RADIO TEST REPORT

FCC ID: 2AXEY-AK-WS1102

Product	:	Smart socket
Trademark	:	N/A
Model Name	:	AK-WS1102
Applicant	:	Guangdong Anke Intelligent Technology Co.,Ltd
Date of Issue	:	Aug,26,2020
Standard(s)	:	FCC Part 15.247
Report No	:	S200XXX

Prepared for

Guangdong Anke Intelligent Technology Co.,Ltd

Building B1 WE Valley, No. 4 Headquarter 2nd Rd Songshan Lake, Dongguan City, Guangdong Province, China

Prepared by

Shenzhen NTEK Testing Technology Co., Ltd.

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REPORT REVISE RECORD

Report No	Revise Time	Issued Date	Valid Version	Notes
S200XX	/	Aug 26, 2020	Invalid	Initial release

TEST RESULT CERTIFICATION

Applicant's name ..... :	Guangdong Anke Intelligent Technology Co.,Ltd
Address ..... :	Building B1 WE Valley, No. 4 Headquarter 2nd Rd Songshan Lake, Dongguan City, Guangdong Province, China
Manufacturer's Name..... :	Guangdong Anke Intelligent Technology Co.,Ltd
Address ..... :	Building B1 WE Valley, No. 4 Headquarter 2nd Rd Songshan Lake, Dongguan City, Guangdong Province, China
Product description	
Product name..... :	Smart socket
Trademark ..... :	N/A
Model and/or type reference ...:	AK-WS1102
Family Model..... :	N/A
Difference Description..... :	N/A
Rating(s)..... :	Input: AC 110-125V, 50/60Hz, 10A Output: 110-125V, 10A(Max)
Standards..... :	FCC PART 15.247

We hereby certify that:
The above equipment was tested by Shenzhen NTEK Testing Technology Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10 (2013) and the energy emitted by the sample EUT tested as described in this report is in compliance with radiated emission limits of FCC PART 15.247.

Date of Test..... :	
Date (s) of performance of tests..... :	Aug 13, 2020 to Aug 26, 2020
Date of Issue..... :	Aug 26, 2020
Test Result..... :	**Pass**

Testing Engineer	:	Leo.Zhu
		(Leo.Zhu)
Technical Manager	:	Eder.Zhan
		(Eder.Zhan)
Authorized Signatory	:	Wetow Huang
		(Wetow Huang)

TABLE OF CONTENTS

1. GENERAL INFORMATION

1.1. PRODUCT DESCRIPTION

The EUT is designed as “LED Projector”. It is designed by way of utilizing the DSSS and OFDM technology to achieve the system operation.

A major technical description of EUT is described as following

Operation Frequency	2.412 GHz ~ 2.462GHz
Output Power	IEEE 802.11b:8.0dBm; IEEE 802.11g: 7.1 dBm; IEEE 802.11n(20): 7.4 dBm;
Modulation	DSSS(DBPSK/DQPSK/CCK);OFDM(BPSK/QPSK/16-QAM/64-QAM)
Number of channels	11
Hardware Version	1.0
Software Version	1.0
Antenna Designation	PCB Antenna
Number of transmit chain	1(802.11b/g/n20)
Antenna Gain	1.0dBi
Power Supply	Input: AC 110-125V, 50/60Hz, 10A

1.2. TABLE OF CARRIER FREQUENCYS

Frequency Band	Channel Number	Frequency
2400~2483.5MHZ	1	2412 MHZ
	2	2417 MHZ
	3	2422 MHZ
	4	2427 MHZ
	5	2432 MHZ
	6	2437 MHZ
	7	2442 MHZ
	8	2447 MHZ
	9	2452 MHZ
	10	2457 MHZ
	11	2462 MHZ

Note: For 20MHZ bandwidth system use Channel 1 to Channel 11, For 40MHZ bandwidth system use Channel 3 to Channel 9

1.3. IEEE 802.11N MODULATION SCHEME

MCS Index	Nss	Modulation	R	NBPSC	NCBPS		NDBPS		Data rate(Mbps)	
									800nsGI	
					20MHz	40MHz	20MHz	40MHz	20MHz	40MHz
0	1	BPSK	1/2	1	52	108	26	54	6.5	13.5
1	1	QPSK	1/2	2	104	216	52	108	13.0	27.0
2	1	QPSK	3/4	2	104	216	78	162	19.5	40.5
3	1	16-QAM	1/2	4	208	432	104	216	26.0	54.0
4	1	16-QAM	3/4	4	208	432	156	324	39.0	81.0
5	1	64-QAM	2/3	6	312	648	208	432	52.0	108.0
6	1	64-QAM	3/4	6	312	648	234	489	58.5	121.5
7	1	64-QAM	5/6	6	312	648	260	540	65.0	135.0

Symbol	Explanation
NSS	Number of spatial streams
R	Code rate
NBPSC	Number of coded bits per single carrier
NCBPS	Number of coded bits per symbol
NDBPS	Number of data bits per symbol
GI	Guard interval

1.4. RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for **FCC ID: 2AXEY-AK-WS1102** filing to comply with the FCC Part 15 requirements.

1.5. TEST METHODOLOGY

KDB 558074 D01 15.247 Meas Guidance v05: Guidance for compliance measurements on Digital transmissio n system, frequency hopping spread spectrum system, and hybrid system devices operating under section 15.247 of the FCC rules
ANSI C63.10:2013 : American National Standard for Testing Unlicensed Wireless Devices

1.6. SPECIAL ACCESSORIES

Refer to section 5.2.

1.7. EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

2. MEASUREMENT UNCERTAINTY

The uncertainty is calculated using the methods suggested in the “Guide to the Expression of Uncertainty in measurement” (GUM) published by CISPR and ANSI.

- Uncertainty of Conducted Emission, Uc = ±3.2 dB
- Uncertainty of Radiated Emission below 1GHz, Uc = ±3.9 dB
- Uncertainty of Radiated Emission above 1GHz, Uc = ±4.8 dB

3. DESCRIPTION OF TEST MODES

NO.	TEST MODE DESCRIPTION
1	Low channel TX
2	Middle channel TX
3	High channel TX
4	Normal operating

Note:
Transmit by 802.11b with Date rate (1/2/5.5/11)
Transmit by 802.11g with Date rate (6/9/12/18/24/36/48/54)
Transmit by 802.11n (20MHz) with Date rate (6.5/13/19.5/26/39/52/58.5/65)
Transmit by 802.11n (40MHz) with Date rate (13.5/27/40.5/54/81/108/121.5/135)

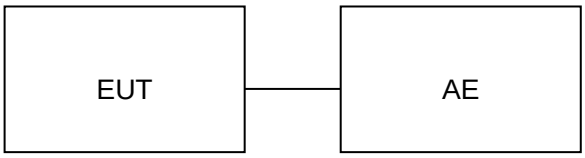
Note:

1. The EUT has been set to operate continuously on the lowest, middle and highest operation frequency Individually, and the eut is operating at its maximum duty cycle>or equal 98%
2. All modes under which configure applicable have been tested and the worst mode test data recording in the test report, if no other mode data.
3. The test software is the SecureCRTSecure_V6.2.3 which can set the EUT into the individual test modes.
4. This module is not supported N40 Mode

4. SYSTEM TEST CONFIGURATION

4.1. CONFIGURATION OF EUT SYSTEM

Configure 1:



4.2. EQUIPMENT USED IN EUT SYSTEM

Item	Equipment	Model No.	ID or Specification	Remark
1	Smart socket	AK-WS1102	2AXEY-AK-WS1102	EUT
2				
3				
4				

4.3. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.247	Output Power	Compliant
§15.247	6 dB Bandwidth	Compliant
§15.247	Conducted Spurious Emission	Compliant
§15.247	Maximum Conducted Output Power SPECTRAL Density	Compliant
§15.209	Radiated Emission	Compliant
§15.247	Band Edges	Compliant
§15.207	Line Conduction Emission	Compliant

5. TEST FACILITY

Site Description		
CNAS-Lab.	:	The Laboratory has been assessed and proved to be in compliance with CNAS-CL01:2006 (identical to ISO/IEC 17025:2005) The Certificate Registration Number is L5516.
IC-Registration	:	The Certificate Registration Number is 9270A-1.
FCC- Accredited	:	Test Firm Registration Number: 463705. Designation Number: CN1184
A2LA-Lab.	:	The Certificate Registration Number is 4298.01 This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009).
Name of Firm	:	Shenzhen NTEK Testing Technology Co., Ltd.
Site Location	:	1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen 518126 P.R. China.

TEST EQUIPMENT OF CONDUCTED EMISSION TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESPI	101206	Jun. 10, 2020	Jun. 09, 2021
LISN	R&S	ESH2-Z5	101313	Apr. 18, 2020	Apr. 17, 2021

TEST EQUIPMENT OF RADIATED EMISSION TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESCI	10096	Jun. 10, 2020	Jun. 09, 2021
EXA Signal Analyzer	Aglient	N9020A	MY49100060	May. 11, 2020	May. 10,, 2021
2.4GHz Fliter	EM Electronics	2400-2500MHz	N/A	Feb. 27, 2020	Feb. 26, 2021
Attenuator	ZHINAN	E-002	N/A	Aug. 26, 2020	Aug. 25, 2021
Horn antenna	SCHWARZBECK	BBHA 9170	#768	Sep. 21, 2020	Sep. 20, 2023
Active loop antenna (9K-30MHz)	ZHINAN	ZN30900C	18051	Jun. 14, 2020	Jun. 13, 2022
Double-Ridged Waveguide Horn	ETS LINDGREN	3117	00034609	May. 26, 2020	May. 25, 2022
Broadband Preamplifier	ETS LINDGREN	3117PA	00225134	Oct. 25, 2020	Oct. 24, 2021
ANTENNA	SCHWARZBECK	VULB9168	D69250	Sep. 28, 2020	Sep. 27, 2022
Spectrum analyzer	R&S	FSU	HKE-048	Dec. 20, 2019	Dec. 19, 2020
Power Meter	DARE	RPR3006W	14I00889S0043	May.12 2020	May.11 2021

6. OUTPUT POWER

6.1. MEASUREMENT PROCEDURE

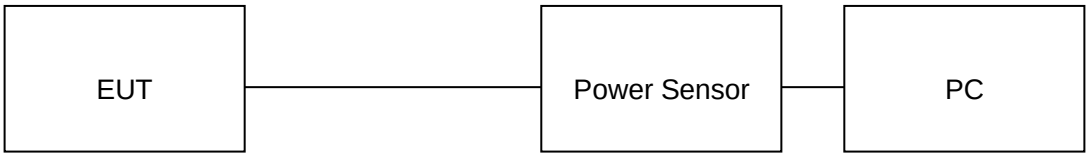
For average power test:

1. Connect EUT RF output port to power sensor through an RF attenuator.
2. Connect the power sensor to the PC.
3. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
4. Record the maximum power from the software.

Note：The EUT was tested according to ANSI C63.10 (2013) for compliance to FCC 47CFR 15.247 requirements.

6.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

AVERAGE POWER SETUP



6.3. LIMITS AND MEASUREMENT RESULT

TEST ITEM	OUTPUT POWER
TEST MODE	802.11b with data rate 1

Frequency (GHz)	Average Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.412	**8.0**	30	Pass
2.437	7.4	30	Pass
2.462	7.5	30	Pass

TEST ITEM	OUTPUT POWER
TEST MODE	802.11g with data rate 6

Frequency (GHz)	Average Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.412	7.1	30	Pass
2.437	6.4	30	Pass
2.462	6.9	30	Pass

TEST ITEM	OUTPUT POWER
TEST MODE	802.11n 20 with data rate 6.5

Frequency (GHz)	Average Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.412	7.4	30	Pass
2.437	6.6	30	Pass
2.462	6.7	30	Pass

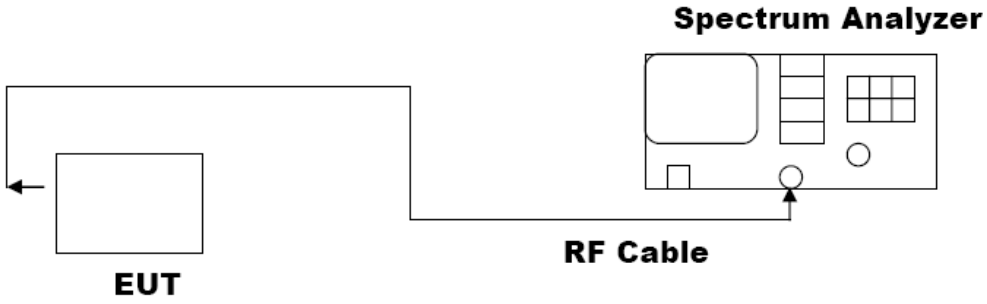
7. 6 DB BANDWIDTH

7.1. MEASUREMENT PROCEDURE

1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
2. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
3. Set SPA Centre Frequency = Operation Frequency, RBW= 100 KHz, VBW≥3×RBW.
4. Set SPA Trace 1 Max hold, then View.

Note: The EUT was tested according to ANSI C63.10 (2013) for compliance to FCC 47CFR 15.247 requirements.

7.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)



7.3. LIMITS AND MEASUREMENT RESULTS

TEST ITEM	6DB BANDWIDTH
TEST MODE	802.11b with data rate 11

LIMITS AND MEASUREMENT RESULT				
Applicable Limits	Applicable Limits			
	Channel	6 dB Bandwidth （MHz）	99% OBW （MHz）	Criteria
>500KHZ	Low Channel	9.047	14.255	PASS
	Middle Channel	9.065	14.217	PASS
	High Channel	9.039	14.303	PASS

TEST ITEM	6DB BANDWIDTH
TEST MODE	802.11g with data rate 54

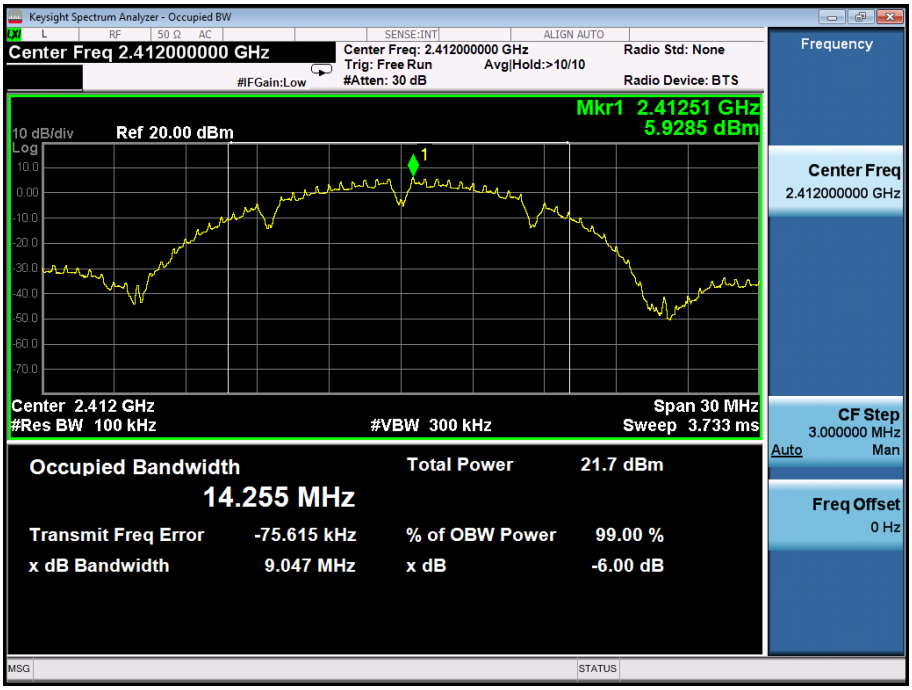
LIMITS AND MEASUREMENT RESULT				
Applicable Limits	Applicable Limits			
	Channel	6 dB Bandwidth （MHz）	99% OBW （MHz）	Criteria
>500KHZ	Low Channel	15.12	16.420	PASS
	Middle Channel	15.08	16.418	PASS
	High Channel	15.12	16.372	PASS

TEST ITEM	6DB BANDWIDTH
TEST MODE	802.11n 20 with data rate 65

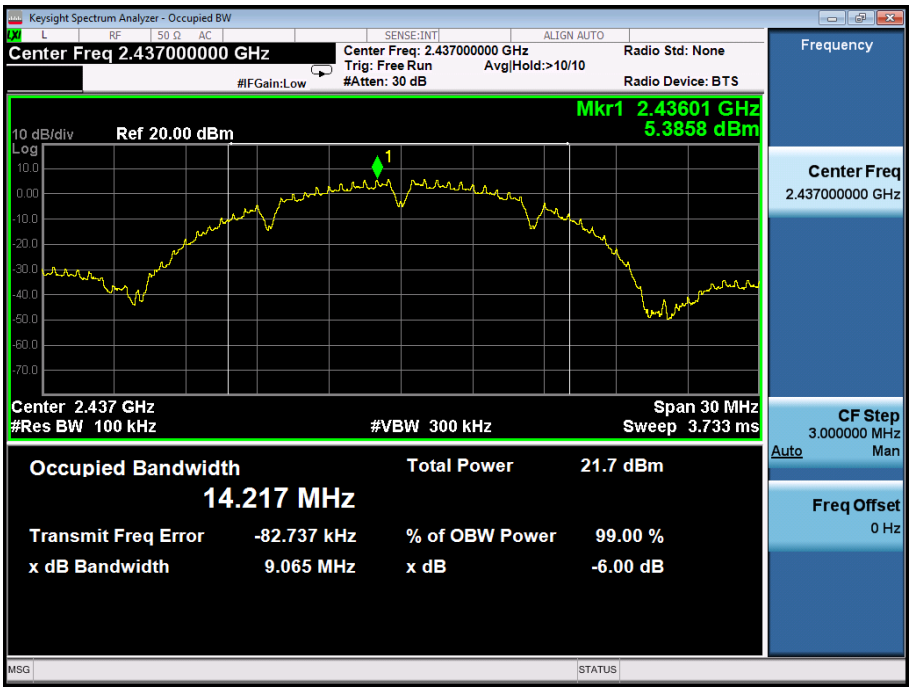
LIMITS AND MEASUREMENT RESULT				
Applicable Limits	**Applicable Limits**			
	Channel	**6 dB Bandwidth （MHz）**	**99% OBW （MHz）**	**Criteria**
>500KHZ	Low Channel	15.44	17.547	PASS
	Middle Channel	15.42	17.541	PASS
	High Channel	15.10	17.515	PASS

802.11b TEST RESULT

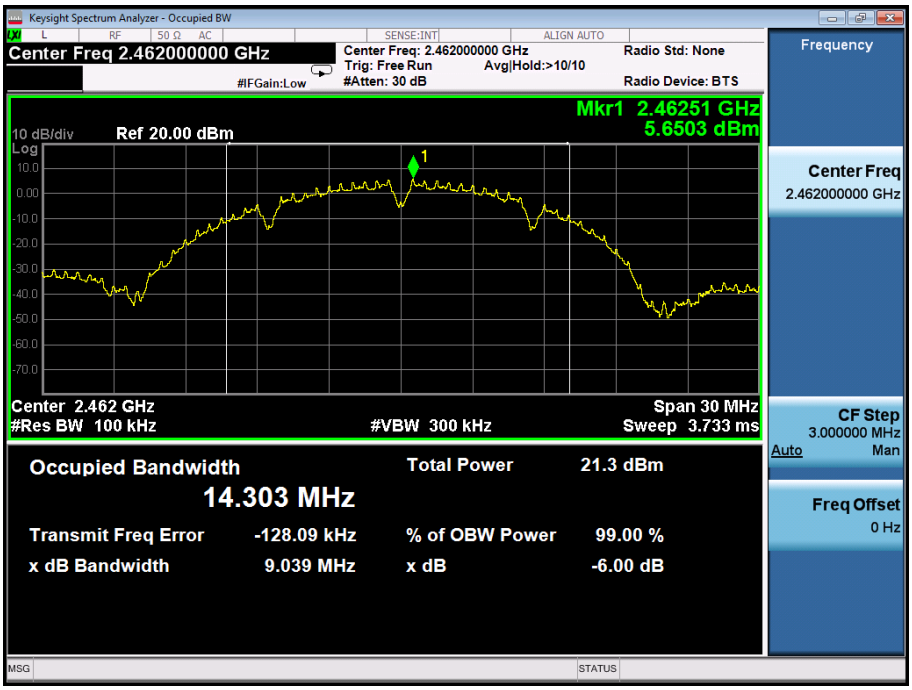
TEST PLOT OF BANDWIDTH FOR LOW CHANNEL



TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL

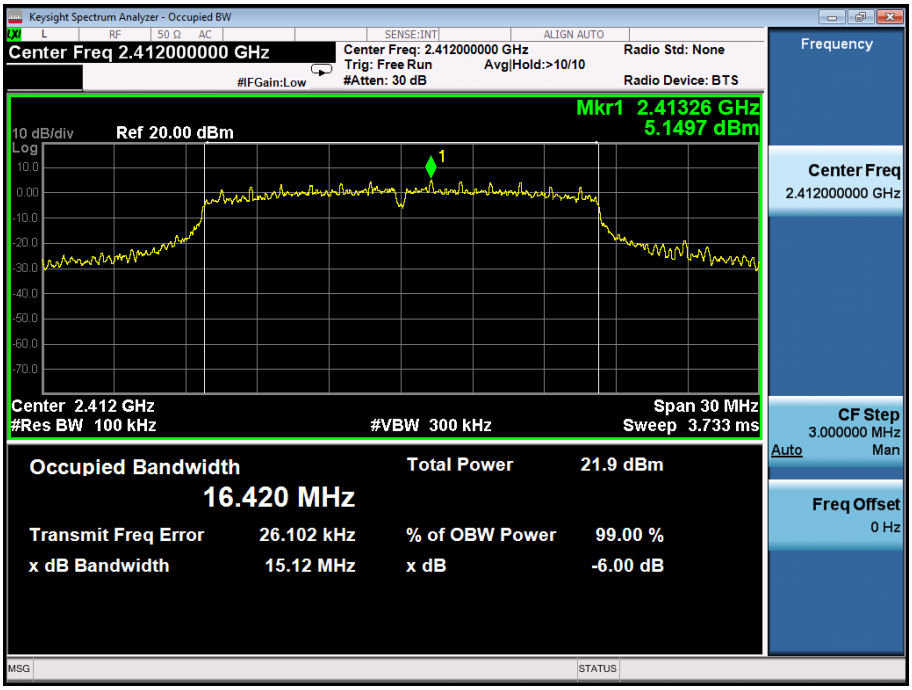


TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL

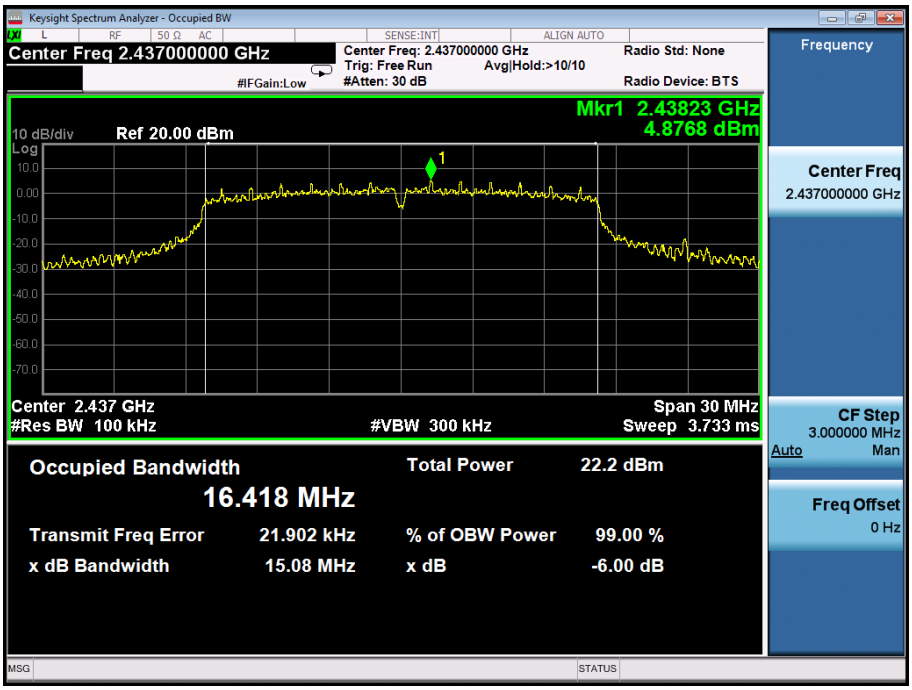


802.11g TEST RESULT

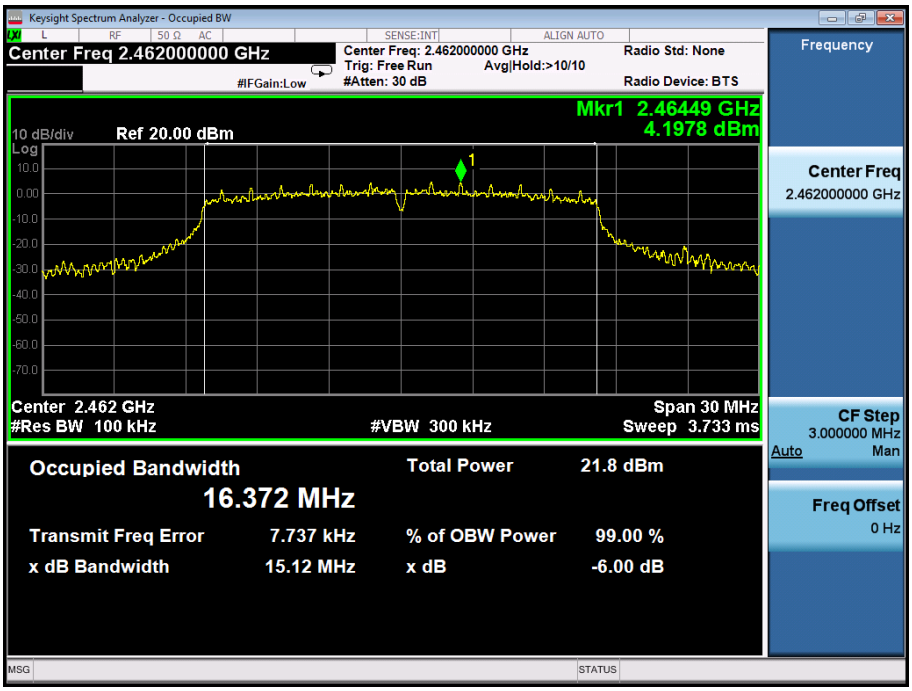
TEST PLOT OF BANDWIDTH FOR LOW CHANNEL



TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL



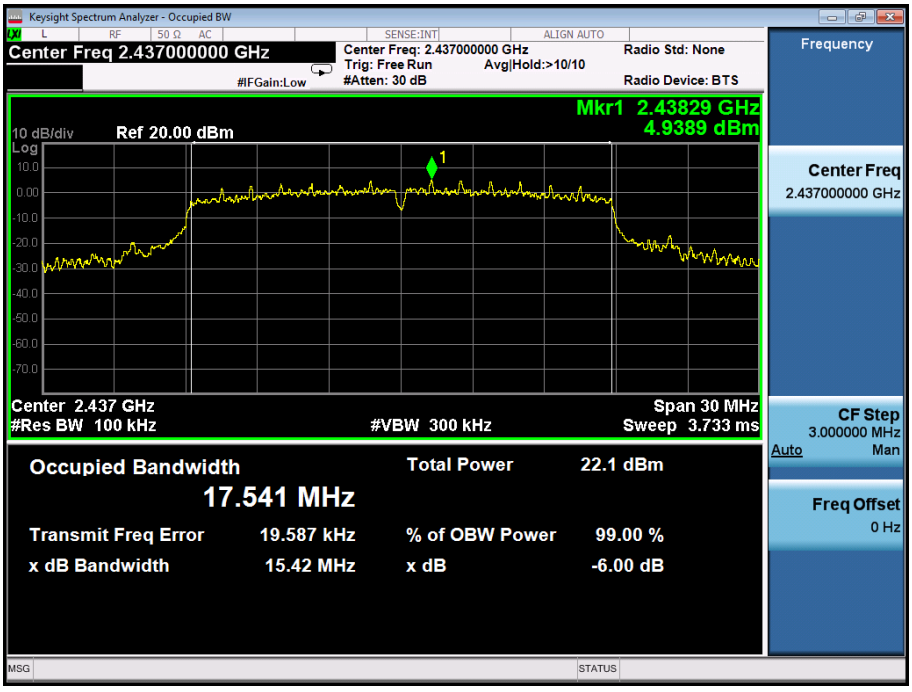
TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL



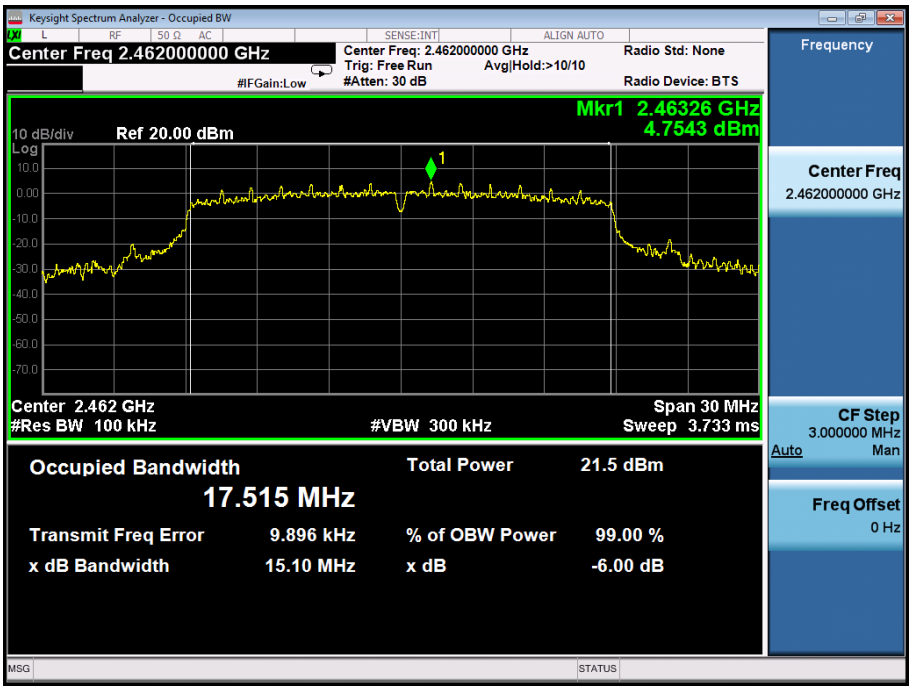
802.11n (20) TEST RESULT

TEST PLOT OF BANDWIDTH FOR LOW CHANNEL

TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL



TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL



9. CONDUCTED SPURIOUS EMISSION

9.1. MEASUREMENT PROCEDURE

1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
2, Set the EUT Work on the top, the middle and the bottom operation frequency individually.
3. Set SPA Trace 1 Max hold, then View.

Note: The EUT was tested according to ANSI C63.10 (2013) for compliance to FCC 47CFR 15.247 requirements. Owing to satisfy the requirements of the number of measurement points, we set the RBW=100KHz, VBW＞RBW, scan up through 10th harmonic.

9.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

The same as described in section 8.2.

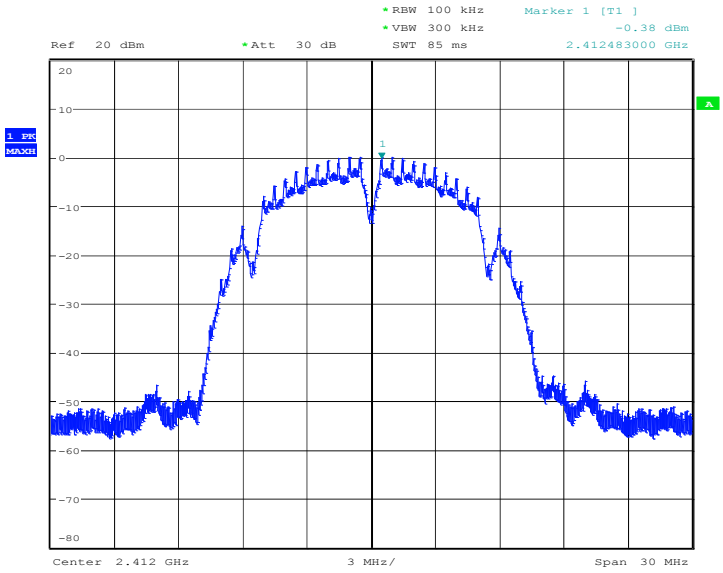
9.3. MEASUREMENT EQUIPMENT USED

The same as described in section 6.

9.4. LIMITS AND MEASUREMENT RESULT

LIMITS AND MEASUREMENT RESULT		
Applicable Limits	**Measurement Result**	
	Test Data	**Criteria**
In any 100 KHz Bandwidth Outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produce by the intentional radiator shall be at least 30 dB below that in 100KHz bandwidth within the band that contains the highest level of the desired power. In addition, radiation 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))	At least -30dBc than the limit Specified on the BOTTOM Channel	PASS
	At least -30dBc than the limit Specified on the TOP Channel	PASS

TEST PLOT OF OUT OF BAND EMISSIONS WITH THE WORST CASE OF 802.11b FOR MODULATION IN LOW CHANNEL



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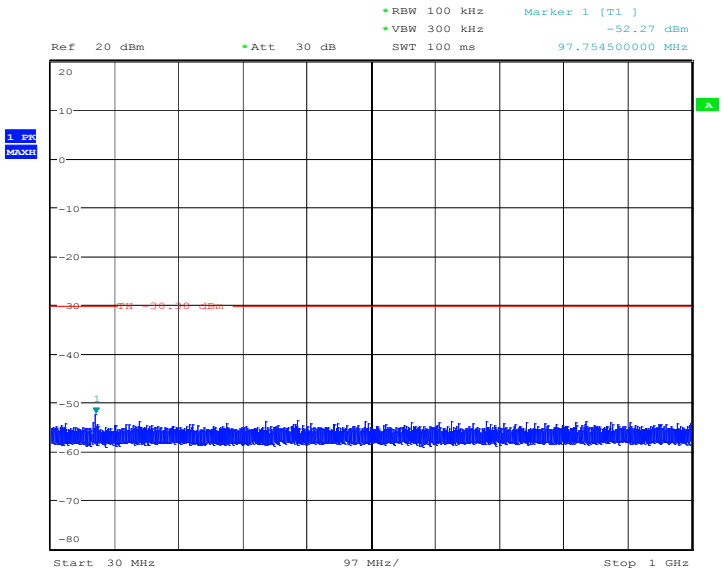

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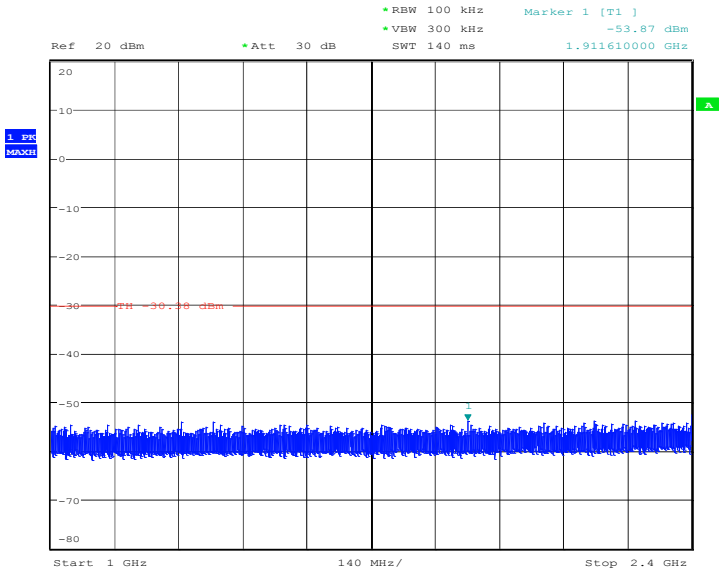

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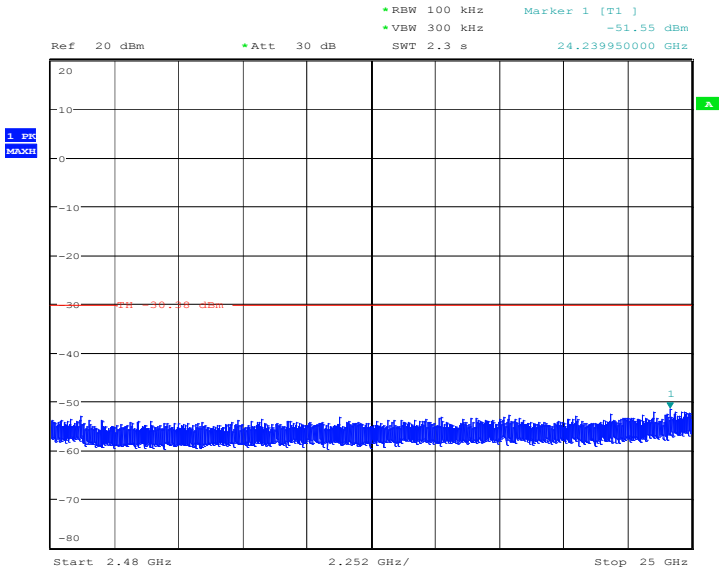

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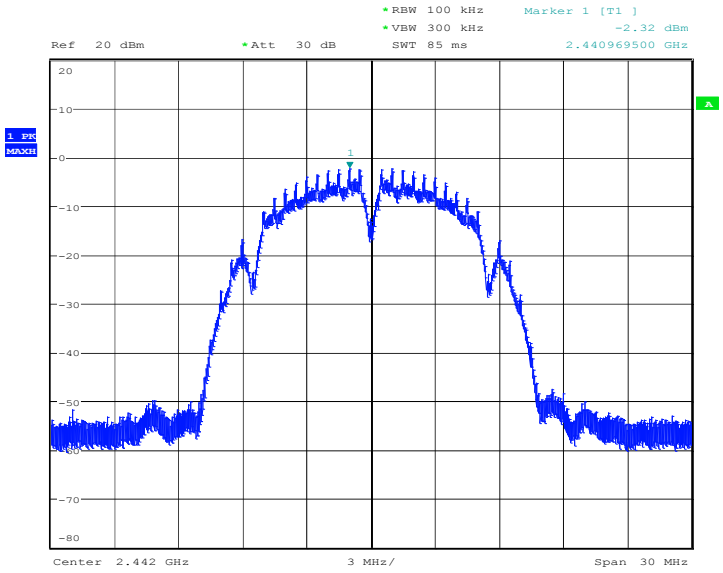
TEST PLOT OF OUT OF BAND EMISSIONS THE WORST CASE OF 802.11b FOR MODULATION IN MIDDLE CHANNEL



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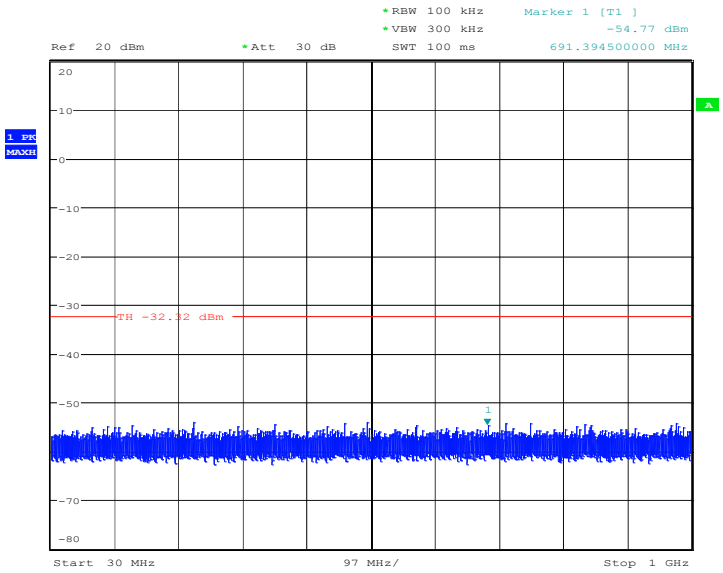

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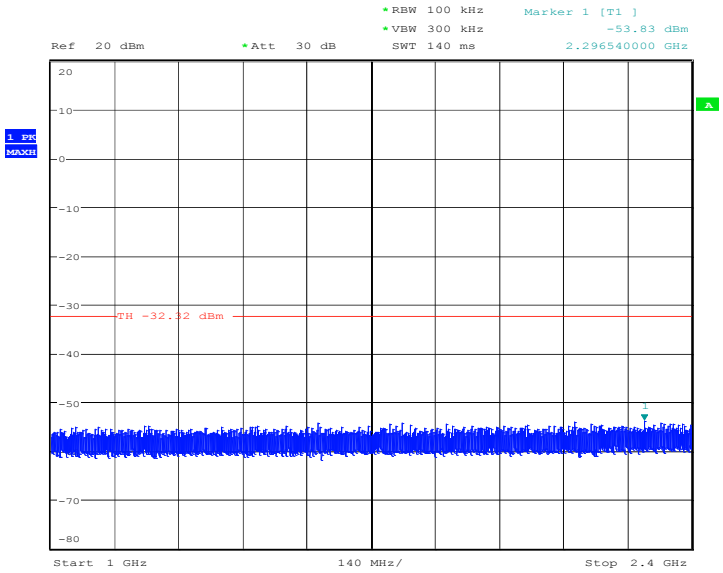

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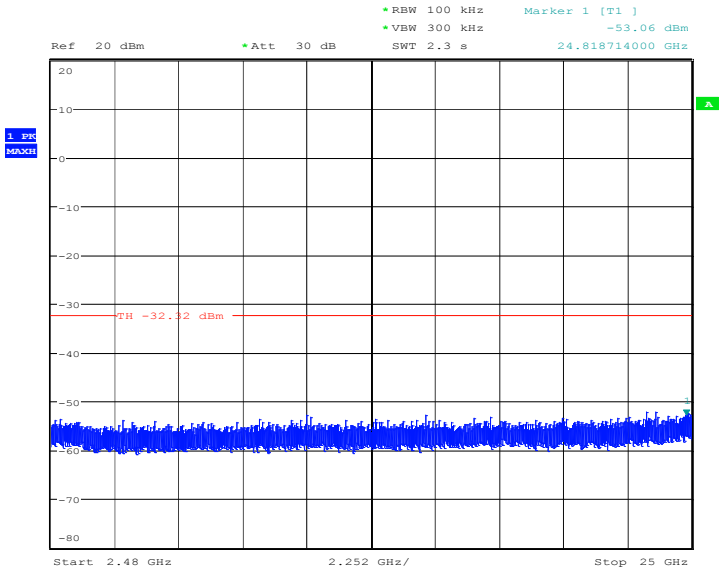

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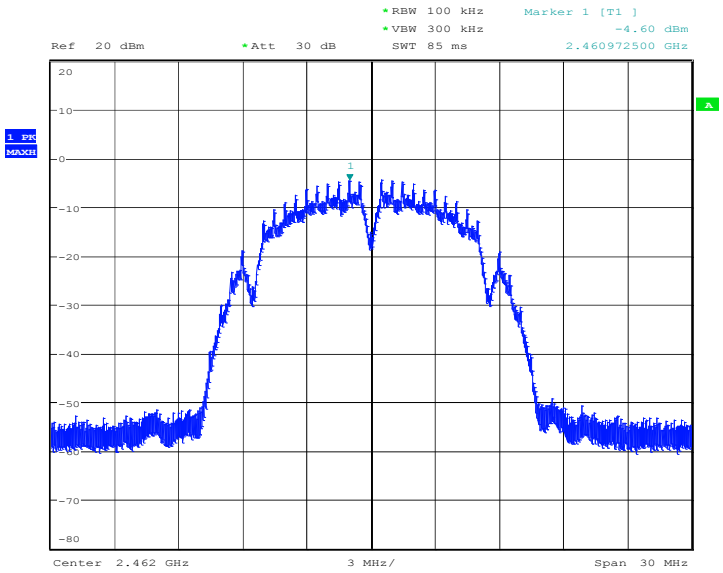
TEST PLOT OF OUT OF BAND EMISSIONS THE WORST CASE OF 802.11b FOR MODULATION IN HIGH CHANNEL



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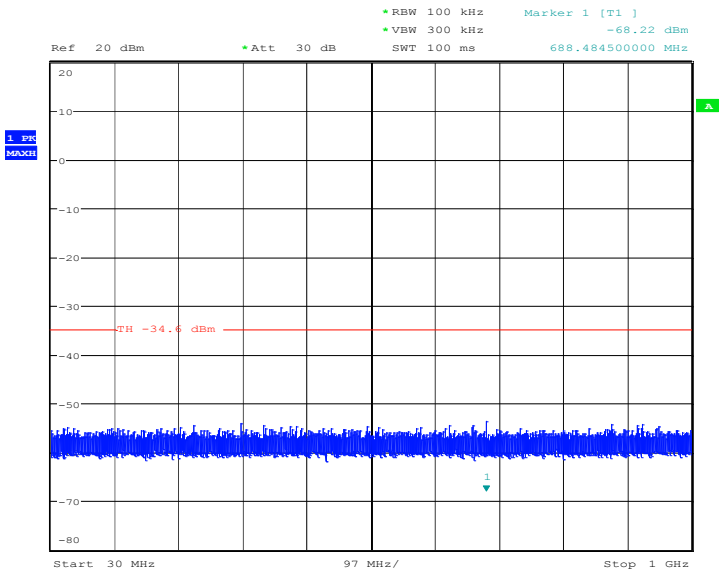

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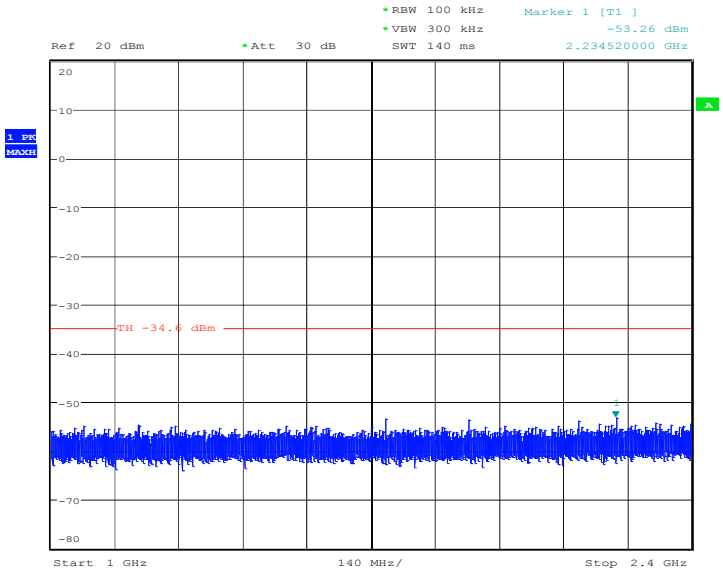

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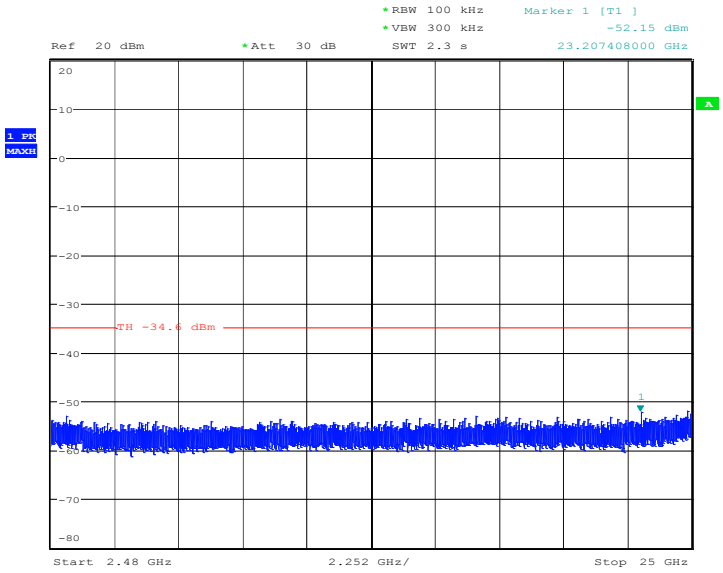

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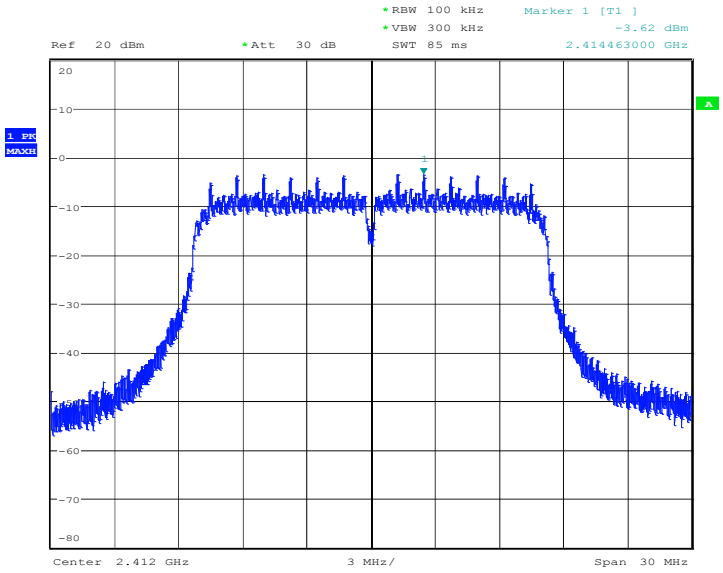
TEST PLOT OF OUT OF BAND EMISSIONS WITH THE WORST CASE OF 802.11g FOR MODULATION IN LOW CHANNEL



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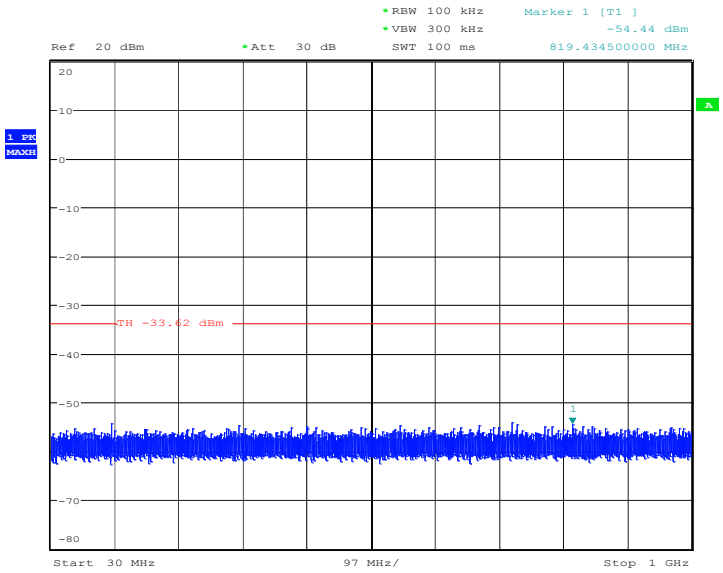

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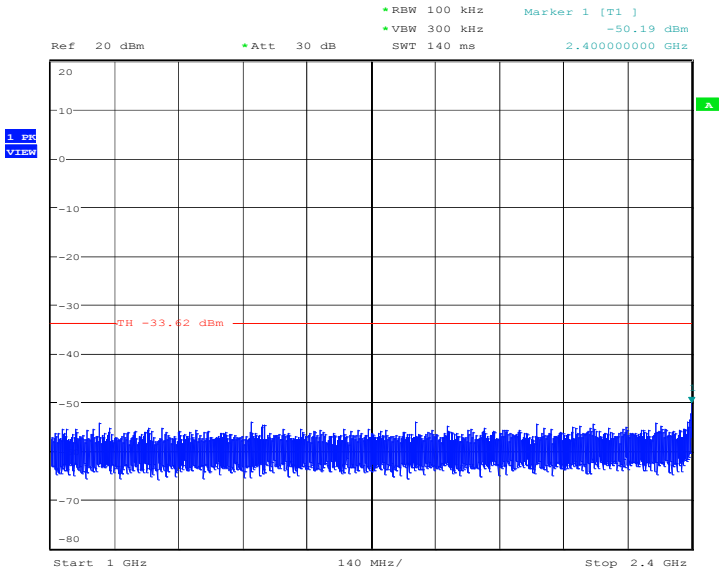

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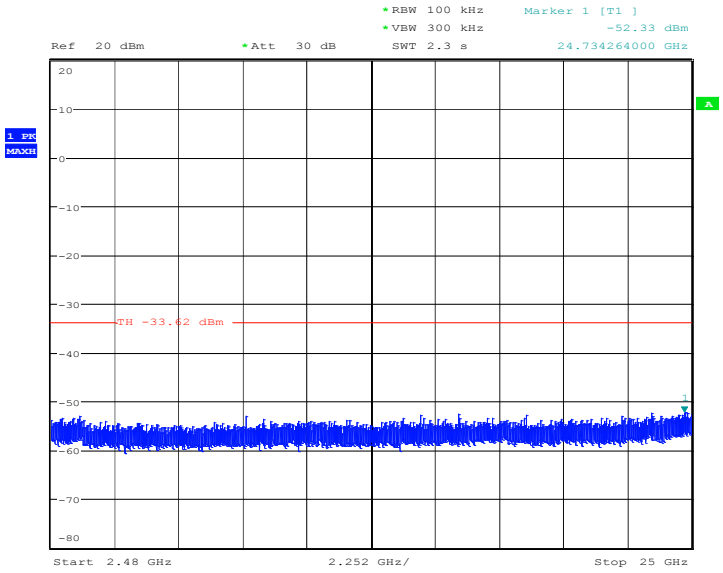
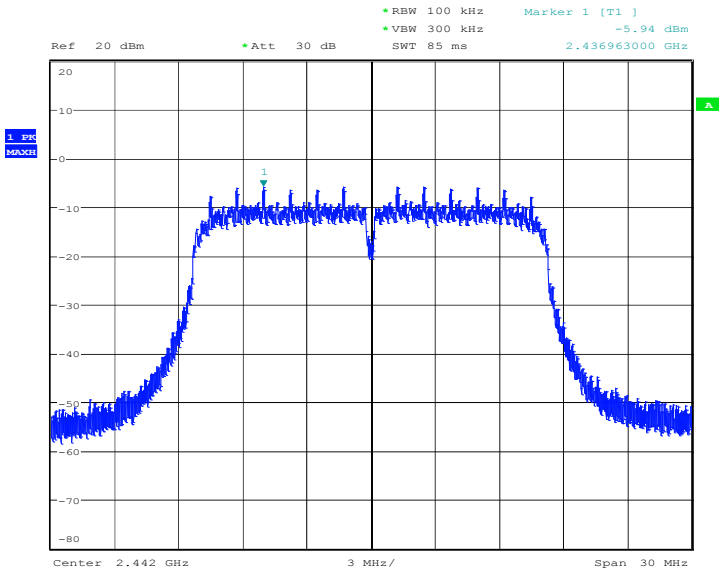


Date: 26.AUG.2020 15:34:55

TEST PLOT OF OUT OF BAND EMISSIONS THE WORST CASE
OF 802.11g FOR MODULATION IN MIDDLE CHANNEL



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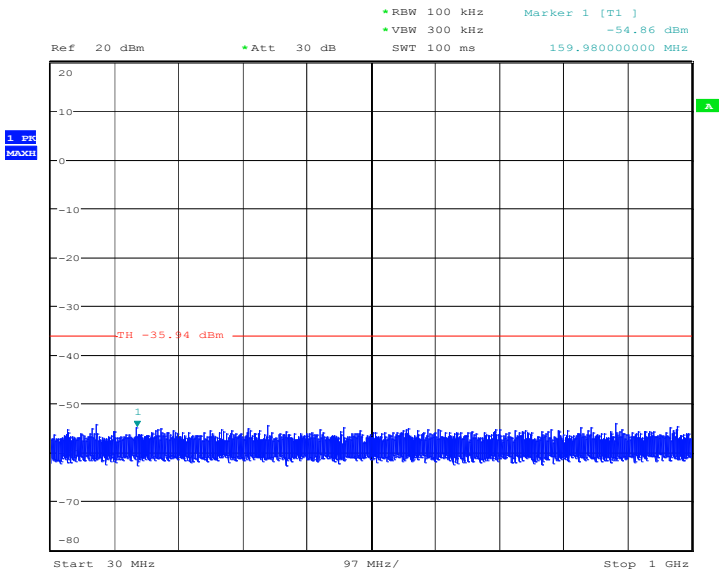

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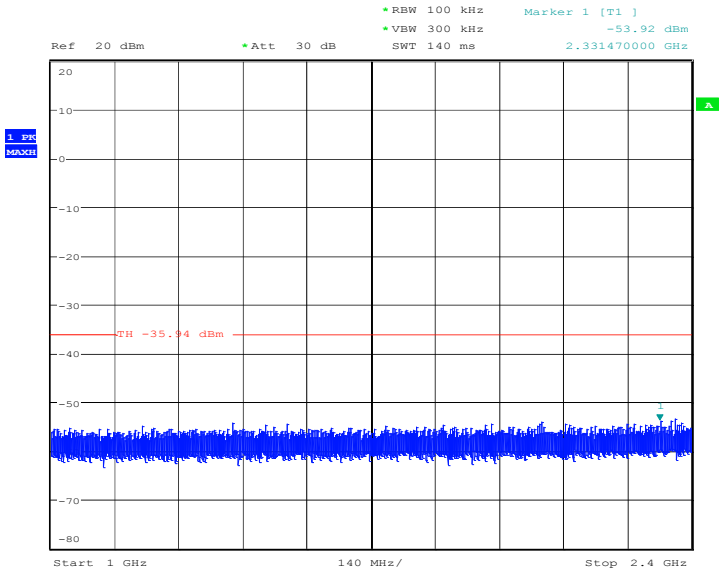

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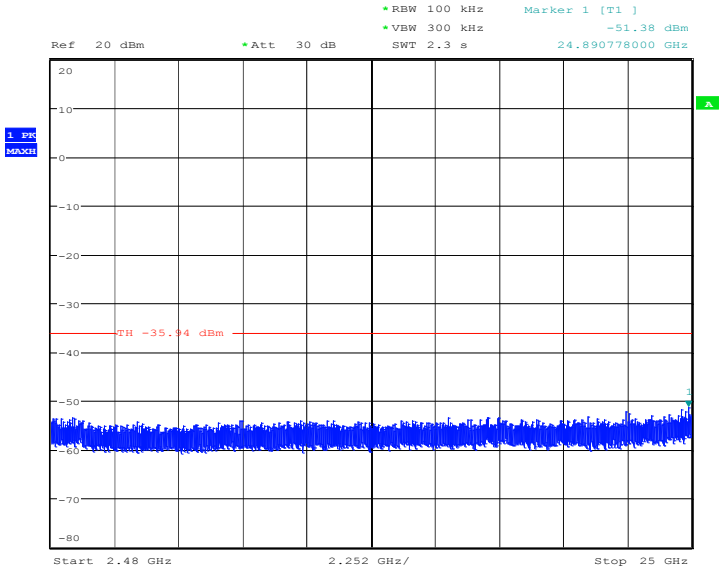
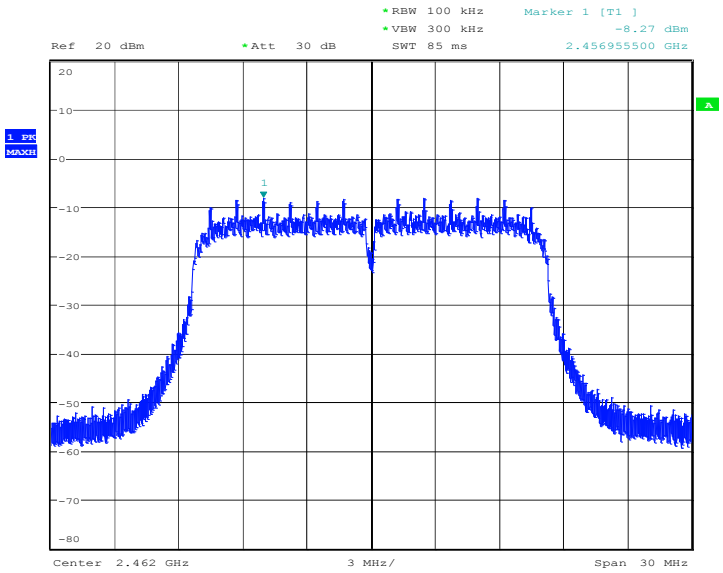


Date: 26.AUG.2020 15:37:18

TEST PLOT OF OUT OF BAND EMISSIONS THE WORST CASE
OF 802.11g FOR MODULATION IN HIGH CHANNEL



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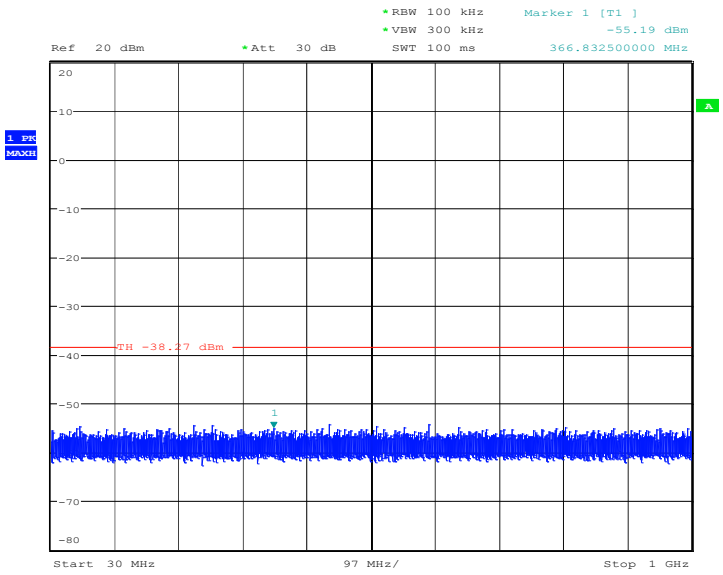

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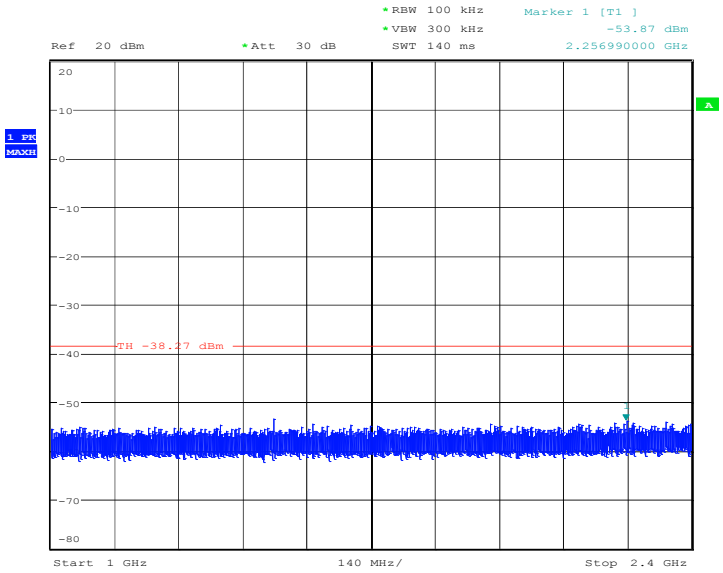

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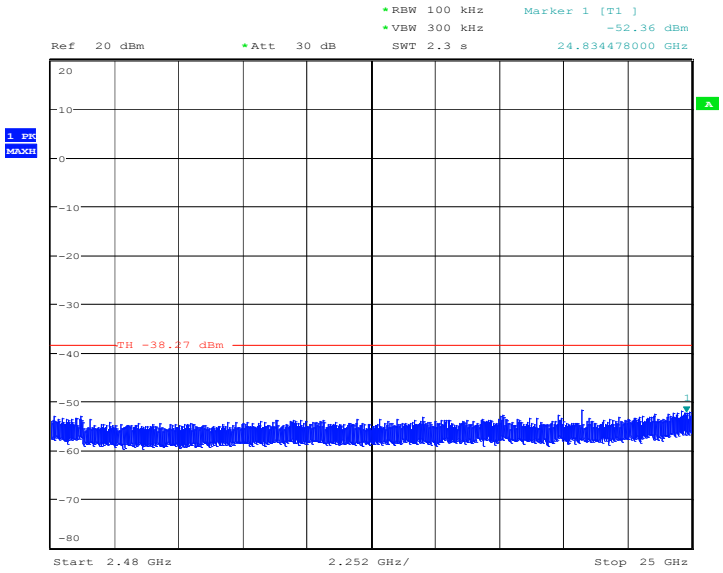
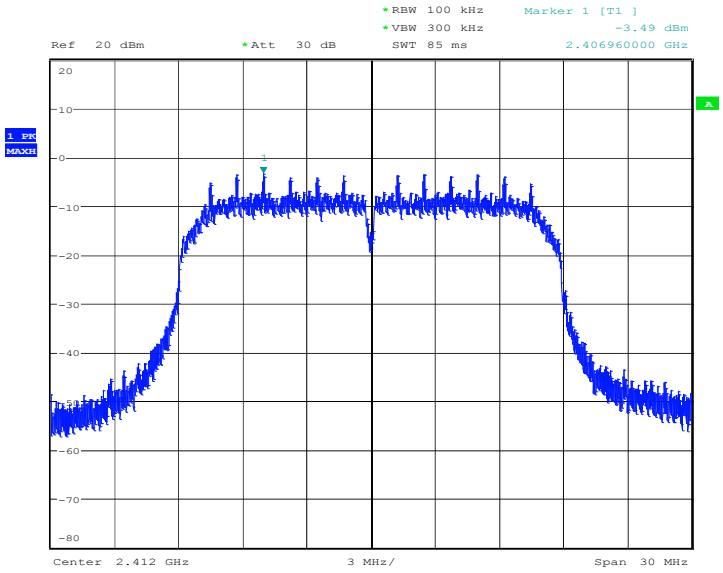


Date: 26.AUG.2020 15:40:05

TEST PLOT OF OUT OF BAND EMISSIONS WITH THE WORST CASE OF 802.11n20 FOR MODULATION IN LOW CHANNEL



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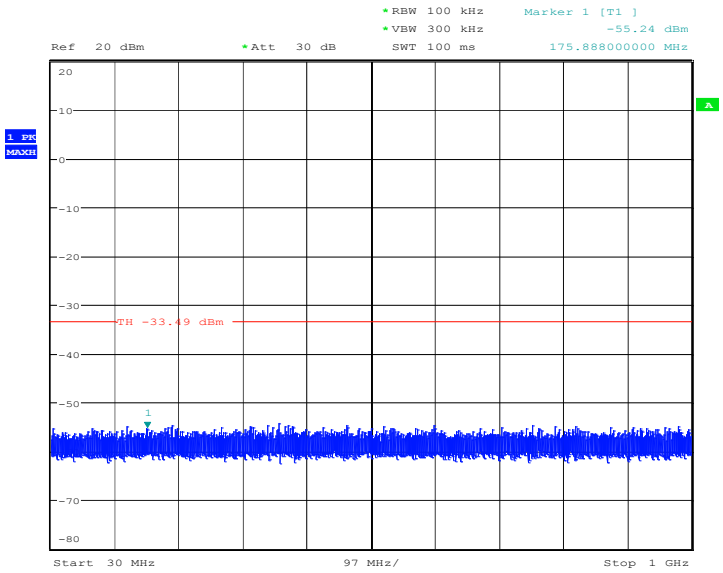

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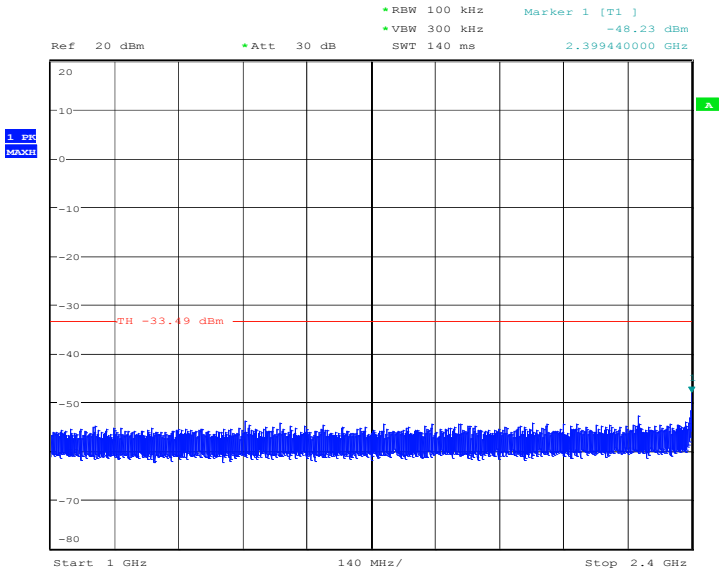

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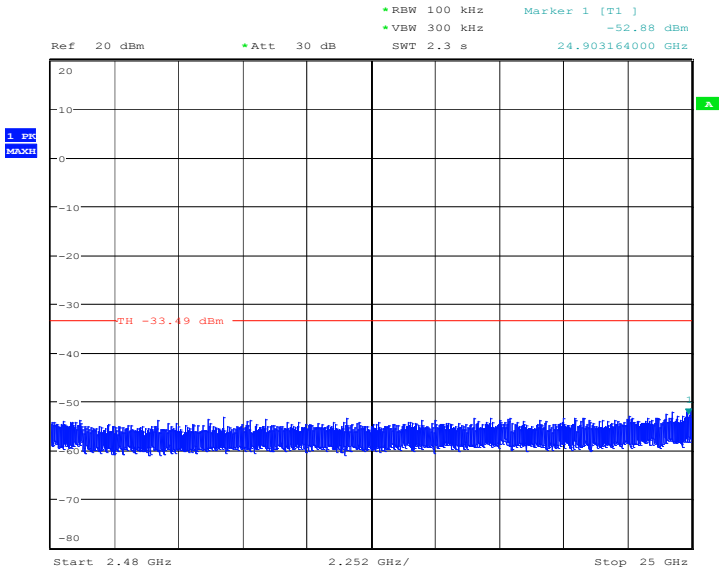
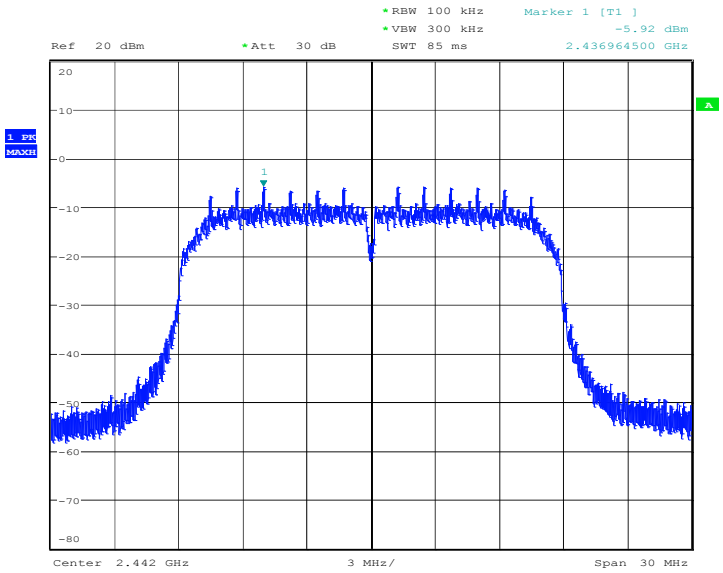


Date: 26.AUG.2020 15:47:40

TEST PLOT OF OUT OF BAND EMISSIONS THE WORST CASE OF 802.11n20 FOR MODULATION IN MIDDLE CHANNEL



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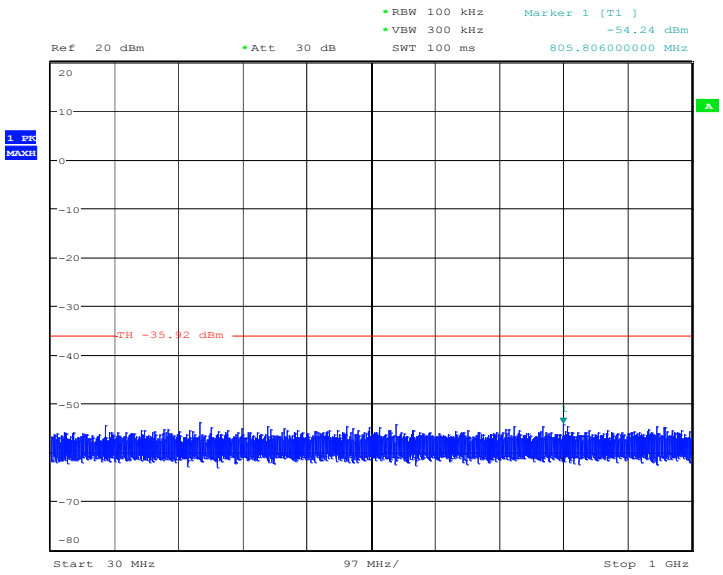

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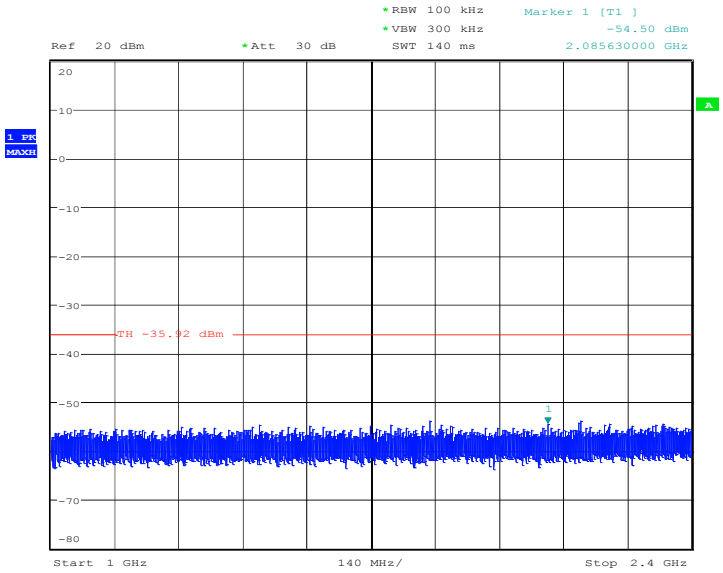

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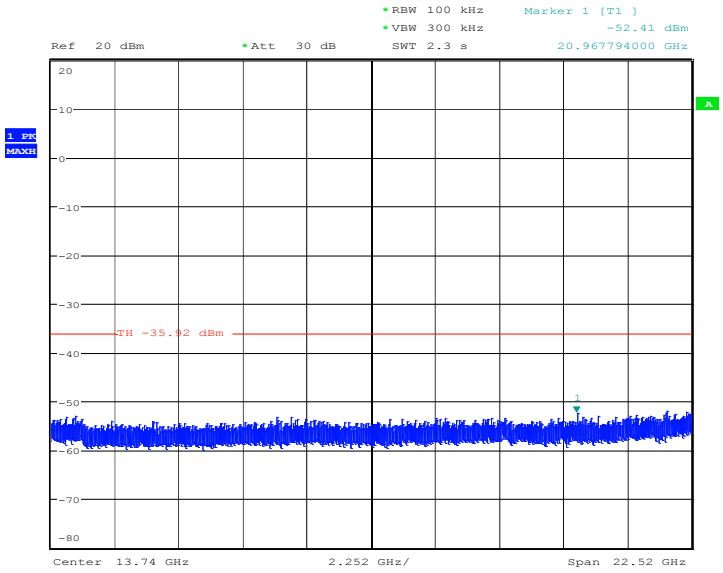
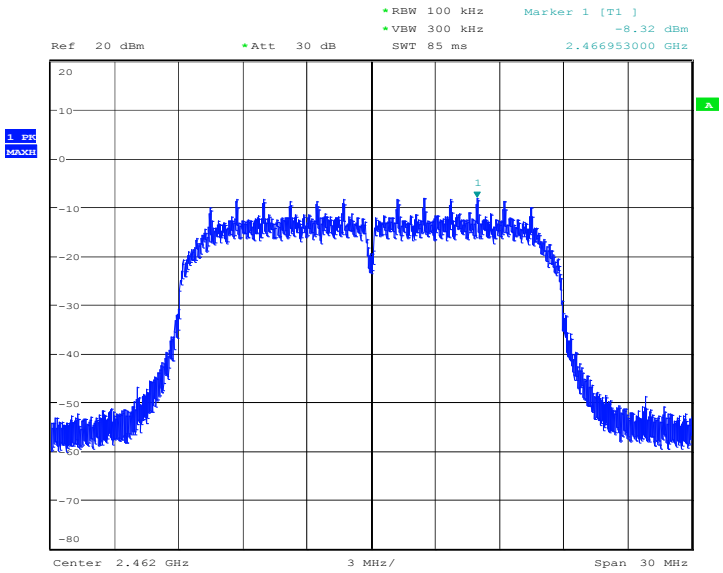


Date: 26.AUG.2020 15:51:51

TEST PLOT OF OUT OF BAND EMISSIONS THE WORST CASE
OF 802.11n20 FOR MODULATION IN HIGH CHANNEL



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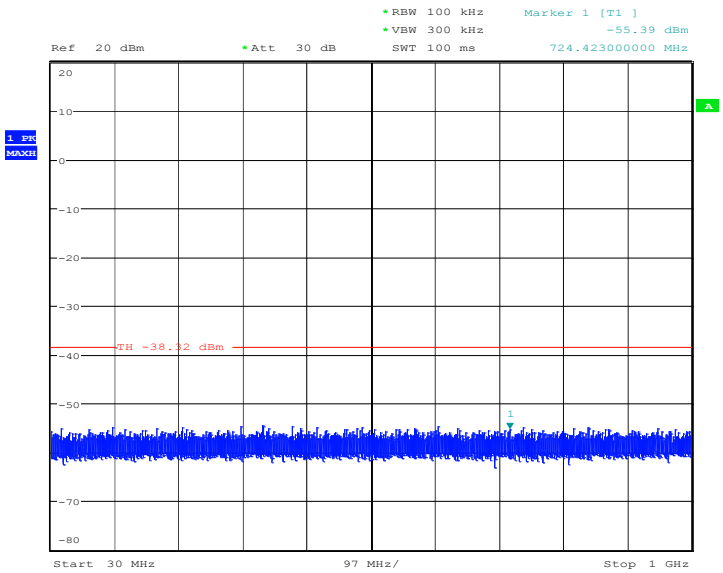

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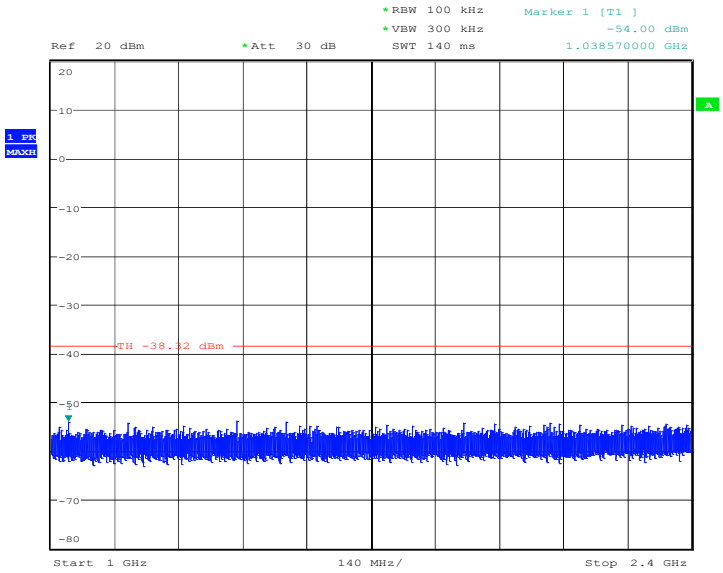
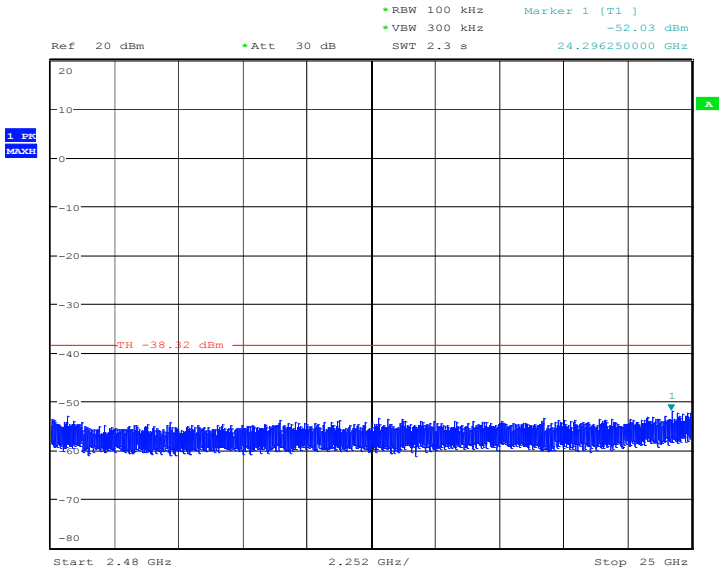


Date: 26.AUG.2020 15:53:39



Date: 26.AUG.2020 15:54:03

Note: transmit chains had been tested, the was the worst case and record in the test report.

10. MAXIMUM CONDUCTED OUTPUT POWER SPECTRAL DENSITY

10.1 MEASUREMENT PROCEDURE

(1). Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator

(2). Set the EUT Work on the top, the middle and the bottom operation frequency individually.

(3). Set SPA Trace 1 Max hold, then View.

Note: The method of AVGPSD-1 in the ANSI C63.10 (2013) item 10.3 was used in this testing.

10.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

Refer To Section 8.2.

10.3 MEASUREMENT EQUIPMENT USED

Refer To Section 6.

10.4 LIMITS AND MEASUREMENT RESULT

TEST ITEM	POWER SPECTRAL DENSITY
TEST MODE	802.11b with data rate 1

Channel No.	Power density (dBm/3kHz)	Limit (dBm/3kHz)	Result
Low Channel	-14.79	8	Pass
Middle Channel	-16.29	8	Pass
High Channel	-19.42	8	Pass

TEST ITEM	POWER SPECTRAL DENSITY
TEST MODE	802.11g with data rate 6

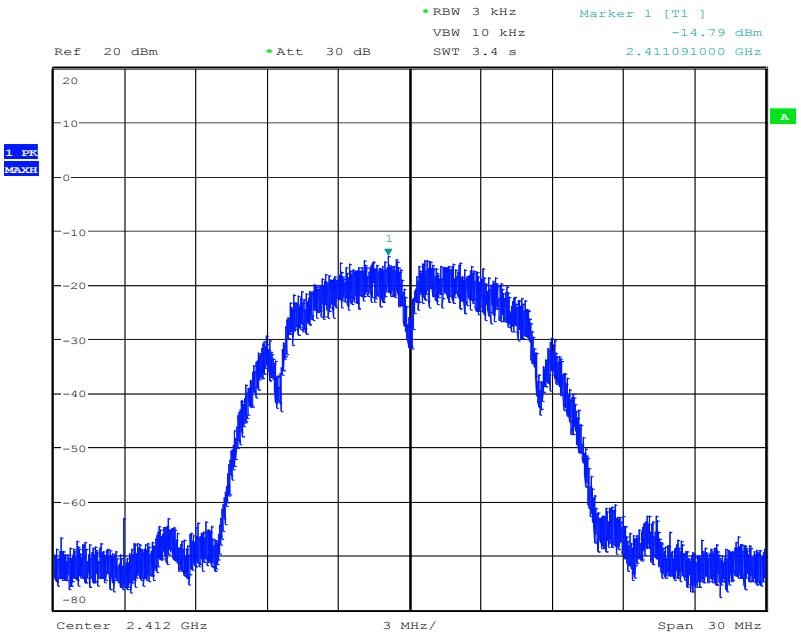
Channel No.	Power density (dBm/3kHz)	Limit (dBm/3kHz)	Result
Low Channel	-17.36	8	Pass
Middle Channel	-19.85	8	Pass
High Channel	-21.48	8	Pass

TEST ITEM	POWER SPECTRAL DENSITY
TEST MODE	802.11n 20 with data rate 6.5

Channel No.	Power density (dBm/3kHz)	Limit (dBm/3kHz)	Result
Low Channel	-16.95	8	Pass
Middle Channel	-19.38	8	Pass
High Channel	-22.32	8	Pass

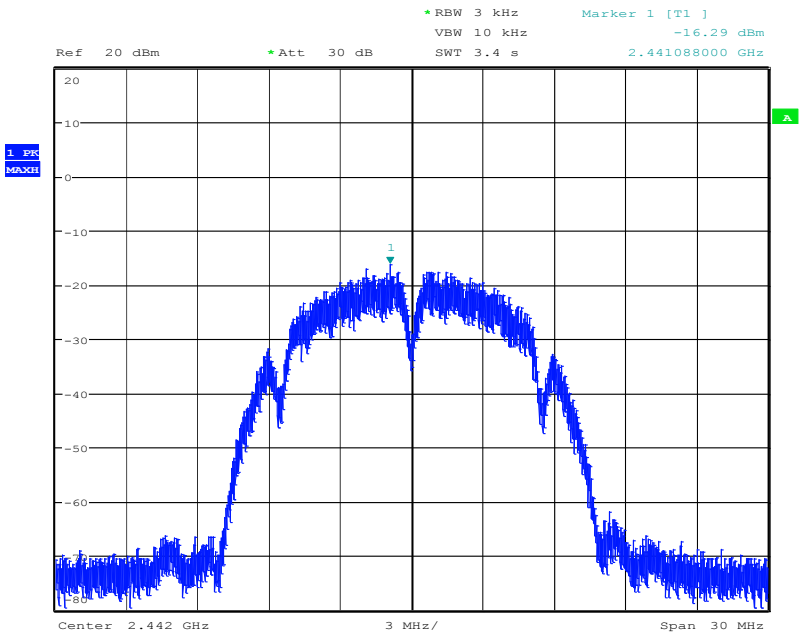
802.11b TEST RESULT

TEST PLOT OF SPECTRAL DENSITY FOR LOW CHANNEL



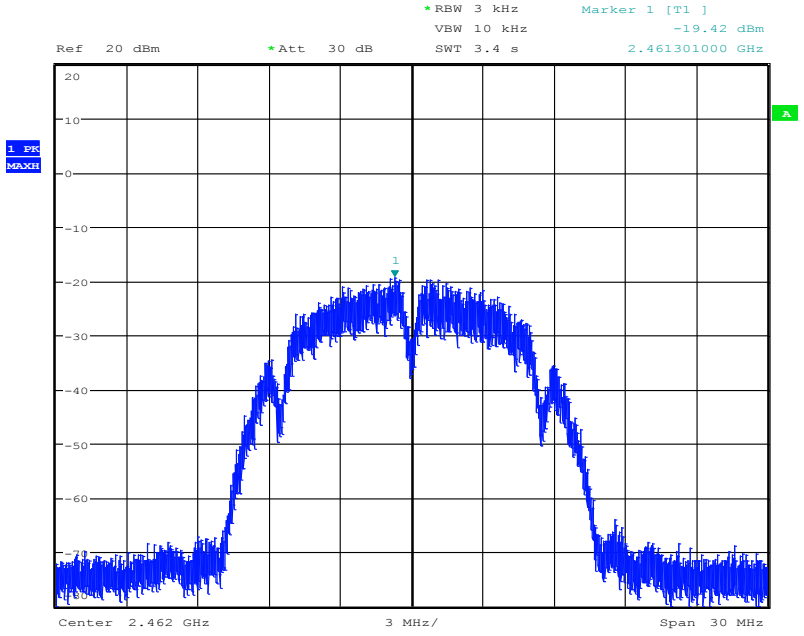
Date: 26.AUG.2020 14:55:18

TEST PLOT OF SPECTRAL DENSITY FOR MIDDLE CHANNEL



Date: 26.AUG.2020 14:55:55

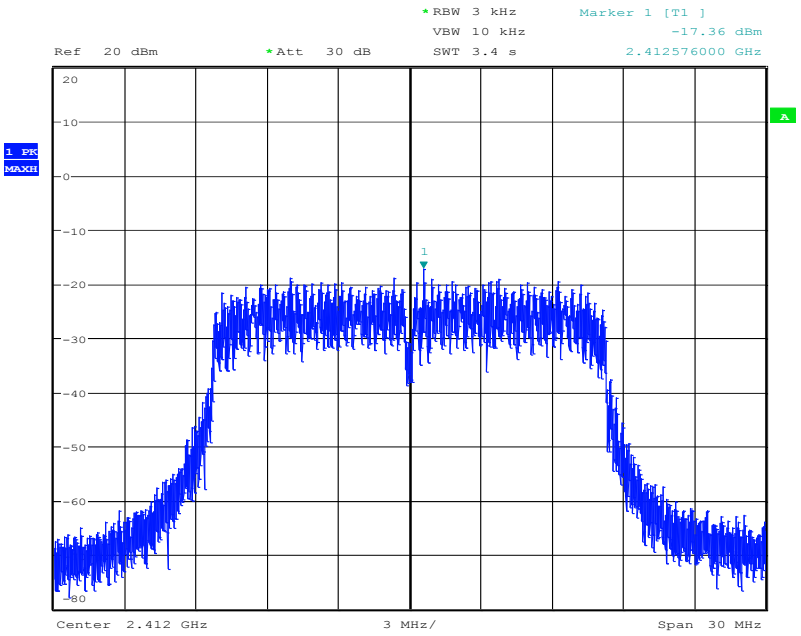
TEST PLOT OF SPECTRAL DENSITY FOR HIGH CHANNEL



Date: 26.AUG.2020 14:56:34

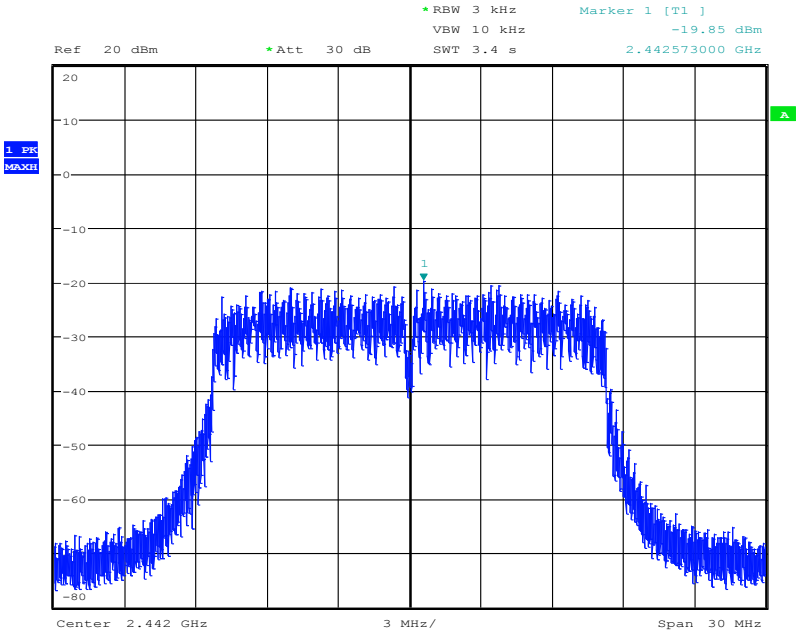
802.11g TEST RESULT

TEST PLOT OF SPECTRAL DENSITY FOR LOW CHANNEL



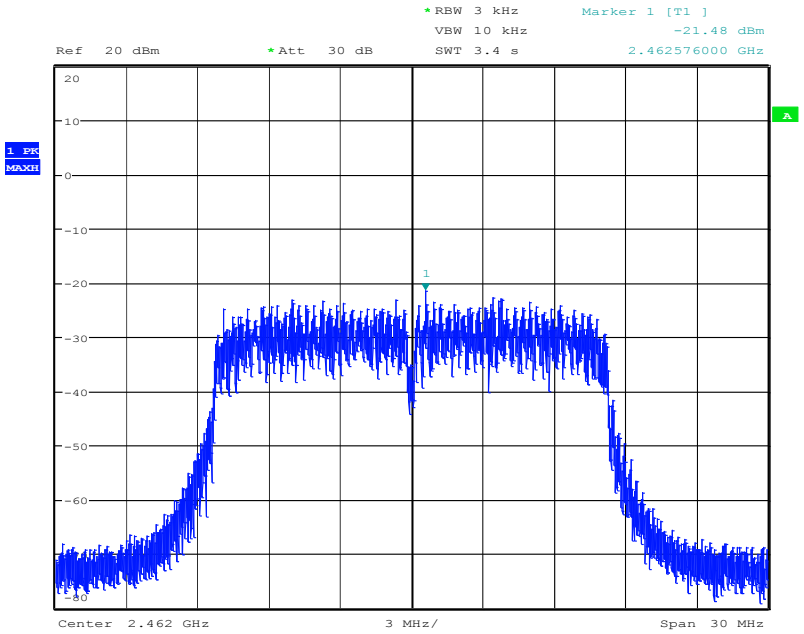
Date: 26.AUG.2020 14:58:17

TEST PLOT OF SPECTRAL DENSITY FOR MIDDLE CHANNEL



Date: 26.AUG.2020 14:57:46

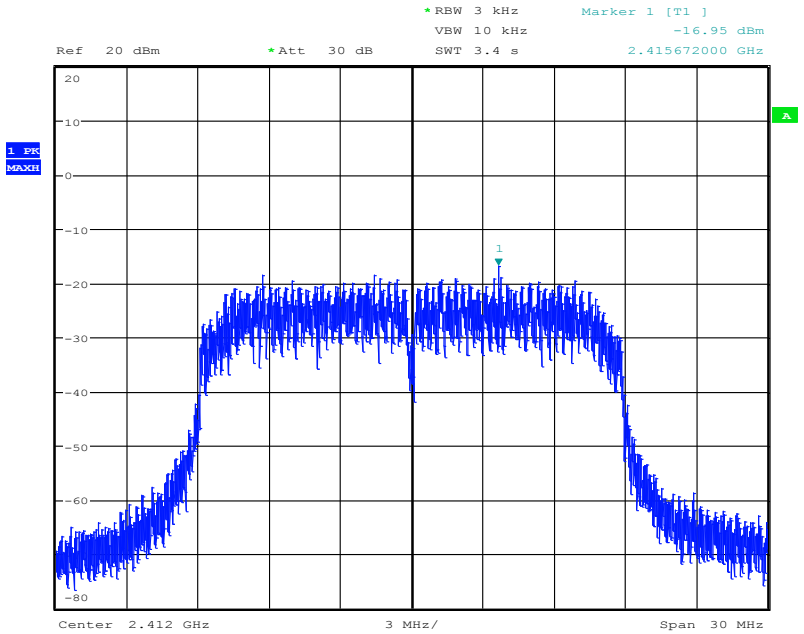
TEST PLOT OF SPECTRAL DENSITY FOR HIGH CHANNEL



Date: 26.AUG.2020 14:57:02

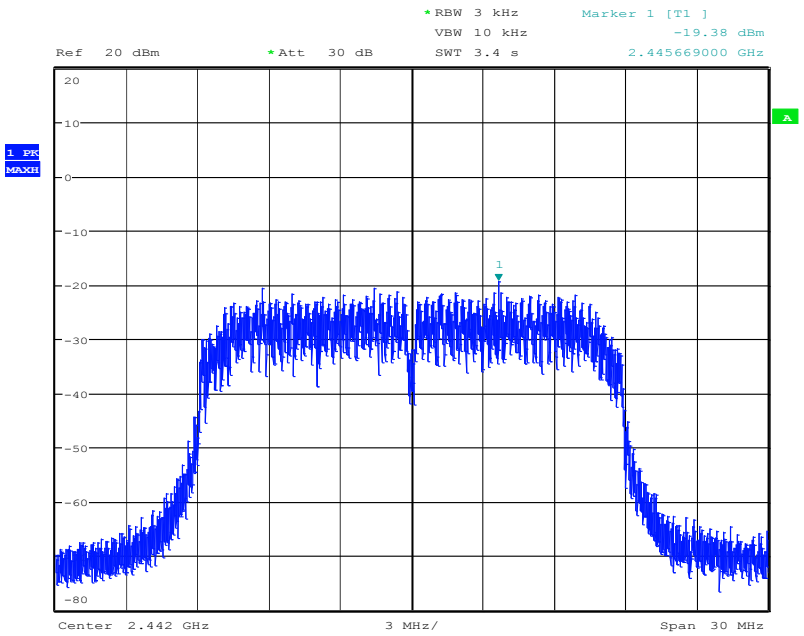
802.11n 20 TEST RESULT

TEST PLOT OF SPECTRAL DENSITY FOR LOW CHANNEL



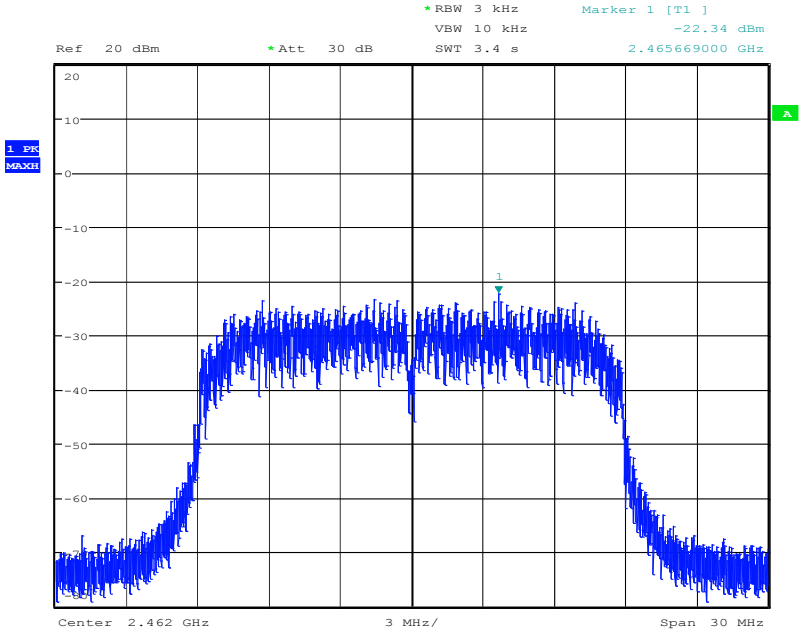
Date: 26.AUG.2020 15:00:01

TEST PLOT OF SPECTRAL DENSITY FOR MIDDLE CHANNEL



Date: 26.AUG.2020 15:00:57

TEST PLOT OF SPECTRAL DENSITY FOR HIGH CHANNEL



Date: 26.AUG.2020 15:01:32

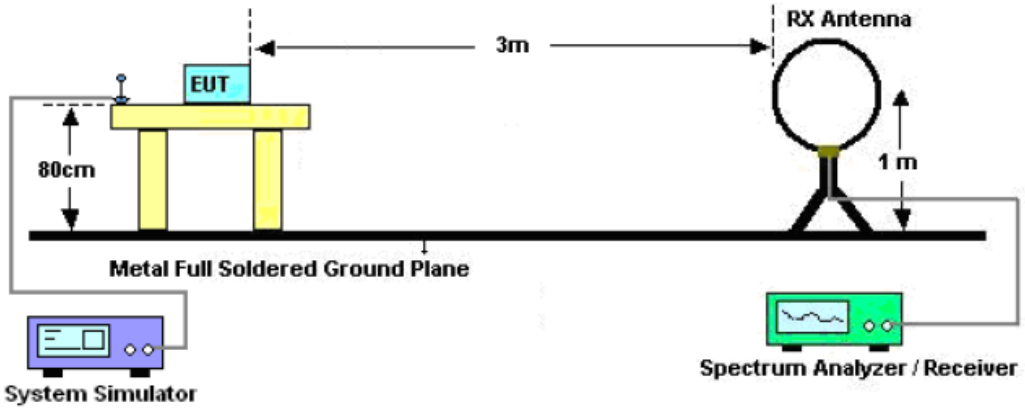
11. RADIATED EMISSION

11.1. MEASUREMENT PROCEDURE

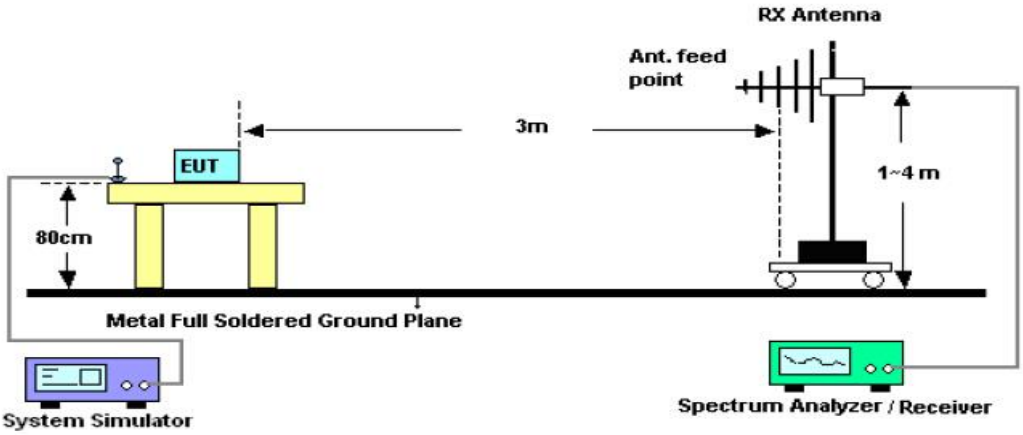
1. The EUT was placed on the top of the turntable 0.8 or 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use 1MHz RBW and 3MHz VBW for peak reading. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.
8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High - Low scan is not required in this case.

11.2. TEST SETUP

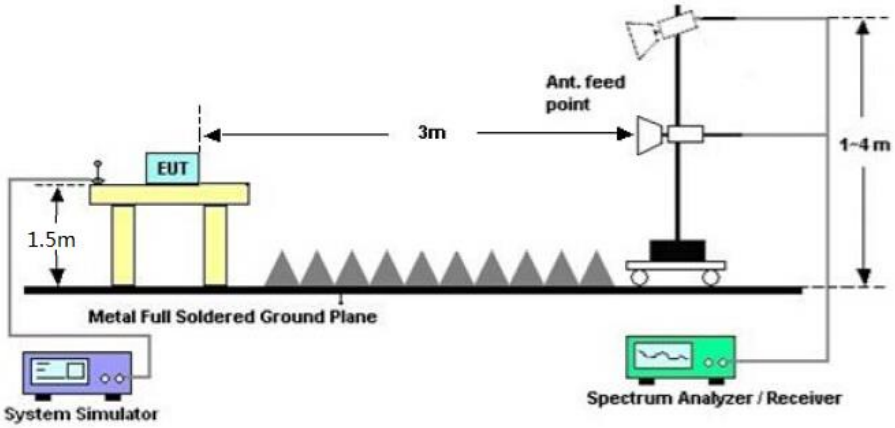
Radiated Emission Test-Setup Frequency Below 30MHz



RADIATED EMISSION TEST SETUP 30MHz-1000MHz



RADIATED EMISSION TEST SETUP ABOVE 1000MHz



11.3. LIMITS AND MEASUREMENT RESULT

15.209(a) Limit in the below table has to be followed

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

Note: All modes were tested For restricted band radiated emission,
the test records reported below are the worst result compared to other modes.

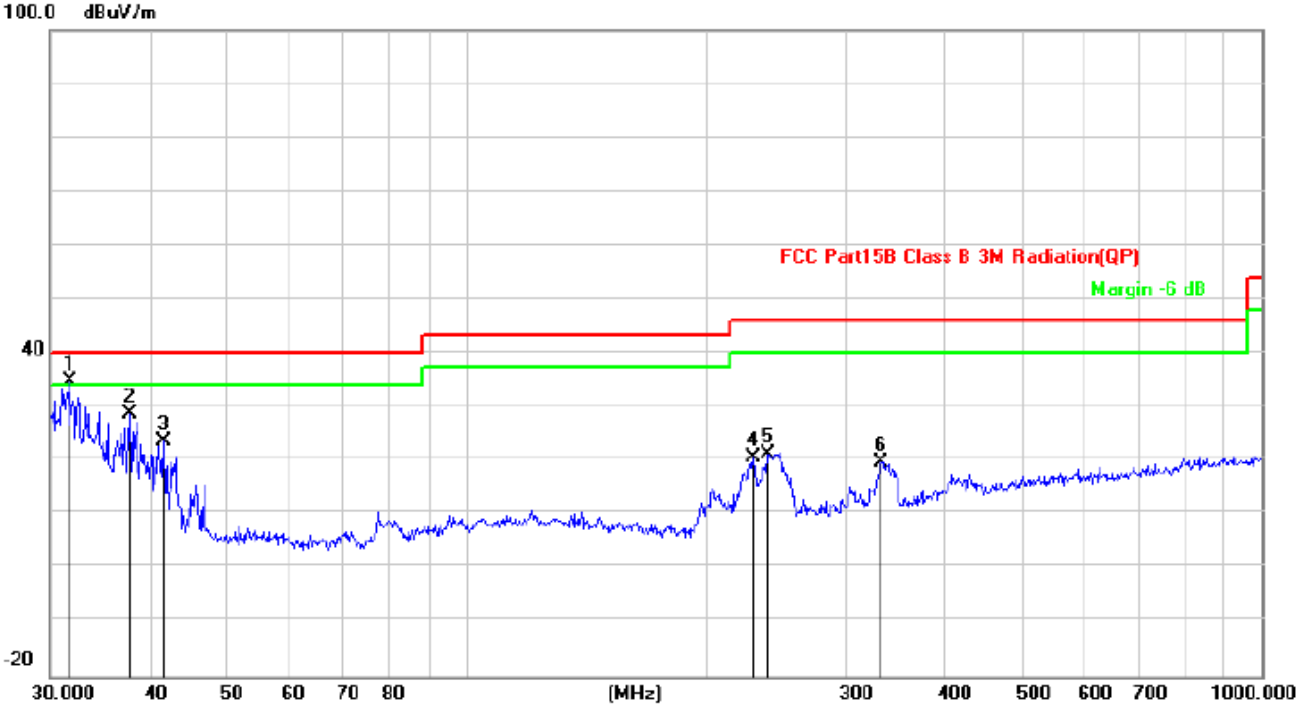
11.4. TEST RESULT

RADIATED EMISSION BELOW 30MHZ

No emission found between lowest internal used/generated frequencies to 30MHz.

RADIATED EMISSION BELOW 1GHZ

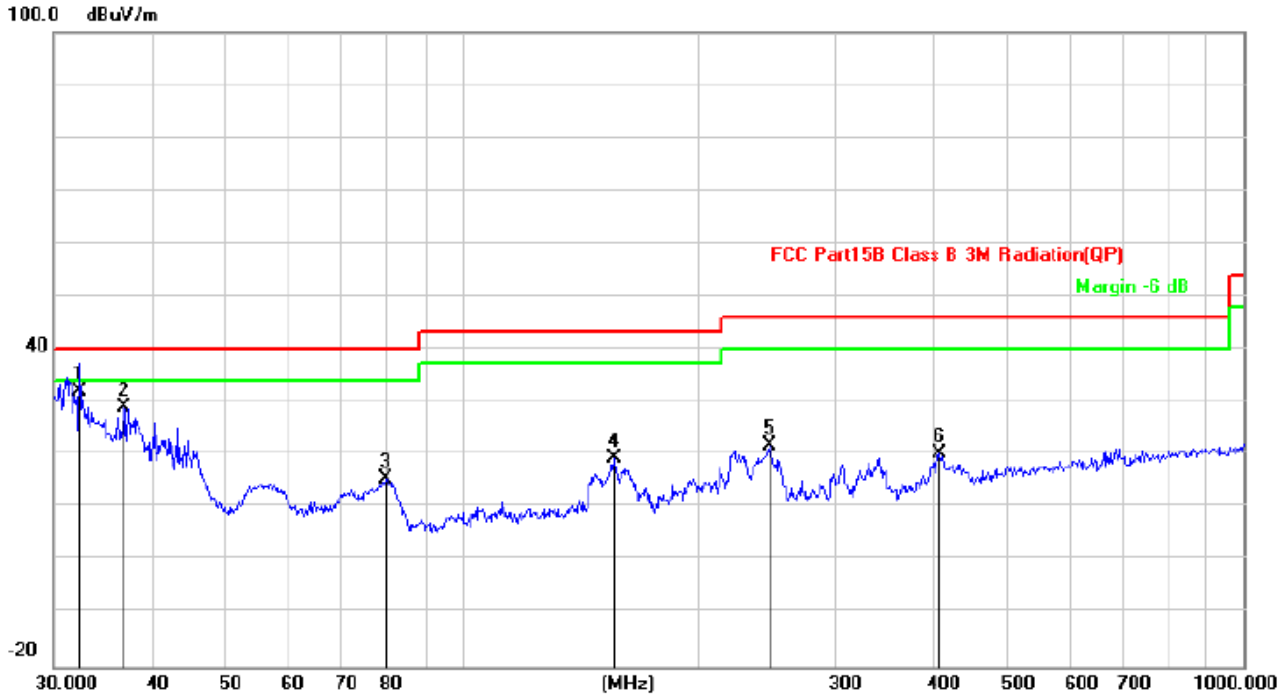
EUT	Smart socket	**Model Name**	AK-WS1102
Temperature	25°C	**Relative Humidity**	55.4%
Pressure	960hPa	**Test Voltage**	Normal Voltage
Test Mode	802.11b with date rate 1 2412MHZ	**Antenna**	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1	*	31.7313	55.53	-20.87	34.66	40.00	-5.34	QP
2		37.8121	53.25	-24.36	28.89	40.00	-11.11	QP
3		41.7129	49.60	-25.83	23.77	40.00	-16.23	QP
4		229.2931	46.68	-25.88	20.80	46.00	-25.20	QP
5		239.9874	46.74	-25.35	21.39	46.00	-24.61	QP
6		332.5187	42.78	-22.94	19.84	46.00	-26.16	QP

RESULT: PASS

EUT	Smart socket	Model Name	AK-WS1102
Temperature	25℃	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1 2412MHZ	Antenna	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1	*	32.4059	53.84	-21.84	32.00	40.00	-8.00	QP
2		36.8952	53.05	-24.00	29.05	40.00	-10.95	QP
3		79.8002	44.60	-29.14	15.46	40.00	-24.54	QP
4		156.4577	45.38	-25.91	19.47	43.50	-24.03	QP
5		247.6819	46.73	-24.87	21.86	46.00	-24.14	QP
6		407.5144	40.85	-20.41	20.44	46.00	-25.56	QP

RESULT: PASS

Note:

1. Factor=Antenna Factor + Cable loss, Margin=Measurement-Limit.

2. The “Factor” value can be calculated automatically by software of measurement system.

3. All test modes had been pre-tested. The 802.11b at low channel is the worst case and recorded in the report.

RADIATED EMISSION ABOVE 1GHZ

EUT	Smart socket	**Model Name**	AK-WS1102
Temperature	25°C	**Relative Humidity**	55.4%
Pressure	960hPa	**Test Voltage**	Normal Voltage
Test Mode	802.11b with date rate 1 2412MHZ	**Antenna**	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4824.95	58.39	3.91	62.30	74.00	-11.70	peak
4824.64	34.18	3.73	37.91	54.00	-16.09	AVG
7236.51	56.98	8.20	65.18	74.00	-8.82	peak
7236.34	33.17	8.27	41.44	54.00	-12.56	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	Smart socket	**Model Name**	AK-WS1102
Temperature	25°C	**Relative Humidity**	55.4%
Pressure	960hPa	**Test Voltage**	Normal Voltage
Test Mode	802.11b with date rate 1 2412MHZ	**Antenna**	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4824.54	58.18	4.06	62.24	74.00	-11.76	peak
4824.30	33.92	3.90	37.82	54.00	-16.18	AVG
7236.62	56.93	8.43	65.36	74.00	-8.64	peak
7236.19	32.90	8.59	41.49	54.00	-12.51	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	Smart socket	**Model Name**	AK-WS1102
Temperature	25℃	**Relative Humidity**	55.4%
Pressure	960hPa	**Test Voltage**	Normal Voltage
Test Mode	802.11b with date rate 1 2437MHZ	**Antenna**	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4874.07	57.28	4.07	61.35	74.00	-12.65	peak
4874.31	42.21	3.76	45.97	54.00	-8.03	AVG
7311.71	50.77	8.64	59.41	74.00	-14.59	peak
7311.88	37.12	8.49	45.61	54.00	-8.39	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	Smart socket	**Model Name**	AK-WS1102
Temperature	25℃	**Relative Humidity**	55.4%
Pressure	960hPa	**Test Voltage**	Normal Voltage
Test Mode	802.11b with date rate 1 2437MHZ	**Antenna**	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4874.30	57.35	3.77	61.12	74.00	-12.88	peak
4874.45	42.03	3.94	45.97	54.00	-8.03	AVG
7311.91	50.90	8.35	59.26	74.00	-14.74	peak
7311.71	37.51	8.58	46.09	54.00	-7.91	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	Smart socket	Model Name	AK-WS1102
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1 2462MHZ	Antenna	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4924.40	57.67	4.23	61.90	74.00	-12.10	peak
4924.26	44.05	4.06	48.11	54.00	-5.89	AVG
7386.25	50.98	8.66	59.64	74.00	-14.36	peak
7386.83	37.50	8.59	46.09	54.00	-7.91	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	Smart socket	Model Name	AK-WS1102
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1 2462MHZ	Antenna	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4924.59	57.66	4.03	61.68	74.00	-12.32	peak
4924.18	43.79	4.01	47.80	54.00	-6.20	AVG
7386.89	50.80	8.35	59.15	74.00	-14.85	peak
7386.66	37.72	8.68	46.40	54.00	-7.60	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

RESULT: PASS

Note:

Other emissions from 1G to 25 GHz are considered as ambient noise. No recording in the test report.

Factor = Antenna Factor + Cable loss - Amplifier gain, Over=Measure-Limit.

The “Factor” value can be calculated automatically by software of measurement system.

All test modes had been pre-tested. The 802.11b mode is the worst case and recorded in the report.

12. BAND EDGE EMISSION- CONDUCTED

12.1. MEASUREMENT PROCEDURE

Radiated restricted band edge measurements

The radiated restricted band edge measurements are measured with an EMI test receiver connected to the receive antenna while the EUT is transmitting

12.2. TEST SET-UP

same as 11.2

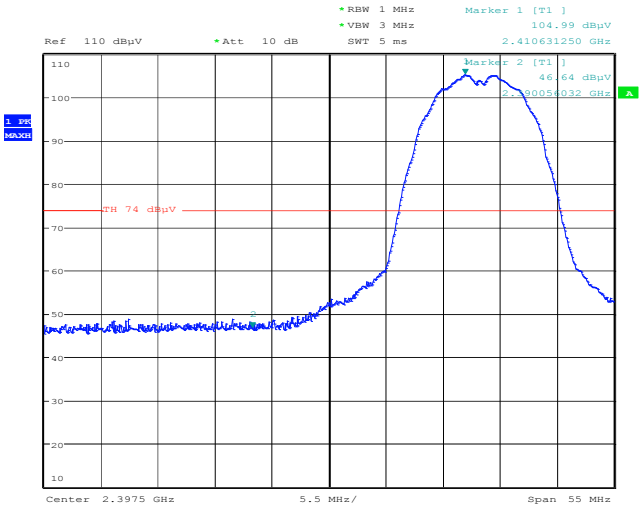
Note:

1. Factor=Antenna Factor + Cable loss - Amplifier gain. Field Strength=Factor + Reading level
2. The factor had been edited in the “Input Correction” of the Spectrum Analyzer. So the Amplitude of test plots is equal to Reading level plus the Factor in dB. Use the A dB(μV) to represent the Amplitude. Use the F dB(μV/m) to represent the Field Strength. So A=F.

12.3. Test Result

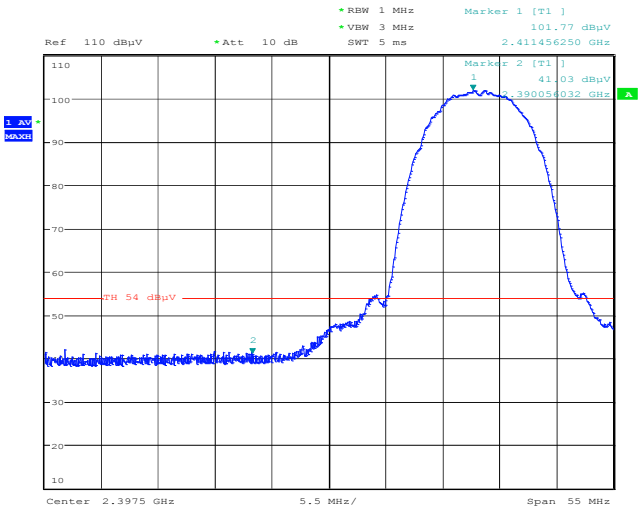
EUT	Smart socket	Model Name	AK-WS1102
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with data rate 1 2412MHZ	Antenna	Horizontal

PK



Date: 20.AUG.2020 17:26:19

AV

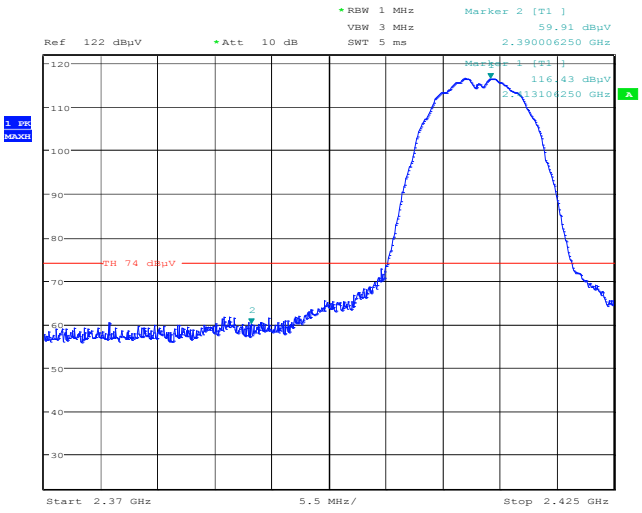


Date: 20.AUG.2020 17:24:54

RESULT: PASS

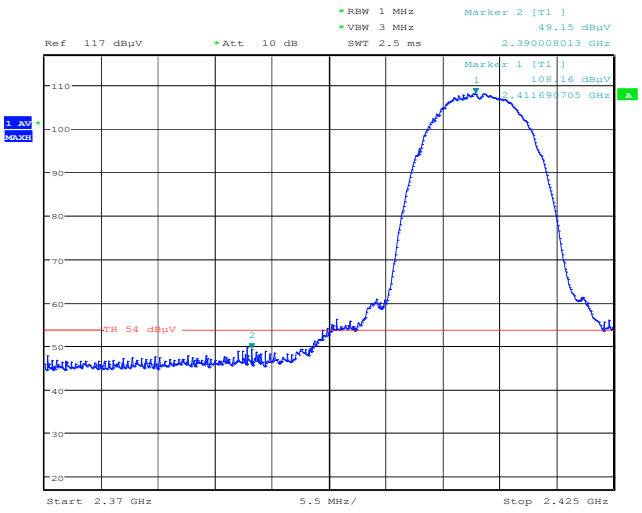
EUT	Smart socket	Model Name	AK-WS1102
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with data rate 1 2412MHZ	Antenna	Vertical

PK



Date: 21.AUG.2020 08:49:22

AV

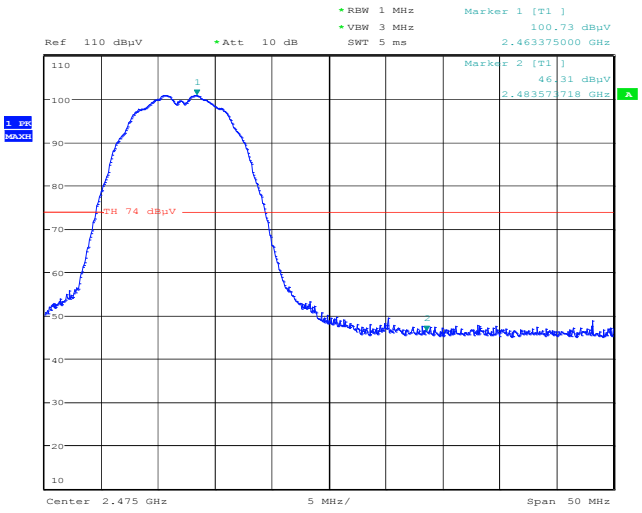


Date: 26.AUG.2020 11:46:05

RESULT: PASS

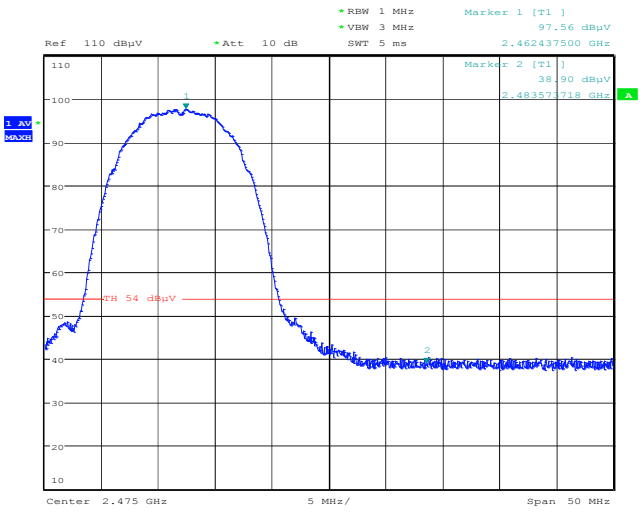
EUT	Smart socket	Model Name	AK-WS1102
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with data rate 1 2462MHZ	Antenna	Horizontal

PK



Date: 20.AUG.2020 17:39:07

AV

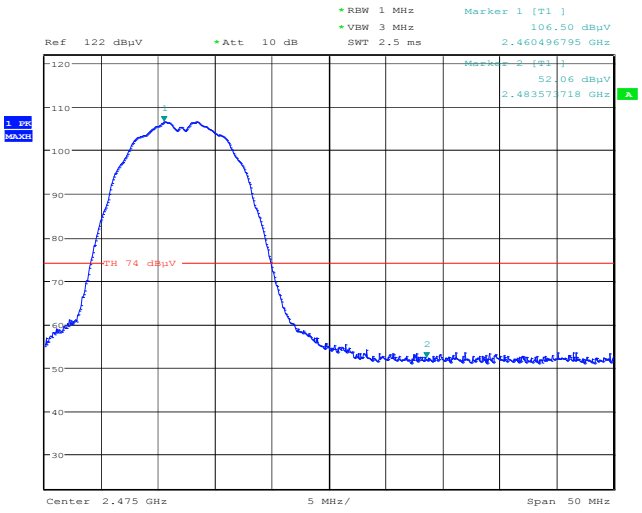


Date: 20.AUG.2020 17:32:50

RESULT: PASS

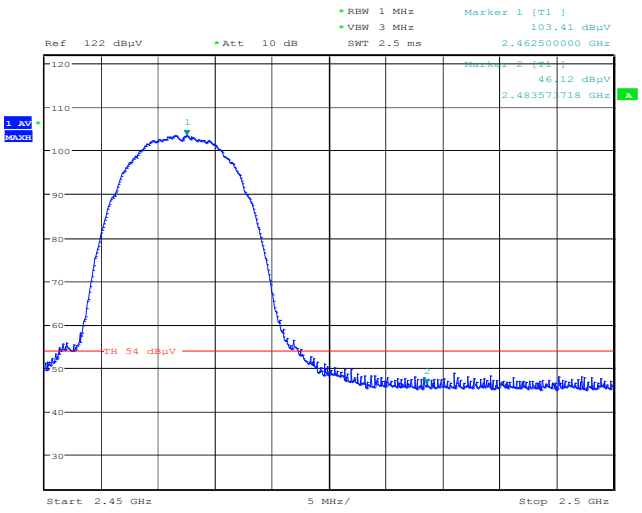
EUT	Smart socket	Model Name	AK-WS1102
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with data rate 1 2462MHZ	Antenna	Vertical

PK



Date: 26.AUG.2020 13:32:44

AV

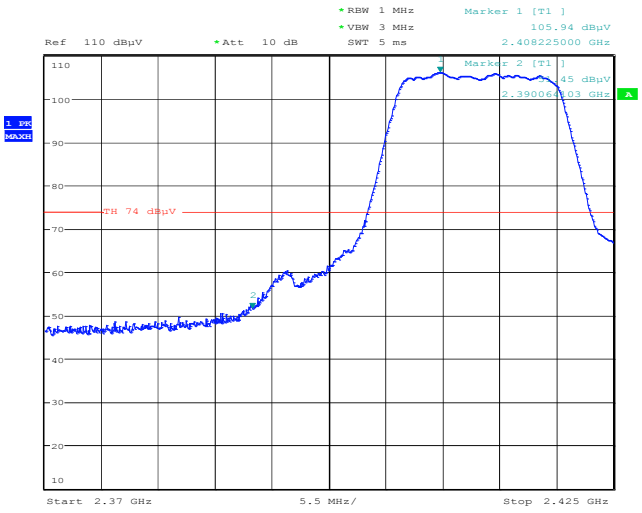


Date: 26.AUG.2020 13:31:40

RESULT: PASS

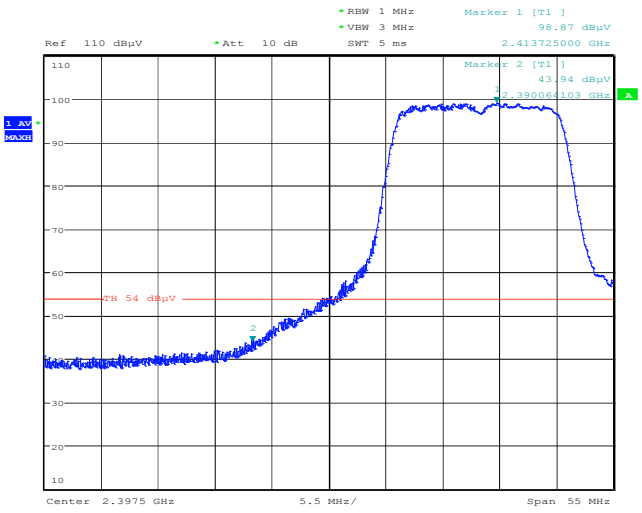
EUT	Smart socket	Model Name	AK-WS1102
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11g with data rate 6 2412MHZ	Antenna	Horizontal

PK



Date: 20.AUG.2020 17:41:59

AV

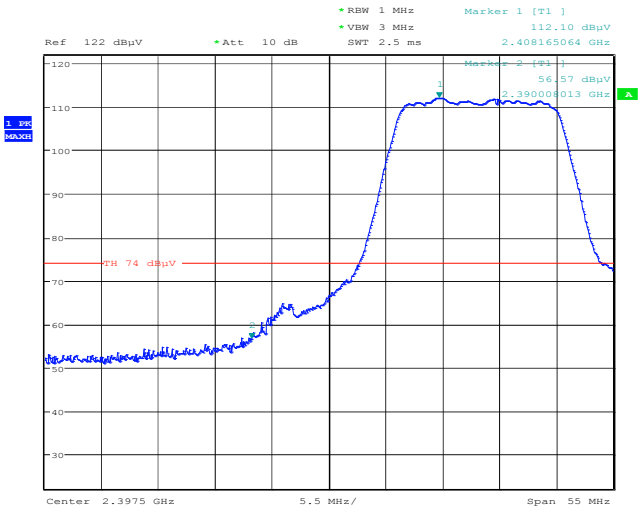


Date: 20.AUG.2020 17:42:49

RESULT: PASS

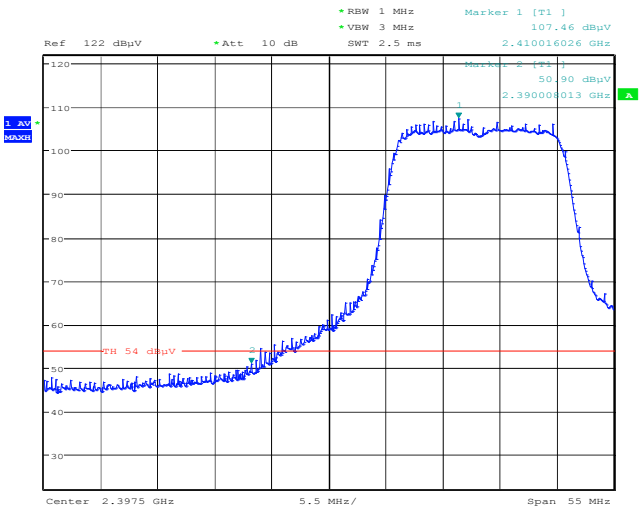
EUT	Smart socket	Model Name	AK-WS1102
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11g with data rate 6 2412MHZ	Antenna	Vertical

PK



Date: 26.AUG.2020 13:37:20

AV

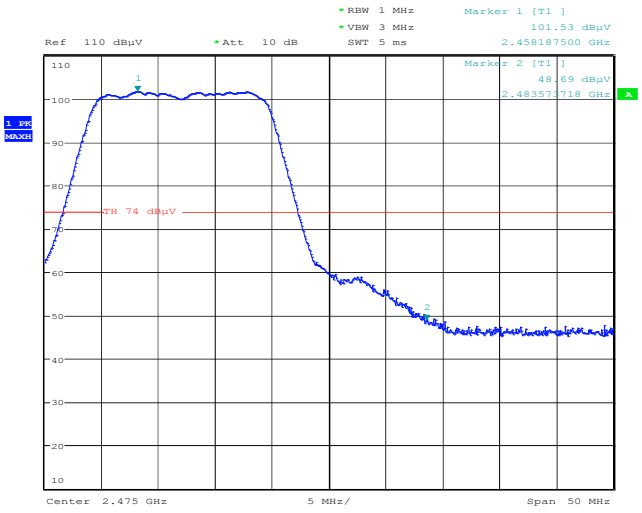


Date: 26.AUG.2020 13:38:58

RESULT: PASS

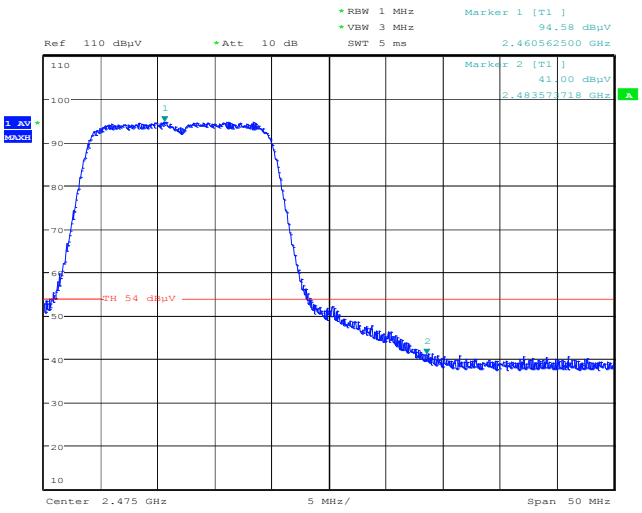
EUT	Smart socket	Model Name	AK-WS1102
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11g with data rate 6 2462MHZ	Antenna	Horizontal

PK



Date: 20.AUG.2020 17:36:17

AV

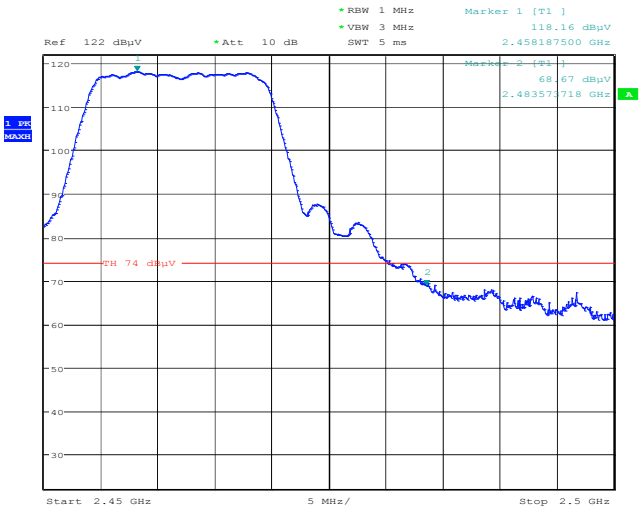


Date: 20.AUG.2020 17:37:04

RESULT: PASS

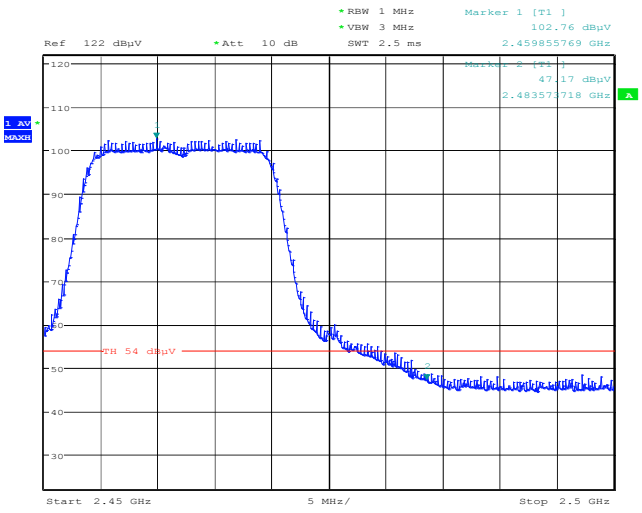
EUT	Smart socket	Model Name	AK-WS1102
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11g with data rate 6 2462MHZ	Antenna	Vertical

PK



Date: 21.AUG.2020 09:06:25

AV

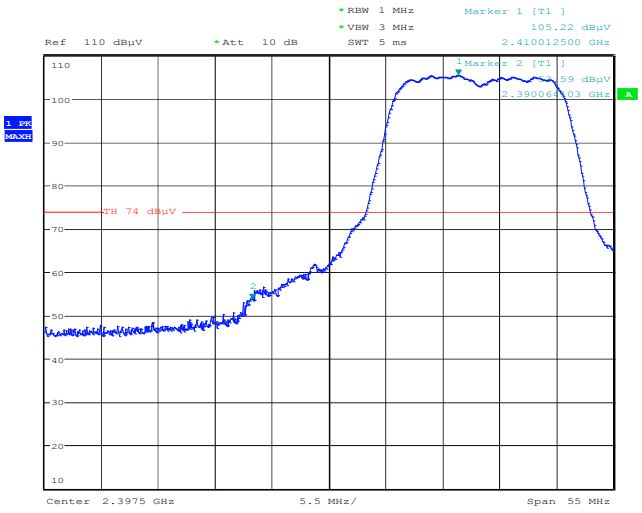


Date: 26.AUG.2020 13:41:08

RESULT: PASS

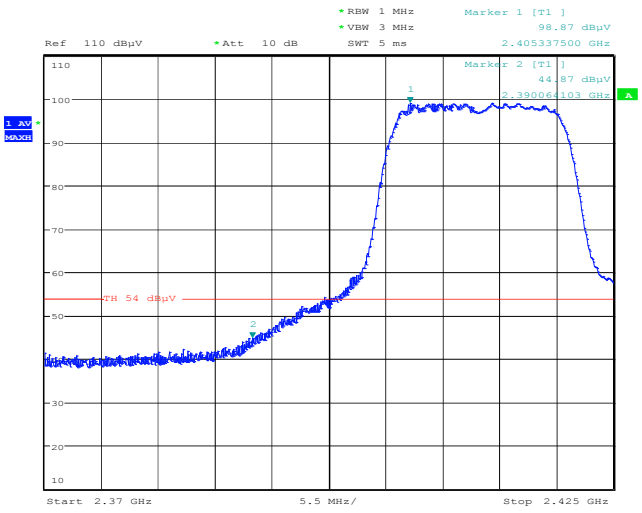
EUT	Smart socket	Model Name	AK-WS1102
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 20 with data rate 6.5 2412MHZ	Antenna	Horizontal

PK



Date: 20.AUG.2020 17:45:48

AV

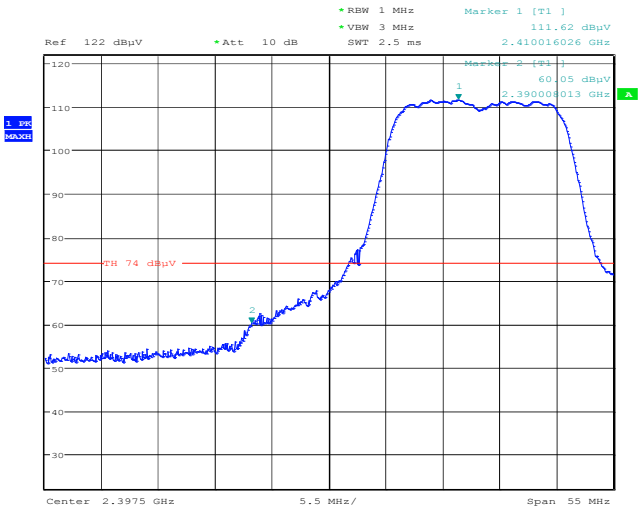


Date: 20.AUG.2020 17:45:10

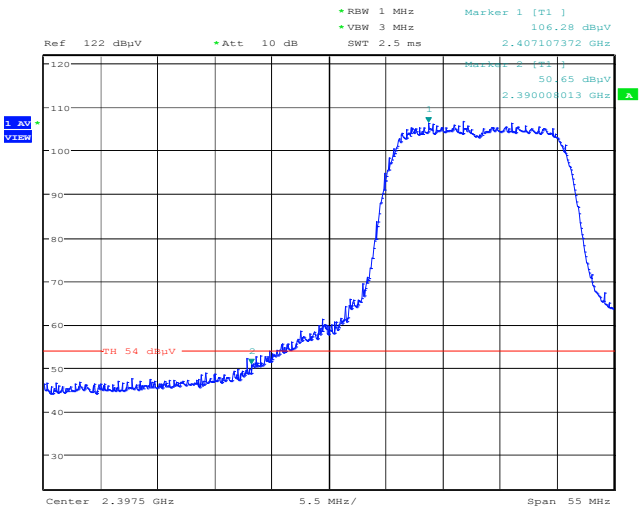
RESULT: PASS

EUT	Smart socket	Model Name	AK-WS1102
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 20 with data rate 6.5 2412MHZ	Antenna	Vertical

PK



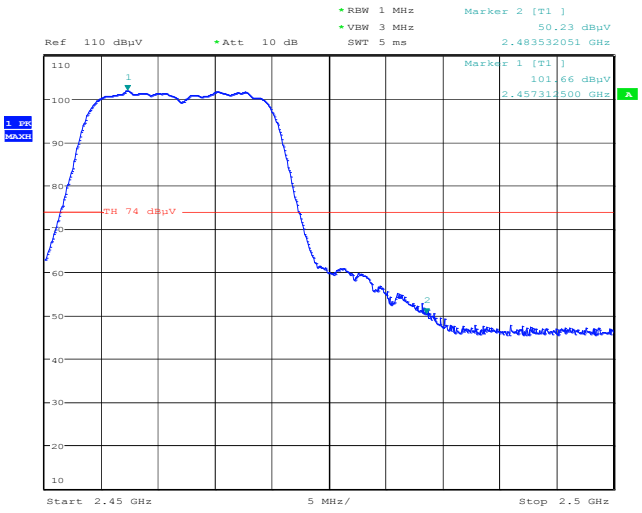
AV



RESULT: PASS

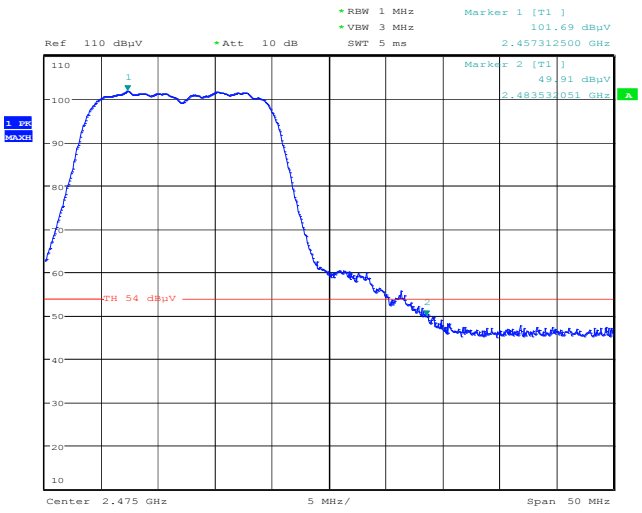
EUT	Smart socket	Model Name	AK-WS1102
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 20 with data rate 6.5 2462MHZ	Antenna	Horizontal

PK



Date: 20.AUG.2020 17:47:28

AV

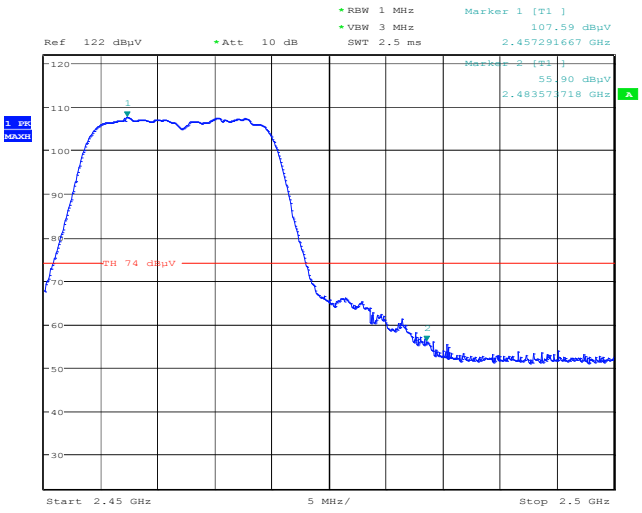


Date: 20.AUG.2020 17:47:58

RESULT: PASS

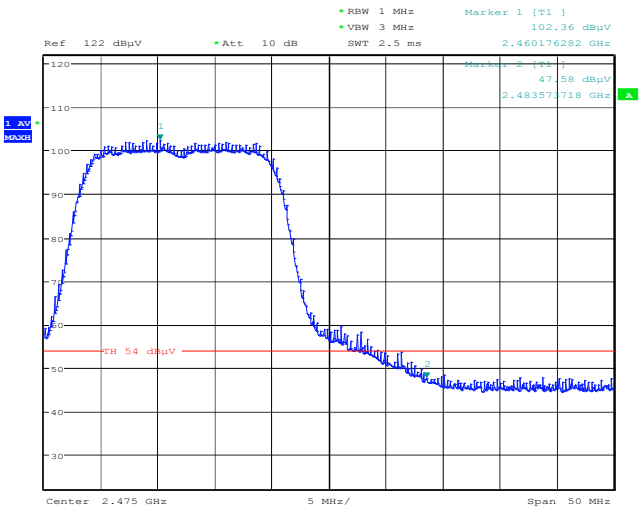
EUT	Smart socket	Model Name	AK-WS1102
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 20 with data rate 6.5 2462MHZ	Antenna	Vertical

PK



Date: 26.AUG.2020 13:50:57

AV



Date: 26.AUG.2020 13:51:41

RESULT: PASS

13. BAND EDGE EMISSION

13.1. MEASUREMENT PROCEDURE

Radiated restricted band edge measurements

The radiated restricted band edge measurements are measured with an EMI test receiver connected to the receive antenna while the EUT is transmitting

13.2. TEST SET-UP

same as 11.2

Note:

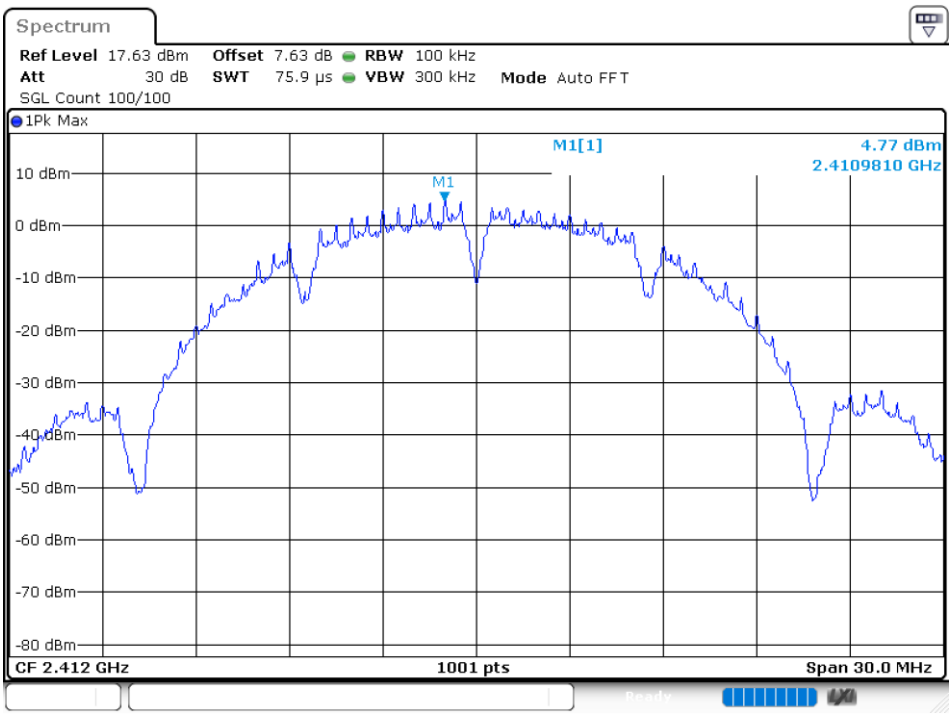
1. Factor=Antenna Factor + Cable loss - Amplifier gain. Field Strength=Factor + Reading level
2. The factor had been edited in the “Input Correction” of the Spectrum Analyzer. So the Amplitude of test plots is equal to Reading level plus the Factor in dB. Use the A dB(μV) to represent the Amplitude. Use the F dB(μV/m) to represent the Field Strength. So A=F.

13.3. Test Result

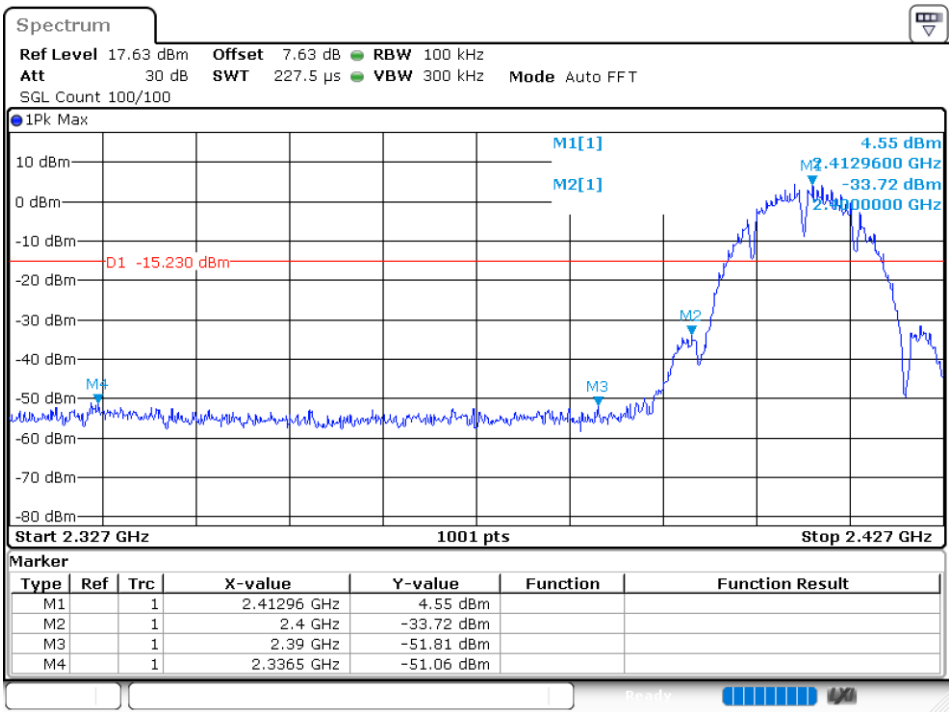
EUT	Smart socket	**Model Name**	AK-WS1102
Temperature	25°C	**Relative Humidity**	55.4%
Pressure	960hPa	**Test Voltage**	Normal Voltage
Test Mode	802.11b/g/n20	**Antenna**	Horizontal

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	802.11b	2412	Ant 1	-55.82	-20	Pass
NVNT	802.11b	2462	Ant 1	-54.06	-20	Pass
NVNT	802.11g	2412	Ant 1	-51.25	-20	Pass
NVNT	802.11g	2462	Ant 1	-48.2	-20	Pass
NVNT	802.11n(HT20)	2412	Ant 1	-51.04	-20	Pass
NVNT	802.11n(HT20)	2462	Ant 1	-49.96	-20	Pass
NVNT	802.11n(HT40)	2422	Ant 1	-47.24	-20	Pass
NVNT	802.11n(HT40)	2452	Ant 1	-47.66	-20	Pass

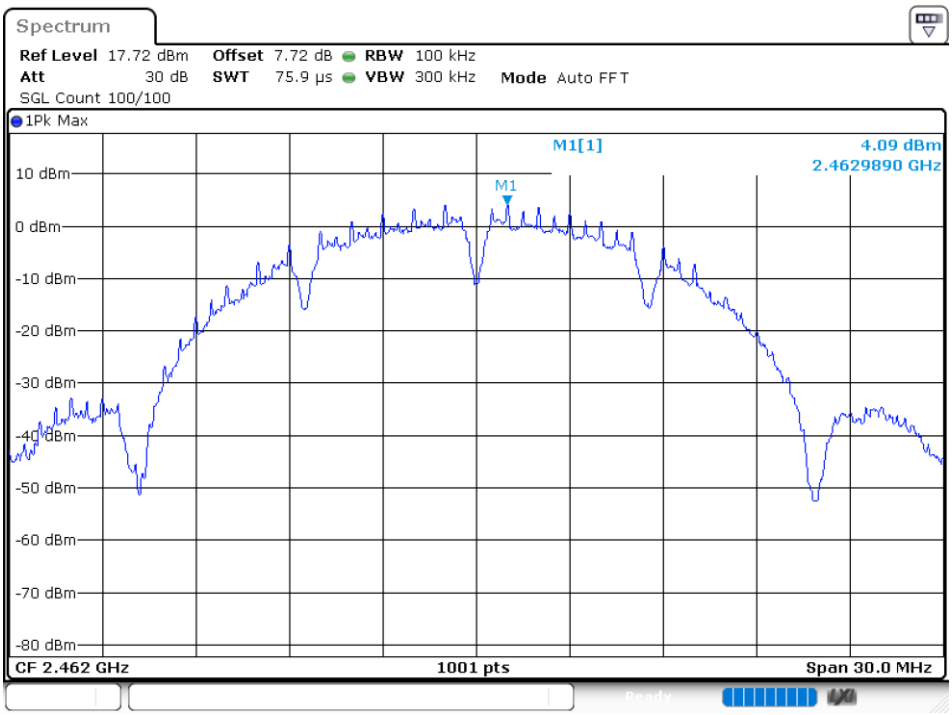
Band Edge NVNT 802.11b 2412MHz Ant1 Ref



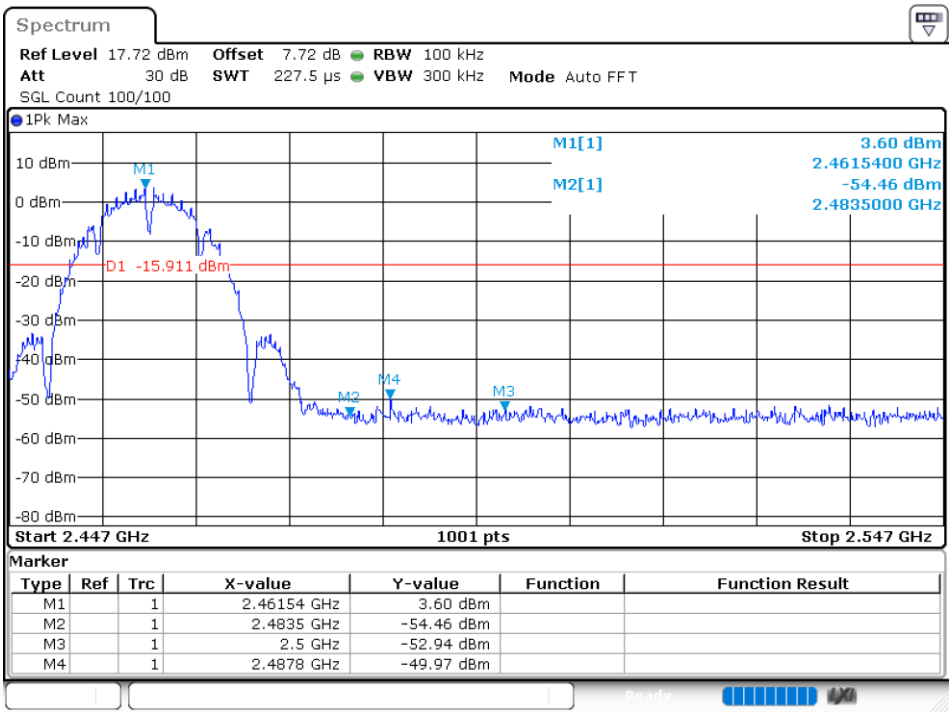
Band Edge NVNT 802.11b 2412MHz Ant1 Emission



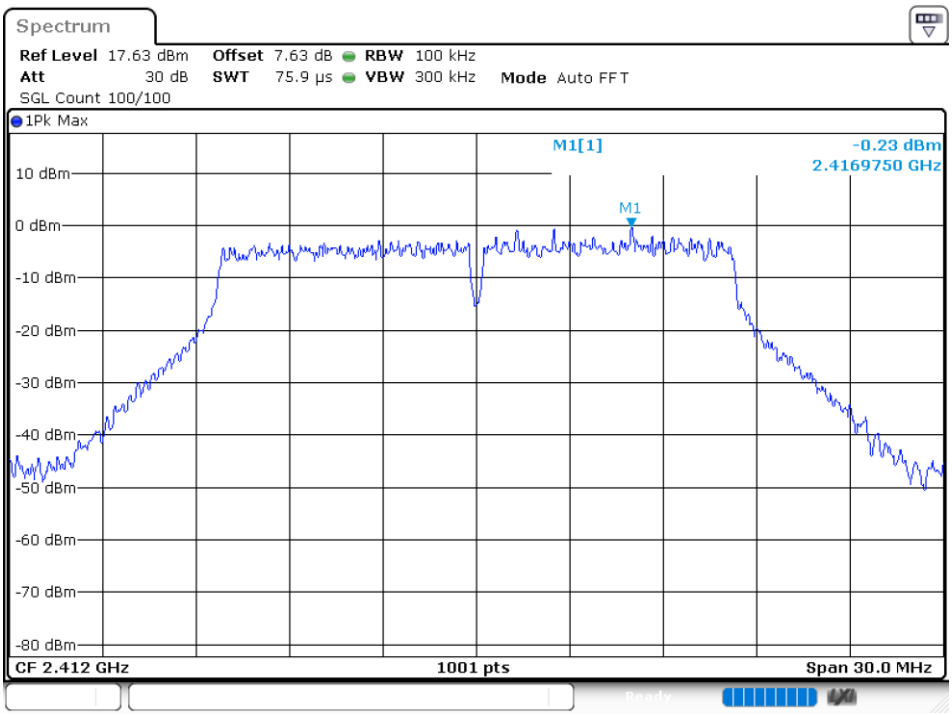
Band Edge NVNT 802.11b 2462MHz Ant1 Ref



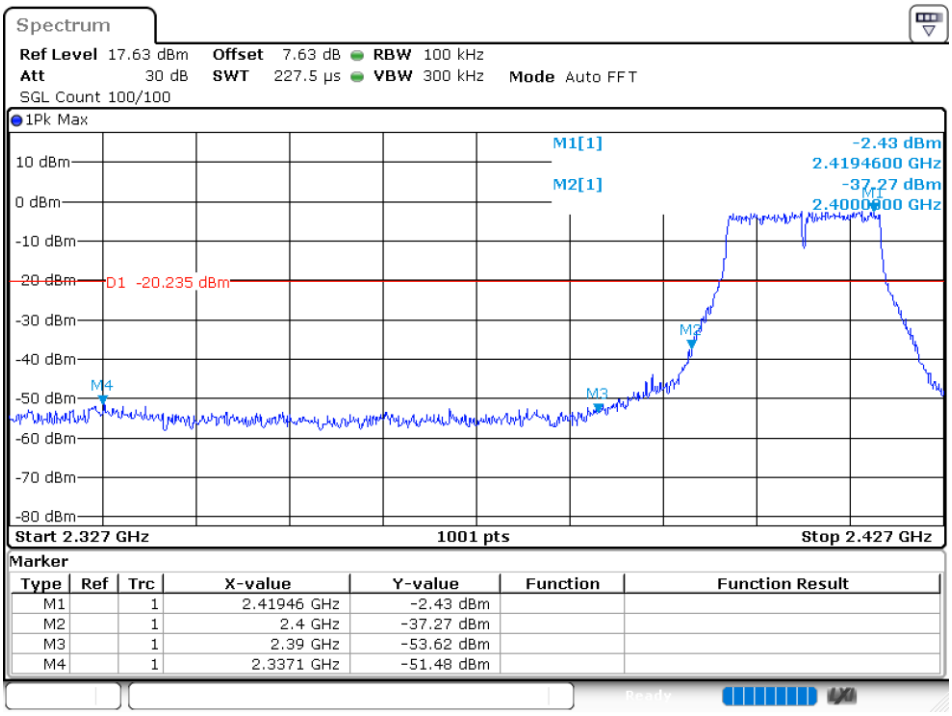
Band Edge NVNT 802.11b 2462MHz Ant1 Emission



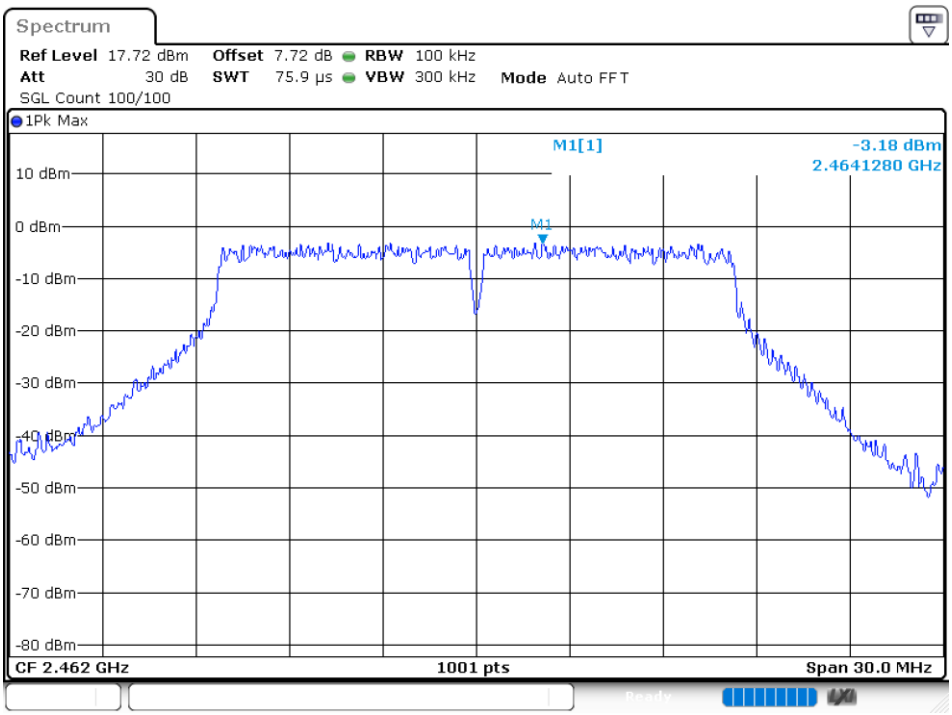
Band Edge NVNT 802.11g 2412MHz Ant1 Ref



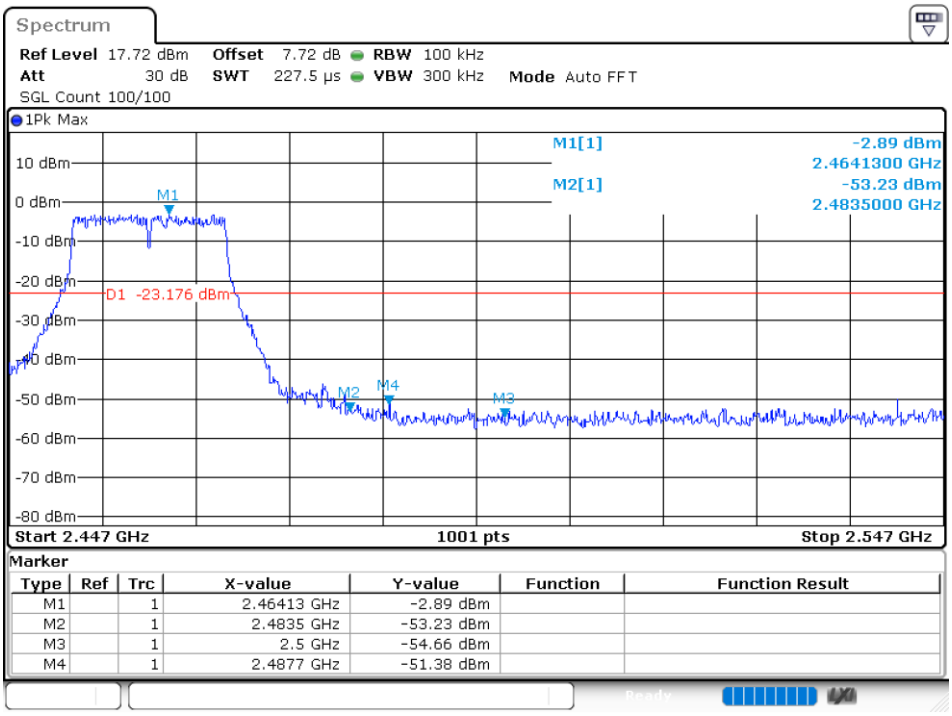
Band Edge NVNT 802.11g 2412MHz Ant1 Emission



Band Edge NVNT 802.11g 2462MHz Ant1 Ref



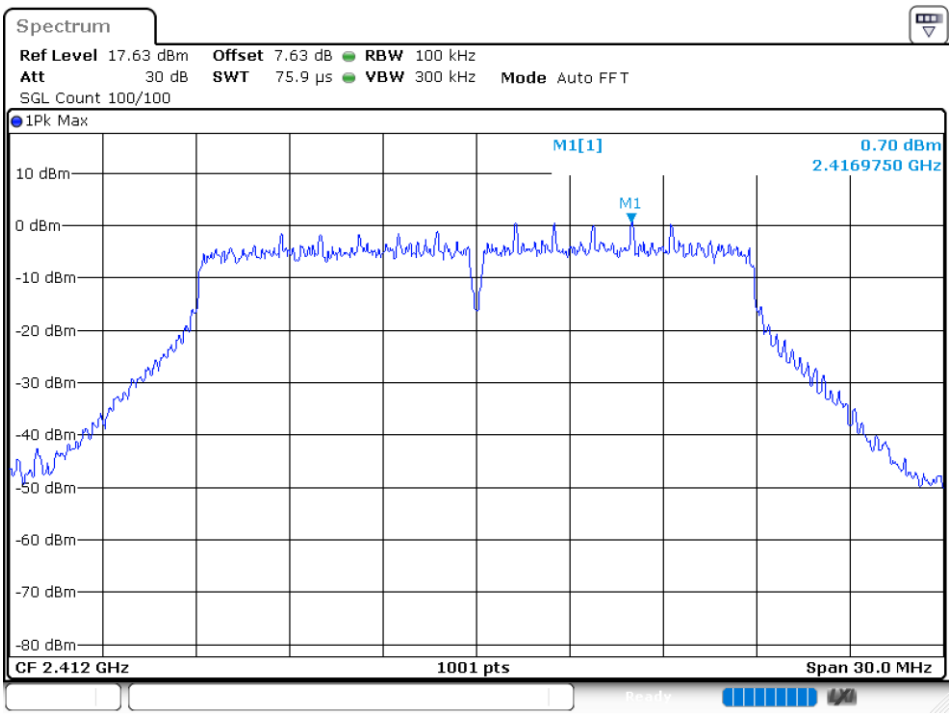
Band Edge NVNT 802.11g 2462MHz Ant1 Emission



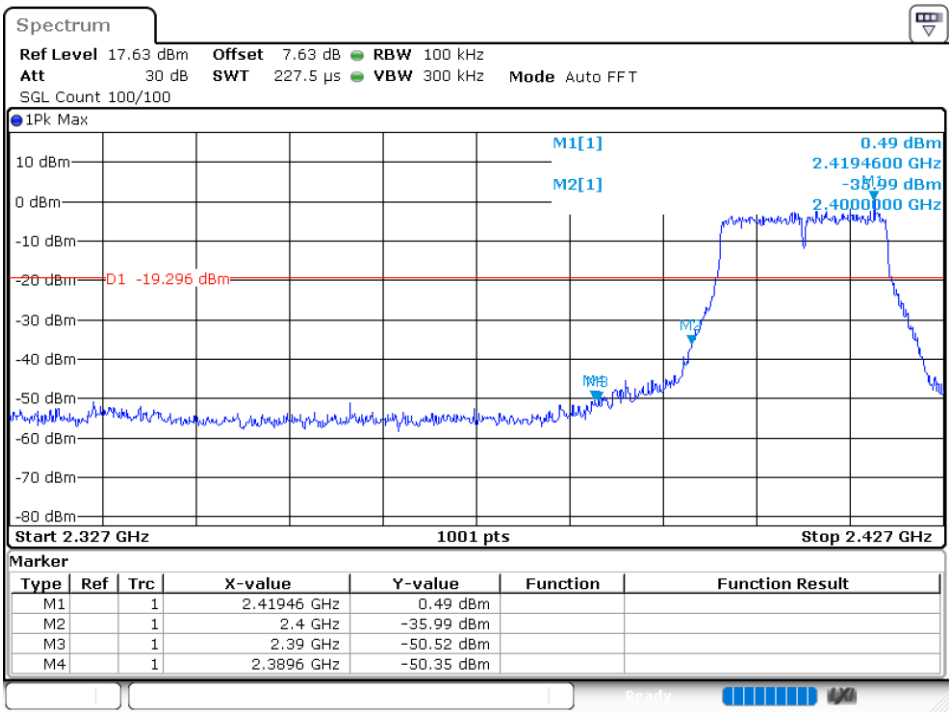
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.46413 GHz	-2.89 dBm		
M2		1	2.4835 GHz	-53.23 dBm		
M3		1	2.5 GHz	-54.66 dBm		
M4		1	2.4877 GHz	-51.38 dBm		

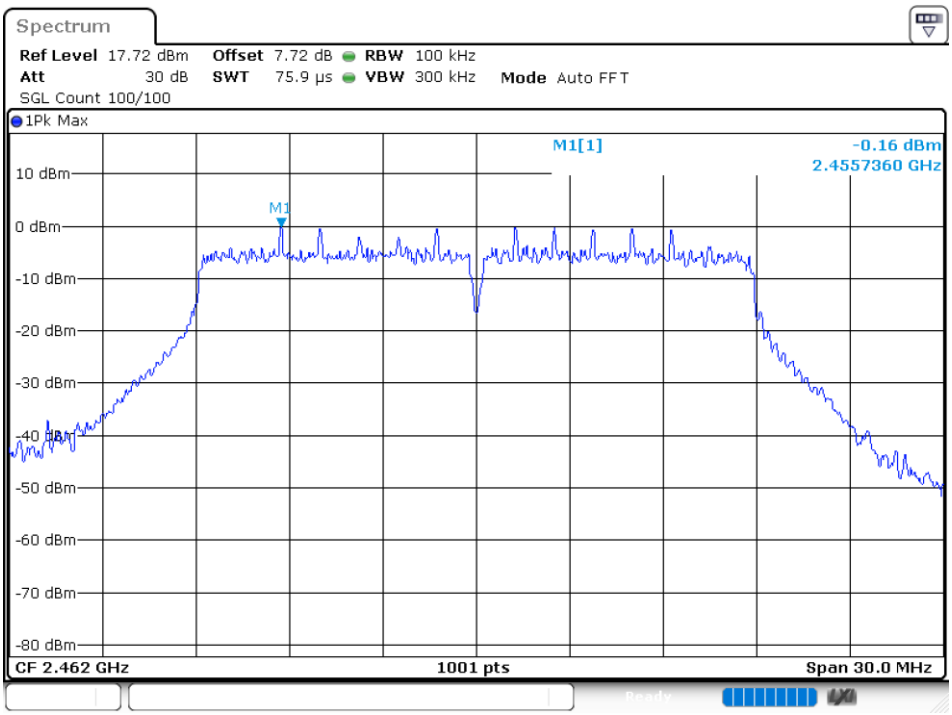
Band Edge NVNT 802.11n(HT20) 2412MHz Ant1 Ref



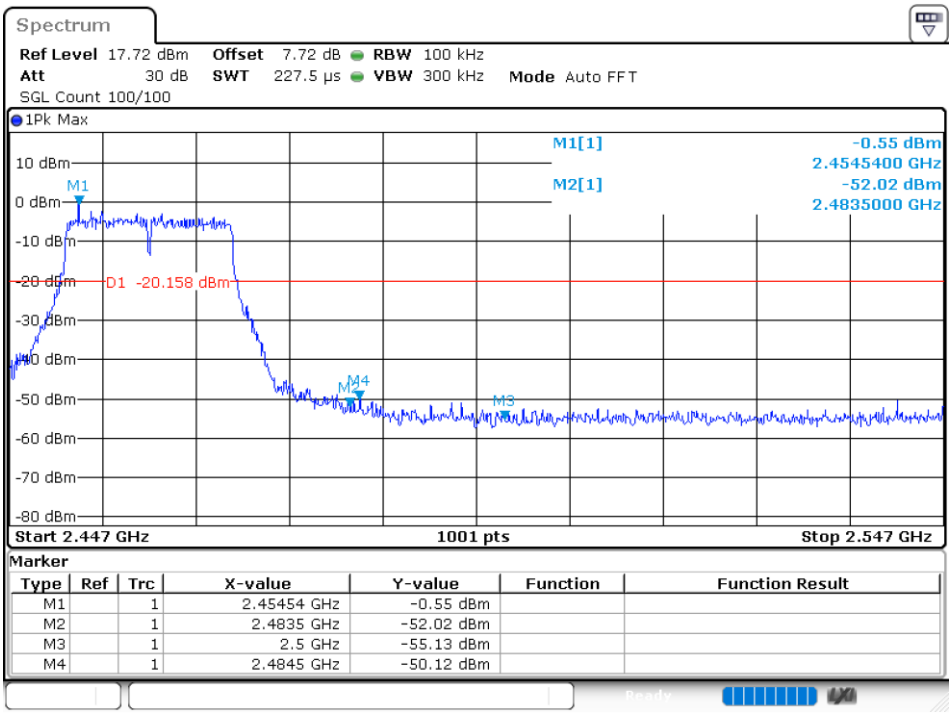
Band Edge NVNT 802.11n(HT20) 2412MHz Ant1 Emission



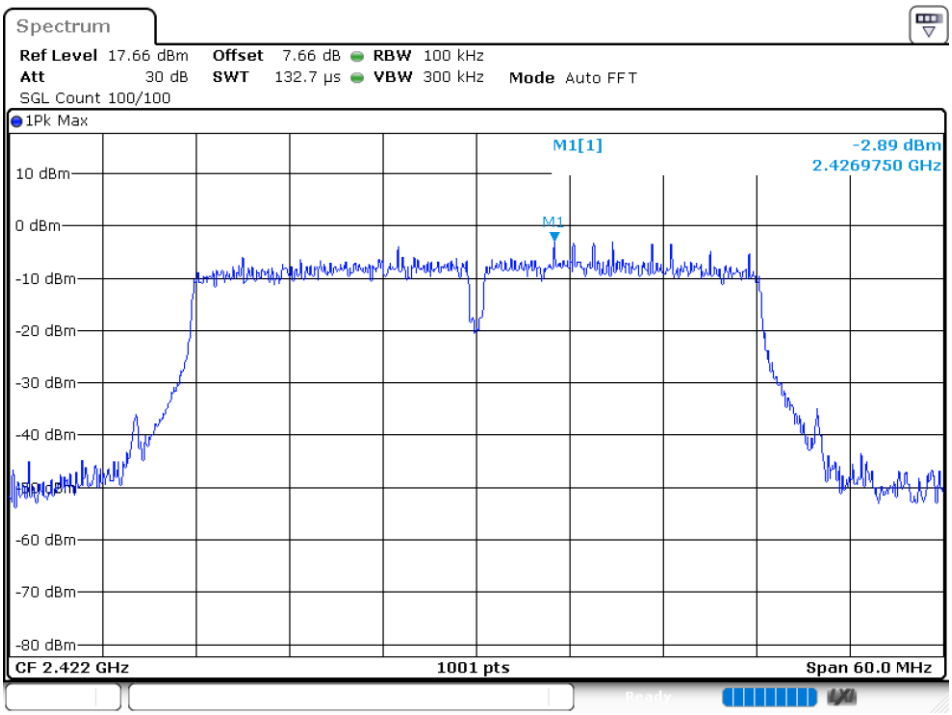
Band Edge NVNT 802.11n(HT20) 2462MHz Ant1 Ref



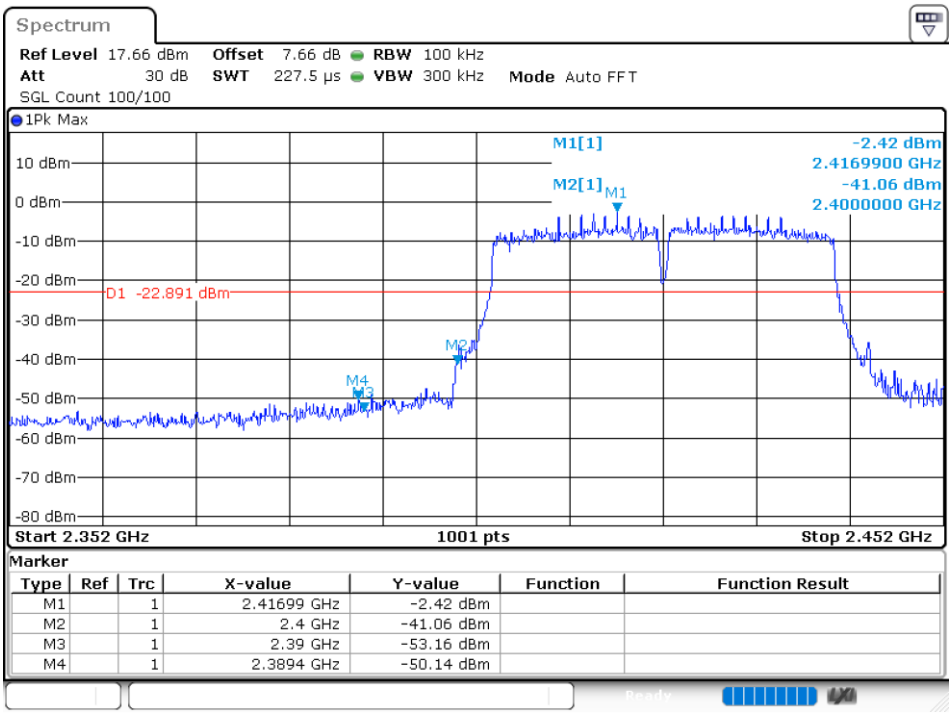
Band Edge NVNT 802.11n(HT20) 2462MHz Ant1 Emission



Band Edge NVNT 802.11n(HT40) 2422MHz Ant1 Ref



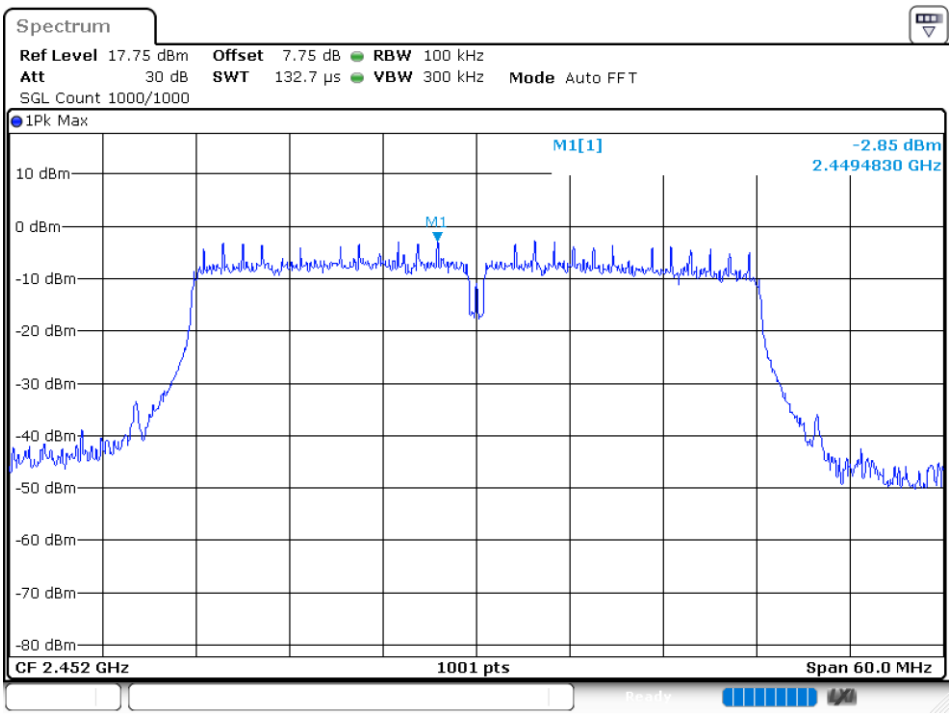
Band Edge NVNT 802.11n(HT40) 2422MHz Ant1 Emission



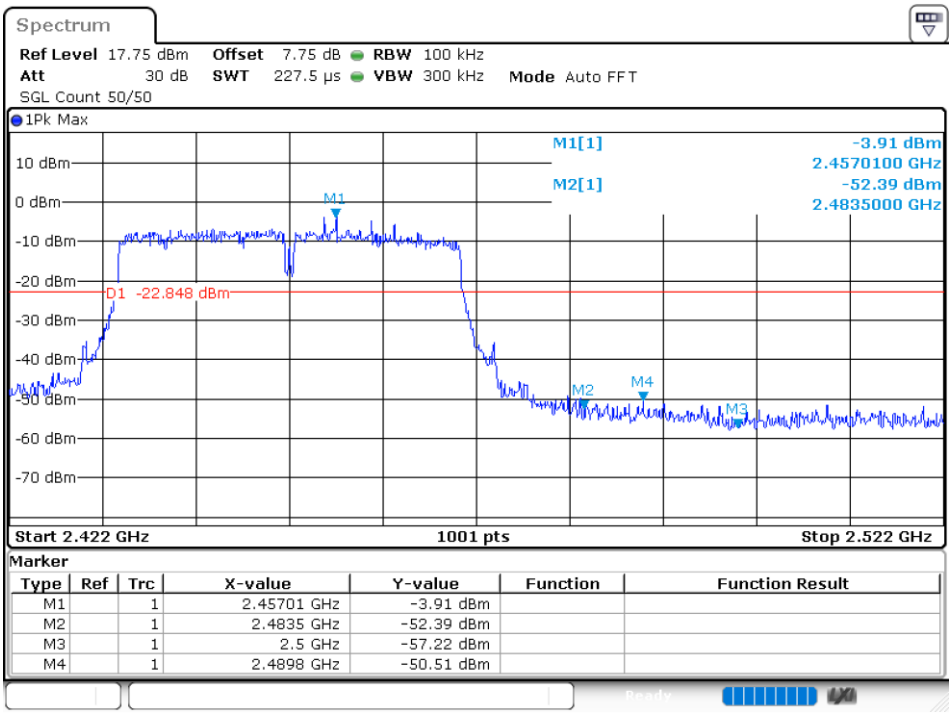
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.41699 GHz	-2.42 dBm		
M2		1	2.4 GHz	-41.06 dBm		
M3		1	2.39 GHz	-53.16 dBm		
M4		1	2.3894 GHz	-50.14 dBm		

Band Edge NVNT 802.11n(HT40) 2452MHz Ant1 Ref



Band Edge NVNT 802.11n(HT40) 2452MHz Ant1 Emission



14. FCC LINE CONDUCTED EMISSION TEST

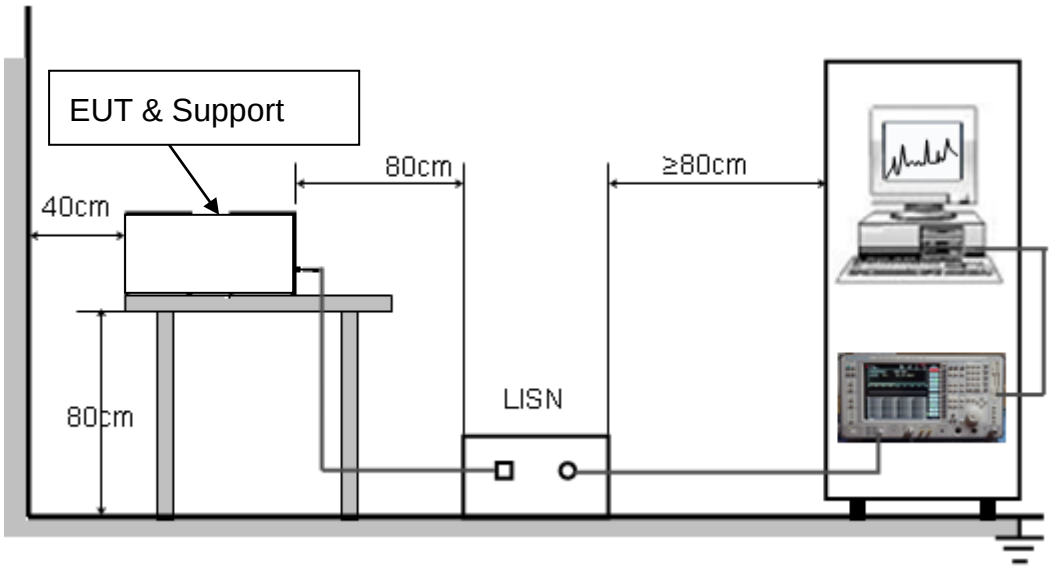
14.1. LIMITS OF LINE CONDUCTED EMISSION TEST

Frequency	Maximum RF Line Voltage	
	Q.P.(dBuV)	Average(dBuV)
150kHz~500kHz	66-56	56-46
500kHz~5MHz	56	46
5MHz~30MHz	60	50

Note:

1. The lower limit shall apply at the transition frequency.
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

14.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST



14.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST

1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
2. Support equipment, if needed, was placed as per ANSI C63.10.
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.
4. All support equipments received AC120V/60Hz power from a LISN, if any.
5. The EUT received charging voltage by adapter which received 120V/60Hzpower by a LISN..
6. The test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7. Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
8. During the above scans, the emissions were maximized by cable manipulation.
9. The test mode(s) were scanned during the preliminary test.

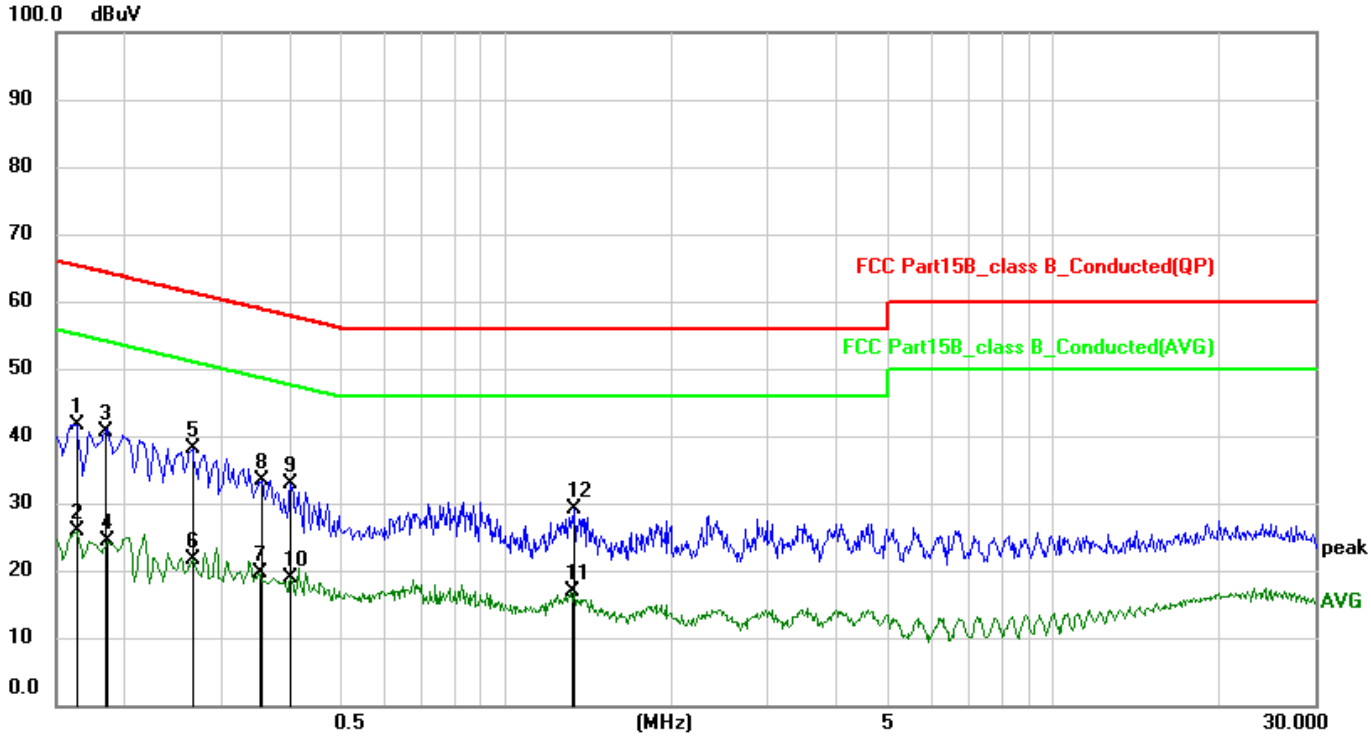
Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

13.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST

1. EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
2. A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less –2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.
3. The test data of the worst case condition(s) was reported on the Summary Data page.

14.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST

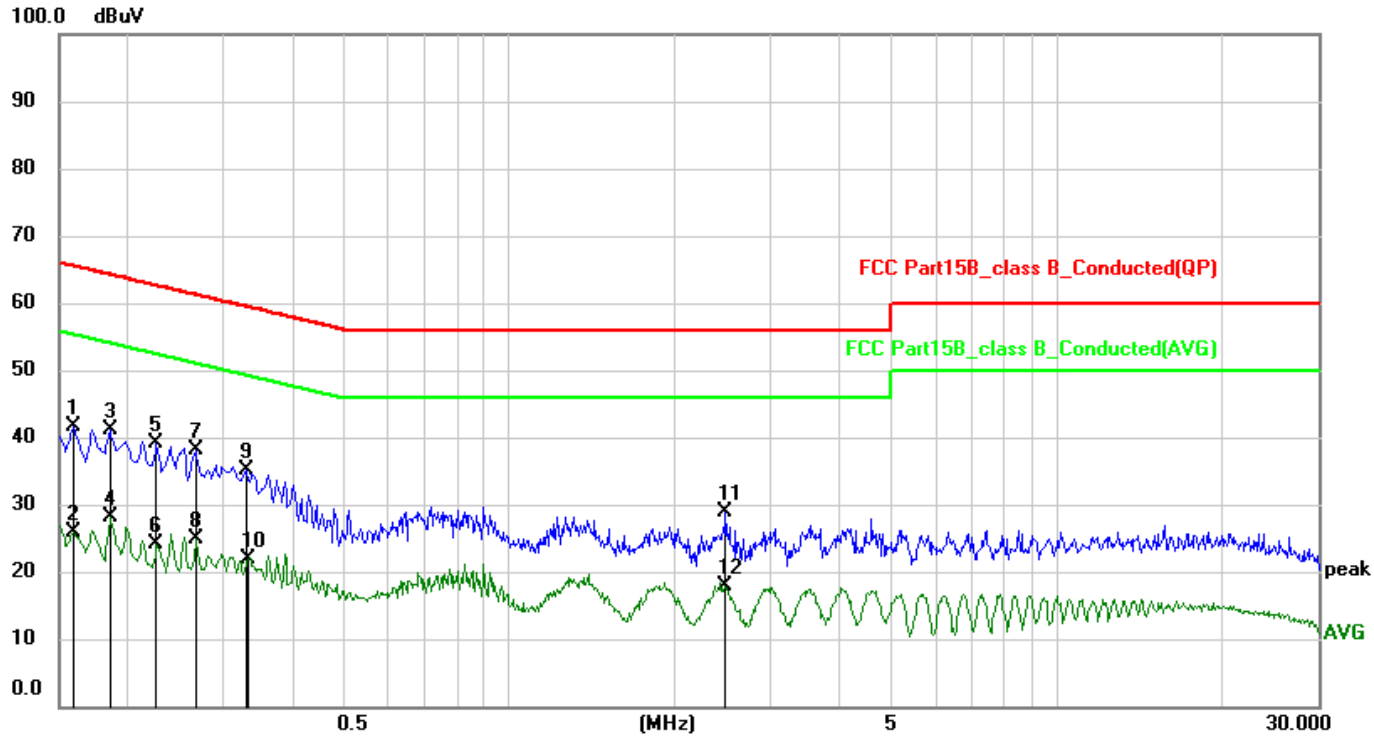
LINE CONDUCTED EMISSION TEST LINE 1-L



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1635	31.79	9.93	41.72	65.28	-23.56	QP	
2		0.1635	15.99	9.93	25.92	55.28	-29.36	AVG	
3		0.1844	30.83	9.91	40.74	64.29	-23.55	QP	
4		0.1859	14.39	9.91	24.30	54.22	-29.92	AVG	
5	*	0.2670	28.11	9.91	38.02	61.21	-23.19	QP	
6		0.2670	11.70	9.91	21.61	51.21	-29.60	AVG	
7		0.3524	9.75	9.92	19.67	48.91	-29.24	AVG	
8		0.3569	23.43	9.92	33.35	58.80	-25.45	QP	
9		0.4020	22.91	9.92	32.83	57.81	-24.98	QP	
10		0.4020	8.85	9.92	18.77	47.81	-29.04	AVG	
11		1.3153	6.77	9.99	16.76	46.00	-29.24	AVG	
12		1.3288	19.14	9.99	29.13	56.00	-26.87	QP	

RESULT: PASS

Line Conducted Emission Test Line 2-N



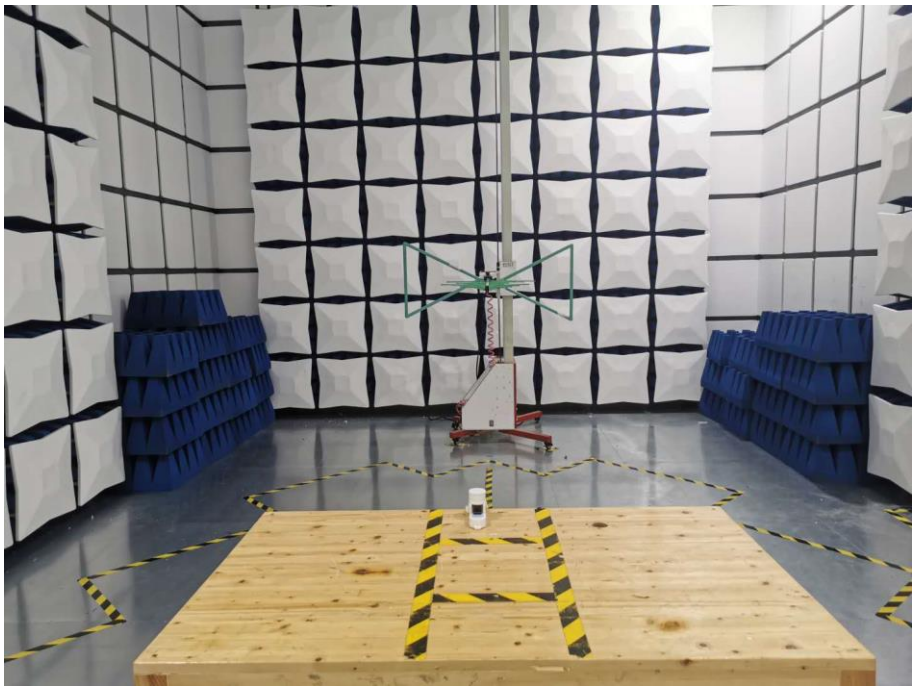
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1590	31.64	9.93	41.57	65.52	-23.95	QP	
2		0.1590	15.98	9.93	25.91	55.52	-29.61	AVG	
3		0.1859	31.18	9.90	41.08	64.22	-23.14	QP	
4		0.1859	18.16	9.90	28.06	54.22	-26.16	AVG	
5		0.2265	29.29	9.90	39.19	62.58	-23.39	QP	
6		0.2265	14.14	9.90	24.04	52.58	-28.54	AVG	
7	*	0.2670	28.30	9.91	38.21	61.21	-23.00	QP	
8		0.2670	14.96	9.91	24.87	51.21	-26.34	AVG	
9		0.3300	25.12	9.92	35.04	59.45	-24.41	QP	
10		0.3321	11.90	9.92	21.82	49.40	-27.58	AVG	
11		2.4809	18.92	10.06	28.98	56.00	-27.02	QP	
12		2.4809	7.87	10.06	17.93	46.00	-28.07	AVG	

RESULT: PASS

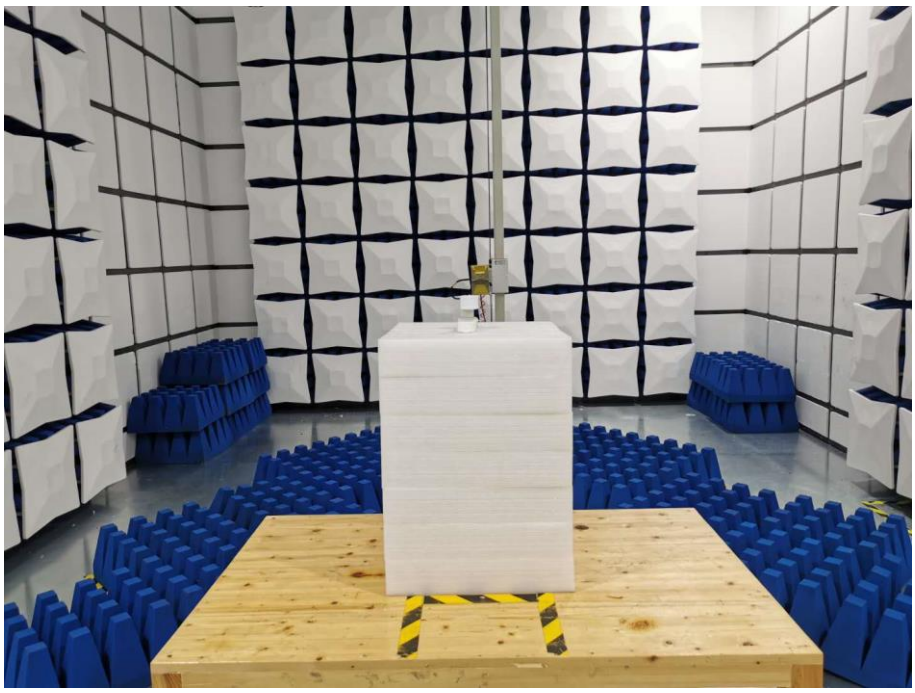
APPENDIX A: PHOTOGRAPHS OF TEST SETUP

FCC LINE CONDUCTED EMISSION TEST SETUP

FCC RADIATED EMISSION TEST SETUP BELOW 1GHZ



FCC RADIATED EMISSION TEST SETUP ABOVE 1GHZ



----END OF REPORT----