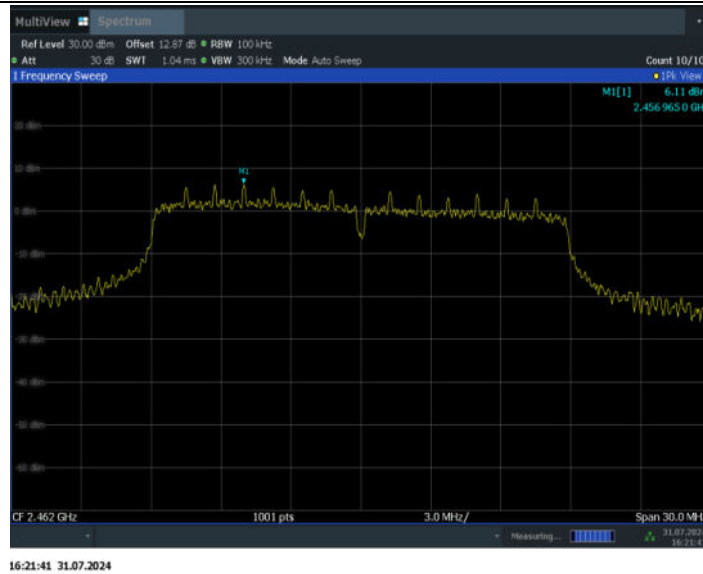
11N20SISO_Ant1_2437_30~1000



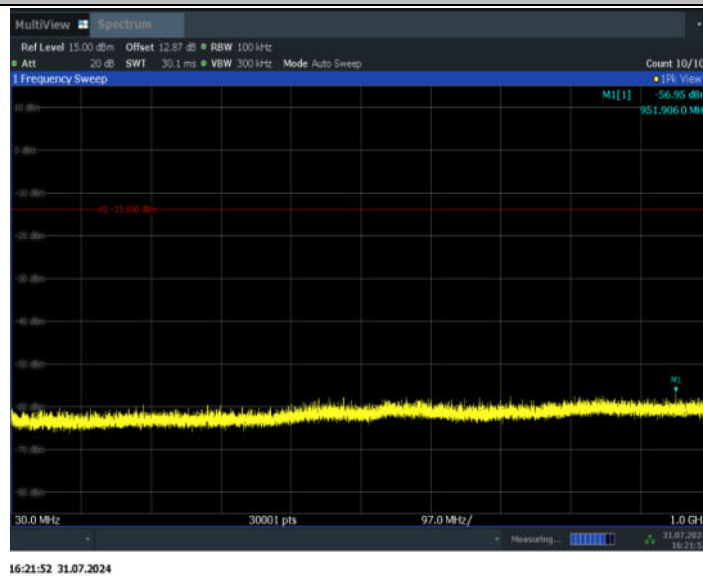
11N20SISO_Ant1_2437_1000~26500



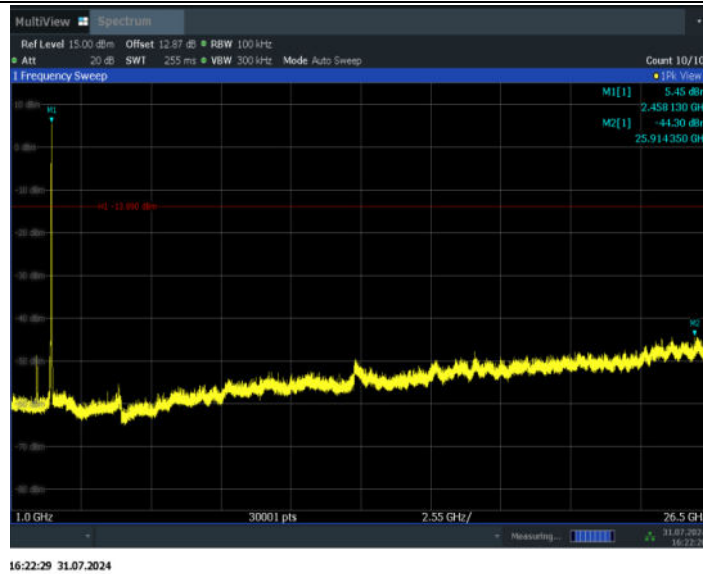
11N20SISO_Ant1_2462_0~Reference



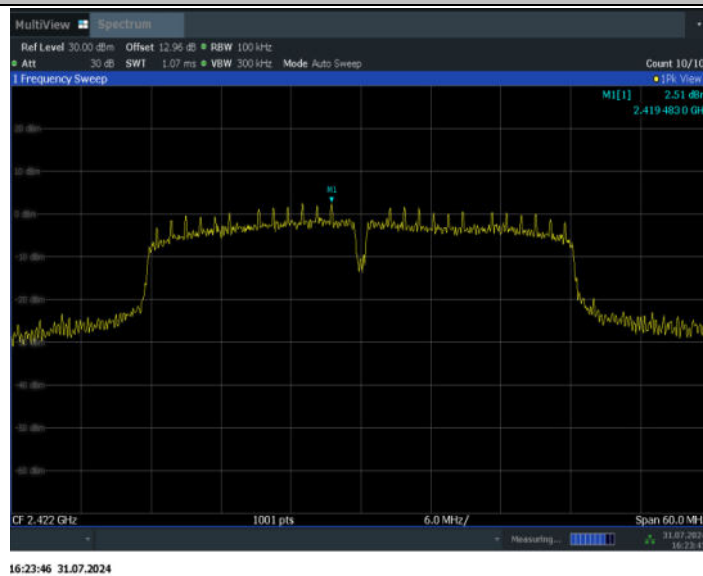
11N20SISO_Ant1_2462_30~1000



11N20SISO_Ant1_2462_1000~26500



11N40SISO_Ant1_2422_0~Reference



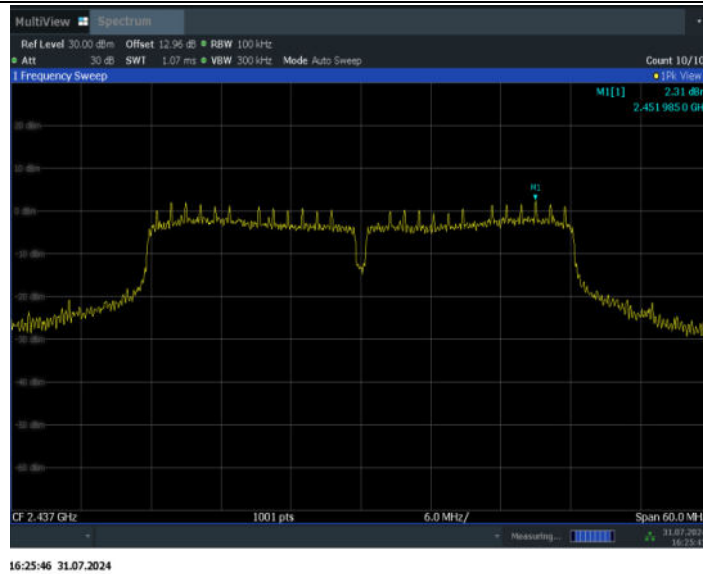
11N40SISO_Ant1_2422_30~1000



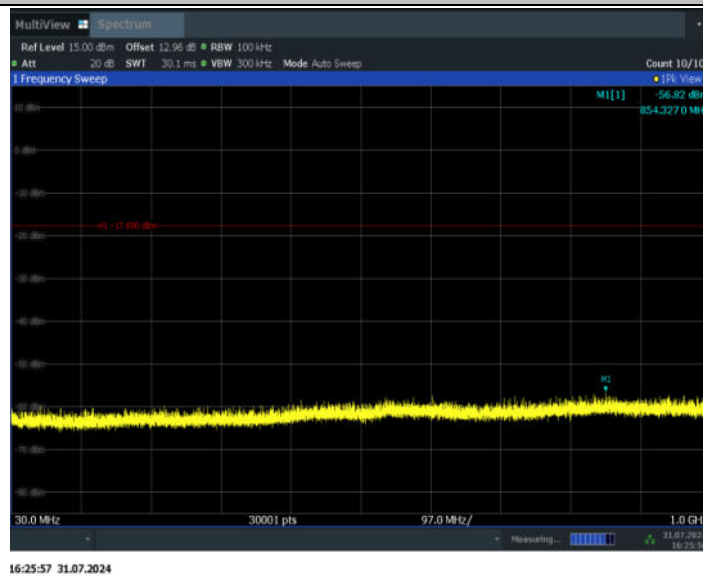
11N40SISO_Ant1_2422_1000~26500



11N40SISO_Ant1_2437_0~Reference



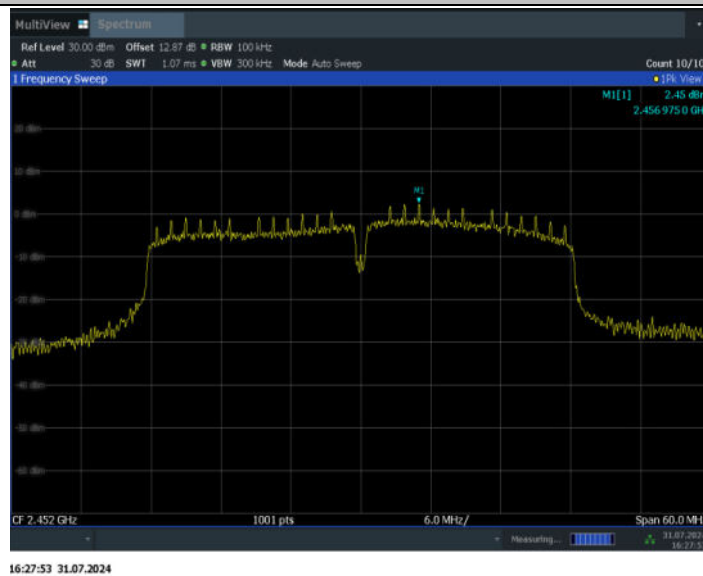
11N40SISO_Ant1_2437_30~1000



11N40SISO_Ant1_2437_1000~26500



11N40SISO_Ant1_2452_0~Reference



11N40SISO_Ant1_2452_30~1000



11N40SISO_Ant1_2452_1000~26500



Conclusion: Pass

A.7. Radiated Unwanted Emission

Limits

Measurement Limit

Standard	Limit
FCC 47 CFR Part 15.247, 15.205, 15.209	20dB below peak output power

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)).

Limit in restricted band

Frequency (MHz)	Field strength($\mu\text{V/m}$)	Measurement distance (m)
0.009 - 0.490	$2400/F(\text{kHz})$	300
0.490 - 1.705	$24000/F(\text{kHz})$	30
1.705 – 30.0	30	30

Frequency of emission (MHz)	Field strength ($\mu\text{V/m}$)	Field strength (dBuV/m)	Measurement distance (m)
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

Note: When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor.

Test setup

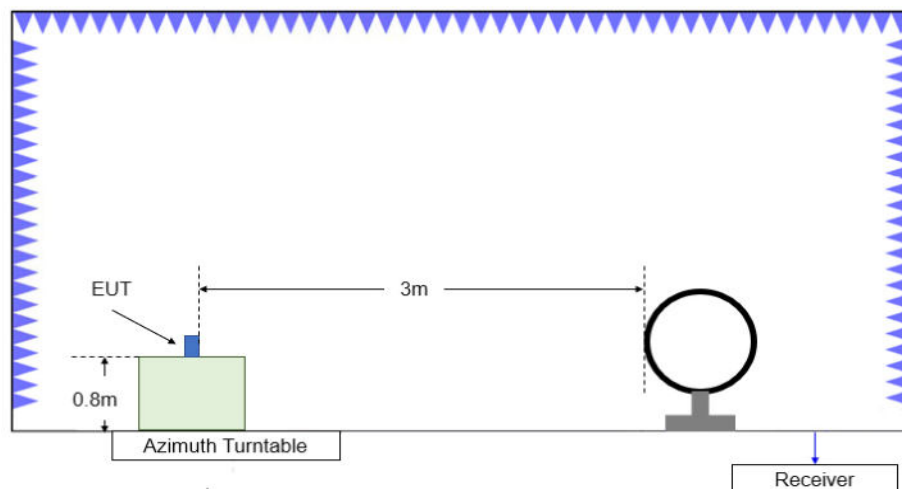


Figure A.2.1. Test Site Diagram (9kHz-30MHz)

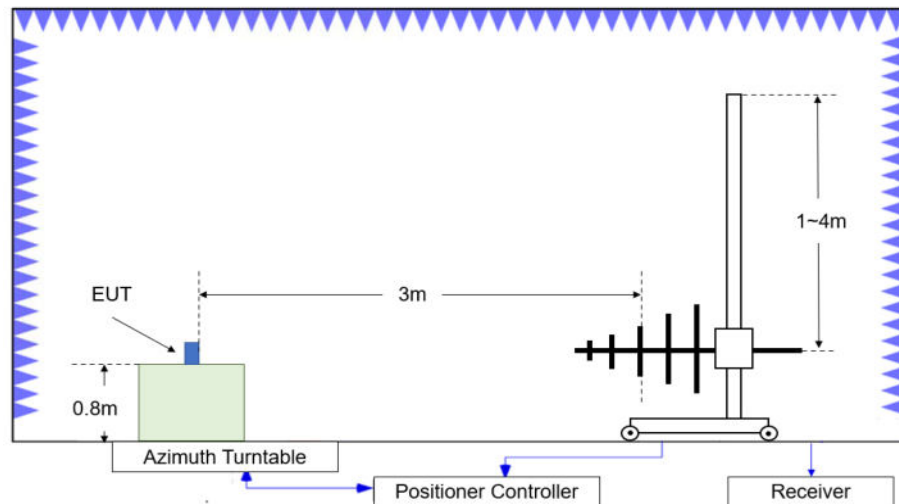


Figure A.2.2. Test Site Diagram (30MHz-1GHz)

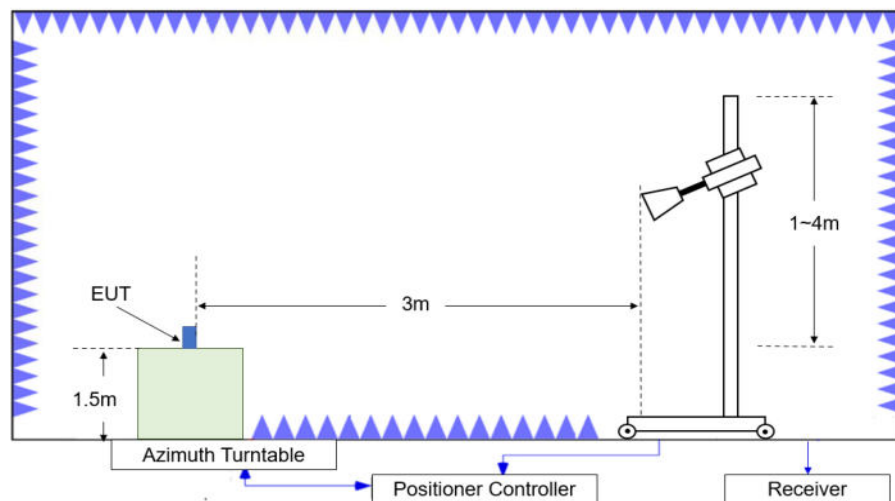


Figure A.2.3. Test Site Diagram (1GHz-40GHz)

Test Procedures

Radiated unwanted emissions from the EUT were measured according to ANSI C63.10.

Test setting

Frequency of emission (MHz)	RBW/VBW	Sweep Time(s)
30-1000	100kHz/300kHz	5
1000-3000	1MHz/3MHz	15
3000-18000	1MHz/3MHz	40
18000-26500	1MHz/3MHz	20

Sample Calculation

A "reference path loss" is established and the A_{Rpl} is the attenuation of "reference path loss", and including the gain of receive antenna, the gain of the preamplifier, the cable loss.

P_{Mea} is the field strength recorded from the instrument.

The measurement results are obtained as described below:

Result= $P_{\text{Mea}}+A_{\text{Rpl}}= P_{\text{Mea}}+\text{Cable Loss}+\text{Antenna Factor}$

Test note

1. The EUT is operating at its maximum duty cycle and its maximum power control level.
2. Investigation has been done on all modes and modulations/data rates. Only the radiated emissions of the configuration that produced the worst case emissions are reported in this section.
3. Spurious emissions for all channels were investigated and almost the same below 1GHz. According to FCC 47 CFR §15.31, emission levels are not report much lower than the limit by over 20dB
4. Measurement frequencies were performed from 9 kHz to the 10th harmonic of highest fundamental frequency or 40GHz, whichever is lower.

Test Result

Peak

802.11b

Ch1

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17520.500	51.86	-29.20	44.50	36.46	74.00	22.14	V
7234.500	51.63	-35.60	36.40	50.83	74.00	22.37	H
13740.500	48.77	-31.00	41.10	38.67	74.00	25.23	V
4823.500	48.60	-37.70	33.00	53.30	74.00	25.40	V
12570.500	46.25	-31.20	39.20	38.25	74.00	27.75	H
2389.700	59.83	-19.80	28.20	51.43	74.00	14.17	H

Ch6

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17461.500	50.89	-28.50	44.20	35.19	74.00	23.11	H
14068.000	47.50	-30.20	41.70	36.00	74.00	26.50	V
11864.000	44.95	-32.80	39.10	38.55	74.00	29.05	V
9169.500	42.67	-34.70	37.70	39.67	74.00	31.33	V
4873.000	42.61	-37.50	33.40	46.71	74.00	31.39	V
7721.000	42.60	-35.90	36.30	42.20	74.00	31.40	V

Ch11

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17586.000	50.75	-29.60	45.10	35.15	74.00	23.25	H
13711.000	47.54	-31.00	41.00	37.54	74.00	26.46	V
11896.000	45.06	-32.40	39.10	38.36	74.00	28.94	V
9228.000	43.02	-34.30	37.60	39.72	74.00	30.98	V
7561.000	42.29	-35.50	36.30	41.49	74.00	31.71	V
2486.100	60.79	-19.70	28.20	52.29	74.00	13.21	H

802.11g

Ch1

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17486.500	50.70	-29.20	44.50	35.30	74.00	23.30	V
14309.500	47.06	-30.40	41.90	35.56	74.00	26.94	V
12794.000	44.44	-31.50	39.80	36.14	74.00	29.56	H
9489.000	42.71	-34.60	37.70	39.61	74.00	31.29	V
4819.500	41.74	-37.70	33.00	46.44	74.00	32.26	H
2389.700	54.49	-19.80	28.20	46.09	74.00	19.51	H

Ch6

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17610.000	50.86	-29.60	45.10	35.26	74.00	23.14	H
13697.000	47.82	-31.00	41.00	37.82	74.00	26.18	H
12657.500	44.36	-31.80	39.40	36.76	74.00	29.64	V
8333.500	42.62	-35.00	37.20	40.42	74.00	31.38	H
7330.000	42.06	-35.90	36.60	41.36	74.00	31.94	H
4876.000	41.85	-37.50	33.40	45.95	74.00	32.15	H

Ch11

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17924.500	51.21	-29.40	46.00	34.61	74.00	22.79	H
13712.500	48.48	-31.00	41.00	38.48	74.00	25.52	V
10968.000	44.50	-33.40	38.50	39.40	74.00	29.50	V
4928.000	43.64	-37.60	33.30	47.94	74.00	30.36	V
8839.000	43.08	-34.50	37.80	39.78	74.00	30.92	V
2485.800	58.99	-19.70	28.20	50.49	74.00	15.01	H

802.11n-HT20
Ch1

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17935.500	50.83	-29.40	46.00	34.23	74.00	23.17	H
13665.000	47.53	-31.00	41.00	37.53	74.00	26.47	V
12661.000	44.31	-31.80	39.40	36.71	74.00	29.69	H
8398.000	42.69	-34.40	37.30	39.79	74.00	31.31	V
7141.000	42.12	-35.60	35.90	41.82	74.00	31.88	V
2351.000	54.01	-19.60	28.20	45.41	74.00	19.99	V

Ch6

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17949.500	50.77	-29.40	46.00	34.17	74.00	23.23	V
13691.500	47.44	-31.00	41.00	37.44	74.00	26.56	H
12756.000	44.83	-31.80	39.60	36.93	74.00	29.17	V
8942.000	42.23	-33.90	37.70	38.43	74.00	31.77	V
7251.500	41.66	-35.60	36.40	40.86	74.00	32.34	V
4866.000	40.45	-37.50	33.40	44.55	74.00	33.55	H

Ch11

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17604.500	50.95	-29.60	45.10	35.35	74.00	23.05	V
13552.500	47.43	-31.50	40.80	38.13	74.00	26.57	V
11810.000	44.79	-32.00	39.20	37.59	74.00	29.21	V
7139.500	43.52	-35.60	35.90	43.22	74.00	30.48	V
8961.000	43.10	-34.70	37.70	40.10	74.00	30.90	V
2488.600	54.18	-19.70	28.20	45.68	74.00	19.82	H

802.11n-HT40
Ch3

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17601.500	51.12	-29.60	45.10	35.52	74.00	22.88	V
13763.500	47.45	-30.90	41.20	37.15	74.00	26.55	V
12987.000	45.05	-31.90	40.10	36.85	74.00	28.95	V
9688.000	41.96	-34.00	37.70	38.26	74.00	32.04	V
7329.000	40.87	-35.90	36.60	40.17	74.00	33.13	V
2388.500	54.66	-19.80	28.20	46.26	74.00	19.34	H

Ch6

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17948.500	51.17	-29.40	46.00	34.57	74.00	22.83	V
13735.000	47.00	-31.00	41.10	36.90	74.00	27.00	H
12651.000	43.84	-31.80	39.40	36.24	74.00	30.16	H
9508.000	41.83	-33.80	37.60	38.03	74.00	32.17	H
7263.000	40.77	-35.60	36.40	39.97	74.00	33.23	H
4169.500	37.08	-37.80	32.30	42.58	74.00	36.92	H

Ch9

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17501.000	51.20	-29.20	44.50	35.80	74.00	22.80	H
13685.000	46.87	-31.00	41.00	36.87	74.00	27.13	H
12843.500	43.92	-31.90	39.90	35.92	74.00	30.08	V
9807.500	41.08	-34.10	37.90	37.28	74.00	32.92	V
7231.000	39.72	-35.60	36.40	38.92	74.00	34.28	V
2485.100	59.38	-19.70	28.20	50.88	74.00	14.62	H

Average

802.11b

Ch1

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
7234.500	46.79	-35.60	36.40	45.99	54.00	7.21	H
4824.000	46.03	-37.70	33.00	50.73	54.00	7.97	V
17982.000	42.15	-29.40	46.00	25.55	54.00	11.85	H
13946.000	39.04	-30.60	41.40	28.24	54.00	14.96	H
12780.000	36.13	-31.50	39.80	27.83	54.00	17.87	H
2389.700	42.13	-19.80	28.20	33.73	54.00	11.87	H

Ch6

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17619.500	41.29	-29.60	45.10	25.69	54.00	12.71	H
13580.000	38.00	-31.30	40.80	28.50	54.00	16.00	V
12766.000	34.57	-31.80	39.60	26.67	54.00	19.43	V
9404.500	32.89	-34.10	37.90	29.09	54.00	21.11	V
4867.500	32.68	-37.50	33.40	36.78	54.00	21.32	H
7324.000	32.58	-35.40	36.60	31.38	54.00	21.42	V

Ch11

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17586.000	41.13	-29.60	45.10	25.53	54.00	12.87	H
13660.000	38.35	-31.30	40.90	28.75	54.00	15.65	V
12653.500	34.74	-31.80	39.40	27.14	54.00	19.26	H
4922.500	34.06	-37.60	33.30	38.36	54.00	19.94	H
9503.000	33.78	-34.60	37.70	30.68	54.00	20.22	V
2485.000	45.22	-19.70	28.20	36.72	54.00	8.78	H

802.11g

Ch1

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17583.500	41.01	-29.60	45.10	25.41	54.00	12.99	V
14127.000	37.39	-30.80	41.70	26.49	54.00	16.61	V
12779.500	34.40	-31.50	39.80	26.10	54.00	19.60	H
9507.000	33.00	-33.80	37.60	29.20	54.00	21.00	V
4824.000	32.47	-37.70	33.00	37.17	54.00	21.53	H
2386.000	41.76	-19.80	28.20	33.36	54.00	12.24	H

Ch6

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17968.000	40.95	-29.40	46.00	24.35	54.00	13.05	H
13679.500	37.84	-31.00	41.00	27.84	54.00	16.16	V
12765.500	34.64	-31.80	39.60	26.74	54.00	19.36	V
9416.500	32.81	-33.60	37.90	28.51	54.00	21.19	V
4873.500	32.67	-37.50	33.40	36.77	54.00	21.33	V
7337.500	32.19	-35.90	36.60	31.49	54.00	21.81	V

Ch11

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17531.000	41.13	-29.20	44.90	25.43	54.00	12.87	V
13711.500	38.10	-31.00	41.00	28.10	54.00	15.90	V
12949.500	34.96	-31.40	40.00	26.36	54.00	19.04	H
4923.000	34.31	-37.60	33.30	38.61	54.00	19.69	H
8979.000	33.59	-34.70	37.70	30.59	54.00	20.41	H
2485.700	43.92	-19.70	28.20	35.42	54.00	10.08	H

802.11n-HT20

Ch1

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17948.500	41.29	-29.40	46.00	24.69	54.00	12.71	H
13692.500	38.21	-31.00	41.00	28.21	54.00	15.79	H
12662.500	34.47	-31.80	39.40	26.87	54.00	19.53	V
8979.500	32.93	-34.70	37.70	29.93	54.00	21.07	V
7439.500	32.26	-35.50	36.50	31.26	54.00	21.74	V
2345.200	42.07	-19.60	28.20	33.47	54.00	11.93	H

Ch6

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17988.500	40.87	-29.40	46.00	24.27	54.00	13.13	V
13667.000	37.83	-31.00	41.00	27.83	54.00	16.17	H
12646.500	34.78	-31.80	39.40	27.18	54.00	19.22	H
9200.500	32.57	-34.70	37.70	29.57	54.00	21.43	V
7814.500	31.99	-35.60	36.50	31.09	54.00	22.01	V
4870.000	31.97	-37.50	33.40	36.07	54.00	22.03	H

Ch11

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17595.000	41.26	-29.60	45.10	25.66	54.00	12.74	V
13736.500	37.93	-31.00	41.10	27.83	54.00	16.07	V
11870.000	35.29	-32.80	39.10	28.89	54.00	18.71	H
9434.000	33.64	-33.60	37.90	29.34	54.00	20.36	V
7233.000	32.92	-35.60	36.40	32.12	54.00	21.08	V
2485.000	42.66	-19.70	28.20	34.16	54.00	11.34	H

802.11n-HT40

Ch3

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17587.500	40.74	-29.60	45.10	25.14	54.00	13.26	H
13763.500	37.79	-30.90	41.20	27.49	54.00	16.21	V
9688.000	35.53	-34.00	37.70	31.83	54.00	18.47	V
12987.000	34.01	-31.90	40.10	25.81	54.00	19.99	V
7650.500	31.23	-35.50	36.30	30.43	54.00	22.77	V
2390.000	42.61	-19.80	28.20	34.21	54.00	11.39	H

Ch6

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17941.000	40.64	-29.40	46.00	24.04	54.00	13.36	H
13729.000	37.37	-31.00	41.10	27.27	54.00	16.63	V
11895.500	34.45	-32.40	39.10	27.75	54.00	19.55	V
9748.000	33.97	-34.50	37.80	30.67	54.00	20.03	V
7425.500	31.33	-35.10	36.60	29.83	54.00	22.67	V
4891.500	28.52	-37.50	33.40	32.62	54.00	25.48	H

Ch9

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17626.000	40.78	-29.50	45.40	24.88	54.00	13.22	V
13942.500	37.24	-30.60	41.40	26.44	54.00	16.76	H
9808.000	36.17	-34.10	37.90	32.37	54.00	17.83	V
12645.000	33.48	-31.80	39.40	25.88	54.00	20.52	V
7429.500	30.57	-35.50	36.50	29.57	54.00	23.43	V
2485.200	43.07	-19.70	28.20	34.57	54.00	10.93	H

Band edge compliance

802.11b mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11b	1	2.31GHz~2.43GHz---L	Fig.1	P
	11	2.45GHz~2.50GHz---H	Fig.2	P

802.11g mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11g	1	2.31GHz~2.43GHz---L	Fig.3	P
	11	2.45GHz~2.50GHz---H	Fig.4	P

802.11n-HT20 mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n (HT20)	1	2.31GHz~2.43GHz---L	Fig.5	P
	11	2.45GHz~2.50GHz---H	Fig.6	P

802.11n-HT40 mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n (HT40)	3	2.31GHz~2.43GHz---L	Fig.7	P
	9	2.45GHz~2.50GHz---H	Fig.8	P

Test graphs as below:

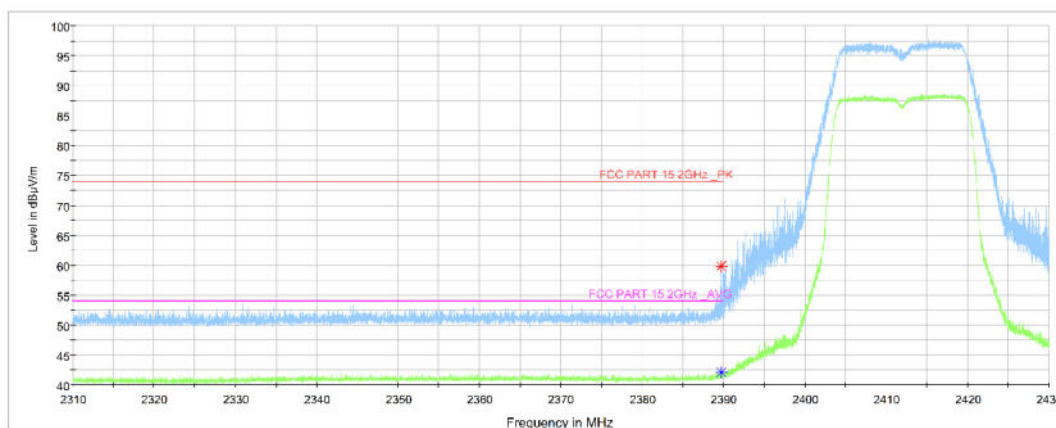


Fig.A.6.2.1 Transmitter Spurious Emission - Radiated (Power): 802.11b, ch1, 2.31 GHz – 2.43GHz

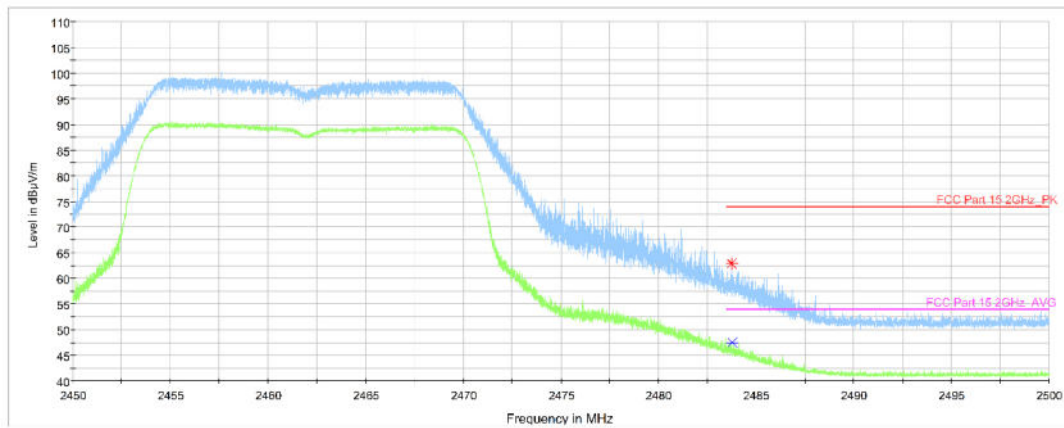


Fig.A.6.2.2 Transmitter Spurious Emission - Radiated (Power): 802.11b, ch11, 2.45 GHz - 2.50GHz

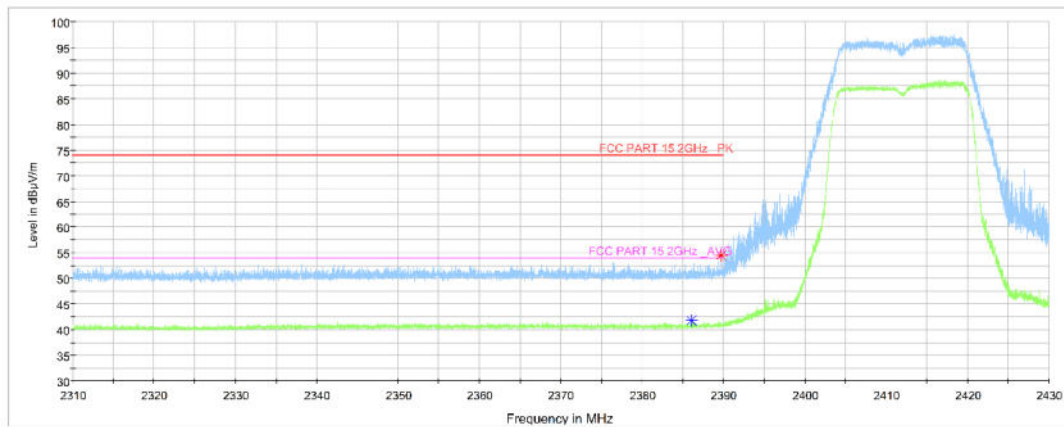


Fig.A.6.2.3 Transmitter Spurious Emission - Radiated (Power): 802.11g, ch1, 2.31 GHz - 2.43GHz

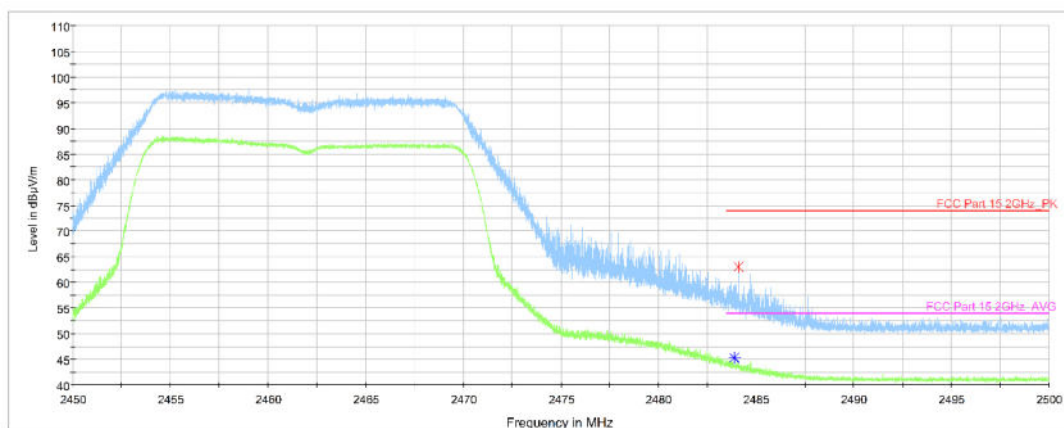


Fig.A.6.2.4 Transmitter Spurious Emission - Radiated (Power): 802.11g, ch11, 2.45 GHz - 2.50GHz

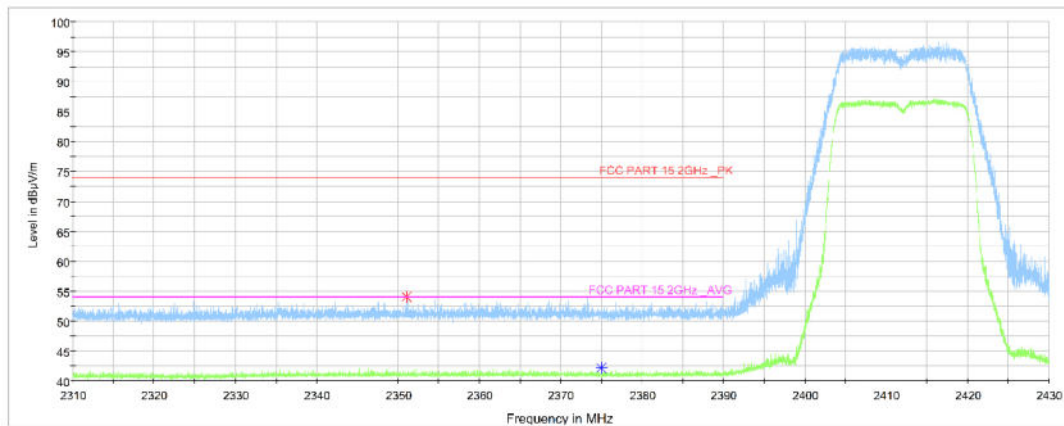


Fig.A.6.2.5 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT20, ch1, 2.31 GHz - 2.43GHz

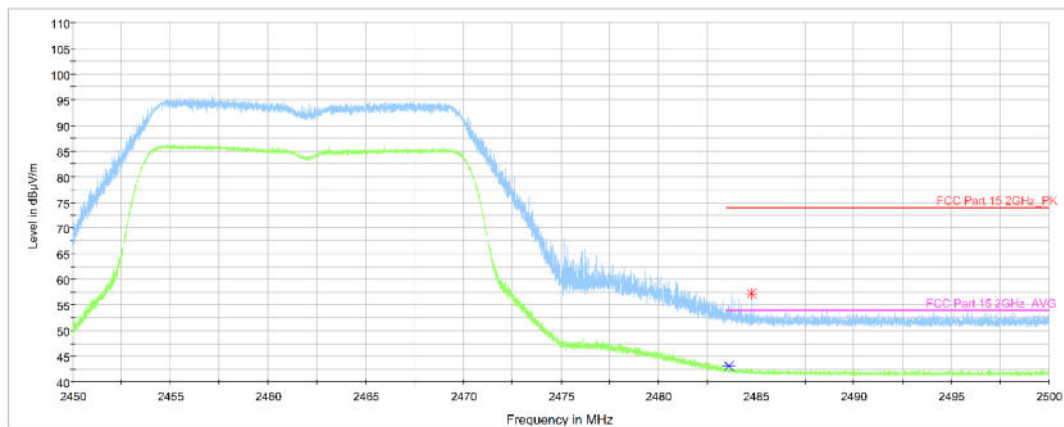


Fig.A.6.2.6 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT20, ch11, 2.45 GHz - 2.50GHz

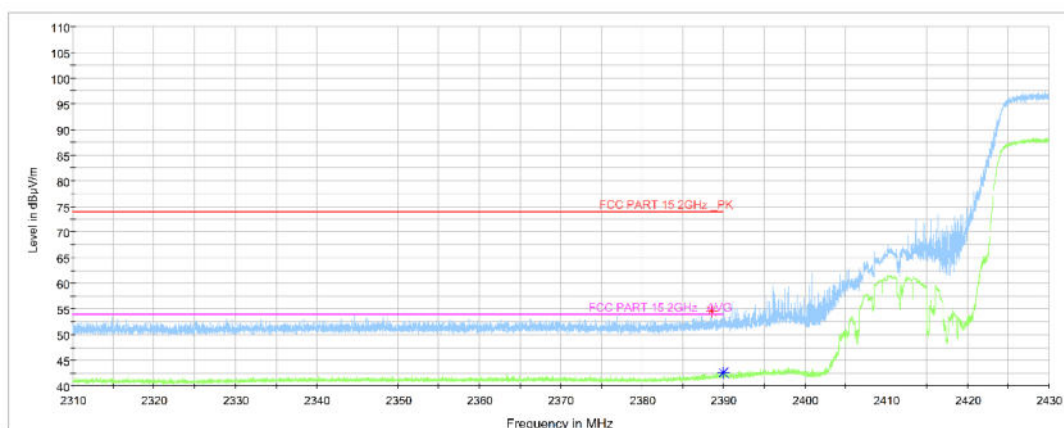
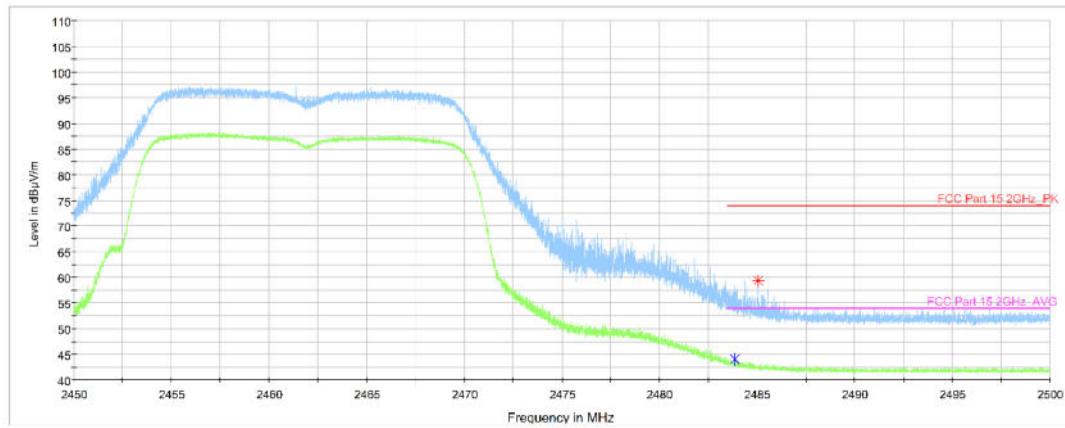


Fig.A.6.2.7 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT40, ch3, 2.31 GHz - 2.43GHz



Transmitter Spurious Emission - Radiated (Power): 802.11n-HT40, ch9, 2.45 GHz - 2.50GHz

A.8. AC Power-line Conducted Emission

Summary

All AC line conducted spurious emissions are measured with a receiver connected to a grounded LISN while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates and modes were investigated for conducted spurious emissions. Only the conducted emissions of the configuration that produced the worst case emissions are reported in this section

Method of Measurement:

See Clause 6.2 of ANSI C63.10 specifically.

See Clause 4 and Clause 5 of ANSI C63.10 generally.

The conducted emissions from the AC port of the EUT are measured in a shielding room. The EUT is connected to a Line Impedance Stabilization Network (LISN). An overview sweep with peak detection was performed. The measurements were performed with a quasi-peak detector and if required, an average detector.

The conducted emission measurements were made with the following detector of the test receiver:
Quasi-Peak / Average Detector.

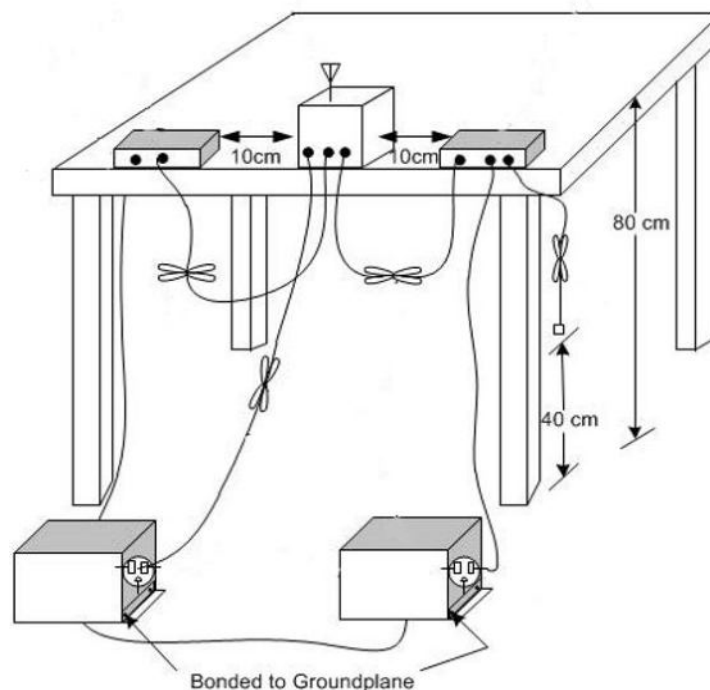
The measurement bandwidth is:

Frequency of Emission (MHz)	RBW/IF bandwidth
0.15-30	9kHz

Test Condition:

Voltage (V)	Frequency (Hz)
120	60

Test setup



Measurement Result and limit:

WLAN (Quasi-peak Limit)

Frequency range (MHz)	Quasi-peak Limit (dBμV)	Result (dBμV)		Conclusion
		With charger		
		802.11b	Idle	
0.15 to 0.5	66 to 56	Fig.A.8.1	Fig.A.8.2	P
0.5 to 5	56			
5 to 30	60			
NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.				

WLAN (Average Limit)

Frequency range (MHz)	Average Limit (dBμV)	Result (dBμV)		Conclusion
		With charger		
		802.11b	Idle	
0.15 to 0.5	56 to 46	Fig.A.8.1	Fig.A.8.2	P
0.5 to 5	46			
5 to 30	50			
NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.				

Conclusion: Pass
Test graphs as below:

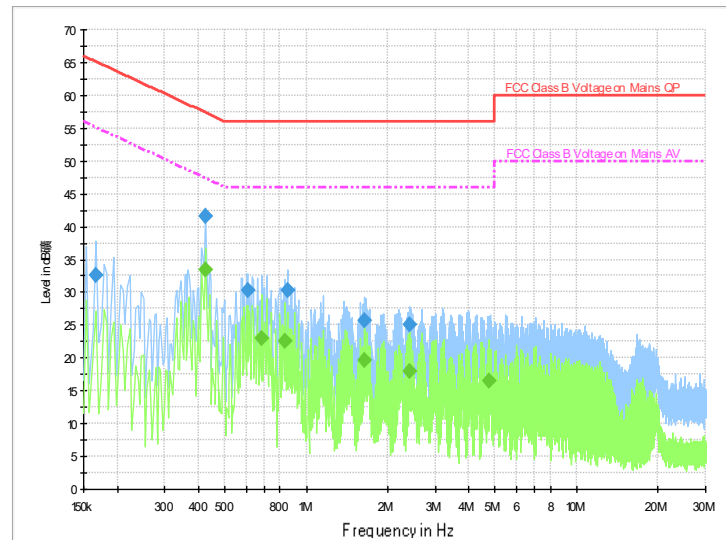


Fig.A.8.1 AC Powerline Conducted Emission-802.11b

Note: The graphic result above is the maximum of the measurements for both phase line and neutral line.

Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.166000	32.7	2000.0	9.000	On	N	19.8	32.5	65.2	
0.422000	41.5	2000.0	9.000	On	L1	20.0	15.9	57.4	
0.606000	30.3	2000.0	9.000	On	L1	20.0	25.7	56.0	
0.850000	30.4	2000.0	9.000	On	L1	19.9	25.6	56.0	
1.638000	25.7	2000.0	9.000	On	L1	19.8	30.3	56.0	
2.422000	25.2	2000.0	9.000	On	L1	19.8	30.8	56.0	

Final Result 2

Frequency (MHz)	CAverage (dBμV)	Meas. Time	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.426000	33.4	2000.0	9.000	On	L1	20.0	13.9	47.3	
0.686000	22.9	2000.0	9.000	On	L1	20.0	23.1	46.0	
0.838000	22.6	2000.0	9.000	On	L1	19.9	23.4	46.0	
1.638000	19.7	2000.0	9.000	On	L1	19.8	26.3	46.0	
2.398000	18.0	2000.0	9.000	On	L1	19.8	28.0	46.0	
4.762000	16.5	2000.0	9.000	On	L1	19.8	29.5	46.0	

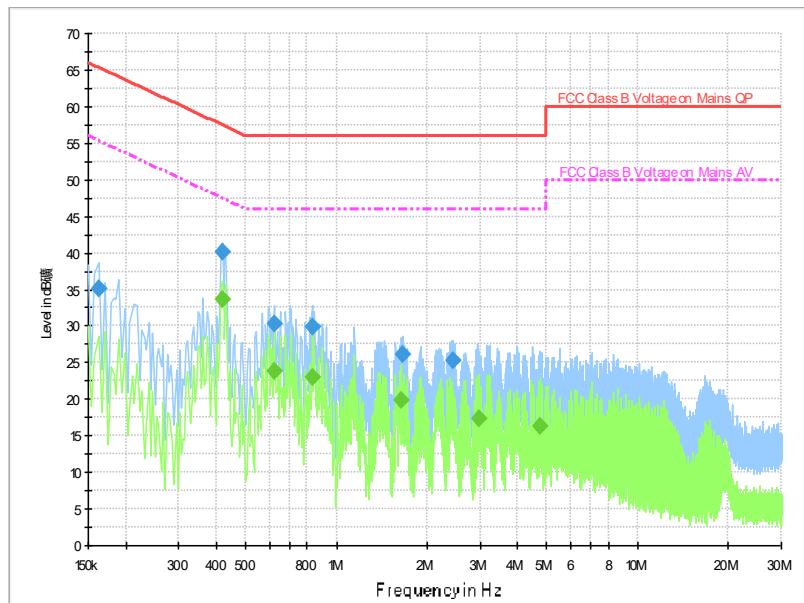


Fig.A.8.2 AC Powerline Conducted Emission-Idle

Note: The graphic result above is the maximum of the measurements for both phase line and neutral line.

Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.162000	35.1	2000.0	9.000	On	N	19.8	30.2	65.4	
0.418000	40.1	2000.0	9.000	On	L1	20.0	17.4	57.5	
0.622000	30.4	2000.0	9.000	On	L1	20.0	25.6	56.0	
0.830000	29.8	2000.0	9.000	On	L1	19.9	26.2	56.0	
1.654000	26.0	2000.0	9.000	On	L1	19.8	30.0	56.0	
2.438000	25.2	2000.0	9.000	On	L1	19.8	30.8	56.0	

Final Result 2

Frequency (MHz)	CAverage (dBμV)	Meas. Time	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.418000	33.7	2000.0	9.000	On	L1	20.0	13.8	47.5	
0.622000	23.7	2000.0	9.000	On	L1	20.0	22.3	46.0	
0.830000	22.9	2000.0	9.000	On	L1	19.9	23.1	46.0	
1.642000	19.8	2000.0	9.000	On	L1	19.8	26.2	46.0	
2.962000	17.4	2000.0	9.000	On	L1	19.8	28.6	46.0	
4.742000	16.3	2000.0	9.000	On	L1	19.8	29.7	46.0	



No.24T04Z101135-023

A.9. Antenna Requirement

The antenna of the device is permanently attached. There are no provisions for connection to an external antenna.

The unit complies with the requirement of FCC Part 15.203.

ANNEX B: EUT parameters

Disclaimer: The antenna gain provided by the client may affect the validity of the measurement results in this report, and the client shall bear the impact and consequences arising therefrom.

ANNEX C: Accreditation Certificate



*****END OF REPORT*****