

RADIO TEST REPORT

FCC 47 CFR PART 15 SUBPART C

Test Standard	FCC Part 15.247
Brand name	ADT
Product name	Extender + Chime
Model No.	SCB1R0-29xxxxx(the 1st x should be "blank" or "-"; the rest x could be 0 to 9, A to Z, a to z, "blank" or "-", for the marketing purpose)
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.

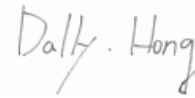
The test Result was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were given in ANSI C63.10: 2013 and compliance standards.

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	December 6, 2019	Initial Issue	ALL	Allison Chen
01	December 10, 2019	See the following note Rev.(01)	P.12	Allison Chen

Rev.(01)

1. Modify description RE above 1GHz in section 3.2.

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1. GENERAL INFORMATION

1.1 EUT INFORMATION

Applicant	Sercomm Corporation 8F, No. 3-1, YuanQu St., NanKang, Taipei 115, Taiwan		
Manufacturer	Sercomm Corporation 8F, No. 3-1, YuanQu St., NanKang, Taipei 115, Taiwan		
Equipment	Extender + Chime		
Model Name	SCB1R0-29xxxxx(the 1st x should be "blank" or "-"; the rest x could be 0 to 9, A to Z, a to z, "blank" or "-", for the marketing purpose)		
Model Discrepancy	All the above models are identical except for the designation of model numbers. The suffix of (the 1st x should be "blank" or "-"; the rest x could be 0 to 9, A to Z, a to z, "blank" or "-", for the marketing purpose) on model number is just for marketing purpose only.		
Trade Name	ADT		
Received Date	November 04, 2019		
Date of Test	November 15 ~ December 4, 2019		
Output Power(W)	Mode	Output Power (W)	
	IEEE 802.11b Mode	0.3206	
	IEEE 802.11g Mode	0.6722	
	IEEE 802.11n HT20 Mode	0.7393	
	IEEE 802.11n HT40 Mode	0.6384	
EUT Power Rating:	Power from AC power. (120Vac, 60Hz)		

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1.2 EUT CHANNEL INFORMATION

Frequency Range	802.11b/g/n HT20: 2412MHz ~ 2462MHz 802.11n HT40: 2422MHz ~ 2452MHz
Modulation Type	1. IEEE 802.11b Mode: DSSS(DBPSK/DQPSK/CCK) 2. IEEE 802.11g Mode: OFDM (BPSK/QPSK/16QAM/64QAM) 3. IEEE 802.11n HT20 Mode : OFDM (BPSK/QPSK/16QAM/64QAM) 4. IEEE 802.11n HT40 Mode : OFDM (BPSK/QPSK/16QAM/64QAM)
Number of channels	1. IEEE 802.11b Mode: 11 Channels 2. IEEE 802.11g Mode: 11 Channels 3. IEEE 802.11n HT20 Mode : 11 Channels 4. IEEE 802.11n HT40 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
<input type="checkbox"/> 1 MHz or less	1	Middle
<input type="checkbox"/> 1 MHz to 10 MHz	2	1 near top and 1 near bottom
<input checked="" type="checkbox"/> More than 10 MHz	3	1 near top, 1 near middle, and 1 near bottom

1.3 ANTENNA INFORMATION

Antenna Type	<input type="checkbox"/> PIFA <input type="checkbox"/> PCB <input checked="" type="checkbox"/> Dipole <input type="checkbox"/> Coils
Antenna Gain	Chain 0: Gain: 2.3dBi Chain 1: Gain: 2.7dBi Power Directional Gain: 2.5dBi
Antenna Connector	i-pex

Notes:

1. Power Directional Gain: $10\text{LOG}(((10^{\text{Ant1}/10})+10^{\text{Ant2}/10}))/2$

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	Dally Hong	-
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					
Equipment	Manufacturer	Model	S/N	Cal Date	Cal Due
Coaxial Cable	Woken	WC12	CC001	06/28/2019	06/27/2020
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:

1. Each piece of equipment is scheduled for calibration once a year.
2. N.C.R. = No Calibration Request.

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 (C)	HP	dv6-1332TX	N/A	CNF9491GPS

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, KDB 662911 D01.

2. TEST SUMMERY

FCC Standard Section	Report Section	Test Item	Result
15.203	1.3	Antenna Requirement	Pass
15.207(a)	5.1	AC Conducted Emission	Pass
15.247(a)(2)	5.2	6 dB Bandwidth	Pass
2.1049	5.2	Occupied Bandwidth (99%)	Pass
15.247(b)(3)	5.3	Output Power Measurement	Pass
15.247(e)	5.4	Power Spectral Density	Pass
15.247(d)	5.5	Conducted Band Edge	Pass
15.247(d)	5.5	Conducted Spurious Emission	Pass
15.247(d)	5.6	Radiation Band Edge	Pass
15.247(d)	5.6	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: MCS8 IEEE 802.11n HT40 Mode: MCS8
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: 2T2R IEEE 802.11n HT20 Mode: 2T2R IEEE 802.11n HT40 Mode: 2T2R

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

AC Power Line Conducted Emission	
Test Condition	AC Power line conducted emission for line and neutral
Power supply Mode	Mode 1: EUT power by AC power.
Worst Mode	<input checked="" type="checkbox"/> Mode 1 <input type="checkbox"/> Mode 2 <input type="checkbox"/> Mode 3 <input type="checkbox"/> Mode 4

Radiated Emission Measurement Above 1G	
Test Condition	Band edge, Emission for Unwanted and Fundamental
Power supply Mode	Mode 1: EUT power by AC power.
Worst Mode	<input checked="" type="checkbox"/> Mode 1 <input type="checkbox"/> Mode 2 <input type="checkbox"/> Mode 3 <input type="checkbox"/> Mode 4
Worst Position	<input type="checkbox"/> Placed in fixed position. <input type="checkbox"/> Placed in fixed position at X-Plane (E2-Plane) <input checked="" type="checkbox"/> Placed in fixed position at Y-Plane (E1-Plane) <input type="checkbox"/> 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 AC power.
Worst Mode	<input checked="" type="checkbox"/> Mode 1 <input type="checkbox"/> Mode 2 <input type="checkbox"/> Mode 3 <input type="checkbox"/> Mode 4

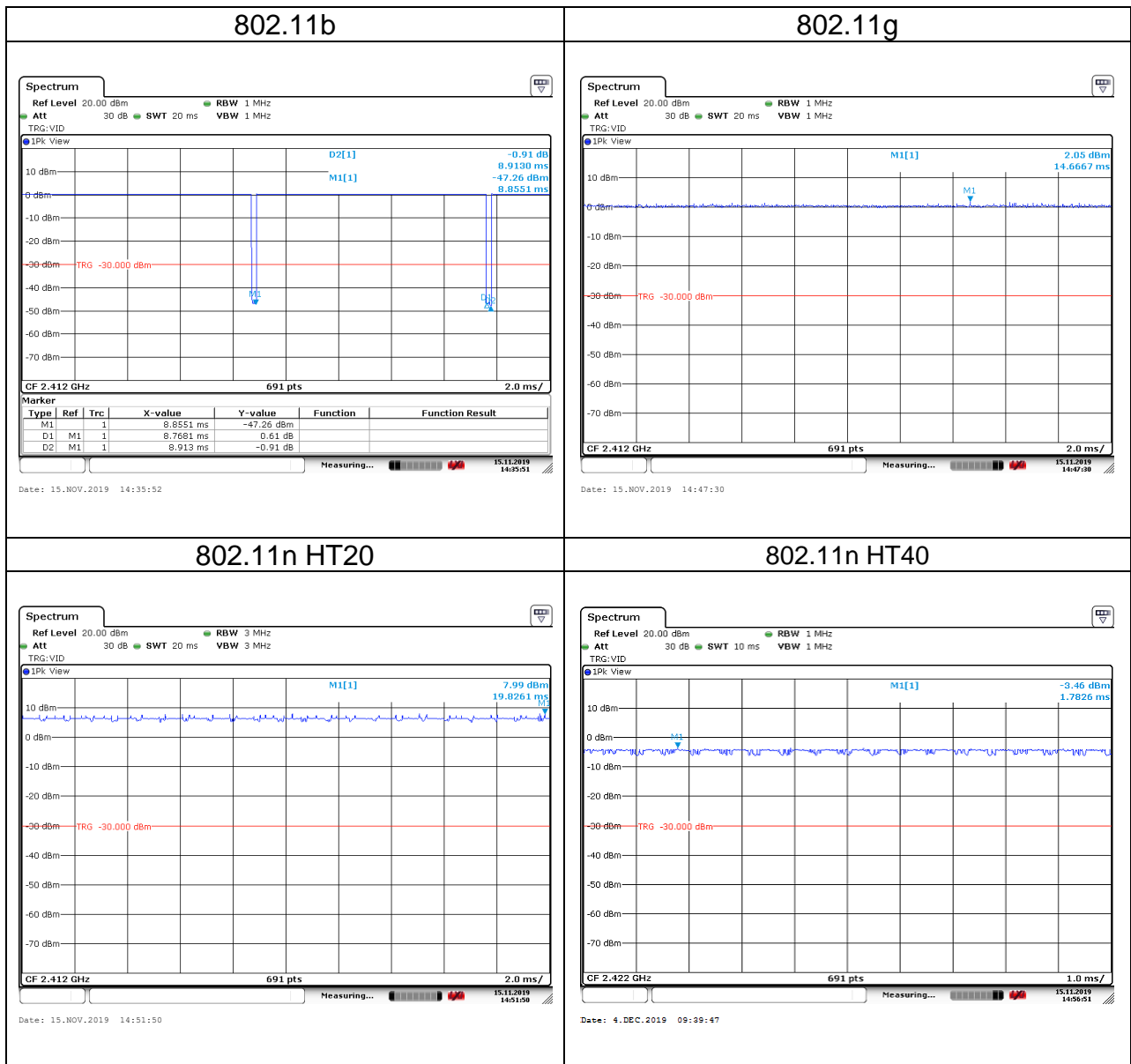
Remark:

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(Y-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.

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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	98.37%	0.07	0.11	0.01
802.11g	100.00%	0.00	0.00	0.01
802.11n HT20	100.00%	0.00	0.00	0.01
802.11n HT40	100.00%	0.00	0.00	0.01



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5. TEST RESULT

5.1 AC POWER LINE CONDUCTED EMISSION

5.1.1 Test Limit

According to §15.207(a),

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

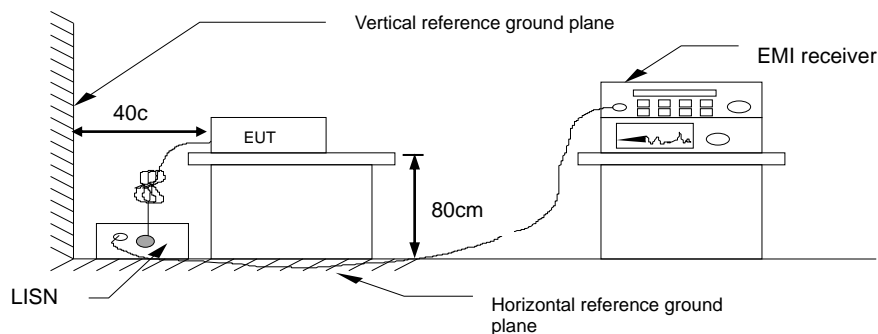
* Decreases with the logarithm of the frequency.

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



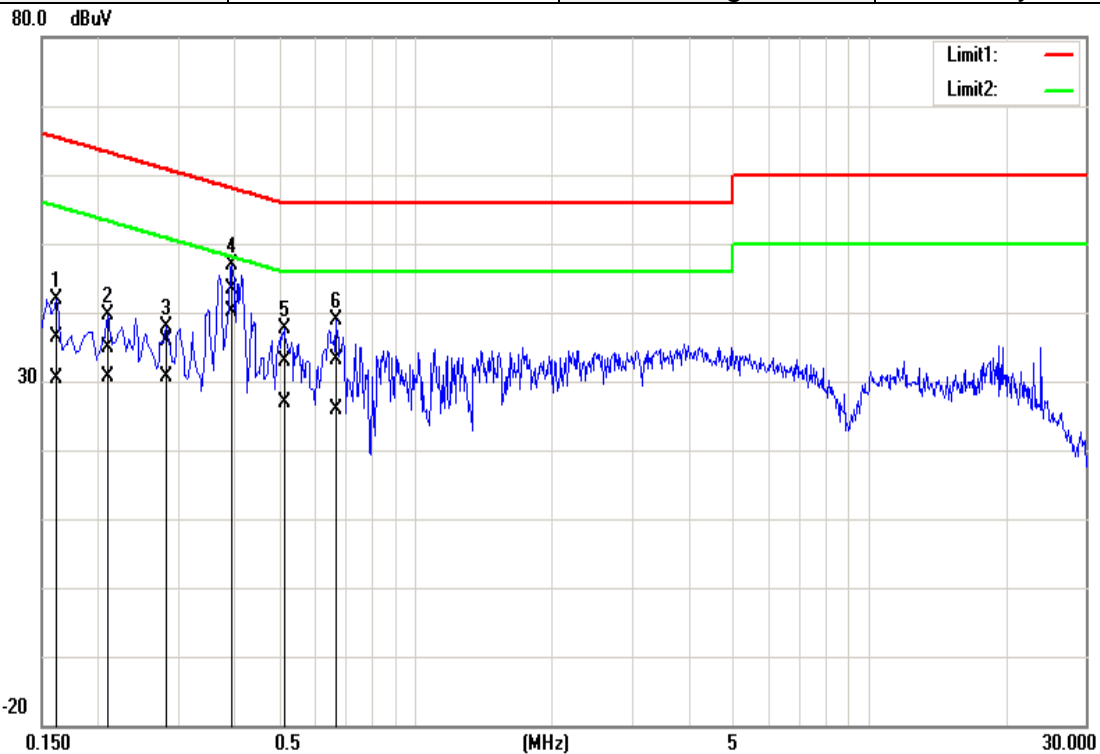
5.1.4 Test Result

Pass.

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Test Data

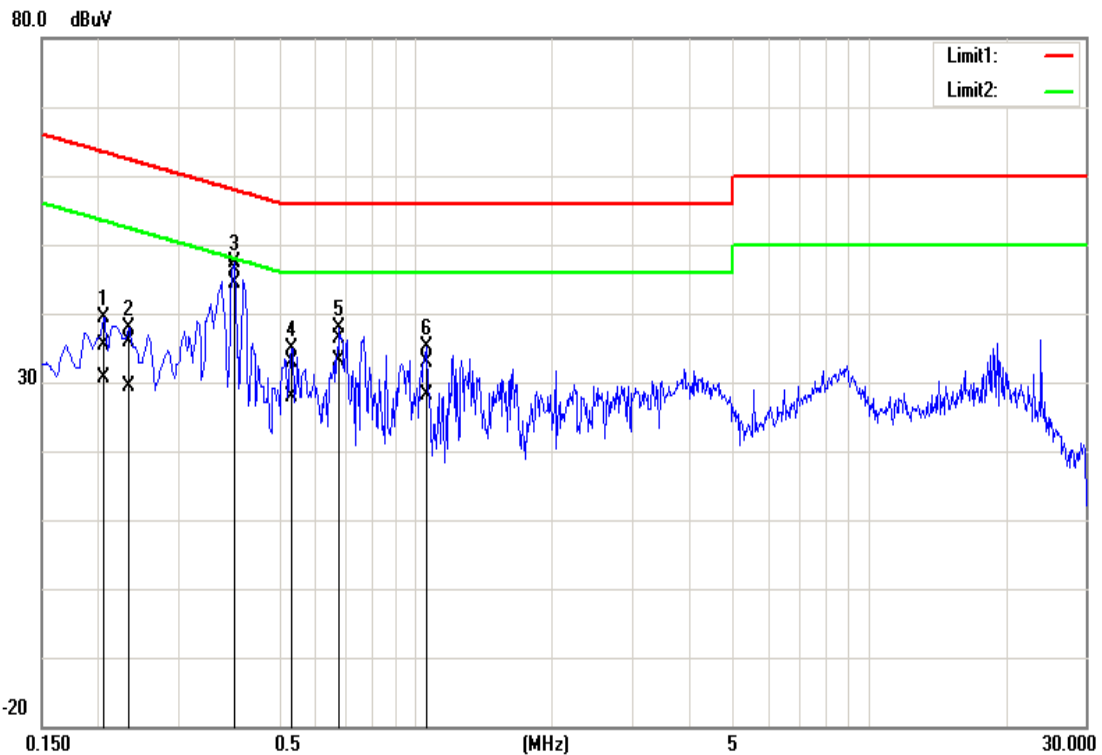
Test Mode:	Mode 1	Temp/Hum	24(°C)/ 50%RH
Phase:	Line	Test Date	2019/11/15
		Test Engineer	Dally Hong



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
0.1620	26.34	20.30	10.14	36.48	30.44	65.36	55.36	-28.88	-24.92	Pass
0.2100	24.84	20.42	10.13	34.97	30.55	63.21	53.21	-28.24	-22.66	Pass
0.2820	25.65	20.44	10.13	35.78	30.57	60.76	50.76	-24.98	-20.19	Pass
0.3940	33.26	29.91	10.14	43.40	40.05	57.98	47.98	-14.58	-7.93	Pass
0.5140	22.81	16.71	10.14	32.95	26.85	56.00	46.00	-23.05	-19.15	Pass
0.6700	22.97	15.67	10.15	33.12	25.82	56.00	46.00	-22.88	-20.18	Pass

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Test Mode:	Mode 1	Temp/Hum	24(°C)/ 50%RH
Phase:	Neutral	Test Date	2019/11/15
		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
0.2040	25.34	20.68	10.02	35.36	30.70	63.45	53.45	-28.09	-22.75	Pass
0.2340	25.86	19.31	10.02	35.88	29.33	62.31	52.31	-26.43	-22.98	Pass
0.3980	36.37	34.28	10.03	46.40	44.31	57.90	47.90	-11.50	-3.59	Pass
0.5340	22.76	17.89	10.03	32.79	27.92	56.00	46.00	-23.21	-18.08	Pass
0.6820	26.46	23.05	10.03	36.49	33.08	56.00	46.00	-19.51	-12.92	Pass
1.0580	22.96	18.15	10.04	33.00	28.19	56.00	46.00	-23.00	-17.81	Pass

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5.2 6dB BANDWIDTH AND OCCUPIED BANDWIDTH(99%)

5.2.1 Test Limit

According to §15.247(a)(2),

6 dB Bandwidth :

Limit	Shall be at least 500kHz
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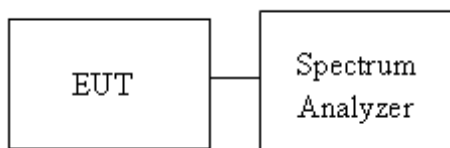
Occupied Bandwidth(99%) : For reporting purposes only.

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 6dB 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



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5.2.4 Test Result

Test mode: IEEE 802.11b Mode / 2412-2462 MHz						
Channel	Frequency (MHz)	Chain 0 OBW(99%) (MHz)	Chain1 OBW(99%) (MHz)	Chain 0 6dB BW (MHz)	Chain 1 6dB BW (MHz)	6dB limit (kHz)
Low	2412	12.9377	12.8075	10.0435	9.087	≥500
Mid	2437	12.2431	12.2431	10.0435	10.0435	
High	2462	12.9811	12.2431	10.0435	9.5652	

Test mode: IEEE 802.11g Mode / 2412-2462 MHz						
Channel	Frequency (MHz)	Chain 0 OBW(99%) (MHz)	Chain1 OBW(99%) (MHz)	Chain 0 6dB BW (MHz)	Chain 1 6dB BW (MHz)	6dB limit (kHz)
Low	2412	17.0622	17.1056	16.3478	16.3478	≥500
Mid	2437	16.7583	16.7583	16.3478	16.3043	
High	2462	16.7583	16.8451	16.3478	16.3478	

Test mode: IEEE 802.11n HT20 Mode / 2412-2462 MHz						
Channel	Frequency (MHz)	Chain 0 OBW(99%) (MHz)	Chain1 OBW(99%) (MHz)	Chain 0 6dB BW (MHz)	Chain 1 6dB BW (MHz)	6dB limit (kHz)
Low	2412	17.8871	17.8437	17.2609	17.0435	≥500
Mid	2437	17.6700	17.6266	17.3043	16.9565	
High	2462	17.6700	17.6266	17.2609	16.9565	

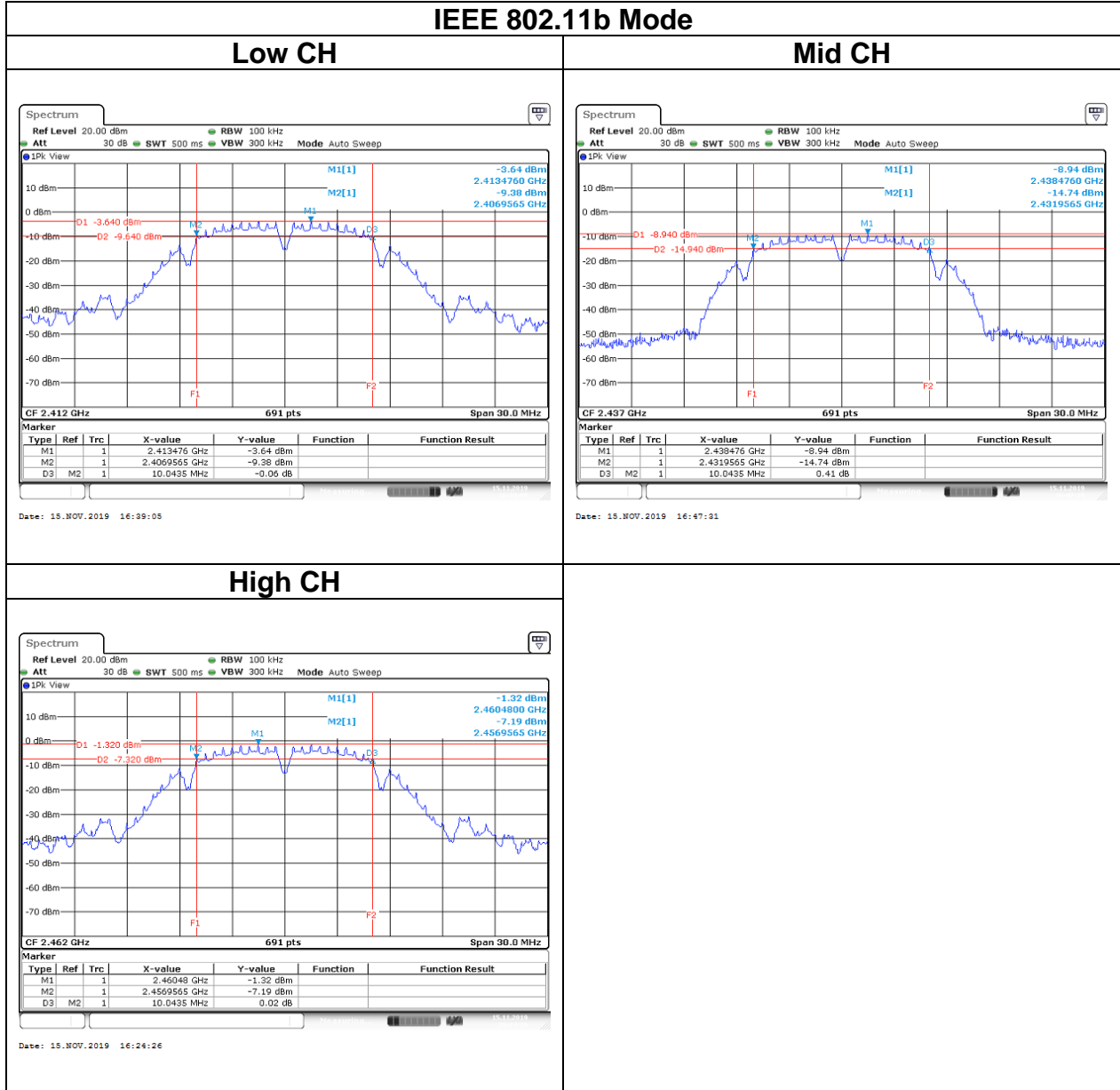
Test mode: IEEE 802.11n HT40 Mode / 2422-2452 MHz						
Channel	Frequency (MHz)	Chain 0 OBW(99%) (MHz)	Chain1 OBW(99%) (MHz)	Chain 0 6dB BW (MHz)	Chain 1 6dB BW (MHz)	6dB limit (kHz)
Low	2422	36.4688	36.8162	35.826	36.406	>500
Mid	2437	36.3531	36.8162	36.406	36.174	
High	2452	36.4688	37.0477	36.406	36.174	

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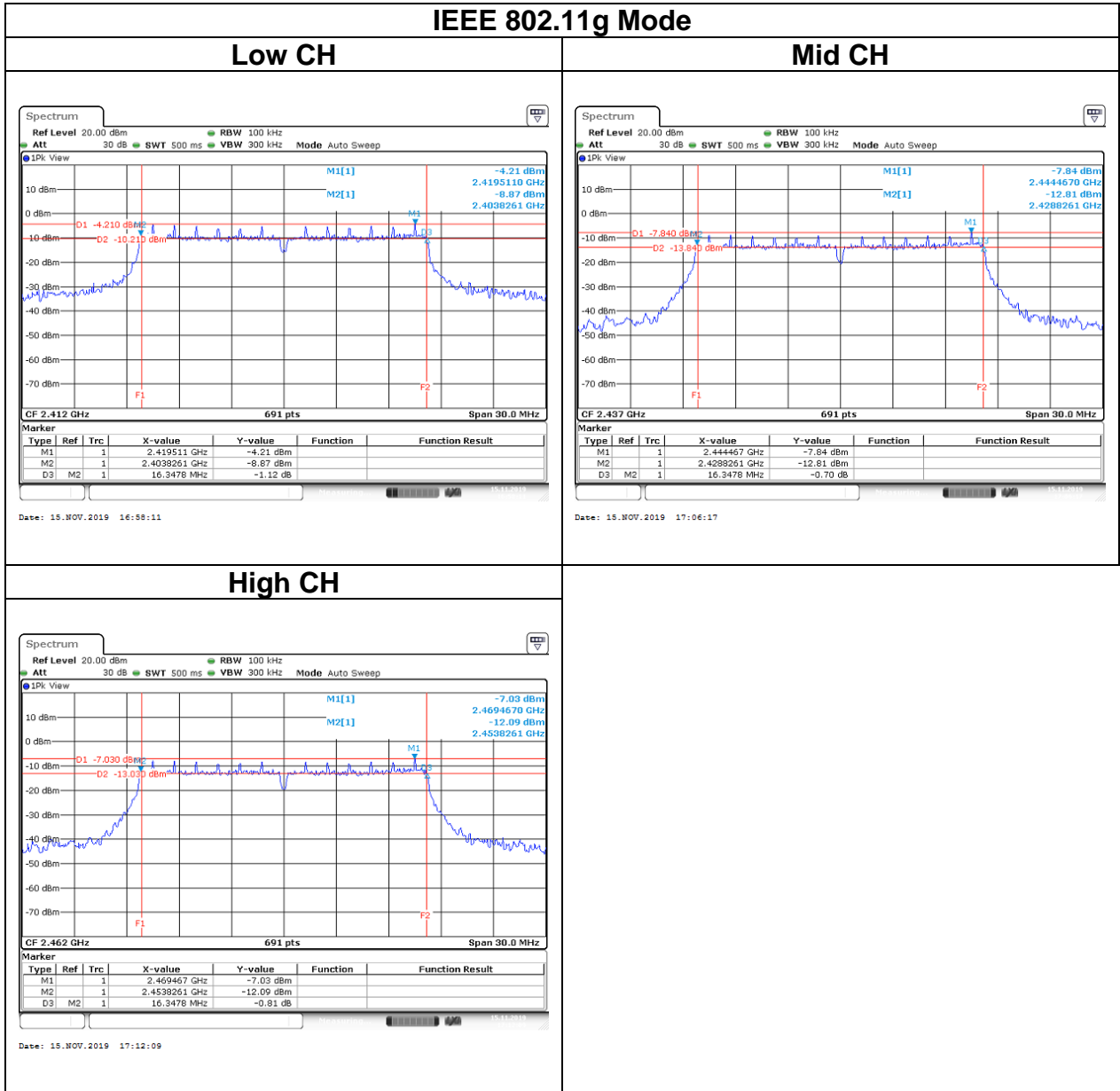
Test Data

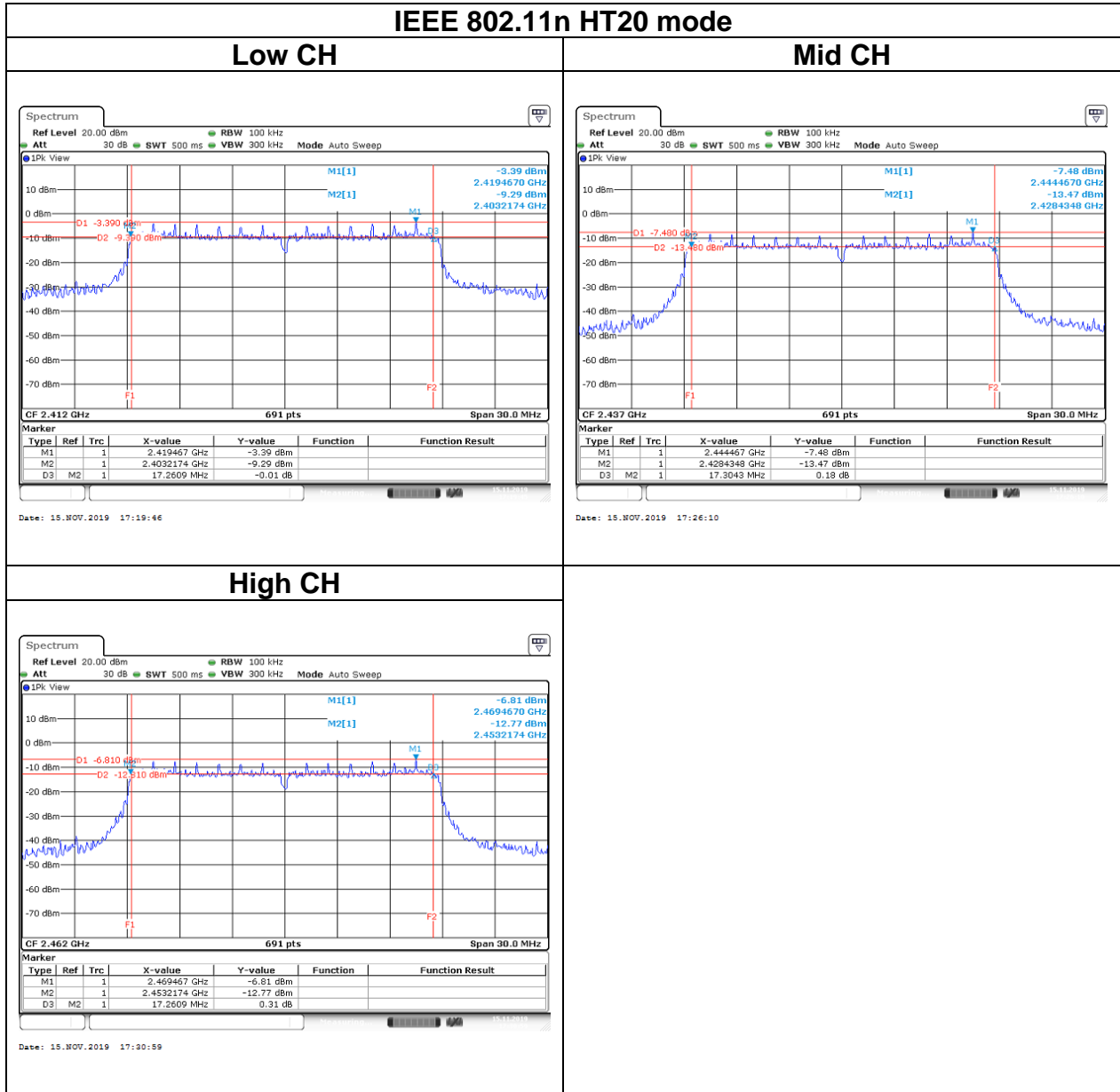
6dB BANDWIDTH

Chain 0



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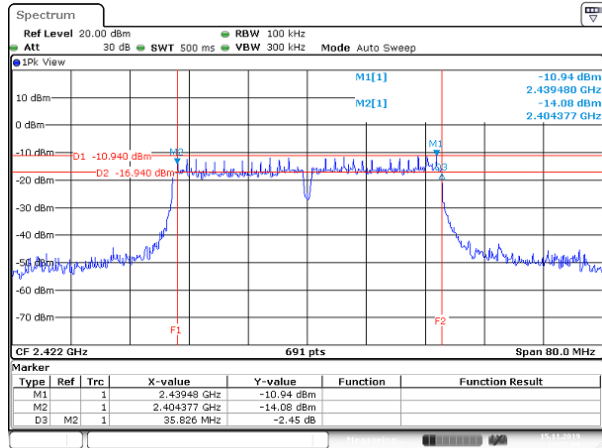




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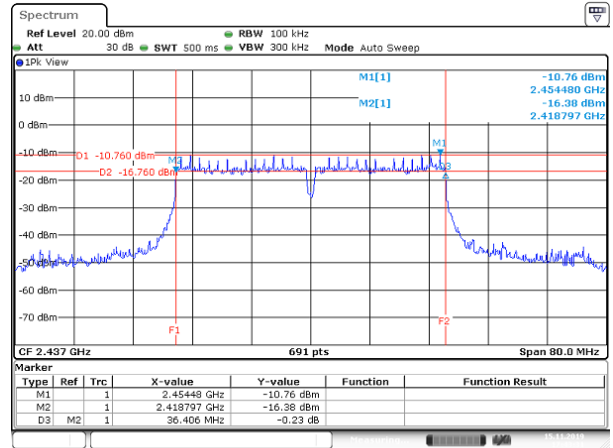
IEEE 802.11n HT40 mode

Low CH



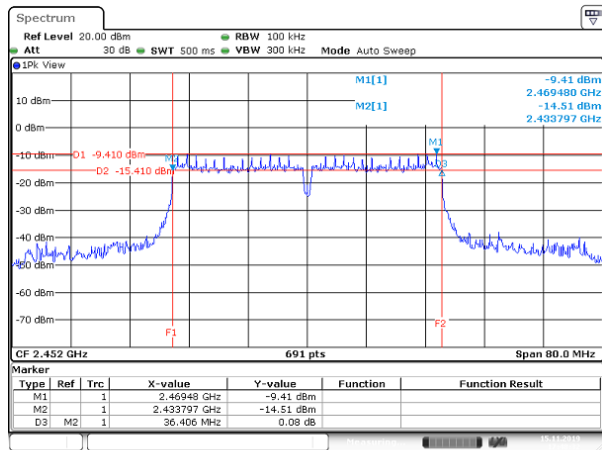
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Mid CH



Date: 15.NOV.2019 17:49:02

High CH



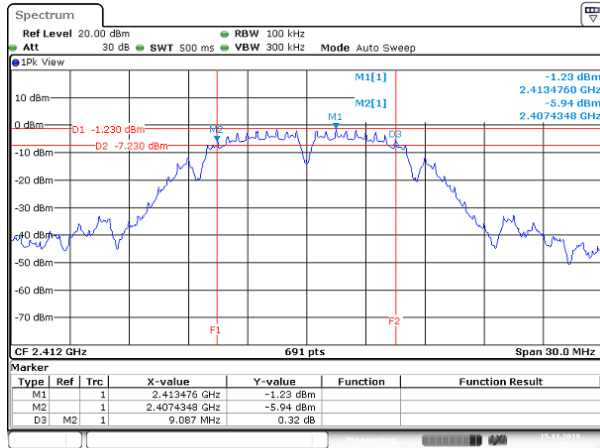
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Report No.: T191104D01-RP1

Chain 1

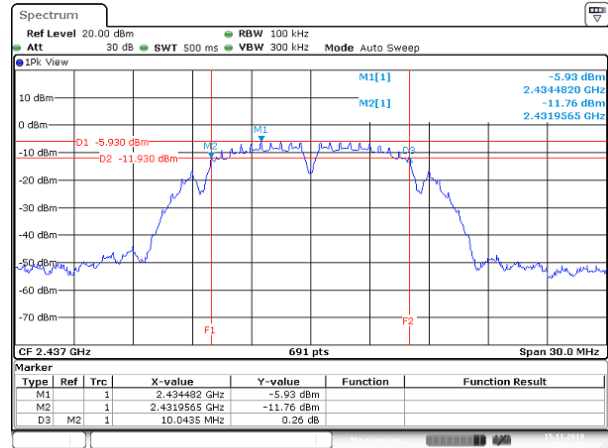
IEEE 802.11b Mode

Low CH



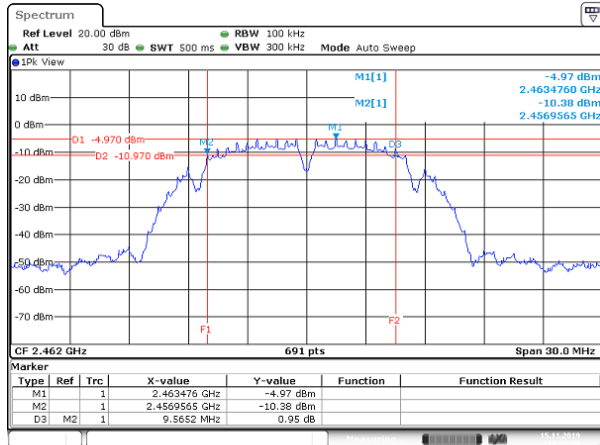
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Mid CH



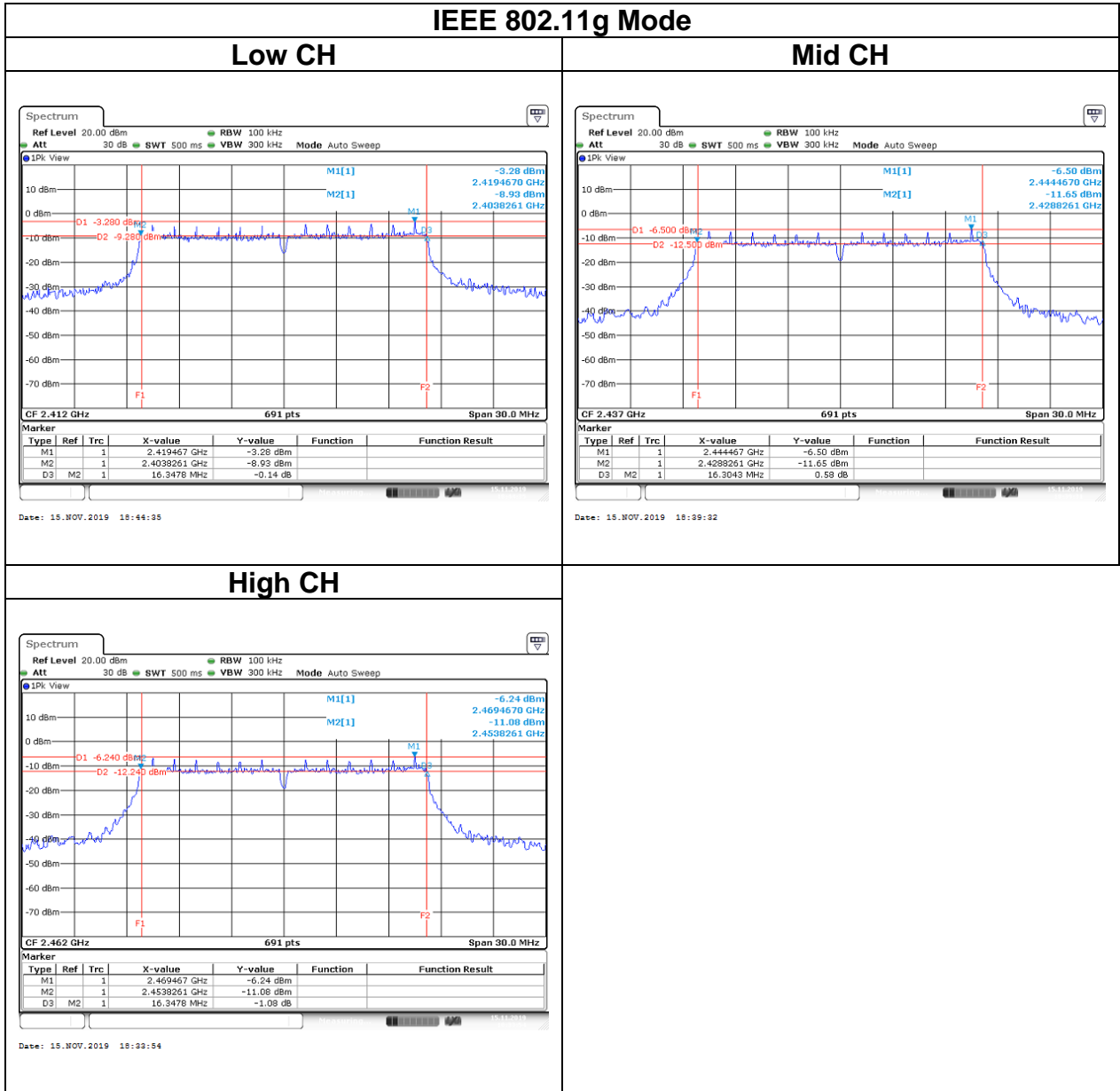
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High CH



Date: 15.NOV.2019 18:56:56

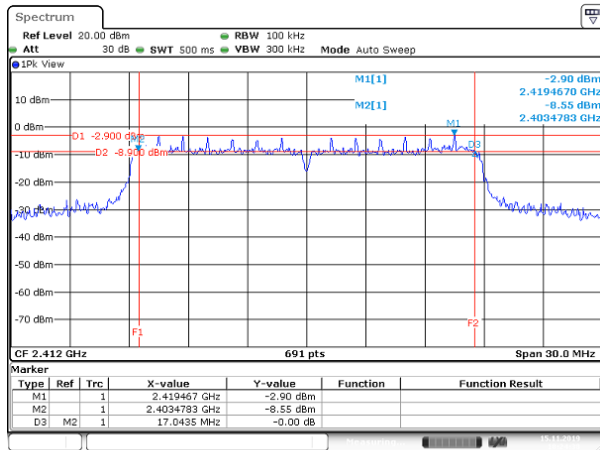
Report No.: T191104D01-RP1



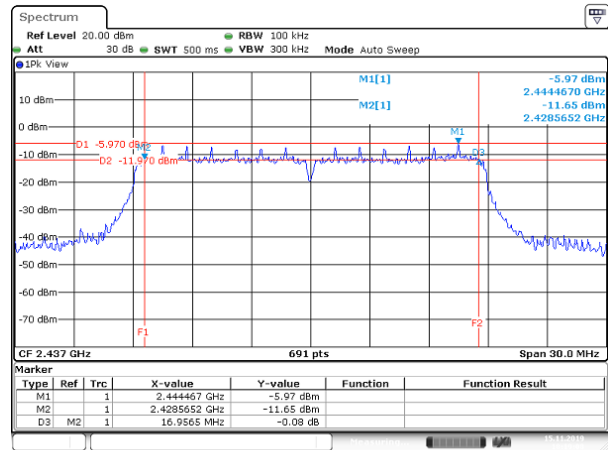
Report No.: T191104D01-RP1

IEEE 802.11n HT20 mode

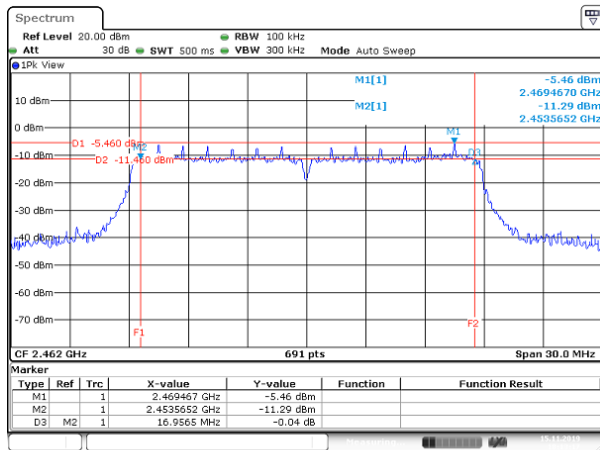
Low CH



Mid CH



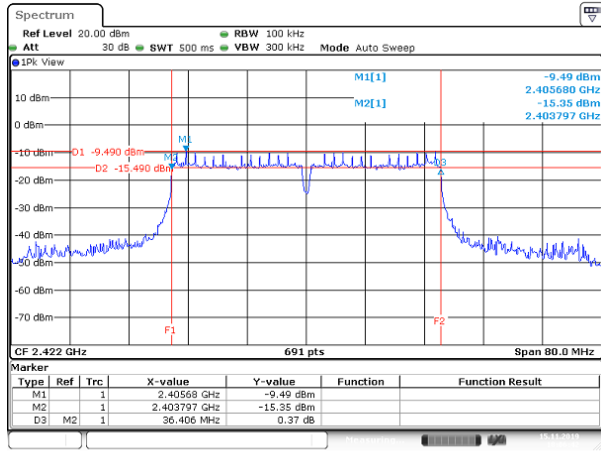
High CH



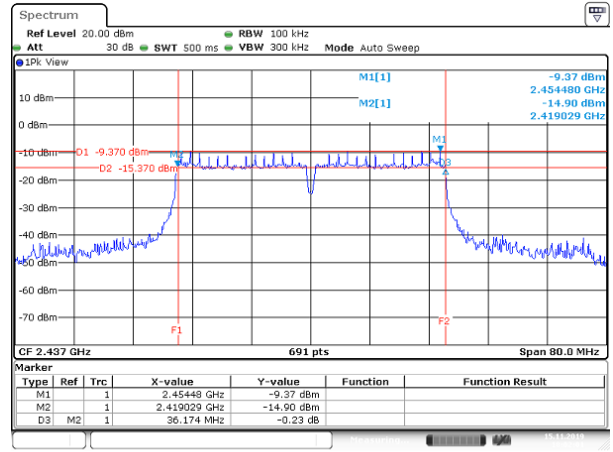
Report No.: T191104D01-RP1

IEEE 802.11n HT40 mode

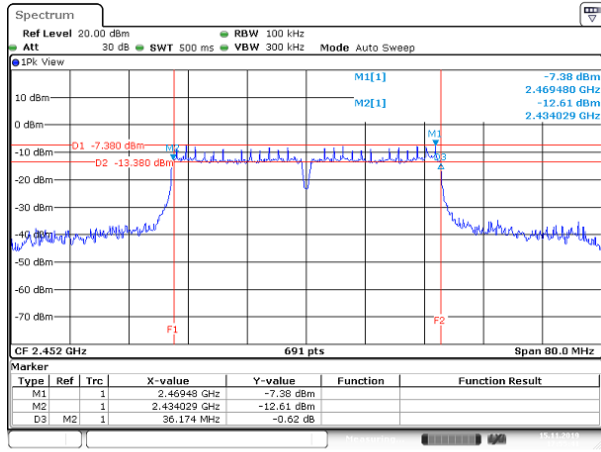
Low CH



Mid CH



High CH

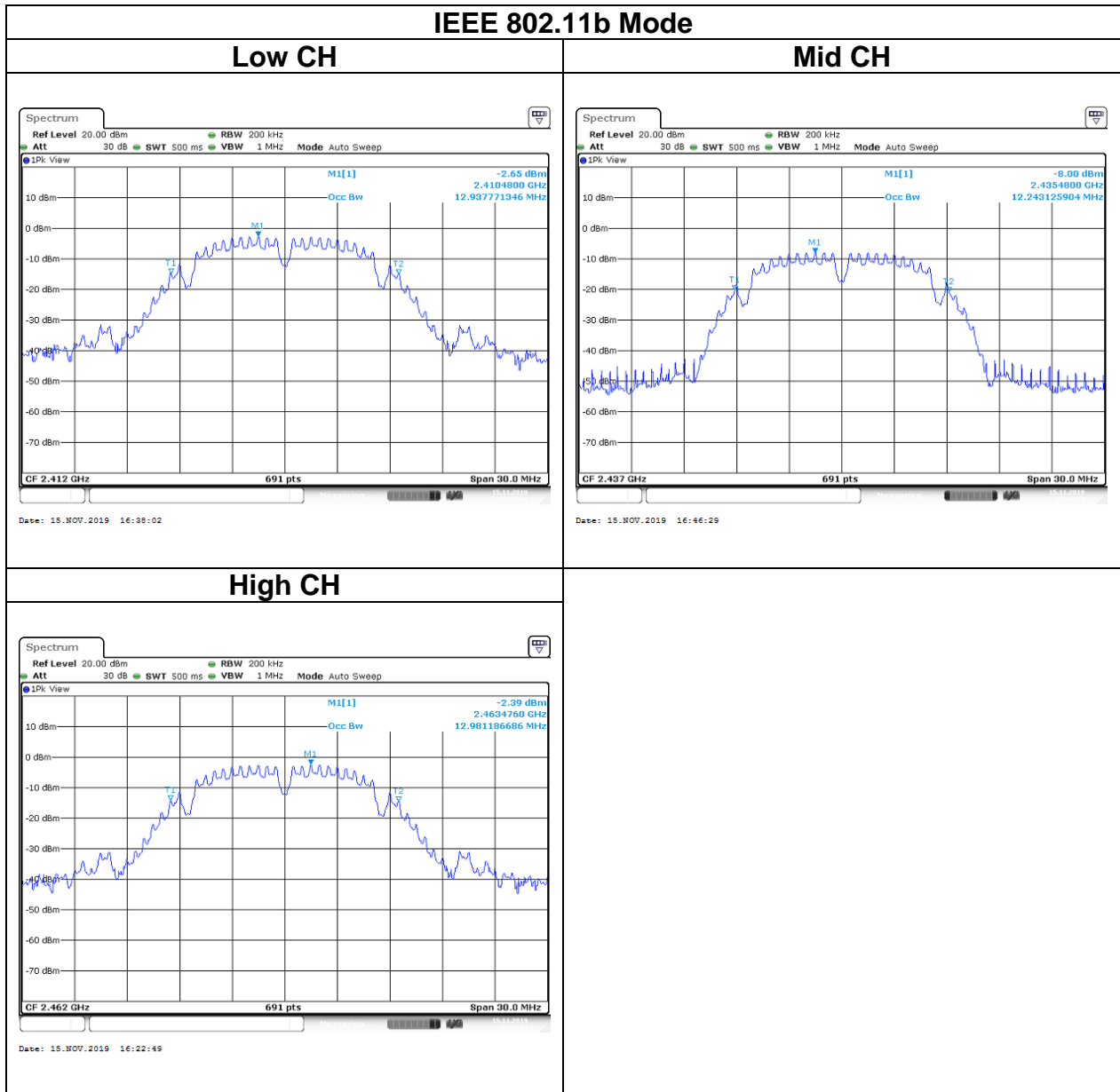


Report No.: T191104D01-RP1

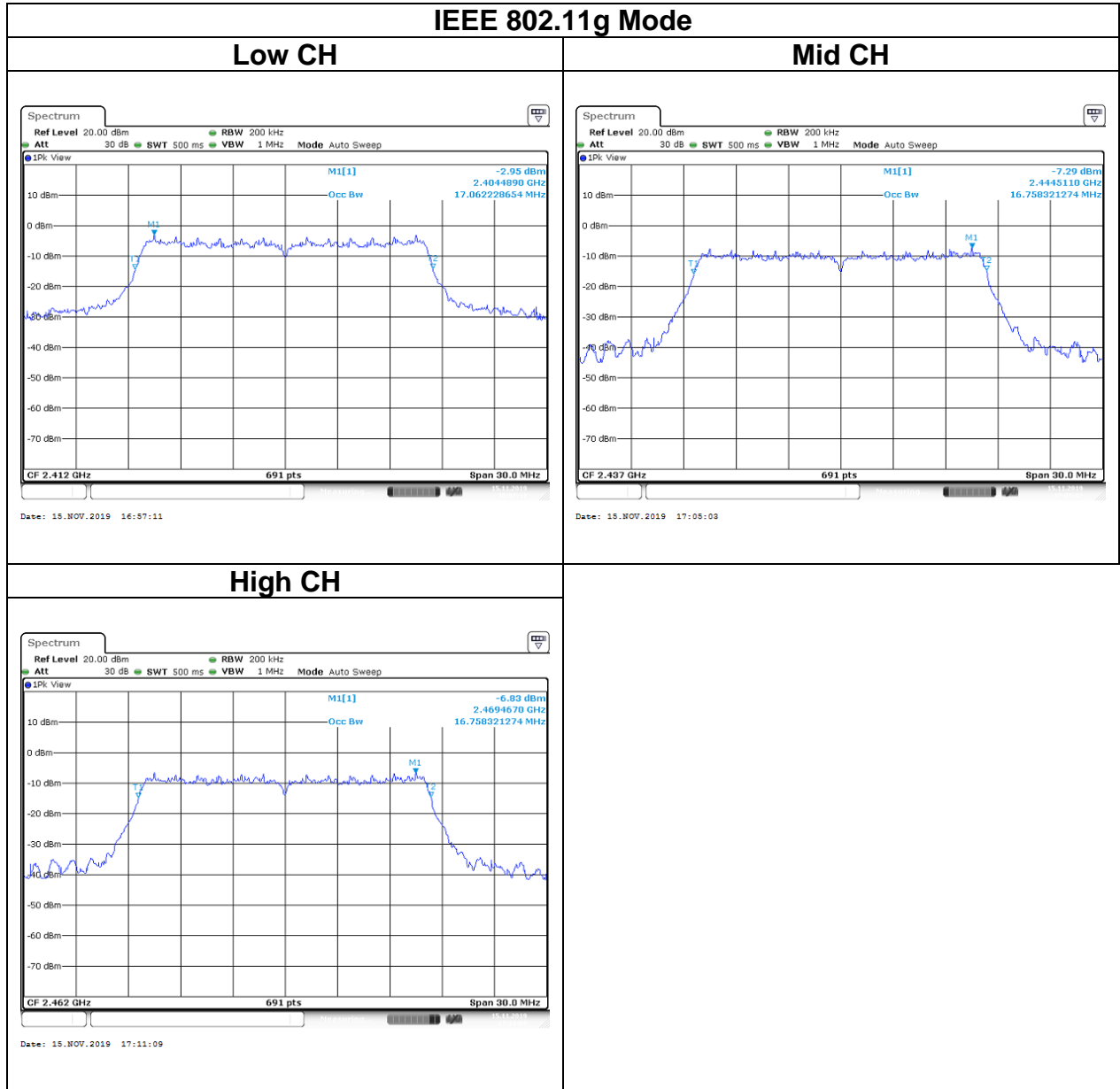
Test Data

BANDWIDTH (99%)

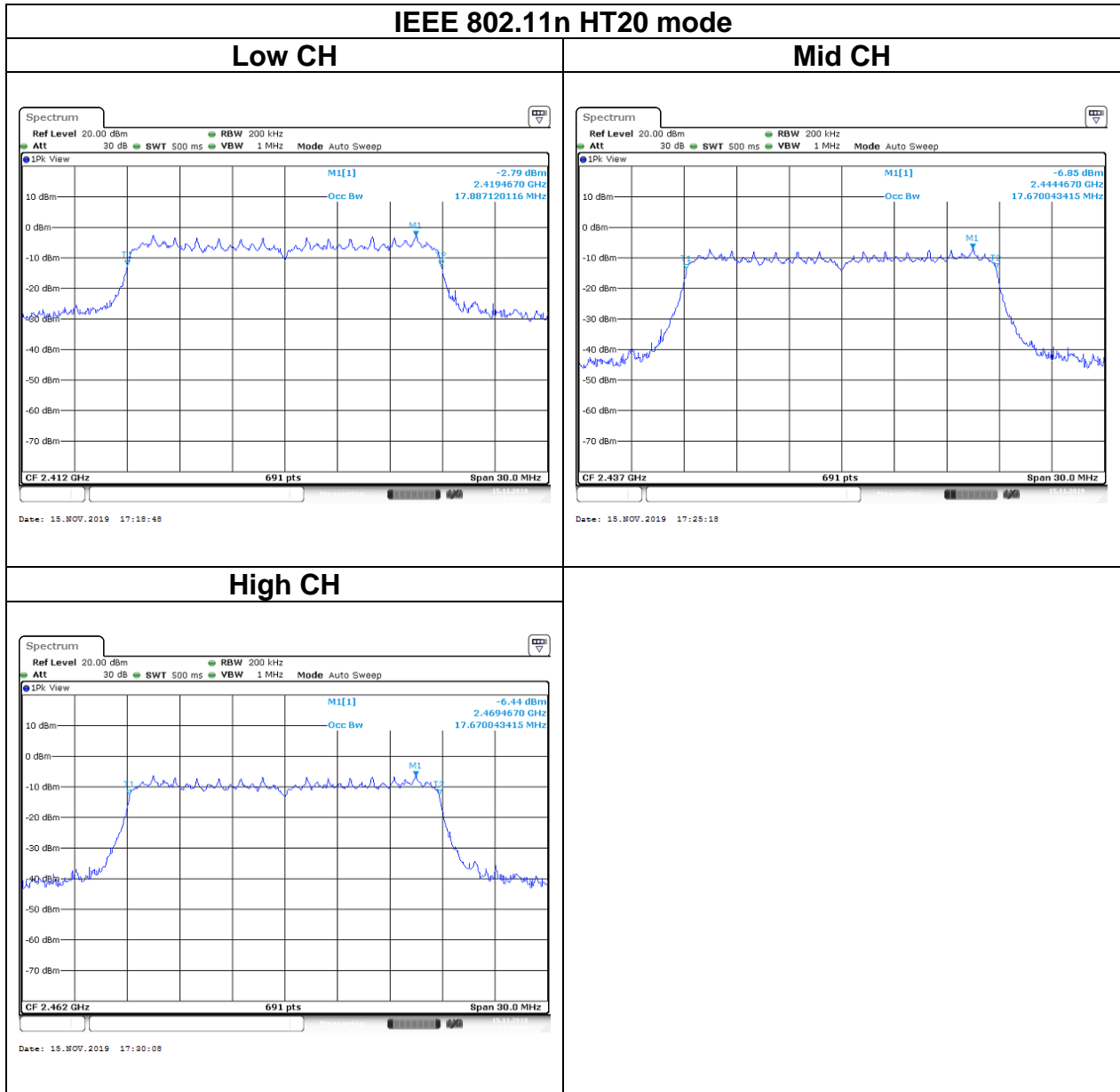
Chain 0



Report No.: T191104D01-RP1

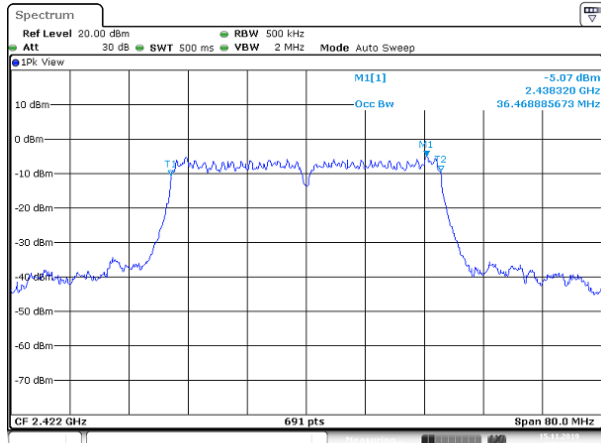


Report No.: T191104D01-RP1



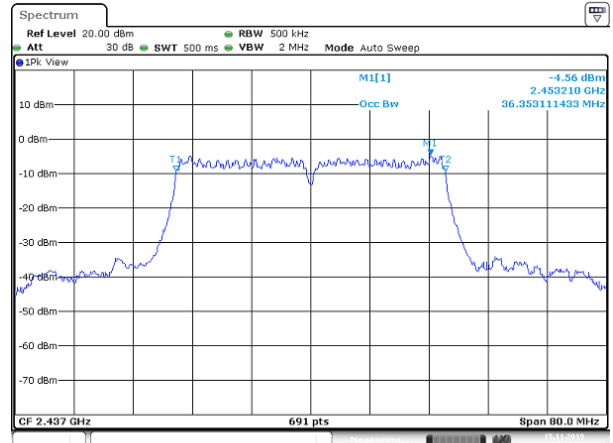
IEEE 802.11n HT40 mode

Low CH



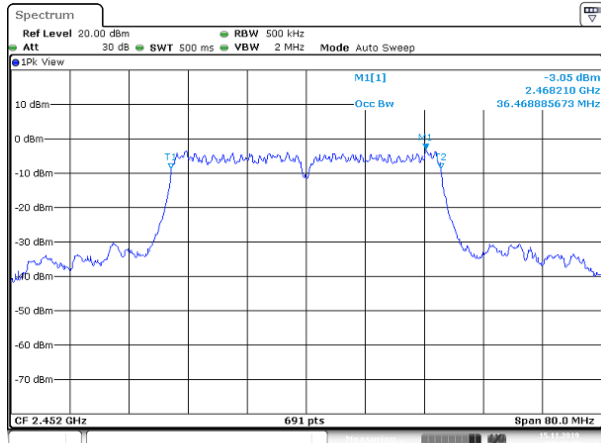
Date: 15.NOV.2019 17:36:19

Mid CH



Date: 15.NOV.2019 17:42:41

High CH



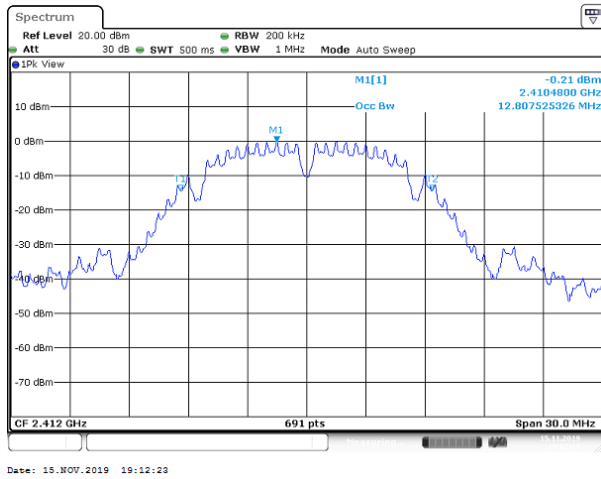
Date: 15.NOV.2019 17:47:48

Report No.: T191104D01-RP1

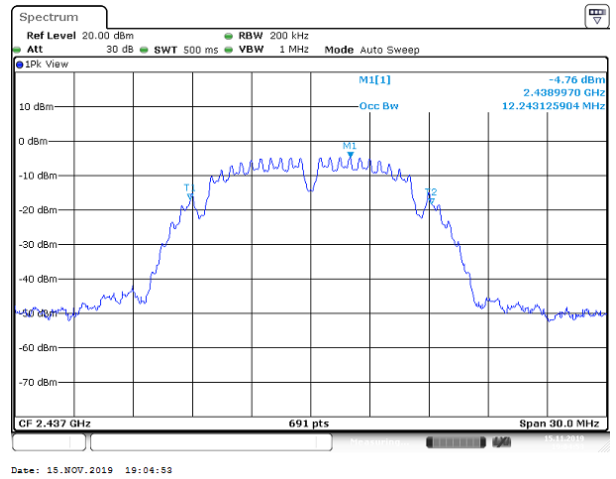
Chain 1

IEEE 802.11b Mode

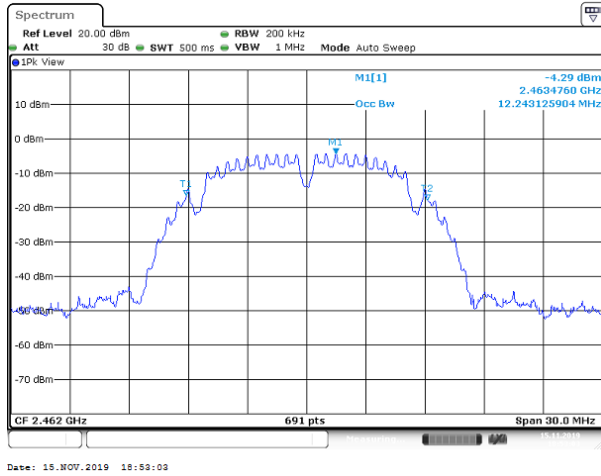
Low CH



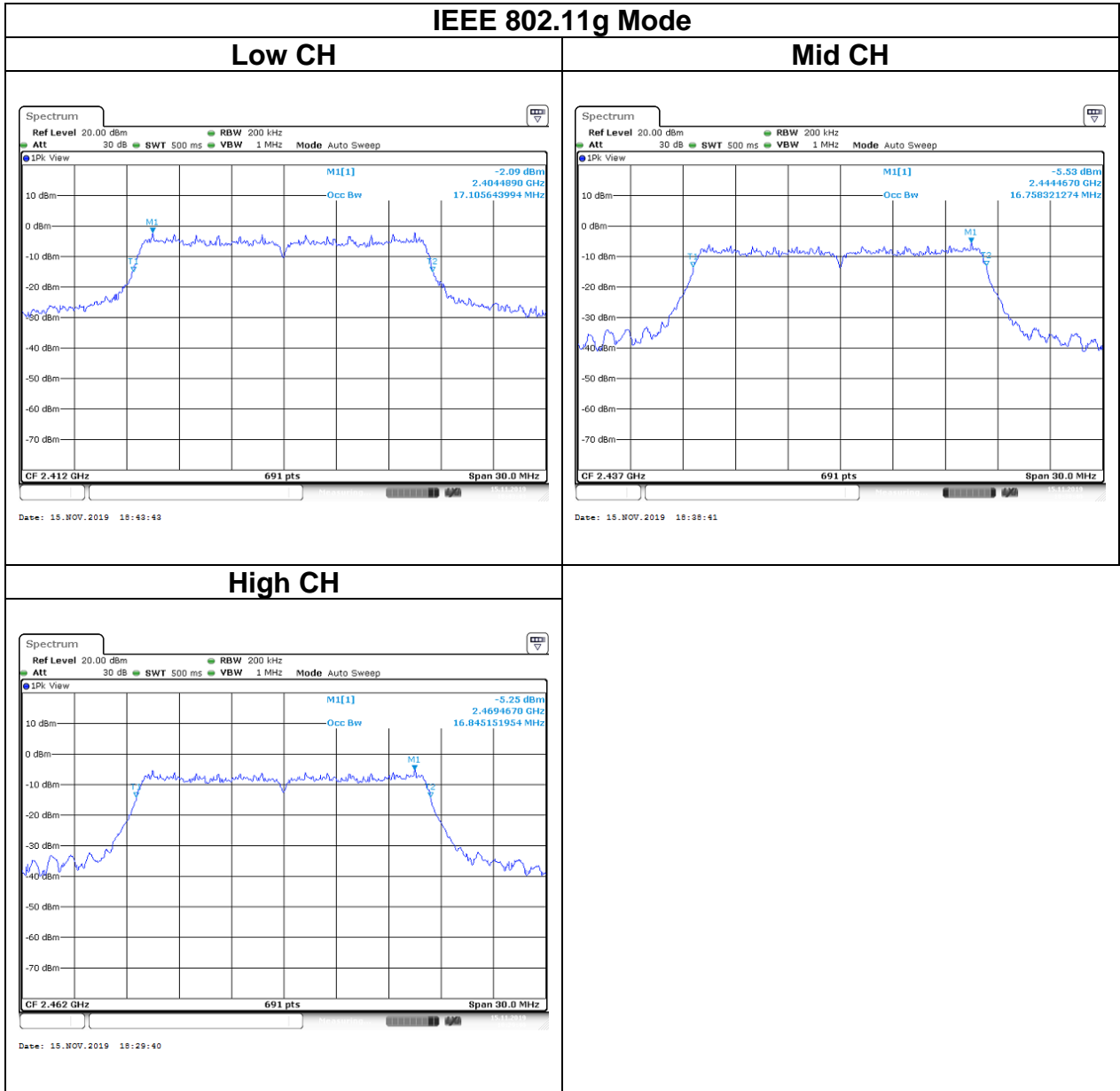
Mid CH



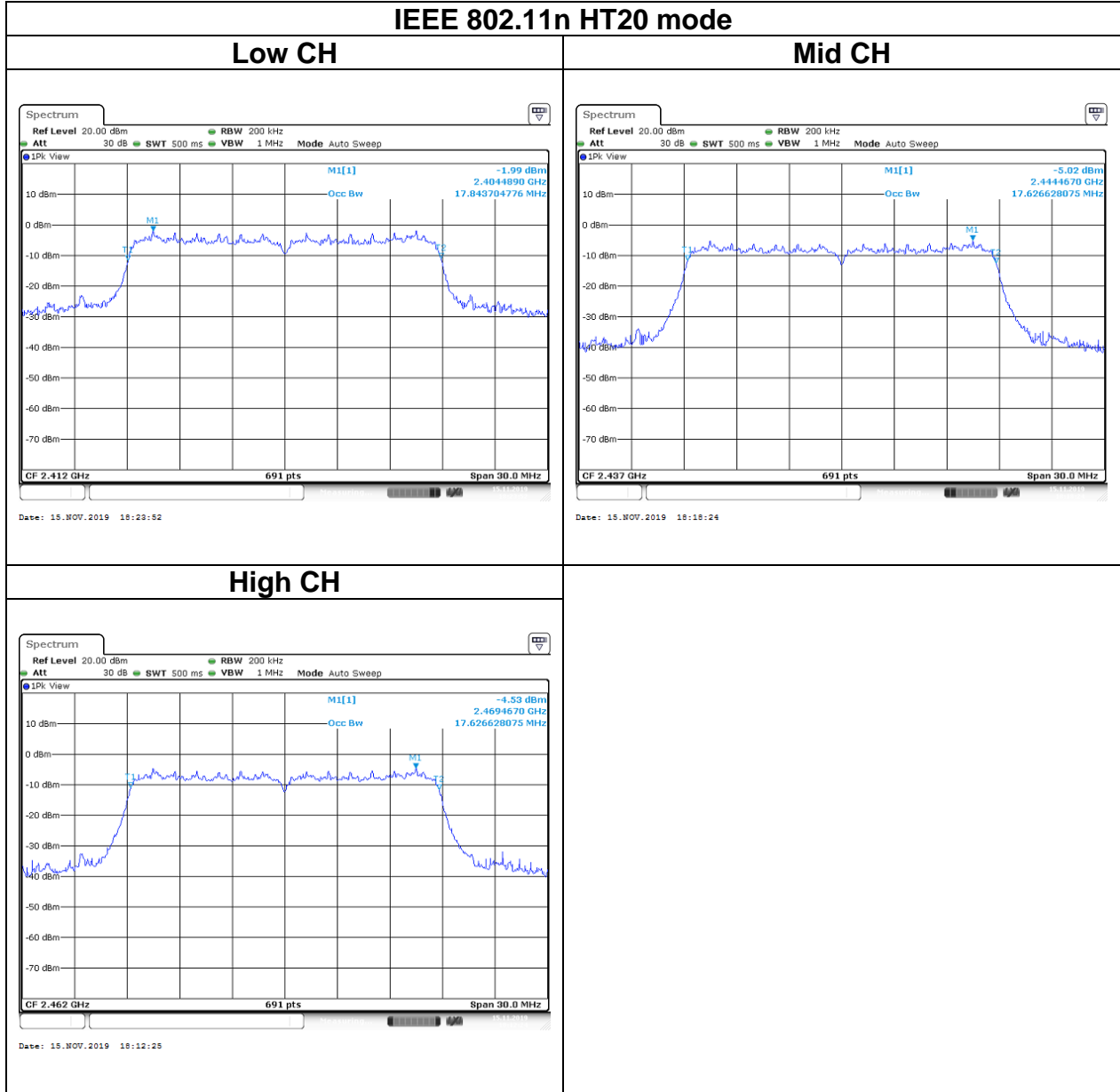
High CH



Report No.: T191104D01-RP1



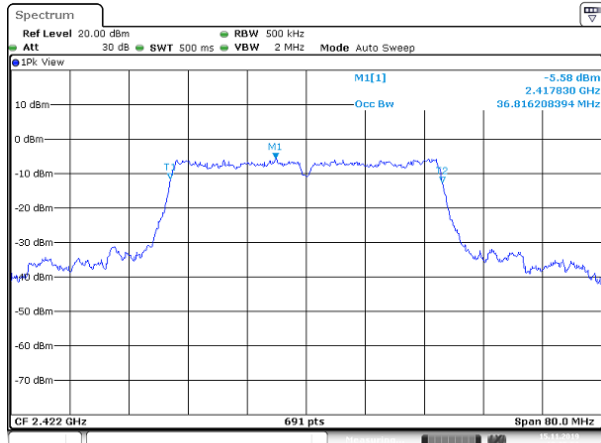
Report No.: T191104D01-RP1



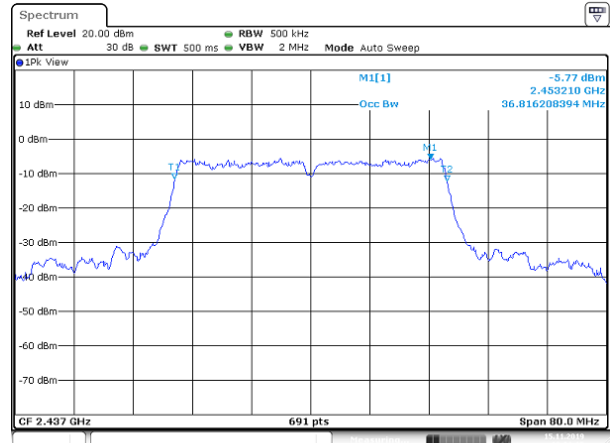
Report No.: T191104D01-RP1

IEEE 802.11n HT40 mode

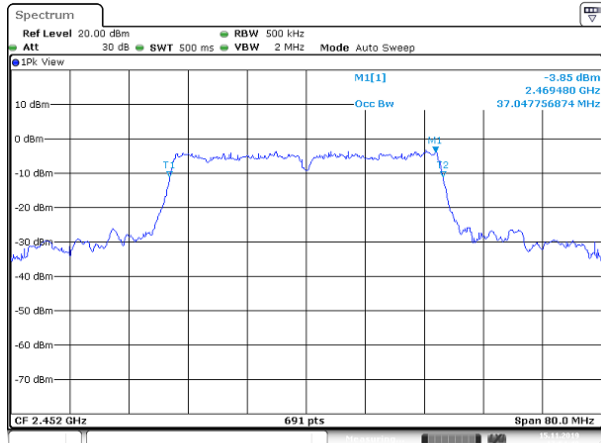
Low CH



Mid CH



High CH



Report No.: T191104D01-RP1

5.3 OUTPUT POWER MEASUREMENT

5.3.1 Test Limit

According to §15.247(b)(3),

Peak output power :

For systems using digital modulation in the 2400-2483.5 MHz: 1 Watt(30 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	<input checked="" type="checkbox"/> Antenna not exceed 6 dBi : 30dBm <input type="checkbox"/> Antenna with DG greater than 6 dBi : [Limit = 30 – (DG – 6)] <input type="checkbox"/> Point-to-point operation :
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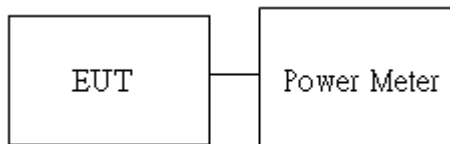
Average output power : For reporting purposes only.

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



Report No.: T191104D01-RP1

5.3.4 Test Result

Peak output power :

1TX:

Wifi 2.4G									
Config	CH	Freq. (MHz)	power set		PK Power(dBm)		PK Total Power (dBm)	PK Total Power (W)	Limit (dBm)
			chain 0	chain 1	chain 0	chain 1			
IEEE 802.11b Data rate: 1Mbps	Low	2412	22	-	24.12	-	24.12	0.2582	30
	Mid	2437	23	-	23.94	-	23.94	0.2477	
	High	2462	22	-	24.07	-	24.07	0.2553	
IEEE 802.11b Data rate: 1Mbps	Low	2412	-	22	-	24.28	24.28	0.2679	
	Mid	2437	-	23	-	25.06	25.06	0.3206	
	High	2462	-	22	-	24.31	24.31	0.2698	

2TX:

Wifi 2.4G									
Config	CH	Freq. (MHz)	power set		PK Power(dBm)		PK Total Power (dBm)	PK Total Power (W)	Limit (dBm)
			chain 0	chain 1	chain 0	chain 1			
IEEE 802.11g Data rate: 6Mbps	Low	2412	29	29	24.71	25.42	28.09	0.6441	30
	Mid	2437	2A	2A	25.06	25.46	28.27	0.6722	
	High	2462	2A	2A	24.84	25.62	28.26	0.6695	
IEEE 802.11n 20MHz Data rate: MCS8	Low	2412	2B	2B	25.07	25.29	28.19	0.6594	
	Mid	2437	2B	2B	23.07	25.84	27.68	0.5865	
	High	2462	2B	2B	25.21	26.1	28.69	0.7393	
IEEE 802.11n 40MHz Data rate: MCS8	Low	2422	2B	2B	23.33	25.99	27.87	0.6125	
	Mid	2437	2B	2B	23.72	25.01	27.42	0.5525	
	High	2452	2B	2B	24.45	25.56	28.05	0.6384	

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Average output power :

1TX:

Wifi 2.4G					
Config	CH	Freq. (MHz)	AV Power(dBm)		AV Total Power (dBm)
			chain 0	chain 1	
IEEE 802.11b Data rate: 1Mbps	Low	2412	21.64	-	21.64
	Mid	2437	21.12	-	21.12
	High	2462	21.25	-	21.25
IEEE 802.11b Data rate: 1Mbps	Low	2412	-	20.15	20.15
	Mid	2437	-	19.98	22.87
	High	2462	-	20.34	22.88

2TX:

Wifi 2.4G					
Config	CH	Freq. (MHz)	AV Power(dBm)		AV Total Power (dBm)
			chain 0	chain 1	
IEEE 802.11g Data rate: 6Mbps	Low	2412	19.27	20.15	22.74
	Mid	2437	19.73	19.98	22.87
	High	2462	19.34	20.34	22.88
IEEE 802.11n 20MHz Data rate: MCS8	Low	2412	19.61	19.77	22.70
	Mid	2437	13.82	20.73	21.54
	High	2462	19.60	21.14	23.45
IEEE 802.11n 40MHz Data rate: MCS8	Low	2422	12.81	20.05	20.80
	Mid	2437	13.40	14.93	17.24
	High	2452	14.85	17.10	19.13

Report No.: T191104D01-RP1

5.4 POWER SPECTRAL DENSITY

5.4.1 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.

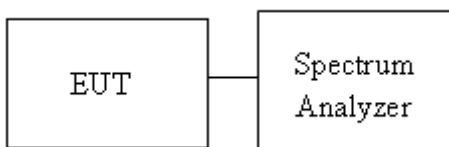
Limit	<input checked="" type="checkbox"/> Antenna not exceed 6 dBi : 8dBm <input type="checkbox"/> Antenna with DG greater than 6 dBi : [Limit = 8 – (DG – 6)] <input type="checkbox"/> Point-to-point operation :
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5.4.2 Test Procedure

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



Report No.: T191104D01-RP1

5.4.4 Test Result

1TX:

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	-7.55	-	-7.55	8
Mid	2437	-13.17	-	-13.17	
High	2462	-9.33	-	-9.33	

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	-	-7.82	-7.82	8
Mid	2437	-	-10.69	-10.69	
High	2462	-	-10.28	-10.28	

Report No.: T191104D01-RP1

2TX:

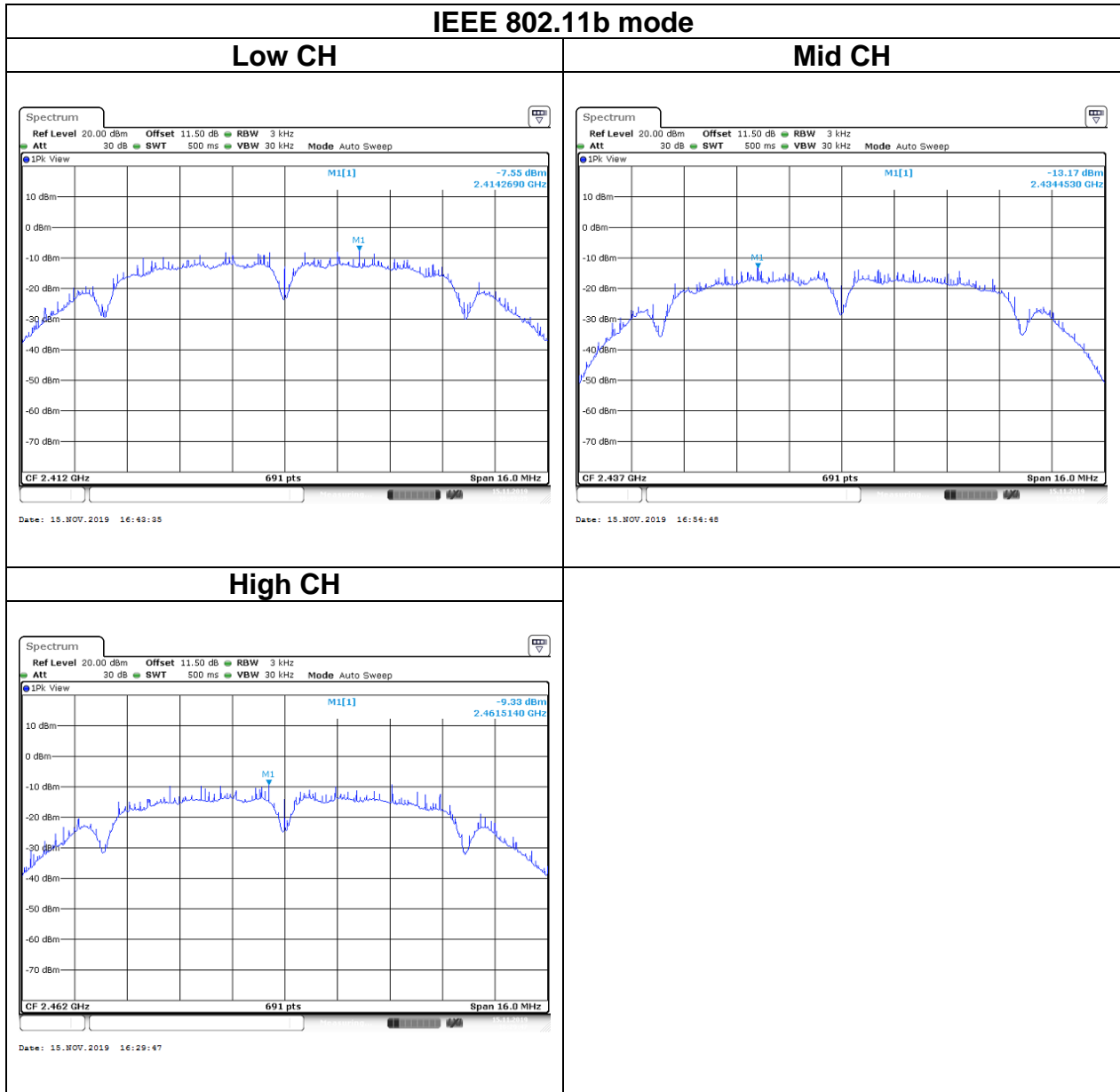
Test mode: IEEE 802.11g Mode / 2412-2462 MHz					
Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	Total PSSD (dBm)	Limit (dBm)
Low	2412	-8.16	-8.76	-5.44	8
Mid	2437	-13.22	-11.38	-9.19	
High	2462	-11.14	-11.64	-8.37	

Test mode: IEEE 802.11n HT20 Mode / 2412-2462 MHz					
Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	Total PSSD (dBm)	Limit (dBm)
Low	2412	-8.32	-8.14	-5.22	8
Mid	2437	-13.41	-11.74	-9.48	
High	2462	-11.84	-11.14	-8.47	

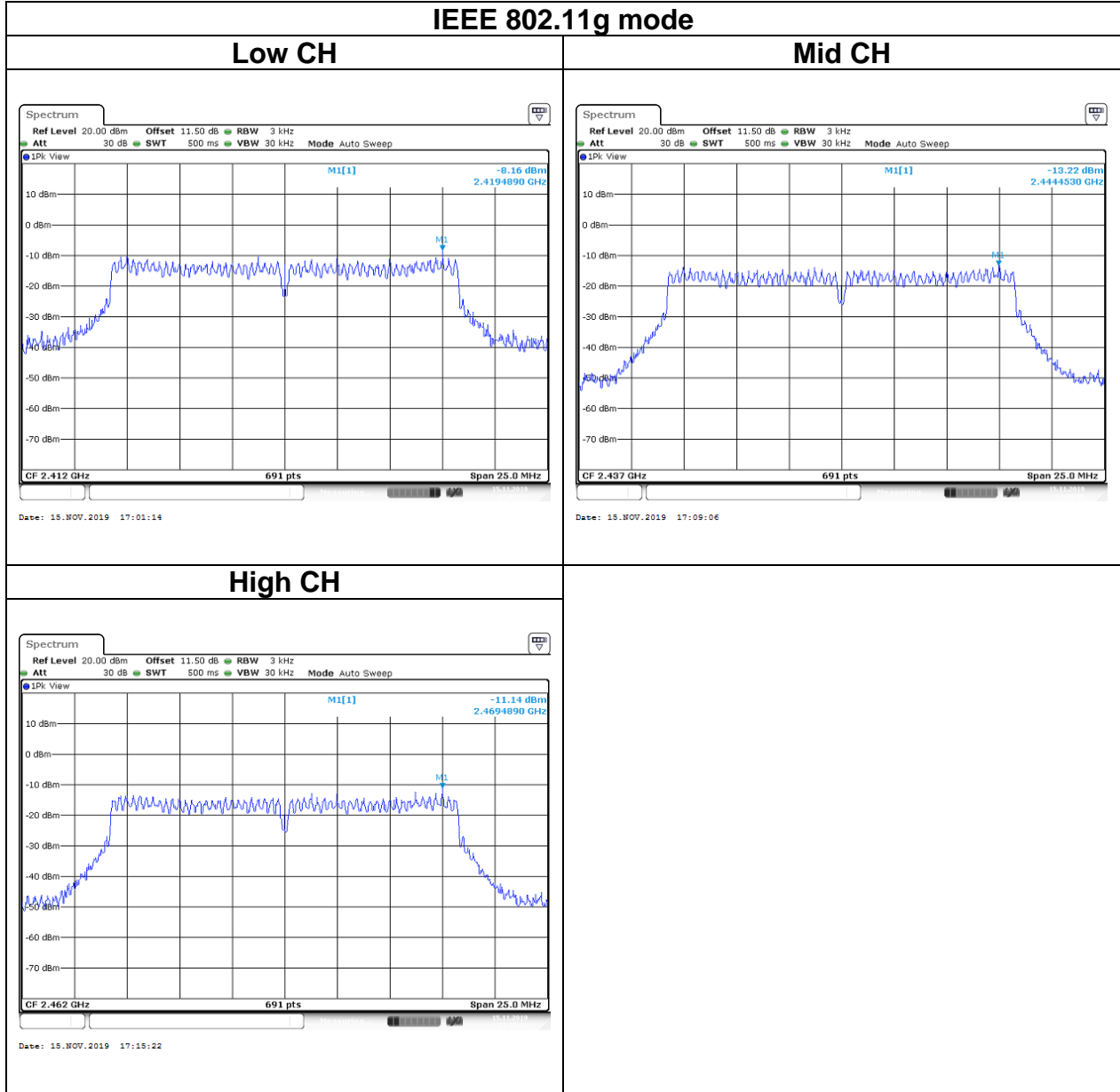
Test mode: IEEE 802.11n HT40 Mode / 2422-2452 MHz					
Channel	Frequency (MHz)	Chain 0 PPSD (dBm)	Chain 1 PPSD (dBm)	Total PSSD (dBm)	Limit (dBm)
Low	2422	-14.18	-13.41	-10.77	8
Mid	2437	-14.05	-13.56	-10.79	
High	2452	-12.74	-11.24	-8.92	

Report No.: T191104D01-RP1

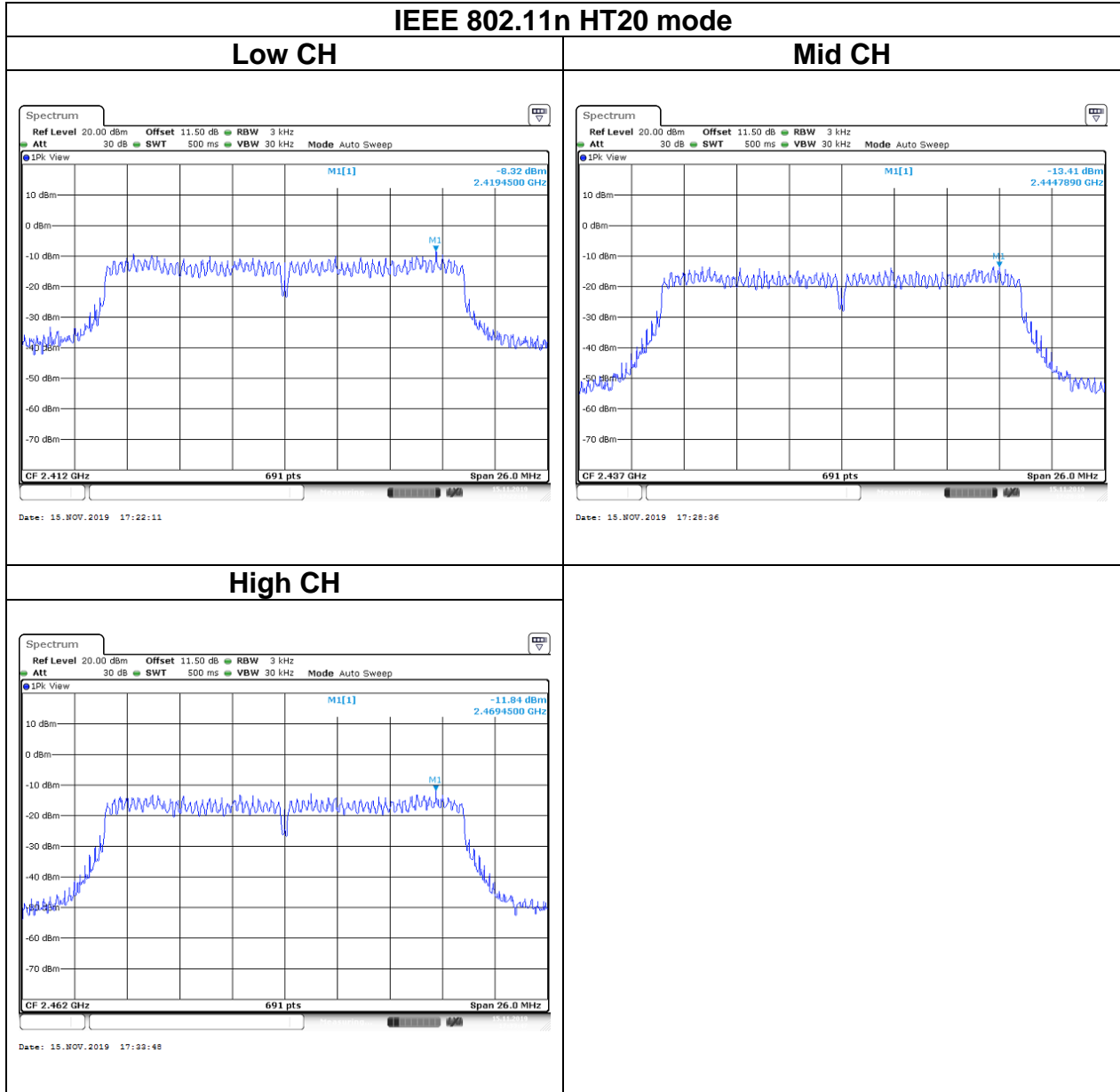
Test Data Chain 0



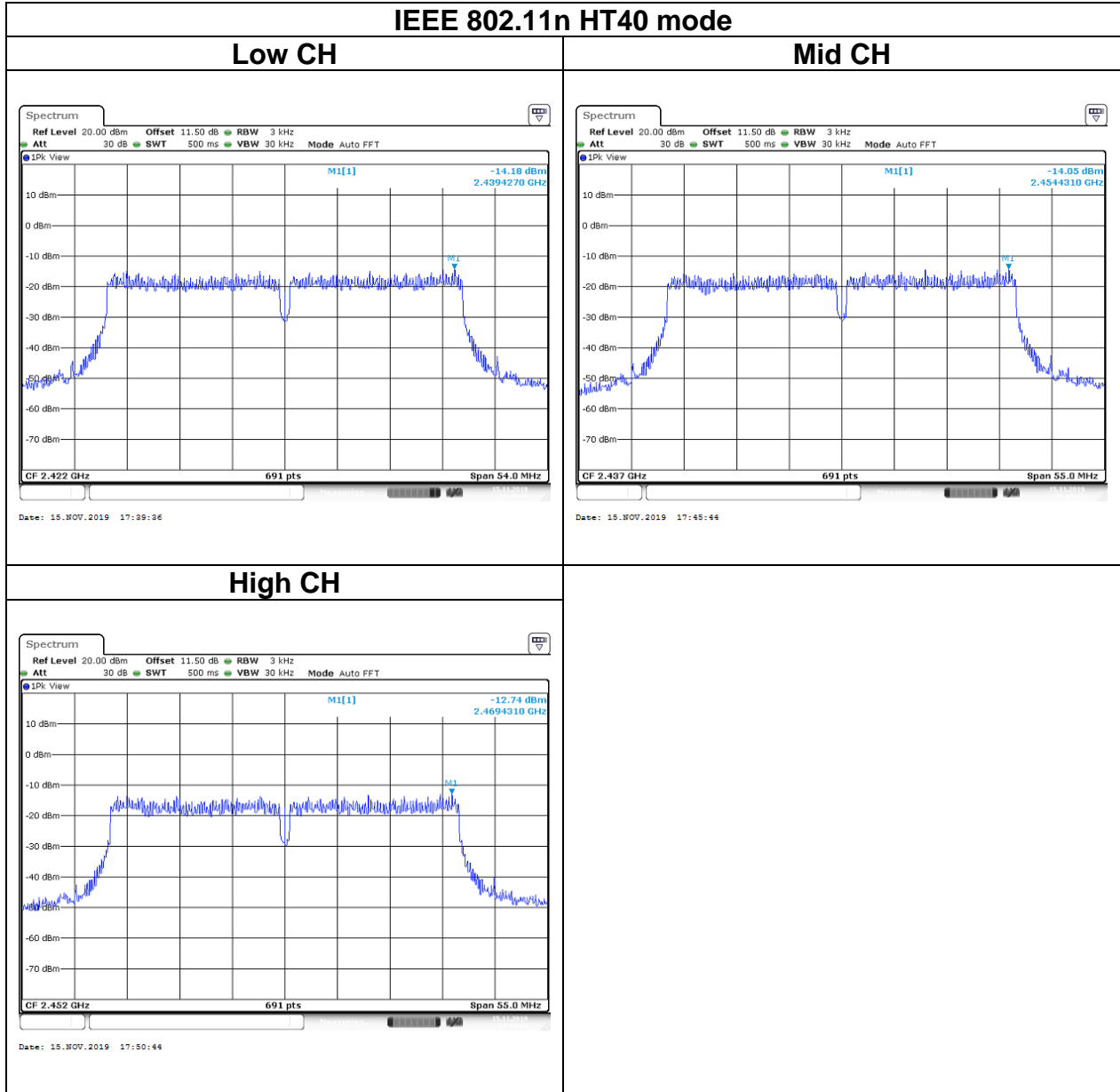
Report No.: T191104D01-RP1



Report No.: T191104D01-RP1

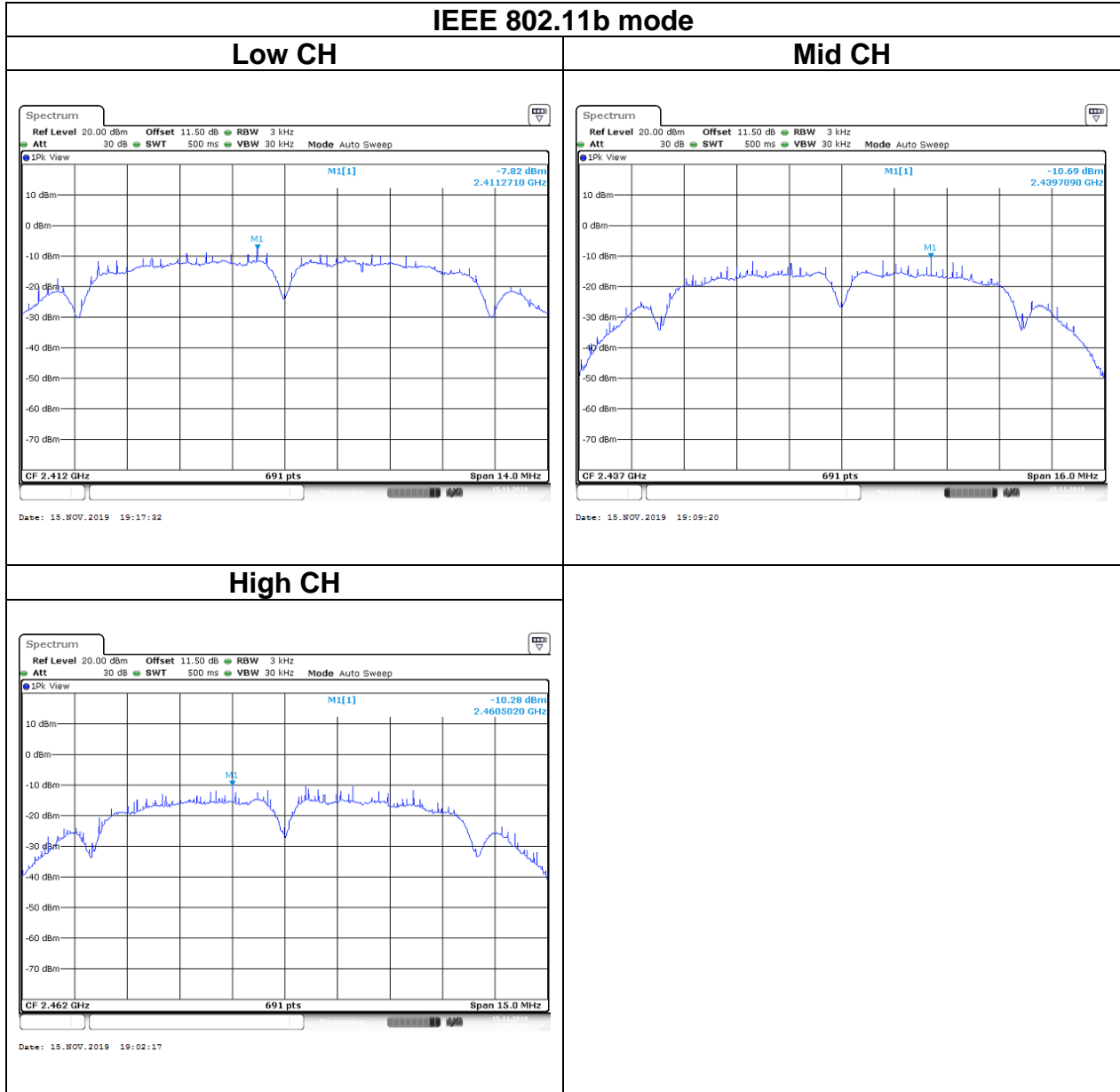


Report No.: T191104D01-RP1

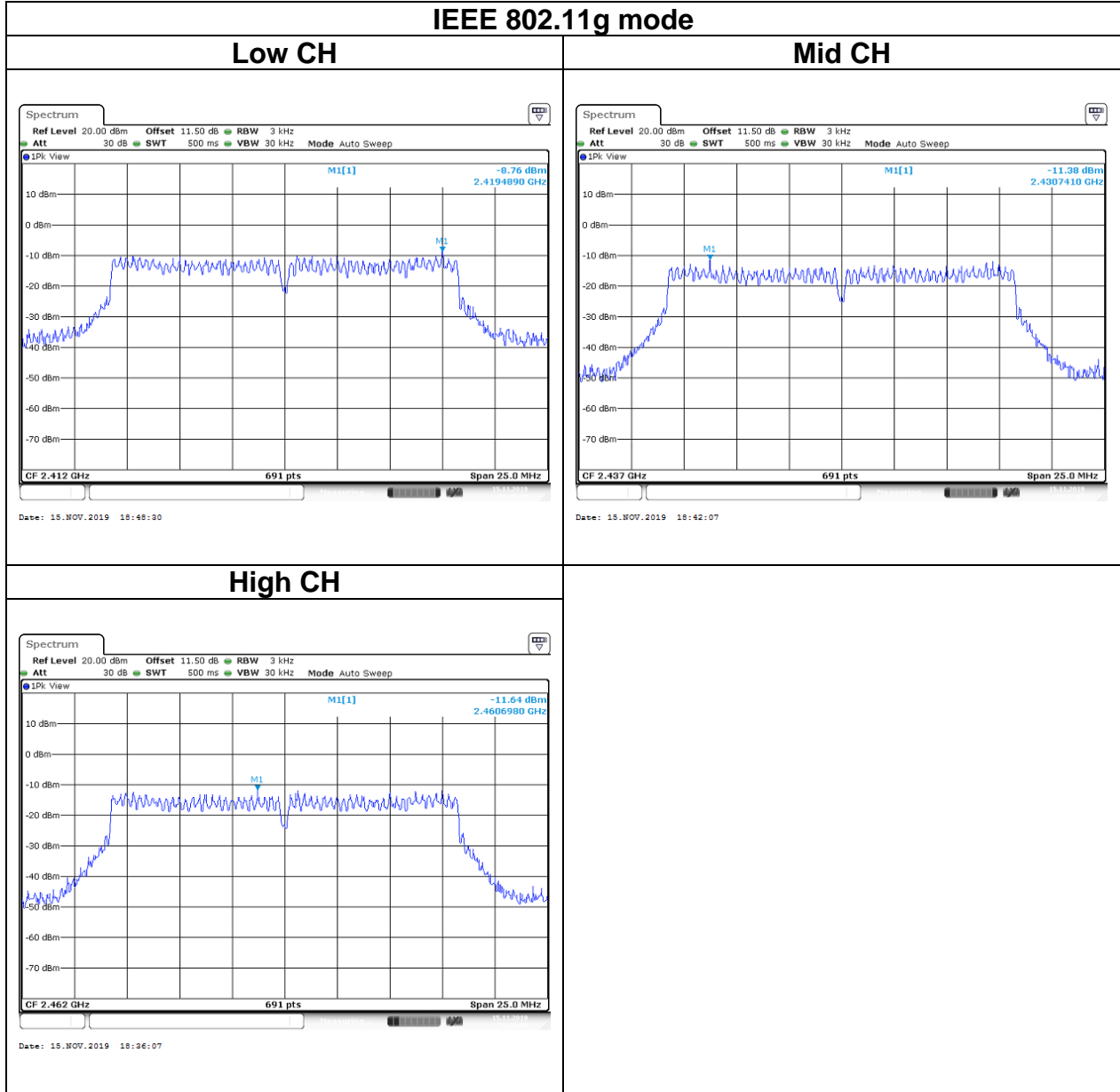


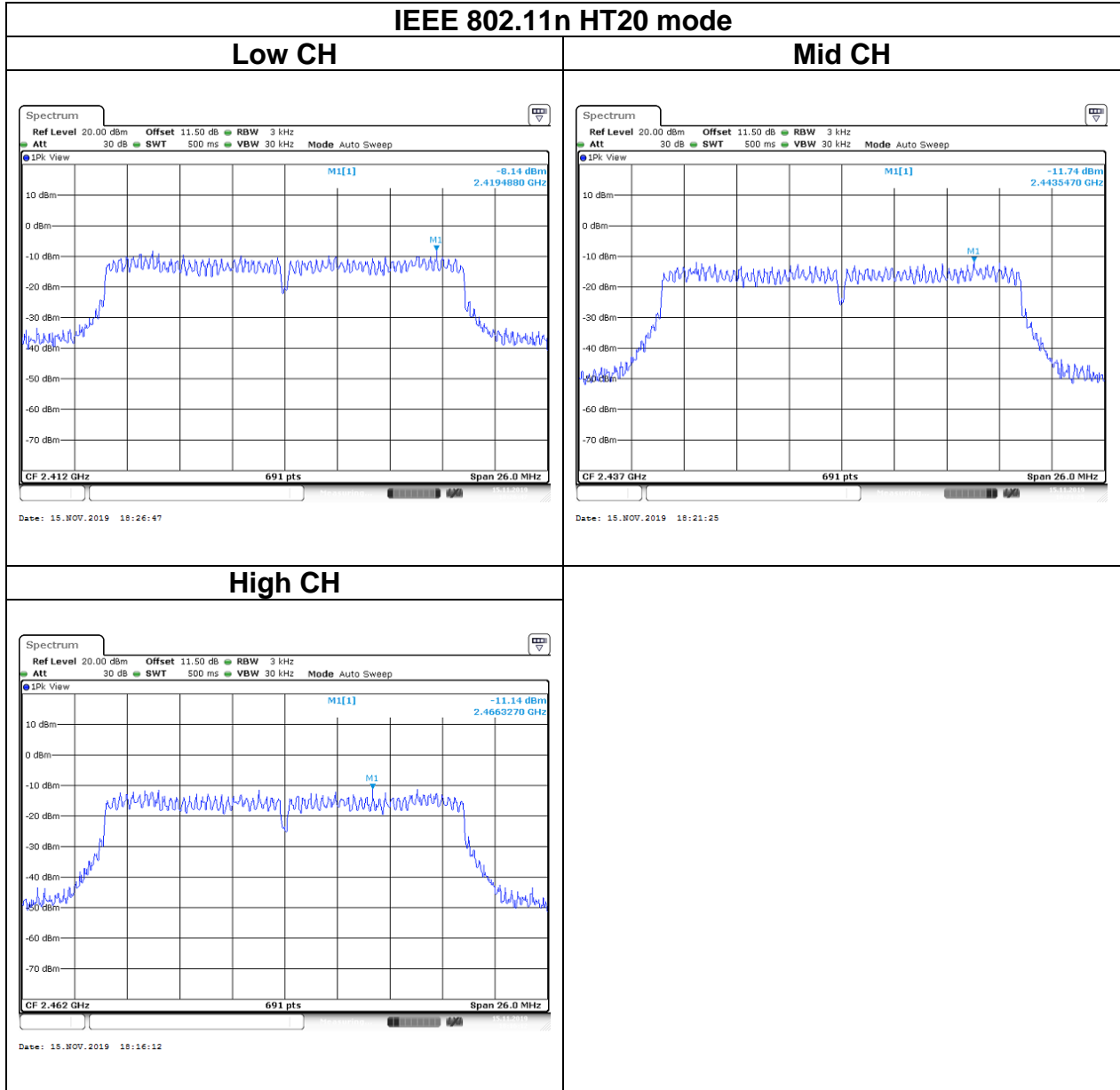
Report No.: T191104D01-RP1

Chain 1

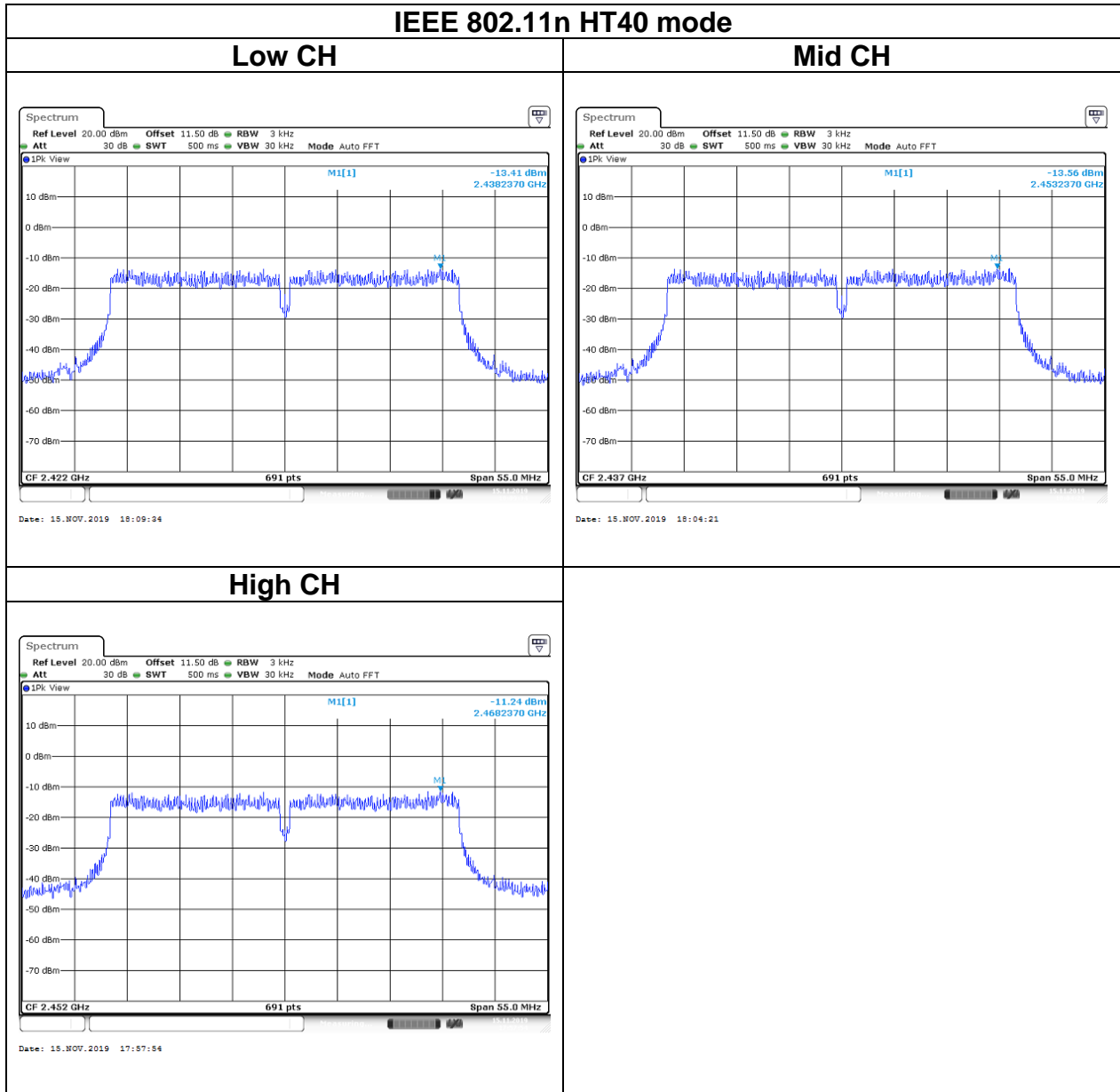


Report No.: T191104D01-RP1





Report No.: T191104D01-RP1



5.5 CONDUCTED BANDEDGE AND SPURIOUS EMISSION

5.5.1 Test Limit

According to §15.247(d),

In any 100 kHz bandwidth outside the authorized frequency band,

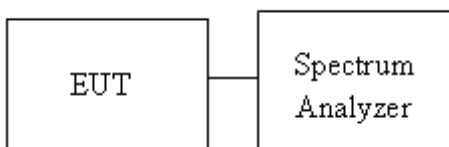
Non-restricted bands shall be attenuated at least 20 dB/30 dB relative to the maximum PSD level in 100 kHz by RF conducted or a radiated measurement which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a).

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



Report No.: T191104D01-RP1

5.5.4 Test Result

Test Data

Chain 0

