RADIO TEST REPORT
FCC 47 CFR PART 15 SUBPART C

Test Standard	**FCC Part 15.247**
Brand name	**JORJIN**
Product name	**WiFi and Bluetooth module**
Model No.	**WG3221-00**
Test Result	**Pass**
Statements of Conformity	**Determination of compliance is based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.**

The test Result was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were given in ANSI C63.10: 2013 and compliance standards.

The test results of this report relate only to the tested sample (EUT) identified in this report.
The test Report of full or partial shall not copy. Without written approval of Compliance Certification Services Inc. (Wugu Laboratory).

Approved by:

Kevin Tsai
Deputy Manager

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.
除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部分複製。
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Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	March 9, 2020	Initial Issue	ALL	Doris Chu
01	March 26, 2020	1. Added S/N, SW Test Tool and SW Tool version in section1.1 2. Revised Date of Test in section 1.1. 3. Added HT40 Frequency Range in section 1.2. 4. Revised section 1.6. 5. Added Support Equipment in section 1.7. 6. Revised section 4.5 Band Edge data. 7. Added Radiation setup photo.	P.4, P.5, P.8, P.9, P.40, P.43, P.46, P.48, A-1-A-3	Doris Chu
02	April 16, 2020	1. Revised IEEE 802.11n HT20 MCS8 to MCS0.	P.28-29,	Doris Chu

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1. GENERAL INFORMATION

1.1 EUT INFORMATION

Applicant	Jorjin Technologies Inc. 17F.-1, NO.239, SEC. 1, DATONG RD., XIZHI DIST. New Taipei City, 22161 Taiwan
Manufacturer	Jorjin Technologies Inc. 17F.-1, NO.239, SEC. 1, DATONG RD., XIZHI DIST. New Taipei City, 22161 Taiwan
Equipment	WiFi and Bluetooth module
Model Name	WG3221-00
Model Discrepancy	N/A
Received Date	November 11, 2019
Date of Test	November 26, 2019 ~ March 25, 2020
Output Power(W)	IEEE 802.11b mode: 0.0940 IEEE 802.11g mode: 0.2037 IEEE 802.11n HT 20 MHz mode: 0.2173 IEEE 802.11n HT 40 MHz mode: 0.1849
Power Supply	Power from host device.
HW Version	WG3221-00B-R01
SW Version	goldenBoardData_HW_191005
S/N	00199438FD7E
SW Test Tool	Qualcomm QRCT
SW Tool version	3.0.298.0

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1.2 EUT CHANNEL INFORMATION

Frequency Range	802.11b/g/n HT 20: 2412MHz ~ 2462MHz 802.11n HT40: 2422MHz ~ 2452MHz
Modulation Type	1. IEEE 802.11b mode: CCK 2. IEEE 802.11g mode: OFDM 3. IEEE 802.11n HT 20 MHz mode : OFDM 4. IEEE 802.11n HT40 MHz mode: OFDM
Number of channel	1. IEEE 802.11b mode: 11 Channels 2. IEEE 802.11g mode: 11 Channels 3. IEEE 802.11n HT 20 MHz mode : 11 Channels 4. IEEE 802.11n HT 40 MHz mode : 7 Channels

Remark:
Refer as ANSI C63.10: 2013 clause 5.6.1 Table 4 for test channels

Number of frequencies to be tested		
Frequency range in which device operates	**Number of frequencies**	**Location in frequency range of operation**
☐ 1 MHz or less	1	Middle
☐ 1 MHz to 10 MHz	2	1 near top and 1 near bottom
☒ More than 10 MHz	3	1 near top, 1 near middle, and 1 near bottom

1.3 ANTENNA INFORMATION

Antenna Specification	1. Unictron / AA077 Chip Antenna / Gain: 1.4 dBi 2. Unictron / AA222 PCB Antenna / Gain: 3.73 dBi 3. JOINSOON ELECTRONICS MFG .CO,LTO / WiFi3dB Antenna Dipole Antenna / Gain: 2.45 dBi

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1.4 MEASUREMENT UNCERTAINTY

PARAMETER	UNCERTAINTY
AC Powerline Conducted Emission	+/- 1.2575
Emission bandwidth, 20dB bandwidth	+/- 1.4003
RF output power, conducted	+/- 1.1372
Power density, conducted	+/- 1.4003
3M Semi Anechoic Chamber / 30M~200M	+/- 4.0138
3M Semi Anechoic Chamber / 200M~1000M	+/- 3.9483
3M Semi Anechoic Chamber / 1G~8G	+/- 2.5975
3M Semi Anechoic Chamber / 8G~18G	+/- 2.6112
3M Semi Anechoic Chamber / 18G~26G	+/- 2.7389

***Remark**:*
1.This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2
2. ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report.

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1.5 FACILITIES AND TEST LOCATION

All measurement facilities used to collect the measurement data are located at

No.11, Wugong 6th Rd., Wugu Dist., New Taipei City 24891, Taiwan. (R.O.C.)

Test site	Test Engineer	Remark
AC Conduction Room	Dally Hong	-
Radiation	Jerry Chang	-
RF Conducted	Dally Hong	-

Remark: *The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.*

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1.6 INSTRUMENT CALIBRATION

RF Conducted Test Site					
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Date**	**Calibration Due**
Power Meter	Anritsu	ML2495A	1149001	02/12/2019	02/11/2020
Power Seneor	Anritsu	MA2491A	030982	02/12/2019	02/11/2020
Signal Analyzer	R&S	FSV 40	101073	09/25/2019	09/24/2020
Software	N/A				

3M 966 Chamber Test Site					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal Date**	**Cal Due**
Band Reject Filters	MICRO TRONICS	BRM 50702	120	02/26/2019	02/25/2020
Bilog Antenna	Sunol Sciences	JB3	A030105	07/26/2019	07/25/2020
Coaxial Cable	HUBER SUHNER	SUCOFLEX 104PEA	20995	02/26/2019	02/25/2020
Coaxial Cable	EMCI	EMC105	190914+25111	09/20/2019	09/19/2020
Digital Thermo-Hygro Meter	WISEWIND	1206	D07	01/30/2019	01/29/2020
double Ridged Guide Horn Antenna	ETC	MCTD 1209	DRH13M02003	10/04/2019	10/03/2020
Loop Ant	COM-POWER	AL-130	121051	03/22/2019	03/21/2020
Pre-Amplifier	EMEC	EM330	060609	02/26/2019	02/25/2020
Pre-Amplifier	HP	8449B	3008A00965	02/26/2019	02/25/2020
Horn Antenna	ETS LINDGREN	3116	00026370	2018/12/26	2019/12/25
K Type Cable	Huber+Suhner	SUCOFLEX 102	29406/2	12/18/2018	12/17/2019
K Type Cable	Huber+Suhner	SUCOFLEX 102	22470/2	12/18/2018	12/17/2019
Pre-Amplifier	EMEC	EM01G26G	060570	06/27/2019	06/26/2020
PSA Series Spectrum Analyzer	Agilent	E4446A	MY46180323	05/29/2019	05/28/2020
Horn Antenna	ETS LINDGREN	3116	00026370	12/18/2019	12/17/2020
K Type Cable	Huber+Suhner	SUCOFLEX 102	29406/2	12/17/2019	12/16/2020
K Type Cable	Huber+Suhner	SUCOFLEX 102	22470/2	12/17/2019	12/16/2020
Pre-Amplifier	EMEC	EM01G26G	060570	06/27/2019	06/26/2020
Antenna Tower	CCS	CC-A-1F	N/A	N.C.R	N.C.R
Controller	CCS	CC-C-1F	N/A	N.C.R	N.C.R
Turn Table	CCS	CC-T-1F	N/A	N.C.R	N.C.R
Software	e3 6.11-20180413				

Conducted Emission Room # B					
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Date**	**Calibration Due**
CABLE	EMCI	CFD300-NL	CERF	06/27/2019	06/26/2020
EMI Test Receiver	R&S	ESCI	100064	07/26/2019	07/25/2020
LISN	SCHWARZBECK	NSLK 8127	8127-541	01/31/2019	01/30/2020
LISN	SCHAFFNER	NNB 41	03/10013	02/13/2019	02/12/2020
Software	EZ-EMC(CCS-3A1-CE-Wugu)				

Remark: *Each piece of equipment is scheduled for calibration once a year.*

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1.7 SUPPORT AND EUT ACCESSORIES EQUIPMENT

EUT Accessories Equipment					
No.	**Equipment**	**Brand**	**Model**	**Series No.**	**FCC ID**
	N/A				

Support Equipment					
No.	**Equipment**	**Brand**	**Model**	**Series No.**	**FCC ID**
1	NB(J)	acer	MS2392	N/A	PPD-QCNFA34AC
2	NB(J)	Lenovo	T420	N/A	PD97260H

1.8 TEST METHODOLOGY AND APPLIED STANDARDS

The test methodology, setups and results comply with all requirements in accordance with ANSI C63.10:2013, FCC Part 2, FCC Part 15.247, KDB 662911 D01, KDB 558074 D01.

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2. TEST SUMMERY

FCC Standard Section	Report Section	Test Item	Result
15.203	1.3	Antenna Requirement	Pass
15.207(a)	4.1	AC Conducted Emission	Pass
15.247(a)(2)	4.2	6 dB Bandwidth	Pass
-	4.2	Occupied Bandwidth (99%)	Pass
15.247(b)	4.3	Output Power Measurement	Pass
15.247(e)	4.4	Power Spectral Density	Pass
15.247(d)	4.5	Conducted Band Edge	Pass
15.247(d)	4.5	Conducted Spurious Emission	Pass
15.247(d)	4.6	Radiation Band Edge	Pass
15.247(d)	4.6	Radiation Spurious Emission	Pass

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3. DESCRIPTION OF TEST MODES

3.1 THE WORST MODE OF OPERATING CONDITION

Operation mode	IEEE 802.11b mode :1Mbps IEEE 802.11g mode :6Mbps IEEE 802.11n HT20 mode :MCS0 IEEE 802.11n HT40 mode: MCS0
Test Channel Frequencies	**IEEE 802.11b mode :** 1. Lowest Channel : 2412MHz 2. Middle Channel : 2437MHz 3. Highest Channel : 2462MHz **IEEE 802.11g mode :** 1. Lowest Channel : 2412MHz 2. Middle Channel : 2437MHz 3. Highest Channel : 2462MHz **IEEE 802.11n HT20 mode :** 1. Lowest Channel : 2412MHz 2. Middle Channel : 2437MHz 3. Highest Channel : 2462MHz **IEEE 802.11n HT40 mode:** 1. Lowest Channel: 2422MHz 2. Middle Channel: 2437MHz 3. Highest Channel: 2452MHz
Operation Transmitter	IEEE 802.11b mode :1T1R IEEE 802.11g mode : 1T1R IEEE 802.11n HT20 mode : 1T1R IEEE 802.11n HT40 mode : 1T1R

Remark:
1. EUT pre-scanned data rate of output power for each mode, the worst data rate were recorded in this report.

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3.2 THE WORST MODE OF MEASUREMENT

Radiated Emission Measurement Above 1G	
Test Condition	**Radiated Emission Above 1G**
Power supply Mode	**Mode 1: EUT power by DC**
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4
Worst Position	☐ Placed in fixed position. ☒ Placed in fixed position at X-Plane (E2-Plane) ☐ Placed in fixed position at Y-Plane (E1-Plane) ☐ Placed in fixed position at Z-Plane (H-Plane)

Radiated Emission Measurement Below 1G	
Test Condition	**Radiated Emission Below 1G**
Power supply Mode	**Mode 1: EUT power by DC**
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4

Remark:
1. The worst mode was record in this test report.
2. EUT pre-scanned in three axis ,X,Y, Z and two polarity, for radiated measurement. The worst case(X-Plane) were recorded in this report
3. The worst case in conducted is PCB Antenna.

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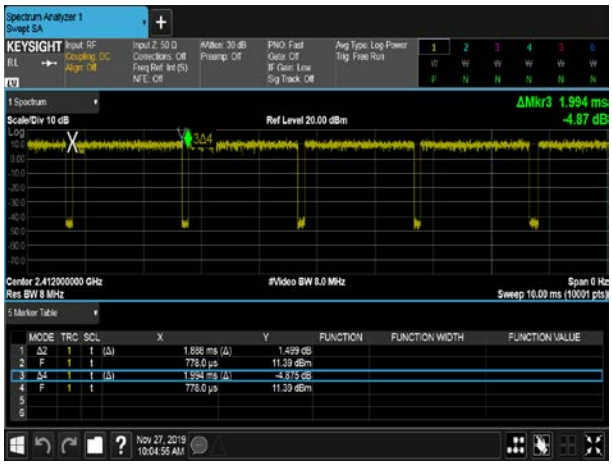
3.3 EUT DUTY CYCLE

Duty Cycle				
Configuration	Duty Cycle (%)	Duty Factor (dB) =10*log (1/Duty Cycle)	1/T (kHz)	VBW setting (kHz)
802.11b	98.95	0.05	0.08	0.01
802.11g	94.63	0.24	0.49	1.00
802.11n HT20	94.68	0.24	0.53	1.00
802.11n HT40	89.75	0.47	1.08	2.00

802.11b

802.11g

802.11n HT20



802.11n HT40

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4. TEST RESULT

4.1 AC POWER LINE CONDUCTED EMISSION

4.1.1 Test Limit

According to §15.207(a)(2),

Frequency Range (MHz)	Limits(dBμV)	
	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

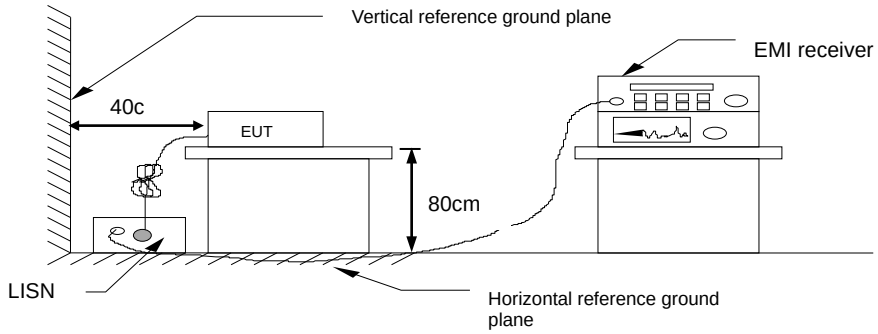
* Decreases with the logarithm of the frequency.

4.1.2 Test Procedure

Test method Refer as ANSI C63.10: 2013 clause 6.2,

1. The EUT was placed on a non-conducted table, which is 0.8m above horizontal ground plane and 0.4m above vertical ground plane.
2. EUT connected to the line impedance stabilization network (LISN)
3. Receiver set RBW of 9kHz and Detector Peak, and note as quasi-peak and average.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. Recorded Line for Neutral and Line.

4.1.3 Test Setup



4.1.4 Test Result

Pass.

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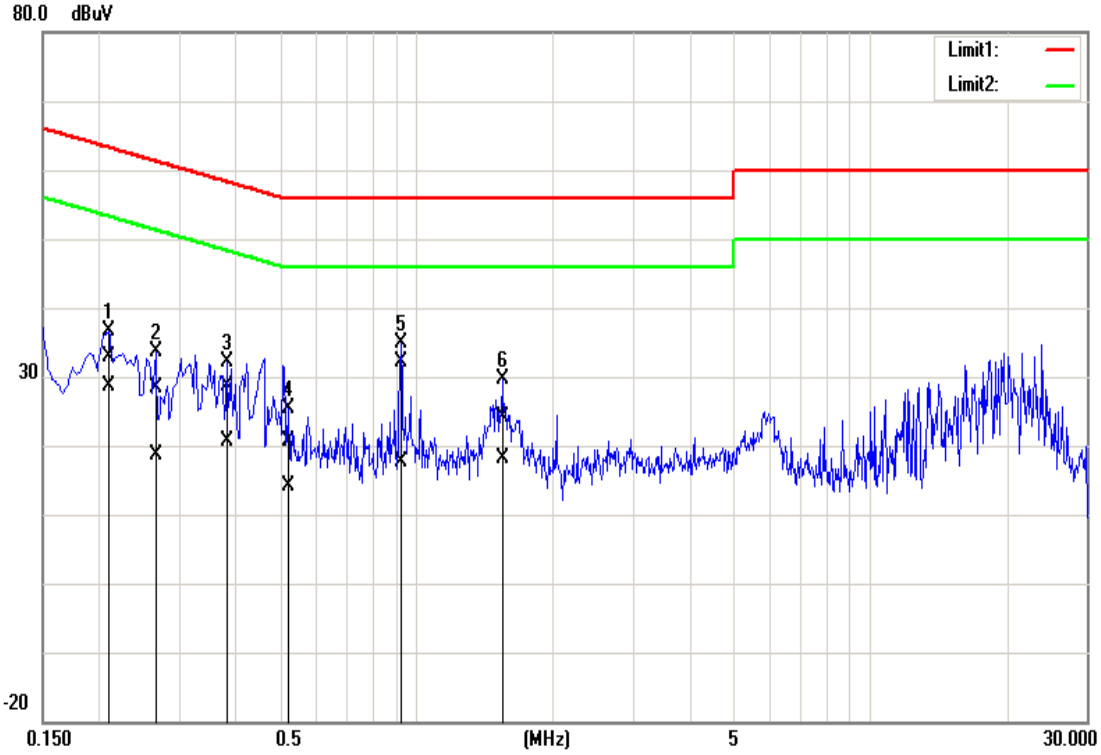
Test Data

Test Mode:	Mode 1	Temp/Hum	24(℃)/ 50%RH
Phase:	Line	Test Date	November 26, 2019
		Test Engineer	Dally Hong



No.	Frequency	QuasiPeak reading	Average reading	Correction factor	QuasiPeak result	Average result	QuasiPeak limit	Average limit	QuasiPeak margin	Average margin	Remark
	(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)	
1	0.2100	22.86	18.43	10.13	32.99	28.56	63.21	53.21	-30.22	-24.65	Pass
2	0.2660	18.13	8.48	10.13	28.26	18.61	61.24	51.24	-32.98	-32.63	Pass
3	0.3820	18.56	10.39	10.14	28.70	20.53	58.24	48.24	-29.54	-27.71	Pass
4	0.5220	10.39	3.90	10.14	20.53	14.04	56.00	46.00	-35.47	-31.96	Pass
5	0.9260	22.02	7.46	10.17	32.19	17.63	56.00	46.00	-23.81	-28.37	Pass
6	1.5460	13.91	7.93	10.19	24.10	18.12	56.00	46.00	-31.90	-27.88	Pass

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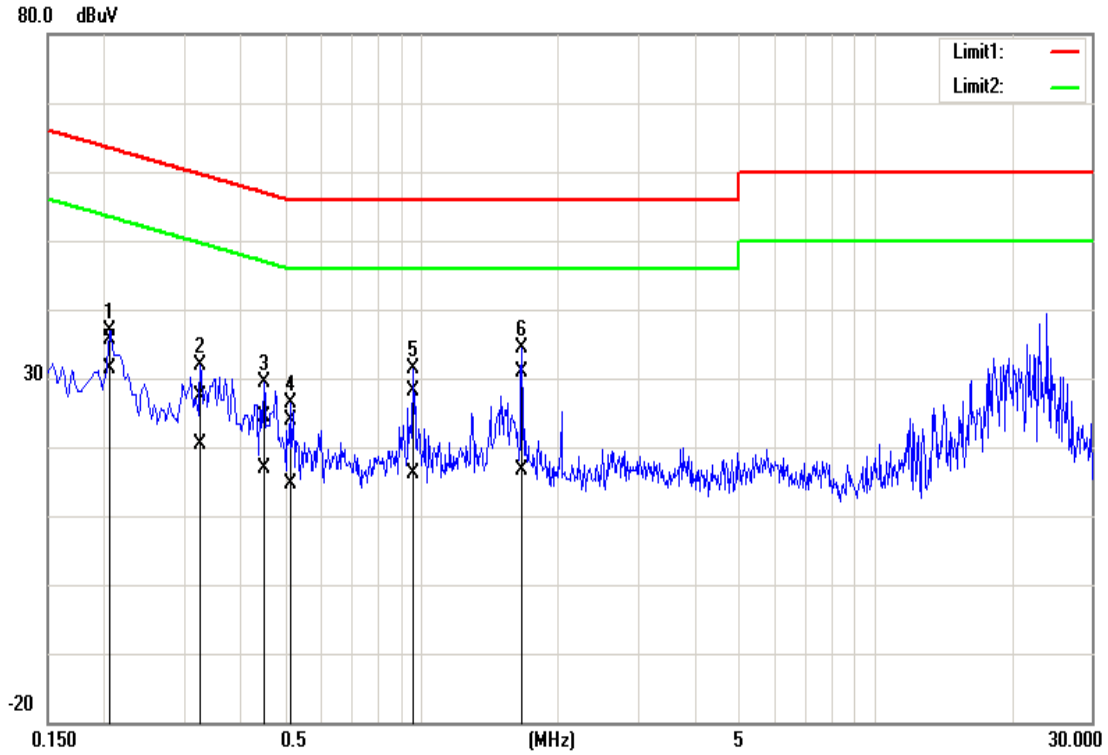
Test Mode:	Mode 1	Temp/Hum	24(℃)/ 50%RH
Phase:	Neutral	Test Date	November 26, 2019
		Test Engineer	Dally Hong



No.	Frequency	QuasiPeak reading	Average reading	Correction factor	QuasiPeak result	Average result	QuasiPeak limit	Average limit	QuasiPeak margin	Average margin	Remark
	(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)	
1	0.2060	25.53	21.25	10.02	35.55	31.27	63.37	53.37	-27.82	-22.10	Pass
2	0.3260	17.26	10.26	10.03	27.29	20.29	59.55	49.55	-32.26	-29.26	Pass
3	0.4500	14.44	6.87	10.03	24.47	16.90	56.88	46.88	-32.41	-29.98	Pass
4	0.5140	13.88	4.53	10.03	23.91	14.56	56.00	46.00	-32.09	-31.44	Pass
5	0.9620	18.14	6.19	10.04	28.18	16.23	56.00	46.00	-27.82	-29.77	Pass
6	1.6660	20.84	6.54	10.06	30.90	16.60	56.00	46.00	-25.10	-29.40	Pass

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4.2 6dB BANDWIDTH AND OCCUPIED BANDWIDTH (99%)

4.2.1 Test Limit

According to §15.247(a)(2),

6 dB Bandwidth ：

Limit	Shall be at least 500kHz

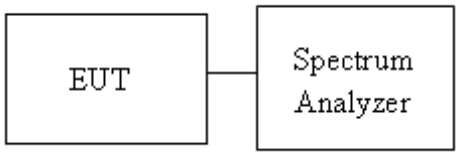
Occupied Bandwidth(99%) ： For reporting purposes only.

4.2.2 Test Procedure

Test method Refer as KDB 558074 D01 and ANSI C63.10: 2013 clause 6.9.2,

1. The EUT RF output connected to the spectrum analyzer by RF cable.
2. Setting maximum power transmit of EUT
3. SA set RBW = 100kHz, VBW = 300kHz and Detector = Peak, to measurement 6 dB Bandwidth.
4. SA set RBW = 1% ~ 5% OBW, VBW = three times the RBW and Detector = Peak, to measurement 99% Bandwidth
5. Measure and record the result of 6 dB Bandwidth and 99% Bandwidth. in the test report.

4.2.3 Test Setup



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4.2.4 Test Result

Test mode: IEEE 802.11b mode / 2412-2462 MHz						
Channel	Frequency (MHz)	Chain 0 OBW(99%) (MHz)	Chain 1 OBW(99%) (MHz)	Chain 0 6dB BW (MHz)	Chain 1 6dB BW (MHz)	6dB limit (kHz)
Low	2412	17.2793	-	10.087	-	≥500
Mid	2437	17.5398	-	10.087	-	
High	2462	18.5818	-	11.087	-	

Test mode: IEEE 802.11g mode / 2412-2462 MHz						
Channel	Frequency (MHz)	Chain 0 OBW(99%) (MHz)	Chain 1 OBW(99%) (MHz)	Chain 0 6dB BW (MHz)	Chain 1 6dB BW (MHz)	6dB limit (kHz)
Low	2412	16.2373	-	15.913	-	≥500
Mid	2437	16.2807	-	16.2609	-	
High	2462	16.3242	-	15.913	-	

Test mode: IEEE 802.11n HT 20 MHz mode / 2412-2462 MHz						
Channel	Frequency (MHz)	Chain 0 OBW(99%) (MHz)	Chain 1 OBW(99%) (MHz)	Chain 0 6dB BW (MHz)	Chain 1 6dB BW (MHz)	6dB limit (kHz)
Low	2412	17.3661	-	15.0435	-	≥500
Mid	2437	17.4096	-	16.2609	-	
High	2462	17.4096	-	16.8696	-	

Test mode: IEEE 802.11n HT 40 MHz mode / 2422-2452 MHz						
Channel	Frequency (MHz)	Chain 0 OBW(99%) (MHz)	Chain 1 OBW(99%) (MHz)	Chain 0 6dB BW (MHz)	Chain 1 6dB BW (MHz)	6dB limit (kHz)
Low	2422	35.8900	-	33.739	-	≥500
Mid	2437	35.8900	-	33.855	-	
High	2452	35.8900	-	32.696	-	

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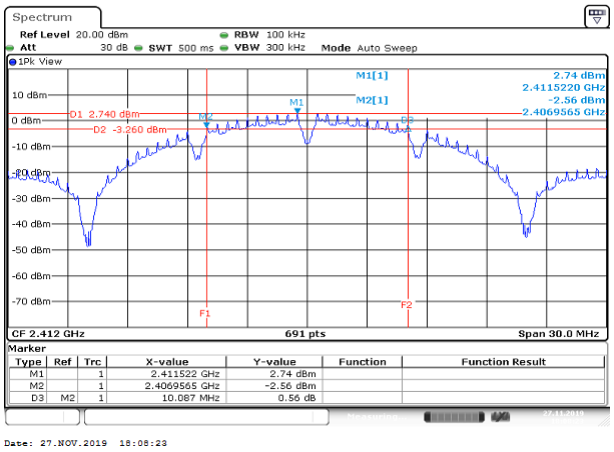
Test Data

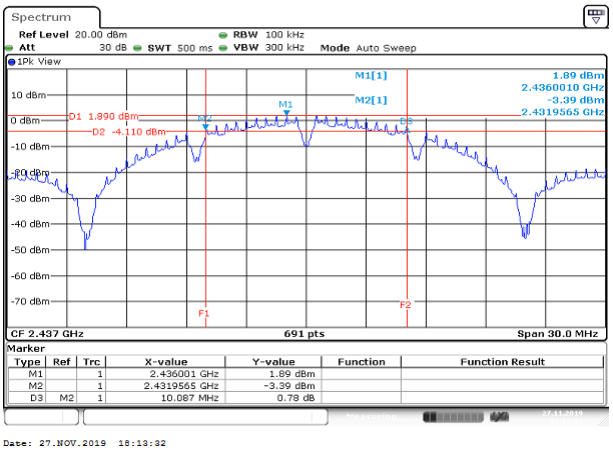
6dB BANDWIDTH

IEEE 802.11b mode- chain 0

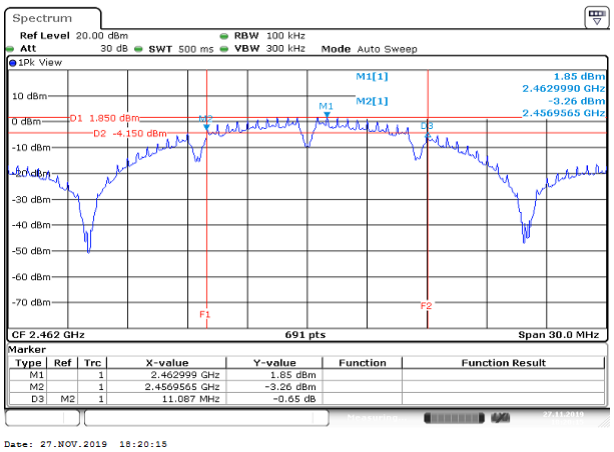
Low CH



Mid CH



High CH



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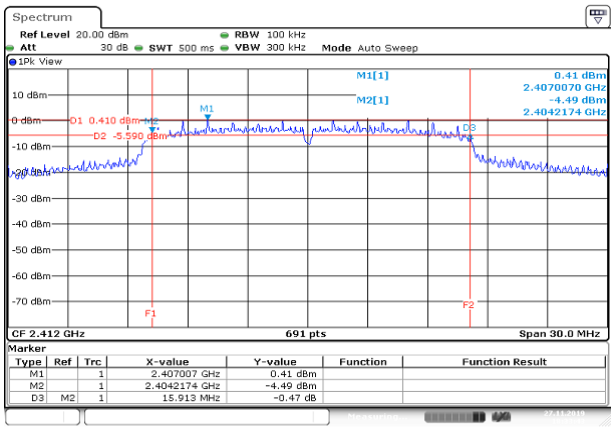
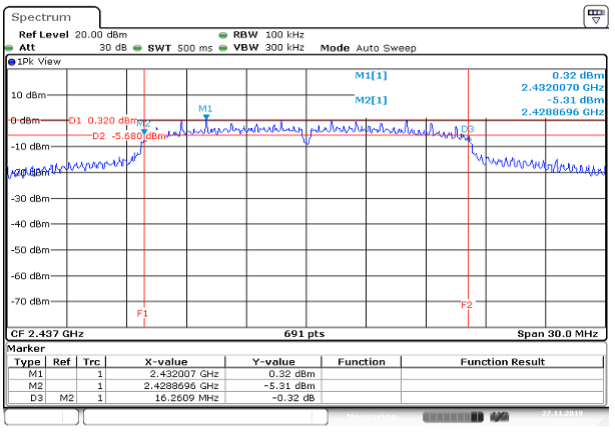
IEEE 802.11g mode- chain 0

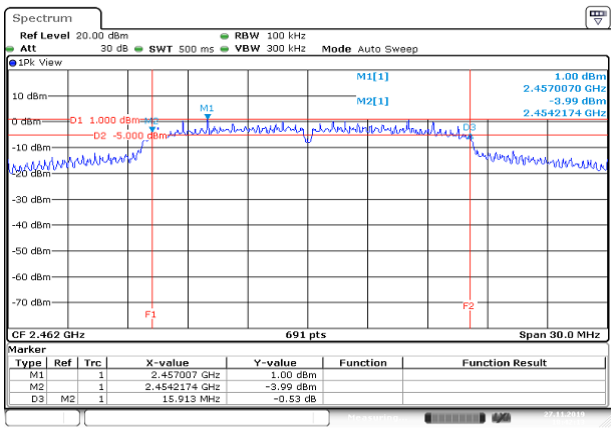
Low CH



Mid CH



High CH



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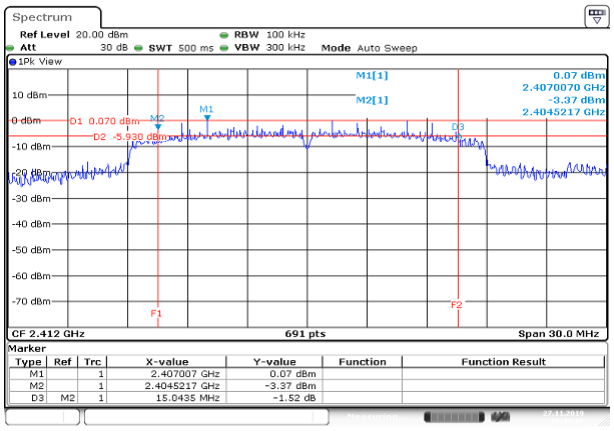
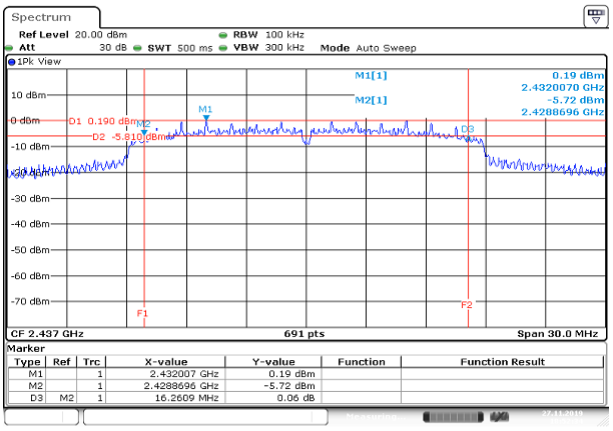
IEEE 802.11n HT20 mode- chain 0

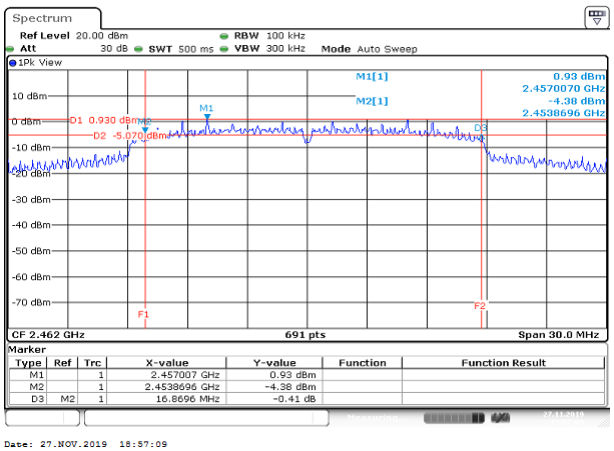
Low CH



Mid CH



High CH



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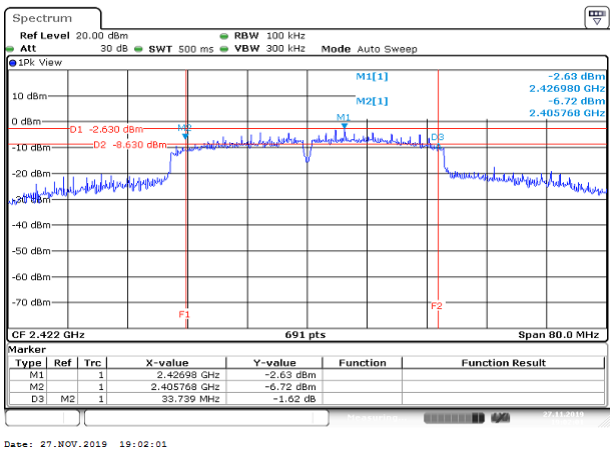
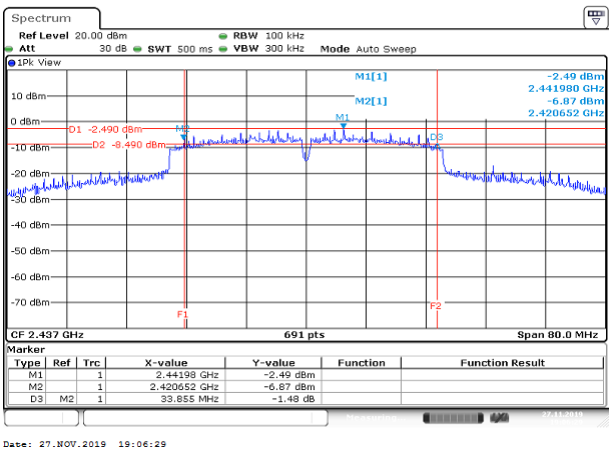
IEEE 802.11n HT40 mode- chain 0

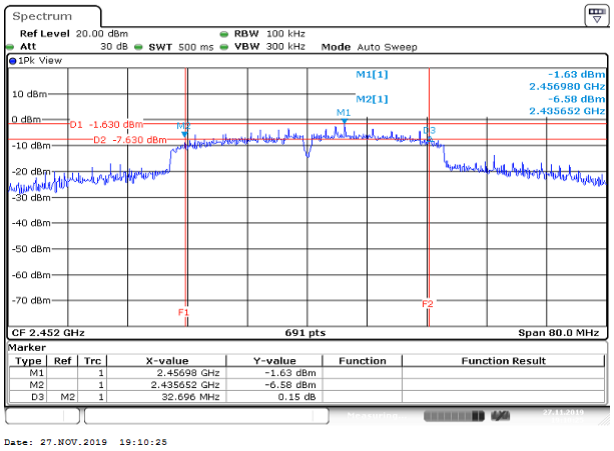
Low CH



Mid CH



High CH



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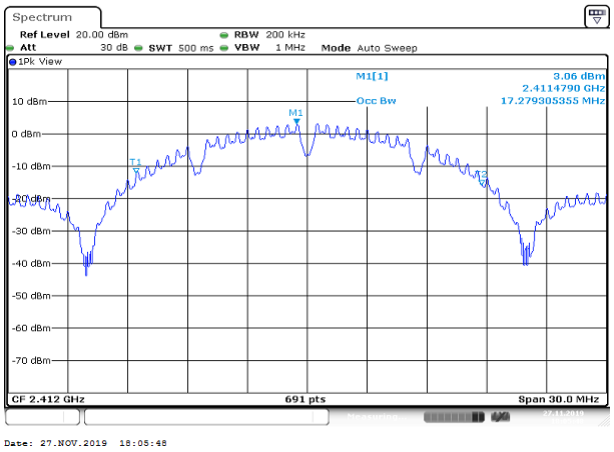
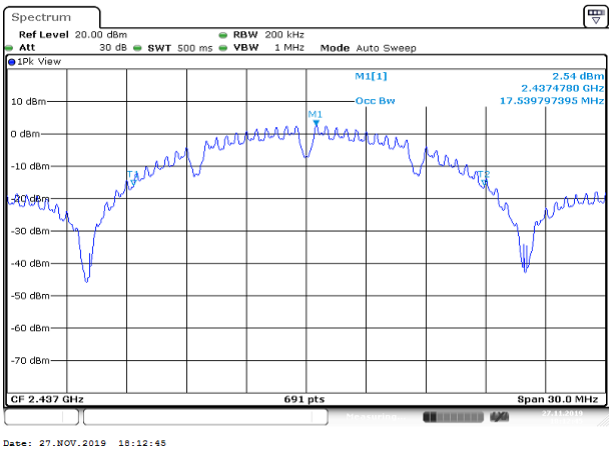
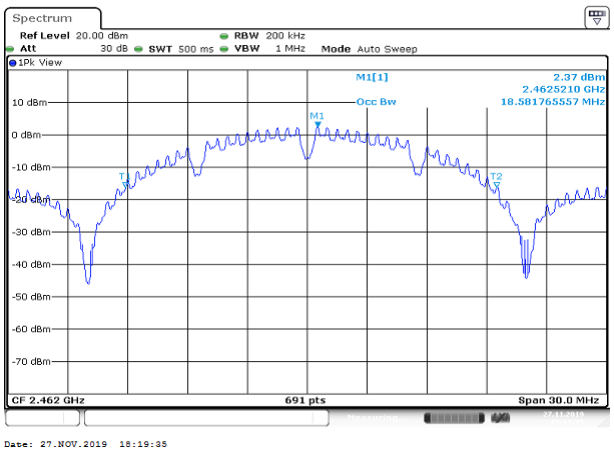
Test Data

BANDWIDTH 99%

IEEE 802.11b mode- chain 0	
Low CH	**Mid CH**
	
High CH	
	

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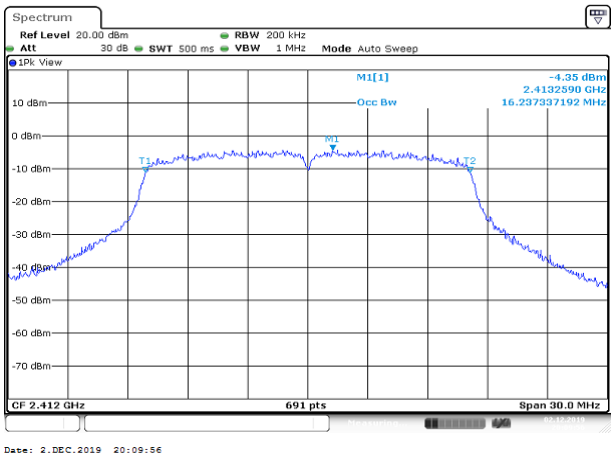
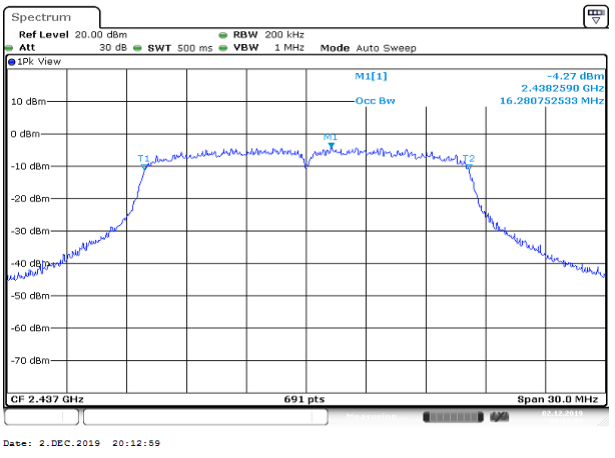
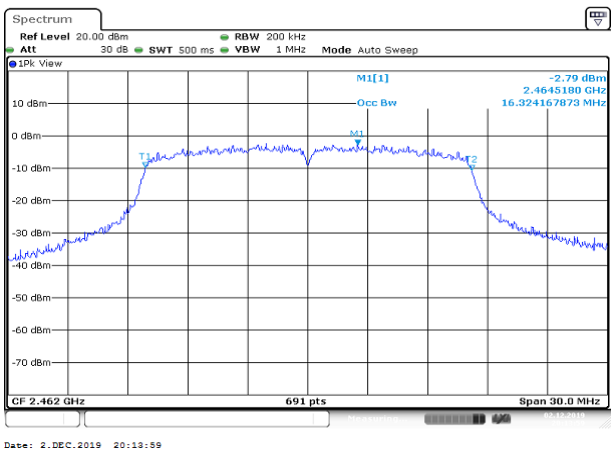
IEEE 802.11g mode- chain 0	
Low CH	**Mid CH**
	
High CH	
	

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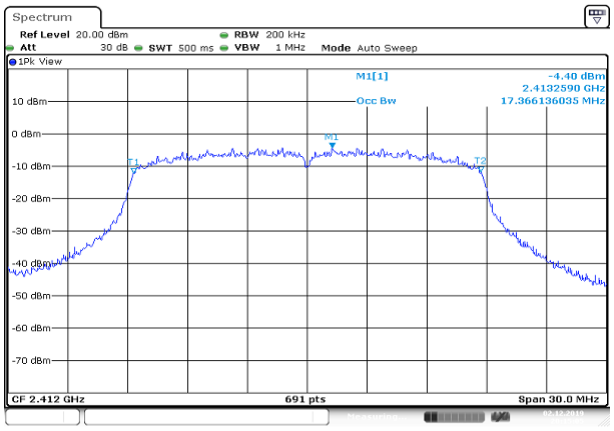
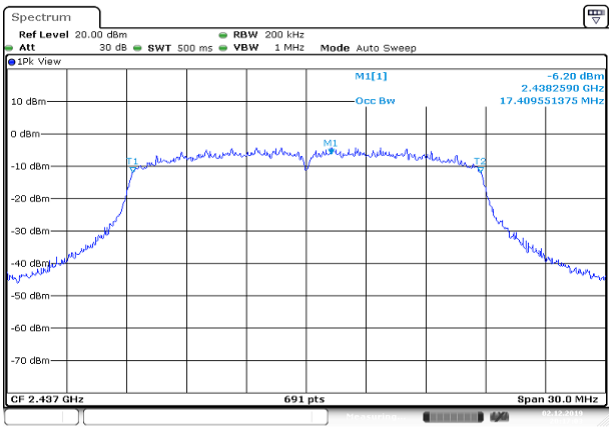
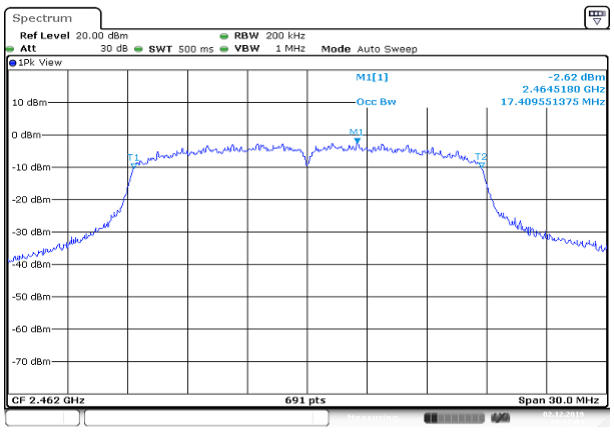
IEEE 802.11n HT20 mode- chain 0	
Low CH	**Mid CH**
	
High CH	
	

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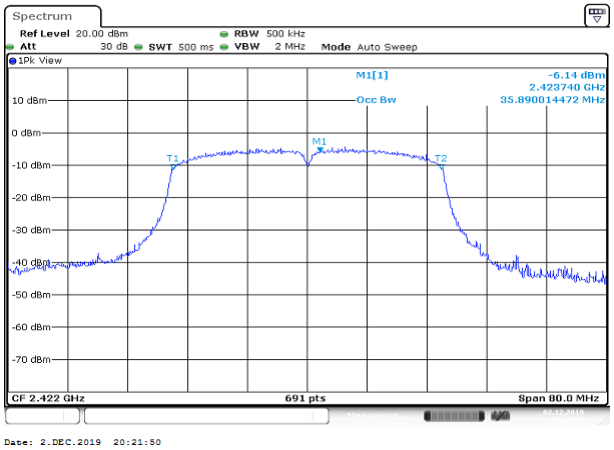
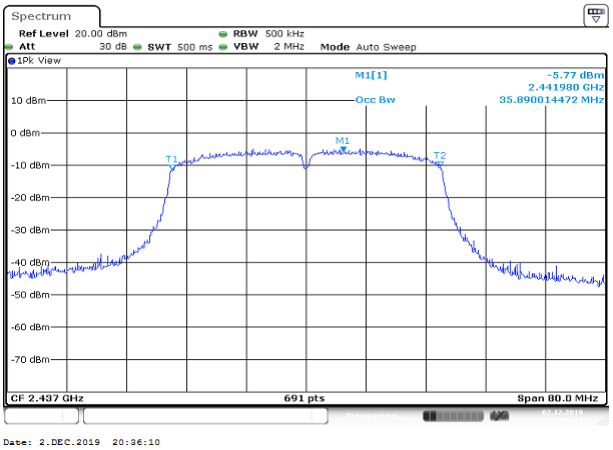
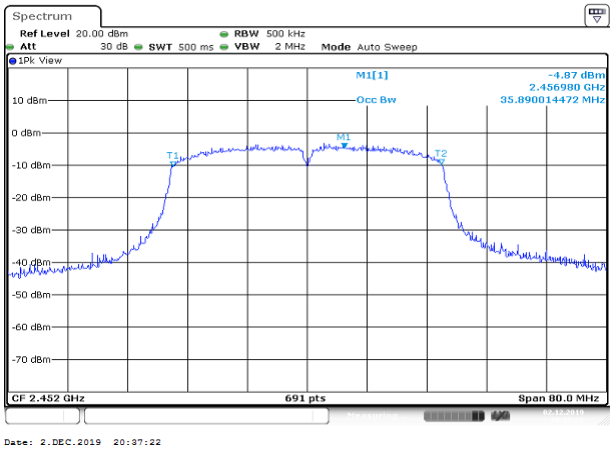
IEEE 802.11n HT40 mode- chain 0	
Low CH	**Mid CH**
	
High CH	
	

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4.3 OUTPUT POWER MEASUREMENT

4.3.1 Test Limit

According to §15.247(b),

Peak output power：

For systems using digital modulation in the 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt(30 dBm) and the e.i.r.p. shall not exceed 4Watt(36 dBm), base on the use of antennas with directional gain not exceed 6 dBi If transmitting antennas of directional gain greater than 6dBi are used the peak output power the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

Limit	☒ Antenna not exceed 6 dBi：30dBm ☐ Antenna with DG greater than 6 dBi： [Limit = 30 – (DG – 6)] ☐ Point-to-point operation：

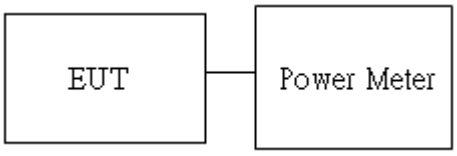
Average output power：For reporting purposes only.

4.3.2 Test Procedure

Test method Refer as KDB 558074 D01, Section 9.1.2.

1. The EUT RF output connected to the power meter by RF cable.
2. Setting maximum power transmit of EUT.
3. The path loss was compensated to the results for each measurement.
4. Measure and record the result of Peak output power and Average output power. in the test report.

4.3.3 Test Setup



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4.3.4 Test Result

Peak output power：

Wifi 2.4G							
Config	CH	Freq. (MHz)	power set	PK Power (dBm)	PK Total Power (W)	DG (dBi)	Limit (dBm)
IEEE 802.11b Data rate: 1Mbps	Low	2412	14	17.33	0.0541	3.73	30
	Mid	2437	16	19.73	0.0940		
	High	2462	14	18.56	0.0718		
IEEE 802.11g Data rate: 6Mbps	Low	2412	14	20.37	0.1089		
	Mid	2437	18	23.09	0.2037		
	High	2462	14	21.31	0.1352		
IEEE 802.11n HT20 Data rate: MCS0	Low	2412	18	22.72	0.1871		
	Mid	2437	18	23.37	0.2173		
	High	2462	17	23.22	0.2099		
IEEE 802.11n HT40 Data rate: MCS0	Low	2422	15	21.09	0.1285		
	Mid	2437	17	22.67	0.1849		
	High	2452	14	21.20	0.1318		

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Average output power：

Wifi 2.4G				
Config	**CH**	**Freq. (MHz)**	**Power Setting**	**AV Power (dBm)**
IEEE 802.11b Data rate: 1Mbps	Low	2412	14	14.84
	Mid	2437	16	17.17
	High	2462	14	15.97
IEEE 802.11g Data rate: 6Mbps	Low	2412	14	14.23
	Mid	2437	18	17.22
	High	2462	14	15.43
IEEE 802.11n HT20 Data rate: MCS0	Low	2412	18	16.69
	Mid	2437	18	17.12
	High	2462	17	17.86
IEEE 802.11n HT40 Data rate: MCS0	Low	2422	15	14.40
	Mid	2437	17	16.30
	High	2452	14	15.06

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4.4 POWER SPECTRAL DENSITY

4.4.1 Test Limit

According to §15.247(e),

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

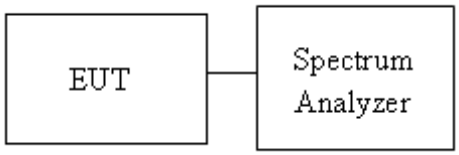
Limit	☒ Antenna not exceed 6 dBi：8dBm ☐ Antenna with DG greater than 6 dBi： [Limit = 8 – (DG – 6)] ☐ Point-to-point operation：

4.4.2 Test Procedure

Test method Refer as KDB 558074 D01, Section 10.2

1. The EUT RF output connected to the spectrum analyzer by RF cable.
2. Setting maximum power transmit of EUT
3. SA set RBW = 3kHz, VBW = 30kHz, Span = 1.5 times DTS Bandwidth (6 dB BW), Detector = Peak, Sweep Time = Auto and Trace = Max hold.
4. The path loss and Duty Factor were compensated to the results for each measurement by SA.
5. Mark the maximum level.
6. Measure and record the result of power spectral density. in the test report.

4.4.3 Test Setup



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4.4.4 Test Result

Test mode: IEEE 802.11b mode / 2412-2462 MHz					
Channel	**Frequency (MHz)**	**Chain 0 PPSD (dBm)**	**Chain 1 PPSD (dBm)**	**Total PSSD (dBm)**	**Limit (dBm)**
Low	2412	-0.86	-	-0.86	8
Mid	2437	-2.63	-	-2.63	
High	2462	-2.26	-	-2.26	

Test mode: IEEE 802.11g mode / 2412-2462 MHz					
Channel	**Frequency (MHz)**	**Chain 0 PPSD (dBm)**	**Chain 1 PPSD (dBm)**	**Total PSSD (dBm)**	**Limit (dBm)**
Low	2412	-3.10	-	-3.10	8
Mid	2437	-4.11	-	-4.11	
High	2462	-4.11	-	-4.11	

Test mode: IEEE 802.11n HT 20 MHz mode / 2412-2462 MHz					
Channel	**Frequency (MHz)**	**Chain 0 PPSD (dBm)**	**Chain 1 PPSD (dBm)**	**Total PSSD (dBm)**	**Limit (dBm)**
Low	2412	-4.49	-	-4.49	8
Mid	2437	-4.29	-	-4.29	
High	2462	-5.79	-	-5.79	

Test mode: IEEE 802.11n HT 40 MHz mode / 2422-2452 MHz					
Channel	**Frequency (MHz)**	**Chain 0 PPSD (dBm)**	**Chain 1 PPSD (dBm)**	**Total PSSD (dBm)**	**Limit (dBm)**
Low	2412	-5.54	-	-5.54	8
Mid	2437	-6.65	-	-6.65	
High	2462	-5.48	-	-5.48	

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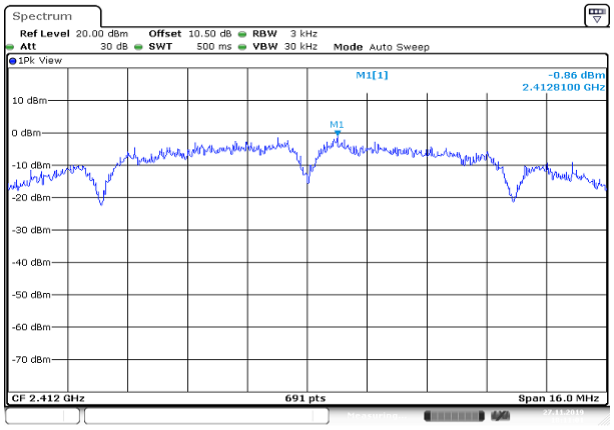
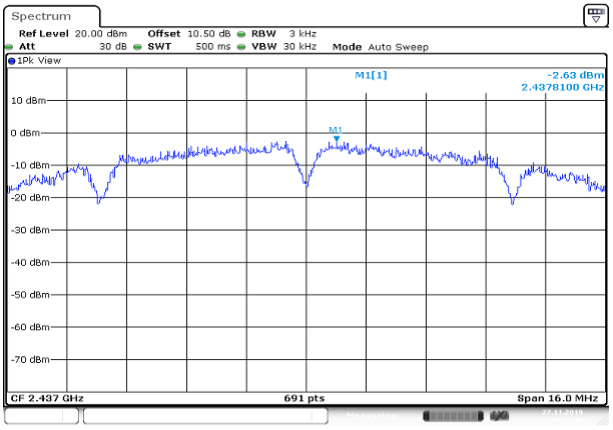
Test Data

IEEE 802.11b mode- chain 0

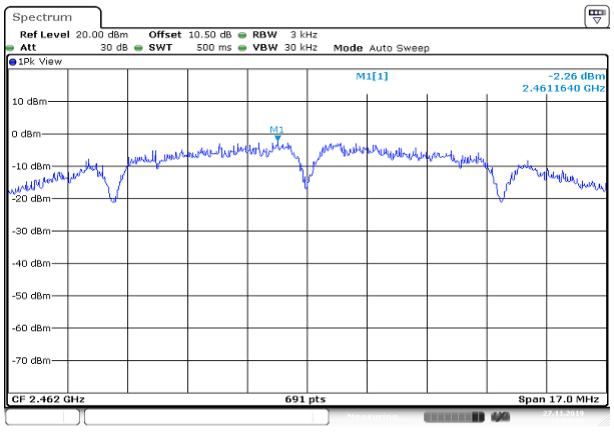
Low CH



Mid CH



High CH



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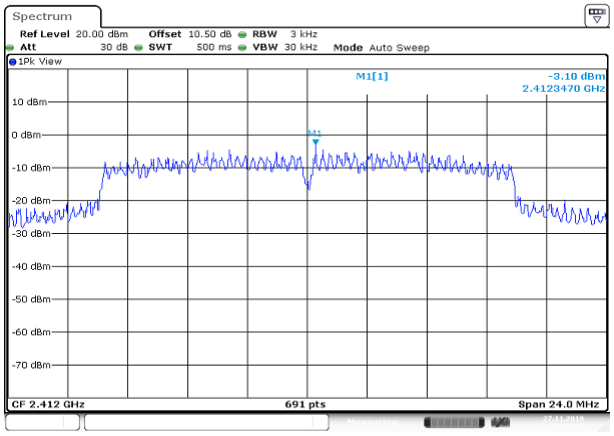
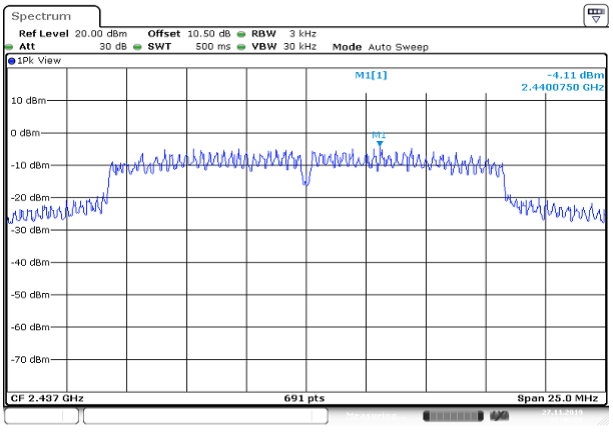
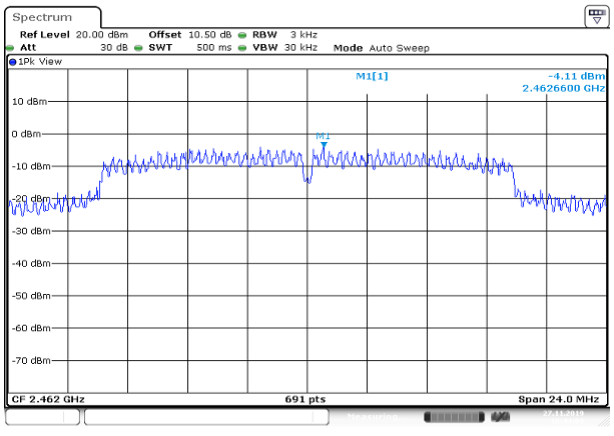
IEEE 802.11g mode- chain 0	
Low CH	**Mid CH**
	
High CH	
	

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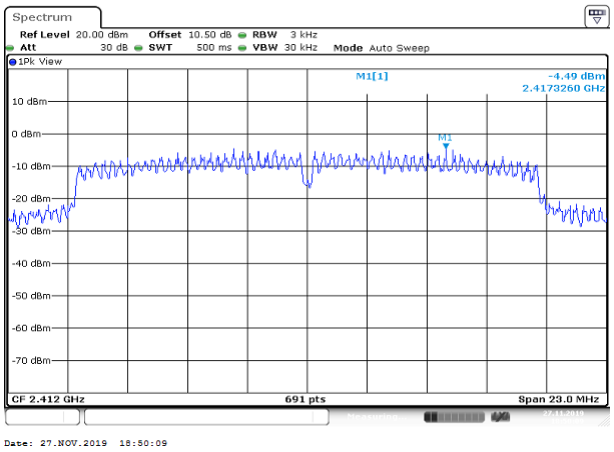
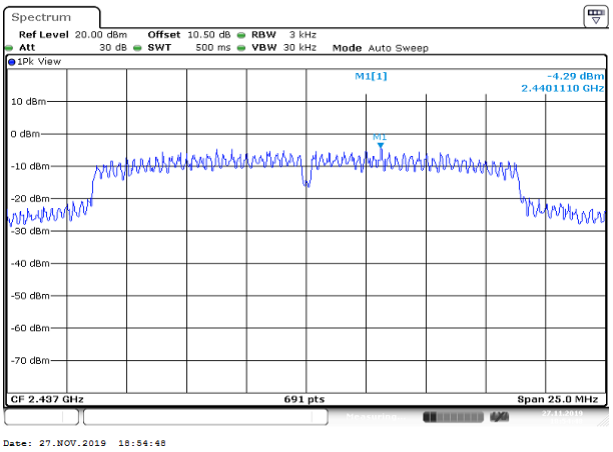
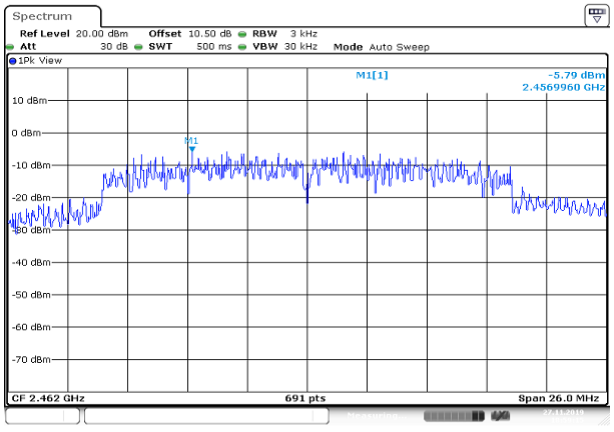
IEEE 802.11n HT20 mode- chain 0	
Low CH	**Mid CH**
	
High CH	
	

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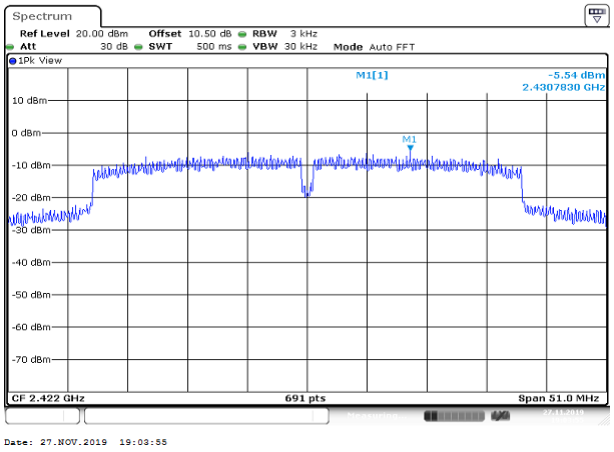
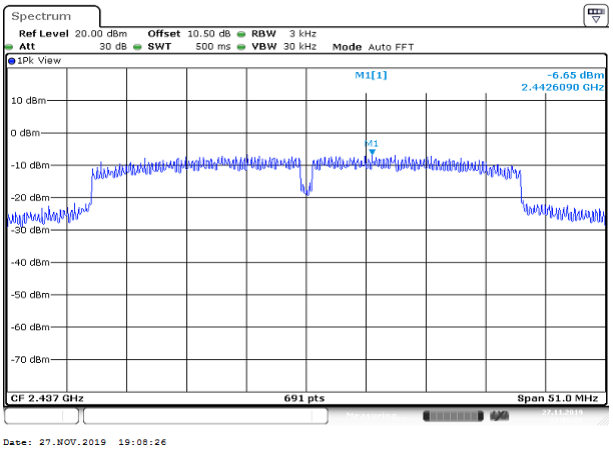
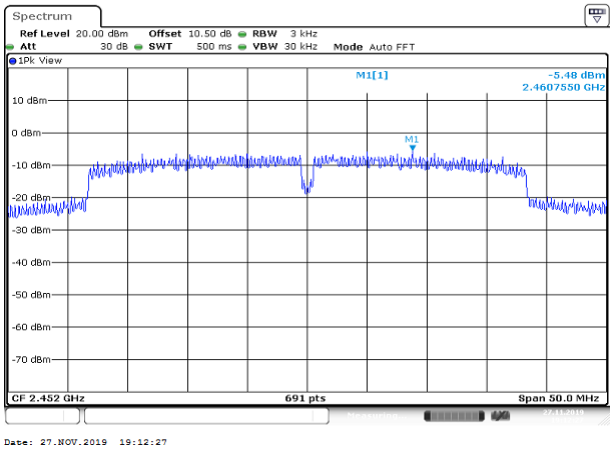
IEEE 802.11n HT40 mode- chain 0	
Low CH	**Mid CH**
	
High CH	
	

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4.5 CONDUCTED BANDEDGE AND SPURIOUS EMISSION

4.5.1 Test Limit

According to §15.247(d),

In any 100 kHz bandwidth outside the authorized frequency band,

Non-restricted bands shall be attenuated at least 20 dB/30 dB relative to the maximum PSD level in 100 kHz by RF conducted or a radiated measurement which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a).

4.5.2 Test Procedure

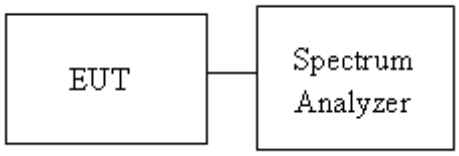
Test method Refer as KDB 662911 D01, KDB 558074 D01.

1. EUT RF output port connected to the SA by RF cable, and the path loss was compensated to result.

2. SA setting, RBW=100kHz, VBW=300kHz, Detector=Peak, Trace mode = max hold, SWT = Auto.

3. In any 100 kHz bandwidth outside the authorized frequency band, shall be attenuated at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when conducted power procedure is used. f the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

4.5.3 Test Setup



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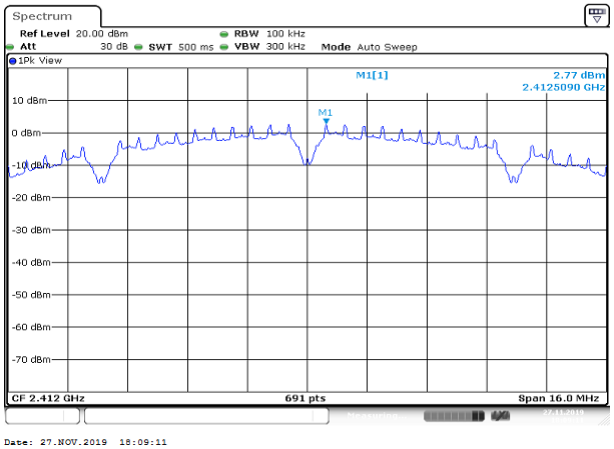
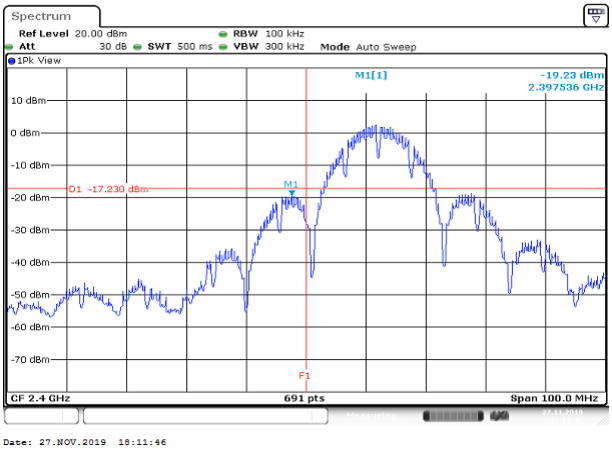
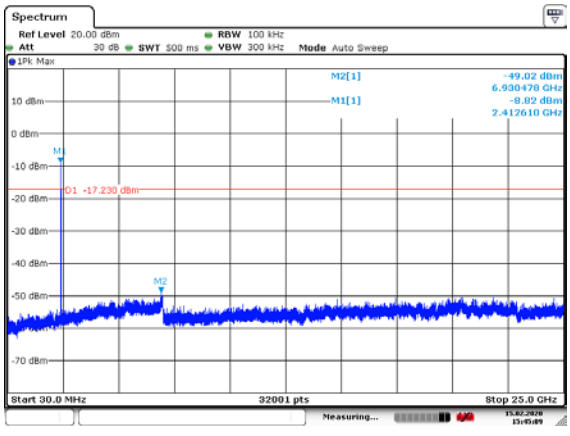
4.5.4 Test Result

Test Data

IEEE 802.11b mode Low CH chain 0	
Reference Level of PSD in 100kHz	**Band Edge**
	
Spurious Emission 30MHz-25GHz	
	

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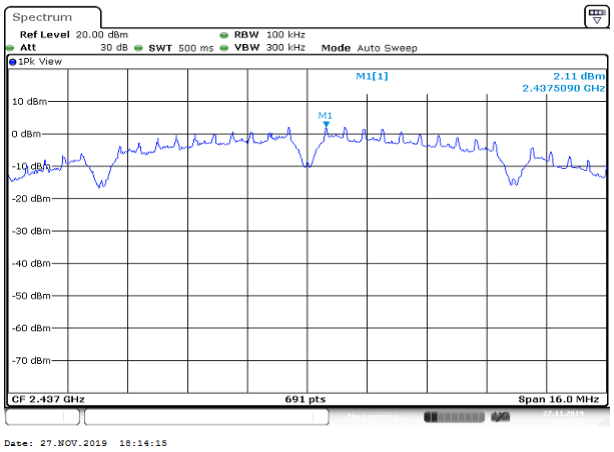
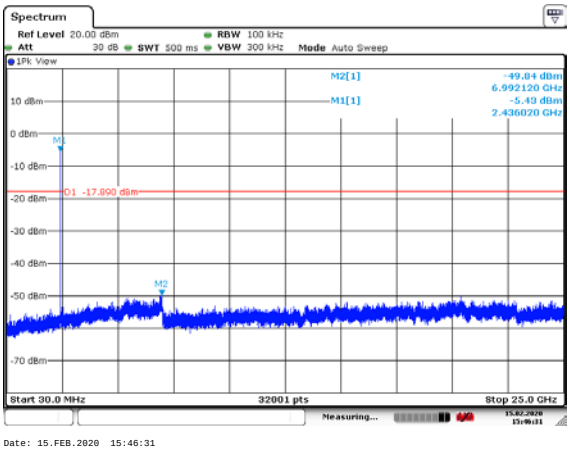
IEEE 802.11b mode Mid CH chain 0	
Reference Level of PSD in 100kHz	**Spurious Emission 30MHz-25GHz**
	

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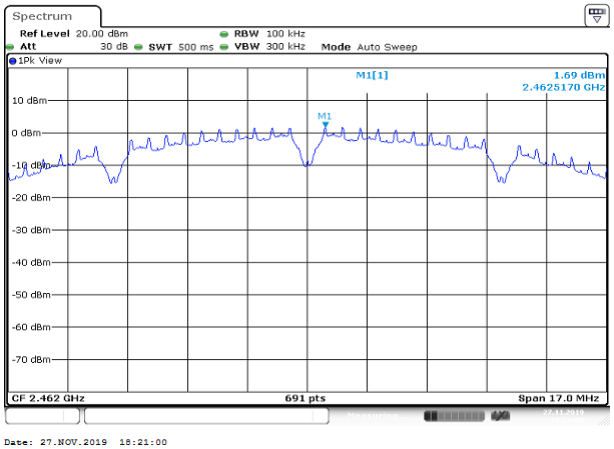
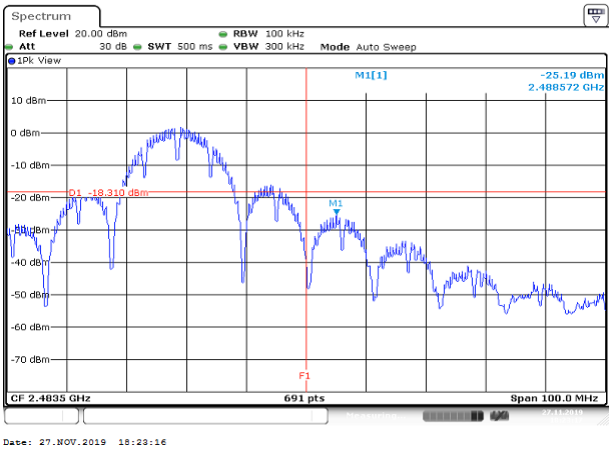
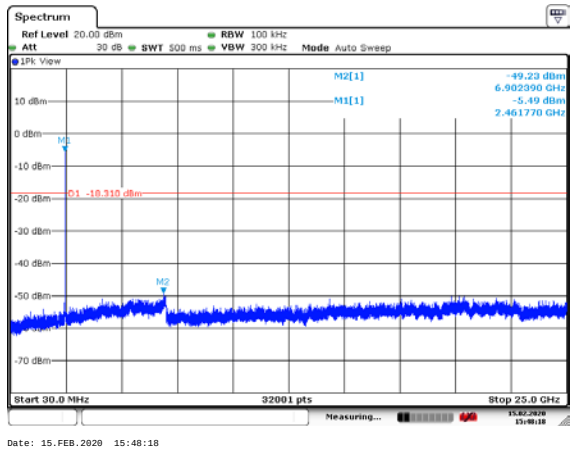
IEEE 802.11b mode High CH chain 0	
Reference Level of PSD in 100kHz	**Band Edge**
	
Spurious Emission 30MHz-25GHz	
	

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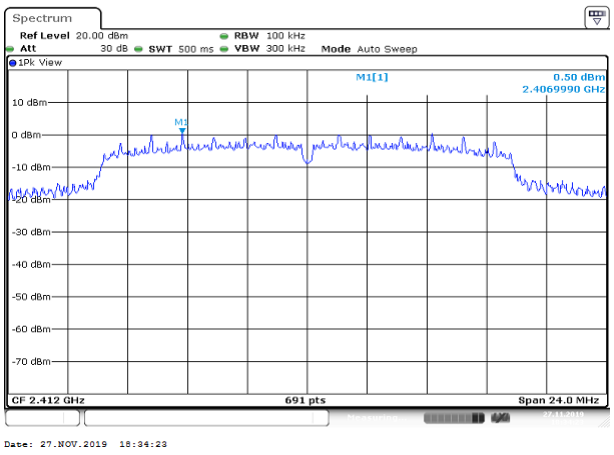
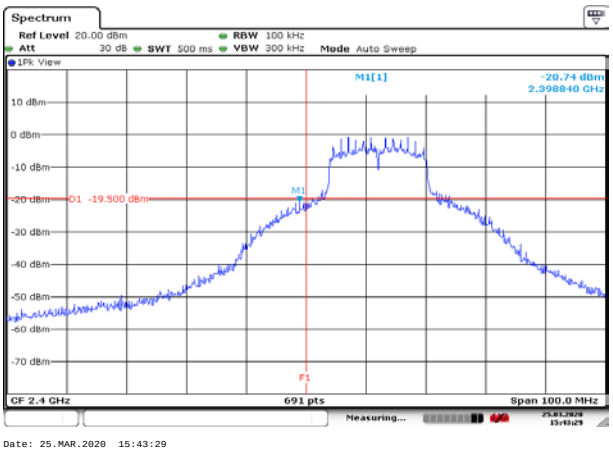
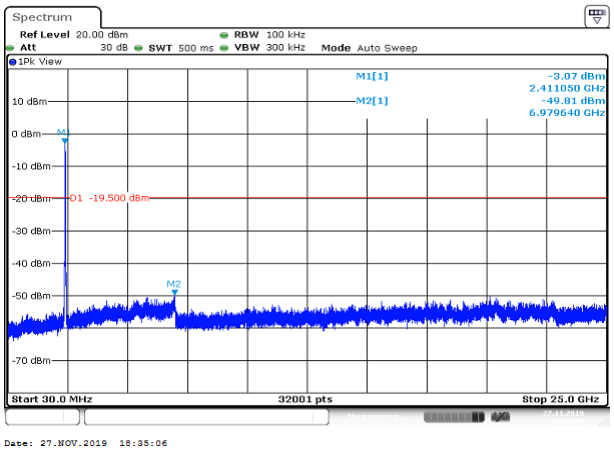
IEEE 802.11g mode Low CH chain 0	
Reference Level of PSD in 100kHz	**Band Edge**
	
Spurious Emission 30MHz-25GHz	
	

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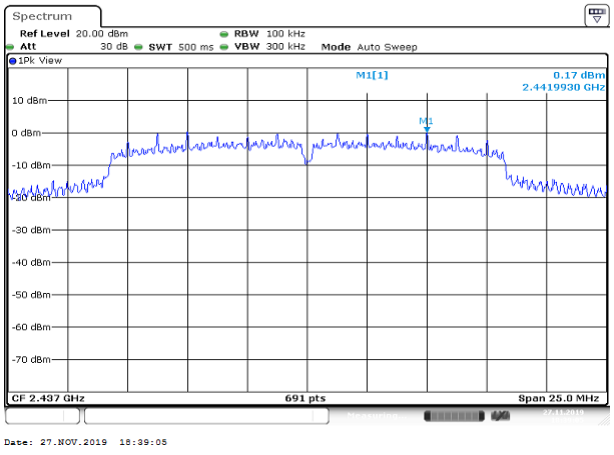
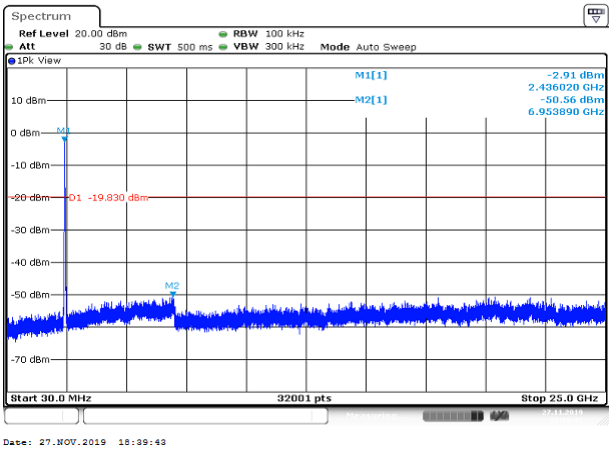
IEEE 802.11g mode Mid CH chain 0	
Reference Level of PSD in 100kHz	**Spurious Emission 30MHz-25GHz**
	

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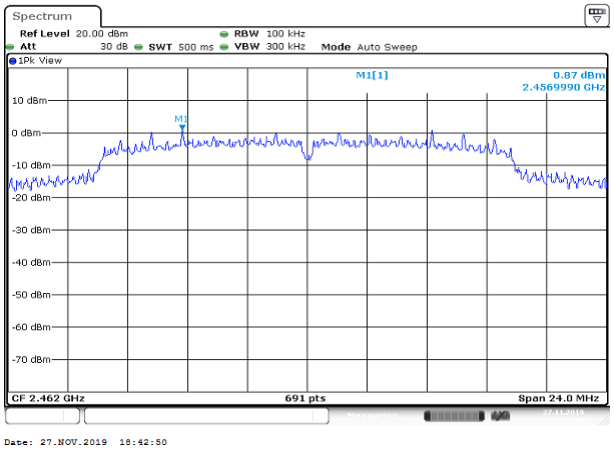
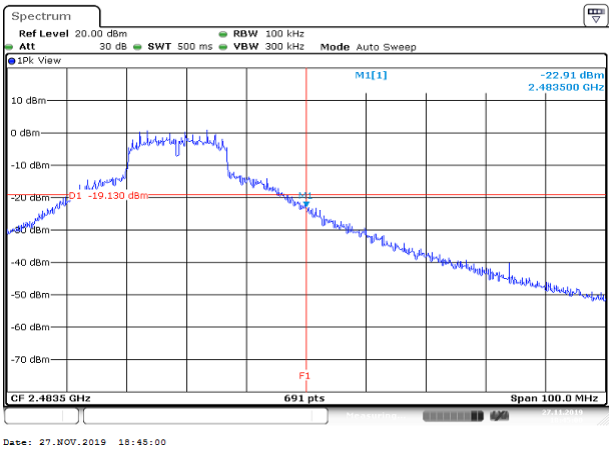
IEEE 802.11g mode High CH chain 0

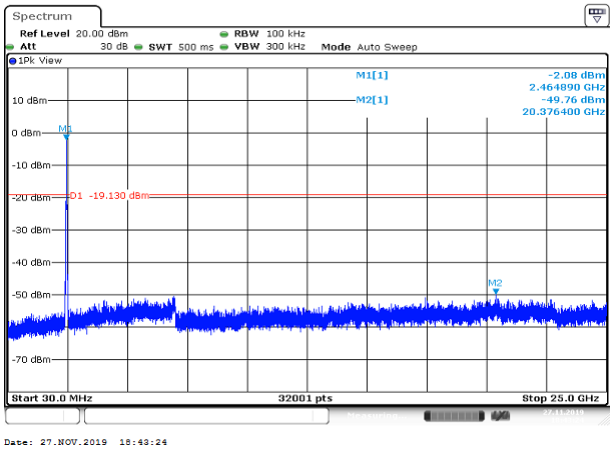
Reference Level of PSD in 100kHz



Band Edge



Spurious Emission 30MHz-25GHz



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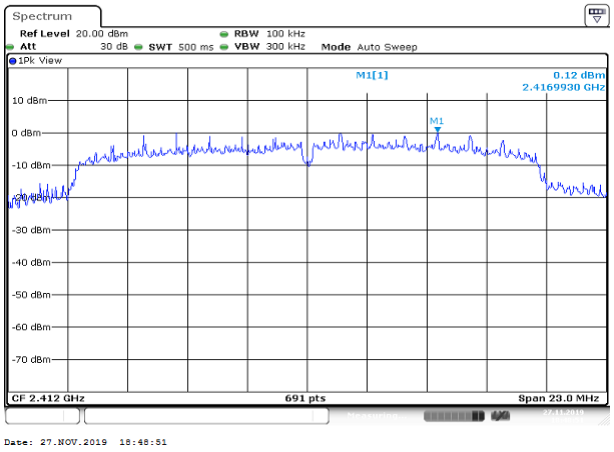
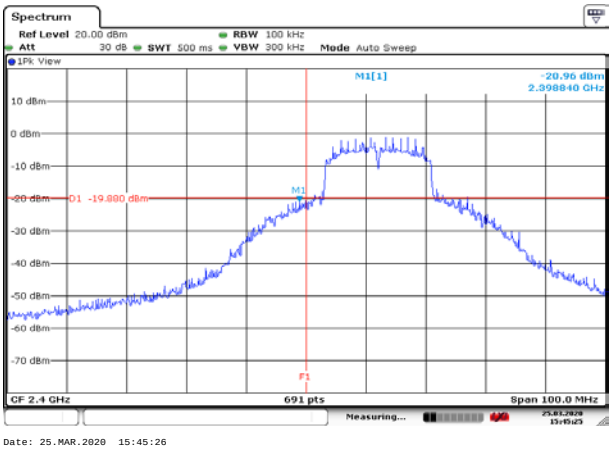
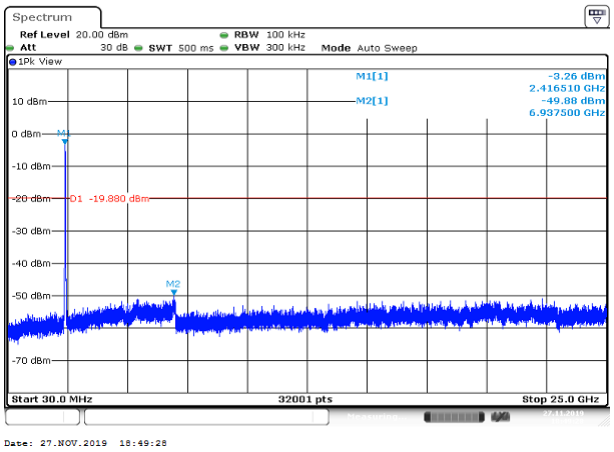
IEEE 802.11 n HT20 mode Low CH chain 0	
Reference Level of PSD in 100kHz	**Band Edge**
	
Spurious Emission 30MHz-25GHz	
	

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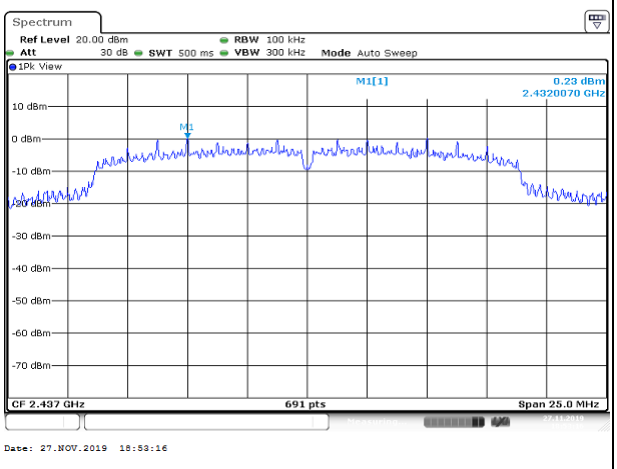
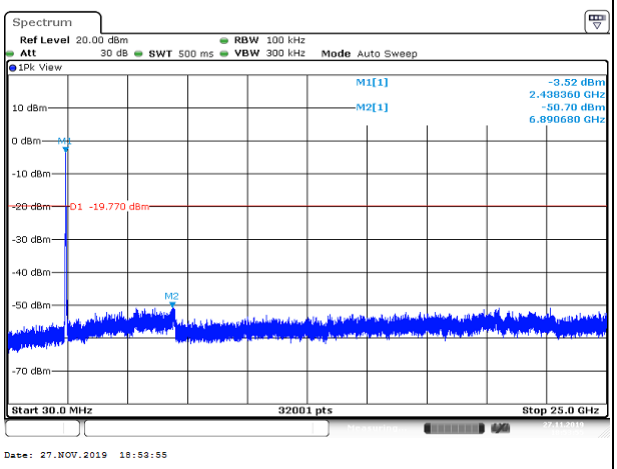
IEEE 802.11 n HT20 mode Mid CH chain 0	
Reference Level of PSD in 100kHz	**Spurious Emission 30MHz-25GHz**
	

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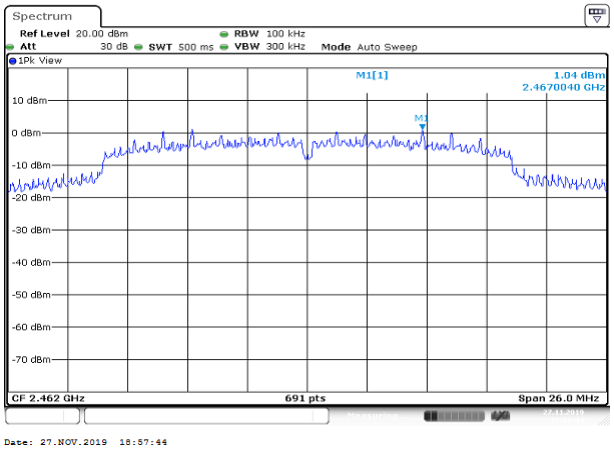
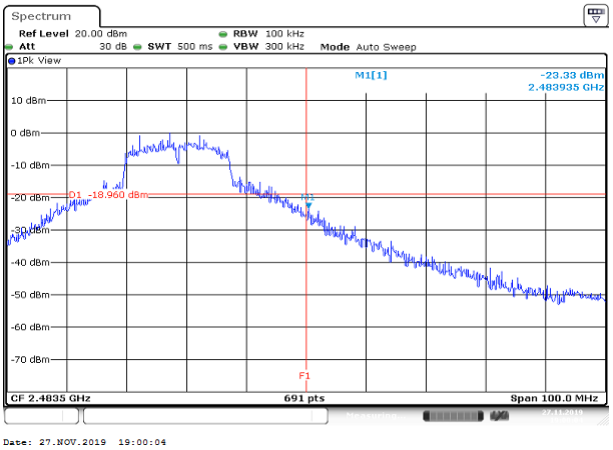
IEEE 802.11n HT20 mode High CH chain 0

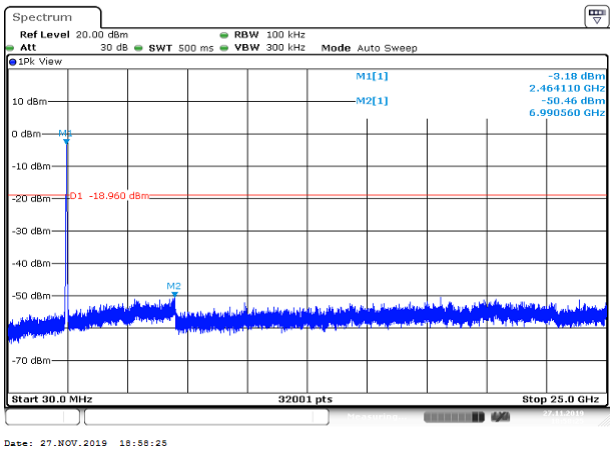
Reference Level of PSD in 100kHz



Band Edge



Spurious Emission 30MHz-25GHz



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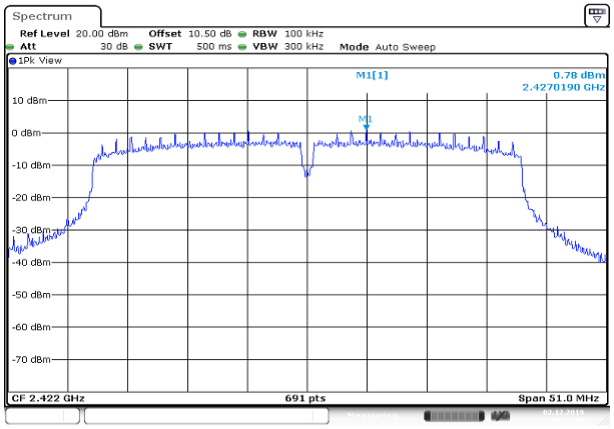
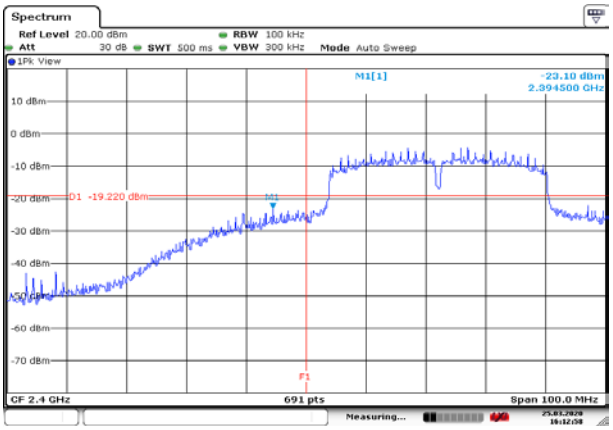
IEEE 802.11 n HT40 mode Low CH chain 0

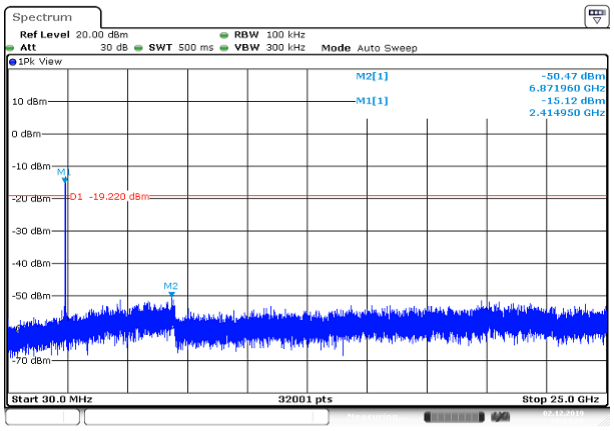
Reference Level of PSD in 100kHz



Band Edge



Spurious Emission 30MHz-25GHz



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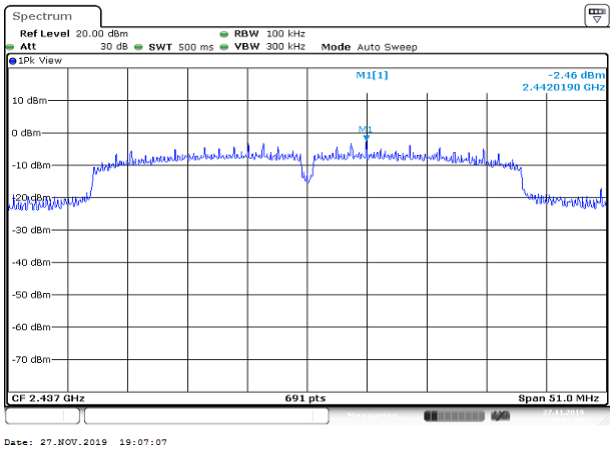
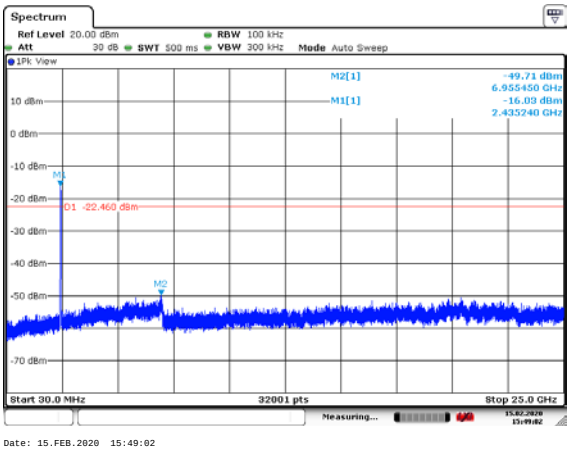
IEEE 802.11 n HT40 mode Mid CH chain 0	
Reference Level of PSD in 100kHz	**Spurious Emission 30MHz-25GHz**
	

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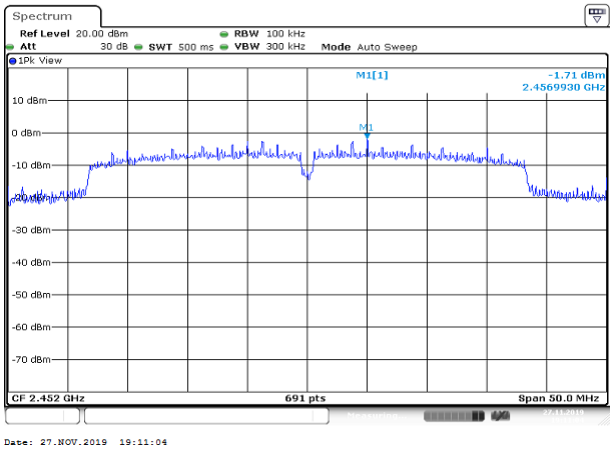
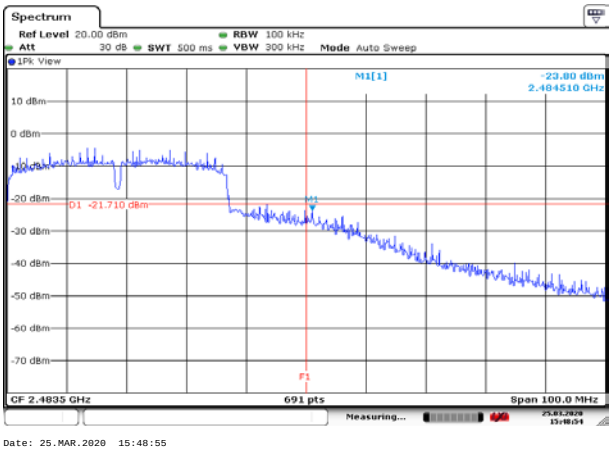
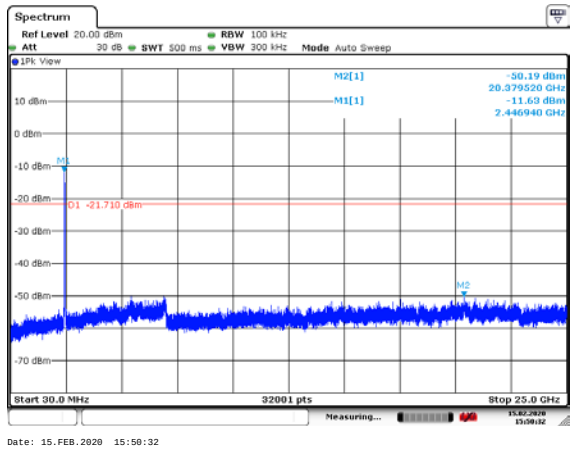
IEEE 802.11n HT40 mode High CH chain 0	
Reference Level of PSD in 100kHz	**Band Edge**
	
Spurious Emission 30MHz-25GHz	
	

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4.6 RADIATION BANDEDGE AND SPURIOUS EMISSION

4.6.1 Test Limit

FCC according to §15.247(d), §15.209 and §15.205,

In any 100 kHz bandwidth outside the authorized frequency band, all harmonic and spurious must be least 20 dB below the highest emission level with the authorized frequency band. Radiation emission which fall in the restricted bands must also follow the FCC section 15.209 as below limit in table.

Below 30 MHz

Frequency	Field Strength (microvolts/m)	Magnetic H-Field (microamperes/m)	Measurement Distance (metres)
9-490 kHz	2,400/F (F in kHz)	2,400/F (F in kHz)	300
490-1,705 kHz	24,000/F (F in kHz)	24,000/F (F in kHz)	30
1.705-30 MHz	30	N/A	30

Above 30 MHz

Frequency	Field Strength (microvolts/m)	Measurement Distance (metres)
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

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4.6.2 Test Procedure

Test method Refer as KDB 662911 D01, KDB 558074 D01.

1. The EUT is placed on a turntable, Above 1 GHz is 1.5m and below 1 GHz is 0.8m above ground plane. The EUT Configured un accordance with ANSI C63.10: 2013, and the EUT set in a continuous mode.

2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level. And EUT is set 3m away from the receiving antenna, which is scanned from 1m to 4m above the ground plane to find out the highest emissions. Measurement are made polarized in both the vertical and the horizontal positions with antenna.

3. Span shall wide enough to full capture the emission measured. The SA from 9kHz to 26.5GHz set to the low, Mid and High channels with the EUT transmit.

Note: No emission found between lowest internal used/generated frequency to 30MHz (9KHz~30MHz)

Remark:

Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open are test site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.

4. The SA setting following：

(1) Below 1G：RBW = 100kHz, VBW ≥ 3 RBW, Sweep = Auto, Detector = Peak, Trace = Max hold.

(2) Above 1G：

(2.1) For Peak measurement：RBW = 1MHz, VBW ≥ 3 RBW, Sweep = Auto, Detector = Peak, Trace = Max hold.

(2.2) For Average measurement：RBW = 1MHz, VBW

- If Duty Cycle ≥ 98%, VBW=10Hz.
- If Duty Cycle < 98%, VBW=1/T.

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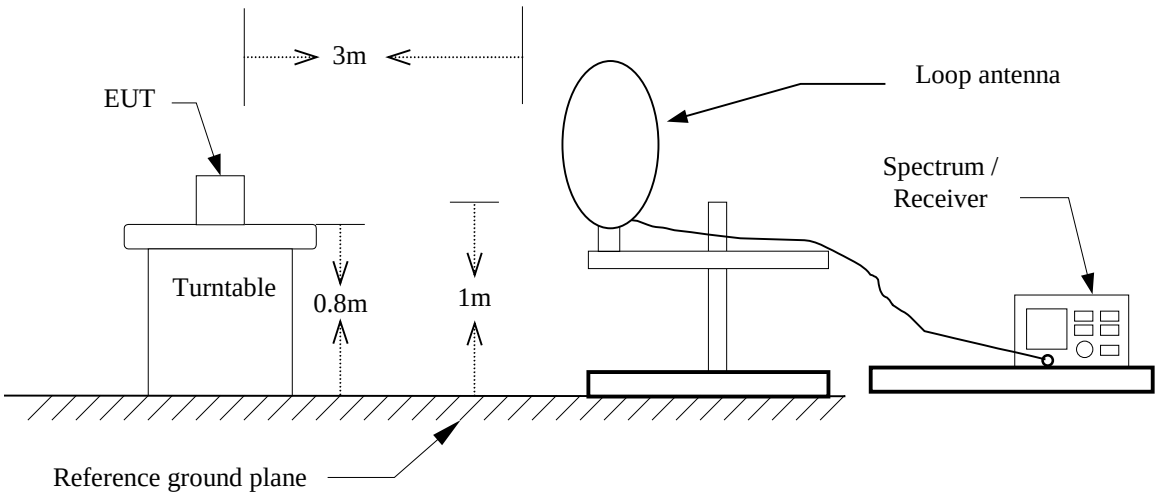
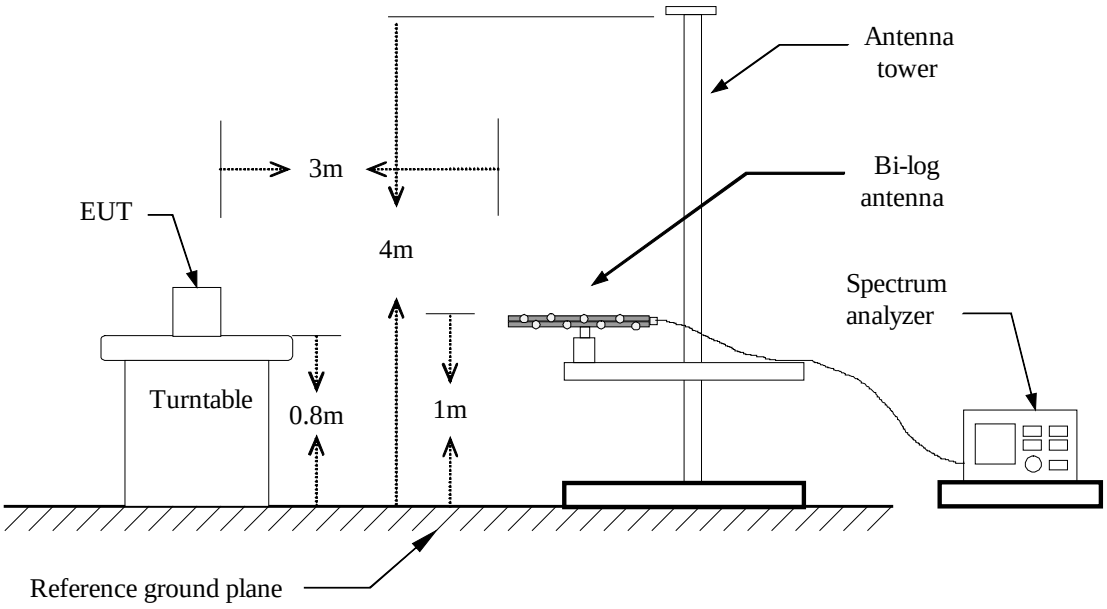
4.6.3 Test Setup

9kHz ~ 30MHz



30MHz ~ 1GHz



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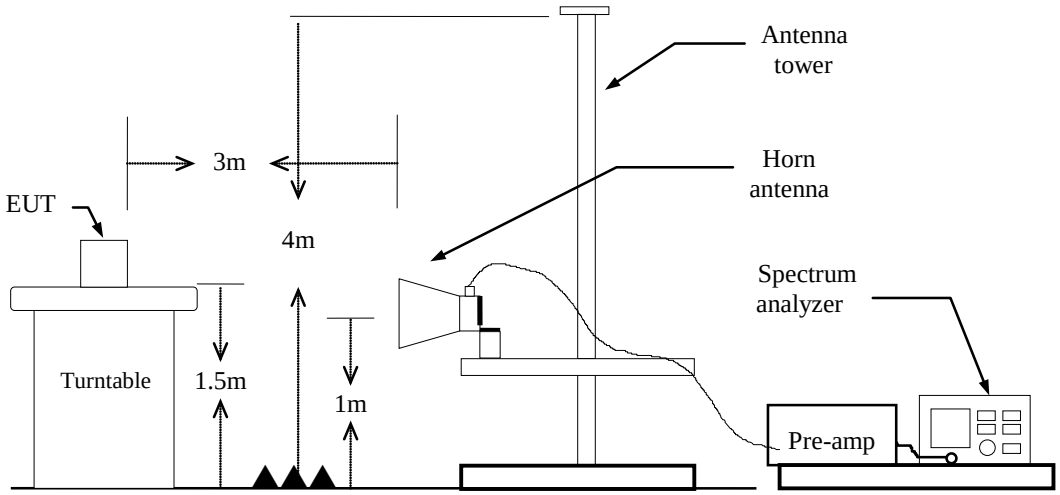
Above 1 GHz



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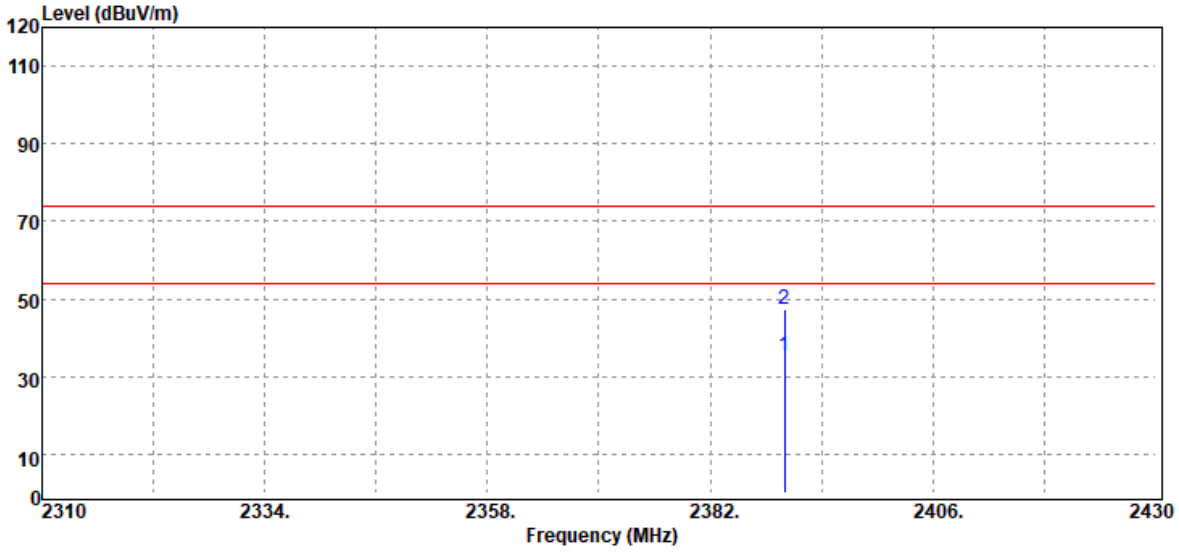
4.6.4 Test Result

Band Edge Test Data

PCB Antenna

Test Mode	IEEE 802.11b Low CH 2412MHz	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Band Edge	Test Date	December 25, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak / Average		



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2390.00	Average	38.82	-3.38	35.44	54.00	-18.56
2390.00	Peak	50.52	-3.38	47.14	74.00	-26.86

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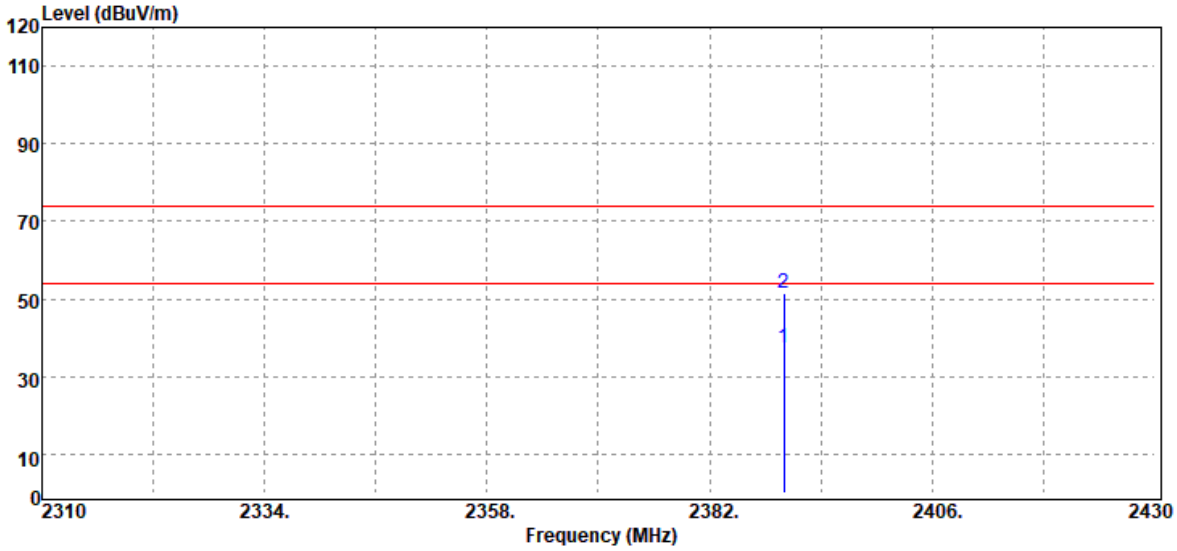
Test Mode	IEEE 802.11b Low CH 2412MHz	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Band Edge	Test Date	December 25, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak & Average		



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2390.00	Average	40.94	-3.38	37.56	54.00	-16.44
2390.00	Peak	54.70	-3.38	51.32	74.00	-22.68

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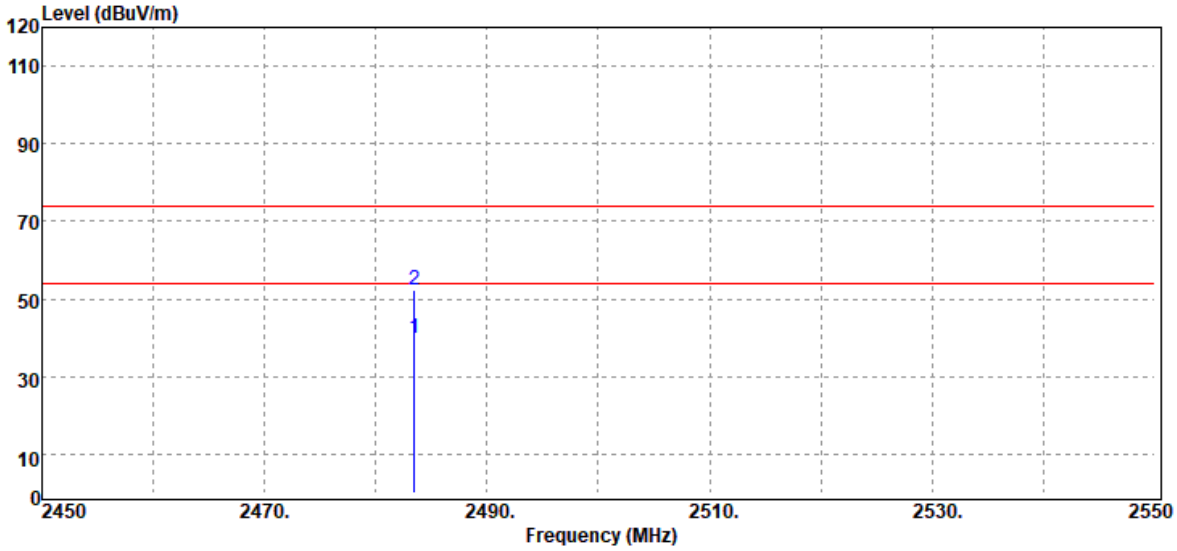
Test Mode	IEEE 802.11b High CH 2462MHz	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Band Edge	Test Date	December 25, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak / Average		



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2483.50	Average	42.76	-2.83	39.93	54.00	-14.07
2483.50	Peak	55.13	-2.83	52.30	74.00	-21.70

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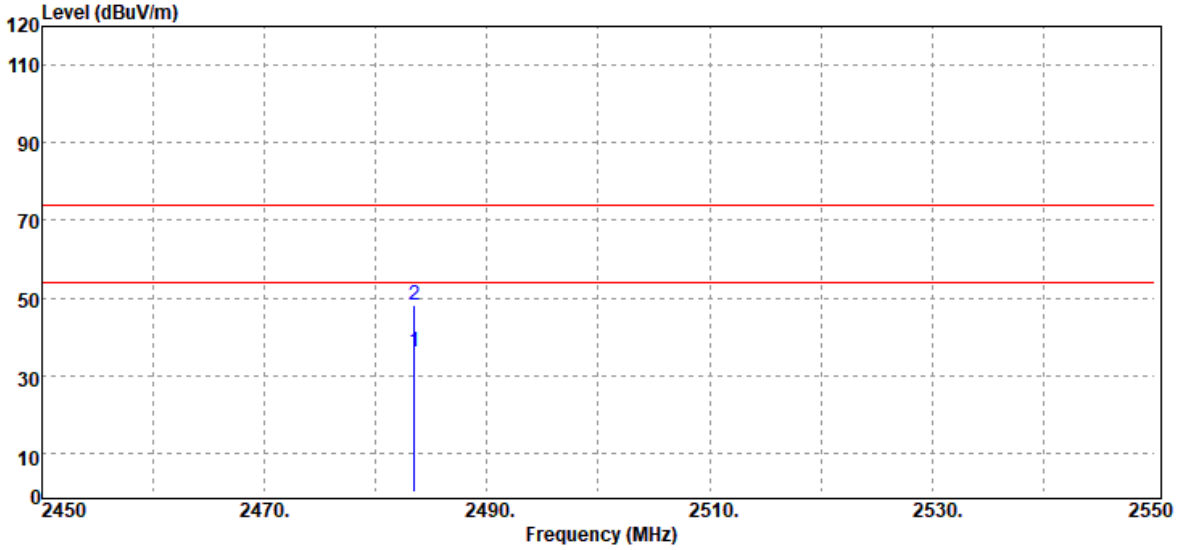
Test Mode	IEEE 802.11b High CH 2462MHz	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Band Edge	Test Date	December 25, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak & Average		



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2483.50	Average	39.15	-2.83	36.32	54.00	-17.68
2483.50	Peak	50.82	-2.83	47.99	74.00	-26.01

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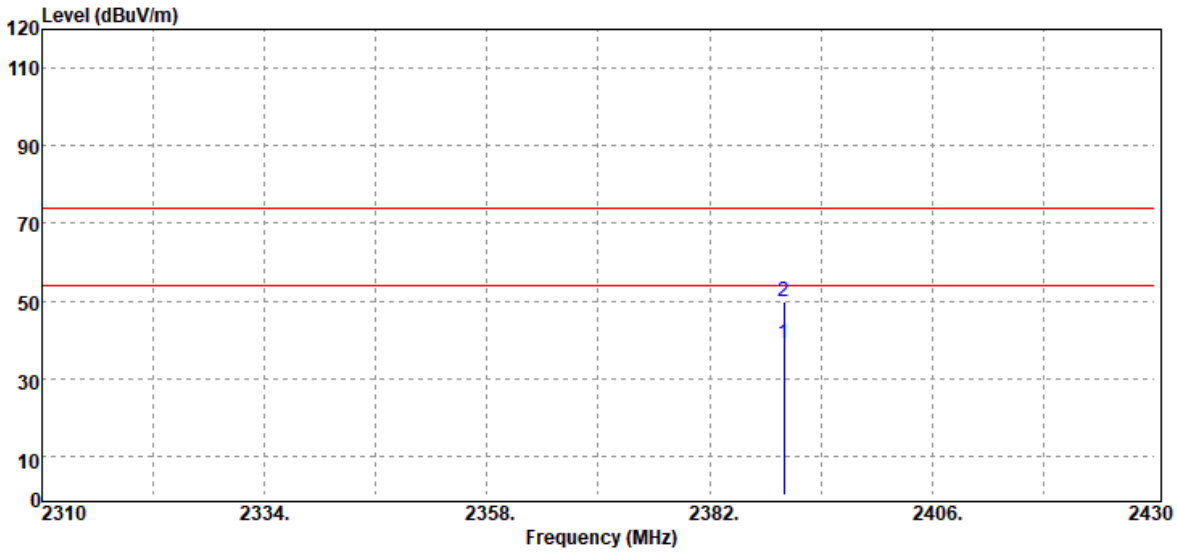
Test Mode	IEEE 802.11g Low CH 2412MHz	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Band Edge	Test Date	December 25, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak / Average		



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2390.00	Average	42.36	-3.38	38.98	54.00	-15.02
2390.00	Peak	53.12	-3.38	49.74	74.00	-24.26

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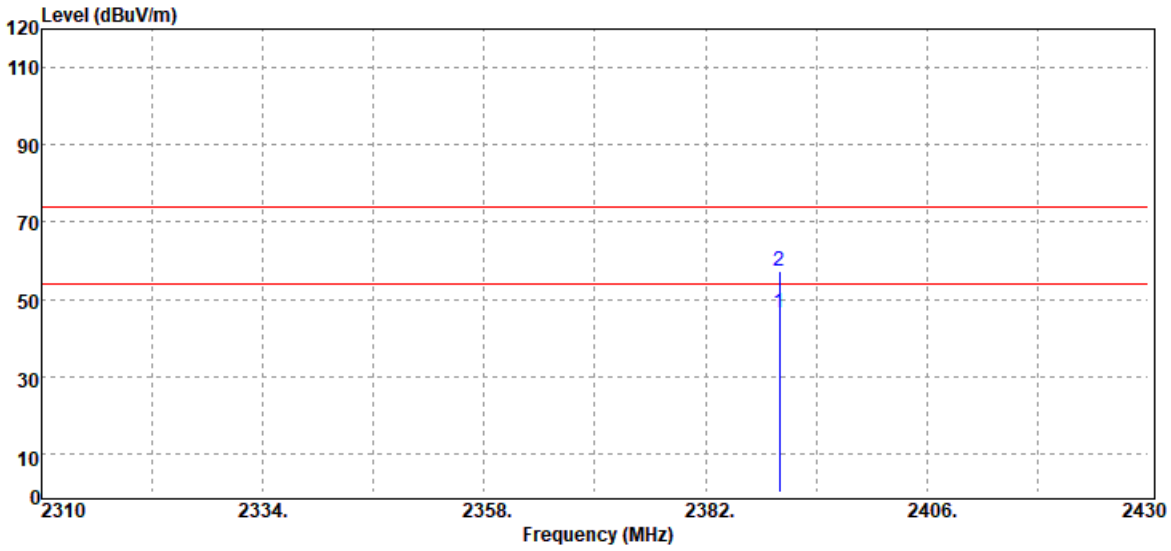
Test Mode	IEEE 802.11g Low CH 2412MHz	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Band Edge	Test Date	December 25, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak & Average		



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2390.00	Average	49.88	-3.38	46.50	54.00	-7.50
2390.00	Peak	60.79	-3.38	57.41	74.00	-16.59

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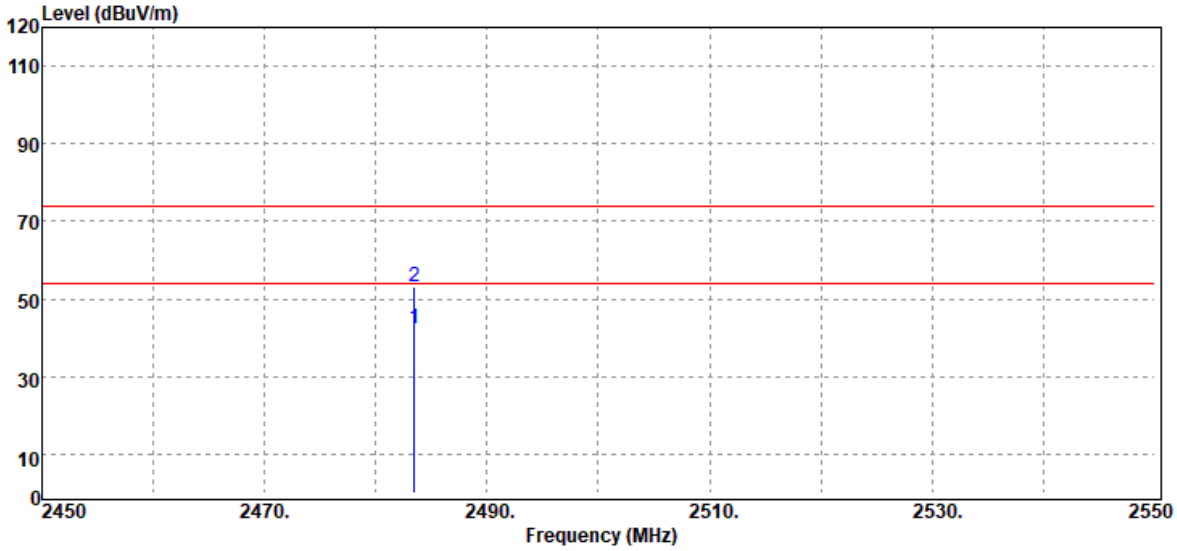
Test Mode	IEEE 802.11g High CH 2462MHz	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Band Edge	Test Date	December 25, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak / Average		



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2483.50	Average	45.18	-2.83	42.35	54.00	-11.65
2483.50	Peak	56.07	-2.83	53.24	74.00	-20.76

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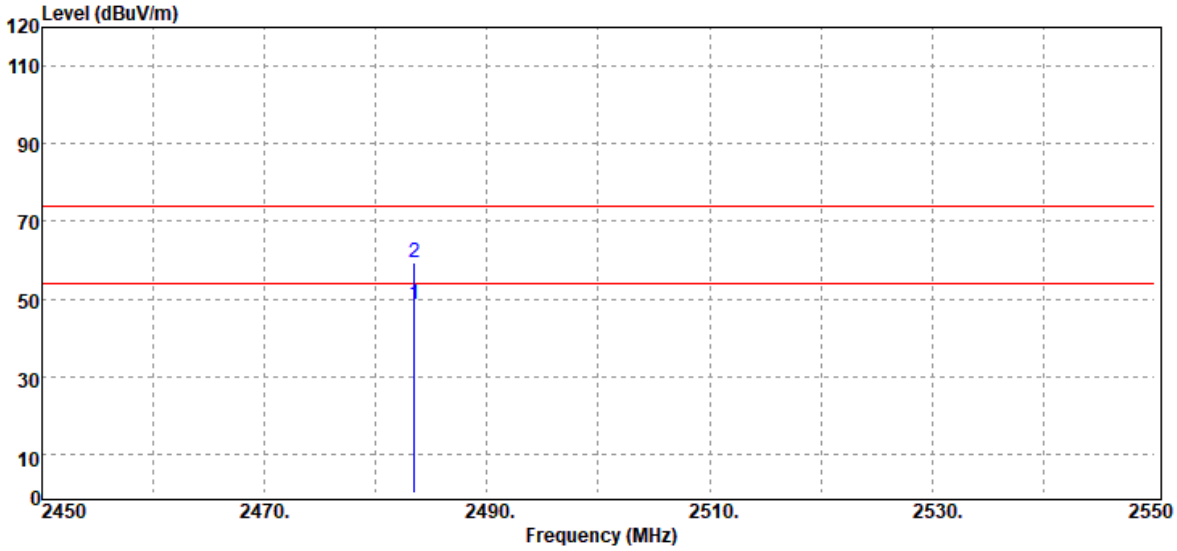
Test Mode	IEEE 802.11g High CH 2462MHz	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Band Edge	Test Date	December 25, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak & Average		



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2483.50	Average	51.53	-2.83	48.70	54.00	-5.30
2483.50	Peak	62.40	-2.83	59.57	74.00	-14.43

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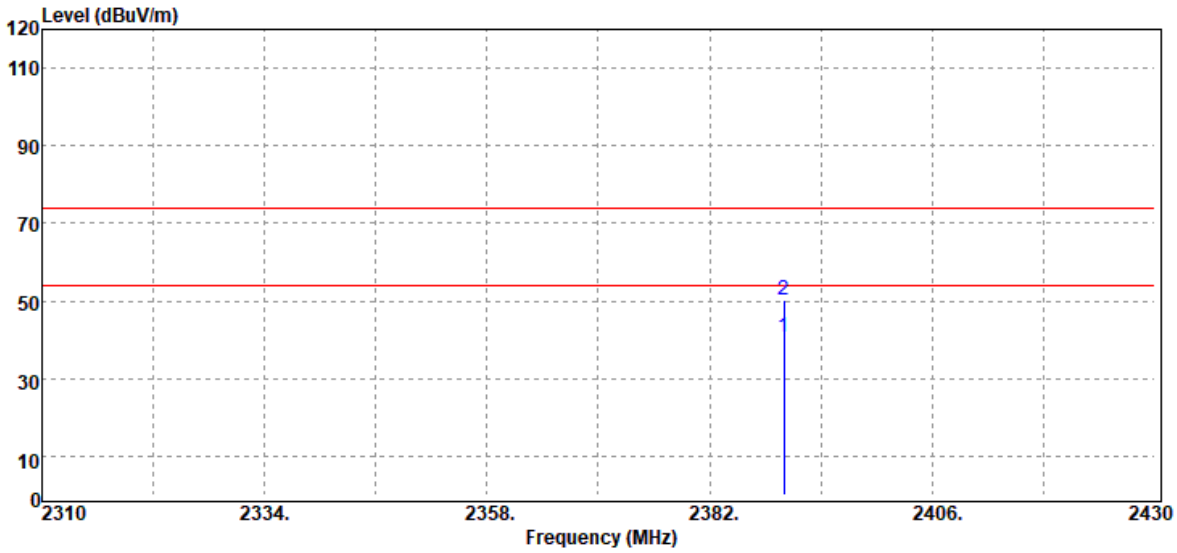
Test Mode	IEEE 802.11n HT20 Low CH 2412MHz	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Band Edge	Test Date	December 25, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak / Average		



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2390.00	Average	44.01	-3.38	40.63	54.00	-13.37
2390.00	Peak	53.49	-3.38	50.11	74.00	-23.89

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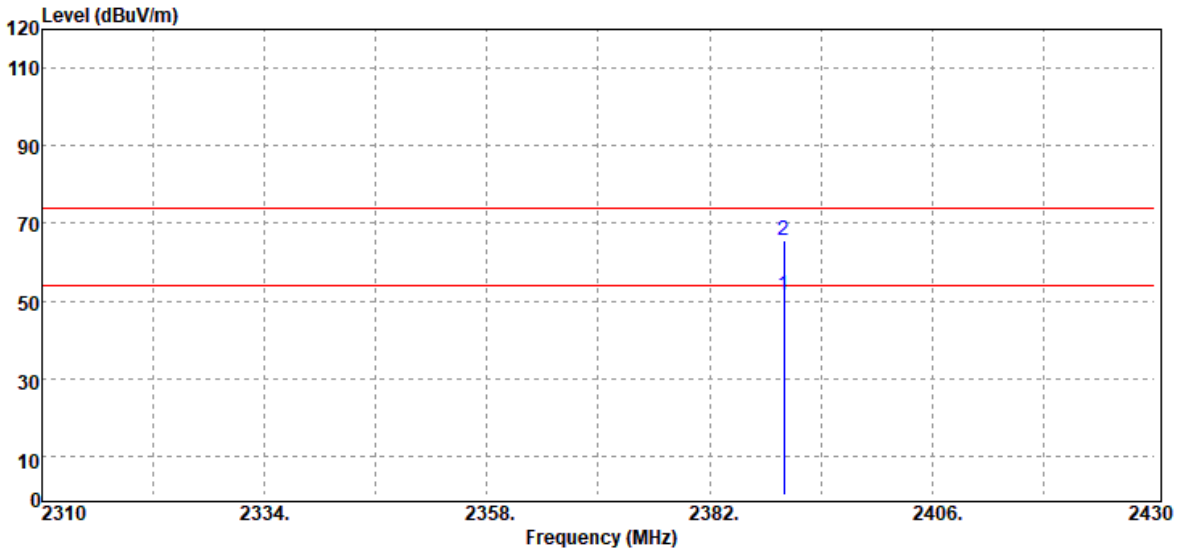
Test Mode	IEEE 802.11 n20 Low CH 2412MHz	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Band Edge	Test Date	December 25, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak & Average		



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2390.00	Average	54.81	-3.38	51.43	54.00	-2.57
2390.00	Peak	68.99	-3.38	65.61	74.00	-8.39

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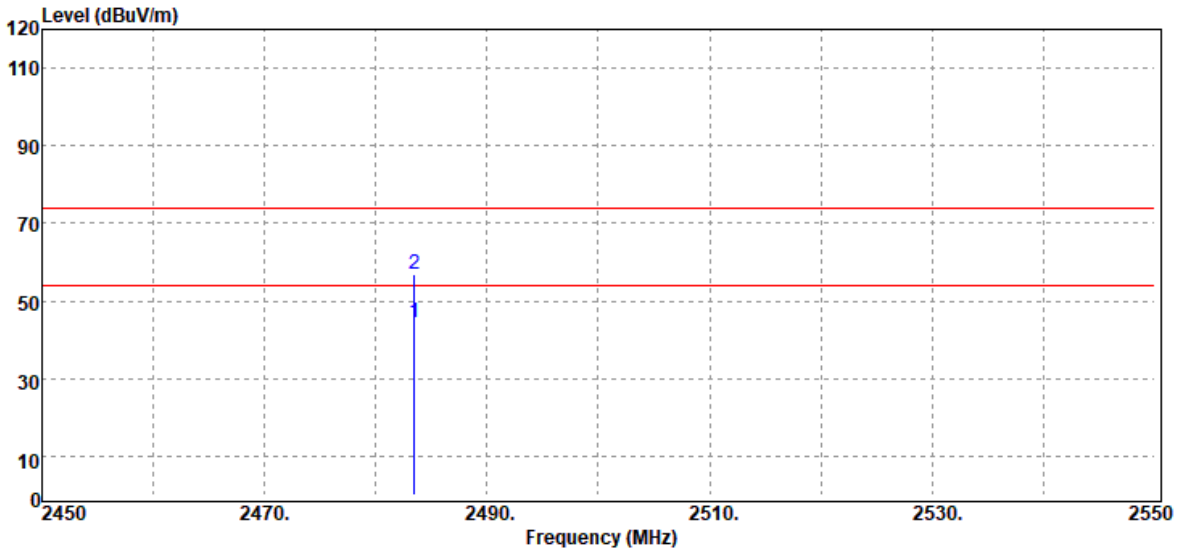
Test Mode	IEEE 802.11n HT20 High CH 2462MHz	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Band Edge	Test Date	December 25, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak / Average		



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2483.50	Average	47.46	-2.83	44.63	54.00	-9.37
2483.50	Peak	59.68	-2.83	56.85	74.00	-17.15

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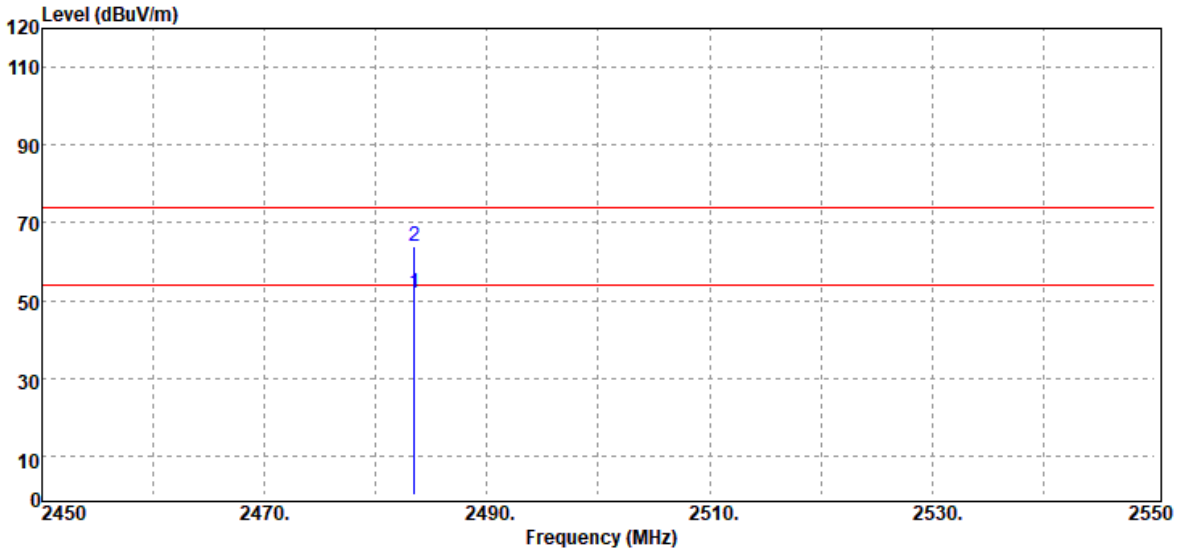
Test Mode	IEEE 802.11n20 High CH 2462MHz	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Band Edge	Test Date	December 25, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak & Average		



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2483.50	Average	54.63	-2.83	51.80	54.00	-2.20
2483.50	Peak	66.85	-2.83	64.02	74.00	-9.98

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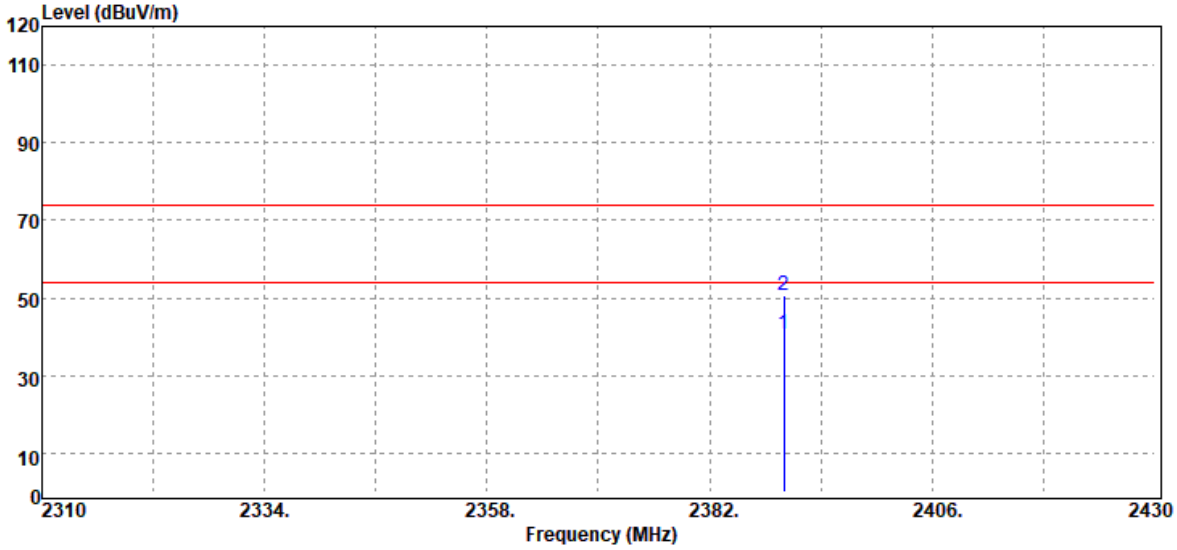
Test Mode	IEEE 802.11n HT40 Low CH 2422MHz	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Band Edge	Test Date	December 25, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak / Average	Test Voltage	



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2390.00	Average	44.24	-3.38	40.86	54.00	-13.14
2390.00	Peak	54.11	-3.38	50.73	74.00	-23.27

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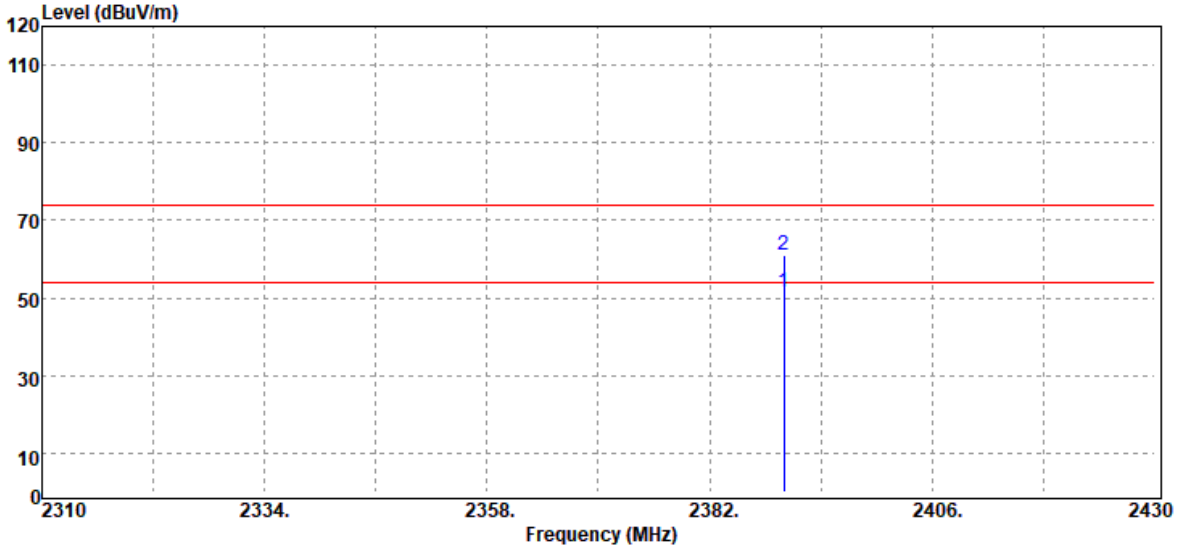
Test Mode	IEEE 802.11n HT40 Low CH 2422MHz	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Band Edge	Test Date	December 25, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak / Average	Test Voltage	



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2390.00	Average	55.06	-3.38	51.68	54.00	-2.32
2390.00	Peak	64.41	-3.38	61.03	74.00	-12.97

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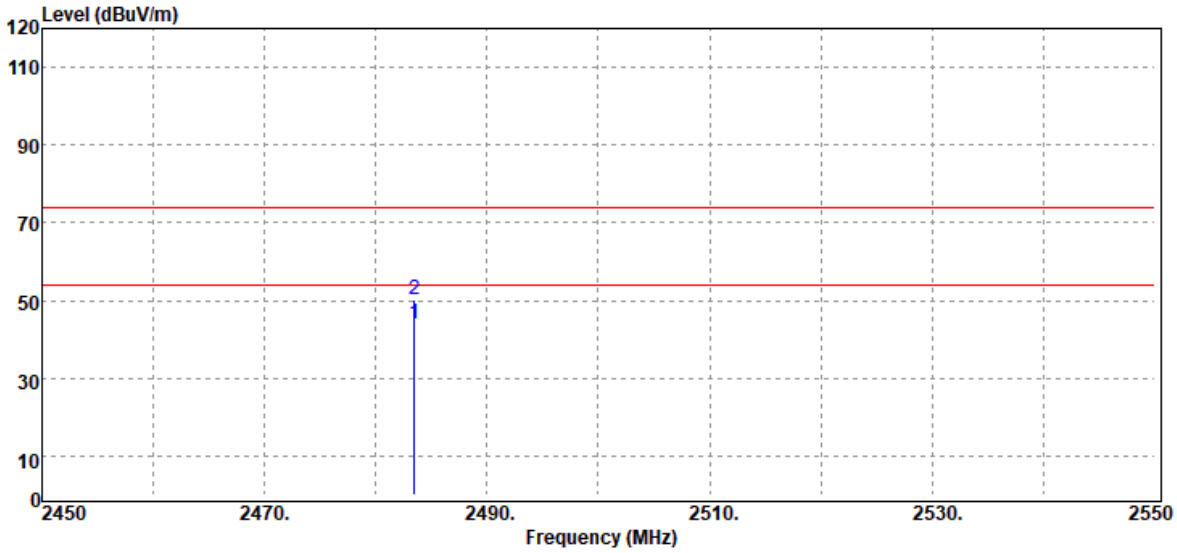
Test Mode	IEEE 802.11n HT40 High CH 2452MHz	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Band Edge	Test Date	December 25, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak / Average	Test Voltage	



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2483.50	Average	46.70	-2.83	43.87	54.00	-10.13
2483.50	Peak	53.14	-2.83	50.31	74.00	-23.69

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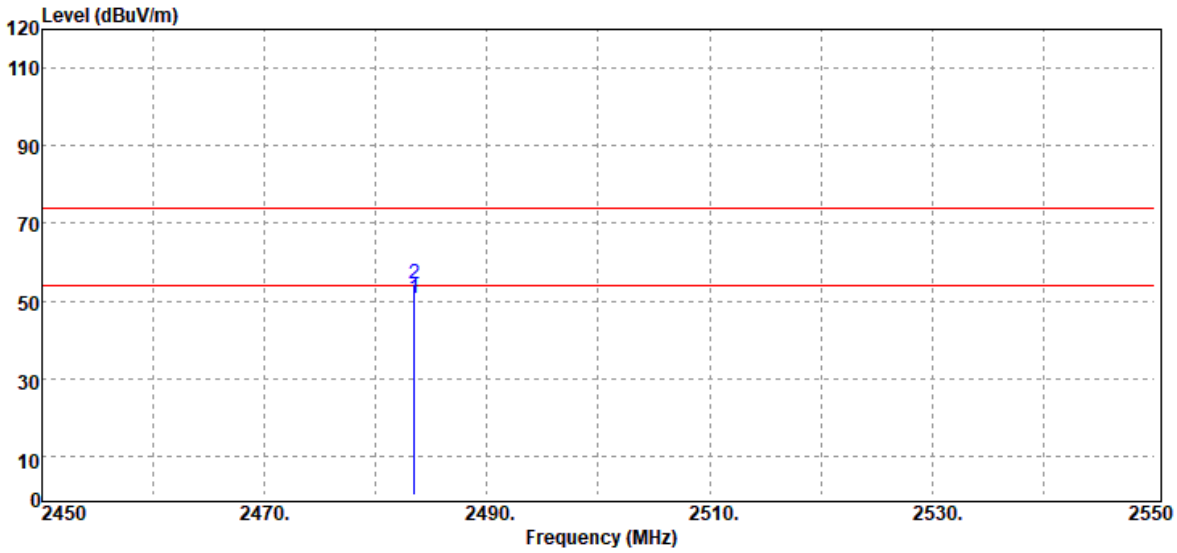
Test Mode	IEEE 802.11n HT40 High CH 2452MHz	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Band Edge	Test Date	December 25, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak / Average	Test Voltage	



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2483.50	Average	53.40	-2.83	50.57	54.00	-3.43
2483.50	Peak	57.13	-2.83	54.30	74.00	-19.70

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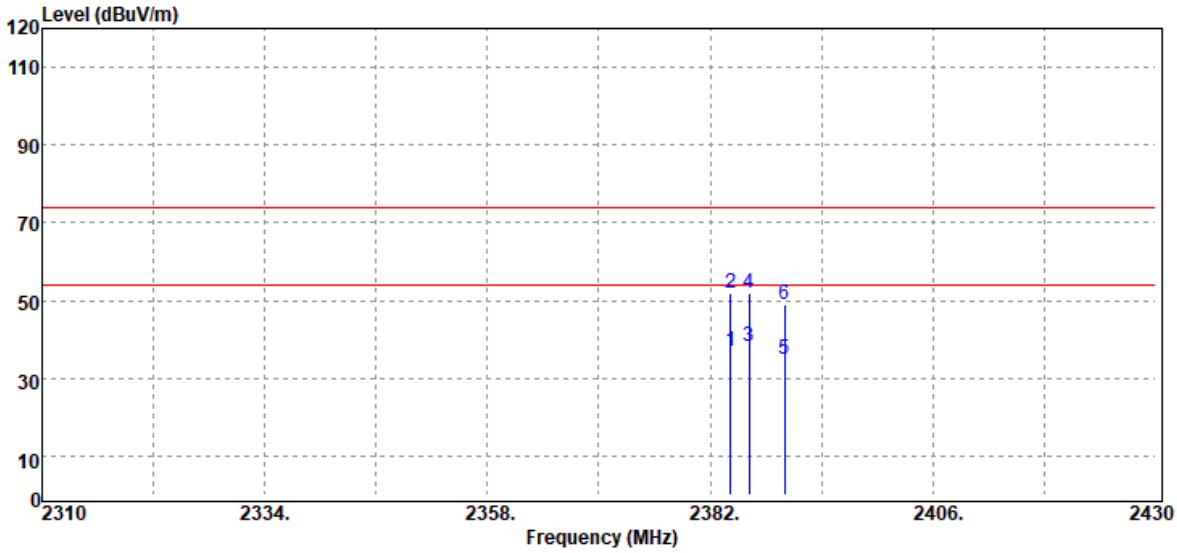
Chip Antenna

Test Mode	IEEE 802.11b Low CH 2412MHz	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Band Edge	Test Date	November 28, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak / Average		



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2384.16	Average	40.22	-3.38	36.84	54.00	-17.16
2384.16	Peak	55.19	-3.38	51.81	74.00	-22.19
2386.20	Average	41.68	-3.38	38.30	54.00	-15.70
2386.20	Peak	55.31	-3.38	51.93	74.00	-22.07
2390.00	Average	38.41	-3.38	35.03	54.00	-18.97
2390.00	Peak	52.22	-3.38	48.84	74.00	-25.16

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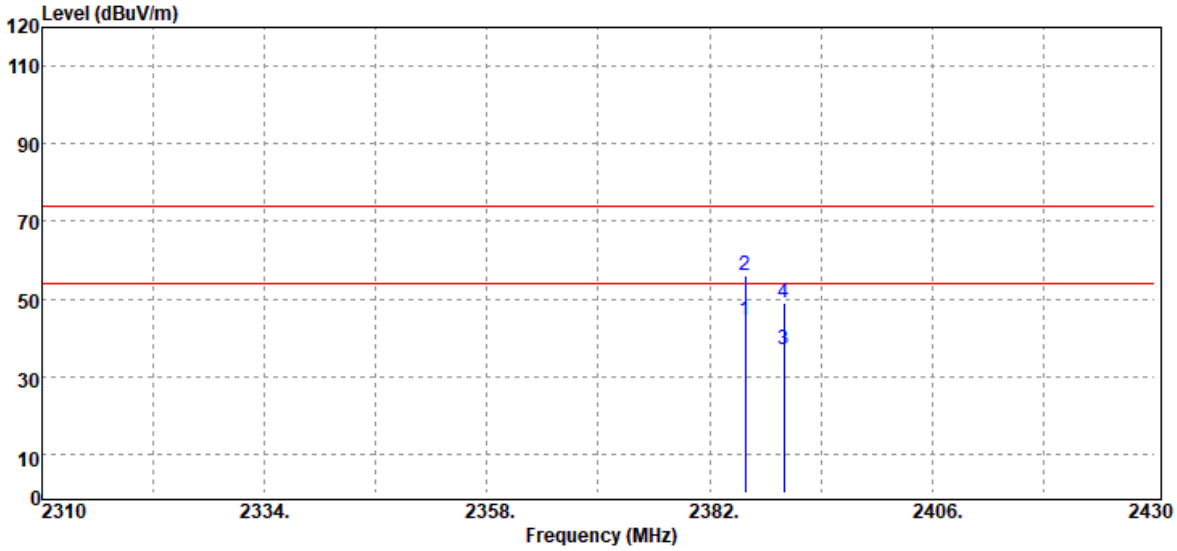
Test Mode	IEEE 802.11b Low CH 2412MHz	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Band Edge	Test Date	November 28, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak & Average		



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2385.84	Average	47.91	-3.38	44.53	54.00	-9.47
2385.84	Peak	59.39	-3.38	56.01	74.00	-17.99
2390.00	Average	40.21	-3.38	36.83	54.00	-17.17
2390.00	Peak	52.33	-3.38	48.95	74.00	-25.05

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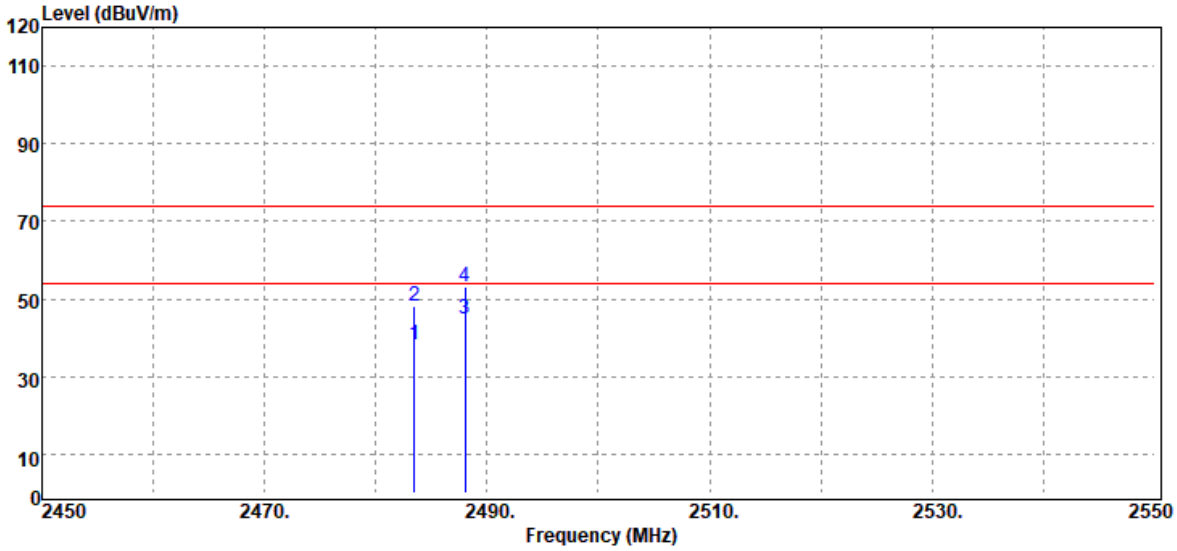
Test Mode	IEEE 802.11b High CH 2462MHz	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Band Edge	Test Date	November 28, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak / Average		



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2483.50	Average	41.18	-2.83	38.35	54.00	-15.65
2483.50	Peak	50.99	-2.83	48.16	74.00	-25.84
2488.00	Average	47.66	-2.80	44.86	54.00	-9.14
2488.00	Peak	55.84	-2.80	53.04	74.00	-20.96

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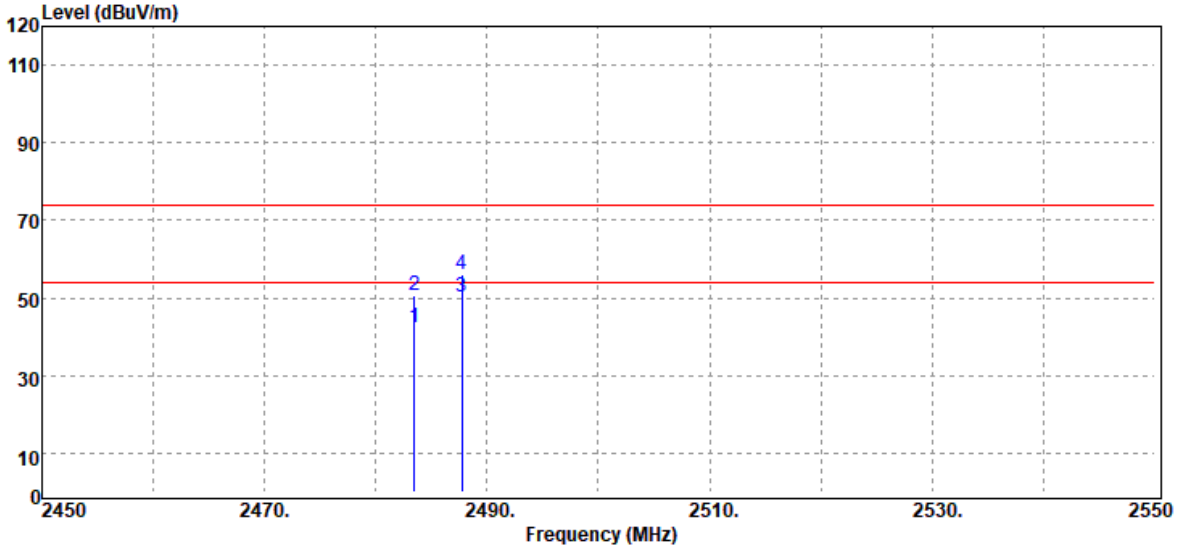
Test Mode	IEEE 802.11b High CH 2462MHz	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Band Edge	Test Date	November 28, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak & Average		



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2483.50	Average	45.28	-2.83	42.45	54.00	-11.55
2483.50	Peak	53.62	-2.83	50.79	74.00	-23.21
2487.70	Average	52.84	-2.80	50.04	54.00	-3.96
2487.70	Peak	58.73	-2.80	55.93	74.00	-18.07

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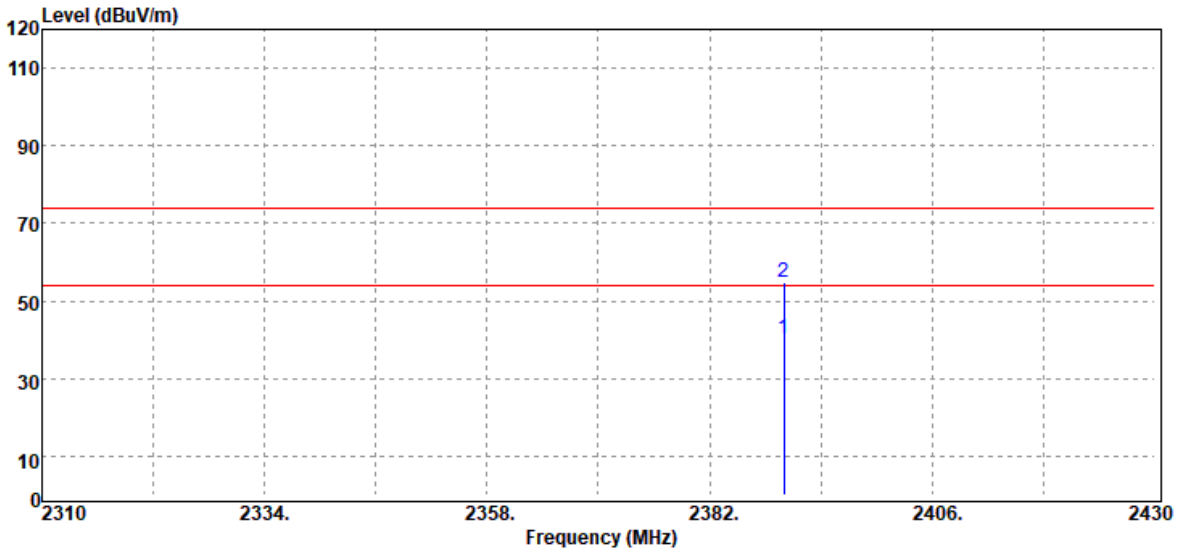
Test Mode	IEEE 802.11g Low CH 2412MHz	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Band Edge	Test Date	November 28, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak / Average		



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2390.00	Average	43.78	-3.38	40.40	54.00	-13.60
2390.00	Peak	58.08	-3.38	54.70	74.00	-19.30

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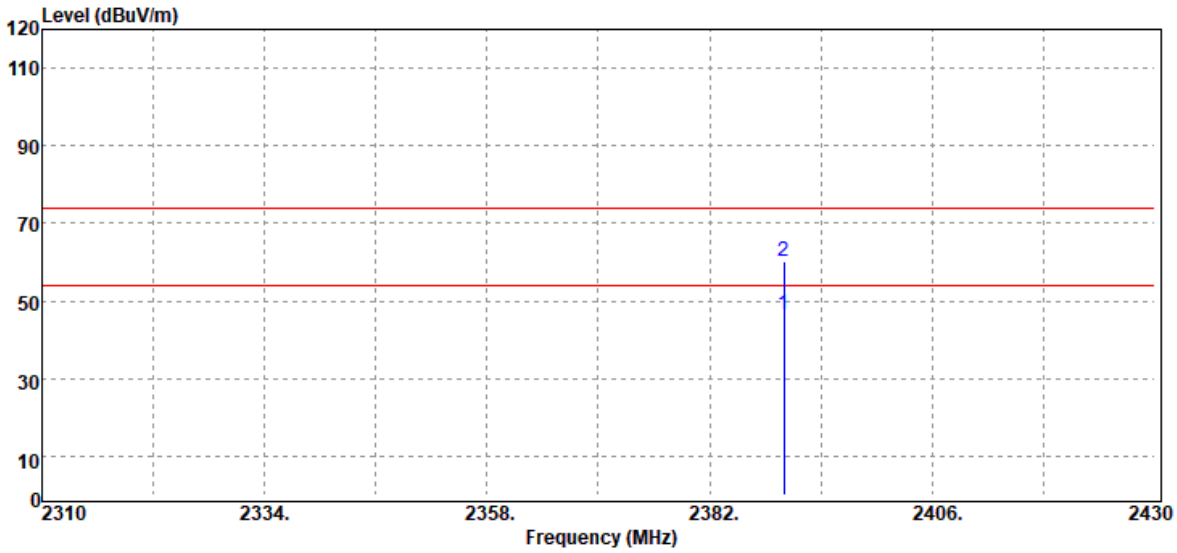
Test Mode	IEEE 802.11g Low CH 2412MHz	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Band Edge	Test Date	November 28, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak & Average		



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2390.00	Average	49.74	-3.38	46.36	54.00	-7.64
2390.00	Peak	63.54	-3.38	60.16	74.00	-13.84

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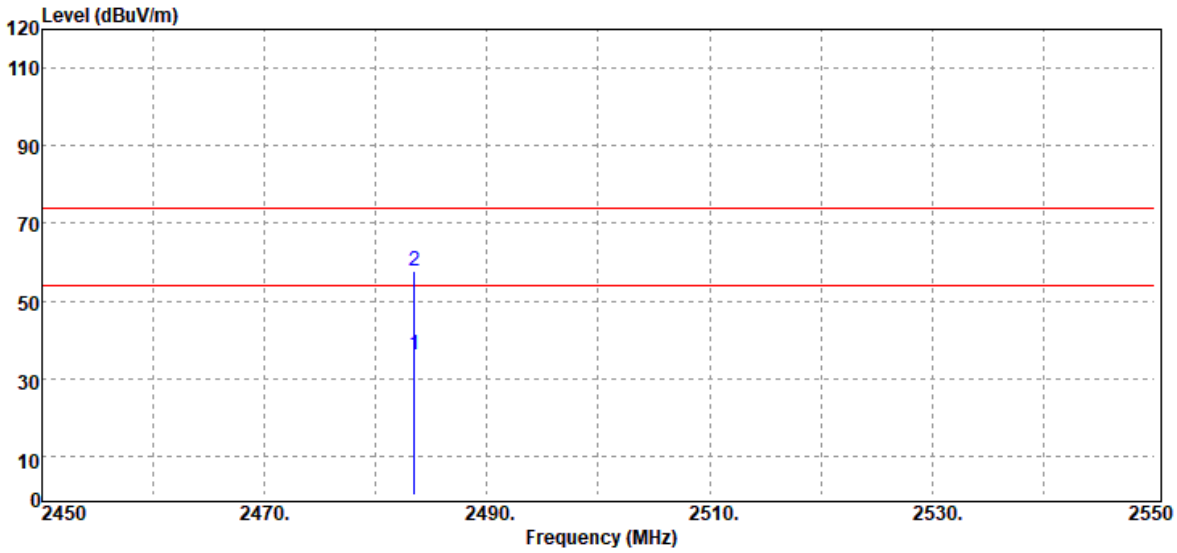
Test Mode	IEEE 802.11g High CH 2462MHz	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Band Edge	Test Date	November 28, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak / Average		



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2483.50	Average	38.92	-2.83	36.09	54.00	-17.91
2483.50	Peak	60.50	-2.83	57.67	74.00	-16.33

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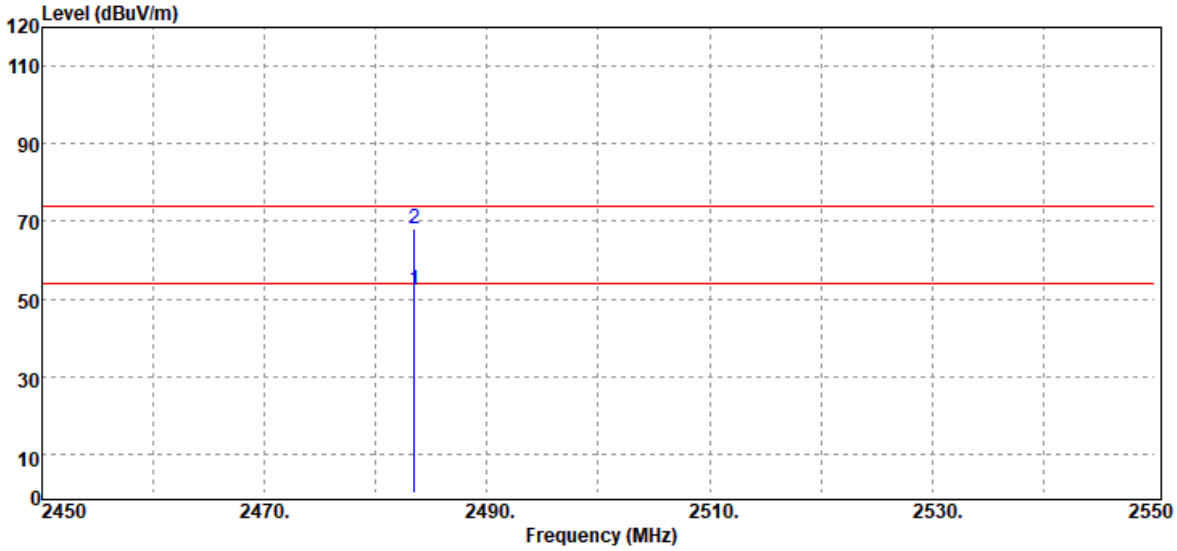
Test Mode	IEEE 802.11g High CH 2462MHz	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Band Edge	Test Date	November 28, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak & Average		



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2483.50	Average	55.27	-2.83	52.44	54.00	-1.56
2483.50	Peak	70.96	-2.83	68.13	74.00	-5.87

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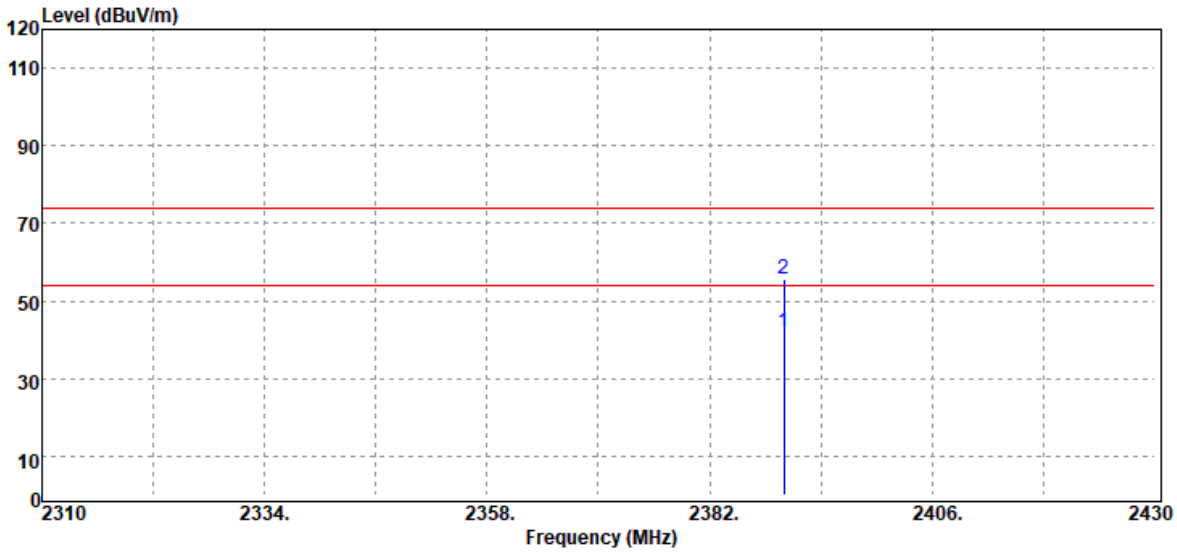
Test Mode	IEEE 802.11n HT20 Low CH 2412MHz	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Band Edge	Test Date	November 28, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak / Average		



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2390.00	Average	45.26	-3.38	41.88	54.00	-12.12
2390.00	Peak	58.98	-3.38	55.60	74.00	-18.40

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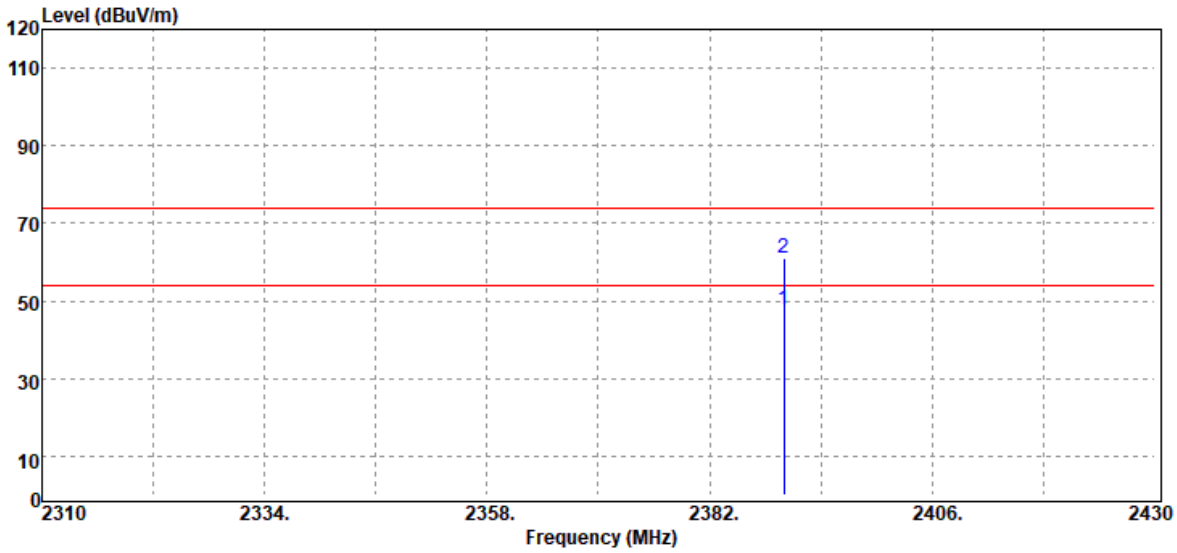
Test Mode	IEEE 802.11 n20 Low CH 2412MHz	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Band Edge	Test Date	November 28, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak & Average		



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2390.00	Average	51.08	-3.38	47.70	54.00	-6.30
2390.00	Peak	64.40	-3.38	61.02	74.00	-12.98

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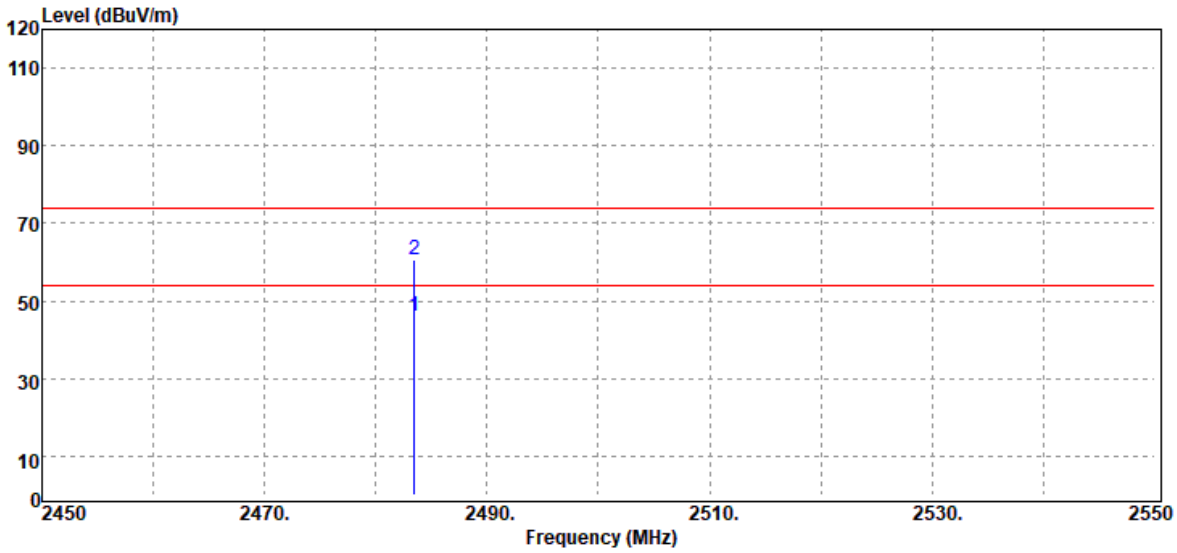
Test Mode	IEEE 802.11n HT20 High CH 2462MHz	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Band Edge	Test Date	November 28, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak / Average		



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2483.50	Average	48.99	-2.83	46.16	54.00	-7.84
2483.50	Peak	63.64	-2.83	60.81	74.00	-13.19

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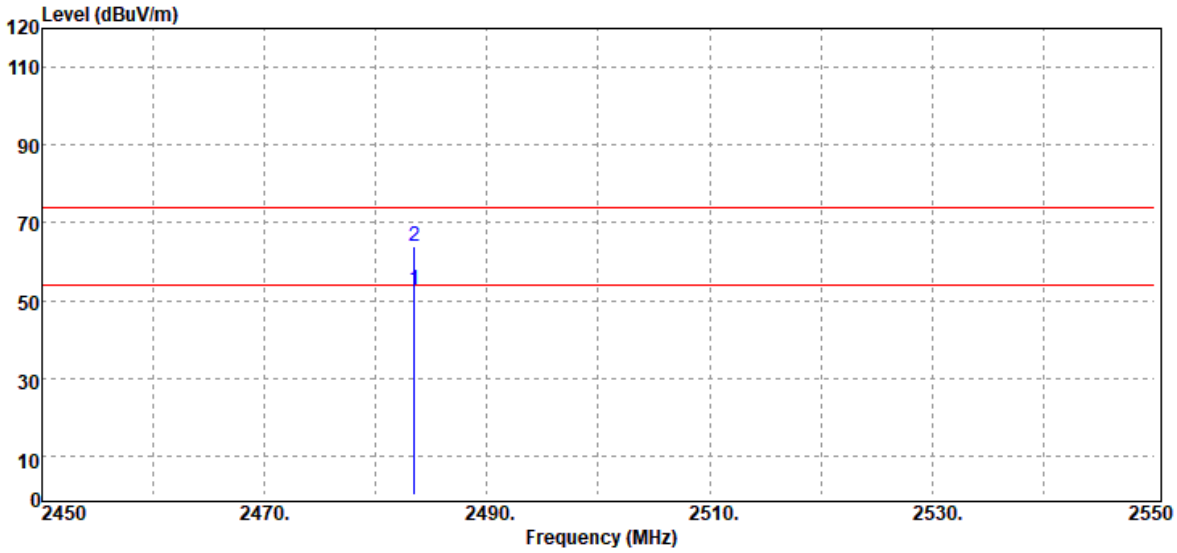
Test Mode	IEEE 802.11n20 High CH 2462MHz	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Band Edge	Test Date	November 28, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak & Average		



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2483.50	Average	55.67	-2.83	52.84	54.00	-1.16
2483.50	Peak	66.87	-2.83	64.04	74.00	-9.96

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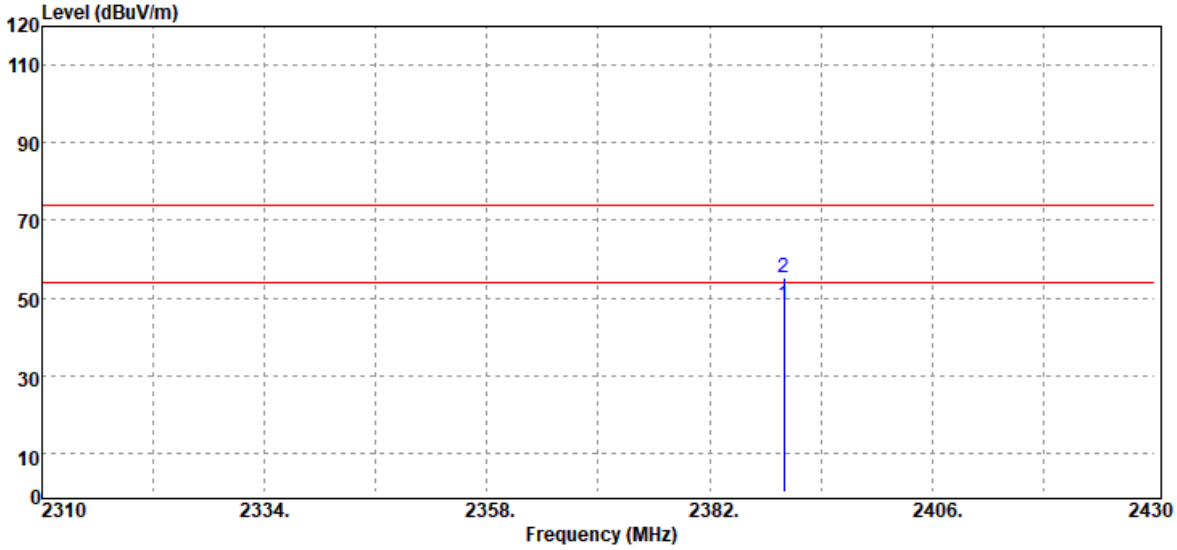
Test Mode	IEEE 802.11n HT40 Low CH 2422MHz	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Band Edge	Test Date	November 28, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak / Average	Test Voltage	



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2390.00	Average	51.53	-3.38	48.15	54.00	-5.85
2390.00	Peak	58.67	-3.38	55.29	74.00	-18.71

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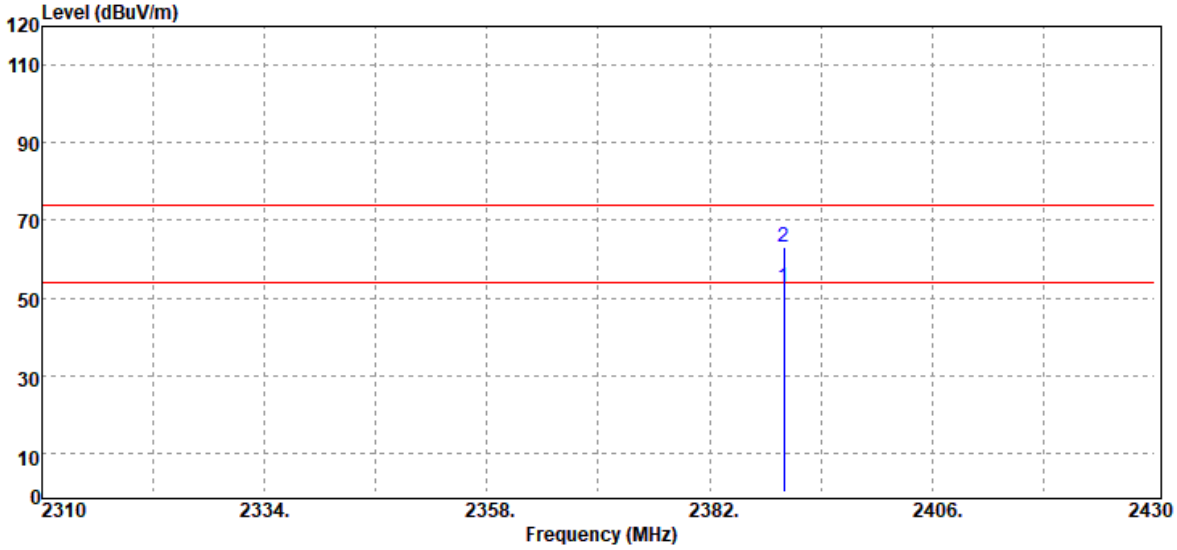
Test Mode	IEEE 802.11n HT40 Low CH 2422MHz	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Band Edge	Test Date	November 28, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak / Average	Test Voltage	



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2390.00	Average	55.98	-3.38	52.60	54.00	-1.40
2390.00	Peak	66.35	-3.38	62.97	74.00	-11.03

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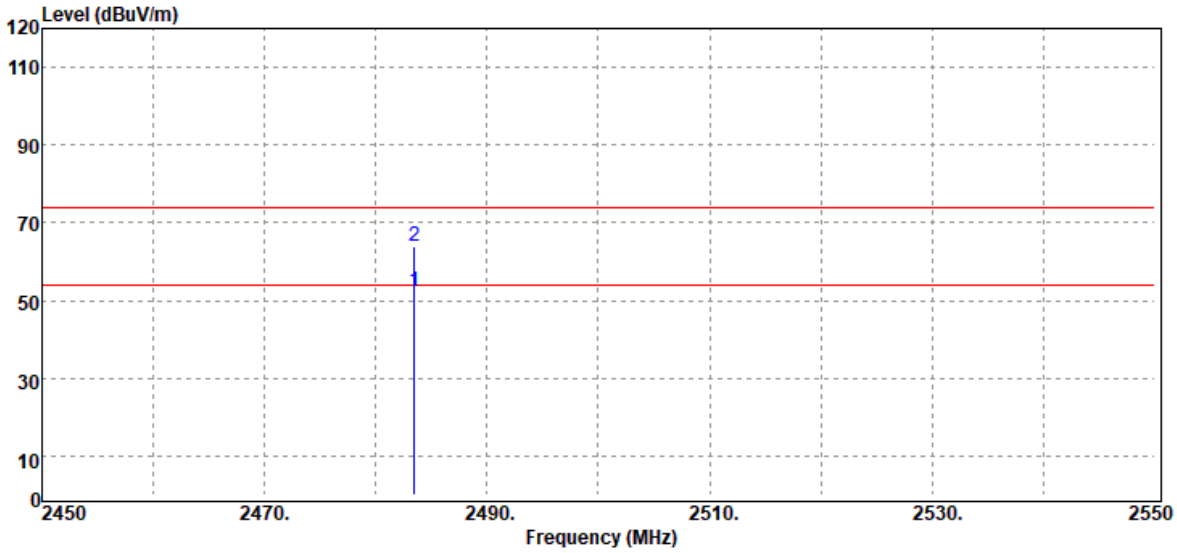
Test Mode	IEEE 802.11n HT40 High CH 2452MHz	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Band Edge	Test Date	November 28, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak / Average	Test Voltage	



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2483.50	Average	55.00	-2.83	52.17	54.00	-1.83
2483.50	Peak	66.85	-2.83	64.02	74.00	-9.98

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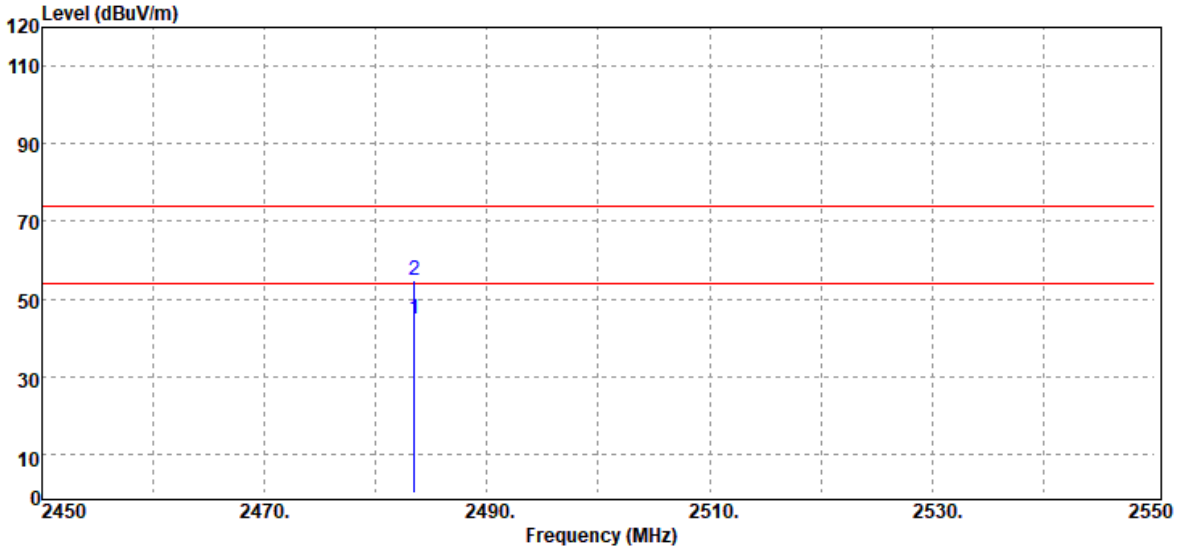
Test Mode	IEEE 802.11n HT40 High CH 2452MHz	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Band Edge	Test Date	November 28, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak / Average	Test Voltage	



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2483.50	Average	47.68	-2.83	44.85	54.00	-9.15
2483.50	Peak	57.47	-2.83	54.64	74.00	-19.36

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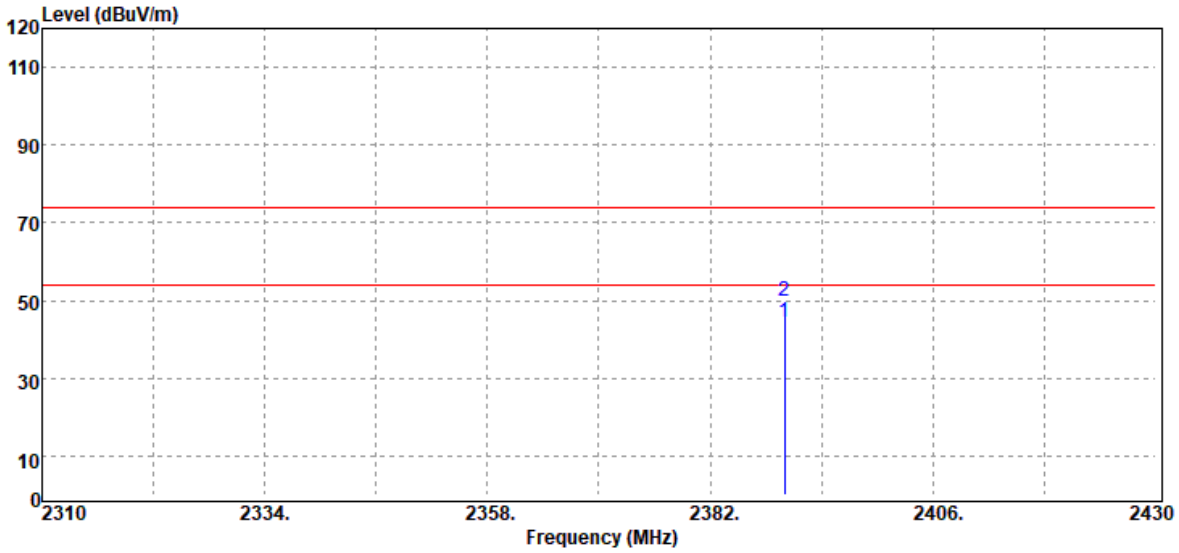
Dipole Antenna

Test Mode	IEEE 802.11b Low CH 2412MHz	Temp/Hum	22.1(℃)/ 58%RH
Test Item	Band Edge	Test Date	December 23, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak / Average		



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2390.00	Average	47.97	-3.38	44.59	54.00	-9.41
2390.00	Peak	53.39	-3.38	50.01	74.00	-23.99

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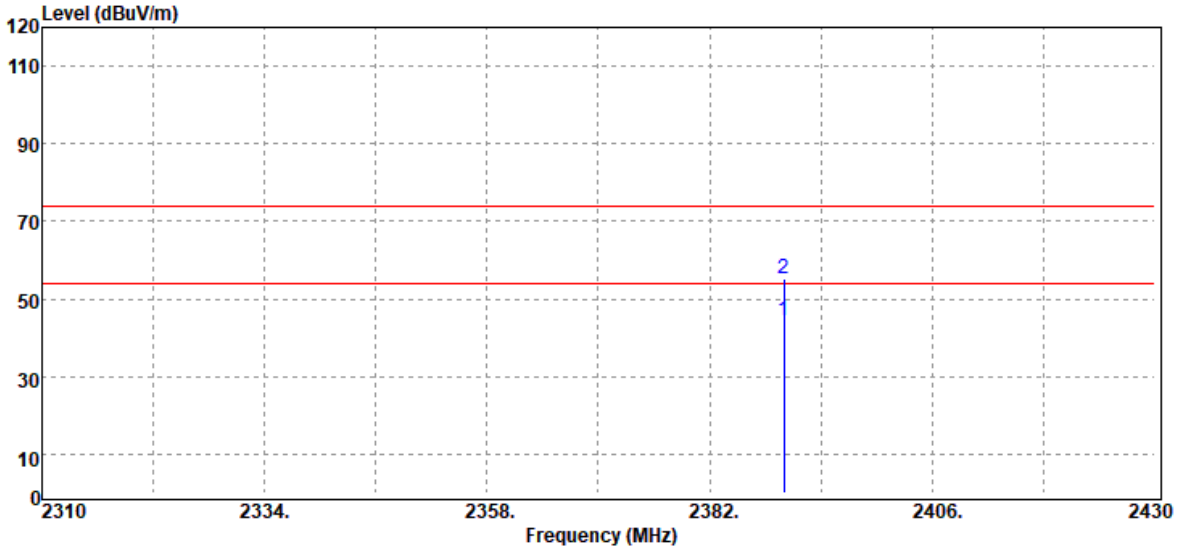
Test Mode	IEEE 802.11b Low CH 2412MHz	Temp/Hum	22.1(℃)/ 58%RH
Test Item	Band Edge	Test Date	December 23, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak & Average		



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2390.00	Average	47.93	-3.38	44.55	54.00	-9.45
2390.00	Peak	58.63	-3.38	55.25	74.00	-18.75

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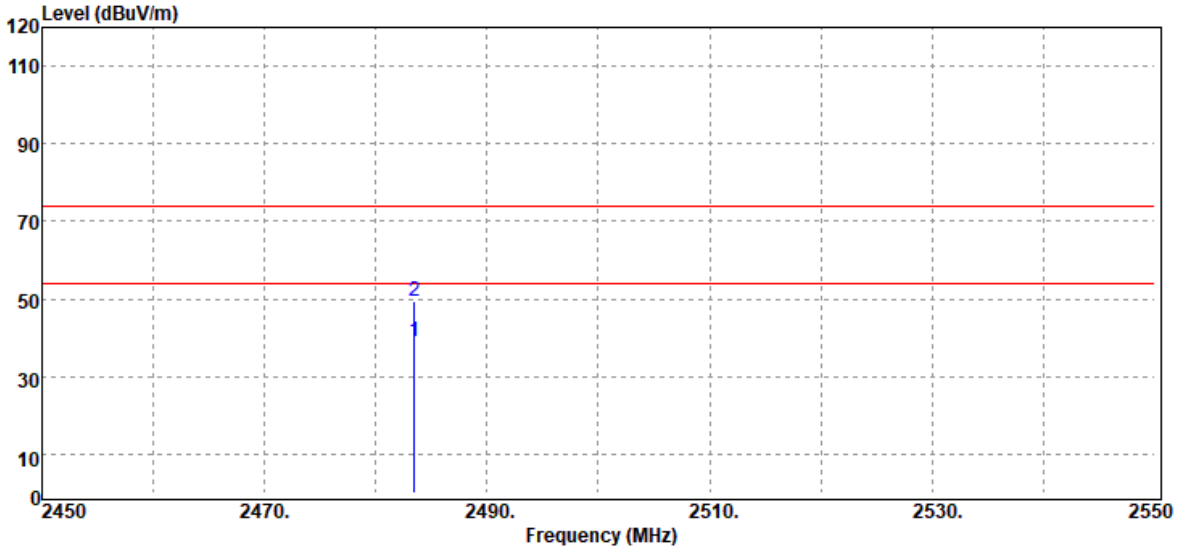
Test Mode	IEEE 802.11b High CH 2462MHz	Temp/Hum	22.1(℃)/ 58%RH
Test Item	Band Edge	Test Date	December 23, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak / Average		



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2483.50	Average	41.66	-2.83	38.83	54.00	-15.17
2483.50	Peak	52.16	-2.83	49.33	74.00	-24.67

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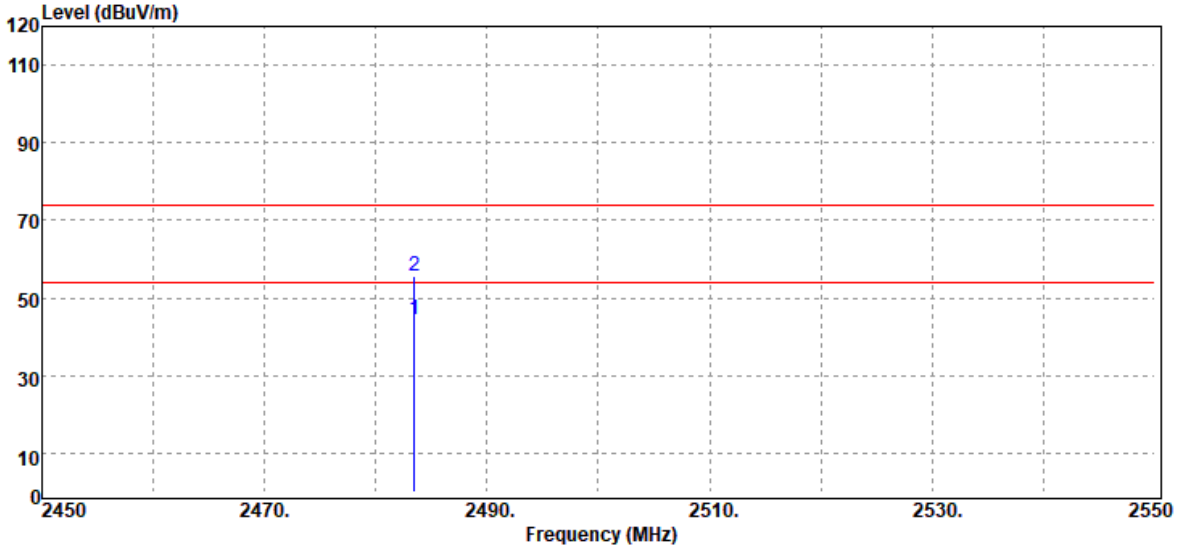
Test Mode	IEEE 802.11b High CH 2462MHz	Temp/Hum	22.1(℃)/ 58%RH
Test Item	Band Edge	Test Date	December 23, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak & Average		



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2483.50	Average	47.43	-2.83	44.60	54.00	-9.40
2483.50	Peak	58.31	-2.83	55.48	74.00	-18.52

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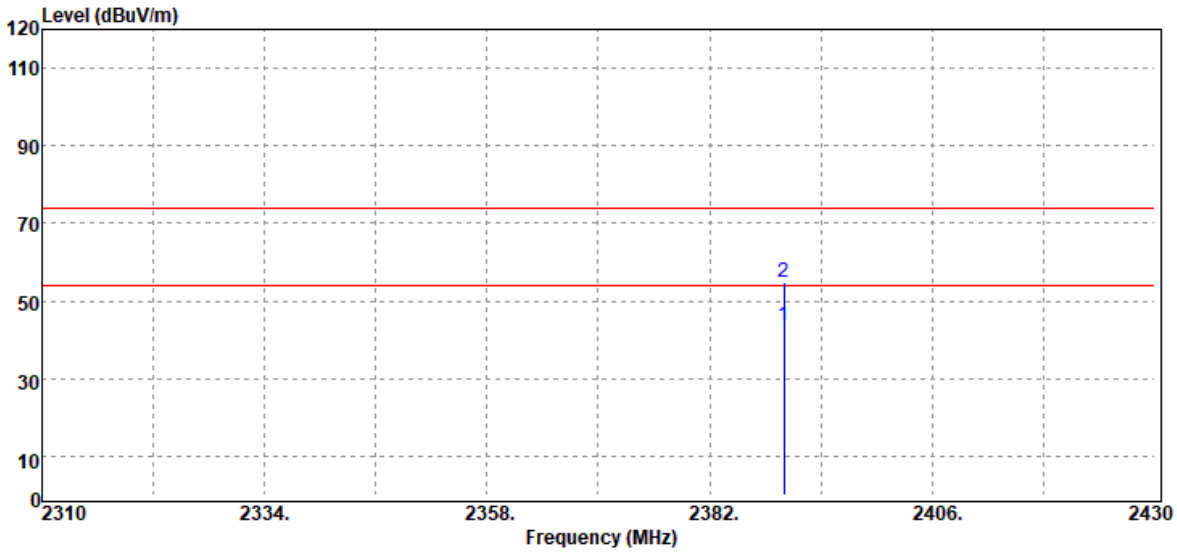
Test Mode	IEEE 802.11g Low CH 2412MHz	Temp/Hum	22.1(℃)/ 58%RH
Test Item	Band Edge	Test Date	December 23, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak / Average		



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2390.00	Average	47.03	-3.38	43.65	54.00	-10.35
2390.00	Peak	58.18	-3.38	54.80	74.00	-19.20

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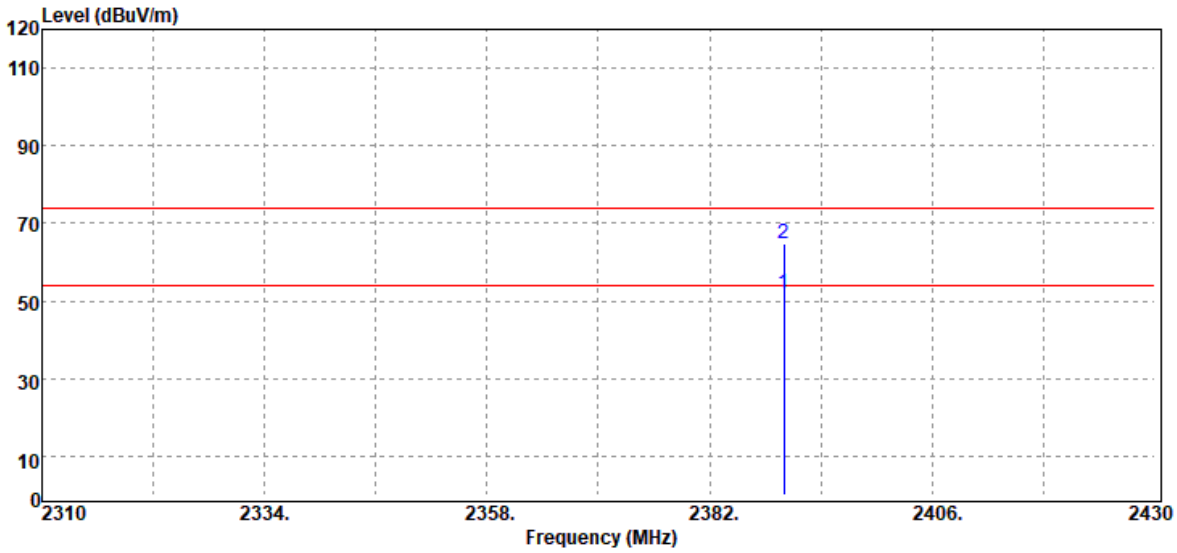
Test Mode	IEEE 802.11g Low CH 2412MHz	Temp/Hum	22.1(℃)/ 58%RH
Test Item	Band Edge	Test Date	December 23, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak & Average		



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2390.00	Average	55.19	-3.38	51.81	54.00	-2.19
2390.00	Peak	68.22	-3.38	64.84	74.00	-9.16

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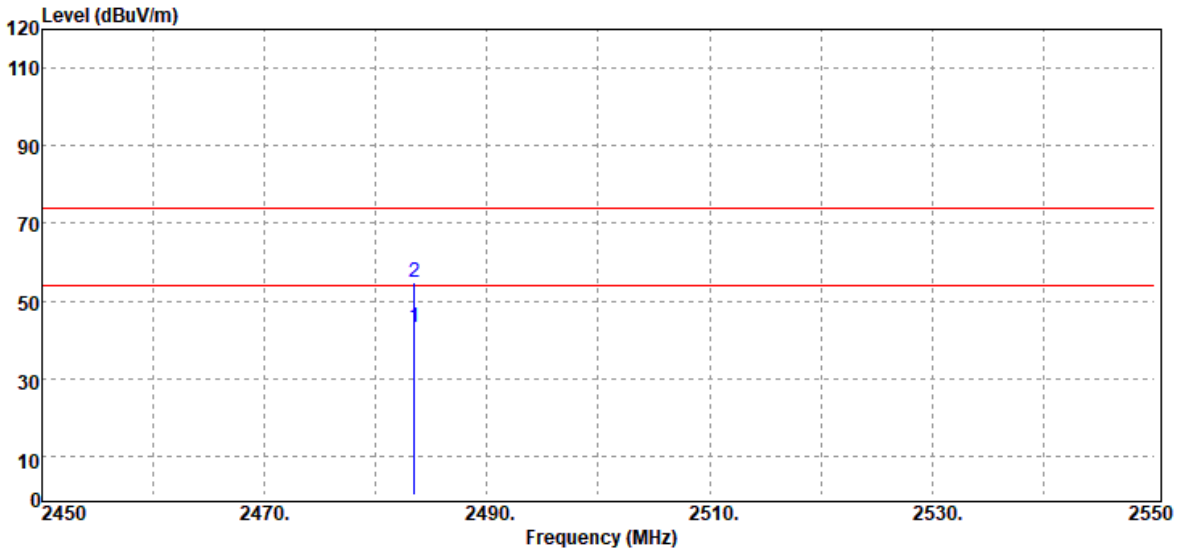
Test Mode	IEEE 802.11g High CH 2462MHz	Temp/Hum	22.1(℃)/ 58%RH
Test Item	Band Edge	Test Date	December 23, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak / Average		



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2483.50	Average	46.06	-2.83	43.23	54.00	-10.77
2483.50	Peak	57.85	-2.83	55.02	74.00	-18.98

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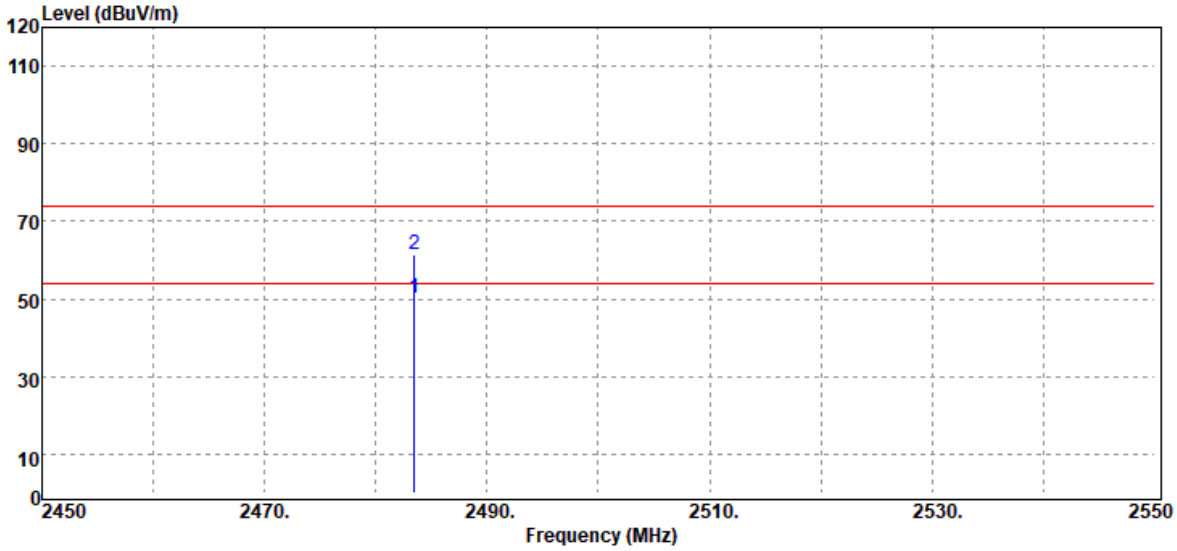
Test Mode	IEEE 802.11g High CH 2462MHz	Temp/Hum	22.1(℃)/ 58%RH
Test Item	Band Edge	Test Date	December 23, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak & Average		



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2483.50	Average	53.00	-2.83	50.17	54.00	-3.83
2483.50	Peak	64.31	-2.83	61.48	74.00	-12.52

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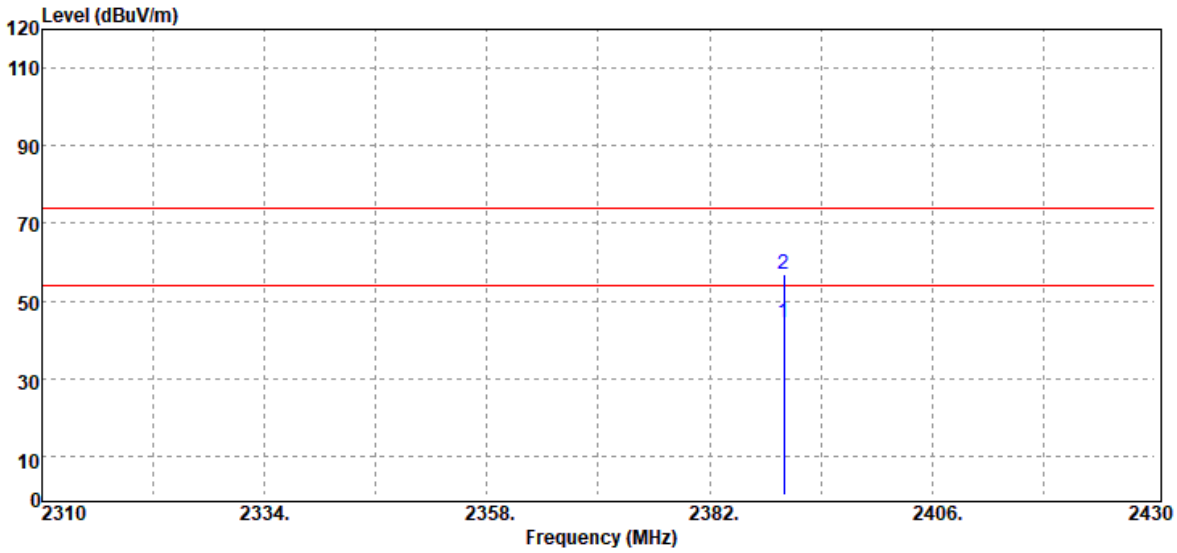
Test Mode	IEEE 802.11n HT20 Low CH 2412MHz	Temp/Hum	22.1(℃)/ 58%RH
Test Item	Band Edge	Test Date	December 23, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak / Average		



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2390.00	Average	47.81	-3.38	44.43	54.00	-9.57
2390.00	Peak	60.25	-3.38	56.87	74.00	-17.13

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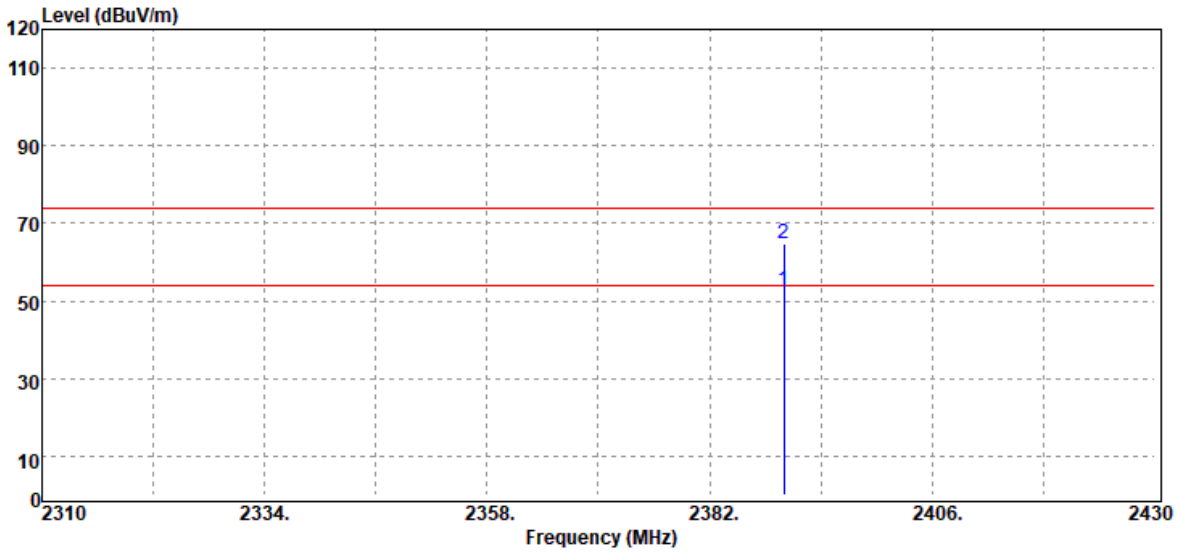
Test Mode	IEEE 802.11 n20 Low CH 2412MHz	Temp/Hum	22.1(℃)/ 58%RH
Test Item	Band Edge	Test Date	December 23, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak & Average		



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2390.00	Average	56.10	-3.38	52.72	54.00	-1.28
2390.00	Peak	68.33	-3.38	64.95	74.00	-9.05

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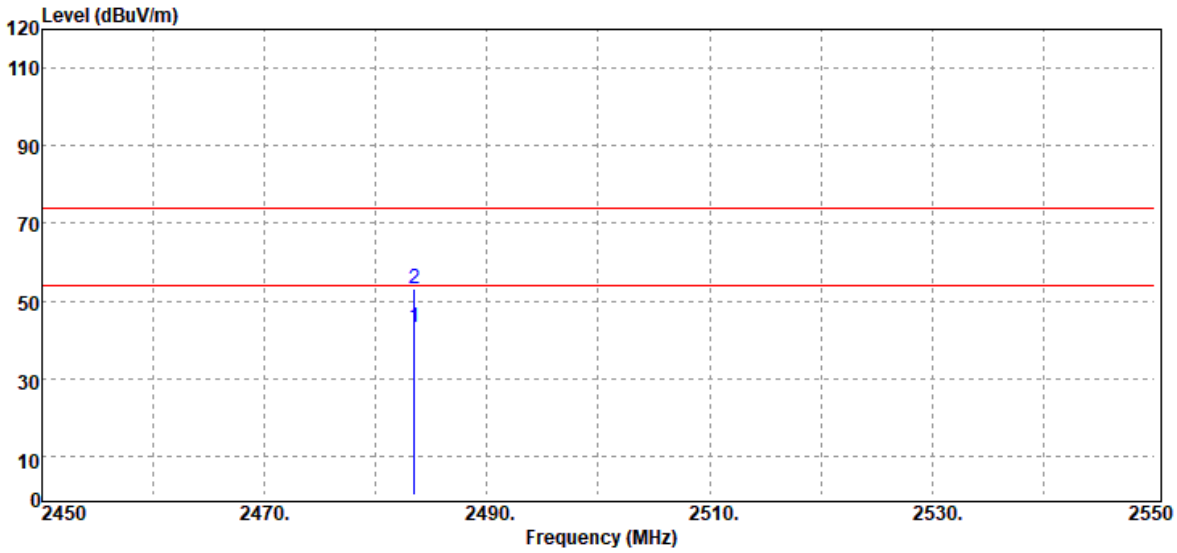
Test Mode	IEEE 802.11n HT20 High CH 2462MHz	Temp/Hum	22.1(℃)/ 58%RH
Test Item	Band Edge	Test Date	December 23, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak / Average		



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2483.50	Average	46.02	-2.83	43.19	54.00	-10.81
2483.50	Peak	55.83	-2.83	53.00	74.00	-21.00

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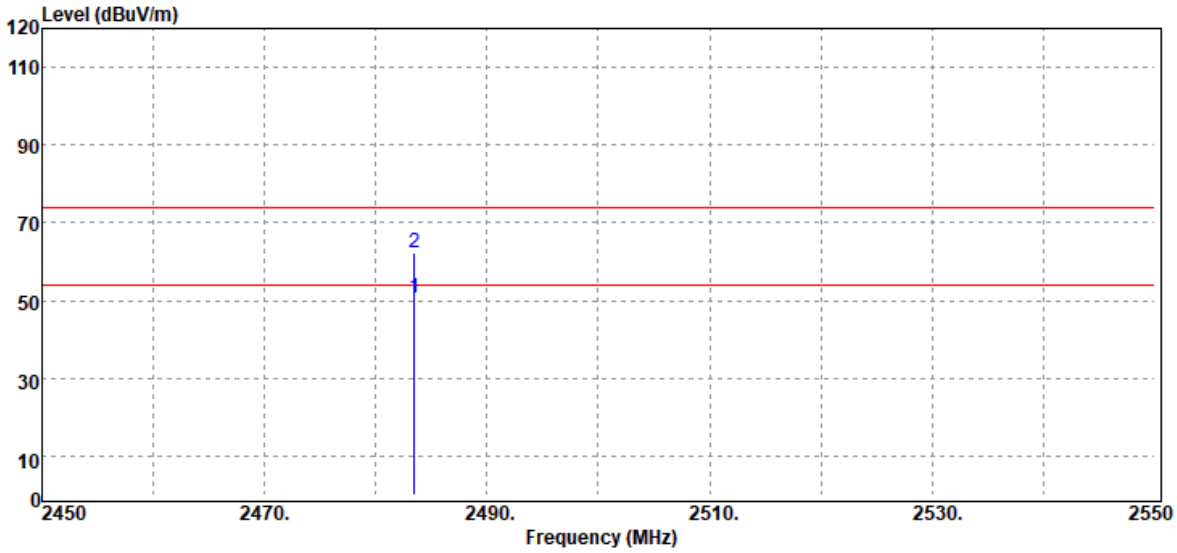
Test Mode	IEEE 802.11n20 High CH 2462MHz	Temp/Hum	22.1(℃)/ 58%RH
Test Item	Band Edge	Test Date	December 23, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak & Average		



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2483.50	Average	53.33	-2.83	50.50	54.00	-3.50
2483.50	Peak	65.09	-2.83	62.26	74.00	-11.74

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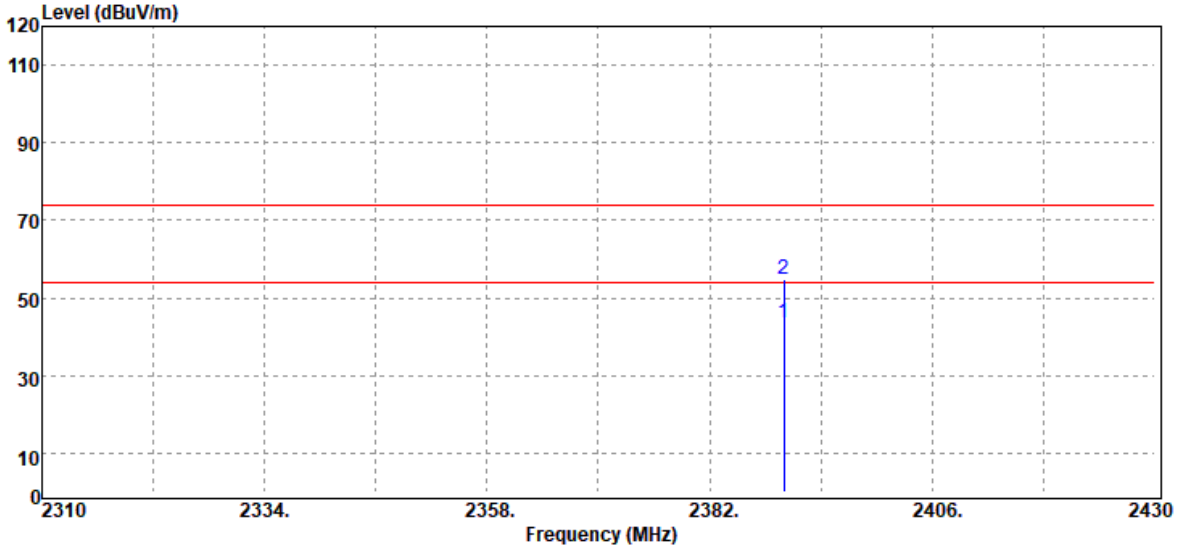
Test Mode	IEEE 802.11n HT40 Low CH 2422MHz	Temp/Hum	22.1(℃)/ 58%RH
Test Item	Band Edge	Test Date	December 23, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak / Average	Test Voltage	



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2390.00	Average	46.99	-3.38	43.61	54.00	-10.39
2390.00	Peak	58.18	-3.38	54.80	74.00	-19.20

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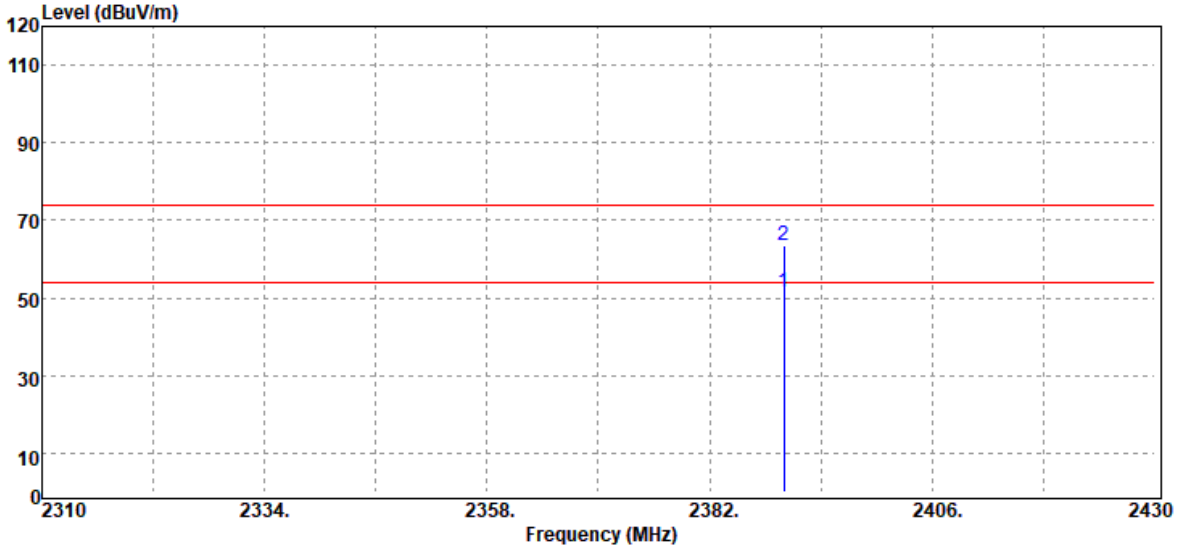
Test Mode	IEEE 802.11n HT40 Low CH 2422MHz	Temp/Hum	22.1(℃)/ 58%RH
Test Item	Band Edge	Test Date	December 23, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak / Average	Test Voltage	



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2390.00	Average	54.85	-3.38	51.47	54.00	-2.53
2390.00	Peak	66.93	-3.38	63.55	74.00	-10.45

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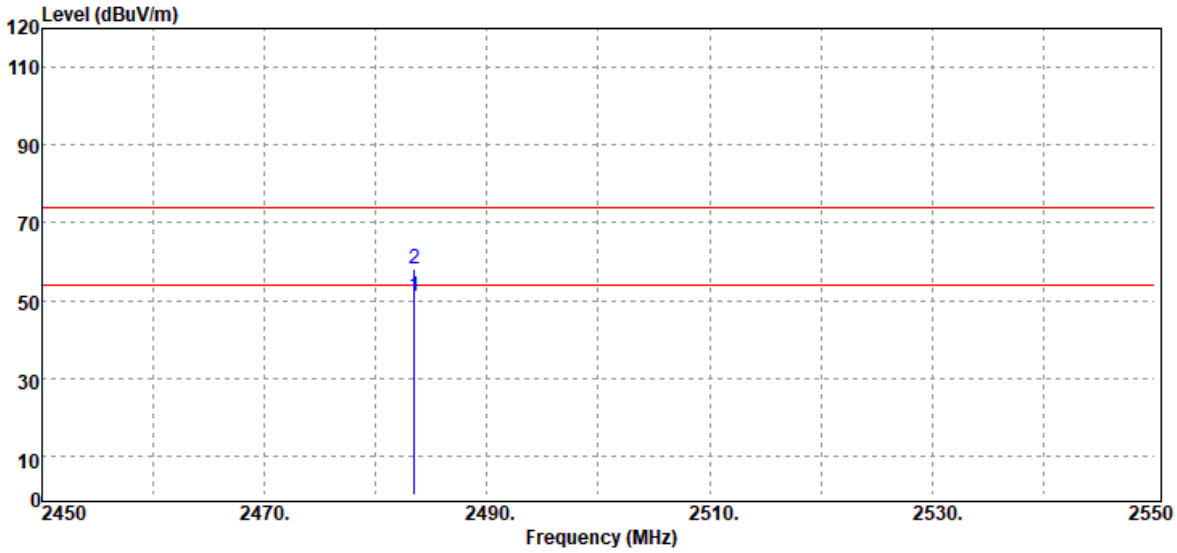
Test Mode	IEEE 802.11n HT40 High CH 2452MHz	Temp/Hum	22.1(℃)/ 58%RH
Test Item	Band Edge	Test Date	December 23, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak / Average	Test Voltage	



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2483.50	Average	53.73	-2.83	50.90	54.00	-3.10
2483.50	Peak	61.03	-2.83	58.20	74.00	-15.80

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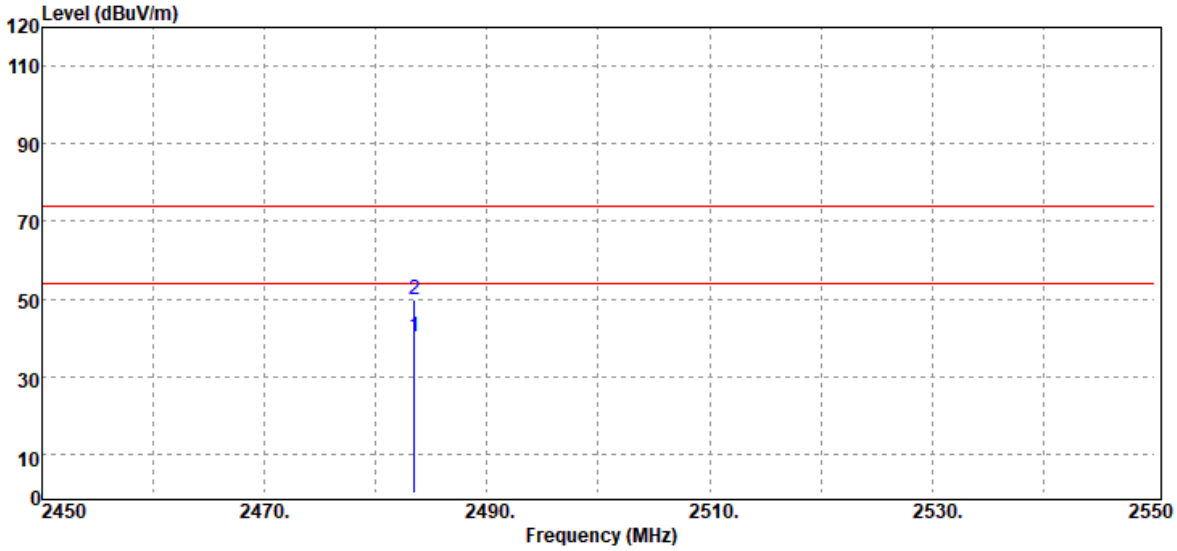
Test Mode	IEEE 802.11n HT40 High CH 2452MHz	Temp/Hum	22.1(℃)/ 58%RH
Test Item	Band Edge	Test Date	December 23, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak / Average	Test Voltage	



Frequency (MHz)	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
2483.50	Average	43.30	-2.83	40.47	54.00	-13.53
2483.50	Peak	52.81	-2.83	49.98	74.00	-24.02

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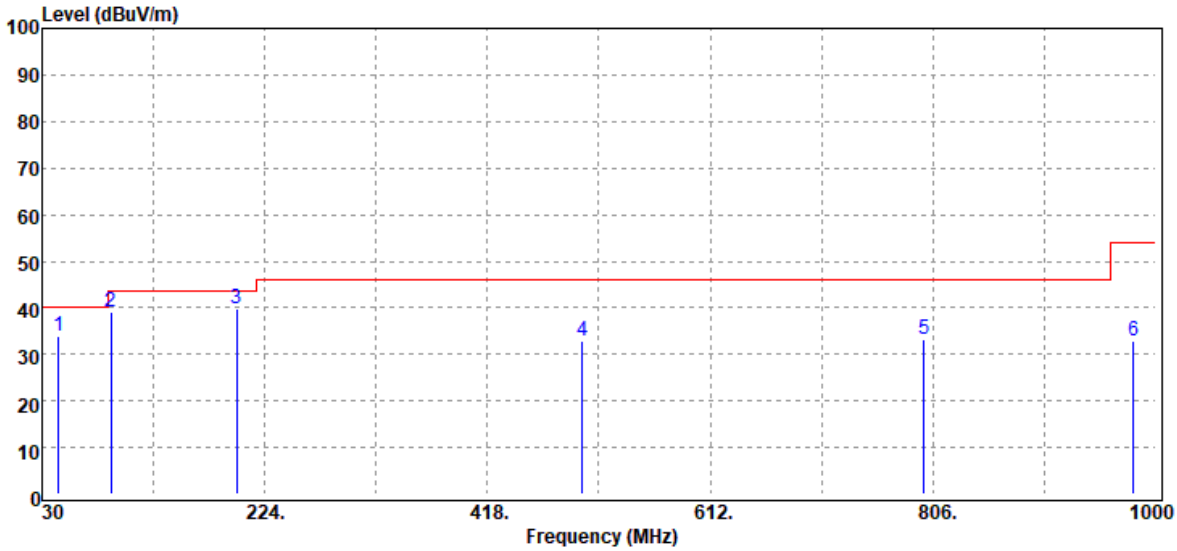
Below 1G Test Data

PCB Antenna

Test Mode	Mode 1	Temp/Hum	22.5(℃)/ 59%RH
Test Item	30MHz-1GHz	Test Date	December 31, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak	Test Voltage	



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
44.55	Peak	46.63	-12.72	33.91	40.00	-6.09
90.14	Peak	54.30	-15.23	39.07	43.50	-4.43
199.75	Peak	49.16	-9.29	39.87	43.50	-3.63
500.45	Peak	35.80	-2.93	32.87	46.00	-13.13
798.24	Peak	31.60	1.50	33.10	46.00	-12.90
980.60	Peak	27.08	5.72	32.80	54.00	-21.20

Note: No emission found between lowest internal used/generated frequency to 30MHz(9KHz~30MHz)

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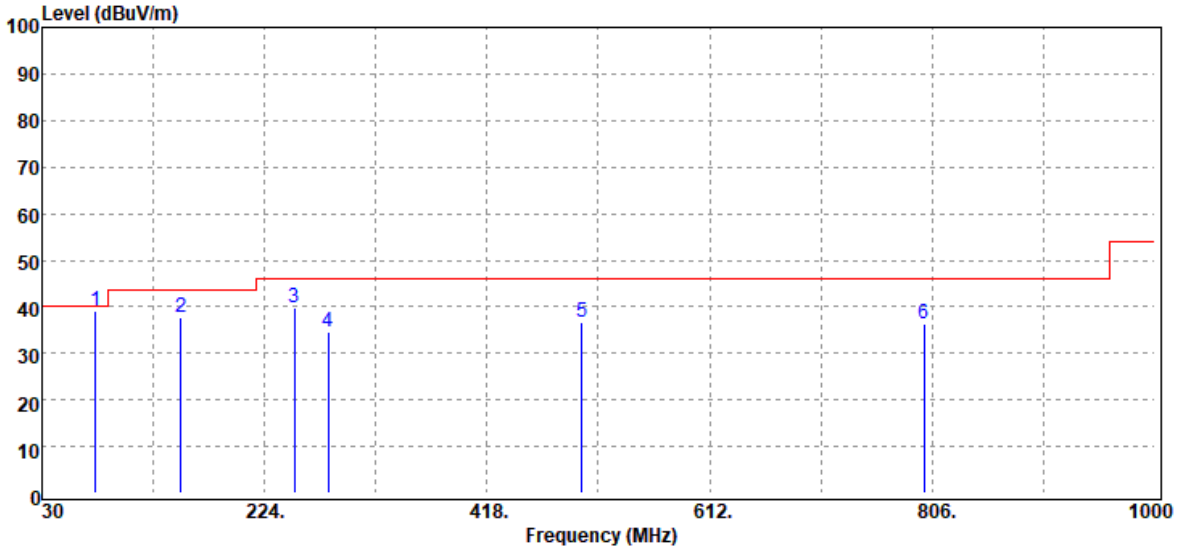
Test Mode	Mode 1	Temp/Hum	22.5(℃)/ 59%RH
Test Item	30MHz-1GHz	Test Date	December 31, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak	Test Voltage	



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
76.56	Peak	54.00	-14.89	39.11	40.00	-0.89
151.25	Peak	47.59	-9.90	37.69	43.50	-5.81
250.19	Peak	50.34	-10.40	39.94	46.00	-6.06
279.29	Peak	42.91	-8.40	34.51	46.00	-11.49
500.45	Peak	39.64	-2.93	36.71	46.00	-9.29
799.21	Peak	34.78	1.52	36.30	46.00	-9.70

Note: No emission found between lowest internal used/generated frequency to 30MHz(9KHz~30MHz)

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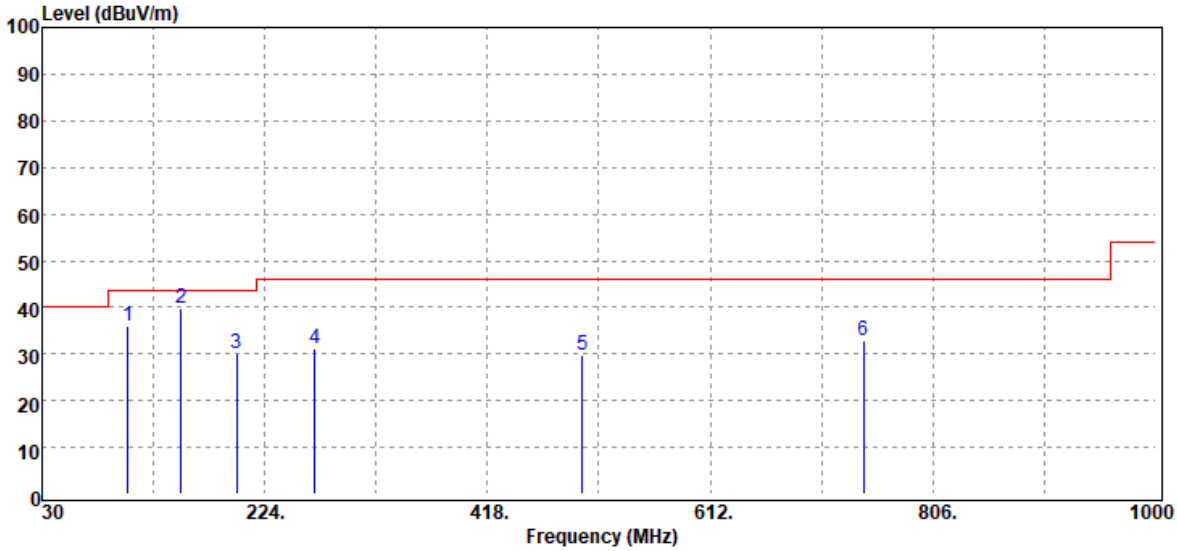
Chip Antenna

Test Mode	Mode 1	Temp/Hum	22.5(℃)/ 59%RH
Test Item	30MHz-1GHz	Test Date	November 28, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak	Test Voltage	



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
104.69	Peak	47.29	-11.18	36.11	43.50	-7.39
151.25	Peak	49.56	-9.90	39.66	43.50	-3.84
199.75	Peak	39.42	-9.29	30.13	43.50	-13.37
267.65	Peak	39.81	-8.72	31.09	46.00	-14.91
500.45	Peak	32.73	-2.93	29.80	46.00	-16.20
745.86	Peak	30.98	1.96	32.94	46.00	-13.06

Note: No emission found between lowest internal used/generated frequency to 30MHz(9KHz~30MHz)

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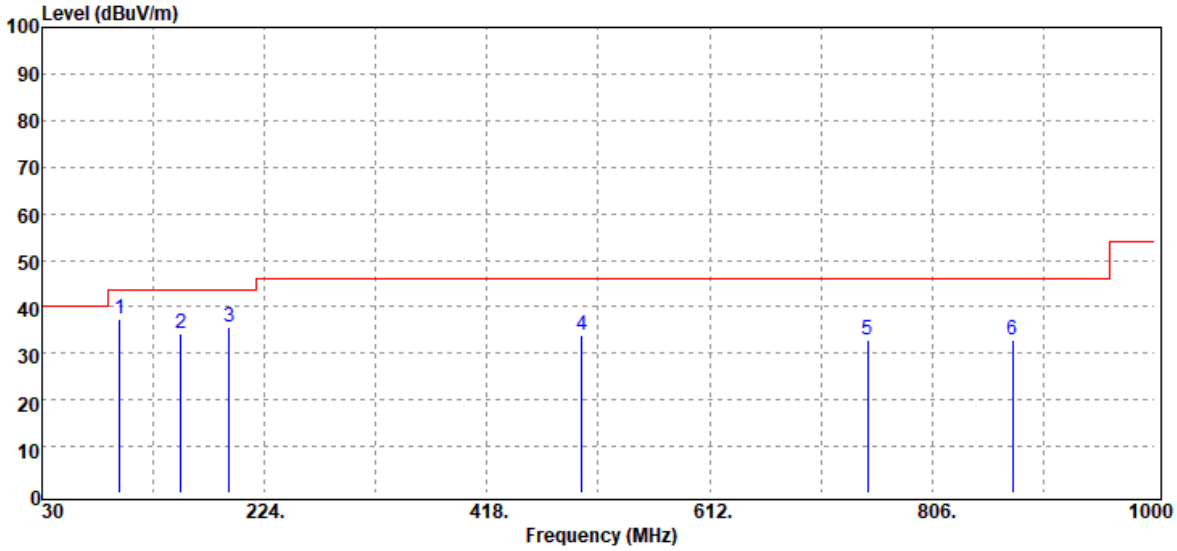
Test Mode	Mode 1	Temp/Hum	22.5(℃)/ 59%RH
Test Item	30MHz-1GHz	Test Date	November 28, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak	Test Voltage	



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
97.90	Peak	50.64	-13.24	37.40	43.50	-6.10
151.25	Peak	44.26	-9.90	34.36	43.50	-9.14
192.96	Peak	45.96	-10.44	35.52	43.50	-7.98
500.45	Peak	36.80	-2.93	33.87	46.00	-12.13
749.74	Peak	30.78	2.12	32.90	46.00	-13.10
875.84	Peak	29.41	3.30	32.71	46.00	-13.29

Note: No emission found between lowest internal used/generated frequency to 30MHz(9KHz~30MHz)

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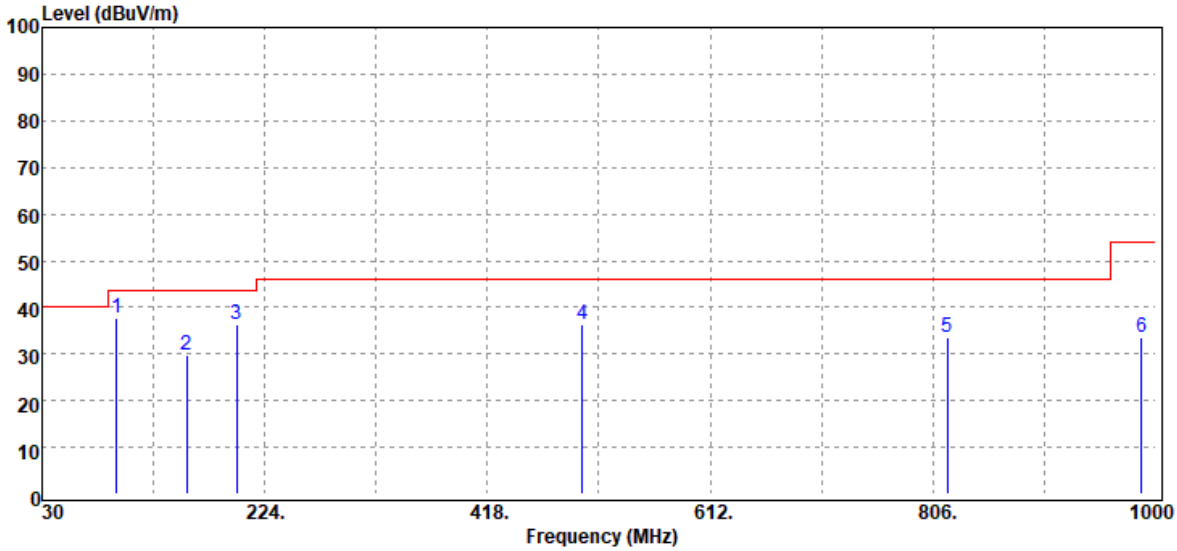
Dipole Antenna

Test Mode	Mode 1	Temp/Hum	22.1(℃)/ 58%RH
Test Item	30MHz-1GHz	Test Date	December 26, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak	Test Voltage	



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
94.99	Peak	51.94	-14.24	37.70	43.50	-5.80
156.10	Peak	39.87	-10.01	29.86	43.50	-13.64
199.75	Peak	45.76	-9.29	36.47	43.50	-7.03
500.45	Peak	39.21	-2.93	36.28	46.00	-9.72
818.61	Peak	30.71	2.92	33.63	46.00	-12.37
987.39	Peak	28.05	5.46	33.51	54.00	-20.49

Note: No emission found between lowest internal used/generated frequency to 30MHz(9KHz~30MHz)

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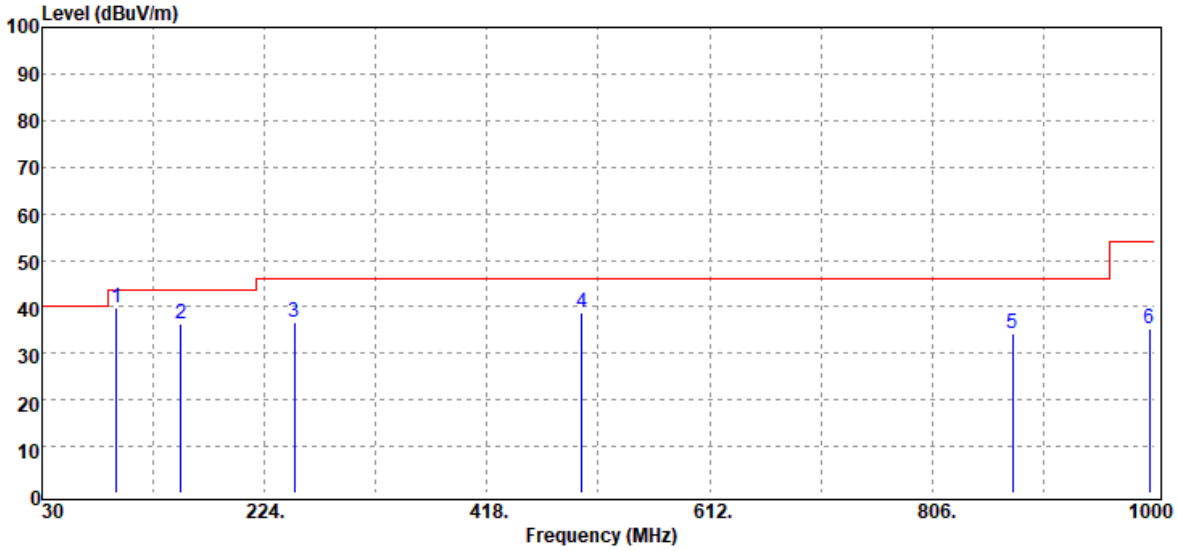
Test Mode	Mode 1	Temp/Hum	22.1(℃)/ 58%RH
Test Item	30MHz-1GHz	Test Date	December 26, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak	Test Voltage	



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
94.99	Peak	54.15	-14.24	39.91	43.50	-3.59
151.25	Peak	46.21	-9.90	36.31	43.50	-7.19
250.19	Peak	46.97	-10.40	36.57	46.00	-9.43
500.45	Peak	41.84	-2.93	38.91	46.00	-7.09
875.84	Peak	30.98	3.30	34.28	46.00	-11.72
995.15	Peak	30.26	5.17	35.43	54.00	-18.57

Note: No emission found between lowest internal used/generated frequency to 30MHz(9KHz~30MHz)

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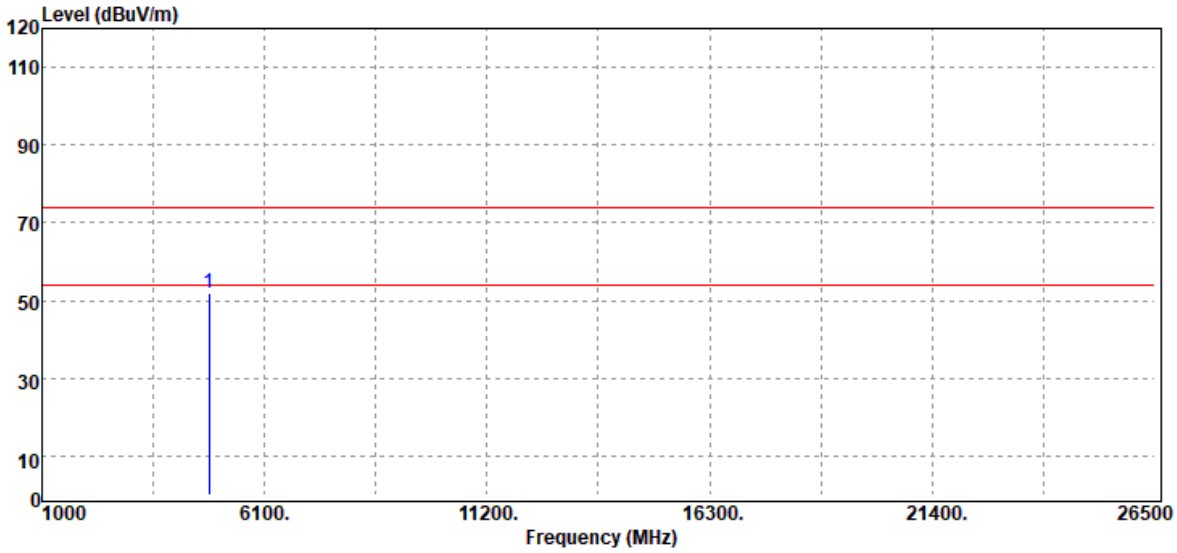
Above 1G Test Data

PCB Antenna

Test Mode	IEEE 802.11b Low CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	December 25, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4824.00	Peak	49.26	2.84	52.10	74.00	-21.90
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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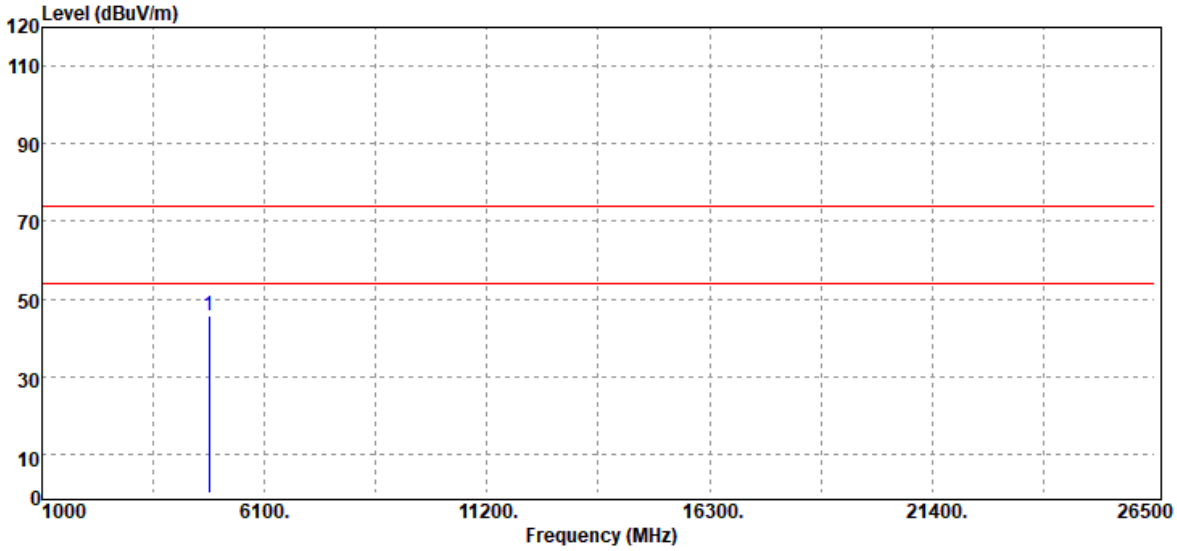
Test Mode	IEEE 802.11b Low CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	December 25, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4824.00	Peak	42.82	2.84	45.66	74.00	-28.34
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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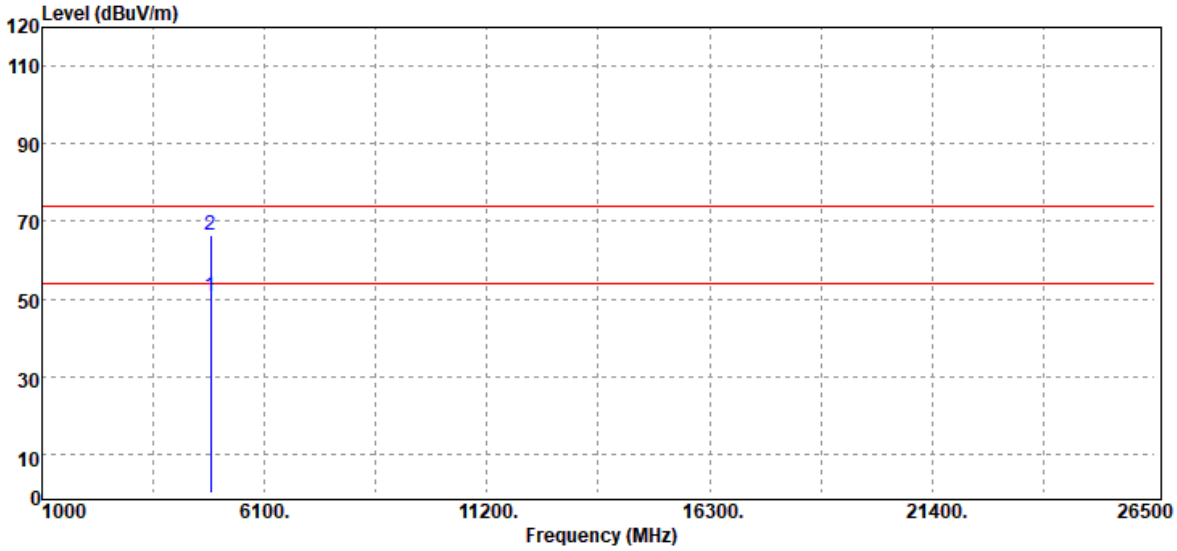
Test Mode	IEEE 802.11b Mid CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	December 25, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak & Average		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4874.00	Average	47.66	2.98	50.64	54.00	-3.36
4874.00	Peak	63.50	2.98	66.48	74.00	-7.52
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

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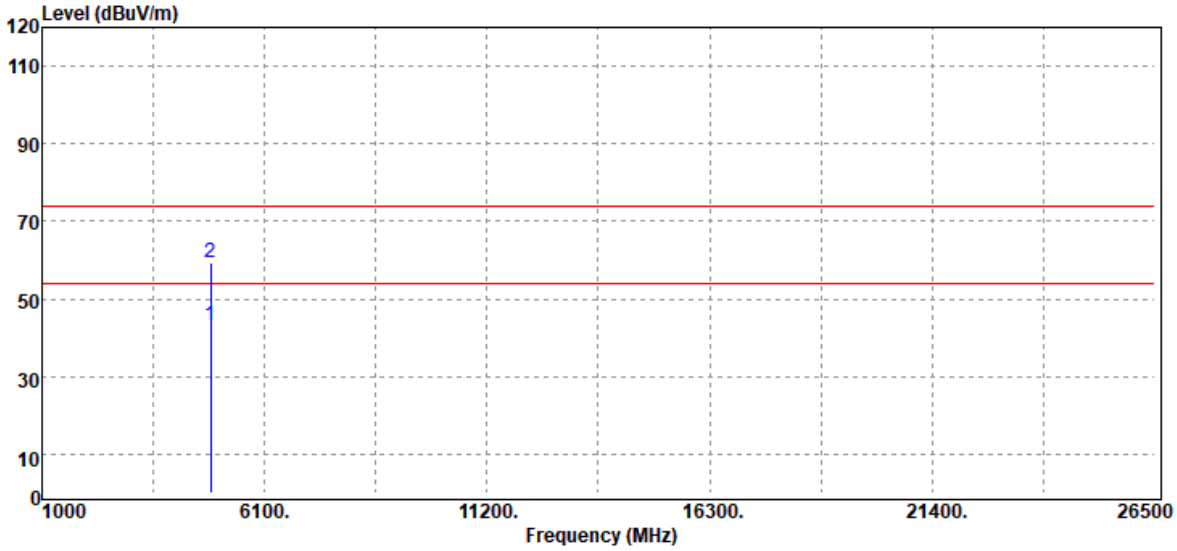
Test Mode	IEEE 802.11b Mid CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	December 25, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak & Average		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4874.00	Average	40.39	2.98	43.37	54.00	-10.63
4874.00	Peak	56.24	2.98	59.22	74.00	-14.78
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

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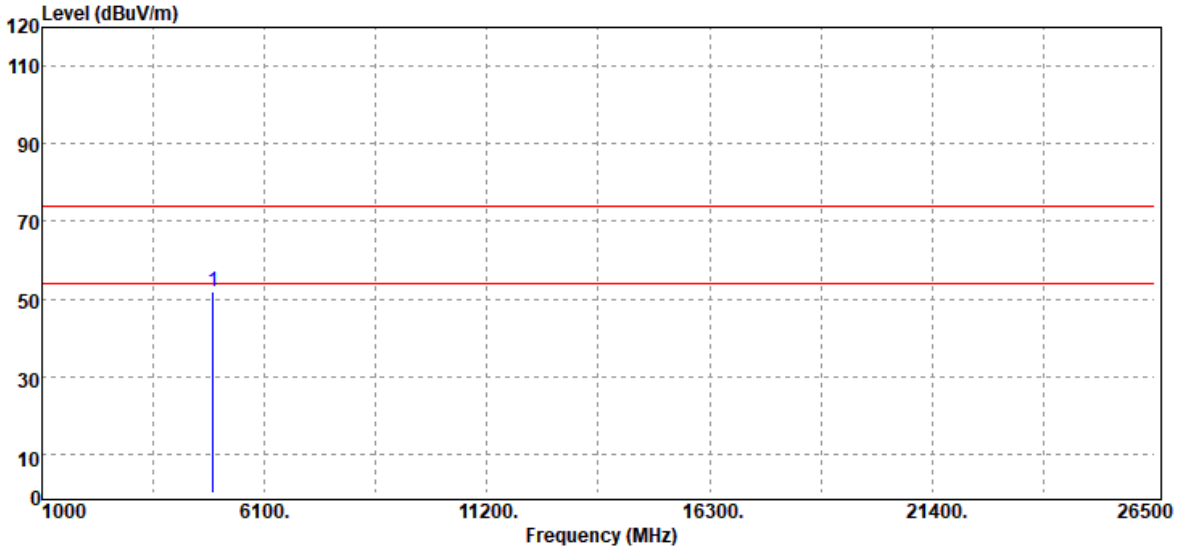
Test Mode	IEEE 802.11b High CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	December 25, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4924.00	Peak	48.34	3.46	51.80	74.00	-22.20
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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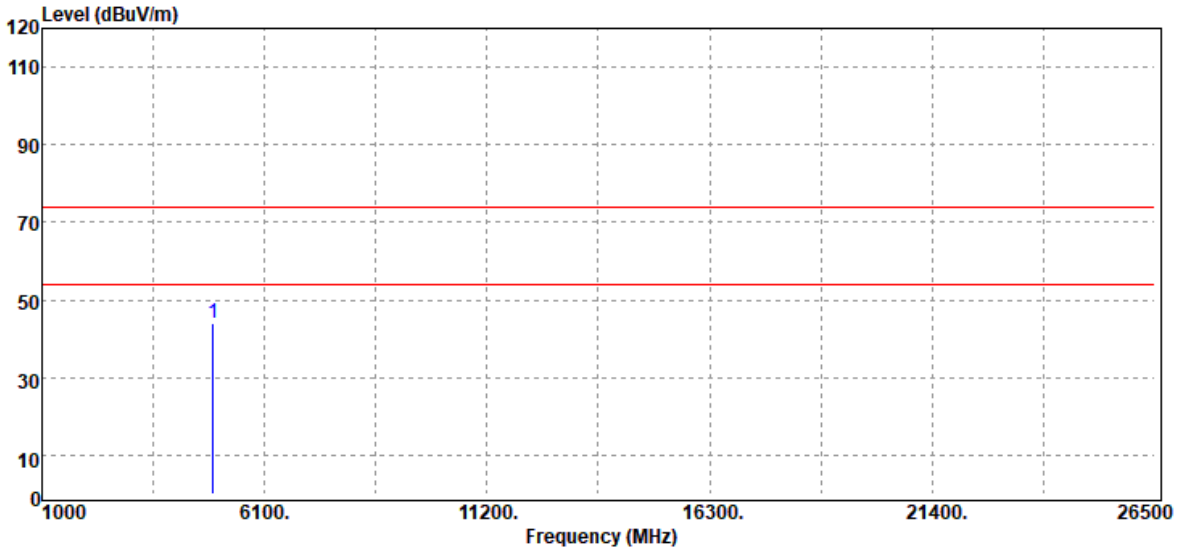
Test Mode	IEEE 802.11b High CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	December 25, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4924.00	Peak	40.46	3.46	43.92	74.00	-30.08
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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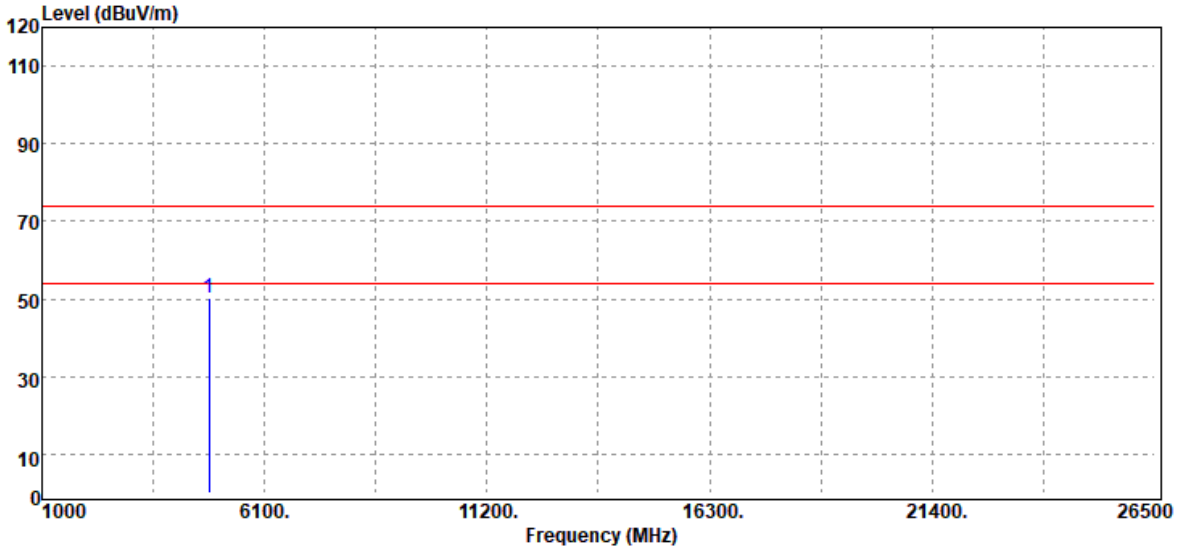
Test Mode	IEEE 802.11g Low CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	December 25, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4824.00	Peak	47.29	2.84	50.13	74.00	-23.87
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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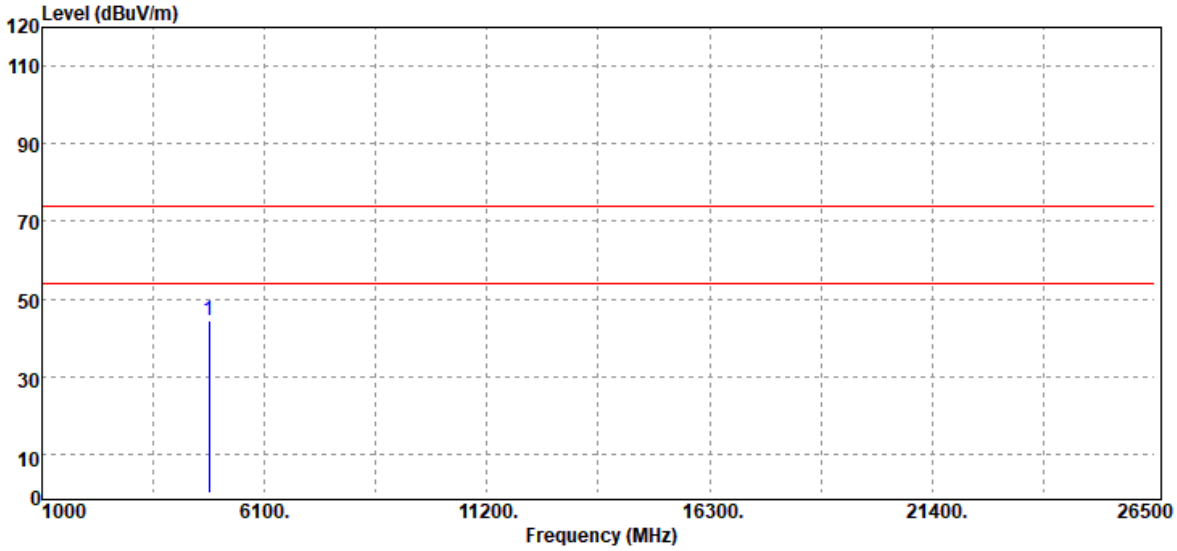
Test Mode	IEEE 802.11g Low CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	December 25, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4824.00	Peak	41.54	2.84	44.38	74.00	-29.62
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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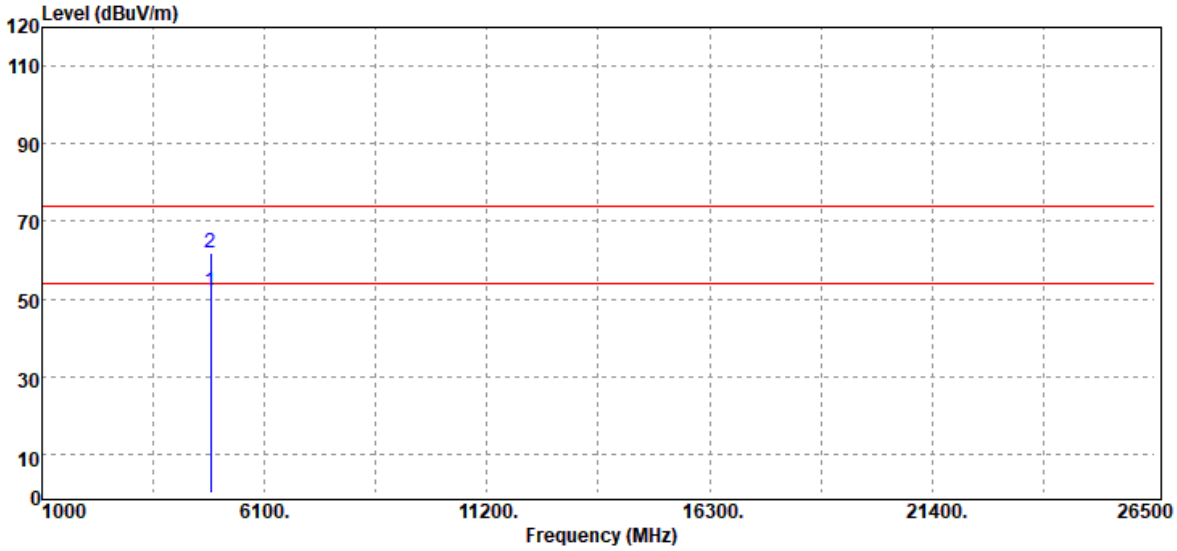
Test Mode	IEEE 802.11g Mid CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	December 25, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak & Average		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4874.00	Average	48.94	2.98	51.92	54.00	-2.08
4874.00	Peak	58.96	2.98	61.94	74.00	-12.06
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

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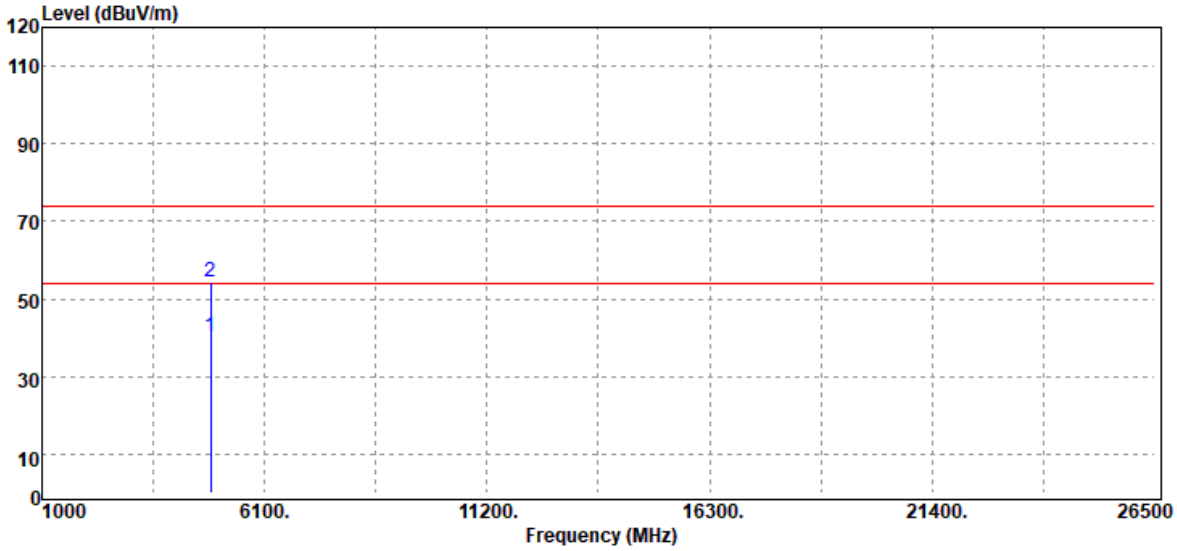
Test Mode	IEEE 802.11g Mid CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	December 25, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak & Average		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4874.00	Average	37.41	2.98	40.39	54.00	-13.61
4874.00	Peak	51.35	2.98	54.33	74.00	-19.67
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

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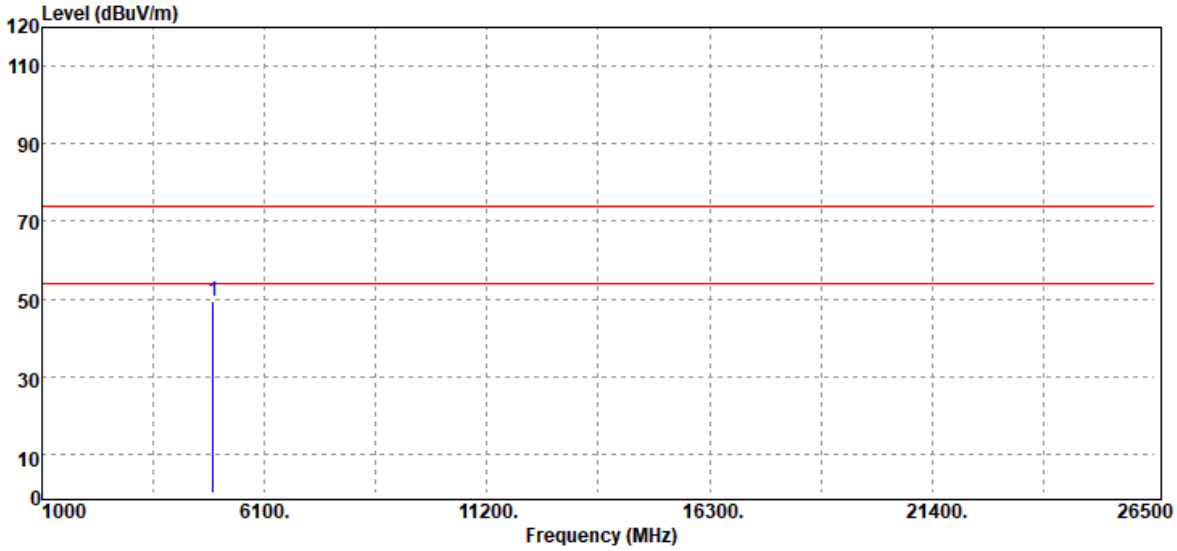
Test Mode	IEEE 802.11g High CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	December 25, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4924.00	Peak	46.03	3.46	49.49	74.00	-24.51
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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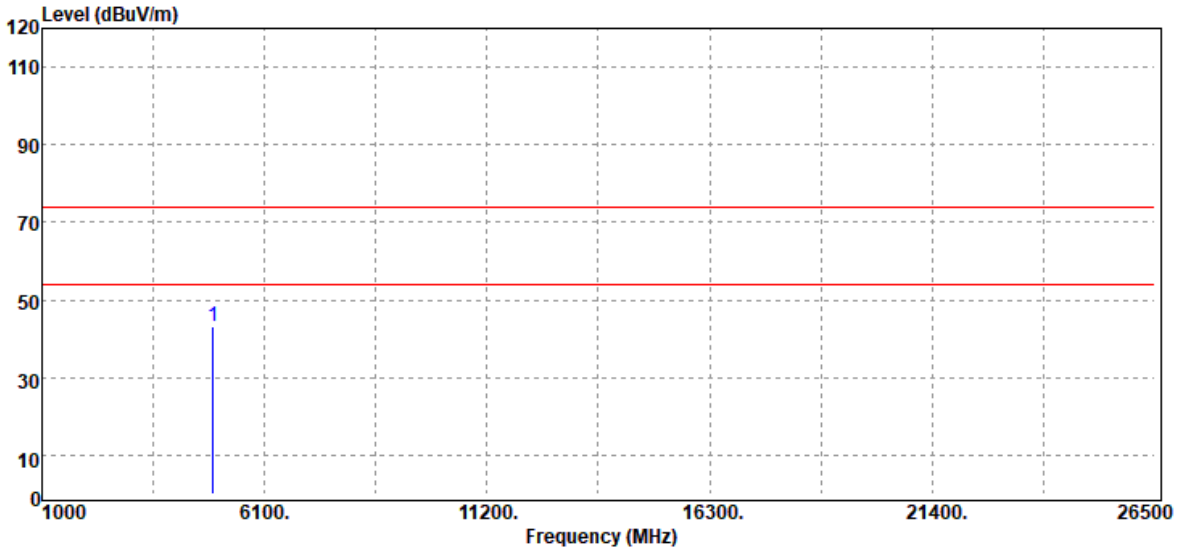
Test Mode	IEEE 802.11g High CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	December 25, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4924.00	Peak	39.55	3.46	43.01	74.00	-30.99
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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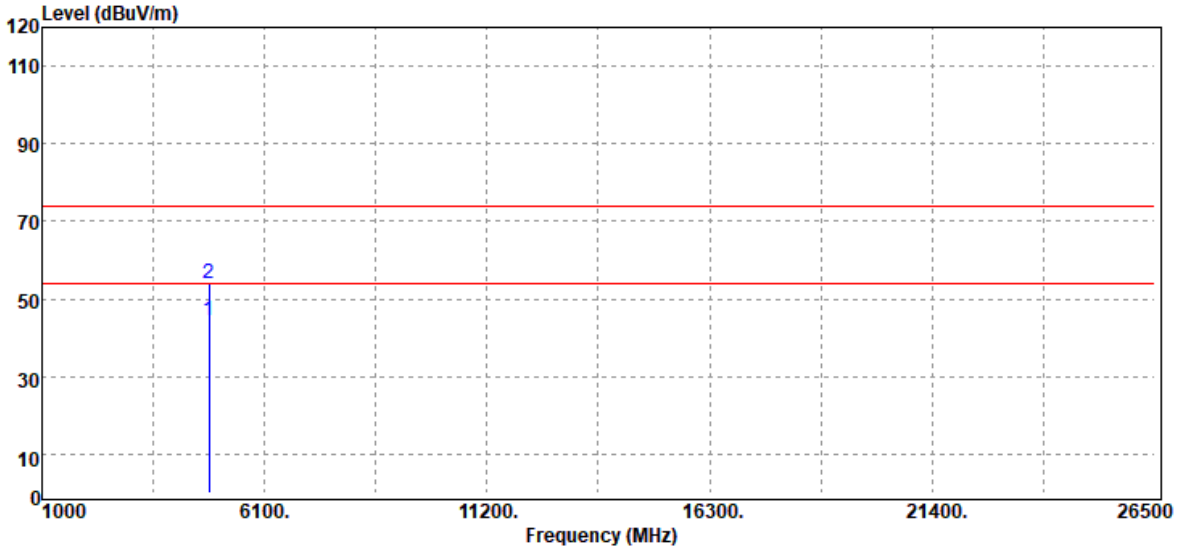
Test Mode	IEEE 802.11n HT20 Low CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	December 25, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak & Average		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4824.00	Average	41.75	2.84	44.59	54.00	-9.41
4824.00	Peak	51.24	2.84	54.08	74.00	-19.92
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

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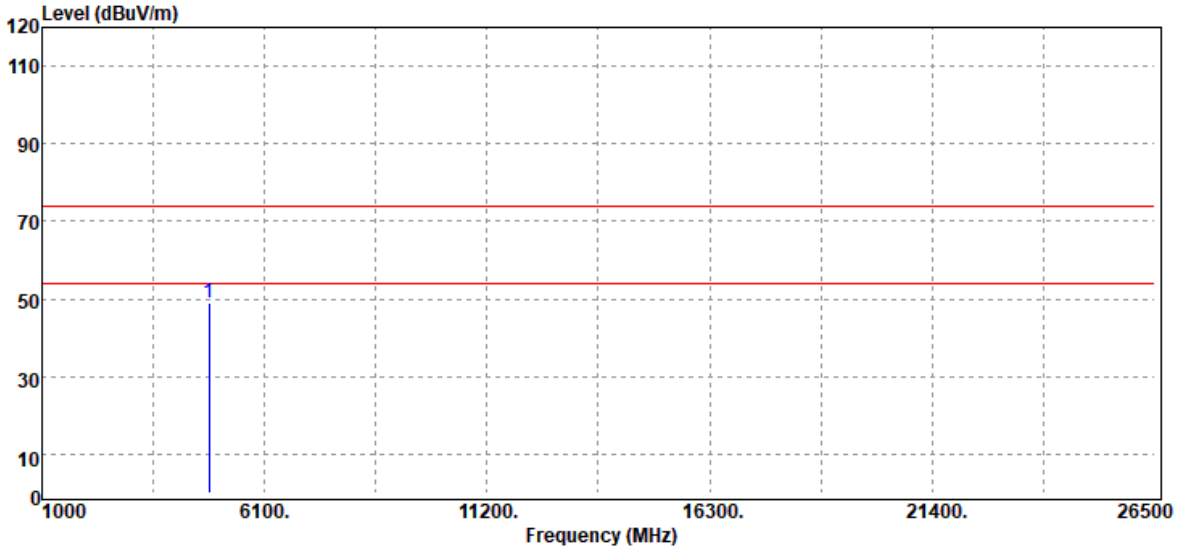
Test Mode	IEEE 802.11n HT20 Low CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	December 25, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4824.00	Peak	46.29	2.84	49.13	74.00	-24.87
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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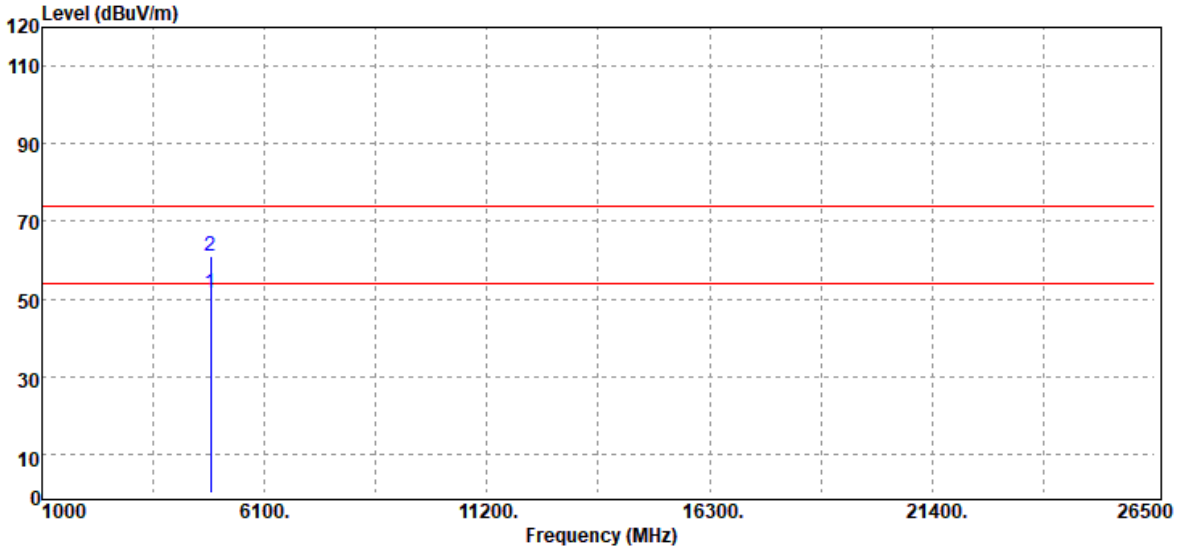
Test Mode	IEEE 802.11n HT20 Mid CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	December 25, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak & Average		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4874.00	Average	48.69	2.98	51.67	54.00	-2.33
4874.00	Peak	58.18	2.98	61.16	74.00	-12.84
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

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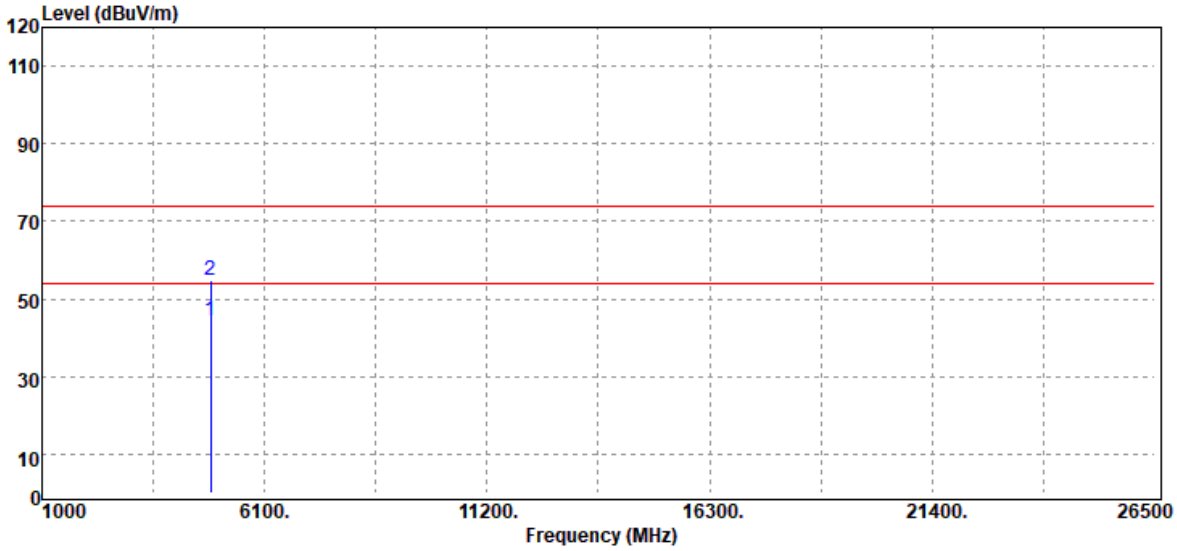
Test Mode	IEEE 802.11n HT20 Mid CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	December 25, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak & Average		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4874.00	Average	41.65	2.98	44.63	54.00	-9.37
4874.00	Peak	51.82	2.98	54.80	74.00	-19.20
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

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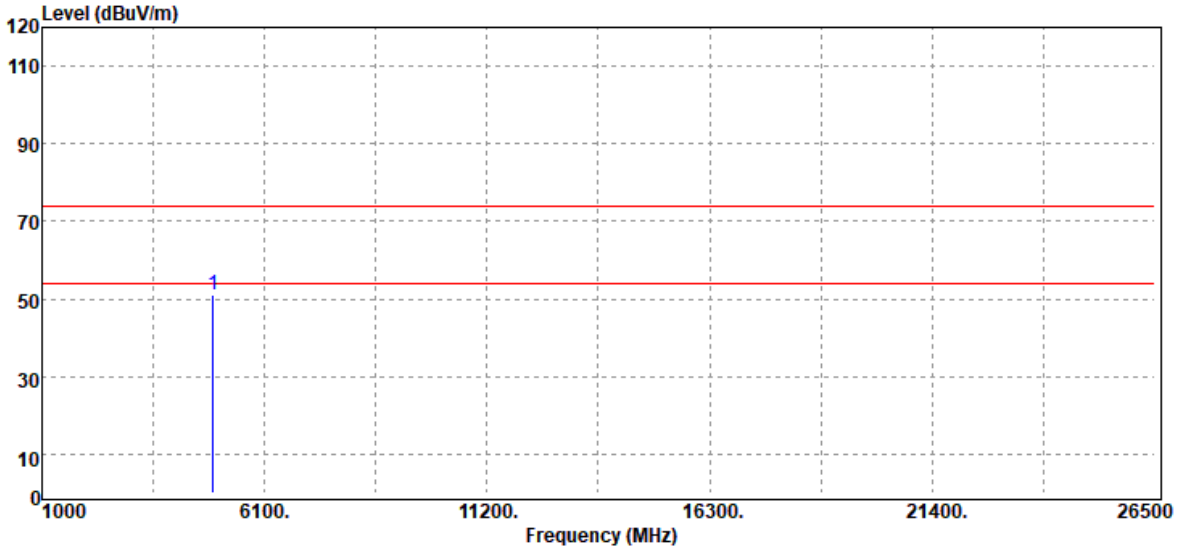
Test Mode	IEEE 802.11n HT20 High CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	December 25, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4924.00	Peak	47.70	3.46	51.16	74.00	-22.84
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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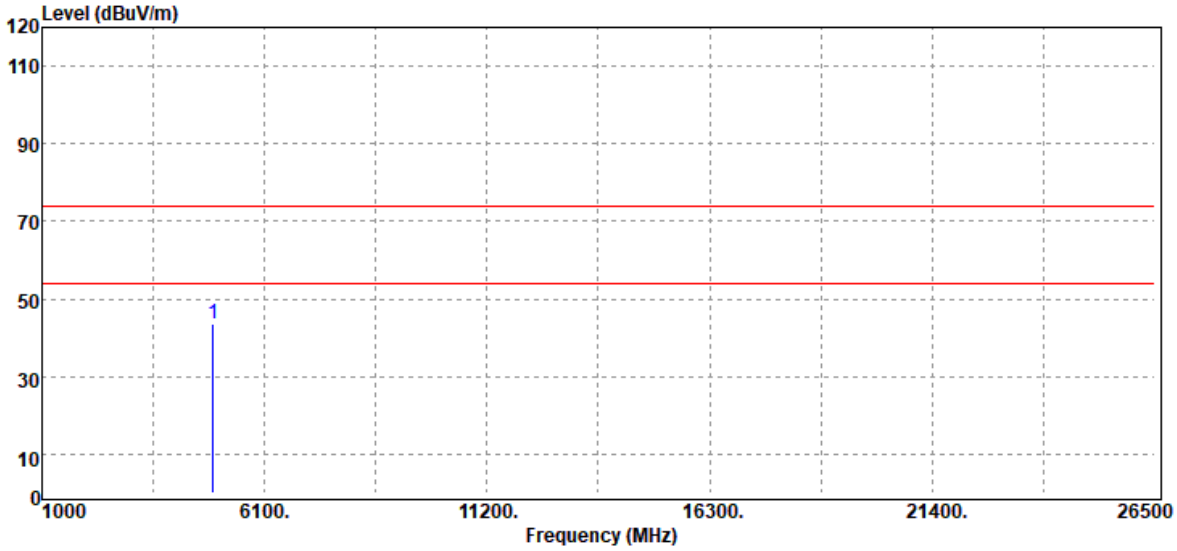
Test Mode	IEEE 802.11n HT20 High CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	December 25, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4924.00	Peak	40.34	3.46	43.80	74.00	-30.20
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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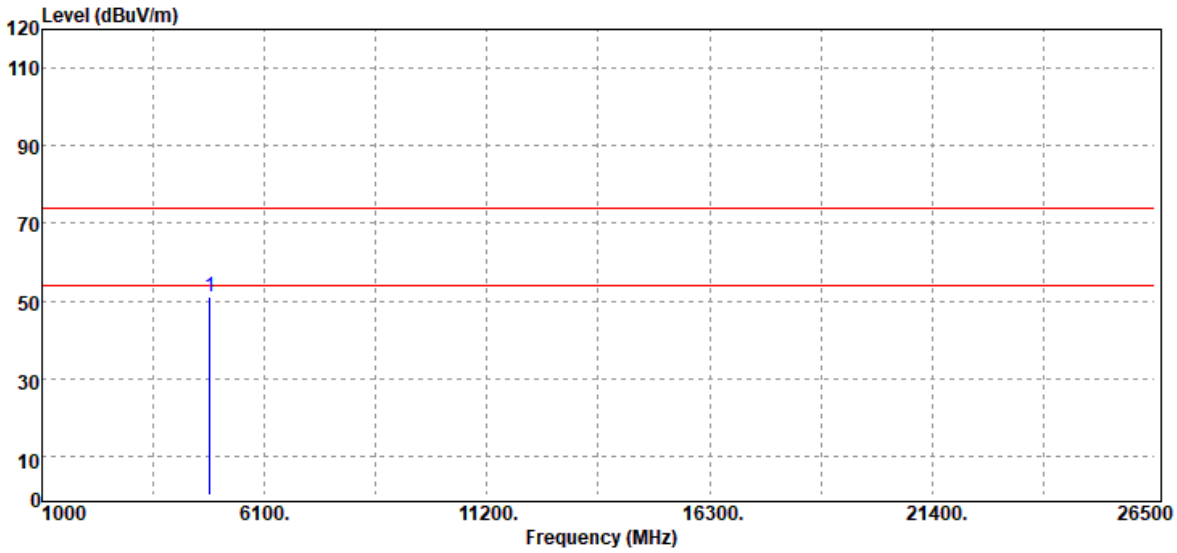
Test Mode	IEEE 802.11n HT40 Low CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	December 25, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4844.00	Peak	48.40	2.84	51.24	74.00	-22.76
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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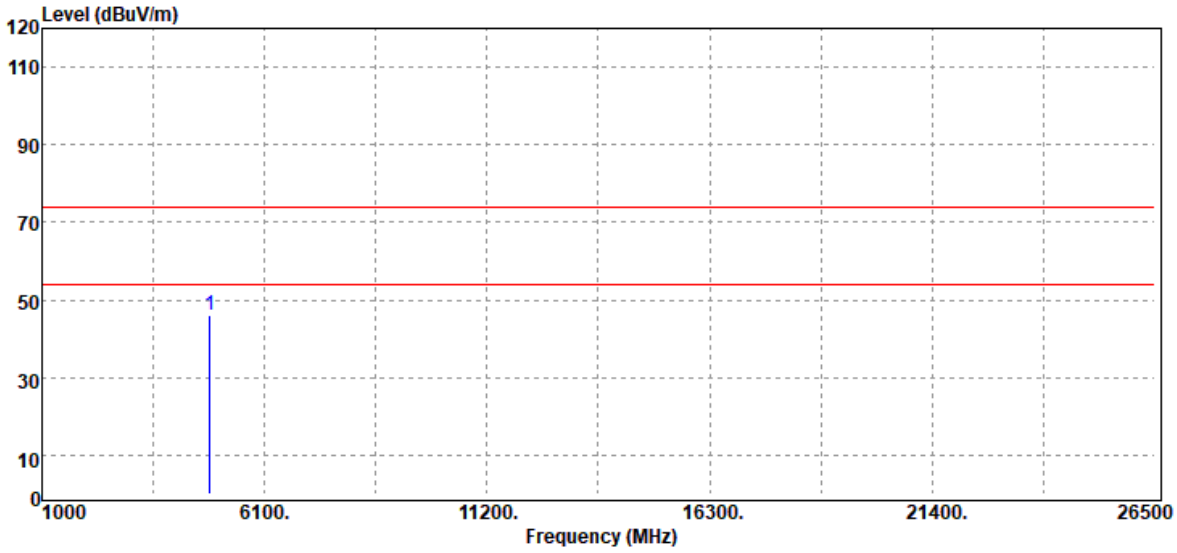
Test Mode	IEEE 802.11n HT40 Low CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	December 25, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4844.00	Peak	43.21	2.84	46.05	74.00	-27.95
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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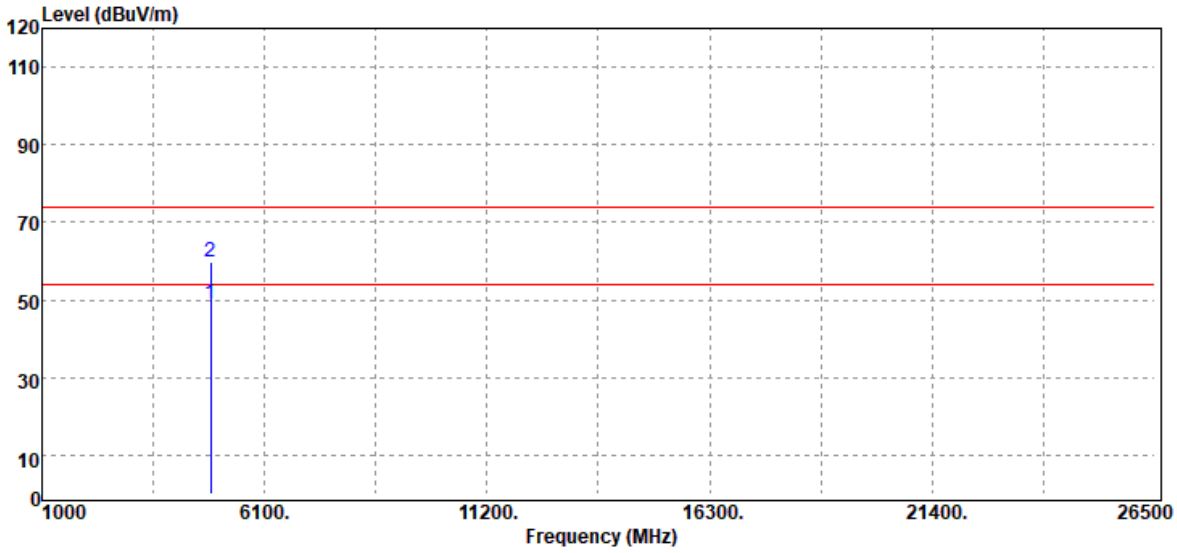
Test Mode	IEEE 802.11n HT40 Mid CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	December 25, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak & Average		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4874.00	Average	46.07	2.98	49.05	54.00	-4.95
4874.00	Peak	56.61	2.98	59.59	74.00	-14.41
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

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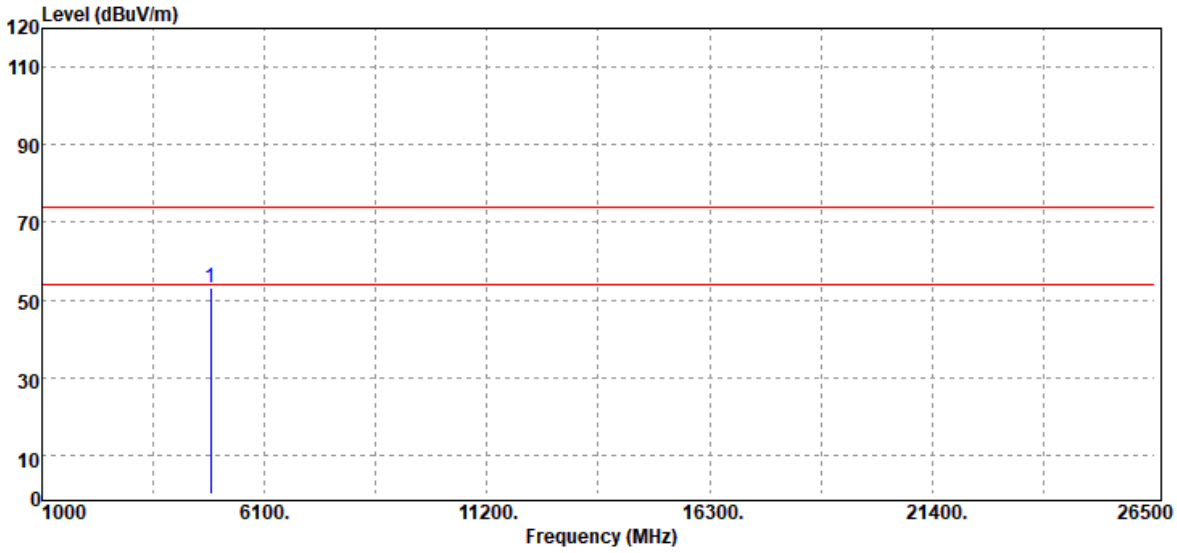
Test Mode	IEEE 802.11n HT40 Mid CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	December 25, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4874.00	Peak	50.06	2.98	53.04	74.00	-20.96
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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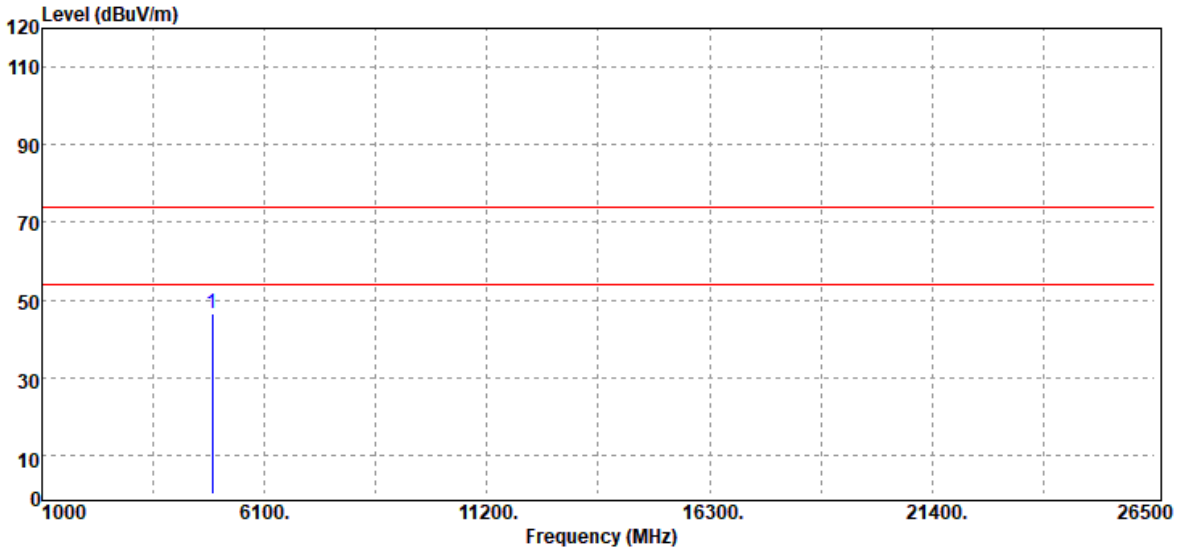
Test Mode	IEEE 802.11n HT40 High CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	December 25, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4904.00	Peak	43.47	3.22	46.69	74.00	-27.31
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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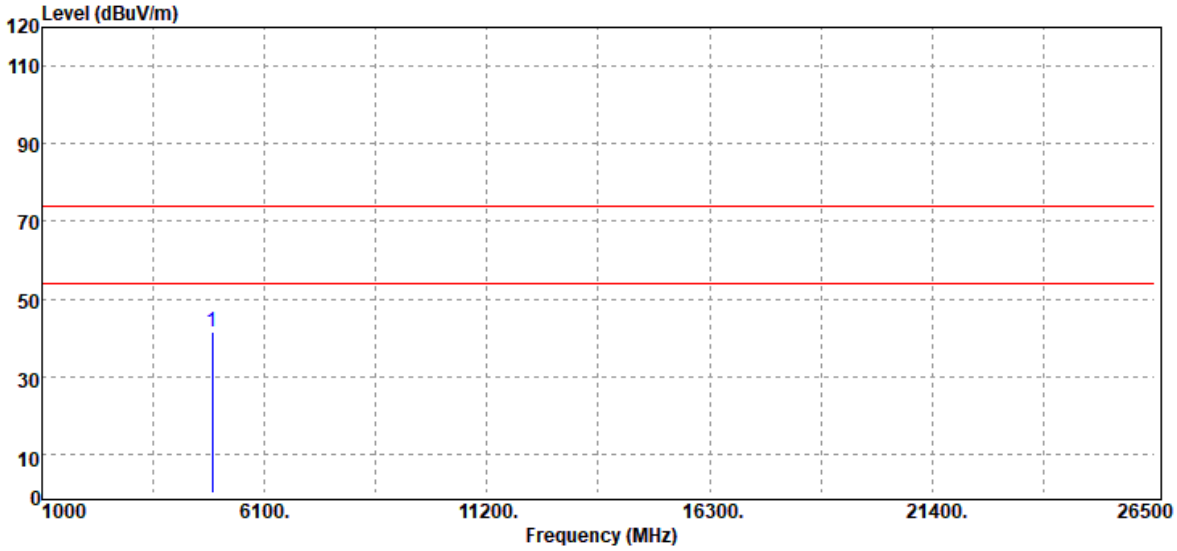
Test Mode	IEEE 802.11n HT40 High CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	December 25, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4904.00	Peak	38.14	3.22	41.36	74.00	-32.64
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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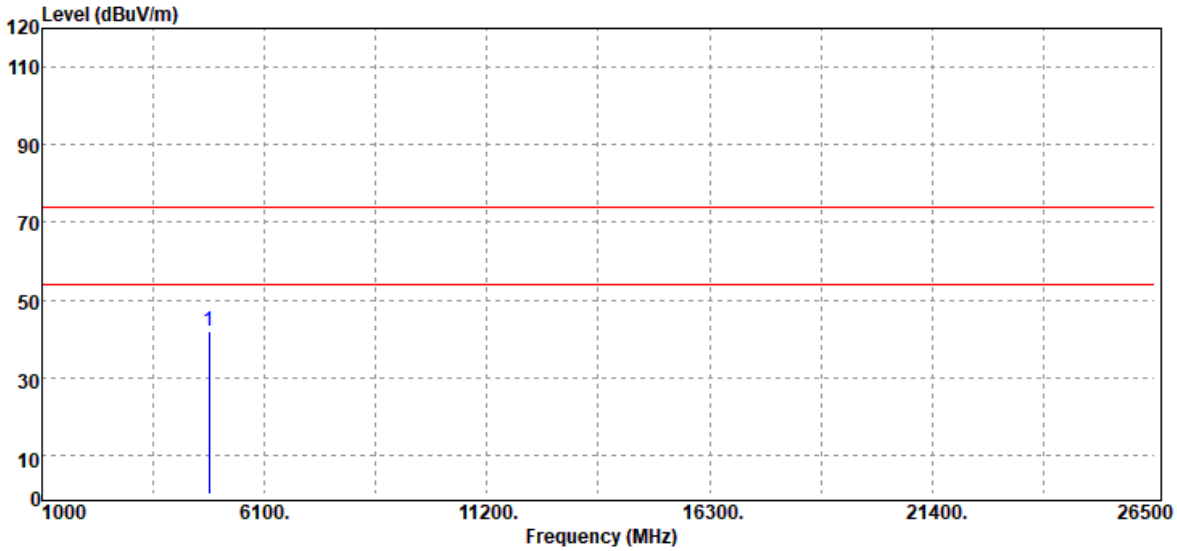
Chip Antenna

Test Mode	IEEE 802.11b Low CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	November 28, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4824.00	Peak	38.92	2.84	41.76	74.00	-32.24
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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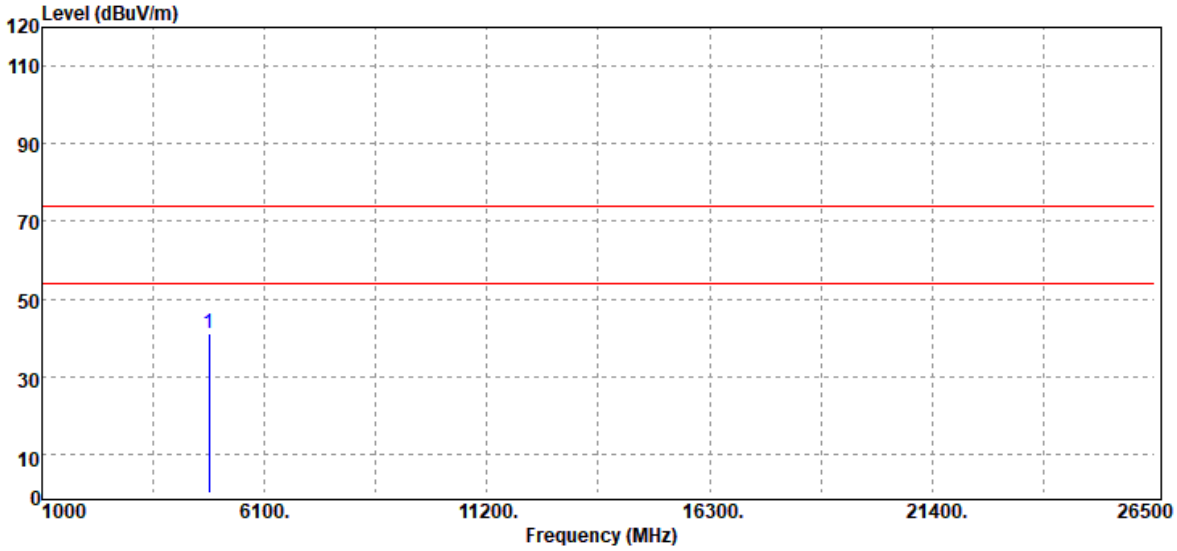
Test Mode	IEEE 802.11b Low CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	November 28, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4824.00	Peak	38.07	2.84	40.91	74.00	-33.09
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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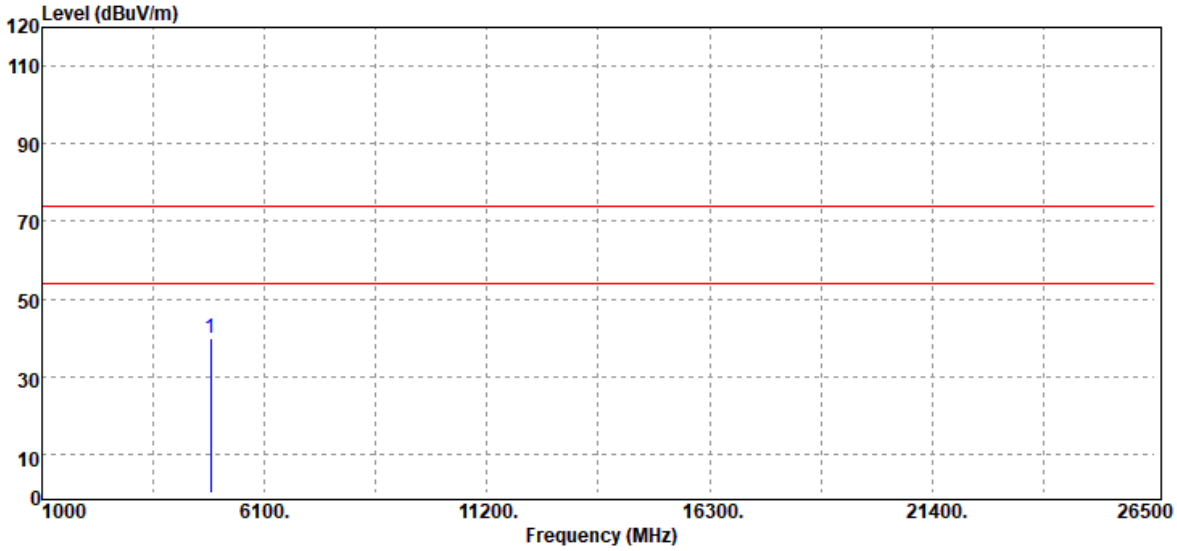
Test Mode	IEEE 802.11b Mid CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	November 28, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4874.00	Peak	36.94	2.98	39.92	74.00	-34.08
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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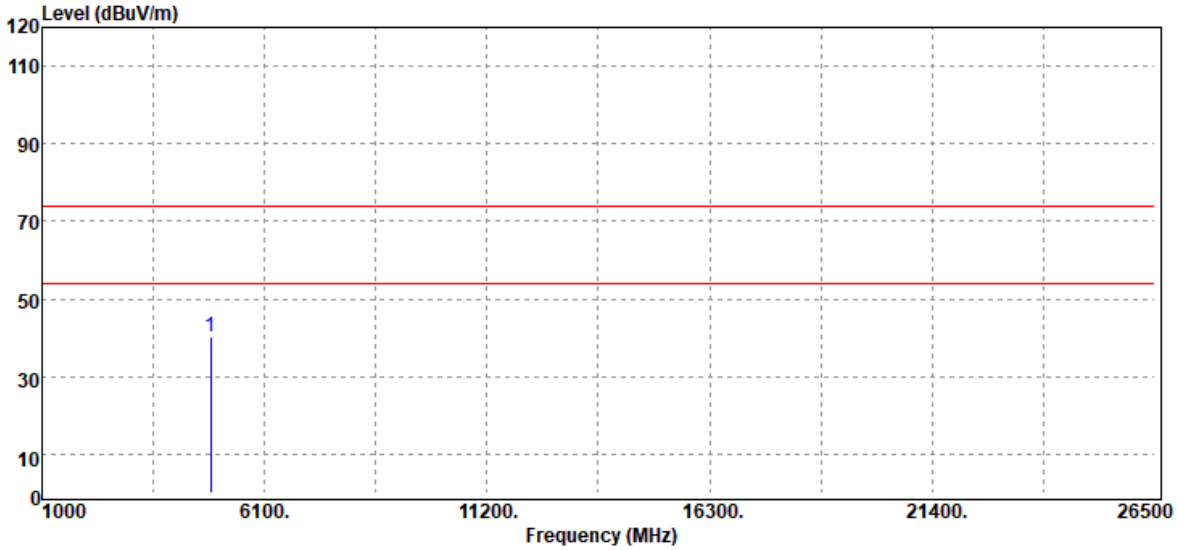
Test Mode	IEEE 802.11b Mid CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	November 28, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4874.00	Peak	37.16	2.98	40.14	74.00	-33.86
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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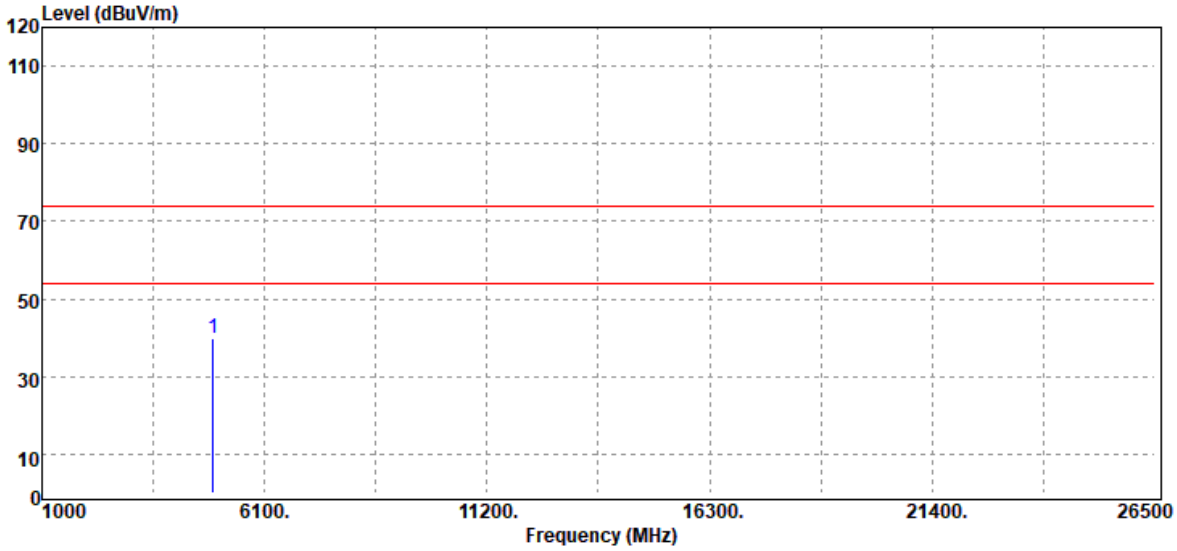
Test Mode	IEEE 802.11b High CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	November 28, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4924.00	Peak	36.43	3.46	39.89	74.00	-34.11
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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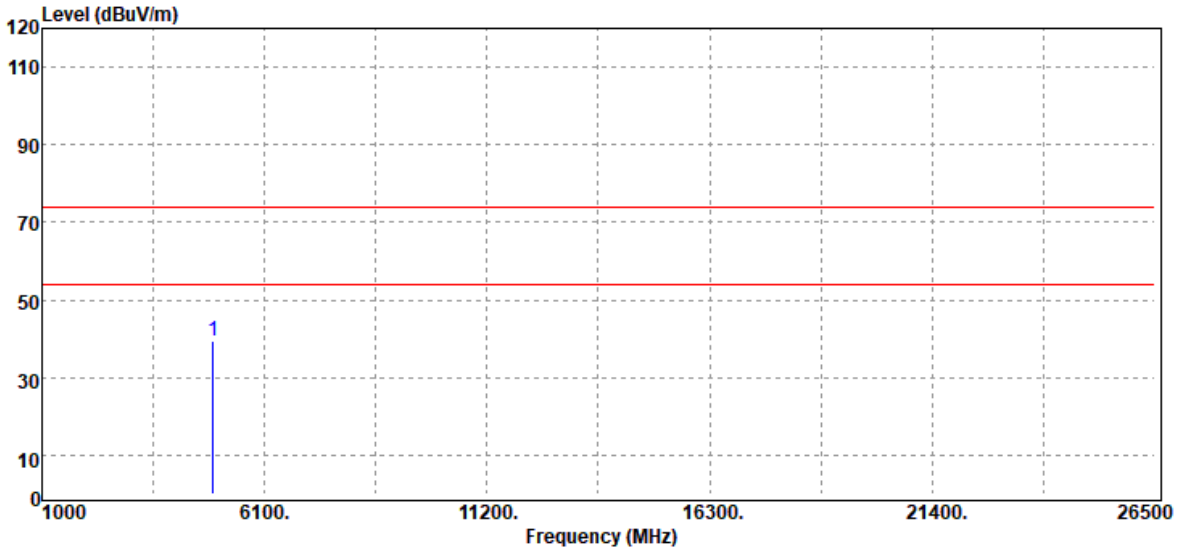
Test Mode	IEEE 802.11b High CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	November 28, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4924.00	Peak	36.03	3.46	39.49	74.00	-34.51
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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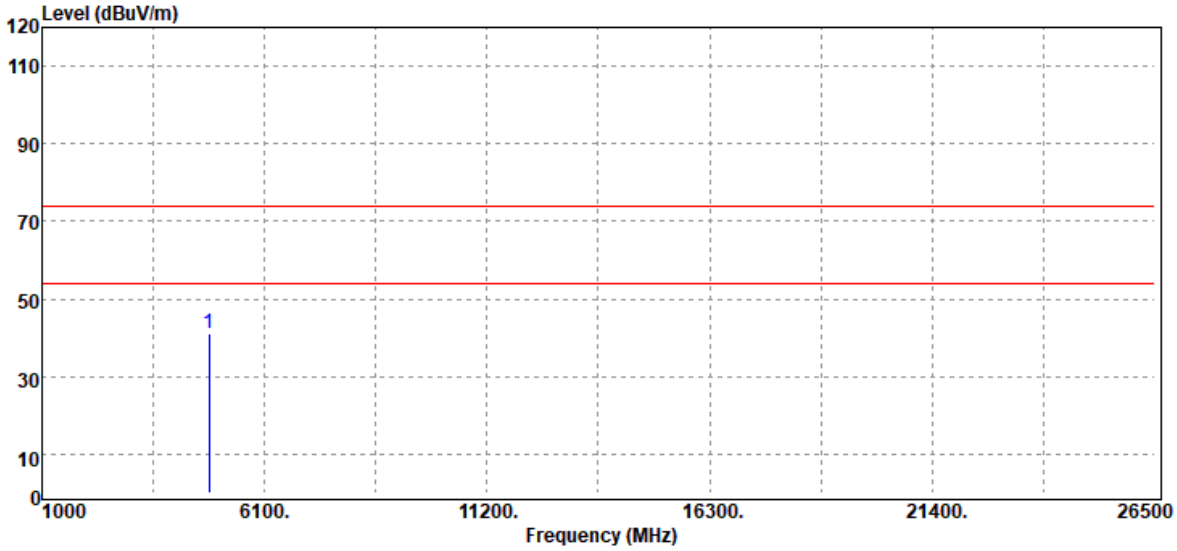
Test Mode	IEEE 802.11g Low CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	November 28, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4824.00	Peak	38.18	2.84	41.02	74.00	-32.98
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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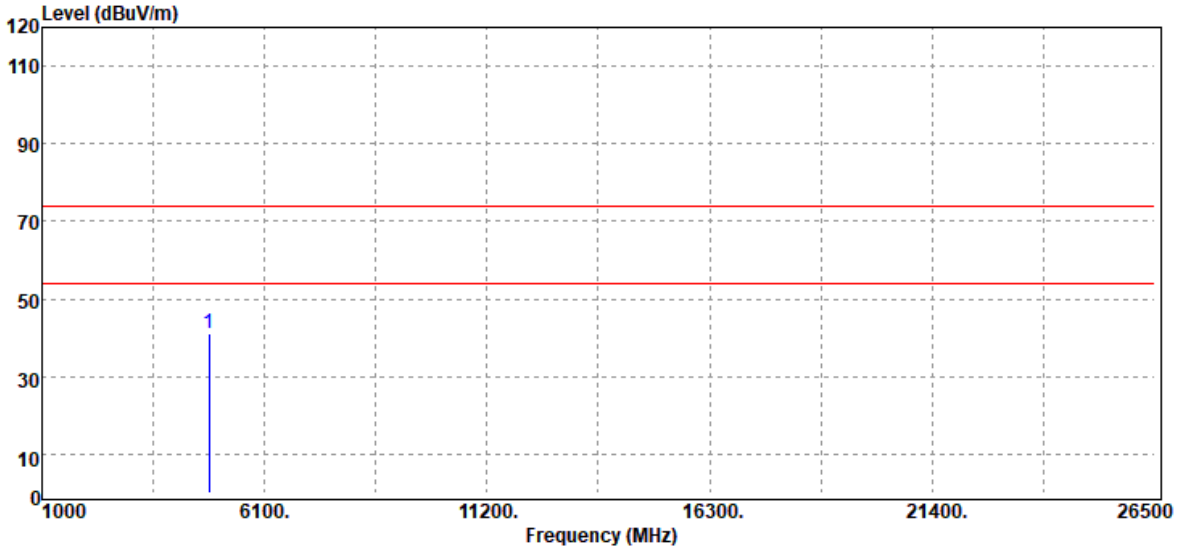
Test Mode	IEEE 802.11g Low CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	November 28, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4824.00	Peak	38.30	2.84	41.14	74.00	-32.86
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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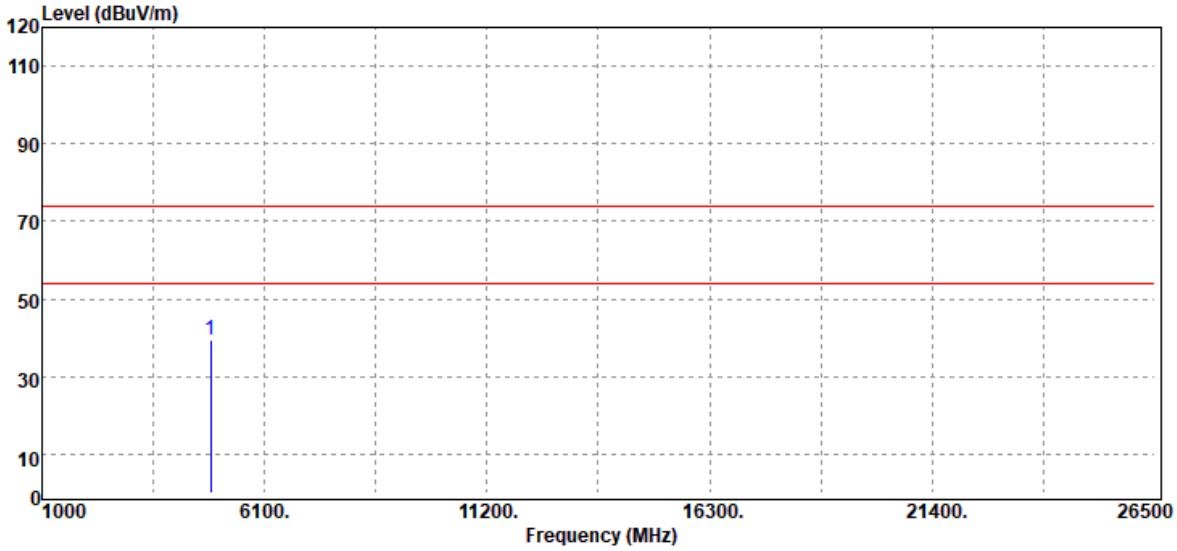
Test Mode	IEEE 802.11g Mid CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	November 28, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4874.00	Peak	36.34	2.98	39.32	74.00	-34.68
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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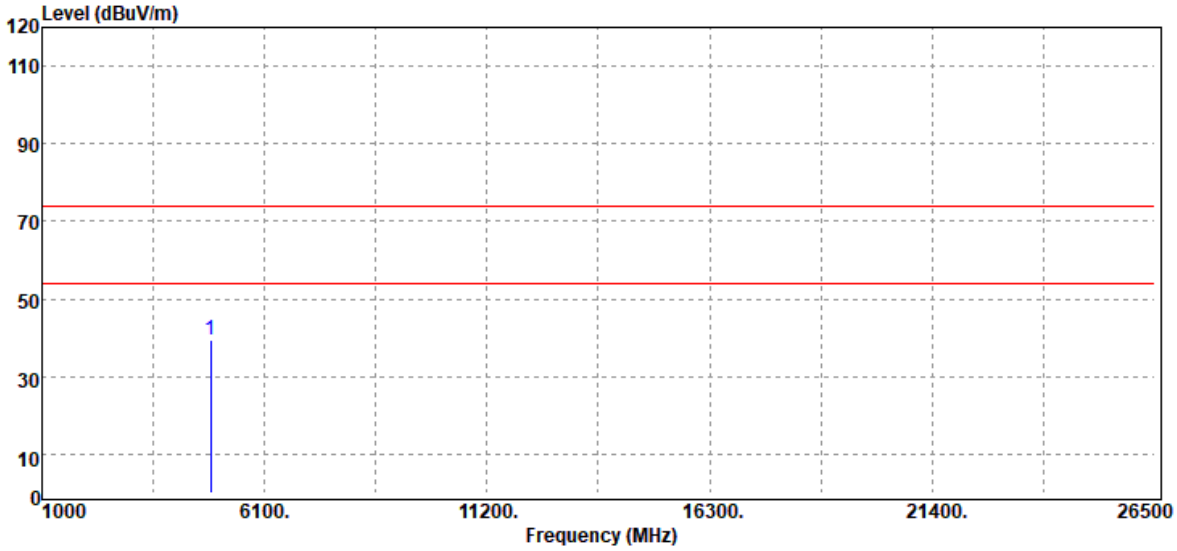
Test Mode	IEEE 802.11g Mid CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	November 28, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4874.00	Peak	36.44	2.98	39.42	74.00	-34.58
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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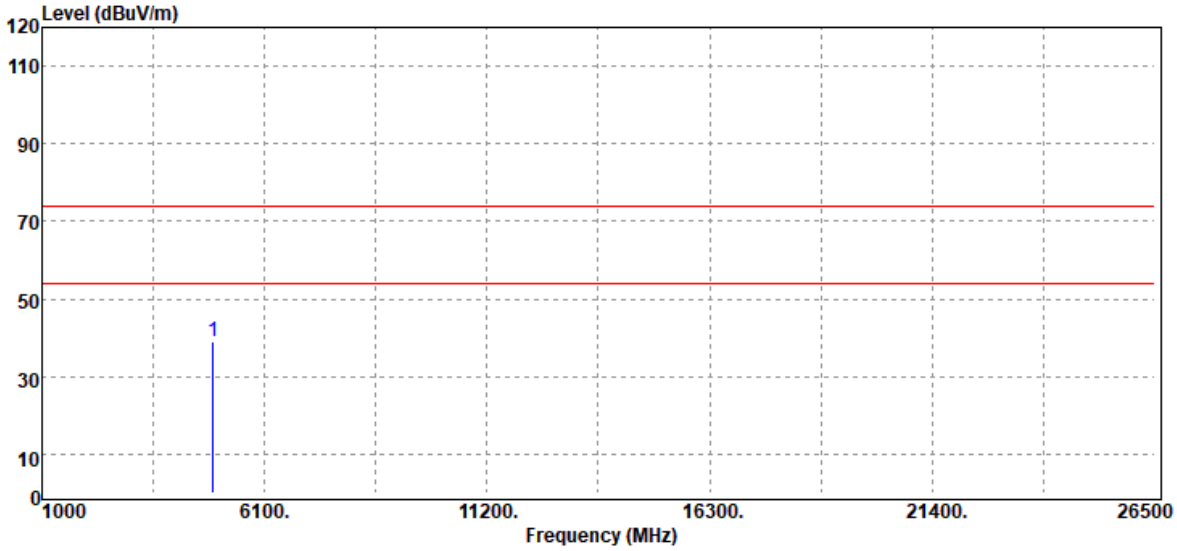
Test Mode	IEEE 802.11g High CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	November 28, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4924.00	Peak	35.78	3.46	39.24	74.00	-34.76
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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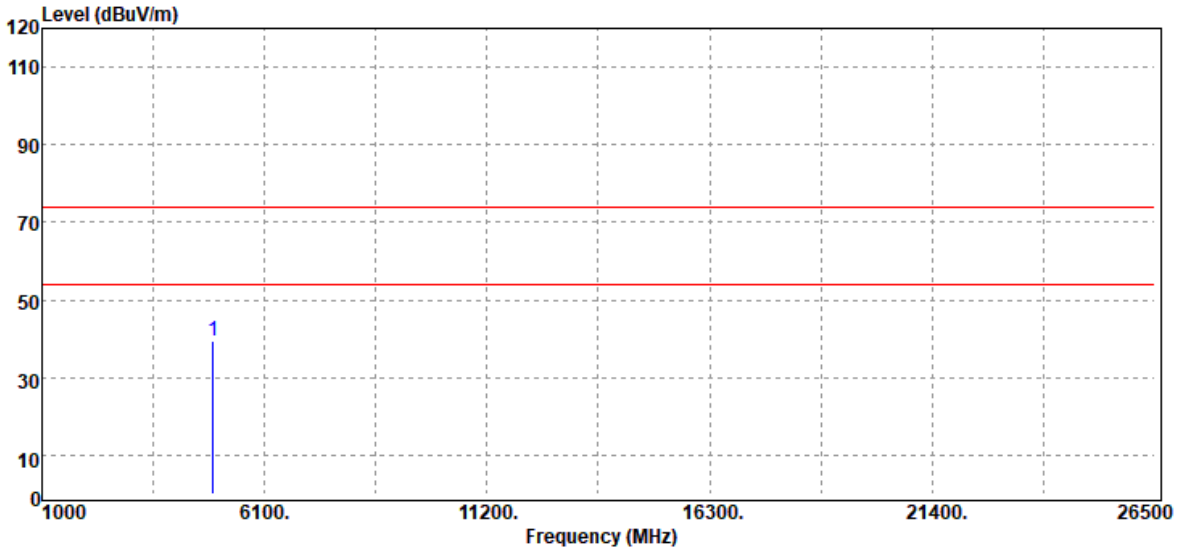
Test Mode	IEEE 802.11g High CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	November 28, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4924.00	Peak	36.17	3.46	39.63	74.00	-34.37
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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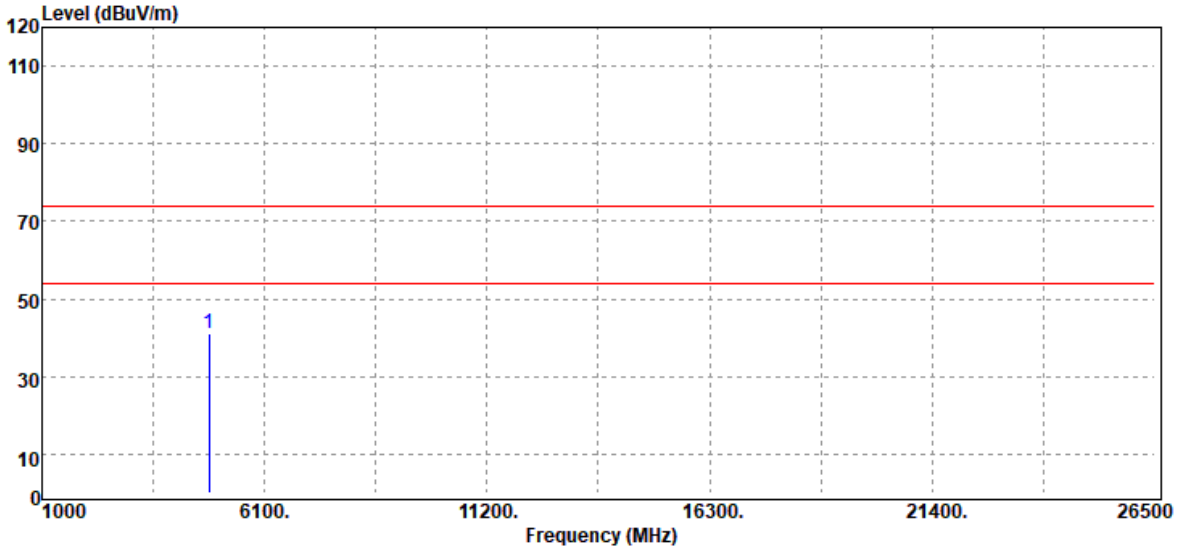
Test Mode	IEEE 802.11n HT20 Low CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	November 28, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4824.00	Peak	38.32	2.84	41.16	74.00	-32.84
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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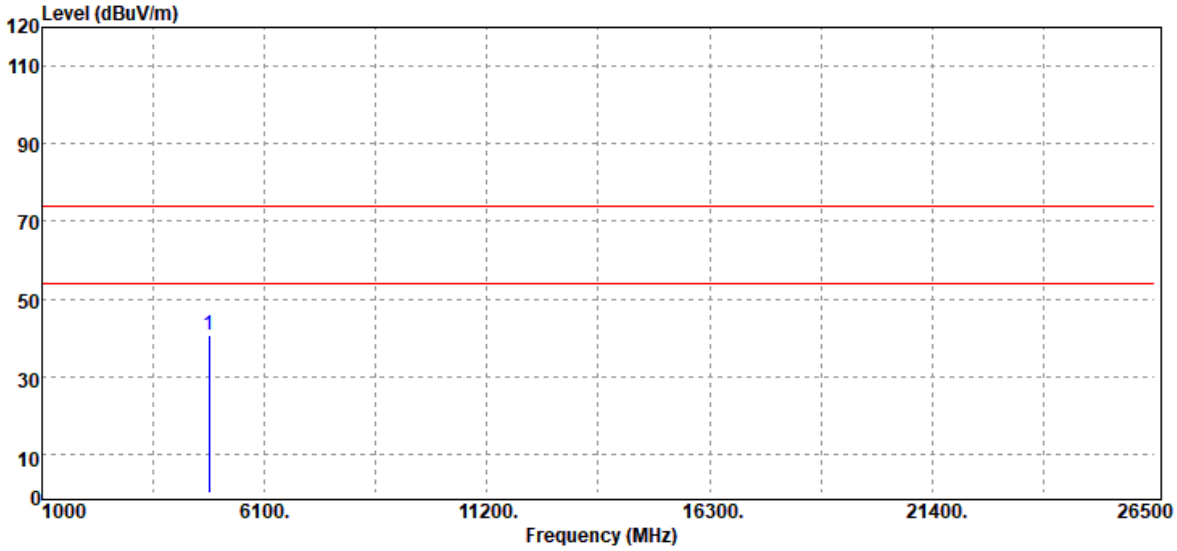
Test Mode	IEEE 802.11n HT20 Low CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	November 28, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4824.00	Peak	37.81	2.84	40.65	74.00	-33.35
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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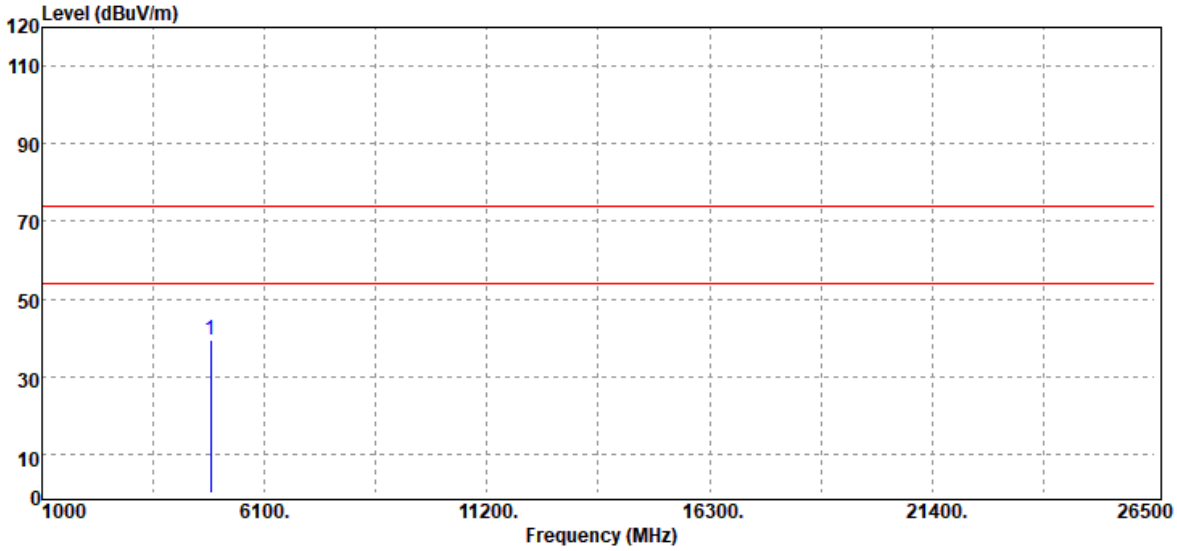
Test Mode	IEEE 802.11n HT20 Mid CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	November 28, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4874.00	Peak	36.51	2.98	39.49	74.00	-34.51
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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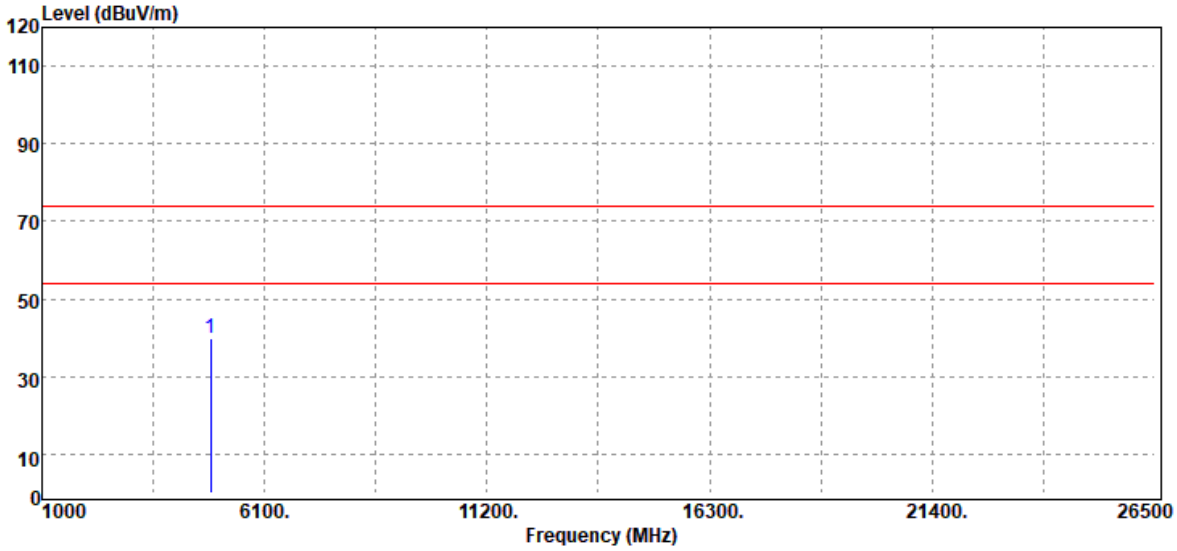
Test Mode	IEEE 802.11n HT20 Mid CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	November 28, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4874.00	Peak	36.70	2.98	39.68	74.00	-34.32
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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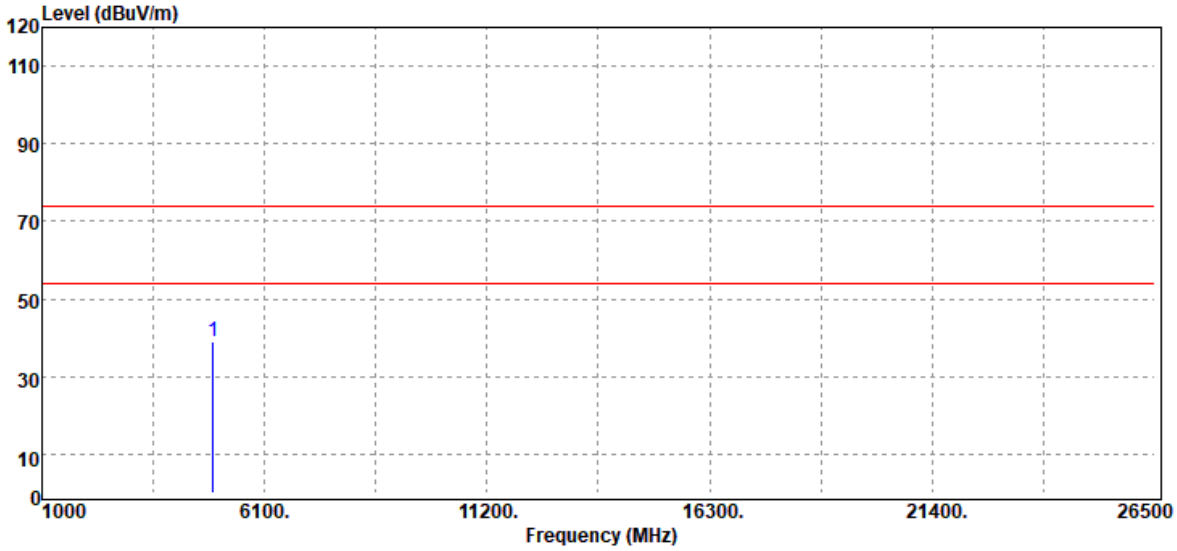
Test Mode	IEEE 802.11n HT20 High CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	November 28, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4924.00	Peak	35.67	3.46	39.13	74.00	-34.87
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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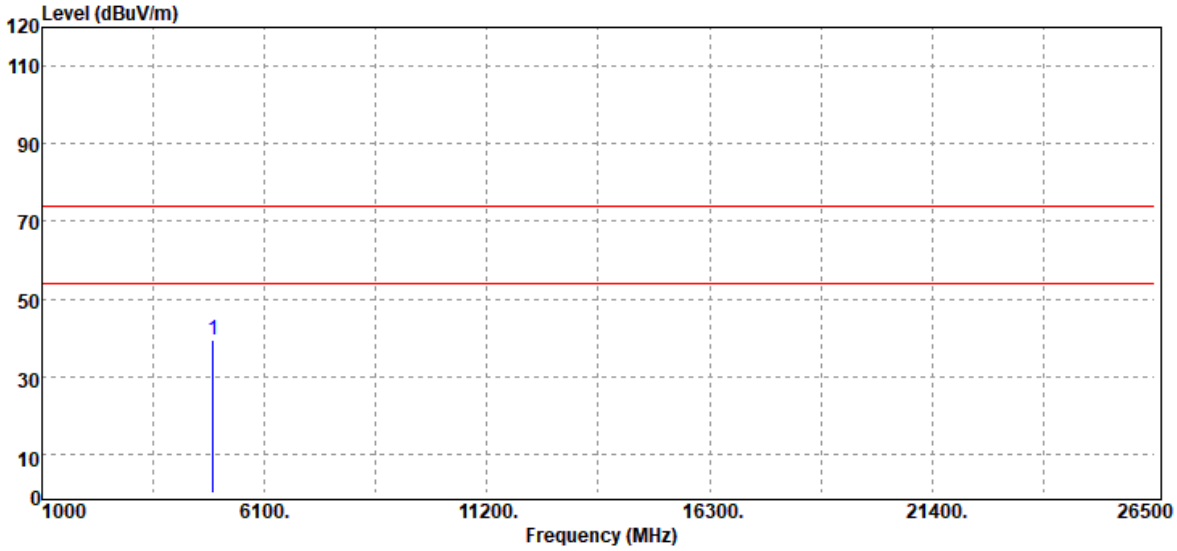
Test Mode	IEEE 802.11n HT20 High CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	November 28, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4924.00	Peak	36.00	3.46	39.46	74.00	-34.54
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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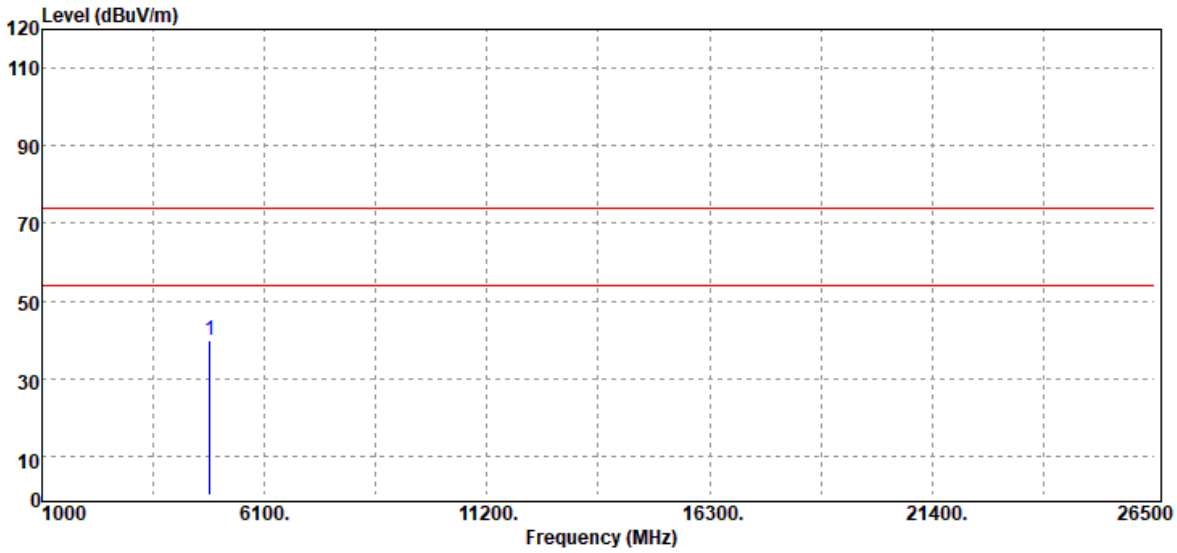
Test Mode	IEEE 802.11n HT40 Low CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	November 28, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4844.00	Peak	37.09	2.84	39.93	74.00	-34.07
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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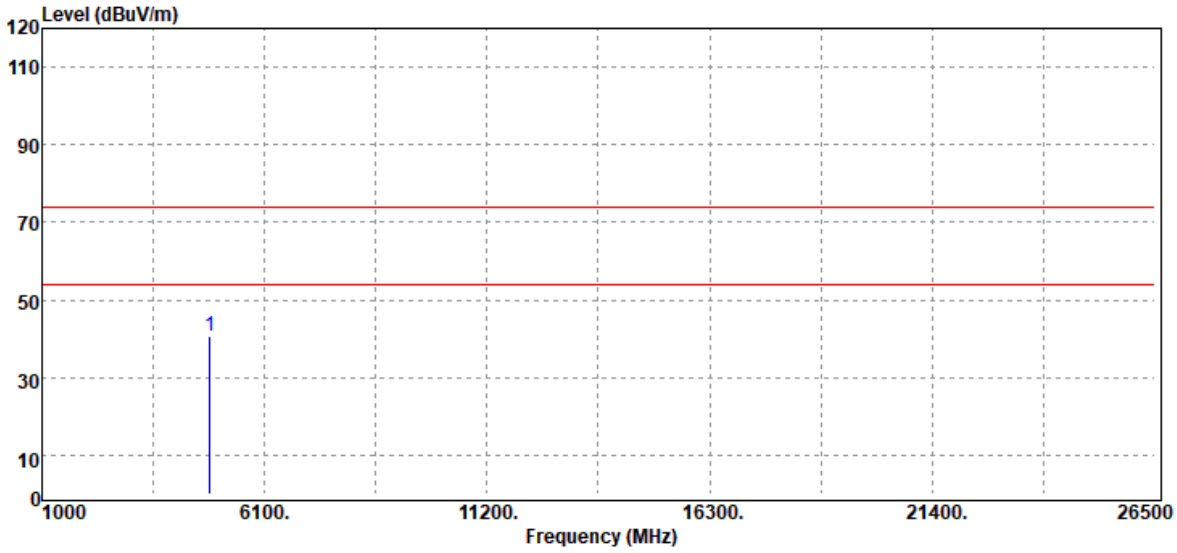
Test Mode	IEEE 802.11n HT40 Low CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	November 28, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4844.00	Peak	37.98	2.84	40.82	74.00	-33.18
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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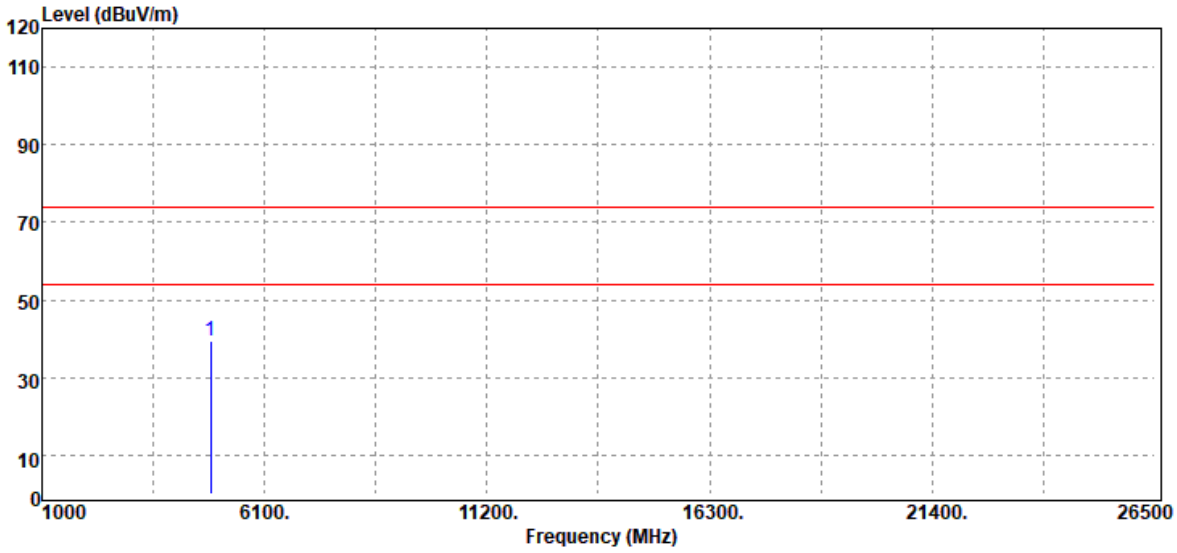
Test Mode	IEEE 802.11n HT40 Mid CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	November 28, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4874.00	Peak	36.44	2.98	39.42	74.00	-34.58
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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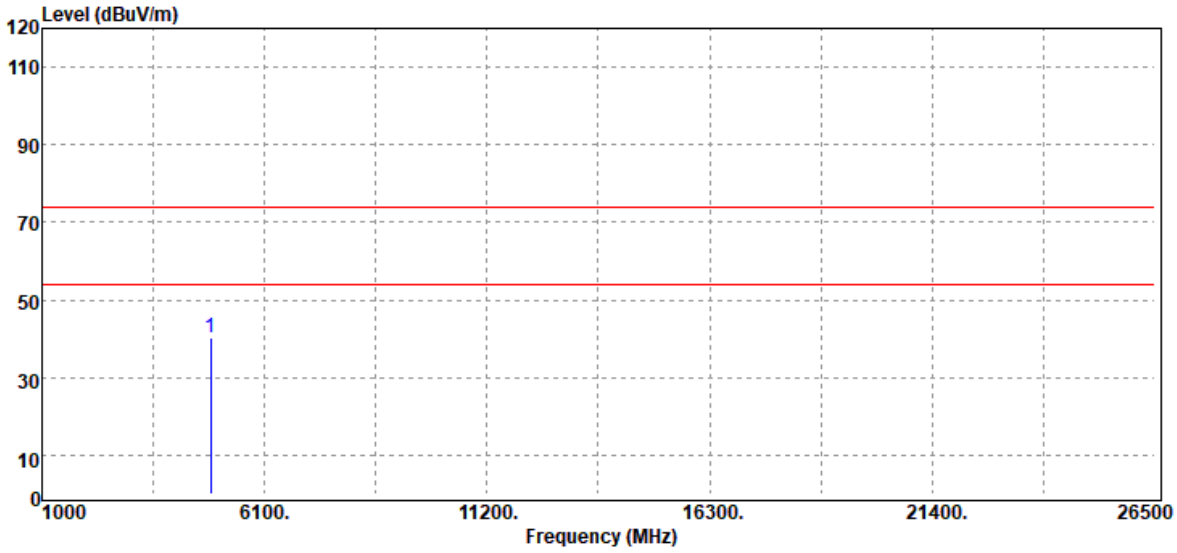
Test Mode	IEEE 802.11n HT40 Mid CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	November 28, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4874.00	Peak	37.09	2.98	40.07	74.00	-33.93
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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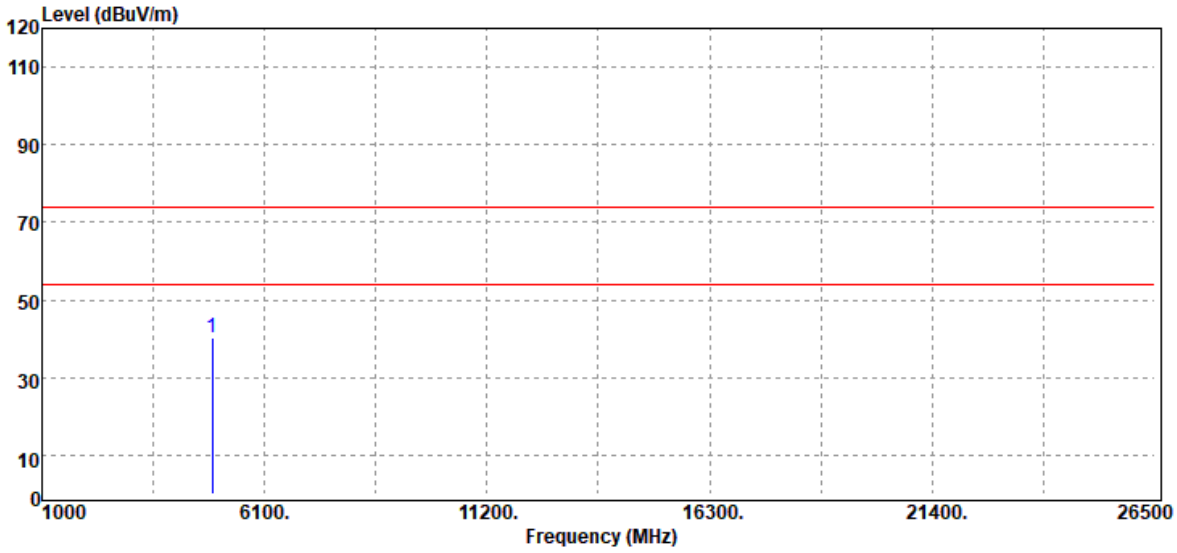
Test Mode	IEEE 802.11n HT40 High CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	November 28, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4904.00	Peak	37.21	3.22	40.43	74.00	-33.57
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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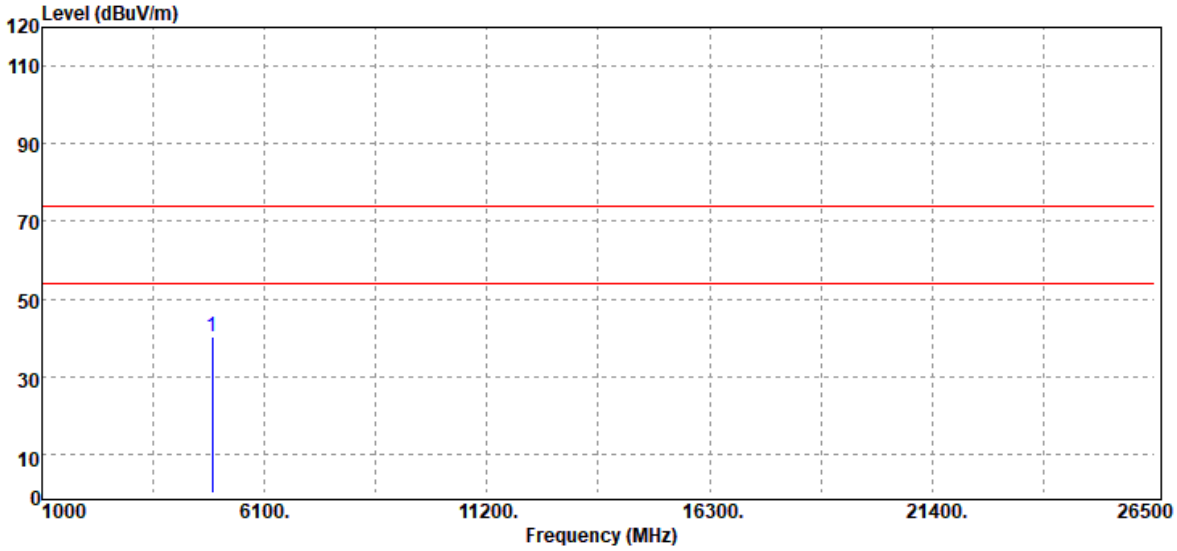
Test Mode	IEEE 802.11n HT40 High CH	Temp/Hum	22.5(℃)/ 59%RH
Test Item	Harmonic	Test Date	November 28, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4904.00	Peak	36.89	3.22	40.11	74.00	-33.89
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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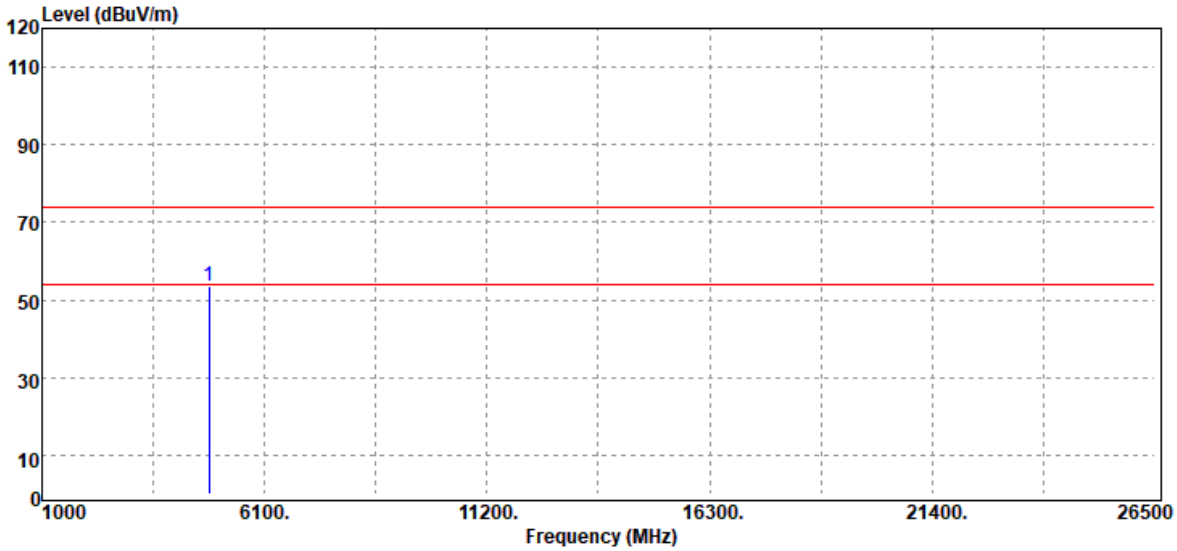
Dipole Antenna

Test Mode	IEEE 802.11b Low CH	Temp/Hum	22.1(℃)/ 58%RH
Test Item	Harmonic	Test Date	December 23, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4824.00	Peak	50.92	2.84	53.76	74.00	-20.24
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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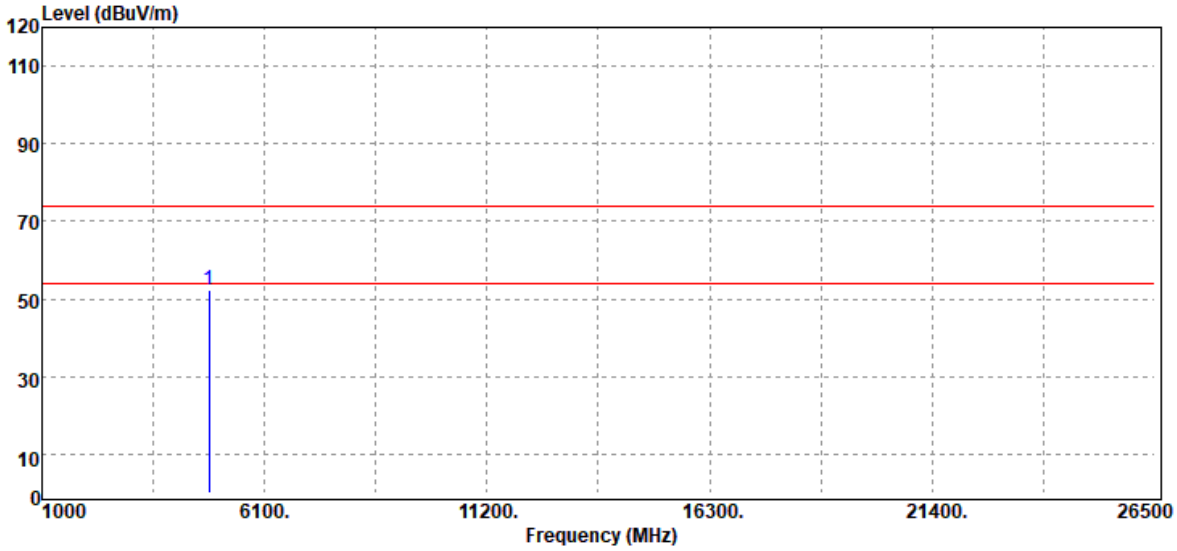
Test Mode	IEEE 802.11b Low CH	Temp/Hum	22.1(℃)/ 58%RH
Test Item	Harmonic	Test Date	December 23, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4824.00	Peak	49.28	2.84	52.12	74.00	-21.88
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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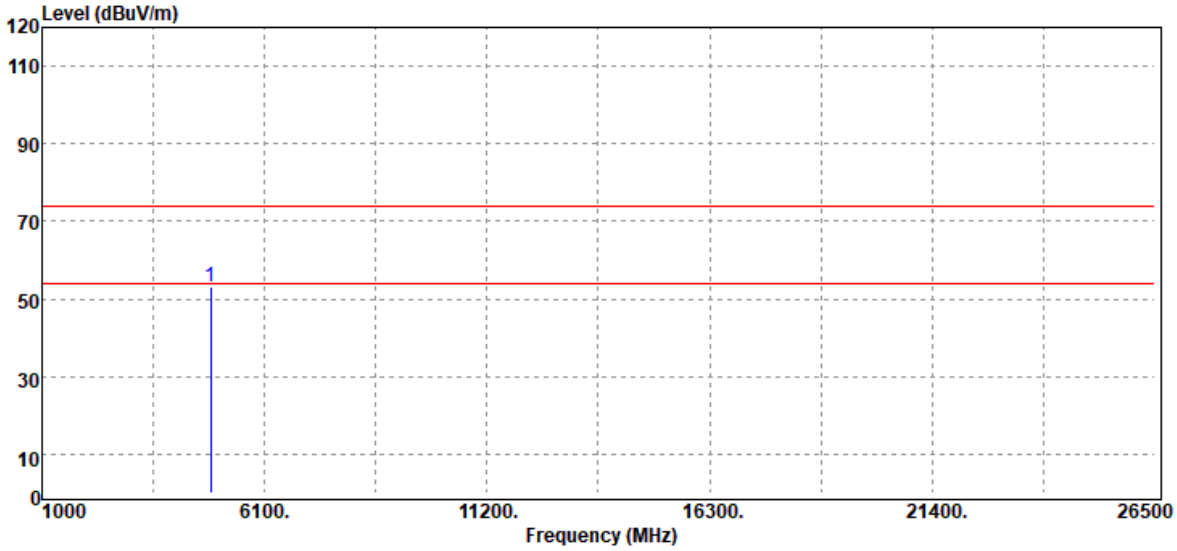
Test Mode	IEEE 802.11b Mid CH	Temp/Hum	22.1(℃)/ 58%RH
Test Item	Harmonic	Test Date	December 23, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4874.00	Peak	50.27	2.98	53.25	74.00	-20.75
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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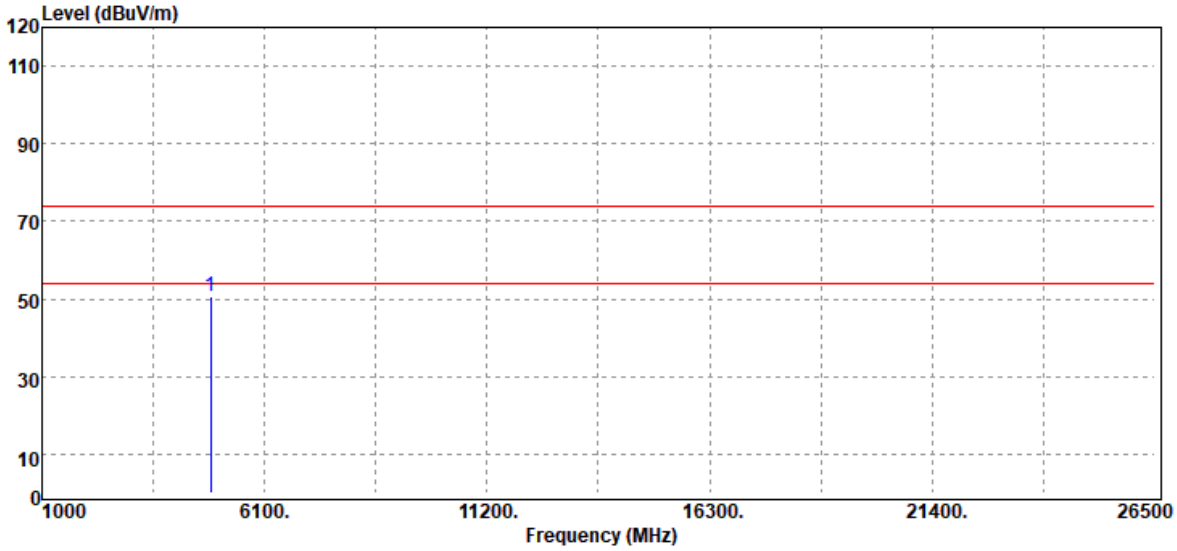
Test Mode	IEEE 802.11b Mid CH	Temp/Hum	22.1(℃)/ 58%RH
Test Item	Harmonic	Test Date	December 23, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4874.00	Peak	47.68	2.98	50.66	74.00	-23.34
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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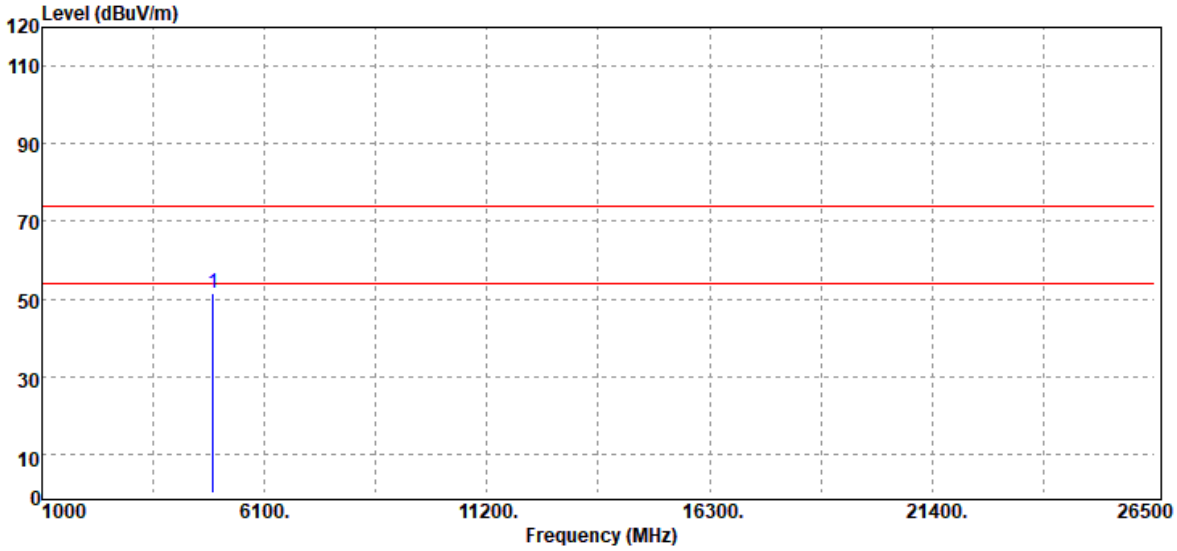
Test Mode	IEEE 802.11b High CH	Temp/Hum	22.1(℃)/ 58%RH
Test Item	Harmonic	Test Date	December 23, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4924.00	Peak	48.11	3.46	51.57	74.00	-22.43
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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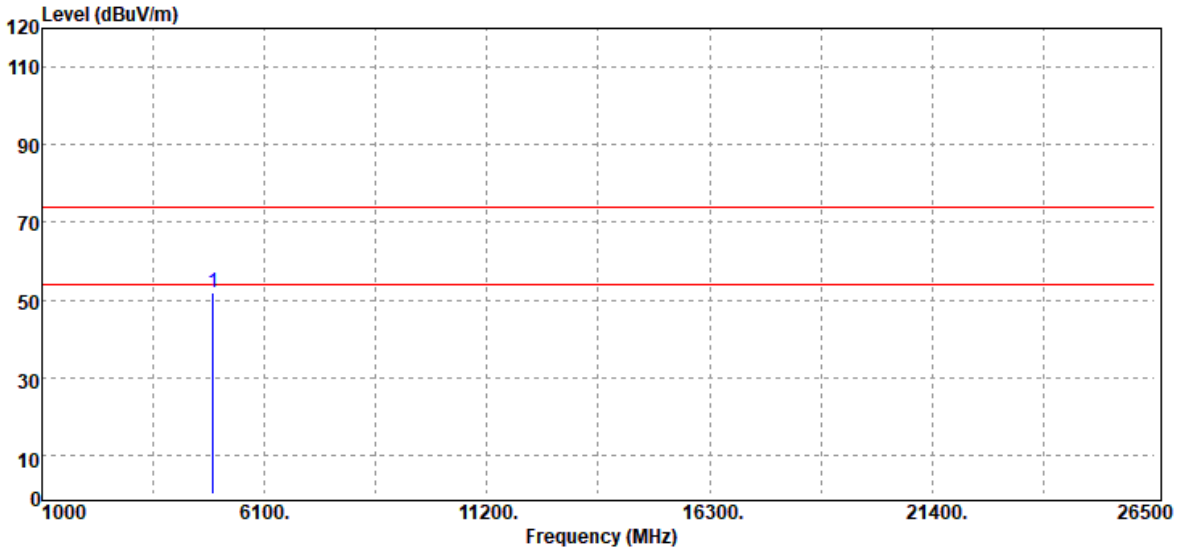
Test Mode	IEEE 802.11b High CH	Temp/Hum	22.1(℃)/ 58%RH
Test Item	Harmonic	Test Date	December 23, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4924.00	Peak	48.56	3.46	52.02	74.00	-21.98
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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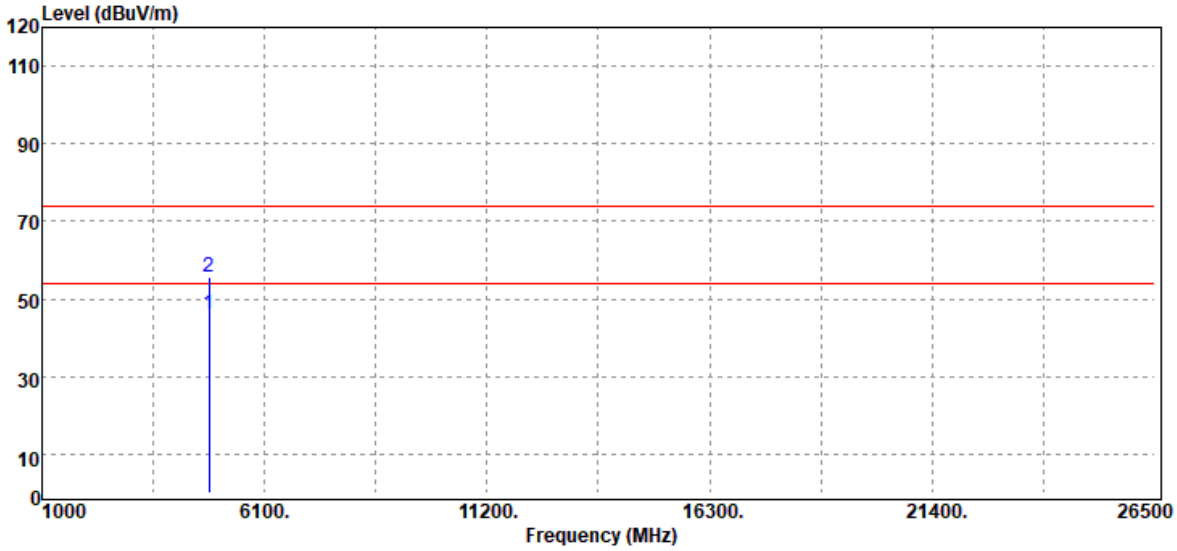
Test Mode	IEEE 802.11g Low CH	Temp/Hum	22.1(℃)/ 58%RH
Test Item	Harmonic	Test Date	December 23, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak & Average		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4824.00	Average	43.07	2.84	45.91	54.00	-8.09
4824.00	Peak	52.78	2.84	55.62	74.00	-18.38
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

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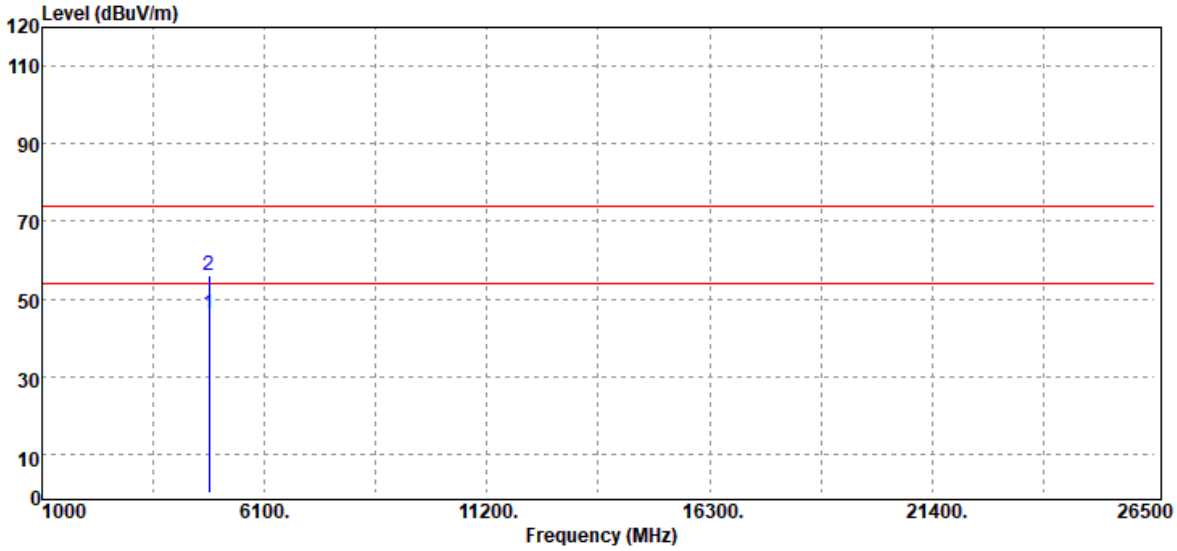
Test Mode	IEEE 802.11g Low CH	Temp/Hum	22.1(℃)/ 58%RH
Test Item	Harmonic	Test Date	December 23, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak & Average		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4824.00	Average	43.17	2.84	46.01	54.00	-7.99
4824.00	Peak	53.12	2.84	55.96	74.00	-18.04
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

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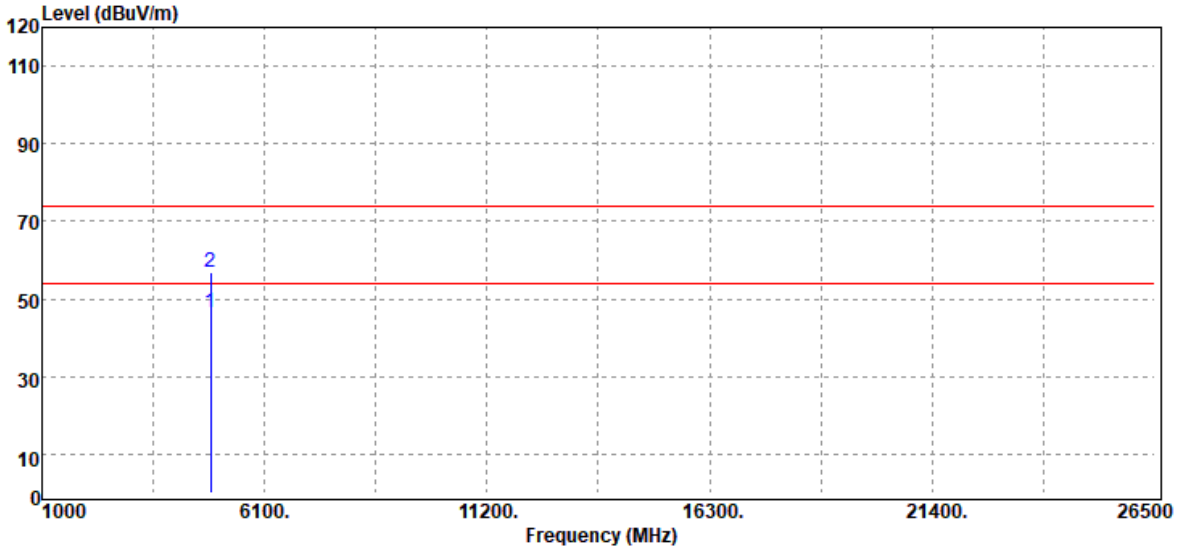
Test Mode	IEEE 802.11g Mid CH	Temp/Hum	22.1(℃)/ 58%RH
Test Item	Harmonic	Test Date	December 23, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak & Average		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4874.00	Average	43.61	2.98	46.59	54.00	-7.41
4874.00	Peak	53.72	2.98	56.70	74.00	-17.30
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

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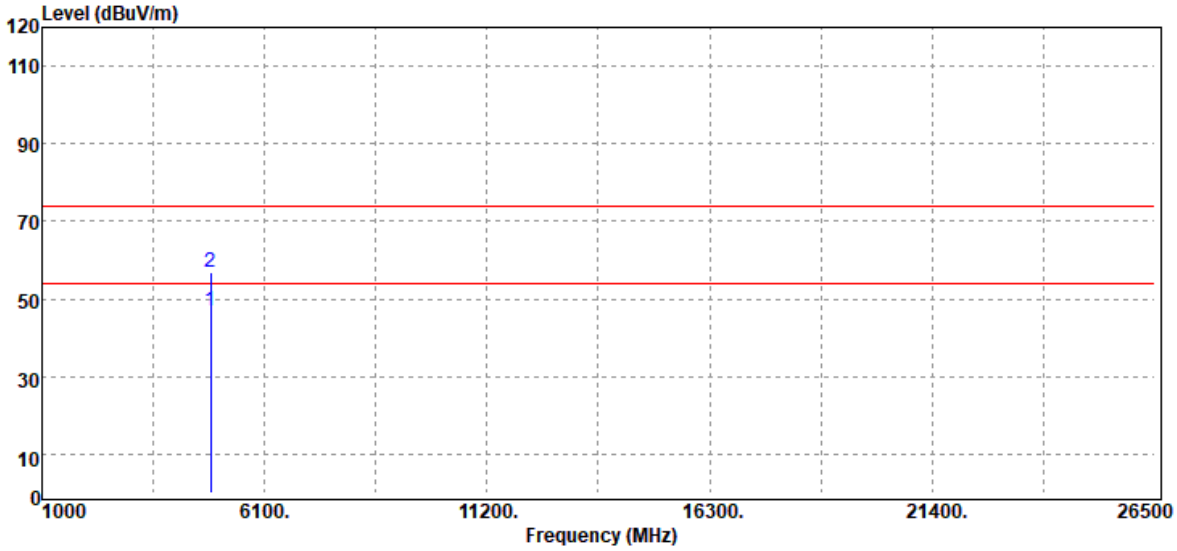
Test Mode	IEEE 802.11g Mid CH	Temp/Hum	22.1(℃)/ 58%RH
Test Item	Harmonic	Test Date	December 23, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak & Average		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4874.00	Average	43.88	2.98	46.86	54.00	-7.14
4874.00	Peak	53.83	2.98	56.81	74.00	-17.19
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

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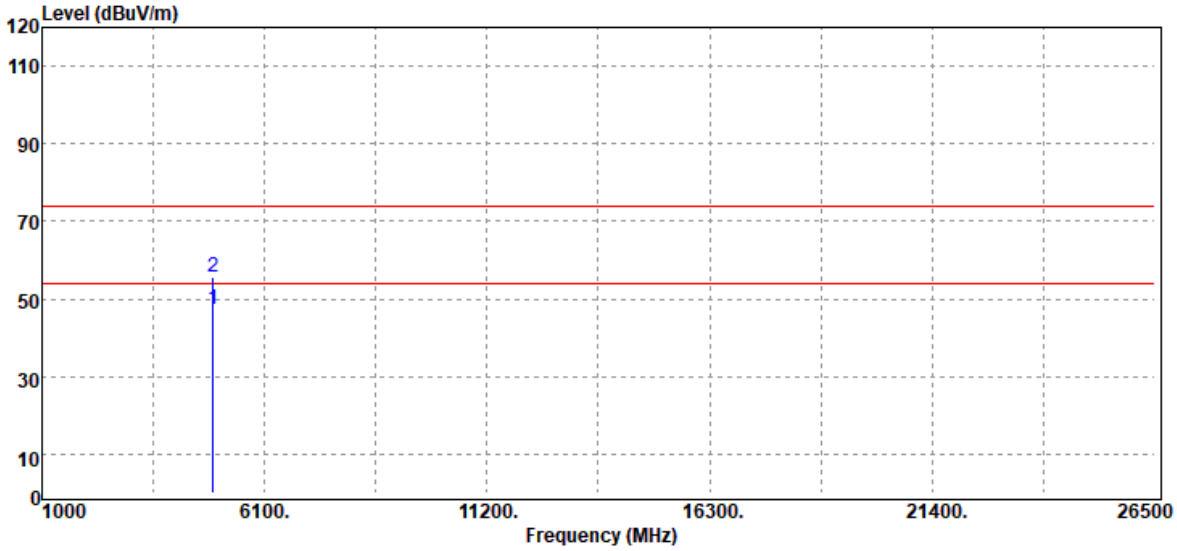
Test Mode	IEEE 802.11g High CH	Temp/Hum	22.1(℃)/ 58%RH
Test Item	Harmonic	Test Date	December 23, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak & Average		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4924.00	Average	43.87	3.46	47.33	54.00	-6.67
4924.00	Peak	52.35	3.46	55.81	74.00	-18.19
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

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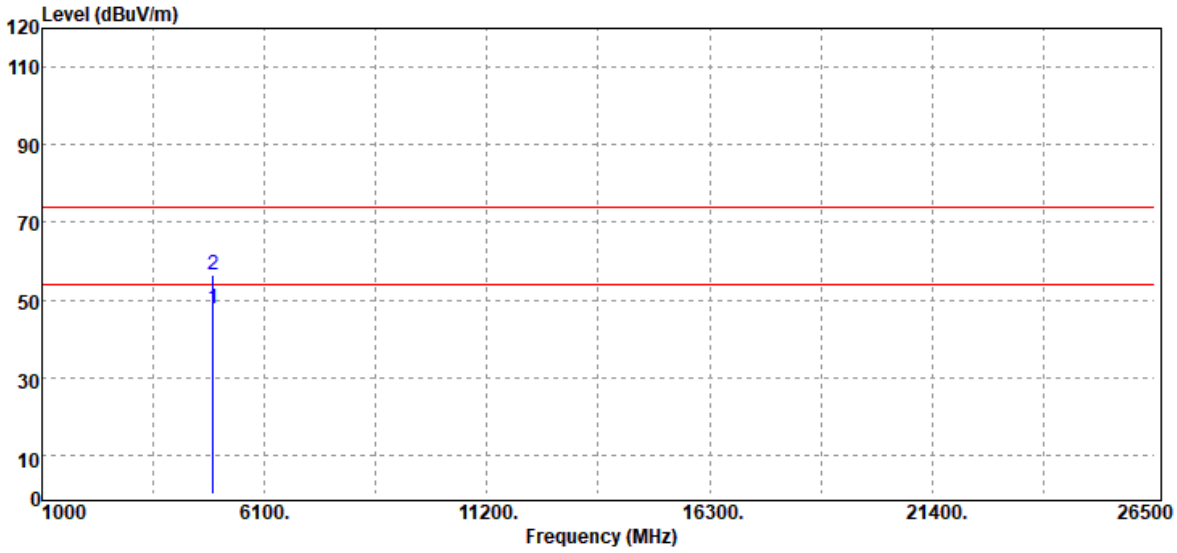
Test Mode	IEEE 802.11g High CH	Temp/Hum	22.1(℃)/ 58%RH
Test Item	Harmonic	Test Date	December 23, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak & Average		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4924.00	Average	44.12	3.46	47.58	54.00	-6.42
4924.00	Peak	53.17	3.46	56.63	74.00	-17.37
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

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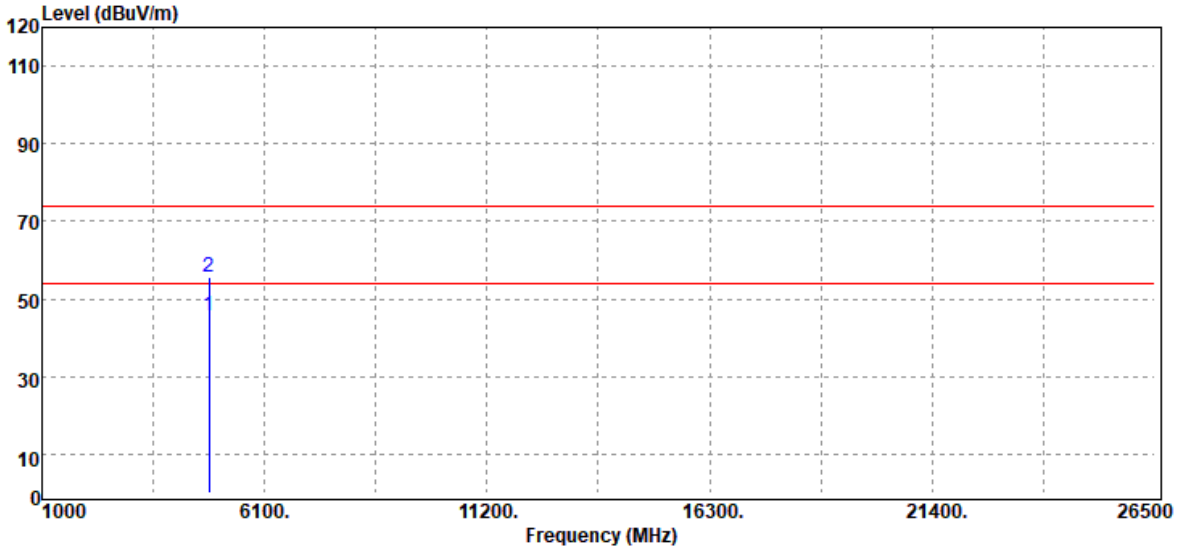
Test Mode	IEEE 802.11n HT20 Low CH	Temp/Hum	22.1(℃)/ 58%RH
Test Item	Harmonic	Test Date	December 23, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak & Average		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4824.00	Average	42.98	2.84	45.82	54.00	-8.18
4824.00	Peak	52.67	2.84	55.51	74.00	-18.49
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

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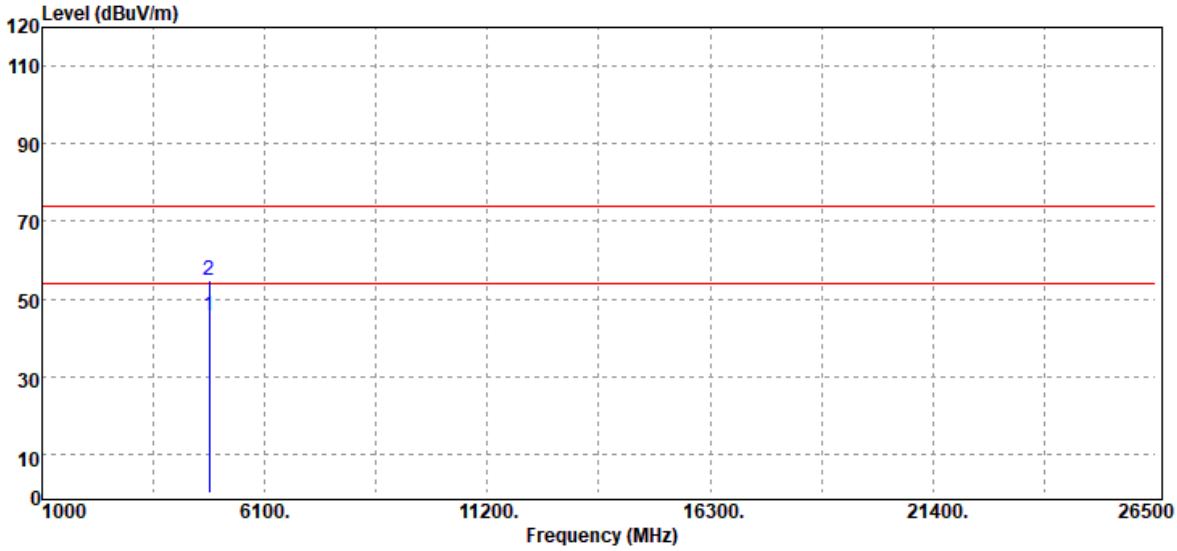
Test Mode	IEEE 802.11n HT20 Low CH	Temp/Hum	22.1(℃)/ 58%RH
Test Item	Harmonic	Test Date	January 7, 2020
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak & Average		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4824.00	Average	42.13	3.58	45.71	54.00	-8.29
4824.00	Peak	52.08	2.84	54.92	74.00	-19.08
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

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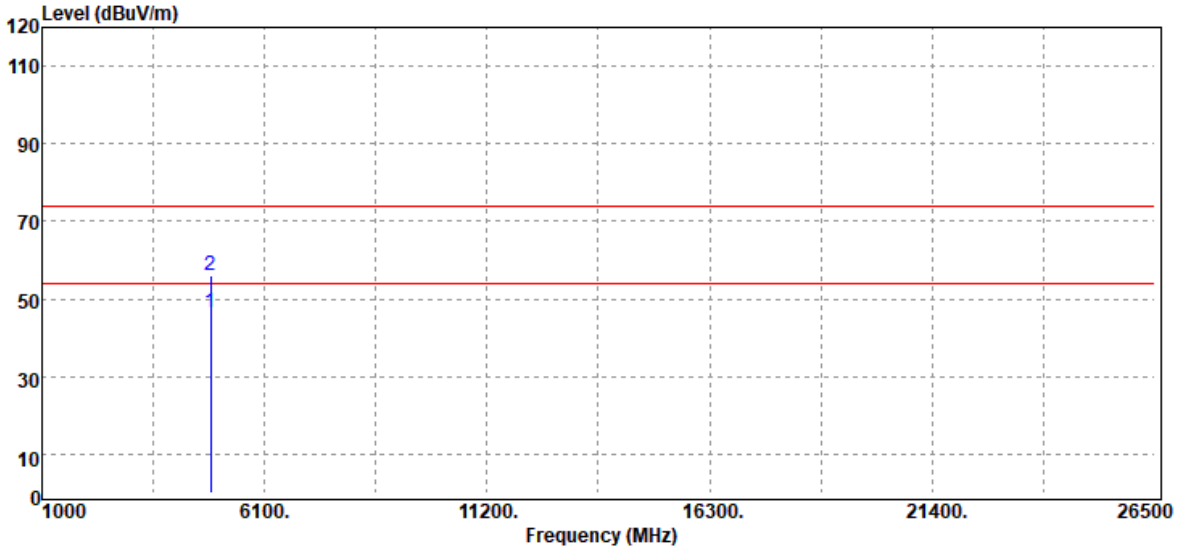
Test Mode	IEEE 802.11n HT20 Mid CH	Temp/Hum	22.1(℃)/ 58%RH
Test Item	Harmonic	Test Date	December 23, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak & Average		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4874.00	Average	43.47	2.98	46.45	54.00	-7.55
4874.00	Peak	53.25	2.98	56.23	74.00	-17.77
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

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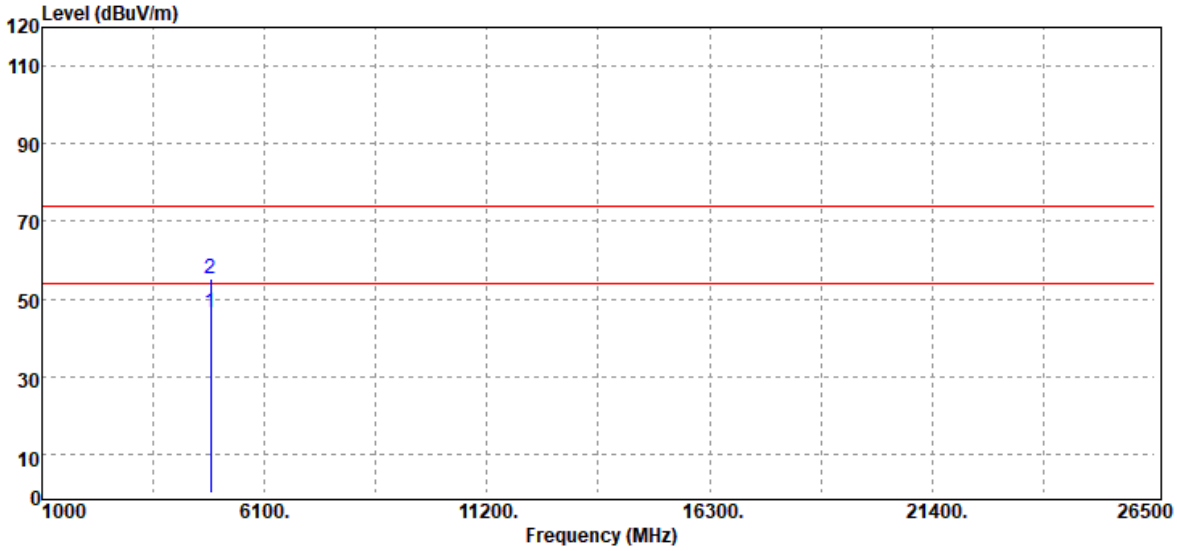
Test Mode	IEEE 802.11n HT20 Mid CH	Temp/Hum	22.1(℃)/ 58%RH
Test Item	Harmonic	Test Date	December 23, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak & Average		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4874.00	Average	43.33	2.98	46.31	54.00	-7.69
4874.00	Peak	52.12	2.98	55.10	74.00	-18.90
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

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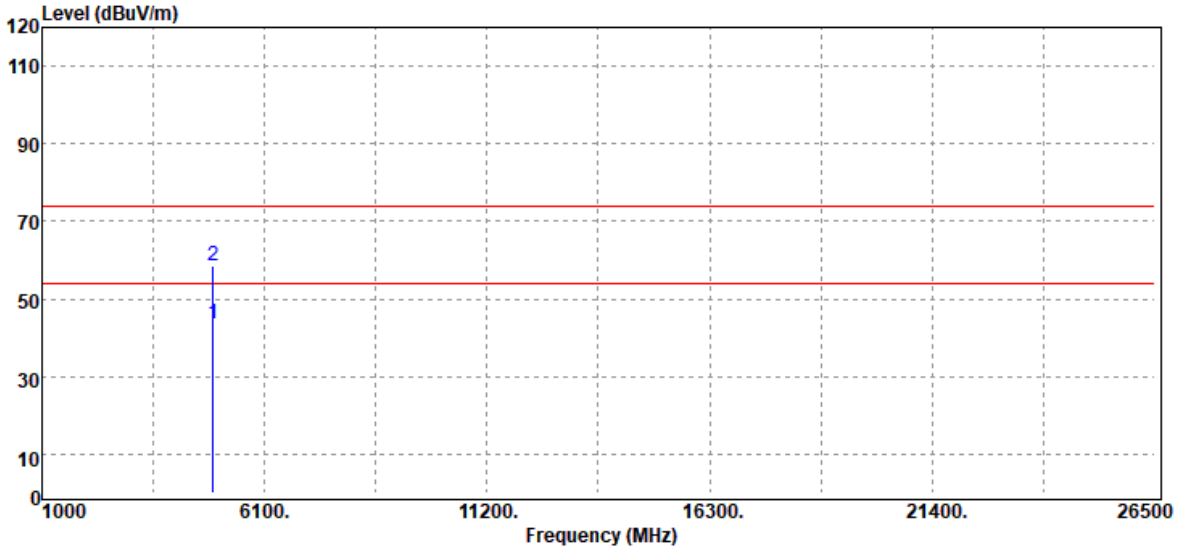
Test Mode	IEEE 802.11n HT20 High CH	Temp/Hum	22.1(℃)/ 58%RH
Test Item	Harmonic	Test Date	December 23, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak & Average		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4924.00	Average	40.17	3.46	43.63	54.00	-10.37
4924.00	Peak	54.89	3.46	58.35	74.00	-15.65
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

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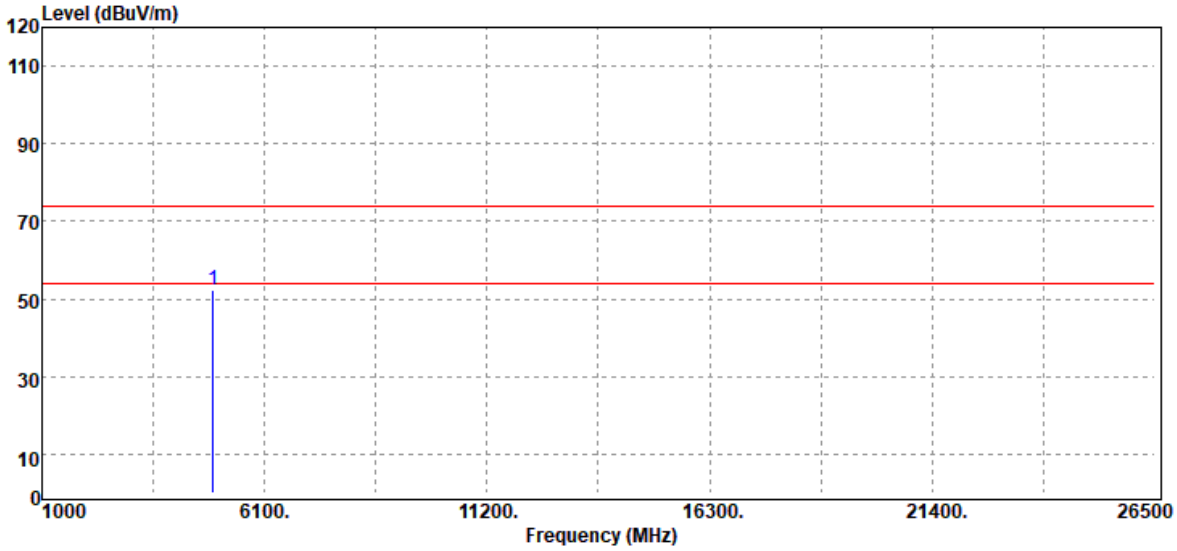
Test Mode	IEEE 802.11n HT20 High CH	Temp/Hum	22.1(℃)/ 58%RH
Test Item	Harmonic	Test Date	December 23, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4924.00	Peak	48.97	3.46	52.43	74.00	-21.57
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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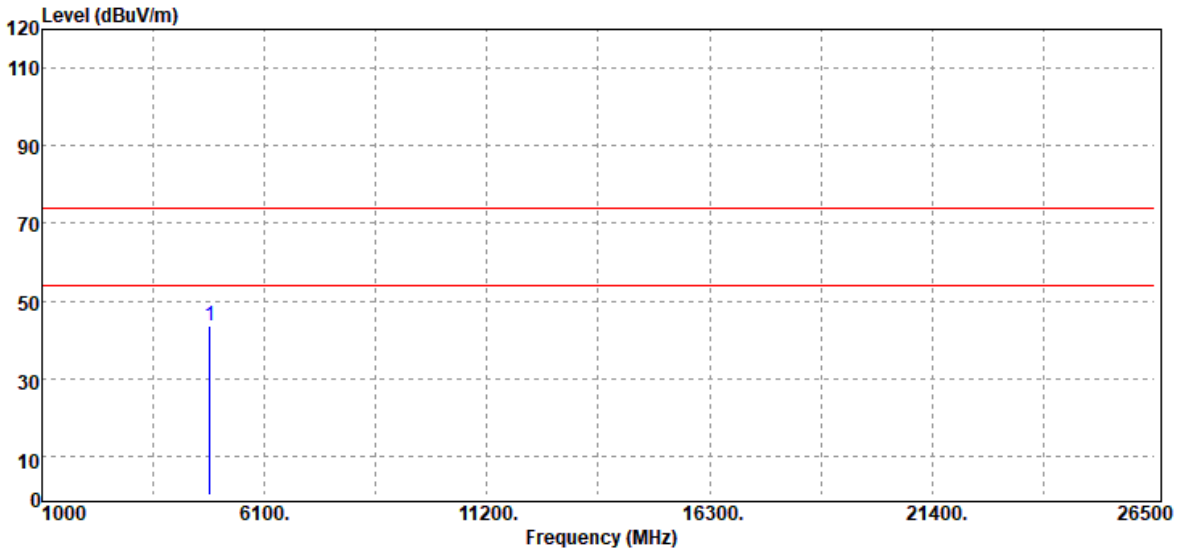
Test Mode	IEEE 802.11n HT40 Low CH	Temp/Hum	22.1(℃)/ 58%RH
Test Item	Harmonic	Test Date	December 23, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4844.00	Peak	40.82	2.84	43.66	74.00	-30.34
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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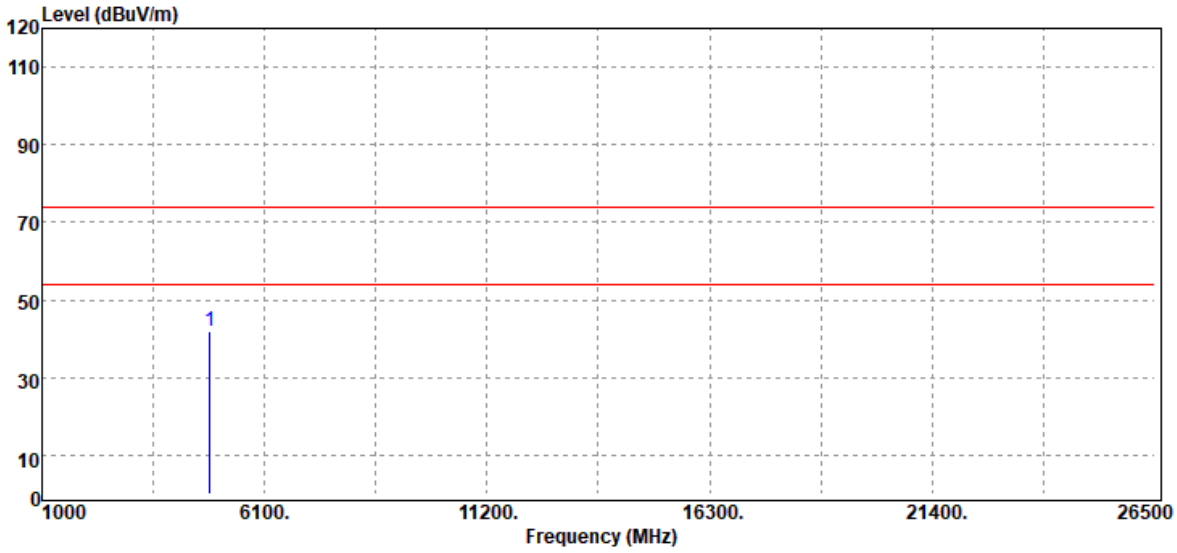
Test Mode	IEEE 802.11n HT40 Low CH	Temp/Hum	22.1(℃)/ 58%RH
Test Item	Harmonic	Test Date	December 23, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4844.00	Peak	38.98	2.84	41.82	74.00	-32.18
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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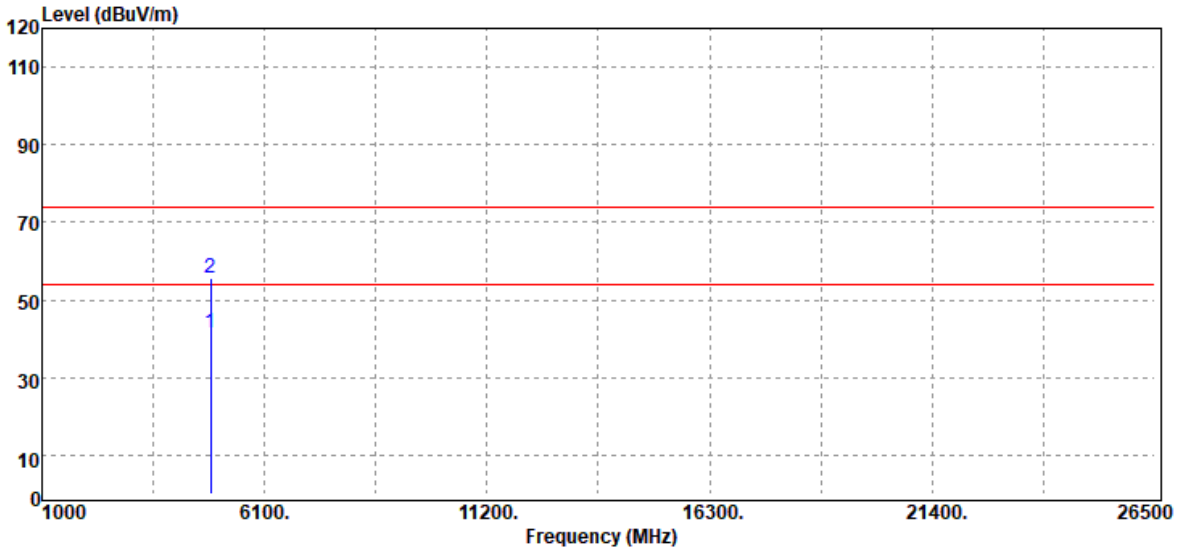
Test Mode	IEEE 802.11n HT40 Mid CH	Temp/Hum	22.1(℃)/ 58%RH
Test Item	Harmonic	Test Date	December 23, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak & Average		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4874.00	Average	38.50	2.98	41.48	54.00	-12.52
4874.00	Peak	52.75	2.98	55.73	74.00	-18.27
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

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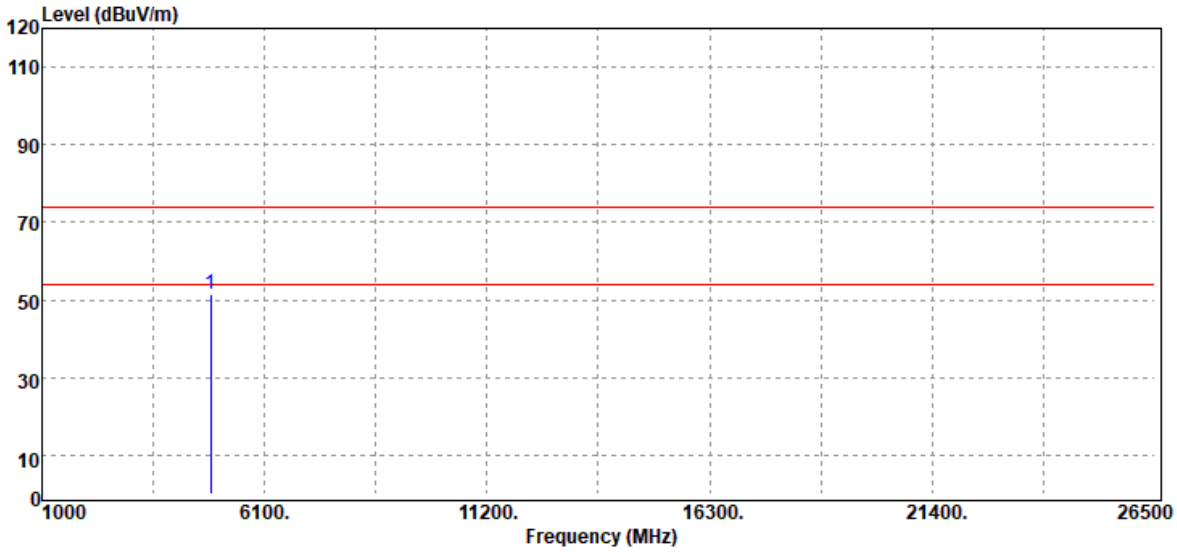
Test Mode	IEEE 802.11n HT40 Mid CH	Temp/Hum	22.1(℃)/ 58%RH
Test Item	Harmonic	Test Date	December 23, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4874.00	Peak	48.48	2.98	51.46	74.00	-22.54
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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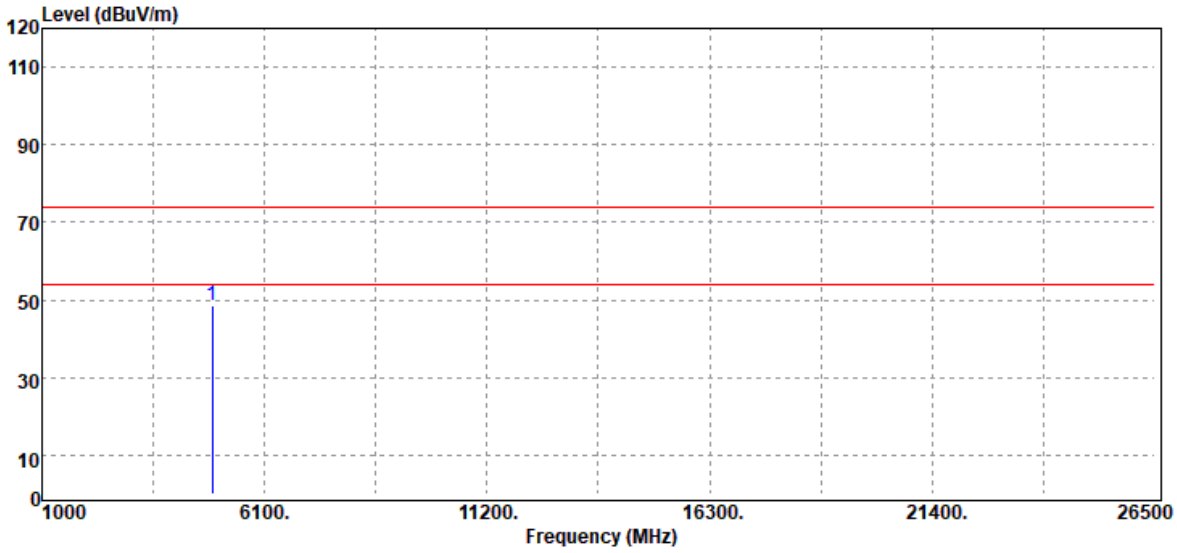
Test Mode	IEEE 802.11n HT40 High CH	Temp/Hum	22.1(℃)/ 58%RH
Test Item	Harmonic	Test Date	December 23, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4904.00	Peak	45.31	3.22	48.53	74.00	-25.47
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

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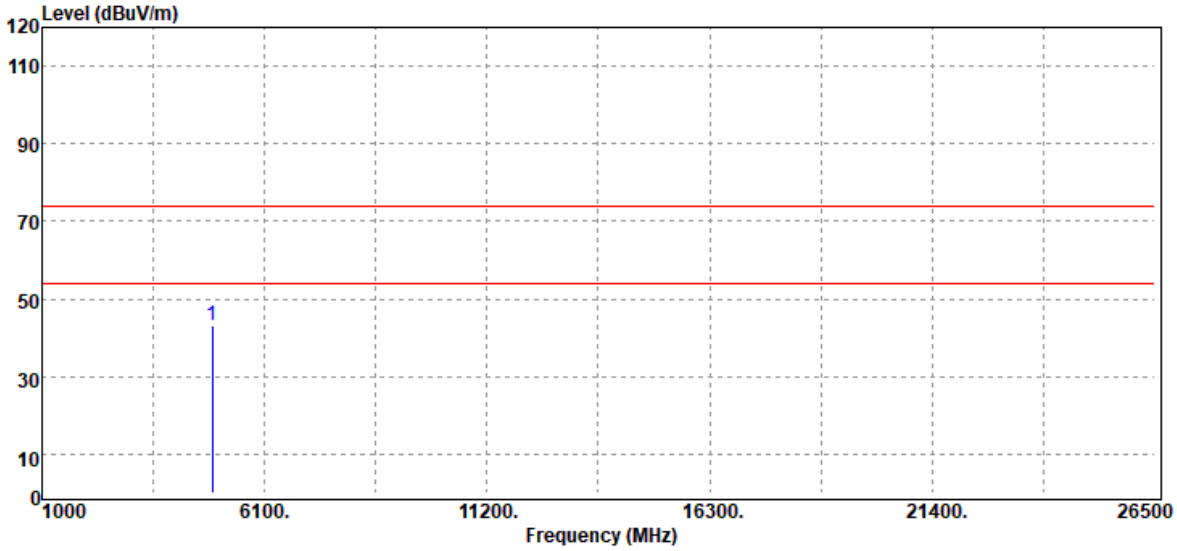
Test Mode	IEEE 802.11n HT40 High CH	Temp/Hum	22.1(℃)/ 58%RH
Test Item	Harmonic	Test Date	December 23, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
4904.00	Peak	39.79	3.22	43.01	74.00	-30.99
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

- End of Test Report -

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