



TEST REPORT

No. 2012TAR155

for

Sony Ericsson Mobile Communications AB

**GSM 850/900/1800/1900 quad bands and UMTS FDD 1/2/5 mobile
phone**

Type: AAD-3880131-BV

FCC ID: PY7A3880131

IC No.: 4170B-A3880131

with

Hardware Version: 6.0.B.1.113

Software Version: A

Issued Date: Apr. 19th, 2012

Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of TMC Beijing.

Test Laboratory:

DAR accreditation (DIN EN ISO/IEC 17025): No. DGA-PL-114/01-02

FCC 2.948 Listed: No.733176

IC O.A.T.S listed: No.6629A-1

TMC Beijing, Telecommunication Metrology Center of Ministry of Industry and Information Technology

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CONTENTS

1. TEST LABORATORY	4
1.1. TESTING LOCATION	4
1.2. TESTING ENVIRONMENT	4
1.3. PROJECT DATA.....	4
1.4. SIGNATURE	4
2. CLIENT INFORMATION	5
2.1. APPLICANT INFORMATION.....	5
2.2. MANUFACTURER INFORMATION.....	5
3. EQUIPMENT UNDER TEST (EUT) AND ANCILLARY EQUIPMENT (AE)	6
3.1. ABOUT EUT	6
3.2. INTERNAL IDENTIFICATION OF EUT USED DURING THE TEST	6
3.3. INTERNAL IDENTIFICATION OF AE USED DURING THE TEST.....	6
3.4. GENERAL DESCRIPTION	7
3.5. EUT SET-UPS	7
4. REFERENCE DOCUMENTS	8
4.1. REFERENCE DOCUMENTS FOR TESTING	8
5. LABORATORY ENVIRONMENT	9
6. SUMMARY OF TEST RESULTS.....	10
6.1. SUMMARY OF TEST RESULTS	10
6.2. STATEMENTS	10
7. TEST EQUIPMENTS UTILIZED.....	11
ANNEX A: MEASUREMENT RESULTS	12
A.1 OUTPUT POWER.....	12
A.2 EMISSION LIMIT	15
A.3 CONDUCTED EMISSION.....	20
A.4 FREQUENCY STABILITY	23
A.5 OCCUPIED BANDWIDTH	26
A.6 EMISSION BANDWIDTH.....	30
A.7 BAND EDGE COMPLIANCE	34
A.8 CONDUCTED SPURIOUS EMISSION	37
A.9 RECEIVER RADIATION EMISSION	58
ANNEX B: TEST LAYOUT	60

ANNEX C: EUT PHOTOGRAPH.....61

1. Test Laboratory

1.1. Testing Location

Company Name: TMC Beijing, Telecommunication Metrology Center of MIIT
Address: No 52, Huayuan beilu, Haidian District, Beijing, P.R.China
Postal Code: 100191
Telephone: +86-10-62304633-2678
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1.2. Testing Environment

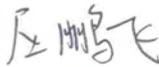
Normal Temperature: 15-35°C
Relative Humidity: 20-75%
Air pressure 980 - 1040 hPa

The climatic requirements above are general exclude the special requirements for dedicated test environments listed in section 5 and some specific test cases in other parts of this report.

1.3. Project data

Receipt of Sample Feb. 21st, 2012
Testing Start Date: Feb. 22nd, 2012
Testing End Date: Apr. 18th, 2012

1.4. Signature



Qu Pengfei

(Prepared this test report)



Sun Xiangqian

(Reviewed this test report)



Song Chongwen

(Approved this test report)

2. Client Information

2.1. Applicant Information

Company Name: Sony Ericsson Mobile Communications(China) Co., Ltd.
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Postal Code: 100102
Country: China
Contact Person: Ma, Gang
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2.2. Manufacturer Information

Company Name: Sony Ericsson Mobile Communications AB
Address /Post: Nya Vattentornet, 22188 Lund, Sweden
City: Lund
Postal Code: 22188
Country: Sweden
Contact Person: Nordlof, Anders
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3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

Description	GSM 850/900/1800/1900, GPRS, EDGE, WCDMA FDD Band 1/2/5, BT EDR2.0, WLAN (802.11 b/g/n), FM, GPS receiver mobile phone
Type	AAD-3880131-BV
FCC ID	PY7A3880131
IC No	4170B-A3880131
Frequency range	GSM 850: 824.2 MHz - 848.8 MHz PCS 1900: 1850.2 MHz -1909.8 MHz WCDMA 850:824 MHz - 849 MHz WCDMA 1900:1850 MHz -1910 MHz
Antenna	Internal
Power supply	Battery or charger (travel adaptor / vehicle adaptor)
Output power	31.22 dBm maximum ERP measured for GSM850 30.44 dBm maximum EIRP measured for PCS1900 26.29 dBm maximum ERP measured for WCDMA 850 27.19 dBm maximum EIRP measured for WCDMA 1900
Extreme vol. Limits	3.5VDC to 4.1VDC (nominal: 3.7VDC)
Extreme temp. Tolerance	-30°C to +50°C

Note: Components list, please refer to documents of the manufacturer; it is also included in the original test record of Telecommunication Metrology Center of MIIT of People's Republic of China.

3.2. Internal Identification of EUT used during the test

EUT ID*	SN	IMEI	HW Version	SW Version
N13	BX902T0A1U	004402144893439	A	6.0.B.1.113
N24	BX902T0A0Y	004402144893173	A	6.0.B.1.113

*EUT ID: is used to identify the test sample in the lab internally.

3.3. Internal Identification of AE used during the test

AE ID*	Description	SN	Revision
AE1	Battery	000064PTSIOH	1C
AE2	Battery	000558PTSIOH	1C
#20183	Travel Charger	8511W 12 S 10380	1
#20258	USB Cable	105012D8042277E	1

AE1, AE2

Type	CBA-0002030
Manufacturer	Sony Ericsson
Minimal Capacitance	1290mAh
Nominal Voltage	3.7V

#20183

Type	CAA-0002016-BV
Manufacturer	Salcomp
Length of cable	99cm (length of USB cable)

#20258

Commercial Name	EC450
Manufacturer	Sony Ericsson
Length of cable	99cm

*AE ID: is used to identify the test sample in the lab internally.

3.4. General Description

The Equipment Under Test (EUT) is a model of GSM 850/900/1800/1900 quad bands and UMTS FDD 1/2/5 mobile phone with integrated antenna.

The EUT supports GSM 850/900/1800/1900MHz bands and WCDMA 850/1900/2100MHz bands. It also supports GPRS service with multi-slots class 33 and EGPRS service with multi-slots class 33 too. The HSDPA and HSUPA features are also supported.

It has MP3, Camera, FM radio, USB memory, GPS receiver, Bluetooth (EDR), WLAN (802.11 b/g/n) and Wi-Fi hotspot functions.

It consists of normal options: lithium battery and travel charger.

Manual and specifications of the EUT were provided to fulfil the test.

Samples undergoing test were selected by the client.

3.5. EUT set-ups

EUT Set-up No.	Combination of EUT and AE	Remarks
Set. 9	N24 + AE1/AE2	Conducted RF tests
Set. 10	N13 + AE1/ AE2 + #20183 + #20258	Tests with travel charger
Set. 11	N13 + AE1/ AE2	ERP/EIRP/RSE tests

4. Reference Documents

4.1. Reference Documents for testing

The following documents listed in this section are referred for testing.

Reference	Title	Version
FCC Part 24	PERSONAL COMMUNICATIONS SERVICES	10-1-10 Edition
FCC Part 22	PUBLIC MOBILE SERVICES	10-1-10 Edition
RSS-132	Cellular Telephones Employing New Technologies Operating in the Bands 824-849 MHz and 869-894 MHz	Issue2
RSS-133	2 GHz Personal Communications Services	Issue5
ANSI/TIA-603-C	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards	2004
ANSI C63.4	Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz	2003

5. LABORATORY ENVIRONMENT

Semi-anechoic chamber (23 meters×17meters×10meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 30 °C
Relative humidity	Min. = 30 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 2 MΩ
Ground system resistance	< 0.5 Ω
Normalised site attenuation (NSA)	< ±3.2 dB, 10 m distance, from 30 to 1000 MHz
Uniformity of field strength	Between 0 and 6 dB, from 80 to 2000 MHz

Control room did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. =20 %, Max. = 80 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 2 MΩ
Ground system resistance	< 0.5 Ω

Conducted chamber did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 30 °C
Relative humidity	Min. = 35 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 2 MΩ
Ground system resistance	< 0.5 Ω

Fully-anechoic chamber2 (8.6 meters×6.1 meters×3.85 meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 30 °C
Relative humidity	Min. = 35 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 2 MΩ
Ground system resistance	< 1 Ω
Uniformity of field strength	Between 0 and 6 dB, from 80 to 4000 MHz

6. SUMMARY OF TEST RESULTS

6.1. Summary of test results

Abbreviations used in this clause:

P	Pass
NA	Not applicable
F	Fail

WCDMA Band V

Items	Test Name	Clause in FCC rules	Clause in IC rules	Section in this report	Verdict
1	Output Power	22.913(a)	4.4	A.1	P
2	Emission Limit	22.917, 2.1051	4.5	A.2	P
3	Conducted Emission	15.107/207	/	A.3	P
4	Frequency Stability	22.235, 2.1055	4.3	A.4	P
5	Occupied Bandwidth	2.1049(h)(i)	4.2	A.5	P
6	Emission Bandwidth	22.917(b)	4.2	A.6	P
7	Band Edge Compliance	22.917(b)	4.5	A.7	P
8	Conducted Spurious Emission	22.917, 2.1057	4.5	A.8	P

WCDMA Band II

Items	Test Name	Clause in FCC rules	Clause in IC rules	Section in this report	Verdict
1	Output Power	24.232(b)	6.4	A.1	P
2	Emission Limit	24.238, 2.1051	6.5	A.2	P
3	Conducted Emission	15.107/207	/	A.3	P
4	Frequency Stability	24.235, 2.1055	6.3	A.4	P
5	Occupied Bandwidth	2.1049(h)(i)	6.2	A.5	P
6	Emission Bandwidth	24.238(b)	6.2	A.6	P
7	Band Edge Compliance	24.238(b)	6.5	A.7	P
8	Conducted Spurious Emission	24.238, 2.1057	6.5	A.8	P

Receiver Radiated Emission

Items	Test Name	Clause in FCC rules	Clause in IC rules	Section in this report	Verdict
1	Receiver Radiated Emissions	15.109 , 2.1053	4.6, 6.6	A.9	P

6.2. Statements

The test cases listed in section 6.1 of this report for the EUT specified in section 3 were performed by TMC according to the standards or reference documents in section 4.1

The EUT met all applicable requirements of the standards or reference documents in section 4.1.

This report only deals with the WCDMA functions among the features described in section 3.

7. Test Equipments Utilized

NO.	Description	TYPE	SERIES NUMBER	MANUFACTURE	CAL DUE DATE
1	Test Receiver	ESCI	100344	R&S	2012-03-28
2	Test Receiver	ESCI	100766	R&S	2012-04-11
3	Test Receiver	ESI40	831564/002	R&S	2013-02-12
4	EMI Antenna	VULB 9163	302	Schwarzbeck	2014-02-10
5	EMI Antenna	3115	6914	EMCO	2012-12-16
6	LISN	ESH2-Z5	829991/012	R&S	2012-04-17
7	Universal Radio Communication Tester	CMU200	116455	R&S	2012-05-21
8	Universal Radio Communication Tester	E5515C	MY48361083	Agilent	2012-03-16
9	Spectrum Analyzer	E4440A	00112642	Agilent	2013-03-04
10	EMI Antenna	9117	177	Schwarzbeck	2012-05-31
11	EMI Antenna	VULB 9163	482	Schwarzbeck	2014-02-17
12	EMI Antenna	3117	00119024	ETS-Lindgren	2014-02-02
13	EMI Antenna	3117	00058889	ETS-Lindgren	2014-02-02
14	Signal Generator	N5183A	MY49060052	Agilent	2013-01-19
15	Climatic chamber	PL-2G	343074	ESPEC	2012-05-12

ANNEX A: MEASUREMENT RESULTS

A.1 OUTPUT POWER

Reference

FCC: CFR Part 22.913(a), 24.232(b)

IC: RSS 132, Issue 2, Section 4.4. RSS 133, Issue 5, Section 6.4

A.1.1 Summary

During the process of testing, the EUT was controlled via Rhode & Schwarz Digital Radio Communication tester (CMU-200) to ensure max power transmission and proper modulation.

This result contains peak output power and EIRP measurements for the EUT.

In all cases, output power is within the specified limits.

A.1.2 Conducted

A.1.2.1 Method of Measurements

The EUT was set up for the max output power with pseudo random data modulation.

The power was measured with spectrum analyzer's peak detector.

These measurements were done at 3 frequencies (bottom, middle and top of operational frequency range) for each band: 1852.4 MHz, 1880.0 MHz and 1907.6 MHz for WCDMA Band II; 826.4 MHz, 836.6 MHz and 846.6 MHz for WCDMA Band V.

A.1.2.2 Measurement result

WCDMA Band II

	Channel number	Frequency(MHz)	output power(dBm)
WCDMA (Band II)	9262	1852.4	22.24
	9400	1880.0	22.40
	9538	1907.6	22.42

WCDMA Band V

	Channel number	Frequency(MHz)	output power(dBm)
WCDMA (Band V)	4132	826.4	22.90
	4183	836.6	22.97
	4233	846.6	22.96

A.1.3 Radiated

A.1.3.1 Description

This is the test for the maximum radiated power from the EUT.

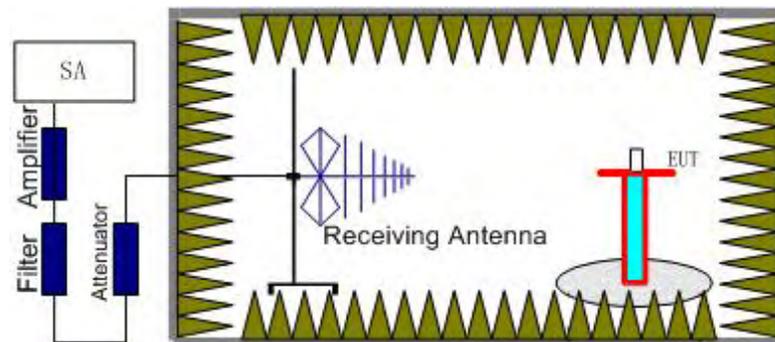
Rule Part 24.232(b) specifies, "Mobile/portable stations are limited to 2 watts e.i.r.p. Peak power" and 24.232(c) specifies that "Peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage."

Rule Part 22.913(a) specifies "Maximum ERP. The effective radiated power (ERP) of base transmitters and cellular repeaters must not exceed 500 Watts. The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts."

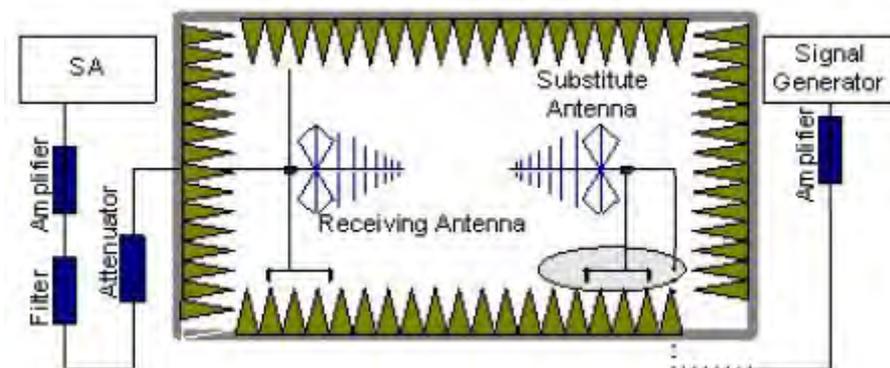
A.1.3.2 Method of Measurement

The measurements procedures in TIA-603C-2004 are used.

1. EUT was placed on a 1.5 meter high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 1.5m. The test setup refers to figure below. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all transmit frequencies in three channels (High, Middle, Low) were measured with peak detector.



2. The EUT is then put into continuously transmitting mode at its maximum power level during the test. And the maximum value of the receiver should be recorded as (P_r).
3. The EUT shall be replaced by a substitution antenna. The test setup refers to figure below.



In the chamber, a substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (P_{Mea}) is applied to the input of the substitution antenna. Adjust the level of the signal generator output until the value of the receiver reaches the previously recorded (P_r). The power of signal source (P_{Mea}) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.

4. An amplifier should be connected to the Signal Source output port. And the cable should be connected between the amplifier and the substitution antenna. The cable loss (P_{cl}), the substitution antenna Gain (G_a) and the amplifier Gain (P_{Ag}) should be

recorded after test.

The measurement results are obtained as described below:

$$\text{Power (EIRP)} = P_{\text{Mea}} - P_{\text{Ag}} - P_{\text{Cl}} - G_a$$

5. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power.
6. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP -2.15.

For test layout photo, please refer to Pic.1 in Annex B.

WCDMA Band II- EIRP

Limits

	Burst Peak EIRP (dBm)
WCDMA Band II	≤33dBm (2W)

Measurement result

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	G _a (dBi)	Peak EIRP(dBm)	Polarization
1852.4	-21.34	6.02	-50	-4.55	27.19	Horizontal
1880.0	-21.40	7.05	-50	-4.43	25.98	Horizontal
1907.6	-19.35	8.90	-50	-4.31	26.06	Horizontal

Sample calculation: 1852.4MHz

$$\begin{aligned} \text{Peak EIRP (dBm)} &= P_{\text{Mea}}(-21.34 \text{ dBm}) - G_a (-4.55 \text{ dBi}) - P_{\text{Ag}} (-50.00 \text{ dB}) - P_{\text{Cl}} (6.02 \text{ dB}) \\ &= 27.19 \text{ dBm} \end{aligned}$$

ANALYZER SETTINGS: RBW = VBW = 5MHZ

Note: Expanded measurement uncertainty for WCDMA Band II is $U = 1.07\text{dB}$, $k=2$.

WCDMA Band V- ERP

Limits

	Burst Peak EIRP (dBm)
WCDMA Band V	≤38.45dBm

Measurement result

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	G _a (dBi)	Correction (dB)	Peak ERP(dBm)	Polarization
826.4	-21.93	2.25	-53	0.85	2.15	25.82	Vertical
836.6	-21.40	2.26	-53	0.90	2.15	26.29	Horizontal
846.6	-22.60	2.26	-53	0.94	2.15	25.05	Vertical

Sample calculation: 836.6 MHz

$$\begin{aligned} \text{Peak ERP(dBm)} &= P_{\text{Mea}}(-21.40\text{dBm}) - G_a (0.90\text{dBi}) - P_{\text{Ag}} (-53.00\text{dB}) - P_{\text{Cl}} (2.26\text{dB}) - 2.15\text{dB} \\ &= 26.29 \text{ dBm} \end{aligned}$$

ANALYZER SETTINGS: RBW = VBW = 5MHZ

Note: Expanded measurement uncertainty for WCDMA Band V is $U = 0.96\text{dB}$, $k=2$.

A.2 EMISSION LIMIT

Reference

FCC: CFR 2.1051, Part 22.917(a), 24.238(b)

IC: RSS 132, Issue 2, Section 4.4. RSS 133, Issue 5, Section 6.2

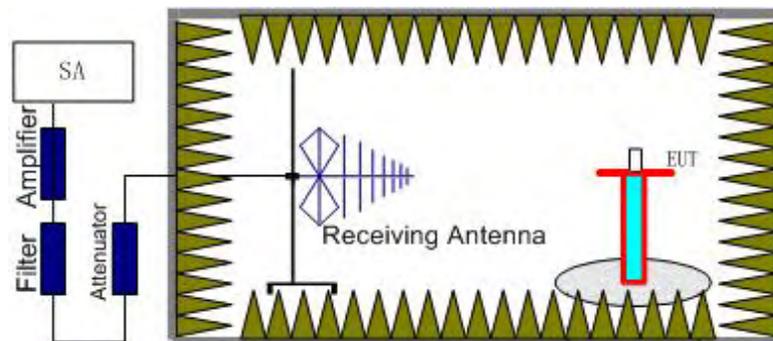
A.2.1 Measurement Method

The measurements procedures in TIA-603C-2004 are used. This measurement is carried out in fully-anechoic chamber 3.

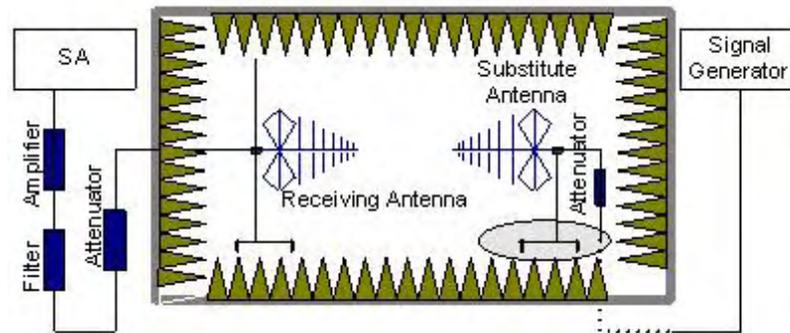
The spectrum was scanned from 30 MHz to the 10th harmonic of the highest frequency generated within the equipment, which is the transmitted carrier that can be as high as 1910 MHz. The resolution bandwidth is set 1MHz as outlined in Part 24.238 and Part 22.917. The spectrum was scanned with the mobile station transmitting at carrier frequencies that pertain to low, mid and high channels of WCDMA Band II and WCDMA Band V.

The procedure of radiated spurious emissions is as follows:

1. EUT was placed on a 1.5 meter high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 1.5m. The test setup refers to figure below. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all non-harmonic and harmonics of the transmit frequency through the 10th harmonic were measured with peak detector.



2. The EUT is then put into continuously transmitting mode at its maximum power level during the test. And the maximum value of the receiver should be recorded as (Pr).
3. The EUT shall be replaced by a substitution antenna. The test setup refers to figure below.



In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (P_{Mea}) is applied to the input of the substitution antenna. Adjust the level of the signal generator output until the value of the receiver reaches the previously recorded (P_r). The power of signal source (P_{Mea}) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.

4. The Path loss (P_{pl}) between the Signal Source with the Substitution Antenna and the Substitution Antenna Gain (G_a) should be recorded after test.

An amplifier should be connected in for the test.

The Path loss (P_{pl}) is the summation of the cable loss and the gain of the amplifier.

The measurement results are obtained as described below:

$$\text{Power (EIRP)} = P_{Mea} + P_{pl} + G_a$$

5. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power.
6. ERP can be calculated from EIRP by subtracting the gain of the dipole, $ERP = EIRP - 2.15\text{dB}$.

A.2.2 Measurement Limit

Part 24.238 specifies that the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. The specification that emissions shall be attenuated below the transmitter power (P) by at least $43 + 10 \log(P)$ dB, translates in the relevant power range (1 to 0.001 W) to -13 dBm. At 1 W the specified minimum attenuation becomes 43 dB and relative to a 30 dBm (1 W) carrier becomes a limit of -13 dBm. At 0.001 W (0 dBm) the minimum attenuation is 13 dB, which again yields a limit of -13 dBm. In this way a translation of the specification from relative to absolute terms is carried out.

A.2.3 Measurement Results

Radiated emissions measurements were made only at the upper, middle, and lower carrier frequencies of the WCDMA Band II (1852.4 MHz, 1880.0MHz and 1907.6MHz) and WCDMA Band V (826.4MHz, 836.6MHz and 846.6MHz). It was decided that measurements at these three carrier frequencies would be sufficient to demonstrate compliance with emissions limits because it was seen that all the significant spurs occur well outside the band and no radiation was seen from a

carrier in one block of the WCDMA Band II or WCDMA Band V into any of the other blocks. The equipment must still, however, meet emissions requirements with the carrier at all frequencies over which it is capable of operating and it is the manufacturer's responsibility to verify this.

WCDMA BAND II, Channel 9262/1852.4MHz

Frequency (MHz)	P _{Mea} (dBm)	P _{pl} (dB)	G _a (dBi)	Peak EIRP (dBm)	Limit (dBm)	Polarity
3886.01	-69.51	5.67	-8.36	-66.82	-13	Horizontal
5126.74	-69.2	6.98	-9.78	-66.40	-13	Vertical
6789.01	-66.38	7.53	-10.89	-63.02	-13	Horizontal
9136.75	-65.74	8.02	-12.6	-61.16	-13	Horizontal
10326.42	-65.50	8.63	-12.47	-61.66	-13	Vertical
11962.78	-65.64	9.57	-12.49	-62.72	-13	Vertical

WCDMA BAND II, Channel 9400/1880MHz

Frequency (MHz)	P _{Mea} (dBm)	P _{pl} (dB)	G _a (dBi)	Peak EIRP (dBm)	Limit (dBm)	Polarity
3785.27	-69.17	5.59	-8.24	-66.52	-13	Horizontal
5480.19	-71.55	8.64	-9.99	-70.20	-13	Vertical
7756.72	-68.40	7.84	-11.66	-64.58	-13	Vertical
10247.4	-68.16	8.60	-12.45	-64.31	-13	Horizontal
13271.9	-63.93	10.43	-13.57	-60.79	-13	Vertical
15519.45	-62.26	10.99	-13.38	-59.87	-13	Horizontal

WCDMA BAND II, Channel 9538/1907.6MHz

Frequency (MHz)	P _{Mea} (dBm)	P _{pl} (dB)	G _a (dBi)	Peak EIRP (dBm)	Limit (dBm)	Polarity
3813.85	-68.17	5.66	-8.28	-65.55	-13	Horizontal
5260.95	-65.58	7.57	-9.86	-63.29	-13	Horizontal
6897.42	-66.68	7.67	-11.00	-63.35	-13	Horizontal
8938.56	-67.76	8.09	-12.55	-63.30	-13	Horizontal
10218.97	-64.66	8.59	-12.44	-60.81	-13	Vertical
13252.56	-66.25	10.39	-13.55	-63.09	-13	Horizontal

WCDMA BAND V, Channel 4132/826.4MHz

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP(dBm)	Limit (dBm)	Polarization
3789.44	-67.78	5.68	-8.25	2.15	-67.36	-13	Horizontal
5092.78	-69.44	7.53	-9.76	2.15	-69.36	-13	Horizontal
6612.91	-69.24	7.45	-10.71	2.15	-68.13	-13	Vertical
7810.76	-67.63	7.57	-11.71	2.15	-65.64	-13	Vertical
8573.68	-65.91	7.71	-12.26	2.15	-63.51	-13	Horizontal
9123.69	-66.28	7.96	-12.60	2.15	-63.79	-13	Vertical

WCDMA BAND V, Channel 4183/836.6MHz

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP(dBm)	Limit (dBm)	Polarization
3485.59	-70.3	5.24	-7.87	2.15	-69.82	-13	Horizontal
4393.31	-71	6.30	-8.74	2.15	-70.71	-13	Vertical
5167.83	-69.84	7.33	-9.80	2.15	-69.52	-13	Horizontal
5836.01	-70.12	11.82	-10.13	2.15	-73.96	-13	Vertical
7818.14	-69.33	7.61	-11.72	2.15	-67.37	-13	Vertical
8623.06	-66.09	7.89	-12.30	2.15	-63.83	-13	Horizontal

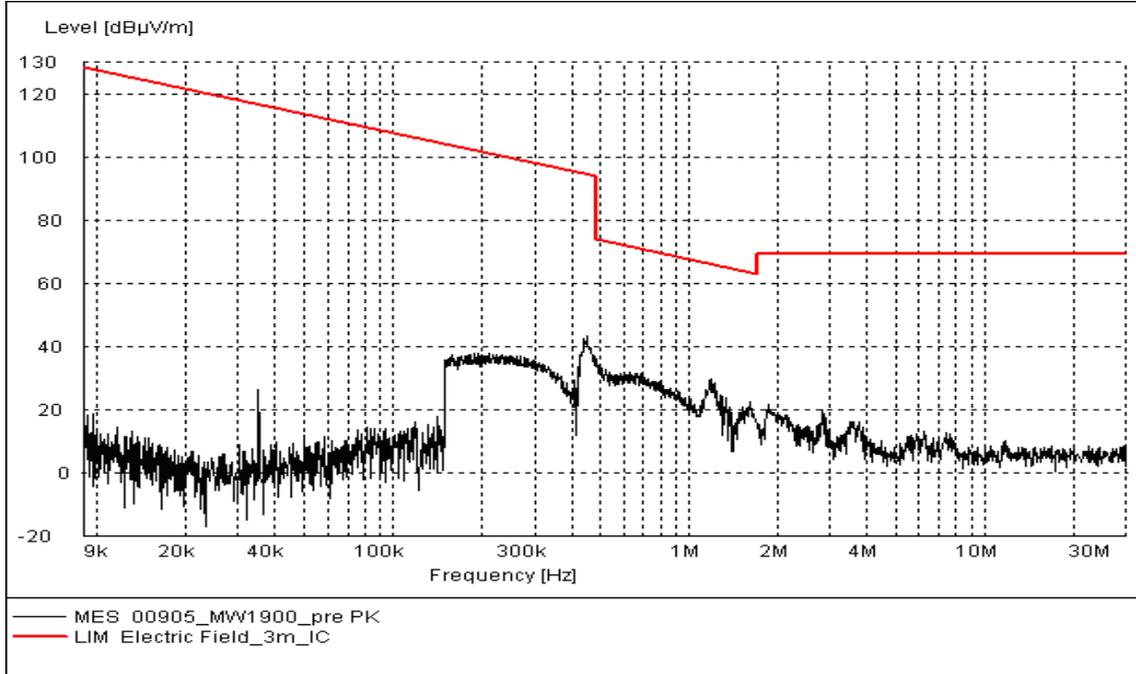
WCDMA BAND V, Channel 4233/846.6MHz

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP(dBm)	Limit (dBm)	Polarization
3435.82	-67.85	5.11	-7.75	2.15	-67.36	-13	Vertical
4112.78	-70.38	6.04	-8.57	2.15	-70.00	-13	Horizontal
4632.76	-68.44	6.36	-9.04	2.15	-67.91	-13	Vertical
5811.16	-69.85	11.78	-10.12	2.15	-73.66	-13	Vertical
6892.55	-67.52	7.66	-10.99	2.15	-66.34	-13	Horizontal
8494.55	-67.15	7.88	-12.20	2.15	-64.98	-13	Horizontal

Note: Expanded measurement uncertainty for this test item is $U = 4.21\text{dB}$, $k=2$.

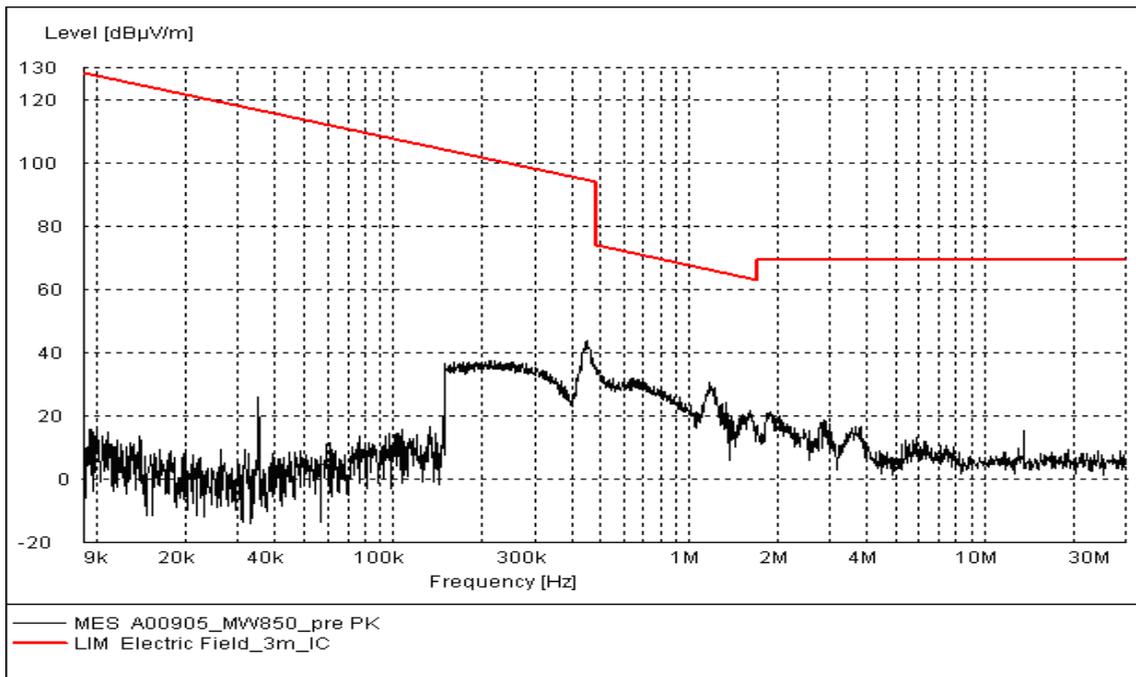
WCDMA Band II

A.2.3.1 RADIATED SPURIOUS EMISSIONS-EUT in Traffic Mode: 9 kHz – 30 MHz (Worst case for 3 channels)



WCDMA Band V

A.2.3.2 RADIATED SPURIOUS EMISSIONS-EUT in Traffic Mode: 9 kHz – 30 MHz (Worst case for 3 channels)



A.3 CONDUCTED EMISSION

Reference

FCC: CFR Part 15.107/207

The measurement procedure in ANSI C63.4-2003 is used. Conducted Emission is measured with travel charger. For test layout photo, please refer to Pic.2 in Annex B.

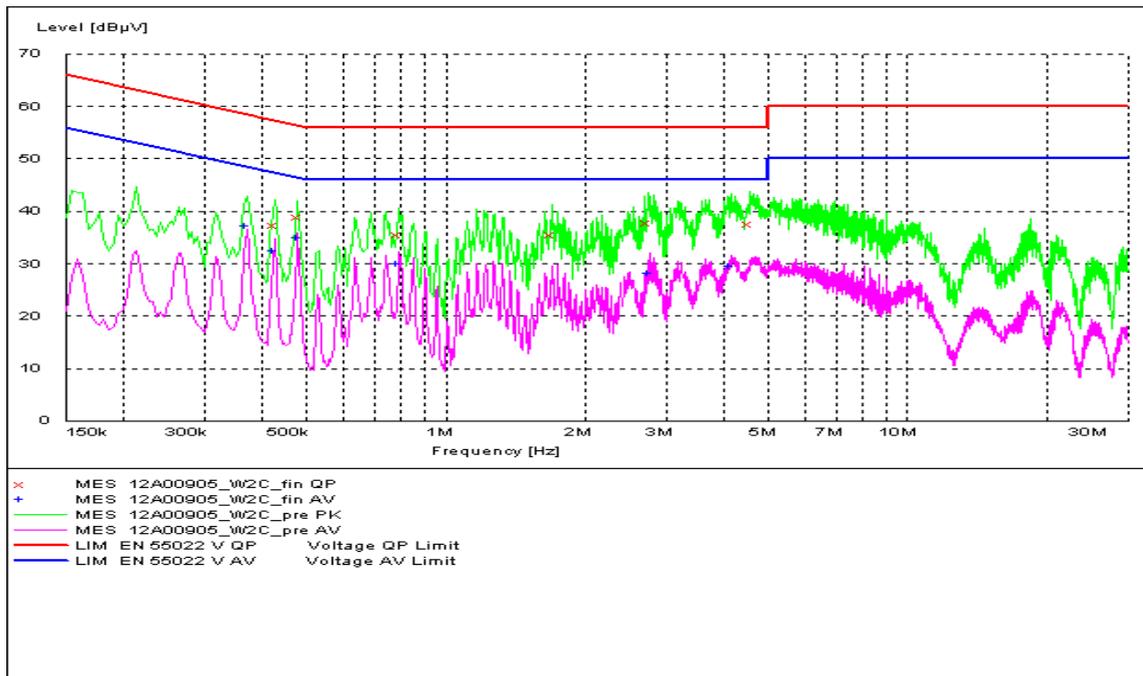
A.3.1 Limit

Frequency of Emission (MHz)	Conducted Limit (dB μ V)	
	Quasi -Peak	Average
0.15 – 0.5	66 to 56*	56 to 46*
0.5 – 5	56	46
5 – 30	60	50

* Decreases with logarithm of the frequency

A.3.2 Measurement result

WCDMA Band II



IF bandwidth 9 kHz

Note: The graphic result above is the maximum of the measurements for both phase line and neutral line.

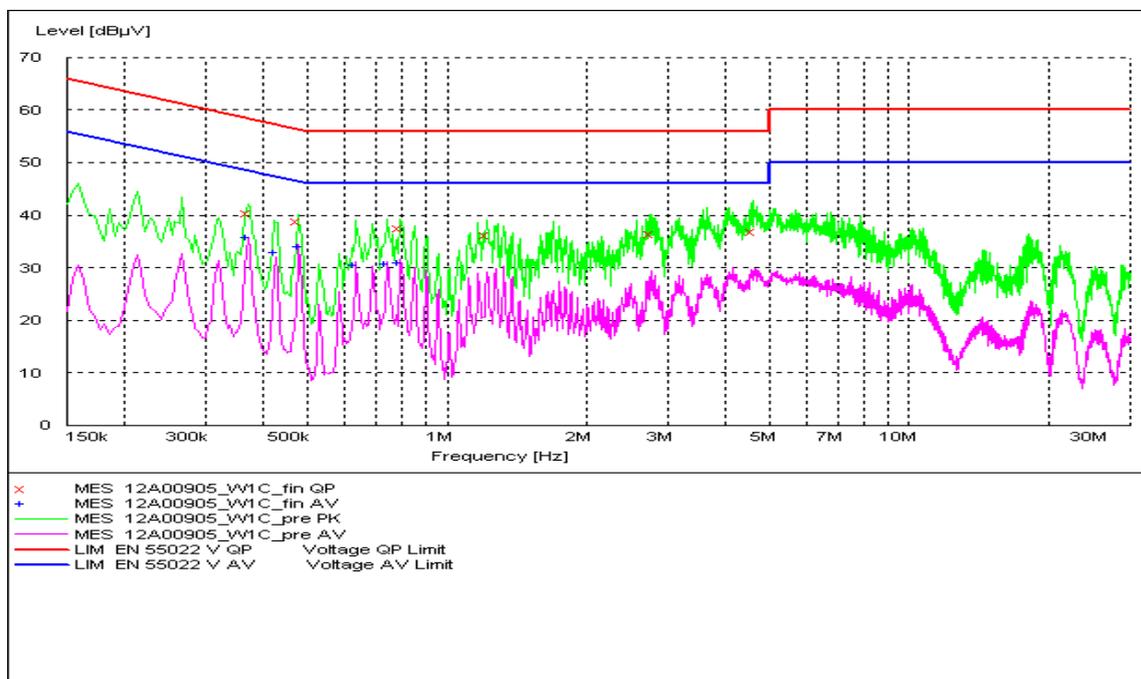
MEASUREMENT RESULT: "12A00905_W2C_fin QP"

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.424500	37.40	10.1	57	19.9	L1	GND
0.478500	38.90	10.1	56	17.5	N	GND
0.793500	35.50	10.1	56	20.5	L1	GND
1.698000	35.50	10.1	56	20.5	L1	GND
2.747880	37.70	10.1	56	18.3	L1	GND
4.564561	37.50	10.2	56	18.5	L1	GND

MEASUREMENT RESULT: "12A00905_W2C_fin AV"

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.370500	37.00	10.1	49	11.5	L1	GND
0.424500	32.40	10.1	47	15.0	N	GND
0.478500	35.00	10.1	46	11.4	L1	GND
0.793500	30.00	10.1	46	16.0	L1	GND
2.758882	28.10	10.1	46	17.9	L1	GND
4.130598	29.40	10.2	46	16.6	L1	GND

WCDMA Band V



IF bandwidth 9 kHz

Note: The graphic result above is the maximum of the measurements for both phase line and neutral line.

MEASUREMENT RESULT: "12A00905_W1C_fin QP"

Frequency MHz	Level dB μ V	Transd dB	Limit dB μ V	Margin dB	Line	PE
0.370500	40.50	10.1	59	18.0	L1	GND
0.474000	38.90	10.1	56	17.6	L1	GND
0.793500	37.50	10.1	56	18.5	L1	GND
1.216500	36.30	10.1	56	19.7	L1	GND
2.758882	36.50	10.1	56	19.5	L1	GND
4.601187	36.90	10.2	56	19.1	L1	GND

MEASUREMENT RESULT: "12A00905_W1C_fin AV"

Frequency MHz	Level dB μ V	Transd dB	Limit dB μ V	Margin dB	Line	PE
0.370500	35.80	10.1	49	12.7	L1	GND
0.424500	33.00	10.1	47	14.4	L1	GND
0.478500	34.10	10.1	46	12.3	L1	GND
0.636000	30.50	10.1	46	15.5	L1	GND
0.744000	30.80	10.1	46	15.2	L1	GND
0.793500	31.00	10.1	46	15.0	L1	GND

A.4 FREQUENCY STABILITY

Reference

FCC: CFR Part 2.1055, 22.235, 24.235

IC: RSS 132, Issue 2, Section 4.3. RSS 133, Issue 5, Section 6.3

A.4.1 Method of Measurement

In order to measure the carrier frequency under the condition of AFC lock, it is necessary to make measurements with the EUT in a "call mode". This is accomplished with the use of R&S CMU200 DIGITAL RADIO COMMUNICATION TESTER.

1. Measure the carrier frequency at room temperature.
2. Subject the EUT to overnight soak at -30°C.
3. With the EUT, powered via nominal voltage, connected to the CMU200 and in a simulated call on mid channel of WCDMA Band II and WCDMA Band V, measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.
4. Repeat the above measurements at 10°C increments from -30°C to +50°C. Allow at least 1 1/2 hours at each temperature, unpowered, before making measurements.
5. Re-measure carrier frequency at room temperature with nominal voltage. Vary supply voltage from minimum voltage to maximum voltage, in 0.1Volt increments re-measuring carrier frequency at each voltage. Pause at nominal voltage for 1 1/2 hours unpowered, to allow any self-heating to stabilize, before continuing.
6. Subject the EUT to overnight soak at +50°C.
7. With the EUT, powered via nominal voltage, connected to the CMU200 and in a simulated call on the centre channel, measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.
8. Repeat the above measurements at 10 C increments from +50°C to -30°C. Allow at least 1 1/2 hours at each temperature, unpowered, before making measurements.
9. At all temperature levels hold the temperature to +/- 0.5°C during the measurement procedure.

A.4.2 Measurement Limit

A.4.2.1 For Hand carried battery powered equipment

According to the JTC standard the frequency stability of the carrier shall be accurate to within 0.1 ppm of the received frequency from the base station. This accuracy is sufficient to meet Sec. 24.235, Frequency Stability. The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. As this transceiver is considered "Hand carried, battery powered equipment" Section 2.1055(d)(2) applies. This requires that the lower voltage for frequency stability testing be specified by the manufacturer. This transceiver is specified to operate with an input voltage of between 3.5VDC and 4.1VDC, with a nominal voltage of 3.7VDC. Operation above or below these voltage limits is prohibited by transceiver software in order to prevent improper operation as well as to protect components from overstress. These voltages represent a tolerance of -10 % and +12.5 %. For the purposes of measuring frequency stability these voltage limits are to be used.

A.4.2.2 For equipment powered by primary supply voltage

According to the JTC standard the frequency stability of the carrier shall be accurate to within 0.1 ppm of the received frequency from the base station. This accuracy is sufficient to meet section 24.235, Frequency Stability. The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. For this EUT section 2.1055(d)(1) applies. This requires varying primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment.

A.4.3 Measurement results

WCDMA Band II

Room Temperature: 23 °C

Frequency Error vs Voltage

Voltage(V)	Frequency error(Hz)	Frequency error(ppm)
3.5	17	0.024
3.7	16	0.023
4.1	16	0.026

Frequency Error vs Temperature

temperature(°C)	Frequency error(Hz)	Frequency error(ppm)
-30	18	0.025
-20	17	0.025
-10	17	0.024
0	16	0.024
10	16	0.023
20	16	0.023
30	16	0.024
40	16	0.025
50	17	0.026

Expanded measurement uncertainty for this test item is 10 Hz, k=2

WCDMA Band V

Room Temperature: 23°C

Frequency Error vs Voltage

Voltage(V)	Frequency error(Hz)	Frequency error(ppm)
3.5	9	0.010
3.7	9	0.011
4.1	9	0.011

Frequency Error vs Temperature

temperature(°C)	Frequency error(Hz)	Frequency error(ppm)
-30	11	0.011
-20	11	0.011
-10	10	0.011
0	9	0.010
10	9	0.010
20	9	0.010
30	9	0.011
40	9	0.011
50	10	0.012

Expanded measurement uncertainty for this test item is 10 Hz, k=2

A.5 OCCUPIED BANDWIDTH

Reference

FCC: CFR Part 2.1049(h)(i)

IC: RSS 132, Issue 2, Section 4.2. RSS 133, Issue 5, Section 6.2.

A.5.1 Occupied Bandwidth Results

Occupied bandwidth measurements are only provided for selected frequencies in order to reduce the amount of submitted data. Data were taken at the extreme and mid frequencies of WCDMA Band II and WCDMA Band V. The table below lists the measured -20dBc BW (99%). Spectrum analyzer plots are included on the following pages.

Measurement Parameters:

RBW = 50 kHz, VBW = 100 kHz

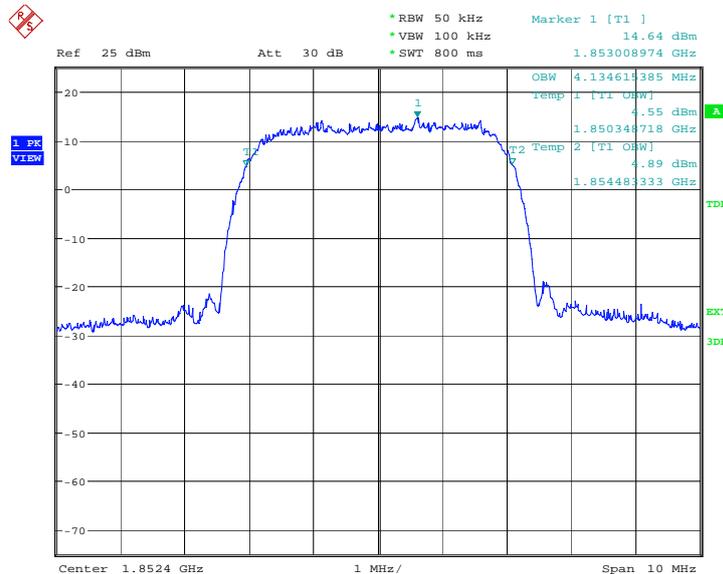
WCDMA Band II (-20dBc)

Frequency(MHz)	Occupied Bandwidth (-20dBc BW)(MHz)
1852.4	4.135
1880.0	4.135
1907.6	4.135

Expanded measurement uncertainty for this test item is 1.1 kHz, k=2

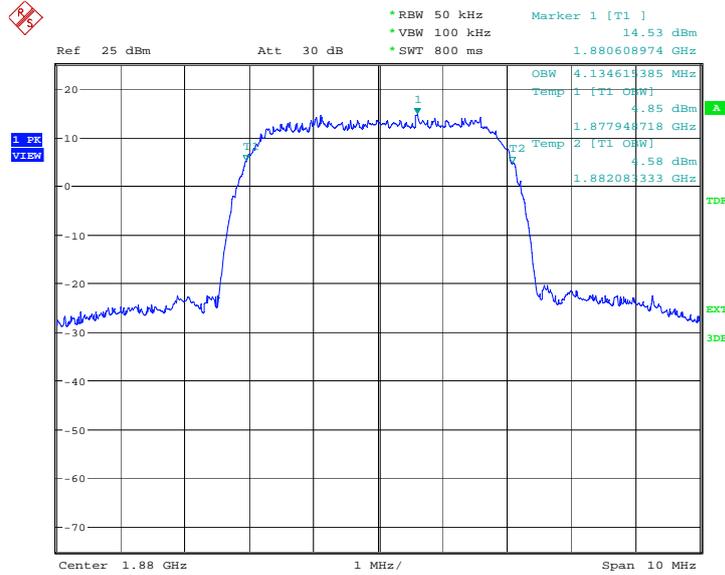
WCDMA Band II

Channel 9262-Occupied Bandwidth (-20dBc BW)



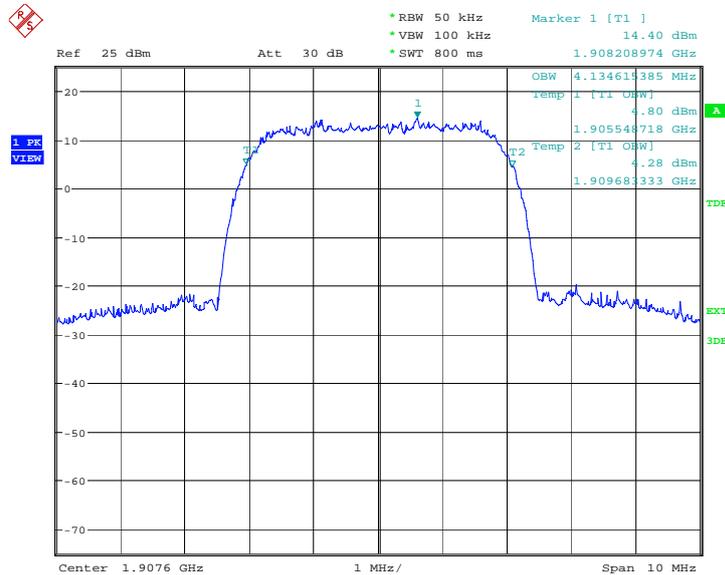
Date: 24.FEB.2012 08:41:37

Channel 9400-Occupied Bandwidth (-20dBc BW)



Date: 24.FEB.2012 08:42:11

Channel 9538-Occupied Bandwidth (-20dBc BW)



Date: 24.FEB.2012 08:42:46

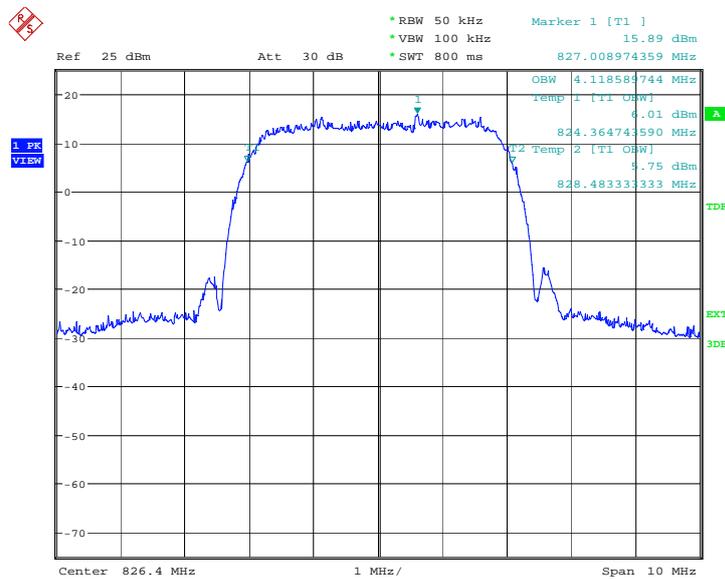
WCDMA Band V (-20dBc)

Frequency(MHz)	Occupied Bandwidth (-20dBc BW)(MHz)
826.4	4.119
836.6	4.103
846.6	4.119

Expanded measurement uncertainty for this test item is 1.1 kHz, k=2

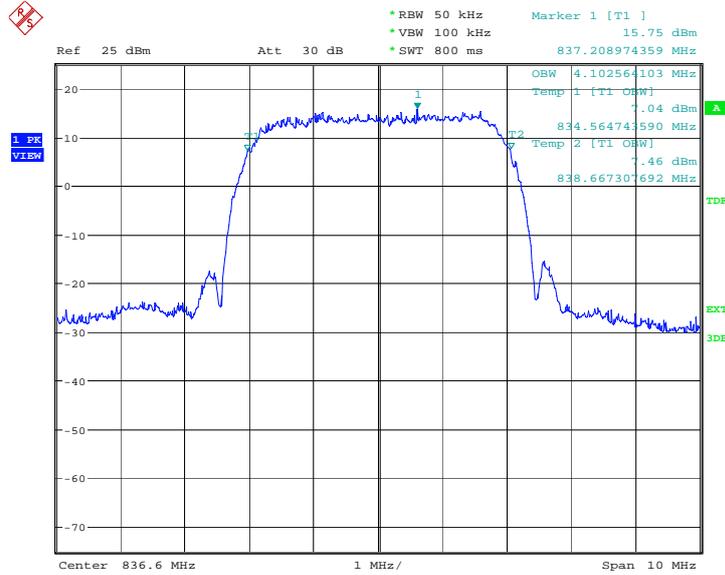
WCDMA Band V

Channel 4132-Occupied Bandwidth (-20dBc BW)



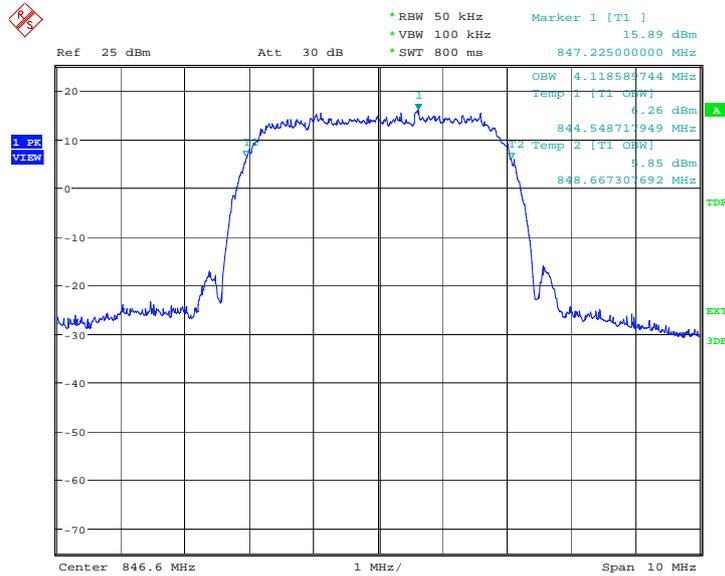
Date: 24.FEB.2012 08:58:23

Channel 4183-Occupied Bandwidth (-20dBc BW)



Date: 24.FEB.2012 08:58:58

Channel 4233-Occupied Bandwidth (-20dBc BW)



Date: 24.FEB.2012 08:59:32

A.6 EMISSION BANDWIDTH

Reference

FCC: CFR Part 22.917(b), 24.238(b)

IC: RSS 132, Issue 2, Section 4.2. RSS 133, Issue 5, Section 6.2.

A.6.1 Emission Bandwidth Results

Emission bandwidth measurements are only provided for selected frequencies in order to reduce the amount of submitted data. Data were taken at the extreme and mid frequencies of WCDMA Band II and WCDMA Band V. Table below lists the measured -26dBc BW. Spectrum analyzer plots are included on the following pages.

Measurement Parameters:

RBW = 50 kHz, VBW = 100 kHz

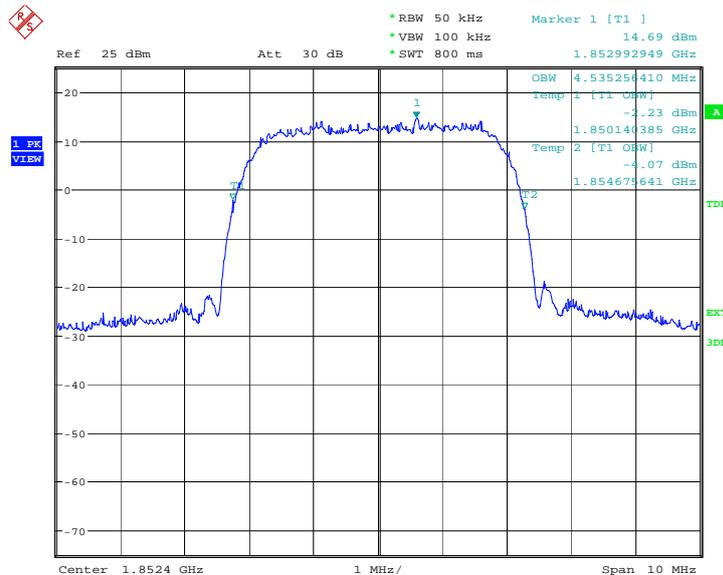
WCDMA Band II (-26dBc)

Frequency(MHz)	Occupied Bandwidth (-26dBc BW)(MHz)
1852.4	4.535
1880.0	4.551
1907.6	4.567

Expanded measurement uncertainty for this test item is 1.1 kHz, k=2

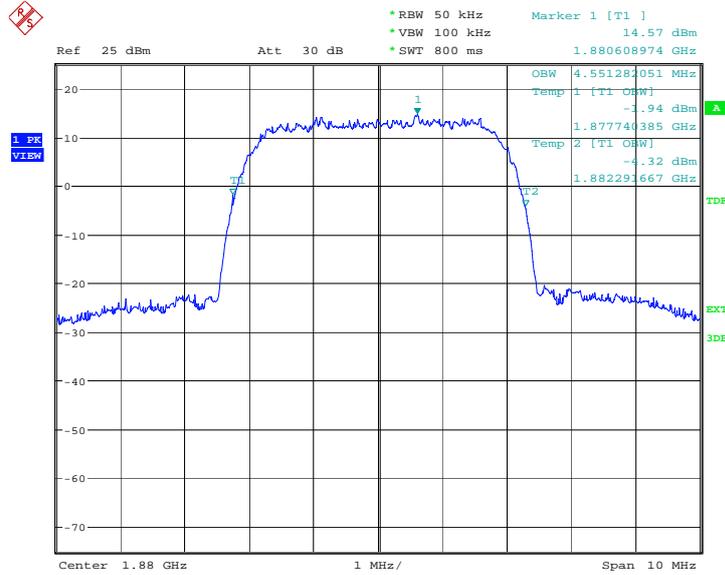
WCDMA Band II

Channel 9262-Occupied Bandwidth (-26dBc BW)



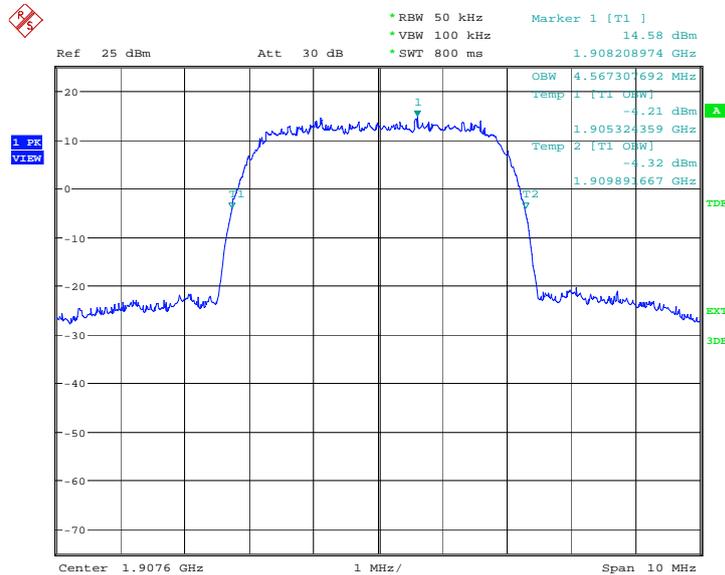
Date: 24.FEB.2012 08:43:22

Channel 9400-Occupied Bandwidth (-26dBc BW)



Date: 24.FEB.2012 08:43:57

Channel 9538-Occupied Bandwidth (-26dBc BW)



Date: 24.FEB.2012 08:44:31

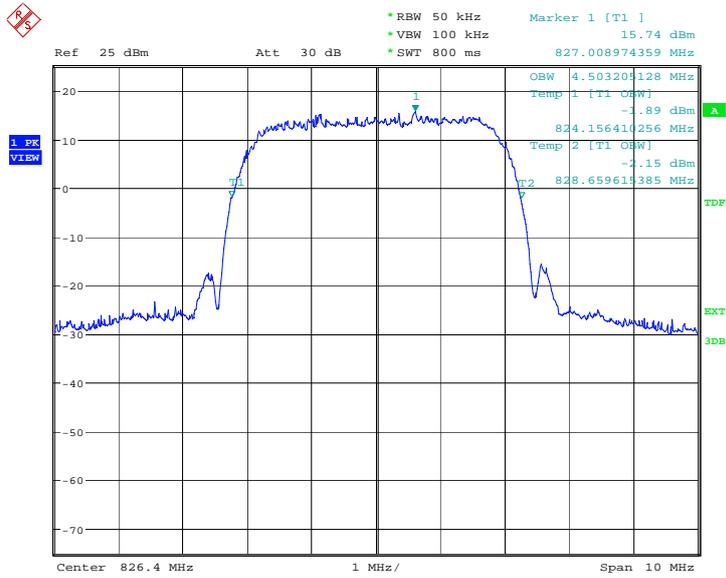
WCDMA Band V (-26dBc)

Frequency(MHz)	Occupied Bandwidth (-26dBc BW)(MHz)
826.40	4.503
836.60	4.503
846.60	4.519

Expanded measurement uncertainty for this test item is 1.1 kHz, k=2

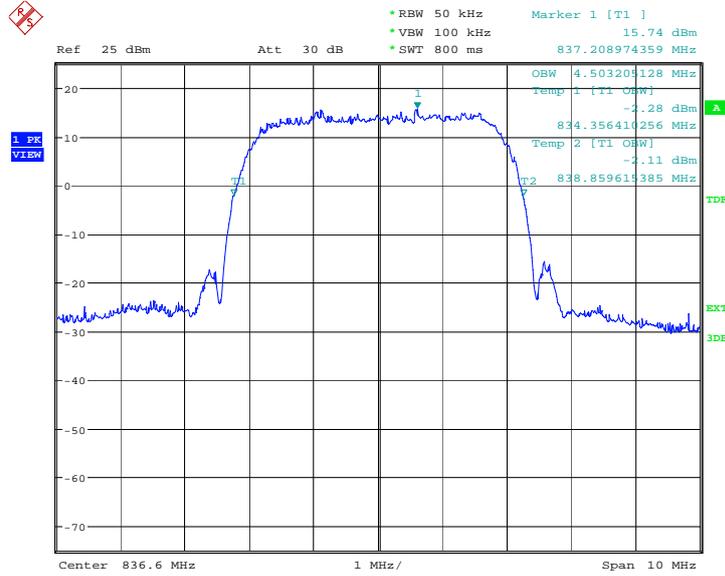
WCDMA Band V

Channel 4132-Occupied Bandwidth (-26dBc BW)



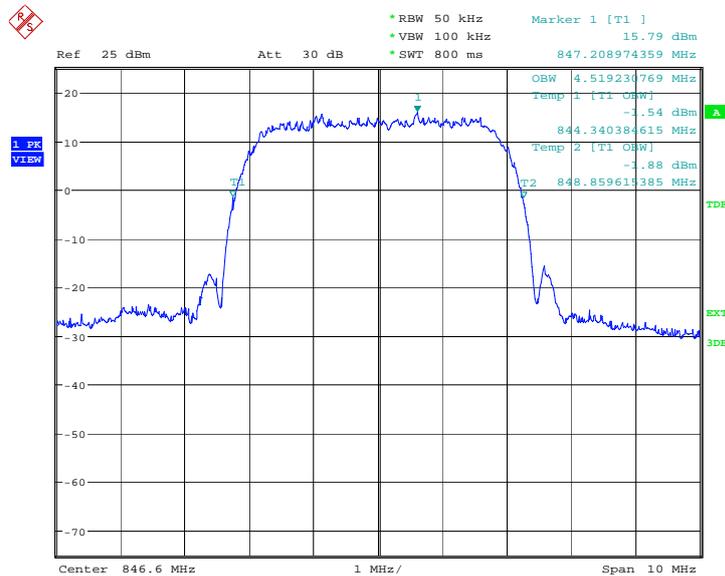
Date: 24.FEB.2012 09:00:08

Channel 4183-Occupied Bandwidth (-26dBc BW)



Date: 24.FEB.2012 09:00:43

Channel 4233-Occupied Bandwidth (-26dBc BW)



Date: 24.FEB.2012 09:01:18

A.7 BAND EDGE COMPLIANCE

Reference

FCC: CFR Part 22.917(b), 24.238(b)

IC: RSS 132, Issue 2, Section 4.5. RSS 133, Issue 5, Section 6.5

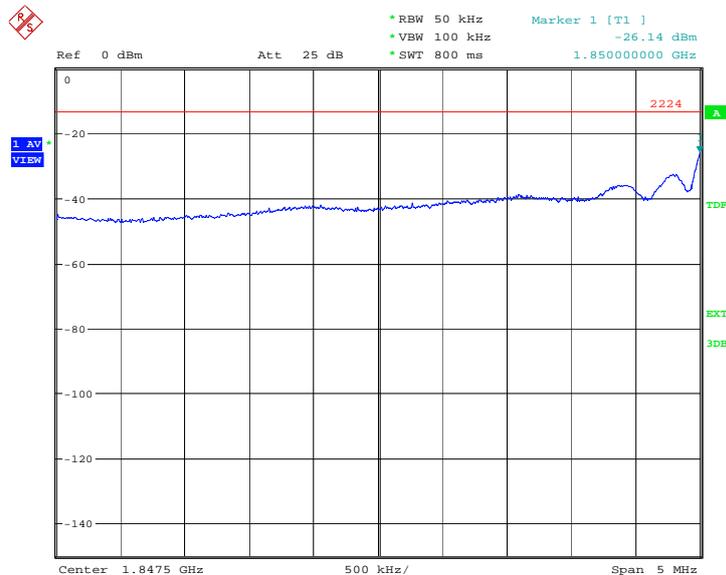
A.7.1 Measurement limit

On any frequency outside frequency band of the US Cellular/PCS spectrum, the power of any emission shall be attenuated below the transmitter power (P, in Watts) by at least $43+10\log(P)$ dB. For all power levels +30 dBm to 0 dBm, this becomes a constant specification limit of -13 dBm.

A.7.2 Measurement result

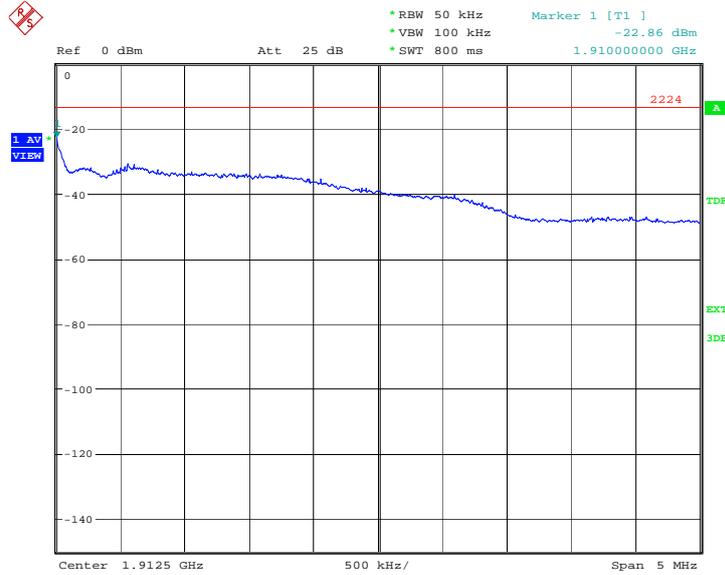
WCDMA Band II

LOW BAND EDGE BLOCK-A (WCDMA Band II)-Channel 9262



Date: 24.FEB.2012 08:44:43

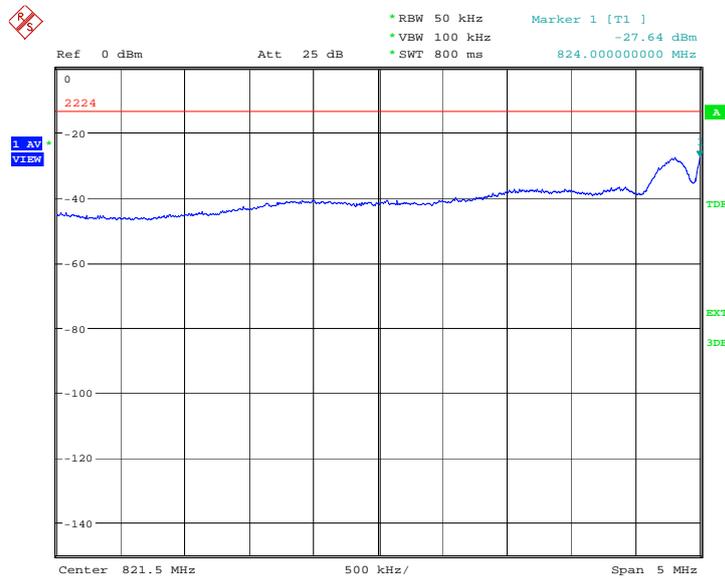
HIGH BAND EDGE BLOCK-C (WCDMA Band II) –Channel 9538



Date: 24.FEB.2012 08:44:54

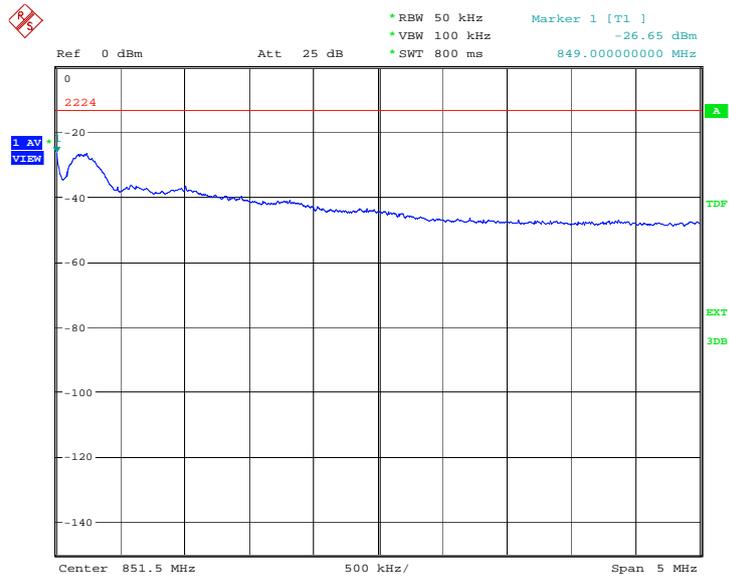
WCDMA Band V

LOW BAND EDGE BLOCK-A (WCDMA Band V)-Channel 4132



Date: 24.FEB.2012 09:01:29

HIGH BAND EDGE BLOCK-C (WCDMA Band V) –Channel 4233



Date: 24.FEB.2012 09:01:40

A.8 CONDUCTED SPURIOUS EMISSION

Reference

FCC: CFR Part 2.1057, 22.917, 24.238

IC: RSS 132, Issue 2, Section 4.5. RSS 133, Issue 5, Section 6.5

A.8.1 Measurement Method

The following steps outline the procedure used to measure the conducted emissions from the EUT.

1. Determine frequency range for measurements: From CFR 2.1057 the spectrum should be investigated from the lowest radio frequency generated in the equipment up to at least the 10th harmonic of the carrier frequency. For the equipment of WCDMA Band II, this equates to a frequency range of 30 MHz to 19.1 GHz, data are taken from 30 MHz to 20 GHz. For WCDMA Band V, data are taken from 30 MHz to 10 GHz.
2. Determine EUT transmit frequencies: below outlines the band edge frequencies pertinent to conducted emissions testing.

WCDMA Band II Transmitter

Channel	Frequency (MHz)
9262	1852.40
9400	1880.00
9538	1907.60

WCDMA Band V Transmitter

Channel	Frequency (MHz)
4132	826.40
4183	836.60
4233	846.60

A. 8.2 Measurement Limit

Part 24.238 and Part 22.917 specify that the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

The specification that emissions shall be attenuated below the transmitter power (P) by at least $43 + 10 \log(P)$ dB, translates in the relevant power range (1 to 0.001 W) to -13 dBm. At 1 W the specified minimum attenuation becomes 43 dB and relative to a 30 dBm (1 W) carrier becomes a limit of -13 dBm. At 0.001 W (0 dBm) the minimum attenuation is 13 dB, which again yields a limit of -13 dBm. In this way a translation of the specification from relative to absolute terms is carried out.

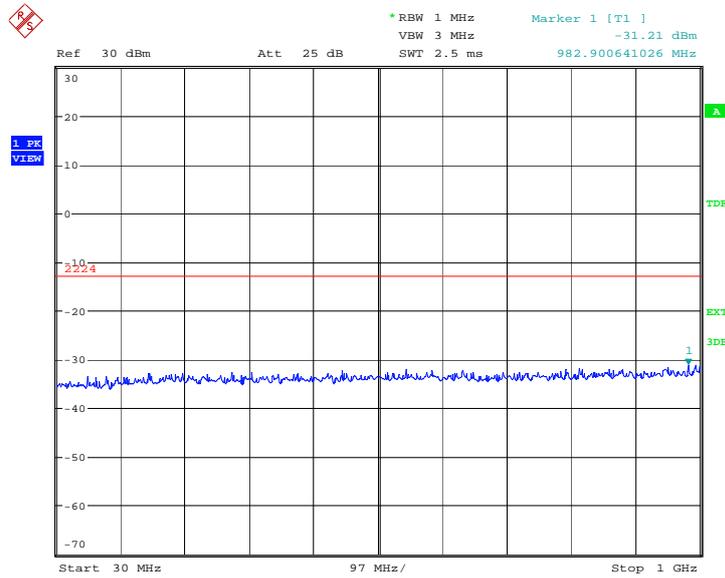
A. 8.3 Measurement result

Measurement Uncertainty: 0.3dB

WCDMA Band II

A. 8.3.1 Channel 9262: 30MHz –1GHz

Spurious emission limit –13dBm.

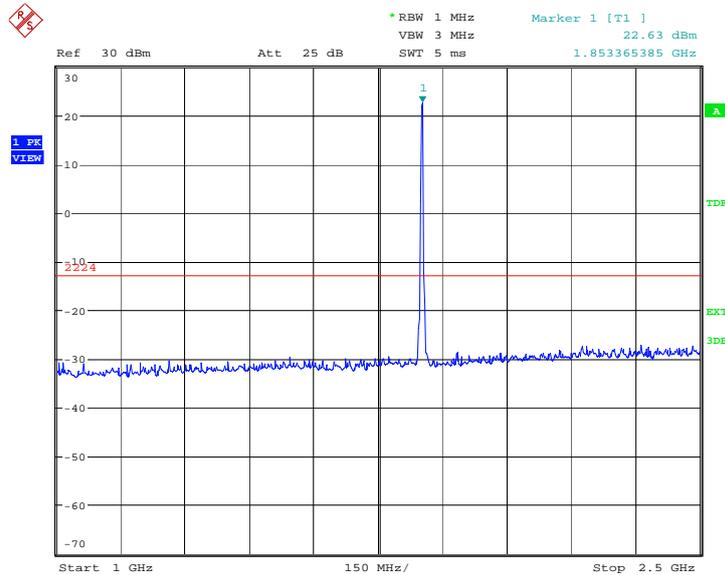


Date: 24.FEB.2012 08:45:25

A.8.3.2 Channel 9262: 1GHz –2.5GHz

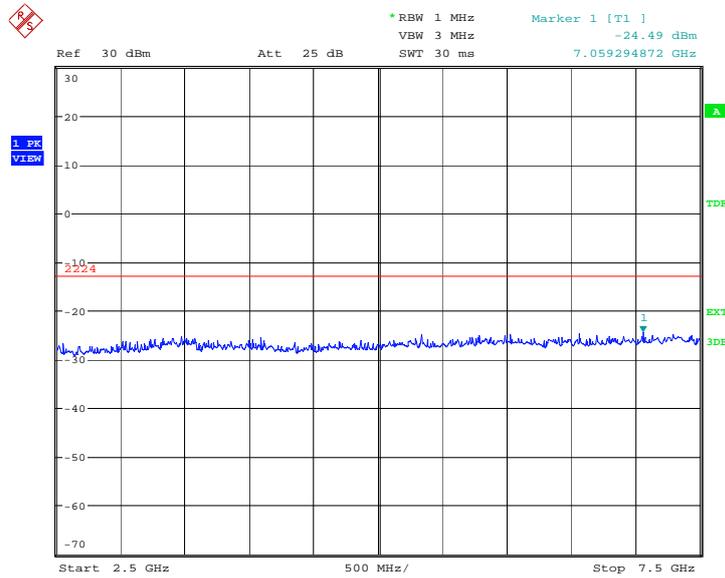
Spurious emission limit –13dBm.

NOTE: peak above the limit line is the carrier frequency.



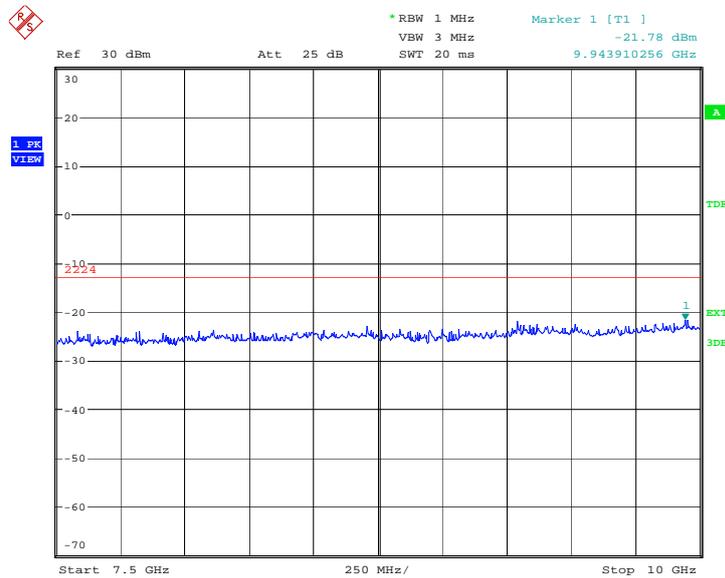
Date: 24.FEB.2012 08:45:53

A.8.3.3 Channel 9262: 2.5GHz –7.5GHz
Spurious emission limit –13dBm.



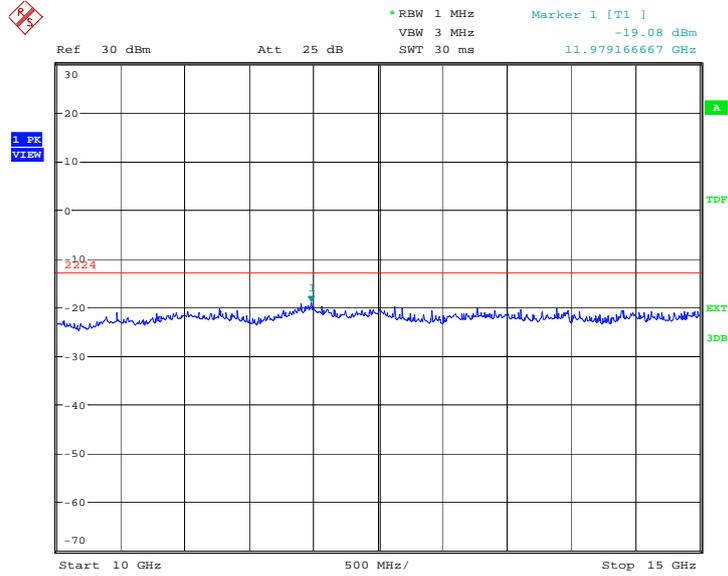
Date: 24.FEB.2012 08:46:21

A.8.3.4 Channel 9262: 7.5GHz –10GHz
Spurious emission limit –13dBm.



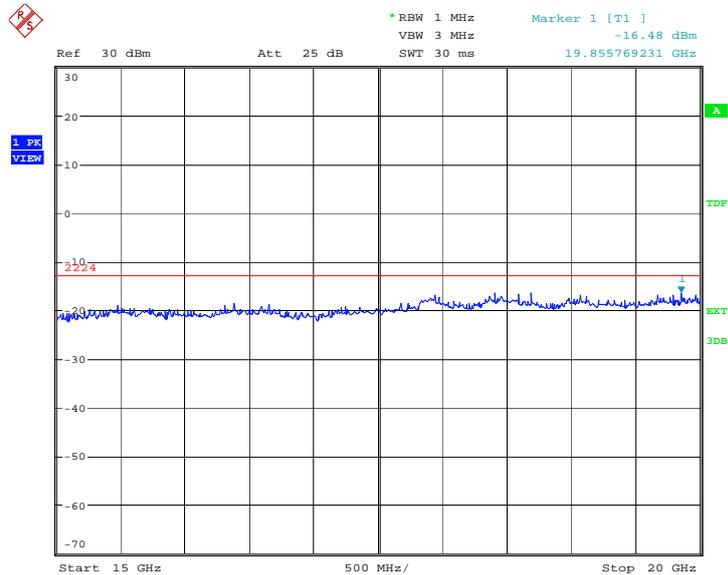
Date: 24.FEB.2012 08:46:50

A.8.3.5 Channel 9262: 10GHz –15GHz
Spurious emission limit –13dBm.



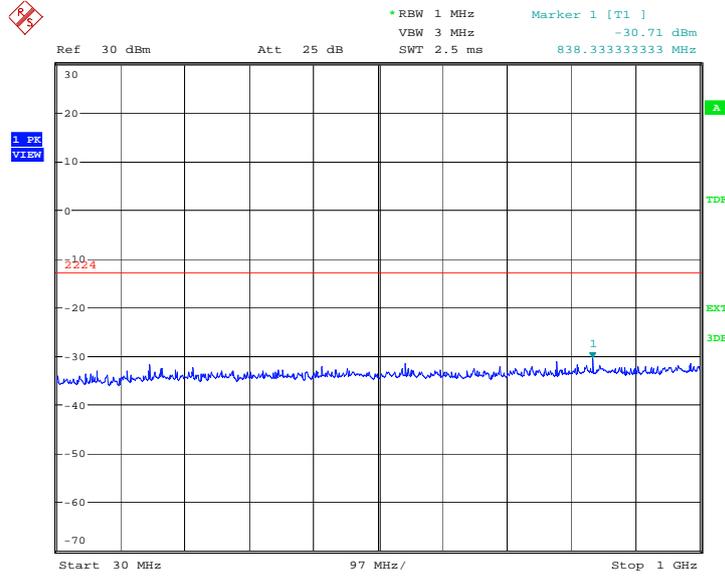
Date: 24.FEB.2012 08:47:18

A.8.3.6 Channel 9262: 15GHz –20GHz
Spurious emission limit –13dBm.



Date: 24.FEB.2012 08:47:46

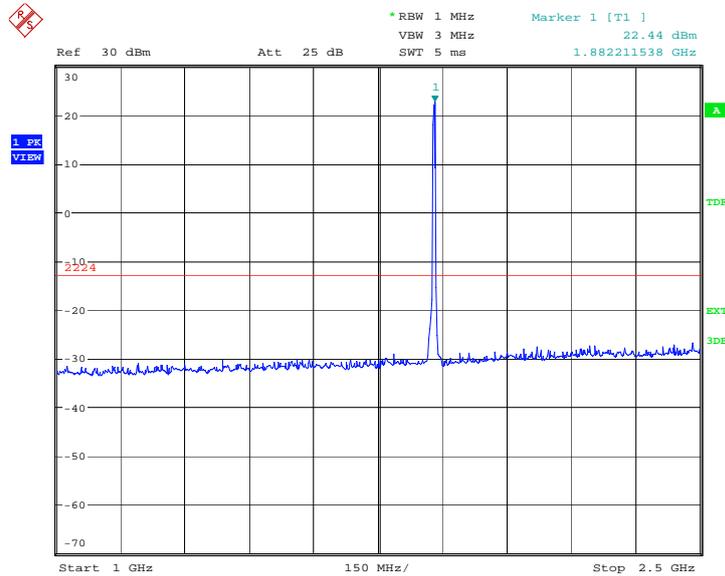
A. 8.3.7 Channel 9400: 30MHz –1GHz
Spurious emission limit –13dBm.



Date: 24.FEB.2012 08:48:17

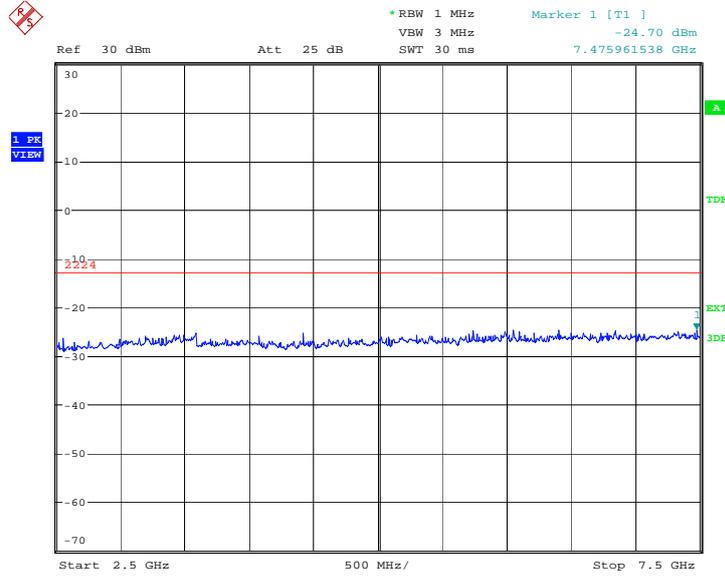
A.8.3.8 Channel 9400: 1GHz –2.5GHz
Spurious emission limit –13dBm.

NOTE: peak above the limit line is the carrier frequency.



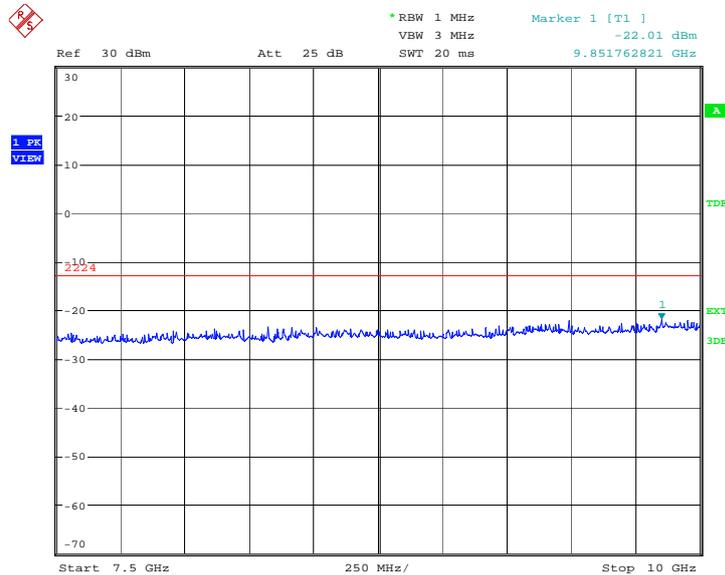
Date: 24.FEB.2012 08:48:45

A.8.3.9 Channel 9400: 2.5GHz –7.5GHz
Spurious emission limit –13dBm.



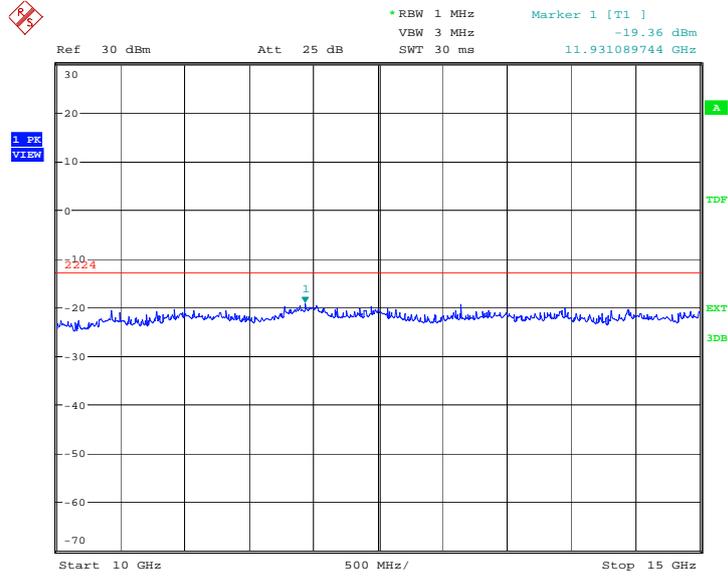
Date: 24.FEB.2012 08:49:14

A.8.3.10 Channel 9400: 7.5GHz –10GHz
Spurious emission limit –13dBm.



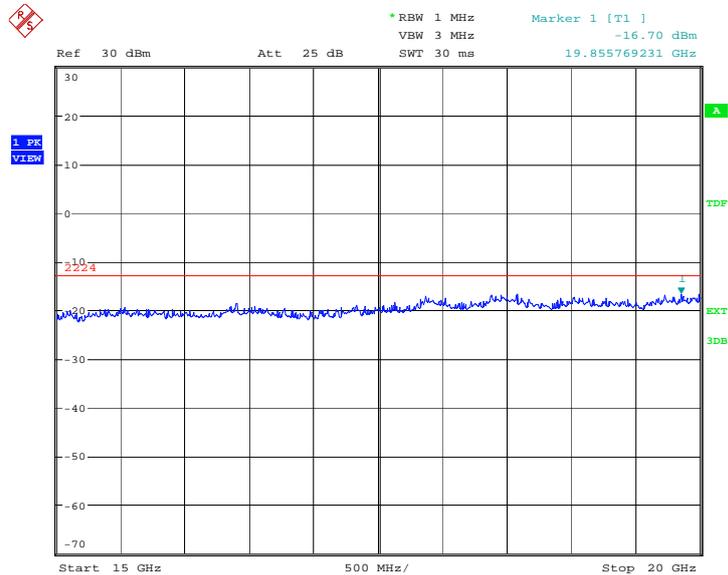
Date: 24.FEB.2012 08:49:42

A.8.3.11 Channel 9400: 10GHz –15GHz
Spurious emission limit –13dBm.



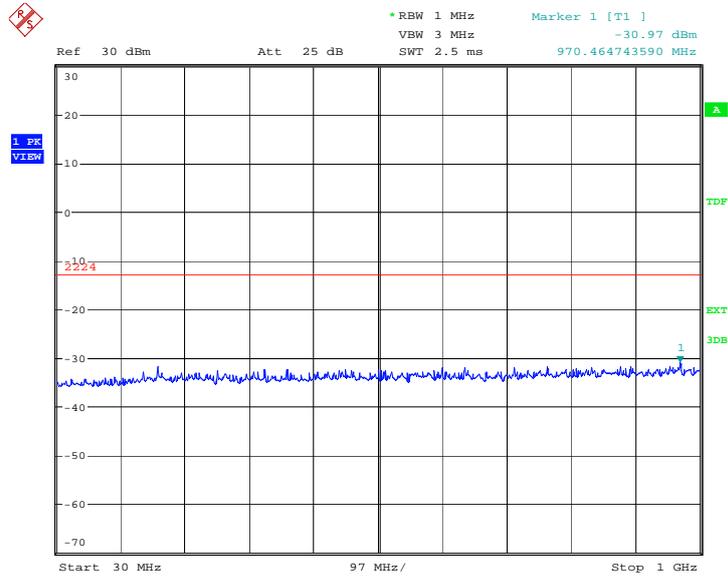
Date: 24.FEB.2012 08:50:10

A.8.3.12 Channel 9400: 15GHz –20GHz
Spurious emission limit –13dBm.



Date: 24.FEB.2012 08:50:38

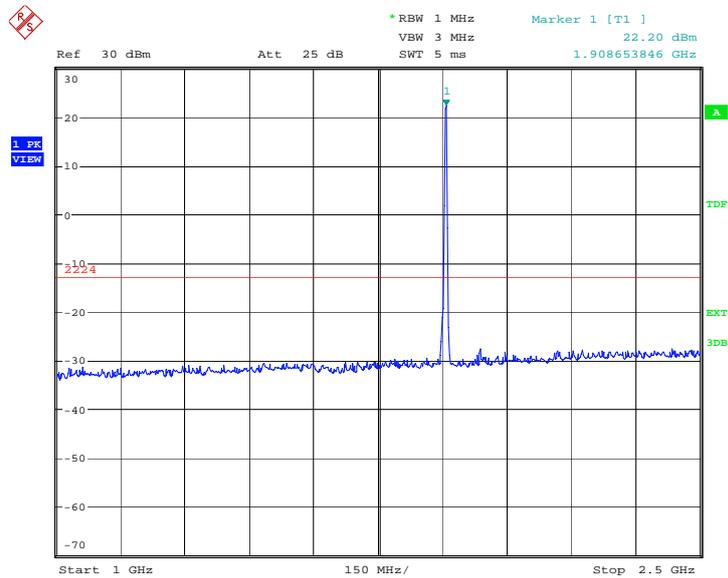
A. 8.3.13 Channel 9538: 30MHz –1GHz
Spurious emission limit –13dBm.



Date: 24.FEB.2012 08:51:10

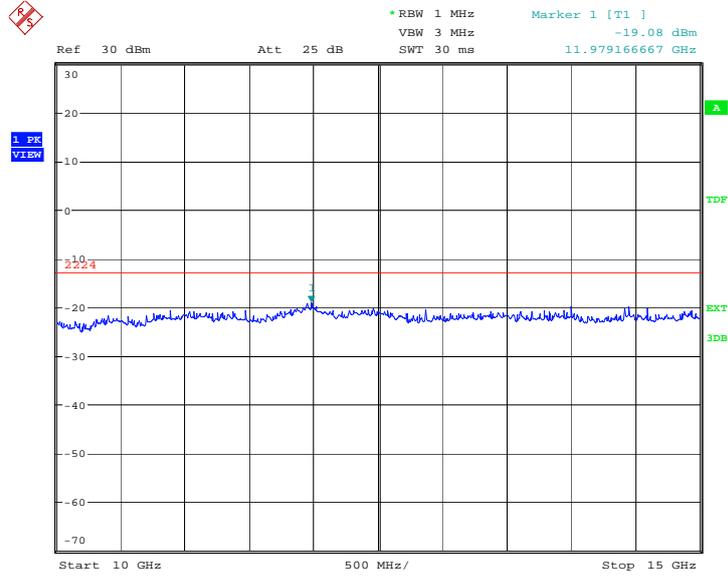
A.8.3.14 Channel 9538: 1GHz –2.5GHz
Spurious emission limit –13dBm.

NOTE: peak above the limit line is the carrier frequency.



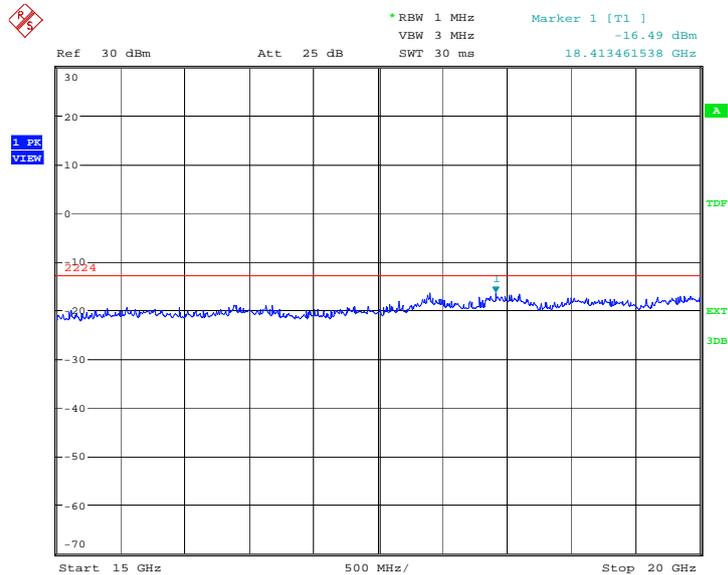
Date: 24.FEB.2012 08:51:38

A.8.3.17 Channel 9538: 10GHz –15GHz
Spurious emission limit –13dBm.



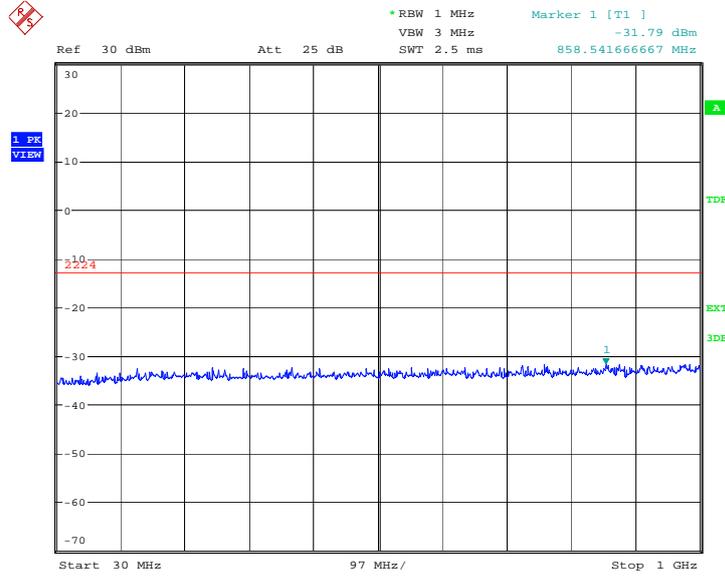
Date: 24.FEB.2012 08:53:02

A.8.3.18 Channel 9538: 15GHz –20GHz
Spurious emission limit –13dBm.



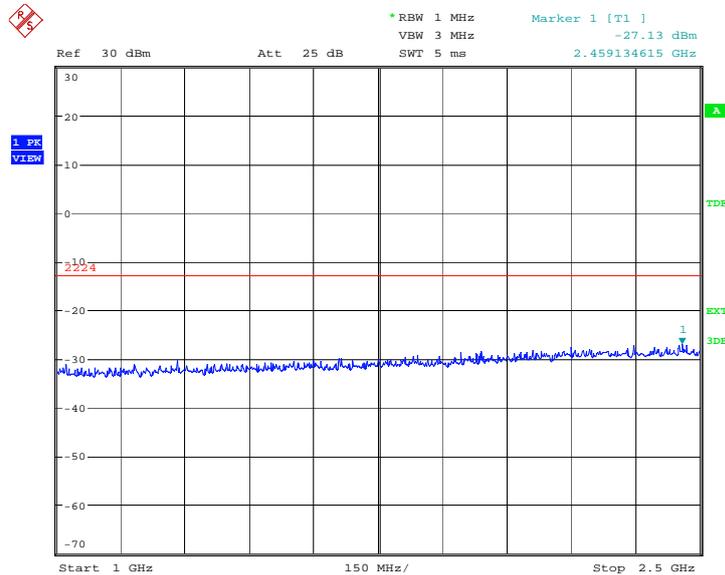
Date: 24.FEB.2012 08:53:31

A. 8.3.19 Idle mode: 30MHz –1GHz
Spurious emission limit –13dBm.



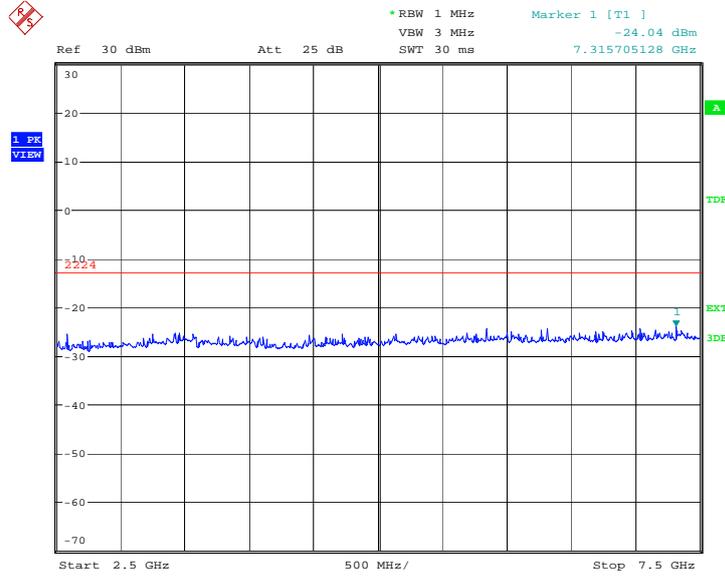
Date: 24.FEB.2012 08:54:00

A.8.3.20 Idle mode: 1GHz –2.5GHz
Spurious emission limit –13dBm.



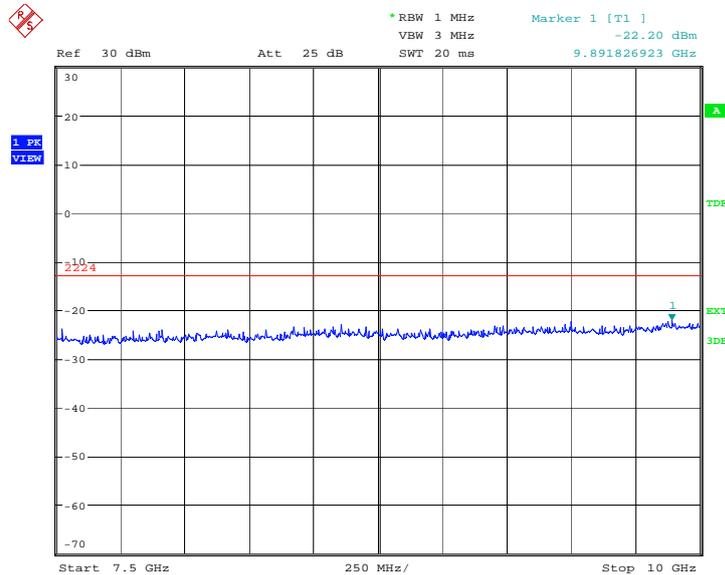
Date: 24.FEB.2012 08:54:28

A.8.3.21 Idle mode: 2.5GHz –7.5GHz
Spurious emission limit –13dBm.



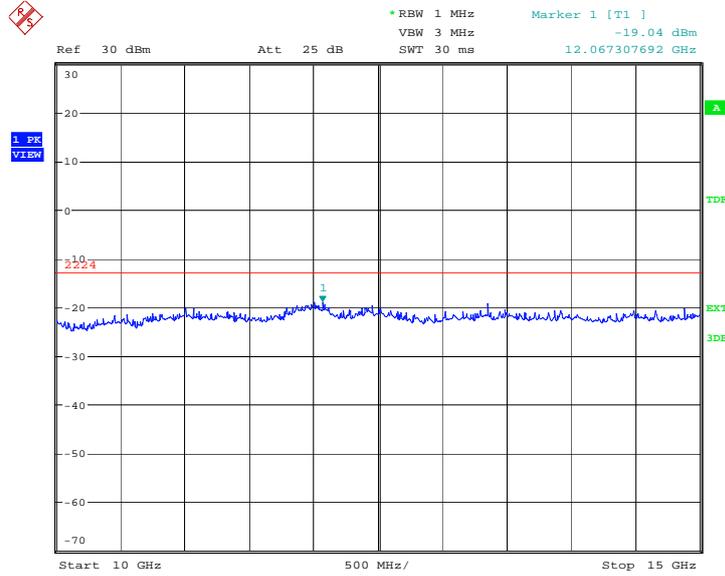
Date: 24.FEB.2012 08:54:56

A.8.3.22 Idle mode: 7.5GHz –10GHz
Spurious emission limit –13dBm.



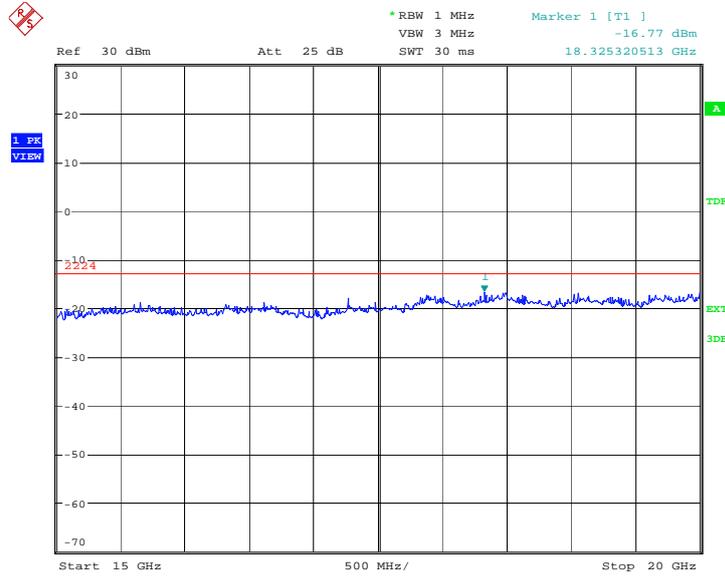
Date: 24.FEB.2012 08:55:24

A.8.3.23 Idle mode: 10GHz –15GHz
Spurious emission limit –13dBm.



Date: 24.FEB.2012 08:55:53

A.8.3.24 Idle mode: 15GHz –20GHz
Spurious emission limit –13dBm.



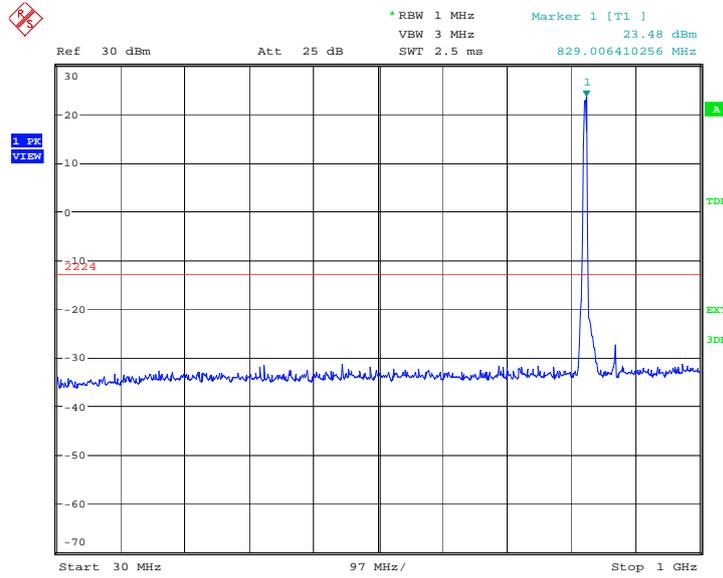
Date: 24.FEB.2012 08:56:21

WCDMA Band V

A. 8.3.25 Channel 4132: 30MHz –1GHz

Spurious emission limit –13dBm.

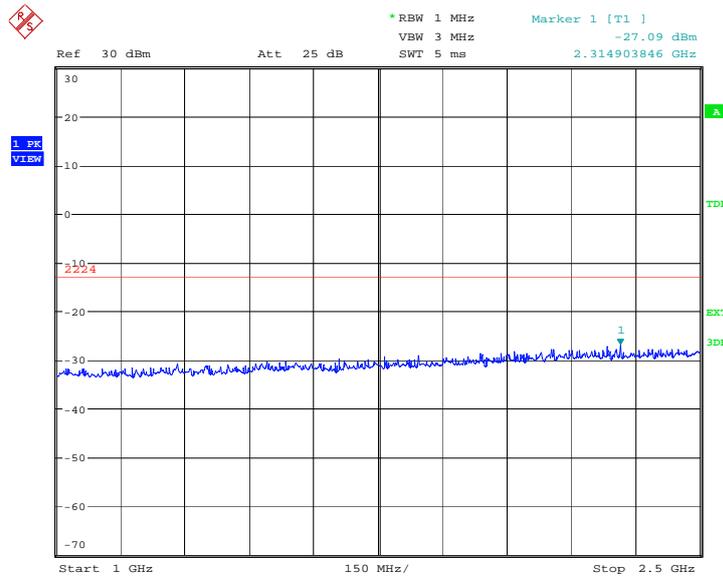
NOTE: peak above the limit line is the carrier frequency.



Date: 24.FEB.2012 09:02:11

A. 8.3.26 Channel 4132: 1GHz – 2.5GHz

Spurious emission limit –13dBm.

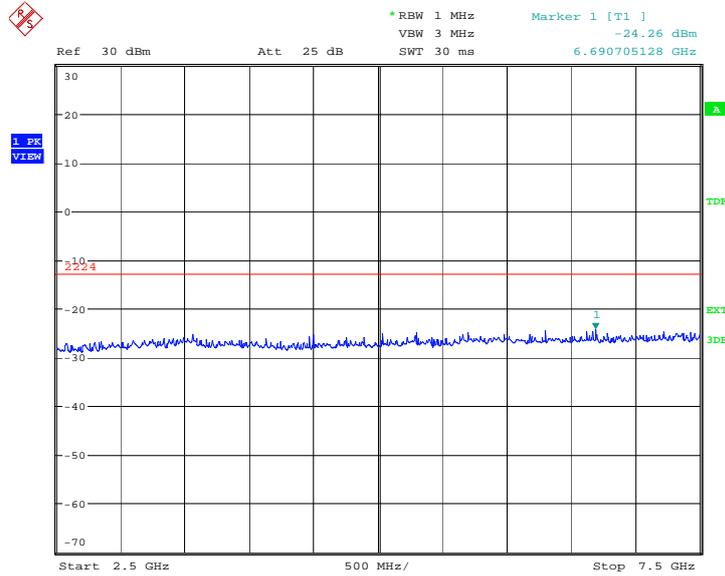


Date: 24.FEB.2012 09:02:39

A. 8.3.27 Channel 4132: 2.5GHz –7.5GHz

Spurious emission limit –13dBm.

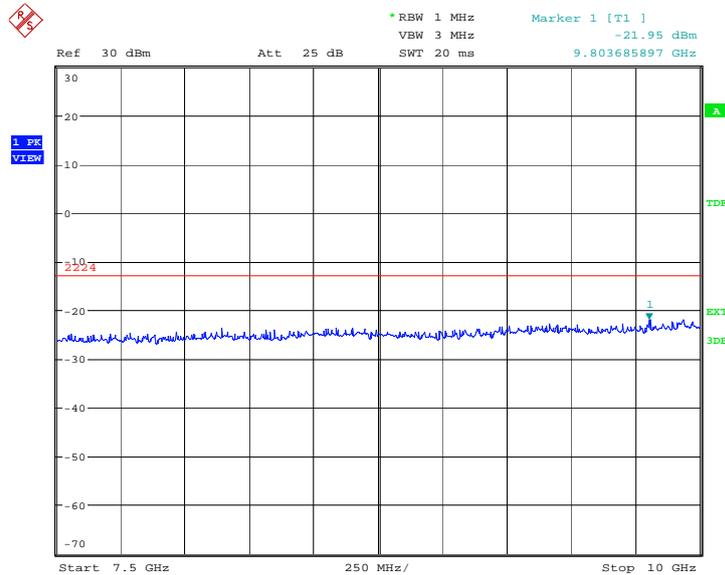
NOTE: peak above the limit line is the carrier frequency.



Date: 24.FEB.2012 09:03:07

A. 8.3.28 Channel 4132: 7.5GHz – 10GHz

Spurious emission limit –13dBm.

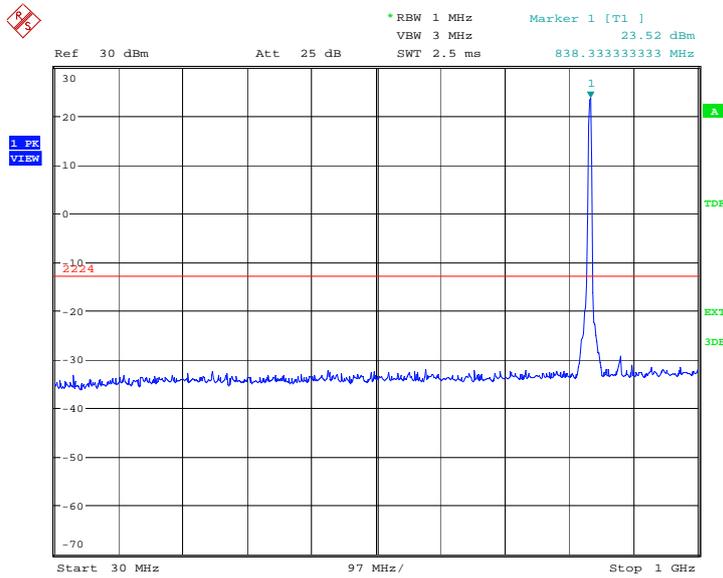


Date: 24.FEB.2012 09:03:36

A. 8.3.29 Channel 4183: 30MHz –1GHz

Spurious emission limit –13dBm.

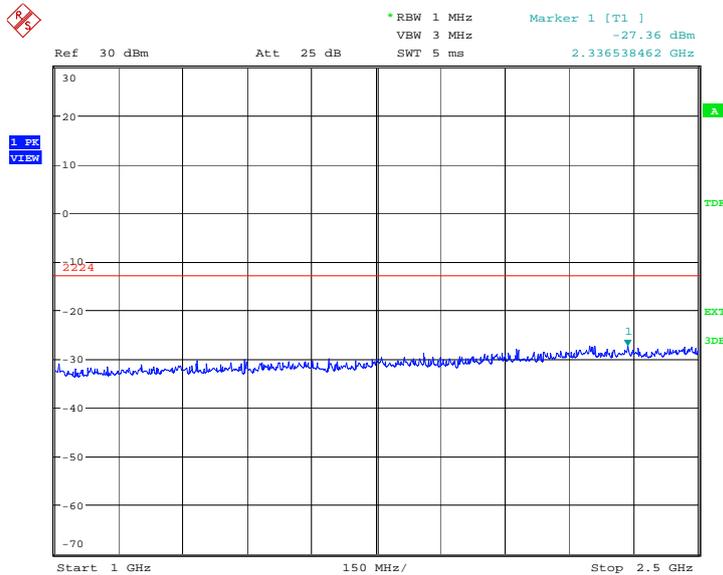
NOTE: peak above the limit line is the carrier frequency.



Date: 24.FEB.2012 09:04:07

A.8.3.30 Channel 4183: 1GHz – 2.5GHz

Spurious emission limit –13dBm.

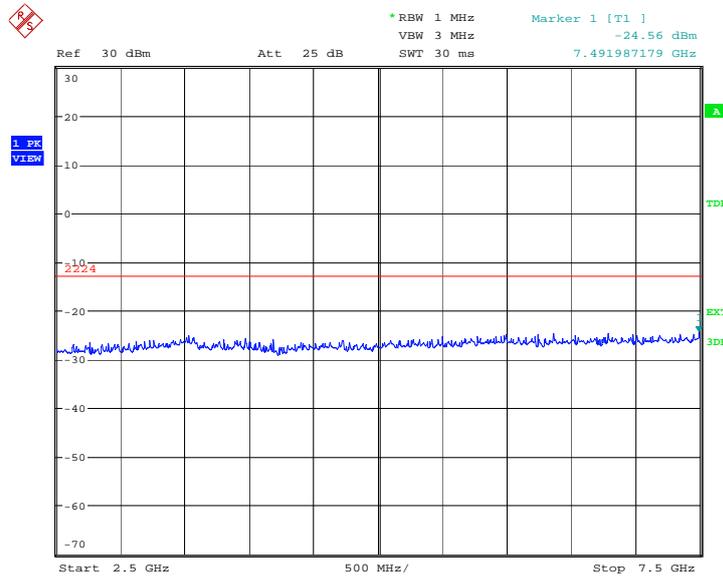


Date: 24.FEB.2012 09:04:35

A. 8.3.31 Channel 4183: 2.5GHz –7.5GHz

Spurious emission limit –13dBm.

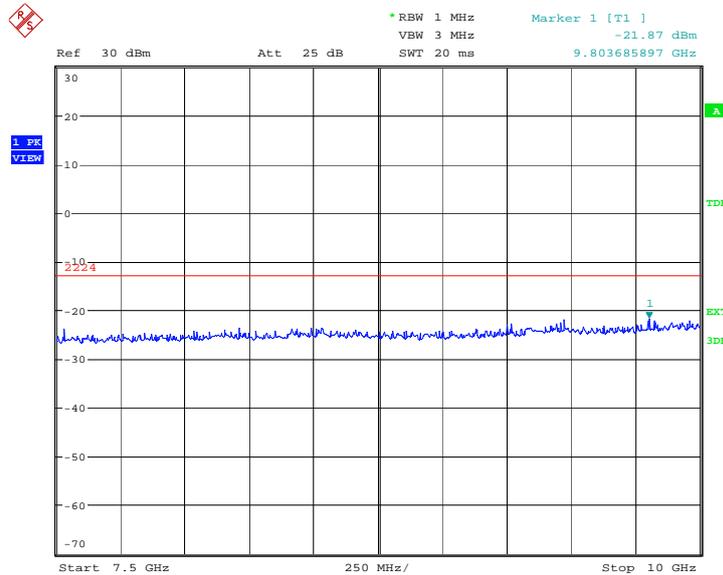
NOTE: peak above the limit line is the carrier frequency.



Date: 24.FEB.2012 09:05:03

A. 8.3.32 Channel 4183: 7.5GHz – 10GHz

Spurious emission limit –13dBm.

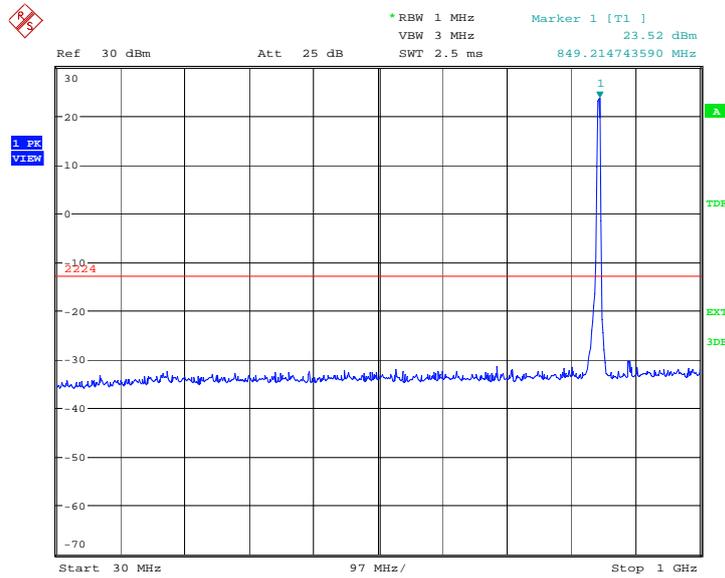


Date: 24.FEB.2012 09:05:31

A. 8.3.33 Channel 4233: 30MHz –1GHz

Spurious emission limit –13dBm.

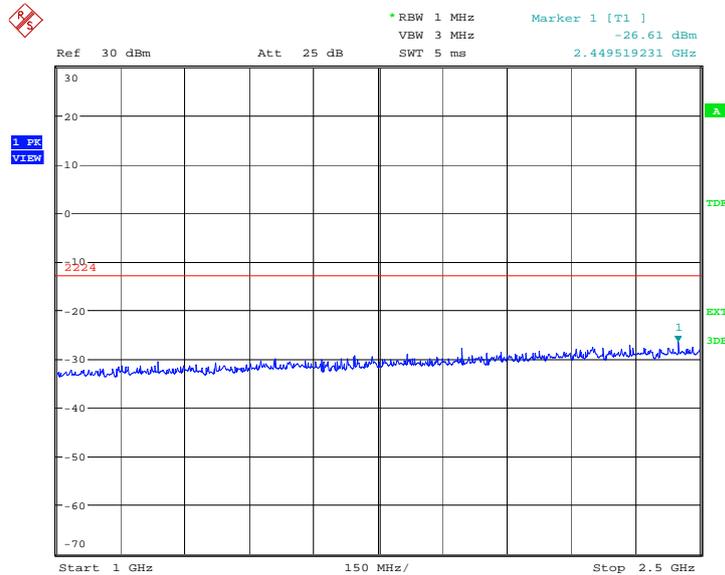
NOTE: peak above the limit line is the carrier frequency.



Date: 24.FEB.2012 09:06:03

A. 8.3.34 Channel 4233: 1GHz – 2.5GHz

Spurious emission limit –13dBm.

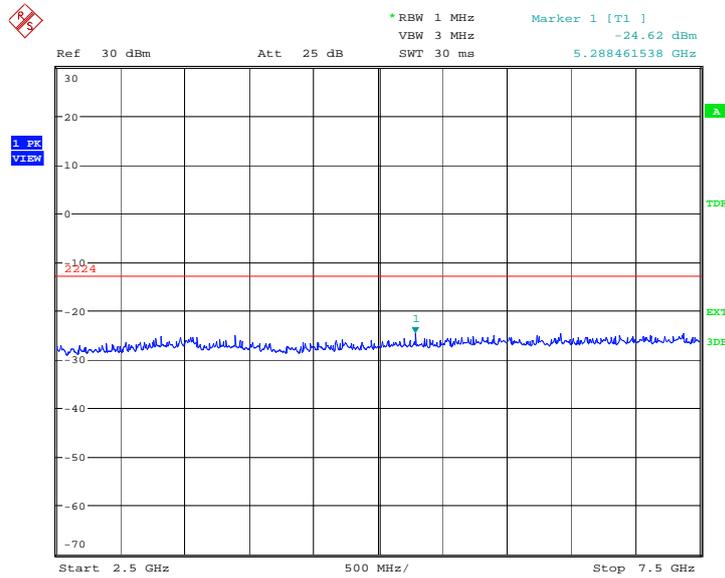


Date: 24.FEB.2012 09:06:31

A. 8.3.35 Channel 4233: 2.5GHz –7.5GHz

Spurious emission limit –13dBm.

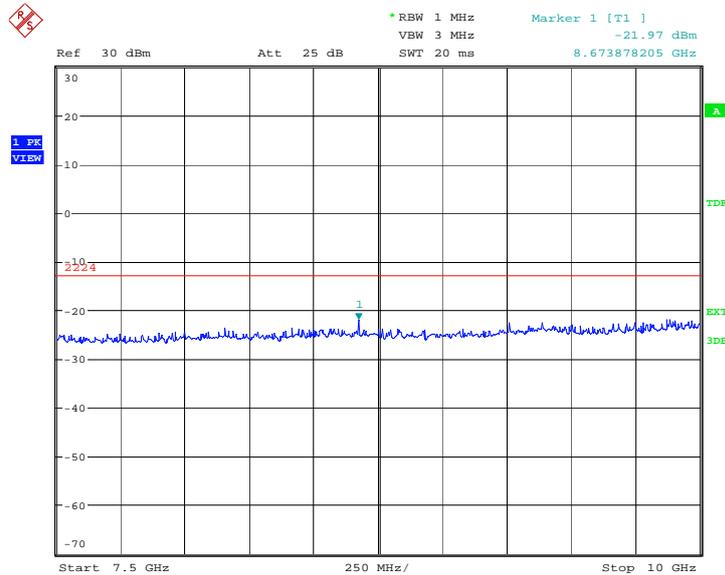
NOTE: peak above the limit line is the carrier frequency.



Date: 24.FEB.2012 09:06:59

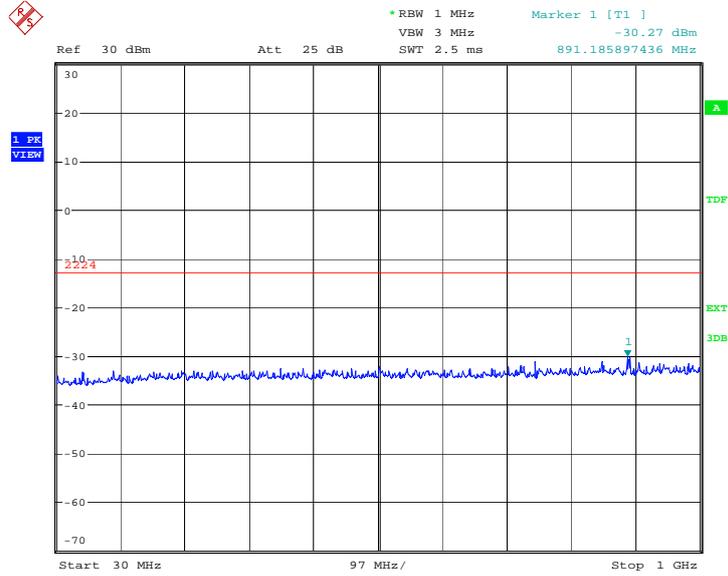
A. 8.3.36 Channel 4233: 7.5GHz – 10GHz

Spurious emission limit –13dBm.



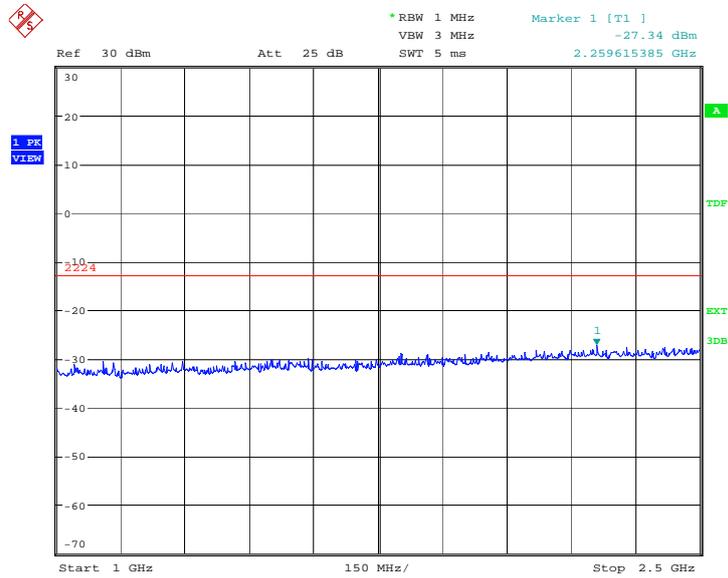
Date: 24.FEB.2012 09:07:27

A. 8.3.37 Idle mode: 30MHz – 1GHz
Spurious emission limit -13dBm.



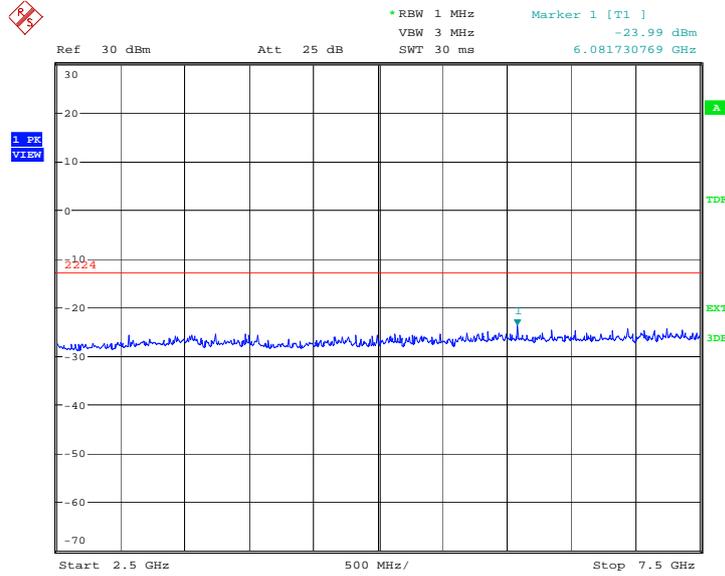
Date: 24.FEB.2012 09:07:56

A.8.3.38 Idle mode: 1GHz – 2.5GHz
Spurious emission limit -13dBm.



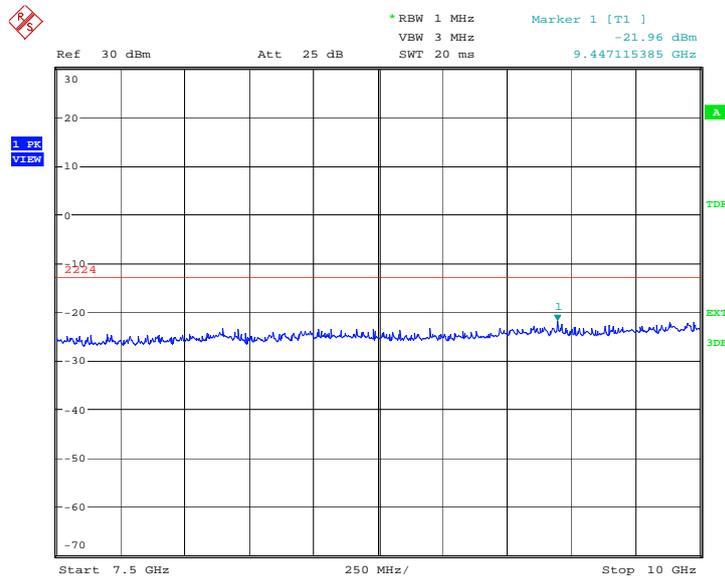
Date: 24.FEB.2012 09:08:25

A.8.3.39 Idle mode: 2.5GHz – 7.5GHz
Spurious emission limit -13dBm.



Date: 24.FEB.2012 09:08:53

A.8.3.40 Idle mode: 7.5GHz – 10GHz
Spurious emission limit -13dBm.



Date: 24.FEB.2012 09:09:21

A.9 RECEIVER RADIATION EMISSION

Reference

FCC: CFR Part 2.1053, 15.109

IC: RSS 132, Issue 2, Section 4.6. RSS 133, Issue 5, Section 6.6

A.9.1 Method of Measurement

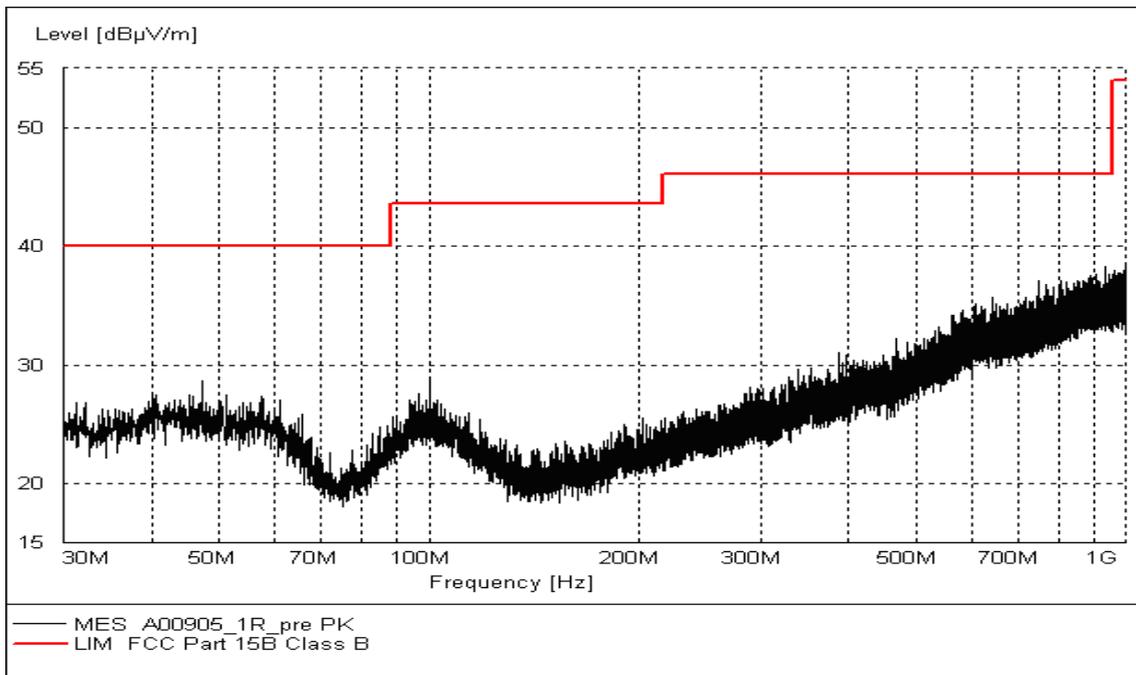
The measurement procedure in ANSI C64.4-2003 is used. The EUT is placed on an 80cm height non-conductive table locating on the center of turntable. From 30MHz-1GHz, the measurement distance is 10m. For frequency range above 1GHz, the measurement distance is 3m.

The EUT is measured with travel charger and the operating mode is idle without CMU200's signaling.

A.9.2 Method of Measurement

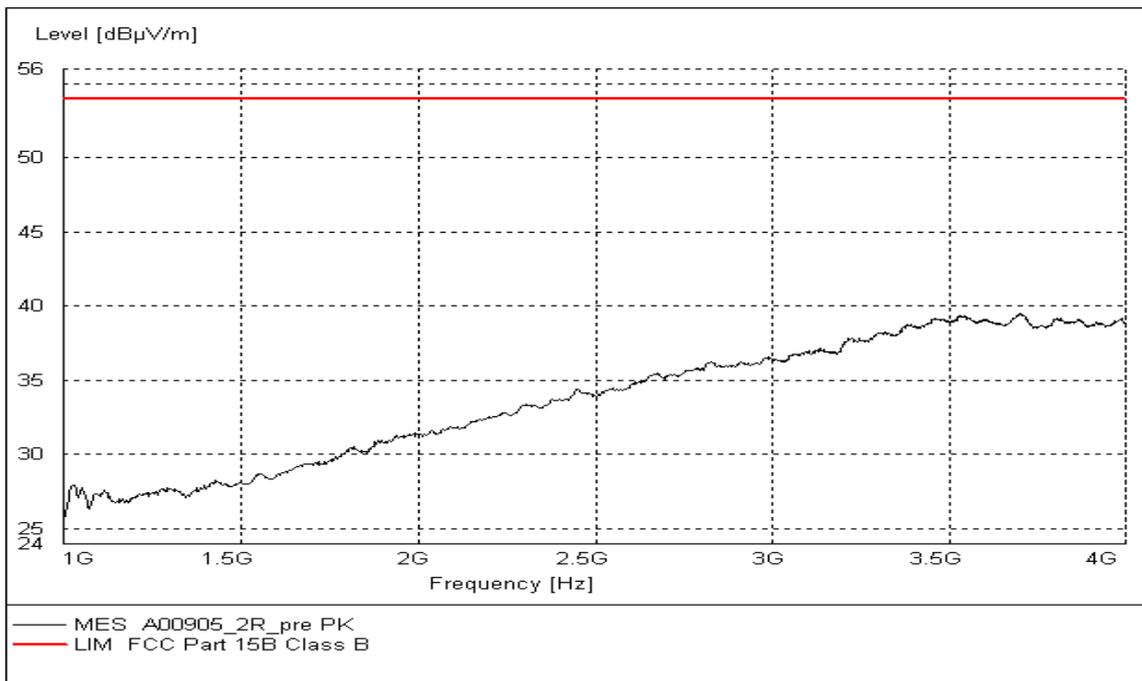
Frequency of Emission (MHz)	Limit (dB μ V/m)	Measurement Distance (m)
30-88	40	3
88-216	43.5	3
216-960	46	3
960-1000	54	3
>1000	54	3

A. 9.3 Measurement results



IF bandwidth: 120 kHz

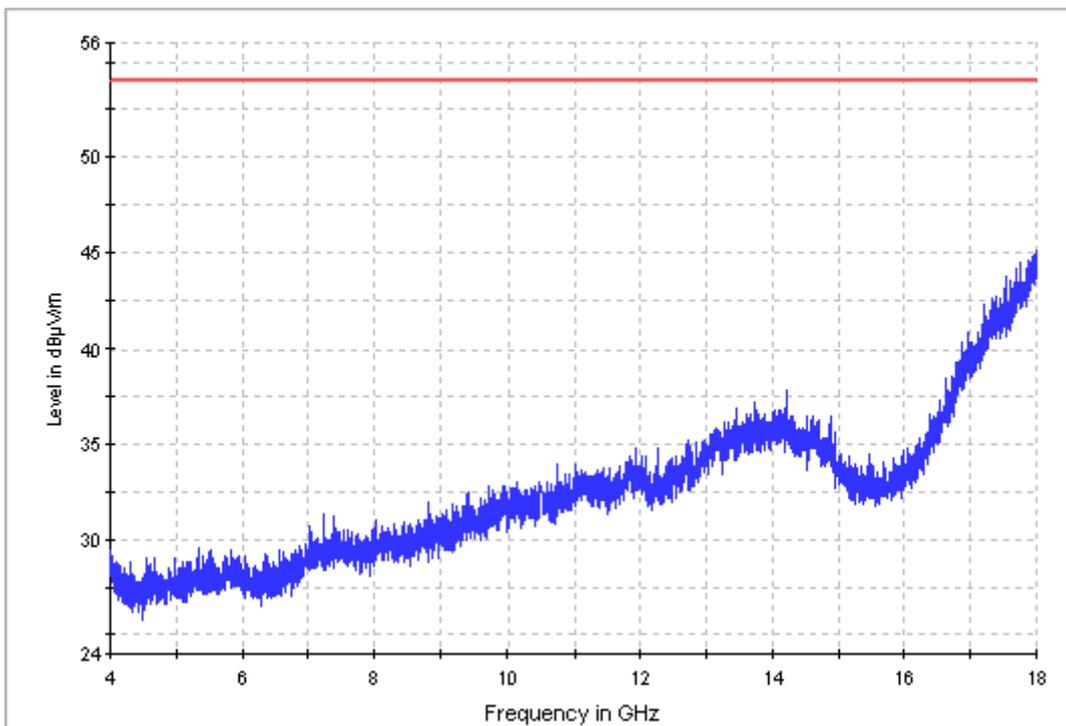
Idle Mode: 30MHz-1GHz



RBW / VBW 1 MHz

Idle Mode: 1GHz-4GHz

FCC 4-18G



RBW / VBW 1 MHz

Idle Mode: 4GHz-18GHz