

TEST REPORT

Test Report No.: 1-4246/12-179-03



Testing Laboratory

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Accredited Test Laboratory:

The test laboratory (area of testing) is accredited
according to DIN EN ISO/IEC 17025
DAR registration number: DGA-PL-176/94-D1
Area of Testing: EMC Laboratory

Applicant and Manufacturer

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Test Standard/s

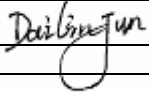
EN 55022	Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement.
EN 55024	Information technology equipment - Immunity characteristics - Limits and methods of measurement
ETSI EN 301 489-1	Electromagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements
ETSI EN 301 489-7	Specific conditions for mobile and portable radio and ancillary equipment of digital cellular radio telecommunications systems (GSM and DCS)
ETSI EN 301 489-24	Specific conditions for IMT-2000 CDMA Direct Spread (UTRA) for Mobile and portable (UE) radio and ancillary equipment
ETSI EN 301 908-1	Base stations (BS), repeaters and user equipment (UE) for IMT-2000 third generation cellular networks; Part 1: Harmonised EN for IMT-2000
ETSI EN 301 511	Global System for Mobile communications(GSM);Harmonized EN for mobile stations in the GSM 900and GSM 1800 bands covering essential requirement under article 3.2 the R&TTE directive(1999/5/EC)

All applied test standards are listed in section 3 of this test report.

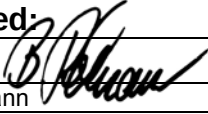
Test Item

Kind of test item:	HSPA+ Module	
Model name:	EM820W	
S/N serial number:	W9V2B110A1400046	
HW hardware status:	MD1EM820WM	
SW software status:	11.805.03.07.00	

Test performed:

	
2010-12-10	Dai Linjun
Date	Testing Manager

Test report authorised:

	
2012-12-04	Bernd Rebmann
Date	Testing Manager

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2 General information

2.1 Notes

The test results of this test report relate exclusively to the test item specified in this test report. CETECOM ICT Services GmbH does not assume responsibility for any conclusions and generalisations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of CETECOM ICT Services GmbH.

2.2 Application details

Date of receipt of order:	Nov.27, 2010
Date of receipt of test item:	Nov.27, 2010
Start of test:	Nov.29, 2010
End of test:	Dec.8, 2010
Person(s) present during the test:	Liaoxiaoping

3 Test standard/s:

Test standard	Version	Test description
EN 55022 Amendment A1	2006 2007	Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement
EN 55024 Amendment A1 Amendment A2	1998 2001 2003	Information technology equipment - Immunity characteristics - Limits and methods of measurement
ETSI EN 301 489-1	V1.9.2	Electromagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements
ETSI EN 301 489-7	V1.3.1	Specific conditions for mobile and portable radio and ancillary equipment of digital cellular radio telecommunications systems (GSM and DCS)
ETSI EN 301 489-24	V1.5.1	Specific conditions for IMT-2000 CDMA Direct Spread (UTRA) for Mobile and portable (UE) radio and ancillary equipment
ETSI EN 301 511	V9.0.2	Global system for mobile communications (GSM); Harmonised EN for mobile stations in the GSM 900 and GSM 1800 bands
ETSI EN 301 908-1	V5.2.1	Base stations (BS), repeaters and user equipment (UE) for IMT-2000 third generation cellular networks; Part 1: Harmonised EN for IMT-2000
CISPR 22	2006	Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement
AS/NZS CISPR 22	2006	Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement
ICES-003	2004	Interference-Causing Equipment Standard Digital Apparatus
CNS 13438	1997	Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement

ANSI C63.4	2009	Methods of Measurement of Radio- Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
VCCI V-4	2009	Supplement for Test Conditions for Requirement under Test.
VCCI V-3	2009	Technical Requirements
ITU-T SM.329-10	2003	Unwanted emissions in the spurious domain - emission limits of ISM equipment
IEC 61000-4-2	2008	Electrostatic discharge immunity test
IEC 61000-4-3	2008	Radiated, radio-frequency, electromagnetic field immunity test

4 Test environment

Temperature:	15 °C – 35 °C
Relative humidity content:	30 % – 60 %
Air pressure:	860 hPa – 1060 hPa
Power supply:	230 V / 50 Hz

5 Test Laboratories sub-contracted

EMC LABORATORY OF RELIABILITY LABORATORY OF HUAWEI TECHNOLOGIES CO., LTD
Street: Bantian Longgang District Shenzhen
Country: P.R.China

6 Information about test item

6.1 General Description

EM820W HSPA+/HSUPA/HSDPA/WCDMA/EDGE/GPRS/GSM dual mode module is subscriber equipment in the UMTS/GSM system. EM820W implements such functions as RF signal receiving/transmitting, HSPA+/HSUPA/HSDPA/WCDMA and EDGE/GPRS/GSM protocol processing, data service etc. Externally it provides PCIE MINI CARD interface (to connect to the notebook etc.). EM820W has NO internal antenna. Only Band I, Band VIII, EGSM900 and DCS1800 test data included in this report.

6.2 Technical Data

Main Equipment Technical Data	
Description:	HSPA+ Module
Models:	EM820W
Input Rated Voltage:	3.3V
Rated Consumption Power:	Max 2.8 W
Maximum Emission Power:	Max 33dBm
Dimensions:	51(length) × 30 (width) × 4.5 (height) (mm3)
Weight:	About 15g

Mode		Work Frequency	
		Transmit Frequency (MHz)	Receive Frequency (MHz)
GSM	GSM900	880 - 915	925 - 960
	DCS1800	1710 - 1785	1805 - 1880
WCDMA	WCDMA2100	1920 - 1980	2110 - 2170
	WCDMA900	880-915	925-960

6.3 Sub-Assembly Identity

Board			
Model Name	Qty.	Serial Number	Description
EM820W	1	W9V2B110A1400046	Main Board
Accessory			
Name	Qty.	Serials number	Description

7 System Configuration during EMC Test

The Equipment under Test (EUT) was functioning correctly during all tests. The EUT was installed within the test site and was configured to simulate a typical user installation, the detailed information of cables and auxiliary equipments is shown as below.

Cable used during test		
Port	Connector	Type of Cable
USB	USB	shielded

Associated Equipment Used during Test					
Name	Model	Manufacturer	S/N	Cal Date	Cal Interval (month)
Radio Communication Tester	CMU200	R&S	112347	2010-03-12	12
Notebook	T43	IBM	3106093834	NA	NA
Notebook	T61	ThinkPad	3108052581	NA	NA

7.1 Test Configurations and Test Modes

The EUT will be connected to test system (Base Station Simulator) in order to simulate normal operating conditions (with reference to the guidance given in the standard for this type of equipment).

Configuration Table	
Test configuration	Test mode
TC1	TM1~TM20

TC1: EUT was powered by the USB port of the notebook directly.

Test Modes	
TM1	operate in traffic mode GPRS 900
TM2	operate in traffic mode GPRS 1800
TM3	operate in traffic mode EDGE 900
TM4	operate in traffic mode EDGE 1800
TM5	operate in traffic mode WCDMA 900
TM6	operate in traffic mode HSDPA 900
TM7	operate in traffic mode HSUPA 900
TM8	operate in traffic mode WCDMA 2100
TM9	operate in traffic mode HSDPA 2100
TM10	operate in traffic mode HSUPA 2100
TM11	operate in idle mode GPRS 900
TM12	operate in idle mode GPRS 1800
TM13	operate in idle mode EDGE 900
TM14	operate in idle mode EDGE 1800
TM15	operate in idle mode WCDMA 900
TM16	operate in idle mode HSDPA 900
TM17	operate in idle mode HSUPA 900
TM18	operate in idle mode WCDMA 2100
TM19	operate in idle mode HSDPA 2100
TM20	operate in idle mode HSUPA 2100

7.2 Test Conditions and Test Connections

The EUT will be connected to test system (Base Station Simulator) in order to simulate normal operating conditions (with reference to the guidance given in the standard for this type of equipment).

Traffic Mode:

The EUT is required to be in the traffic mode, a call is set up according to the generic call set up procedure and enter the EUT into loop back test mode.

For WCDMA, the following conditions shall also be met:

Logical Test Interface for details regarding generic call set-up procedure and BER, BLER test loop scenarios:

Set and send continuously up power control commands to the UE;

The DTX shall be disabled;

Inner Loop Power Control shall be enabled;

Transmitting and/or receiving (UL/DL) bit rate for reference test channel shall be 12.2 kbit / s.

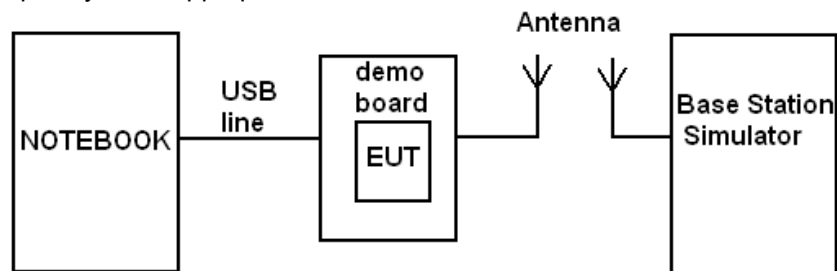
The EUT shall be commanded to operate at maximum transmit power;

For EGSM and DCS, the following conditions shall also be met:

The EUT shall be commanded to operate at maximum transmit power;

The downlink RXQUAL shall be monitored.

Assign channel frequency to an appropriate channel number.



Idle Mode:

The EUT will be connected to test system (Base Station Simulator) in order to simulate normal operating conditions (with reference to the guidance given in the standard for this type of equipment).

The EUT is required to be in the idle mode.

For WCDMA, the following conditions shall be met:

UE shall be camped on a cell;

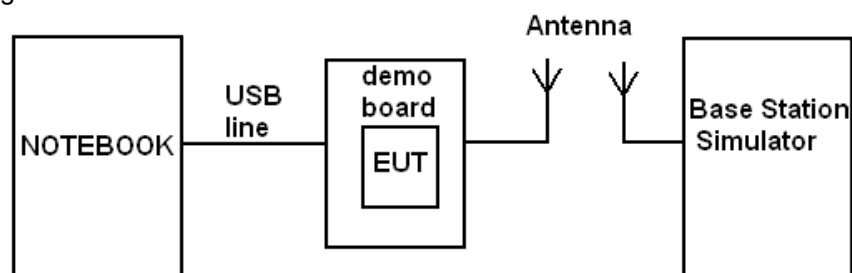
UE shall perform Location Registration (LR) before the test, but not during the test;

UE's neighbor cell list shall be empty;

Paging repetition period and DRX cycle shall be set to minimum (shortest possible time interval).

For GSM and DCS, the following conditions shall be met:

When the EUT is required to be in the idle mode, the test system shall simulate a Base Station (BS) with Broadcast Control Channel/Common Control Channel (BCCH/CCCH) on one carrier. The EUT shall be synchronized to the BCCH, listening to the CCCH and able to respond to paging messages. Periodic Location Updating shall be disabled.



8 Summary of test results

- ☒ All of the performed measurements are passed
☐ At least one of the performed measurements is failed

EUT Classification: Wireless Terminal				
Test Items	Test Configuration & Test Mode	Required Performance Criteria	Result	Site
Radiated Emissions Enclosure Port	TC1 (TM11-TM20)	N/A	Pass	Site1
Radiated Spurious Emissions Enclosure Port	TC1 (TM1-TM20)	N/A	Pass	Site1
Immunity To Radiated Electromagnetic Fields Enclosure Port	TC1 (TM1-TM20)	CT/CR	Pass	Site1
Immunity To Electrostatic Discharge Enclosure Port	TC1 (TM1-TM20)	TT/TR	Pass	Site1
Note: 1, Measurement taken is within the measurement uncertainty of measurement system. 2, TC = Test configuration				

8.1 Immunity Performance Criteria

During immunity test, the EUT was monitored for compliance against the performance "CT&CR, TT&TR" criteria as appropriate for the particular test applied. The "pass/fail" performance criterion to be used during test is detailed below:

8.1.1 Performance Criterion CT&CR (Continuous Phenomena)

Data service:
In traffic mode:

For WCDMA, the performance criteria during the test can be one of the following:
 If the BER (as referred in TS 134 109) is used, it shall not exceed 0.001 during the test sequence;
 If the BLER (as referred in TS 134 109) is used, it shall not exceed 0.01 during the test sequence.
 The BLER calculation shall be based on evaluating the CRC on each transport block.
 At the conclusion of the test, the EUT shall operate as intended with no loss of user control functions or stored data, and the communication link shall have been maintained.

For GSM and DCS

A communication link shall be established at the start of the test, and maintained during the test, the RXQUAL of the downlink shall not exceed the value of 3, measured during each individual exposure in the test sequence.

For GPRS and EGPRS, BLER should not exceed 10%.

At the conclusion of the test, the EUT shall operate as intended with no loss of user control functions or stored data, and the communication link shall have been maintained.

In idle mode:
The transmitter shall not unintentional operate.

Speech service: < if application >

Not applicable.

8.1.2 Performance Criterion TT&TR (Transient Phenomena)

Data service:

In traffic mode:

A communications link shall be established at the start of the test,

At the conclusion of each exposure it shall be verified that the communications link has been maintained. At the conclusion of the total test comprising the series of individual exposures, the EUT shall operate as intended with no loss of user control functions or stored data, as declared by the manufacturer, and the communications link shall have been maintained.

In idle mode:

The transmitter shall not unintentional operate.

Audio service: < if application >

Not applicable.

8.2 Measurement uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

RE	Field strength (dB μ V/m)	U=4.2dB; k=2(30MHz-1GHz)
RE	Field strength (dB μ V/m)	U=4.9dB; k=2(1GHz-6GHz)
RSE	ERP (dBm)	U=2.2dB; k=2

9 Emission – Detailed test results

9.1 Electromagnetic Radiated Emissions 30 MHz to 6 GHz

9.1.1 Test Procedure

The test site semi-anechoic chamber has met the requirement of NSA tolerance 4dB according to the standards: ANSI C63.4. The test distance was 3m for 30MHz ~ 1GHz.

The test site full-anechoic chamber has met the requirement of VSWR tolerance 6dB according to the standards: CISPR 16-1-4. The test distance was 3m for 1GHz ~ 6GHz.

The set-up and test methods were according to EN 55022/CISPR 22

A preliminary scan and a final scan of the emissions were made from 30 MHz to 1GHz by using test script of software; the emissions were measured using Quasi-Peak Detector (30MHz~1GHz) and AV/PK Detector (above 1GHz). The maximal emission value was acquired by adjusting the antenna height, polarization and turntable azimuth in accordance with the software setup. Normally, the height range of antenna was 1m to 4m, the azimuth range of turntable was 0° to 360°, The receive antenna has two polarizations V and H.

Conditional testing procedure:

The highest internal source of a EUT is defined as the highest frequency generated or used within the EUT or on which the EUT operates or tunes.

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
< 108	1000
108 - 500	2000
500 - 1000	5000
Above 1000	5th harmonic of the highest frequency or 6GHz, whichever is less

9.1.2 Test Results

The EUT has met the requirements for Radiated Emission of enclosure port.

Test Limits		
Frequency (MHz)	Distance (m)	QP (dBuV/m)
30 - 230	3	40
230 - 1000	3	47

Test Limits			
Frequency (GHz)	Distance (m)	Average (dBuV/m)	Peak (dBuV/m)
1-3	3	50	70
3-6	3	54	74

9.2 Radiated Spurious Emissions 30 MHz to 12.75 GHz

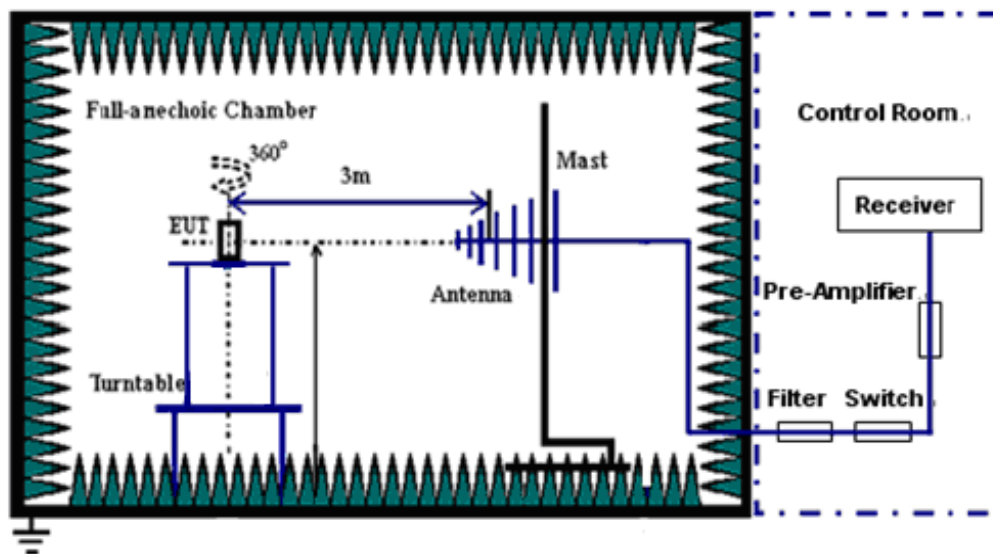
9.2.1 Test Procedure

A test site fulfilling the requirements of ITU-R Recommendation SM329-10 was used. The EUT was placed on a non-conducting support in the anechoic chamber and was operated from a power source via an RF filter to avoid radiation from the power leads.

Step 1:

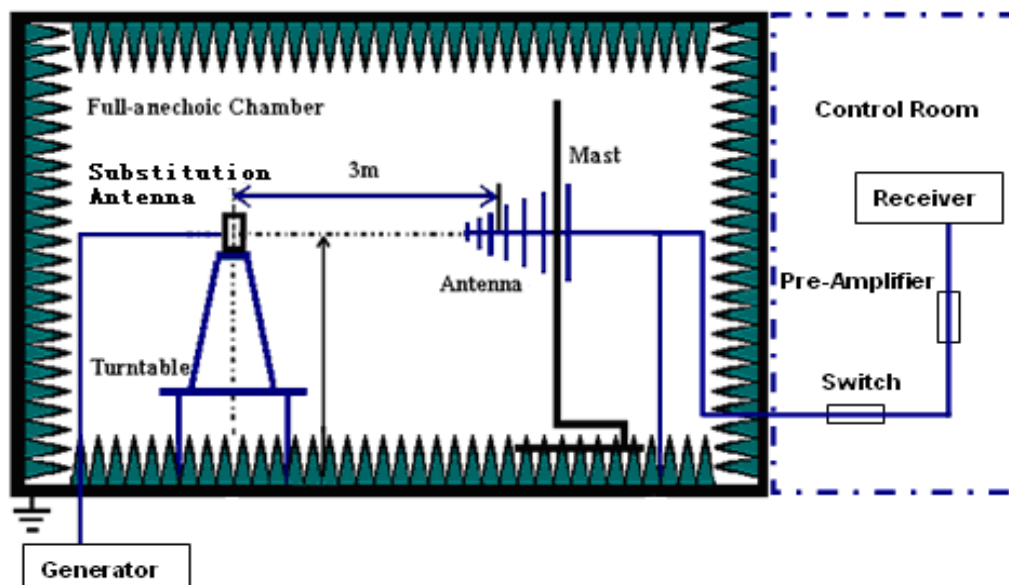
For transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, EIRP shall be measured when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in 2.1033(c)(8). Connect the EUT to the BTS simulator via the air interface.

Test the Radiated maximum output power by the Test Receiver from test antenna.



Step 2:

Use substitution method to verify the maximum output power. The EUT is substituted by a dipole antenna. The dipole is connected to a signal generator. And then adjust the output level of the signal generator to get the same received power recorded in step1 on Test Receiver, and record the power level of Signal Generator. Of course, the cable loss at the test frequency should be compensated.



Test should be performed in normal voltage condition and extreme voltage condition for GSM and DCS test modes. All test configurations were tested, but only the worst case data were showed in this test report.

Frequency band	Minimum requirement (E.R.P) idle mode	Minimum requirement (E.R.P) traffic mode
WCDMA		
30MHz~1GHz	-57dBm	-36dBm
1GHz~12.75GHz	-47dBm	-30dBm
Fc1 - 4MHz < f < Fc2 + 4 MHz	NA	Not defined
GSM900		
30MHz to 880MHz	-57dBm	-36dBm
880MHz to 915MHz	-59 dBm	
915MHz to 1000MHz	-57 dBm	
1GHz to 1710MHz	-47 dBm	-30dBm
1710MHz to 1785MHz	-53 dBm	
1785MHz to 4GHz	-47 dBm	
DCS1800		
30MHz to 880MHz	-57dBm	-36dBm
880MHz to 915MHz	-59 dBm	
915MHz to 1000MHz	-57 dBm	
1GHz to 1710MHz	-47 dBm	-30dBm
1710MHz to 1785MHz	-53 dBm	-36dBm
1785MHz to 4GHz	-47 dBm	-30dBm

9.2.2 Test results

The EUT has met the requirements of ETSI EN 301 511 and ETSI EN 301 908-1

10 Immunity – Detailed test results

10.1 Radio frequency electromagnetic field (80 MHz to 2.7GHz)

10.1.1 Test Procedure

The EUT was configured as described in section 7 for this test. The set-up and test methods were according to IEC 61000-4-3. All sides of the EUT (front, rear, left and right) were tested by antenna with vertical and horizontal polarization.

10.1.2 Test Results

The EUT has met the requirements of Performance Criterion CT&CR for Immunity to Radiated Electric Fields of enclosure port.

Test side of EUT	Front, Rear, Left, Right
Criterion	CT&CR
Frequency range & Test Level	80MHz –1000MHz test level:3 V/m(Unmodulated, rms) 1400MHz –2700MHz test level:3 V/m(Unmodulated, rms)
Modulation	80% AM, 1kHz
Exclusion band	GSM900: Transmit Band: 902.1MHz~902.7MHz Receive Band: 896.5MHz~1008MHz DCS1800: Transmit Band: 1746.9MHz~1747.5MHz Receive Band: 1696.7MHz~1974MHz WCDMA Band I: Transmit Band: 1937.5MHz~1962.5MHz Receive Band: 2025MHz~2255MHz WCDMA Band VIII: Transmit Band: 885MHz~910MHz Receive Band: 840MHz~1045MHz
Special frequency points	80 MHz, 120 MHz, 160 MHz; 230 MHz; 434 MHz; 460 MHz; 600 MHz; 863 MHz and 900 MHz; 1750MHz;1950MHz ($\pm 1\%$).
Conclusion	Pass

10.2 Electrostatic discharge

10.2.1 Test Procedure

The EUT was configured as described in section 7 for this test. The set-up and test methods were according to IEC 61000-4-2.

10.2.2 Test Results

The EUT has met the requirements of Performance Criterion TT&TR for Immunity to Electrostatic Discharge of enclosure port.

Details of the points tested were presented in Table below.

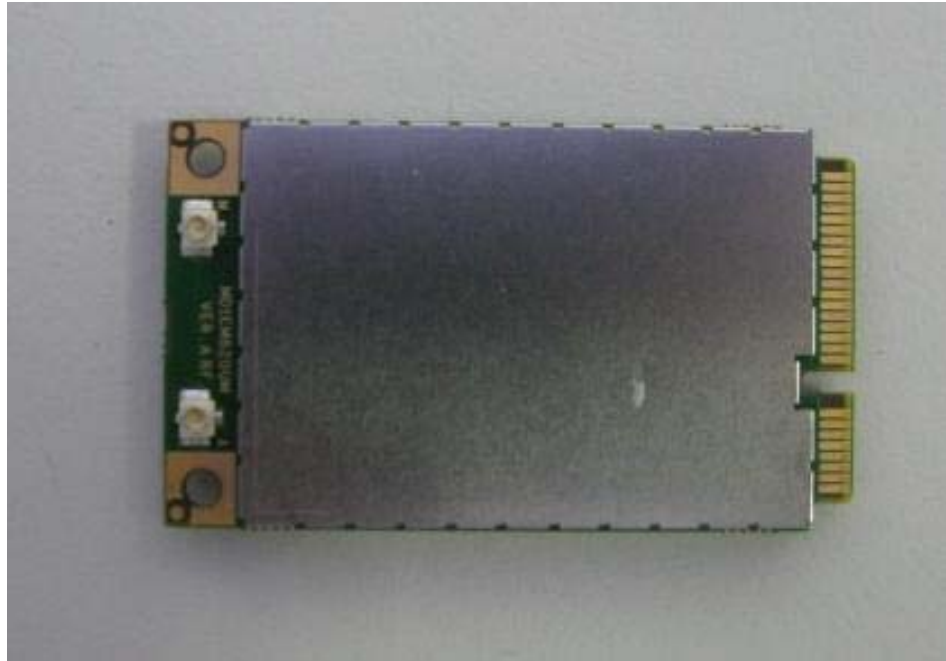
Test Points	Specification Level				Conclusion
	±2kV,±4kV, Contact Discharges		±2kV,±4kV, ±8kV Air Discharges		
	Positive	Negative	Positive	Negative	
Horizontal Coupling Plane-front	√	√	N/A	N/A	Pass
Horizontal Coupling Plane-rear	√	√	N/A	N/A	Pass
Horizontal Coupling Plane-left	√	√	N/A	N/A	Pass
Horizontal Coupling Plane-right	√	√	N/A	N/A	Pass
Vertical Coupling Plane-front	√	√	N/A	N/A	Pass
Vertical Coupling Plane-rear	√	√	N/A	N/A	Pass
Vertical Coupling Plane-left	√	√	N/A	N/A	Pass
Vertical Coupling Plane-right	√	√	N/A	N/A	Pass
RF port	√	√	N/A	N/A	Pass
Shield crust	√	√	N/A	N/A	Pass

√ The EUT's performance was not impaired at this test point when the ESD pulse was applied.

11 Test equipment and ancillaries used for tests

Test item	Test Instrument	Model	Manufacturer	Cal-Date	Cal Interval (month)
RE&RSE	EMI Test receiver	ESU26	R&S	Jun.25, 2010	12
	Broadband Antenna	VULB 9163	SCHWARZBECK	May.15,2010	12
	Horn Antenna	HF906	R&S	May.15,2010	12
	EMI Test receiver	ESIB26	R&S	April.22,2010	12
	Horn Antenna	3117	EMCO	Oct.25.2010	12
	Broadband Antenna	CBL6112B	SCHAFFNER	Oct.28.2010	12
RS	Signal Generator	SMR40	R&S	Jun.24,2010	12
	Amplifier	BLWA0830-160/10/40D	BONN	Jun.24,2010	12
ESD	ESD Simulator	NSG437	TESEQ	Jul.26.2010	12
Software Information					
Test Item		Software Name	Manufacturer	Version	
RE		ES-K1	R&S	1.7.1	
RSE		EMC32	R&S	V5.10.99	
RS		EMC32	R&S	V8.30.10	

Annex A: Photographs of the EUT



EM820W Appearance

Annex B: Photographs of the test set-up

Radiated Emission



Radiated Disturbance Emissions (30MHz-1GHz)



Radiated Disturbance Emissions (above 1GHz)

Radiated Spurious Emission

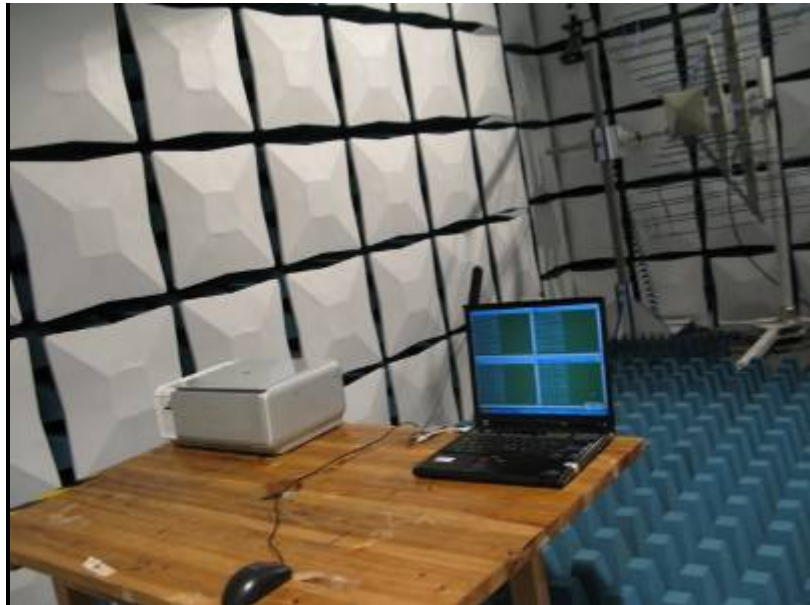


Radiated Spurious Emission-30M~2GHz



Radiated Spurious Emission-2G~12.75GHz

Immunity



Immunity to Radiated Electric Fields



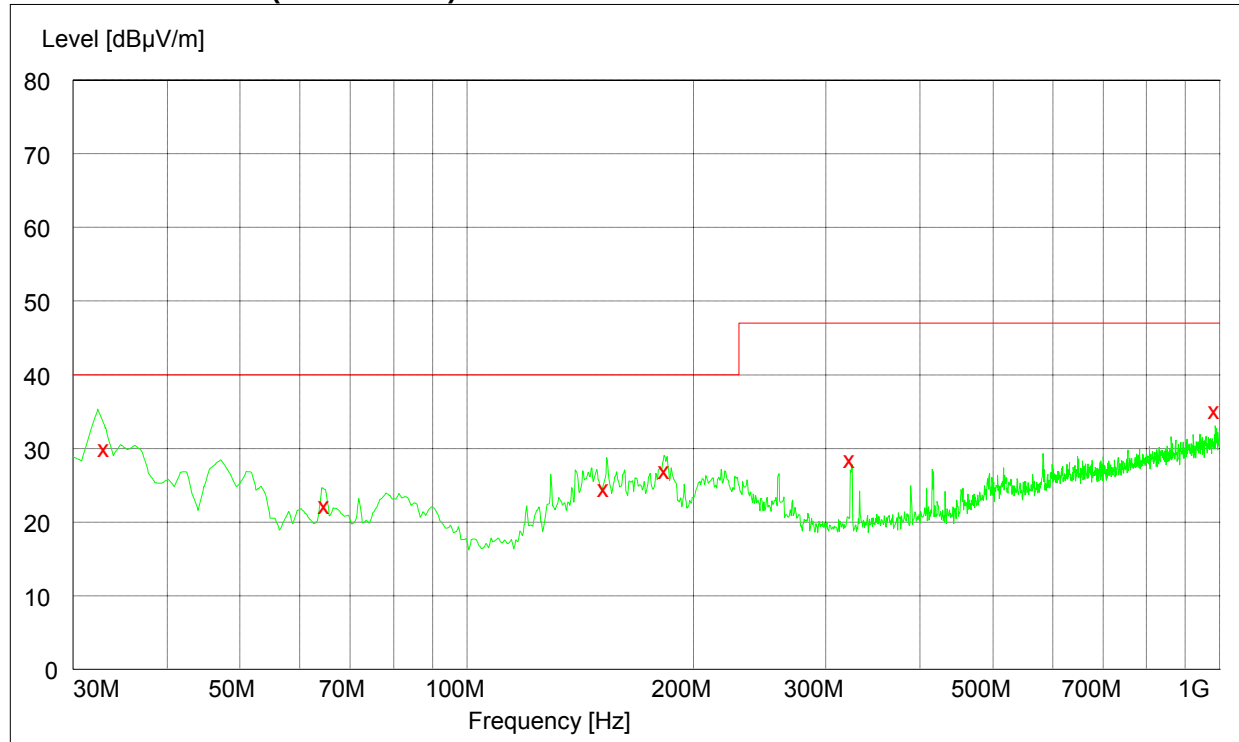
Immunity to Electrostatic Discharge

Annex C: Graph and Data of Emission Test

Radiated Disturbance

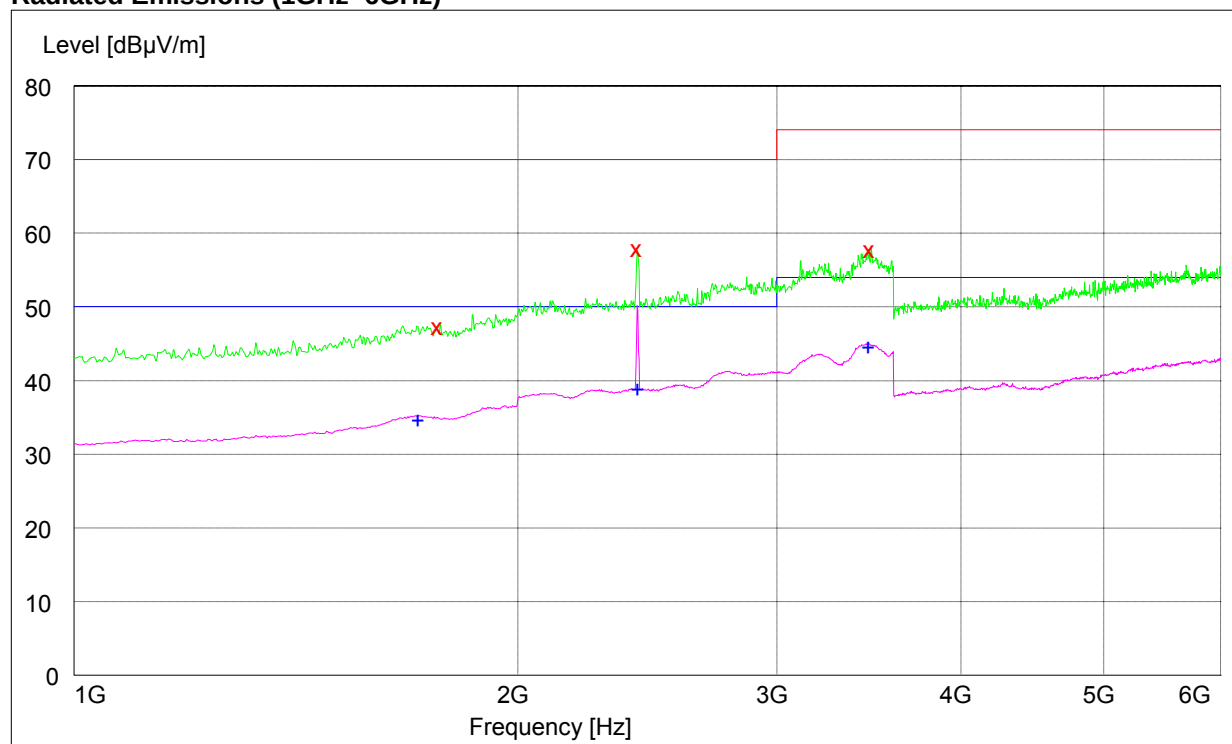
This test was carried out in all the test modes, here only the worst test result was shown.

Radiated Emissions (30MHz~1GHz)



MEASUREMENT RESULT: QP Detector

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Height cm	Azimuth deg	Polarization
33.060000	30.20	11.7	40.0	9.8	110.0	232.00	VERTICAL
64.860000	22.40	10.5	40.0	17.6	100.0	75.00	VERTICAL
152.580000	24.80	9.1	40.0	15.2	104.0	168.00	VERTICAL
183.660000	27.20	11.3	40.0	12.8	100.0	165.00	VERTICAL
324.060000	28.70	16.2	47.0	18.3	140.0	156.00	VERTICAL
987.720000	35.30	27.0	47.0	11.7	231.0	2.00	VERTICAL

Radiated Emissions (1GHz~6GHz)**MEASUREMENT RESULT: PK Detector**

Frequency	Level	Transd	Limit	Margin	Height	Azimuth	Polarization
MHz	dBμV/m	dB	dBμV/m	dB	cm	deg	
1767.500000	47.50	31.2	70.0	22.5	100.0	158.00	VERTICAL
2413.500000	58.10	33.5	70.0	11.9	100.0	235.00	VERTICAL
3470.000000	58.00	37.6	74.0	16.0	100.0	107.00	HORIZONTAL

MEASUREMENT RESULT: AV Detector

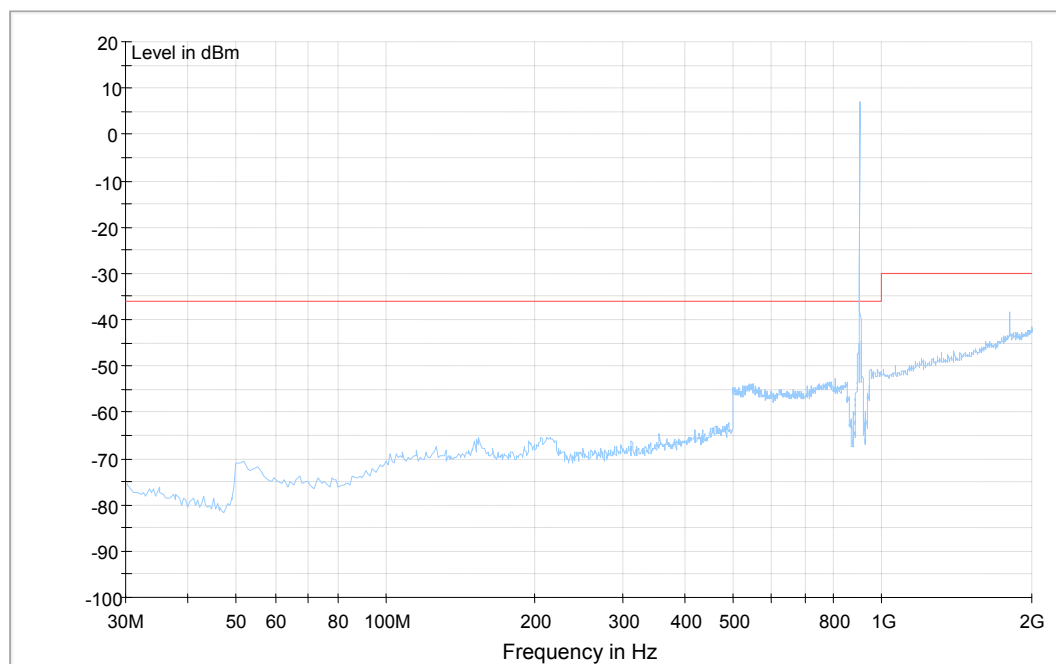
Frequency	Level	Transd	Limit	Margin	Height	Azimuth	Polarization
MHz	dBμV/m	dB	dBμV/m	dB	cm	deg	
1713.000000	34.80	30.9	50.0	15.2	100.0	356.00	VERTICAL
2415.000000	39.00	33.5	50.0	11.0	100.0	261.00	VERTICAL
3464.000000	44.70	37.6	54.0	9.3	100.0	105.00	HORIZONTAL

Radiated Spurious Emissions

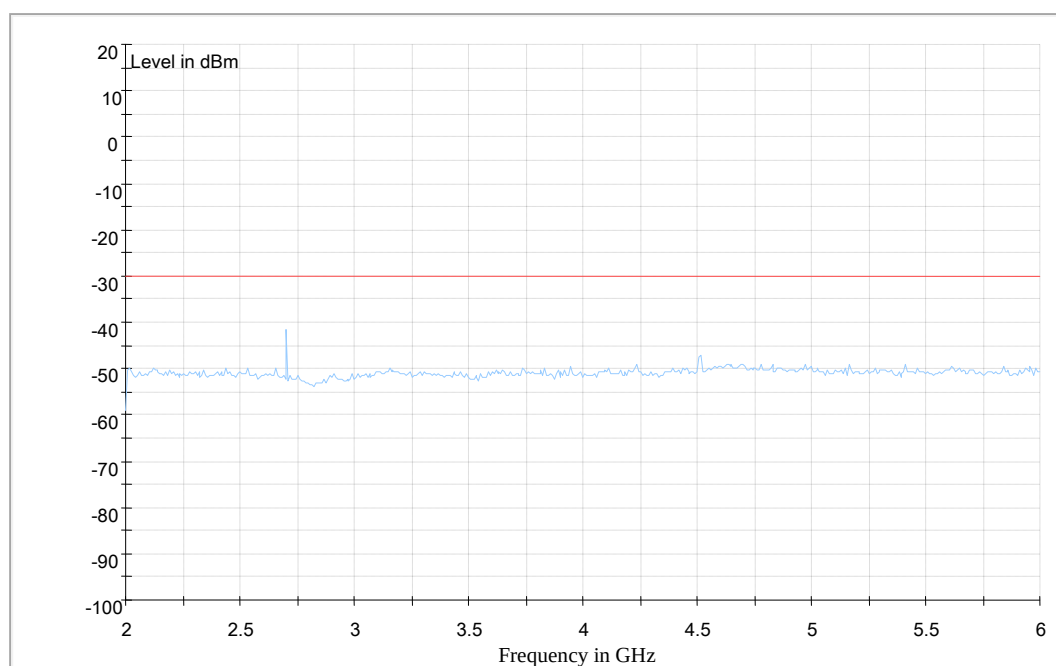
For GPRS 900

Traffic Mode (30MHz~2GHz)

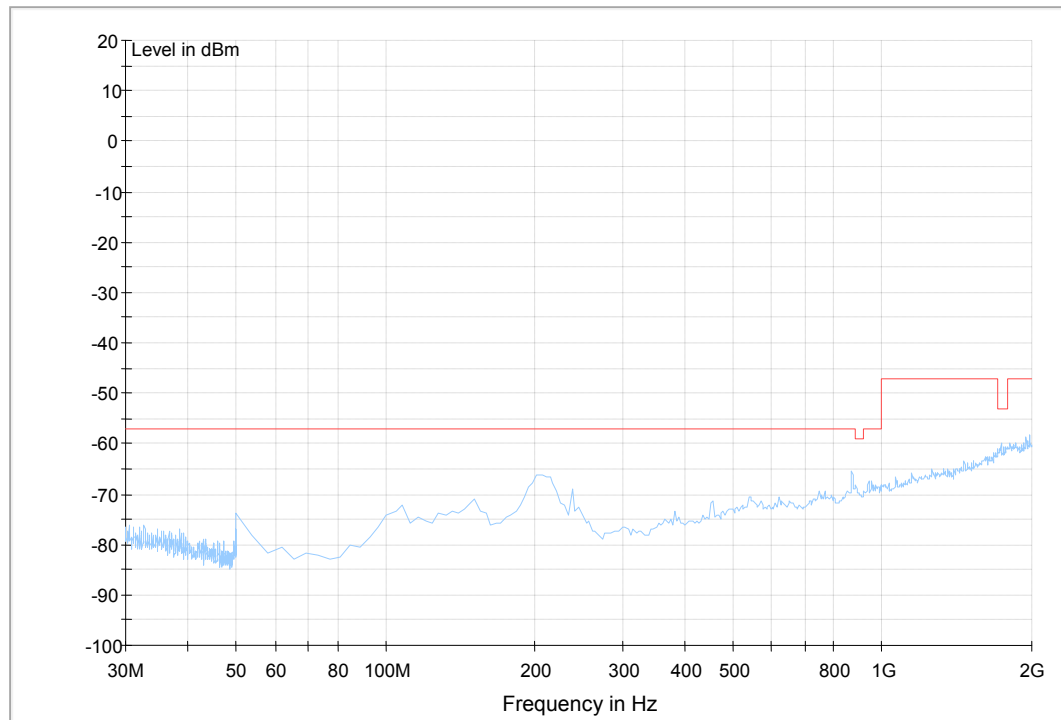
Note: The peak exceeds the limit line is carrier frequency.



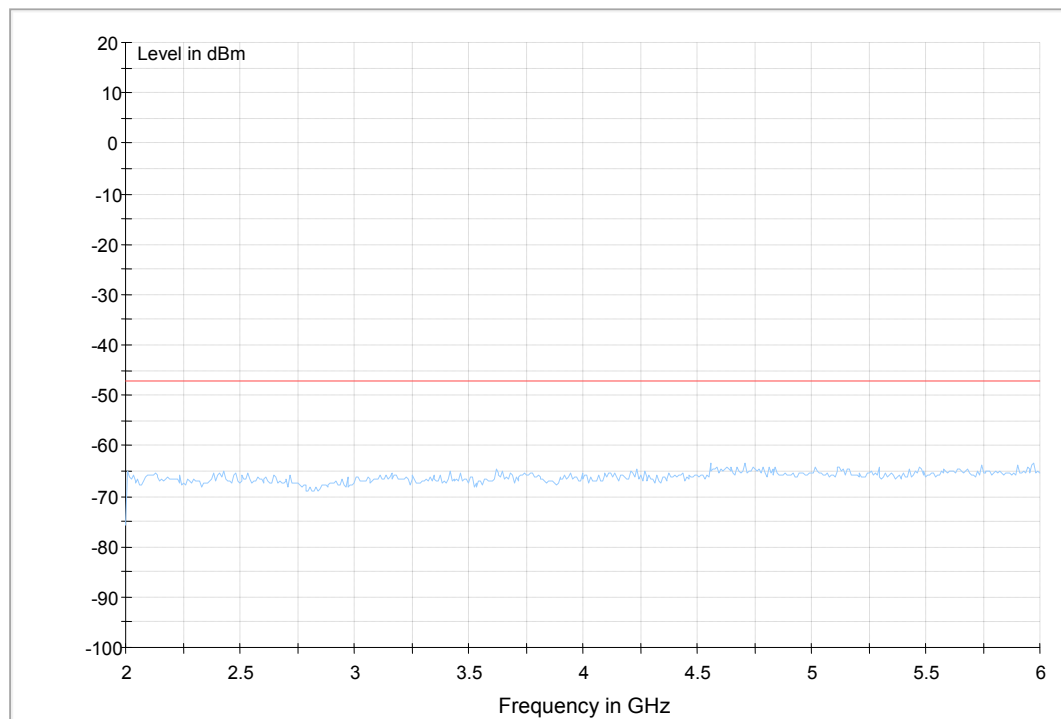
Traffic Mode (2GHz~6GHz)



Idle Mode (30MHz~2GHz)



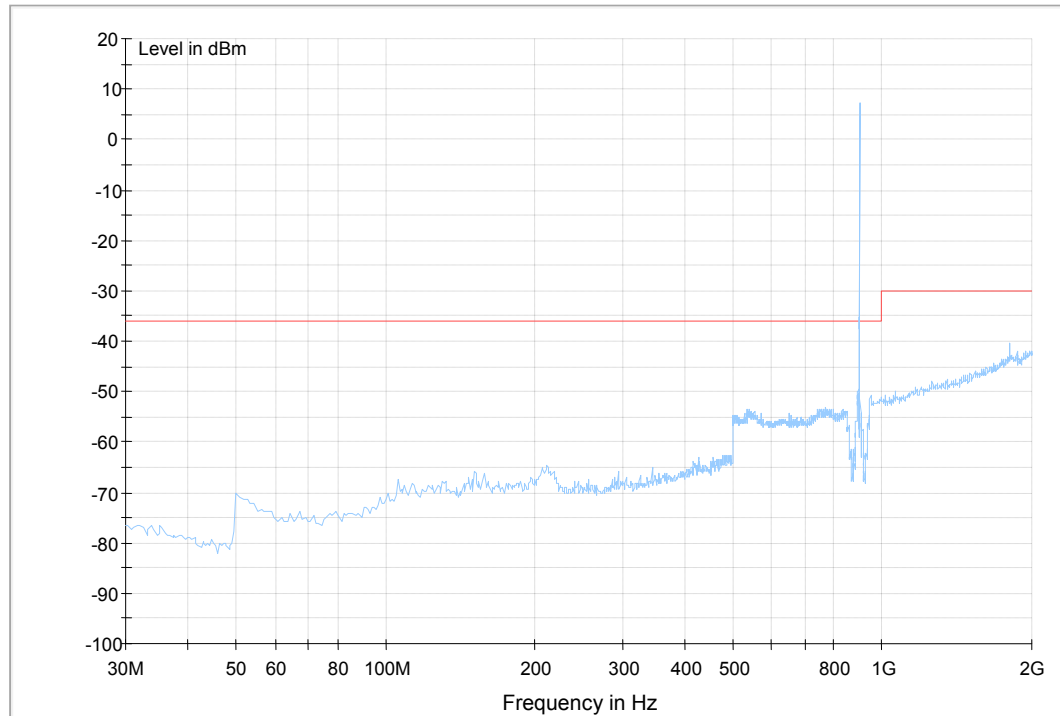
Idle Mode (2GHz~6GHz)



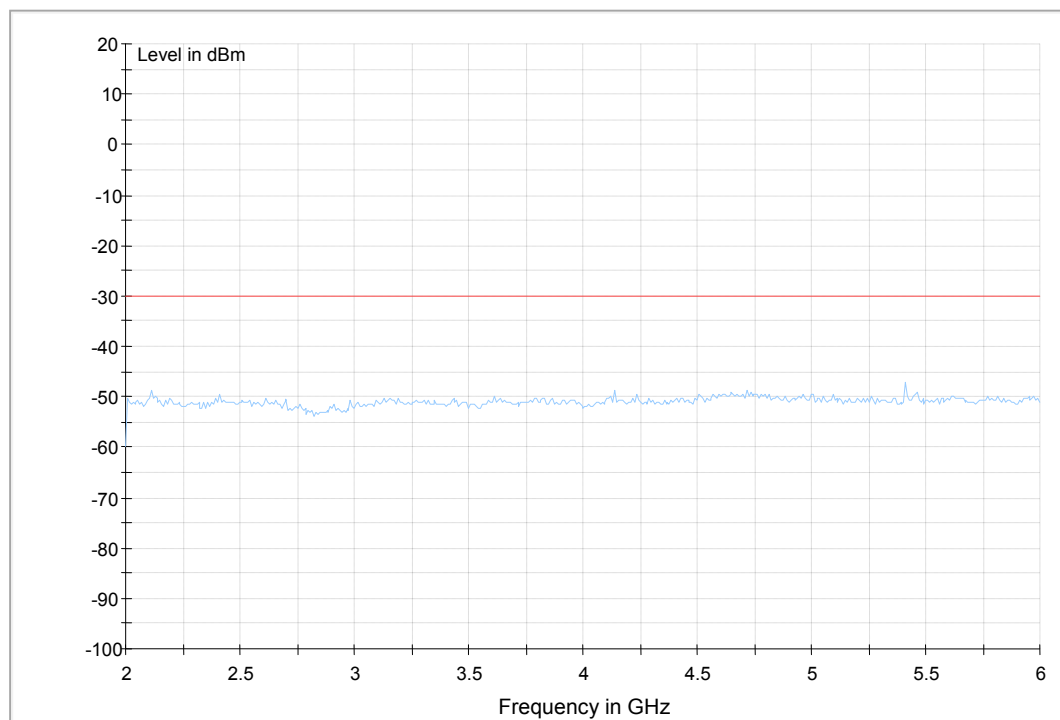
For EDGE 900

Traffic Mode (30MHz~2GHz)

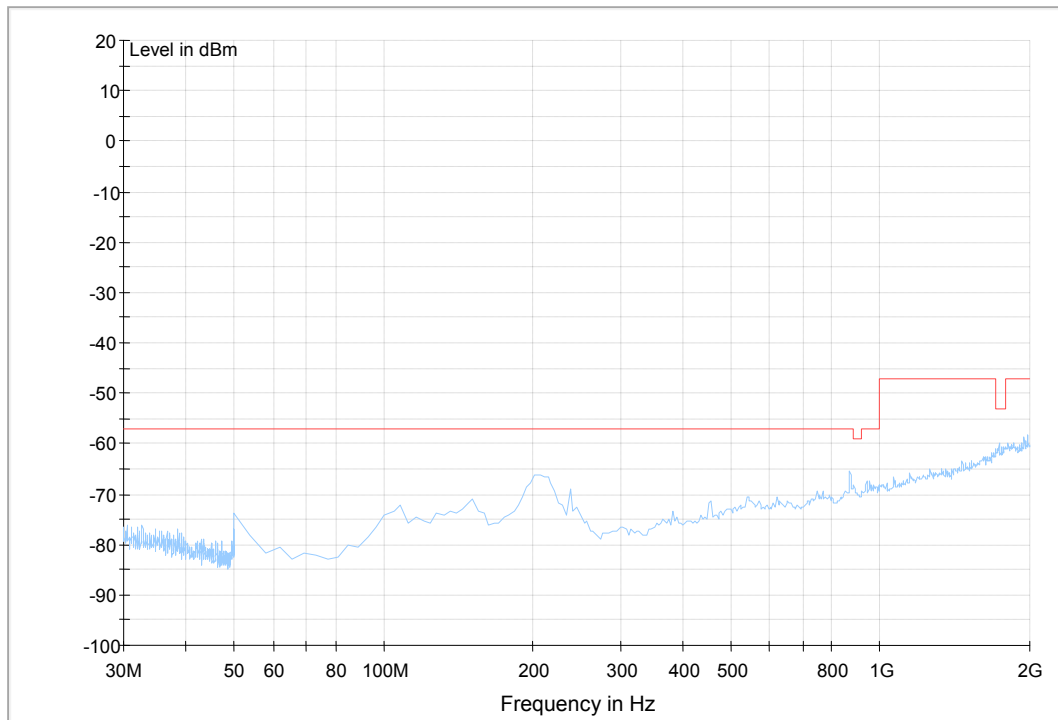
Note: The peak exceeds the limit line is carrier frequency.



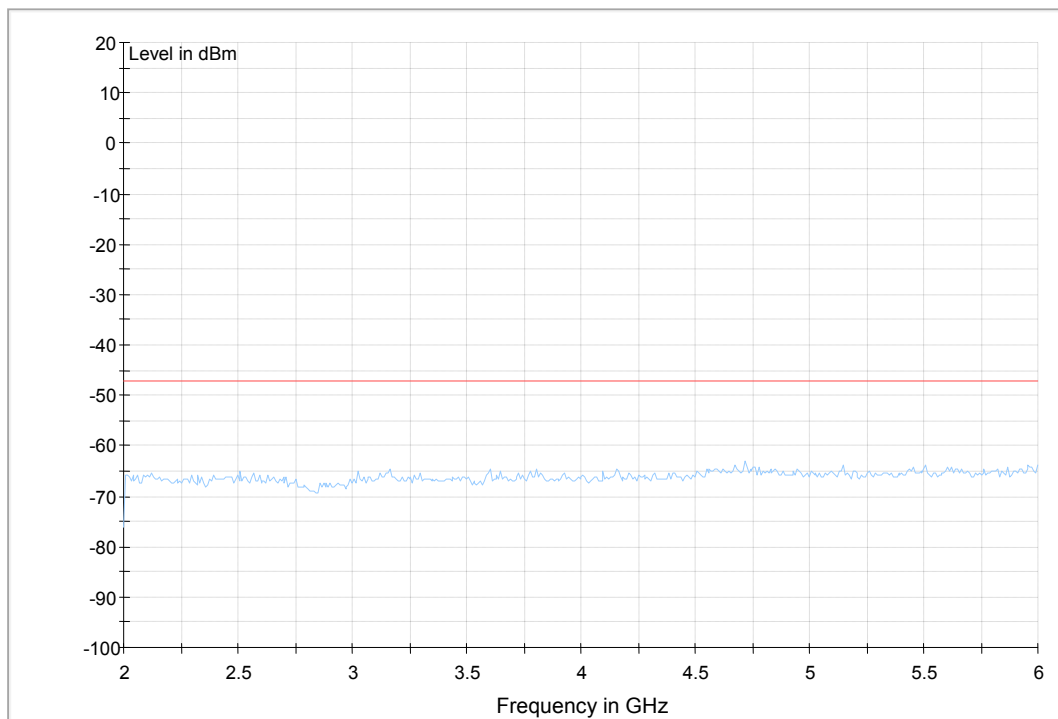
Traffic Mode (2GHz~6GHz)



Idle Mode (30MHz~2GHz)



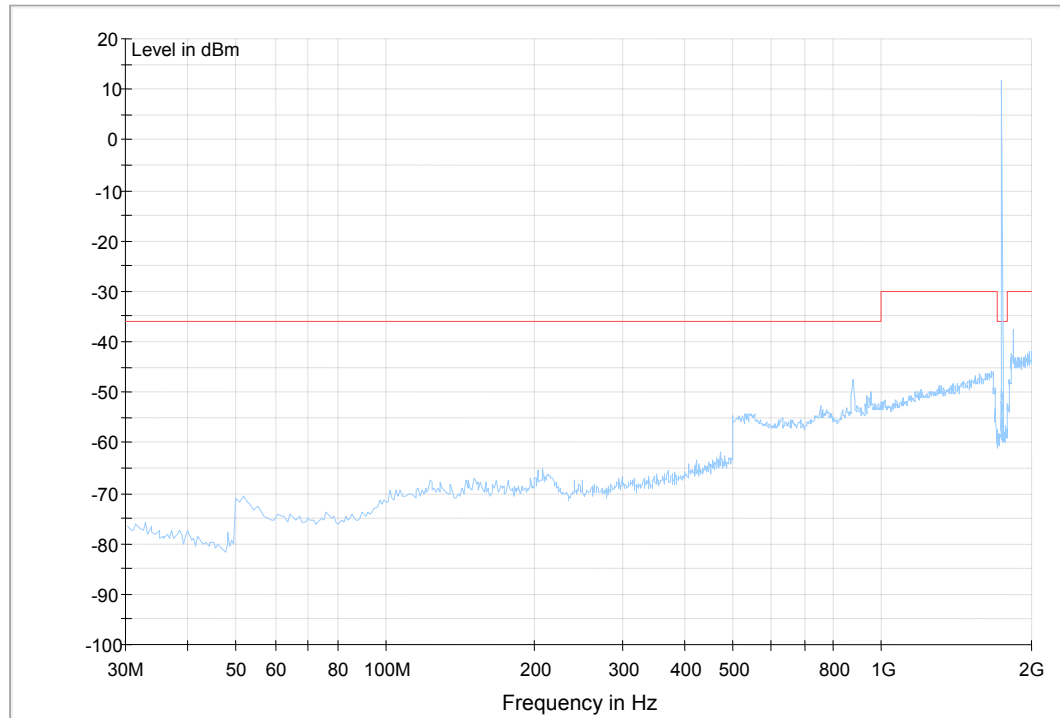
Idle Mode (2GHz~6GHz)



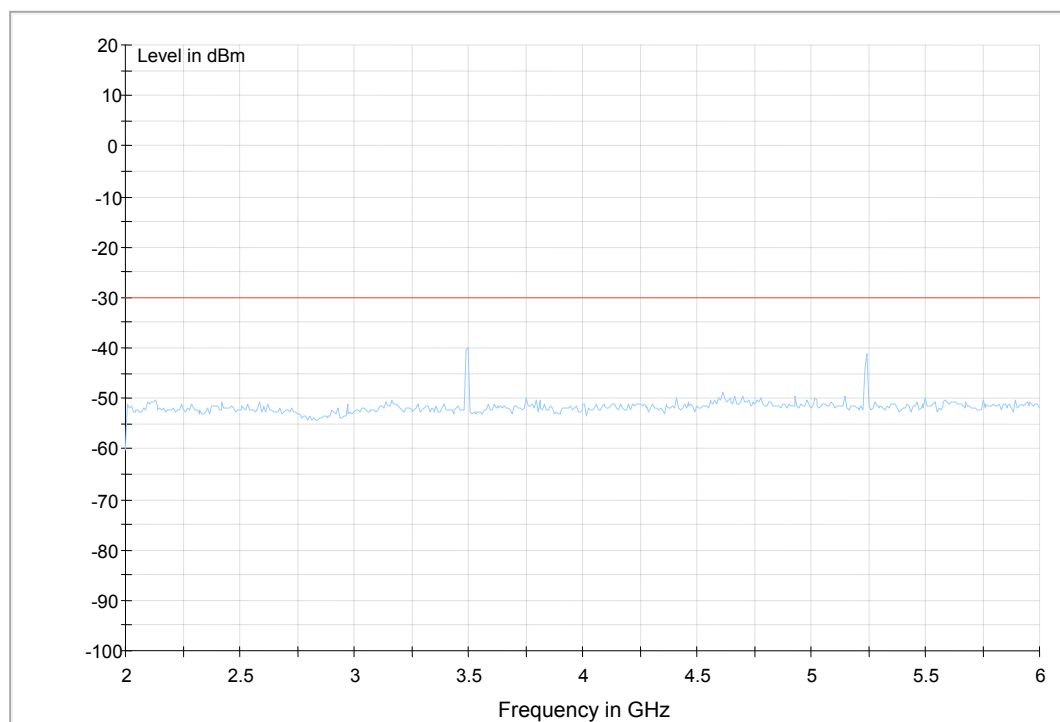
For GPRS 1800

Traffic Mode (30MHz~2GHz)

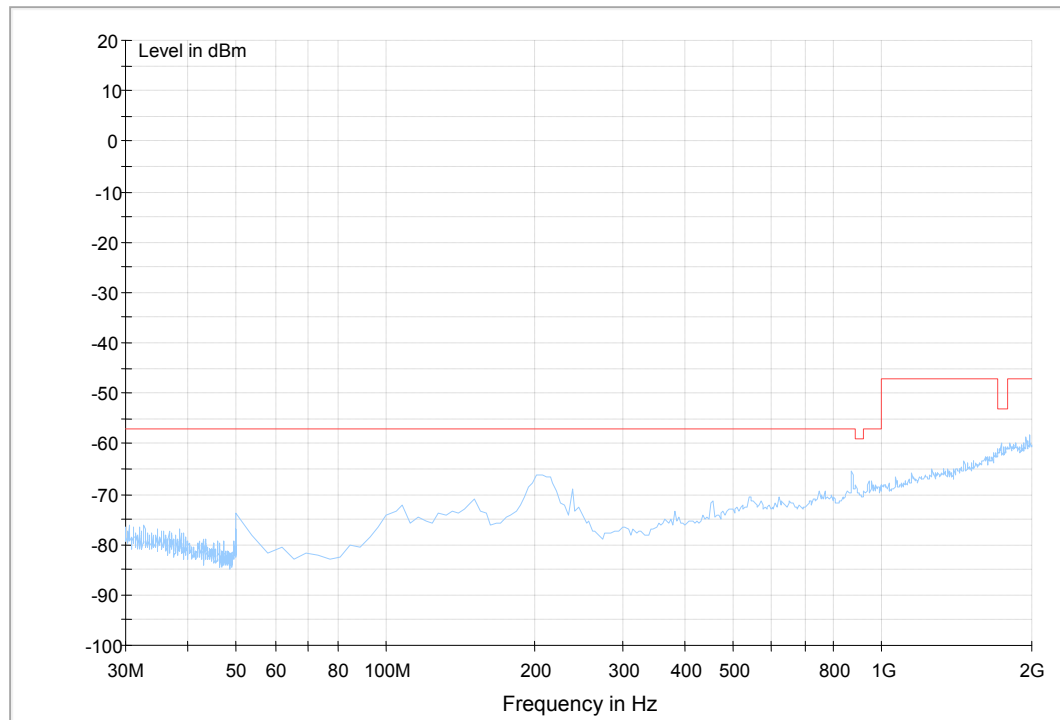
Note: The peak exceeds the limit line is carrier frequency.



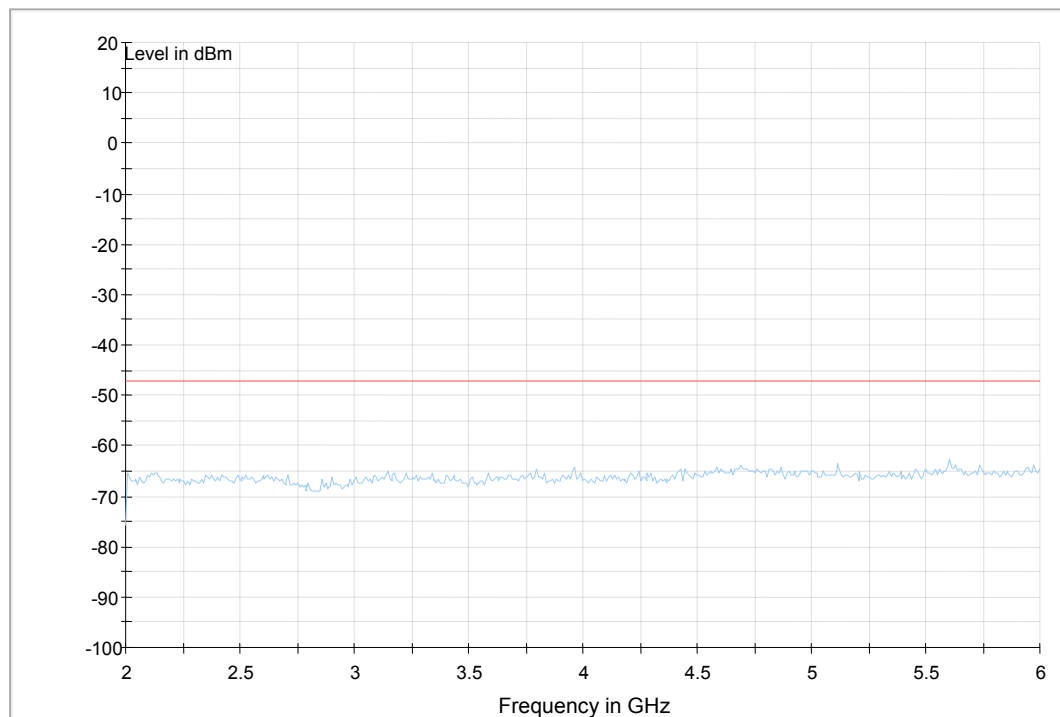
Traffic Mode (2GHz~6GHz)



Idle Mode (30MHz~2GHz)



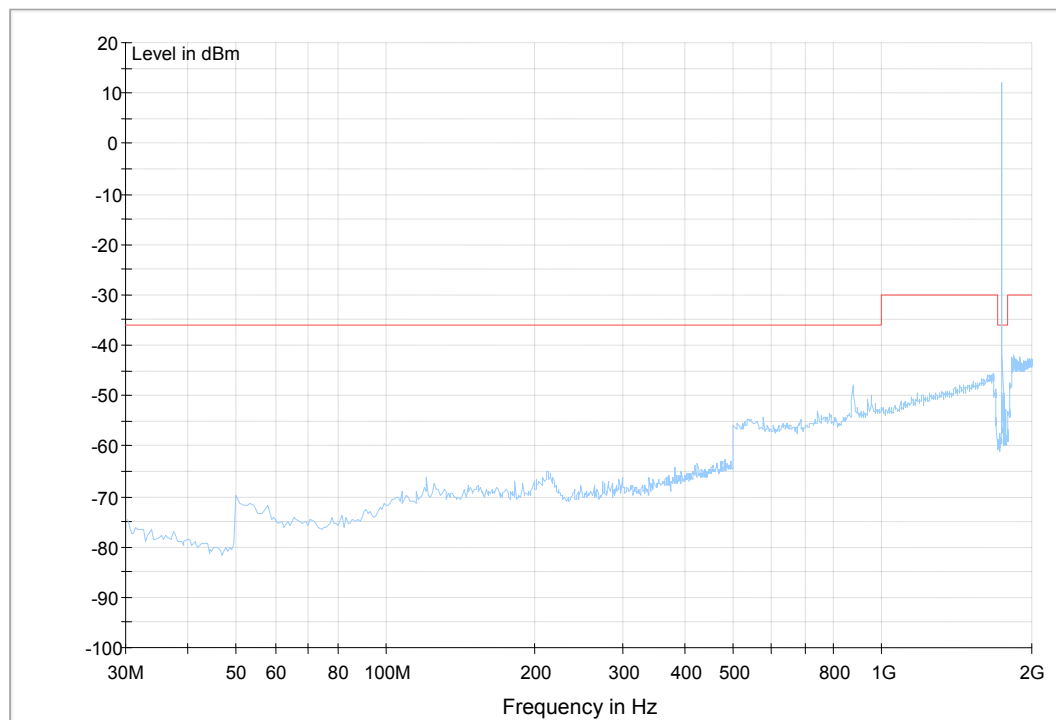
Idle Mode (2GHz~6GHz)



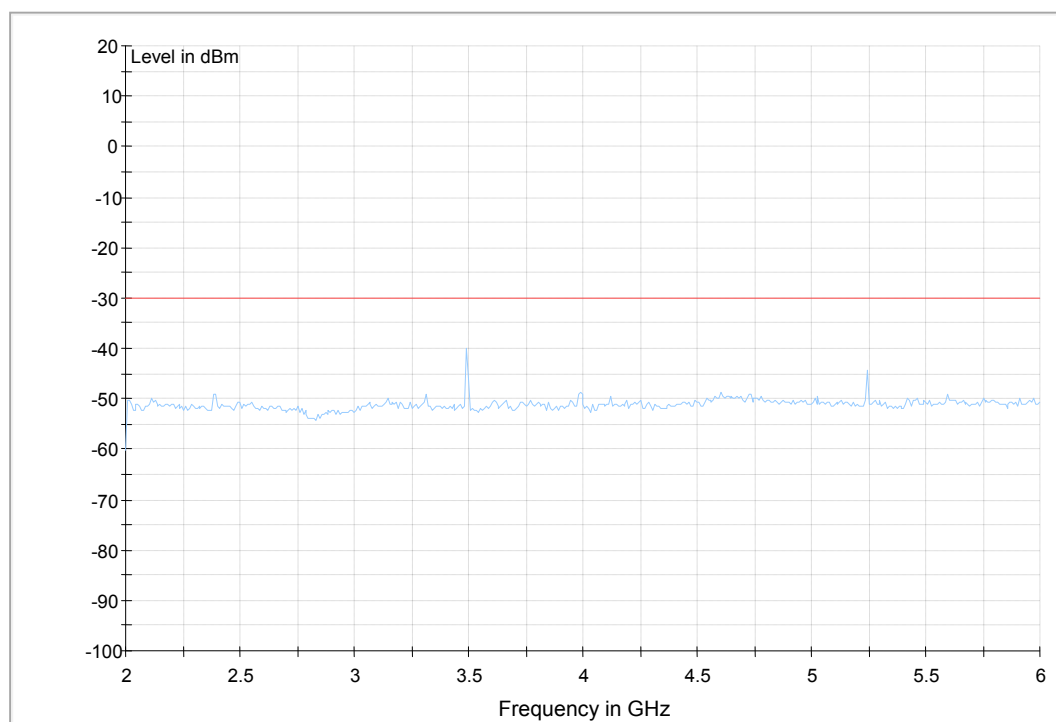
For EGPRS 1800

Traffic Mode (30MHz~2GHz)

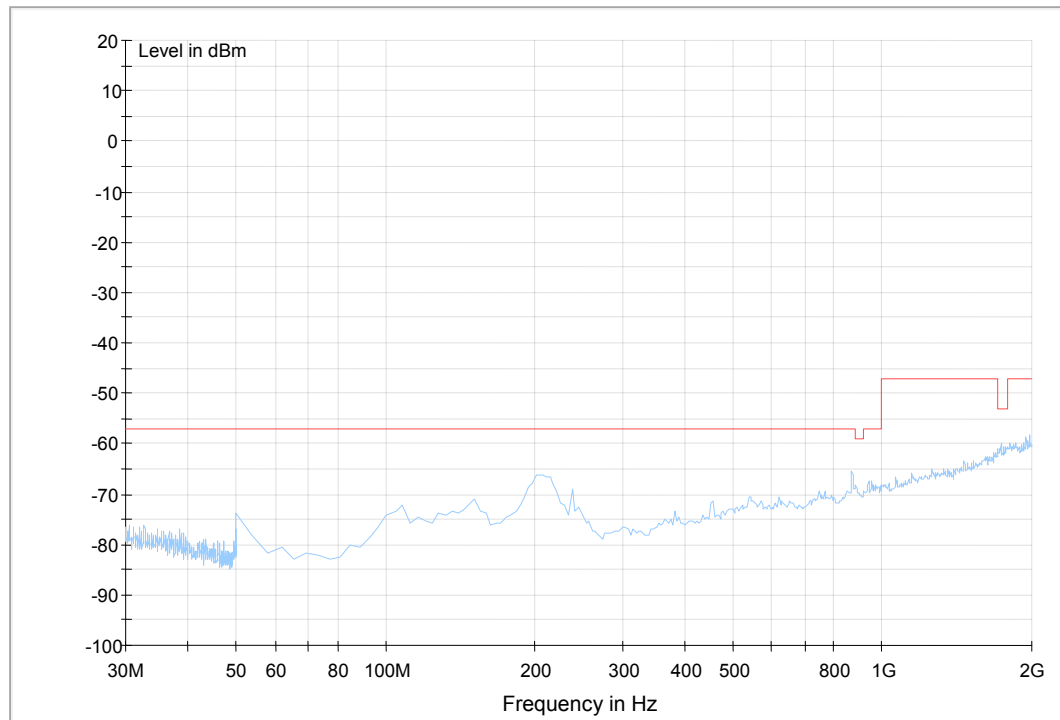
Note: The peak exceeds the limit line is carrier frequency.



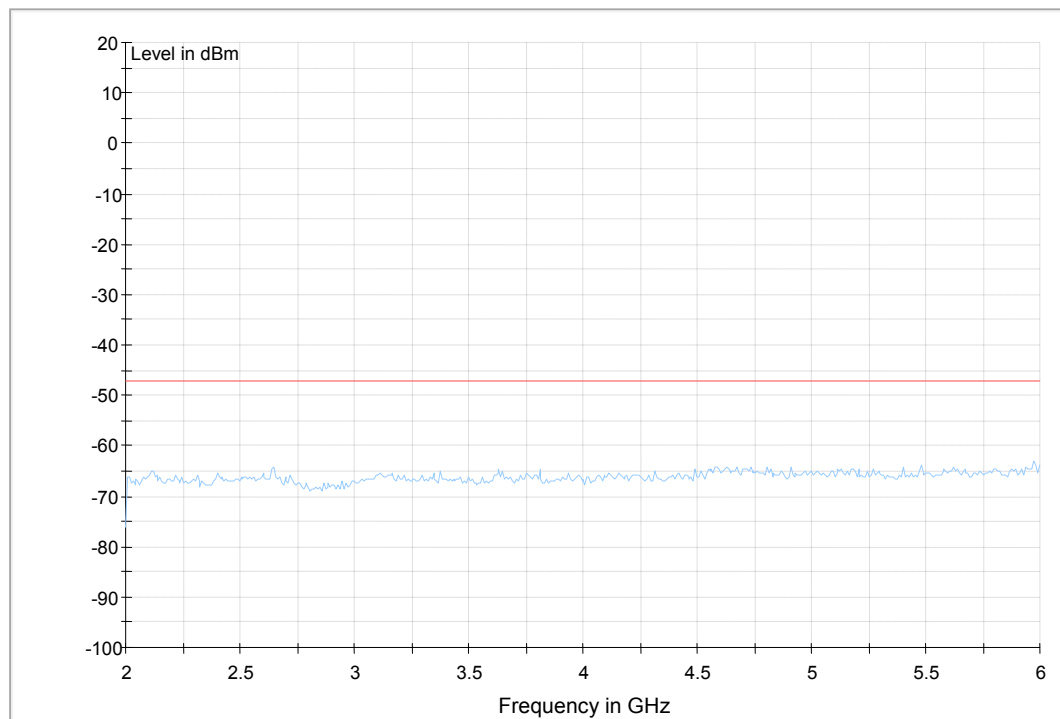
Traffic Mode (2GHz~6GHz)



Idle Mode (30MHz~2GHz)



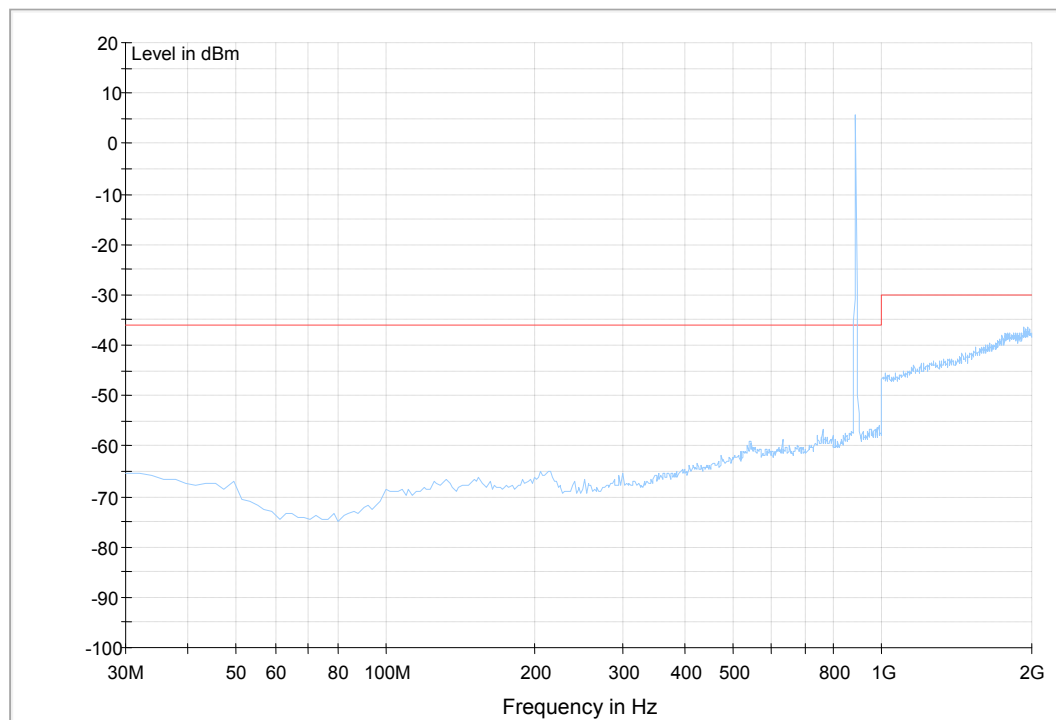
Idle Mode (2GHz~6GHz)



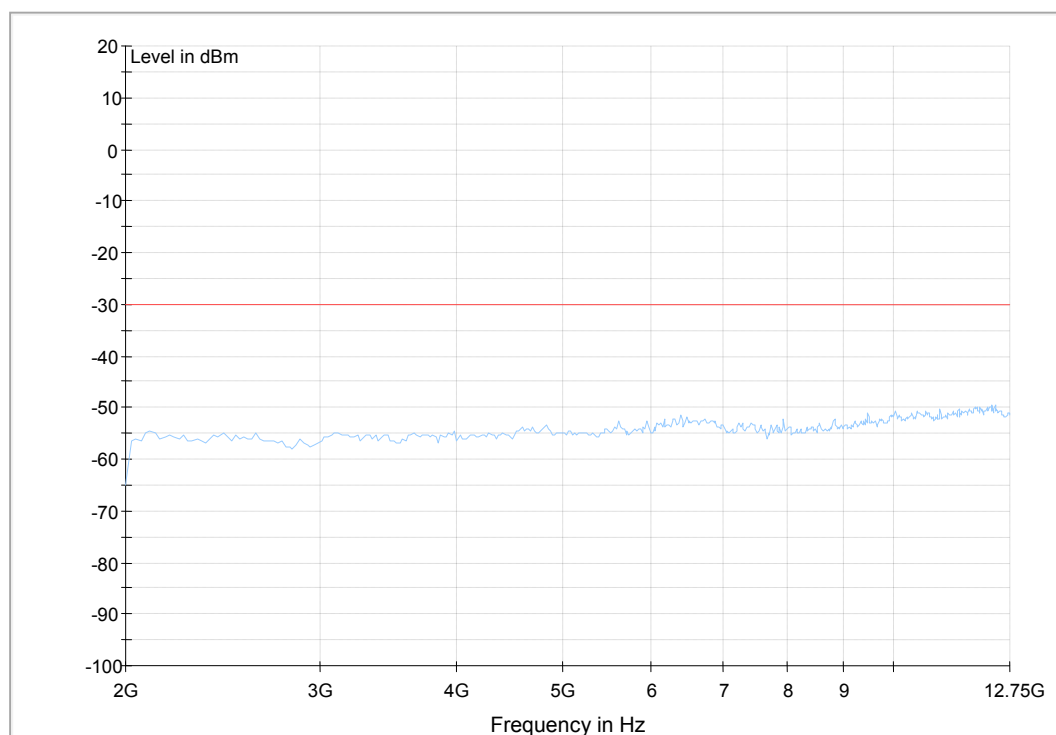
For WCDMA 900

Traffic Mode (30MHz~2GHz)

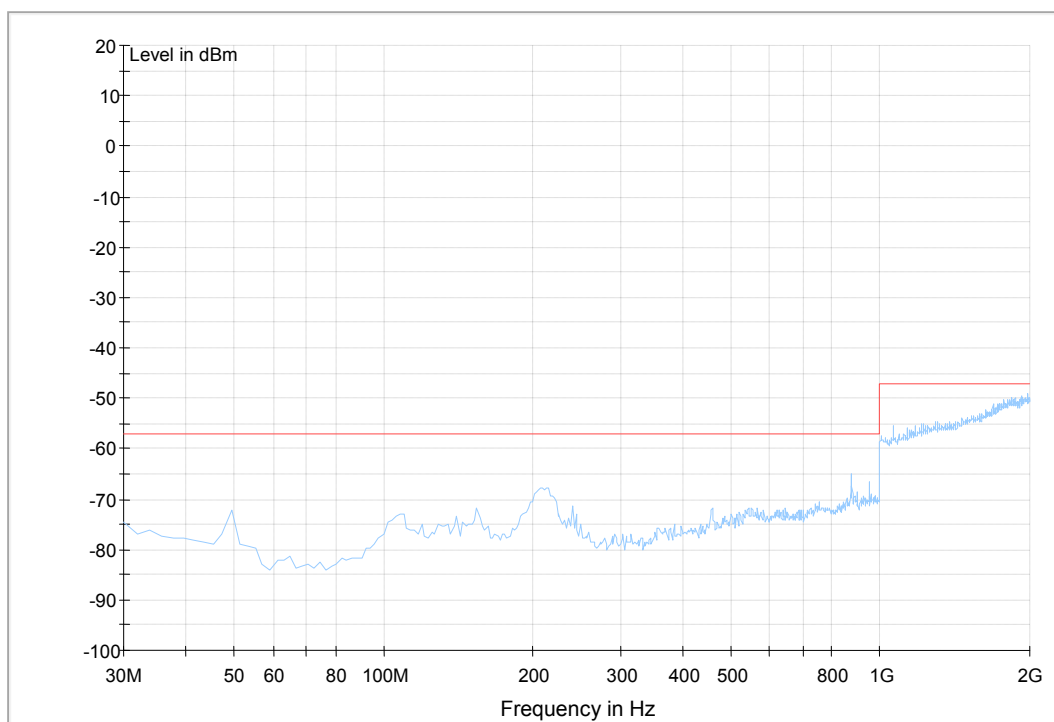
Note: The peak exceeds the limit line is carrier frequency.



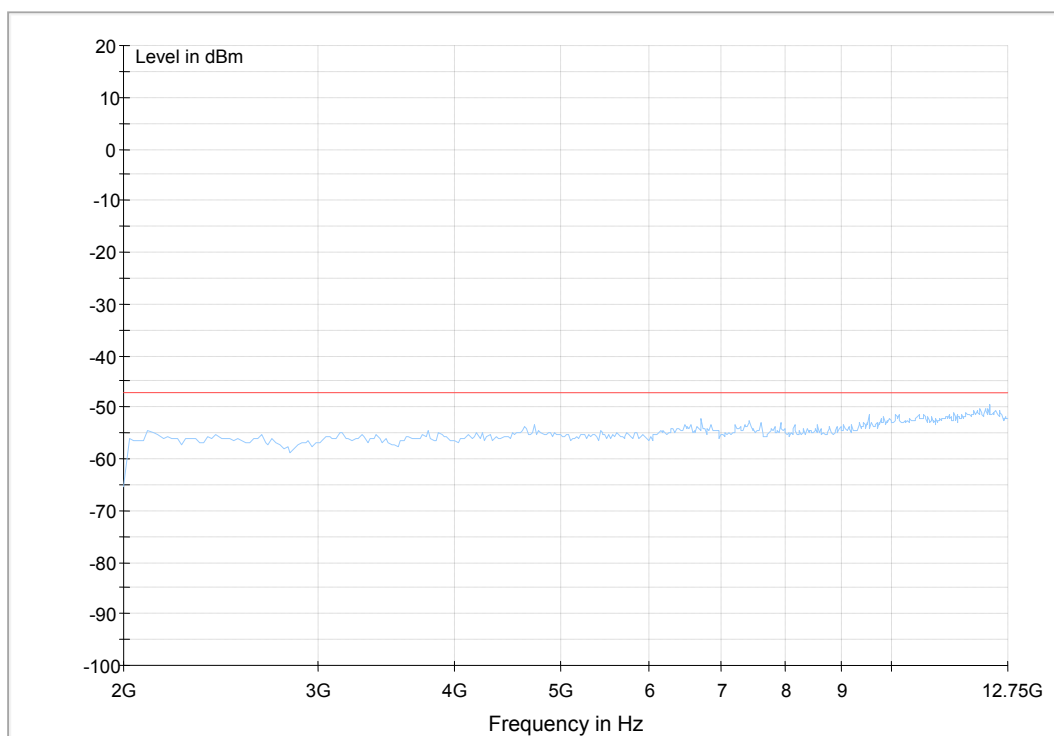
Traffic Mode (2GHz~12.75GHz)



Idle Mode (30MHz~2GHz)



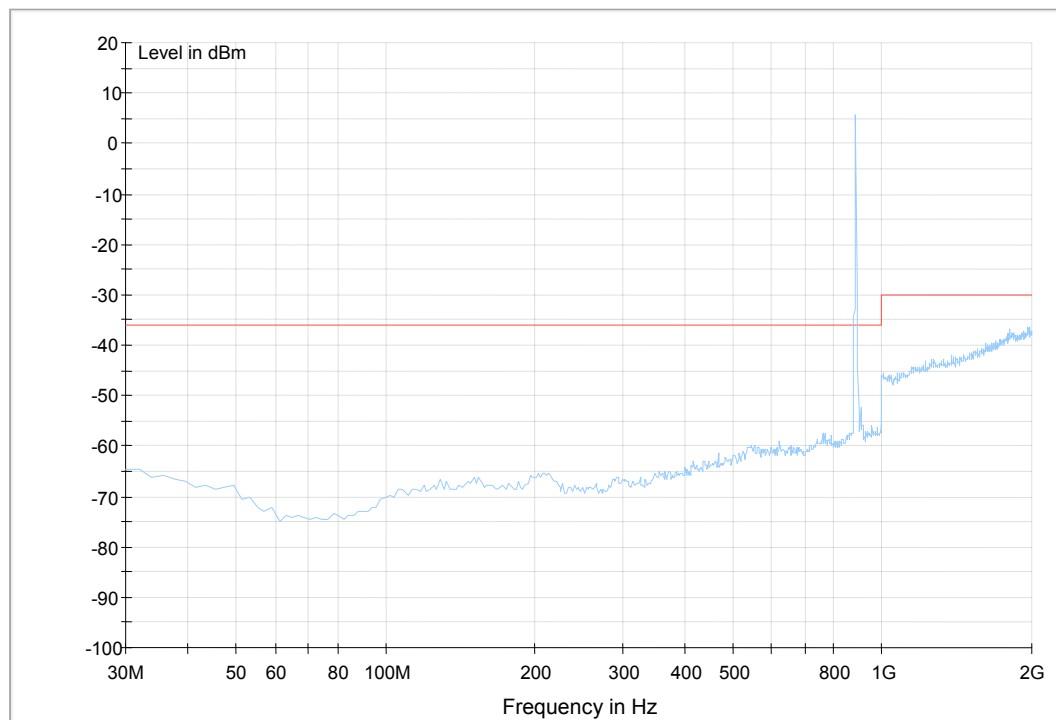
Idle Mode (2GHz~12.75GHz)



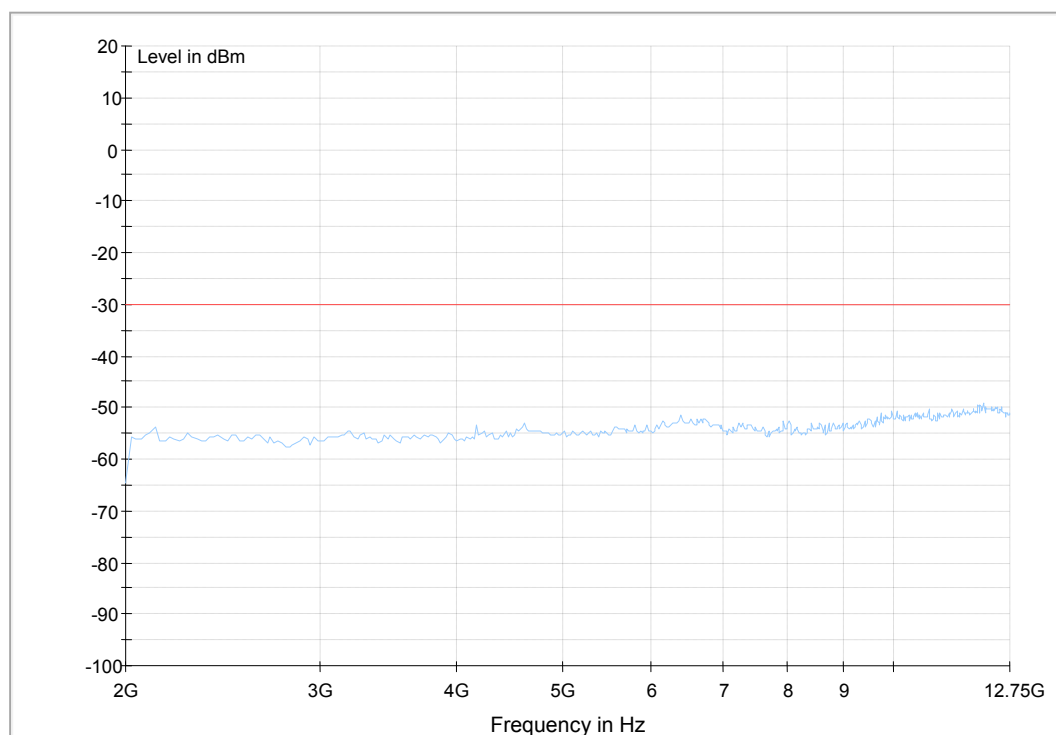
For HSDPA 900

Traffic Mode (30MHz~2GHz)

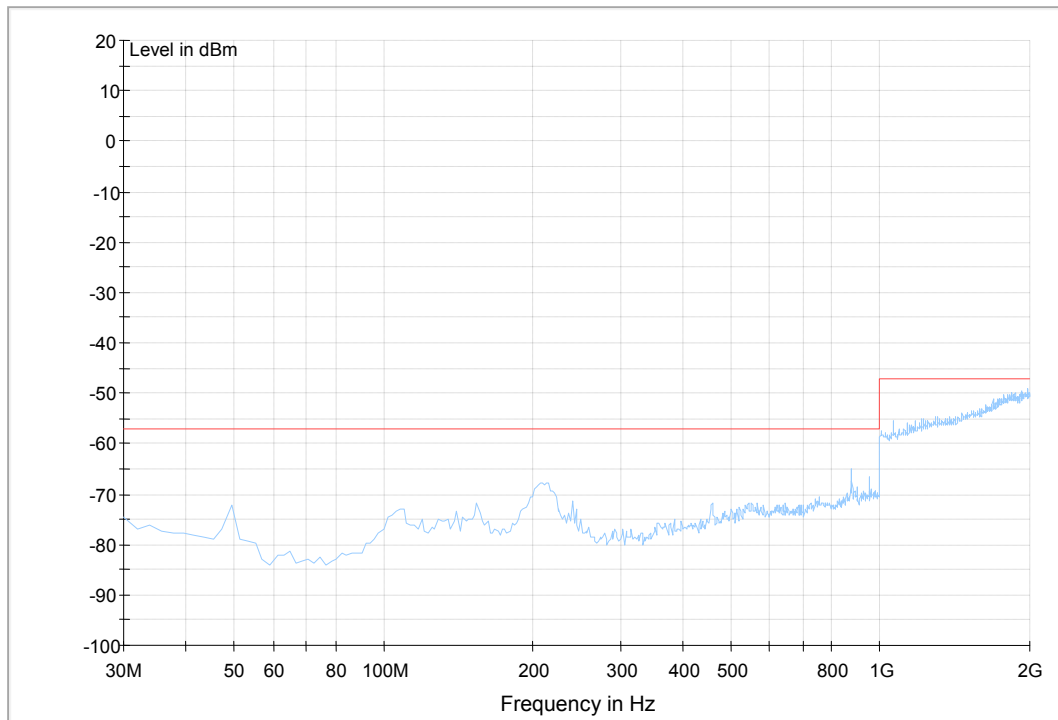
Note: The peak exceeds the limit line is carrier frequency.



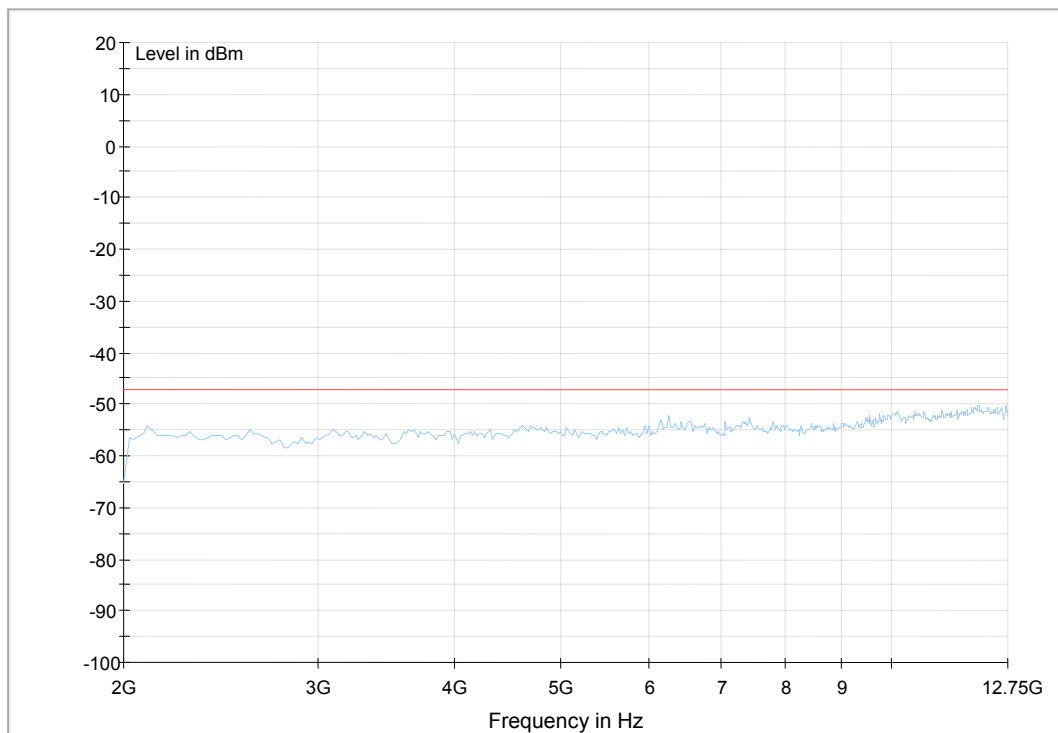
Traffic Mode (2GHz~12.75GHz)



Idle Mode (30MHz~2GHz)



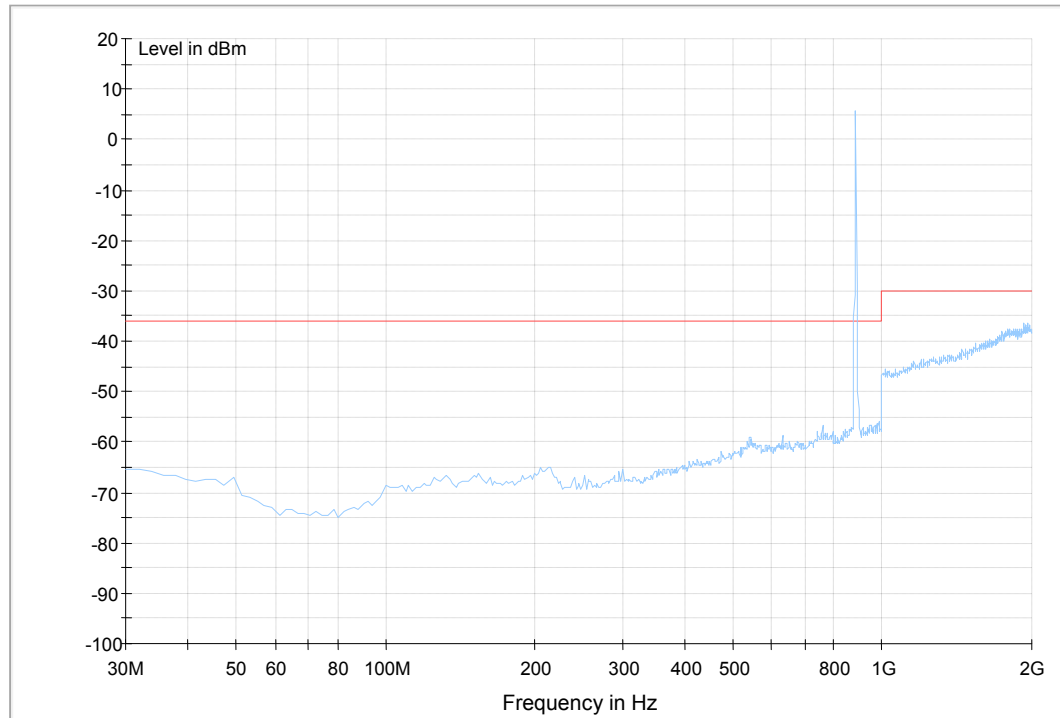
Idle Mode (2GHz~12.75GHz)



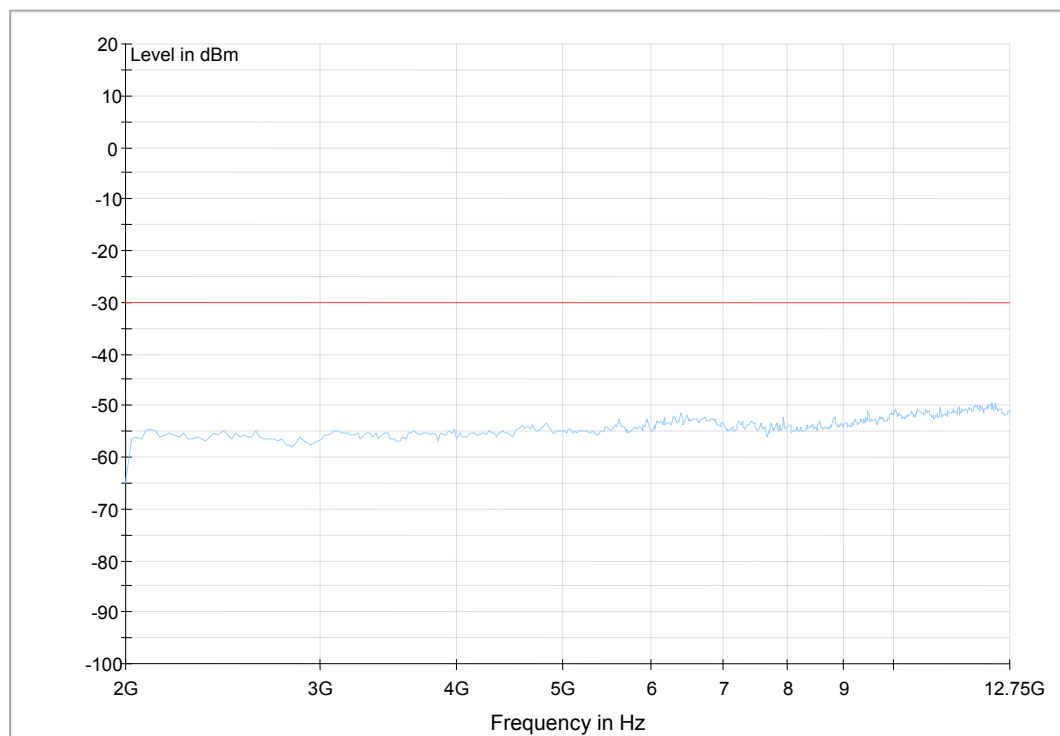
For HSUPA 900

Traffic Mode (30MHz~2GHz)

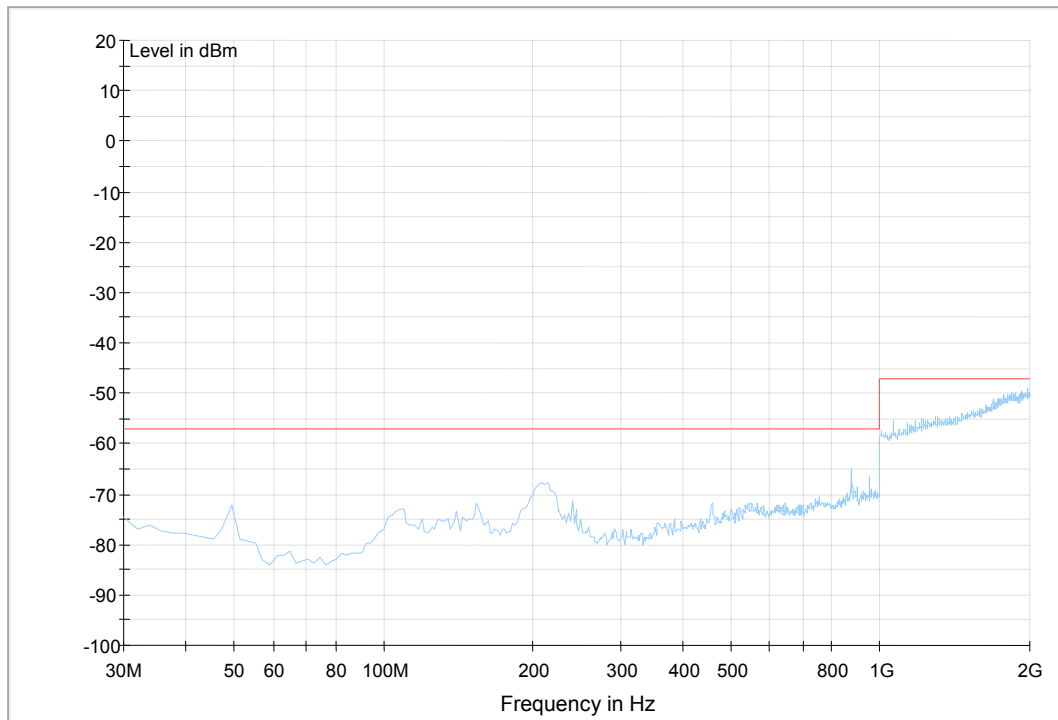
Note: The peak exceeds the limit line is carrier frequency.



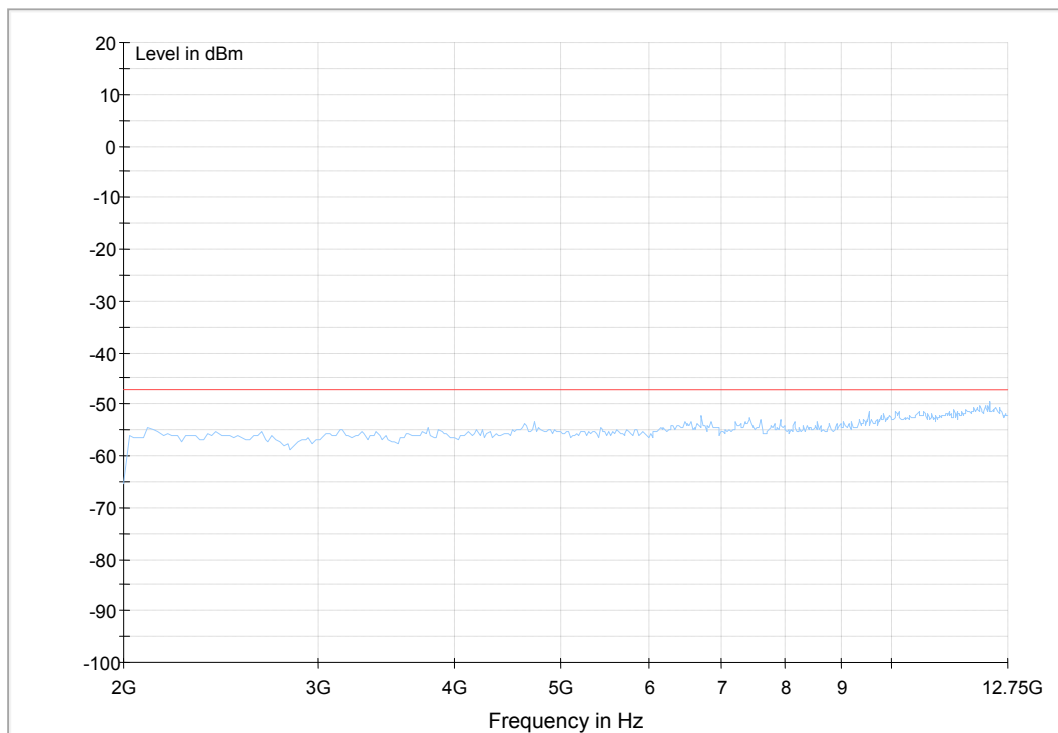
Traffic Mode (2GHz~12.75GHz)



Idle Mode (30MHz~2GHz)



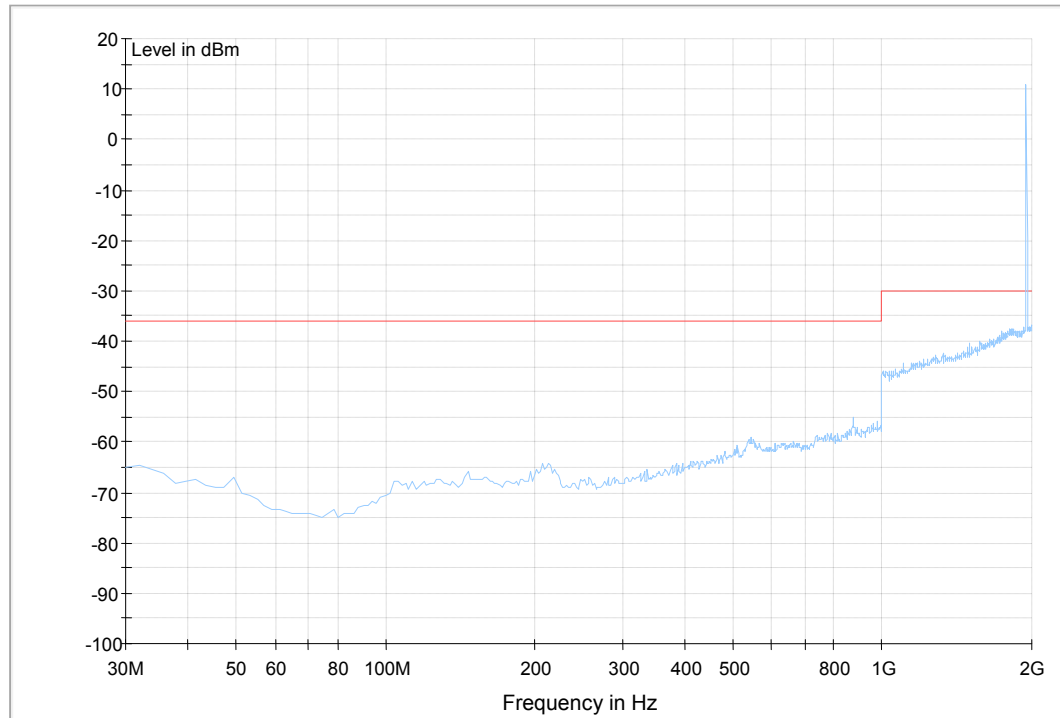
Idle Mode (2GHz~12.75GHz)



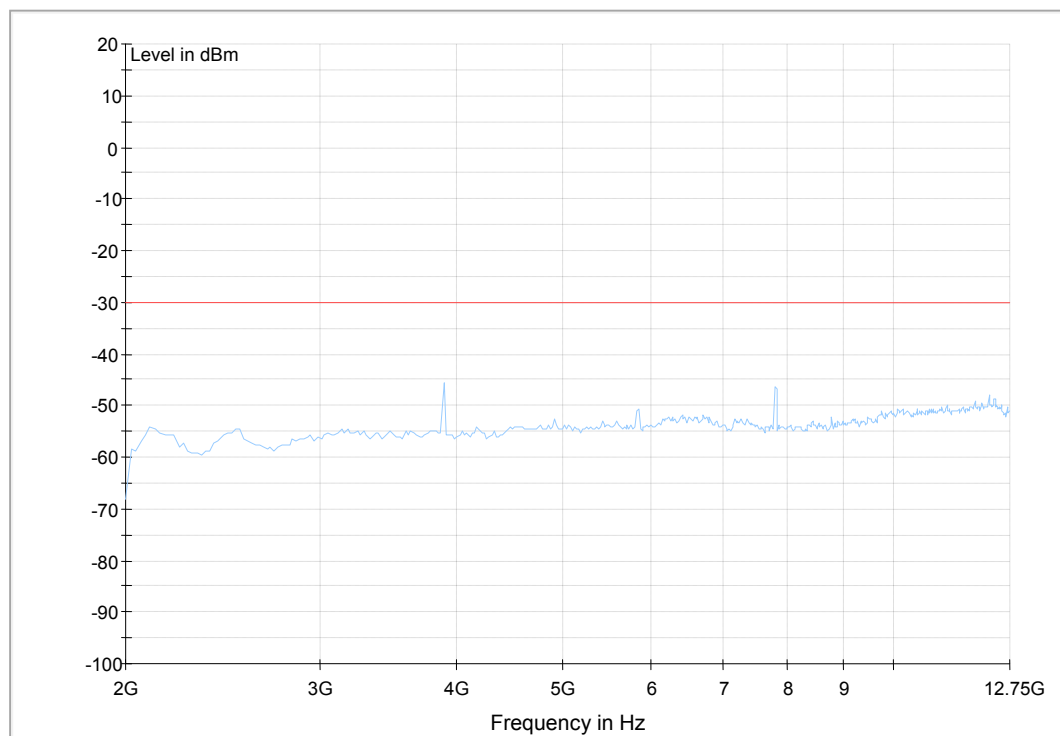
For WCDMA 2100

Traffic Mode (30MHz~2GHz)

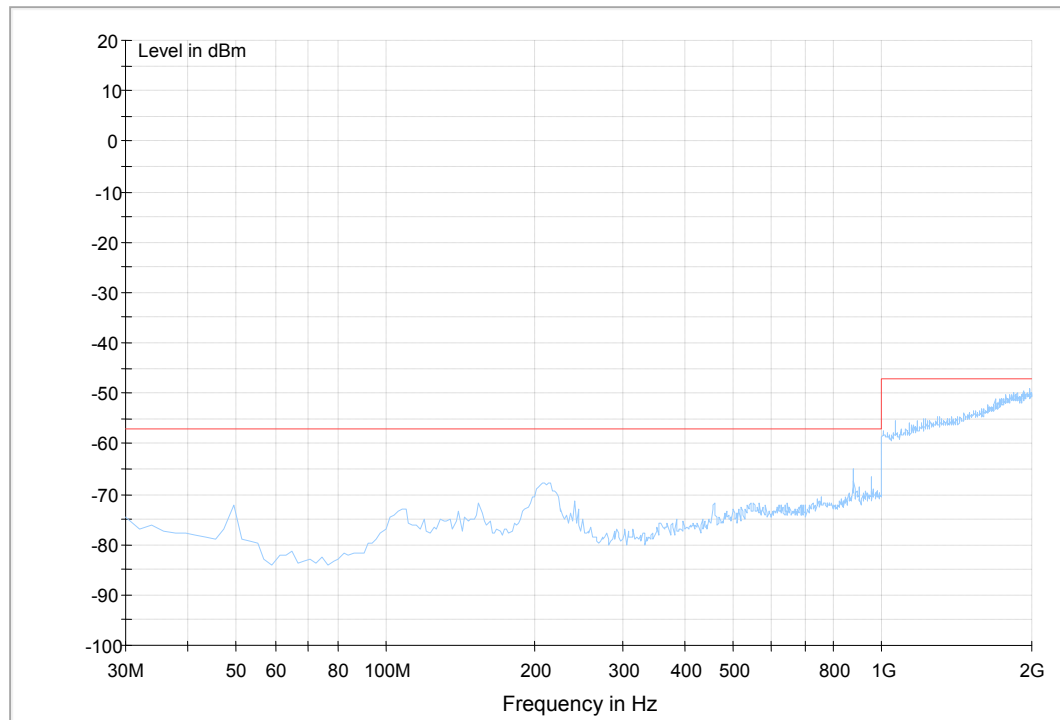
Note: The peak exceeds the limit line is carrier frequency.



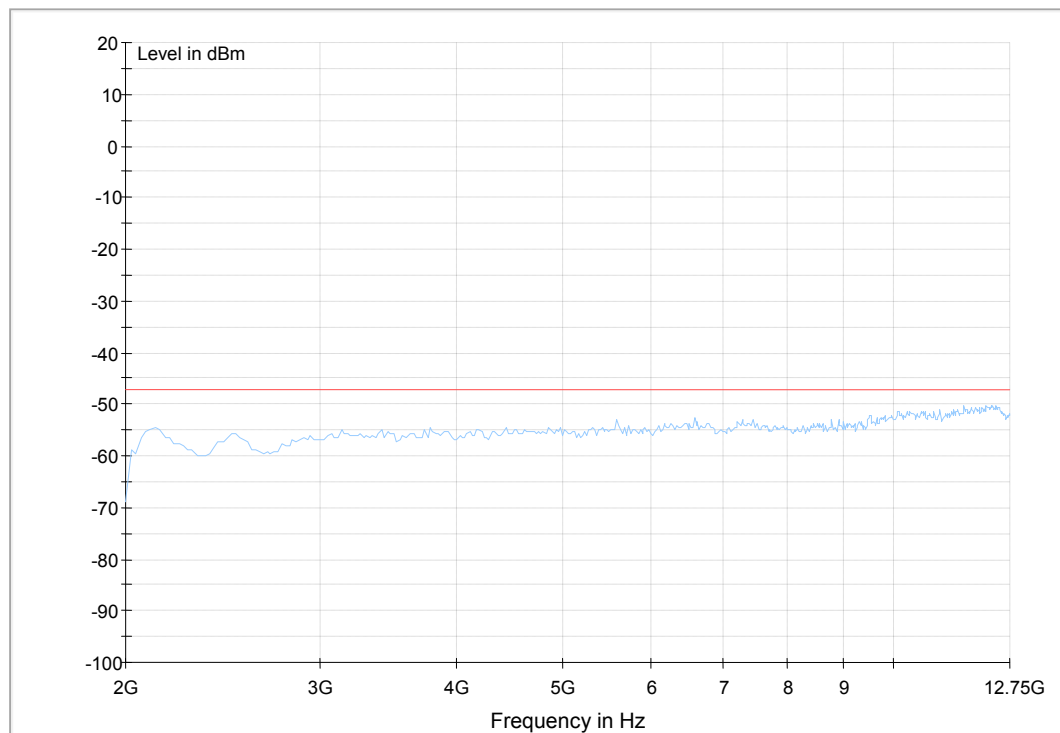
Traffic Mode (2GHz~12.75GHz)



Idle Mode (30MHz~2GHz)



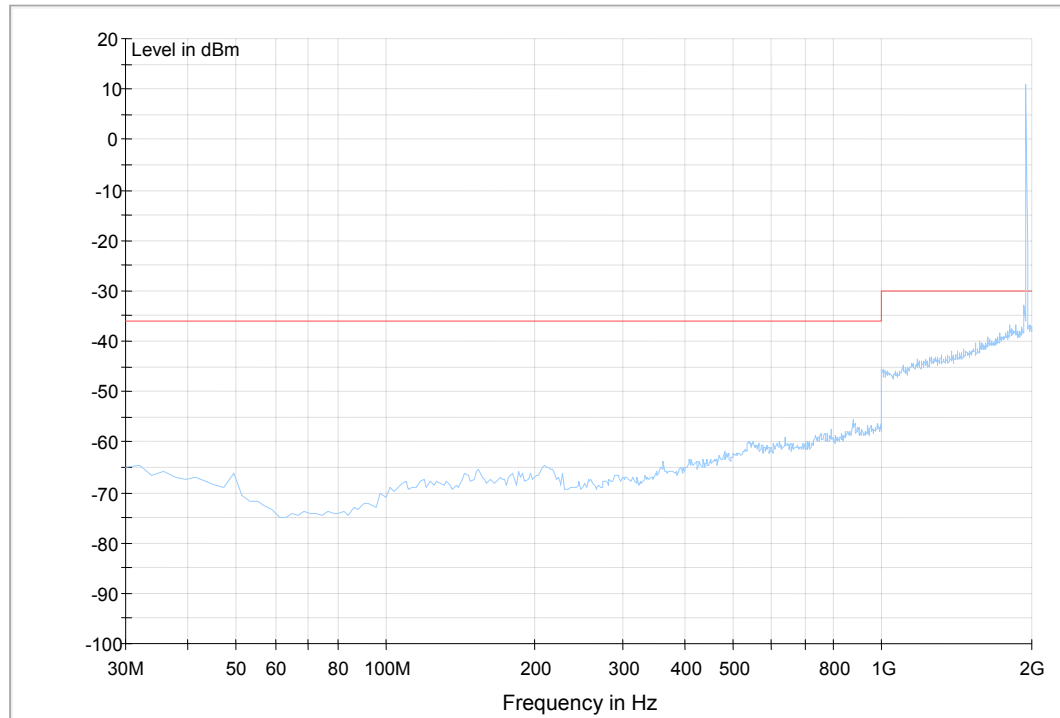
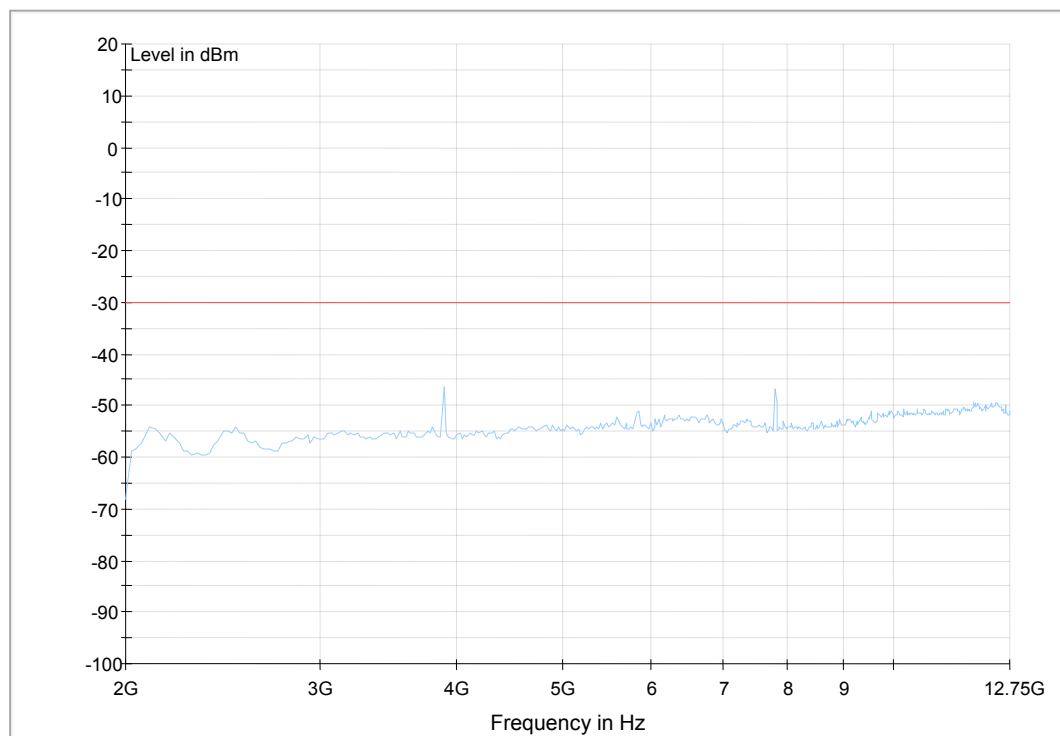
Idle Mode (2GHz~12.75GHz)



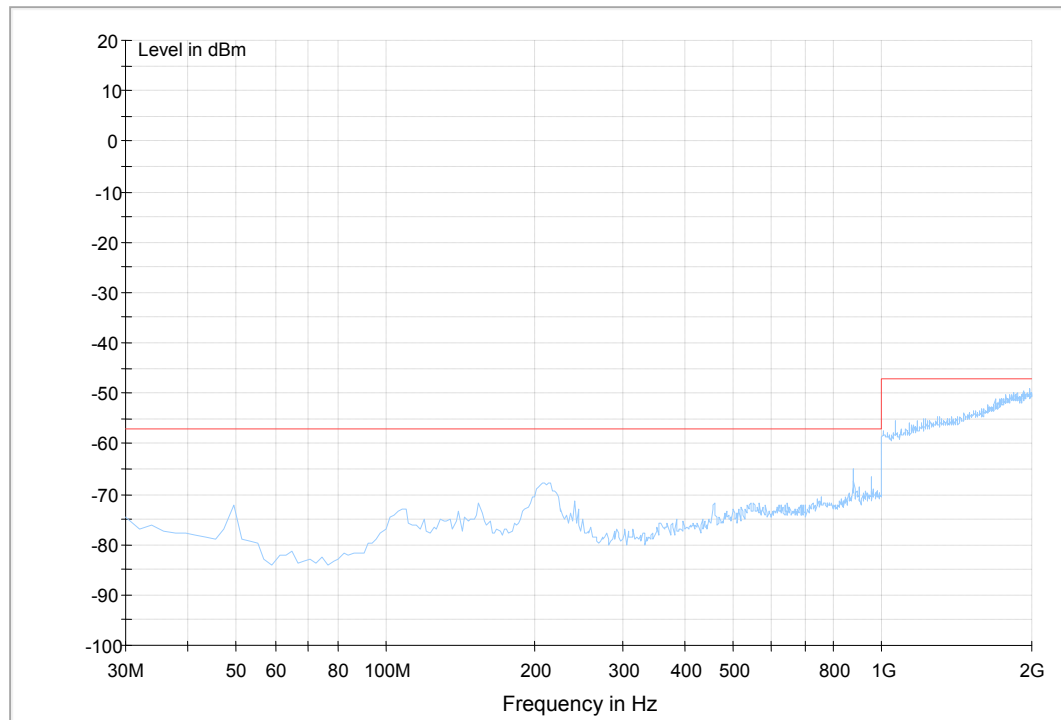
For HSDPA 2100

Traffic Mode (30MHz~2GHz)

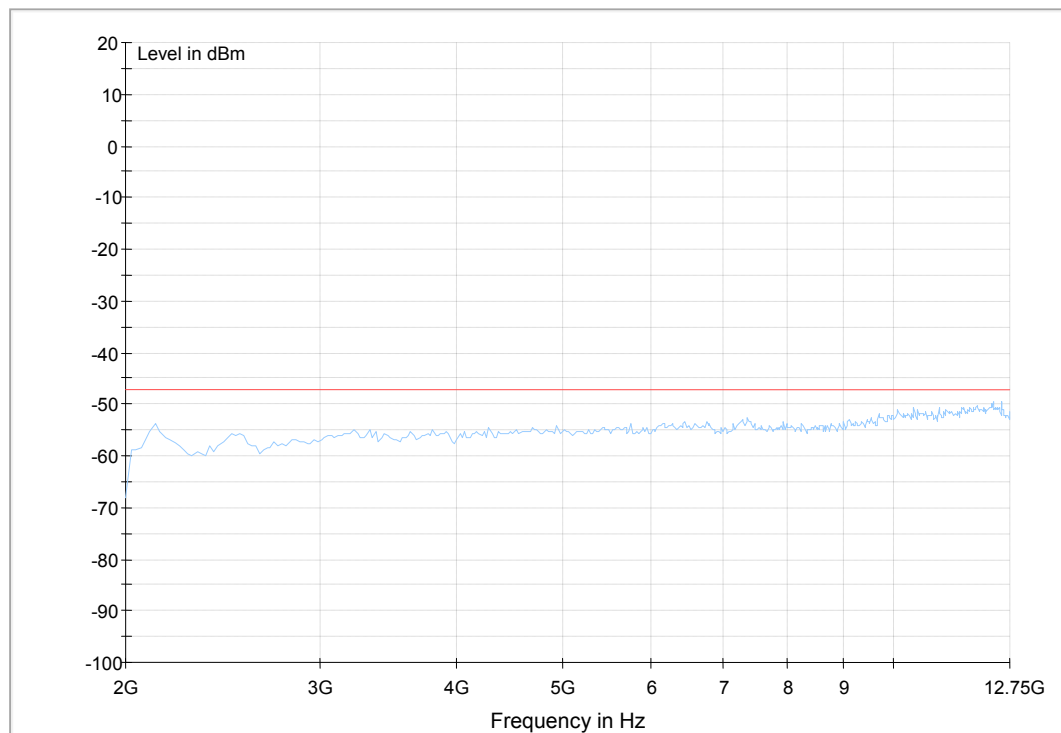
Note: The peak exceeds the limit line is carrier frequency.

**Traffic Mode (2GHz~12.75GHz)**

Idle Mode (30MHz~2GHz)



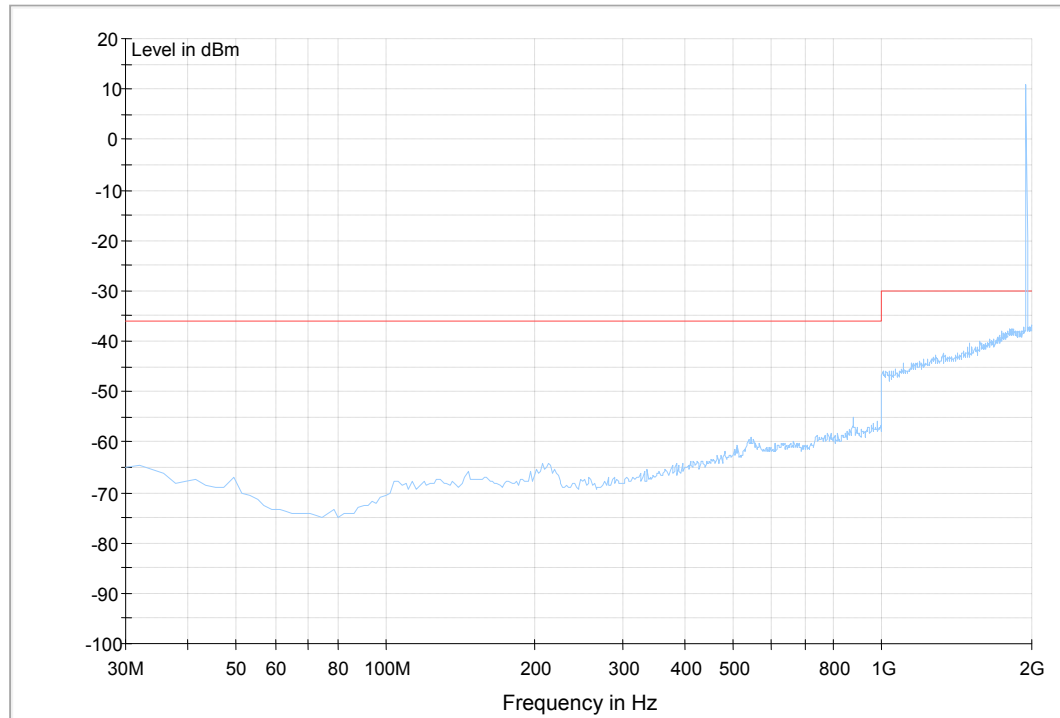
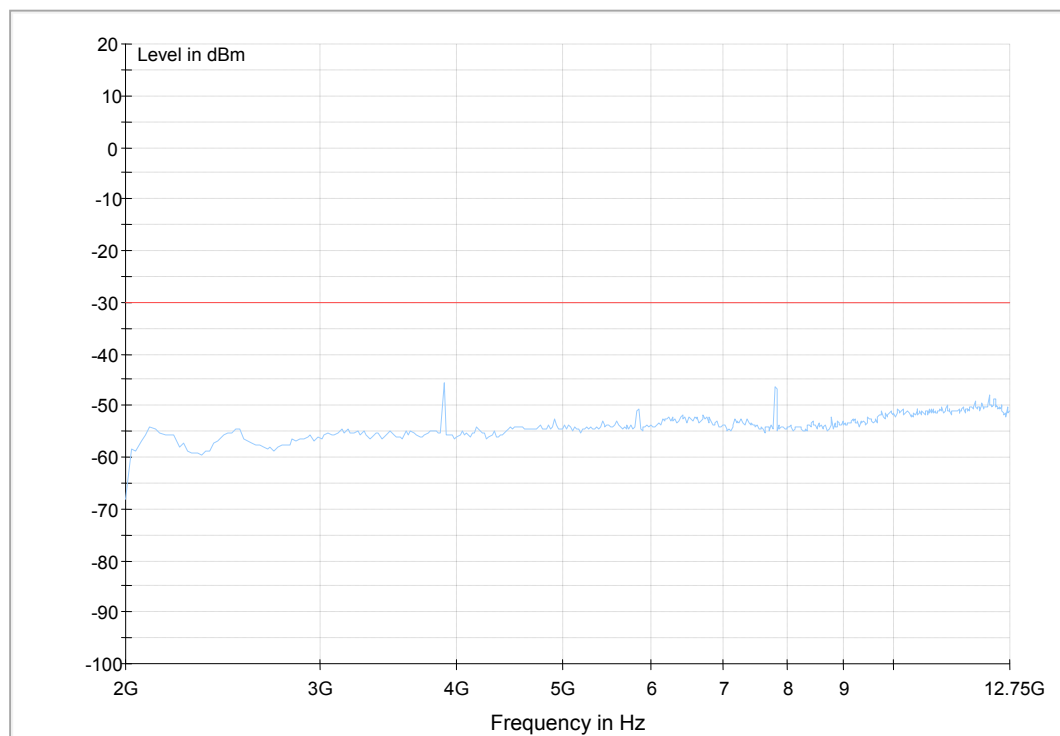
Idle Mode (2GHz~12.75GHz)



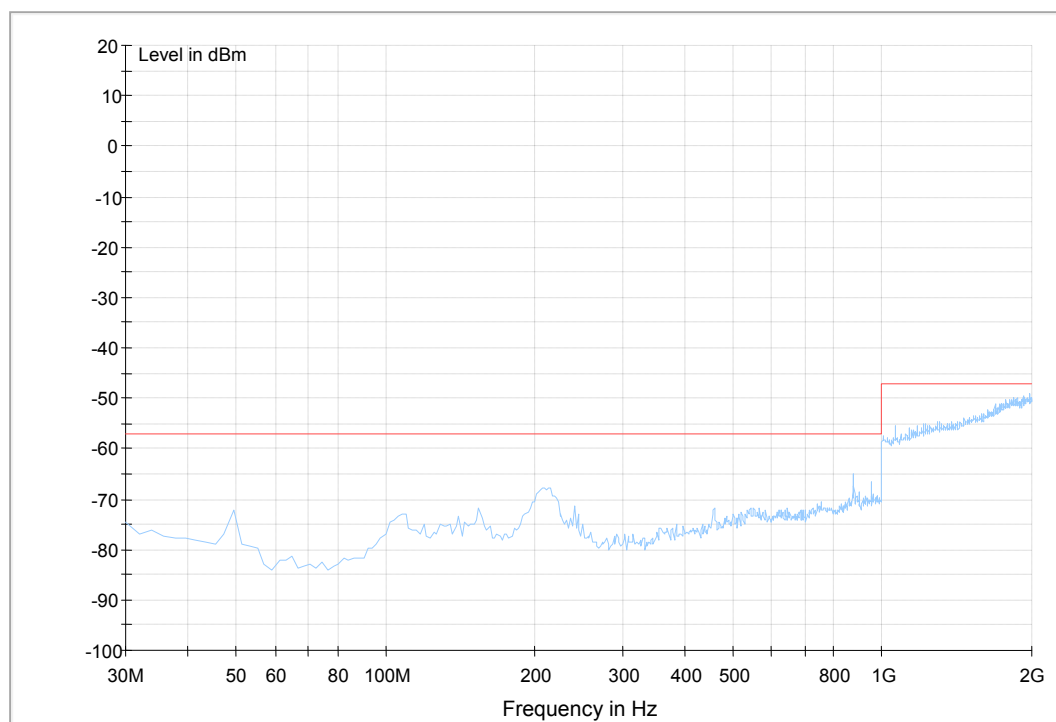
For HSUPA 2100

Traffic Mode (30MHz~2GHz)

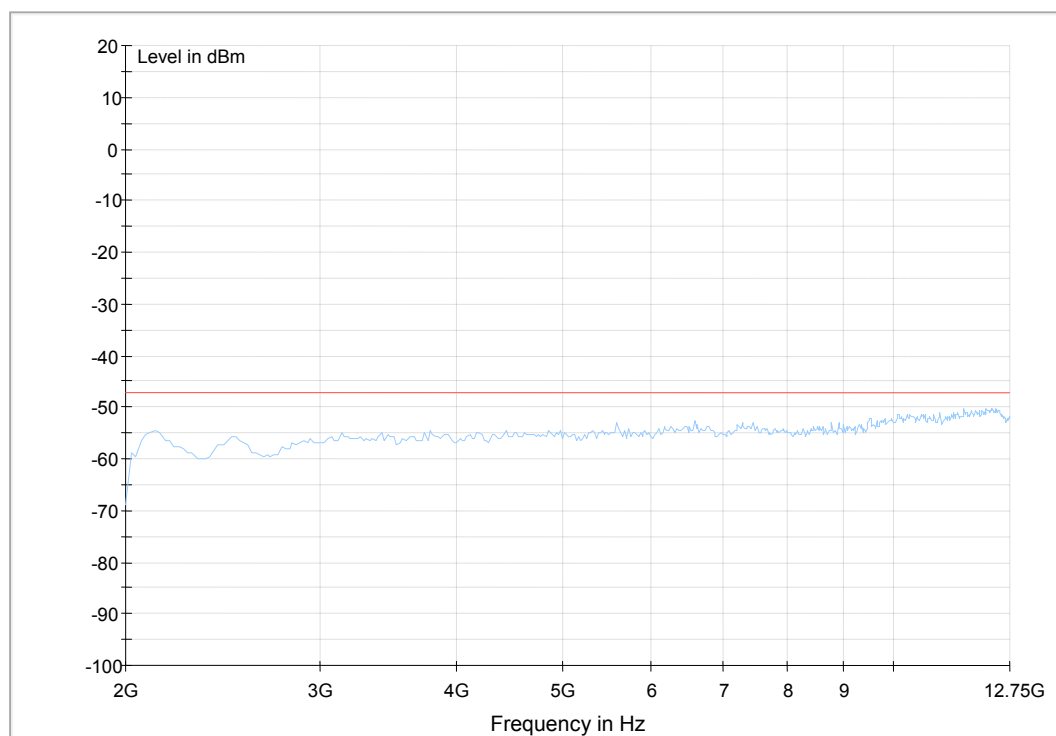
Note: The peak exceeds the limit line is carrier frequency.

**Traffic Mode (2GHz~12.75GHz)**

Idle Mode (30MHz~2GHz)



Idle Mode (2GHz~12.75GHz)



Annex D: Document history

Version	Applied changes	Date of release
---	Initial release	2012-12-04