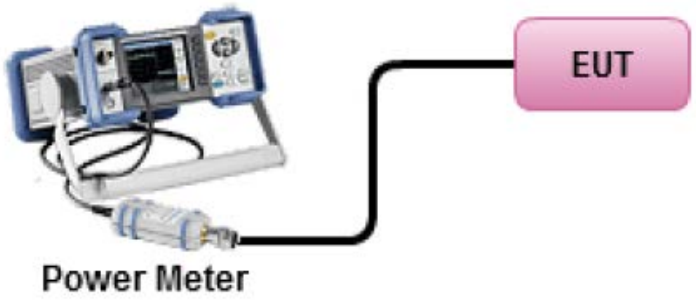
10.4 Output Power

Requirement(s):

Spec	Item	Requirement	Applicable
§ 15.247 RSS247 (5.4.4)	a)	FHSS in 2400-2483.5MHz with ≥ 75 channels: ≤1 Watt	☐
	b)	FHSS in 5725-5850MHz: ≤1 Watt	☐
	c)	For all other FHSS in the 2400-2483.5MHz band: ≤0.125 Watt.	☐
	d)	FHSS in 902-928MHz with ≥ 50 channels: ≤1 Watt	☐
	e)	FHSS in 902-928MHz with ≥ 25 & <50 channels: ≤0.25 Watt	☐
	f)	DSSS in 902-928MHz, 2400-2483.5MHz, 5725-5850MHz: ≤1 Watt	☒

Test Setup



Test Procedure

558074 D01 DTS Meas Guidance v03r04, 9.2.3.1

Measurement using a Power Meter (PM)

Measurements may be performed using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

- Connect EUT's RF output power to power meter
- Set EUT to be continuous transmission mode
- Measurement the average output power using power meter and record the result
- Repeat above steps for different test channel and other modulation type.

Test Date	05/17/2016	Environmental condition	Temperature	23ºC
			Relative Humidity	44%
			Atmospheric Pressure	1021mbar

Remark	Directional Gain = G_{ANT} + 10*log(N_{ANT}) dBi Antenna Gain (G_{ANT}) = 5.7dBi N_{ANT} = 3
Result	☒ Pass ☐ Fail

Test Data ☒ Yes ☐ N/A

Test Plot ☐ Yes (See below) ☒ N/A

Test was done by *Rachana Khanduri* at *RF Test Site*.

Output Power measurement result

For Non- Beamforming:

Type	Test mode	Freq (MHz)	CH	Conducted Power (dBm)				Limit (dBm)	Result
				Chain1	Chain2	Chain3	Combined Power		
Output	802.11b	2412	Low	20.02	18.67	18.97	24.03	30	Pass
Output	802.11b	2437	Mid	19.96	18.62	18.80	23.94	30	Pass
Output	802.11b	2462	High	20.06	18.57	18.90	24.00	30	Pass
Output	802.11g	2412	Low	19.46	18.02	18.41	23.44	30	Pass
Output	802.11g	2437	Mid	19.55	18.12	18.31	23.48	30	Pass
Output	802.11g	2462	High	19.64	18.06	18.34	23.51	30	Pass
Output	802.11n-20M	2412	Low	20.23	18.67	19.03	24.13	30	Pass
Output	802.11n-20M	2437	Mid	20.26	18.76	19.01	24.17	30	Pass
Output	802.11n-20M	2462	High	20.03	18.72	18.97	24.05	30	Pass
Note	N/A								

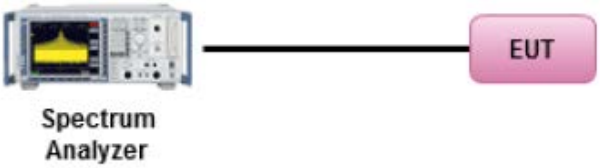
For Beamforming:

Type	Test mode	Freq (MHz)	CH	Conducted Power (dBm)				Limit (dBm)	Result
				Chain1	Chain2	Chain3	Combined Power		
Output	802.11b	2412	Low	20.02	18.67	18.97	24.03	25.53	Pass
Output	802.11b	2437	Mid	19.96	18.62	18.80	23.94	25.53	Pass
Output	802.11b	2462	High	20.06	18.57	18.90	24.00	25.53	Pass
Output	802.11g	2412	Low	19.46	18.02	18.41	23.44	25.53	Pass
Output	802.11g	2437	Mid	19.55	18.12	18.31	23.48	25.53	Pass
Output	802.11g	2462	High	19.64	18.06	18.34	23.51	25.53	Pass
Output	802.11n-20M	2412	Low	20.23	18.67	19.03	24.13	25.53	Pass
Output	802.11n-20M	2437	Mid	20.26	18.76	19.01	24.17	25.53	Pass
Output	802.11n-20M	2462	High	20.03	18.72	18.97	24.05	25.53	Pass
Note	Directional Gain = 5.7 + 10* log(3) = 10.47dBi Directional Gain is greater than 6dBi. So, Limit = 30- 4.47 = 25.53dBm								

10.5 Band Edge

Requirement(s):

Spec	Item	Requirement	Applicable
§ 15.247 RSS247(5.5)	d)	For non-restricted band, 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 or 30dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, determined by the measurement method on output power to be used. Attenuation below the general limits specified in § 15.209 (a) is not required ☐ 20 dB down ☒ 30 dB down	☒

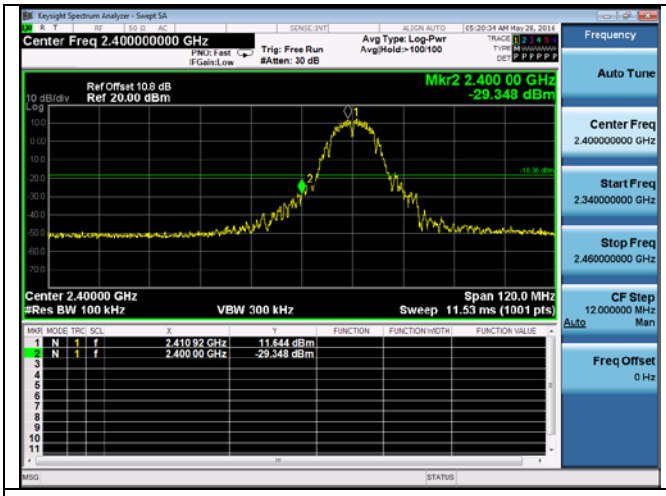
Test Setup			
Test Procedure	558074 D01 DTS Meas Guidance v03r04 Band Edge measurement procedure 1. Set the EUT to maximum power setting and enable the EUT transmit continuously. 2. Band edge emissions must be at least 30 dB down from the highest emission level within the authorized band as a measured. The attunation shall be be 30 dB instead of 20 dB when Peak conducted output power procedure is used. 3. Change modulation and channel bandwidth then repeat step 1 to 2. 4. Measured and record the results in the test report.		
Test Date	05/17/2016	Environmental condition	Temperature 22ºC Relative Humidity 46% Atmospheric Pressure 1020mbar
Remark	None		
Result	☒ Pass ☐ Fail		

Test Data ☐ Yes ☒ N/A

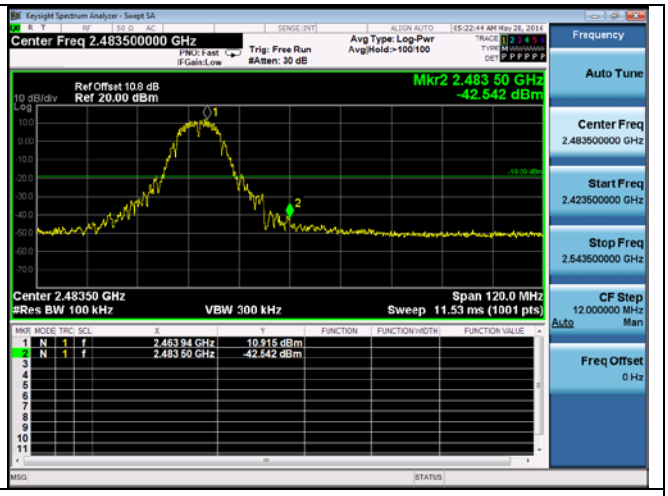
Test Plot ☒ Yes (See below) ☐ N/A

Test was done by *Rachana Khanduri* at *RF Test Site*.

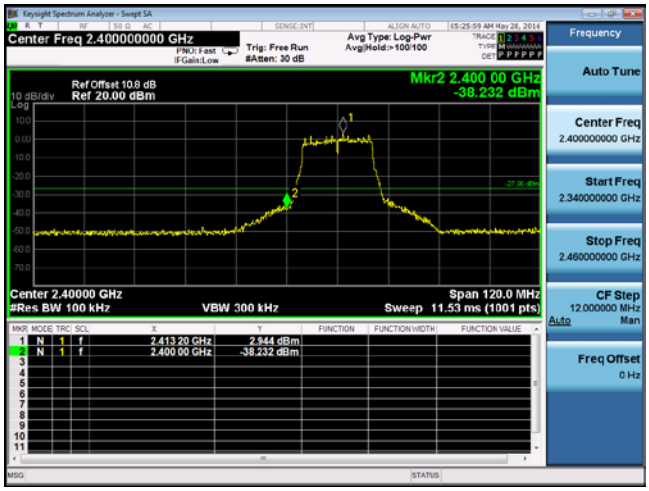
Test Plots:
Chain 1:



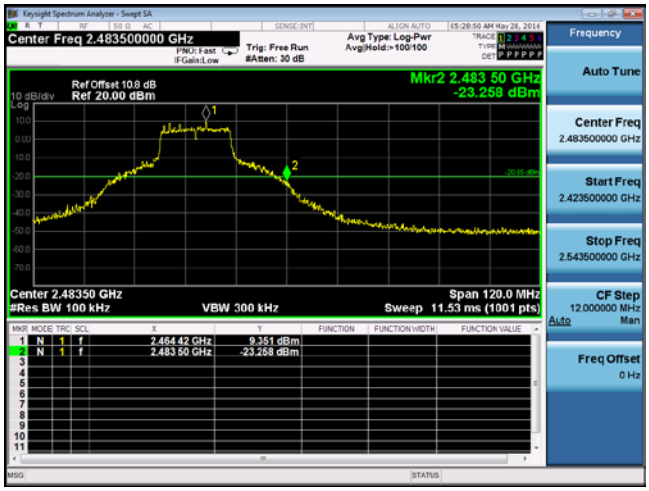
Lower Band Edge-2.4G-802.11b 2412MHz



Higher Band Edge-2.4G-802.11b 2462MHz



Lower Band Edge-2.4G-802.11g 2412MHz

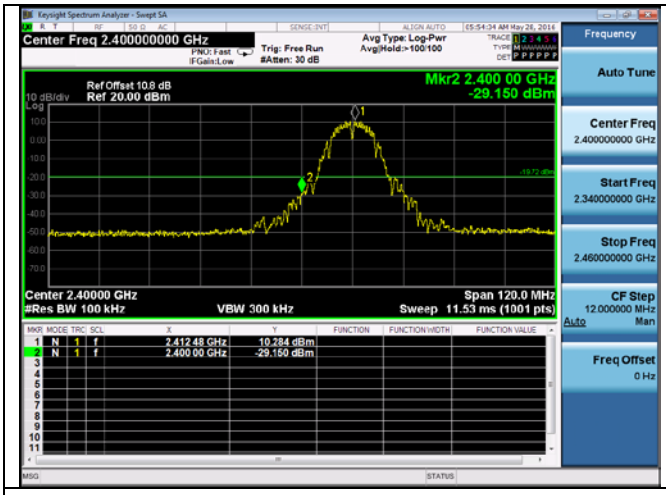


Higher Band Edge-2.4G-802.11g 2462MHz

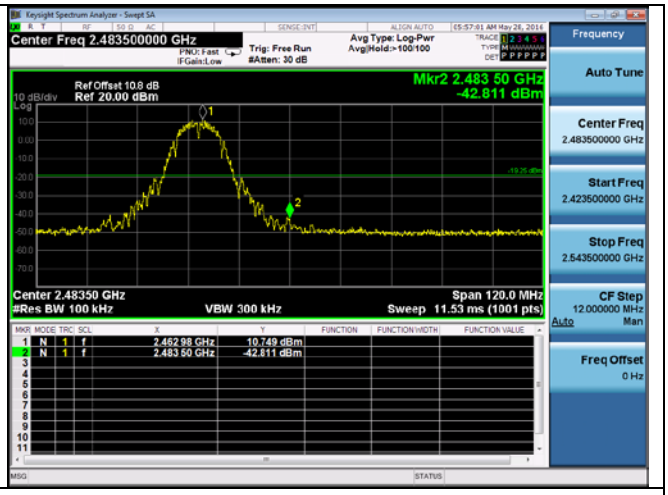
Lower Band Edge-2.4G-802.11n-20M 2412MHz

Higher Band Edge-2.4G-802.11n-20M 2462MHz

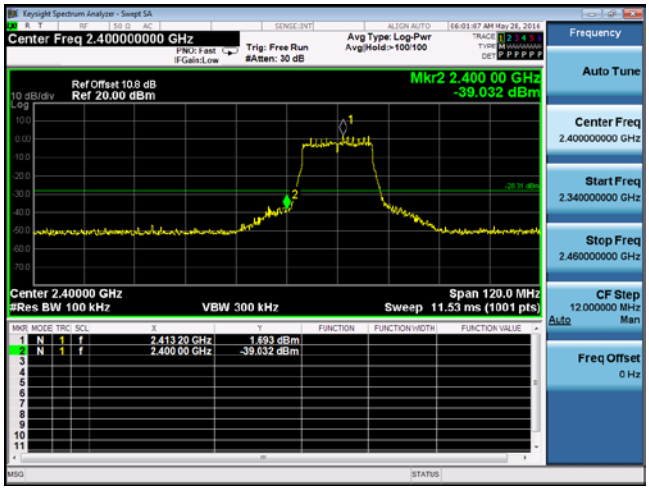
Chain 2:



Lower Band Edge-2.4G-802.11b 2412MHz

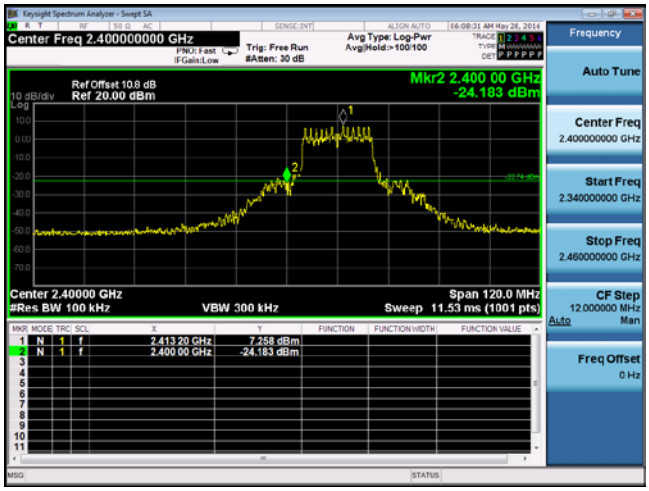


Higher Band Edge-2.4G-802.11b 2462MHz



Lower Band Edge-2.4G-802.11g 2412MHz

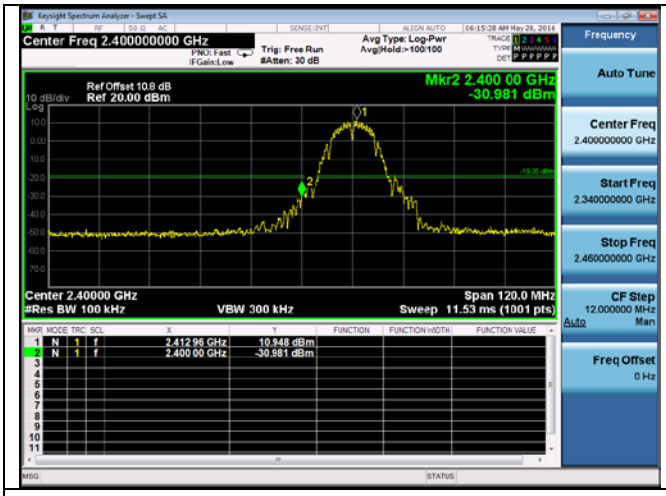
Higher Band Edge-2.4G-802.11g 2462MHz



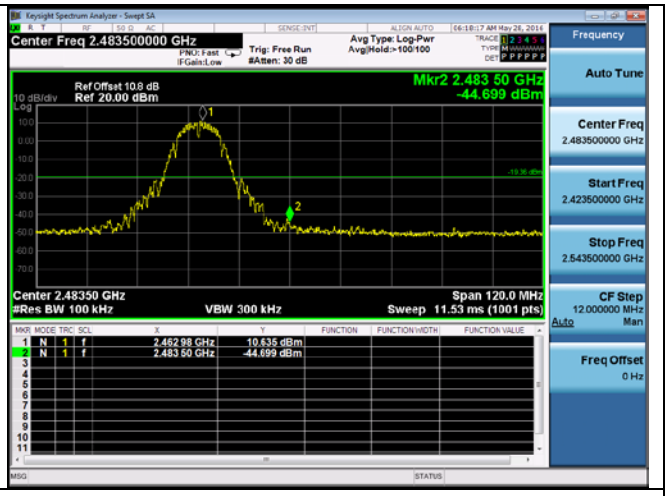
Lower Band Edge-2.4G-802.11n-20M 2412MHz

Higher Band Edge-2.4G-802.11n-20M 2462MHz

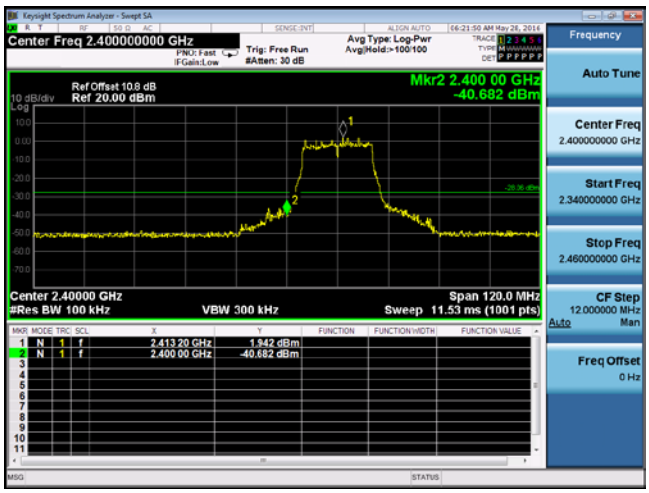
Chain 3:



Lower Band Edge-2.4G-802.11b 2412MHz



Higher Band Edge-2.4G-802.11b 2462MHz



Lower Band Edge-2.4G-802.11g 2412MHz

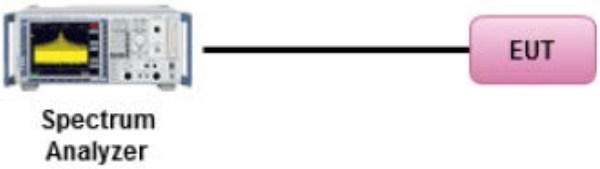
Higher Band Edge-2.4G-802.11g 2462MHz

Lower Band Edge-2.4G-802.11n-20M 2412MHz

Higher Band Edge-2.4G-802.11n-20M 2462MHz

10.6 Peak Spectral Density

Requirement(s):

Spec	Item	Requirement	Applicable
§ 15.247(e) RSS247 (5.2.2)	e)	DSSS: ≤8dBm/3KHz	☒
	f)	DSSS in hybrid sys with FH turned off: ≤8dBm/3KHz	☐
Test Setup			
Test Procedure	558074 D01 DTS Meas Guidance v03r04, 10.2 Method PKPSD (peak PSD) Peak spectral density measurement procedure - Set analyzer center frequency to DTS channel center frequency. - Set the span to 1.5 times the DTS bandwidth. - Set the RBW to: 3 kHz ≤ RBW ≤ 100 kHz. - Set the VBW ≥ 3 x RBW. - Detector = Peak - Sweep time = auto couple. - Trace mode = Max Hold - Allow trace to fully stabilize. - Use the peak marker function to determine the maximum amplitude level within the RBW. - If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.		
Test Date	05/17/2016	Environmental condition	Temperature 22ºC Relative Humidity 46% Atmospheric Pressure 1020mbar
Remark	None		
Result	☒ Pass ☐ Fail		

Test Data ☒ Yes ☐ N/A

Test Plot ☒ Yes (See below) ☐ N/A

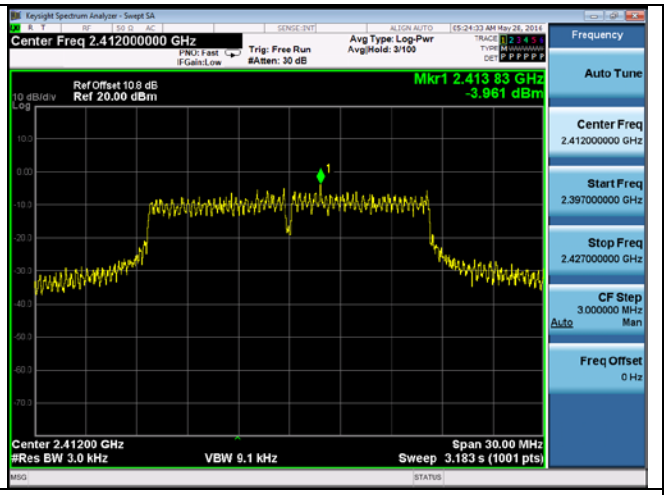
Test was done by *Rachana Khanduri* at *RF Test Site*.

PSD measurement results

Type	Test mode	Freq (MHz)	CH	Conducted PSD (dBm/3KHz)				Limit (dBm/3KHz)	Result
				Chain1	Chain2	Chain3	Combined PSD		
PSD	802.11b	2412	Low	-2.52	-4.47	-3.70	1.28	≤8	Pass
PSD	802.11b	2437	Mid	-3.46	-4.33	-4.12	0.82	≤8	Pass
PSD	802.11b	2462	High	-2.53	-4.14	-3.94	1.30	≤8	Pass
PSD	802.11g	2412	Low	-3.96	-5.69	-6.13	-0.38	≤8	Pass
PSD	802.11g	2437	Mid	-4.82	-6.53	-5.83	-0.90	≤8	Pass
PSD	802.11g	2462	High	-4.81	-6.51	-6.28	-1.03	≤8	Pass
PSD	802.11n-20M	2412	Low	-2.06	-3.20	-2.37	2.25	≤8	Pass
PSD	802.11n-20M	2437	Mid	-1.83	-3.51	-2.45	2.23	≤8	Pass
PSD	802.11n-20M	2462	High	-1.34	-2.97	-2.70	2.49	≤8	Pass
Note	-								

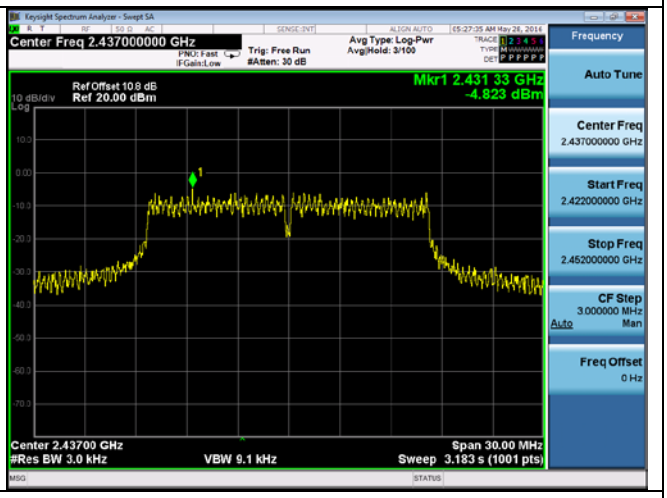
Test Plots
Chain 1:

PSD-2.4G-802.11b 2412MHz



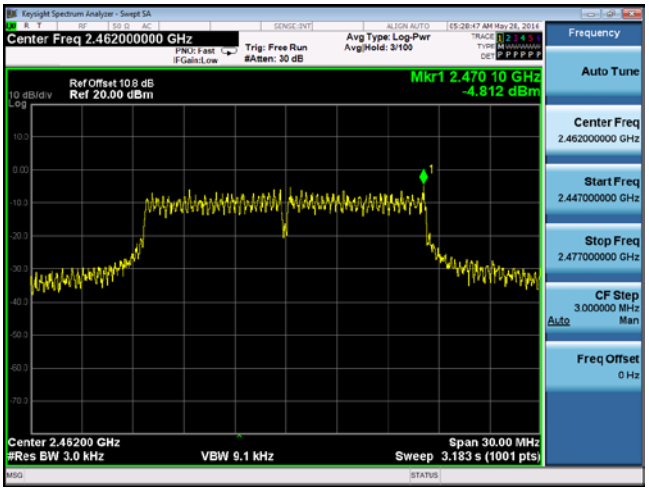
PSD-2.4G-802.11g 2412MHz

PSD-2.4G-802.11b 2437MHz

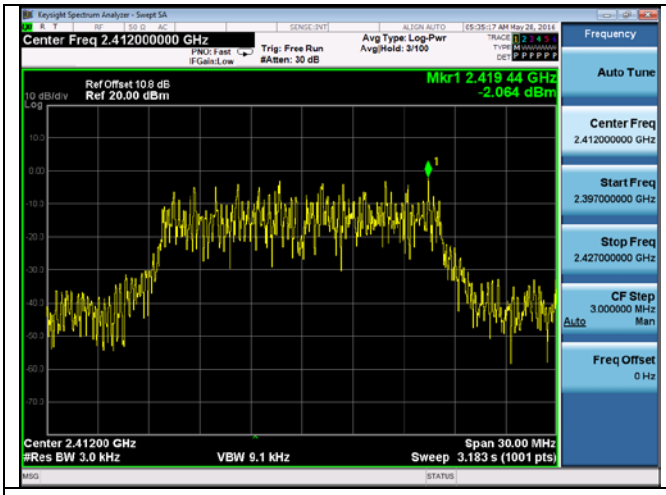


PSD-2.4G-802.11g 2437MHz

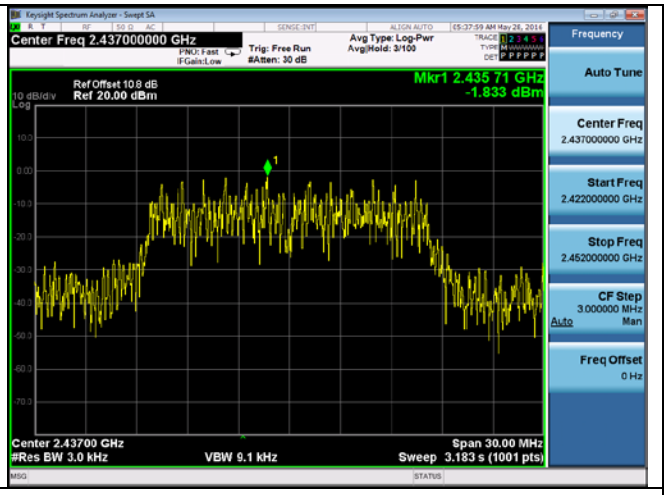
PSD-2.4G-802.11b 2462MHz



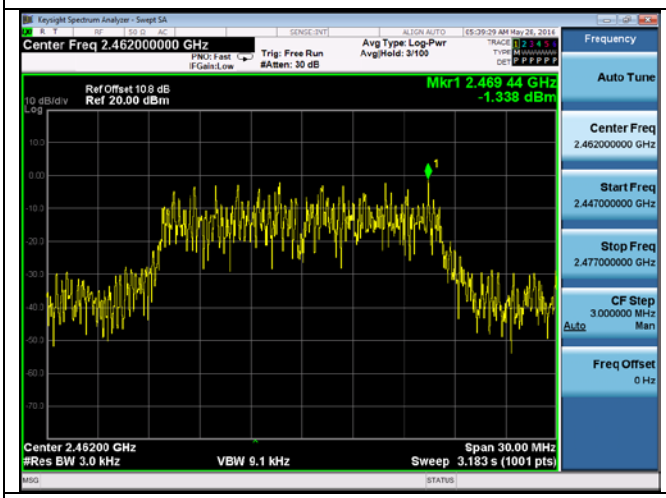
PSD-2.4G-802.11g 2462MHz



PSD-2.4G-802.11n-20M 2412MHz



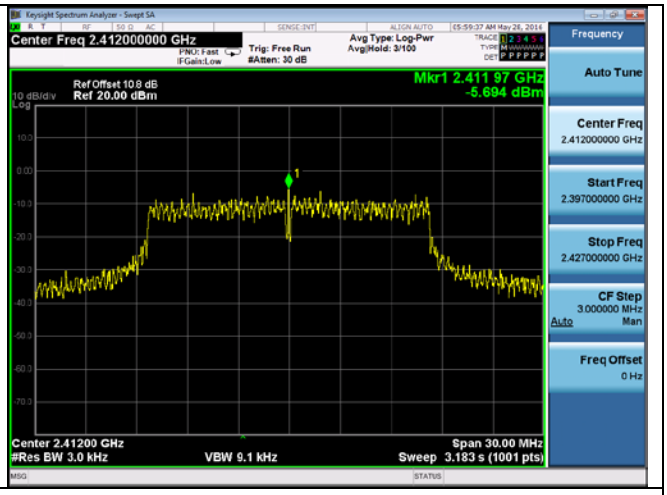
PSD-2.4G-802.11n-20M 2437MHz



PSD-2.4G-802.11n-20M 2462MHz

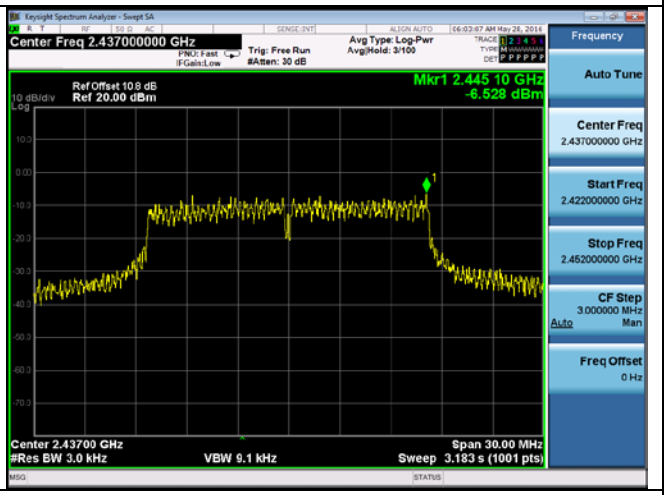
Chain 2:

PSD-2.4G-802.11b 2412MHz



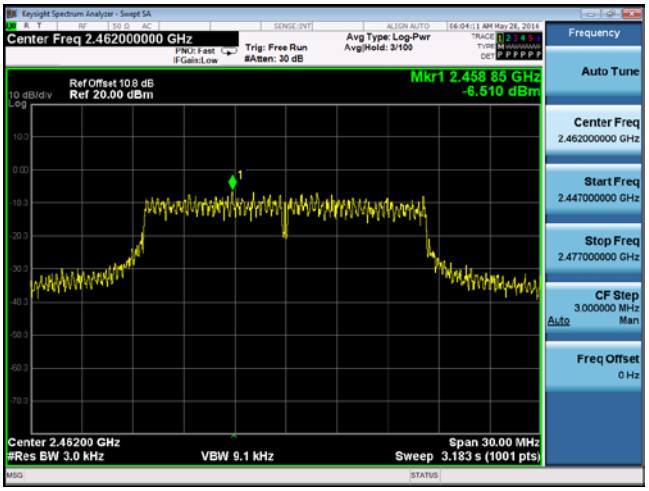
PSD-2.4G-802.11g 2412MHz

PSD-2.4G-802.11b 2437MHz

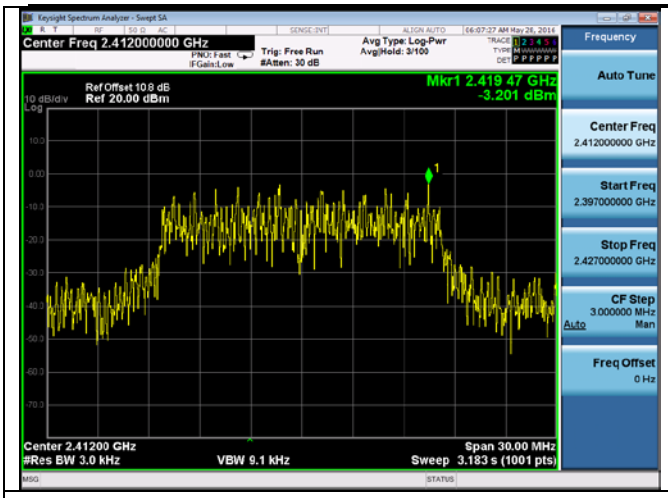


PSD-2.4G-802.11g 2437MHz

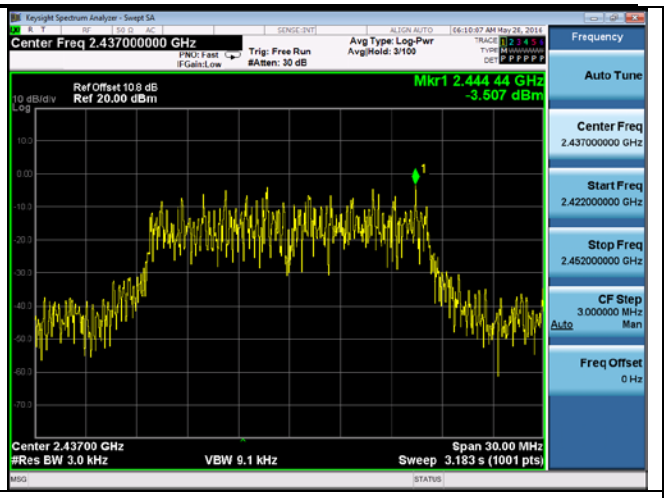
PSD-2.4G-802.11b 2462MHz



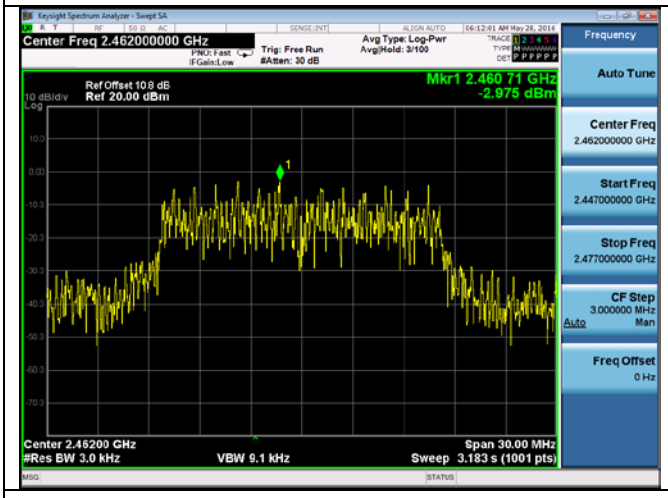
PSD-2.4G-802.11g 2462MHz



PSD-2.4G-802.11n-20M 2412MHz



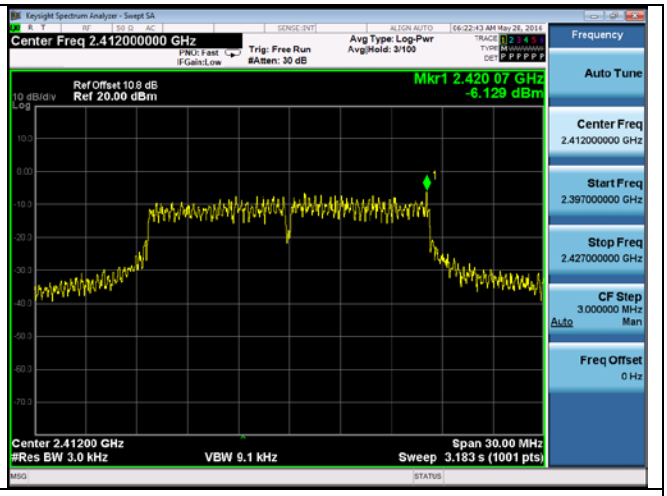
PSD-2.4G-802.11n-20M 2437MHz



PSD-2.4G-802.11n-20M 2462MHz

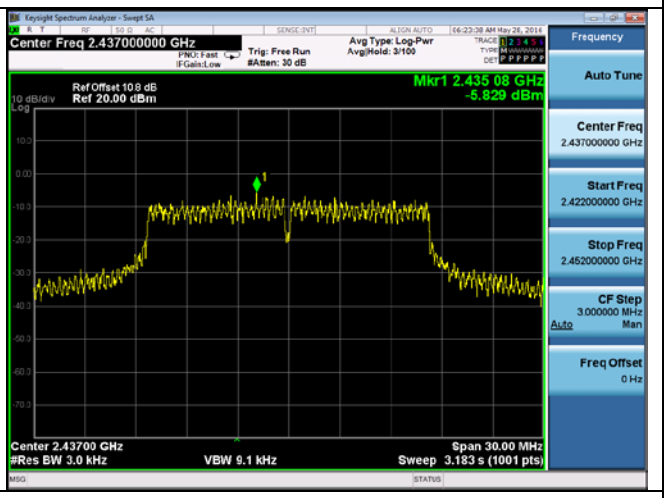
Chain 3:

PSD-2.4G-802.11b 2412MHz



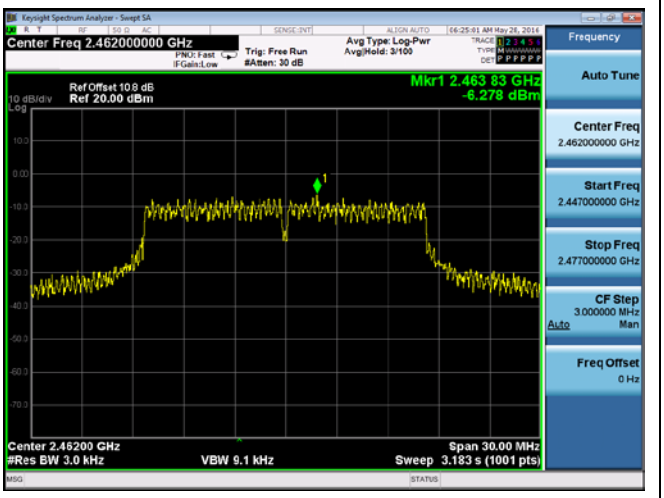
PSD-2.4G-802.11g 2412MHz

PSD-2.4G-802.11b 2437MHz

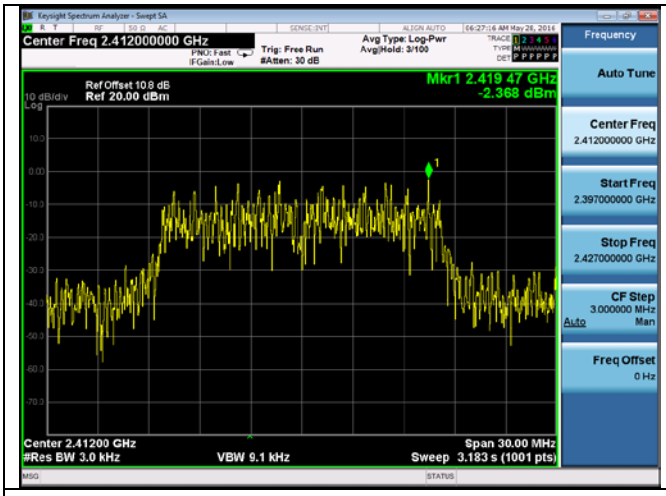


PSD-2.4G-802.11g 2437MHz

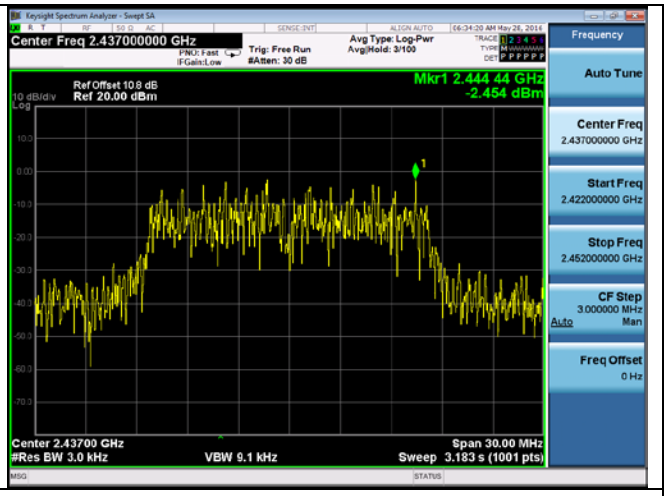
PSD-2.4G-802.11b 2462MHz



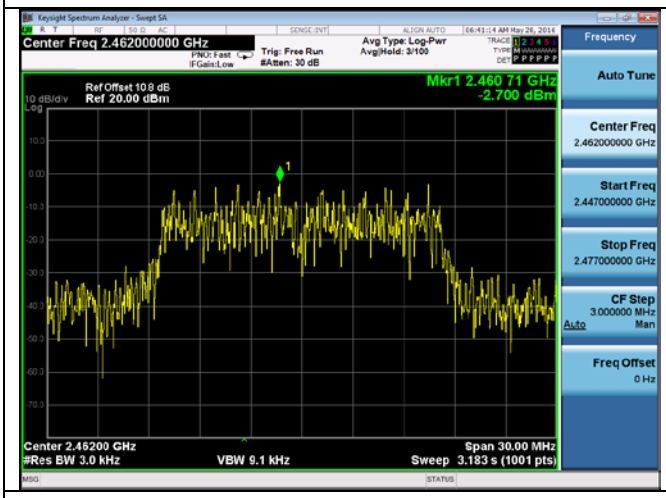
PSD-2.4G-802.11g 2462MHz



PSD-2.4G-802.11n-20M 2412MHz



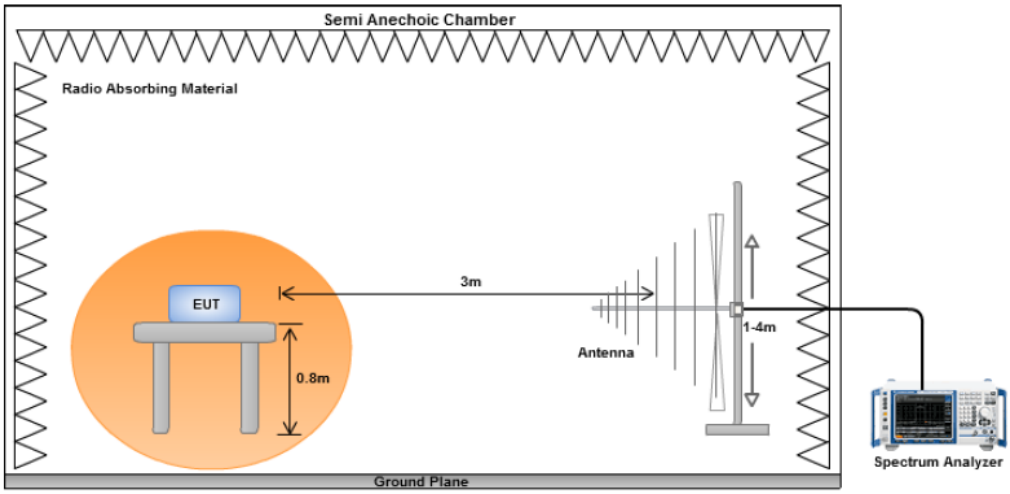
PSD-2.4G-802.11n-20M 2437MHz



PSD-2.4G-802.11n-20M 2462MHz

10.7 Radiated Spurious Emissions below 1GHz

Requirement(s):

<table>
<tr><th>Spec</th><th>Item</th><th>Requirement</th><th>Applicable</th></tr>
<tr><td>47CFR§15.247(d)
RSS247 (5.5)</td><td>a)</td><td>Except higher limit as specified elsewhere in other section, the emissions from the low-power radio-frequency devices shall not exceed the field strength levels specified in the following table and the level of any unwanted emissions shall not exceed the level of the fundamental emission. The tighter limit applies at the band edges
<table>
<tr><th>Frequency range (MHz)</th><th>Field Strength (uV/m)</th></tr>
<tr><td>30 – 88</td><td>100</td></tr>
<tr><td>88 – 216</td><td>150</td></tr>
<tr><td>216 960</td><td>200</td></tr>
<tr><td>Above 960</td><td>500</td></tr>
</table></td><td>☒</td></tr>
<tr><td>Test Setup</td><td colspan="3"> 
</td></tr>
<tr><td>Procedure</td><td colspan="3">1. The EUT was switched on and allowed to warm up to its normal operating condition.
2. The test was carried out at the selected frequency points obtained from the EUT characterisation. Maximization of the emissions, was carried out by rotating the EUT, changing the antenna polarization, and adjusting the antenna height in the following manner:
a. Vertical or horizontal polarisation (whichever gave the higher emission level over a full rotation of the EUT) was chosen.
b. The EUT was then rotated to the direction that gave the maximum emission.
c. Finally, the antenna height was adjusted to the height that gave the maximum emission.
3. A Quasi-peak measurement was then made for that frequency point.
4. Steps 2 and 3 were repeated for the next frequency point, until all selected frequency points were measured.</td></tr>
<tr><td>Remark</td><td colspan="3">The EUT was scanned up to 1GHz. Both horizontal and vertical polarities were investigated. The results show only the worst case.</td></tr>
<tr><td>Result</td><td colspan="3">☒ Pass ☐ Fail</td></tr>
</table>

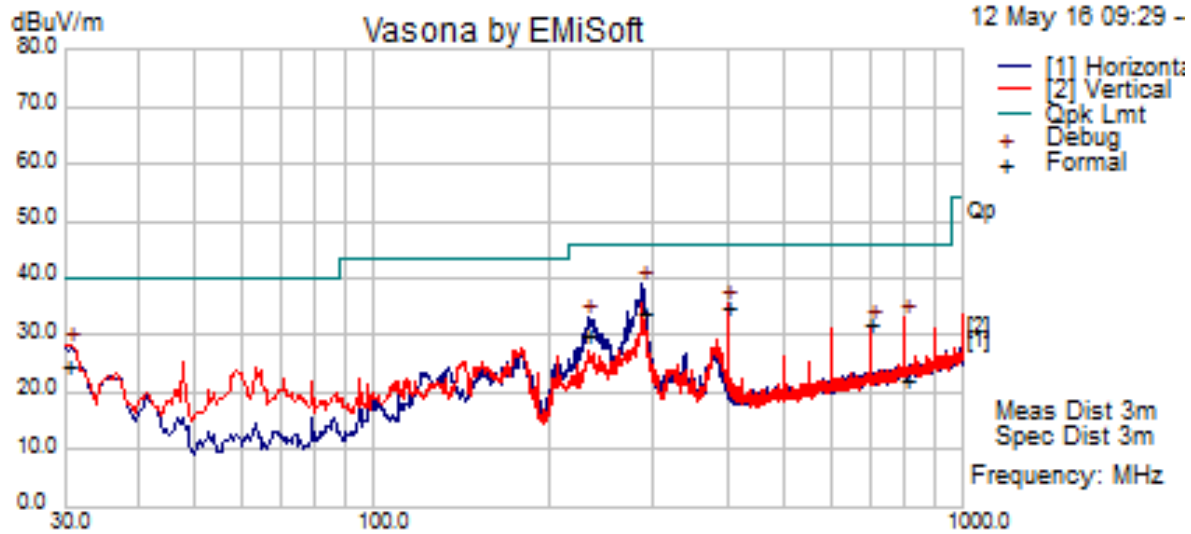
Test Data ☒ Yes (See below) ☐ N/A

Test Plot ☒ Yes (See below) ☐ N/A

Test was done by *Rachana Khanduri* at *10m Chamber*.

Radiated Emission Test Results (Below 1GHz)

Test specification	Below 1GHz			
Environmental Conditions:	Temp (°C):	25.7	Result	
	Humidity (%)	29		
	Atmospheric (mPa):			
Mains Power:	110VAC, 60Hz			
Tested by:	Rachana Khanduri			
Test Date:	05/12/2016			
Remarks:	2.4GHz 11n20 2437MHz			



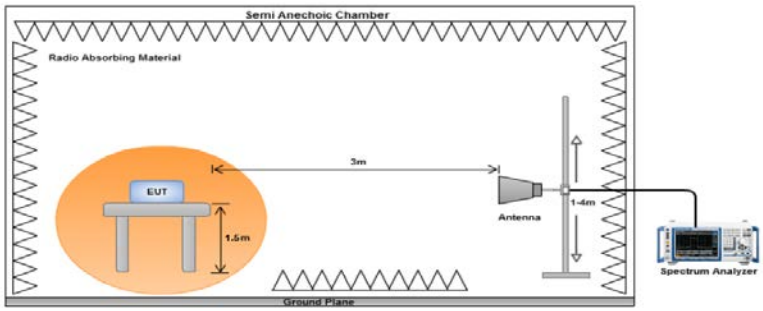
Quasi Max Measurement

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
287.21	57.60	2.59	-26.29	33.90	Quasi Max	H	101	41	46.02	-12.12	Pass
399.99	55.35	3.10	-23.86	34.59	Quasi Max	V	110	197	46.02	-11.43	Pass
30.38	39.69	0.82	-15.97	24.54	Quasi Max	V	203	309	40.00	-15.46	Pass
232.30	55.44	2.27	-27.88	29.83	Quasi Max	H	124	69	46.02	-16.19	Pass
800.40	35.10	4.52	-17.40	22.22	Quasi Max	V	144	49	46.02	-23.80	Pass
700.02	46.27	4.17	-18.73	31.71	Quasi Max	V	100	356	46.02	-14.31	Pass

Note: Both horizontal and vertical polarities were investigated. The results above show only the worst case.

10.8 Radiated Spurious Emissions Above 1GHz

Requirement(s):

Spec	Item	Requirement	Applicable
47CFR§15.247(d), RSS247 (5.5)	a)	For non-restricted band, 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 or 30dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, determined by the measurement method on output power to be used. Attenuation below the general limits specified in § 15.209(a) is not required ☐ 20 dB down ☒ 30 dB down	☒
	b)	or restricted band, emission must also comply with the radiated emission limits specified in 15.209	☒
Test Setup			
Procedure	1. The EUT was switched on and allowed to warm up to its normal operating condition. 2. The test was carried out at the selected frequency points obtained from the EUT characterisation. Maximization of the emissions, was carried out by rotating the EUT, changing the antenna polarization, and adjusting the antenna height in the following manner: a. Vertical or horizontal polarisation (whichever gave the higher emission level over a full rotation of the EUT) was chosen. b. The EUT was then rotated to the direction that gave the maximum emission. c. Finally, the antenna height was adjusted to the height that gave the maximum emission. 3. An average measurement was then made for that frequency point. 4. Steps 2 and 3 were repeated for the next frequency point, until all selected frequency points were measured.		
Remark	None		
Result	☒ Pass ☐ Fail		

Test Data ☒ Yes (See below) ☐ N/A

Test Plot ☐ Yes (See below) ☒ N/A

Test was done by *Rachana Khanduri* at *3m Chamber*.

Radiated Emission Test Results (Above 1GHz)

802.11b – 2412MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
17914.52	50.10	9.46	-3.10	56.46	Peak Max	H	149	289	74	-17.54	Pass
4823.94	62.21	7.04	-17.24	52.02	Peak Max	V	176	104	74	-21.98	Pass
1944.60	63.96	4.76	-27.86	40.86	Peak Max	V	183	249	74	-33.14	Pass
17914.52	37.42	9.46	-3.10	43.78	Average Max	H	149	289	54	-10.22	Pass
4823.94	57.60	7.04	-17.24	47.40	Average Max	V	176	104	54	-6.60	Pass
1944.60	48.92	4.76	-27.86	25.82	Average Max	V	183	249	54	-28.18	Pass

802.11b - 2437MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
17637.03	49.71	9.43	-3.36	55.77	Peak Max	V	180	341	74	-18.23	Pass
4876.92	57.62	7.06	-17.09	47.59	Peak Max	V	149	19	74	-26.41	Pass
1964.11	57.51	4.76	-27.56	34.71	Peak Max	V	199	179	74	-39.29	Pass
17637.03	37.76	9.43	-3.36	43.82	Average Max	V	180	341	54	-10.18	Pass
4876.92	48.30	7.06	-17.09	38.27	Average Max	V	149	19	54	-15.73	Pass
1964.11	46.29	4.76	-27.56	23.49	Average Max	V	199	179	54	-30.51	Pass

802.11b – 2462MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
17981.00	49.71	9.47	-3.22	55.95	Peak Max	V	176	55	74	-18.05	Pass
4890.00	53.63	7.06	-17.05	43.64	Peak Max	V	184	274	74	-30.36	Pass
1904.90	58.16	4.76	-28.47	34.45	Peak Max	V	202	187	74	-39.55	Pass
17981.00	37.90	9.47	-3.22	44.15	Average Max	V	176	55	54	-9.85	Pass
4890.00	41.66	7.06	-17.05	31.68	Average Max	V	184	274	54	-22.32	Pass
1904.90	46.20	4.76	-28.47	22.49	Average Max	V	202	187	54	-31.51	Pass

802.11g - 2412MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
17915.00	49.51	9.46	-3.10	55.87	Peak Max	V	180	284	74	-18.13	Pass
15179.00	50.84	8.99	-7.56	52.27	Peak Max	V	194	146	74	-21.73	Pass
1951.60	58.50	4.76	-27.75	35.51	Peak Max	V	187	312	74	-38.49	Pass
17915.00	37.83	9.46	-3.10	44.19	Average Max	V	180	284	54	-9.81	Pass
15179.00	39.36	8.99	-7.56	40.79	Average Max	V	194	146	54	-13.21	Pass
1951.60	46.64	4.76	-27.75	23.65	Average Max	V	187	312	54	-30.35	Pass

802.11g – 2437MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
17650.00	49.24	9.43	-3.30	55.36	Peak Max	H	161	315	74	-18.64	Pass
12201.00	51.31	8.83	-7.86	52.28	Peak Max	V	151	243	74	-21.72	Pass
1951.60	63.11	4.76	-27.75	40.12	Peak Max	V	203	346	74	-33.88	Pass
17650.00	37.48	9.43	-3.30	43.61	Average Max	H	161	315	54	-10.39	Pass
12201.00	39.29	8.83	-7.86	40.25	Average Max	V	151	243	54	-13.75	Pass
1951.60	52.69	4.76	-27.75	29.70	Average Max	V	203	346	54	-24.30	Pass

802.11g - 2462MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
17903.00	48.93	9.46	-3.08	55.31	Peak Max	H	150	82	74	-18.69	Pass
12417.00	51.03	8.94	-7.21	52.77	Peak Max	V	194	61	74	-21.23	Pass
1965.30	57.55	4.76	-27.54	34.77	Peak Max	V	160	231	74	-39.23	Pass
17903.00	37.55	9.46	-3.08	43.93	Average Max	H	150	82	54	-10.07	Pass
12417.00	38.83	8.94	-7.21	40.56	Average Max	V	194	61	54	-13.44	Pass
1965.30	45.71	4.76	-27.54	22.92	Average Max	V	160	231	54	-31.08	Pass

802.11n20 - 2412MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
17946.00	49.27	9.46	-3.16	55.58	Peak Max	H	98	67	74	-18.42	Pass
4798.40	51.63	7.04	-17.31	41.35	Peak Max	H	103	342	74	-32.65	Pass
9605.40	50.46	7.89	-10.43	47.92	Peak Max	H	137	12	74	-26.08	Pass
17946.00	37.18	9.46	-3.16	43.49	Average Max	H	98	67	54	-10.52	Pass
4798.40	39.73	7.04	-17.31	29.45	Average Max	H	103	342	54	-24.55	Pass
9605.40	38.49	7.89	-10.43	35.95	Average Max	H	137	12	54	-18.05	Pass

802.11n20 – 2437MHz

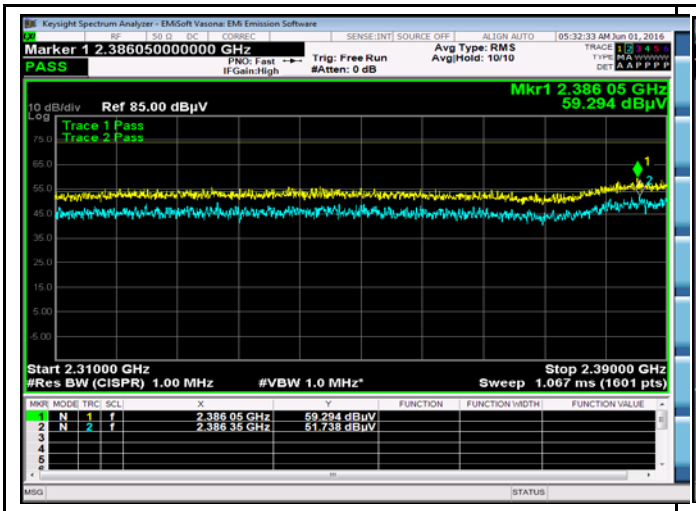
Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
17994.00	49.09	9.47	-3.25	55.31	Peak Max	H	202	86	74	-18.69	Pass
4874.20	54.90	7.06	-17.09	44.86	Peak Max	V	102	238	74	-29.14	Pass
9193.60	49.93	7.75	-10.44	47.24	Peak Max	V	134	187	74	-26.76	Pass
17994.00	37.61	9.47	-3.25	43.83	Average Max	H	202	86	54	-10.17	Pass
4874.20	42.80	7.06	-17.09	32.76	Average Max	V	102	238	54	-21.24	Pass
9193.60	38.43	7.75	-10.44	35.75	Average Max	V	134	187	54	-18.25	Pass

802.11n20 - 2462MHz

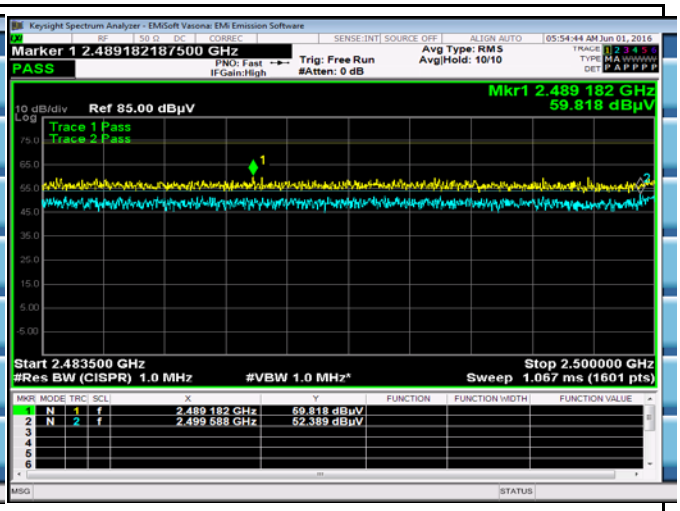
Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
4801.50	62.64	7.04	-17.30	52.37	Peak Max	V	123	131	74	-21.63	Pass
9607.70	53.38	7.89	-10.42	50.85	Peak Max	V	102	360	74	-23.15	Pass
7208.10	55.49	7.36	-11.58	51.27	Peak Max	V	171	211	74	-22.73	Pass
4801.50	50.27	7.04	-17.30	40.01	Average Max	H	157	246	54	-13.99	Pass
9607.70	41.41	7.89	-10.42	38.88	Average Max	V	102	360	54	-15.12	Pass
7208.10	43.25	7.36	-11.58	39.03	Average Max	V	171	211	54	-14.98	Pass

Note: Both horizontal and vertical polarities were investigated. The results show only the worst case.

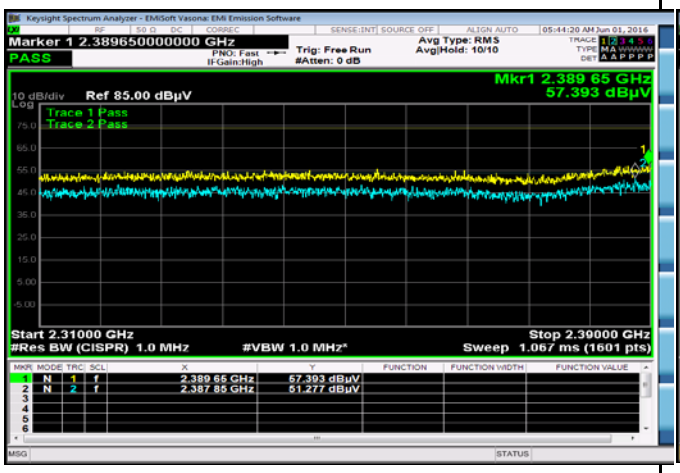
Restricted Band Measurement Plot



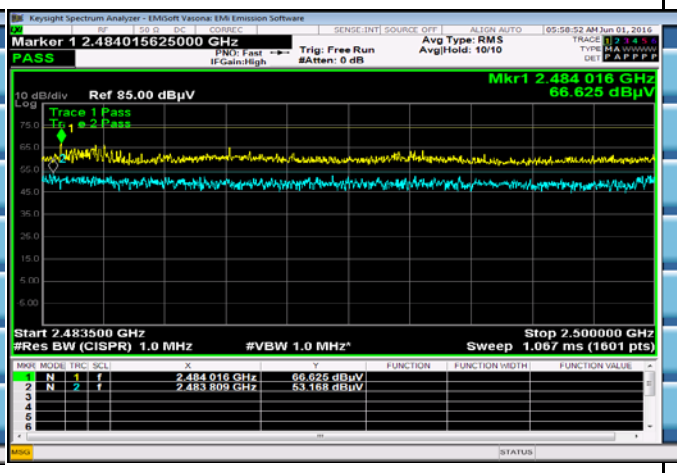
Restricted Band 802.11b 2412MHz



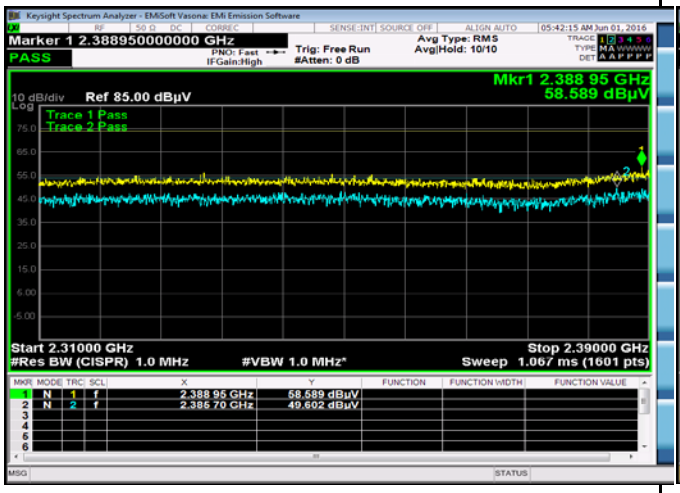
Restricted Band 802.11b 2462MHz



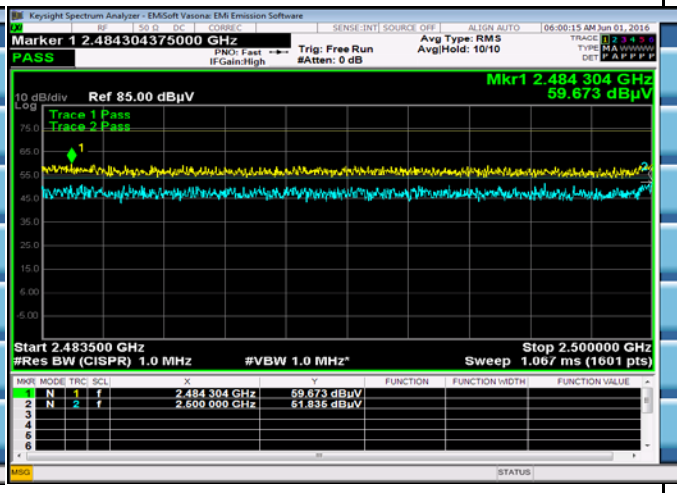
Restricted Band 802.11g 2412MHz



Restricted Band 802.11g 2462MHz



Restricted Band 802.11n-20M 2412MHz



Restricted Band 802.11n-20M 2462MHz

Annex A. TEST INSTRUMENT

Instrument	Model	Manufacturer	Serial #	Cal Date	Cal Cycle	Cal Due	In use
Conducted Emissions							
R & S Receiver	ESIB 40	Rohde & Schwarz	100179	06/08/2016	1 Year	06/08/2017	☑
CHASE LISN (9k-30MHz)	MN2050B	Chase	1018	08/07/2015	1 Year	08/07/2016	☑
Radiated Emissions							
R & S Receiver	ESIB 40	Rohde & Schwarz	100179	06/08/2016	1 Year	06/08/2017	☑
Spectrum Analyzer	N9010A	Keysight	10SL0219	08/20/2015	1 Year	08/20/2016	☑
Pre-Amplifier (1-26.5GHz)	8449B	Hewlett Packard	3008A00715	03/30/2016	1 Year	03/30/2017	☑
Preamplifier (100KHz-7GHz)	LPA-6-30	RF Bay, Inc.	11140711	02/10/2016	1 Year	02/10/2017	☑
ETS-Lingren Loop Antenna	6512	ETS-Lingren	00049120	05/12/2015	1 Year	05/12/2016	☐
Bi-Log antenna (30MHz~2GHz)	JB1	Sunol Sciences	A030702	08/15/2015	1 Year	08/15/2016	☑
Horn Antenna (1-26.5GHz)	3115	EMCO	10SL0059	08/25/2015	1 Year	08/25/2016	☑
3 Meters SAC	3M	ETS-Lingren	N/A	06/09/2016	1 Year	06/09/2017	☑
10 Meters SAC	10M	ETS-Lingren	N/A	09/05/2015	1 Year	09/05/2016	☑
RF Conducted Measurement							
Spectrum Analyzer	N9010A	Keysight	10SL0219	08/20/2015	1 Year	08/20/2016	☑
USB RF Power Sensor	7002-006	ETS-Lingren	10SL0190	09/03/2015	1 Year	09/03/2016	☑

Test Software Version

Test Item	Vendor	Software	Version
Radiated Emission	EMISoft	EMISoft Vasona	V5.0

Annex B. SIEMIC Accreditation

Accreditations	Document	Scope / Remark
ISO 17025 (A2LA)		Please see the documents for the detailed scope
ISO Guide 65 (A2LA)		Please see the documents for the detailed scope
TCB Designation		A1, A2, A3, A4, B1, B2, B3, B4, C
FCC DoC Accreditation		FCC Declaration of Conformity Accreditation
FCC Site Registration		3 meter site
FCC Site Registration		10 meter site
IC Site Registration		3 meter site
IC Site Registration		10 meter site
EU NB		Radio & Telecommunications Terminal Equipment: EN45001 – EN ISO/IEC 17025
		Electromagnetic Compatibility: EN45001 – EN ISO/IEC 17025
Singapore iDA CB(Certification Body)		Phase I, Phase II
Vietnam MIC CAB Accreditation		Please see the document for the detailed scope
Hong Kong OFCA		(Phase II) OFCA Foreign Certification Body for Radio and Telecom
		(Phase I) Conformity Assessment Body for Radio and Telecom
Industry Canada CAB		Radio: Scope A – All Radio Standard Specification in Category I
		Telecom: CS-03 Part I, II, V, VI, VII, VIII

Japan Recognized Certification Body Designation		Radio: A1. Terminal equipment for purpose of calling Telecom: B1. Specified radio equipment specified in Article 38-2, Paragraph 1, Item 1 of the Radio Law
Korea CAB Accreditation		EMI: KCC Notice 2008-39, RRL Notice 2008-3: CA Procedures for EMI KN22: Test Method for EMI EMS: KCC Notice 2008-38, RRL Notice 2008-4: CA Procedures for EMS KN24, KN61000-4-2, -4-3, -4-4, -4-5, -4-6, -4-8, -4-11: Test Method for EMS
		Radio: RRL Notice 2008-26, RRL Notice 2008-2, RRL Notice 2008-10, RRL Notice 2007-49, RRL Notice 2007-20, RRL Notice 2007-21, RRL Notice 2007-80, RRL Notice 2004-68
		Telecom: President Notice 20664, RRL Notice 2007-30, RRL Notice 2008-7 with attachments 1, 3, 5, 6; President Notice 20664, RRL Notice 2008-7 with attachment 4
Taiwan NCC CAB Recognition		LP0002, PSTN01, ADSL01, ID0002, IS6100, CNS14336, PLMN07, PLMN01, PLMN08
Taiwan BSMI CAB Recognition		CNS 13438
Japan VCCI		R-3083: Radiation 3 meter site C-3421: Main Ports Conducted Interference Measurement T-1597: Telecommunication Ports Conducted Interference Measurement
Australia CAB Recognition		EMC: AS/NZS CISPR 11, AS/NZS CISPR 14.1, AS/NZS CISPR22, AS/NZS 61000.6.3, AS/NZS 61000.6.4
		Radio communications: AS/NZS 4281, AS/NZS 4268, AS/NZS 4280.1, AS/NZS 4280.2, AS/NZS 4295, AS/NZS 4582, AS/NZS 4583, AS/NZS 4769.1, AS/NZS 4769.2, AS/NZS 4770, AS/NZS 4771
		Telecommunications: AS/ACIF S002:05, AS/ACIF S003:06, AS/ACIF S004:06 AS/ACIF S006:01, AS/ACIF S016:01, AS/ACIF S031:01, AS/ACIF S038:01, AS/ACIF S040:01, AS/ACIF S041:05, AS/ACIF S043.2:06, AS/ACIF S60950.1
Australia NATA Recognition		AS/ACIF S002, AS/ACIF S003, AS/ACIF S004, AS/ACIF S006, AS/ACIF S016,AS/ACIF S031, AS/ACIF S038, AS/ACIF S040, AS/ACIF S041, AS/ACIF S043.2