



FCC EMC Test Report

Product Name: DC-HSPA+ USB Stick

Model Number: K4605

Report No: SYBHZ(R)E024092010EB-1

FCC ID: QISK4605

Reliability Laboratory of Huawei Technologies Co., Ltd.

Huawei Base, Bantian, Longgang District, Shenzhen 518129, P.R. China

Tel: +86 755 28780808 Fax: +86 755 89652518

Notice 1

1. The laboratory has obtained the accreditation of China National Accreditation Service for Conformity Assessment (CNAS), and accreditation number: L0310.
2. The laboratory has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements. The site recognition number is 97456.
3. The laboratory has been listed by industry Canada to perform electromagnetic emission measurement. The site recognition number is 6369A-1.
4. The test report is invalid if not marked with "exclusive stamp for the test report".
5. The test report is invalid if not marked with the stamps or the signatures of the persons responsible for performing, revising and approving the test report.
6. The test report is invalid if there is any evidence of erasure and/or falsification.
7. If there is any dissidence for the test report, please file objection to the test centre within 15 days from the date of receiving the test report.
8. Normally, the test report is only responsible for the samples that have undergone the test.
9. Context of the test report cannot be used partially or in full for publicity and/or promotional purposes without previous written approval of the laboratory.

Notice 2

Modification Information:

Table 1 Modification Information

Modification Information	1	
	2	
	3	<i>Not Applicable!</i>
	4	
	5	
	6	
	7	



REPORT ON	DC-HSPA+ USB Stick
	M/N: K4605
REGULATION	FCC CFR47 Part 15: Subpart B;
	FCC CFR47 Part 22:Subpart H;
	FCC CFR47 Part 24: Subpart E;
START OF TEST	Sep.11,2010
END OF TEST	Sep.15,2010
Final Judgement:	Pass

Approved By

2010-09-21
Date

Liuchunlin
Name

Signature

Reviewed By

2010-09-21
Date

Dailinjun
Name

Signature

Operator

2010-09-21
Date

Liaoxiaoping
Name

Signature

REPORT BODY CONTENT

1	Status	6
1.1	Product Information.....	6
1.2	Applied Standard	6
1.3	Test Site	7
1.4	Test environment condition.....	7
2	Summary of Results.....	8
3	Equipment Specification	9
3.1	General Description	9
3.2	Sub-Assembly Identity	9
4	System Configuration during EMC Test	9
4.1	Cables Used during Test	10
4.2	Associated Equipment Used during Test	10
4.3	Test Configurations and Test Mode.....	10
4.4	Test conditions and test Connections.....	11
5	Electromagnetic Interference (EMI)	13
5.1	Radiated Disturbance 30MHz to18000MHz	13
5.2	Conducted Disturbance 0.15 MHz to 30MHz	14
5.3	Radiated Spurious Emissions.....	15
6	Main Test Instruments	18
7	System Measurement Uncertainty.....	19
8	Graph and Data of Emission Test.....	20
8.1	Radiated Disturbance	20
8.2	Conducted Disturbance	22
8.3	Radiated Spurious Emission.....	23

1 Status

1.1 Product Information

CLIENT:	Huawei Technologies Co, Ltd.
ADDRESS:	Bantian Longgang District Shenzhen, P.R. China
MANUFACTURING DESCRIPTION	DC-HSPA+ USB Stick
MANUFACTURERS MODEL NUMBER	K4605

1.2 Applied Standard

FCC Measurement Specification	FCC Limits Part(s)	Description	Result
-	15.107	Conducted Emission at Power Port	PASS
-	15.109	Radiated Emission of Enclosure in Idle Mode	PASS
2.1051	22.917&24.238	Radiated Spurious Emission	PASS

1.3 Test Site

Site 1:
RELIABILITY LABORATORY OF HUAWEI TECHNOLOGIES CO., LTD

1.4 Test environment condition

Ambient temperature	20~24℃
Relative humidity	38%~49%
Atmospheric pressure	101kPa

2 Summary of Results

Table 2 below shows a brief summary of the results obtained.

Table 2 Summary of results

EUT Classification: Wireless Module				
Test Items	Test Configuration &Test Mode	Required Performance Criteria	Result	Site
Radiated Emissions Enclosure Port	TC1 (TM11~TM20)	N/A	Pass	Site1
Conducted Emissions	TC1 (TM1~TM20)	N/A	Pass	Site1
Radiated Spurious Emissions Enclosure Port	TC1 (TM1~TM10)	N/A	Pass	Site1
Note: 1, Measurement taken is within the measurement uncertainty of measurement system. 2, TC = Test configuration				

3 Equipment Specification

3.1 General Description

K4605 HSPA+/WCDMA/EDGE/GPRS/GSM dual mode USB Stick is subscriber equipment in the UMTS/GSM system. K4605 implement such functions as RF signal receiving/transmitting, HSPA+/WCDMA and EDGE/GPRS/GSM protocol processing, data service etc. Externally it provides USB interface (to connect to the notebook etc.), USIM card interface and Micro SD card interface. K4605 has dual internal antennas as default.

But only Band II, Band V, GSM850 and DCS1900 test data included in this report.

The difference of E372u-8, K4605:

1. E372u-8 is a GSM/GPRS/EDGE/WCDMA/HSPA+ USB Stick. The GSM supports four bands. The WCDMA supports WCDMA2100, WCDMA1900 and WCDMA 900, WCDMA850.
2. K4605 is the USB Stick which changes some component from E372u-8.
The PCB of K4605 and E372u-8 is the same. The differences between K4605 and E372u-8 are: the appearance is different and the NAND FLASH volume is different.

3.1.1 Main Equipment Technical Data

Description:	DC-HSPA+ USB Stick
Models:	K4605
Input Rated Voltage:	5V
Rated Consumption Power:	Max 3.5 W
Maximum Emission Power:	Max 33dBm
Dimensions:	91 (length) × 28 (width) × 14.3 (height) (mm3)
Weight:	29.3g

Table 3 Sub-Assembly Identity

Mode		Work Frequency	
		Transmitt Frequency (MHz)	Receive Frequency (MHz)
WCDMA	BAND V	824-849	869-894
	BAND II	1850-1910	1930-1990
GSM	GSM850	824-849	869-894
	PCS1900	1850-1910	1930-1990

3.2 Sub-Assembly Identity

Table 4 Sub-Assembly Identity

Board			
Model Name	Qty.	Serial Number	Description
K4605	1	9RA2A11081000011	Main Board
Accessory			
Name	Qty.	Serials number	Description

4 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.

4.1 Cables Used during Test

Table 5 Cable Used during Test

Port	Connector	Type of Cable
USB	USB	N/A

4.2 Associated Equipment Used during Test

Table 6 Associated Equipment Used during Test

Name	Model	Manufacturer	S/N	Cal Date
Radio Communication Tester	CMU200	R&S	112347	2010-03-12
Notebook	D620	DELL	3106085412	NA
Notebook	T43	IBM	3106093834	N/A

4.3 Test Configurations and Test Mode

4.3.1 Test Configuration.

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).

Table 7 Configuration table

Test configuration	Test mode
TC1	TM1~TM20

TC1: EUT was powered by a demo board, which is connected to the notebook by USB port.

4.3.2 Test Mode

There were 20 test Modes. TM1 to TM20 were shown below:

TM1: operate in traffic mode GPRS 1900;
TM2: operate in traffic mode EGPRS 1900;
TM3: operate in traffic mode WCDMA BAND II ;
TM4: operate in traffic mode HSDPA BAND II ;
TM5: operate in traffic mode HSUPA BAND II ;
TM6: operate in traffic mode GPRS 850;
TM7: operate in traffic mode EGPRS 850;
TM8: operate in traffic mode WCDMA BAND V ;
TM9: operate in traffic mode HSDPA BAND V ;
TM10: operate in traffic mode HSUPA BAND V ;
TM11: operate in idle mode GPRS 1900;
TM12: operate in idle mode EGPRS 1900;
TM13: operate in idle mode GPRS 850;
TM14: operate in idle mode EGPRS 850;
TM15: operate in idle mode WCDMA BAND II ;
TM16: operate in idle mode HSDPA BAND II ;
TM17: operate in idle mode HSUPA BAND II ;
TM18: operate in idle mode WCDMA BAND V ;
TM19: operate in idle mode HSDPA BAND V ;

TM20: operate in idle mode HSUPA BAND V ;

4.4 Test conditions and test Connections

4.4.1 Test Conditions

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).

4.4.2 Test Connections

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 GSM850 and PCS1900, 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. Here, set the ARFCN channel number to 661 for PCS1900, 190 to GSM850, 4132 to WCDMA 850, 9400 to WCDMA 1900.

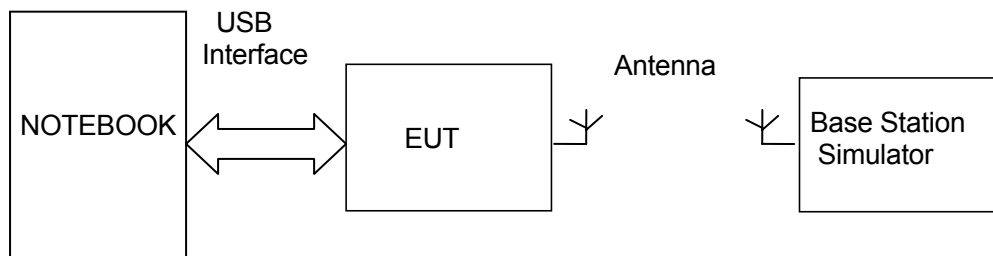


Figure 1.: TC1 (TM1-TM10)

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 neighbour cell list shall be empty;
- Paging repetition period and DRX cycle shall be set to minimum (shortest possible time interval).

For GSM850 and PCS1900, 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.

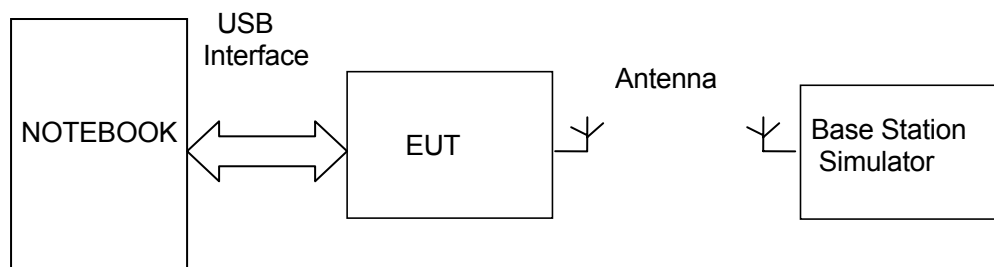


Figure 2. TC1 (TM11-TM20)

5 Electromagnetic Interference (EMI)

5.1 Radiated Disturbance 30MHz to18000MHz

5.1.1 Test Procedure

The test site semi-anechoic chamber has met the requirement of NSA tolerance 4dB according to the standards: ANSI C63.4 (2003). The test distance was 3m. The EUT was set-up on insulator 80cm above the Ground Plane. The set-up and test methods were according to ANSI C63.4. The Radiated Disturbance measurements were made using a Rohde and Schwarz ESU26 Test Receiver and control software ES-K1.

A preliminary scan and a final scan of the emissions were made from 30 MHz to 18GHz by using test script of software; the emissions were measured using a Quasi-Peak Detector (30MHz~1GHz) and AV detector (1GHz ~18GHz). The maximal emission value was acquired by adjusting the antenna height, polarisation 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.

Huawei Mobile Station was communicated with the BTS simulator through Air interface. The Mobile Station operated on the typical channel and the Mobile Station worked in idle mode, transmitter was not work in this test.

EUT was configured in idle mode and the test performed at worst emission state.

Measurement bandwidth: 30 MHz – 1000 MHz: 120 k Hz

Measurement bandwidth: 1GHz – 18GHz: 1MHz

Test set up figure:

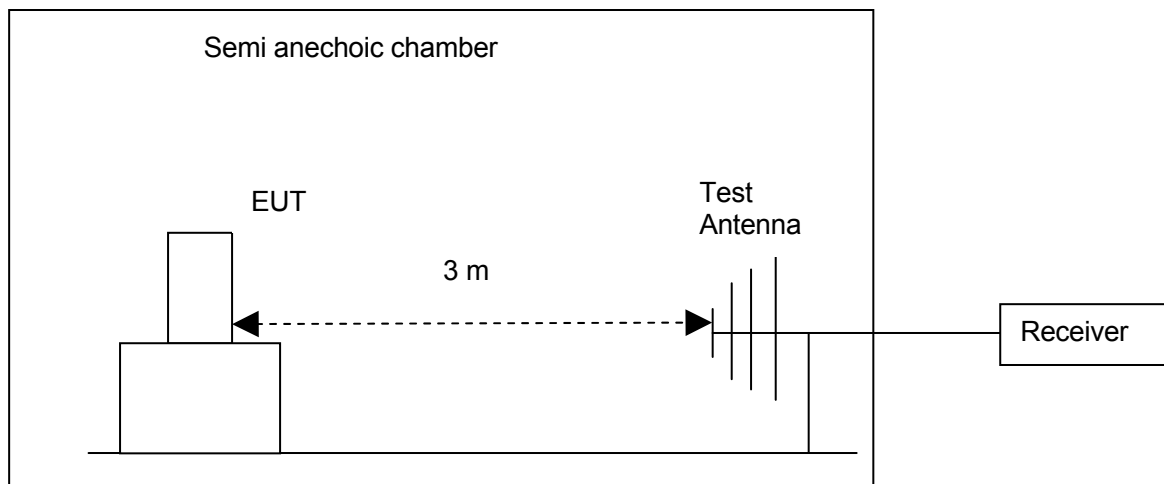


Figure 3. Test set-up

5.1.2 Test Results

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

Table 8 Test Limits

Frequency of Emission (MHz)	Radiated Limit	
	Unit($\mu\text{V}/\text{m}$)	Unit($\text{dB}\mu\text{V}/\text{m}$)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

5.2 Conducted Disturbance 0.15 MHz to 30MHz

5.2.1 Test Procedure

The Table-top EUT was placed upon a non-metallic table 0.8 m above the horizontal metal reference ground plane. EUT was connected to LISN and LISN was connected to reference Ground Plane. EUT was 80cm from LISN. The set-up and test methods were according to ANSI C63.4: 2003.

Conducted Disturbance at AC Port measurements were undertaken on the L and N Lines. The emissions were measured using a Quasi-Peak Detector and Average Detector.

Huawei Mobile Station was communicated with the BTS simulator through Air interface, the BTS simulator controls the Mobile Station to transmitter the maximum power which defined in specification of product. The Mobile Station operated on the typical channel.

Measurement bandwidth (RBW) for 150kHz to 30 MHz: 9 kHz;

Test Set-up figure:

The Mobile Station was setup in the screened chamber and operated under nominal conditions.

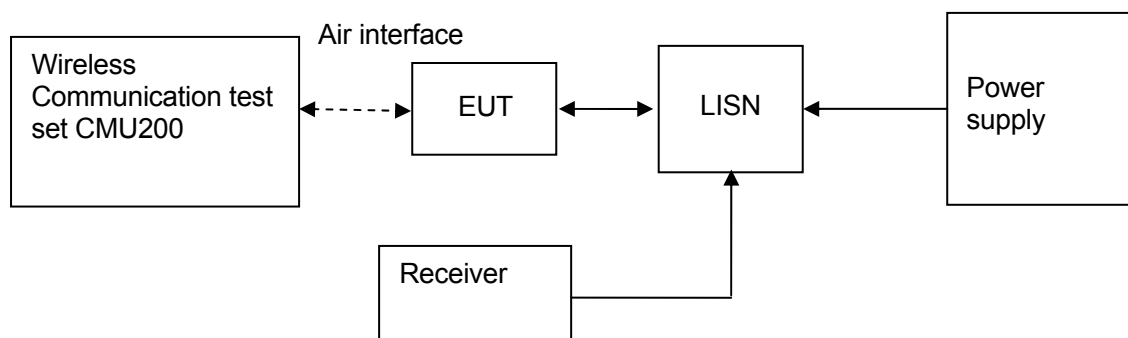


Figure 4. Test Set-up

5.2.2 Test Results

The EUT has met requirements for Conducted disturbance of power lines.

Table 9 Test Limit of DC&AC Power Port

Frequency range	150kHz~ 30MHz	
Classification	Class B	
Limit(Class B)	Voltage limits	
	QP	AV
0.15MHz~0.5MHz	66~56 $\text{dB}\mu\text{V}$	56~46 $\text{dB}\mu\text{V}$
0.5MHz~5MHz	56 $\text{dB}\mu\text{V}$	46 $\text{dB}\mu\text{V}$

5MHz~30MHz	60 dB μ V	50 dB μ V
------------	---------------	---------------

5.3 Radiated Spurious Emissions

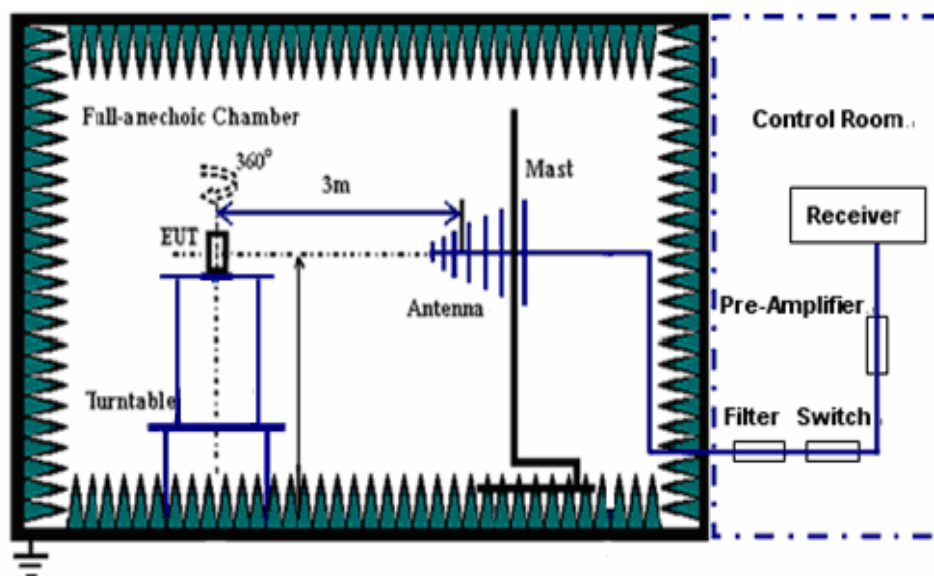
5.3.1 Test Procedure

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:

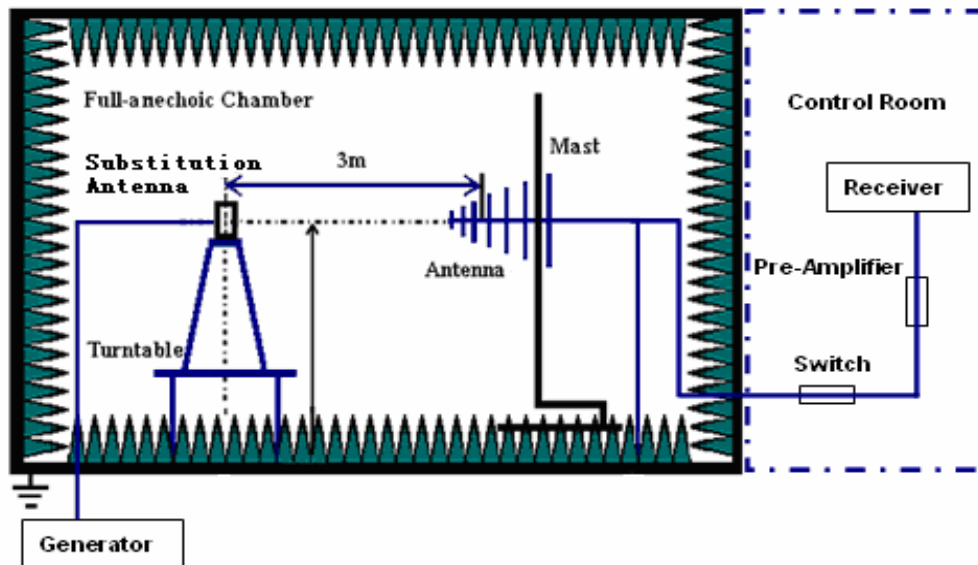
For transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, EIRP shall be measured when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in 2.1033(c)(8). Connect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

Test the Radiated maximum output power by the Rohde and Schwarz ESIB26 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 ESIB26 Test Receiver, and record the power level of Signal Generator. Of course, the cable loss at the test frequency should be compensated.



According to part 22.917, the defined measurement bandwidth as following:

22.917(b) Measurement procedure: Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater.

Measurement bandwidth (RBW) for 9 kHz up to 150 kHz: 1 kHz;
Measurement bandwidth (RBW) for 150 kHz up to 30 MHz: 10 kHz;
Measurement bandwidth (RBW) for 30 MHz up to 1 GHz: 100 kHz;
Measurement bandwidth (RBW) for 1GHz up to 18 GHz: 1MHz;

Table 10 Radiated Spurious Emissions Limits

Frequency band	Minimum requirement (E.R.P) traffic mode
30MHz~18GHz	-13dBm

According to part 24.238, the defined measurement bandwidth as following:

24.238 (b) Measurement procedure: Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater.

Measurement bandwidth (RBW) for 9 kHz up to 150 kHz: 1 kHz;
Measurement bandwidth (RBW) for 150 kHz up to 30 MHz: 10 kHz;
Measurement bandwidth (RBW) for 30 MHz up to 26.5 GHz: 1 MHz;

Table 11 Radiated Spurious Emissions Limits

Frequency band	Minimum requirement (E.R.P) traffic mode
30MHz~26.5GHz	-13dBm

No peak found in pre- test. All frequency points' margin is bigger than 20dB, so the substitution method isn't used.

Calculation Sample:

Table 12 Substitution Results

Freq. [MHz]	Measure ment Value [dBm]	Substitution Antenna Type	Gain [dBd]	Cable Loss [dB]	Signal Generator Level [dBm]	Substitution Level [dBm]	FCC limit [dBm]	Result

Note: For get the E.R.P. (Efficient Radiated Power) in substitution method, the following formula should take to calculate it,

$$\text{E.R.P. [dBm]} = \text{SGP [dBm]} - \text{Cable Loss [dB]} + \text{Gain [dBd]}$$

NOTE: SGP- Signal Generator Level

5.3.2 Test Results

The EUT has met the requirements of FCC Part22/Part24 requirement.

6 Main Test Instruments

Table 13 Main Test Equipments

Test item	Test Instrument	Model	Manufacturer	Cal-Date	Cal Interval (month)
RE	EMI Test receiver	ESU26	R&S	Jun.25, 2010	12
	Broadband Antenna	VULB9163	SCHWARZBECK	May.15, 2010	12
	Horn Antenna	HF906	R&S	May.15, 2010	12
CE	EMI Test receiver	ESU26	R&S	Jun.25, 2010	12
	Artificial Mains Network	ENV216	R&S	Jun.25, 2010	12
RSE	EMI Test receiver	ESIB26	R&S	April.22, 2010	12
	Horn Antenna	3117	EMCO	Oct.28.2010	12
	Broadband Antenna	CBL6112B (2747)	SCHAFFNER	Nov.30, 2009	12
Software Information					
Test Item	Software Name	Manufacturer		Version	
RE/CE	ES-K1	R&S		1.7.1	
RSE	EMC32	R&S		V5.10.99	

7 System Measurement Uncertainty

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

Table 14 System Measurement Uncertainty

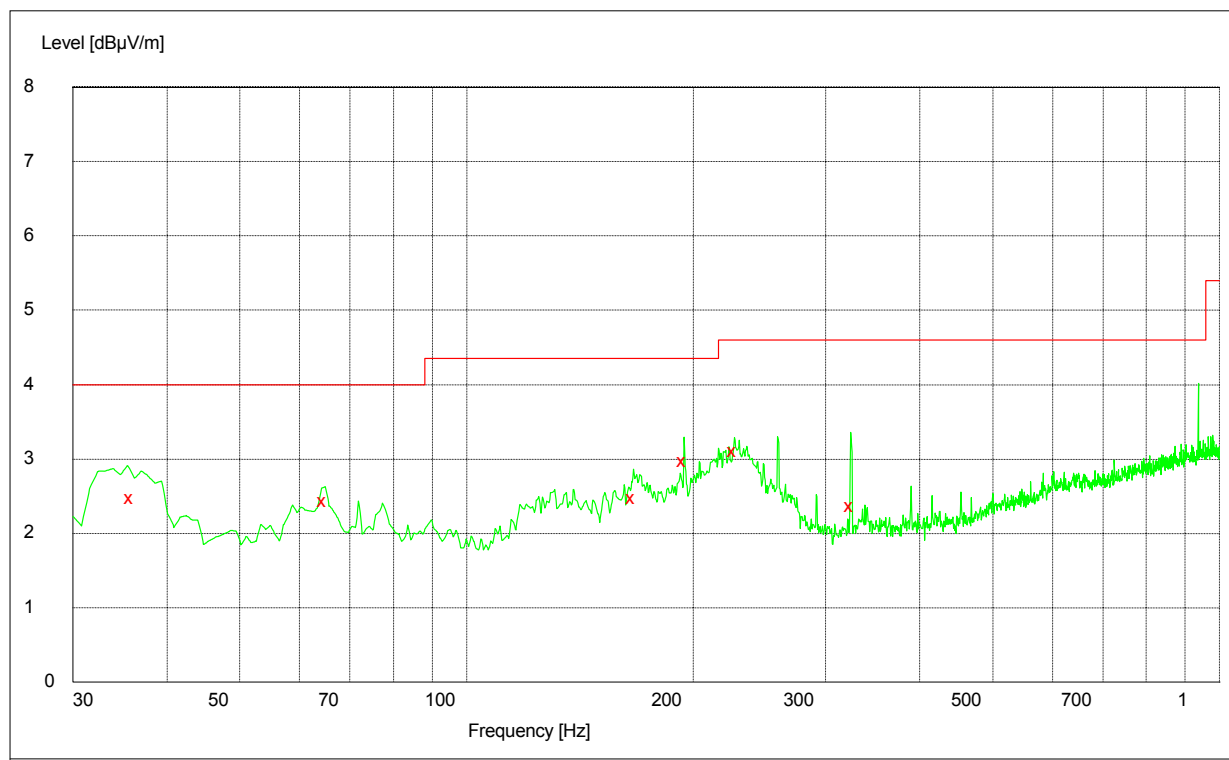
Items		Extended Uncertainty
RE	Field strength (dB μ V/m)	U=4.1dB; k=2(30MHz-1GHz)
RE	Field strength (dB μ V/m)	U=4.1dB; k=2(1GHz-18GHz)
RSE	ERP (dBm)	U=2.2dB; k=2
CE	Disturbance Voltage(dB μ V)	U=3.4dB; k=2

8 Graph and Data of Emission Test

8.1 Radiated Disturbance

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

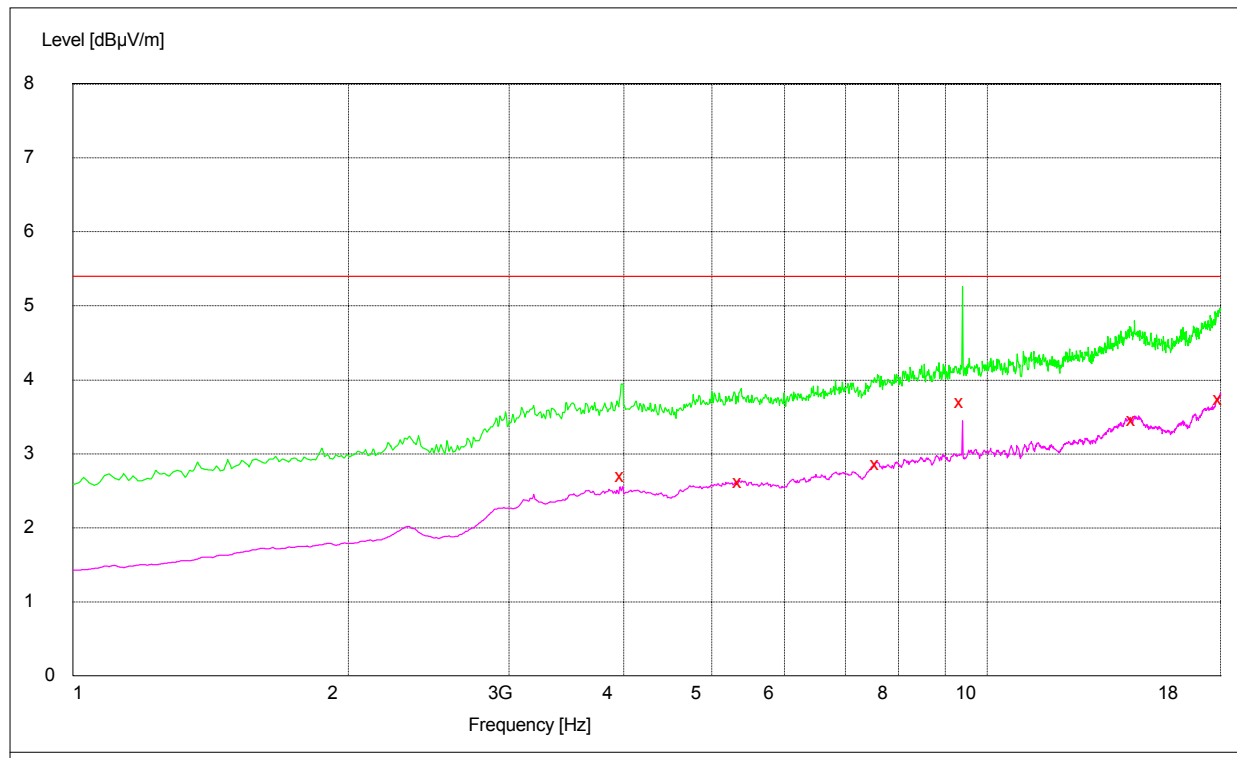
30MHz-1GHz



MEASUREMENT RESULT: QP Detector

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Height cm	Azimuth deg	Polarisation
35.880000	24.70	12.0	40.0	15.3	118.0	277.00	VERTICAL
64.800000	24.30	10.5	40.0	15.7	100.0	123.00	VERTICAL
166.260000	24.60	9.9	43.5	18.9	133.0	327.00	HORIZONTAL
194.460000	29.60	12.0	43.5	13.9	167.0	100.00	HORIZONTAL
226.980000	30.90	13.3	46.0	15.1	100.0	90.00	HORIZONTAL
324.480000	23.60	16.2	46.0	22.4	100.0	137.00	HORIZONTAL

1GHz-18GHz



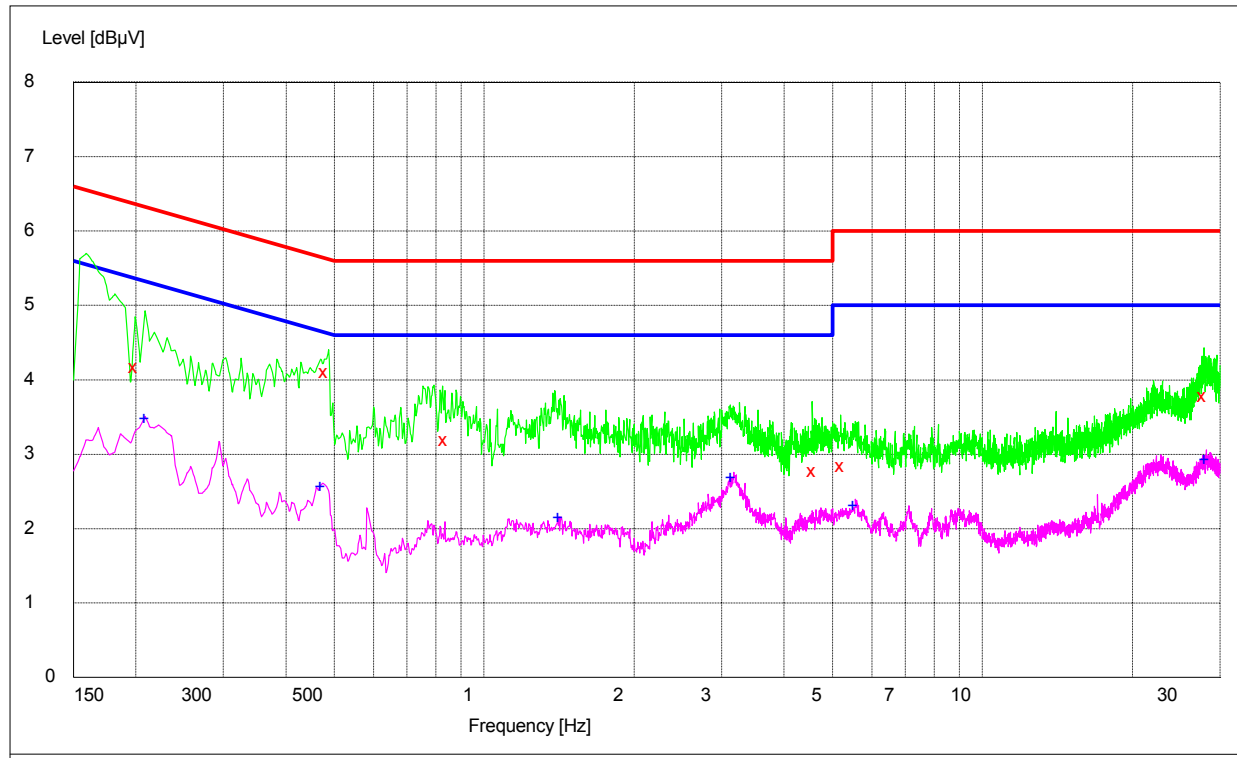
MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Height cm	Azimuth deg	Polarisation
3993.000000	26.80	-5.8	54.0	27.2	100.0	335.00	VERTICAL
5369.000000	26.00	-2.5	54.0	28.0	100.0	24.00	HORIZONTAL
7579.500000	28.40	1.6	54.0	25.6	100.0	5.00	HORIZONTAL
9384.500000	36.70	4.8	54.0	17.3	100.0	359.00	VERTICAL
14474.000000	34.40	12.3	54.0	19.6	100.0	220.00	HORIZONTAL
17996.000000	37.20	17.3	54.0	16.8	100.0	52.00	HORIZONTAL

8.2 Conducted Disturbance

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

8.2.1 AC Power Port Test Data



MEASUREMENT RESULT: QP Detector

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.200000	41.60	10.1	64	22.4	L1	FLO
0.482000	41.00	10.1	56	15	L1	FLO
0.838000	31.80	10.1	56	24.2	L1	FLO
4.596000	27.60	10.2	56	28.4	N	FLO
5.236000	28.20	10.2	60	31.8	N	FLO
27.928000	37.70	10.4	60	22.3	L1	FLO

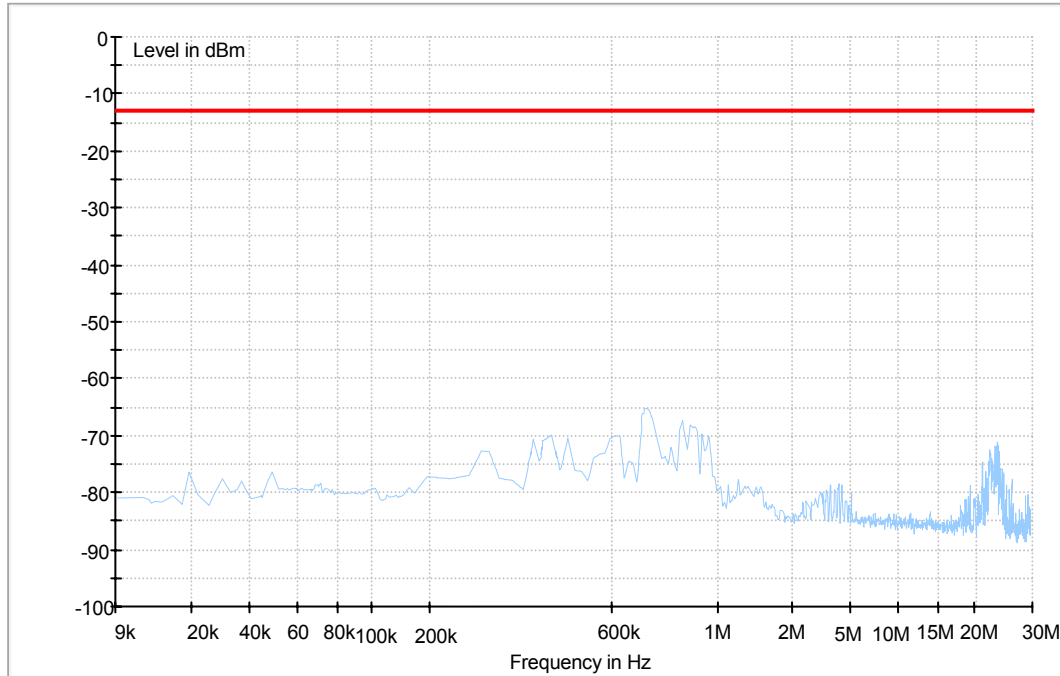
MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.210000	34.60	10.0	53	18.4	L1	FLO
0.474000	25.40	10.1	46	20.6	L1	FLO
1.420000	21.30	10.1	46	24.7	N	FLO
3.156000	26.70	10.2	46	19.3	N	FLO
5.562000	22.90	10.2	50	27.1	N	FLO
28.210000	29.10	10.4	50	20.9	L1	FLO

8.3 Radiated Spurious Emission

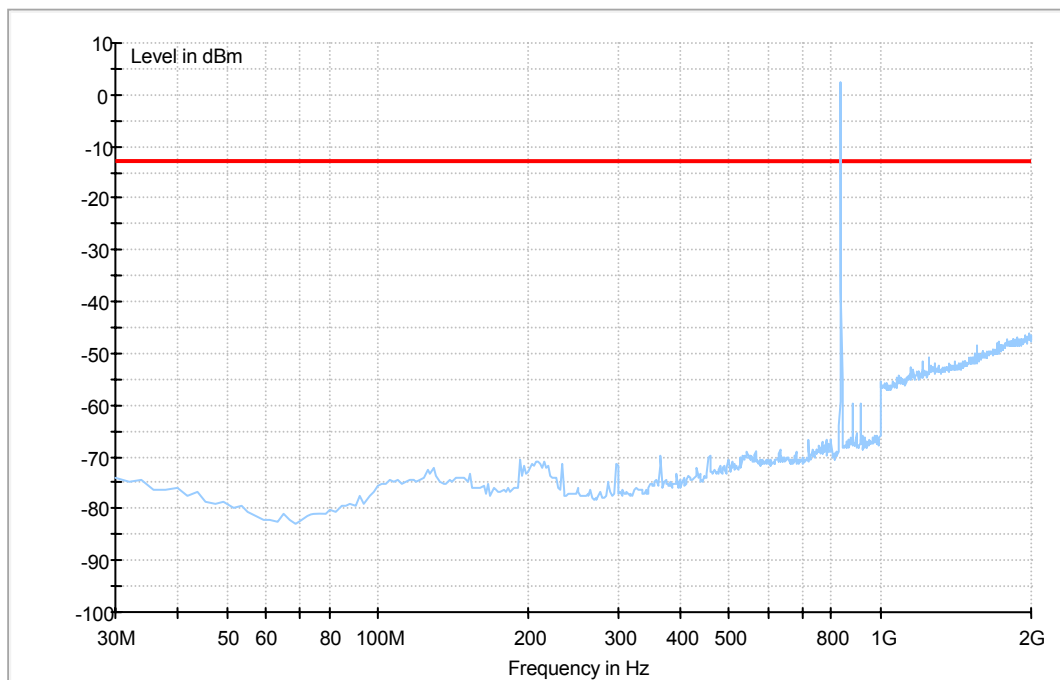
8.3.1 For GPRS 850

Traffic Mode (9kHz-30MHz)

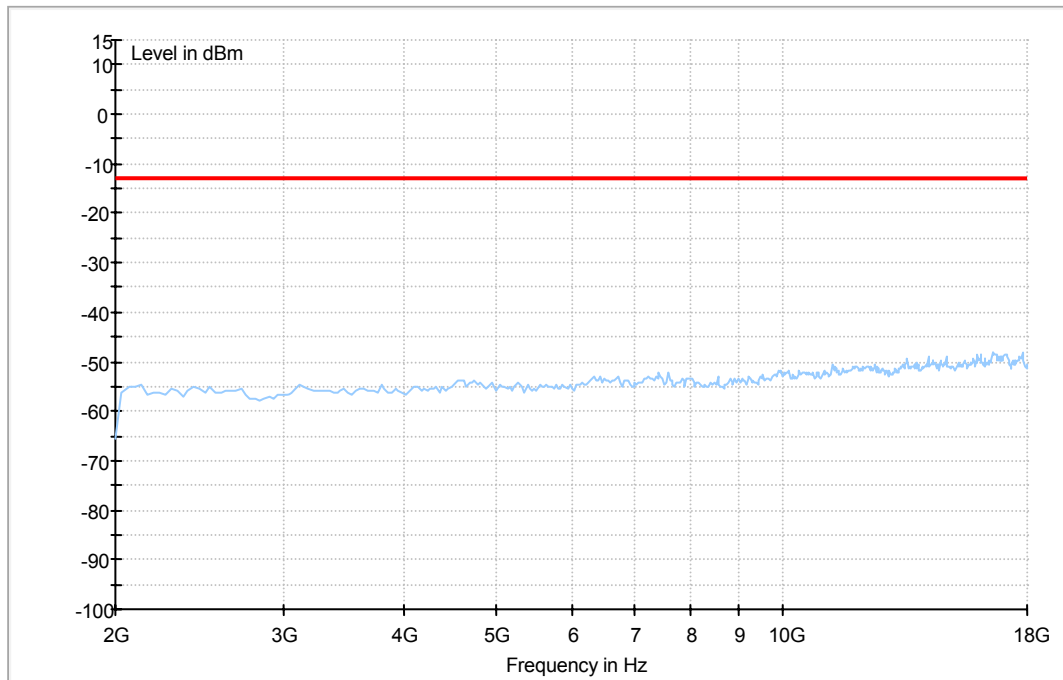


Traffic Mode (30MHz-2GHz)

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

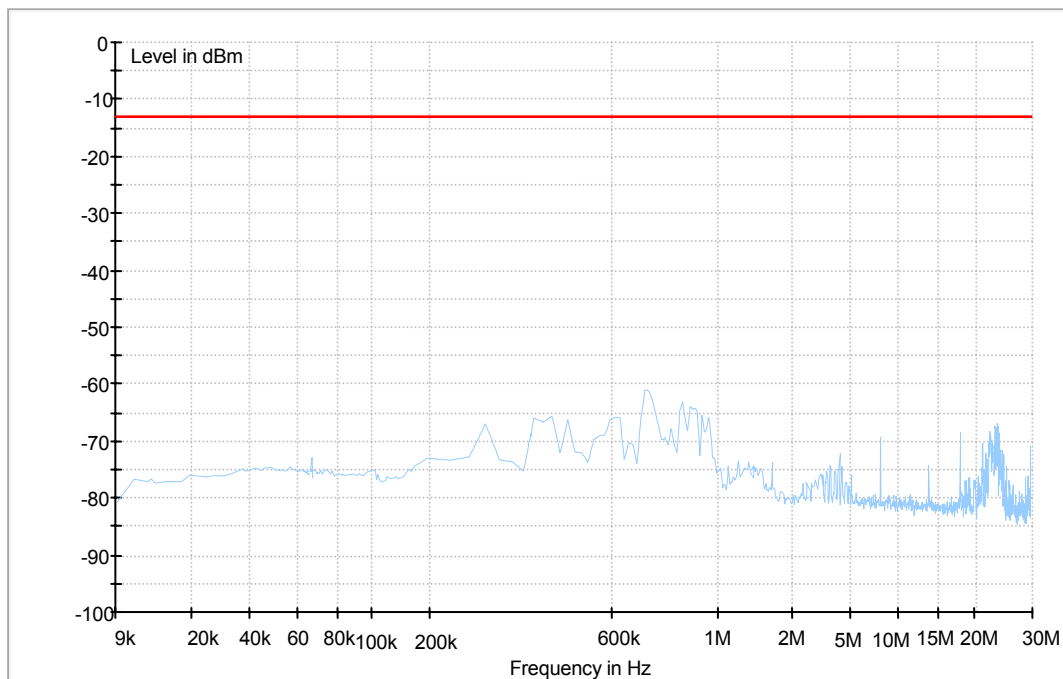


Traffic Mode (2GHz-18GHz)



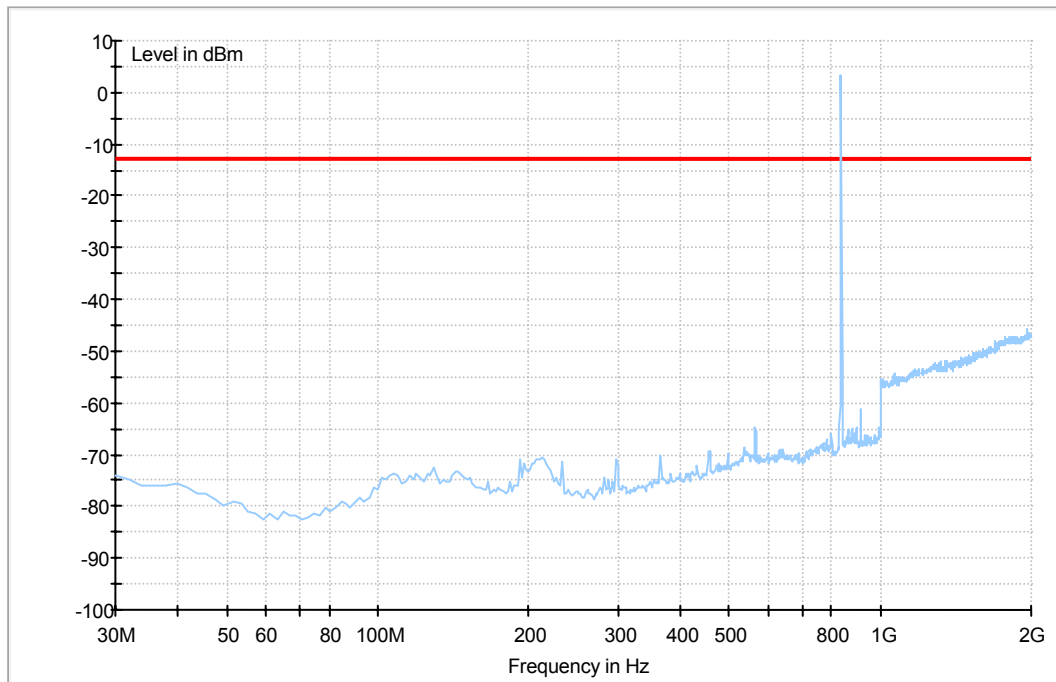
8.3.2 For EGPRS 850

Traffic Mode (9kHz-30MHz)

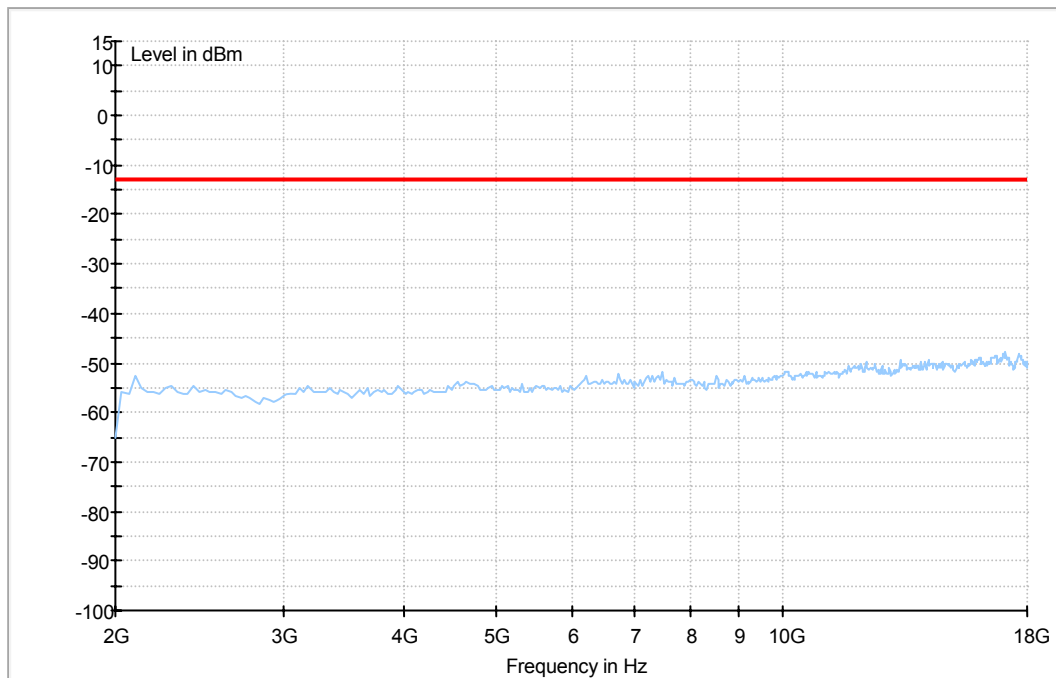


Traffic Mode (30MHz-2GHz)

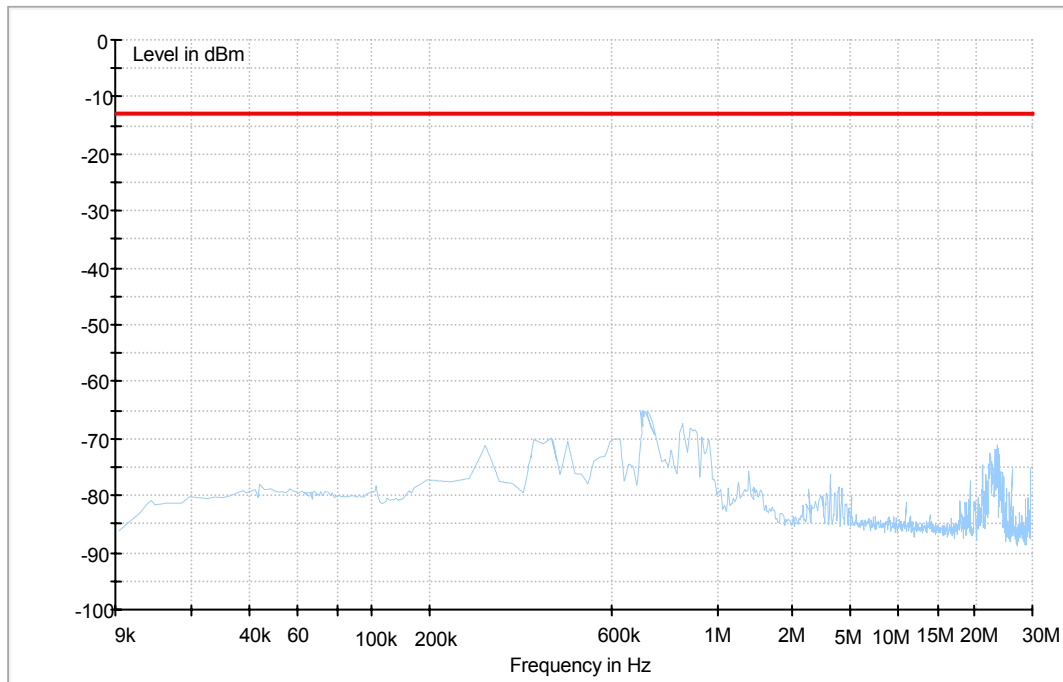
Note: The peak exceeds the limit line is carrier frequency.



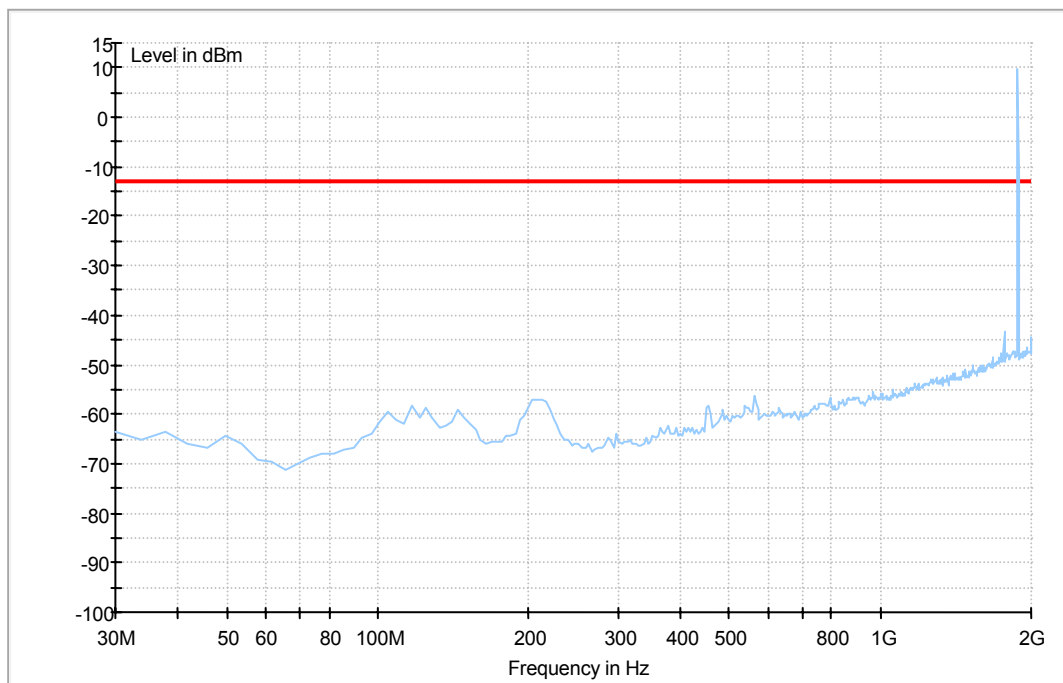
Traffic Mode (2GHz-18GHz)



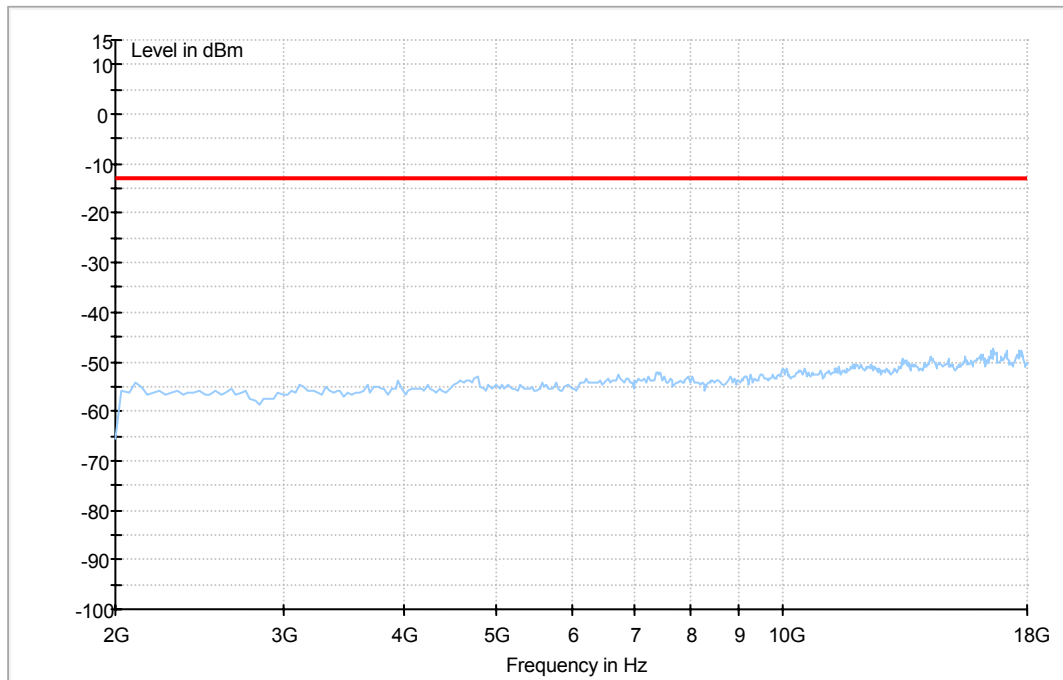
8.3.3 For GPRS 1900 Traffic Mode (9kHz-30MHz)



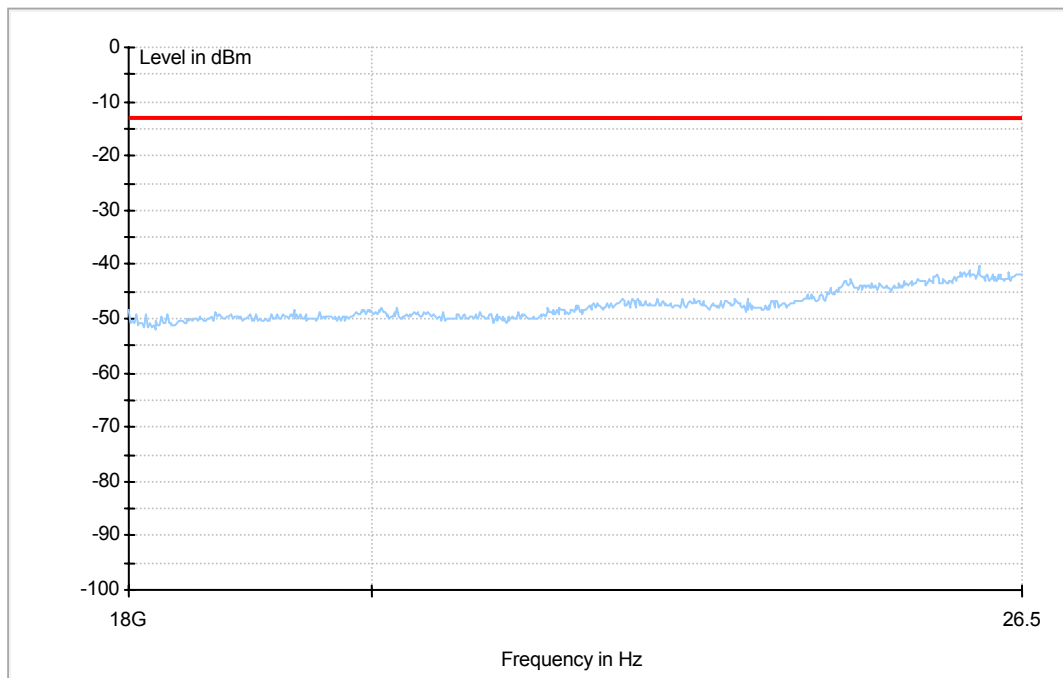
Traffic Mode (30MHz-2GHz)
Note: The peak exceeds the limit line is carrier frequency.



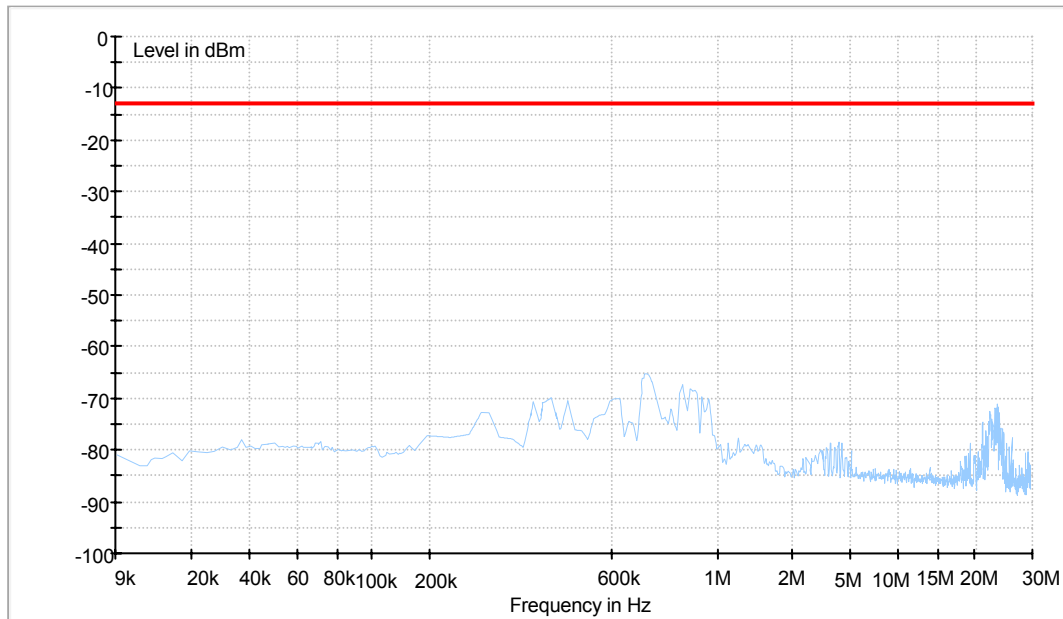
Traffic Mode (2GHz-18GHz)



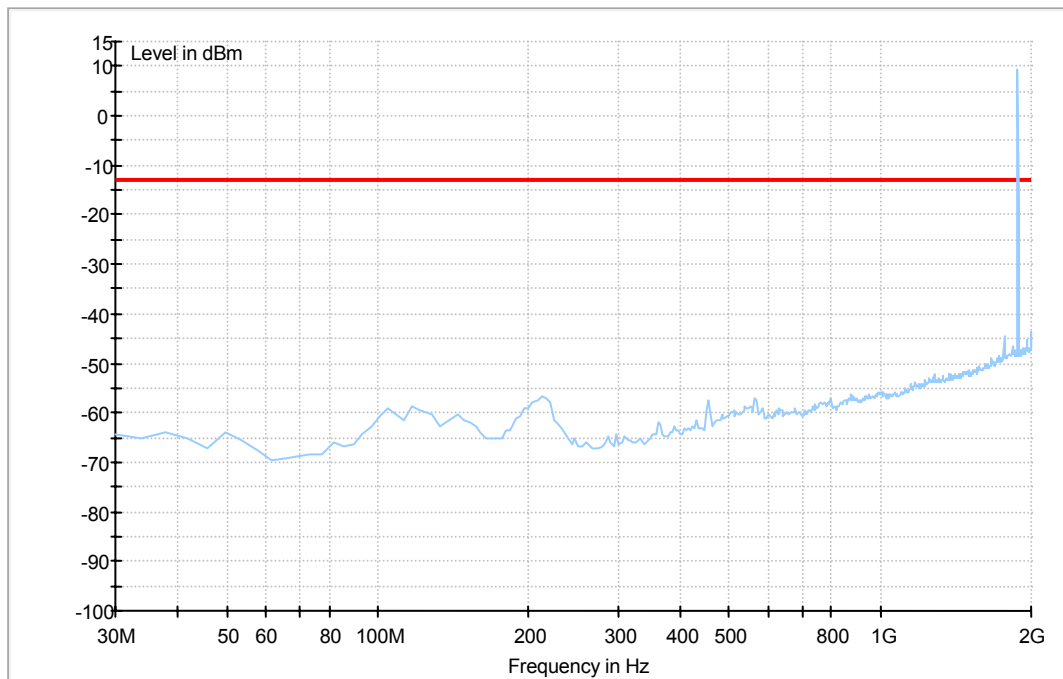
Traffic Mode (18GHz-26.5GHz)



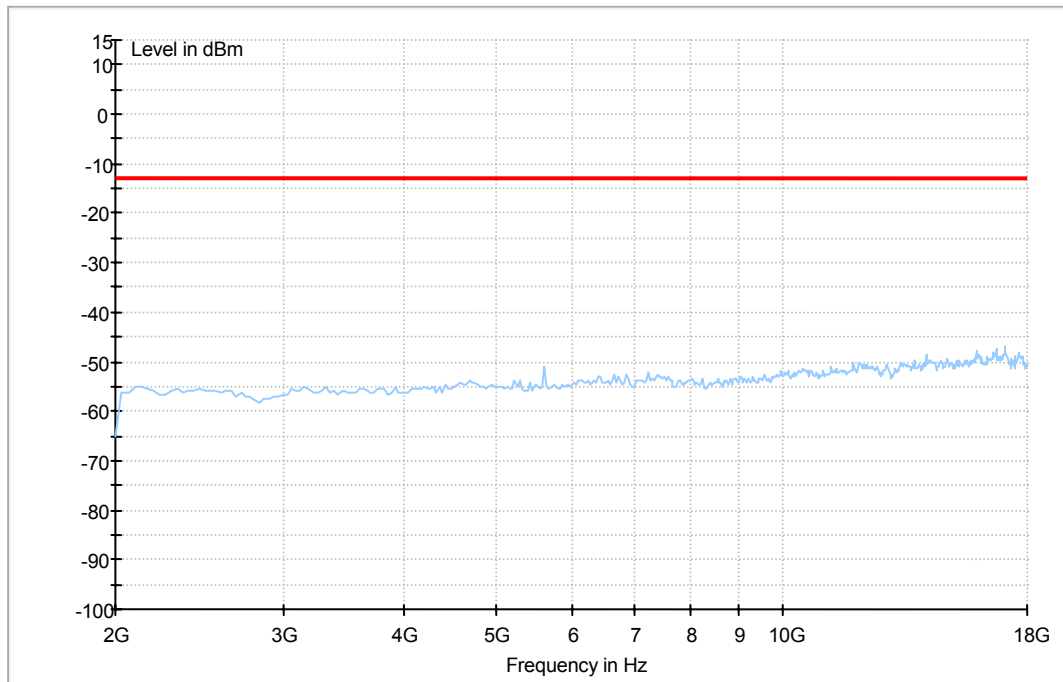
8.3.4 For EGPRS 1900 Traffic Mode (9kHz-30MHz)



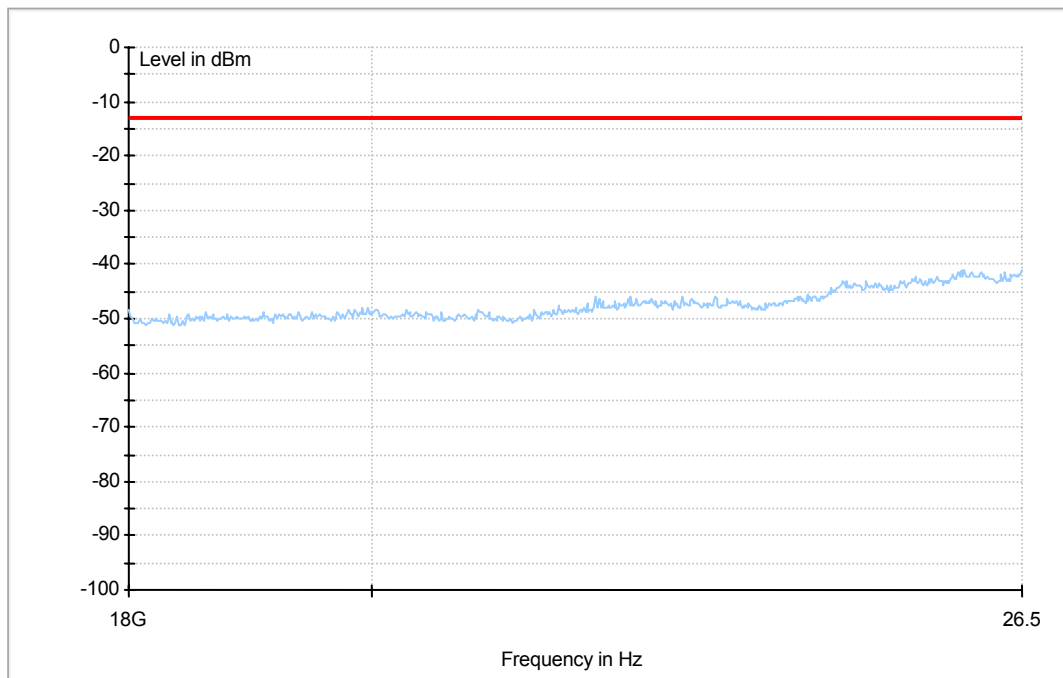
Traffic Mode (30MHz-2GHz)
Note: The peak exceeds the limit line is carrier frequency.



Traffic Mode (2GHz-18GHz)

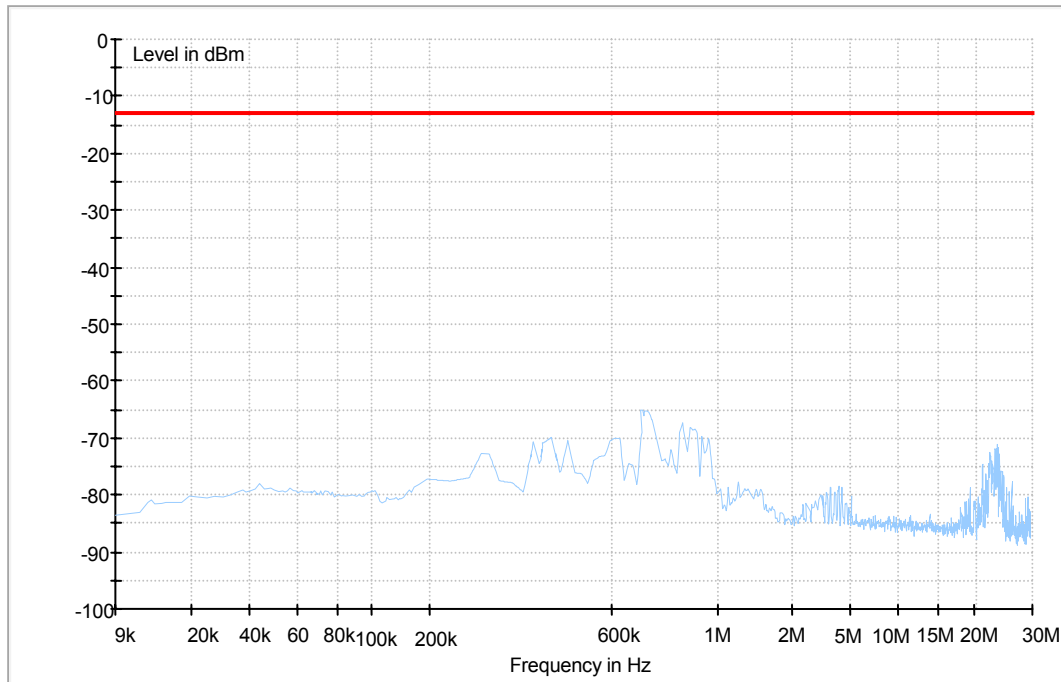


Traffic Mode (18GHz-26.5GHz)



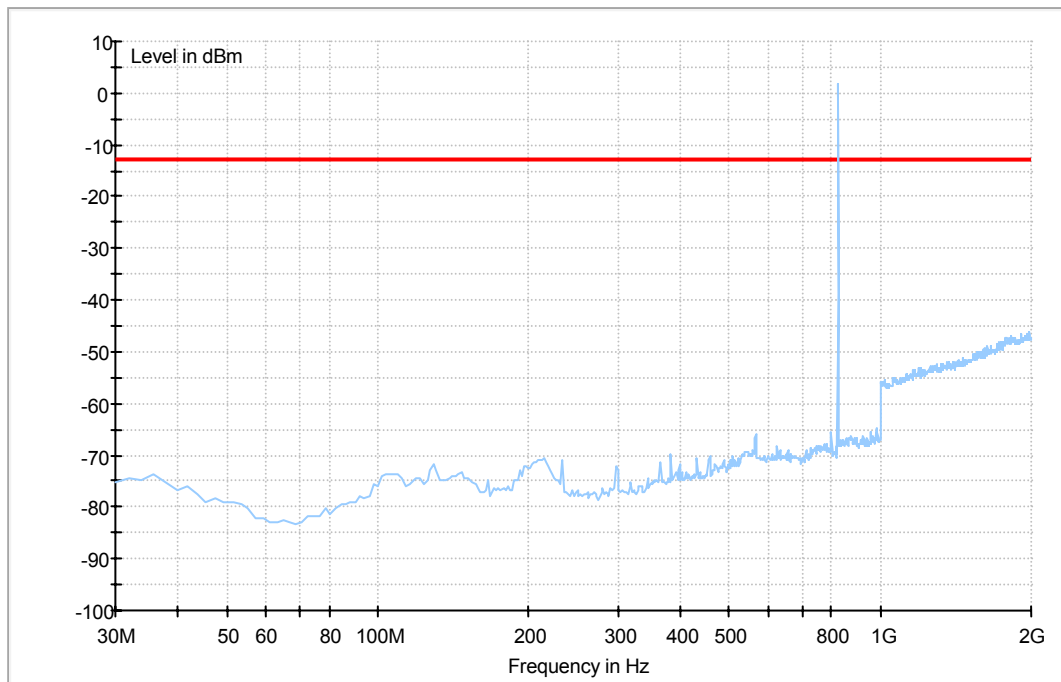
8.3.5 For WCDMA BAND V

Traffic Mode (9kHz-30MHz)

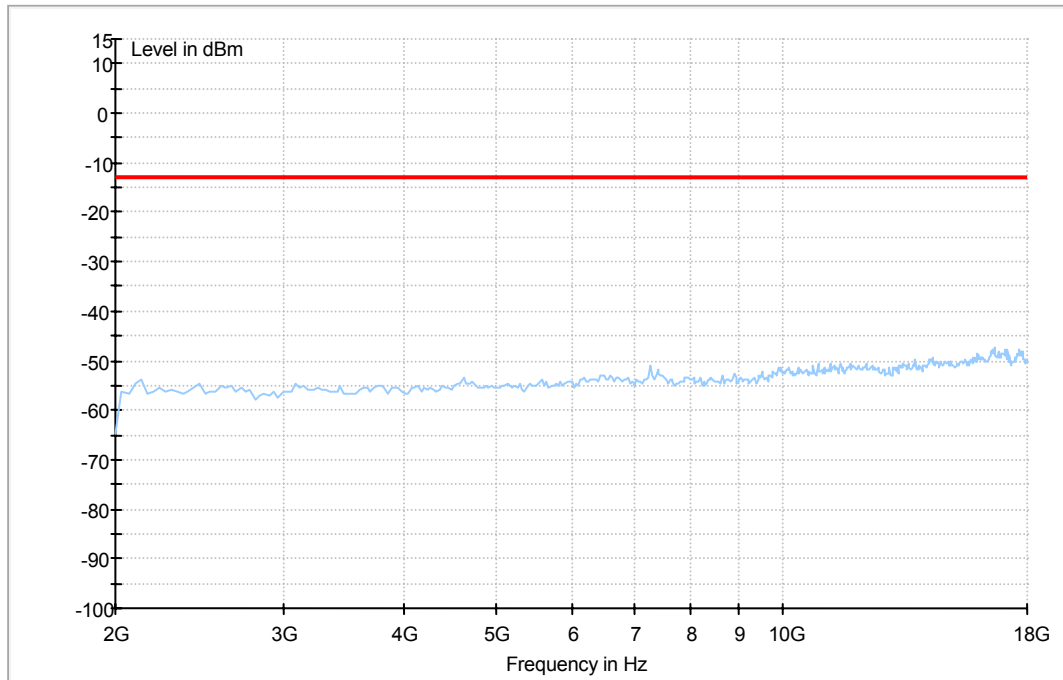


Traffic Mode (30MHz-2GHz)

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

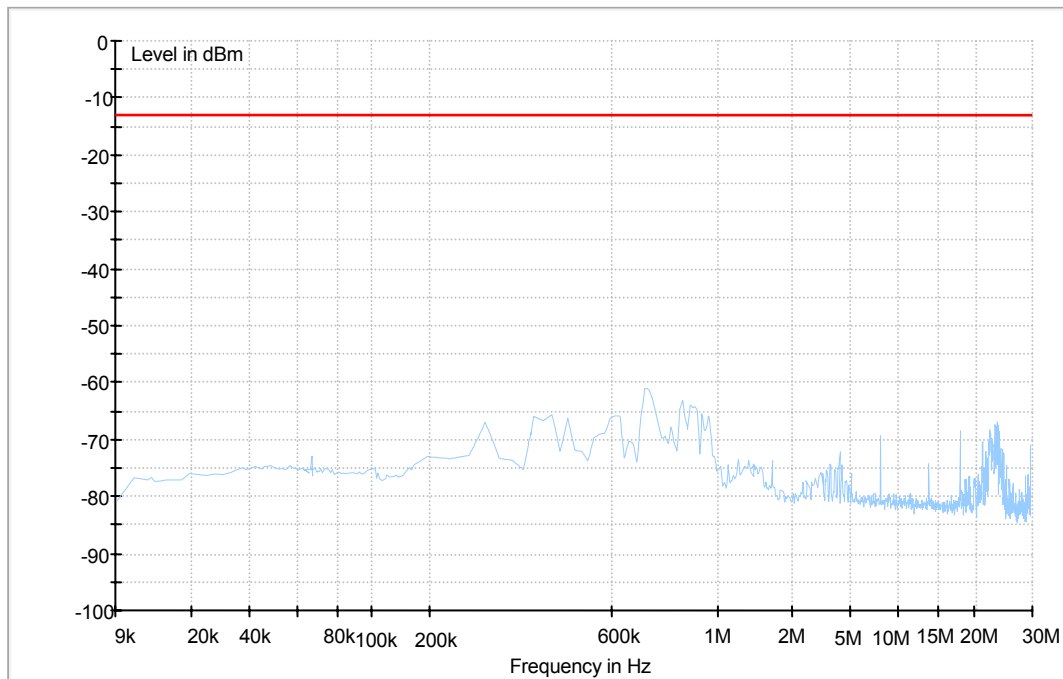


Traffic Mode (2GHz-18GHz)



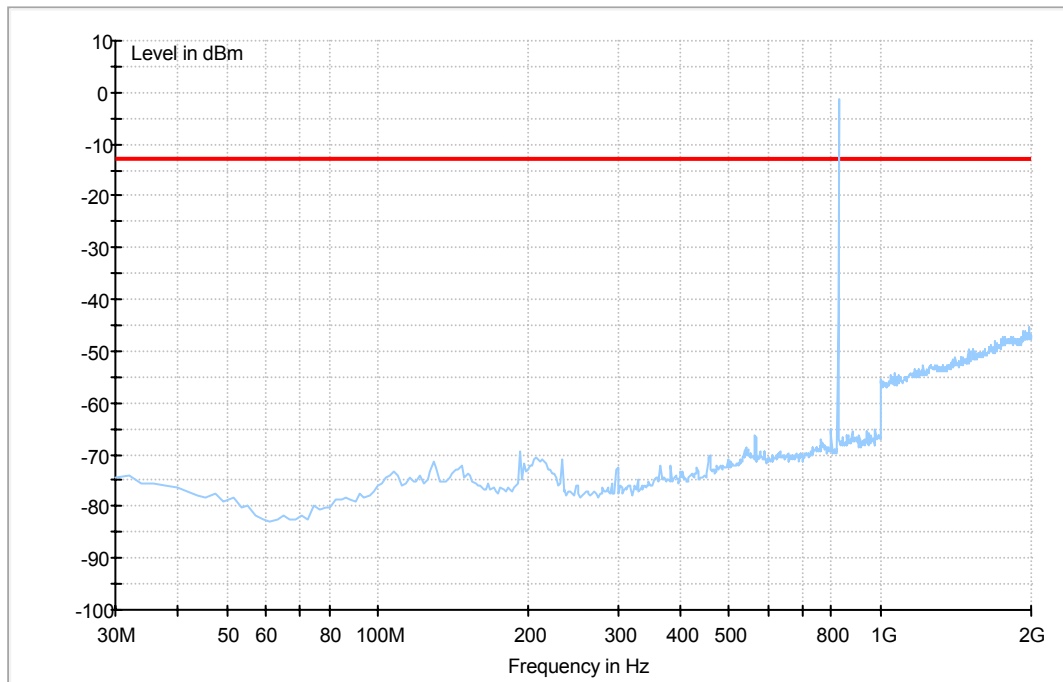
8.3.6 For HSDPA BAND V

Traffic Mode (9kHz-30MHz)

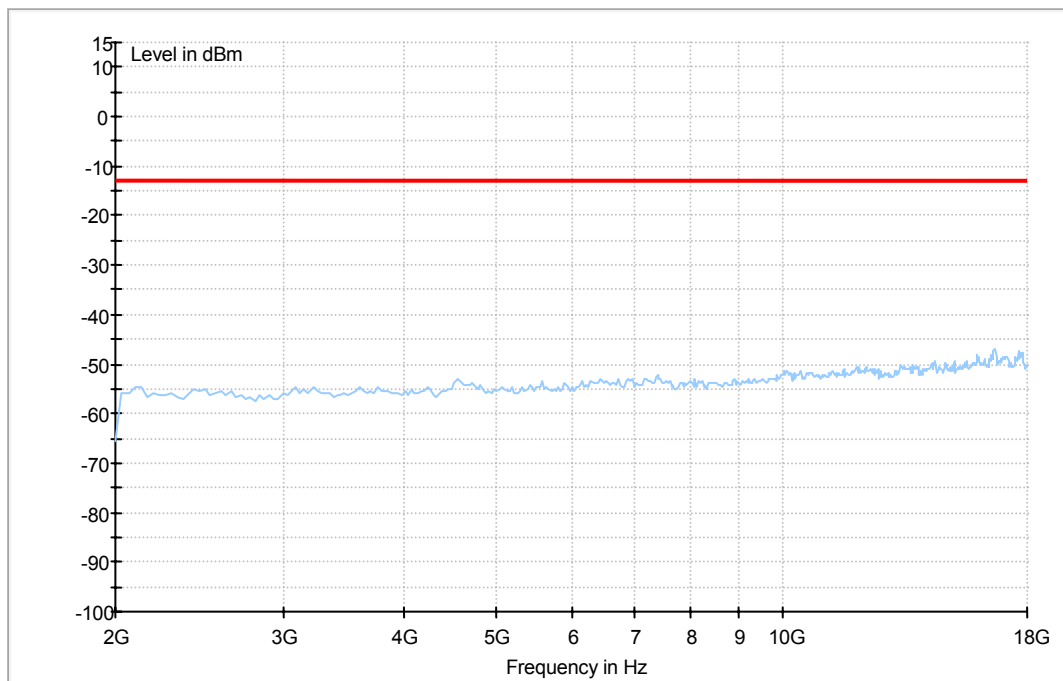


Traffic Mode (30MHz-2GHz)

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

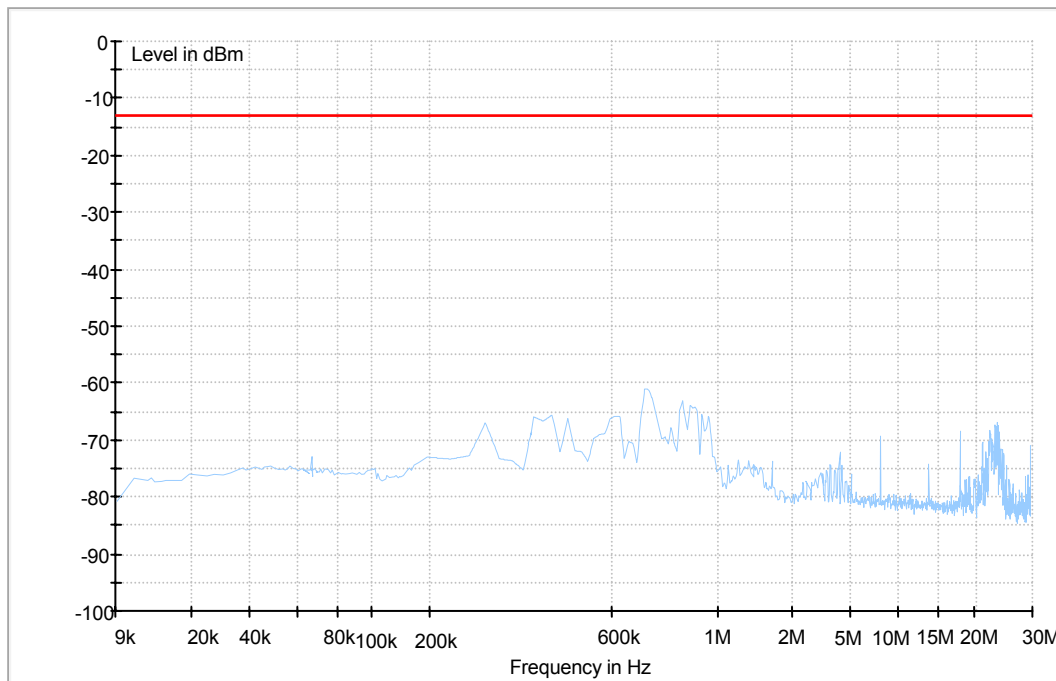


Traffic Mode (2GHz-18GHz)



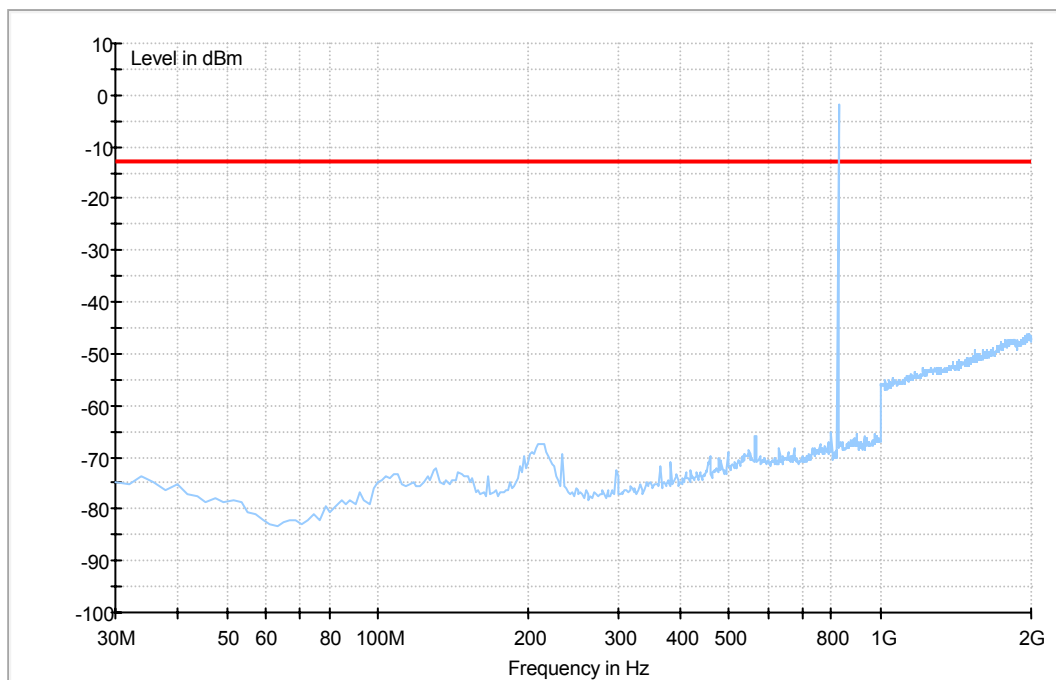
8.3.7 For HSUPA BAND V

Traffic Mode (9kHz-30MHz)

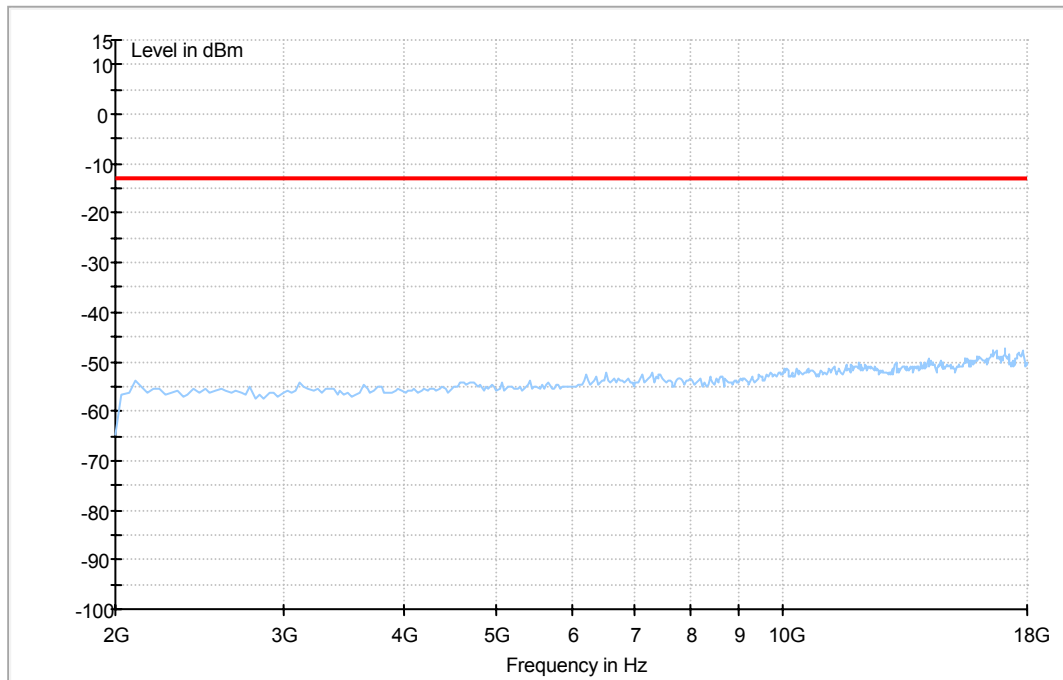


Traffic Mode (30MHz-2GHz)

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

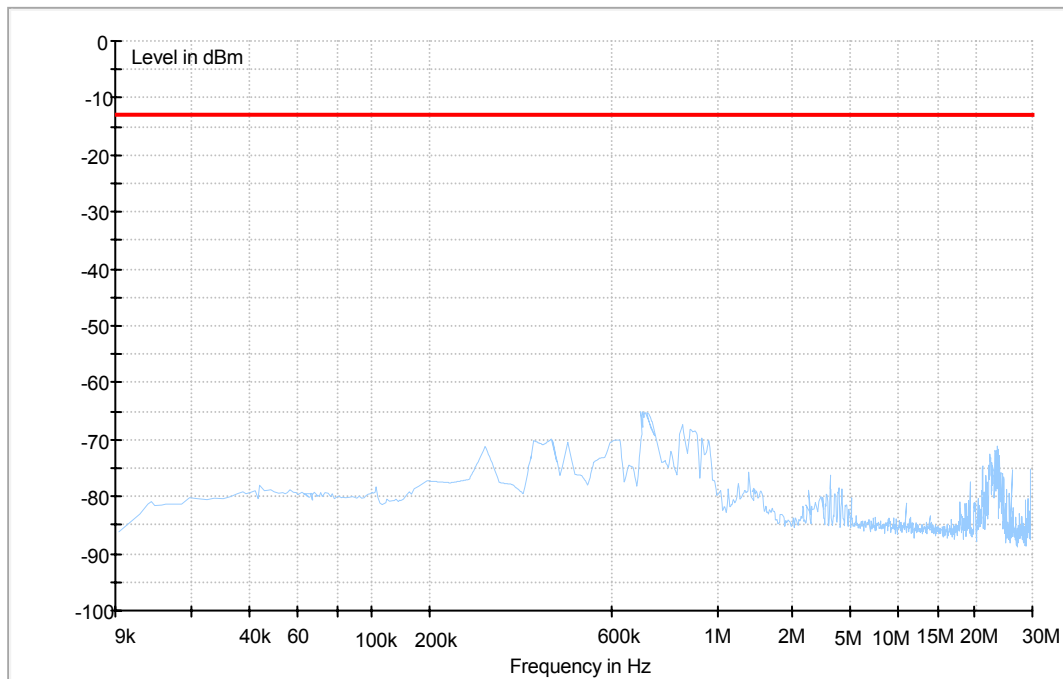


Traffic Mode (2GHz-18GHz)



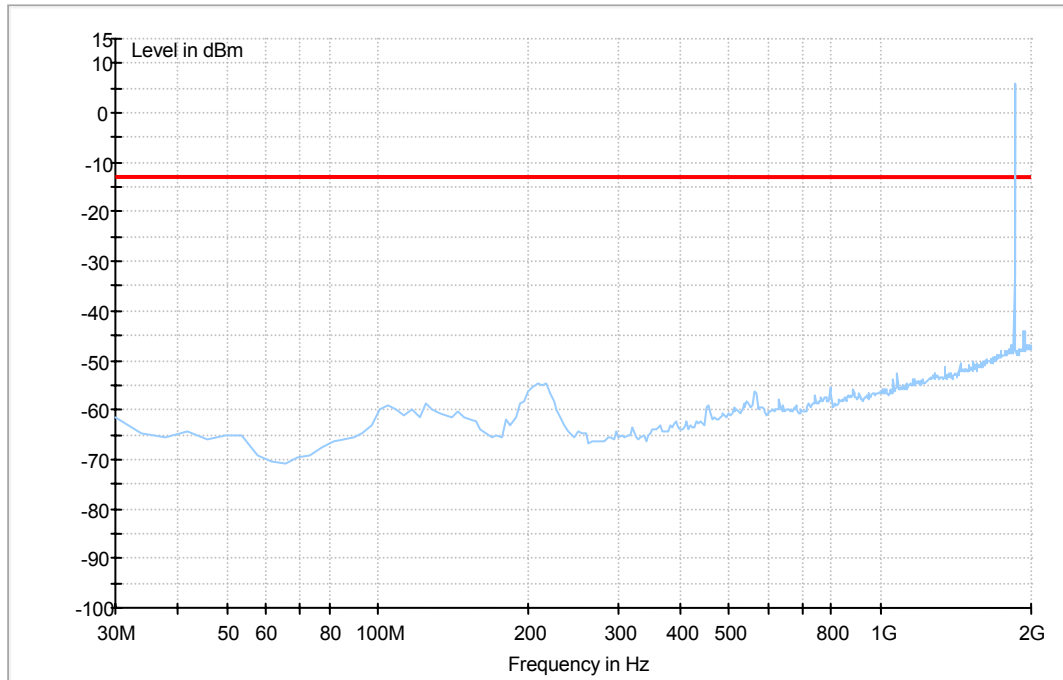
8.3.8 For WCDMA BAND II

Traffic Mode (9kHz-30MHz)

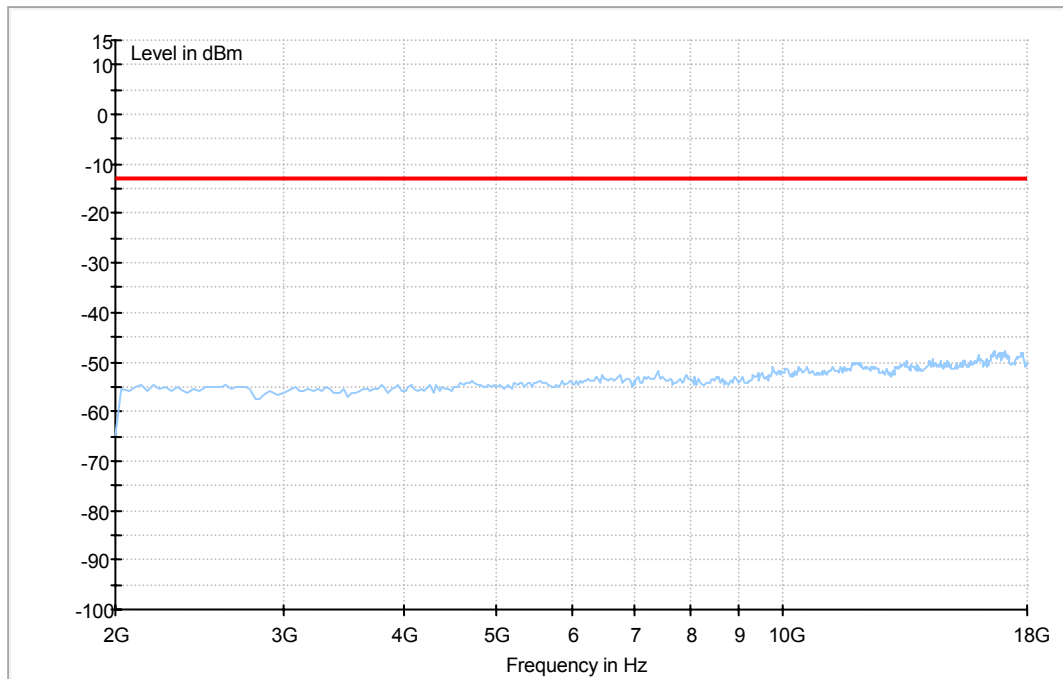


Traffic Mode (30MHz-2GHz)

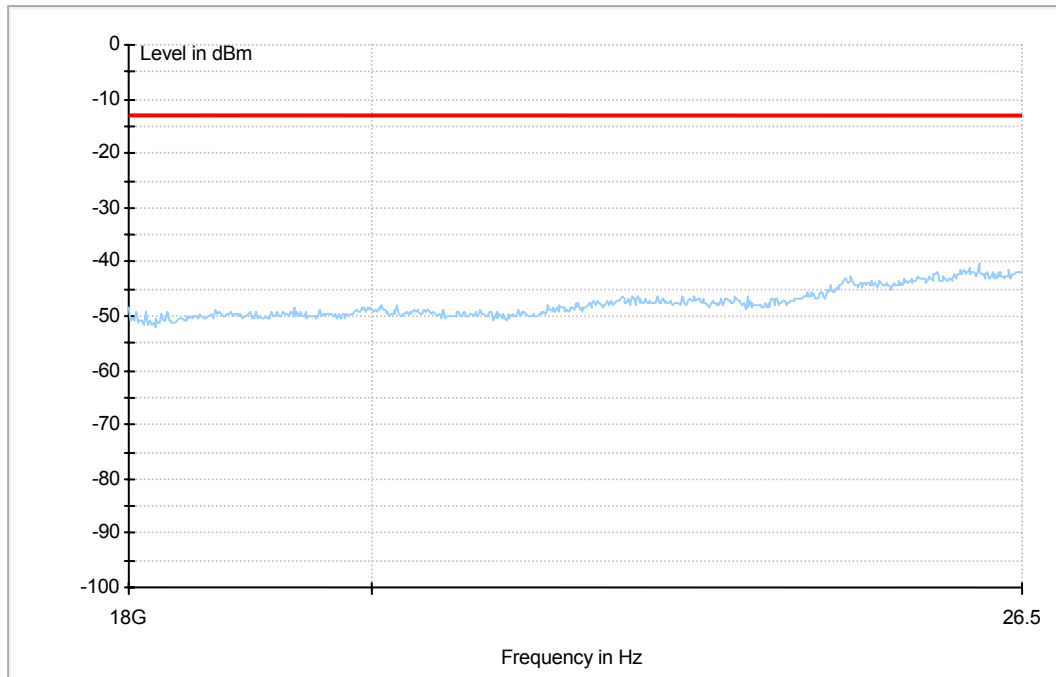
Note: The peak exceeds the limit line is carrier frequency.



Traffic Mode (2GHz-18GHz)

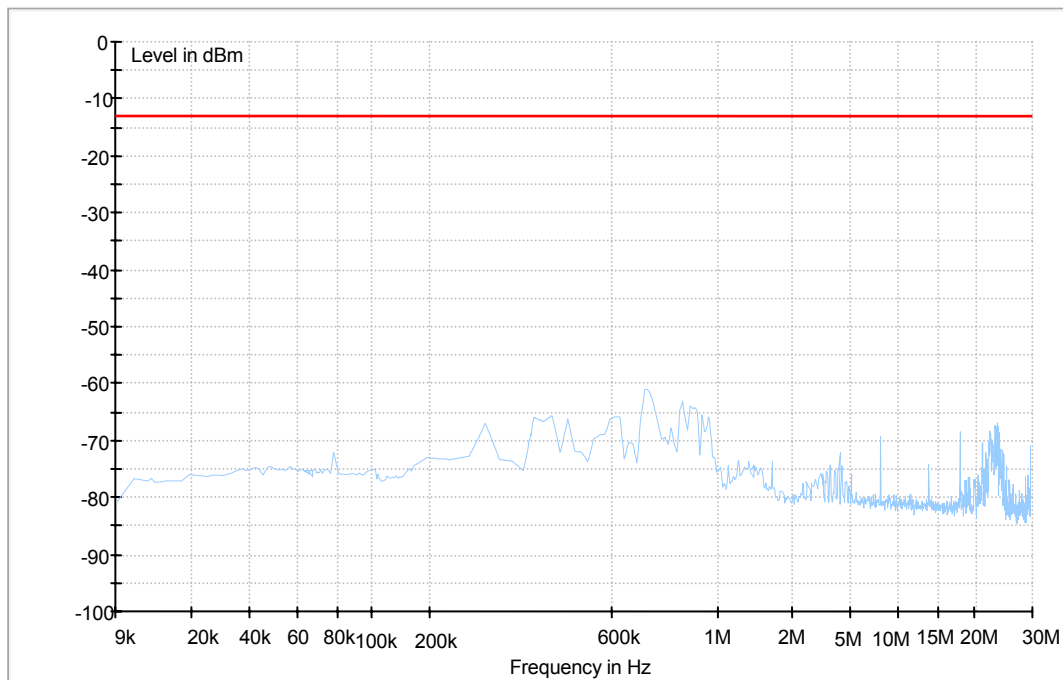


Traffic Mode (18GHz-26.5GHz)



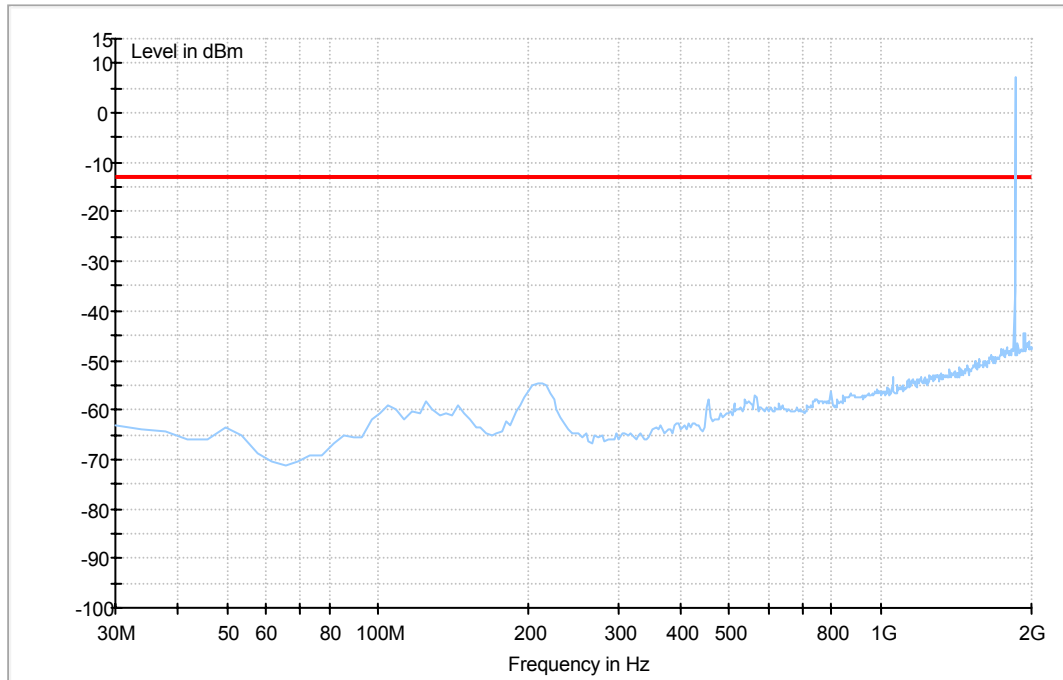
8.3.9 For HSDPA BAND II

Traffic Mode (9kHz-30MHz)

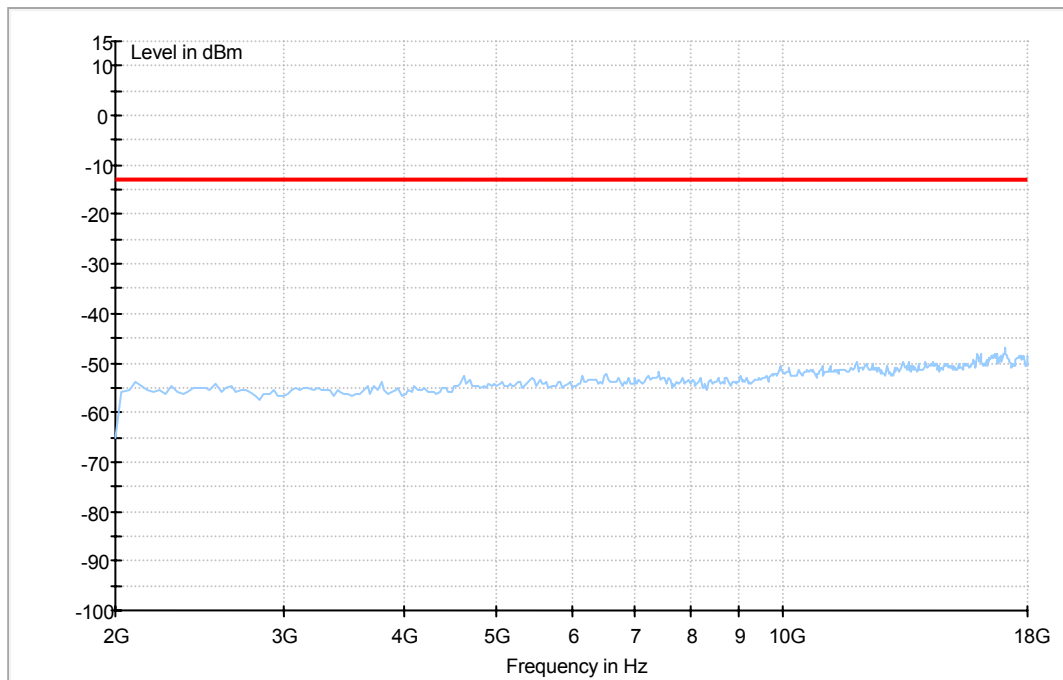


Traffic Mode (30MHz-2GHz)

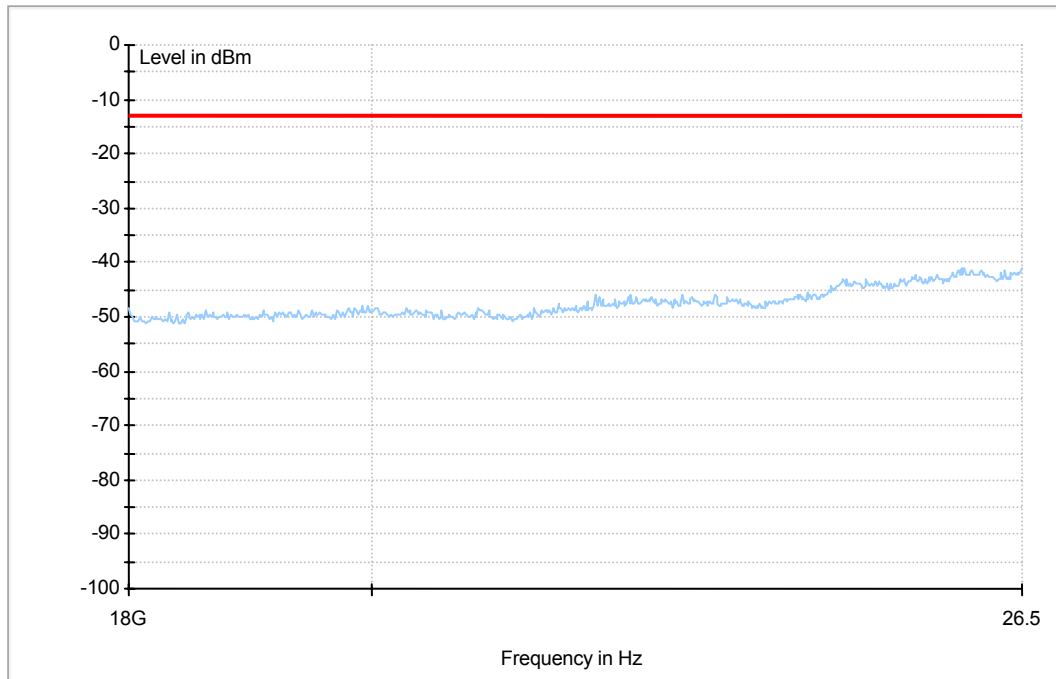
Note: The peak exceeds the limit line is carrier frequency.



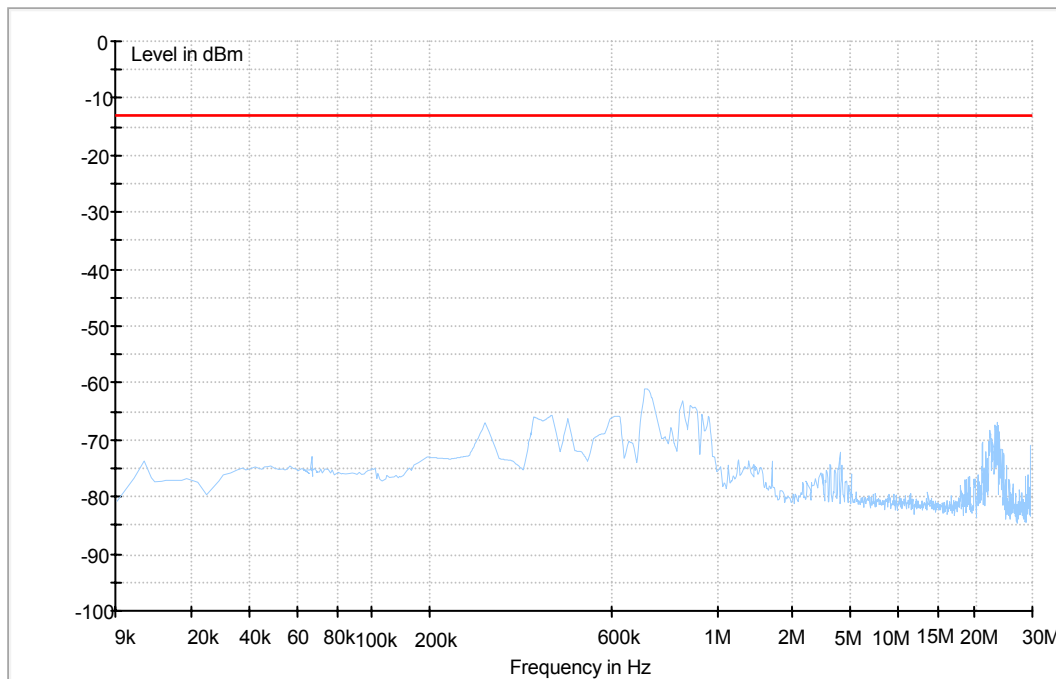
Traffic Mode (2GHz-18GHz)



Traffic Mode (18GHz-26.5GHz)

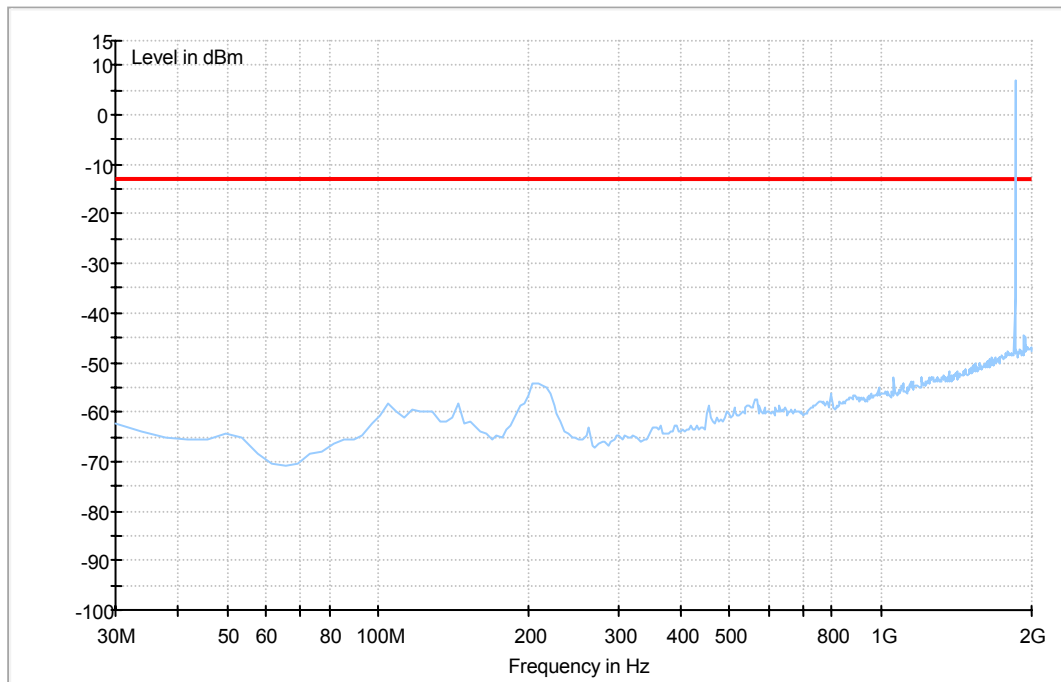


8.3.10 For HSUPA BAND II Traffic Mode (9kHz-30MHz)

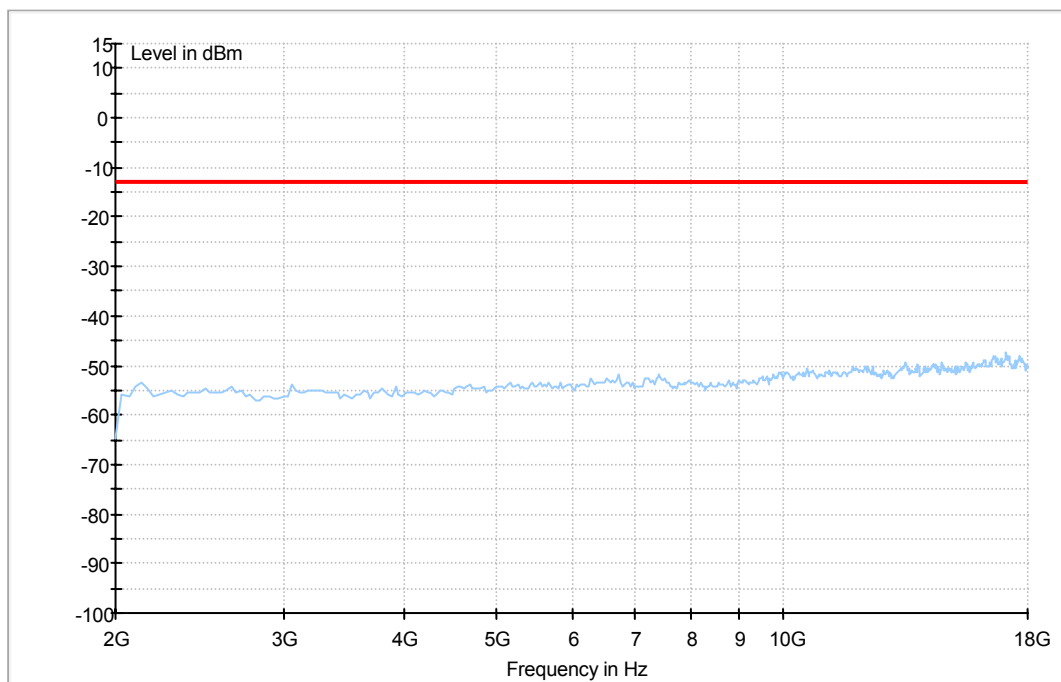


Traffic Mode (30MHz-2GHz)

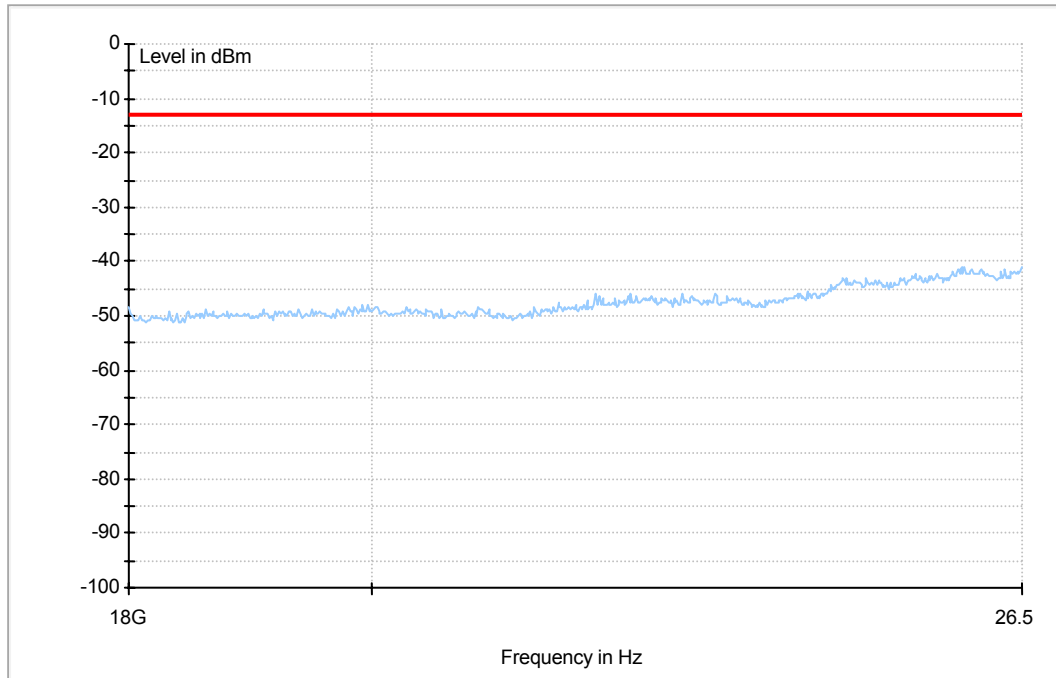
Note: The peak exceeds the limit line is carrier frequency.



Traffic Mode (2GHz-18GHz)



Traffic Mode (18GHz-26.5GHz)



END