

FCC Radio Test Report

FCC ID: 2AC23-WT39M2011

**FCC 47 CFR Part 15 Subpart E
RSS 247 Issue 1:2015**

Product : WIFI+BT Module

Trade Name : GSD

Model Number : WT39M2011

Firmware Version Identification Number (FVIN): 1.0

Issued for

Hui Zhou Gaoshengda Technology Co.,LTD

NO.75 Zhongkai Development Area, Huizhou, Guangdong, China

Issued by

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TEST RESULT CERTIFICATION

Product : WIFI+BT Module
Applicant..... : Hui Zhou Gaoshengda Technology Co.,LTD
Address : NO.75 Zhongkai Development Area, Huizhou, Guangdong, China
Manufacturer..... : Hui Zhou Gaoshengda Technology Co.,LTD
Address : NO.75 Zhongkai Development Area, Huizhou, Guangdong, China
Model No. : WT39M2011
Standards : FCC Part 15 Subpart C (15.407)
 RSS 247 Issue 1: 2015
Test Method..... : ANSI C63.10: 2014
 KDB 789033 D02 General UNII Test Procedures New Rules v01

The above equipment has been tested by Shenzhen ATL Testing Technology Co., Ltd. and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Test.....:

Date of receipt of test item 2015-12-28

Date(s) of performance of test 2016-01-04 to 2016-01-25

Test Result.....: Pass

Testing by	:	<u>Si fei fei</u>	Date	:	<u>2016-01-25</u>
		(Si feifei)			
Check by	:	<u>Xie Lingling</u>	Date	:	<u>2016-01-26</u>
		(Xie Lingling)			
Approved by	:	<u>Xu Peng</u>	Date	:	<u>2016-01-26</u>
		(Xu Peng)			

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1. TEST SUMMARY

Test procedures according to the technical standards:

FCC Part 15 Subpart E (15.407)/RSS 247				
Standard Section		Test Item	Judgment	Remark
15.207	RSS Gen 7.2.4	AC Power Conducted Emission	PASS	
15.407(b)	RSS 247 6.2.1&6.2.4	Band Edge Emission	PASS	
15.407(a)	RSS 247 6.2	Peak Output Power	PASS	
15.407(a)	RSS 247 6.2.1&6.2.4	6dB/26dB RF Bandwidth	PASS	
15.407(a)	RSS 247 6.2.1&6.2.4	Power Spectral Density	PASS	
15.407(b)/ 15.205	RSS 247 6.2.1&6.2.4	Transmitter Radiated Emissions	PASS	
15.407(g)	RSS 247 6.2.4	Frequency Stability	PASS	
15.203		Antenna Requirement	PASS	

NOTE:

(1) "N/A" denotes test is not applicable in this Test Report

(2) The test results of this report relate only to the tested sample(s) identified in this report.

1.1 TEST FACILITY

Shenzhen ATL Testing Technology Co., Ltd.

Add. : F/4, Building 10, Dayuan Industrial Zone, Xili Town, Nanshan District, Shenzhen, China

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately **95** %.

A. Conducted Emission :

The measurement uncertainty is evaluated as ± 3.2 dB.

B. Radiated Measurement :

The measurement uncertainty is evaluated as ± 3.7 dB.

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	WIFI+BT Module
Model Name	WT39M2011
Additional Model Number(s)	N/A
Model Difference	N/A
Frequency Range	U-NII-1: 5150~5250MHz U-NII-3: 5725~5850MHz
Modulation Type	802.11a: OFDM(QPSK, BPSK, 16QAM) 802.11g: OFDM(QPSK, BPSK, 16QAM, 64QAM)
Data Rate	802.11a: 6/9/12/18/24/36/48/54 Mbps 802.11n: up to 150 Mbps
RF Output Power	U-NII-1: 802.11a: 15.65 dBm 802.11n(HT20): 14.88 dBm 802.11n(HT40): 15.19 dBm U-NII-3: 802.11a: 15.42 dBm 802.11n(HT20): 14.50 dBm 802.11n(HT40): 14.12 dBm
Antenna Type	FPC Antenna Max. Gain: 5150~5250: 2.78 dBi Max. Gain: 5725~5850: 2.02 dBi
Power Source	DC Powered by host system.
Power Rating	DC 5V from USB interference.
Remark	More details EUT technical specifications, please refer to the User's Manual.

Note:

- (1) This Test Report is FCC Part 15 Subpart C, 15.407 for IEEE 802.11a/n. And the Test procedure follows the FCC KDB 789033 D02 General UNII Test Procedures New Rules v01.
- (2) Transmitting mode with antennas

Mode	TX Antenna (s)
802.11a	1
802.11n(HT20)	2
802.11n(HT40)	2

(3) Channel List.

5 GHz U-NII-1 Band				
Frequency Band	Channel No.	Frequency	Channel No.	Frequency
5150~5250 MHz	36	5180 MHz	44	5220 MHz
	38	5190 MHz	46	5230 MHz
	40	5200 MHz	48	5240 MHz
	42	5210 MHz		
For 802.11a and 802.11n(HT20), use channel 36, 40, 44, 48				
For 802.11n(HT40), use channel 38, 46				

5 GHz U-NII-3 Band				
Frequency Band	Channel No.	Frequency	Channel No.	Frequency
5725~5850 MHz	149	5745 MHz	157	5785 MHz
	151	5755 MHz	159	5795 MHz
	153	5765 MHz	161	5805 MHz
	155	5775 MHz	165	5825 MHz
For 802.11a and 802.11n(HT20), use channel 149, 153, 157, 161, 165				
For 802.11n(HT40), use channel 151, 159				

2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	WiFi TX Mode
Mode 2	WiFi TX 802.11a Mode
Mode 3	WiFi TX 802.11n(HT20)Mode
Mode 4	WiFi TX 802.11n(HT40) Mode

For Conducted Test	
Final Test Mode	Description
Mode 2	WiFi TX Mode

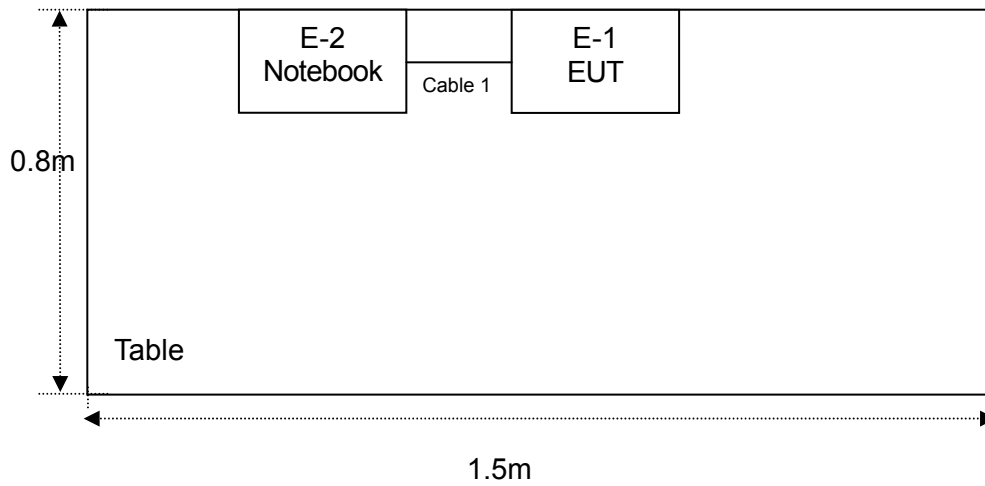
For Radiated Test	
Final Test Mode	Description
Mode 1	WiFi TX Mode
Mode 2	WiFi TX 802.11a Mode
Mode 3	WiFi TX 802.11n(HT20)Mode
Mode 4	WiFi TX 802.11n(HT40) Mode

Note:

- (1) Software used to control the EUT for staying in continuous transmitting mode was programmed. After verification, all tests were carried out with the worst case test modes as shown below.
- (2) IEEE 802.11a Mode with OFDM:
U-NII-1: Channel (36/40/48) with 6Mbps data rate were chosen for full testing.
U-NII-3: Channel (149/157/165) with 6Mbps data rate were chosen for full testing.
- (3) IEEE 802.11n(HT20) Mode:
U-NII-1:Channel (36/40/48) with MCS 0 data rate were chosen for full testing.
U-NII-3:Channel (149/157/165) with MCS 0 data rate were chosen for full testing.
- (4) IEEE 802.11n(HT40) Mode:
U-NII-1: Channel (38/46) with MCS 0 data rate were chosen for full testing.
U-NII-3: Channel (151/159) with MCS 0 data rate were chosen for full testing.
- (5) By preliminary testing and verifying three axis (X, Y and Z) position of EUT transmitted status, it was found that "X axis" position was the worst, then the final test was executed the worst condition and test data were recorded in this report.

2.3 DESCRIPTION OF TEST SETUP

Radiated Emission



2.4 DESCRIPTION TEST PERIPHERAL AND EUT PERIPHERAL

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
E-1	WIFI+BT Module	GSD	WT39M2011	N/A	EUT
E-2	Notebook	LENOVO	P405	DOC	

Item	Shielded Type	Ferrite Core	Length	Note
1	NO	NO	15cm	

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.
- (3) “YES” means “shielded” “with core”; “NO” means “unshielded” “without core”.

2.5 EUT Exercise Software

Power Parameters for Testing			
Test Software Version		MT7601 USB V1.0.9.0.exe	
Mode	Channel/ Parameters U-NII-1		
802.11a	CH 36	CH 40	CH 48
	19	19	19
802.11n(HT20)	CH 36	CH 40	CH 48
	19	19	19
802.11n(HT40)	CH 38	CH 46	
	19	19	

Power Parameters for Testing			
Test Software Version		MT7601 USB V1.0.9.0.exe	
Mode	Channel/ Parameters U-NII-3		
802.11a	CH 149	CH 157	CH 165
	16	16	16
802.11n(HT20)	CH 149	CH 157	CH 165
	16	16	16
802.11n(HT40)	CH 151	CH 159	
	16	16	

3. CONDUCTED EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Quasi-peak	Average
	dBuV	dBuV
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

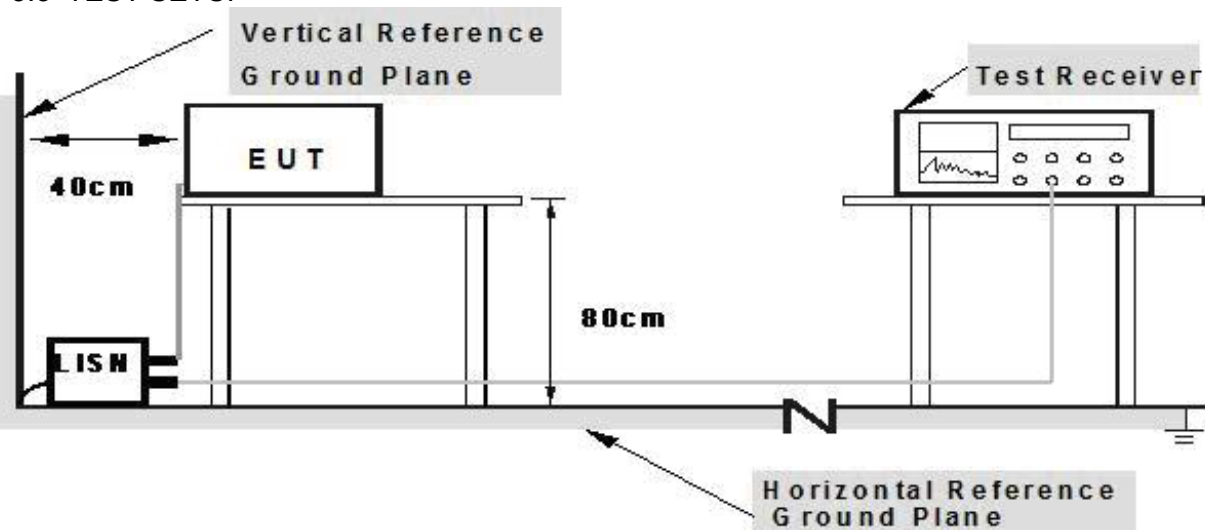
The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

3.2 TEST PROCEDURE

- a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.3 TEST SETUP



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

3.4 TEST INSTRUMENTS

Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
LISN	R&S	NSLK81	8126466	Jul. 05, 2015	Jul. 04. 2016	1 year
LISN	R&S	NSLK81	8126487	Dec. 23, 2015	Dec. 22, 2016	1 year
50Ω Switch	ANRITSU CORP	MP59B	6200983704	Jul. 05, 2015	Jul. 04. 2016	1 year
Test Cable	N/A	C01	N/A	Jul. 05, 2015	Jul. 04. 2016	1 year
Test Cable	N/A	C02	N/A	Jul. 05, 2015	Jul. 04. 2016	1 year
Test Cable	N/A	C03	N/A	Jul. 05, 2015	Jul. 04. 2016	1 year
EMI Test Receiver	R&S	ESCI	1166.595	Jul. 05, 2015	Jul. 04. 2016	1 year
Passive Voltage Probe	ESH2-Z3	R&S	100196	Jul. 05, 2015	Jul. 04. 2016	1 year

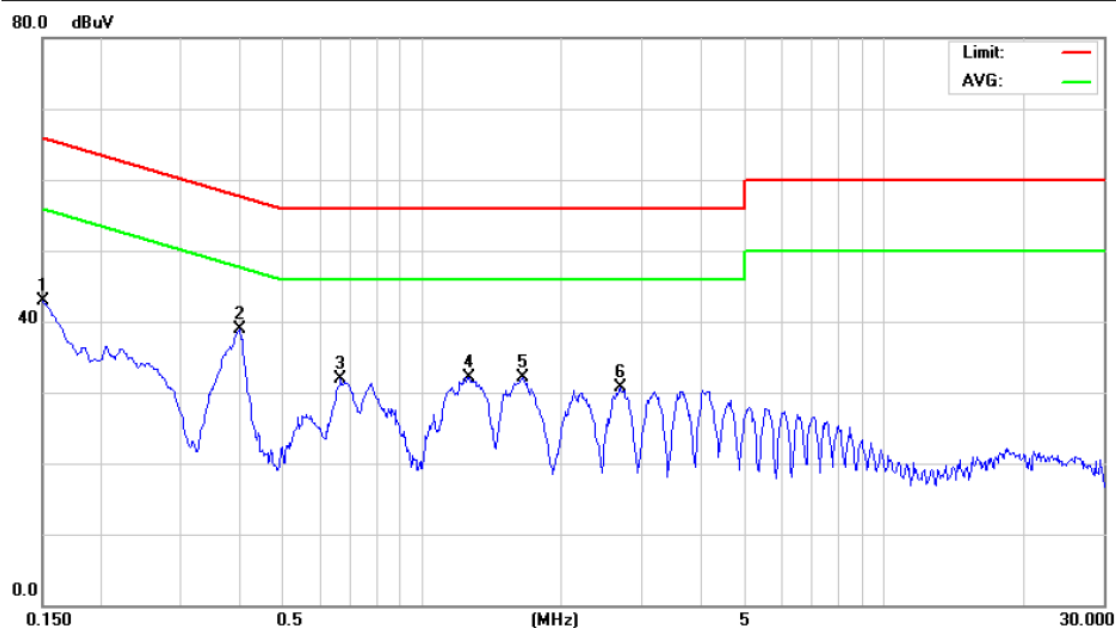
3.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

3.6 TEST RESULTS

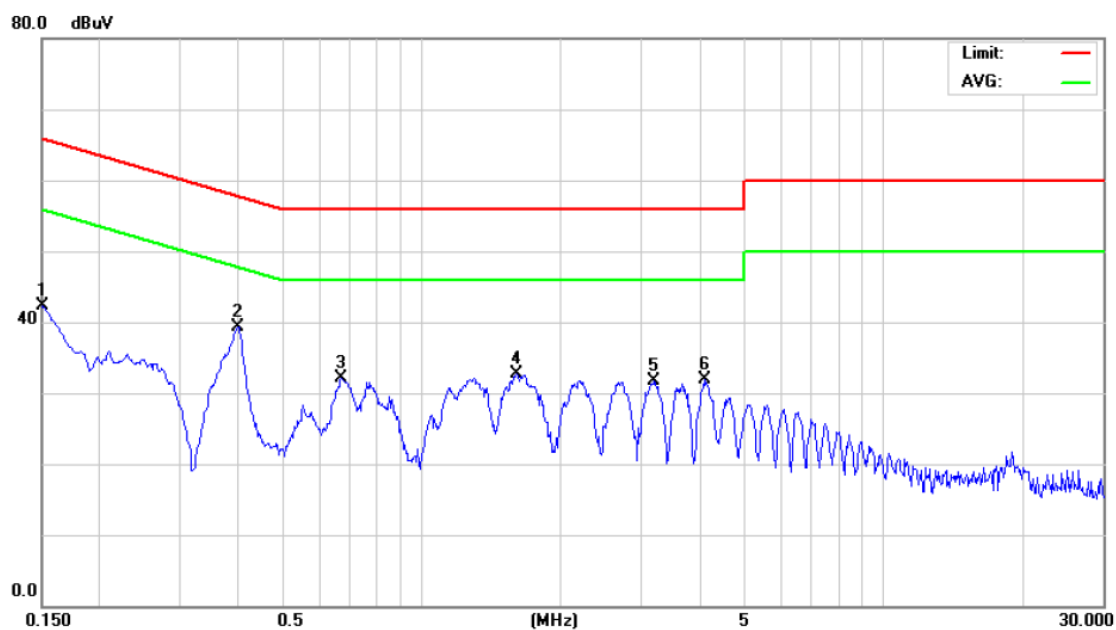
EUT :	WIFI+BT Module	Model Name. :	WT39M2011
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Terminal:	Line
Test Mode :	WIFI TX Mode (802.11a CH36)		
Test Voltage :	120V/ 60Hz		

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector
1		0.1500	32.91	9.92	42.83	66.00	-23.17	peak
2	*	0.4020	28.81	10.02	38.83	57.81	-18.98	peak
3		0.6660	21.88	10.10	31.98	56.00	-24.02	peak
4		1.2660	22.08	10.06	32.14	56.00	-23.86	peak
5		1.6580	22.01	10.06	32.07	56.00	-23.93	peak
6		2.6860	20.62	10.04	30.66	56.00	-25.34	peak



EUT :	WIFI+BT Module	Model Name. :	WT39M2011
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Terminal:	Neutral
Test Mode :	WIFI TX Mode (802.11a CH36)		
Test Voltage :	120V/ 60Hz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.1500	32.19	10.12	42.31	66.00	-23.69	peak
2	*	0.3980	29.29	10.05	39.34	57.90	-18.56	peak
3		0.6700	22.02	10.02	32.04	56.00	-23.96	peak
4		1.6060	22.65	10.10	32.75	56.00	-23.25	peak
5		3.2060	21.62	10.06	31.68	56.00	-24.32	peak
6		4.0940	21.84	10.06	31.90	56.00	-24.10	peak



4. RADIATED EMISSION MEASUREMENT

4.1 RADIATED EMISSION LIMIT (Frequency Range 9KHz-1000MHz)

20 dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a) and RSS-247 Section 3, then the 15.209(a) and RSS-General limit in the table below has to be followed.

FREQUENCY (MHz)	Field Strength (uV/m at meter)	Measurement Distance (meters)
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

RADIATED EMISSION LIMITS (Above 1000MHz)

FREQUENCY (MHz)	Class A (dBuV/m)(at 3 M)		Class B (dBuV/m)(at 3 M)	
	Peak	Average		Peak
Above 1000	80	60	74	54

Limits of emission out of the restricted bands

FREQUENCY (MHz)	EIRP Limits (dBm)	Equivalent Field Strength (dBuV/m)(at 3 M)
5150~5250	-27	68.3
5725~5825	-27 (beyond 10 MHz of the band edge)	68.3
	-17 (within 10 MHz of the band edge)	78.3

Note:

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (2) Emission Level(dBuV/m)=20log Emission Level(uV/m)

The following table is the setting of the receiver

Receiver Parameter	Setting
Attenuation	Auto
Start Frequency~ Stop Frequency	9kHz~150kHz/ RB 200Hz for QP
Start Frequency~ Stop Frequency	150kHz~30MHz/ RB 9kHz for QP
Start Frequency~ Stop Frequency	30MHz~1000MHz/ RB120kHz for QP

The following table is the setting of the spectrum

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10 th carrier harmonic
RB/ VB (emission in restricted band)	1MHz/ 3 MHz for Peak, 1MHz/ 10Hz for Average

4.2 TEST PROCEDURE

- The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured, above 1G Average detector mode will be instead.
- If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

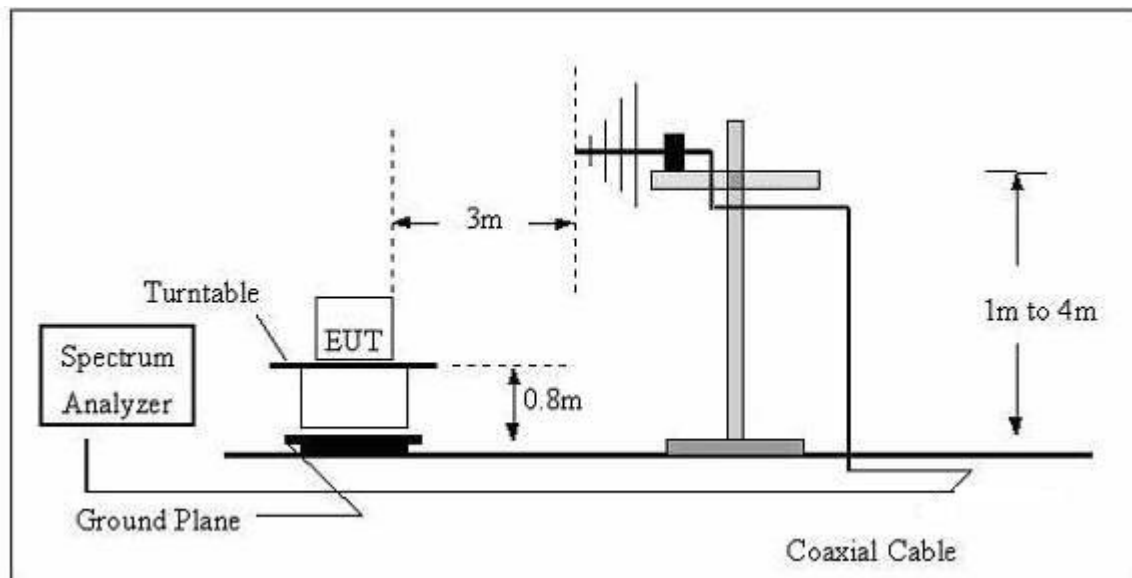
Note:

Both horizontal and vertical antenna polarities were tested.

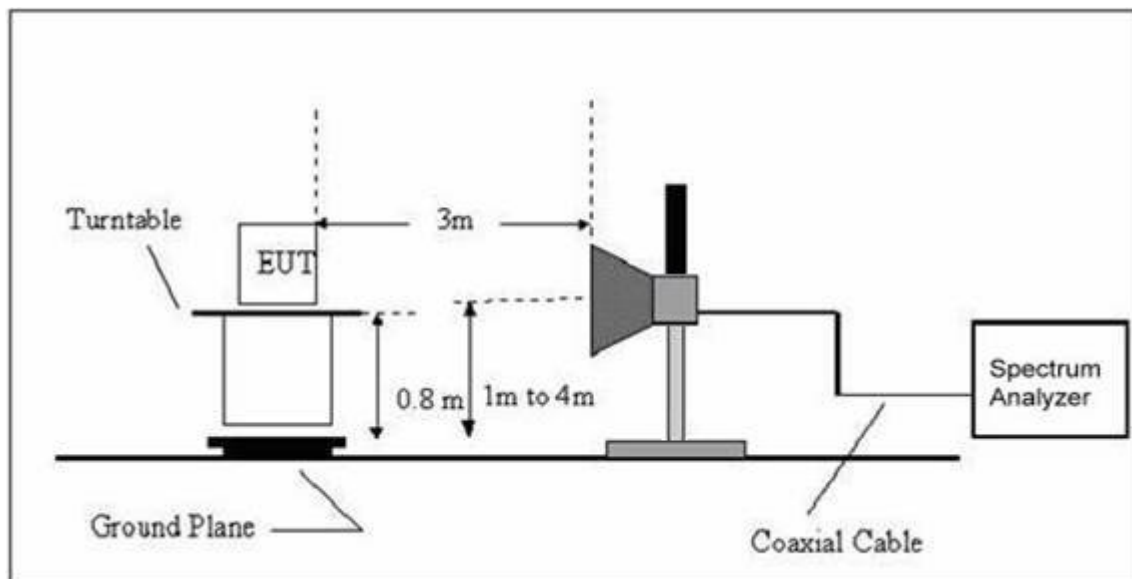
And performed pretest to three orthogonal axis. The worst case emissions were reported.

4.3 TEST SETUP

(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



(B) Radiated Emission Test Set-Up Frequency Above 1GHz



4.4 TEST INSTRUMENTS

Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
Broadband Antenna	R&S	VULB 9168	VULB 9168-456	Jul. 05, 2015	Jul. 04. 2016	1 year
Test Cable	N/A	R-01	N/A	Dec. 23, 2015	Dec. 22, 2016	1 year
Test Cable	N/A	R-02	N/A	Dec. 23, 2015	Dec. 22, 2016	1 year
EMI Test Receiver	R&S	ESCI	101324	Jul. 05, 2015	Jul. 04. 2016	1 year
Antenna Mast	EM	SC100_1	N/A	N/A	N/A	N/A
Turn Table	EM	SC100	060531	N/A	N/A	N/A
50Ω Switch	Anritsu Corp	MP59B	6200983705	Jul. 05, 2015	Jul. 04. 2016	1 year
Spectrum Analyzer	R&S	FSP40	100154	Jul. 05, 2015	Jul. 04. 2016	1 year
Horn Antenna	R&S	HF906	10029	Jul. 05, 2015	Jul. 04. 2016	1 year
Amplifier	EM	EM-30180	060538	Jul. 05, 2015	Jul. 04. 2016	1 year

4.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **2.3** Unless otherwise a special operating condition is specified in the follows during the testing.

4.6 TEST RESULTS

4.6.1 TEST RESULTS (Bellow 1GHz)

EUT :	WIFI+BT Module	Model Name. :	WT39M2011
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Ant. Pol.:	Horizontal
Test Mode :	WIFI TX Mode (802.11a CH36)		
Test Voltage :	DC 5V		

No. Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	81.4100	52.82	-22.60	30.22	40.00	-9.78	QP
2	234.6700	52.36	-18.69	33.67	46.00	-12.33	QP
3	285.1100	51.94	-16.85	35.09	46.00	-10.91	QP
4 *	331.6700	53.23	-16.36	36.87	46.00	-9.13	QP
5	428.6700	49.60	-15.34	34.26	46.00	-11.74	QP
6	644.9800	42.89	-12.12	30.77	46.00	-15.23	QP

Remark:

Factor = Antenna Factor + Cable Loss.

EUT :	WIFI+BT Module	Model Name. :	WT39M2011
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Ant. Pol.:	Vertical
Test Mode :	WIFI TX Mode (802.11a CH36)		
Test Voltage :	DC 5V		

No. Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1 *	50.3700	52.87	-20.76	32.11	40.00	-7.89	QP
2	85.2900	54.32	-22.76	31.56	40.00	-8.44	QP
3	257.9500	52.90	-18.01	34.89	46.00	-11.11	QP
4	271.5300	52.98	-17.27	35.71	46.00	-10.29	QP
5	376.2900	50.59	-15.93	34.66	46.00	-11.34	QP
6	715.7900	42.42	-11.64	30.78	46.00	-15.22	QP

Remark:

Factor = Antenna Factor + Cable Loss.

EUT :	WIFI+BT Module	Model Name. :	WT39M2011
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Ant. Pol.:	Horizontal
Test Mode :	WIFI TX Mode (802.11a CH149)		
Test Voltage :	DC 5V		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	62.0100	55.67	-20.80	34.87	40.00	-5.13	QP	
2		140.5800	56.17	-19.74	36.43	43.50	-7.07	QP	
3		314.2100	57.69	-20.04	37.65	46.00	-8.35	QP	
4		436.4300	55.21	-17.18	38.03	46.00	-7.97	QP	
5		629.4600	50.46	-13.91	36.55	46.00	-9.45	QP	
6		749.7400	46.83	-12.05	34.78	46.00	-11.22	QP	

Remark:

Factor = Antenna Factor + Cable Loss.

EUT :	WIFI+BT Module	Model Name. :	WT39M2011
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Ant. Pol.:	Vertical
Test Mode :	WIFI TX Mode (802.11a CH149)		
Test Voltage :	DC 5V		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	
1		52.3100	49.61	-20.85	28.76	40.00	-11.24	QP	
2	*	67.8300	54.22	-21.67	32.55	40.00	-7.45	QP	
3		174.5300	52.66	-19.05	33.61	43.50	-9.89	QP	
4		236.6100	53.37	-18.67	34.70	46.00	-11.30	QP	
5		290.9300	50.08	-16.57	33.51	46.00	-12.49	QP	
6		380.1700	48.79	-15.90	32.89	46.00	-13.11	QP	

Remark:

Factor = Antenna Factor + Cable Loss.

4.6.2 TEST RESULTS (Above 1GHz)

EUT :	WIFI+BT Module	Model Name. :	WT39M2011
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Ant. Pol.:	Horizontal
Test Mode :	WIFI TX Mode (802.11a CH36)		
Test Voltage :	DC 5V		

No. Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Detector	Comment
	MHz	dBuV	dB	dBuV	dBuV	dB		
1	5150.000	49.60	6.74	56.34	68.30	-11.96	peak	
2	5150.000	42.39	6.74	49.13	54.00	-4.87	AVG	
3 X	5173.600	90.61	6.82	97.43	68.30	29.13	peak	Fundamental Frequency
4 *	5173.800	84.47	6.82	91.29	54.00	37.29	AVG	Fundamental Frequency

No. Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Detector	Comment
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1 *	10360.50	34.00	13.59	47.59	54.00	-6.41	AVG	
2	10360.55	45.17	13.59	58.76	68.30	-9.54	peak	

Remark:

Factor = Antenna Factor + Cable Loss.

EUT :	WIFI+BT Module	Model Name. :	WT39M2011
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Ant. Pol.:	Vertical
Test Mode :	WIFI TX Mode (802.11a CH36)		
Test Voltage :	DC 5V		

No. Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Detector	Comment
	MHz	dBuV	dB	dBuV	dBuV	dB		
1	5150.000	48.41	6.74	55.15	68.30	-13.15	peak	
2	5150.000	42.77	6.74	49.51	54.00	-4.49	AVG	
3 *	5186.400	85.71	6.86	92.57	54.00	38.57	AVG	Fundamental Frequency
4 X	5186.800	91.72	6.86	98.58	68.30	30.28	peak	Fundamental Frequency

No. Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Detector	Comment
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1	10360.55	44.27	13.59	57.86	68.30	-10.44	peak	
2 *	10360.64	33.15	13.59	46.74	54.00	-7.26	AVG	

Remark:

Factor = Antenna Factor + Cable Loss.

EUT :	WIFI+BT Module	Model Name. :	WT39M2011
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Ant. Pol.:	Horizontal
Test Mode :	WIFI TX Mode (802.11a CH40)		
Test Voltage :	DC 5V		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	10401.60	34.42	13.62	48.04	54.00	-5.96	AVG	
2		10401.68	45.35	13.62	58.97	68.30	-9.33	peak	

Remark:

Factor = Antenna Factor + Cable Loss.

EUT :	WIFI+BT Module	Model Name. :	WT39M2011
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Ant. Pol.:	Vertical
Test Mode :	WIFI TX Mode (802.11a CH40)		
Test Voltage :	DC 5V		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	10401.52	34.19	13.62	47.81	54.00	-6.19	AVG	
2		10401.64	44.47	13.62	58.09	68.30	-10.21	peak	

Remark:

Factor = Antenna Factor + Cable Loss.

EUT :	WIFI+BT Module	Model Name. :	WT39M2011
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Ant. Pol.:	Horizontal
Test Mode :	WIFI TX Mode (802.11a CH48)		
Test Voltage :	DC 5V		

No. Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1 *	5235.000	86.61	7.01	93.62	54.00	39.62	AVG	Fundamental Frequency
2 X	5235.400	92.87	7.01	99.88	68.30	31.58	peak	Fundamental Frequency
3	5350.000	44.39	7.37	51.76	68.30	-16.54	peak	
4	5350.000	39.26	7.37	46.63	54.00	-7.37	AVG	

No. Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	10481.45	45.97	13.70	59.67	68.30	-8.63	peak	
2 *	10481.45	34.91	13.70	48.61	54.00	-5.39	AVG	

Remark:

Factor = Antenna Factor + Cable Loss.

EUT :	WIFI+BT Module	Model Name. :	WT39M2011
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Ant. Pol.:	Vertical
Test Mode :	WIFI TX Mode (802.11a CH48)		
Test Voltage :	DC 5V		

No. Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1 *	5246.000	85.91	7.05	92.96	54.00	38.96	AVG	Fundamental Frequency
2 X	5246.600	91.73	7.05	98.78	68.30	30.48	peak	Fundamental Frequency
3	5350.000	45.10	7.37	52.47	68.30	-15.83	peak	
4	5350.000	40.81	7.37	48.18	54.00	-5.82	AVG	

No. Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	10481.40	33.17	13.70	46.87	54.00	-7.13	AVG	
2	10481.56	44.70	13.70	58.40	68.30	-9.90	peak	

Remark:

Factor = Antenna Factor + Cable Loss.

EUT :	WIFI+BT Module	Model Name. :	WT39M2011
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Ant. Pol.:	Horizontal
Test Mode :	WIFI TX Mode (802.11n(HT20) CH36)		
Test Voltage :	DC 5V		

No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	5150.000	46.93	6.74	53.67	68.30	-14.63	peak	
2	5150.000	43.04	6.74	49.78	54.00	-4.22	AVG	
3 *	5173.400	85.11	6.82	91.93	54.00	37.93	AVG	Fundamental Frequency
4 X	5174.800	91.52	6.82	98.34	68.30	30.04	peak	Fundamental Frequency

No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	10361.20	45.86	13.59	59.45	68.30	-8.85	peak	
2 *	10361.28	34.49	13.59	48.08	54.00	-5.92	AVG	

Remark:

Factor = Antenna Factor + Cable Loss.

EUT :	WIFI+BT Module	Model Name. :	WT39M2011
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Ant. Pol.:	Vertical
Test Mode :	WIFI TX Mode (802.11n(HT20) CH36)		
Test Voltage :	DC 5V		

No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	5150.000	46.83	6.74	53.57	68.30	-14.73	peak	
2	5150.000	42.44	6.74	49.18	54.00	-4.82	AVG	
3 *	5185.400	85.74	6.85	92.59	54.00	38.59	AVG	Fundamental Frequency
4 X	5186.600	91.66	6.86	98.52	68.30	30.22	peak	Fundamental Frequency

No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	10361.20	32.69	13.59	46.28	54.00	-7.72	AVG	
2	10361.24	44.96	13.59	58.55	68.30	-9.75	peak	

Remark:

Factor = Antenna Factor + Cable Loss.

EUT :	WIFI+BT Module	Model Name. :	WT39M2011
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Ant. Pol.:	Horizontal
Test Mode :	WIFI TX Mode (802.11n(HT20) CH40)		
Test Voltage :	DC 5V		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	10400.20	32.94	13.62	46.56	54.00	-7.44	AVG	
2		10400.25	45.12	13.62	58.74	68.30	-9.56	peak	

Remark:

Factor = Antenna Factor + Cable Loss.

EUT :	WIFI+BT Module	Model Name. :	WT39M2011
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Ant. Pol.:	Vertical
Test Mode :	WIFI TX Mode (802.11n(HT20) CH40)		
Test Voltage :	DC 5V		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	10400.21	32.77	13.62	46.39	54.00	-7.61	AVG	
2		10400.26	44.14	13.62	57.76	68.30	-10.54	peak	

Remark:

Factor = Antenna Factor + Cable Loss.

EUT :	WIFI+BT Module	Model Name. :	WT39M2011
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Ant. Pol.:	Horizontal
Test Mode :	WIFI TX Mode (802.11n(HT20) CH48)		
Test Voltage :	DC 5V		

No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1 X	5233.000	91.96	7.01	98.97	68.30	30.67	peak	Fundamental Frequency
2 *	5234.000	87.04	7.01	94.05	54.00	40.05	AVG	Fundamental Frequency
3	5350.000	45.18	7.37	52.55	68.30	-15.75	peak	
4	5350.000	40.75	7.37	48.12	54.00	-5.88	AVG	

No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	10481.18	33.80	13.70	47.50	54.00	-6.50	AVG	
2	10481.24	44.78	13.70	58.48	68.30	-9.82	peak	

Remark:

Factor = Antenna Factor + Cable Loss.

EUT :	WIFI+BT Module	Model Name. :	WT39M2011
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Ant. Pol.:	Vertical
Test Mode :	WIFI TX Mode (802.11n(HT20) CH48)		
Test Voltage :	DC 5V		

No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1 *	5245.200	86.55	7.04	93.59	54.00	39.59	AVG	Fundamental Frequency
2 X	5246.400	91.71	7.05	98.76	68.30	30.46	peak	Fundamental Frequency
3	5350.000	45.39	7.37	52.76	68.30	-15.54	peak	
4	5350.000	40.78	7.37	48.15	54.00	-5.85	AVG	

No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	10481.19	32.81	13.70	46.51	54.00	-7.49	AVG	
2	10481.23	43.96	13.70	57.66	68.30	-10.64	peak	

Remark:

Factor = Antenna Factor + Cable Loss.

EUT :	WIFI+BT Module	Model Name. :	WT39M2011
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Ant. Pol.:	Horizontal
Test Mode :	WIFI TX Mode (802.11n(HT40) CH38)		
Test Voltage :	DC 5V		

No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	5150.000	44.97	6.74	51.71	68.30	-16.59	peak	
2	5150.000	40.84	6.74	47.58	54.00	-6.42	AVG	
3 *	5187.000	78.59	6.86	85.45	54.00	31.45	AVG	Fundamental Frequency
4 X	5191.800	90.66	6.89	97.55	68.30	29.25	peak	Fundamental Frequency

No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	10381.51	31.72	13.60	45.32	54.00	-8.68	AVG	
2	10381.56	43.85	13.60	57.45	68.30	-10.85	peak	

Remark:

Factor = Antenna Factor + Cable Loss.

EUT :	WIFI+BT Module	Model Name. :	WT39M2011
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Ant. Pol.:	Vertical
Test Mode :	WIFI TX Mode (802.11n(HT40) CH38)		
Test Voltage :	DC 5V		

No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	5150.000	43.06	6.74	49.80	68.30	-18.50	peak	
2	5150.000	46.72	6.74	53.46	54.00	-0.54	AVG	
3 X	5188.400	92.96	6.86	99.82	68.30	31.52	peak	Fundamental Frequency
4 *	5191.800	81.20	6.89	88.09	54.00	34.09	AVG	Fundamental Frequency

No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	10381.53	31.02	13.60	44.62	54.00	-9.38	AVG	
2	10381.58	43.15	13.60	56.75	68.30	-11.55	peak	

Remark:

Factor = Antenna Factor + Cable Loss.

EUT :	WIFI+BT Module	Model Name. :	WT39M2011
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Ant. Pol.:	Horizontal
Test Mode :	WIFI TX Mode (802.11n(HT40) CH46)		
Test Voltage :	DC 5V		

No. Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1 *	5228.200	80.35	6.99	87.34	54.00	33.34	AVG	Fundamental Frequency
2 X	5231.600	91.44	7.01	98.45	68.30	30.15	peak	Fundamental Frequency
3	5350.000	45.31	7.37	52.68	68.30	-15.62	peak	
4	5350.000	40.25	7.37	47.62	54.00	-6.38	AVG	

No. Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	10461.59	31.81	13.68	45.49	54.00	-8.51	AVG	
2	10461.65	43.96	13.68	57.64	68.30	-10.66	peak	

Remark:

Factor = Antenna Factor + Cable Loss.

EUT :	WIFI+BT Module	Model Name. :	WT39M2011
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Ant. Pol.:	Vertical
Test Mode :	WIFI TX Mode (802.11n(HT40) CH46)		
Test Voltage :	DC 5V		

No. Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1 *	5243.200	82.47	7.03	89.50	54.00	35.50	AVG	Fundamental Frequency
2 X	5244.600	93.29	7.04	100.33	68.30	32.03	peak	Fundamental Frequency
3	5350.000	45.94	7.37	53.31	68.30	-14.99	peak	
4	5350.000	40.77	7.37	48.14	54.00	-5.86	AVG	

No. Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	10461.57	31.03	13.68	44.71	54.00	-9.29	AVG	
2	10461.64	42.92	13.68	56.60	68.30	-11.70	peak	

Remark:

Factor = Antenna Factor + Cable Loss.

EUT :	WIFI+BT Module	Model Name. :	WT39M2011
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Ant. Pol.:	Horizontal
Test Mode :	WIFI TX Mode (802.11a CH149)		
Test Voltage :	DC 5V		

No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	5725.000	55.37	9.78	65.15	68.30	-3.15	peak	
2	5725.000	42.43	9.78	52.21	54.00	-1.79	AVG	
3 X	5750.400	83.68	9.85	93.53	68.30	25.23	peak	Fundamental Frequency
4 *	5751.200	72.74	9.85	82.59	54.00	28.59	AVG	Fundamental Frequency

No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	11491.42	31.83	14.75	46.58	54.00	-7.42	AVG	
2	11491.47	44.01	14.75	58.76	68.30	-9.54	peak	

Remark:

Factor = Antenna Factor + Cable Loss.

EUT :	WIFI+BT Module	Model Name. :	WT39M2011
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Ant. Pol.:	Vertical
Test Mode :	WIFI TX Mode (802.11a CH149)		
Test Voltage :	DC 5V		

No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	5725.000	55.34	9.78	65.12	68.30	-3.18	peak	
2	5725.000	40.74	9.78	50.52	54.00	-3.48	AVG	
3 X	5739.000	86.47	9.82	96.29	68.30	27.99	peak	Fundamental Frequency
4 *	5751.400	76.08	9.85	85.93	54.00	31.93	AVG	Fundamental Frequency

No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	11491.41	30.89	14.75	45.64	54.00	-8.36	AVG	
2	11491.47	43.03	14.75	57.78	68.30	-10.52	peak	

Remark:

Factor = Antenna Factor + Cable Loss.

EUT :	WIFI+BT Module	Model Name. :	WT39M2011
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Ant. Pol.:	Horizontal
Test Mode :	WIFI TX Mode (802.11a CH157)		
Test Voltage :	DC 5V		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	11571.45	31.36	14.87	46.23	54.00	-7.77	AVG	
2		11571.67	43.78	14.87	58.65	68.30	-9.65	peak	

Remark:

Factor = Antenna Factor + Cable Loss.

EUT :	WIFI+BT Module	Model Name. :	WT39M2011
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Ant. Pol.:	Vertical
Test Mode :	WIFI TX Mode (802.11a CH157)		
Test Voltage :	DC 5V		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	11571.47	30.61	14.87	45.48	54.00	-8.52	AVG	
2		11571.68	42.66	14.87	57.53	68.30	-10.77	peak	

Remark:

Factor = Antenna Factor + Cable Loss.

EUT :	WIFI+BT Module	Model Name. :	WT39M2011
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Ant. Pol.:	Horizontal
Test Mode :	WIFI TX Mode (802.11a CH165)		
Test Voltage :	DC 5V		

No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 X	5830.400	84.59	10.08	94.67	68.30	26.37	peak	Fundamental Frequency
2 *	5831.400	73.55	10.08	83.63	54.00	29.63	AVG	Fundamental Frequency
3	5850.000	55.28	10.13	65.41	68.30	-2.89	peak	
4	5850.000	40.20	10.13	50.33	54.00	-3.67	AVG	

No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	11651.61	31.42	14.99	46.41	54.00	-7.59	AVG	
2	11651.65	43.63	14.99	58.62	68.30	-9.68	peak	

Remark:

Factor = Antenna Factor + Cable Loss.

EUT :	WIFI+BT Module	Model Name. :	WT39M2011
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Ant. Pol.:	Vertical
Test Mode :	WIFI TX Mode (802.11a CH165)		
Test Voltage :	DC 5V		

No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	5831.400	78.88	10.08	88.96	54.00	34.96	AVG	Fundamental Frequency
2 X	5832.400	88.89	10.08	98.97	68.30	30.67	peak	Fundamental Frequency
3	5850.000	55.35	10.13	65.48	68.30	-2.82	peak	
4	5850.000	40.19	10.13	50.32	54.00	-3.68	AVG	

No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	11651.60	30.09	14.99	45.08	54.00	-8.92	AVG	
2	11651.66	42.38	14.99	57.37	68.30	-10.93	peak	

Remark:

Factor = Antenna Factor + Cable Loss.

EUT :	WIFI+BT Module	Model Name. :	WT39M2011
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Ant. Pol.:	Horizontal
Test Mode :	WIFI TX Mode (802.11n(HT20) CH149)		
Test Voltage :	DC 5V		

No. Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	5725.000	43.51	8.85	52.36	68.30	-15.94	peak	
2	5725.000	39.58	8.85	48.43	54.00	-5.57	AVG	
3 X	5750.000	88.28	8.95	97.23	68.30	28.93	peak	Fundamental Frequency
4 *	5751.200	77.46	8.95	86.41	54.00	32.41	AVG	Fundamental Frequency

No. Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	11491.57	31.05	14.75	45.80	54.00	-8.20	AVG	
2	11491.63	43.68	14.75	58.43	68.30	-9.87	peak	

Remark:

Factor = Antenna Factor + Cable Loss.

EUT :	WIFI+BT Module	Model Name. :	WT39M2011
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Ant. Pol.:	Vertical
Test Mode :	WIFI TX Mode (802.11n(HT20) CH149)		
Test Voltage :	DC 5V		

No. Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	5725.000	44.53	8.85	53.38	68.30	-14.92	peak	
2	5725.000	40.69	8.85	49.54	54.00	-4.46	AVG	
3 X	5740.000	90.81	8.91	99.72	68.30	31.42	peak	Fundamental Frequency
4 *	5751.200	81.04	8.95	89.99	54.00	35.99	AVG	Fundamental Frequency

No. Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	11491.51	30.12	14.75	44.87	54.00	-9.13	AVG	
2	11491.56	42.80	14.75	57.55	68.30	-10.75	peak	

Remark:

Factor = Antenna Factor + Cable Loss.

EUT :	WIFI+BT Module	Model Name. :	WT39M2011
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Ant. Pol.:	Horizontal
Test Mode :	WIFI TX Mode (802.11n(HT20) CH157)		
Test Voltage :	DC 5V		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	11571.49	30.99	14.87	45.86	54.00	-8.14	AVG	
2		11571.56	43.58	14.87	58.45	68.30	-9.85	peak	

Remark:

Factor = Antenna Factor + Cable Loss.

EUT :	WIFI+BT Module	Model Name. :	WT39M2011
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Ant. Pol.:	Vertical
Test Mode :	WIFI TX Mode (802.11n(HT20) CH157)		
Test Voltage :	DC 5V		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	11571.58	30.01	14.87	44.88	54.00	-9.12	AVG	
2		11571.64	42.62	14.87	57.49	68.30	-10.81	peak	

Remark:

Factor = Antenna Factor + Cable Loss.

EUT :	WIFI+BT Module	Model Name. :	WT39M2011
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Ant. Pol.:	Horizontal
Test Mode :	WIFI TX Mode (802.11n(HT20) CH165)		
Test Voltage :	DC 5V		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	X	5820.000	87.89	9.27	97.16	68.30	28.86	peak	Fundamental Frequency
2	*	5830.200	76.87	9.31	86.18	54.00	32.18	AVG	Fundamental Frequency
3		5850.000	43.17	9.40	52.57	68.30	-15.73	peak	
4		5850.000	38.64	9.40	48.04	54.00	-5.96	AVG	

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	11651.59	29.76	14.99	44.75	54.00	-9.25	AVG	
2		11651.68	42.69	14.99	57.68	68.30	-10.62	peak	

Remark:

Factor = Antenna Factor + Cable Loss.

EUT :	WIFI+BT Module	Model Name. :	WT39M2011
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Ant. Pol.:	Vertical
Test Mode :	WIFI TX Mode (802.11n(HT20) CH165)		
Test Voltage :	DC 5V		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	X	5818.400	89.53	9.26	98.79	68.30	30.49	peak	Fundamental Frequency
2	*	5831.200	81.84	9.32	91.16	54.00	37.16	AVG	Fundamental Frequency
3		5850.000	44.27	9.40	53.67	68.30	-14.63	peak	
4		5850.000	39.73	9.40	49.13	54.00	-4.87	AVG	

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	11651.56	29.90	14.99	44.89	54.00	-9.11	AVG	
2		11651.67	42.45	14.99	57.44	68.30	-10.86	peak	

Remark:

Factor = Antenna Factor + Cable Loss.

EUT :	WIFI+BT Module	Model Name. :	WT39M2011
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Ant. Pol.:	Horizontal
Test Mode :	WIFI TX Mode (802.11n(HT40) CH151)		
Test Voltage :	DC 5V		

No. Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	5725.000	44.85	8.85	53.70	68.30	-14.60	peak	
2	5725.000	40.75	8.85	49.60	54.00	-4.40	AVG	
3 *	5768.000	75.13	9.03	84.16	54.00	30.16	AVG	Fundamental Frequency
4 X	5769.800	87.08	9.04	96.12	68.30	27.82	peak	Fundamental Frequency

No. Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	11511.58	29.43	14.78	44.21	54.00	-9.79	AVG	
2	11511.67	43.10	14.78	57.88	68.30	-10.42	peak	

Remark:

Factor = Antenna Factor + Cable Loss.

EUT :	WIFI+BT Module	Model Name. :	WT39M2011
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Ant. Pol.:	Vertical
Test Mode :	WIFI TX Mode (802.11n(HT40) CH151)		
Test Voltage :	DC 5V		

No. Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	5725.000	44.71	8.85	53.56	68.30	-14.74	peak	
2	5725.000	39.63	8.85	48.48	54.00	-5.52	AVG	
3 X	5751.800	89.83	8.96	98.79	68.30	30.49	peak	Fundamental Frequency
4 *	5757.700	78.51	8.99	87.50	54.00	33.50	AVG	Fundamental Frequency

No. Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	11511.55	29.09	14.78	43.87	54.00	-10.13	AVG	
2	11511.64	41.72	14.78	56.50	68.30	-11.80	peak	

Remark:

Factor = Antenna Factor + Cable Loss.

EUT :	WIFI+BT Module	Model Name. :	WT39M2011
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Ant. Pol.:	Horizontal
Test Mode :	WIFI TX Mode (802.11n(HT40) CH159)		
Test Voltage :	DC 5V		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	5778.800	88.46	9.08	97.54	68.30	29.24	peak	Fundamental Frequency
2	*	5779.400	77.39	9.09	86.48	54.00	32.48	AVG	Fundamental Frequency
3		5850.000	47.43	9.40	56.83	68.30	-11.47	peak	
4		5850.000	38.37	9.40	47.77	54.00	-6.23	AVG	

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	11591.56	28.59	14.90	43.49	54.00	-10.51	AVG	
2		11591.65	41.75	14.90	56.65	68.30	-11.65	peak	

Remark:

Factor = Antenna Factor + Cable Loss.

EUT :	WIFI+BT Module	Model Name. :	WT39M2011
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	1010hPa	Ant. Pol.:	Vertical
Test Mode :	WIFI TX Mode (802.11n(HT40) CH159)		
Test Voltage :	DC 5V		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	5793.200	90.63	9.15	99.78	68.30	31.48	peak	Fundamental Frequency
2	*	5800.800	78.36	9.18	87.54	54.00	33.54	AVG	Fundamental Frequency
3		5850.000	44.28	9.40	53.68	68.30	-14.62	peak	
4		5850.000	38.55	9.40	47.95	54.00	-6.05	AVG	

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	11591.51	29.84	14.90	44.74	54.00	-9.26	AVG	
2		11591.60	42.55	14.90	57.45	68.30	-10.85	peak	

Remark:

Factor = Antenna Factor + Cable Loss.

5. MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

5.1 LIMITS

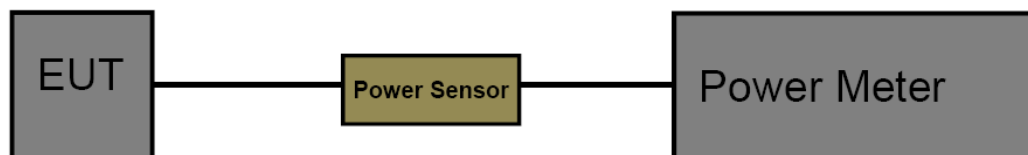
FCC Part 15.407, subpart E/RSS-247	
Frequency Range (MHz)	Limits
5150~5250	Fixed: 30 dBm (1W) Mobile and Portable: 24 dBm (250mW)
5725~5850	30 dBm (1W)

5.2 TEST PROCEDURE

The measurement is according to section 3 of FCC KDB 789033 D02 General UNII Test Procedures New Rules v01.

The EUT was directly connected to the power meter and antenna output port as shown in the block diagram as below.

5.3 TEST SETUP



5.4 TEST INSTRUMENTS

Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
P-Series Power Meter	Agilent	N1911A	MY45100482	Jul. 05, 2015	Jul. 04. 2016	1 year
Wideband Power Sensor	Agilent	N1921A	MY51200145	Jul. 05, 2015	Jul. 04. 2016	1 year
Power Meter	Anritsu	ML2495A	1204015	Dec. 20, 2015	Dec. 19. 2016	1 year
Wideband Power Sensor	Anritsu	MA2411B	1127120	Dec. 20, 2015	Dec. 19. 2016	1 year

5.5 EUT OPERATING CONDITIONS

The EUT was set to continuously transmitting in the maximum power during the test.

5.6 TEST RESULTS

Conducted Power 5150~5250					
802.11a Power					
Channel	Frequency	Conducted Power (dBm)			Max. Limit (dBm)
		Ant. 0	Ant. 1	Total	
36	5180 MHz		15.65	15.65	24
40	5200 MHz		15.48	15.48	
48	5240 MHz		14.72	14.72	
802.11n(HT20) Power					
Channel	Frequency	Conducted Power (dBm)			Max. Limit (dBm)
		Ant. 0	Ant. 1	Total	
36	5180 MHz	11.14	12.13	14.67	24
40	5200 MHz	11.23	12.32	14.82	
48	5240 MHz	11.31	12.37	14.88	
802.11n(HT40) Power					
Channel	Frequency	Conducted Power (dBm)			Max. Limit (dBm)
		Ant. 0	Ant. 1	Total	
38	5190 MHz	11.55	12.67	15.16	24
46	5240 MHz	11.61	12.75	15.23	
Note: The Antenna Gain is 2.78 dBi					

Conducted Power 5725~5850					
802.11a Power					
Channel	Frequency	Conducted Power (dBm)			Max. Limit (dBm)
		Ant. 0	Ant. 1	Total	
149	5745 MHz		14.44	14.44	24
157	5785 MHz		14.17	14.17	
165	5825 MHz		15.42	15.42	
802.11n(HT20) Power					
Channel	Frequency	Conducted Power (dBm)			Max. Limit (dBm)
		Ant. 0	Ant. 1	Total	
149	5745 MHz	10.74	12.13	14.50	24
157	5785 MHz	10.57	11.76	14.21	
165	5825 MHz	10.12	11.05	13.62	
802.11n(HT40) Power					
Channel	Frequency	Conducted Power (dBm)			Max. Limit (dBm)
		Ant. 0	Ant. 1	Total	
151	5755 MHz	10.56	11.75	14.21	24
159	5795 MHz	10.38	11.56	14.02	
Note: The Antenna Gain is 2.02 dBi.					

6. OCCUPIED BANDWIDTH MEASUREMENT

6.1 LIMITS

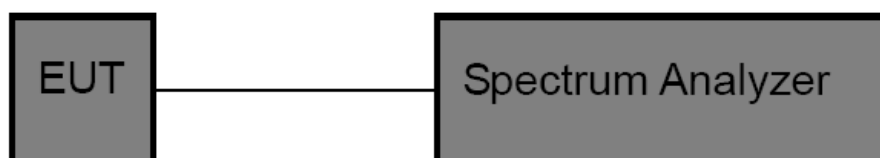
FCC Part 15.407, subpart E/ RSS 247	
Frequency Range (MHz)	Requirement
5150~5250	26 dB Bandwidth
5725~5850	6 dB Bandwidth>500 KHz

6.2 TEST PROCEDURE

The EUT was directly connected to the power meter and antenna output port as show in the block diagram as bellow.

Spectrum Parameters	Setting
6 dB Bandwidth	
Attenuation	Auto
Span	>6 dB Bandwidth
RBW	100 kHz
VBW	$\geq 3\text{RBW}$
Detector	Peak
Trace	Max Hold
26 dB Bandwidth	
Sweep Time	Auto
Spectrum Parameters	Setting
Attenuation	Auto
Span	>26 dB Bandwidth
RBW	1% of the emission bandwidth
VBW	$\geq \text{RBW}$
Detector	Peak
Trace	Max Hold

6.3 TEST SETUP



6.4 TEST INSTRUMENTS

Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
Spectrum Analyzer	R&S	FSP40	100154	Jul. 05, 2015	Jul. 06. 2016	1 year

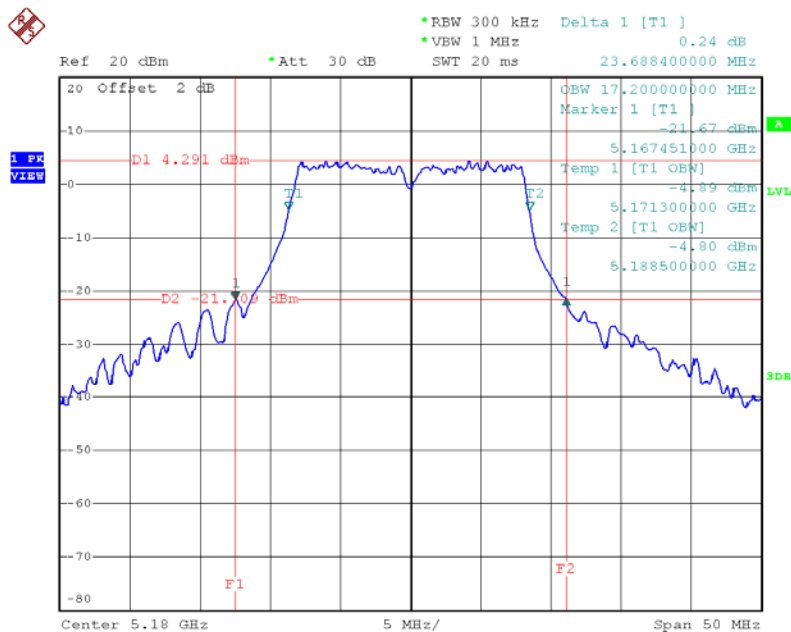
6.5 EUT OPERATING CONDITIONS

The EUT was set to continuously transmitting in the maximum power during the test.

6.6 TEST RESULTS

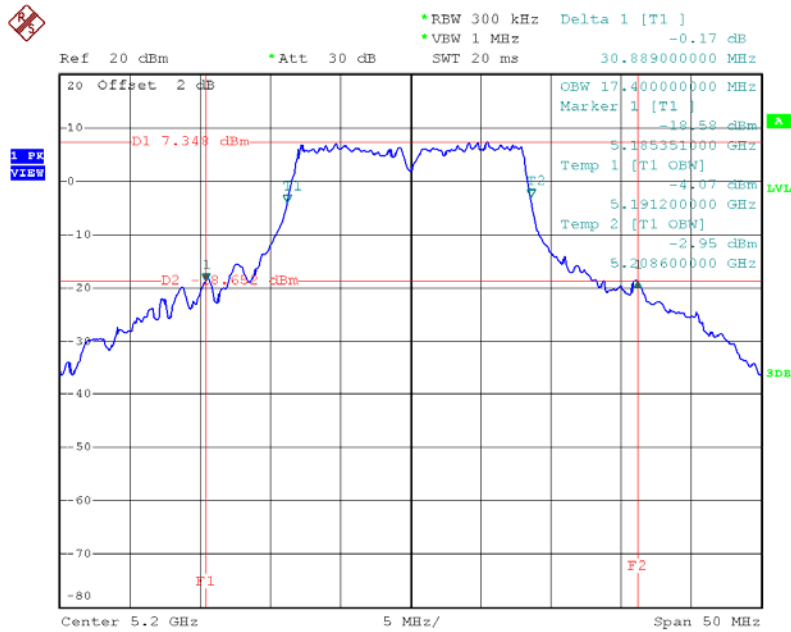
802.11a Mode			
Frequency (MHz)	26dB Bandwidth (MHz)	99% OBW (MHz)	Limit
5180	23.6884	17.20	N/A
5200	30.8890	17.40	
5240	27.1500	17.20	

802.11a Mode 5180 MHz



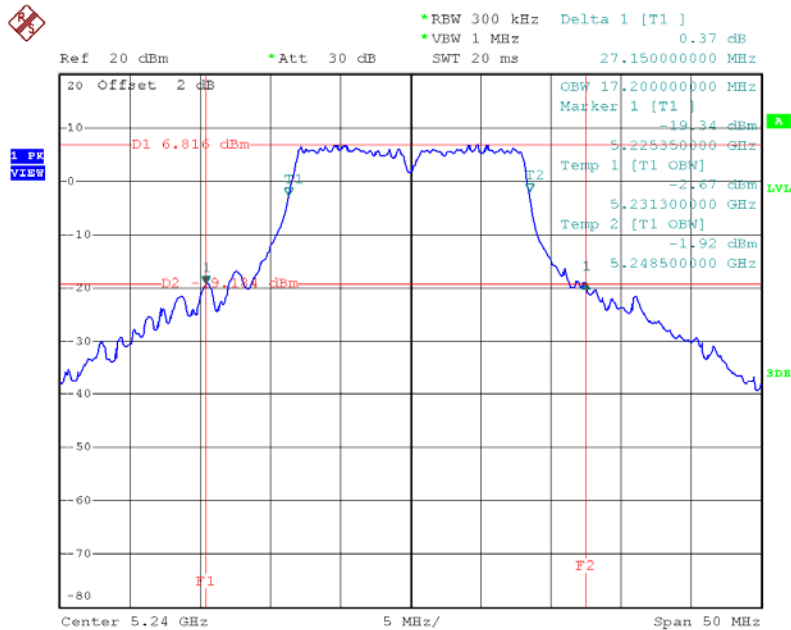
Date: 16.JAN.2016 11:15:15

802.11a Mode 5200 MHz



Date: 16.JAN.2016 19:49:59

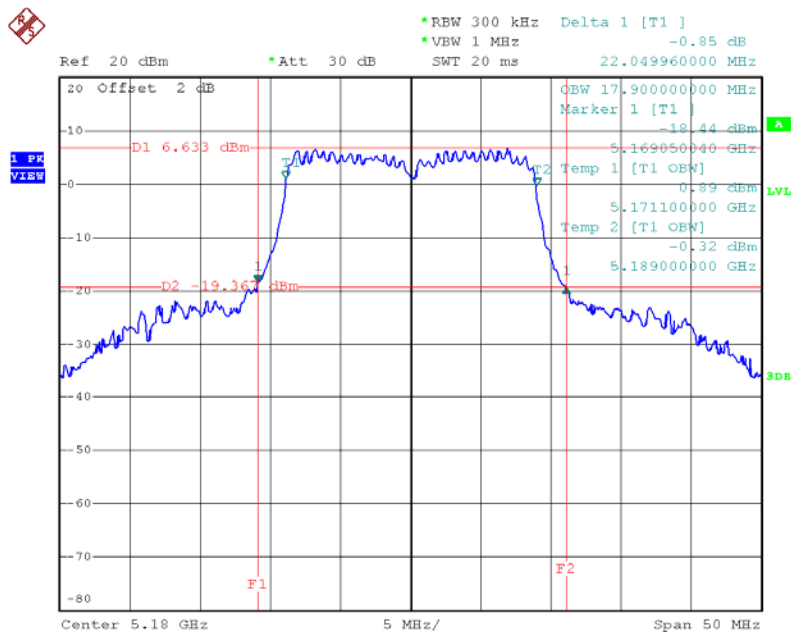
802.11a Mode 5240 MHz



Date: 16.JAN.2016 19:50:56

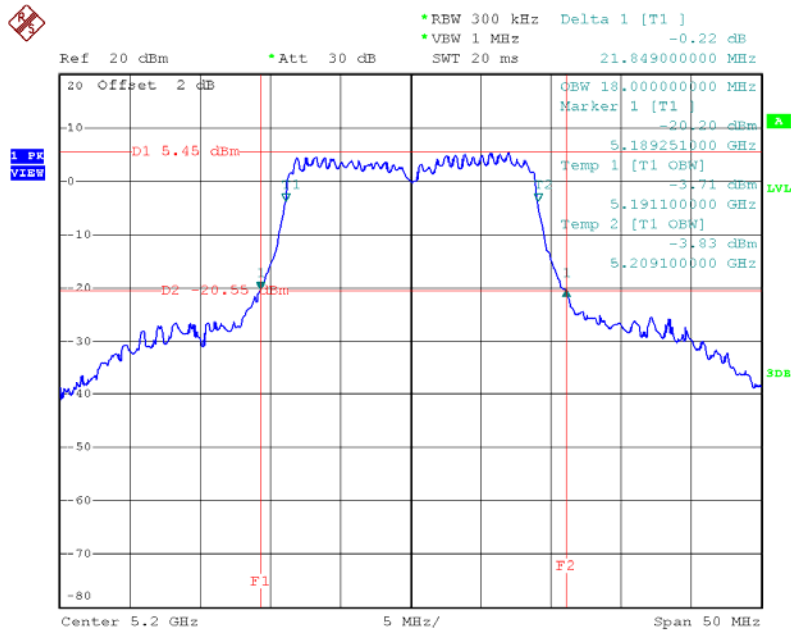
802.11n(HT20) Mode			
Frequency (MHz)	26dB Bandwidth (MHz)	99% OBW (MHz)	Limit
5180	22.04996	17.90	N/A
5200	21.8490	18.00	
5240	22.0490	17.90	

802.11n(HT20) Mode 5180 MHz



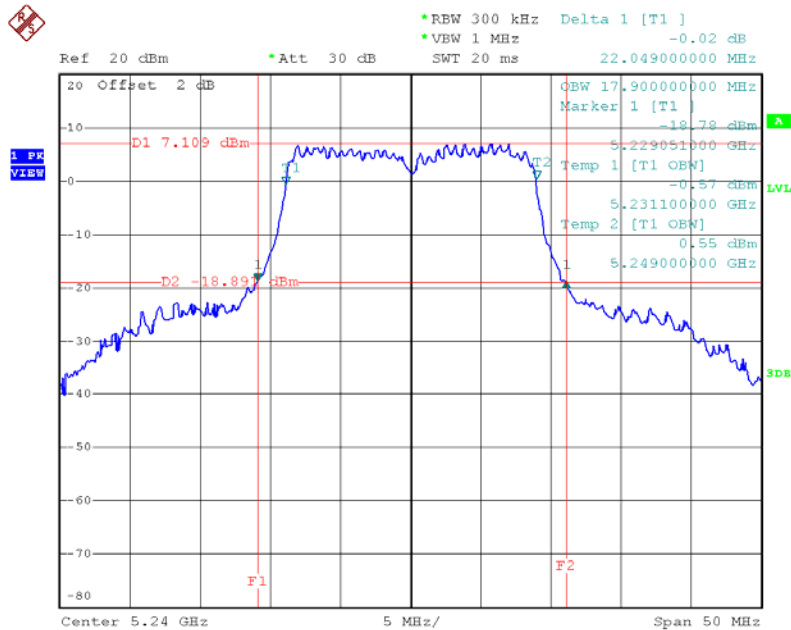
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802.11n(HT20) Mode 5200 MHz



Date: 16.JAN.2016 10:27:14

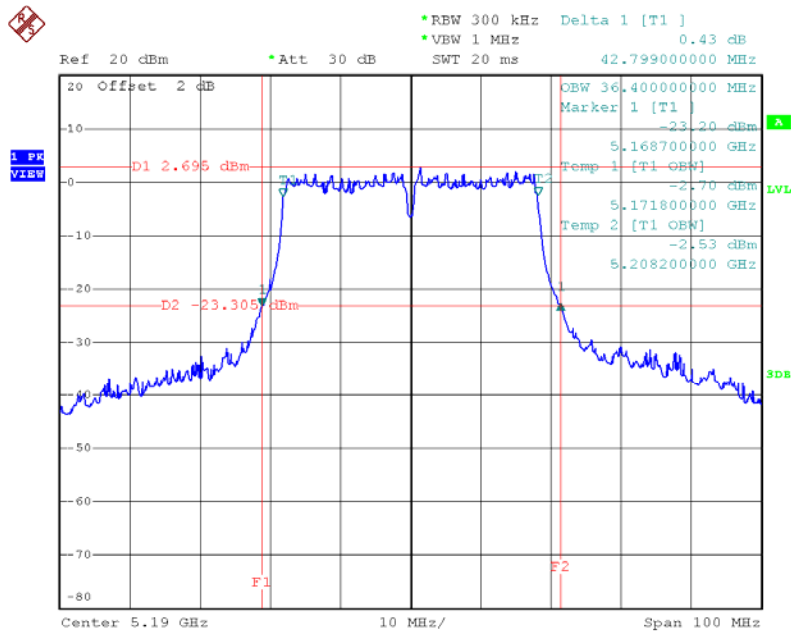
802.11n(HT20) Mode 5240 MHz



Date: 16.JAN.2016 10:28:26

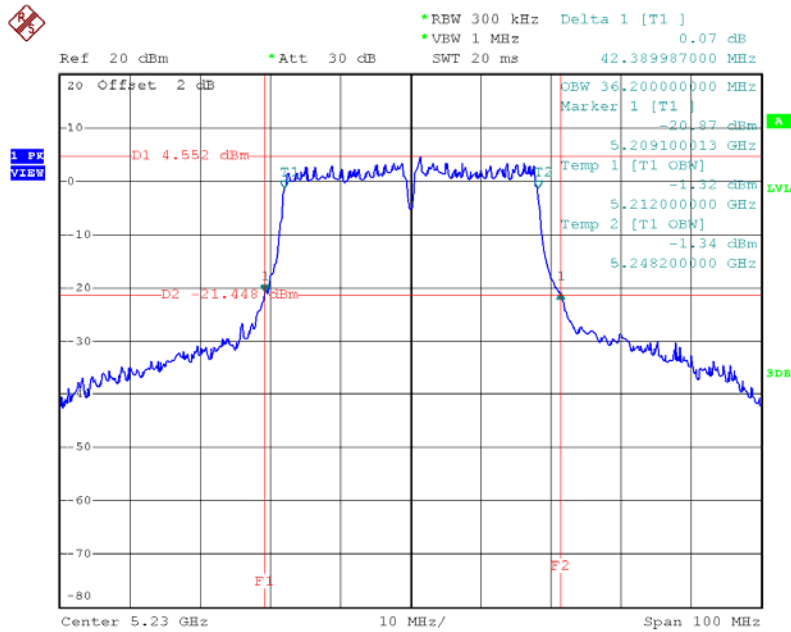
802.11n(HT40) Mode			
Frequency (MHz)	26dB Bandwidth (MHz)	99% OBW (MHz)	Limit
5190	42.7990	36.40	N/A
5230	42.389987	36.20	

802.11n(HT40) Mode 5190 MHz



Date: 16.JAN.2016 10:36:40

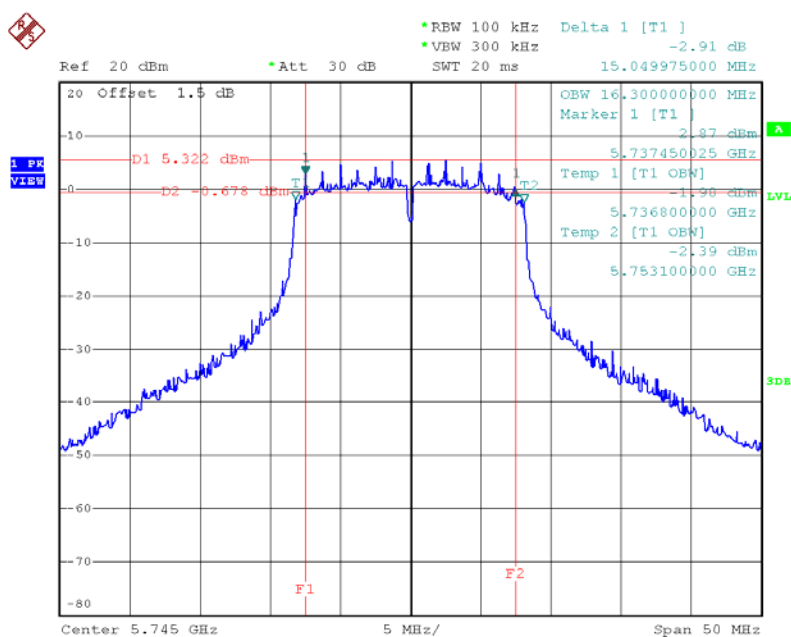
802.11n(HT40) Mode 5230 MHz



Date: 16.JAN.2016 10:40:27

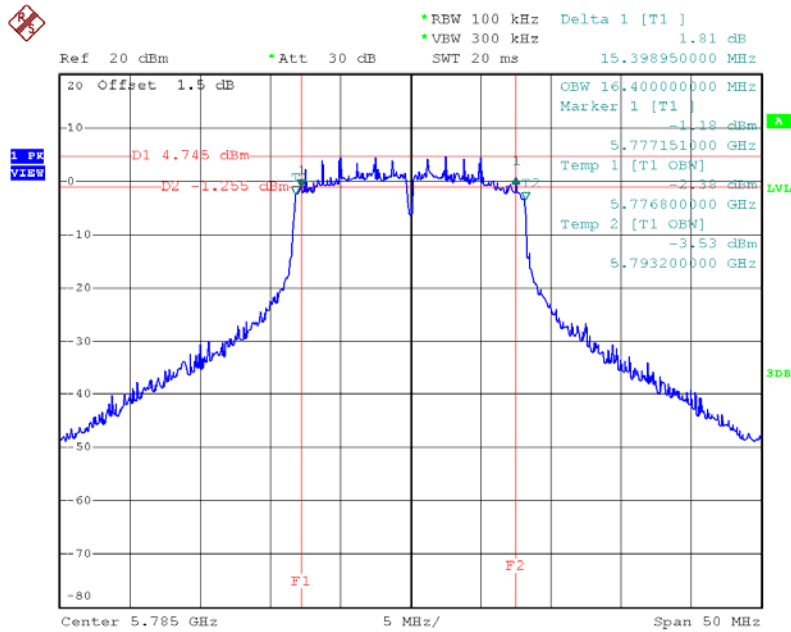
802.11a Mode			
Frequency (MHz)	6dB Bandwidth (MHz)	99% OBW (MHz)	Limit
5745	15.049975	16.30	>=500 kHz
5785	15.39895	16.40	
5825	15.49995	16.30	

802.11a Mode 5745MHz



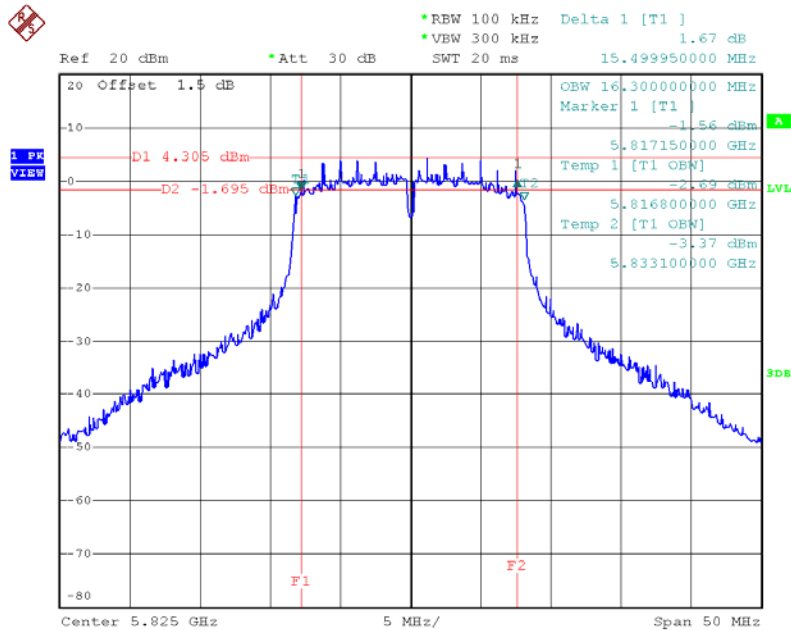
Date: 21.JAN.2016 19:03:47

802.11a Mode 5785MHz



Date: 21.JAN.2016 19:06:17

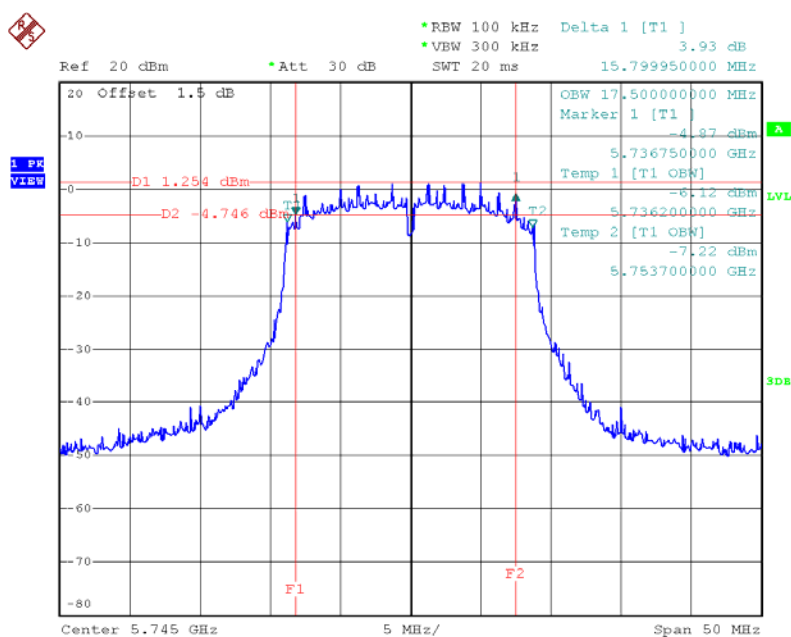
802.11a Mode 5825MHz



Date: 21.JAN.2016 19:07:08

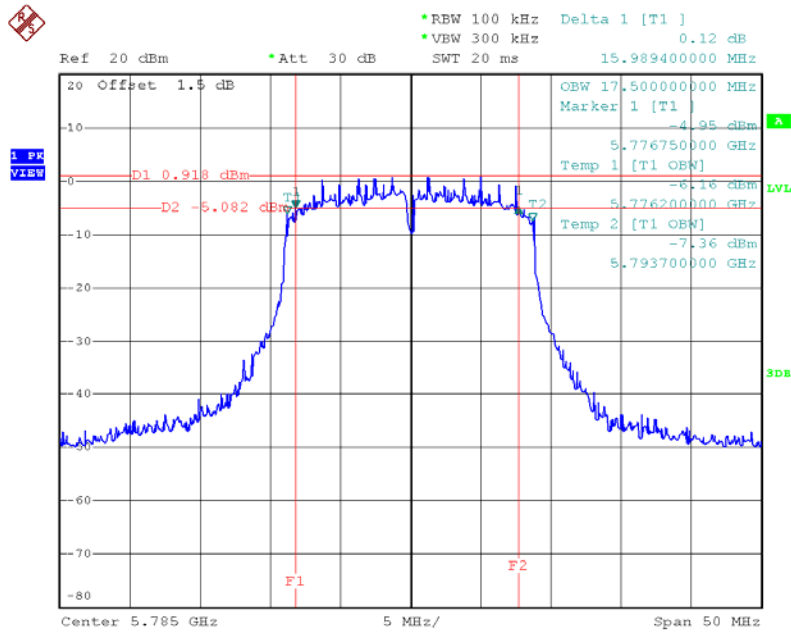
802.11n(HT20) Mode			
Frequency (MHz)	6dB Bandwidth (MHz)	99% OBW (MHz)	Limit
5745	15.79995	17.50	>=500 kHz
5785	15.9894	17.50	
5825	15.7994	17.50	

802.11n(HT20) Mode 5745MHz



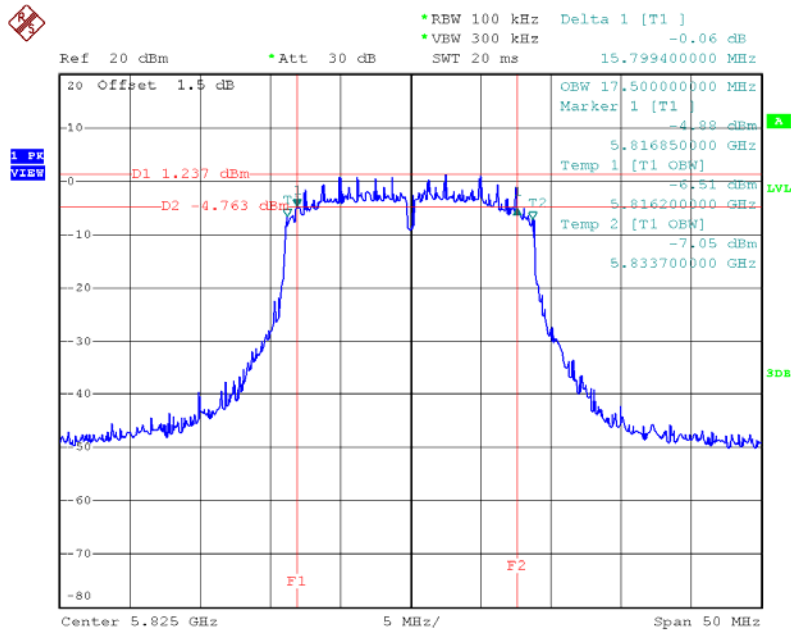
Date: 21.JAN.2016 21:57:18

802.11n(HT20) Mode 5785MHz



Date: 21.JAN.2016 21:58:15

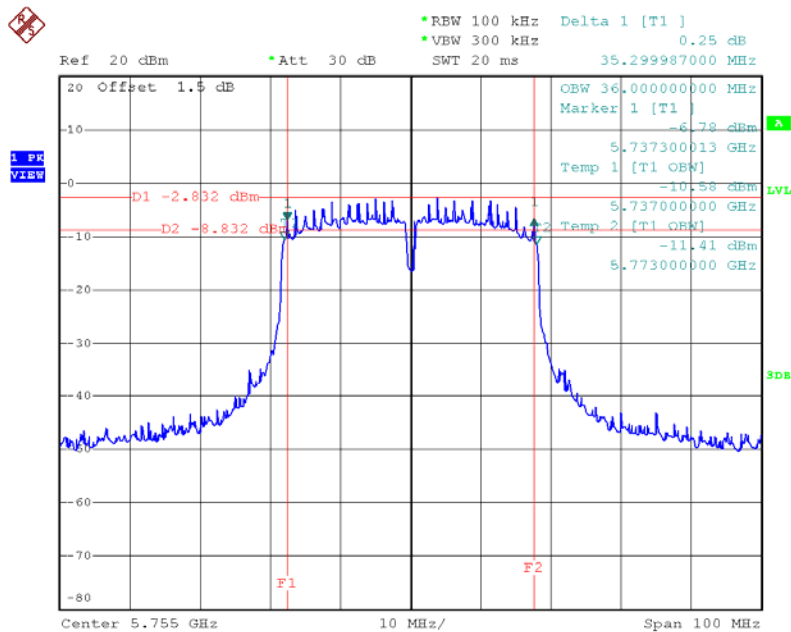
802.11n(HT20) Mode 5825MHz



Date: 21.JAN.2016 21:59:07

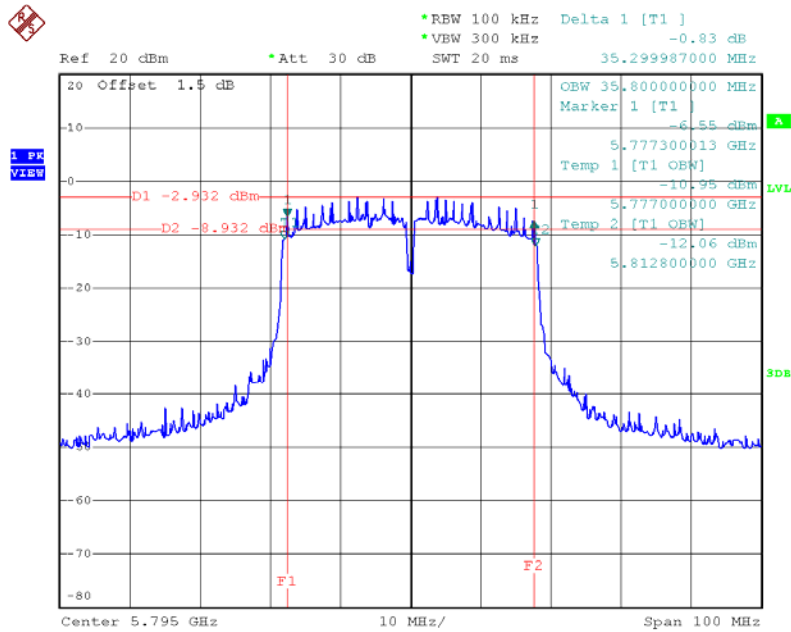
802.11n(HT40) Mode			
Frequency (MHz)	6dB Bandwidth (MHz)	99% OBW (MHz)	Limit
5755	35.299987	36.00	>=500 kHz
5795	35.299987	35.80	

802.11n(HT40) Mode 5755MHz



Date: 21.JAN.2016 21:24:43

802.11n(HT40) Mode 5795MHz



Date: 21.JAN.2016 21:25:44

7. POWER SPECTRAL DENSITY

7.1 LIMITS

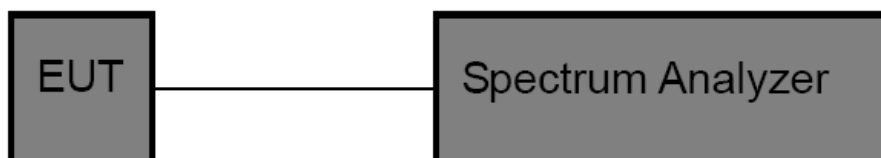
FCC Part 15.407, Subpart E/ RSS 247	
Frequency Range (MHz)	Limits
5150~5250	Mobile and Portable: 11 dBm/MHz Other: 17 dBm/MHz
5725~5850	30 dBm/500kHz

7.2 TEST PROCEDURE

The EUT was directly connected to the power meter and antenna output port as show in the block diagram as bellow.

Spectrum Parameters	Setting
Attenuation	Auto
Span	Set the span to encompass the EBW
RBW	1 MHz
VBW	3 MHz
Detector	RMS
Trace	Max Hold
Sweep Time	Auto
Trace	100 Traces in power averaging

7.3 TEST SETUP



7.4 TEST INSTRUMENTS

Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
Spectrum Analyzer	R&S	FSP40	100154	Jul. 05, 2015	Jul. 04. 2016	1 year

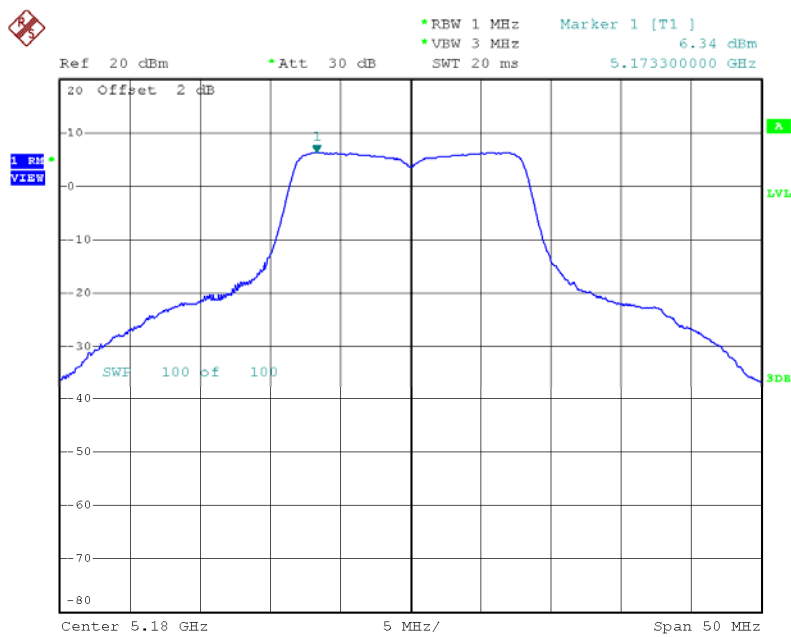
7.5 EUT OPERATING CONDITIONS

The EUT was set to continuously transmitting in the maximum power during the test.

7.6 TEST RESULTS

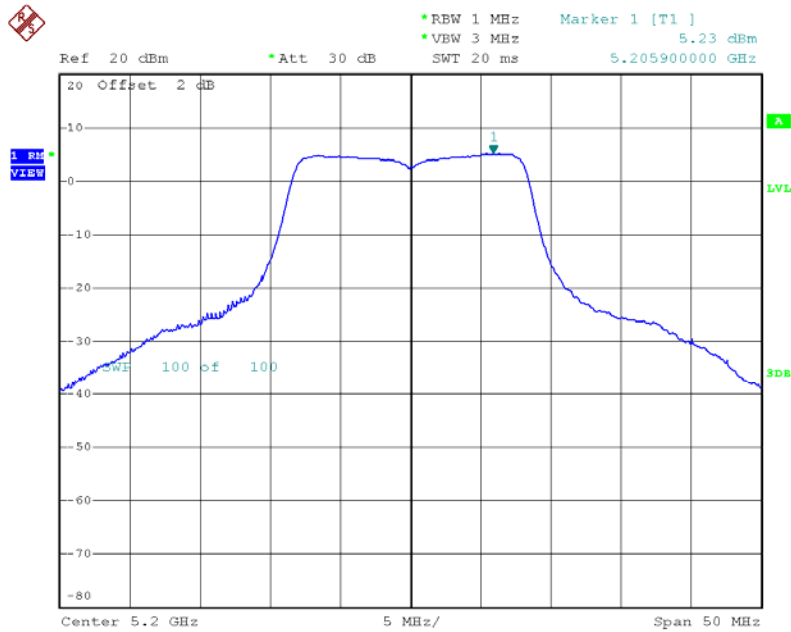
802.11a Mode					
Frequency (MHz)	Power Density (dBm/MHz)			Limit (dBm/MHz)	Result
	ANT 0	ANT 1	Total		
5180		6.34	6.34	11	Pass
5200		5.23	5.23		
5240		4.51	4.51		

802.11a Mode 5180 MHz



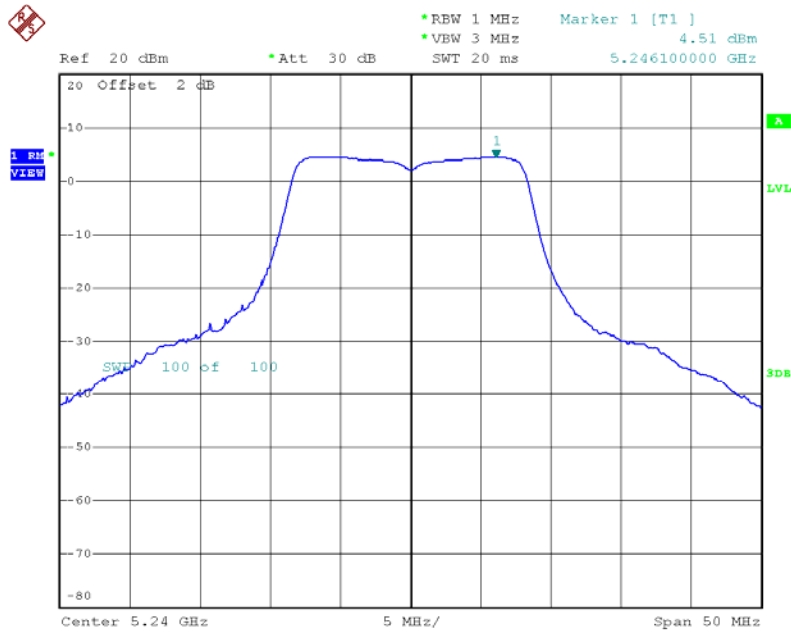
Date: 16.JAN.2016 19:34:40

802.11a Mode 5200 MHz



Date: 16.JAN.2016 19:50:08

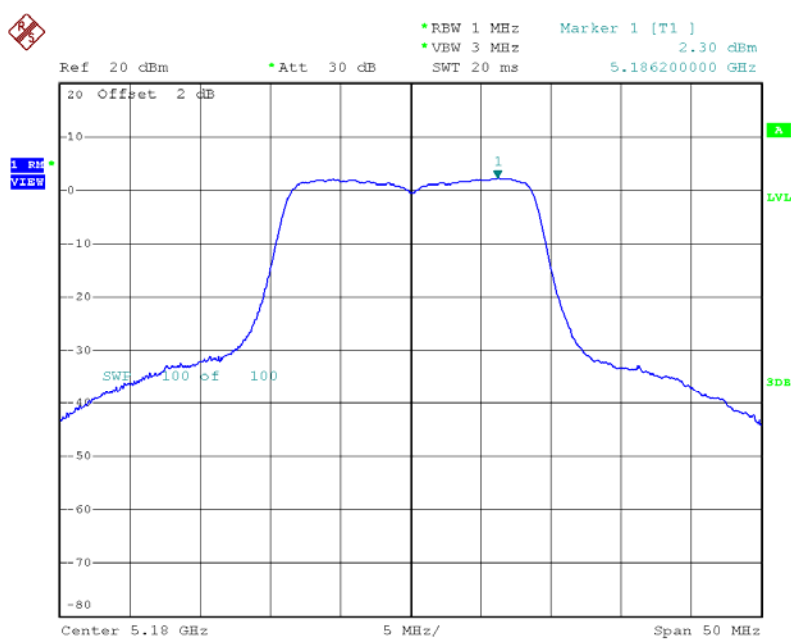
802.11a Mode 5240 MHz



Date: 16.JAN.2016 19:51:05

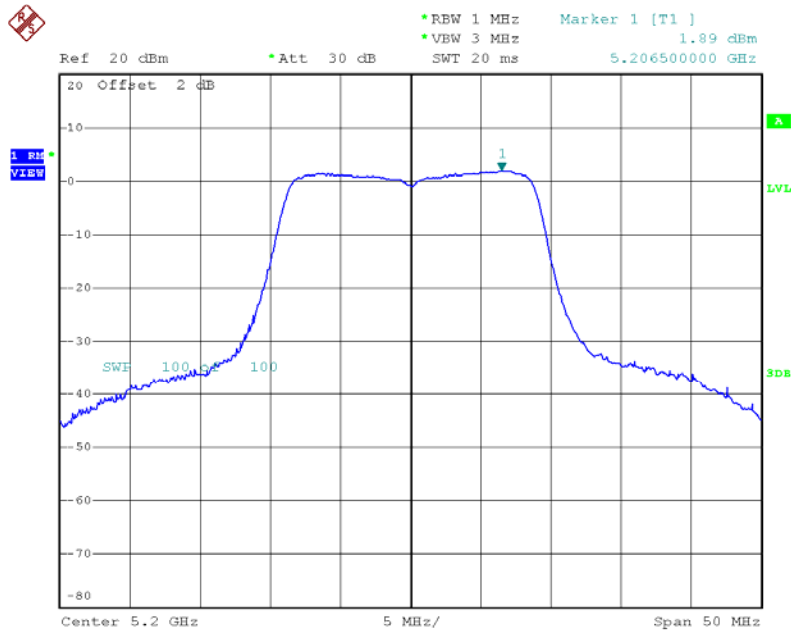
802.11n(HT20) Mode					
Frequency (MHz)	Power Density (dBm/MHz)			Limit (dBm/MHz)	Result
	ANT 0	ANT 1	Total		
5180	2.30	3.16	5.76	11	Pass
5200	1.89	2.82	5.39		
5240	3.63	4.10	6.88		

802.11n(HT20) Mode 5180 MHz-ANT 0



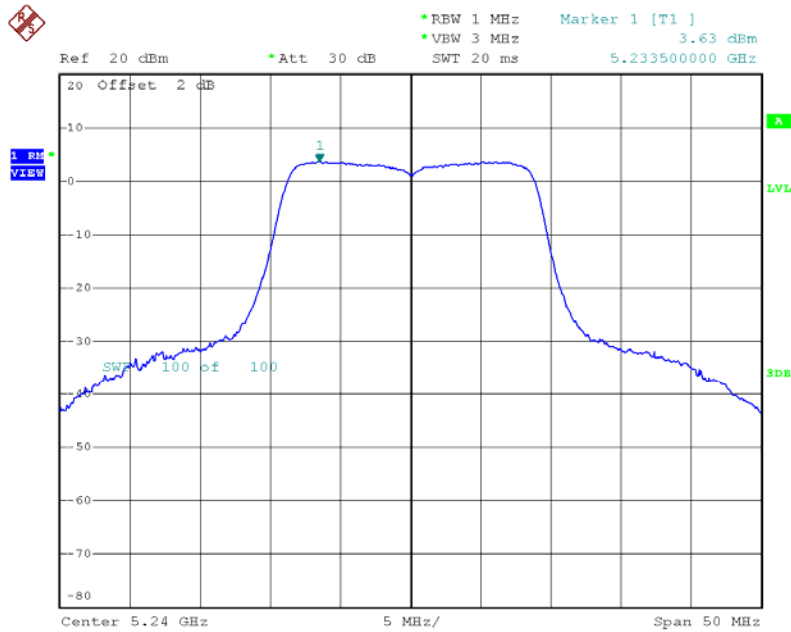
Date: 16.JAN.2016 20:33:14

802.11n(HT20) Mode 5200 MHz-ANT 0



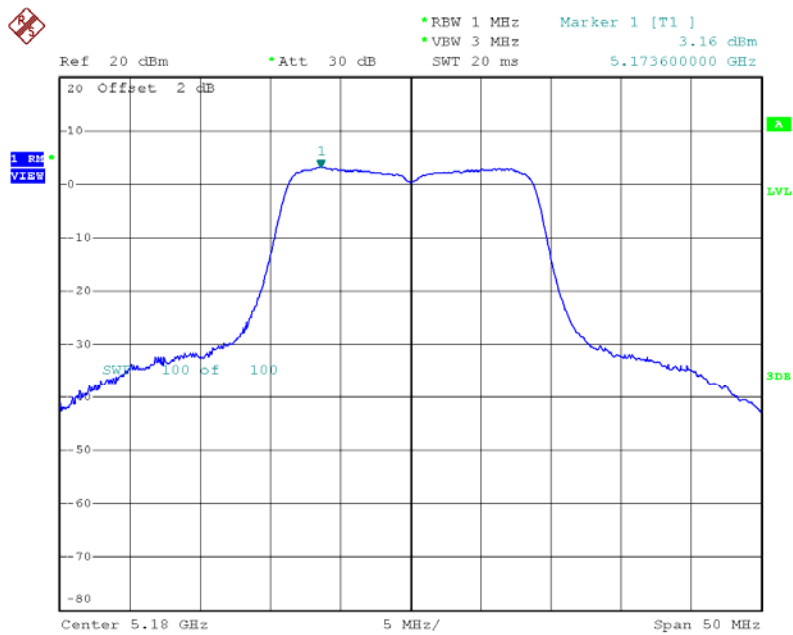
Date: 16.JAN.2016 10:27:23

802.11n(HT20) Mode 5240 MHz-ANT 0



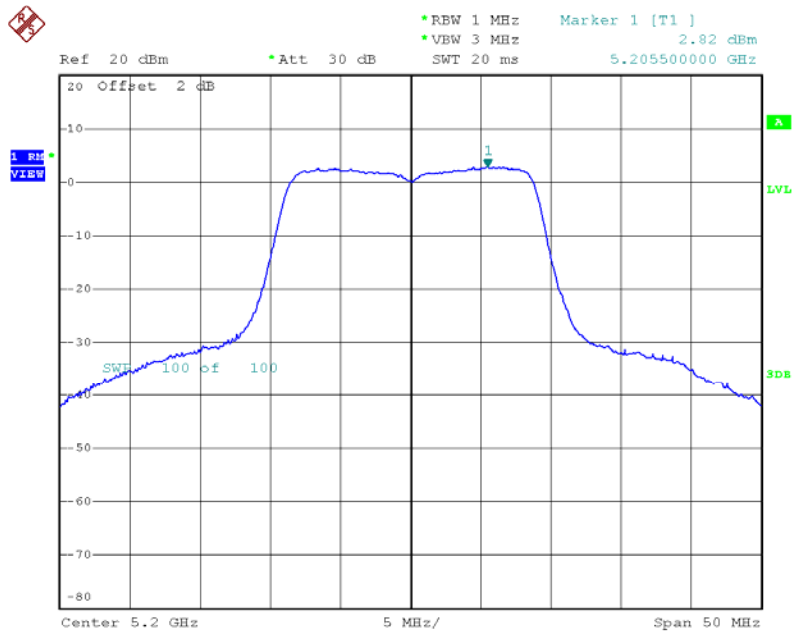
Date: 16.JAN.2016 10:28:35

802.11n(HT20) Mode 5180 MHz-ANT 1



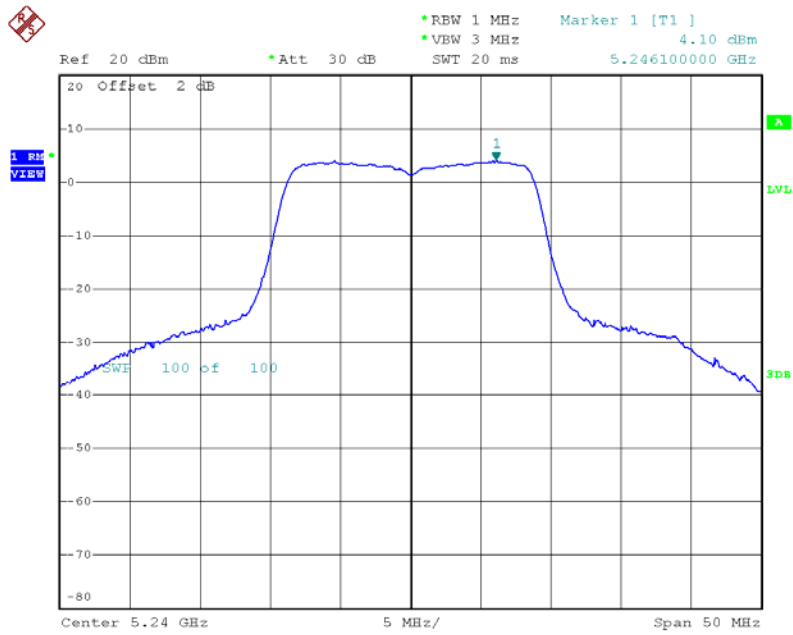
Date: 16.JAN.2016 10:20:16

802.11n(HT20) Mode 5200 MHz-ANT 1



Date: 16.JAN.2016 20:26:21

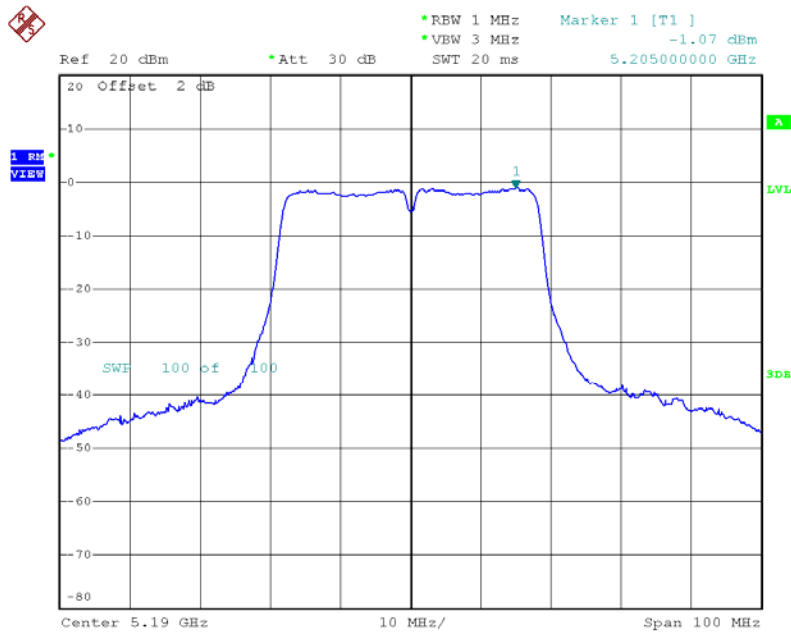
802.11n(HT20) Mode 5240 MHz-ANT 1



Date: 16.JAN.2016 20:27:49

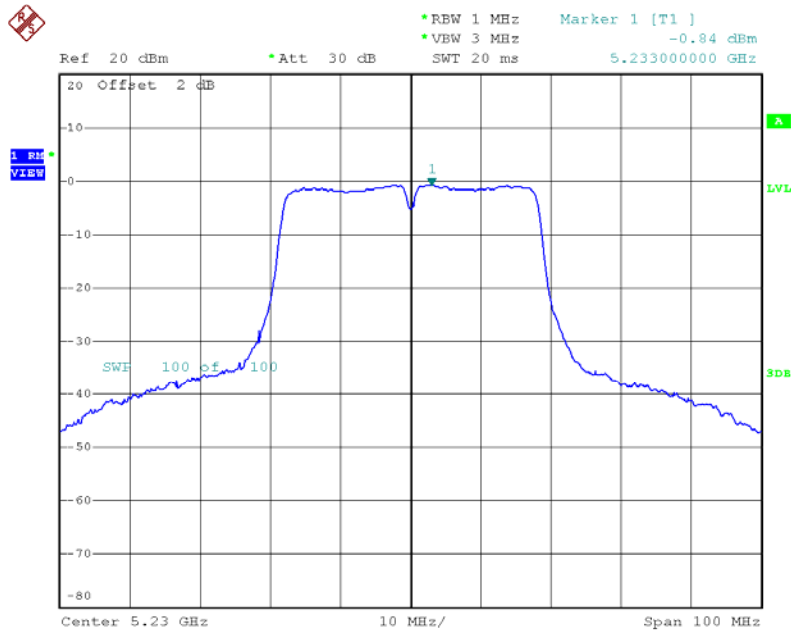
801.11n(HT40) Mode					
Frequency (MHz)	Power Density (dBm/MHz)			Limit (dBm/MHz)	Result
	ANT 0	ANT 1	Total		
5190	-1.07	0.15	2.59	11	Pass
5230	-0.84	0.43	2.85		

802.11n (HT40) Mode 5190 MHz



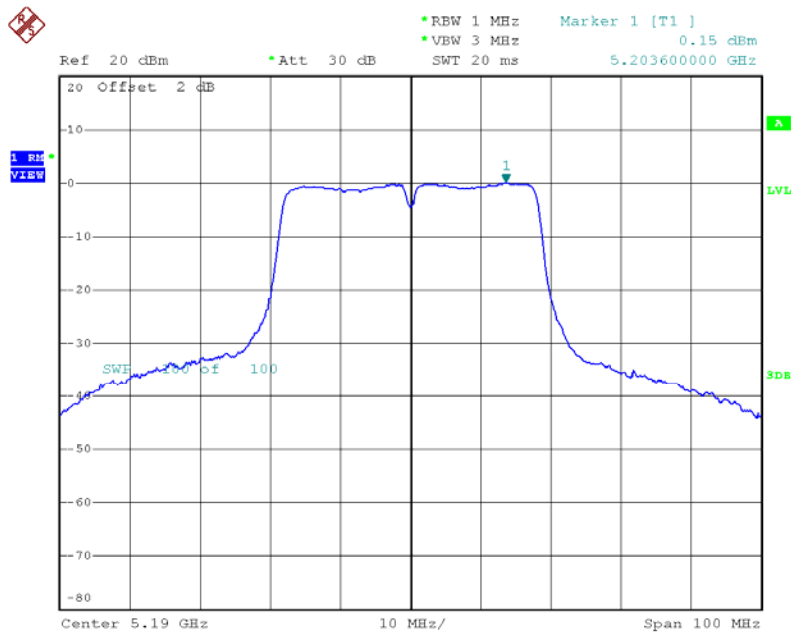
Date: 16.JAN.2016 10:36:50

802.11n (HT40) Mode 5230 MHz-ANT 0



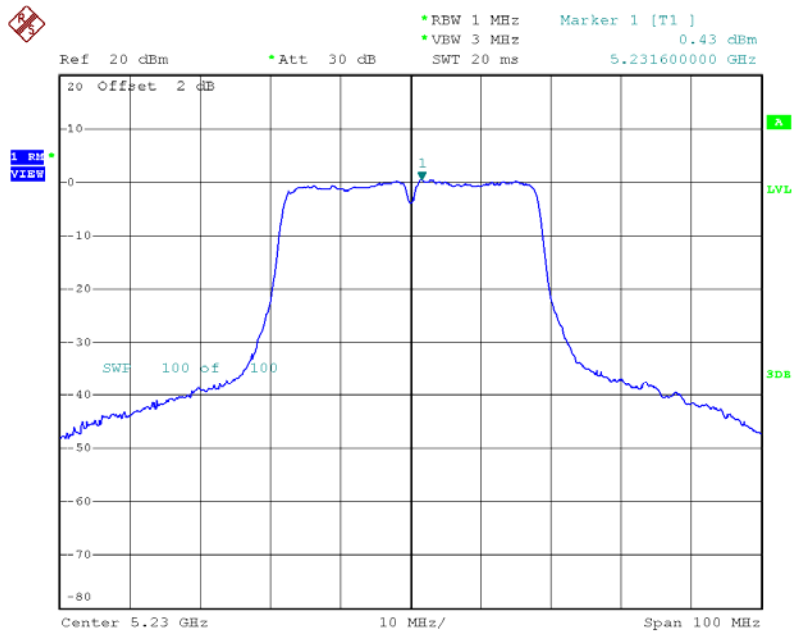
Date: 16.JAN.2016 21:05:02

802.11n (HT40) Mode 5190 MHz-ANT 1



Date: 16.JAN.2016 20:56:29

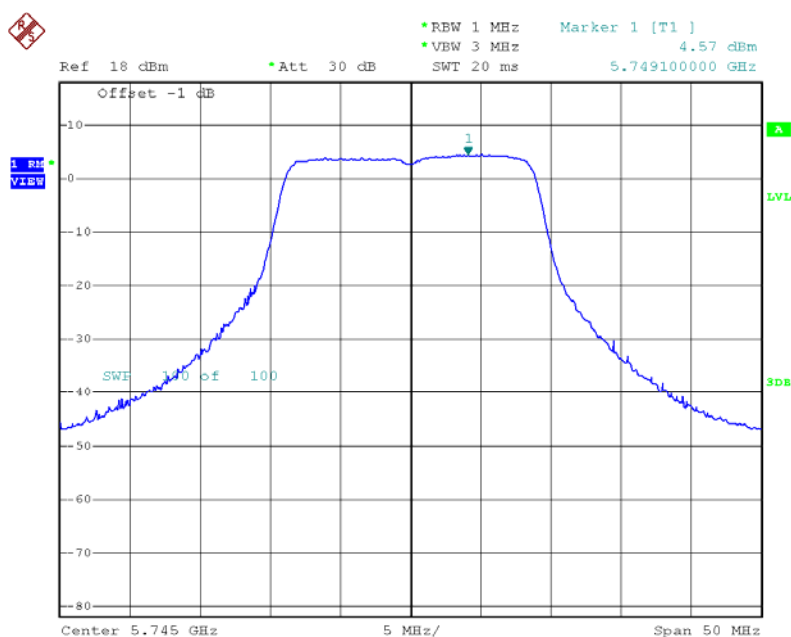
802.11n (HT40) Mode 5230 MHz-ANT 1



Date: 16.JAN.2016 10:40:36

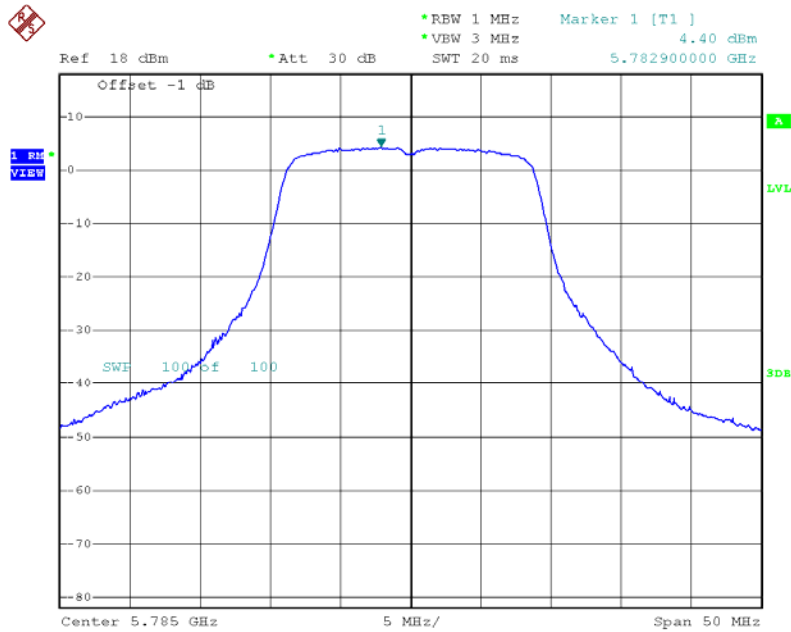
802.11a Mode					
Frequency (MHz)	Power Density			Limit (dBm/500KHz)	Result
	ANT 0 (dBm/MHz)	ANT 1 (dBm/MHz)	Total (dBm/500kHz)		
5745		4.57	1.56	30	Pass
5785		4.40	1.39		
5825		5.43	2.42		
Remark: Bandwidth factor=-3.01 dBm					

802.11a Mode 5745 MHz



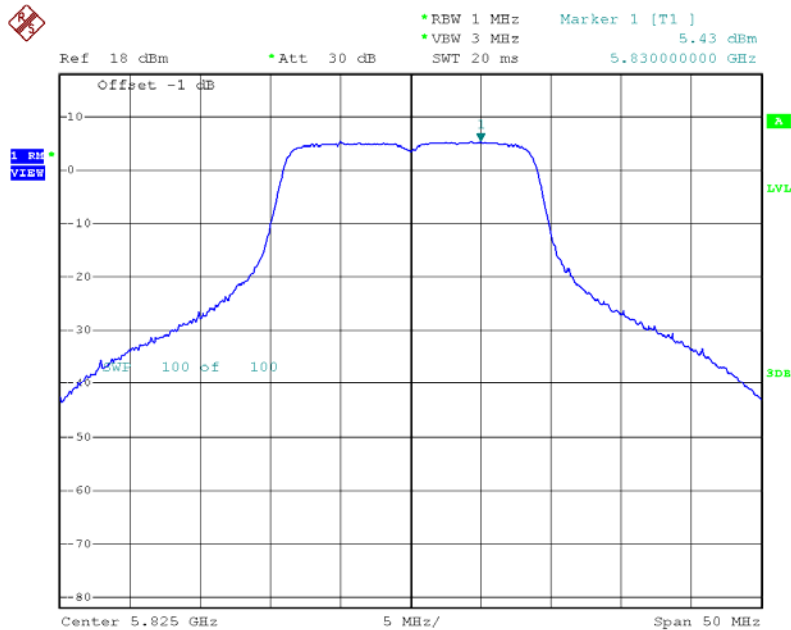
Date: 21.JAN.2016 12:28:56

802.11a Mode 5785 MHz



Date: 21.JAN.2016 12:36:10

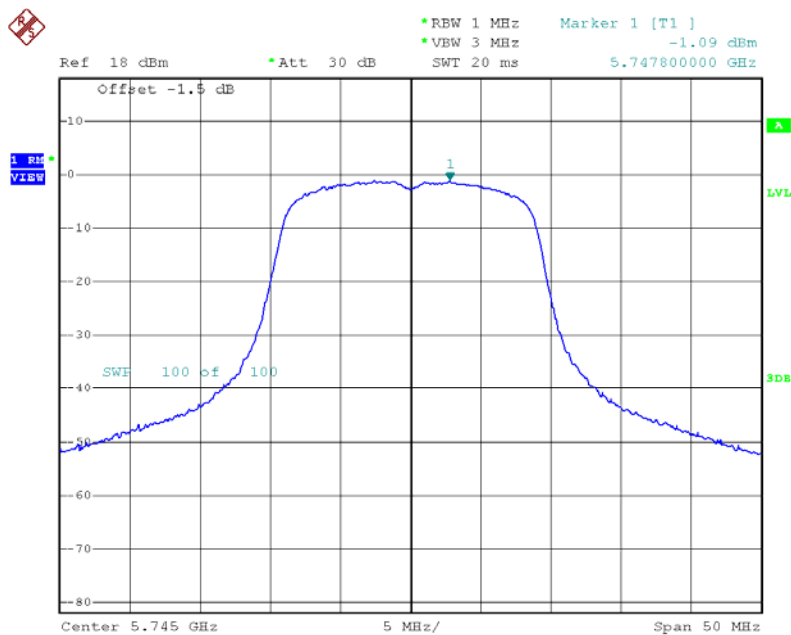
802.11a Mode 5825 MHz



Date: 21.JAN.2016 12:03:12

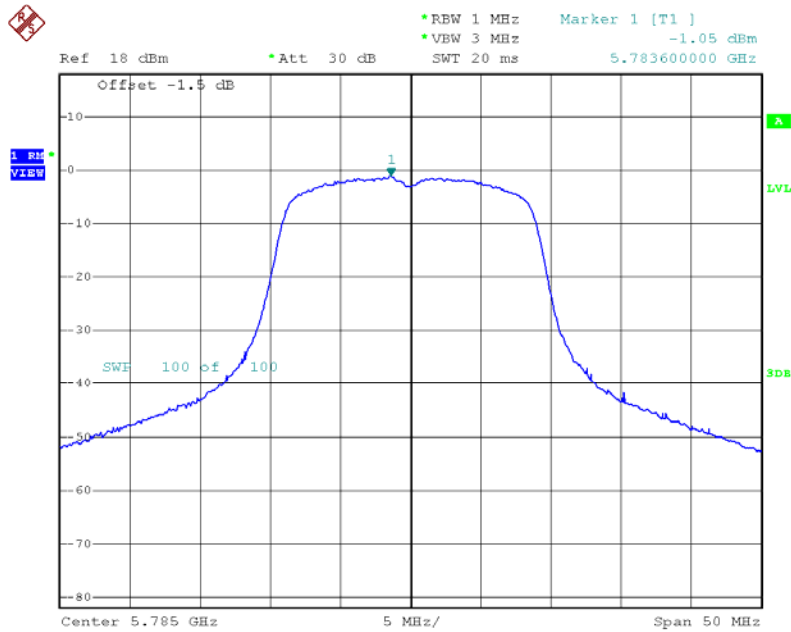
802.11n(20) Mode					
Frequency (MHz)	Power Density			Limit (dBm/500KHz)	Result
	ANT 0 (dBm/MHz)	ANT 1 (dBm/MHz)	Total (dBm/500kHz)		
5745	-1.09	-0.89	-0.98	30	Pass
5785	-1.05	-0.81	-0.92		
5825	-1.98	-1.13	-1.53		
Remark: Bandwidth factor=-3.01 dBm					

802.11n(HT20) Mode 5745 MHz-ANT 0



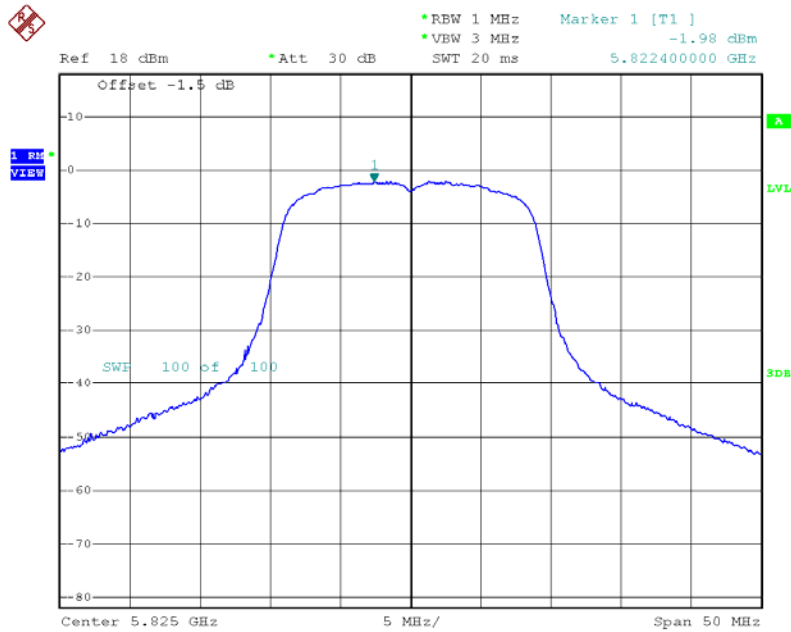
Date: 21.JAN.2016 12:12:28

802.11n(HT20) Mode 5785 MHz-ANT 0



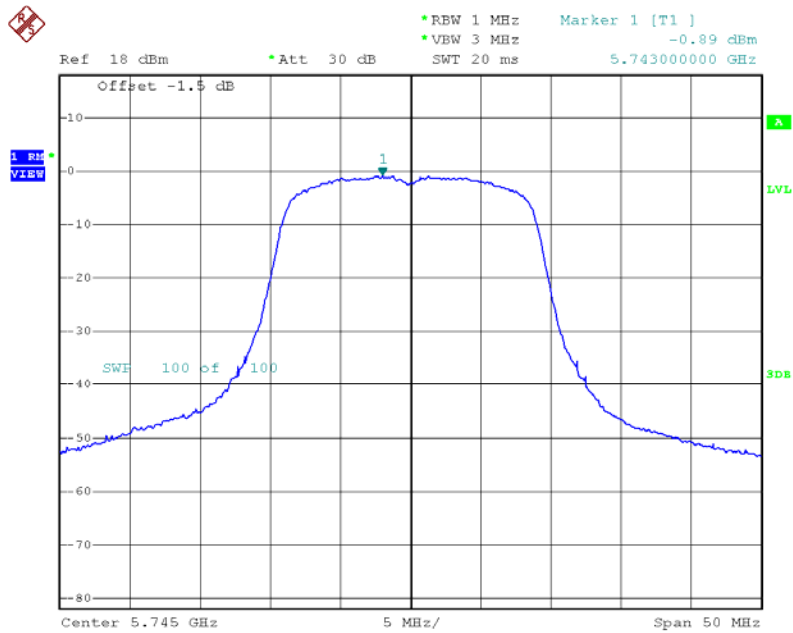
Date: 21.JAN.2016 12:12:59

802.11n(HT20) Mode 5825 MHz-ANT 0



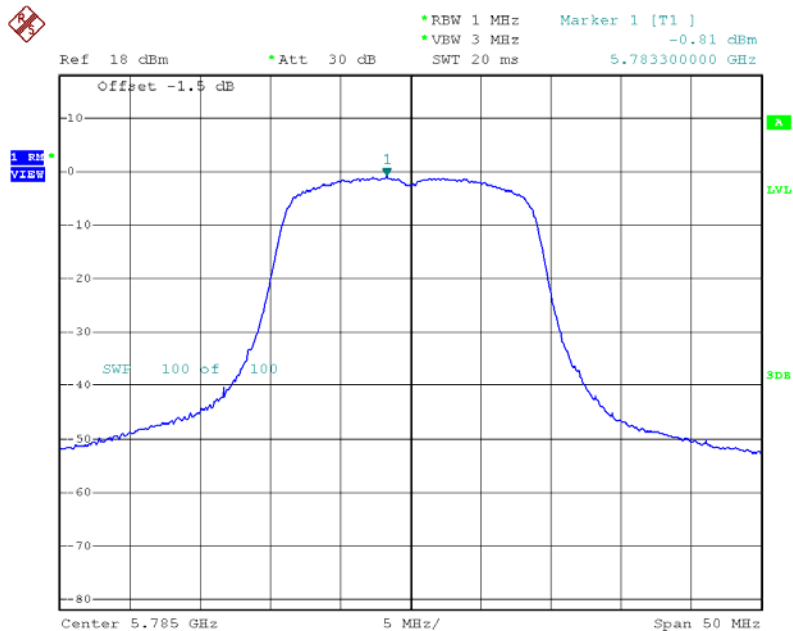
Date: 21.JAN.2016 12:13:16

802.11n(HT20) Mode 5745 MHz-ANT 1



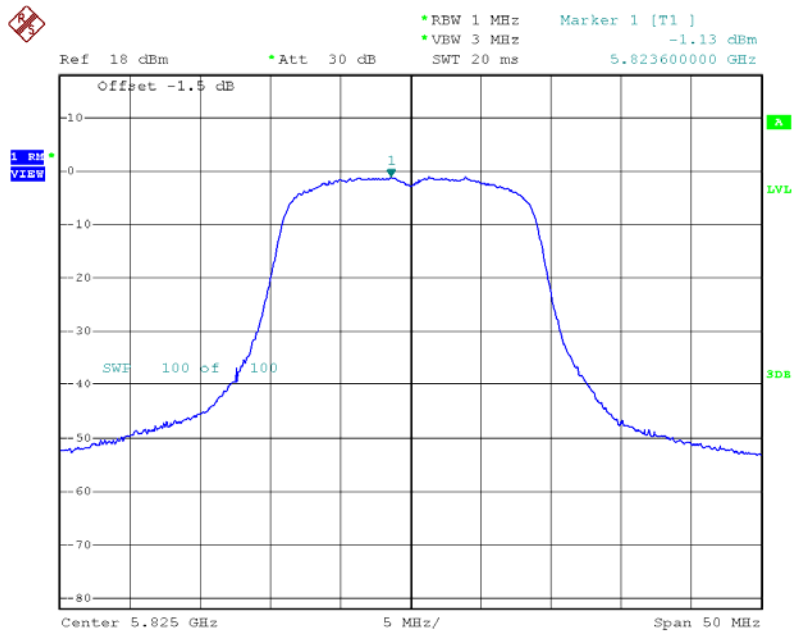
Date: 21.JAN.2016 21:57:27

802.11n(HT20) Mode 5785 MHz-ANT 1



Date: 21.JAN.2016 21:58:24

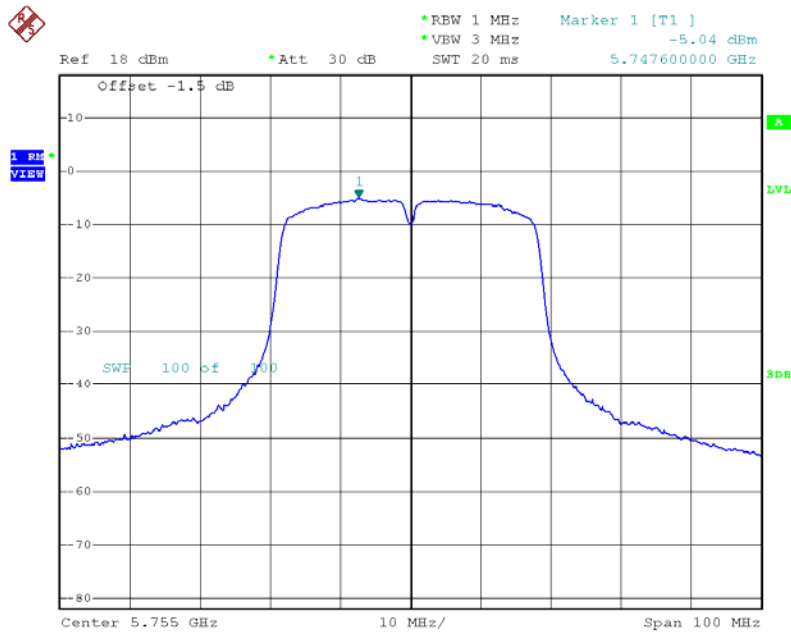
802.11n(HT20) Mode 5825 MHz-ANT 1



Date: 21.JAN.2016 21:59:16

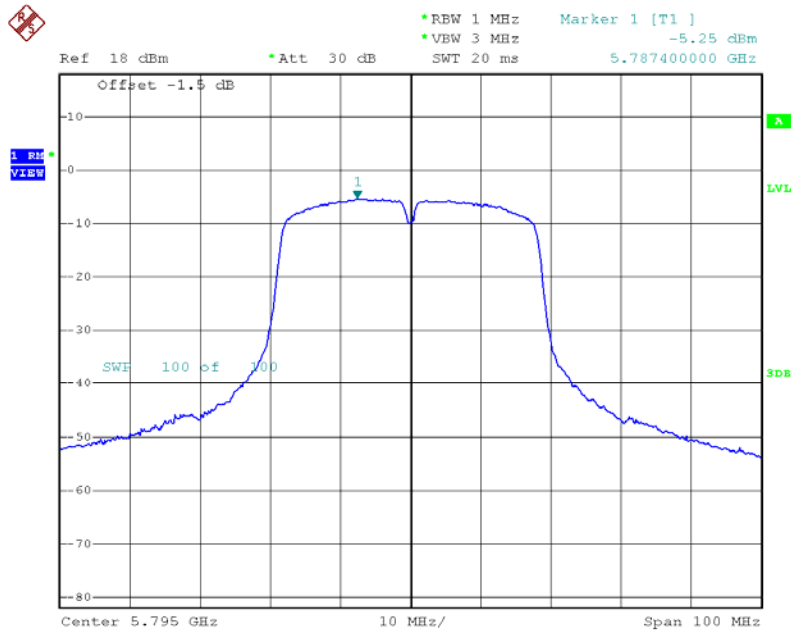
802.11n(40) Mode					
Frequency (MHz)	Power Density			Limit (dBm/500KHz)	Result
	ANT 0 (dBm/MHz)	ANT 1 (dBm/MHz)	Total (dBm/500kHz)		
5755	-5.04	-5.02	-5.02	30	Pass
5795	-5.25	-5.11	-5.17		
Remark: Bandwidth factor=-3.01 dBm					

802.11n(HT40) Mode 5755 MHz-ANT 0



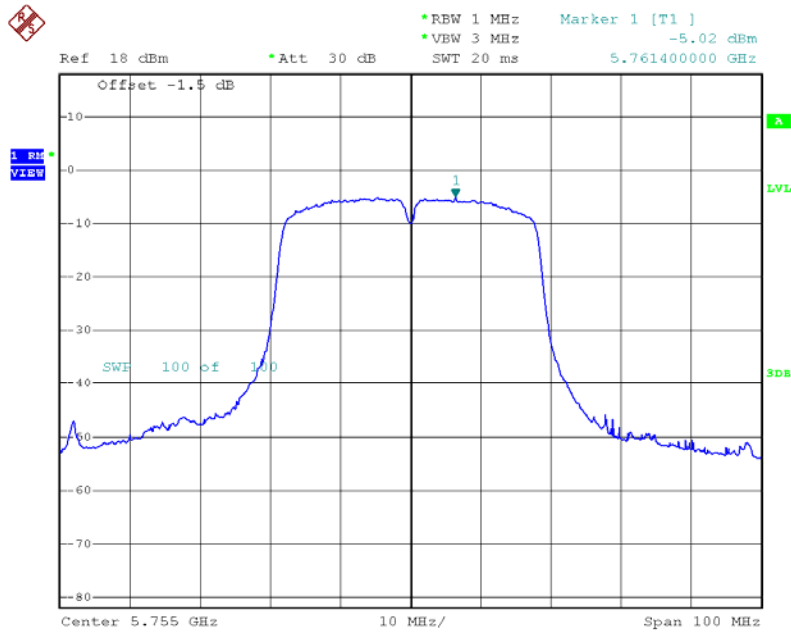
Date: 21.JAN.2016 21:24:52

802.11n(HT40) Mode 5795 MHz-ANT 0



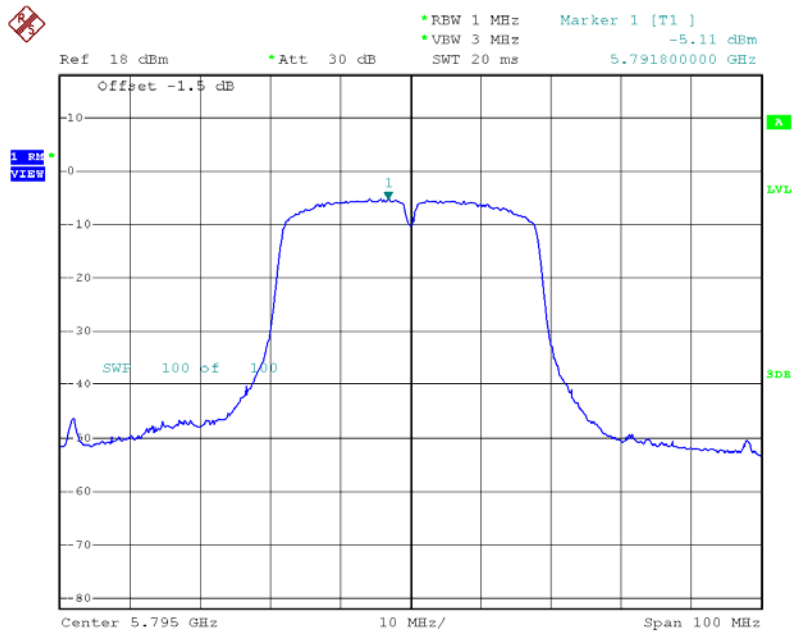
Date: 21.JAN.2016 21:25:54

802.11n(HT40) Mode 5755 MHz-ANT 1



Date: 21.JAN.2016 18:54:24

802.11n(HT40) Mode 5795 MHz-ANT 1



Date: 21.JAN.2016 22:21:43

8. BAND EDGE EMISSION

8.1 LIMITS

FCC Part 15.407, Subpart E/RSS 247	
Frequency Range (MHz)	Limits
5150~5250	-27 dBm/MHz
5725~5850	Below -17 dBm/MHz within 10MHz of band edge, below -27 dBm/MHz beyond 10MHz

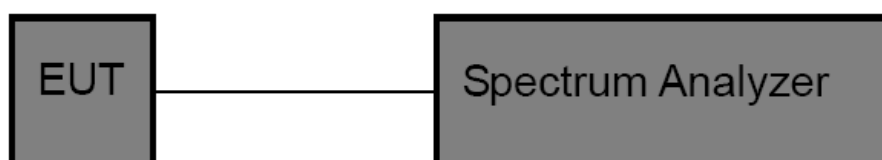
8.2 TEST PROCEDURE

The EUT was directly connected to the power meter and antenna output port as show in the block diagram as bellow.

Spectrum Parameters	Setting
Attenuation	Auto
RBW	1 MHz
VBW	3 MHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

8.3 TEST SETUP

Conducted Emission Test Setup



8.4 TEST INSTRUMENTS

Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
Spectrum Analyzer	R&S	FSP40	100154	Jul. 05, 2015	Jul. 04. 2016	1 year

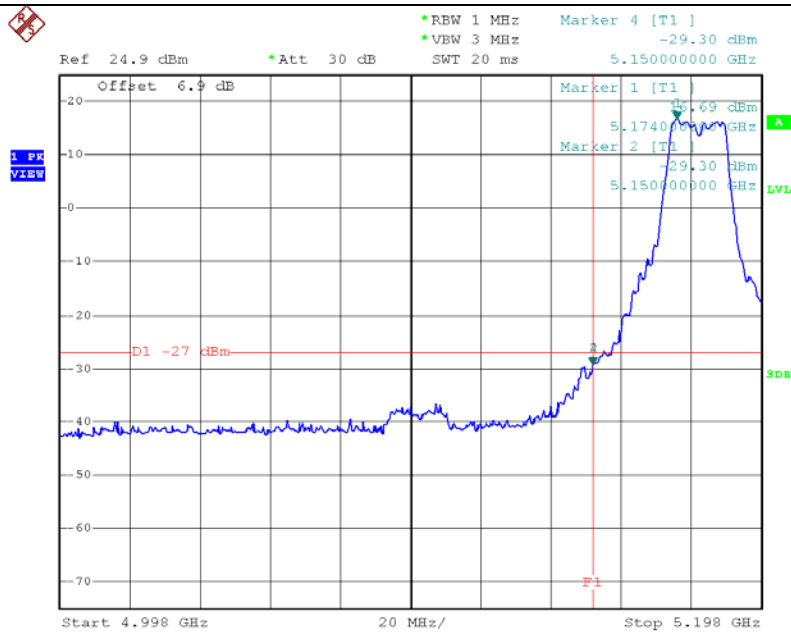
8.5 EUT OPERATING CONDITIONS

The EUT was set to continuously transmitting in the maximum power during the test.

8.6 TEST RESULTS

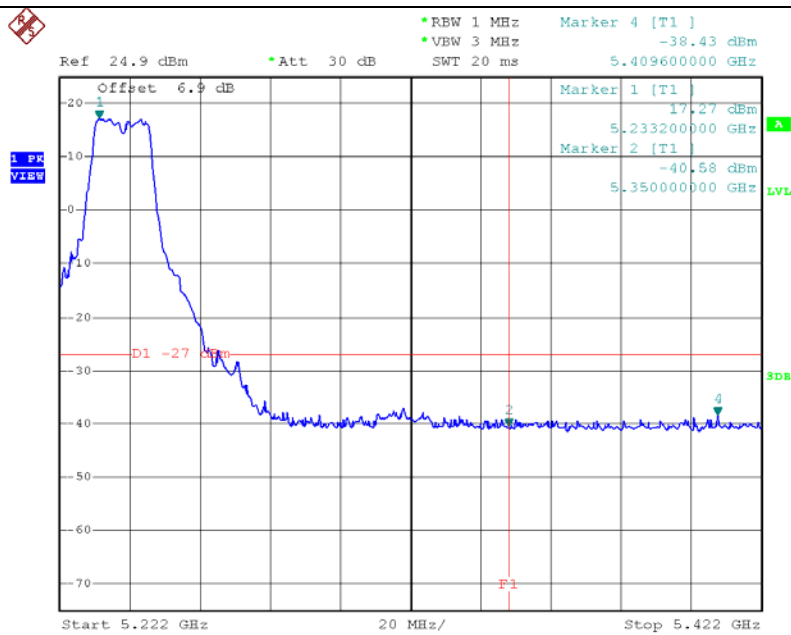
Only showed the worst mode data of ANT 0 transmitting.

802.11a Mode CH36



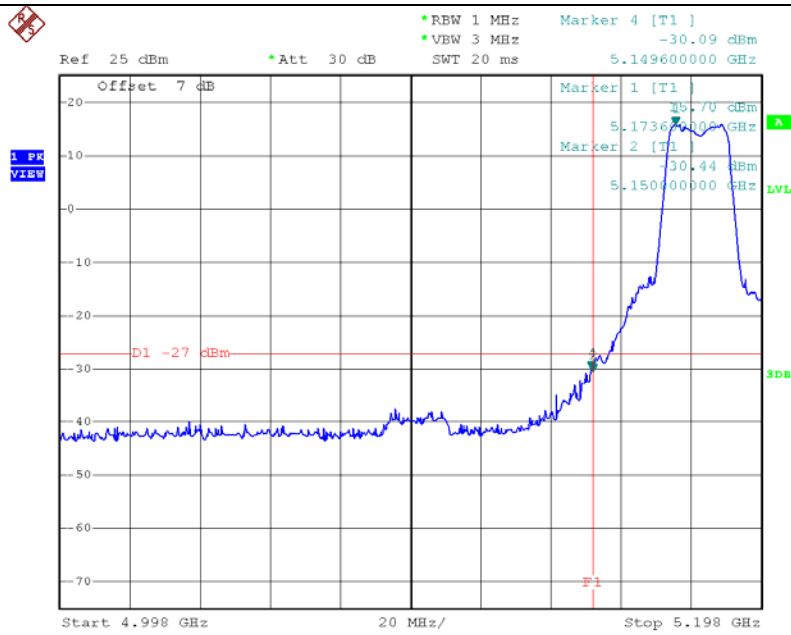
Date: 16.JAN.2016 19:48:49

802.11a Mode CH48



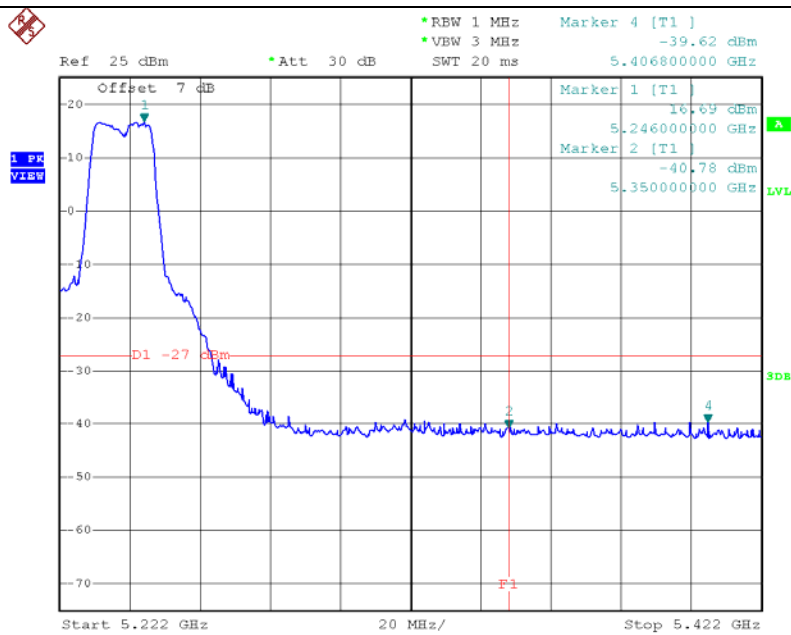
Date: 16.JAN.2016 19:51:13

802.11n(HT20) Mode CH36



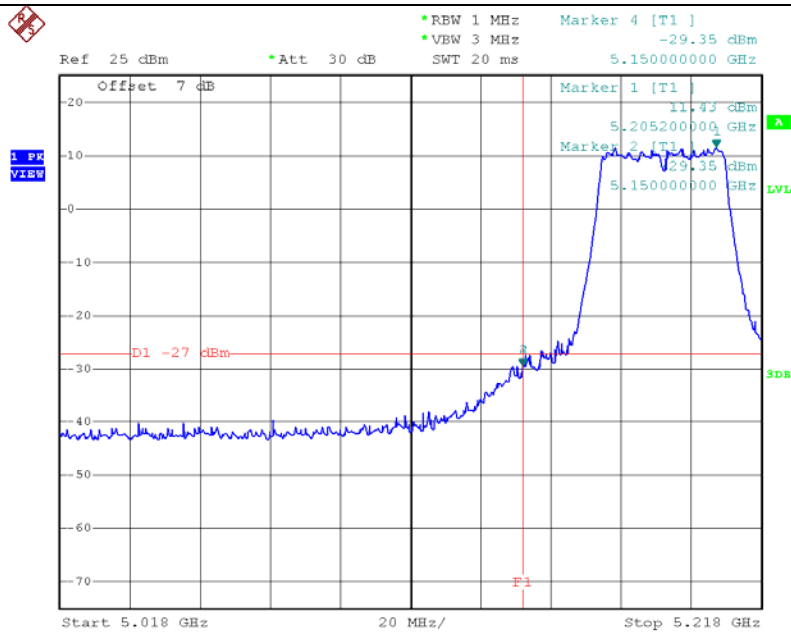
Date: 16.JAN.2016 10:20:23

802.11n(HT20) Mode CH48



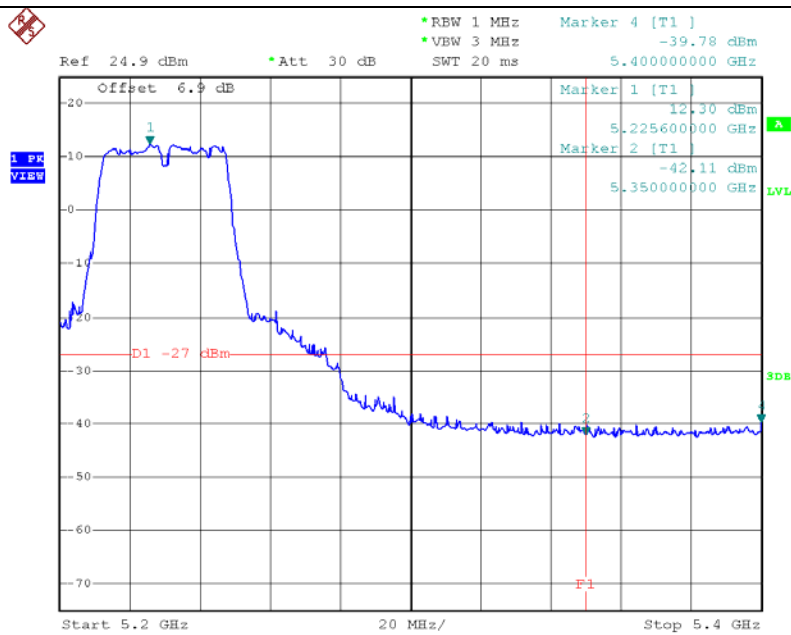
Date: 16.JAN.2016 10:28:43

802.11n(HT40) Mode CH38



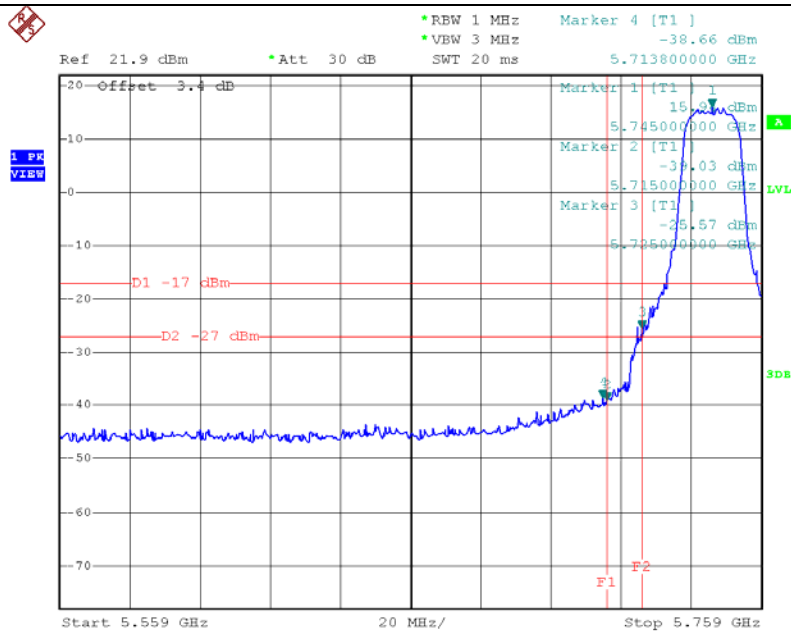
Date: 16.JAN.2016 10:39:02

802.11n(HT40) Mode CH46



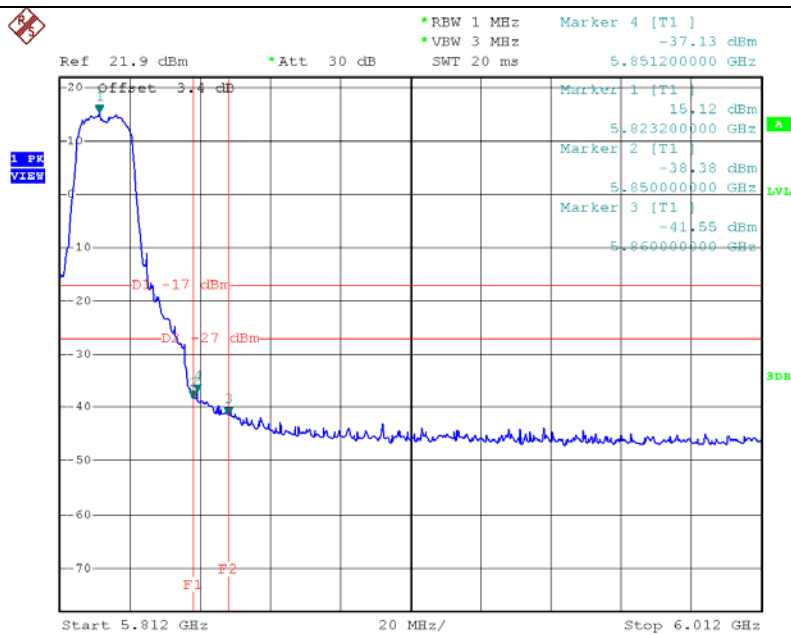
Date: 16.JAN.2016 21:05:10

802.11a Mode CH149



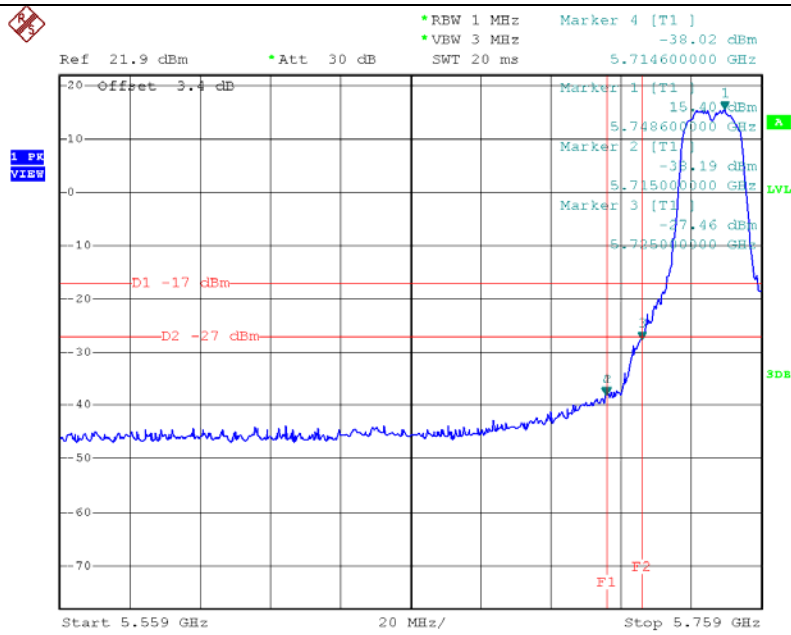
Date: 21.JAN.2016 19:03:55

802.11a Mode CH165



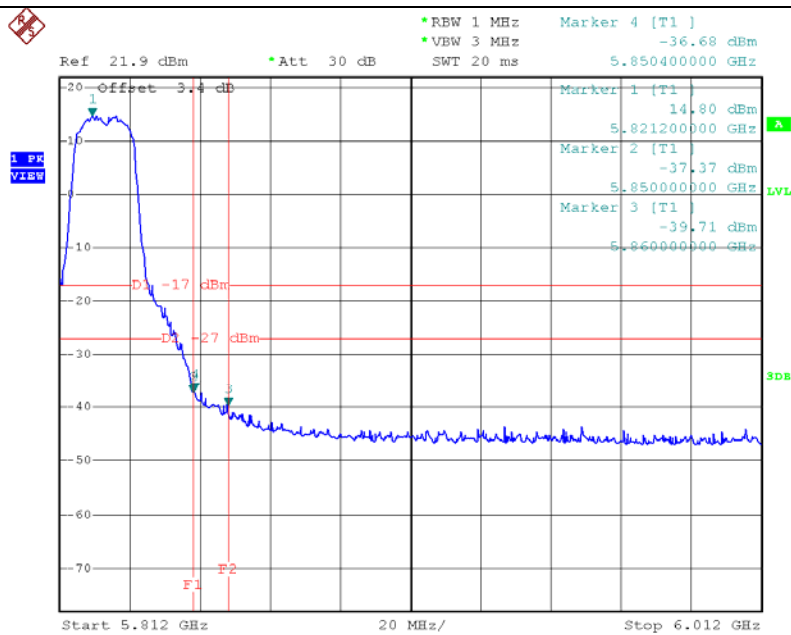
Date: 21.JAN.2016 19:07:25

802.11n(HT20) Mode CH149



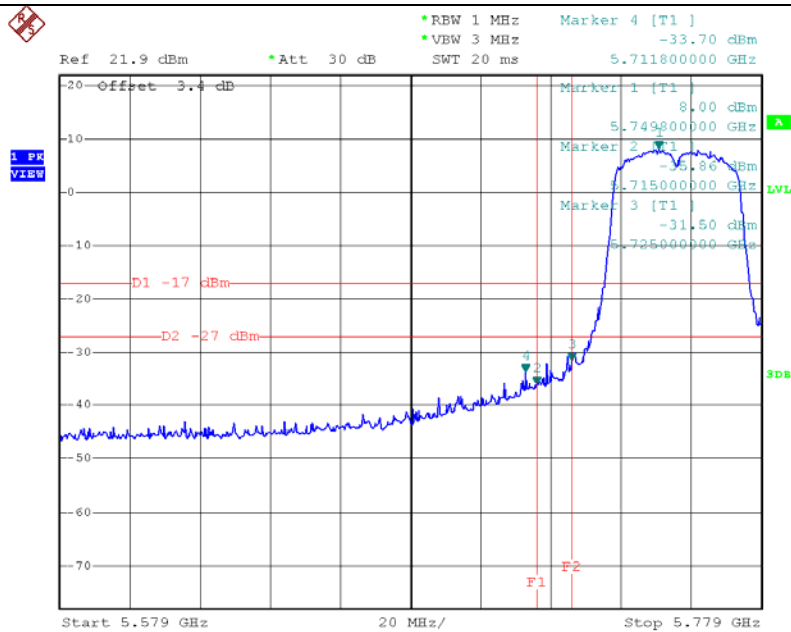
Date: 21.JAN.2016 19:19:57

802.11n(HT20) Mode CH165

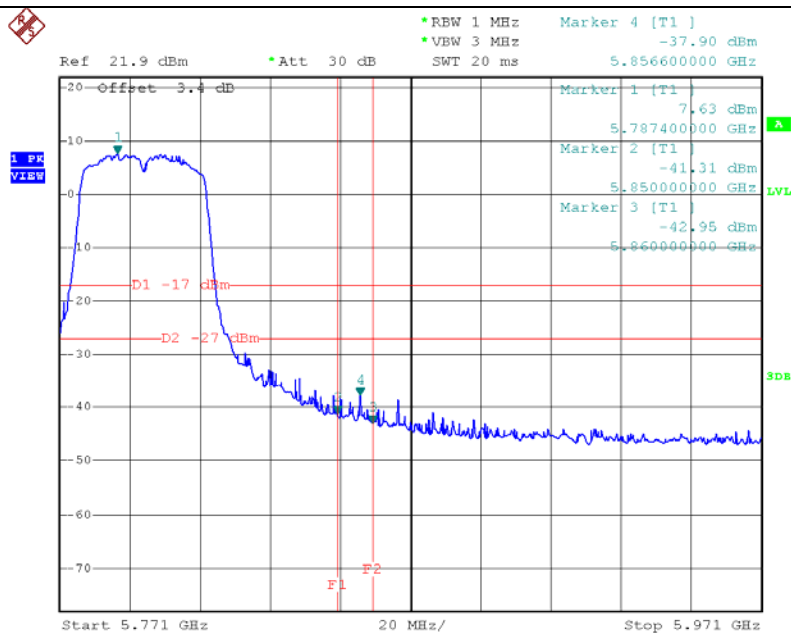


Date: 21.JAN.2016 19:22:38

802.11n(HT40) Mode CH151



802.11n(HT40) Mode CH159



9. ANTENNA REQUIREMENT

9.1 LIMITS

FCC Part 15.407, Subpart E/RSS 247	
Frequency Range (MHz)	Limits
5150~5250	Specified in the user's manual, the center frequency tolerance shall be ± 20 ppm maximum for the 5GHz band.
5725~5850	

9.2 TEST PROCEDURE

The EUT was directly connected to the power meter and antenna output port as show in the block diagram as bellow.

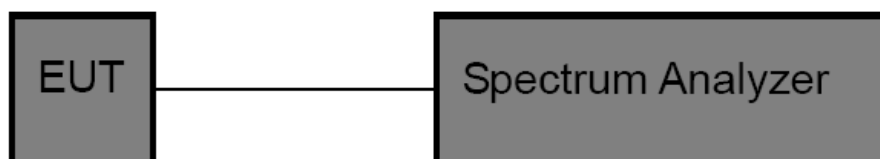
Spectrum Parameters	Setting
Attenuation	Auto
Span	Entire absence of modulation emissions bandwidth
RBW	10 kHz
VBW	10 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value.

User manual temperature is 0°C~50°C

9.3 TEST SETUP

Conducted Emission Test Setup



9.4 TEST INSTRUMENTS

Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
Spectrum Analyzer	R&S	FSP40	100154	Jul. 05, 2015	Jul. 04. 2016	1 year

9.5 EUT OPERATING CONDITIONS

The EUT was set to continuously transmitting in the maximum power during the test.

9.6 TEST RESULTS

5150~5250 Band (5200MHz)	
Voltage vs. Frequency Stability	
Voltage (V)	Measurement Frequency (MHz)
132	5199.9941
120	5199.9962
118	5199.9978
Max. Deviation (MHz)	0.0059
Max. Deviation (ppm)	1.13
Temperature vs. Frequency Stability	
Temperature (°C)	Measurement Frequency (MHz)
0	5199.9947
10	5199.9961
20	5199.9964
30	5199.9975
40	5199.9979
50	5199.9981
Max. Deviation (MHz)	0.0053
Max. Deviation (ppm)	1.01

5725~5850 Band (5200MHz)	
Voltage vs. Frequency Stability	
Voltage (V)	Measurement Frequency (MHz)
132	5199.9941
120	5199.9962
118	5199.9978
Max. Deviation (MHz)	0.0059
Max. Deviation (ppm)	1.13
Temperature vs. Frequency Stability	
Temperature (°C)	Measurement Frequency (MHz)
0	5199.9947
10	5199.9961
20	5199.9964
30	5199.9975
40	5199.9979
50	5199.9981
Max. Deviation (MHz)	0.0053
Max. Deviation (ppm)	1.01

10. ANTENNA REQUIREMENT

10.1 REQUIREMENT

Antenna Requirement (15.203)	An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.
Antenna Requirement (15.407)	If transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

10.2 ANTENNA CONNECTOR CONSTRUCTION

The EUT antenna is a FPC Antenna. And the maximum gain of this antenna is 2.78 dBi for 5150~5250 MHz, 2.02 dBi for 5725~5850 MHz.

It complies with the standard requirement.