Test Mode:	leste	ed by: <u>Sab</u>	<u>er Huang</u>				
Ambient tem	mbient temperature: <u>24°C</u> Relative humidity: <u>52% RH</u>						
Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1801.000	48.57	-6.26	42.31	74.00	-31.69	V	Peak
2152.000	46.82	-4.17	42.65	74.00	-31.35	V	Peak
2539.000	46.67	-2.19	44.48	74.00	-29.52	V	Peak
3286.000	47.96	-0.88	47.08	74.00	-26.92	V	Peak
4105.000	43.91	1.96	45.87	74.00	-28.13	V	Peak
4834.000	43.58	4.44	48.02	74.00	-25.98	V	Peak
		· · · · · · · · · · · · · · · · · · ·					
1954.000	47.89	-5.29	42.60	74.00	-31.40	Н	Peak
2512.000	48.50	-2.24	46.26	74.00	-27.74	Н	Peak
3061.000	46.01	-1.26	44.75	74.00	-29.25	Н	Peak
3952.000	44.32	1.39	45.71	74.00	-28.29	Н	Peak
4663.000	43.57	3.88	47.45	74.00	-26.55	н	Peak
5176.000	44.54	5.29	49.83	74.00	-24.17	н	Peak

et Moder TX / IEEE 202 11a (CU Liah)

eted by: Sabar Huana

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
- 4. 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.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).



Test Mode:]	Test Mode: TX / IEEE 802.11n HT20 MHz (CH Low) Tested by: Saber Huang							
Ambient terr	perature:	<u>24°C</u> Re	lative hum	idity: <u>52%</u>	<u>RH</u>	Date: Apri	<u>l 1, 2017</u>	
Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark	
1765.000	51.91	-6.35	45.56	74.00	-28.44	V	Peak	
2629.000	46.66	-2.03	44.63	74.00	-29.37	V	Peak	
3214.000	51.79	-1.00	50.79	74.00	-23.21	V	Peak	
4195.000	43.72	2.28	46.00	74.00	-28.00	V	Peak	
4825.000	47.01	4.41	51.42	74.00	-22.58	V	Peak	
6022.000	42.19	6.12	48.31	74.00	-25.69	V	Peak	
1558.000	47.76	-6.78	40.98	74.00	-33.02	Н	Peak	
2494.000	48.37	-2.29	46.08	74.00	-27.92	Н	Peak	
3214.000	48.75	-1.00	47.75	74.00	-26.25	Н	Peak	
4231.000	44.01	2.40	46.41	74.00	-27.59	Н	Peak	
5230.000	43.68	5.39	49.07	74.00	-24.93	Н	Peak	
5914.000	42.21	6.04	48.25	74.00	-25.75	Н	Peak	

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
- 4. 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.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).



iest mode.									
Ambient ten	nperature:	<u>24°C</u> R	elative hum	nidity: <u>52%</u>	RH	Date: Apri	<u>I 1, 2017</u>		
Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark		
1801.000	47.62	-6.26	41.36	74.00	-32.64	V	Peak		
2512.000	46.73	-2.24	44.49	74.00	-29.51	V	Peak		
3250.000	48.26	-0.94	47.32	74.00	-26.68	V	Peak		
4132.000	44.35	2.05	46.40	74.00	-27.60	V	Peak		
4879.000	45.96	4.59	50.55	74.00	-23.45	V	Peak		
5635.000	42.59	5.93	48.52	74.00	-25.48	V	Peak		
	•					·			
2071.000	46.87	-4.61	42.26	74.00	-31.74	Н	Peak		
2512.000	47.42	-2.24	45.18	74.00	-28.82	Н	Peak		
2791.000	46.26	-1.74	44.52	74.00	-29.48	Н	Peak		
3799.000	44.79	0.74	45.53	74.00	-28.47	Н	Peak		
4645.000	43.41	3.82	47.23	74.00	-26.77	Н	Peak		
5212.000	43.97	5.36	49.33	74.00	-24.67	Н	Peak		
REMARKS									

Test Mode: TX / IEEE 802.11n HT20 MHz (CH Mid)

Tested by: Saber Huang

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
- 4. 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.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).



Test Mode: TX / EEE 802.11n HT20 MHz (CH High)

Tested by: Saber Huang

Ambient ten	mbient temperature: <u>24°C</u> Relative humidity: <u>52% RH</u>						Date: April 1, 2017	
Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark	
1756.000	48.19	-6.36	41.83	74.00	-32.17	V	Peak	
2512.000	47.08	-2.24	44.84	74.00	-29.16	V	Peak	
3286.000	47.89	-0.88	47.01	74.00	-26.99	V	Peak	
4258.000	44.35	2.50	46.85	74.00	-27.15	V	Peak	
4924.000	44.98	4.73	49.71	74.00	-24.29	V	Peak	
6265.000	41.44	6.51	47.95	74.00	-26.05	V	Peak	
		· · · · · · · · · · · · · · · · · · ·						
1963.000	46.02	-5.23	40.79	74.00	-33.21	Н	Peak	
2557.000	46.37	-2.16	44.21	74.00	-29.79	Н	Peak	
3772.000	45.09	0.63	45.72	74.00	-28.28	Н	Peak	
4672.000	44.70	3.91	48.61	74.00	-25.39	Н	Peak	
5140.000	43.45	5.23	48.68	74.00	-25.32	Н	Peak	
6193.000	41.83	6.39	48.22	74.00	-25.78	Н	Peak	

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
- 4. 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.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).



Test Mode: TX / IEEE 802.11n HT40 MHz (CH Low)

Tested by: Saber Huang

Ambient tem	nbient temperature: <u>24°C</u> Relative humidity: <u>52% RH</u>						Date: <u>April 1, 2017</u>	
Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark	
1738.000	51.25	-6.40	44.85	74.00	-29.15	V	Peak	
2530.000	47.12	-2.21	44.91	74.00	-29.09	V	Peak	
3232.000	50.67	-0.97	49.70	74.00	-24.30	V	Peak	
3808.000	43.91	0.78	44.69	74.00	-29.31	V	Peak	
4339.000	43.71	2.78	46.49	74.00	-27.51	V	Peak	
4852.000	45.44	4.50	49.94	74.00	-24.06	V	Peak	
1360.000	47.95	-7.21	40.74	74.00	-33.26	н	Peak	
2134.000	47.12	-4.27	42.85	74.00	-31.15	н	Peak	
2530.000	47.27	-2.21	45.06	74.00	-28.94	н	Peak	
3232.000	44.87	-0.97	43.90	74.00	-30.10	Н	Peak	
3790.000	44.90	0.70	45.60	74.00	-28.40	Н	Peak	
4672.000	44.37	3.91	48.28	74.00	-25.72	Н	Peak	

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
- 4. 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.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).



Test Mode:	Test Mode: TX / IEEE 802.11n HT40 MHz (CH Mid) Tested by: Saber Huang								
Ambient ten	perature:	<u>24°C</u> R	elative hum	nidity: <u>52%</u>	RH	Date: Apri	<u>I 1, 2017</u>		
Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark		
1765.000	49.49	-6.35	43.14	74.00	-30.86	V	Peak		
2503.000	46.97	-2.25	44.72	74.00	-29.28	V	Peak		
3250.000	48.01	-0.94	47.07	74.00	-26.93	V	Peak		
4204.000	44.68	2.31	46.99	74.00	-27.01	V	Peak		
4870.000	44.24	4.56	48.80	74.00	-25.20	V	Peak		
5401.000	42.98	5.69	48.67	74.00	-25.33	V	Peak		
1756.000	47.59	-6.36	41.23	74.00	-32.77	Н	Peak		
2512.000	47.90	-2.24	45.66	74.00	-28.34	Н	Peak		
3349.000	44.78	-0.77	44.01	74.00	-29.99	Н	Peak		
4321.000	44.40	2.72	47.12	74.00	-26.88	Н	Peak		
5320.000	42.40	5.55	47.95	74.00	-26.05	Н	Peak		
6130.000	43.14	6.29	49.43	74.00	-24.57	Н	Peak		

Test Mode: TX / IEEE 802.11n HT40 MHz (CH Mid)

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
- 4. 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.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

Test Mode: TX / EEE 802.11n HT40 MHz (CH High)

Tested by: Saber Huang

Ambient ten	mbient temperature: <u>24°C</u> Relative humidity: <u>52% RH</u>						ate: <u>April 1, 2017</u>	
Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark	
1765.000	47.78	-6.35	41.43	74.00	-32.57	V	Peak	
2512.000	47.40	-2.24	45.16	74.00	-28.84	V	Peak	
3268.000	48.54	-0.91	47.63	74.00	-26.37	V	Peak	
4150.000	44.36	2.12	46.48	74.00	-27.52	V	Peak	
4897.000	43.41	4.64	48.05	74.00	-25.95	V	Peak	
5752.000	42.73	5.98	48.71	74.00	-25.29	V	Peak	
	1			1				
1342.000	48.57	-7.27	41.30	74.00	-32.70	Н	Peak	
2512.000	47.64	-2.24	45.40	74.00	-28.60	Н	Peak	
3646.000	44.54	0.10	44.64	74.00	-29.36	н	Peak	
4600.000	43.89	3.68	47.57	74.00	-26.43	Н	Peak	
5176.000	44.07	5.29	49.36	74.00	-24.64	Н	Peak	
6058.000	42.27	6.17	48.44	74.00	-25.56	Н	Peak	

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
- 4. 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.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).



7.3. 6dB BANDWIDTH MEASUREMENT

7.3.1. LIMITS

According to §15.247(a)(2), systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz. The minimum 6 dB bandwidth shall be at least 500 kHz.

7.3.2. TEST INSTRUMENTS

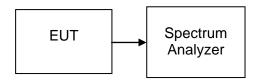
Name of Equipment	Manufacturer	Model	Serial Number	Last Calibration	Calibration Due
Spectrum Analyzer	Agilent	N9010A	MY52221469	02/21/2017	02/20/2018

7.3.3. TEST PROCEDURES (please refer to measurement standard)

8.2 Option 2:

The automatic bandwidth measurement capability of an instrument may be employed using the X dB bandwidth mode with X set to 6 dB, if the functionality described above (i.e., RBW = 100 kHz, VBW \geq 3 RBW, peak detector with maximum hold) is implemented by the instrumentation function. When using this capability, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that might be \geq 6 dB.

7.3.4. TEST SETUP





7.3.5. TEST RESULTS

No non-compliance noted **Test Data**

Test mode: IEEE 802.11b

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2412	12140		PASS
Mid	2437	12150	>500	PASS
High	2462	12140		PASS

Test mode: IEEE 802.11g

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2412	16360		PASS
Mid	2437	16360	>500	PASS
High	2462	16360		PASS

Test mode: IEEE 802.11n HT20 MHz

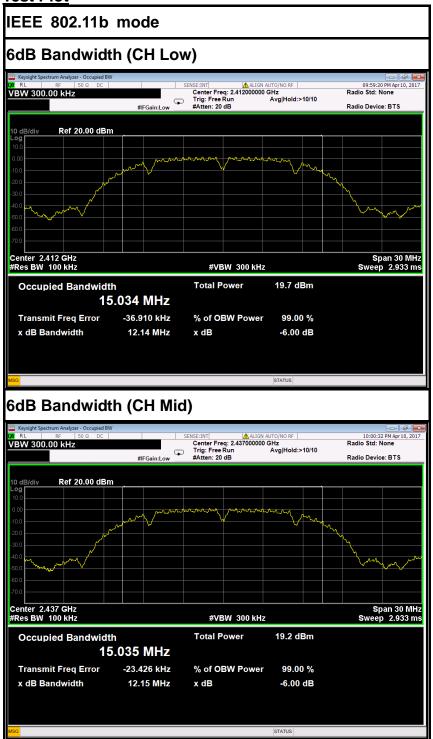
Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2412	17090		PASS
Mid	2437	17120	>500	PASS
High	2462	17100		PASS

Test mode: IEEE 802.11n HT40 MHz

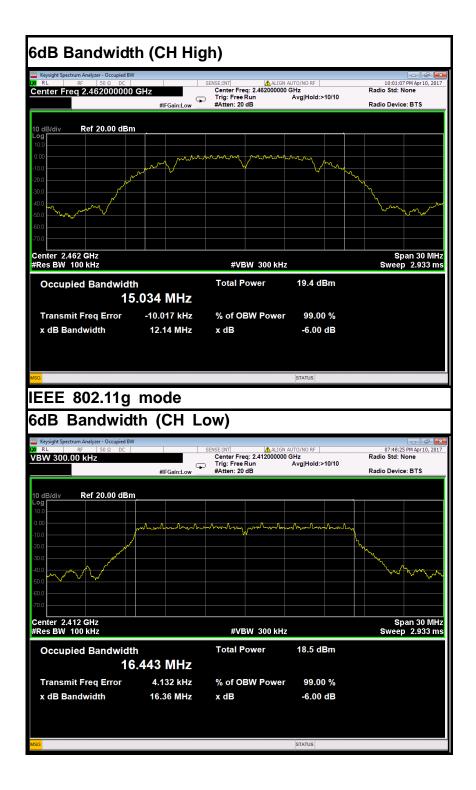
Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2422	35700		PASS
Mid	2437	35430	>500	PASS
High	2452	35520		PASS



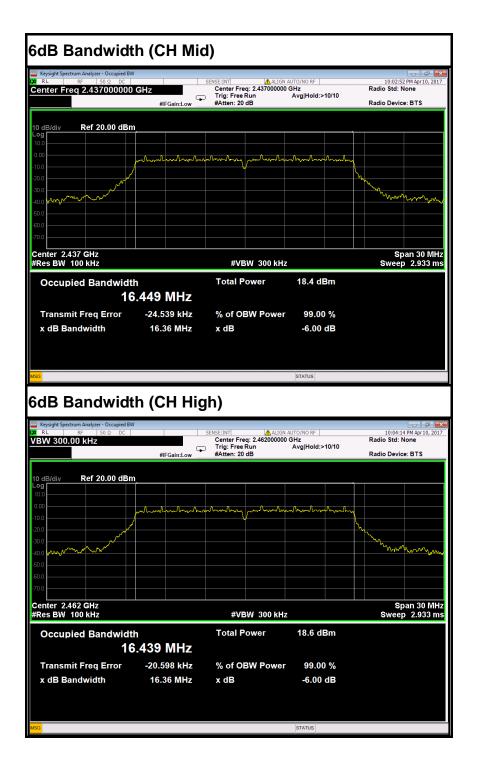








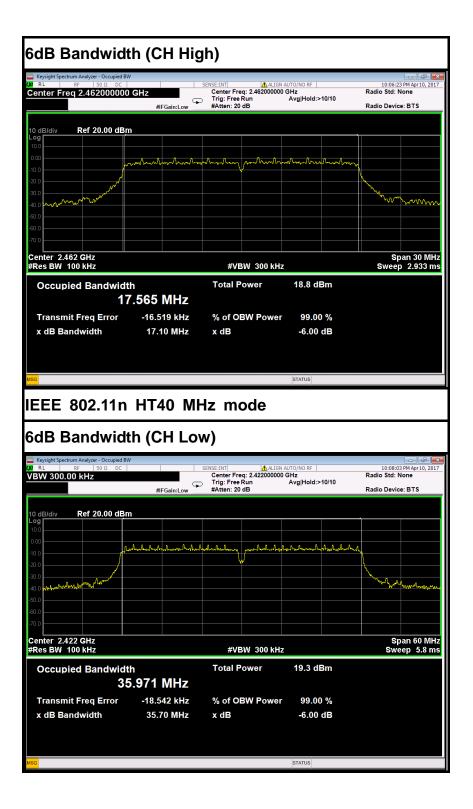






IEEE 802.11n HT20 MHz mode 6dB Bandwidth (CH Low) R I SENSE:INT Center Freq: 2.412000000 GHz Trig: Free Run Avg|Hold:>10/10 #Atten: 20 dB 10:04:44 PM Apr 10, 2017 Radio Std: None Center Freq 2.412000000 GHz #IFGain:Low Radio Device: BTS Ref 20.00 dBm B/div Annal Amm www. Span 30 MHz Sweep 2.933 ms Center 2.412 GHz #Res BW 100 kHz #VBW 300 kHz Total Power 18.5 dBm **Occupied Bandwidth** 17.563 MHz Transmit Freq Error -24.871 kHz % of OBW Power 99.00 % x dB Bandwidth 17.09 MHz x dB -6.00 dB STATUS 6dB Bandwidth (CH Mid) 10:05:47 PM Apr 10, 2017 Radio Std: None Center Freq: 2.437000000 GHz City: Free Run Avg|Hold:>10/10 #Atten: 20 dB VBW 300.00 kHz #IFGain:Low Radio Device: BTS Ref 20.00 dBm /div Anonto monor and an a Span 30 MHz Sweep 2.933 ms Center 2.437 GHz #Res BW 100 kHz #VBW 300 kHz Total Power 18.3 dBm Occupied Bandwidth 17.564 MHz Transmit Freq Error -21.208 kHz % of OBW Power 99.00 % x dB Bandwidth 17.12 MHz x dB -6.00 dB





6dB Bandwidth (CH Mid)



-				
Keysight Spectrum Analyzer - Occupied BW Ku RF 50 Ω DC		SENSE:INT	AUTO/NO RF	10:09:57 PM Apr 10, 2017
VBW 300.00 kHz		Center Freq: 2.43700000) GHz Avg Hold:>10/10	Radio Std: None
	#IFGain:Low	#Atten: 20 dB	Avginola.> 10/10	Radio Device: BTS
10 dB/div Ref 20.00 dBm				
10.0				
0.00				
-10.0	hadred and hours hadred	hadrahelynang proved when his	hadra have a have hadren he	-h,
-20.0		W		
-30.0				- Ava
-40.0 more al all all and a free all and a free and a free all and				mar marken and and a second second
-50.0				
-60.0				
-70.0				
Center 2.437 GHz #Res BW 100 kHz		#VBW 300 kH;	2	Span 60 MH Sweep 5.8 m
Occupied Bandwidth		Total Power	19.0 dBm	
35	.981 MHz			
Transmit Freq Error	627 Hz	% of OBW Power	99.00 %	
x dB Bandwidth	35.43 MHz	x dB	-6.00 dB	
<mark>SG</mark>			STATUS	
6dB Bandwidt	h (CH Hig	jh)		
		Jh)		
Keysight Spectrum Analyzer - Occupied BW		SENSE:INT	AUTO/NO RF	10:11:03 PM Apr 10, 201
Keysight Spectrum Analyzer - Occupied BW K RL RF 50 Ω DC	GHz	SENSE:INT ALIGN Center Freq: 2.45200000) GHz	10:11:03 PM Apr10, 201 Radio Std: None
Keysight Spectrum Analyzer - Occupied BW K RL RF 50 Ω DC		SENSE:INT ALIGN Center Freq: 2.45200000	AUTO/NO RF GHz Avg Hold:>10/10	10:11:03 PM Apr 10, 201
Keysight Spectrum Analyzer - Occupied BW K RL RF 50 Ω DC	GHz	SENSE:INT ALIGN Center Freq: 2.452000000 Trig: Free Run) GHz	10:11:03 PM Apr 10, 201 Radio Std: None
Keysight Spectrum Analyzer - Occupied BW R R 8F 50.0 DC Center Freq 2.452000000 Ref 20.00 dBm 10 dB/div Ref 20.00 dBm	GHz #FGain:Low	SENSE:INT ALIGN Center Freq: 2.452000000 Trig: Free Run) GHz	10:11:03 PM Apr 10, 201 Radio Std: None
Keysight Spectrum Analyzer - Occupied BW R R 8F 50.0 DC Center Freq 2.452000000 Ref 20.00 dBm 10 dB/div Ref 20.00 dBm	GHz #FGain:Low	SENSE:INT ALIGN Center Freq: 2.452000000 Trig: Free Run) GHz	10:11:03 PM Apr 10, 201 Radio Std: None
Keysight Spectrum Analyzer - Occupied BW RL RF 50.0 DC Center Freq 2.452000000 Ref 20.00 dBm Ref 20.00 dBm 10 dB/div Ref 20.00 dBm 0 0	GHz #FGain:Low	SENSE:JNT ALIGA Center Freq: 2.4520000i Trig: Freq Run #Atten: 20 dB) GHz Avg Hold:>10/10	10:11:03 PM Apr10, 201 Radio Std: None Radio Device: BTS
Keysight Spectrum Analyzer - Occupied BW R L RF S0.0 DC Center Freq 2.452000000 Ref 20.000 dB/div 10 dB/div Ref 20.00 dB/m 0.00 0 0 0	GHz #FGain:Low	SENSE:JNT ALIGA Center Freq: 2.4520000i Trig: Freq Run #Atten: 20 dB) GHz	10:11:03 PM Apr10, 201 Radio Std: None Radio Device: BTS
Keysight Spectrum Analyzer - Occupied BW RL RF 50.0 DC Center Freq 2.452000000 Ref 20.00 dBm Ref 20.00 dBm 10 dB/div Ref 20.00 dBm 0 0	GHz #FGain:Low	SENSE:JNT ALIGA Center Freq: 2.4520000i Trig: Freq Run #Atten: 20 dB) GHz Avg Hold:>10/10	10:11:03 PM Apr10, 201 Radio Std: None Radio Device: BTS
Keysight Spectrum Analyzer - Occupied BW RL	GHz #FGain:Low	SENSE:JNT ALIGA Center Freq: 2.4520000i Trig: Freq Run #Atten: 20 dB) GHz Avg Hold:>10/10	10:11:03 PM Apr10, 201 Radio Std: None Radio Device: BTS
Reysight Spectrum Analyzer - Occupied BW RL RF S0 @ DC Center Freq 2.452000000 S0 @ DC DC In dB/div Ref 20.00 dBm DC 0 0B/div Ref 20.00 dBm DC 0 00 DC DC DC <thdc< th=""></thdc<>	GHz #FGain:Low	SENSE:JNT ALIGA Center Freq: 2.4520000i Trig: Freq Run #Atten: 20 dB) GHz Avg Hold:>10/10	10:11:03 PM Apr10, 201 Radio Std: None Radio Device: BTS
Keysight Spectrum Analyzer - Occupied BW RL RF SO Ω DC Center Freq 2.452000000 Ref 20.00 dBm Context (Context (Contex	GHz #FGain:Low	SENSE:JNT ALIGA Center Freq: 2.4520000i Trig: Freq Run #Atten: 20 dB) GHz Avg Hold:>10/10	10:11:03 PM Apr10, 201 Radio Std: None Radio Device: BTS
RL RL RE SO DC Center Freq 2.452000000 IO dB/div Ref 20.00 dBm 0 dB/div Ref 20.00 dBm Conter Freq 2.452000000 10 dB/div Ref 20.00 dBm Conter Freq 2.4520000000 10 dB/div Ref 20.00 dBm Conter Freq 2.4520000000 10 dB/div Conter Freq 2.45200000000 10 dB/div Conter Freq 2.45200000000000000000000000000000000000	GHz #FGain:Low	SENSE:JNT ALIGA Center Freq: 2.4520000i Trig: Freq Run #Atten: 20 dB) GHz Avg Hold:>10/10	10:11:03 PM Apr10, 201 Radio Std: None Radio Device: BTS
Keysight Spectrum Analyzer - Occupied BW RL RF 50.0 DC Center Freq 2.452000000 Ref 20.00 dBm Context Conte	GHz #FGain:Low	SENSE:JNT ALIGA Center Freq: 2.4520000i Trig: Freq Run #Atten: 20 dB) GHz Avg Hold:>10/10	10:11:03 PM Apr10, 201 Radio Std: None Radio Device: BTS
Keysight Spectrum Analyzer - Occupied BW R L RF 50.0 DC Center Freq 2.452000000 Ref 20.00 dBm Context (Context	GHz #FGain:Low	SENSE:JNT ALIGA Center Freq: 2.4520000i Trig: Freq Run #Atten: 20 dB) GHz Avg Hold:>10/10	10:11-03 PM Apr 10, 201 Radio Std: None Radio Device: BTS
Keysight Spectrum Analyzer - Occupied BW RL RF 50.0 DC Center Freq 2.452000000 10 Ref 20.00 dBm 00 Image: Control of the second	GHz #FGain:Low	SENSE:JNT ALIGA Center Freq: 2.4520000i Trig: Freq Run #Atten: 20 dB) GHz Avg Hold:>10/10	10:11:03 PM Aprilo, 201 Radio Std: None Radio Device: BTS
RL RE SO DC Center Freq 2.452000000 10 dB/div Ref 20.00 dBm Conter Freq 2.452000000 10 dB/div Ref 20.00 dBm Conter Colspan="2">Conter Colspan="2">Conter Colspan="2">Conter Colspan="2">Conter 2.452 GHz Center 2.452 GHz Center 2.452 GHz #Res BW 100 kHz	GHz #FGain:Low	SENSE:INT ALLGA Center Freq: 2.45200000 Trig: Free Run #Atten: 20 dB) GHz Avg Hold:>10/10 Դայիսիստոներիայիայիստիս	10:11:03 PM Aprilo, 201 Radio Std: None Radio Device: BTS
Reysight Spectrum Analyzer - Occupied BW RL RF S0.9 DC Center Freq 2.452000000 Ref 20.00 dBm Ref 20.00 dBm 10 dB/dlaw Ref 20.00 dBm Ref 20.00 dBm 100 Image: Center Freq 2.452 GHz Ref 20.00 dBm Image: Center 2.452 GHz Center 2.452 GHz Ref 20.00 dBm Image: Center 2.452 GHz Image: Center 2.452 GHz Image: Center 2.452 GHz Occupied Bandwidth Center 2.452 GHz Image: Center	GHz #FGaintow	SENSE:INT Center Freq: 2.45200000 Trig: Free Run #Atten: 20 dB) GHz Avg Hold:>10/10	10:11:03 PM Aprilo, 201 Radio Std: None Radio Device: BTS
Resident Spectrum Analyzer - Occupied BW RL RF S0.9 DC Center Freq 2.452000000 Ref 20.00 dBm Ref 20.00 dBm Iog Iog Iog Iog Iog Iog Iog Iog Iog Iog Iog Iog Iog Iog Iog Iog Iog Iog Iog Iog Iog Iog Iog Iog Iog Iog Iog Iog Iog Iog	GHz #FGain:Low	SENSE:INT ALLGA Center Freq: 2.45200000 Trig: Free Run #Atten: 20 dB) GHz Avg Hold:>10/10 Դայիսիստոներիայիայիստիս	10:11:03 PM Aprilo, 201 Radio Std: None Radio Device: BTS
RL RF SOURCE Conter Freq 2.452000000	GHz #FGaintow	SENSE:INT ALLGA Center Freq: 2.45200000 Trig: Free Run #Atten: 20 dB	o GHz Avg Hold:>10/10	10:11:03 PM Aprilo, 201 Radio Std: None Radio Device: BTS
kysight Spectrum Analyzer - Occupied BW RL RF S0 DC Center Freq 2.452000000 Center Freq 2.452000000 Center Freq 2.452000000 Center State Center 2.452 GHz #Res BW 100 kHz Cocupied Bandwidth 355 Transmit Freq Error	GHz #FGain:Low	SENSE:INT ALIGN Center Freq: 2.45200000 Trig: Free Run #Atten: 20 dB	o GHz Avg Hold:>10/10	10:11:03 PM Aprilo, 201 Radio Std: None Radio Device: BTS
Keysight Spectrum Analyzer - Occupied BW R R SO 0 DC Center Freq 2.452000000 Ref 20.00 dBm Ref 20.00 dBm 100	GHz #FGain:Low	SENSE:INT ALIGN Center Freq: 2.45200000 Trig: Free Run #Atten: 20 dB dwwheelwaay protocological www.align.com #VBW 300 kH; Total Power % of OBW Power	o GHz Avg Hold:>10/10	10:11:03 PM Aprilo, 201 Radio Std: None Radio Device: BTS
kysight Spectrum Analyzer - Occupied BW RL RF S0 DC Center Freq 2.452000000 Center Freq 2.452000000 Center Freq 2.452000000 Center State Center 2.452 GHz #Res BW 100 kHz Cocupied Bandwidth 355 Transmit Freq Error	GHz #FGain:Low	SENSE:INT ALIGN Center Freq: 2.45200000 Trig: Free Run #Atten: 20 dB dwwheelwaay protocological www.align.com #VBW 300 kH; Total Power % of OBW Power	o GHz Avg Hold:>10/10	10:11:03 PM Aprilo, 201 Radio Std: None Radio Device: BTS
kysight Spectrum Analyzer - Occupied BW RL RF S0 DC Center Freq 2.452000000 Center Freq 2.452000000 Center Freq 2.452000000 Center State Center 2.452 GHz #Res BW 100 kHz Cocupied Bandwidth 355 Transmit Freq Error	GHz #FGain:Low	SENSE:INT ALIGN Center Freq: 2.45200000 Trig: Free Run #Atten: 20 dB dwwheelwaay protocological www.align.com #VBW 300 kH; Total Power % of OBW Power	o GHz Avg Hold:>10/10	10:11:03 PM Aprilo, 201 Radio Std: None Radio Device: BTS
keysight Spectrum Analyzer - Occupied BW RL RF 500 DC Center Freq 2.452000000 Center Freq 2.452000000 Center State Center State Center 2.452 GHz #kes BW 100 kHz Cocupied Bandwidth 35 Transmit Freq Error	GHz #FGain:Low	SENSE:INT ALIGN Center Freq: 2.45200000 Trig: Free Run #Atten: 20 dB dwwheelwaay protocological www.align.com #VBW 300 kH; Total Power % of OBW Power	o GHz Avg Hold:>10/10	Radio Device: BTS



7.4. ANTENNA GAIN

MEASUREMENT

The antenna gain of the complete system is calculated by the difference of radiated power in EIRP and the conducted power of the module. For normal WLAN devices, the DSSS mode is used.

MEASUREMENT PARAMETERS

Measurement parameter					
Detector	Peak				
Sweep time	Auto				
Resolution bandwidth	3 MHz				
Video bandwidth	3 MHz				
Trace-Mode	Max hold				

LIMITS

FCC	IC
Antenna	a Gain
6 dl	Ві

TEST RESULTS

IEEE 802.11b mode

T _{nom}	V _{nom}	Lowest channel 2412MHz	Middle channel 2437MHz	Highest channel 2462MHz
Conducted power [dBm/MHz] Measured with DSSS modulation		3.13	3.03	2.73
Radiated power [o Measured with DS		5.87	5.94	5.27
ain [dBi] Calculated		2.74 2.91		2.54
Measurement und	certainty	± 1.5	dB (cond.) / ± 3 dB	(rad.)



7.5. PEAK OUTPUT POWER

7.5.1. LIMITS

The maximum peak output power of the intentional radiator shall not exceed the following:

- 1. According to §15.247(b)(3), for systems using digital modulation in the bands of 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz: 1 Watt.
- 2. According to §15.247(b)(4), the conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

7.5.2. TEST INSTRUMENTS

Name of Equipment	Manufacturer	Model	Serial Number	Last Calibration	Calibration Due
Power Meter	Anritsu	ML2495A	1204003	02/21/2017	02/20/2018
Power Sensor	Anritsu	MA2411B	1126150	02/21/2017	02/20/2018

7.5.3. TEST PROCEDURES (please refer to measurement standard)

9.1.1 RBW ≥ *DTS* bandwidth

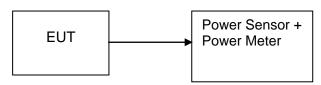
This procedure shall be used when the measurement instrument has available a resolution bandwidth that is greater than the *DTS bandwidth*.

- a) Set the RBW \geq DTS bandwidth.
- b) Set VBW \geq 3 RBW.
- c) Set span \ge 3 x RBW
- d) Sweep time = auto couple.
- e) Detector = peak.
- f) Trace mode = max hold.
- g) Allow trace to fully stabilize.
- h) Use peak marker function to determine the peak amplitude level.

9.1.3 PKPM1 Peak power meter method

The maximum peak conducted output power may be measured using a broadband peak RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall utilize a fast-responding diode detector.

7.5.4. TEST SETUP





7.5.5. TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11b

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Peak / AVG	Limit (W)	Result
Low	2412	14.90	0.03090			PASS
Mid	2437	14.80	0.03020	Peak	1	PASS
High	2462	14.50	0.02818			PASS
Low	2412	12.60	0.01820			PASS
Mid	2437	12.40	0.01738	AVG	1	PASS
High	2462	12.10	0.01622			PASS

Test mode: IEEE 802.11g

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Peak / AVG	Limit (W)	Result
Low	2412	20.70	0.11749			PASS
Mid	2437	21.00	0.12589	Peak	1	PASS
High	2462	21.00	0.12589			PASS
Low	2412	11.30	0.01349			PASS
Mid	2437	11.60	0.01445	AVG	1	PASS
High	2462	11.70	0.01479			PASS

Test mode: IEEE 802.11n HT20 MHz

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Peak / AVG	Limit (W)	Result
Low	2412	20.20	0.10471			
Mid	2437	20.30	0.10715	Peak	1	PASS
High	2462	20.50	0.11220			PASS
Low	2412	11.50	0.01413			PASS
Mid	2437	11.60	0.01445	AVG	1	PASS
High	2462	11.80	0.01514			PASS

Test mode: IEEE 802.11n HT40 MHz

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Peak / AVG	Limit (W)	Result
Low	2422	20.50	0.11220			PASS
Mid	2437	20.80	0.12023	Peak	1	PASS
High	2452	20.90	0.12303			PASS
Low	2422	11.80	0.01514			PASS
Mid	2437	12.00	0.01585	AVG	1	PASS
High	2452	12.00	0.01585			PASS

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7.6. BAND EDGES MEASUREMENT

7.6.1. LIMITS

According to §15.247(d), in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in 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. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in 15.209(a) (see Section 15.205(c)).

Radiated Emission Test Site 966(2)										
Name of Equipment	Manufacturer	Model Number	Serial Number	Last Calibration	Due Calibration					
PSA Series Spectrum Analyzer	Agilent	N9010A	MY55370330	02/21/2017	02/20/2018					
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI	100783	02/21/2017	02/20/2018					
Amplifier	EMEC	EM330	060661	03/18/2017	03/17/2018					
High Noise Amplifier	Agilent	8449B	3008A01838	02/21/2017	02/20/2018					
Loop Antenna	COM-POWER	AL-130	121044	09/25/2016	09/24/2017					
Bilog Antenna	SCHAFFNER	CBL6143	5082	02/21/2017	02/20/2018					
Horn Antenna	SCHWARZBECK	BBHA9120	D286	02/28/2017	02/27/2018					
Board-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170-497	02/28/2017	02/27/2018					
Turn Table	N/A	N/A	N/A	N.C.R	N.C.R					
Antenna Tower	SUNOL	TLT2	N/A	N.C.R	N.C.R					
Controller	Sunol Sciences	SC104V	022310-1	N.C.R	N.C.R					
Controller	СТ	N/A	N/A	N.C.R	N.C.R					
Temp. / Humidity Meter	Anymetre	JR913	N/A	02/21/2017	02/20/2018					
Test S/W	FARAD		LZ-RF / CCS	S-SZ-3A2						

7.6.2. TEST INSTRUMENTS

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. The FCC Site Registration number is 101879.

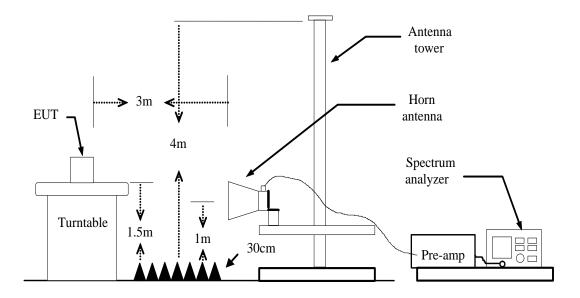
3. N.C.R = No Calibration Required.

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7.6.3. TEST PROCEDURES (please refer to measurement standard)

- 1. The EUT is placed on a turntable, which is 1.5m above the ground plane.
- 2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
- 3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
- 4. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:
 - (a) PEAK: RBW=1MHz / VBW=3MHz / Sweep=AUTO
 - (b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO / Detector=PEAK
- 5. Repeat the procedures until all the PEAK and AVERAGE versus POLARIZATION are measured.

7.6.4. TEST SETUP



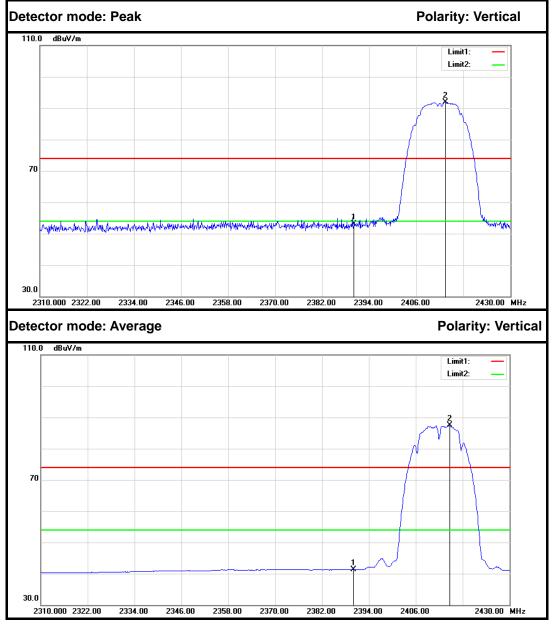


7.6.5. TEST RESULTS

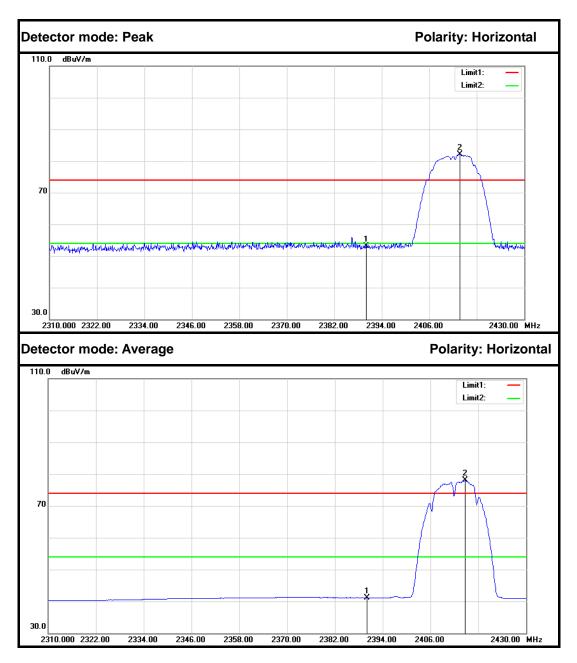
Test Plot

IEEE 802.11b mode

Band Edges (CH Low)



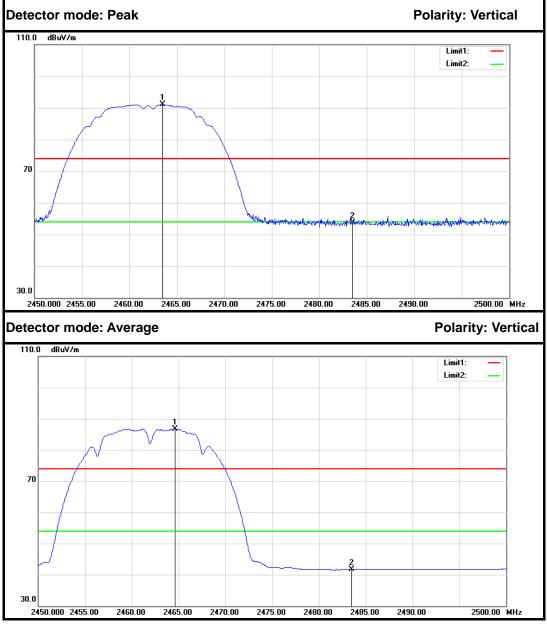
No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2390.000	55.88	-2.86	53.02	74.00	-20.98	Peak	Vertical
2	2413.440	94.68	-2.73	91.95			Peak	Vertical
3	2390.000	44.24	-2.86	41.38	54.00	-12.62	Average	Vertical
4	2414.640	90.24	-2.73	87.51			Average	Vertical



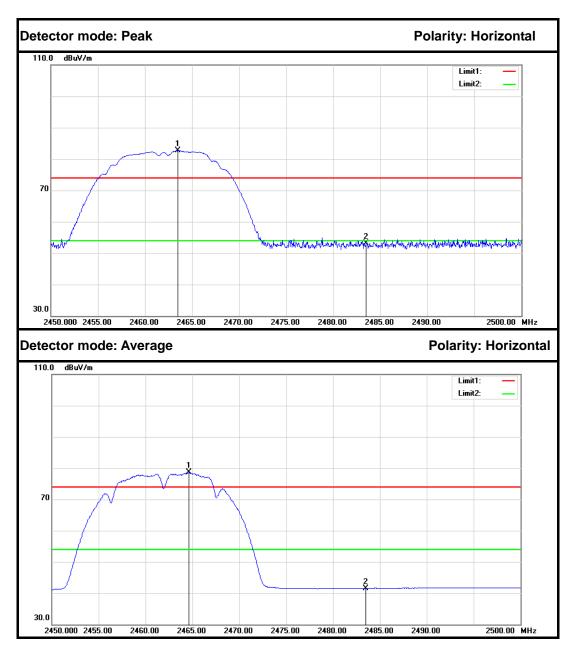
No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2390.000	56.04	-2.86	53.18	74.00	-20.82	Peak	Horizontal
2	2413.680	84.81	-2.73	82.08			Peak	Horizontal
3	2390.000	44.00	-2.86	41.14	54.00	-12.86	Average	Horizontal
4	2414.640	80.78	-2.73	78.05			Average	Horizontal



Band Edges (CH High)



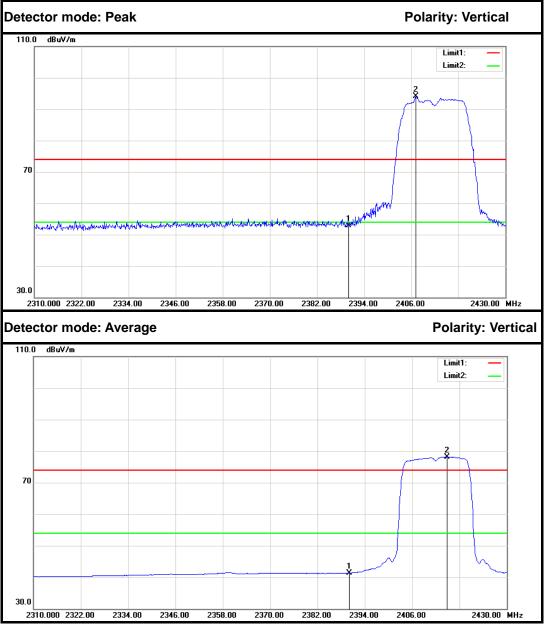
No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2463.500	93.48	-2.46	91.02			Peak	Vertical
2	2483.500	56.05	-2.35	53.70	74.00	-20.30	Peak	Vertical
3	2464.650	89.25	-2.45	86.80			Average	Vertical
4	2483.500	44.12	-2.35	41.77	54.00	-12.23	Average	Vertical



No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2463.500	85.19	-2.46	82.73			Peak	Horizontal
2	2483.500	55.40	-2.35	53.05	74.00	-20.95	Peak	Horizontal
3	2464.650	81.06	-2.45	78.61			Average	Horizontal
4	2483.500	43.86	-2.35	41.51	54.00	-12.49	Average	Horizontal

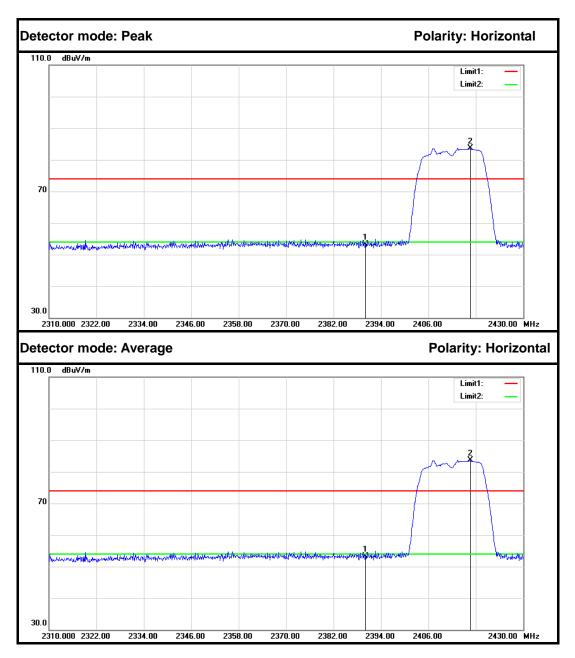


IEEE 802.11g mode Band Edges (CH Low)



No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2390.000	55.69	-2.86	52.83	74.00	-21.17	Peak	Vertical
2	2407.200	96.86	-2.77	94.09			Peak	Vertical
3	2390.000	44.21	-2.86	41.35	54.00	-12.65	Average	Vertical
4	2414.880	80.83	-2.73	78.10			Average	Vertical

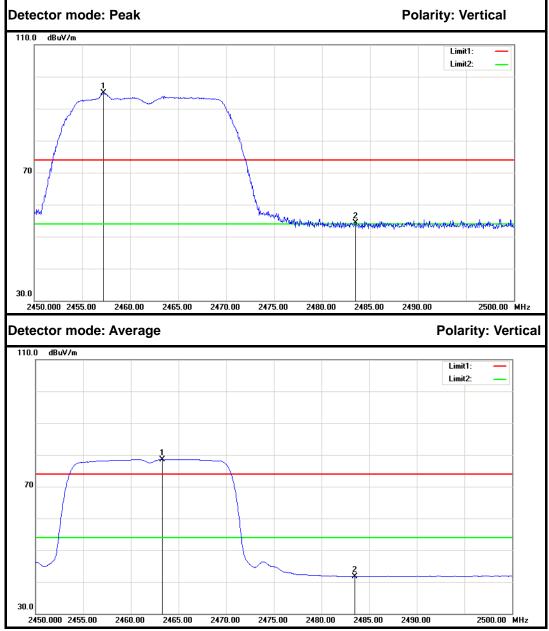
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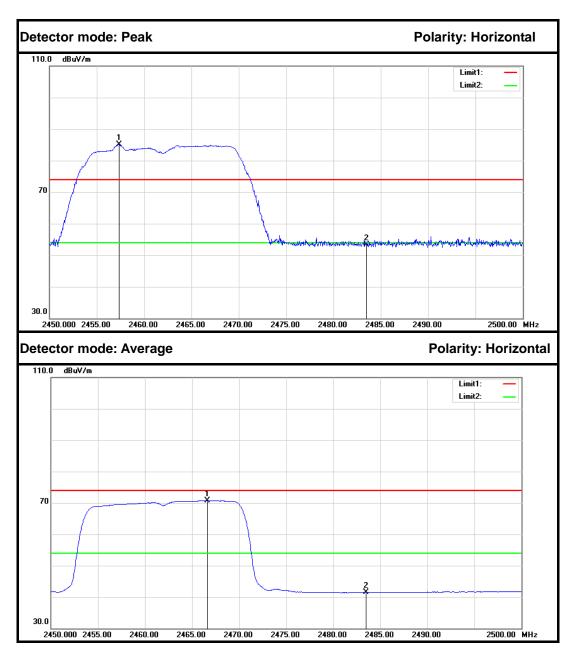
No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remar k	Antenna Polar
1	2390.000	56.10	-2.86	53.24	74.00	-20.76	Peak	Horizontal
2	2416.560	86.46	-2.72	83.74			Peak	Horizontal
3	2390.000	43.95	-2.86	41.09	54.00	-12.91	Average	Horizontal
4	2415.120	72.31	-2.73	69.58			Average	Horizontal



Band Edges (CH High)



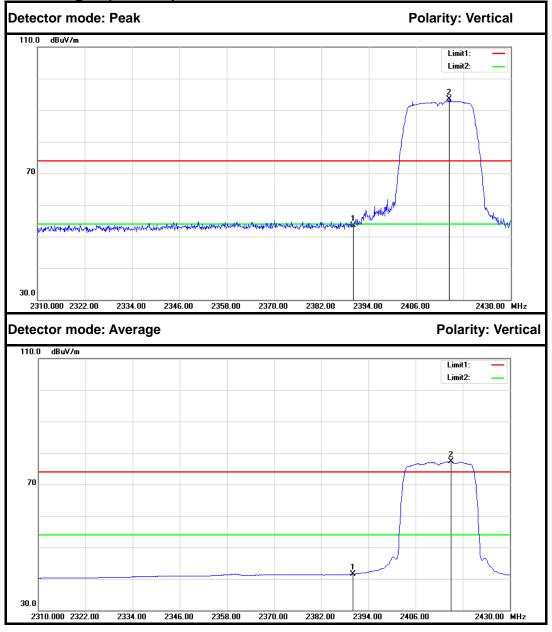
No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2457.250	97.37	-2.49	94.88			Peak	Vertical
2	2483.500	56.71	-2.35	54.36	74.00	-19.64	Peak	Vertical
3	2463.300	81.04	-2.46	78.58			Average	Vertical
4	2483.500	44.06	-2.35	41.71	54.00	-12.29	Average	Vertical



No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2457.350	87.63	-2.49	85.14			Peak	Horizontal
2	2483.500	55.70	-2.35	53.35	74.00	-20.65	Peak	Horizontal
3	2466.650	73.14	-2.44	70.70			Average	Horizontal
4	2483.500	43.82	-2.35	41.47	54.00	-12.53	Average	Horizontal

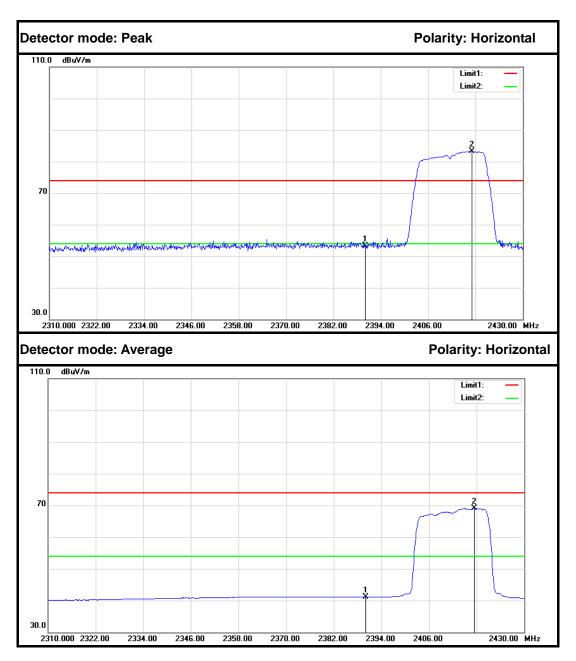


IEEE 802.11n HT20 MHz mode Band Edges (CH Low)



No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2390.000	56.42	-2.86	53.56	74.00	-20.44	Peak	Vertical
2	2414.400	96.27	-2.73	93.54			Peak	Vertical
3	2390.000	44.35	-2.86	41.49	54.00	-12.51	Average	Vertical
4	2415.000	80.02	-2.73	77.29			Average	Vertical

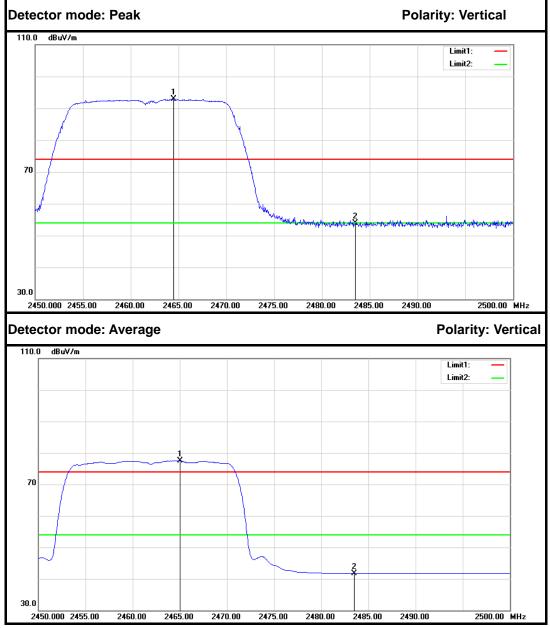
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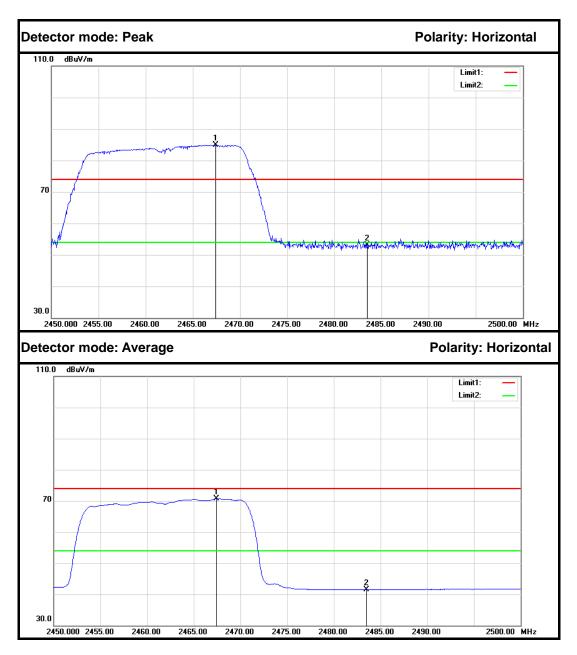
No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2390.000	56.19	-2.86	53.33	74.00	-20.67	Peak	Horizontal
2	2417.160	86.01	-2.71	83.30			Peak	Horizontal
3	2390.000	43.93	-2.86	41.07	54.00	-12.93	Average	Horizontal
4	2417.400	71.88	-2.71	69.17			Average	Horizontal



Band Edges (CH High)



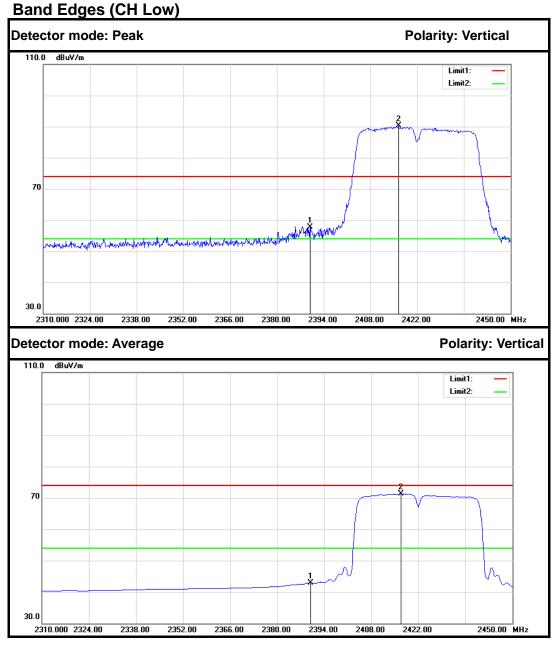
No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2464.500	95.40	-2.45	92.95			Peak	Vertical
2	2483.500	56.31	-2.35	53.96	74.00	-20.04	Peak	Vertical
3	2465.050	79.95	-2.45	77.50			Average	Vertical
4	2483.500	44.00	-2.35	41.65	54.00	-12.35	Average	Vertical



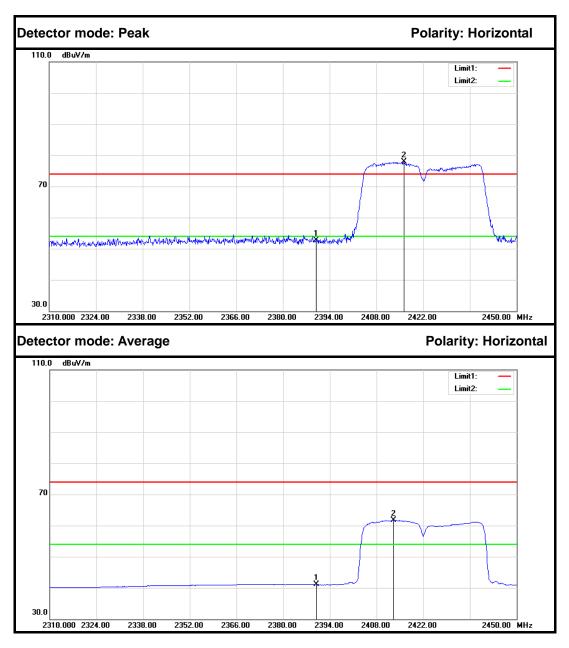
No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2467.450	87.38	-2.44	84.94			Peak	Horizontal
2	2483.500	55.47	-2.35	53.12	74.00	-20.88	Peak	Horizontal
3	2467.450	73.13	-2.44	70.69			Average	Horizontal
4	2483.500	43.84	-2.35	41.49	54.00	-12.51	Average	Horizontal



IEEE 802.11n HT40 MHz mode



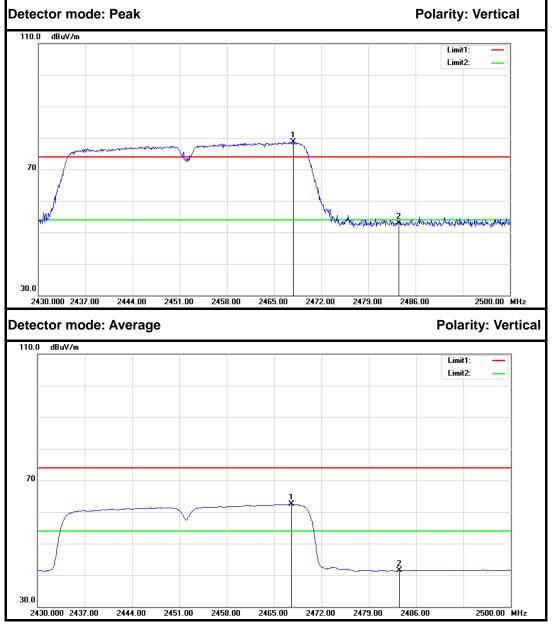
No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2390.000	60.52	-2.86	57.66	74.00	-16.34	Peak	Vertical
2	2416.400	92.94	-2.72	90.22			Peak	Vertical
3	2390.000	45.79	-2.86	42.93	54.00	-11.07	Average	Vertical
4	2416.820	73.99	-2.72	71.27			Average	Vertical



No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2390.000	55.59	-2.86	52.73	74.00	-21.27	Peak	Horizontal
2	2416.260	80.53	-2.72	77.81			Peak	Horizontal
3	2390.000	43.88	-2.86	41.02	54.00	-12.98	Average	Horizontal
4	2413.180	64.45	-2.74	61.71			Average	Horizontal

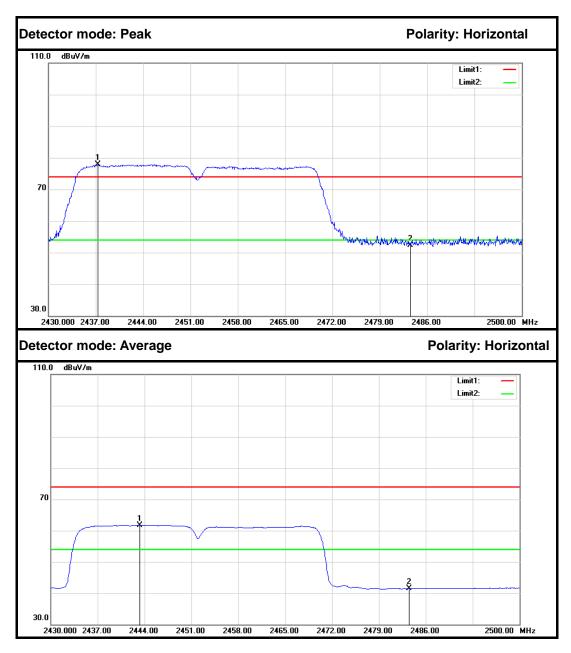


Band Edges (CH High)



No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2467.870	81.12	-2.44	78.68			Peak	Vertical
2	2483.500	55.21	-2.35	52.86	74.00	-21.14	Peak	Vertical
3	2467.520	64.92	-2.44	62.48			Average	Vertical
4	2483.500	43.78	-2.35	41.43	54.00	-12.57	Average	Vertical





No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2437.350	80.50	-2.60	77.90			Peak	Horizontal
2	2483.500	54.73	-2.35	52.38	74.00	-21.62	Peak	Horizontal
3	2443.300	64.37	-2.57	61.80			Average	Horizontal
4	2483.500	43.79	-2.35	41.44	54.00	-12.56	Average	Horizontal



7.7. PEAK POWER SPECTRAL DENSITY MEASUREMENT

7.7.1. LIMITS

According to §15.247(e), for digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

According to §15.247(f), the digital modulation operation of the hybrid system, with the frequency hopping turned off, shall comply with the power density requirements of paragraph (d) of this section.

7.7.2. TEST INSTRUMENTS

Name of Equipment	Manufacturer	Model	Serial Number	Last Calibration	Calibration Due
Spectrum Analyzer	Agilent	N9010A	MY52221469	02/21/2017	02/20/2018

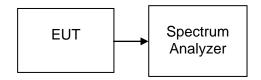
7.7.3. TEST PROCEDURES (please refer to measurement standard)

§15.247(e)specifies a conducted power spectral density (PSD) limit of 8 dBm in any 3 kHz band segment within the fundamental EBW during any time interval of continuous transmission. The same method as used to determine the conducted output power shall be used to determine the power spectral density (i.e.,if peak-detected fundamental power was measured then use the peak PSD procedure and if average fundamental power was measured then use the average PSD procedure).

10.2 Method PKPSD (peak PSD)

- 1. Set analyzer center frequency to DTS channel center frequency.
- 2. Set the span to 1.5 times the DTS bandwidth.
- 3. Set the RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
- 4. Set the VBW \geq 3 x RBW.
- 5. Detector = peak.
- 6. Sweep time = auto couple.
- 7. Trace mode = max hold.
- 8. Allow trace to fully stabilize.
- 9. Use the peak marker function to determine the maximum amplitude level within the RBW.
- 10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

7.7.4. TEST SETUP





7.7.5. TEST RESULTS

No non-compliance noted

<u>Test Data</u>

Test mode: IEEE 802.11b

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Test Result
Low	2412	-13.145		PASS
Mid	2437	1.969	8	PASS
High	2462	1.401		PASS

Test mode: IEEE 802.11g

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Test Result
Low	2412	-15.304		PASS
Mid	2437	-15.982	8	PASS
High	2462	-16.424		PASS

Test mode: IEEE 802.11n HT20 MHz

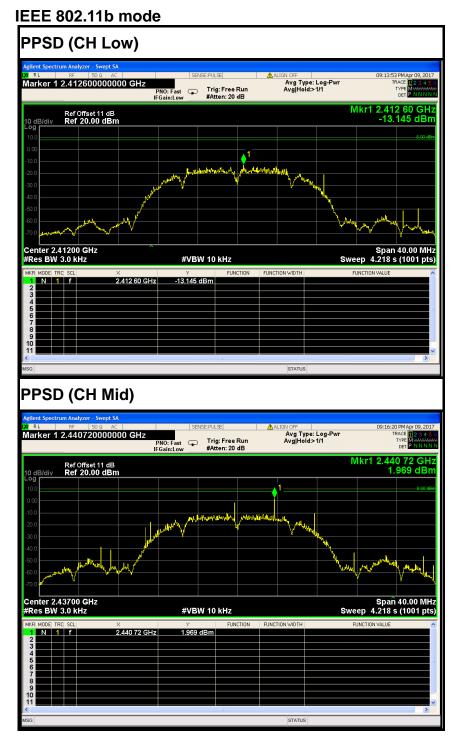
Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Test Result
Low	2412	-15.349		PASS
Mid	2437	-16.381	8	PASS
High	2462	-15.925		PASS

Test mode: IEEE 802.11n HT40 MHz

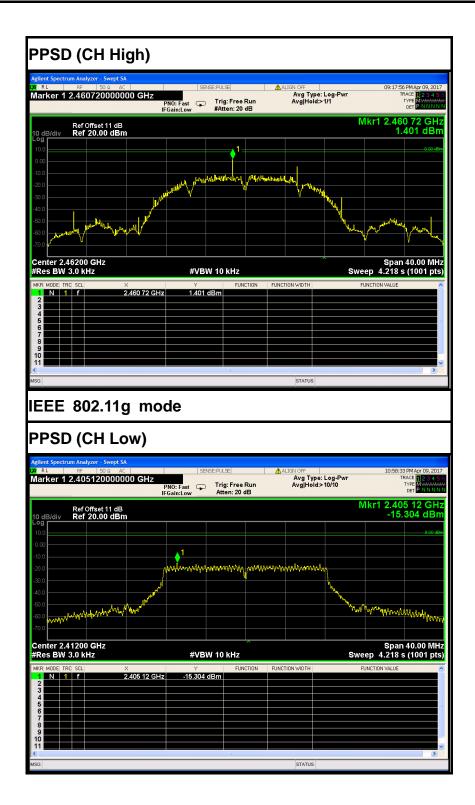
Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Test Result
Low	2422	-17.878		PASS
Mid	2437	-18.960	8	PASS
High	2452	-13.145		PASS



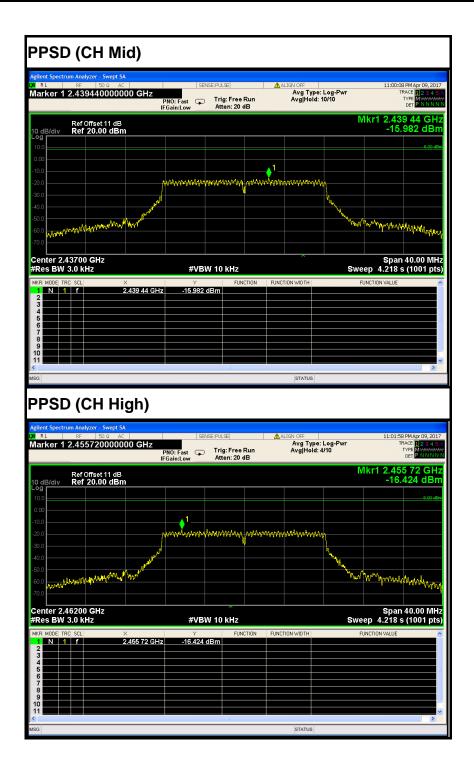
Test Plot













PPSD (CH Low) Marker 1 2.413240000000 GHz Avg Type: Log-Pw Avg|Hold: 3/10 PNO: Fast Trig: Free Run IFGain:Low Atten: 20 dB 2.413 24 GI -15.349 dB Ref Offset 11 dB Ref 20.00 dBm wheney wheney wheney Arman WWWWWWW Why Center 2.41200 GHz #Res BW 3.0 kHz Span 40.00 MHz 4.218 s (1001 pts) #VBW 10 kHz Sweep 2.413 24 GHz N 1 f -15 349 dBm PPSD (CH Mid) 1 2.433240000000 GHz Avg Type: Log-Pwr Avg|Hold: 5/10 PNO: Fast Trig: Free Run IFGain:Low Atten: 20 dB Mkr1 2.433 24 GF -16.381 dB Ref Offset 11 dB Ref 20.00 dBm Þ manna MA404 AAAAAA White Martin Malana wayyou when the work Center 2.43700 GHz #Res BW 3.0 kHz Span 40.00 MHz Sweep 4.218 s (1001 pts) #VBW 10 kHz 2.433 24 GHz -16.381 dBi 1 f

IEEE 802.11n HT20 MHz mode



