



TEST REPORT

No. 2012TAR443

for

TCT Mobile Limited

UMTS Triband / GSM Quadband mobile phone

Model Name: ONE TOUCH 768T

FCC ID: RAD287

IC: 9238A-0012

with

Hardware Version: PIO01

Software Version: swC22

Issued Date: Sep 28, 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.6629B

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1. Test Laboratory

1.1. Testing Location

Company Name: TMC Beijing, Telecommunication Metrology Center of MIIT
Address: 3/F Shou Xiang Technology Building, No.51 Xueyuan Road, Hai
Dian District, Beijing, P. R. China
Postal Code: 100191
Telephone: 00861062304633
Fax: 00861062304793

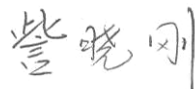
1.2. Testing Environment

Normal Temperature: 15-35℃
Relative Humidity: 20-75%

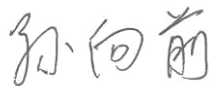
1.3. Project data

Testing Start Date: Aug 21, 2012
Testing End Date: Sep 27, 2012

1.4. Signature



Zi Xiaogang
(Prepared this test report)



Sun Xiangqian
(Reviewed this test report)



Lu Bingsong
Deputy Director of the laboratory
(Approved this test report)

2. Client Information

2.1. Applicant Information

Company Name: TCT Mobile Limited
Address /Post: 5F, C building, No. 232, Liang Jing Road ZhangJiang High-Tech Park,
Pudong Area Shanghai, P.R. China. 201203
City: Shanghai
Country: China
Telephone: 0086-21-61460890
Fax: 0086-21-61460602

2.2. Manufacturer Information

Company Name: TCT Mobile Limited
Address /Post: 5F, C building, No. 232, Liang Jing Road ZhangJiang High-Tech Park,
Pudong Area Shanghai, P.R. China. 201203
City: Shanghai
Country: China
Telephone: 0086-21-61460890
Fax: 0086-21-61460602

3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

Description	UMTS Triband / GSM Quadband mobile phone
Model Name	ONE TOUCH 768T
FCC ID	RAD287
IC	9238A-0012
Frequency	GSM 850MHz; PCS 1900MHz; WCDMA Band II; WCDMA Band V; WCDMA BAND IV
Antenna	Internal
Power supply	Battery or Charger (AC Adaptor)
Output power	26.70dBm maximum EIRP measured for WCDMA Band II
Extreme vol. Limits	3.5VDC to 4.2VDC (nominal 3.8VDC)
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*	IMEI	HW Version	SW Version
N07	013303000051519	PIO01	swC22
N08	013303000050545	PIO01	swC22

*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	
AE1	Battery	B097155EA0A
AE2	Battery	B152153A1AA
AE3	Battery	B152153A1CA
AE4	Travel charger	/
AE5	Travel charger	/

AE1, AE2, AE3

Model	CAB3120000C1
Manufacturer	BYD
Capacitance	850mAh
Nominal voltage	3.8V

AE4

Model	CBA3002AG0C1
Manufacturer	BYD

Length of cable	121cm
AE5	
Model	CBA3002AG0C3
Manufacturer	BYD
Length of cable	127cm

*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 UMTS Triband / GSM Quadband mobile phone with integrated antenna. It consists of normal options: lithium battery, charger. Manual and specifications of the EUT were provided to fulfil the test. Samples undergoing test were selected by the Client.

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	V 10.1.09
FCC Part 22	PUBLIC MOBILE SERVICES	V 10.1.09
FCC Part 27	MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES	V 10.1.09
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
RSS-Gen	RSS-Gen — General Requirements and Information for the Certification of Radiocommunication Equipment	Issue 3, December 2010
RSS-132	Cellular Telephones Employing New Technologies Operating in the Bands 824-849 MHz and 869-894 MHz	Issue 2, September 2005
RSS-133	2 GHz Personal Communications Services	Issue 5, February 2009
KDB971168 D01	Procedures for Compliance Measurement of the Fundamental Emission Power of Licensed Wideband (> 1 MHz) Digital Transmission Systems	2011

5. LABORATORY ENVIRONMENT

Control room / conducted chamber 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

Fully-anechoic chamber 2 (8.6 meters X 6.1 meters X 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
Site voltage standing-wave ratio (S_{VSWR})	Between 0 and 6 dB, from 1GHz to 18GHz
Uniformity of field strength	Between 0 and 6 dB, from 80 to 4000 MHz

Semi-anechoic chamber 2 / Fully-anechoic chamber 3 (10 meters X 6.7 meters X 6.15 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	> 100 dB
Electrical insulation	> 2 MΩ
Ground system resistance	< 0.5 Ω
Normalised site attenuation (NSA)	< ±3.5 dB, 3 m distance
Site voltage standing-wave ratio (S_{VSWR})	Between 0 and 6 dB, from 1GHz to 18GHz
Uniformity of field strength	Between 0 and 6 dB, from 80 to 3000 MHz

6. SUMMARY OF TEST RESULTS

WCDMA Band II

Items	Test Name	Clause in FCC rules	Clause in IC rules RSS-Gen and RSS- 133	Section in this report	Verdict
1	Output Power	24.232(c)	6.4	A.1	P
2	Emission Limit	24.238, 2.1051	6.5	A.2	P
3	CONDUCTED EMISSION	15.107/15.207		A.3	P
4	Frequency Stability	24.235, 2.1055	6.3	A.4	P
5	Occupied Bandwidth	2.1049(h)(i)	4.1/4.6.1	A.5	P
6	Emission Bandwidth	24.238(b)	4.6.1	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

WCDMA Band V

Items	Test Name	Clause in FCC rules	Clause in IC rules RSS-Gen and RSS-132	Section in this report	Verdict
1	Output Power	§2.1046(a), 22.913(a)	4.4	A.1	P
2	Emission Limit	22.917, 2.1051	4.5	A.2	P
3	CONDUCTED EMISSION	15.107/15.207		A.3	P
4	Frequency Stability	22.235, 2.1055	4.3	A.4	P
5	Occupied Bandwidth	2.1049(h)(i)	4.1/4.6.1	A.5	P
6	Emission Bandwidth	22.917(b)	4.6.1	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 IV

Items	Test Name	Clause in FCC rules	Clause in IC rules RSS-Gen and RSS-132	Section in this report	Verdict
1	Output Power	27.50(d)(2)	5.4	A.1	P
2	Emission Limit	27.53(h)	5.5	A.2	P
3	CONDUCTED EMISSION	15.107/15.207		A.3	P
4	Frequency Stability	27.54	5.3	A.4	P
5	Occupied Bandwidth	2.1049(h)(i)	4.1/4.6.1	A.5	P
6	Emission Bandwidth	27.53(g)	4.6.1	A.6	P

7	Band Edge Compliance	27.53(g)	5.5	A.7	P
8	Conducted Spurious Emission	2.1057/27.53(g)	5.5	A.8	P

Receiver Radiated Emission

Items	Test Name	Clause in FCC rules	Clause in IC rules		Section in this report	Verdict
			RSS-132	RSS-133		
1	Receiver Radiated Emissions	15.109 2.1053	4.6	6.6	A.9	P

7. Test Equipments Utilized

NO.	NAME	TYPE	SERIES NUMBER	PRODUCER	CAL DUE DATE
1	Test Receiver	ESCI	100344	R&S	2013-03-28
2	Test Receiver	ESU26	100376	R&S	2012-11-08
3	BiLog Antenna	VULB 9163	514	Schwarzbeck	2014-11-10
4	BiLog Antenna	3117	00139065	ETS-Lindgren	2014-07-31
5	Signal Generator	SMB100A	102063	R&S	2013-04-05
6	LISN	ESH2-Z5	829991/012	R&S	2013-04-16
7	Universal Radio Communication Tester	CMU200	102228	R&S	2013-07-06
8	Universal Radio Communication Tester	E5515C	MY48361083	Agilent	2013-03-16
9	Spectrum Analyzer	E4440A	MY48250642	Agilent	2013-03-04
10	EMI Antenna	9117	177	Schwarzbeck	2013-06-28
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	2013-03-19
15	Climatic chamber	PL-2G	343074	ESPEC	2013-05-12
16	Spectrum Analyzer	FSU26	200030	R&S	2013-06-19

ANNEX A: MEASUREMENT RESULTS

A.1 OUTPUT POWER

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 Rhode & Schwarz Spectrum Analyzer FSU (RMS) These measurements were done at 3 frequencies, 1852.4 MHz, 1880.0MHz and 1907.6MHz for WCDMA Band II;826.4MHz, 836.6MHz and 846.6MHz for WCDMA Band V and 1712.4MHz, 1740MHz, and 1752.6MHz for WCDMA Band IV(bottom, middle and top of operational frequency range).

Limit

A.1.2.2 Test Condition

RBW	VBW	Sweep Time	Span
10MHz	10MHz	800ms	50MHz

WCDMA Band II

Measurement result

WCDMA (Band II)	CH	Frequency(MHz)	output power(dBm)
	9262	1852.4	22.44
	9400	1880.0	22.36
	9538	1907.6	22.31

WCDMA Band V

Measurement result

WCDMA (Band V)	CH	Frequency(MHz)	output power(dBm)
	4132	826.4	23.06
	4183	836.6	23.07
	4233	846.6	22.92

WCDMA Band IV

Measurement result

WCDMA (Band IV)	CH	Frequency(MHz)	output power(dBm)
	1312	1712.4	22.26
	1450	1740.0	22.35
	1513	1752.6	22.16

A.1.3 Radiated

A.1.3.1 Description

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

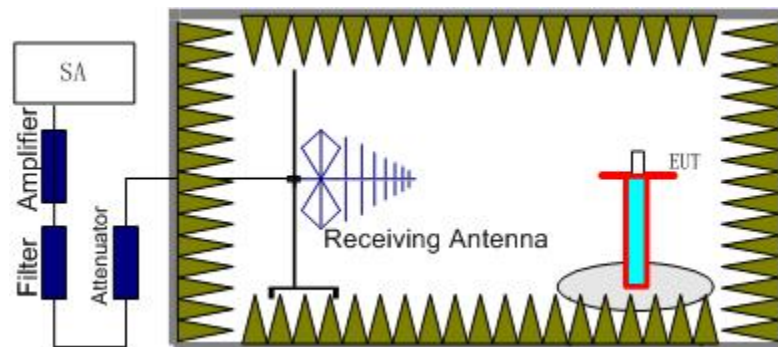
Rule Part 24.232(b) specifies, "Mobile/portable stations are limited to 2 watts e.i.r.p. Peak power" and 24.232(c) specifies that "Peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage."

Rule Part 22.913(a) specifies "The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts." Rule Part 27.50(d)(2) specifies, "Fixed, mobile, and portable (handheld) stations operating in the 1710–1755 MHz band are limited to a peak EIRP of 1 watt."

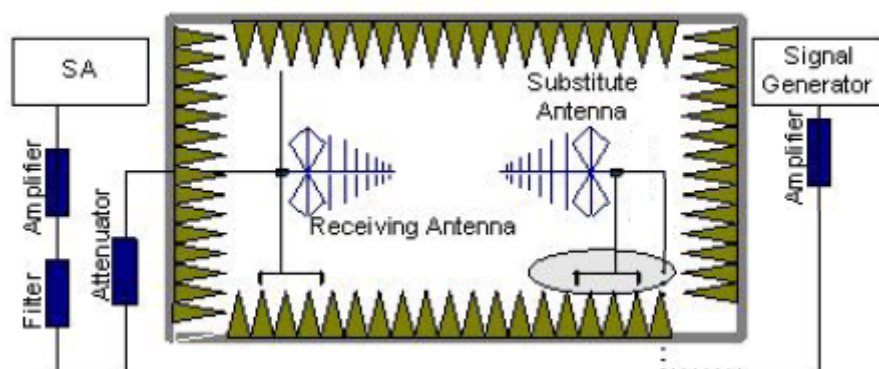
A.1.3.2 Method of Measurement

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 (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, and adjust the level of the signal generator output until the value of the receiver reach 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. A amplifier should be connected to the Signal Source output port. And the cable should be connect 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:

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

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, $ERP = EIRP - 2.15\text{dBi}$.

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 Antenna Gain(dB)	EIRP(dBm)	Polarization
1852.40	-21.83	6.02	-50.00	-4.55	26.70	V
1880.00	-21.95	7.05	-50.00	-4.43	25.43	V
1907.60	-19.17	8.90	-50.00	-4.31	26.24	V

Frequency: 1852.40MHz

Peak EIRP(dBm)= P_{Mea}(-21.83dBm)- P_{cl}(6.02dB)- P_{Ag}(-50.00dB) - G_a (-4.55dB) =26.70dBm

ANALYZER SETTINGS: RBW = VBW = 3MHz

WCDMA Band V-ERP

Limits

	Burst Peak ERP (dBm)
WCDMA Band V	38.45dBm (7W)

Measurement result

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction (dBm)	ERP(dBm)	Polarization
826.40	-32.96	2.25	-53.00	0.85	2.15	14.79	V
836.60	-32.98	2.26	-53.00	0.90	2.15	14.71	V
846.60	-33.54	2.26	-53.00	0.94	2.15	14.11	V

Frequency: 826.40MHz

Peak ERP(dBm)= P_{Mea}(-32.96dBm)- P_{cl}(2.25dB)- P_{Ag}(-53.00dB)-G_a (0.85dB)-2.15dBm=14.79dBm

ANALYZER SETTINGS: RBW = VBW = 3MHz

WCDMA Band IV-EIRP

Limits

	Burst Peak EIRP (dBm)
WCDMA Band IV	30dBm (2W)

Measurement result

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Polarization
1712.40	-27.76	3.66	-50.00	-5.17	23.75	V
1740.00	-25.47	4.36	-50.00	-5.04	25.21	V
1752.60	-25.63	3.85	-50.00	-4.99	25.51	V

Frequency: 1752.60MHz

Peak EIRP(dBm)= P_{Mea}(-25.63dBm)- P_{cl}(3.85dB)- P_{Ag}(-50.00dB) - G_a (-4.99dB) =25.51dBm

ANALYZER SETTINGS: RBW = VBW = 3MHz

A.2 EMISSION LIMIT

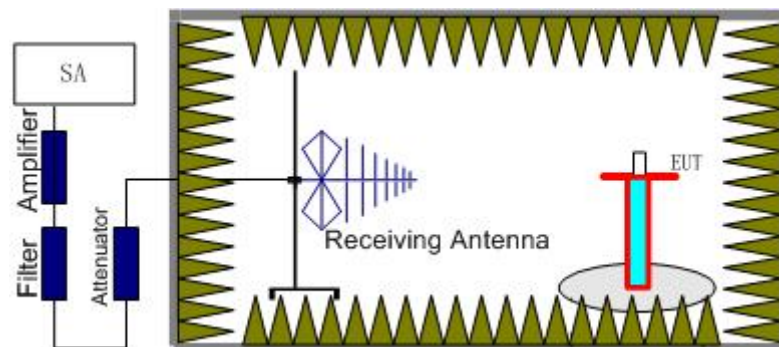
A.2.1 Measurement Method

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

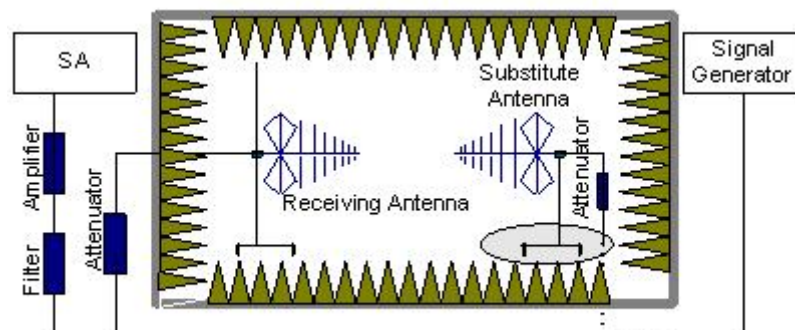
The spectrum was scanned from 30 MHz to the 10th harmonic of the highest frequency generated within the equipment. The resolution bandwidth is set as outlined in Part 24.238, Part 22.917 and Part 27.53. The spectrum was scanned with the mobile station transmitting at carrier frequencies that pertain to low, mid and high channels of WCDMA Band II, WCDMA Band V and WCDMA Band IV.

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, and adjust the level of the signal generator output until the value of the receiver reach 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.

A 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, $ERP = EIRP - 2.15\text{dBi}$.

A.2.2 Measurement Limit

Part 24.238 , Part 22.917 and Part 27.53 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.

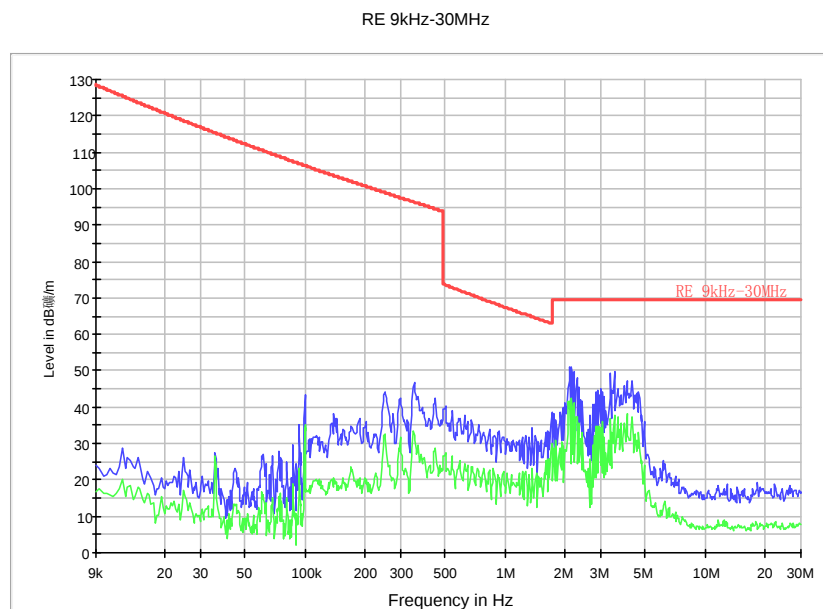
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A.2.3 Measurement Results

Radiated emissions measurements were made only at the upper, middle, and lower carrier frequencies of WCDMA Band II (1852.4 MHz, 1880.0MHz and 1907.6MHz) , WCDMA Band V(826.4MHz, 836.6MHz and 846.6MHz) and WCDMA Band IV(1712.4MHz, 1740MHz and 1752.6MHz). 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, WCDMA Band V and WCDMA Band IV 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.

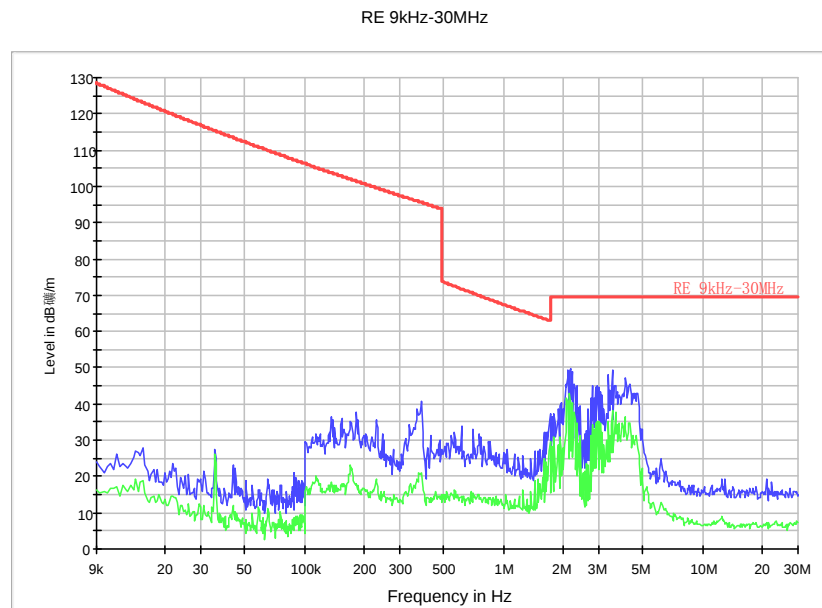
WCDMA BAND II Mode Channel 9262/1852.4MHz

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
3702.41	-45.06	5.32	-8.14	-42.24	-13.00	H
5418.87	-69.26	8.08	-9.95	-67.39	-13.00	V
7806.10	-67.96	7.54	-11.71	-63.79	-13.00	V
9089.13	-68.20	8.04	-12.60	-63.64	-13.00	V
11714.11	-64.77	9.53	-12.44	-61.86	-13.00	V
16316.60	-54.62	11.36	-12.62	-53.36	-13.00	H

WCDMA Band II Channel 9262/1852.4MHz RADIATED SPURIOUS EMISSIONS-EUT in Traffic
Mode: 9 kHz – 30 MHz

WCDMA BAND II Mode Channel 9400/1880MHz

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
3762.47	-47.68	5.91	-8.21	-45.38	-13.00	H
5290.48	-69.48	7.52	-9.87	-67.13	-13.00	V
7814.29	-68.56	7.59	-11.71	-64.44	-13.00	H
11235.57	-63.91	9.13	-12.40	-60.64	-13.00	H
13532.18	-66.59	10.86	-13.81	-63.64	-13.00	V
17720.14	-58.27	11.87	-13.43	-56.71	-13.00	V

WCDMA Band II Channel 9400/1880MHz RADIATED SPURIOUS EMISSIONS-EUT in Traffic
Mode: 9 kHz – 30 MHz

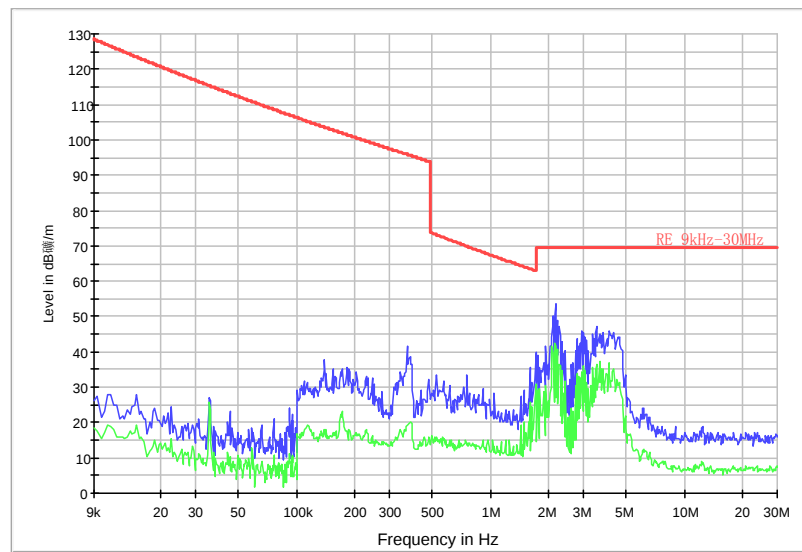


WCDMA BAND II Mode Channel 9538/1907.6MHz

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
3812.73	-56.09	5.68	-8.28	-53.49	-13.00	H
5237.48	-69.48	7.53	-9.84	-67.17	-13.00	V
6965.29	-64.26	7.83	-11.07	-61.02	-13.00	V
10214.38	-63.99	8.59	-12.44	-60.14	-13.00	H
12975.44	-63.77	10.03	-13.27	-60.53	-13.00	H
16872.39	-55.90	11.66	-12.40	-55.16	-13.00	V

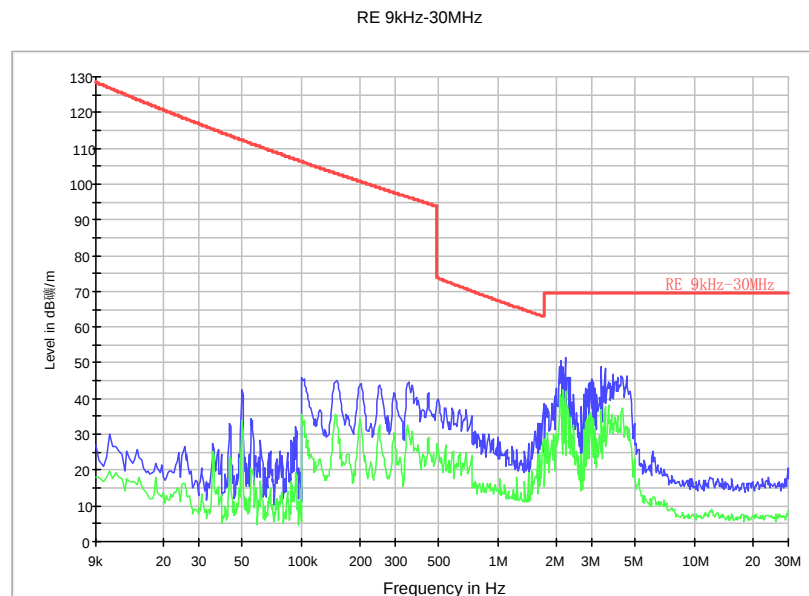
WCDMA Band II Channel 9538/1907.6MHz RADIATED SPURIOUS EMISSIONS-EUT in Traffic Mode: 9 kHz – 30 MHz

RE 9kHz-30MHz



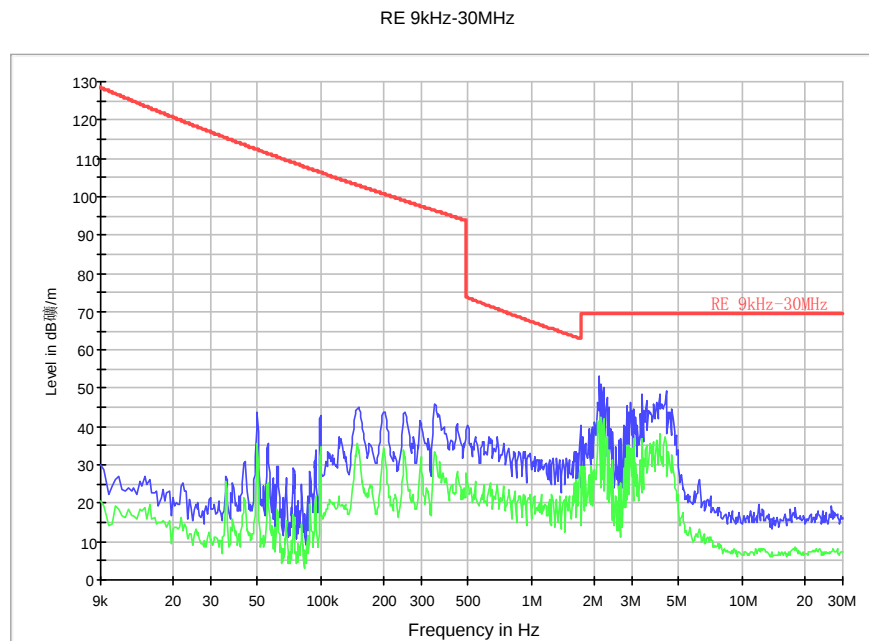
WCDMA BAND V Mode Channel 4132/826.4MHz

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Correction	Peak ERP(dBm)	Limit (dBm)	Polarization
				(dBm)			
1651.04	-55.75	3.56	-5.44	2.15	-56.02	-13.00	V
2113.43	-59.58	4.33	-4.24	2.15	-61.82	-13.00	H
3408.23	-88.03	5.02	-7.68	2.15	-87.52	-13.00	V
5076.07	-69.43	7.43	-9.75	2.15	-69.26	-13.00	V
7055.57	-69.08	8.28	-11.13	2.15	-68.38	-13.00	H
8496.78	-65.16	7.89	-12.20	2.15	-63.00	-13.00	H

WCDMA Band V Channel 4132/826.4MHz RADIATED SPURIOUS EMISSIONS-EUT in Traffic
Mode: 9 kHz – 30 MHz

WCDMA BAND V Mode Channel 4183/836.6MHz

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Correction	Peak ERP(dBm)	Limit (dBm)	Polarization
				(dBm)			
1610.64	-66.16	3.53	-5.61	2.15	-66.23	-13.00	H
2471.78	-53.80	4.15	-5.32	2.15	-54.78	-13.00	V
3343.50	-73.53	5.48	-7.52	2.15	-73.64	-13.00	V
5095.31	-68.22	7.54	-9.76	2.15	-68.15	-13.00	V
6395.10	-67.69	8.27	-10.52	2.15	-67.59	-13.00	H
8227.84	-66.05	7.64	-12.04	2.15	-63.80	-13.00	H

WCDMA Band V Channel 4183/836.6MHz RADIATED SPURIOUS EMISSIONS-EUT in Traffic
Mode: 9 kHz – 30 MHz

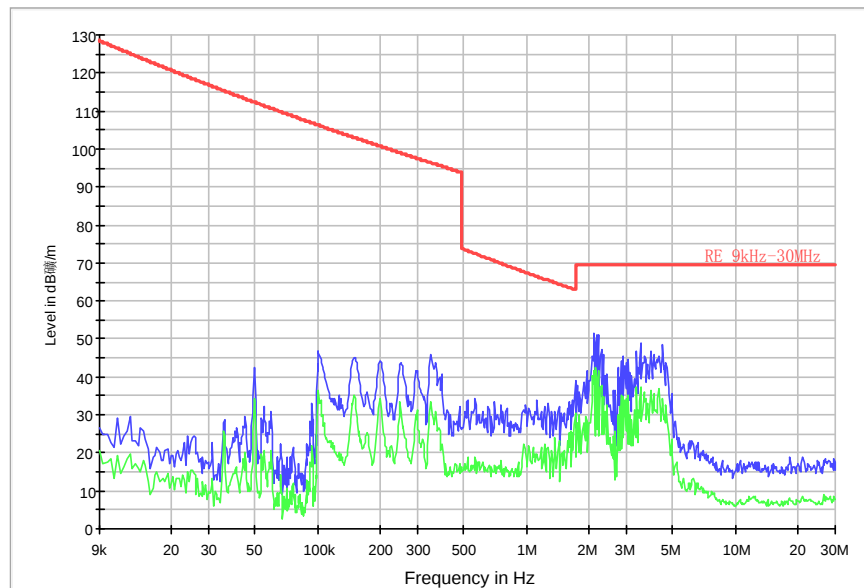


WCDMA BAND V Mode Channel 4233/846.6MHz

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Correction (dBm)	Peak ERP(dBm)	Limit (dBm)	Polarization
1690.66	-55.07	3.60	-5.26	2.15	-55.56	-13.00	V
3048.27	-69.48	5.12	-6.82	2.15	-69.93	-13.00	V
4322.65	-72.56	6.11	-8.69	2.15	-72.13	-13.00	H
5200.80	-67.36	7.66	-9.82	2.15	-67.35	-13.00	H
6195.06	-65.62	10.43	-10.36	2.15	-67.84	-13.00	V
7146.69	-66.59	8.77	-11.19	2.15	-66.32	-13.00	H

WCDMA Band V Channel 4233/846.6MHz RADIATED SPURIOUS EMISSIONS-EUT in Traffic Mode: 9 kHz – 30 MHz

RE 9kHz-30MHz

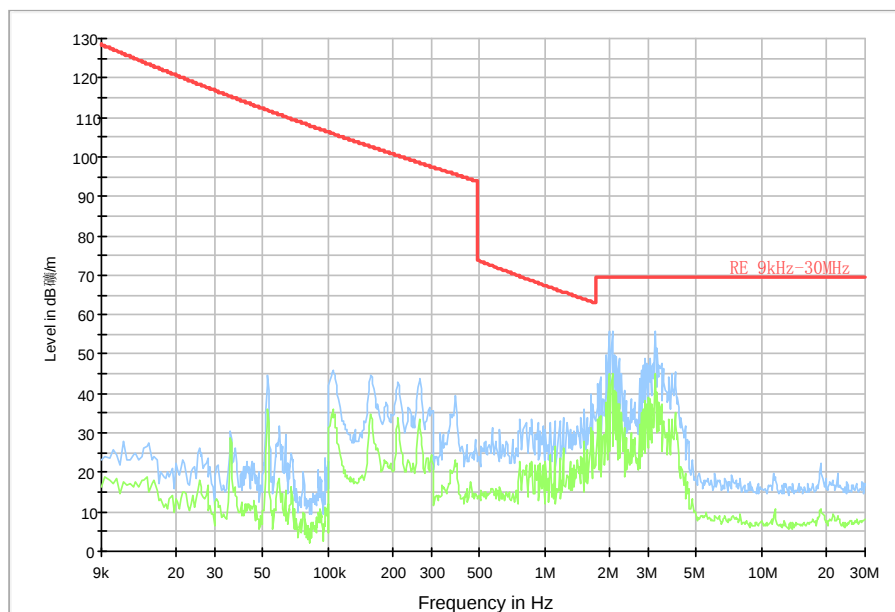


WCDMA BAND IV Mode Channel 1312/1712.4MHz

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
3426.25	-52.45	4.95	-7.72	-49.68	-13.00	H
5133.47	-66.82	6.97	-9.78	-64.01	-13.00	V
6886.11	-68.94	7.64	-10.99	-65.59	-13.00	V
8618.56	-65.13	7.93	-12.29	-60.77	-13.00	V
10340.22	-66.63	8.65	-12.47	-62.81	-13.00	H
12513.36	-65.78	9.72	-12.72	-62.78	-13.00	V

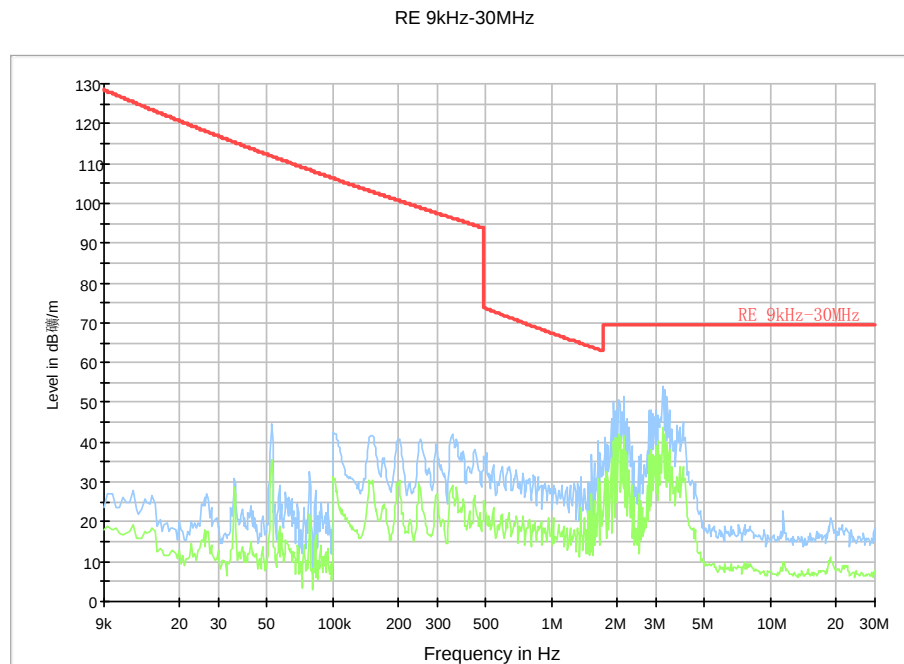
WCDMA Band IV Channel 1312/1712.4MHz RADIATED SPURIOUS EMISSIONS-EUT in Traffic Mode: 9 kHz – 30 MHz

RE 9kHz-30MHz


WCDMA BAND IV Mode Channel 1450/1740MHz

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
3477.72	-57.67	5.31	-7.85	-55.13	-13.00	H
6441.55	-67.86	7.95	-10.55	-65.26	-13.00	V
8618.87	-65.93	7.92	-12.30	-61.55	-13.00	H
10137.49	-64.14	8.50	-12.43	-60.21	-13.00	V
13064.02	-66.58	10.20	-13.36	-63.42	-13.00	V
17790.91	-59.94	11.90	-13.47	-58.37	-13.00	V

WCDMA Band IV Channel 1450/1740MHz RADIATED SPURIOUS EMISSIONS-EUT in Traffic Mode: 9 kHz – 30 MHz

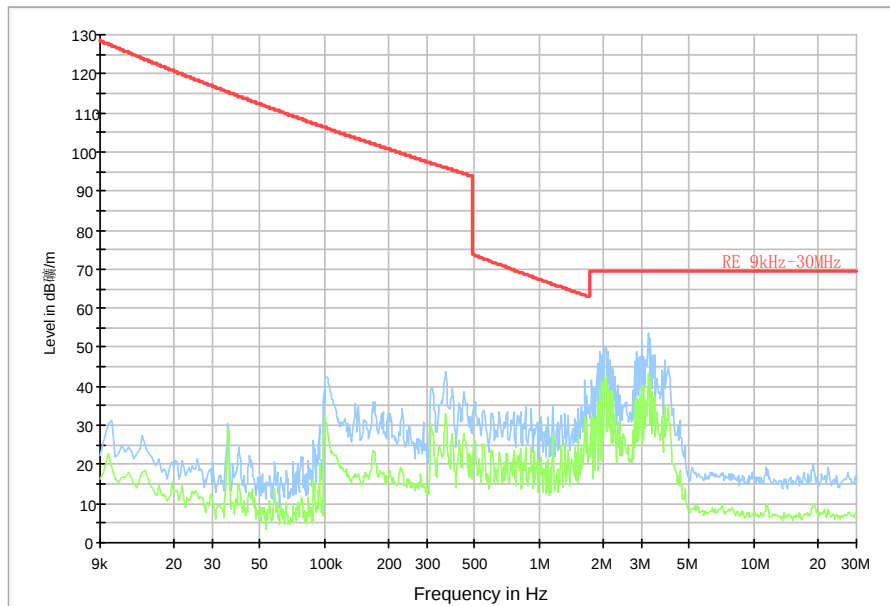


WCDMA BAND IV Mode Channel 1513/1752.6MHz

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Polarization
3507.04	-59.28	5.17	-7.91	-56.54	-13.00	H
4971.69	-71.00	7.19	-9.65	-68.54	-13.00	H
6778.30	-66.57	7.58	-10.88	-63.27	-13.00	V
8597.65	-67.14	8.02	-12.28	-62.88	-13.00	V
10332.98	-65.06	8.64	-12.47	-61.23	-13.00	V
12449.59	-61.44	9.62	-12.68	-58.38	-13.00	H

WCDMA Band IV Channel 1513/1752.6MHz RADIATED SPURIOUS EMISSIONS-EUT in Traffic Mode: 9 kHz – 30 MHz

RE 9kHz-30MHz



A.3 CONDUCTED EMISSION

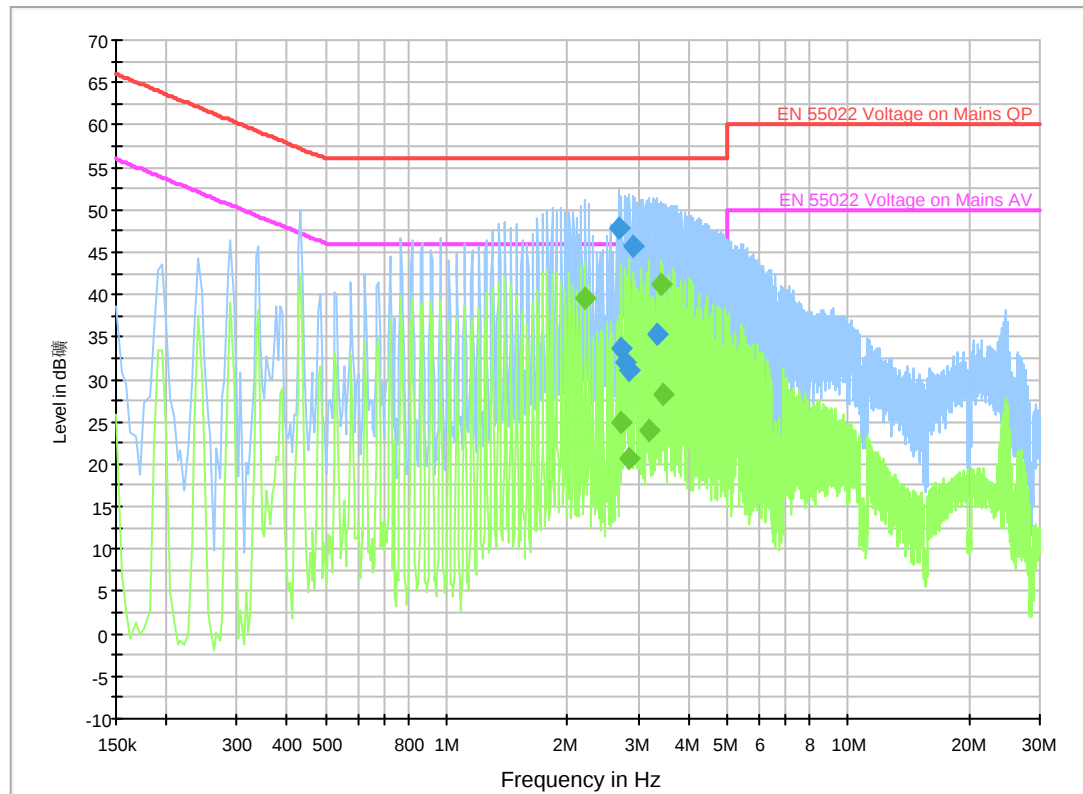
The measurement procedure in ANSI C63.4-2003 is used. Conducted Emission is measured with travel charger.

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-AE4



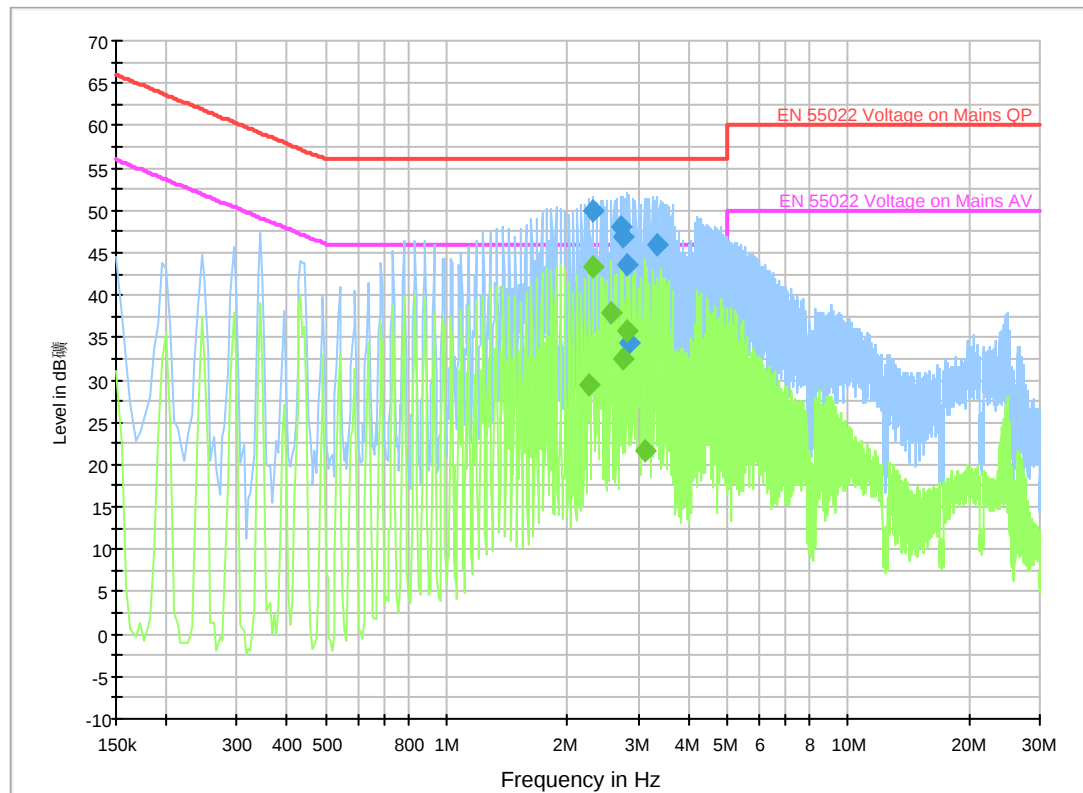
Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
2.688000	47.7	GND	L1	10.0	8.3	56.0
2.728500	33.6	GND	L1	10.0	22.4	56.0
2.769000	32.0	GND	L1	10.0	24.0	56.0
2.859000	31.0	GND	L1	10.0	25.0	56.0
2.904000	45.7	GND	L1	10.0	10.3	56.0
3.331500	35.3	GND	L1	10.0	20.7	56.0

Final Result 2

Frequency (MHz)	CAverage (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
2.215500	39.5	GND	L1	10.0	6.5	46.0
2.728500	24.8	GND	L1	10.0	21.2	46.0
2.859000	20.8	GND	L1	10.0	25.2	46.0
3.187500	24.0	GND	L1	10.0	22.0	46.0
3.421500	41.3	GND	L1	10.0	4.7	46.0
3.471000	28.3	GND	L1	10.0	17.7	46.0

WCDMA Band V-AE4



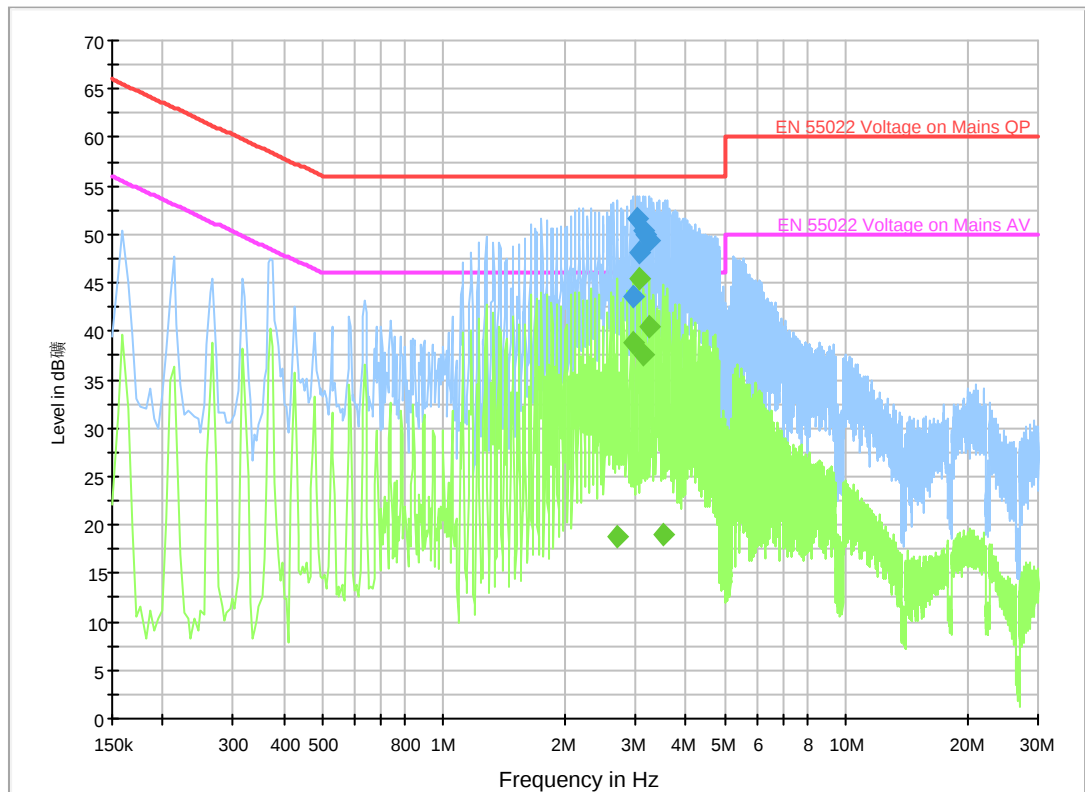
Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
2.314500	49.9	GND	L1	10.0	6.1	56.0
2.706000	48.1	GND	L1	10.0	7.9	56.0
2.755500	46.8	GND	L1	10.0	9.2	56.0
2.805000	43.5	GND	L1	10.0	12.5	56.0
2.859000	34.5	GND	L1	10.0	21.5	56.0
3.349500	45.9	GND	L1	10.0	10.1	56.0

Final Result 2

Frequency (MHz)	CAverage (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
2.265000	29.5	GND	L1	10.0	16.5	46.0
2.314500	43.3	GND	L1	10.0	2.7	46.0
2.562000	37.8	GND	L1	10.0	8.2	46.0
2.755500	32.4	GND	L1	10.0	13.6	46.0
2.805000	35.9	GND	L1	10.0	10.1	46.0
3.102000	21.6	GND	L1	10.0	24.4	46.0

WCDMA Band IV-AE4



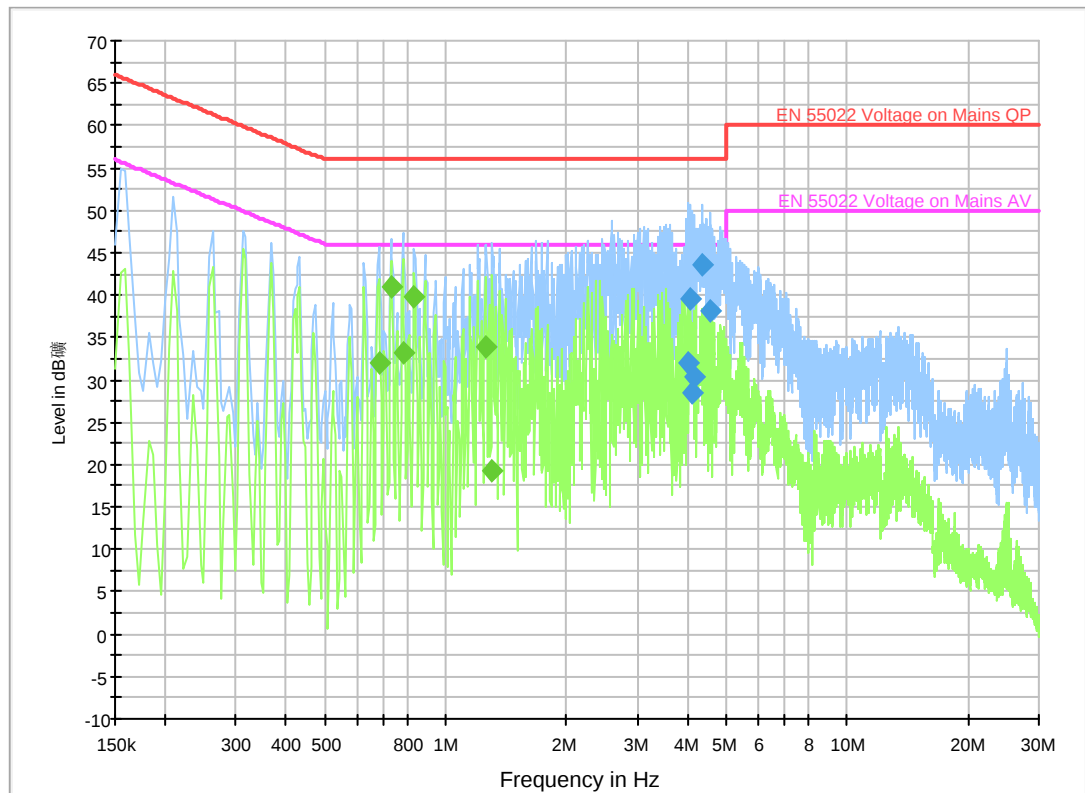
Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
2.967000	43.7	GND	L1	10.0	12.3	56.0
3.021000	51.7	GND	L1	10.0	4.3	56.0
3.070500	48.2	GND	L1	10.0	7.8	56.0
3.129000	50.3	GND	L1	10.0	5.7	56.0
3.178500	49.9	GND	L1	10.0	6.1	56.0
3.232500	49.3	GND	L1	10.0	6.7	56.0

Final Result 2

Frequency (MHz)	CAverage (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
2.701500	18.8	GND	L1	10.0	27.2	46.0
2.967000	38.8	GND	L1	10.0	7.2	46.0
3.070500	45.3	GND	L1	10.0	0.7	46.0
3.129000	37.6	GND	L1	10.0	8.4	46.0
3.232500	40.6	GND	L1	10.0	5.4	46.0
3.498000	19.0	GND	L1	10.0	27.0	46.0

WCDMA Band II-AE5



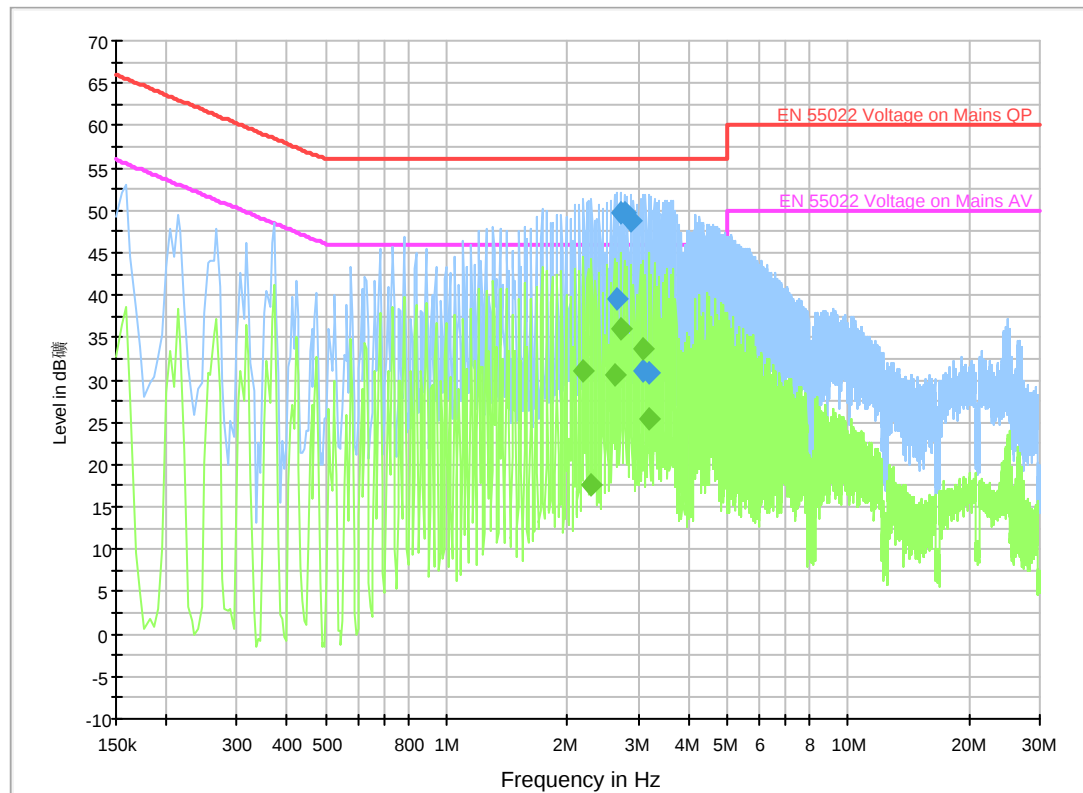
Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
4.015500	32.1	GND	N	10.0	23.9	56.0
4.069500	39.5	GND	N	10.0	16.5	56.0
4.119000	28.6	GND	N	10.0	27.4	56.0
4.173000	30.3	GND	N	10.0	25.7	56.0
4.371000	43.6	GND	L1	10.0	12.4	56.0
4.537500	38.2	GND	N	10.0	17.8	56.0

Final Result 2

Frequency (MHz)	CAverage (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.681000	31.9	GND	N	10.0	14.1	46.0
0.730500	40.9	GND	N	10.0	5.1	46.0
0.784500	33.1	GND	N	10.0	12.9	46.0
0.834000	39.7	GND	N	10.0	6.3	46.0
1.252500	33.9	GND	N	10.0	12.1	46.0
1.306500	19.2	GND	N	10.0	26.8	46.0

MP3



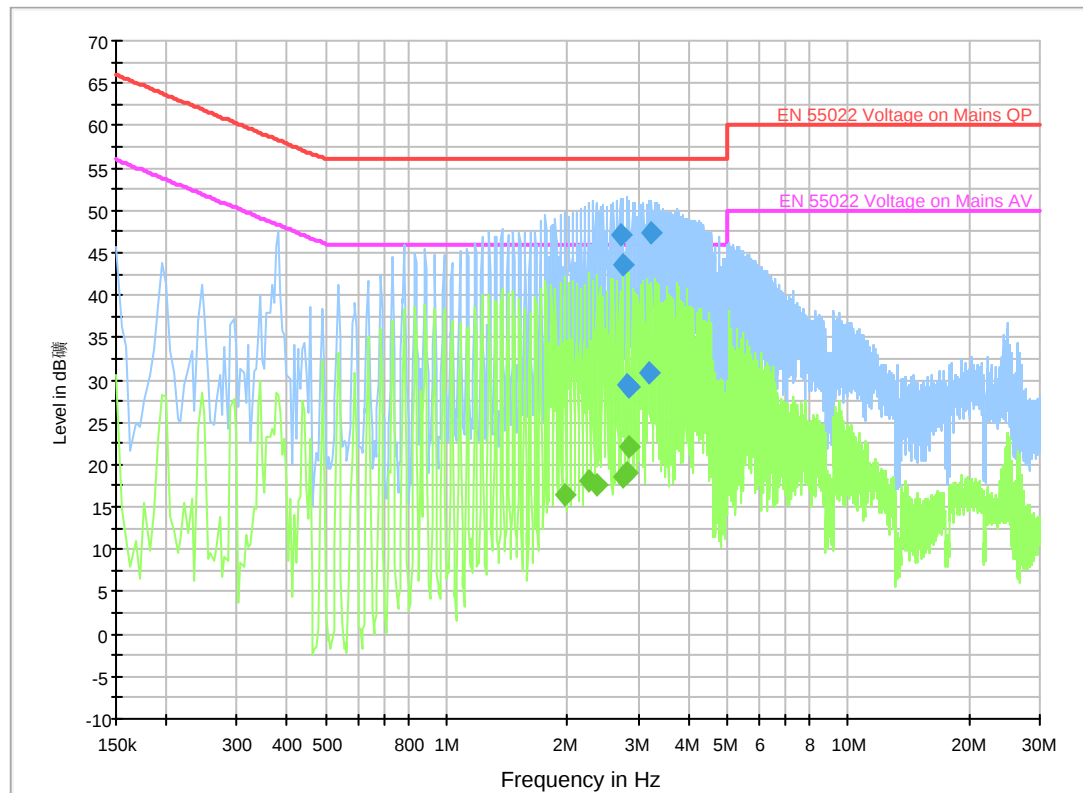
Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
2.661000	39.6	GND	L1	10.0	16.4	56.0
2.715000	49.6	GND	L1	10.0	6.4	56.0
2.764500	49.7	GND	L1	10.0	6.3	56.0
2.868000	48.7	GND	L1	10.0	7.3	56.0
3.079500	31.0	GND	L1	10.0	25.0	56.0
3.183000	30.8	GND	L1	10.0	25.2	56.0

Final Result 2

Frequency (MHz)	CAverage (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
2.193000	31.2	GND	L1	10.0	14.8	46.0
2.296500	17.7	GND	L1	10.0	28.3	46.0
2.611500	30.6	GND	L1	10.0	15.4	46.0
2.715000	36.1	GND	L1	10.0	9.9	46.0
3.079500	33.7	GND	L1	10.0	12.3	46.0
3.183000	25.4	GND	L1	10.0	20.6	46.0

Camera



Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
2.710500	47.1	GND	L1	10.0	8.9	56.0
2.751000	43.5	GND	L1	10.0	12.5	56.0
2.800500	29.5	GND	L1	10.0	26.5	56.0
2.850000	29.3	GND	L1	10.0	26.7	56.0
3.196500	30.7	GND	L1	10.0	25.3	56.0
3.241500	47.3	GND	L1	10.0	8.7	56.0

Final Result 2

Frequency (MHz)	CAverage (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
1.968000	16.3	GND	L1	10.0	29.7	46.0
2.260500	18.0	GND	L1	10.0	28.0	46.0
2.359500	17.6	GND	L1	10.0	28.4	46.0
2.751000	18.5	GND	L1	10.0	27.5	46.0
2.800500	19.0	GND	L1	10.0	27.0	46.0
2.850000	22.1	GND	L1	10.0	23.9	46.0

A.4 FREQUENCY STABILITY

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, WCDMA Band V, and WCDMA BAND IV, 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. Remeasure carrier frequency at room temperature with nominal voltage. Vary supply voltage from minimum voltage to maximum voltage, in 0.1Volt increments remeasuring 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 4.2VDC, with a nominal voltage of 3.8VDC. 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 Sec. 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

Frequency Error vs Voltage

Voltage(V)	Frequency error(Hz)	Frequency error(ppm)
3.5	-9	0.005
3.8	-7	0.004
4.2	-10	0.005

Frequency Error vs Temperature

temperature(°C)	Frequency error(Hz)	Frequency error(ppm)
-30	-11	0.006
-20	-9	0.005
-10	-9	0.005
0	-8	0.004
10	-7	0.004
20	-7	0.004
30	-7	0.004
40	-8	0.004
50	-10	0.005

WCDMA Band V

Frequency Error vs Voltage

Voltage(V)	Frequency error(Hz)	Frequency error(ppm)
3.5	-6	0.007
3.8	-3	0.004
4.2	-5	0.006

Frequency Error vs Temperature

temperature(°C)	Frequency error(Hz)	Frequency error(ppm)
-30	-9	0.010
-20	-7	0.008
-10	-6	0.007
0	-4	0.005
10	-4	0.005
20	-3	0.004
30	-3	0.004
40	-5	0.006
50	-5	0.006

WCDMA Band IV

Frequency Error vs Voltage

Voltage(V)	Frequency error(Hz)	Frequency error(ppm)
3.5	-8	0.005
3.8	-5	0.003
4.2	-7	0.004

Frequency Error vs Temperature

temperature(°C)	Frequency error(Hz)	Frequency error(ppm)
-30	-10	0.006
-20	-8	0.005
-10	-6	0.003
0	-6	0.003
10	-6	0.003
20	-5	0.003
30	-5	0.003
40	-7	0.004
50	-9	0.005

A.5 OCCUPIED BANDWIDTH

A.5.1 Occupied Bandwidth Results

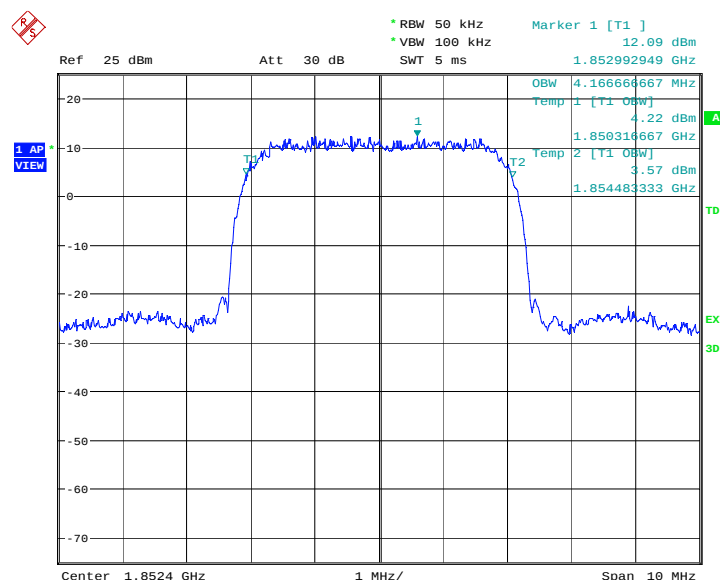
Similar to conducted emissions; occupied bandwidth measurements are only provided for selected frequencies in order to reduce the amount of submitted data. Data were taken at the extreme and mid frequencies of WCDMA Band II, WCDMA Band V and WCDMA Band IV. The table below lists the measured 99% OBW. Spectrum analyzer plots are included on the following pages.

WCDMA Band II(99% OBW)

Frequency(MHz)	Occupied Bandwidth (99%OBW)(MHz)
1852.4	4.167
1880.0	4.167
1907.6	4.167

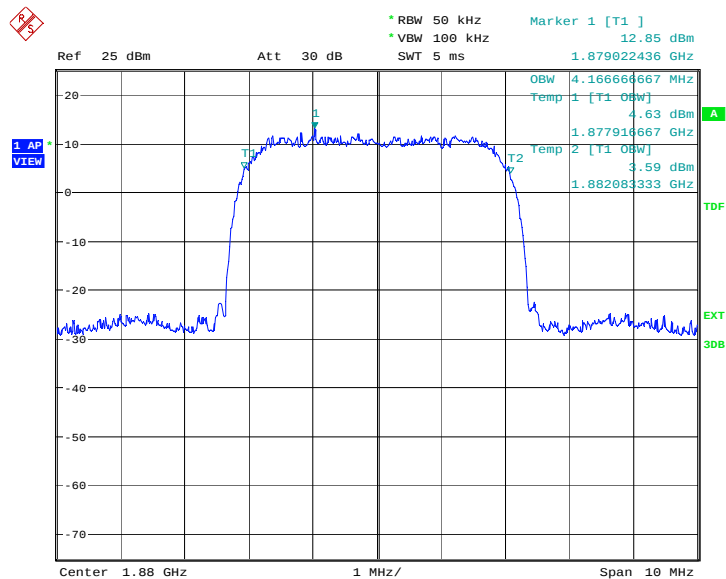
WCDMA Band II

Channel 9262-Occupied Bandwidth (99% OBW)



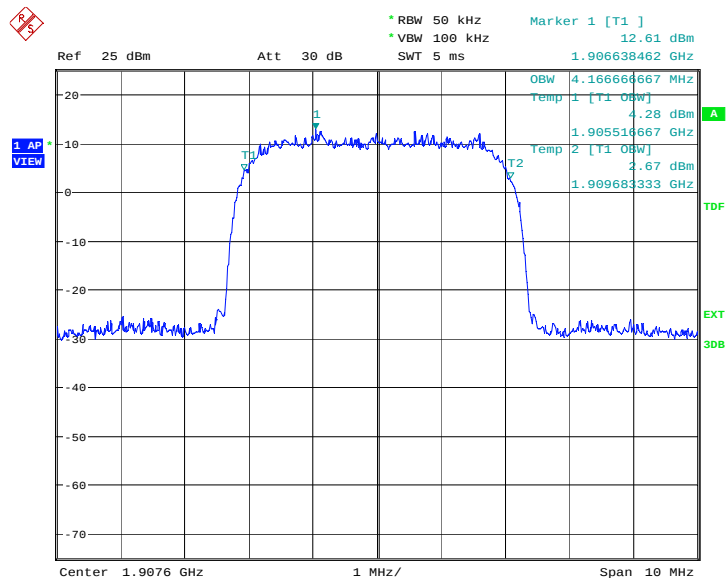
Date: 21.AUG.2012 11:27:53

Channel 9400-Occupied Bandwidth (99% OBW)



Date: 21.AUG.2012 11:28:28

Channel 9538-Occupied Bandwidth (99% OBW)



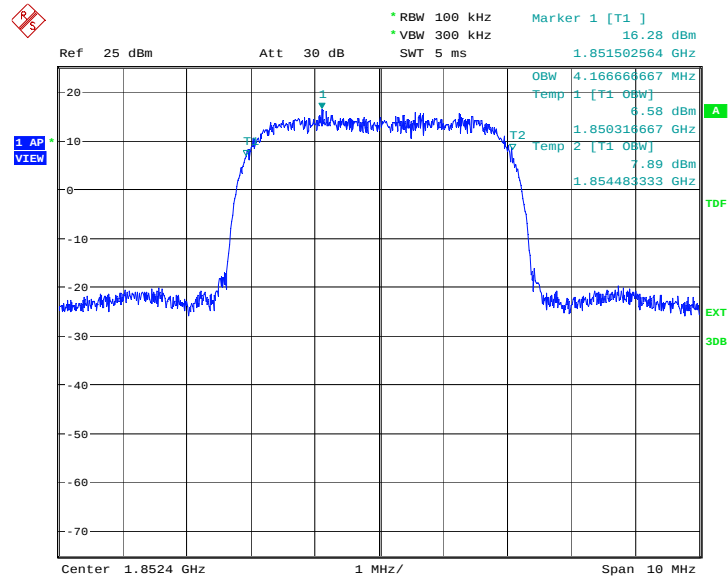
Date: 21.AUG.2012 11:29:02

WCDMA Band II(99% OBW)-IC

Frequency(MHz)	Occupied Bandwidth (99% OBW)(MHz)
1852.4	4.167
1880.0	4.167
1907.6	4.167

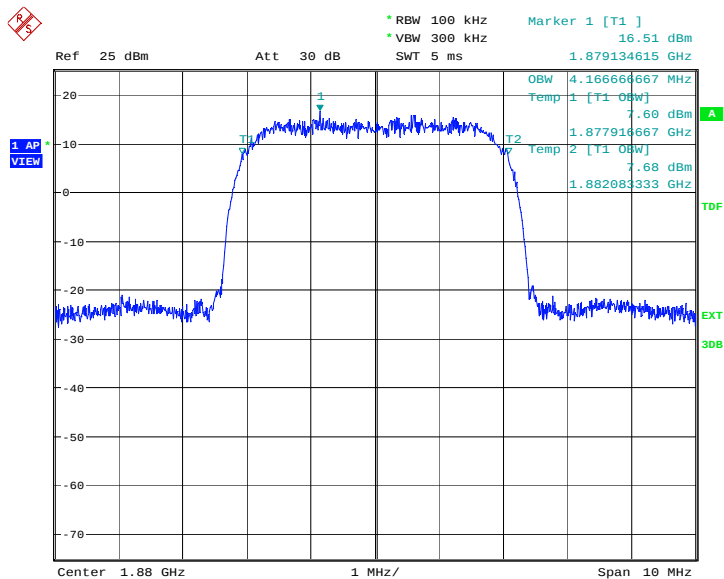
WCDMA Band II

Channel 9262-Occupied Bandwidth (99% OBW)



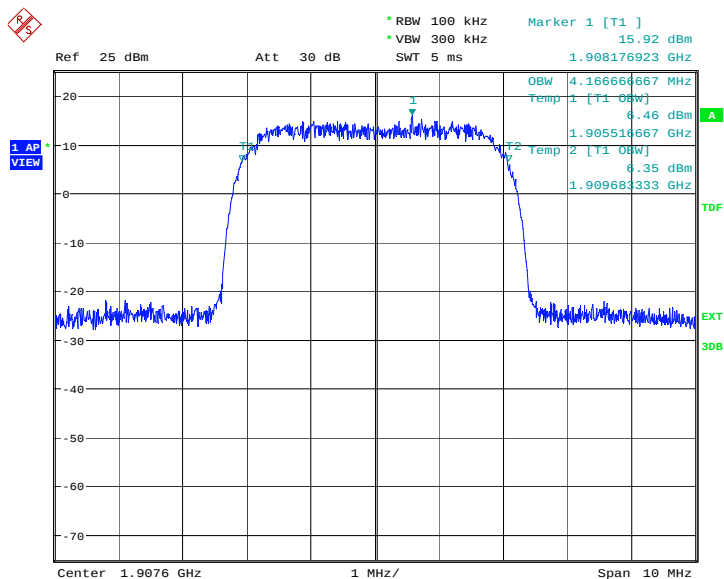
Date: 21.AUG.2012 11:31:46

Channel 9400-Occupied Bandwidth (99% OBW)



Date: 21.AUG.2012 11:32:20

Channel 9538-Occupied Bandwidth (99% OBW)



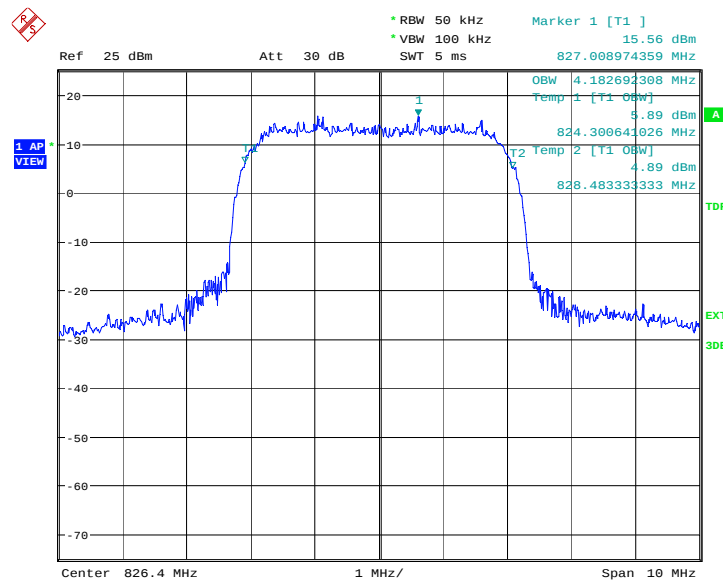
Date: 21.AUG.2012 11:32:55

WCDMA Band V(99% OBW)

Frequency(MHz)	Occupied Bandwidth (99% OBW)(MHz)
826.4	4.183
836.6	4.167
846.6	4.167

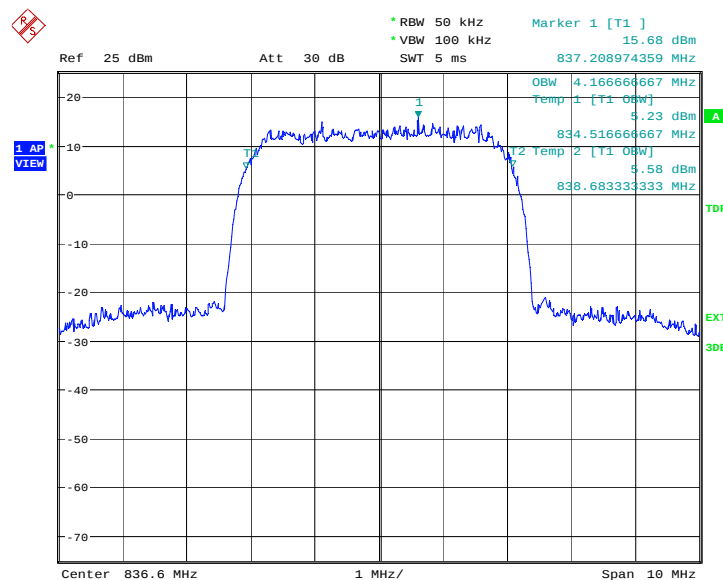
WCDMA Band V

Channel 4132-Occupied Bandwidth (99% OBW)



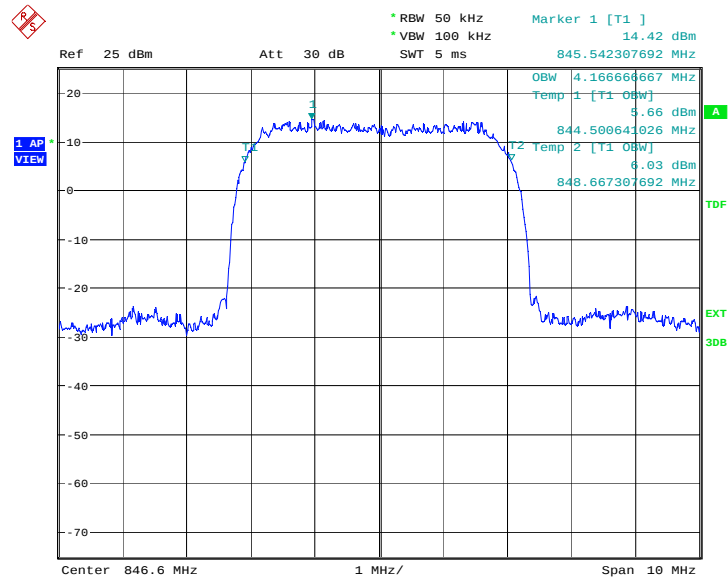
Date: 21.AUG.2012 11:46:28

Channel 4183-Occupied Bandwidth (99% OBW)



Date: 21.AUG.2012 11:47:03

Channel 4233-Occupied Bandwidth (99% OBW)



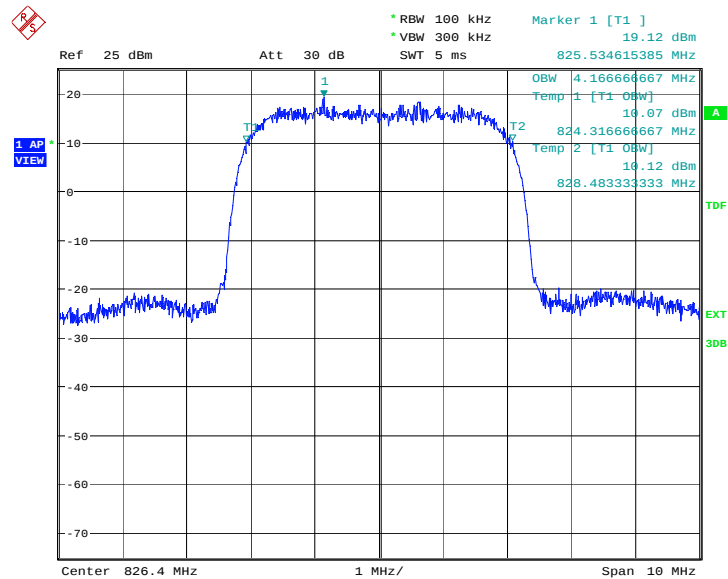
Date: 21.AUG.2012 11:47:37

WCDMA Band V(99% OBW)-IC

Frequency(MHz)	Occupied Bandwidth (99% OBW)(MHz)
826.4	4.167
836.6	4.183
846.6	4.167

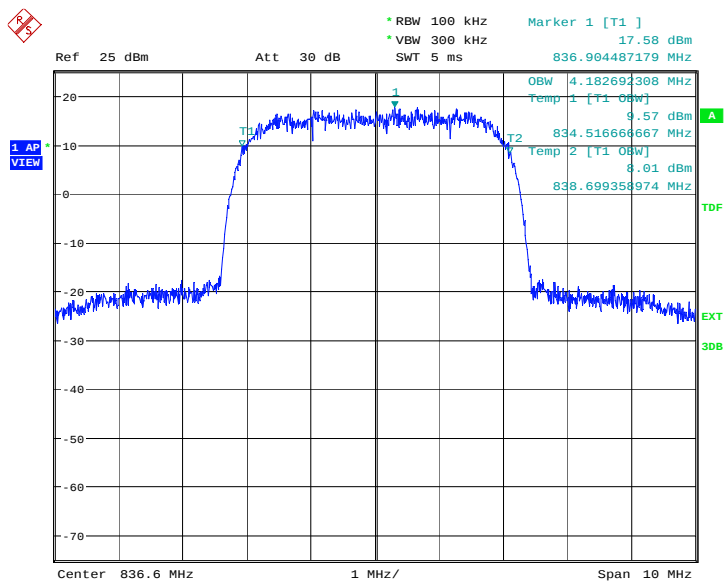
WCDMA Band V

Channel 4132-Occupied Bandwidth (99% OBW)



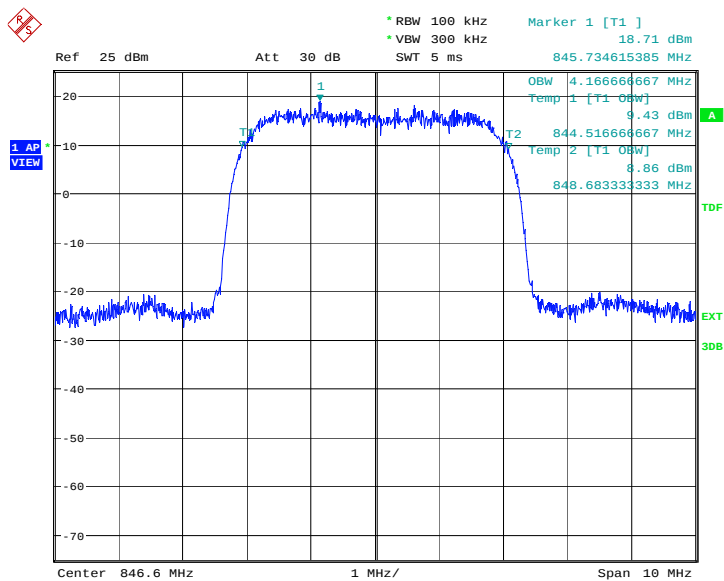
Date: 21.AUG.2012 11:50:21

Channel 4183-Occupied Bandwidth (99% OBW)



Date: 21.AUG.2012 11:50:55

Channel 4233-Occupied Bandwidth (99% OBW)



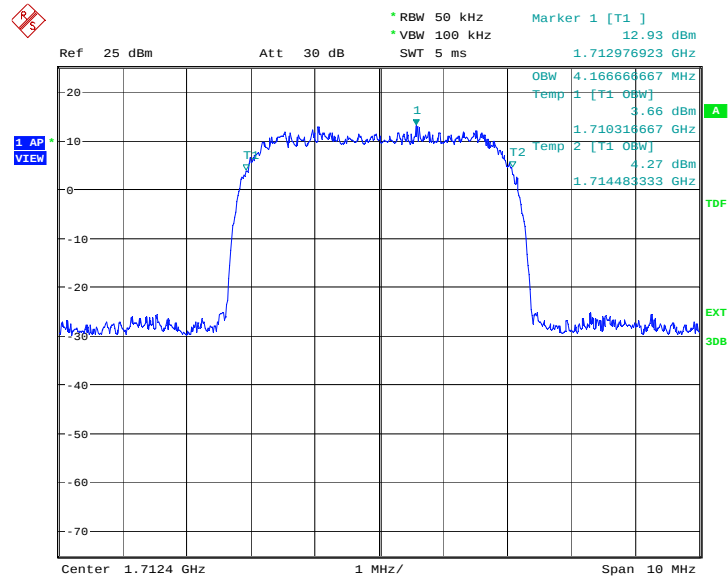
Date: 21.AUG.2012 11:51:30

WCDMA Band IV(99% OBW)

Frequency(MHz)	Occupied Bandwidth (99% OBW)(MHz)
1712.4	4.167
1740.0	4.183
1752.6	4.167

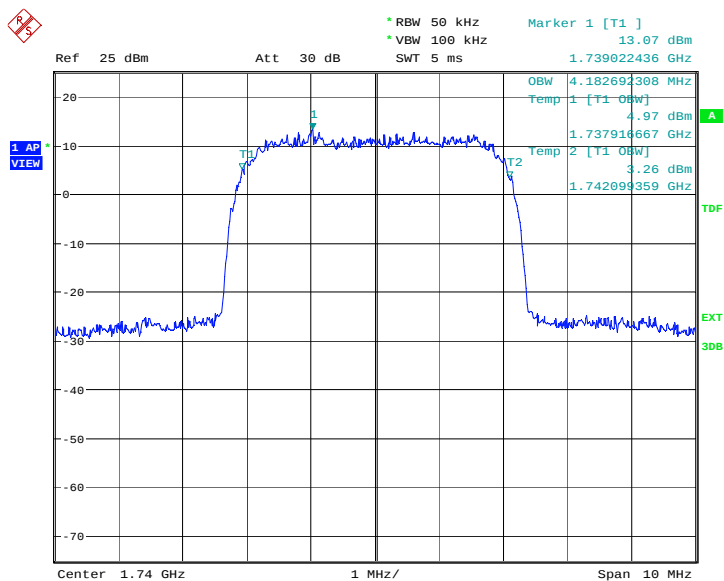
WCDMA Band IV

Channel 1312-Occupied Bandwidth (99% OBW)



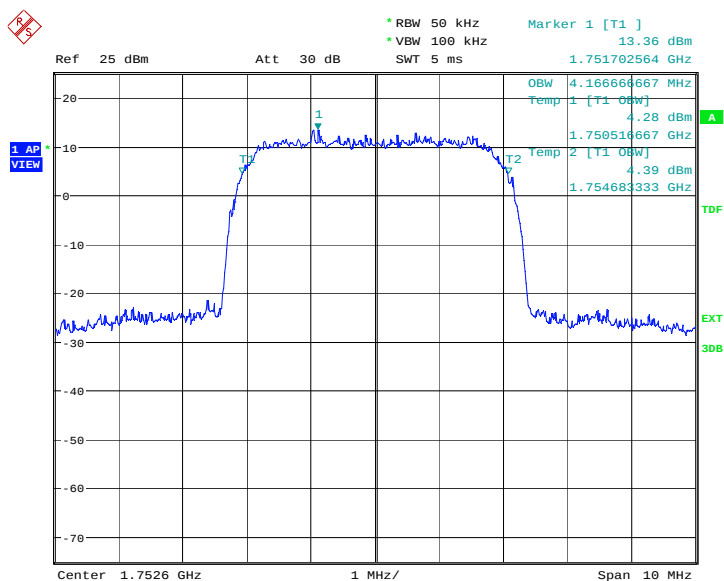
Date: 28.AUG.2012 01:20:05

Channel 1450-Occupied Bandwidth (99% OBW)



Date: 28.AUG.2012 01:20:40

Channel 1513-Occupied Bandwidth (99% OBW)

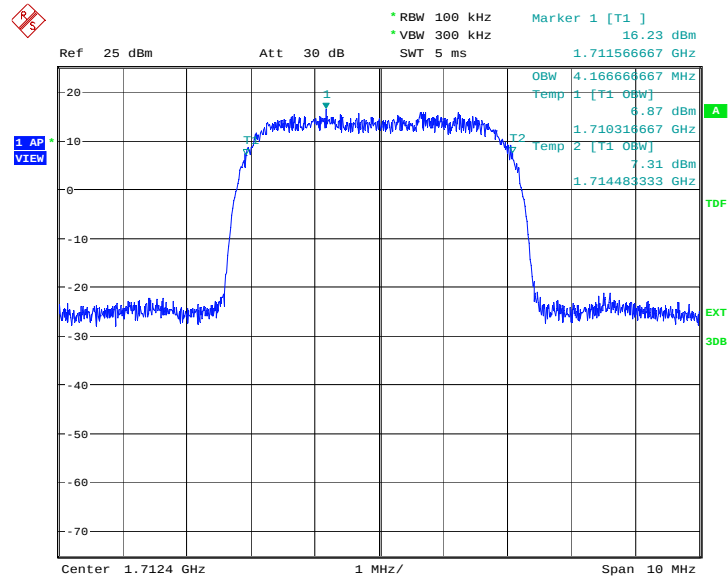


Date: 28.AUG.2012 01:21:14

WCDMA Band IV(99% OBW)-IC

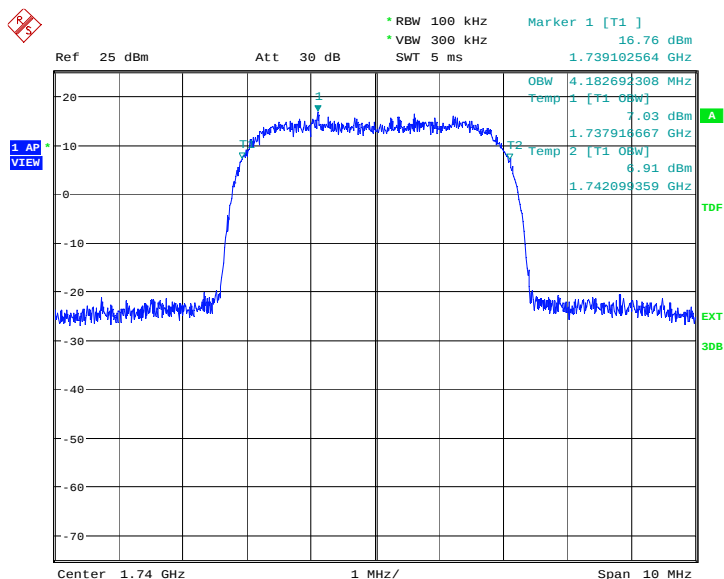
Frequency(MHz)	Occupied Bandwidth (99% OBW)(MHz)
1712.4	4.167
1740	4.183
1752.6	4.167

Channel 1312-Occupied Bandwidth (99% OBW)



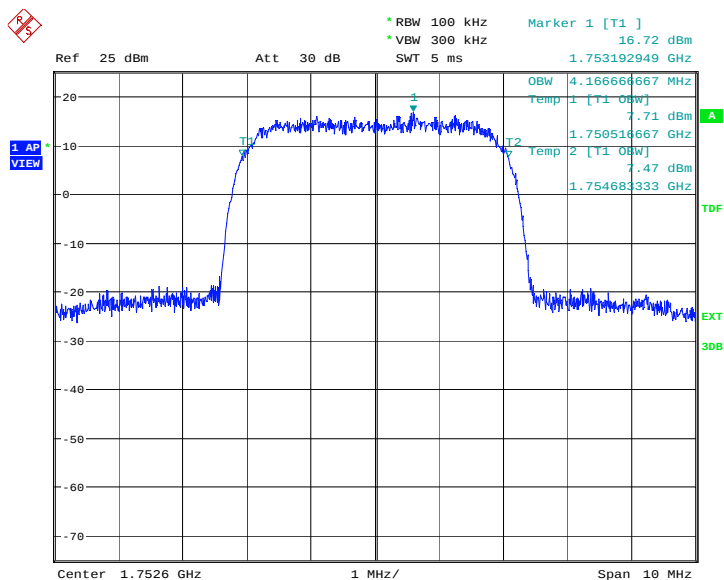
Date: 28.AUG.2012 01:23:59

Channel 1450-Occupied Bandwidth (99% OBW)



Date: 28.AUG.2012 01:24:33

Channel 1513-Occupied Bandwidth (99% OBW)



Date: 28.AUG.2012 01:25:08

A.6 EMISSION BANDWIDTH

A.6.1 Emission Bandwidth Results

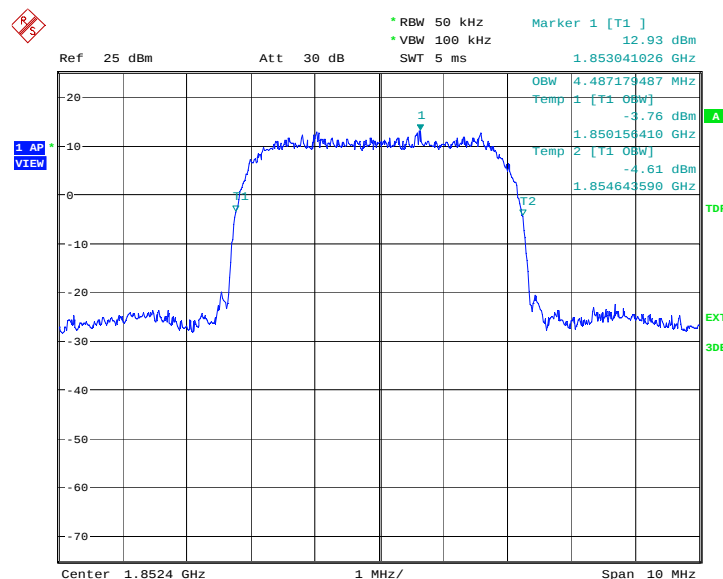
Similar to conducted emissions; Emission bandwidth measurements are only provided for selected frequencies in order to reduce the amount of submitted data. Data were taken at the extreme and mid frequencies of WCDMA Band II, WCDMA Band V and WCDMA Band IV. Table below lists the measured 100% OBW. Spectrum analyzer plots are included on the following pages.

WCDMA Band II(100% OBW)

Frequency(MHz)	Occupied Bandwidth (100% OBW)(MHz)
1852.4	4.487
1880.0	4.487
1907.6	4.487

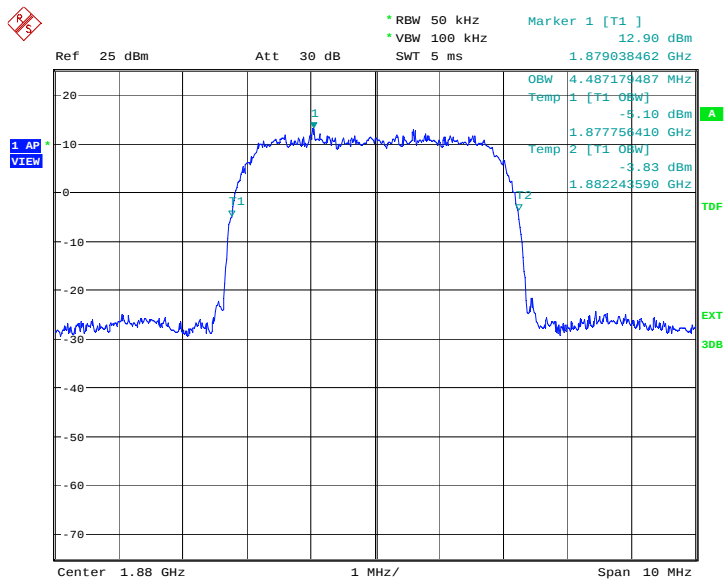
WCDMA Band II

Channel 9262-Occupied Bandwidth (100% OBW)



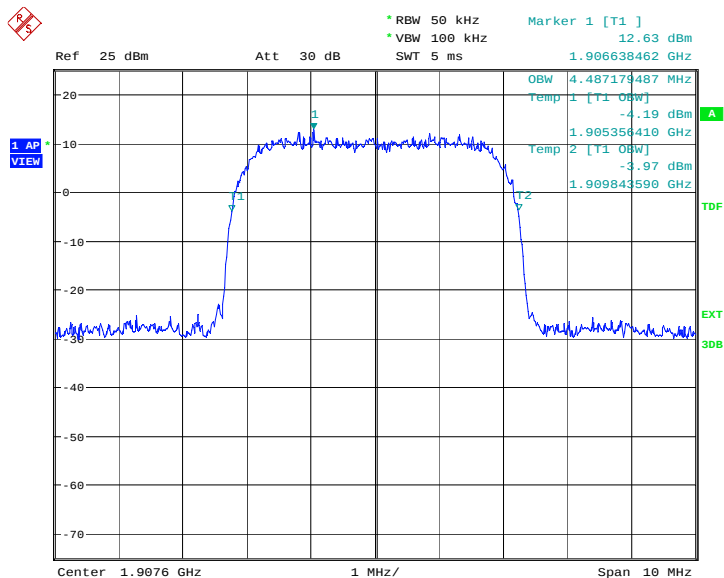
Date: 21.AUG.2012 11:29:38

Channel 9400-Occupied Bandwidth (100% OBW)



Date: 21.AUG.2012 11:30:13

Channel 9538-Occupied Bandwidth (100% OBW)



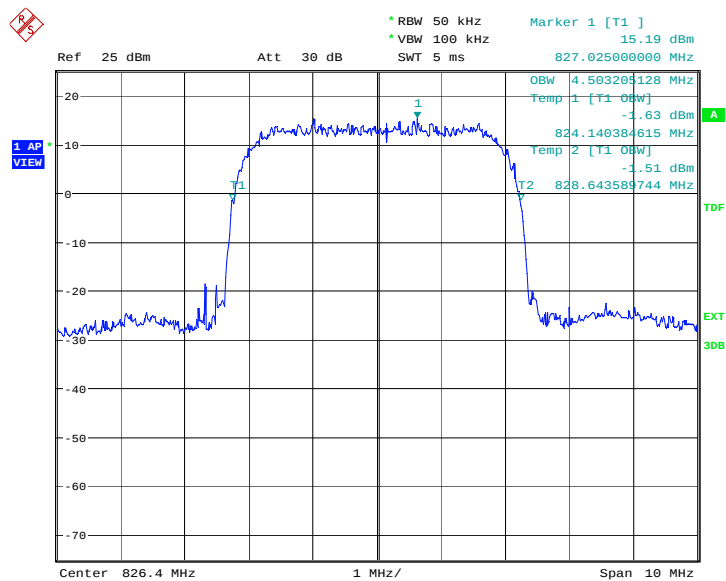
Date: 21.AUG.2012 11:30:47

WCDMA Band V(100% OBW)

Frequency(MHz)	Occupied Bandwidth (100% OBW)(MHz)
826.40	4.503
836.60	4.503
846.60	4.487

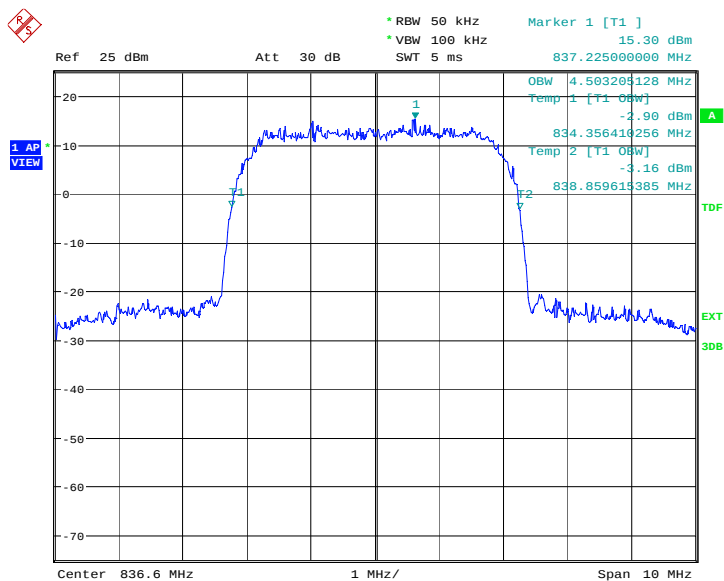
WCDMA Band V

Channel 4132-Occupied Bandwidth (100% OBW)



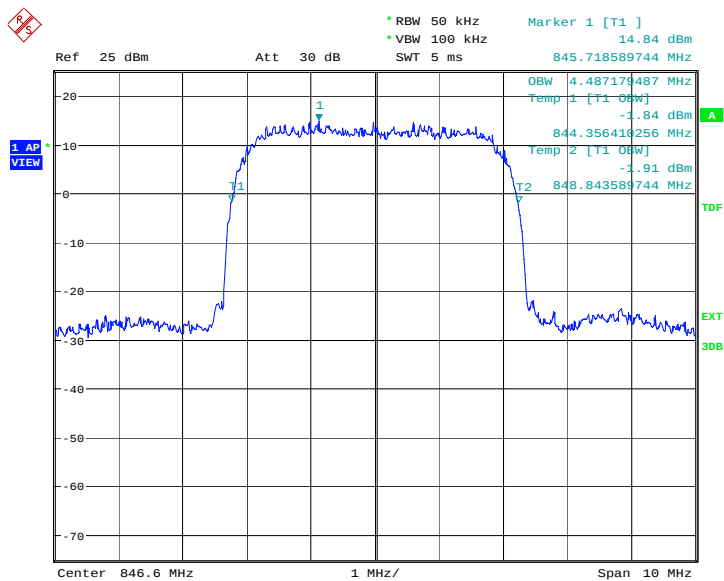
Date: 21.AUG.2012 11:48:13

Channel 4183-Occupied Bandwidth (100% OBW)



Date: 21.AUG.2012 11:48:48

Channel 4233-Occupied Bandwidth (100% OBW)



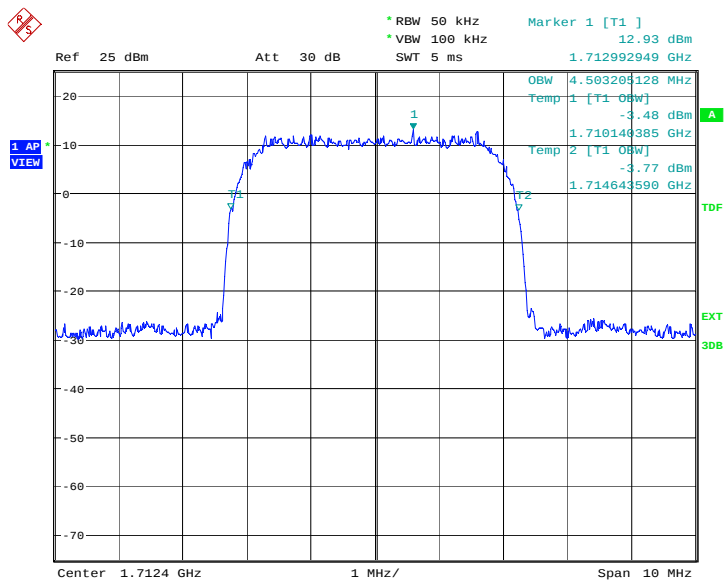
Date: 21.AUG.2012 11:49:22

WCDMA Band IV(100% OBW)

Frequency(MHz)	Occupied Bandwidth (100% OBW)(MHz)
1712.4	4.503
1740.0	4.487
1752.6	4.503

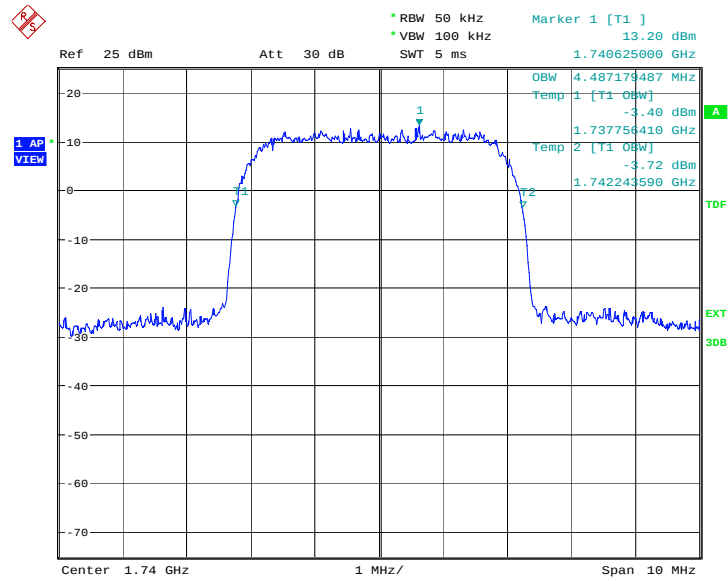
WCDMA Band IV

Channel 1312-Occupied Bandwidth (100% OBW)



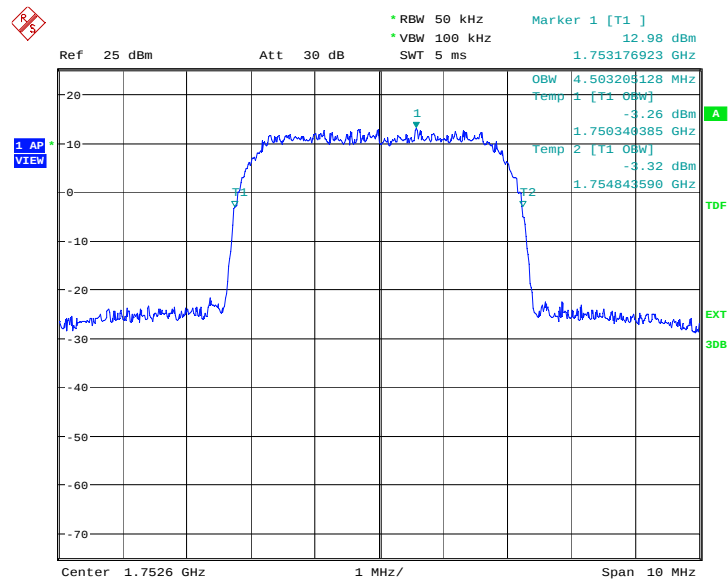
Date: 28.AUG.2012 01:21:51

Channel 1450-Occupied Bandwidth (100% OBW)



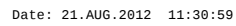
Date: 28.AUG.2012 01:22:25

Channel 1513-Occupied Bandwidth (100% OBW)



Date: 28.AUG.2012 01:23:00

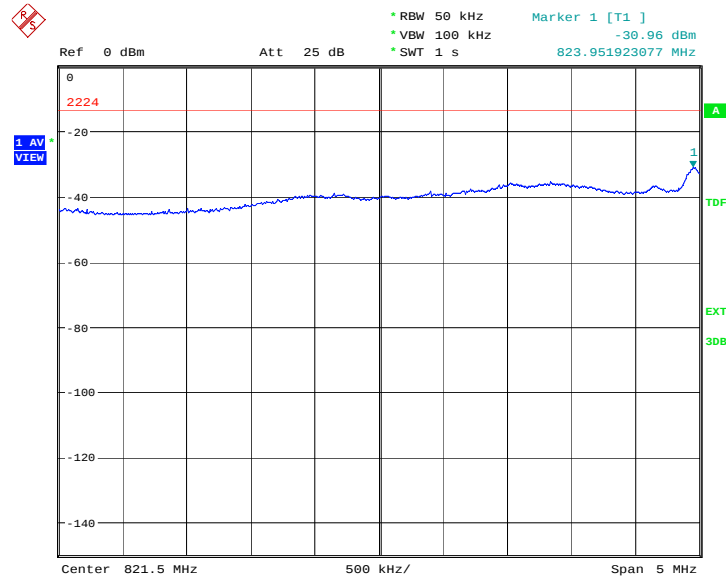
LOW BAND EDGE BLOCK-A (WCDMA Band II)-Channel 9262



Date: 21.AUG.2012 11:31:10

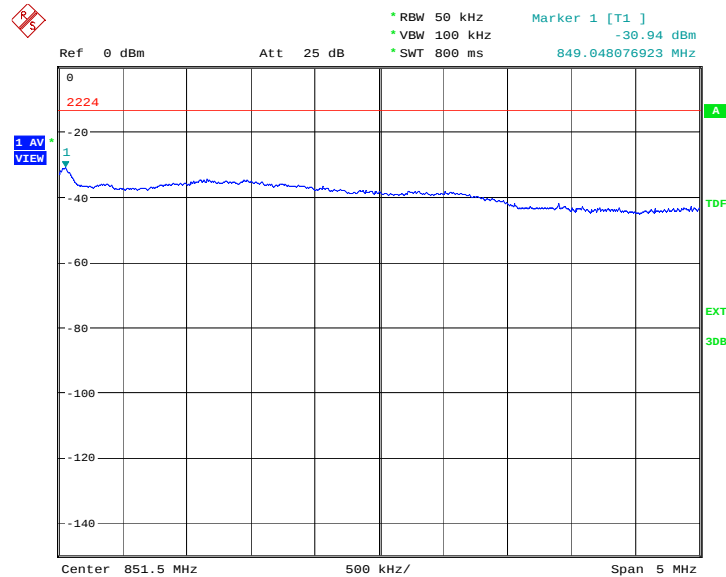
WCDMA Band V

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



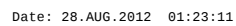
Date: 21.AUG.2012 11:49:34

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



Date: 21.AUG.2012 11:49:45

LOW BAND EDGE BLOCK-A (WCDMA Band IV)-Channel 1312



Date: 28.AUG.2012 01:23:22

A.8 CONDUCTED SPURIOUS EMISSION

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 taken from 30 MHz to 20 GHz. For WCDMA Band V, data taken from 30 MHz to 10GHz. For the equipment of WCDMA Band IV, this equates to a frequency range of 30 MHz to 17.55 GHz, data taken from 30 MHz to 20 GHz.
2. The sweep time is set automatically by instrument itself. That should be the optimal sweep time for the span and the RBW. If the sweep time is too short, that is sweep is too fast, the sweep result is not accurate; If the sweep time is too long, that is sweep is too low, some frequency components may be lost. The instrument will give a optimal sweep time according the selected span and RBW.
3. The procedure to get the conducted spurious emission is as follows:
The trace mode is set to MaxHold to get the highest signal at each frequency;
Wait 25 seconds;
Get the result.
4. 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

WCDMA Band IV Transmitter

Channel	Frequency (MHz)
1312	1712.40
1450	1740.00
1513	1752.60

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

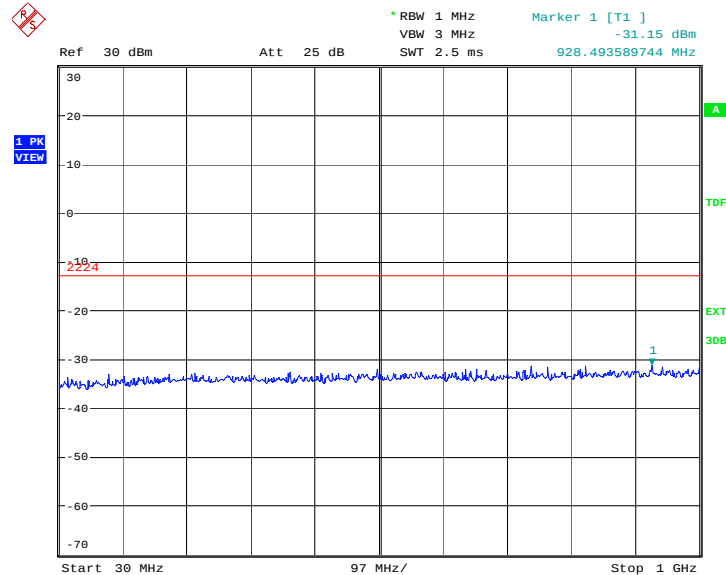
+ 10 log (P) dB, translates in the relevant power range (1 to 0.001 W) to -13 dBm. At 1 W the specified minimum attenuation becomes 43 dB and relative to a 30 dBm (1 W) carrier becomes a limit of -13 dBm. At 0.001 W (0 dBm) the minimum attenuation is 13 dB, which again yields a limit of -13 dBm. In this way a translation of the specification from relative to absolute terms is carried out.

A.8.3 Measurement result

WCDMA Band II

A.8.3.1 Channel 9262: 30MHz –1GHz

Spurious emission limit –13dBm.

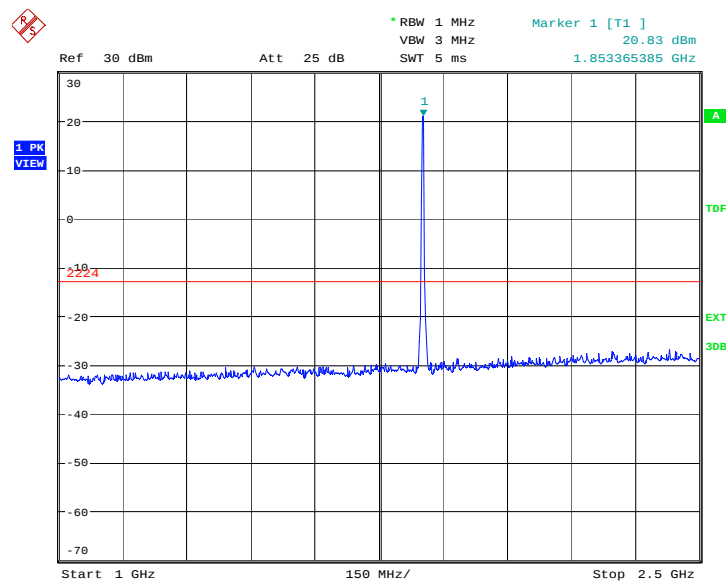


Date: 21.AUG.2012 11:33:26

A.8.3.2 Channel 9262: 1GHz –2.5GHz

Spurious emission limit –13dBm.

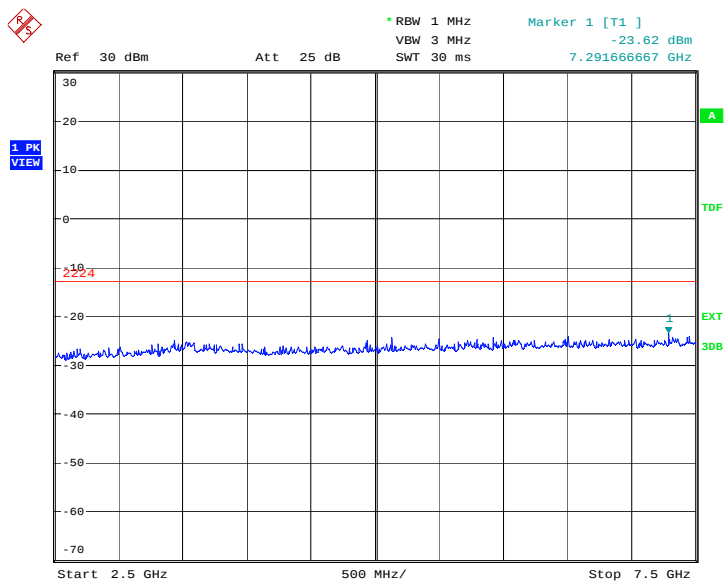
NOTE: peak above the limit line is the carrier frequency.



Date: 21.AUG.2012 11:33:54

A.8.3.3 Channel 9262: 2.5GHz –7.5GHz

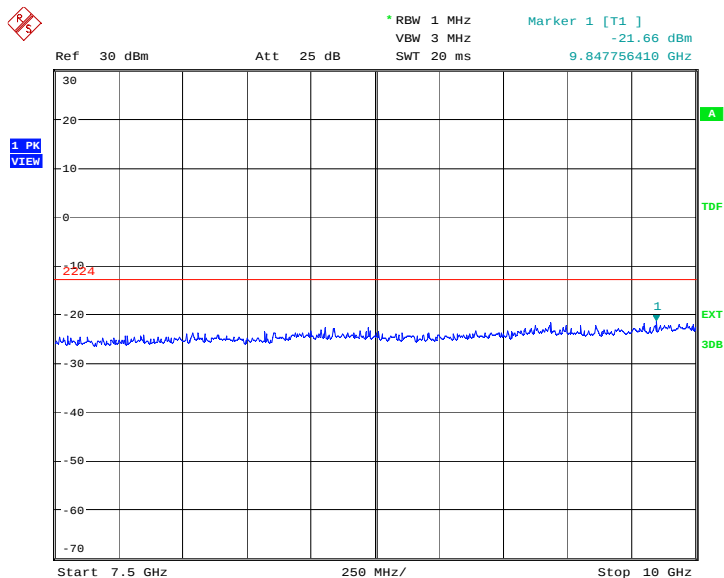
Spurious emission limit –13dBm.



Date: 21.AUG.2012 11:34:23

A.8.3.4 Channel 9262: 7.5GHz –10GHz

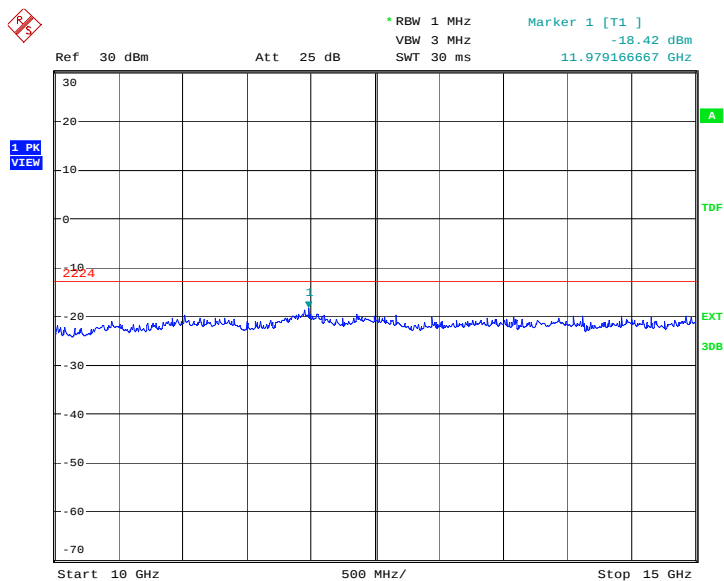
Spurious emission limit –13dBm.



Date: 21.AUG.2012 11:34:51

A.8.3.5 Channel 9262: 10GHz –15GHz

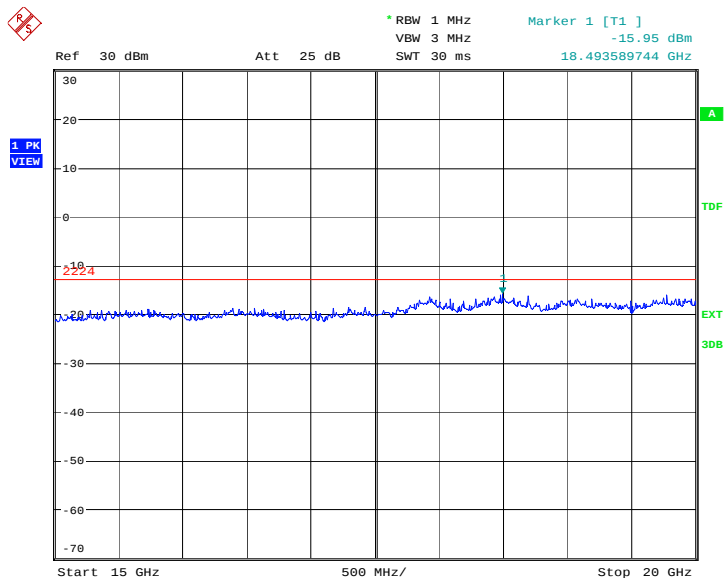
Spurious emission limit –13dBm.



Date: 21.AUG.2012 11:35:19

A.8.3.6 Channel 9262: 15GHz –20GHz

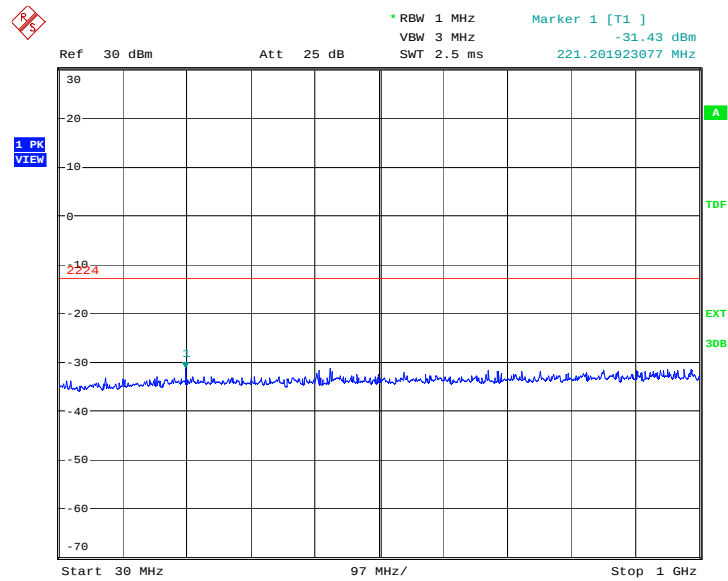
Spurious emission limit –13dBm.



Date: 21.AUG.2012 11:35:47

A.8.3.7 Channel 9400: 30MHz –1GHz

Spurious emission limit –13dBm.

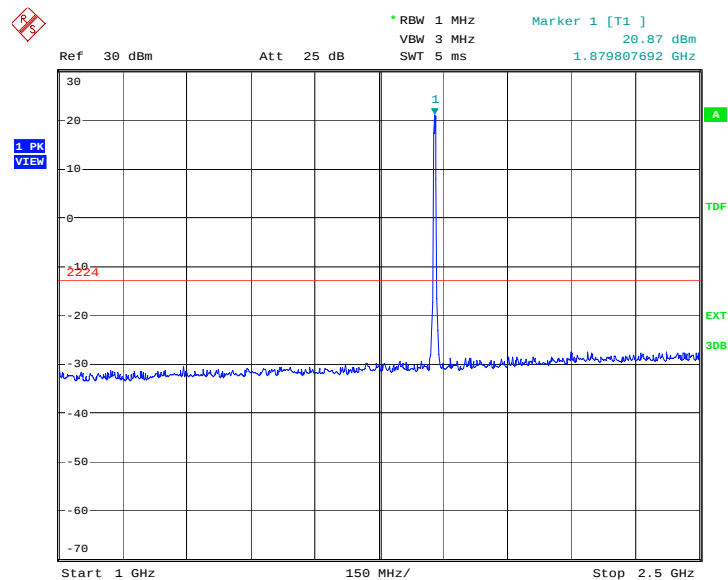


Date: 21.AUG.2012 11:36:18

A.8.3.8 Channel 9400: 1GHz –2.5GHz

Spurious emission limit –13dBm.

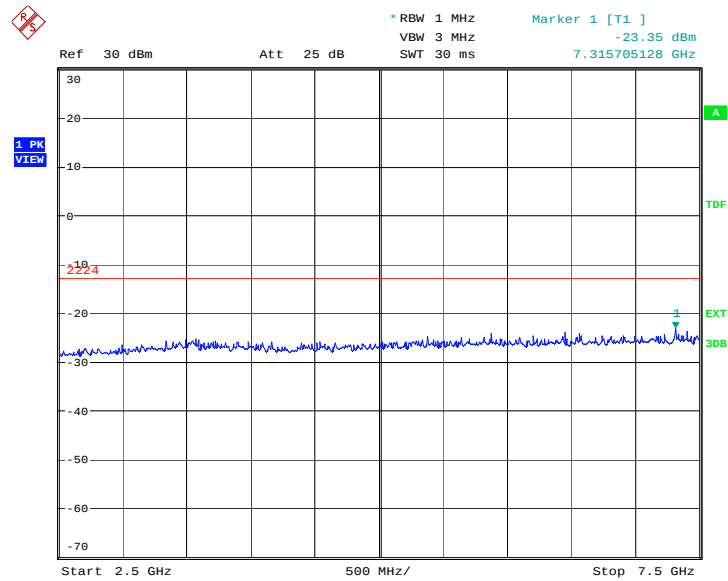
NOTE: peak above the limit line is the carrier frequency.



Date: 21.AUG.2012 11:36:47

A.8.3.9 Channel 9400: 2.5GHz –7.5GHz

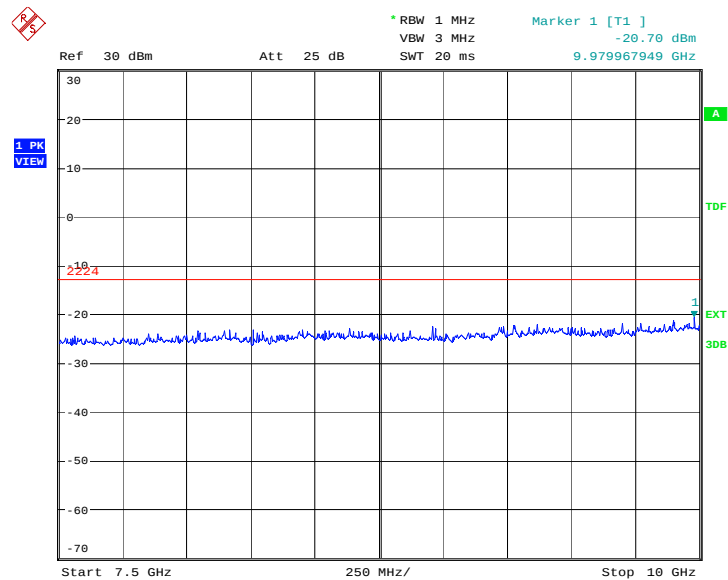
Spurious emission limit –13dBm.



Date: 21.AUG.2012 11:37:15

A.8.3.10 Channel 9400: 7.5GHz –10GHz

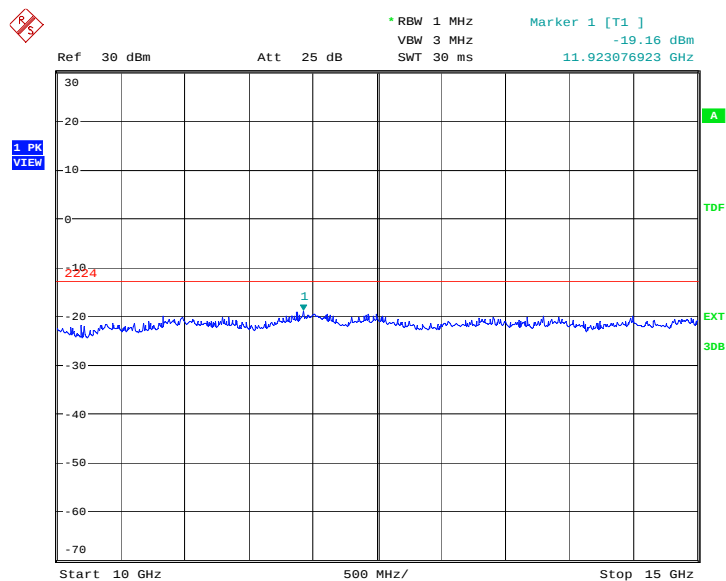
Spurious emission limit –13dBm.



Date: 21.AUG.2012 11:37:43

A.8.3.11 Channel 9400: 10GHz –15GHz

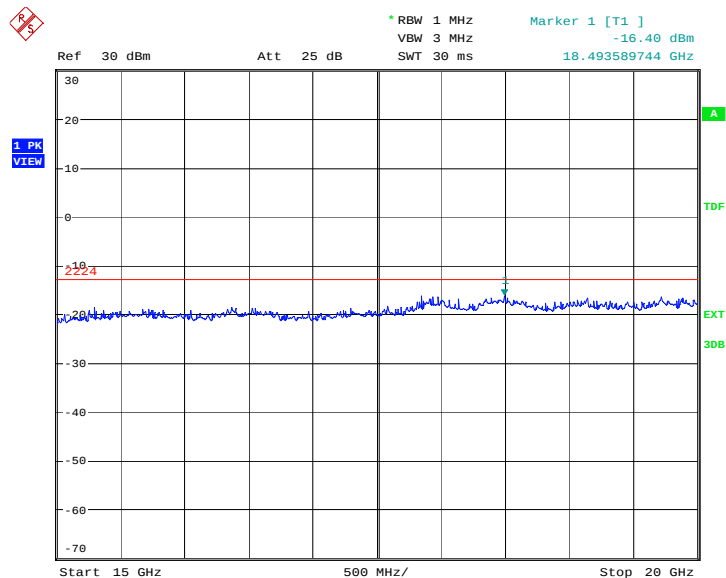
Spurious emission limit –13dBm.



Date: 21.AUG.2012 11:38:11

A.8.3.12 Channel 9400: 15GHz –20GHz

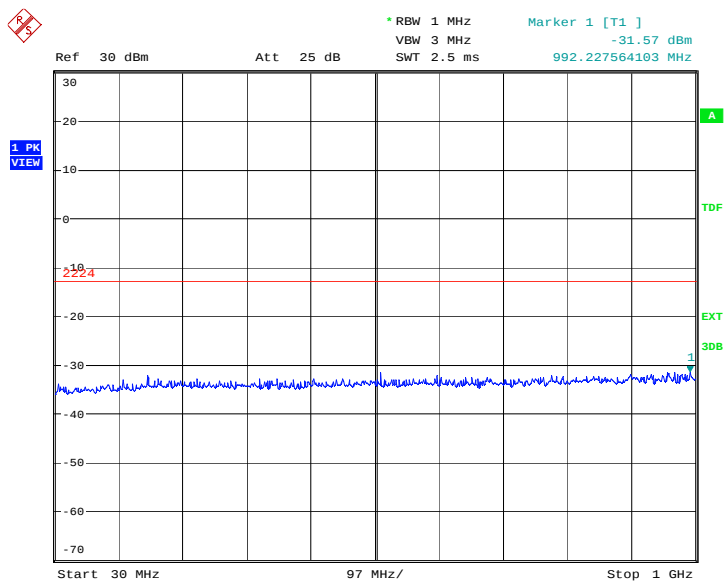
Spurious emission limit –13dBm.



Date: 21.AUG.2012 11:38:40

A.8.3.13 Channel 9538: 30MHz –1GHz

Spurious emission limit –13dBm.

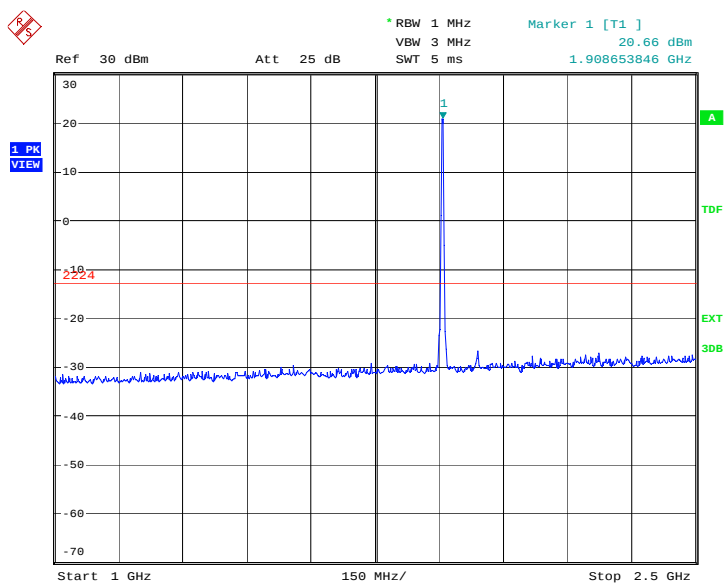


Date: 21.AUG.2012 11:39:11

A.8.3.14 Channel 9538: 1GHz –2.5GHz

Spurious emission limit –13dBm.

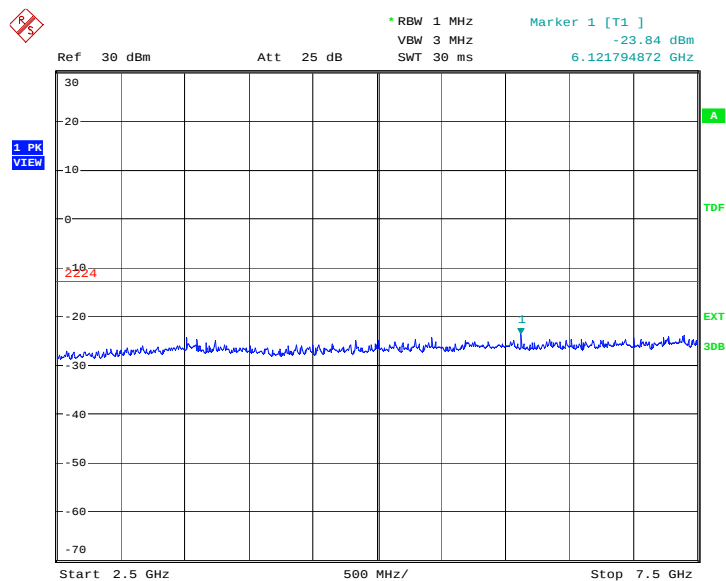
NOTE: peak above the limit line is the carrier frequency.



Date: 21.AUG.2012 11:39:39

A.8.3.15 Channel 9538: 2.5GHz –7.5GHz

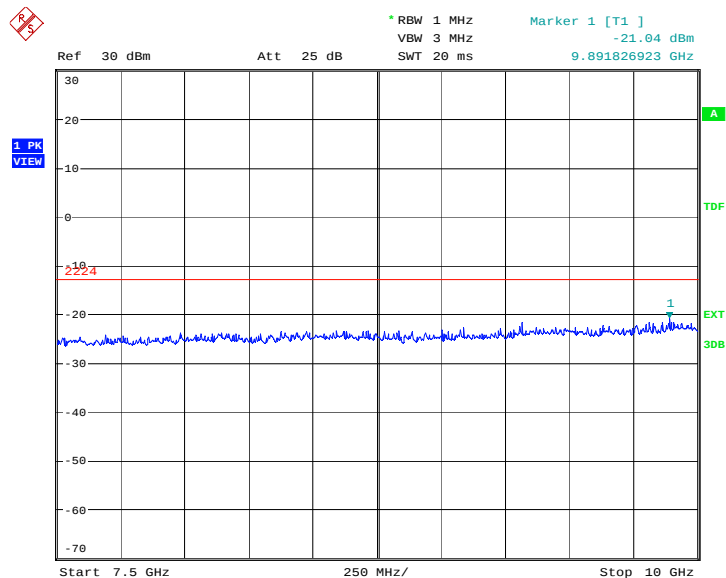
Spurious emission limit –13dBm.



Date: 21.AUG.2012 11:40:07

A.8.3.16 Channel 9538: 7.5GHz –10GHz

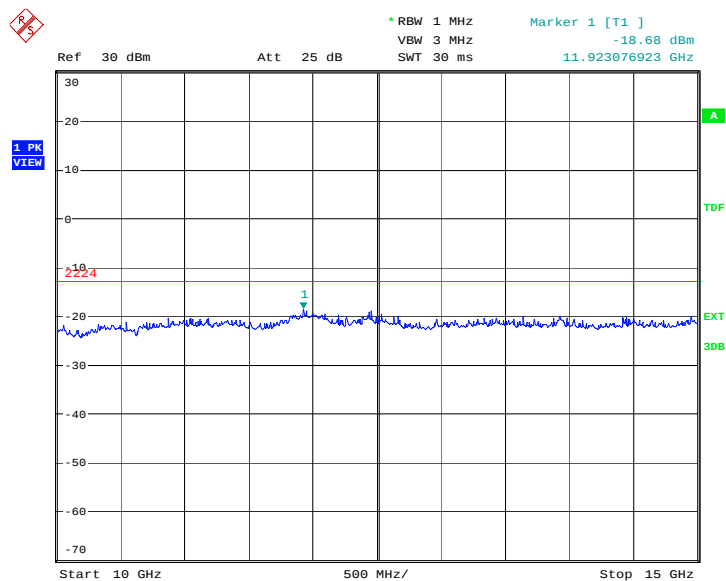
Spurious emission limit –13dBm.



Date: 21.AUG.2012 11:40:35

A.8.3.17 Channel 9538: 10GHz –15GHz

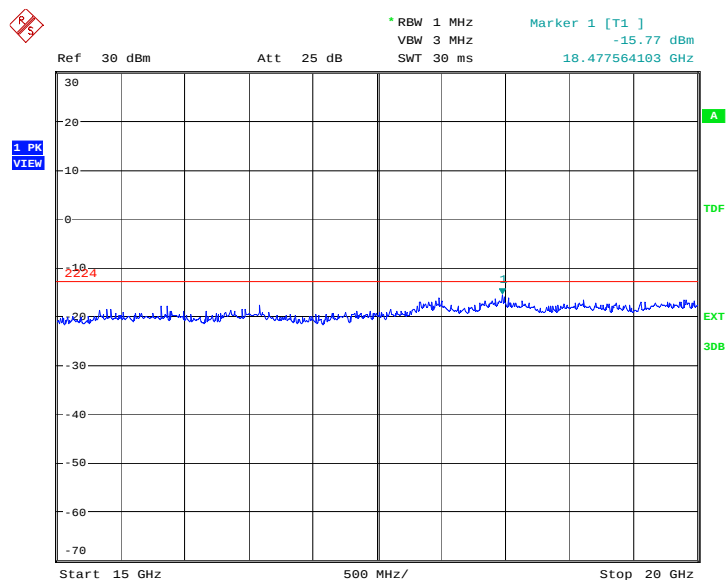
Spurious emission limit –13dBm.



Date: 21.AUG.2012 11:41:03

A.8.3.18 Channel 9538: 15GHz –20GHz

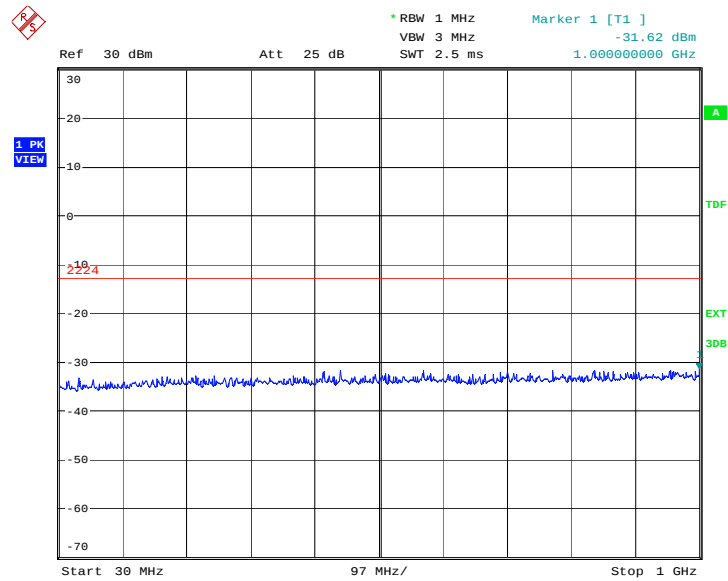
Spurious emission limit –13dBm.



Date: 21.AUG.2012 11:41:32

A.8.3.19 Idle mode: 30MHz –1GHz

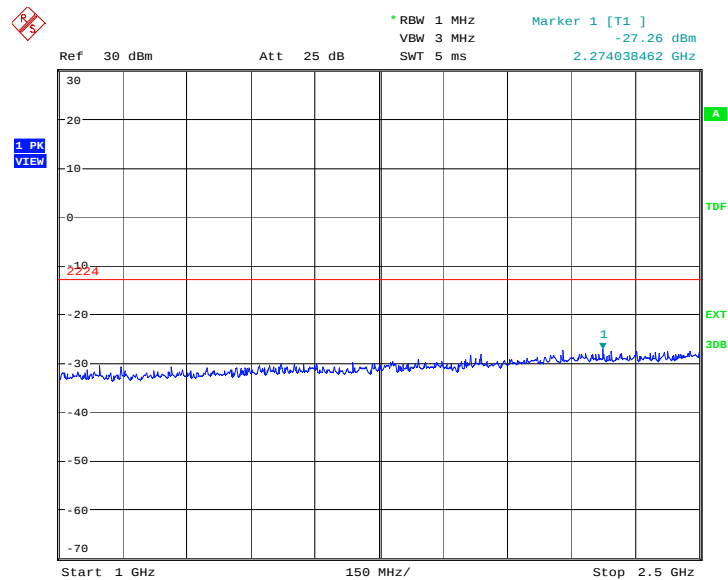
Spurious emission limit –13dBm.



Date: 21.AUG.2012 11:42:01

A.8.3.20 Idle mode: 1GHz –2.5GHz

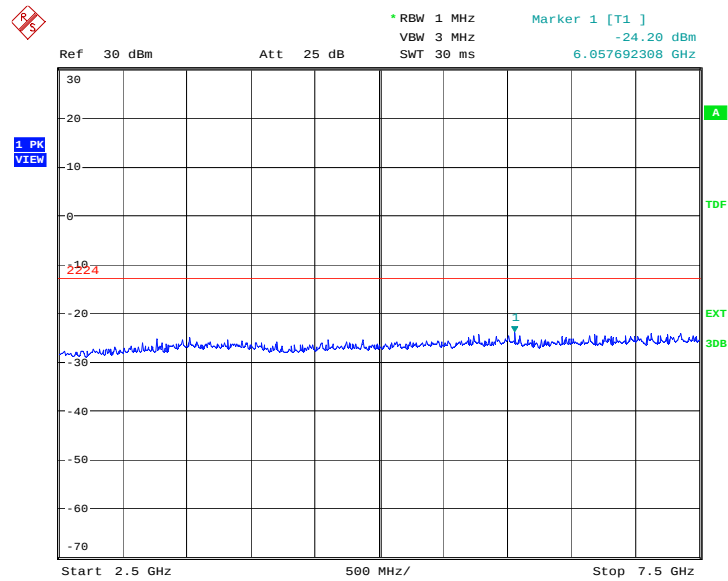
Spurious emission limit –13dBm.



Date: 21.AUG.2012 11:42:29

A.8.3.21 Idle mode: 2.5GHz –7.5GHz

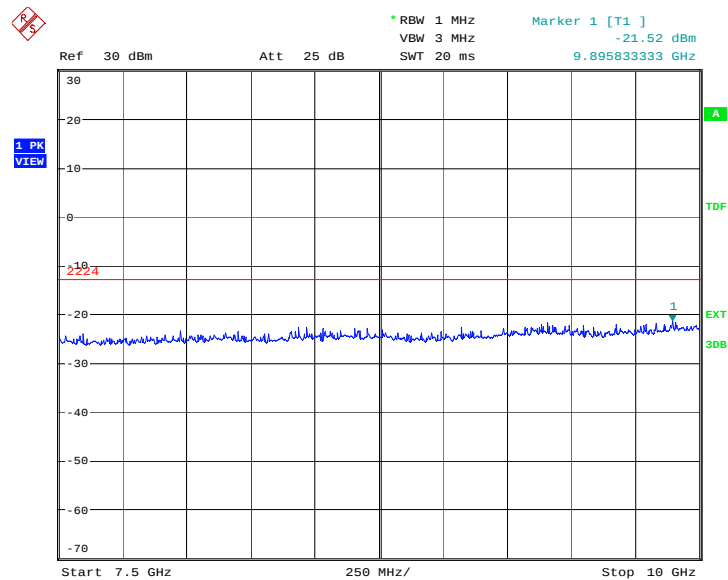
Spurious emission limit –13dBm.



Date: 21.AUG.2012 11:42:57

A.8.3.22 Idle mode: 7.5GHz –10GHz

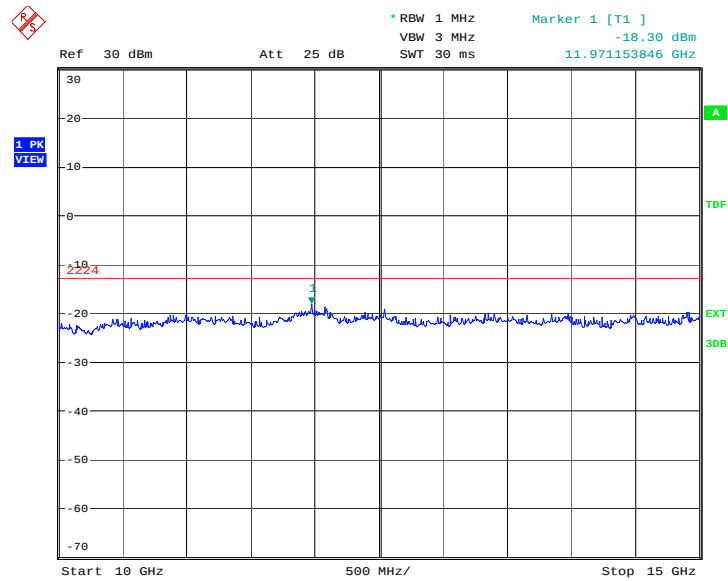
Spurious emission limit –13dBm.



Date: 21.AUG.2012 11:43:25

A.8.3.23 Idle mode: 10GHz –15GHz

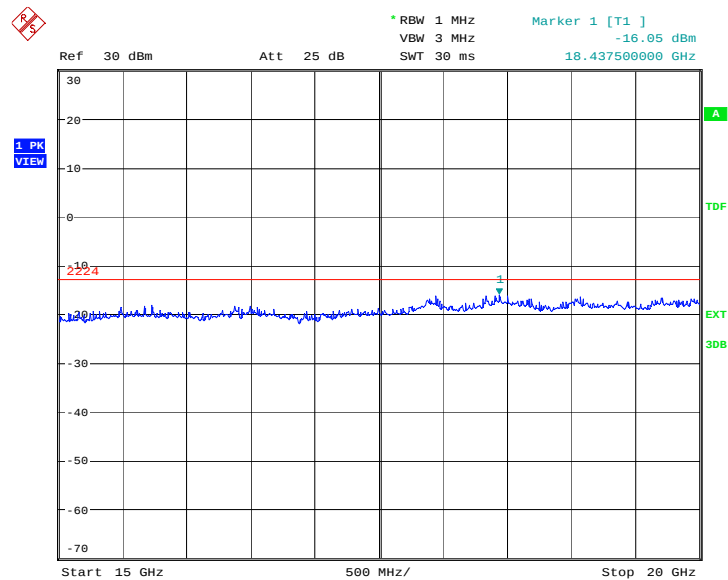
Spurious emission limit –13dBm.



Date: 21.AUG.2012 11:43:54

A.8.3.24 Idle mode: 15GHz –20GHz

Spurious emission limit –13dBm.



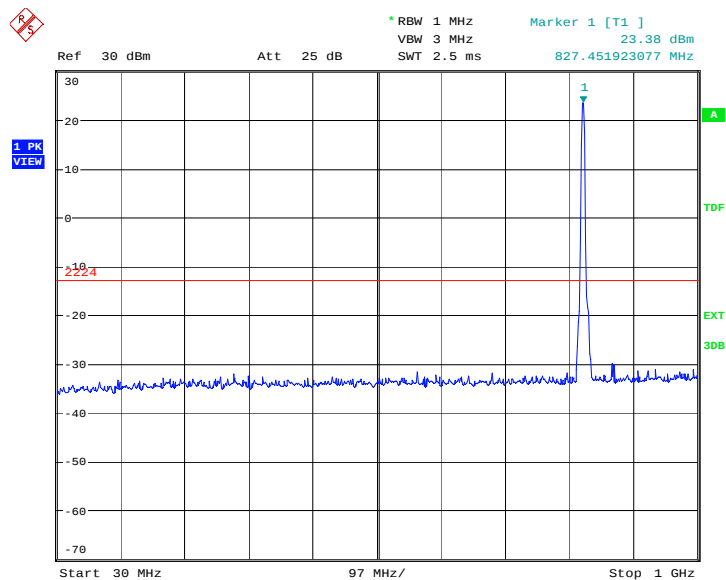
Date: 21.AUG.2012 11:44:22

WCDMA Band V

A.8.3.25 Channel 4132: 30MHz –1GHz

Spurious emission limit –13dBm.

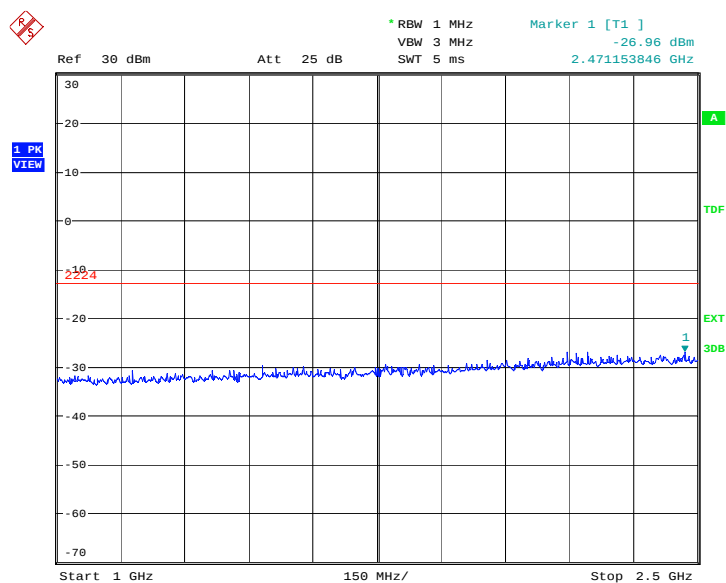
NOTE: peak above the limit line is the carrier frequency.



Date: 21.AUG.2012 11:52:01

A.8.3.26 Channel 4132: 1GHz – 2.5GHz

Spurious emission limit –13dBm.

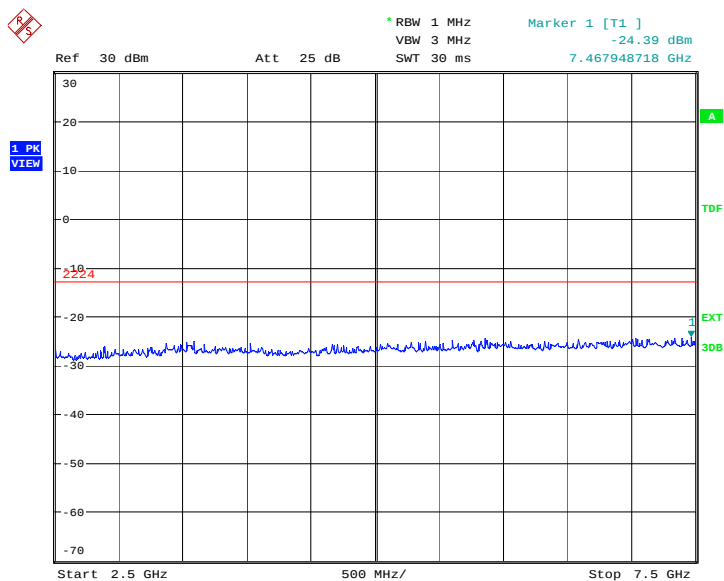


Date: 21.AUG.2012 11:52:29

A.8.3.27 Channel 4132: 2.5GHz –7.5GHz

Spurious emission limit –13dBm.

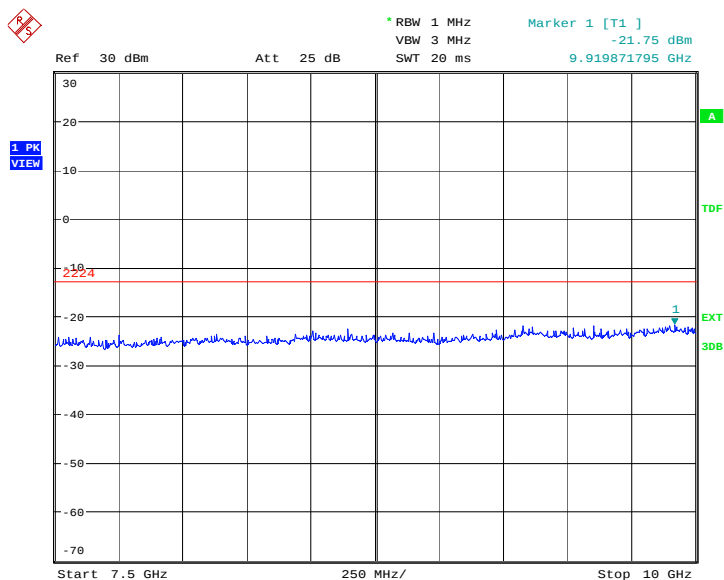
NOTE: peak above the limit line is the carrier frequency.



Date: 21.AUG.2012 11:52:57

A.8.3.28 Channel 4132: 7.5GHz – 10GHz

Spurious emission limit –13dBm.

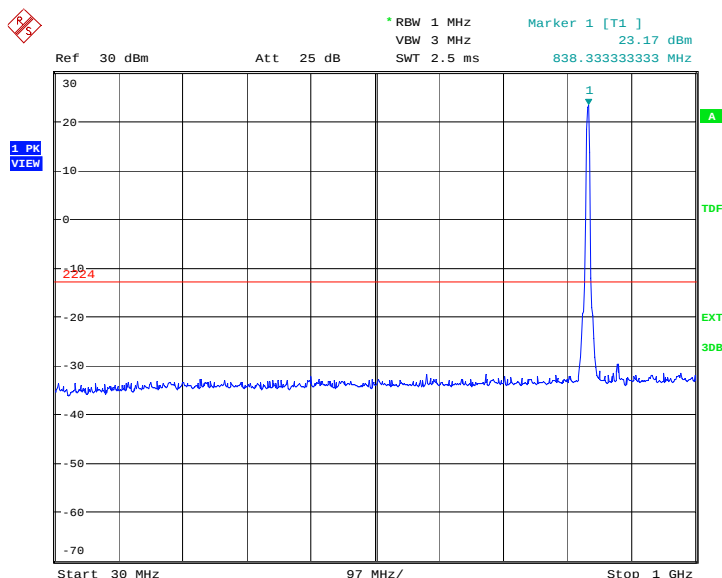


Date: 21.AUG.2012 11:53:25

A.8.3.29 Channel 4183: 30MHz –1GHz

Spurious emission limit –13dBm.

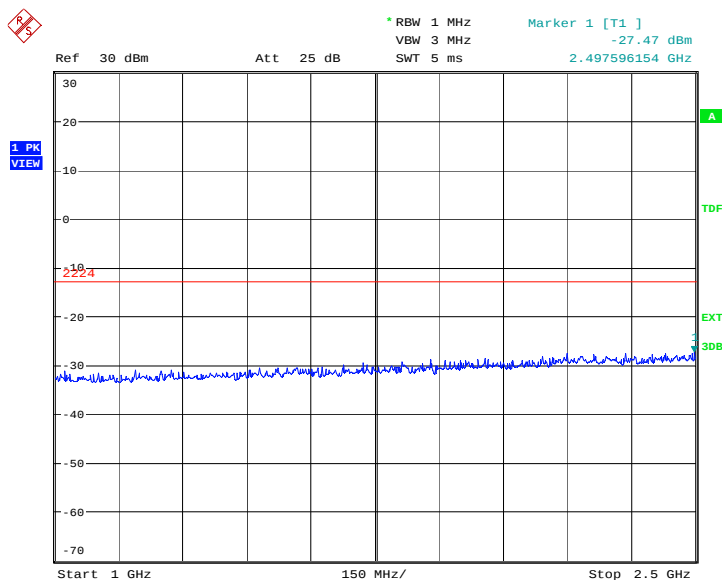
NOTE: peak above the limit line is the carrier frequency.



Date: 21.AUG.2012 11:53:57

A.8.3.30 Channel 4183: 1GHz – 2.5GHz

Spurious emission limit –13dBm.

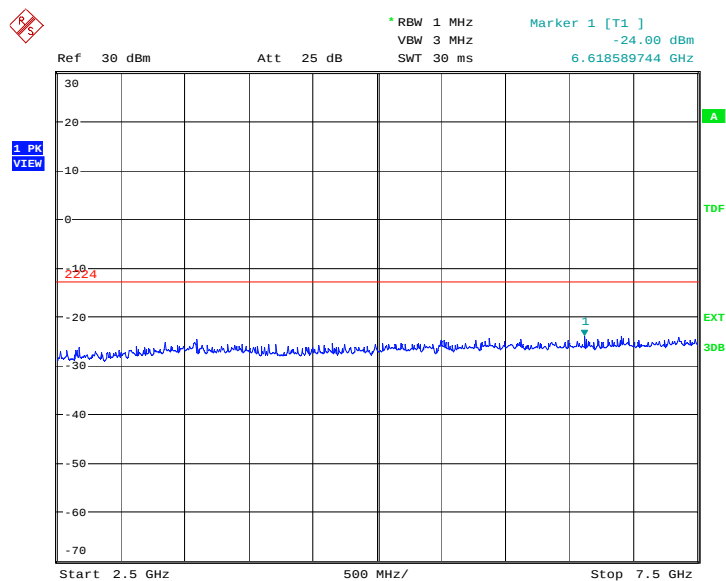


Date: 21.AUG.2012 11:54:25

A.8.3.31 Channel 4183: 2.5GHz –7.5GHz

Spurious emission limit –13dBm.

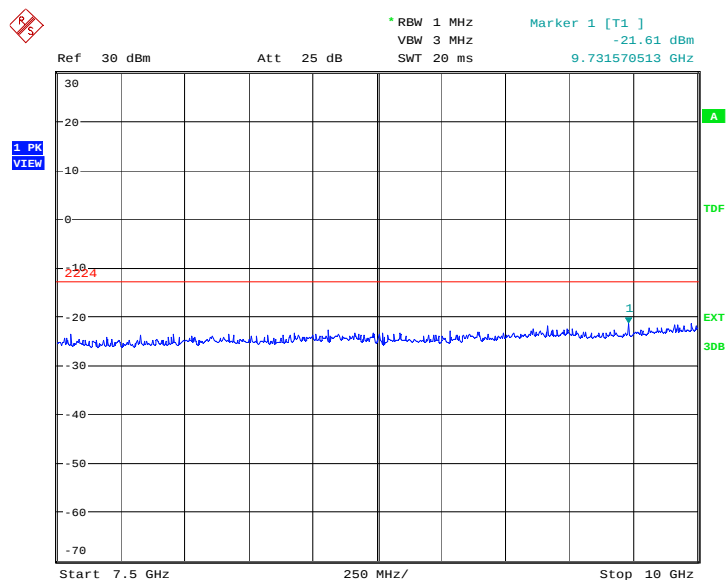
NOTE: peak above the limit line is the carrier frequency.



Date: 21.AUG.2012 11:54:53

A.8.3.32 Channel 4183: 7.5GHz – 10GHz

Spurious emission limit –13dBm.

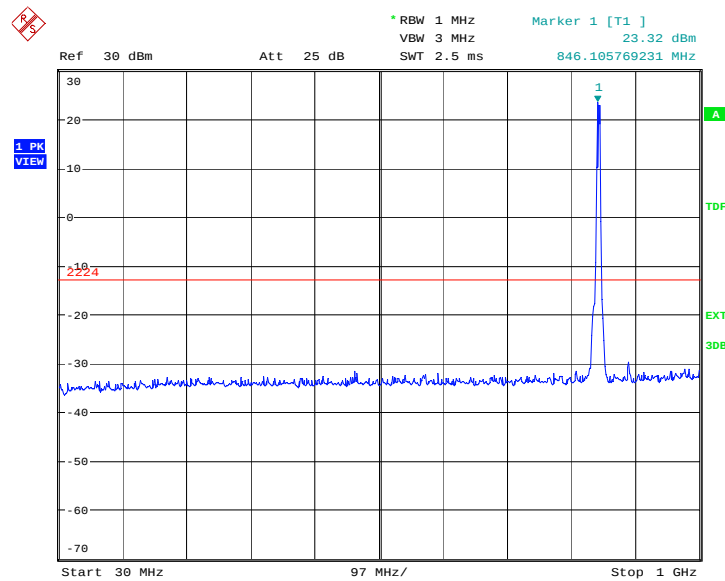


Date: 21.AUG.2012 11:55:21

A.8.3.33 Channel 4233: 30MHz –1GHz

Spurious emission limit –13dBm.

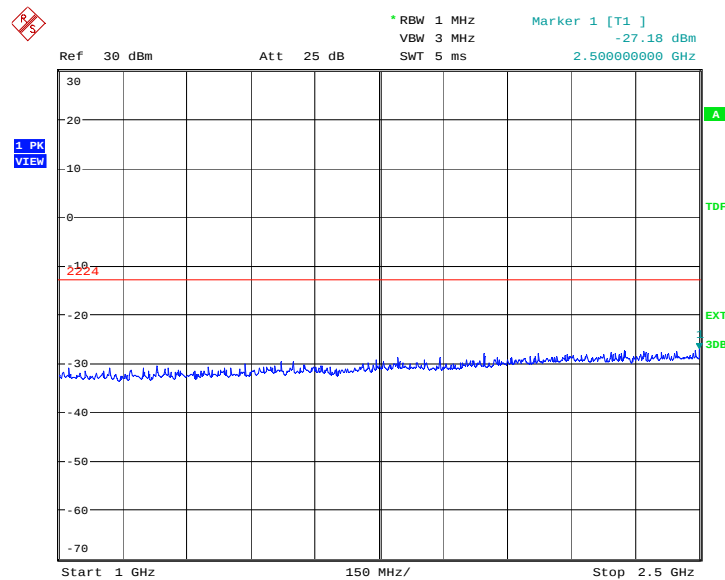
NOTE: peak above the limit line is the carrier frequency.



Date: 21.AUG.2012 11:55:52

A.8.3.34 Channel 4233: 1GHz – 2.5GHz

Spurious emission limit –13dBm.

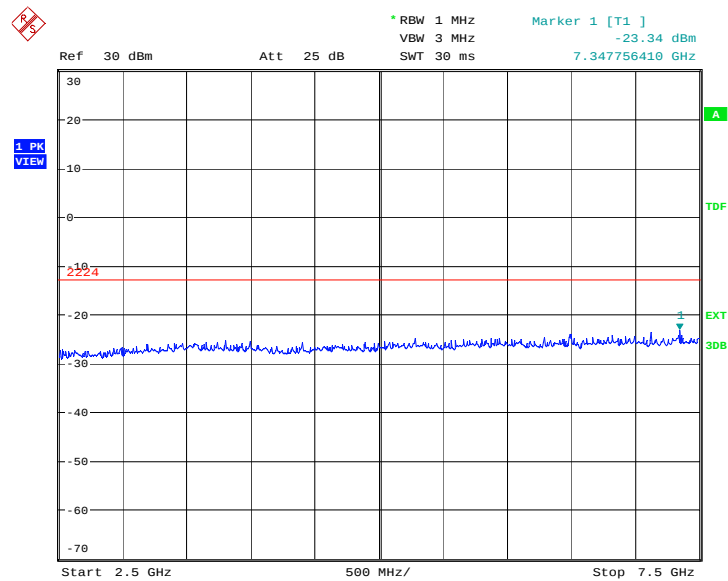


Date: 21.AUG.2012 11:56:21

A.8.3.35 Channel 4233: 2.5GHz – 7.5GHz

Spurious emission limit –13dBm.

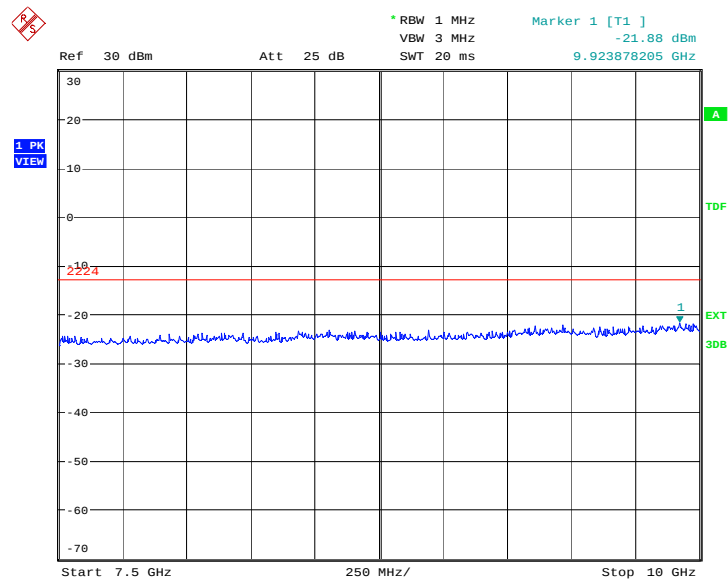
NOTE: peak above the limit line is the carrier frequency.



Date: 21.AUG.2012 11:56:49

A.8.3.36 Channel 4233: 7.5GHz – 10GHz

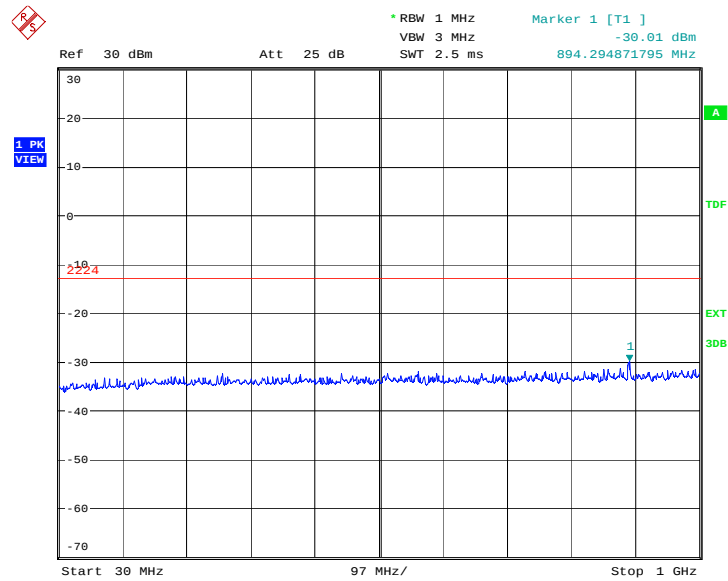
Spurious emission limit –13dBm.



Date: 21.AUG.2012 11:57:17

A.8.3.37 Idle mode: 30MHz – 1GHz

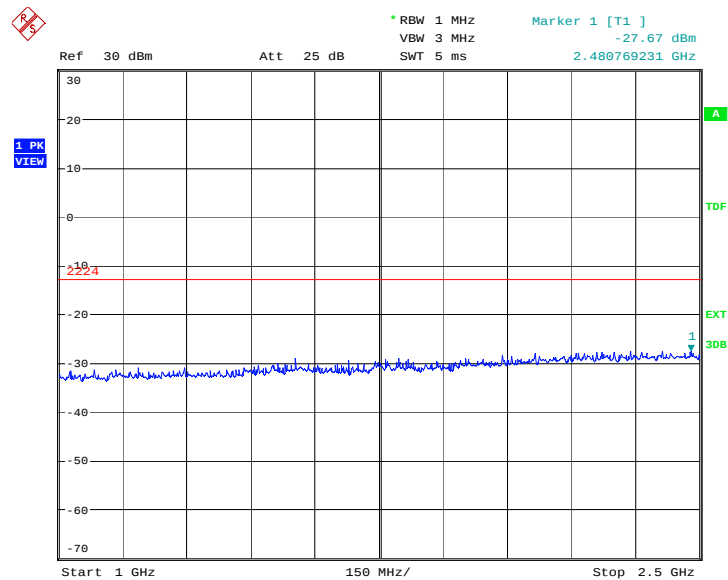
Spurious emission limit -13dBm.



Date: 21.AUG.2012 11:57:46

A.8.3.38 Idle mode: 1GHz – 2.5GHz

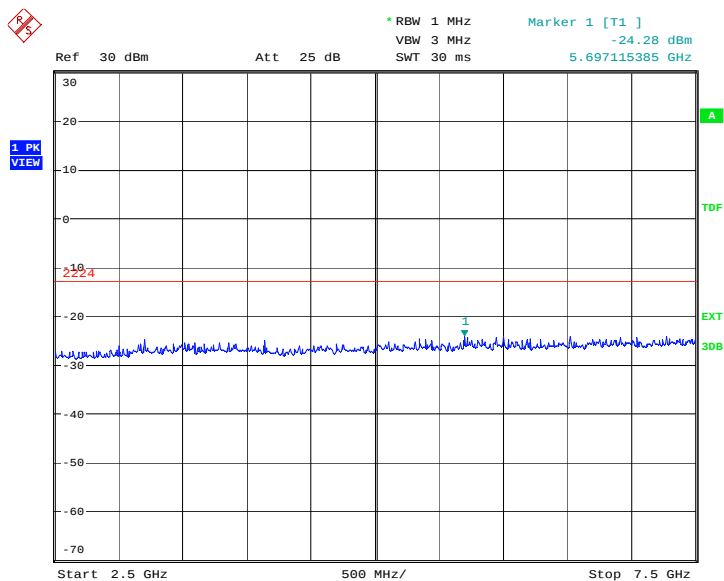
Spurious emission limit -13dBm.



Date: 21.AUG.2012 11:58:14

A.8.3.39 Idle mode: 2.5GHz – 7.5GHz

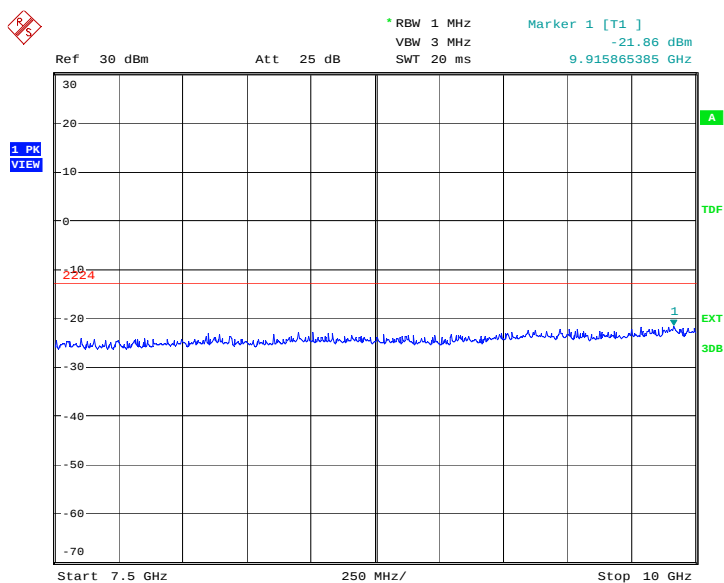
Spurious emission limit -13dBm.



Date: 21.AUG.2012 11:58:42

A.8.3.40 Idle mode: 7.5GHz – 10GHz

Spurious emission limit -13dBm.

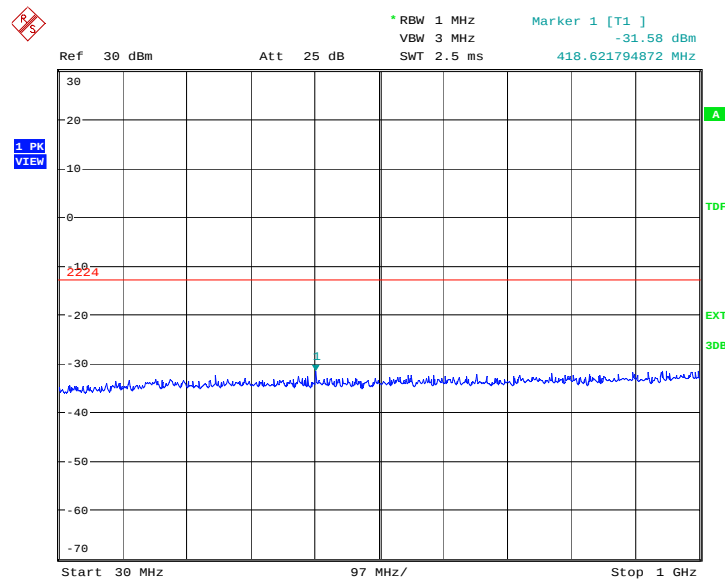


Date: 21.AUG.2012 11:59:11

WCDMA Band IV

A. 8.3.41 Channel 1312: 30MHz –1GHz

Spurious emission limit –13dBm.

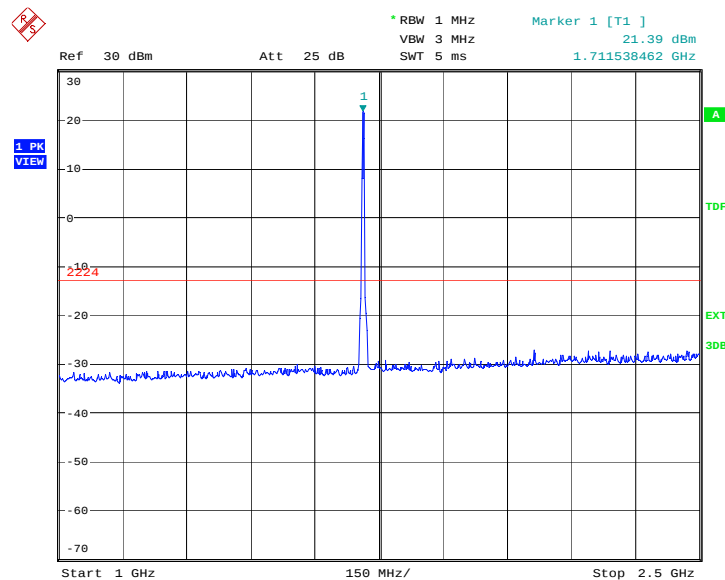


Date: 28.AUG.2012 01:25:39

A. 8.3.42 Channel 1312: 1GHz –2.5GHz

Spurious emission limit –13dBm.

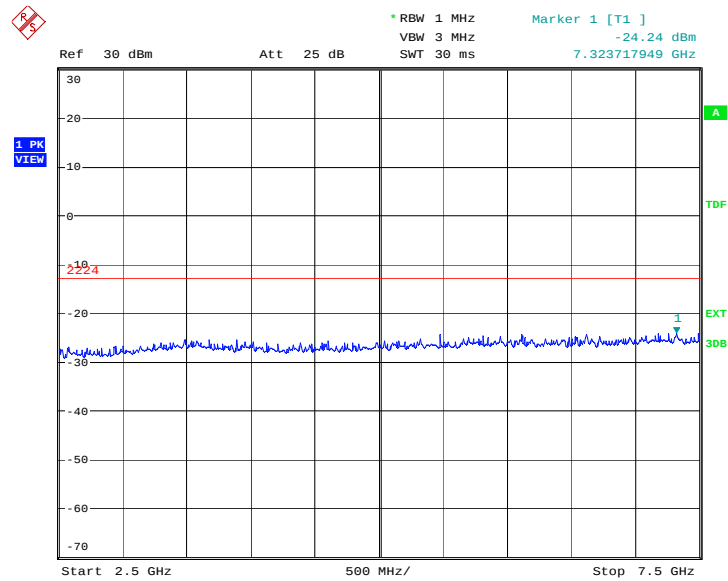
NOTE: peak above the limit line is the carrier frequency.



Date: 28.AUG.2012 01:26:08

A. 8.3.43 Channel 1312: 2.5GHz –7.5GHz

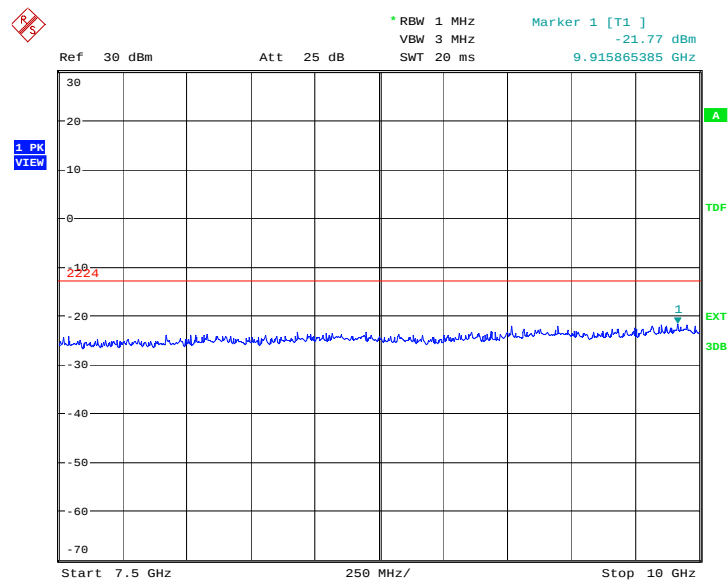
Spurious emission limit –13dBm.



Date: 28.AUG.2012 01:26:36

A. 8.3.44 Channel 1312: 7.5GHz –10GHz

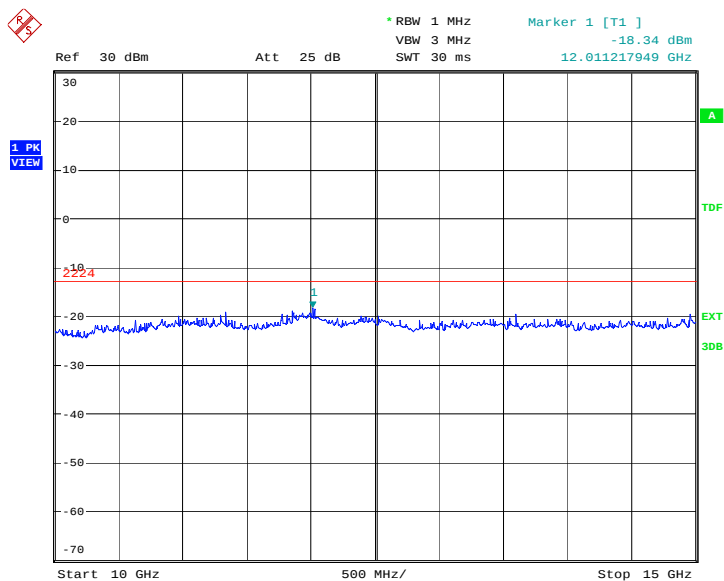
Spurious emission limit –13dBm.



Date: 28.AUG.2012 01:27:04

A. 8.3.45 Channel 1312: 10GHz –15GHz

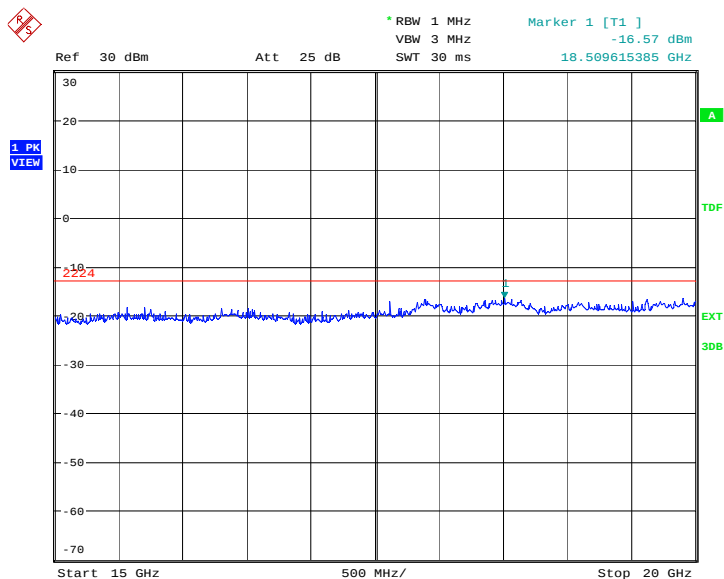
Spurious emission limit –13dBm.



Date: 28.AUG.2012 01:27:33

A. 8.3.46 Channel 1312: 15GHz –20GHz

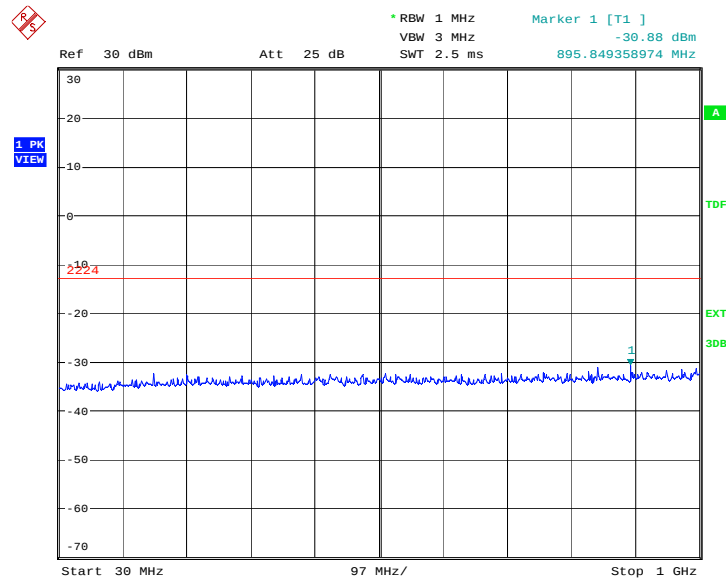
Spurious emission limit –13dBm.



Date: 28.AUG.2012 01:28:01

A. 8.3.47 Channel 1450: 30MHz –1GHz

Spurious emission limit –13dBm.

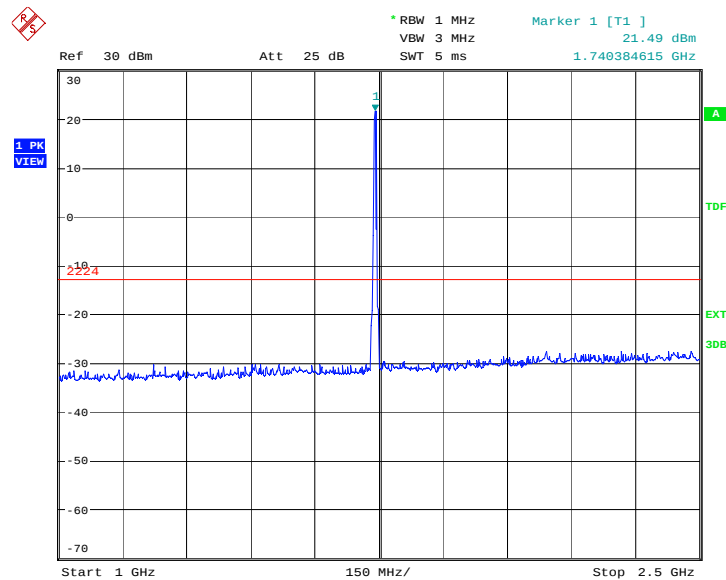


Date: 28.AUG.2012 01:28:33

A. 8.3.48 Channel 1450: 1GHz –2.5GHz

Spurious emission limit –13dBm.

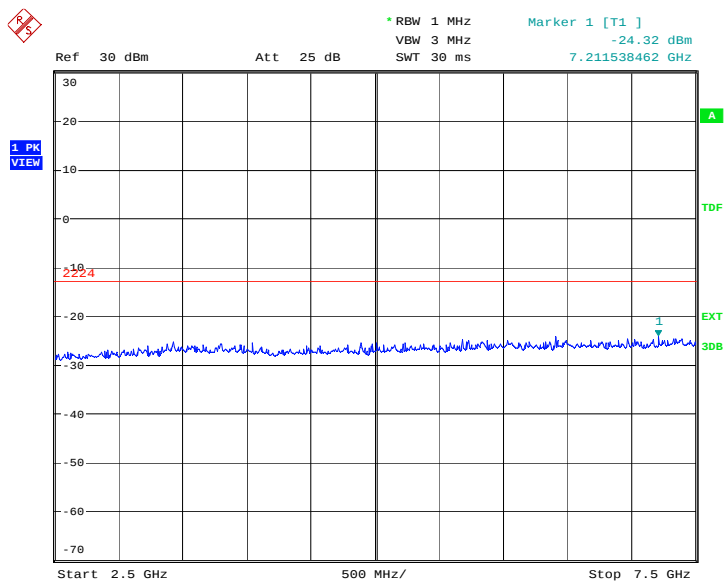
NOTE: peak above the limit line is the carrier frequency.



Date: 28.AUG.2012 01:29:01

A. 8.3.49 Channel 1450: 2.5GHz –7.5GHz

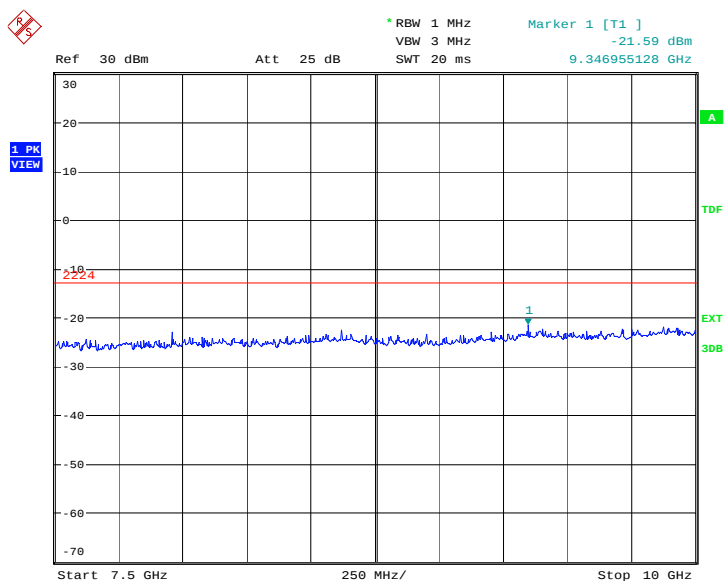
Spurious emission limit –13dBm.



Date: 28.AUG.2012 01:29:30

A. 8.3.50 Channel 1450: 7.5GHz –10GHz

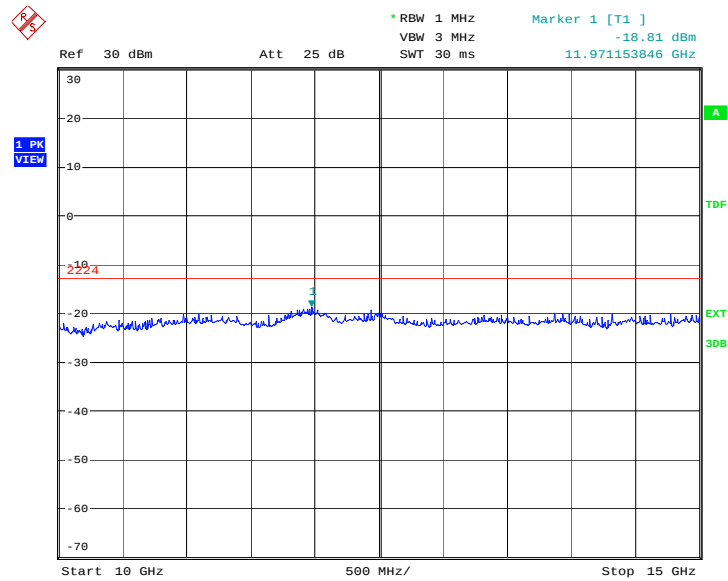
Spurious emission limit –13dBm.



Date: 28.AUG.2012 01:29:58

A. 8.3.51 Channel 1450: 10GHz –15GHz

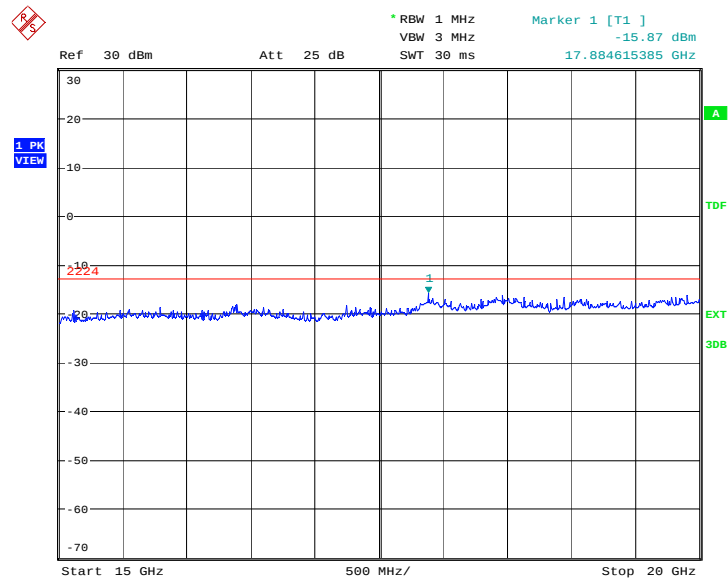
Spurious emission limit –13dBm.



Date: 28.AUG.2012 01:30:27

A. 8.3.52 Channel 1450: 15GHz –20GHz

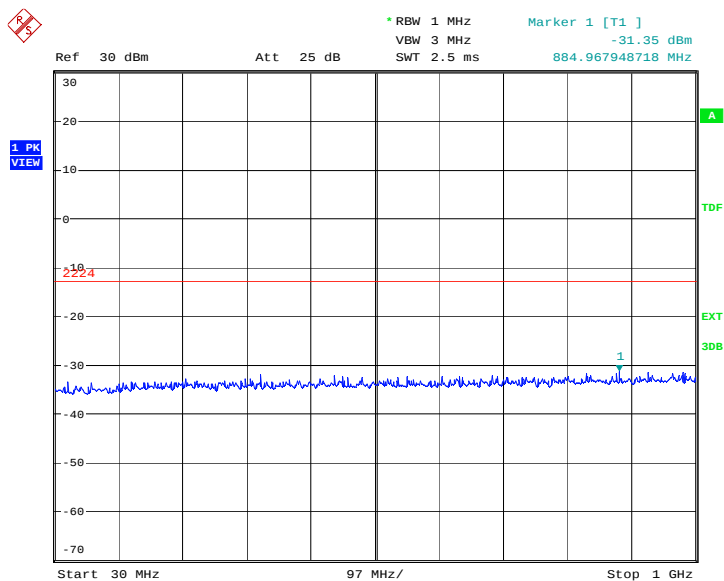
Spurious emission limit –13dBm.



Date: 28.AUG.2012 01:30:55

A. 8.3.53 Channel 1513: 30MHz –1GHz

Spurious emission limit –13dBm.

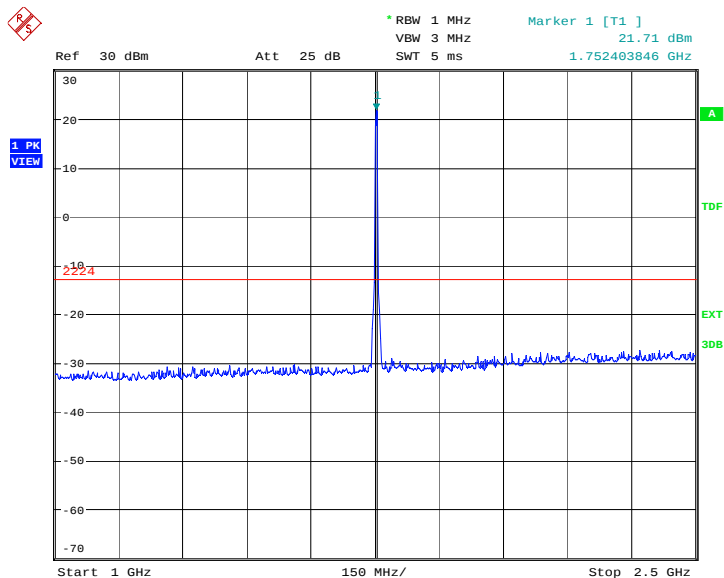


Date: 28.AUG.2012 01:31:27

A. 8.3.54 Channel 1513: 1GHz –2.5GHz

Spurious emission limit –13dBm.

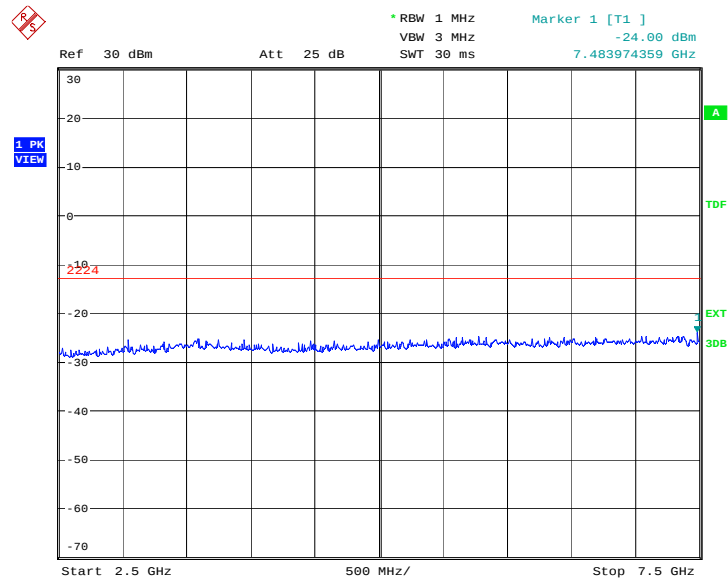
NOTE: peak above the limit line is the carrier frequency.



Date: 28.AUG.2012 01:31:55

A. 8.3.55 Channel 1513: 2.5GHz –7.5GHz

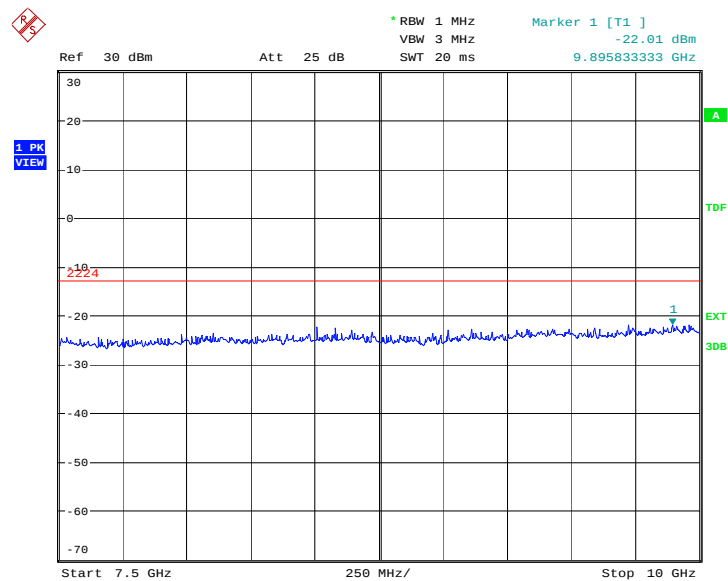
Spurious emission limit –13dBm.



Date: 28.AUG.2012 01:32:23

A. 8.3.56 Channel 1513: 7.5GHz –10GHz

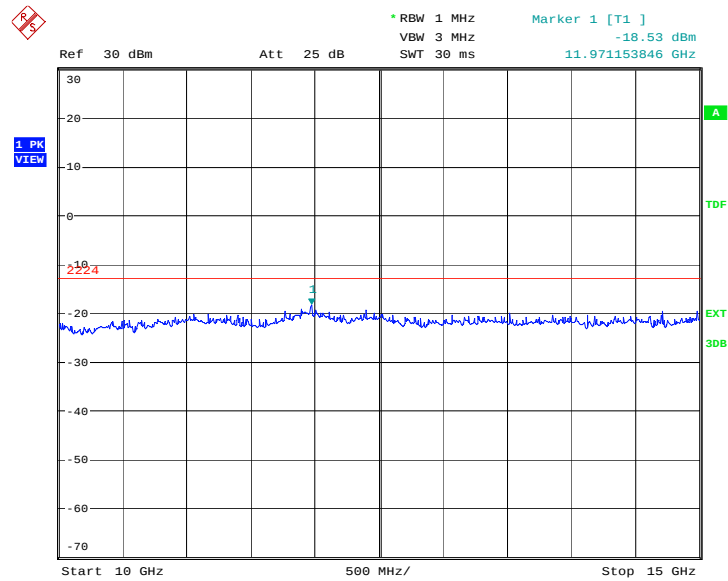
Spurious emission limit –13dBm.



Date: 28.AUG.2012 01:32:52

A. 8.3.57 Channel 1513: 10GHz –15GHz

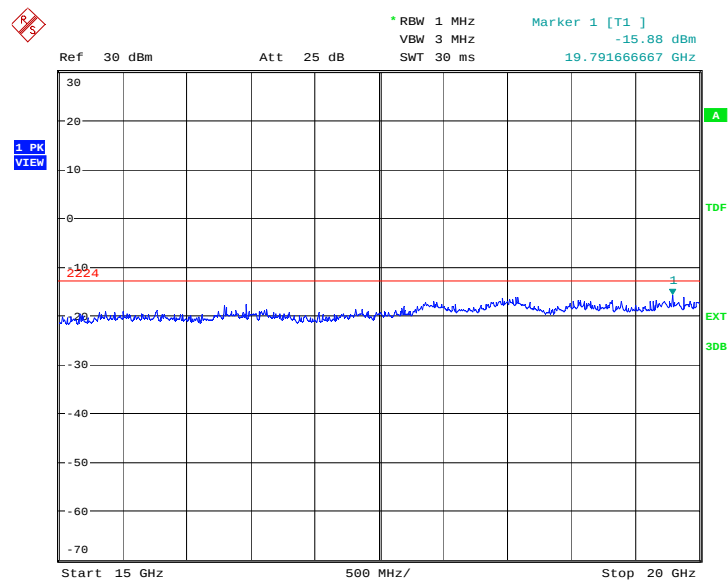
Spurious emission limit –13dBm.



Date: 28.AUG.2012 01:33:20

A. 8.3.58 Channel 1513: 15GHz –20GHz

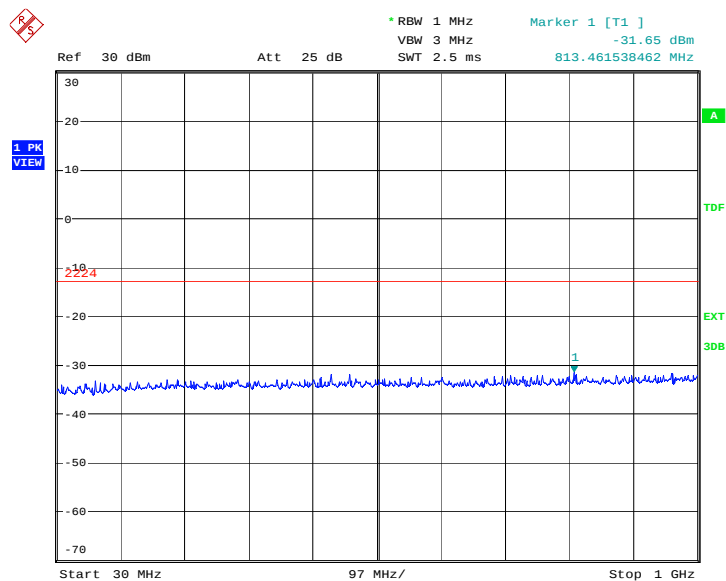
Spurious emission limit –13dBm.



Date: 28.AUG.2012 01:33:48

A. 8.3.59 Idle mode: 30MHz –1GHz

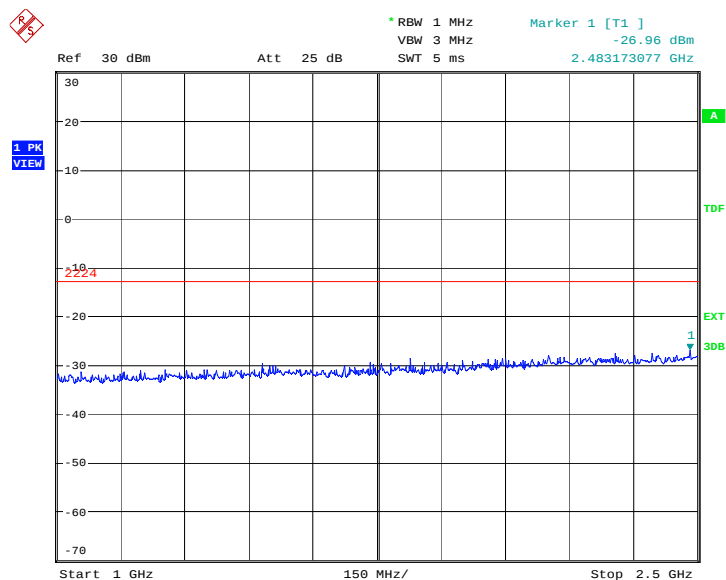
Spurious emission limit –13dBm.



Date: 28.AUG.2012 01:34:18

A.8.3.60 Idle mode: 1GHz –2.5GHz

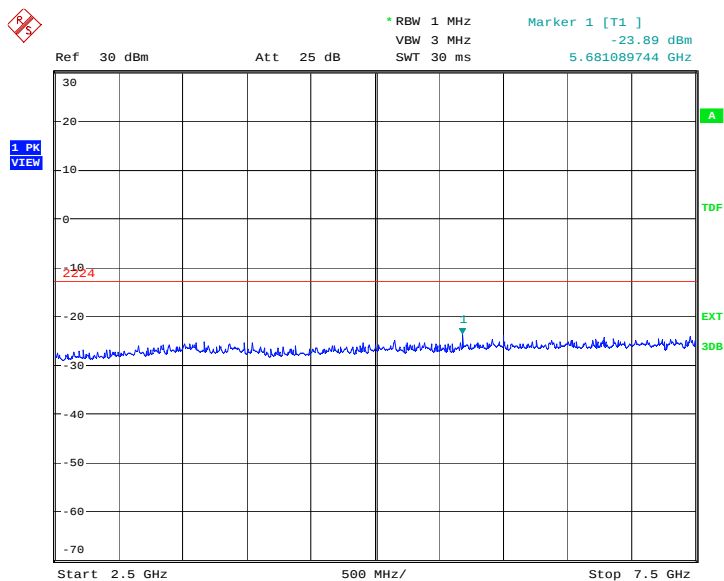
Spurious emission limit –13dBm.



Date: 28.AUG.2012 01:34:46

A.8.3.61 Idle mode: 2.5GHz –7.5GHz

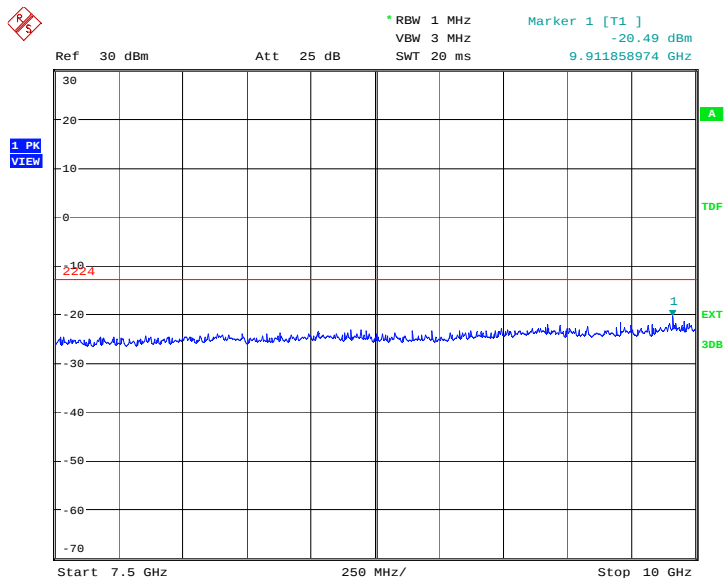
Spurious emission limit –13dBm.



Date: 28.AUG.2012 01:35:14

A.8.3.62 Idle mode: 7.5GHz –10GHz

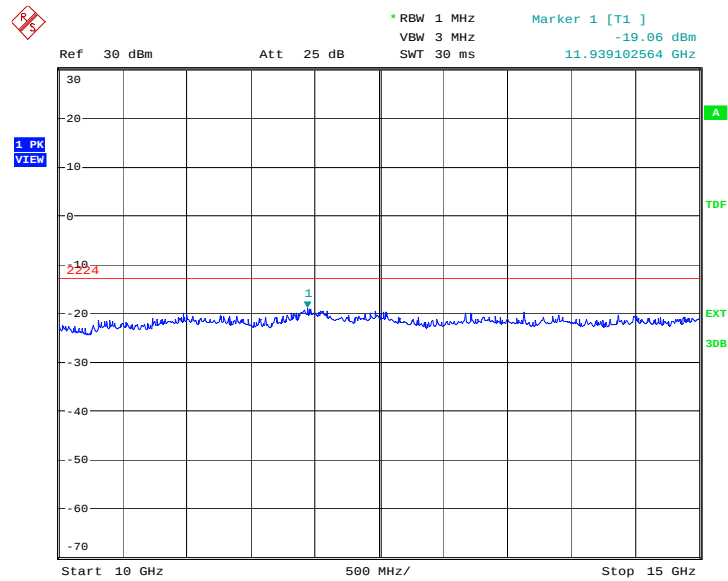
Spurious emission limit –13dBm.



Date: 28.AUG.2012 01:35:42

A.8.3.63 Idle mode: 10GHz –15GHz

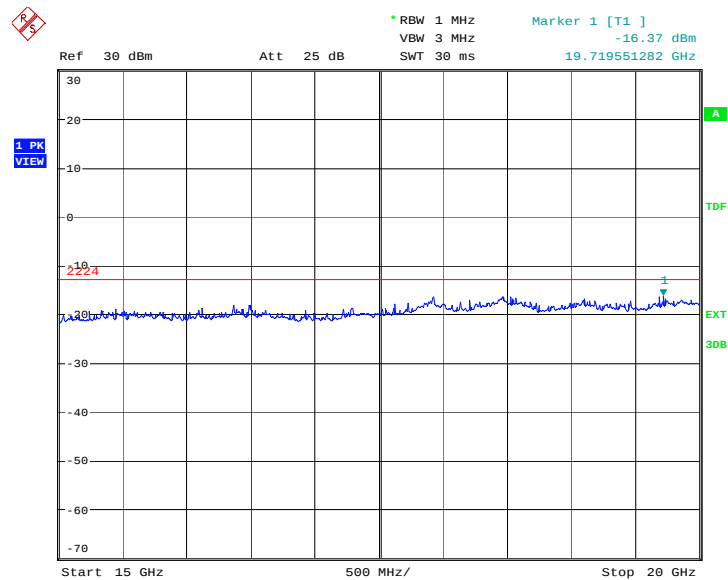
Spurious emission limit –13dBm.



Date: 28.AUG.2012 01:36:11

A.8.3.64 Idle mode: 15GHz –20GHz

Spurious emission limit –13dBm.



Date: 28.AUG.2012 01:36:39

A.9 RECEIVER RADIATION EMISSION

Reference

FCC: CFR Part 15.109, 2.1053

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

A.9.1 Method of Measurement

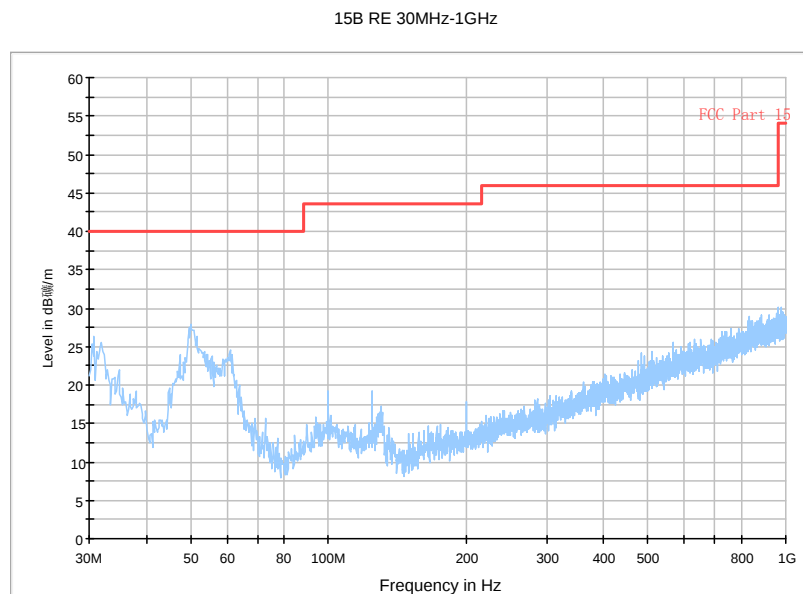
The measurement procedure in ANSI C64.4-2003 is used. The EUT is placed on a 80cm height non-conductive table locating on the center of turntable. From 30MHz-1GHz, the measurement distance is 10m. For frequency range above 1GHz, the measurement distance is 3m.

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	30	10
88-216	33.5	10
216-960	36	10
960-1000	44	10
>1000	54	3

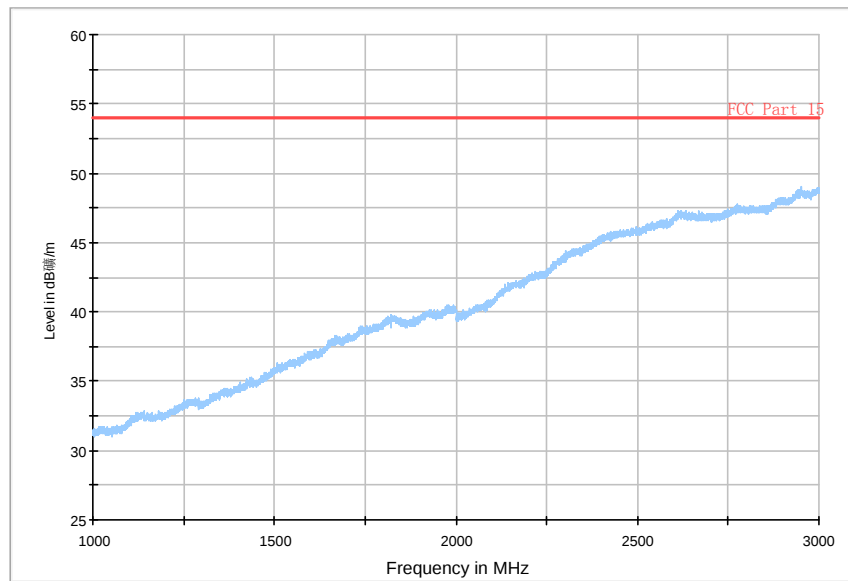
A. 9.3 Measurement results



IF bandwidth: 120 kHz

Idle Mode: 30MHz-1GHz

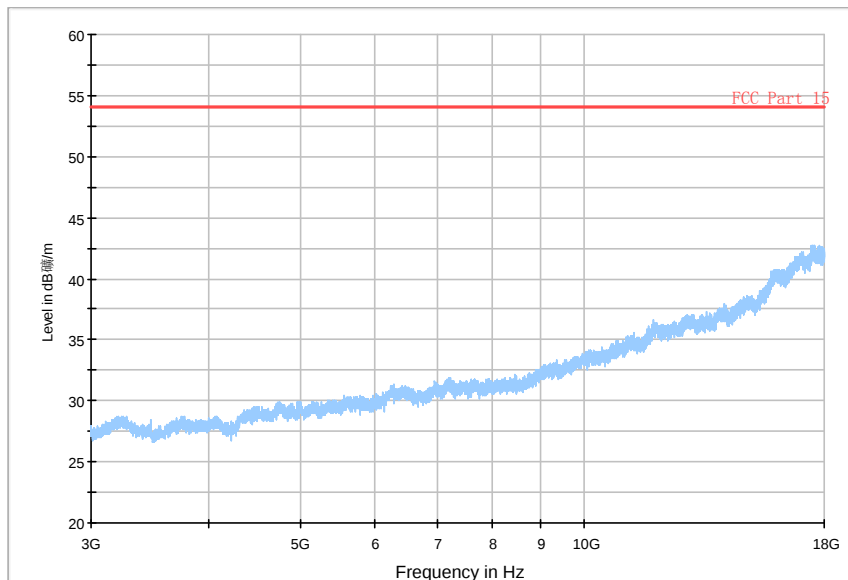
15B RE - 1GHz-3GHz



RBW / VBW 1 MHz

Idle Mode: 1GHz-3GHz

RE - 3GHz-18GHz



RBW / VBW 1 MHz

Idle Mode: 3GHz-18GHz

END OF REPORT