



FCC ID: P4Q-N635A
Report No.: T191105W01-RP3

IC: 2420C-N635A

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RADIO TEST REPORT

FCC 47 CFR PART 15 SUBPART C

INDUSTRY CANADA RSS-247

Test Standard	FCC Part 15.247 IC RSS-247 issue 2 and IC RSS-GEN issue 5
Product name	Chiron pro
Brand Name	Mitac, Mio, Navman, Magellan
Model No.	N635
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:

Tested by:

Kevin Tsai
Deputy Manager

Dally Hong
Engineer

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	January 17, 2020	Initial Issue	ALL	Allison Chen



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1. GENERAL INFORMATION

1.1 EUT INFORMATION

FCC Applicant	Mitac Digital Technology Corporation No.200, Wen Hwa 2nd Rd.,Kuei Shan Dist. Taoyuan, 33383 Taiwan
IC Applicant	MiTAC Digital Technology Corporation No.200, Wenhua 2nd Rd., Guishan Dist. Taoyuan City 333 Taiwan
Manufacturer	MITAC COMPUTER (KUNSHAN) CO., LTD. No. 269, 2nd Avenue, District A, Comprehensive Free Trade Zone, Kunshan, Jiangsu, P.R. China
Equipment	Chiron pro
Model Name	N635
Model Discrepancy	Difference of the those trade names (list on this report) are just for marketing purpose only.
Trade Name	Mitac, Mio, Navman, Magellan
Received Date	November 5, 2019
Date of Test	November 25 ~ December 4, 2019
Output Power(W)	IEEE 802.11b mode: 0.0851 (EIRP: 0.1151) IEEE 802.11g mode: 0.1449 (EIRP: 0.1959) IEEE 802.11n HT 20 MHz mode: 0.1432 (EIRP: 0.1936) IEEE 802.11n HT 40 MHz mode: 0.1380 (EIRP: 0.1866)
Power Supply	1. Power from Rechargeable Li-ion Polymer Battery. Rating: 3.7VDC, 4000mAh, 14.8Wh 2. Power from Adapter. I/P: 100-240VAC, 50/60Hz, 0.5A O/P: 5.0VDC, 2A
HW Version	R02
SW Version	R15



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1.2 EUT CHANNEL INFORMATION

Frequency Range	802.11b/g/n HT 20: 2412MHz ~ 2462MHz 802.11n HT 40: 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 HT 40 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 and RSS-GEN Table A1 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 Type	☐ PIFA ☐ PCB ☐ Dipole ☐ Coils ☒ Integral
Antenna Gain	Gain: 1.31 dBi
Antenna Connector	i-pex

1.4 MEASUREMENT UNCERTAINTY

PARAMETER	UNCERTAINTY
AC Powerline Conducted Emission	+/- 1.2575
Emission bandwidth, 20dB bandwidth	+/- 0.0014
RF output power, conducted	+/- 1.14
Power density, conducted	+/- 1.40
3M Semi Anechoic Chamber / 30M~200M	+/- 4.12
3M Semi Anechoic Chamber / 200M~1000M	+/- 4.68
3M Semi Anechoic Chamber / 1G~8G	+/- 5.18
3M Semi Anechoic Chamber / 8G~18G	+/- 5.47
3M Semi Anechoic Chamber / 18G~26G	+/- 3.81
3M Semi Anechoic Chamber / 26G~40G	+/- 3.87

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.

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	Jane Wang	-

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

1.6 INSTRUMENT CALIBRATION

RF Conducted Test Site					
Equipment	Manufacturer	Model	S/N	Cal Date	Cal Due
Coaxial Cable	Woken	WC12	CC003	06/28/2019	06/27/2020
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
PSA Series Spectrum Analyzer	Agilent	E4446A	MY46180323	05/29/2019	05/28/2020
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				

AC line Conduction Test Room					
Equipment	Manufacturer	Model	S/N	Cal Date	Cal 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)				

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	IC ID
	N/A					

Support Equipment						
No.	Equipment	Brand	Model	Series No.	FCC ID	IC ID
1	NB(J)	TOSHIBA	PT345T-00L002	N/A	PD97260H	1000M-7260H

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 558074 D01, RSS-247 Issue 2 and RSS-GEN Issue 5.



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2. TEST SUMMERY

FCC Standard Section	IC Standard Section	Report Section	Test Item	Result
15.203	-	1.3	Antenna Requirement	Pass
15.207(a)	RSS-GEN 8.8	4.1	AC Conducted Emission	Pass
15.247(a)(2)	RSS-247(5.2)(a)	4.2	6 dB Bandwidth	Pass
-	RSS-GEN 6.6	4.2	Occupied Bandwidth (99%)	Pass
15.247(b)(3)	RSS-247(5.4)(d)	4.3	Output Power Measurement	Pass
15.247(e)	RSS-247(5.2)(b)	4.4	Power Spectral Density	Pass
15.247(d)	RSS-247(5.5)	4.5	Conducted Band Edge	Pass
15.247(d)	RSS-247(5.5)	4.5	Conducted Emission	Pass
15.247(d)	RSS-GEN 8.9, 8.10	4.6	Radiation Band Edge	Pass
15.247(d)	RSS-GEN 8.9, 8.10	4.6	Radiation Spurious Emission	Pass

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.

3.2 THE WORST MODE OF MEASUREMENT

AC Power Line Conducted Emission	
Test Condition	AC Power line conducted emission for line and neutral
Power supply Mode	Mode1: EUT Power by Battery (DC 3V) Mode 2: EUT power by adapter + Type C USB Mode3: EUT Power by Type C USB+ CarCharge (DC12V) Mode4: EUT Power by Cradle(N564)+Micro USB+Adapter Mode5: EUT Power by Cradle(N564)+Micro USB+ CarCharge (DC12V) Mode6: EUT Power by Cradle(N564) + Cable(DC 12V) Mode7: EUT Power by Cradle(N564_TN)+Micro USB+Adapter Mode8: EUT Power by Cradle(N564_TN)+Micro USB+ CarCharge (DC12V) Mode9: EUT Power by Cradle(N564_TN) + Cable(DC 12V) Mode10: EUT Power by Cradle(N635_V)+Micro USB+Adapter Mode11: EUT Power by Cradle(N635_V)+Micro USB+ CarCharge (DC12V) Mode12: EUT Power by Cradle(N635_V) + Cable(DC 12V) Mode13: EUT Power by Cradle(N635_VL)+Micro USB+Adapter Mode14: EUT Power by Cradle(N635_VL)+Micro USB+ CarCharge (DC12V) Mode15: EUT Power by Cradle(N635_VL) + Cable(DC 12V) Mode16: EUT Power by Cradle(N635_VHG) + Cable(DC 12V)
Worst Mode	☐ Mode 1 ☐ Mode 2 ☐ Mode 3 ☒ Mode 4

Radiated Emission Measurement Above 1G	
Test Condition	Radiated Emission Above 1G
Power supply Mode	Mode1: EUT Power by Battery (DC 3V) Mode2: EUT Power by Adapter + Type C USB Mode3: EUT Power by Type C USB+ CarCharge (DC12V) Mode4: EUT Power by Cradle(N564)+Micro USB+Adapter Mode5: EUT Power by Cradle(N564)+Micro USB+ CarCharge (DC12V) Mode6: EUT Power by Cradle(N564) + Cable(DC 12V) Mode7: EUT Power by Cradle(N564_TN)+Micro USB+Adapter Mode8: EUT Power by Cradle(N564_TN)+Micro USB+ CarCharge (DC12V) Mode9: EUT Power by Cradle(N564_TN) + Cable(DC 12V) Mode10: EUT Power by Cradle(N635_V)+Micro USB+Adapter Mode11: EUT Power by Cradle(N635_V)+Micro USB+ CarCharge (DC12V) Mode12: EUT Power by Cradle(N635_V) + Cable(DC 12V) Mode13: EUT Power by Cradle(N635_VL)+Micro USB+Adapter Mode14: EUT Power by Cradle(N635_VL)+Micro USB+ CarCharge (DC12V) Mode15: EUT Power by Cradle(N635_VL) + Cable(DC 12V) Mode16: EUT Power by Cradle(N635_VHG) + Cable(DC 12V)
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)

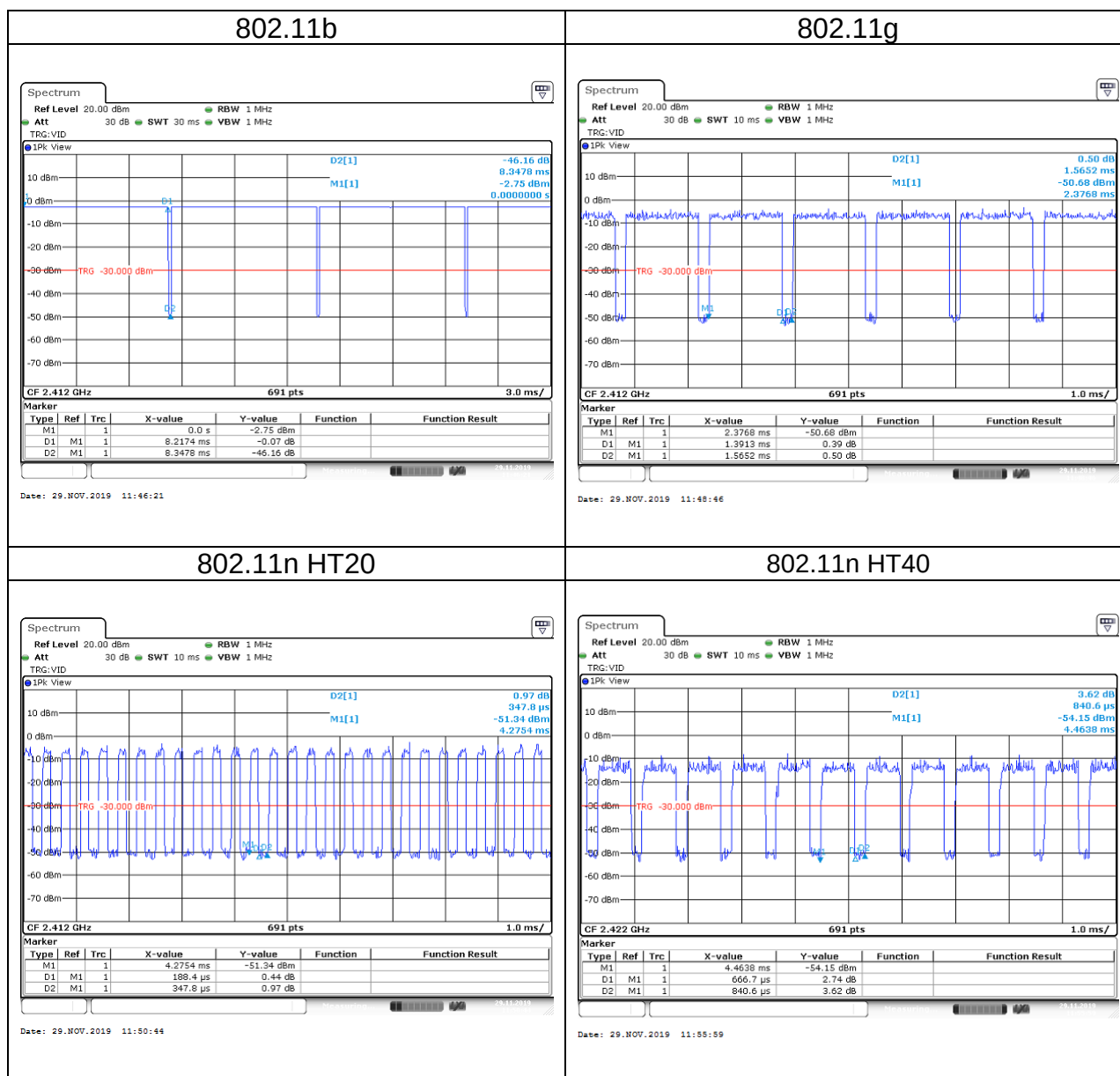
Radiated Emission Measurement Below 1G	
Test Condition	Radiated Emission Below 1G
Power supply Mode	Mode1: EUT Power by Battery (DC 3V) Mode2: EUT Power by Adapter + Type C USB Mode3: EUT Power by Type C USB+ CarCharge (DC12V) Mode4: EUT Power by Cradle(N564)+Micro USB+Adapter Mode5: EUT Power by Cradle(N564)+Micro USB+ CarCharge (DC12V) Mode6: EUT Power by Cradle(N564) + Cable(DC 12V) Mode7: EUT Power by Cradle(N564_TN)+Micro USB+Adapter Mode8: EUT Power by Cradle(N564_TN)+Micro USB+ CarCharge (DC12V) Mode9: EUT Power by Cradle(N564_TN) + Cable(DC 12V) Mode10: EUT Power by Cradle(N635_V)+Micro USB+Adapter Mode11: EUT Power by Cradle(N635_V)+Micro USB+ CarCharge (DC12V) Mode12: EUT Power by Cradle(N635_V) + Cable(DC 12V) Mode13: EUT Power by Cradle(N635_VL)+Micro USB+Adapter Mode14: EUT Power by Cradle(N635_VL)+Micro USB+ CarCharge (DC12V) Mode15: EUT Power by Cradle(N635_VL) + Cable(DC 12V) Mode16: EUT Power by Cradle(N635_VHG) + Cable(DC 12V)
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(Z-Plane) were recorded in this report
3. AC power line conducted emission and for below 1G radiation emission were performed the EUT transmit at the highest output power channel as worse case.

4. EUT DUTY CYCLE

Duty Cycle				
Configuration	Duty Cycle (%)	Duty Factor (dB) =10*log (1/Duty Cycle)	1/T (kHz)	VBW setting (kHz)
802.11b	98.44%	0.07	0.12	0.01
802.11g	88.89%	0.51	0.72	1.00
802.11n HT20	54.17%	2.66	5.31	6.00
802.11n HT40	79.31%	1.01	1.50	2.00



5. TEST RESULT

5.1 AC POWER LINE CONDUCTED EMISSION

5.1.1 Test Limit

According to §15.207(a) and RSS-GEN section 8.8,

Frequency Range (MHz)	Limits(dB μ V)	
	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

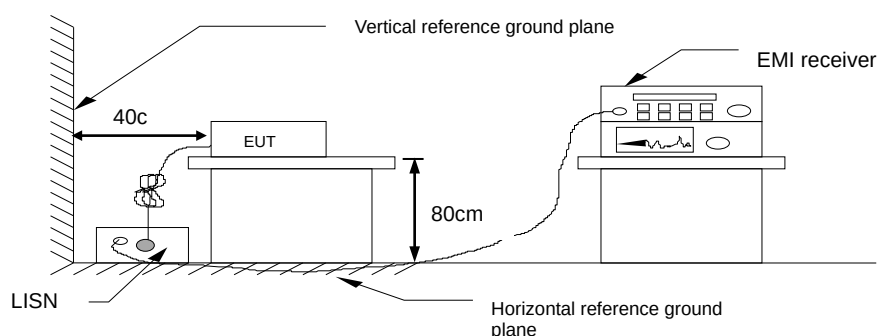
* Decreases with the logarithm of the frequency.

5.1.2 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.

5.1.3 Test Setup

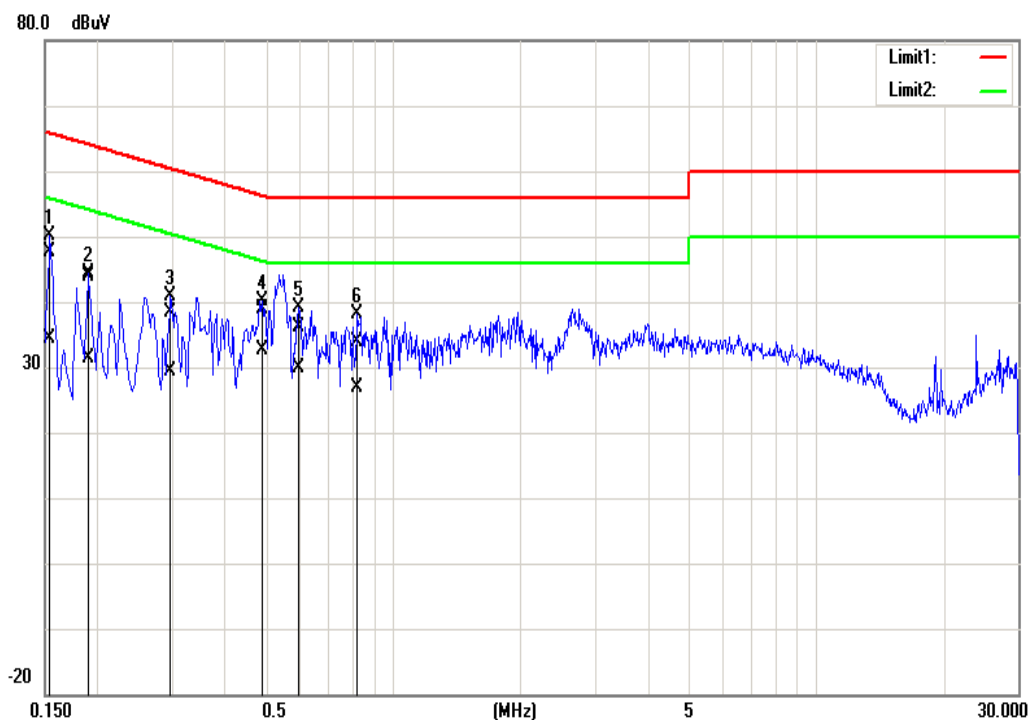


5.1.4 Test Result

Pass.

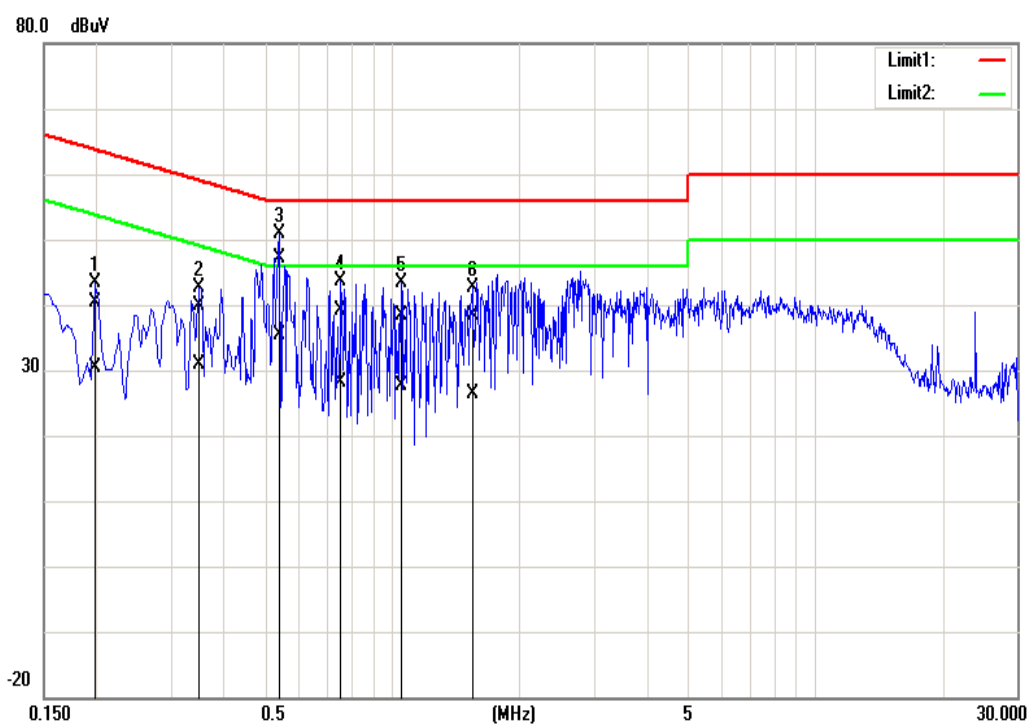
Test Data

Test Mode:	Mode 4	Temp/Hum	24(°C)/ 50%RH
Phase:	Line	Test Date	2019/11/25
		Test Engineer	Dally Hong



Frequency (MHz)	Quasi Peak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	Quasi Peak result (dBuV)	Average result (dBuV)	Quasi Peak limit (dBuV)	Average limit (dBuV)	Quasi Peak margin (dB)	Average margin (dB)	Remark
0.1540	37.41	24.34	10.14	47.55	34.48	65.78	55.78	-18.23	-21.30	Pass
0.1900	33.66	21.13	10.13	43.79	31.26	64.04	54.04	-20.25	-22.78	Pass
0.2980	28.33	19.25	10.13	38.46	29.38	60.30	50.30	-21.84	-20.92	Pass
0.4900	28.86	22.57	10.14	39.00	32.71	56.17	46.17	-17.17	-13.46	Pass
0.5980	25.93	19.75	10.15	36.08	29.90	56.00	46.00	-19.92	-16.10	Pass
0.8220	23.74	16.71	10.16	33.90	26.87	56.00	46.00	-22.10	-19.13	Pass

Test Mode:	Mode 4	Temp/Hum	24(°C)/ 50%RH
Phase:	Neutral	Test Date	2019/11/25
		Test Engineer	Dally Hong



Frequency (MHz)	Quasi Peak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	Quasi Peak result (dBuV)	Average result (dBuV)	Quasi Peak limit (dBuV)	Average limit (dBuV)	Quasi Peak margin (dB)	Average margin (dB)	Remark
0.1980	30.47	20.44	10.02	40.49	30.46	63.69	53.69	-23.20	-23.23	Pass
0.3500	29.93	20.79	10.03	39.96	30.82	58.96	48.96	-19.00	-18.14	Pass
0.5420	37.01	25.47	10.03	47.04	35.50	56.00	46.00	-8.96	-10.50	Pass
0.7580	28.99	18.03	10.04	39.03	28.07	56.00	46.00	-16.97	-17.93	Pass
1.0540	28.38	17.69	10.04	38.42	27.73	56.00	46.00	-17.58	-18.27	Pass
1.5500	28.42	16.30	10.06	38.48	26.36	56.00	46.00	-17.52	-19.64	Pass

5.2 6dB BANDWIDTH AND OCCUPIED BANDWIDTH(99%)

5.2.1 Test Limit

According to §15.247(a)(2) and RSS-247 section 5.2(a),

6 dB Bandwidth :

Limit	Shall be at least 500kHz
-------	--------------------------

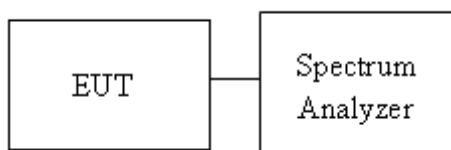
Occupied Bandwidth(99%) : For reporting purposes only.

5.2.2 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 and 99% 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.

5.2.3 Test Setup



5.2.4 Test Result

Test mode: IEEE 802.11b Mode / 2412-2462 MHz				
Channel	Frequency (MHz)	OBW(99%) (MHz)	6dB BW (MHz)	6dB limit (kHz)
Low	2412	12.6338	7.5217	≥500
Mid	2437	12.6338	7.5217	
High	2462	12.7206	7.5652	

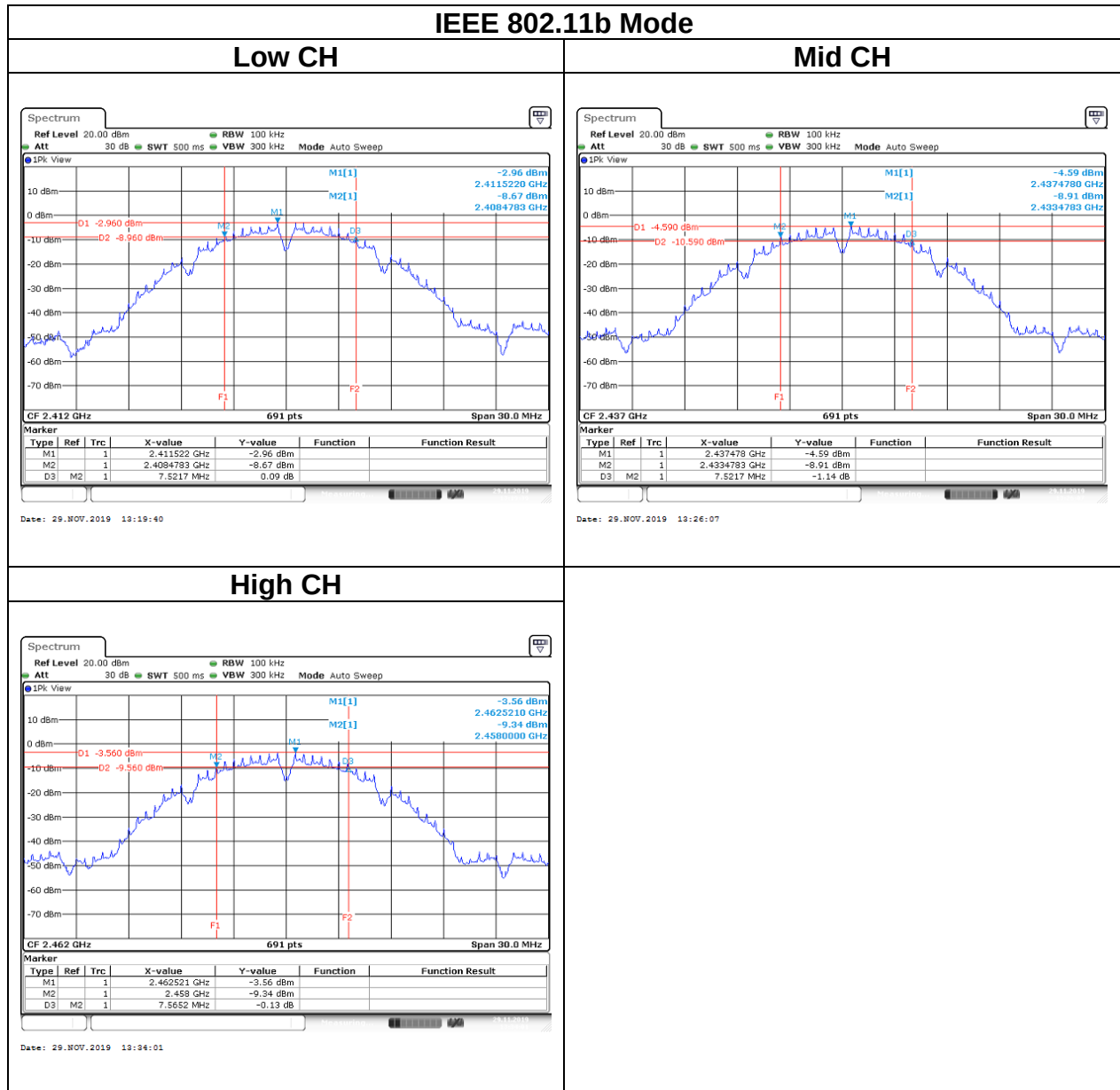
Test mode: IEEE 802.11g Mode / 2412-2462 MHz				
Channel	Frequency (MHz)	OBW(99%) (MHz)	6dB BW (MHz)	6dB limit (kHz)
Low	2412	16.8451	16.0435	≥500
Mid	2437	17.1056	16.3478	
High	2462	17.2358	16.2609	

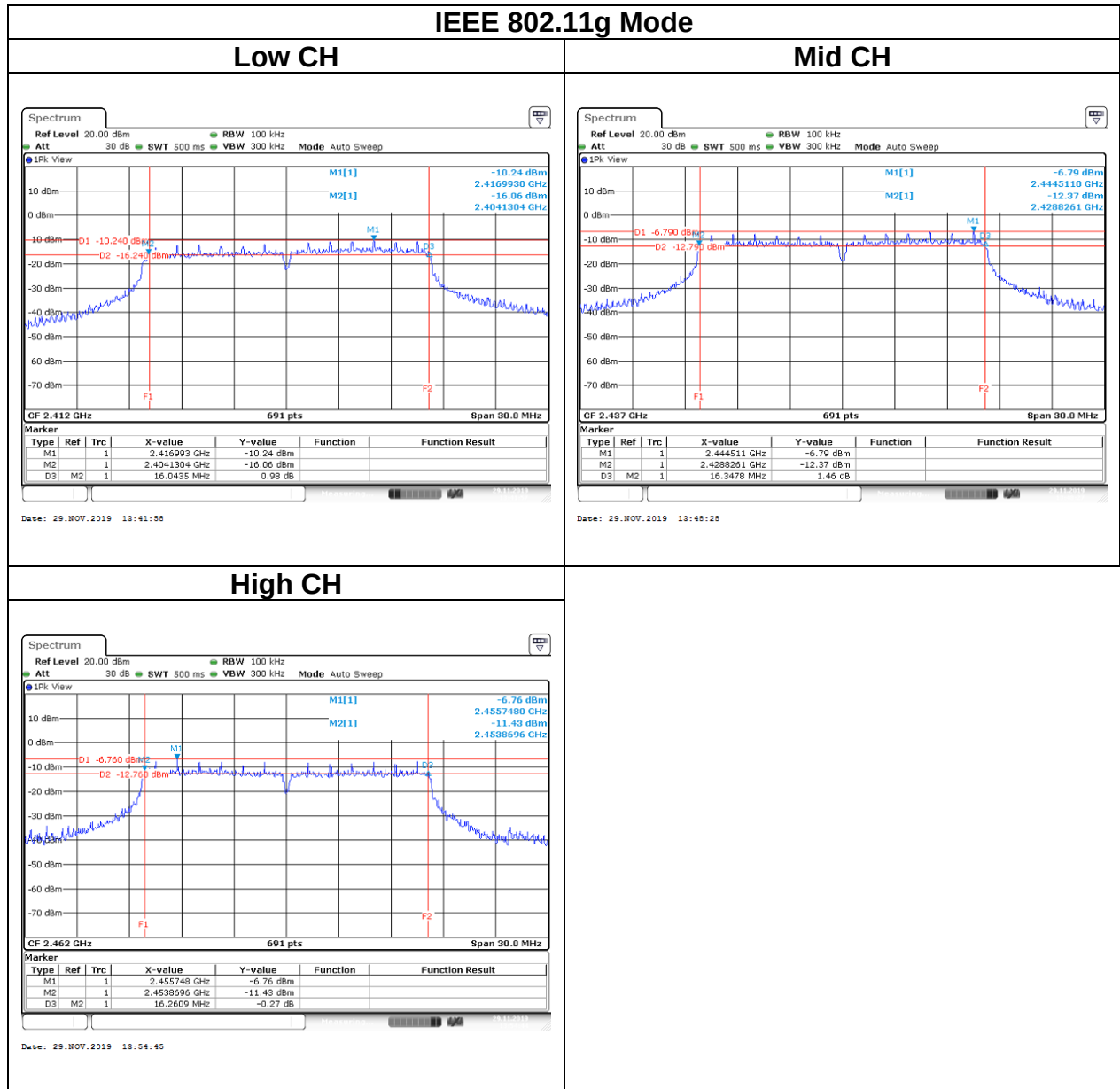
Test mode: IEEE 802.11n HT20 Mode / 2412-2462 MHz				
Channel	Frequency (MHz)	OBW(99%) (MHz)	6dB BW (MHz)	6dB limit (kHz)
Low	2412	17.9739	17.3043	≥500
Mid	2437	18.2344	17.6087	
High	2462	18.1041	17.5652	

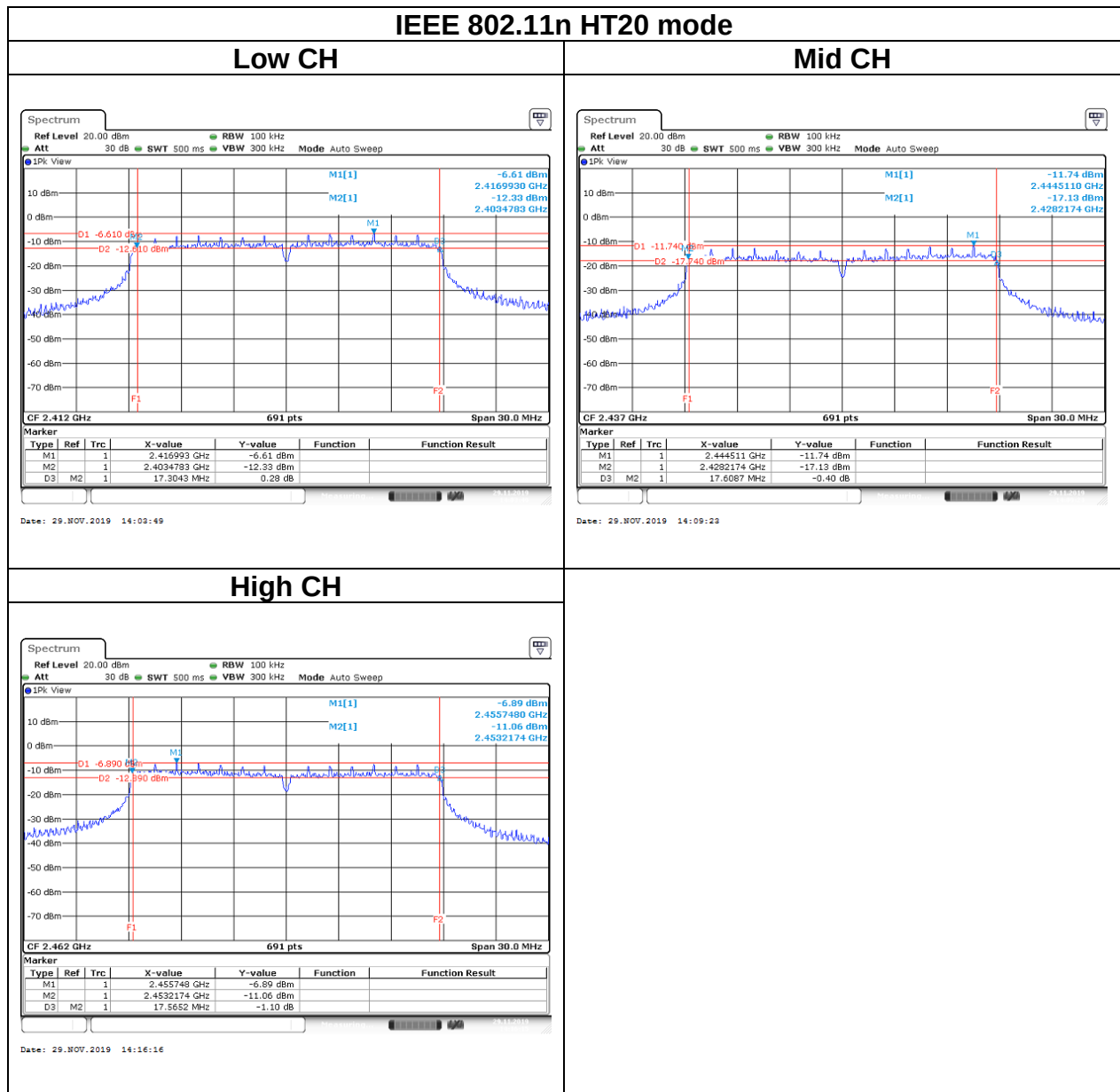
Test mode: IEEE 802.11n HT40 Mode / 2422-2452 MHz				
Channel	Frequency (MHz)	OBW(99%) (MHz)	6dB BW (MHz)	6dB limit (kHz)
Low	2422	36.5846	35.014	>500
Mid	2437	37.0477	35.246	
High	2452	36.5846	35.246	

Test Data

6dB BANDWIDTH

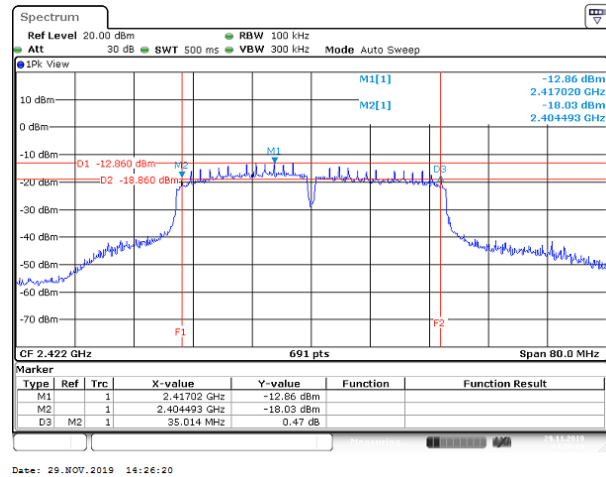




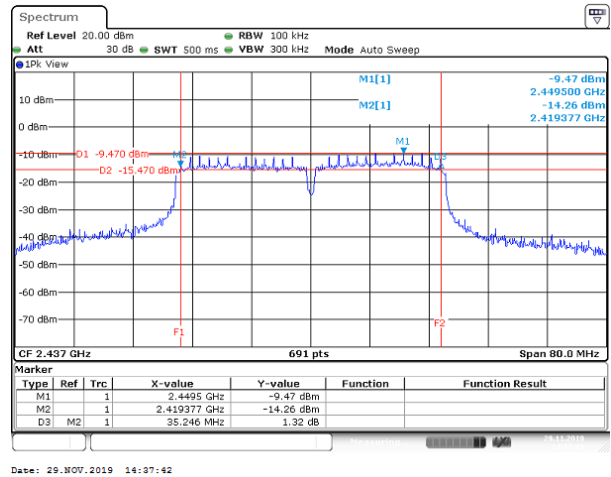


IEEE 802.11n HT40 mode

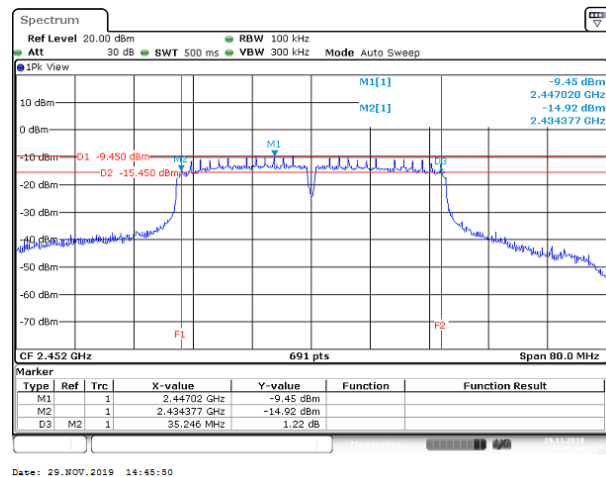
Low CH



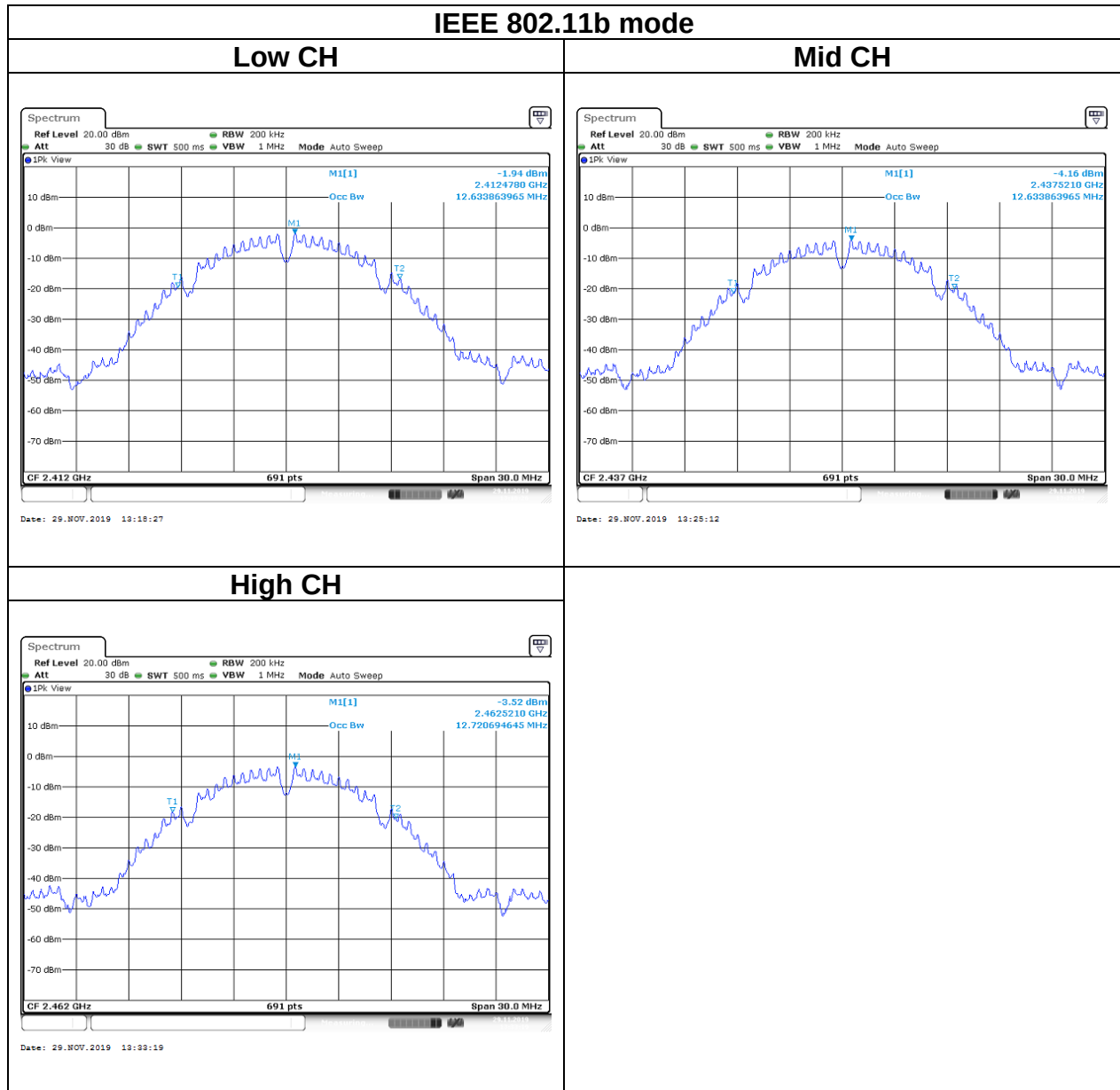
Mid CH

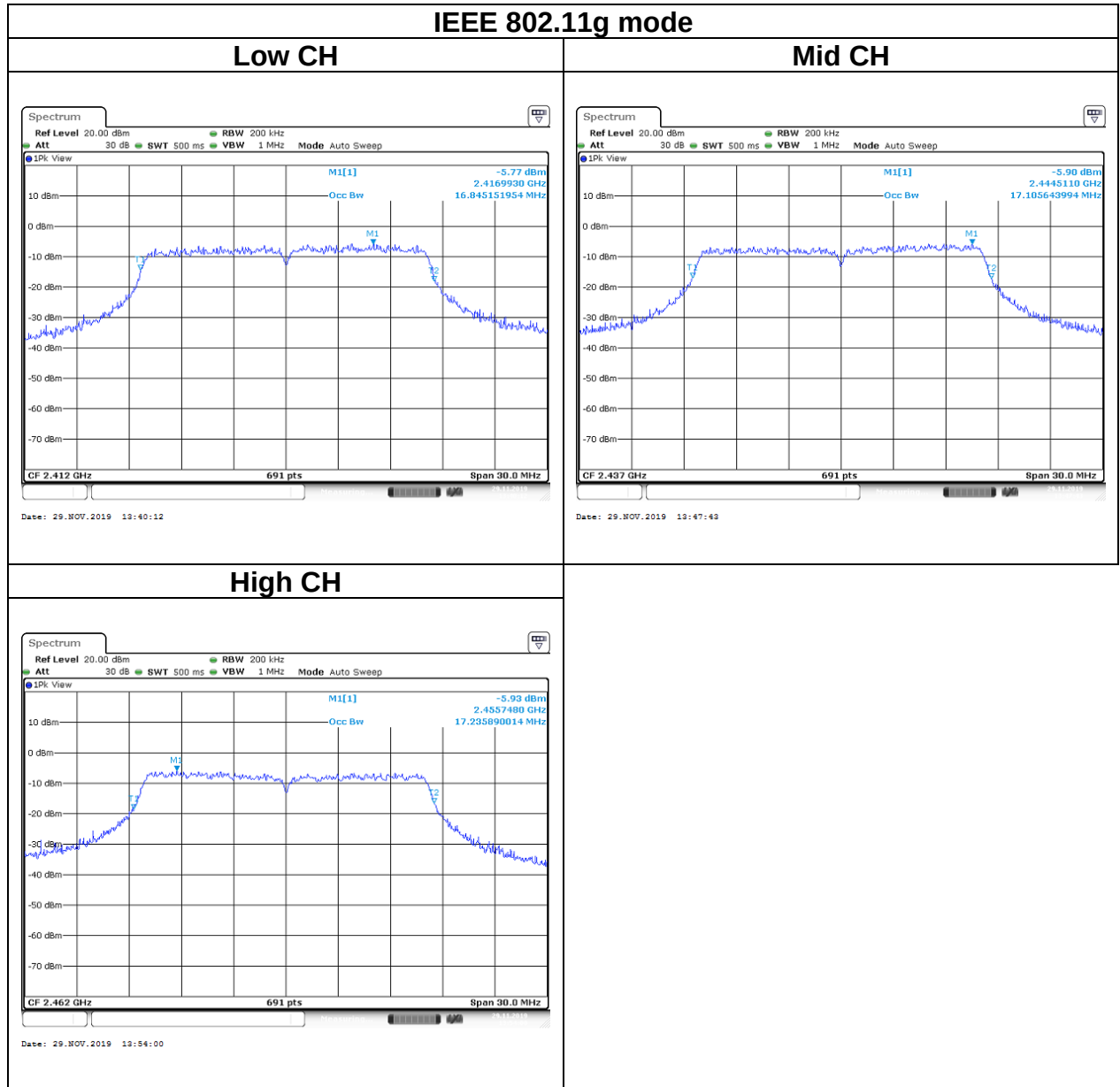


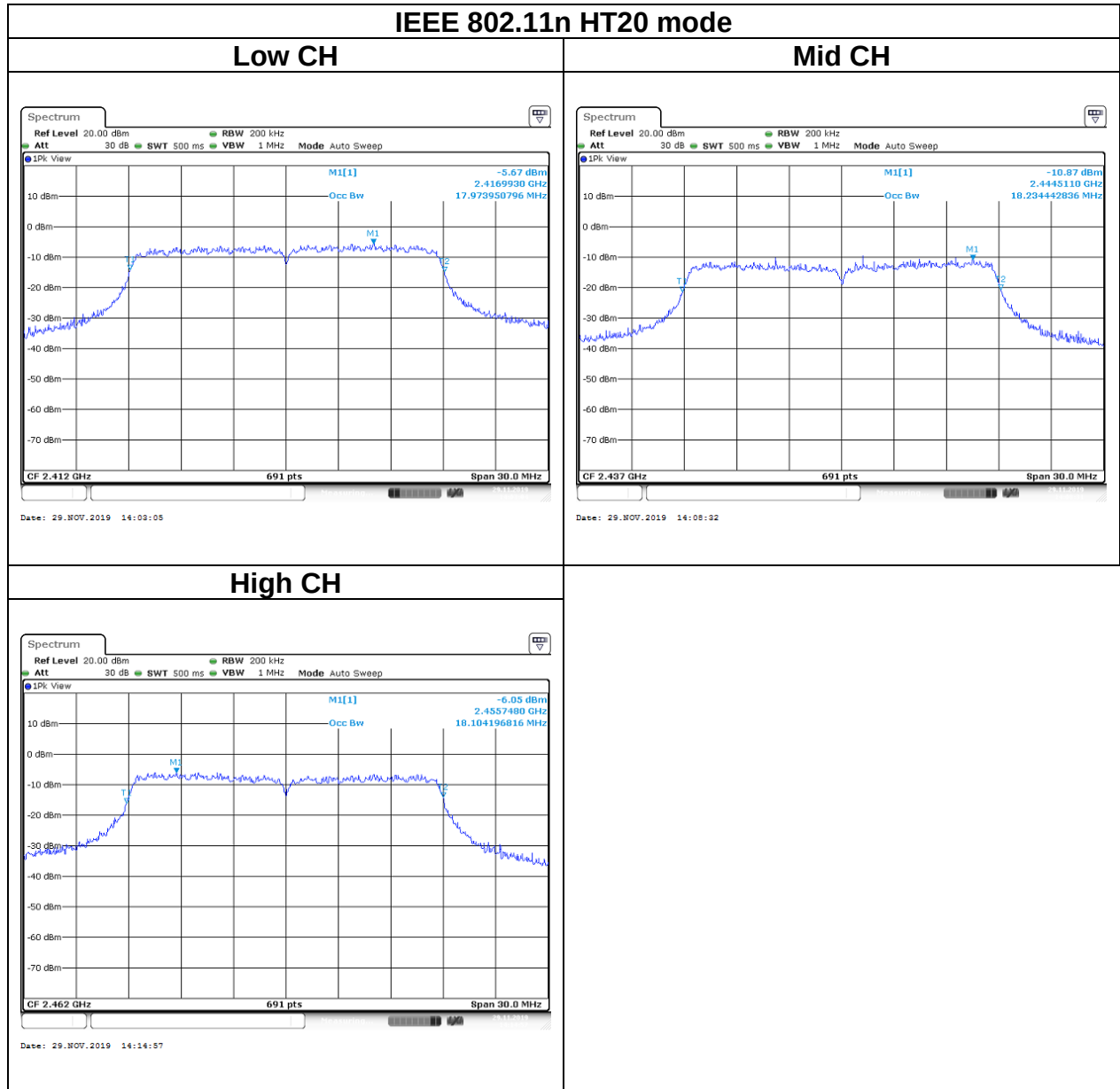
High CH

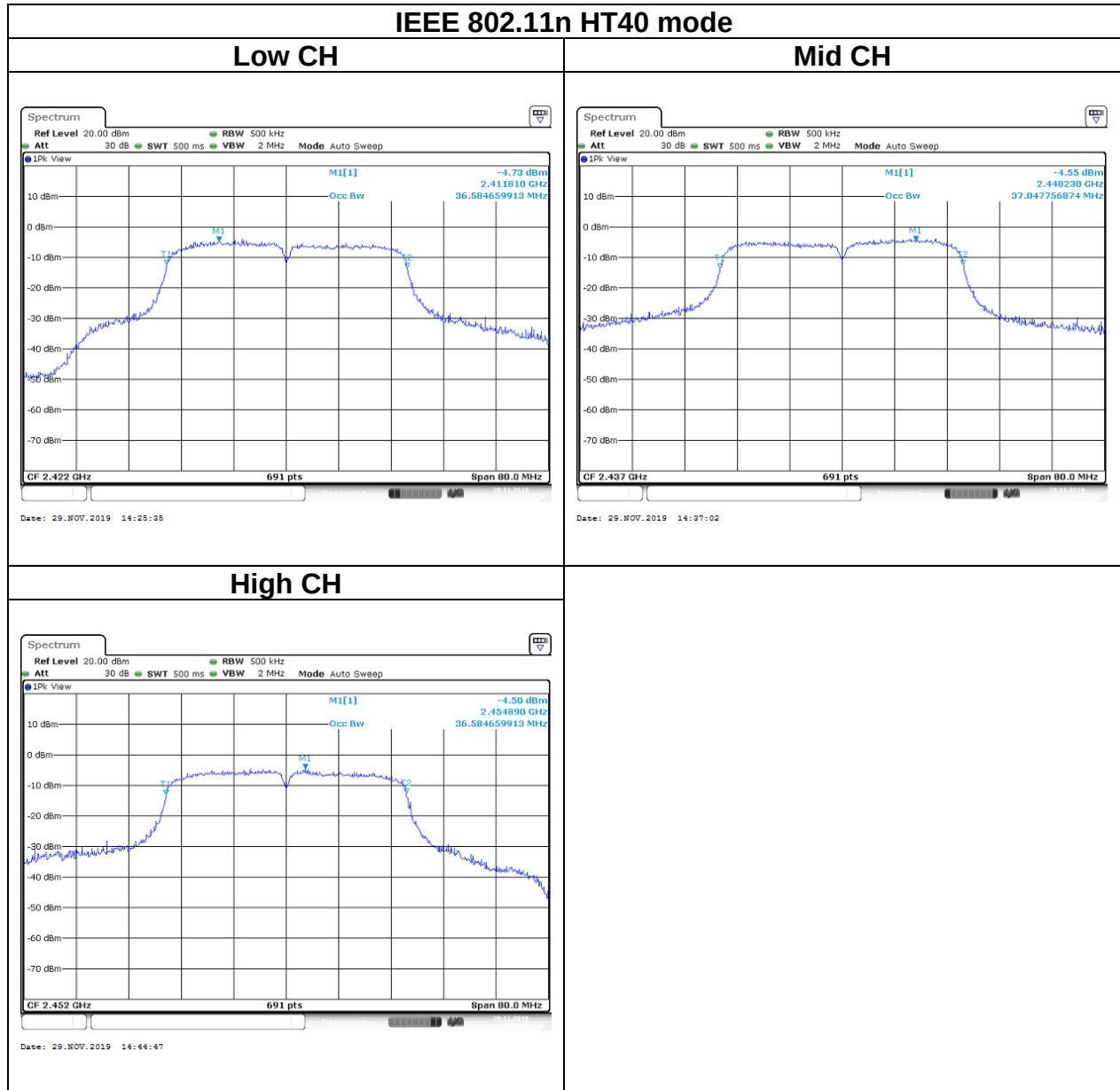


BANDWIDTH (99%)









5.3 OUTPUT POWER MEASUREMENT

5.3.1 Test Limit

According to §15.247(b) (3) and RSS-247 section 5.4(d),

Peak output power :

For systems using digital modulation in the 2400-2483.5 MHz: 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 :
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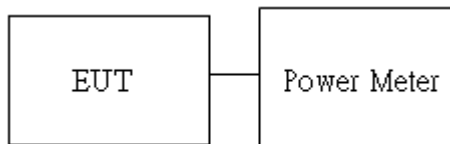
Average output power : For reporting purposes only.

5.3.2 Test Procedure

Test method Refer as KDB 558074 D01.

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.

5.3.3 Test Setup



5.3.4 Test Result

Peak output power :

Wifi 2.4G										
Config	CH	Freq. (MHz)	power set	PK Power (dBm)	PK Power (W)	EIRP PK Power (dBm)	EIRP PK Power (W)	DG (dBi)	Limit (dBm)	EIRP Limit (dBm)
IEEE 802.11b Data rate: 1Mbps	Low	2412	18	19.15	0.0822	20.46	0.1112	1.31	30	36
	Mid	2437	18	19.30	0.0851	20.61	0.1151			
	High	2462	18	19.16	0.0824	20.47	0.1114			
IEEE 802.11g Data rate: 6Mbps	Low	2412	18	21.00	0.1259	22.31	0.1702			
	Mid	2437	18	21.61	0.1449	22.92	0.1959			
	High	2462	18	21.60	0.1445	22.91	0.1954			
IEEE 802.11n HT20 Data rate: MCS0	Low	2412	18	21.09	0.1285	22.40	0.1738			
	Mid	2437	18	21.56	0.1432	22.87	0.1936			
	High	2462	18	21.55	0.1429	22.86	0.1932			
IEEE 802.11n HT40 Data rate: MCS0	Low	2422	18	21.03	0.1268	22.34	0.1714			
	Mid	2437	18	21.19	0.1315	22.50	0.1778			
	High	2452	18	21.40	0.1380	22.71	0.1866			



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Average output power :

Wifi 2.4G			
Config	CH	Freq. (MHz)	AV Power (dBm)
IEEE 802.11b Data rate: 1Mbps	Low	2412	16.32
	Mid	2437	16.29
	High	2462	16.16
IEEE 802.11g Data rate: 6Mbps	Low	2412	14.91
	Mid	2437	14.72
	High	2462	14.65
IEEE 802.11n HT20 Data rate: MCS0	Low	2412	17.12
	Mid	2437	16.92
	High	2462	16.88
IEEE 802.11n HT40 Data rate: MCS0	Low	2422	15.57
	Mid	2437	15.38
	High	2452	15.62

5.4 POWER SPECTRAL DENSITY

5.4.1 Test Limit

According to §15.247(e) and RSS-247 section 5.2(b),

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.

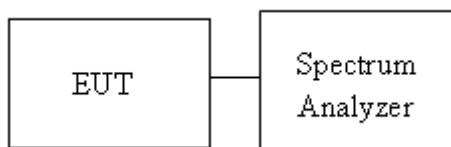
Limit	☒ Antenna not exceed 6 dBi : 8dBm ☐ Antenna with DG greater than 6 dBi : [Limit = 8 – (DG – 6)] ☐ Point-to-point operation :
-------	---

5.4.2 Test Procedure

Test method Refer as KDB 558074 D01.

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 was 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.

5.4.3 Test Setup



5.4.4 Test Result

Test mode: IEEE 802.11b mode / 2412-2462 MHz			
Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Limit (dBm)
Low	2412	-4.57	8
Mid	2437	-5.59	
High	2462	-7.06	

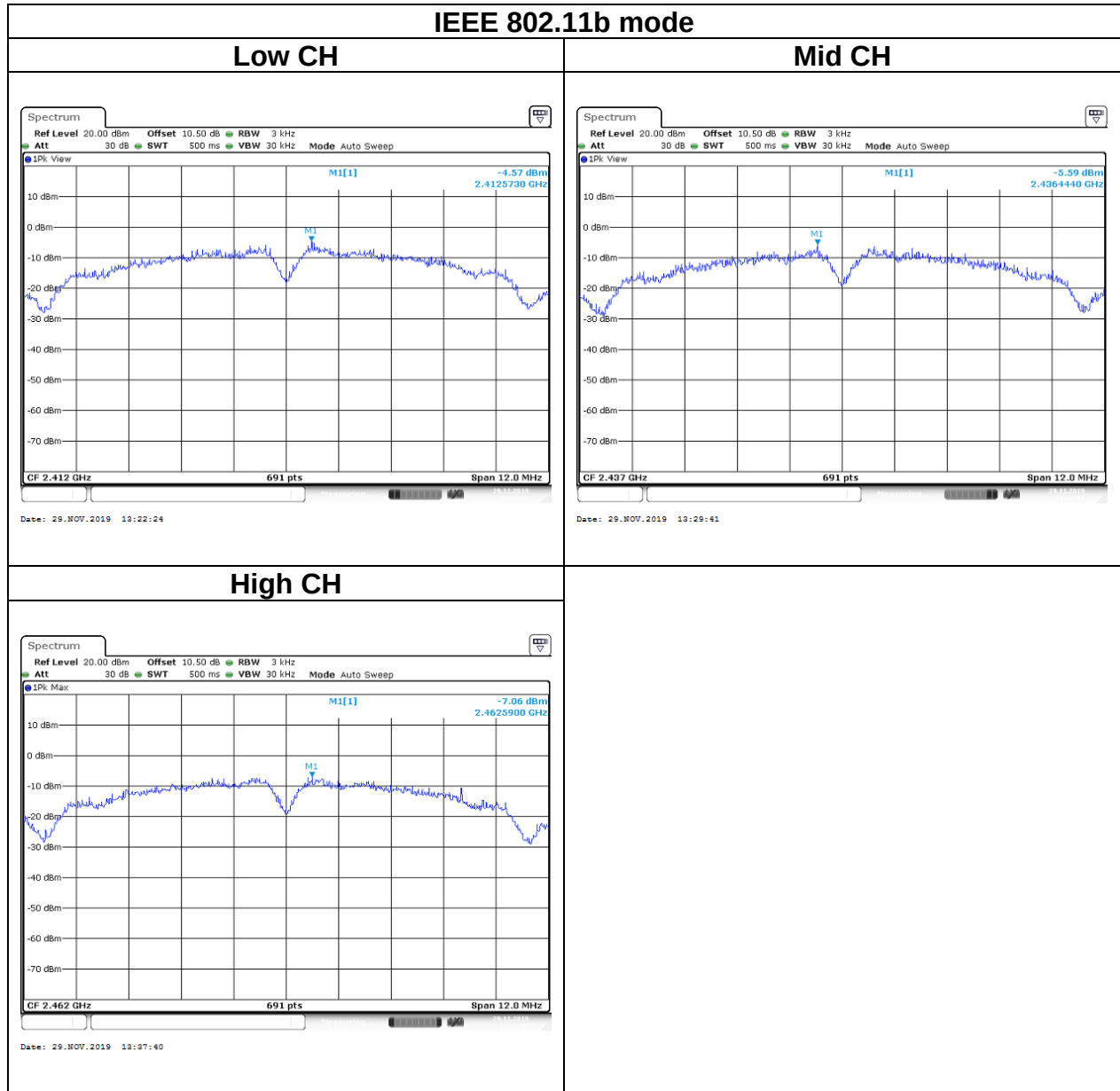
Test mode: IEEE 802.11g mode / 2412-2462 MHz			
Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Limit (dBm)
Low	2412	-10.69	8
Mid	2437	-10.32	
High	2462	-9.86	

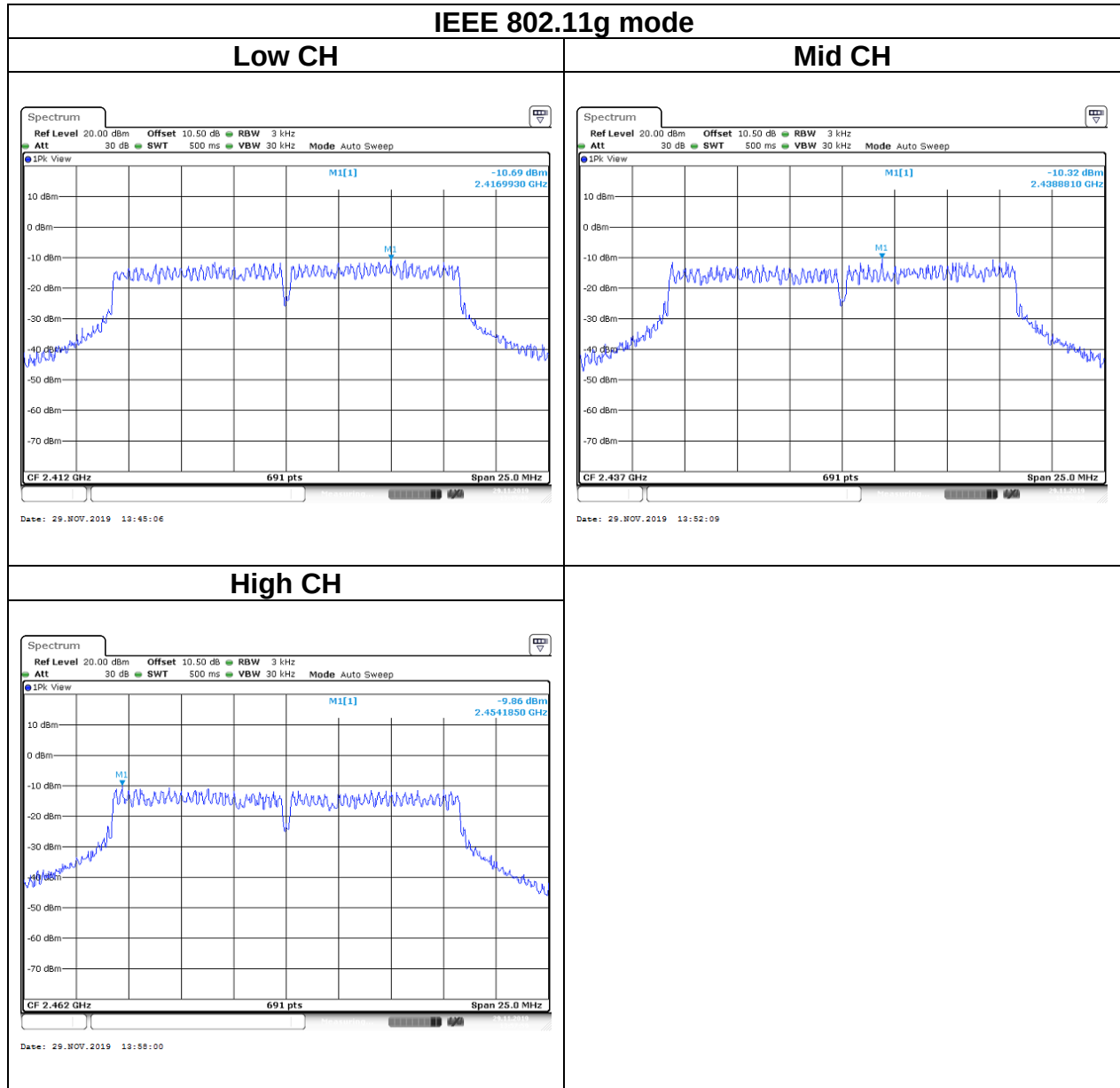
Test mode: IEEE 802.11n HT 20 MHz mode / 2412-2462 MHz			
Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Limit (dBm)
Low	2412	-10.65	8
Mid	2437	-10.10	
High	2462	-9.84	

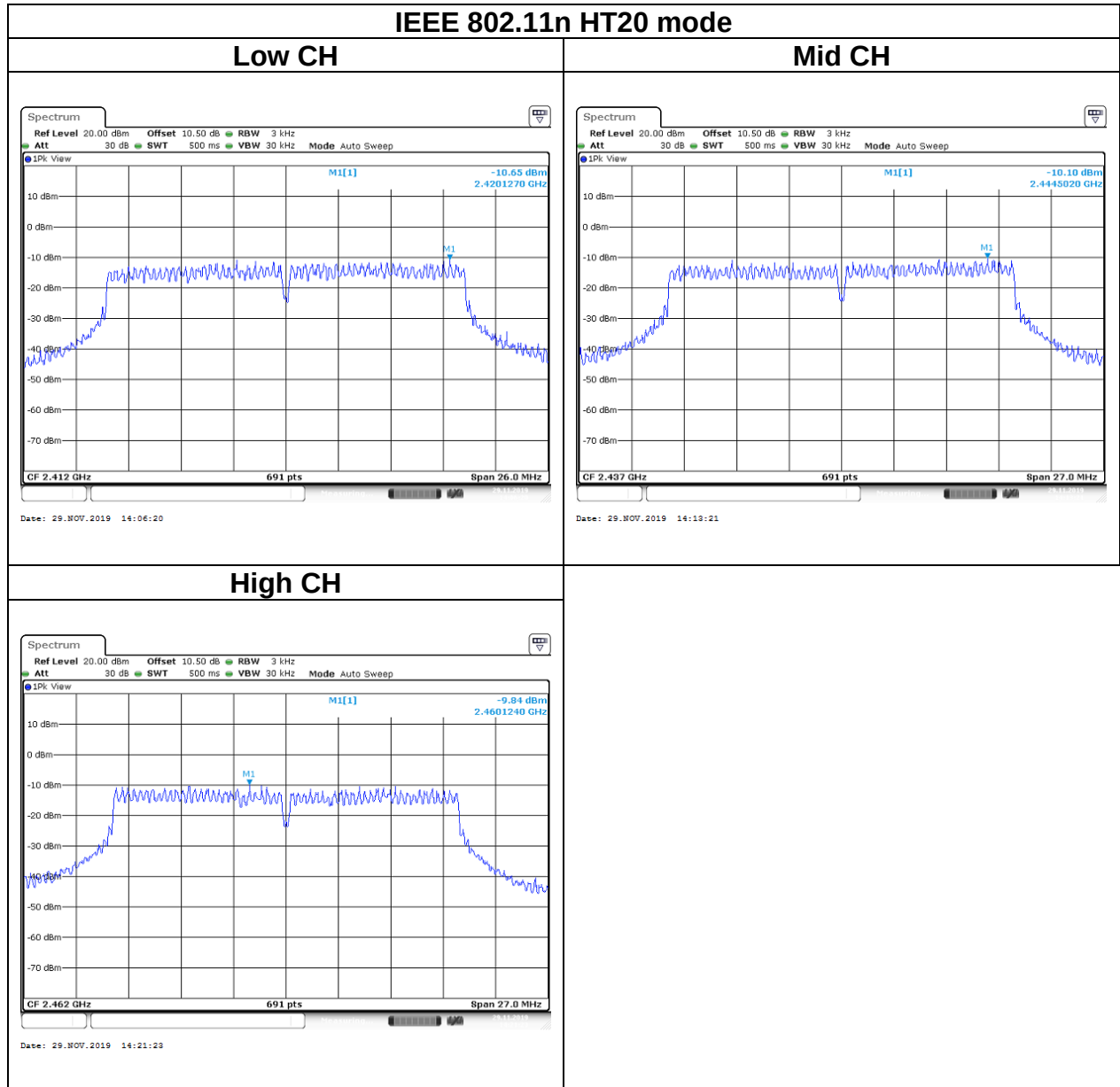
Test mode: IEEE 802.11n HT 40 MHz mode / 2422-2452 MHz			
Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Limit (dBm)
Low	2422	-11.94	8
Mid	2437	-12.00	
High	2452	-12.09	

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Test Data



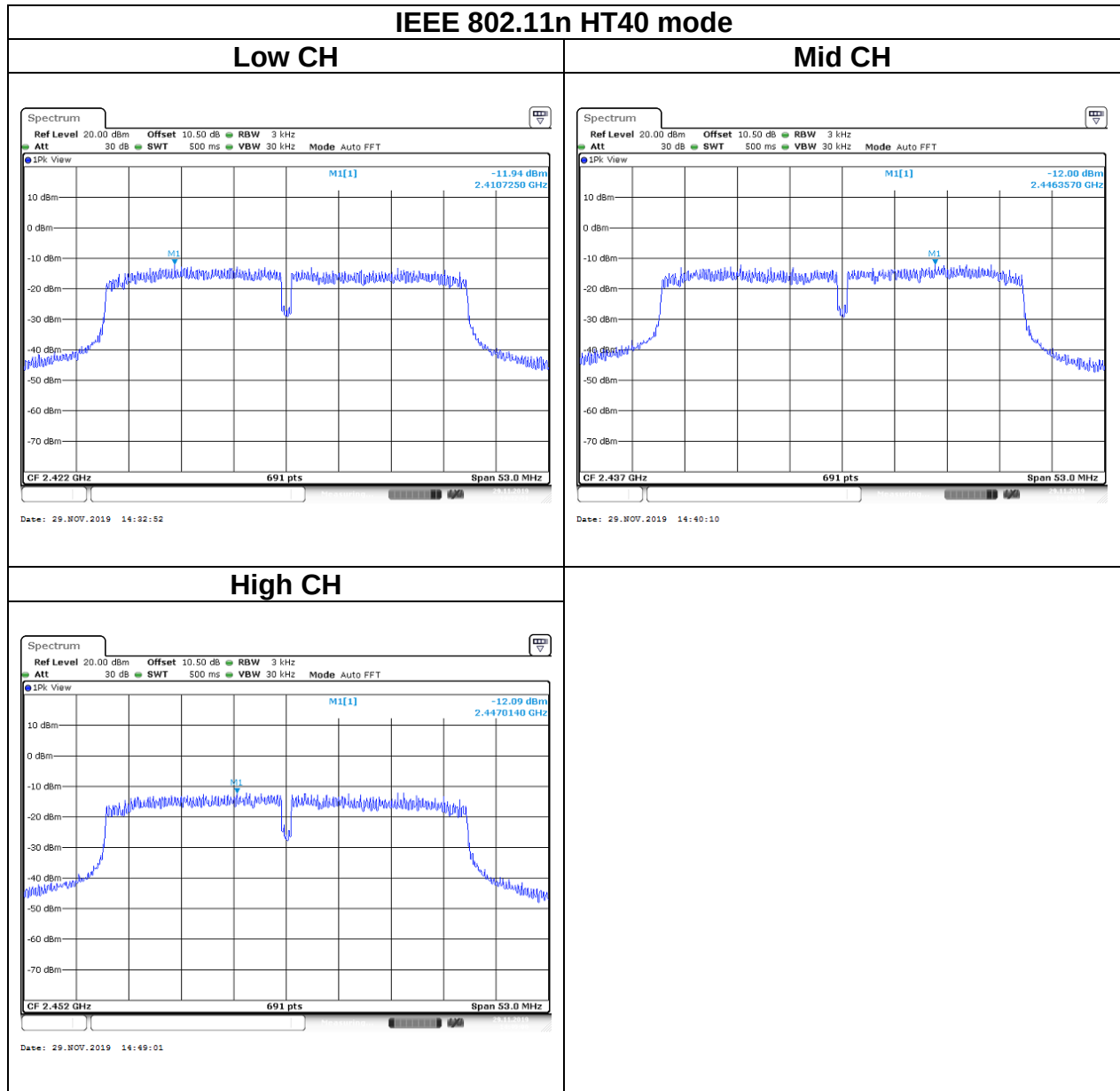






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5.5 CONDUCTED BANDEDGE AND SPURIOUS EMISSION

5.5.1 Test Limit

According to §15.247(d) and RSS-247 section 5.5,

In any 100 kHz bandwidth outside the authorized frequency band,

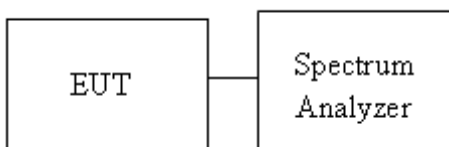
Non-restricted bands shall be attenuated at least 20 dB/30 dB relative to the maximum PSD level in 100 kHz by RF conducted or a radiated measurement which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a).

5.5.2 Test Procedure

Test method Refer as 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. If 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.

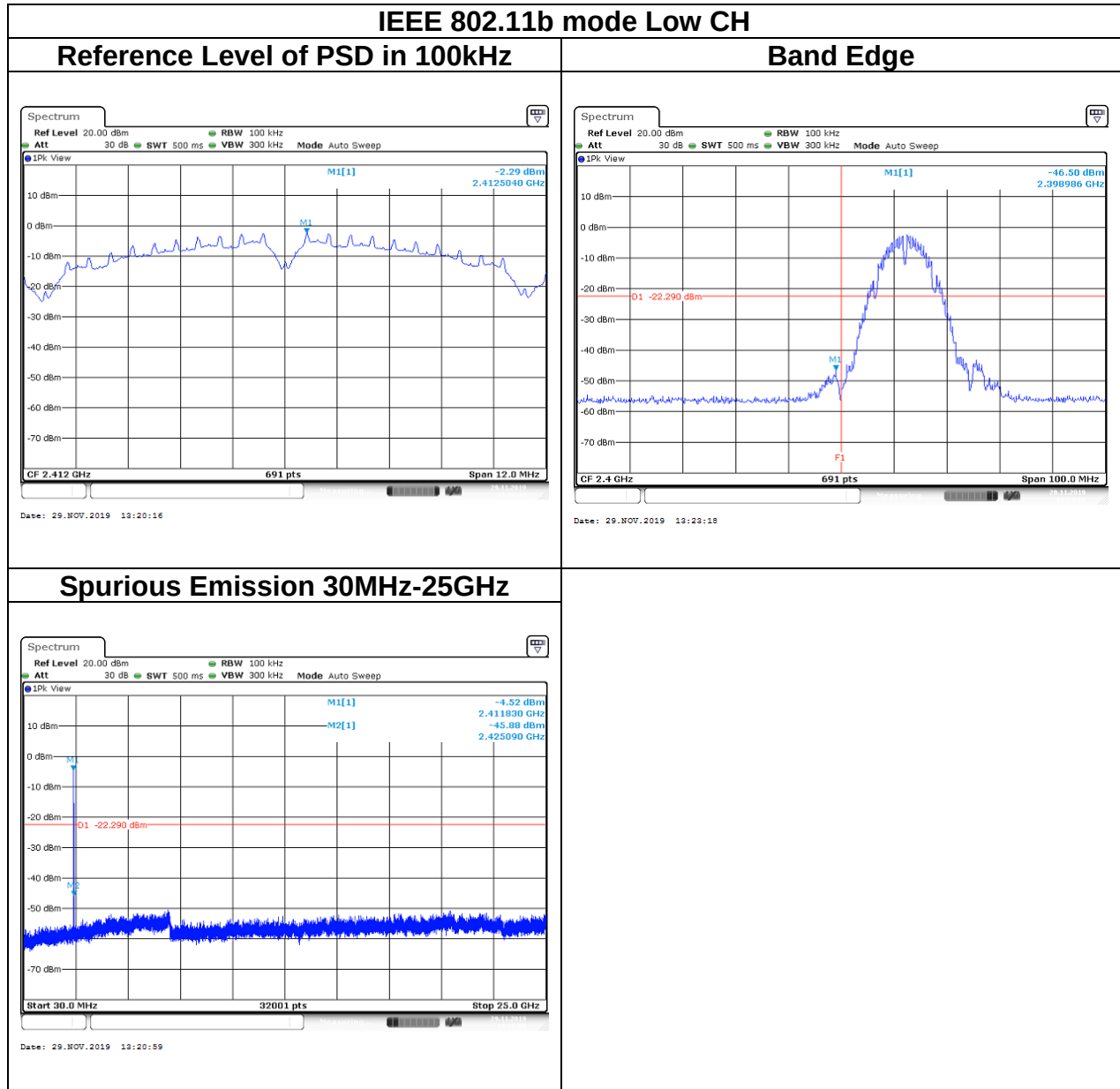
5.5.3 Test Setup



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5.5.4 Test Result

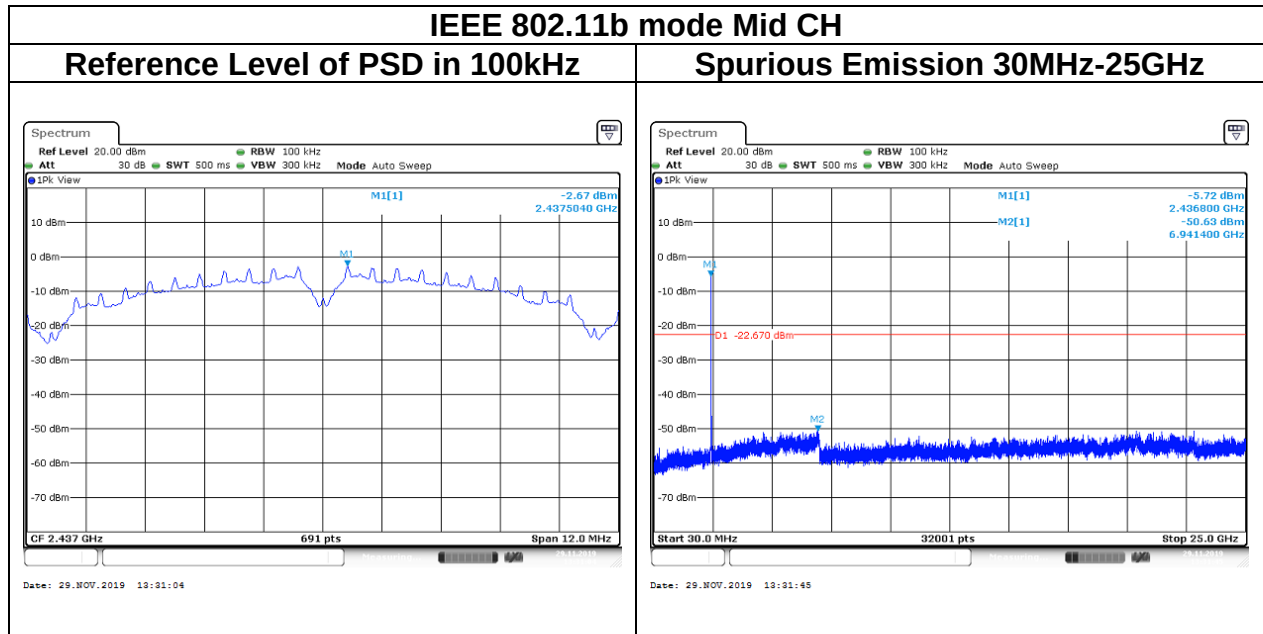
Test Data

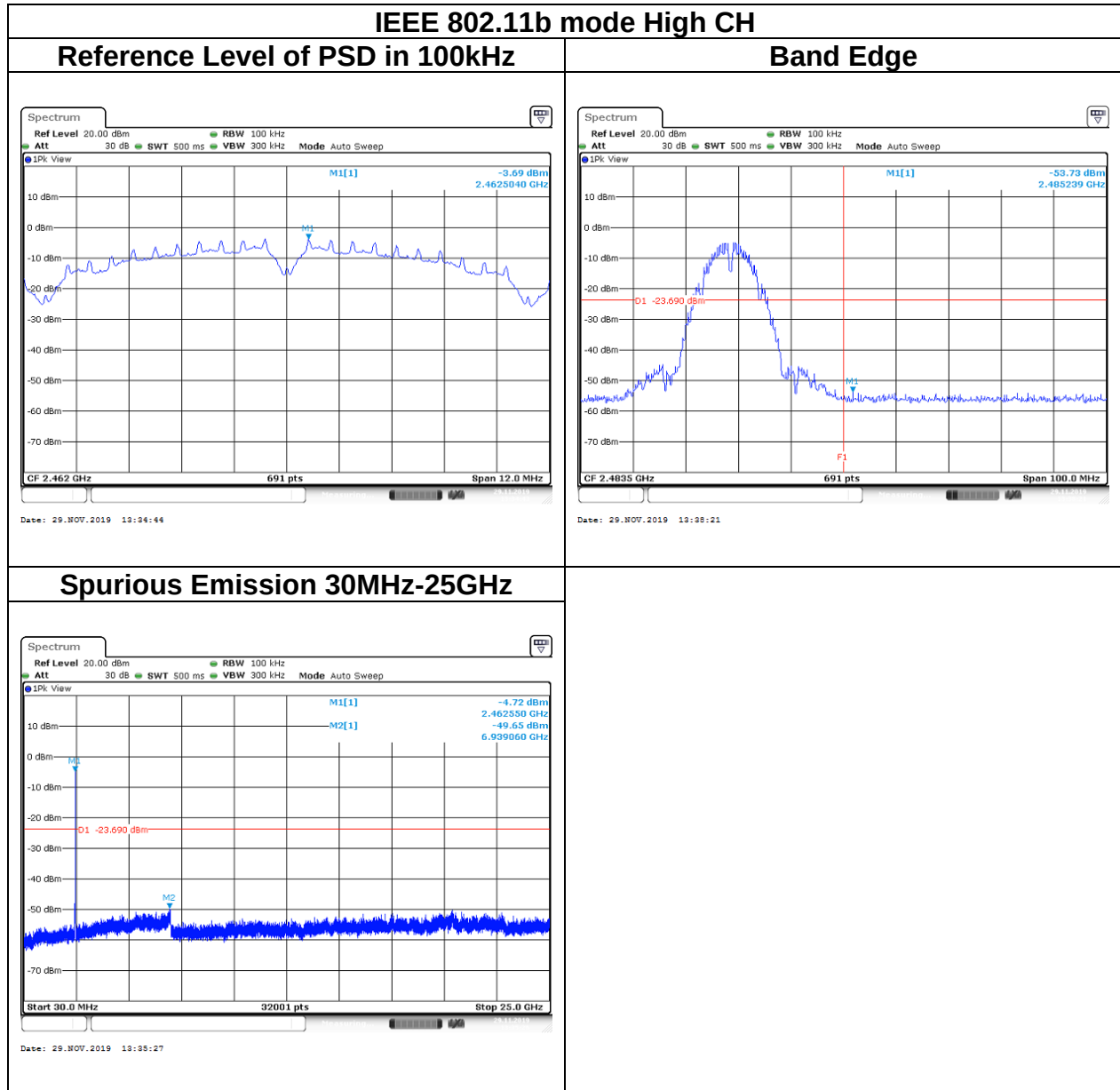


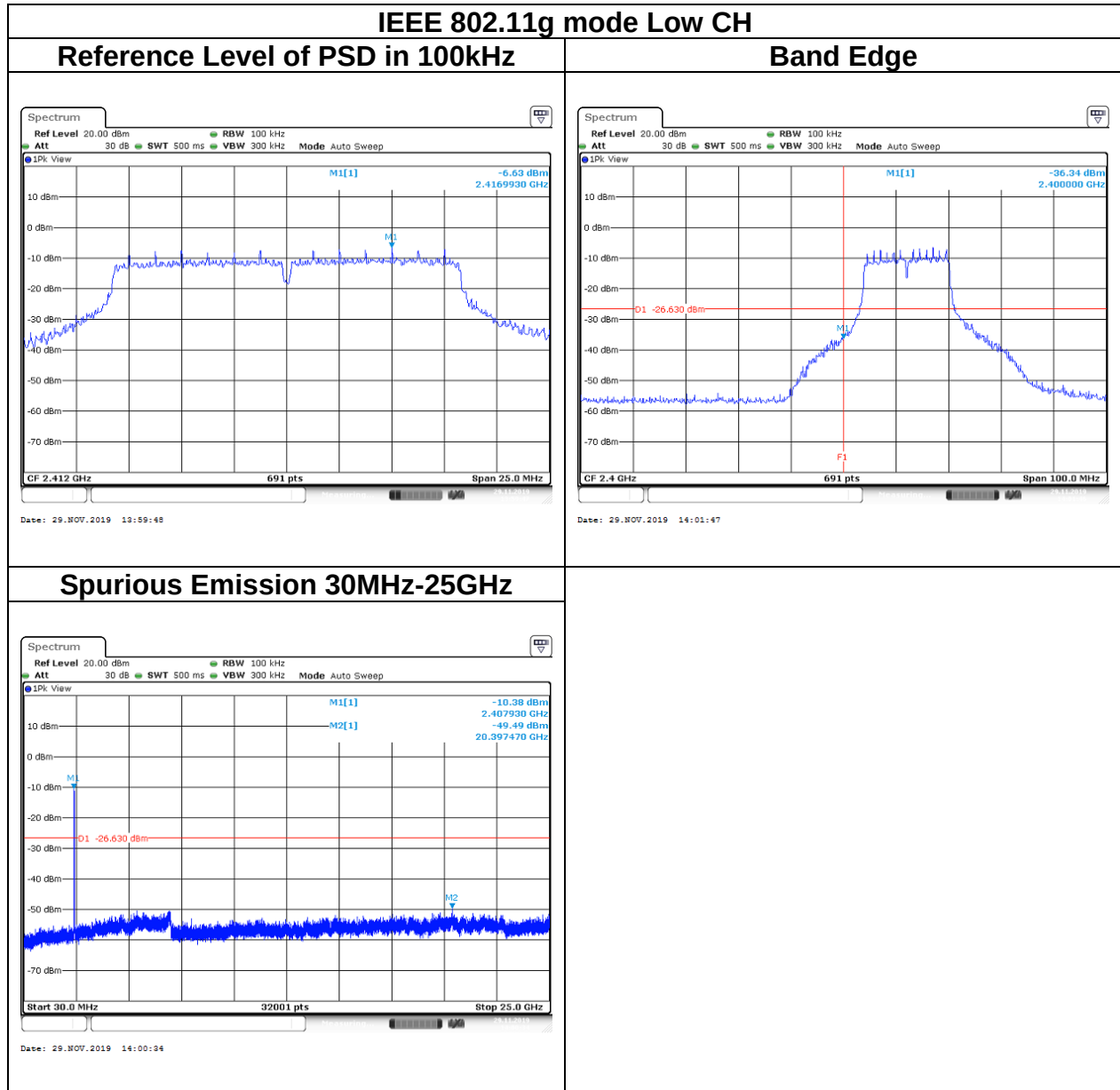


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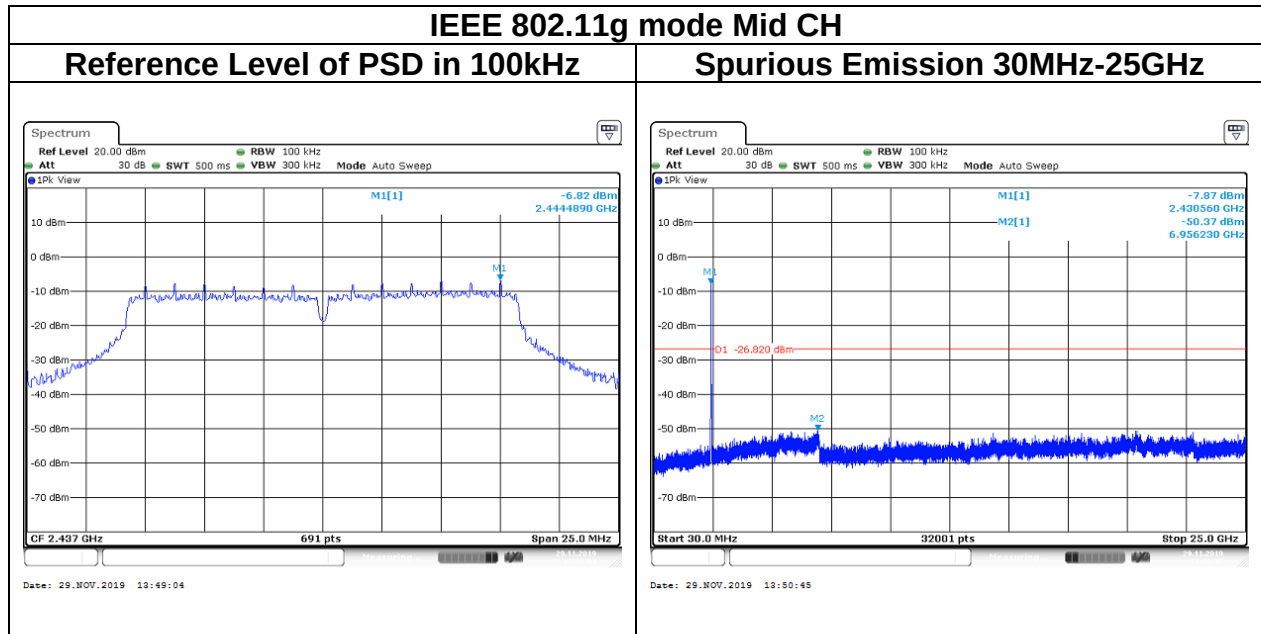


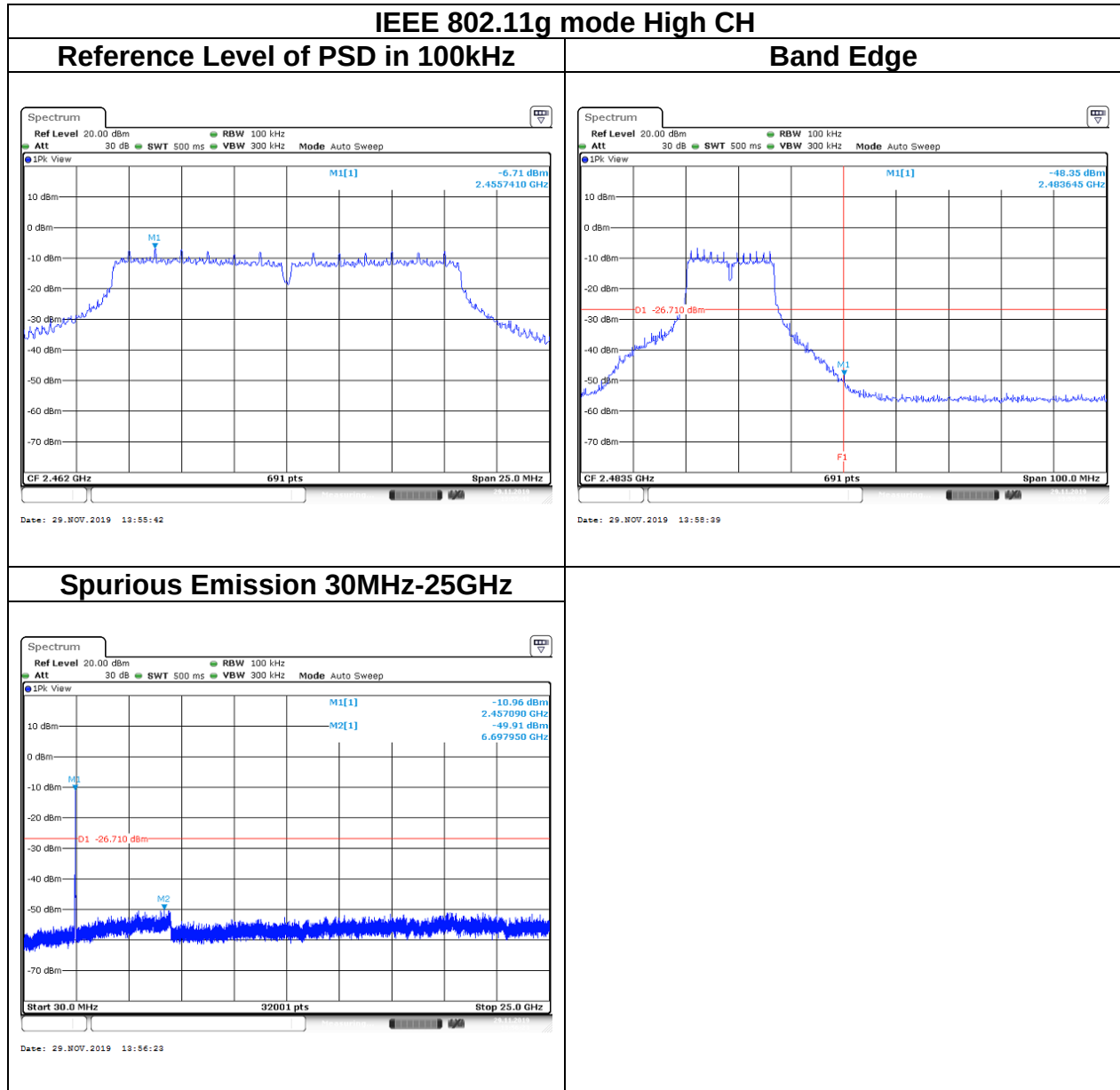


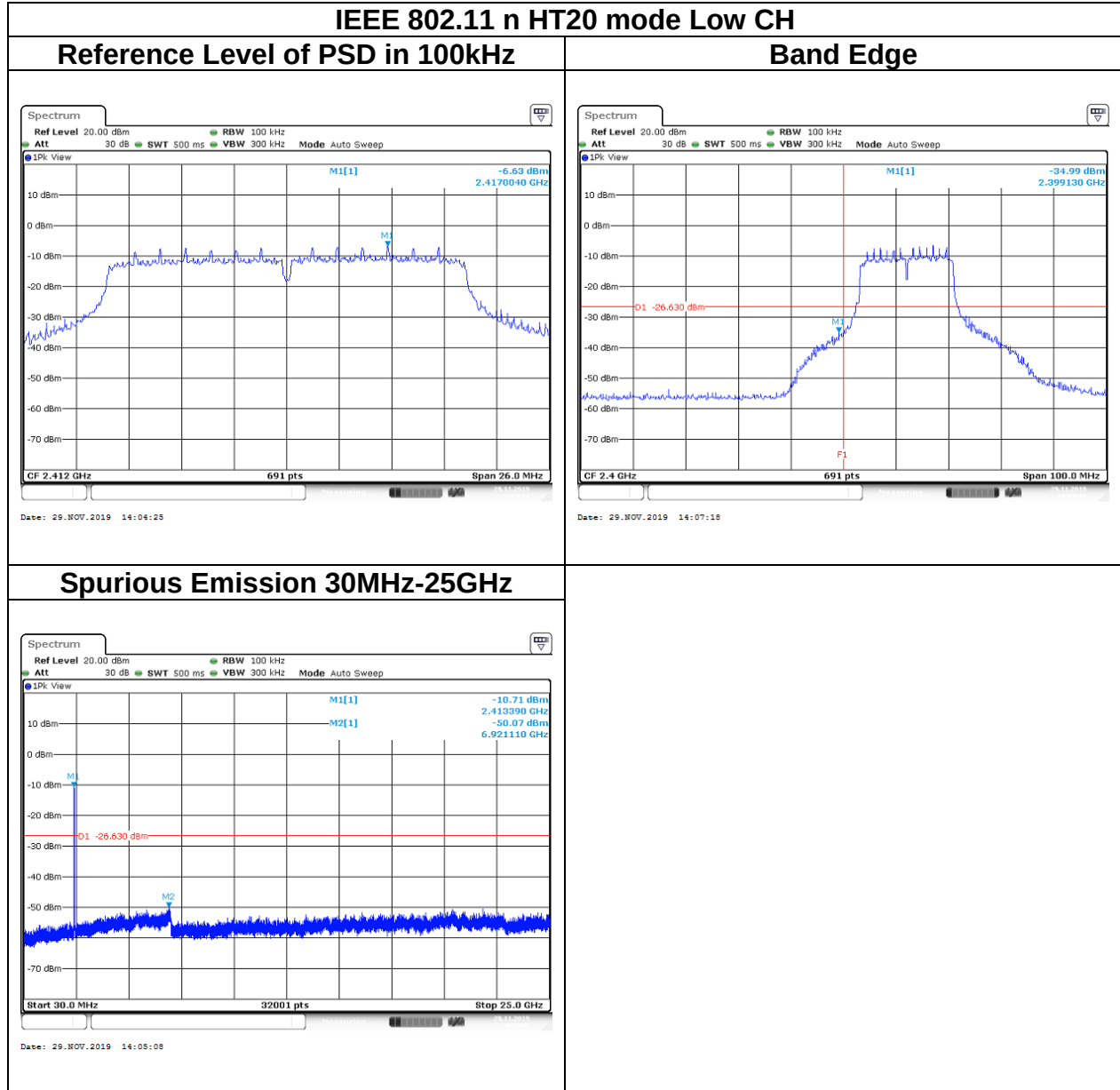


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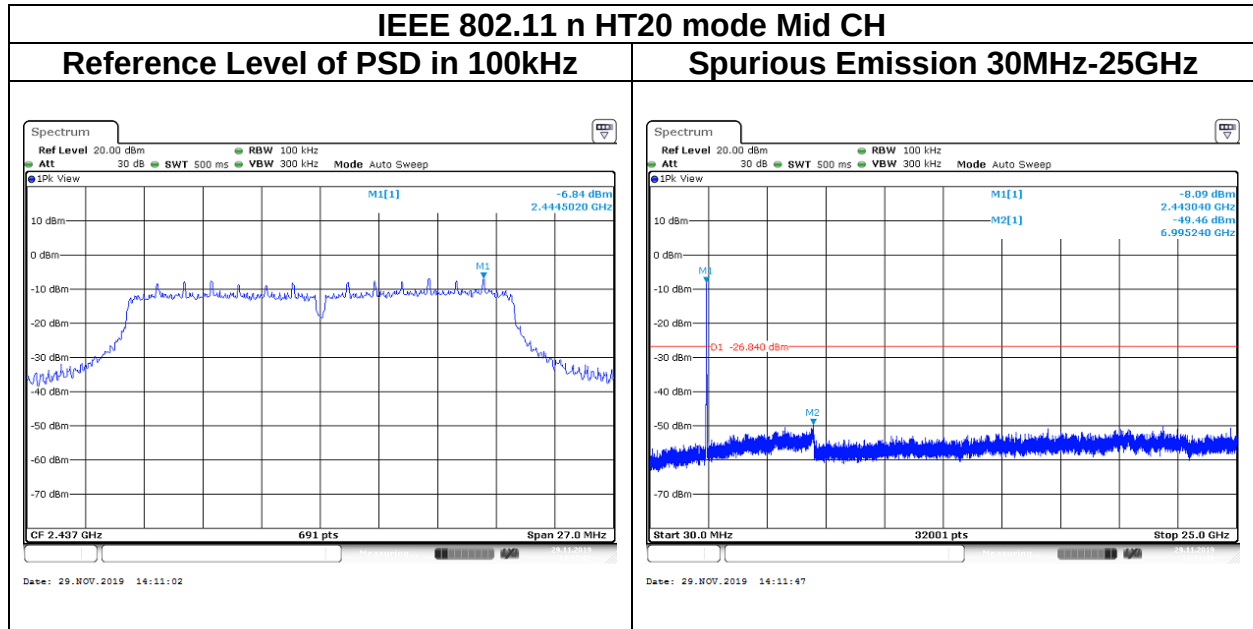


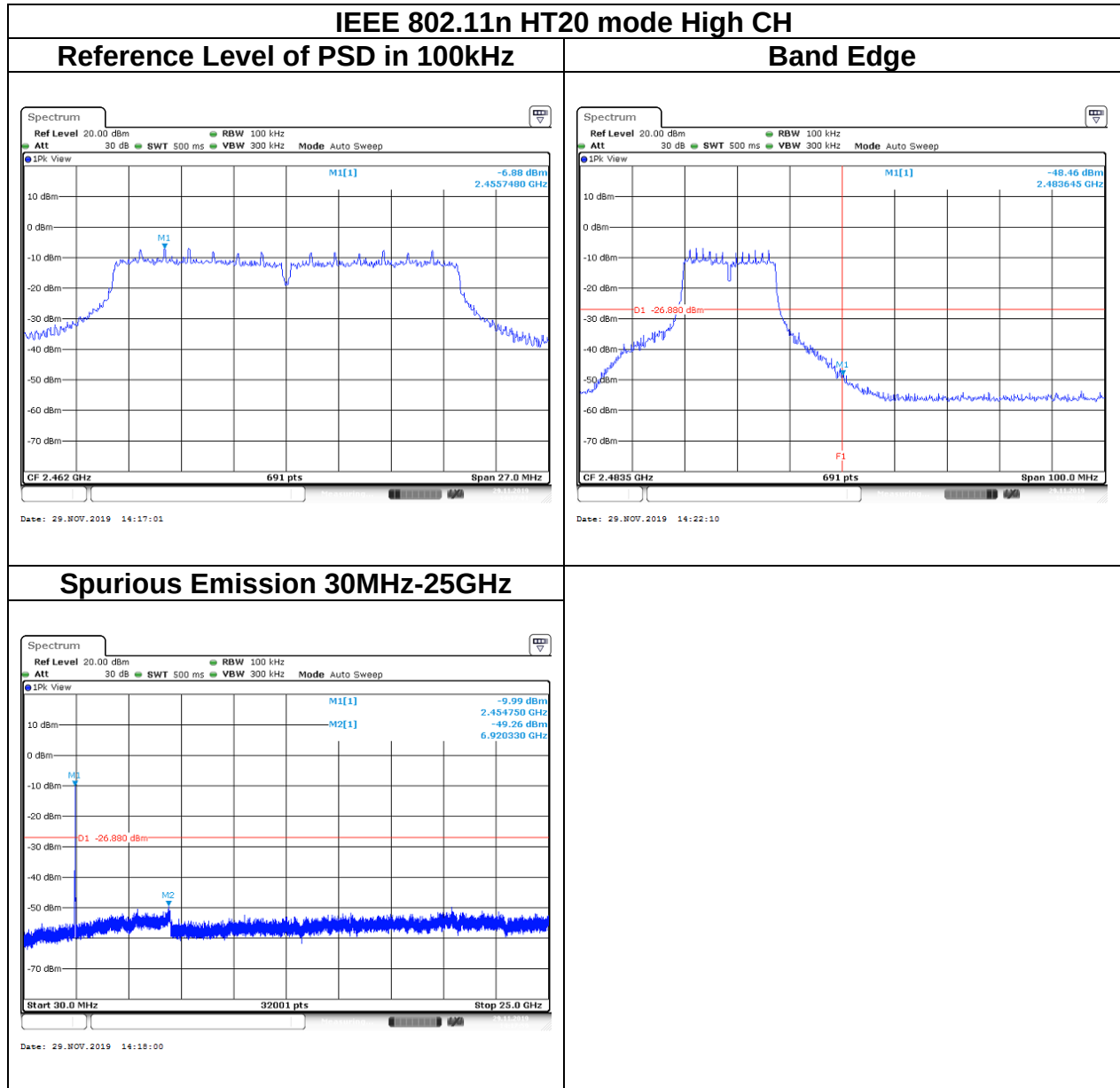


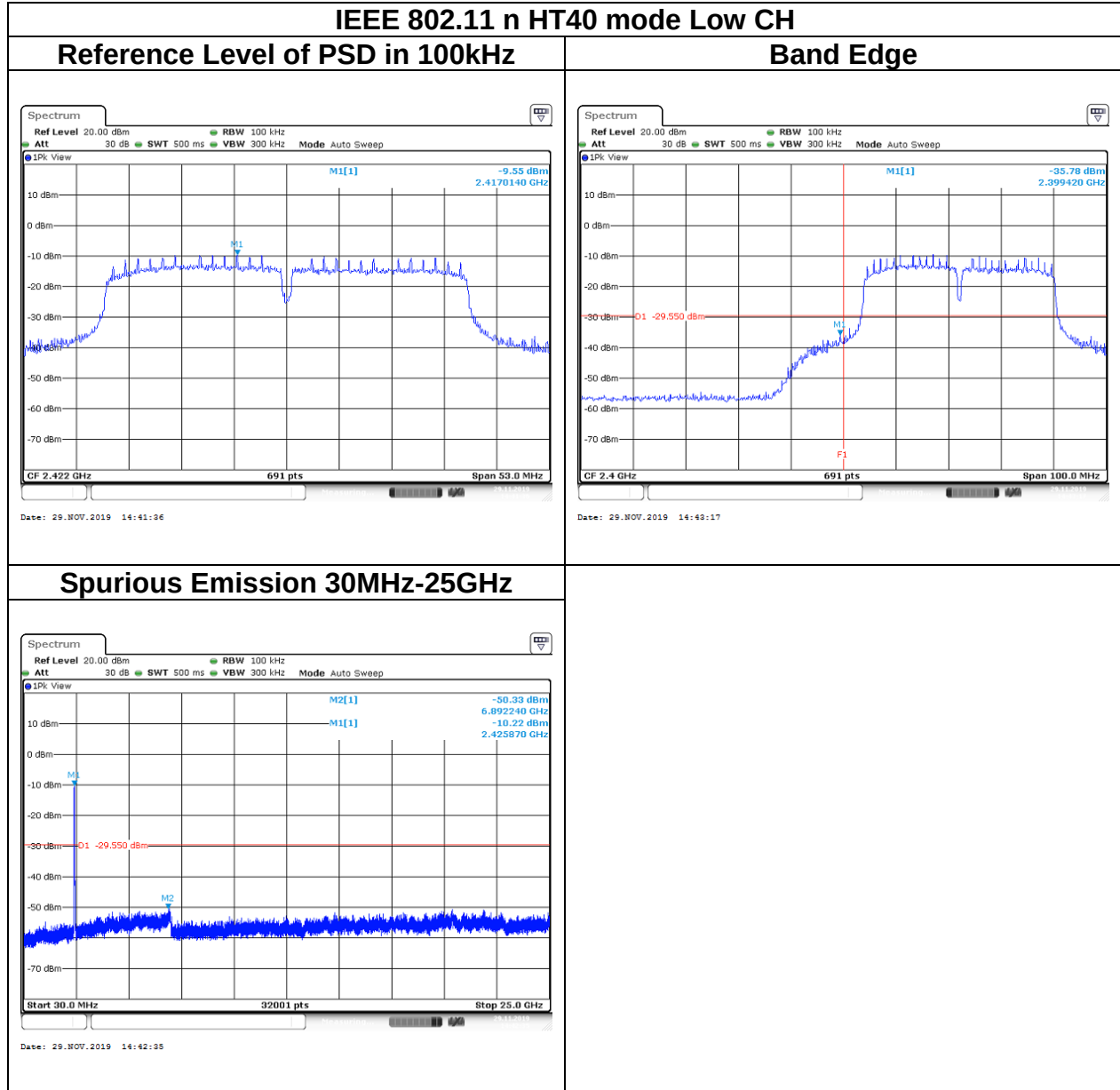


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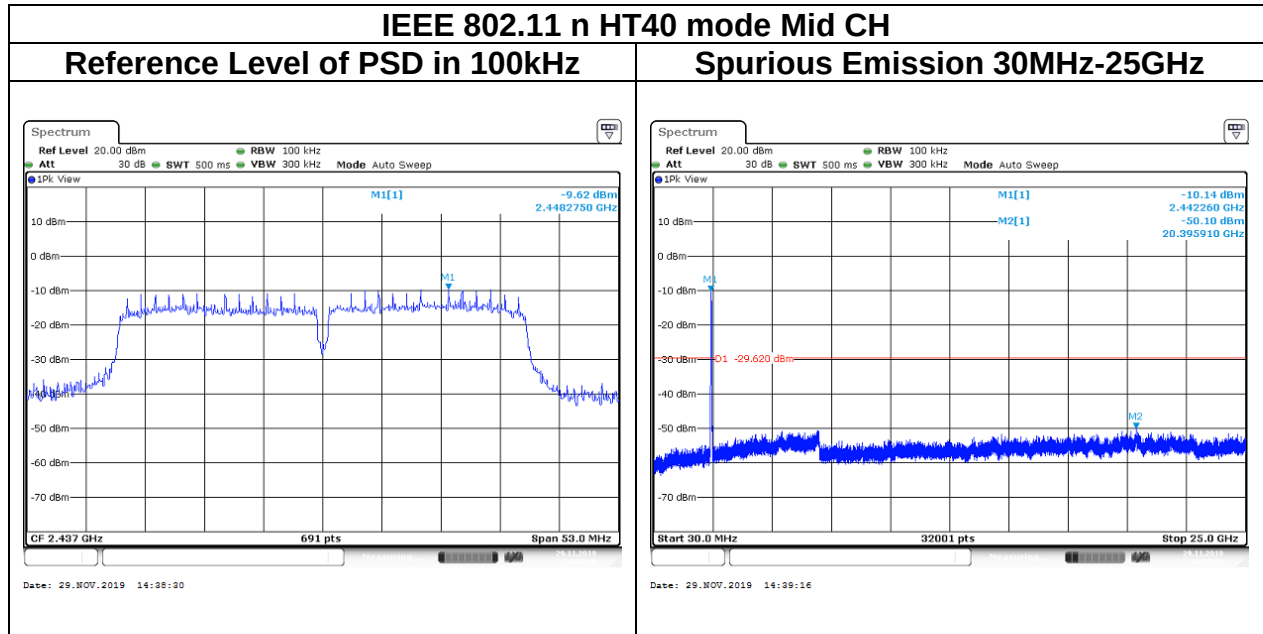


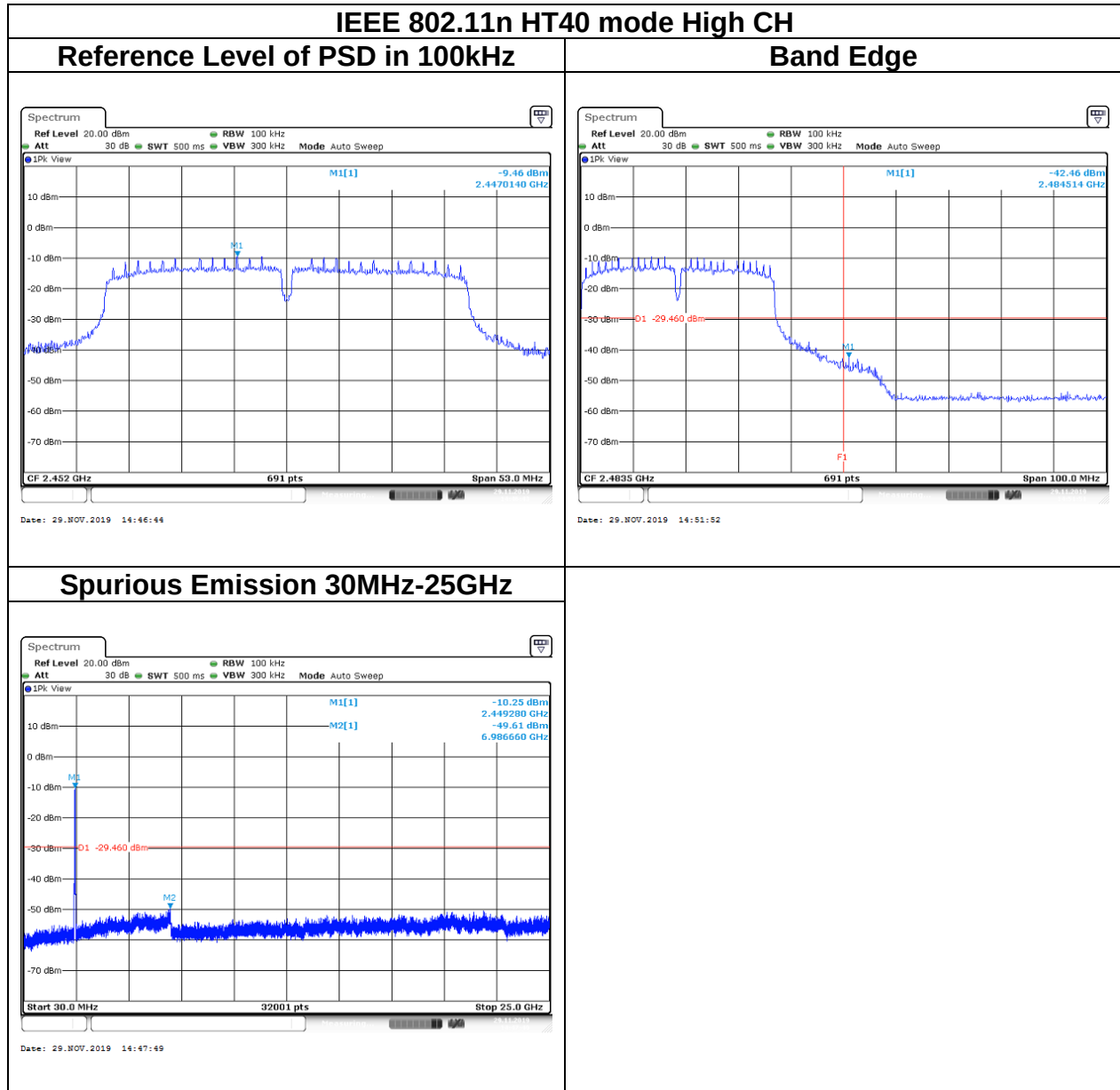




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5.6 RADIATION BANDEDGE AND SPURIOUS EMISSION

5.6.1 Test Limit

FCC according to §15.247(d), §15.209 and §15.205,
IC according to RSS-247 section 5.5, RSS-Gen, Section 8.9 and 8.10

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

Remark:

Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open area 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.

IC according to RSS-247 section 5.5, RSS-Gen, Section 8.9 and 8.10

RSS-Gen Table 3 and Table 5 – General Field Strength Limits for Transmitters and Receivers at Frequencies Above 30 MHz ^(Note)

Frequency (MHz)	Field Strength microvolts/m at 3 metres (watts, e.i.r.p.)	
	Transmitters	Receivers
30-88	100 (3 nW)	100 (3 nW)
88-216	150 (6.8 nW)	150 (6.8 nW)
216-960	200 (12 nW)	200 (12 nW)
Above 960	500 (75 nW)	500 (75 nW)

Note: Measurements for compliance with the limits in table 3 may be performed at distances other than 3 metres, in accordance with Section 6.6.

RSS-Gen Table 6: General Field Strength Limits for Transmitters at Frequencies Below 30 MHz (Transmit)

Frequency	Magnetic field strength (H-Field) (μA/m)	Measurement Distance (m)
9-490 kHz ^{Note}	6.37/F (F in kHz)	300
490-1,705 kHz	63.7/F (F in kHz)	30
1.705-30 MHz	0.08	30

Note: The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector..

5.6.2 Test Procedure

Test method Refer as 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.
4. The SA setting following :
 - (1) Below 1G : RBW = 100kHz, VBW $\geq$ 3 RBW, Sweep = Auto, Detector = Peak, Trace = Max hold.
 - (2) Above 1G :
 - (2.1) For Peak measurement : RBW = 1MHz, VBW $\geq$ 3 RBW, Sweep = Auto, Detector = Peak, Trace = Max hold.
 - (2.2) For Average measurement : RBW = 1MHz, VBW
If Duty Cycle $\geq$ 98%, VBW=10Hz.
If Duty Cycle < 98%, VBW=1/T.

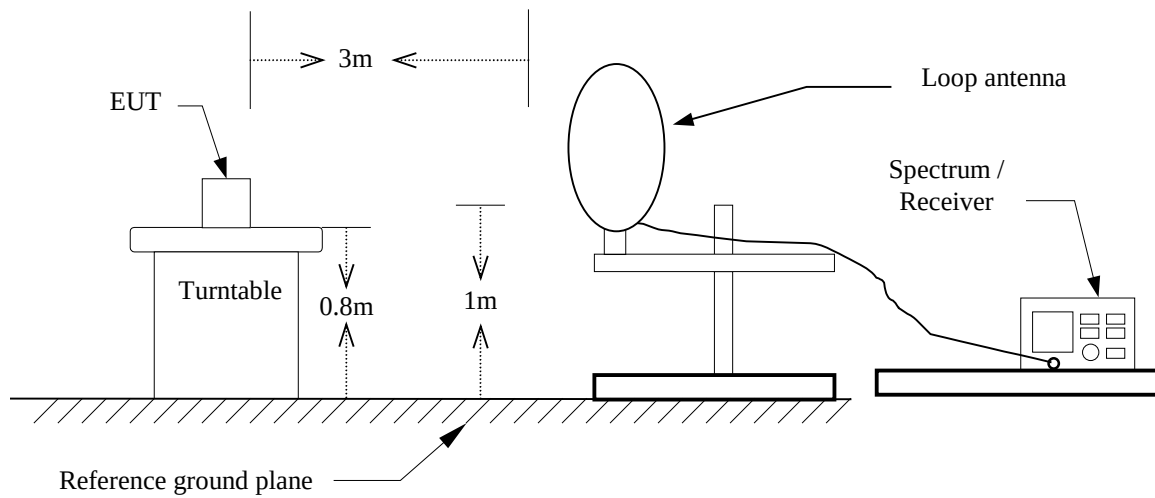
Remark:

1. 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.
2. No emission found between lowest internal used/generated frequency to 30MHz (9kHz~30MHz).

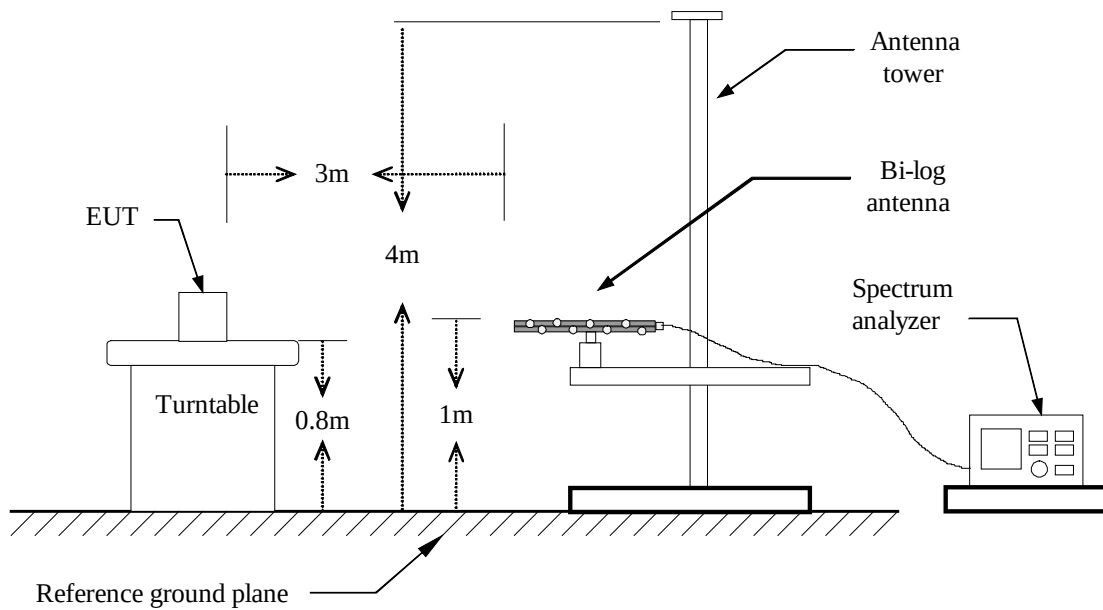
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5.6.3 Test Setup

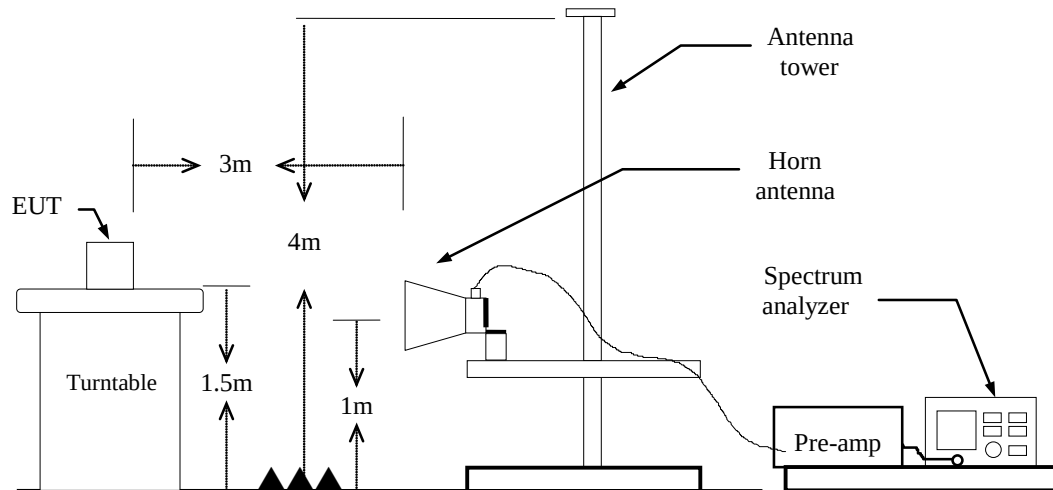
9kHz ~ 30MHz



30MHz ~ 1GHz



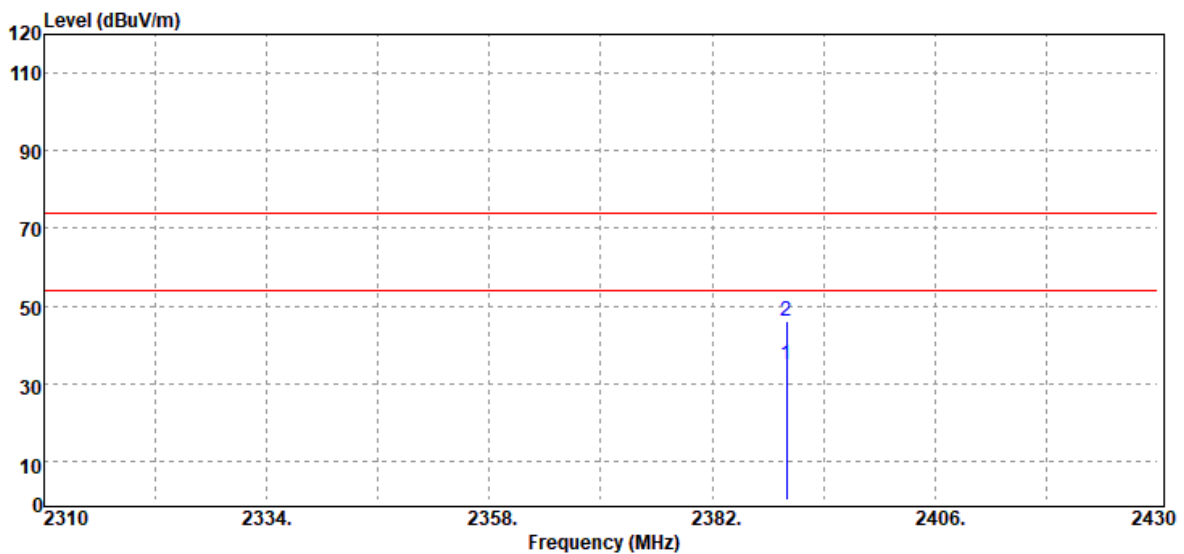
Above 1 GHz



5.6.4 Test Result

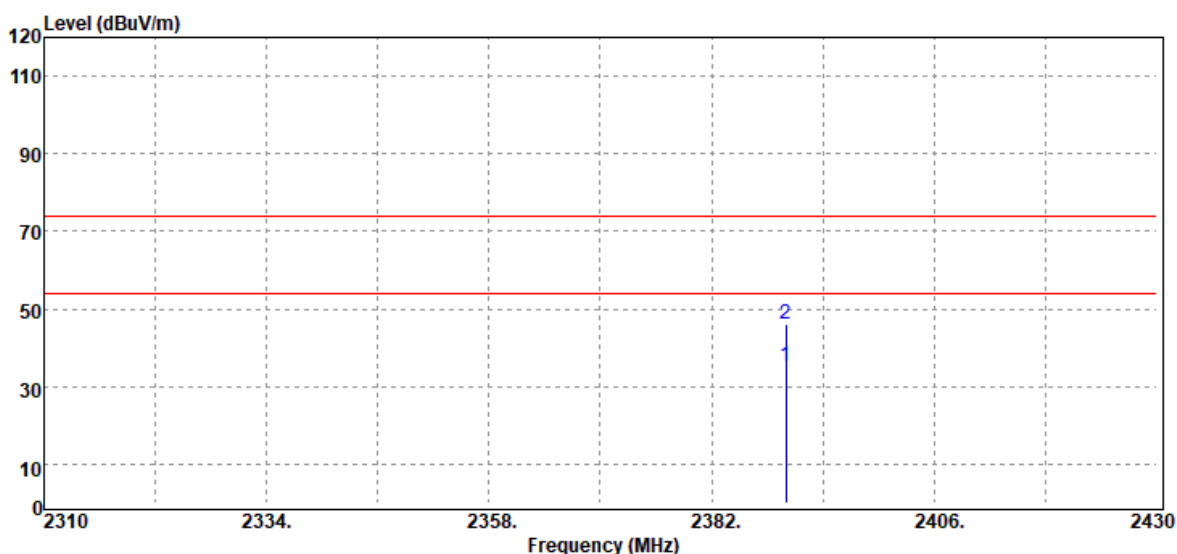
Band Edge Test Data

Test Mode	IEEE 802.11b Low CH	Temp/Hum	19.6(°C)/ 51%RH
Test Item	Band Edge	Test Date	December 4, 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
2390.00	Average	38.42	-3.38	35.04	54.00	-18.96
2390.00	Peak	49.51	-3.38	46.13	74.00	-27.87

Test Mode	IEEE 802.11b Low CH	Temp/Hum	19.6(°C)/ 51%RH
Test Item	Band Edge	Test Date	December 4, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak / Average		



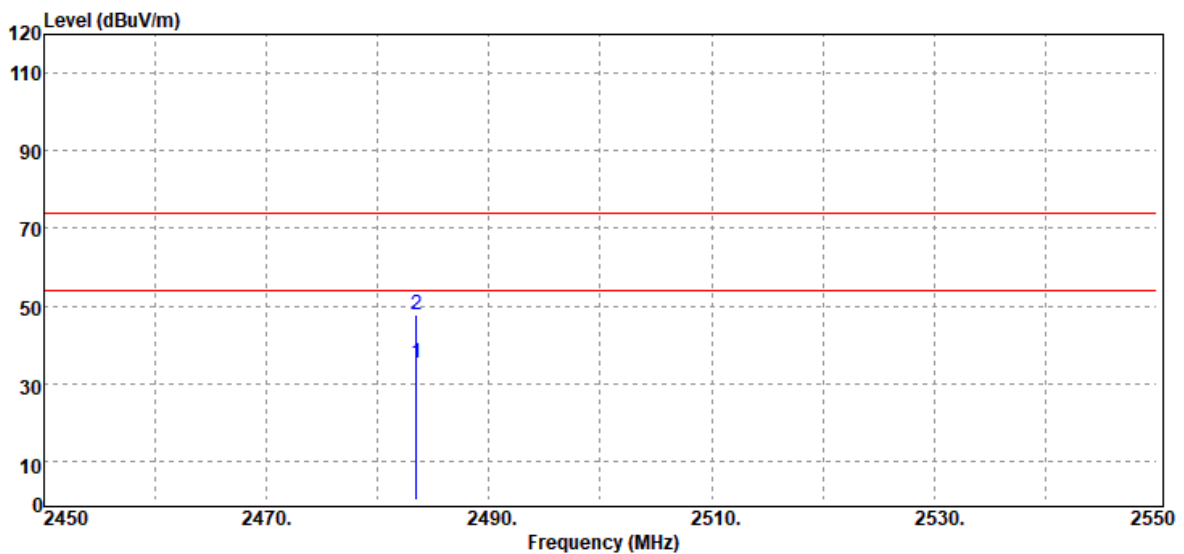
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV/m	Limit @3m dBμV/m	Margin dB
2390.00	Average	38.73	-3.38	35.35	54.00	-18.65
2390.00	Peak	49.60	-3.38	46.22	74.00	-27.78



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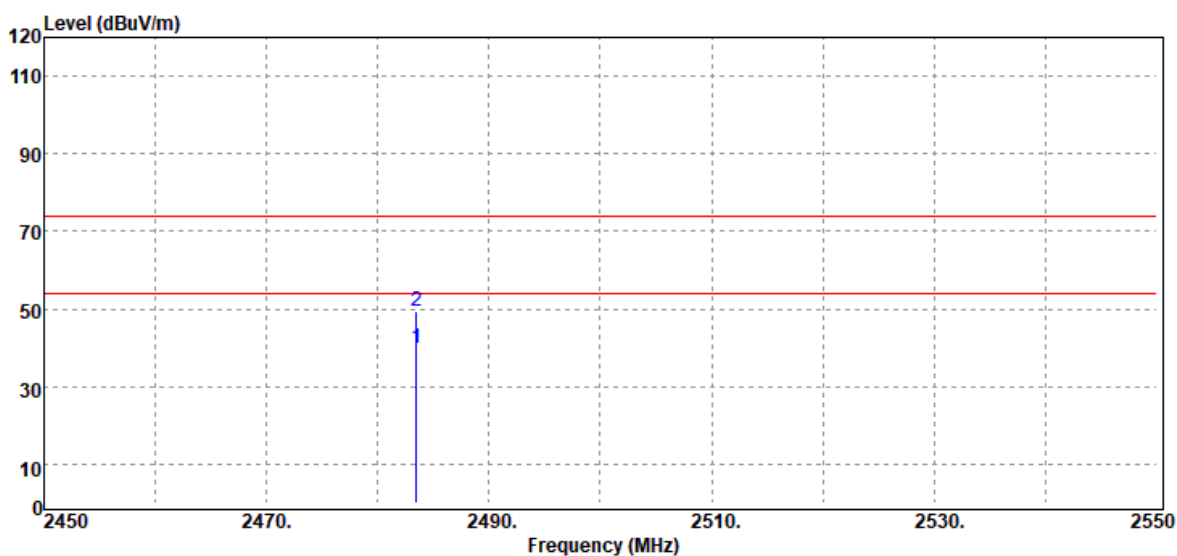
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Test Mode	IEEE 802.11b high CH	Temp/Hum	19.6(°C)/ 51%RH
Test Item	Band Edge	Test Date	December 4, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak / Average		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB μ V	Factor dB	Actual FS dB μ V/m	Limit @3m dB μ V/m	Margin dB
2483.50	Average	38.24	-2.83	35.41	54.00	-18.59
2483.50	Peak	50.68	-2.83	47.85	74.00	-26.15

Test Mode	IEEE 802.11b high CH	Temp/Hum	19.6(°C)/ 51%RH
Test Item	Band Edge	Test Date	December 4, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak / Average		



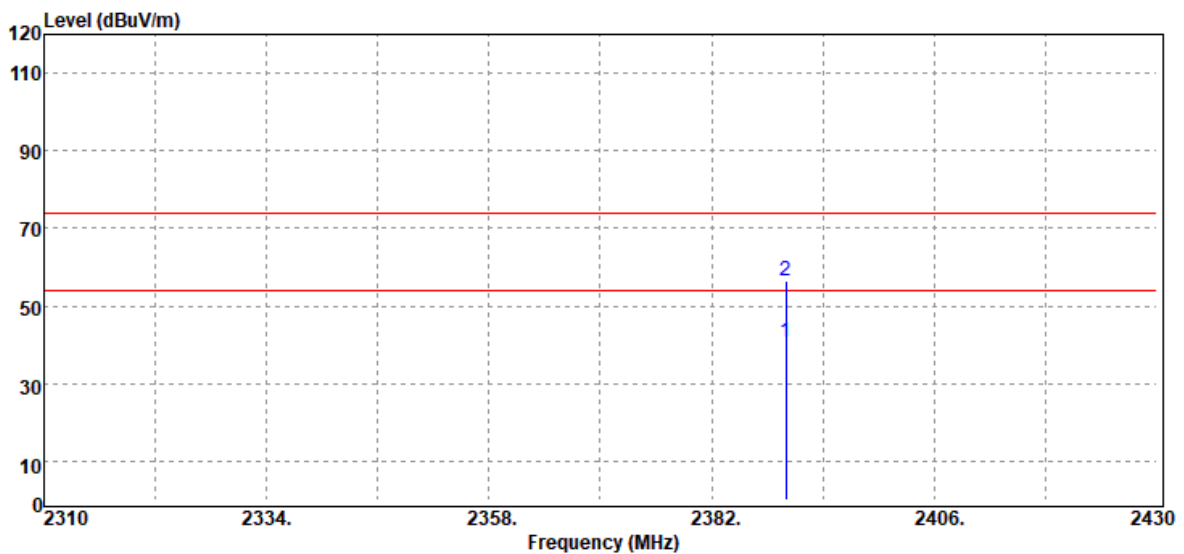
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV/m	Limit @3m dBμV/m	Margin dB
2483.50	Average	42.56	-2.83	39.73	54.00	-14.27
2483.50	Peak	52.29	-2.83	49.46	74.00	-24.54



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Test Mode	IEEE 802.11g Low CH	Temp/Hum	19.6(°C)/ 51%RH
Test Item	Band Edge	Test Date	December 4, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak / Average		



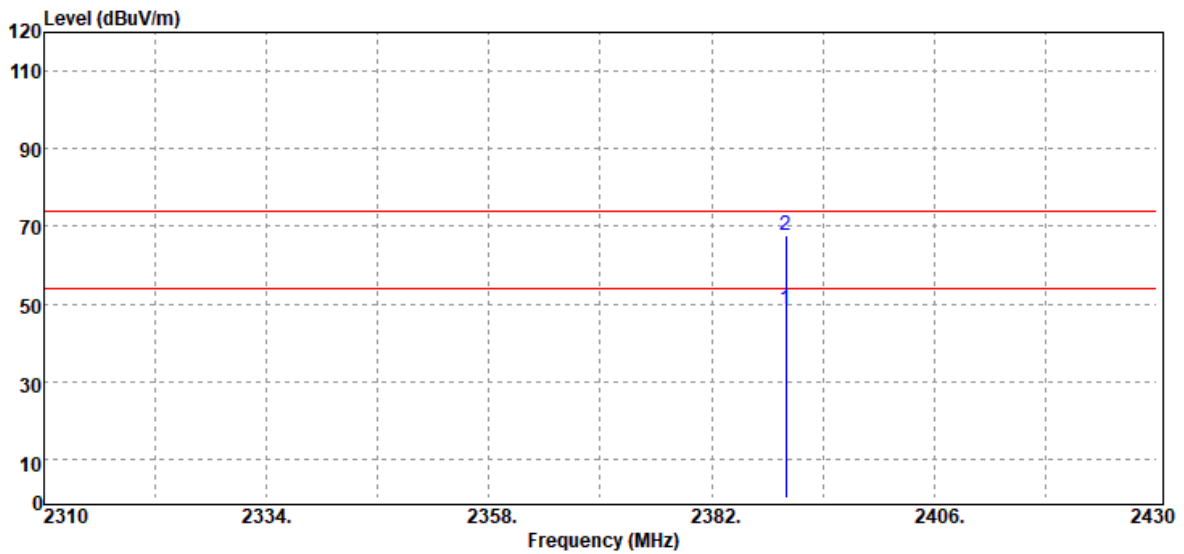
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB μ V	Factor dB	Actual FS dB μ V/m	Limit @3m dB μ V/m	Margin dB
2390.00	Average	43.99	-3.38	40.61	54.00	-13.39
2390.00	Peak	59.93	-3.38	56.55	74.00	-17.45



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Test Mode	IEEE 802.11g Low CH	Temp/Hum	19.6(°C)/ 51%RH
Test Item	Band Edge	Test Date	December 4, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak / Average		



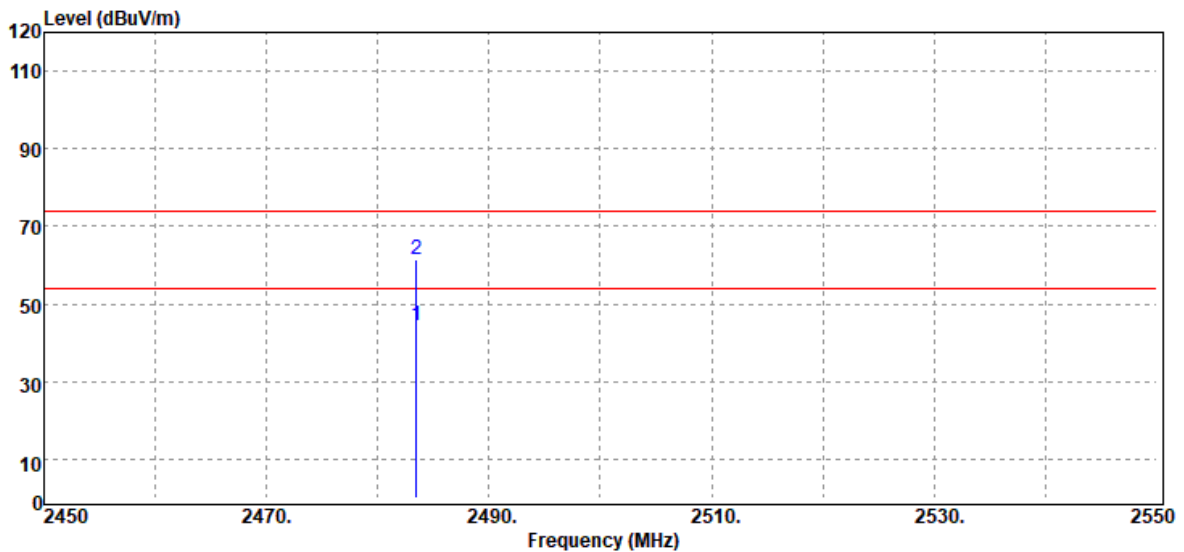
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV/m	Limit @3m dBμV/m	Margin dB
2390.00	Average	51.78	-3.38	48.40	54.00	-5.60
2390.00	Peak	71.05	-3.38	67.67	74.00	-6.33



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Test Mode	IEEE 802.11g high CH	Temp/Hum	19.6(°C)/ 51%RH
Test Item	Band Edge	Test Date	December 4, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak / Average		



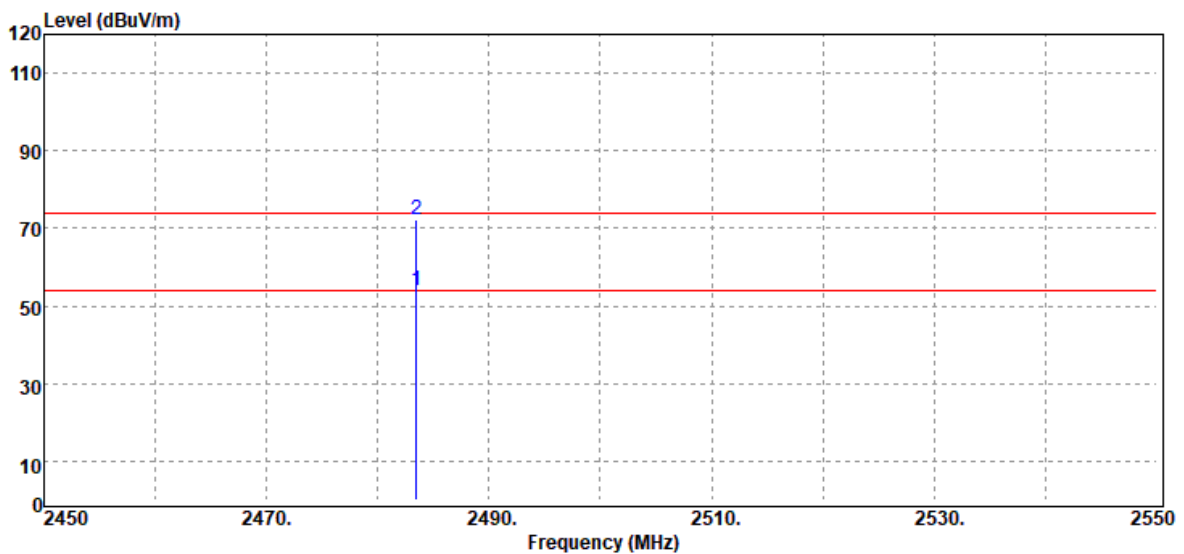
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV/m	Limit @3m dBμV/m	Margin dB
2483.50	Average	47.40	-2.83	44.57	54.00	-9.43
2483.50	Peak	64.49	-2.83	61.66	74.00	-12.34



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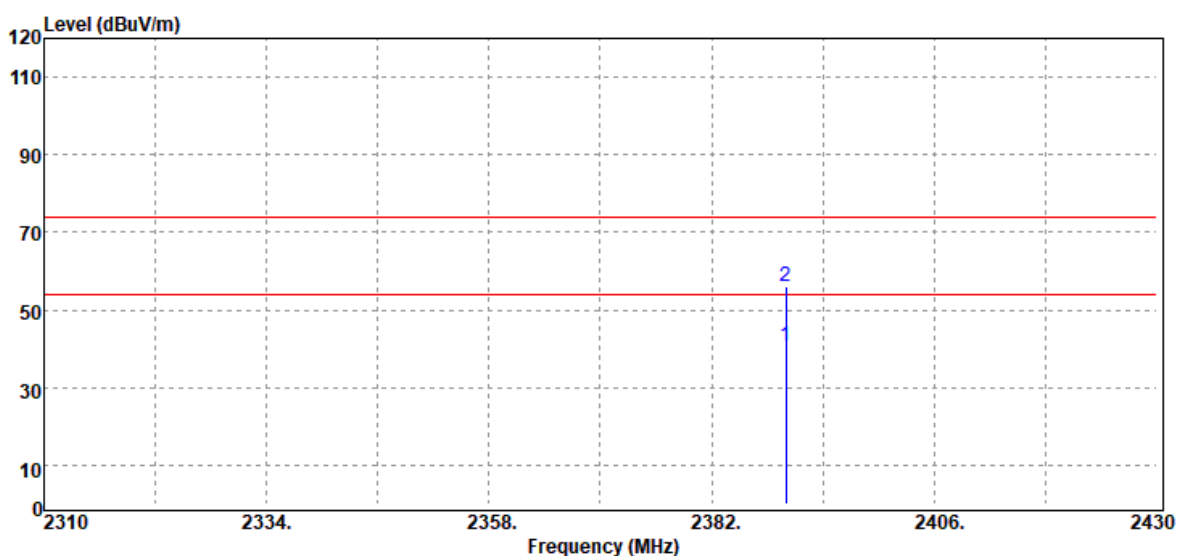
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Test Mode	IEEE 802.11g Low CH	Temp/Hum	19.6(°C)/ 51%RH
Test Item	Band Edge	Test Date	December 4, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak / Average		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV/m	Limit @3m dBμV/m	Margin dB
2483.50	Average	56.78	-2.83	53.95	54.00	-0.05
2483.50	Peak	74.97	-2.83	72.14	74.00	-1.86

Test Mode	IEEE 802.11n HT20 Low CH	Temp/Hum	19.6(°C)/ 51%RH
Test Item	Band Edge	Test Date	December 4, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak / Average		



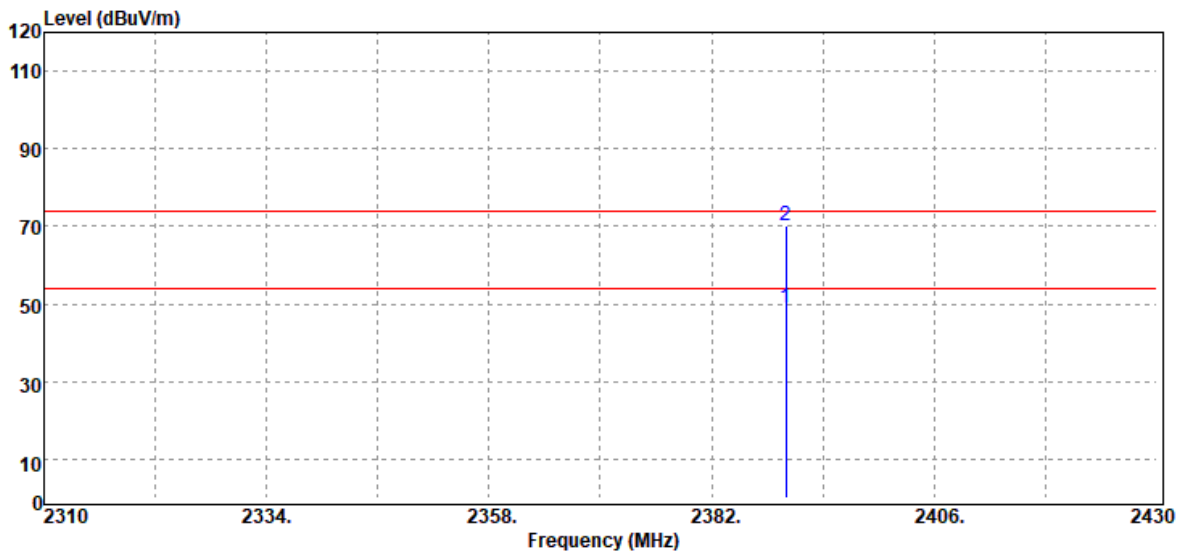
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBuV	Factor dB	Actual FS dBuV/m	Limit @3m dBuV/m	Margin dB
2390.00	Average	44.04	-3.38	40.66	54.00	-13.34
2390.00	Peak	59.62	-3.38	56.24	74.00	-17.76



Report No.: T191105W01-RP3

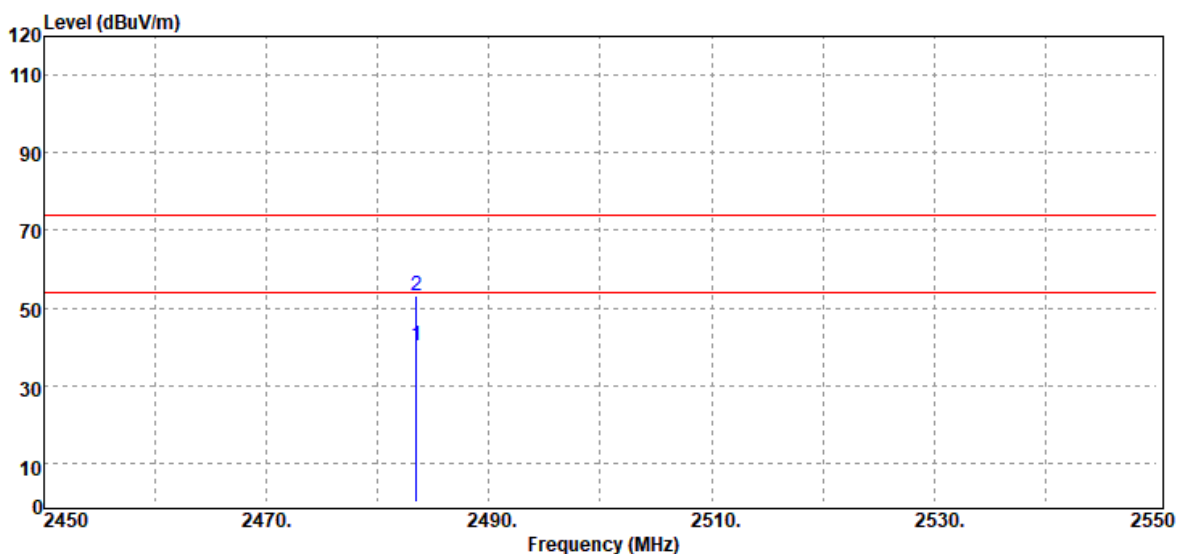
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Test Mode	IEEE 802.11n HT20 Low CH	Temp/Hum	19.6(°C)/ 51%RH
Test Item	Band Edge	Test Date	December 4, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak / Average		



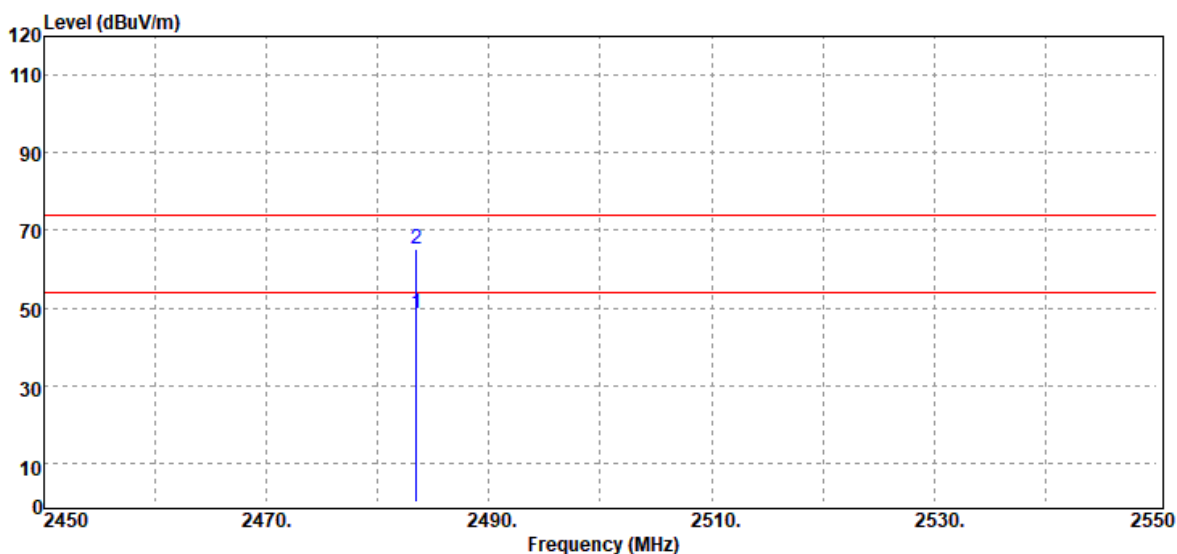
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV/m	Limit @3m dBμV/m	Margin dB
2390.00	Average	52.51	-3.38	49.13	54.00	-4.87
2390.00	Peak	73.54	-3.38	70.16	74.00	-3.84

Test Mode	IEEE 802.11n HT20 high CH	Temp/Hum	19.6(°C)/ 51%RH
Test Item	Band Edge	Test Date	December 4, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak / Average		



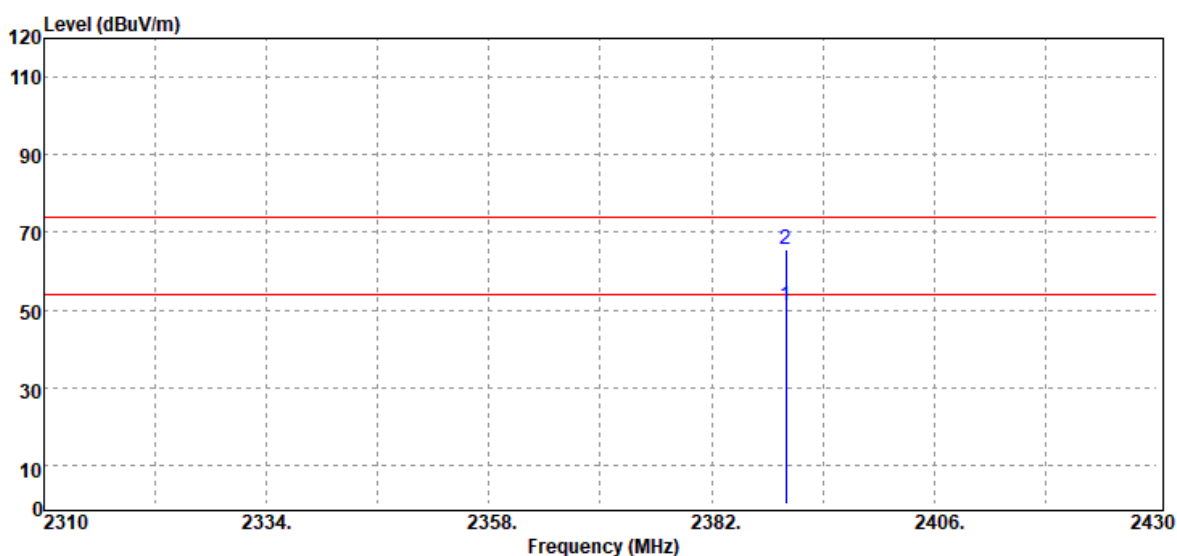
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV/m	Limit @3m dBμV/m	Margin dB
2483.50	Average	43.18	-2.83	40.35	54.00	-13.65
2483.50	Peak	55.87	-2.83	53.04	74.00	-20.96

Test Mode	IEEE 802.11n HT20 high CH	Temp/Hum	19.6(°C)/ 51%RH
Test Item	Band Edge	Test Date	December 4, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak / Average		



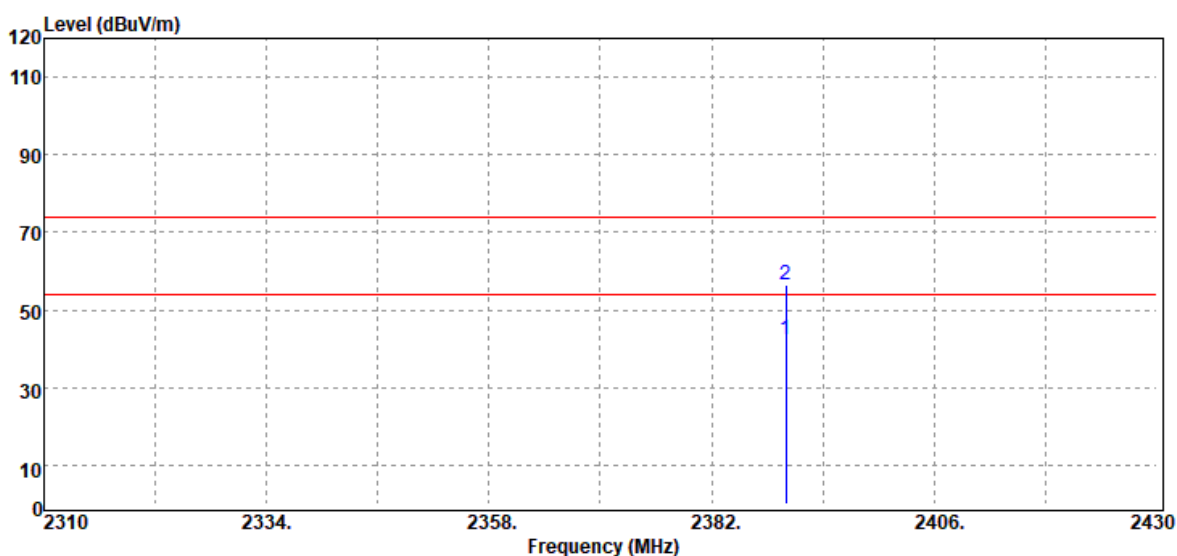
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBuV	Factor dB	Actual FS dBuV/m	Limit @3m dBuV/m	Margin dB
2483.50	Average	51.39	-2.83	48.56	54.00	-5.44
2483.50	Peak	67.92	-2.83	65.09	74.00	-8.91

Test Mode	IEEE 802.11n HT40 Low CH	Temp/Hum	19.6(°C)/ 51%RH
Test Item	Band Edge	Test Date	December 4, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak / Average		



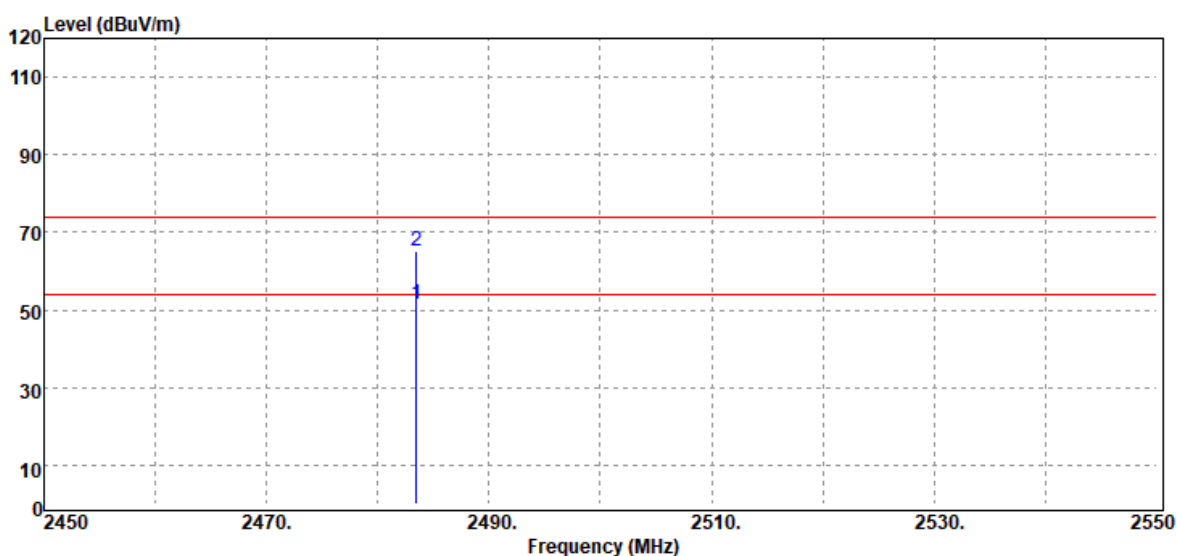
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV/m	Limit @3m dBμV/m	Margin dB
2390.00	Average	54.66	-3.38	51.28	54.00	-2.72
2390.00	Peak	69.17	-3.38	65.79	74.00	-8.21

Test Mode	IEEE 802.11n HT40 Low CH	Temp/Hum	19.6(°C)/ 51%RH
Test Item	Band Edge	Test Date	December 4, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak / Average		



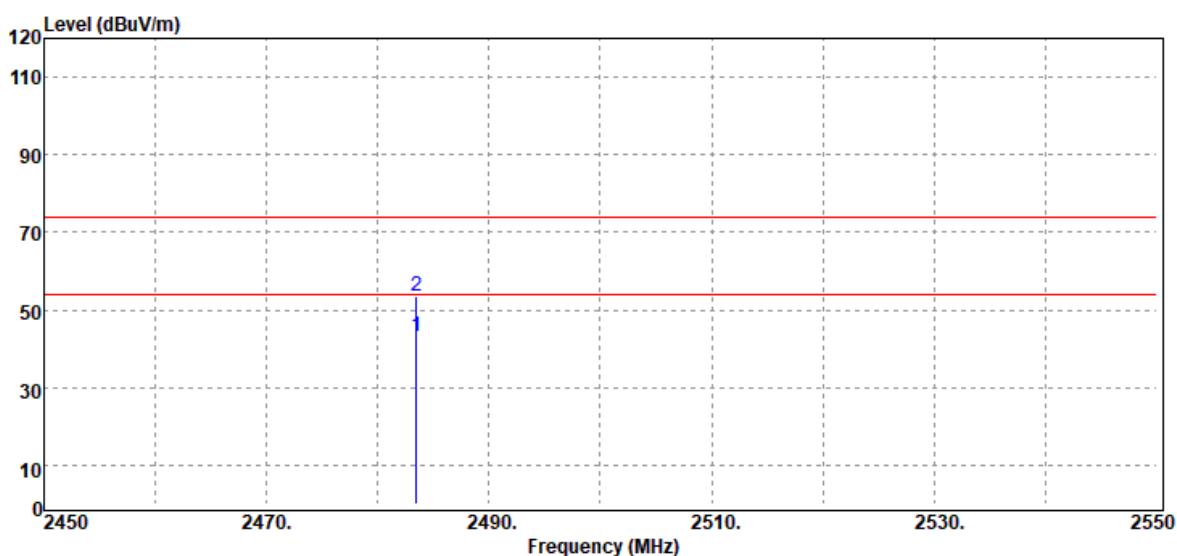
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBuV	Factor dB	Actual FS dBuV/m	Limit @3m dBuV/m	Margin dB
2390.00	Average	45.55	-3.38	42.17	54.00	-11.83
2390.00	Peak	59.65	-3.38	56.27	74.00	-17.73

Test Mode	IEEE 802.11n HT40 high CH	Temp/Hum	19.6(°C)/ 51%RH
Test Item	Band Edge	Test Date	December 4, 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
2483.50	Average	54.40	-2.83	51.57	54.00	-2.43
2483.50	Peak	67.86	-2.83	65.03	74.00	-8.97

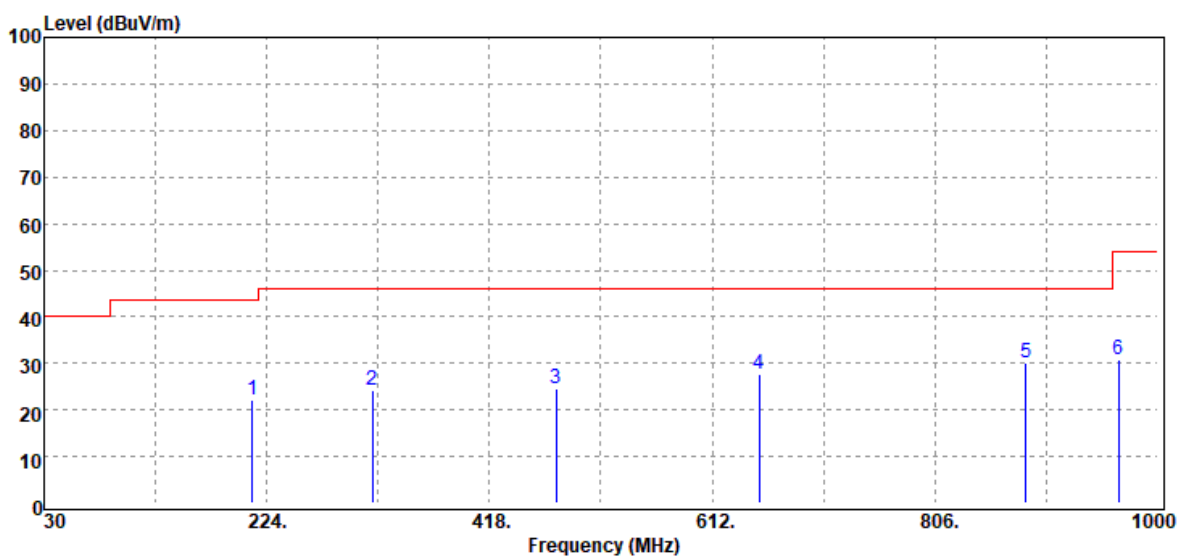
Test Mode	IEEE 802.11n HT40 high CH	Temp/Hum	19.6(°C)/ 51%RH
Test Item	Band Edge	Test Date	December 4, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak / Average		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV/m	Limit @3m dBμV/m	Margin dB
2483.50	Average	45.85	-2.83	43.02	54.00	-10.98
2483.50	Peak	56.30	-2.83	53.47	74.00	-20.53

Below 1G Test Data

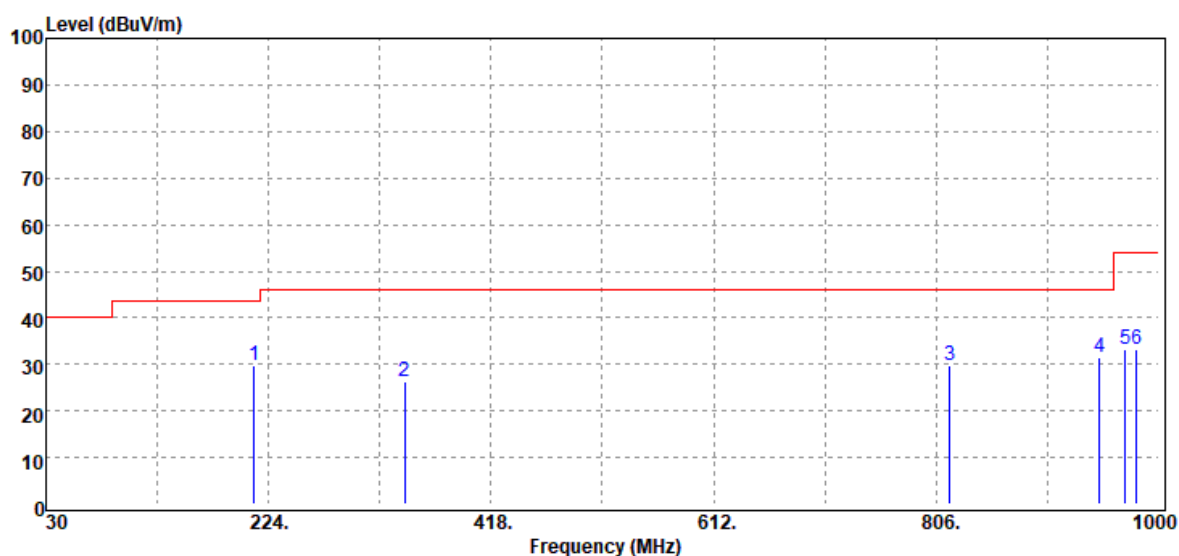
Test Mode	Mode 1	Temp/Hum	19.6(°C)/ 51%RH
Test Item	30MHz-1GHz	Test Date	December 4, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV/m	Limit @3m dBμV/m	Margin dB
211.39	Peak	33.62	-11.57	22.05	43.50	-21.45
316.15	Peak	31.79	-7.59	24.20	46.00	-21.80
476.20	Peak	27.61	-3.14	24.47	46.00	-21.53
652.74	Peak	28.12	-0.30	27.82	46.00	-18.18
885.54	Peak	26.23	3.79	30.02	46.00	-15.98
966.05	Peak	25.57	5.08	30.65	54.00	-23.35

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

Test Mode	Mode 1	Temp/Hum	19.6(°C)/ 51%RH
Test Item	30MHz-1GHz	Test Date	December 4, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		

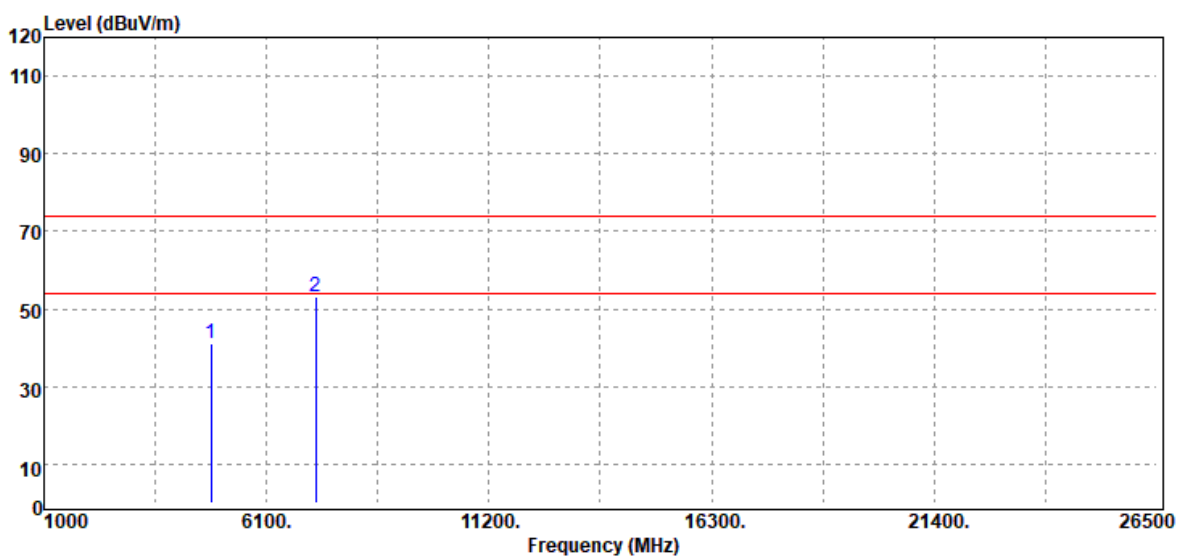


Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV/m	Limit @3m dBμV/m	Margin dB
211.39	Peak	41.38	-11.57	29.81	43.50	-13.69
342.34	Peak	33.58	-7.19	26.39	46.00	-19.61
817.64	Peak	26.76	2.84	29.60	46.00	-16.40
948.59	Peak	27.59	3.97	31.56	46.00	-14.44
970.90	Peak	27.82	5.37	33.19	54.00	-20.81
980.60	Peak	27.66	5.72	33.38	54.00	-20.62

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

Above 1G Test Data

Test Mode	IEEE 802.11b Low CH	Temp/Hum	19.6(°C)/ 51%RH
Test Item	Harmonic	Test Date	December 4, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak		

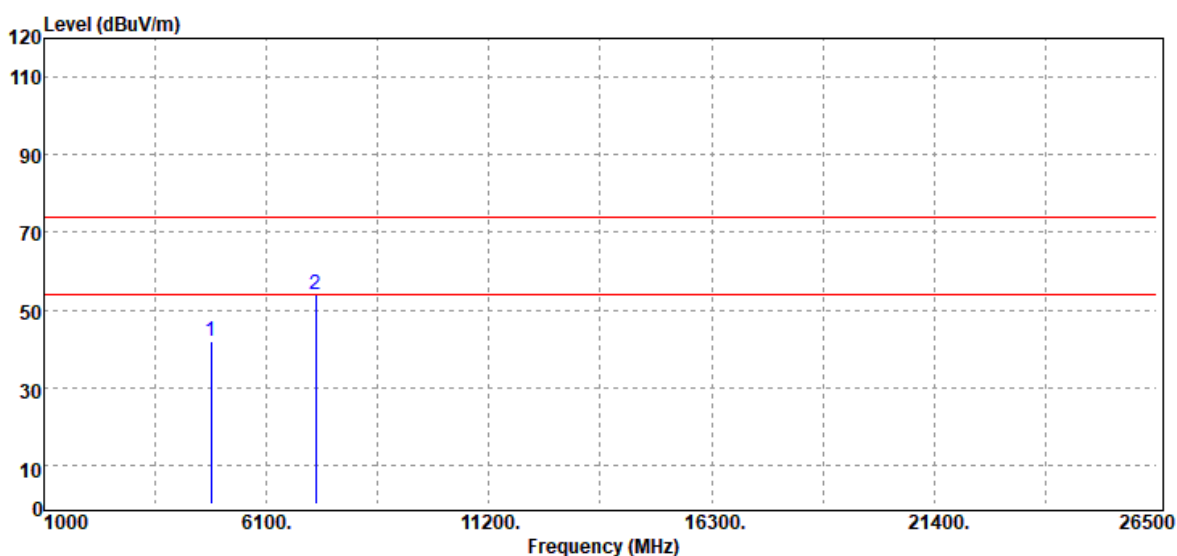


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4824.00	38.29	2.84	41.13	74.00	-32.87	Peak
7236.00	42.63	10.44	53.07	74.00	-20.93	Peak
N/A						

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

Test Mode	IEEE 802.11b Low CH	Temp/Hum	19.6(°C)/ 51%RH
Test Item	Harmonic	Test Date	December 4, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		

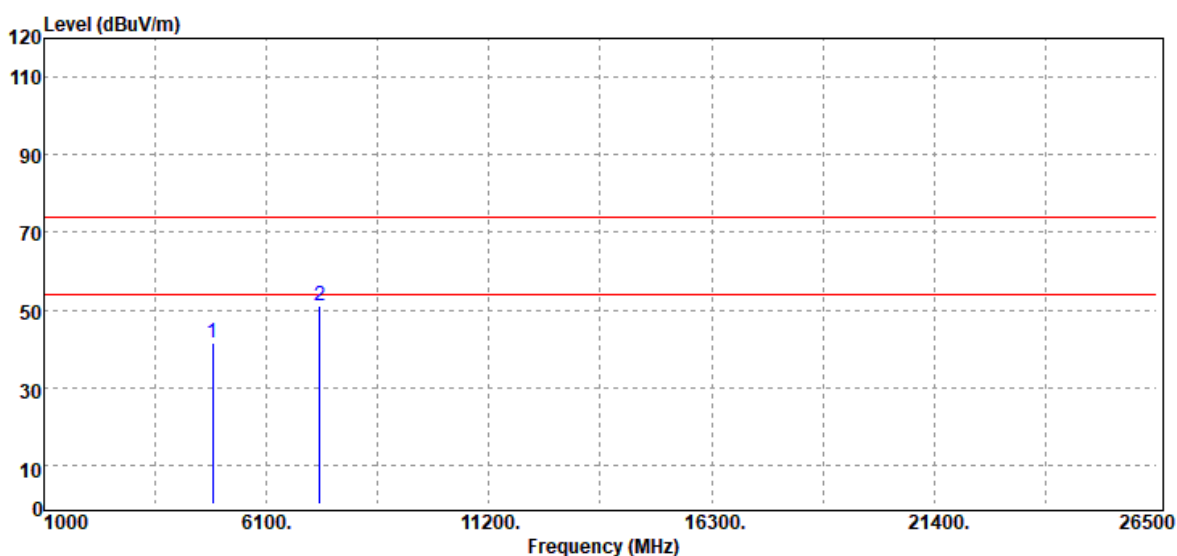


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4824.00	39.29	2.84	42.13	74.00	-31.87	Peak
7236.00	43.36	10.44	53.80	74.00	-20.20	Peak
N/A						

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

Test Mode	IEEE 802.11b Mid CH	Temp/Hum	19.6(°C)/ 51%RH
Test Item	Harmonic	Test Date	December 4, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak		

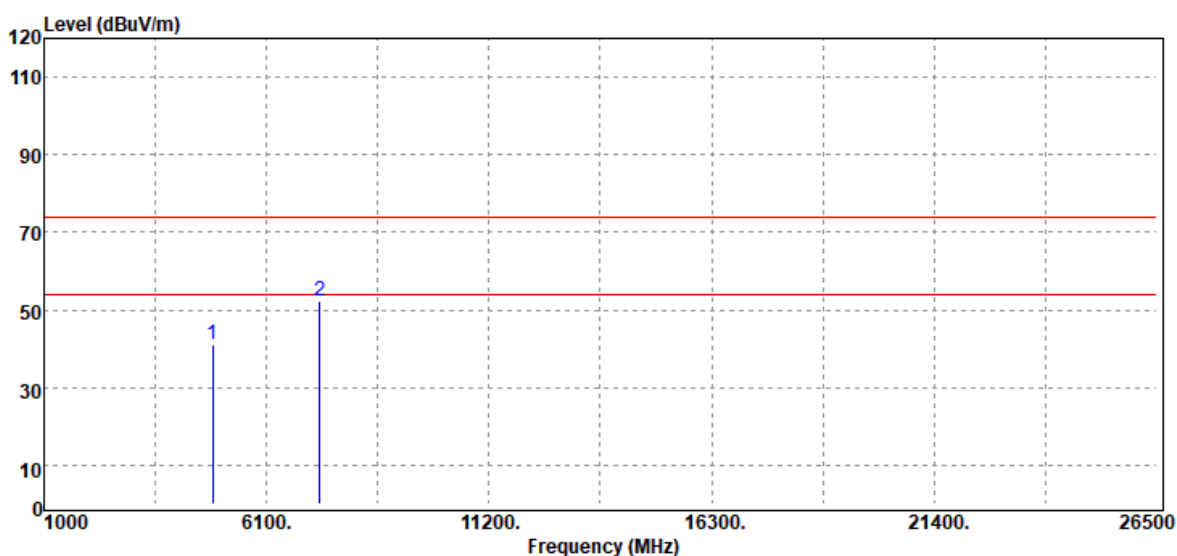


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4874.00	38.41	2.98	41.39	74.00	-32.61	Peak
7311.00	40.58	10.60	51.18	74.00	-22.82	Peak
N/A						

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

Test Mode	IEEE 802.11b Mid CH	Temp/Hum	19.6(°C)/ 51%RH
Test Item	Harmonic	Test Date	December 4, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		

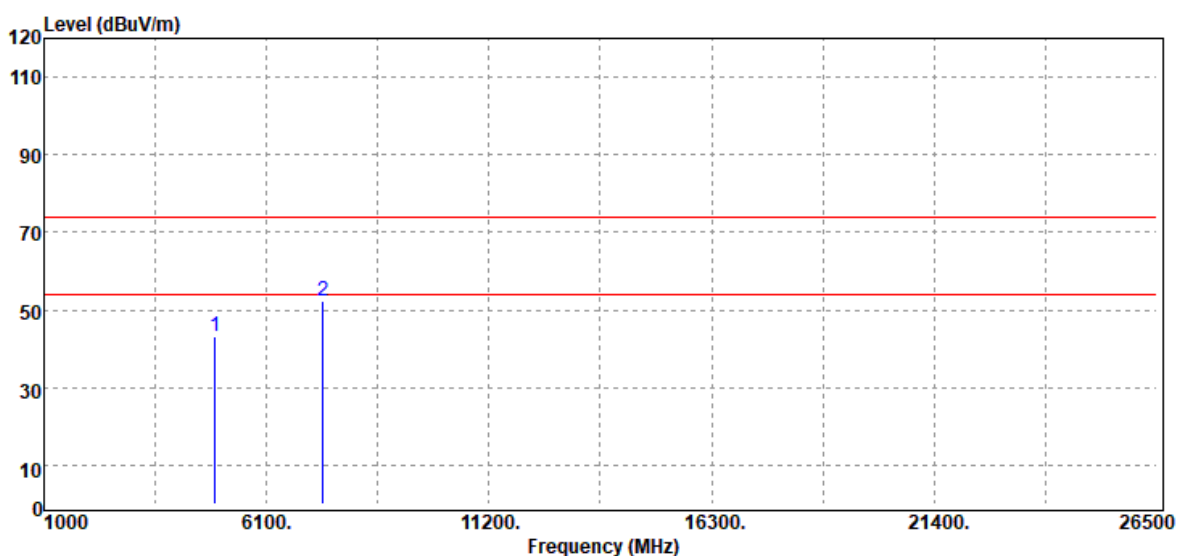


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4874.00	38.32	2.98	41.30	74.00	-32.70	Peak
7311.00	41.63	10.60	52.23	74.00	-21.77	Peak
N/A						

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

Test Mode	IEEE 802.11b High CH	Temp/Hum	19.6(°C)/ 51%RH
Test Item	Harmonic	Test Date	December 4, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak		

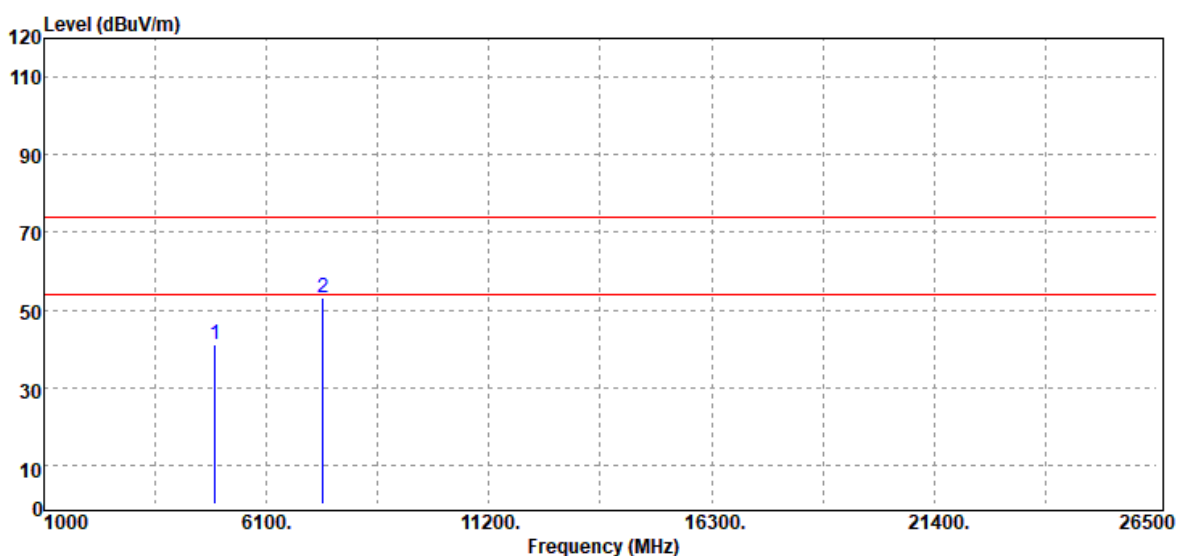


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4924.00	39.88	3.46	43.34	74.00	-30.66	Peak
7386.00	41.37	10.85	52.22	74.00	-21.78	Peak
N/A						

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

Test Mode	IEEE 802.11b High CH	Temp/Hum	19.6(°C)/ 51%RH
Test Item	Harmonic	Test Date	December 4, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		

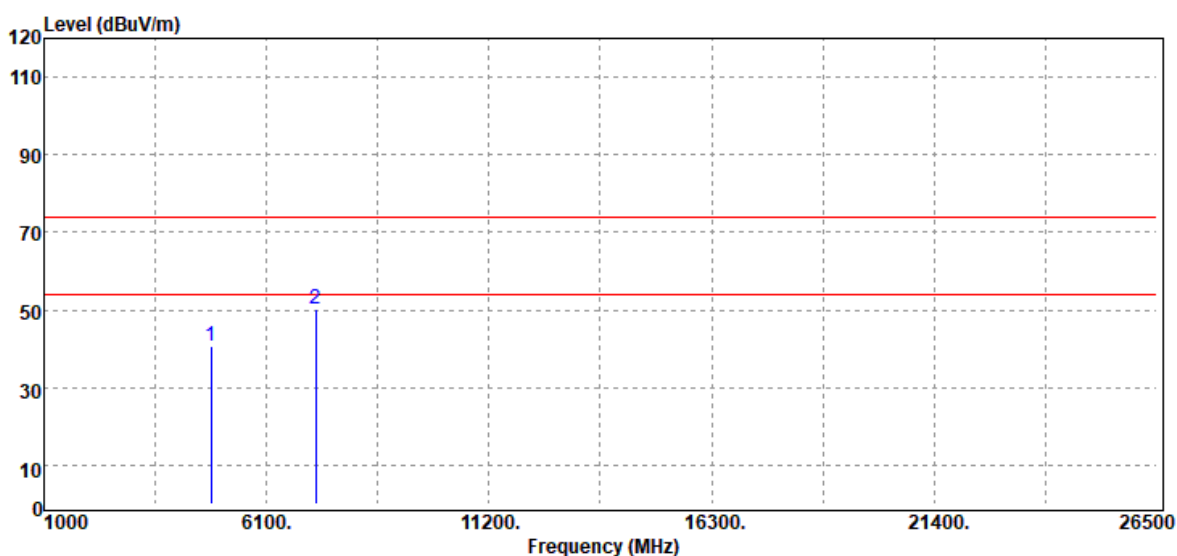


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4924.00	37.83	3.46	41.29	74.00	-32.71	Peak
7386.00	42.15	10.85	53.00	74.00	-21.00	Peak
N/A						

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

Test Mode	IEEE 802.11g Low CH	Temp/Hum	19.6(°C)/ 51%RH
Test Item	Harmonic	Test Date	December 4, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak		

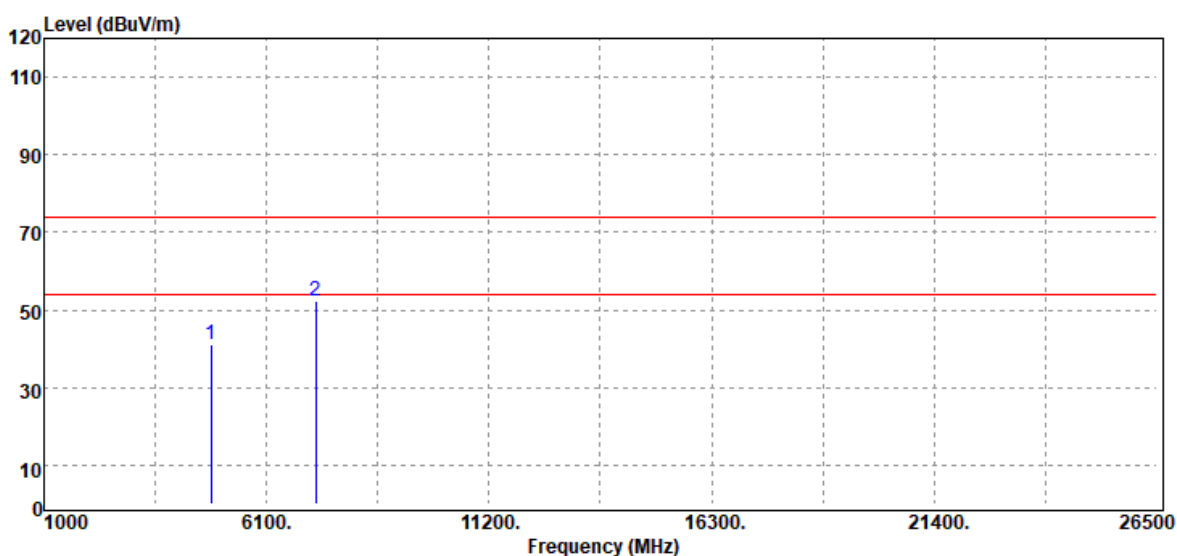


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4824.00	38.02	2.84	40.86	74.00	-33.14	Peak
7236.00	39.68	10.44	50.12	74.00	-23.88	Peak
N/A						

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

Test Mode	IEEE 802.11g Low CH	Temp/Hum	19.6(°C)/ 51%RH
Test Item	Harmonic	Test Date	December 4, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		

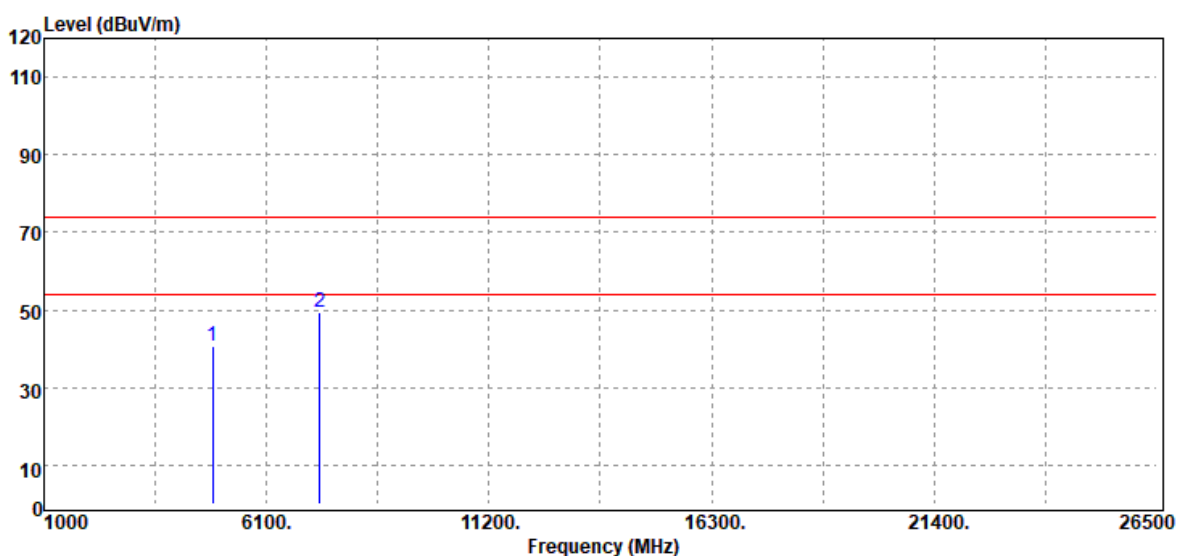


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4824.00	38.40	2.84	41.24	74.00	-32.76	Peak
7236.00	41.70	10.44	52.14	74.00	-21.86	Peak
N/A						

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

Test Mode	IEEE 802.11g Mid CH	Temp/Hum	19.6(°C)/ 51%RH
Test Item	Harmonic	Test Date	December 4, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak		

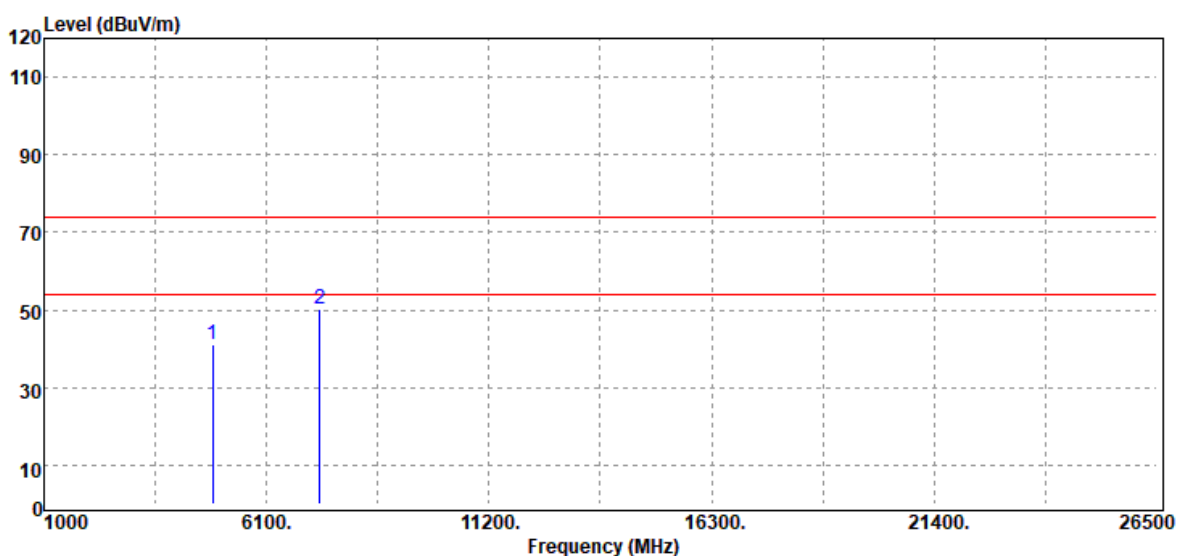


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4874.00	37.89	2.98	40.87	74.00	-33.13	Peak
7311.00	38.61	10.60	49.21	74.00	-24.79	Peak
N/A						

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

Test Mode	IEEE 802.11g Mid CH	Temp/Hum	19.6(°C)/ 51%RH
Test Item	Harmonic	Test Date	December 4, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		

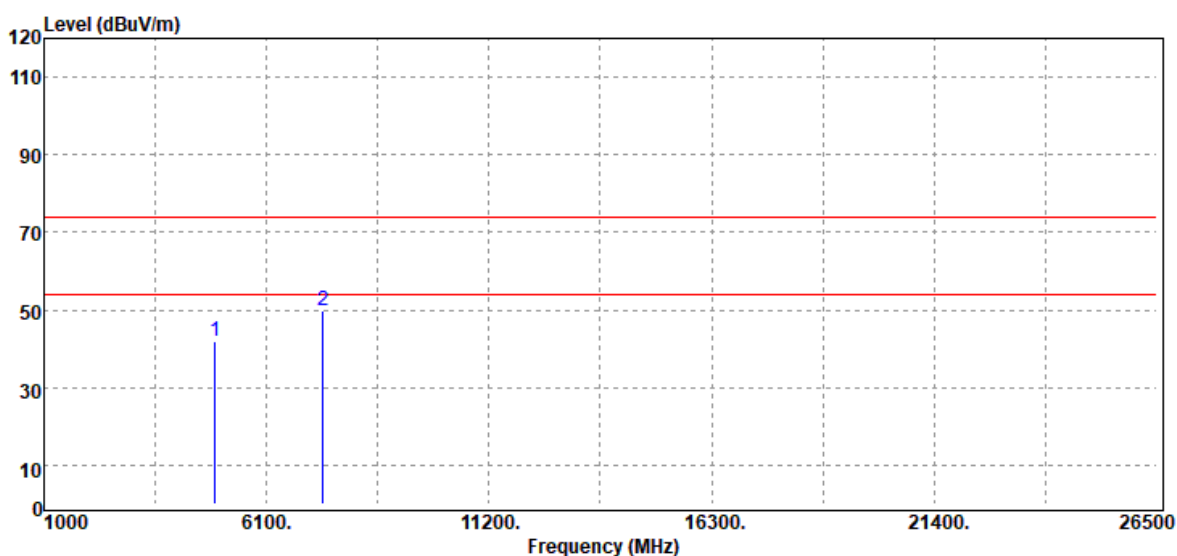


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4874.00	37.93	2.98	40.91	74.00	-33.09	Peak
7311.00	39.54	10.60	50.14	74.00	-23.86	Peak
N/A						

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

Test Mode	IEEE 802.11g High CH	Temp/Hum	19.6(°C)/ 51%RH
Test Item	Harmonic	Test Date	December 4, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak		

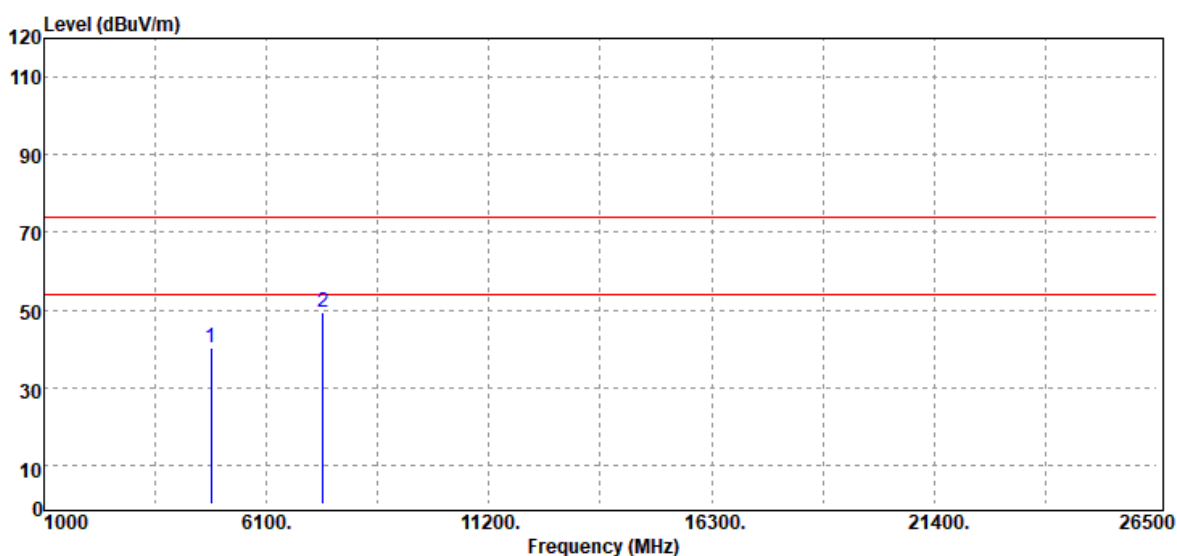


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4924.00	38.29	3.46	41.75	74.00	-32.25	Peak
7386.00	38.86	10.85	49.71	74.00	-24.29	Peak
N/A						

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

Test Mode	IEEE 802.11g High CH	Temp/Hum	19.6(°C)/ 51%RH
Test Item	Harmonic	Test Date	December 4, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		

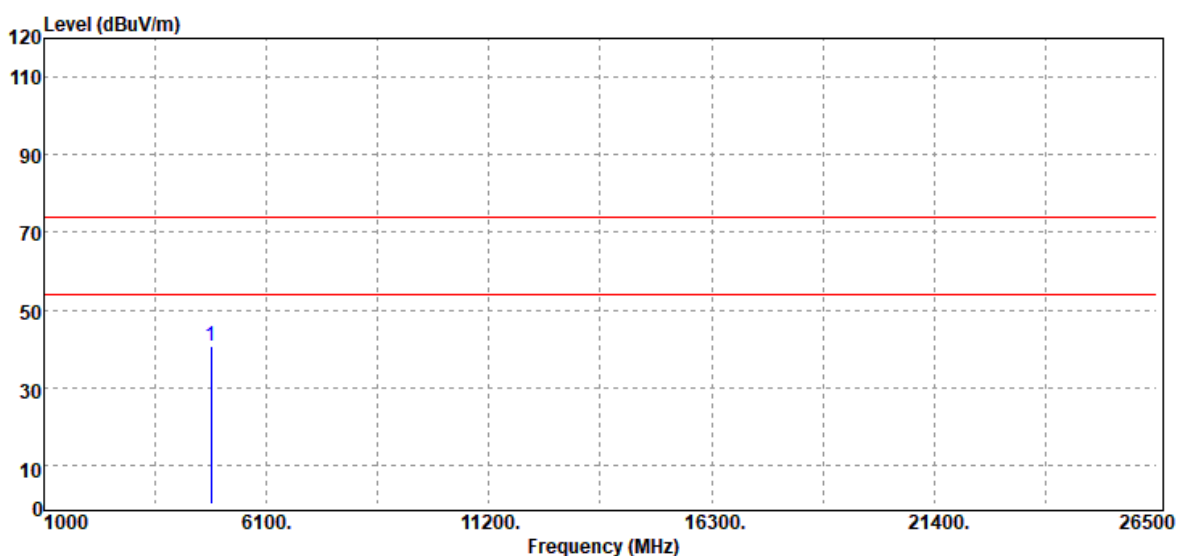


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4824.00	37.53	2.84	40.37	74.00	-33.63	Peak
7386.00	38.70	10.85	49.55	74.00	-24.45	Peak
N/A						

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

Test Mode	IEEE 802.11n HT20 Low CH	Temp/Hum	19.6(°C)/ 51%RH
Test Item	Harmonic	Test Date	December 4, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak		

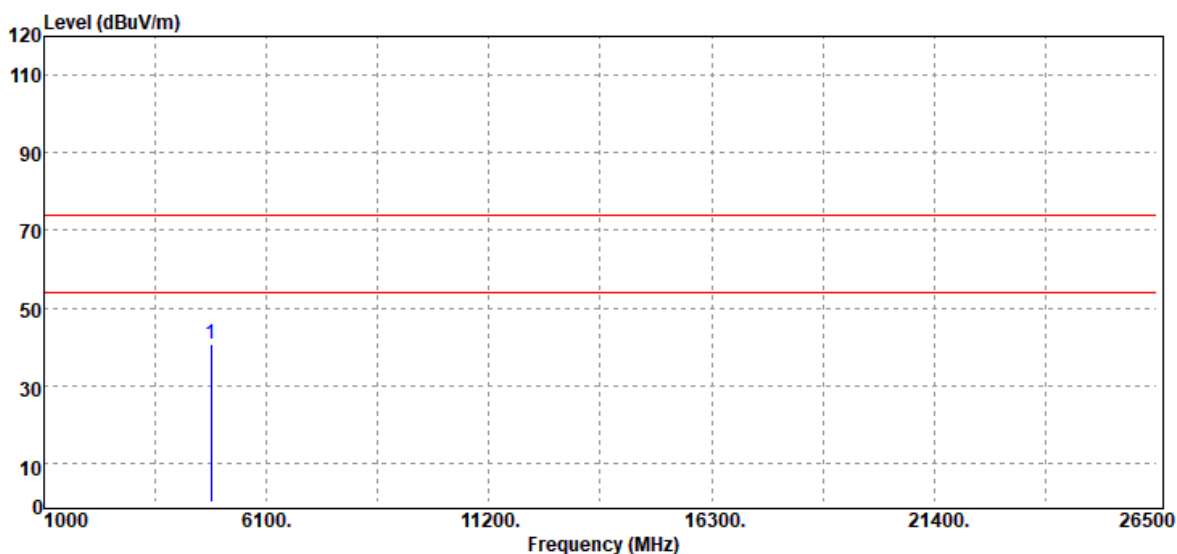


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4824.00	37.79	2.84	40.63	74.00	-33.37	Peak
N/A						

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

Test Mode	IEEE 802.11n HT20 Low CH	Temp/Hum	19.6(°C)/ 51%RH
Test Item	Harmonic	Test Date	December 4, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		

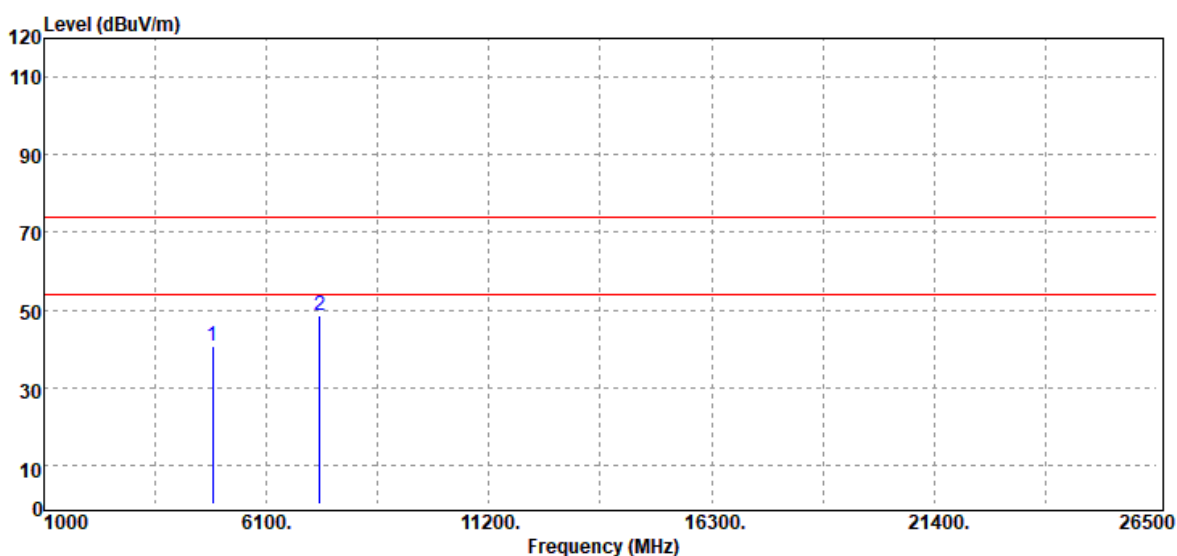


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4824.00	37.99	2.84	40.83	74.00	-33.17	Peak
N/A						

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

Test Mode	IEEE 802.11n HT20 Mid CH	Temp/Hum	19.6(°C)/ 51%RH
Test Item	Harmonic	Test Date	December 4, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak		

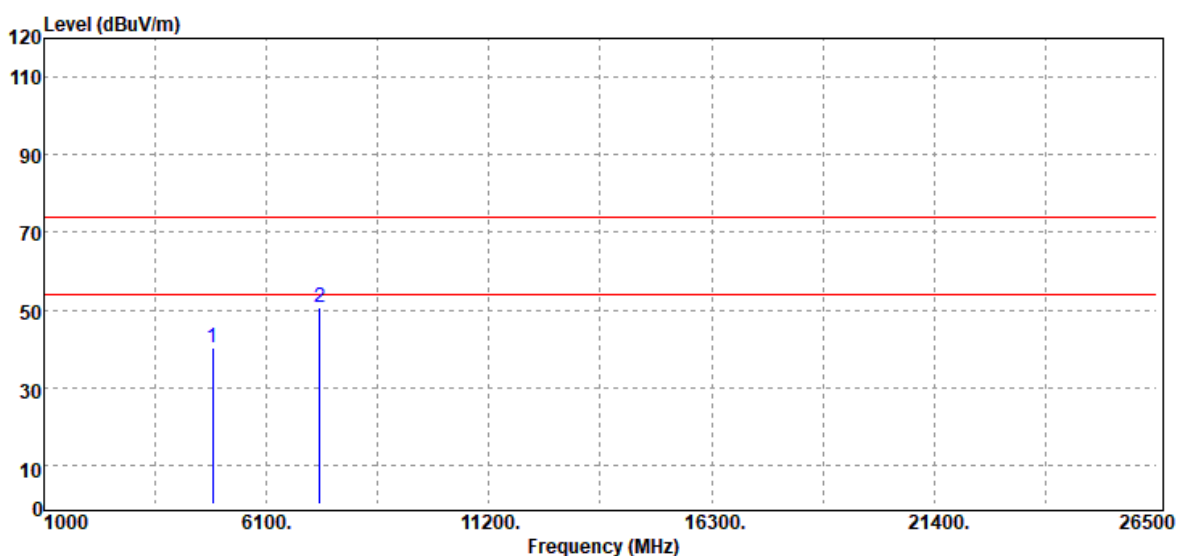


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4874.00	37.86	2.98	40.84	74.00	-33.16	Peak
7311.00	38.02	10.60	48.62	74.00	-25.38	Peak
N/A						

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

Test Mode	IEEE 802.11n HT20 Mid CH	Temp/Hum	19.6(°C)/ 51%RH
Test Item	Harmonic	Test Date	December 4, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		

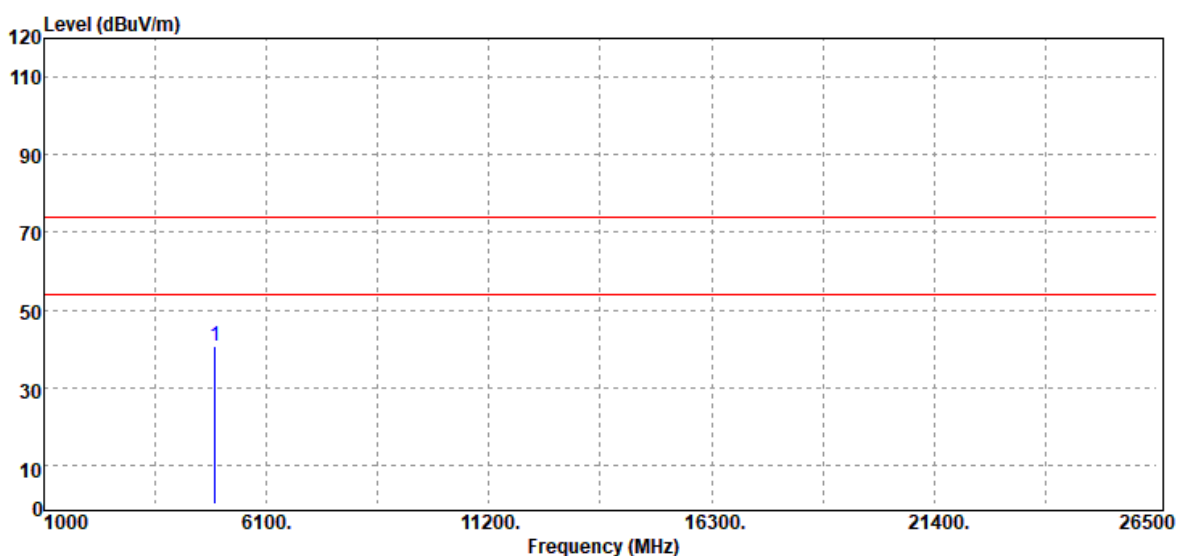


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4874.00	37.40	2.98	40.38	74.00	-33.62	Peak
7311.00	40.23	10.60	50.83	74.00	-23.17	Peak
N/A						

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

Test Mode	IEEE 802.11n HT20 High CH	Temp/Hum	19.6(°C)/ 51%RH
Test Item	Harmonic	Test Date	December 4, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak		

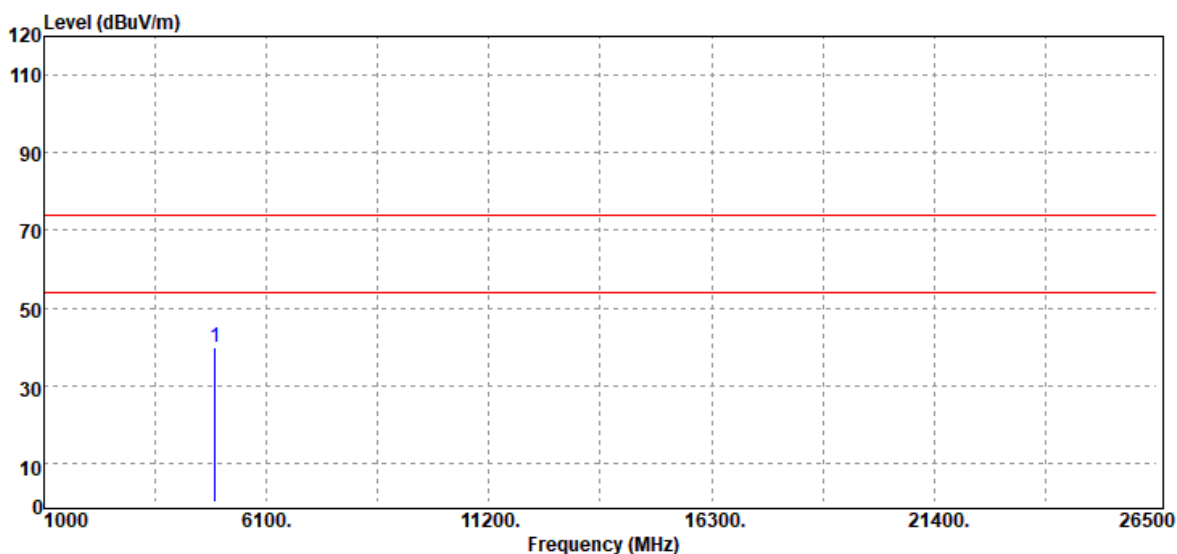


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4924.00	37.09	3.46	40.55	74.00	-33.45	Peak
N/A						

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

Test Mode	IEEE 802.11n HT20 High CH	Temp/Hum	19.6(°C)/ 51%RH
Test Item	Harmonic	Test Date	December 4, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		

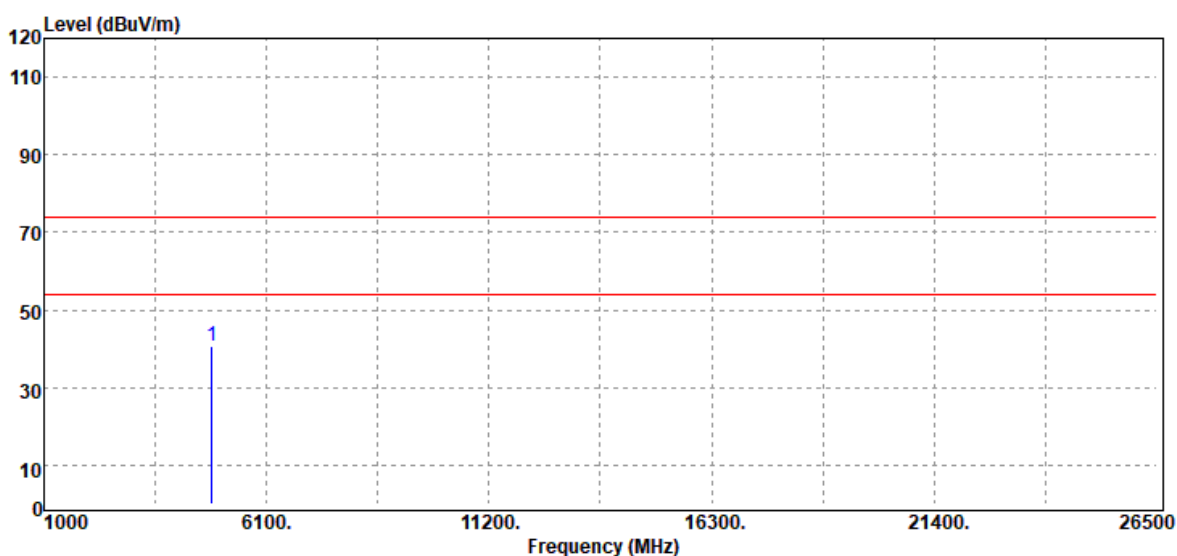


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4924.00	36.29	3.46	39.75	74.00	-34.25	Peak
N/A						

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

Test Mode	IEEE 802.11n HT40 Low CH	Temp/Hum	19.6(°C)/ 51%RH
Test Item	Harmonic	Test Date	December 4, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak		

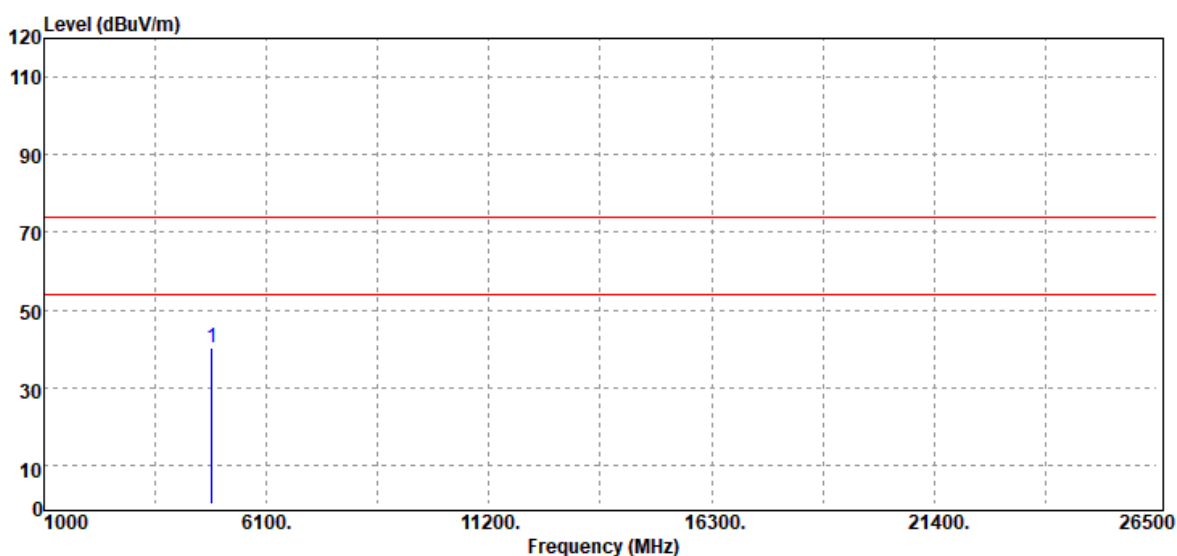


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4844.00	37.79	2.84	40.63	74.00	-33.37	Peak
N/A						

Remark:

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

Test Mode	IEEE 802.11n HT40 Low CH	Temp/Hum	19.6(°C)/ 51%RH
Test Item	Harmonic	Test Date	December 4, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		

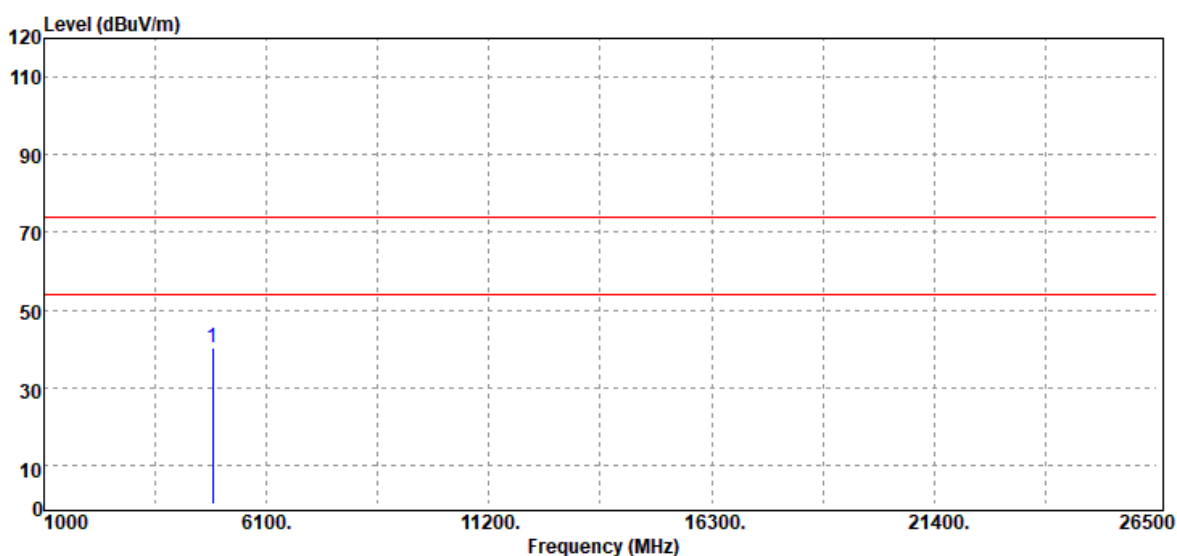


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4844.00	37.44	2.84	40.28	74.00	-33.72	Peak
N/A						

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

Test Mode	IEEE 802.11n HT40 Mid CH	Temp/Hum	19.6(°C)/ 51%RH
Test Item	Harmonic	Test Date	December 4, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak		

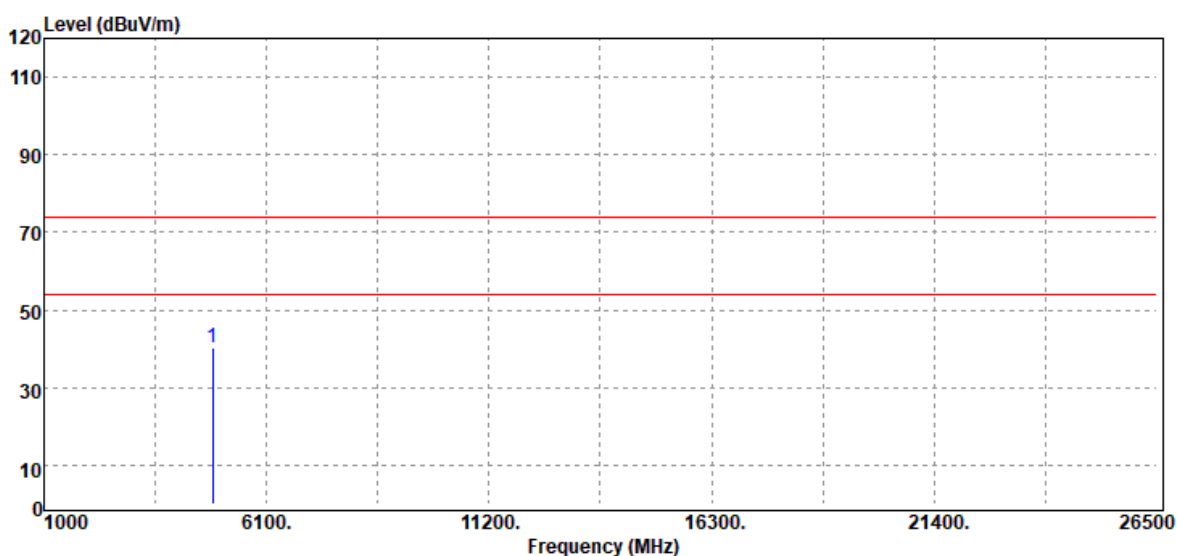


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4874.00	37.16	2.98	40.14	74.00	-33.86	Peak
N/A						

Remark:

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

Test Mode	IEEE 802.11n HT40 Mid CH	Temp/Hum	19.6(°C)/ 51%RH
Test Item	Harmonic	Test Date	December 4, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		

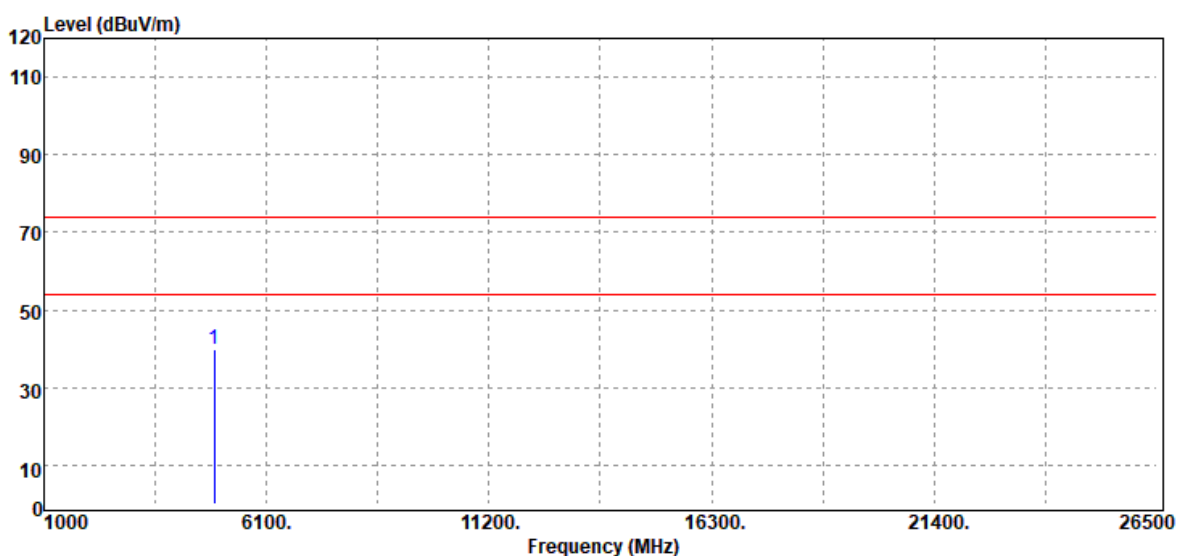


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4874.00	37.19	2.98	40.17	74.00	-33.83	Peak
N/A						

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

Test Mode	IEEE 802.11n HT40 High CH	Temp/Hum	19.6(°C)/ 51%RH
Test Item	Harmonic	Test Date	December 4, 2019
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak		

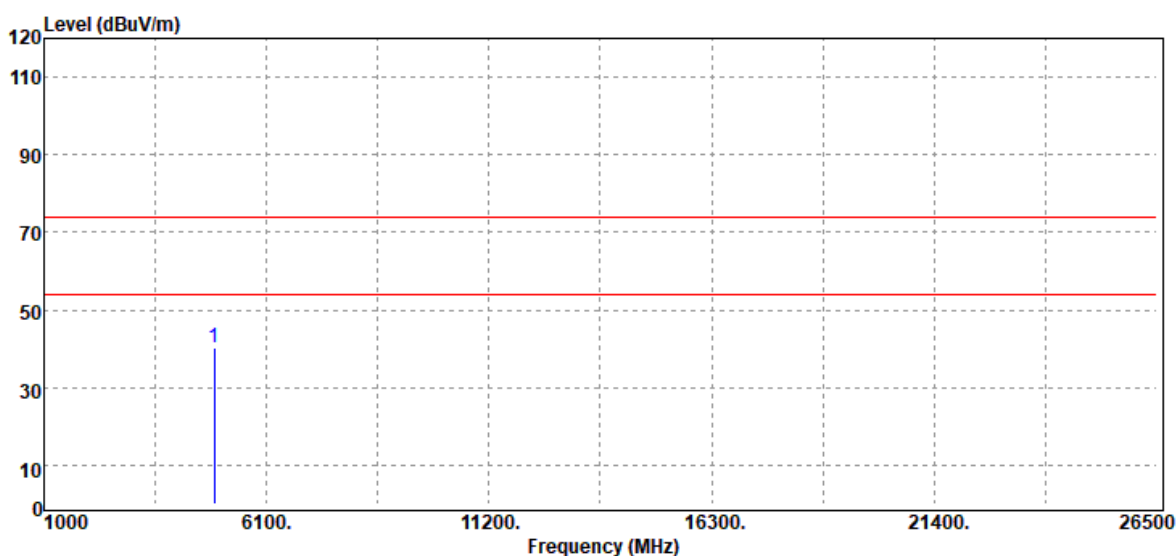


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4904.00	36.68	3.22	39.90	74.00	-34.10	Peak
N/A						

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

Test Mode	IEEE 802.11n HT40 High CH	Temp/Hum	19.6(°C)/ 51%RH
Test Item	Harmonic	Test Date	December 4, 2019
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4904.00	37.06	3.22	40.28	74.00	-33.72	Peak
N/A						

Remark:

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

- End of Test Report -