

TEST REPORT

Verified Code: 204042

Report No.:	E20201007701201-2	Application No.:	E20201007701201
Client:	Fiberhome Telecommunication Technologies Co., Ltd.		
Address:	No.88 Youkeyuan Road, Hongshan District, Wuhan,Hubei, China		
Sample Description:	Wireless Router		
Model:	SR1041D		
Test Specification:	CFR 47, FCC Part 15 Subpart C RADIO FREQUENCY DEVICES: Subpart C—Intentional Radiators		
Receipt Date:	2020-10-14		
Test Date:	2020-10-14 to 2020-12-03		
Issue Date:	2021-04-20		
Test Result:	Pass		
Prepared By: Test Engineer Xie Jang	Reviewed By: Technical Manager Jiang Tao	Approved By: Manager John Lee	
Other Aspects:			
Note: Note			
Abbreviations: ok / P = passed; fail / F = failed; n.a. / N = not applicable;			
The test result in this test report refers exclusively to the presented test sample. This report shall not be reproduced except in full, without the written approval of GRGT.			



DIRECTIONS OF TEST

- 1. This station carries out test task according to the national regulation of verifications which can be traced to National Primary Standards and BIPM.**
- 2. The test report merely corresponds to the test sample. It is not permitted to copy extracts of these test result without the written permission of the test laboratory.**
- 3. If there is any objection concerning the test, the client should inform the laboratory within 15 days from the date of receiving the test report.**

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1. TEST RESULT SUMMARY

Standard	Item	Limit / Severity	Result
CFR 47, FCC Part 15 Subpart C (§15.247)	Antenna Requirement	§15.203	PASS
	Conducted Emissions	§15.207 (a)	PASS
	Radiated Spurious Emission	§15.247(d)	PASS
	6 dB Bandwidth	§15.247 (a)(2)	PASS
	Maximum Peak Output Power	§15.247(b)(3)	PASS
	Power Spectral Density	§15.247(e)	PASS
	Conducted band edges and Spurious Emission	§15.247(d)	PASS
	Restricted bands of operation	§15.205	PASS

The EUT have two antennas. The antenna is External antenna.

The max gain of antenna 1 is 5.62dBi and antenna 2 is 5.37dBi, which accordance 15.203, is considered sufficient to comply with the provisions of this section.

2. GENERAL DESCRIPTION OF EUT

2.1. APPLICANT

Name: Fiberhome Telecommunication Technologies Co., Ltd.
Address: No.88 Youkeyuan Road, Hongshan District, Wuhan,Hubei, China

2.2. MANUFACTURER

Name: Fiberhome Telecommunication Technologies Co., Ltd.
Address: No.88 Youkeyuan Road, Hongshan District, Wuhan,Hubei, China

2.3. FACTORY

Name: Fiberhome Telecommunication Technologies Co.Ltd.
Address: No.67,Chuangye Street,East Lake High-tech Development Zone,Wuhan City,Hubei Province,P.R.China

2.4. BASIC DESCRIPTION OF EQUIPMENT UNDER TEST

Equipment: Wireless Router
Model No.: SR1041D
Adding Model: /
Trade Name: FiberHome
FCC ID: 2AV2N-SR1041D
Power Supply: DC12V power supplied by adapter
Adapter Specification: Model: RD1201000-C55-35MGD
Input: 100-240V~50/60Hz 0.6A MAX
Output: 12.0V --- 1.0A
Frequency Range: 2412MHz~2462MHz: 802.11b; 802.11g; 802.11n(HT20)
2422MHz~2452MHz: 802.11n(HT40);
Transmit Power: **Non-beamforming**
12.20dBm for 802.11b mode (antenna 1)
12.22dBm for 802.11b mode (antenna 2)
17.58dBm for 802.11g mode (antenna 1)
17.55dBm for 802.11g mode (antenna 2)
16.89dBm for 802.11n HT20 mode(MIMO)
16.91dBm for 802.11n HT40 mode(MIMO)
Beamforming
16.43dBm for 802.11n HT20 mode(MIMO)
16.45dBm for 802.11n HT40 mode(MIMO)
Modulation type: DSSS for 802.11b mode;
OFDM for 802.11g mode;
OFDM for 802.11n mode.

Channel space: 5MHz

Antenna Specification: External antenna 1 with 5.62dBi gain (Max.)
External antenna 2 with 5.37dBi gain (Max)

Temperature Range: -5 °C ~ 45 °C

Hardware Version: SR1041D_R1A

Software Version: RP0100

Sample No: E20201007701201-0001, E20201007701201-0003,

Note: /

2.5. TEST OPERATION MODE

Mode No.	Description of the modes
1	2.4G wifi fixed transmitting

2.6. LOCAL SUPPORTIVE INSTRUMENTS

Name of Equipment	Manufacturer	Model	Serial Number	Note
Notebook	LENOVO	TianYi 310-14ISK	MP18DLC6	/
Adapter (Notebook)	LENOVO	ADLX65NCC3A	N/A	/
Cable				
AC cable	/	/	/	Unshielded, 1.00m
DC cable	/	/	/	Shielded, 1.80m

Test software:

Software version
Mp_tool_0417

Non-beamforming

Mode	Date Rate	Frequency (MHz)	Power Setting
802.11b	1M	2412	18/18
		2437	22/22
		2462	22/22
802.11g	6M	2412	38/38
		2437	43/43
		2462	42/42
802.11n HT20	MCS0	2412	36/37
		2437	36/38
		2462	36/38
802.11n HT40	MCS0	2422	35/35
		2437	36/37
		2452	35/35

Beamforming

Mode	Date Rate	Frequency (MHz)	Power Setting
802.11n HT20	MCS0	2412	35/36
		2437	35/37
		2462	35/37
802.11n HT40	MCS0	2422	34/34
		2437	35/36
		2452	34/34

3. LABORATORY AND ACCREDITATIONS

3.1. LABORATORY

The tests & measurements refer to this report were performed by Shenzhen EMC Laboratory of Guangzhou GRG Metrology & Test Co., Ltd.

Add : Address: No.1301 Guanguang Road Xinlan Community, Guanlan Street,
Longhua District Shenzhen, 518110, People's Republic of China

P.C. : 518000

Tel : 0755-61180008

Fax : 0755-61180008

3.2. ACCREDITATIONS

Our laboratories are accredited and approved by the following approval agencies according to GB/T 27025(ISO/IEC 17025:2017)

USA A2LA(Certificate #:2861.01)

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

Canada Industry Canada

USA FCC

Copies of granted accreditation certificates are available for downloading from our web site, <http://www.grgtest.com>

3.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement		Frequency	Uncertainty
Radiated Emission	Horizontal	30MHz~1000MHz	4.30dB
		1GHz~18GHz	5.60dB
		18GHz~26GHz	3.65dB
	Vertical	30MHz~1000MHz	4.30dB
		1GHz~18GHz	5.60dB
		18GHz~26GHz	3.65dB
Conduction Emission		9 kHz ~ 150 kHz	2.80dB
		150 kHz ~ 10 MHz	2.80dB
		10 MHz ~ 30 MHz	2.20dB

This uncertainty represents an expanded uncertainty factor of k=2.

4. LIST OF USED TEST EQUIPMENT AT GRGT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Conducted Emissions				
EMI TEST RECEIVER	R&S	ESCI	100783	2021-10-08
LISN(EUT)	R&S	ENV216	101543	2021-03-24
Radiated Spurious Emission& Restricted bands of operation				
TEST RECEIVER	R&S	ESU26	EMC26-G260	2021-09-22
Spectrum Analyzer	Agilent	N9010A	MY52221469	2021-05-16
Bilog Antenna	Schwarzbeck	VULB 9163	01279	2021-03-14
Horn Antenna	Schwarzbeck	BBHA 9120D(1201)	02143	2021-12-27
Board-Band Horn Antenna	Schwarzbeck	BBHA 9170	BBHA 9170-497	2021-11-05
Amplifier	Tonscend	TAP9E6343	AP20E806065	2021-06-28
Amplifier	Tonscend	TAP01018048	AP20E8060075	2021-06-28
Amplifier	Tonscend	TAP037030	AP20E8060081	2021-06-28
Amplifier	Tonscend	TAP184050	AP20E806071	2021-06-15
Test S/W	Tonscend	JS32-RE/2.5.1.5		
6 dB Bandwidth				
Spectrum Analyzer	Agilent	N9010A	MY52221469	2021-05-16
Output Power				
Pulse power sensor	Agilent	MA2411B	1126150	2021-04-13
Power meter	Anritsu	ML2495A	1204003	2021-04-13
Conducted band edges and Spurious Emission				
Spectrum Analyzer	Agilent	N9010A	MY52221469	2021-05-16
Power Spectral Density				
Spectrum Analyzer	Agilent	N9010A	MY52221469	2021-05-16

Note: The calibration interval of the above test instruments is 12 months.

5. CONDUCTED EMISSION MEASUREMENT

5.1. LIMITS

Frequency range	Limits (dBμV)	
	Quasi-peak	Average
150kHz ~ 0.5MHz	66~56	56~46
0.5 MHz ~ 5 MHz	56	46
5 MHz ~ 30 MHz	60	50

NOTE: (1) The lower limit shall apply at the transition frequencies.

(2) The limit decreases in line with the logarithm of the frequency in the range of 150 kHz to 0.5MHz.

5.2. TEST PROCEDURES

Procedure of Preliminary Test

Test procedures follow ANSI C63.10:2013.

For measurement of the disturbance voltage the equipment under test (EUT) is connected to the power supply mains and any other extended network via one or more artificial network(s). An EUT, whether intended to be grounded or not, and which is to be used on a table is configured as follows:

- Either the bottom or the rear of the EUT shall be at a controlled distance of 40 cm from a reference ground plane. This ground plane is normally the wall or floor of a shielded room. It may also be a grounded metal plane of at least 2 m by 2 m. This is physically accomplished as follows:

- 1) place the EUT on a table of non-conducting material which is at least 80 cm high. Place the EUT so that it is 40 cm from the wall of the shielded room, or
- 2) place the EUT on a table of non-conducting material which is 40 cm high so that the bottom of the EUT is 40 cm above the ground plane;

- All other conductive surfaces of the EUT shall be at least 80 cm from the reference ground plane;

- The EUT are placed on the floor that one side of the housings is 40 cm from the vertical reference ground plane and other metallic parts;

- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth forming a bundle 30 cm to 40 cm long, hanging approximately in the middle between the ground plane and the table.

- I/O cables that are connected to a peripheral shall be bundled in the centre. The end of the cable may be terminated if required using correct terminating impedance. The total length shall not exceed 1 m.

The test mode(s) described in Item 2.4 were scanned during the preliminary test. After the preliminary scan, we found the test mode described in Item 2.4 producing the highest emission level. The EUT configuration and cable configuration of the above highest emission levels were recorded for reference of the final test.

Procedure of Final Test

EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test. A scan was taken on both power lines, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. The test data of the worst-case condition(s) was recorded.

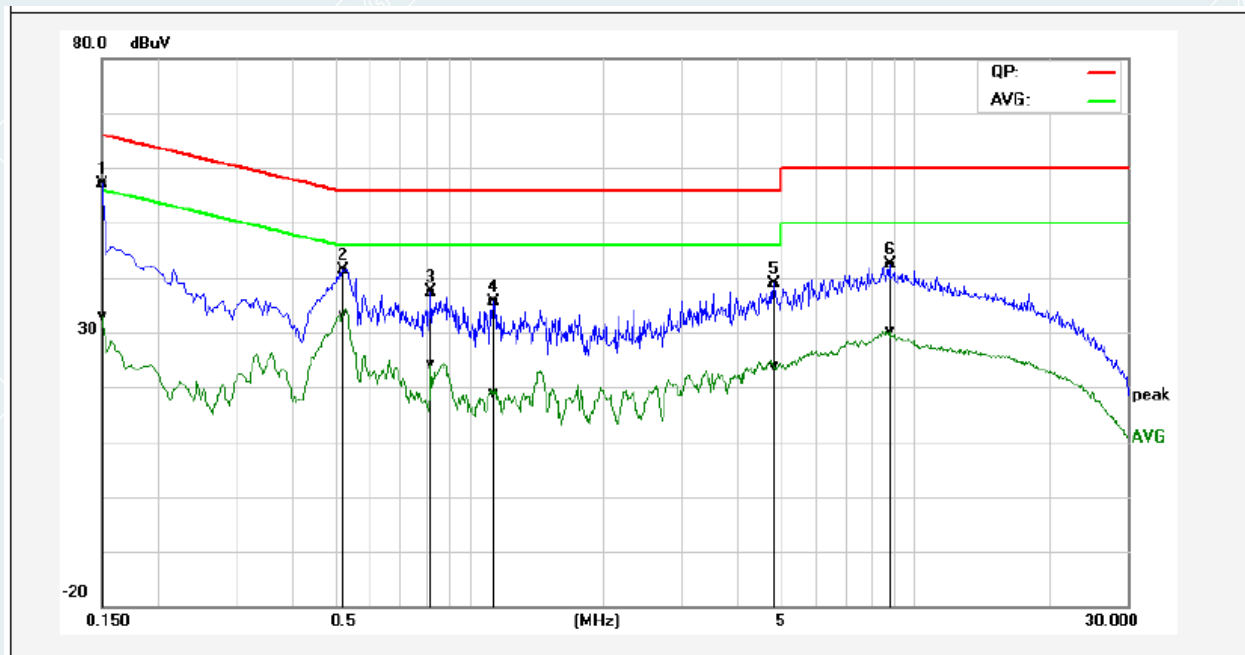
The diagram illustrates the experimental setup for EMI measurements. It features two tables. The left table, labeled 'G.R.P.', holds the 'EUT' (Equipment Under Test). The right table holds the 'RECEIVER' system, which includes a computer monitor, keyboard, and tower unit. A 'LISN' (Line Impedance Stabilization Network) is positioned between the two tables, connected to the power lines of both. Dimensions are specified: 0.4m for the EUT, 0.8m for the LISN, and 0.8m for the distance between the tables.

Frequency (MHz)	QuasiPeak Reading (dBuV)	Average Reading (dBuV)	Correction Factor (dB)	QuasiPeak Result (dBuV)	Average Result (dBuV)	QuasiPeak Limit (dBuV)	Average Limit (dBuV)	QuasiPeak Margin (dB)	Average Margin (dB)	Remark (Pass/Fail)
X.XXXX	32.69	25.65	11.52	44.21	37.17	65.78	55.79	-21.57	-18.62	Pass

Factor	= Insertion loss of LISN + Cable Loss
Result	= Quasi-peak Reading/ Average Reading + Factor
Limit	= Limit stated in standard
Margin	= Result (dBuV) – Limit (dBuV)

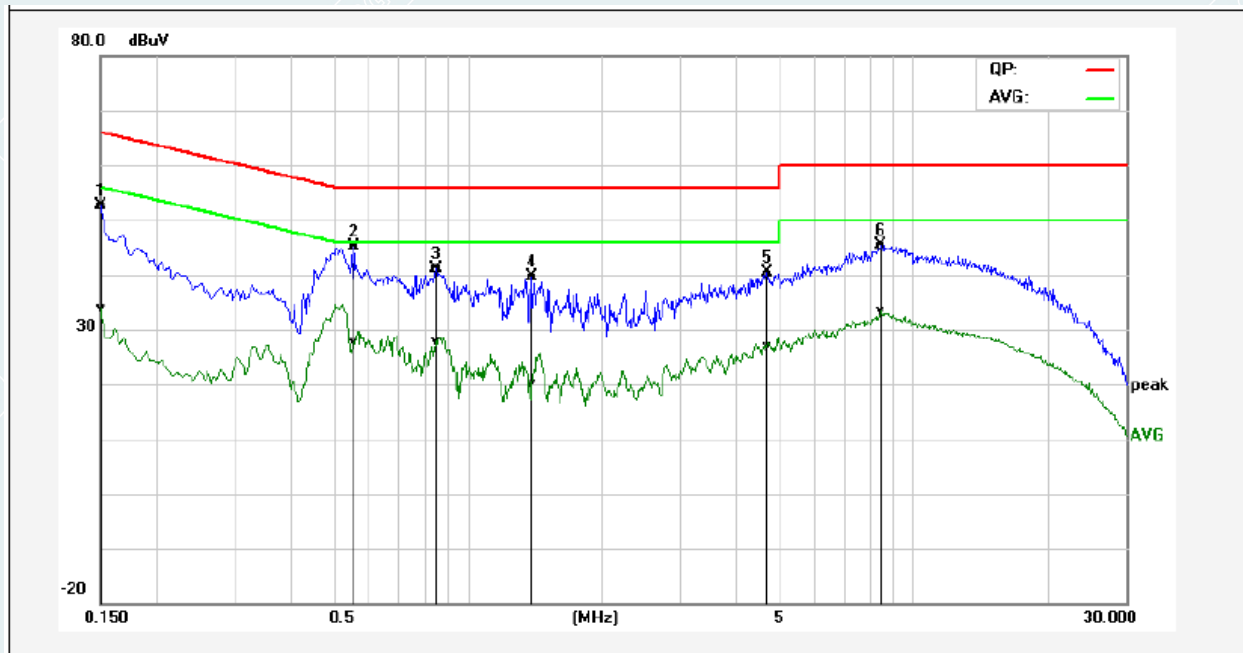
5.5. TEST RESULTS

Model No.	SR1041D	RBW,VBW	9 kHz
Environmental Conditions	25.8°C/48%RH	Test Mode	Mode 1
Tested By	Luo Ping	Line	L
Tested Date	2020/10/22	Test Voltage	AC120V/60Hz



No.	Frequency (MHz)	QuasiPeak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	QuasiPeak result (dBuV)	Average result (dBuV)	QuasiPeak limit (dBuV)	Average limit (dBuV)	QuasiPeak margin (dB)	Average margin (dB)	Remark
1*	0.1500	47.50	23.22	9.66	57.16	32.88	65.99	56.00	-8.83	-23.12	Pass
2	0.5220	31.78	23.51	9.67	41.45	33.18	56.00	46.00	-14.55	-12.82	Pass
3	0.8260	27.81	14.40	9.69	37.50	24.09	56.00	46.00	-18.50	-21.91	Pass
4	1.1380	26.01	9.18	9.70	35.71	18.88	56.00	46.00	-20.29	-27.12	Pass
5	4.8380	28.97	14.17	9.80	38.77	23.97	56.00	46.00	-17.23	-22.03	Pass
6	8.8180	32.45	20.25	9.82	42.27	30.07	60.00	50.00	-17.73	-19.93	Pass

Model No.	SR1041D	RBW,VBW	9 kHz
Environmental Conditions	25.8°C/48%RH	Test Mode	Mode 1
Tested By	Luo Ping	Line	N
Tested Date	2020/10/22	Test Voltage	AC120V/60Hz



No.	Frequency (MHz)	QuasiPeak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	QuasiPeak result (dBuV)	Average result (dBuV)	QuasiPeak limit (dBuV)	Average limit (dBuV)	QuasiPeak margin (dB)	Average margin (dB)	Remark
1	0.1500	42.98	24.15	9.66	52.64	33.81	65.99	56.00	-13.35	-22.19	Pass
2*	0.5580	35.49	17.94	9.67	45.16	27.61	56.00	46.00	-10.84	-18.39	Pass
3	0.8500	31.51	18.11	9.69	41.20	27.80	56.00	46.00	-14.80	-18.20	Pass
4	1.3980	29.91	10.37	9.71	39.62	20.08	56.00	46.00	-16.38	-25.92	Pass
5	4.7180	30.45	17.01	9.80	40.25	26.81	56.00	46.00	-15.75	-19.19	Pass
6	8.4819	35.63	23.61	9.83	45.46	33.44	60.00	50.00	-14.54	-16.56	Pass

6. RADIATED SPURIOUS EMISSIONS

6.1. LIMITS

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required.

Frequency (MHz)	Quasi-peak($\mu\text{V/m}$)	Measurement distance(m)	Quasi-peak($\text{dB}\mu\text{V/m}$)@distance 3m
0.009-0.490	2400/F(kHz)	300	53.8~88.5
0.490-1.705	24000/F(kHz)	30	43~53.8
1.705-30.0	30	30	49.5
30 ~ 88	100	3	40
88~216	150	3	43.5
216 ~ 960	200	3	46
Above 960	500	3	54

NOTE: (1) The lower limit shall apply at the transition frequencies.

NOTE: (2) Above 18G Limit= $74+20\log(3/1)=83.54$ ($\text{dB}\mu\text{V/m}$).

6.2. TEST PROCEDURES (please refer to measurement standard)

1) Sequence of testing 9 kHz to 30 MHz

Setup:

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a rotatable table with 0.8 m height is used.
- If the EUT is a floor standing device, it is placed on the ground.
- Auxiliary equipment and cables were positioned to simulate normal operation conditions.
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- The measurement distance is 3 meter.
- The EUT was set into operation.

Pre measurement:

- The turntable rotates from 0° to 315° using 45° steps.
- The antenna height is 0.8 meter.
- At each turntable position the analyzer sweeps with peak detection to find the maximum of all emissions

Final measurement:

- Identified emissions during the pre measurement the software maximizes by rotating the turntable position (0 °to 360 °) and by rotating the elevation axes (0 °to 360 °).
- The final measurement will be done in the position (turntable and elevation) causing the highest emissions with QPK detector.
- The final levels, frequency, measuring time, bandwidth, turntable position, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the pre measurement and the limit will be stored.

2) Sequence of testing 30 MHz to 1 GHz**Setup:**

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a table with 0.8 m height is used, which is placed on the ground plane.
- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.
- Auxiliary equipment and cables were positioned to simulate normal operation conditions
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- The measurement distance is 3 meter.
- The EUT was set into operation.

Pre measurement:

- The turntable rotates from 0 °to 315 °using 45 °steps.
- The antenna is polarized vertical and horizontal.
- The antenna height changes from 1 to 3 meter.
- At each turntable position, antenna polarization and height the analyzer sweeps three times in peak to find the maximum of all emissions.

Final measurement:

- The final measurement will be performed with minimum the six highest peaks.
- According to the maximum antenna and turntable positions of premeasurement the software maximize the peaks by changing turntable position ($\pm 45^\circ$) and antenna movement between 1 and 4 meter.
- The final measurement will be done with QP detector with an EMI receiver.
- The final levels, frequency, measuring time, bandwidth, antenna height, antenna polarization, turntable angle, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement with marked maximum final measurements and the limit will be stored.

3) Sequence of testing 1 GHz to 18 GHz

Setup:

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a rotatable table with 1.5 m height is used.
- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.
- Auxiliary equipment and cables were positioned to simulate normal operation conditions
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- The measurement distance is 3 meter.
- The EUT was set into operation.

Pre measurement:

- The turntable rotates from 0 ° to 315 ° using 45 ° steps.
- The antenna is polarized vertical and horizontal.
- The antenna height scan range is 1 meter to 2.5 meter.
- At each turntable position and antenna polarization the analyzer sweeps with peak detection to find the maximum of all emissions.

Final measurement:

- The final measurement will be performed with minimum the six highest peaks.
- According to the maximum antenna and turntable positions of premeasurement the software maximize the peaks by changing turntable position ($\pm 45^\circ$) and antenna movement between 1 and 4 meter. This procedure is repeated for both antenna polarizations.
- The final measurement will be done in the position (turntable, EUT-table and antenna polarization) causing the highest emissions with Peak and Average detector.
- The final levels, frequency, measuring time, bandwidth, turntable position, EUT-table position, antenna polarization, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the pre measurement with marked maximum final measurements and the limit will be stored.

4) Sequence of testing above 18 GHz**Setup:**

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a rotatable table with 1.5 m height is used.
- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.
- Auxiliary equipment and cables were positioned to simulate normal operation conditions
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- The measurement distance is 1 meter.
- The EUT was set into operation.

Pre measurement:

- The antenna is moved spherical over the EUT in different polarisations of the antenna.

Final measurement:

- The final measurement will be performed at the position and antenna orientation for all detected emissions that were found during the premeasurements with Peak and Average detector.
- The final levels, frequency, measuring time, bandwidth, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement and the limit will be stored.

NOTE: The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for RMS Average (Duty cycle < 98%) for Average detection (AV) at frequency above 1GHz, then the measurement results was added to a correction factor ($10 \log(1/\text{duty cycle})$).

6.3. TEST SETUP

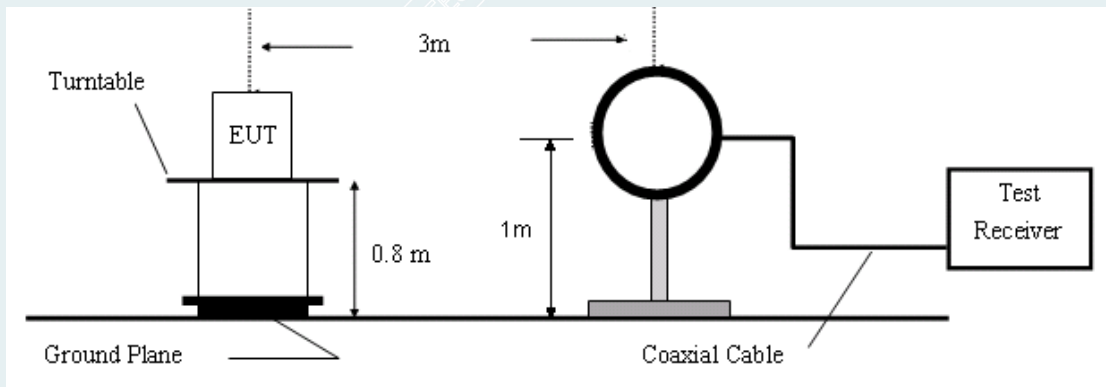


Figure 1. 9 KHz to 30MHz radiated emissions test configuration

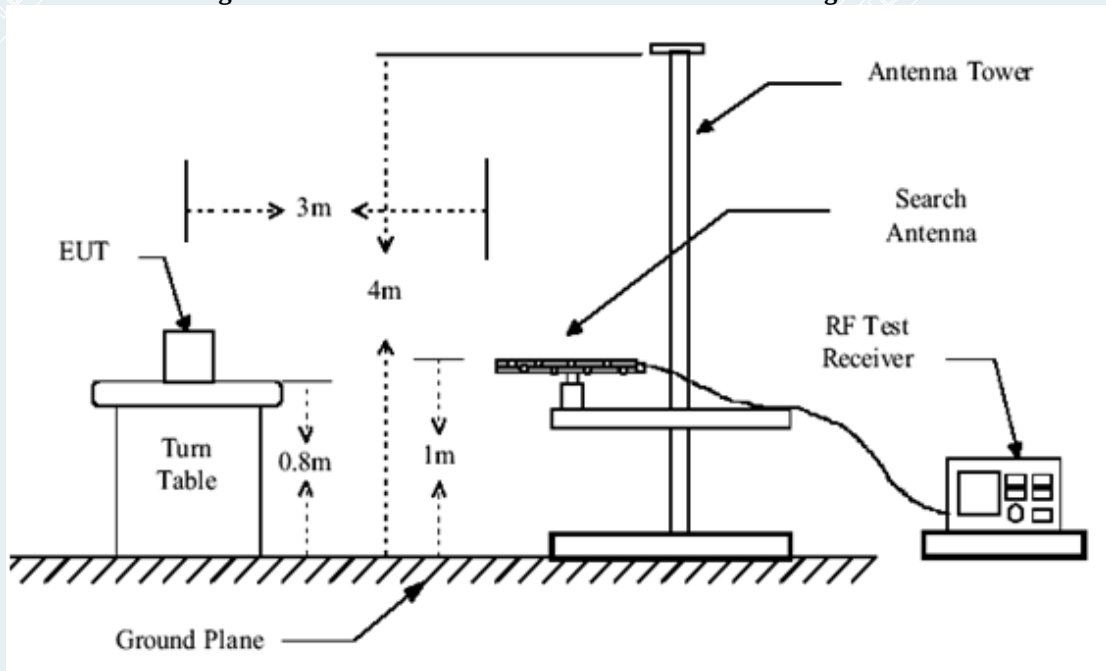


Figure 2. 30MHz to 1GHz radiated emissions test configuration

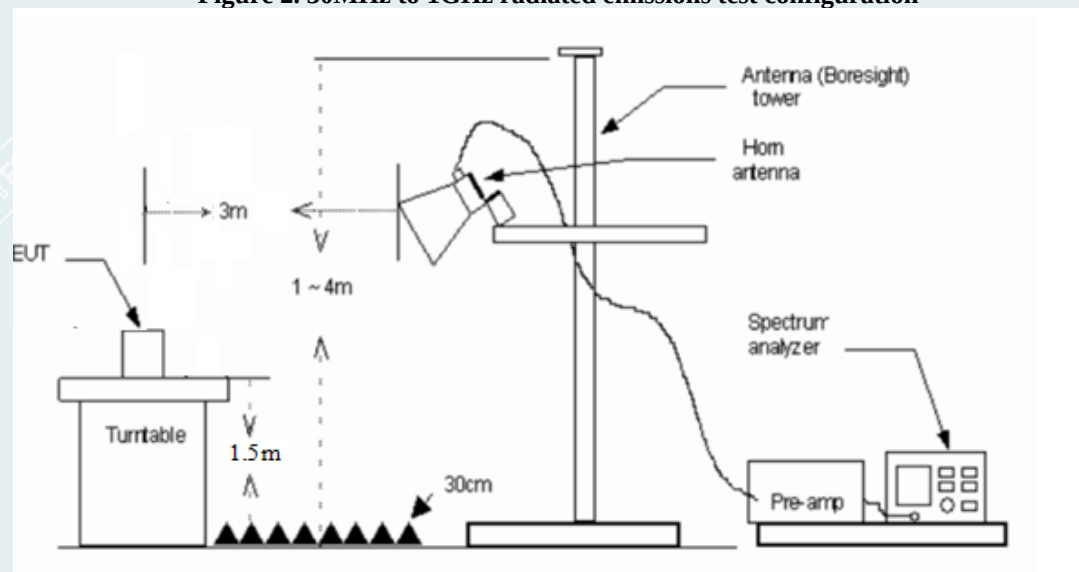


Figure 3. Above 1GHz radiated emissions test configuration

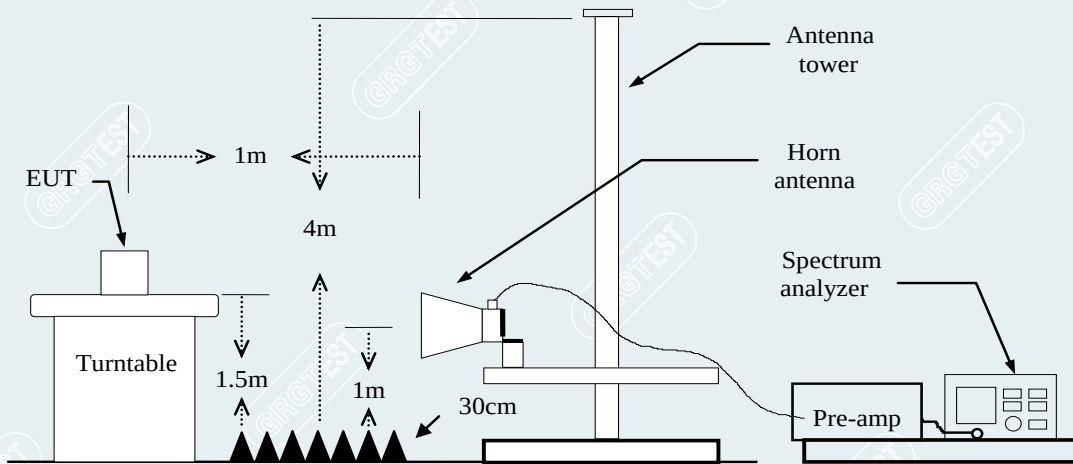


Figure 4. Above 18GHz radiated emissions test configuration

6.4. DATA SAMPLE

30MHz to 1GHz

No.	Frequency (MHz)	Reading (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Pole
xxx	xxx	37.06	-15.48	21.58	40.00	-18.42	QP	Vertical

Above 1 GHz

No.	Frequency (MHz)	Reading (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Pole
xxx	xxx	65.45	-11.12	54.33	74.00	-19.67	peak	Vertical
xxx	xxx	63.00	-11.12	51.88	54.00	-2.12	AVG	Vertical

Above 18 GHz

No.	Frequency (MHz)	Reading (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Pole
xxx	xxx	68.86	57.66	-11.20	83.54	25.88	peak	Vertical
xxx	xxx	68.89	-11.20	57.69	63.54	5.85	AVG	Vertical

Frequency (MHz) = Emission frequency in MHz

Ant.Pol. (H/V) = Antenna polarization

Reading (dBuV) = Uncorrected Analyzer / Receiver reading

Correction Factor (dB/m) = Antenna factor + Cable loss – Amplifier gain

Result (dBuV/m) = Reading (dBuV) + Correction Factor (dB/m)

Limit (dBuV/m) = Limit stated in standard

Margin (dB) = Remark Result (dBuV/m) – Limit (dBuV/m)

Peak = Peak Reading

QP = Quasi-peak Reading

AVG = Average Reading

6.5. TEST RESULTS

30MHz to 1GHz

Recorded the worst case results in this report (IEEE 802.11b)

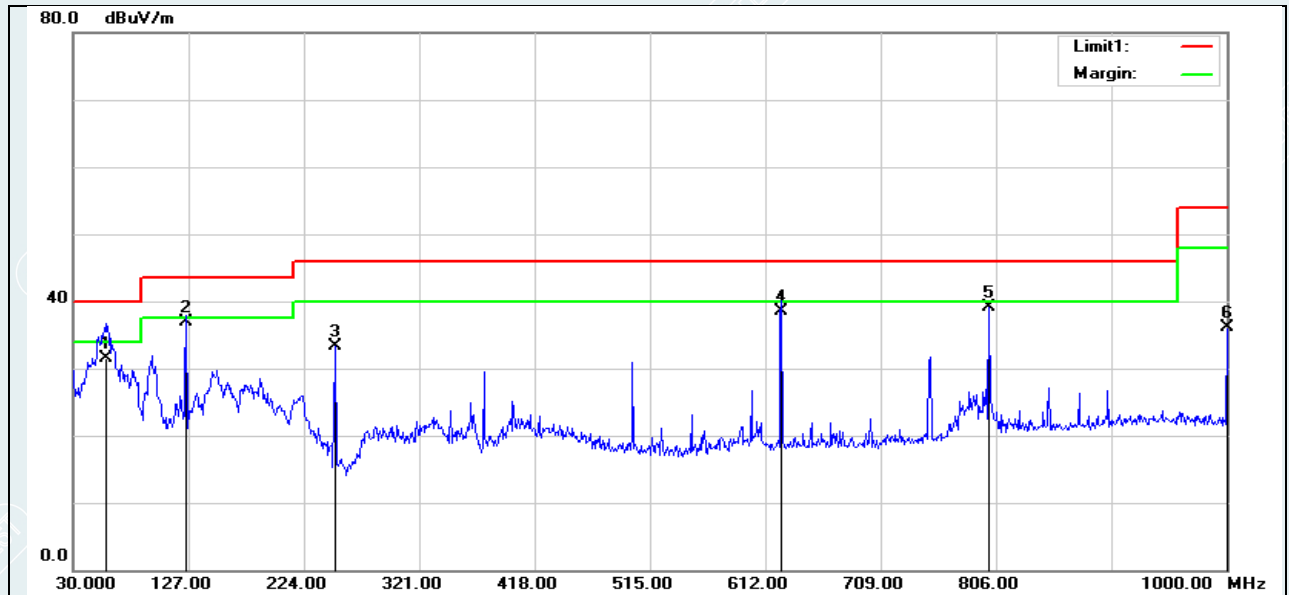
Mode: TX/ IEEE 802.11b

Lowest channel (2412MHz)

Polarity

Date: 2020/11/09

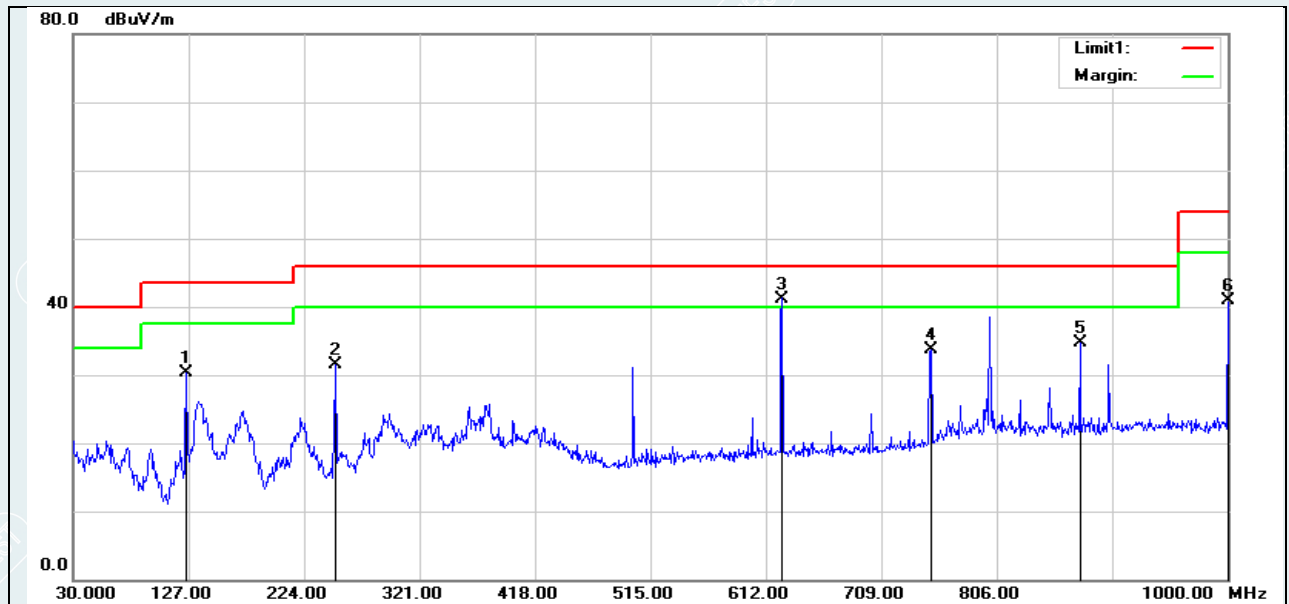
Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg)	Remark
1	58.1300	60.20	-28.68	31.52	40.00	-8.48	120	360	QP
2*	125.0600	62.97	-26.16	36.81	43.50	-6.69	100	291	QP
3	250.1900	58.76	-25.37	33.39	46.00	-12.61	199	272	QP
4	625.5800	55.98	-17.39	38.59	46.00	-7.41	100	158	QP
5	800.1800	54.67	-15.48	39.19	46.00	-6.81	100	360	QP
6	1000.0000	50.13	-14.04	36.09	54.00	-17.91	100	195	QP

Mode: TX/ IEEE 802.11b
 Lowest channel (2412MHz)
 Polarity

Date: 2020/11/09
 Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg)	Remark
1	125.0600	56.55	-26.16	30.39	43.50	-13.11	299	196	QP
2	250.1900	56.78	-25.37	31.41	46.00	-14.59	100	198	QP
3*	625.5800	58.49	-17.39	41.10	46.00	-4.90	138	360	QP
4	750.7100	49.92	-16.21	33.71	46.00	-12.29	113	360	QP
5	875.8400	49.60	-14.89	34.71	46.00	-11.29	100	48	QP
6	1000.0000	54.95	-14.04	40.91	54.00	-13.09	100	301	QP

Remark:

- 1 No emission found between lowest internal used/generated frequency to 30MHz.
- 2 Radiated emissions measured in frequency range from 9 kHz to 1GHz were made with an instrument using Quasi-peak detector mode.
- 3 Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 4 The IF bandwidth of Receiver between 30MHz to 1GHz was 120 kHz.

Above 1GHz-18GHz:

Recorded the worst case results in this report (antenna 1 for IEEE 802.11b/g)

Mode: TX / IEEE 802.11b (antenna 1)

Lowest channel (2412MHz)

Date: 2020/11/26

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1203.0000	44.02	44.68	0.66	74.00	29.32	100	187	Horizontal
2	2411.7500	89.62	96.47	6.85	74.00	-22.47	100	200	Horizontal
3	4823.4375	74.30	64.01	-10.29	74.00	9.99	200	80	Horizontal
4	7235.6250	58.42	55.29	-3.13	74.00	18.71	200	268	Horizontal
5	13985.6250	39.61	49.91	10.30	74.00	24.09	200	210	Horizontal
6	17970.9375	38.27	58.92	20.65	74.00	15.08	200	230	Horizontal

PK Final Data List					
NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	4823.9374	-10.27	200	80	Horizontal
2	7232.8421	-3.14	200	3.8	Horizontal
3	13985.6250	10.30	200	210	Horizontal
4	17970.9375	20.65	200	230	Horizontal

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4823.9374	-10.27	60.81	50.54	54.00	3.46	200	80	Horizontal
2	7232.8421	-3.14	36.01	32.87	54.00	21.13	200	3.8	Horizontal
3	13985.6250	10.30	28.10	38.40	54.00	15.60	200	210	Horizontal
4	17970.9375	20.65	27.99	48.64	54.00	5.36	200	230	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2411.6250	98.04	104.89	6.85	74.00	-30.89	100	158	Vertical
2	4823.4375	73.00	62.71	-10.29	74.00	11.29	200	157	Vertical
3	4999.6875	55.30	46.64	-8.66	74.00	27.36	200	183	Vertical
4	7235.6250	62.30	59.17	-3.13	74.00	14.83	100	202	Vertical
5	9647.8125	46.10	48.60	2.50	74.00	25.40	200	236	Vertical
6	17997.1875	38.16	59.41	21.25	74.00	14.59	100	268	Vertical

PK Final Data List					
NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	4823.2249	-10.29	200	3.6	Vertical
2	7231.5086	-3.14	100	3.8	Vertical
3	9647.8898	2.50	200	167.6	Vertical
4	17997.1875	21.25	100	268	Vertical

AV Final Data List

NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4823.2249	-10.29	49.02	38.73	54.00	15.27	200	3.6	Vertical
2	7231.5086	-3.14	35.06	31.92	54.00	22.08	100	3.8	Vertical
3	9647.8898	2.50	38.61	41.11	54.00	12.89	200	167.6	Vertical
4	17997.1875	21.25	28.32	49.57	54.00	4.43	100	268	Vertical

Mode: TX/ IEEE 802.11b (antenna 1)
Middle channel (2437 MHz)

Date: 2020/11/26

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2438.0000	98.38	104.76	6.38	74.00	-30.76	100	78	Vertical
2	4873.1250	69.02	59.56	-9.46	74.00	14.44	200	160	Vertical
3	7311.5625	61.73	58.07	-3.66	74.00	15.93	200	197	Vertical
4	9748.1250	47.46	50.03	2.57	74.00	23.97	200	193	Vertical
5	10360.3125	46.37	50.12	3.75	74.00	23.88	100	279	Vertical
6	14622.1875	41.94	52.38	10.44	74.00	21.62	100	214	Vertical

PK Final Data List					
NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	4874.0036	-9.46	189	163	Vertical
2	7311.7090	-3.66	187	3.4	Vertical
3	9747.8907	2.57	200	252.3	Vertical
4	10359.9389	3.76	112	220.6	Vertical
5	14621.8360	10.43	100	64.1	Vertical

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4874.0036	-9.46	60.16	50.70	54.00	3.30	189	163	Vertical
2	7311.7090	-3.66	46.02	42.36	54.00	11.64	187	3.4	Vertical
3	9747.8907	2.57	35.67	38.24	54.00	15.76	200	252.3	Vertical
4	10359.9389	3.76	35.04	38.80	54.00	15.20	112	220.6	Vertical
5	14621.8360	10.43	29.79	40.22	54.00	13.78	100	64.1	Vertical

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2436.6000	98.30	104.70	6.40	74.00	-30.70	100	165	Horizontal
2	4873.1250	68.98	59.52	-9.46	74.00	14.48	100	164	Horizontal
3	4999.6875	52.74	44.08	-8.66	74.00	29.92	200	205	Horizontal
4	7310.6250	61.25	57.58	-3.67	74.00	16.42	200	193	Horizontal
5	9748.1250	47.86	50.43	2.57	74.00	23.57	100	234	Horizontal
6	10360.3125	46.10	49.85	3.75	74.00	24.15	200	279	Horizontal

PK Final Data List

NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	4874.2964	-9.46	108	3.5	Horizontal
2	7308.7212	-3.67	200	10.1	Horizontal
3	9748.4765	2.57	100	3.3	Horizontal
4	10359.9389	3.76	200	3.5	Horizontal

AV Final Data List

NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4874.2964	-9.46	59.41	49.95	54.00	4.05	108	3.5	Horizontal
2	7308.7212	-3.67	47.44	43.77	54.00	10.23	200	10.1	Horizontal
3	9748.4765	2.57	32.46	35.03	54.00	18.97	100	3.3	Horizontal
4	10359.9389	3.76	32.73	36.49	54.00	17.51	200	3.5	Horizontal

Mode: TX / IEEE 802.11b (antenna 1)
Highest channel (2462MHz)

Date: 2020/11/26

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2463.0000	98.46	104.39	5.93	74.00	-30.39	200	74	Horizontal
2	4923.7500	65.12	56.19	-8.93	74.00	17.81	200	159	Horizontal
3	4999.6875	53.50	44.84	-8.66	74.00	29.16	200	190	Horizontal
4	7385.6250	54.54	51.98	-2.56	74.00	22.02	100	189	Horizontal
5	9847.5000	44.90	47.59	2.69	74.00	26.41	100	167	Horizontal
6	10360.3125	45.17	48.92	3.75	74.00	25.08	200	279	Horizontal

PK Final Data List					
NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	4923.8486	-8.92	141	3.5	Horizontal
2	7380.5651	-2.57	100	3.8	Horizontal
3	9859.8094	2.69	112	3.8	Horizontal
4	10360.3125	3.75	200	279	Horizontal

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4923.8486	-8.92	49.03	40.11	54.00	13.89	141	3.5	Horizontal
2	7380.5651	-2.57	35.58	33.01	54.00	20.99	100	3.8	Horizontal
3	9859.8094	2.69	32.16	34.85	54.00	19.15	112	3.8	Horizontal
4	10360.3125	3.75	33.67	37.42	54.00	16.58	200	279	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2463.0000	98.46	104.39	5.93	74.00	-30.39	100	161	Vertical
2	4923.7500	65.19	56.26	-8.93	74.00	17.74	100	156	Vertical
3	4999.6875	53.15	44.49	-8.66	74.00	29.51	100	189	Vertical
4	7385.6250	54.81	52.25	-2.56	74.00	21.75	100	189	Vertical
5	9847.5000	46.09	48.78	2.69	74.00	25.22	100	179	Vertical
6	10360.3125	46.58	50.33	3.75	74.00	23.67	200	279	Vertical

PK Final Data List

NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	4924.0459	-8.92	159	180	Vertical
2	7389.0278	-2.57	184	3.5	Vertical
3	9847.8156	2.69	100	3.5	Vertical
4	10360.3125	3.75	200	279	Vertical

AV Final Data List

NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4924.0459	-8.92	59.54	50.62	54.00	3.38	159	180	Vertical
2	7389.0278	-2.57	35.68	33.11	54.00	20.89	184	3.5	Vertical
3	9847.8156	2.69	35.69	38.38	54.00	15.62	100	3.5	Vertical
4	10360.3125	3.75	34.38	38.13	54.00	15.87	200	279	Vertical

Mode: TX / IEEE 802.11g (antenna 1)
Lowest channel (2412MHz)

Date: 2020/11/26

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1746.2000	43.43	46.86	3.43	74.00	27.14	200	116	Horizontal
2	2418.4000	90.24	96.97	6.73	74.00	-22.97	100	268	Horizontal
3	4819.6875	67.96	57.61	-10.35	74.00	16.39	200	160	Horizontal
4	7234.6875	60.36	57.24	-3.12	74.00	16.76	200	338	Horizontal
5	13985.6250	39.58	49.88	10.30	74.00	24.12	100	132	Horizontal
6	17979.3750	38.17	59.01	20.84	74.00	14.99	100	187	Horizontal

PK Final Data List						
NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity	
1	4814.8987	-10.35	200	356.5	Horizontal	
2	7234.5716	-3.12	188	313.4	Horizontal	
3	13985.6250	10.30	100	132	Horizontal	
4	17979.3750	20.84	100	187	Horizontal	

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4814.8987	-10.35	43.51	33.16	54.00	20.84	200	356.5	Horizontal
2	7234.5716	-3.12	51.34	48.22	54.00	5.78	188	313.4	Horizontal
3	13985.6250	10.30	26.99	37.29	54.00	16.71	100	132	Horizontal
4	17979.3750	20.84	27.82	48.66	54.00	5.34	100	187	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1777.4000	42.96	46.58	3.62	74.00	27.42	100	268	Vertical
2	2408.2000	89.96	96.87	6.91	74.00	-22.87	100	1	Vertical
3	4826.2500	66.91	56.67	-10.24	74.00	17.33	100	161	Vertical
4	7232.8125	61.44	58.34	-3.10	74.00	15.66	100	333	Vertical
5	14028.7500	39.19	49.26	10.07	74.00	24.74	200	199	Vertical
6	17991.5625	38.31	59.43	21.12	74.00	14.57	100	92	Vertical

PK Final Data List						
NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity	
1	4826.3660	-10.24	111	356.5	Vertical	
2	7233.2182	-3.10	112	345.1	Vertical	
3	14028.7500	10.07	200	199	Vertical	
4	17991.5625	21.12	100	92	Vertical	

AV Final Data List

NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4826.3660	-10.24	49.52	39.28	54.00	14.72	111	356.5	Vertical
2	7233.2182	-3.10	48.51	45.41	54.00	8.59	112	345.1	Vertical
3	14028.7500	10.07	28.31	38.38	54.00	15.62	200	199	Vertical
4	17991.5625	21.12	27.96	49.08	54.00	4.92	100	92	Vertical

Mode: TX/ IEEE 802.11g (antenna 1)
Middle channel (2437 MHz)

Date: 2020/11/26

Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2443.8000	92.32	98.59	6.27	74.00	-24.59	200	228	Horizontal
2	4862.8125	61.39	51.76	-9.63	74.00	22.24	100	92	Horizontal
3	7304.0625	60.55	56.78	-3.77	74.00	17.22	200	322	Horizontal
4	12183.7500	42.32	48.65	6.33	74.00	25.35	100	120	Horizontal
5	14014.6875	39.06	49.30	10.24	74.00	24.70	100	162	Horizontal
6	17975.6250	38.39	59.15	20.76	74.00	14.85	200	240	Horizontal

PK Final Data List

NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	4871.3848	-9.63	100	356.5	Horizontal
2	7308.5105	-3.77	100	314	Horizontal
3	12183.7500	6.33	100	120	Horizontal
4	14014.6875	10.24	100	162	Horizontal
5	17975.6250	20.76	200	240	Horizontal

AV Final Data List

NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4871.3848	-9.63	39.04	29.41	54.00	24.59	100	356.5	Horizontal
2	7308.5105	-3.77	50.84	47.07	54.00	6.93	100	314	Horizontal
3	12183.7500	6.33	30.12	36.45	54.00	17.55	100	120	Horizontal
4	14014.6875	10.24	27.94	38.18	54.00	15.82	100	162	Horizontal
5	17975.6250	20.76	27.63	48.39	54.00	5.61	200	240	Horizontal

Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2443.6000	92.62	98.90	6.28	74.00	-24.90	100	228	Vertical
2	4874.0625	62.33	52.89	-9.44	74.00	21.11	100	96	Vertical
3	7310.6250	59.20	55.53	-3.67	74.00	18.47	100	332	Vertical
4	9754.6875	45.20	47.77	2.57	74.00	26.23	100	328	Vertical
5	14594.0625	39.22	49.79	10.57	74.00	24.21	200	151	Vertical
6	17989.6875	38.22	59.30	21.08	74.00	14.70	100	188	Vertical

PK Final Data List

NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	4885.0760	-9.44	113	356.5	Vertical
2	7310.2735	-3.67	148	345	Vertical
3	14594.0625	10.57	200	151	Vertical
4	17989.6875	21.08	100	188	Vertical

AV Final Data List

NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4885.0760	-9.44	43.05	33.61	54.00	20.39	113	356.5	Vertical
2	7310.2735	-3.67	48.70	45.03	54.00	8.97	148	345	Vertical
3	14594.0625	10.57	28.16	38.73	54.00	15.27	200	151	Vertical
4	17989.6875	21.08	27.69	48.77	54.00	5.23	100	188	Vertical

Mode: TX/ IEEE 802.11g (antenna 1)
Highest channel (2462MHz)

Date: 2020/11/26

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1818.6000	42.10	45.76	3.66	74.00	28.24	100	92	Horizontal
2	2455.6000	91.50	97.56	6.06	74.00	-23.56	100	309	Horizontal
3	4918.1250	57.11	48.16	-8.95	74.00	25.84	200	85	Horizontal
4	7382.8125	50.90	48.30	-2.60	74.00	25.70	100	268	Horizontal
5	13991.2500	39.57	49.92	10.35	74.00	24.08	100	188	Horizontal
6	17986.8750	38.10	59.11	21.01	74.00	14.89	100	264	Horizontal

PK Final Data List					
NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	4913.1990	-8.95	176	356.5	Horizontal
2	7385.0013	-2.60	111	316.6	Horizontal

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4913.1990	-8.95	41.17	32.22	54.00	21.78	176	356.5	Horizontal
2	7385.0013	-2.60	42.81	40.21	54.00	13.79	111	316.6	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2458.0000	91.36	97.38	6.02	74.00	-23.38	100	306	Vertical
2	4917.1875	56.76	47.81	-8.95	74.00	26.19	200	126	Vertical
3	7379.0625	50.37	47.71	-2.66	74.00	26.29	200	268	Vertical
4	11716.8750	41.18	48.31	7.13	74.00	25.69	200	268	Vertical
5	14011.8750	39.08	49.36	10.28	74.00	24.64	200	157	Vertical
6	17987.8125	38.29	59.32	21.03	74.00	14.68	200	268	Vertical

PK Final Data List					
NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	4916.5177	-8.95	200	356.5	Vertical
2	7381.3093	-2.66	200	356.5	Vertical
3	11716.8750	7.13	200	268	Vertical
4	14011.8750	10.28	200	157	Vertical
5	17987.8125	21.03	200	268	Vertical

AV Final Data List

NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4916.5177	-8.95	45.99	37.04	54.00	16.96	200	356.5	Vertical
2	7381.3093	-2.66	38.32	35.66	54.00	18.34	200	356.5	Vertical
3	11716.8750	7.13	33.56	40.69	54.00	13.31	200	268	Vertical
4	14011.8750	10.28	28.64	38.92	54.00	15.08	200	157	Vertical
5	17987.8125	21.03	28.37	49.40	54.00	4.60	200	268	Vertical

Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1818.6000	42.10	45.76	3.66	74.00	28.24	100	92	Horizontal
2	2455.6000	91.50	97.56	6.06	74.00	-23.56	100	309	Horizontal
3	4918.1250	57.11	48.16	-8.95	74.00	25.84	200	85	Horizontal
4	7382.8125	50.90	48.30	-2.60	74.00	25.70	100	268	Horizontal
5	13991.2500	39.57	49.92	10.35	74.00	24.08	100	188	Horizontal
6	17986.8750	38.10	59.11	21.01	74.00	14.89	100	264	Horizontal

PK Final Data List

NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	4913.1990	-8.95	176	356.5	Horizontal
2	7385.0013	-2.60	111	316.6	Horizontal

AV Final Data List

NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4913.1990	-8.95	41.17	32.22	54.00	21.78	176	356.5	Horizontal
2	7385.0013	-2.60	42.81	40.21	54.00	13.79	111	316.6	Horizontal

Mode: TX / IEEE 802.11n HT20 (MIMO)
Lowest channel (2412MHz)

Date: 2020/11/26

Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1892.3750	43.03	46.31	3.28	74.00	27.69	200	92	Horizontal
2	2409.2500	89.56	96.45	6.89	74.00	-22.45	100	347	Horizontal
3	4823.4375	64.81	54.52	-10.29	74.00	19.48	200	75	Horizontal
4	7246.8750	56.15	52.89	-3.26	74.00	21.11	100	147	Horizontal
5	13984.6875	38.97	49.27	10.30	74.00	24.73	200	80	Horizontal
6	17991.5625	37.81	58.93	21.12	74.00	15.07	200	204	Horizontal

PK Final Data List

NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	4828.8098	-10.29	200	3.8	Horizontal
2	7236.3066	-3.26	100	157.1	Horizontal
3	13994.1003	10.29	200	33.6	Horizontal
4	18000.0000	21.12	200	3.6	Horizontal

AV Final Data List

NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4828.8098	-10.29	42.44	32.15	54.00	21.85	200	3.8	Horizontal
2	7236.3066	-3.26	45.09	41.83	54.00	12.17	100	157.1	Horizontal
3	13994.1003	10.29	28.53	38.82	54.00	15.18	200	33.6	Horizontal
4	18000.0000	21.12	27.89	49.01	54.00	4.99	200	3.6	Horizontal

Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2416.2500	89.16	95.93	6.77	74.00	-21.93	100	350	Vertical
2	4822.5000	65.26	54.96	-10.30	74.00	19.04	200	152	Vertical
3	7240.3125	56.22	53.03	-3.19	74.00	20.97	100	147	Vertical
4	10286.2500	43.16	47.05	3.89	74.00	26.95	200	268	Vertical
5	14903.4375	40.28	49.47	9.19	74.00	24.53	200	225	Vertical
6	17988.7500	38.94	60.00	21.06	74.00	14.00	100	80	Vertical

PK Final Data List

NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	4823.0410	-10.30	200	3.6	Vertical
2	7242.0530	-3.19	100	3.6	Vertical
3	14930.4261	9.19	200	3.6	Vertical
4	17867.9672	21.05	100	3.6	Vertical

AV Final Data List

NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4823.0410	-10.30	51.54	41.24	54.00	12.76	200	3.6	Vertical
2	7242.0530	-3.19	38.48	35.29	54.00	18.71	100	3.6	Vertical
3	14930.4261	9.19	28.02	37.21	54.00	16.79	200	3.6	Vertical
4	17867.9672	21.05	28.26	49.31	54.00	4.69	100	3.6	Vertical

Mode: TX/ IEEE 802.11n HT20 (MIMO)
Middle channel (2437 MHz)

Date: 2020/11/26

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2442.1250	91.45	97.75	6.30	74.00	-23.75	100	352	Horizontal
2	4874.0625	57.91	48.47	-9.44	74.00	25.53	200	75	Horizontal
3	7303.1250	62.04	58.26	-3.78	74.00	15.74	100	163	Horizontal
4	10610.6250	42.41	47.50	5.09	74.00	26.50	200	214	Horizontal
5	14001.5625	38.57	48.97	10.40	74.00	25.03	100	157	Horizontal
6	17971.8750	38.47	59.14	20.67	74.00	14.86	200	28	Horizontal

PK Final Data List					
NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	4877.6165	-9.44	200	356.4	Horizontal
2	7310.9665	-3.78	100	334.4	Horizontal
3	14001.5625	10.40	100	157	Horizontal
4	17971.8750	20.67	200	28	Horizontal

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4877.6165	-9.44	43.68	34.24	54.00	19.76	200	356.4	Horizontal
2	7310.9665	-3.78	46.96	43.18	54.00	10.82	100	334.4	Horizontal
3	14001.5625	10.40	27.23	37.63	54.00	16.37	100	157	Horizontal
4	17971.8750	20.67	28.38	49.05	54.00	4.95	200	28	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2430.0000	100.66	107.18	6.52	74.00	-33.18	100	198	Vertical
2	4877.8125	58.18	48.80	-9.38	74.00	25.20	200	173	Vertical
3	4999.6875	55.82	47.16	-8.66	74.00	26.84	200	183	Vertical
4	7320.0000	68.74	65.21	-3.53	74.00	8.79	100	132	Vertical
5	11576.2500	40.91	47.86	6.95	74.00	26.14	200	268	Vertical
6	17965.3125	38.78	59.31	20.53	74.00	14.69	200	126	Vertical

PK Final Data List					
NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	4880.4312	-9.39	200	3.8	Vertical
2	7311.3486	-3.54	100	193	Vertical
3	17965.3125	20.53	200	126	Vertical

AV Final Data List

NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4880.4312	-9.39	45.33	35.94	54.00	18.06	200	3.8	Vertical
2	7311.3486	-3.54	52.91	49.37	54.00	4.63	100	193	Vertical
3	17965.3125	20.53	28.89	49.42	54.00	4.58	200	126	Vertical

Mode: TX/ IEEE 802.11n HT20 (MIMO)
Highest channel (2462MHz)

Date: 2020/11/26

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1773.6250	42.51	46.10	3.59	74.00	27.90	200	160	Horizontal
2	2458.6250	92.42	98.42	6.00	74.00	-24.42	200	268	Horizontal
3	4930.3125	55.96	47.06	-8.90	74.00	26.94	200	96	Horizontal
4	7384.6875	56.23	53.65	-2.58	74.00	20.35	200	92	Horizontal
5	14000.6250	39.01	49.42	10.41	74.00	24.58	100	92	Horizontal
6	17970.0000	38.27	58.90	20.63	74.00	15.10	200	92	Horizontal

PK Final Data List						
NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity	
1	4928.0607	-8.90	200	356.4	Horizontal	
2	7381.8176	-2.58	200	304.7	Horizontal	
3	14000.6250	10.41	100	92	Horizontal	
4	17970.0000	20.63	200	92	Horizontal	

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4928.0607	-8.90	40.68	31.78	54.00	22.22	200	356.4	Horizontal
2	7381.8176	-2.58	44.75	42.17	54.00	11.83	200	304.7	Horizontal
3	14000.6250	10.41	26.93	37.34	54.00	16.66	100	92	Horizontal
4	17970.0000	20.63	28.77	49.40	54.00	4.60	200	92	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2455.0000	100.71	106.78	6.07	74.00	-32.78	200	134	Vertical
2	4921.8750	56.21	47.28	-8.93	74.00	26.72	100	140	Vertical
3	4999.6875	55.45	46.79	-8.66	74.00	27.21	200	208	Vertical
4	7380.0000	61.60	58.95	-2.65	74.00	15.05	100	177	Vertical
5	13980.0000	39.51	49.77	10.26	74.00	24.23	100	92	Vertical
6	18000.0000	38.69	60.00	21.31	74.00	14.00	200	203	Vertical

PK Final Data List						
NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity	
1	4924.8723	-8.93	100	356.4	Vertical	
2	7388.0423	-2.64	100	356.2	Vertical	
3	13980.0000	10.26	100	92	Vertical	
4	18000.0000	21.31	200	203	Vertical	

AV Final Data List

NO.	Freq. [MHz]	Factor [dB]	AV Reading [dB μ V/m]	AV Value [dB μ V/m]	AV Limit [dB μ V/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4924.8723	-8.93	42.08	33.15	54.00	20.85	100	356.4	Vertical
2	7388.0423	-2.64	35.77	33.13	54.00	20.87	100	356.2	Vertical
3	13980.0000	10.26	26.98	37.24	54.00	16.76	100	92	Vertical
4	18000.0000	21.31	27.64	48.95	54.00	5.05	200	203	Vertical

Mode: TX / IEEE 802.11n HT40 (MIMO)
Lowest channel (2422MHz)

Date: 2020/11/26

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2438.3750	86.86	93.23	6.37	74.00	-19.23	100	268	Horizontal
2	4836.5625	58.62	48.55	-10.07	74.00	25.45	200	92	Horizontal
3	7273.1250	53.57	50.03	-3.54	74.00	23.97	200	357	Horizontal
4	11584.6875	40.91	47.90	6.99	74.00	26.10	200	312	Horizontal
5	14576.2500	38.73	49.21	10.48	74.00	24.79	100	331	Horizontal
6	17970.0000	38.23	58.86	20.63	74.00	15.14	100	250	Horizontal

PK Final Data List					
NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	4836.1750	-10.07	200	54.6	Horizontal
2	7271.4641	-3.54	200	10.1	Horizontal
3	14576.2500	10.48	100	331	Horizontal
4	17970.0000	20.63	100	250	Horizontal

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4836.1750	-10.07	47.01	36.94	54.00	17.06	200	54.6	Horizontal
2	7271.4641	-3.54	39.09	35.55	54.00	18.45	200	10.1	Horizontal
3	14576.2500	10.48	26.58	37.06	54.00	16.94	100	331	Horizontal
4	17970.0000	20.63	28.12	48.75	54.00	5.25	100	250	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2407.0000	99.20	106.13	6.93	74.00	-32.13	100	116	Vertical
2	4829.0625	56.21	46.02	-10.19	74.00	27.98	200	172	Vertical
3	4999.6875	55.63	46.97	-8.66	74.00	27.03	100	208	Vertical
4	7246.8750	59.33	56.07	-3.26	74.00	17.93	100	146	Vertical
5	13371.5625	40.65	49.48	8.83	74.00	24.52	100	224	Vertical
6	17999.0625	37.52	58.81	21.29	74.00	15.19	100	213	Vertical

PK Final Data List					
NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	4827.5147	-10.19	200	356.4	Vertical
2	7255.8175	-3.26	100	356.3	Vertical
3	13371.5625	8.83	100	224	Vertical
4	17999.0625	21.29	100	213	Vertical

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4827.5147	-10.19	40.82	30.63	54.00	23.37	200	356.4	Vertical
2	7255.8175	-3.26	39.77	36.51	54.00	17.49	100	356.3	Vertical
3	13371.5625	8.83	27.12	35.95	54.00	18.05	100	224	Vertical
4	17999.0625	21.29	27.89	49.18	54.00	4.82	100	213	Vertical

Mode: TX/ IEEE 802.11n HT40 (MIMO)
Middle channel (2437 MHz)

Date: 2020/11/26

Suspected Data List									
NO.	Freq. [MHz]	Reading [dB μ V/m]	Level [dB μ V/m]	Factor [dB]	Limit [dB μ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2450.7500	89.66	95.81	6.15	74.00	-21.81	100	352	Horizontal
2	4861.8750	55.16	45.51	-9.65	74.00	28.49	200	74	Horizontal
3	7311.5625	57.90	54.24	-3.66	74.00	19.76	200	225	Horizontal
4	11225.6250	42.56	49.17	6.61	74.00	24.83	100	268	Horizontal
5	14616.5625	39.21	49.69	10.48	74.00	24.31	100	245	Horizontal
6	17988.7500	38.23	59.29	21.06	74.00	14.71	200	162	Horizontal

PK Final Data List					
NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	4867.6991	-9.65	200	3.6	Horizontal
2	7309.7463	-3.66	200	8	Horizontal
3	11225.6250	6.61	100	268	Horizontal
4	14616.5625	10.48	100	245	Horizontal
5	17988.7500	21.06	200	162	Horizontal

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dB μ V/m]	AV Value [dB μ V/m]	AV Limit [dB μ V/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4867.6991	-9.65	39.38	29.73	54.00	24.27	200	3.6	Horizontal
2	7309.7463	-3.66	43.80	40.14	54.00	13.86	200	8	Horizontal
3	11225.6250	6.61	29.92	36.53	54.00	17.47	100	268	Horizontal
4	14616.5625	10.48	26.54	37.02	54.00	16.98	100	245	Horizontal
5	17988.7500	21.06	28.08	49.14	54.00	4.86	200	162	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dB μ V/m]	Level [dB μ V/m]	Factor [dB]	Limit [dB μ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1899.5000	44.22	47.46	3.24	74.00	26.54	200	180	Vertical
2	2439.3750	100.01	106.36	6.35	74.00	-32.36	200	355	Vertical
3	4873.1250	56.34	46.88	-9.46	74.00	27.12	200	161	Vertical
4	4999.6875	55.19	46.53	-8.66	74.00	27.47	200	188	Vertical
5	7299.3750	64.07	60.25	-3.82	74.00	13.75	100	126	Vertical
6	17972.8125	38.71	59.41	20.70	74.00	14.59	100	226	Vertical

PK Final Data List

NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	4875.0579	-9.46	200	3.6	Vertical
2	7306.4814	-3.82	100	3.6	Vertical
3	17972.8125	20.70	100	226	Vertical

AV Final Data List

NO.	Freq. [MHz]	Factor [dB]	AV Reading [dB μ V/m]	AV Value [dB μ V/m]	AV Limit [dB μ V/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4875.0579	-9.46	45.04	35.58	54.00	18.42	200	3.6	Vertical
2	7306.4814	-3.82	41.62	37.80	54.00	16.20	100	3.6	Vertical
3	17972.8125	20.70	28.63	49.33	54.00	4.67	100	226	Vertical

Mode: TX/ IEEE 802.11n HT40 (MIMO)
Highest channel (2452MHz)

Date: 2020/11/26

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2437.0000	88.46	94.85	6.39	74.00	-20.85	200	92	Horizontal
2	4909.6875	54.15	45.17	-8.98	74.00	28.83	100	48	Horizontal
3	4999.6875	51.30	42.64	-8.66	74.00	31.36	200	268	Horizontal
4	7350.0000	53.48	50.39	-3.09	74.00	23.61	100	230	Horizontal
5	14607.1875	38.84	49.39	10.55	74.00	24.61	200	59	Horizontal
6	17994.3750	38.40	59.58	21.18	74.00	14.42	200	12	Horizontal

PK Final Data List					
NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	4910.8087	-8.97	100	3.8	Horizontal
2	7356.1544	-3.09	100	3.8	Horizontal
3	14607.1875	10.55	200	59	Horizontal
4	17994.3750	21.18	200	12	Horizontal

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4910.8087	-8.97	40.86	31.89	54.00	22.11	100	3.8	Horizontal
2	7356.1544	-3.09	40.30	37.21	54.00	16.79	100	3.8	Horizontal
3	14607.1875	10.55	27.96	38.51	54.00	15.49	200	59	Horizontal
4	17994.3750	21.18	27.52	48.70	54.00	5.30	200	12	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2437.0000	99.45	105.84	6.39	74.00	-31.84	200	92	Vertical
2	4905.0000	54.11	45.12	-8.99	74.00	28.88	200	157	Vertical
3	4999.6875	55.13	46.47	-8.66	74.00	27.53	200	188	Vertical
4	7337.8125	58.15	54.88	-3.27	74.00	19.12	200	230	Vertical
5	13978.1250	39.42	49.66	10.24	74.00	24.34	200	268	Vertical
6	17985.0000	38.84	59.81	20.97	74.00	14.19	100	173	Vertical

PK Final Data List					
NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	4910.5221	-8.99	200	3.6	Vertical
2	7341.7225	-3.27	200	3.6	Vertical
3	13978.1250	10.24	200	268	Vertical
4	17985.0000	20.97	100	173	Vertical

AV Final Data List

NO.	Freq. [MHz]	Factor [dB]	AV Reading [dB μ V/m]	AV Value [dB μ V/m]	AV Limit [dB μ V/m]	AV Margin [dB]	Height [cm]	Angle [$^{\circ}$]	Polarity
1	4910.5221	-8.99	41.86	32.87	54.00	21.13	200	3.6	Vertical
2	7341.7225	-3.27	39.29	36.02	54.00	17.98	200	3.6	Vertical
3	13978.1250	10.24	29.21	39.45	54.00	14.55	200	268	Vertical
4	17985.0000	20.97	28.31	49.28	54.00	4.72	100	173	Vertical

Above 18GHz-26.5GHz:

Pre-scan all modes and recorded the worst case results in this report (antenna 1: IEEE 802.11b)

Mode: TX / IEEE 802.11b (antenna 1)

Lowest channel (2412MHz)

Date: 2020/11/02

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	19295.4000	68.86	57.66	-11.20	83.54	25.88	100	185	Vertical
2	20545.7500	56.41	46.12	-10.29	83.54	37.42	100	346	Vertical
3	22695.4000	56.05	46.94	-9.11	83.54	36.60	100	218	Vertical
4	23299.7500	56.67	48.07	-8.60	83.54	35.47	100	229	Vertical
5	24946.2000	55.92	47.99	-7.93	83.54	35.55	100	196	Vertical
6	26455.8000	55.99	50.17	-5.82	83.54	33.37	100	303	Vertical

PK Final Data List					
NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	19295.4000	-11.20	100	185	Vertical

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	19295.4000	-11.20	68.89	57.69	63.54	5.85	100	185	Vertical

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	18807.5000	58.48	47.06	-11.42	83.54	36.48	100	12	Horizontal
2	19295.4000	61.90	50.70	-11.20	83.54	32.84	100	184	Horizontal
3	22223.6500	55.94	46.33	-9.61	83.54	37.21	100	249	Horizontal
4	22667.3500	56.65	47.52	-9.13	83.54	36.02	100	23	Horizontal
5	24895.2000	55.60	47.70	-7.90	83.54	35.84	100	195	Horizontal
6	25573.5000	55.52	47.90	-7.62	83.54	35.64	100	77	Horizontal

Mode: TX / IEEE 802.11b (antenna 1)
Moddle channel (2437MHz)

Date: 2020/11/02

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	19496.0000	68.85	57.76	-11.09	83.54	25.78	100	186	Vertical
2	19873.4000	57.51	46.73	-10.78	83.54	36.81	100	314	Vertical
3	20254.2000	57.20	46.73	-10.47	83.54	36.81	100	272	Vertical
4	21619.3000	56.89	46.97	-9.92	83.54	36.57	100	239	Vertical
5	23135.7000	55.57	46.82	-8.75	83.54	36.72	100	57	Vertical
6	26148.9500	55.15	48.19	-6.96	83.54	35.35	100	78	Vertical

PK Final Data List					
NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	19496.0000	-11.09	100	186	Vertical

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	19496.0000	-11.09	68.32	57.23	63.54	6.31	100	186	Vertical

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	18943.5000	58.09	46.70	-11.39	83.54	36.84	100	57	Horizontal
2	19496.0000	61.78	50.69	-11.09	83.54	32.85	100	250	Horizontal
3	20912.9500	56.74	46.18	-10.56	83.54	37.36	100	186	Horizontal
4	22182.8500	56.00	46.33	-9.67	83.54	37.21	100	196	Horizontal
5	24376.7000	55.16	47.28	-7.88	83.54	36.26	100	100	Horizontal
6	26327.4500	56.19	49.89	-6.30	83.54	33.65	100	229	Horizontal

Mode: TX / IEEE 802.11b (antenna 1)
Highest channel (2462MHz)

Date: 2020/11/02

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	18493.0000	59.34	47.82	-11.52	83.54	35.72	100	261	Vertical
2	18879.7500	58.84	47.44	-11.40	83.54	36.10	100	14	Vertical
3	19695.7500	67.65	56.72	-10.93	83.54	26.82	100	261	Vertical
4	20936.7500	56.99	46.42	-10.57	83.54	37.12	100	175	Vertical
5	22212.6000	56.89	47.26	-9.63	83.54	36.28	100	196	Vertical
6	23862.4500	56.02	47.65	-8.37	83.54	35.89	100	175	Vertical

PK Final Data List					
NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	19695.7500	-10.93	100	261	Vertical

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	19695.7500	-10.93	67.98	57.05	63.54	6.49	100	261	Vertical

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	18370.6000	58.46	46.76	-11.70	83.54	36.78	100	260	Horizontal
2	19165.3500	57.73	46.45	-11.28	83.54	37.09	100	33	Horizontal
3	19695.7500	61.15	50.22	-10.93	83.54	33.32	100	249	Horizontal
4	22677.5500	55.98	46.85	-9.13	83.54	36.69	100	313	Horizontal
5	24388.6000	55.65	47.79	-7.86	83.54	35.75	100	249	Horizontal
6	25759.6500	56.17	48.59	-7.58	83.54	34.95	100	43	Horizontal

7. 6DB BANDWIDTH

7.1. LIMITS

Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

7.2. TEST PROCEDURES

- 1) Remove the antenna from the EUT, and then connect a low loss RF cable from antenna port to the spectrum analyzer.
- 2) Set resolution bandwidth (RBW) = 100kHz. Set the video bandwidth (VBW) $\geq 3 \times$ RBW. Detector = Peak. Trace mode = max hold. Sweep = auto couple. Allow the trace to stabilize, record 6dB bandwidth value.
- 3) Repeat above procedures until all frequencies measured were complete.

7.3. TEST SETUP



7.4. TEST RESULTS

Non-beamforming

Test mode: IEEE 802.11b

Channel No.	Frequency (MHz)	Bandwidth (kHz)		Limit (kHz)	Test Result
		antenna 1	antenna 2		
1	2412	10014	10014	>500	PASS
6	2437	10072	10072		PASS
11	2462	10072	10014		PASS

Test mode: IEEE 802.11g

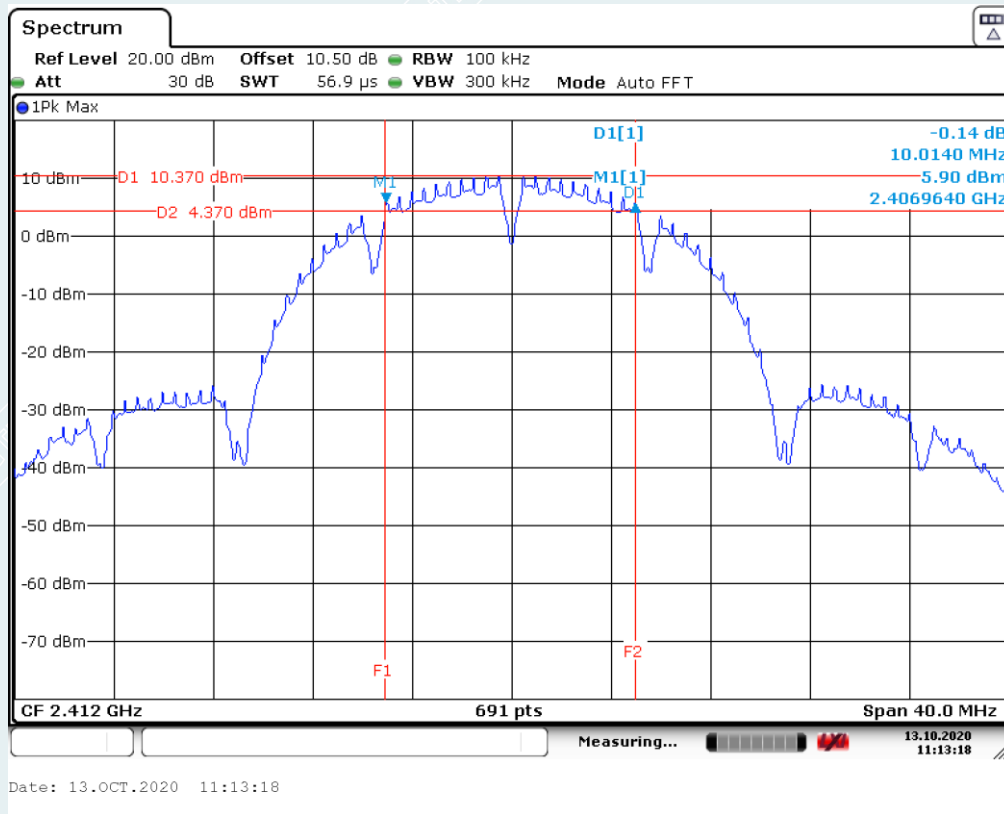
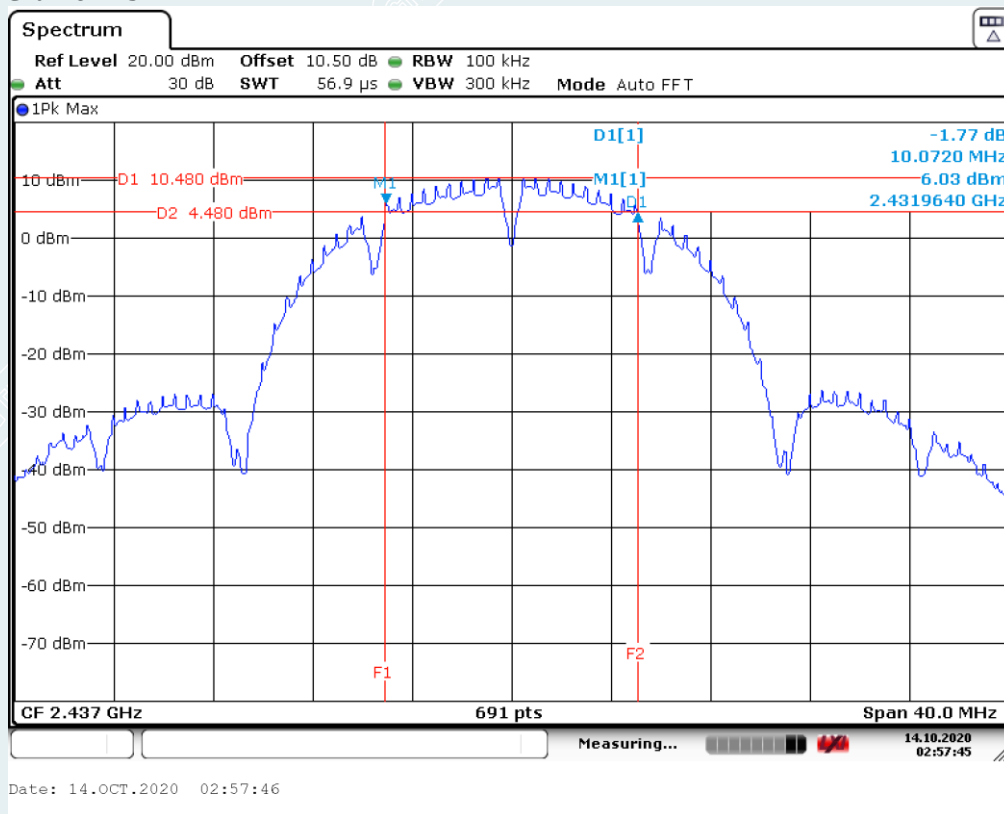
Channel No.	Frequency (MHz)	Bandwidth (kHz)		Limit (kHz)	Test Result
		antenna 1	antenna 2		
1	2412	16556	16498	>500	PASS
6	2437	16498	16498		PASS
11	2462	16556	16440		PASS

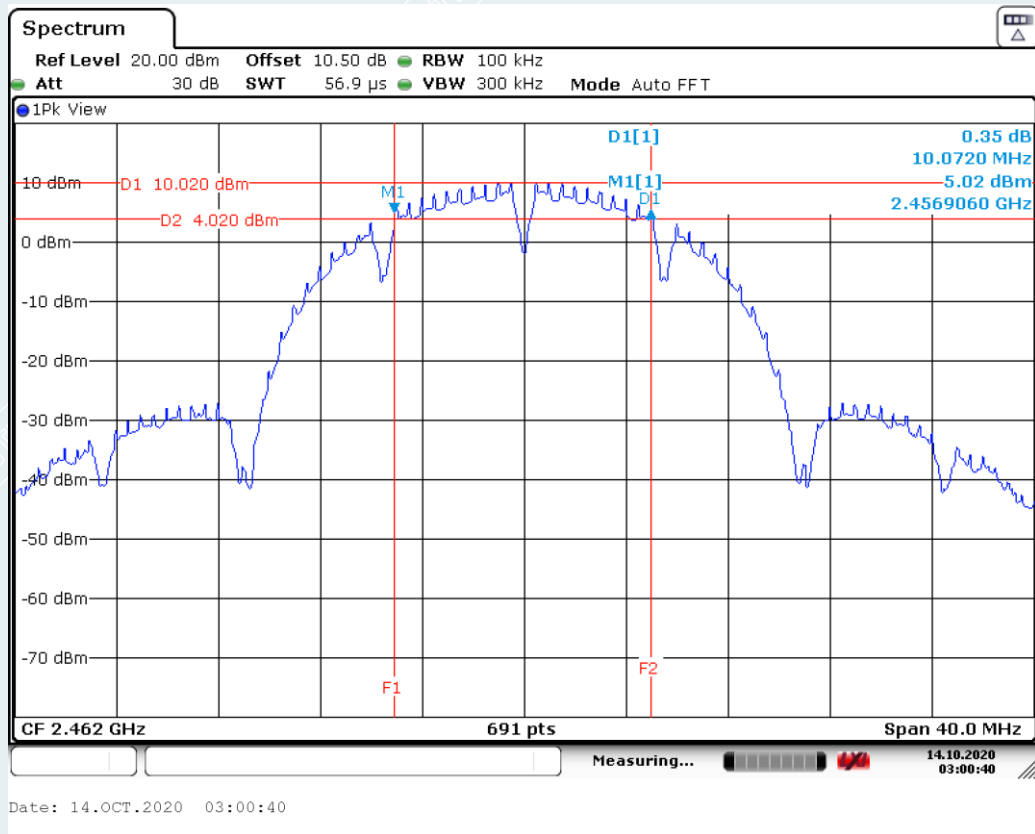
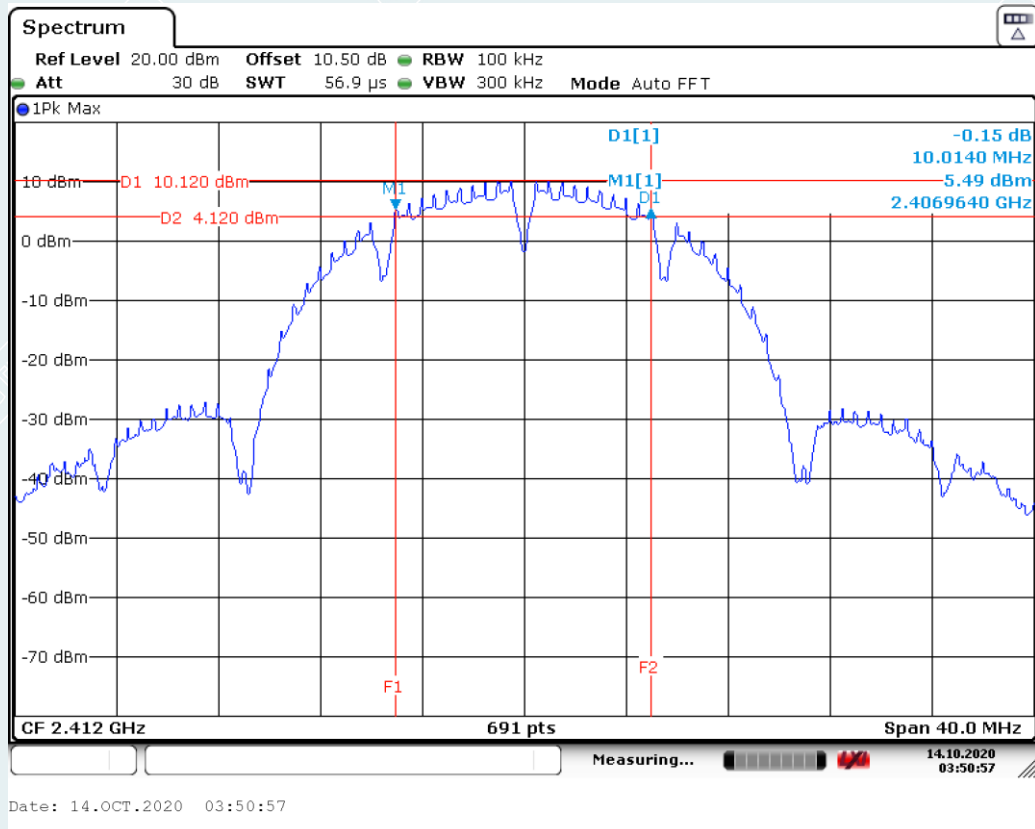
Test mode: IEEE 802.11n HT20

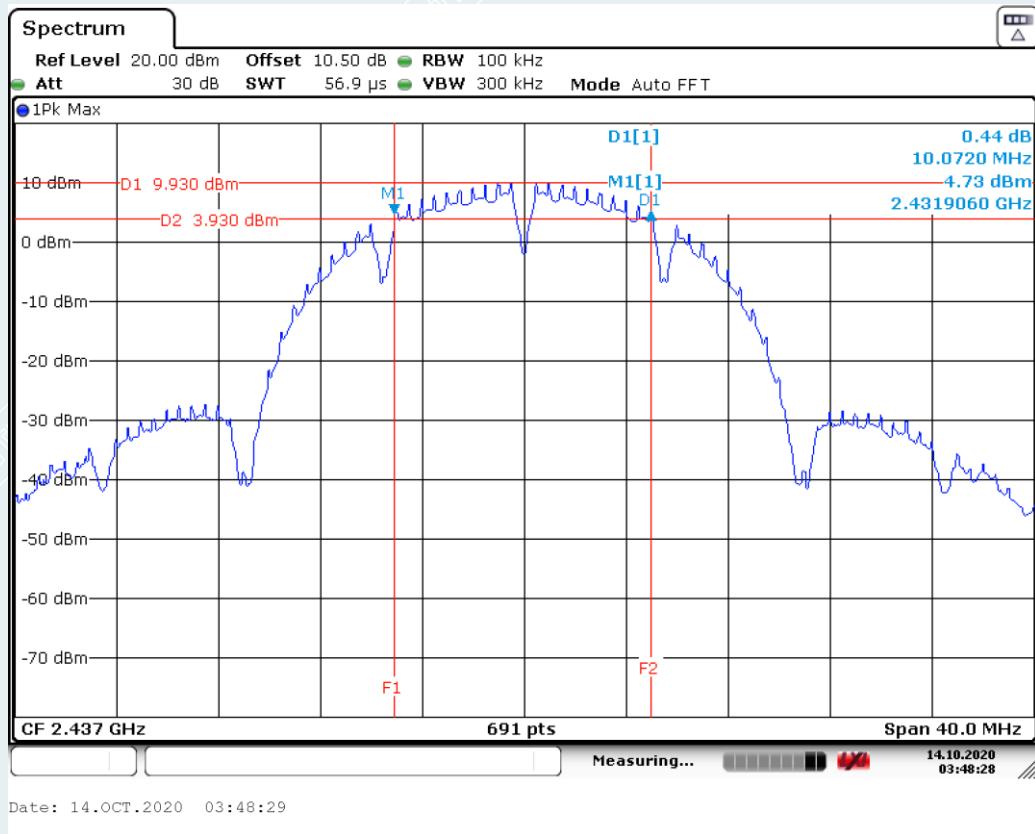
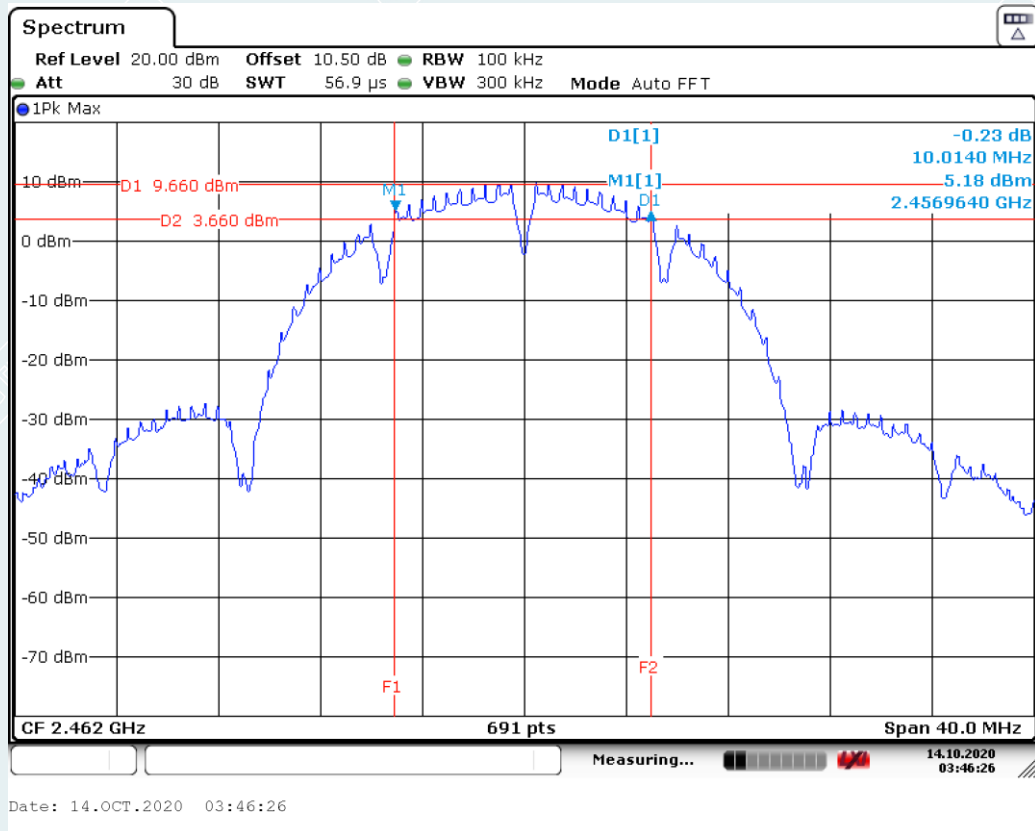
Channel No.	Frequency (MHz)	Bandwidth (kHz)		Limit (kHz)	Test Result
		antenna 1	antenna 2		
1	2412	17713	17656	>500	PASS
6	2437	17656	17713		PASS
11	2462	17713	17656		PASS

Test mode: IEEE 802.11n HT40

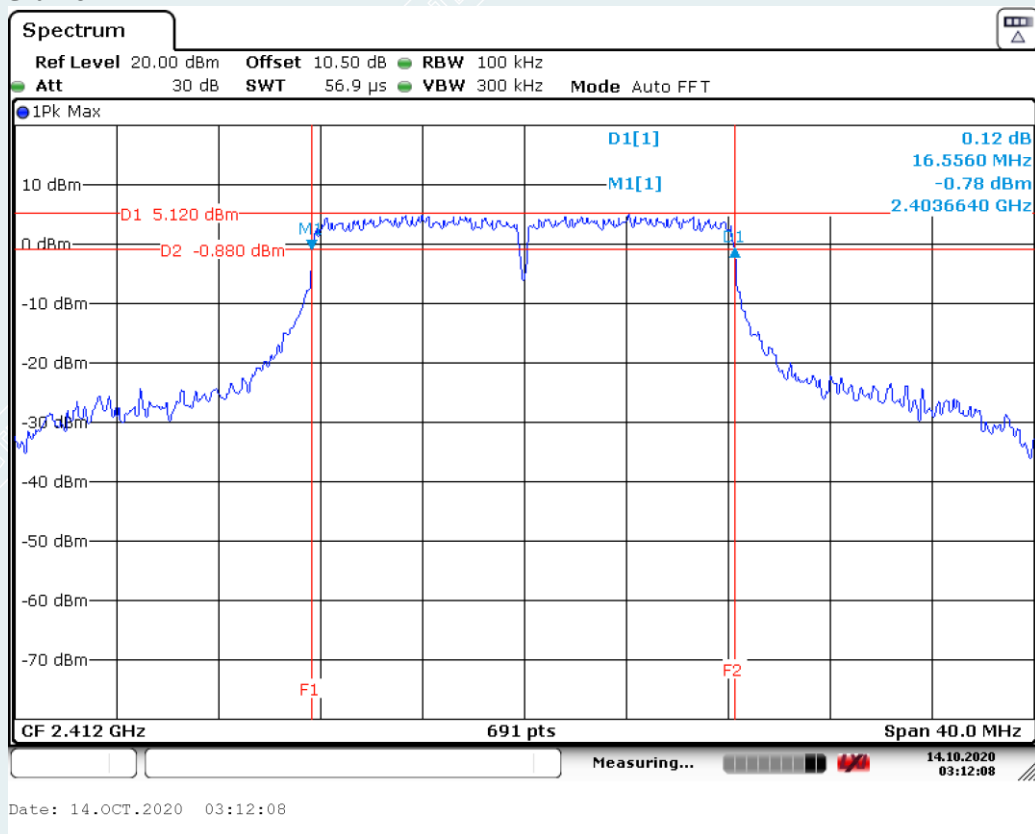
Channel No.	Frequency (MHz)	Bandwidth (kHz)		Limit (kHz)	Test Result
		antenna 1	antenna 2		
3	2422	36470	36470	>500	PASS
6	2437	36470	36470		PASS
9	2452	36350	36470		PASS

802.11b mode (antenna 1):
Channel 2412MHz**802.11b mode (antenna 1):**
Channel 2437MHz

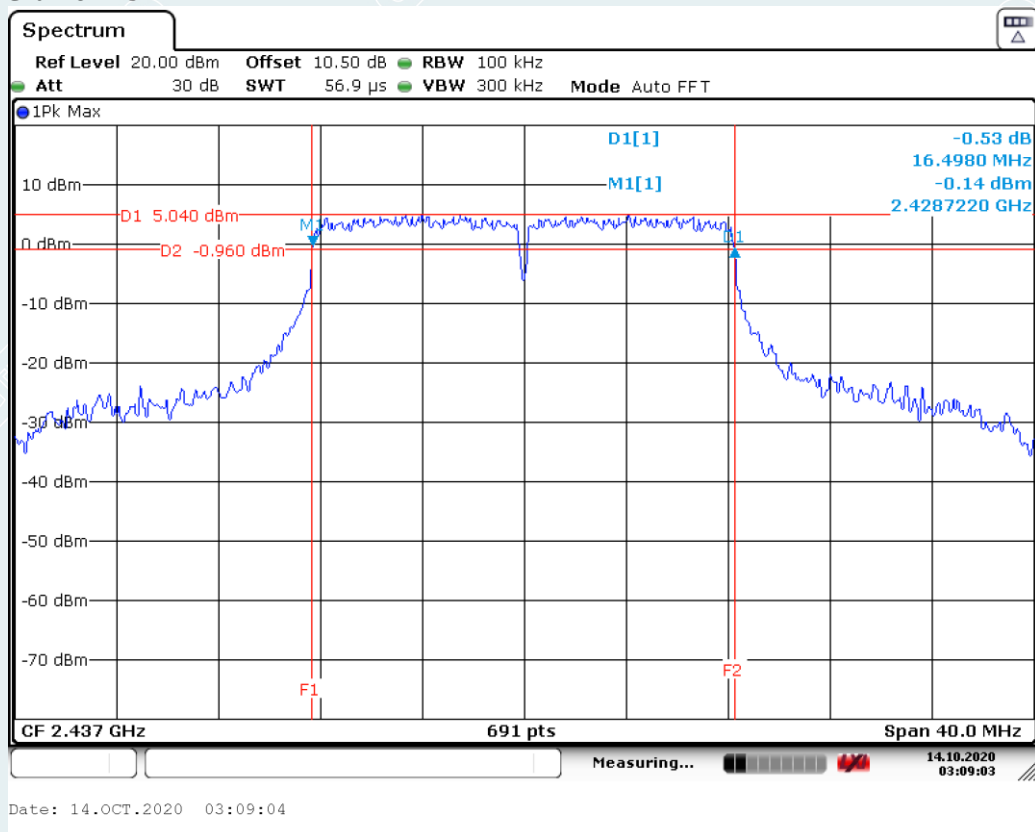
802.11b mode (antenna 1):
Channel 2462MHz**802.11b mode (antenna 2):**
Channel 2412MHz

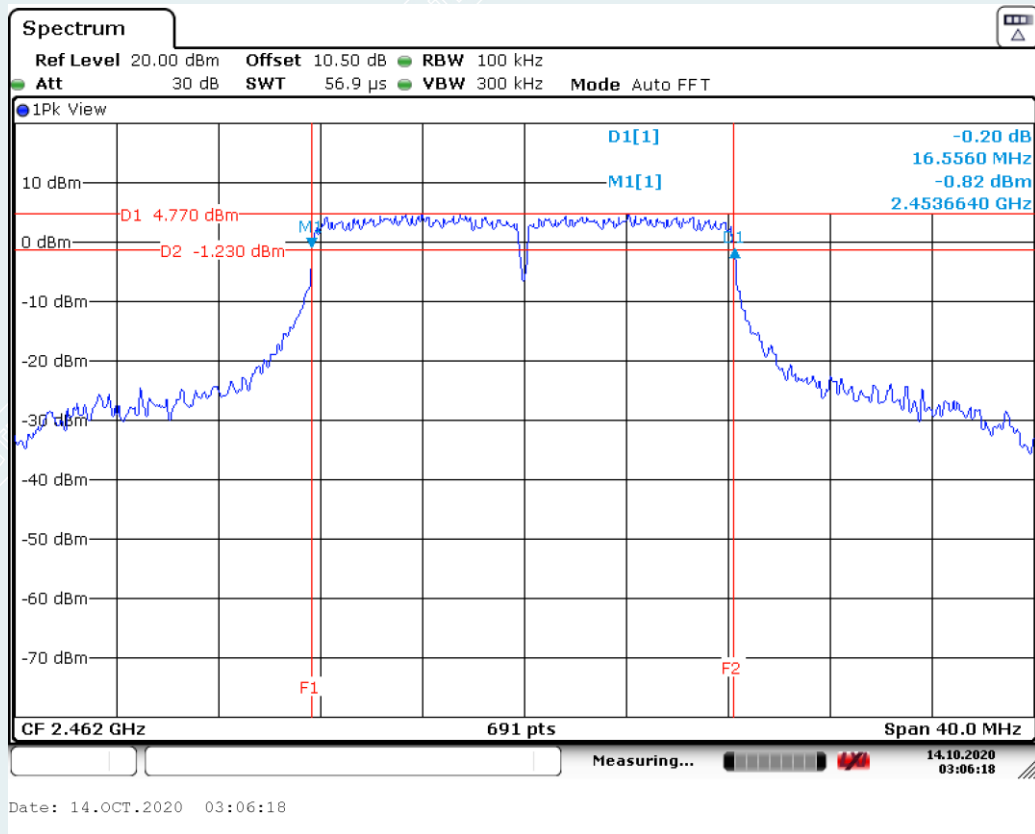
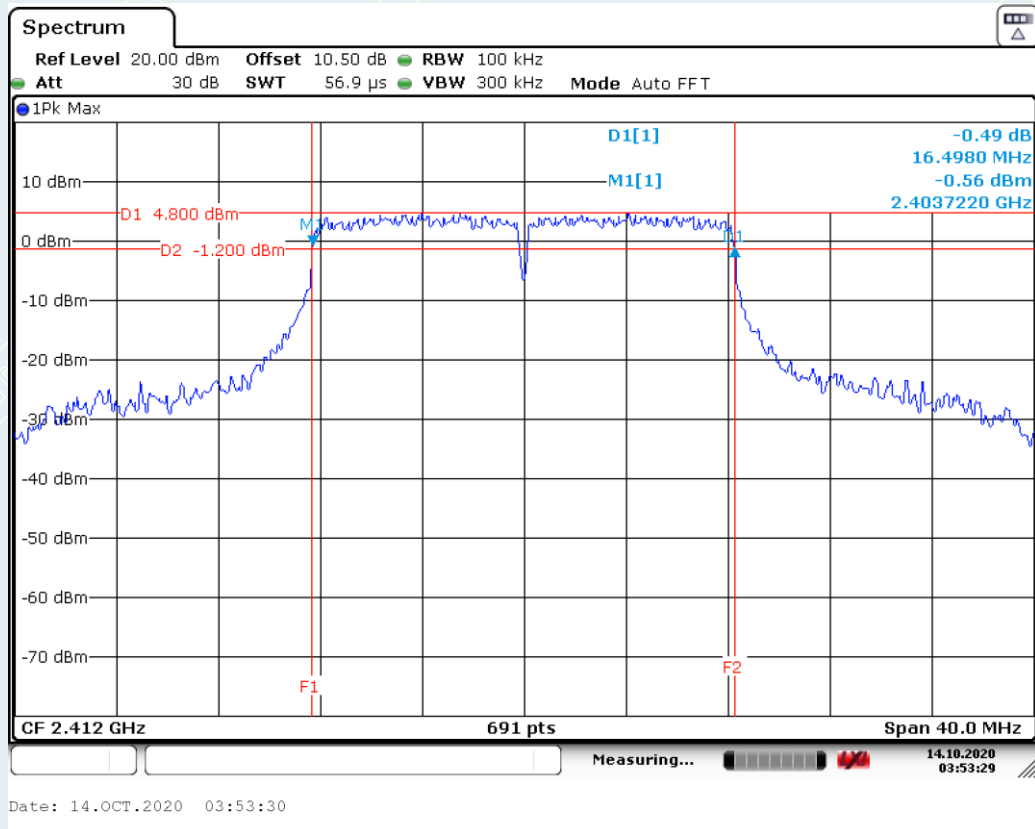
802.11b mode (antenna 2):
Channel 2437MHz**802.11b mode (antenna 2):**
Channel 2462MHz

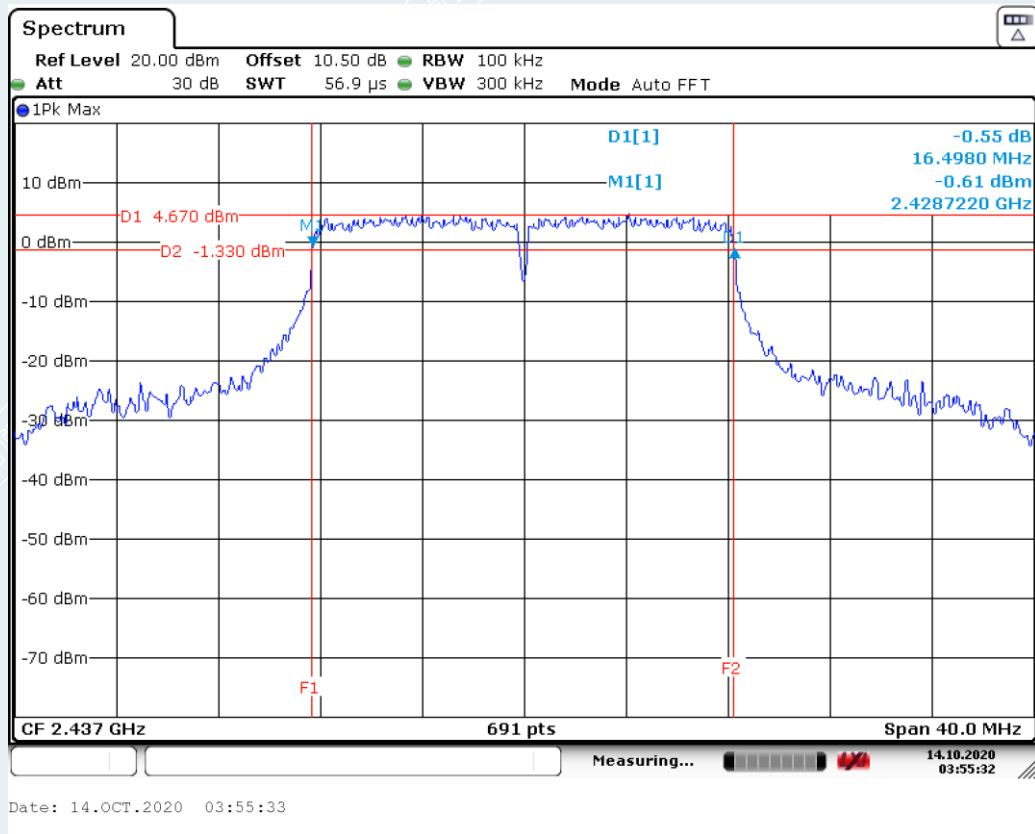
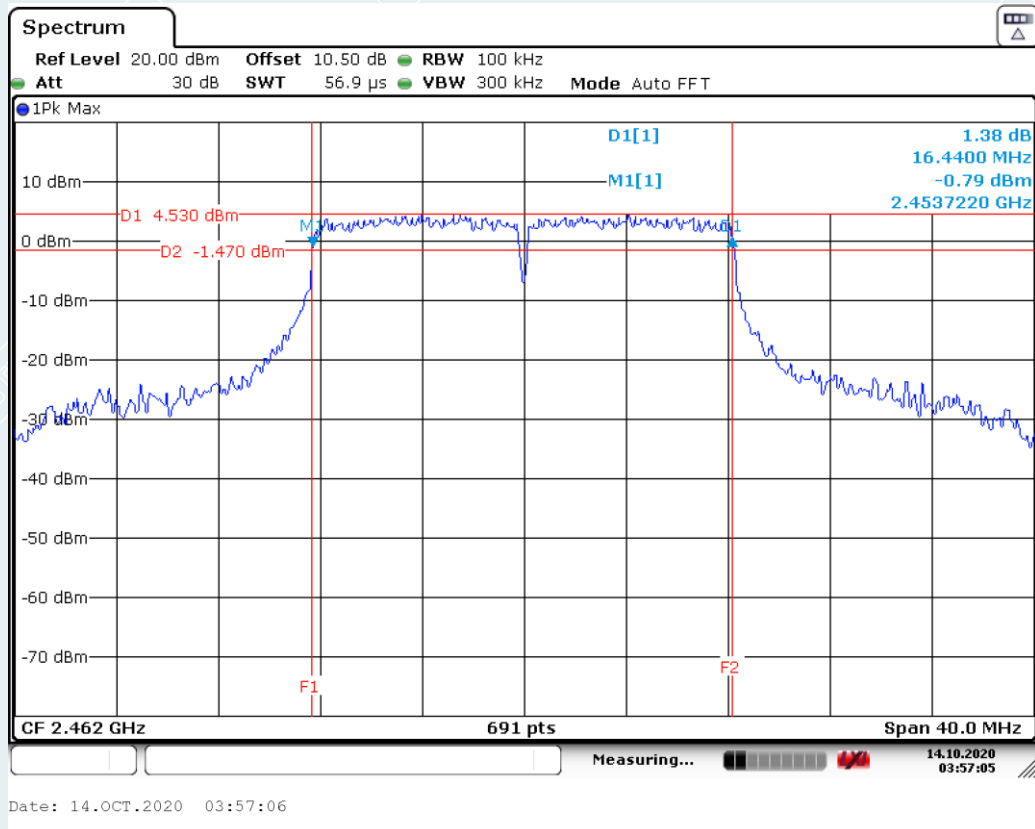
802.11g mode (antenna 1):
Channel 2412MHz

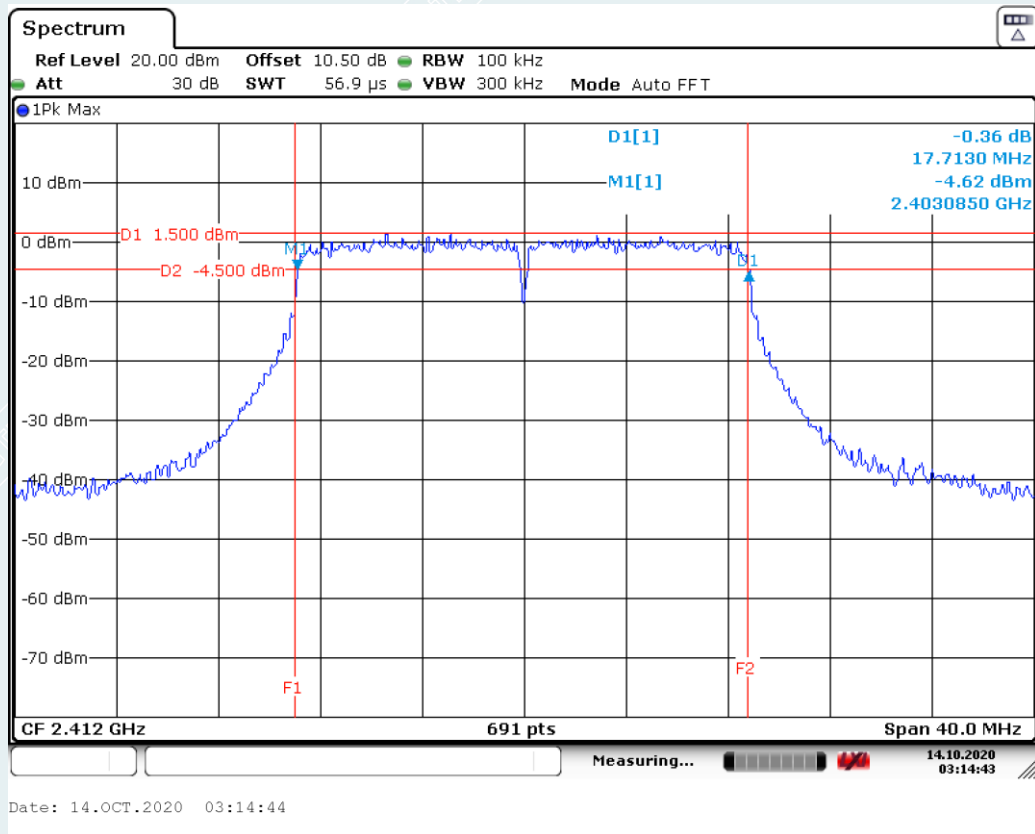
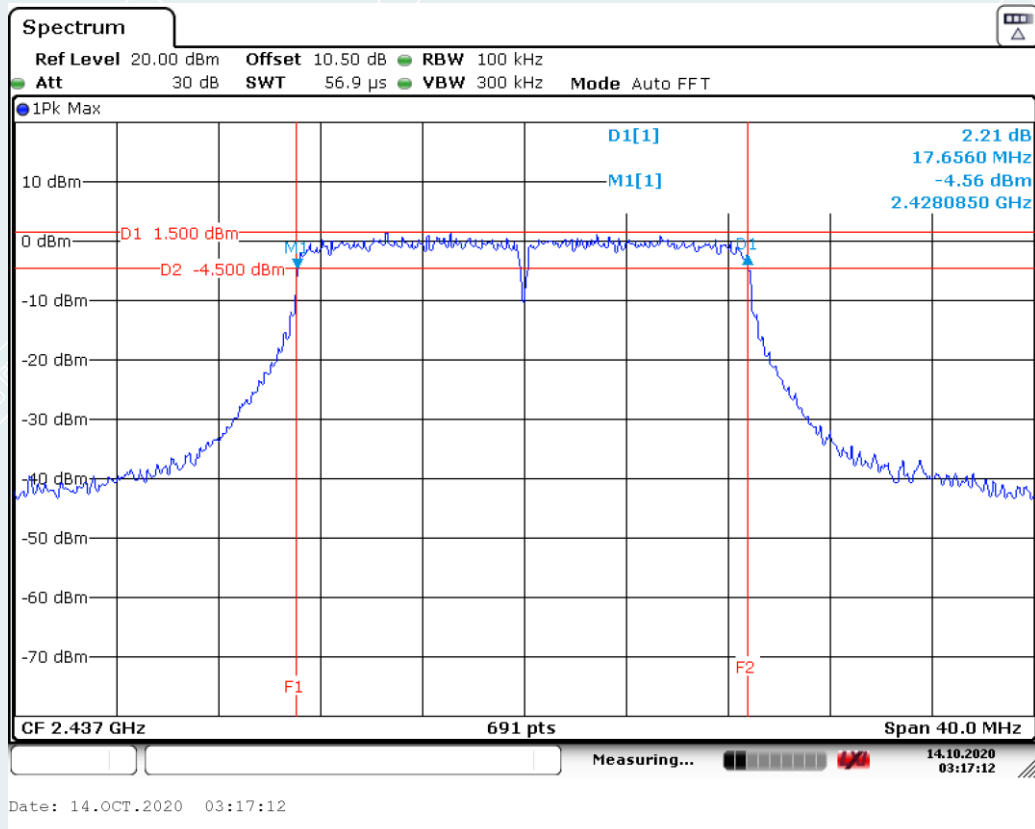


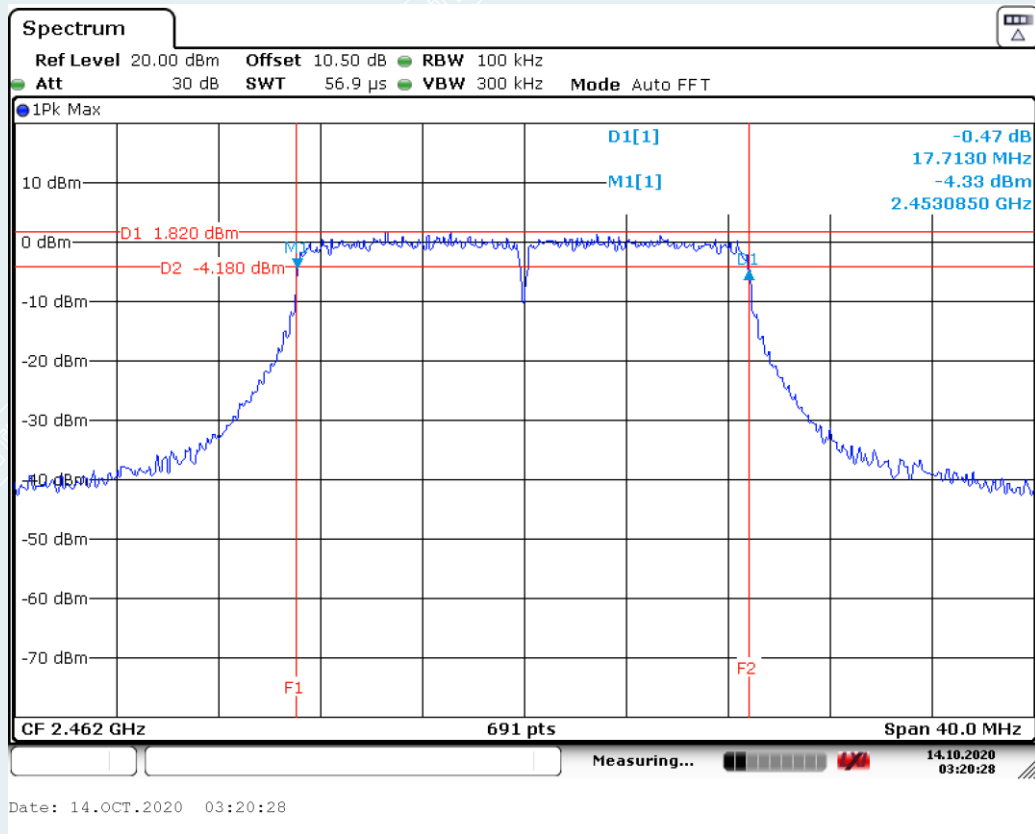
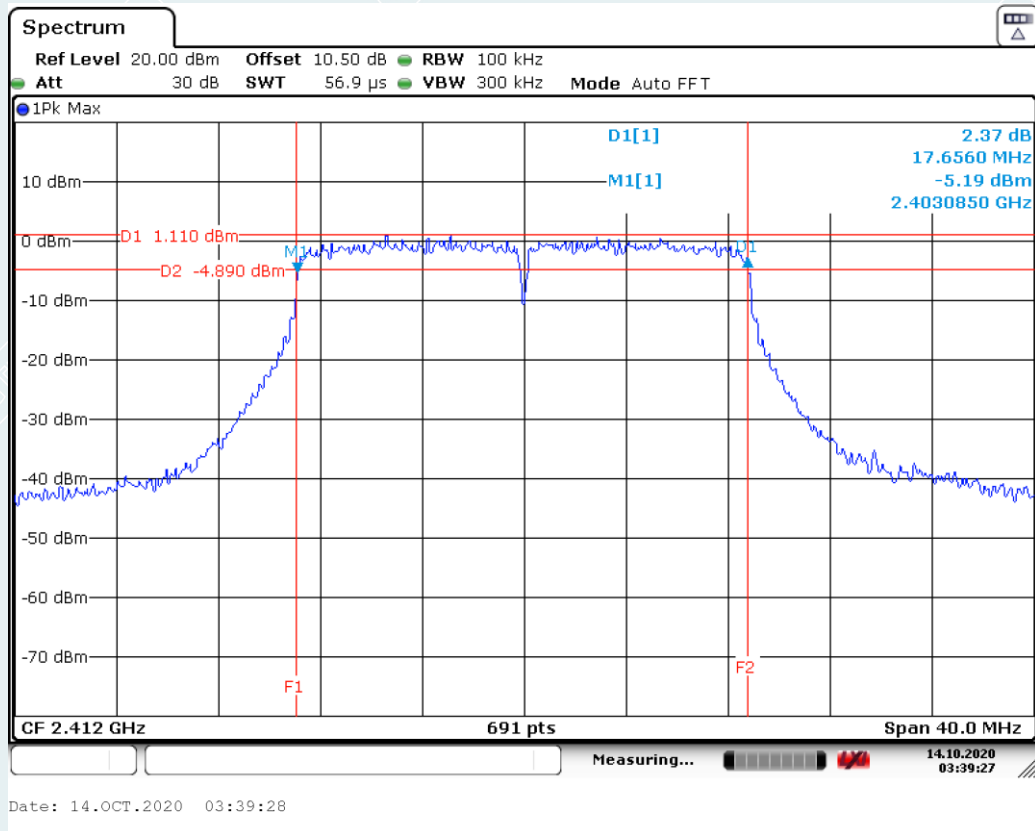
802.11g mode (antenna 1):
Channel 2437MHz



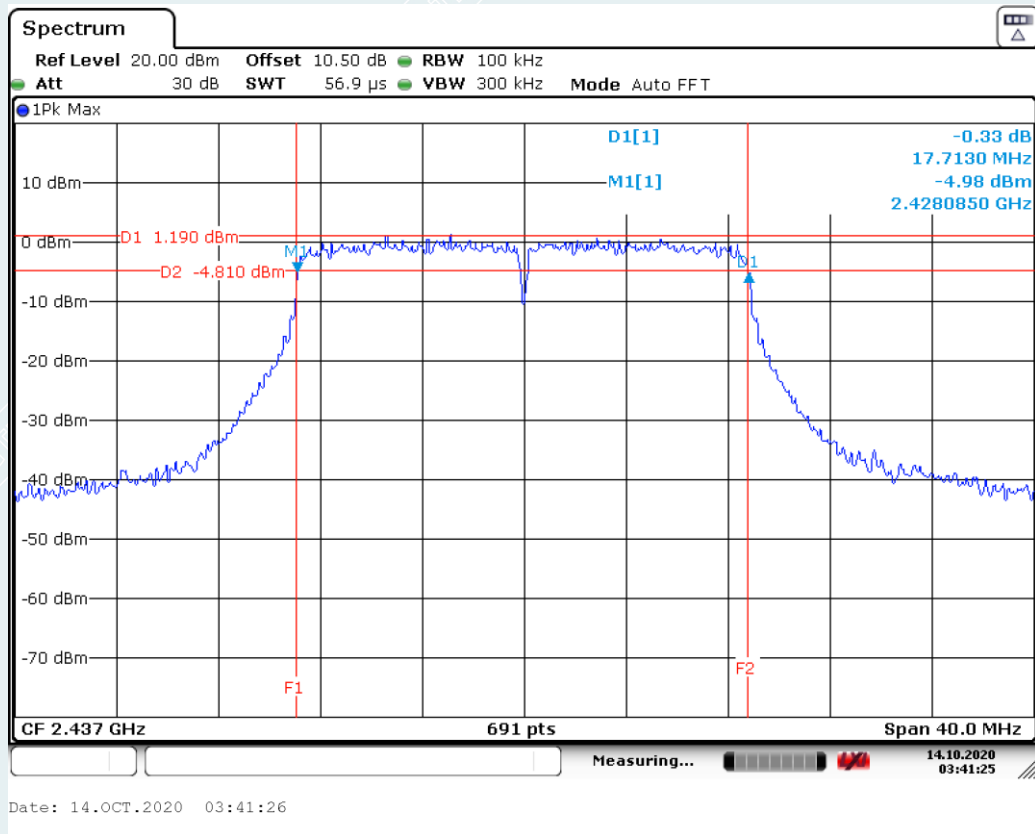
802.11g mode (antenna 1):
Channel 2462MHz**802.11g mode (antenna 2):**
Channel 2412MHz

802.11g mode (antenna 2):
Channel 2437MHz**802.11g mode (antenna 2):**
Channel 2462MHz

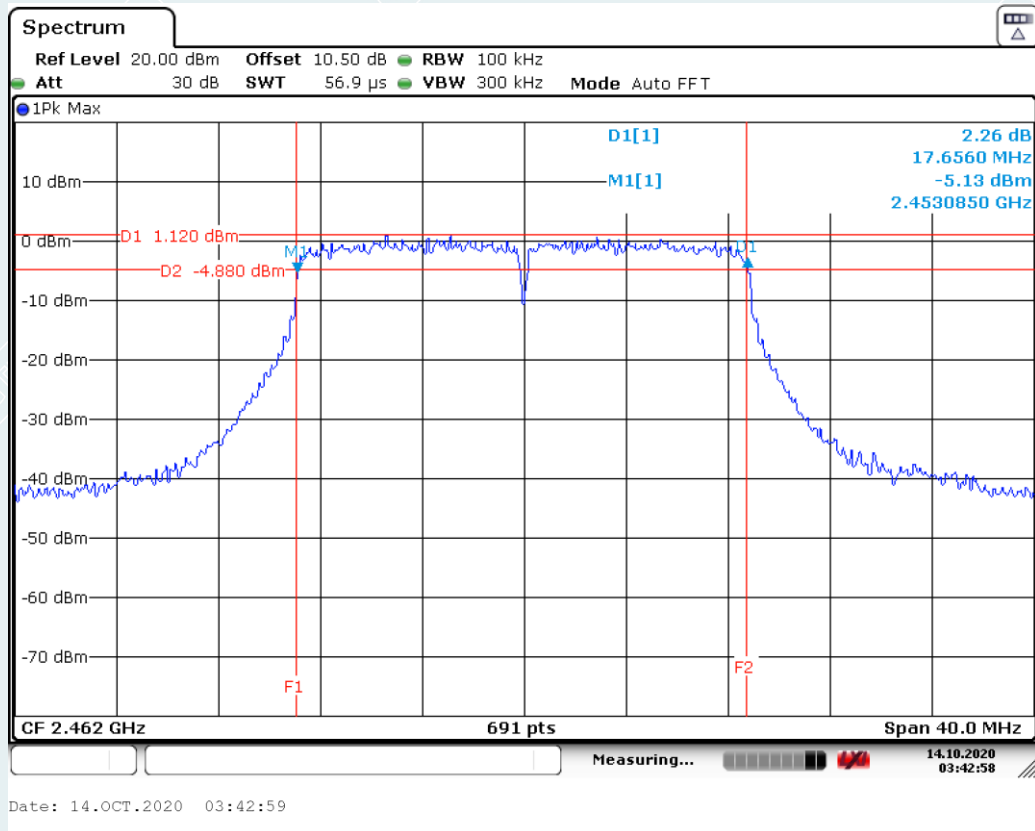
802.11n HT20 mode (antenna 1):
Channel 2412MHz**802.11n HT20 mode (antenna 1):**
Channel 2437MHz

802.11n HT20 mode (antenna 1):
Channel 2462MHz**802.11n HT20 mode (antenna 2):**
Channel 2412MHz

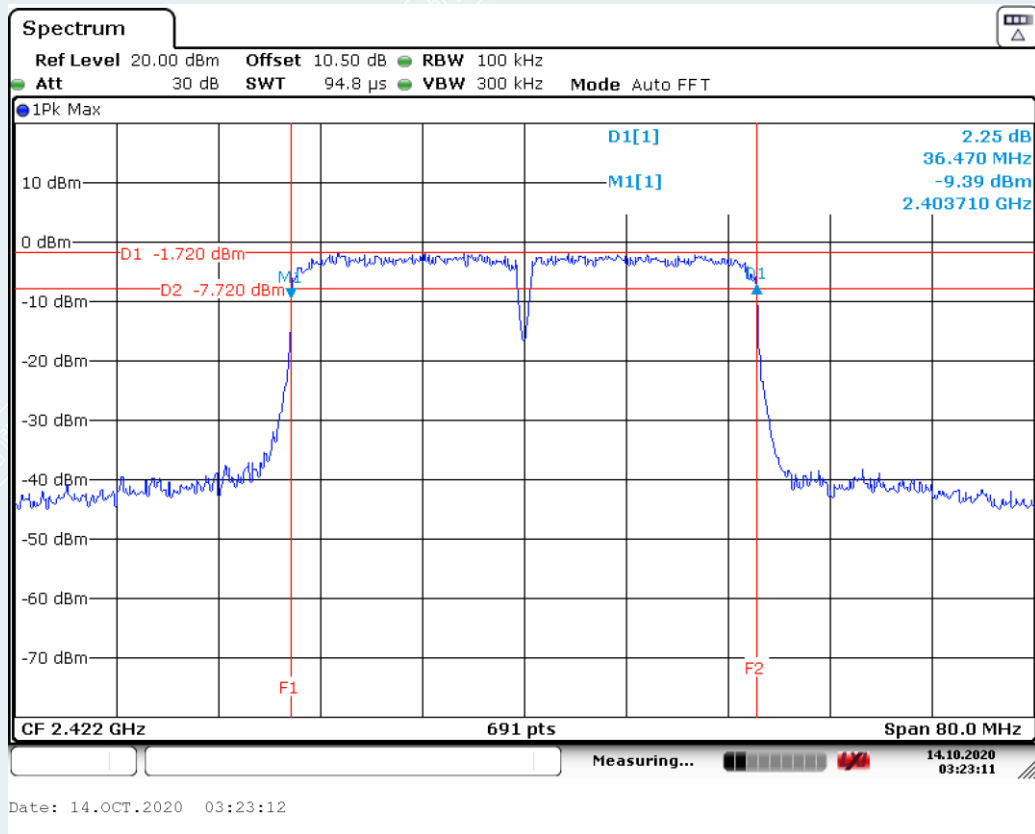
802.11n HT20 mode (antenna 2):
Channel 2437MHz



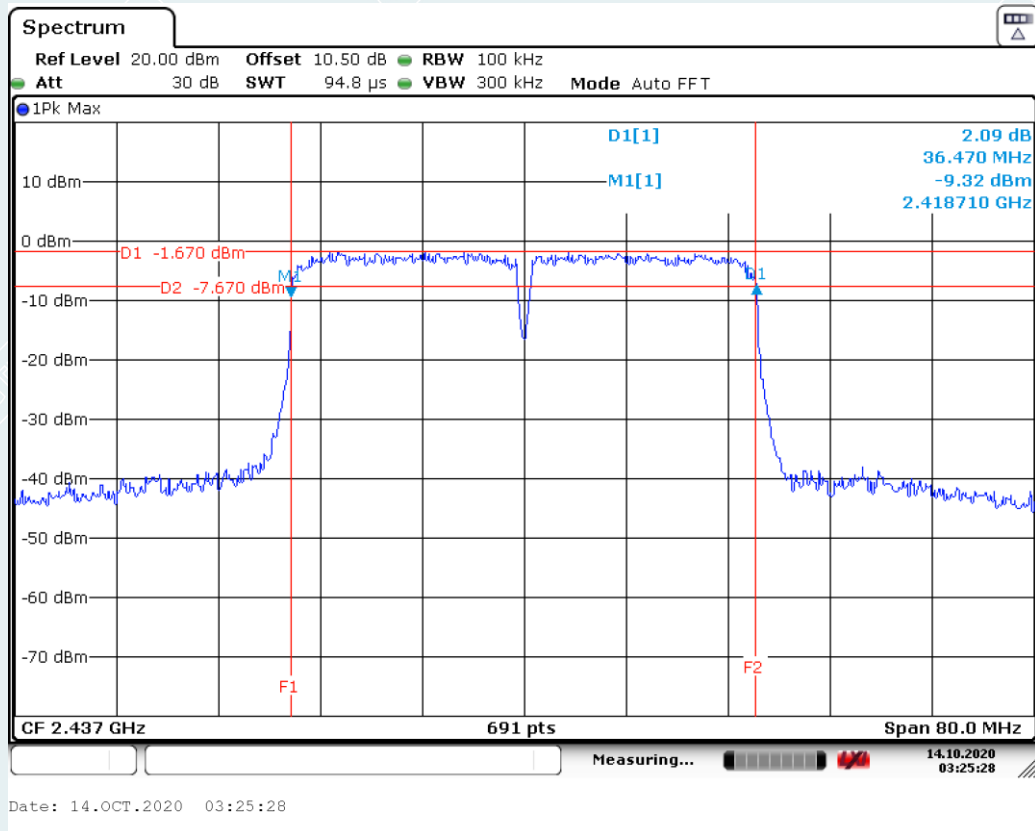
802.11n HT20 mode (antenna 2):
Channel 2462MHz



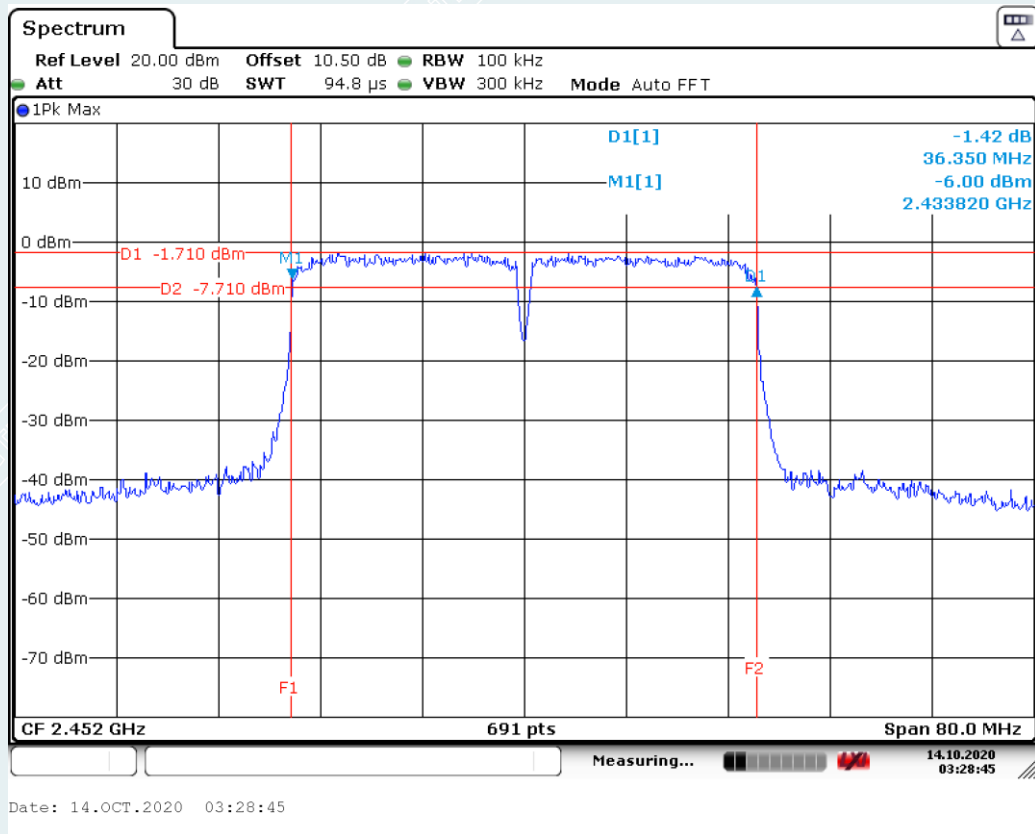
802.11n HT40 mode (antenna 1):
Channel 2422MHz



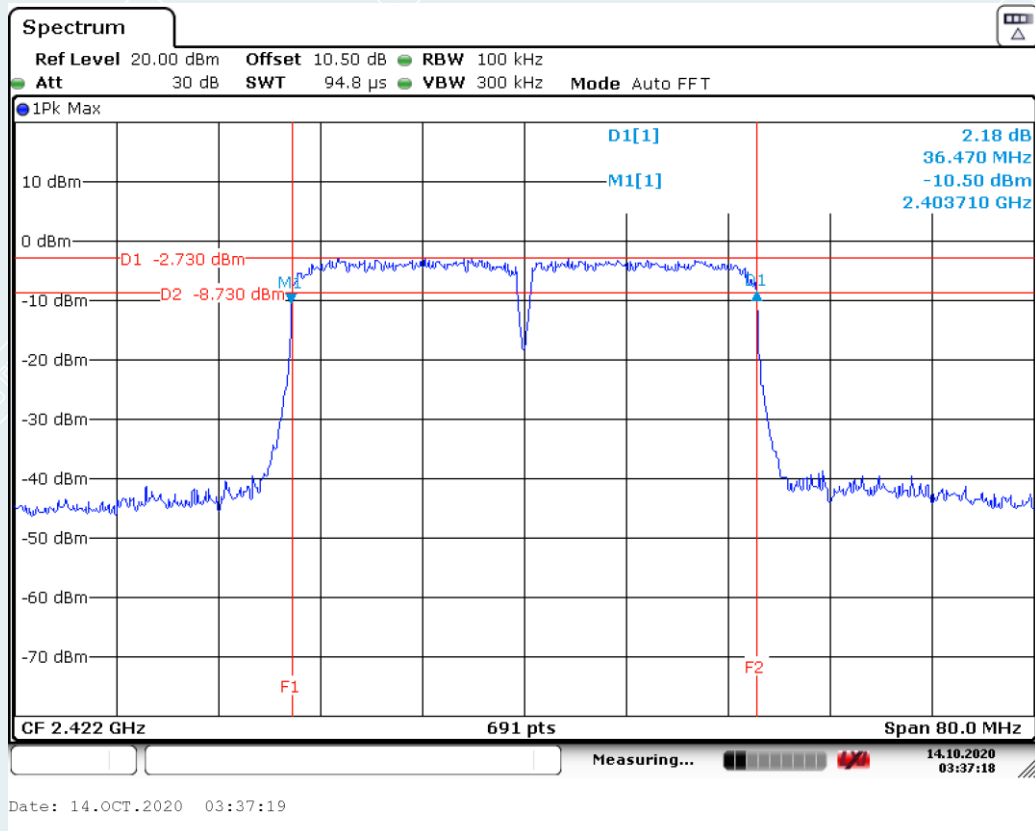
802.11n HT40 mode (antenna 1):
Channel 2437MHz



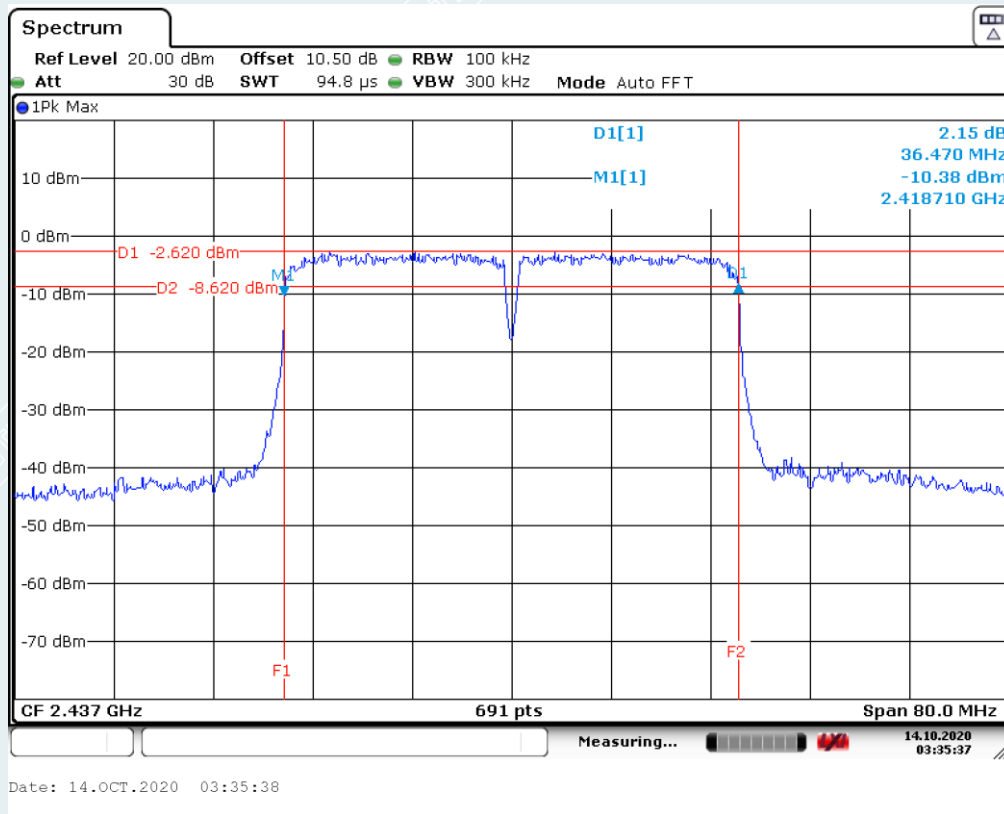
802.11n HT40 mode (antenna 1):
Channel 2452MHz



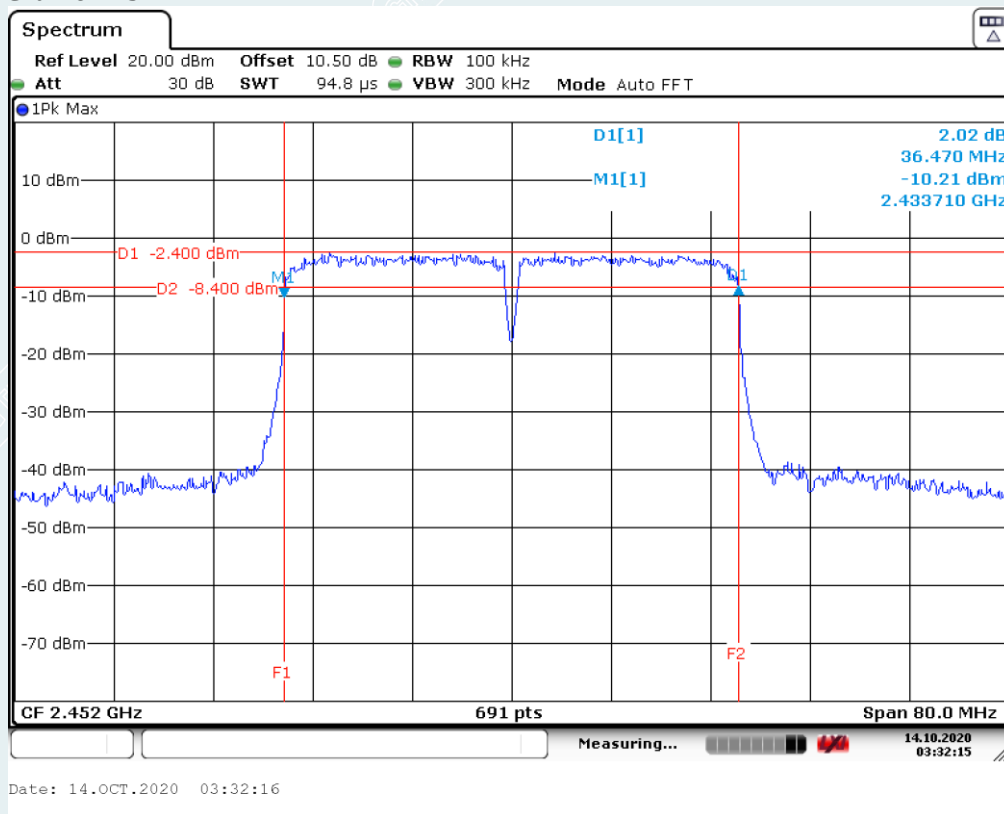
802.11n HT40 mode (antenna 2):
Channel 2422MHz



802.11n HT40 mode (antenna 2):
Channel 2437MHz



802.11n HT40 mode (antenna 2):
Channel 2452MHz



8. MAXIMUM PEAK OUTPUT POWER

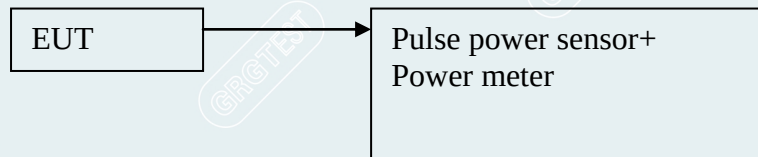
8.1. LIMITS

The maximum Peak output power measurement is 1W

8.2. TEST PROCEDURES

- 1) Place the EUT on a bench and set it in transmitting mode.
- 2) Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to an EMI Test Receiver.
- 3) The spectrum analyzer resolution bandwidth that is $\leq \text{EBW}$. So we test the Maximum Conducted Output Power — Integrated band power method.
- 4) Set the analyzer span $\geq 1.5 \times$ DTS bandwidth. Set the RBW = 1 MHz. Set the VBW ≥ 3 MHz. Sweep time = auto couple. Detector = peak. Allow trace to fully stabilize.

8.3. TEST SETUP



8.4. TEST RESULT

Non-beamforming

802.11b Mode (antenna 1):

Channel No.	Frequency (MHz)	Measured Channel Power with Duty Factor (dBm)	Peak / AVG	Limit	Result
1	2412	9.35	AVG	30dBm	Pass
6	2437	12.20			Pass
11	2462	12.06			Pass

802.11b Mode (antenna 2):

Channel No.	Frequency (MHz)	Measured Channel Power with Duty Factor (dBm)	Peak / AVG	Limit	Result
1	2412	9.44	AVG	30dBm	Pass
6	2437	12.22			Pass
11	2462	12.08			Pass

802.11g Mode (antenna 1):

Channel No.	Frequency (MHz)	Measured Channel Power with Duty Factor (dBm)	Peak / AVG	Limit	Result
1	2412	15.55	AVG	30dBm	Pass
6	2437	17.58			Pass
11	2462	16.85			Pass

802.11g Mode (antenna 2):

Channel No.	Frequency (MHz)	Measured Channel Power with Duty Factor (dBm)	Peak / AVG	Limit	Result
1	2412	15.12	AVG	30dBm	Pass
6	2437	17.55			Pass
11	2462	16.90			Pass

802.11n HT20 Mode (MIMO):

Channel No.	Frequency (MHz)	Measured Channel Power with Duty Factor (dBm)			Peak/ AVG	Limit	Result
		antenna 1	antenna 2	total			
1	2412	13.97	13.73	16.86	AVG	27.49dBm	Pass
6	2437	13.95	13.81	16.89			Pass
11	2462	13.80	13.87	16.85			Pass

802.11n HT40 Mode (MIMO):

Channel No.	Frequency (MHz)	Measured Channel Power with Duty Factor (dBm)			Peak/ AVG	Limit	Result
		antenna 1	antenna 2	total			
3	2422	13.78	13.12	16.47	AVG	27.49dBm	Pass
6	2437	13.98	13.82	16.91			Pass
9	2452	13.59	12.89	16.26			Pass

Note: 1. This EUT supports MIMO 2X2, any transmit signals are correlated with each other,
So Directional gain = $10\log[(10^{5.62/20} + 10^{5.37/20})/2]$ dBi, HT20/40 mode: Directional gain (dBi)=8.51

Note: 2. Antenna gain is greater than 6, HT20/40 mode: Output Power Limit = $30 - (8.51 - 6) = 27.49\text{dBm}$;

Beamforming

802.11n HT20 Mode (MIMO):

Channel No.	Frequency (MHz)	Measured Channel Power with Duty Factor (dBm)			Peak/AVG	Limit	Result
		antenna 1	antenna 2	total			
1	2412	13.42	13.30	16.37	AVG	27.38dBm	Pass
6	2437	13.41	13.43	16.43			Pass
11	2462	13.31	13.46	16.40			Pass

802.11n HT40 Mode (MIMO):

Channel No.	Frequency (MHz)	Measured Channel Power with Duty Factor (dBm)			Peak/AVG	Limit	Result
		antenna 1	antenna 2	total			
3	2422	13.28	12.72	16.02	AVG	27.38dBm	Pass
6	2437	13.44	13.43	16.45			Pass
9	2452	13.12	12.42	15.79			Pass

Note: 1. The Beamforming Gain: 3dBi, So Directional gain (dBi) = Gain(max) + Beamforming Gain, that is Directional gain (dBi) = $5.62 + 3 = 8.62$

Note: 2. Antenna gain is greater than 6, HT20/40 mode: Output Power limit = $30 - (8.62 - 6) = 27.38\text{dBm}$

9. POWER SPECTRAL DENSITY

9.1. LIMITS

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

9.2. TEST PROCEDURES

- 1) Remove the antenna from the EUT, and then connect a low loss RF cable from antenna port to the spectrum analyzer.
- 2) Position the EUT was set without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
- 3) Set the analyzer span to 1.5 times the DTS bandwidth. Set the RBW = 3 kHz. Set the VBW ≥ 3 RBW. Detector = peak. Ensure that the number of measurement points in the sweep $\geq 2 \times$ span/RBW (use of a greater number of measurement points than this minimum requirement is recommended).
- 4) Repeat above procedures until all frequencies measured were complete.

9.3. TEST SETUP



9.4. TEST RESULTS

Duty Cycle Calculation					
	Mode	ON Time(ms)	Total Time(ms)	Duty Cycle	Duty Factor
duty cycle>98%	802.11B	1	1	100%	0
	802.11G	1	1	100%	0
	802.11N20	1	1	100%	0
	802.11N40	1	1	100%	0

Non-beamforming

802.11b Mode:

Channel No.	Frequency (MHz)	PSD (dBm)		Duty Factor	Total PSD with Duty Factor (dBm)		Limit (dBm)	Result
		antenna 1	antenna 2		antenna 1	antenna 2		
1	2412	-20.95	-21.55	0	-20.95	-21.55	8.00	Pass
6	2437	-18.29	-18.88	0	-18.29	-18.88	8.00	Pass
11	2462	-18.45	-19.02	0	-18.45	-19.02	8.00	Pass

802.11g Mode:

Channel No.	Frequency (MHz)	PSD (dBm)		Duty Factor	Total PSD with Duty Factor (dBm)		Limit (dBm)	Result
		antenna 1	antenna 2		antenna 1	antenna 2		
1	2412	-13.14	-14.03	0	-13.14	-14.03	8.00	Pass
6	2437	-11.07	-9.96	0	-11.07	-9.96	8.00	Pass
11	2462	-11.80	-12.29	0	-11.80	-12.29	8.00	Pass

802.11n HT20 Mode:

Channel No.	Frequency (MHz)	PSD (dBm)			Duty Factor	Total PSD with Duty Factor (dBm)	Limit (dBm)	Result
		antenna 1	antenna 2	total				
1	2412	-13.89	-14.40	-11.13	0	-11.13	5.49	Pass
6	2437	-13.98	-14.27	-11.11	0	-11.11	5.49	Pass
11	2462	-14.12	-14.26	-11.18	0	-11.18	5.49	Pass

802.11n HT40 Mode:

Channel No.	Frequency (MHz)	PSD (dBm)			Duty Factor	Total PSD with Duty Factor (dBm)	Limit (dBm)	Result
		antenna 1	antenna 2	total				
3	2422	-14.99	-15.87	-12.40	0	-12.40	5.49	Pass
6	2437	-14.74	-15.41	-12.05	0	-12.05	5.49	Pass
9	2452	-15.35	-16.11	-12.70	0	-12.70	5.49	Pass

Note: 1. Note: 1. This EUT supports MIMO 2X2, any transmit signals are correlated with each other, So Directional gain = $10\log[(10^{5.62/20} + 10^{5.37/20})/2]$ dBi, HT20/40 mode: Directional gain (dBi)=8.51
 Note: 2. Antenna gain is greater than 6, HT20/40 mode: PSD limit = $8 - (8.51 - 6) = 5.49$ dBm

Beamforming**802.11n HT20 Mode:**

Channel No.	Frequency (MHz)	PSD (dBm)			Duty Factor	Total PSD with Duty Factor (dBm)	Limit (dBm)	Result
		antenna 1	antenna 2	total				
1	2412	-14.38	-14.86	-11.60	0	-11.60	5.38	Pass
6	2437	-14.51	-14.49	-11.49	0	-11.49	5.38	Pass
11	2462	-14.75	-14.73	-11.73	0	-11.73	5.38	Pass

802.11n HT40 Mode:

Channel No.	Frequency (MHz)	PSD (dBm)			Duty Factor	Total PSD with Duty Factor (dBm)	Limit (dBm)	Result
		antenna 1	antenna 2	total				
3	2422	-15.57	-16.38	-12.95	0	-12.95	5.38	Pass
6	2437	-15.13	-15.99	-12.53	0	-12.53	5.38	Pass
9	2452	-15.76	-16.55	-13.13	0	-13.13	5.38	Pass

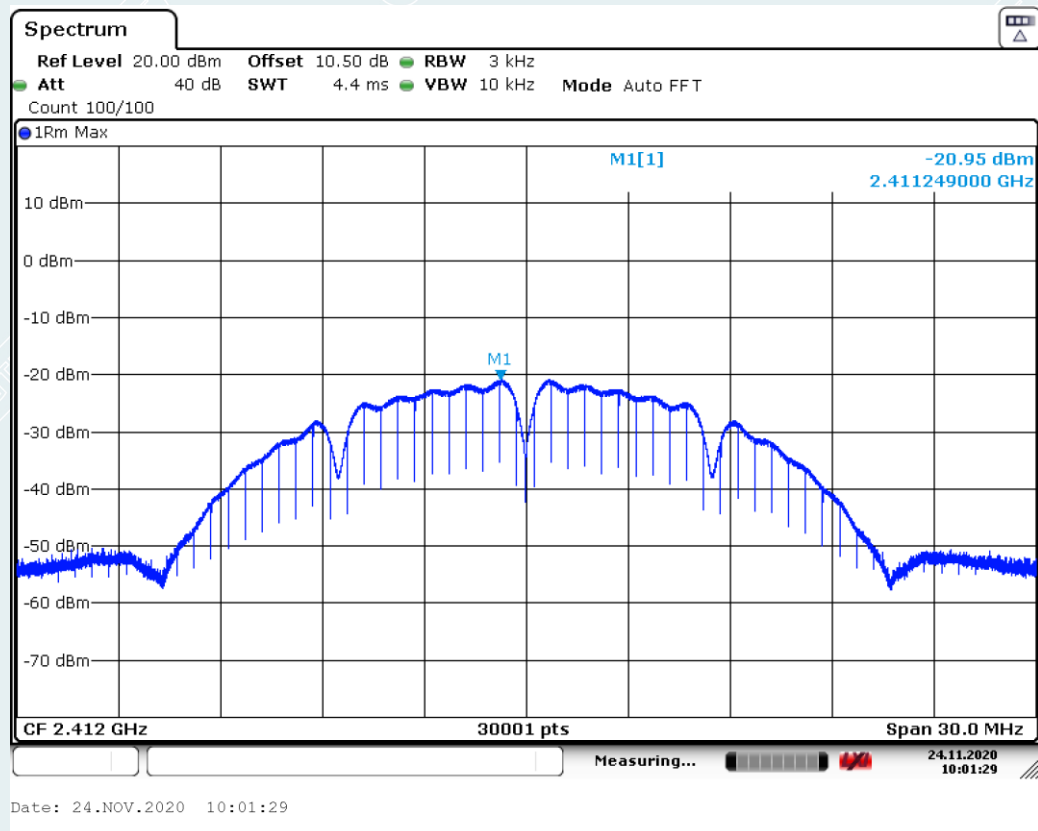
Note: 1. The Beamforming Gain: 3dBi ,So Directional gain (dBi)= Gain(max)+ Beamforming Gain, that is Directional gain (dBi)= 5.62+3=8.62

Note: 2. Antenna gain is greater than 6,HT20/40 mode: PSD limit=8-(8.62-6)=5.38dBm

Non-beamforming

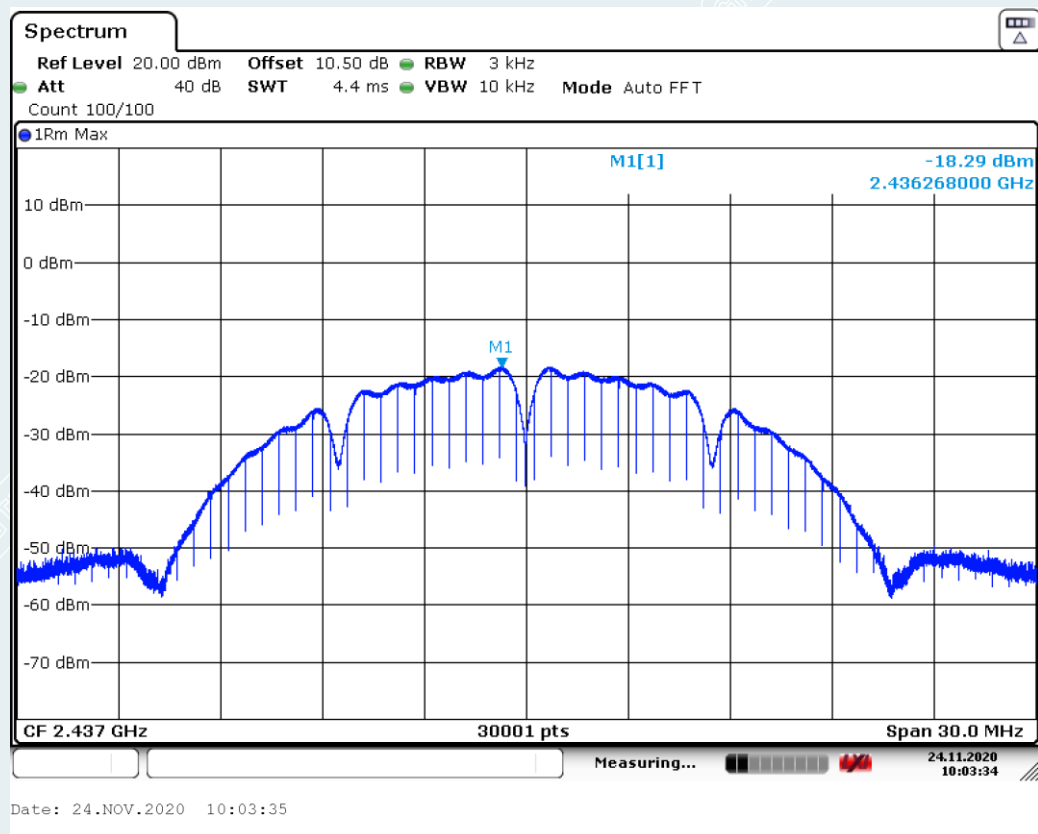
802.11b mode (antenna 1):

Channel 2412MHz

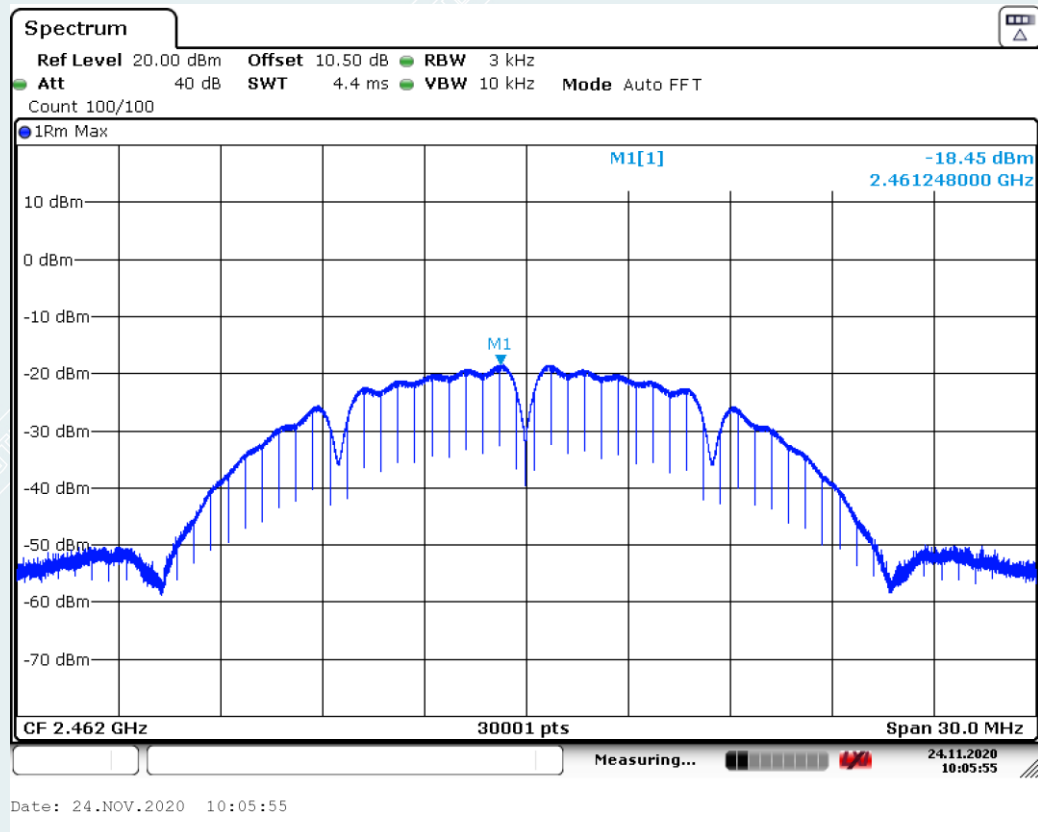


802.11b mode (antenna 1):

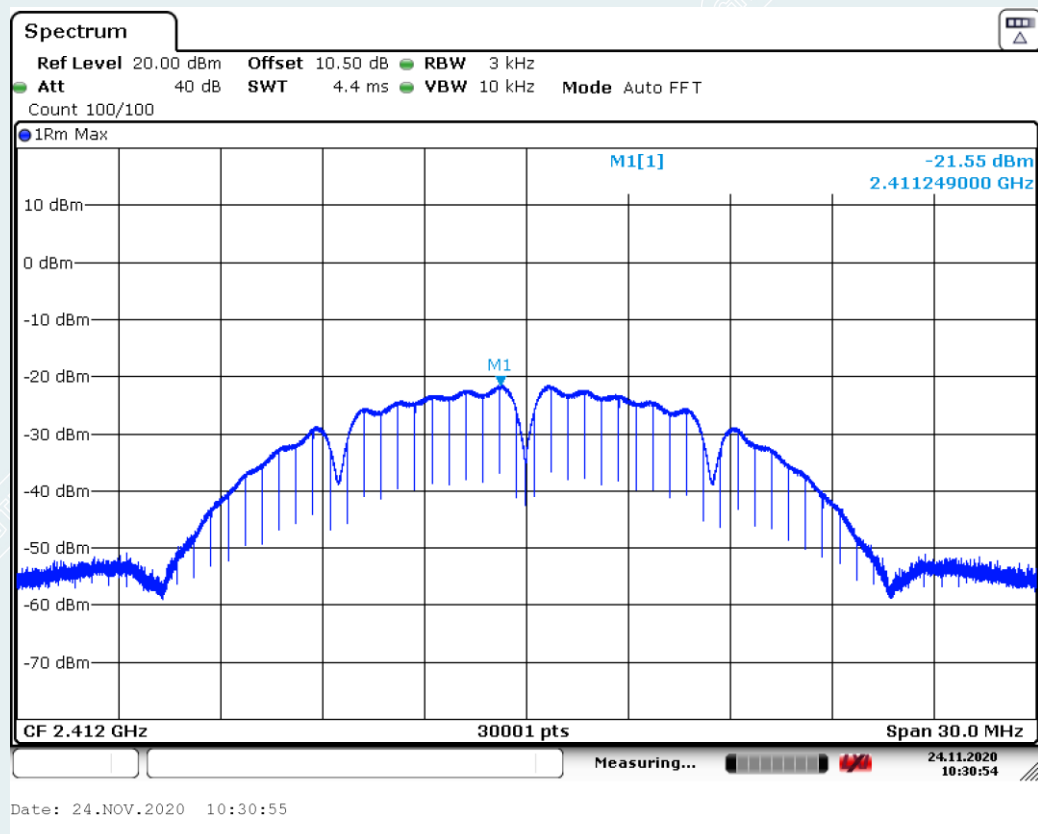
Channel 2437MHz



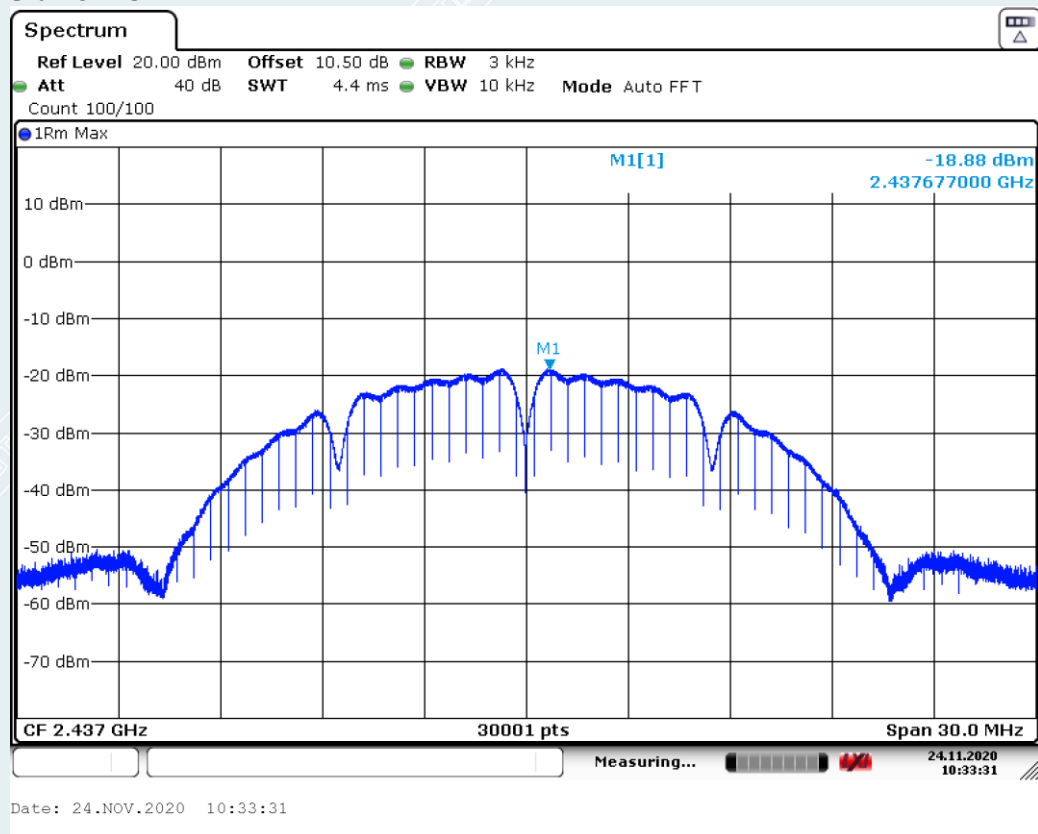
802.11b mode (antenna 1):
Channel 2462MHz



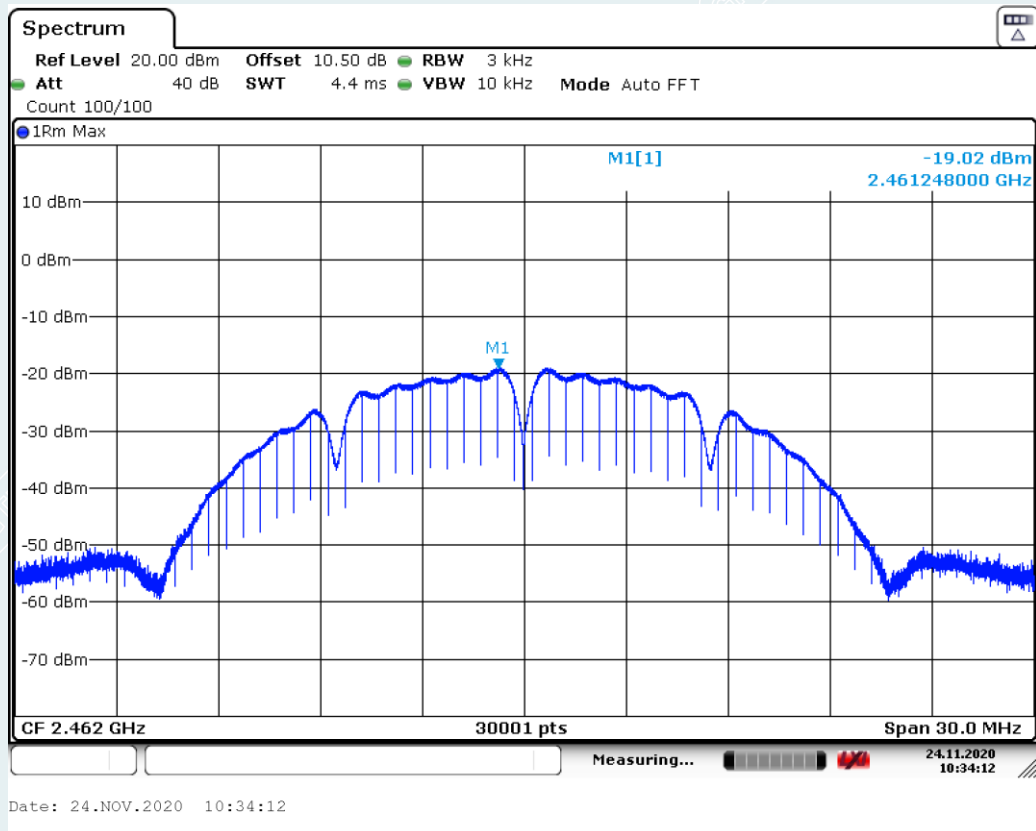
802.11b mode (antenna 2):
Channel 2412MHz



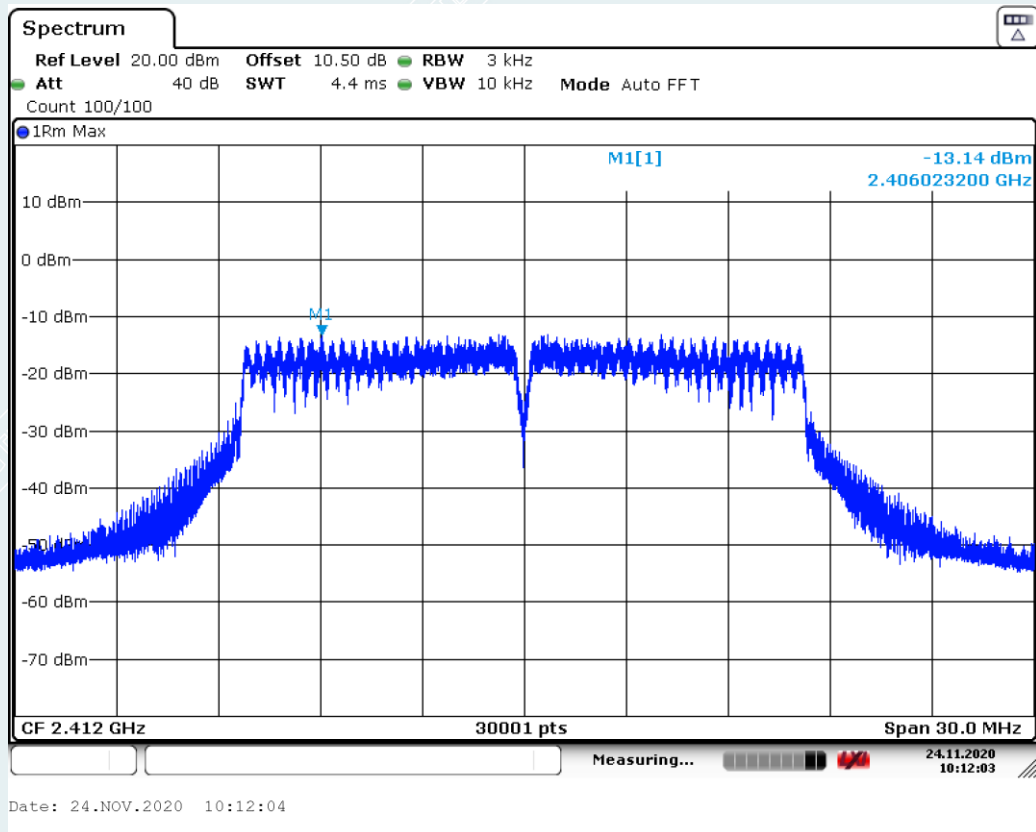
802.11b mode (antenna 2):
Channel 2437MHz



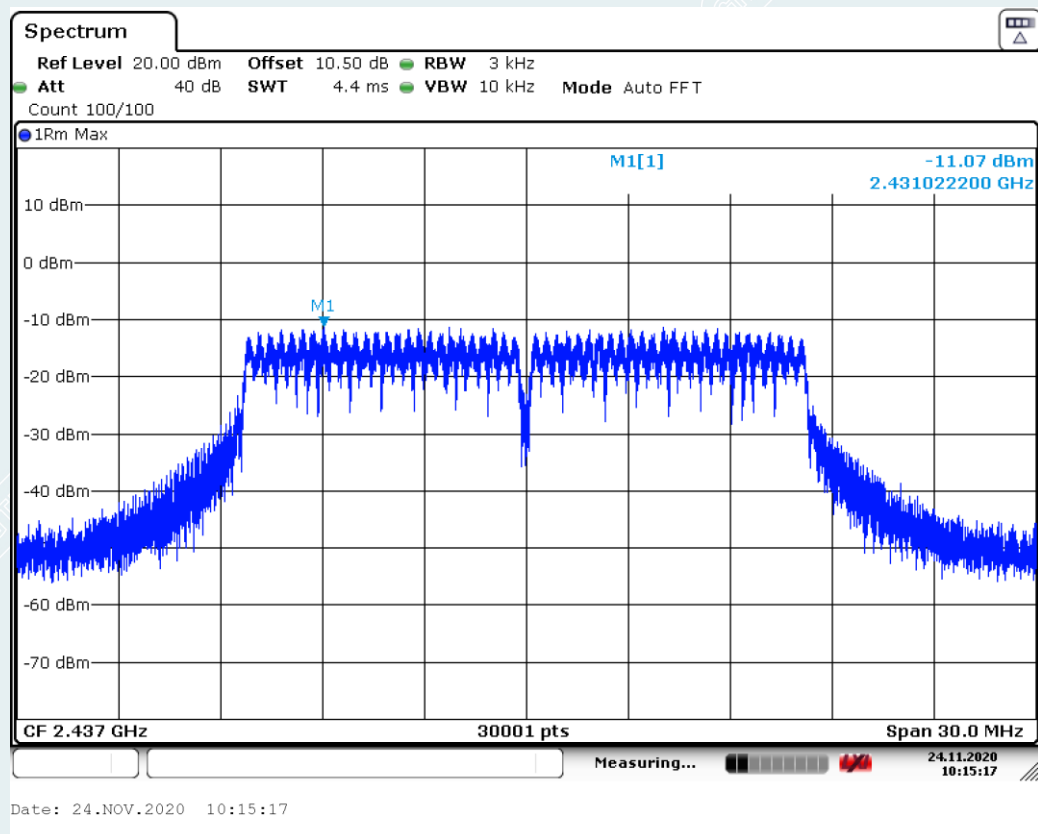
802.11b mode (antenna 2):
Channel 2462MHz



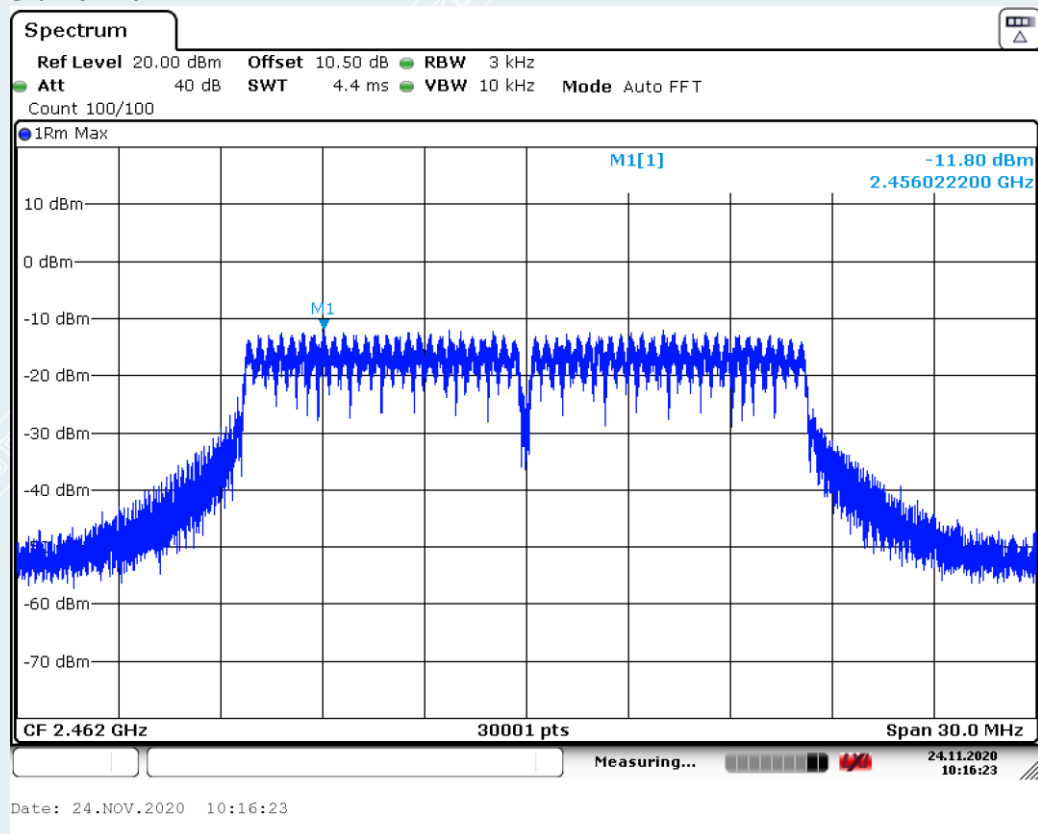
802.11g mode (antenna 1):
Channel 2412MHz



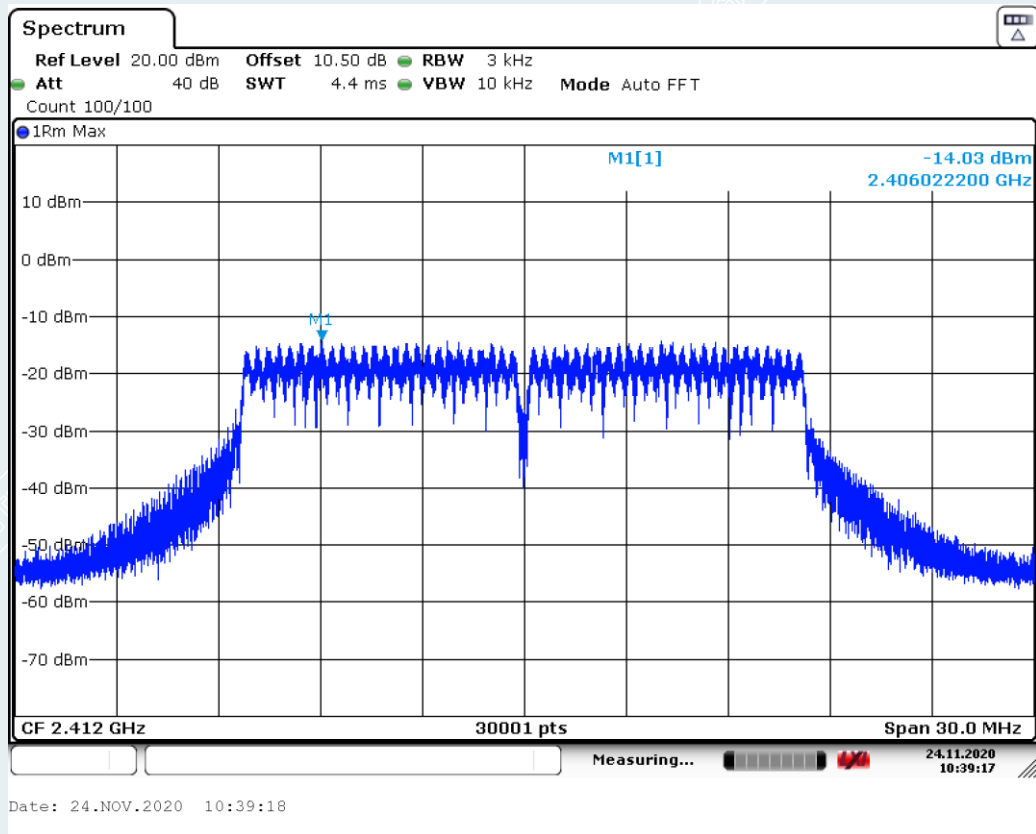
802.11g mode (antenna 1):
Channel 2437MHz



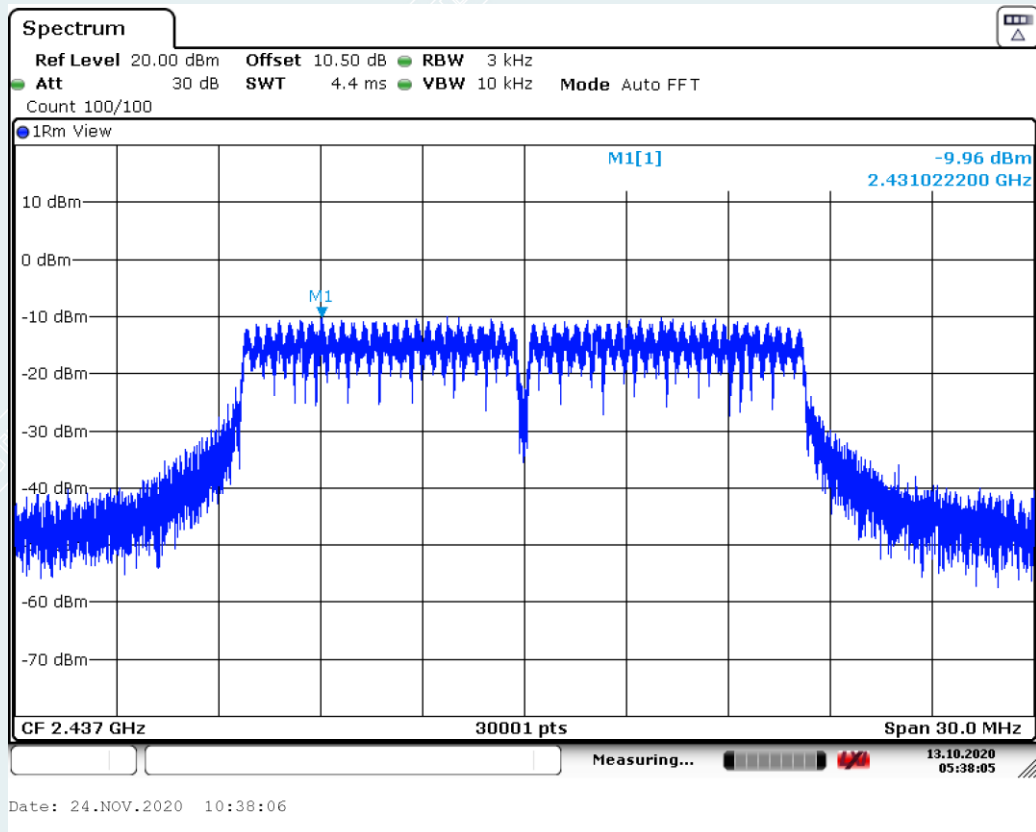
802.11g mode (antenna 1):
Channel 2462MHz



802.11g mode (antenna 2):
Channel 2412MHz



802.11g mode (antenna 2):
Channel 2437MHz



802.11g mode (antenna 2):
Channel 2462MHz