D-PL-12111-01-01

CNAS L0447

Registration No.910917

TEST REPORT

Report No.: SRTC2014-H024-E0039

Product Name: GSM/GPRS/EDGE/UMTS Digital Mobile Phone with Bluetooth and WiFi

Product Model: Philips I928

Applicant: Shenzhen Sang Fei Consumer Communications Co., Ltd.

Manufacturer: Shenzhen Sang Fei Consumer Communications Co., Ltd.

Specification: FCC Part 15, Subpart C (October 9, 2012 edition)

FCC ID: VQRCTI928

The State Radio_monitoring_center Testing Center (SRTC)

No.80 Beilishi Road Xicheng District Beijing, China

Tel: 86-10-68009202 Fax: 86-10-68009205

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1. General information

1.1 Notes of the test report

The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written permission of The State Radio_monitoring_center Testing Center (SRTC).
The test results relate only to individual items of the samples which have been tested.

1.2 Information about the testing laboratory

Company: The State Radio_monitoring_center Testing Center (SRTC)
Address: No.80 Beilishi Road, Xicheng District, Beijing China
City: Beijing
Country or Region: China
Contacted person: Wang Junfeng
Tel: +86 10 68009181 +86 10 68009202
Fax: +86 10 68009195 +86 10 68009205
Email: wangjf@srrc.org.cn / wangjunfeng@srtc.org.cn

1.3 Applicant's details

Company: Shenzhen Sang Fei Consumer Communications Co., Ltd.
Address: 11 Science & Technology Rd., Shenzhen Hi-tech Industrial Park, Nanshan District
City: Shenzhen
Country or Region: China
Grantee Code: VQR
Contacted person: Helen.Lin
Tel: 86-755-33308888
Fax: 86-755-26614979
Email: Helen.Lin@sangfei.com

1.4 Manufacturer's details

Company: Shenzhen Sang Fei Consumer Communications Co., Ltd.
Address: 11 Science & Technology Rd., Shenzhen Hi-tech Industrial Park, Nanshan District
City: Shenzhen
Country or Region: China
Contacted person: Helen.Lin
Tel: 86-755-33308888
Fax: 86-755-26614979
Email: Helen.Lin@sangfei.com

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1.5 Application details

Date of reception of test sample: 10th June 2014
Date of test: 17th June 2014 to 4th July 2014

1.6 Reference specification

FCC Part 15, Subpart C (October 9, 2012 edition)

1.7 Information of EUT

1.7.1 General information

Name of EUT	GSM/GPRS/EDGE/UMTS Digital Mobile Phone with Bluetooth and WiFi
FCC ID	VQRCTI928
Frequency Range	2.4GHz~2.4835GHz
Number of Channel	11
Modulation Type	DBPSK/DQPSK/CCK/BPSK/QPSK/16QAM/64QAM
Duplex Mode	TDD
Channel Spacing	5MHz
Data Rate	1Mbps/2Mbps/5.5Mbps/11Mbps/6Mbps/9Mbps/12Mbps /18Mbps/24Mbps/36Mbps/48Mbps/54Mbps/6.5Mbps /13.0Mbps/13.5Mbps/19.5Mbps/26.0Mbps/27.0Mbps /39.0Mbps/40.5Mbps/52.0Mbps/58.5Mbps/65Mbps /81.0Mbps/108.0Mbps/121.5Mbps/135.0Mbps
Transmit Mode	Continuously
Duty Cycles	98%
Antenna Type	Fixed Internal
Power Supply	Battery or Charger
Rated Power Supply Voltage	3.8V
HW Version	TMBHb
SW Version	I928_M6592_1418_00_V01A_T01_AG

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1.7.2 EUT details

Product Name	Product Model	IMEI
GSM/GPRS/EDGE/UMTS Digital Mobile Phone with Bluetooth and WiFi	Philips I928	864359020039884

1.7.3 Auxiliary equipment details

Equipment	Charger
Manufacturer	Salcomp (Shenzhen) Co., Ltd
Model Number	S14B08
Input Voltage	100V-240V a.c.
Output Voltage	5.0V d.c.
Frequency	50/60Hz

Equipment	Battery
Manufacturer	harbin coslight powerco.,ltd
Model Number	AB3000BWMC
Capacity	3000mAh
Rated Voltage	3.8V d.c.

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2. Test information

2.1 Summary of the test results

No.	Test case	FCC reference	Verdict
1	Peak Power Output	15.247(b)(3)	Pass
2	Occupied Bandwidth	15.247(a)(2)	Pass
3	Transmitter Power Spectral Density	15.247(e)	Pass
4	Spurious RF Conducted Emissions	15.247(d)	Pass
5	Spurious Radiated Emissions	15.247(d)/15.35(b)/15.209	Pass
6	Band Edge Compliance	15.247(d)	Pass
7	AC Power line Conducted Emission	15.207	Pass

This Test Report Is Issued by: Mr. Song Qizhu Director of the test lab	Checked by: Mr. Wang Junfeng Deputy director of the test lab
Tested by: Mr. Zhang Wentao Test engineer	Issued date: **2014.07.11**

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2.2 Test result

2.2.1 Peak Power Output

2.2.1.1 Ambient condition

Temperature	Relative humidity	Pressure
22°C	40%	101.1kPa

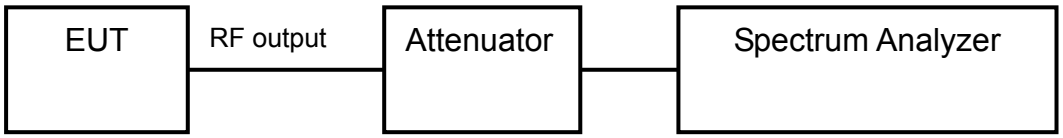
2.2.1.2 Test Description

The measurement is made according to KDB 558074 D01 DTS Meas Guidance v03r01 Section 9.1.1.

WIFI is operating in 98% Duty Factor mode.

a) Set the RBW ≥ DTS bandwidth.
b) Set VBW ≥ 3 x RBW.
c) Set span ≥ 3 x RBW
d) Sweep time = auto couple.
e) Detector = peak.
f) Trace mode = max hold.
g) Allow trace to fully stabilize.
h) Use peak marker function to determine the peak amplitude level.

The used resolution bandwidth in output power measuring is 20MHz for 802.11b/802.11g/802.11n(HT20) and 40MHz for 802.11n(HT40).



2.2.1.3 Test limit

FCC Part15.247(b)(3):
For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt.

Used conversion factor: Limit (dBm) = 10 log (Limit (W)/1mW)
==> Maximum Output Power: 30 dBm

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2.2.1.4 Test result

Modulation type		Average power output (dBm)		
		2412MHz (Ch1)	2437MHz (Ch6)	2462MHz (Ch11)
11b	1 Mbps	15.93	15.99	**16.03**
	2 Mbps	15.64	15.81	15.93
	5.5 Mbps	15.62	15.79	15.97
	11 Mbps	14.13	15.50	15.48
11g	6 Mbps	12.49	15.16	12.57
	9 Mbps	12.23	14.97	12.37
	12 Mbps	12.20	15.16	12.41
	18 Mbps	11.76	14.82	11.97
	24 Mbps	11.24	13.90	11.36
	36 Mbps	10.72	13.60	10.77
	48 Mbps	10.30	13.14	10.50
	54 Mbps	10.12	13.02	10.33
11n HT20	6.5 Mbps	12.48	15.13	12.48
	13 Mbps	11.97	15.01	12.03
	19.5 Mbps	11.53	14.37	11.59
	26 Mbps	11.14	14.07	11.23
	39 Mbps	10.65	13.78	10.74
	52 Mbps	10.32	13.39	10.58
	58.5 Mbps	10.14	13.08	10.40
	65 Mbps	9.95	12.86	10.18

Modulation type		Average power output (dBm)		
		2422MHz (Ch3)	2437MHz (Ch6)	2462MHz (Ch11)
11n HT40	13.5 Mbps	9.78	14.79	14.78
	27 Mbps	9.21	14.17	14.10
	40.5 Mbps	8.67	13.48	13.51
	54 Mbps	8.24	13.08	13.12
	81 Mbps	7.33	12.37	12.33
	108 Mbps	6.89	11.86	11.84
	121.5 Mbps	6.71	11.26	11.66
	135 Mbps	6.61	11.16	11.55

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Modulation type		Peak power output (dBm)		
		2412MHz (Ch1)	2437MHz (Ch6)	2462MHz (Ch11)
11b	**1 Mbps**	**18.79**	**19.41**	**18.63**
	2 Mbps	18.69	19.28	18.35
	5.5 Mbps	18.64	18.59	18.24
	11 Mbps	18.66	18.60	18.46
11g	6 Mbps	21.22	21.64	20.75
	9 Mbps	21.04	21.47	20.52
	12 Mbps	**21.65**	**21.78**	**21.28**
	18 Mbps	21.53	21.64	21.16
	24 Mbps	20.73	21.25	20.27
	36 Mbps	20.84	21.40	20.33
	48 Mbps	21.52	21.77	21.18
	54 Mbps	21.64	21.77	21.11
11n HT20	6.5 Mbps	20.80	21.26	21.16
	13 Mbps	20.63	21.15	20.27
	19.5 Mbps	20.73	21.38	20.29
	26 Mbps	20.75	21.38	20.17
	39 Mbps	20.64	21.20	20.15
	52 Mbps	**21.68**	**21.82**	**21.61**
	58.5 Mbps	21.50	21.75	21.06
	65 Mbps	21.51	21.69	21.03

Modulation type		Peak power output (dBm)		
		2422MHz (Ch3)	2437MHz (Ch6)	2462MHz (Ch11)
11n HT40	13.5 Mbps	20.90	22.38	22.24
	27 Mbps	20.92	22.13	22.08
	40.5 Mbps	20.98	22.30	22.03
	54 Mbps	21.03	22.23	22.17
	81 Mbps	21.07	22.32	22.21
	108 Mbps	21.05	22.56	22.41
	121.5 Mbps	**21.23**	**22.59**	**22.94**
	135 Mbps	21.20	22.58	22.45

* The data rate 1Mbps, 12Mbps, 52Mbps, 121.5Mbps are selected as worse condition, and the following cases are performed with this condition.

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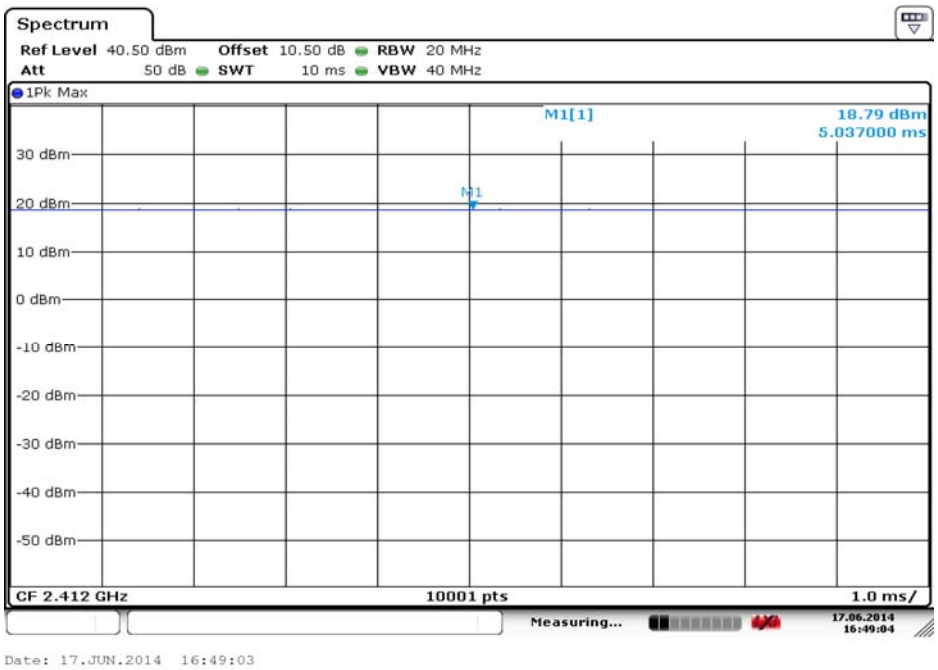
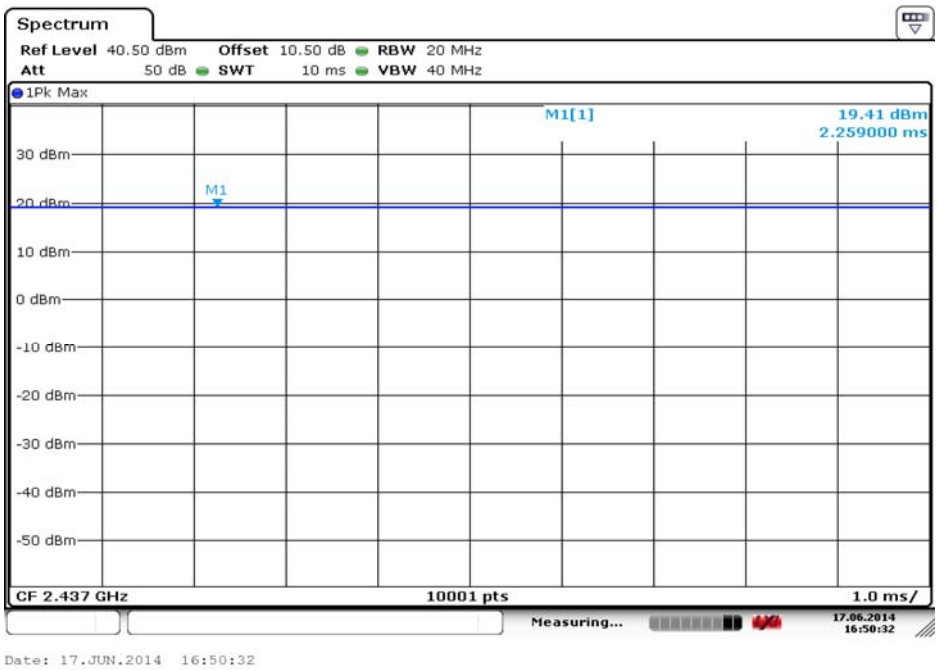


Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11b



Carrier frequency (MHz): 2437
Channel No.:6
Test Mode: 802.11b

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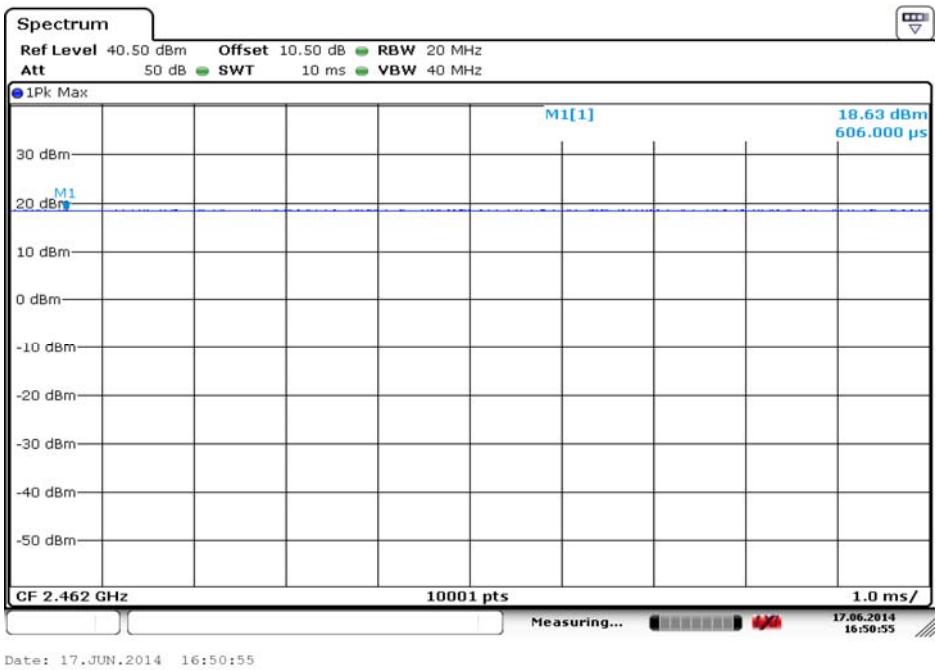
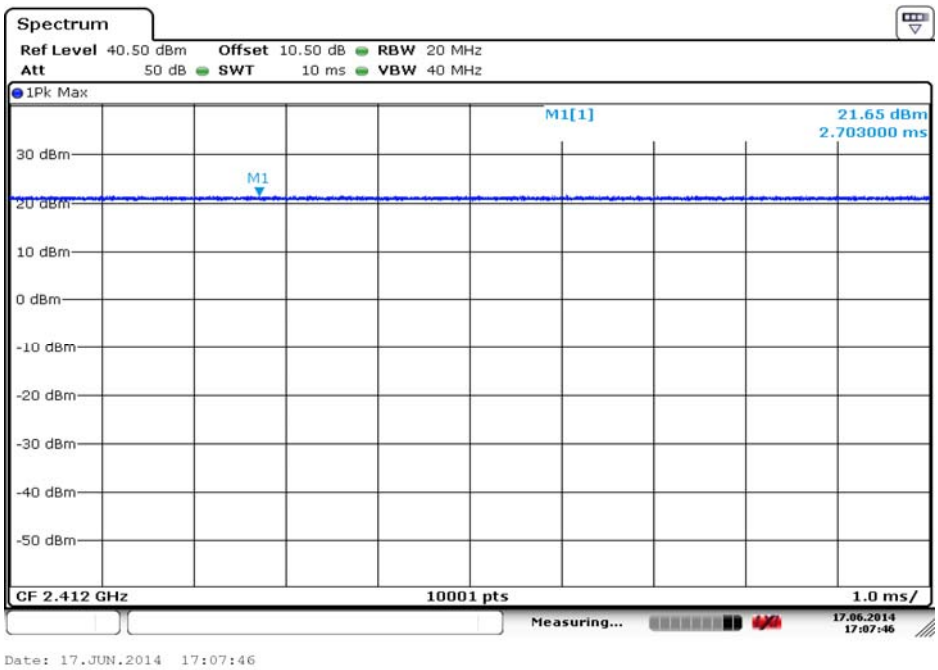


Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11b



Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11g

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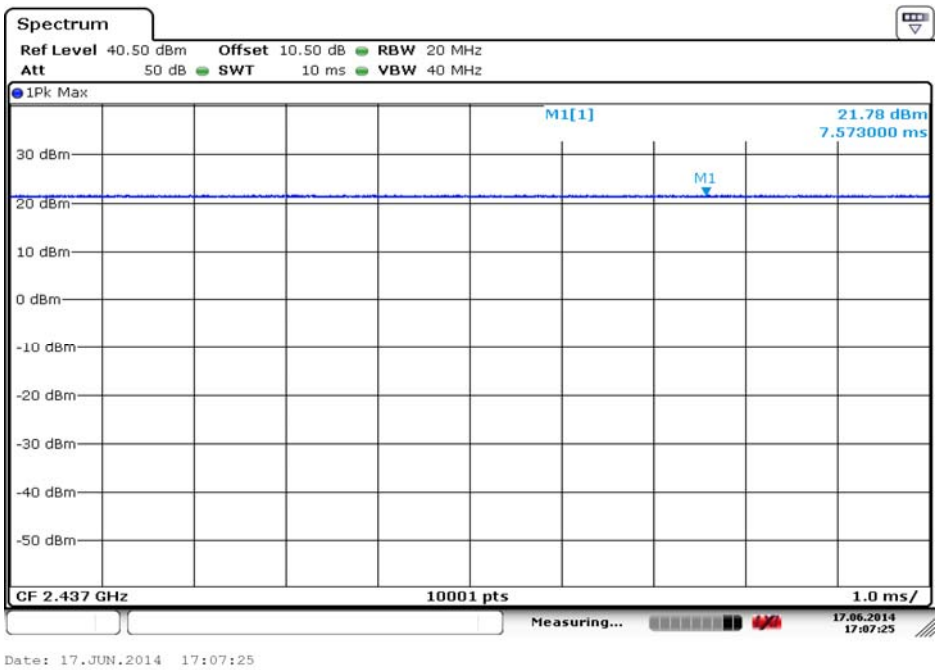
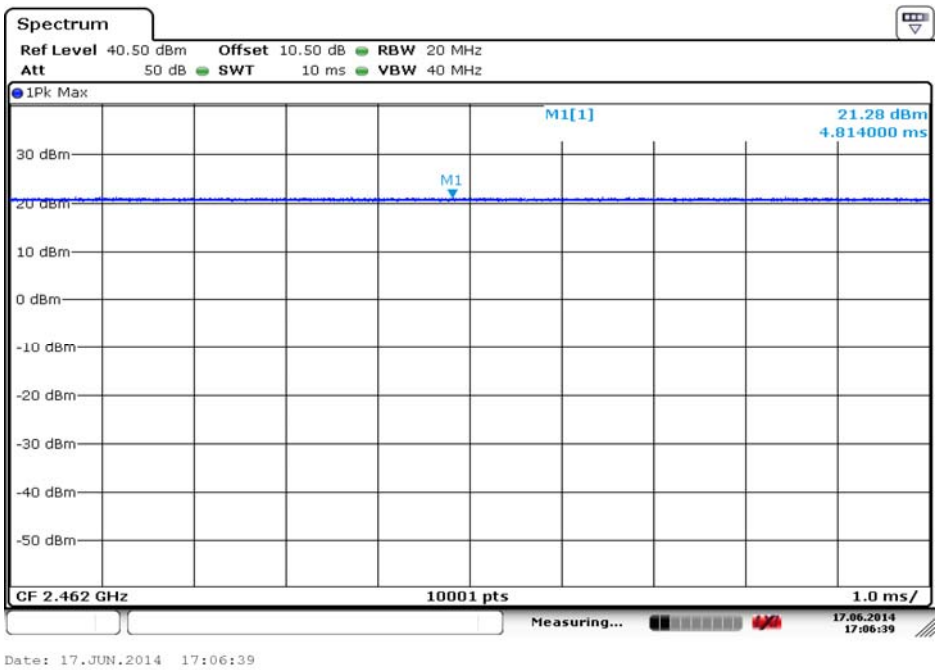


Carrier frequency (MHz): 2437
Channel No.:6
Test Mode: 802.11g



Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11g

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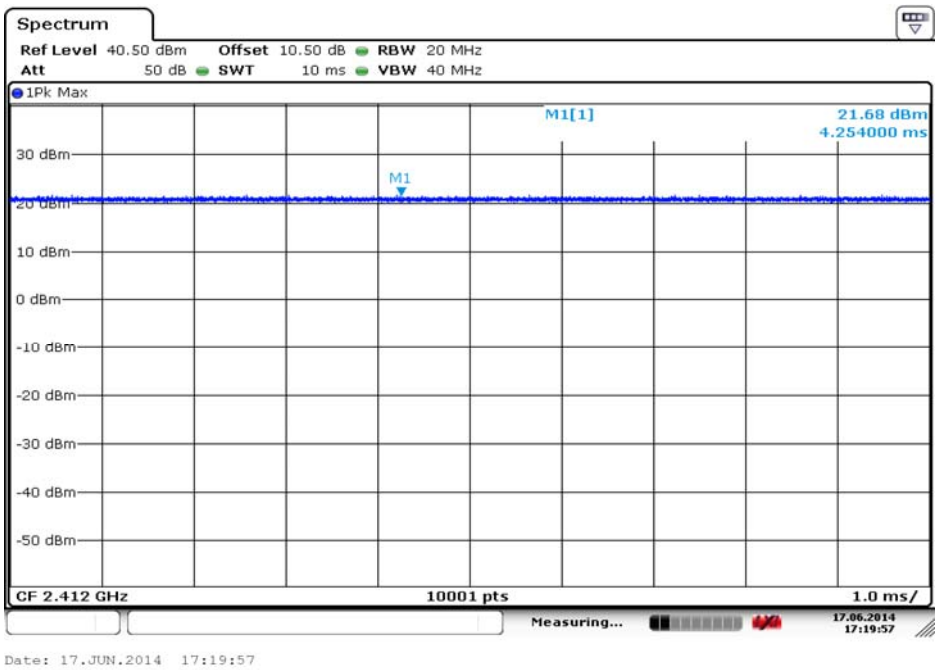
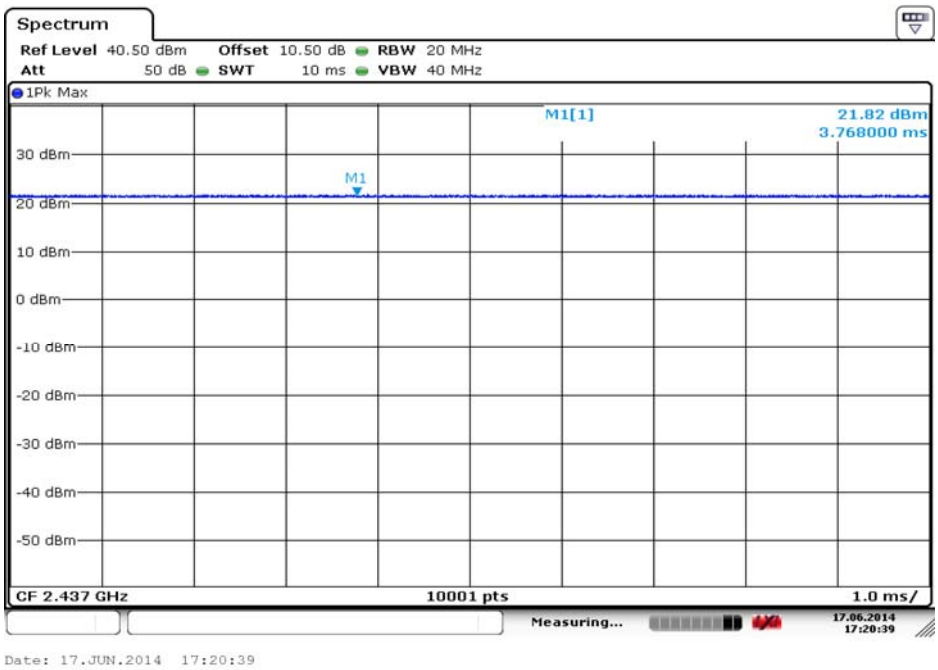


Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11n(HT20)



Carrier frequency (MHz): 2437
Channel No.:6
Test Mode: 802.11n(HT20)

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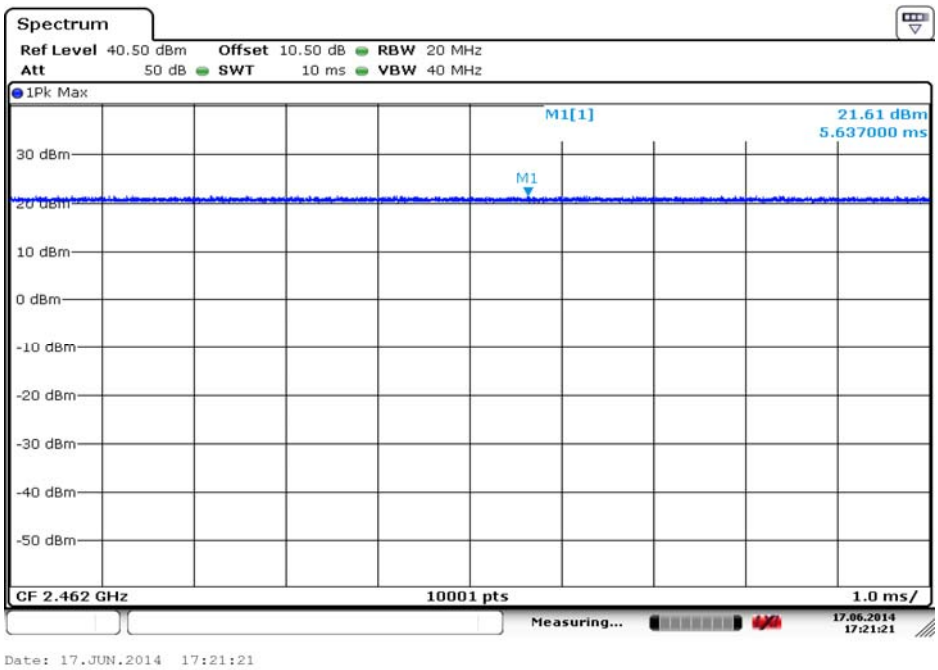
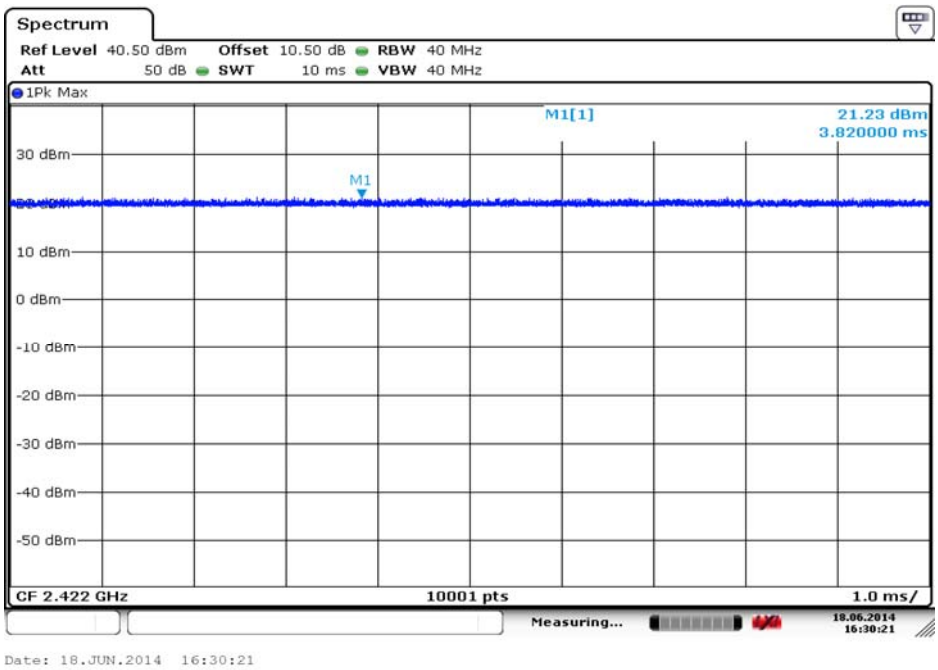


Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11n(HT20)



Carrier frequency (MHz): 2412
Channel No.:3
Test Mode: 802.11n(HT40)

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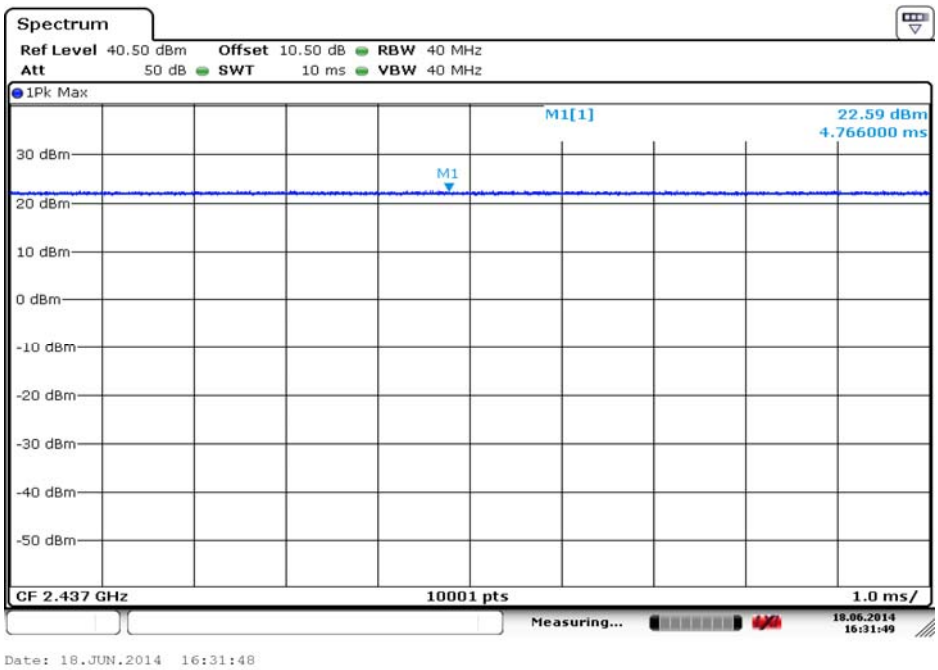
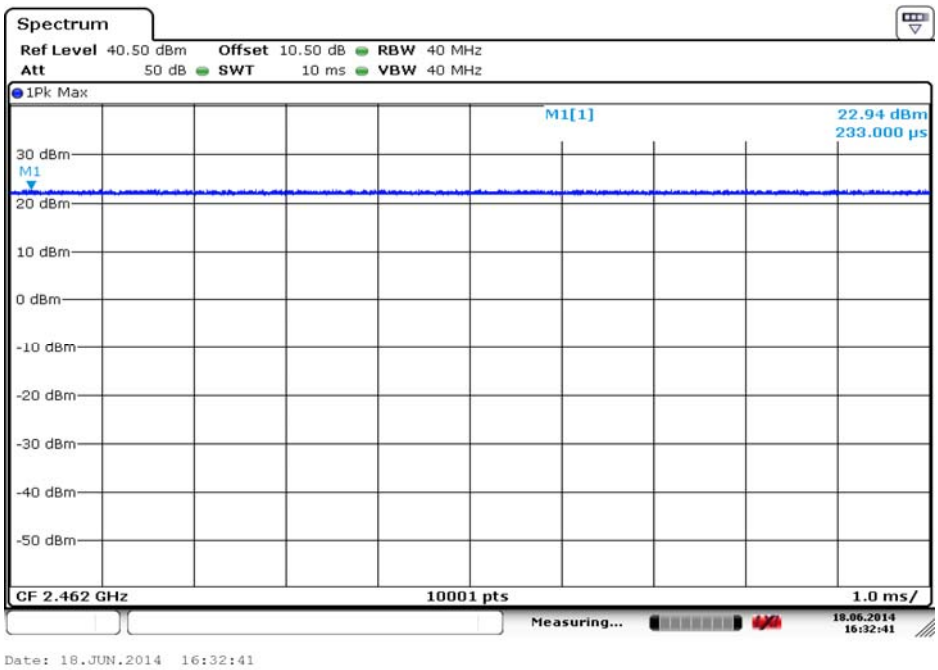


Carrier frequency (MHz): 2437
Channel No.:6
Test Mode: 802.11n(HT40)



Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11n(HT40)

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2.2.2 Occupied Bandwidth

2.2.2.1 Ambient condition

Temperature	Relative humidity	Pressure
22°C	40%	101.1kPa

2.2.2.2 Test Description

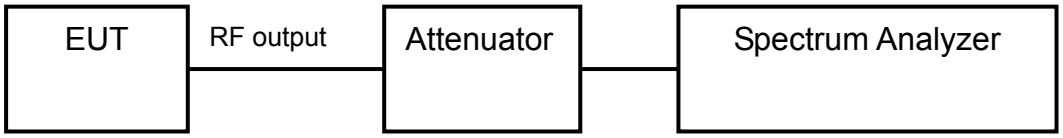
The measurement is made according to KDB 558074 D01 DTS Meas Guidance v03r01 Section 8.1.

The Equipment Under Test (EUT) was setup in a shielded room to perform the occupied bandwidth measurements.

The reference level is the level of the highest amplitude signal observed from the transmitter at either the fundamental frequency or first-order modulation products in all typical modes of operation, including the unmodulated carrier, even if atypical.

The results recorded were measured with the modulation which produces the worst-case (widest) occupied bandwidth.

a) Set RBW = 100 kHz.
b) Set the video bandwidth (VBW) ≥ 3 x RBW.
c) Detector = Peak.
d) Trace mode = max hold.
e) Sweep = auto couple.
f) Allow the trace to stabilize.
g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.



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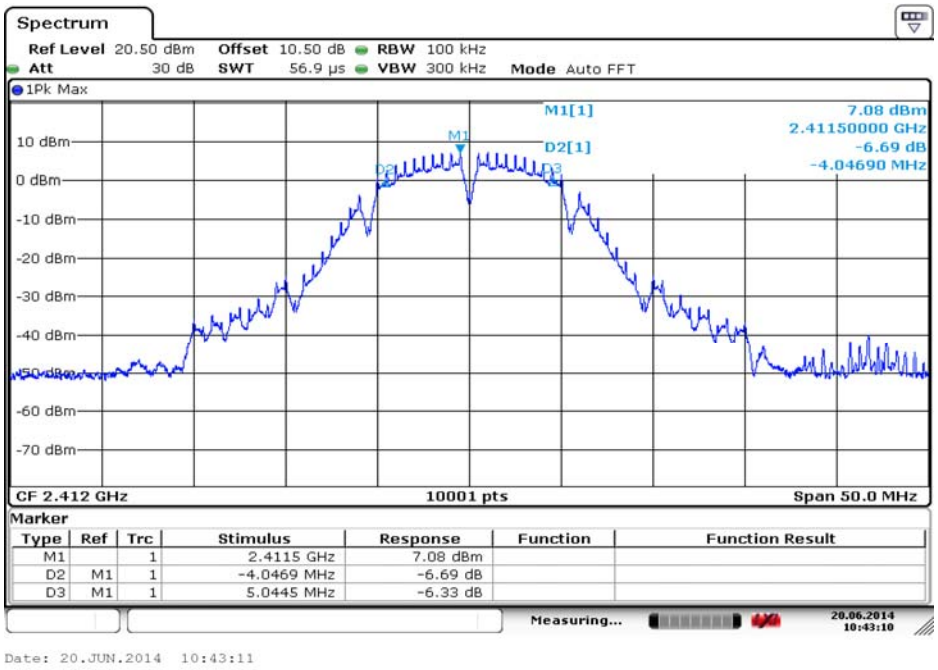
2.2.2.3 Test limit

FCC Part15.247(a)(2)
Systems using digital modulation techniques 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 500kHz.

2.2.2.4 Test result

Test Mode: 802.11b

Carrier frequency (MHz)	Channel No.	6 dB bandwidth(MHz)
2412	1	9.09
2437	6	10.05
2462	11	9.09



Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11b

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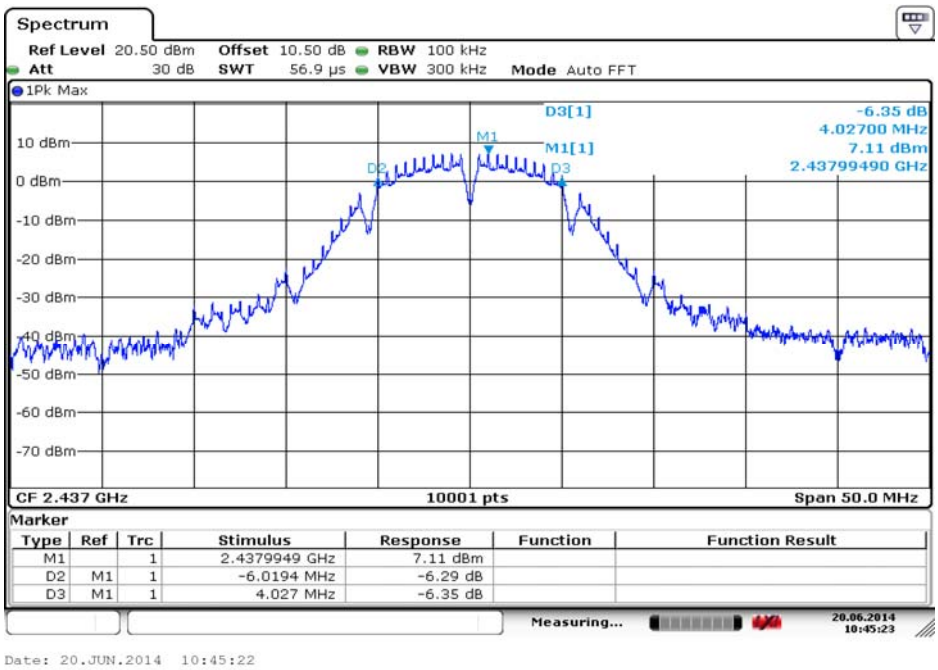
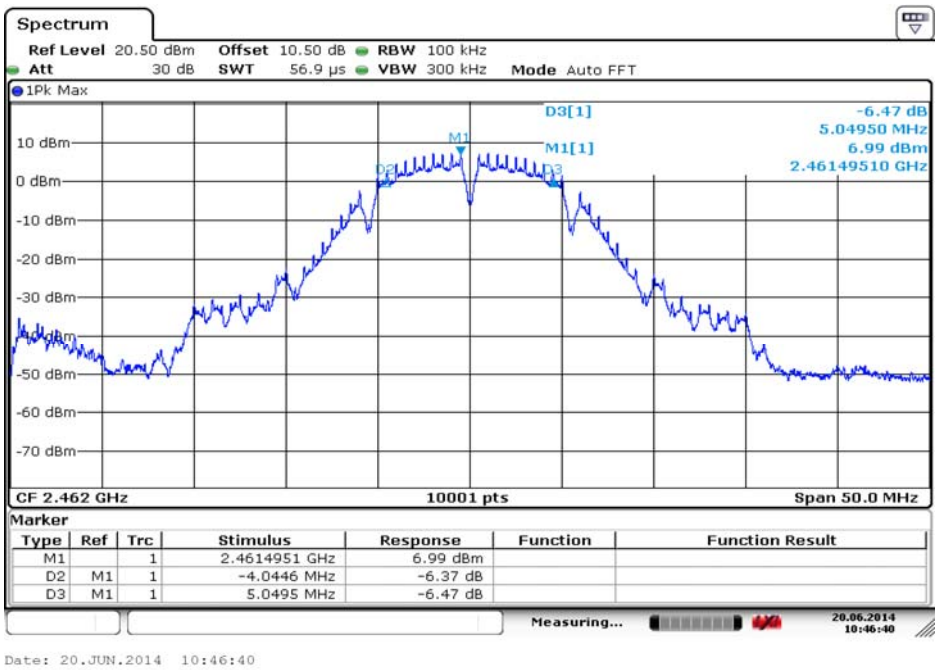


Carrier frequency (MHz): 2437
Channel No.:6
Test Mode: 802.11b



Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11b

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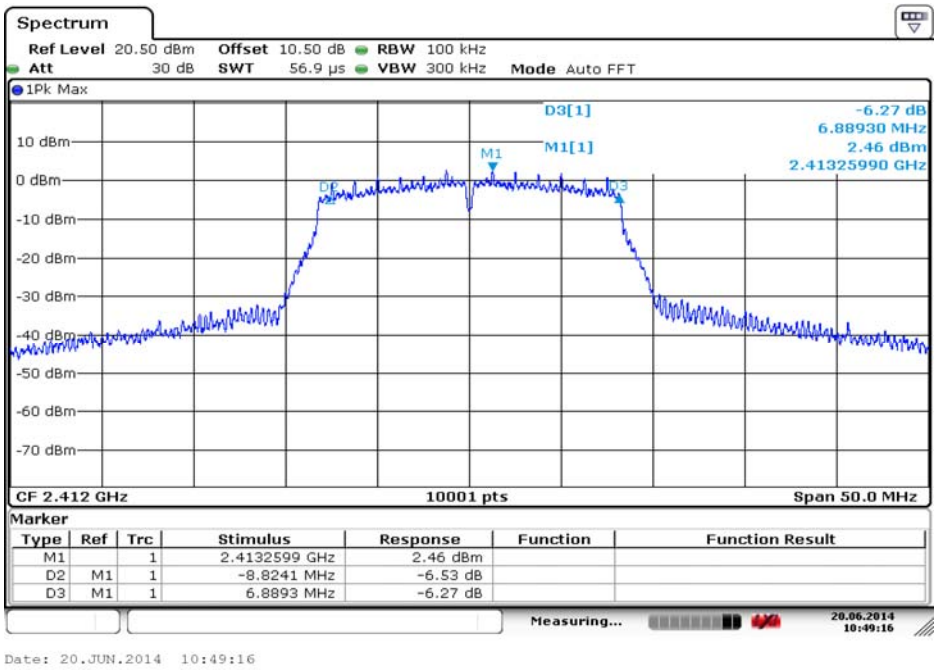
Test Mode: 802.11g

Carrier frequency (MHz)	Channel No.	6 dB bandwidth(MHz)
2412	1	15.71
2437	6	15.44
2462	11	15.44



Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11g

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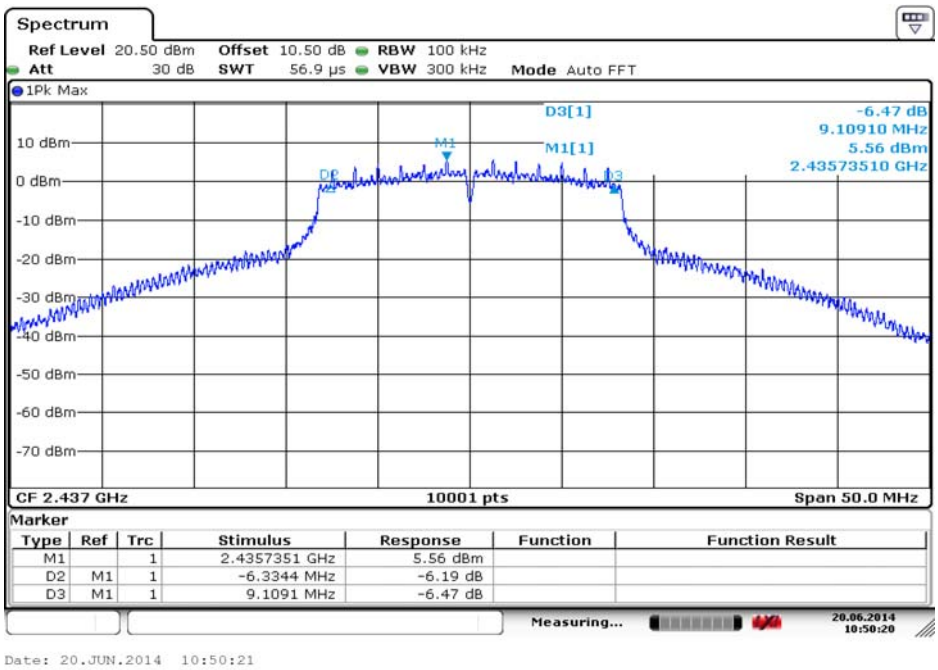

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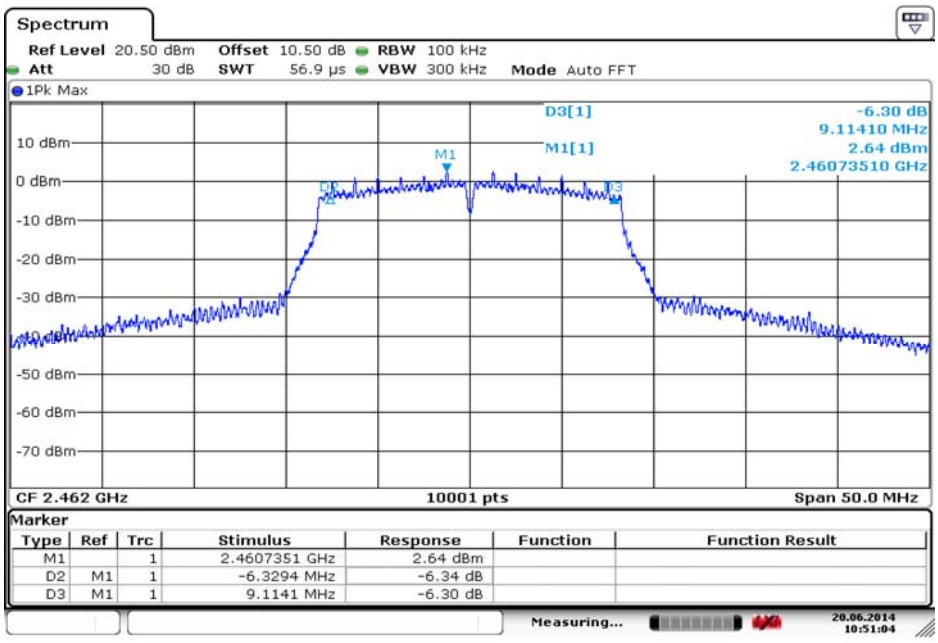
Carrier frequency (MHz): 2437
Channel No.:6
Test Mode: 802.11g



Date: 20.JUN.2014 10:51:05

Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11g

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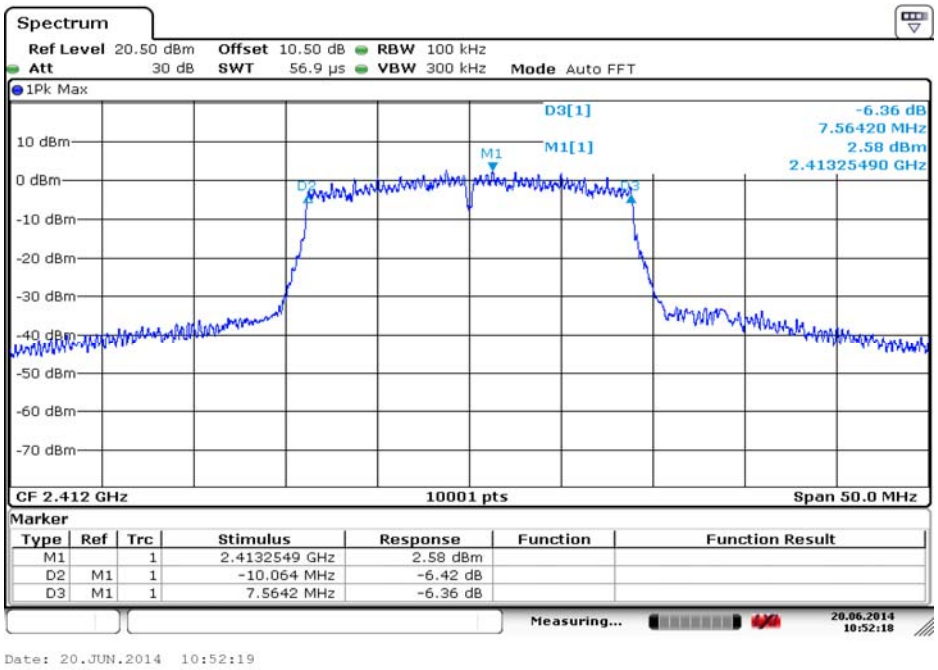
Test Mode: 802.11n(HT20)

Carrier frequency (MHz)	Channel No.	6 dB bandwidth(MHz)
2412	1	17.63
2437	6	17.62
2462	11	17.68



Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11n(HT20)

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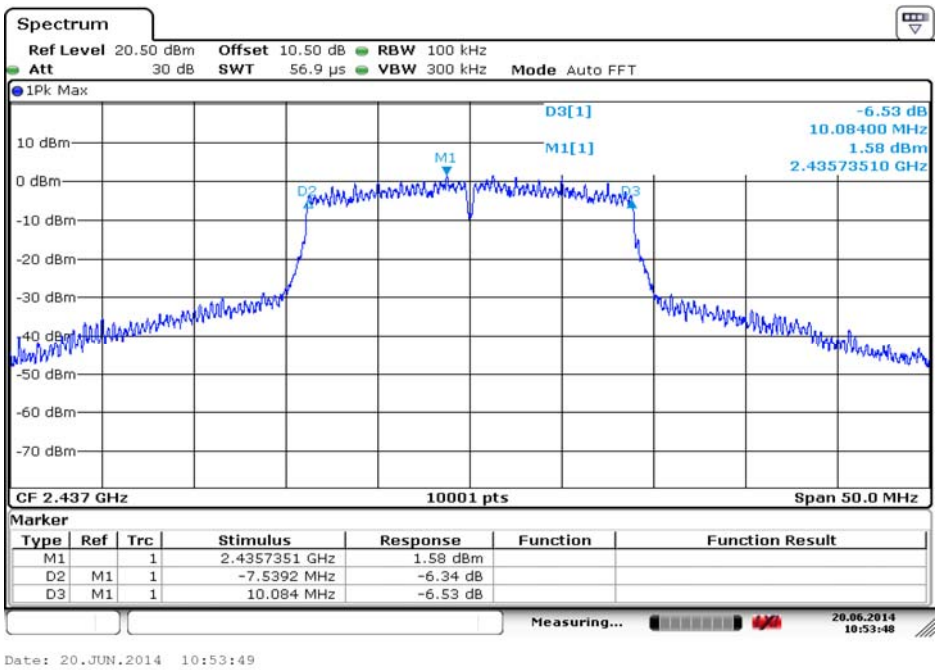
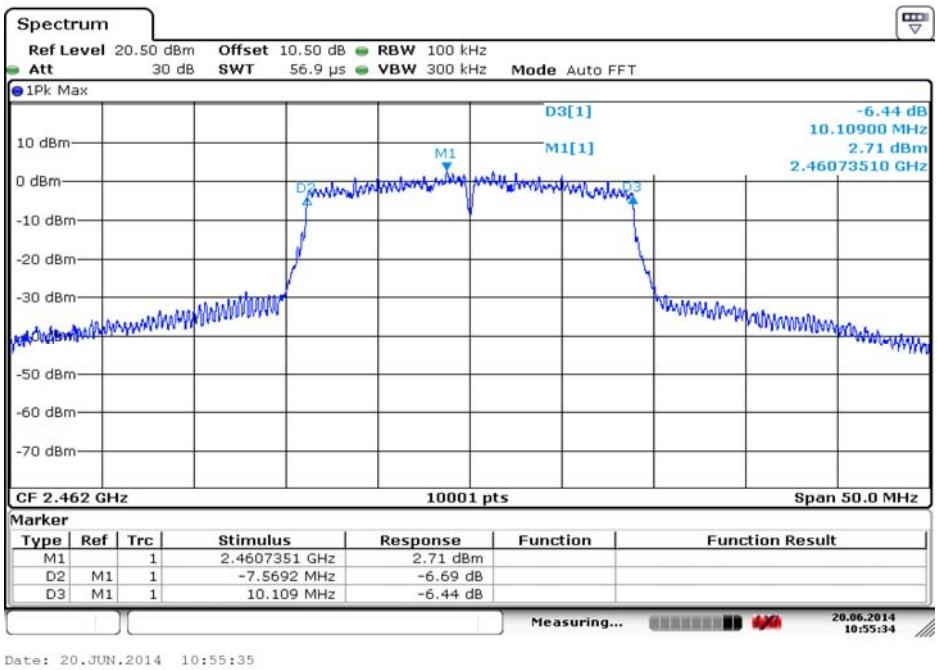


Carrier frequency (MHz): 2437
Channel No.:6
Test Mode: 802.11n(HT20)



Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11n(HT20)

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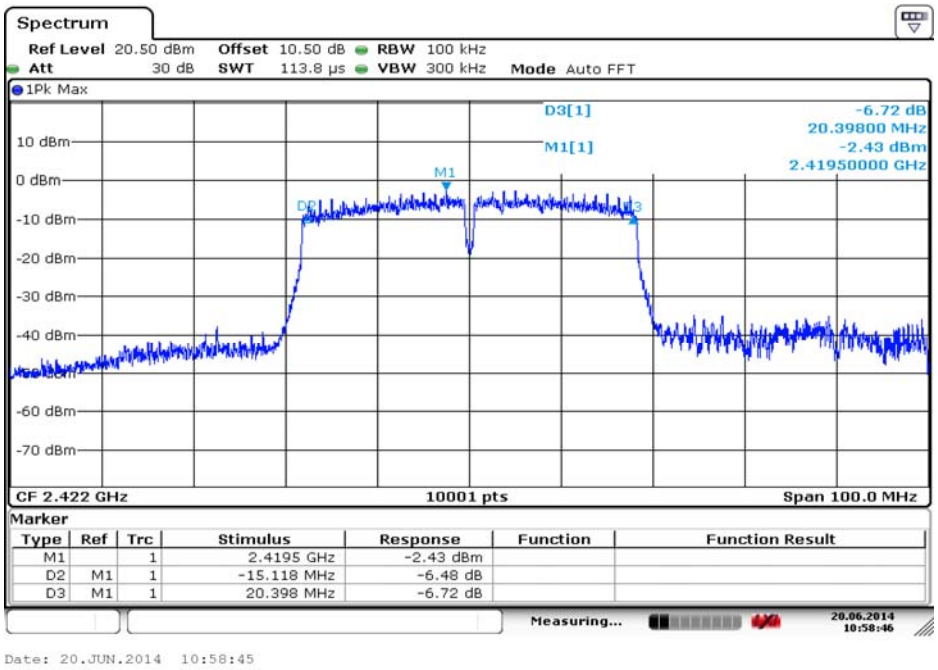
Test Mode: 802.11n(HT40)

Carrier frequency (MHz)	Channel No.	6 dB bandwidth(MHz)
2422	3	35.52
2437	6	36.45
2462	11	35.43



Carrier frequency (MHz): 2422
Channel No.:3
Test Mode: 802.11n(HT40)

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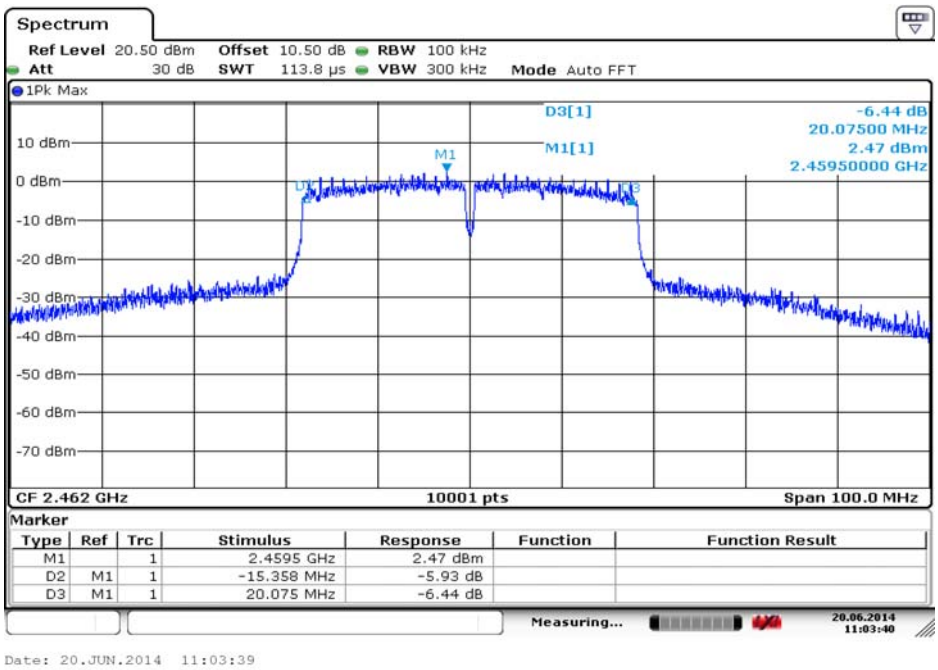
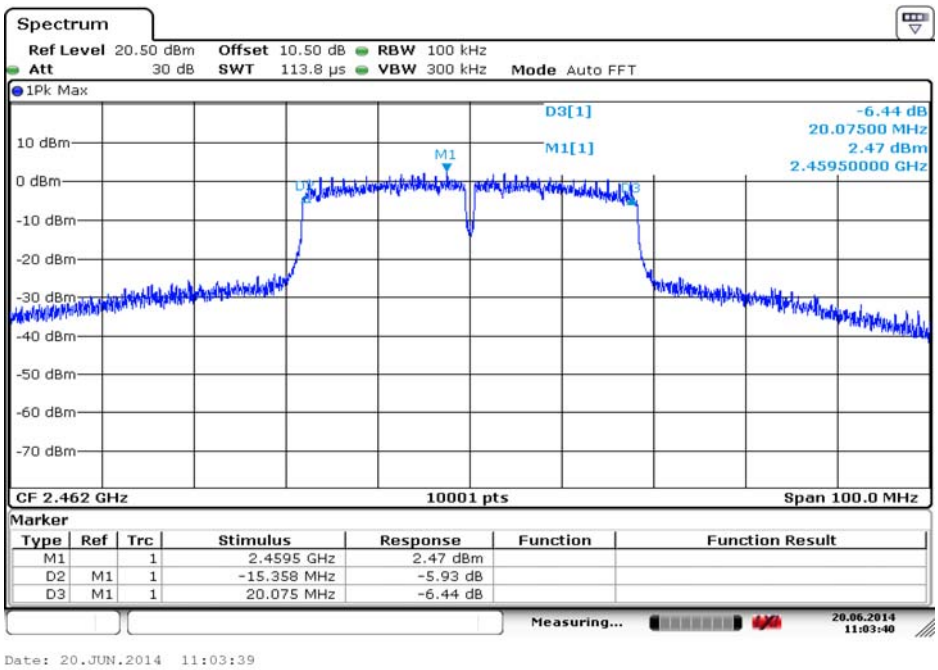


Carrier frequency (MHz): 2437
Channel No.:6
Test Mode: 802.11n(HT40)



Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11n(HT40)

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2.2.3 Transmitter Power Spectral Density

2.2.3.1 Ambient condition

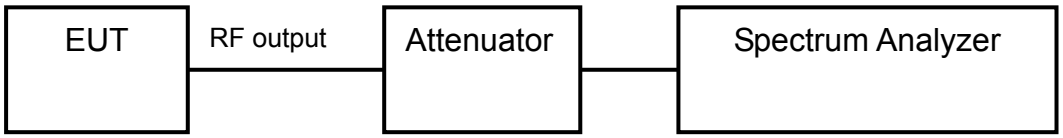
Temperature	Relative humidity	Pressure
22°C	40%	101.1kPa

2.2.3.2 Test Description

The measurement is made according to KDB 558074 D01 DTS Meas Guidance v03r01 Section 10.2.

The EUT was connected to the spectrum analyzer and WiFi set via a attenuator with a known loss.

a) Set analyzer center frequency to DTS channel center frequency.
b) Set the span to 1.5 times the DTS bandwidth.
c) Set the RBW to: 3 kHz ≤ RBW ≤ 100 kHz.
d) Set the VBW ≥ 3 x RBW.
e) Detector = peak.
f) Sweep time = auto couple.
g) Trace mode = max hold.
h) Allow trace to fully stabilize.
i) Use the peak marker function to determine the maximum amplitude level within the RBW.
j) If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.



2.2.3.3 Test limit

FCC Par15.247(e)

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

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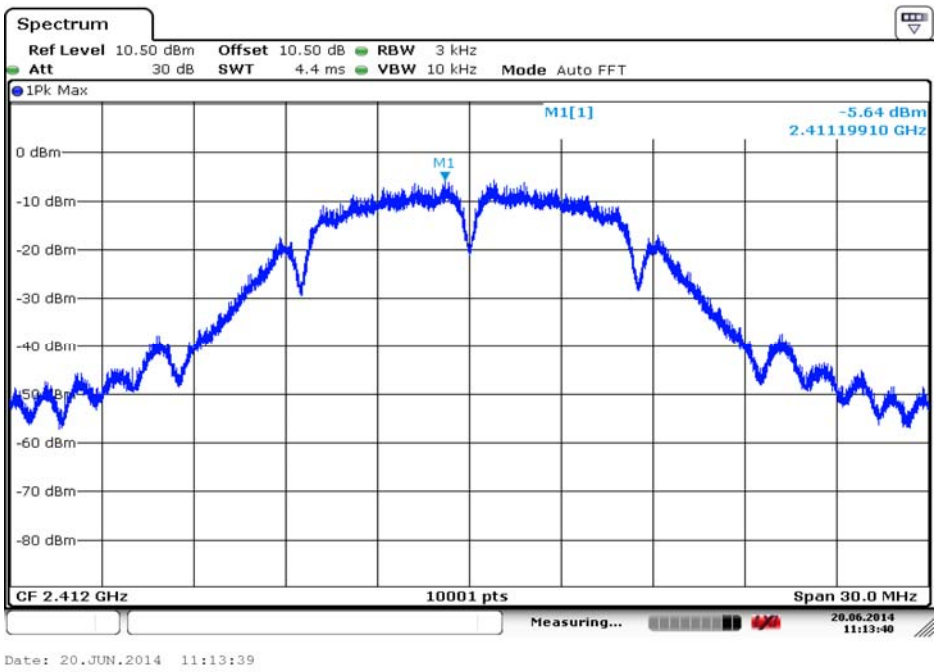
2.2.3.4 Test result

Test Mode: 802.11b

Carrier frequency (MHz)	Channel No	Power Density
2412	1	-5.64
2437	6	-7.26
2462	11	-7.05



Carrier frequency (MHz): 2412
Channel No.1
Test Mode: 802.11b

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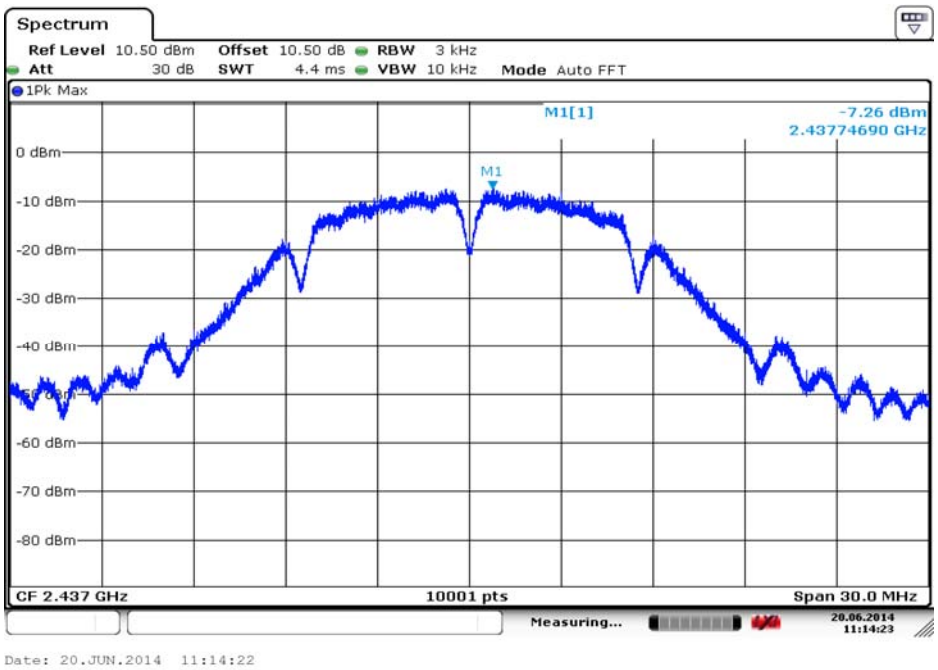
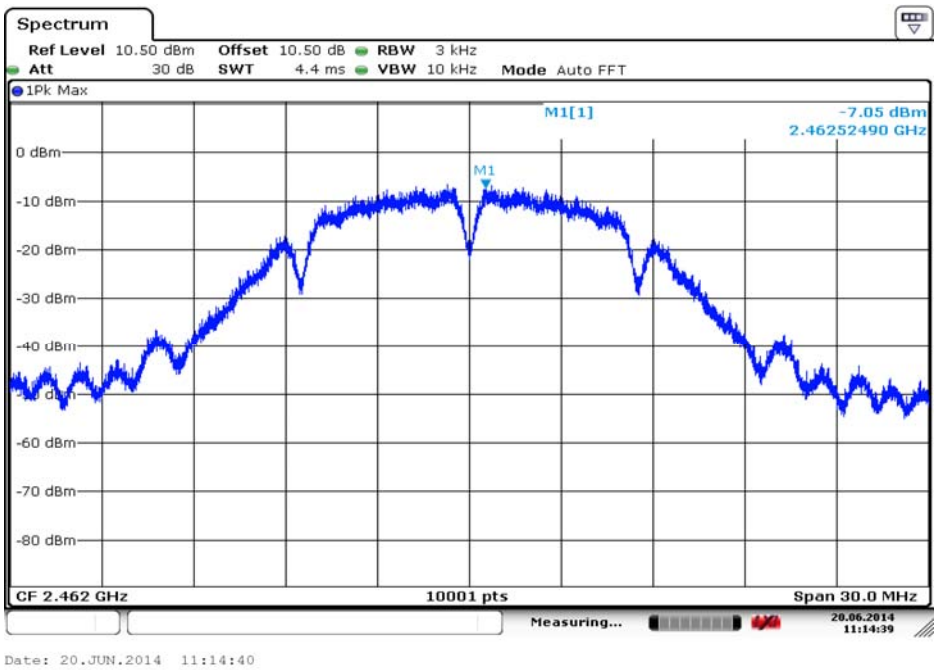


Carrier frequency (MHz): 2437
Channel No.6
Test Mode: 802.11b



Carrier frequency (MHz): 2462
Channel No.11
Test Mode: 802.11b

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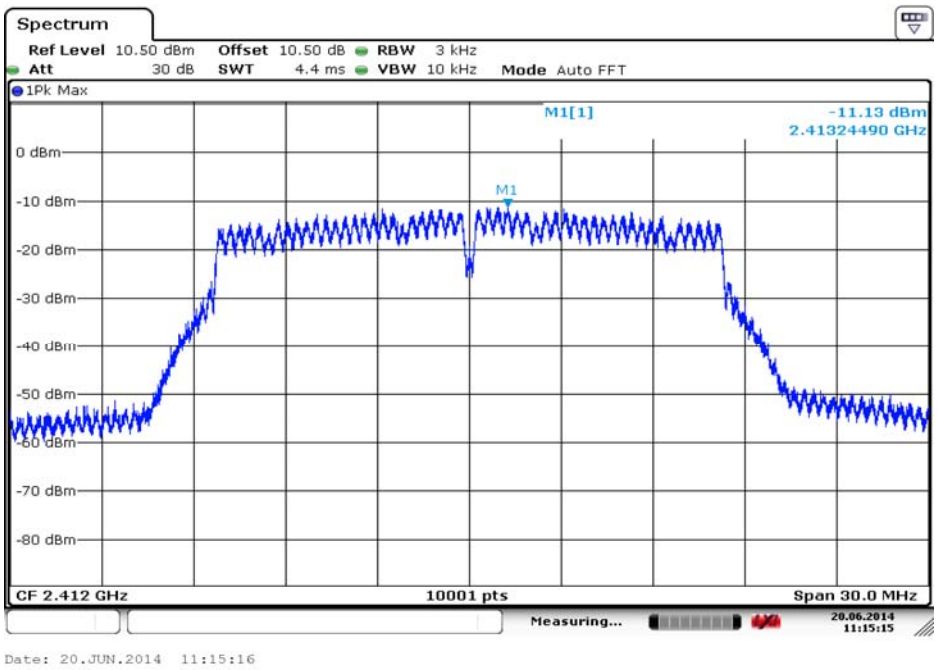
Test Mode: 802.11g

Carrier frequency (MHz)	Channel No	Power Density
2412	1	-11.13
2442	6	-8.32
2472	11	-10.78



Carrier frequency (MHz): 2412
Channel No.1
Test Mode: 802.11g

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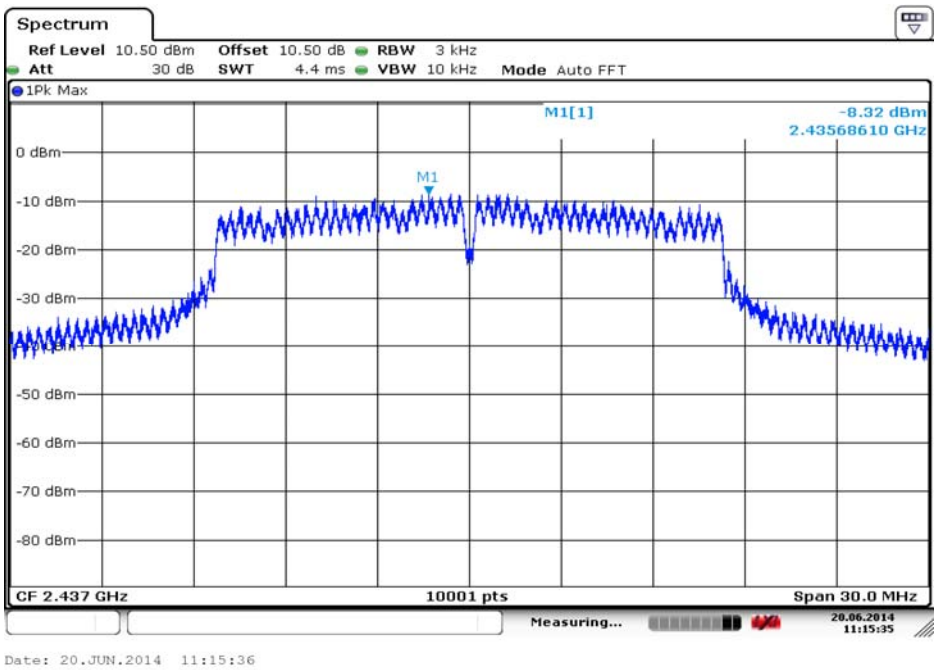
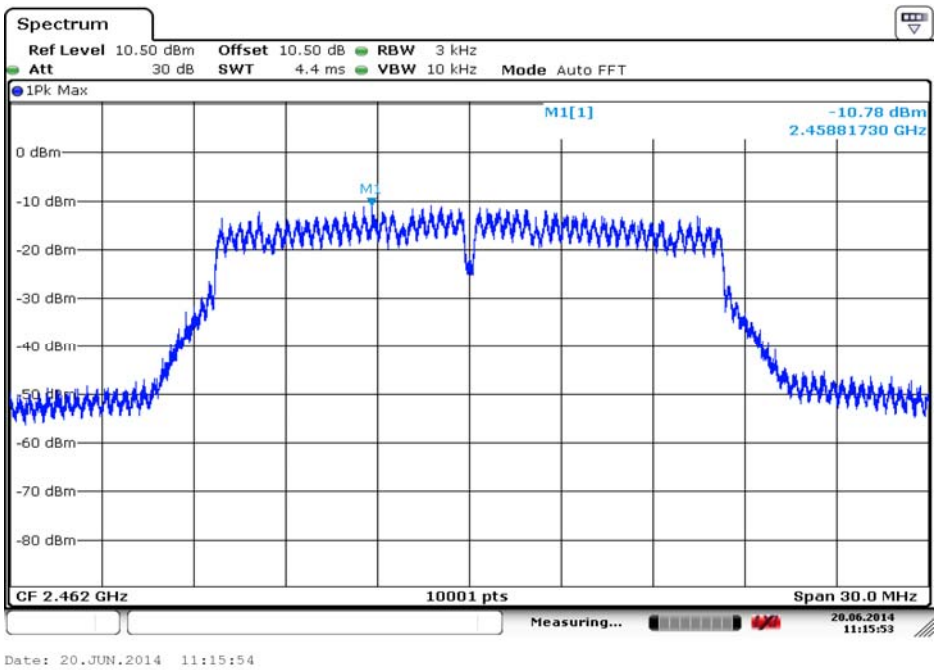


Carrier frequency (MHz): 2437
Channel No.6
Test Mode: 802.11g



Carrier frequency (MHz): 2462
Channel No.11
Test Mode: 802.11g

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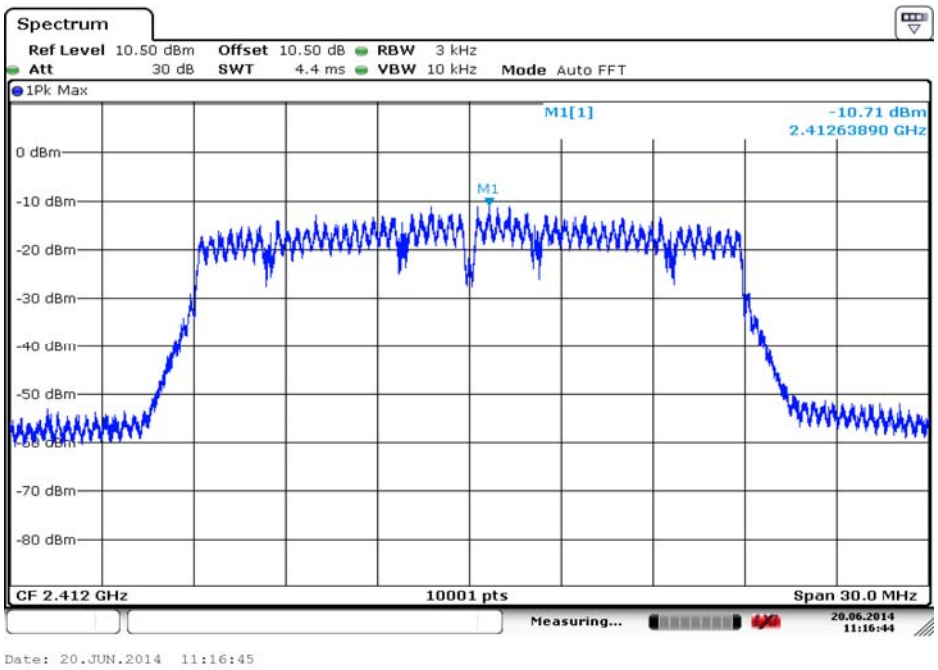
Test Mode: 802.11n(HT20)

Carrier frequency (MHz)	Channel No	Power Density
2412	1	-10.71
2437	6	-12.33
2462	11	-10.53



Carrier frequency (MHz): 2412
Channel No.1
Test Mode: 802.11n(HT20)

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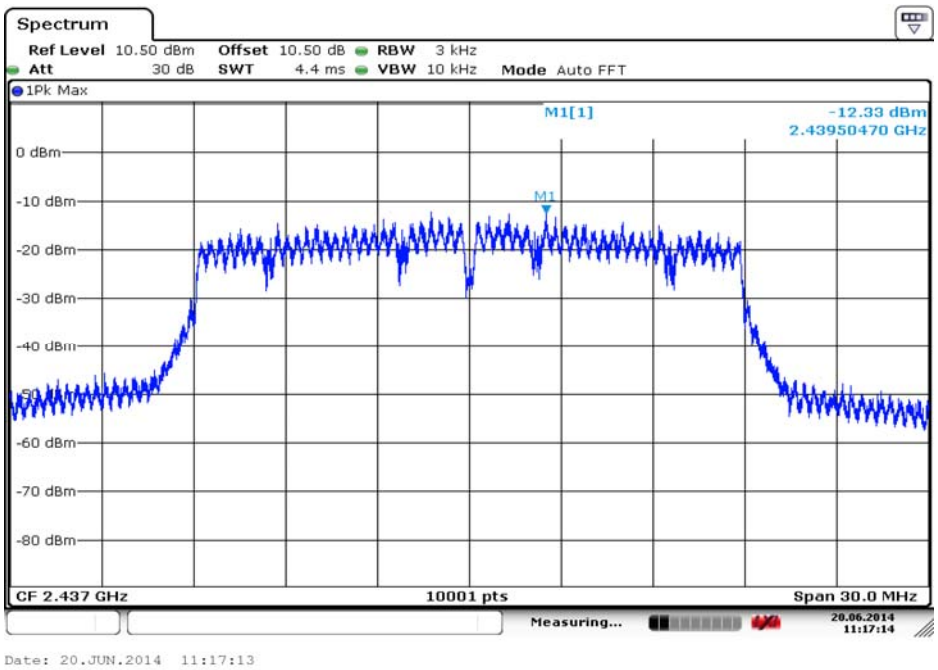
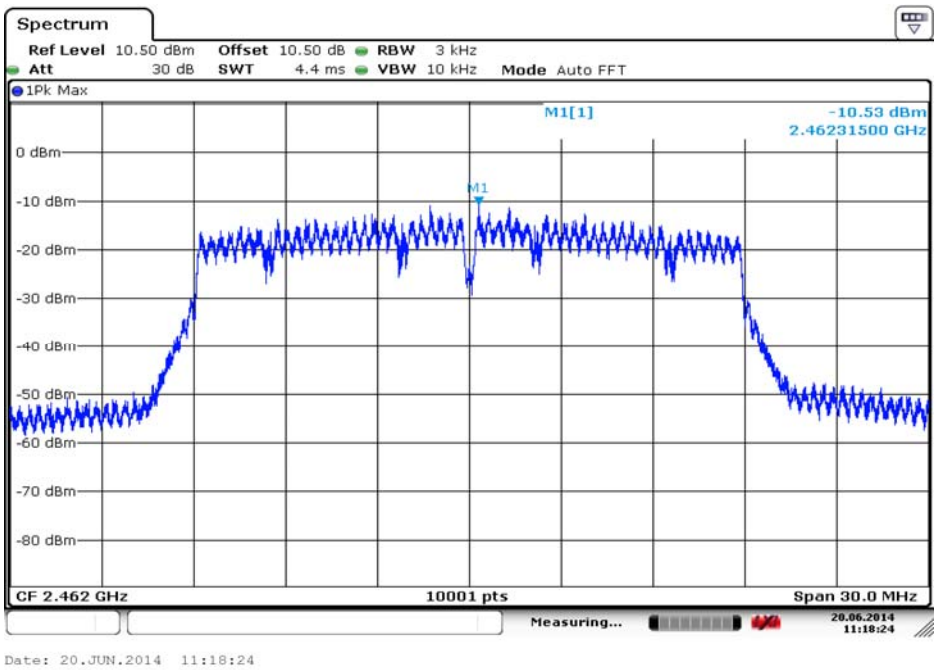


Carrier frequency (MHz): 2437
Channel No.6
Test Mode: 802.11n(HT20)



Carrier frequency (MHz): 2462
Channel No.11
Test Mode: 802.11n(HT20)

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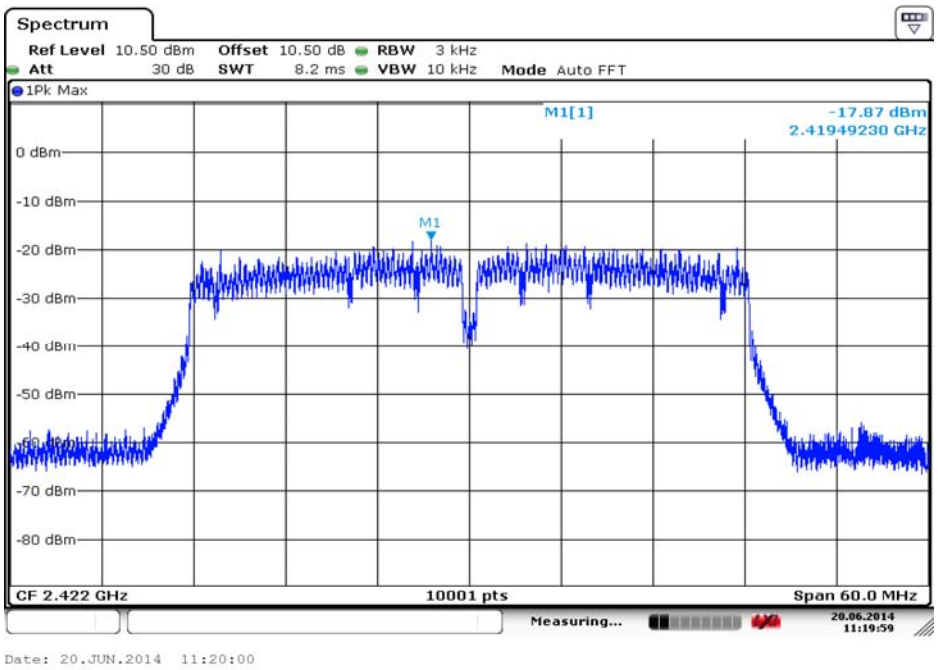
Test Mode: 802.11n(HT40)

Carrier frequency (MHz)	Channel No	Power Density
2422	3	-17.87
2437	6	-17.06
2462	11	-12.46



Carrier frequency (MHz): 2422
Channel No.3
Test Mode: 802.11n(HT40)

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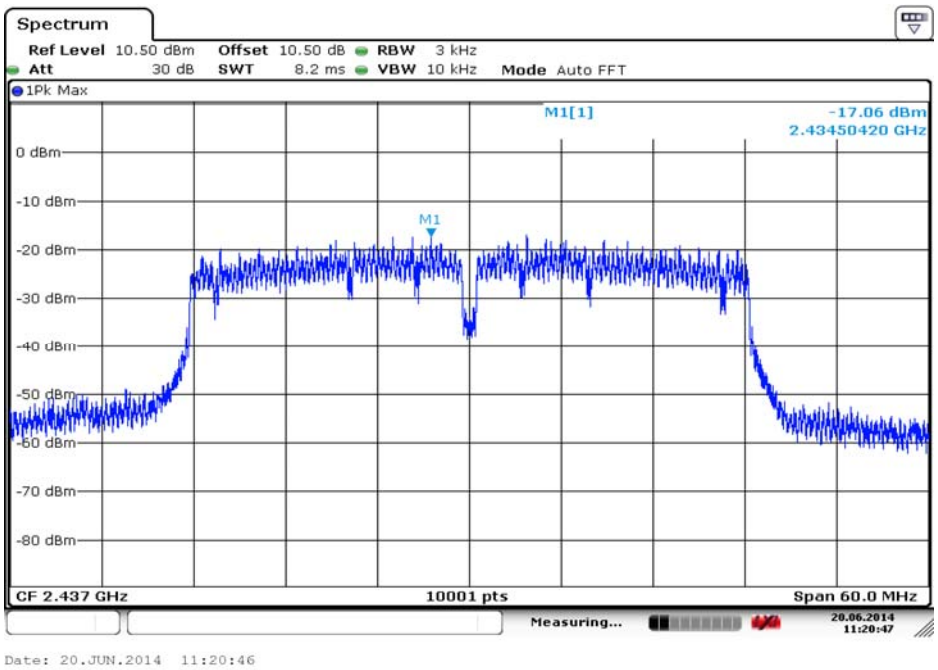
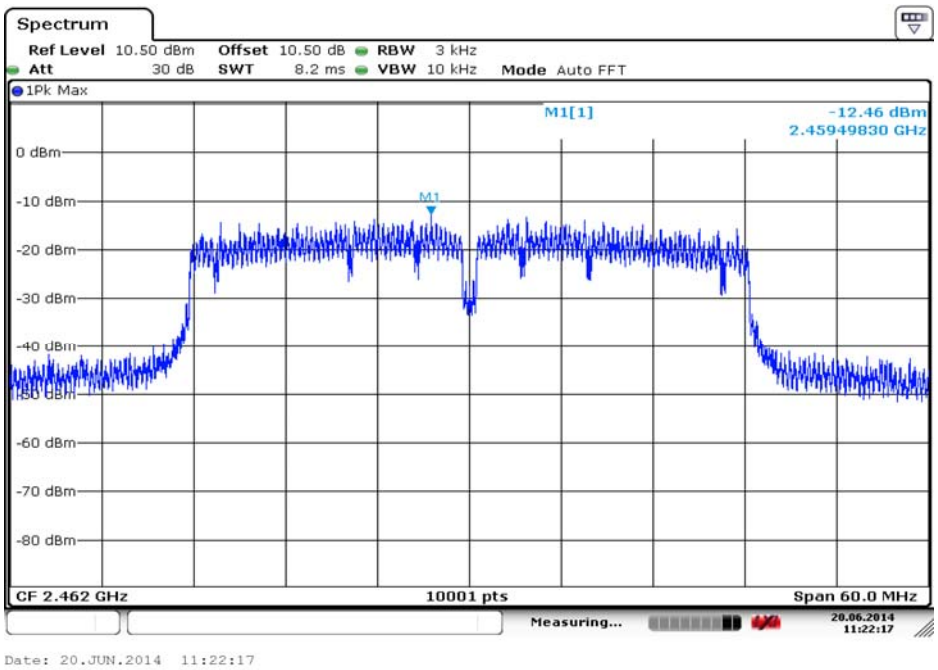


Carrier frequency (MHz): 2437
Channel No.6
Test Mode: 802.11n(HT40)



Carrier frequency (MHz): 2462
Channel No.11
Test Mode: 802.11n(HT40)

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2.2.4 Spurious RF Conducted Emissions

2.2.4.1 Ambient condition

Temperature	Relative humidity	Pressure
22°C	40%	101.1kPa

2.2.4.2 Test Description

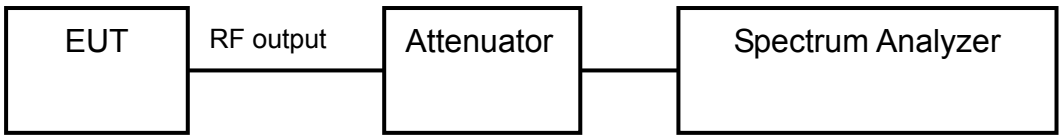
The measurement is made according to KDB 558074 D01 DTS Meas Guidance v03r01 Section 11.3.

The Equipment Under Test (EUT) was set up in a shielded room to perform the spurious emissions measurements.

The EUT was connected to the spectrum analyzer and WiFi set via a attenuator with a known loss.

a) Set the center frequency and span to encompass frequency range to be measured.
b) Set the RBW = 1 MHz.
c) Set the VBW ≥ 3 x RBW.
d) Detector = peak.
e) Ensure that the number of measurement points ≥ span/RBW
f) Sweep time = auto couple.
g) Trace mode = max hold.
h) Allow trace to fully stabilize.
i) Use the peak marker function to determine the maximum amplitude level.

The reference value for the measurement of the spurious RF conducted emissions is determined during the test “band edge compliance” (cf. chapter 4.5). This value is used to calculate the 20 dBc limit.



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2.2.4.3 Test limit

FCC Part15.247(d)
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.

2.2.4.4 Test result

Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11b

Frequency MHz	Corrected measurement value dBm	Reference value dBm	Limit dBm	Delta dB
---	---	---	---	---
---	---	---	---	---

Carrier frequency (MHz): 2437
Channel No.:6
Test Mode: 802.11b

Frequency MHz	Corrected measurement value dBm	Reference value dBm	Limit dBm	Delta dB
---	---	---	---	---
---	---	---	---	---

Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11b

Frequency MHz	Corrected measurement value dBm	Reference value dBm	Limit dBm	Delta dB
---	---	---	---	---
---	---	---	---	---

Note: The Reference value see 2.2.6 Band edge compliance

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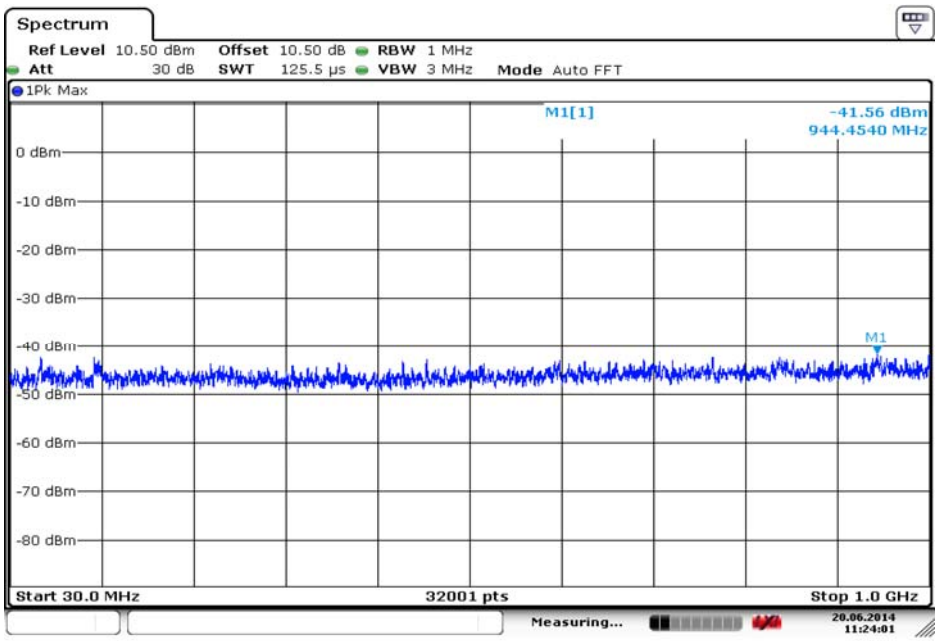
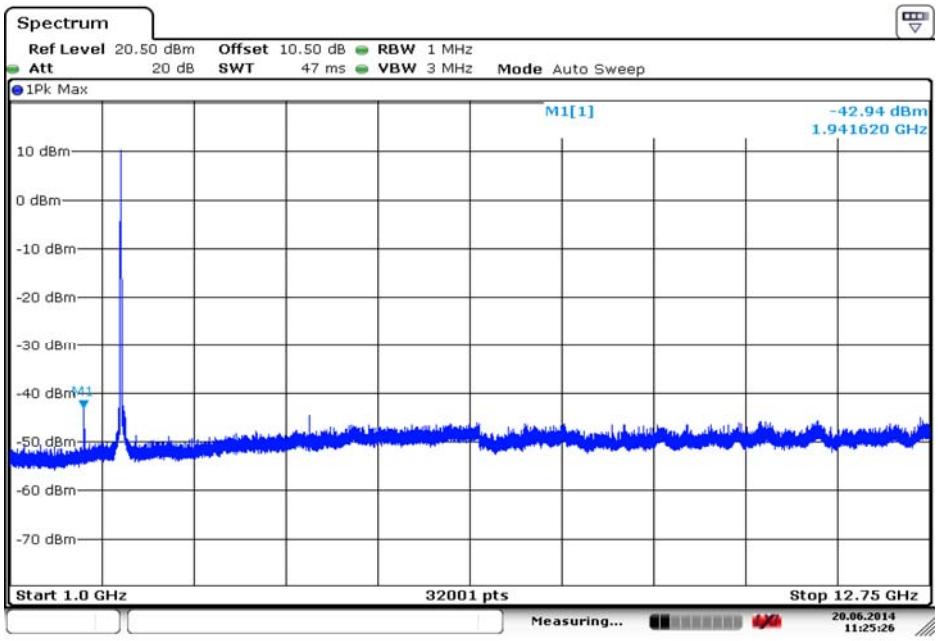


Date: 20.JUN.2014 11:24:00



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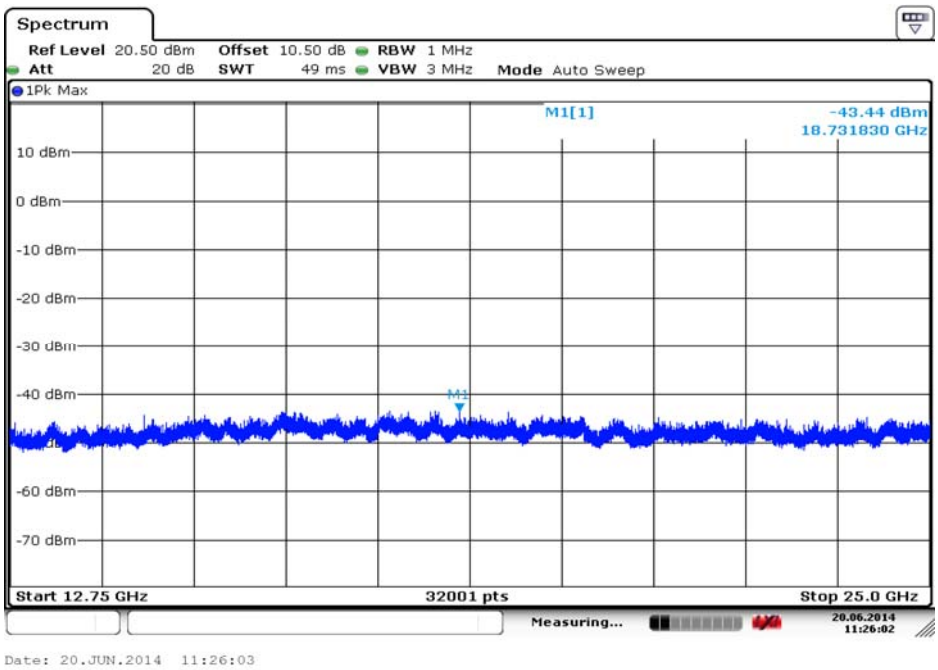
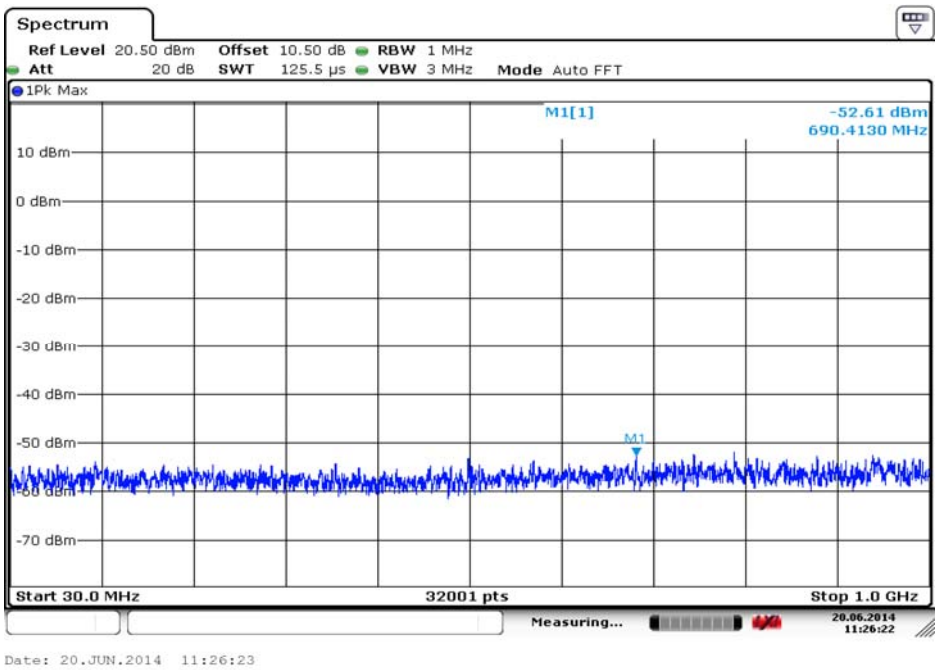


Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11b



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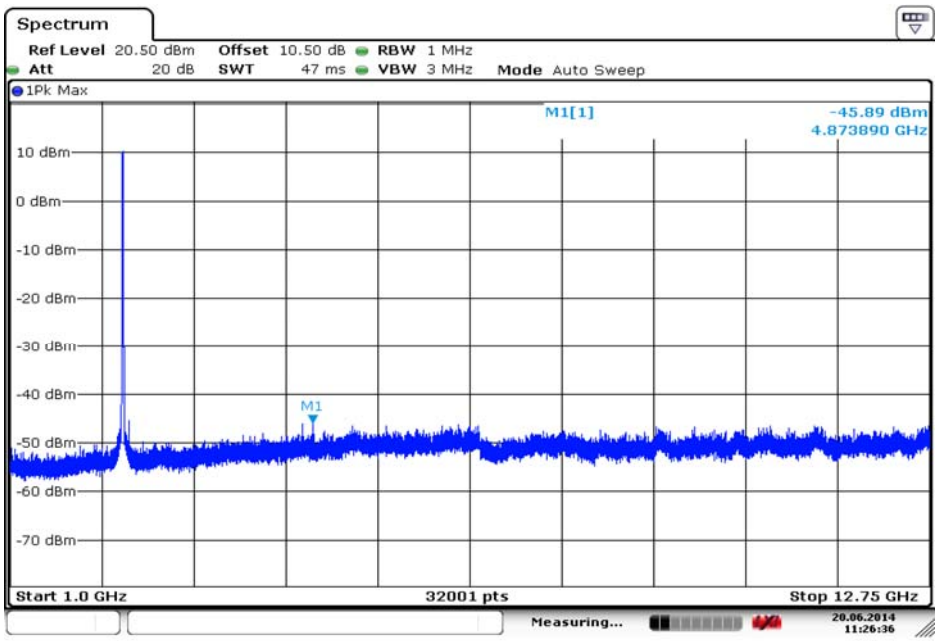

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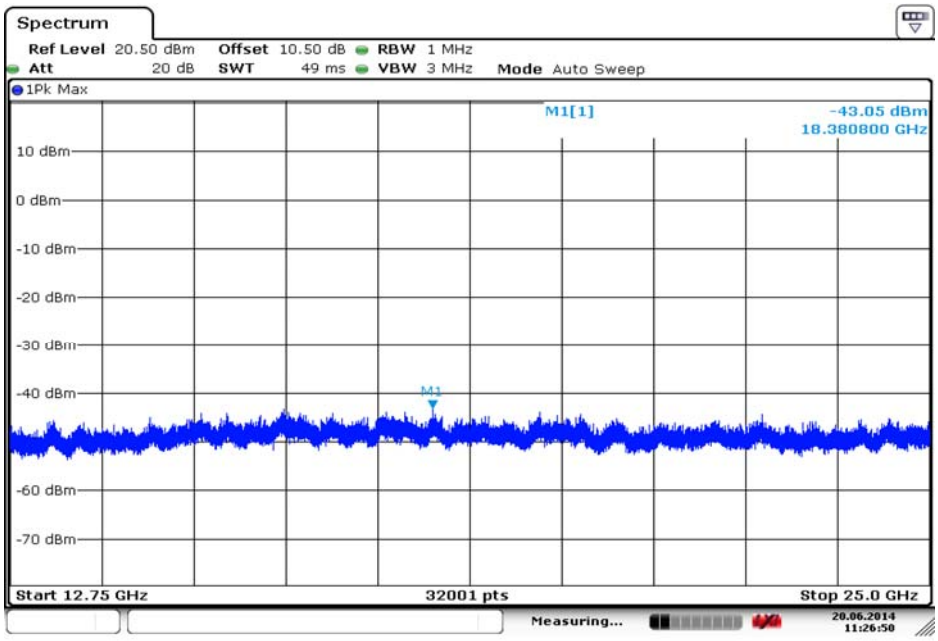

Date: 20.JUN.2014 11:26:51

Carrier frequency (MHz): 2437
Channel No.:6
Test Mode: 802.11b

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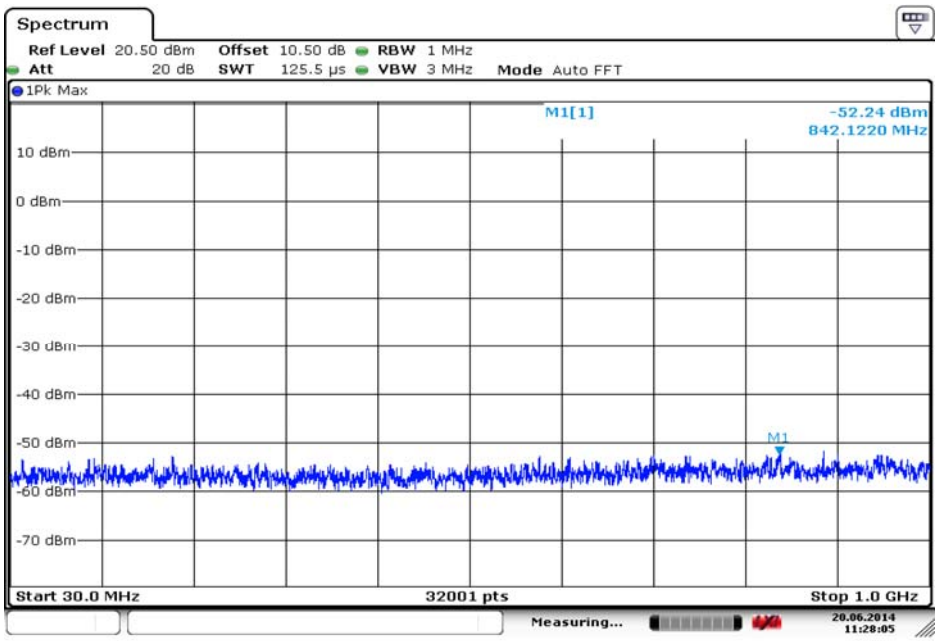

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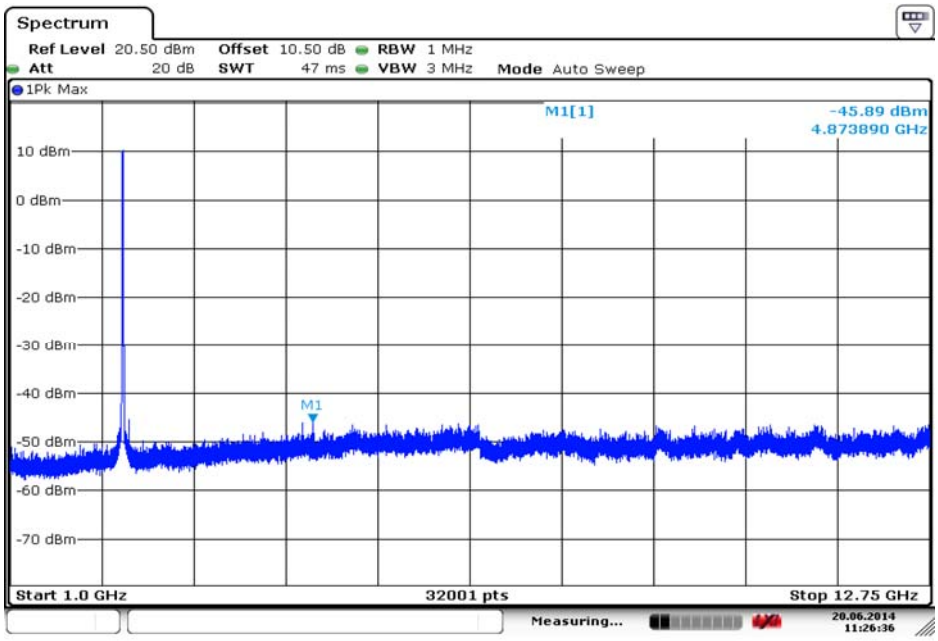

Date: 20.JUN.2014 11:26:37

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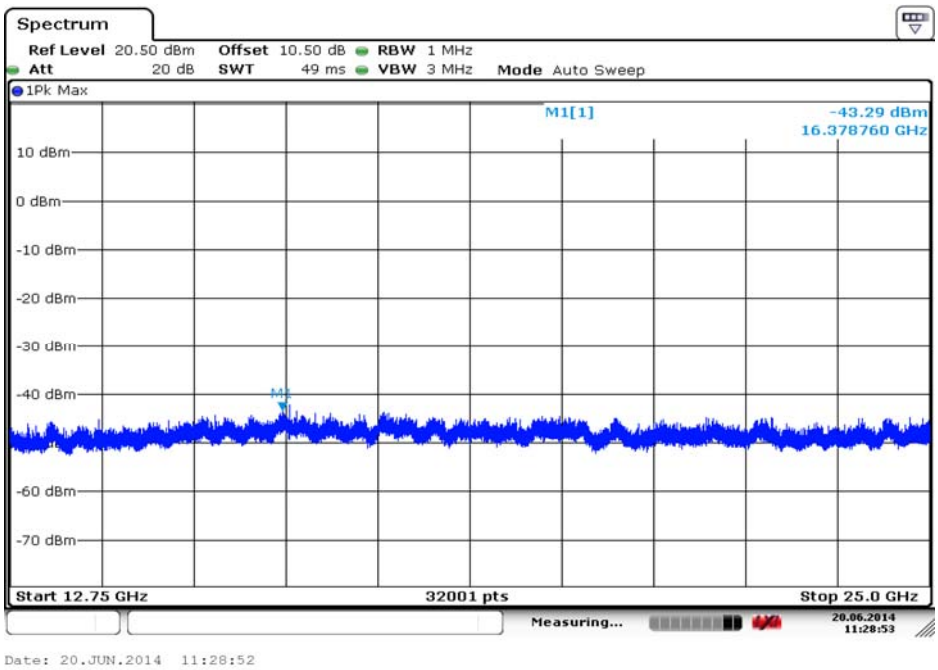

Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11b

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Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11g

Frequency MHz	Corrected measurement value dBm	Reference value dBm	Limit dBm	Delta dB
---	---	---	---	---
---	---	---	---	---

Carrier frequency (MHz): 2437
Channel No.:6
Test Mode: 802.11g

Frequency MHz	Corrected measurement value dBm	Reference value dBm	Limit dBm	Delta dB
---	---	---	---	---
---	---	---	---	---

Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11g

Frequency MHz	Corrected measurement value dBm	Reference value dBm	Limit dBm	Delta dB
---	---	---	---	---
---	---	---	---	---

Note: The Reference value see 2.2.6 Band edge compliance

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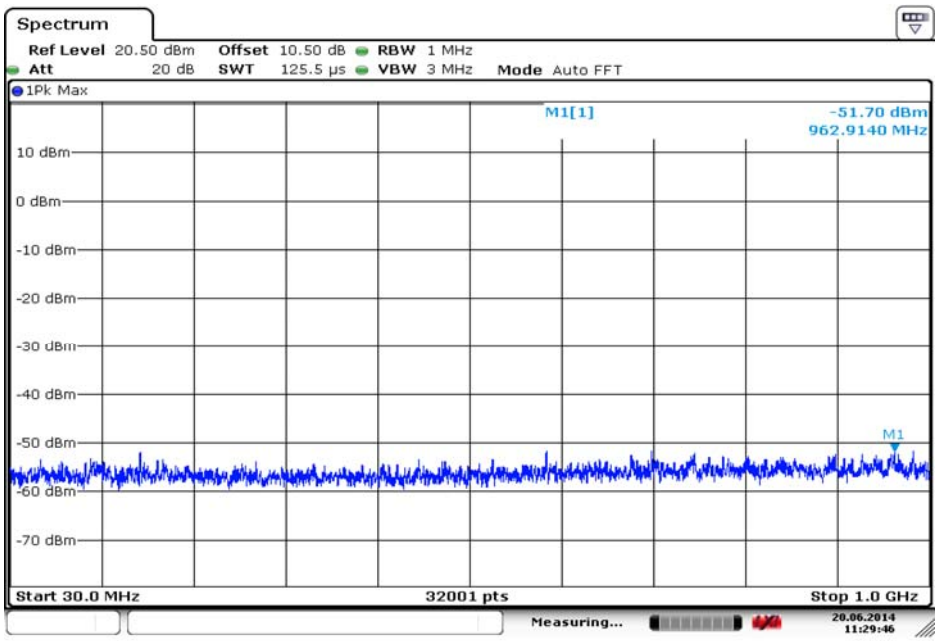

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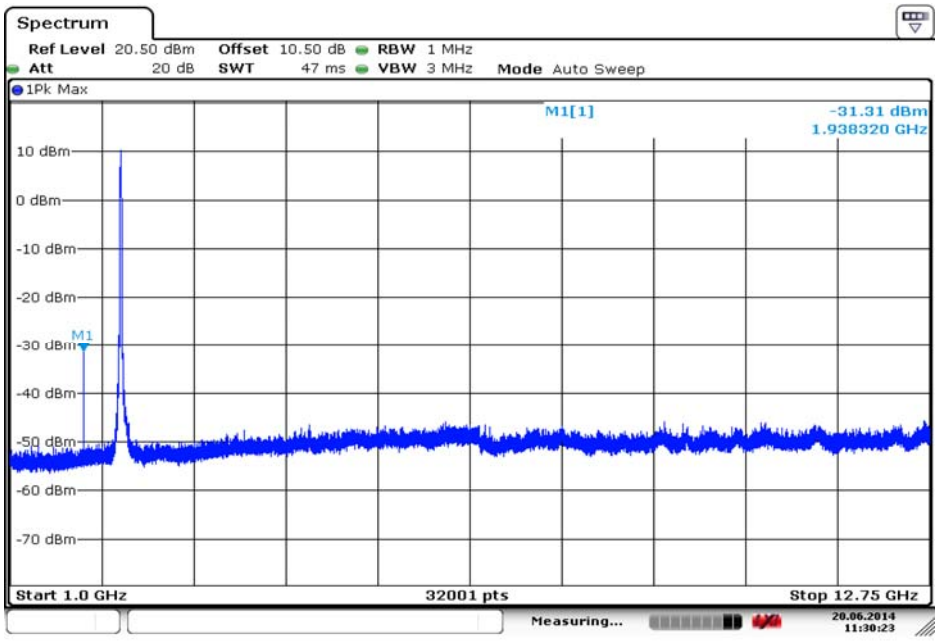

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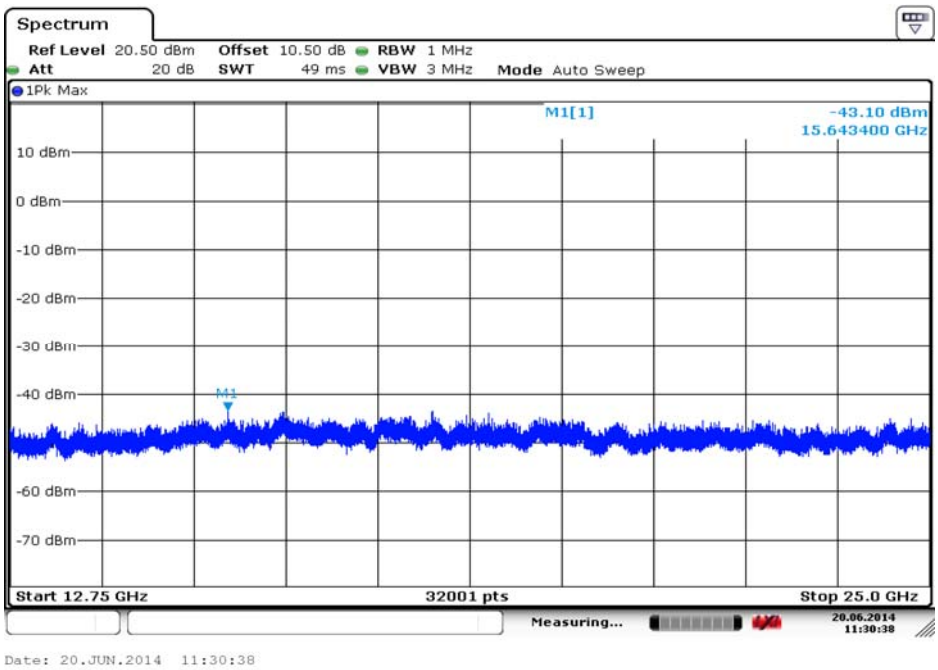
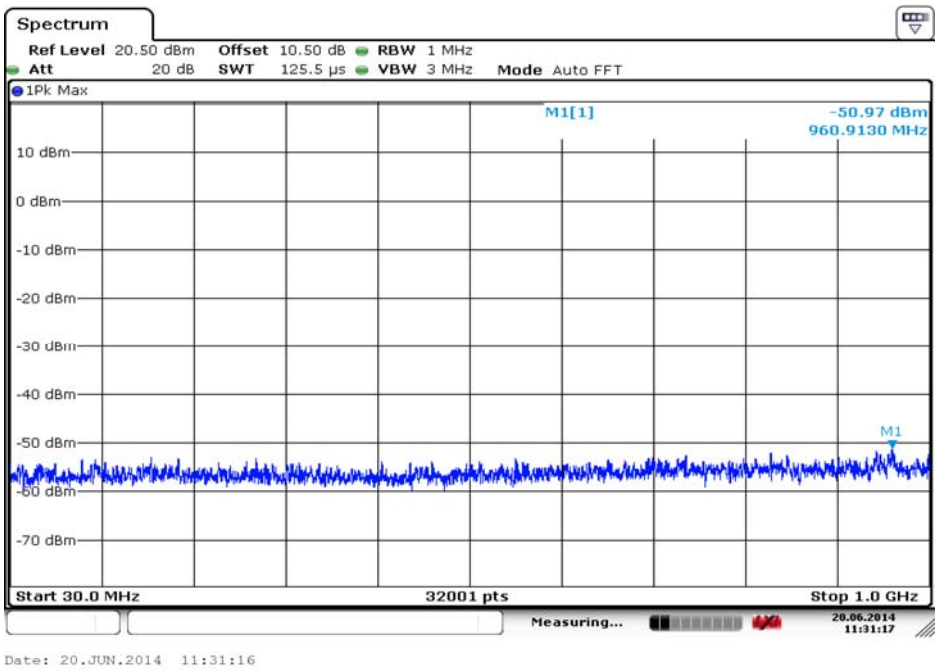


Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11g



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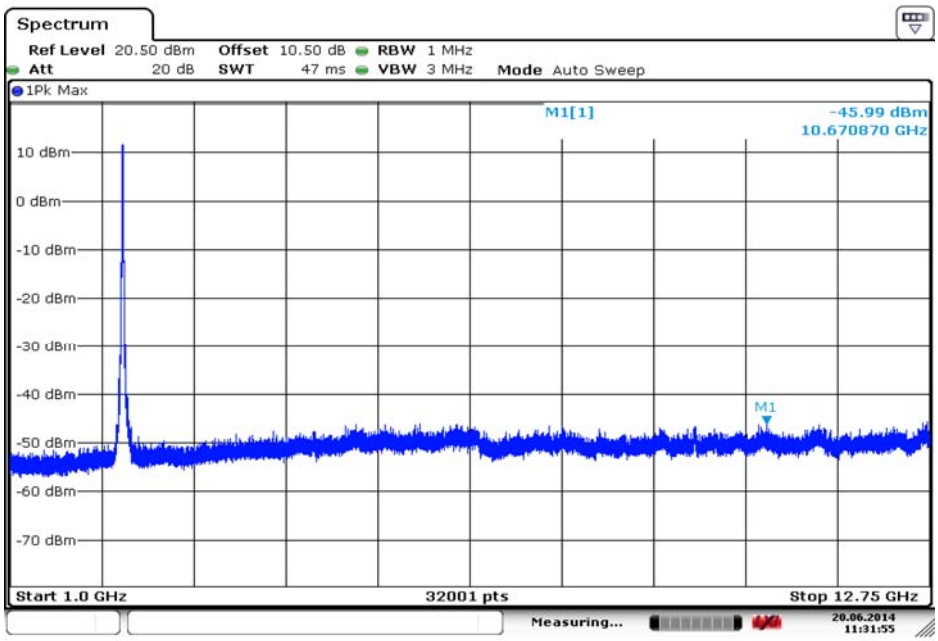

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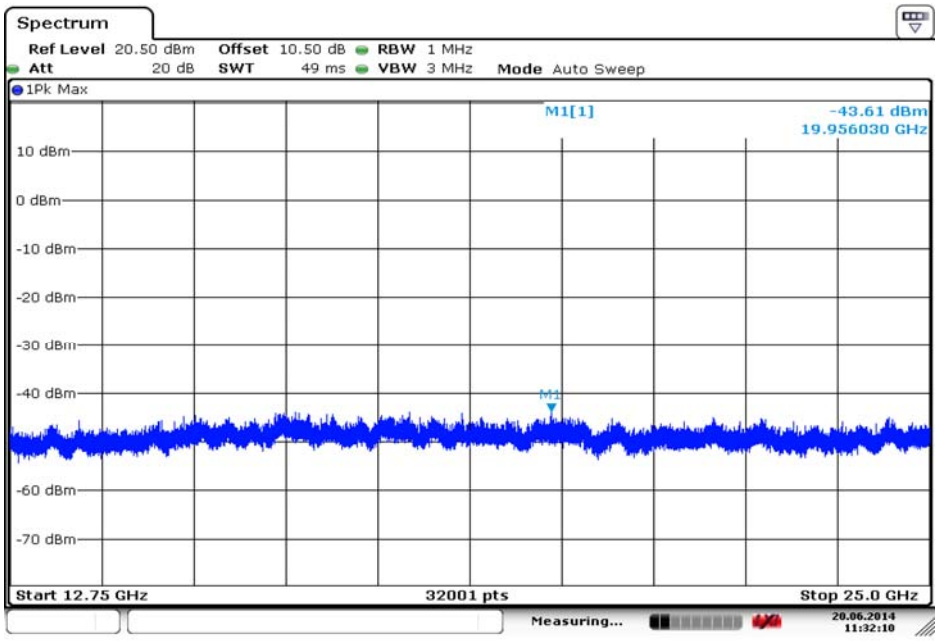

Date: 20.JUN.2014 11:32:11

Carrier frequency (MHz): 2437
Channel No.:6
Test Mode: 802.11g

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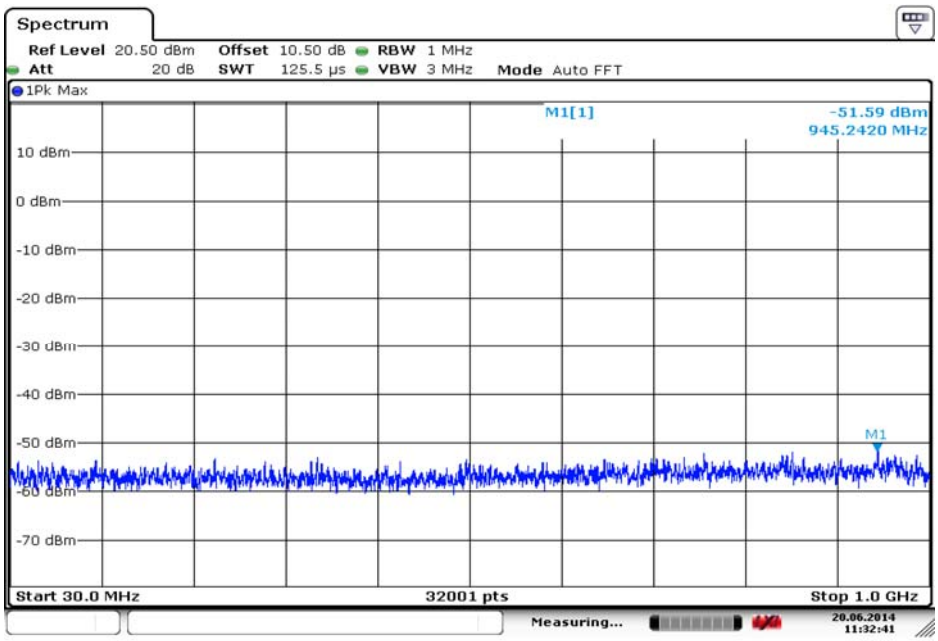

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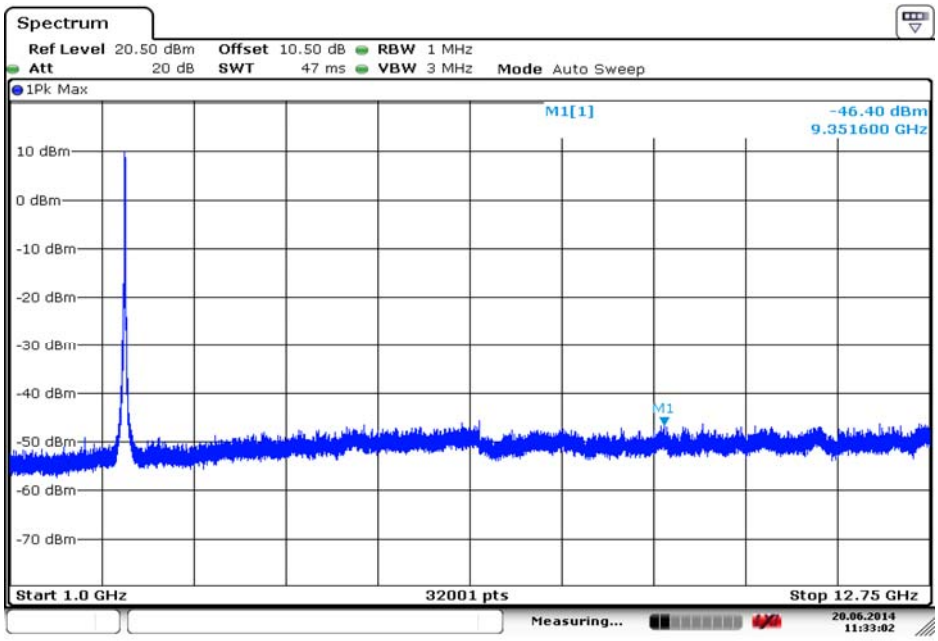

Date: 20.JUN.2014 11:33:02

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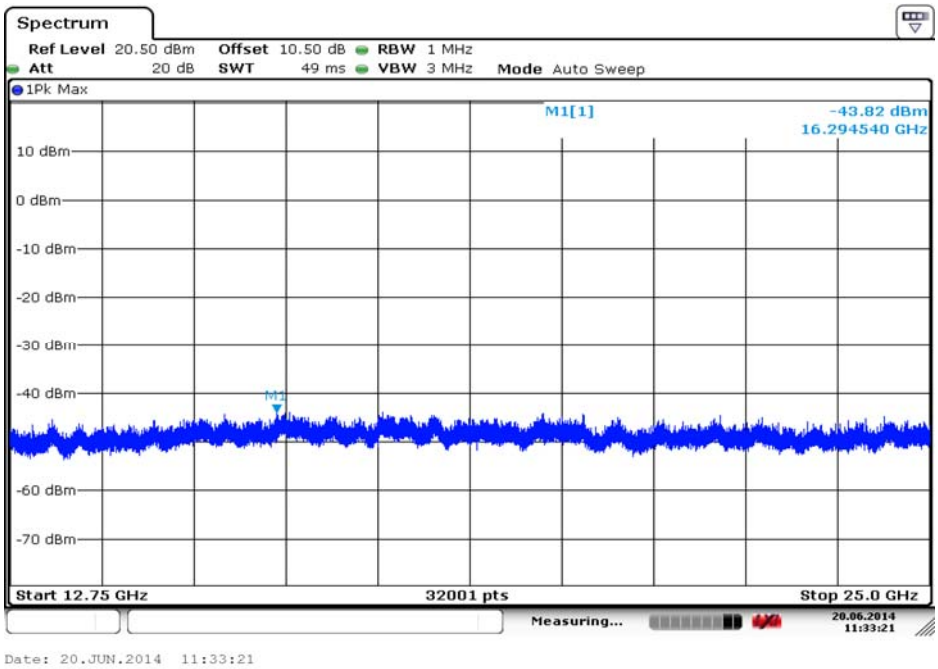

Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11g

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Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11n(HT20)

Frequency MHz	Corrected measurement value dBm	Reference value dBm	Limit dBm	Delta dB
---	---	---	---	---
---	---	---	---	---

Carrier frequency (MHz): 2437
Channel No.:6
Test Mode: 802.11n(HT20)

Frequency MHz	Corrected measurement value dBm	Reference value dBm	Limit dBm	Delta dB
---	---	---	---	---
---	---	---	---	---

Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11n(HT20)

Frequency MHz	Corrected measurement value dBm	Reference value dBm	Limit dBm	Delta dB
---	---	---	---	---
---	---	---	---	---

Note: The Reference value see 2.2.6 Band edge compliance

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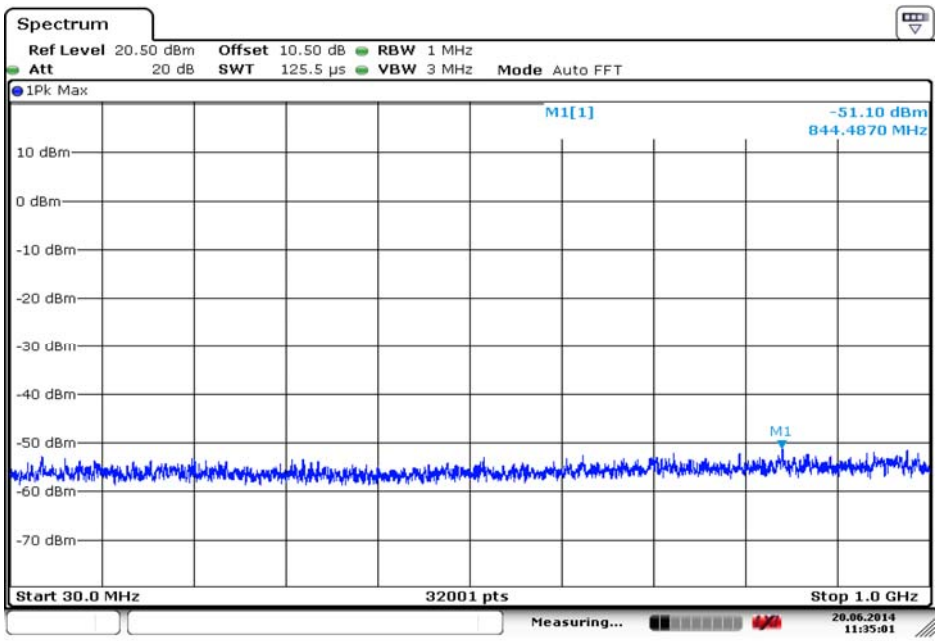

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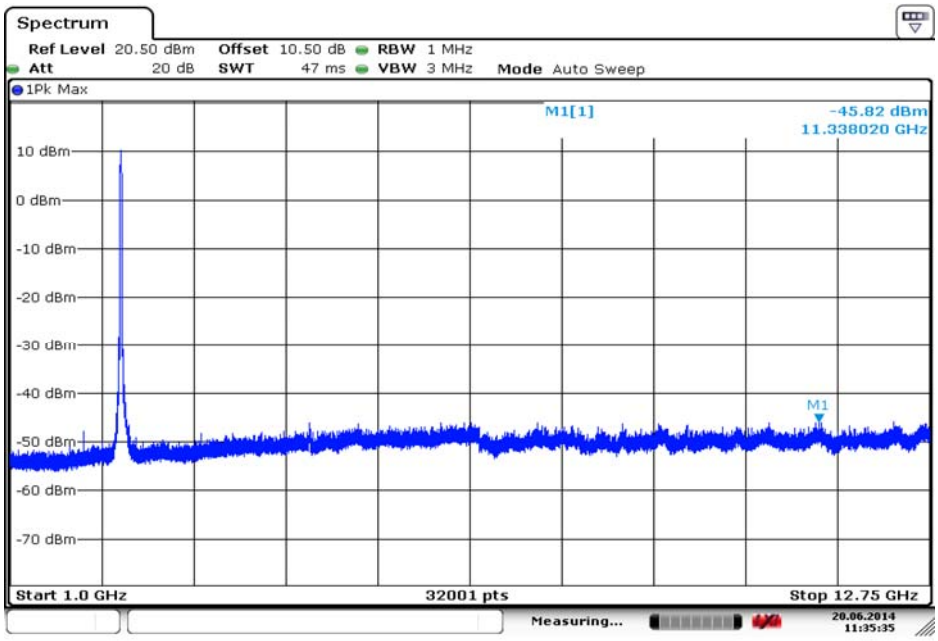

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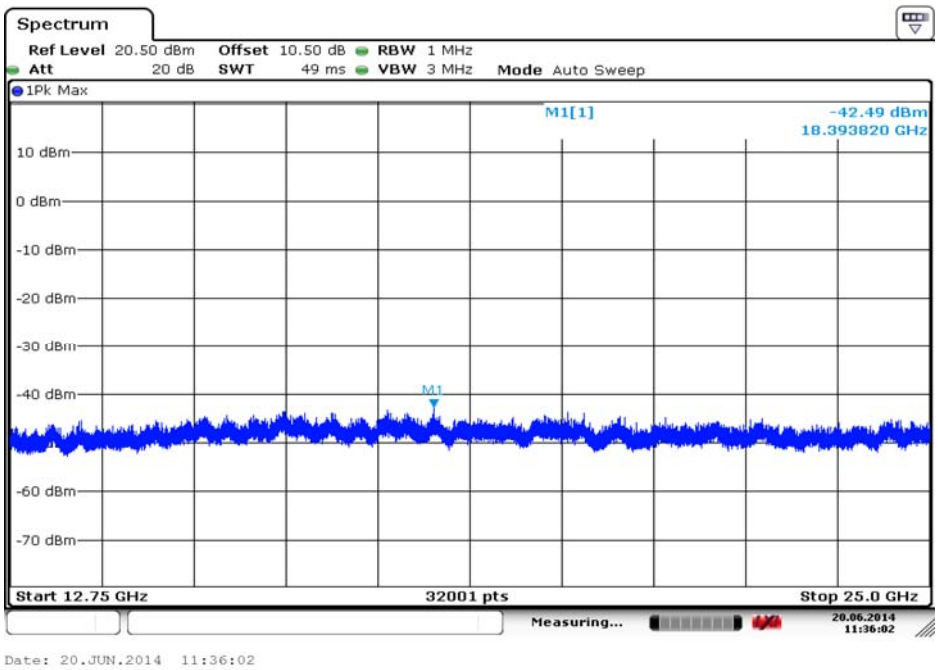
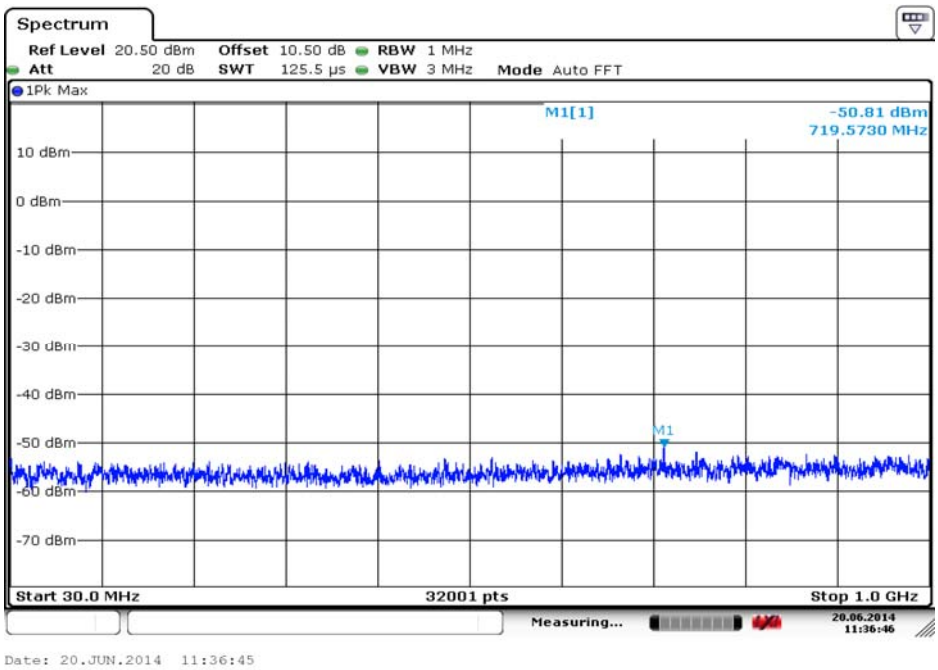


Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11n(HT20)



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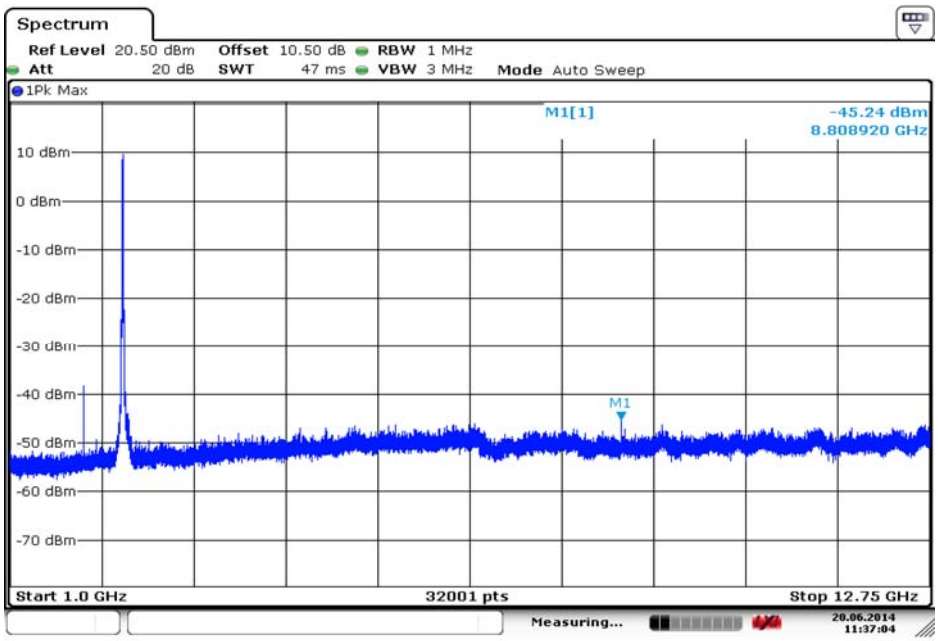

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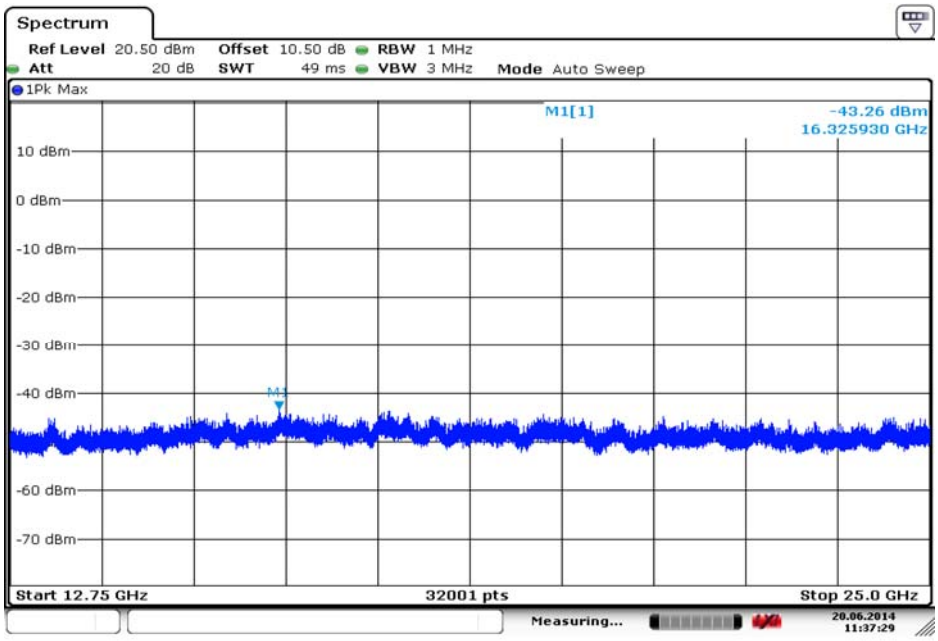

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Carrier frequency (MHz): 2437
Channel No.:6
Test Mode: 802.11n(HT20)

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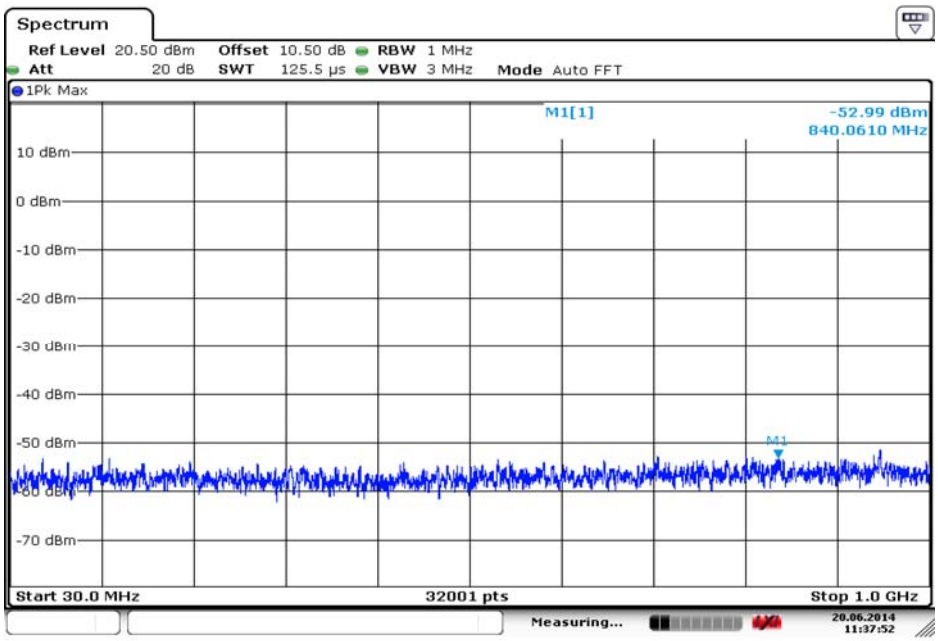

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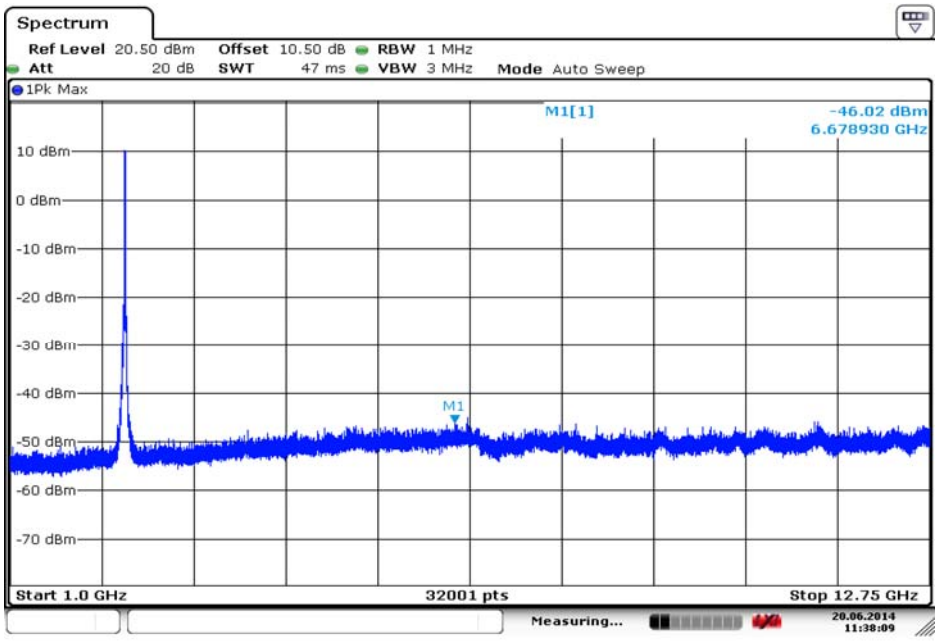

Date: 20.JUN.2014 11:38:09

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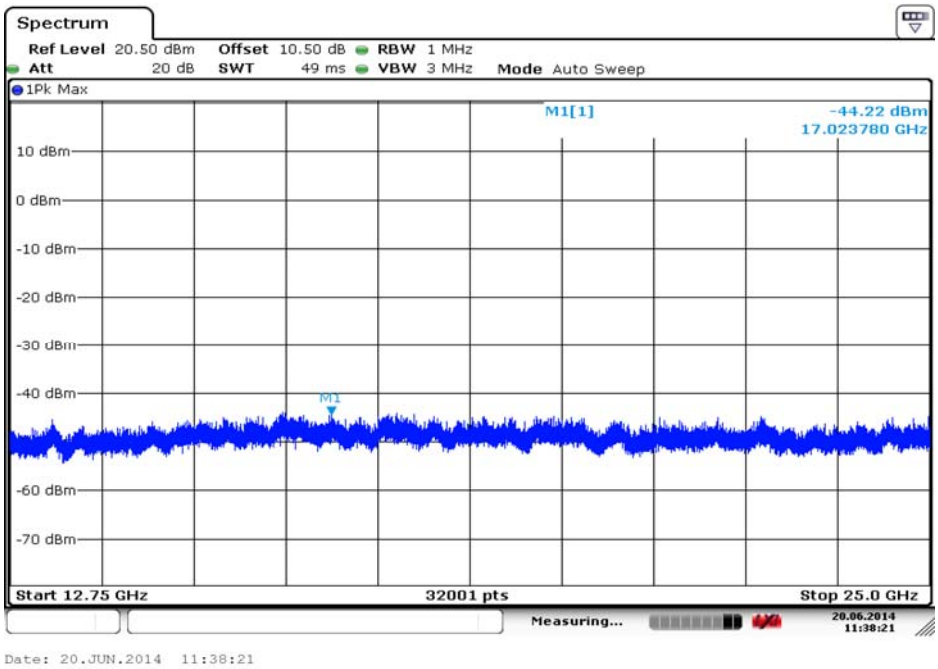

Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11n(HT20)

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Carrier frequency (MHz): 2422
Channel No.:3
Test Mode: 802.11n(HT40)

Frequency MHz	Corrected measurement value dBm	Reference value dBm	Limit dBm	Delta dB
---	---	---	---	---
---	---	---	---	---

Carrier frequency (MHz): 2437
Channel No.:6
Test Mode: 802.11n(HT40)

Frequency MHz	Corrected measurement value dBm	Reference value dBm	Limit dBm	Delta dB
---	---	---	---	---
---	---	---	---	---

Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11n(HT40)

Frequency MHz	Corrected measurement value dBm	Reference value dBm	Limit dBm	Delta dB
---	---	---	---	---
---	---	---	---	---

Note: The Reference value see 2.2.6 Band edge compliance

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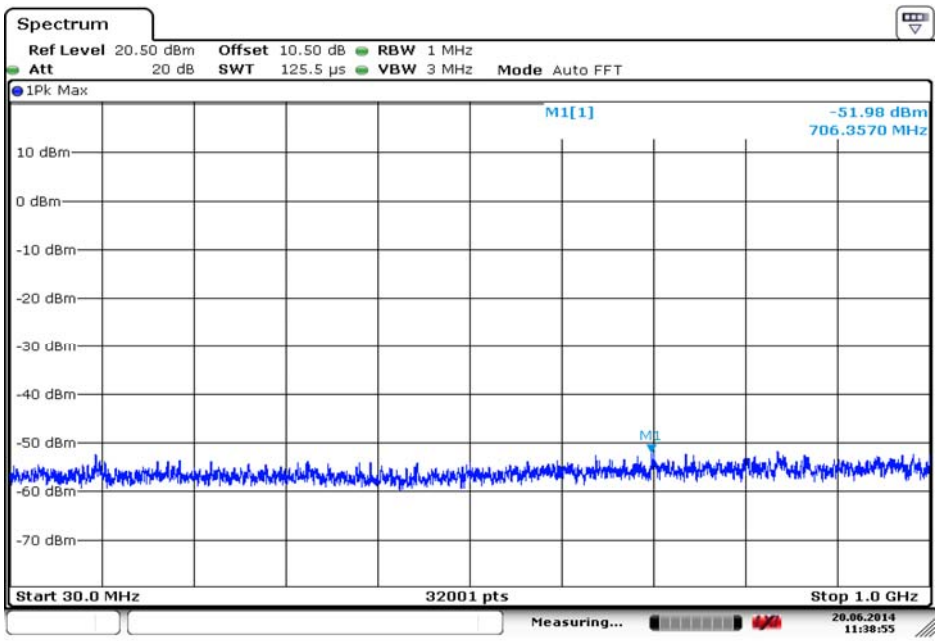

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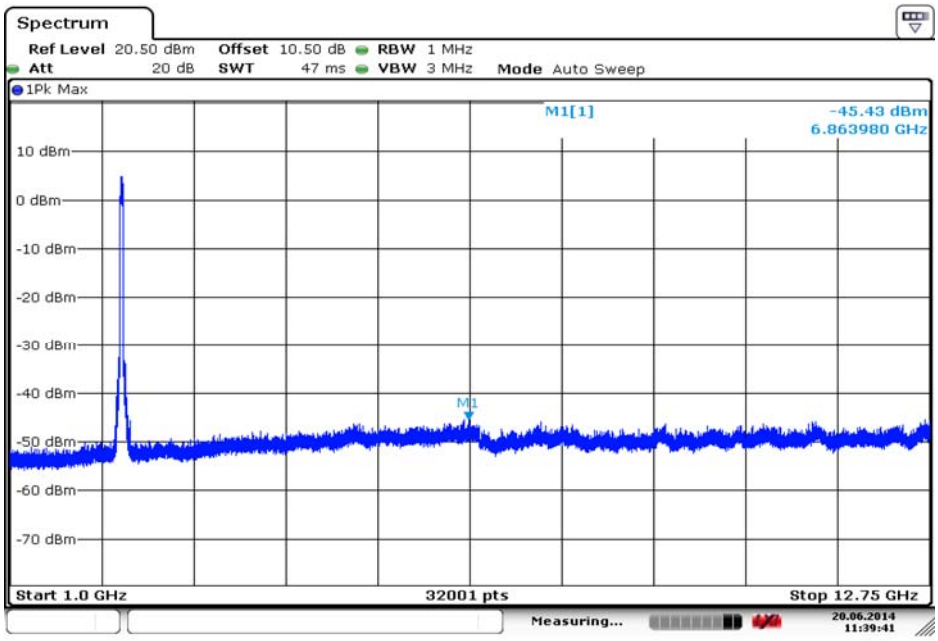

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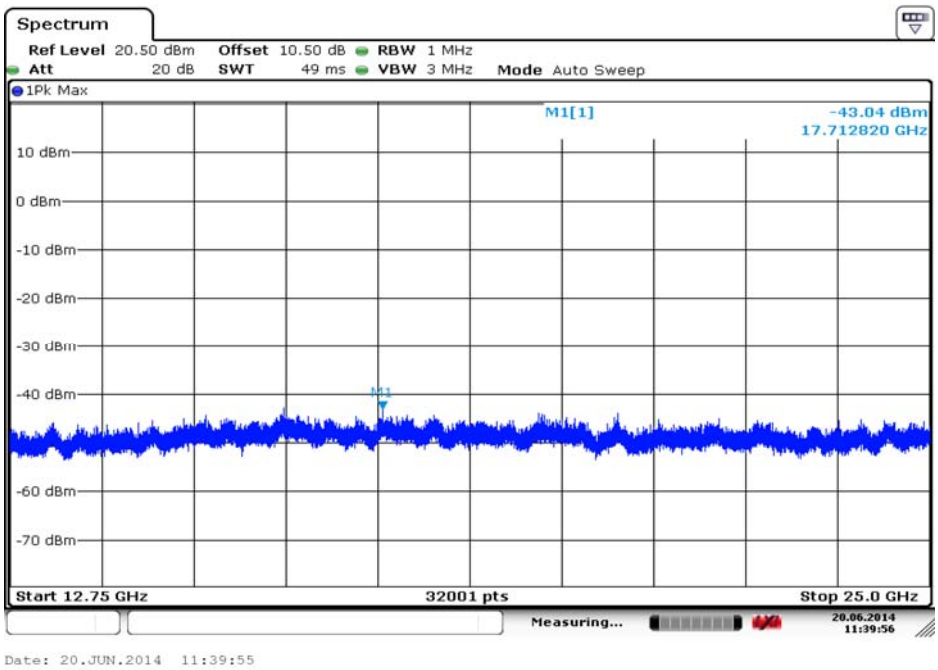
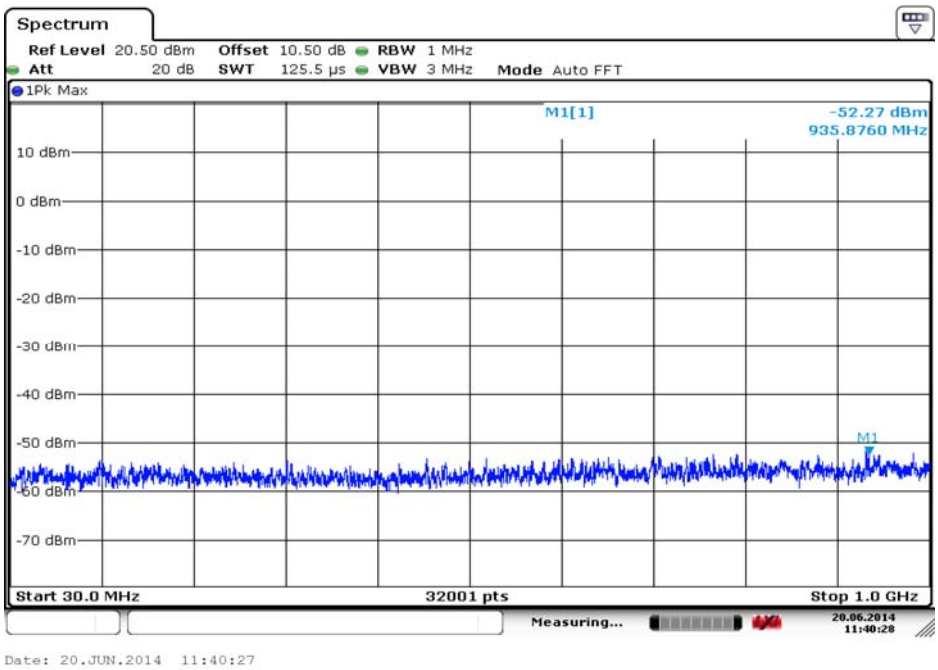


Carrier frequency (MHz): 2422
Channel No.:3
Test Mode: 802.11n(HT40)



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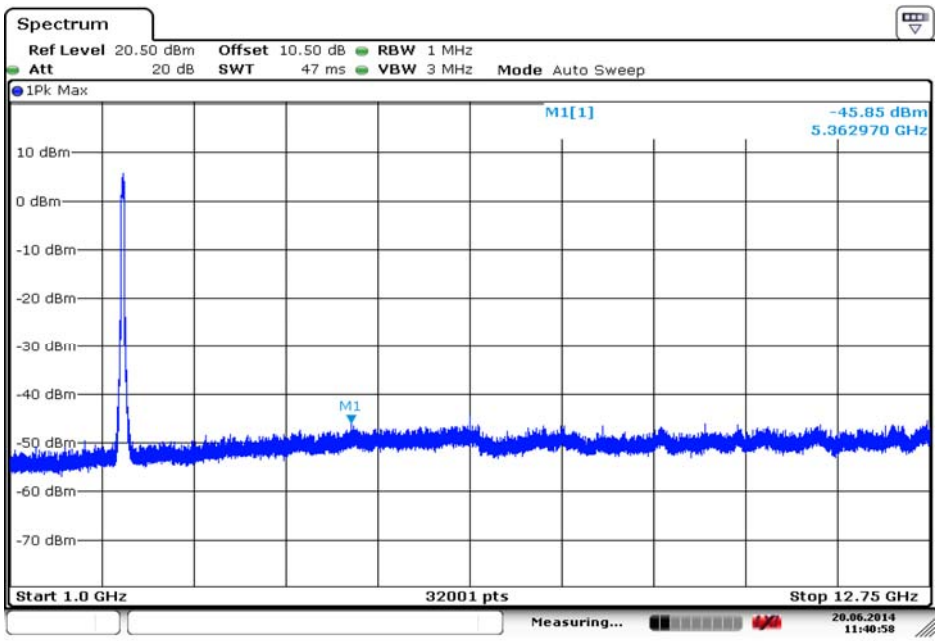

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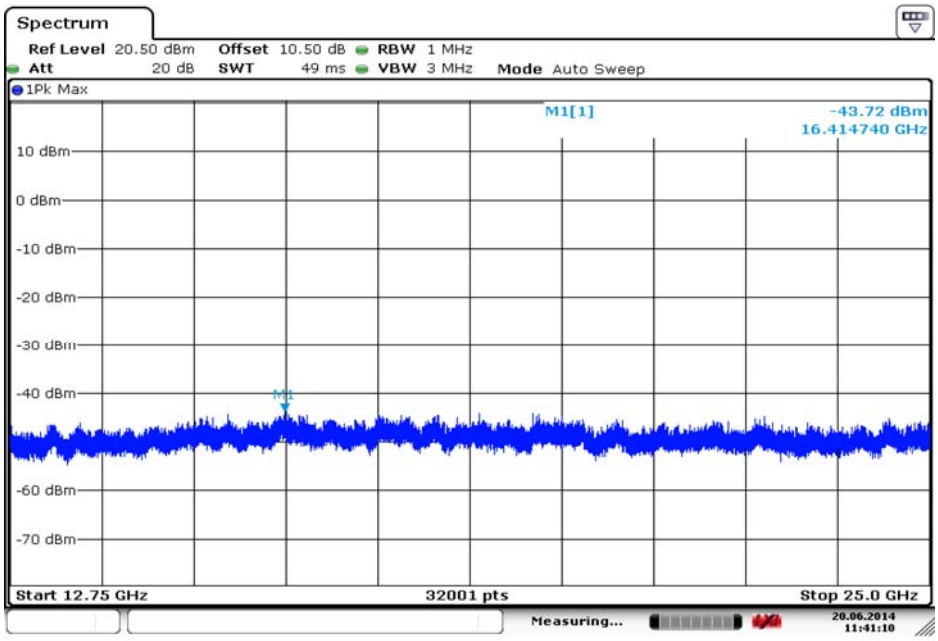

Date: 20.JUN.2014 11:41:09

Carrier frequency (MHz): 2437
Channel No.:6
Test Mode: 802.11n(HT40)

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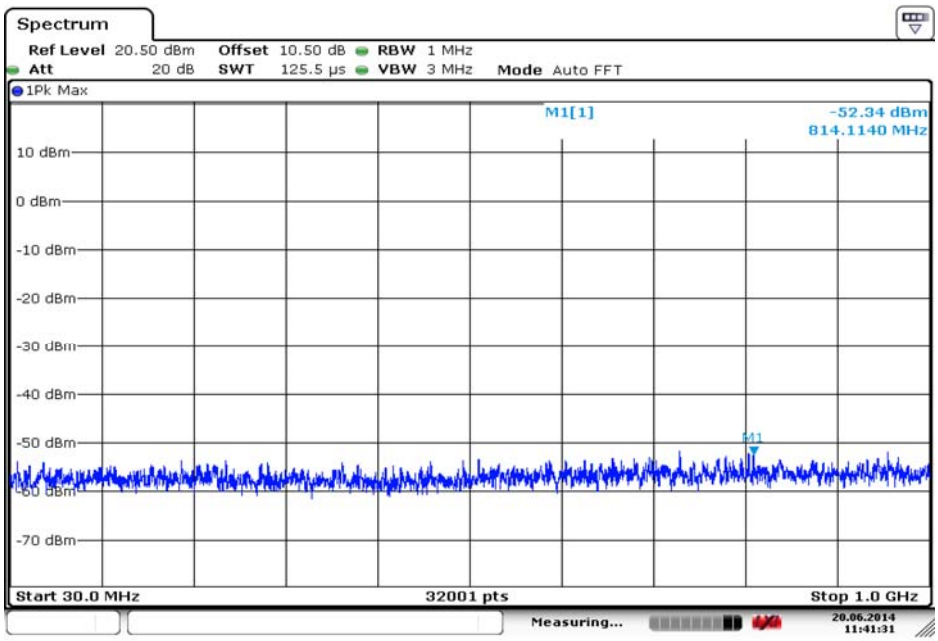

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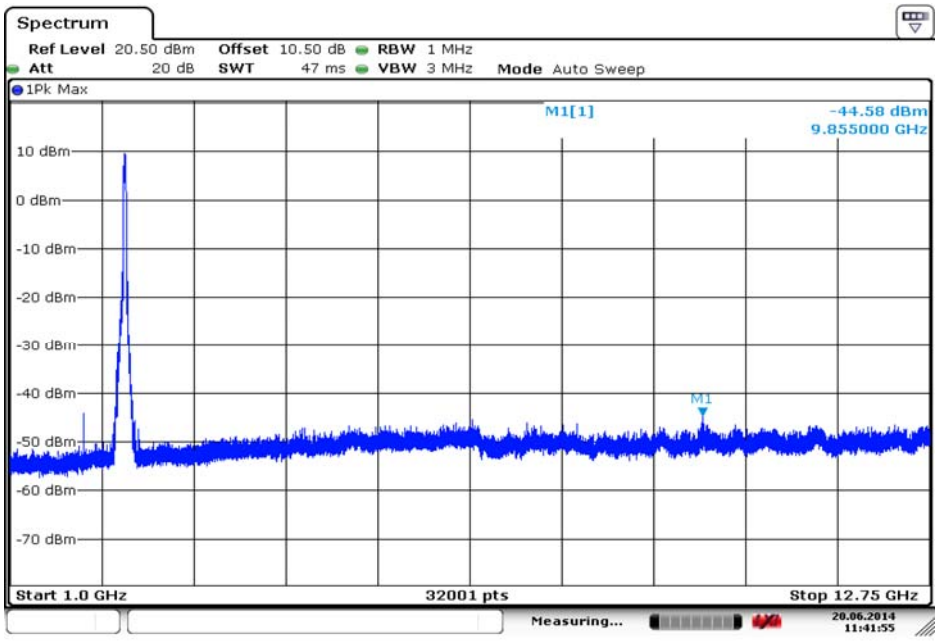

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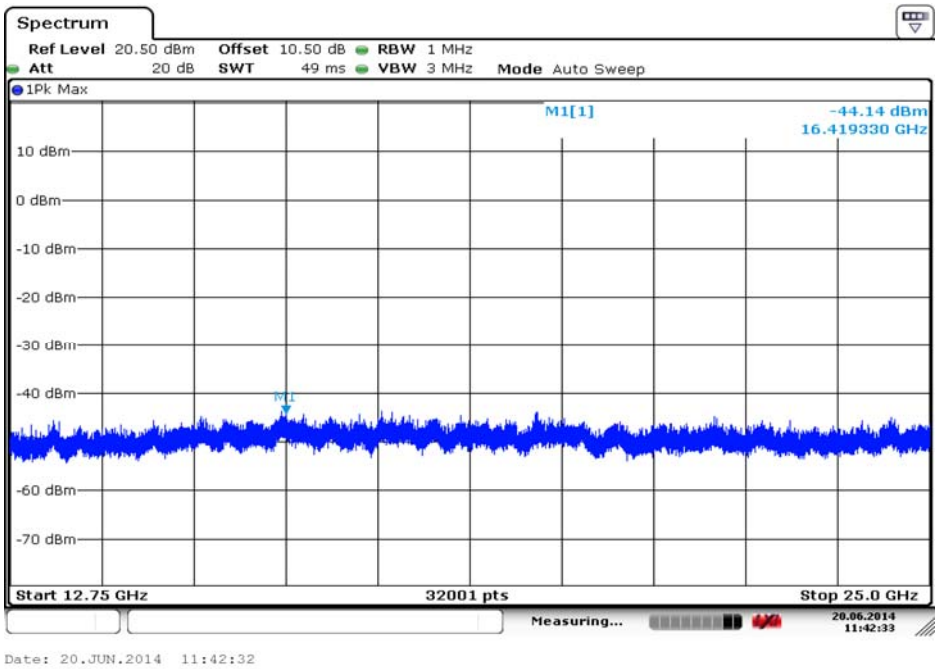
Copyright © SRTC



Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11n(HT40)

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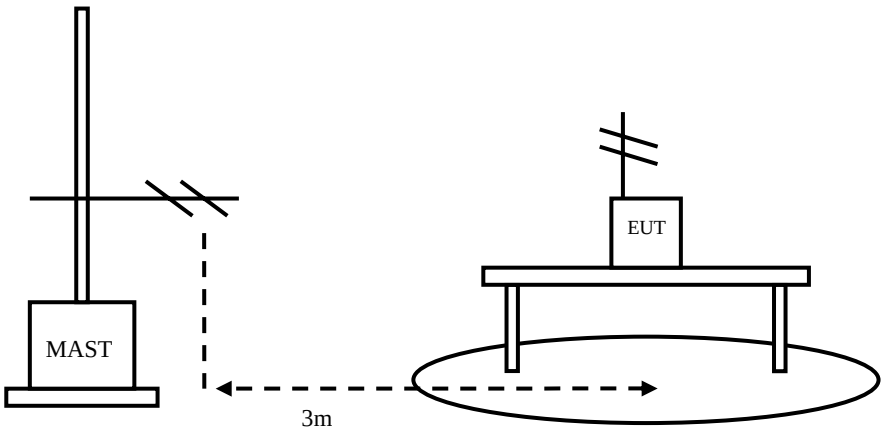
2.2.5 Spurious Radiated Emissions

2.2.5.1 Ambient condition

Temperature	Relative humidity	Pressure
20°C	35%	101.4kPa

2.2.5.2 Test Description

The measurement is made according to ANSI C63.4-2009 Section 8.3 and KDB 558074 D01 DTS Meas Guidance v03r01 Section 12.2, 13.3.
The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna.
The radiated emissions measurements were made in a typical installation configuration.
Then start the test software ES-K1. Sweep the whole frequency band through the range from 30MHz to 1GHz or above, using receive log period antenna HL562 or Ridge horn antenna HF906.
During the test, the height of receive antenna shall be moved from 1 to meters, and the antenna shall be performed under horizontal and vertical polarization. The turn table shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. The results (reference to 2.2.5.4) shall be showed the worst case of the three orthogonal axes.
The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.



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Test Procedures Used
KDB 558074 v03r01 – Section 12.2.5 (average power measurements)
KDB 558074 v03r01 – Section 12.2.4 (peak power measurements)

Test Settings
Average Field Strength Measurements per Section 12.2.5.1 of KDB 558074 v03r01
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = power average (RMS)
5. Number of measurement points = 1001 (Number of points must be > 2 x span/RBW)
6. Sweep time = auto
7. Trace (RMS) averaging was performed over at least 100 traces

Peak Field Strength Measurements per Section 12.2.4 of KDB 558074 v03r01
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

2.2.5.3 Test limit

FCC Part15.247(d):
... In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

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FCC Part15.209:
Radiated Emission Limits

Frequency of Emission(MHz)	Limits	
	Detector	Unit (dBμV/m)
30～88	Quasi-peak	40.0
88～216	Quasi-peak	43.5
216～960	Quasi-peak	46.0
960～1000	Quasi-peak	54.0
1000～5th harmonic of the highest frequency or 40GHz, whichever is lower	Average	54.0
	Peak	74.0

FCC Part15.35(b):
..., there is also a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit....

Used conversion factor: Limit (dBμV/m) = 20 log (Limit (μV/m)/1μV/m)

2.2.5.4 Test result

A "reference path loss" is established and the A_{Rpl} is the attenuation of "reference path loss", and including the gain of receive antenna, the gain of the preamplifier, the cable loss.

The measurement results are obtained as described below:

Result= $P_{mea} + A_{Rpl}$

The worst case attitude: The mobile lay down.

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For 802.11b

Frequency(MHz)	Result(dBuV/m)	A_{Rpl} (dB)	P_{mea} (dBuV/m)	Polarity
44.87	17.60	12.30	5.30	Vertical
260.32	22.60	10.60	12.00	Vertical
263.53	27.00	10.70	16.30	Vertical
283.57	23.90	11.20	12.70	Vertical
286.77	25.60	11.40	14.20	Vertical
959.92	23.20	24.30	-1.10	Vertical

For 802.11g

Frequency(MHz)	Result(dBuV/m)	A_{Rpl} (dB)	P_{mea} (dBuV/m)	Polarity
262.73	25.90	10.70	15.20	Vertica
265.93	28.80	10.80	18.00	Vertical
270.74	23.70	10.90	12.80	Vertical
280.36	28.00	11.10	16.90	Vertical
283.57	20.40	11.20	9.20	Vertical
285.97	29.80	11.30	18.50	Vertical

For 802.11n(HT20)

Frequency(MHz)	Result(dBuV/m)	A_{Rpl} (dB)	P_{mea} (dBuV/m)	Polarity
258.72	25.90	10.50	15.40	Vertical
262.73	24.10	10.70	13.40	Vertical
270.74	24.60	10.90	13.70	Vertical
276.35	25.90	10.90	15.00	Vertical
282.77	18.00	11.20	6.80	Vertical
285.97	28.40	11.30	17.10	Vertical

For 802.11n(HT40)

Frequency(MHz)	Result(dBuV/m)	A_{Rpl} (dB)	P_{mea} (dBuV/m)	Polarity
45.57	18.70	11.80	6.90	Vertical
260.32	27.40	10.60	16.80	Vertical
263.53	27.60	10.70	16.90	Vertical
279.56	24.40	11.00	13.40	Vertical
283.57	29.40	11.20	18.20	Vertical
285.97	25.50	11.30	14.20	Vertical

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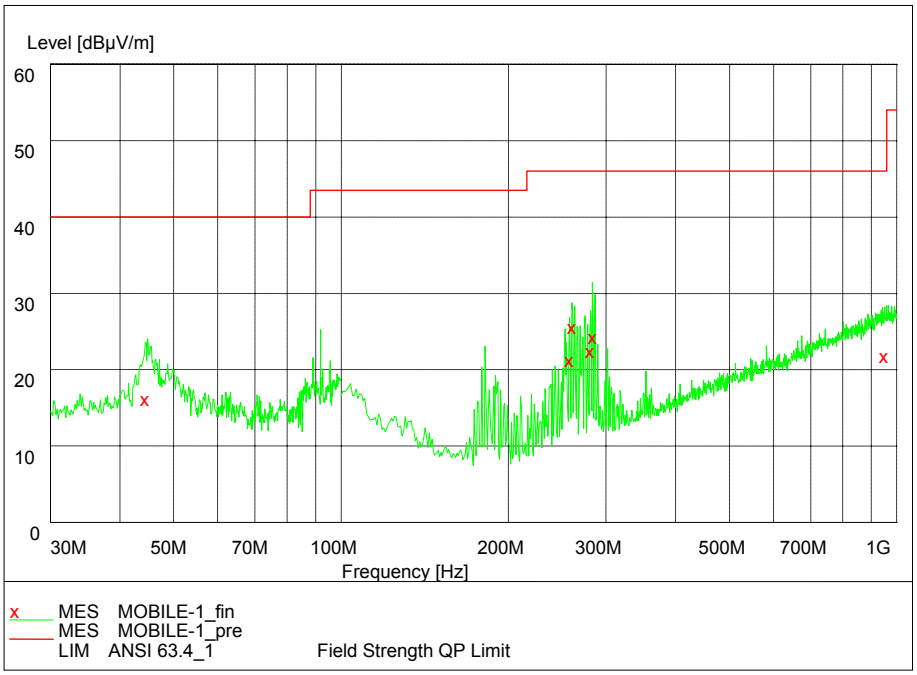
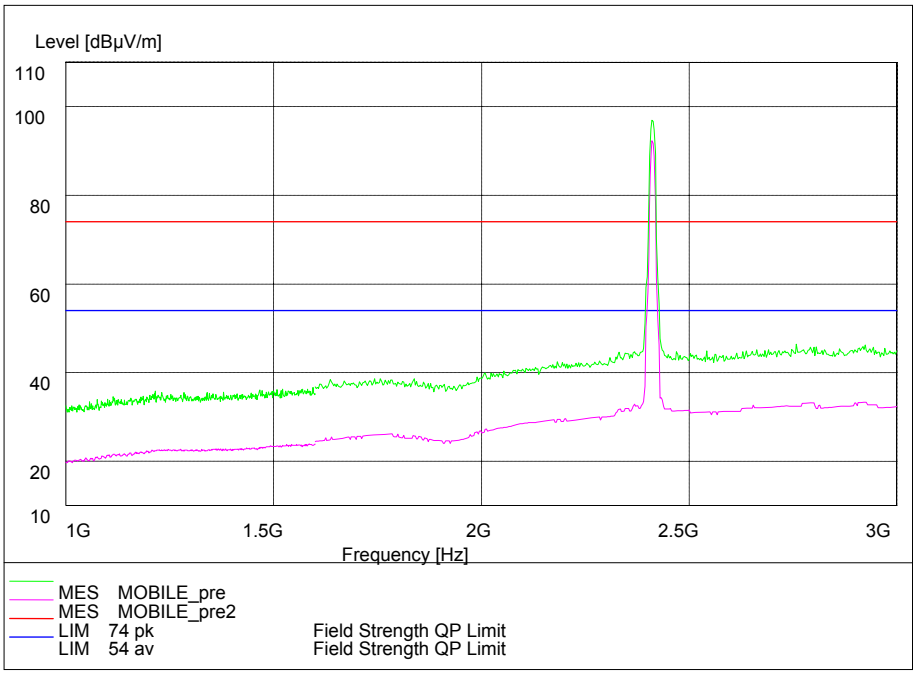
Carrier frequency (MHz): 2437
Channel No.:6



Frequency Range: 30MHz -1GHz
Detector: QP mode
Test Mode: 802.11b



Frequency Range: 1GHz -3GHz
Detector: Av mode and PK mode
Modulation type: 802.11b

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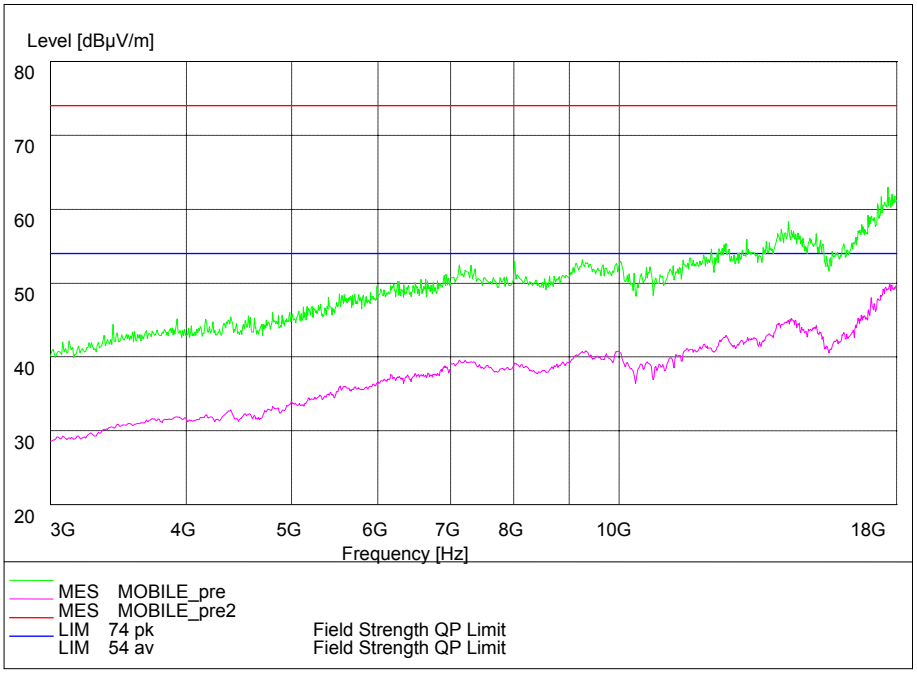
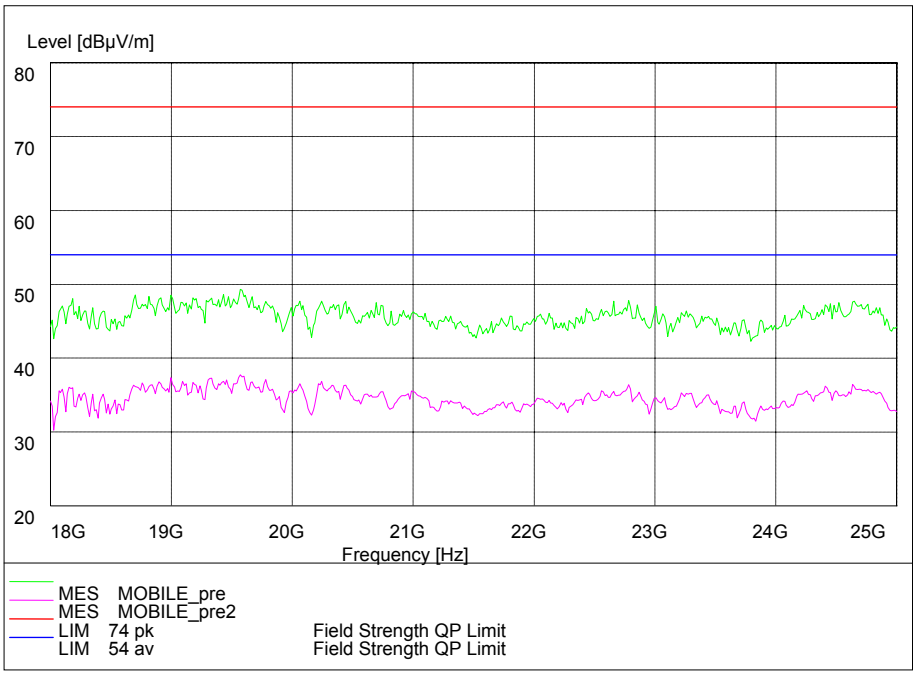


Frequency Range: 3GHz -18GHz
Detector: Av mode and PK mode
Modulation type: 802.11b



Frequency Range: 18GHz -25GHz
Detector: Av mode and PK mode
Modulation type: 802.11b

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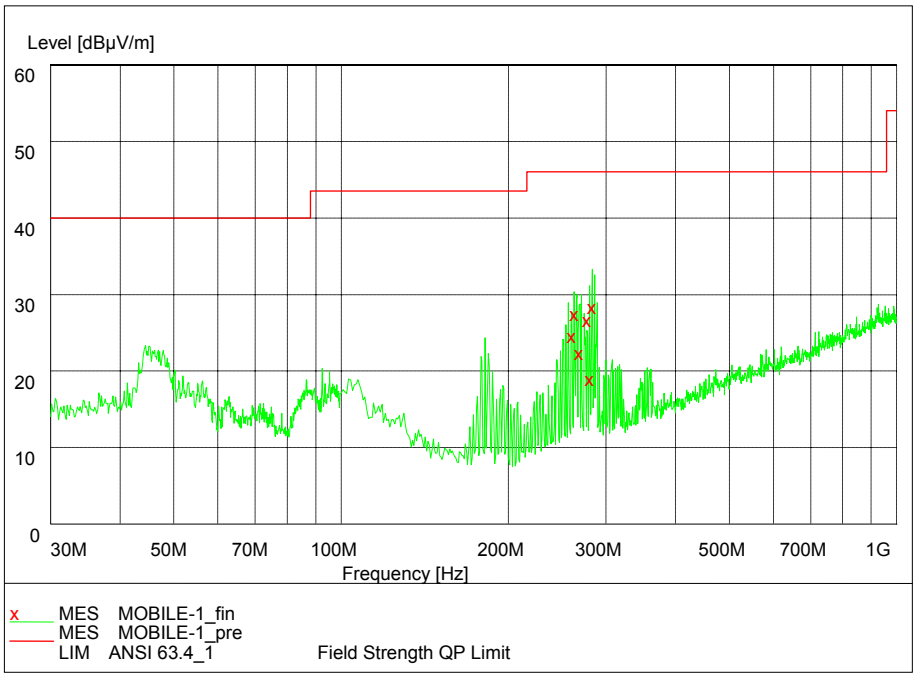
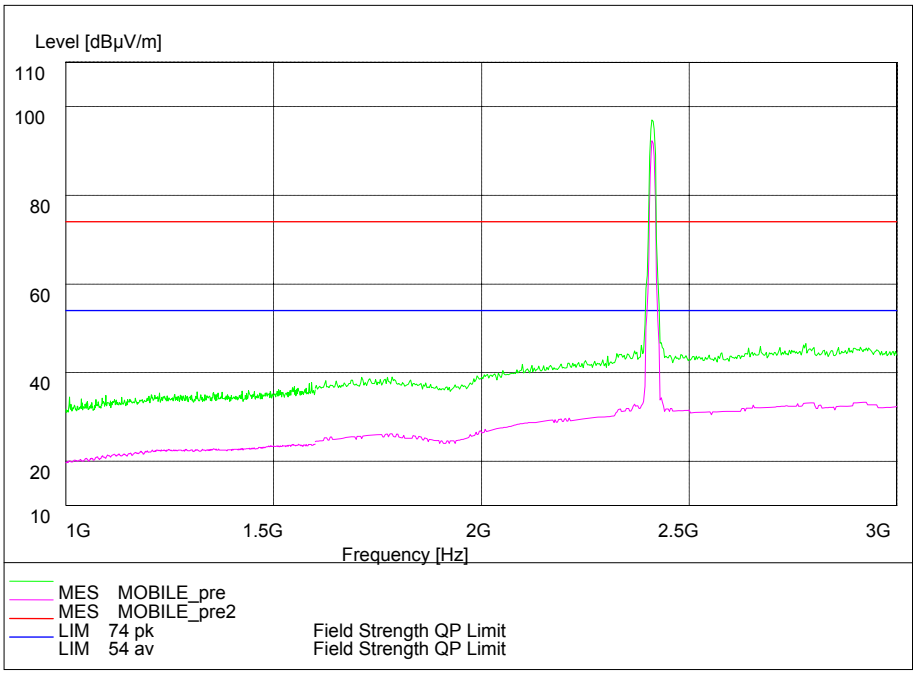


Frequency Range: 30MHz -1GHz
Detector: QP mode
Modulation type: 802.11g



Frequency Range: 1GHz -3GHz
Detector: Av mode and PK mode
Modulation type: 802.11g

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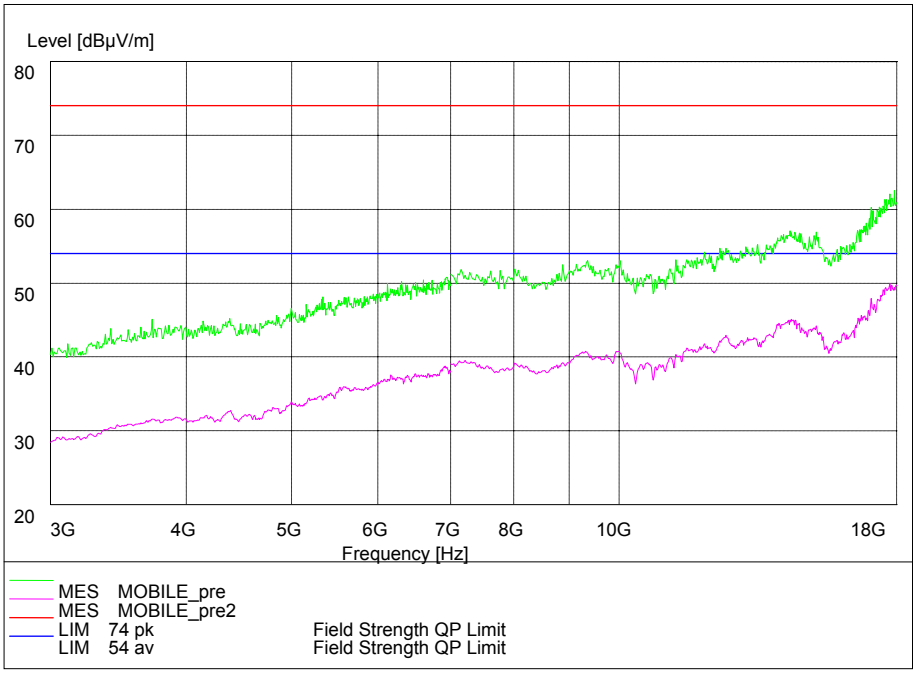
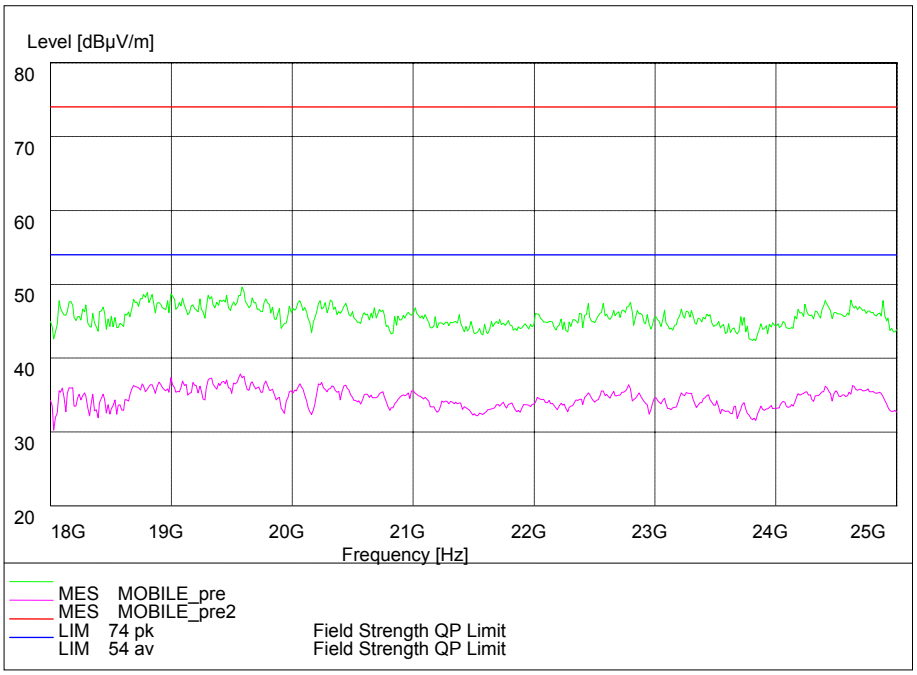


Frequency Range: 3GHz -18GHz
Detector: Av mode and PK mode
Modulation type: 802.11g



Frequency Range: 18GHz -25GHz
Detector: Av mode and PK mode
Modulation type: 802.11g

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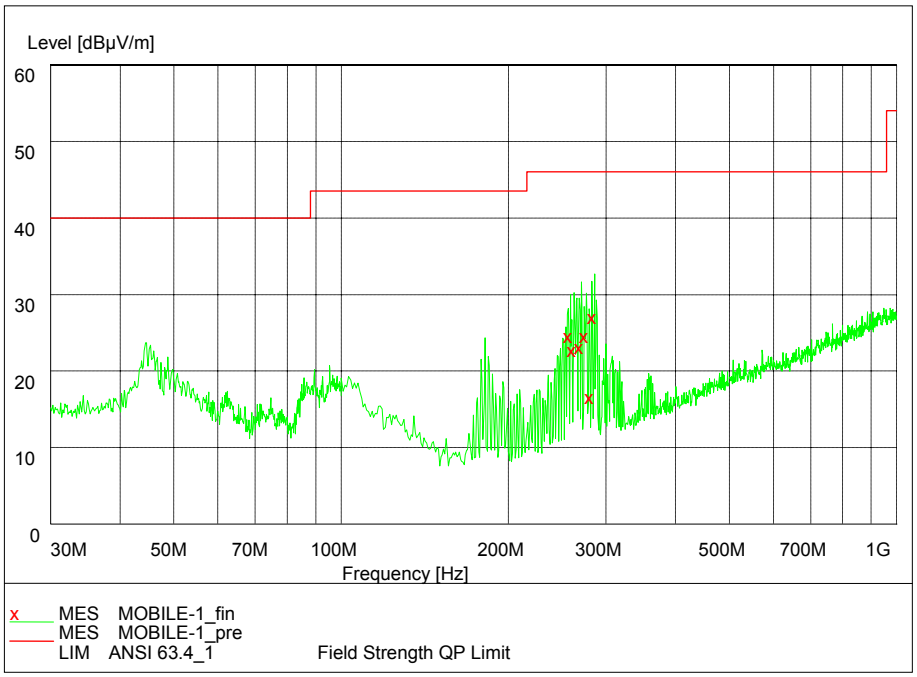
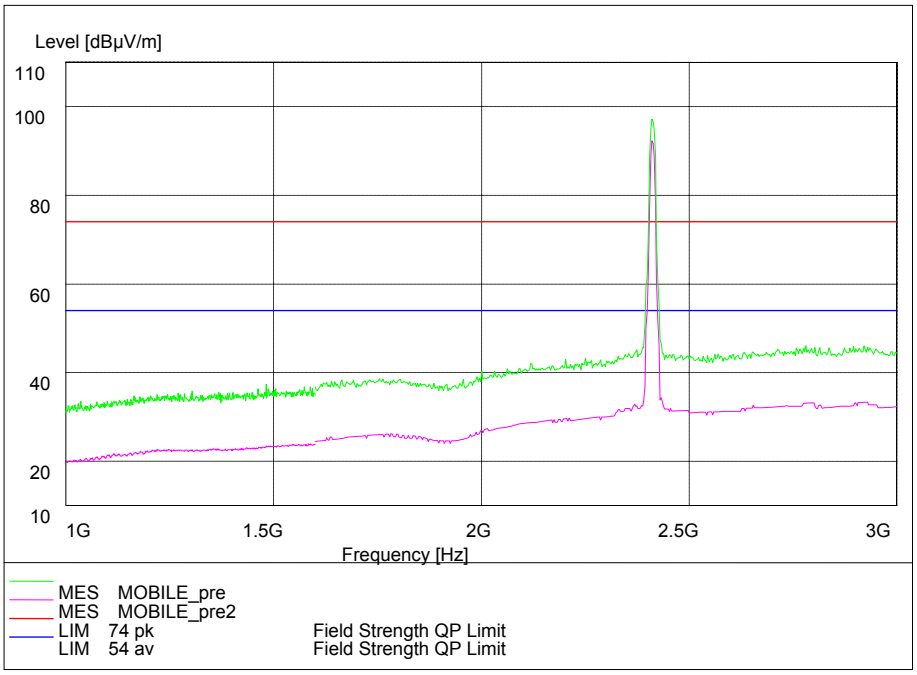


Frequency Range: 30MHz -1GHz
Detector: QP mode
Test Mode: 802.11n(HT20)



Frequency Range: 1GHz -3GHz
Detector: Av mode and PK mode
Modulation type: 802.11n(HT20)

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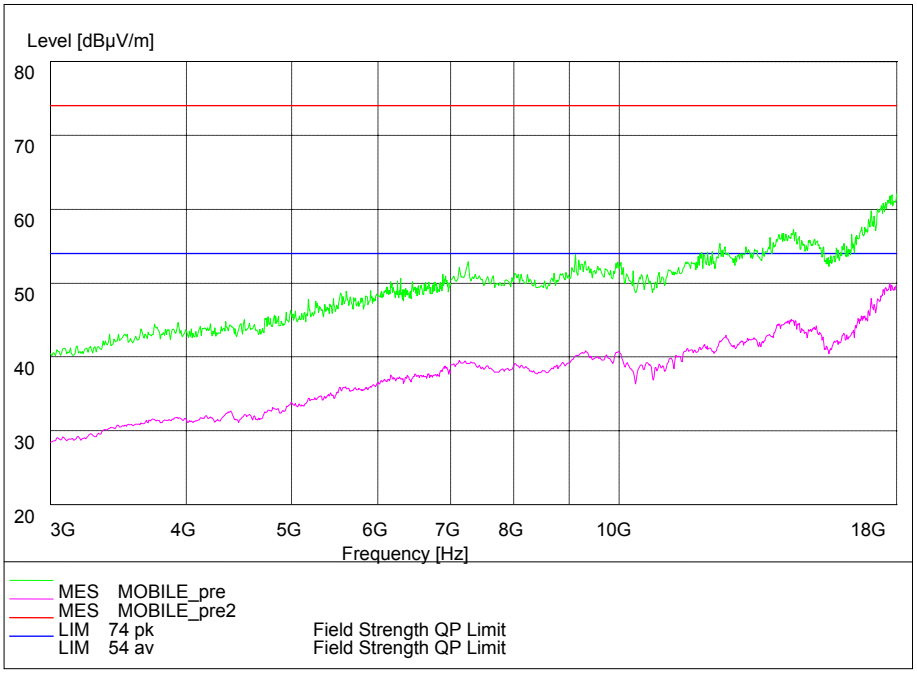
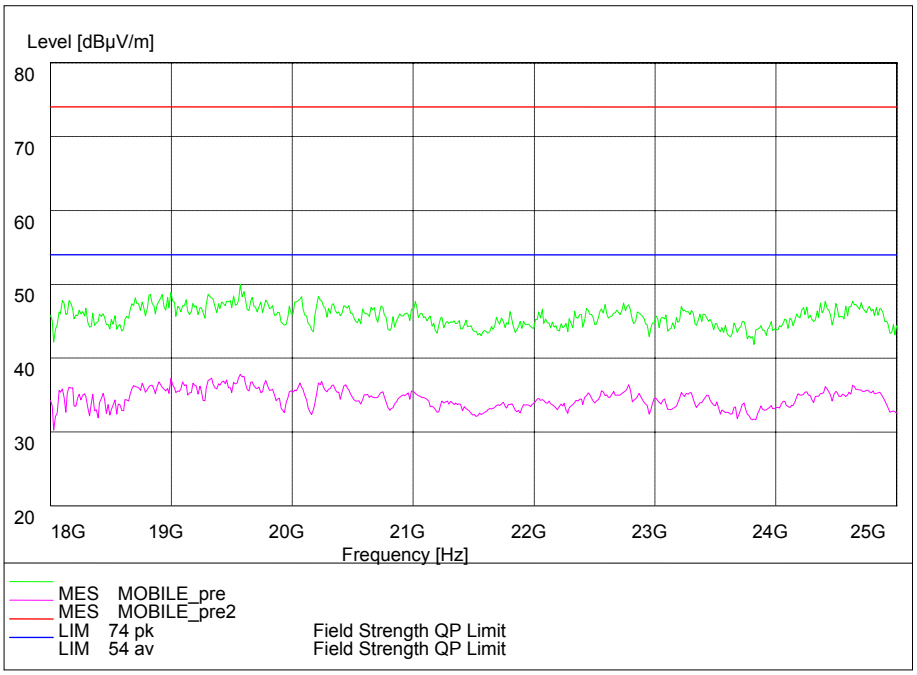


Frequency Range: 3GHz -18GHz
Detector: Av mode and PK mode
Modulation type: 802.11n(HT20)



Frequency Range: 18GHz -25GHz
Detector: Av mode and PK mode
Modulation type: 802.11n(HT20)

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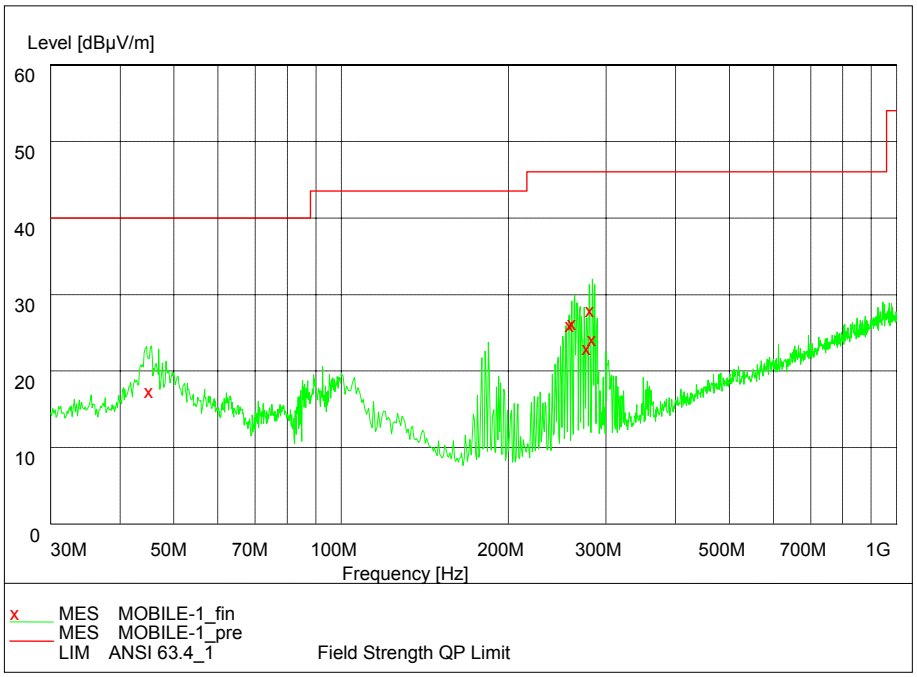
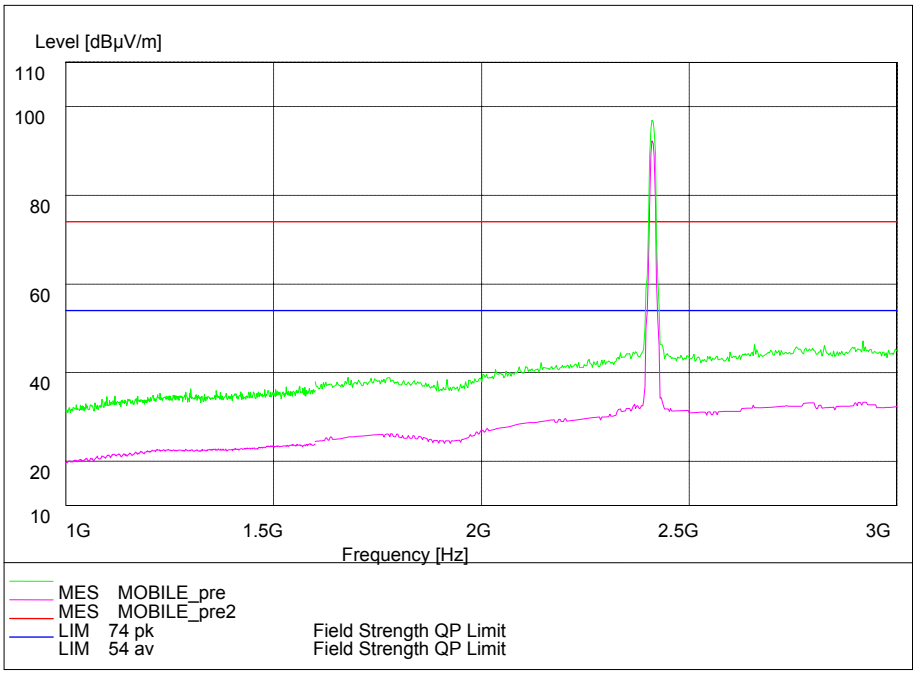


Frequency Range: 30MHz -1GHz
Detector: QP mode
Modulation type: 802.11n(HT40)



Frequency Range: 1GHz -3GHz
Detector: Av mode and PK mode
Modulation type: 802.11n(HT40)

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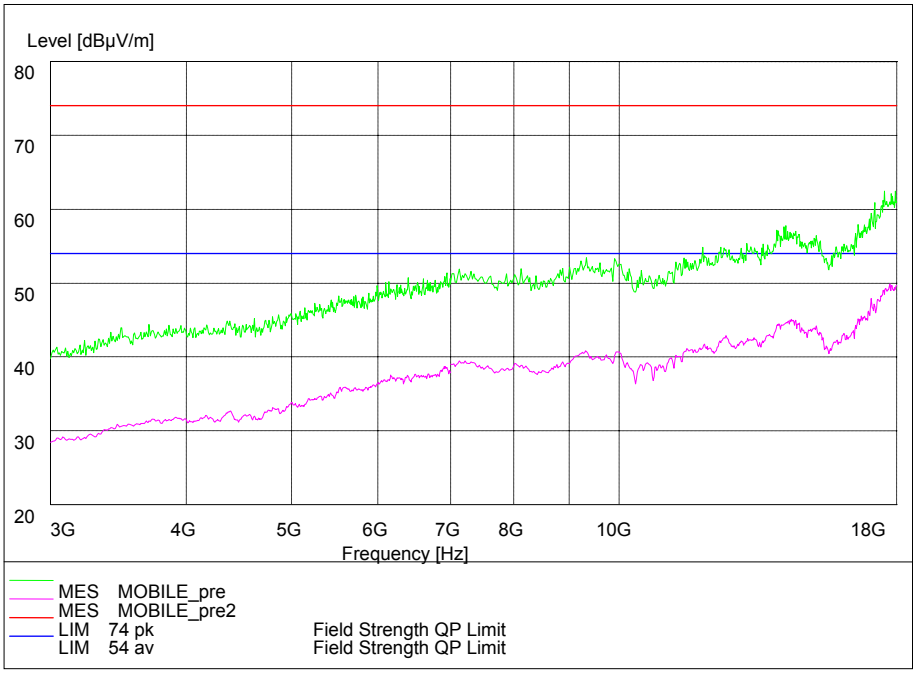
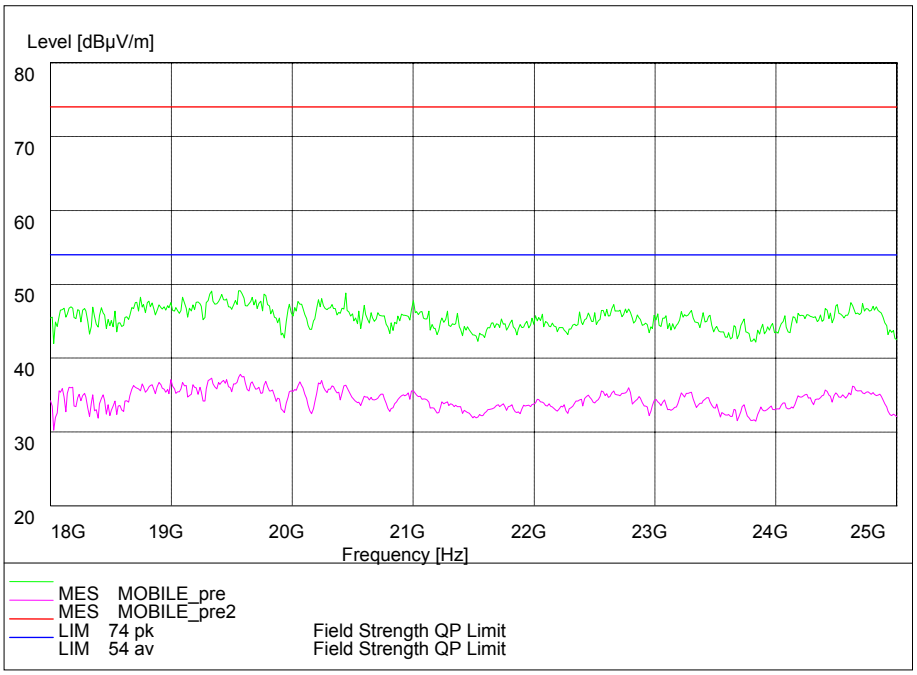


Frequency Range: 3GHz -18GHz
Detector: Av mode and PK mode
Modulation type: 802.11n(HT40)



Frequency Range: 18GHz -25GHz
Detector: Av mode and PK mode
Modulation type: 802.11n(HT40)

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2.2.6 Band Edge Compliance

2.2.6.1 Ambient condition

Temperature	Relative humidity	Pressure
22°C	40%	101.1kPa

2.2.6.2 Test Description

The measurement is made according to KDB 558074 D01 DTS Meas Guidance v03r01 Section 13.3.

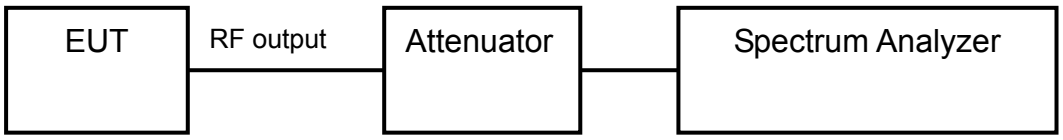
2.2.6.2.1 RF Conducted Measurement

The Equipment Under Test (EUT) was set up in a shielded room to perform the spurious emissions measurements.

The EUT was connected to the spectrum analyzer and WiFi test set via a power splitter with a known loss.

For the first measurement the EUT is set to transmit on the lowest channel (2412 MHz). The lower band edge is 2400 MHz.
Analyzer settings:
- Detector: Peak
- RBW= 100 kHz
- VBW= 300 kHz

For the second measurement the EUT is set to transmit on the highest channel (2462MHz). The higher band edge is 2483.5 MHz.
Analyzer settings:
- Detector: Peak
- RBW= 100 kHz
- VBW= 300 kHz



2.2.6.2.2 Radiated Measurement

The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the

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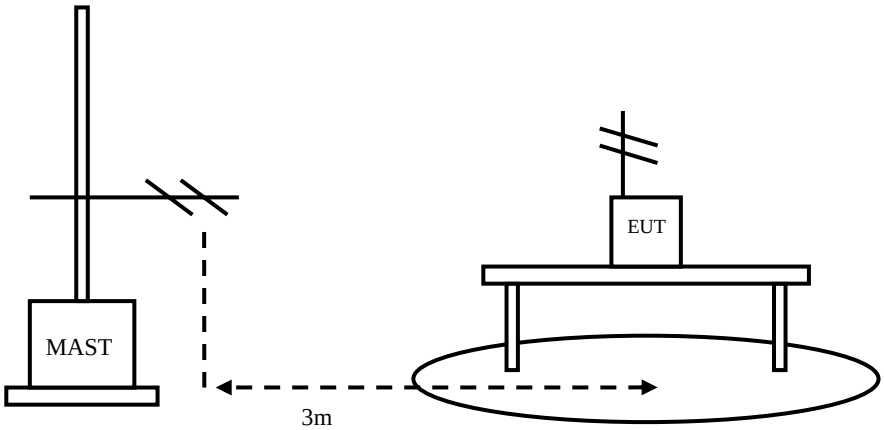
EUT and the receiving antenna.

The radiated emissions measurements were made in a typical installation configuration.

During the test, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turn table shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. The results (reference to 2.2.6.5) shall be showed the worst case of the three orthogonal axes.

The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.



Test Procedures Used
KDB 558074 v03r01 – Section 13.3 Integration method
The following procedures may be used to determine the peak or average field strength or power of an unwanted emission that is within 2 MHz of the authorized band edge. If a peak detector is utilized, use the procedure described in 13.2.1. Use the procedure described in 13.2.2 when using an average detector and the EUT can be configured to transmit continuously (i.e., duty cycle ≥ 98%). Use the procedure described in 13.2.3 when using an average detector and the EUT cannot be configured to transmit continuously but the duty cycle is constant (i.e., duty cycle variations are less than ± 2 percent). Use the procedure described in 13.2.4 when using an average detector for those cases where the EUT cannot be configured to transmit continuously and the duty cycle is not constant (duty cycle variations equal or exceed 2 percent).

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2.2.6.3 Test limit

FCC Part15.247(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.

2.2.6.4 Test result

2.2.6.4.1 RF Conducted Measurement

Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11b

Frequency MHz	Measured value dBm	Reference value dBm	Limit dBm
2400	-33.63	7.21	-12.79

Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11b

Frequency MHz	Measured value dBm	Reference value dBm	Limit dBm
2483.5	-49.19	7.08	-12.92

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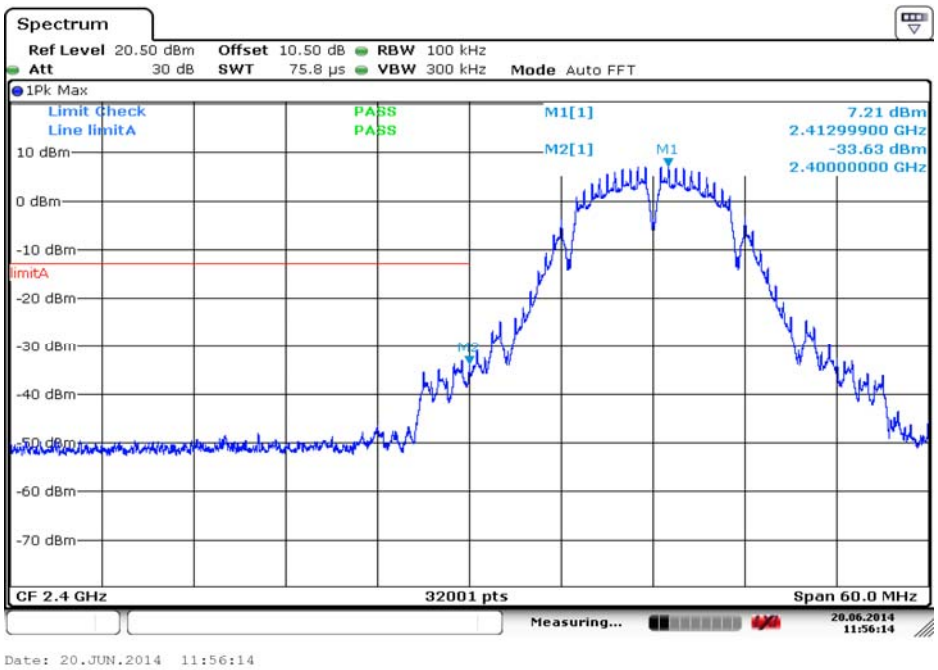
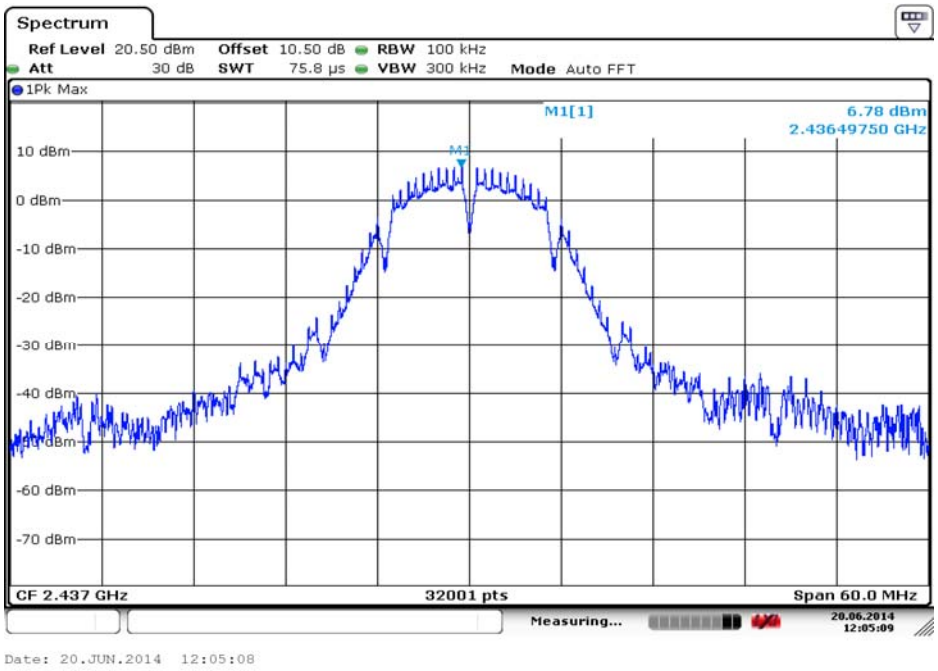


Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11b



Carrier frequency (MHz): 2437
Channel No.:6
Test Mode: 802.11b

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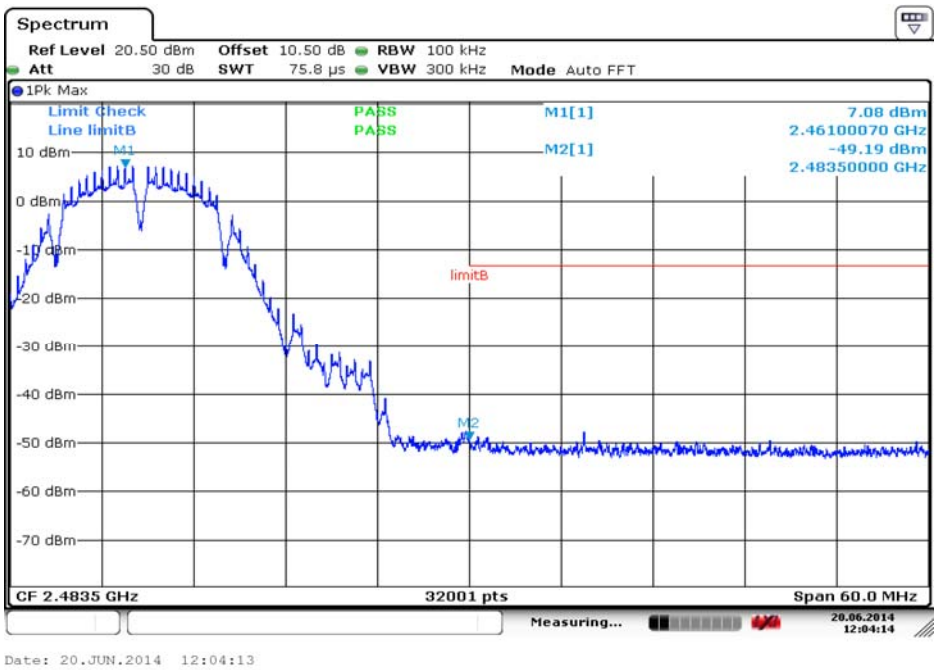

Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11b

Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11g

Frequency MHz	Measured value dBm	Reference value dBm	Limit dBm
2400	-38.97	2.41	-17.59

Carrier frequency (MHz): 2462
Channel No.:13
Test Mode: 802.11g

Frequency MHz	Measured value dBm	Reference value dBm	Limit dBm
2483.5	-40.19	2.72	-17.28

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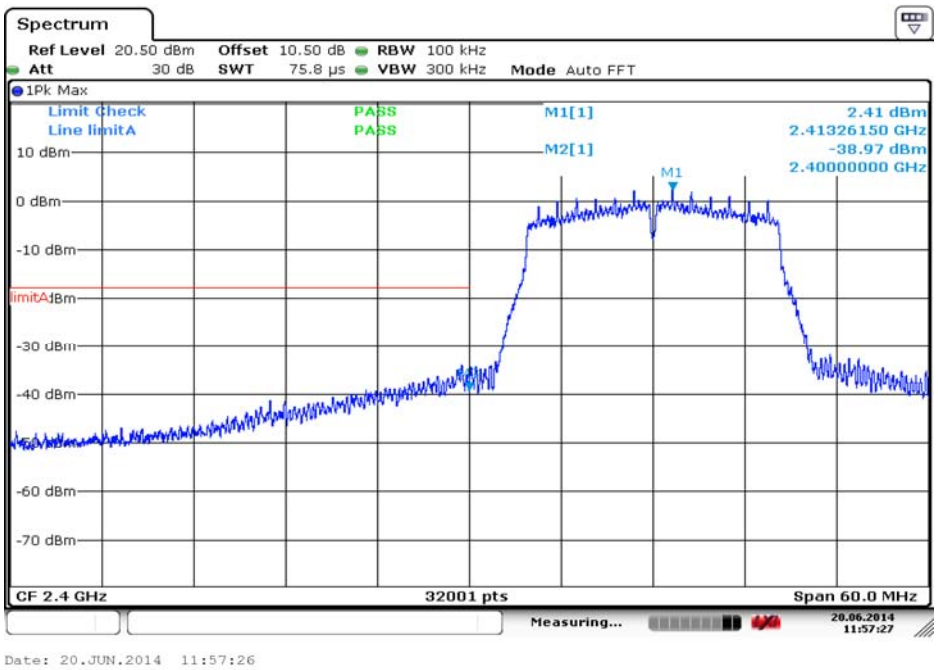
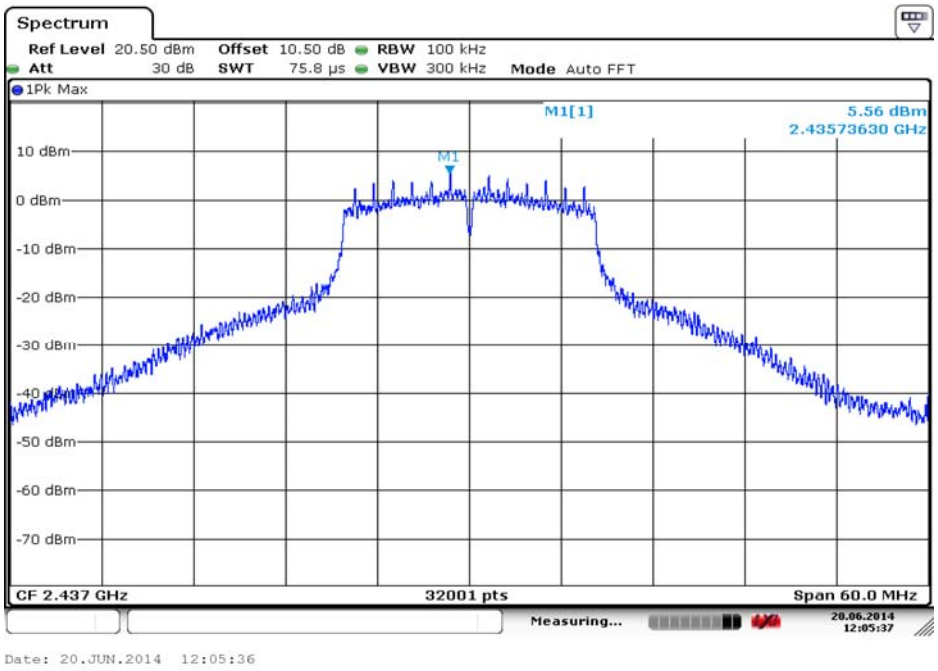


Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11g



Carrier frequency (MHz): 2437
Channel No.:6
Test Mode: 802.11g

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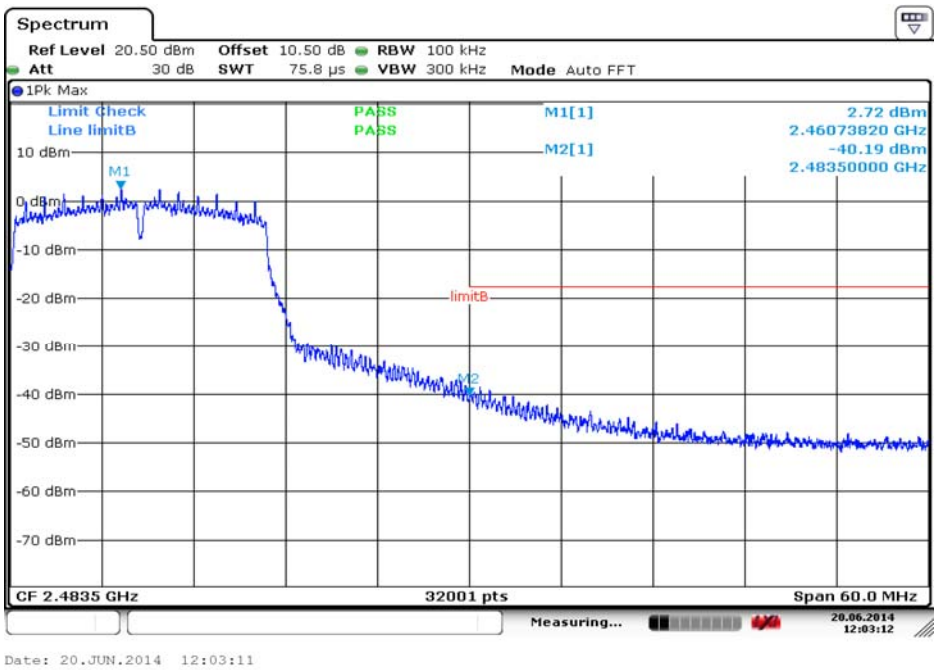

Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11g

Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11n(HT20)

Frequency MHz	Measured value dBm	Reference value dBm	Limit dBm
2400	-37.69	2.62	-17.38

Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11n(HT20)

Frequency MHz	Measured value dBm	Reference value dBm	Limit dBm
2483.5	-39.63	2.71	-17.29

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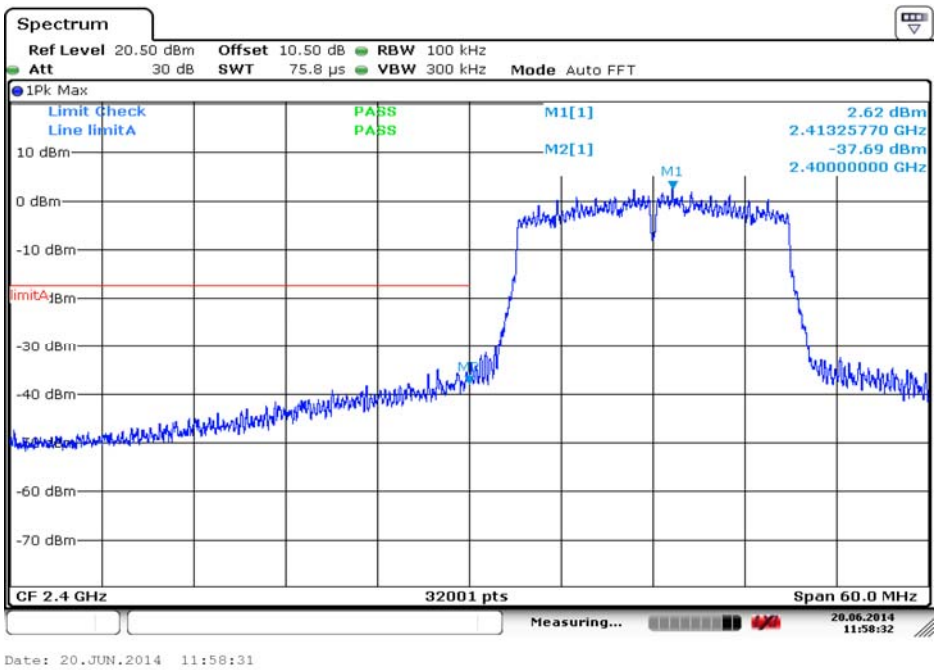
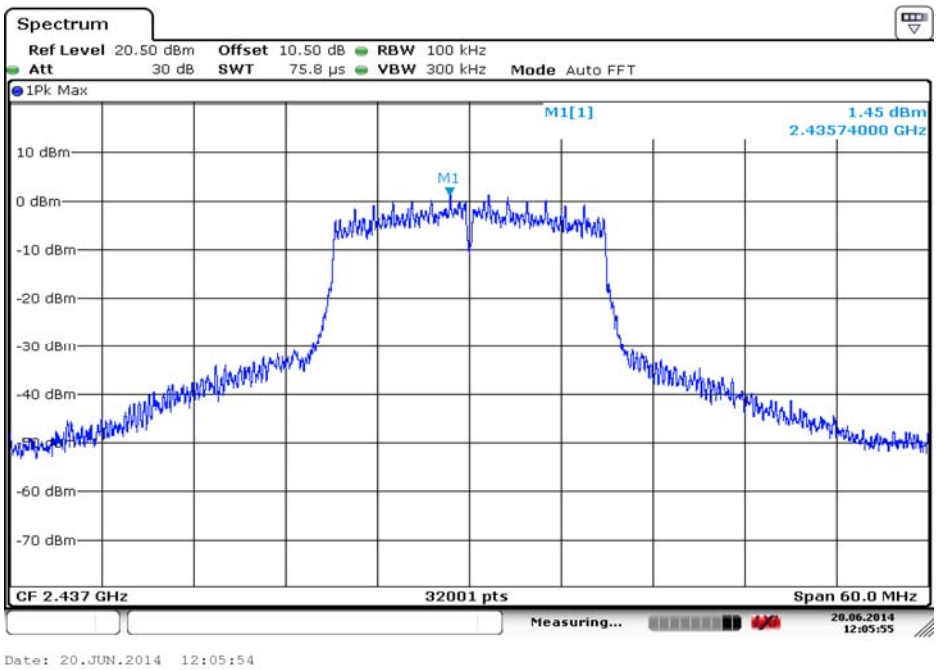


Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11n(HT20)



Carrier frequency (MHz): 2437
Channel No.:6
Test Mode: 802.11n(HT20)

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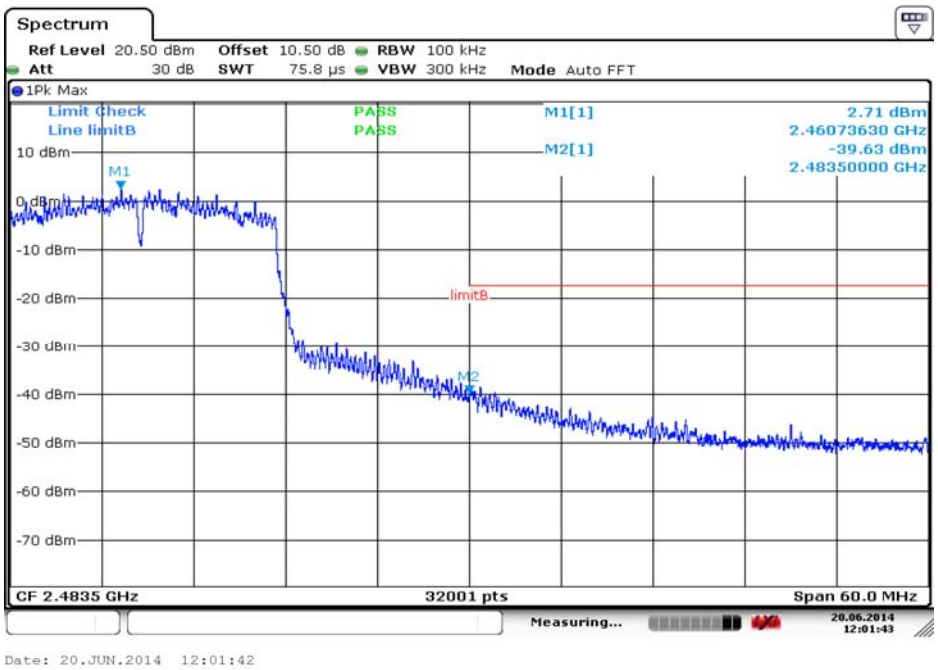

Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11n(HT20)

Carrier frequency (MHz): 2422
Channel No.:3
Test Mode: 802.11n(HT40)

Frequency MHz	Measured value dBm	Reference value dBm	Limit dBm
2400	-45.10	-2.71	-22.71

Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11n(HT40)

Frequency MHz	Measured value dBm	Reference value dBm	Limit dBm
2483.5	-27.41	2.43	-17.57

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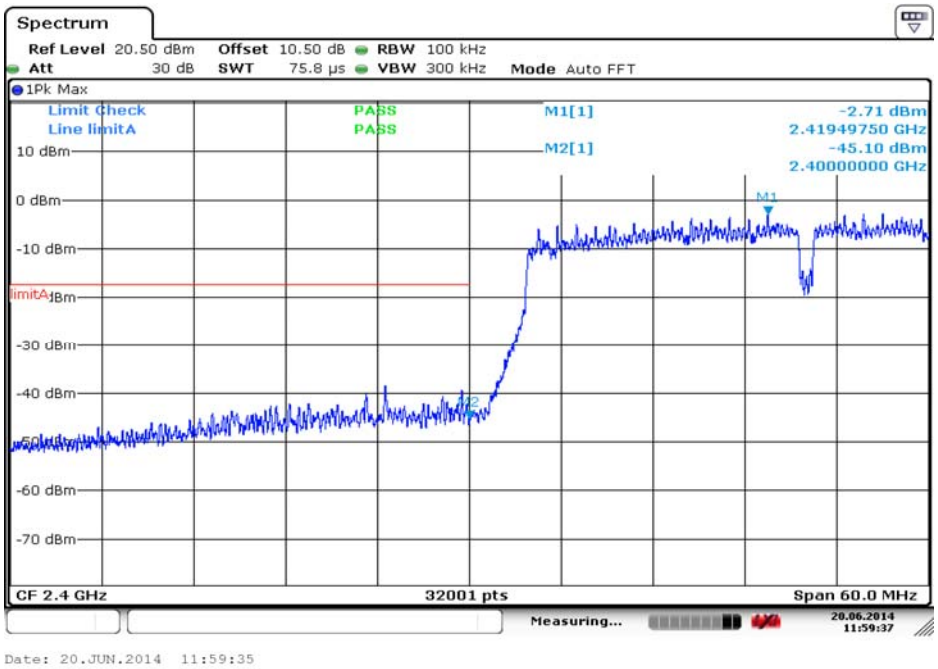
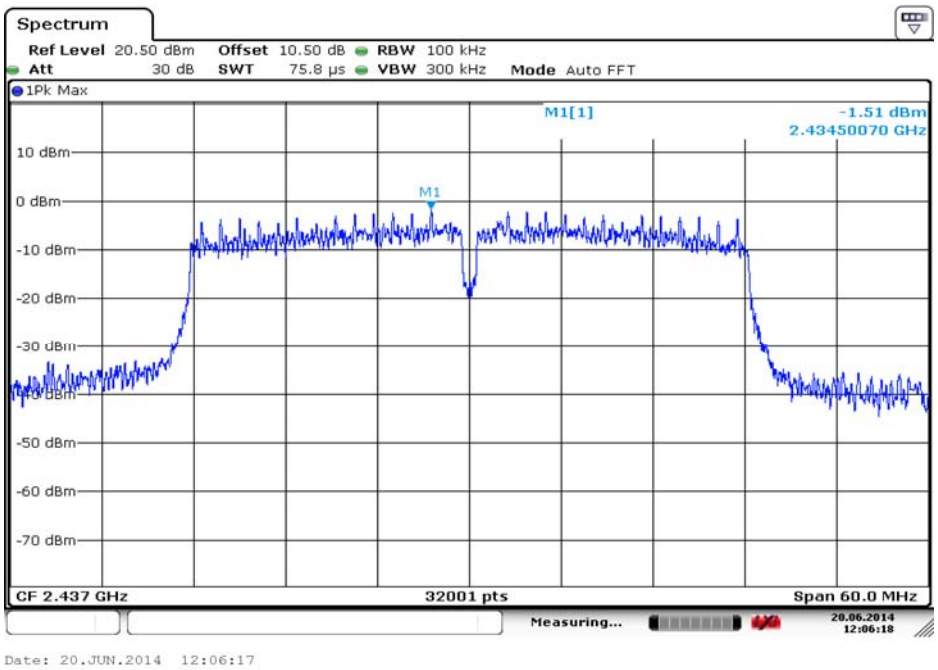


Carrier frequency (MHz): 2422
Channel No.:3
Test Mode: 802.11n(HT40)



Carrier frequency (MHz): 2437
Channel No.:6
Test Mode: 802.11n(HT40)

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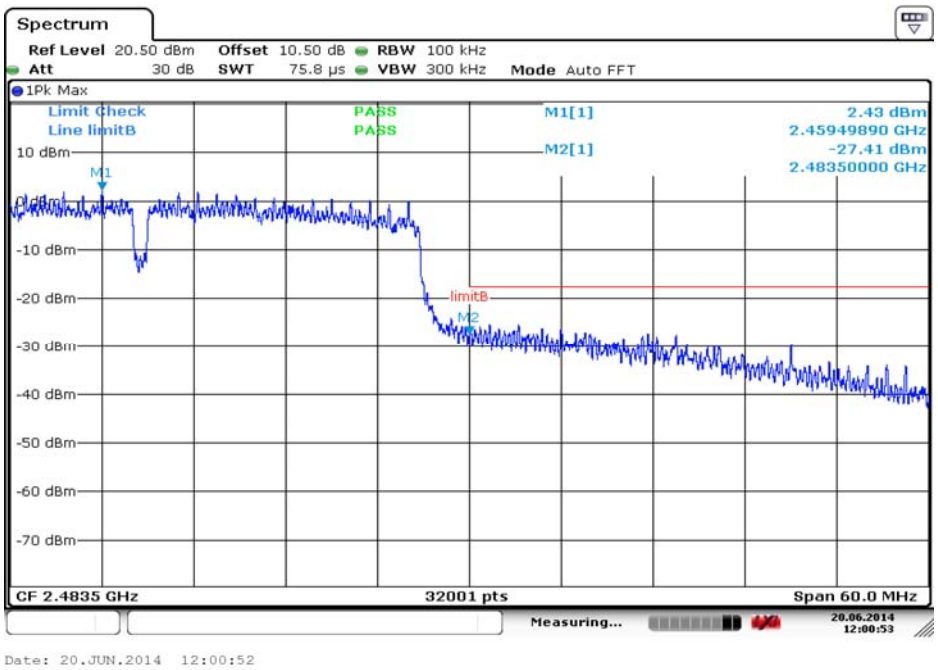

Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11n(HT40)

2.2.6.4.2 Radiated Emission Band Edge

The worst case attitude: The mobile lay down.

Peak detector：RBW=1MHz,VBW=3MHz,sweep time= auto；
Average detector：RBW=1MHz,VBW=3MHz,sweep time=auto；

Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11b
Polarity:Vertical
Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2412	101.02	67.02	N/A	N/A	8.90	25.10
2	2390	56.57	22.57	-17.43	74.00	8.90	25.10

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Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11b
Polarity:Horizontal
Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2412	97.37	63.37	N/A	N/A	8.90	25.10
2	2390	55.86	21.86	-18.14	74.00	8.90	25.10

Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11b
Polarity:Vertical
Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2412	91.19	57.19	N/A	N/A	8.90	25.10
2	2390	42.05	8.05	-11.95	54.00	8.90	25.10

Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11b
Polarity:Horizontal
Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2412	88.02	54.02	N/A	N/A	8.90	25.10
2	2390	41.31	7.31	-12.69	54.00	8.90	25.10

Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11b
Polarity:Vertical
Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2462	101.21	67.21	N/A	N/A	8.90	25.10
2	2483.5	56.60	22.60	-17.40	74.00	8.90	25.10

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Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11b
Polarity:Horizontal
Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2462	98.03	64.03	N/A	N/A	8.90	25.10
2	2483.5	57.11	23.11	-16.89	74.00	8.90	25.10

Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11b
Polarity:Vertical
Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2462	92.38	58.38	N/A	N/A	8.90	25.10
2	2483.5	42.66	8.66	-11.34	54.00	8.90	25.10

Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11b
Polarity:Horizontal
Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2462	87.73	53.73	N/A	N/A	8.90	25.10
2	2483.5	42.91	8.91	-11.09	54.00	8.90	25.10

Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11g
Polarity: Vertical
Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2412	101.60	67.60	N/A	N/A	8.90	25.10
2	2390	56.33	22.33	-17.67	74.00	8.90	25.10

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Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11g
Polarity:Horizontal
Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2412	97.95	63.95	N/A	N/A	8.90	25.10
2	2390	56.42	22.42	-17.58	74.00	8.90	25.10

Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11g
Polarity: Vertical
Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2412	91.33	57.33	N/A	N/A	8.90	25.10
2	2390	42.46	8.46	-11.54	54.00	8.90	25.10

Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11g
Polarity:Horizontal
Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2412	85.78	51.78	N/A	N/A	8.90	25.10
2	2390	41.84	7.84	-12.16	54.00	8.90	25.10

Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11g
Polarity: Vertical
Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2462	101.99	67.99	N/A	N/A	8.90	25.10
2	2483.5	54.60	20.60	-19.40	74.00	8.90	25.10

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Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11g
Polarity:Horizontal
Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2462	96.73	62.73	N/A	N/A	8.90	25.10
2	2483.5	54.50	20.50	-19.50	74.00	8.90	25.10

Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11g
Polarity: Vertical
Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2462	93.29	59.29	N/A	N/A	8.90	25.10
2	2483.5	42.75	8.75	-11.25	54.00	8.90	25.10

Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11g
Polarity:Horizontal
Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2462	86.96	52.96	N/A	N/A	8.90	25.10
2	2483.5	41.35	7.35	-12.65	54.00	8.90	25.10

Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11n(HT20)
Polarity: Vertical
Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2412	100.97	66.97	N/A	N/A	8.90	25.10
2	2390	55.55	21.55	-18.45	74.00	8.90	25.10

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Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11n(HT20)
Polarity:Horizontal
Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2412	97.94	63.94	N/A	N/A	8.90	25.10
2	2390	56.70	22.70	-17.30	74.00	8.90	25.10

Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11n(HT20)
Polarity: Vertical
Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2412	93.84	59.84	N/A	N/A	8.90	25.10
2	2390	41.69	7.69	-12.31	54.00	8.90	25.10

Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11n(HT20)
Polarity:Horizontal
Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2412	85.13	51.13	N/A	N/A	8.90	25.10
2	2390	42.54	8.54	-11.46	54.00	8.90	25.10

Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11n(HT20)
Polarity: Vertical
Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2462	100.09	66.09	N/A	N/A	8.90	25.10
2	2483.5	54.74	20.74	-19.26	74.00	8.90	25.10

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Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11n(HT20)
Polarity:Horizontal
Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2462	94.62	60.62	N/A	N/A	8.90	25.10
2	2483.5	55.72	21.72	-18.28	74.00	8.90	25.10

Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11n(HT20)
Polarity: Vertical
Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2462	92.57	58.57	N/A	N/A	8.90	25.10
2	2483.5	42.78	8.78	-11.22	54.00	8.90	25.10

Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11n(HT20)
Polarity:Horizontal
Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2462	88.69	54.69	N/A	N/A	8.90	25.10
2	2483.5	42.88	8.88	-11.12	54.00	8.90	25.10

Carrier frequency (MHz): 2422
Channel No.:3
Test Mode: 802.11n(HT40)
Polarity: Vertical
Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2422	100.70	66.70	N/A	N/A	8.90	25.10
2	2390	55.55	21.55	-18.45	74.00	8.90	25.10

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Carrier frequency (MHz): 2422
Channel No.:3
Test Mode: 802.11n(HT40)
Polarity:Horizontal
Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2422	99.49	65.49	N/A	N/A	8.90	25.10
2	2390	57.05	23.05	-16.95	74.00	8.90	25.10

Carrier frequency (MHz): 2422
Channel No.:3
Test Mode: 802.11n(HT40)
Polarity: Vertical
Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2422	93.77	59.77	N/A	N/A	8.90	25.10
2	2390	41.80	7.80	-12.20	54.00	8.90	25.10

Carrier frequency (MHz): 2422
Channel No.:3
Test Mode: 802.11n(HT40)
Polarity:Horizontal
Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2422	85.90	51.90	N/A	N/A	8.90	25.10
2	2390	41.92	7.92	-12.08	54.00	8.90	25.10

Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11n(HT40)
Polarity: Vertical
Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2462	102.43	68.43	N/A	N/A	8.90	25.10
2	2483.5	56.08	22.08	-17.92	74.00	8.90	25.10

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Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11n(HT40)
Polarity:Horizontal
Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2462	99.31	65.31	N/A	N/A	8.90	25.10
2	2483.5	55.35	21.35	-18.65	74.00	8.90	25.10

Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11n(HT40)
Polarity: Vertical
Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2462	94.42	60.42	N/A	N/A	8.90	25.10
2	2483.5	42.20	8.20	-11.80	54.00	8.90	25.10

Carrier frequency (MHz): 2462
Channel No.11
Test Mode: 802.11n(HT40)
Polarity:Horizontal
Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB)
1	2462	86.62	52.62	N/A	N/A	8.90	25.10
2	2483.5	41.33	7.33	-12.67	54.00	8.90	25.10

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2.2.7 AC Power line Conducted Emission

2.2.7.1 Ambient condition

Temperature	Relative humidity	Pressure
20°C	35%	101.4kPa

2.2.7.2 Test limit

FCC Part15.207

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

The measurement is made according to ANSI C63.4-2009

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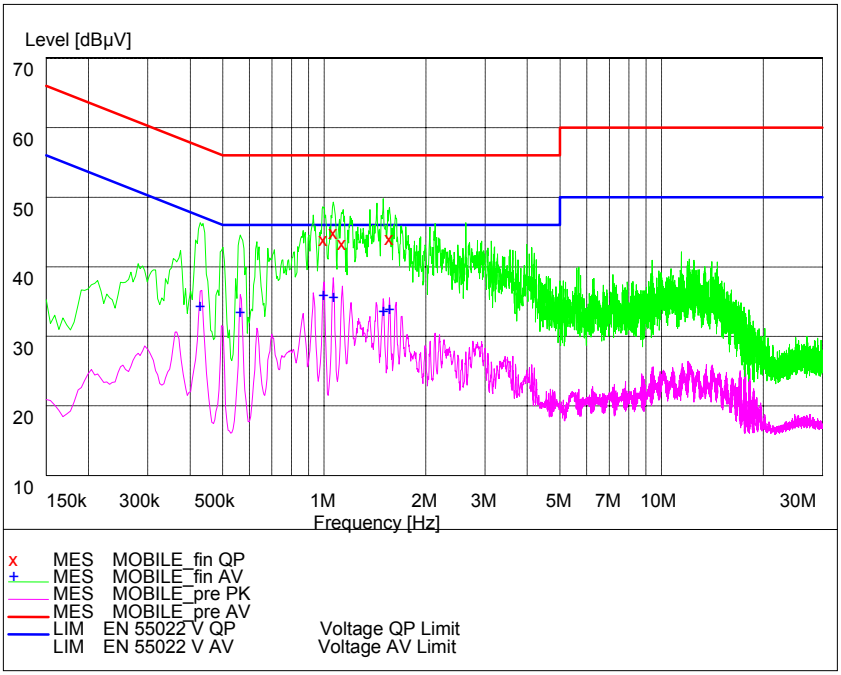
2.2.7.3 Test result

Noise Level of the Measuring Instrument



L+N Line

MEASUREMENT RESULT: "MOBILE_fin AV"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.429000	36.00	20.3	47	11.3	---	---
0.564000	35.20	20.3	46	10.8	---	---
0.996000	37.60	20.2	46	8.4	---	---
1.068000	37.30	20.2	46	8.7	---	---
1.500000	35.30	20.2	46	10.7	---	---
1.563000	35.50	20.2	46	10.5	---	---

MEASUREMENT RESULT: "MOBILE_fin QP"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.996000	45.60	20.2	56	10.4	---	---
1.068000	46.60	20.2	56	9.4	---	---
1.131000	45.10	20.2	56	10.9	---	---
1.563000	45.70	20.2	56	10.3	---	---

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2.3. Measurement Uncertainty

Items	Uncertainty	
Occupied Bandwidth	3kHz	
Peak power output	0.67dB	
Band edge compliance	1.20dB	
Transmitter Power Spectral Density	0.75dB	
Spurious emissions	30MHz～1GHz	2.83dB
	1GHz～12.75GHz	2.50dB
	12.75GHz～25GHz	2.75dB

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2.4. List of test equipment

No.	Name/Model	Manufacturer	S/N	Cal Due date
1.	Spectrum Analyzer FSV	ROHDE&SCHWARZ	101065	2014.8
2.	Signal Generator MG3700A	Anritsu	6200677084	2014.8
3.	Attenuation 6810.17.B	HUBER+SUHNER	768710	2014.8
4.	Cable 104EA	SUCOFLEX	9272/4EA	2014.8
5.	Cable 104EA	SUCOFLEX	9266/4EA	2014.8
6.	12.65m×8.03m×7.50m Fully-Anechoic Chamber	FRANKONIA	-----	-----
7.	23.18m×16.88m×9.60m Semi-Anechoic Chamber	FRANKONIA	---	-----
8.	Turn table Diameter:1m	HD	-----	-----
9.	Turn table Diameter:5m	HD	-----	-----
10.	Antenna master FAC(MA4.0)	MATURO	-----	-----
11.	Antenna master SAC(MA4.0)	MATURO	-----	-----
12.	9.080m×5.255m×3.525m Shielding room	FRANKONIA	-----	-----
13.	HF 906 Double-Ridged Waveguide Horn Antenna	R&S	100030	2014.8
14.	HF 906 Double-Ridged Waveguide Horn Antenna	R&S	100029	2014.8
15.	HL562 Ultra log antenna	R&S	100016	2014.8
16.	3160-09 Receive antenna	SCHWARZ-BECK	002058-002	2014.8
17.	ESI 40 EMI test receiver	R&S	100015	2014.8
18.	Radio tester	CMU 200	114667	2014.8
19.	ESCS30 EMI test receiver	R&S	100029	2014.8
20.	HL562 Receive antenna	R&S	100167	2014.8
21.	ESH3-Z5 LISN	R&S	100020	2014.8

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Appendix

Appendix1 Test Setup

Tel: 86-10-68009202 68009203
Fax: 86-10-68009195 68009205
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