FCC PART 15C
TEST REPORT
No.I23Z70127-IOT03

for

Samsung Electronics Co., Ltd.

Multi-band GSM/WCDMA/LTE Phone with Bluetooth, WLAN

SM-A055M/DS,SM-A055M

With

FCC ID: ZCASMA055M

Hardware Version: REV1.0

Software Version: A055M.001

Issued Date: 2023-08-02

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.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S.Government.

Test Laboratory:

CTTL-Telecommunication Technology Labs, CAICT

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REPORT HISTORY

Report Number	Revision	Description	Issue Date
I23Z70127-IOT03	Rev.0	1st edition	2023-07-25
I23Z70127-IOT03	Rev.1	Update the antenna information.	2023-08-02

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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 NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM (NVLAP) with lab code 600118-0, and is also an FCC accredited test laboratory (CN5017), and ISED accredited test laboratory (ISED#: 24849). The detail accreditation scope can be found on NVLAP website.

1.2. Testing Location

Conducted testing Location :CTTL(Huayuan North Road)

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

Radiated testing Location:

CTTL (BDA)

Address: No. 18A, Kangding Street, Beijing Economic-Technology Development Area, Beijing, 100176, P.R. China

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

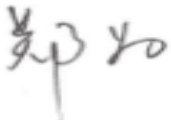
Testing Start Date: 2023-06-14

Testing End Date: 2023-07-25

1.5. Signature

Yao Xingyu

(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:	Samsung Electronics Co., Ltd.
Address:	19 Chapin Rd.,Building D Pine Brook, NJ 07058
City:	New Jersey
Postal Code:	/
Country:	United States
Telephone:	+1-201-937-4203
Fax:	/

2.2. Manufacturer Information

Company Name:	Samsung Electronics Co., Ltd.
Address:	Samsung R5, Maetan dong 129, Samsung ro Youngtong gu, Suwon city 443 742, Korea
City:	Suwon
Postal Code:	/
Country:	Korea
Telephone:	+82-10-2722-4159
Fax:	/

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

3.1. About EUT

Description	Multi-band GSM/WCDMA/LTE Phone with Bluetooth, WLAN
Model name	SM-A055M/DS,SM-A055M
FCC ID	ZCASMA055M
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	23.68dBm
Power Supply	3.85V

3.2. Internal Identification of EUT

EUT ID*	SN or IMEI	HW Version	SW Version
UT10a	2370127UT10a	REV1.0	A055M.001
UT12a	2370127UT12a	REV1.0	A055M.001

*EUT ID: is used to identify the test sample in the lab internally.
UT10a is used for Conduction test, UT12a is used for Radiation test.

3.3. Internal Identification of AE

AE ID*	Name	Model	Manufacturer
AE1	Battery	WT-S-N28	SCUD (FUJIAN) Electronics Co., Ltd.
AE2	Adapter	EP-TA800	DONGGUAN SOLUM ELECTRONICS CO.,LTD.
AE3-1	Date Cable1 C-C	EP-DN980BWE	GUANGXI BROAD TELECOMMUNICATION CO.,LTD
AE3-2	Date Cable2 C-C	EP-DN980BWE	R.e.tech Electronics (Huizhou) Co., Ltd.
AE3-3	Date Cable3 C-C	EP-DN980BWE	Cresyn Electronics(Dongguan) Co., Ltd.

*AE ID: is used to identify the test sample in the lab internally.
*AE2 is not the AE for EUT, provided by the client for relevant tests.

3.4. General Description

The Equipment under Test (EUT) is a model of Multi-band GSM/WCDMA/LTE Phone with Bluetooth, WLAN 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: 15.205 Restricted bands of operation; 15.209 Radiated emission limits, general requirements; 15.247 Operation within the bands 902-928MHz, 2400-2483.5 MHz, and 5725-5850 MHz.	2021
ANSI C63.10	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices	2013
KDB 558074 D01	Federal Communications Commission Office of Engineering and Technology Laboratory Division 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. Test Results

5.1. 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
Transmitter Spurious Emission - Radiated	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

5.2. Statements

The test cases as listed in section 5.1 of this report for the EUT specified in section 3 was performed by CTTL and according to the standards or reference documents listed in section 4.2

The EUT met all requirements of the standards or reference documents, and only the WLAN function was tested in this report.

The device what use a permanently attached antenna were considered sufficient to comply with the provisions of 15.203.

5.3. Test Conditions

T nom	Normal Temperature
T min	Low Temperature
T max	High Temperature
V nom	Normal Voltage

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

Temperature	T nom	26°C
Voltage	V nom	3.85V(By battery)
Humidity	H nom	20-75%

6. 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	2024-07-04
2	LISN	ENV216	101200	Rohde & Schwarz	1 year	2024-07-04
3	Test Receiver	ESCI	100344	Rohde & Schwarz	1 year	2024-02-21
4	Shielding Room	S81	/	ETS-Lindgren	/	/

Radiated emission test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibration Due date
1	Test Receiver	ESU26	100376	R&S	1 year	2023-09-22
2	Test Receiver	ESW44	103015	R&S	1 year	2024-01-14
3	Test Receiver	ESW44	103144	R&S	1 year	2023-10-25
4	Loop Antenna	HFH2-Z2	829324/007	R&S	1 year	2023-12-22
5	EMI Antenna	VULB9163	01177	Schwarzbeck	1 year	2023-08-03
6	EMI Antenna	3117	00139065	ETS-Lindgren	1 year	2023-10-05
7	EMI Antenna	LB-180400-25-C-KF	2110084000006	A-INFO	1 year	2024-03-02

AC Power Line Conducted Emission

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibration Due date
1	LISN	ENV216	101459	R&S	1 year	2024-02-29
2	Test Receiver	ESCI	100766	R&S	1 year	2024-03-30

7. Measurement Uncertainty

7.1. Maximum Output Power

Measurement Uncertainty: 0.387dB,k=1.96

7.2. Peak Power Spectral Density

Measurement Uncertainty: 0.705dB,k=1.96

7.3. DTS 6-dB Signal Bandwidth

Measurement Uncertainty: 60.80Hz,k=1.96

7.4. Band Edges Compliance

Measurement Uncertainty : 0.62dB,k=1.96

7.5. Transmitter Spurious Emission

Conducted (k=1.96)

Frequency Range	Uncertainty(dB)
30MHz ≤ f ≤ 2GHz	1.22
2GHz ≤ f ≤3.6GHz	1.22
3.6GHz ≤ f ≤8GHz	1.22
8GHz ≤ f ≤12.75GHz	1.51
12.75GHz ≤ f ≤26GHz	1.51
26GHz ≤ f ≤40GHz	1.59

Radiated (k=2)

Frequency Range	Uncertainty(dB)
9kHz-30MHz	4.92
30MHz ≤ f ≤ 1GHz	5.73
1GHz ≤ f ≤18GHz	5.62
18GHz ≤ f ≤40GHz	3.52

7.6. AC Power-line Conducted Emission

Measurement Uncertainty : 3.10dB, 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

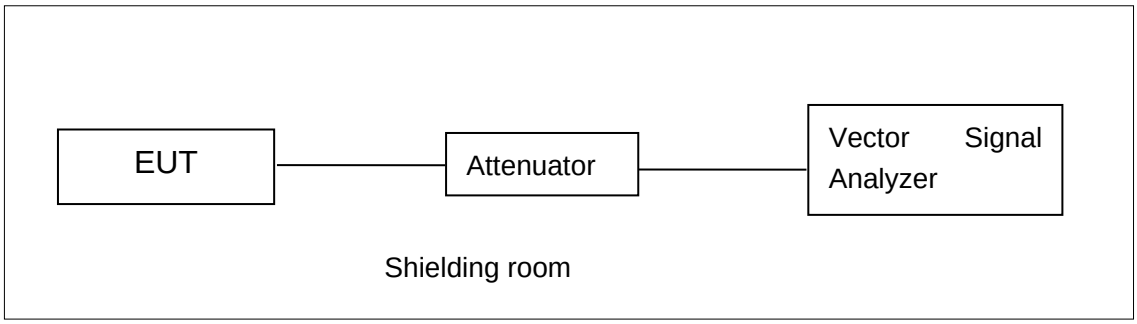


Fig.A.1.1.1: Test Setup Diagram for Conducted Measurements

A.1.2. Radiated Emission Measurements

In the case of radiated emission, the used settings are as follows,
Sweep frequency from 30 MHz to 1GHz, RBW = 100 kHz, VBW = 300 kHz;
Sweep frequency from 1 GHz to 26GHz, RBW = 1MHz, VBW = 3MHz;

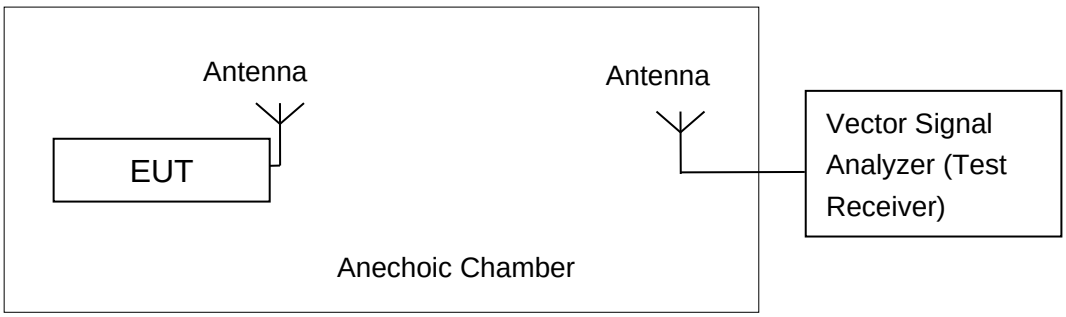


Fig.A.1.2.1: Test Setup Diagram for Radiated Measurements

A.2. Maximum Output Power

Method of Measurement: See ANSI C63.10-2013-clause 11.9.1.1

a) Set the RBW ≥ DTS bandwidth.
b) Set VBW ≥ [3 × RBW].
c) Set span ≥ [3 × RBW].
d) Sweep time = auto couple.
e) Detector = peak.
f) Trace mode = max hold.
g) Allow trace to fully stabilize.
h) Use peak marker function to determine the peak amplitude level.

Measurement Limit:

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

EUT ID: UT10a

A.2.1. Peak Output Power-conducted

Measurement Results:

802.11b/g mode

Mode	Data Rate (Mbps)	Test Result (dBm)		
		2412MHz (Ch1)	2437MHz (Ch6)	2462 MHz (Ch11)
802.11b	1	20.28	20.13	20.38
	2	/	/	/
	5.5	/	/	/
	11	/	/	/
802.11g	6	23.68	23.47	23.60
	9	/	/	/
	12	/	/	/
	18	/	/	/
	24	/	/	/
	36	/	/	/
	48	/	/	/
	54	/	/	/

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	23.62	23.28	23.41
	MCS1	/	/	/
	MCS2	/	/	/
	MCS3	/	/	/
	MCS4	/	/	/
	MCS5	/	/	/
	MCS6	/	/	/
	MCS7	/	/	/

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

Measurement Results:

802.11b/g mode

Mode	Channel	Power Spectral Density (dBm/3 kHz)		Conclusion
802.11b	1	Fig.A.3.1	-4.70	**P**
	6	Fig.A.3.2	-3.95	**P**
	11	Fig.A.3.3	-4.32	**P**
802.11g	1	Fig.A.3.4	-8.01	**P**
	6	Fig.A.3.5	-8.14	**P**
	11	Fig.A.3.6	-8.27	**P**

802.11n-HT20 mode

Mode	Channel	Power Spectral Density (dBm/3 kHz)		Conclusion
802.11n (HT20)	1	Fig.A.3.7	-8.89	**P**
	6	Fig.A.3.8	-8.50	**P**
	11	Fig.A.3.9	-8.53	**P**

Conclusion: Pass

Test graphs as below:

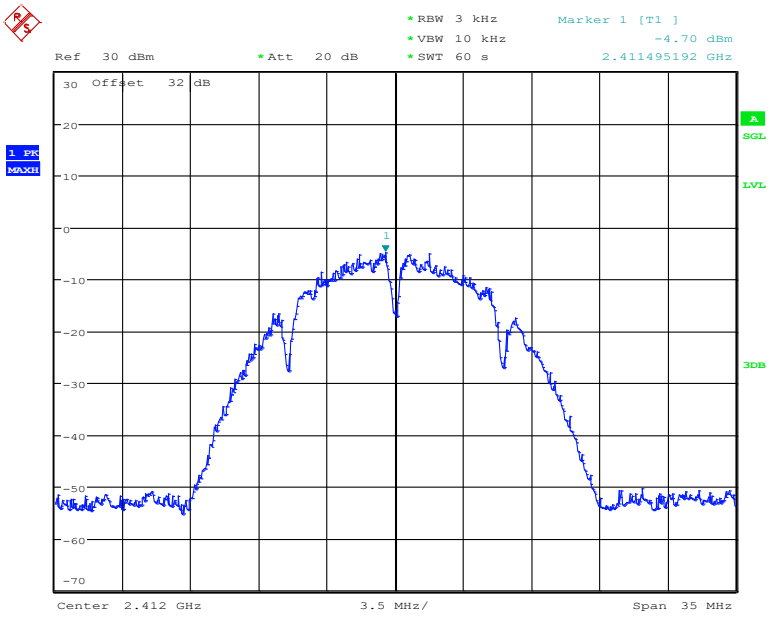


Fig.A.3.1 Power Spectral Density(802.11b,Ch1)

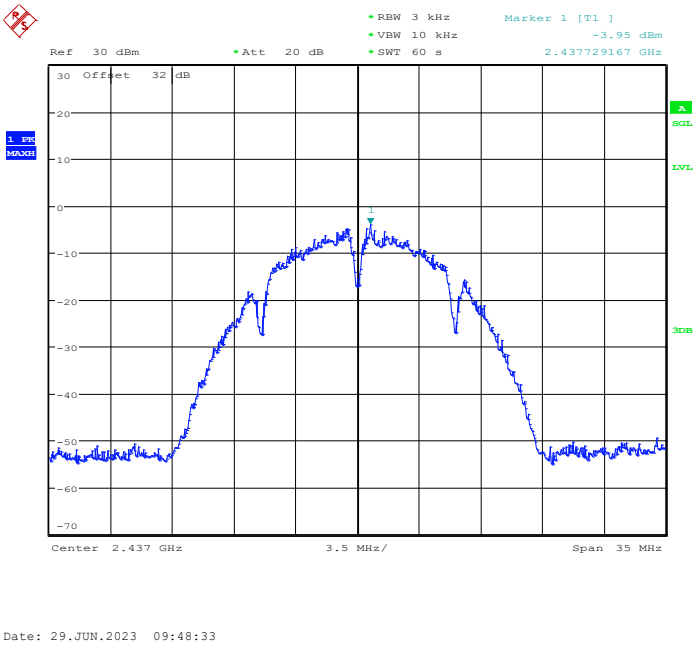


Fig.A.3.2 Power Spectral Density (802.11b, Ch 6)

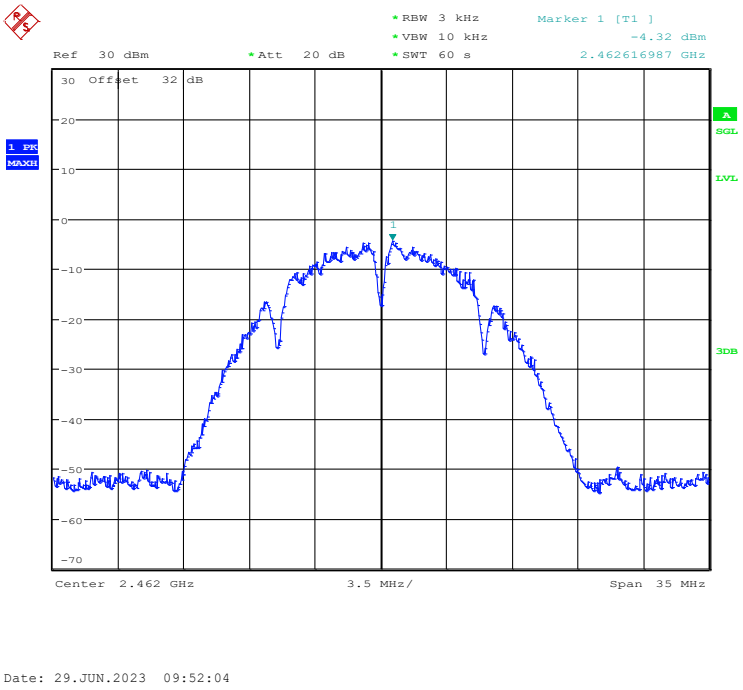


Fig.A.3.3 Power Spectral Density (802.11b, Ch 11)

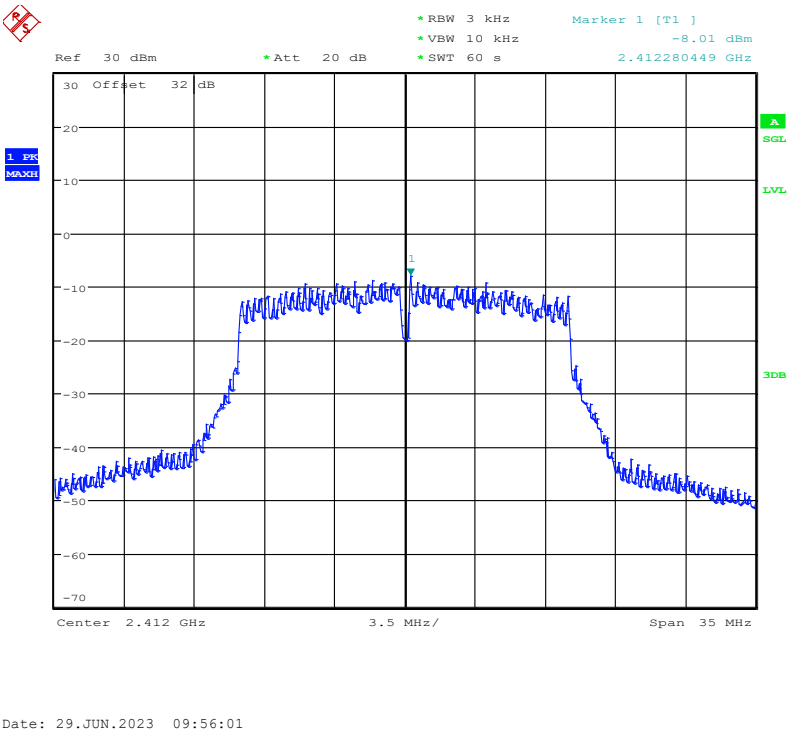


Fig.A.3.4 Power Spectral Density (802.11g, Ch 1)

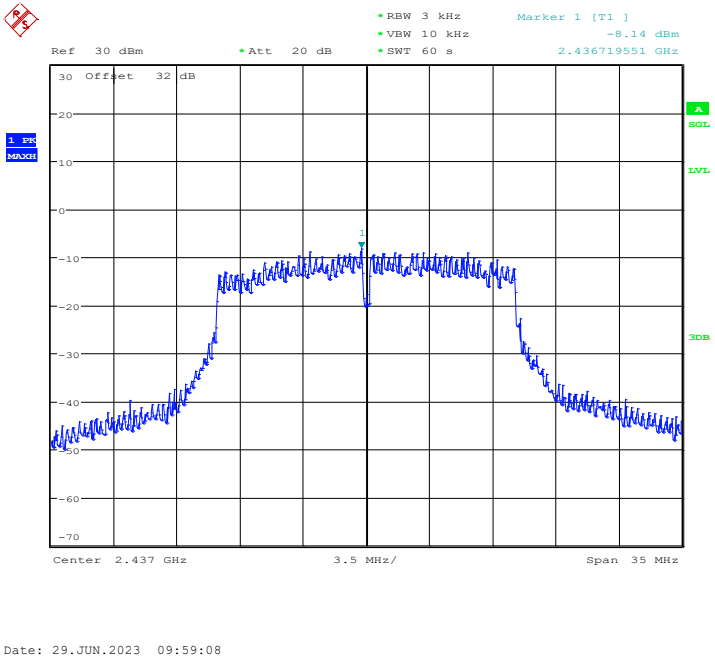


Fig.A.3.5 Power Spectral Density (802.11g, Ch 6)

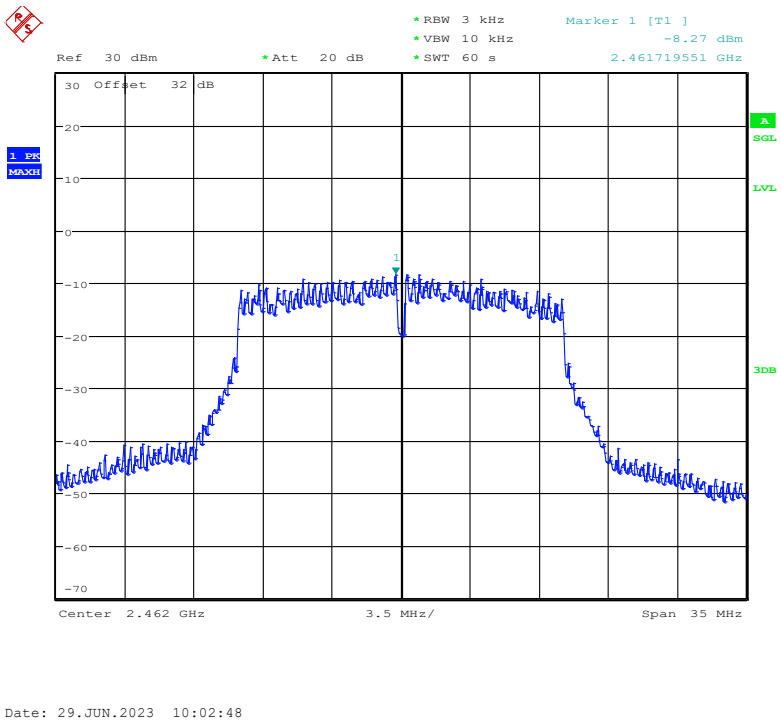


Fig.A.3.6 Power Spectral Density (802.11g, Ch 11)

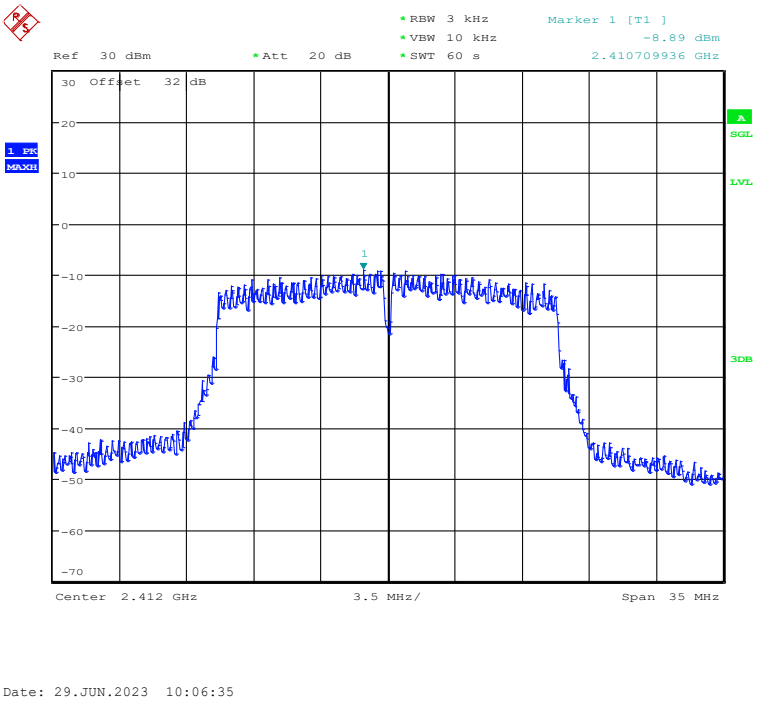


Fig.A.3.7 Power Spectral Density (802.11n-HT20, Ch 1)

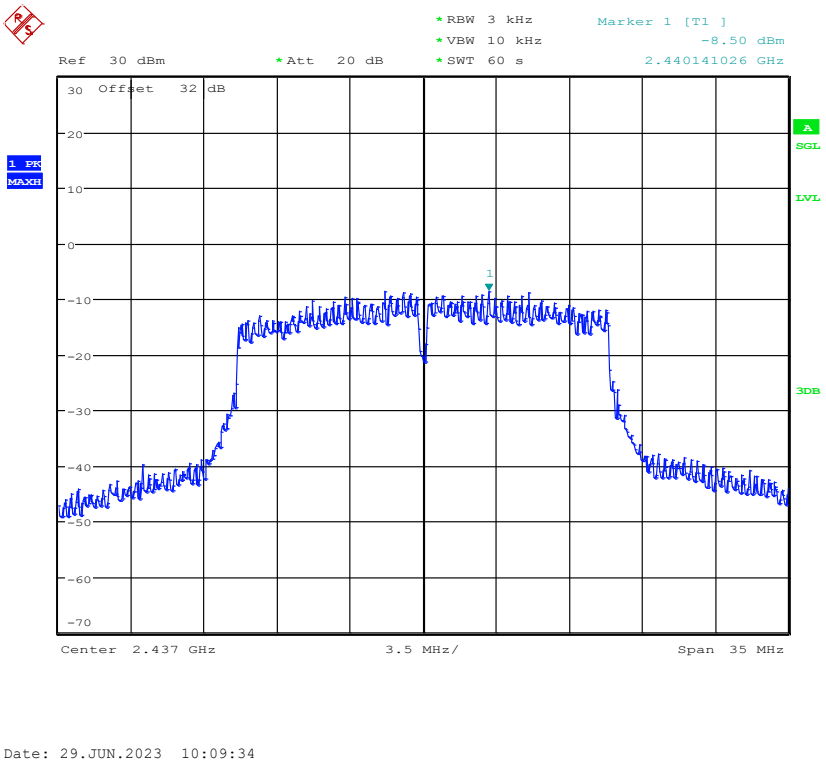


Fig.A.3.8 Power Spectral Density (802.11n-HT20, Ch 6)

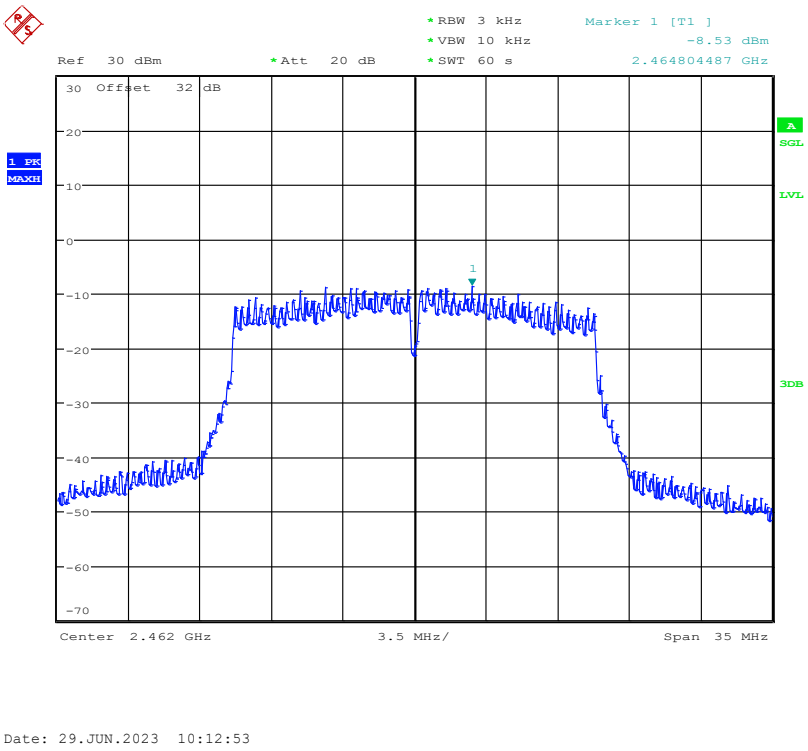


Fig.A.3.9 Power Spectral Density (802.11n-HT20, Ch 11)

A.4. DTS 6-dB Signal Bandwidth

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

a) Set RBW = 100 kHz.
b) Set the video bandwidth (VBW) = 300 kHz.
c) Detector = Peak.
d) Trace mode = max hold.
e) Sweep = auto couple.
f) Allow the trace to stabilize.
g) 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: UT10a

Measurement Result:

802.11b/g mode

Mode	Channel	Occupied 6dB Bandwidth (MHz)		conclusion
802.11b	1	Fig.A.4.1	8.05	**P**
	6	Fig.A.4.2	8.55	**P**
	11	Fig.A.4.3	8.05	**P**
802.11g	1	Fig.A.4.4	16.34	**P**
	6	Fig.A.4.5	16.38	**P**
	11	Fig.A.4.6	16.32	**P**

802.11n-HT20 mode

Mode	Channel	Occupied 6dB Bandwidth (MHz)		conclusion
802.11n (HT20)	1	Fig.A.4.7	17.58	**P**
	6	Fig.A.4.8	17.60	**P**
	11	Fig.A.4.9	17.58	**P**

Conclusion: Pass
Test graphs as below:

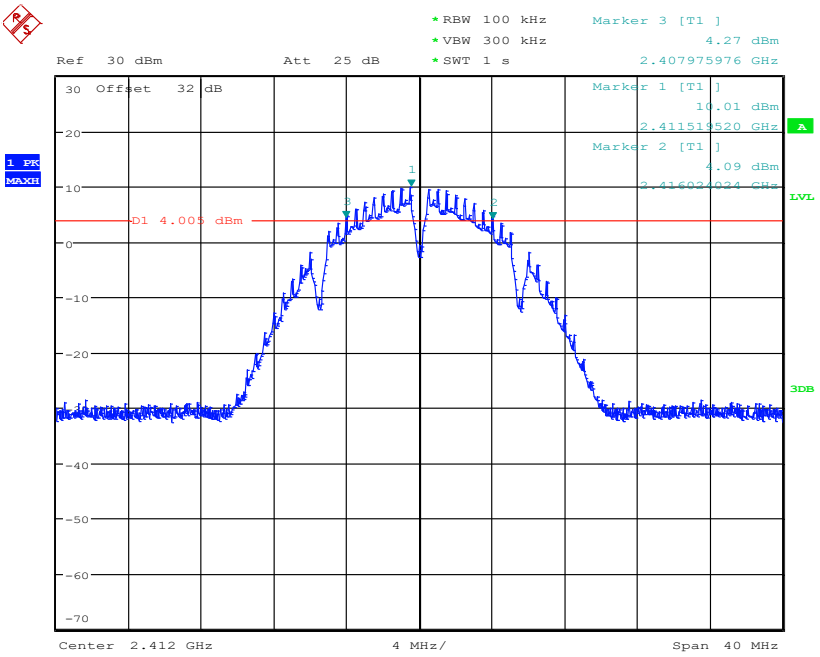


Fig.A.4.1 Occupied 6dB Bandwidth(802.11b,Ch 1)

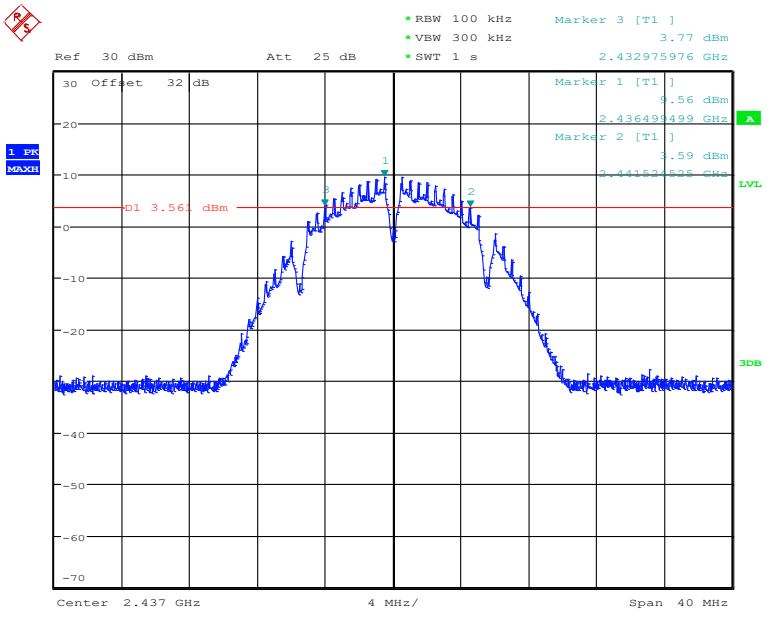


Fig.A.4.2 Occupied 6dB Bandwidth (802.11b, Ch 6)

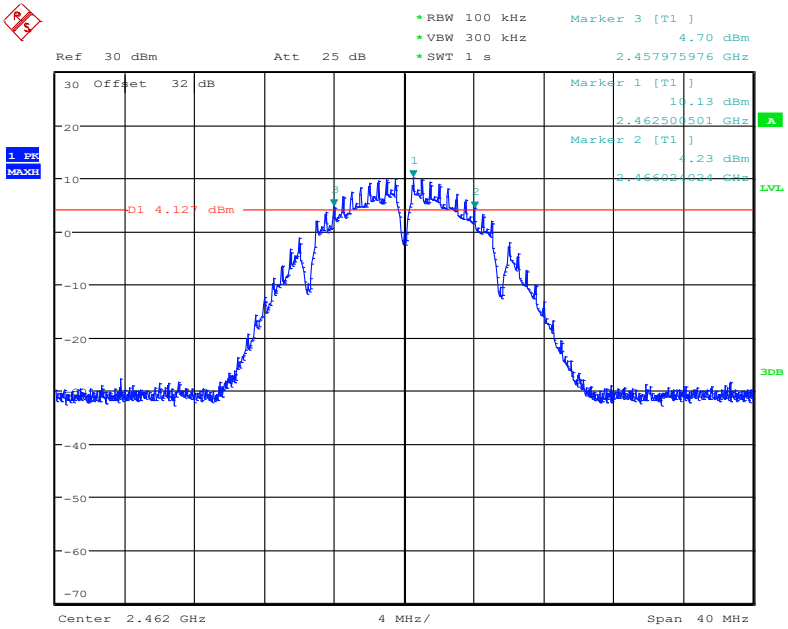


Fig.A.4.3 Occupied 6dB Bandwidth (802.11b, Ch 11)

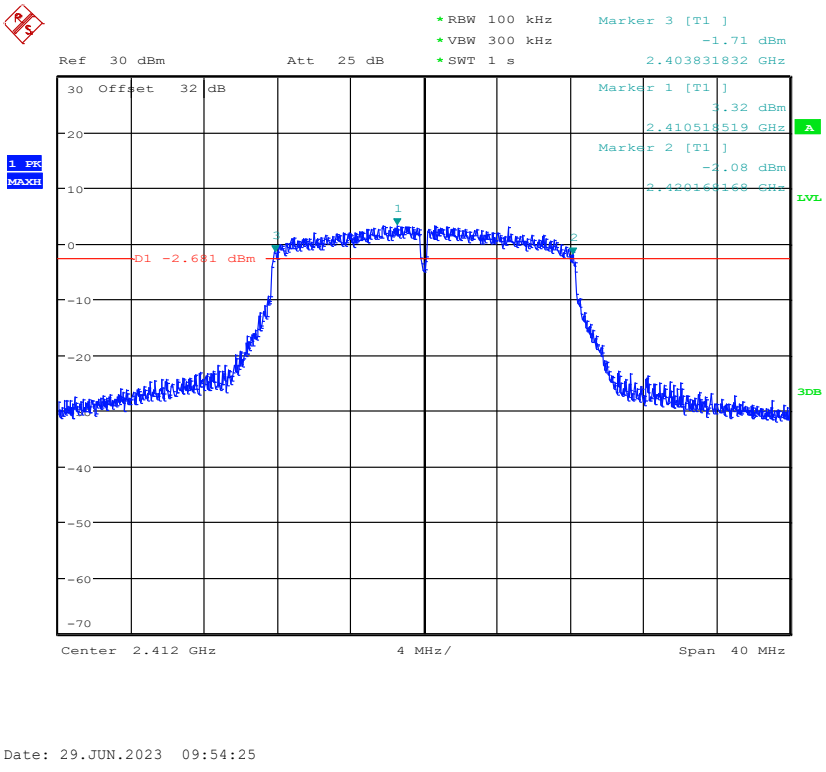


Fig.A.4.4 Occupied 6dB Bandwidth (802.11g, Ch 1)

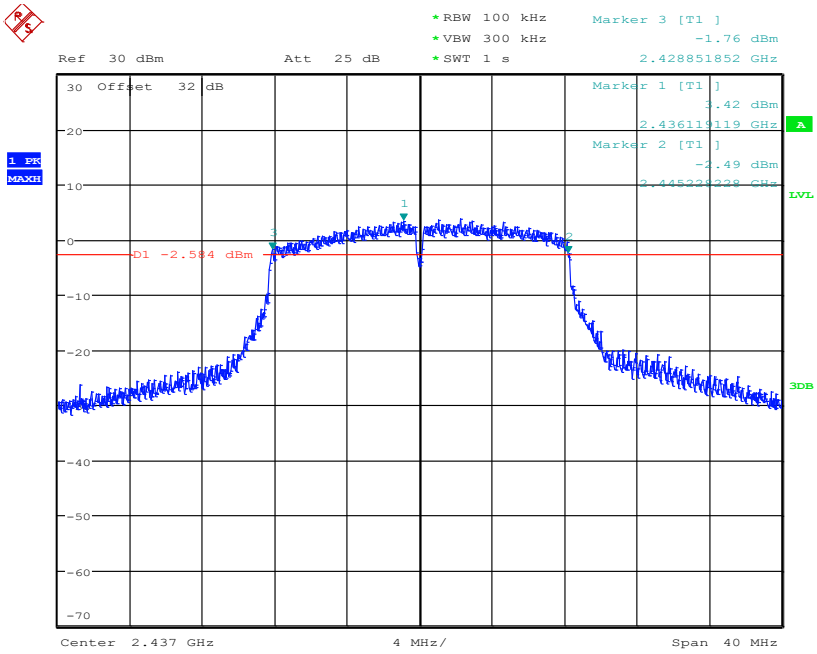


Fig.A.4.5 Occupied 6dB Bandwidth (802.11g, Ch 6)

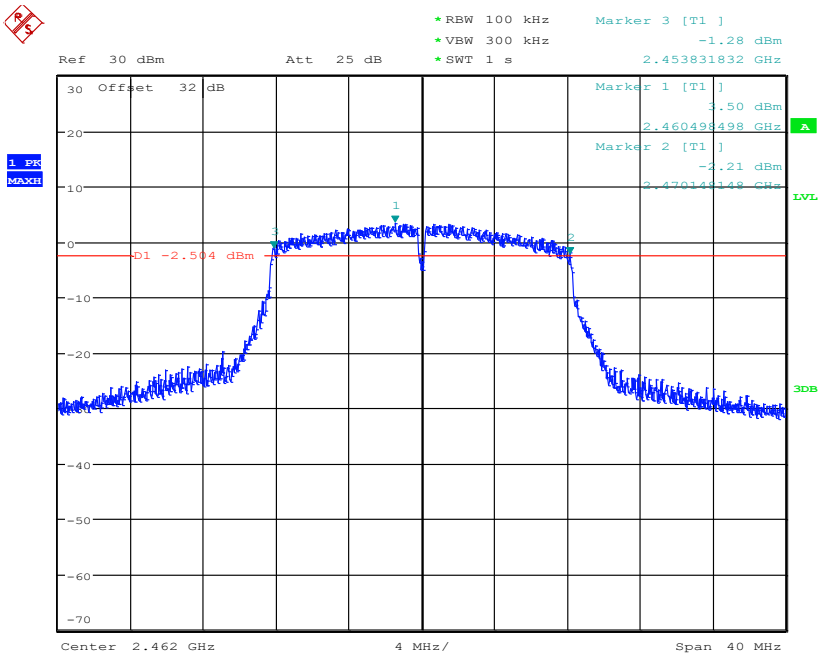


Fig.A.4.6 Occupied 6dB Bandwidth (802.11g, Ch 11)

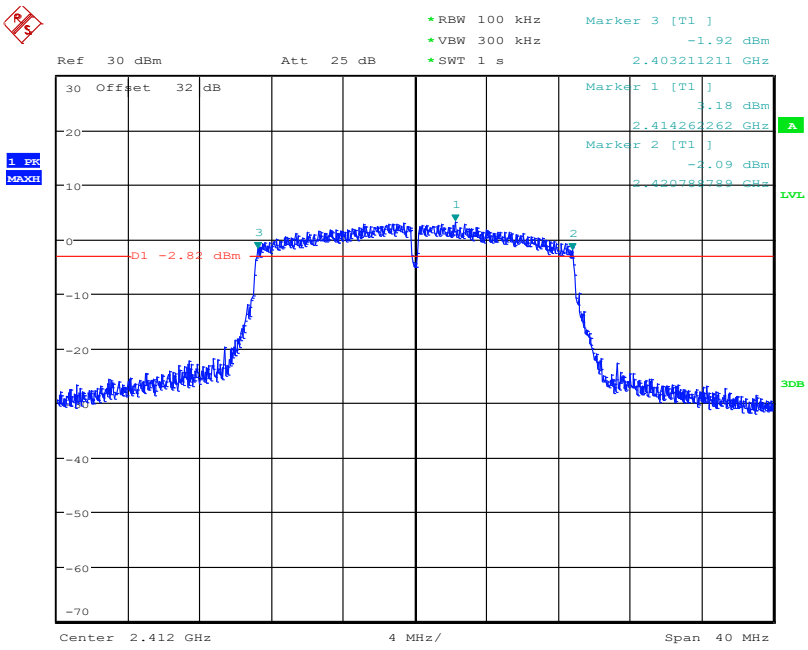


Fig.A.4.7 Occupied 6dB Bandwidth (802.11n-20MHz, Ch 1)

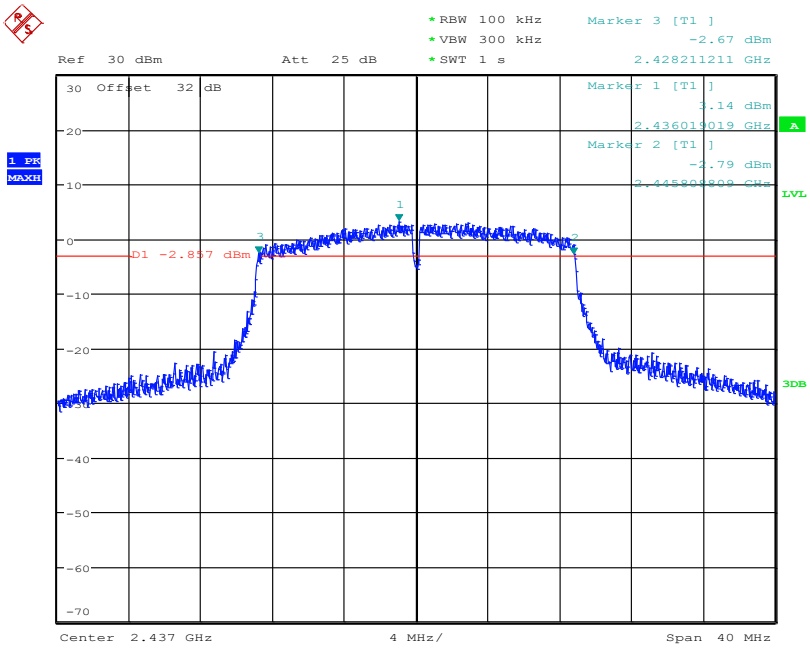


Fig.A.4.8 Occupied 6dB Bandwidth (802.11n-HT20, Ch 6)

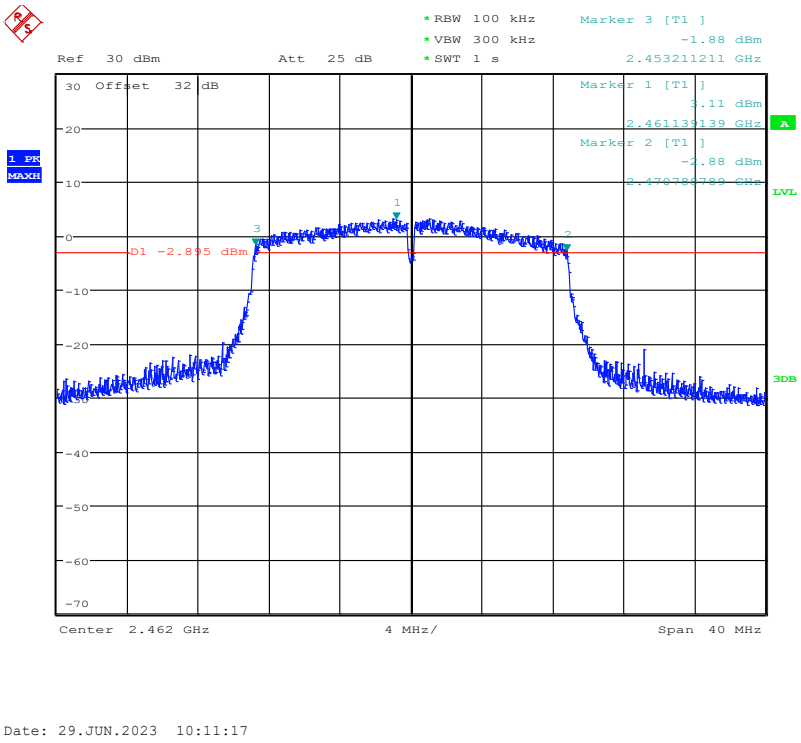


Fig.A.4.9 Occupied 6dB Bandwidth (802.11n-HT20, Ch 11)

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: UT10a

Measurement Result:

802.11b/g mode

Mode	Channel	Test Results	Conclusion
802.11b	1	Fig.A.5.1	**P**
	11	Fig.A.5.2	**P**
802.11g	1	Fig.A.5.3	**P**
	11	Fig.A.5.4	**P**

802.11n-HT20 mode

Mode	Channel	Test Results	Conclusion
802.11n (HT20)	1	Fig.A.5.5	**P**
	11	Fig.A.5.6	**P**

Conclusion: Pass

Test graphs as below:

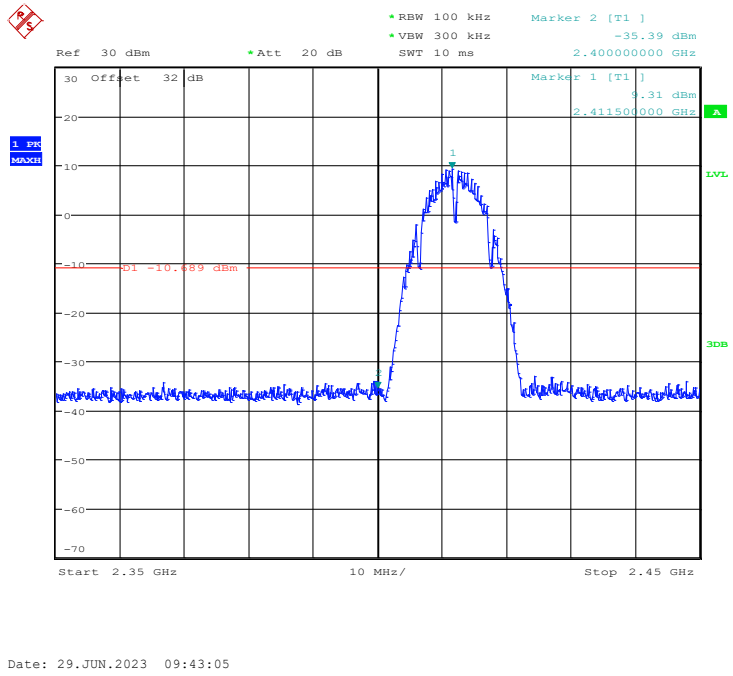


Fig.A.5.1 Band Edges (802.11b, Ch 1)

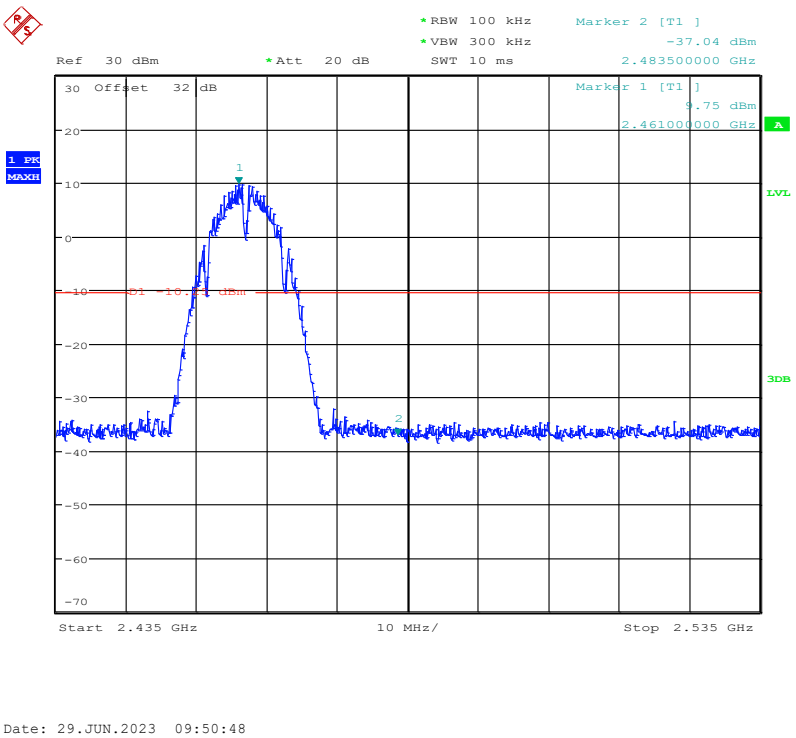


Fig.A.5.2 Band Edges (802.11b, Ch 11)

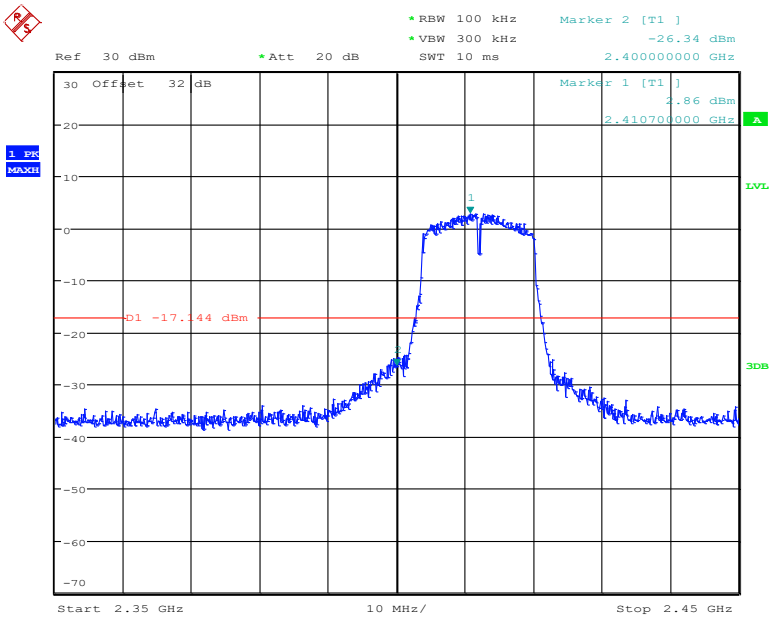


Fig.A.5.3 Band Edges (802.11g, Ch 1)

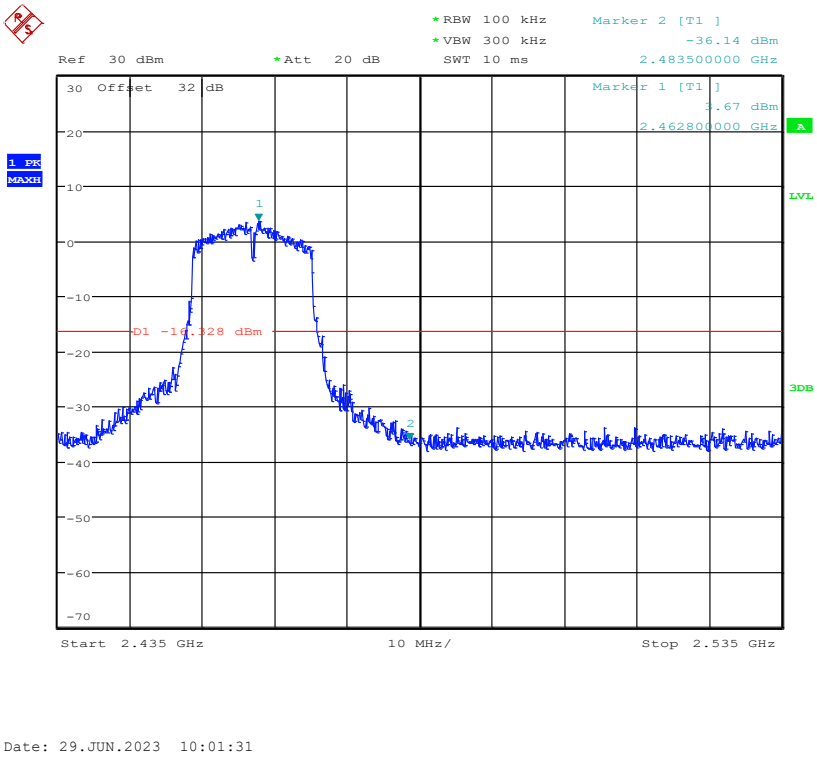


Fig.A.5.4 Band Edges (802.11g, Ch 11)

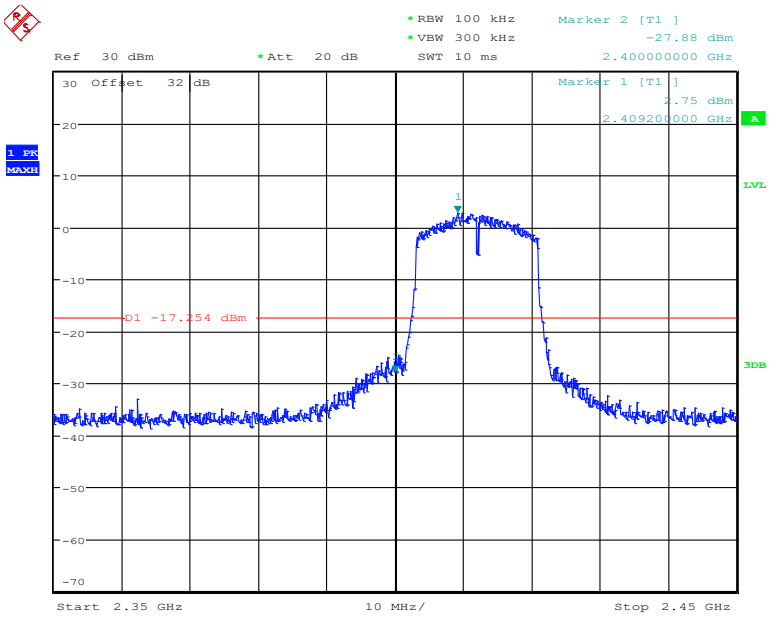


Fig.A.5.5 Band Edges (802.11n-HT20, Ch 1)

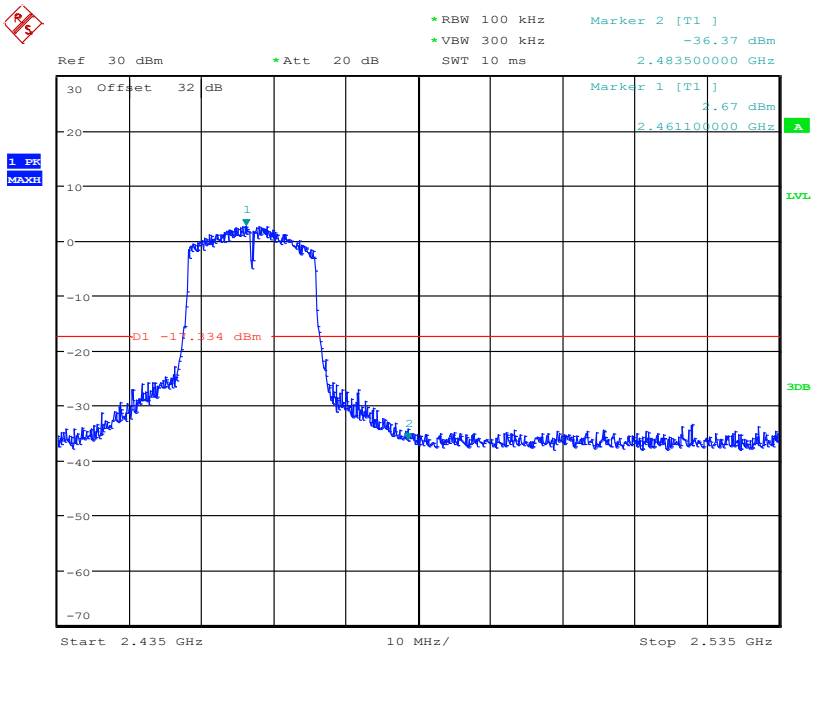


Fig.A.5.6 Band Edges (802.11n-HT20, Ch 11)

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: UT10a

Measurement Results:

802.11b mode

MODE	Channel	Frequency Range	Test Results	Conclusion
802.11b	1	2.412 GHz	Fig.A.6.1.1	**P**
		30 MHz ~ 1 GHz	Fig.A.6.1.2	**P**
		1 GHz ~ 26.5 GHz	Fig.A.6.1.3	**P**
	6	2.437 GHz	Fig.A.6.1.4	**P**
		30 MHz ~ 1 GHz	Fig.A.6.1.5	**P**
		1 GHz ~ 26.5 GHz	Fig.A.6.1.6	**P**
	11	2.462 GHz	Fig.A.6.1.7	**P**
		30 MHz ~ 1 GHz	Fig.A.6.1.8	**P**
		1 GHz ~ 26.5 GHz	Fig.A.6.1.9	**P**

802.11g mode

MODE	Channel	Frequency Range	Test Results	Conclusion
802.11g	1	2.412 GHz	Fig.A.6.1.10	**P**
		30 MHz ~ 1 GHz	Fig.A.6.1.11	**P**
		1 GHz ~ 26.5 GHz	Fig.A.6.1.12	**P**
	6	2.437 GHz	Fig.A.6.1.13	**P**
		30 MHz ~ 1 GHz	Fig.A.6.1.14	**P**
		1 GHz ~ 26.5 GHz	Fig.A.6.1.15	**P**
	11	2.462 GHz	Fig.A.6.1.16	**P**
		30 MHz ~ 1 GHz	Fig.A.6.1.17	**P**
		1 GHz ~ 26.5 GHz	Fig.A.6.1.18	**P**

802.11n-HT20 mode

MODE	Channel	Frequency Range	Test Results	Conclusion
802.11n (HT20)	1	2.412 GHz	Fig.A.6.1.19	**P**
		30 MHz ~ 1 GHz	Fig.A.6.1.20	**P**
		1 GHz ~ 26.5 GHz	Fig.A.6.1.21	**P**
	6	2.437 GHz	Fig.A.6.1.22	**P**
		30 MHz ~ 1 GHz	Fig.A.6.1.23	**P**
		1 GHz ~ 26.5 GHz	Fig.A.6.1.24	**P**
	11	2.462 GHz	Fig.A.6.1.25	**P**
		30 MHz ~ 1 GHz	Fig.A.6.1.26	**P**
		1 GHz ~ 26.5 GHz	Fig.A.6.1.27	**P**

Conclusion: Pass

Test graphs as below:

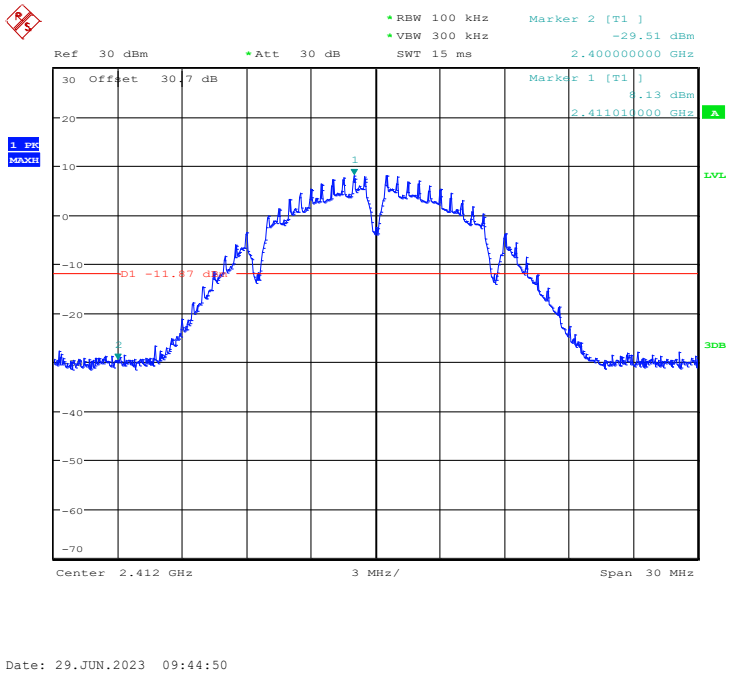


Fig.A.6.1.1 Transmitter Spurious Emission - Conducted (802.11b, Ch1, Center Frequency)

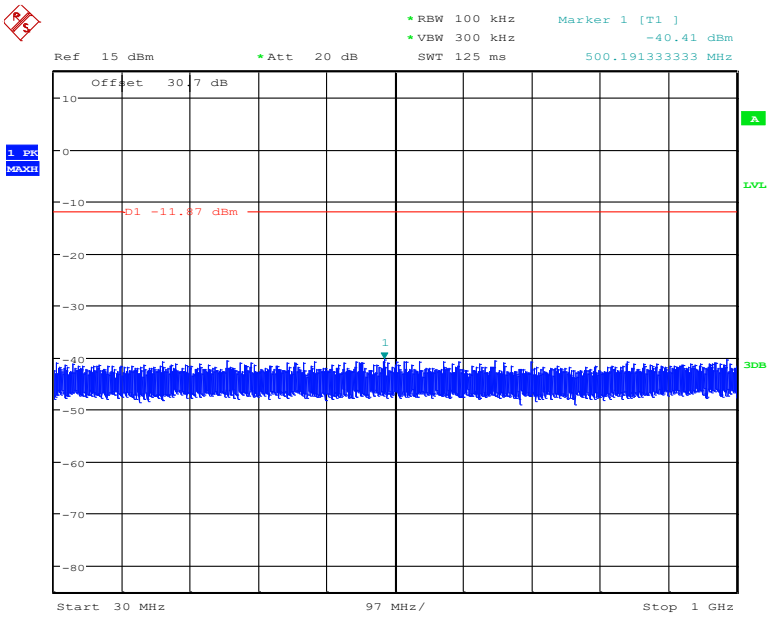


Fig.A.6.1.2 Transmitter Spurious Emission - Conducted (802.11b, Ch1, 30 MHz-1 GHz)

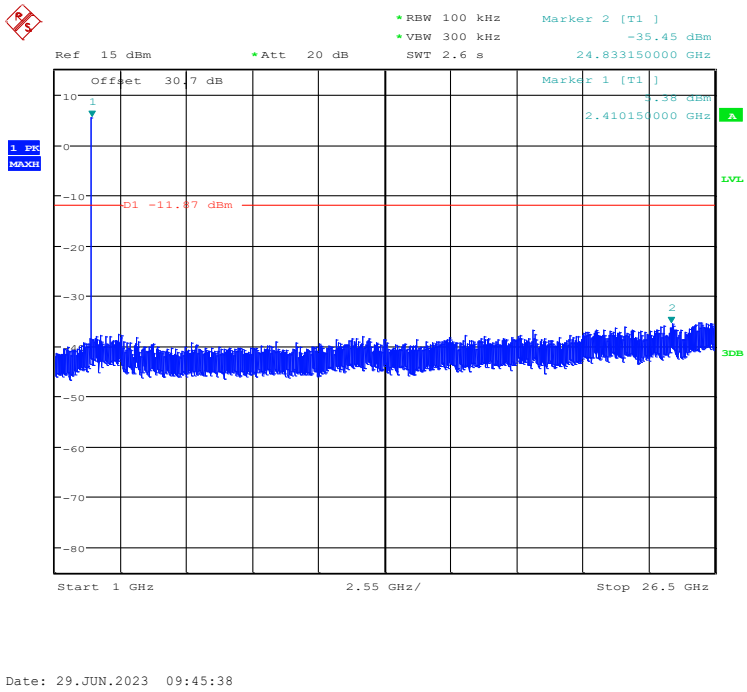


Fig.A.6.1.3 Transmitter Spurious Emission - Conducted (802.11b, Ch1, 1 GHz-26 GHz)

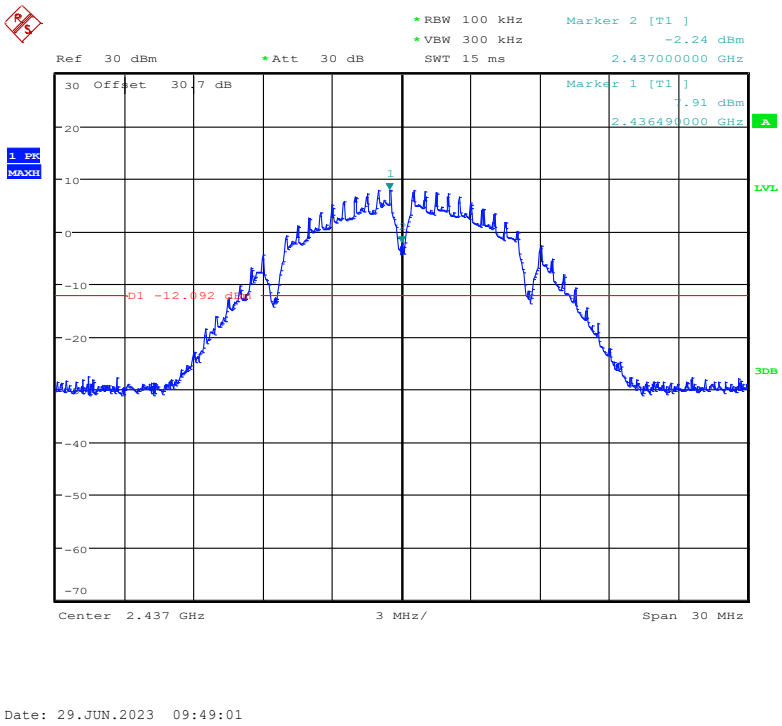


Fig.A.6.1.4 Transmitter Spurious Emission - Conducted (802.11b, Ch6, Center Frequency)

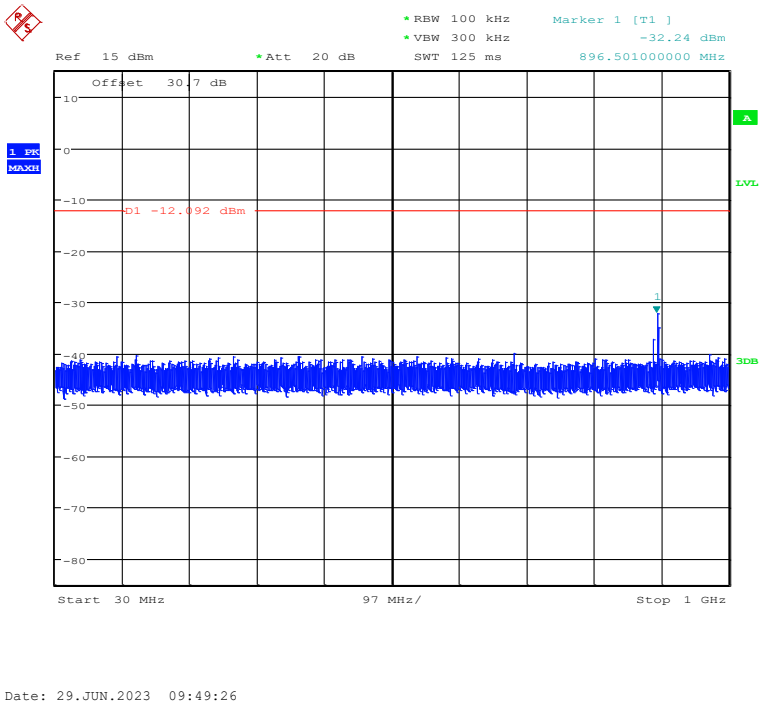


Fig.A.6.1.5 Transmitter Spurious Emission - Conducted (802.11b, Ch6, 30 MHz-1 GHz)

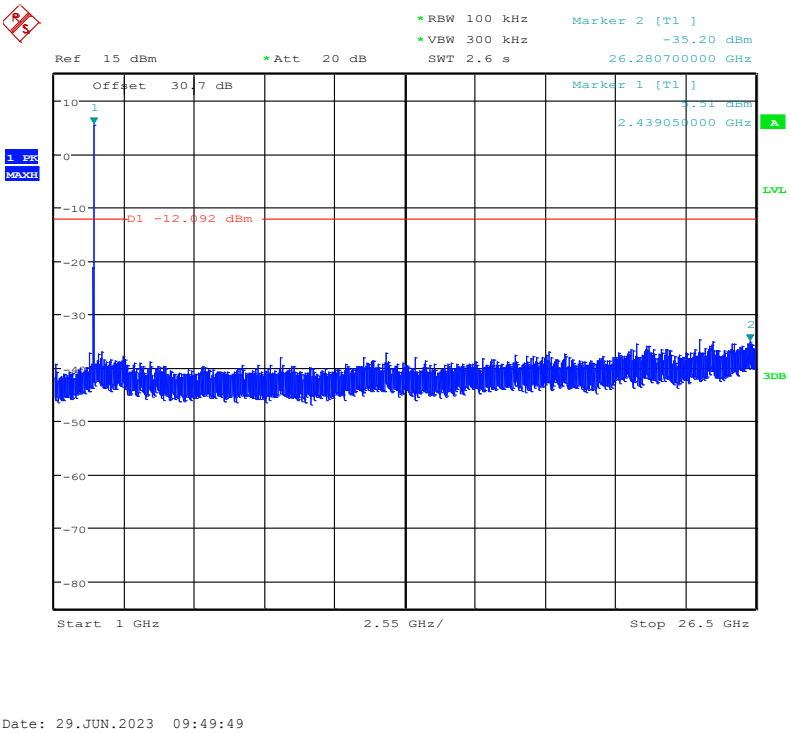


Fig.A.6.1.6 Transmitter Spurious Emission - Conducted (802.11b, Ch6, 1 GHz-26 GHz)

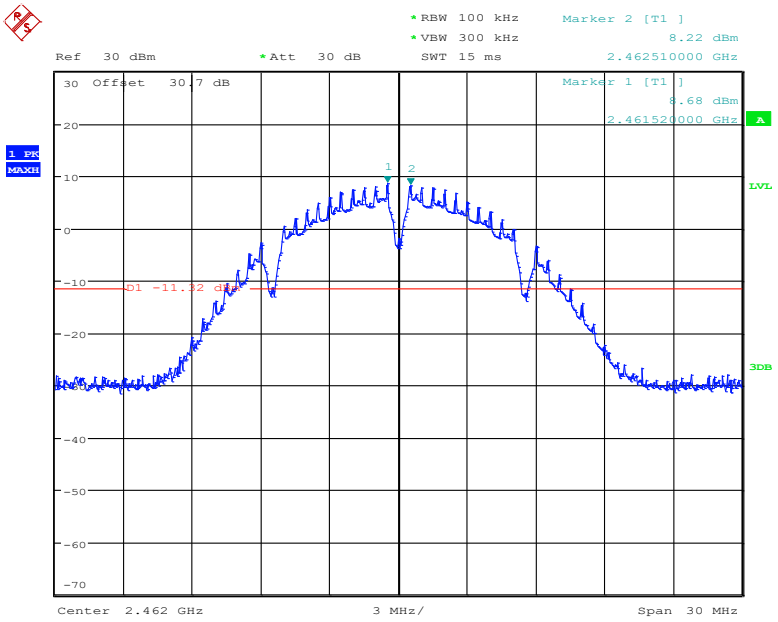


Fig.A.6.1.7 Transmitter Spurious Emission - Conducted (802.11b, Ch11, Center Frequency)

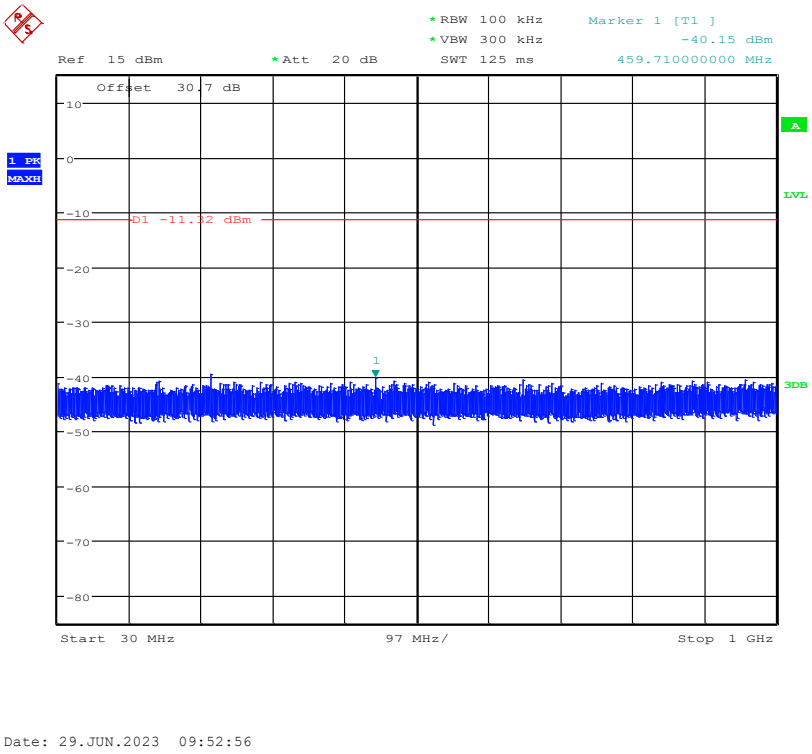


Fig.A.6.1.8 Transmitter Spurious Emission - Conducted (802.11b, Ch11, 30 MHz-1 GHz)

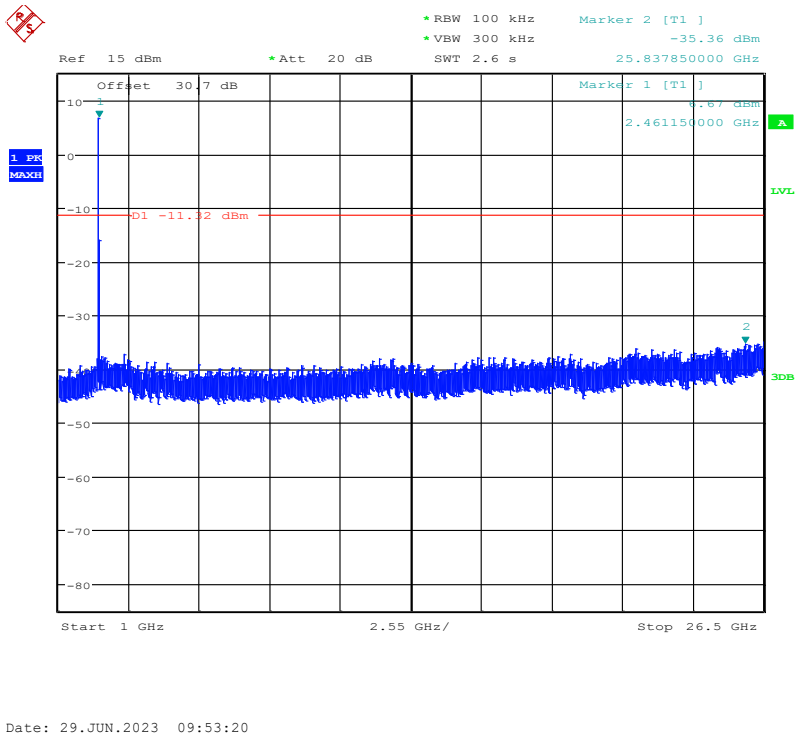


Fig.A.6.1.9 Transmitter Spurious Emission - Conducted (802.11b, Ch11, 20 GHz-26 GHz)

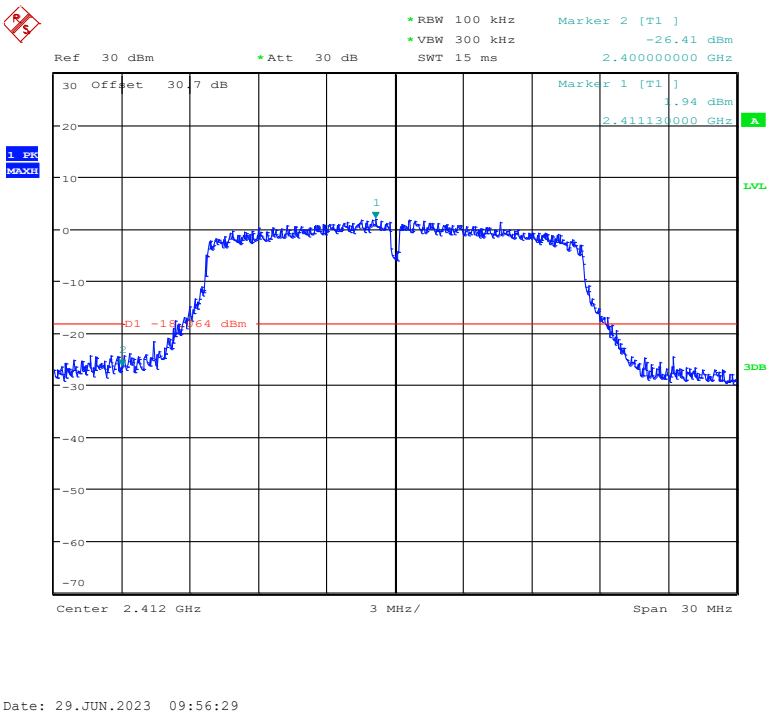


Fig.A.6.1.10 Transmitter Spurious Emission - Conducted (802.11g, Ch1, Center Frequency)

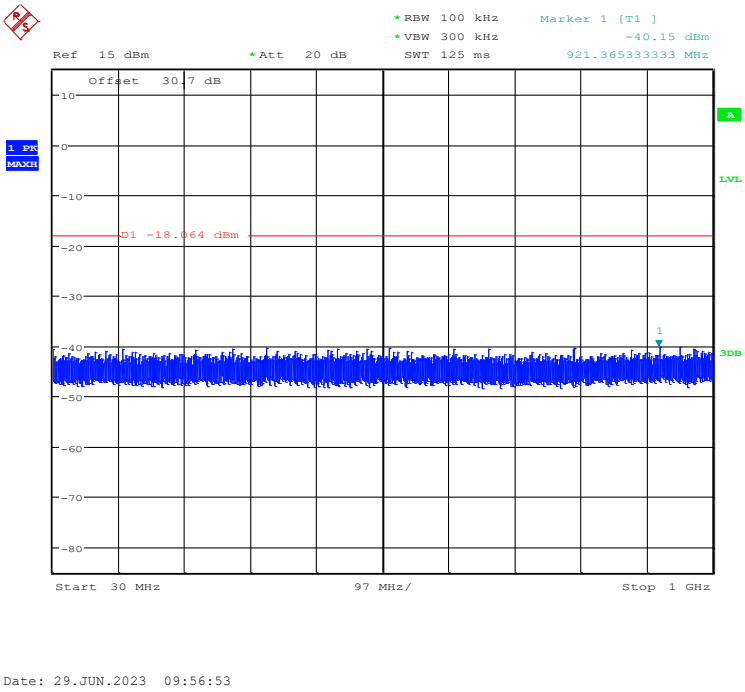


Fig.A.6.1.11 Transmitter Spurious Emission - Conducted (802.11g, Ch1, 30 MHz-1 GHz)

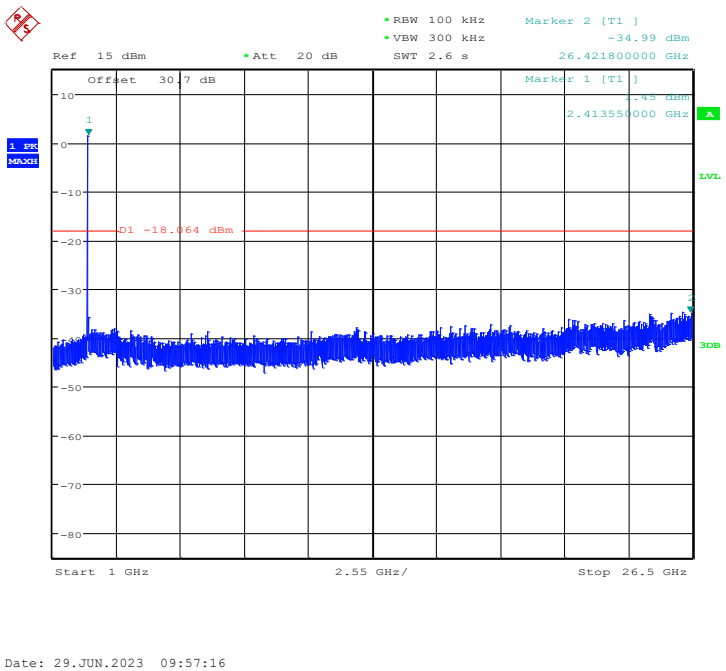


Fig.A.6.1.12 Transmitter Spurious Emission - Conducted (802.11g, Ch1, 1 GHz-26 GHz)

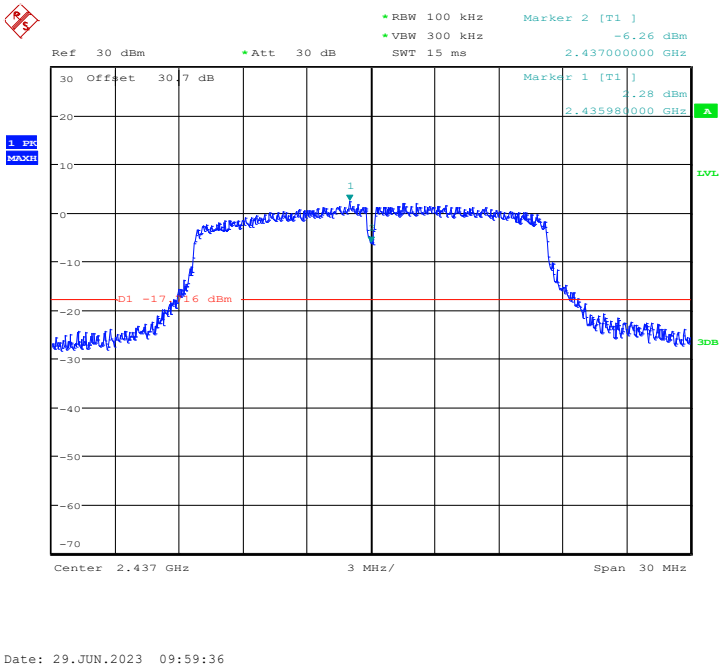


Fig.A.6.1.13 Transmitter Spurious Emission - Conducted (802.11g, Ch6, Center Frequency)

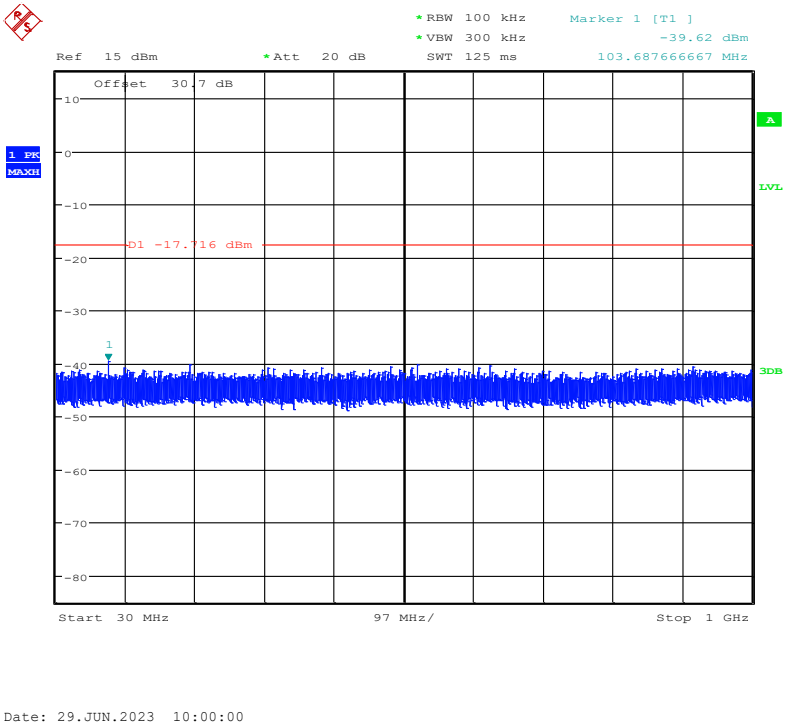


Fig.A.6.1.14 Transmitter Spurious Emission - Conducted (802.11g, Ch6, 30 MHz-1 GHz)

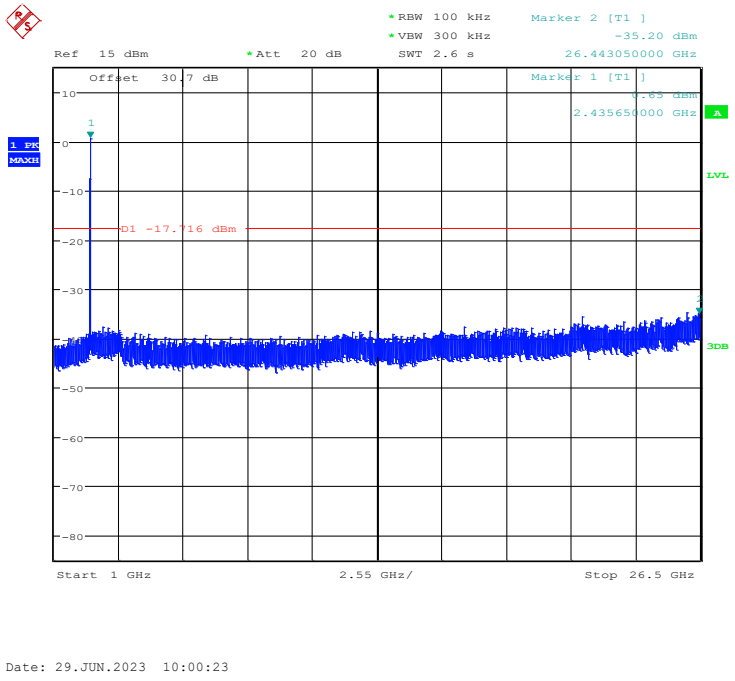


Fig.A.6.1.15 Transmitter Spurious Emission - Conducted (802.11g, Ch6, 1 GHz-26 GHz)

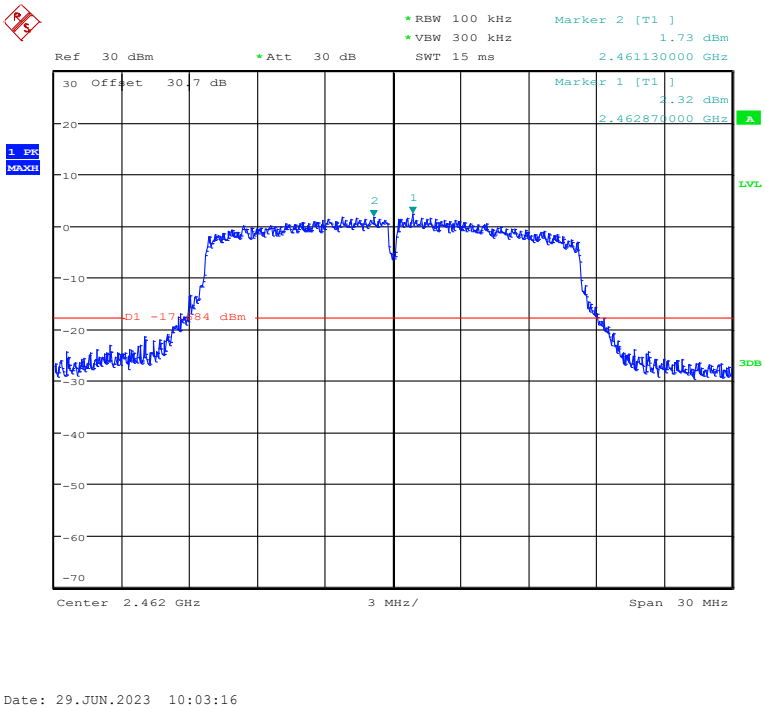


Fig.A.6.1.16 Transmitter Spurious Emission - Conducted (802.11g, Ch11, Center Frequency)

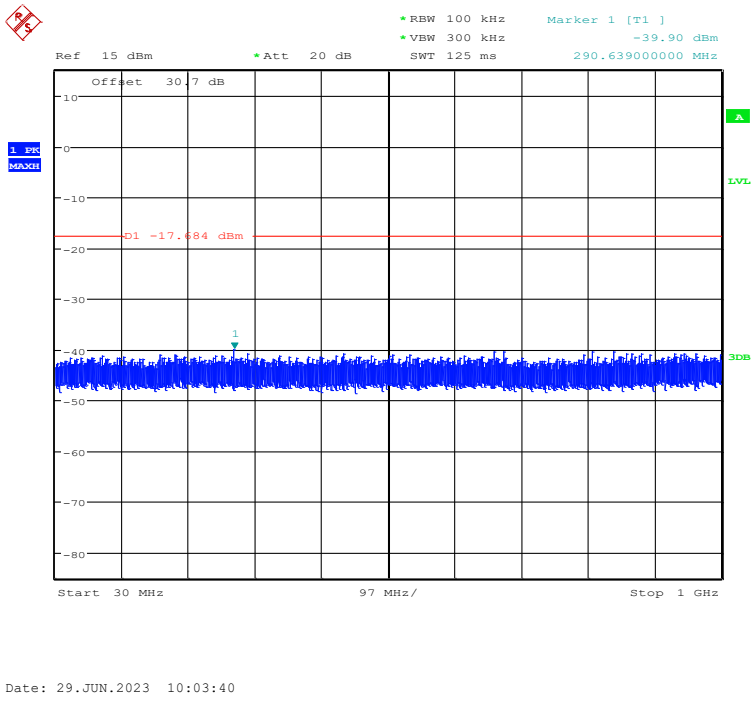


Fig.A.6.1.17 Transmitter Spurious Emission - Conducted (802.11g, Ch11, 30 MHz-1 GHz)

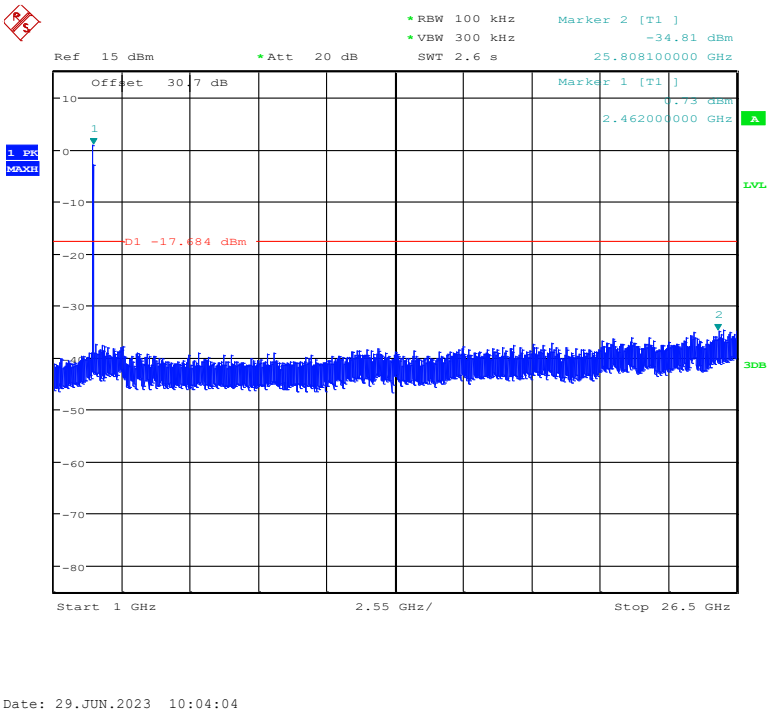


Fig.A.6.1.18 Transmitter Spurious Emission - Conducted (802.11g, Ch11, 1 GHz-26 GHz)

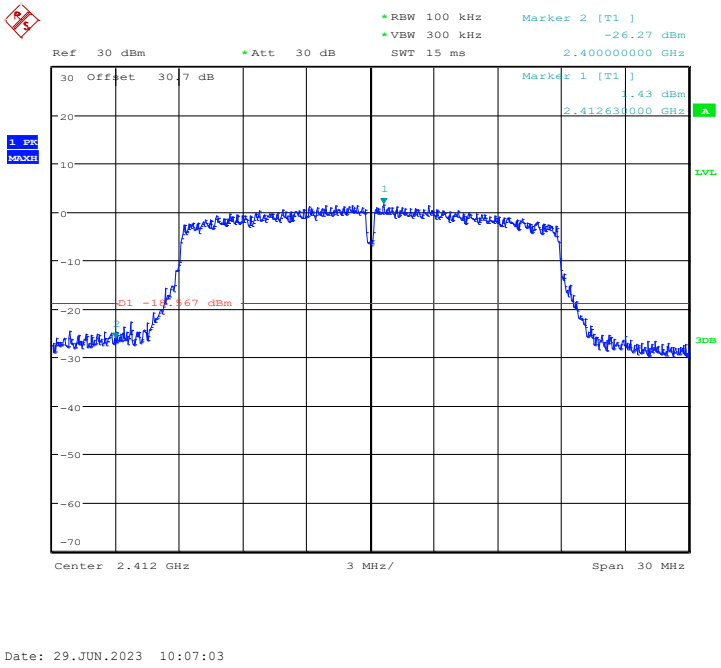


Fig.A.6.1.19 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch1, Center Frequency)

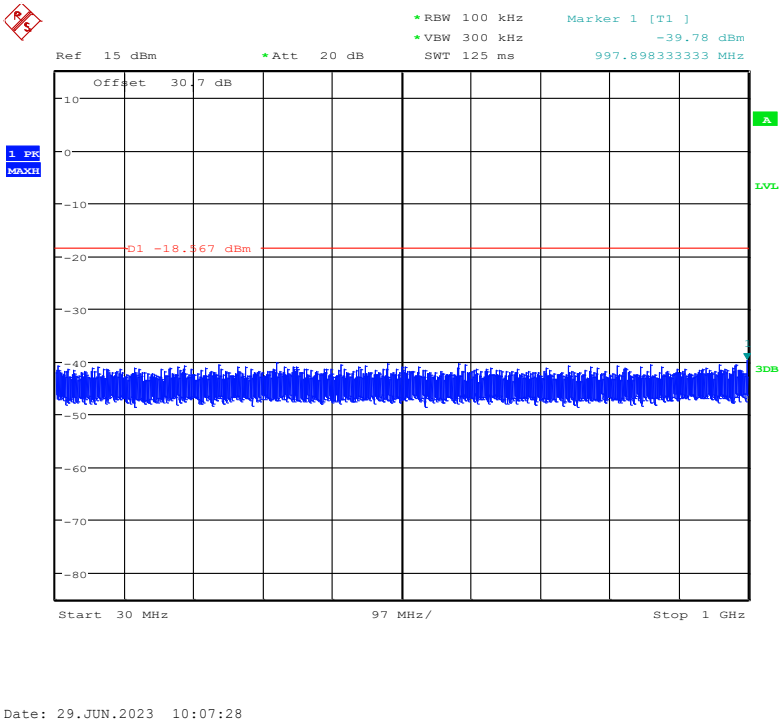


Fig.A.6.1.20 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch1, 30 MHz-1 GHz)

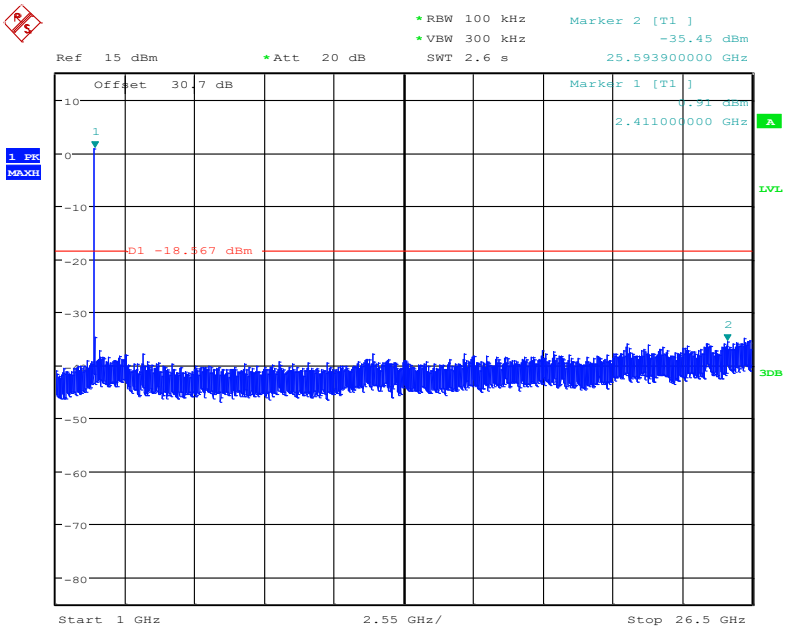


Fig.A.6.1.21 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch1, 1 GHz-26 GHz)

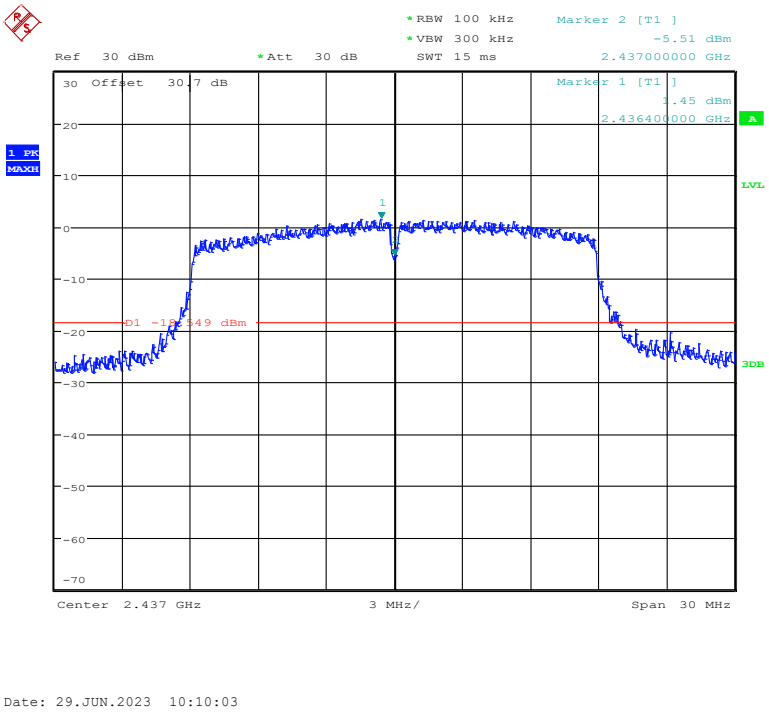


Fig.A.6.1.22 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch6, Center Frequency)

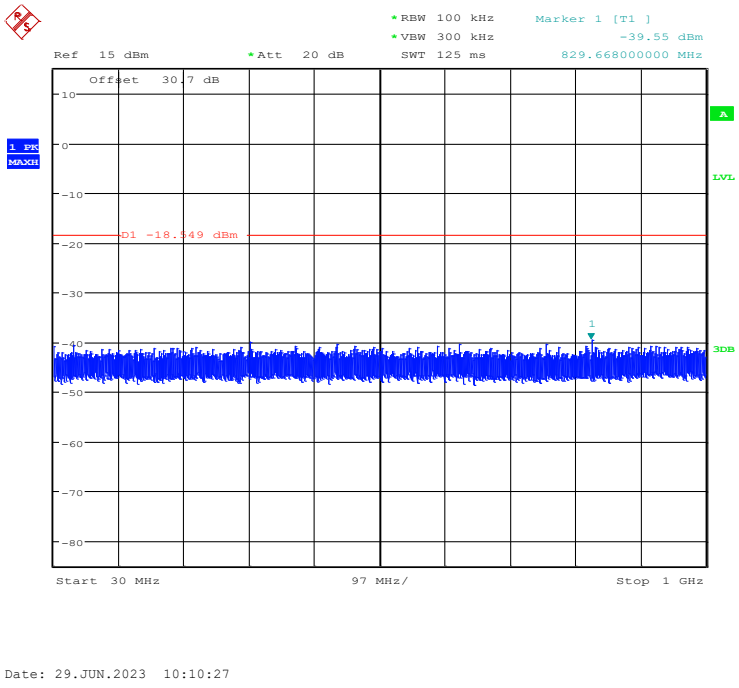


Fig.A.6.1.23 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch6, 30 MHz-1 GHz)

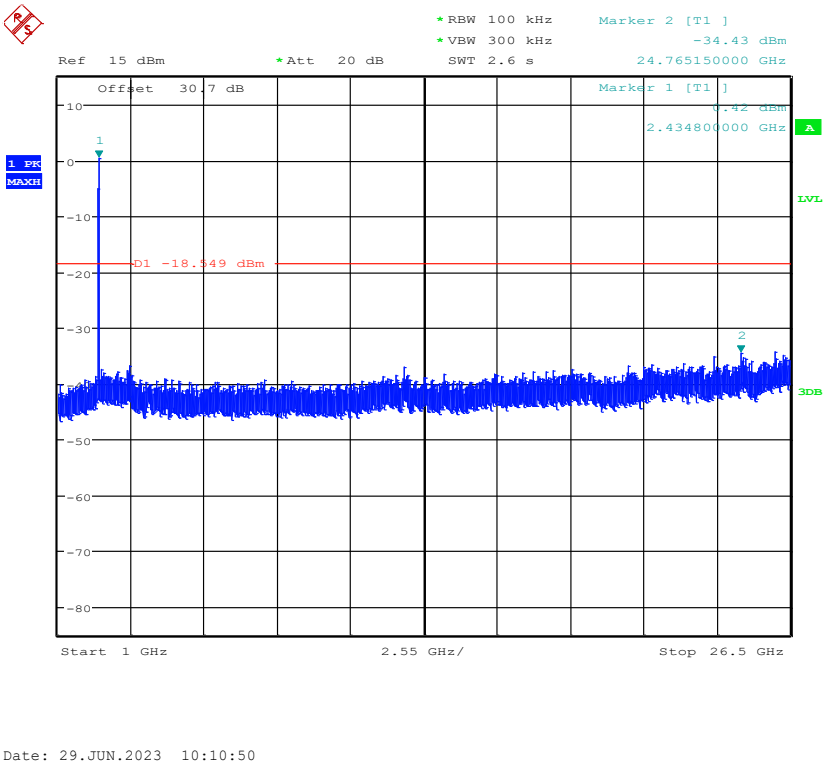


Fig.A.6.1.24 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch6, 1 GHz-26 GHz)

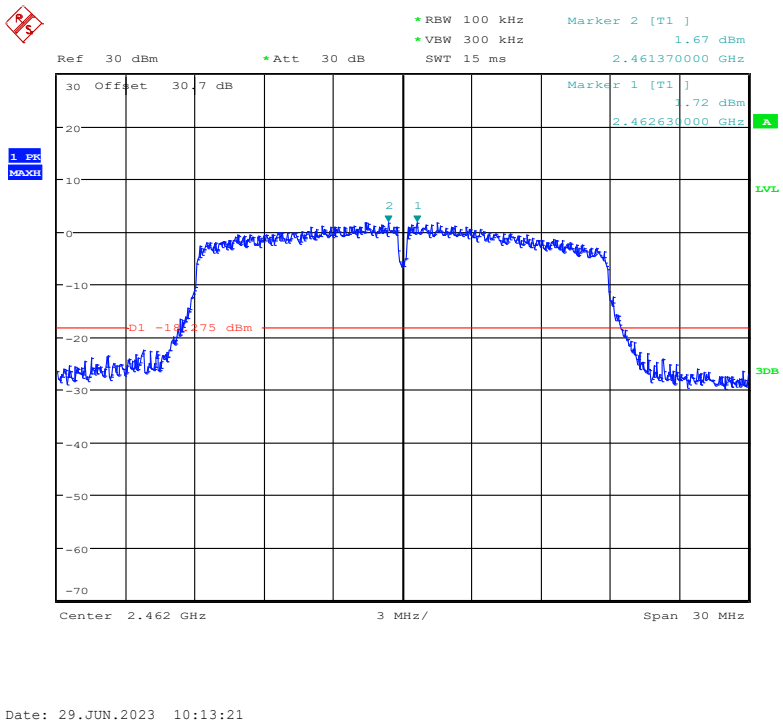


Fig.A.6.1.25 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, Center Frequency)

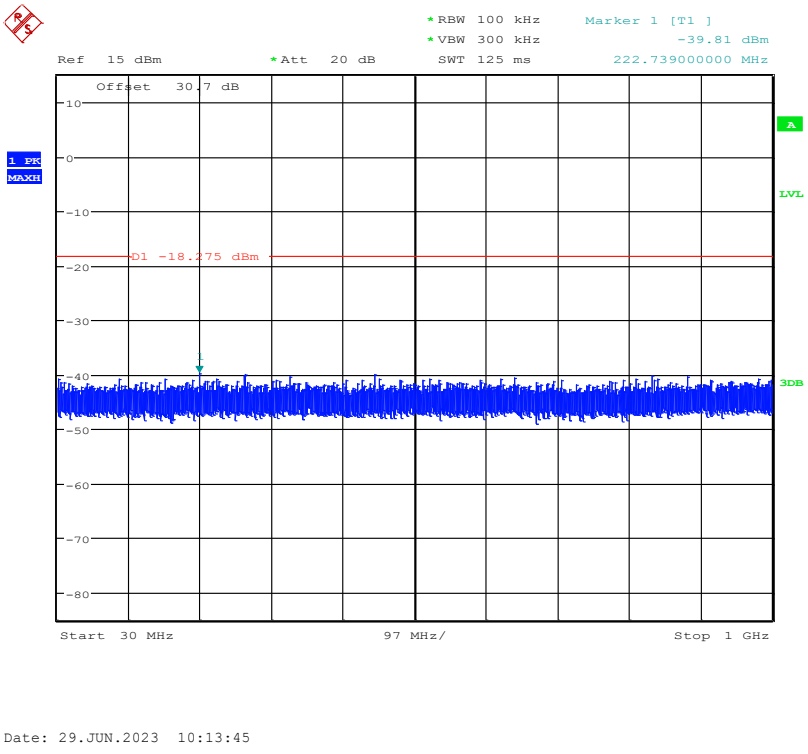


Fig.A.6.1.26 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 30 MHz-1 GHz)

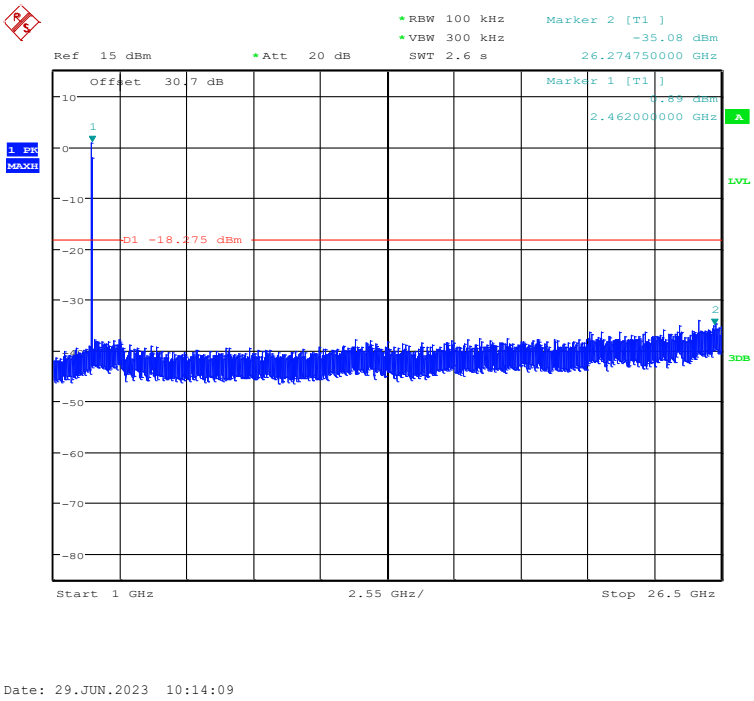


Fig.A.6.1.27 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 1 GHz-26 GHz)

A.6.2 Transmitter Spurious Emission - Radiated

Method of Measurement: See ANSI C63.10-clause 6.4 &6.5 & 6.6

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 of emission (MHz)	Field strength (uV/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

Frequency (MHz)	Field strength(μV/m)	Measurement distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30

Set up:

Tabletop devices shall be placed on a nonconducting platform with nominal top surface dimensions 1 m by 1.5 m. For emissions testing at or below 1 GHz, the table height shall be 80 cm above the reference ground plane. For emission measurements above 1 GHz, the table height shall be 1.5 m

The EUT and transmitting antenna shall be centered on the turntable.

Test Procedure

The EUT was placed on a non-conductive table. 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 360° and the measurement antenna is moved from 1m to 4m to get the maximization result. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

The receiver references:

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

Measurement results:

802.11b mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11b	1	2.31GHz~2.43GHz---L	Fig.A.6.2.1	**P**
	11	2.45GHz~2.50GHz---H	Fig.A.6.2.2	**P**

802.11g mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11g	1	2.31GHz~2.43GHz---L	Fig.A.6.2.3	**P**
	2	2.31GHz~2.43GHz---L	Fig.A.6.2.4	**P**
	3	2.31GHz~2.43GHz---L	Fig.A.6.2.5	**P**
	10	2.45GHz~2.50GHz---H	Fig.A.6.2.6	**P**
	11	2.45GHz~2.50GHz---H	Fig.A.6.2.7	**P**

802.11n-HT20 mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n (HT20)	1	2.31GHz~2.43GHz---L	Fig.A.6.2.8	**P**
	2	2.31GHz~2.43GHz---L	Fig.A.6.2.9	**P**
	3	2.31GHz~2.43GHz---L	Fig.A.6.2.10	**P**
	10	2.45GHz~2.50GHz---H	Fig.A.6.2.11	**P**
	11	2.45GHz~2.50GHz---H	Fig.A.6.2.12	**P**

Conclusion: Pass

Note:

1. 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_{Mea}+$A_{Rpl=}$ P_{Mea}+Cable Loss+Antenna Factor

2. The range of evaluated frequency is from 9 kHz to 26GHz. Measurement value show only up to 6 maximum emissions noted.

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)
2385.586	60.28	5.34	32.20	22.74	74.00	13.72	H
2385.992	60.90	5.34	32.21	23.35	74.00	13.10	V
4823.500	48.38	-34.04	34.10	48.32	74.00	25.62	H
7236.000	42.88	-32.56	35.87	39.57	74.00	31.12	H
9648.000	45.99	-30.71	36.90	39.80	74.00	28.01	H
12060.000	46.76	-29.98	38.82	37.92	74.00	27.24	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)
2315.800	41.99	-29.92	31.56	40.34	74.00	32.01	H
2532.000	43.49	-29.34	32.66	40.16	74.00	30.51	V
4874.000	43.84	-34.19	34.15	43.88	74.00	30.16	V
7311.000	43.84	-32.47	35.96	40.36	74.00	30.16	H
9748.000	45.72	-31.31	36.90	40.13	74.00	28.28	V
12185.000	46.54	-30.64	39.07	38.11	74.00	27.46	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)
2485.140	61.07	5.46	32.60	23.01	74.00	12.93	V
2485.390	61.42	5.46	32.60	23.36	74.00	12.58	V
4924.000	47.11	-33.75	34.25	46.61	74.00	26.89	V
7386.000	43.24	-32.36	35.80	39.80	74.00	30.76	H
9848.000	43.25	-31.95	37.00	38.20	74.00	30.75	H
12310.000	46.96	-30.66	38.91	38.71	74.00	27.04	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)
2389.380	69.46	5.35	32.25	31.86	74.00	4.54	V
2389.982	70.54	5.35	32.26	32.92	74.00	3.46	V
4824.000	41.50	-34.04	34.10	41.44	74.00	32.50	V
7236.000	42.76	-32.56	35.87	39.45	74.00	31.24	V
9648.000	45.44	-30.71	36.90	39.25	74.00	28.56	V
12060.000	47.62	-29.98	38.82	38.78	74.00	26.38	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)
2346.000	42.09	-29.66	31.68	40.06	74.00	31.91	V
2561.400	43.02	-29.36	32.70	39.68	74.00	30.98	H
4874.000	43.66	-34.19	34.15	43.70	74.00	30.34	H
7311.000	43.12	-32.47	35.96	39.64	74.00	30.88	V
9748.000	44.21	-31.31	36.90	38.62	74.00	29.79	H
12185.000	45.67	-30.64	39.07	37.24	74.00	28.33	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)
2483.510	69.59	5.46	32.60	31.53	74.00	4.41	H
2483.600	69.87	5.46	32.60	31.81	74.00	4.13	H
4924.000	42.32	-33.75	34.25	41.82	74.00	31.68	H
7386.000	43.30	-32.36	35.80	39.86	74.00	30.70	V
9848.000	43.49	-31.95	37.00	38.44	74.00	30.51	H
12310.000	46.41	-30.66	38.91	38.16	74.00	27.59	V

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)
2387.728	63.15	5.35	32.23	25.57	74.00	10.85	V
2388.694	62.59	5.35	32.24	24.99	74.00	11.41	H
4824.000	41.26	-34.04	34.10	41.20	74.00	32.74	V
7236.000	42.30	-32.56	35.87	38.99	74.00	31.70	H
9648.000	45.58	-30.71	36.90	39.39	74.00	28.42	V
12060.000	46.47	-29.98	38.82	37.63	74.00	27.53	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)
2361.600	42.27	-29.44	31.86	39.84	74.00	31.73	H
2540.200	44.17	-29.26	32.68	40.75	74.00	29.83	V
4874.000	43.37	-34.19	34.15	43.41	74.00	30.63	H
7311.000	44.53	-32.47	35.96	41.05	74.00	29.47	H
9745.000	44.96	-31.28	36.89	39.35	74.00	29.04	H
12185.000	46.50	-30.64	39.07	38.07	74.00	27.50	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)
2483.615	67.79	5.46	32.60	29.73	74.00	6.21	H
2483.945	68.72	5.46	32.60	30.65	74.00	5.28	H
4924.000	41.72	-33.75	34.25	41.22	74.00	32.28	V
7386.000	43.16	-32.36	35.80	39.73	74.00	30.84	H
9848.000	44.72	-31.95	37.00	39.67	74.00	29.28	V
12310.000	46.45	-30.66	38.91	38.21	74.00	27.55	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)
2396.462	46.63	5.37	32.35	8.92	54.00	7.37	V
2431.425	49.35	5.40	32.53	11.42	54.00	4.65	V
4823.750	42.36	-34.04	34.10	42.31	54.00	11.64	H
7235.950	31.49	-32.56	35.87	28.18	54.00	22.51	V
9648.150	34.11	-30.71	36.90	27.92	54.00	19.89	V
12060.000	35.54	-29.98	38.82	26.71	54.00	18.46	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)
2411.400	48.18	5.38	32.45	10.35	54.00	5.82	V
2462.887	49.55	5.44	32.60	11.52	54.00	4.45	V
4873.800	44.40	-34.19	34.15	44.44	54.00	9.60	H
7310.850	31.53	-32.47	35.96	28.04	54.00	22.47	V
9747.900	32.97	-31.30	36.90	27.37	54.00	21.03	H
12184.950	34.11	-30.64	39.07	25.68	54.00	19.89	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)
2442.037	49.11	5.41	32.57	11.13	54.00	4.89	V
2481.900	48.97	5.46	32.60	10.91	54.00	5.03	V
4923.850	41.46	-33.75	34.25	40.97	54.00	12.54	V
7386.100	31.35	-32.36	35.80	27.92	54.00	22.65	V
9848.000	31.90	-31.95	37.00	26.85	54.00	22.10	H
12309.900	34.62	-30.66	38.91	26.37	54.00	19.38	V

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)
2389.687	48.00	5.35	32.26	10.39	54.00	6.00	V
2390.025	48.42	5.35	32.26	10.80	54.00	5.58	V
4824.100	30.00	-34.04	34.10	29.95	54.00	24.00	H
7235.950	30.90	-32.56	35.87	27.59	54.00	23.10	H
9648.150	33.64	-30.71	36.90	27.44	54.00	20.36	V
12060.000	34.91	-29.98	38.82	26.08	54.00	19.09	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)
2411.025	48.53	5.38	32.44	10.70	54.00	5.47	V
2462.363	50.30	5.43	32.60	12.27	54.00	3.70	V
4874.850	31.08	-34.19	34.15	31.12	54.00	22.92	V
7310.850	31.02	-32.47	35.96	27.54	54.00	22.98	H
9747.900	32.67	-31.30	36.90	27.07	54.00	21.33	V
12184.950	34.07	-30.64	39.07	25.64	54.00	19.93	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)
2483.512	49.69	5.46	32.60	11.63	54.00	4.31	V
2483.738	49.63	5.46	32.60	11.57	54.00	4.37	V
4923.500	30.86	-33.76	34.25	30.38	54.00	23.14	H
7310.850	30.86	-32.47	35.96	27.38	54.00	23.14	V
9747.900	32.66	-31.30	36.90	27.07	54.00	21.34	H
12184.950	34.14	-30.64	39.07	25.71	54.00	19.86	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)
2389.575	47.53	5.35	32.26	9.93	54.00	6.47	V
2389.912	47.80	5.35	32.26	10.19	54.00	6.20	V
4824.100	29.32	-34.04	34.10	29.26	54.00	24.68	H
7235.950	30.74	-32.56	35.87	27.43	54.00	23.26	H
9648.150	33.65	-30.71	36.90	27.46	54.00	20.35	H
12060.000	34.92	-29.98	38.82	26.08	54.00	19.08	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)
2411.963	50.57	5.38	32.45	12.74	54.00	3.43	V
2462.175	50.62	5.43	32.60	12.59	54.00	3.38	V
4874.150	30.70	-34.19	34.15	30.74	54.00	23.30	V
7310.850	31.43	-32.47	35.96	27.94	54.00	22.57	H
9747.900	33.17	-31.30	36.90	27.58	54.00	20.83	H
12184.950	34.65	-30.64	39.07	26.22	54.00	19.35	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)
2483.588	49.52	5.46	32.60	11.46	54.00	4.48	V
2483.850	49.48	5.46	32.60	11.42	54.00	4.52	V
4923.850	30.93	-33.75	34.25	30.43	54.00	23.07	H
7386.100	30.90	-32.36	35.80	27.46	54.00	23.10	V
9848.000	32.07	-31.95	37.00	27.02	54.00	21.93	H
12309.900	34.77	-30.66	38.91	26.52	54.00	19.23	H

Test graphs as below:

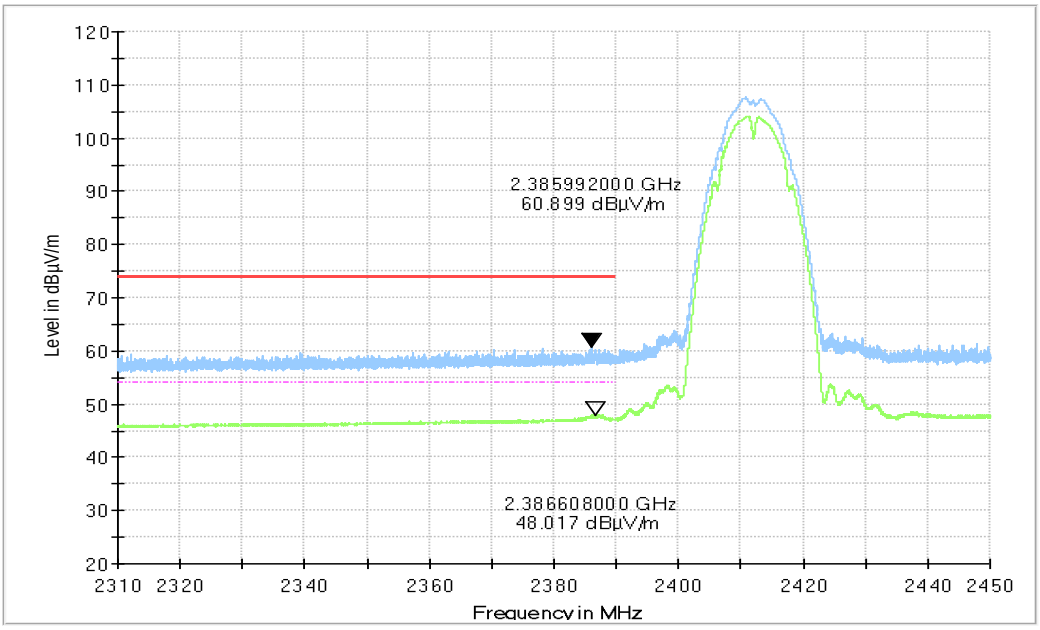


Fig.A.6.2.1 Transmitter Spurious Emission - Radiated (Power): 802.11b, ch1, 2.31 GHz – 2.45GHz

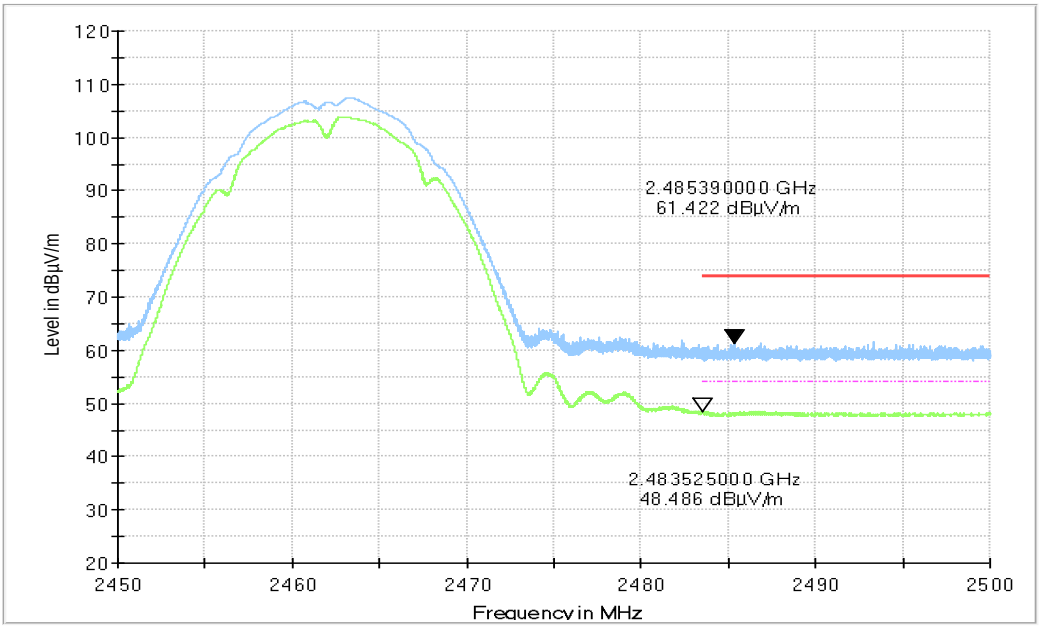


Fig.A.6.2.2 Transmitter Spurious Emission - Radiated (Power): 802.11b, ch11, 2.45 GHz - 2.50GHz

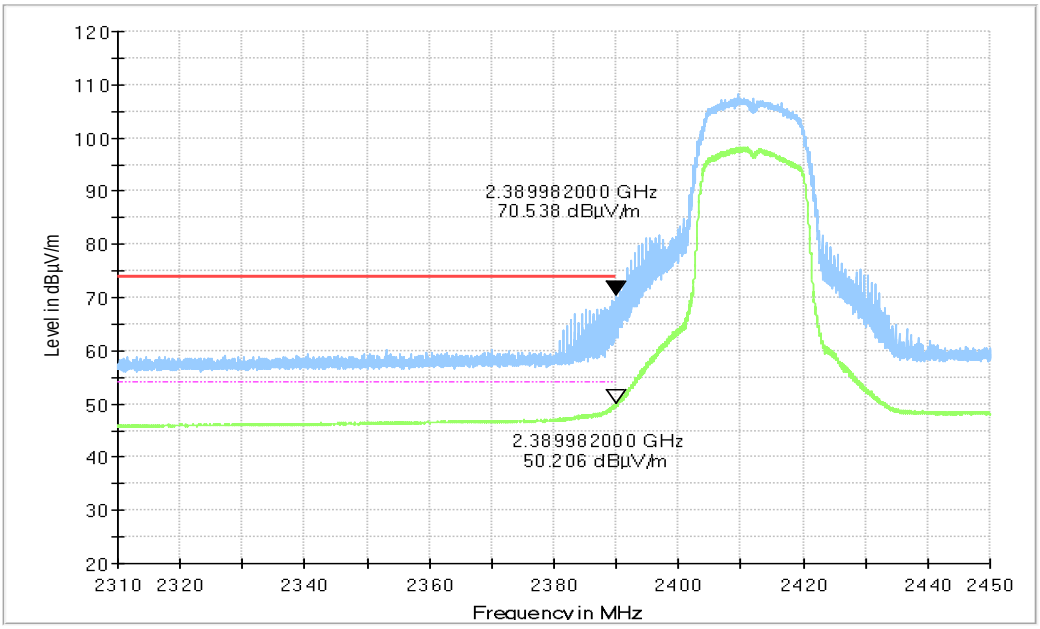


Fig.A.6.2.3 Transmitter Spurious Emission - Radiated (Power): 802.11g, ch1, 2.31 GHz - 2.45GHz

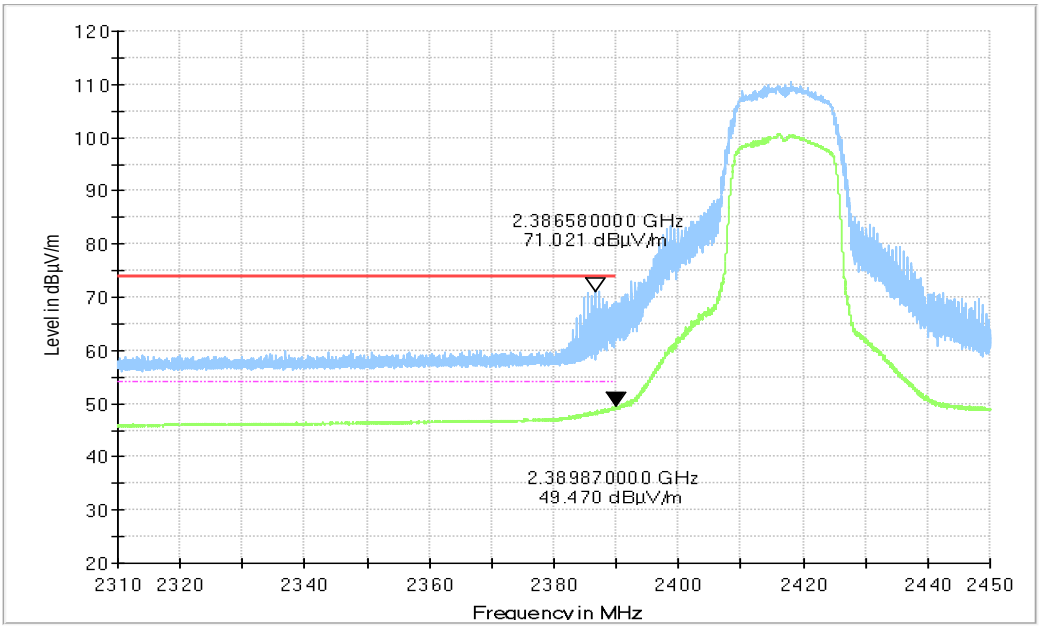


Fig.A.6.2.4 Transmitter Spurious Emission - Radiated (Power): 802.11g, ch2, 2.31 GHz - 2.45GHz

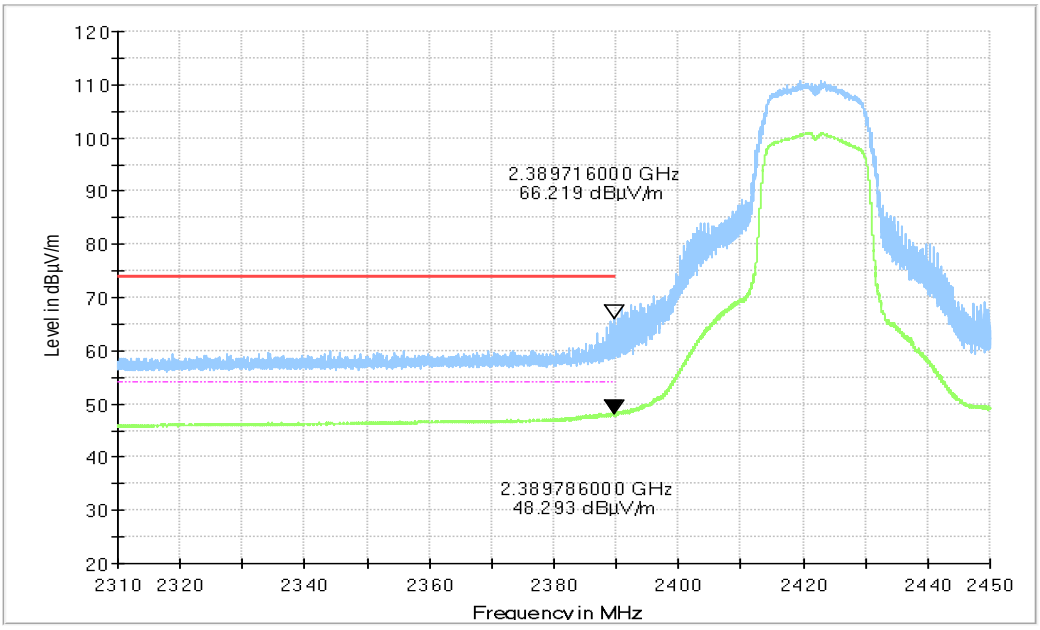


Fig.A.6.2.5 Transmitter Spurious Emission - Radiated (Power): 802.11g, ch3, 2.31 GHz - 2.45GHz

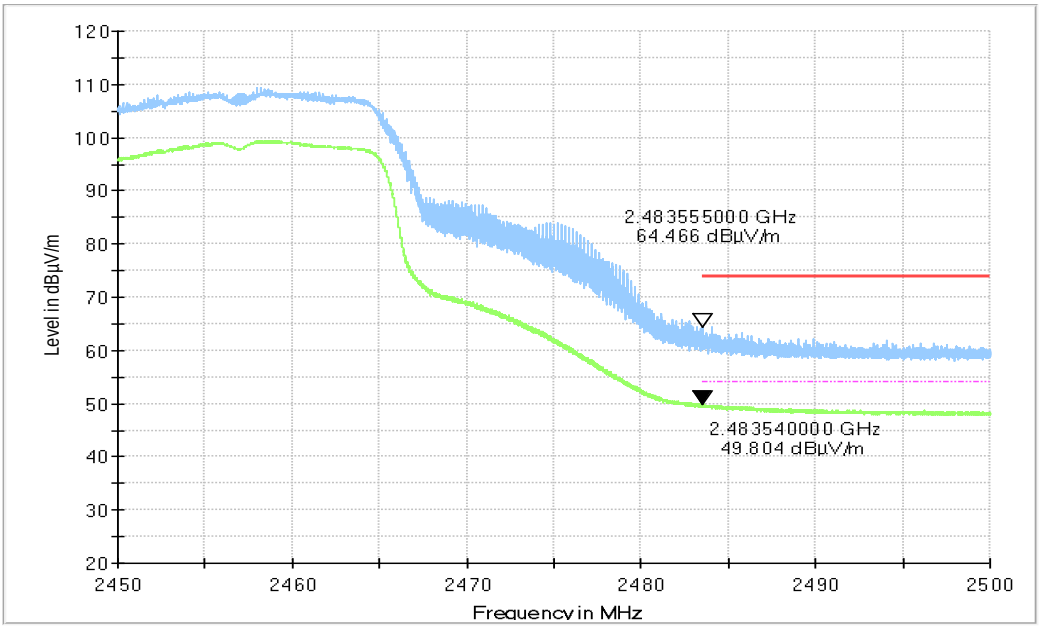


Fig.A.6.2.6 Transmitter Spurious Emission - Radiated (Power): 802.11g, ch10, 2.45 GHz - 2.50GHz

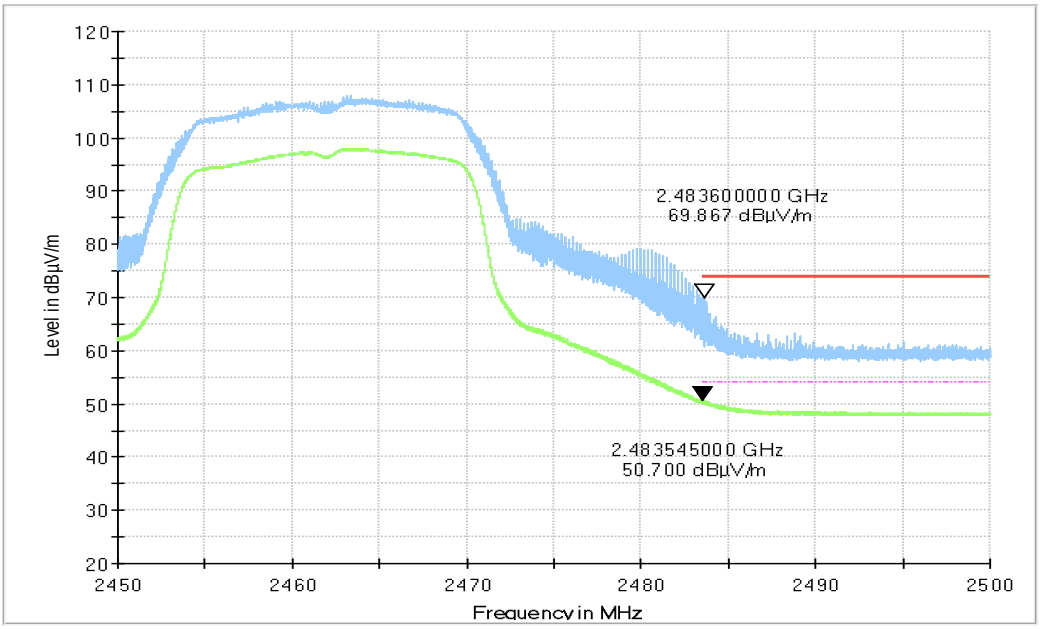


Fig.A.6.2.7 Transmitter Spurious Emission - Radiated (Power): 802.11g, ch11, 2.45 GHz - 2.50GHz

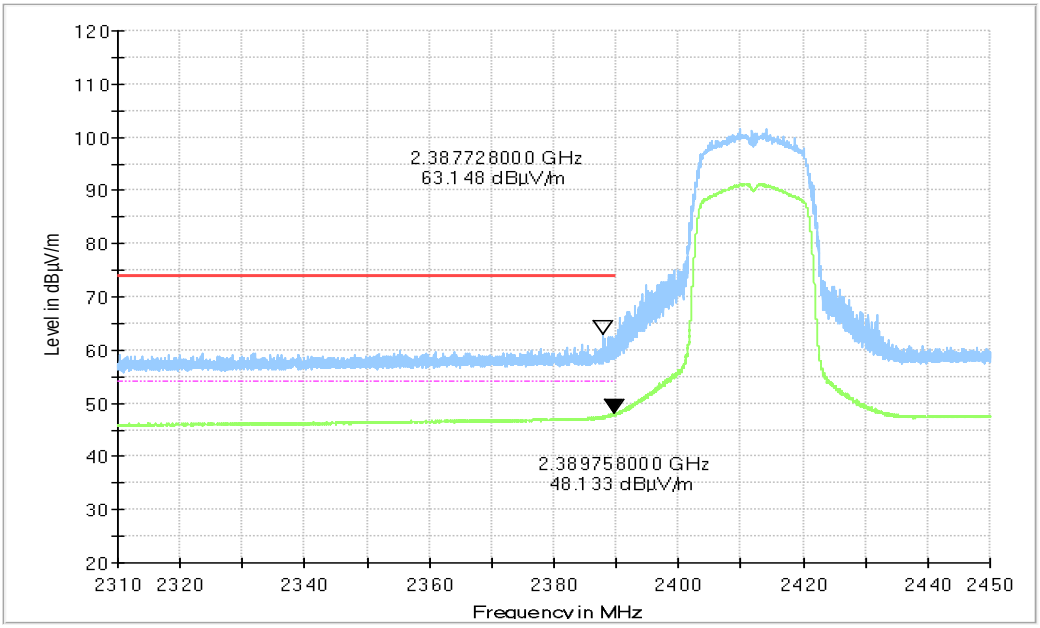


Fig.A.6.2.8 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT20, ch1, 2.31 GHz - 2.45GHz

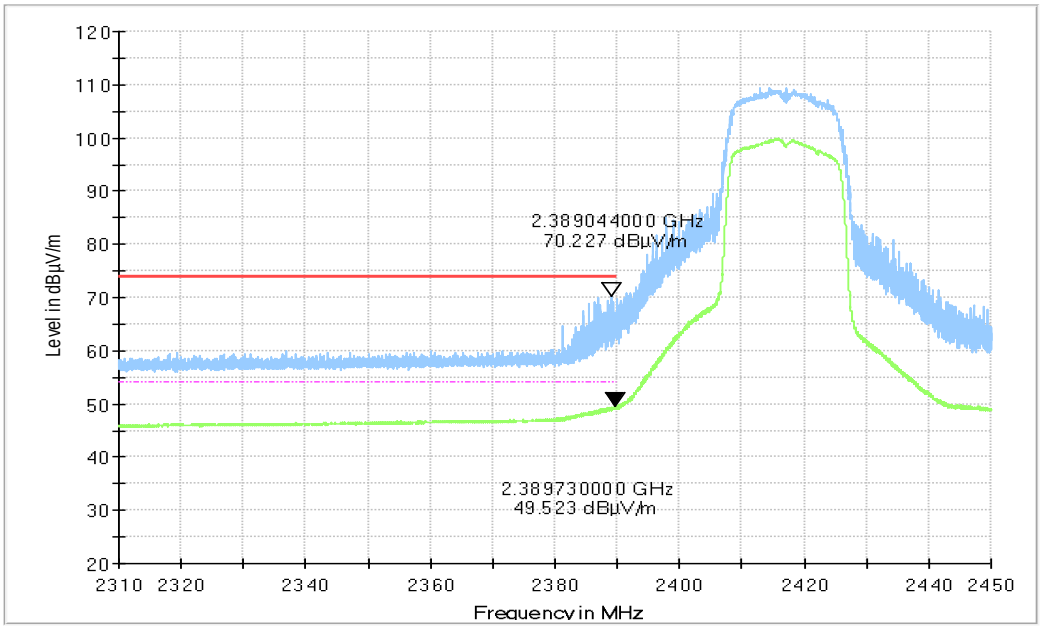


Fig.A.6.2.9 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT20, ch2, 2.31 GHz - 2.45GHz

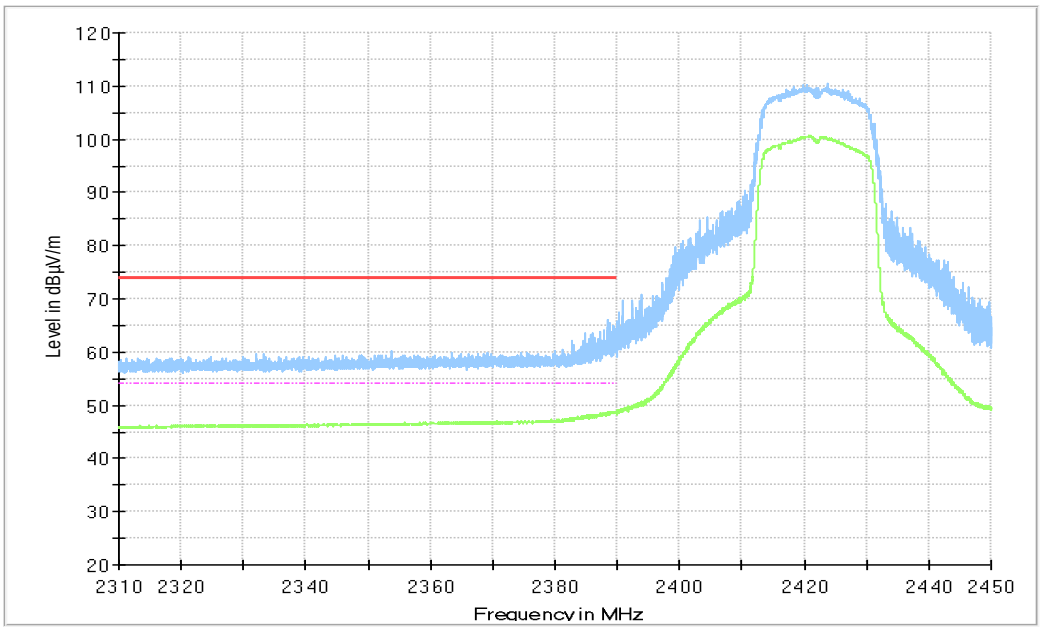


Fig.A.6.2.1 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT20, ch3, 2.31 GHz - 2.45GHz

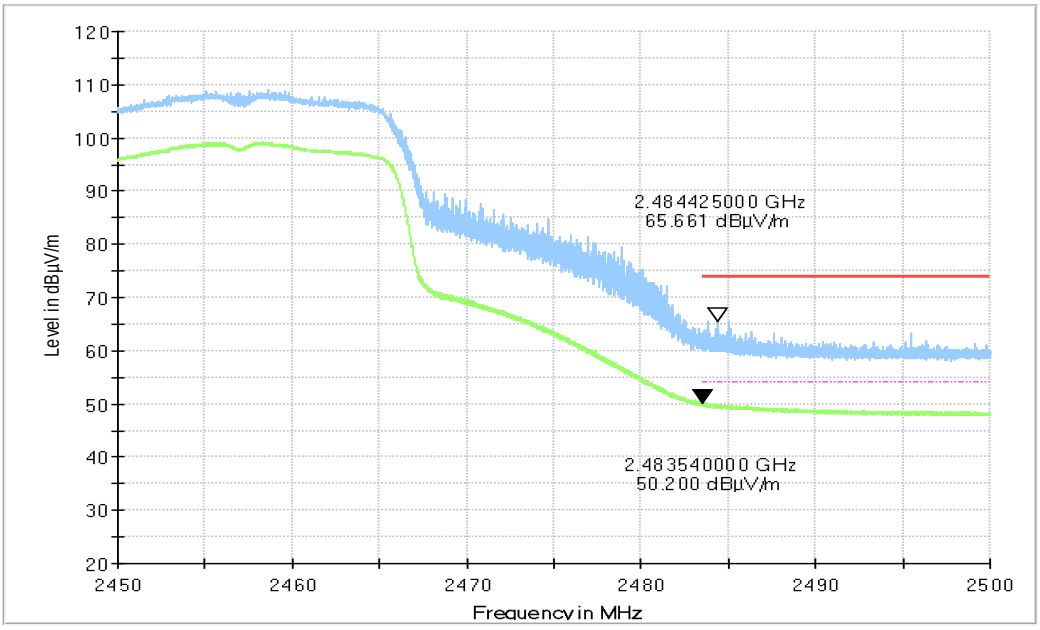


Fig.A.6.2.2 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT20, ch10, 2.45 GHz - 2.50GHz

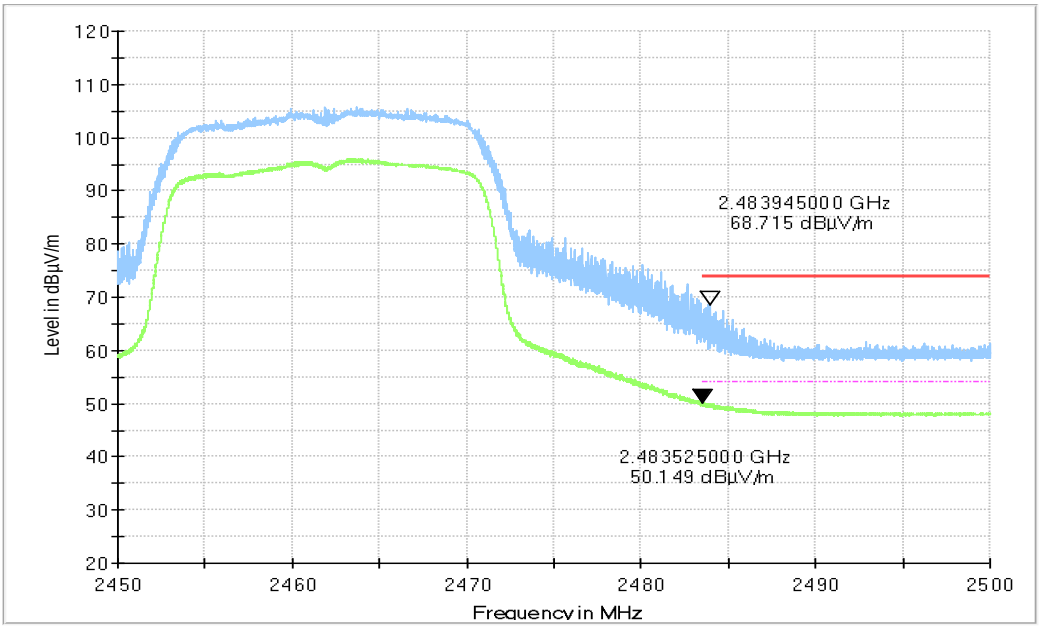


Fig.A.6.2.3 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT20, ch11, 2.45 GHz - 2.50GHz

A.7. 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.

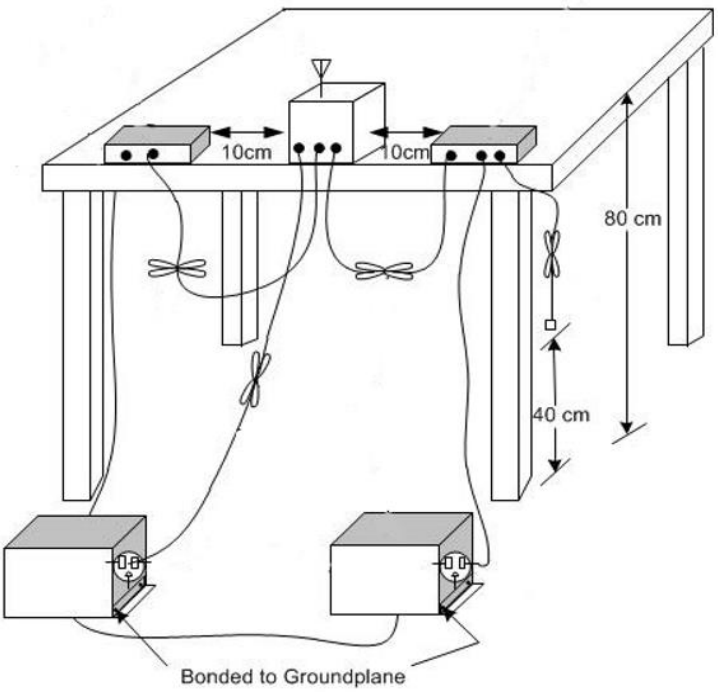
The measurement bandwidth is:

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

Test Condition:

Voltage（V）	Frequency（Hz）
120	60

Measurement 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.7.1	Fig.A.7.2	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.7.1	Fig.A.7.2	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:

Result for Traffic:

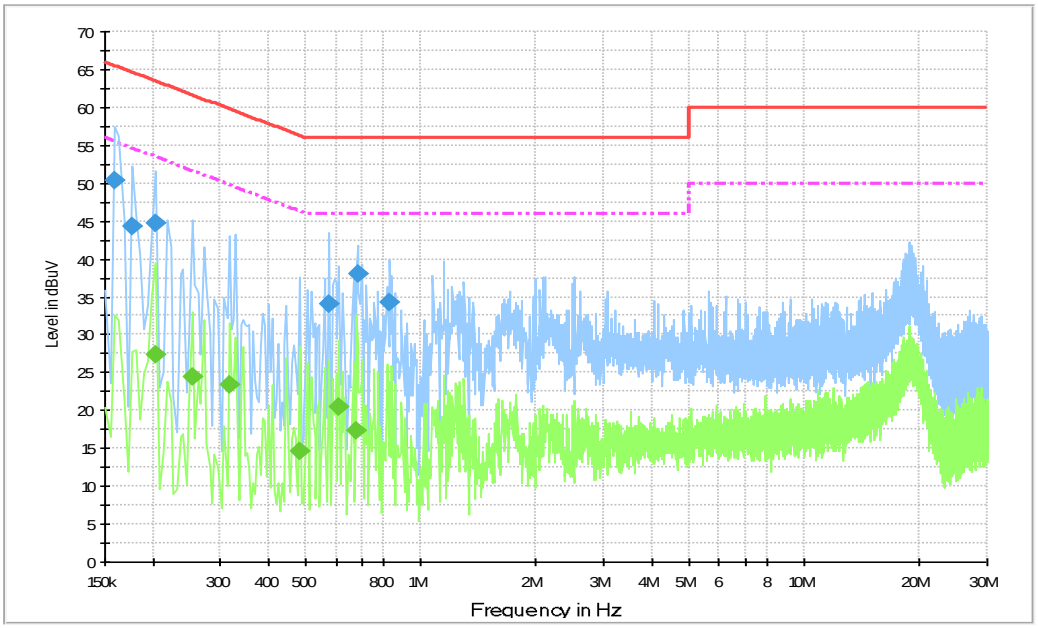


Fig.A.7.1 AC Powerline Conducted Emission-802.11b

Note1: 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 (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.159000	50.4	2000.	9.000	N	26.8	15.1	65.5
0.177000	44.3	2000.	9.000	L1	23.5	20.3	64.6
0.204000	44.7	2000.	9.000	N	19.7	18.7	63.4
0.577500	34.0	2000.	9.000	N	19.7	22.0	56.0
0.685500	38.0	2000.	9.000	L1	19.7	18.0	56.0
0.829500	34.2	2000.	9.000	N	19.7	21.8	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.204000	27.4	2000.0	9.000	N	19.7	26.1	53.4
0.253500	24.4	2000.0	9.000	L1	19.7	27.2	51.6
0.316500	23.3	2000.0	9.000	N	19.7	26.5	49.8
0.483000	14.7	2000.0	9.000	L1	19.8	31.6	46.3
0.609000	20.5	2000.0	9.000	N	19.7	25.5	46.0
0.681000	17.4	2000.0	9.000	L1	19.7	28.6	46.0

Result for Idle:

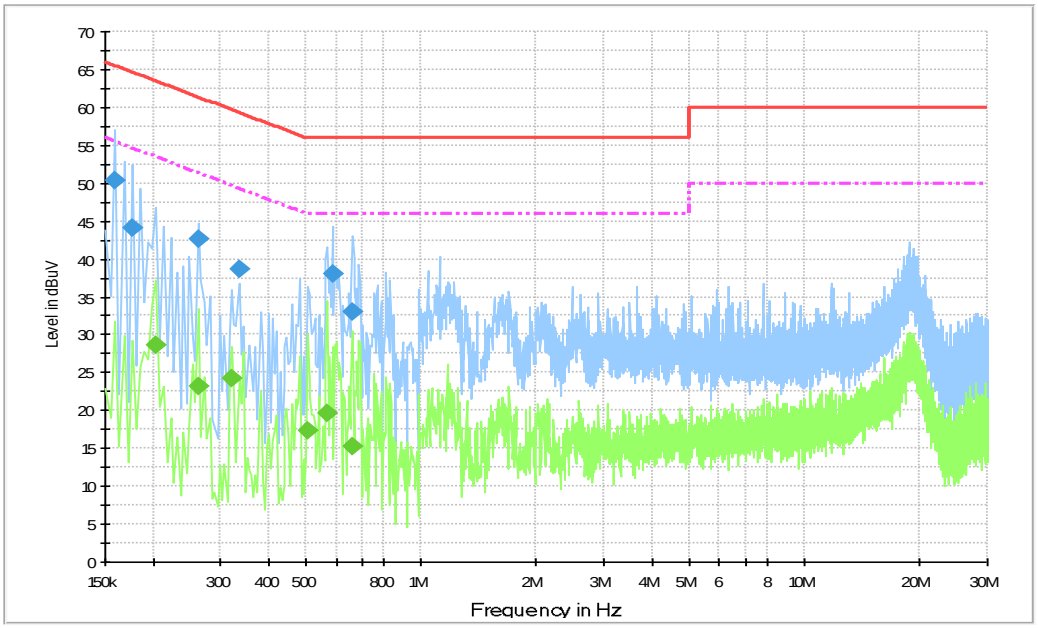


Fig.A.7.2 AC Powerline Conducted Emission-Idle

Note1: 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 (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.159000	50.4	2000.	9.000	L1	26.8	15.1	65.5
0.177000	44.2	2000.	9.000	N	23.5	20.5	64.6
0.262500	42.6	2000.	9.000	L1	19.7	18.8	61.4
0.334500	38.7	2000.	9.000	N	19.7	20.7	59.3
0.586500	38.0	2000.	9.000	N	19.7	18.0	56.0
0.663000	33.0	2000.	9.000	L1	19.7	23.0	56.0

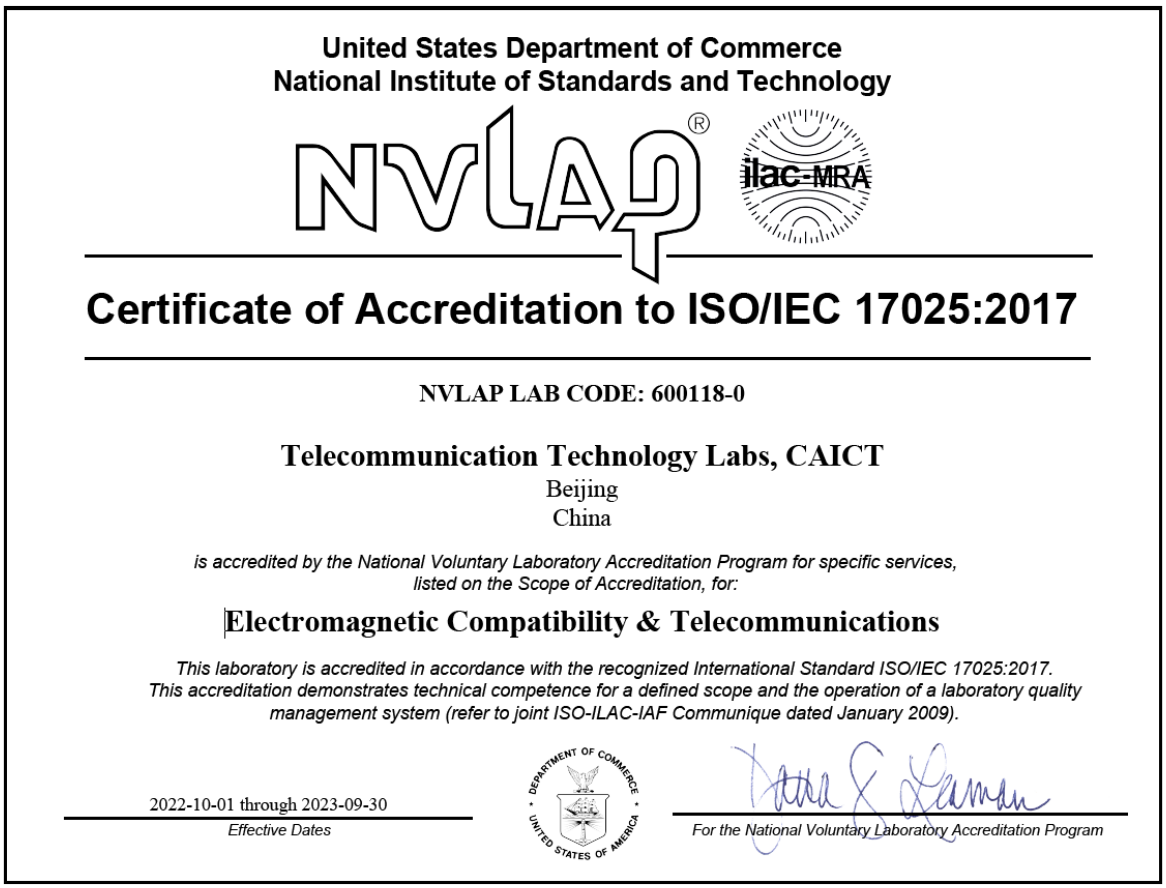
Final Result 2

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.204000	28.6	2000.0	9.000	L1	19.7	24.9	53.4
0.262500	23.1	2000.0	9.000	L1	19.7	28.2	51.4
0.321000	24.3	2000.0	9.000	N	19.7	25.4	49.7
0.505500	17.3	2000.0	9.000	L1	19.8	28.7	46.0
0.568500	19.6	2000.0	9.000	L1	19.8	26.4	46.0
0.663000	15.3	2000.0	9.000	N	19.7	30.7	46.0

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



United States Department of Commerce
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NVLAP LAB CODE: 600118-0

Telecommunication Technology Labs, CAICT
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is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

Electromagnetic Compatibility & Telecommunications

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).

2022-10-01 through 2023-09-30
Effective Dates

DEPARTMENT OF COMMERCE · UNITED STATES OF AMERICA

For the National Voluntary Laboratory Accreditation Program

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