

# ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT



**Applicant:** Hublot SA  
Chemin de la Vuarpilliere 33, 1260 Nyon, Switzerland

**Manufacturer:** Hublot SA  
Chemin de la Vuarpilliere 33, 1260 Nyon, Switzerland

**Product Name:** Big Bang e

**Brand Name:** Hublot

**Model No.:** HB450 1

**Model Difference:** N/A

**Report Number:** ER/2022/30056

**FCC ID** 2AUTBHB4501

**IC:** 25553-HB4501

**Date of EUT Received:** March 18, 2022

**Date of Test:** March 25, 2022 ~ April 12, 2022

**Issue Date:** June 22, 2022

Approved By \_\_\_\_\_

**Blue Yang**

**We hereby certify that:**

The above equipment was tested by SGS Taiwan Ltd. Central RF Lab. 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 comply with FCC rule part §15.247, ISSED RSS-247.

The results of this report relate only to the sample identified in this report.

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## Revision History

Report Number	Revision	Description	Issue Date	Revised By	Remark
ER/2022/30056	00	Original	June 22, 2022	Violetta Tang	

**Note:**

- 1、The remark "\*" indicates modification of the report upon requests from certification body.

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## 1 GENERAL INFORMATION

### 1.1 Product Description

Product Name:	Big Bang e
Brand Name:	Hublot
Model No.:	HB450 1
Model Difference:	N/A
Hardware Version:	1000
Firmware Version:	eng.supers.20220520
EUT Series No.:	748710895(Conducted); 748723197(Conduction & Radiated)
Power Supply:	3.8Vdc from Rechargeable Lithium Polymer Battery or 5Vdc from USB Port
Test Software (Name/Version)	QRCT Version3.0.297.0

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## 1.2 RF Specification

### WLAN 2.4GHz

Wi-Fi	Frequency Range	Channels	Rated Power in dBm (Peak)	Modulation Technology
802.11b	2412~2472	13	21.39	DSSS
802.11g	2412~2472	13	18.55	OFDM
802.11n20	2412~2472	13	18.54	OFDM
Modulation type:		CCK, DQPSK, DBPSK for DSSS		
		64QAM, 16QAM, QPSK, BPSK for OFDM		
Data Rate:		802.11 b: 1/2/5.5/11 Mbps		
		802.11 g: 6/9/12/18/24/36/48/54 Mbps		
		802.11 n_20MHz:6.5 - 72.2Mbps		

### WLAN 2.4GHz for IC

Wi-Fi	Frequency Range	Channels	Rated Power in dBm (Peak)	Rated Power in dBm (EIRP)	Modulation Technology
802.11b	2412~2472	13	21.39	6.96	DSSS
802.11g	2412~2472	13	18.55	1.96	OFDM
802.11n20	2412~2472	13	18.54	1.77	OFDM
Modulation type:		CCK, DQPSK, DBPSK for DSSS			
		64QAM, 16QAM, QPSK, BPSK for OFDM			
Data Rate:		802.11 b: 1/2/5.5/11 Mbps			
		802.11 g: 6/9/12/18/24/36/48/54 Mbps			
		802.11 n_20MHz:6.5 - 72.2Mbps			

## 1.3 Antenna Designation

Antenna Type	Brand	Antenna Model No.	Material	Freq.(MHz)	Peak Antenna Gain (dBi)
Loop	COMPAL	DHW2	Ceramic	2400-2485	-7.9
Loop	COMPAL	DHW2	Metal	2400-2485	-9.5

### Note:

1. Pre-scanned was done on the above antennas, measurements were demonstrated by using the antenna with the highest gain as the worst case scenarios.
2. Antenna information is provided by the applicant.

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## 1.4 Test Methodology of Applied Standards

FCC Part 15, Subpart C §15.247  
 FCC KDB 558074 D01 15.247 Meas Guidance v05r02  
 FCC KDB 662911 D01 Multiple Transmitter Output v02r01  
 RSS-247 issue 2 Feb. 2017  
 RSS-Gen, Issue 5 (Amendment 2, February 2021)  
 ANSI C63.10:2013

## 1.5 Test Facility

Laboratory	Test Site Address	Test Site Name	FCC Designation number	IC CAB identifier
SGS Taiwan Ltd. Central RF Lab. (TAF code 3702)	No.134, Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan.	SAC 1	TW0027	TW3702
		SAC 3		
		Conduction 1		
		Conducted 1		
		Conducted 2		
		Conducted 3		
		Conducted 4		
		Conducted 5		
		Conducted 6		
	No.2, Keji 1st Rd., Guishan District, Taoyuan City, Taiwan 333	Conduction C	TW0028	
		SAC C		
		SAC D		
		SAC G		
		Conducted A		
		Conducted B		
		Conducted C		
		Conducted D		
		Conducted E		
		Conducted F		
		Conducted G		
<b>Note:</b> Test site name is remarked on the equipment list in each section of this report as an indication where measurements occurred in specific test site and address.				

## 1.6 Special Accessories

There are no special accessories used while test was conducted.

## 1.7 Equipment Modifications

There was no modification incorporated into the EUT.

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## 2 SYSTEM TEST CONFIGURATION

### 2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

### 2.2 EUT Exercise

An engineering test mode (software/firmware) that applicant provided was utilized to manipulate the EUT into transmit, selection of the test channel, and modulation scheme.

### 2.3 Test Procedure

#### 2.3.1 Conducted Emissions

The EUT is placed on a table which is 0.8 m above ground plane. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30 MHz. The CISPR Quasi-Peak and Average detector mode is employed. The two LISNs provide 50  $\mu$ H/50 ohm of coupling impedance for the measuring instrument. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

#### 2.3.2 Conducted Test (RF)

The active antenna port of the unlicensed wireless device is connected to the spectrum analyzer with attenuator to protect the instrumentation. If a second antenna port is available, it is tested at one operating frequency, with other port(s) appropriately terminated, to verify it has similar output characteristics as the fully tested port.

#### 2.3.3 Radiated Emissions

The EUT is placed on a turn table. For emissions testing at or below 1 GHz, the table height shall be 0.8 m above the reference ground plane. For emission measurements above 1 GHz, the table height shall be 1.5 m. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this transmitter (EUT) was rotated through three orthogonal axes and measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made "while keeping the antenna in the 'cone of radiation' from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response." is still within the 3dB illumination BW of the measurement antenna.

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## 2.4 Measurement Results Explanation Example

### 2.4.1 Radiated Emission Test Sites For Measurements From 9 kHz To 30 MHz

Radiated emission below 30MHz is measured in a 9m\*6m\*6m semi-anechoic chamber, the measurements correspond to those obtained at an open-field test site.

There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.

### 2.4.2 For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuation factor between EUT conducted port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly EUT RF output level.

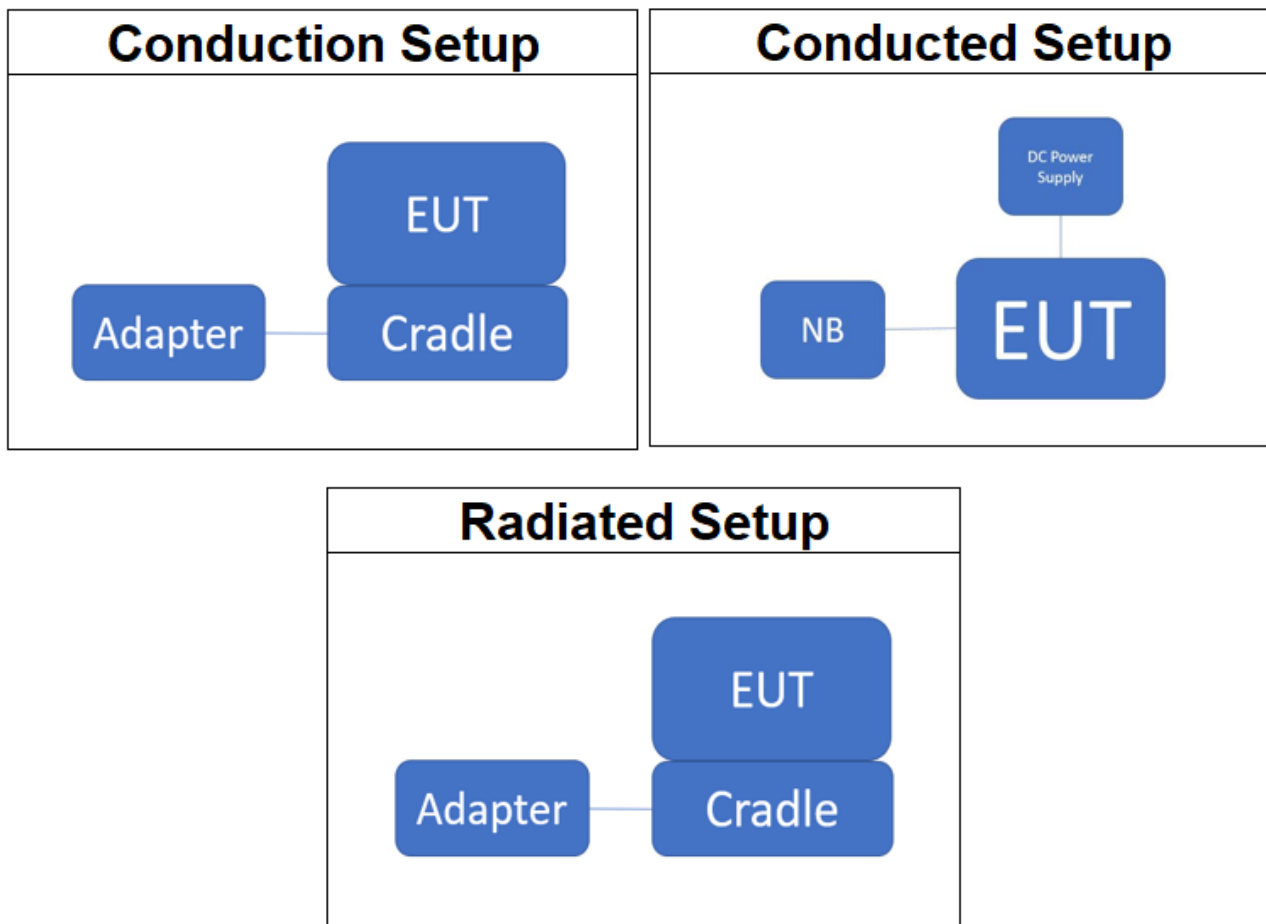
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## 2.5 Test Configuration



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## 2.6 Control Unit(s)

Conducted Emission Test Site: Conduction 1					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Test Software	audix	e3	Ver. 9 210322	N.C.R	N.C.R
adapter	Lucent Trans	1A70	N/A	N/A	N/A
Cradle	Luxshare-ICT	L4QPG003-CS-H	N/A	N/A	N/A
USB Cable	SAIBAO	SRB-A014A	N/A	N/A	N/A

Conducted Emission Test Site: Conducted 3					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Test Software	SGS	Radio Test Software	Ver. 21	N.C.R	N.C.R
Notebook	Lenovo	T440P	PC-014TAK	N/A	N/A
Micro USB Cable	SGS	MDBT42T	N/A	N/A	N/A

Radiated Emission Test Site: SAC 3					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Test Software	audix	e3	Ver. 9 210322	N.C.R	N.C.R
adapter	Lucent Trans	1A70	N/A	N/A	N/A
Cradle	Luxshare-ICT	L4QPG003-CS-H	N/A	N/A	N/A
USB Cable	SAIBAO	SRB-A014A	N/A	N/A	N/A

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### 3 SUMMARY OF TEST RESULTS

FCC Rules	ISED Rules	Description Of Test	Result
§15.207(a)	RSS-Gen §8.8	AC Power Line Conducted Emission	Compliant
§15.247(b) (3)	RSS-247 §5.4 d	Peak Output Power	Compliant
§15.247(a)(2)	RSS-247 §5.2 a RSS-Gen §6.7	Emission Bandwidth	Compliant
§15.205 §15.209 §15.247(d)	RSS-247 §5.5 RSS-Gen §8.9 RSS-Gen §8.10 RSS-Gen §6.13	Radiated & Conducted Band Edge and Spurious Emission	Compliant
§15.247(e)	RSS-247 §5.2 b	Power Spectral Density	Compliant
§15.203	N/A	Antenna Requirement	Compliant

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## 4 DESCRIPTION OF TEST MODES

### 4.1 Operation Frequencies

Modulation of 20MHz nominal bandwidth

CHANNEL	FREQUENCY (MHz)
1	2412
2	2417
3	2422
4	2427
5	2432
6	2437
7	2442
8	2447
9	2452
10	2457
11	2462
12	2467
13	2472

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## 4.2 The Worst Test Modes and Channel Details

1. The EUT has been tested under operating condition.
2. Test program used to control the EUT for staying in continuous transmitting and receiving mode is programmed.
3. Investigation has been done on all the possible configurations for searching the worst case.

The given UE is pre-scanned among below modes.

Modulation		Transmission Chain								Single Transmission Spatial		Multi Transmission Spatial	
v	802.11 b	v	Ch0		Ch1		Ch2		Ch3	v	1TX		1TX
v	802.11 g	v	Ch0		Ch1		Ch2		Ch3	v	1TX		1TX
v	802.11 n	v	Ch0		Ch1		Ch2		Ch3	v	SISO		MIMO
	802.11 ax		Ch0		Ch1		Ch2		Ch3		SISO		MIMO

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4. Therefore, below summary is the modes of test configuration that yield the highest reading and generate the highest emission chosen to carry out the relevantly mandatory test items.

Conducted					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)	ANTENNA PORT
802.11b	1 to 13	1,7,11,12,13	DSSS	1	ch0
802.11g	1 to 13	1,7,11,12,13	OFDM	6	ch0
802.11n (HT20)	1 to 13	1,7,11,12,13	OFDM	MCS0	ch0

RADIATED EMISSION TEST (BELOW 1 GHz)					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)	ANTENNA PORT
802.11g	1 to 13	7	OFDM	6	ch0

RADIATED EMISSION TEST (ABOVE 1 GHz)					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)	ANTENNA PORT
802.11b	1 to 13	1,7,11,12,13	DSSS	1	ch0
802.11g	1 to 13	1,7,11,12,13	OFDM	6	ch0
802.11n (HT20)	1 to 13	1,7,11,12,13	OFDM	MCS0	ch0

#### Note:

The field strength of radiated emission was measured as the EUT positioned in different orthogonal planes (E1/E2/H) based on actual usage of the EUT to pre-scan the emissions for determining the worst case scenario.

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## 5 MEASUREMENT UNCERTAINTY

Test Items	Uncertainty
AC Power Line Conducted Emission	+/- 2.34 dB
Output Power measurement	+/- 1 dB
Emission Bandwidth	+/- 1.53 Hz
Undesignable radiated emission measurement	+/- 1.68 dB
Peak Power Density	+/- 1.62 dB
Temperature	+/- 0.4 °C
Humidity	+/- 3.5 %
DC / AC Power Source	+/- 1 %

Radiated Spurious Emission Measurement Uncertainty			
Polarization: Vertical	+/-	2.57 dB	9kHz~30MHz
	+/-	4.85 dB	30MHz - 1000MHz
	+/-	4.45 dB	1GHz - 18GHz
	+/-	4.24 dB	18GHz - 40GHz
Polarization: Horizontal	+/-	2.57 dB	9kHz~30MHz
	+/-	4.37 dB	30MHz - 1000MHz
	+/-	4.45 dB	1GHz - 18GHz
	+/-	4.24 dB	18GHz - 40GHz

### Note:

1. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.
2. The conformity assessment statement in this report is based solely on the test results, measurement uncertainty is excluded.

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## 6 MEASUREMENT EQUIPMENT USED

### 6.1 Emission from AC power line

Conducted Emission Test Site: Conduction 1					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
EMI Test Receiver	R&S	ESCI 7	100759	08/26/2021	08/25/2022
LISN	SCHWARZBECK	NSLK 8127	01040	08/10/2021	08/09/2022
Coaxial Cables	N/A	Coaxial Cable	161207	12/07/2021	12/06/2022

### 6.2 Conducted Measurement

Conducted Emission Test Site: Conducted 3					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
EXA Spectrum Analyzer	Agilent	N9010A	MY54200716	10/13/2021	10/12/2022
EXA Spectrum Analyzer	KEYSIGHT	N9010B	MY59071571	05/26/2021	05/25/2022
Power Meter	Anritsu	ML2496A	2132007	11/12/2021	11/11/2022
Power Sensor	Anritsu	MA2411B	1911392	09/21/2021	09/20/2022
DC Power Supply	Gwinstek	SPS-3610	GEV856757	10/12/2021	10/11/2022
DC Block	Mini-Circuits	BLK-18-S+	1	12/14/2021	12/13/2022

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### 6.3 Radiated Measurement

Radiated Emission Test Site: SAC 3					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Horn Antenna	SCHWARZBECK	BBHA9170	184	12/16/2021	12/15/2022
Horn Antenna	SCHWARZBECK	BBHA9120D	1441	09/27/2021	09/26/2022
Bi-log Antenna	SCHWARZBECK	VULB9168	378	08/20/2021	08/19/2022
Loop Antenna	ETS.LINDGREN	6502	148045	09/29/2021	09/28/2022
PXA Spectrum Analyzer	Agilent	N9030A	MY53120760	04/27/2021	04/26/2022
EMI Test Receiver	R&S	ESCI 7	100759	08/26/2021	08/25/2022
Pre-Amplifier	HP	8449B	3008A00578	12/16/2021	12/15/2022
Pre-Amplifier	EMC Instruments	EMC184045 B	980135	10/27/2021	10/26/2022
Pre-Amplifier	HP	8447D	2944A07676	12/16/2021	12/15/2022
Attenuator	Mini-Circuit	BW-S10W2+	4	12/14/2021	12/13/2022
Filter 2400-2483.5 MHz	EWT	EWT-14-0166	M1	12/14/2021	12/13/2022
High Pass Filter	WI	WHKX4.0/18 G-10SS	22	12/14/2021	12/13/2022
Coaxial Cable	Huber Suhner	SUCOFLEX 102	MY2636/2	12/16/2021	12/15/2022
Coaxial Cable	Huber Suhner	SUCOFLEX 104	340057/4	12/16/2021	12/15/2022
Coaxial Cable	Huber Suhner	SUCOFLEX 104PEA	800052/2	12/16/2021	12/15/2022
Coaxial Cable	Huber Suhner	SUCOFLEX 102	MY2621/2	12/16/2021	12/15/2022
Coaxial Cable	Huber Suhner	SUCOFLEX 102	MY2617/2	12/16/2021	12/15/2022
Site Cal	SGS	SAC 3	N/A	01/01/2022	12/31/2022

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## 7 CONDUCTED EMISSION TEST

### 7.1 Standard Applicable

Frequency range within 150kHz to 30MHz shall not exceed the Limit table as below.

Frequency range MHz	Limits (dBuV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50

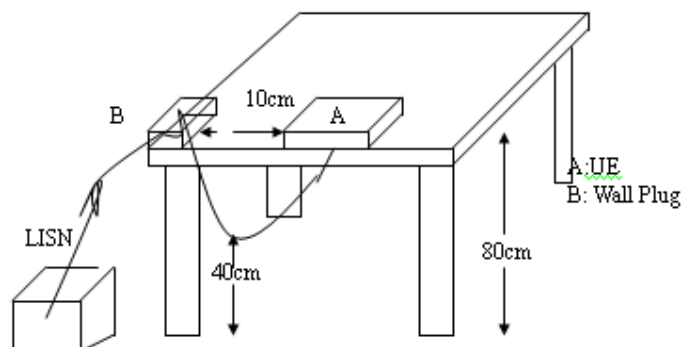
Note

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

### 7.2 EUT Setup

1. The conducted emission tests were performed in the test site, using the setup in accordance with the ANSI C63.10:2013.
2. The AC/DC Power adaptor of EUT was plug-in LISN. The EUT was placed flushed with the rear of the table.
3. The LISN was connected with 120Vac/60Hz power source.

### 7.3 Test Setup



### 7.4 Measurement Procedure

1. The EUT was placed on a table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
4. Repeat above procedures until all phases of power being supplied by given UE are completed

### 7.5 Measurement Result

Note: Refer to next page for measurement data and plots.

Note2: The \* reveals the worst-case results that closet to the limit.

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## AC POWER LINE CONDUCTED EMISSION TEST DATA

Report Number :ER/2022/30056

Test Site :Conduction 1

Test Mode :WLAN 2.4G

Test Date :2022-04-06

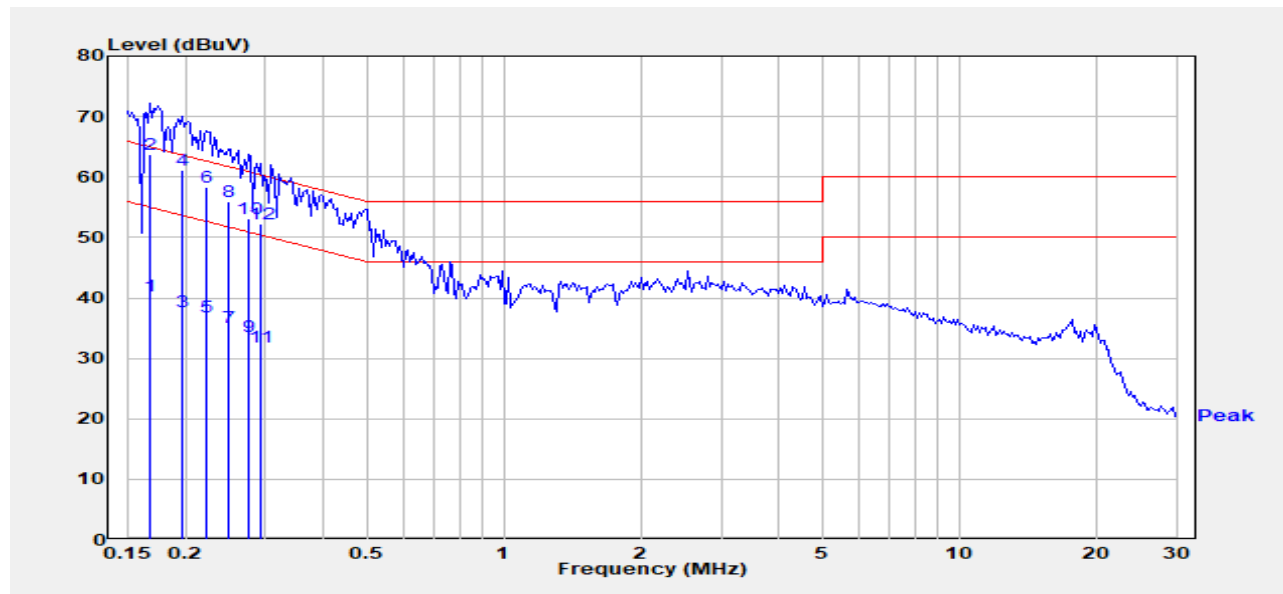
Power :120V/60Hz

Temp./Humi. :22.3/66

Probe :L

Engineer :Jack Liu

Note: :



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV	Limit dBμV	Margin dB
0.167	Average	38.12	2.12	40.24	55.12	-14.88
0.167	QP	61.53	2.12	63.65	65.12	-1.47
0.198	Average	35.53	2.12	37.65	53.71	-16.06
0.198	QP	59.02	2.12	61.14	63.71	-2.57
0.222	Average	34.78	2.12	36.90	52.74	-15.84
0.222	QP	56.22	2.12	58.34	62.74	-4.40
0.249	Average	32.92	2.12	35.04	51.78	-16.74
0.249	QP	53.76	2.12	55.88	61.78	-5.90
0.274	Average	31.58	2.12	33.70	50.98	-17.28
0.274	QP	51.06	2.12	53.18	60.98	-7.80
0.292	Average	29.85	2.12	31.97	50.46	-18.49
0.292	QP	50.16	2.12	52.28	60.46	-8.18

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Report Number :ER/2022/30056

Test Mode :WLAN 2.4G

Power :120V/60Hz

Probe :N

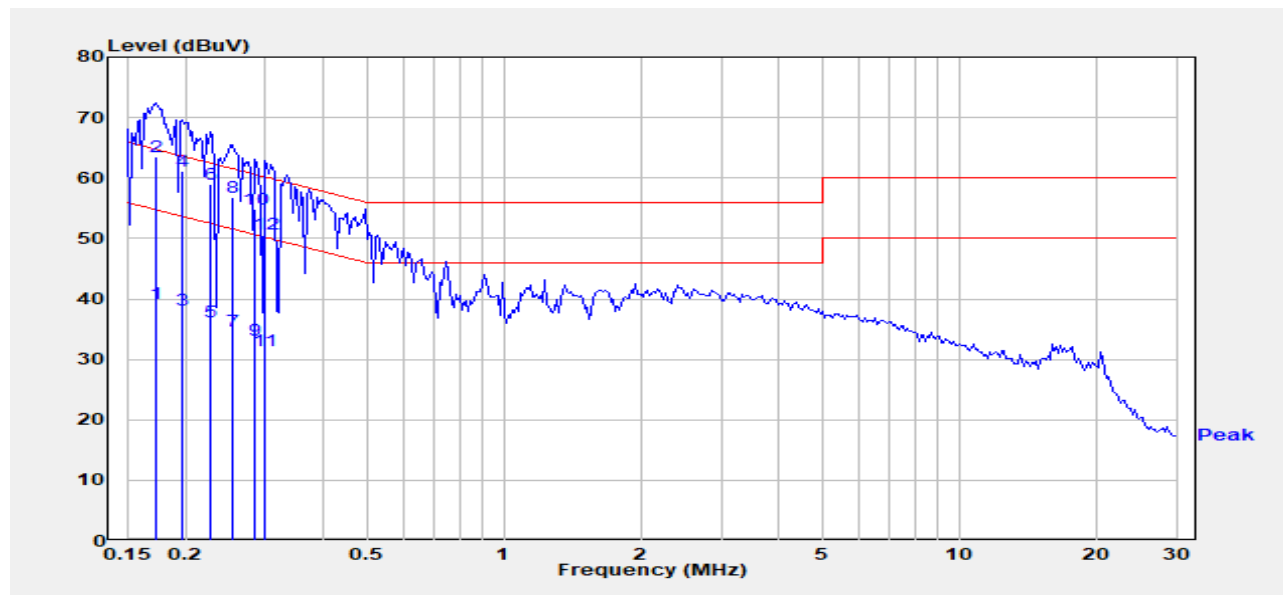
Note: :

Test Site :Conduction 1

Test Date :2022-04-06

Temp./Humi. :22.3/66

Engineer :Jack Liu



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV	Limit dBμV	Margin dB
0.172	Average	36.95	2.21	39.16	54.86	-15.70
0.172	QP	61.22	2.21	63.43	64.86	-1.43
0.198	Average	35.92	2.29	38.21	53.71	-15.50
0.198	QP	58.91	2.29	61.20	63.71	-2.51
0.227	Average	33.92	2.27	36.19	52.57	-16.38
0.227	QP	56.66	2.27	58.93	62.57	-3.64
0.255	Average	32.38	2.24	34.62	51.60	-16.98
0.255	QP	54.56	2.24	56.80	61.60	-4.80
0.283	Average	30.96	2.21	33.17	50.72	-17.55
0.283	QP	52.63	2.21	54.84	60.72	-5.88
0.299	Average	29.16	2.20	31.36	50.28	-18.92
0.299	QP	48.56	2.20	50.76	60.28	-9.52

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## 8 PEAK OUTPUT POWER MEASUREMENT

### 8.1 Standard Applicable

### 8.2 Duty Cycle

Pre-analysis Check: While conducting average power measurement, duty cycle of each mode shall be checked to ensure its duty cycle in order to compensate for the loss due to insufficient ratio of duty cycle.

All duty cycle is pre-scanned, and result as obtained below shows only the most representative ones where duty cycle is conducted as the given transmission with given virtual operation that expresses the percentage.

### 8.3 Output Power

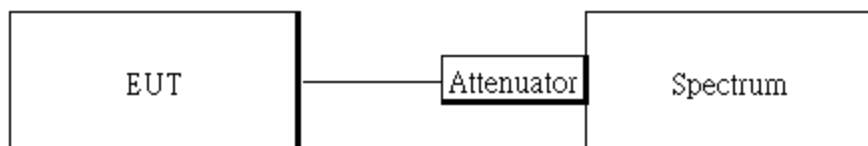
For systems using digital modulation in the 2400-2483.5 MHz bands, the limit for peak output power is 1Watt and the e.i.r.p. shall not exceed 4 W.

If the transmitting antenna of directional gain greater than 6dBi are used the peak output power from the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the Antenna exceeds 6dBi.

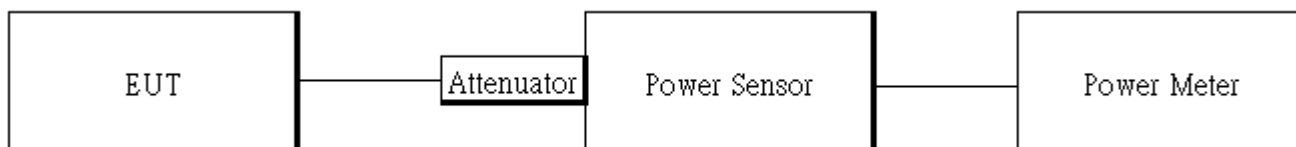
In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of Antenna exceeds 6dBi.

### 8.4 Test Setup

#### 8.4.1 Duty Cycle



#### 8.4.2 Output Power:



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## 8.5 Measurement Procedure

### 8.5.1 Duty Cycle:

1. Set span = Zero
2. RBW = 8MHz
3. VBW = 8MHz,
4. Detector = Peak

### 8.5.2 Output Power

1. Place the EUT on the table and set it in transmitting mode.
2. The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance .
3. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the power meter.

#### Power Meter:

It is used as the auxiliary test equipment to conduct the output power measurement.

4. Record the max. Reading as observed from Spectrum or Power Meter.

**\* Note: The duty cycle factor and below is compensated to obtain the maximum value of measurement in average.**

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## 8.6 Measurement Result

### 8.6.1 Duty Cycle:

	Duty Cycle (%) = Ton / (Ton+Toff)	Duty Factor (dB) = 10*log ( 1/Duty Cycle )	1/T (kHz)	VBW setting (kHz)
802.11b	99.75	0.01	0.31	0.01
802.11g	99.75	0.01	0.31	0.01
802.11n_20	99.72	0.01	0.31	0.01

### 8.6.2 Duty Cycle test plots

802.11b\_20MHz\_Chain0\_2412MHz



802.11n\_20MHz\_Chain0\_2412MHz



802.11g\_20MHz\_Chain0\_2412MHz



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### 8.6.3 Output Power

802.11b Ch0						
CH	Freq. (MHz)	Data Rate	Power set	Peak Output Power (dBm)	Limit (dBm)	RESULT
1	2412	1	4/15	21.39	30.00	PASS
7	2442	1	3/23	20.79	30.00	PASS
11	2462	1	3/23	20.52	30.00	PASS
12	2467	1	4/21	20.91	30.00	PASS
13	2472	1	4/21	20.87	30.00	PASS
802.11b Ch0						
CH	Freq. (MHz)	Data Rate	Power set	Max. Avg. Output include tune up tolerance Power (dBm)	Limit (dBm)	RESULT
1	2412	1	4/15	14.69	30.00	PASS
7	2442	1	3/23	14.79	30.00	PASS
11	2462	1	3/23	14.52	30.00	PASS
12	2467	1	4/21	14.86	30.00	PASS
13	2472	1	4/21	14.69	30.00	PASS
802.11g Ch0						
CH	Freq. (MHz)	Data Rate	Power set	Peak Output Power (dBm)	Limit (dBm)	RESULT
1	2412	6	0/11	18.55	30.00	PASS
7	2442	6	0/13	17.97	30.00	PASS
11	2462	6	0/16	18.11	30.00	PASS
12	2467	6	0/16	17.94	30.00	PASS
13	2472	6	0/2	15.51	30.00	PASS
802.11g Ch0						
CH	Freq. (MHz)	Data Rate	Power set	Max. Avg. Output include tune up tolerance Power (dBm)	Limit (dBm)	RESULT
1	2412	6	0/11	9.78	30.00	PASS
7	2442	6	0/13	9.59	30.00	PASS
11	2462	6	0/16	9.86	30.00	PASS
12	2467	6	0/16	9.86	30.00	PASS
13	2472	6	0/2	6.52	30.00	PASS

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802.11nHT_20M Ch0						
CH	Freq. (MHz)	Data Rate	Power set	Peak Output Power (dBm)	Limit (dBm)	RESULT
1	2412	MCS0	0/10	18.54	30.00	PASS
7	2442	MCS0	0/13	18.49	30.00	PASS
11	2462	MCS0	0/15	18.08	30.00	PASS
12	2467	MCS0	0/15	17.81	30.00	PASS
13	2472	MCS0	0/-7	13.57	30.00	PASS
802.11nHT_20M Ch0						
CH	Freq. (MHz)	Data Rate	Power set	Max. Avg. Output include tune up tolerance Power (dBm)	Limit (dBm)	RESULT
1	2412	MCS0	0/10	9.63	30.00	PASS
7	2442	MCS0	0/13	9.67	30.00	PASS
11	2462	MCS0	0/15	9.66	30.00	PASS
12	2467	MCS0	0/15	9.58	30.00	PASS
13	2472	MCS0	0/-7	4.28	30.00	PASS

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### 8.6.4 EIRP

802.11b Ch0							
CH	Freq. (MHz)	Data Rate	Avg. Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	RESULT
1	2412	1	14.69	-7.90	6.79	36	PASS
7	2442	1	14.79	-7.90	6.89	36	PASS
11	2462	1	14.52	-7.90	6.62	36	PASS
12	2467	1	14.86	-7.90	6.96	36	PASS
13	2472	1	14.69	-7.90	6.79	36	PASS

802.11g Ch0							
CH	Freq. (MHz)	Data Rate	Avg. Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	RESULT
1	2412	6	9.78	-7.90	1.88	36	PASS
7	2442	6	9.59	-7.90	1.69	36	PASS
11	2462	6	9.86	-7.90	1.96	36	PASS
12	2467	6	9.86	-7.90	1.96	36	PASS
13	2472	6	6.52	-7.90	-1.38	36	PASS

802.11nHT_20M Ch0							
CH	Freq. (MHz)	Data Rate	Avg. Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	RESULT
1	2412	MCS0	9.63	-7.90	1.73	36	PASS
7	2442	MCS0	9.67	-7.90	1.77	36	PASS
11	2462	MCS0	9.66	-7.90	1.76	36	PASS
12	2467	MCS0	9.58	-7.90	1.68	36	PASS
13	2472	MCS0	4.28	-7.90	-3.62	36	PASS

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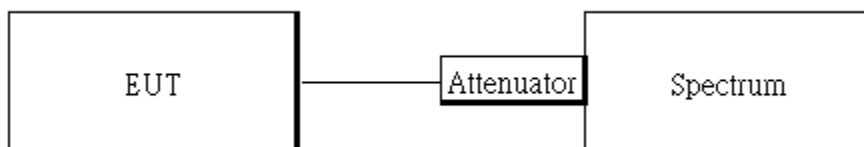
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## 9 EMISSION BANDWIDTH MEASUREMENT

### 9.1 Standard Applicable

The minimum 6 dB bandwidth shall be at least 500 kHz.

### 9.2 Test Setup



### 9.3 Measurement Procedure

1. Place the EUT on the table and set it in transmitting mode.
2. The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance .
3. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
4. Set the spectrum analyzer as  
RBW= 100kHz ,  
VBW = 3 X RBW,  
Span= 2 to 5 times of the OBW,  
Sweep=auto,  
Detector = Peak, and Max hold for -6dB Bandwidth test.
5. Set the spectrum analyzer as  
RBW= 1 % to 5% of 99% Bandwidth ,  
VBW  $\geq$  3 X RBW,  
Span= large enough to capture all products of the modulation process,  
Sweep=auto,  
Detector = Peak, and Max hold for 99% Bandwidth test.
6. Turn on the 99% bandwidth function, max reading.
7. Repeat above procedures until all test default channel is completed

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## 9.4 6dB Bandwidth

### 802.11b Ch0

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	<b>8562</b>	$\geq 500$	PASS
2442	8088	$\geq 500$	PASS
2462	8094	$\geq 500$	PASS
2467	<b>8562</b>	$\geq 500$	PASS
2472	8092	$\geq 500$	PASS

### 802.11g Ch0

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	<b>16380</b>	$\geq 500$	PASS
2442	<b>16380</b>	$\geq 500$	PASS
2462	<b>16380</b>	$\geq 500$	PASS
2467	<b>16380</b>	$\geq 500$	PASS
2472	<b>16380</b>	$\geq 500$	PASS

### 802.11nHT\_20M Ch0

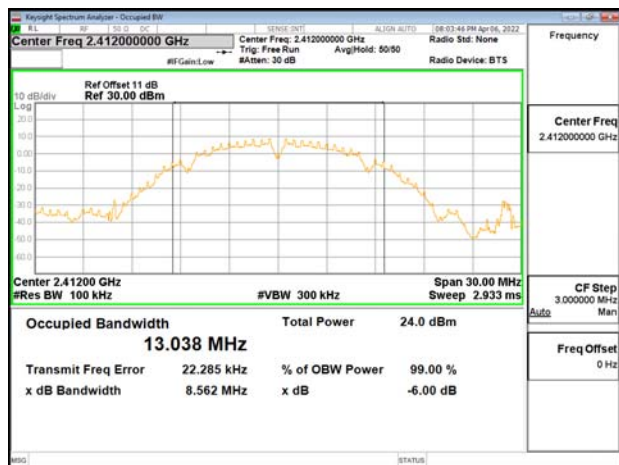
Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	<b>16390</b>	$\geq 500$	PASS
2442	<b>16390</b>	$\geq 500$	PASS
2462	16380	$\geq 500$	PASS
2467	<b>16390</b>	$\geq 500$	PASS
2472	16380	$\geq 500$	PASS

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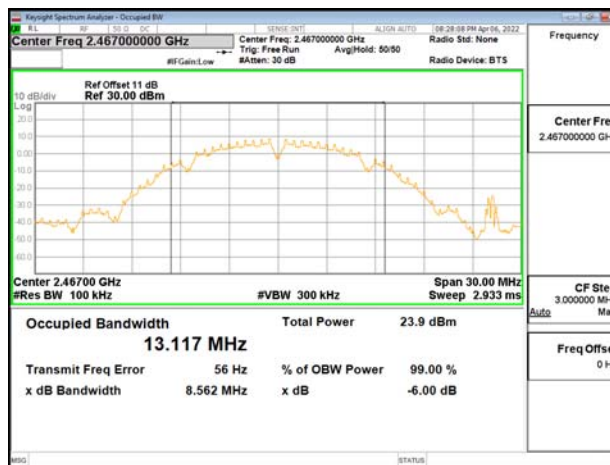
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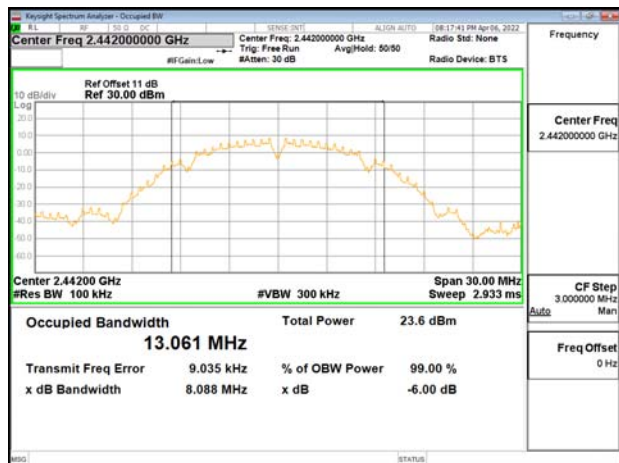
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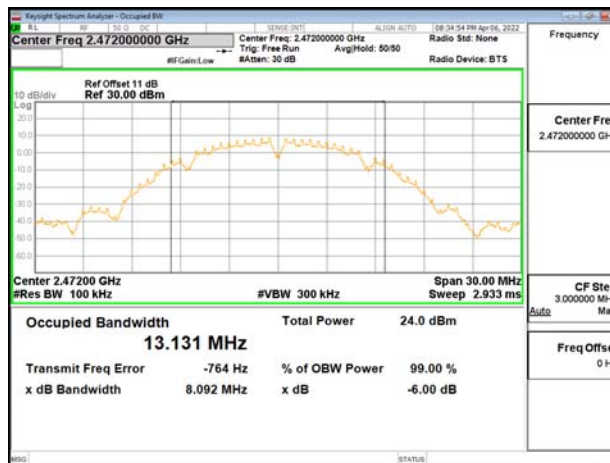
802.11b\_20MHz\_Chain0\_2467MHz



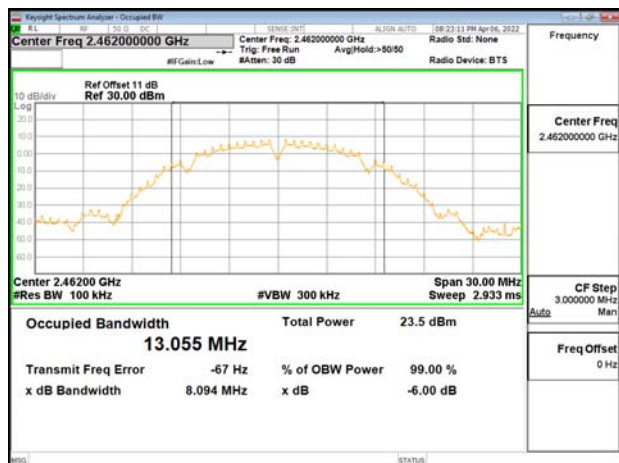
802.11b\_20MHz\_Chain0\_2442MHz



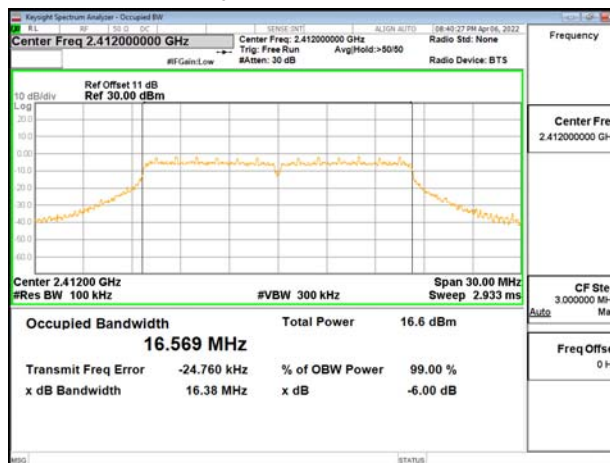
802.11b\_20MHz\_Chain0\_2472MHz



802.11b\_20MHz\_Chain0\_2462MHz



802.11g\_20MHz\_Chain0\_2412MHz

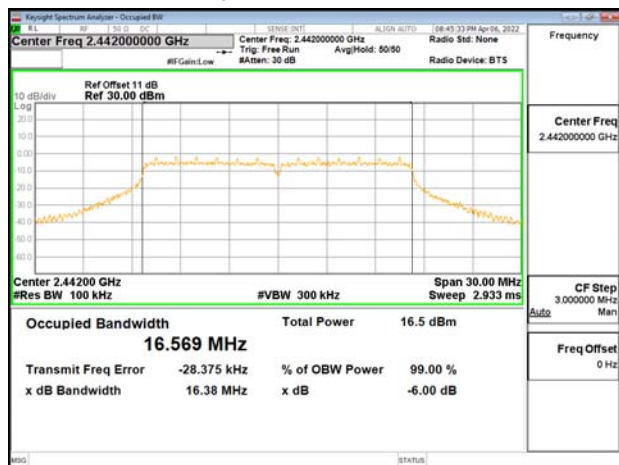


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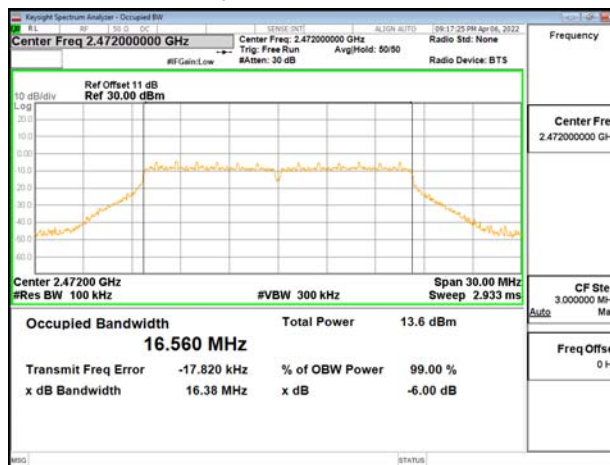
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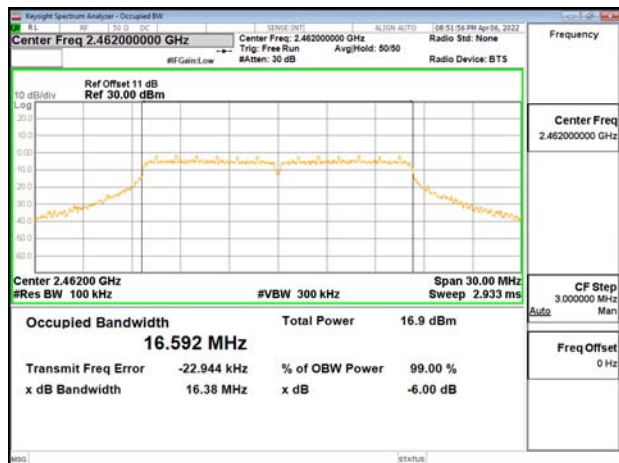
802.11g\_20MHz\_Chain0\_2442MHz



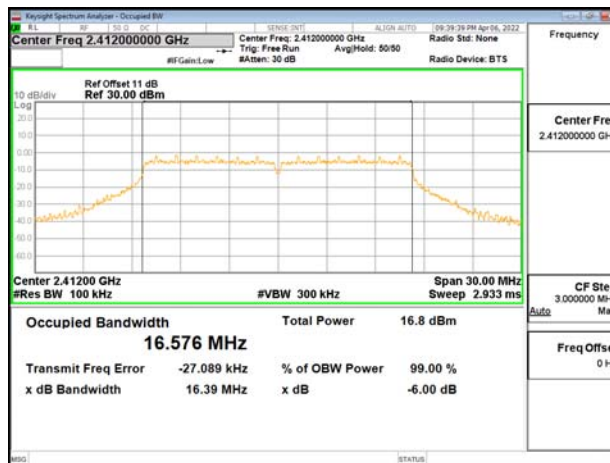
802.11g\_20MHz\_Chain0\_2472MHz



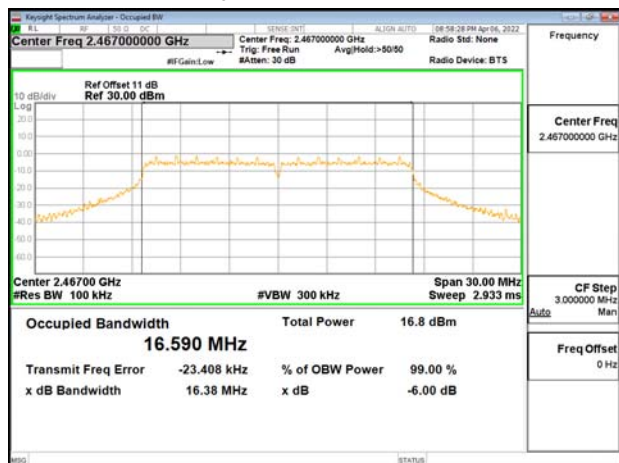
802.11g\_20MHz\_Chain0\_2462MHz



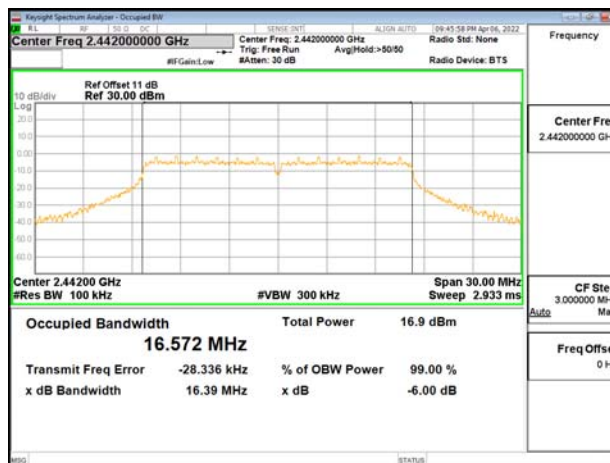
802.11n\_20MHz\_Chain0\_2412MHz



802.11g\_20MHz\_Chain0\_2467MHz



802.11n\_20MHz\_Chain0\_2442MHz



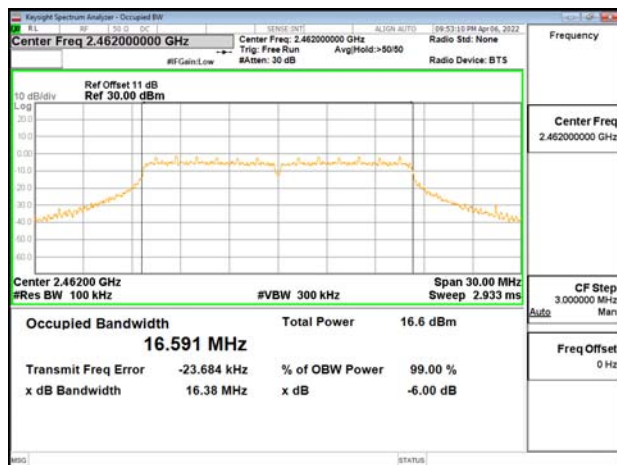
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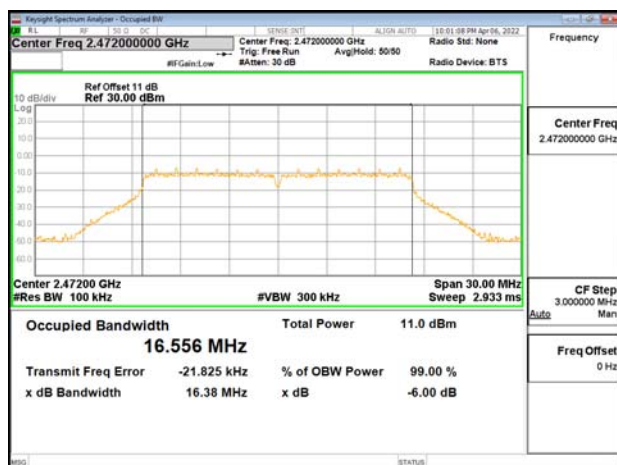
802.11n\_20MHz\_Chain0\_2462MHz



802.11n\_20MHz\_Chain0\_2467MHz



802.11n\_20MHz\_Chain0\_2472MHz



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## 9.5 99% Bandwidth

### 802.11b Ch0

Freq. (MHz)	99% BW (MHz)
2412	13.056
2442	13.096
2462	13.083
2467	13.153
2472	13.137

### 802.11g Ch0

Freq. (MHz)	99% BW (MHz)
2412	17.167
2442	17.205
2462	17.201
2467	17.238
2472	17.106

### 802.11n\_HT20M Ch0

Freq. (MHz)	99% BW (MHz)
2412	17.188
2442	17.169
2462	17.207
2467	17.236
2472	17.155

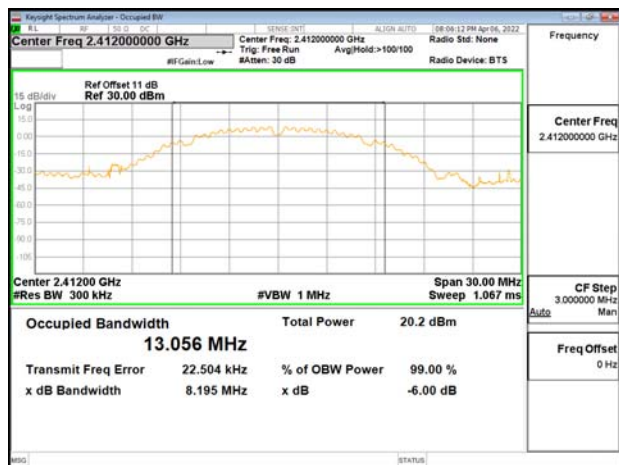
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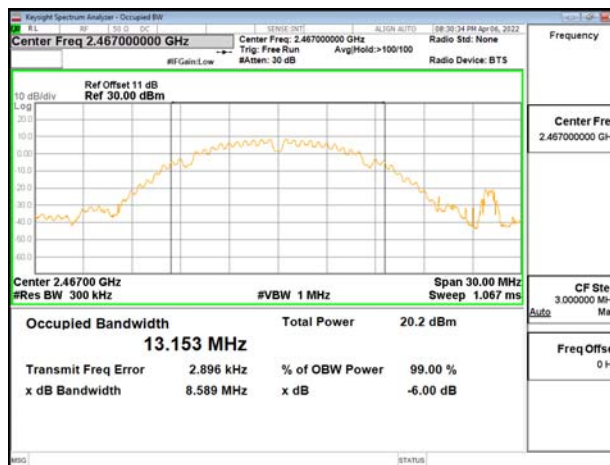
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802.11b\_20MHz\_Chain0\_2412MHz



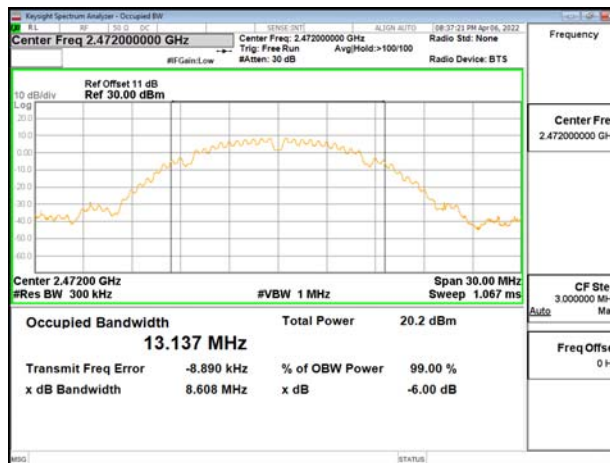
802.11b\_20MHz\_Chain0\_2467MHz



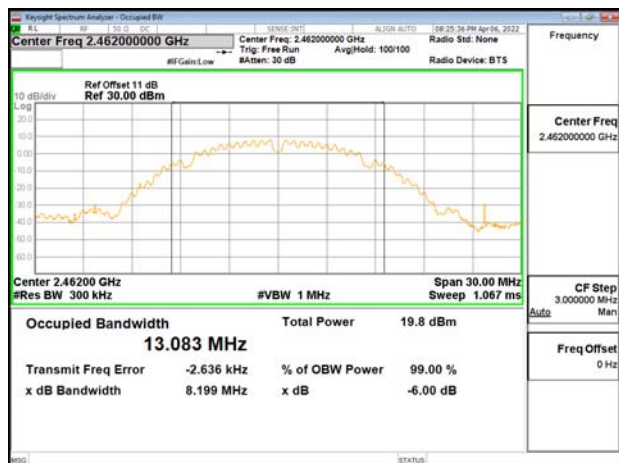
802.11b\_20MHz\_Chain0\_2442MHz



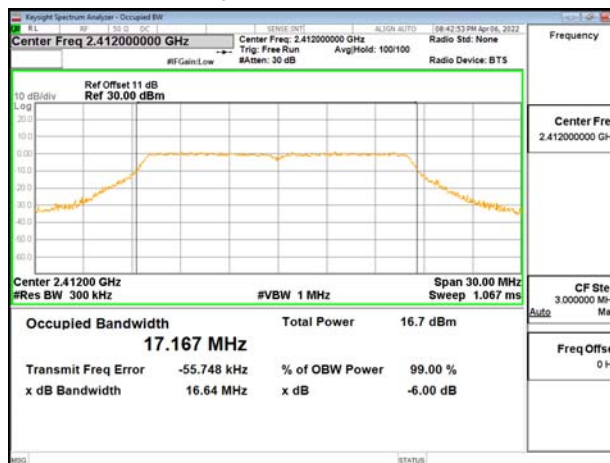
802.11b\_20MHz\_Chain0\_2472MHz



802.11b\_20MHz\_Chain0\_2462MHz



802.11g\_20MHz\_Chain0\_2412MHz

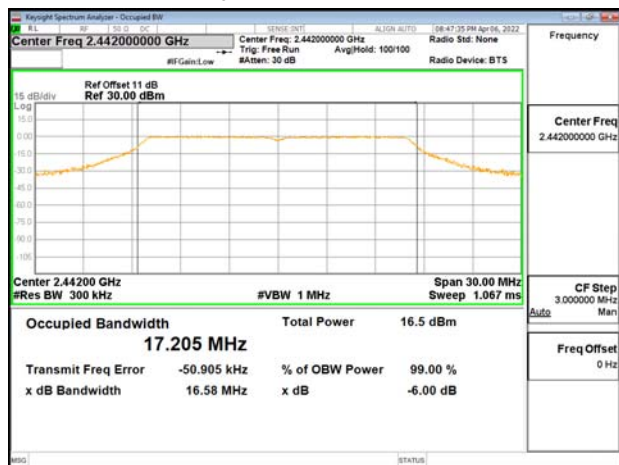


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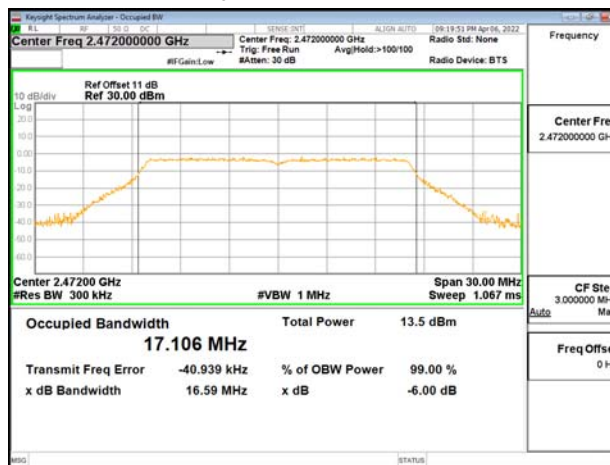
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802.11g\_20MHz\_Chain0\_2442MHz



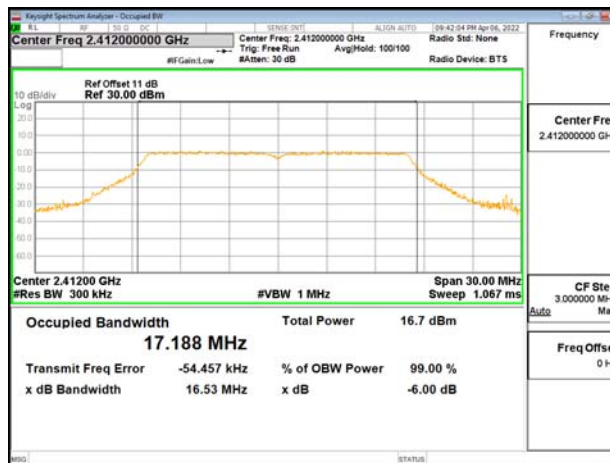
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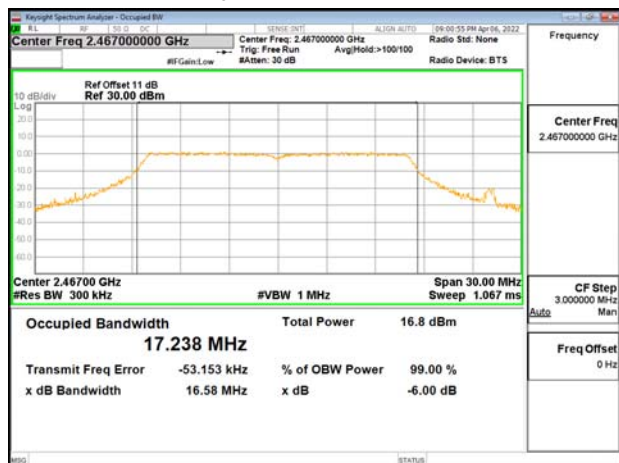
802.11g\_20MHz\_Chain0\_2462MHz



802.11n\_20MHz\_Chain0\_2412MHz



802.11g\_20MHz\_Chain0\_2467MHz



802.11n\_20MHz\_Chain0\_2442MHz

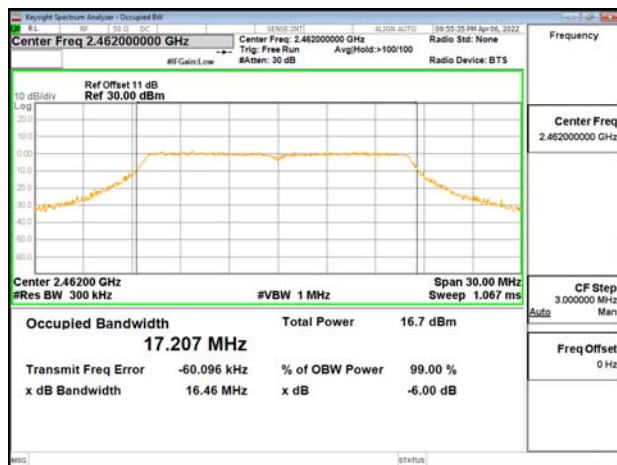


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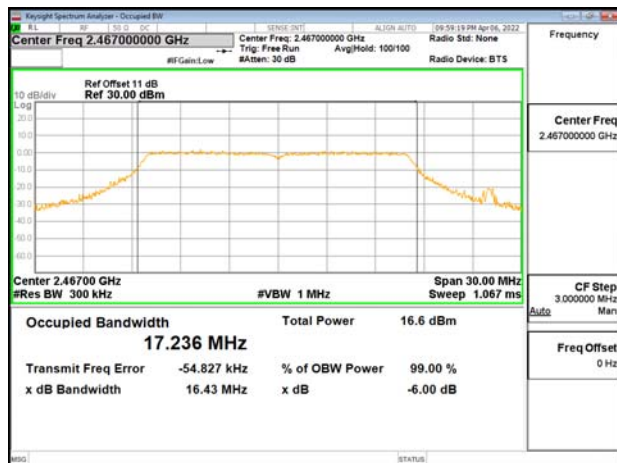
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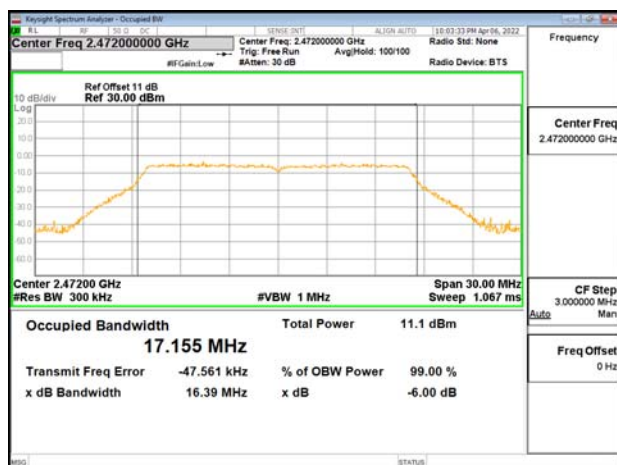
802.11n\_20MHz\_Chain0\_2462MHz



802.11n\_20MHz\_Chain0\_2467MHz



802.11n\_20MHz\_Chain0\_2472MHz



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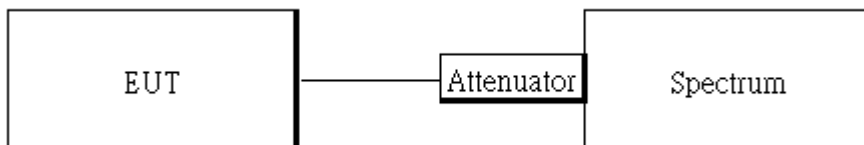
## 10 CONDUCTED BAND EDGES AND SPURIOUS EMISSION MEASUREMENT

### 10.1 Standard Applicable

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a) & RSS-Gen §8.10, must also comply with the radiated emission limits specified in §15.209(a) & RSS-Gen §8.9.

### 10.2 Test Setup



### 10.3 Measurement Procedure

#### 10.3.1 Reference Level of Emission Limit:

1. Set analyzer center frequency to DTS channel center frequency.
2. The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance .
3. Set the span to 1.5 times the DTS channel bandwidth.
4. Set the RBW = 100kHz & VBW = 300 kHz.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level.

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**10.3.2 Conducted Band Edge:**

1. To connect Antenna Port of EUT to Spectrum.
2. The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance .
3. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
4. Set start to edge frequency, and stop frequency of spectrum analyzer so as to encompass the spectrum to be examined.
5. Set the spectrum analyzer as RBW=100 kHz, VBW=300 kHz, Detector = Peak, Sweep = auto
6. Mark the highest reading of the emission as the reference level measurement.
7. Set DL as the limit = reading on marker of reference level measurement – 20dBm
8. Mark the highest readings of the emissions outside of 2400MHz~2483.5MHz.
9. Repeat above procedures until all default test channel (low, middle, and high) was complete.

**10.3.3 Conducted Spurious Emission:**

1. To connect Antenna Port of EUT to Spectrum
2. The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance .
3. Set RBW = 100 kHz & VBW= 300 kHz, Detector =Peak, Sweep = Auto.
4. Allow trace to fully stabilize.
5. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.
6. Repeat above procedures until all default test channel measured were complete.

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## 10.4 Measurement Result

### 802.11b Ch0

Reference Level of Limit		
Freq. (MHz)	PSD (dBm)	Reference Level of Limit (dBm)
2412	8.380	-11.62
2442	8.318	-11.68
2462	7.652	-12.35
2467	8.430	-11.57
2472	8.650	-11.35

### 802.11g Ch0

Reference Level of Limit 802.11g mode		
Freq. (MHz)	PSD (dBm)	Reference Level of Limit (dBm)
2412	-1.600	-21.60
2442	-1.680	-21.68
2462	-1.260	-21.26
2467	-1.343	-21.34
2472	-4.608	-24.61

### 802.11nHT\_20M Ch0

Reference Level of Limit 802.11n20 MODE		
Freq. (MHz)	PSD (dBm)	Reference Level of Limit (dBm)
2412	-1.418	-21.42
2442	-1.242	-21.24
2462	-1.487	-21.49
2467	-1.490	-21.49
2472	-7.091	-27.09

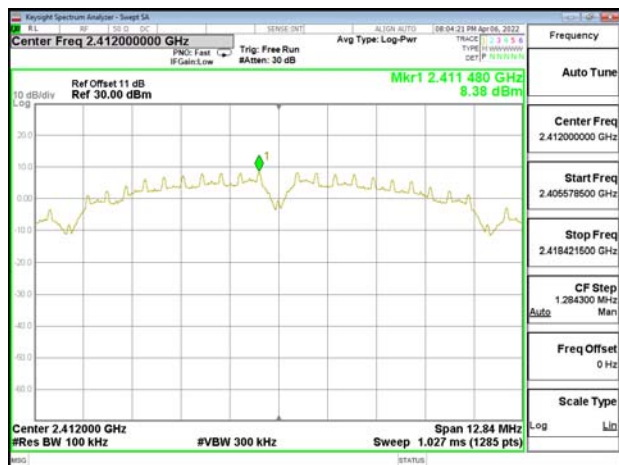
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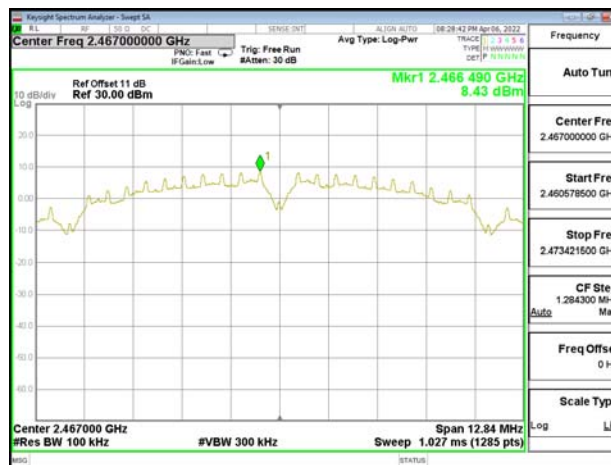
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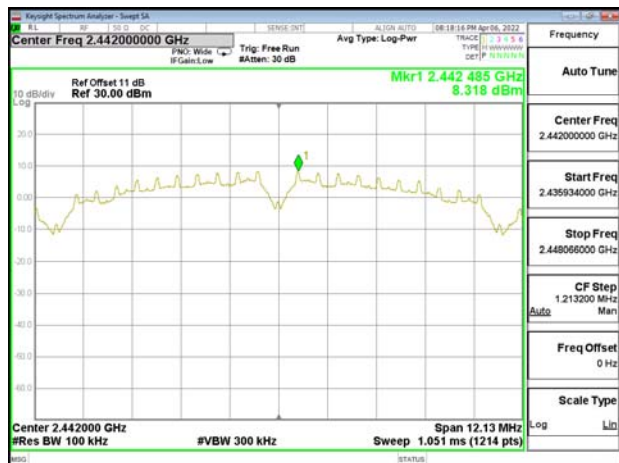
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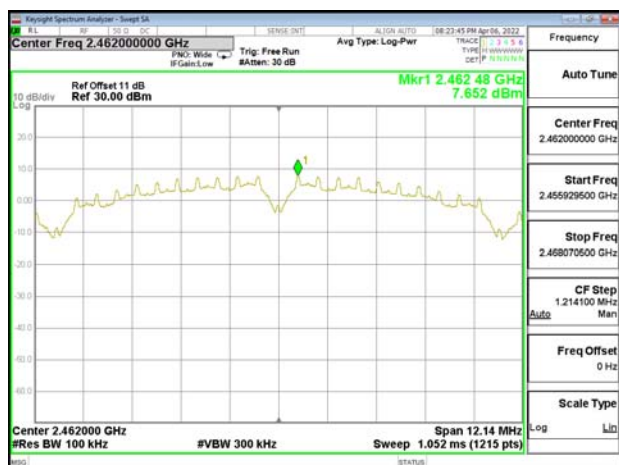
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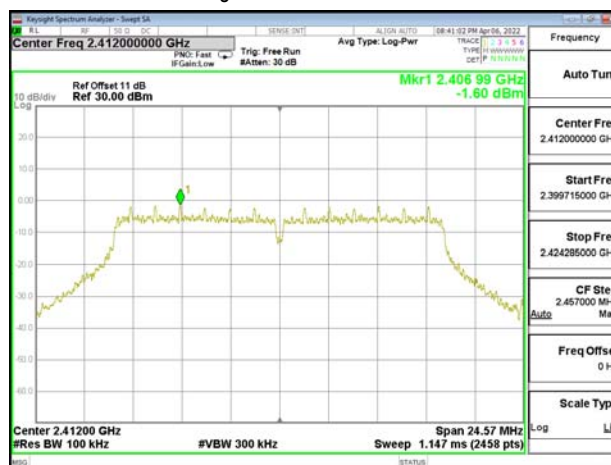
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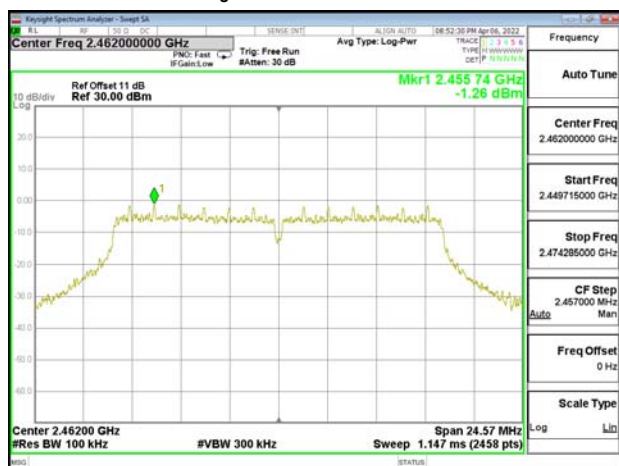
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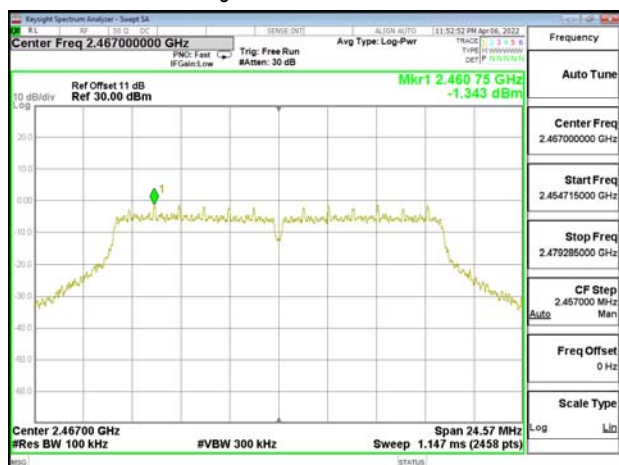
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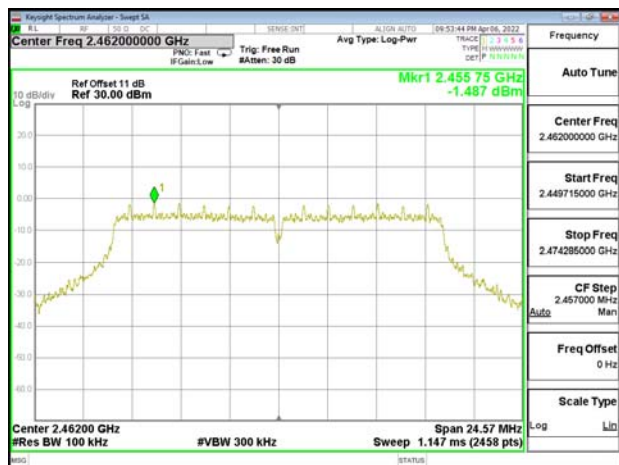
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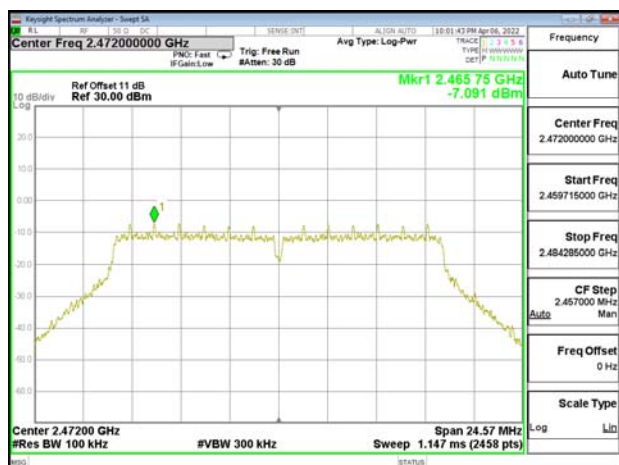
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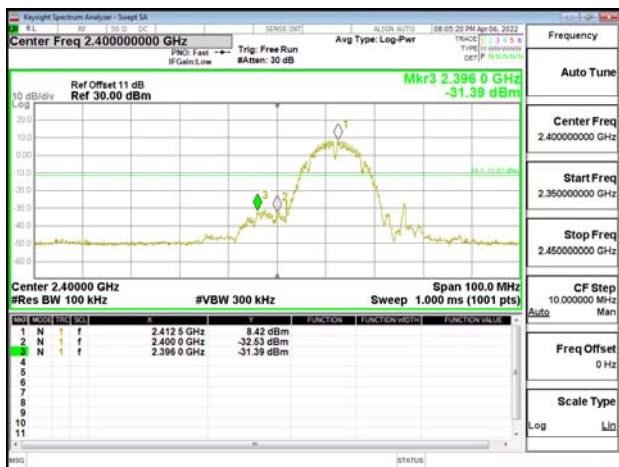


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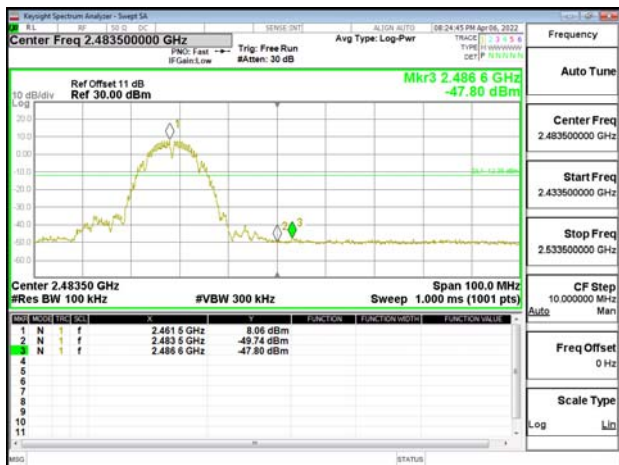
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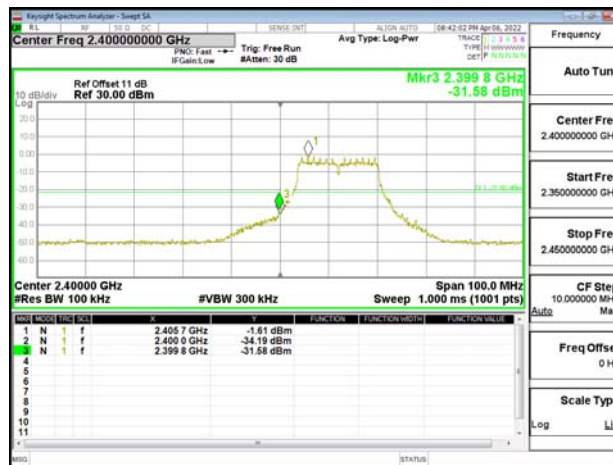
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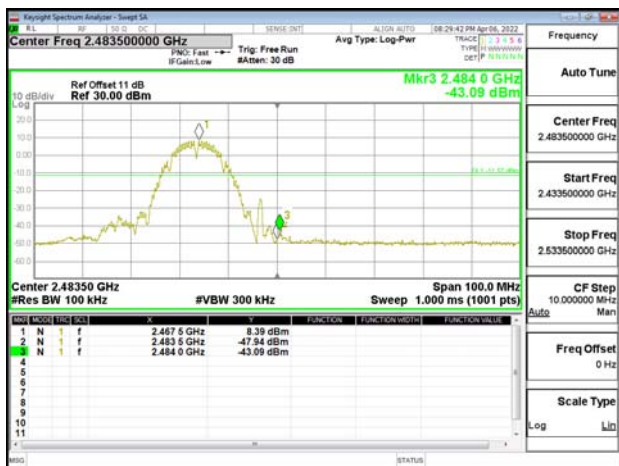
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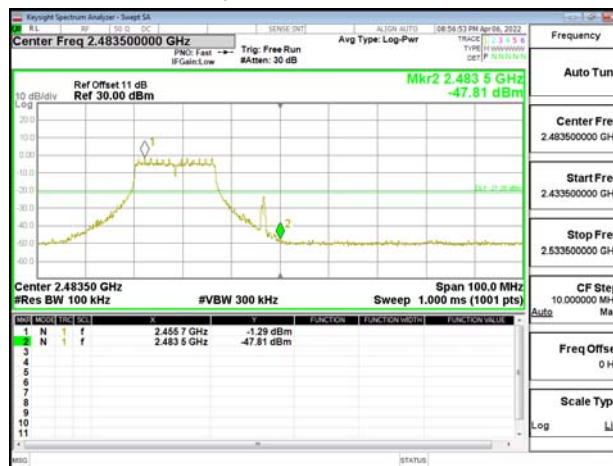
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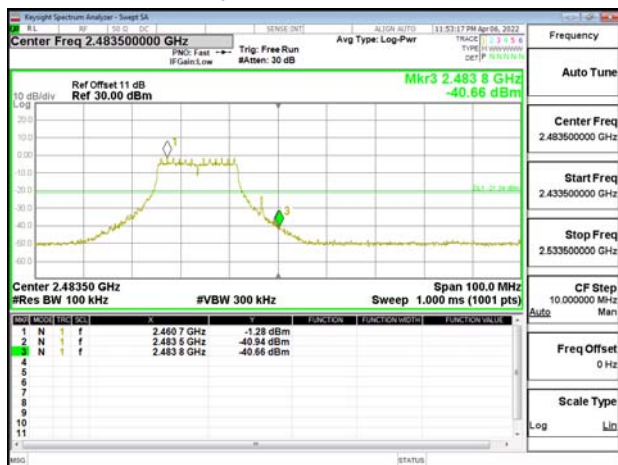


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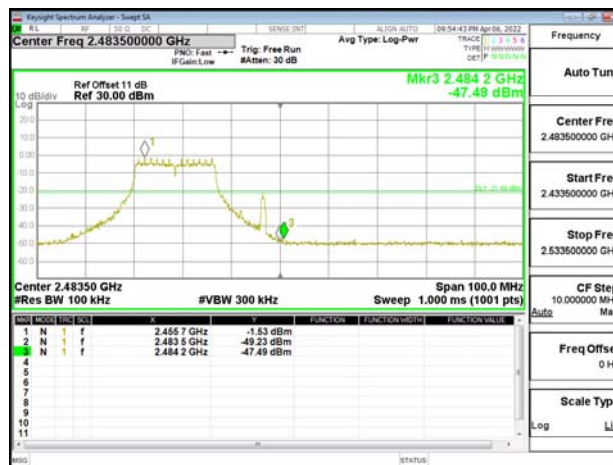
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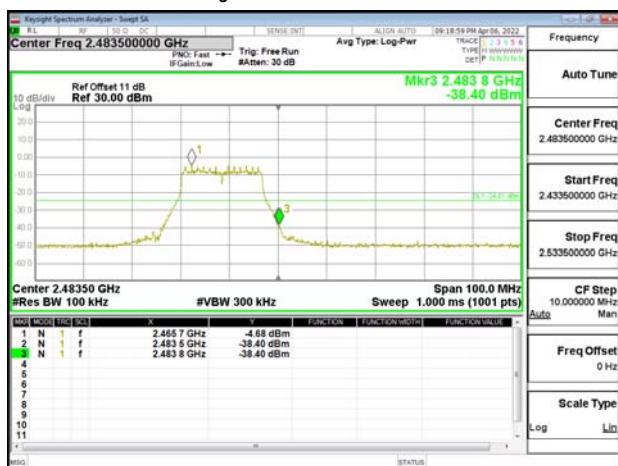
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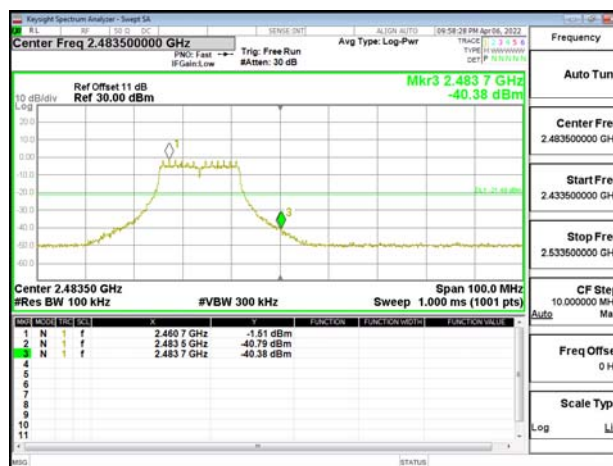
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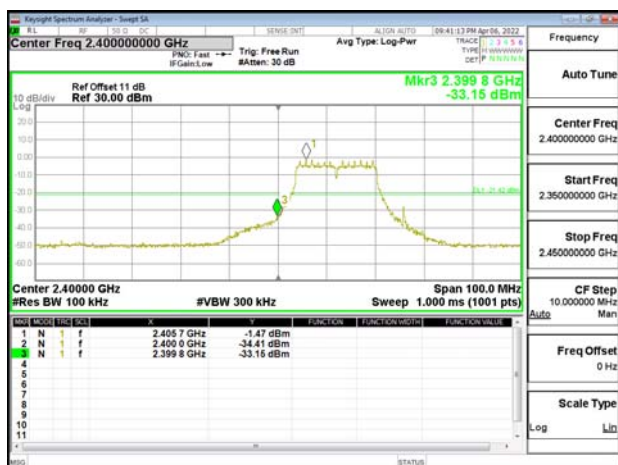
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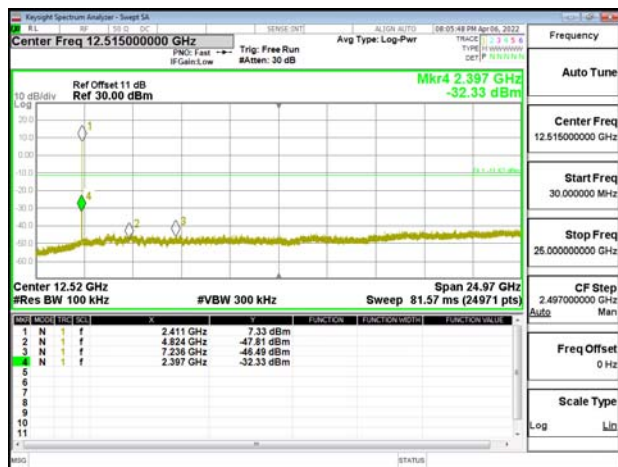
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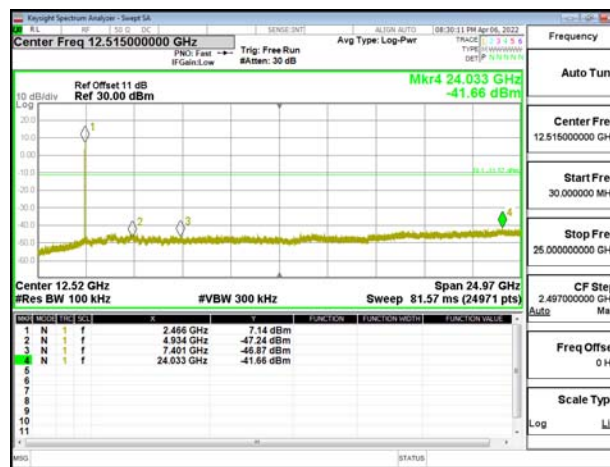
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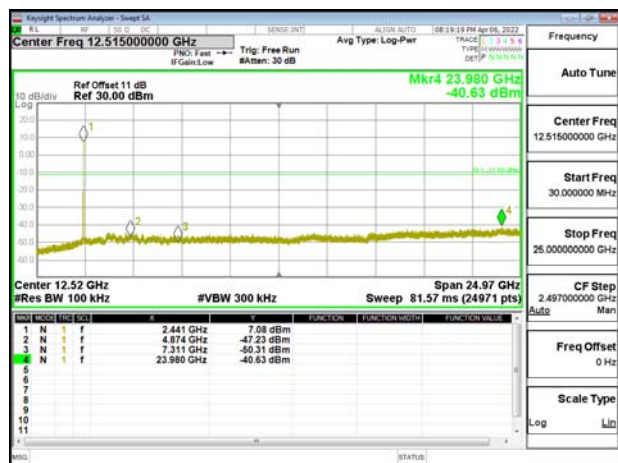
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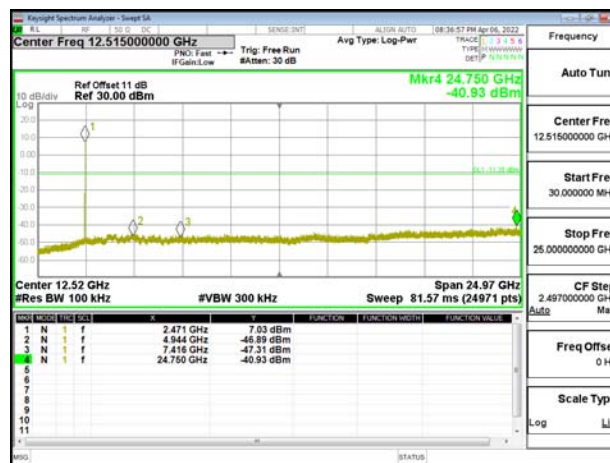
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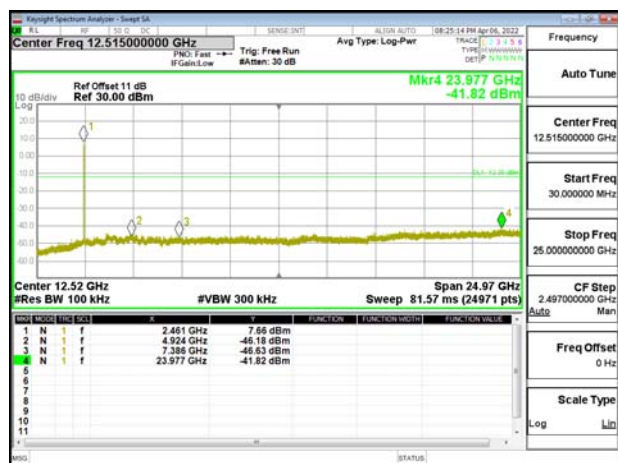
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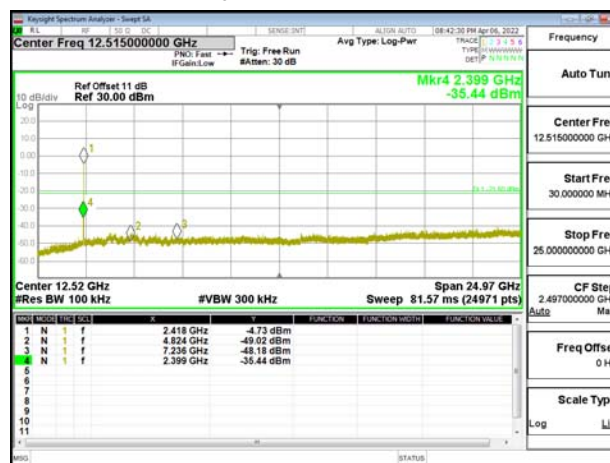
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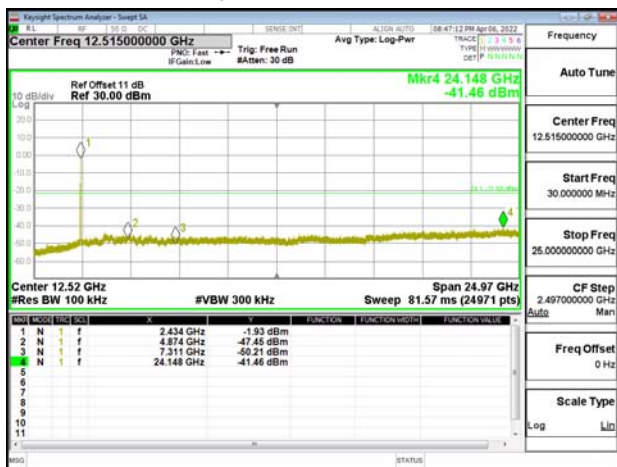


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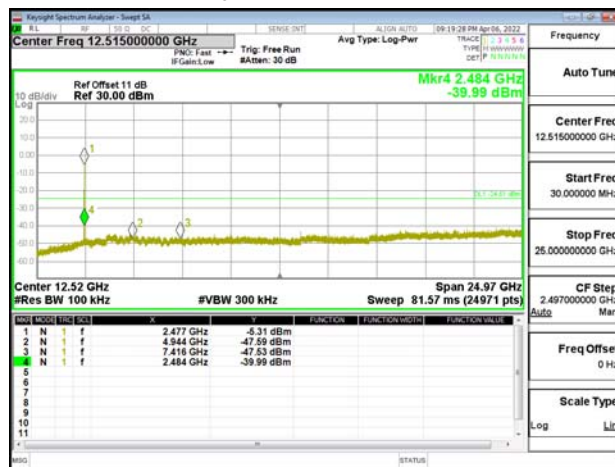
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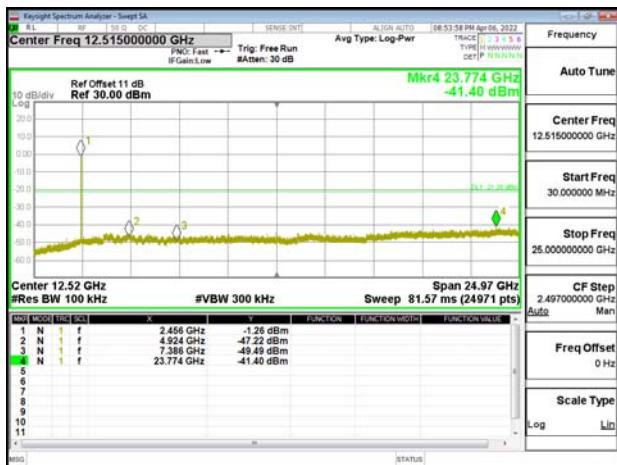
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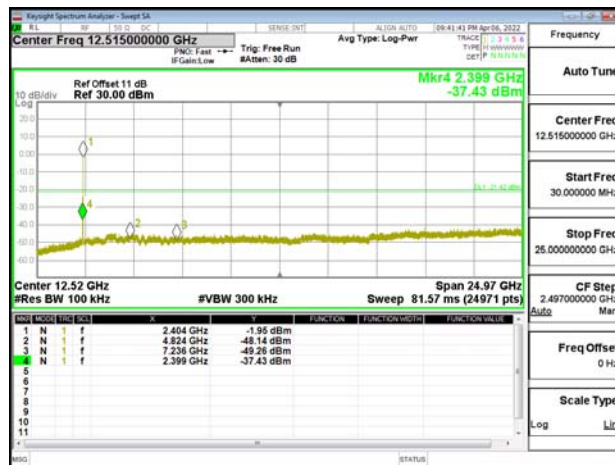
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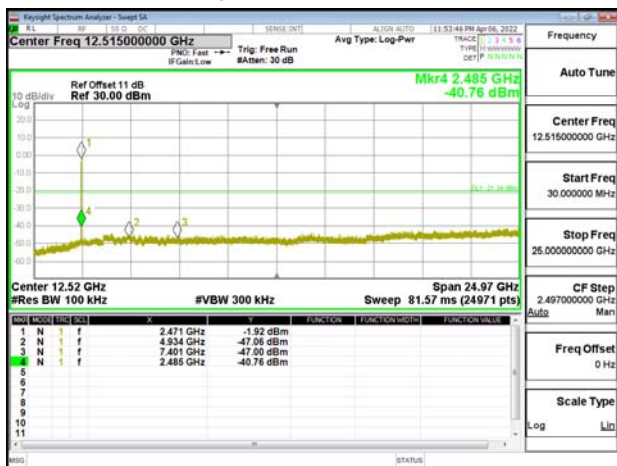
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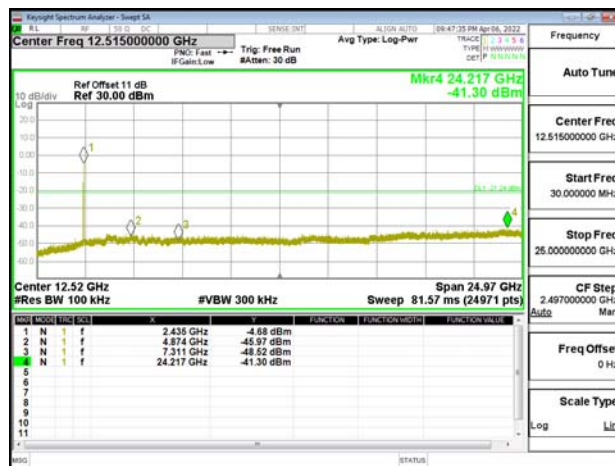
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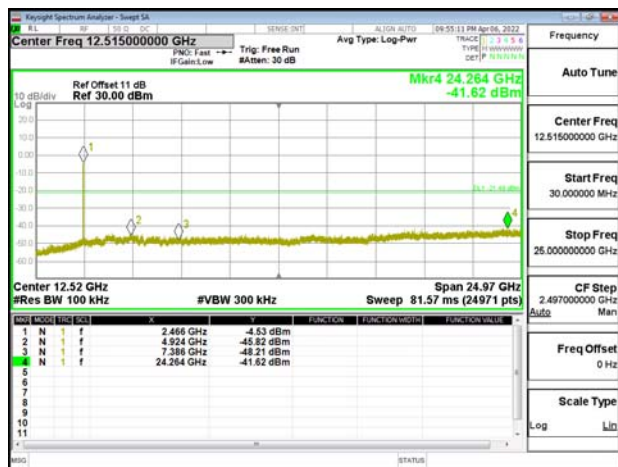


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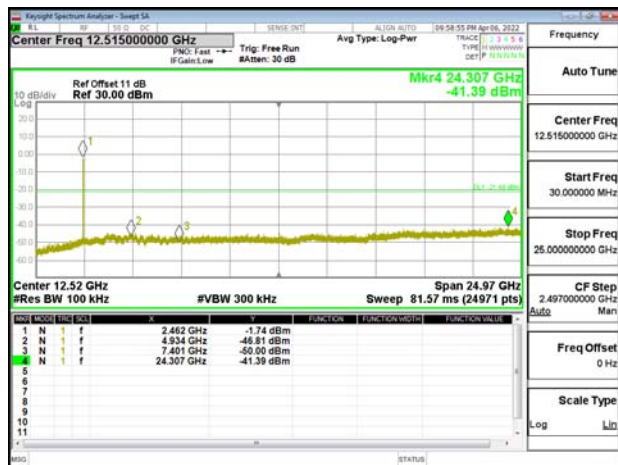
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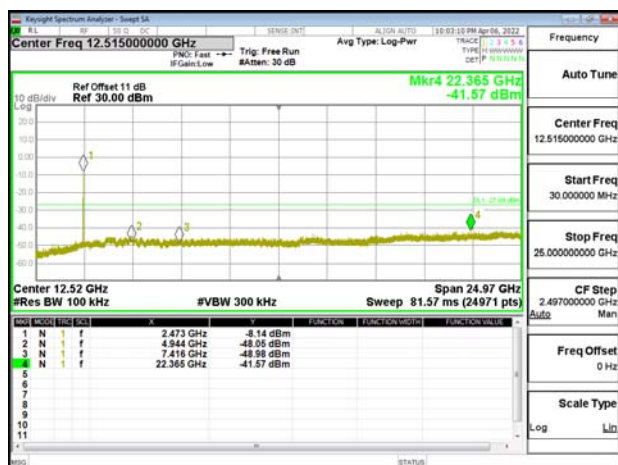
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802.11n\_20MHz\_Chain0\_2467MHz



802.11n\_20MHz\_Chain0\_2472MHz



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## 11 RADIATED BANDEDGE AND SPURIOUS EMISSION MEASUREMENT

### 11.1 Standard Applicable

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. In addition, radiated emissions which fall in the restricted bands must also comply with the §15.209 and RSS-Gen §8.9 Table 5 and 6 limit as below.

And according to §15.33(a) (1) & RSS-Gen §6.13.2.a, for an intentional radiator operates below 10GHz, the frequency range of measurements: to the tenth harmonic of the highest fundamental frequency or to 40GHz, whichever is lower.

Frequency (MHz)	Field strength (microvolts/meter)	Distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

**Note:**

1. The lower limit shall apply at the transition frequencies.

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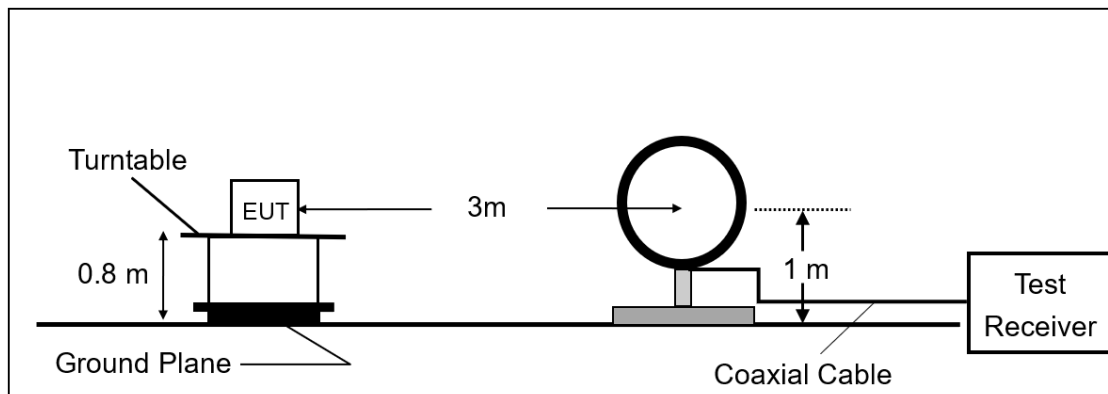
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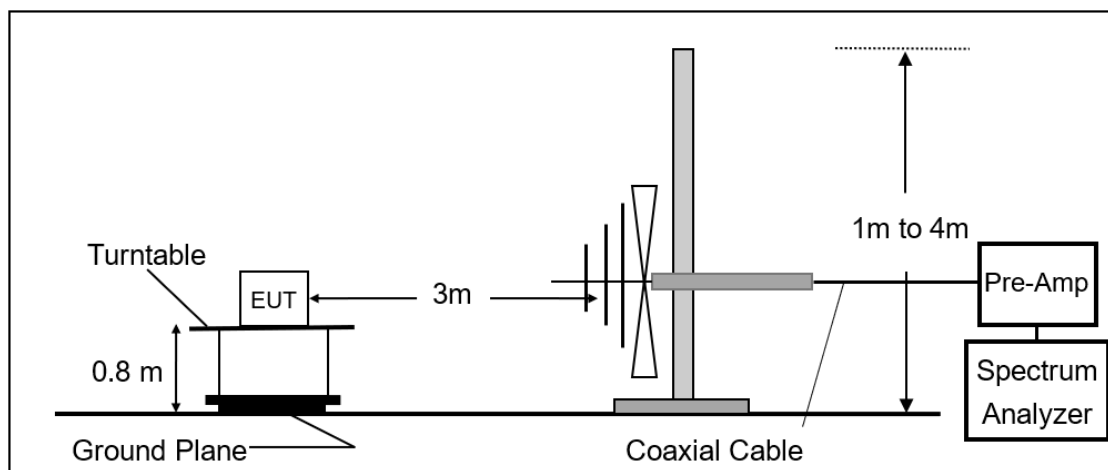


## 11.2 Test Setup

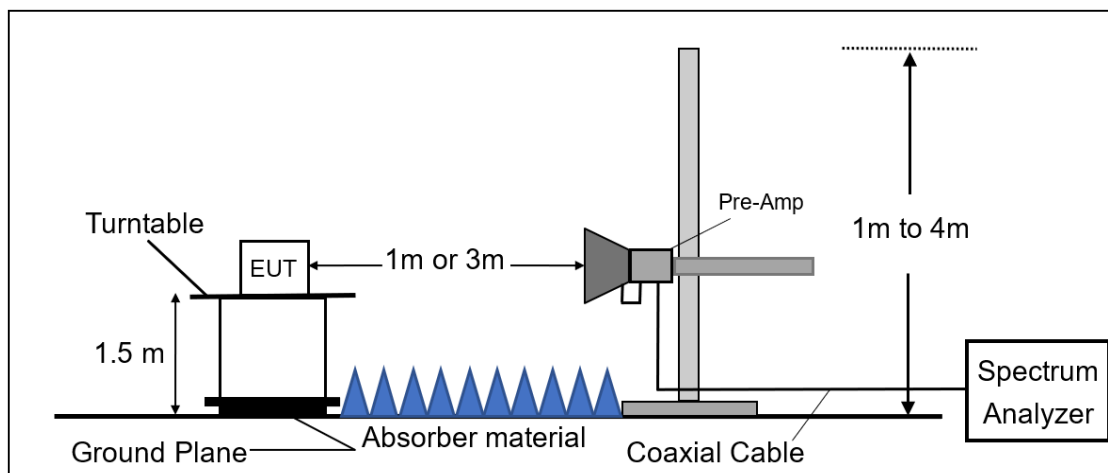
### (A) Radiated Emission Test Set-Up, Frequency Below 30MHz.



### (B) Radiated Emission Test Set-Up, Frequency From 30MHz to 1000MHz.



### (C) Radiated Emission Test Set-Up, Frequency Above 1GHz.



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### 11.3 Measurement Procedure

1. The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance .
2. The EUT was placed on a turn table with 0.8m for frequency< 1GHz and 1.5m for frequency> 1GHz above ground plane.
3. The turn table shall rotate 360 degrees to determine the position of maximum emission level.
4. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emissions.
5. Set the spectrum analyzer as RBW=100 kHz and VBW=300 kHz for Peak Detector (PK) at frequency between 30MHz and 1 GHz.
6. Use receiver mode as RBW=120 kHz for Quasi-peak (QP) at frequency between 30MHz and 1 GHz.
7. Set the spectrum analyzer as RBW=1 MHz, VBW=3 MHz for Maximum Emission Measurements at frequency above 1 GHz.
8. Set the spectrum analyzer as RBW=1 MHz, VBW=10 Hz (Duty cycle > 98%) or VBW ≥ 1/T (Duty cycle < 98%) for Average Emission Measurements at frequency above 1 GHz.
9. When measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made “while keeping the antenna in the ‘cone of radiation’ from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response.” is still within the 3dB illumination BW of the measurement antenna.
10. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
11. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
12. Repeat above procedures until all default test channel measured were complete.

### 11.4 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading.

The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CL - AG$$

**Where** *FS = Field Strength*

*CL = Cable Attenuation Factor (Cable Loss)*

*RA = Reading Amplitude*

*AG = Amplifier Gain*

*AF = Antenna Factor*

*The limit of the emission level is expressed in dBuV/m, which converts  $20 \cdot \log(uV/m)$*

*Actual FS(dBuV/m) = SPA. Reading level(dBuV) + Factor(dB)*

*Factor(dB) = Antenna Factor(dBuV/m) + Cable Loss(dB) – Pre\_Amplifier Gain(dB)*

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### 11.5 Test Results of Radiated Spurious Emissions from 9 kHz to 30 MHz

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit per 15.31(o) & RSS-GEN §6.13.2 was not reported.

### 11.6 Measurement Result

**Note:**

1. *Refer to next page spectrum analyzer data chart and tabular data sheets.*
2. *Measurements are completed at peak and average level, the mark of average is the highest emission in restricted bands.*

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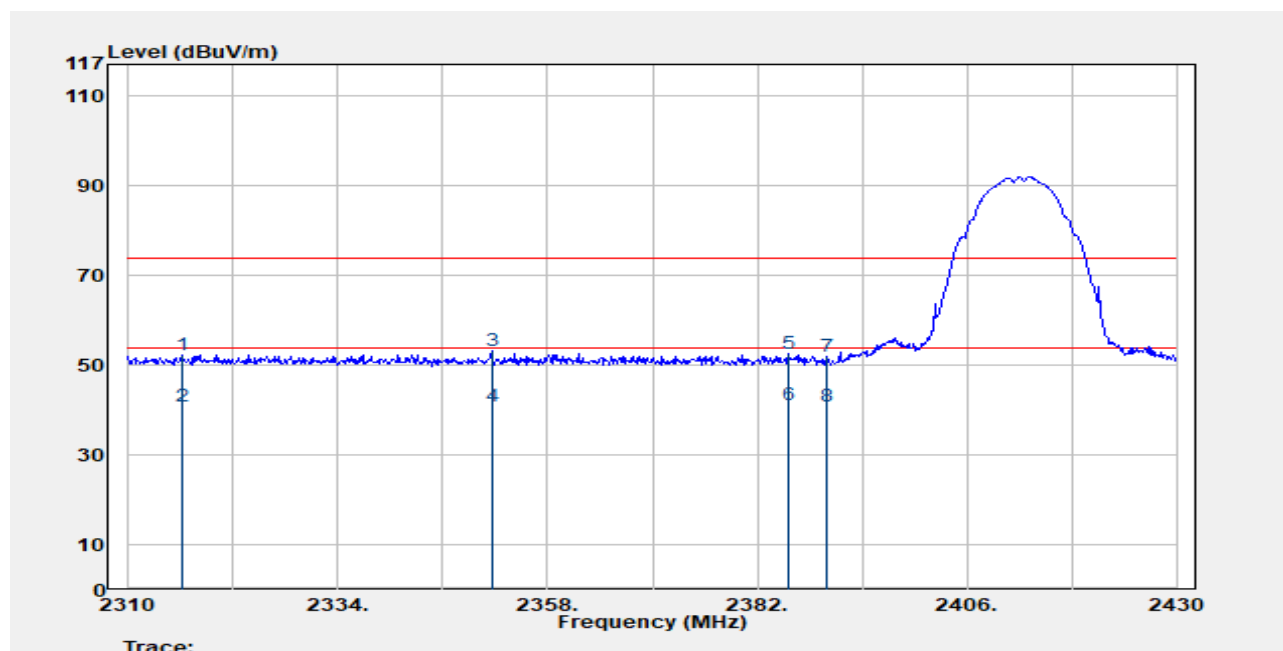
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## 11.6.1 Radiated Band Edge Measurement Result

Report Number :ER/2022/30056  
 Operation Mode :802.11b  
 Test Frequency :2412 MHz  
 Test Mode :Bandedge CH Low  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Vertical  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
2316.240	Peak	51.44	1.02	52.45	74.00	-21.55
2316.240	Average	40.04	1.02	41.06	54.00	-12.94
2351.640	Peak	52.07	1.08	53.14	74.00	-20.86
2351.640	Average	39.96	1.08	41.04	54.00	-12.96
2385.480	Peak	51.48	1.08	52.56	74.00	-21.44
2385.480	Average	40.06	1.08	41.14	54.00	-12.86
2390.000	Peak	50.78	1.08	51.86	74.00	-22.14
2390.000	Average	39.94	1.08	41.02	54.00	-12.98

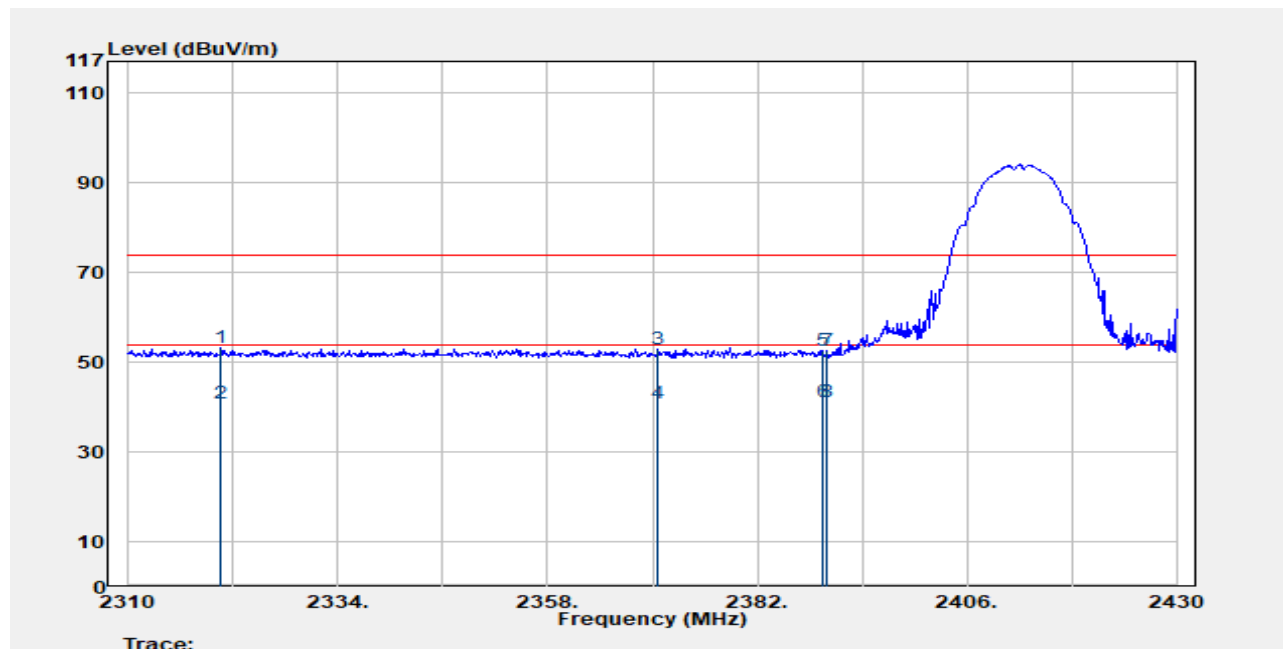
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Report Number :ER/2022/30056  
 Operation Mode :802.11b  
 Test Frequency :2412 MHz  
 Test Mode :Bandedge CH Low  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Horizontal  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
2320.560	Peak	52.21	1.03	53.23	74.00	-20.77
2320.560	Average	39.89	1.03	40.92	54.00	-13.08
2370.600	Peak	51.90	1.08	52.98	74.00	-21.02
2370.600	Average	39.85	1.08	40.93	54.00	-13.07
2389.440	Peak	51.63	1.08	52.72	74.00	-21.28
2389.440	Average	39.99	1.08	41.07	54.00	-12.93
2390.000	Peak	51.40	1.08	52.48	74.00	-21.52
2390.000	Average	40.02	1.08	41.10	54.00	-12.90

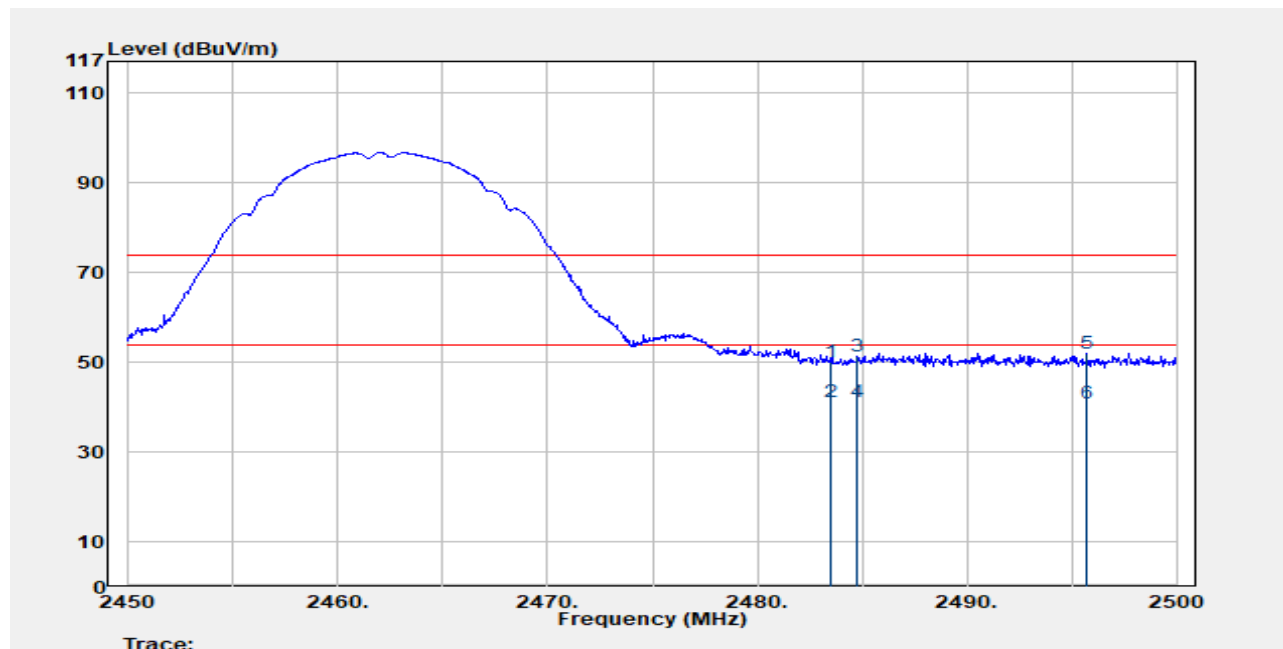
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Report Number :ER/2022/30056  
 Operation Mode :802.11b  
 Test Frequency :2462 MHz  
 Test Mode :Bandedge CH High  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Vertical  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBuV	dB	dBuV/m	dBuV/m	dB
2483.500	Peak	49.31	0.76	50.06	74.00	-23.94
2483.500	Average	40.55	0.76	41.31	54.00	-12.69
2484.800	Peak	50.50	0.76	51.26	74.00	-22.74
2484.800	Average	40.43	0.76	41.19	54.00	-12.81
2495.750	Peak	51.37	0.78	52.14	74.00	-21.86
2495.750	Average	40.22	0.78	41.00	54.00	-13.00

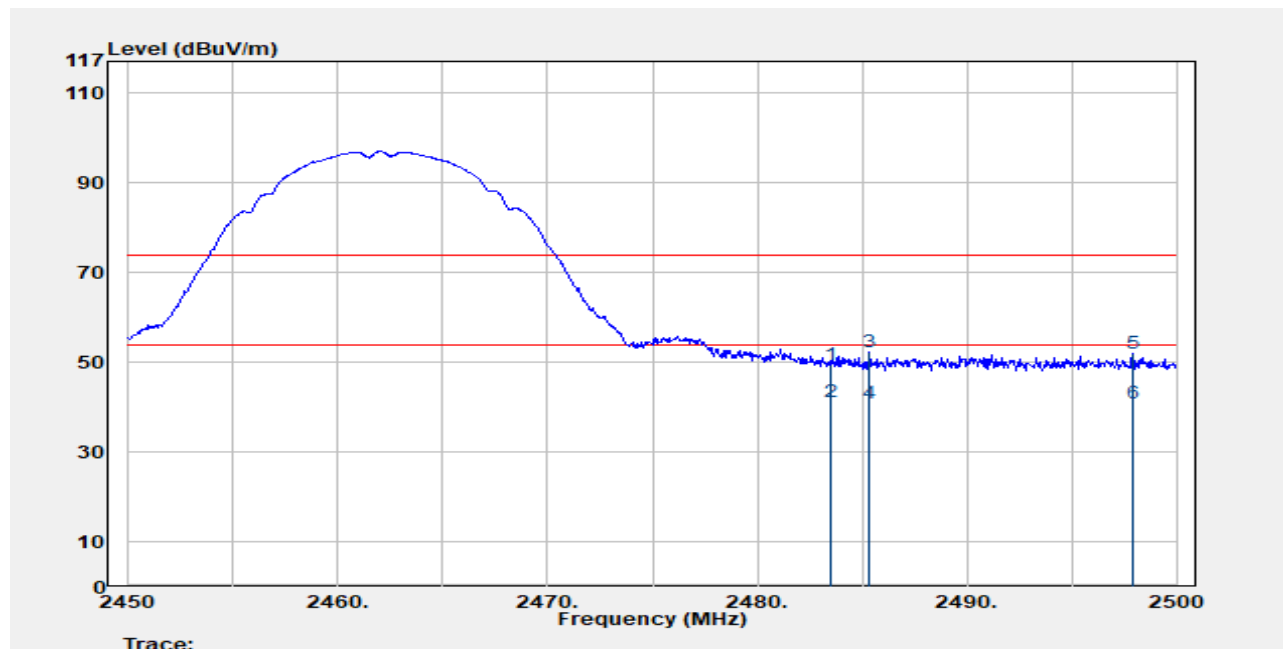
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 Operation Mode :802.11b  
 Test Frequency :2462 MHz  
 Test Mode :Bandedge CH High  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Horizontal  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
2483.500	Peak	48.80	0.76	49.56	74.00	-24.44
2483.500	Average	40.44	0.76	41.20	54.00	-12.80
2485.350	Peak	51.56	0.76	52.32	74.00	-21.68
2485.350	Average	40.26	0.76	41.02	54.00	-12.98
2497.900	Peak	51.36	0.78	52.14	74.00	-21.86
2497.900	Average	40.16	0.78	40.94	54.00	-13.06

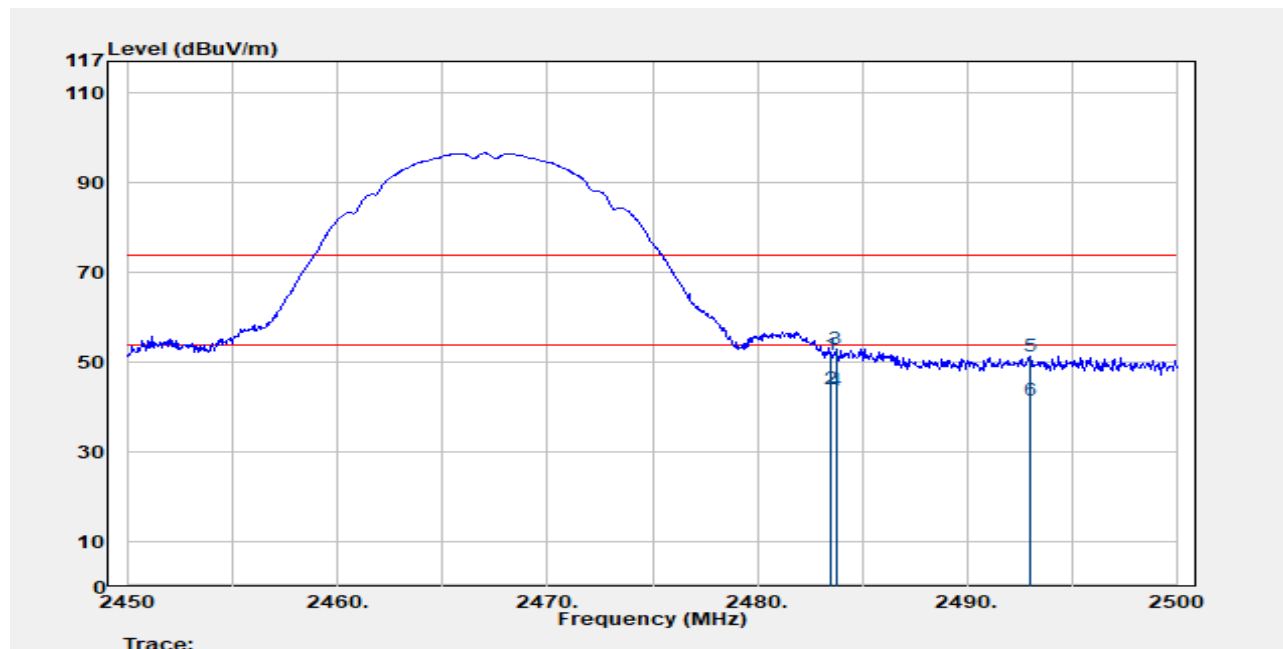
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 Test Mode :Bandedge CH High  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Vertical  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBuV	dB	dBuV/m	dBuV/m	dB
2483.500	Peak	50.79	0.76	51.55	74.00	-22.45
2483.500	Average	43.33	0.76	44.09	54.00	-9.91
2483.750	Peak	52.21	0.76	52.97	74.00	-21.03
2483.750	Average	43.06	0.76	43.82	54.00	-10.18
2493.050	Peak	50.51	0.77	51.28	74.00	-22.72
2493.050	Average	40.63	0.77	41.40	54.00	-12.60

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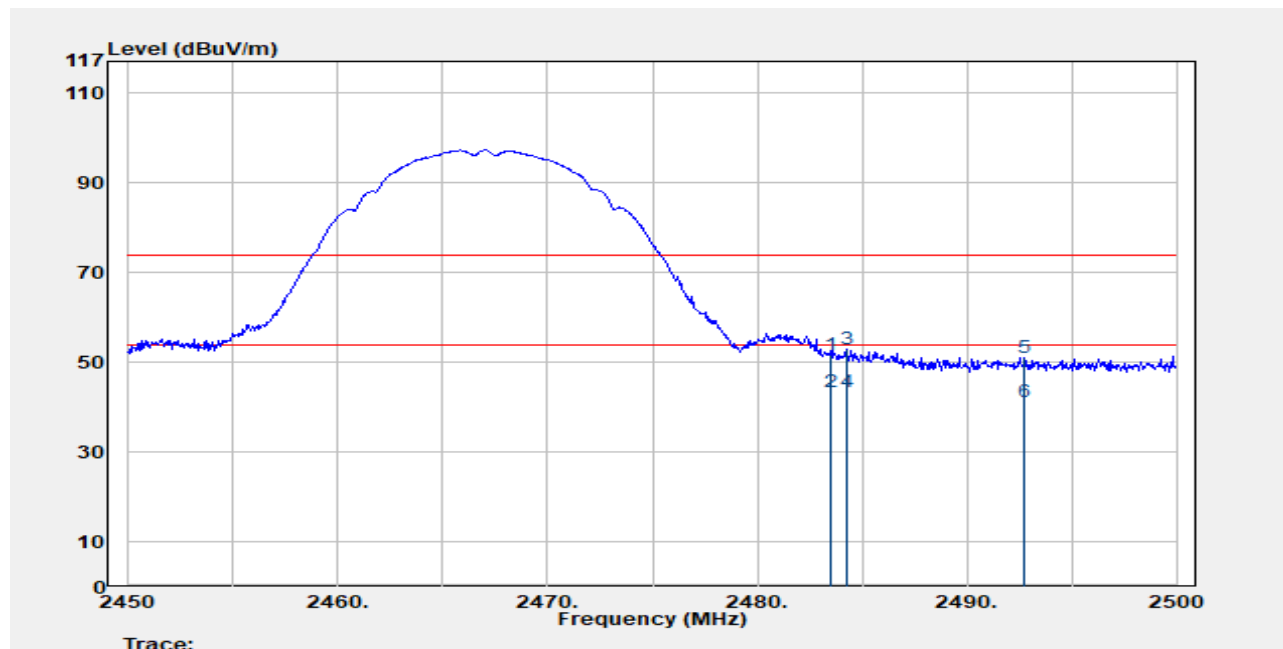
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 Test Frequency :2467 MHz  
 Test Mode :Bandedge CH High  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Horizontal  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
2483.500	Peak	50.92	0.76	51.68	74.00	-22.32
2483.500	Average	42.81	0.76	43.57	54.00	-10.43
2484.250	Peak	52.05	0.76	52.81	74.00	-21.19
2484.250	Average	42.63	0.76	43.39	54.00	-10.61
2492.750	Peak	50.27	0.77	51.04	74.00	-22.96
2492.750	Average	40.38	0.77	41.15	54.00	-12.85

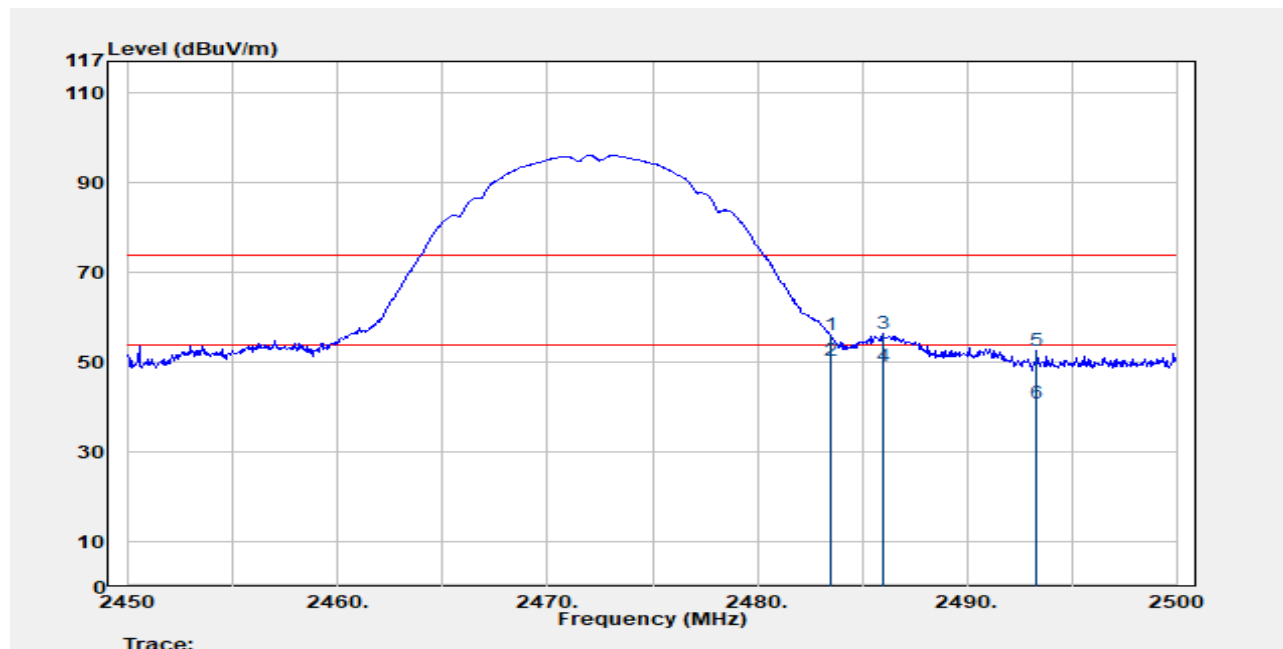
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Report Number :ER/2022/30056  
 Operation Mode :802.11b  
 Test Frequency :2472 MHz  
 Test Mode :Bandedge CH High  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Vertical  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
2483.500	Peak	55.33	0.76	56.09	74.00	-17.91
2483.500	Average	49.56	0.76	50.32	54.00	-3.68
2486.000	Peak	55.61	0.76	56.37	74.00	-17.63
2486.000	Average	48.34	0.76	49.10	54.00	-4.90
2493.350	Peak	51.96	0.77	52.73	74.00	-21.27
2493.350	Average	40.19	0.77	40.96	54.00	-13.04

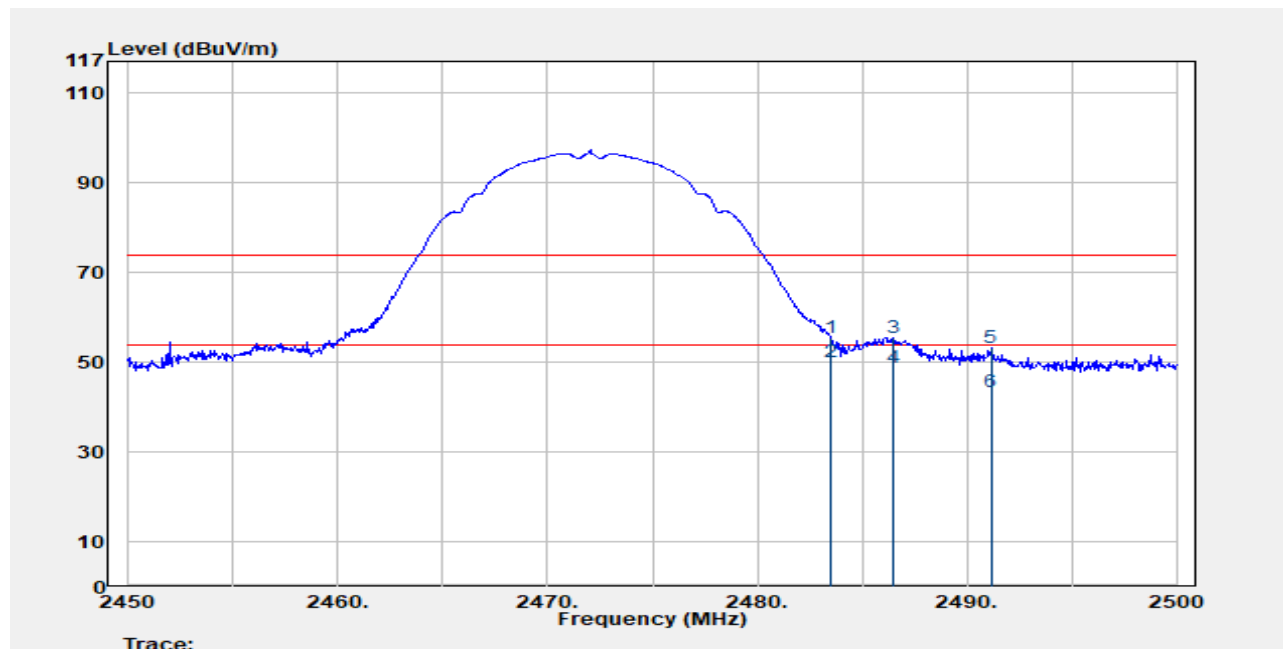
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Report Number :ER/2022/30056  
 Operation Mode :802.11b  
 Test Frequency :2472 MHz  
 Test Mode :Bandedge CH High  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Horizontal  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
2483.500	Peak	54.58	0.76	55.33	74.00	-18.67
2483.500	Average	49.26	0.76	50.02	54.00	-3.98
2486.450	Peak	54.82	0.76	55.58	74.00	-18.42
2486.450	Average	47.99	0.76	48.75	54.00	-5.25
2491.150	Peak	52.38	0.77	53.15	74.00	-20.85
2491.150	Average	42.54	0.77	43.31	54.00	-10.69

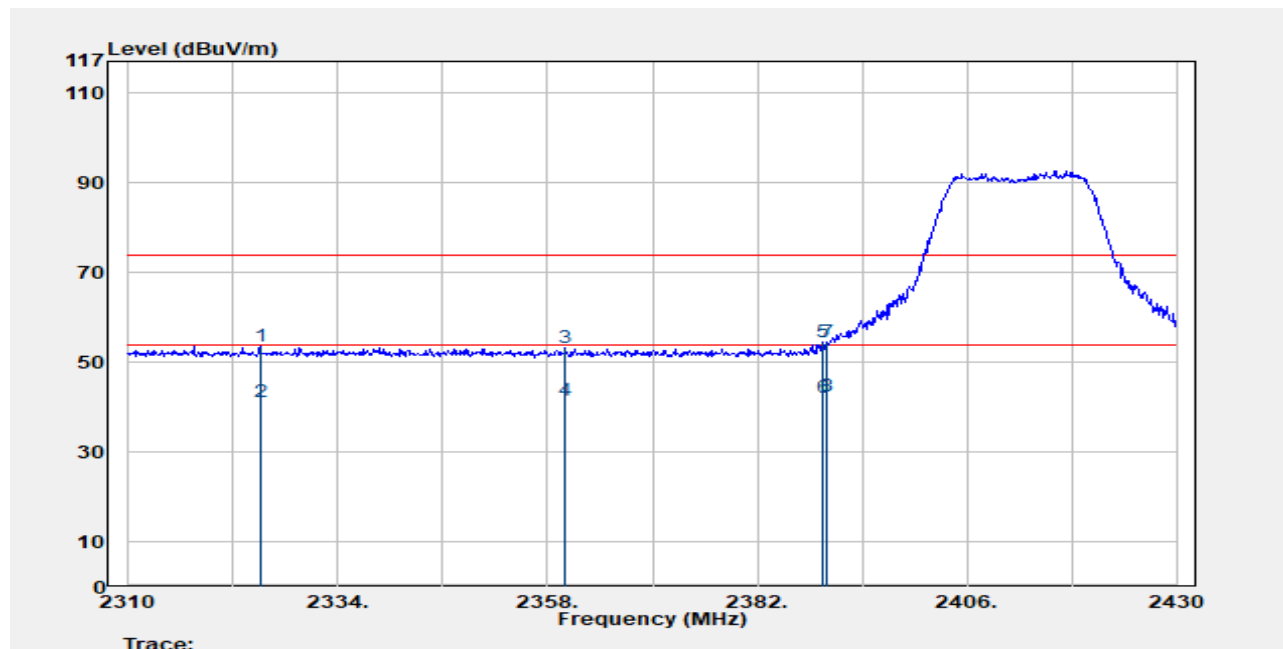
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Report Number :ER/2022/30056  
 Operation Mode :802.11g  
 Test Frequency :2412 MHz  
 Test Mode :Bandedge CH Low  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Vertical  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
2325.120	Peak	52.59	1.03	53.63	74.00	-20.37
2325.120	Average	40.28	1.03	41.31	54.00	-12.69
2360.040	Peak	52.08	1.08	53.16	74.00	-20.84
2360.040	Average	40.42	1.08	41.50	54.00	-12.50
2389.440	Peak	53.46	1.08	54.54	74.00	-19.46
2389.440	Average	41.05	1.08	42.13	54.00	-11.87
2390.000	Peak	53.45	1.08	54.53	74.00	-19.47
2390.000	Average	41.40	1.08	42.48	54.00	-11.52

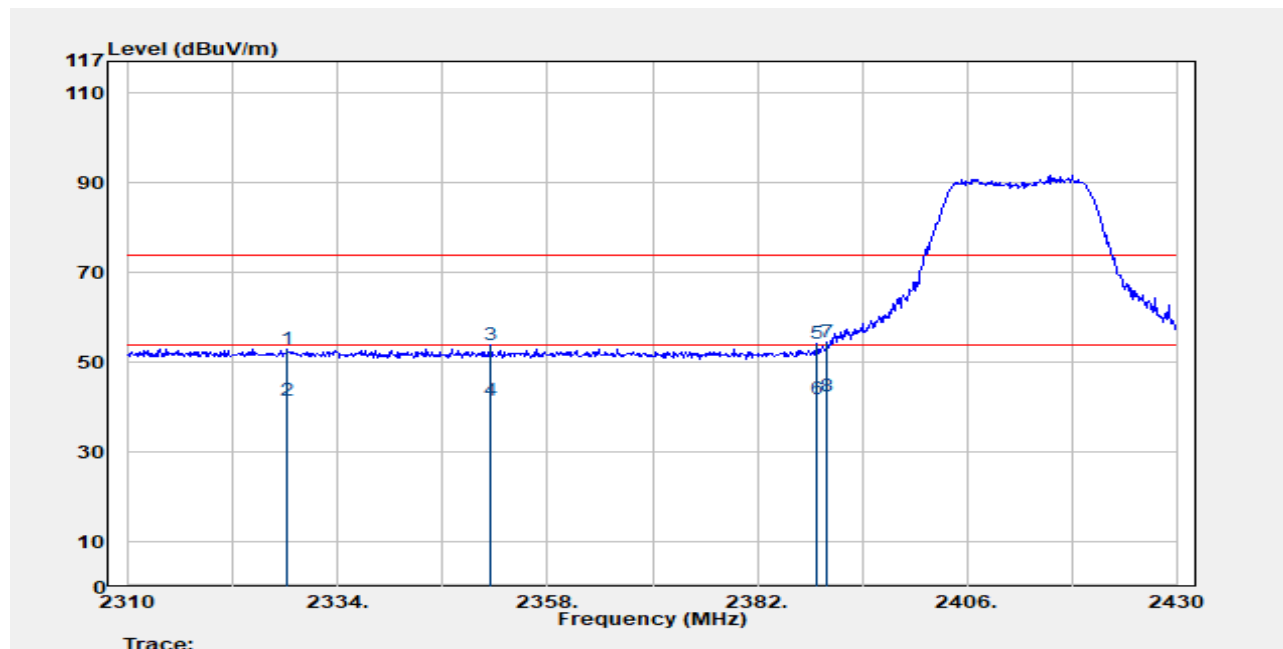
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Report Number :ER/2022/30056  
 Operation Mode :802.11g  
 Test Frequency :2412 MHz  
 Test Mode :Bandedge CH Low  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Horizontal  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
2328.240	Peak	51.93	1.04	52.97	74.00	-21.03
2328.240	Average	40.39	1.04	41.43	54.00	-12.57
2351.520	Peak	52.91	1.08	53.98	74.00	-20.02
2351.520	Average	40.45	1.08	41.53	54.00	-12.47
2388.840	Peak	53.01	1.08	54.09	74.00	-19.91
2388.840	Average	40.81	1.08	41.89	54.00	-12.11
2390.000	Peak	53.30	1.08	54.38	74.00	-19.62
2390.000	Average	41.25	1.08	42.33	54.00	-11.67

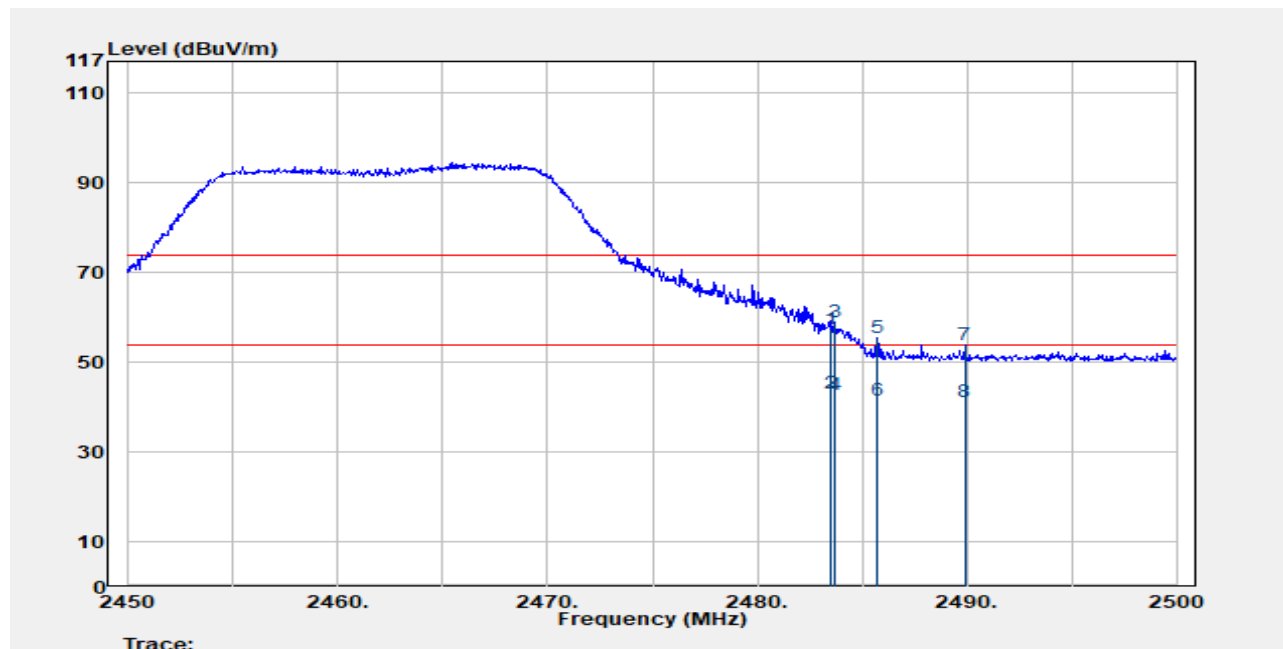
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Report Number :ER/2022/30056  
 Operation Mode :802.11g  
 Test Frequency :2462 MHz  
 Test Mode :Bandedge CH High  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Vertical  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
2483.500	Peak	56.57	0.76	57.32	74.00	-16.68
2483.500	Average	42.29	0.76	43.05	54.00	-10.95
2483.700	Peak	58.08	0.76	58.83	74.00	-15.17
2483.700	Average	41.99	0.76	42.75	54.00	-11.25
2485.700	Peak	54.62	0.76	55.38	74.00	-18.62
2485.700	Average	40.71	0.76	41.47	54.00	-12.53
2489.900	Peak	53.10	0.77	53.87	74.00	-20.13
2489.900	Average	40.46	0.77	41.23	54.00	-12.77

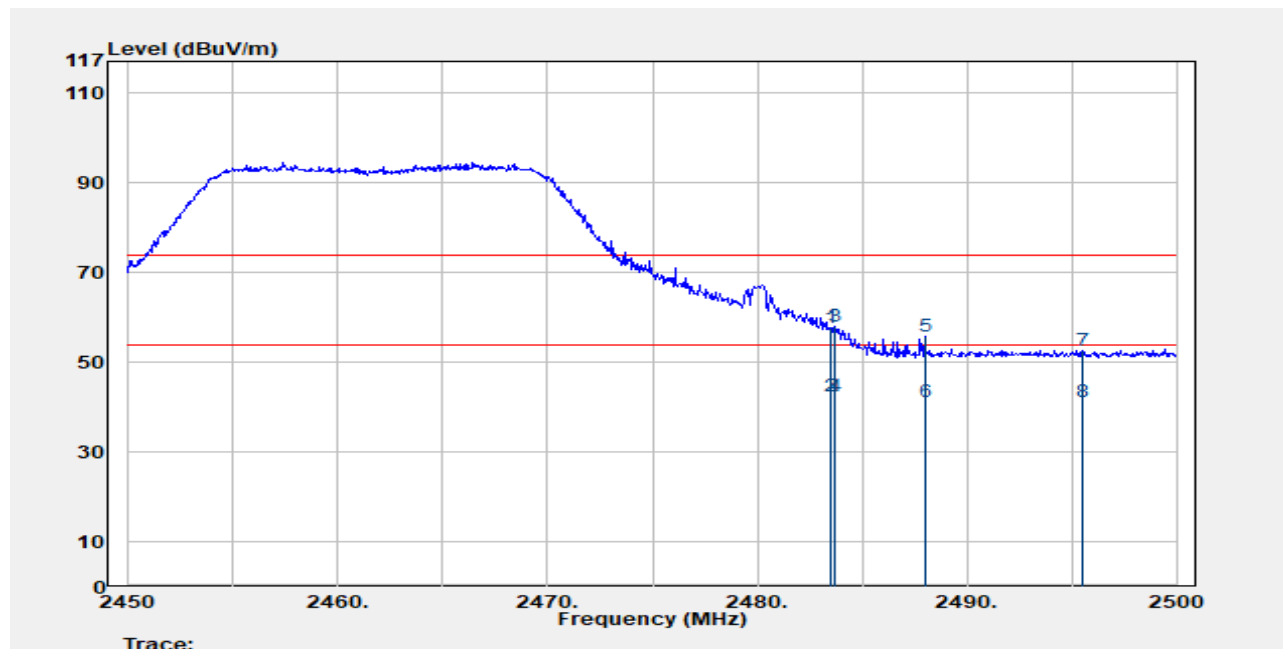
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Report Number :ER/2022/30056  
 Operation Mode :802.11g  
 Test Frequency :2462 MHz  
 Test Mode :Bandedge CH High  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Horizontal  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
2483.500	Peak	56.88	0.76	57.63	74.00	-16.37
2483.500	Average	41.84	0.76	42.60	54.00	-11.40
2483.700	Peak	57.22	0.76	57.98	74.00	-16.02
2483.700	Average	41.68	0.76	42.44	54.00	-11.56
2488.000	Peak	55.14	0.76	55.91	74.00	-18.09
2488.000	Average	40.37	0.76	41.13	54.00	-12.87
2495.500	Peak	51.81	0.77	52.58	74.00	-21.42
2495.500	Average	40.59	0.77	41.36	54.00	-12.64

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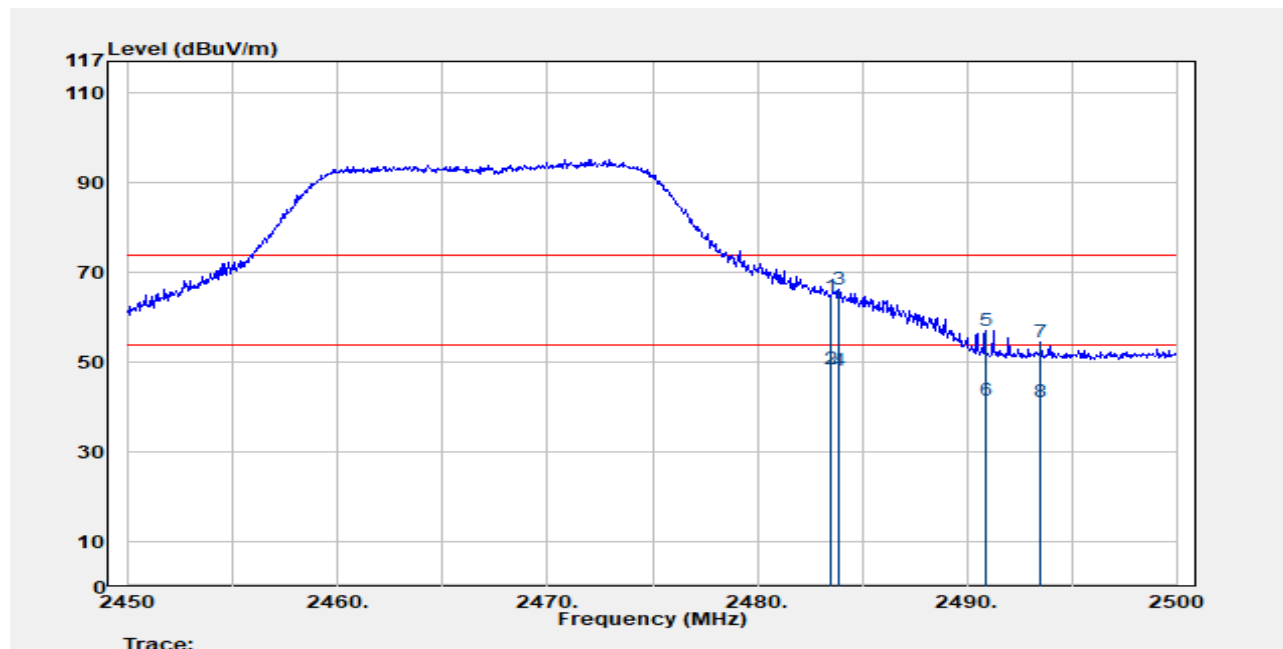
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Report Number :ER/2022/30056  
 Operation Mode :802.11g  
 Test Frequency :2467 MHz  
 Test Mode :Bandedge CH High  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Vertical  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
2483.500	Peak	64.03	0.76	64.78	74.00	-9.22
2483.500	Average	47.91	0.76	48.67	54.00	-5.33
2483.850	Peak	65.57	0.76	66.33	74.00	-7.67
2483.850	Average	47.31	0.76	48.07	54.00	-5.93
2490.900	Peak	56.33	0.77	57.09	74.00	-16.91
2490.900	Average	40.67	0.77	41.44	54.00	-12.56
2493.550	Peak	53.91	0.77	54.68	74.00	-19.32
2493.550	Average	40.50	0.77	41.27	54.00	-12.73

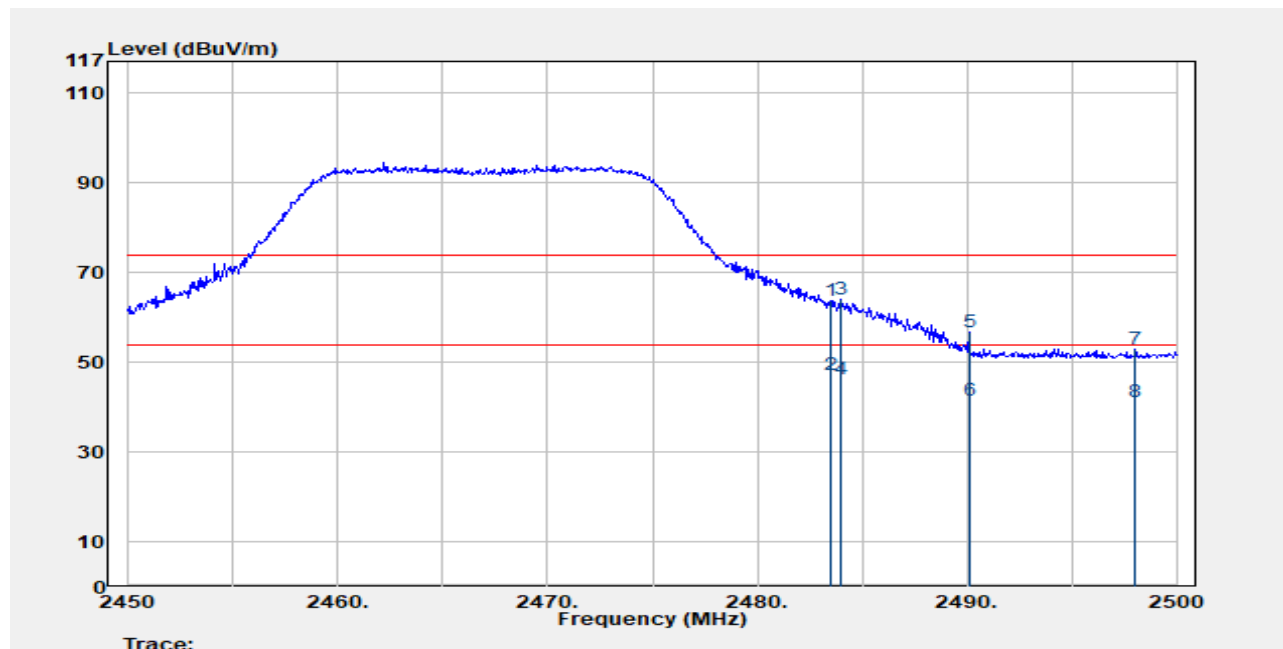
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Report Number :ER/2022/30056  
 Operation Mode :802.11g  
 Test Frequency :2467 MHz  
 Test Mode :Bandedge CH High  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Horizontal  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
2483.500	Peak	62.88	0.76	63.64	74.00	-10.36
2483.500	Average	46.37	0.76	47.13	54.00	-6.87
2483.950	Peak	63.43	0.76	64.19	74.00	-9.81
2483.950	Average	45.65	0.76	46.41	54.00	-7.59
2490.100	Peak	56.08	0.77	56.85	74.00	-17.15
2490.100	Average	40.71	0.77	41.48	54.00	-12.52
2498.050	Peak	52.31	0.78	53.09	74.00	-20.91
2498.050	Average	40.40	0.78	41.18	54.00	-12.82

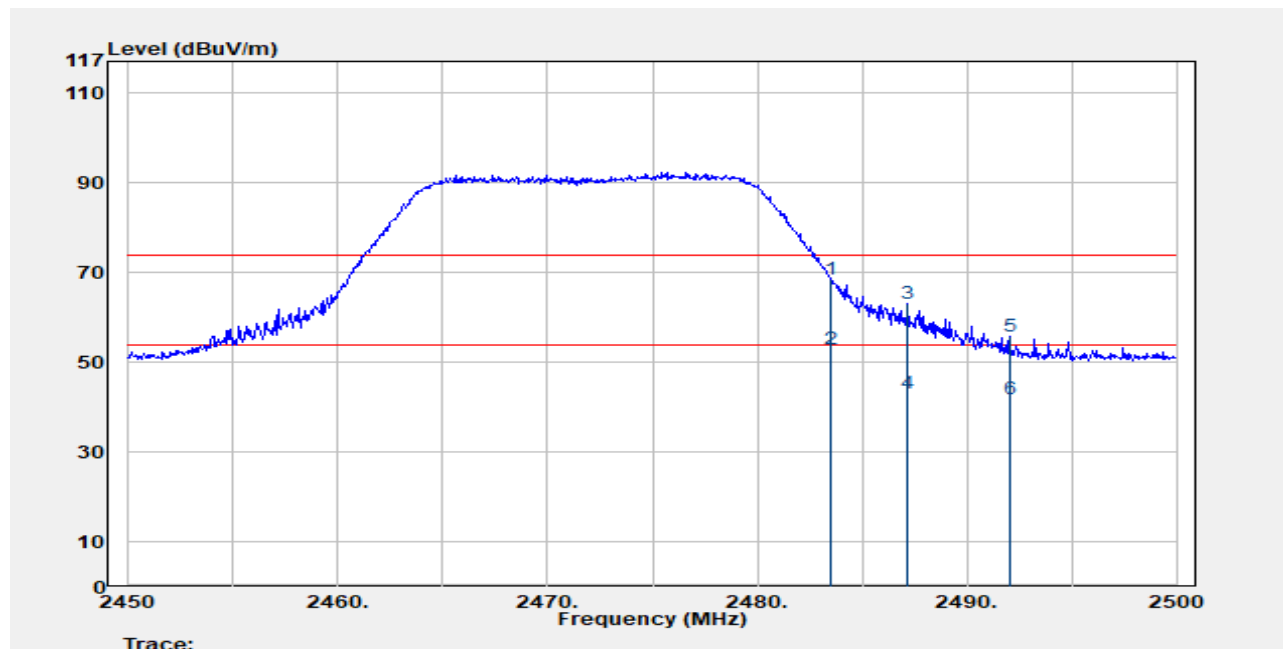
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Report Number :ER/2022/30056  
 Operation Mode :802.11g  
 Test Frequency :2472 MHz  
 Test Mode :Bandedge CH High  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Vertical  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
2483.500	Peak	67.66	0.76	68.42	74.00	-5.58
2483.500	Average	52.15	0.76	52.91	54.00	-1.09
2487.200	Peak	62.26	0.76	63.02	74.00	-10.98
2487.200	Average	42.36	0.76	43.12	54.00	-10.88
2492.050	Peak	55.04	0.77	55.81	74.00	-18.19
2492.050	Average	41.03	0.77	41.80	54.00	-12.20

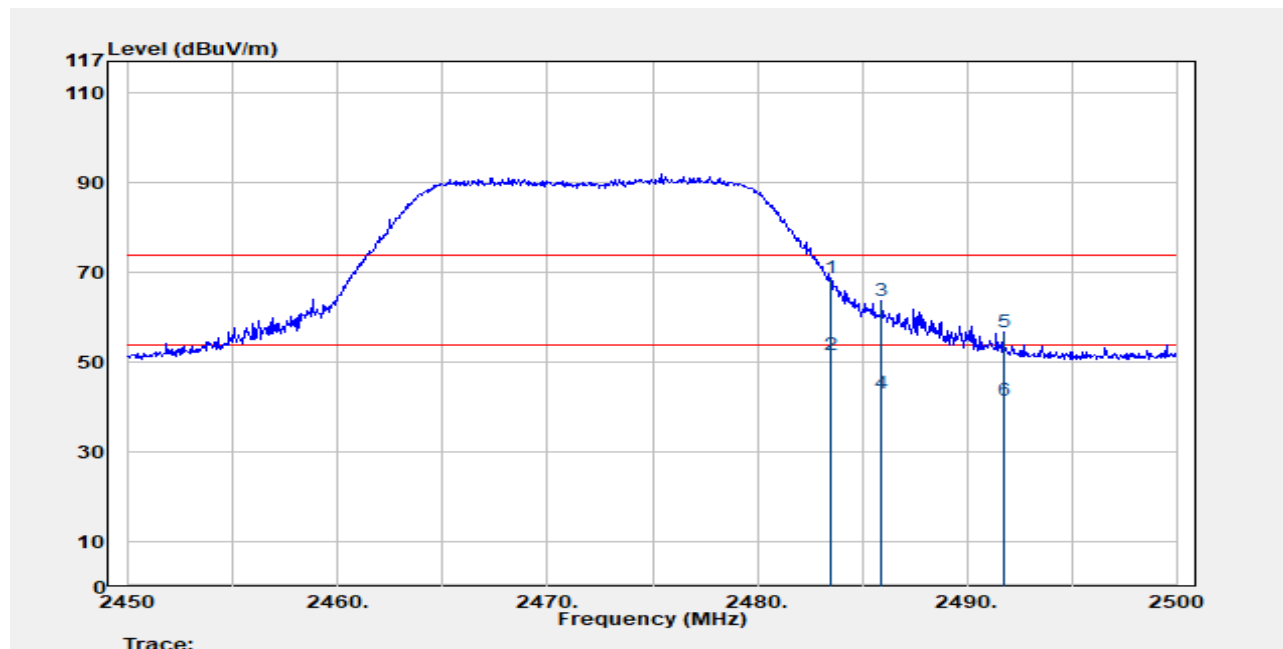
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Report Number :ER/2022/30056  
 Operation Mode :802.11g  
 Test Frequency :2472 MHz  
 Test Mode :Bandedge CH High  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Horizontal  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
2483.500	Peak	68.13	0.76	68.89	74.00	-5.11
2483.500	Average	50.91	0.76	51.67	54.00	-2.33
2485.950	Peak	63.01	0.76	63.77	74.00	-10.23
2485.950	Average	42.26	0.76	43.02	54.00	-10.98
2491.750	Peak	56.06	0.77	56.83	74.00	-17.17
2491.750	Average	40.92	0.77	41.69	54.00	-12.31

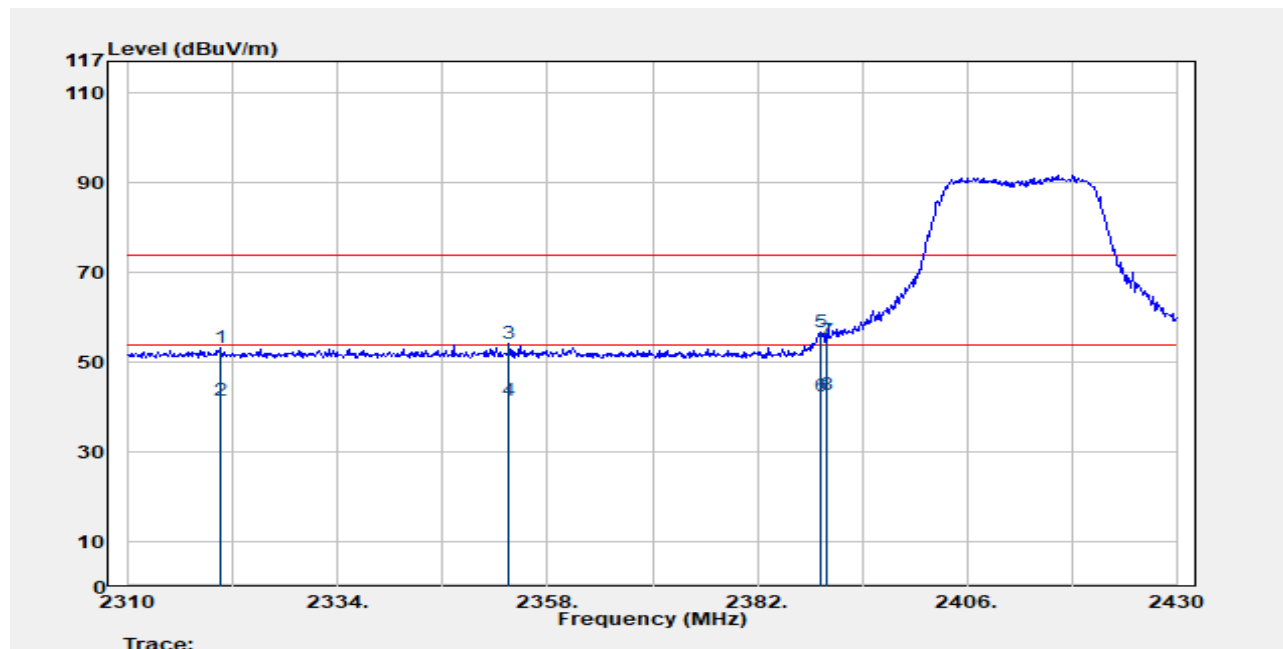
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Report Number :ER/2022/30056  
 Operation Mode :802.11n20  
 Test Frequency :2412 MHz  
 Test Mode :Bandedge CH Low  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Vertical  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
2320.440	Peak	52.21	1.03	53.24	74.00	-20.76
2320.440	Average	40.50	1.03	41.53	54.00	-12.47
2353.560	Peak	53.27	1.08	54.35	74.00	-19.65
2353.560	Average	40.35	1.08	41.43	54.00	-12.57
2389.200	Peak	55.69	1.08	56.77	74.00	-17.23
2389.200	Average	41.36	1.08	42.44	54.00	-11.56
2390.000	Peak	53.78	1.08	54.86	74.00	-19.14
2390.000	Average	41.71	1.08	42.79	54.00	-11.21

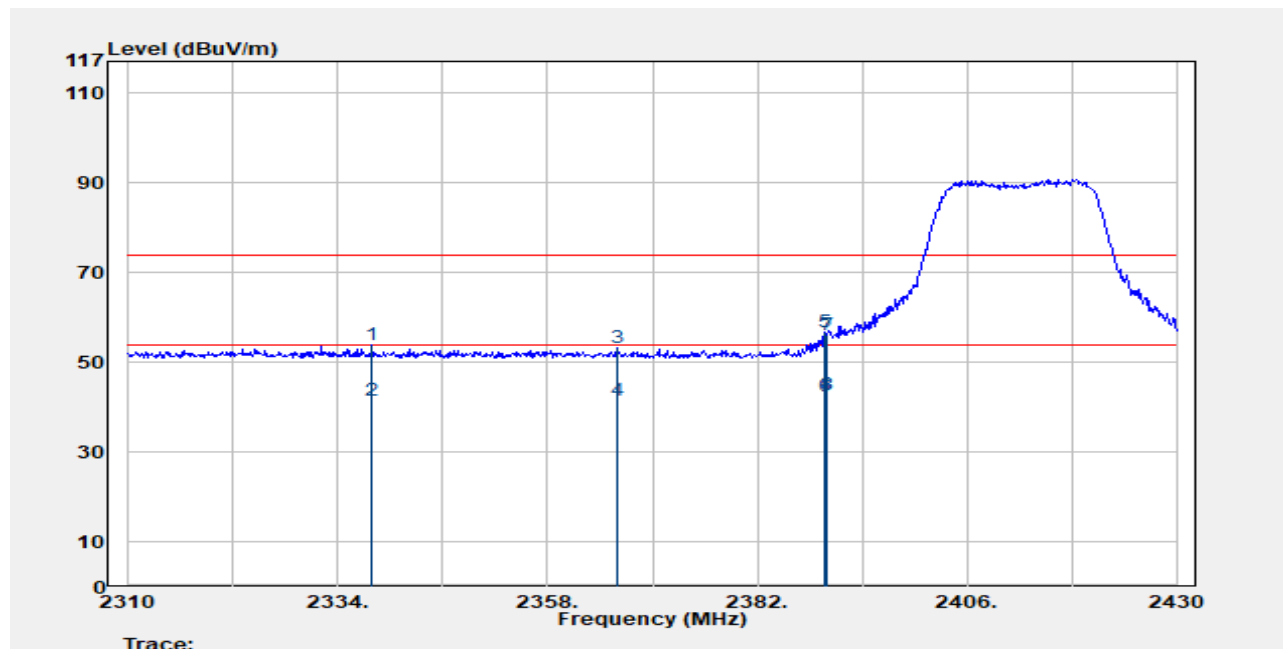
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Report Number :ER/2022/30056  
 Operation Mode :802.11n20  
 Test Frequency :2412 MHz  
 Test Mode :Bandedge CH Low  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Horizontal  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
2337.840	Peak	52.81	1.06	53.87	74.00	-20.13
2337.840	Average	40.34	1.06	41.40	54.00	-12.60
2365.920	Peak	52.05	1.08	53.13	74.00	-20.87
2365.920	Average	40.37	1.08	41.45	54.00	-12.55
2389.680	Peak	55.52	1.08	56.60	74.00	-17.40
2389.680	Average	41.54	1.08	42.62	54.00	-11.38
2390.000	Peak	55.11	1.08	56.19	74.00	-17.81
2390.000	Average	41.83	1.08	42.91	54.00	-11.09

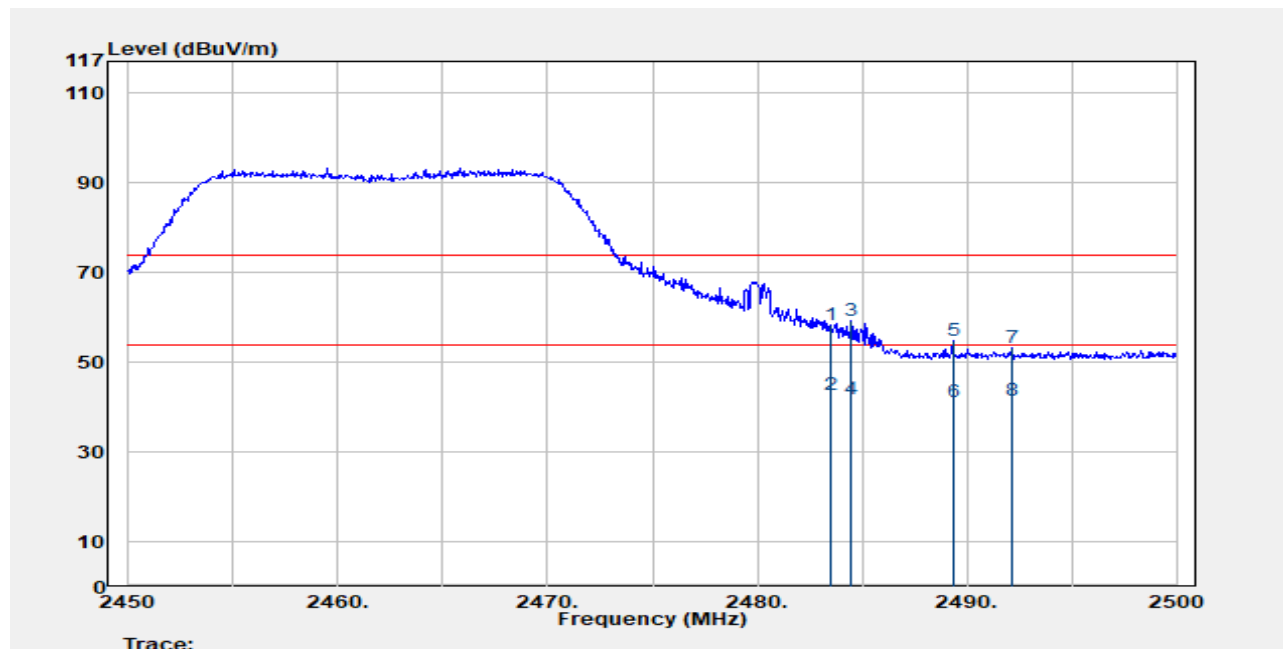
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Report Number :ER/2022/30056  
 Operation Mode :802.11n20  
 Test Frequency :2462 MHz  
 Test Mode :Bandedge CH High  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Vertical  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
2483.500	Peak	57.52	0.76	58.28	74.00	-15.72
2483.500	Average	42.04	0.76	42.80	54.00	-11.20
2484.500	Peak	58.41	0.76	59.17	74.00	-14.83
2484.500	Average	41.25	0.76	42.01	54.00	-11.99
2489.350	Peak	53.94	0.76	54.71	74.00	-19.29
2489.350	Average	40.45	0.76	41.21	54.00	-12.79
2492.150	Peak	52.38	0.77	53.15	74.00	-20.85
2492.150	Average	40.65	0.77	41.42	54.00	-12.58

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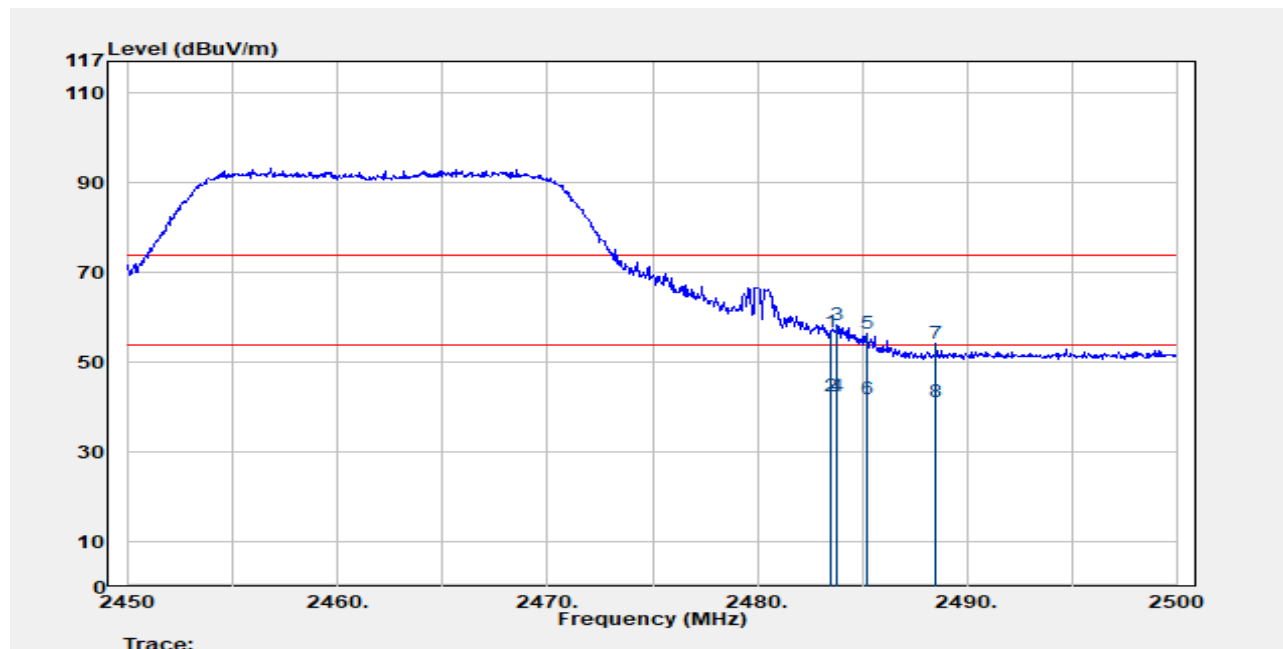
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Report Number :ER/2022/30056  
 Operation Mode :802.11n20  
 Test Frequency :2462 MHz  
 Test Mode :Bandedge CH High  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Horizontal  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
2483.500	Peak	55.92	0.76	56.67	74.00	-17.33
2483.500	Average	41.81	0.76	42.57	54.00	-11.43
2483.800	Peak	57.61	0.76	58.37	74.00	-15.63
2483.800	Average	41.61	0.76	42.37	54.00	-11.63
2485.250	Peak	55.71	0.76	56.47	74.00	-17.53
2485.250	Average	41.04	0.76	41.80	54.00	-12.20
2488.550	Peak	53.30	0.76	54.06	74.00	-19.94
2488.550	Average	40.39	0.76	41.15	54.00	-12.85

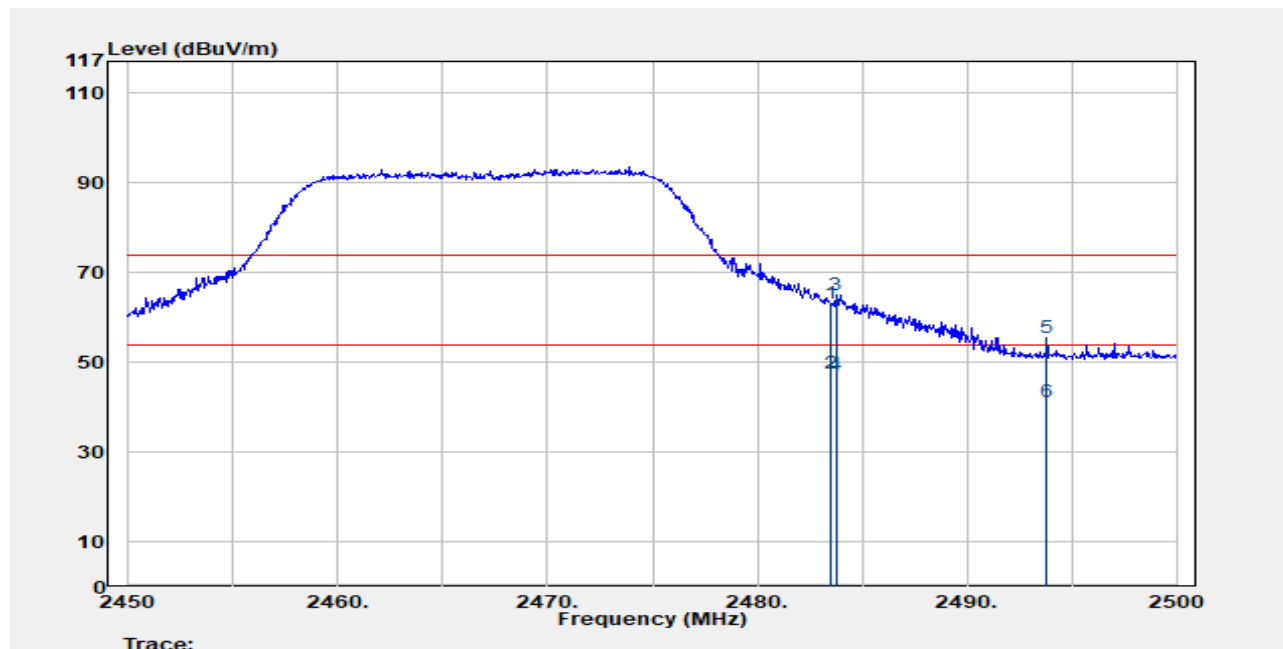
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Report Number :ER/2022/30056  
 Operation Mode :802.11n20  
 Test Frequency :2467 MHz  
 Test Mode :Bandedge CH High  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Vertical  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
2483.500	Peak	62.22	0.76	62.98	74.00	-11.02
2483.500	Average	46.72	0.76	47.48	54.00	-6.52
2483.750	Peak	64.16	0.76	64.92	74.00	-9.08
2483.750	Average	46.40	0.76	47.16	54.00	-6.84
2493.800	Peak	54.65	0.77	55.43	74.00	-18.57
2493.800	Average	40.44	0.77	41.21	54.00	-12.79

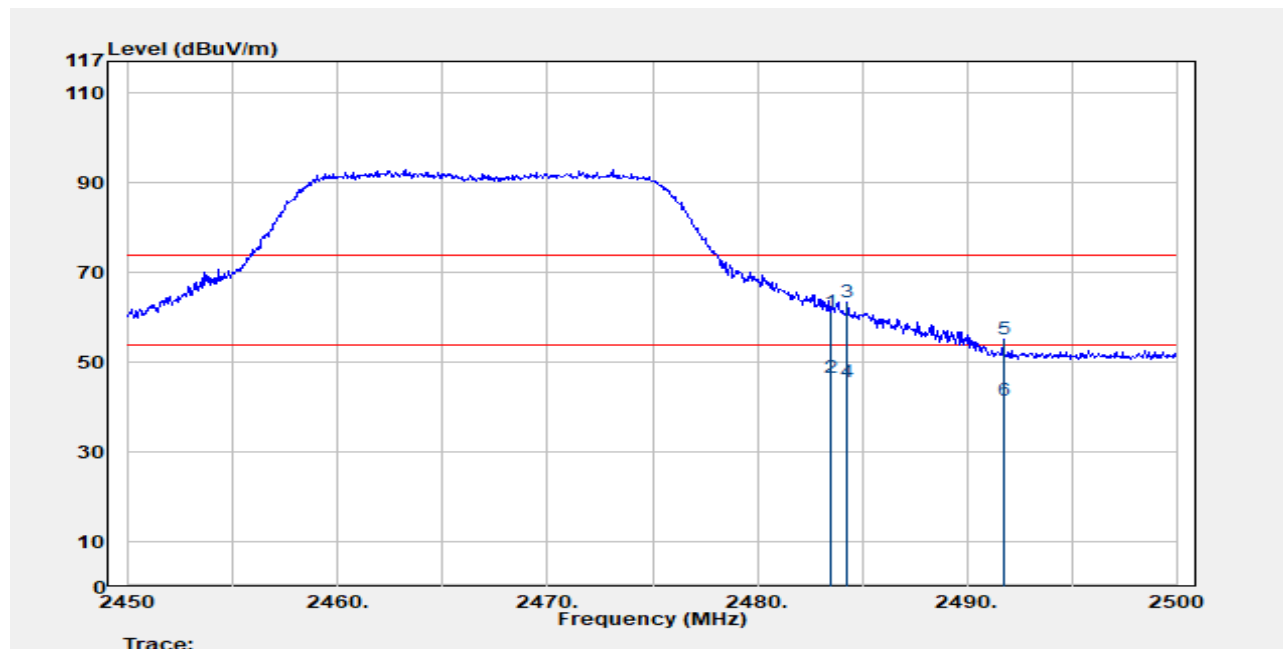
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Report Number :ER/2022/30056  
 Operation Mode :802.11n20  
 Test Frequency :2467 MHz  
 Test Mode :Bandedge CH High  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Horizontal  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
2483.500	Peak	60.47	0.76	61.23	74.00	-12.77
2483.500	Average	45.76	0.76	46.52	54.00	-7.48
2484.300	Peak	62.81	0.76	63.56	74.00	-10.44
2484.300	Average	44.97	0.76	45.73	54.00	-8.27
2491.750	Peak	54.49	0.77	55.26	74.00	-18.74
2491.750	Average	40.74	0.77	41.51	54.00	-12.49

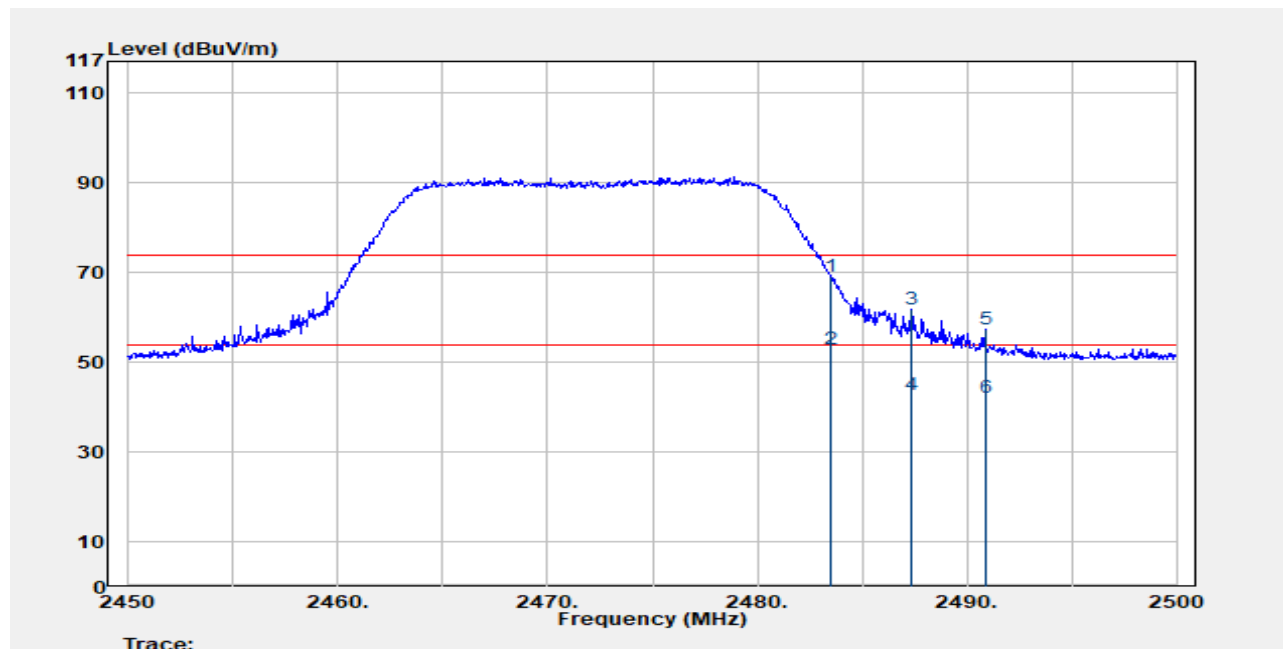
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Report Number :ER/2022/30056  
 Operation Mode :802.11n20  
 Test Frequency :2472 MHz  
 Test Mode :Bandedge CH High  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Vertical  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBuV	dB	dBuV/m	dBuV/m	dB
2483.500	Peak	68.31	0.76	69.07	74.00	-4.93
2483.500	Average	52.18	0.76	52.94	54.00	-1.06
2487.350	Peak	61.18	0.76	61.94	74.00	-12.06
2487.350	Average	42.14	0.76	42.90	54.00	-11.10
2490.900	Peak	56.75	0.77	57.51	74.00	-16.49
2490.900	Average	41.54	0.77	42.31	54.00	-11.69

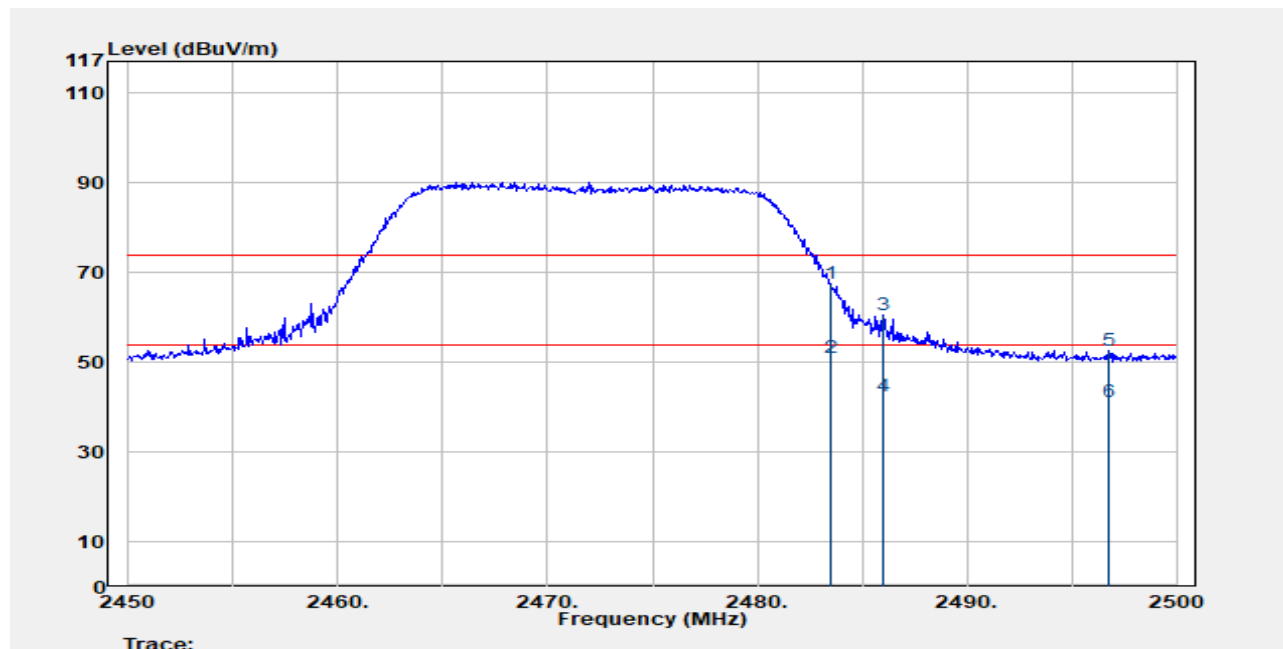
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Report Number :ER/2022/30056  
 Operation Mode :802.11n20  
 Test Frequency :2472 MHz  
 Test Mode :Bandedge CH High  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Horizontal  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBuV	dB	dBuV/m	dBuV/m	dB
2483.500	Peak	66.69	0.76	67.44	74.00	-6.56
2483.500	Average	50.38	0.76	51.14	54.00	-2.86
2486.050	Peak	59.78	0.76	60.54	74.00	-13.46
2486.050	Average	41.63	0.76	42.39	54.00	-11.61
2496.750	Peak	51.85	0.78	52.62	74.00	-21.38
2496.750	Average	40.37	0.78	41.15	54.00	-12.85

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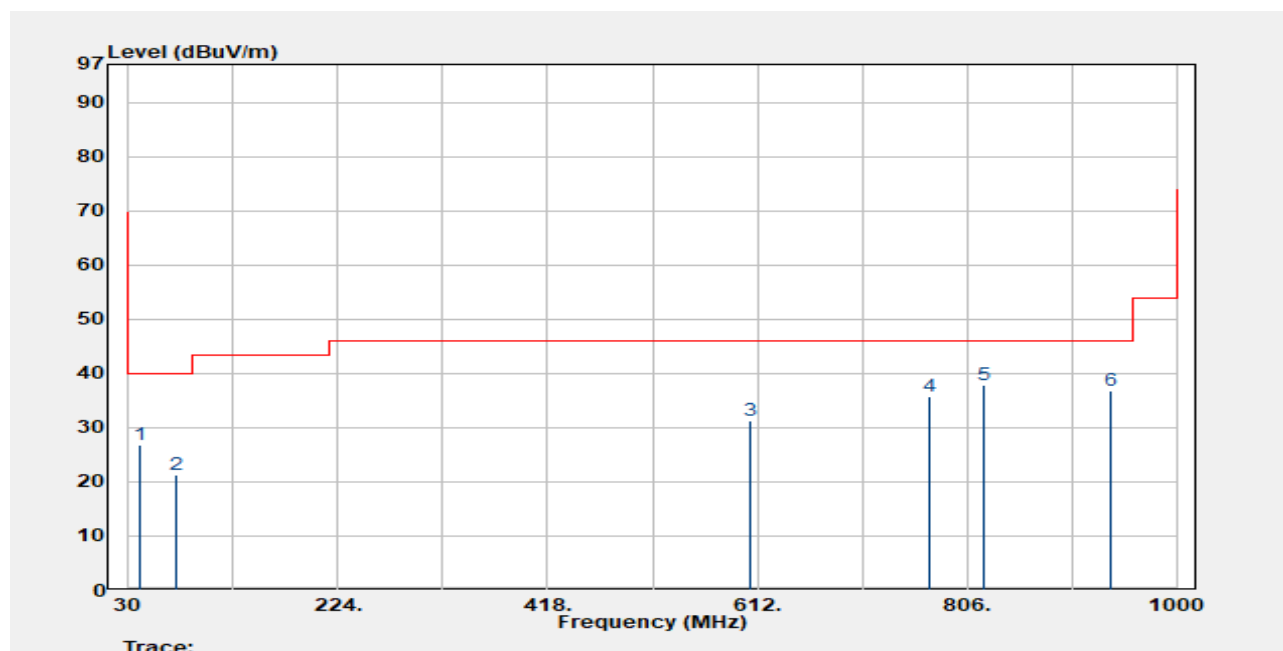
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## 11.6.2 Spurious Emission:

Report Number :ER/2022/30056  
 Operation Mode :802.11g  
 Test Frequency :2442 MHz  
 Test Mode :Tx CH Mid  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Vertical  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
39.700	Peak	35.16	-8.46	26.71	40.00	-13.29
73.650	Peak	32.14	-10.91	21.23	40.00	-18.77
605.210	Peak	30.73	0.49	31.22	46.00	-14.78
771.080	Peak	32.94	2.89	35.83	46.00	-10.17
821.520	Peak	33.98	4.00	37.98	46.00	-8.02
939.860	Peak	31.45	5.46	36.91	46.00	-9.09

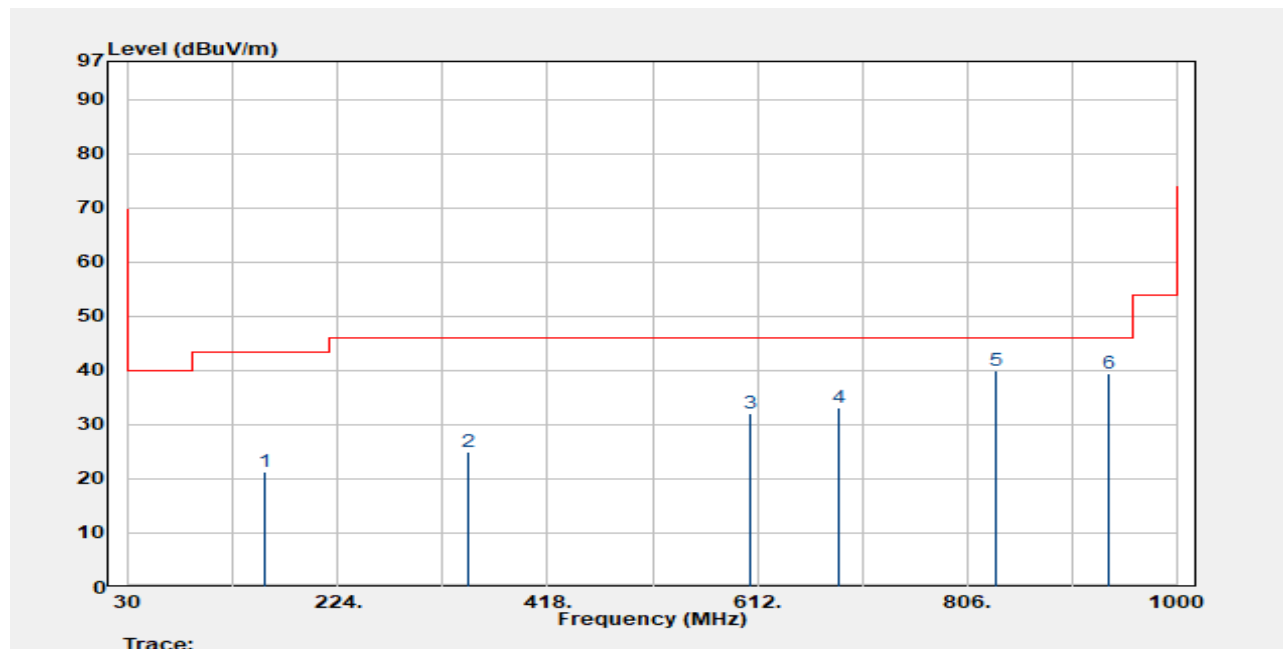
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Report Number :ER/2022/30056  
 Operation Mode :802.11g  
 Test Frequency :2442 MHz  
 Test Mode :Tx CH Mid  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Horizontal  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
156.100	Peak	28.25	-7.07	21.18	43.50	-22.32
345.250	Peak	29.90	-4.89	25.02	46.00	-20.98
605.210	Peak	31.49	0.49	31.99	46.00	-14.01
687.660	Peak	31.76	1.25	33.01	46.00	-12.99
833.160	Peak	35.68	4.34	40.02	46.00	-5.98
937.920	Peak	33.90	5.47	39.37	46.00	-6.63

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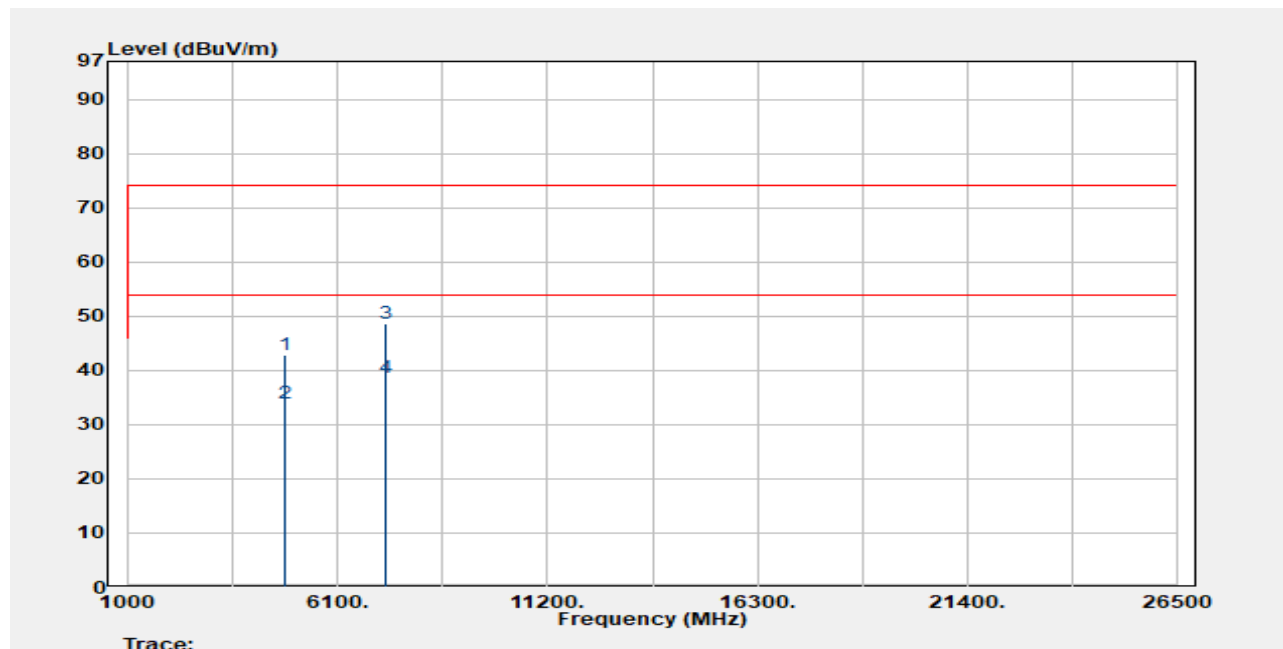
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Report Number :ER/2022/30056  
 Operation Mode :802.11b  
 Test Frequency :2412 MHz  
 Test Mode :Tx CH Low  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Vertical  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
4824.000	Peak	35.05	7.77	42.82	74.00	-31.18
4824.000	Average	26.07	7.77	33.84	54.00	-20.16
7236.000	Peak	34.20	14.37	48.58	74.00	-25.42
7236.000	Average	24.38	14.37	38.75	54.00	-15.25

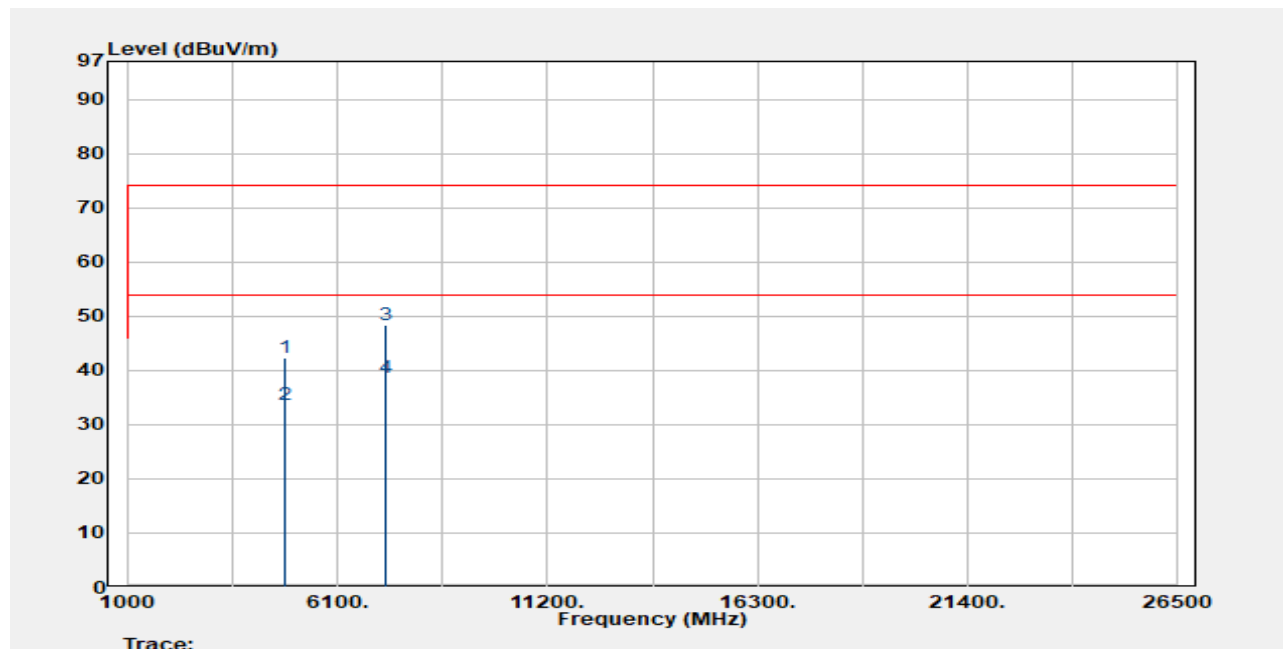
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Report Number :ER/2022/30056  
 Operation Mode :802.11b  
 Test Frequency :2412 MHz  
 Test Mode :Tx CH Low  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Horizontal  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
4824.000	Peak	34.66	7.77	42.43	74.00	-31.57
4824.000	Average	25.99	7.77	33.76	54.00	-20.24
7236.000	Peak	34.09	14.37	48.46	74.00	-25.54
7236.000	Average	24.28	14.37	38.65	54.00	-15.35

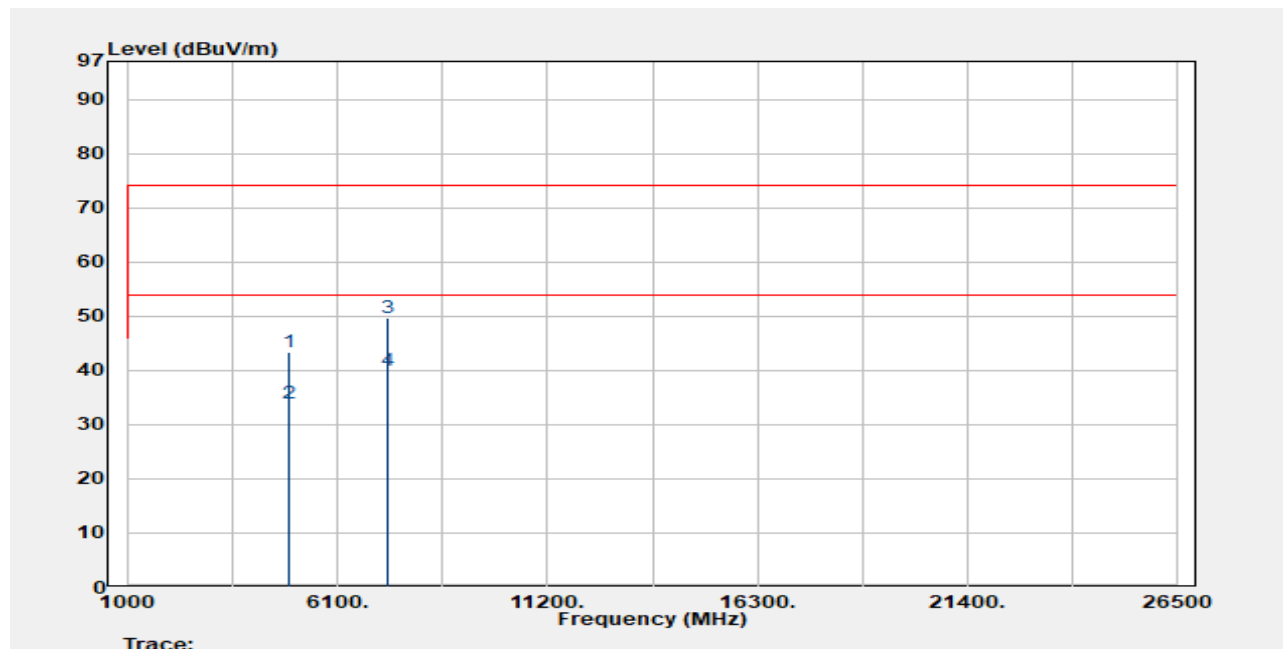
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Report Number :ER/2022/30056  
 Operation Mode :802.11b  
 Test Frequency :2442 MHz  
 Test Mode :Tx CH Mid  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Vertical  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBuV	dB	dBuV/m	dBuV/m	dB
4884.000	Peak	35.71	7.71	43.42	74.00	-30.58
4884.000	Average	26.16	7.71	33.87	54.00	-20.13
7326.000	Peak	34.36	15.34	49.70	74.00	-24.30
7326.000	Average	24.69	15.34	40.03	54.00	-13.97

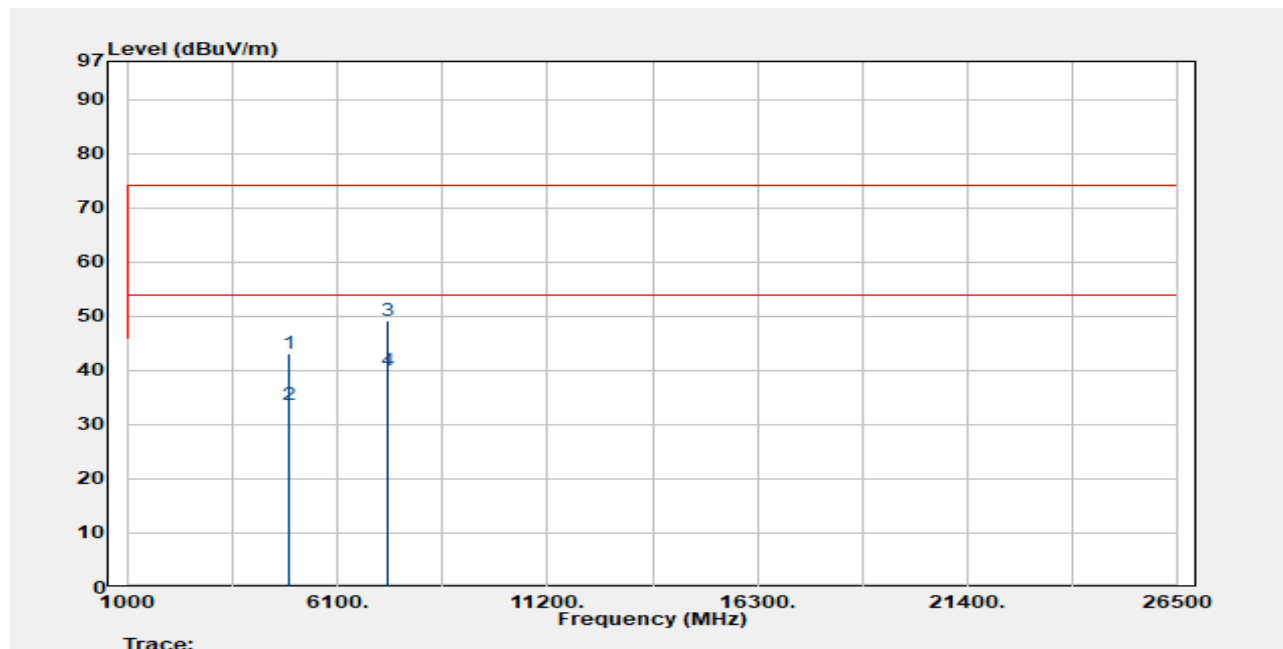
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Report Number :ER/2022/30056  
 Operation Mode :802.11b  
 Test Frequency :2442 MHz  
 Test Mode :Tx CH Mid  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Horizontal  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBuV	dB	dBuV/m	dBuV/m	dB
4884.000	Peak	35.41	7.71	43.12	74.00	-30.88
4884.000	Average	26.05	7.71	33.76	54.00	-20.24
7326.000	Peak	33.85	15.34	49.19	74.00	-24.81
7326.000	Average	24.59	15.34	39.93	54.00	-14.07

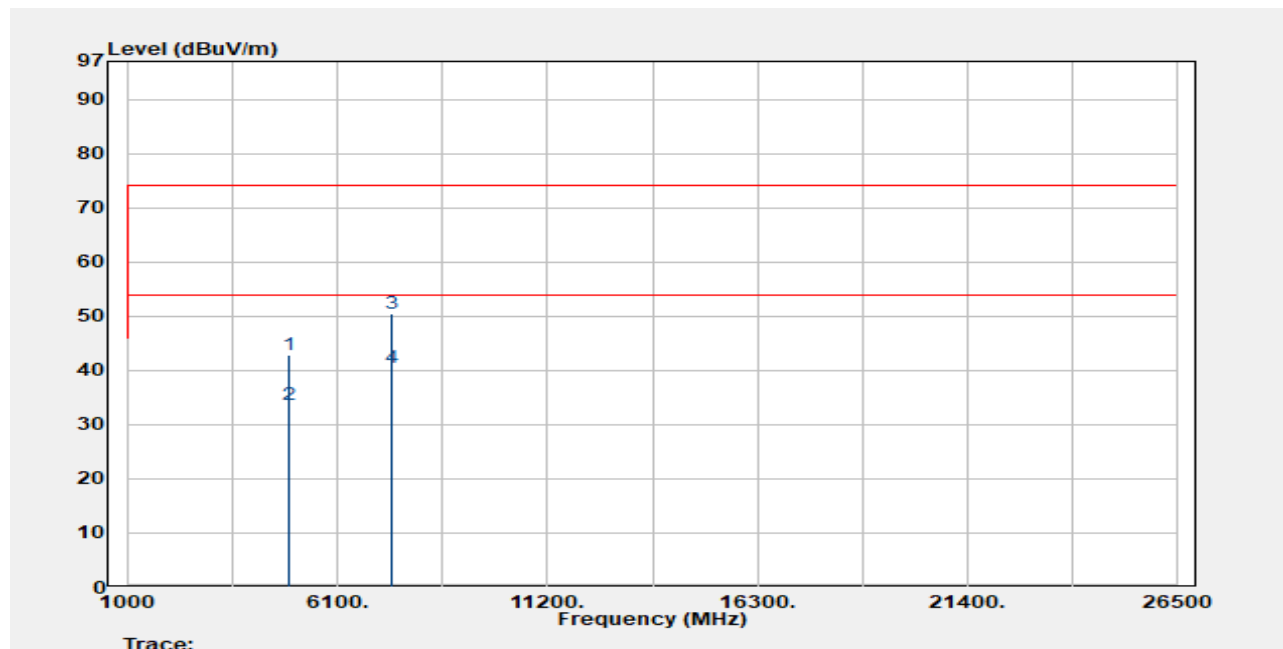
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Report Number :ER/2022/30056  
 Operation Mode :802.11b  
 Test Frequency :2462 MHz  
 Test Mode :Tx CH High  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Vertical  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
4924.000	Peak	34.75	7.97	42.72	74.00	-31.28
4924.000	Average	25.80	7.97	33.77	54.00	-20.23
7386.000	Peak	35.21	15.16	50.37	74.00	-23.63
7386.000	Average	25.34	15.16	40.50	54.00	-13.50

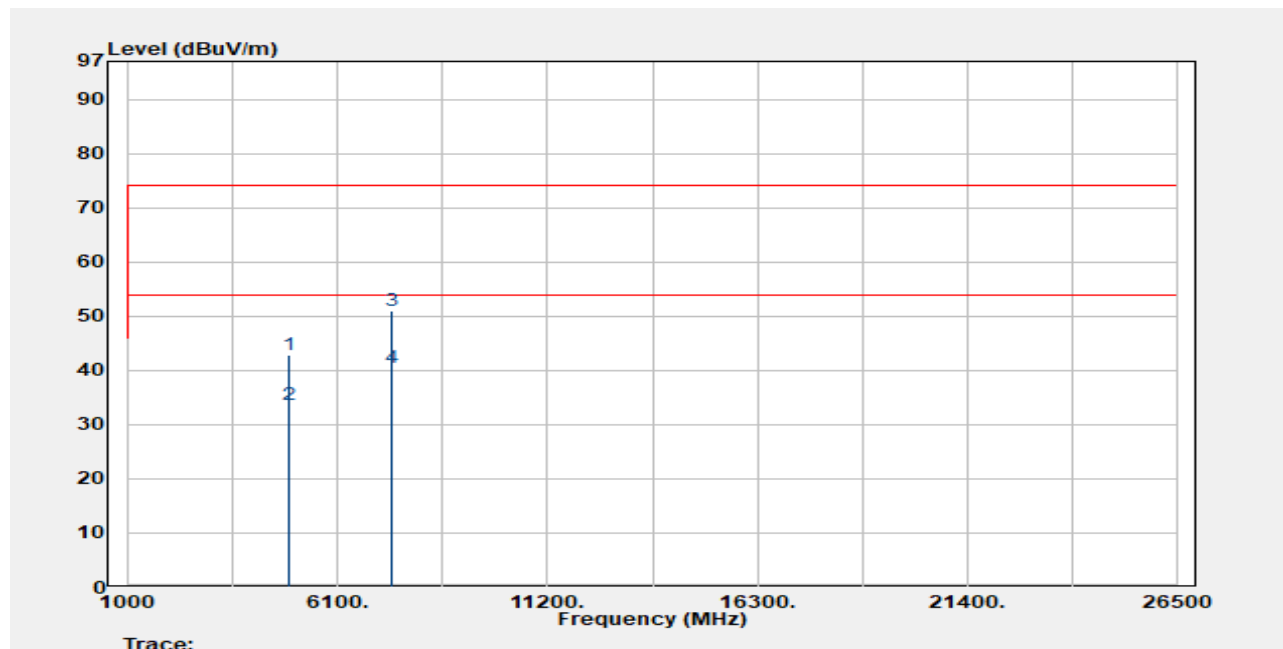
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Report Number :ER/2022/30056  
 Operation Mode :802.11b  
 Test Frequency :2462 MHz  
 Test Mode :Tx CH High  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Horizontal  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBuV	dB	dBuV/m	dBuV/m	dB
4924.000	Peak	34.81	7.97	42.78	74.00	-31.22
4924.000	Average	25.67	7.97	33.64	54.00	-20.36
7386.000	Peak	35.81	15.16	50.97	74.00	-23.03
7386.000	Average	25.27	15.16	40.43	54.00	-13.57

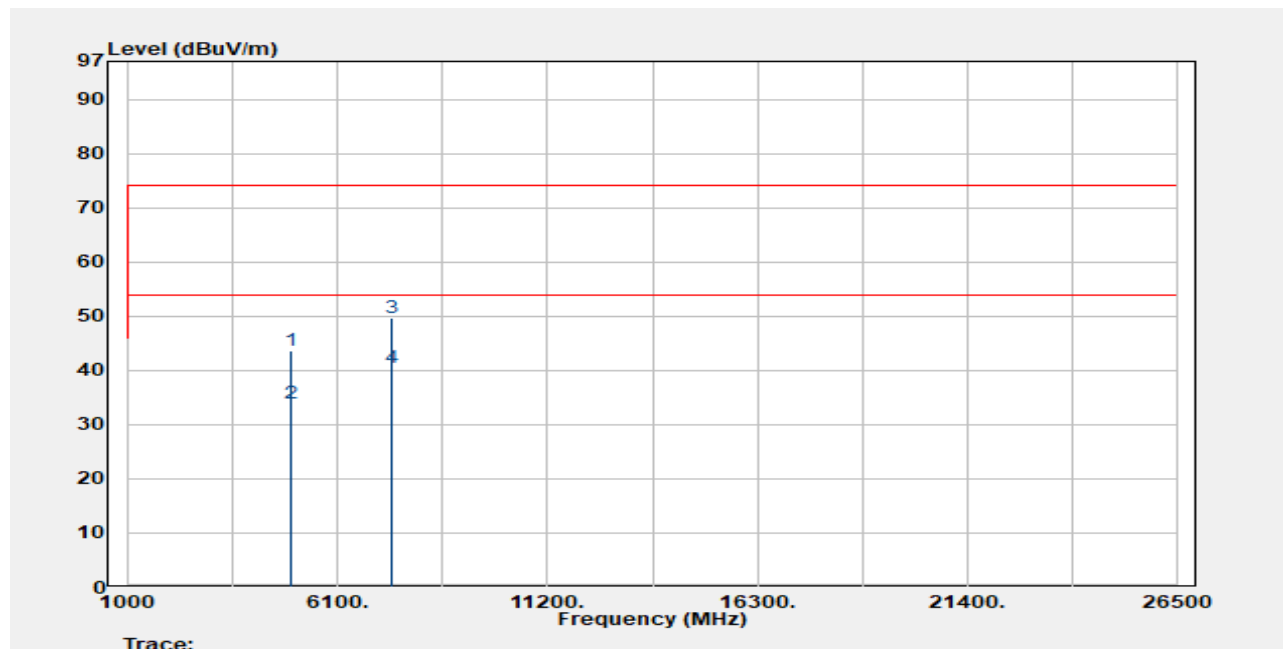
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Report Number :ER/2022/30056  
 Operation Mode :802.11b  
 Test Frequency :2467 MHz  
 Test Mode :Tx CH High  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Vertical  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
4934.000	Peak	35.58	8.12	43.70	74.00	-30.30
4934.000	Average	25.73	8.12	33.85	54.00	-20.15
7401.000	Peak	34.60	15.21	49.81	74.00	-24.19
7401.000	Average	25.18	15.21	40.39	54.00	-13.61

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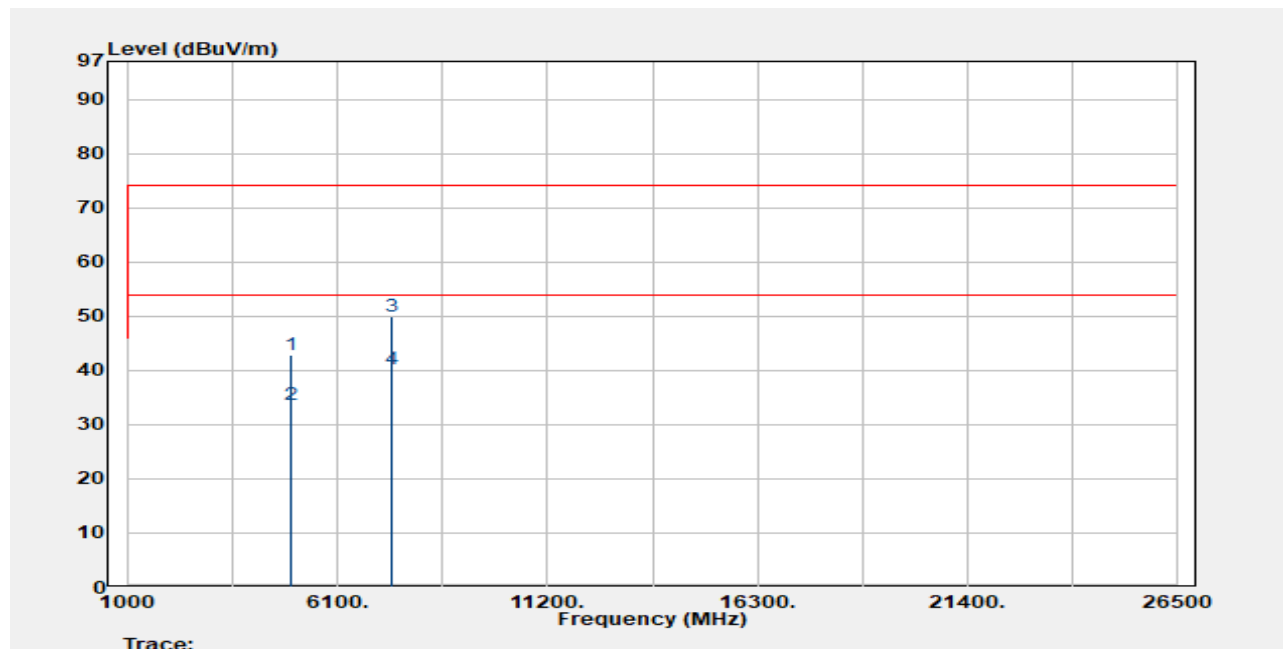
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Report Number :ER/2022/30056  
 Operation Mode :802.11b  
 Test Frequency :2467 MHz  
 Test Mode :Tx CH High  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Horizontal  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBuV	dB	dBuV/m	dBuV/m	dB
4934.000	Peak	34.78	8.12	42.90	74.00	-31.10
4934.000	Average	25.60	8.12	33.72	54.00	-20.28
7401.000	Peak	34.85	15.21	50.06	74.00	-23.94
7401.000	Average	25.11	15.21	40.32	54.00	-13.68

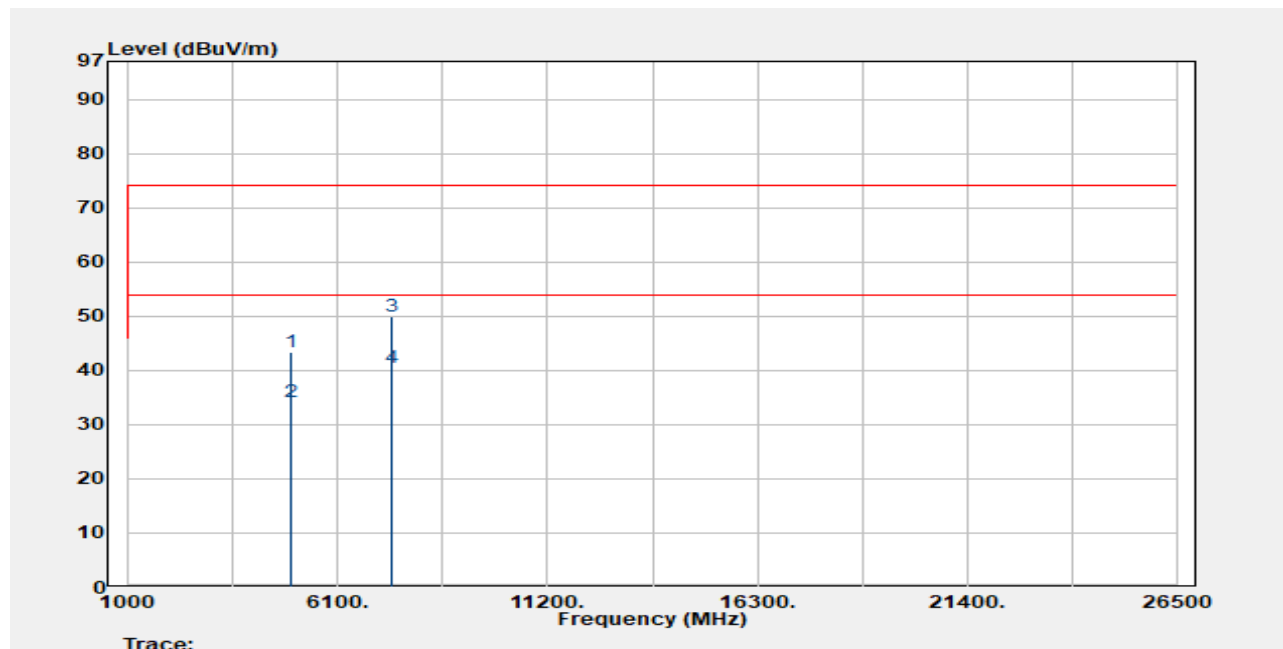
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Report Number :ER/2022/30056  
 Operation Mode :802.11b  
 Test Frequency :2472 MHz  
 Test Mode :Tx CH High  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Vertical  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBuV	dB	dBuV/m	dBuV/m	dB
4944.000	Peak	35.17	8.28	43.44	74.00	-30.56
4944.000	Average	25.81	8.28	34.09	54.00	-19.91
7416.000	Peak	34.65	15.18	49.83	74.00	-24.17
7416.000	Average	25.21	15.18	40.39	54.00	-13.61

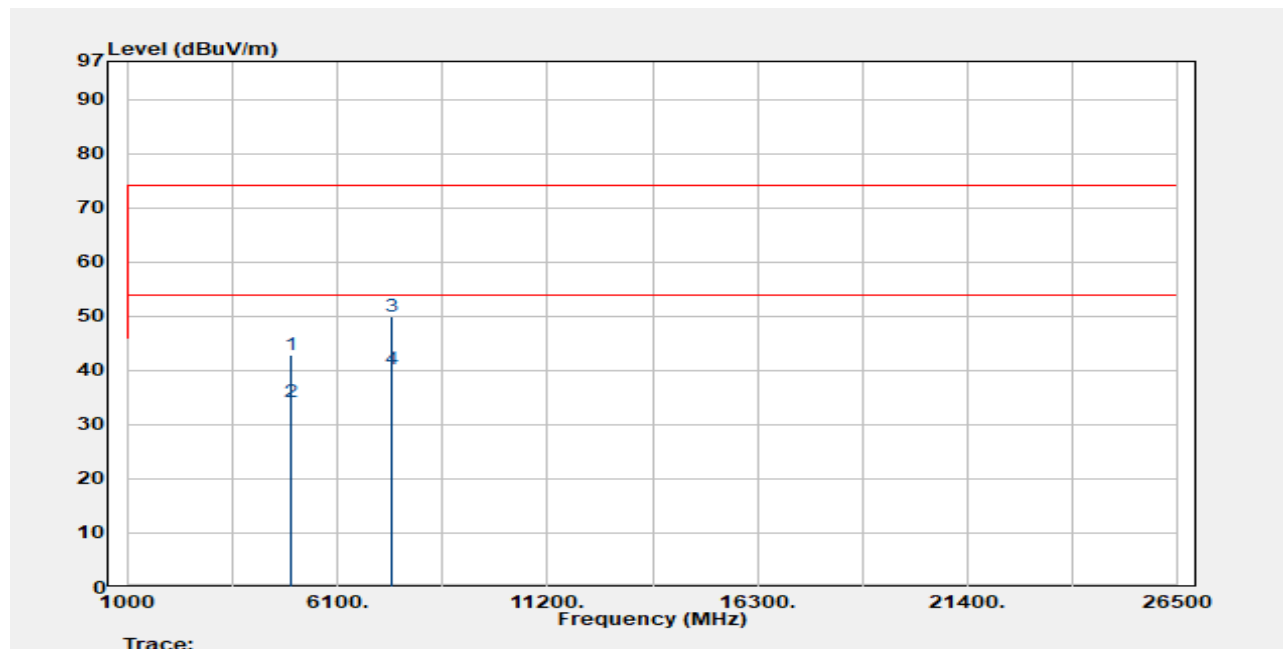
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Report Number :ER/2022/30056  
 Operation Mode :802.11b  
 Test Frequency :2472 MHz  
 Test Mode :Tx CH High  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Horizontal  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
4944.000	Peak	34.50	8.28	42.78	74.00	-31.22
4944.000	Average	25.77	8.28	34.05	54.00	-19.95
7416.000	Peak	34.87	15.18	50.06	74.00	-23.94
7416.000	Average	25.16	15.18	40.34	54.00	-13.66

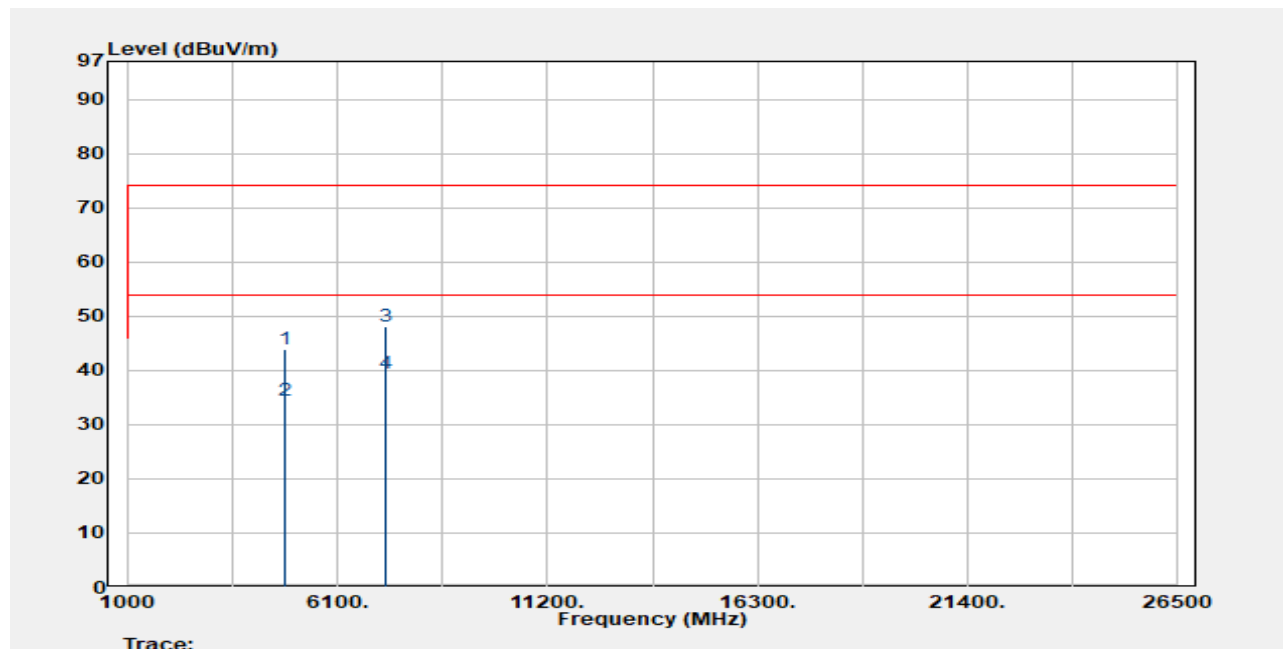
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Report Number :ER/2022/30056  
 Operation Mode :802.11g  
 Test Frequency :2412 MHz  
 Test Mode :Tx CH Low  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Vertical  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
4824.000	Peak	36.07	7.77	43.85	74.00	-30.15
4824.000	Average	26.57	7.77	34.34	54.00	-19.66
7236.000	Peak	33.85	14.37	48.23	74.00	-25.77
7236.000	Average	24.99	14.37	39.36	54.00	-14.64

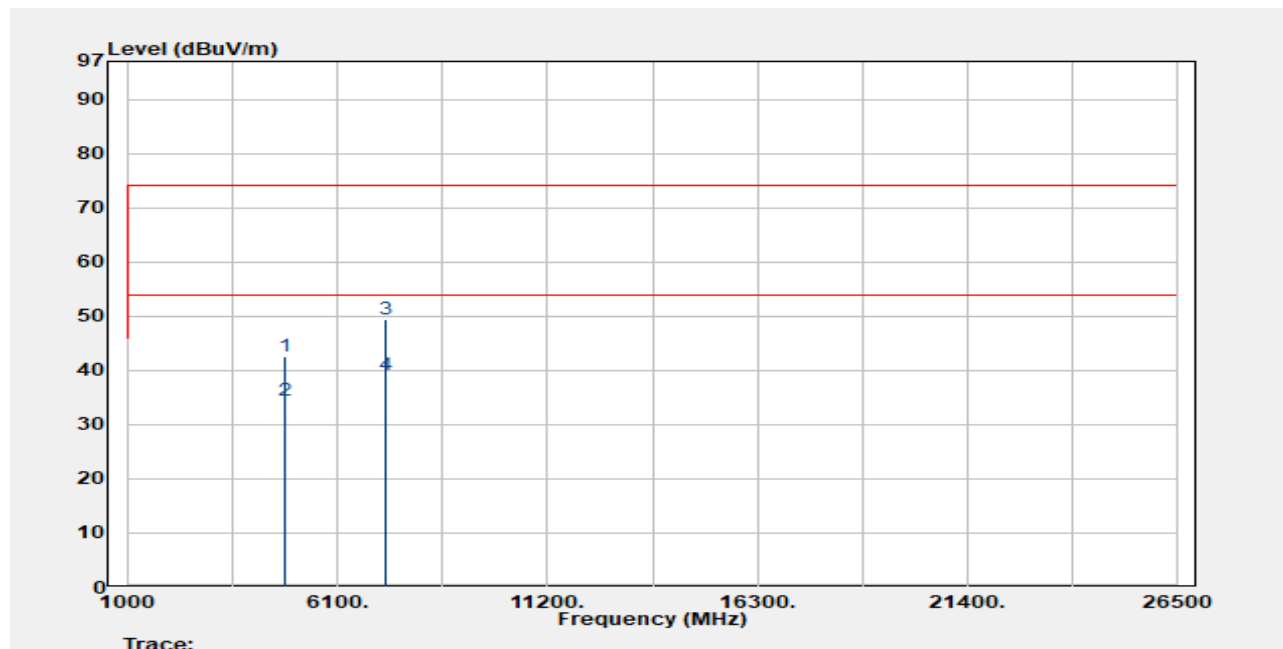
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Report Number :ER/2022/30056  
 Operation Mode :802.11g  
 Test Frequency :2412 MHz  
 Test Mode :Tx CH Low  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Horizontal  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
4824.000	Peak	34.71	7.77	42.49	74.00	-31.51
4824.000	Average	26.59	7.77	34.36	54.00	-19.64
7236.000	Peak	34.95	14.37	49.32	74.00	-24.68
7236.000	Average	24.82	14.37	39.19	54.00	-14.81

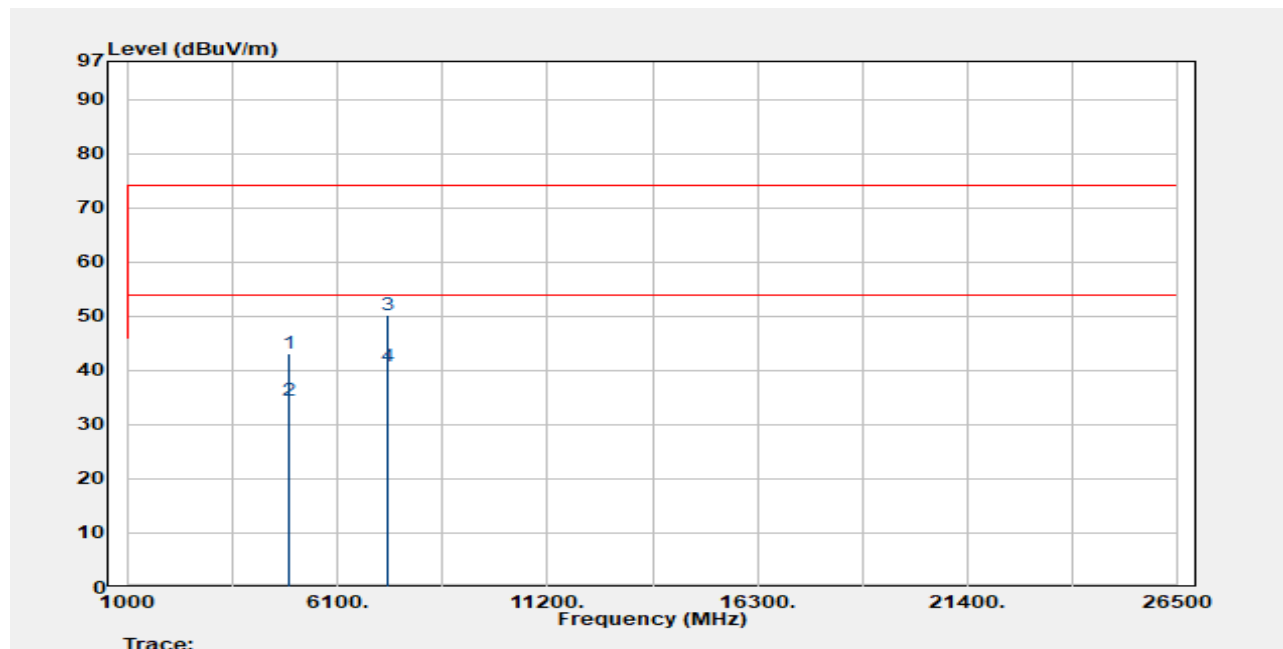
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Report Number :ER/2022/30056  
Operation Mode :802.11g  
Test Frequency :2442 MHz  
Test Mode :Tx CH Mid  
EUT Pol :E1 Plane

Test Site :SAC 3  
Test Date :2022-04-06  
Temp./Humi. :20.5/66  
Antenna Pol. :Vertical  
Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
4884.000	Peak	35.35	7.71	43.06	74.00	-30.94
4884.000	Average	26.73	7.71	34.44	54.00	-19.56
7326.000	Peak	34.85	15.34	50.19	74.00	-23.81
7326.000	Average	25.28	15.34	40.62	54.00	-13.38

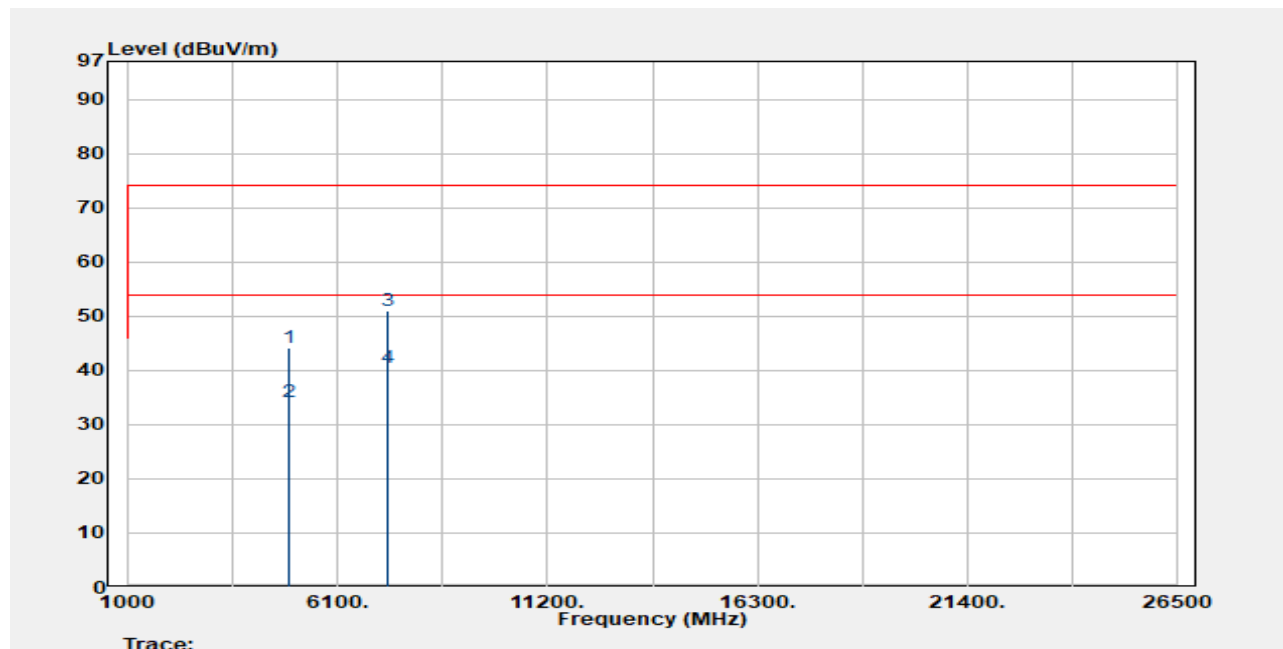
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Report Number :ER/2022/30056  
 Operation Mode :802.11g  
 Test Frequency :2442 MHz  
 Test Mode :Tx CH Mid  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Horizontal  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
4884.000	Peak	36.41	7.71	44.13	74.00	-29.87
4884.000	Average	26.59	7.71	34.30	54.00	-19.70
7326.000	Peak	35.61	15.34	50.95	74.00	-23.05
7326.000	Average	25.18	15.34	40.52	54.00	-13.48

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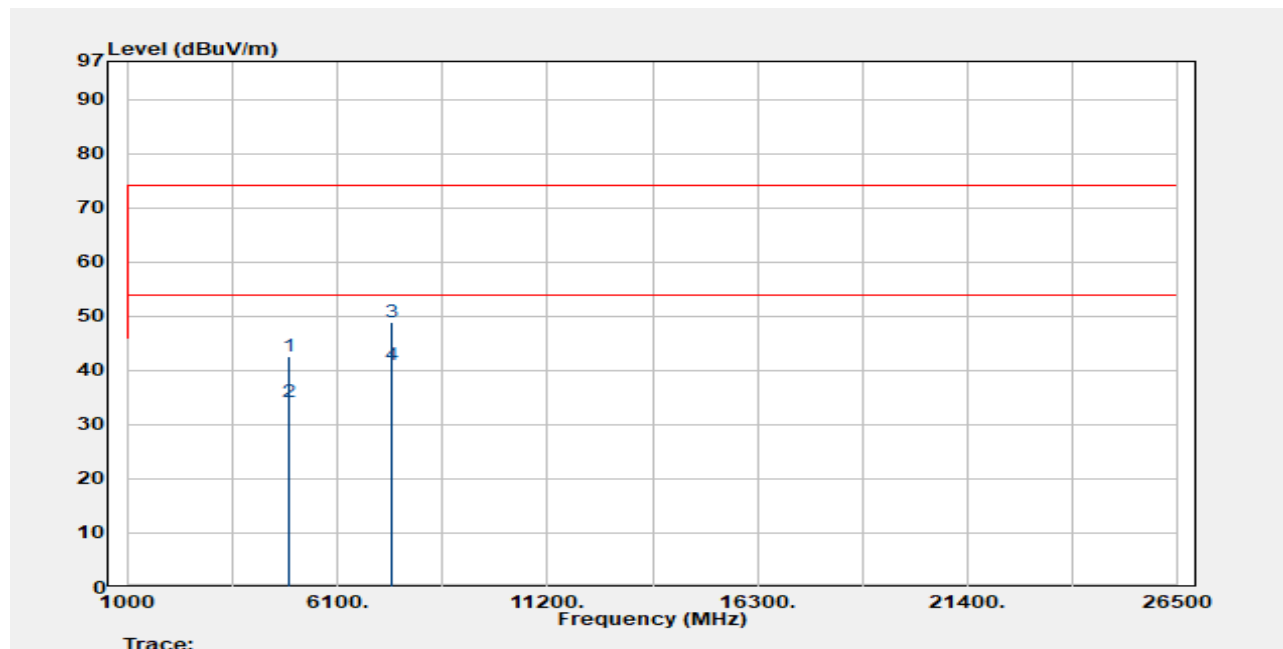
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Report Number :ER/2022/30056  
 Operation Mode :802.11g  
 Test Frequency :2462 MHz  
 Test Mode :Tx CH High  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Vertical  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
4924.000	Peak	34.66	7.97	42.62	74.00	-31.38
4924.000	Average	26.33	7.97	34.30	54.00	-19.70
7386.000	Peak	33.76	15.16	48.92	74.00	-25.08
7386.000	Average	25.79	15.16	40.95	54.00	-13.05

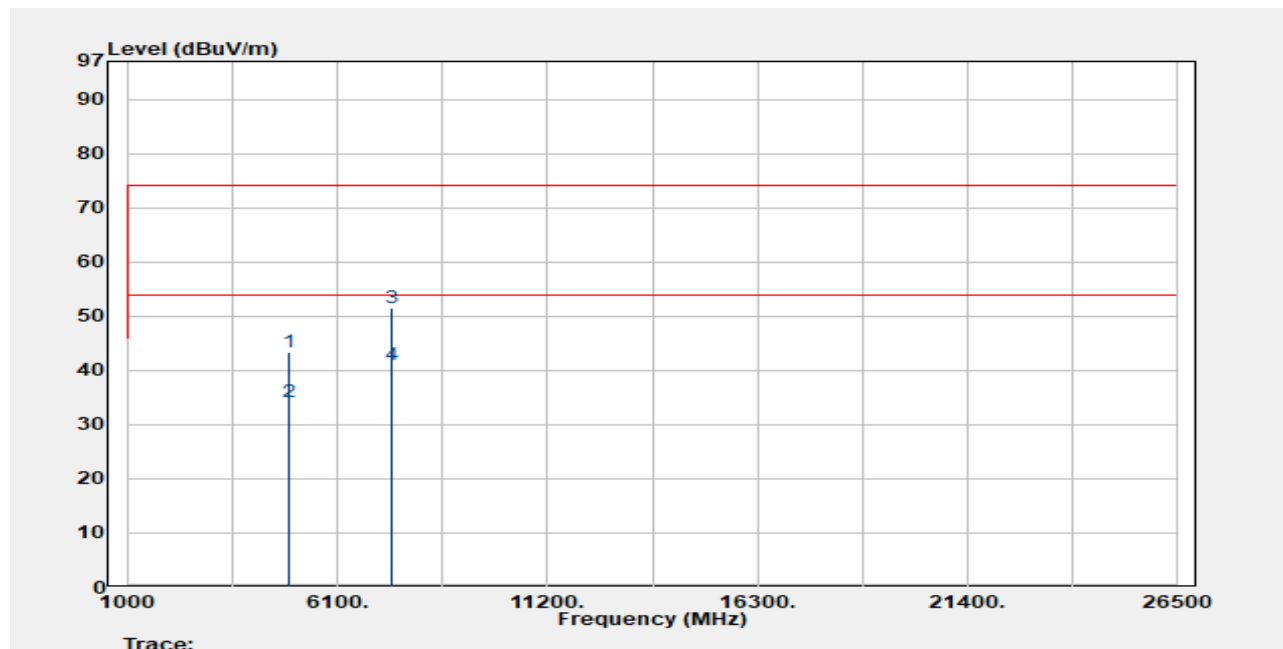
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Report Number :ER/2022/30056  
 Operation Mode :802.11g  
 Test Frequency :2462 MHz  
 Test Mode :Tx CH High  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Horizontal  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBuV	dB	dBuV/m	dBuV/m	dB
4924.000	Peak	35.42	7.97	43.39	74.00	-30.61
4924.000	Average	26.22	7.97	34.19	54.00	-19.81
7386.000	Peak	36.47	15.16	51.63	74.00	-22.37
7386.000	Average	25.81	15.16	40.97	54.00	-13.03

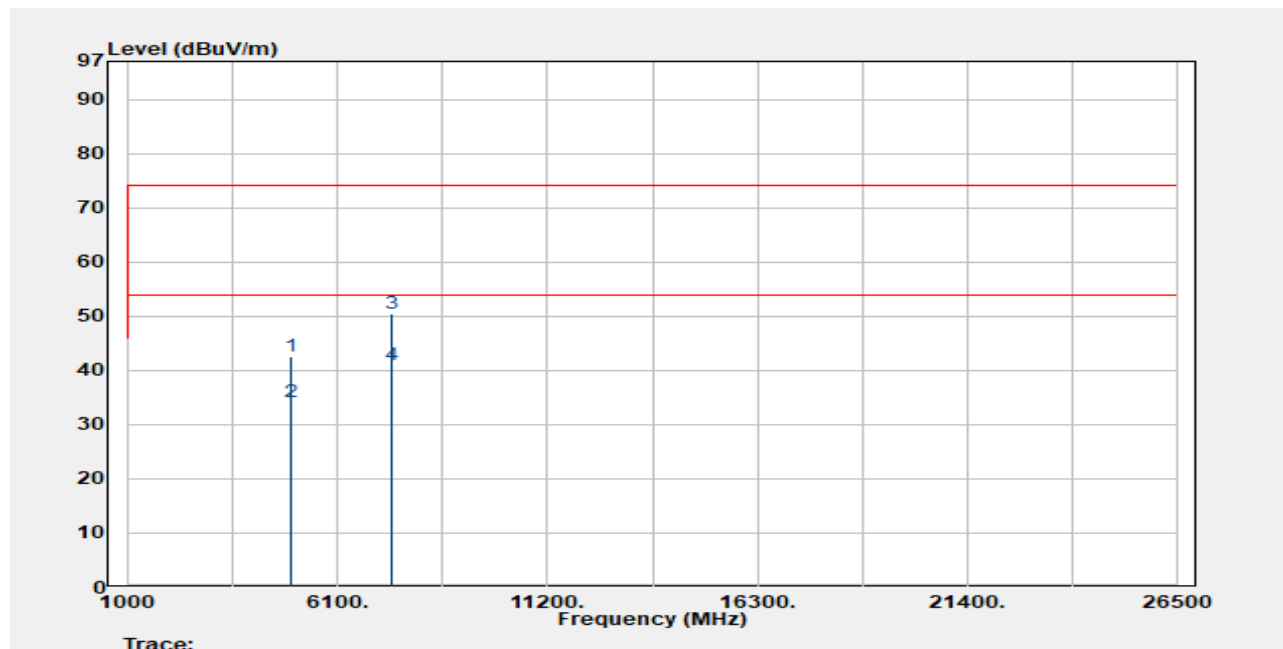
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Report Number :ER/2022/30056  
 Operation Mode :802.11g  
 Test Frequency :2467 MHz  
 Test Mode :Tx CH High  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Vertical  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBuV	dB	dBuV/m	dBuV/m	dB
4934.000	Peak	34.39	8.12	42.51	74.00	-31.49
4934.000	Average	26.17	8.12	34.29	54.00	-19.71
7401.000	Peak	35.39	15.21	50.59	74.00	-23.41
7401.000	Average	25.79	15.21	41.00	54.00	-13.00

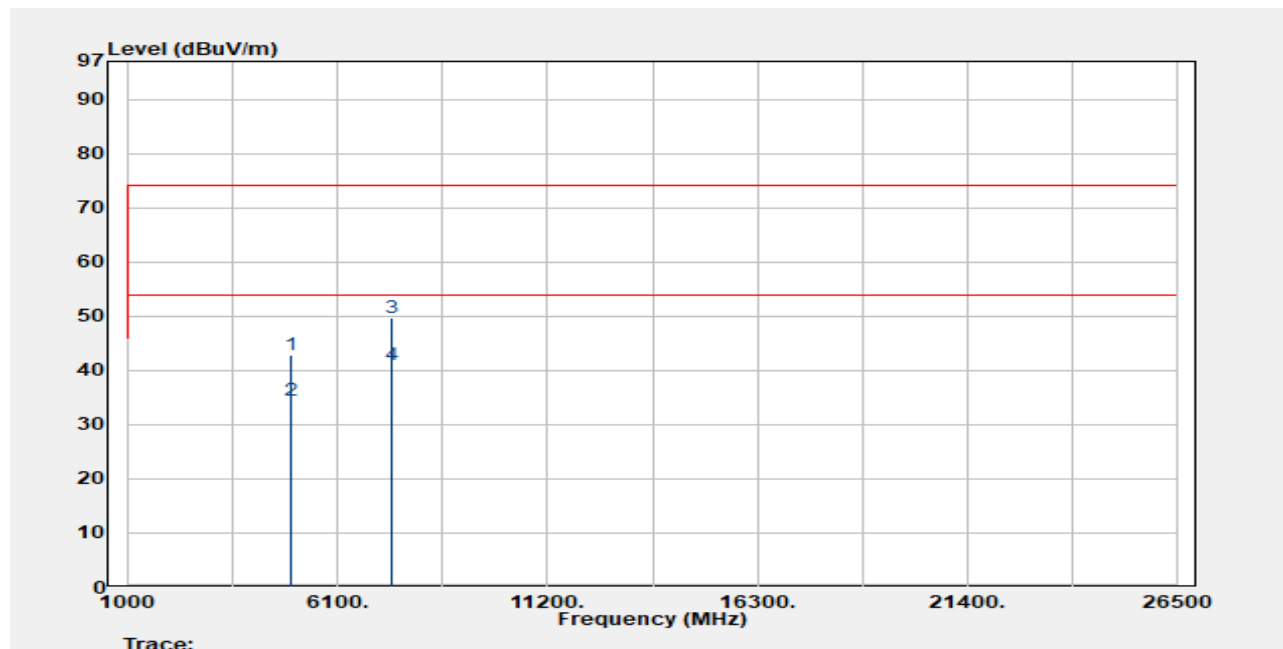
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Report Number :ER/2022/30056  
 Operation Mode :802.11g  
 Test Frequency :2467 MHz  
 Test Mode :Tx CH High  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Horizontal  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBuV	dB	dBuV/m	dBuV/m	dB
4934.000	Peak	34.66	8.12	42.78	74.00	-31.22
4934.000	Average	26.27	8.12	34.39	54.00	-19.61
7401.000	Peak	34.42	15.21	49.63	74.00	-24.37
7401.000	Average	25.74	15.21	40.95	54.00	-13.05

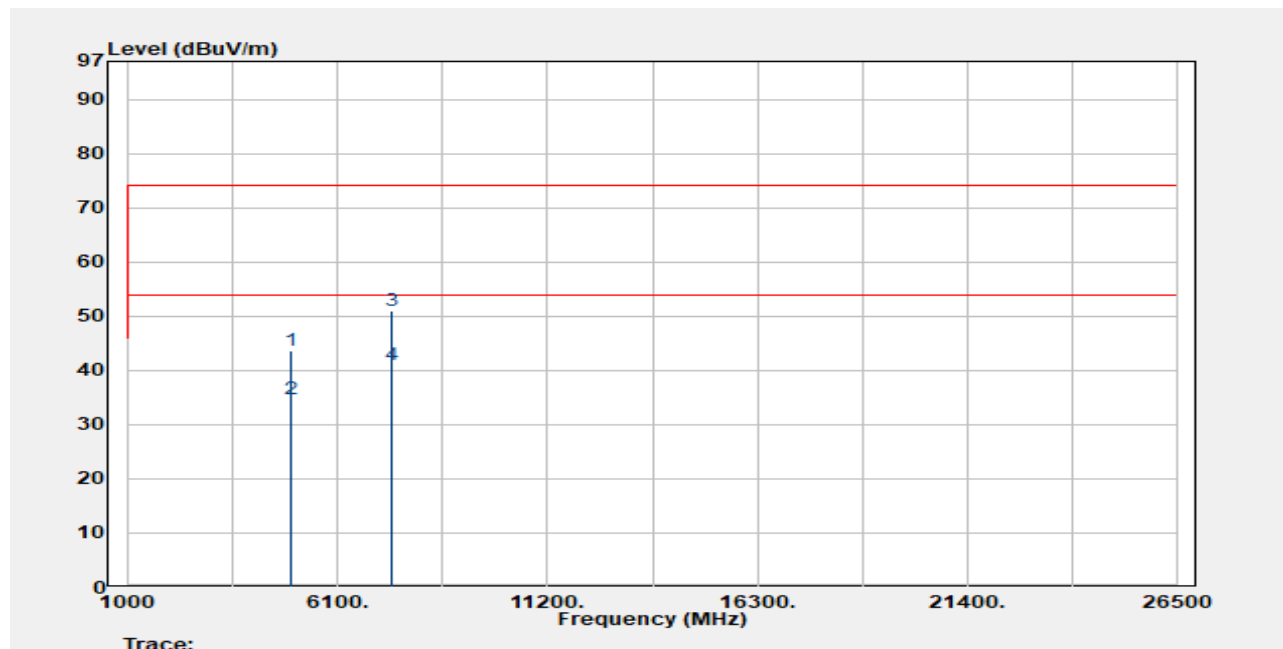
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Report Number :ER/2022/30056  
 Operation Mode :802.11g  
 Test Frequency :2472 MHz  
 Test Mode :Tx CH High  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Vertical  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
4944.000	Peak	35.36	8.28	43.64	74.00	-30.36
4944.000	Average	26.29	8.28	34.57	54.00	-19.43
7416.000	Peak	35.90	15.18	51.09	74.00	-22.91
7416.000	Average	25.71	15.18	40.89	54.00	-13.11

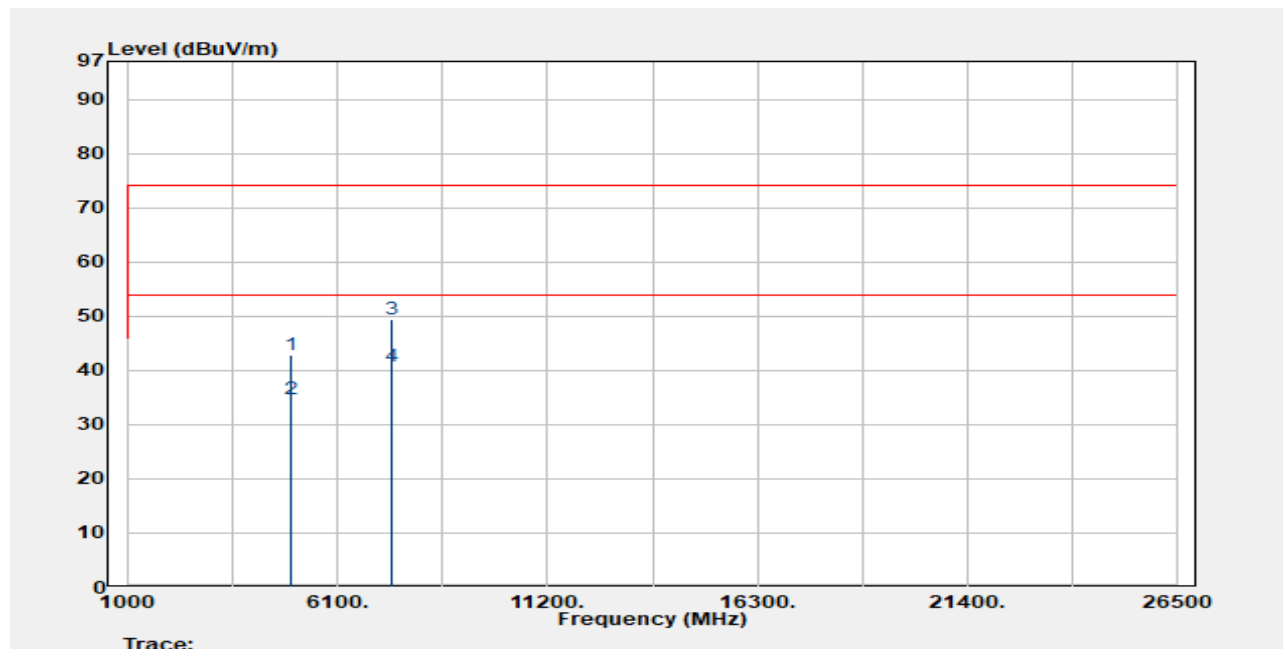
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Report Number :ER/2022/30056  
 Operation Mode :802.11g  
 Test Frequency :2472 MHz  
 Test Mode :Tx CH High  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Horizontal  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
4944.000	Peak	34.50	8.28	42.77	74.00	-31.23
4944.000	Average	26.38	8.28	34.66	54.00	-19.34
7416.000	Peak	34.22	15.18	49.40	74.00	-24.60
7416.000	Average	25.69	15.18	40.87	54.00	-13.13

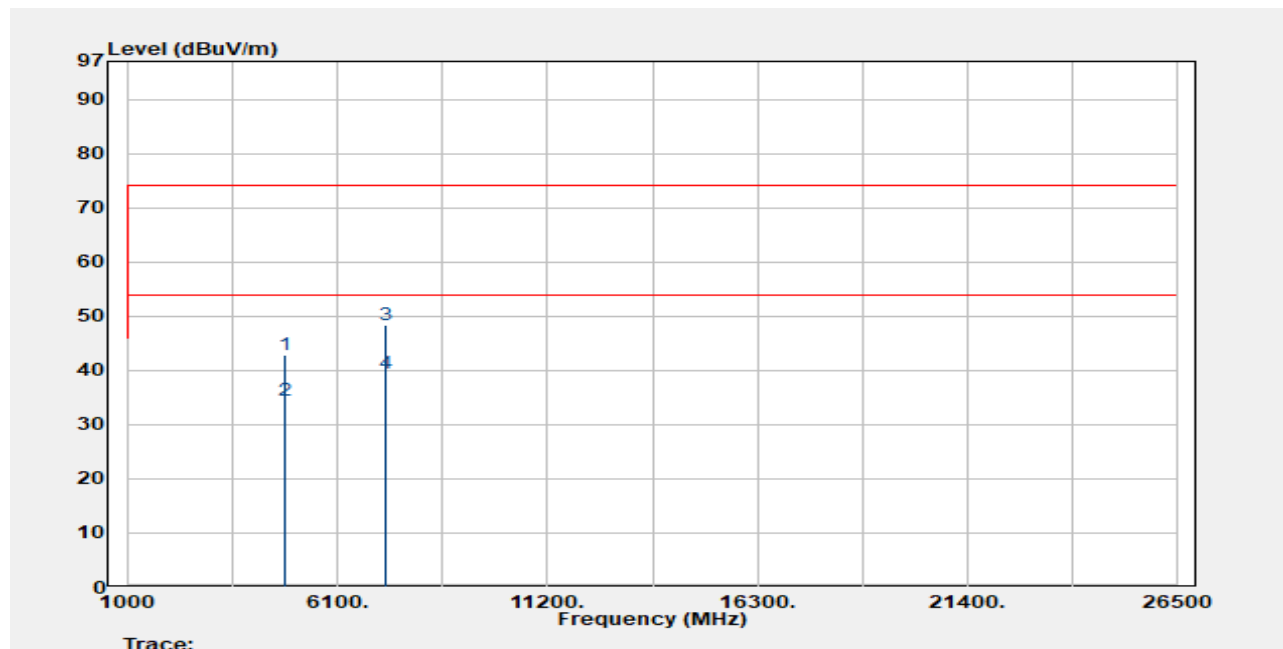
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Report Number :ER/2022/30056  
 Operation Mode :802.11n20  
 Test Frequency :2412 MHz  
 Test Mode :Tx CH Low  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Vertical  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
4824.000	Peak	35.05	7.77	42.82	74.00	-31.18
4824.000	Average	26.59	7.77	34.36	54.00	-19.64
7236.000	Peak	33.93	14.37	48.31	74.00	-25.69
7236.000	Average	25.07	14.37	39.44	54.00	-14.56

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

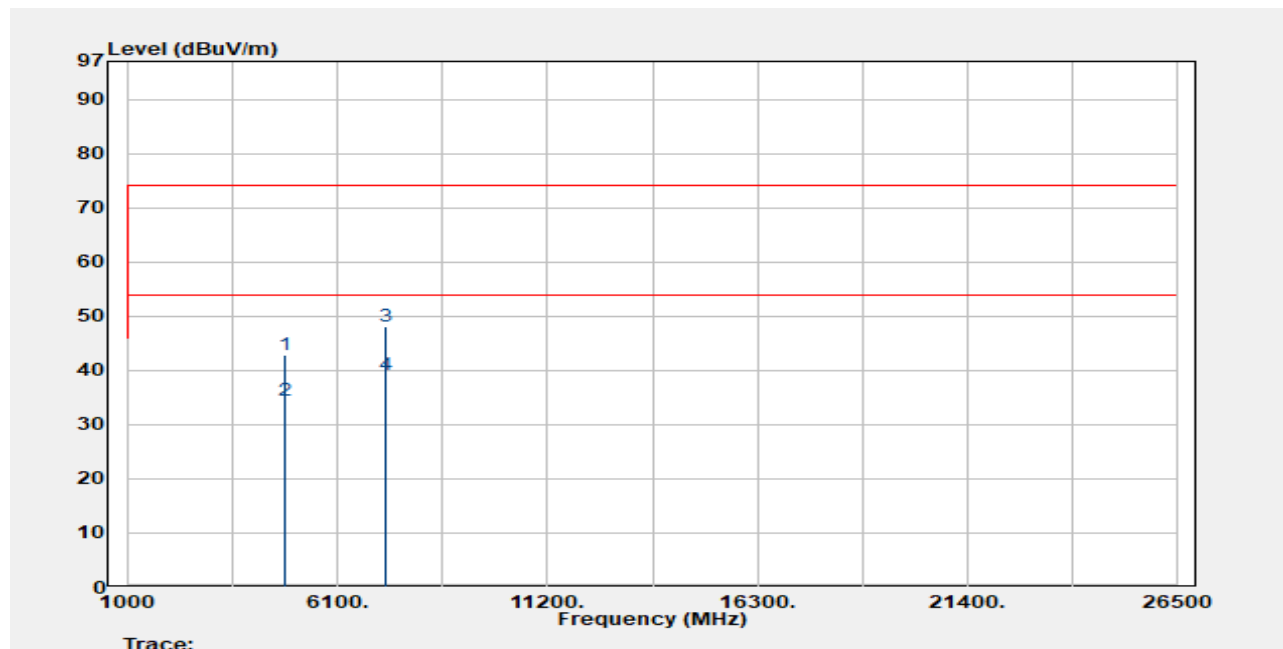
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Report Number :ER/2022/30056  
 Operation Mode :802.11n20  
 Test Frequency :2412 MHz  
 Test Mode :Tx CH Low  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Horizontal  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBuV	dB	dBuV/m	dBuV/m	dB
4824.000	Peak	35.19	7.77	42.96	74.00	-31.04
4824.000	Average	26.64	7.77	34.41	54.00	-19.59
7236.000	Peak	33.72	14.37	48.09	74.00	-25.91
7236.000	Average	24.88	14.37	39.25	54.00	-14.75

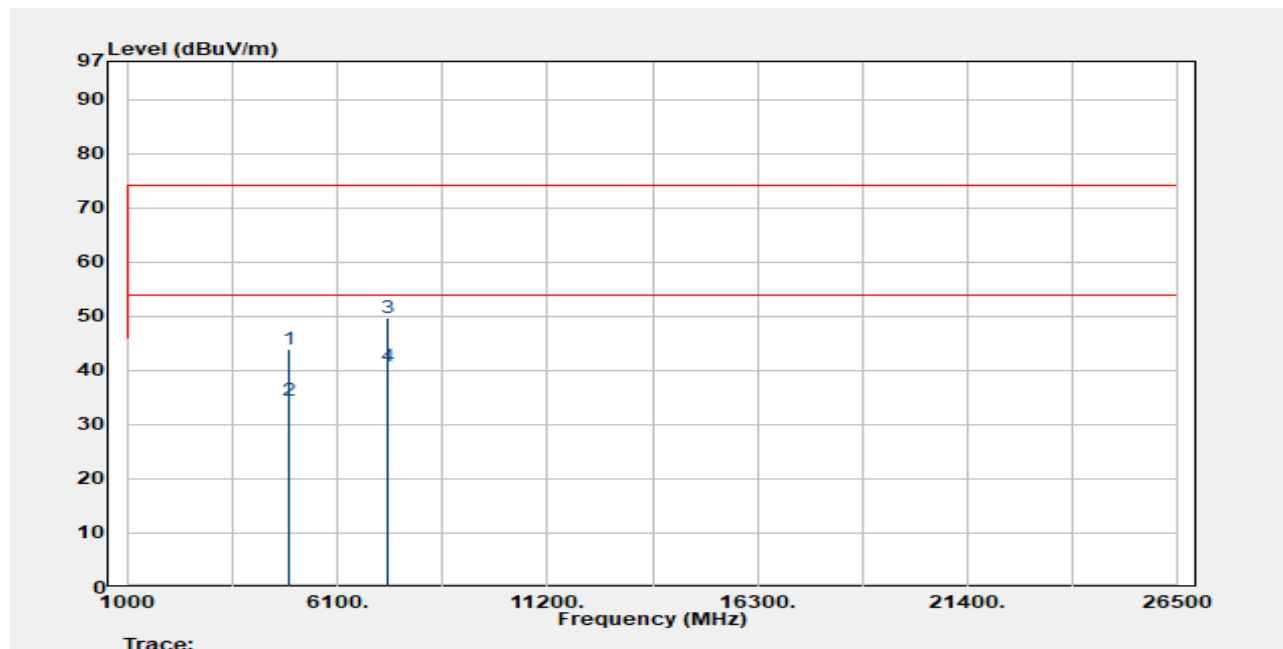
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Report Number :ER/2022/30056  
 Operation Mode :802.11n20  
 Test Frequency :2442 MHz  
 Test Mode :Tx CH Mid  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Vertical  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBuV	dB	dBuV/m	dBuV/m	dB
4884.000	Peak	36.28	7.71	43.99	74.00	-30.01
4884.000	Average	26.79	7.71	34.50	54.00	-19.50
7326.000	Peak	34.22	15.34	49.56	74.00	-24.44
7326.000	Average	25.40	15.34	40.74	54.00	-13.26

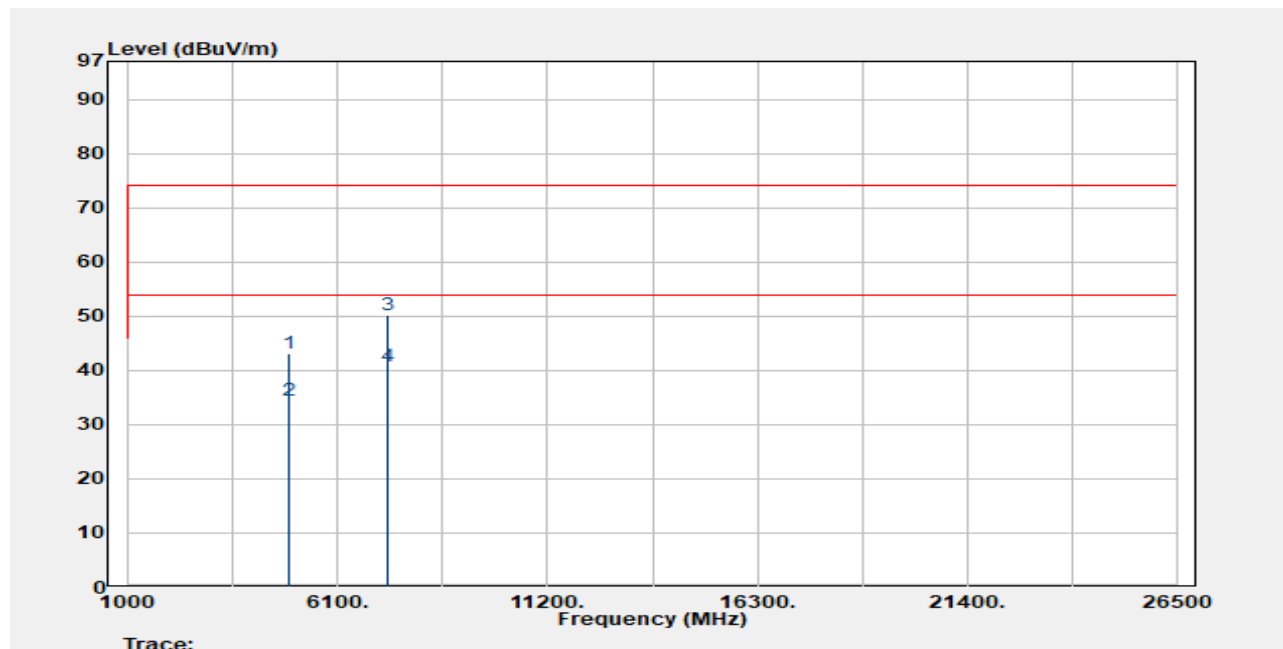
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Report Number :ER/2022/30056  
 Operation Mode :802.11n20  
 Test Frequency :2442 MHz  
 Test Mode :Tx CH Mid  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Horizontal  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
4884.000	Peak	35.28	7.71	42.99	74.00	-31.01
4884.000	Average	26.76	7.71	34.47	54.00	-19.53
7326.000	Peak	34.91	15.34	50.25	74.00	-23.75
7326.000	Average	25.31	15.34	40.65	54.00	-13.35

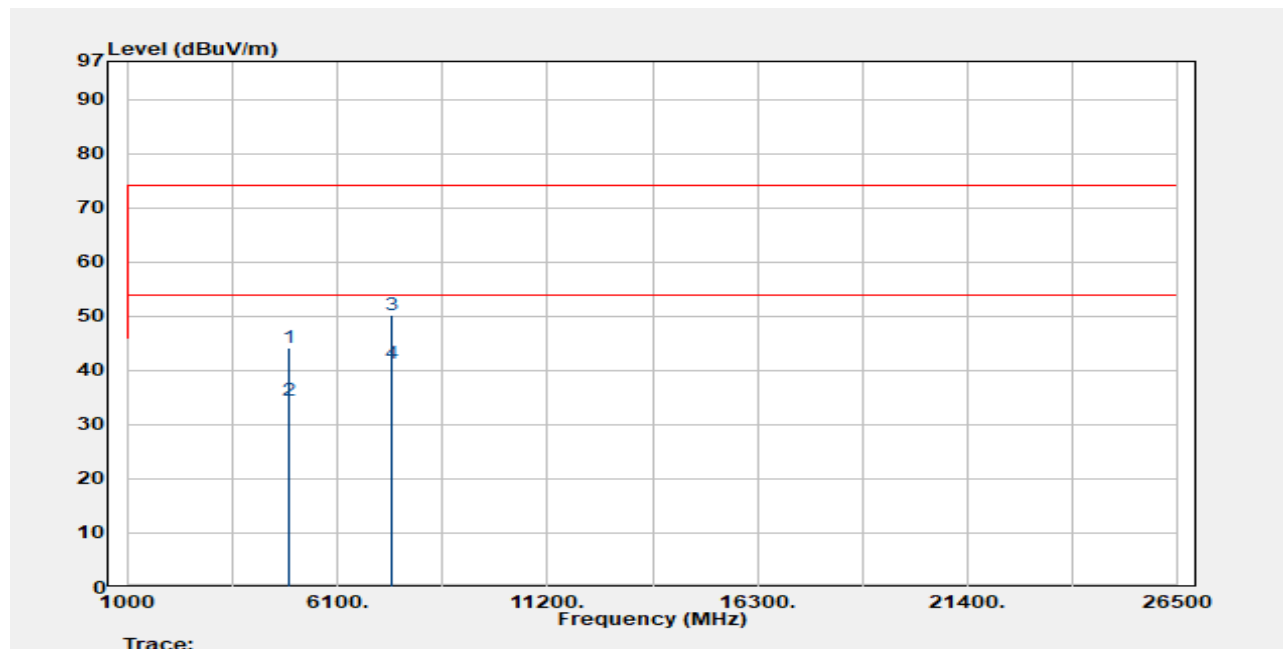
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Report Number :ER/2022/30056  
 Operation Mode :802.11n20  
 Test Frequency :2462 MHz  
 Test Mode :Tx CH High  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Vertical  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBuV	dB	dBuV/m	dBuV/m	dB
4924.000	Peak	36.32	7.97	44.29	74.00	-29.71
4924.000	Average	26.48	7.97	34.45	54.00	-19.55
7386.000	Peak	34.98	15.16	50.14	74.00	-23.86
7386.000	Average	26.10	15.16	41.26	54.00	-12.74

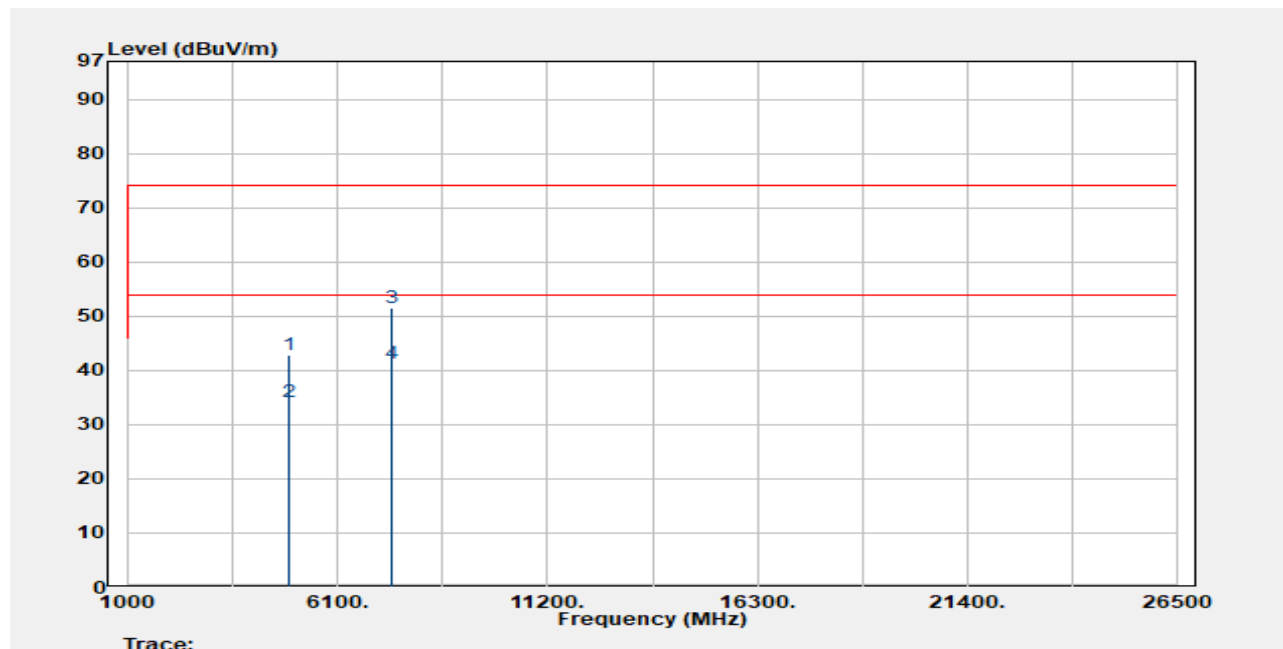
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Report Number :ER/2022/30056  
 Operation Mode :802.11n20  
 Test Frequency :2462 MHz  
 Test Mode :Tx CH High  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Horizontal  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
4924.000	Peak	34.84	7.97	42.81	74.00	-31.19
4924.000	Average	26.31	7.97	34.28	54.00	-19.72
7386.000	Peak	36.28	15.16	51.44	74.00	-22.56
7386.000	Average	26.01	15.16	41.17	54.00	-12.83

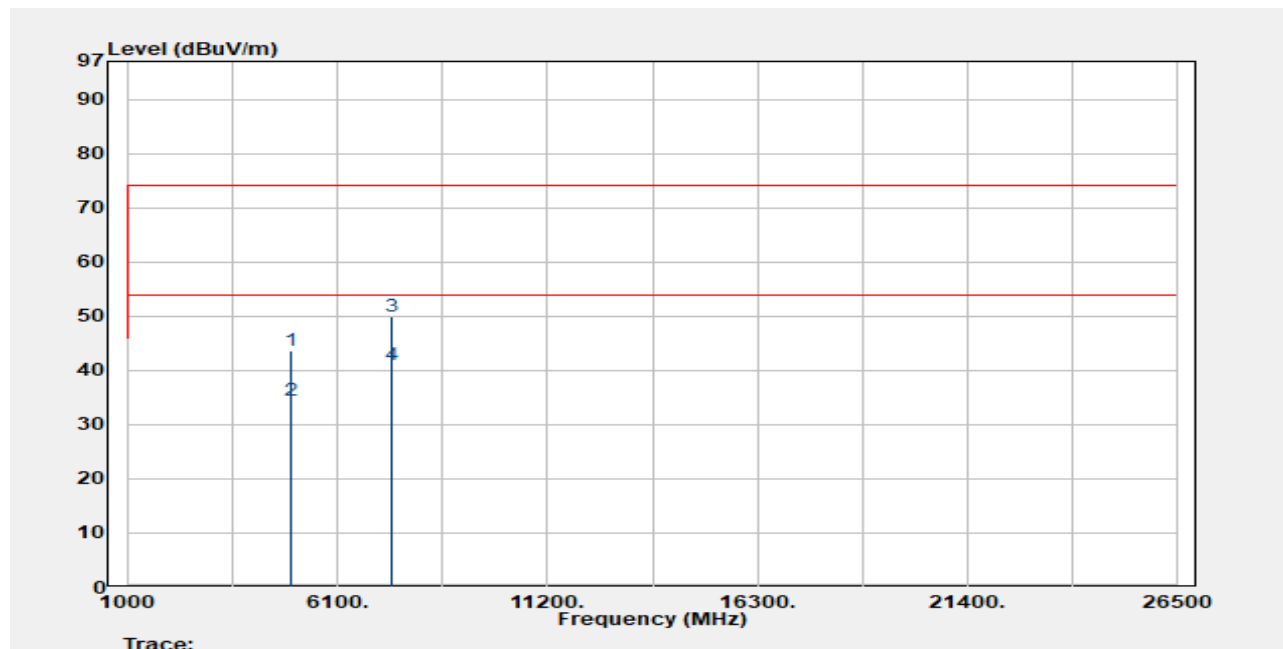
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Report Number :ER/2022/30056  
 Operation Mode :802.11n20  
 Test Frequency :2467 MHz  
 Test Mode :Tx CH High  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Vertical  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBuV	dB	dBuV/m	dBuV/m	dB
4934.000	Peak	35.42	8.12	43.55	74.00	-30.45
4934.000	Average	26.34	8.12	34.46	54.00	-19.54
7401.000	Peak	34.75	15.21	49.96	74.00	-24.04
7401.000	Average	25.83	15.21	41.04	54.00	-12.96

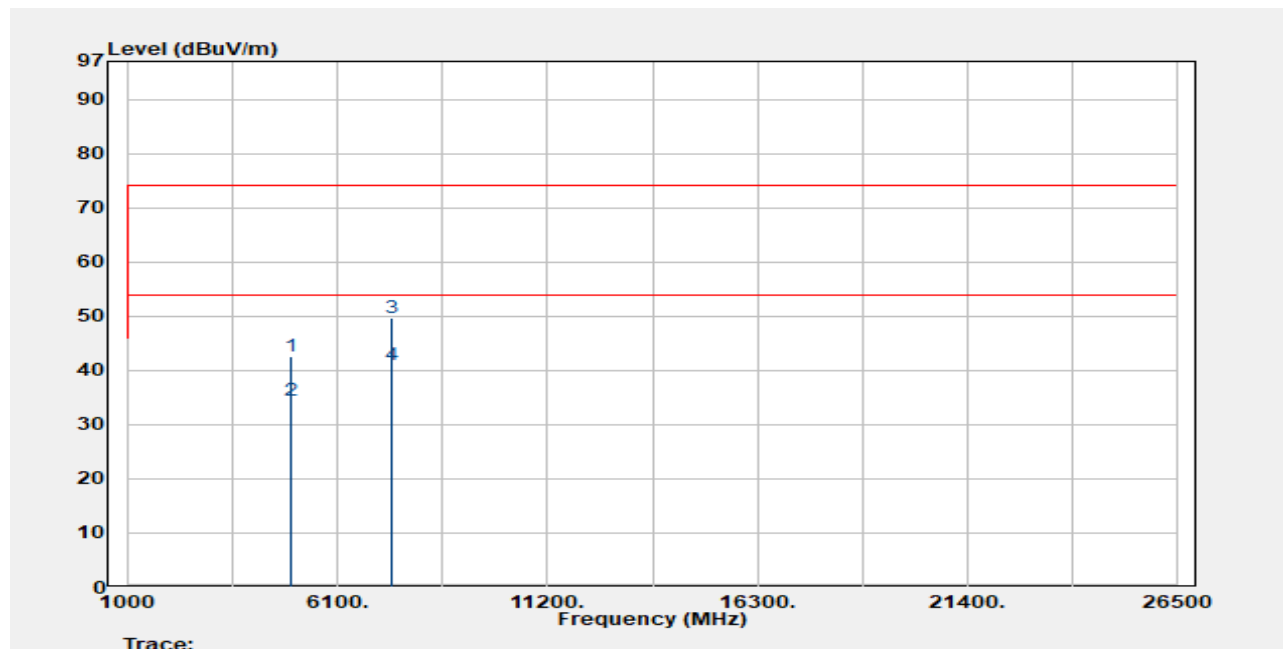
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Report Number :ER/2022/30056  
Operation Mode :802.11n20  
Test Frequency :2467 MHz  
Test Mode :Tx CH High  
EUT Pol :E1 Plane

Test Site :SAC 3  
Test Date :2022-04-06  
Temp./Humi. :20.5/66  
Antenna Pol. :Horizontal  
Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
4934.000	Peak	34.35	8.12	42.47	74.00	-31.53
4934.000	Average	26.22	8.12	34.34	54.00	-19.66
7401.000	Peak	34.41	15.21	49.62	74.00	-24.38
7401.000	Average	25.71	15.21	40.92	54.00	-13.08

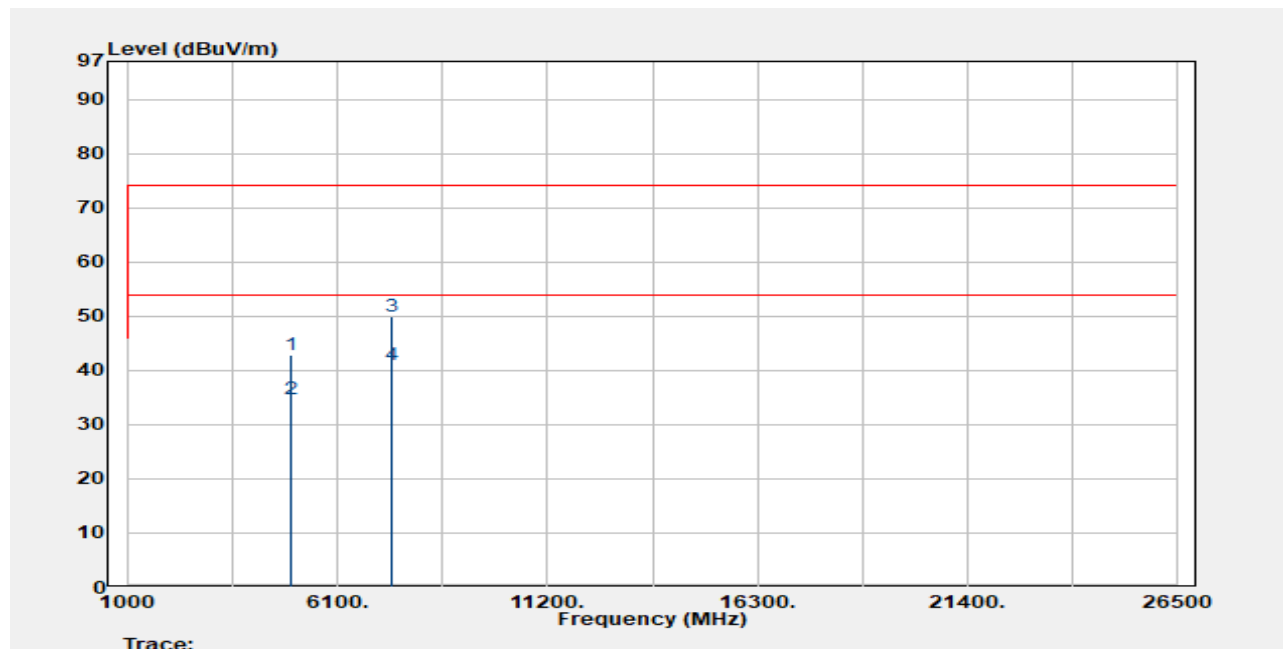
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Report Number :ER/2022/30056  
 Operation Mode :802.11n20  
 Test Frequency :2472 MHz  
 Test Mode :Tx CH High  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Vertical  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
4944.000	Peak	34.62	8.28	42.89	74.00	-31.11
4944.000	Average	26.42	8.28	34.70	54.00	-19.30
7416.000	Peak	34.69	15.18	49.88	74.00	-24.12
7416.000	Average	25.77	15.18	40.95	54.00	-13.05

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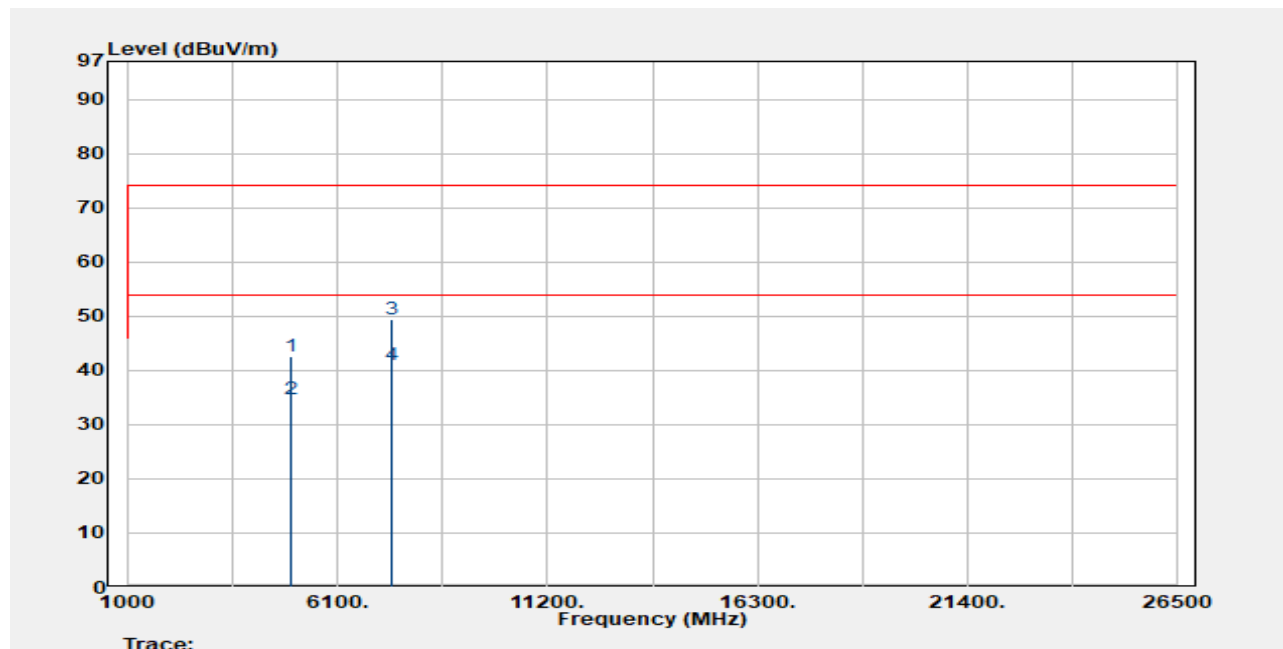
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Report Number :ER/2022/30056  
 Operation Mode :802.11n20  
 Test Frequency :2472 MHz  
 Test Mode :Tx CH High  
 EUT Pol :E1 Plane

Test Site :SAC 3  
 Test Date :2022-04-06  
 Temp./Humi. :20.5/66  
 Antenna Pol. :Horizontal  
 Engineer :Jack Liu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBuV	dB	dBuV/m	dBuV/m	dB
4944.000	Peak	34.18	8.28	42.46	74.00	-31.54
4944.000	Average	26.33	8.28	34.61	54.00	-19.39
7416.000	Peak	34.20	15.18	49.39	74.00	-24.61
7416.000	Average	25.75	15.18	40.93	54.00	-13.07

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## 12 POWER SPECTRAL DENSITY

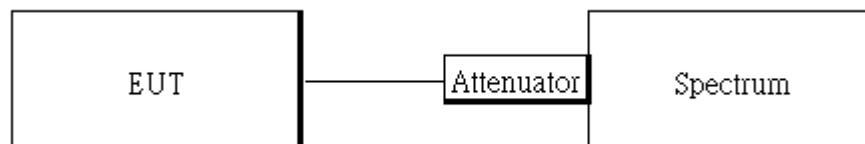
### 12.1 Standard Applicable

Per Part 15.247 (e)

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

This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

### 12.2 Test Setup



### 12.3 Measurement Procedure

1. Set analyzer center frequency to DTS channel center frequency.
2. The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance .
3. Set the span to 1.5 times the DTS channel bandwidth.
4. Set the RBW = 3 kHz & VBW = 10 kHz.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level.

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## 12.4 Power spectral density

POWER DENSITY 802.11b				
Freq. (MHz)	Ch0 PSD	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
2412	-5.24	-5.24	8.00	PASS
2442	-6.43	-6.43	8.00	PASS
2462	-6.56	-6.56	8.00	PASS
2467	-6.44	-6.44	8.00	PASS
2472	-5.39	-5.39	8.00	PASS

POWER DENSITY 802.11g				
Freq. (MHz)	Ch0 PSD	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
2412	-15.86	-15.86	8.00	PASS
2442	-16.13	-16.13	8.00	PASS
2462	-15.82	-15.82	8.00	PASS
2467	-15.98	-15.98	8.00	PASS
2472	-19.39	-19.39	8.00	PASS

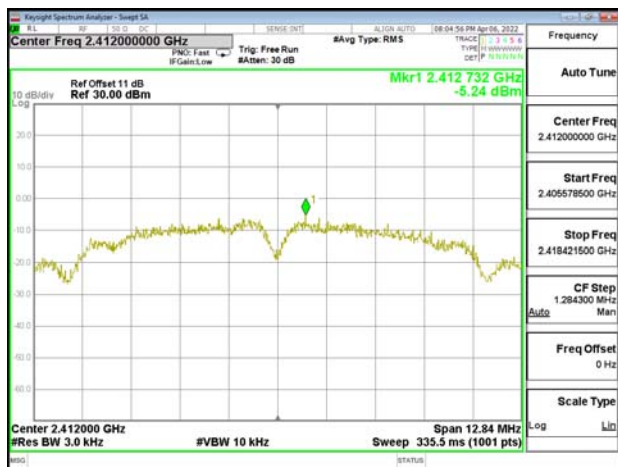
POWER DENSITY 802.11n HT20				
Freq. (MHz)	Ch0 PSD	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
2412	-15.48	-15.48	8.00	PASS
2442	-15.01	-15.01	8.00	PASS
2462	-15.57	-15.57	8.00	PASS
2467	-16.32	-16.32	8.00	PASS
2472	-21.59	-21.59	8.00	PASS

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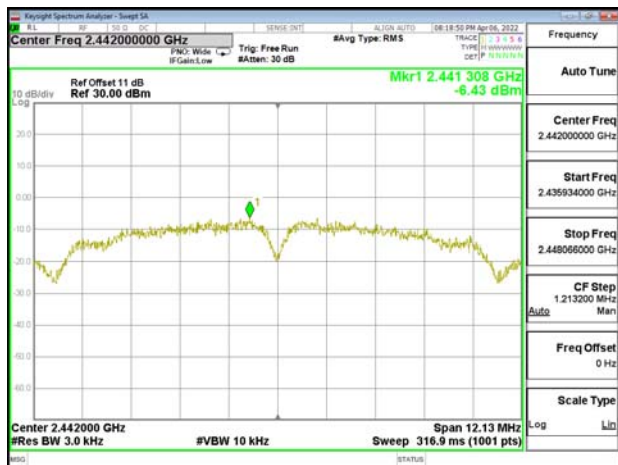
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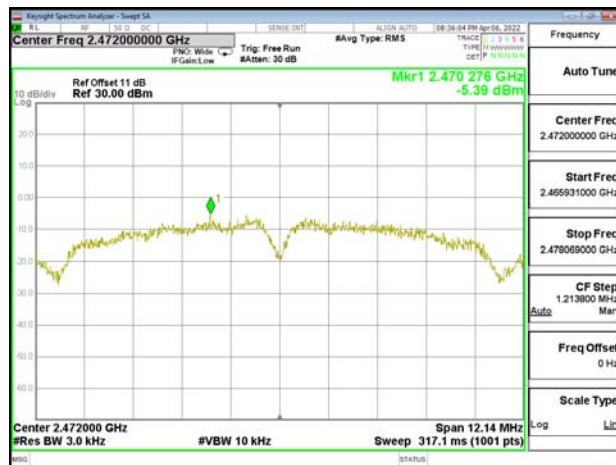
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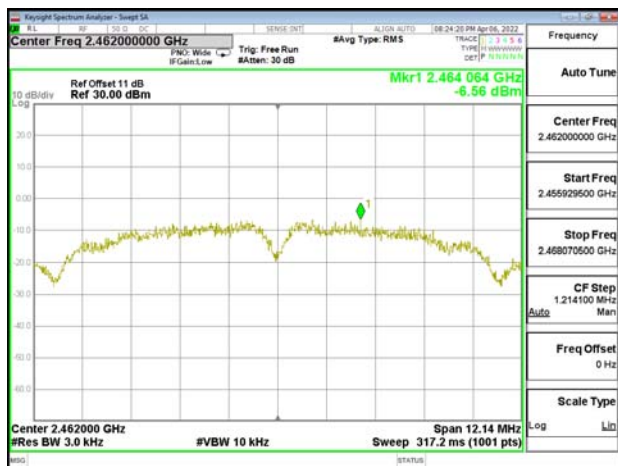
802.11b\_20MHz\_Chain0\_2442MHz



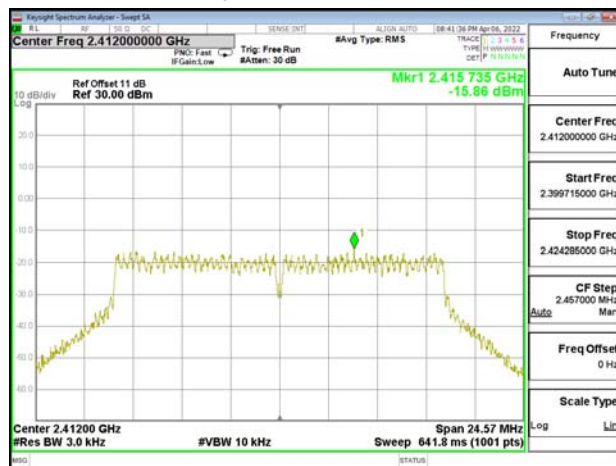
802.11b\_20MHz\_Chain0\_2472MHz



802.11b\_20MHz\_Chain0\_2462MHz



802.11g\_20MHz\_Chain0\_2412MHz

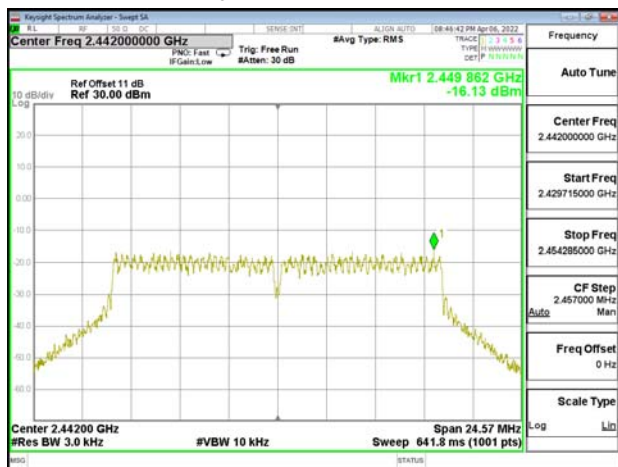


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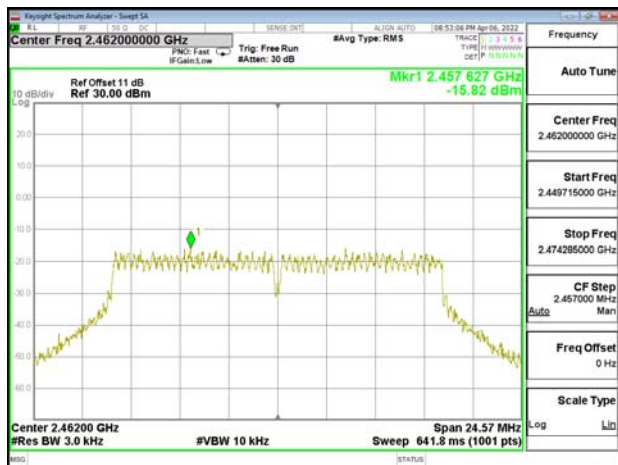
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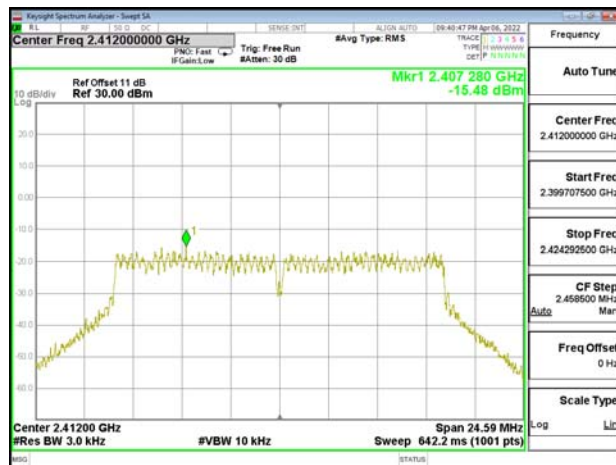
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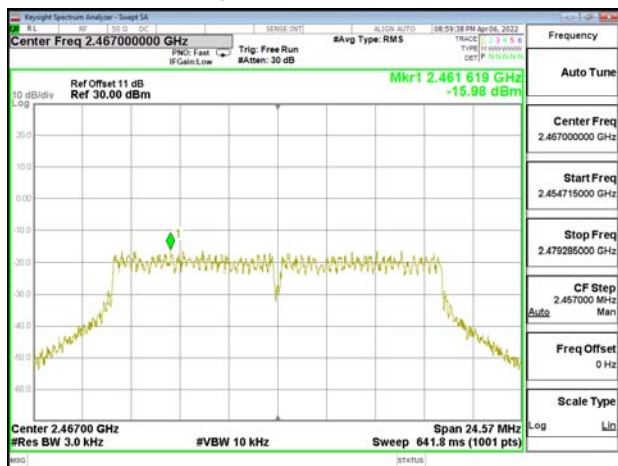
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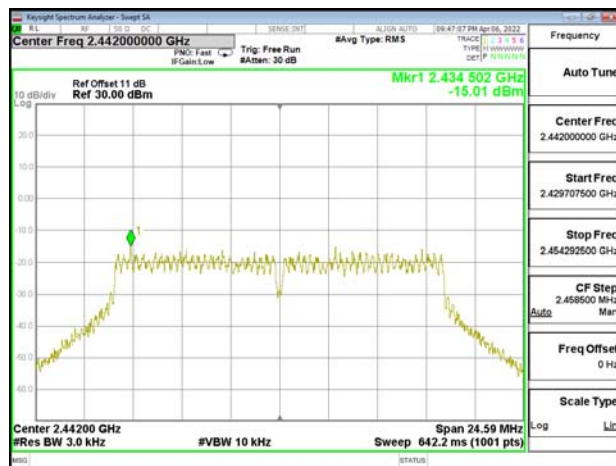
802.11n\_20MHz\_Chain0\_2412MHz



802.11g\_20MHz\_Chain0\_2467MHz



802.11n\_20MHz\_Chain0\_2442MHz

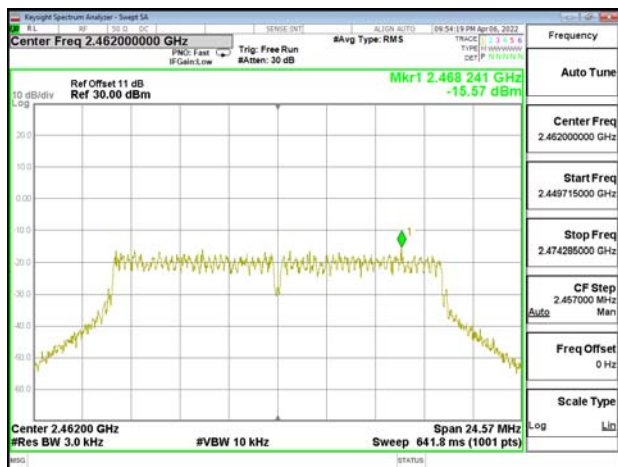


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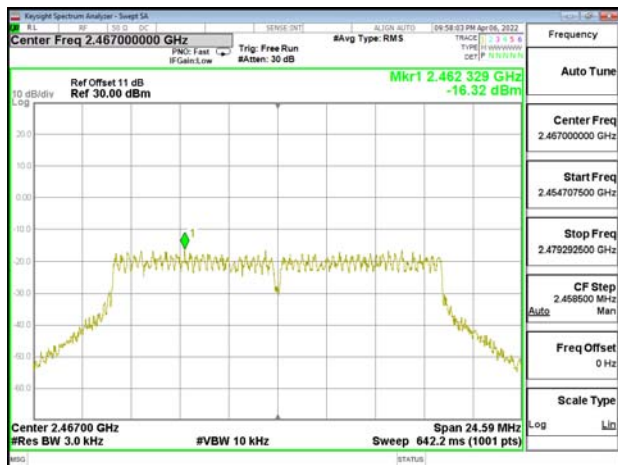
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802.11n\_20MHz\_Chain0\_2462MHz



802.11n\_20MHz\_Chain0\_2467MHz



802.11n\_20MHz\_Chain0\_2472MHz



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## 13 ANTENNA REQUIREMENT

### 13.1 Standard Applicable

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §§ 15.211, 15.213, 15.217, 15.219, 15.221, or § 15.236. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with § 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

### 13.2 Antenna Connected Construction

The antenna is designed as permanently attached and no consideration of replacement. Please see EUT photo for details.

*~ End of Report ~*

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