EMC TEST REPORT

No. SH09060416-001

Applicant	:	Hangzhou H3C Technologies Co., Ltd 310 Liuhe Road, Zhijiang Science Park, Hangzhou 10053, P.R.China
Manufacturer	:	Hangzhou H3C Technologies Co., Ltd 310 Liuhe Road, Zhijiang Science Park, Hangzhou 10053, P.R.China
Equipment	:	Wireless LAN Access Point
Type/Model	:	H3C WA2110-AG

SUMMARY

The equipment complies with the requirements according to the following standard(s):

47CFR Part 15 (2008): Radio Frequency Devices

ANSIC63.4 (2003): American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

RSS-210 Issue 7 (June 2007): Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment

RSS-Gen Issue 2 (June 2007): General Requirements and Information for the Certification of Radiocommunication Equipment

Date of issue: August 12, 2009

Prepared by:	Reviewed by:
Daniel Zhao (*Project Engineer*)	Jonny Jing (*Reviewer*)

Description of Test Facility

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FCC Registration Number: 236597
IC Assigned Code: 2042B-1

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Content

1. General Information

1.1 Applicant Information

Applicant:	Hangzhou H3C Technologies Co., Ltd 310 Liuhe Road, Zhijiang Science Park, Hangzhou 10053, P.R.China
Name of contact:	Li Sun
Tel: Fax:	86 10 82774654 86 10 82774214
Manufacturer:	Hangzhou H3C Technologies Co., Ltd. 310 Liuhe Road, Zhijiang Science Park, Hangzhou 10053, P.R.China
Sample received date :	Aug. 1, 2009
Date of test :	Aug. 1 , 2009 ~ Aug. 9, 2009

1.2 Identification of the EUT

Equipment:	Wireless LAN Access Point
Type/model:	H3C WA2110-AG
FCC ID: IC:	U6IH3CEWTO235A22W 2299L-WA2110AG

1.3 Technical specification

Operation Frequency Band:	5725 MHz – 5825 MHz
Modulation:	IEEE 802.11b: DSSS IEEE 802.11g: DSSS IEEE 802.11a: OFDM
Antenna Designation:	External replaceable omnidirectional antenna, reverse SMA-K connector to be connected to the EUT.
Gain of Antenna:	3.5dBi max.
Rating:	Powered from an AC/DC Adapter Model number: FSP025-1AD207A IP: AC 100-240V, 50/60Hz, 0.7A OP: DC 48V, 0.52A
Description of EUT:	This Product is adding a transmitting frequency band 5725 – 5850MHz based on FCC ID: U6IH3CEWT0235A22W.
Power Cable:	Unshielded, detachable, 2.0m
I/O port:	RJ45

Channel Description:

Channel Identifier	Frequency (MHz)
low	5745
middle	5785
high	5825

1.4 Mode of operation during the test / Test peripherals used

The EUT was supplied with 120Vac, 60Hz and it was running in operating mode.
The EUT was transmitted continuously during the test.
The EUT was preliminary scanned with data rate 54/48/36/24/18/12/9/6M, After the preliminary scan, the 6Mbps data rate mode (the worst case) are chosen for the final testing. ..

2. Test Specification

2.1 Instrument list

Equipment	Type	Manu.	Internal no.	Cal. Date	Due date
Test Receiver	ESIB 26	R&S	EC 3045	2009-6-1	2010-5-31
Spectrum Analyzer	E4446A	Agilent	EC 3046-1	2009-6-1	2010-5-31
Semi-anechoic chamber	-	Albatross project	EC 3048	2009-6-1	2010-5-31
A.M.N.	ESH2-Z5	R&S	EC 3119	2009-1-23	2010-1-22
Test Receiver	ESCS 30	R&S	EC 2107	2009-1-23	2010-1-22
Ultra-broadband antenna	CBL 6112D	TESEQ	EC 4206	2009-5-30	2010-6-1
Horn antenna	HF 906	R&S	EC 3049	2009-6-30	2010-6-29
Pre-amplifier	Pre-amp 18	R&S	EC 3222	2009-6-30	2010-6-29
Pre-amplifier	Pre-amp 40	Beijing Radio 2	-	2009-3-4	2010-3-3
Horn antenna	K638A	Beijing Radio 2	-	2009-3-4	2010-3-3
Power meter	PM2002	AR	EC3043-7	2009-1-23	2010-1-22
Power sensor	PH2000	AR	EC3043-8	2009-1-23	2010-1-22
Signal generator	SMR 20	R&S	EC 3044-1	2008-8-21	2009-8-20
Spectrum Analyzer	E7402A	Agilent	EC2254	2008-9-17	2009-9-16
High-Pass Filter	WHKX2.8/18G-12SS	Wainwright	SN1	2009-3-3	2010-3-3
High-Pass Filter	WHKX7.0/18G-8SS	Wainwright	SN16	2009-3-3	2010-3-3
Lowpass Filter	WLKS4500-9SS	Wainwright	SN2	2009-3-3	2010-3-3

2.2 Test Standard

47CFR Part 15 (2007)
ANSI C63.4: 2003
RSS-210 Issue 7 (June 2007)
RSS-Gen Issue 2 (June 2007)

2.3 Test Summary

This report applies to tested sample only. This report shall not be reproduced in part without written approval of Intertek Testing Service Shanghai Limited.

TEST ITEM	FCC REFERANCE	IC REFERANCE	RESULT
Minimum 6dB Bandwidth	15.247(a)(2)	RSS-210 Issue 7 Annex 8	Pass
Maximum peak output power	15.247(b)(1)	RSS-210 Issue 7 Annex 8	Pass
Power spectrum density	15.247(e)	RSS-210 Issue 7 Annex 8	Pass
Radiated emission	15.205 & 15.209	RSS-210 Issue 7 Clause 2	Pass
Emission on the Band Edge	15.247(d)	RSS-210 Issue 7 Annex 8	NA
Power line conducted emission	15.207	RSS-Gen Issue 2 Clause 7.2.2	Pass
Channel number of hopping system	15.247(a)(1)(iii)	RSS-210 Issue 7 Annex 8	NA
Average time of occupancy in any channel	15.247(a)(1)(iii)	RSS-210 Issue 7 Annex 8	NA
RF Antenna Conducted Spurious	15.247d	RSS-210 Issue 7 Annex 8	Pass

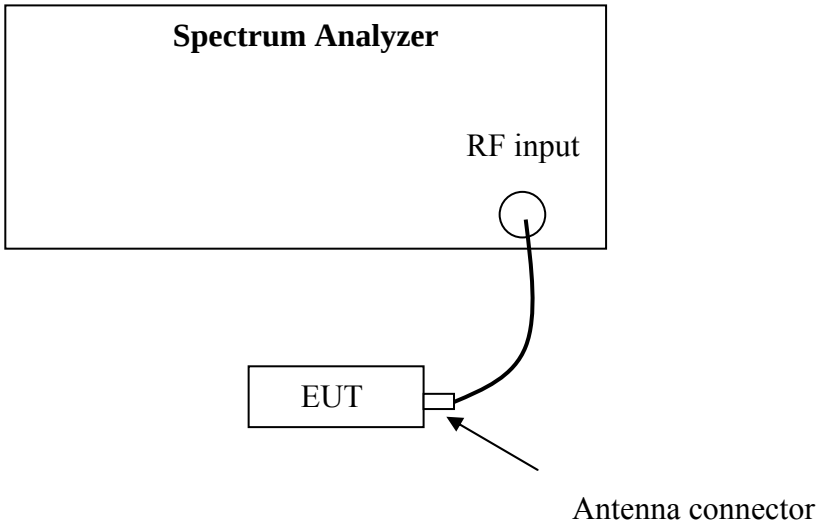
3. Minimum 6dB Bandwidth

Test result: PASS

3.1 Limit

For systems using digital modulation techniques that may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz and 5725 - 5850 MHz bands, the minimum 6 dB bandwidth shall be at least 500 kHz.

3.2 Test Configuration



3.3 Test Procedure and test setup

The minimum 6dB bandwidth per FCC §15.247(a)(2) is measured using the Spectrum Analyzer with the resolutions bandwidth set at 100kHz, the video bandwidth set at 300kHz, and the SPAN>>RBW. The test was performed at 3 channels (lowest, middle and highest channel).
The EUT was tested according to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

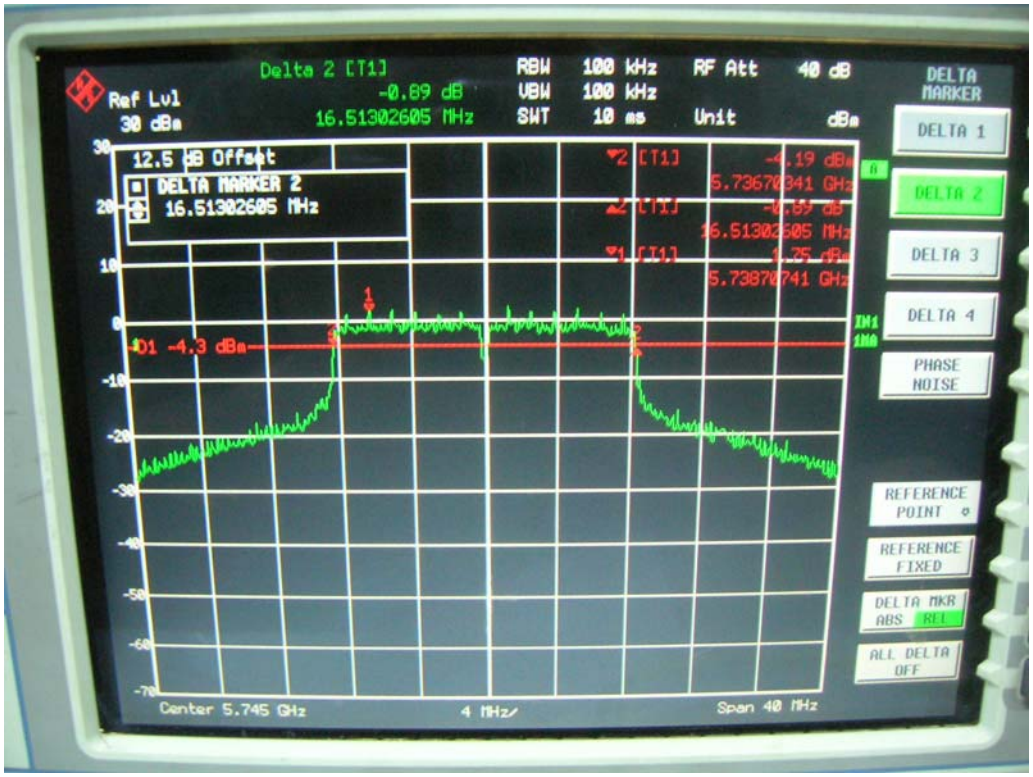
3.4 Test Protocol

Temperature : 22°C
Relative Humidity : 43%

Frequency (MHz)	Channel	Bandwidth (MHz)	Limit (MHz)
5745	Low	16.51	⩾0.5
5785	Mid	16.43	⩾0.5
5805	High	16.51	⩾0.5

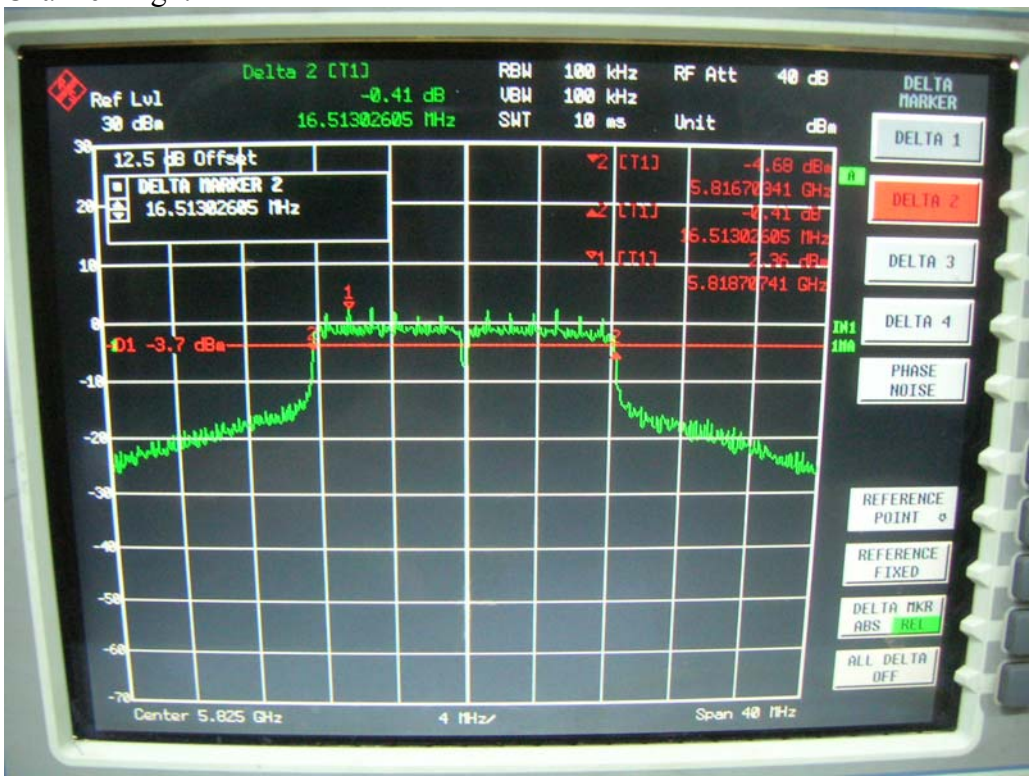
Note: The EUT was tested while in a continuous transmit mode and the worst case data rates is 6Mbps for 802.11a. The EUT was tuned to a low, middle and high channel.

Test plot:
Channel Low:



Channel Middle:

Channel High:



3.5 Measurement uncertainty

The measurement uncertainty is ±100Hz.

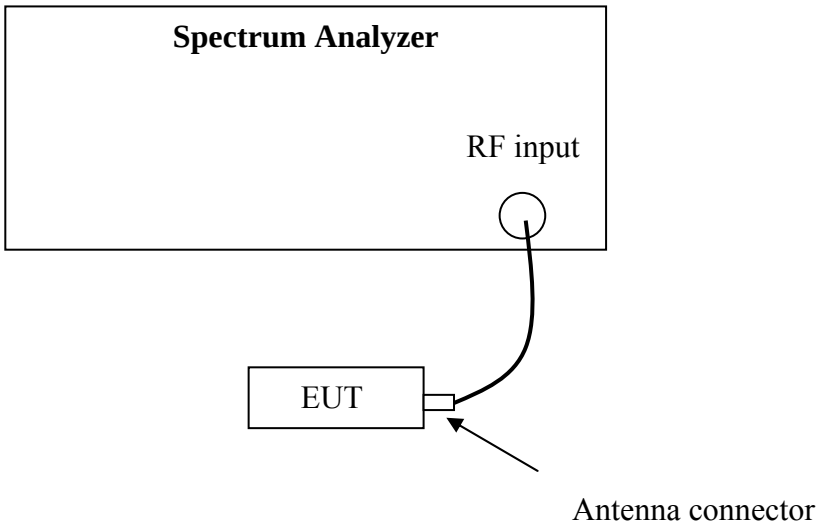
4. Maximum peak output power

Test result: Pass

4.1 Test limit

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt
For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts
If the transmitting antenna of directional gain greater than 6dBi is used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.
For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt.

4.2 Test Configuration



4.3 Test procedure and test setup

The power output per FCC § 15.247(b)(1) is measured using the Spectrum Analyzer with the resolutions bandwidth set at 1MHz, the video bandwidth set at 3MHz, and the SPAN>>RBW. The test was performed at 3 channels (lowest, middle and highest channel). The EUT was tested according to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

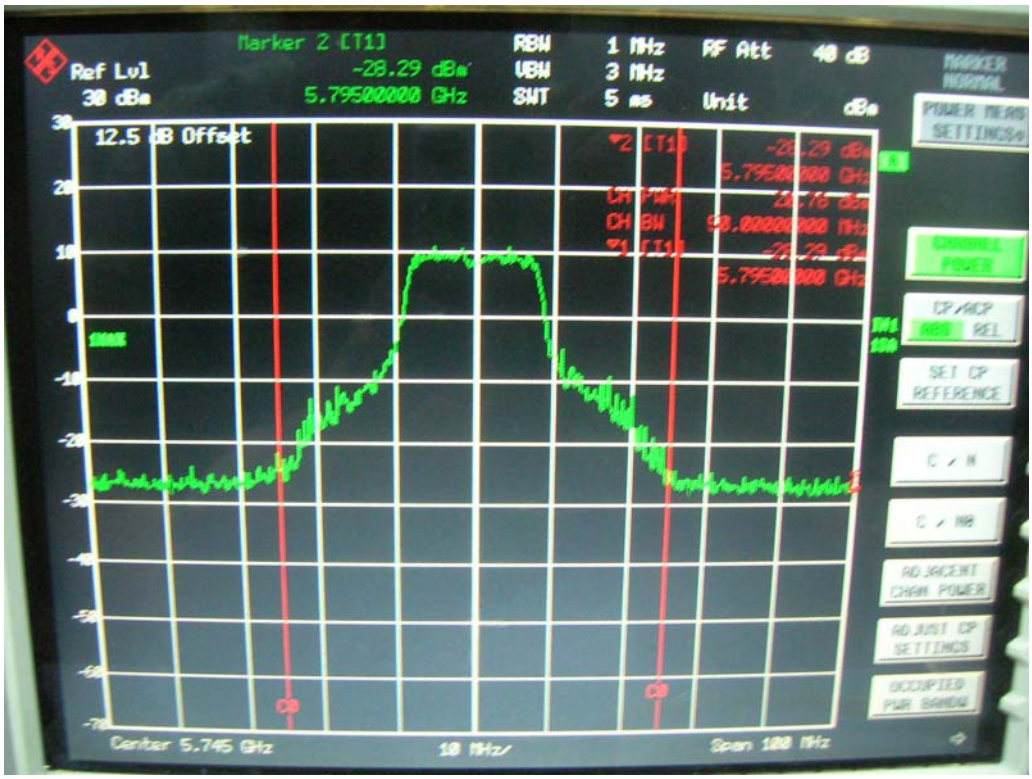
4.4 Test protocol

Temperature : 22 °C
Relative Humidity : 43 %

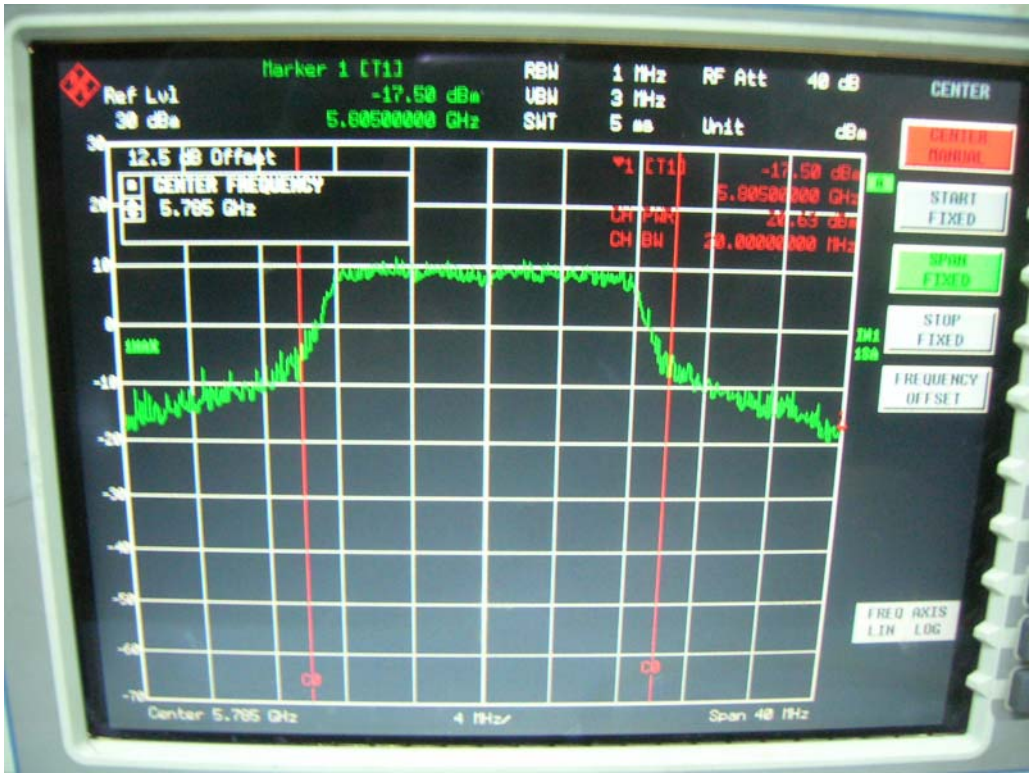
Frequency (MHz)	Channel	Output Power (dBm)	Output Power (W)	Limit (W)	Result
5745	Low	20.76	0.119	1	PASS
5785	Mid	20.63	0.116		PASS
5825	High	20.33	0.108		PASS

Note: The EUT was tested while in a continuous transmit mode and the worst case data rates is 6Mbps for 802.11a. The EUT was tuned to a low, middle and high channel.

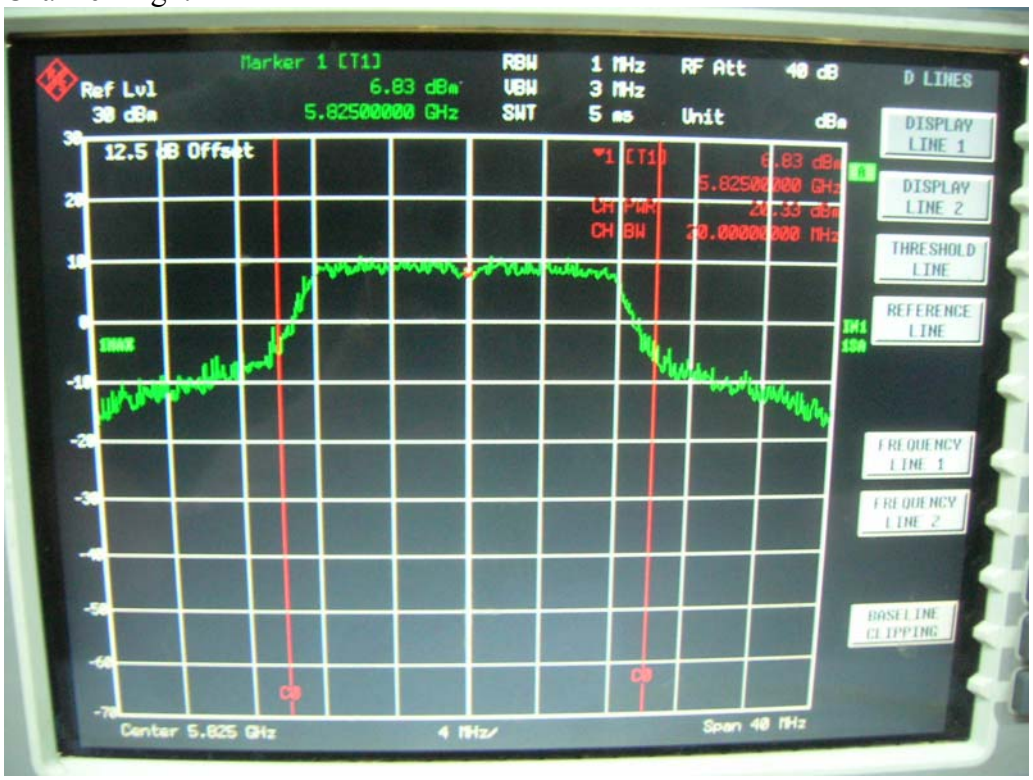
Test Plot:
Channel Low:



Channel Middle:



Channel High:



4.5 Measurement uncertainty

The measurement uncertainty is ±1dB.

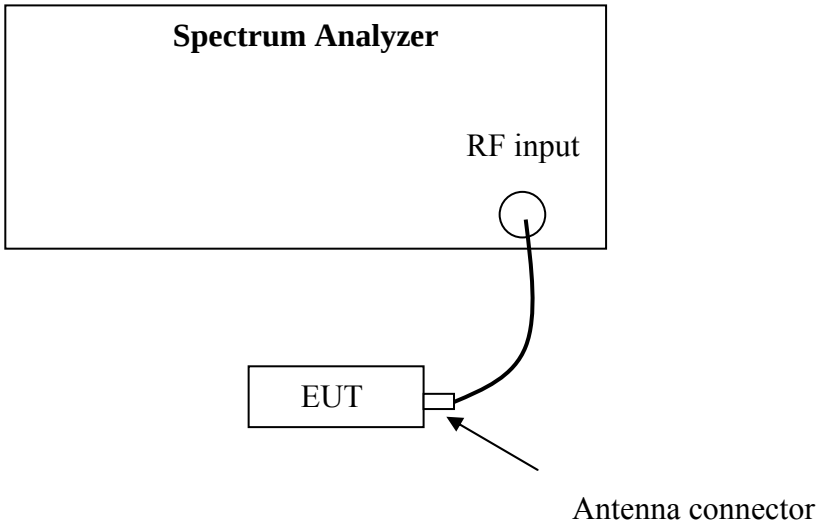
5. Power spectrum density

Test result: **Pass**

5.1 Test limit

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

5.2 Test Configuration



5.3 Test procedure and test setup

The power output per FCC §15.247(e) was measured using the Spectrum Analyzer with the resolutions bandwidth set at 3kHz, the video bandwidth set at 10kHz. The test was performed at 3 channels (lowest, middle and highest channel).
The EUT was tested according to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

5.4 Test Protocol

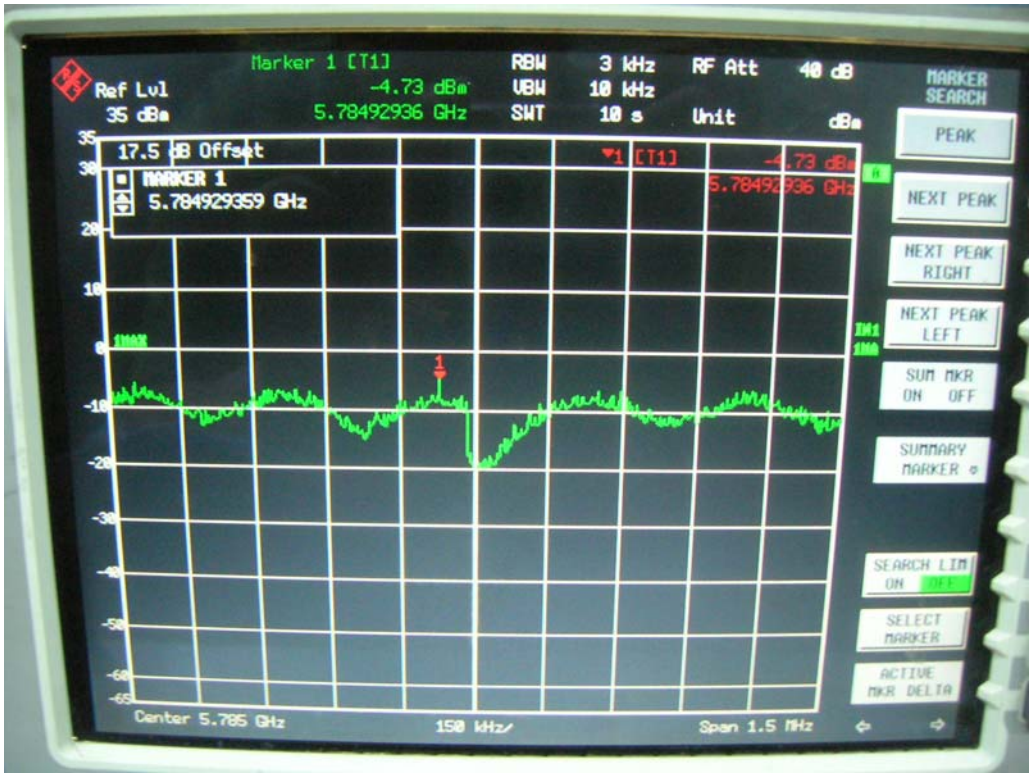
Temperature : 22 °C
Relative Humidity : 43 %

Frequency (MHz)	**Channel**	**PPSD** (dBm/3kHz)	**Limit** (dBm/3kHz)	Test result
5745	Low	-5.88	≤8	PASS
5785	Mid	-4.73	≤8	PASS
5825	High	-5.92	≤8	PASS

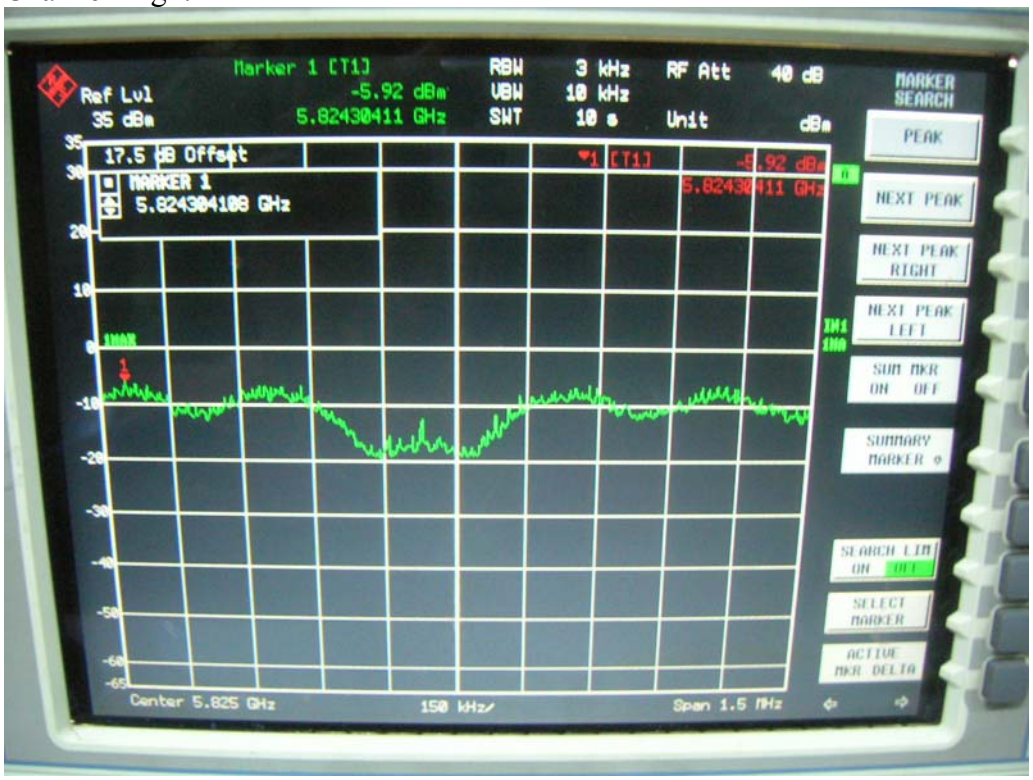
Note: The EUT was tested while in a continuous transmit mode and the worst case data rates is 6Mbps for 802.11a. TheEUT was tuned to a low, middle and high channel.

Test plot:
Channel Low:

Channel Middle:



Channel High:



5.5 Measurement uncertainty

The measurement uncertainty is ±1dB/3kHz.

6. Radiated emission

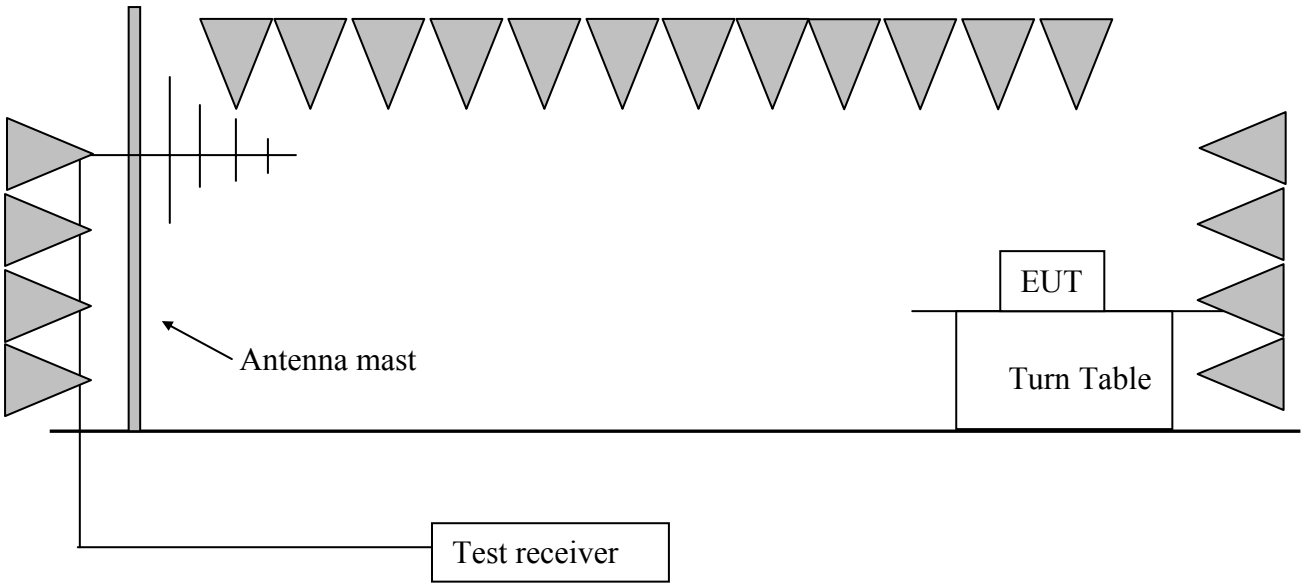
Test result: PASS

6.1 Test limit

The radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) showed as below:

Frequency (MHz)	Field Strength (dBuV/m)	Measurement Distance (m)
30 - 88	40.0	3
88 - 216	43.5	3
216 - 960	46.0	3
Above 960	54.0	3

6.2 Test Configuration



6.3 Test procedure and test setup

The measurement was applied in a semi-anechoic chamber. While testing for spurious emission higher than 1GHz, if applied, the pre-amplifier would be equipped just at the output terminal of the antenna.
The EUT and simulators were placed on a 0.8m high wooden turntable above the horizontal metal ground plane. The turn table rotated 360 degrees to determine the position of the maximum emission level. The EUT was set 3 meters away from the receiving antenna which was mounted on an antenna mast. The antenna moved up and down between from 1meter to 4 meters to find out the maximum emission level.
The EUT was tested according to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

The radiated emission was measured using the Spectrum Analyzer with the resolutions bandwidth set as:

RBW = 100kHz, VBW = 300kHz (30MHz~1GHz)
RBW = 1MHz, VBW = 3MHz (>1GHz for PK);
RBW = 1MHz, VBW = 10Hz (>1GHz for AV);

6.4 Test protocol

Temperature : 22 °C
Relative Humidity : 43 %

Frequency (MHz)	Ant.Pol. (H/V)	Correction Factor (dB)	Result (dBuV/m)	Limit (Peak) (dBuV/m)	Margin (dB)
76.5331	V	-14.41	37.41	40.0	-2.59
225.872	V	-10.06	41.67	46.0	-4.33
401.002	V	-4.58	41.09	46.0	-4.91
424.85	V	-4.02	40.1	46.0	-5.90
737.67	V	1.52	38.92	46.0	-7.08
922.846	V	3.93	45.66	46.0	-0.34
175.5511	H	-10.48	36.31	43.5	-7.19
325.2505	H	-7.07	42.42	46.0	-3.58
401.002	H	-4.58	44.63	46.0	-1.37
424.8497	H	-4.02	42.7	46.0	-3.30
830.2605	H	2.89	45.01	46.0	-0.99
919.982	H	3.9	42.42	46.0	-3.58

REMARKS:

1. Measuring frequencies from 30 MHz to the 1GHz.
2. Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using peak/quasi-peak detector mode.
3. Quasi-peak test would be performed if the peak result were greater than the quasi-peak limit or as required by the applicant.
4. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
5. Margin (dB) = Remark result (dBuV/m) – Quasi-peak limit (dBuV/m).

Channel Low:

Frequency (MHz)	Ant.Pol. (H/V)	Correction Factor (dB)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Note
1840.00	V	1.31	43.4	*36.37*	74.00	54.00	-17.63	average
5748.05	V	11.28	50.00	*44.57*	74.00	54.00	-9.43	average
11495.2	V	15.01	55.1	*46.99*	74.00	54.00	-7.01	average
1840.00	H	1.31	43.04	*35.26*	74.00	54.00	-18.74	average
5747.62	H	11.42	48.84	*44.34*	74.00	54.00	-9.66	average
11500.02	H	15.02	50.1	*46.01*	74.00	54.00	-7.99	average

REMARKS:

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

Channel Middle:

Frequency (MHz)	Ant.Pol. (H/V)	Correction Factor (dB)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Note
1841.20	V	1.31	44.32	*41.37*	74.00	54.00	-12.63	average
5788.03	V	11.3	50.12	*47.51*	74.00	54.00	-6.49	average
11576.3	V	15.32	55.32	*52.38*	74.00	54.00	-1.62	average
1842.32	H	1.31	49.99	*47.26*	74.00	54.00	-6.74	average
5786.62	H	11.5	48.65	*46.76*	74.00	54.00	-7.24	average
11569.32	H	16.02	50.1	*47.31*	74.00	54.00	-6.69	average

REMARKS:

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

Channel high:

Frequency (MHz)	Ant.Pol. (H/V)	Correction Factor (dB)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Note
1841.02	V	1.35	44.02	*41.64*	74.00	54.00	-12.36	average
5808.66	V	11.45	51.02	*48.74*	74.00	54.00	-5.26	average
11618.32	V	15.99	55.02	*51.28*	74.00	54.00	-2.72	average
1840.99	H	1.32	43.98	*41.58*	74.00	54.00	-12.42	average
5810.02	H	11.62	50.91	*48.91*	74.00	54.00	-5.09	average
11617.30	H	16.02	54.03	*52.01*	74.00	54.00	-1.99	average

REMARKS:

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

6.5 Measurement uncertainty

The measurement uncertainty describes the overall uncertainty of the given measured value during the operation of the EUT.

Measurement uncertainty of radiated emission is: ± 5.31dB

The measurement uncertainty is given with a confidence of 95%, k=2.

The measurement uncertainty is traceable to internal procedure TI-036.

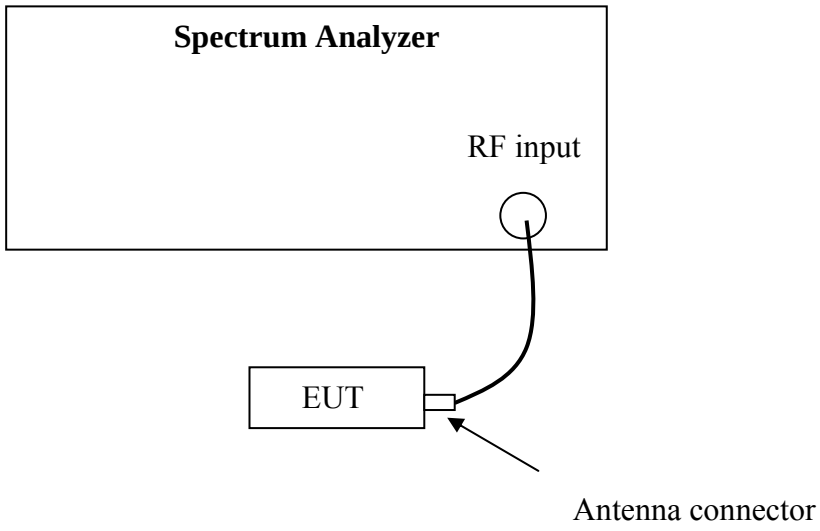
7. Emission on the Band Edge

Test result: **NA**

7.1 Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.

7.2 Test Configuration



7.3 Test procedure and test setup

The Emission outside the frequency Band per FCC §15.247(d) is measured using the Spectrum Analyzer with the resolutions bandwidth set at 100kHz, the video bandwidth set at 300kHz, and the SPAN>>RBW.
The EUT was tested according to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

7.4 Test protocol

Temperature	:	°C
Relative Humidity	:	%

Test plots:

7.5 Measurement uncertainty

The measurement uncertainty is ±1dB.

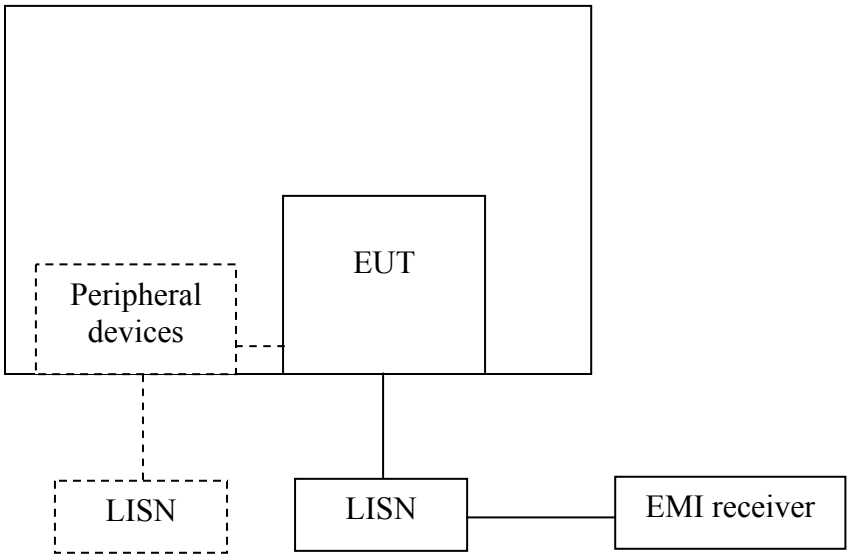
8. Power line conducted emission

Test result: **Pass**

8.1 Limit

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	QP	AV
0.15-0.5	66 to 56*	56 to 46 *
0.5-5	56	46
5-30	60	50
* Decreases with the logarithm of the frequency.		

8.2 Test configuration



☒ For table top equipment, wooden support is 0.8m height table

☐ For floor standing equipment, wooden support is 0.1m height rack.

8.3 Test procedure and test set up

The EUT are connected to the main power through a line impedance stabilization network (LISN). This provides a 50Ω/50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50Ω/50uH coupling impedance with 50Ω termination.
Both sides (Line and Neutral) of AC line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4 on conducted measurement.
The bandwidth of the test receiver is set at 9 kHz.
The EUT was tested according to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

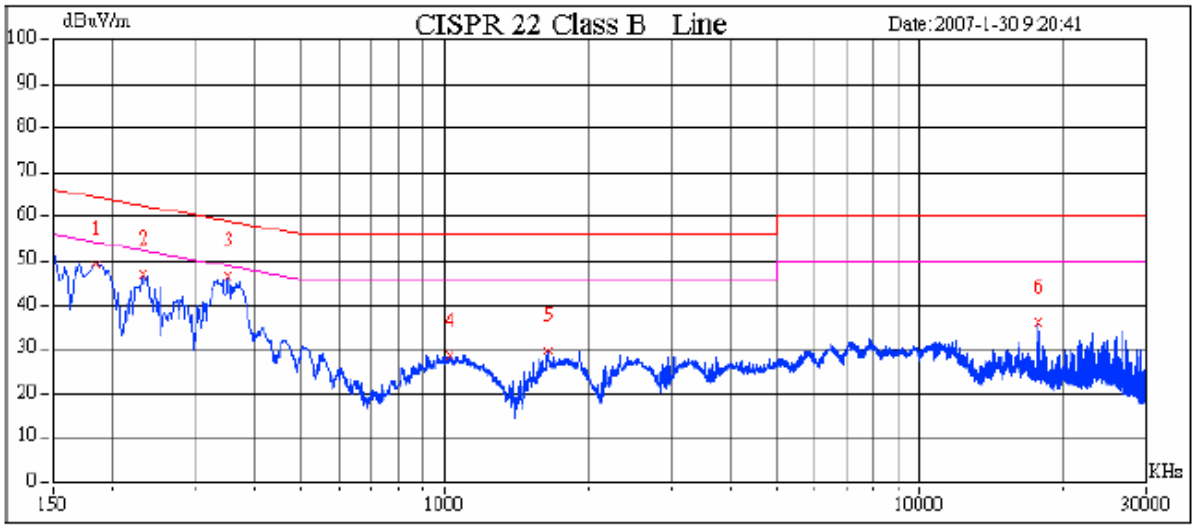
8.4 Test protocol

Temperature : 20 °C
Relative Humidity : 40 %

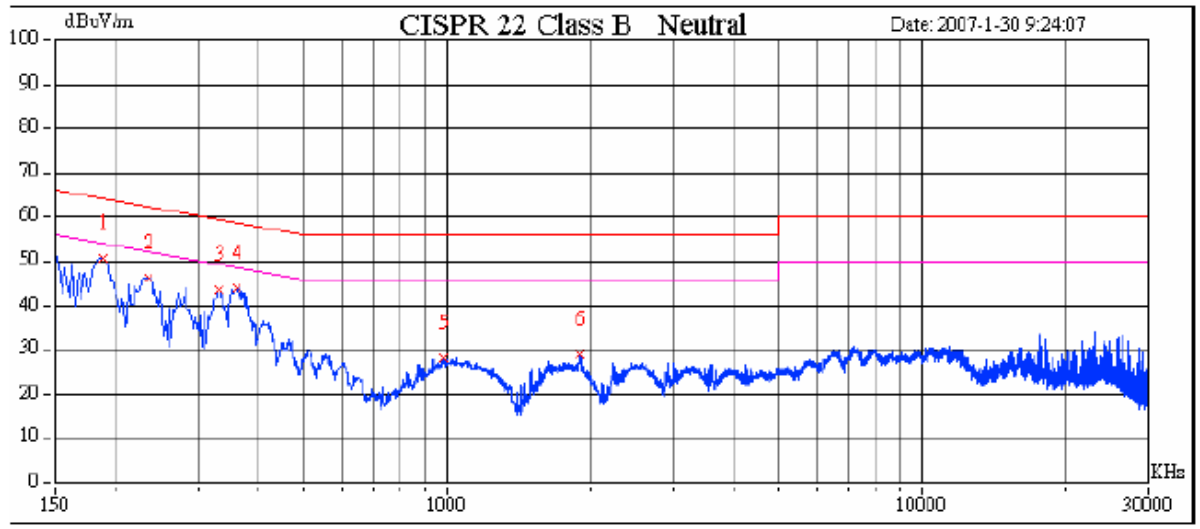
Frequency (KHz)	Corr. factor (dB)	QP Result (dBuV)	AV Result (dBuV)	QP Limit (dBuV)	AV Limit (dBuV)	QP Margin (dB)	AV Margin (dB)	Note
190.2	10.36	36.42	36.3	64.85	54.85	-28.43	-18.55	L1
231.4	10.36	35.11	35.45	63.67	53.67	-28.56	-18.22	L1
329.8	10.4	38.94	38.73	60.86	50.86	-21.92	-12.13	L1
1023.8	10.43	19.08	18.14	56.00	46.00	-36.92	-27.86	L1
1646.7	10.48	19.4	19.22	56.00	46.00	-36.60	-26.78	L1
17812.5	12.04	17.64	23.06	60.00	50.00	-42.36	-26.94	L1
183.9	10.4	34.55	28.72	65.03	55.03	-30.48	-26.31	L2
235.1	10.39	34.32	33.82	63.57	53.57	-29.25	-19.75	L2
331.3	10.4	31.7	32.21	60.82	50.82	-29.12	-18.61	L2
375.9	10.4	35.88	36.99	59.55	49.55	-23.67	-12.56	L2
987.5	10.42	19.47	18.29	56.00	46.00	-36.53	-27.71	L2
1908.1	10.49	22.11	21.43	56.00	46.00	-33.89	-24.57	L2

Remark: 1. Correction Factor (dB) = LISN Factor (dB) + Cable Loss (dB).
2. Margin (dB) = Result - Limit.
3. L1 = Line One (Live Line) / L2 = Line Two (Neutral Line)

L1



L2



8.5 Measurement Uncertainty

The measurement uncertainty describes the overall uncertainty of the given measured value during the operation of the EUT.
Measurement uncertainty at mains terminal: ± 1.99dB
The measurement uncertainty is given with a confidence of 95%, k=2.
The measurement uncertainty is traceable to internal procedure TI-036.

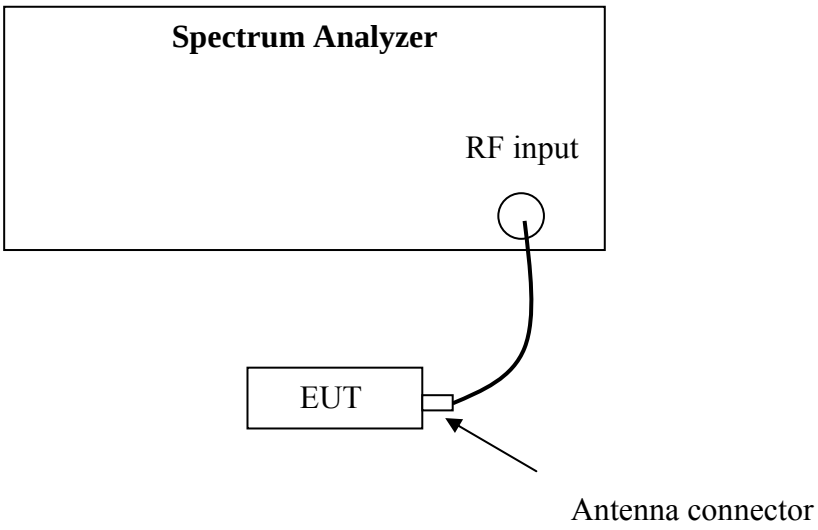
9. Channel Number of hopping system

Test result: **NA**

9.1 Limit

Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels.

9.2 Test Configuration



9.3 Test procedure and test setup

The channel number per FCC §15.247(a)(1)(iii) is measured using the Spectrum Analyzer with the resolutions bandwidth set at 100kHz, the video bandwidth set at 300kHz, and the SPAN>>RBW.
The RF passband of the EUT was divided into 3 appropriate bands to test.
The EUT was tested according to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

9.4 Test protocol

Channel Number	Limit
-	≥15

9.5 Measurement uncertainty

The measurement uncertainty is ±1dB.

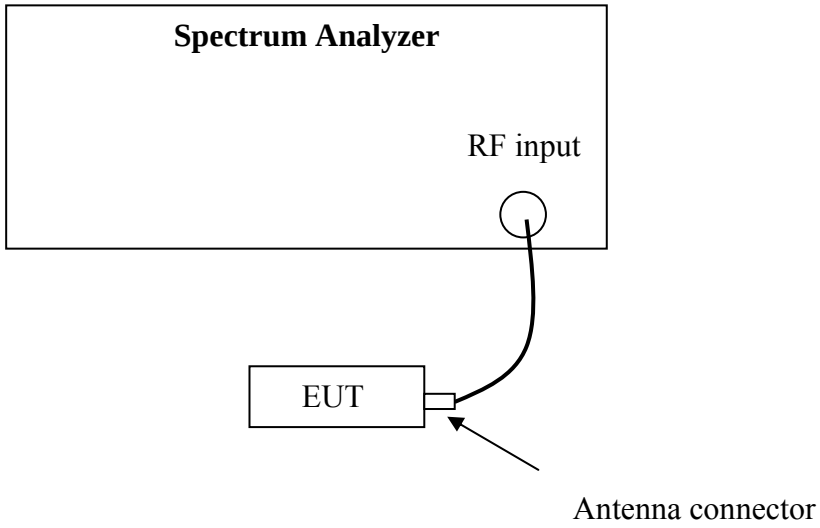
10. Average time of occupancy in any channel

Test result: **NA**

10.1 Limit

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

10.2 Test Configuration



10.3 Test procedure and test setup

Average time of occupancy in any channel per FCC § 15.247(a)(1)(iii)
is measured using the Spectrum Analyzer with the resolutions bandwidth set at 100kHz, the video bandwidth set at 300kHz, and the SPAN set to be 0Hz to test in time domain. The test is performed at the middle channel.

10.4 Test protocol

Packet	Observed period (s) **P**	Time of occupancy for single hopping (ms) **O**	Hops among the interval of 3.6 s **I**	Average time of occupancy (s) **T**	Limit (s)
Packet Type 4	-	-	-	-	≤0.4
Packet Type 11	-	-	-	-	≤0.4
Packet Type 15	-	-	-	-	≤0.4

Remark: 1. There are 79 channels in all. So the observed period P = 0.4 * 79 = 31.6 s.
2. Average time of occupancy **T = O *I * P / 3.6**

10.5 Measurement uncertainty

The measurement uncertainty is ± 10μs.

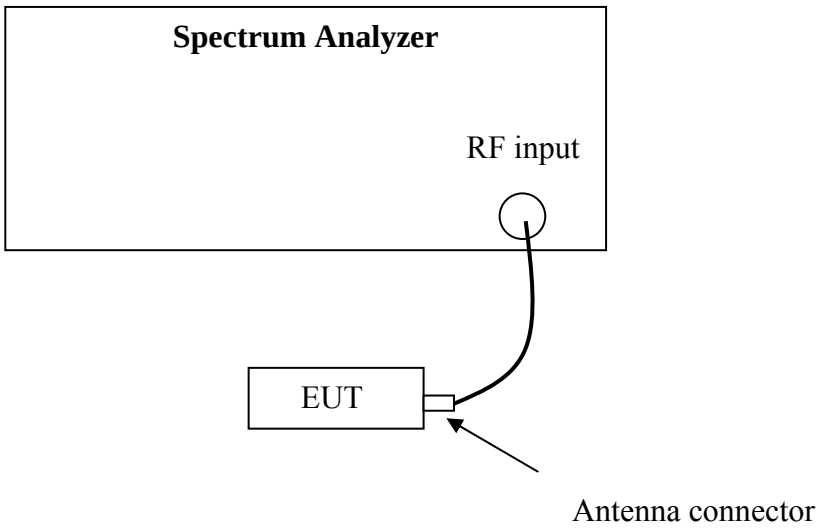
11. Occupied Bandwidth

Test Status: Tested

11.1 Test limit

None

11.2 Test Configuration



11.3 Test procedure and test setup

The Spectrum Analyzer with the resolutions bandwidth set at 100 kHz, the video bandwidth set at 100 kHz.

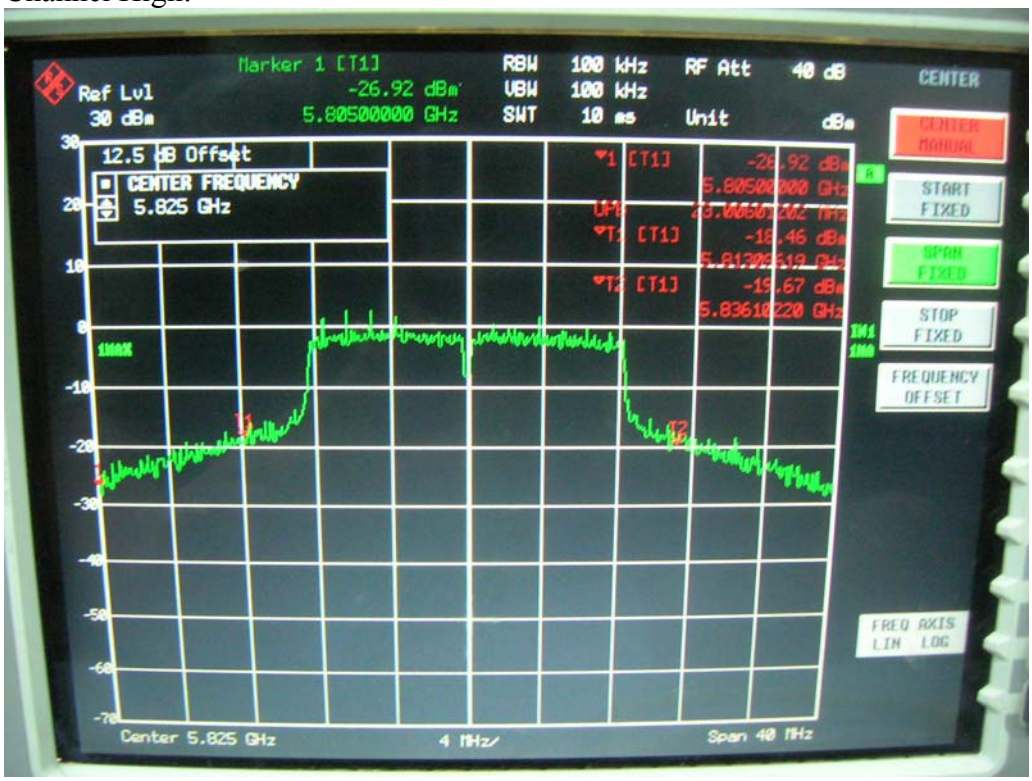
11.4 Test protocol

Temperature	:	22 °C
Relative Humidity	:	43 %

Channel Low:

Channel Middle:

Channel High:



11.5 Measurement uncertainty

The measurement uncertainty is ±100Hz.

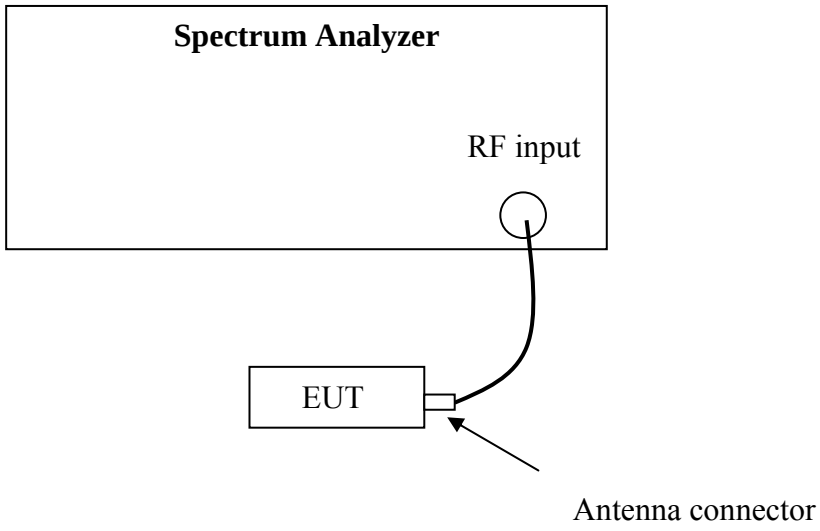
12. RF Antenna Conducted Spurious

Test result: **PASS**

12.1 Test limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.

12.2 Test Configuration



12.3 Test procedure and test setup

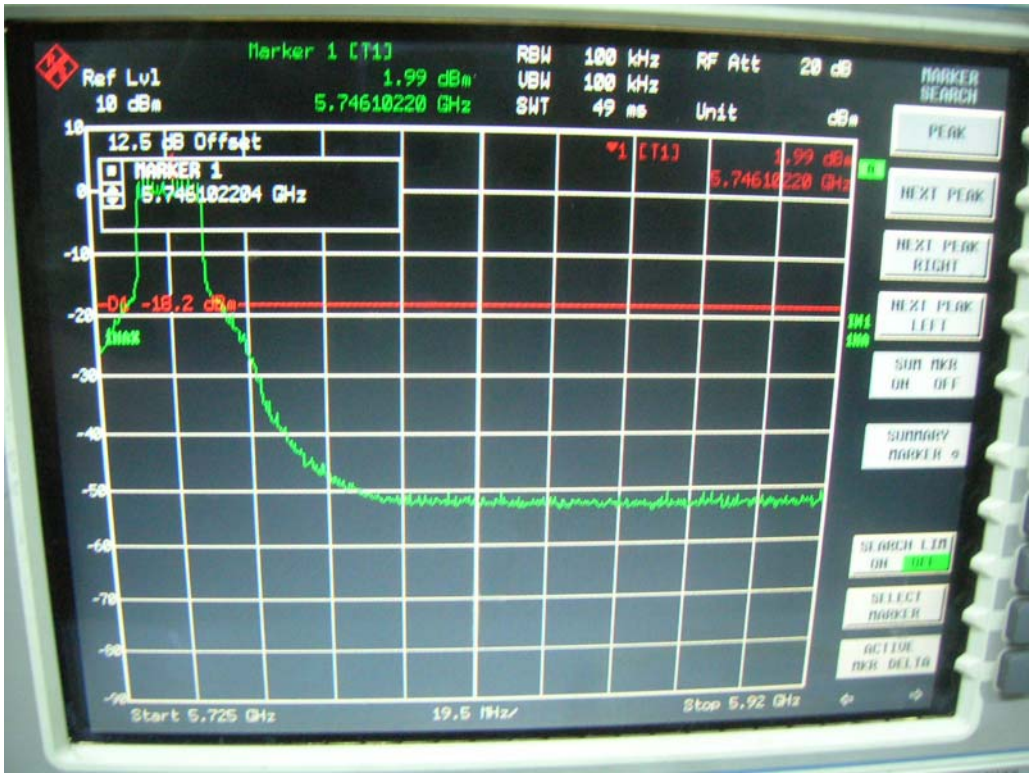
The Emission outside the frequency Band per FCC §15.247(d) is measured using the Spectrum Analyzer with the resolutions bandwidth set at 100kHz, the video bandwidth set at 100kHz.
The EUT was tested according to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

12.4 Test protocol

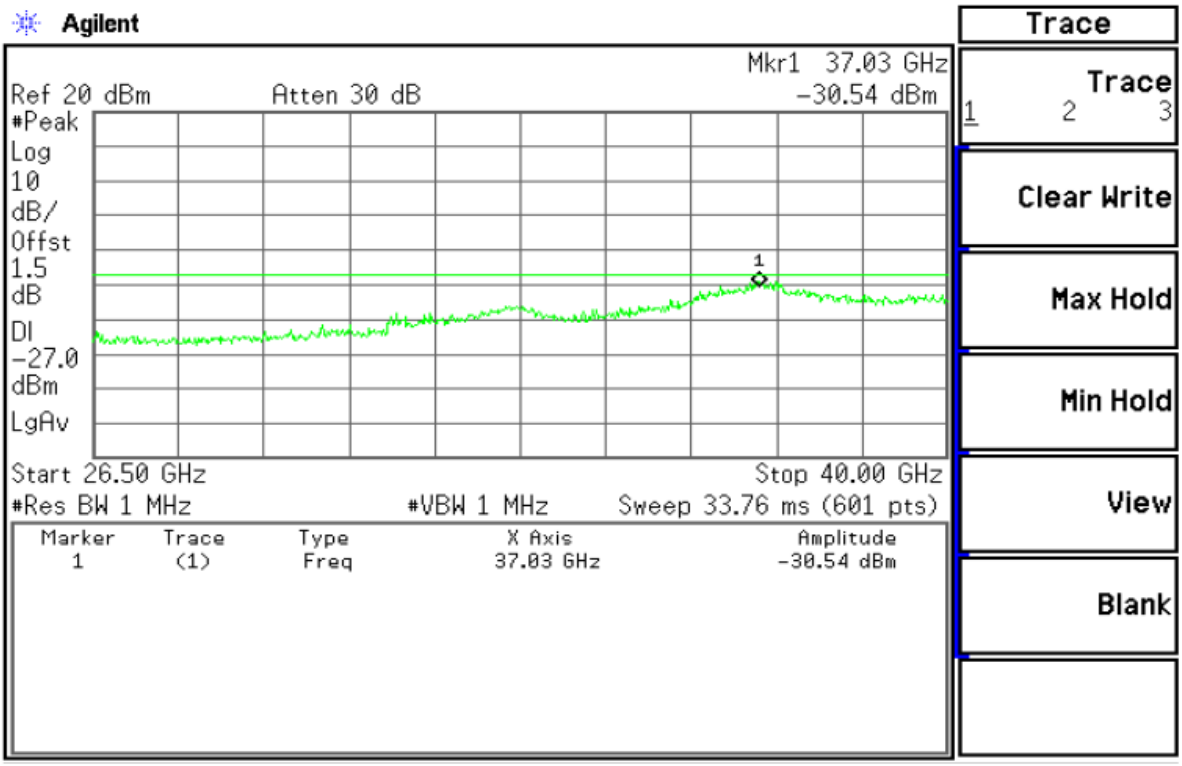
Temperature	:	20 °C
Relative Humidity	:	40 %

Channel Low:

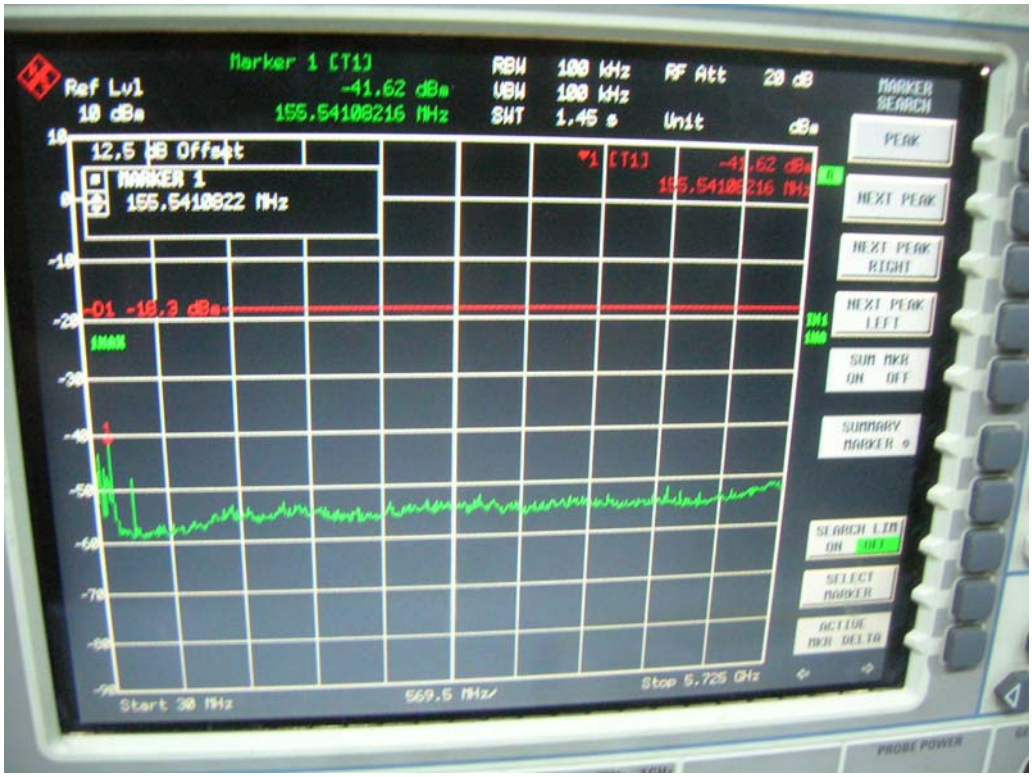

Marker 1 [T1]
-29.32 dBm
5.72500000 GHz
RBW 100 kHz
VBW 100 kHz
SWT 1.45 s
RF Att 20 dB
Unit dBm
Ref Lvl
10 dBm
12.5 dB Offset
MARKER 1
5.725 GHz
-01 -16.2 dBm
Start 30 MHz
569.6 kHz/
Stop 5.725 GHz
MARKER NORMAL


Marker 1 [T1]
1.99 dBm
5.74610220 GHz
RBW 100 kHz
VBW 100 kHz
SWT 49 ms
RF Att 20 dB
Unit dBm
Ref Lvl
10 dBm
12.5 dB Offset
MARKER 1
5.745102204 GHz
-01 -16.2 dBm
Start 5.725 GHz
19.5 MHz/
Stop 5.92 GHz
MARKER SEARCH
PEAK
NEXT PEAK
NEXT PEAK RIGHT
NEXT PEAK LEFT
SUMMARY MARKER

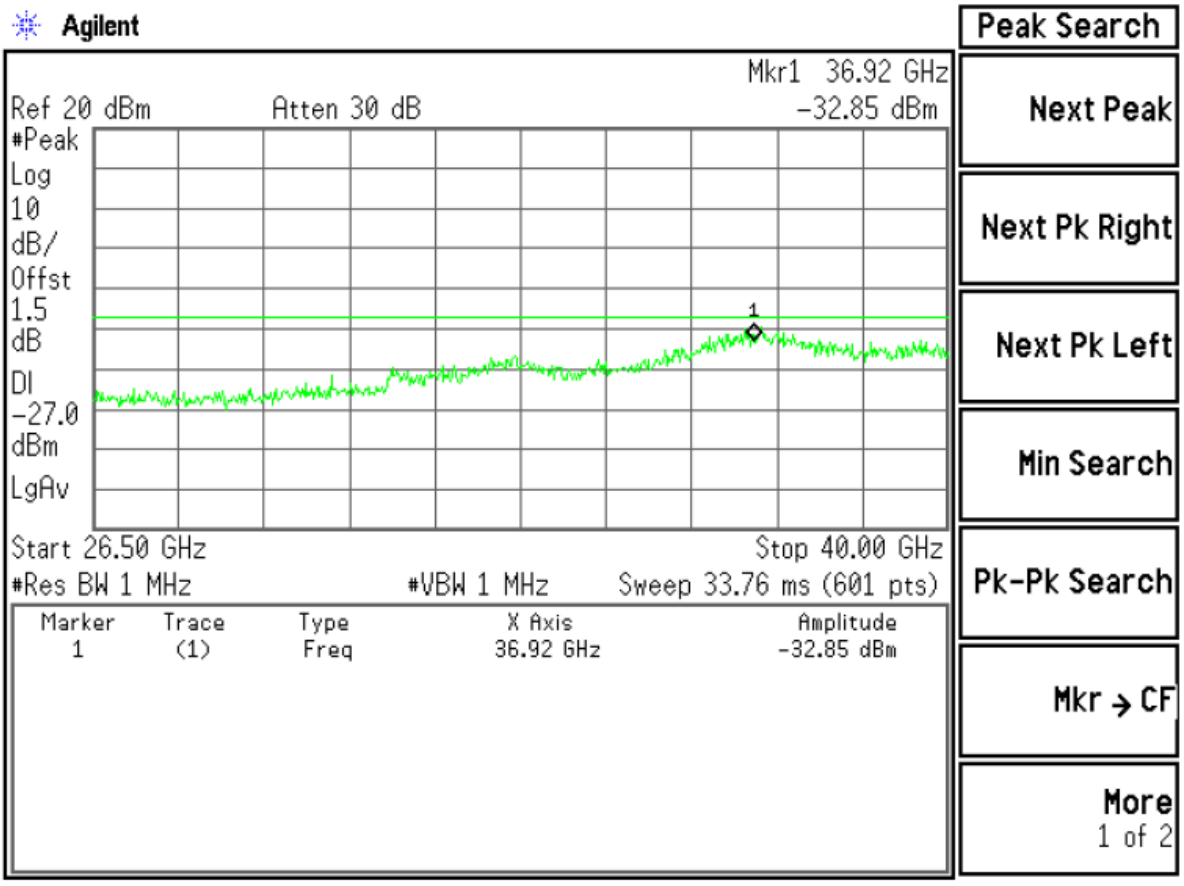

Marker 2 [T1]
-46.50 dBm
17.22044033 GHz
RBW 100 kHz
VBW 100 kHz
SWT 5.2 s
RF Att 20 dB
Unit dBm
TRACE 1
Ref Lvl
10 dBm
12.5 dB Offset
D1 -18.2 dBm
Start 5.92 GHz
2.050 GHz/
Stop 26.5 GHz


Agilent
Mkr1 37.03 GHz
Ref 20 dBm
Atten 30 dB
-30.54 dBm
#Peak
Log
10
dB/
Offst
1.5
dB
Dl
-27.0
dBm
LgAv
Start 26.50 GHz
Stop 40.00 GHz
#Res BW 1 MHz
#VBW 1 MHz
Sweep 33.76 ms (601 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 37.03 GHz -30.54 dBm
Trace
Trace
1 2 3
Clear Write
Max Hold
Min Hold
View
Blank

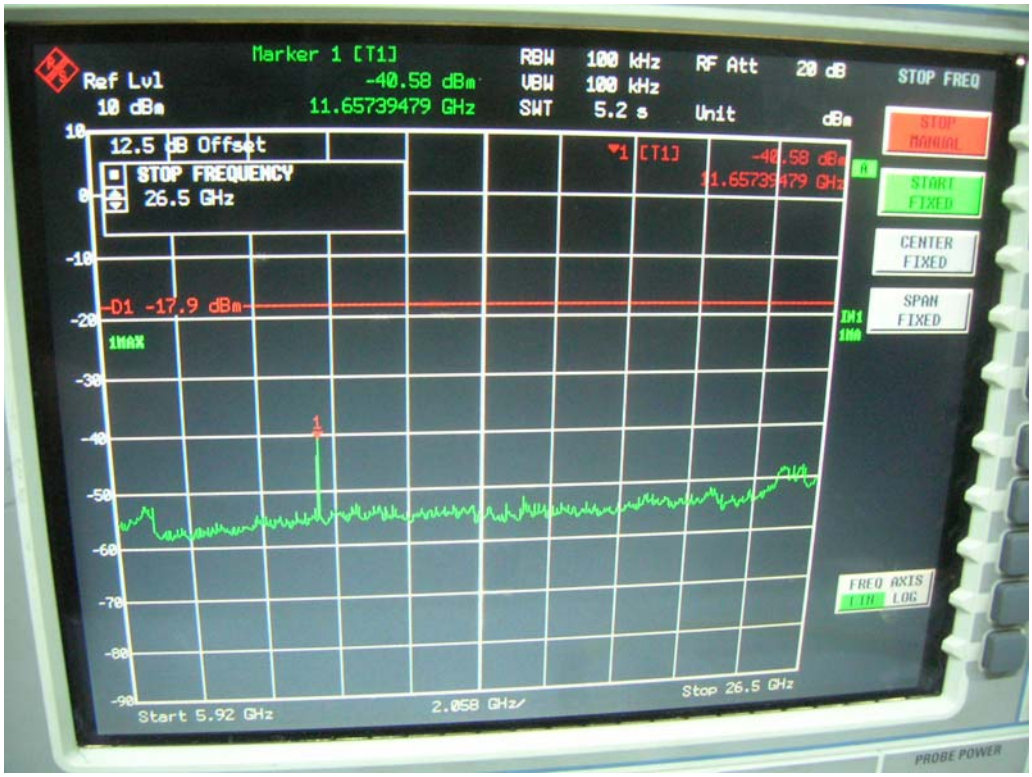
Channel Middle:

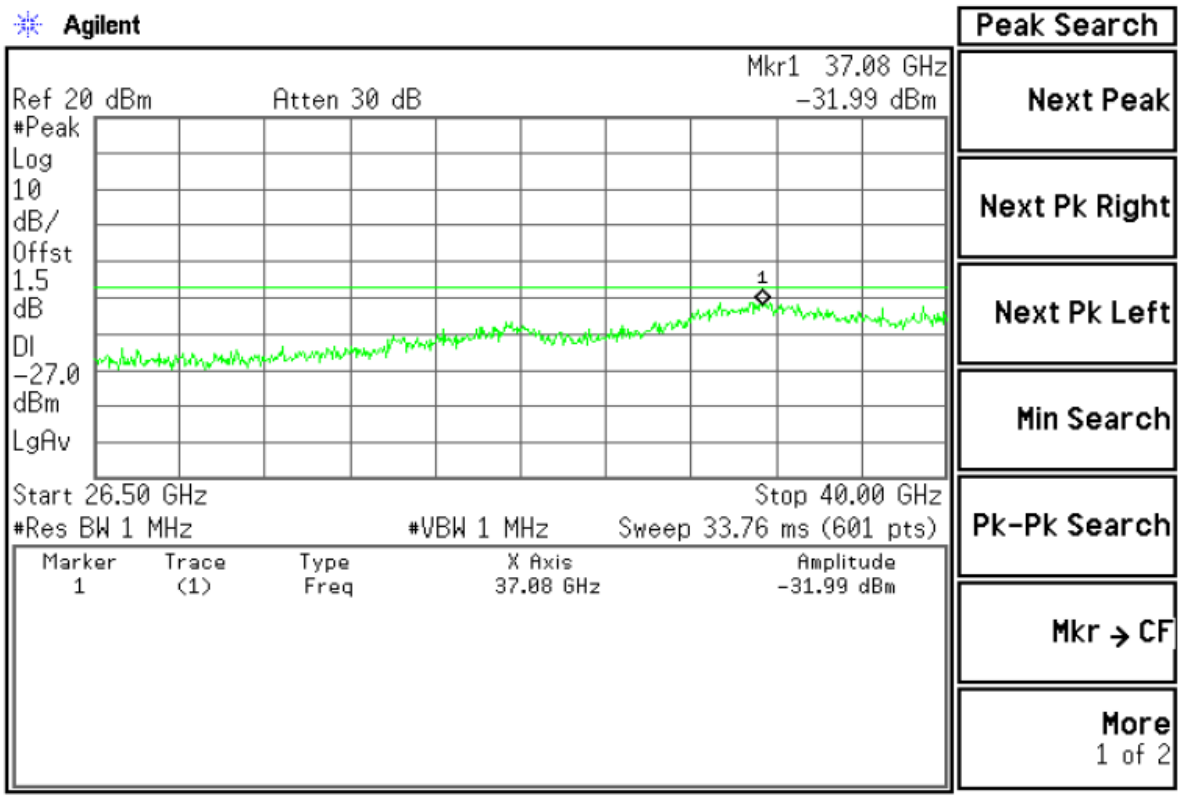



Marker 1 [T1]
-37.75 dBm
11.56056112 GHz
RBW 100 kHz
VBW 100 kHz
SWT 5.2 s
RF Att 20 dB
Unit dBm
Ref Lvl
10 dBm
12.5 dB Offset
STOP FREQUENCY
26.5 GHz
D1 -18.3 dBm
Start 5.92 GHz
2.858 GHz
Stop 26.5 GHz
STOP FREQ
CENTER FIXED
SPAN FIXED


Agilent
Mkr1 36.92 GHz
Ref 20 dBm
Atten 30 dB
-32.85 dBm
#Peak
Log
10
dB/
Offst
1.5
dB
Dl
-27.0
dBm
LgAv
Start 26.50 GHz
Stop 40.00 GHz
#Res BW 1 MHz
#VBW 1 MHz
Sweep 33.76 ms (601 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 36.92 GHz -32.85 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
Mkr → CF
More
1 of 2

Channel High:





Note: The EUT was tested while in a continuous transmit mode and the worst case data rates is 6Mbps for 802.11a. TheEUT was tuned to a low, middle and high channel.

12.5 Measurement uncertainty

The measurement uncertainty is ±1dB.