8.5 Frequency Stability

▣ Test requirements

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

▣ Test Procedure

The EUT was placed inside of an environmental chamber as the temperature in the chamber was varied between -20℃ and +50℃. The temperature was incremented by 10℃ intervals and the unit was allowed to stabilize at each measurement. The center frequency of the transmitting channel was evaluated at each temperature and the frequency deviation from the channel's center frequency was recorded.

▣ Test Result : Comply

Band I & Band II : (5150 MHz ~ 5350 MHz)

26 dB Bandwidth Reference Note 1	
Low edge	High edge
5,170,775,000	5,329,187,500

Supply Voltage (V DC)	TEMP (℃)	Operating Frequency					
		5180 MHz			5320 MHz		
		Measured Frequency (Hz)	Deviation (%)	26dBc low edge not3 2 (Hz)	Measured Frequency (Hz)	Deviation (%)	26dBc high edge not3 3 (Hz)
12.000	+25(Ref)	5,180,036,712	0.000709	5,170,811,712	5,320,036,763	0.000691	5,329,224,263
	+50	5,180,041,359	0.000798	5,170,816,359	5,320,041,503	0.000780	5,329,229,003
	+40	5,180,040,302	0.000778	5,170,815,302	5,320,039,509	0.000743	5,329,227,009
	+30	5,180,039,365	0.000760	5,170,814,365	5,320,037,706	0.000709	5,329,225,206
	+20	5,180,034,059	0.000658	5,170,809,059	5,320,035,778	0.000673	5,329,223,278
	+10	5,180,029,867	0.000577	5,170,804,867	5,320,031,001	0.000583	5,329,218,501
	0	5,180,025,628	0.000495	5,170,800,628	5,320,026,523	0.000499	5,329,214,023
	-10	5,180,021,376	0.000413	5,170,796,376	5,320,022,054	0.000415	5,329,209,554
	-20	5,180,017,153	0.000331	5,170,792,153	5,320,017,482	0.000329	5,329,204,982
10.200	+25	5,180,036,707	0.000709	5,170,811,707	5,320,036,762	0.000691	5,329,224,262
13.800	+25	5,180,036,738	0.000709	5,170,811,738	5,320,036,792	0.000692	5,329,224,292

Note 1: Please refer to the test plot.

Note 2: **26 dB Bandwidth Reference Low edge (Hz)** + (**Measured Frequency (Hz)** - **Operating Frequency (Hz)**) = **26dBc low edge (Hz)**

Note 3: **26 dB Bandwidth Reference High edge (Hz)** + (**Measured Frequency (Hz)** - **Operating Frequency (Hz)**) = **26dBc High edge (Hz)**

Band III : (5470 MHz ~ 5725 MHz)

26 dB Bandwidth Reference Note 1	
Low edge	High edge
5,490,750,000	5,709,362,500

Supply Voltage (V DC)	TEMP (℃)	Operating Frequency					
		5500 MHz			5700 MHz		
		Measured Frequency (Hz)	Deviation (%)	26dBc low edge not3 2 (Hz)	Measured Frequency (Hz)	Deviation (%)	26dBc high edge not3 3 (Hz)
12.000	+25(Ref)	5,500,037,514	0.000682	5,490,787,514	5,700,038,084	0.000668	5,709,400,584
	+50	5,500,042,136	0.000766	5,490,792,136	5,700,042,581	0.000747	5,709,405,081
	+40	5,500,040,394	0.000734	5,490,790,394	5,700,040,870	0.000717	5,709,403,370
	+30	5,500,038,491	0.000700	5,490,788,491	5,700,039,038	0.000685	5,709,401,538
	+20	5,500,036,605	0.000666	5,490,786,605	5,700,036,967	0.000649	5,709,399,467
	+10	5,500,031,943	0.000581	5,490,781,943	5,700,032,455	0.000569	5,709,394,955
	0	5,500,027,290	0.000496	5,490,777,290	5,700,027,941	0.000490	5,709,390,441
	-10	5,500,022,628	0.000411	5,490,772,628	5,700,023,237	0.000408	5,709,385,737
	-20	5,500,018,229	0.000331	5,490,768,229	5,700,018,719	0.000328	5,709,381,219
10.200	+25	5,500,037,514	0.000682	5,490,787,514	5,700,038,078	0.000668	5,709,400,578
13.800	+25	5,500,037,539	0.000683	5,490,787,539	5,700,038,109	0.000669	5,709,400,609

Note 1: Please refer to the test plot.

Note 2: **26 dB Bandwidth Reference Low edge (Hz)** + (**Measured Frequency (Hz)** - **Operating Frequency (Hz)**) = **26dBc low edge (Hz)**

Note 3: **26 dB Bandwidth Reference High edge (Hz)** + (**Measured Frequency (Hz)** - **Operating Frequency (Hz)**) = **26dBc High edge (Hz)**

Band IV : (5725 MHz ~ 5850 MHz)

6 dB Bandwidth Reference Note 1	
Low edge	High edge
5737.445000	5833.192000

Supply Voltage (V DC)	TEMP (℃)	Operating Frequency					
		5745 MHz			5825 MHz		
		Measured Frequency (Hz)	Deviation (%)	26dBc low edge not3 2 (Hz)	Measured Frequency (Hz)	Deviation (%)	26dBc high edge not3 3 (Hz)
3.700	+25(Ref)	5,745,024,571	0.000428	5,737,469,571	5,825,024,078	0.000413	5,833,216,078
	+50	5,745,056,171	0.000978	5,737,501,171	5,825,015,138	0.000260	5,833,207,138
	+40	5,745,048,339	0.000841	5,737,493,339	5,825,001,992	0.000034	5,833,193,992
	+30	5,745,035,247	0.000614	5,737,480,247	5,825,018,364	0.000315	5,833,210,364
	+20	5,745,024,143	0.000420	5,737,469,143	5,825,024,001	0.000412	5,833,216,001
	+10	5,745,018,932	0.000330	5,737,463,932	5,825,029,891	0.000513	5,833,221,891
	0	5,745,032,291	0.000562	5,737,477,291	5,825,040,194	0.000690	5,833,232,194
	-10	5,745,048,329	0.000841	5,737,493,329	5,825,036,274	0.000623	5,833,228,274
	-20	5,745,056,171	0.000978	5,737,501,171	5,825,055,348	0.000950	5,833,247,348
3.145	+25	5,745,024,701	0.000430	5,737,469,701	5,825,024,701	0.000424	5,833,216,701
4.255	+25	5,745,024,653	0.000429	5,737,469,653	5,825,024,252	0.000416	5,833,216,252

Note 1: Please refer to the test plot.

Note 2: **6 dB Bandwidth Reference Low edge (Hz)** + (**Measured Frequency (Hz)** - **Operating Frequency (Hz)**) = **6dBc low edge (Hz)**

Note 3: **6 dB Bandwidth Reference High edge (Hz)** + (**Measured Frequency (Hz)** - **Operating Frequency (Hz)**) = **6dBc High edge (Hz)**

8.6 Radiated Spurious Emission Measurements

▣ Test Procedure

▪ **FCC Part 15.209(a) and (b)**

Frequency (MHz)	Limit (uV/m)	Measurement Distance (meter)
0.009 – 0.490	2400/F(KHz)	300
0.490 – 1.705	24000/F(KHz)	30
1.705 – 30.0	30	30
30 ~ 88	100 **	3
88 ~ 216	150 **	3
216 ~ 960	200 **	3
Above 960	500	3

** Except as provided in 15.209(g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88MHz, 174-216MHz or 470-806MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g. 15.231 and 15.241.

▪ **FCC Part 15.205 (a):** Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	MHz	GHz	GHz
0.009 ~ 0.110	8.41425 ~ 8.41475	108 ~ 121.94	1300 ~ 1427	4.5 ~ 5.15	14.47 ~ 14.5
0.495 ~ 0.505	12.29 ~ 12.293	123 ~ 138	1435 ~ 1626.5	5.35 ~ 5.46	15.35 ~ 16.2
2.1735 ~ 2.1905	12.51975 ~	149.9 ~ 150.05	1645.5 ~ 1646.5	7.25 ~ 7.75	17.7 ~ 21.4
4.125 ~ 4.128	12.52025	160.52475 ~	1660 ~ 1710	8.025 ~ 8.5	22.01 ~ 23.12
4.17725 ~ 4.17775	12.57675 ~	160.52525	1718.8 ~ 1722.2	9.0 ~ 9.2	23.6 ~ 24.0
4.20725 ~ 4.20775	12.57725	160.7 ~ 160.9	2200 ~ 2300	9.3 ~ 9.5	31.2 ~ 31.8
6.215 ~ 6.218	13.36 ~ 13.41	162.0125 ~ 167.17	2310 ~ 2390	10.6 ~ 12.7	36.43 ~ 36.5
6.26775 ~ 6.26825	16.42 ~ 16.423	167.72 ~ 173.2	2483.5 ~ 2500	13.25 ~ 13.4	Above 38.6
6.31175 ~ 6.31225	16.69475 ~	240 ~ 285	2655 ~ 2900		
8.291 ~ 8.294	16.69525	322 ~ 335.4	3260 ~ 3267		
8.362 ~ 8.366	16.80425 ~	399.90 ~ 410	3332 ~ 3339		
8.37625 ~ 8.38675	16.80475	608 ~ 614	3345.8 ~ 3358		
	25.5 ~ 25.67	960 ~ 1240	3600 ~ 4000		
	37.5 ~ 38.25				
	73 ~ 74.6				
	74.8 ~ 75.2				

▪ **FCC Part 15.205(b):** The field strength of emissions appearing within these frequency bands shall not exceed the limits shown in §15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in §15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in §15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in §15.35 apply to these measurements.

▪ **FCC Part 15.407 (b):** Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1) For transmitters operating in the **5.15-5.25 GHz band**: all emissions outside of the **5.15-5.35 GHz band** shall not exceed an **EIRP of -27 dBm/MHz**.
(2) For transmitters operating in the **5.25-5.35 GHz band**: all emissions outside of the **5.15-5.35 GHz band** shall not exceed an **EIRP of -27 dBm/MHz**.
(3) For transmitters operating in the **5.47-5.725 GHz band**: all emissions outside of the **5.47-5.725 GHz band** shall not exceed an **EIRP of -27 dBm/MHz.**
(4) For transmitters operating in the **5.725-5.85 GHz band**: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of −17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of −27 dBm/MHz.
(5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.
(6) Unwanted emissions **below 1 GHz** must comply with the general field strength limits set forth in **Section 15.209**. Further, any U-NII devices using an **AC power line** are required to comply also with the conducted limits set forth in **Section 15.207**.
(7) The provisions of §15.205 apply to intentional radiators operating under this section
(8) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency band edges as the design of the equipment permits.

▣ Test Procedure

The EUT was placed on a 0.8m high non-conductive table inside a shielded enclosure. An antenna was placed near the EUT and measurements of frequencies and amplitudes of field strengths were recorded for reference during final measurements. For final radiated testing, measurements were performed in semi anechoic chamber. Measurements were performed with the EUT oriented in 3 orthogonal axis and rotated 360 degrees to determine the worst-case orientation for maximum emissions.

Radiated spurious emission measured using following Measurement Procedure **of KDB789033 D02 V01**

► General Requirements for Unwanted Emissions Measurements

The following requirements apply to all unwanted emissions measurements, both in and outside of the restricted bands:

- EUT Duty Cycle

(1) The EUT shall be configured or modified to **transmit continuously** except as stated in (ii), below. The intent is to test at 100 percent duty cycle; however a small reduction in duty cycle(**to no lower than 98 percent**) is permitted if required by the EUT for amplitude control purposes. Manufacturers are expected to provide software to the test lab to permit such continuous operation.

(2) If **continuous transmission (or at least 98 percent duty cycle) cannot be achieved** due to hardware limitations of the EUT (e.g., overheating), the following additions to the measurement and reporting procedures are required:

- The EUT shall be configured to operate at the maximum achievable duty cycle.
- Measure the duty cycle, x, of the transmitter output signal.
- Adjustments to measurement procedures (e.g., increasing test time and number of traces averaged) shall be performed as described in the procedures below.
- The test report shall include the following additional information:
  - The reason for the duty cycle limitation.
  - The duty cycle achieved for testing and the associated transmit duration and interval between transmissions.
  - The sweep time and the amount of time used for trace stabilization during max-hold measurements for peak emission measurements.

(3) **Reduction of the measured emission amplitude levels to account for operational duty factor is not permitted. Compliance is based on emission levels occurring during transmission - not on an average across on and off times of the transmitter.**

► Measurements below 1000 MHz

a) Follow the requirements in section II.G.3, “General Requirements for Unwanted Emissions Measurements”.

b) Compliance shall be demonstrated using **CISPR quasi-peak detection**; however, **peak detection** is permitted as an alternative to quasi-peak detection.

► **Measurements Above 1000MHz(Peak)**

a) Follow the requirements in section II.G.3, “General Requirements for Unwanted Emissions Measurements”.
b) Peak emission levels are measured by setting the analyzer as follows:
(i) **RBW = 1 MHz**.
(ii) **VBW ≥ 3 MHz.**
(iii) **Detector = Peak.**
(iv) Sweep time = auto.
(v) Trace mode = max hold.
(vi) Allow sweeps to continue until the trace stabilizes. Note that if the transmission is not continuous, the time required for the trace to stabilize will increase by a factor of approximately 1/x, where x is the duty cycle. For example, at 50 percent duty cycle, the measurement time will increase by a factor of two relative to measurement time for continuous transmission.

► **Measurements Above 1000MHz(Method AD)**

(i) **RBW = 1 MHz.**
(ii) **VBW ≥ 3 MHz.**
(iii) **Detector = RMS**, if span/(# of points in sweep) ≤ RBW/2. Satisfying this condition may require increasing the number of points in the sweep or reducing the span. If the condition is not satisfied, the detector mode shall be set to peak.
(iv) Averaging type = power (i.e., RMS)
• As an alternative, the detector and averaging type may be set for linear voltage averaging. Some analyzers require linear display mode in order to use linear voltage averaging. Log or dB averaging shall not be used.
(v) Sweep time = auto.
(vi) Perform a trace average of at least 100 traces if the transmission is continuous. If the transmission is not continuous, the number of traces shall be increased by a factor of 1/x, where x is the duty cycle. For example, with 50 percent duty cycle, at least 200 traces shall be averaged.
(vii) If tests are performed with the EUT transmitting at a duty cycle less than 98 percent, a correction factor shall be added to the measurement results prior to comparing to the emission limit in order to compute the emission level that would have been measured had the test been performed at 100 percent duty cycle. The correction factor is computed as follows:

• **If power averaging (RMS) mode was used in step (iv) above, the correction factor is 10 log(1/x), where x is the duty cycle.**
For example, if the transmit duty cycle was 50 percent, then 3 dB must be added to the measured emission levels.
• If linear voltage averaging mode was used in step (iv) above, the correction factor is 20 log(1/x), where x is the duty cycle. For example, if the transmit duty cycle was 50 percent, then 6 dB must be added to the measured emission levels.
• If a specific emission is demonstrated to be continuous (100 percent duty cycle) rather than turning on and off with the transmit cycle, no duty cycle correction is required for that emission.

▣ Measurement Data:

Radiated Spurious Emissions(9kHz ~ 40GHz) : *M/N: SMT-i6021 & 802.11a & Adaptor = DC 12V*

Tested Channel	Frequency (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	T.F (dB/m)	DCCF (dB)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
36 (5180MHz)	5149.480	H	X	PK	53.28	9.23	N/A	N/A	62.51	74.00	11.49
	5147.270	H	X	AV	40.32	9.23	1.94	N/A	51.49	54.00	2.51
40 (5200MHz)	5126.600	V	Y	PK	52.59	9.04	N/A	N/A	61.63	74.00	12.37
	5125.670	V	Y	AV	41.17	9.04	1.94	N/A	52.15	54.00	1.85
48 (5240MHz)	10480.210	H	X	PK	43.95	11.12	N/A	-9.54	45.53	68.20	22.67
	10483.886	V	X	PK	44.83	11.12	N/A	-9.54	46.41	68.20	21.79
52 (5260MHz)	10520.615	H	X	PK	44.20	11.23	N/A	-9.54	45.89	68.20	22.31
	10521.335	V	X	PK	43.61	11.23	N/A	-9.54	45.30	68.20	22.90
60 (5300MHz)	5374.535	H	X	PK	49.76	9.14	N/A	N/A	58.90	74.00	15.10
	5374.469	H	X	AV	38.63	9.14	1.94	N/A	49.71	54.00	4.29
64 (5320MHz)	5393.767	H	X	PK	52.85	9.15	N/A	N/A	62.00	74.00	12.00
	5393.745	H	X	AV	39.72	9.15	1.94	N/A	50.81	54.00	3.19
100 (5500MHz)	5425.167	H	X	PK	50.73	9.17	N/A	N/A	59.90	74.00	14.10
	5424.947	H	X	AV	39.36	9.17	1.94	N/A	50.47	54.00	3.53
116 (5580MHz)	11160.805	V	X	PK	44.09	12.63	N/A	-9.54	47.18	74.00	26.82
	11160.695	V	X	AV	33.43	12.63	1.94	-9.54	38.46	54.00	15.54
140 (5700MHz)	11399.065	V	X	PK	44.75	13.03	N/A	-9.54	48.24	74.00	25.76
	11400.645	V	X	AV	34.71	13.03	1.94	-9.54	40.14	54.00	13.86
149 (5745MHz)	11490.335	H	X	PK	45.61	13.17	N/A	-9.54	49.24	74.00	24.76
	11489.085	H	X	AV	35.20	13.17	1.94	-9.54	40.77	54.00	13.23
157 (5785MHz)	11570.355	H	X	PK	46.51	13.27	N/A	-9.54	50.24	74.00	23.76
	11569.325	H	X	AV	35.60	13.27	1.94	-9.54	41.27	54.00	12.73
165 (5825MHz)	11649.775	V	X	PK	46.65	13.36	N/A	-9.54	50.47	74.00	23.53
	11649.945	V	X	AV	35.67	13.36	1.94	-9.54	41.43	54.00	12.57

Note.

1. No other spurious and harmonic emissions were found greater than listed emissions on above table.
2. Information of Distance Factor.
   For finding emissions, the test distance might be reduced from 3m to 1m.
   In this case, the distance factor(-9.54dB) is applied to the result.
   - Calculation of distance factor = 20log(applied distance / required distance) = 20log(1m / 3m) = -9.54dB
   When distance factor is “N/A”, the distance is 3m and distance factor is not applied.
3. The limit is converted to field strength.
   E[dBuV/m] = EIRP[dBm] + 95.2 dB = -27dBm + 95.2 = 68.2dBuV/m
4. Sample Calculation.
   Margin = Limit – Result / Result = Reading + T.F+ DCCF + DCF / T.F = AF + CL – AG
   Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain,
   DCCF = Duty Cycle Correction Factor, DCF = Distance Correction Factor
5. If peak measurement satisfy the average limit, then average measurement are not required.

▣ **Measurement Data:**

Radiated Spurious Emissions(9kHz ~ 40GHz) : *M/N: SMT-i6021 & 802.11n(HT20) & Adaptor = DC 12V*

Tested Channel	Frequency (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	T.F (dB/m)	DCCF (dB)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
36 (5180MHz)	5105.790	H	X	PK	51.88	8.89	N/A	N/A	60.77	74.00	13.23
	5105.700	H	X	AV	40.23	8.89	2.08	N/A	51.20	54.00	2.80
40 (5200MHz)	5125.800	H	X	PK	51.27	9.04	N/A	N/A	60.31	74.00	13.69
	5125.400	H	X	AV	39.72	9.04	2.08	N/A	50.84	54.00	3.16
48 (5240MHz)	10480.265	H	X	PK	43.86	11.12	N/A	-9.54	45.44	68.20	22.76
	10478.615	V	X	PK	43.16	11.12	N/A	-9.54	44.74	68.20	23.46
52 (5260MHz)	10519.295	H	X	PK	44.10	11.23	N/A	-9.54	45.79	68.20	22.41
	10521.305	V	X	PK	43.21	11.23	N/A	-9.54	44.90	68.20	23.30
60 (5300MHz)	5376.867	H	X	PK	49.02	9.14	N/A	N/A	58.16	74.00	15.84
	5376.185	H	X	AV	38.02	9.14	2.08	N/A	49.24	54.00	4.76
64 (5320MHz)	5395.703	H	X	PK	48.90	9.15	N/A	N/A	58.05	74.00	15.95
	5394.603	H	X	AV	36.82	9.15	2.08	N/A	48.05	54.00	5.95
100 (5500MHz)	5425.937	H	X	PK	48.81	9.17	N/A	N/A	57.98	74.00	16.02
	5425.321	H	X	AV	38.11	9.17	2.08	N/A	49.36	54.00	4.64
116 (5580MHz)	11158.465	H	X	PK	43.29	13.29	N/A	-9.54	47.04	74.00	26.96
	11159.715	H	X	AV	33.19	13.29	2.08	-9.54	39.02	54.00	14.98
140 (5700MHz)	11398.725	V	X	PK	44.70	13.03	N/A	-9.54	48.19	74.00	25.81
	11399.865	V	X	AV	33.72	13.03	2.08	-9.54	39.29	54.00	14.71
149 (5745MHz)	11489.674	V	X	PK	45.52	13.17	N/A	-9.54	49.15	74.00	24.85
	11490.469	V	X	AV	35.26	13.17	2.08	-9.54	40.97	54.00	13.03
157 (5785MHz)	11571.009	H	X	PK	46.01	13.27	N/A	-9.54	49.74	74.00	24.26
	11570.169	H	X	AV	34.95	13.27	2.08	-9.54	40.76	54.00	13.24
165 (5825MHz)	11649.771	H	X	PK	46.07	13.36	N/A	-9.54	49.89	74.00	24.11
	11650.394	H	X	AV	34.60	13.36	2.08	-9.54	40.50	54.00	13.50

Note.

1. No other spurious and harmonic emissions were found greater than listed emissions on above table.
2. Information of Distance Factor.
   For finding emissions, the test distance might be reduced from 3m to 1m.
   In this case, the distance factor(-9.54dB) is applied to the result.
   - Calculation of distance factor = 20log(applied distance / required distance) = 20log(1m / 3m) = -9.54dB
   When distance factor is “N/A”, the distance is 3m and distance factor is not applied.
3. The limit is converted to field strength.
   E[dBuV/m] = EIRP[dBm] + 95.2 dB = -27dBm + 95.2 = 68.2dBuV/m
4. Sample Calculation.
   Margin = Limit – Result / Result = Reading + T.F+ DCCF + DCF / T.F = AF + CL – AG
   Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain,
   DCCF = Duty Cycle Correction Factor, DCF = Distance Correction Factor
5. If peak measurement satisfy the average limit, then average measurement are not required.

▣ **Measurement Data:**

Radiated Spurious Emissions(9kHz ~ 40GHz) : *M/N: SMT-i6021 & 802.11n(HT40) & Adaptor = DC 12V*

Tested Channel	Frequency (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	T.F (dB/m)	DCCF (dB)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
38 (5190MHz)	5147.850	H	X	PK	52.32	9.21	N/A	N/A	61.53	74.00	12.47
	5149.500	H	X	AV	40.47	9.23	3.02	N/A	52.72	54.00	1.28
46 (5230MHz)	10461.570	H	X	PK	45.82	11.09	N/A	-9.54	47.37	68.20	20.83
	10460.170	V	X	PK	45.27	11.09	N/A	-9.54	46.82	68.20	21.38
54 (5270MHz)	10540.690	H	X	PK	47.14	11.28	N/A	-9.54	48.88	68.20	19.32
	10538.470	V	X	PK	45.93	11.28	N/A	-9.54	47.67	68.20	20.53
62 (5310MHz)	5351.870	H	X	PK	49.01	9.85	N/A	N/A	58.86	74.00	15.14
	5350.066	H	X	AV	37.80	9.85	3.02	N/A	50.67	54.00	3.33
102 (5510MHz)	5459.824	H	X	PK	46.13	10.00	N/A	N/A	56.13	74.00	17.87
	5458.284	H	X	AV	35.44	10.00	3.02	N/A	48.46	54.00	5.54
110 (5550MHz)	11098.470	H	X	PK	44.54	12.53	N/A	-9.54	47.53	74.00	26.47
	11100.130	H	X	AV	34.08	12.53	3.02	-9.54	40.09	54.00	13.91
134 (5670MHz)	11340.990	V	X	PK	45.00	12.93	N/A	-9.54	48.39	74.00	25.61
	11338.970	V	X	AV	34.60	12.93	3.02	-9.54	41.01	54.00	12.99
151 (5755MHz)	11510.323	H	X	PK	44.98	13.20	N/A	-9.54	48.64	74.00	25.36
	11509.077	H	X	AV	33.77	13.20	3.02	-9.54	40.45	54.00	13.55
159 (5795MHz)	11589.319	H	X	PK	44.33	13.29	N/A	-9.54	48.08	74.00	25.92
	11590.256	H	X	AV	33.43	13.29	3.02	-9.54	40.20	54.00	13.80

Note.

1. No other spurious and harmonic emissions were found greater than listed emissions on above table.
2. Information of Distance Factor.
   For finding emissions, the test distance might be reduced from 3m to 1m.
   In this case, the distance factor(-9.54dB) is applied to the result.
   - Calculation of distance factor = 20log(applied distance / required distance) = 20log(1m / 3m) = -9.54dB
   When distance factor is “N/A”, the distance is 3m and distance factor is not applied.
3. The limit is converted to field strength.
   E[dBuV/m] = EIRP[dBm] + 95.2 dB = -27dBm + 95.2 = 68.2dBuV/m
4. Sample Calculation.
   Margin = Limit – Result / Result = Reading + T.F+ DCCF + DCF / T.F = AF + CL – AG
   Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain,
   DCCF = Duty Cycle Correction Factor, DCF = Distance Correction Factor
5. If peak measurement satisfy the average limit, then average measurement are not required.

▣ **Measurement Data:**

Radiated Spurious Emissions(9kHz ~ 40GHz) : *M/N: SMT-i6021 & 802.11a & PoE = DC 48V*

Tested Channel	Frequency (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	T.F (dB/m)	DCCF (dB)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
36 (5180MHz)	5148.960	H	X	PK	56.29	9.22	N/A	N/A	65.51	74.00	8.49
	5149.220	H	X	AV	40.19	9.22	1.94	N/A	51.35	54.00	2.65
40 (5200MHz)	5125.550	V	Y	PK	53.78	9.04	N/A	N/A	62.82	74.00	11.18
	5125.190	V	Y	AV	40.63	9.04	1.94	N/A	51.61	54.00	2.39
48 (5240MHz)	10480.050	H	X	PK	44.28	11.12	N/A	-9.54	45.86	68.20	22.34
	10480.525	V	X	PK	44.42	11.12	N/A	-9.54	46.00	68.20	22.20
52 (5260MHz)	10519.435	H	X	PK	43.83	11.23	N/A	-9.54	45.52	68.20	22.68
	10520.205	V	X	PK	43.66	11.23	N/A	-9.54	45.35	68.20	22.85
60 (5300MHz)	5374.799	H	X	PK	49.84	9.14	N/A	N/A	58.98	74.00	15.02
	5374.535	H	X	AV	38.82	9.14	1.94	N/A	49.90	54.00	4.10
64 (5320MHz)	5393.846	H	X	PK	50.32	9.15	N/A	N/A	59.47	74.00	14.53
	5394.911	H	X	AV	39.66	9.15	1.94	N/A	50.75	54.00	3.25
100 (5500MHz)	5425.233	H	X	PK	49.98	9.17	N/A	N/A	59.15	74.00	14.85
	5425.651	H	X	AV	39.50	9.17	1.94	N/A	50.61	54.00	3.39
116 (5580MHz)	11159.895	V	X	PK	44.37	12.63	N/A	-9.54	47.46	74.00	26.54
	11160.095	V	X	AV	33.66	12.63	1.94	-9.54	38.69	54.00	15.31
140 (5700MHz)	11401.155	H	X	PK	44.98	13.03	N/A	-9.54	48.47	74.00	25.53
	11401.185	H	X	AV	34.34	13.03	1.94	-9.54	39.77	54.00	14.23
149 (5745MHz)	11489.615	H	X	PK	46.22	13.17	N/A	-9.54	49.85	74.00	24.15
	11488.795	H	X	AV	35.35	13.17	1.94	-9.54	40.92	54.00	13.08
157 (5785MHz)	11570.335	H	X	PK	46.33	13.27	N/A	-9.54	50.06	74.00	23.94
	11569.395	H	X	AV	35.90	13.27	1.94	-9.54	41.57	54.00	12.43
165 (5825MHz)	11651.115	V	X	PK	46.69	13.36	N/A	-9.54	50.51	74.00	23.49
	11651.225	V	X	AV	35.98	13.36	1.94	-9.54	41.74	54.00	12.26

Note.

1. No other spurious and harmonic emissions were found greater than listed emissions on above table.
2. Information of Distance Factor.
   For finding emissions, the test distance might be reduced from 3m to 1m.
   In this case, the distance factor(-9.54dB) is applied to the result.
   - Calculation of distance factor = 20log(applied distance / required distance) = 20log(1m / 3m) = -9.54dB
   When distance factor is “N/A”, the distance is 3m and distance factor is not applied.
3. The limit is converted to field strength.
   E[dBuV/m] = EIRP[dBm] + 95.2 dB = -27dBm + 95.2 = 68.2dBuV/m
4. Sample Calculation.
   Margin = Limit – Result / Result = Reading + T.F+ DCCF + DCF / T.F = AF + CL – AG
   Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain,
   DCCF = Duty Cycle Correction Factor, DCF = Distance Correction Factor
5. If peak measurement satisfy the average limit, then average measurement are not required.

▣ Measurement Data:

Radiated Spurious Emissions(9kHz ~ 40GHz) : *M/N: SMT-i6021 & 802.11n(HT20) & PoE = DC 48V*

Tested Channel	Frequency (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	T.F (dB/m)	DCCF (dB)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
36 (5180MHz)	5105.440	H	X	PK	51.06	8.89	N/A	N/A	59.95	74.00	14.05
	5105.140	H	X	AV	40.81	8.89	2.08	N/A	51.78	54.00	2.22
40 (5200MHz)	5124.140	H	X	PK	51.38	9.04	N/A	N/A	60.42	74.00	13.58
	5125.750	H	X	AV	39.61	9.04	2.08	N/A	50.73	54.00	3.27
48 (5240MHz)	10480.225	H	X	PK	44.33	11.12	N/A	-9.54	45.91	68.20	22.29
	10480.765	V	X	PK	43.95	11.12	N/A	-9.54	45.53	68.20	22.67
52 (5260MHz)	10519.885	H	X	PK	44.11	11.23	N/A	-9.54	45.80	68.20	22.40
	10521.015	V	X	PK	43.72	11.23	N/A	-9.54	45.41	68.20	22.79
60 (5300MHz)	5374.117	H	X	PK	48.72	9.14	N/A	N/A	57.86	74.00	16.14
	5374.975	H	X	AV	37.73	9.14	2.08	N/A	48.95	54.00	5.05
64 (5320MHz)	5393.789	H	X	PK	48.95	9.15	N/A	N/A	58.10	74.00	15.90
	5395.065	H	X	AV	37.19	9.15	2.08	N/A	48.42	54.00	5.58
100 (5500MHz)	5425.519	H	X	PK	48.68	9.17	N/A	N/A	57.85	74.00	16.15
	5424.991	H	X	AV	38.16	9.17	2.08	N/A	49.41	54.00	4.59
116 (5580MHz)	11158.625	H	X	PK	43.46	12.63	N/A	-9.54	46.55	74.00	27.45
	11159.995	H	X	AV	33.25	12.63	2.08	-9.54	38.42	54.00	15.58
140 (5700MHz)	11401.795	H	X	PK	43.83	13.03	N/A	-9.54	47.32	74.00	26.68
	11399.205	H	X	AV	33.91	13.03	2.08	-9.54	39.48	54.00	14.52
149 (5745MHz)	11489.659	V	X	PK	45.95	13.17	N/A	-9.54	49.58	74.00	24.42
	11489.396	V	X	AV	35.10	13.17	2.08	-9.54	40.81	54.00	13.19
157 (5785MHz)	11570.364	H	X	PK	45.65	13.27	N/A	-9.54	49.38	74.00	24.62
	11570.041	H	X	AV	34.96	13.27	2.08	-9.54	40.77	54.00	13.23
165 (5825MHz)	11651.159	H	X	PK	45.77	13.36	N/A	-9.54	49.59	74.00	24.41
	11650.011	H	X	AV	34.67	13.36	2.08	-9.54	40.57	54.00	13.43

Note.

1. No other spurious and harmonic emissions were found greater than listed emissions on above table.
2. Information of Distance Factor.
   For finding emissions, the test distance might be reduced from 3m to 1m.
   In this case, the distance factor(-9.54dB) is applied to the result.
   - Calculation of distance factor = 20log(applied distance / required distance) = 20log(1m / 3m) = -9.54dB
   When distance factor is “N/A”, the distance is 3m and distance factor is not applied.
3. The limit is converted to field strength.
   E[dBuV/m] = EIRP[dBm] + 95.2 dB = -27dBm + 95.2 = 68.2dBuV/m
4. Sample Calculation.
   Margin = Limit – Result / Result = Reading + T.F+ DCCF + DCF / T.F = AF + CL – AG
   Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain,
   DCCF = Duty Cycle Correction Factor, DCF = Distance Correction Factor
5. If peak measurement satisfy the average limit, then average measurement are not required.

▣ **Measurement Data:**

Radiated Spurious Emissions(9kHz ~ 40GHz) : *M/N: SMT-i6021 & 802.11n(HT40) & PoE = DC 48V*

Tested Channel	Frequency (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	T.F (dB/m)	DCCF (dB)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
38 (5190MHz)	5149.550	H	X	PK	51.39	9.23	N/A	N/A	60.62	74.00	13.38
	5148.900	H	X	AV	40.39	9.23	3.02	N/A	52.64	54.00	1.36
46 (5230MHz)	10460.730	H	X	PK	46.50	11.07	N/A	-9.54	48.03	68.20	20.17
	10460.750	V	X	PK	46.51	11.07	N/A	-9.54	48.04	68.20	20.16
54 (5270MHz)	10540.710	H	X	PK	45.87	11.28	N/A	-9.54	47.61	68.20	20.59
	10538.510	V	X	PK	45.83	11.28	N/A	-9.54	47.57	68.20	20.63
62 (5310MHz)	5350.000	H	X	PK	49.19	9.12	N/A	N/A	58.31	74.00	15.69
	5350.000	H	X	AV	38.49	9.12	3.02	N/A	50.63	54.00	3.37
102 (5510MHz)	5459.912	H	X	PK	45.29	9.25	N/A	N/A	54.54	74.00	19.46
	5458.768	H	X	AV	35.01	9.25	3.02	N/A	47.28	54.00	6.72
110 (5550MHz)	11101.450	H	X	PK	44.24	12.53	N/A	-9.54	47.23	74.00	26.77
	11100.330	H	X	AV	34.12	12.53	3.02	-9.54	40.13	54.00	13.87
134 (5670MHz)	11341.110	V	X	PK	45.02	12.93	N/A	-9.54	48.41	74.00	25.59
	11338.870	V	X	AV	34.46	12.93	3.02	-9.54	40.87	54.00	13.13
151 (5755MHz)	11510.548	H	X	PK	45.13	13.20	N/A	-9.54	48.79	74.00	25.21
	11511.283	H	X	AV	33.61	13.20	3.02	-9.54	40.29	54.00	13.71
159 (5795MHz)	11588.781	H	X	PK	44.20	13.29	N/A	-9.54	47.95	74.00	26.05
	11588.256	H	X	AV	33.36	13.29	3.02	-9.54	40.13	54.00	13.87

Note.

1. No other spurious and harmonic emissions were found greater than listed emissions on above table.
2. Information of Distance Factor.
   For finding emissions, the test distance might be reduced from 3m to 1m.
   In this case, the distance factor(-9.54dB) is applied to the result.
   - Calculation of distance factor = 20log(applied distance / required distance) = 20log(1m / 3m) = -9.54dB
   When distance factor is “N/A”, the distance is 3m and distance factor is not applied.
3. The limit is converted to field strength.
   E[dBuV/m] = EIRP[dBm] + 95.2 dB = -27dBm + 95.2 = 68.2dBuV/m
4. Sample Calculation.
   Margin = Limit – Result / Result = Reading + T.F+ DCCF + DCF / T.F = AF + CL – AG
   Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain,
   DCCF = Duty Cycle Correction Factor, DCF = Distance Correction Factor
5. If peak measurement satisfy the average limit, then average measurement are not required.

▣ Measurement Data:

Radiated Spurious Emissions(9kHz ~ 40GHz) : *M/N: SMT-i6011 & 802.11a & Adaptor = DC 12V*

Tested Channel	Frequency (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	T.F (dB/m)	DCCF (dB)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
36 (5180MHz)	5105.040	H	X	PK	50.84	8.90	N/A	N/A	59.74	74.00	14.26
	5104.640	H	X	AV	40.10	8.90	1.94	N/A	50.94	54.00	3.06
40 (5200MHz)	5124.340	H	X	PK	49.38	9.04	N/A	N/A	58.42	74.00	15.58
	5124.440	H	X	AV	40.28	9.04	1.94	N/A	51.26	54.00	2.74
48 (5240MHz)	10480.750	H	X	PK	43.65	11.12	N/A	-9.54	45.23	68.20	22.97
	10481.650	V	X	PK	42.91	11.12	N/A	-9.54	44.49	68.20	23.71
52 (5260MHz)	10521.810	H	X	PK	43.74	11.23	N/A	-9.54	45.43	68.20	22.77
	10519.840	V	X	PK	43.57	11.23	N/A	-9.54	45.26	68.20	22.94
60 (5300MHz)	5374.557	H	X	PK	50.41	9.14	N/A	N/A	59.55	74.00	14.45
	5375.833	H	X	AV	39.77	9.14	1.94	N/A	50.85	54.00	3.15
64 (5320MHz)	5394.845	H	X	PK	50.48	9.15	N/A	N/A	59.63	74.00	14.37
	5395.725	H	X	AV	39.81	9.15	1.94	N/A	50.90	54.00	3.10
100 (5500MHz)	5424.507	H	X	PK	49.65	9.17	N/A	N/A	58.82	74.00	15.18
	5425.695	H	X	AV	38.82	9.17	1.94	N/A	49.93	54.00	4.07
116 (5580MHz)	11159.710	H	X	PK	43.63	12.63	N/A	-9.54	46.72	74.00	27.28
	11159.830	H	X	AV	33.76	12.63	1.94	-9.54	38.79	54.00	15.21
140 (5700MHz)	11401.670	V	X	PK	44.08	13.03	N/A	-9.54	47.57	74.00	26.43
	11400.110	V	X	AV	34.37	13.03	1.94	-9.54	39.80	54.00	14.20
149 (5745MHz)	11489.735	H	X	PK	44.59	13.17	N/A	-9.54	48.22	74.00	25.78
	11490.405	H	X	AV	34.21	13.17	1.94	-9.54	39.78	54.00	14.22
157 (5785MHz)	11569.255	H	X	PK	44.81	13.27	N/A	-9.54	48.54	74.00	25.46
	11569.825	H	X	AV	33.82	13.27	1.94	-9.54	39.49	54.00	14.51
165 (5825MHz)	11649.955	V	X	PK	44.86	13.36	N/A	-9.54	48.68	74.00	25.32
	11649.385	V	X	AV	34.04	13.36	1.94	-9.54	39.80	54.00	14.20

Note.

1. No other spurious and harmonic emissions were found greater than listed emissions on above table.
2. Information of Distance Factor.
   For finding emissions, the test distance might be reduced from 3m to 1m.
   In this case, the distance factor(-9.54dB) is applied to the result.
   - Calculation of distance factor = 20log(applied distance / required distance) = 20log(1m / 3m) = -9.54dB
   When distance factor is “N/A”, the distance is 3m and distance factor is not applied.
3. The limit is converted to field strength.
   E[dBuV/m] = EIRP[dBm] + 95.2 dB = -27dBm + 95.2 = 68.2dBuV/m
4. Sample Calculation.
   Margin = Limit – Result / Result = Reading + T.F+ DCCF + DCF / T.F = AF + CL – AG
   Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain,
   DCCF = Duty Cycle Correction Factor, DCF = Distance Correction Factor
5. If peak measurement satisfy the average limit, then average measurement are not required.

▣ Measurement Data:

Radiated Spurious Emissions(9kHz ~ 40GHz) : *M/N: SMT-i6011 & 802.11n(HT20) & Adaptor = DC 12V*

Tested Channel	Frequency (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	T.F (dB/m)	DCCF (dB)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
36 (5180MHz)	5104.890	H	X	PK	50.24	8.89	N/A	N/A	59.13	74.00	14.87
	5105.590	H	X	AV	39.37	8.89	2.08	N/A	50.34	54.00	3.66
40 (5200MHz)	5125.100	H	X	PK	50.05	9.04	N/A	N/A	59.09	74.00	14.91
	5126.000	H	X	AV	39.97	9.04	2.08	N/A	51.09	54.00	2.91
48 (5240MHz)	10479.130	H	X	PK	44.57	11.12	N/A	-9.54	46.15	68.20	22.05
	10480.250	V	X	PK	44.76	11.12	N/A	-9.54	46.34	68.20	21.86
52 (5260MHz)	10519.870	H	X	PK	45.83	11.23	N/A	-9.54	47.52	68.20	20.68
	10519.070	V	X	PK	45.47	11.23	N/A	-9.54	47.16	68.20	21.04
60 (5300MHz)	5374.535	H	X	PK	49.69	9.14	N/A	N/A	58.83	74.00	15.17
	5374.051	H	X	AV	38.99	9.14	2.08	N/A	50.21	54.00	3.79
64 (5320MHz)	5395.483	H	X	PK	49.97	9.15	N/A	N/A	59.12	74.00	14.88
	5395.681	H	X	AV	39.62	9.15	2.08	N/A	50.85	54.00	3.15
100 (5500MHz)	5424.419	H	X	PK	49.34	9.17	N/A	N/A	58.51	74.00	15.49
	5425.013	H	X	AV	39.88	9.17	2.08	N/A	51.13	54.00	2.87
116 (5580MHz)	11160.290	V	X	PK	43.47	12.63	N/A	-9.54	46.56	74.00	27.44
	11160.070	V	X	AV	33.80	12.63	2.08	-9.54	38.97	54.00	15.03
140 (5700MHz)	11399.770	H	X	PK	44.48	13.03	N/A	-9.54	47.97	74.00	26.03
	11399.950	H	X	AV	34.00	13.03	2.08	-9.54	39.57	54.00	14.43
149 (5745MHz)	11489.795	H	X	PK	44.59	13.17	N/A	-9.54	48.22	74.00	25.78
	11489.915	H	X	AV	34.51	13.17	2.08	-9.54	40.22	54.00	13.78
157 (5785MHz)	11571.045	H	X	PK	44.66	13.27	N/A	-9.54	48.39	74.00	25.61
	11569.485	H	X	AV	33.76	13.27	2.08	-9.54	39.57	54.00	14.43
165 (5825MHz)	11650.615	H	X	PK	45.59	13.36	N/A	-9.54	49.41	74.00	24.59
	11649.815	H	X	AV	34.16	13.36	2.08	-9.54	40.06	54.00	13.94

Note.

1. No other spurious and harmonic emissions were found greater than listed emissions on above table.
2. Information of Distance Factor.
   For finding emissions, the test distance might be reduced from 3m to 1m.
   In this case, the distance factor(-9.54dB) is applied to the result.
   - Calculation of distance factor = 20log(applied distance / required distance) = 20log(1m / 3m) = -9.54dB
   When distance factor is “N/A”, the distance is 3m and distance factor is not applied.
3. The limit is converted to field strength.
   E[dBuV/m] = EIRP[dBm] + 95.2 dB = -27dBm + 95.2 = 68.2dBuV/m
4. Sample Calculation.
   Margin = Limit – Result / Result = Reading + T.F+ DCCF + DCF / T.F = AF + CL – AG
   Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain,
   DCCF = Duty Cycle Correction Factor, DCF = Distance Correction Factor
5. If peak measurement satisfy the average limit, then average measurement are not required.

▣ **Measurement Data:**

Radiated Spurious Emissions(9kHz ~ 40GHz) : *M/N: SMT-i6011 & 802.11n(HT40) & Adaptor = DC 12V*

Tested Channel	Frequency (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	T.F (dB/m)	DCCF (dB)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
38 (5190MHz)	5148.500	H	X	PK	51.12	9.22	N/A	N/A	60.34	74.00	13.66
	5149.750	H	X	AV	39.72	9.23	3.02	N/A	51.97	54.00	2.03
46 (5230MHz)	10461.210	H	X	PK	44.90	11.06	N/A	-9.54	46.42	68.20	21.78
	10461.210	H	X	PK	44.90	11.06	N/A	-9.54	46.42	68.20	21.78
54 (5270MHz)	10538.410	H	X	PK	45.31	11.27	N/A	-9.54	47.04	68.20	21.16
	10538.370	V	X	PK	45.04	11.27	N/A	-9.54	46.77	68.20	21.43
62 (5310MHz)	5350.594	H	X	PK	49.36	9.12	N/A	N/A	58.48	74.00	15.52
	5350.264	H	X	AV	38.47	9.12	3.02	N/A	50.61	54.00	3.39
102 (5510MHz)	5435.311	H	X	PK	47.90	9.18	N/A	N/A	57.08	74.00	16.92
	5434.717	H	X	AV	36.68	9.18	3.02	N/A	48.88	54.00	5.12
110 (5550MHz)	11101.590	V	X	PK	43.64	12.53	N/A	-9.54	46.63	74.00	27.37
	11100.050	V	X	AV	33.82	12.53	3.02	-9.54	39.83	54.00	14.17
134 (5670MHz)	11341.010	H	X	PK	44.22	12.93	N/A	-9.54	47.61	74.00	26.39
	11339.970	H	X	AV	34.13	12.93	3.02	-9.54	40.54	54.00	13.46
151 (5755MHz)	11508.567	H	X	PK	44.42	13.20	N/A	-9.54	48.08	74.00	25.92
	11508.897	H	X	AV	33.50	13.20	3.02	-9.54	40.18	54.00	13.82
159 (5795MHz)	11589.332	H	X	PK	43.59	13.29	N/A	-9.54	47.34	74.00	26.66
	11589.152	H	X	AV	33.21	13.29	3.02	-9.54	39.98	54.00	14.02

Note.

1. No other spurious and harmonic emissions were found greater than listed emissions on above table.
2. Information of Distance Factor.
   For finding emissions, the test distance might be reduced from 3m to 1m.
   In this case, the distance factor(-9.54dB) is applied to the result.
   - Calculation of distance factor = 20log(applied distance / required distance) = 20log(1m / 3m) = -9.54dB
   When distance factor is “N/A”, the distance is 3m and distance factor is not applied.
3. The limit is converted to field strength.
   E[dBuV/m] = EIRP[dBm] + 95.2 dB = -27dBm + 95.2 = 68.2dBuV/m
4. Sample Calculation.
   Margin = Limit – Result / Result = Reading + T.F+ DCCF + DCF / T.F = AF + CL – AG
   Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain,
   DCCF = Duty Cycle Correction Factor, DCF = Distance Correction Factor
5. If peak measurement satisfy the average limit, then average measurement are not required.

▣ Measurement Data:

Radiated Spurious Emissions(9kHz ~ 40GHz) : *M/N: SMT-i6011 & 802.11a & PoE = DC 48V*

Tested Channel	Frequency (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	T.F (dB/m)	DCCF (dB)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
36 (5180MHz)	5106.590	H	X	PK	50.86	8.90	N/A	N/A	59.76	74.00	14.24
	5103.890	H	X	AV	40.16	8.90	1.94	N/A	51.00	54.00	3.00
40 (5200MHz)	5124.790	H	X	PK	49.79	9.04	N/A	N/A	58.83	74.00	15.17
	5125.650	H	X	AV	39.47	9.04	1.94	N/A	50.45	54.00	3.55
48 (5240MHz)	10479.970	H	X	PK	44.09	11.12	N/A	-9.54	45.67	68.20	22.53
	10480.690	V	X	PK	43.29	11.12	N/A	-9.54	44.87	68.20	23.33
52 (5260MHz)	10519.956	H	X	PK	42.78	11.23	N/A	-9.54	44.47	68.20	23.73
	10520.730	V	X	PK	43.69	11.23	N/A	-9.54	45.38	68.20	22.82
60 (5300MHz)	5375.129	H	X	PK	49.83	9.14	N/A	N/A	58.97	74.00	15.03
	5375.767	H	X	AV	39.79	9.14	1.94	N/A	50.87	54.00	3.13
64 (5320MHz)	5395.593	H	X	PK	50.59	9.15	N/A	N/A	59.74	74.00	14.26
	5395.483	H	X	AV	39.79	9.15	1.94	N/A	50.88	54.00	3.12
100 (5500MHz)	5426.245	H	X	PK	51.16	9.17	N/A	N/A	60.33	74.00	13.67
	5425.871	H	X	AV	38.92	9.17	1.94	N/A	50.03	54.00	3.97
116 (5580MHz)	11159.810	V	X	PK	42.86	12.63	N/A	-9.54	45.95	74.00	28.05
	11160.010	V	X	AV	33.94	12.63	1.94	-9.54	38.97	54.00	15.03
140 (5700MHz)	11399.550	H	X	PK	44.24	13.03	N/A	-9.54	47.73	74.00	26.27
	11399.950	H	X	AV	34.18	13.03	1.94	-9.54	39.61	54.00	14.39
149 (5745MHz)	11489.765	H	X	PK	44.93	13.17	N/A	-9.54	48.56	74.00	25.44
	11489.995	H	X	AV	34.75	13.17	1.94	-9.54	40.32	54.00	13.68
157 (5785MHz)	11570.345	H	X	PK	44.32	13.27	N/A	-9.54	48.05	74.00	25.95
	11570.235	H	X	AV	33.61	13.27	1.94	-9.54	39.28	54.00	14.72
165 (5825MHz)	11649.815	V	X	PK	44.72	13.36	N/A	-9.54	48.54	74.00	25.46
	11649.405	V	X	AV	33.92	13.36	1.94	-9.54	39.68	54.00	14.32

Note.

1. No other spurious and harmonic emissions were found greater than listed emissions on above table.
2. Information of Distance Factor.
   For finding emissions, the test distance might be reduced from 3m to 1m.
   In this case, the distance factor(-9.54dB) is applied to the result.
   - Calculation of distance factor = 20log(applied distance / required distance) = 20log(1m / 3m) = -9.54dB
   When distance factor is “N/A”, the distance is 3m and distance factor is not applied.
3. The limit is converted to field strength.
   E[dBuV/m] = EIRP[dBm] + 95.2 dB = -27dBm + 95.2 = 68.2dBuV/m
4. Sample Calculation.
   Margin = Limit – Result / Result = Reading + T.F+ DCCF + DCF / T.F = AF + CL – AG
   Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain,
   DCCF = Duty Cycle Correction Factor, DCF = Distance Correction Factor
5. If peak measurement satisfy the average limit, then average measurement are not required.

▣ Measurement Data:

Radiated Spurious Emissions(9kHz ~ 40GHz) : *M/N: SMT-i6011 & 802.11n(HT20) & PoE = DC 48V*

Tested Channel	Frequency (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	T.F (dB/m)	DCCF (dB)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
36 (5180MHz)	5104.090	H	X	PK	49.52	9.06	N/A	N/A	58.58	74.00	15.42
	5104.590	H	X	AV	40.32	9.06	2.08	N/A	51.46	54.00	2.54
40 (5200MHz)	5124.140	H	X	PK	49.57	9.04	N/A	N/A	58.61	74.00	15.39
	5125.950	H	X	AV	40.07	9.04	2.08	N/A	51.19	54.00	2.81
48 (5240MHz)	10480.330	H	X	PK	45.65	11.12	N/A	-9.54	47.23	68.20	20.97
	10479.170	V	X	PK	45.28	11.12	N/A	-9.54	46.86	68.20	21.34
52 (5260MHz)	10519.910	H	X	PK	45.39	11.23	N/A	-9.54	47.08	68.20	21.12
	10519.750	V	X	PK	44.94	11.23	N/A	-9.54	46.63	68.20	21.57
60 (5300MHz)	5376.493	H	X	PK	49.12	9.14	N/A	N/A	58.26	74.00	15.74
	5376.185	H	X	AV	39.25	9.14	2.08	N/A	50.47	54.00	3.53
64 (5320MHz)	5394.867	H	X	PK	50.08	9.15	N/A	N/A	59.23	74.00	14.77
	5395.703	H	X	AV	39.63	9.15	2.08	N/A	50.86	54.00	3.14
100 (5500MHz)	5426.487	H	X	PK	49.88	9.17	N/A	N/A	59.05	74.00	14.95
	5425.145	H	X	AV	39.25	9.17	2.08	N/A	50.50	54.00	3.50
116 (5580MHz)	11160.160	H	X	PK	43.02	12.63	N/A	-9.54	46.11	74.00	27.89
	11159.990	H	X	AV	33.77	12.63	2.08	-9.54	38.94	54.00	15.06
140 (5700MHz)	11401.770	V	X	PK	45.00	13.03	N/A	-9.54	48.49	74.00	25.51
	11400.450	V	X	AV	34.17	13.03	2.08	-9.54	39.74	54.00	14.26
149 (5745MHz)	11490.845	H	X	PK	46.22	13.17	N/A	-9.54	49.85	74.00	24.15
	11489.825	H	X	AV	34.36	13.17	2.08	-9.54	40.07	54.00	13.93
157 (5785MHz)	11570.135	H	X	PK	44.73	13.27	N/A	-9.54	48.46	74.00	25.54
	11569.525	H	X	AV	33.82	13.27	2.08	-9.54	39.63	54.00	14.37
165 (5825MHz)	11650.025	H	X	PK	44.66	13.36	N/A	-9.54	48.48	74.00	25.52
	11649.825	H	X	AV	34.12	13.36	2.08	-9.54	40.02	54.00	13.98

Note.

1. No other spurious and harmonic emissions were found greater than listed emissions on above table.
2. Information of Distance Factor.
   For finding emissions, the test distance might be reduced from 3m to 1m.
   In this case, the distance factor(-9.54dB) is applied to the result.
   - Calculation of distance factor = 20log(applied distance / required distance) = 20log(1m / 3m) = -9.54dB
   When distance factor is “N/A”, the distance is 3m and distance factor is not applied.
3. The limit is converted to field strength.
   E[dBuV/m] = EIRP[dBm] + 95.2 dB = -27dBm + 95.2 = 68.2dBuV/m
4. Sample Calculation.
   Margin = Limit – Result / Result = Reading + T.F+ DCCF + DCF / T.F = AF + CL – AG
   Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain,
   DCCF = Duty Cycle Correction Factor, DCF = Distance Correction Factor
5. If peak measurement satisfy the average limit, then average measurement are not required.

▣ **Measurement Data:**

Radiated Spurious Emissions(9kHz ~ 40GHz) : *M/N: SMT-i6011 & 802.11n(HT40) & PoE = DC 48V*

Tested Channel	Frequency (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	T.F (dB/m)	DCCF (dB)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
38 (5190MHz)	5149.200	H	X	PK	53.61	9.23	N/A	N/A	62.84	74.00	11.16
	5149.900	H	X	AV	40.63	9.23	3.02	N/A	52.88	54.00	1.12
46 (5230MHz)	10461.110	H	X	PK	44.68	11.07	N/A	-9.54	46.21	68.20	21.99
	10459.770	V	X	PK	45.17	11.07	N/A	-9.54	46.70	68.20	21.50
54 (5270MHz)	10539.650	H	X	PK	45.02	11.28	N/A	-9.54	46.76	68.20	21.44
	10541.090	V	X	PK	44.44	11.28	N/A	-9.54	46.18	68.20	22.02
62 (5310MHz)	5350.242	H	X	PK	49.40	9.12	N/A	N/A	58.52	74.00	15.48
	5350.110	H	X	AV	38.90	9.12	3.02	N/A	51.04	54.00	2.96
102 (5510MHz)	5436.697	H	X	PK	47.84	9.18	N/A	N/A	57.02	74.00	16.98
	5435.135	H	X	AV	36.59	9.18	3.02	N/A	48.79	54.00	5.21
110 (5550MHz)	11099.610	V	X	PK	43.86	12.53	N/A	-9.54	46.85	74.00	27.15
	11100.130	V	X	AV	33.82	12.53	3.02	-9.54	39.83	54.00	14.17
134 (5670MHz)	11340.110	V	X	PK	43.74	12.93	N/A	-9.54	47.13	74.00	26.87
	11340.170	V	X	AV	34.17	12.93	3.02	-9.54	40.58	54.00	13.42
151 (5755MHz)	11511.058	H	X	PK	44.58	13.20	N/A	-9.54	48.24	74.00	25.76
	11508.987	H	X	AV	33.52	13.20	3.02	-9.54	40.20	54.00	13.80
159 (5795MHz)	11591.253	H	X	PK	44.16	13.29	N/A	-9.54	47.91	74.00	26.09
	11590.638	H	X	AV	33.26	13.29	3.02	-9.54	40.03	54.00	13.97

Note.

1. No other spurious and harmonic emissions were found greater than listed emissions on above table.
2. Information of Distance Factor.
   For finding emissions, the test distance might be reduced from 3m to 1m.
   In this case, the distance factor(-9.54dB) is applied to the result.
   - Calculation of distance factor = 20log(applied distance / required distance) = 20log(1m / 3m) = -9.54dB
   When distance factor is “N/A”, the distance is 3m and distance factor is not applied.
3. The limit is converted to field strength.
   E[dBuV/m] = EIRP[dBm] + 95.2 dB = -27dBm + 95.2 = 68.2dBuV/m
4. Sample Calculation.
   Margin = Limit – Result / Result = Reading + T.F+ DCCF + DCF / T.F = AF + CL – AG
   Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain,
   DCCF = Duty Cycle Correction Factor, DCF = Distance Correction Factor
5. If peak measurement satisfy the average limit, then average measurement are not required.

8.7 AC Conducted Emissions

▣ **TEST PROCEDURE:**

The conducted emissions are measured in the shielded room with a spectrum analyzer in peak hold. Emissions closest to the limit are measured in the quasi-peak mode (QP) and average mode (AV) with the tuned receiver using a bandwidth of 9 kHz. The emissions are maximized further by cable manipulation and Exerciser operation. The highest emissions relative to the limit are listed.

▣ **Measurement Data: Comply**

Note 1: See next pages for actual measured spectrum plots and data.

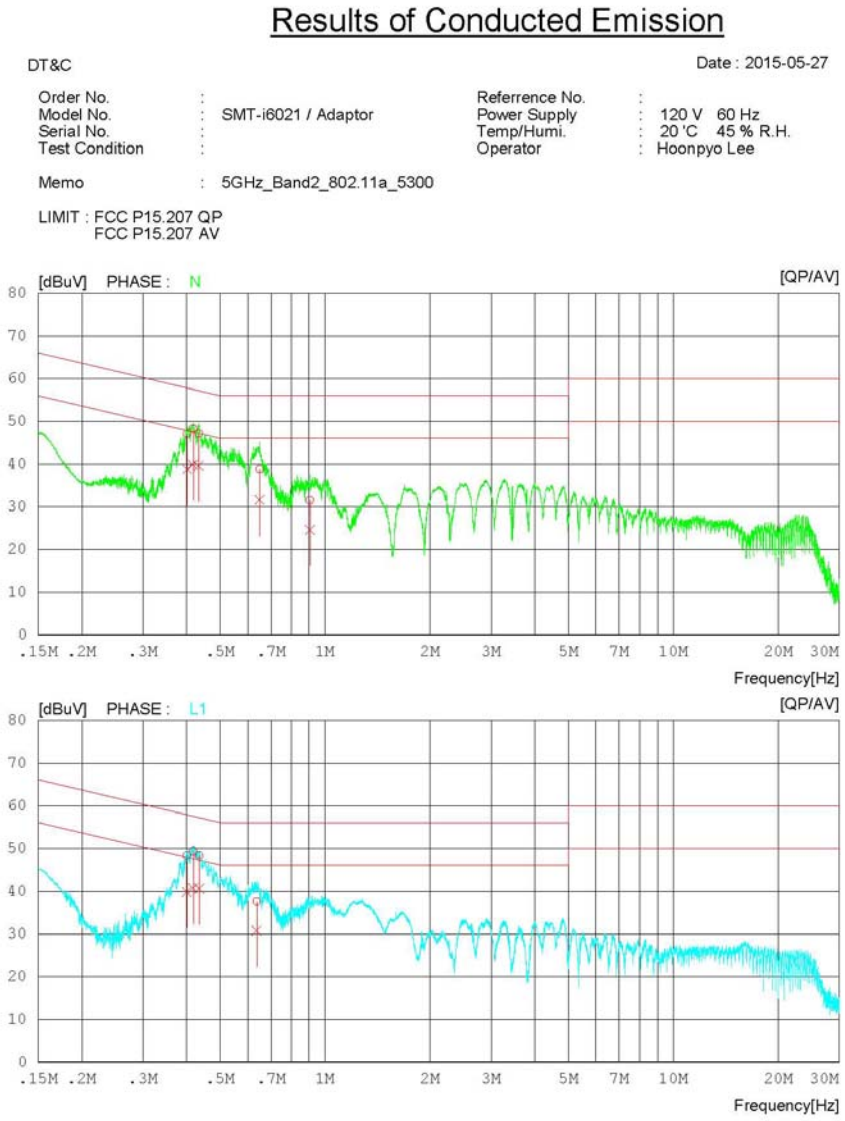
▣ **Minimum Standard: FCC Part 15.207(a)**

Frequency Range (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15 ~ 0.5	66 to 56 *	56 to 46 *
0.5 ~ 5	56	46
5 ~ 30	60	50

* Decreases with the logarithm of the frequency

AC Line Conducted Emissions (Graph)

Test Mode: Band II & 802.11a & 5300MHz & Adaptor mode(DC 12V)



AC Line Conducted Emissions (Data List)

Test Mode: Band II & 802.11a & 5300MHz & Adaptor mode(DC 12V)

Results of Conducted Emission

DT&C Date : 2015-05-27

Order No.	:	Referrence No.	:
Model No.	: SMT-i6021 / Adaptor	Power Supply	: 120 V 60 Hz
Serial No.	:	Temp/Humi.	: 20 'C 45 % R.H.
Test Condition	:	Operator	: Hoonpyo Lee

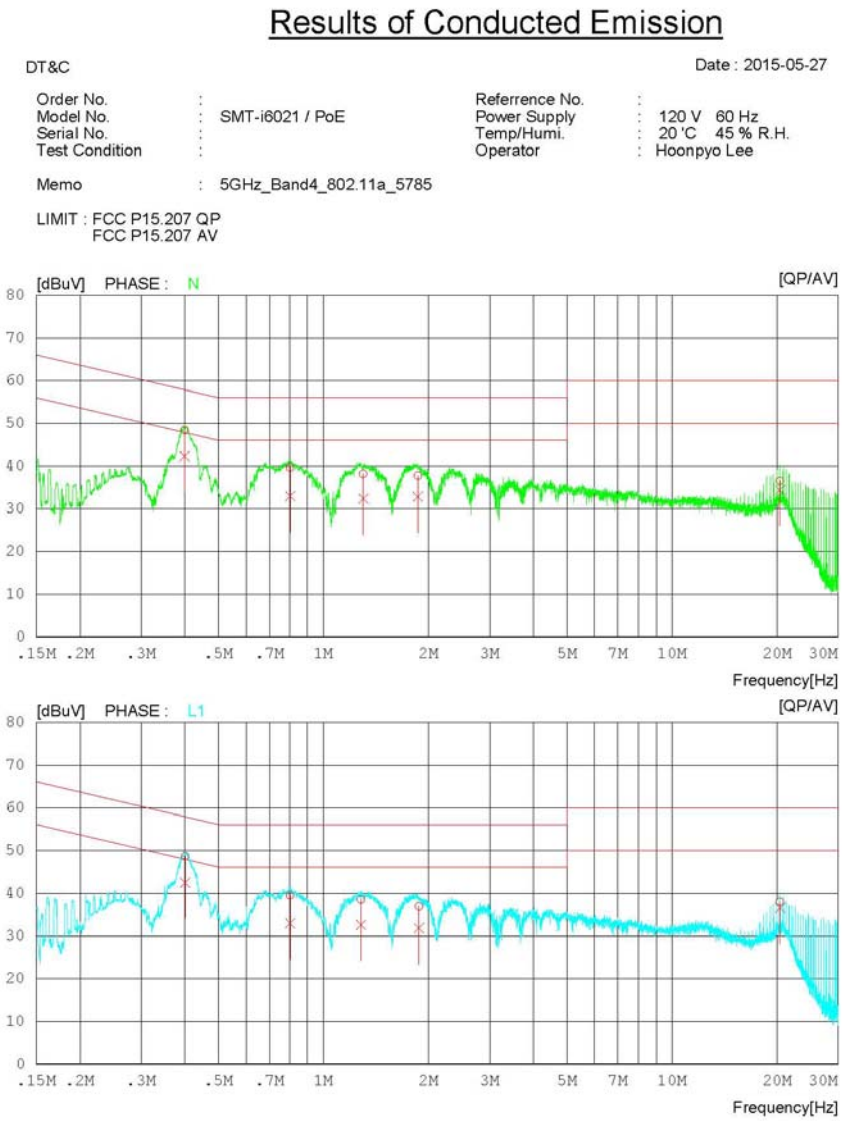
Memo : 5GHz_Band2_802.11a_5300

LIMIT : FCC P15.207 QP
FCC P15.207 AV

NO	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV	PHASE
	[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	
1	0.40195	46.1	37.8	0.9	47.0	38.7	57.8	47.8	10.8	9.1	N
2	0.41772	47.3	38.9	0.9	48.2	39.8	57.5	47.5	9.3	7.7	N
3	0.43362	46.2	38.7	0.9	47.1	39.6	57.2	47.2	10.1	7.6	N
4	0.64846	38.1	30.8	0.7	38.8	31.5	56.0	46.0	17.2	14.5	N
5	0.90490	30.9	24.1	0.5	31.4	24.6	56.0	46.0	24.6	21.4	N
6	0.40067	47.3	38.9	0.9	48.2	39.8	57.8	47.8	9.6	8.0	L1
7	0.41760	48.3	39.9	0.9	49.2	40.8	57.5	47.5	8.3	6.7	L1
8	0.43516	47.4	39.7	0.9	48.3	40.6	57.2	47.2	8.9	6.6	L1
9	0.63620	36.8	30.0	0.7	37.5	30.7	56.0	46.0	18.5	15.3	L1

AC Line Conducted Emissions (Graph)

Test Mode: Band IV & 802.11a & 5785MHz & PoE mode(DC 48V)



AC Line Conducted Emissions (Data List)

Test Mode: Band IV & 802.11a & 5785MHz & PoE mode(DC 48V)

Results of Conducted Emission

DT&C Date : 2015-05-27

Order No.	:	Referrence No.	:
Model No.	: SMT-i6021 / PoE	Power Supply	: 120 V 60 Hz
Serial No.	:	Temp/Humi.	: 20 'C 45 % R.H.
Test Condition	:	Operator	: Hoonpyo Lee

Memo : 5GHz_Band4_802.11a_5785

LIMIT : FCC P15.207 QP
FCC P15.207 AV

NO	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV	PHASE
	[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	
1	0.39946	47.4	41.4	0.9	48.3	42.3	57.9	47.9	9.6	5.6	N
2	0.80281	39.0	32.3	0.6	39.6	32.9	56.0	46.0	16.4	13.1	N
3	1.30120	37.6	31.8	0.5	38.1	32.3	56.0	46.0	17.9	13.7	N
4	1.86660	37.2	32.3	0.5	37.7	32.8	56.0	46.0	18.3	13.2	N
5	20.41280	35.7	33.7	0.7	36.4	34.4	60.0	50.0	23.6	15.6	N
6	0.40110	47.6	41.6	0.9	48.5	42.5	57.8	47.8	9.3	5.3	L1
7	0.80229	38.9	32.3	0.6	39.5	32.9	56.0	46.0	16.5	13.1	L1
8	1.28340	37.9	32.1	0.5	38.4	32.6	56.0	46.0	17.6	13.4	L1
9	1.87980	36.3	31.2	0.5	36.8	31.7	56.0	46.0	19.2	14.3	L1
10	20.41360	37.2	35.7	0.7	37.9	36.4	60.0	50.0	22.1	13.6	L1

8.8 Occupied Bandwidth

▣ **Test Requirements**

When the occupied bandwidth limit is not stated in the applicable RSS or reference measurement method, the transmitted signal bandwidth shall be reported as the 99% emission bandwidth, as calculated or measured.

▣ **Test Configuration**

Refer to the APPENDIX I.

▣ **Test Procedure :**

- Procedure: (RSS-Gen Issue 4)
• The transmitter shall be operated at its maximum carrier power measured under normal test conditions.
• The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts.
• The resolution bandwidth (RBW) shall be in the range of 1% to 5% of the occupied bandwidth (OBW) and video bandwidth (VBW) shall be approximately 3x RBW.

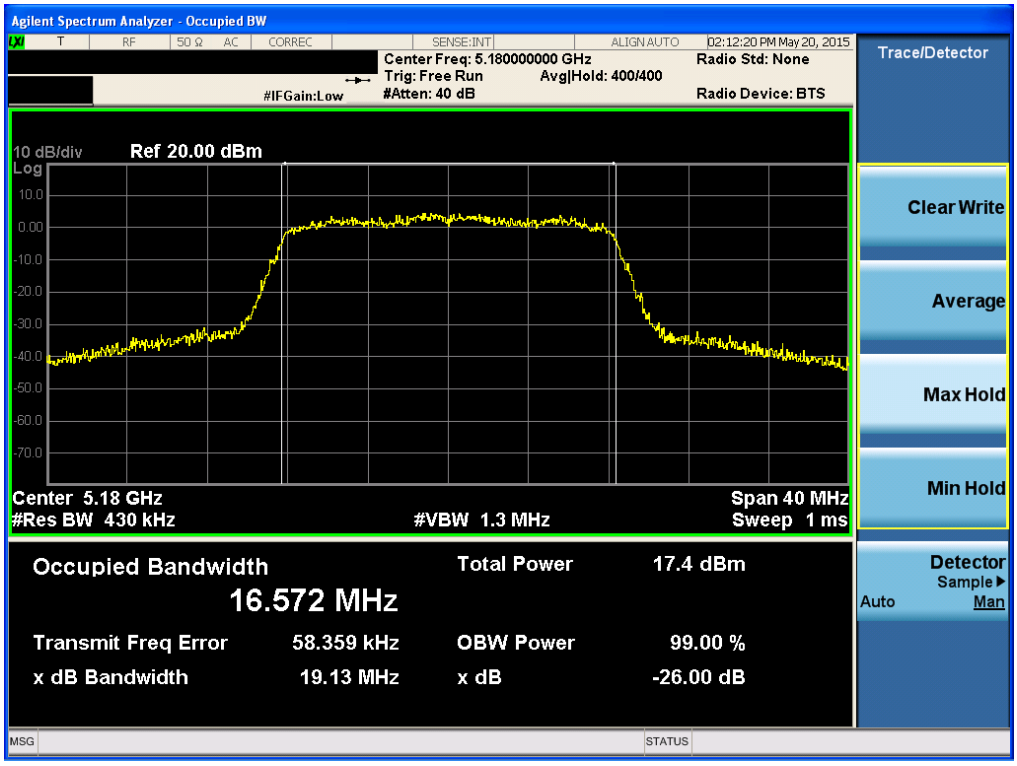
▣ **Test Result : Comply**

Mode	Bands	Channel	Frequency [MHz]	Test Result [MHz]
802.11a	Band I	36	5180	16.572
		40	5200	16.590
		48	5240	16.639
	Band II	52	5260	16.553
		60	5300	16.538
		64	5320	16.571
	Band III	100	5500	16.556
		116	5580	16.590
		140	5700	16.570
	Band IV	149	5745	16.552
		157	5785	16.555
		165	5825	16.547
802.11n HT20	Band I	36	5180	17.619
		40	5200	17.635
		48	5240	17.624
	Band II	52	5260	17.607
		60	5300	17.619
		64	5320	17.583
	Band III	100	5500	17.603
		116	5580	17.618
		140	5700	17.645
	Band IV	149	5745	17.624
		157	5785	17.623
		165	5825	17.599
802.11n HT40	Band I	38	5190	36.057
		46	5230	36.014
	Band II	54	5270	35.998
		62	5310	36.042
	Band III	102	5510	36.033
		110	5550	36.027
		134	5670	36.049
	Band IV	151	5755	36.121
		159	5795	36.206

▣ RESULT PLOTS

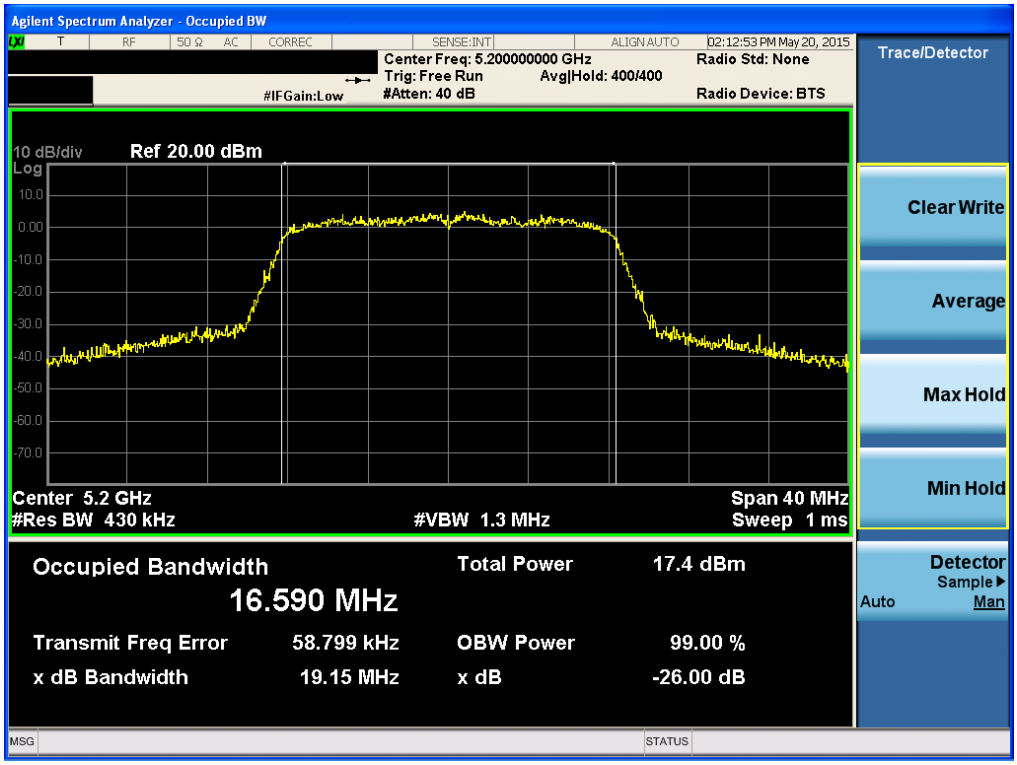
Occupied Bandwidth

Test Mode: 802.11a & Ch.36

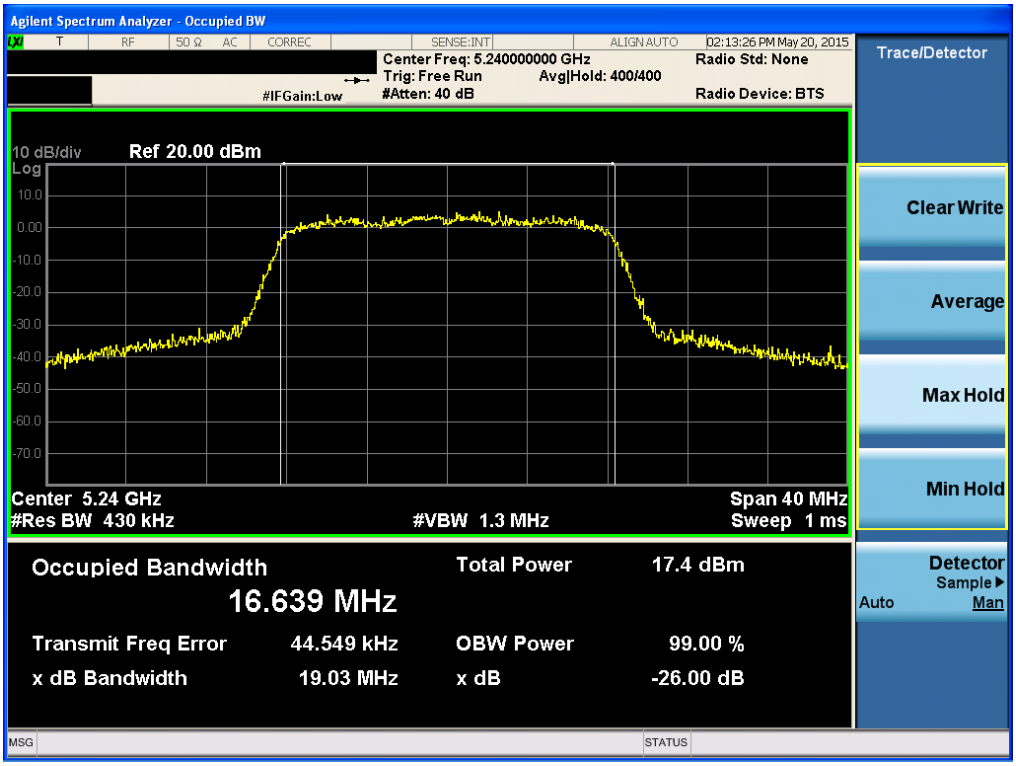


Occupied Bandwidth

Test Mode: 802.11a & Ch.40

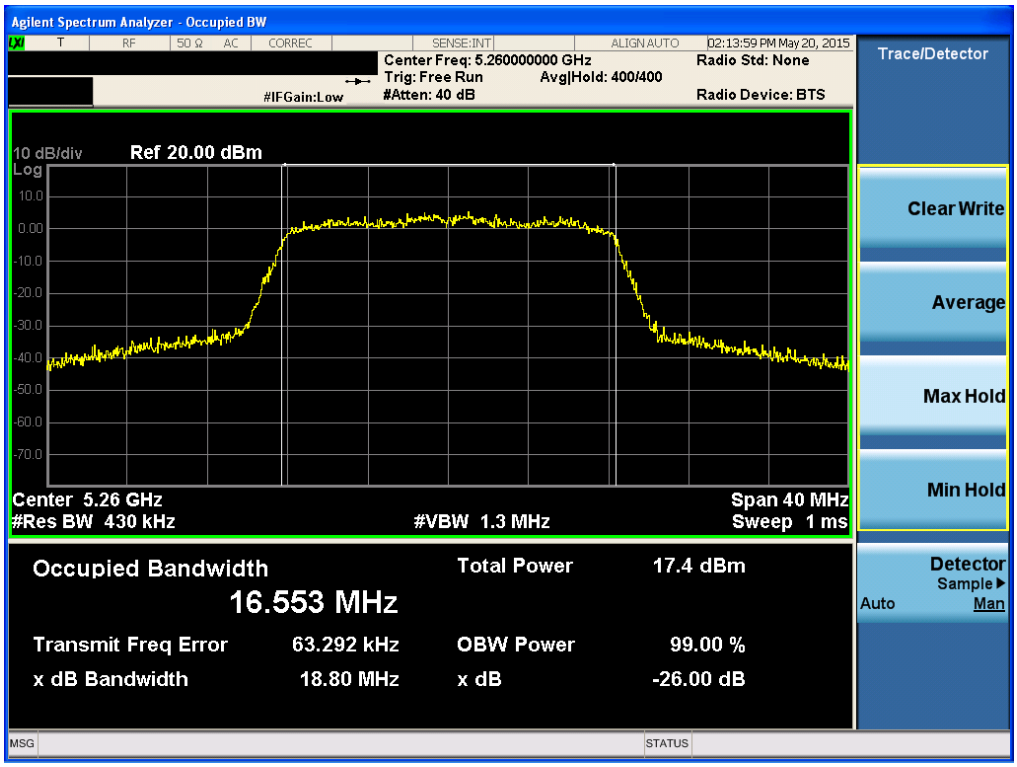


Occupied Bandwidth Test Mode: 802.11a & Ch.48



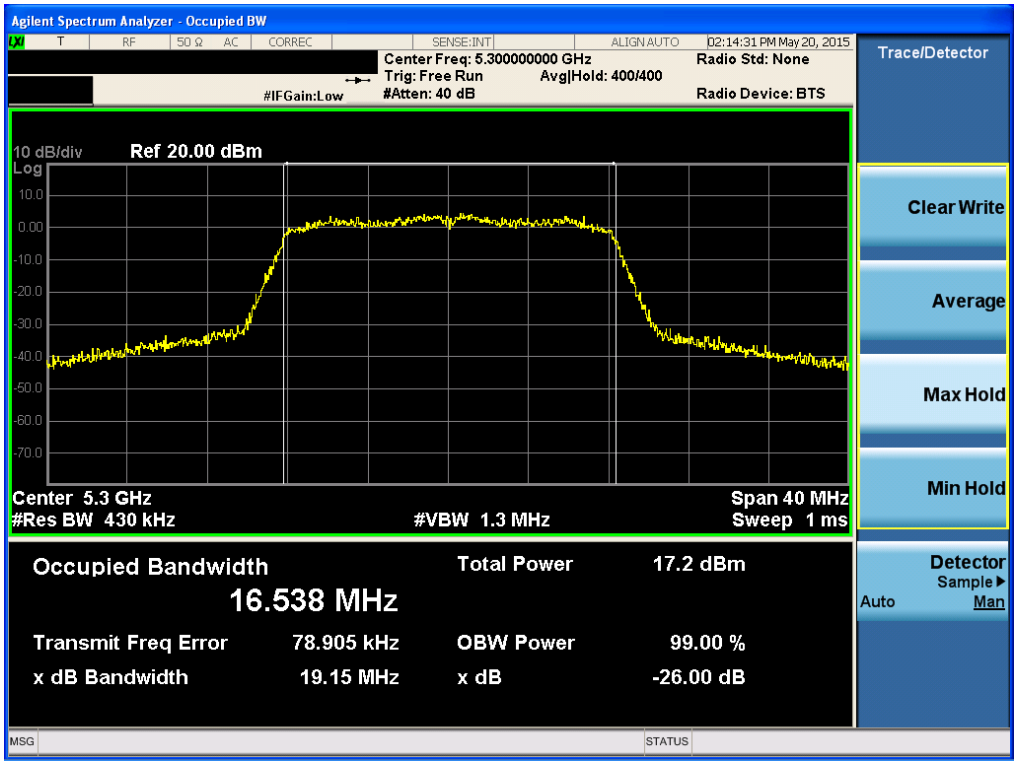
Occupied Bandwidth

Test Mode: 802.11a & Ch.52

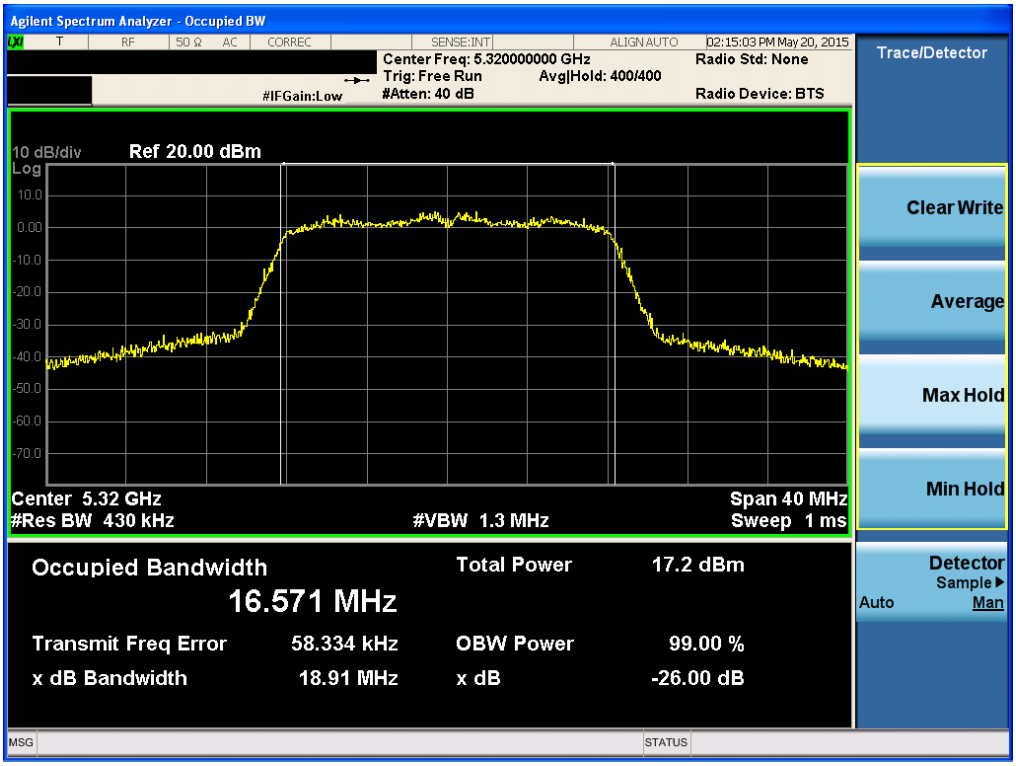


Occupied Bandwidth

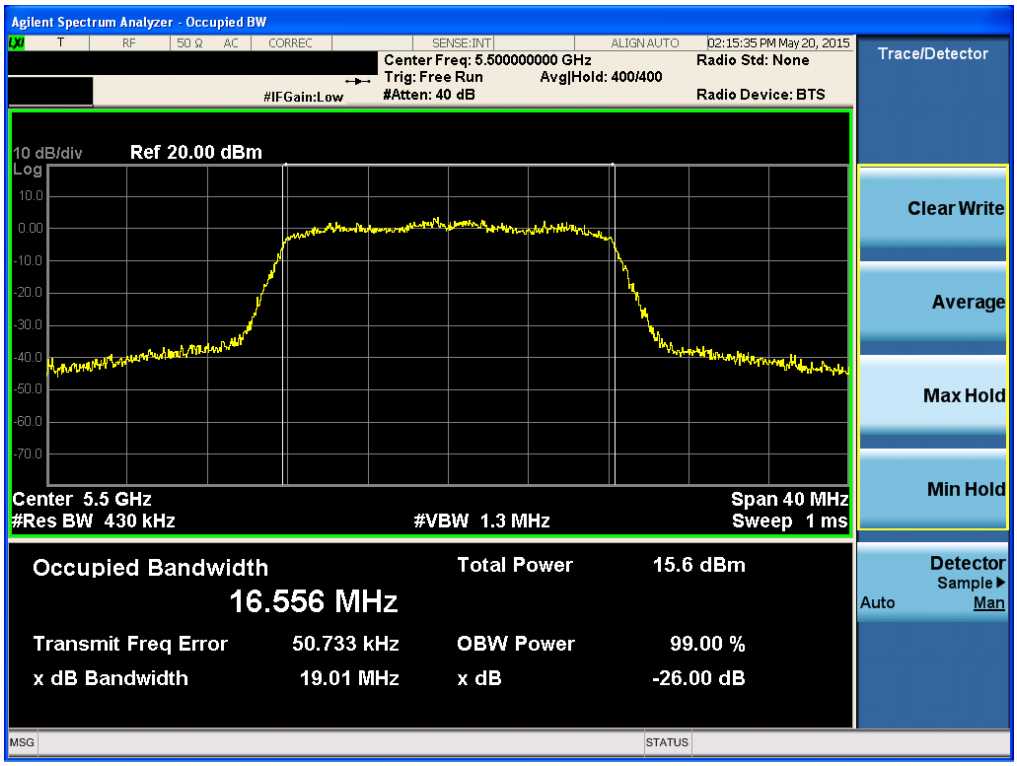
Test Mode: 802.11a & Ch.60



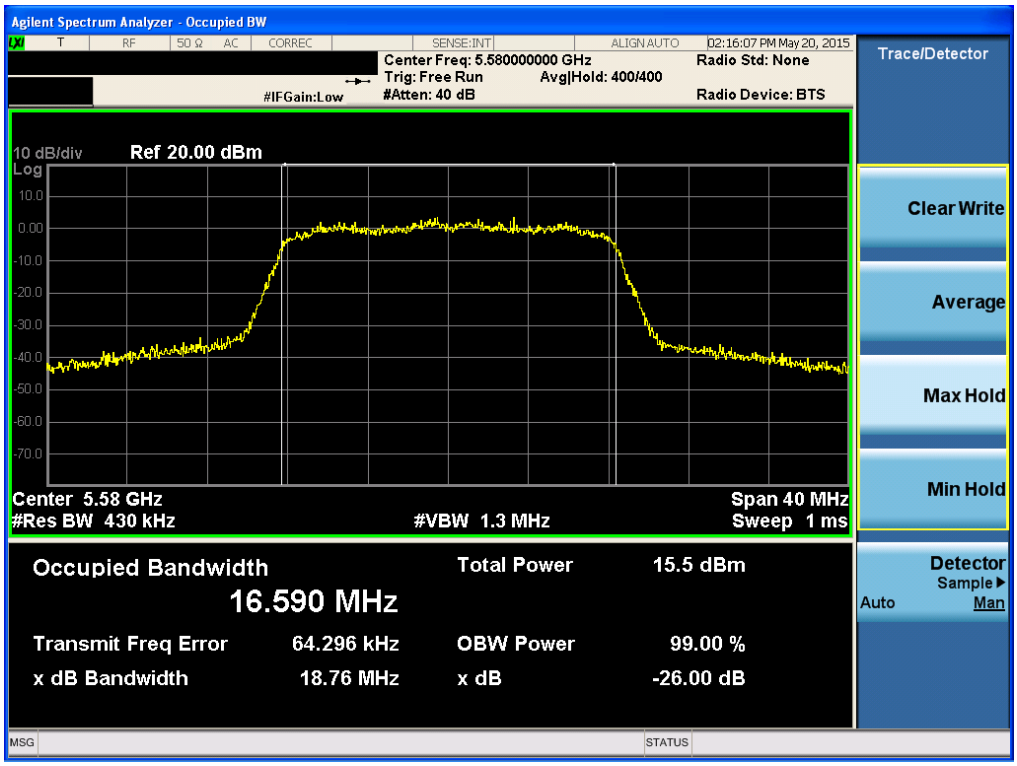
Occupied Bandwidth Test Mode: 802.11a & Ch.64



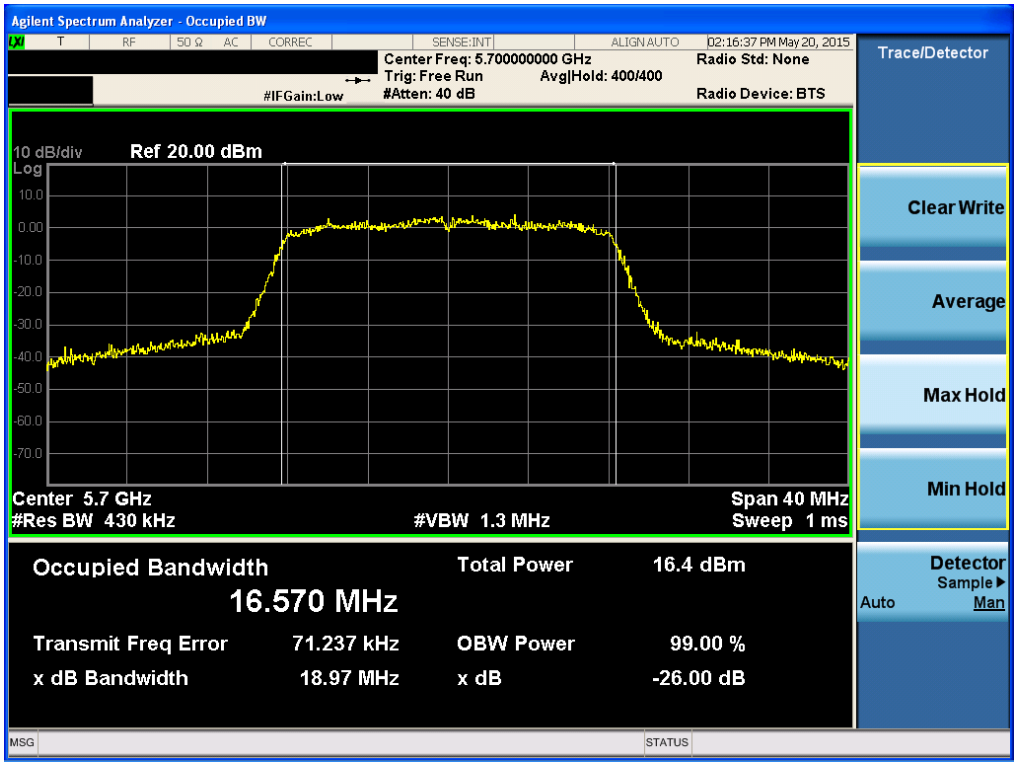
Occupied Bandwidth Test Mode: 802.11a & Ch.100



Occupied Bandwidth Test Mode: 802.11a & Ch.116



Occupied Bandwidth Test Mode: 802.11a & Ch.140



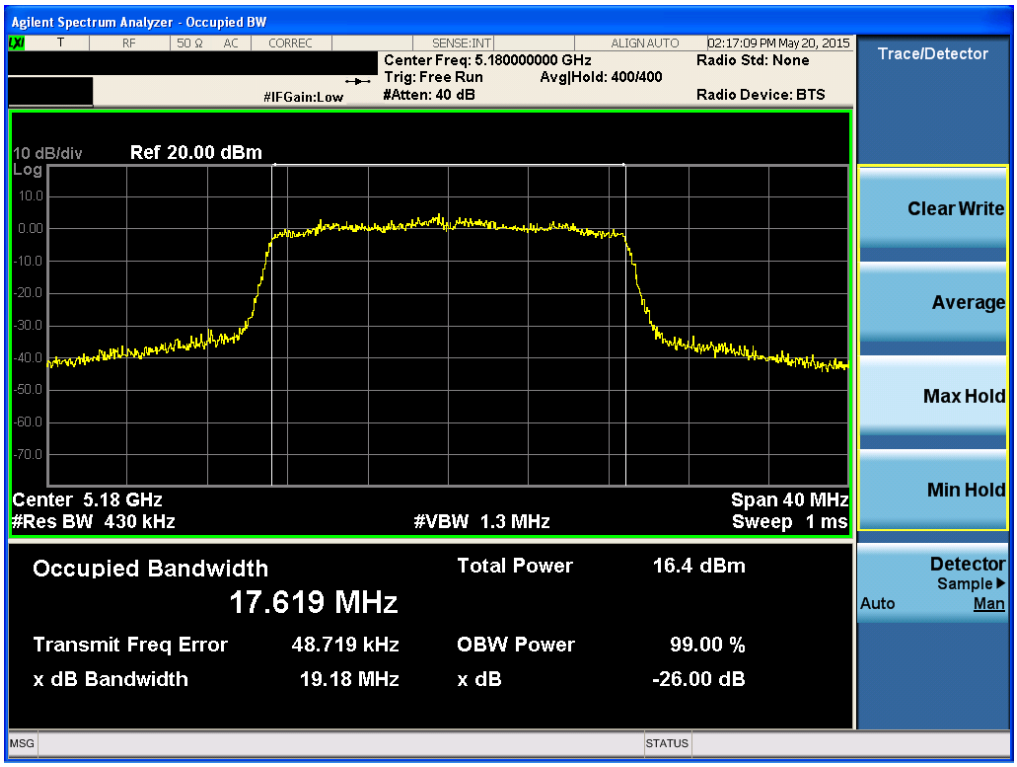
Occupied Bandwidth Test Mode: 802.11a & Ch.149

Occupied Bandwidth Test Mode: 802.11a & Ch.157

Occupied Bandwidth Test Mode: 802.11a & Ch.165

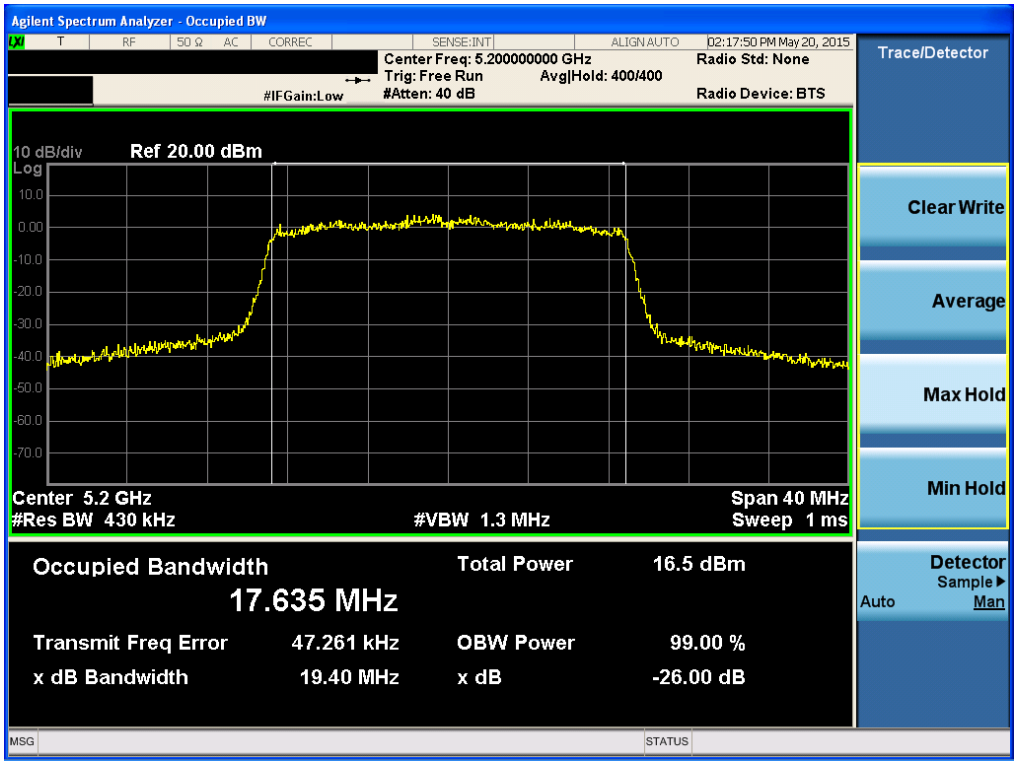
Occupied Bandwidth

Test Mode: 802.11n HT20 & Ch.36

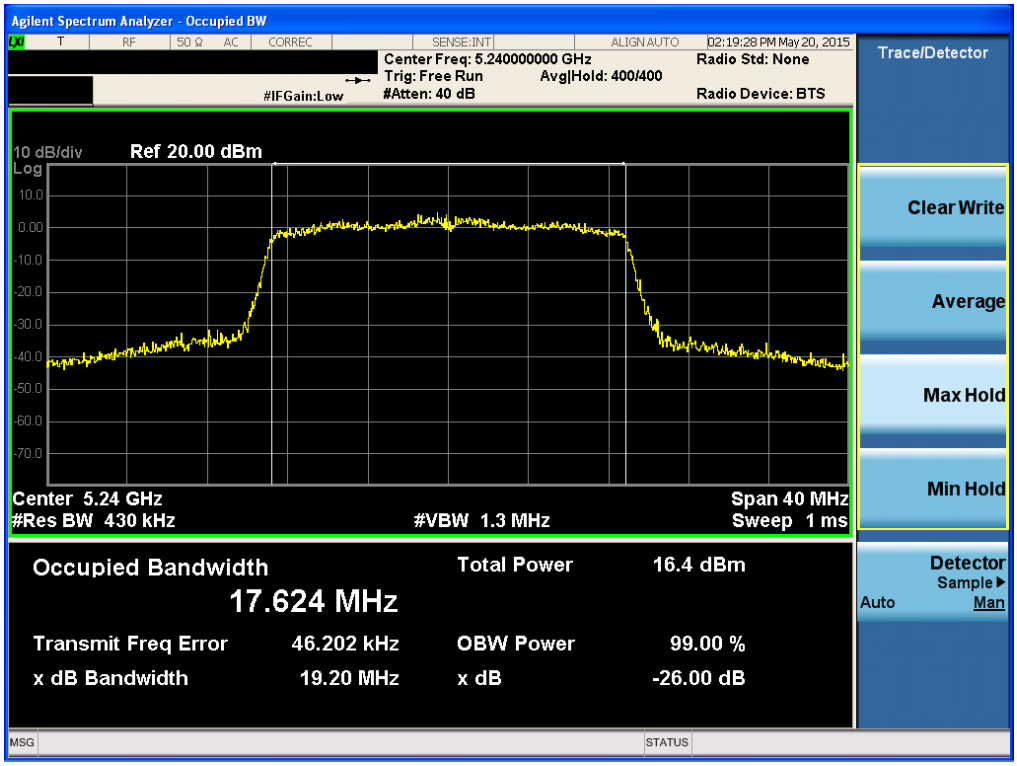


Occupied Bandwidth

Test Mode: 802.11n HT20 & Ch.40

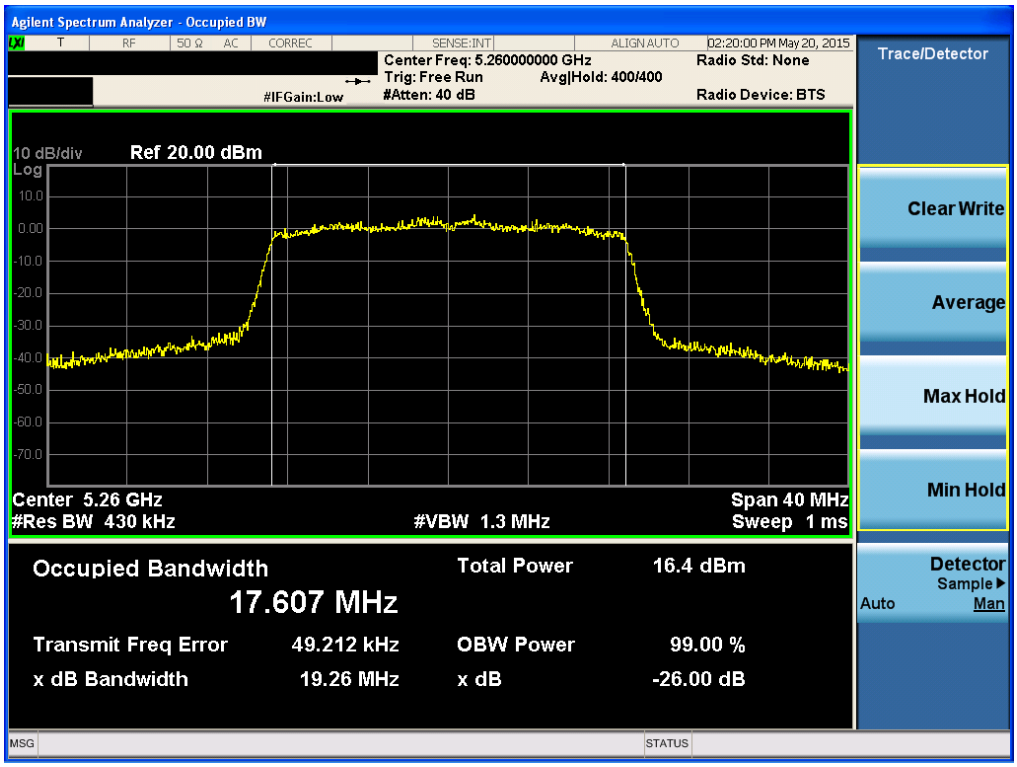


Occupied Bandwidth Test Mode: 802.11n HT20 & Ch.48



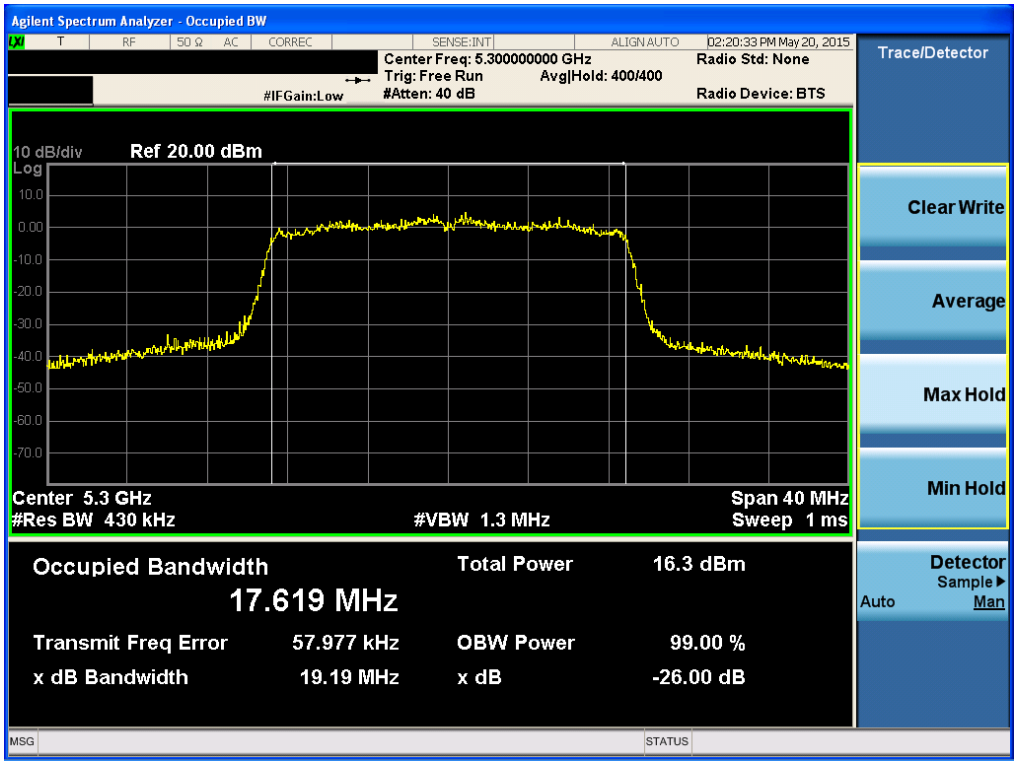
Occupied Bandwidth

Test Mode: 802.11n HT20 & Ch.52

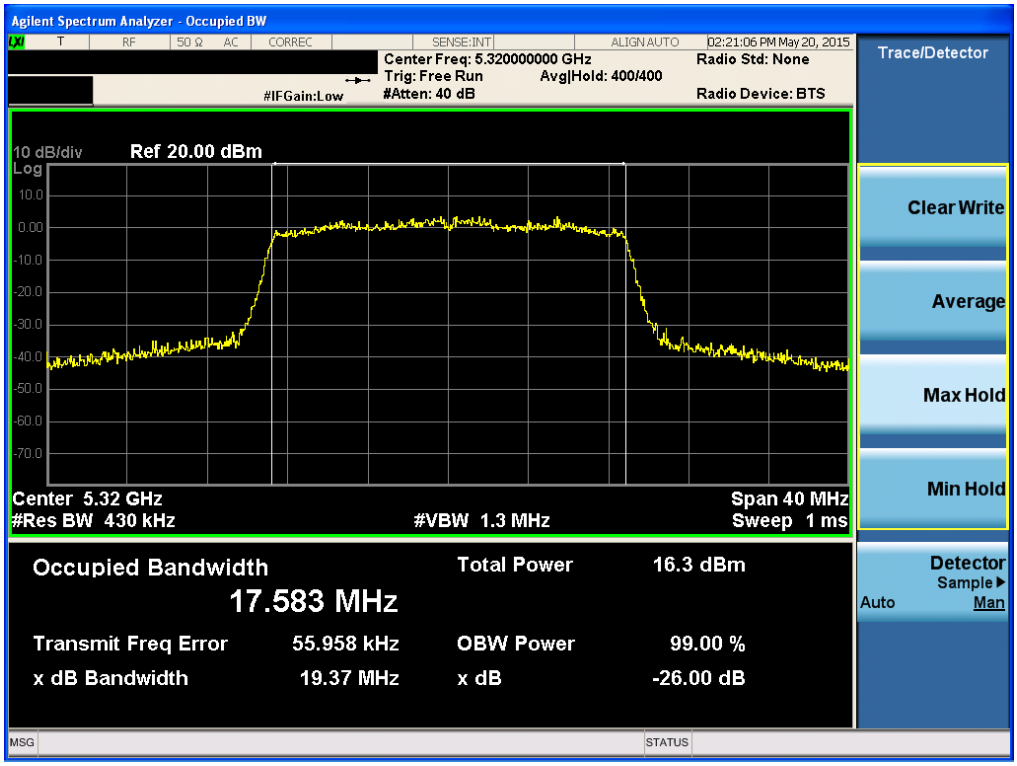


Occupied Bandwidth

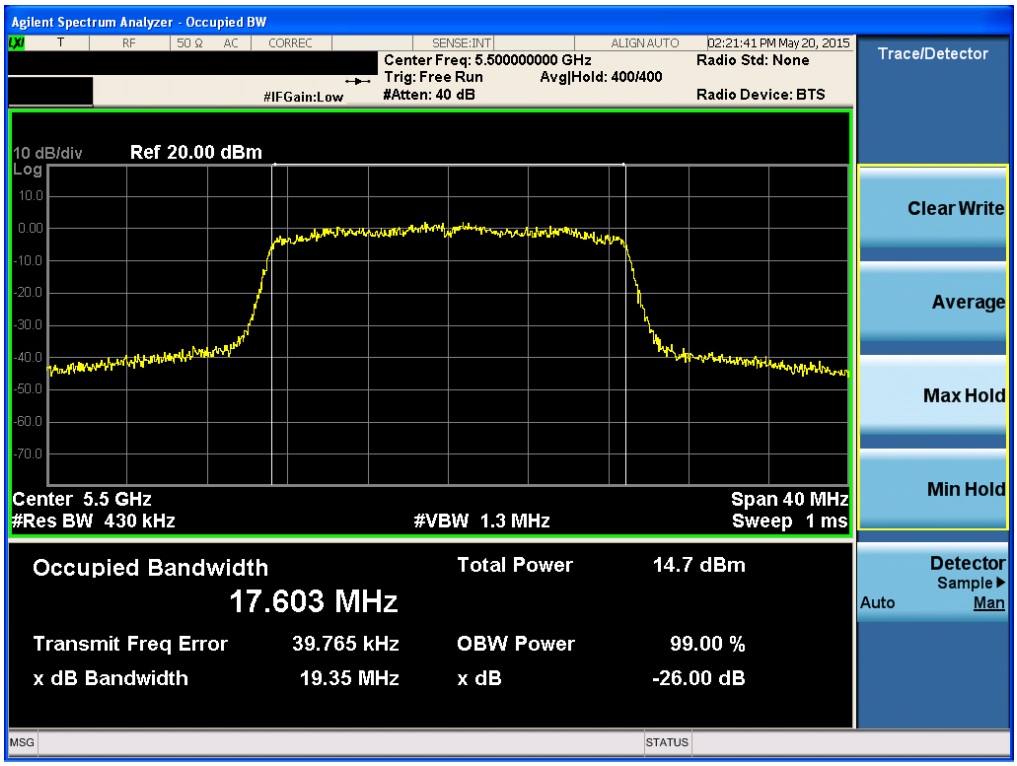
Test Mode: 802.11n HT20 & Ch.60



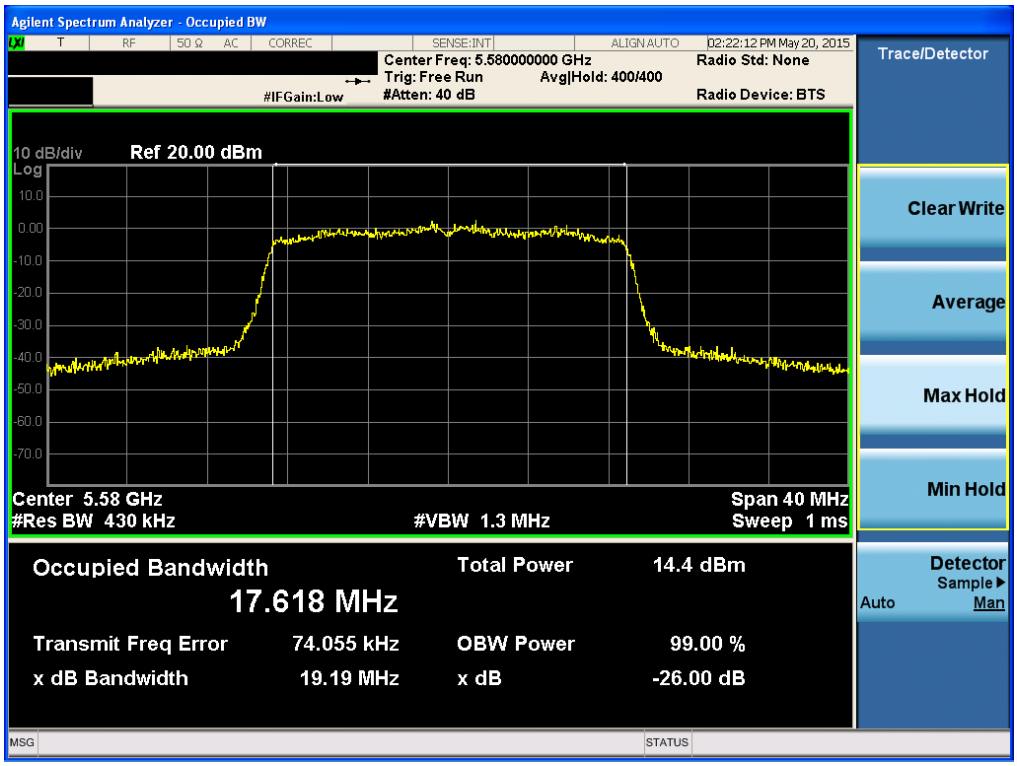
Occupied Bandwidth Test Mode: 802.11n HT20 & Ch.64



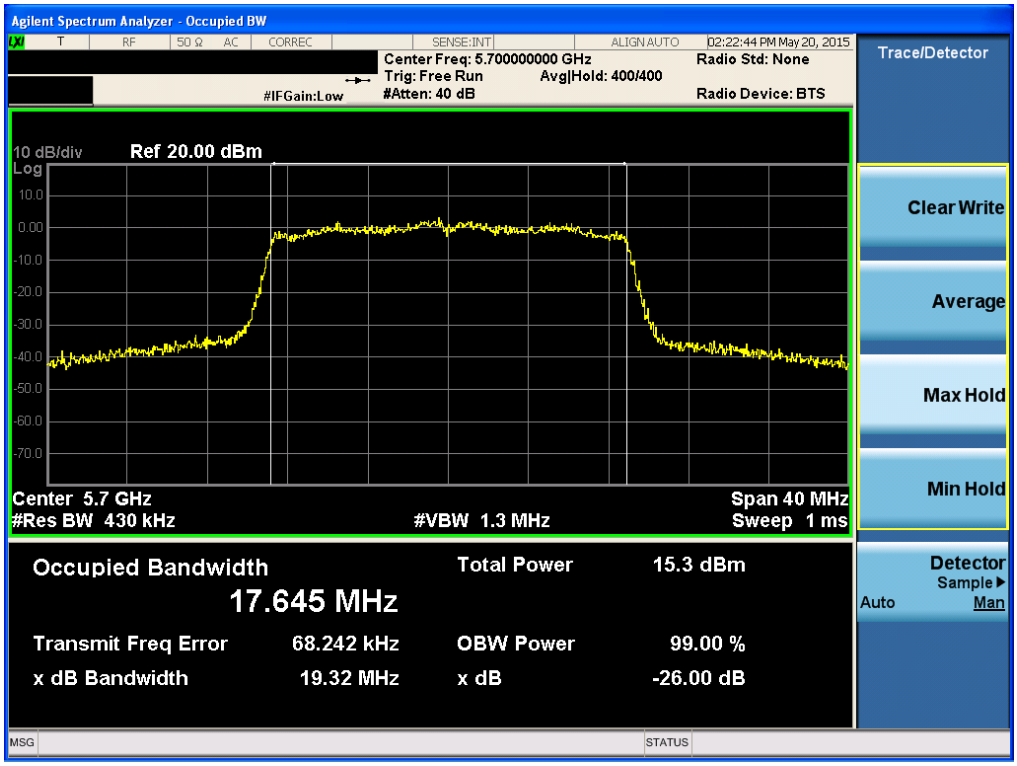
Occupied Bandwidth Test Mode: 802.11n HT20 & Ch.100



Occupied Bandwidth Test Mode: 802.11n HT20 & Ch.116



Occupied Bandwidth Test Mode: 802.11n HT20 & Ch.140



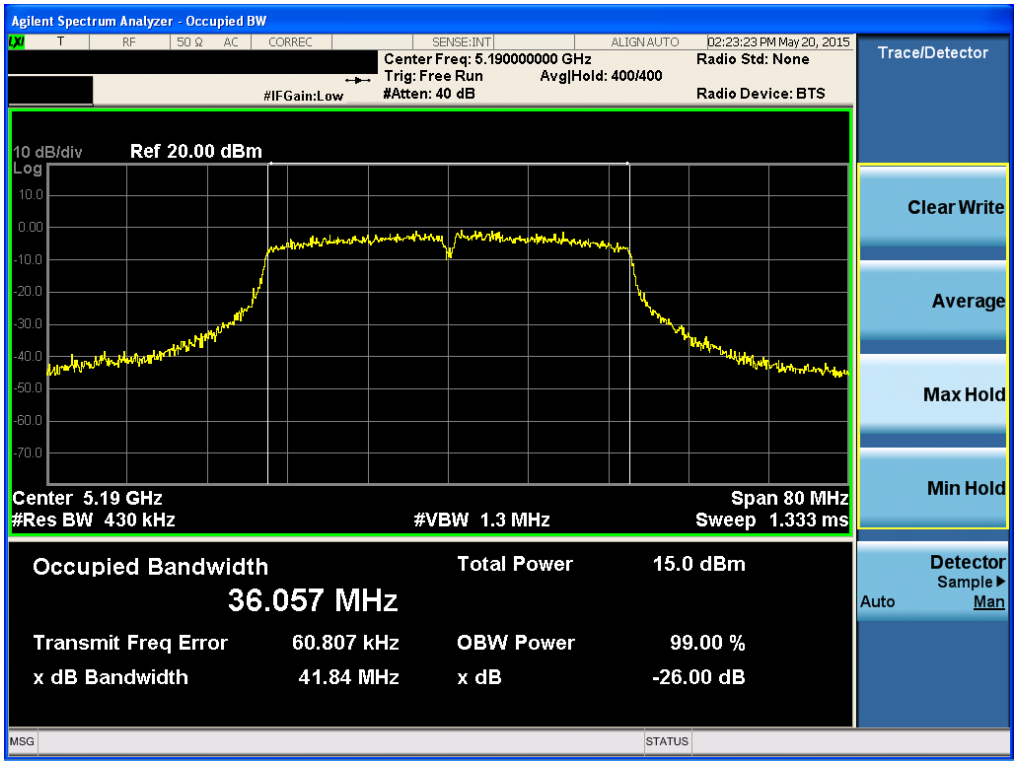
Occupied Bandwidth Test Mode: 802.11n HT20 & Ch.149

Occupied Bandwidth Test Mode: 802.11n HT20 & Ch.157

Occupied Bandwidth Test Mode: 802.11n HT20 & Ch.165

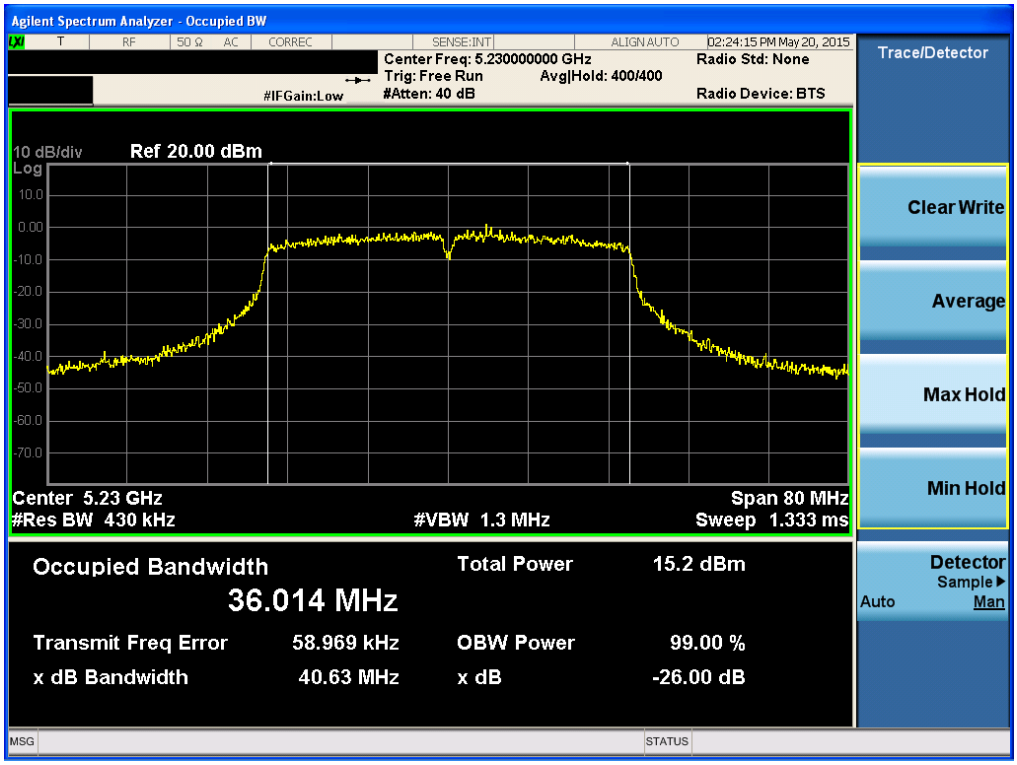
Occupied Bandwidth

Test Mode: 802.11n HT40 & Ch.38

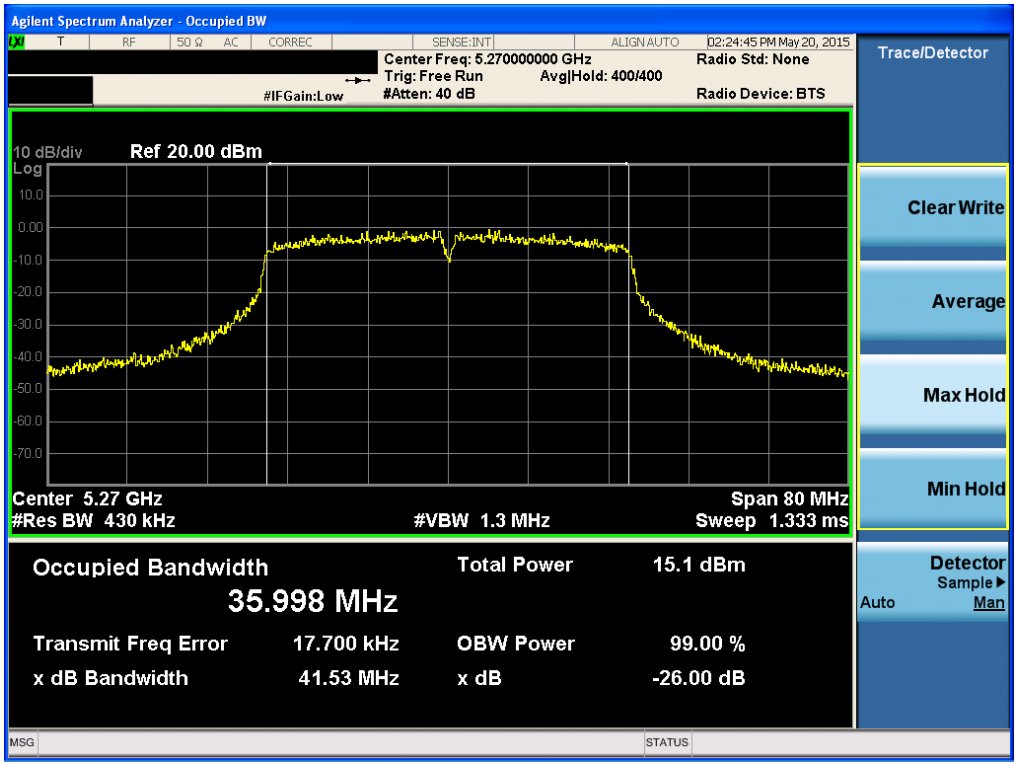


Occupied Bandwidth

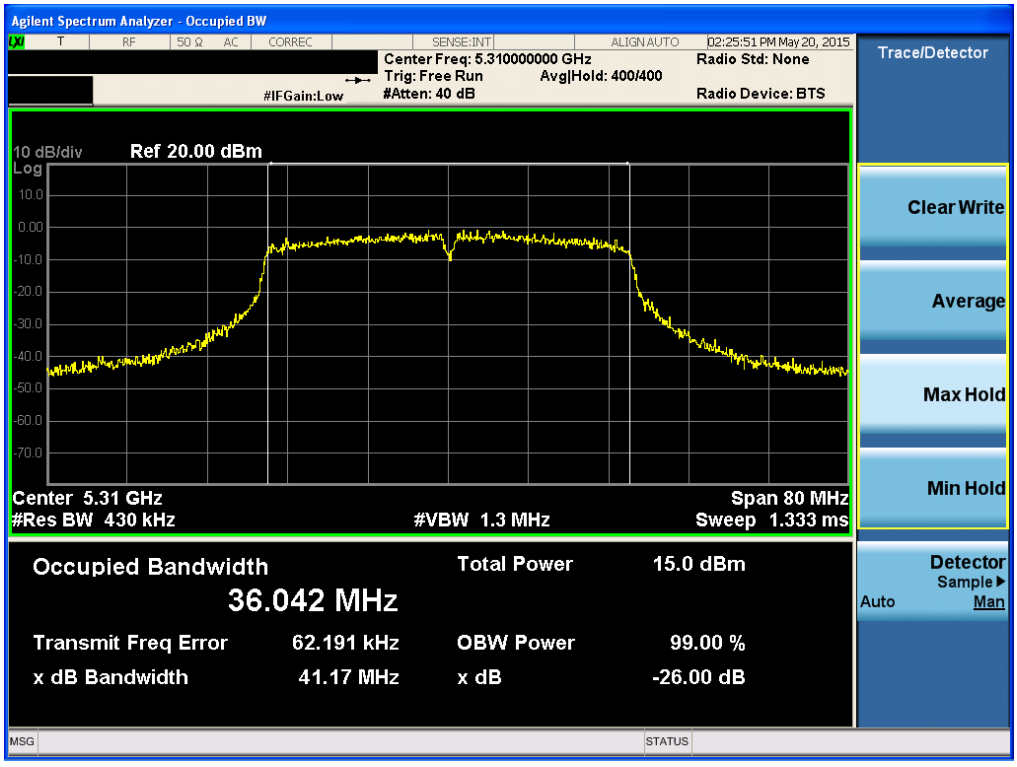
Test Mode: 802.11n HT40 & Ch.46



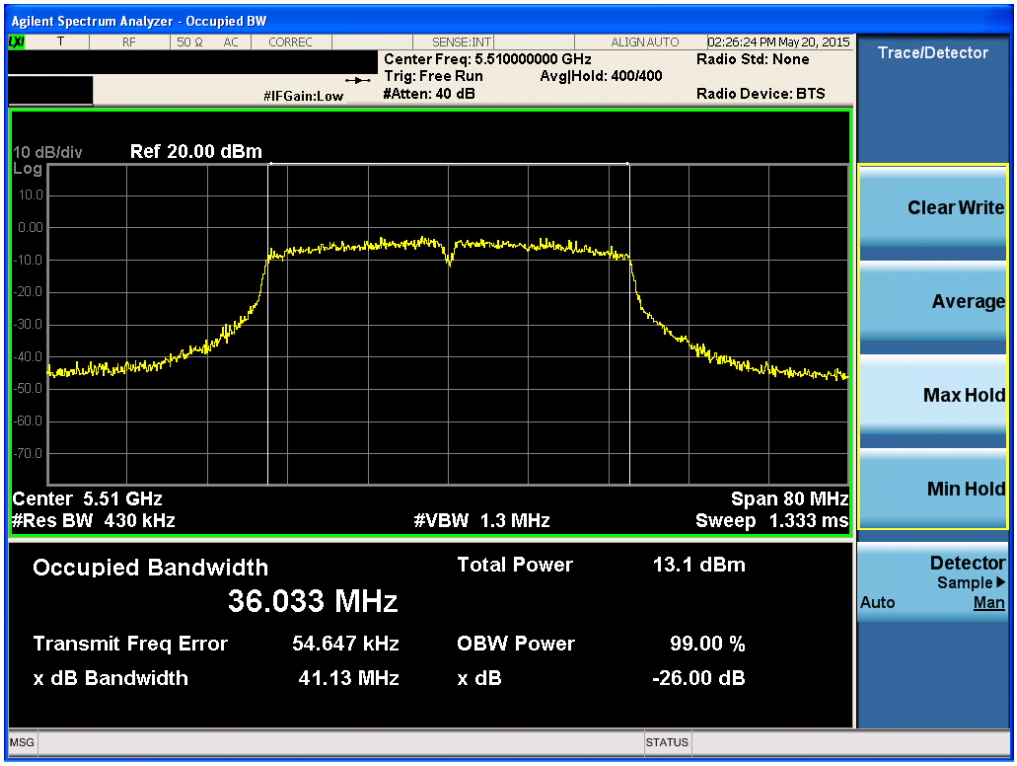
Occupied Bandwidth Test Mode: 802.11n HT40 & Ch.54



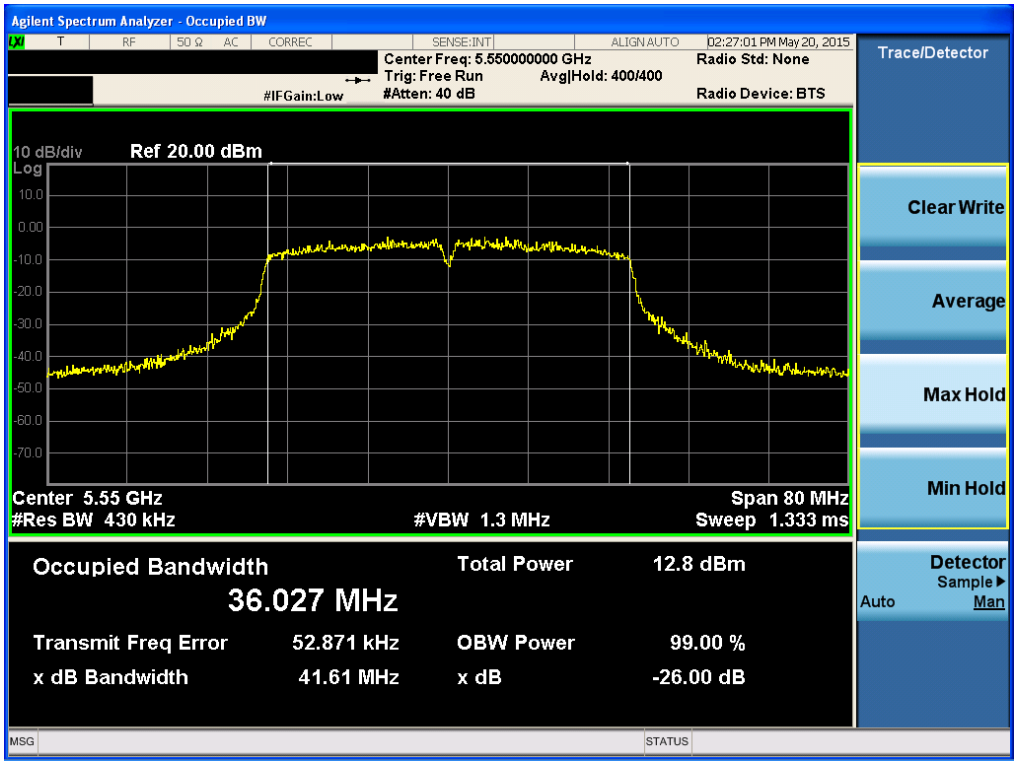
Occupied Bandwidth Test Mode: 802.11n HT40 & Ch.62



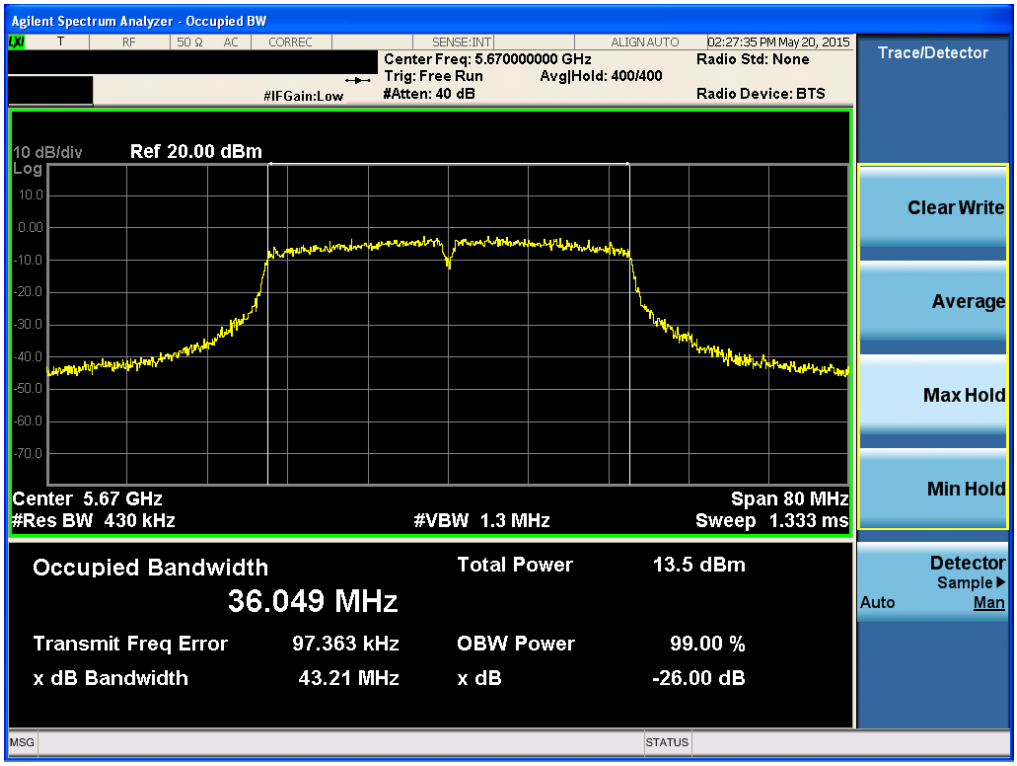
Occupied Bandwidth Test Mode: 802.11n HT40 & Ch.102



Occupied Bandwidth Test Mode: 802.11n HT40 & Ch.110



Occupied Bandwidth Test Mode: 802.11n HT40 & Ch.134

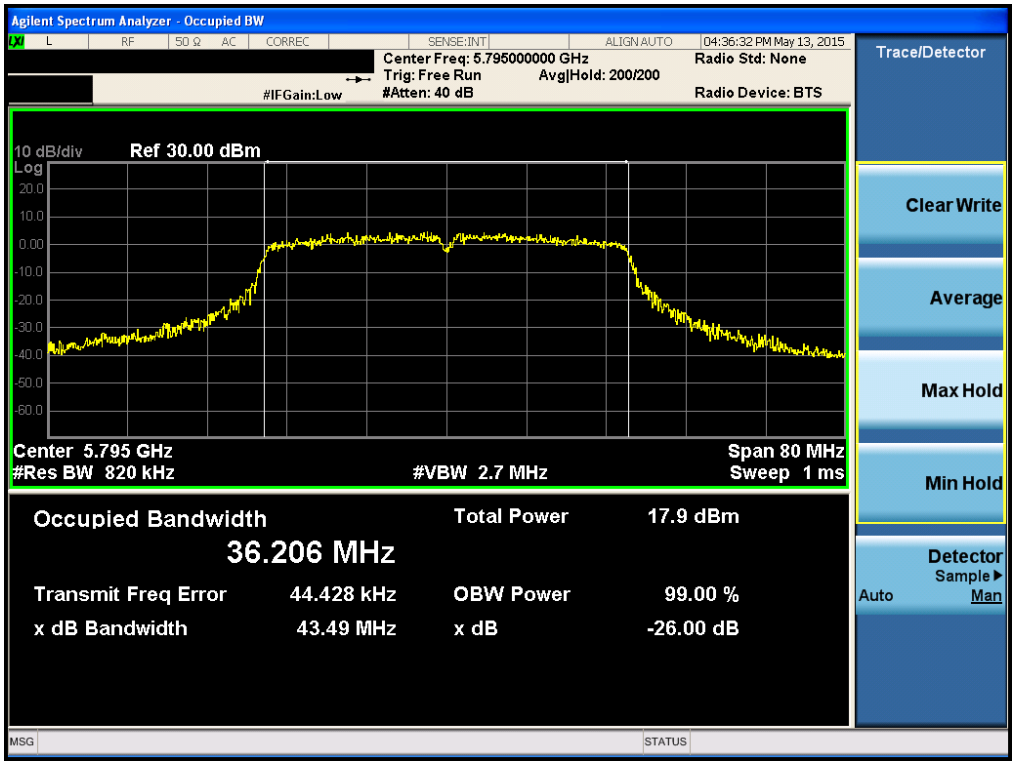


Occupied Bandwidth

Test Mode: 802.11n HT40 & Ch.151

Occupied Bandwidth

Test Mode: 802.11n HT40 & Ch.159



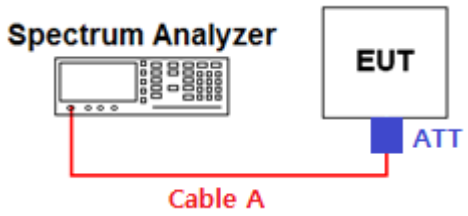
9. LIST OF TEST EQUIPMENT

Type	Manufacturer	Model	Cal.Date (yy/mm/dd)	Next.Cal.Date (yy/mm/dd)	S/N
MXA Signal Analyzer	Agilent Technologies	N9020A	15/01/06	16/01/06	MY49100833
PXA Signal Analyzer	Agilent Technologies	N9030A	14/10/21	15/10/21	MY53310140
Power Meter & Wide Bandwidth Sensor	Anritsu	ML2495A MA2490A	15/03/26	16/03/26	1306007 1249001
Signal Generator	Rohde Schwarz	SMF100A	14/07/01	15/07/01	102341
Dynamic Measurement DC Source	Agilent Technologies	66332A	14/10/20	15/10/20	MY43000394
Multimeter	HP	34401A	15/02/25	16/02/25	3146A13475
Thermohygrometer	BODYCOM	BJ5478	15/02/26	16/02/26	1209
Thermohygrometer	BODYCOM	BJ5478	15/05/08	16/05/08	120612-1
Loop Antenna	Schwarzbeck	FMZB1513	14/04/29	16/04/29	1513-128
BILOG ANTENNA	SCHWARZBECK	VULB9160	14/04/04	16/04/04	3357
Horn Antenna	ETS-LINDGREN	3115	15/02/09	17/02/09	9202-3820
Horn Antenna	A.H.Systems Inc.	SAS-574	15/04/30	17/04/30	154
High-pass filter	Wainwright Instruments	WHKX12-2580-3000-18000-80SS	14/10/17	15/10/17	1
Highpass Filter	Wainwright Instruments	WHNX6-6320-8000-26500-40CC	14/10/17	15/10/17	3
PreAmplifier	TSJ	MLA-010K01-B01-27	15/04/09	16/04/09	1844539
PreAmplifier	Agilent	8449B	14/11/06	15/11/06	3008A02108
PreAmplifier	A.H. SYSTEMS	PAM-1840VH	14/12/12	15/12/12	163
EMI TEST RECEIVER	R&S	DSR7	14/10/21	15/10/21	101109
EMI TEST RECEIVER	R&S	ESCI	15/02/25	16/02/25	100364
SINGLE-PHASE MASTER	NF	4420	14/09/11	15/09/11	3049354420023
Artificial Mains Network	Narda S.T.S. / PMM	PMM L2-16B	14/06/26	15/06/26	000WX20305

APPENDIX I

Conducted Test set up Diagram

- **Conducted Measurement**



APPENDIX II

Duty Cycle Information

TEST PROCEDURE

Duty Cycle [X = On Time / (On + Off time)] is measured using Measurement Procedure **of KDB789033 D02 V01**

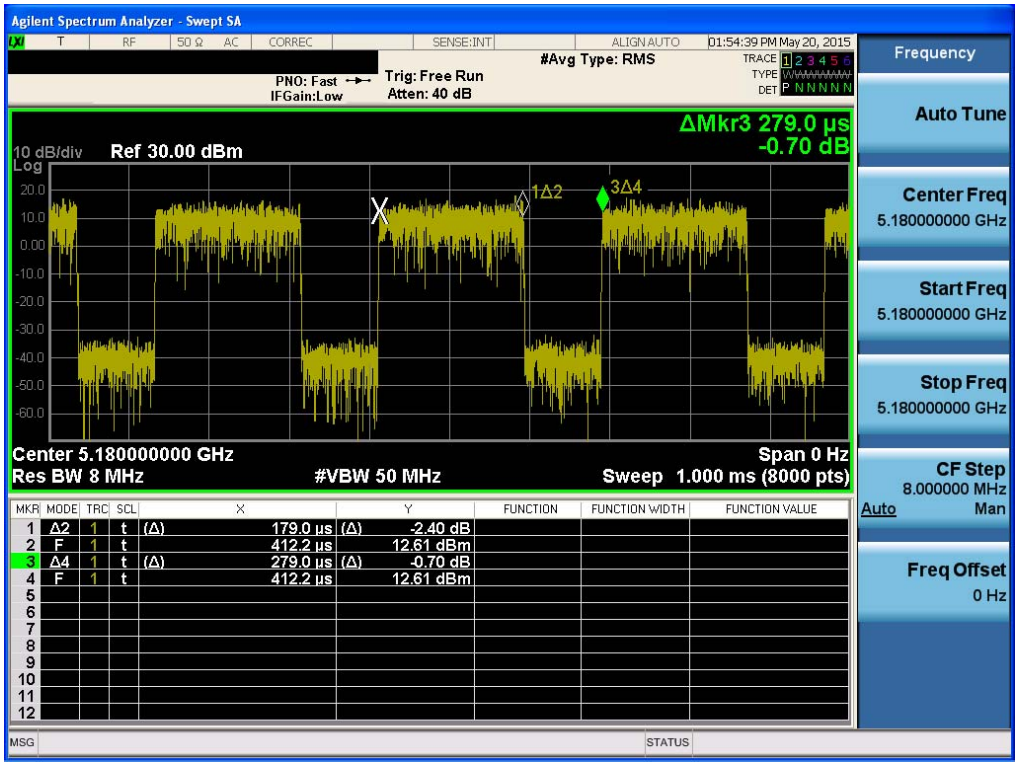
1. Set the center frequency of the spectrum analyzer to the center frequency of the transmission.
2. Set RBW ≥ EBW if possible; otherwise, set RBW to the largest available value.
3. Set VBW ≥ RBW.
4. Set detector = peak.
5. Note : The zero-span measurement method shall not be used unless both **RBW and VBW are> 50/*T***, where *T* is defined in section II.B.1.a), and **the number of sweep points across duration *T* exceeds 100**. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring duty cycle shall not be used if *T* ≤ 16.7 microseconds.)

   T : The minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
   (***T* = On time** of the above table since the EUT operates with above fixed Duty Cycle and it is the minimum On time)

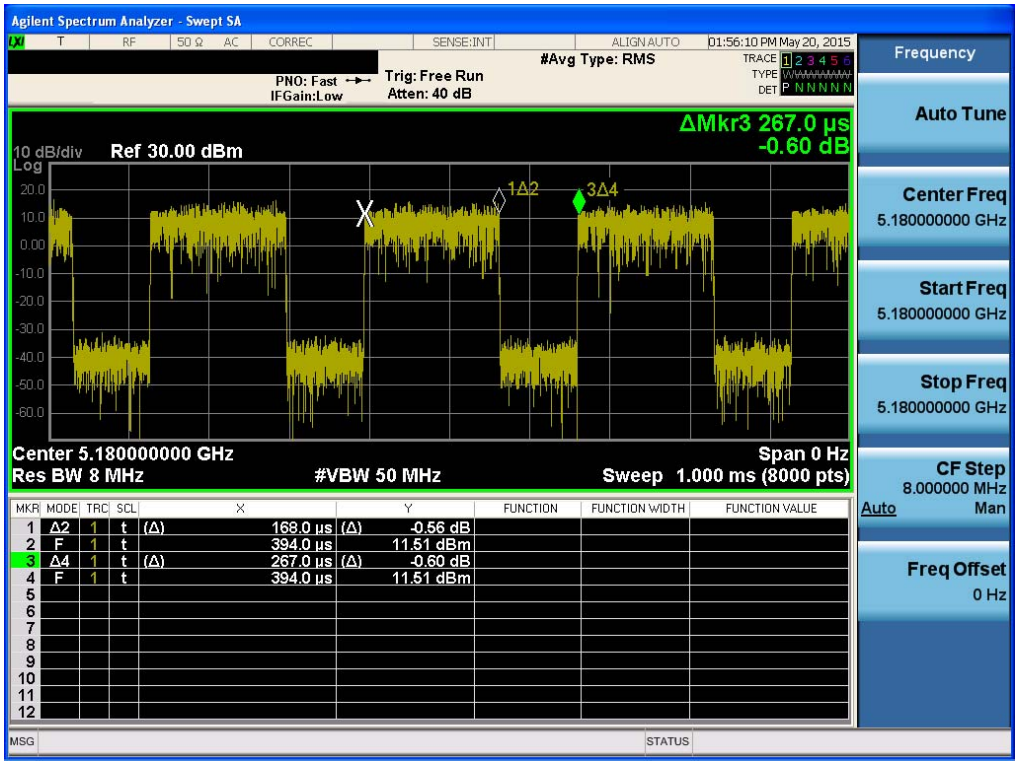
TEST DATA

Mode	Channel	Tested Frequency [MHz]	Maximum Achievable Duty Cycle (*x*) = On / (On+Off)			Duty Cycle Correction Factor [dB]	1/*T* [Hz]
			On Time [ms]	On+OffTime [ms]	*x*		
802.11a	36	5180	0.179	0.279	0.64	1.94	5586.6
802.11n (HT20)	36	5180	0.168	0.267	0.62	2.08	5952.39
802.11n (HT40)	38	5190	0.099	0.198	0.5	3.02	10101.02

Duty Cycle Test Mode: 802.11a & Ch.36



Duty Cycle Test Mode: 802.11n HT20 & Ch.36



Duty Cycle Test Mode: 802.11n HT40 & Ch.38