FCC Radio Test Report

FCC ID: 2ACSY-AX821

FCC 47 CFR Part 15 Subpart C

Product： Hy-Fi Powerline Adapter

Trade Name： Neurona

Model Number： AX821

Issued for

Neurona LLC

300 International Drive, Suite 100, Amherst, NY 14221

Issued by

Shenzhen STONE Testing Technology Co., Ltd.

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TEST RESULT CERTIFICATION

Product	:	Hy-Fi Powerline Adapter
Applicant	:	Neurona LLC
Address	:	300 International Drive, Suite 100, Amherst, NY 14221
Manufacturer	:	Neurona LLC
Address	:	300 International Drive, Suite 100, Amherst, NY 14221
Model No.	:	AX821
Standards	:	FCC Part 15 Subpart C (15.247)
Test Method	:	ANSI C63.4: 2003 KDB 558074 D01 v03r02 and KDB 662911 D01v02r01

The above equipment has been tested by Shenzhen STONE 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 2014-07-10

Date(s) of performance of test ..... 2014-07-10 to 2014-07-28

Test Result.....: Pass

Testing by	:	Linna Liu	Date	:	2014-07-27
		(Linna Liu)			
Check by	:	Andy Huang	Date	:	2014-07-30
		(Andy Huang)			
Approved by	:	Ethan Chen	Date	:	2014-08-04
		(Ethan Chen)			

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1. TEST SUMMARY

Test procedures according to the technical standards:

FCC Part 15 Subpart C (15.247)			
Standard Section	Test Item	Judgment	Remark
15.207	AC Power Conducted Emission	PASS	
15.247(d)	Antenna Conducted Spurious Emissions	PASS	
15.247(b)(3)	Output Power	PASS	
15.247(a)(2)	6dB RF Bandwidth	PASS	
15.247(e)	Power Spectral Density	PASS	
15.209/15.205	Transmitter Radiated Emissions	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 STONE Testing Technology Co., Ltd.

Add. : F/6, Bldg.12, Zhongxing Industrial City, Chuangye Rd., Nanshan District, Shenzhen, Guangdong, China

Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

FCC Registration No.: 323508

IC Registration No.: 11043A

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement **y ± U**，where expended 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	Hy-Fi Powerline Adapter
Model Name	AX821
Additional Model Number(s)	N/A
Model Difference	N/A
Frequency Range	5745~5825 MHz
Modulation Type	802.11a/n: OFDM
Data Rate	802.11n: 450 Mbps
RF Output Power	802.11a: 15.31 dBm 802.11n(HT20): 15.37 dBm 802.11n(HT40): 14.73 dBm
Antenna Type	PIFA Antenna (Max. Gain: 4 dBi)
Power Source	AC power by AC system.
Power Rating	Input: AC 120~240V 50/60 Hz 12A
Remark	More details of EUT technical specification, please refer to the User's Manual.

Note:

(1) This Test Report is FCC Part 15 Subpart C, 15.247 for IEEE 802.11b/g/n. And the Test procedure follows the FCC KDB 558075 D01 DTS Meas Guidance V03R02.

(2) Transmitting mode with antennas

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

(3) Channel List.

5 GHz Band				
Frequency Band	**Channel No.**	**Frequency**	**Channel No.**	**Frequency**
5725~5850 MHz Band 4	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 20 MHz Bandwidth, use channel 149, 153, 157, 161, 165. For 40 MHz Bandwidth, 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:
Channel (5745/5785/5825 MHz) with BPSK data rate were chosen for full testing.

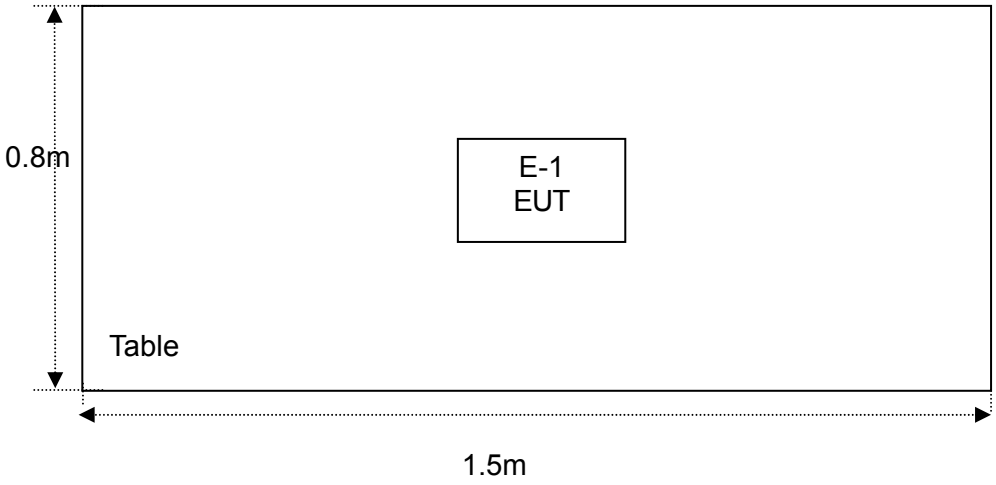
(3) IEEE 802.11a(HT20) Mode:
Channel (5745/5785/5825 MHz) with BPSK data rate were chosen for full testing.

(4) IEEE 802.11a(HT40) Mode:
Channel (5755/5795 MHz) 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	Tablet PC	/	GX1301-NA	N/A	EUT
E-2					
E-3					

Item	Shielded Type	Ferrite Core	Length	Note

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 f r Testing			
Test Software Version	**Atheros Radio Test 2 (ART2-GUI).exe**		
Mode	**Frequency/ Parameters**		
802.11a	**5745 MHz**	**5785 MHz**	**5825 MHz**
	15	**15**	**15**
802.11n(HT20)	**5745 MHz**	**5785 MHz**	**5825 MHz**
	15	**15**	**15**
802.11n(HT40)	**5755 MHz**	**5795 MHz**	
	15	**15**	

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.

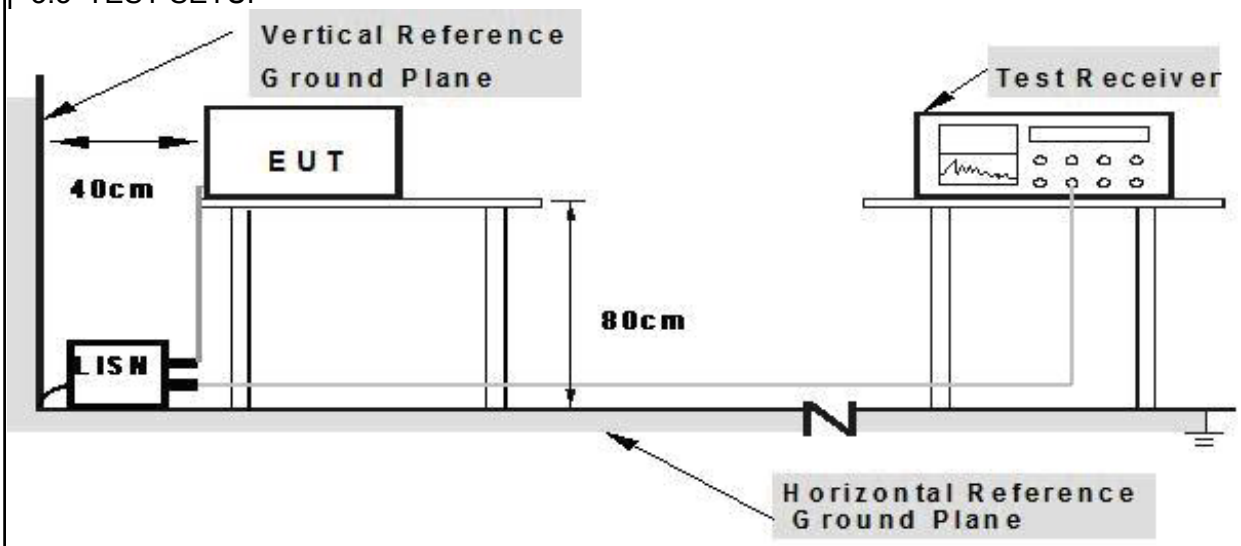
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

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. 06, 2014	Jul. 05. 2015	1 year
LISN	R&S	NSLK81	8126487	Dec. 25, 2013	Dec. 24, 2014	1 year
50Ω Switch	ANRITSU CORP	MP59B	6200983704	Jul. 06, 2014	Jul. 05. 2015	1 year
Test Cable	N/A	C01	N/A	Jul. 06, 2014	Jul. 05. 2015	1 year
Test Cable	N/A	C02	N/A	Jul. 06, 2014	Jul. 05. 2015	1 year
Test Cable	N/A	C03	N/A	Jul. 06, 2014	Jul. 05. 2015	1 year
EMI Test Receiver	R&S	ESCI	1166.595	Jul. 06, 2014	Jul. 05. 2015	1 year
Passive Voltage Probe	ESH2-Z3	R&S	100196	Jul. 06, 2014	Jul. 05. 2015	1 year

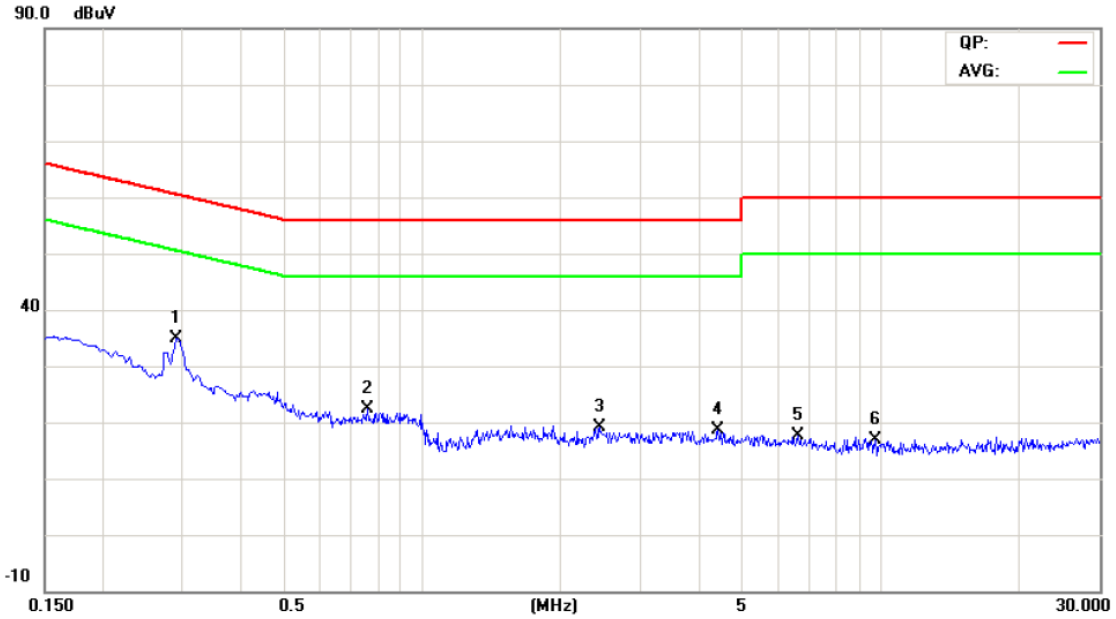
3.5 EUT OPERATING CONDITIONS

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

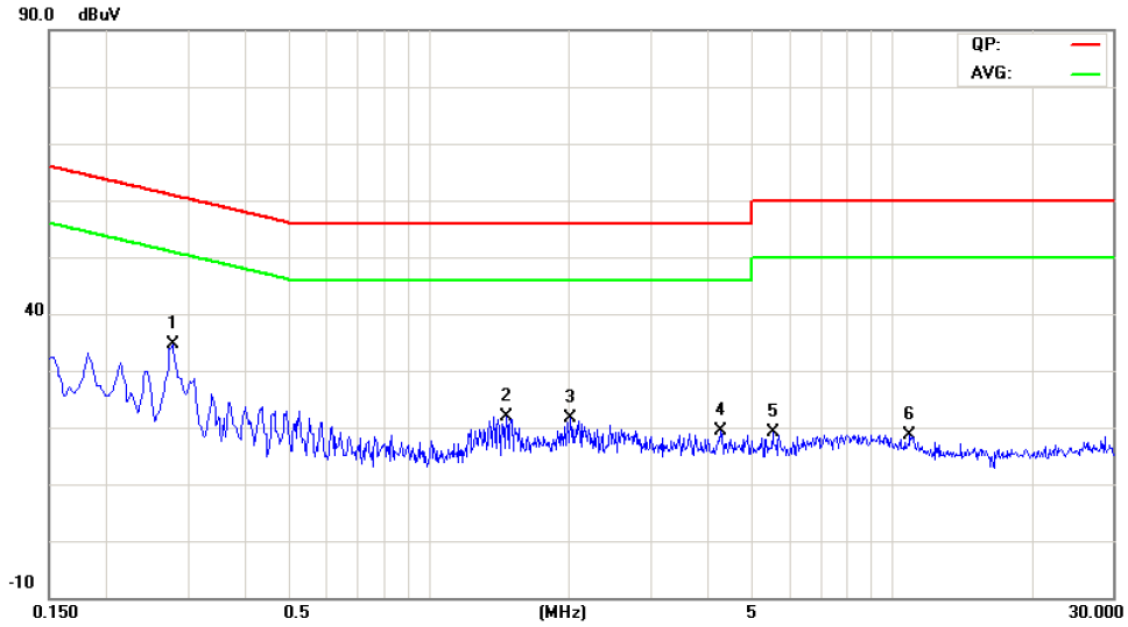
EUT：	Hy-Fi Powerline Adapter	Model Name. ：	AX821
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Test Date：	2014-07-22
Test Mode：	Mode 1	Phase：	Line
Test Voltage ：	120V/ 60Hz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.2900	24.92	10.02	34.94	60.52	-25.58	peak	
2		0.7620	12.17	10.11	22.28	56.00	-33.72	peak	
3		2.4460	9.13	10.05	19.18	56.00	-36.82	peak	
4		4.4138	8.55	9.98	18.53	56.00	-37.47	peak	
5		6.6179	7.61	10.04	17.65	60.00	-42.35	peak	
6		9.7259	6.71	10.15	16.86	60.00	-43.14	peak	



EUT：	Hy-Fi Powerline Adapter	Model Name. ：	AX821
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Test Date：	2014-07-22
Test Mode：	Mode 1	Phase：	Neutral
Test Voltage ：	120V/ 60Hz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.2779	24.43	10.09	34.52	60.88	-26.36	peak	
2		1.4659	11.87	10.11	21.98	56.00	-34.02	peak	
3		2.0180	11.52	10.06	21.58	56.00	-34.42	peak	
4		4.2618	9.42	10.06	19.48	56.00	-36.52	peak	
5		5.5099	9.04	10.06	19.10	60.00	-40.90	peak	
6		10.9618	8.59	10.14	18.73	60.00	-41.27	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-210 Section 2.2&A8.5, 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

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

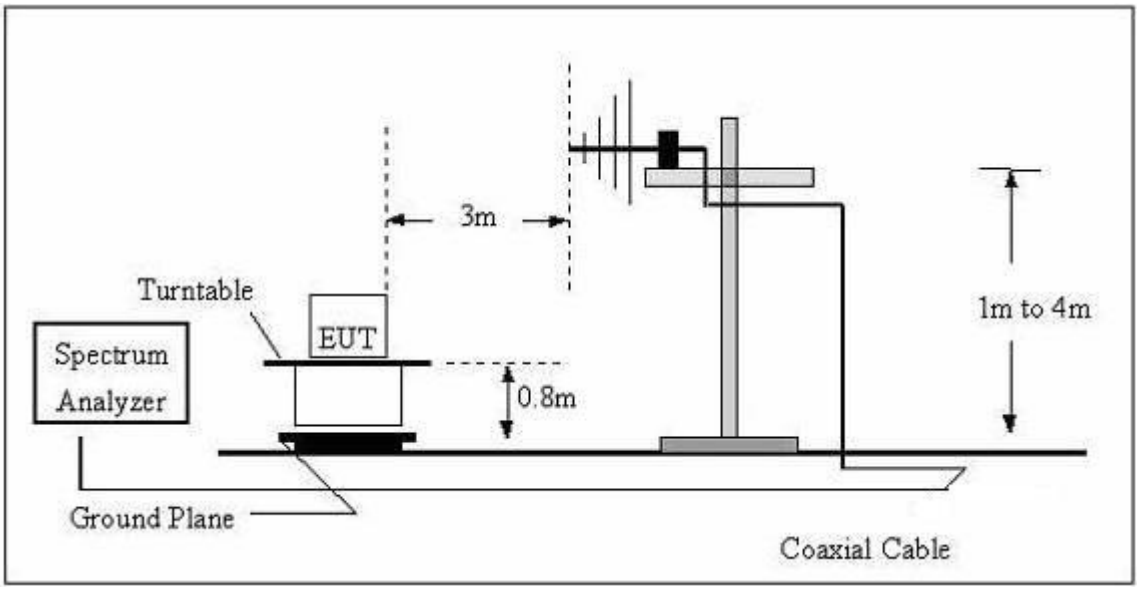
a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.

b. 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.
c. 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.
d. 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.
e. 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.
f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

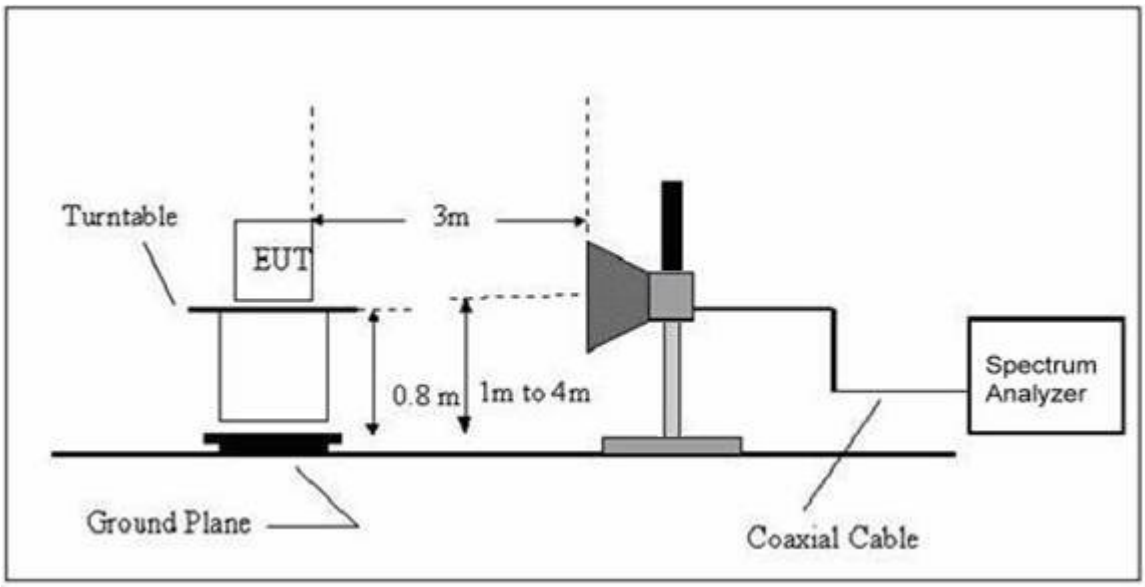
Note:
Both horizontal and vertical antenna polarities were tested.
And performed pretest to three orthogonal axis. The worst case emissions were reported.

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. 06, 2014	Jul. 05. 2015	1 year
Test Cable	N/A	R-01	N/A	Dec. 25, 2013	Dec. 24, 2014	1 year
Test Cable	N/A	R-02	N/A	Dec. 25, 2013	Dec. 24, 2014	1 year
EMI Test Receiver	R&S	ESCI	101324	Jul. 06, 2014	Jul. 05. 2015	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. 06, 2014	Jul. 05. 2015	1 year
Spectrum Analyzer	R&S	FSP40	100154	Jul. 06, 2014	Jul. 05. 2015	1 year
Horn Antenna	R&S	HF906	10029	Jul. 06, 2014	Jul. 05. 2015	1 year
Horn Antenna	Schwarzbek	BBHA9170	0258475	Dec. 25, 2013	Dec. 24, 2014	1 year
Amplifier	EM	EM-30180	060538	Jul. 06, 2014	Jul. 05. 2015	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：	Hy-Fi Powerline Adapter	Model Name. ：	AX821
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Test Date：	2014-07-15
Test Mode ：	Mode 1	Polarization：	Horizontal
Test Power ：	AC 120V/60 Hz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		35.8746	41.21	-13.07	28.14	40.00	-11.86	peak	
2		51.6612	47.99	-13.08	34.91	40.00	-5.09	peak	
3		79.5210	46.43	-17.78	28.65	40.00	-11.35	peak	
4		326.7396	48.13	-11.02	37.11	46.00	-8.89	peak	
5		400.4320	51.87	-9.36	42.51	46.00	-3.49	peak	
6	*	556.7744	50.77	-7.09	43.68	46.00	-2.32	peak	

Remark:
Factor = Antenna Factor + Cable Loss.

EUT：	Hy-Fi Powerline Adapter	Model Name. ：	AX821
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Test Date :	2014-07-15
Test Mode ：	Mode 1	Polarization :	Vertical
Test Power ：	AC 120V/60 Hz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		35.8745	43.32	-13.07	30.25	40.00	-9.75	peak	
2		79.5207	45.92	-17.78	28.14	40.00	-11.86	peak	
3		165.1421	46.90	-16.76	30.14	43.50	-13.36	peak	
4		372.0045	44.22	-9.97	34.25	46.00	-11.75	peak	
5	*	556.7747	46.10	-7.09	39.01	46.00	-6.99	peak	
6		744.8741	43.10	-4.09	39.01	46.00	-6.99	peak	

Remark:
Factor = Antenna Factor + Cable Loss.

4.6.2 TEST RESULTS (Above 1GHz)

EUT：	Hy-Fi Powerline Adapter	Model Name. ：	AX821
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Test Date：	2014-07-15
Test Mode ：	A Mode 5745 TX Mode	Polarization：	Horizontal
Test Power ：	AC 120V/60 Hz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5725.000	53.96	9.78	63.74	74.00	-10.26	peak	
2		5725.000	39.86	9.78	49.64	54.00	-4.36	AVG	
3	X	5740.700	94.06	9.83	103.89	74.00	29.89	peak	Fudamental Frequency
4	*	5740.900	83.44	9.83	93.27	54.00	39.27	AVG	Fudamental Frequency

EUT：	Hy-Fi Powerline Adapter	Model Name. ：	AX821
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Test Date：	2014-07-15
Test Mode ：	A Mode 5745 TX Mode	Polarization：	Vertical
Test Power ：	AC 120V/60 Hz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5725.000	54.85	9.78	64.63	74.00	-9.37	peak	
2		5725.000	38.42	9.78	48.20	54.00	-5.80	AVG	
3	X	5741.100	93.55	9.83	103.38	74.00	29.38	peak	Fudamental Frequency
4	*	5741.100	83.06	9.83	92.89	54.00	38.89	AVG	Fudamental Frequency

EUT：	Hy-Fi Powerline Adapter	Model Name. ：	AX821
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Test Date：	2014-07-15
Test Mode ：	A Mode 5745 TX Mode	Polarization：	Horizontal
Test Power ：	AC 120V/60 Hz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11495.50	39.06	9.57	48.63	74.00	-25.37	peak	
2	*	11495.50	31.96	9.57	41.53	54.00	-12.47	AVG	

EUT：	Hy-Fi Powerline Adapter	Model Name. ：	AX821
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Test Date：	2014-07-15
Test Mode ：	A Mode 5745 TX Mode	Polarization：	Vertical
Test Power ：	AC 120V/60 Hz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11495.20	40.32	11.73	52.05	74.00	-21.95	peak	
2	*	11495.20	33.46	11.73	45.19	54.00	-8.81	AVG	

EUT：	Hy-Fi Powerline Adapter	Model Name. ：	AX821
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Test Date：	2014-07-15
Test Mode ：	A Mode 5785 TX Mode	Polarization：	Horizontal
Test Power ：	AC 120V/60 Hz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	5780.400	86.17	9.93	96.10	54.00	42.10	AVG	Fudamental Frequency
2	X	5791.000	96.51	9.96	106.47	74.00	32.47	peak	Fudamental Frequency

EUT：	Hy-Fi Powerline Adapter	Model Name. ：	AX821
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Test Date：	2014-07-15
Test Mode ：	A Mode 5785 TX Mode	Polarization：	Vertical
Test Power ：	AC 120V/60 Hz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	5780.900	97.02	9.93	106.95	74.00	32.95	peak	Fudamental Frequency
2	*	5780.900	86.66	9.93	96.59	54.00	42.59	AVG	Fudamental Frequency

EUT：	Hy-Fi Powerline Adapter	Model Name. ：	AX821
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Test Date：	2014-07-15
Test Mode ：	A Mode 5785 TX Mode	Polarization：	Horizontal
Test Power ：	AC 120V/60 Hz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11572.50	38.50	9.55	48.05	74.00	-25.95	peak	
2	*	11572.50	32.31	9.55	41.86	54.00	-12.14	AVG	

EUT：	Hy-Fi Powerline Adapter	Model Name. ：	AX821
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Test Date：	2014-07-15
Test Mode ：	A Mode 5785 TX Mode	Polarization：	Vertical
Test Power ：	AC 120V/60 Hz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11572.50	39.72	11.75	51.47	74.00	-22.53	peak	
2	*	11572.50	33.38	11.75	45.13	54.00	-8.87	AVG	

EUT：	Hy-Fi Powerline Adapter	Model Name. ：	AX821
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Test Date：	2014-07-15
Test Mode ：	A Mode 5825 TX Mode	Polarization：	Horizontal
Test Power ：	AC 120V/60 Hz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	5818.300	84.75	10.05	94.80	54.00	40.80	AVG	Fudamental Frequency
2	X	5818.800	95.33	10.05	105.38	74.00	31.38	peak	Fudamental Frequency
3		5850.000	47.60	10.13	57.73	74.00	-16.27	peak	
4		5850.000	35.79	10.13	45.92	54.00	-8.08	AVG	

EUT：	Hy-Fi Powerline Adapter	Model Name. ：	AX821
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Test Date：	2014-07-15
Test Mode ：	A Mode 5825 TX Mode	Polarization：	Vertical
Test Power ：	AC 120V/60 Hz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	5818.500	84.31	10.05	94.36	54.00	40.36	AVG	Fudamental Frequency
2	X	5823.200	94.79	10.05	104.84	74.00	30.84	peak	Fudamental Frequency
3		5850.000	47.20	10.13	57.33	74.00	-16.67	peak	
4		5850.000	35.67	10.13	45.80	54.00	-8.20	AVG	

EUT：	Hy-Fi Powerline Adapter	Model Name. ：	AX821
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Test Date：	2014-07-15
Test Mode ：	A Mode 5825 TX Mode	Polarization：	Horizontal
Test Power ：	AC 120V/60 Hz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11652.30	38.72	9.54	48.26	74.00	-25.74	peak	
2	*	11652.30	31.96	9.54	41.50	54.00	-12.50	AVG	

EUT：	Hy-Fi Powerline Adapter	Model Name. ：	AX821
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Test Date：	2014-07-15
Test Mode ：	A Mode 5825 TX Mode	Polarization：	Vertical
Test Power ：	AC 120V/60 Hz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11652.30	39.95	11.78	51.73	74.00	-22.27	peak	
2	*	11652.30	32.89	11.78	44.67	54.00	-9.33	AVG	

EUT：	Hy-Fi Powerline Adapter	Model Name. ：	AX821
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Test Date：	2014-07-15
Test Mode ：	N20 Mode 5745 TX Mode	Polarization：	Horizontal
Test Power ：	AC 120V/60 Hz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5725.000	52.61	9.78	62.39	74.00	-11.61	peak	
2		5725.000	38.86	9.78	48.64	54.00	-5.36	AVG	
3	X	5740.700	92.32	9.83	102.15	74.00	28.15	peak	Fudamental Frequency
4	*	5750.700	82.37	9.85	92.22	54.00	38.22	AVG	Fudamental Frequency

EUT：	Hy-Fi Powerline Adapter	Model Name. ：	AX821
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Test Date：	2014-07-15
Test Mode ：	N20 Mode 5745 TX Mode	Polarization：	Vertical
Test Power ：	AC 120V/60 Hz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5725.000	52.37	9.78	62.15	74.00	-11.85	peak	
2		5725.000	36.92	9.78	46.70	54.00	-7.30	AVG	
3	X	5741.100	93.04	9.83	102.87	74.00	28.87	peak	Fudamental Frequency
4	*	5746.100	81.89	9.83	91.72	54.00	37.72	AVG	Fudamental Frequency

EUT：	Hy-Fi Powerline Adapter	Model Name. ：	AX821
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Test Date：	2014-07-15
Test Mode ：	N20 Mode 5745 TX Mode	Polarization：	Horizontal
Test Power ：	AC 120V/60 Hz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11495.10	37.88	9.56	47.44	74.00	-26.56	peak	
2	*	11495.10	30.00	9.56	39.56	54.00	-14.44	AVG	

EUT：	Hy-Fi Powerline Adapter	Model Name. ：	AX821
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Test Date：	2014-07-15
Test Mode ：	N20 Mode 5745 TX Mode	Polarization：	Vertical
Test Power ：	AC 120V/60 Hz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11495.10	38.54	11.73	50.27	74.00	-23.73	peak	
2	*	11495.10	31.29	11.73	43.02	54.00	-10.98	AVG	

EUT：	Hy-Fi Powerline Adapter	Model Name. ：	AX821
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Test Date：	2014-07-15
Test Mode ：	N20 Mode 5785 TX Mode	Polarization：	Horizontal
Test Power ：	AC 120V/60 Hz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	5780.900	94.46	9.93	104.39	74.00	30.39	peak	Fudamental Frequency
2	*	5780.900	85.66	9.93	95.59	54.00	41.59	AVG	Fudamental Frequency

EUT：	Hy-Fi Powerline Adapter	Model Name. ：	AX821
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Test Date：	2014-07-15
Test Mode ：	N20 Mode 5785 TX Mode	Polarization：	Vertical
Test Power ：	AC 120V/60 Hz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	5780.900	94.69	9.93	104.62	74.00	30.62	peak	Fudamental Frequency
2	*	5780.900	85.66	9.93	95.59	54.00	41.59	AVG	Fudamental Frequency

EUT：	Hy-Fi Powerline Adapter	Model Name. ：	AX821
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Test Date：	2014-07-15
Test Mode ：	N20 Mode 5785 TX Mode	Polarization：	Horizontal
Test Power ：	AC 120V/60 Hz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11574.70	36.66	9.55	46.21	74.00	-27.79	peak	
2	*	11574.70	29.24	9.55	38.79	54.00	-15.21	AVG	

EUT：	Hy-Fi Powerline Adapter	Model Name. ：	AX821
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Test Date：	2014-07-15
Test Mode ：	N20 Mode 5785 TX Mode	Polarization：	Vertical
Test Power ：	AC 120V/60 Hz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11574.70	38.50	11.75	50.25	74.00	-23.75	peak	
2	*	11574.70	31.94	11.75	43.69	54.00	-10.31	AVG	

EUT：	Hy-Fi Powerline Adapter	Model Name. ：	AX821
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Test Date：	2014-07-15
Test Mode ：	N20 Mode 5825 TX Mode	Polarization：	Horizontal
Test Power ：	AC 120V/60 Hz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	5818.800	94.46	10.05	104.51	74.00	30.51	peak	Fudamental Frequency
2	*	5823.100	84.13	10.05	94.18	54.00	40.18	AVG	Fudamental Frequency
3		5850.000	46.19	10.13	56.32	74.00	-17.68	peak	
4		5850.000	35.29	10.13	45.42	54.00	-8.58	AVG	

EUT：	Hy-Fi Powerline Adapter	Model Name. ：	AX821
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Test Date：	2014-07-15
Test Mode ：	N20 Mode 5825 TX Mode	Polarization：	Vertical
Test Power ：	AC 120V/60 Hz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	5823.200	93.21	10.05	103.26	74.00	29.26	peak	Fudamental Frequency
2	*	5823.400	83.58	10.06	93.64	54.00	39.64	AVG	Fudamental Frequency
3		5850.000	46.35	10.13	56.48	74.00	-17.52	peak	
4		5850.000	35.67	10.13	45.80	54.00	-8.20	AVG	

EUT：	Hy-Fi Powerline Adapter	Model Name. ：	AX821
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Test Date：	2014-07-15
Test Mode ：	N20 Mode 5825 TX Mode	Polarization：	Horizontal
Test Power ：	AC 120V/60 Hz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11652.00	36.64	9.54	46.18	74.00	-27.82	peak	
2	*	11652.00	29.20	9.54	38.74	54.00	-15.26	AVG	

EUT：	Hy-Fi Powerline Adapter	Model Name. ：	AX821
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Test Date：	2014-07-15
Test Mode ：	N20 Mode 5825 TX Mode	Polarization：	Vertical
Test Power ：	AC 120V/60 Hz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11652.00	38.04	11.78	49.82	74.00	-24.18	peak	
2	*	11652.00	30.86	11.78	42.64	54.00	-11.36	AVG	

EUT：	Hy-Fi Powerline Adapter	Model Name. ：	AX821
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Test Date：	2014-07-15
Test Mode ：	N40 Mode 5755 TX Mode	Polarization：	Horizontal
Test Power ：	AC 120V/60 Hz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5725.000	54.44	9.78	64.22	74.00	-9.78	peak	
2		5725.000	40.60	9.78	50.38	54.00	-3.62	AVG	
3	*	5741.500	83.24	9.83	93.07	54.00	39.07	AVG	Fudamental Frequency
4	X	5741.600	94.46	9.83	104.29	74.00	30.29	peak	Fudamental Frequency

EUT：	Hy-Fi Powerline Adapter	Model Name. ：	AX821
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Test Date：	2014-07-15
Test Mode ：	N40 Mode 5755 TX Mode	Polarization：	Vertical
Test Power ：	AC 120V/60 Hz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5725.000	53.46	9.78	63.24	74.00	-10.76	peak	
2		5725.000	39.75	9.78	49.53	54.00	-4.47	AVG	
3	X	5739.300	93.70	9.82	103.52	74.00	29.52	peak	Fudamental Frequency
4	*	5741.400	82.92	9.83	92.75	54.00	38.75	AVG	Fudamental Frequency

EUT：	Hy-Fi Powerline Adapter	Model Name. ：	AX821
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Test Date：	2014-07-15
Test Mode ：	N40 Mode 5755 TX Mode	Polarization：	Horizontal
Test Power ：	AC 120V/60 Hz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11512.70	35.28	9.57	44.85	74.00	-29.15	peak	
2	*	11512.70	27.62	9.57	37.19	54.00	-16.81	AVG	

EUT：	Hy-Fi Powerline Adapter	Model Name. ：	AX821
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Test Date：	2014-07-15
Test Mode ：	N40 Mode 5755 TX Mode	Polarization：	Vertical
Test Power ：	AC 120V/60 Hz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11512.70	35.52	11.73	47.25	74.00	-26.75	peak	
2	*	11512.70	26.78	11.73	38.51	54.00	-15.49	AVG	

EUT：	Hy-Fi Powerline Adapter	Model Name. ：	AX821
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Test Date：	2014-07-15
Test Mode ：	N40 Mode 5795 TX Mode	Polarization：	Horizontal
Test Power ：	AC 120V/60 Hz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	5780.000	82.01	9.93	91.94	54.00	37.94	AVG	Fudamental Frequency
2	X	5781.900	93.88	9.93	103.81	74.00	29.81	peak	Fudamental Frequency
3		5850.000	47.81	10.13	57.94	74.00	-16.06	peak	
4		5850.000	35.58	10.13	45.71	54.00	-8.29	AVG	

EUT：	Hy-Fi Powerline Adapter	Model Name. ：	AX821
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Test Date：	2014-07-15
Test Mode ：	N40 Mode 5795 TX Mode	Polarization：	Vertical
Test Power ：	AC 120V/60 Hz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	5779.000	93.71	9.92	103.63	74.00	29.63	peak	Fudamental Frequency
2	*	5780.000	82.84	9.93	92.77	54.00	38.77	AVG	Fudamental Frequency
3		5850.000	47.56	10.13	57.69	74.00	-16.31	peak	
4		5850.000	35.14	10.13	45.27	54.00	-8.73	AVG	

EUT：	Hy-Fi Powerline Adapter	Model Name. ：	AX821
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Test Date：	2014-07-15
Test Mode ：	N40 Mode 5795 TX Mode	Polarization：	Horizontal
Test Power ：	AC 120V/60 Hz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11592.90	34.84	9.55	44.39	74.00	-29.61	peak	
2	*	11592.90	27.49	9.55	37.04	54.00	-16.96	AVG	

EUT：	Hy-Fi Powerline Adapter	Model Name. ：	AX821
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Test Date：	2014-07-15
Test Mode ：	N40 Mode 5795 TX Mode	Polarization：	Vertical
Test Power ：	AC 120V/60 Hz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11592.90	35.33	11.76	47.09	74.00	-26.91	peak	
2	*	11592.90	26.64	11.76	38.40	54.00	-15.60	AVG	

5. MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

5.1 LIMITS

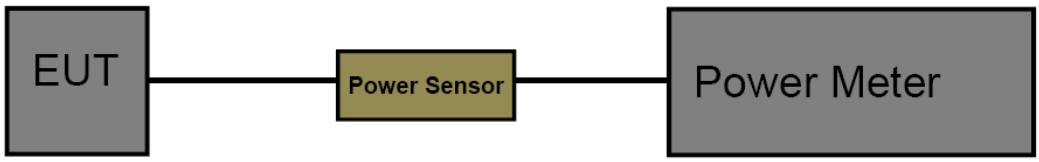
FCC Part 15.247, subpart C	
Frequency Range (MHz)	5725~5825
Limits	30

5.2 TEST PROCEDURE

The measurement is according to section 9.1.2 of KDB 558074 D01 DTS Meas Guidance v03r02.

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

5.3 TEST SETUP



5.4 TEST INSTRUMENTS

Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
Power Meter	Anritsu	ML2495A	0917201	Jul. 06, 2014	Jul. 05. 2015	1 year
Power Sensor	Anritsu	MA2411B	1035004	Jul. 06, 2014	Jul. 05. 2015	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

5.8 G Band4 Conducted Power					
802.11a Power					
Channel	Frequency	Conducted Power (dBm)			Max. Limit (dBm)
		Ant. 0	Ant. 1	Total	
149	5745 MHz	15.12			30
157	5785 MHz	15.31			
165	5825 MHz	15.17			
802.11a(HT20) Power					
Channel	Frequency	Conducted Power (dBm)			Max. Limit (dBm)
		Ant. 0	Ant. 1	Total	
149	5745 MHz	12.54	11.65	15.13	30
157	5785 MHz	12.89	11.76	15.37	
165	5825 MHz	12.47	11.70	15.11	
802.11a(HT40) Power					
Channel	Frequency	Conducted Power (dBm)			Max. Limit (dBm)
		Ant. 0	Ant. 1	Total	
151	5755 MHz	12.25	11.11	14.73	30
159	5795 MHz	12.20	11.14	14.71	

6. OCCUPIED BANDWIDTH MEASUREMENT

6.1 LIMITS

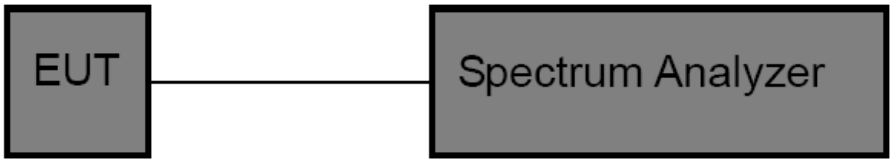
FCC Part 15.247, subpart C	
Frequency Range (MHz)	5725~5825
Limits	6 dB Bandwidth>500 KHz

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
Attenuation	Auto
Span	>6 dB Bandwidth
RBW	100 kHz
VBW	≥3RBW
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

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. 06, 2014	Jul. 05. 2015	1 year

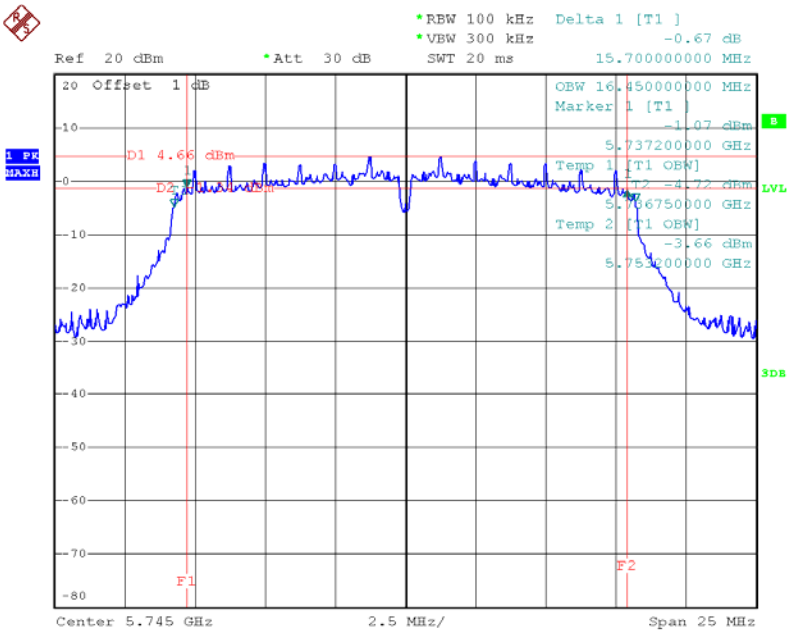
6.5 EUT OPERATING CONDITIONS

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

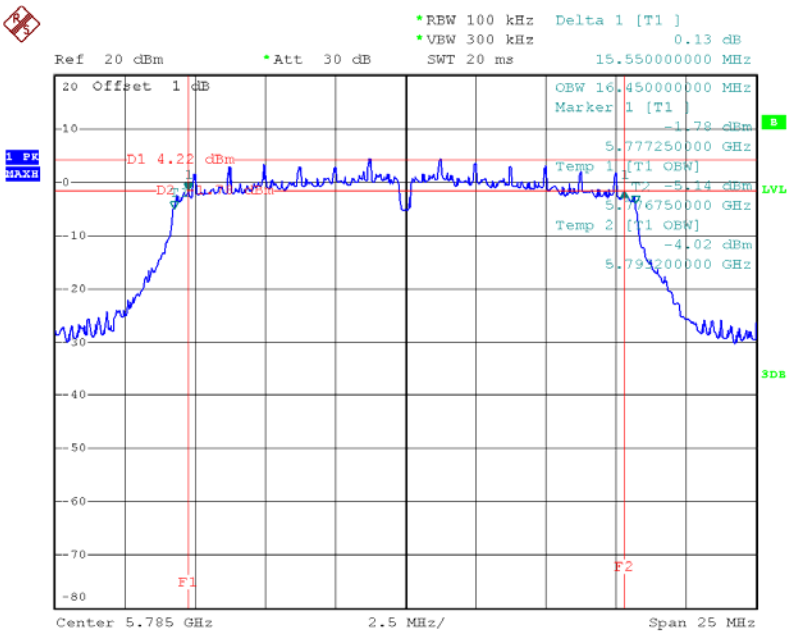
6.6 TEST RESULTS

801.11a Mode			
Frequency (MHz)	**6dB Bandwidth (MHz)**	**99% OBW (MHz)**	**Limit**
5745	15.70	16.45	>=500 kHz
5785	15.55	16.45	
5825	15.60	16.45	
Note: The worst mode is the TX AN0, only showed the worst mode plots.			

802.11a Mode 5745 MHz



802.11a Mode 5785 MHz



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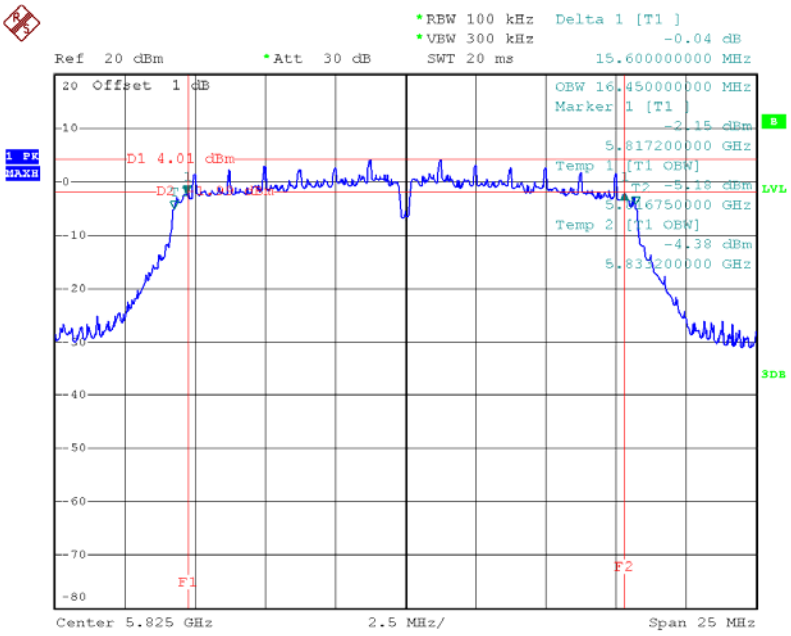
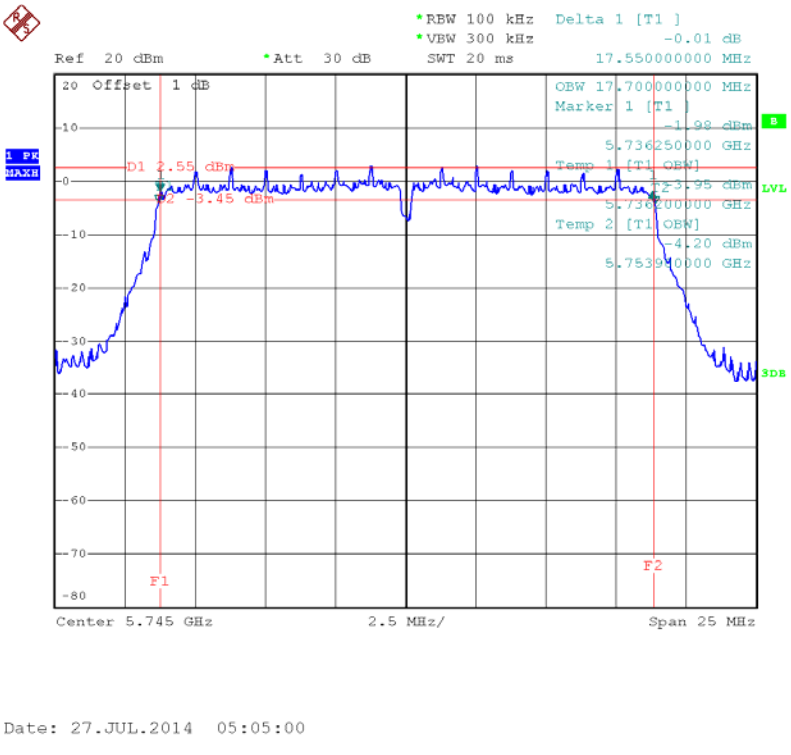
802.11a Mode 5825 MHz



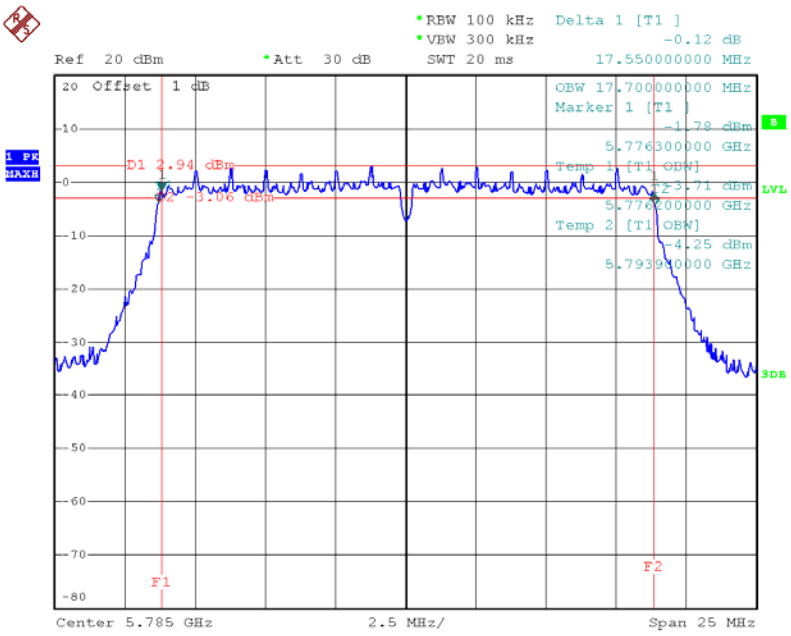
Date: 27.JUL.2014 06:36:36

801.11n(20) Mode			
Frequency (MHz)	**6dB Bandwidth (MHz)**	**99% OBW (MHz)**	**Limit**
5745	17.55	17.70	>=500 kHz
5785	17.55	17.70	
5825	17.65	17.70	
Note: The worst mode is the TX AN0, only showed the worst mode plots.			

802.11n(20) Mode 5745 MHz

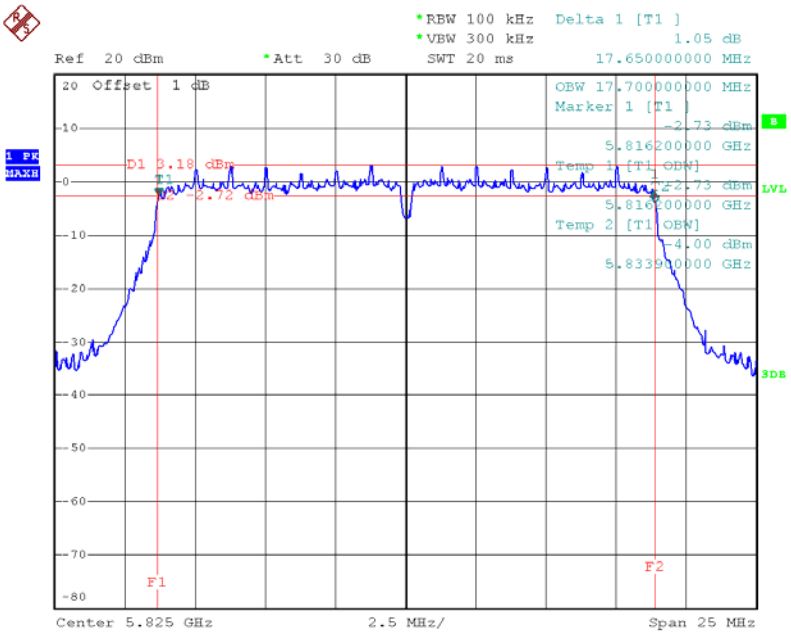


802.11n(20) Mode 5785 MHz



Date: 27.JUL.2014 05:03:49

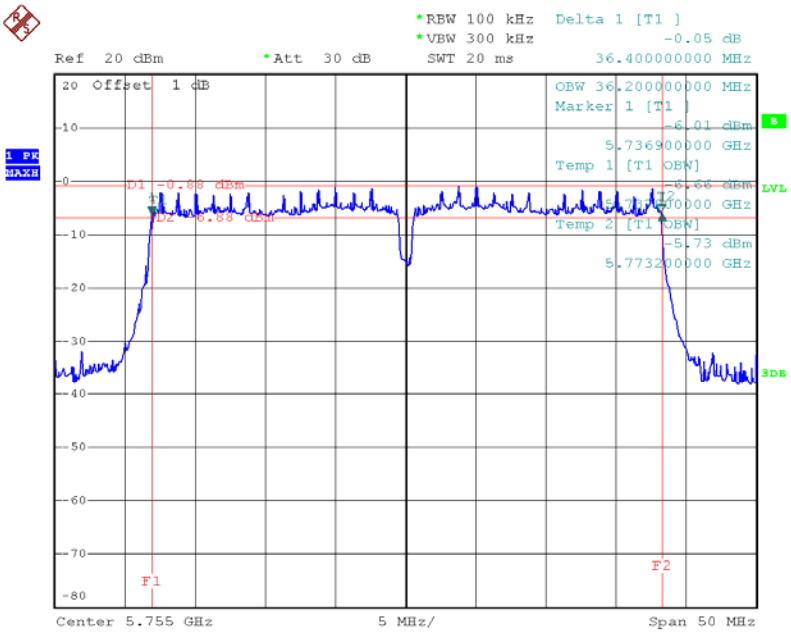
802.11n(20) Mode 5825 MHz



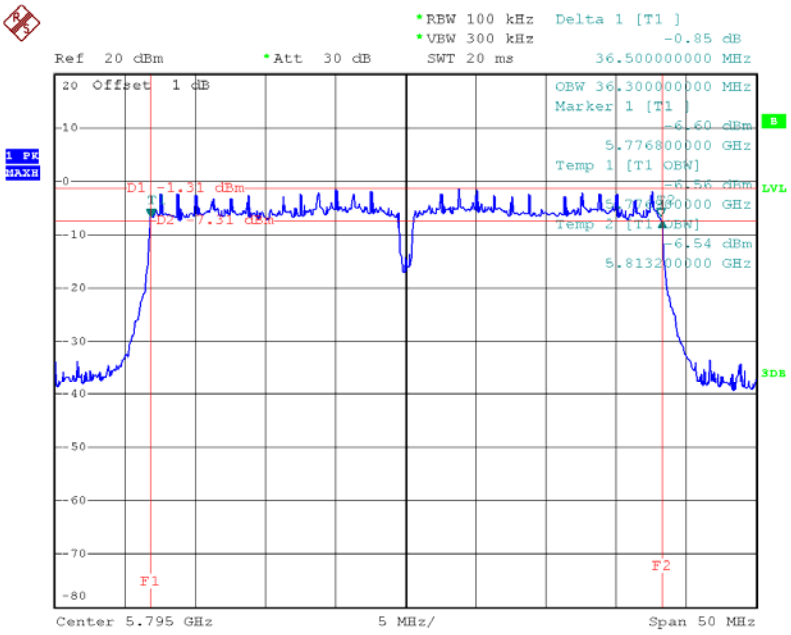
Date: 27.JUL.2014 04:59:10

801.11n(40) Mode			
Frequency (MHz)	6dB Bandwidth (MHz)	99% OBW (MHz)	Limit
5755	36.40	36.20	>=500 kHz
5795	36.50	36.30	
Note: The worst mode is the TX AN0, only showed the worst mode plots.			

802.11n(40) Mode 5755 MHz



802.11n(40) Mode 5795 MHz



Date: 27.JUL.2014 06:02:57

7. POWER SPECTRAL DENSITY

7.1 LIMITS

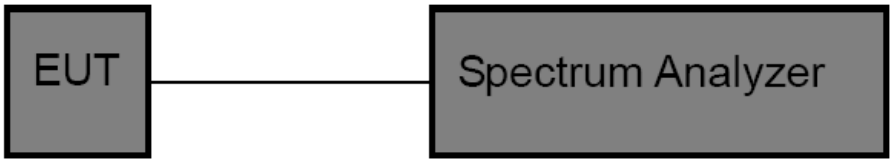
FCC Part 15.247, Subpart C	
Frequency Range (MHz)	5725~5825
99% Occupied Bandwidth	8 dBm in any 3 kHz

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 1.5 times the DTS channel bandwidth
RBW	3 kHz
VBW	≥3RBW
Detector	Reak
Trace	Max Hold
Sweep Time	Auto

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. 06, 2014	Jul. 05. 2015	1 year

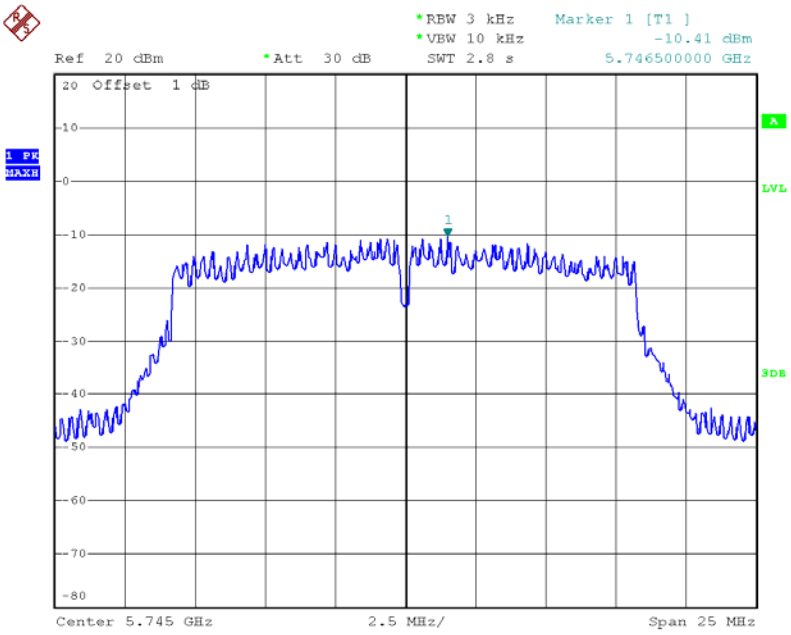
7.5 EUT OPERATING CONDITIONS

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

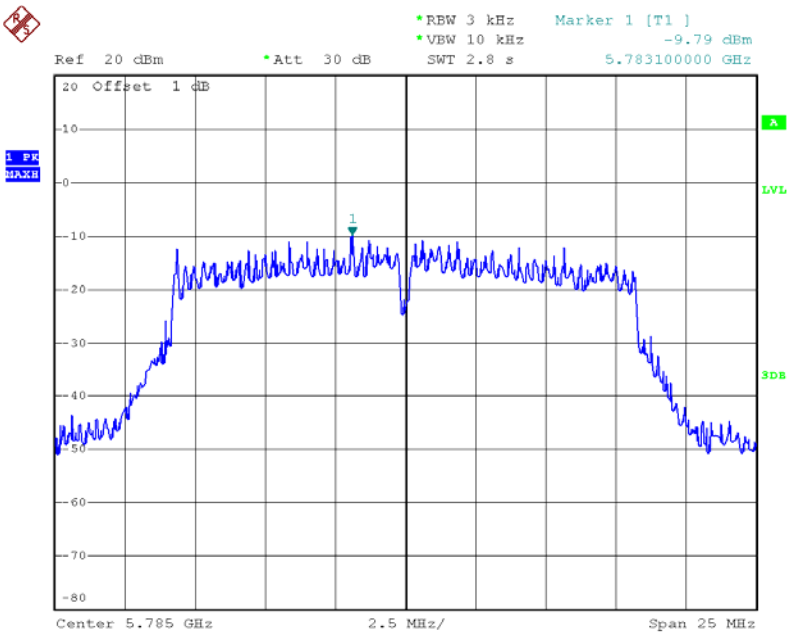
7.6 TEST RESULTS

801.11a Mode					
Frequency	Power Density (3 kHz/dBm)			Limit (dBm/3KHz)	Result
	ANT 0	ANT 1	Total		
5745	-10.41			8	Pass
5785	-9.79				
5825	-10.97				
Note: The worst mode is the TX AN0, only showed the worst mode plots.					

802.11a Mode 5745 MHz-ANT 0

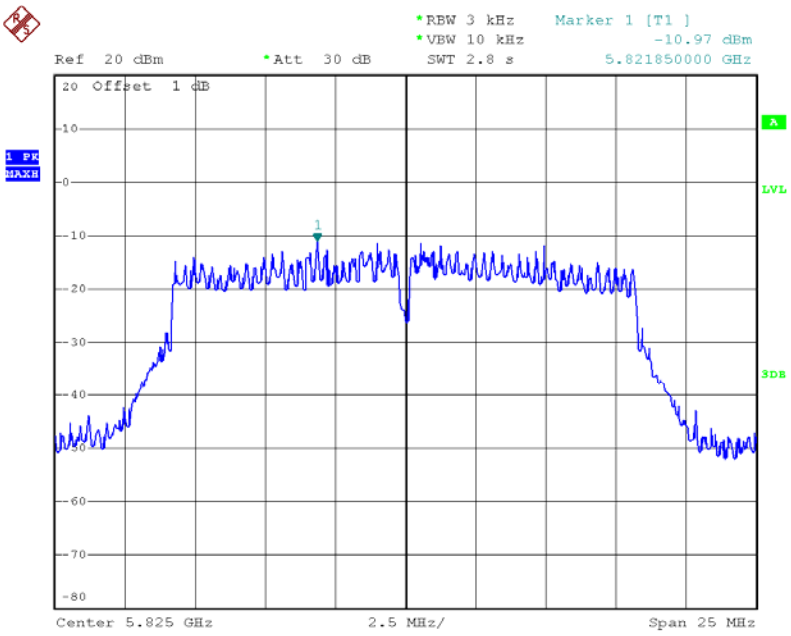


802.11a Mode 5785 MHz-ANT 0



Date: 27.JUL.2014 06:34:31

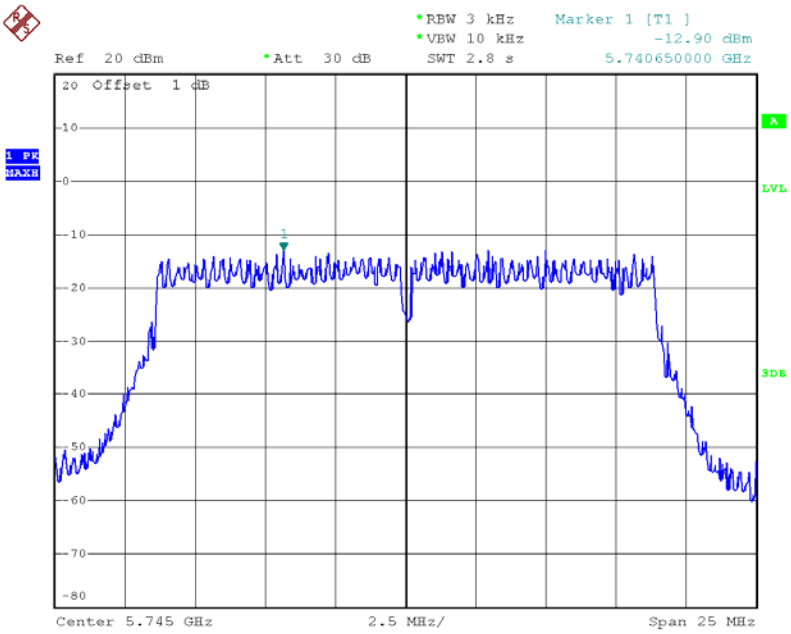
802.11a Mode 5825 MHz-ANT 0



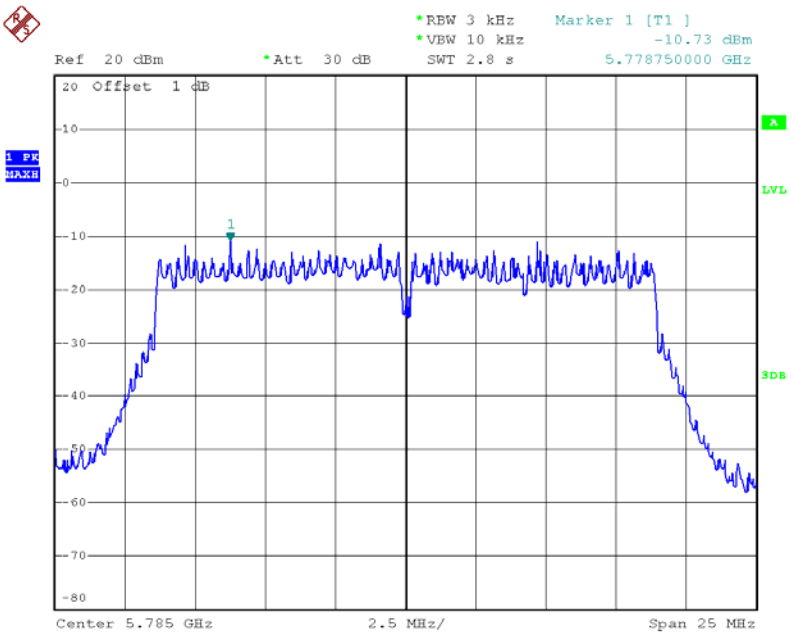
Date: 27.JUL.2014 06:36:52

801.11a(HT20) Mode					
Frequency	Power Density (3 kHz/dBm)			Limit (dBm/3KHz)	Result
	ANT 0	ANT1	Total		
5745	-12.90	-20.23	-12.16	8	Pass
5785	-10.73	-19.96	-10.24		
5825	-11.64	-18.31	-10.79		

802.11n (HT20) Mode 5745 MHz-ANT 0

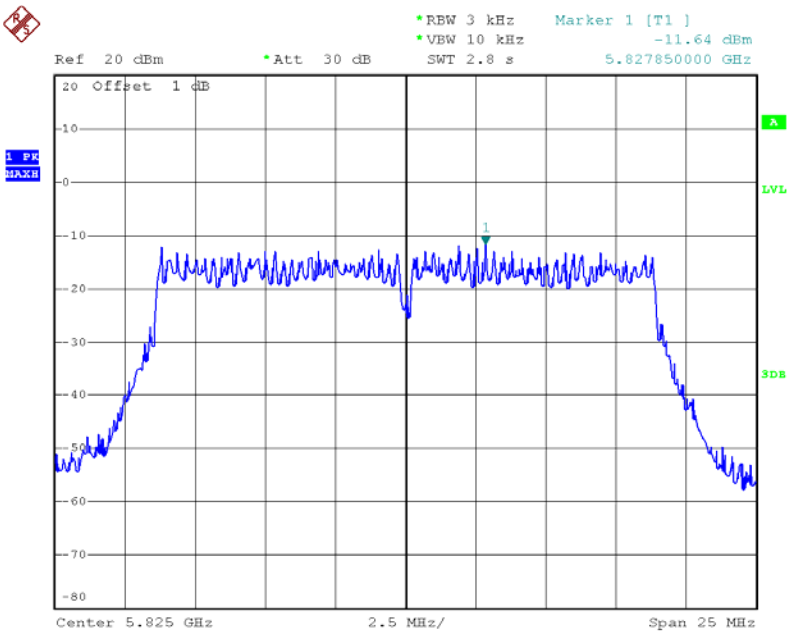


802.11n(HT20) Mode 5785 MHz-ANT 0



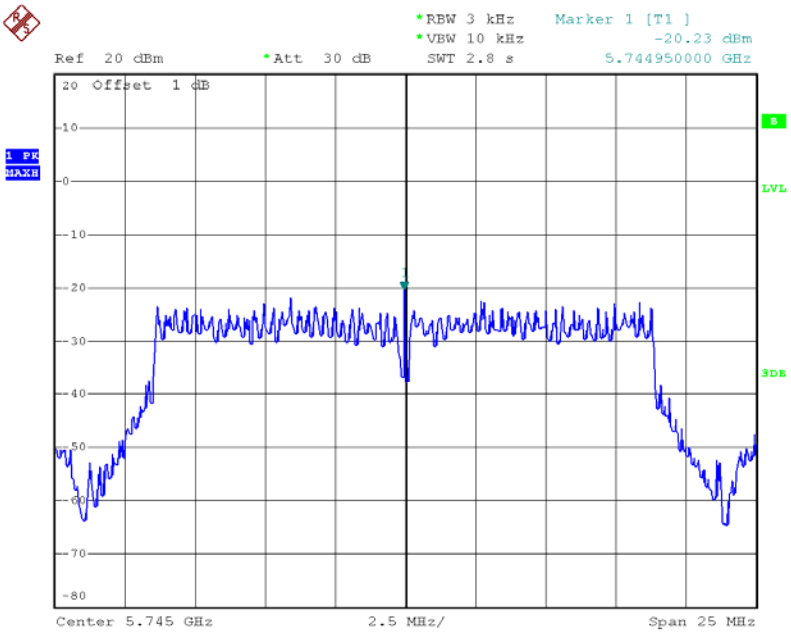
Date: 27.JUL.2014 05:01:55

802.11n(HT20) Mode 5825 MHz-ANT 0



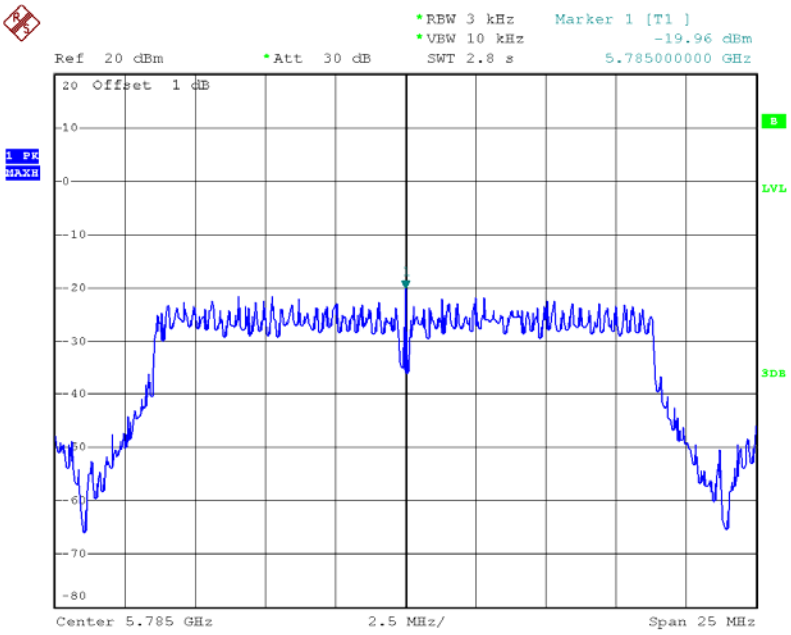
Date: 27.JUL.2014 05:01:27

802.11n (HT20) Mode 5745 MHz-ANT 1



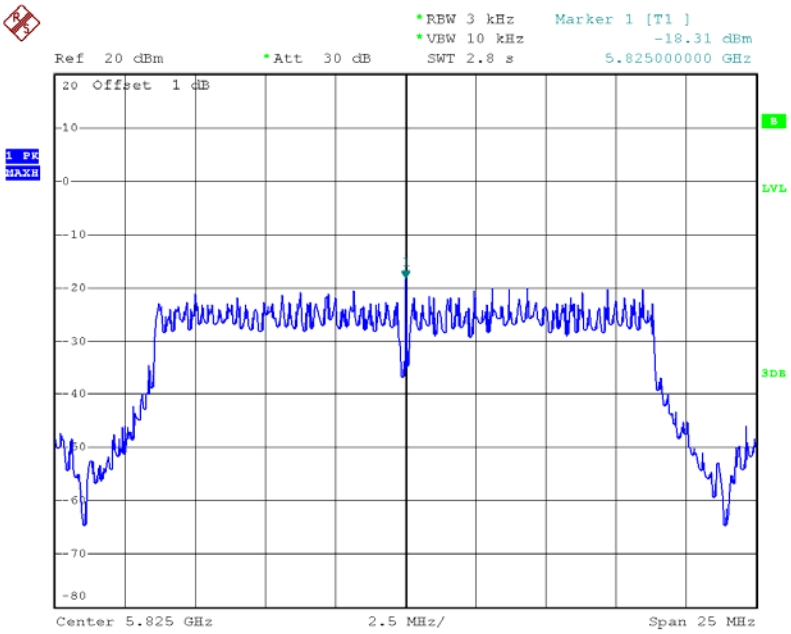
Date: 15.MAY.2014 10:21:48

802.11n (HT20) Mode 5785 MHz-ANT 1



Date: 15.MAY.2014 10:30:02

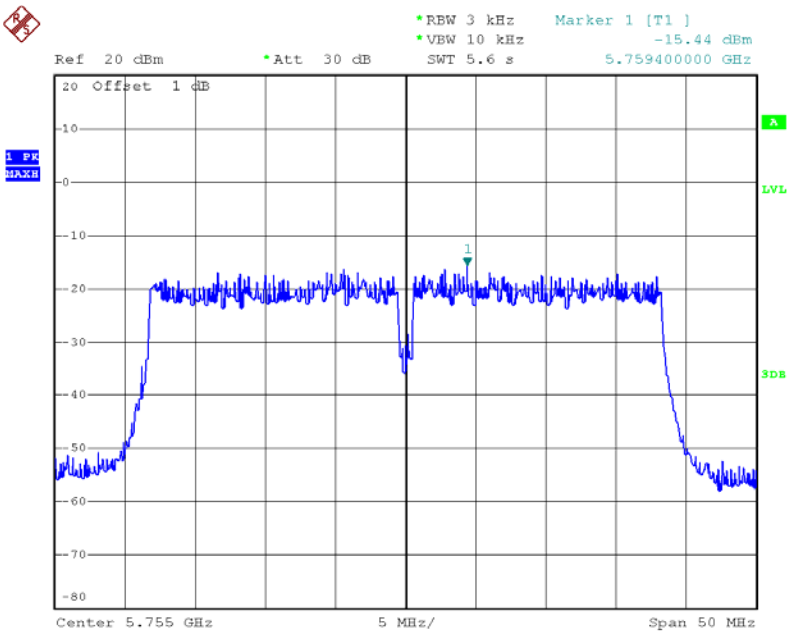
802.11n (HT20) Mode 5825 MHz-ANT 1



Date: 15.MAY.2014 10:36:49

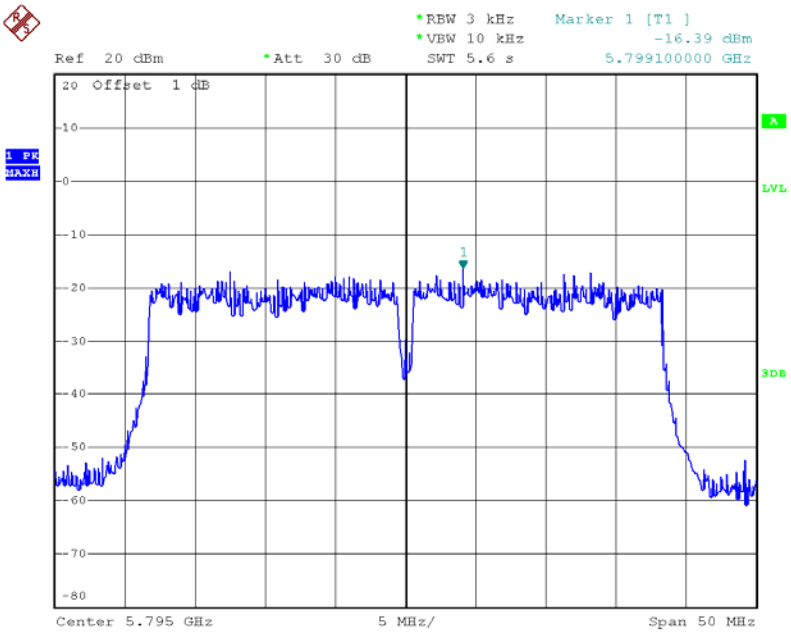
801.11a (HT40)Mode					
Frequency	Power Density (3 kHz/dBm)			Limit (dBm/3KHz)	Result
	ANT 0	ANT 1	Total		
5755	-15.44	-21.88	-14.55	8	Pass
5795	-16.39	-18.35	-14.25		

802.11n (HT40) Mode 5755 MHz-ANT 0



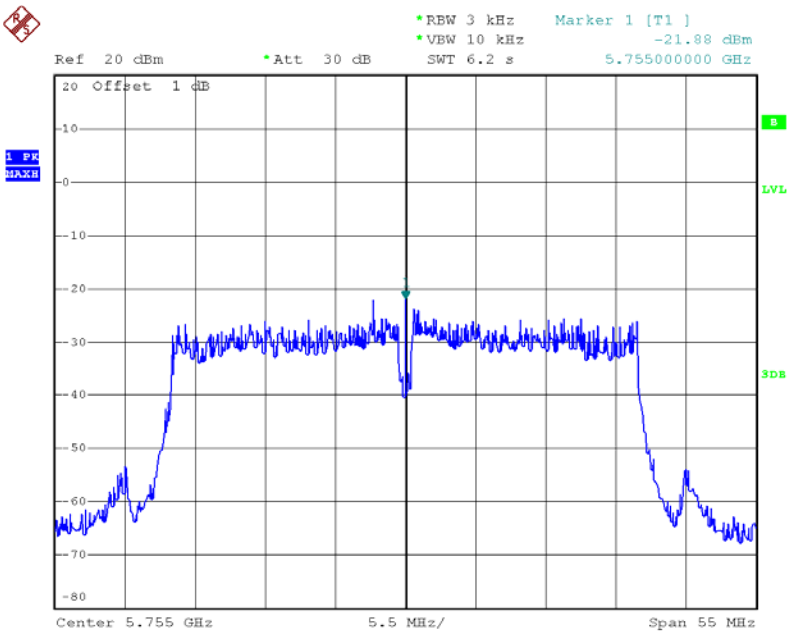
Date: 27.JUL.2014 06:05:34

802.11n (HT40) Mode 5795 MHz-ANT 0



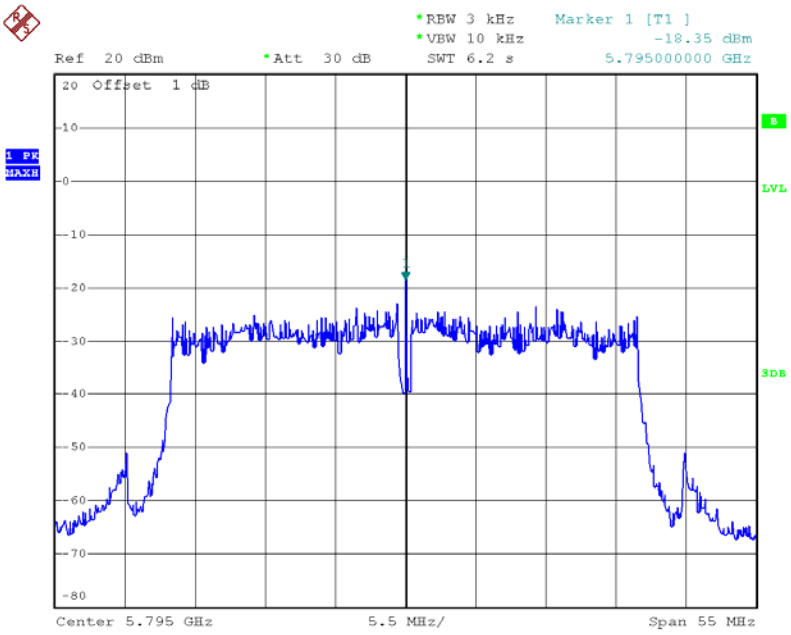
Date: 27.JUL.2014 06:00:51

802.11n (HT40) Mode 5755 MHz-ANT 1



Date: 27.JUL.2014 11:01:17

802.11n (HT40) Mode 5795 MHz-ANT 1



Date: 27.JUL.2014 11:07:04

8. ANTENNA CONDUCTED SPURIOUS EMISSION

8.1 LIMITS

FCC Part 15.247, Subpart C	
Frequency Range (MHz)	2400~2483.5
Limit	In any 100 kHz bandwidth outside the intentional radiation frequency band, the radio frequency power shall be at least 20 dB below the highest level of the desired power, based on either an RF conducted measurement, provide the transmitter demonstrates compliance with the peak conducted power limits.

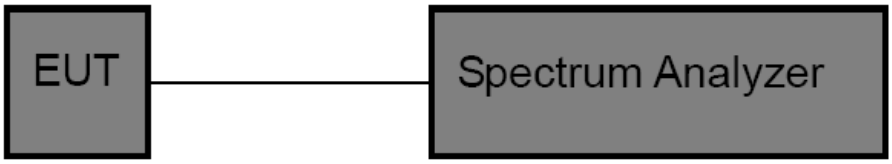
8.2 TEST PROCEDURE

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

a. Set frequency range to capture low band-edge from 2310 MHz up to 2390 MHz, and for up band-edge from 2483.5 MHz up to 2500 MHz
b. For low band-edge set the equipment transmit at the lowest channel, and for up band-edge set the equipment transmit at the highest channel
c. Set the VBW≥3 RBW (100kHz/ 300kHz) for conducted measurement
d. For radiated measurements the RBW set to 1 MHz, and the VBW set to 1 MHz for peak measurements and 10 Hz for average measurement

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. 06, 2014	Jul. 05. 2015	1 year

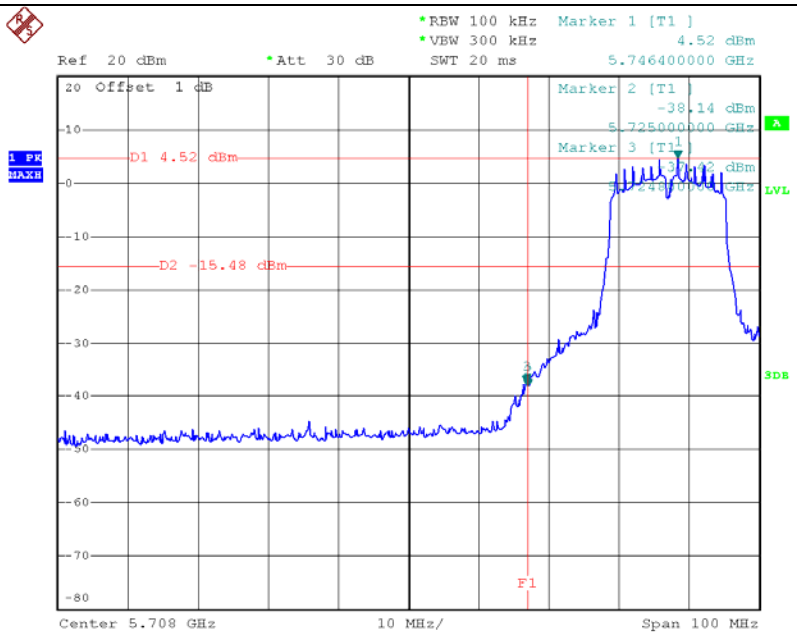
8.5 EUT OPERATING CONDITIONS

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

8.6 TEST RESULTS

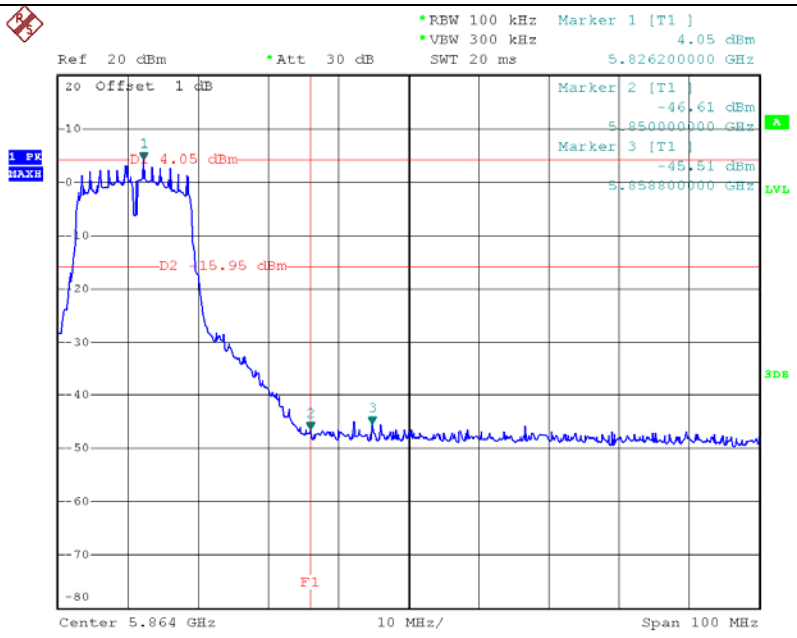
Only showed the worst mode data of ANT 0 transmitting.

A Mode 149CH



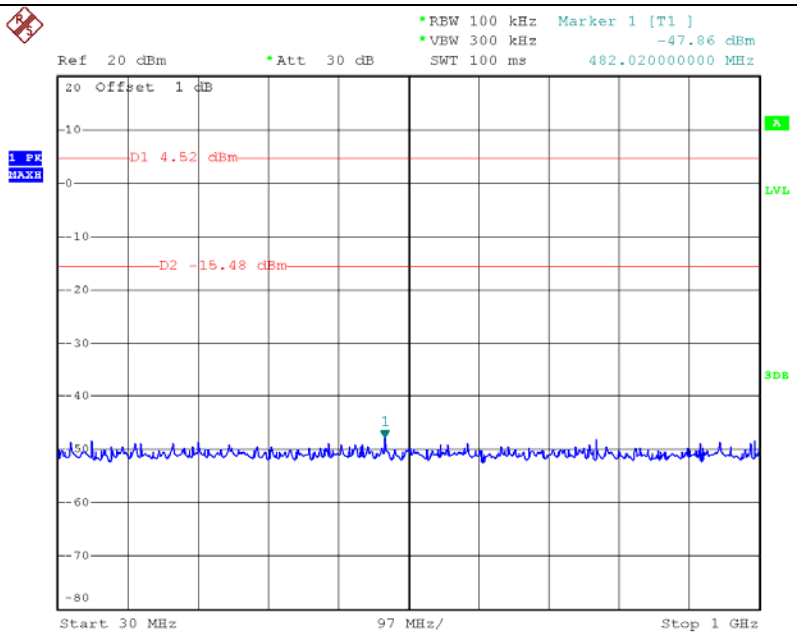
Date: 27.JUL.2014 06:32:11

A Mode 165CH



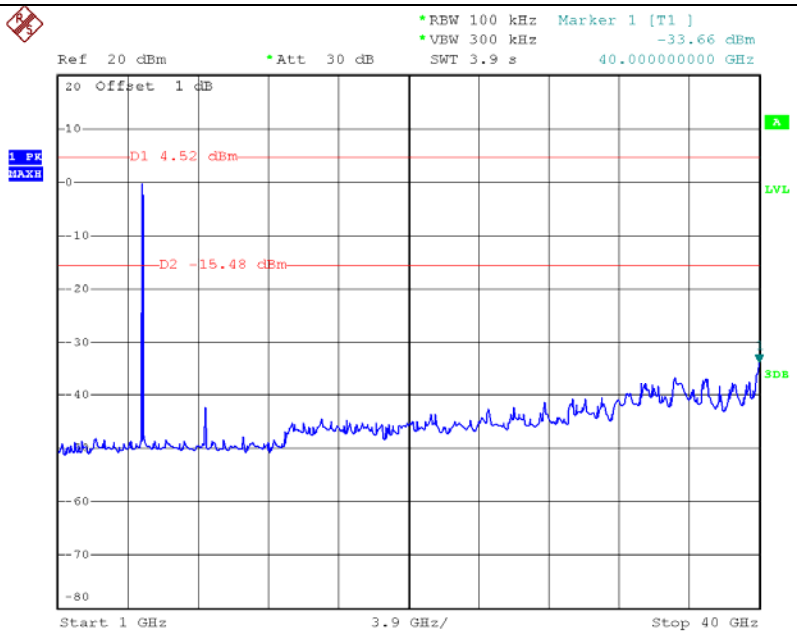
Date: 27.JUL.2014 06:37:35

A Mode 149CH (30MHz~1GHz)



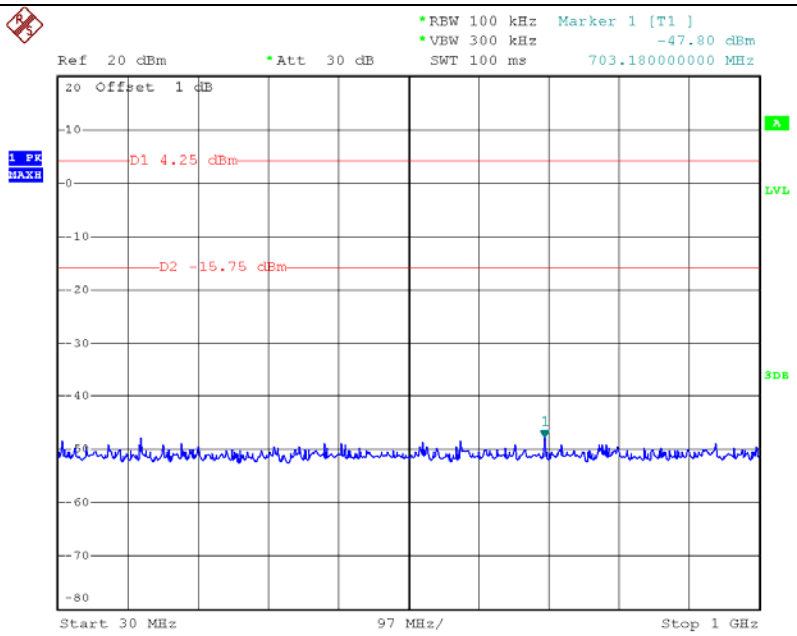
Date: 27.JUL.2014 06:32:27

A Mode 149CH (1GHz~40GHz)



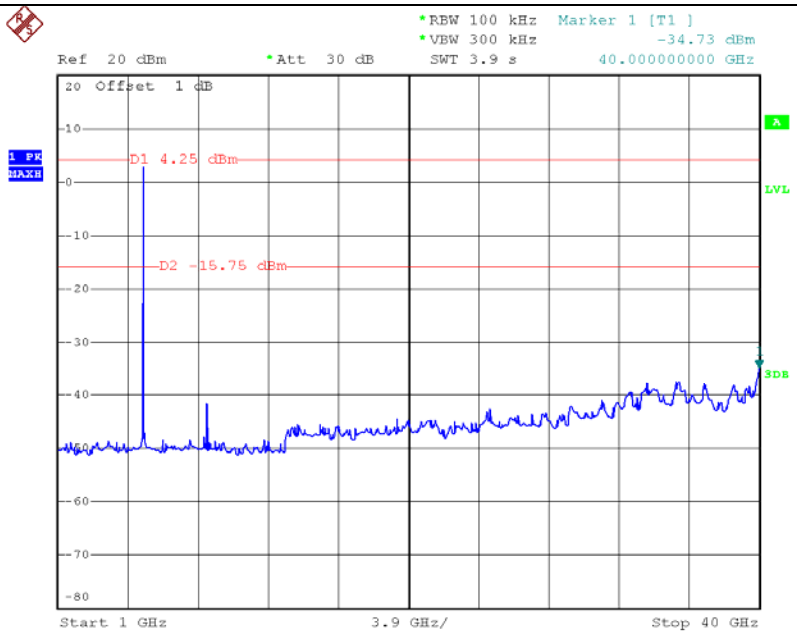
Date: 27.JUL.2014 06:32:59

A Mode 157CH (30MHz~1GHz)

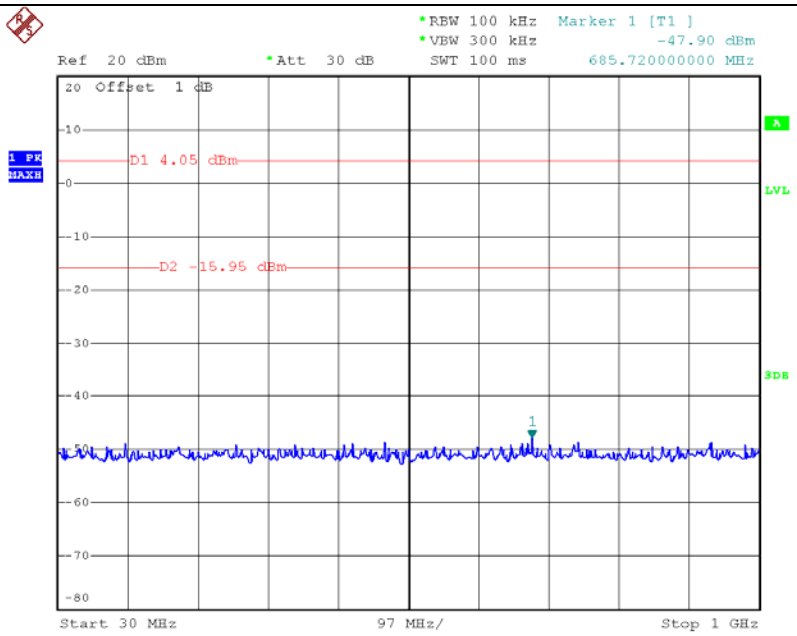


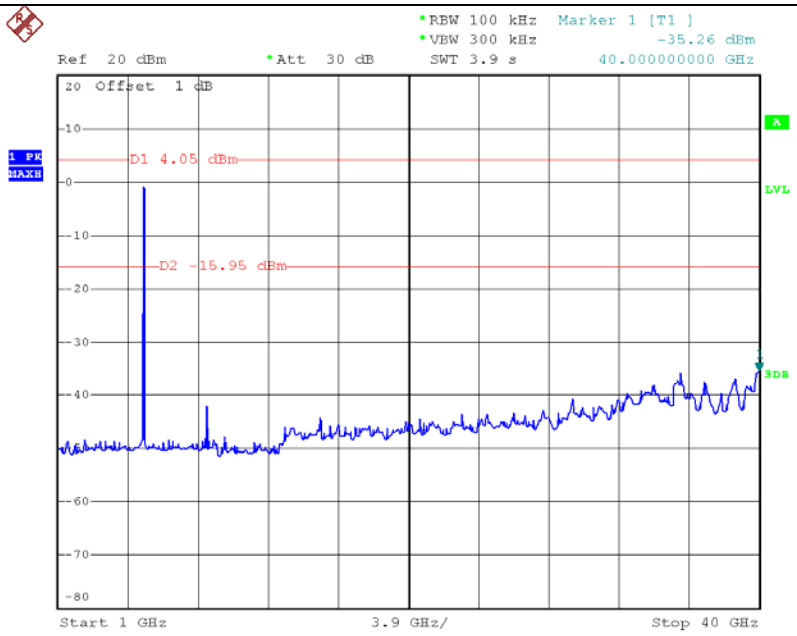
Date: 27.JUL.2014 06:33:57

A Mode 157CH (1GHz~40GHz)

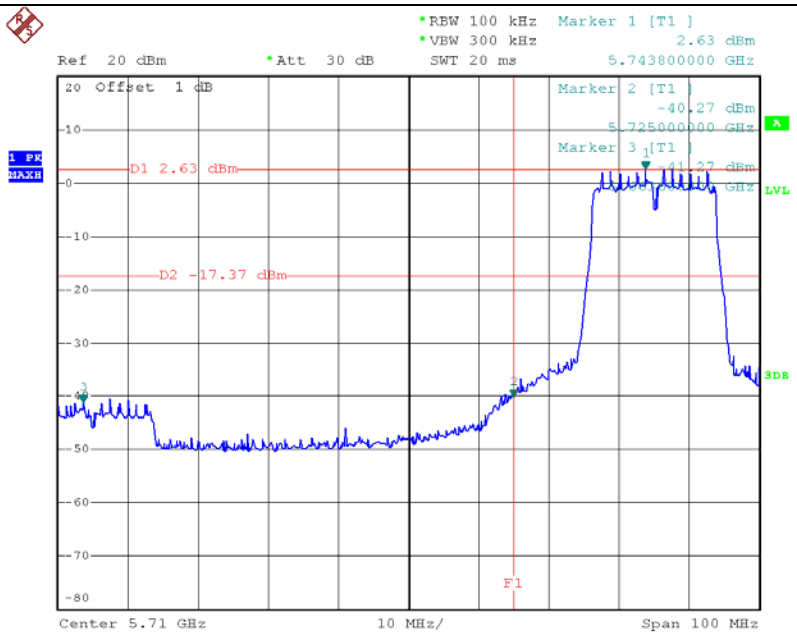


Date: 27.JUL.2014 06:34:10

A Mode 165CH (30MHz~1GHz)

Date: 27.JUL.2014 06:37:50

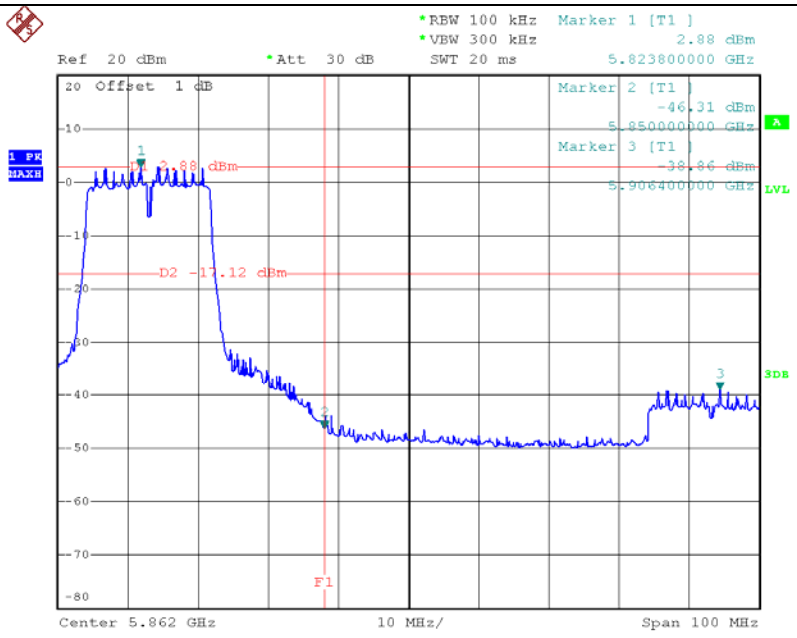
A Mode 165CH (1GHz~40GHz)

Date: 27.JUL.2014 06:38:03

N (HT20) Mode149CH



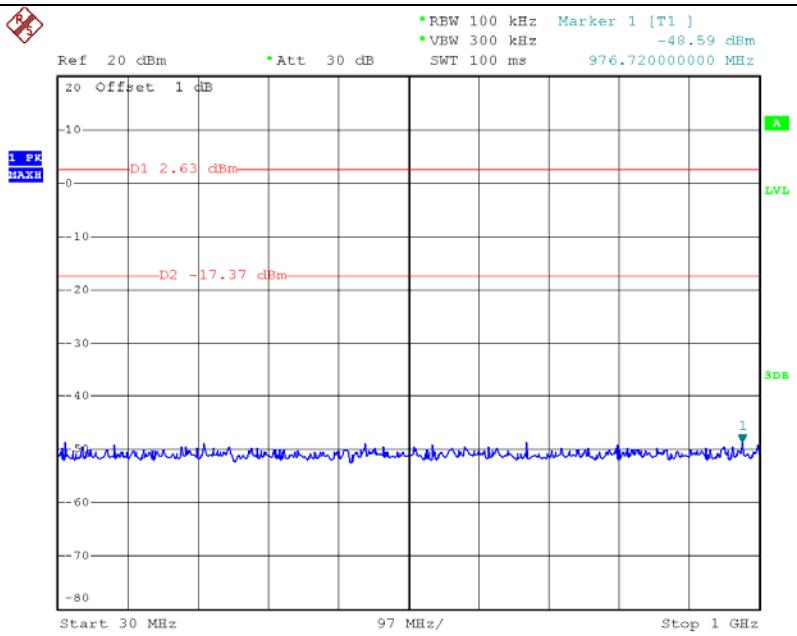
Date: 27.JUL.2014 05:05:50

N (HT20) Mode High 165CH



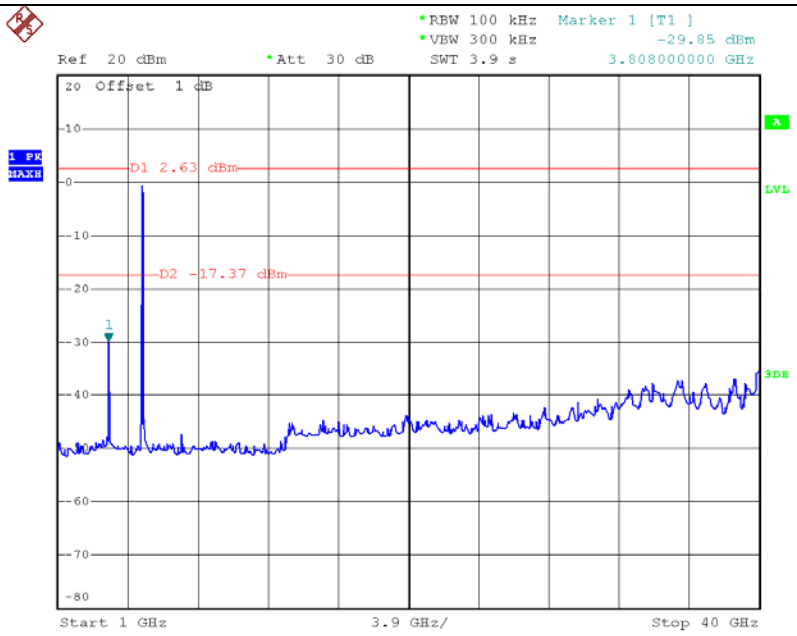
Date: 27.JUL.2014 05:00:07

N (HT20) Mode 149CH (30MHz~1GHz)



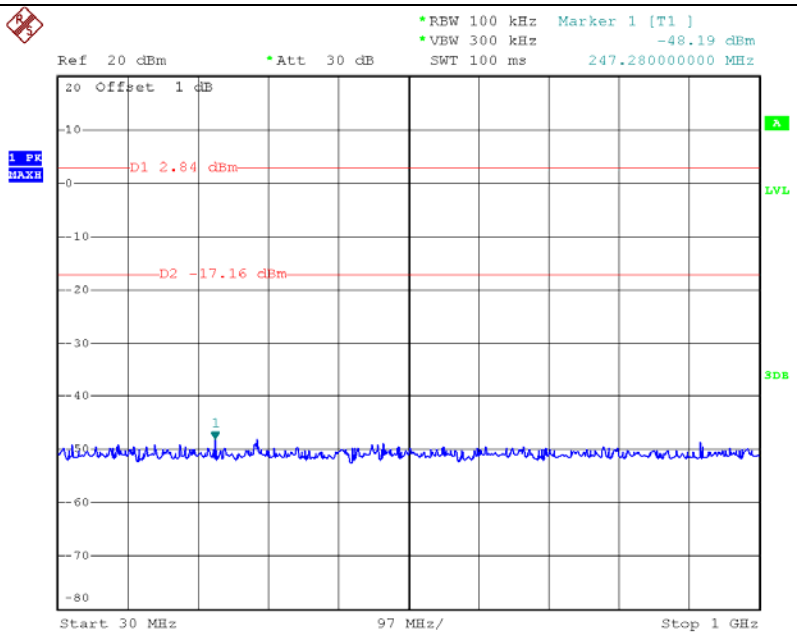
Date: 27.JUL.2014 05:06:09

N (HT20) Mode 149CH (1GHz~40GHz)



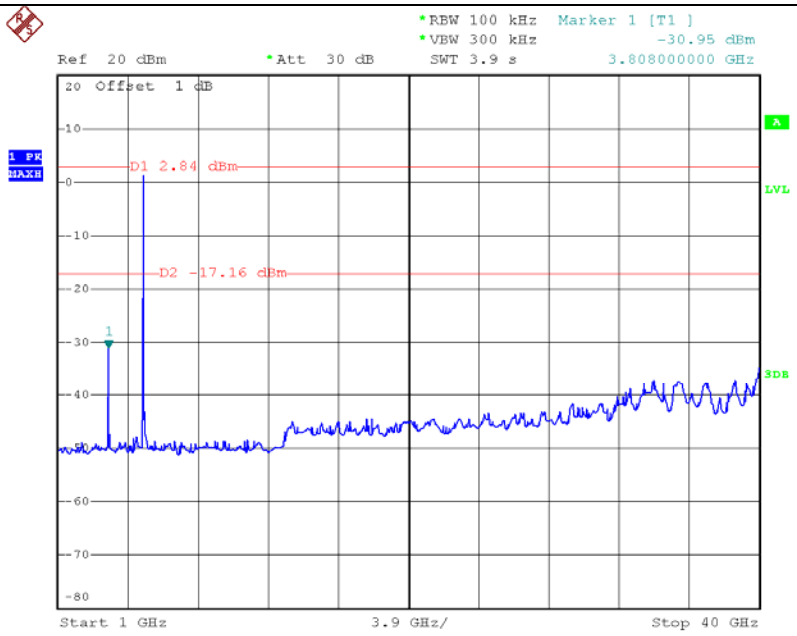
Date: 27.JUL.2014 05:06:22

N (HT20) Mode 157CH (30MHz~1GHz)



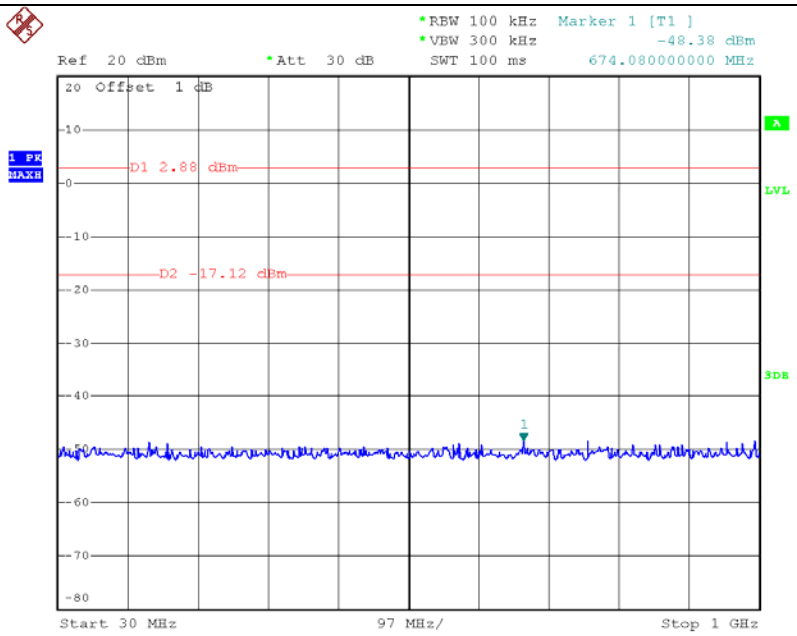
Date: 27.JUL.2014 05:02:49

N (HT20) Mode 157CH (1GHz~40GHz)



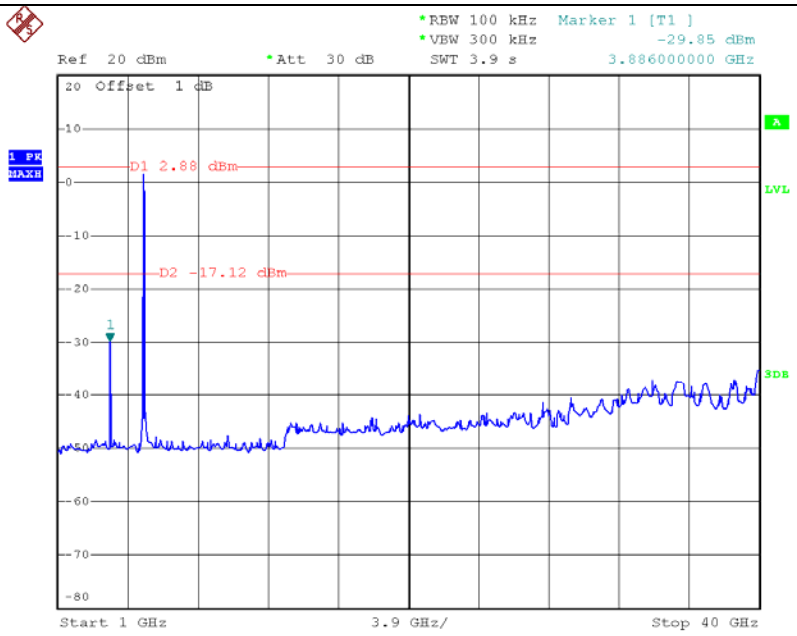
Date: 27.JUL.2014 05:03:05

N (HT20) Mode 165CH (30MHz~1GHz)



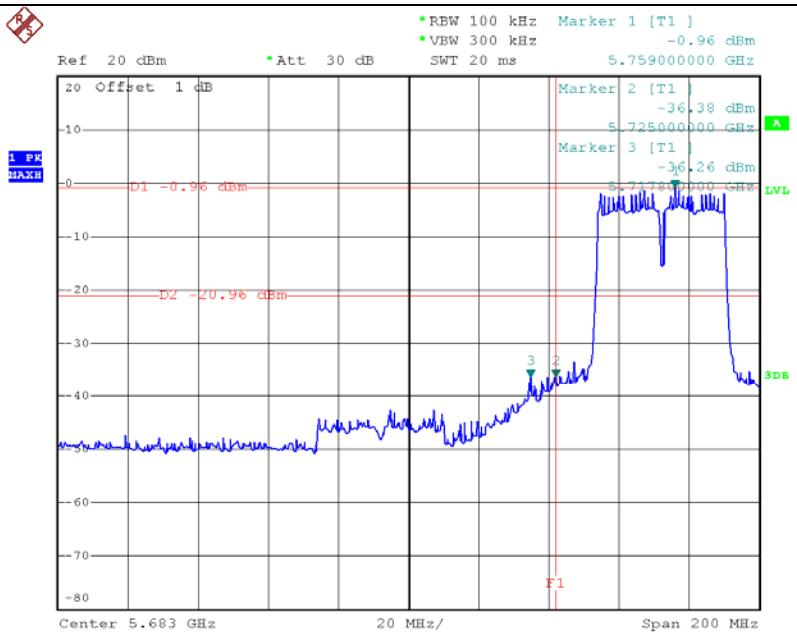
Date: 27.JUL.2014 05:00:24

N (HT20) Mode 165CH (1GHz~40GHz)



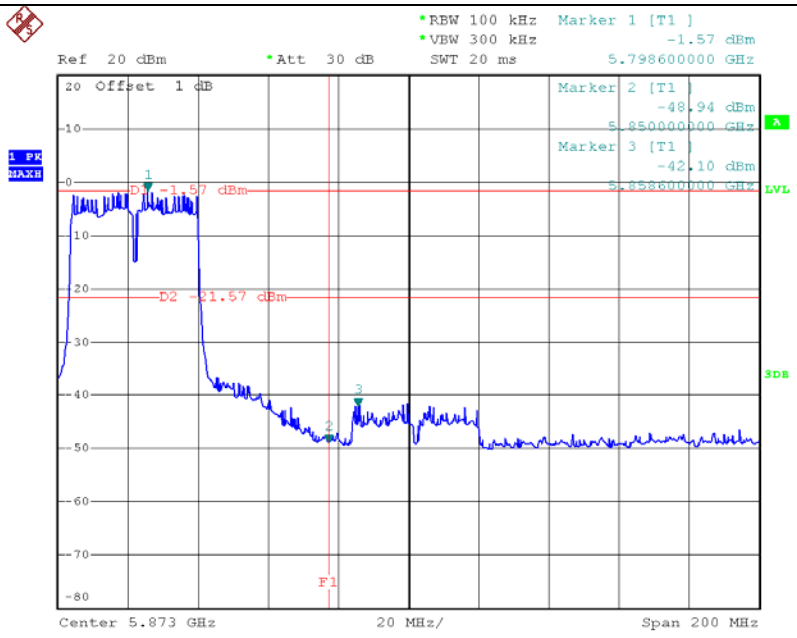
Date: 27.JUL.2014 05:00:45

N (HT40) Mode 151CH



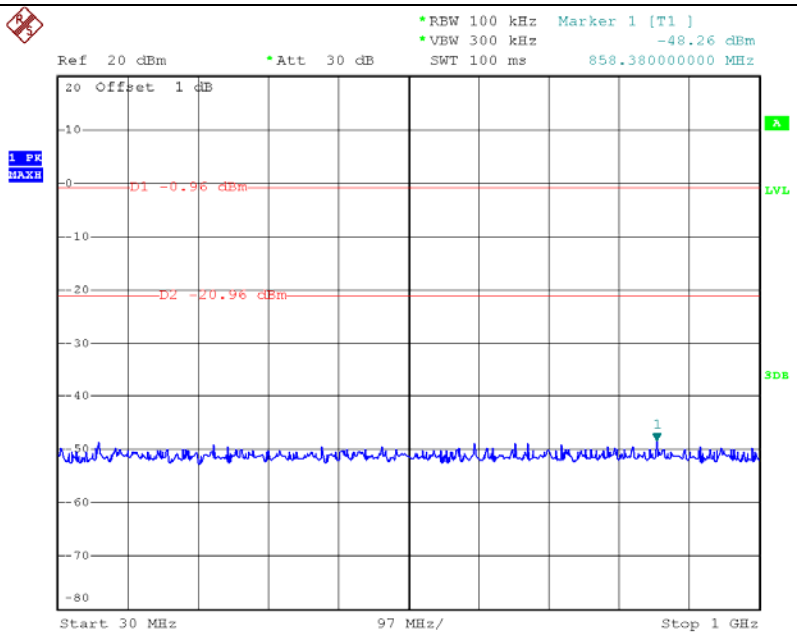
Date: 27.JUL.2014 06:04:48

N (HT40) Mode 159CH



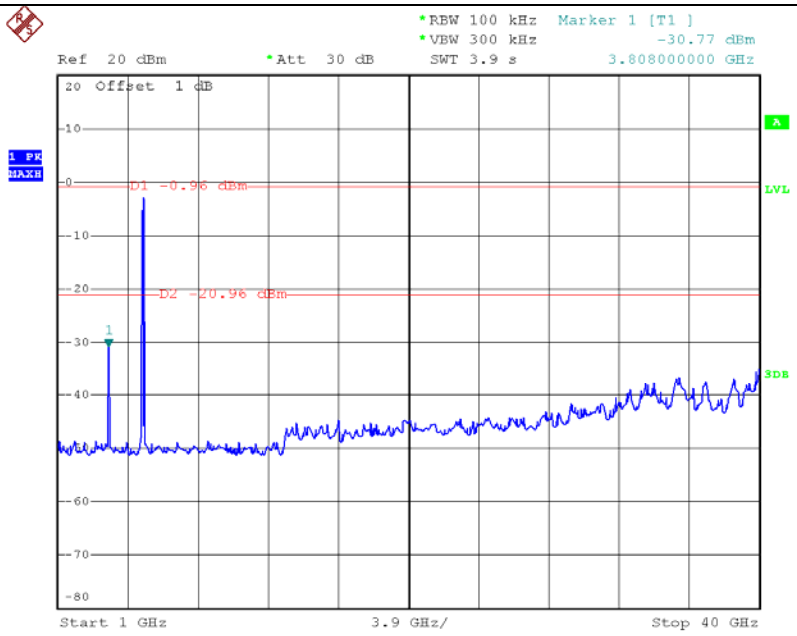
Date: 27.JUL.2014 06:02:01

N (HT40) Mode 151CH (30MHz~1GHz)



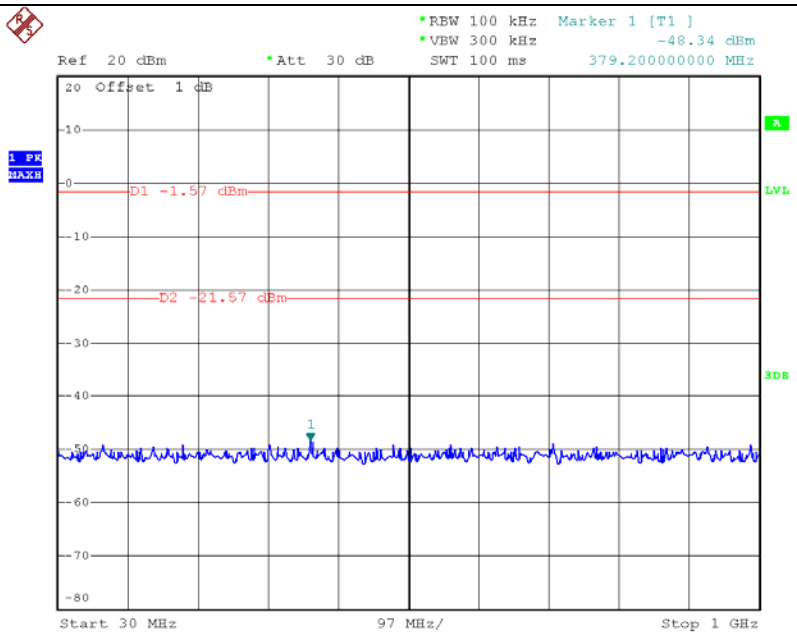
Date: 27.JUL.2014 06:05:01

N (HT40) Mode 151CH (1GHz~40GHz)



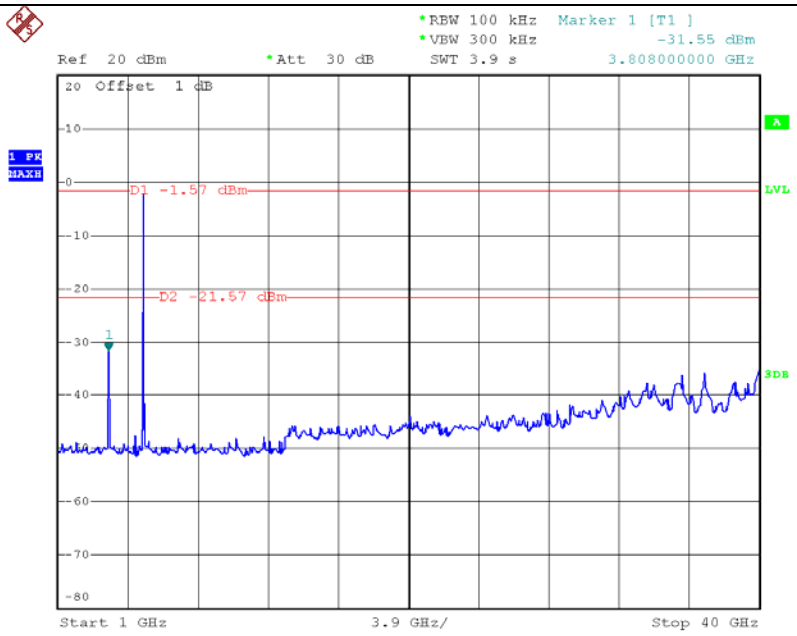
Date: 27.JUL.2014 06:05:13

N (HT40) Mode 159CH (30MHz~1GHz)



Date: 27.JUL.2014 06:02:13

N (HT40) Mode 159CH (1GHz~40GHz)



Date: 27.JUL.2014 06:02:25

9. ANTENNA REQUIREMENT

9.1 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 (15.247)	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.

9.2 ANTENNA CONNECTOR CONSTRUCTION

The EUT antenna is a PIFA Antenna. And the maximum gain of this antenna is 4 dBi.
It complies with the standard requirement.