

TEST REPORT

of

FCC Part 15 Subpart B&C §15.247 / RSS-210 Issue 8, RSS-Gen Issue 3

FCC ID/IC Certification: A3LEADT10 / 649E-EADT10

Equipment Under Test : Allshare Cast Hub
Model Name : EAD-T10
Serial No. : N/A
Applicant : SAMSUNG ELECTRONICS CO., LTD.
Manufacturer : SAMSUNG ELECTRONICS CO., LTD.
Date of Test(s) : 2012.04.03 ~ 2012.04.11
Date of Issue : 2012.04.17

In the configuration tested, the EUT complied with the standards specified above.

Tested By:



Logan Lee

Date

2012.04.17

Approved By:



Feel Jeong

Date

2012.04.17

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1. General Information

1.1. Testing laboratory

SGS Korea Co., Ltd.(Gunpo Laboratory)

- 705, Dongchun-Dong Sooji-Gu, Yongin-Shi, Kyungki-Do, South Korea.

- Wireless Div. 2FL, 18-34, Sanbon-dong, Gunpo-si, Gyeonggi-do, Korea 435-040

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1.2. Details of applicant

Applicant : SAMSUNG ELECTRONICS CO., LTD.

Address : 416, Maetan-dong, Yeongtong-gu, Suwon-city, Gyeonggi-do, Korea

Contact Person : Kim, Jin-Kyung

Phone No. : +82 31 301 4187

1.3. Description of EUT

Kind of Product	Allshare Cast Hub
Model Name	EAD-T10
Serial Number	N/A
Power Supply	DC 5 V
Frequency Range	1) 2 412 MHz ~ 2 462 MHz (11b/g/n_HT20), 2) 5 745 MHz ~ 5 825 MHz (11a/n_HT20), 3) 5 755 MHz ~ 5 795 MHz (11a/n_HT40), 4) 5 180 MHz ~ 5 240 MHz (11a/n_HT20_Non DFS), 5) 5 190 MHz ~ 5 230 MHz (11a/n_HT40_Non DFS)
Modulation Technique	DSSS, OFDM
Number of Channels	1) 11 channel (11b/g/n_HT20) 2) 5 channel (11a/n_HT20) 3) 2 channel (11n_HT40), 4) 4 channel (11a/n_HT20_Non DFS) 5) 2 channel (11n_HT40_Non DFS)
Antenna Type	Internal type (SISO)
Antenna Gain	1) 0.33 dB i(11b/g/n_HT20) 2), 3) -6.40 dB i(11a/n_HT20, HT40) 4), 5) 0.38 dB i(11a/n_HT20, HT40_Non DFS)

1.4. Declaration by the manufacturer

- N/A

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1.5. Test equipment list

Equipment	Manufacturer	Model	S/N	Cal Due.
Signal Generator	R&S	SMR40	100272	Jul. 15, 2012
Spectrum Analyzer	Agilent	N9030A	US51350132	Oct. 28, 2012
Spectrum Analyzer	R&S	FSV30	100768	Mar. 29, 2013
Power Sensor	R&S	NRP-Z81	100669	Apr. 03, 2013
Attenuator	Agilent	8490D	50748	May 01, 2013
Attenuator	AEROFLEX/INMET	18N-20dB	3	Apr. 02, 2013
Low Pass Filter	Mini-Circuits	NLP-1200+	V8979400903-1	Jul. 11, 2012
High Pass Filter	Wainwright	WHK3.0/18G-10SS	344	Jul. 07, 2012
High Pass Filter	Wainwright	WHK6.0/18G-10SS	11	Jul. 07, 2012
DC Power Supply	Agilent	U8002A	MY50020026	Mar. 29, 2013
Preamplifier	H.P.	8447F	2944A03909	Jul. 04, 2012
Preamplifier	R&S	SCU18	10117	Jan. 12, 2013
Preamplifier	MITEQ Inc.	JS44-18004000-35-8P	1546891	Jul. 04, 2012
Test Receiver	R&S	ESU26	100109	Feb. 21, 2013
Bilog Antenna	SCHWARZBECK MESSELEKTRONIK	VULB9163	396	May 12, 2013
Horn Antenna	R&S	HF906	100326	Nov. 23, 2012
Horn Antenna	SCHWARZBECK MESSELEKTRONIK	BBHA9170	BBHA9170223	Jun. 30, 2012
Antenna Master	INNCO	MM4000	N.C.R	N.C.R.
Turn Table	INNCO	DS 1200S	N.C.R	N.C.R.
Anechoic Chamber	SY Corporation	L × W × H (6.5 m × 3.5 m × 3.5 m)	N.C.R	N.C.R.
EMI Test Receiver	R&S	ESHSI0	863365/018	Jul. 07, 2012
Two-Line V-Network	R&S	ENV216	100190	Jan. 09, 2013
Anechoic Chamber	SY Corporation	L × W × H (9.6 m × 6.4 m × 6.4 m)	N.C.R	N.C.R

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1.6. Summary of test result

The EUT has been tested according to the following specifications:

APPLIED STANDARD:FCC Part15 subpart B&C, RSS-210, RSS-Gen			
Standard section		Test Item	Result
15.205(a) 15.209 15.247(d)	A8.5	Transmitter Radiated Spurious Emissions Conducted Spurious Emission	Complied
15.109(a)	RSS-Gen 6	Receiver Radiated Spurious Emission	Complied
15.247(a)(2)	A8.2(a)	6 dB Bandwidth and 99% BW	Complied
15.247(b)(3)	A8.4(4)	Maximum Peak Output Power	Complied
15.247(e)	A8.3(2)	Power Spectral Density	Complied
15.207	RSS-Gen 5.5/ RSS-102	Transmitter AC power line conducted emission	Complied

1.7. Description of test mode

802.11 b mode:

We found out the test mode with the highest power level after we analyze all the data rates. 1 Mbps data rate is chose worst case as a representative.

802.11a/g mode:

We found out the test mode with the highest power level after we analyze all the data rates. 6 Mbps data rate is chose (worst case) as a representative.

802.11n mode:

We found out the test mode with the highest power level after we analyze all the data rates. MCS0 data rate is chose (worst case) as a representative.

1.8. Test report revision

Revision	Report number	Description
0	F690501/RF-RTL005448	Initial
1	F690501/RF-RTL005448-1	Revised Description of EUT

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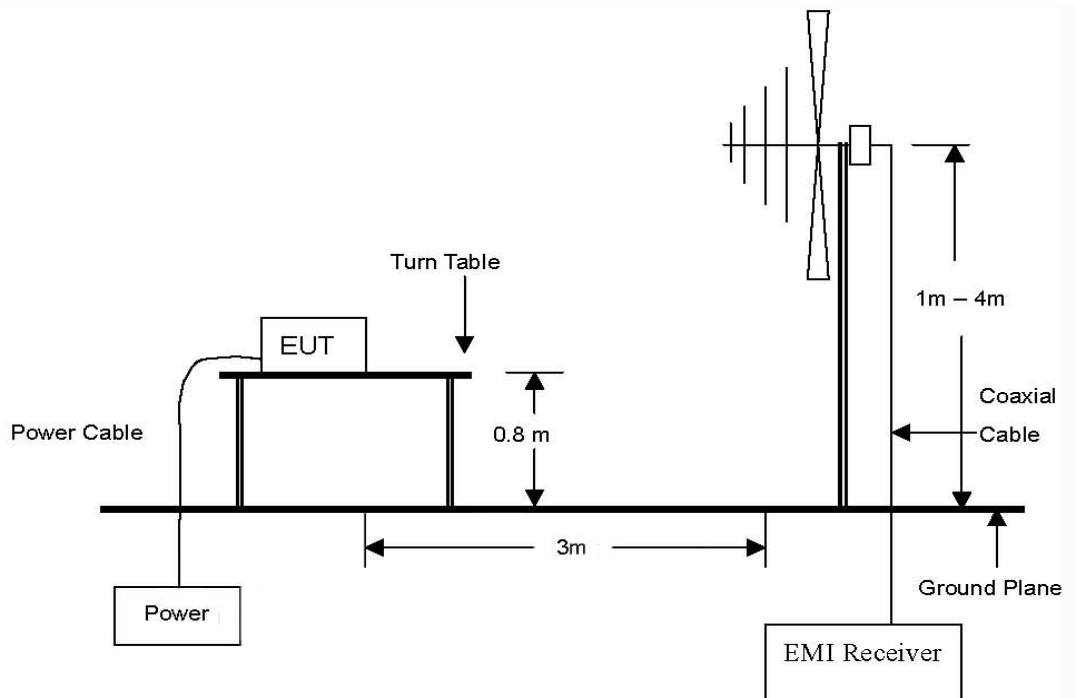
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2. Transmitter radiated spurious emissions and conducted spurious emission

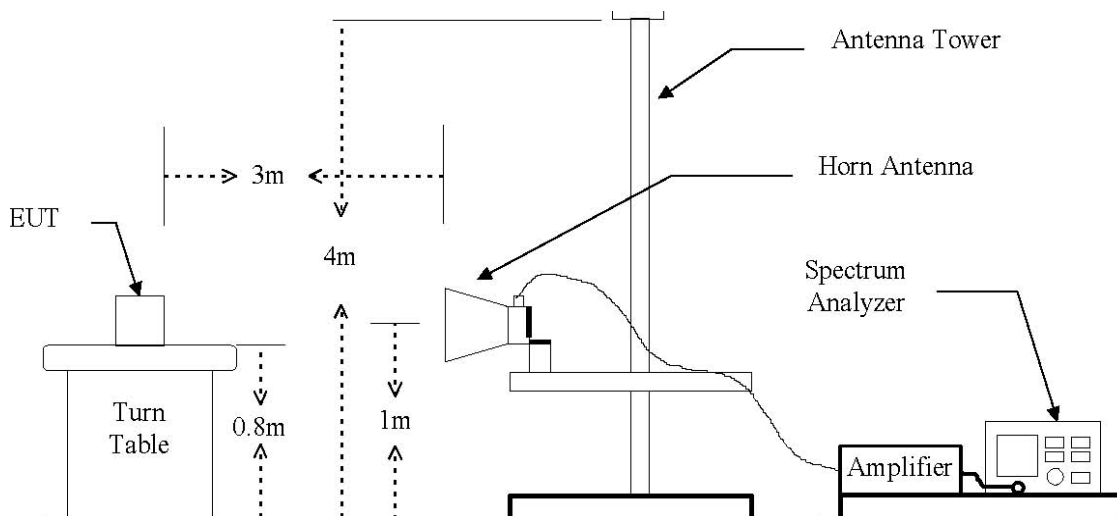
2.1. Test setup

2.1.1. Transmitter radiated spurious emissions

The diagram below shows the test setup that is utilized to make the measurements for emission from 30 MHz to 1 GHz Emissions.



The diagram below shows the test setup that is utilized to make the measurements for emission from 1 GHz to 40 GHz Emissions.



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2.1.2. Conducted spurious emissions



2.2. Limit

According to §15.247(d), in any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated 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, based on either an RF conducted or a radiated measurement , provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval , as permitted under paragraph(b)(3) of this section , the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in section §15.209(a) is not required. In addition, radiated emission which in the restricted band, as define in section §15.205(a), must also comply the radiated emission limits specified in section §15.209(a) (see section §15.205(c))

According to § 15.109(a), for an intentional radiator devices, the general required of field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values :

Frequency (MHz)	Distance (Meters)	Radiated (dB µV/m)	Radiated (µV/m)
30 - 88	3	40.0	100
88 – 216	3	43.5	150
216 – 960	3	46.0	200
Above 960	3	54.0	500

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2.3. Test procedures

Radiated emissions from the EUT were measured according to the dictates of KDB558074.

2.3.1. Test procedures for radiated spurious emissions

1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter anechoic chamber test site. The table was rotated 360 degrees to determine the position of the highest radiation.
2. During performing radiated emission below 1 GHz, the EUT was set 3 meters away from the interference receiving antenna, which was mounted on the top of a variable-height antenna tower. During performing radiated emission above 1 GHz, the EUT was set 3 meter away from the interference-receiving antenna.
3. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

■ Note

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Peak detection (PK) or Quasi-peak detection (QP) at frequency below 1 GHz.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection and frequency above 1 GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz for Average detection (AV) at frequency above 1 GHz.

2.3.2. Test procedures for conducted spurious emissions

1. The transmitter output was connected to the spectrum analyzer through an attenuator.
2. The bandwidth of the fundamental frequency was measured with the spectrum analyzer using RBW=100 kHz, VBW=100 kHz.

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2.4. Test result

Ambient temperature : $(24 \pm 2) ^\circ\text{C}$
Relative humidity : 49 % R.H.

2.4.1. Spurious radiated emission (Worst case configuration_11g mode)

The frequency spectrum from 30 MHz to 1000 MHz was investigated. All emissions are not reported much lower than the prescribed limits.

Radiated emissions			Ant	Correction factors		Total	Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	Amp gain+CL (dB)	Actual (dB uV/m)	Limit (dB uV/m)	Margin (dB)
53.77	39.20	Peak	V	13.50	-26.30	26.40	40.00	13.60
93.05	37.00	Peak	V	10.80	-26.40	21.40	43.50	22.10
132.38	43.80	Peak	H	8.80	-26.00	26.60	43.50	16.90
271.98	40.00	Peak	H	12.60	-24.90	27.70	46.00	18.30
Above 300.00	Not detected	-	-	-	-	-	-	-

■ Remark:

1. All spurious emission at channels are almost the same below 1 GHz, so that the middle channel was chosen at representative in final test.
2. Actual = Reading + AF + AMP + CL
3. To get a maximum emission level from the EUT, the EUT was moved throughout the x, y and z planes. The worst case is z.

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2.4.2. Spurious radiated emission for above 1 GHz

The frequency spectrum above 1000 MHz was investigated. Emission levels are not reported much lower than the limits by over 30 dB.

DSSS : 802.11b

Low Channel (2 412 MHz)

Radiated Emissions			Ant	Correction Factors		Total	FCC Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
*2 390.00	27.27	Peak	V	28.05	5.14	60.46	74.00	13.54
*2 390.00	15.75	Average	V	28.05	5.14	48.94	54.00	5.06

Radiated Emissions			Ant	Correction Factors		Total	FCC Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
4 824.07	46.91	Peak	V	32.31	-34.98	44.24	74.00	29.76
Above 4 900.00	Not detected	-	-	-	-	-	-	-

Middle Channel (2 437 MHz)

Radiated Emissions			Ant	Correction Factors		Total	FCC Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
4 873.73	43.38	Peak	V	32.79	-34.97	41.20	74.00	32.80
Above 4 900.00	Not detected	-	-	-	-	-	-	-

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High Channel (2 462 MHz)

Radiated Emissions			Ant	Correction Factors		Total	FCC Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
*2 483.50	27.19	Peak	V	28.31	5.19	60.69	74.00	13.31
*2 483.50	15.56	Average	V	28.31	5.19	49.06	54.00	4.94

Radiated Emissions			Ant	Correction Factors		Total	FCC Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
4 924.55	42.78	Peak	V	33.11	-34.87	41.02	74.00	32.98
Above 5 000.00	Not detected	-	-	-	-	-	-	-

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OFDM : 802.11g

Low Channel (2 412 MHz)

Radiated Emissions			Ant	Correction Factors		Total	FCC Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
*2 390.00	35.25	Peak	V	28.05	5.14	68.44	74.00	5.56
*2 390.00	18.56	Average	V	28.05	5.14	51.75	54.00	2.25

Radiated Emissions			Ant	Correction Factors		Total	FCC Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
4 821.42	45.06	Peak	V	32.27	-34.97	42.36	74.00	31.64
Above 4 900.00	Not detected	-	-	-	-	-	-	-

Middle Channel (2 437 MHz)

Radiated Emissions			Ant	Correction Factors		Total	FCC Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
4 872.44	42.80	Peak	V	32.78	-34.97	40.61	74.00	33.39
Above 4 900.00	Not detected	-	-	-	-	-	-	-

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High Channel (2 462 MHz)

Radiated Emissions			Ant	Correction Factors		Total	FCC Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
*2 483.50	36.15	Peak	V	28.31	5.19	69.65	74.00	4.35
*2 483.50	17.55	Average	V	28.31	5.19	51.05	54.00	2.95

Radiated Emissions			Ant	Correction Factors		Total	FCC Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
4 925.22	42.73	Peak	V	33.11	-34.88	40.96	74.00	33.04
Above 5 000.00	Not detected	-	-	-	-	-	-	-

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OFDM : 802.11n_HT20

Low Channel (2 412 MHz)

Radiated Emissions			Ant	Correction Factors		Total	FCC Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
*2 390.00	30.12	Peak	V	28.05	5.14	63.31	74.00	10.69
*2 390.00	16.51	Average	V	28.05	5.14	49.70	54.00	4.30

Radiated Emissions			Ant	Correction Factors		Total	FCC Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
4 820.67	44.26	Peak	V	32.26	-34.97	41.55	74.00	32.45
Above 4 900.00	Not detected	-	-	-	-	-	-	-

Middle Channel (2 437 MHz)

Radiated Emissions			Ant	Correction Factors		Total	FCC Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
4 875.94	42.55	Peak	V	32.81	-34.96	40.40	74.00	33.60
Above 4 900.00	Not detected	-	-	-	-	-	-	-

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High Channel (2 462 MHz)

Radiated Emissions			Ant	Correction Factors		Total	FCC Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
*2 483.50	32.15	Peak	V	28.31	5.19	65.65	74.00	8.35
*2 483.50	16.19	Average	V	28.31	5.19	49.69	54.00	4.31

Radiated Emissions			Ant	Correction Factors		Total	FCC Limit	
Frequency (MHz)	Reading (dB μ V)	Detect Mode	Pol.	AF (dB/m)	AMP+CL (dB)	Actual (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
4 921.57	42.22	Peak	V	33.08	-34.87	40.43	74.00	33.57
Above 5 000.00	Not detected	-	-	-	-	-	-	-

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802.11a

A. Low Channel (5 745 MHz)

Radiated Emissions			Ant	Correction Factors		Total	Limit	
Frequency (MHz)	Reading (dB uV)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Actual (dB uV/m)	Limit (dB uV/m)	Margin (dB)
5 745.00	52.80	Peak	H	34.16	8.18	95.14	-	-
5 745.00	43.14	Average	H	34.16	8.18	85.48	-	-
5 745.00	51.26	Peak	V	34.16	8.18	93.60	-	-
5 745.00	41.52	Average	V	34.16	8.18	83.86	-	-

Frequency (MHz)	Reading (dB uV)	Detect Mode	Pol.	AF (dB/m)	Amp Gain +CL (dB)	Actual (dB uV/m)	Limit (dB uV/m)	Margin (dB)
11 489.93	37.39	Peak	V	38.38	-30.20	45.57	74.00	28.43
Above 11 500.00	Not detected	-	-	-	-	-	-	-

B. Middle Channel (5 785 MHz)

Radiated Emissions			Ant	Correction Factors		Total	Limit	
Frequency (MHz)	Reading (dB uV)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Actual (dB uV/m)	Limit (dB uV/m)	Margin (dB)
5 785.00	52.84	Peak	H	34.08	8.09	95.01	-	-
5 785.00	42.84	Average	H	34.08	8.09	85.01	-	-
5 785.00	50.95	Peak	V	34.08	8.09	93.12	-	-
5 785.00	41.44	Average	V	34.08	8.09	83.61	-	-

Frequency (MHz)	Reading (dB uV)	Detect Mode	Pol.	AF (dB/m)	Amp Gain +CL (dB)	Actual (dB uV/m)	Limit (dB uV/m)	Margin (dB)
11 572.53	36.99	Peak	V	38.42	-30.04	45.37	74.00	28.63
Above 11 600.00	Not detected	-	-	-	-	-	-	-

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C. High Channel (5 825 MHz)

Radiated Emissions			Ant	Correction Factors		Total	Limit	
Frequency (MHz)	Reading (dB uV)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Actual (dB uV/m)	Limit (dB uV/m)	Margin (dB)
5 825.00	52.29	Peak	H	34.10	8.09	94.48	-	-
5 825.00	42.08	Average	H	34.10	8.09	84.27	-	-
5 825.00	50.51	Peak	V	34.10	8.09	92.70	-	-
5 825.00	40.94	Average	V	34.10	8.09	83.13	-	-

Frequency (MHz)	Reading (dB uV)	Detect Mode	Pol.	AF (dB/m)	Amp Gain +CL (dB)	Actual (dB uV/m)	Limit (dB uV/m)	Margin (dB)
11 650.65	38.11	Peak	V	38.36	-29.91	46.56	74.00	27.44
Above 11 700.00	Not detected	-	-	-	-	-	-	-

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802.11n-HT20

A. Low Channel (5 745 MHz)

Radiated Emissions			Ant	Correction Factors		Total	Limit	
Frequency (MHz)	Reading (dB uV)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Actual (dB uV/m)	Limit (dB uV/m)	Margin (dB)
5 745.00	52.53	Peak	H	34.16	8.18	94.87	-	-
5 745.00	42.37	Average	H	34.16	8.18	84.71	-	-
5 745.00	51.01	Peak	V	34.16	8.18	93.35	-	-
5 745.00	40.97	Average	V	34.16	8.18	83.31	-	-

Frequency (MHz)	Reading (dB uV)	Detect Mode	Pol.	AF (dB/m)	Amp Gain +CL (dB)	Actual (dB uV/m)	Limit (dB uV/m)	Margin (dB)
11 503.03	37.78	Peak	V	38.47	-30.21	46.04	74.00	27.96
Above 11 600.00	Not detected	-	-	-	-	-	-	-

B. Middle Channel (5 785 MHz)

Radiated Emissions			Ant	Correction Factors		Total	Limit	
Frequency (MHz)	Reading (dB uV)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Actual (dB uV/m)	Limit (dB uV/m)	Margin (dB)
5 785.00	52.82	Peak	H	34.08	8.09	94.99	-	-
5 785.00	42.87	Average	H	34.08	8.09	85.04	-	-
5 785.00	51.32	Peak	V	34.08	8.09	93.49	-	-
5 785.00	41.04	Average	V	34.08	8.09	83.21	-	-

Frequency (MHz)	Reading (dB uV)	Detect Mode	Pol.	AF (dB/m)	Amp Gain +CL (dB)	Actual (dB uV/m)	Limit (dB uV/m)	Margin (dB)
11 570.00	37.06	Peak	V	38.43	-30.05	45.44	74.00	28.56
Above 11 600.00	Not detected	-	-	-	-	-	-	-

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C. High Channel (5 825 MHz)

Radiated Emissions			Ant	Correction Factors		Total	Limit	
Frequency (MHz)	Reading (dB uV)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Actual (dB uV/m)	Limit (dB uV/m)	Margin (dB)
5 825.00	52.31	Peak	H	34.10	8.09	94.50	-	-
5 825.00	42.14	Average	H	34.10	8.09	84.33	-	-
5 825.00	50.76	Peak	V	34.10	8.09	92.95	-	-
5 825.00	40.60	Average	V	34.10	8.09	82.79	-	-

Frequency (MHz)	Reading (dB uV)	Detect Mode	Pol.	AF (dB/m)	Amp Gain +CL (dB)	Actual (dB uV/m)	Limit (dB uV/m)	Margin (dB)
11 646.89	37.49	Peak	V	38.36	-29.91	45.94	74.00	28.06
Above 11 700.00	Not detected	-	-	-	-	-	-	-

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802.11n_HT40

A. Low Channel (5 755 MHz)

Radiated Emissions			Ant	Correction Factors		Total	Limit	
Frequency (MHz)	Reading (dB uV)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Actual (dB uV/m)	Limit (dB uV/m)	Margin (dB)
5 755.00	51.69	Peak	H	34.11	8.18	93.98	-	-
5 755.00	40.74	Average	H	34.11	8.18	83.03	-	-
5 755.00	48.87	Peak	V	34.11	8.18	91.16	-	-
5 755.00	38.23	Average	V	34.11	8.18	80.52	-	-

Frequency (MHz)	Reading (dB uV)	Detect Mode	Pol.	AF (dB/m)	Amp Gain +CL (dB)	Actual (dB uV/m)	Limit (dB uV/m)	Margin (dB)
11 508.92	37.46	Peak	V	38.47	-30.19	45.74	74.00	28.26
Above 11 600.00	Not detected	-	-	-	-	-	-	-

B. High Channel (5 795 MHz)

Radiated Emissions			Ant	Correction Factors		Total	Limit	
Frequency (MHz)	Reading (dB uV)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Actual (dB uV/m)	Limit (dB uV/m)	Margin (dB)
5 795.00	50.43	Peak	H	34.03	8.06	92.52	-	-
5 795.00	39.86	Average	H	34.03	8.06	81.95	-	-
5 795.00	48.21	Peak	V	34.03	8.06	90.30	-	-
5 795.00	37.55	Average	V	34.03	8.06	79.64	-	-

Frequency (MHz)	Reading (dB uV)	Detect Mode	Pol.	AF (dB/m)	Amp Gain +CL (dB)	Actual (dB uV/m)	Limit (dB uV/m)	Margin (dB)
11 587.69	36.89	Peak	V	38.40	-30.02	45.27	74.00	28.73
Above 11 600.00	Not detected	-	-	-	-	-	-	-

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■ Remarks

1. “*” means the restricted band.
2. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental Frequency.
3. Radiated emissions measured in frequency above 1 000 MHz were made with an instrument using Peak / average detector mode.
4. Average test would be performed if the peak result were greater than the average limit.
5. Actual = Reading + AF + AMP + CL
6. To get a maximum emission level from the EUT, the EUT was moved throughout the x-axis, y-axis and z-axis. The worst case is z-axis at 2.4 GHz and The worst case is x-axis at 5.8 GHz

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2.4.3. Spurious RF Conducted Emissions: Plot of Spurious RF Conducted Emission

2.4GHz

802.11b

Low Channel



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Middle Channel



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High Channel



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802.11g

Low Channel



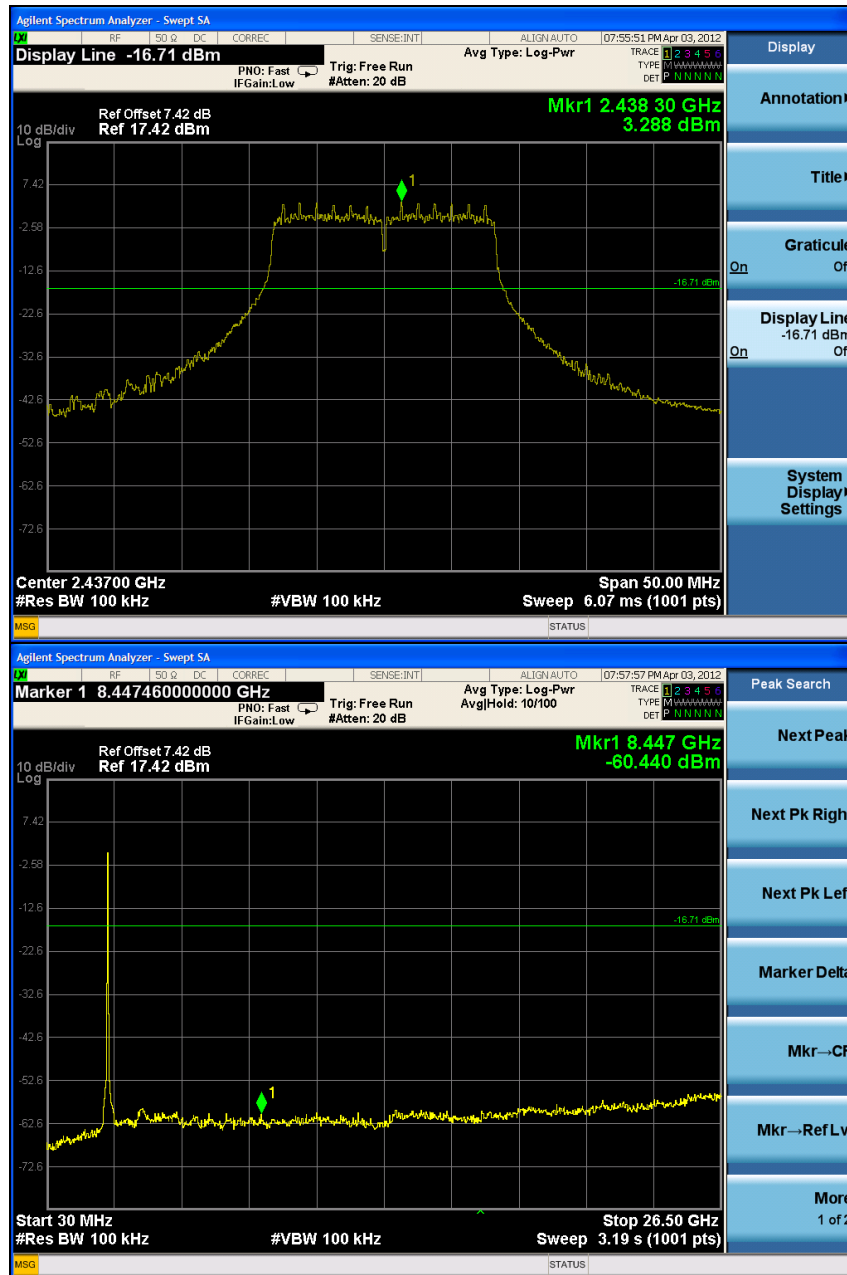
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Middle Channel



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High Channel



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802.11n_HT20

Low Channel



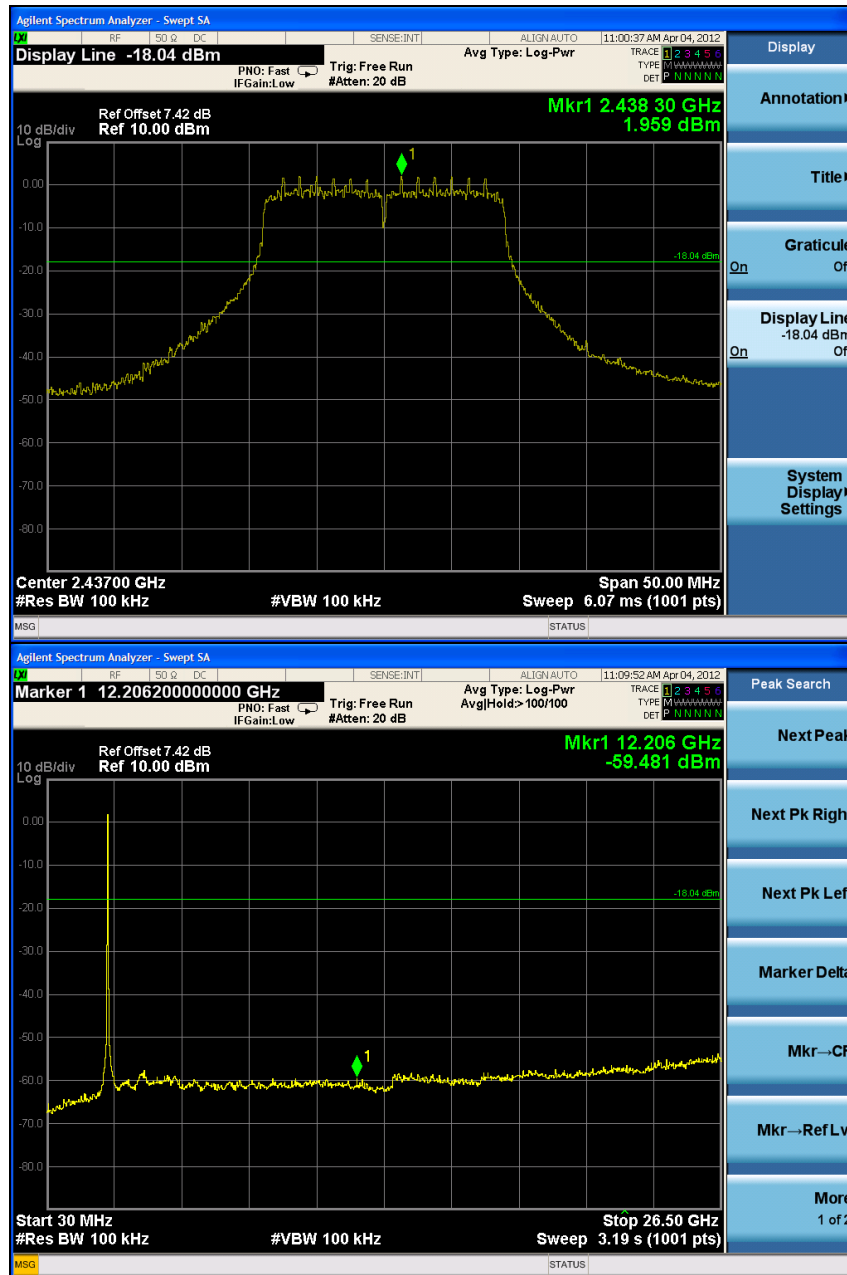
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Middle Channel



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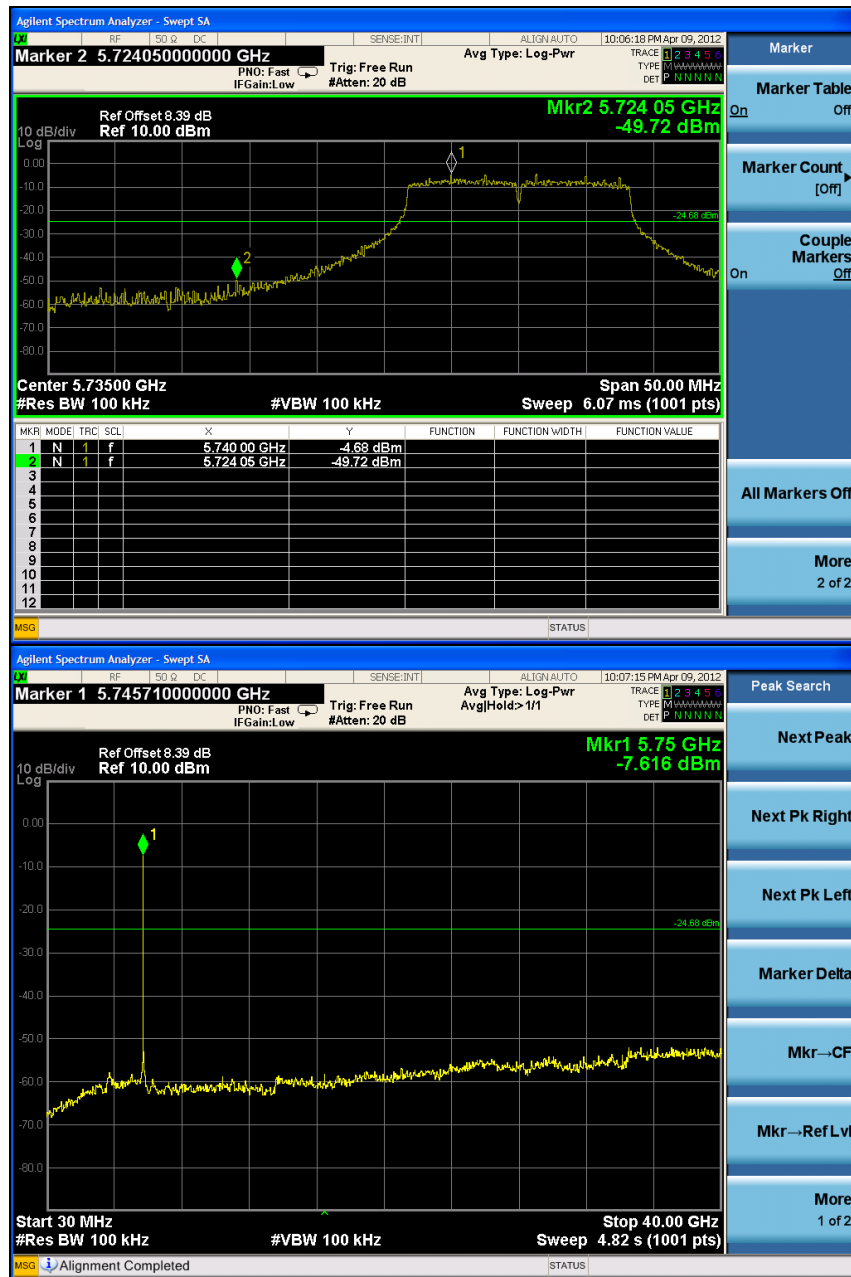
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5.8 GHz

802.11a

Low Channel



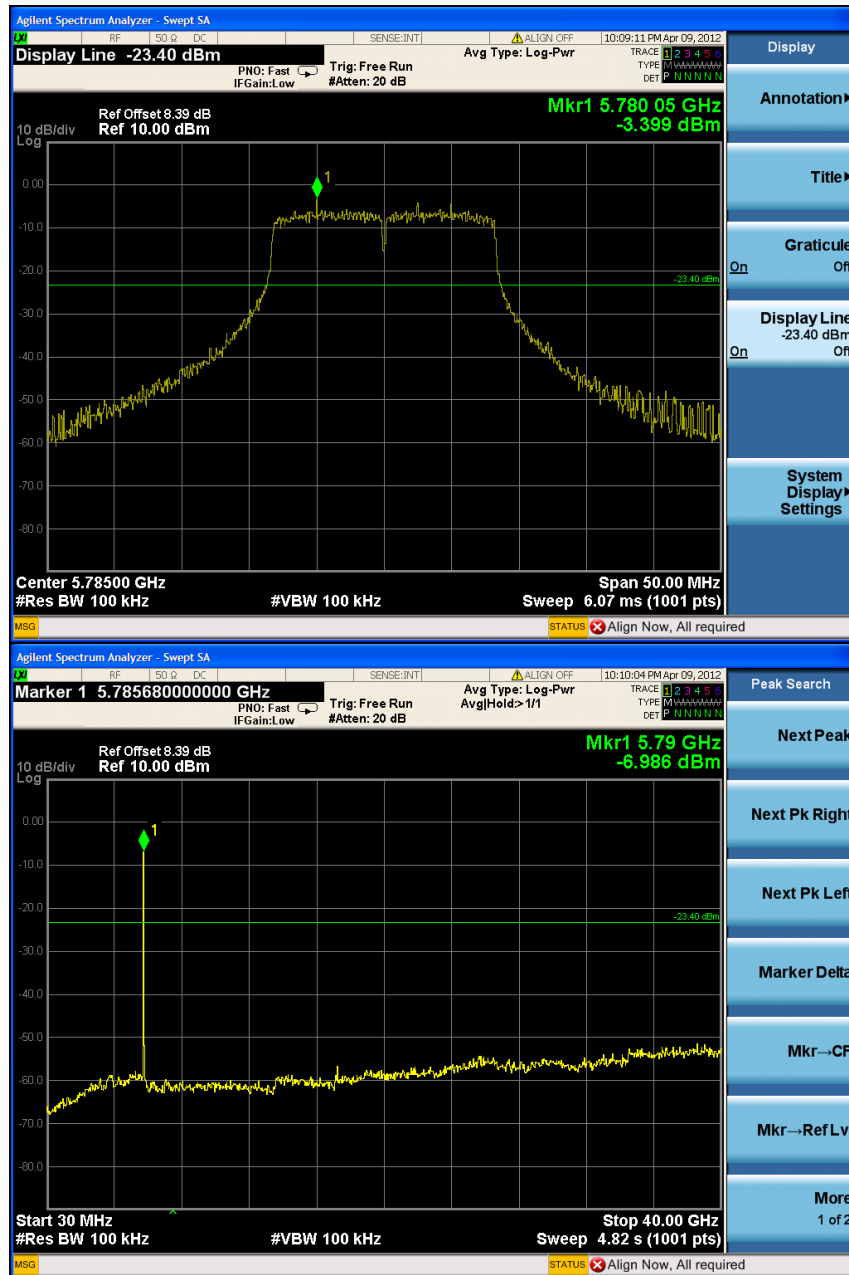
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Middle Channel



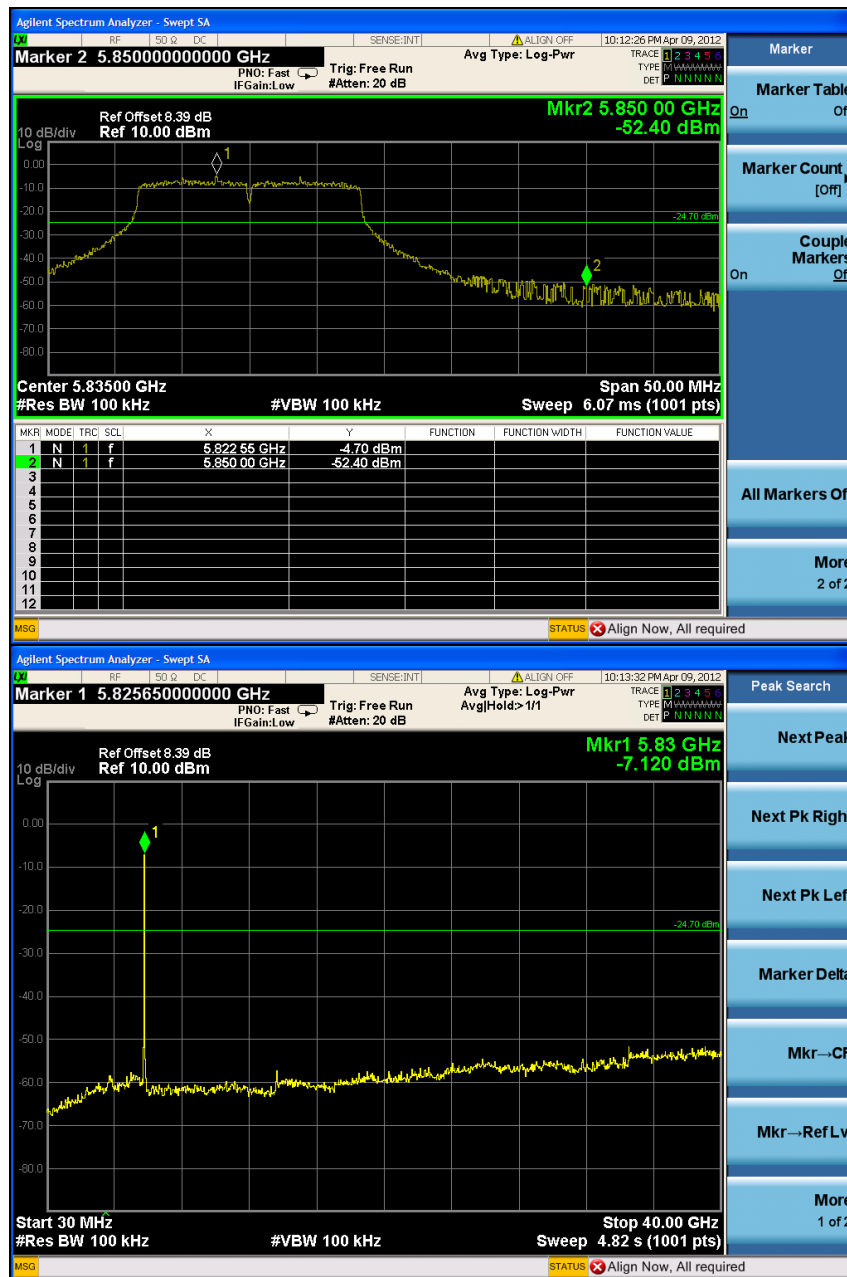
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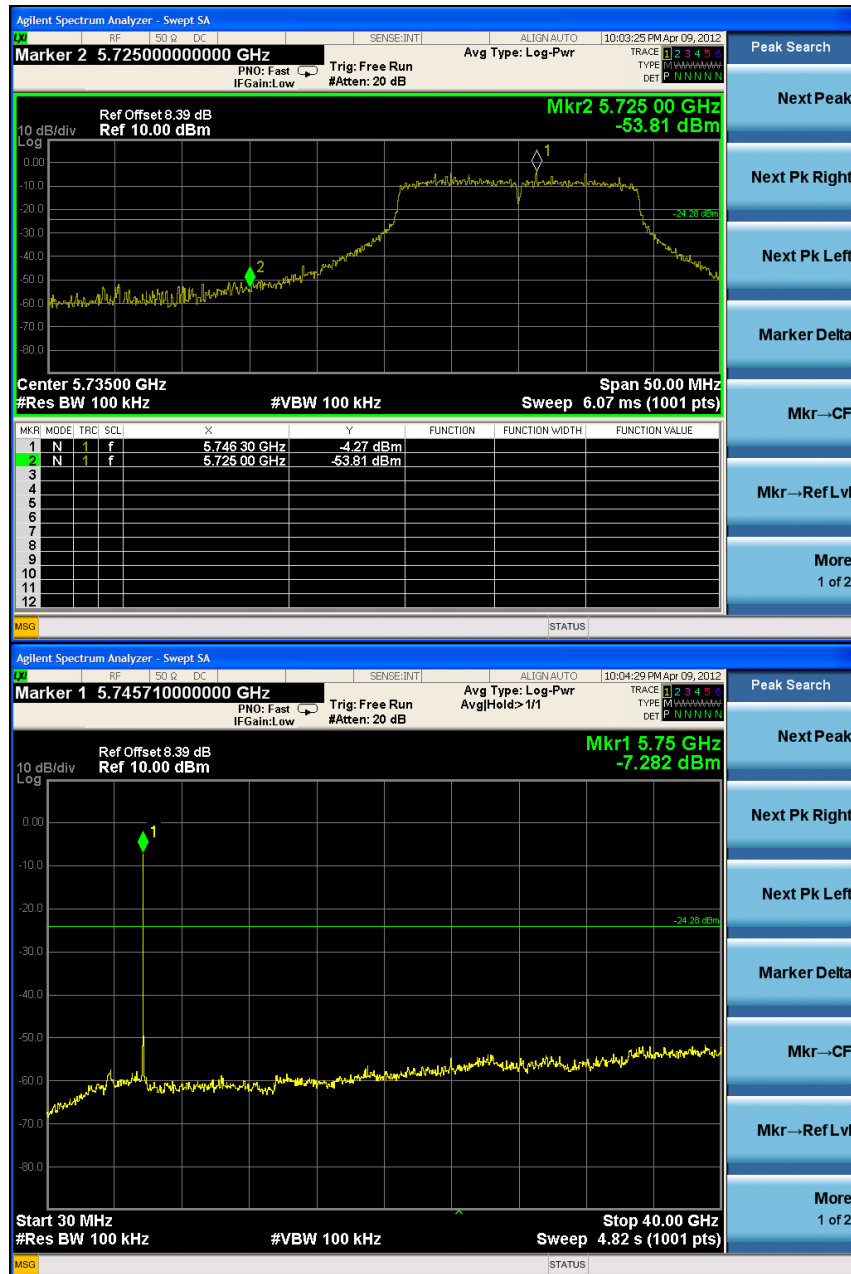
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802.11n_HT20

Low Channel



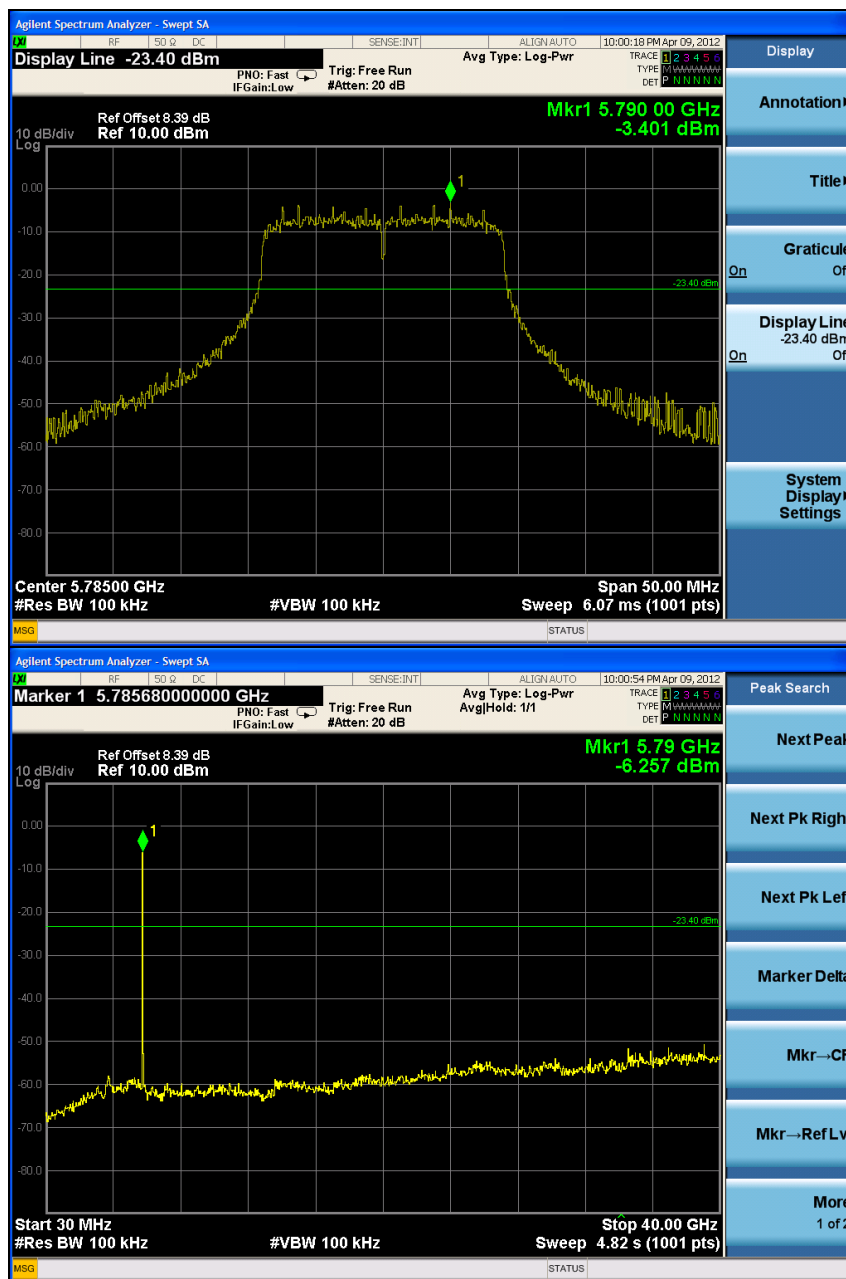
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Middle Channel



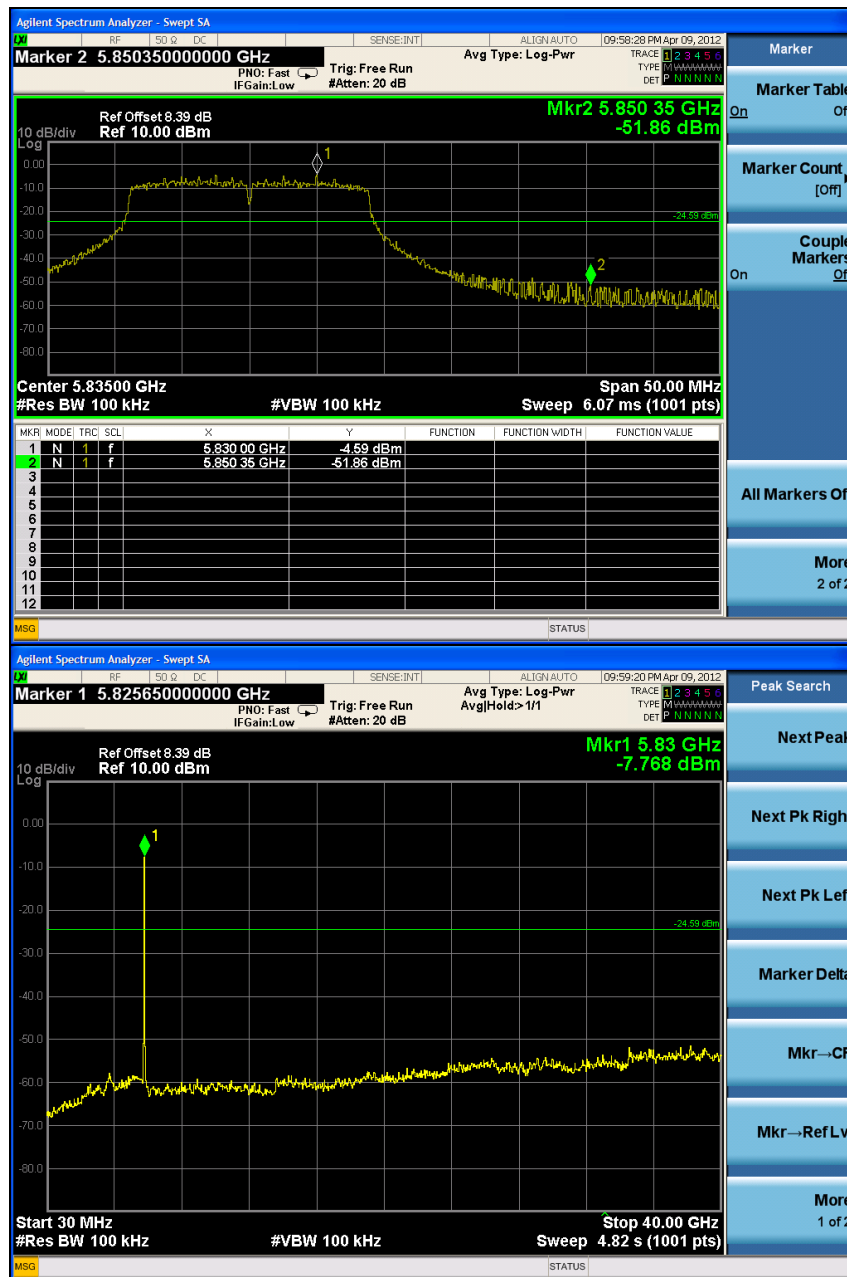
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Low Channel



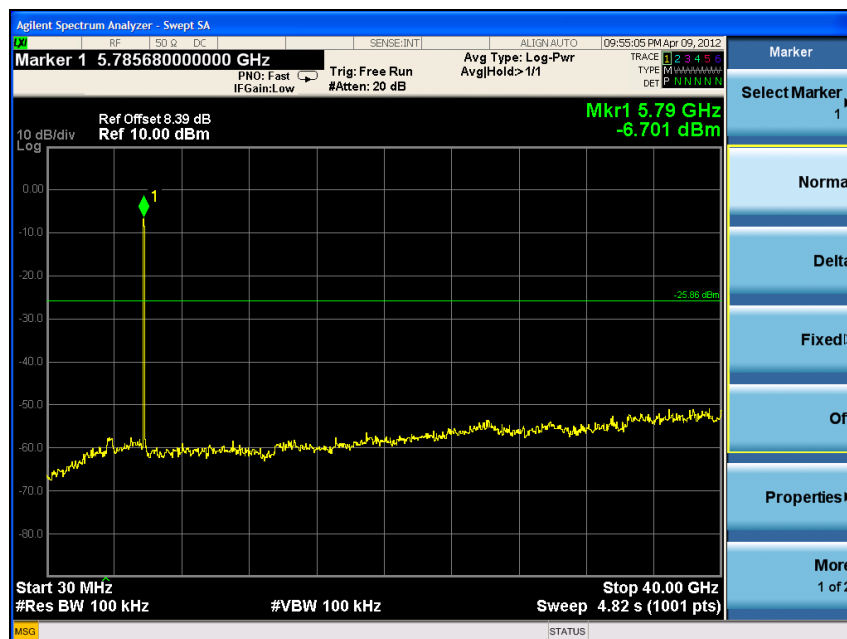
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3. Receiver Radiated spurious emissions

3.1. Test setup - Same as clause 2.1.

3.1.1. Receiver Radiated Spurious Emissions - Same as clause 2.1.1.

3.2. Limit

According to §15.109(a), Except for Class A digital devices, the field strength of radiated emission from unintentional radiator at a distance of 3 m shall not exceed the following values:

Frequency (MHz)	Distance (Meters)	Radiated (dB μ V/m)	Radiated (μ V/m)
30 - 88	3	40.0	100
88 – 216	3	43.5	150
216 – 960	3	46.0	200
Above 960	3	54.0	500

3.3. Test Procedures - Same as clause 2.3.

Radiated emissions from the EUT were measured according to the dictates of KDB558074.

3.3.1. Test Procedures for Radiated Spurious Emissions- Same as clause 2.3.1.

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3.4. Test Results

Ambient temperature : (24 ± 2) °C
Relative humidity : 47 % R.H.

3.4.1. Spurious Radiated Emission (Worst case configuration_11g mode)

The frequency spectrum from 30 MHz to 26.5 GHz was investigated. Emission levels are not reported much lower than the limits by over 30 dB. All reading values are peak values.

Radiated Emissions			Ant	Correction Factors		Total	FCC Limit	
Frequency (MHz)	Reading (dBμV)	Detect Mode	Pol.	AF (dB/m)	AMP + CL (dB)	Actual (dBμV/m)	Limit (dBμV/m)	Margin (dB)
53.85	38.30	Peak	V	13.50	-26.30	25.50	40.00	14.50
93.09	36.10	Peak	V	10.80	-26.40	20.50	43.50	23.00
132.42	43.20	Peak	V	8.80	-26.00	26.00	43.50	17.50
272.46	39.90	Peak	V	12.60	-24.90	27.60	46.00	18.40
Above 300.00	Not detected	-	-	-	-	-	-	-

Remark:

1. All spurious emission at channels are almost the same from 30 MHz to 26.5 GHz, so that the middle channel was chosen at representative in final test.
2. Actual = Reading + AF + AMP + CL

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