FCC Part 15.247
TEST REPORT

for

Portable GNSS Receiver

Model Name:	MobileMapper 10
Brand Name:	ASHTECH
Report No.:	SH11030016W02
FCC ID:	NZI802140

prepared for

ASHTECH S.A.S
ZAC LA FLEURIAYE BP 60433 RUE THOMAS EDISON
44474 CARQUEFU CEDEX FRANCE

prepared by

Shenzhen Electronic Product Quality Testing Center
Morlab Laboratory
3/F, Electronic Testing Building, Shahe Road, Xili,
Nanshan District, Shenzhen, 518055 P. R. China
Tel: +86 755 86130398
Fax: +86 755 86130218

LAB CODE 20081223-00

Table of Contents

1. Test Report Certification

Equipment under Test:	Portable GNSS receiver
Brand Name:	ASHTECH
Model Name:	MobileMapper 10
FCC ID:	NZI802140
Applicant:	ASHTECH S.A.S. ZAC LA FLEURIAYE BP 60433 RUE THOMAS EDISON 44474 CARQUEFOU CEDEX FRANCE
Manufacturer:	Beijing UniStrong Science & Technology Co., Ltd 6F East, A2 Building,#9 Jiuxianqiao East Road, Chaoyang District, Beijing 100015,China
Test Standards:	47 CFR Part 15,Subpart C
Test Date(s):	Mar.15, 2011 –Apr.15, 2011
Test Result:	PASS

*** We Hereby Certify That:**

The equipment under test was tested by Shenzhen Electronic Product Quality Testing Center Morlab Laboratory. The test data, data evaluation, test procedures and equipment configurations shown in this report were made in accordance with the requirement of related FCC rules.

The test results of this report only apply for the tested sample equipment identified above. The test report shall be invalid without all the signatures of the test engineer, the reviewer and the approver.

Tested by: Shi Feng Dated: 2011.4.20
Shi Feng

Reviewed by: Zhang Jun Dated: 2011.4.20.
Zhang Jun

Approved by: Wei Bei Dated: 2011.4.20.
Wei Bei

2. General Information

2.1. Description of EUT

Product Feature & Specification	
Equipment	Portable GNSS receiver
Brand Name	ASHTECH
Model Number	MobileMapper 10
Frequency Range	2400MHz~2483.5MHz
Number of Channels	11
Carrier Frequency of Each Channel	2412+(n-1)*5MHz;n=1~11
Channel Spacing	5MHz
Max Transmit Power To antenna	802.11b: 10.17dBm(0.010W) 802.11g: 8.82dBm(0.008W)
Modulation Technique	802.11b: DSSS(BPSK/QPSK/CCK) 802.11g: OFDM(BPSK/QPSK/16QAM/64QAM)
Antenna Information	Chip Antenna with gain 0.94 dBi
Hardware Version	v2.0
Software Version	01.001.1chs
EUT Stage	Production Unit

NOTE:

1. The EUT provides Wi-Fi (802.11b and 802.11g) wireless interface, operating at 2.4GHz ISM band,the channels and transmitter center frequencies are:
   - Channel 1: 2412 MHz (lowest channel)
   - Channel 2: 2417 MHz
   - Channel 3: 2422 MHz
   - Channel 4: 2427 MHz
   - Channel 5: 2432 MHz
   - Channel 6: 2437 MHz (middle channel)
   - Channel 7: 2442 MHz
   - Channel 8: 2447 MHz
   - Channel 9: 2452 MHz
   - Channel 10: 2457 MHz
   - Channel 11: 2462 MHz (highest channel)

2. The above EUT's information was declared by manufacturer.. For a more detailed features description about the EUT, please refer to User's Manual.

2.2. Test Standards and Results

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part 15 Subpart C §15.247
- FCC Public Notice DA 00-705
- ANSI C63.4-2003
- IC RSS-210 Issue 7

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

Test items and the results are as bellow:

№	FCC Rules	IC Rules	Test Type	Limits	Result
1	§15.247(b)	A8.4	Maximum Peak Output Power	≤30dBm	PASS
2	§15.247(a)(2)	A8.2(a)	6dB Bandwidth	≥0.5MHz	PASS
3	§15.247(d)	A8.5	Band Edge	＜20dBc	PASS
4	§15.247(e)	A8.2(b)	Power Spectrum Density	≤8dBm	PASS
5	§15.247(d)	A8.5	Conducted Spurious Emission	＜20dBc	PASS
6	§15.207	Gen 7.2.2	Conducted Emission	15.207(a)	PASS
7	§15.209 §15.247(d)	A8.5	Radiated Emission	§15.209 §15.247(d)	PASS
8	§15.203 15.247(b)	A8.4	Antenna Requirement	NA	PASS
9	/	GEN 7.2.3	Receiver Spurious Emissions	GEN 7.2.3.1& GEN 7.2.3.1	PASS

2.3. Test Facility

Shenzhen Electronic Product Quality Testing Center Morlab Laboratory is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L1659.

All measurement facilities used to collect the measurement data are located at Electronic Testing Building, Shahe Road, Xili, Nanshan District, Shenzhen 518055 CHINA. The test site is constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22; the FCC registration number is 741109.

2.4. Environmental conditions

During the measurement, the environmental conditions were within the listed ranges:

Temperature (°C):	20 - 25
Relative Humidity (%):	40 - 60
Atmospheric Pressure (kPa):	96

2.5. Operation mode of test

The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction (150 kHz to 30 MHz), radiation (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

Pre-scanned tests were conducted to determine the final configuration from all possible combinations. The following tables are showing the test modes as the worst cases and recorded in this report.

TEST MODE		
Radiated Mode	**Conducted Mode**	**AC Conducted Emission**
1: 802.11b Channel 01_2412 MHz	1: 802.11b Channel 01_2412 MHz	1:GSM 850 Idle + WIFI link + Adapter + BT Earphone
2: 802.11b Channel 06_2437 MHz	2: 802.11b Channel 06_2437 MHz	
3: 802.11b Channel 11_2462 MHz	3: 802.11b Channel 11_2462 MHz	
4: 802.11g Channel 01_2412 MHz	4: 802.11g Channel 01_2412 MHz	
5: 802.11g Channel 06_2437 MHz	5: 802.11g Channel 06_2437 MHz	
6: 802.11g Channel 11_2462 MHz	6: 802.11g Channel 11_2462 MHz	

2.6. Ancillary Equipents List

Equipment	Model	Trade	FCC ID	Data cable	Power cord
Wifi Router	DI-624+A	D-LINK	/	N/A	Unshieding,1.8m
Notebook PC	SL410	IBM	/	N/A	Unshieding,1.8m
BT earphone	BH-105	NOKIA	/	N/A	/

3. Maximum Peak Output Power

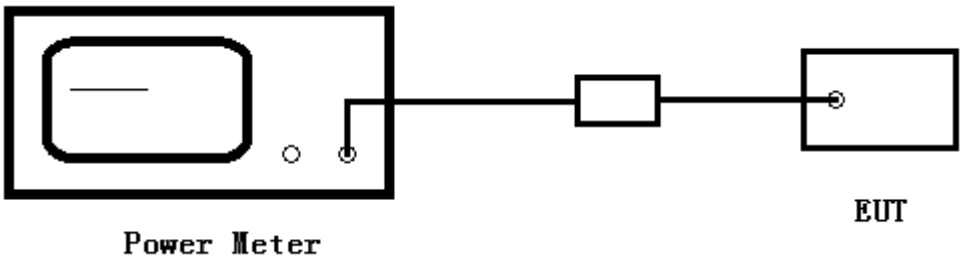
3.1. Requirement of the standard

According to FCC §15.247 (b) (3), the maximum peak output power of systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands is 1 Watt.

3.2. Test Procedure

The EUT temporary antenna port was coupled to the power meter. The radio frequency load attached to the EUT antenna terminal was 50 Ohm. The lost of the cables the test system is calibrated to correct the reading.

3.3. Test Setup



3.4. Test Results

Modulation	Operating Frequency (MHz)	Peak Output Power		Limit (W)
		(dBm)	(W)	
DSSS	2412	9.92	0.010	1
	2437	**10.17**	0.010	1
	2462	10.16	0.010	1
OFDM	2412	8.60	0.007	1
	2437	8.77	0.008	1
	2462	**8.82**	0.008	1

4. 6dB Bandwidth Measurement

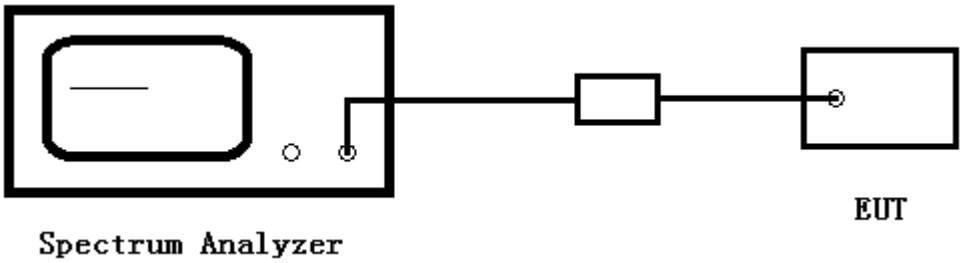
4.1. Requirement of the standard

According to FCC §15.247 (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 500 kHz.

4.2. Test Procedure

a) The EUT temporary antenna port was coupled to the spectrum analyzer. The lost of the cables the test system is calibrated to correct the reading.
b) The spectrum analyzer was set to Maxpeak Detector function and Maximum Hold mode.
c) The resolution bandwidth of the spectrum analyzer was set to at least 1% of the EUT emission bandwidth. RBW=100 kHz, VBW=300 kHz.

4.3. Test Setup



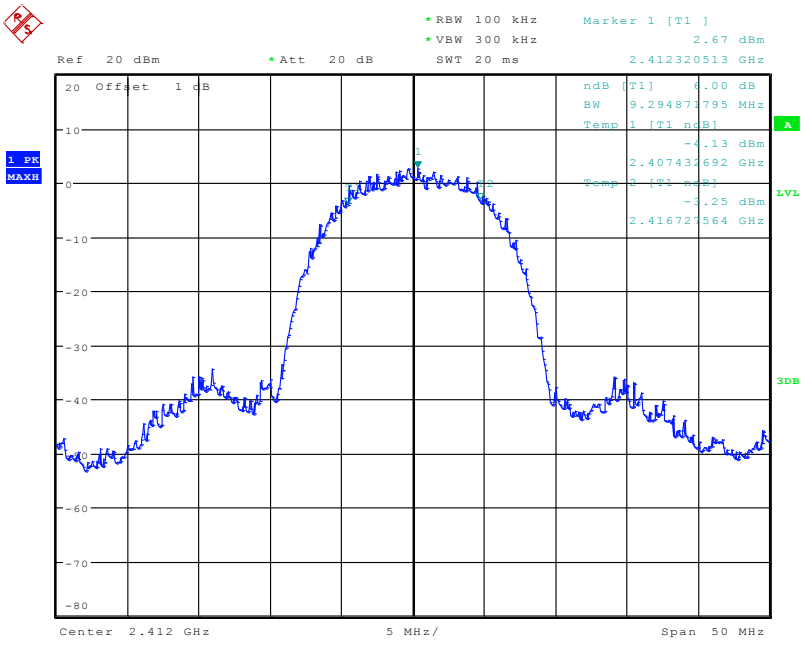
For the actual test configuration, please refer to the related item-Photographs of the Test Configuration.

4.4. Test Results

EUT Modulation	EUT Operating Frequency (MHz)	6dB Bandwidth (MHz)	FCC Requirement
DSSS	2412	9.295	>500 kHz
	2437	9.135	
	2462	8.734	
OFDM	2412	16.587	
	2437	16.587	
	2462	16.587	

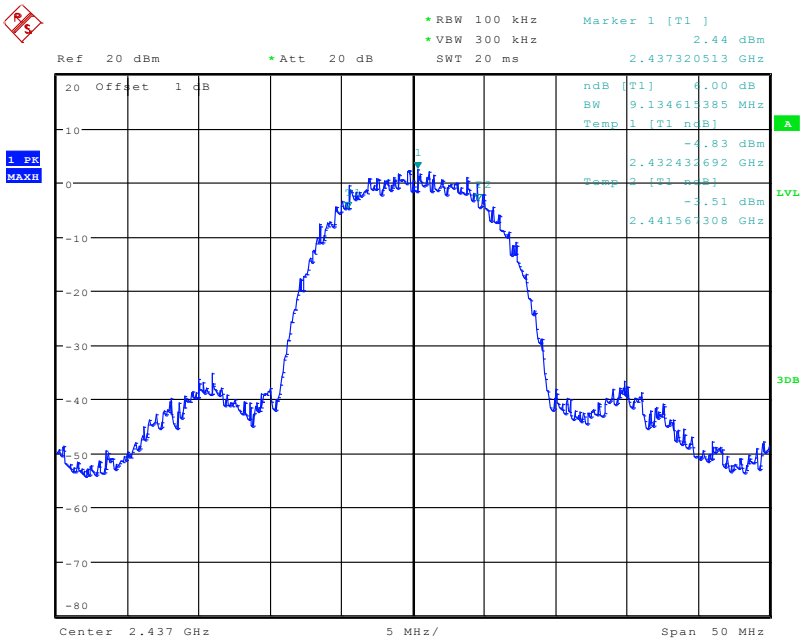
4.5. Test Plots

1. DSSS-2412MHz



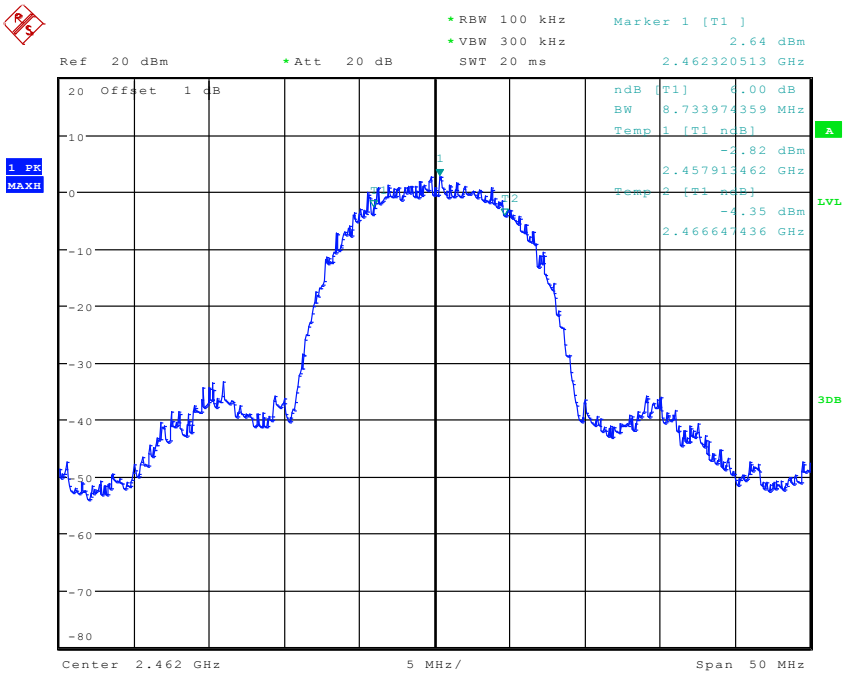
Date: 21.MAR.2011 16:59:33

2. DSSS-2437MHz



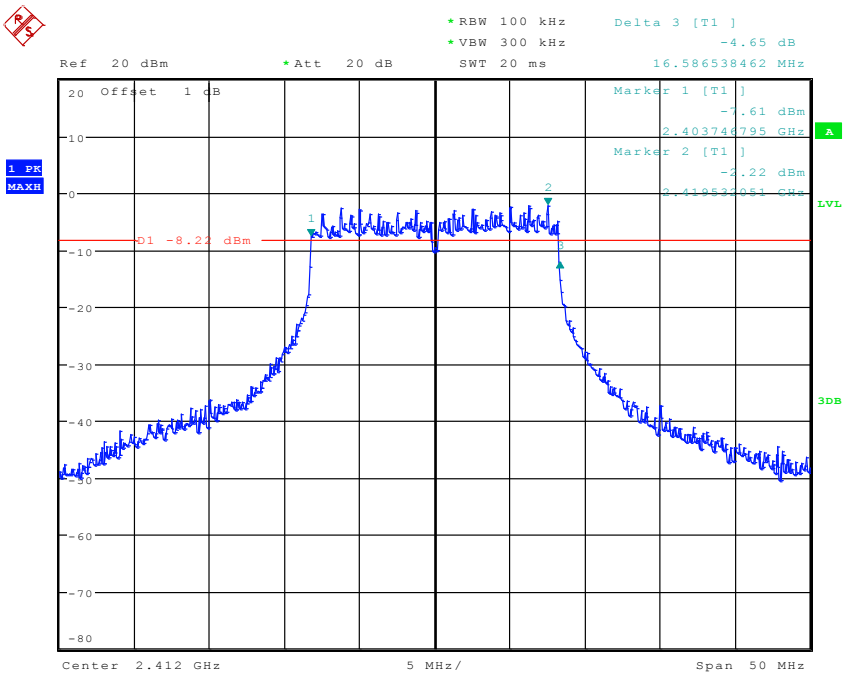
Date: 21.MAR.2011 17:02:31

3. DSSS-2462MHz



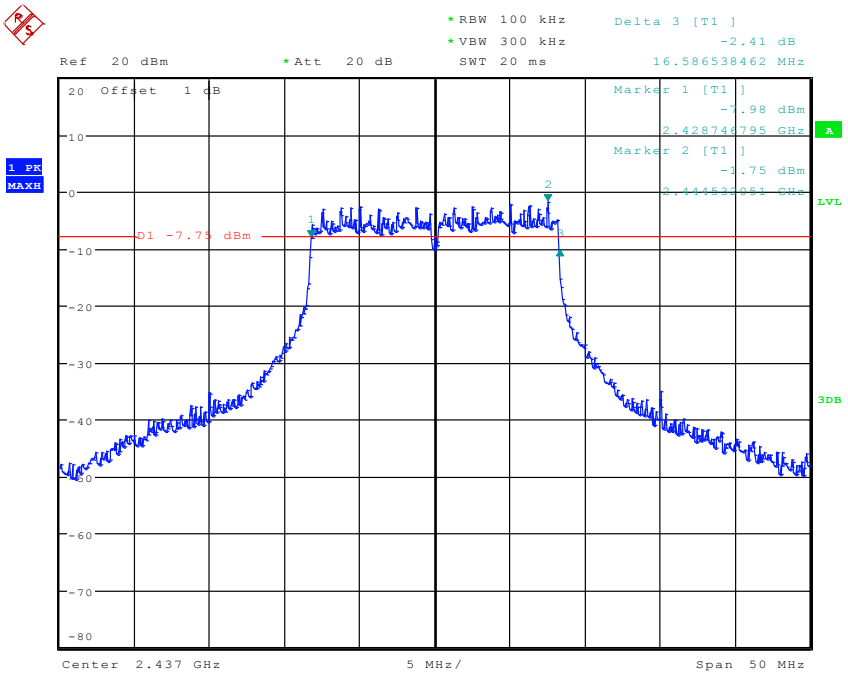
Date: 21.MAR.2011 17:04:50

4. OFDM-2412MHz



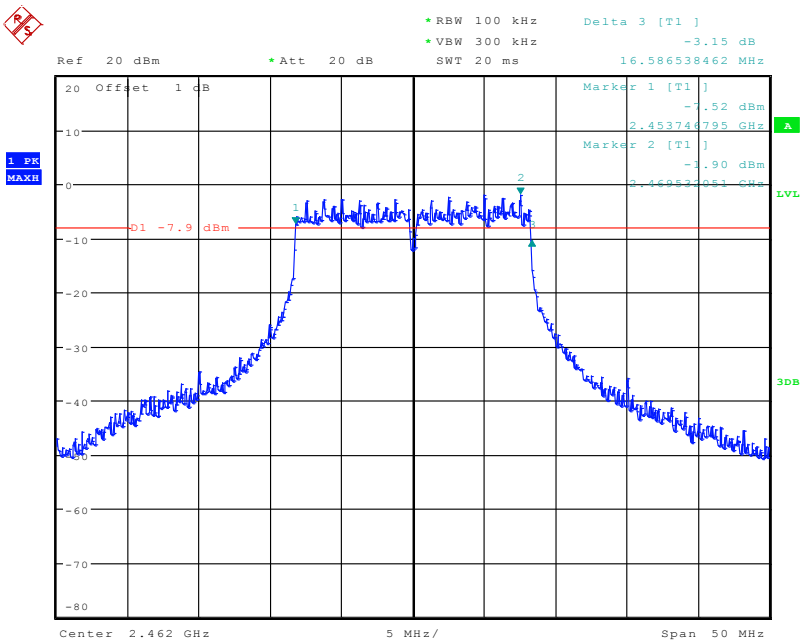
Date: 21.MAR.2011 17:16:44

5. OFDM-2437MHz



Date: 21.MAR.2011 17:14:30

6. OFDM-2462MHz



Date: 21.MAR.2011 17:18:59

5. Band Edge

5.1. Requirement of the standard

According to FCC §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.

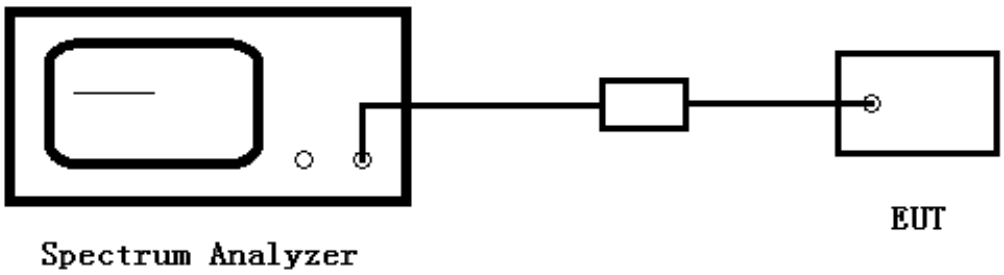
5.2. Test Procedure

a. For RF Conducted Measurement:
The EUT was tested according to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.
Set RBW = 100 kHz, Span greater than RBW.

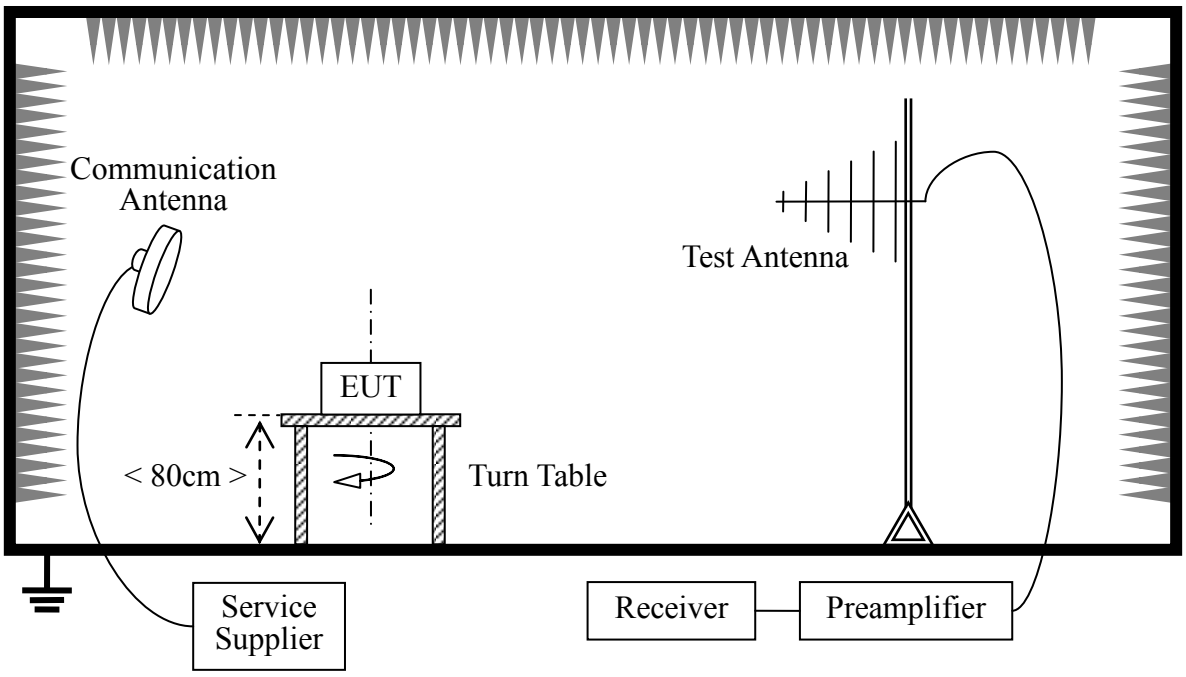
b. For RF Radiated Measurement:
The EUT was setup according to ANSI C63.4, 2003 and tested according to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47 CFR 15.247 requirements.
For measurements above 1GHz the resolution bandwidth is set to 1MHz, then the video bandwidth is set to 1MHz for peak measurements and 10Hz for average measurements.
The spectrum from 30MHz to 26GHz is investigated with the transmitter set to the lowest, middle and highest channels in the 2.4GHz band.
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth.
TheEUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are Made with the antenna polarized in both the vertical and the horizontal positions.

5.3. Test Setup

Conducted Band Edge



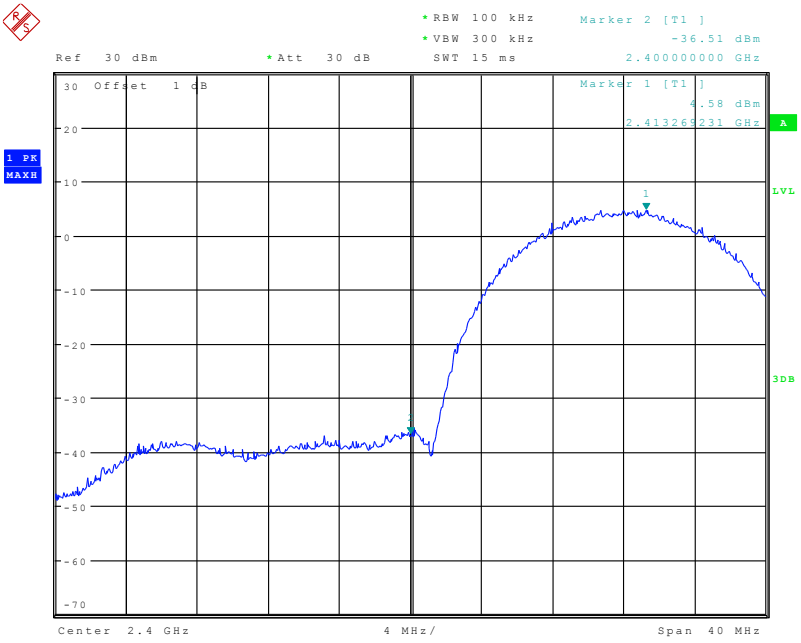
Radiated Band Edge



5.4. Test Results

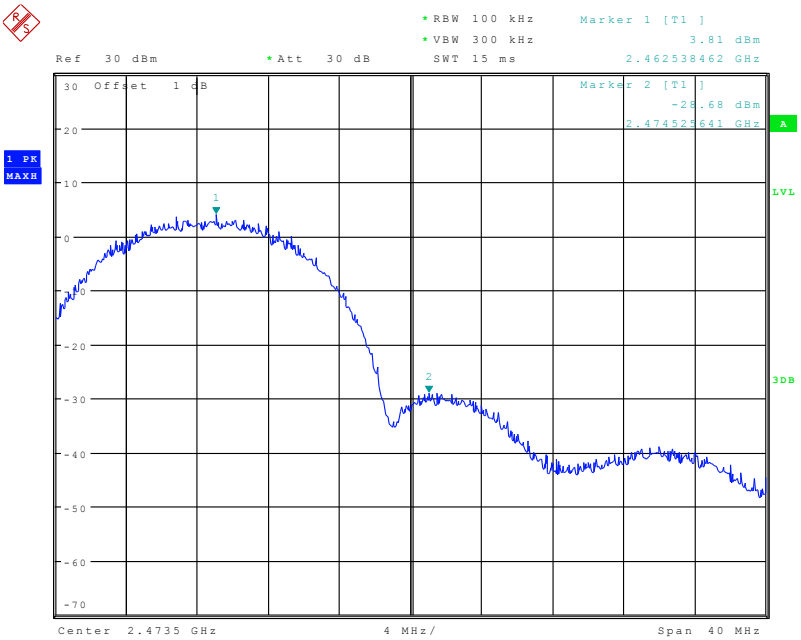
5.4.1. Conducted Band Edge

1. DSSS-2412MHz Maxpeak Detector



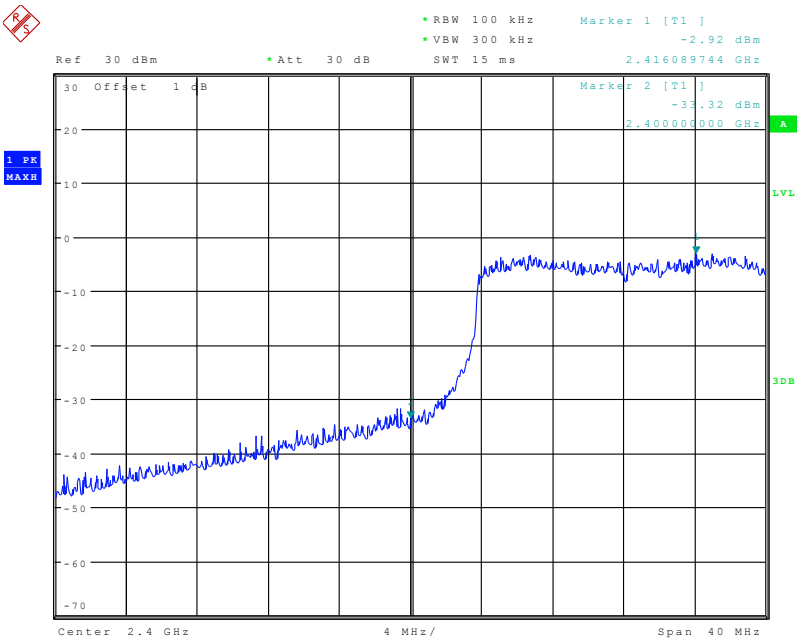
Date: 21.MAR.2011 17:23:29

2. DSSS-2462MHz Maxpeak Detector



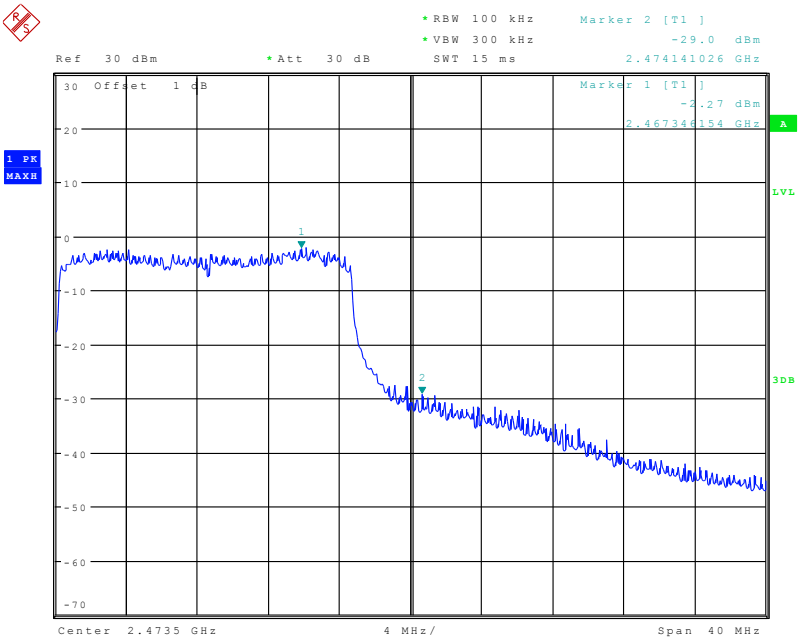
Date: 21.MAR.2011 18:02:05

3. OFDM -2412MHz Maxpeak Detector



Date: 21.MAR.2011 17:28:46

4. OFDM -2462MHz Maxpeak Detector



Date: 21.MAR.2011 17:31:43

5.4.2. Radiated Band Edge

Modulation	Frequency (MHz)	Measure Level (dBuV/m)	Correct Factor (dB)	Reading Level (dBuV)	Limit (dBuV/m)	Detector Type	Antenna Polarity
DSSS	2400	69.58	0.35	69.23	74	Peak	H
	2400	51.46	0.35	51.11	54	Average	
	2400	68.93	0.35	68.58	74	Peak	V
	2400	49.66	0.35	49.31	54	Average	
	2483.5	58.21	0.64	57.57	74	Peak	H
	2483.5	46.46	0.64	45.82	54	Average	
	2483.5	53.96	0.64	53.32	74	Peak	V
	2483.5	45.36	0.64	44.72	54	Average	
OFDM	2400	68.77	0.35	68.42	74	Peak	H
	2400	51.87	0.35	51.52	54	Average	
	2400	66.63	0.35	66.28	74	Peak	V
	2400	47.64	0.35	47.29	54	Average	
	2483.5	56.18	0.64	55.54	74	Peak	H
	2483.5	43.86	0.64	43.22	54	Average	
	2483.5	55.00	0.64	54.36	74	Peak	V
	2483.5	43.40	0.64	42.76	54	Average	

NOTE：

Measurement Level = Reading Level + Correct Factor

6. Power Spectrum Density Measurement

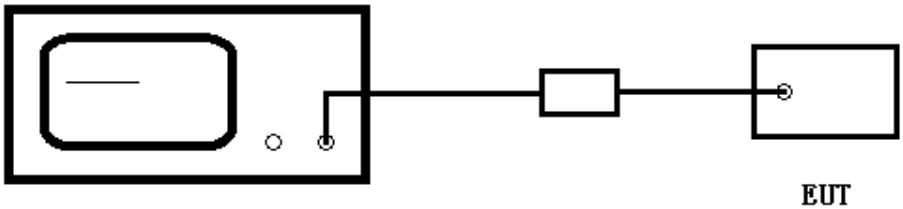
6.1. Requirement of the standard

According to FCC §15.247(e), for digitally modulated systems, the peak 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.

6.2. Test Procedure

a. The EUT temporary antenna port was coupled to the spectrum analyzer. The lost of the cables the test system is calibrated to correct the reading.
b. The spectrum analyzer was set to Maxpeak Detector function and Maximum Hold mode.
c. The resolution bandwidth of the spectrum analyzer was set to 3 kHz.

6.3. Test Setup

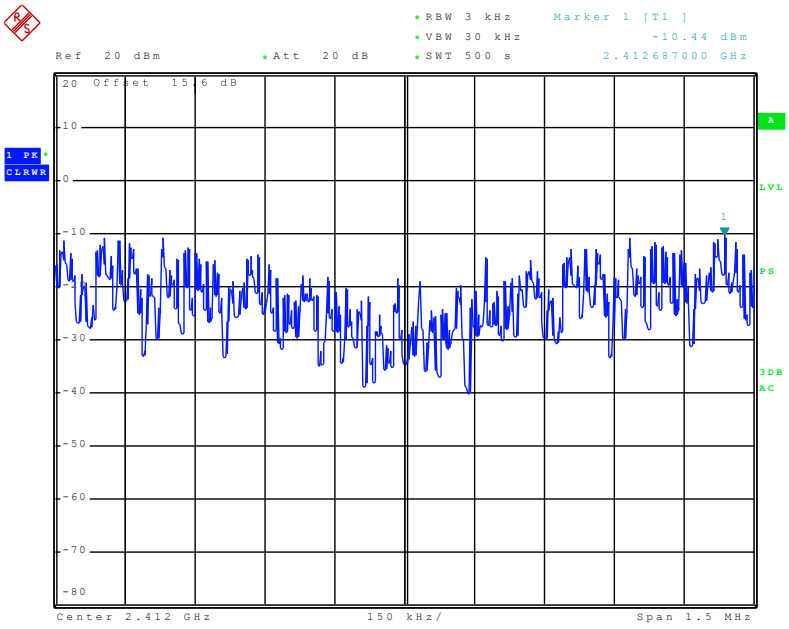


6.4. Test Results

EUT Modulation	Operating Frequency (MHz)	Power spectrum density (dBm/3kHz)	Limit (dBm/3kHz)
DSSS	2412	-10.44	8
	2437	-10.17	
	2462	-9.33	
OFDM	2412	-9.98	
	2437	-13.14	
	2462	-12.61	

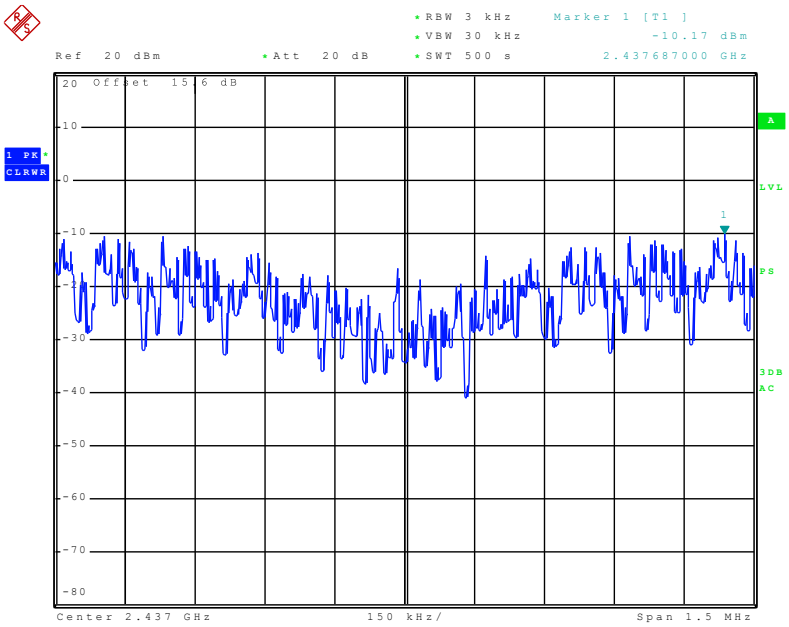
6.5. Test Plots

1. DSSS-2412MHz



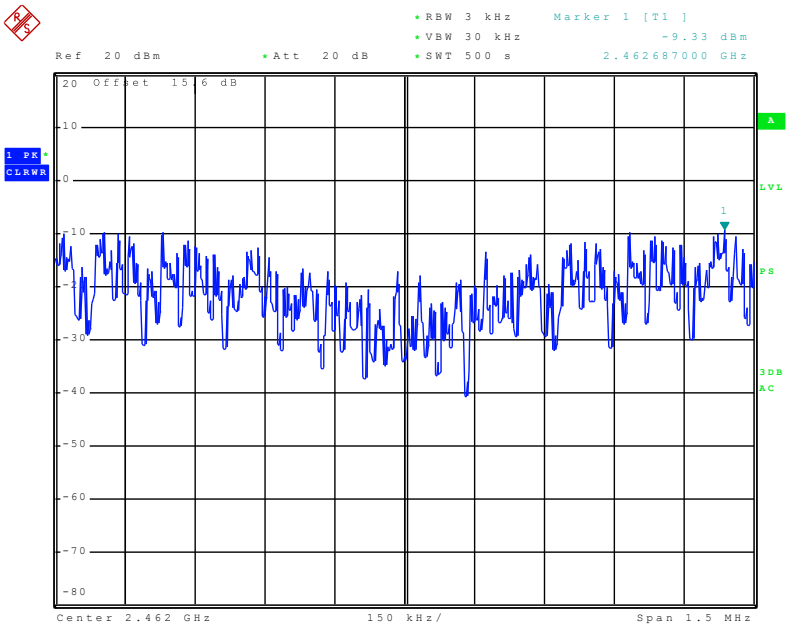
Date: 6.APR.2011 08:58:04

2. DSSS-2437MHz



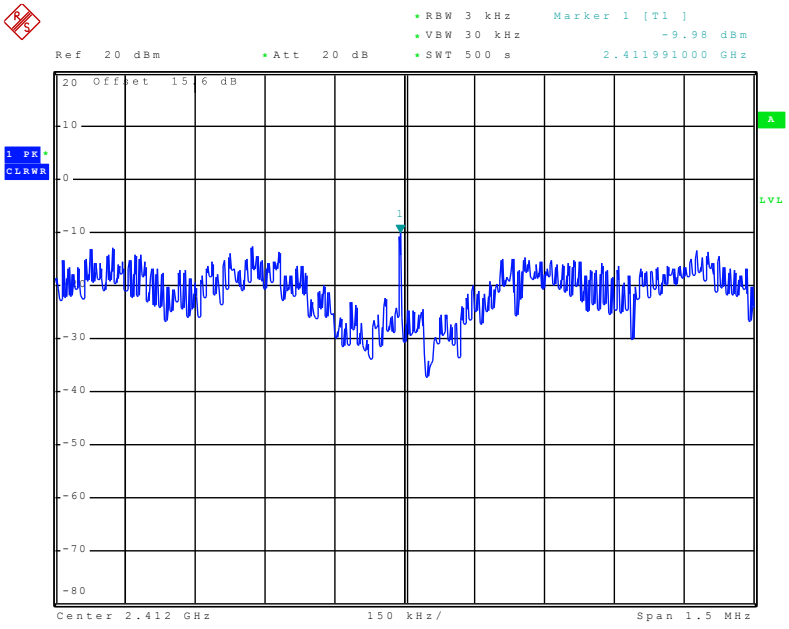
Date: 6.APR.2011 09:13:19

3. DSSS-2462MHz



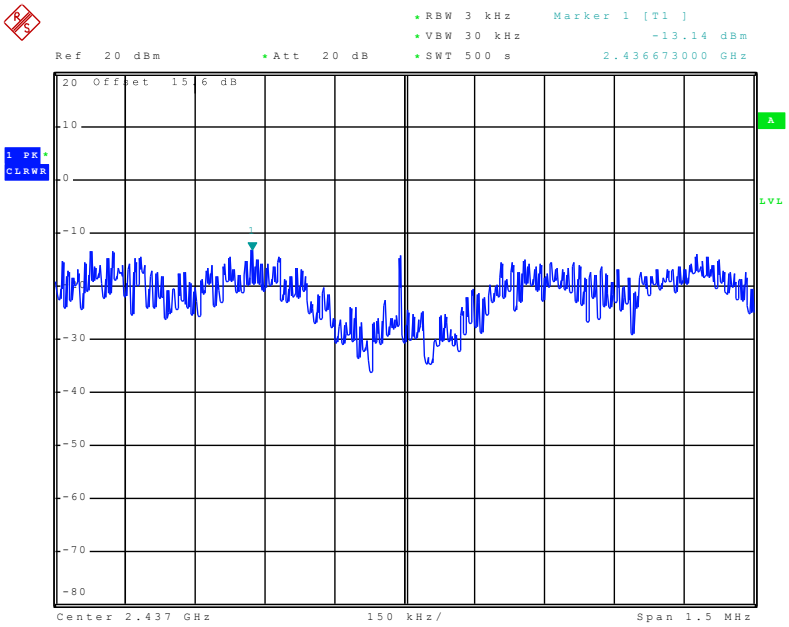
Date: 6.APR.2011 09:24:52

4. OFDM-2412MHz



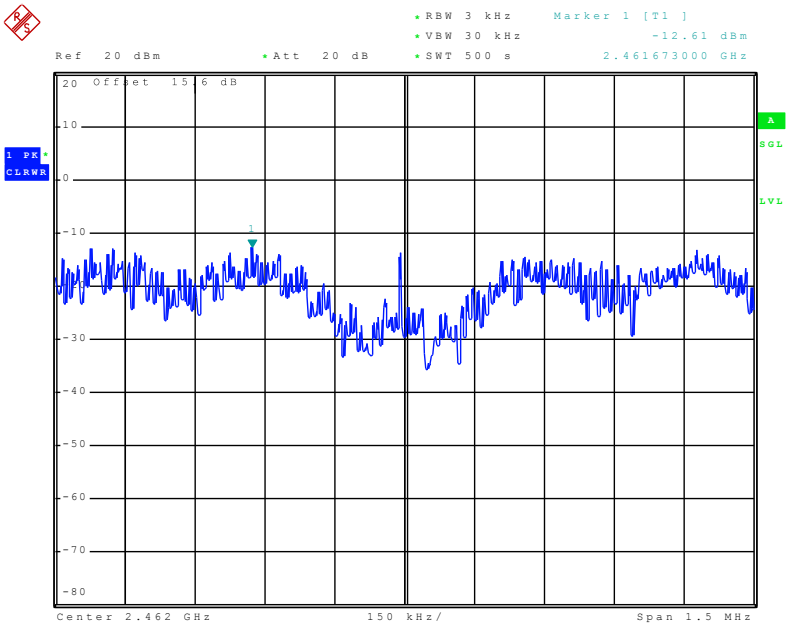
Date: 6.APR.2011 14:21:36

5. OFDM-2437MHz



Date: 6.APR.2011 14:39:13

6. OFDM-2462MHz



Date: 6.APR.2011 14:51:46

7. Conducted Spurious Emission

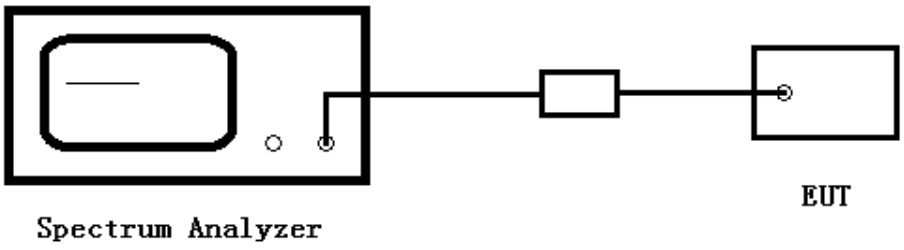
7.1. Requirement of the standard

According to FCC §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.

7.2. Test Procedure

a) The EUT was coupled to the spectrum analyzer and the base station simulator through a power divider. The radio frequency load attached to the EUT antenna terminal was 50 Ohm. The lost of the cables the test system is calibrated to correct the reading.
b) The spectrum analyzer was set to Maxpeak Detector function and Maximum Hold mode.
c) The spurious Emissions from 9 KHz to 10th harmonic of the fundamental frequency were researched.
d) According to the standard requirement, the resolution bandwidth of the spectrum analyzer was set to RBW=100 kHz, VBW=300 kHz.

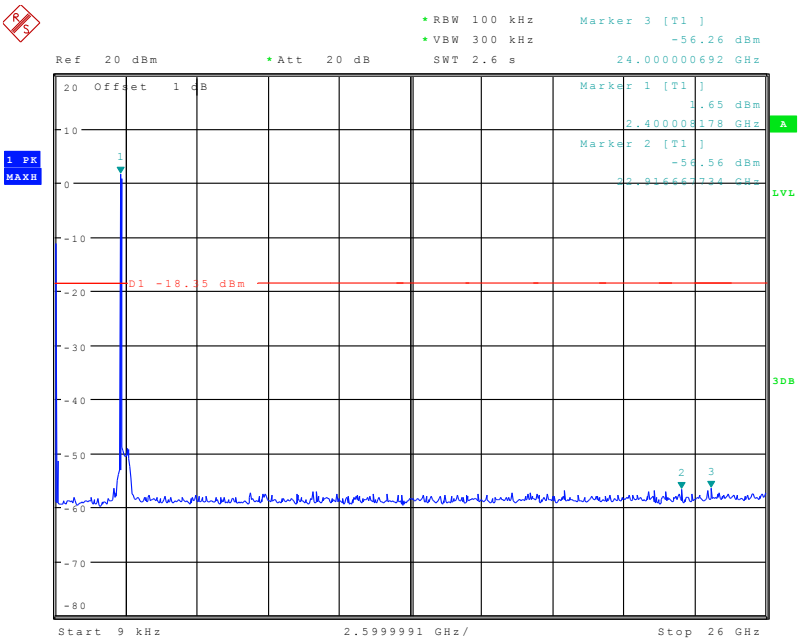
7.3. Test Setup



7.4. Test Results

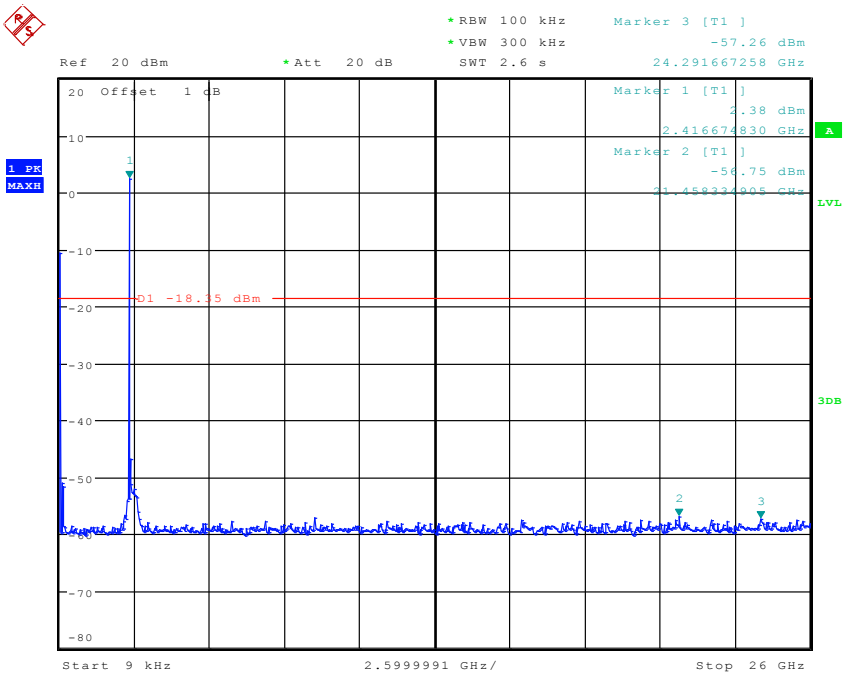
The following test plots shows that spurious emissions in the whole frequency range were bellow the 20dBc limit line.

1. DSSS-2412MHz



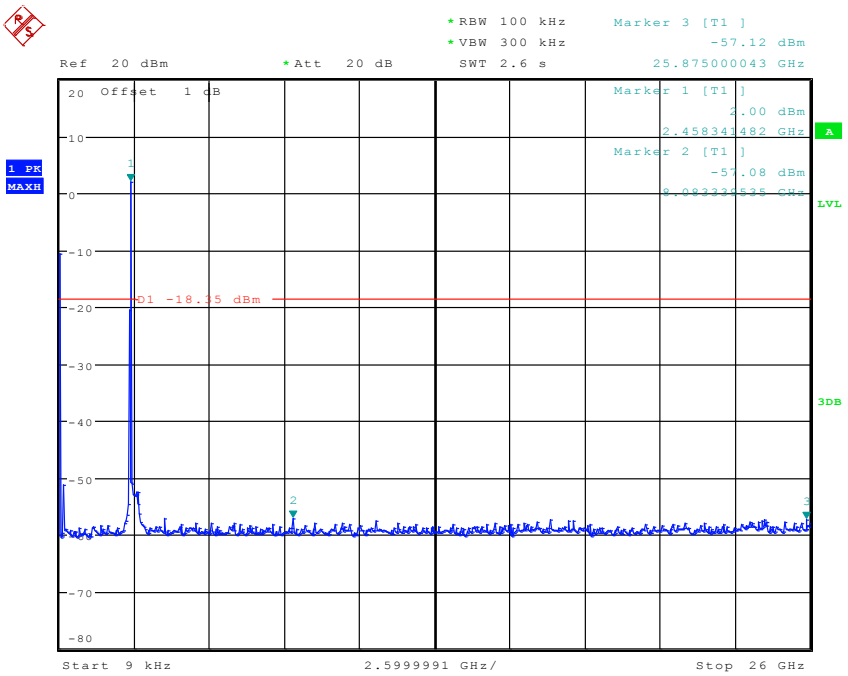
Date: 21.MAR.2011 18:07:54

2. DSSS-2437MHz



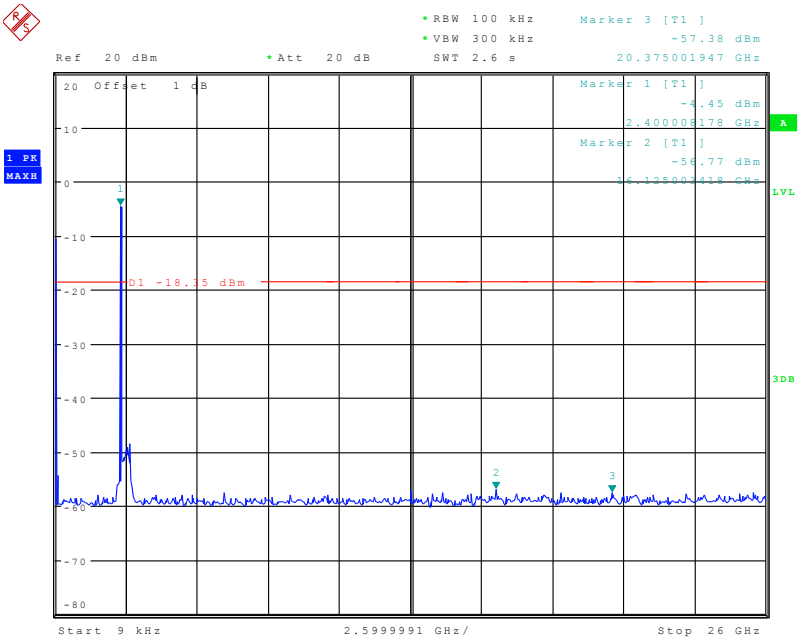
Date: 21.MAR.2011 18:14:32

3. DSSS-2462MHz



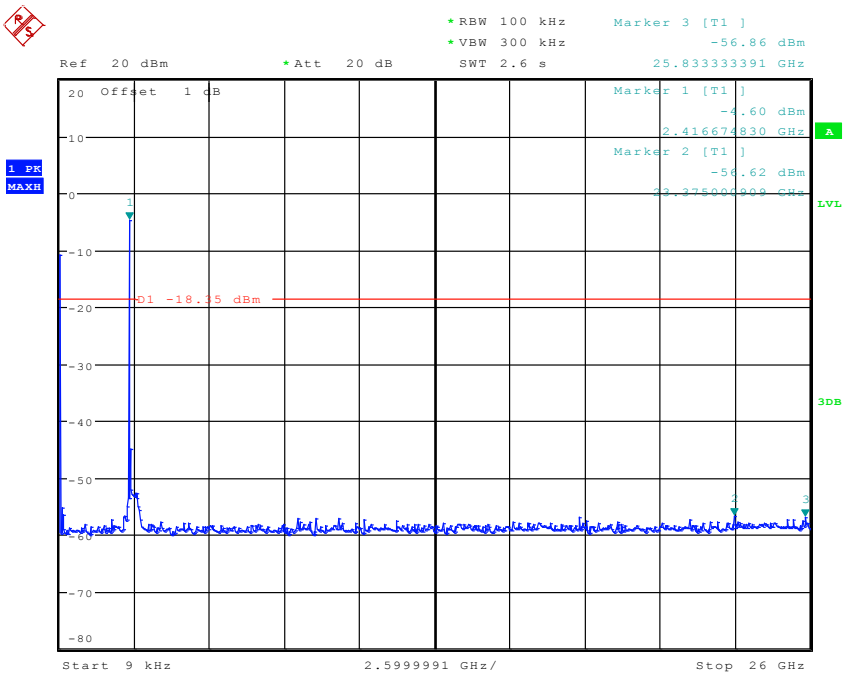
Date: 21.MAR.2011 18:16:55

4. OFDM-2412MHz



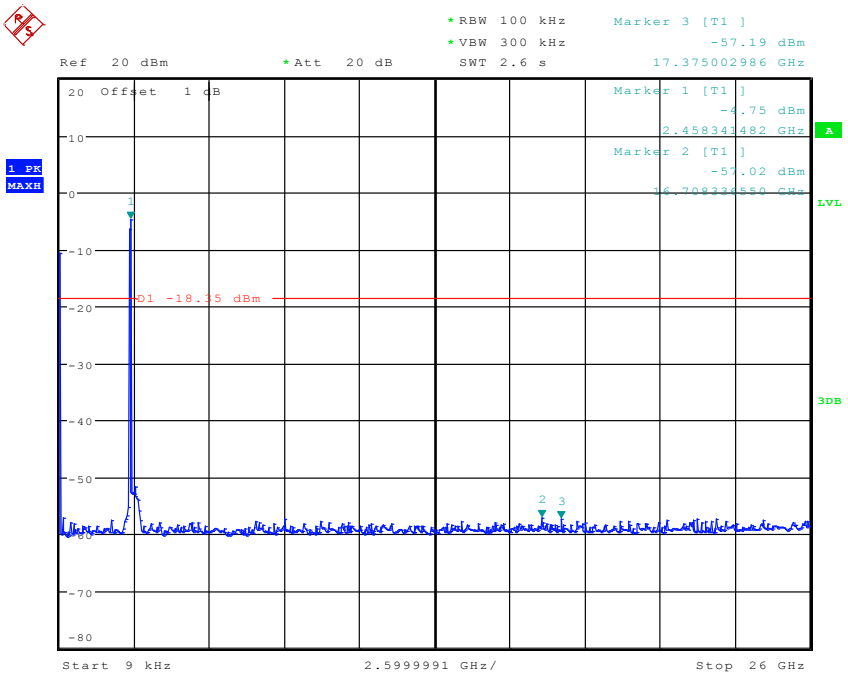
Date: 21.MAR.2011 18:19:27

5. OFDM-2437MHz



Date: 21.MAR.2011 18:22:44

6. OFDM-2462MHz



Date: 21.MAR.2011 18:24:30

8. Conducted Emission Test

8.1. Requirement of the standard

According to FCC §15.207, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN).

Frequency range (MHz)	Conducted Limit (dBμV)	
	Quai-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
0.50 - 30	60	50

NOTE:

1. The lower limit shall apply at the band edges.
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz.

8.2. Test Procedure

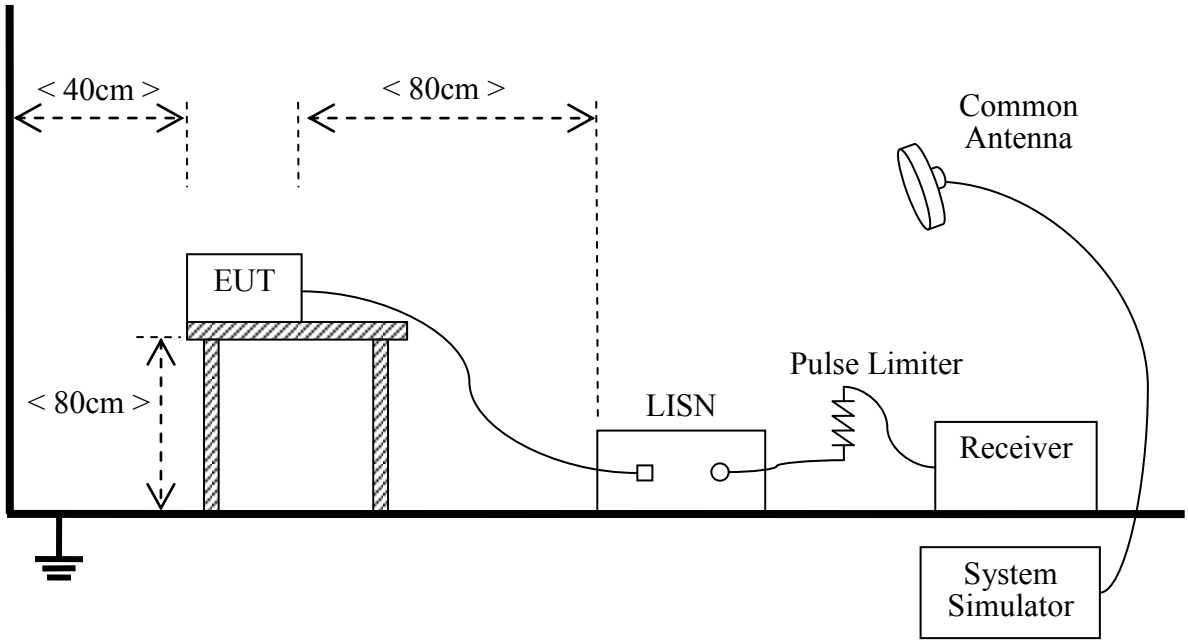
a) The EUT was placed on a 0.8m high insulating table and kept 0.4 meters from the conducting wall of shielded room.

b) The EUT was connected to the power mains through a line impedance stabilization network (LISN). The LISN provide 50Ω/50μH of coupling impedance for the measuring instrument.

c) Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

d) The frequency range from 150 kHz to 30 MHz was searched using CISPR Quasi-Peak and Average detector.

8.3. Test Setup



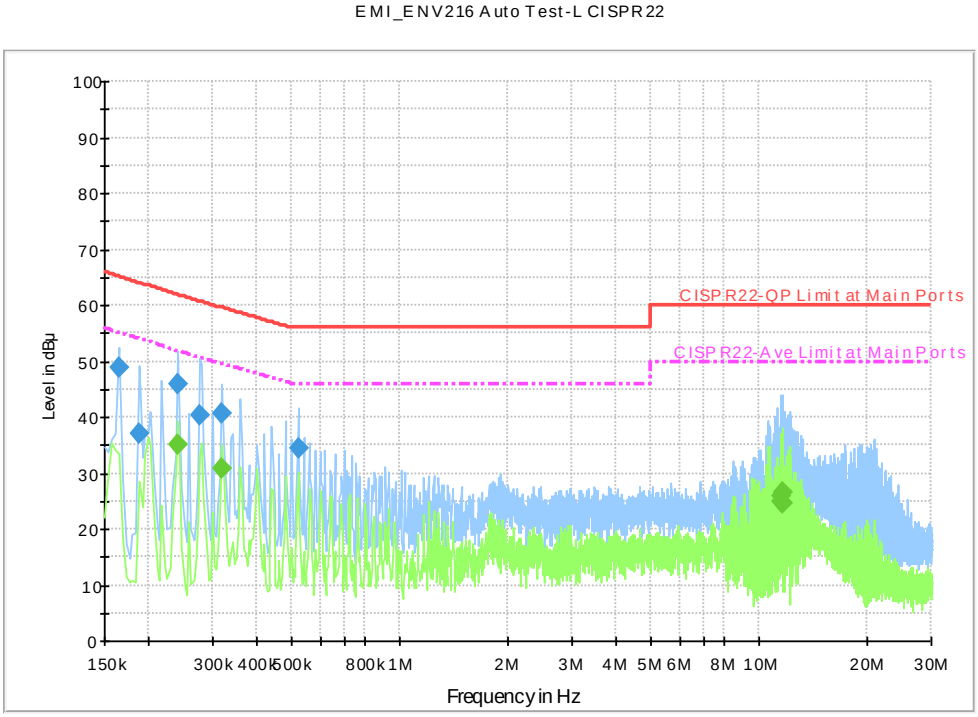
For the actual test configuration, please refer to the related item - Photographs of the Test Configuration.

8.4. Test Results

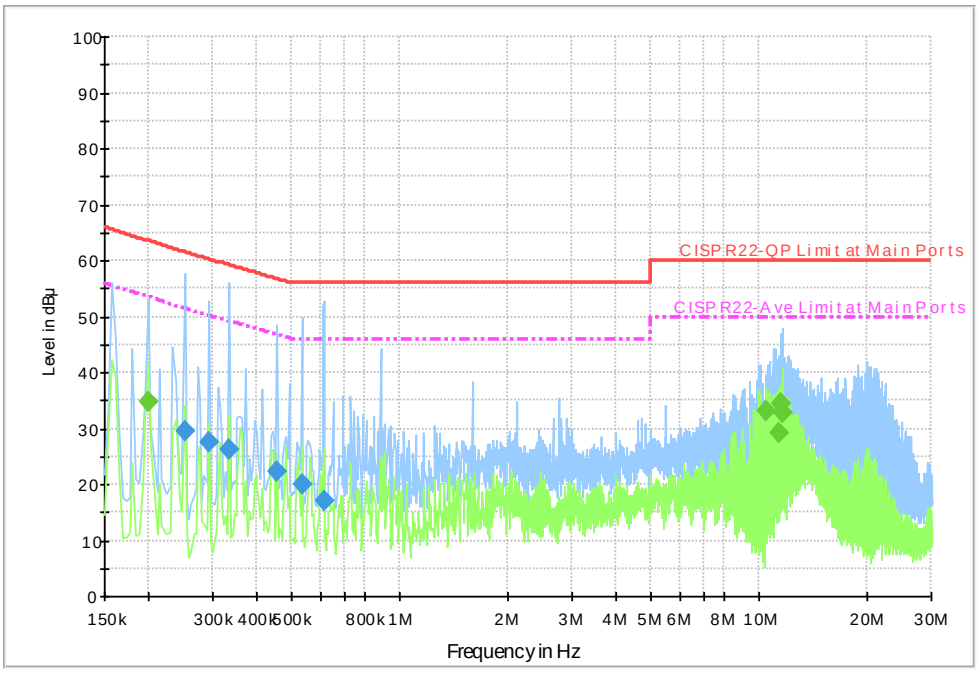
Frequency (MHz)	QuasiPeak (dBμ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμ V)	Comment
0.164925	49.0	150.000	9.000	Off	L1	9.5	16.2	65.2	PASS
0.187312	37.0	150.000	9.000	Off	L1	9.6	27.0	64.0	PASS
0.239550	45.9	150.000	9.000	Off	L1	9.7	16.0	61.9	PASS
0.276862	40.4	150.000	9.000	Off	L1	9.7	20.3	60.7	PASS
0.317906	40.8	150.000	9.000	Off	L1	9.7	18.8	59.6	PASS
0.519394	34.5	150.000	9.000	Off	L1	9.7	21.5	56.0	PASS
0.250744	29.5	150.000	9.000	On	N	9.6	32.0	61.5	PASS
0.291788	27.6	150.000	9.000	On	N	9.6	32.7	60.3	PASS
0.332831	26.3	150.000	9.000	On	N	9.7	32.9	59.2	PASS
0.452231	22.2	150.000	9.000	On	N	9.7	34.6	56.8	PASS
0.530588	20.0	150.000	9.000	On	N	9.7	36.0	56.0	PASS
0.612675	16.9	150.000	9.000	On	N	9.7	39.1	56.0	PASS

Frequency (MHz)	Average (dBμ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμ V)	Comment
0.239550	35.2	150.000	9.000	Off	L1	9.7	16.7	51.9	PASS
0.317906	30.7	150.000	9.000	Off	L1	9.7	18.8	49.5	PASS
11.422106	25.9	150.000	9.000	Off	L1	10.1	24.1	50.0	PASS
11.500462	24.9	150.000	9.000	Off	L1	10.1	25.1	50.0	PASS
11.541506	26.6	150.000	9.000	Off	L1	10.1	23.4	50.0	PASS
11.578819	24.5	150.000	9.000	Off	L1	10.1	25.5	50.0	PASS
0.198506	34.7	150.000	9.000	On	N	9.6	18.8	53.5	PASS
10.429594	33.0	150.000	9.000	On	N	10.1	17.0	50.0	PASS
11.310169	29.1	150.000	9.000	On	N	10.1	20.9	50.0	PASS
11.474344	34.3	150.000	9.000	On	N	10.1	15.7	50.0	PASS
11.515388	34.5	150.000	9.000	On	N	10.1	15.5	50.0	PASS
11.552700	32.9	150.000	9.000	On	N	10.1	17.1	50.0	PASS

8.5. Test Plots:



(Plot A: L Phase)



(Plot B: N Phase)

9. Radiated Emission Test

9.1. Requirement of the standard

According to FCC §15.247(c), radiated emission outside the frequency band attenuation below the general limits specified in Section 15.209(a) is not required. 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).

According to FCC §15.209 (a), Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

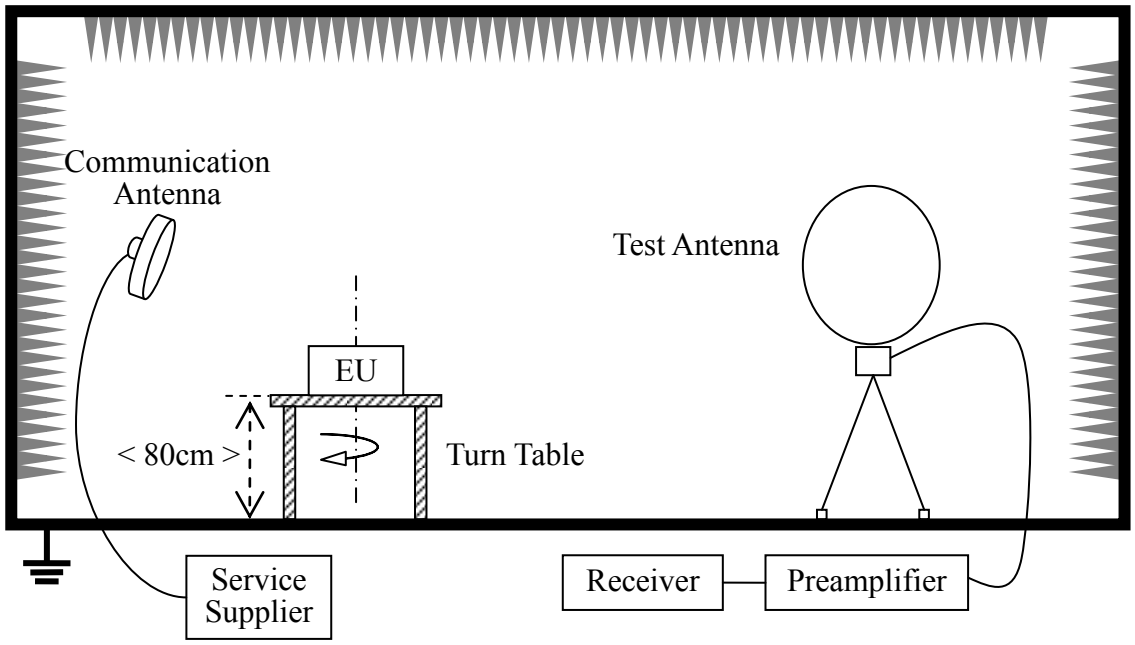
As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector. When average radiated emission measurements are specified in this part, including emission measurements below 1000 MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit for the frequency being investigated unless a different peak emission limit is otherwise specified in the rules,

9.2. Test Procedure

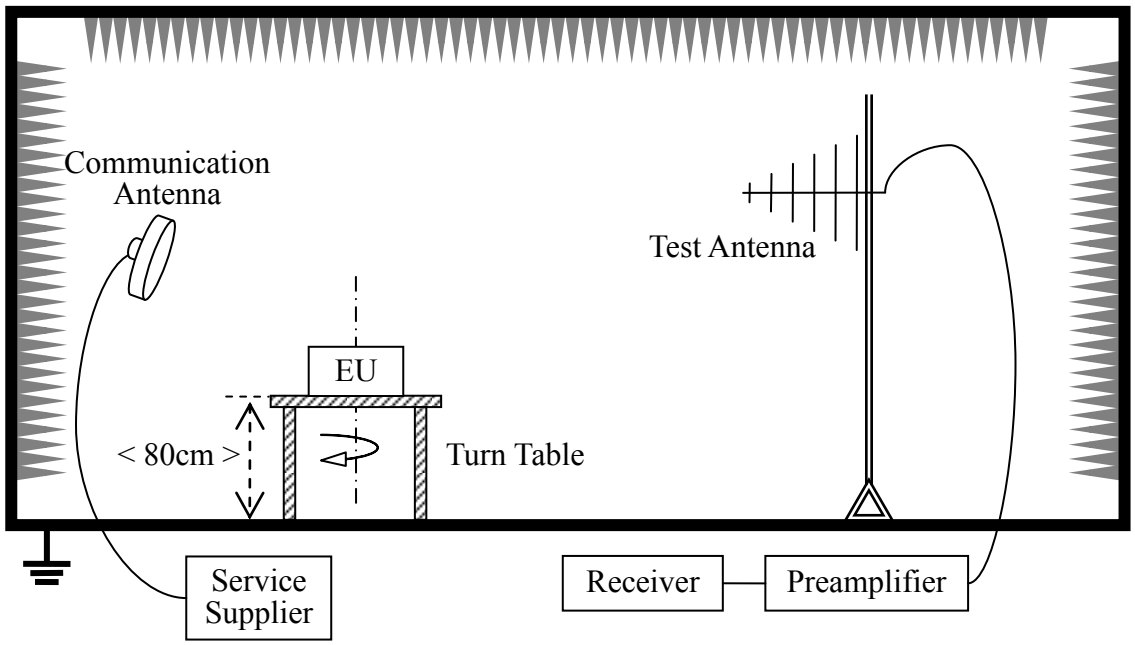
1) The EUT was placed on the top of a ratable 0.8 meters above the ground at a semi-anechoic chamber.In the frequency range of 9 kHz to 30 MHz, magnetic field was measured with loop antenna.
2) The antenna was positioned with its plane vertical at 1 m distance from the EUT. The center of the loop was 1 m above the ground. During the measurement the loop antenna rotated about its vertical axis for maximum response at each azimuth about the EUT.
3) In the frequency range above 30MHz, ultra-broadband bi-log antenna (30 MHz to 1 GHz) and horn antenna (above 1GHz) were used. Antenna was 3 meters away from the EUT. Antenna height was varied from one meter to four meter 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) The test-receiver system was set to Peak Detector Function and Specified Bandwidth with Maximum Hold Mode.
5) 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 emission that did not have 10 dB margins would be retested one by one using the quasi-peak method.

9.3. Test Setup



Rdiated emissions below 30MHz



Rdiated emissions above 30MHz

For the actual test configuration, please refer to the related item-Photographs of the Test Configuration.

9.4. Test Results

9.4.1. Test Results of Radiated Emissions (9 kHz ~ 30 MHz)

Frequency(MHz)	Level(dBuV)	Margin(dB)	Limit(dBuV)	Remark
-	-	>10	-	See note

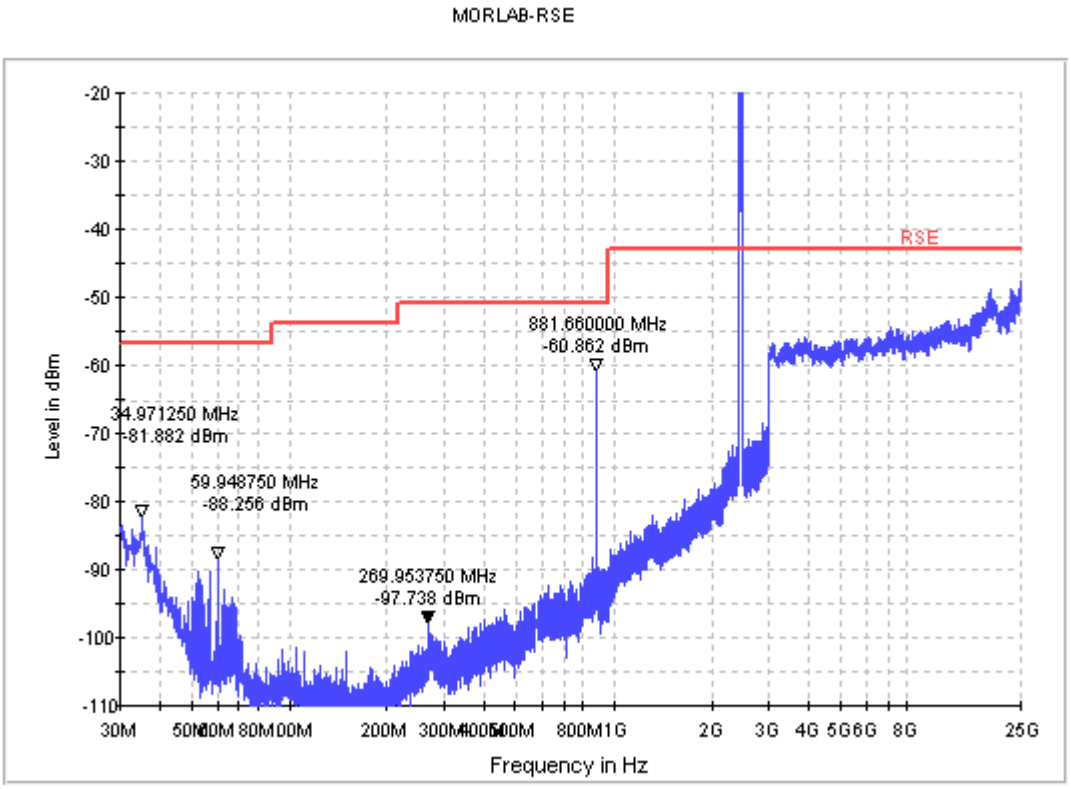
Note:

The amplitude of spurious emissions that are attenuated by more than 10dB below the permissible value has no need to be reported.

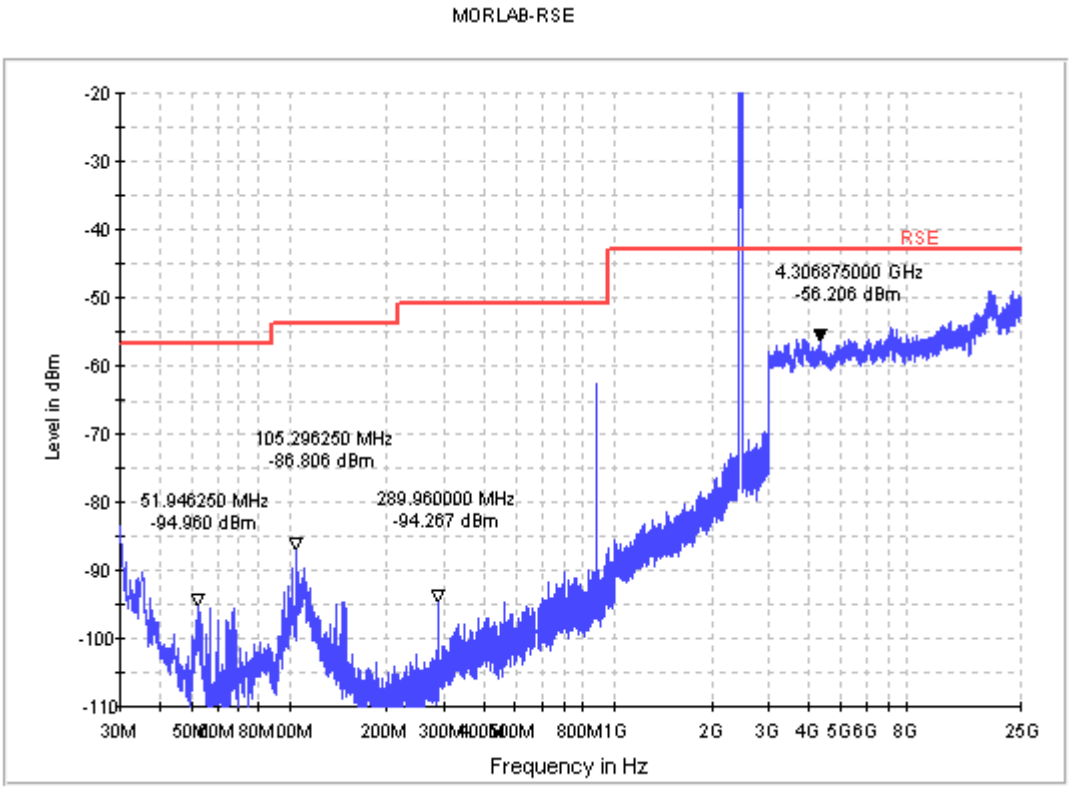
Distance extrapolation factor = 40 log (specific distance / test distance) (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor.

9.4.2. Test Result of Radiated Emission (30 MHz ~ 10th Harmonic)



(Plot A: Antenna Horizonta)



(Plot B: Antenna Vertical)

10. Antenna Requirements

10.1. Requirement of the standard

If directional gain of transmitting antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the FCC rule.

10.2. Antenna Connected Construction

The antennas type used in this product is Chip Antenna without connector and it is considered to meet antenna requirement.

10.3. Antenna Gain

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.

11. Receiver Spurious Emissions

11.1.Requirement of the standard

According to RSS-GEN 4.10, the receiver shall be operated in the normal receive mode near the mid-point of the band over which the receiver is designed to operate. The search for spurious emissions shall be from the lowest frequency internally generated or used in the receiver (e.g. local oscillator, intermediate or carrier frequency), or 30 MHz, whichever is the higher, to at least 3 times the highest tuneable or local oscillator frequency, whichever is the higher, without exceeding 40 GHz.
According to RSS-GEN 7.2.3.1, If the device has a detachable antenna of known antenna impedance, then the antenna conducted method is permitted in lieu of a radiated measurement.
Receiver spurious emissions at any discrete frequency shall not exceed 2 nanowatts in the band 30-1000 MHz, or 5 nanowatts above 1 GHz.

Limits for Conducted Receiver Spurious Emissions	
Frequency(MHz)	Limit
30 – 1000	2nW
Above 1000	5nW

According to RSS-GEN 7.2.3.2, for Radiated Measurement, all spurious emissions shall comply with the limits of Table below:

Limits for Rradiated Receiver Spurious Emissions	
Frequency(MHz)	Field Strength(microvolts/meter)
30 - 88	100
88 - 216	150
216 - 960	200
Above 960	500

11.2. Test Procedure

Please refer to RSS-GEN section 4.10 for the measurement methods.

11.3. Test Setup

See section 9.3 of this report.

11.4. Test Results

11.4.1. Conducted Receiver Spurious Emissions

Frequency(MHz)	Measure Result(nW)	Limit (nW)
30 – 1000	--	2
Above 1000	--	5

11.4.2. Rradiated Receiver Spurious Emissions

No.	Frequency (MHz)	Antenna Polarization	Detector mode	Level ERP(dBμV)	Limit (dBμV)	Margin (dB)
1	30 - 88	Vertical	Peak	--	40	>10
2	88 – 216	Vertical	Peak	--	43.5	>10
3	216 – 960	Vertical	Peak	--	46	>10
4	960 - 1000	Vertical	Peak	--	54	>10
5	1000 – 10000	Vertical	Average	--	54	>10
6	30 - 88	Horizontal	Peak	--	40	>10
7	88 – 216	Horizontal	Peak	--	43.5	>10
8	216 – 960	Horizontal	Peak	--	46	>10
9	960 - 1000	Horizontal	Peak	--	54	>10
10	1000 - 10000	Horizontal	Average	--	54	>10

Notes:

1) Both radiated measurement method and conducted measurement method were used. For the radiated method, the antenna polarization was set to vertical and horizontal respectively.
2) The measurement was performed at the mid operating frequencies.
3) "--" in the table above means that the emissions are too small to be measured and are at least 10 dB below the limit.

12. List of Equipments Used

Description	Manufacturer	Model No.	Cal. Date	Due Date	Serial No.
Test Receiver	Rohde & Schwarz	ESCI3	2010.9	2011.9	100666
Spectrum Analyzer	Rohde & Schwarz	FSP30	2010.9	2011.9	101020
Spectrum Analyzer	Rohde & Schwarz	FSU26	2010.9	2011.9	200880
System Simulator	Agilent	E5515C	2010.9	2011.9	GB46040102
System Simulator	Rohde&Schwarz	CMU200	2010.9	2011.9	105571
LISN	Rohde & Schwarz	ENV216	2010.9	2011.9	812744
Loop Antenna	Rohde & Schwarz	HFH2-Z2	2010.9	2012.9	A0304220
Ultra Broadband Ant.	Rohde & Schwarz	HL562	2010.9	2012.9	A0304224
Horn Ant.	Rohde & Schwarz	HF906	2010.9	2012.9	100150
DC power supply	HP	66309D	2010.9	2012.9	US39070653
Shield Room	ETS	Site 1	/	/	A0304188
Anechoic Chamber	ETS	EMC9×6× 6 (m)	/	/	/

**** END OF REPORT ****