



FCC RF Test Report

Product Name: Mobile WiFi

Model Number: E5776s-501

Report No: SYBH(Z-RF)006112012-2002

FCC ID: QISE5776s-501

IC : 6369A-E5776S

Reliability Laboratory of Huawei Technologies Co., Ltd.

Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District,
Shenzhen, 518129, P.R.C

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Notice

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-2.
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.
10. The laboratory has Passed the accreditation by The American Association for Laboratory Accreditation (A2LA). The accreditation number is 2174.01.



Applicant:	Huawei Technologies Co., Ltd.
Address:	Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C
Date of Receipt Test Item:	Nov.,07, 2012
Start Date of Test:	Nov.,07, 2012
End Date of Test:	Nov.,16, 2012
Test Result:	Pass

Approved by Senior

2012-11-16

DaiLinjun

Engineer:

Date

Name

Signature

Prepared by:

2012-11-16

GuoXingxing

Date

Name

Signature



Contents

1	<u>General Information</u>	5
1.1	APPLIED STANDARD.....	5
1.2	TEST LOCATION.....	5
1.3	TEST ENVIRONMENT CONDITION	5
2	<u>Summary</u>	6
3	<u>Product Description</u>	7
3.1	PRODUCT INFORMATION	7
4	<u>Test Description</u>	9
4.1	SUPPORTED FREQUENCY RANGE	9
4.2	TRANSMITTER / RECEIVER CHARACTERISTICS.....	9
4.3	ANTENNA GAIN.....	10
4.4	POWER SUPPLY	10
5	<u>General Test Conditions / Configurations</u>	11
5.1	RF CHANNELS UNDER TEST.....	11
5.2	TEST MODES.....	11
5.3	TEST ENVIRONMENT	11
5.4	TEST SETUP.....	12
5.5	TEST CONDITIONS	16
6	<u>Main Test Instruments</u>	18
7	<u>Measurement Uncertainty</u>	19



1 General Information

1.1 Applied Standard

Applied Rules: 47 CFR FCC Part 02:2011
47 CFR FCC Part 24: 2011

IC RSS-Gen (Issue 3)
IC RSS-133 (Issue 5)

Test Method: FCC KDB 971168 D01 Power Meas License Digital Systems v01
FCC KDB 662911 D01 Multiple Transmitter Output v01

1.2 Test Location

Test Location 1: Reliability Laboratory of Huawei Technologies Co., Ltd.
Address: Administration Building, Headquarters of Huawei Technologies Co., Ltd.,
Bantian, Longgang District, Shenzhen, 518129, P.R.C

1.3 Test Environment Condition

Ambient Temperature: 19.5 to 25 °C
Ambient Relative Humidity: 40 to 55 %
Atmospheric Pressure: Not applicable



2 Summary

Table 1 Summary of results

Test Item	FCC Rule No.	IC Rule No.	Requirements	Test Result	Verdict (NOTE 2)
RF Power Output	§2.1046, §24.232	RSS-Gen, §4.8; RSS-133, §6.4	EIRP ≤ 2 W; PAR ≤ 13 dB.	Appendix A	Pass
Bandwidth	§2.1049, §22.917	RSS-Gen, §4.6	OBW: No limit. EBW: No limit.	Appendix B	Pass
Band Edges Compliance	§2.1051, §24.238	RSS-Gen, §4.9; RSS-133, §6.5	≤ -13 dBm/1%*EBW, in 1 MHz bands immediately outside and adjacent to the frequency block.	Appendix C	Pass
Spurious Emission at Antenna Terminals	§2.1051, §24.238	RSS-Gen, §4.9; RSS-133, §6.5	≤ -13 dBm/1 MHz, from 9 kHz to 10 th harmonics but outside authorized operating frequency ranges.	Appendix D	Pass
Field Strength of Spurious Radiation	§2.1053, §24.238	RSS-Gen, §4.9; RSS-133, §6.5	≤ -13 dBm/1 MHz.	Appendix E	Pass
Frequency Stability	§2.1055, §24.235	RSS-Gen, §4.7; RSS-133, §6.3	FCC: within authorized frequency block. IC: ≤ ±2.5 ppm.	Appendix F	Pass
Receiver Spurious Emissions (NOTE 1)	---	RSS-Gen, §4.10; RSS-Gen, §6; RSS-133, §6.6	Radiated limit: RSS-Gen, §6.1 field strength limit. Conducted limit: ≤ -57 dBm/120 kHz (CISPR-QP), from 30 MHz to 1000 MHz, and ≤ -53 dBm/1 MHz (AV), from 1 GHz to 3 rd harmonics.	Appendix G	Pass
Photos of Test Setups	---	---	---	Appendix H	---
<p>NOTE 1: For Receiver Spurious Emissions, If the receiver has a detachable antenna of known impedance, antenna conducted spurious emissions measurement is permitted as an alternative to radiated measurement. However, the radiated method is recommended. The antenna conducted test shall be performed with the antenna disconnected and the receiver antenna terminals connected to a measuring instrument having equal impedance to that specified for the antenna.</p> <p>NOTE 2: For the verdict, the "N/A" denotes "not applicable", the "N/T" denotes "not tested".</p>					



3 Product Description

3.1 Product Information

3.1.1 General Description

E5776s-501 is a LTE/UMTS/GSM triple mode and WiFi Wireless mobile Router; it can be used as a WiFi hotspot based on standard of IEEE802.11b/g/n. It supports 3G WCDMA and 4G LTE wireless internet accessing function. About 3G WCDMA wireless mode, it supports WCDMA and HSDPA/HSUPA/HSPA+/DC-HSDPA, operating in Band1、Band2、Band4、Band 5; and the 4G LTE operating in Band4、Band7; and GSM operating in GSM850MHz and GSM1900MHz.The WiFi frequency is 2.4GHz.

E5776s-501 supports 1Tx2Rx for 3G WCDMA and 4G LTE. WiFi supports 2Tx2Rx.

3.1.2 Board Information

Table 2 Board Information

Mobile WiFi		
E5776s-501		
Board and Module		
Equipment Designation / Description	Software Version	Hardware Version
MAINBOARD	21.202.11.01.00	CL2E5776SM

3.1.3 Adapter Technical Data

AC/DCAdapter Model	HW-050200U3W
Manufacturer	HUAWEI
Input Voltage	100-240V1 ~50/60Hz, 0.5A MAX
Output Voltage	 5.0V 2.0A



3.1.4 Battery Technical Data

Name	Qty.	Manufacture	Serials number	Description
Li-ion Battery	1	HUAWEI	HB5P1H	Battery Model: HB5P1H Rated capacity: 3000mAh Nominal Voltage: === +3.7V Charging Voltage: === +4.2V



4 Test Description

4.1 Supported Frequency Range

Characteristics	Description
Downlink	1930 to 1990 MHz
Uplink	1850 to 1910 MHz

4.2 Transmitter / Receiver Characteristics

Characteristics	Description
System Type	GSM UMTS
TX Output Power (per Antenna Port)	GSM system: 30dBm; UMTS system: 24dBm
Channel Spacing(s) / Bandwidth(s)	GSM system: 200 kHz UMTS system: 5 MHz
Designation of Emissions	GSM system: 250KGXW (GMSK modulation), 250KG7W (8PSK modulation) UMTS system: 4M17F9W



4.3 Antenna Gain

Antenna Gain(dBi)	0.3
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4.4 Power Supply

Specification	Description
Power Supply Type	Directly Connected to DC /AC Power Supply
Input to EUT (DC power)	DC Voltage Nominal: \approx 3.7 V DC Voltage Range: \approx 3.6 V to 4.2V



5 General Test Conditions / Configurations

5.1 RF Channels under Test

Test Mode	TX / RX	RF Channel		
		Low (L)	Middle (M)	High (H)
TM1/TM2	TX	Channel 512	Channel 661	Channel 810
		1850.2MHz	1880.0MHz	1909.8MHz
	RX	Channel 512	Channel 661	Channel 810
		1930.2 MHz	1960.0 MHz	1989.8 MHz
TM3/TM4/TM5	TX	Channel 9262	Channel9400	Channel9538
		1852.4MHz	1880.0MHz	1907.6MHz
	RX	Channel 9662	Channel 9800	Channel 9938
		1932.4 MHz	1960.0 MHz	1987.6 MHz

5.2 Test Modes

Test Mode	Test Modes Description
TM1	GSM/GPRS, GMSK modulation
TM2	EDGE, 8PSK modulation
TM3	WCDMA, QPSK modulation
TM4	HSDPA, QPSK modulation
TM5	HSUPA, QPSK modulation

5.3 Test Environment

Environment Parameter	Selected Values During Tests	
Relative Humidity	Ambient	
Temperature	TN	Ambient
Voltage	VL	3.6V
	VN	3.7V
	VH	4.2V

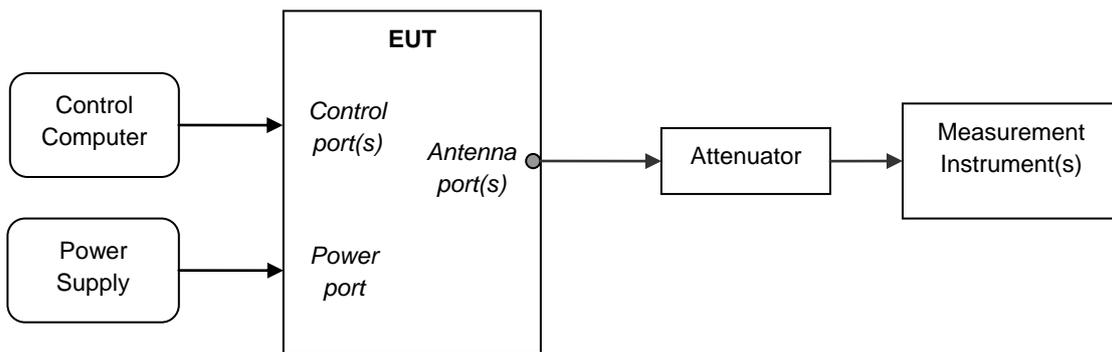
NOTE: VL= lower extreme test voltage
 VN= nominal voltage
 VH= upper extreme test voltage
 TN= normal temperature

5.4 Test Setup

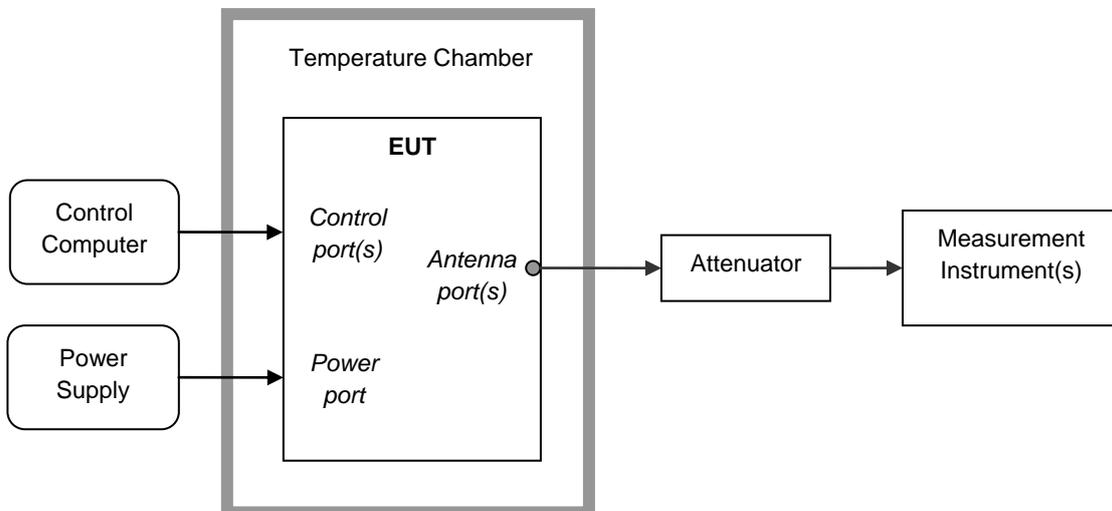
5.4.1 General Test Setup Configurations

Configuration	Description
Test Antenna Ports	Until otherwise declared, all TX tests are ONLY performed at the main Transmitter antenna port (e.g. TRXA, TXA and so on) of the EUT, and all RX tests are ONLY performed at the main Receiver antenna port (e.g. TRXA, RXA and so on) of the EUT.
Multiple RF Sources	Other than the tested RF source of the EUT, other RF source(s) are disabled or shutdown during measurements.

5.4.2 Test Setup 1



5.4.3 Test Setup 2





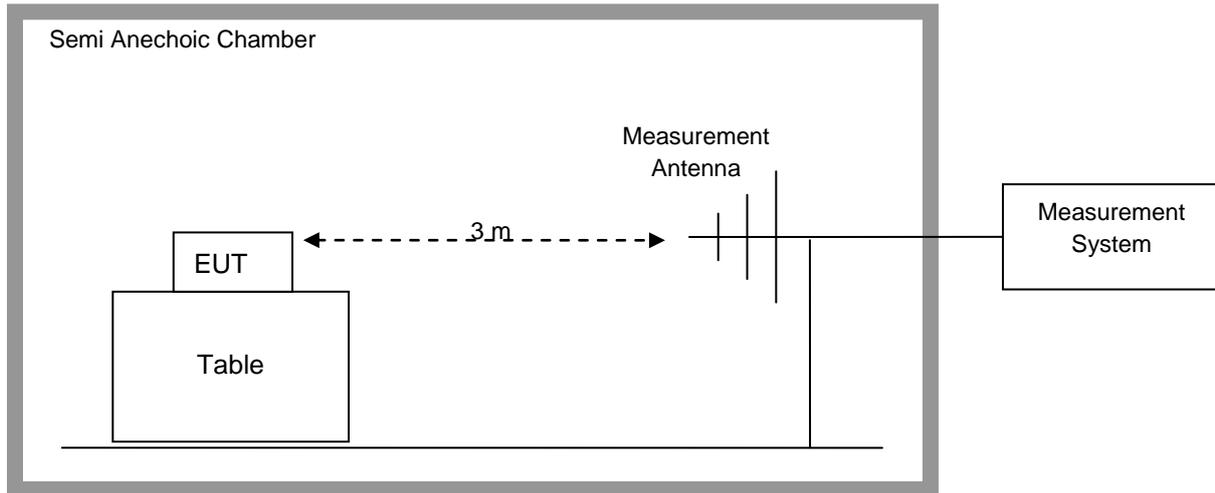
5.4.4 Test Setup 3

NOTE1: Effective radiated power (ERP) or Effective Isotropic radiated power (EIRP) refers to the EUT radiation power output, assuming all emissions are radiated from half-wave dipole antennas or horn antennas.

NOTE2: The EUT was set on insulator 80cm above the Ground Plane. The setup and test methods were according to ANSI-TIA-603C 2004. The measurements were carried through with a Rohde and Schwarz Test Receiver and control software.

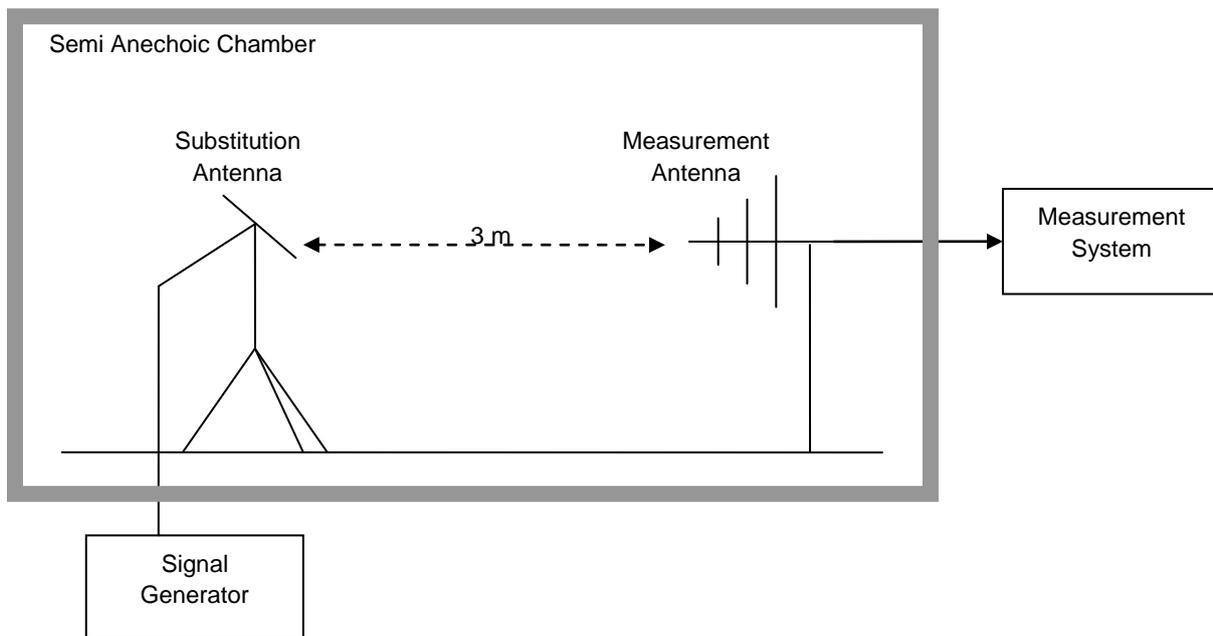
Step 1: Pre-test to find the Maximum ERP or EIRP

1. Connect the test system according to the following figure. EUT is running for 30 minutes before test, and measurement instruments are warming-up for 30 minutes.
2. Set up communication link between Universal radio communication tester and EUT, set EUT working frequency, and control EUT to transmit at maximum power.
3. Set the center frequency of the signal analyzer or receiver to the EUT's operating frequency, the RBW is equal to the emission bandwidth of the signal. Set RMS detector for the test, and the span is equal to 2 times of emission bandwidth, the other settings should remain automatic. Normally, the height range of antenna was 1m to 4m, the azimuth range of turntable was 0° to 360°. The receiver antenna has two polarizations V and H. A portable or small unlicensed wireless device shall be placed on a non-metallic test fixture or other non-metallic support during testing. The supporting fixture shall permit orientation of the EUT in each of three orthogonal (x, y, z) axis positions such that emissions from the EUT are maximized. Measure the EUT maximum RF power and record the result.
4. Changing EUT working frequency and measuring the RF power at channel L, M, H respectively.
Complete the test data.



Step 2: Substitution method to verify the maximum ERP or EIRP

1. Measurement setup is according to the following figure. EUT was substituted by antenna, and the polarization is identical with the test antenna; the signal generator was connected to the substitution antenna.
2. The radiated output power, measured by signal analyzer set, is the same as recorded in above. Then this power level is matched by a signal from a calibrated signal generator which is substituted for EUT. The power supplied by the generator is then equal to the ERP or EIRP after corrected by the antenna gain and cable loss.





5.5 Test Conditions

Test Case	Test Conditions	
Transmitter Output Power	Test Configuration	Ambient Temperature & Rated Voltage
	Test Setup	Test Setup 1 & Test Setup 3
	Detector	RMS
	RF Channels (TX)	L, M, H
	Test Mode	TM1/TM2/TM3/TM4TM5
Modulation Characteristics	Test Configuration	Ambient Temperature & Rated Voltage
	Test Setup	Test Setup 1
	RF Channels (TX)	M
	Test Mode	TM1/TM2/TM3
Occupied Bandwidth	Test Configuration	Ambient Temperature & Rated Voltage
	Test Setup	Test Setup 1
	Detector	PK
	RF Channels (TX)	L, M, H
	Test Mode	TM1/TM2/TM3
Band Edges Compliance	Test Configuration	Ambient Temperature & Rated Voltage
	Test Setup	Test Setup 1
	Detector	RMS
	RF Channels (TX)	L, H
	Test Mode	TM1/TM2/TM3
Spurious Emission at Antenna Terminals	Test Configuration	Ambient Temperature & Rated Voltage
	Test Setup	Test Setup 1
	Detector	PK
	RF Channels (TX)	L, M,H
	Test Mode	TM1/TM2/TM3
Field Strength of Spurious Radiation	Test Configuration	Ambient Temperature & Rated Voltage
	Test Setup	Test Setup 3
	Detector	PK
	RF Channels (TX)	M
	Test Mode	TM1/TM2/TM3/TM4TM5
Frequency Stability	Test Configuration	(1) -30 °C to +50 °C with step 10 °C at Rated Voltage; (2) 85%, 100% and 115% of Rated Voltage at Ambient Temperature.
	Test Setup	Test Setup 2
	RF Channels (TX)	M



Test Case	Test Conditions	
	Test Mode	TM1/TM2/TM3



6 Main Test Instruments

Table 3 Main Test Equipments

Equipment Name	Manufacturer	Model	Serial Number	Cal Date	Cal. Due
Power supply	KEITHLEY	2303	1288003	2012-11-09	2013-11-08
Universal Radio Communication Tester	R&S	CMU200	117341	2012-01-13	2013-01-12
Universal Radio Communication Tester	Agilent	E5515C	MY50260239	2012-11-09	2013-11-08
Spectrum Analyzer	Agilent	E4440A	MY49420179	2012-07-18	2013-07-17
Signal Analyzer	R&S	FSQ31	200021	2012-11-09	2013-11-08
Temperature Chamber	WEISS	WKL64	24600294	2012-02-14	2013-02-13
Signal generator	Agilent	E8257D	MY49281095	2012-07-10	2013-07-09
Spectrum analyzer	R&S	FSU3	200474	2012-03-06	2013-03-05
Spectrum analyzer	R&S	FSU43	100144	2012-03-06	2013-03-05
Double-Ridged Waveguide Horn Antenna (1G~18GHz)	R&S	HF907	100304	2012-04-06	2013-04-05
Double-Ridged Waveguide Horn Antenna (1G~18GHz)	R&S	HF907	100391	2012-04-06	2013-04-05
Trilog Broadband Antenna (30M~3GHz)	SCHWARZ BECK	VULB 9163	9163-521	2012-07-18	2013-07-17
Pyramidal Horn Antenna(26GHz-40GHz)	ETS-Lindgren	3160-10	00123940	2012-02-28	2013-02-27
Pyramidal Horn Antenna(18GHz-26.5GHz)	ETS-Lindgren	3160-09	00125912	2012-02-28	2013-02-27



7 Measurement Uncertainty

For a 95% confidence level (k=2), the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 as following:

Test Item		Extended Uncertainty
Transmitter Output Power	Power (dBm)	U =0.39 dB
Occupied Bandwidth	Magnitude (%)	U=0.2%
Band Edge Compliance	Disturbance Power (dBm)	U=2.0 dB
Conducted Spurious Emissions	Disturbance Power (dBm)	U=2.0 dB
Field Strength of Spurious Radiation	ERP (dBm)	U=4.6 dB (30 MHz – 1GHz) U=3.0 dB (above 1 GHz)
Frequency Stability	Frequency Accuracy (ppm)	U=0.21 ppm

END



FCC&IC Test Report of E5776s-501
FCC ID: QISE5776S-501
IC : 6369A-E5776S

Appendix A

Transmitter Output Power

According to FCC Part 2.1046 & Part24.232



Conducted Power of Transmitter

TEST CONDITIONS		RF Output Power (Conducted)					
		Channel512(L)		Channel661(M)		Channel810(H)	
		1850.2MHz		1880.0MHz		1909.8MHz	
		dBm		dBm		dBm	
T_{nom} / V_{nom}		Measured	Limit	Measured	Limit	Measured	Limit
TM1		29.91	33	30.16	33	30.09	33
TM2		26.41	33	26.03	33	25.67	33
TEST CONDITIONS		Channel9262(L)		Channel9400(M)		Channel9538(H)	
		1852.4MHz		1880.0MHz		1907.6MHz	
		dBm		dBm		dBm	
T_{nom} / V_{nom}		Measured	Limit	Measured	Limit	Measured	Limit
TM3		23.35	33	23.22	33	22.81	33
TM4	Case1	22.8	33	22.73	33	22.22	33
	Case2	22.81	33	22.69	33	22.28	33
	Case3	22.34	33	22.2	33	21.8	33
	Case4	21.87	33	21.77	33	21.27	33
TM5	Case1	22.37	33	21.62	33	21.15	33
	Case2	20.07	33	20.57	33	20.19	33
	Case3	20.72	33	20.46	33	20.07	33
	Case4	20.51	33	20.35	33	19.97	33
	Case5	21.69	33	21.57	33	21.17	33



Peak-to-Average Ratio

TEST CONDITIONS		Peak-to-Average Ratio					
		Channel512(L)		Channel661(M)		Channel810(H)	
		1850.2MHz		1880.0MHz		1909.8MHz	
		dB		dB		dB	
T_{nom} / V_{nom}		Measured	Limit	Measured	Limit	Measured	Limit
TM1		0.7	13	0.7	13	0.7	13
TM2		3.31	13	3.51	13	3.29	13
TEST CONDITIONS		Channel9262(L)		Channel9400(M)		Channel9538(H)	
		1852.4MHz		1880.0MHz		1907.6MHz	
		dB		dB		dB	
T_{nom} / V_{nom}		Measured	Limit	Measured	Limit	Measured	Limit
TM3		2.51	13	2.82	13	2.75	13
TM4	Case1	3.31	13	3.51	13	3.29	13
	Case2	4.11	13	4.05	13	4.09	13
	Case3	4.51	13	4.41	13	4.39	13
	Case4	4.53	13	4.56	13	4.73	13
TM5	Case1	4.23	13	4.31	13	4.25	13
	Case2	6.01	13	5.97	13	6.13	13
	Case3	5.91	13	5.93	13	5.86	13
	Case4	6.02	13	6.13	13	6.19	13
	Case5	5.29	13	5.23	13	5.21	13



Effective Isotropic Radiated Power of Transmitter (EIRP)

Test Mode	Freq. [MHz]	Meas. Level [dBm]	Substitution Antenna Type	SGP [dBm]	Substitution Gain [dBi]	Cable Loss [dB]	Substitution Level (EIRP)	FCC limit [dBm]	Result
							[dBm]		
TM1	1850.2	31.31	Horn Ant.	27.61	4.5	1	31.11	33	Pass
TM1	1880.0	31.56	Horn Ant.	27.86	4.5	1	31.36	33	Pass
TM1	1909.8	31.49	Horn Ant.	27.49	4.8	1	31.29	33	Pass
TM2	1850.2	27.81	Horn Ant.	24.51	4.5	1	28.01	33	Pass
TM2	1880.0	27.43	Horn Ant.	23.73	4.5	1	27.23	33	Pass
TM2	1909.8	27.07	Horn Ant.	23.07	4.8	1	26.87	33	Pass
TM3	1852.4	24.75	Horn Ant.	21.05	4.5	1	24.55	33	Pass
TM3	1880.0	24.62	Horn Ant.	21.3	4.5	1	24.8	33	Pass
TM3	1907.6	24.21	Horn Ant.	20.21	4.8	1	24.01	33	Pass

Note: a, For getting the EIRP (Efficient Isotropic Radiated Power) in substitution method, the following formula should be taken to calculate it,

$$\text{EIRP [dBm]} = \text{SGP [dBm]} - \text{Cable Loss [dB]} + \text{Gain [dBi]}$$

b, SGP=Signal Generator Level

END



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IC : 6369A-E5776S

Appendix B

Occupied Bandwidth

According to FCC Part 2.1049 & Part24 Subpart E



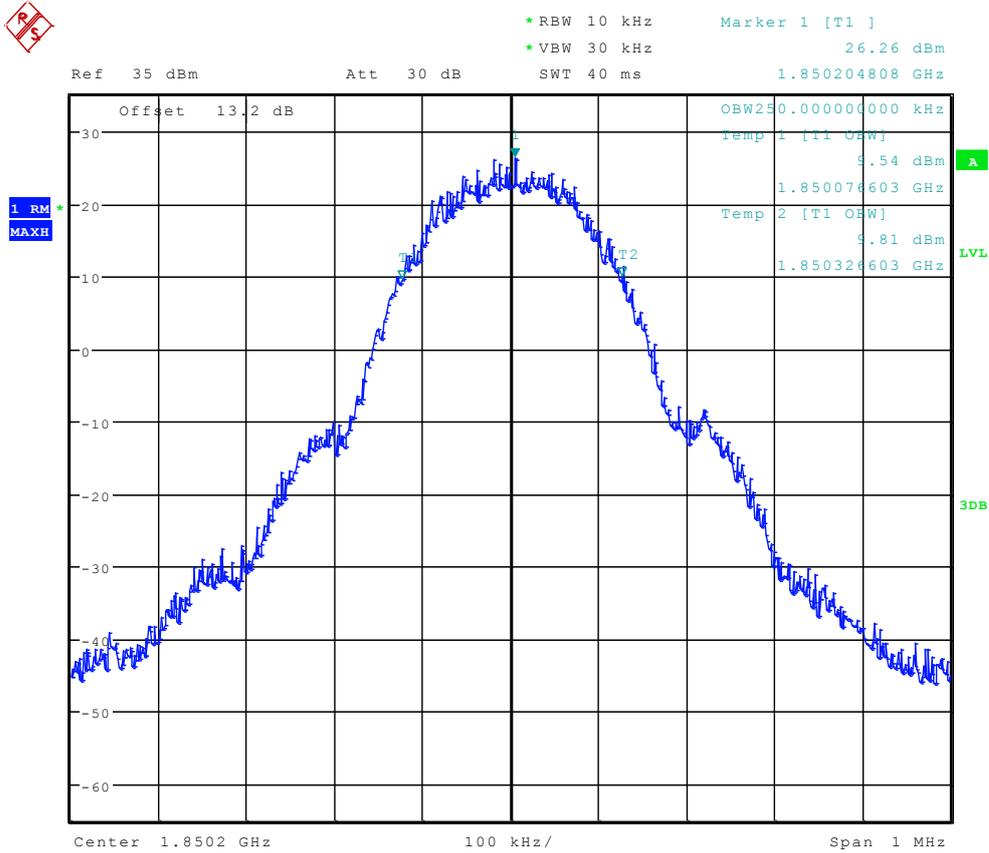
Result Table

Table 1 Measurement Results

Test Mode	RF Channel	Occupied Bandwidth [kHz]	Verdict
TM1	512	250.00	Pass
	661	246.79	Pass
	810	246.79	Pass
TM2	512	250.00	Pass
	661	246.79	Pass
	810	250.00	Pass
Test Mode	RF Channel	Occupied Bandwidth [MHz]	Verdict
TM3	9262	4.17	Pass
	9400	4.17	Pass
	9538	4.17	Pass



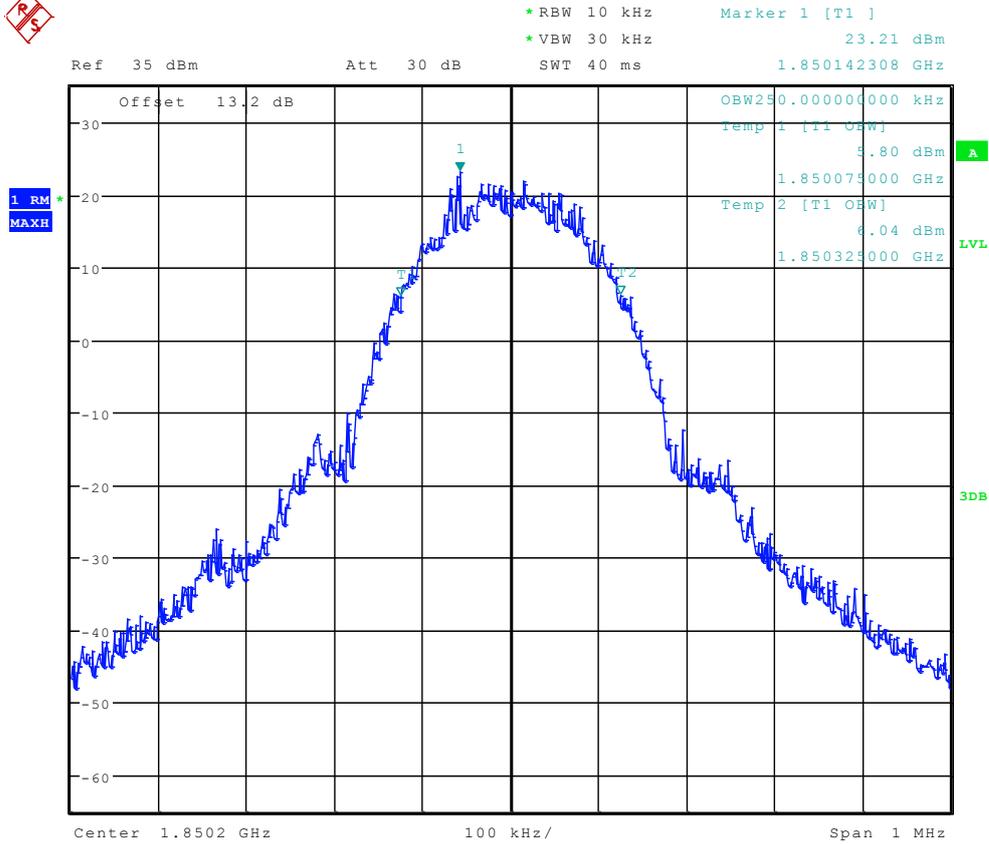
TM1:GPRS/GSM Channel 512



Date: 9.NOV.2012 09:06:57



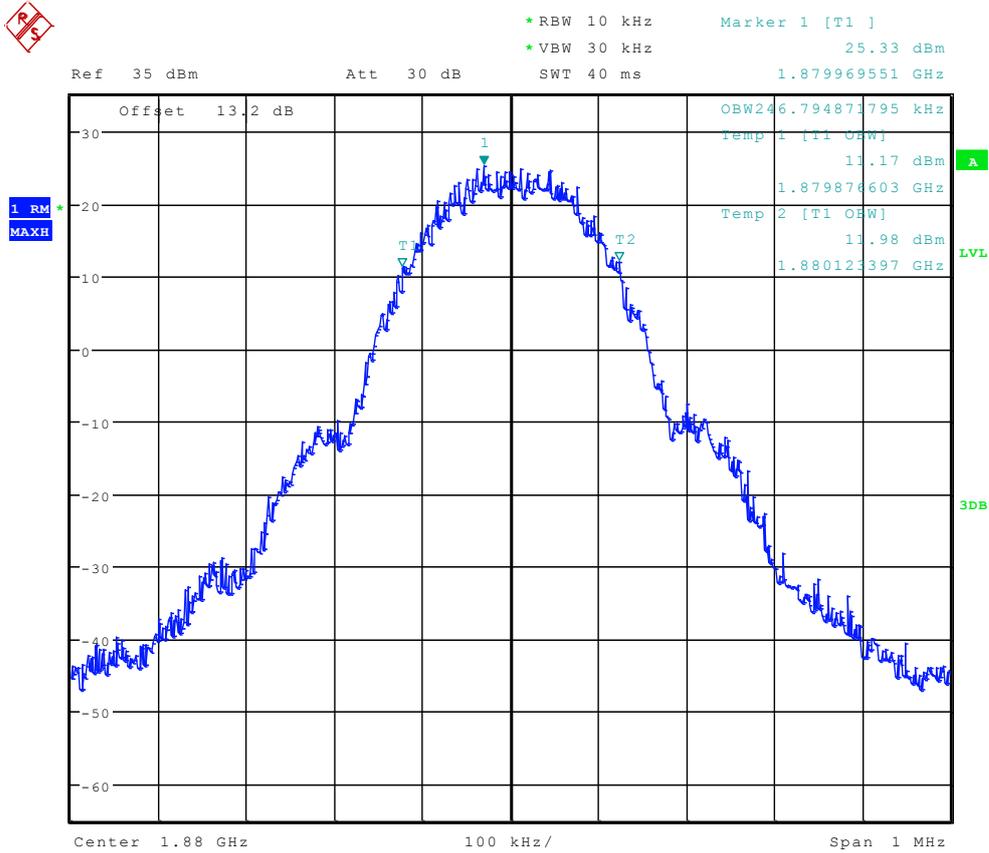
TM2:EDGE Channel 512



Date: 9.NOV.2012 09:17:13



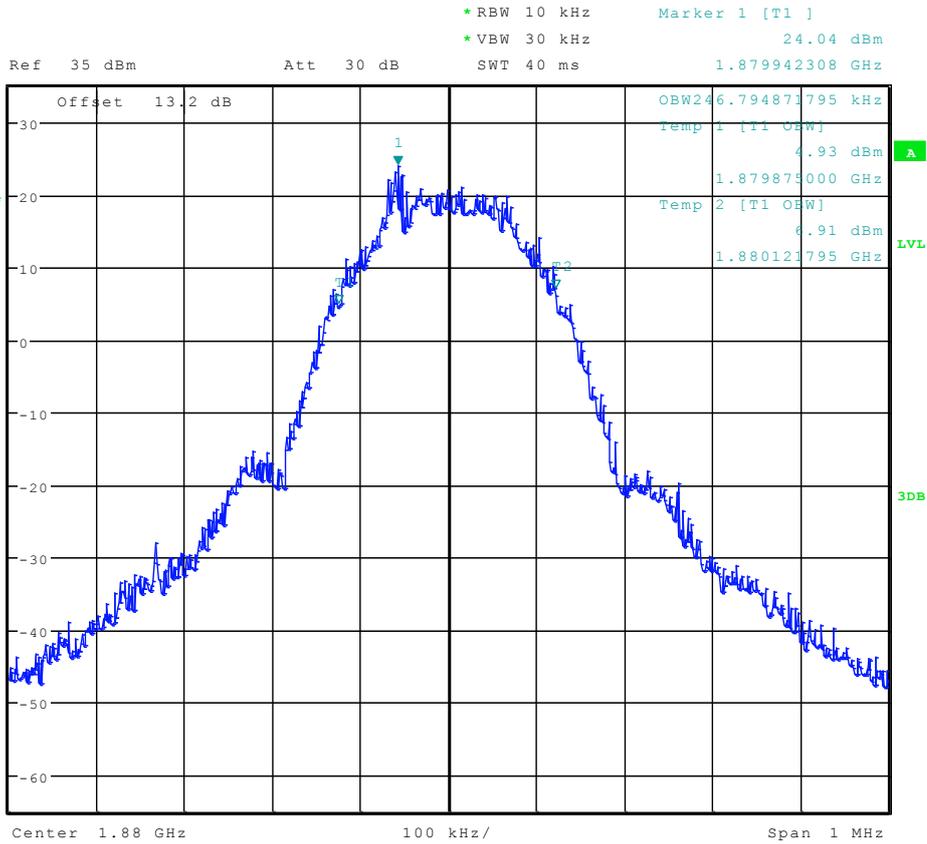
TM1:GPRS/GSM Channel 661



Date: 9.NOV.2012 09:07:11



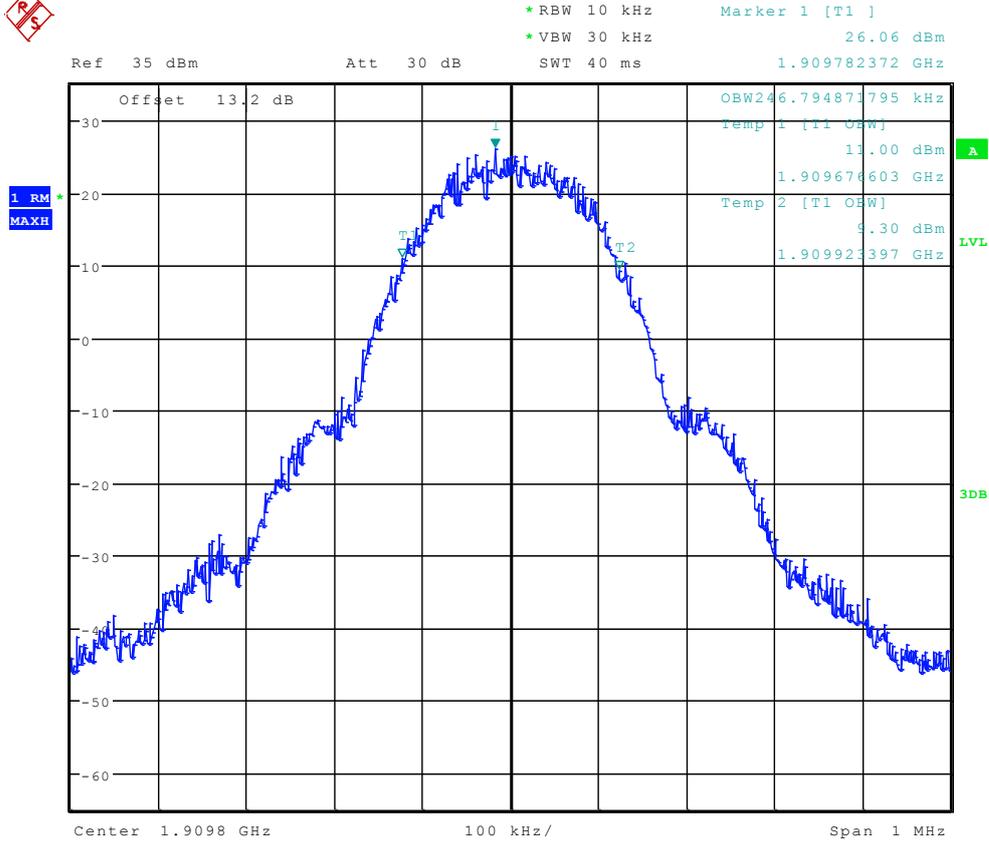
TM2:EDGE Channel 661



Date: 9.NOV.2012 09:17:26



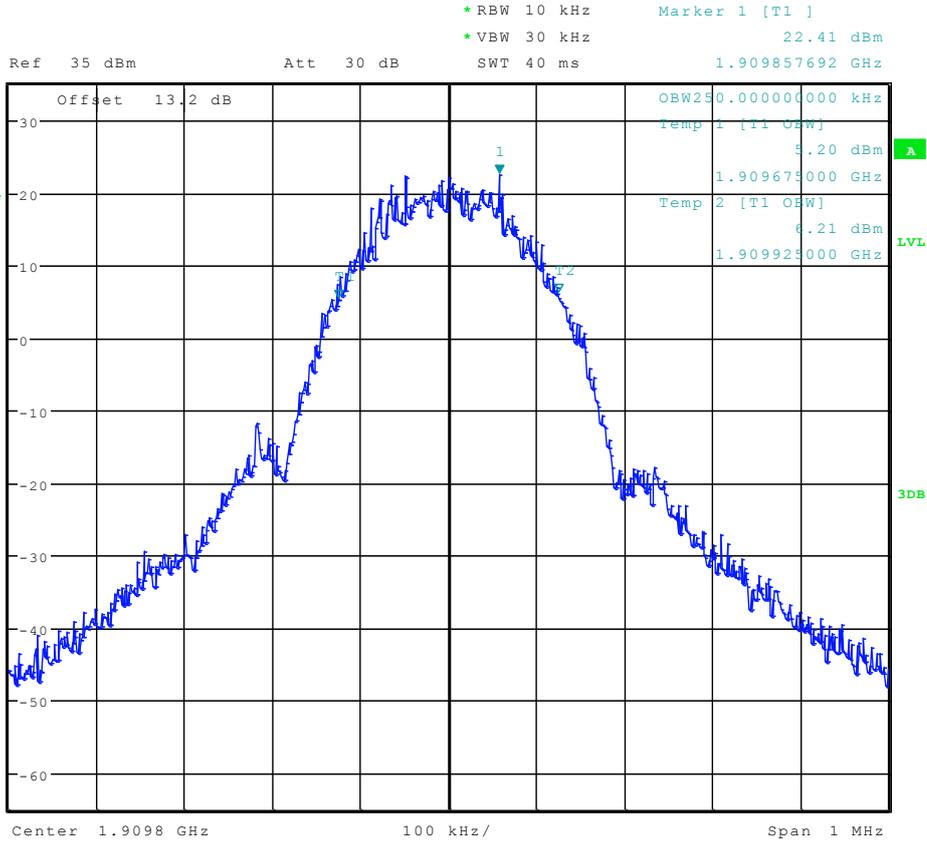
TM1:GPRS/GSM Channel 810



Date: 9.NOV.2012 09:07:24



TM2:EDGE Channel 810



Date: 9.NOV.2012 09:17:40



FCC&IC Test Report of E5776s-501
FCC ID: QISE5776S-501
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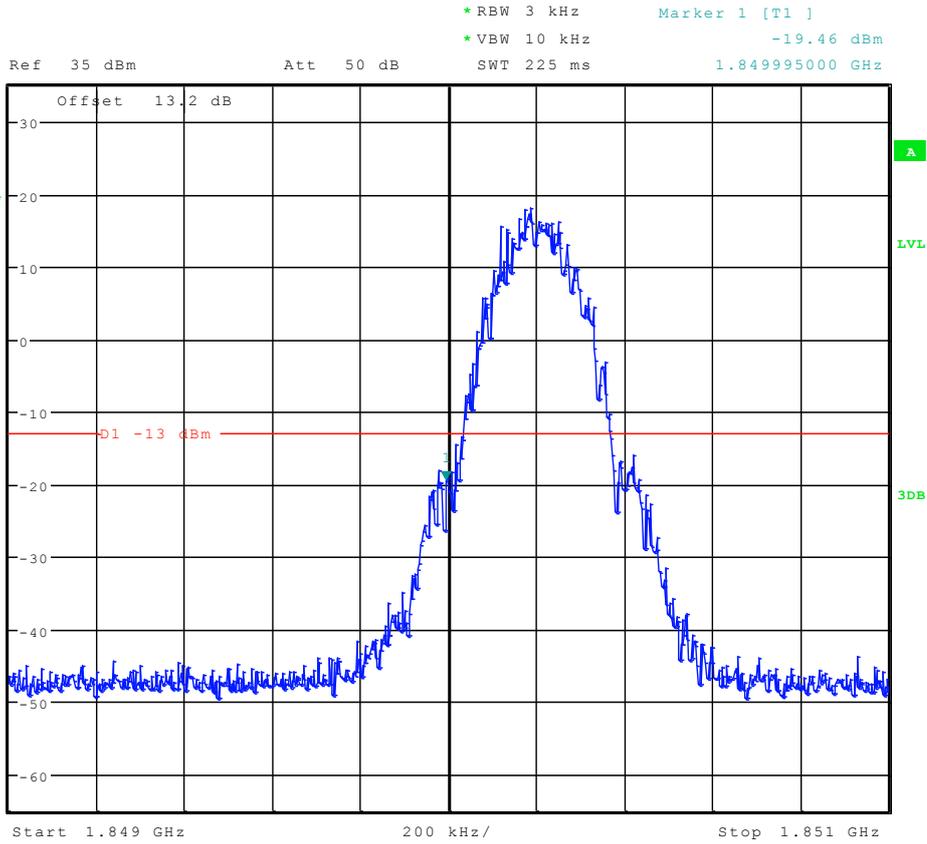
Appendix C

Band Edges Compliance

According to FCC Part 2.1051 & Part24 Subpart E



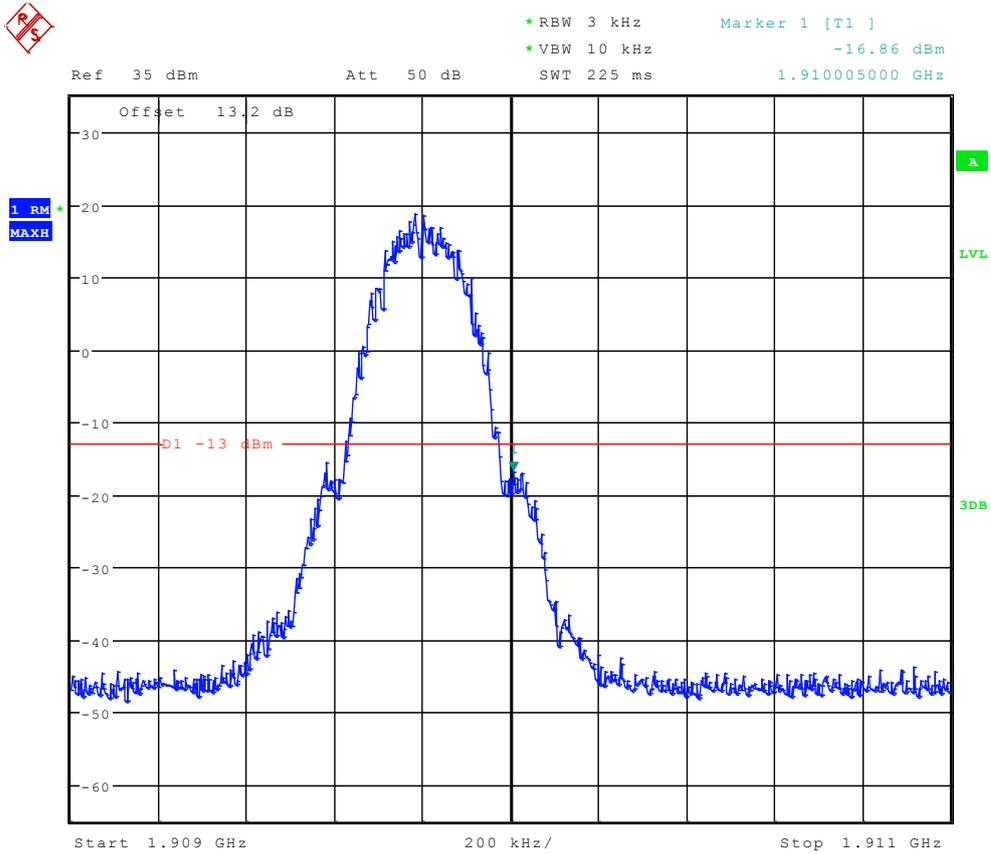
TM1:GPRS/GSM Left Edge Channel 512



Date: 9.NOV.2012 09:54:09



Right Edge Channel 810



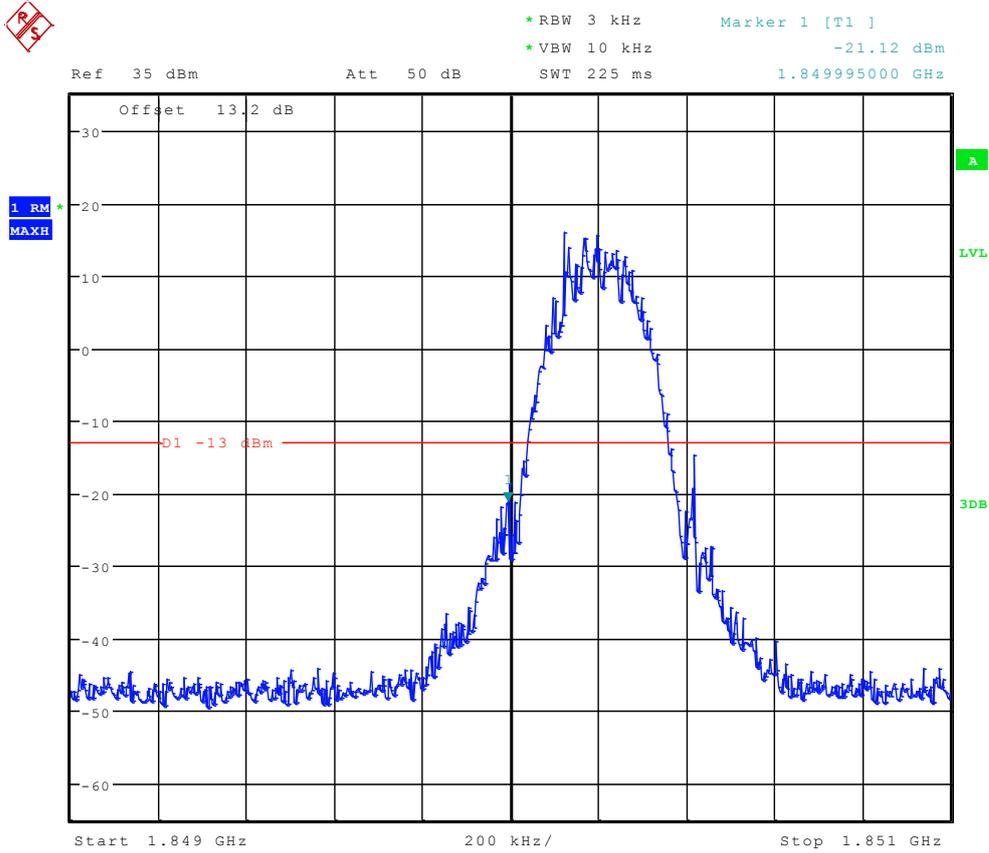
Date: 9.NOV.2012 09:54:44



TM2:EDGE

Left Edge

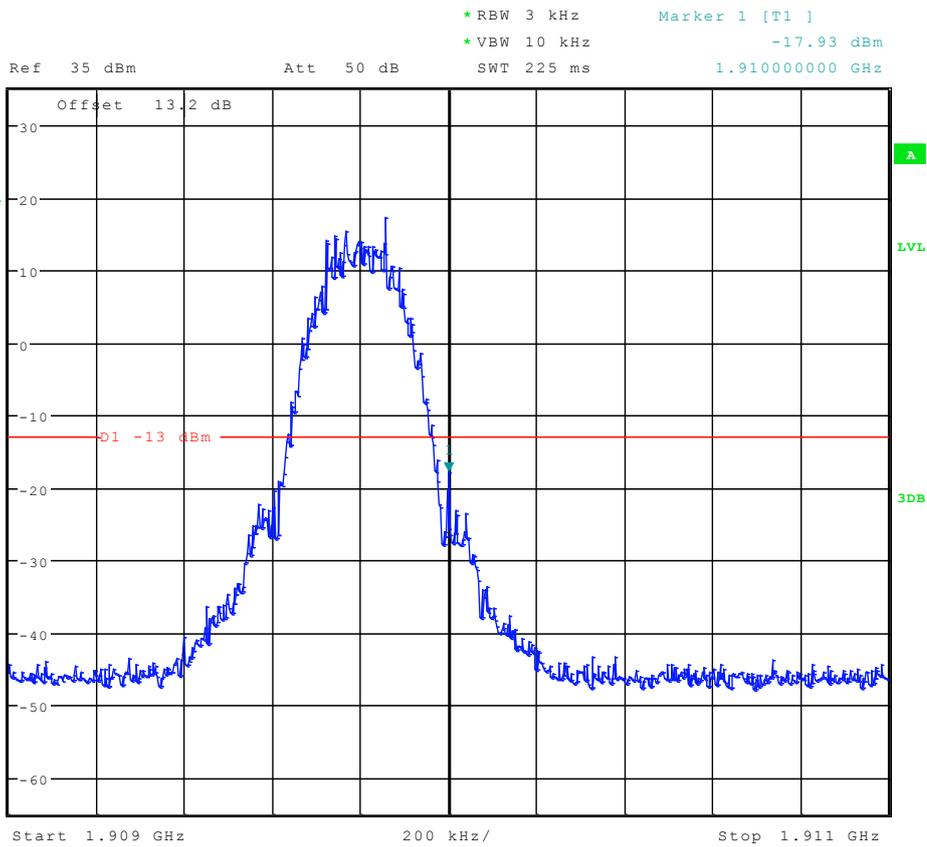
Channel 512



Date: 9.NOV.2012 09:16:02



Right Edge Channel 810



Date: 9.NOV.2012 09:16:58



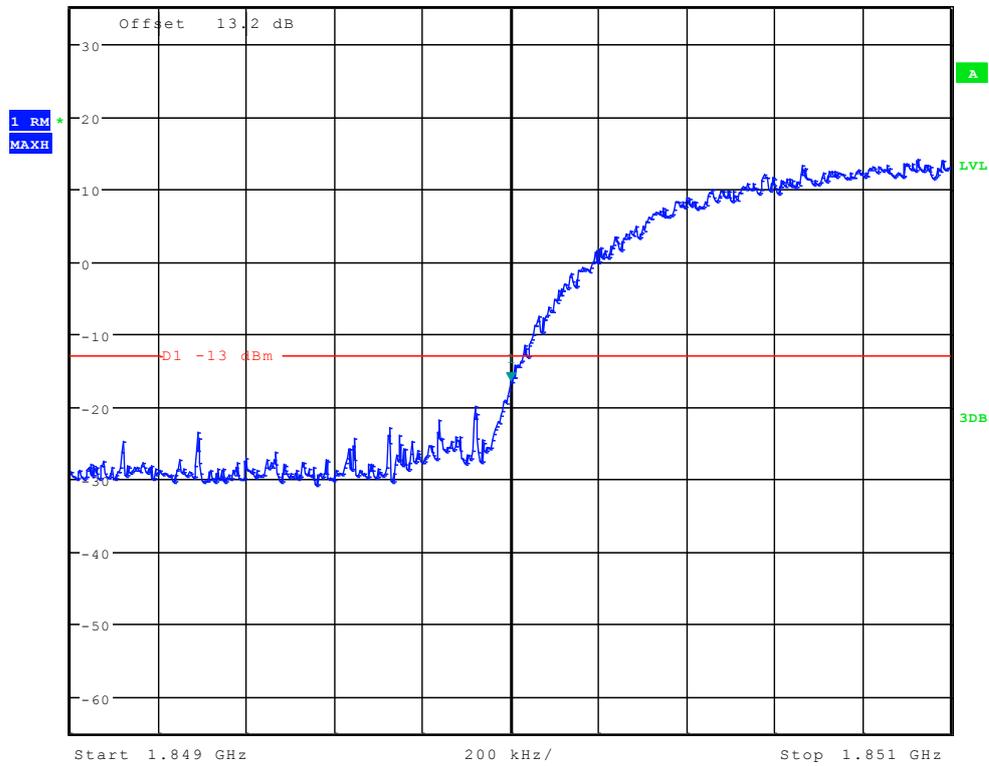
TM3: WCDMA

Left Edge

Channel 9262



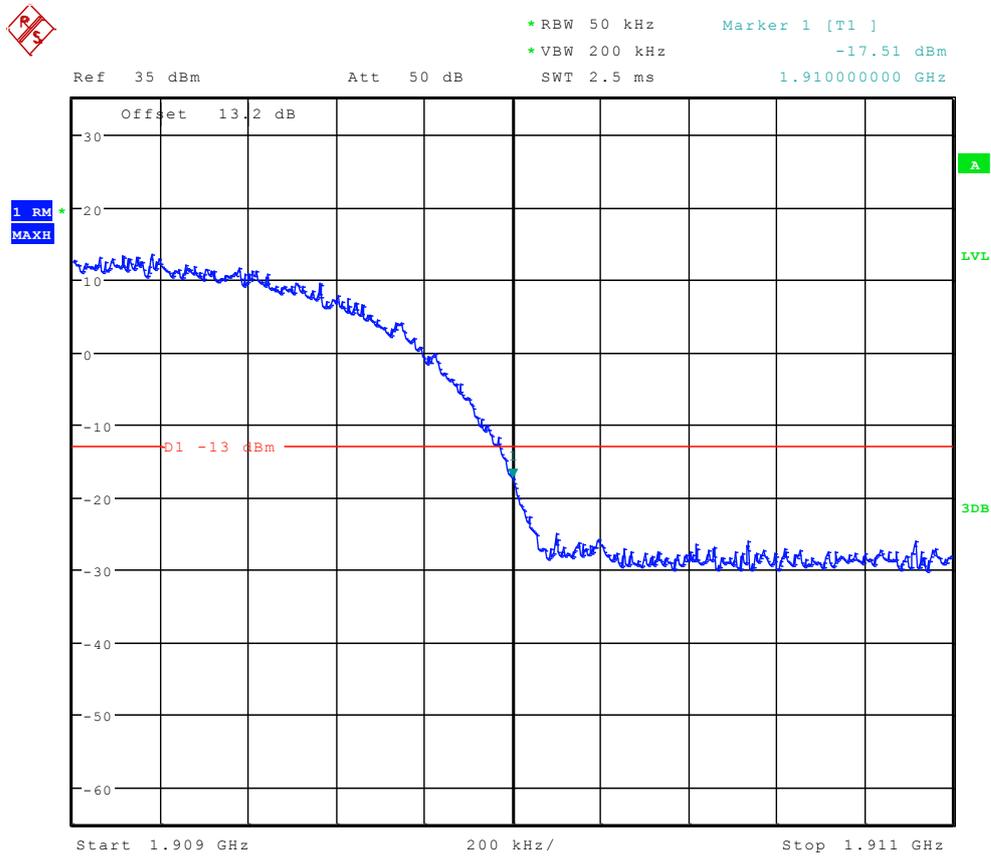
Ref 35 dBm Att 50 dB SWT 2.5 ms Marker 1 [T1] -16.61 dBm
* RBW 50 kHz
* VBW 200 kHz



Date: 9.NOV.2012 09:23:46



Right Edge Channel 9538



Date: 9.NOV.2012 09:23:59

END



FCC&IC Test Report of E5776s-501
FCC ID: QISE5776S-501
IC : 6369A-E5776S

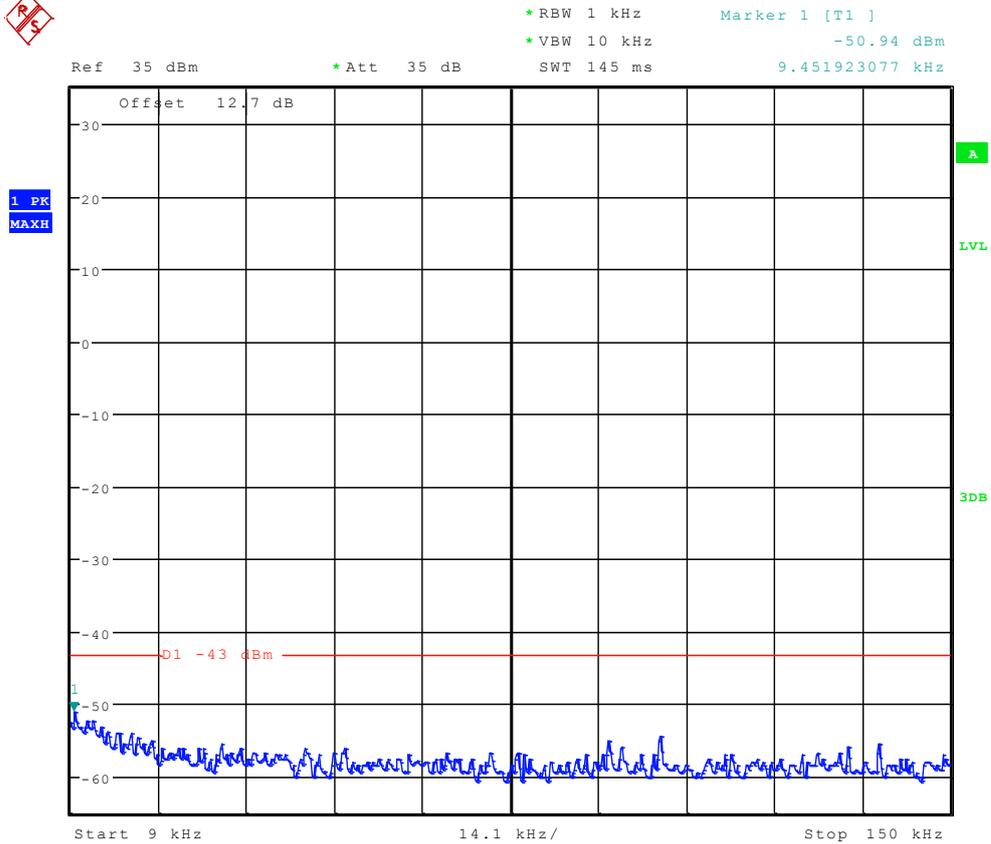
Appendix D

Spurious Emission at Antenna Terminal

According to FCC Part 2.1051 & Part24 Subpart E



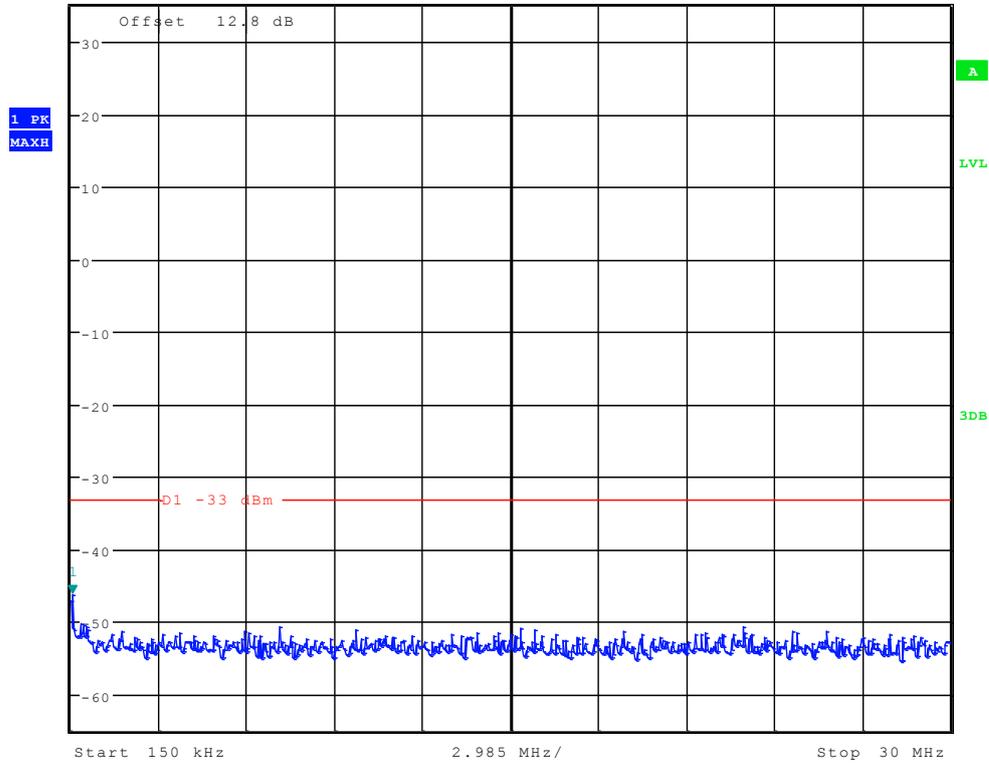
TM1:GPRS/GSM Channel 512



Date: 9.NOV.2012 09:07:39



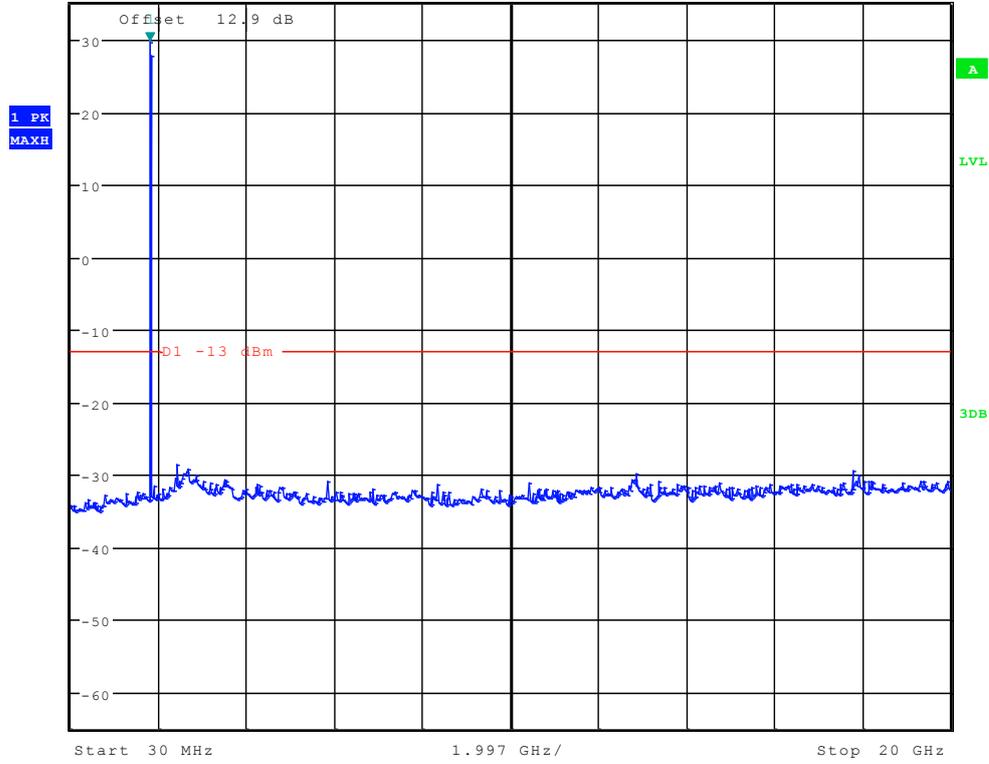
Ref 35 dBm * Att 35 dB SWT 300 ms 197.836538462 kHz
* RBW 10 kHz Marker 1 [T1]
* VBW 30 kHz -46.10 dBm



Date: 9.NOV.2012 09:08:23



Ref 35 dBm * Att 35 dB SWT 115 ms Marker 1 [T1] 29.54 dBm
* RBW 1 MHz * VBW 3 MHz



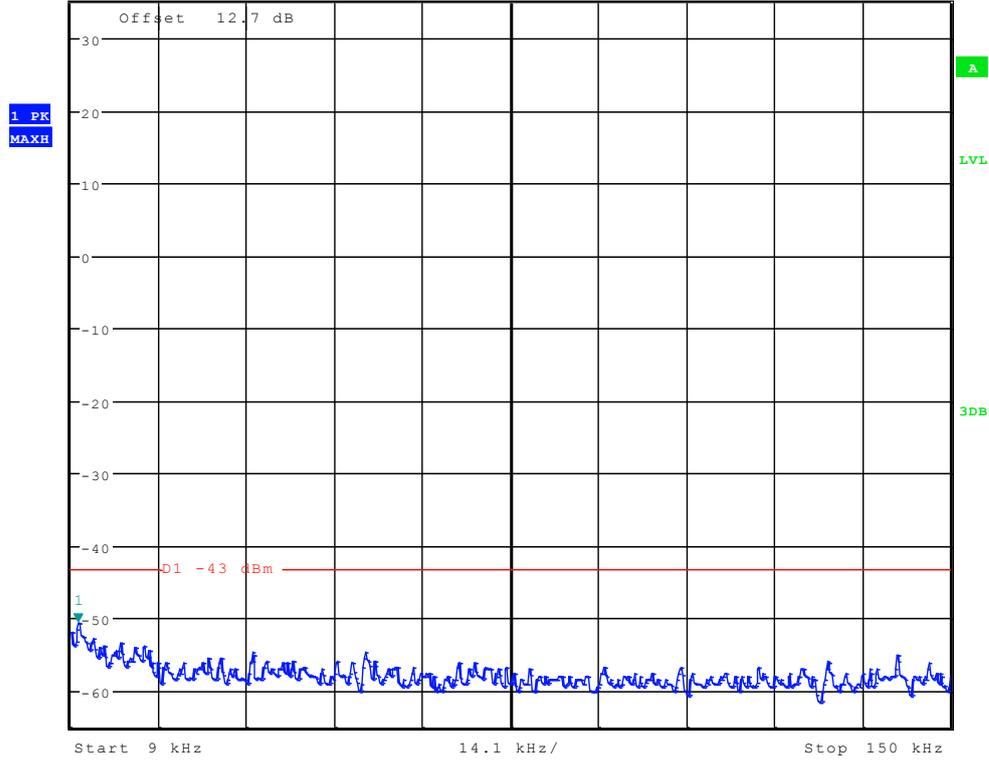
Date: 9.NOV.2012 09:09:23



Channel 661



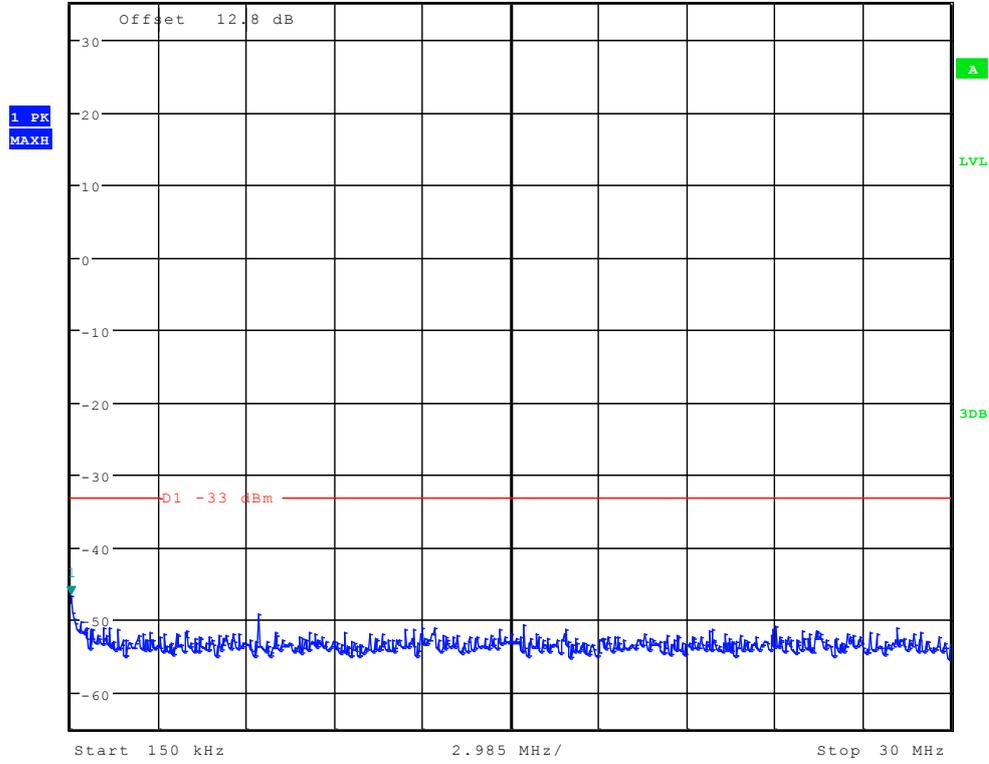
Ref 35 dBm * Att 35 dB * RBW 1 kHz * VBW 10 kHz SWT 145 ms Marker 1 [T1] -50.51 dBm
10.129807692 kHz



Date: 9.NOV.2012 09:07:54



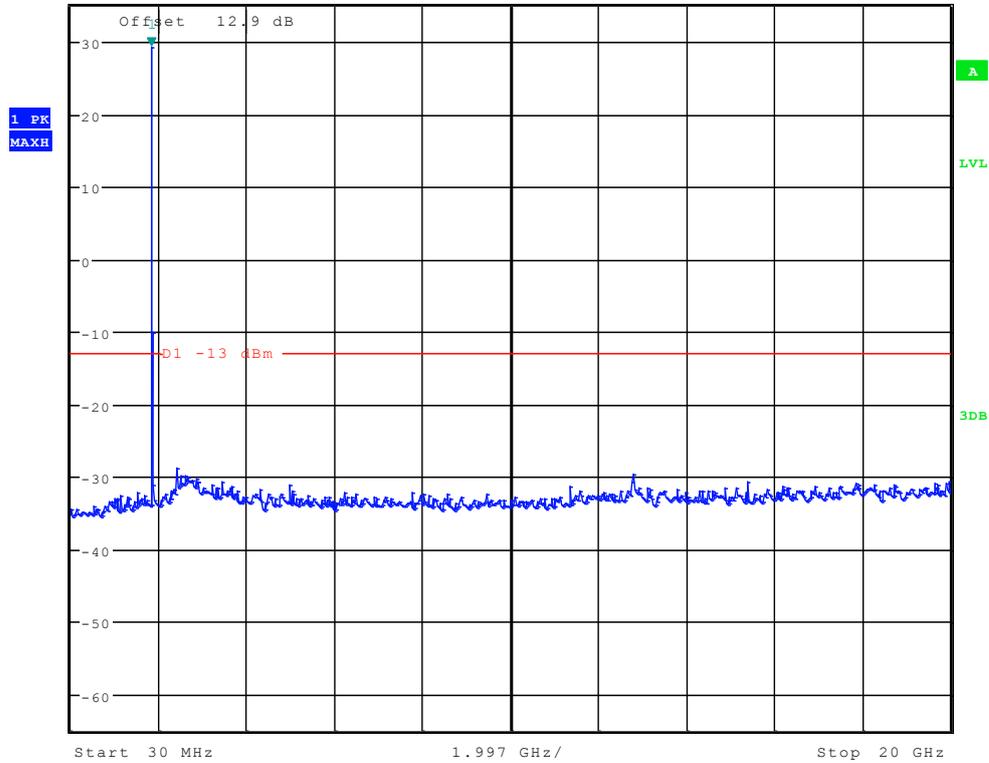
Ref 35 dBm * Att 35 dB SWT 300 ms 150.000000000 kHz
* RBW 10 kHz Marker 1 [T1]
* VBW 30 kHz -46.53 dBm



Date: 9.NOV.2012 09:08:37



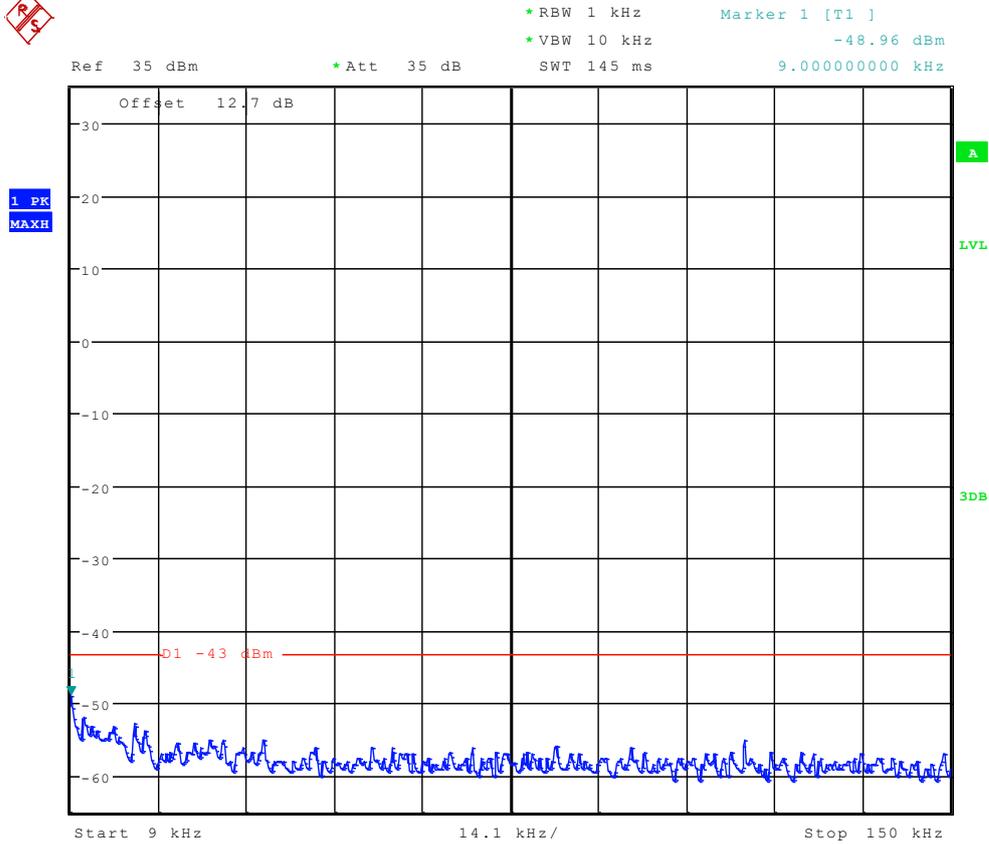
Ref 35 dBm * Att 35 dB SWT 115 ms Marker 1 [T1] 29.28 dBm
* RBW 1 MHz * VBW 3 MHz 1.854182692 GHz



Date: 9.NOV.2012 09:09:38



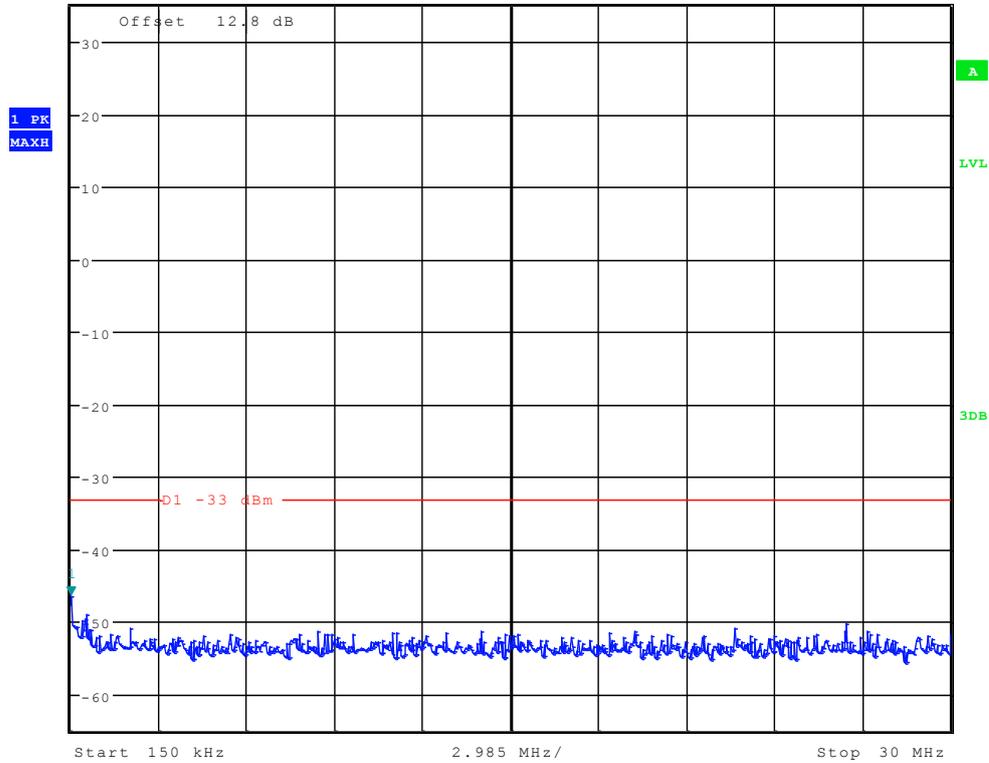
Channel 810



Date: 9.NOV.2012 09:08:08



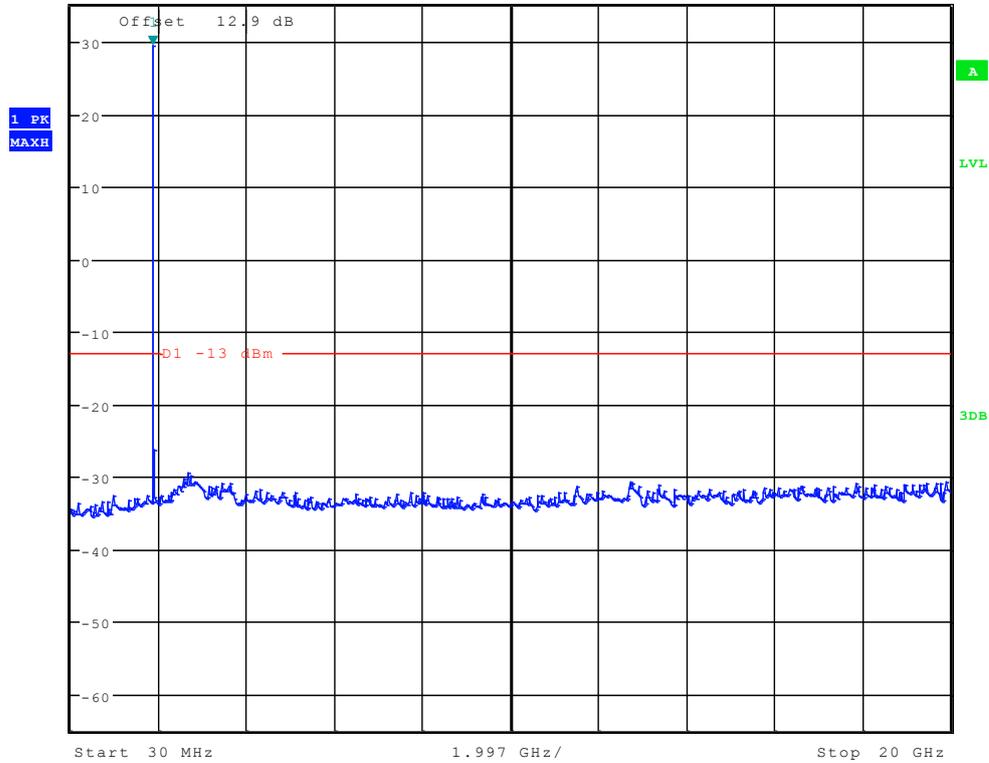
Ref 35 dBm * Att 35 dB SWT 300 ms 150.000000000 kHz
* RBW 10 kHz Marker 1 [T1]
* VBW 30 kHz -46.42 dBm



Date: 9.NOV.2012 09:08:52



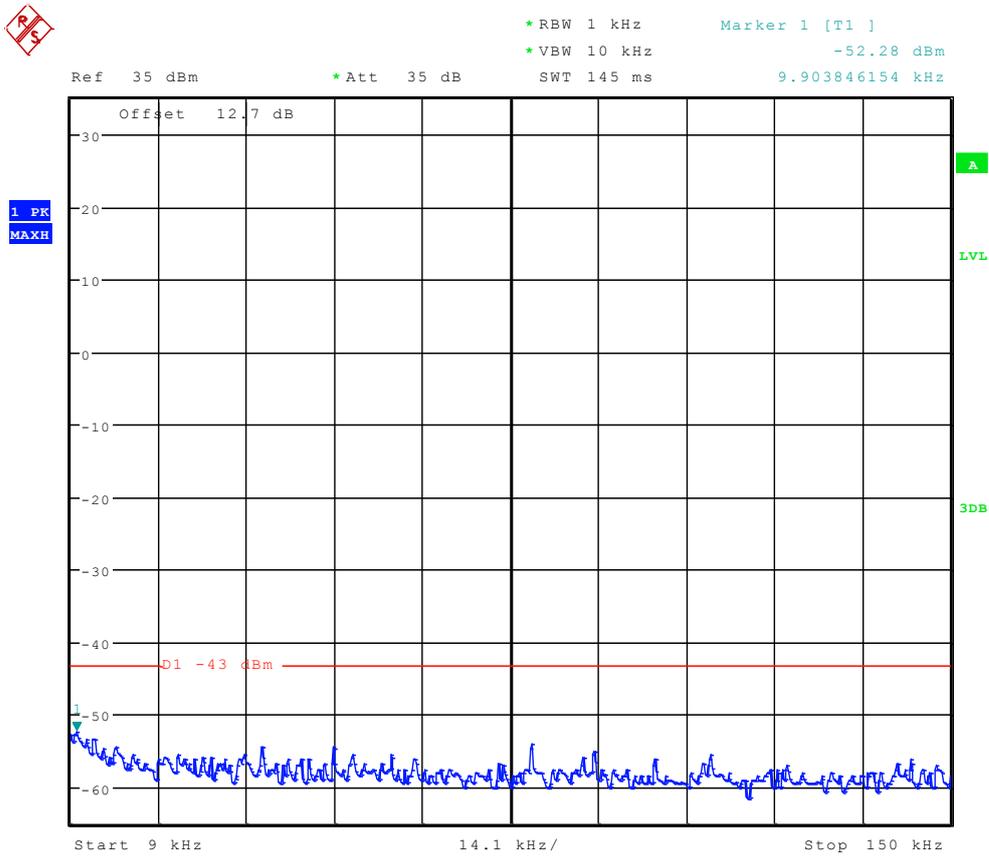
Ref 35 dBm * Att 35 dB SWT 115 ms Marker 1 [T1] 29.42 dBm
* RBW 1 MHz * VBW 3 MHz



Date: 9.NOV.2012 09:09:52



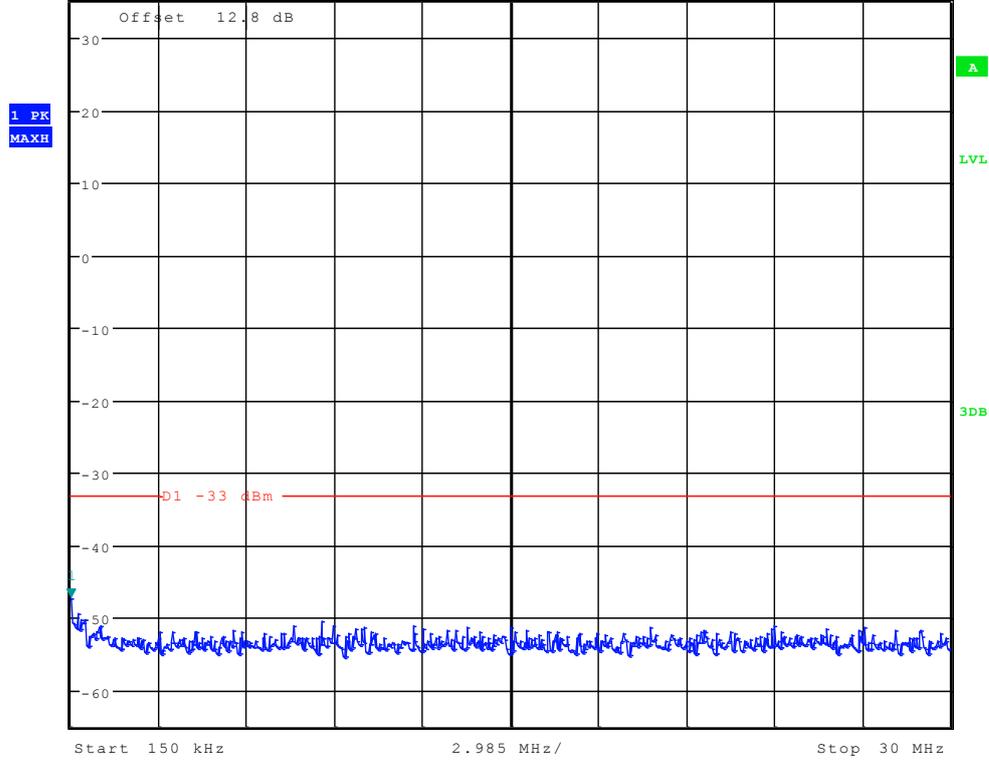
TM2:EDGE Channel 512



Date: 9.NOV.2012 09:17:55



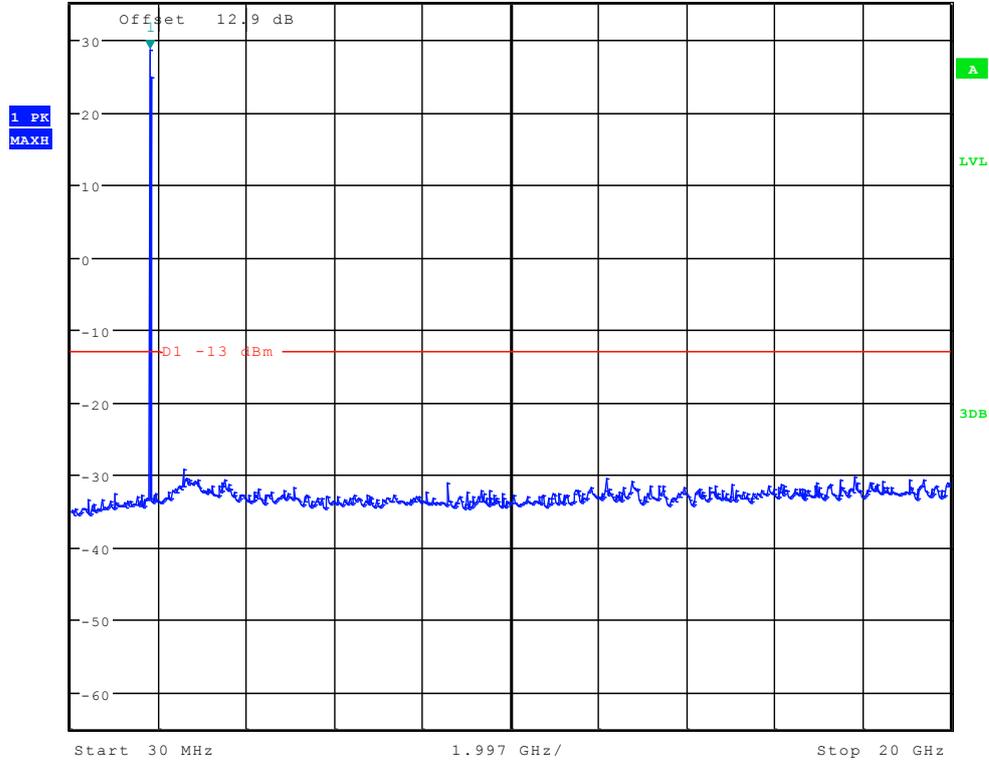
Ref 35 dBm * Att 35 dB SWT 300 ms 150.000000000 kHz
* RBW 10 kHz Marker 1 [T1]
* VBW 30 kHz -47.32 dBm



Date: 9.NOV.2012 09:18:38



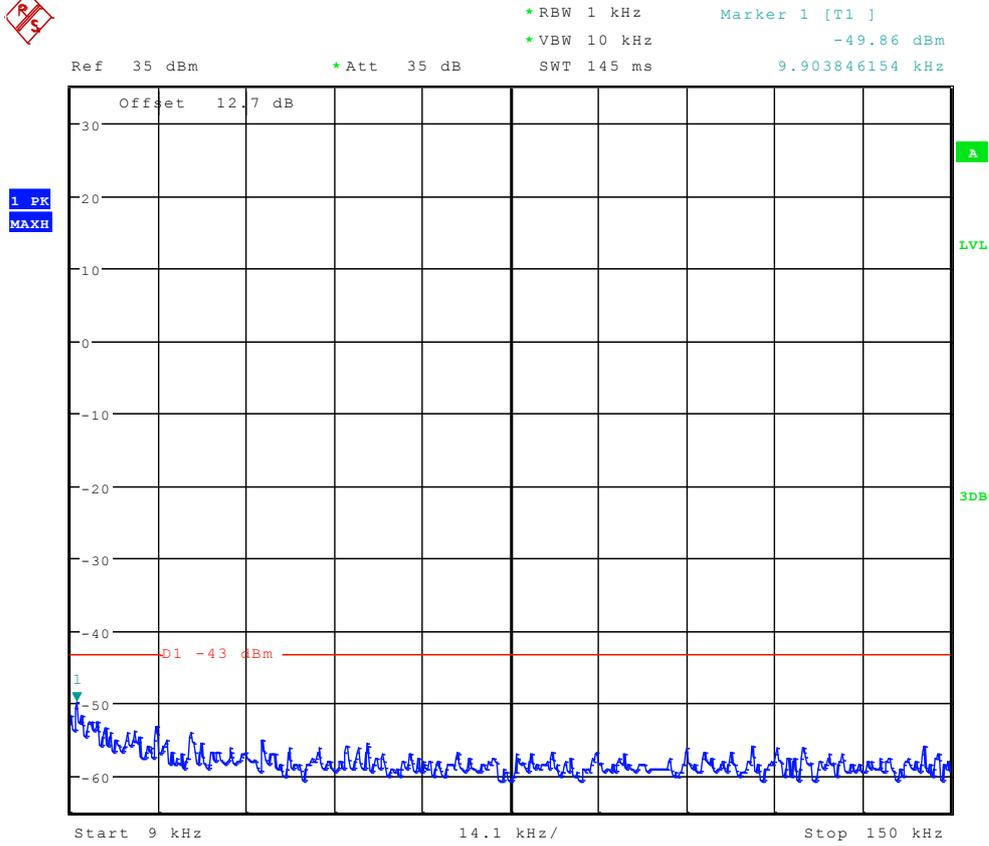
Ref 35 dBm * Att 35 dB SWT 115 ms Marker 1 [T1] 28.57 dBm
* RBW 1 MHz * VBW 3 MHz 1.822179487 GHz



Date: 9.NOV.2012 09:19:22



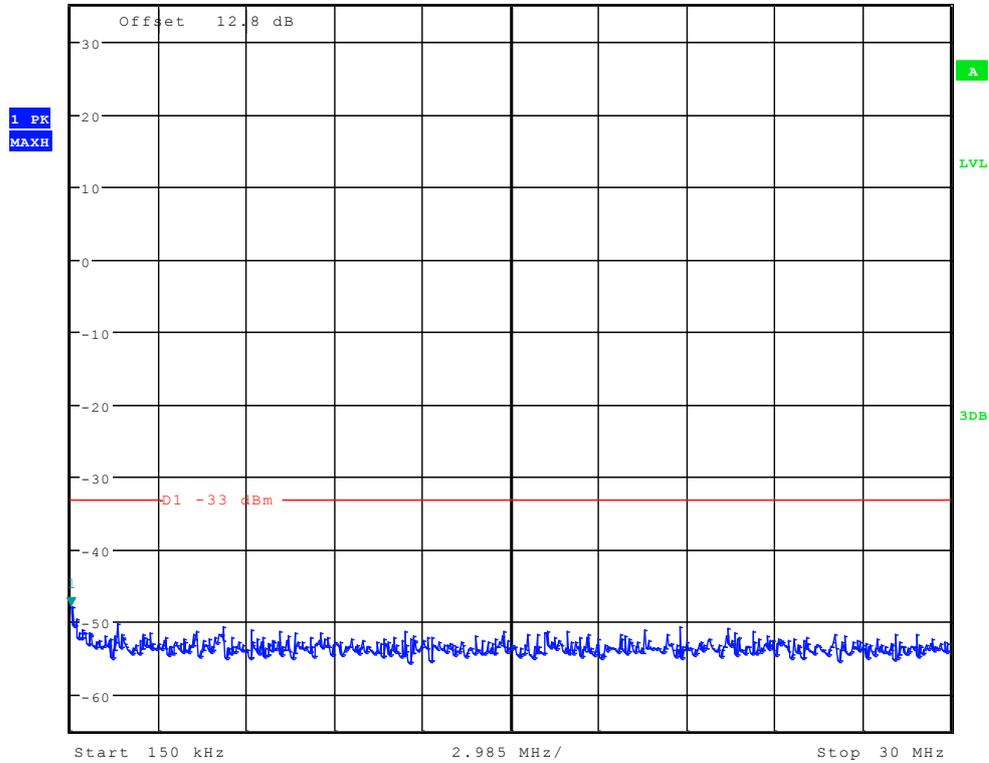
Channel 661



Date: 9.NOV.2012 09:18:09



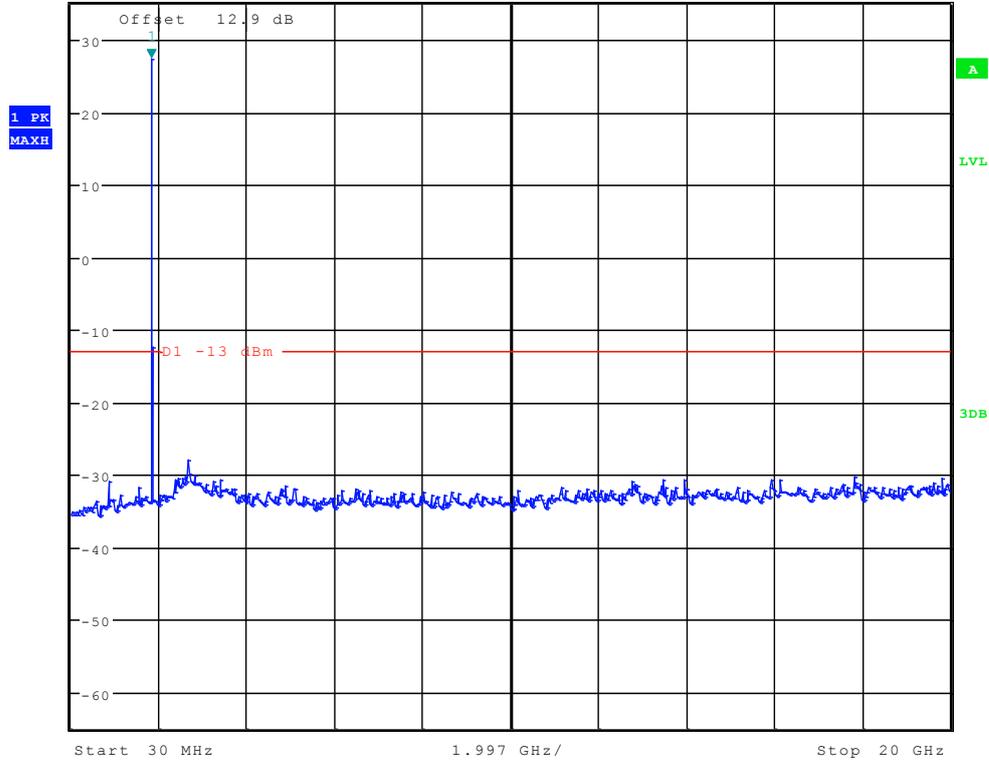
Ref 35 dBm * Att 35 dB SWT 300 ms 150.000000000 kHz
* RBW 10 kHz Marker 1 [T1]
* VBW 30 kHz -47.80 dBm



Date: 9.NOV.2012 09:18:53



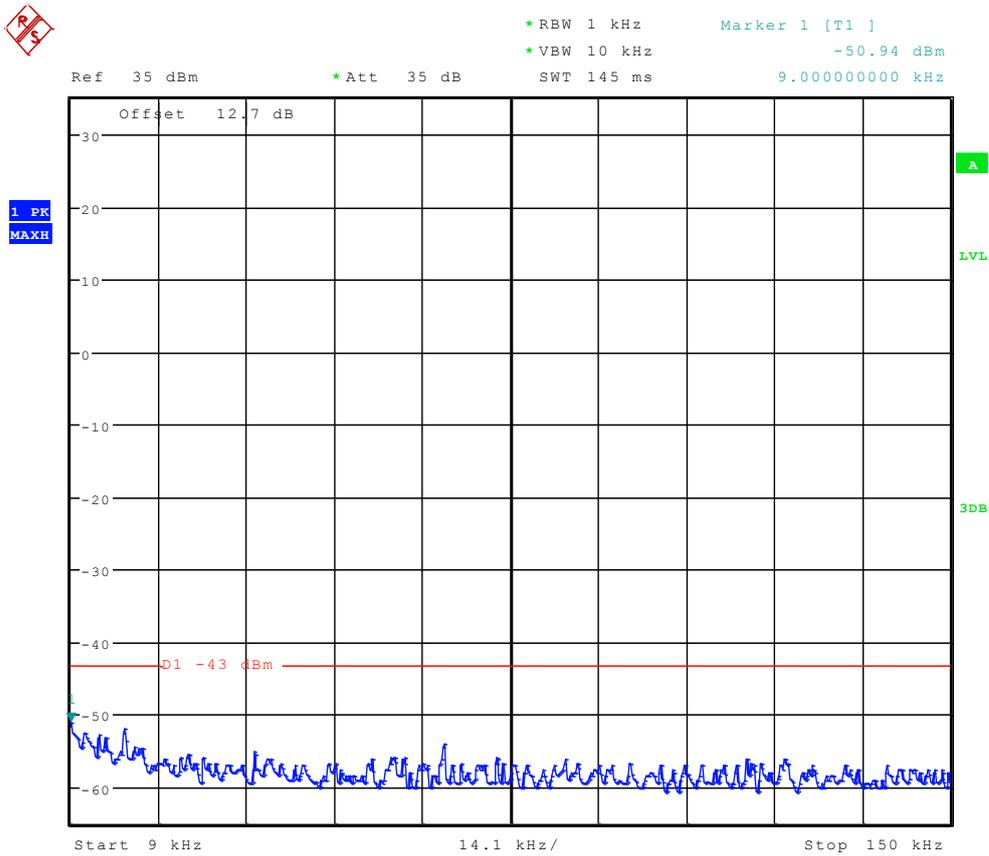
Ref 35 dBm * Att 35 dB SWT 115 ms Marker 1 [T1] 27.41 dBm
* RBW 1 MHz * VBW 3 MHz 1.854182692 GHz



Date: 9.NOV.2012 09:19:37



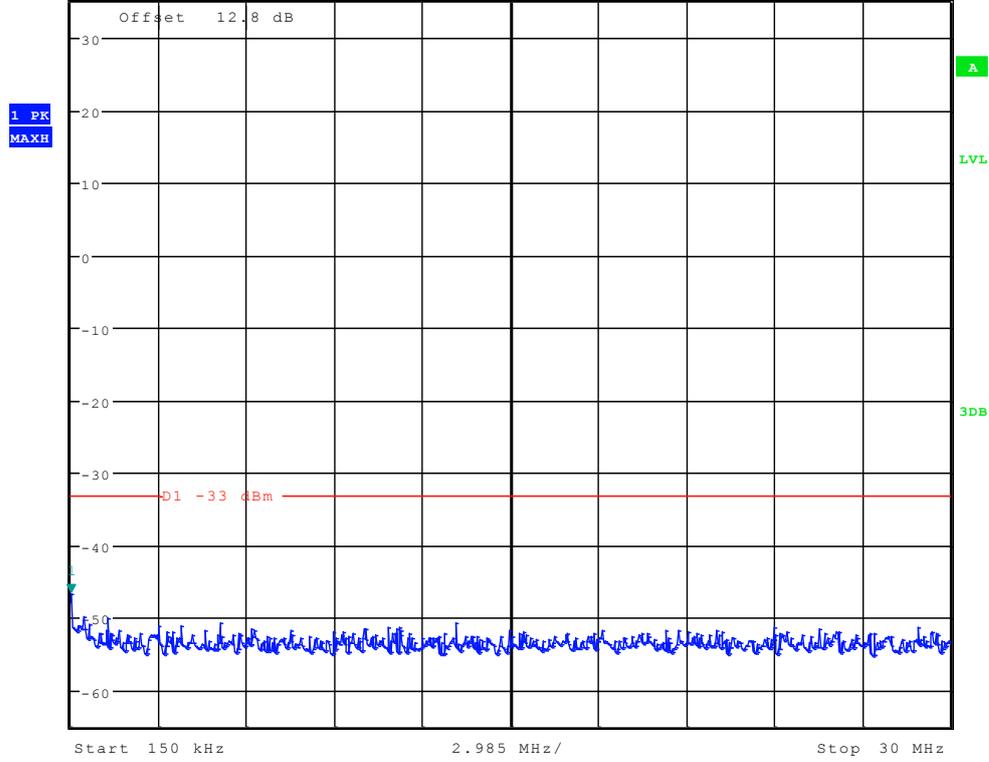
Channel 810



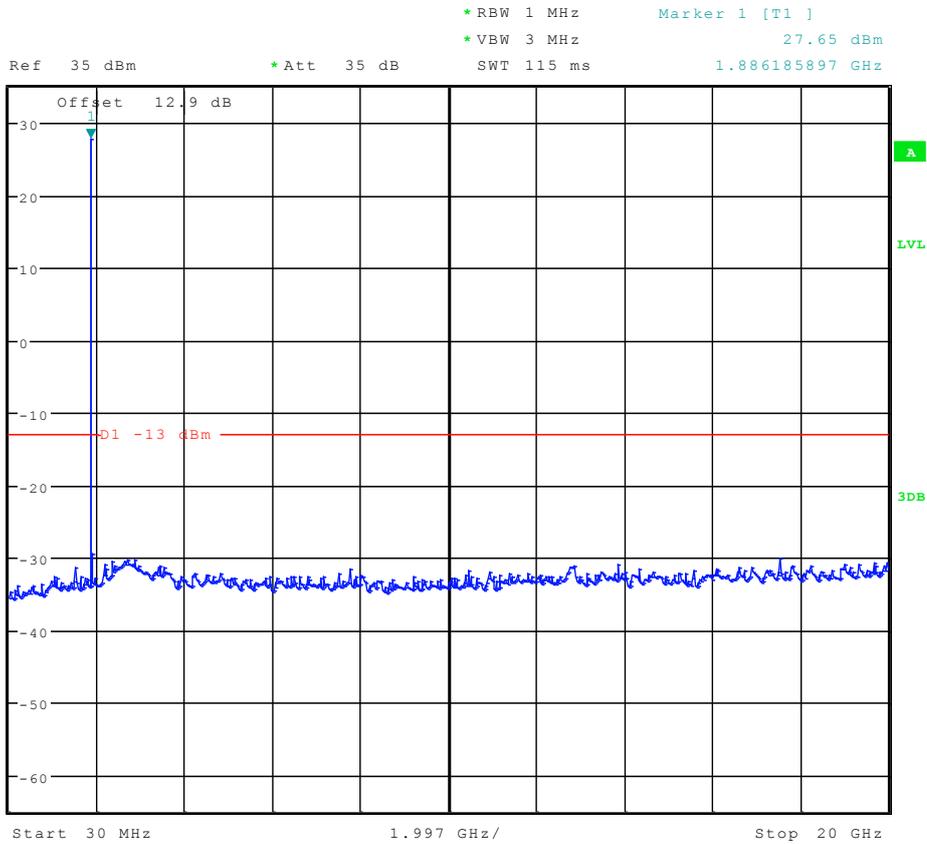
Date: 9.NOV.2012 09:18:23



Ref 35 dBm * Att 35 dB SWT 300 ms 150.000000000 kHz
* RBW 10 kHz Marker 1 [T1]
* VBW 30 kHz -46.69 dBm



Date: 9.NOV.2012 09:19:07

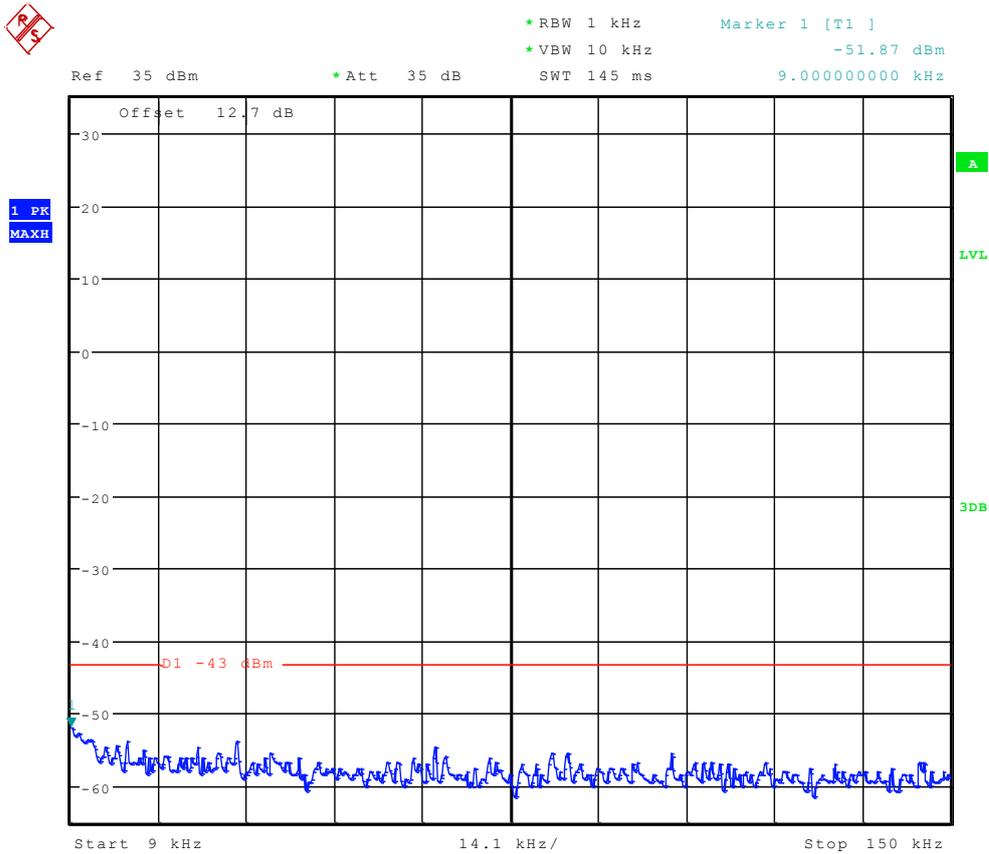


Date: 9.NOV.2012 09:19:51



TM3: WCDMA

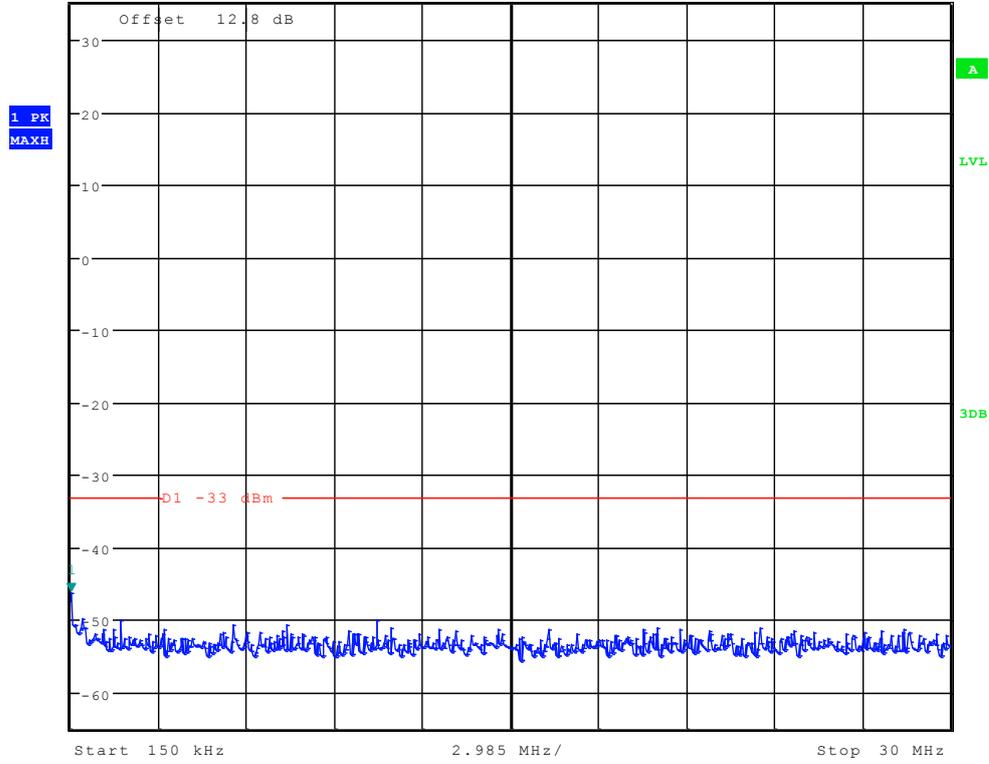
Channel 9262



Date: 9.NOV.2012 09:24:14



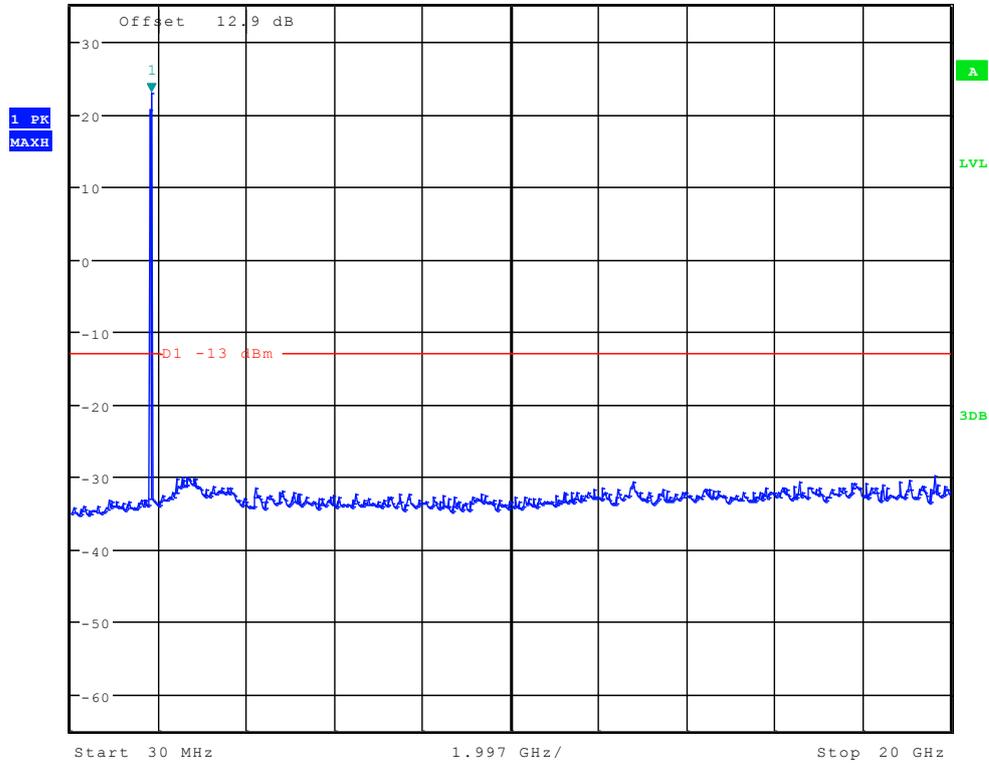
Ref 35 dBm * Att 35 dB SWT 300 ms 150.000000000 kHz
* RBW 10 kHz Marker 1 [T1]
* VBW 30 kHz -46.26 dBm



Date: 9.NOV.2012 09:24:58



Ref 35 dBm * Att 35 dB SWT 115 ms Marker 1 [T1] 22.85 dBm
* RBW 1 MHz * VBW 3 MHz



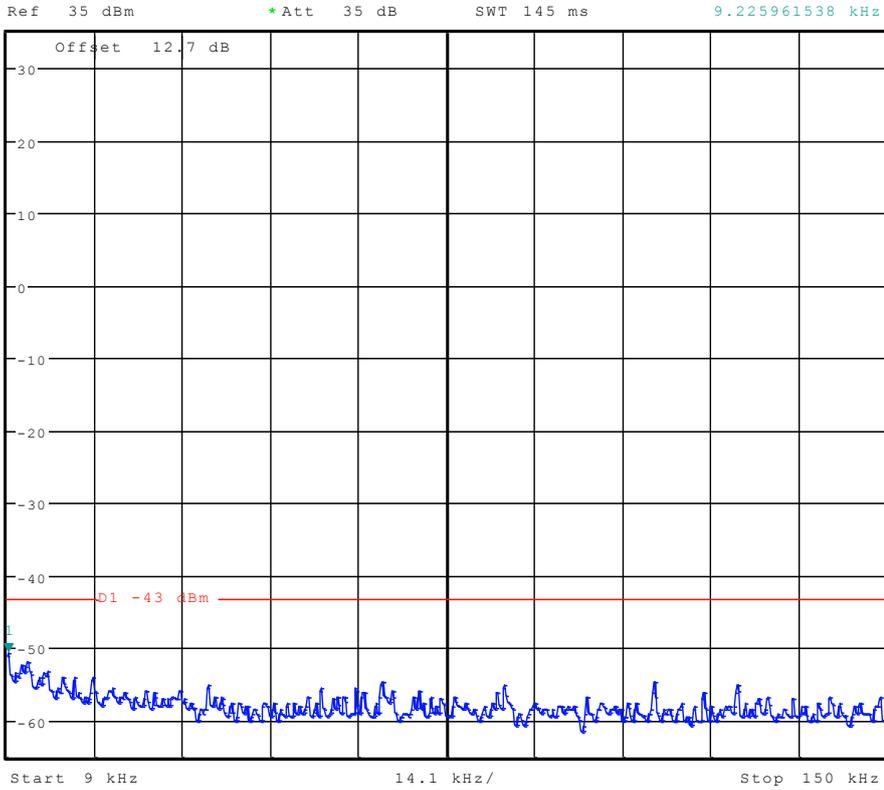
Date: 9.NOV.2012 09:25:42



Channel 9400



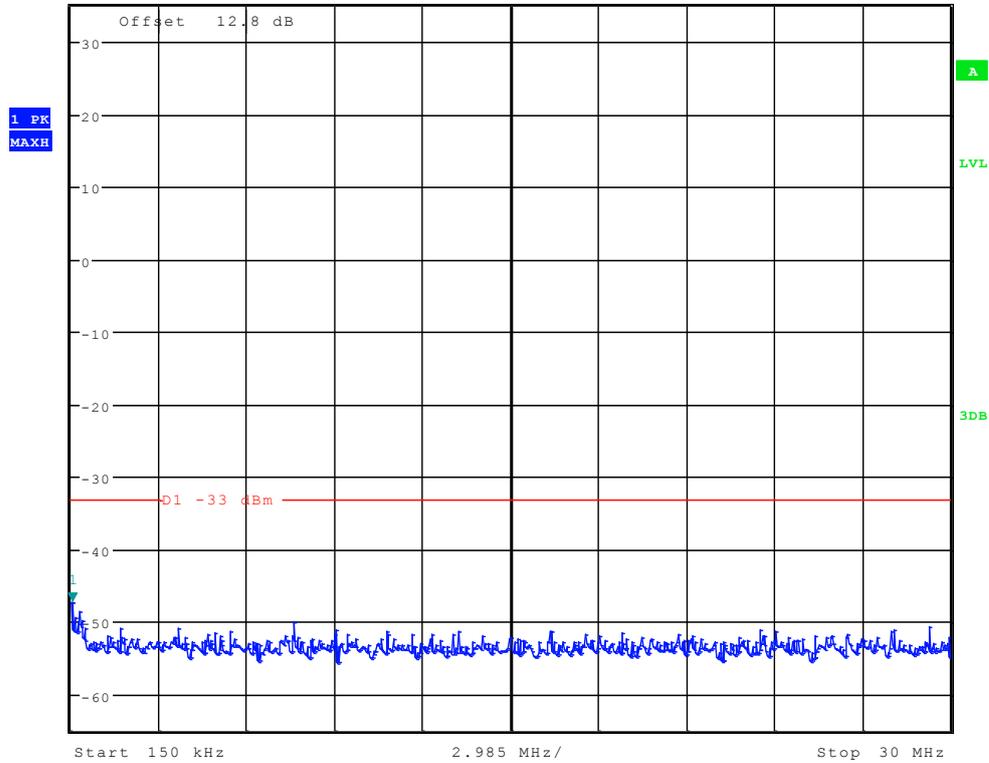
*RBW 1 kHz Marker 1 [T1]
*VBW 10 kHz -50.51 dBm
SWT 145 ms 9.225961538 kHz



Date: 9.NOV.2012 09:24:28



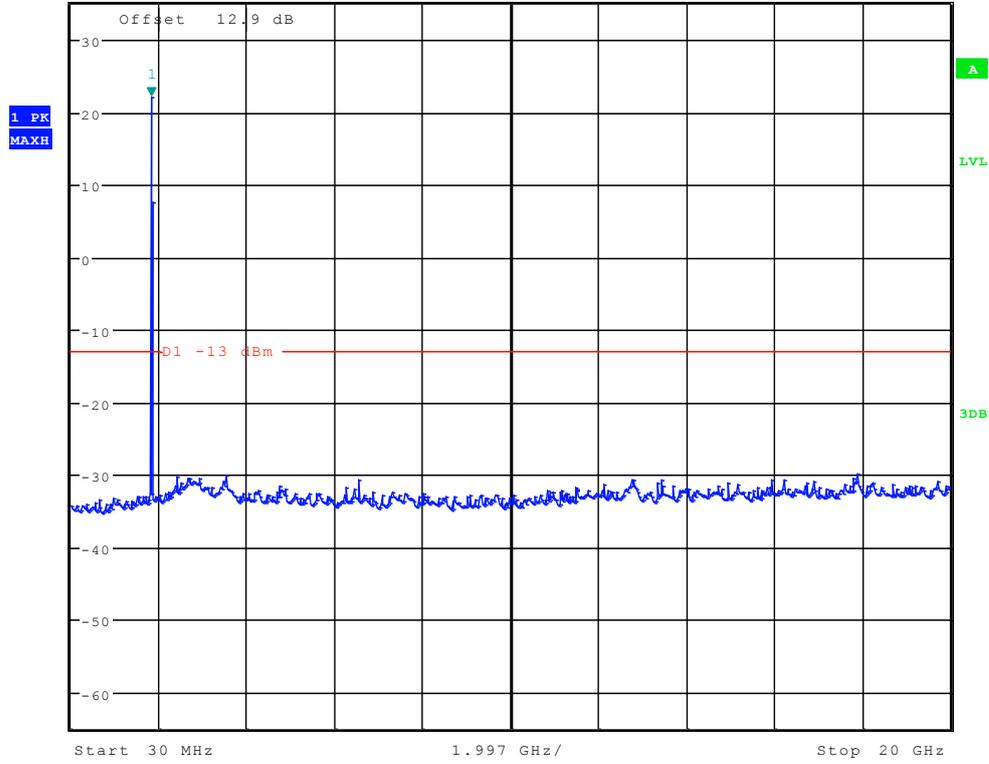
Ref 35 dBm * Att 35 dB SWT 300 ms 197.836538462 kHz
* RBW 10 kHz Marker 1 [T1]
* VBW 30 kHz -47.20 dBm



Date: 9.NOV.2012 09:25:12



Ref 35 dBm * Att 35 dB SWT 115 ms Marker 1 [T1] 22.09 dBm
* RBW 1 MHz * VBW 3 MHz



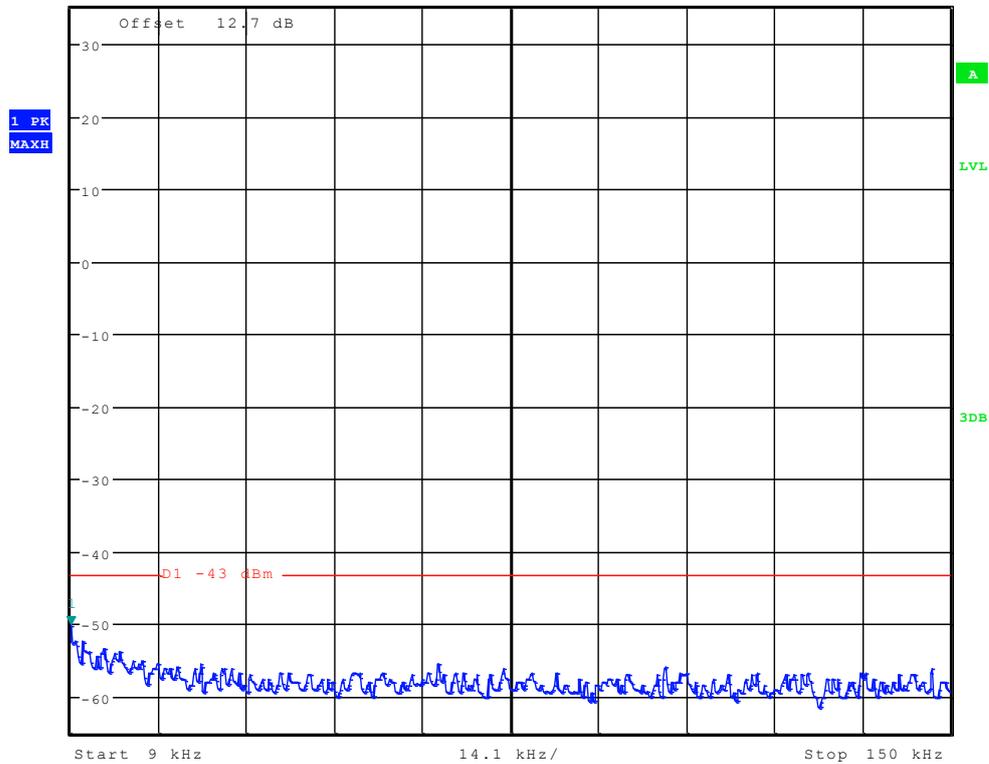
Date: 9.NOV.2012 09:25:56



Channel 9538



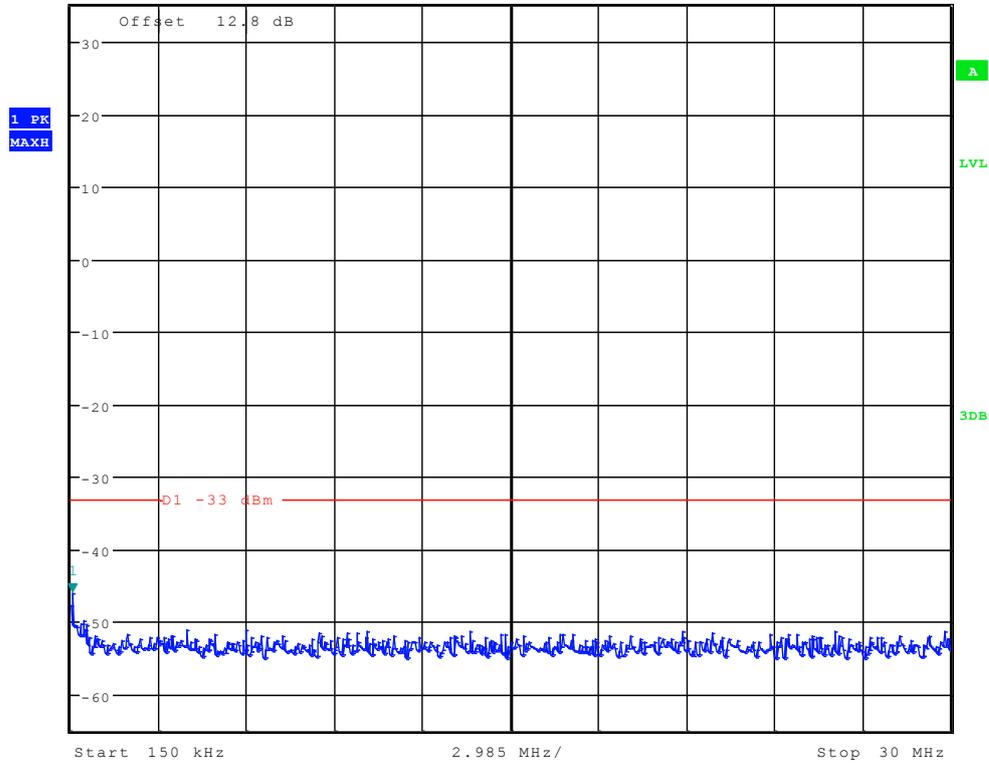
Ref 35 dBm * Att 35 dB * RBW 1 kHz Marker 1 [T1] -50.09 dBm
* VBW 10 kHz 9.000000000 kHz
SWT 145 ms



Date: 9.NOV.2012 09:24:43



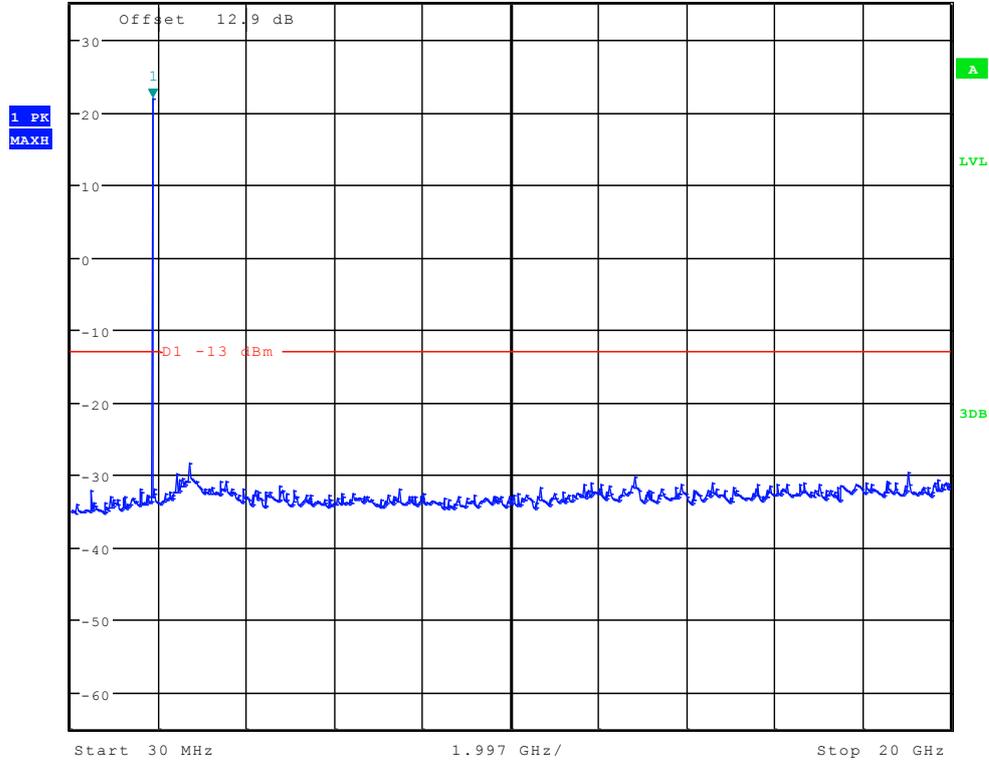
Ref 35 dBm * Att 35 dB SWT 300 ms 197.836538462 kHz
* RBW 10 kHz Marker 1 [T1]
* VBW 30 kHz -46.00 dBm



Date: 9.NOV.2012 09:25:27



Ref 35 dBm * Att 35 dB SWT 115 ms Marker 1 [T1] 21.97 dBm
* RBW 1 MHz * VBW 3 MHz 1.886185897 GHz



Date: 9.NOV.2012 09:26:10

END



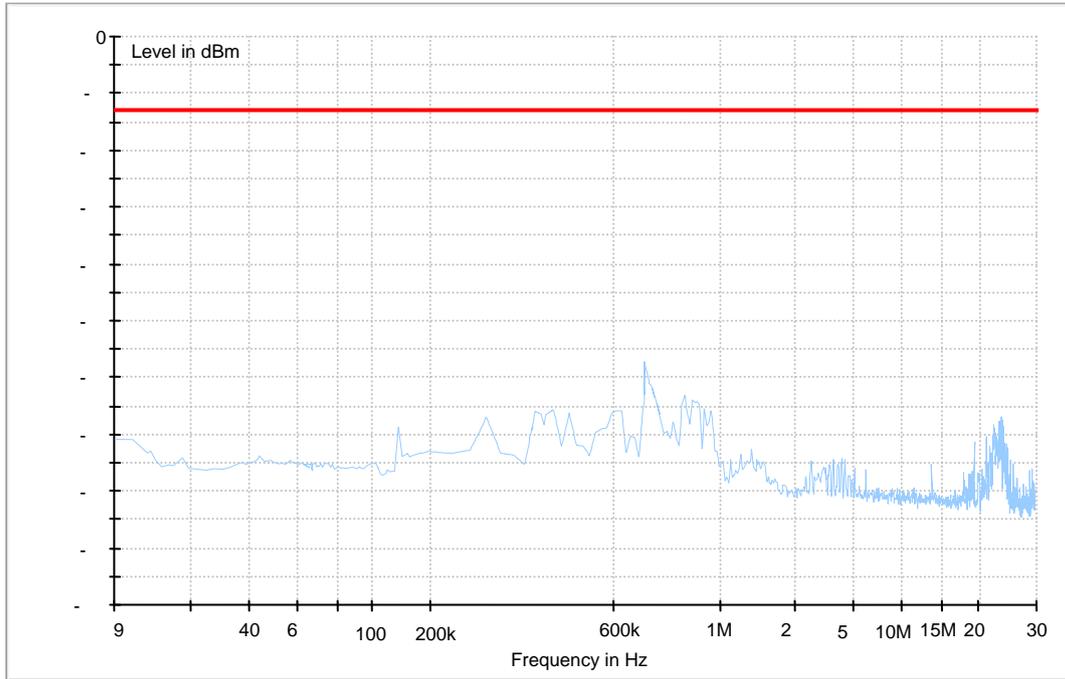
Appendix E

Radiated spurious emission



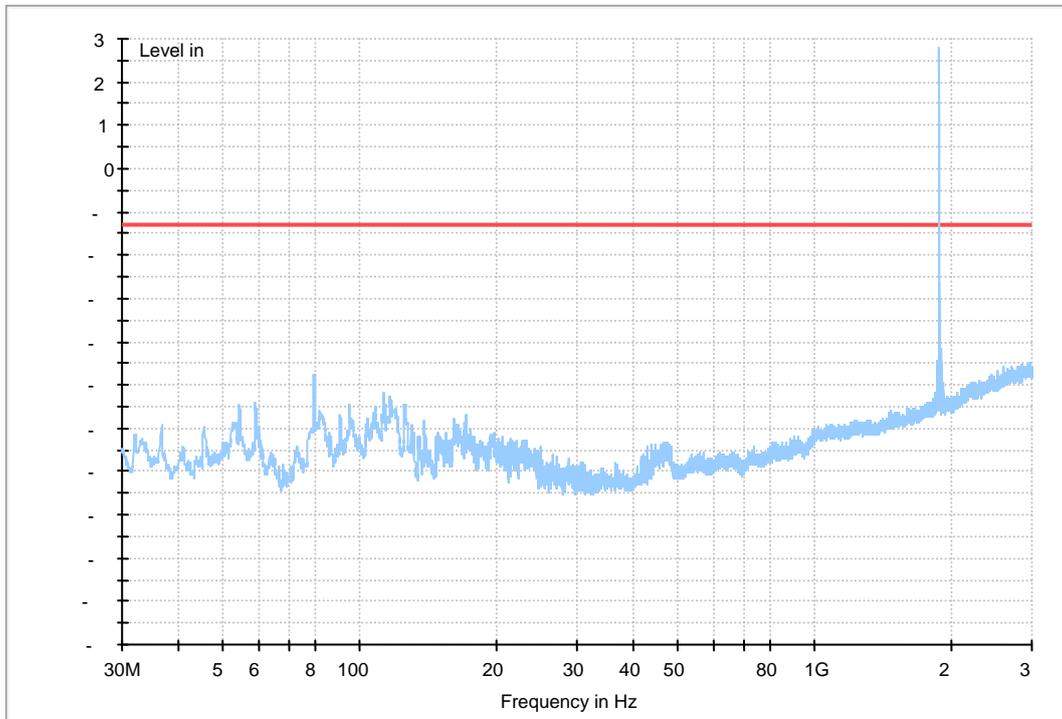
GPRS 1900

Traffic Mode (9kHz-30MHz)



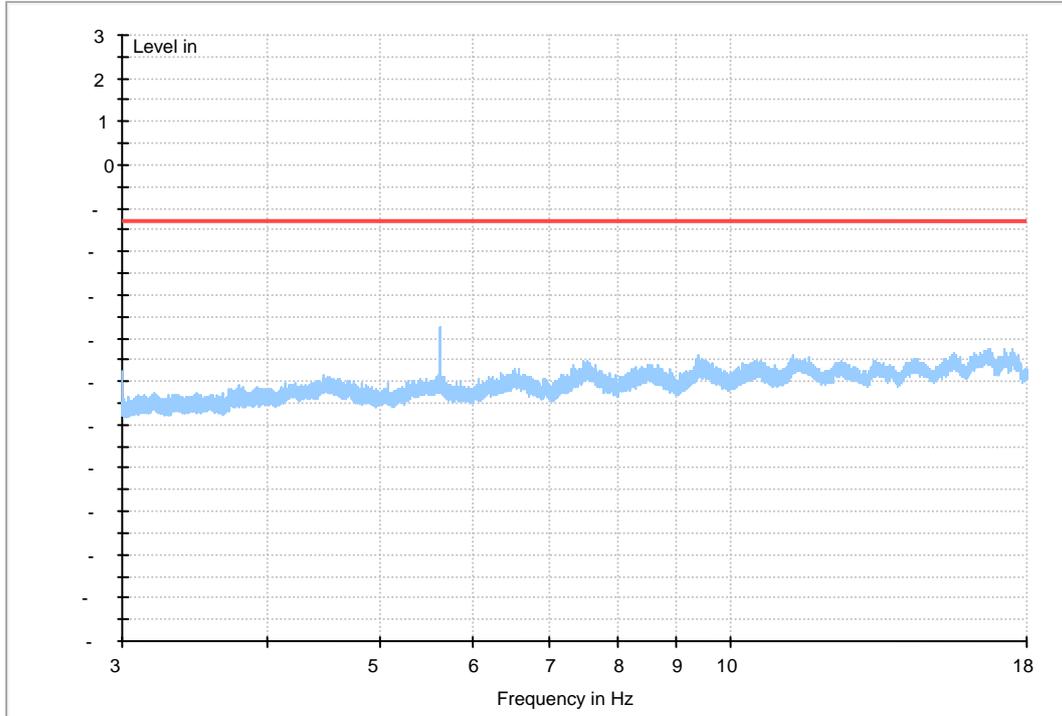


Traffic Mode (30MHz-3GHz)



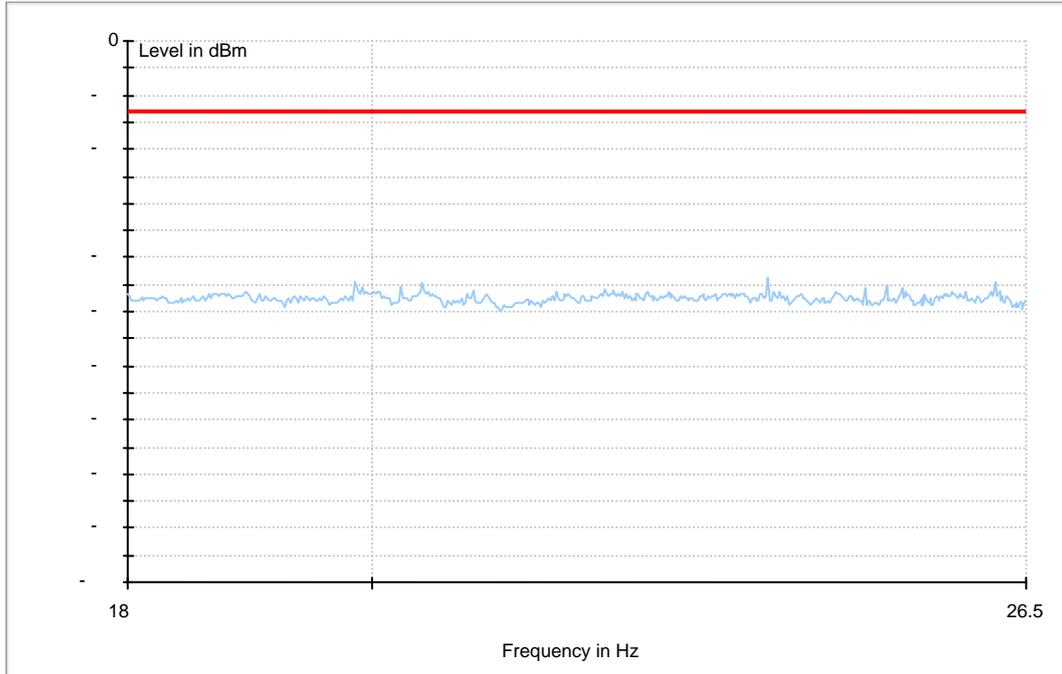


Traffic Mode (3GHz-18GHz)





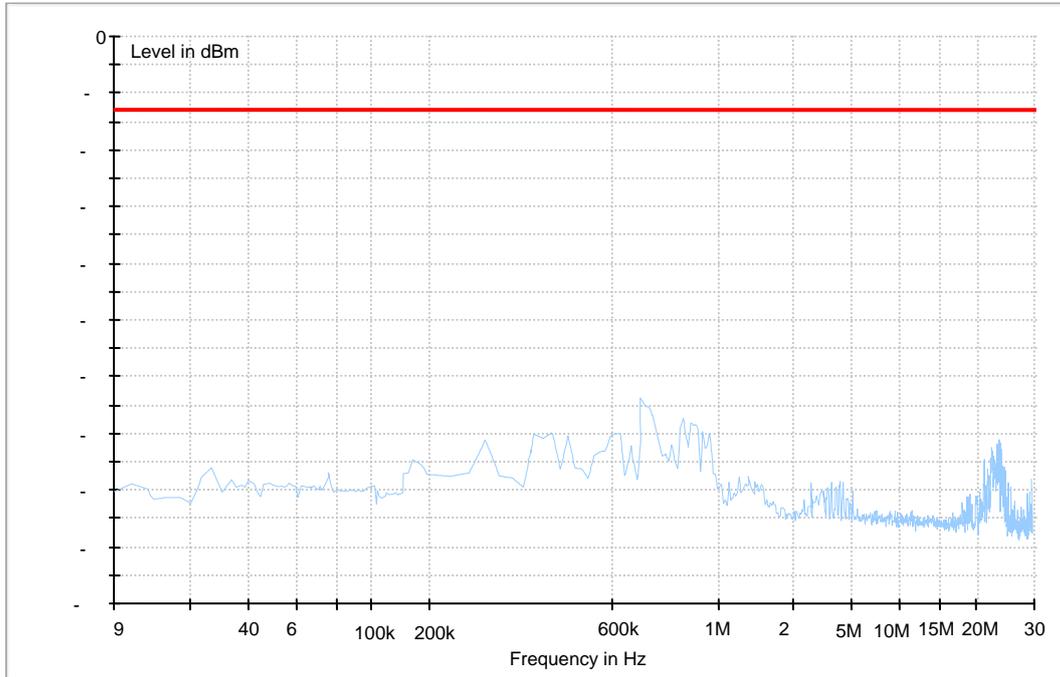
Traffic Mode (18GHz-26.5GHz)





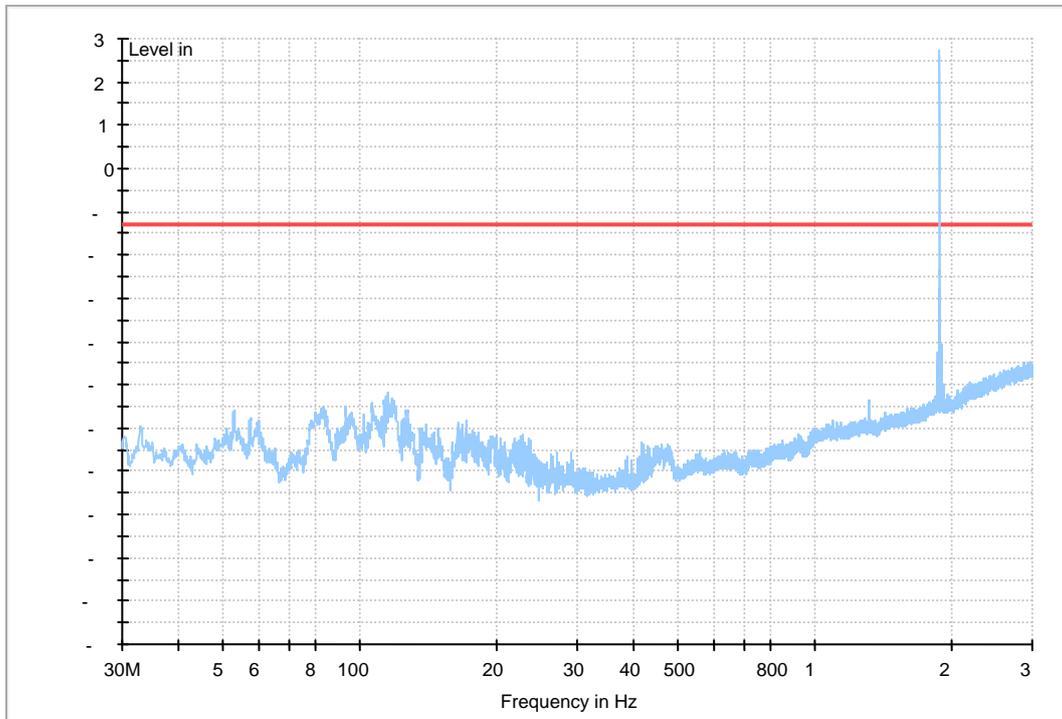
EDGE 1900

Traffic Mode (9kHz-30MHz)



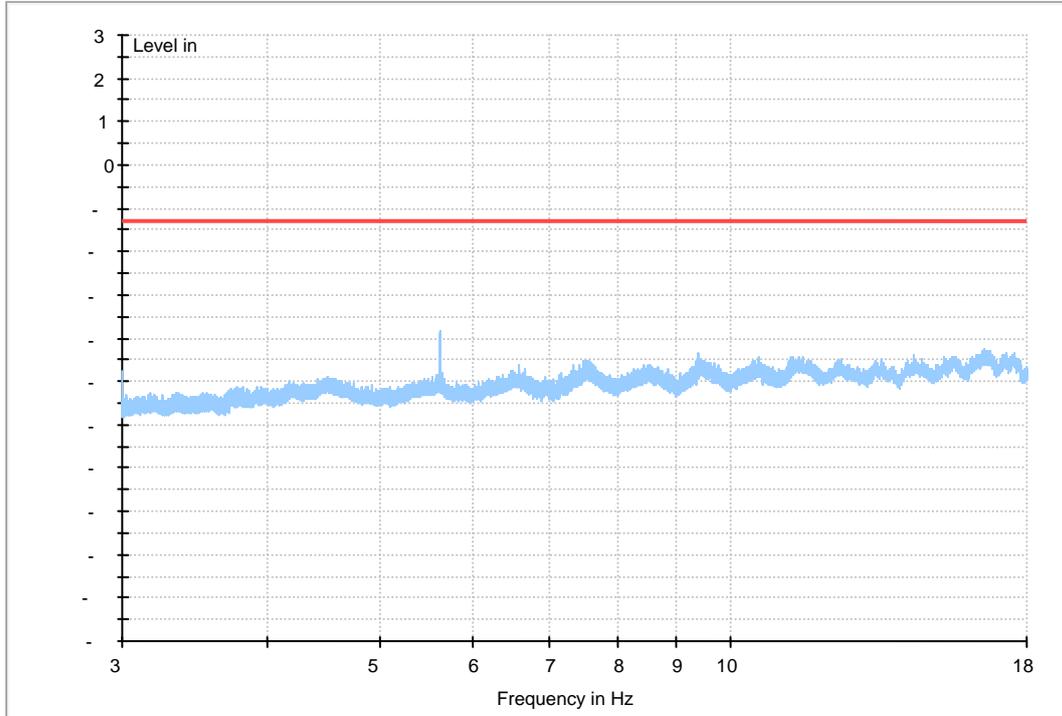


Traffic Mode (30MHz-3GHz)



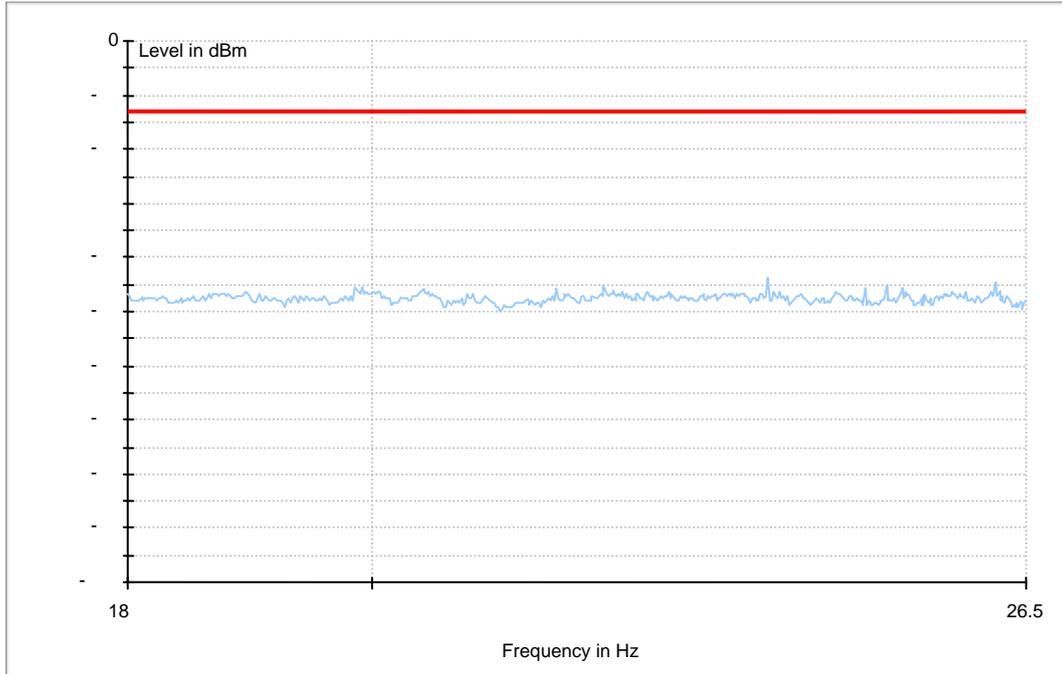


Traffic Mode (3GHz-18GHz)





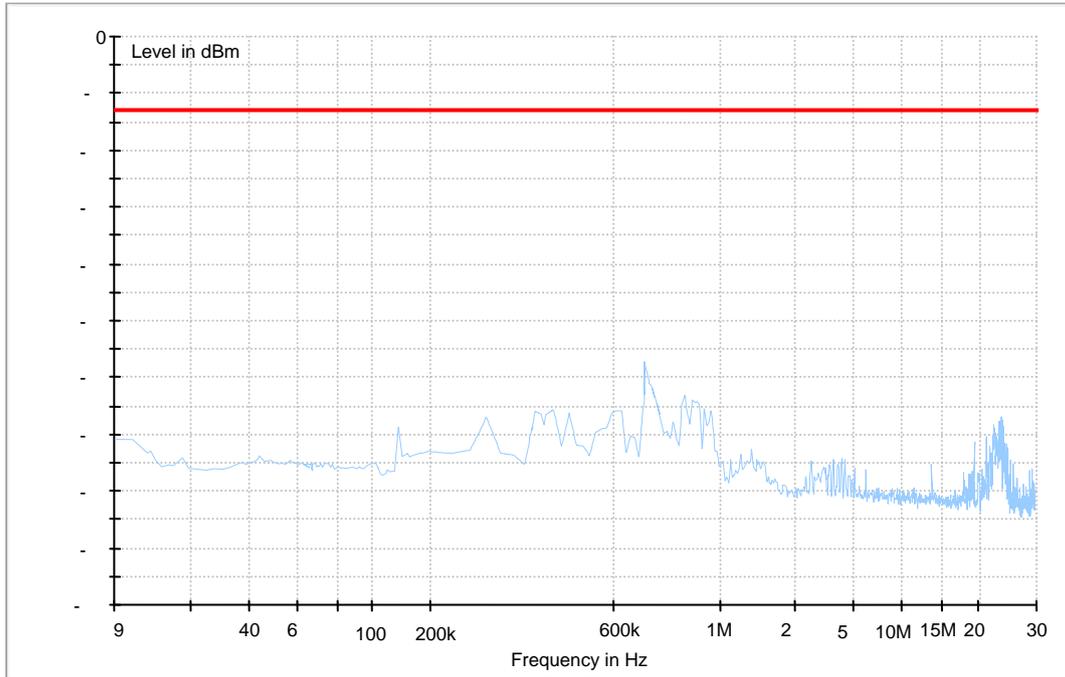
Traffic Mode (18GHz-26.5GHz)





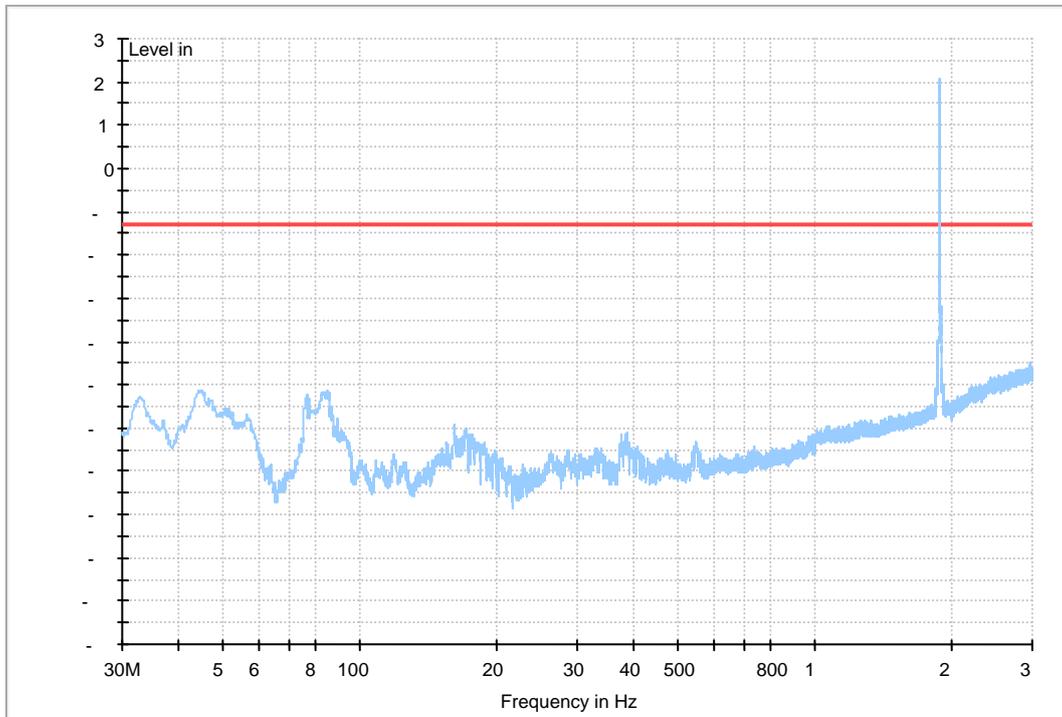
WCDMA Band II

Traffic Mode (9kHz-30MHz)



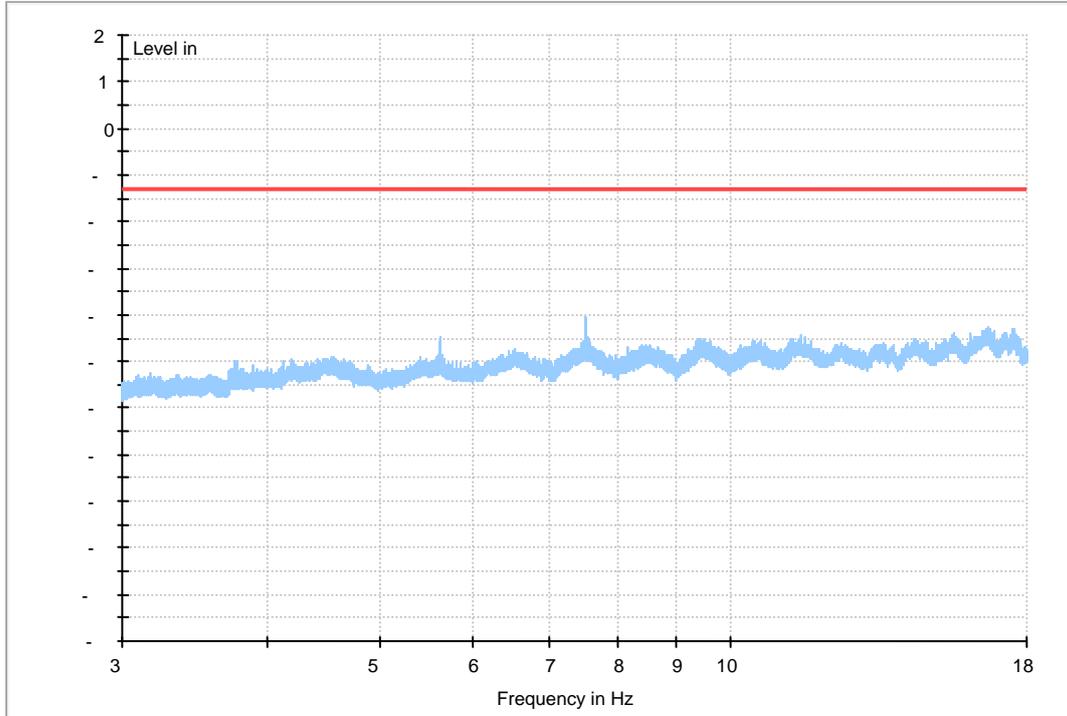


Traffic Mode (30MHz-3GHz)



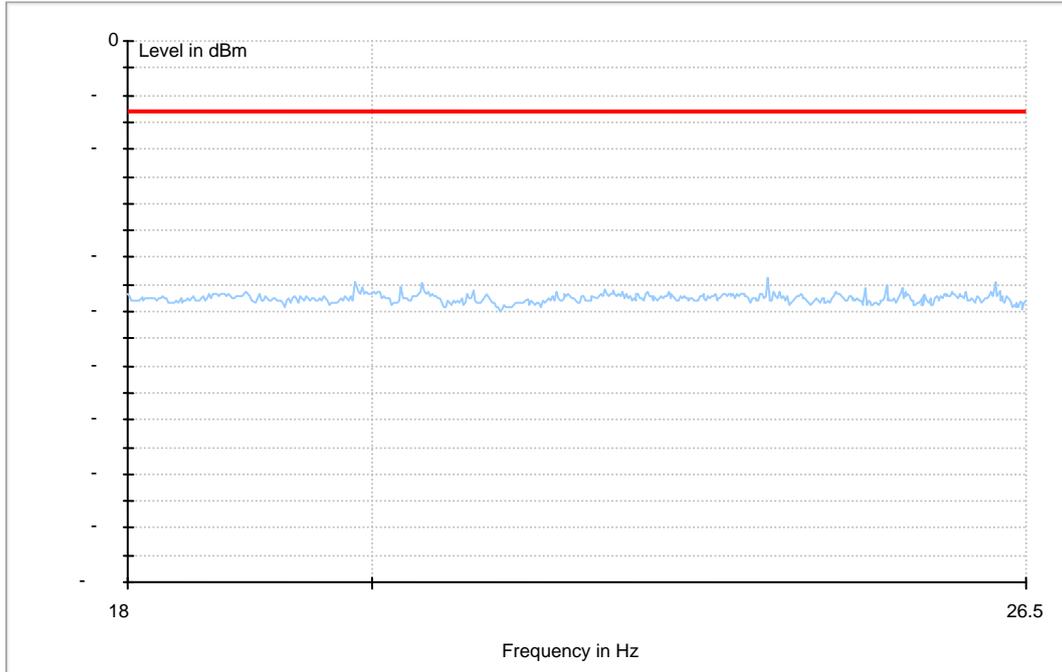


Traffic Mode (3GHz-18GHz)





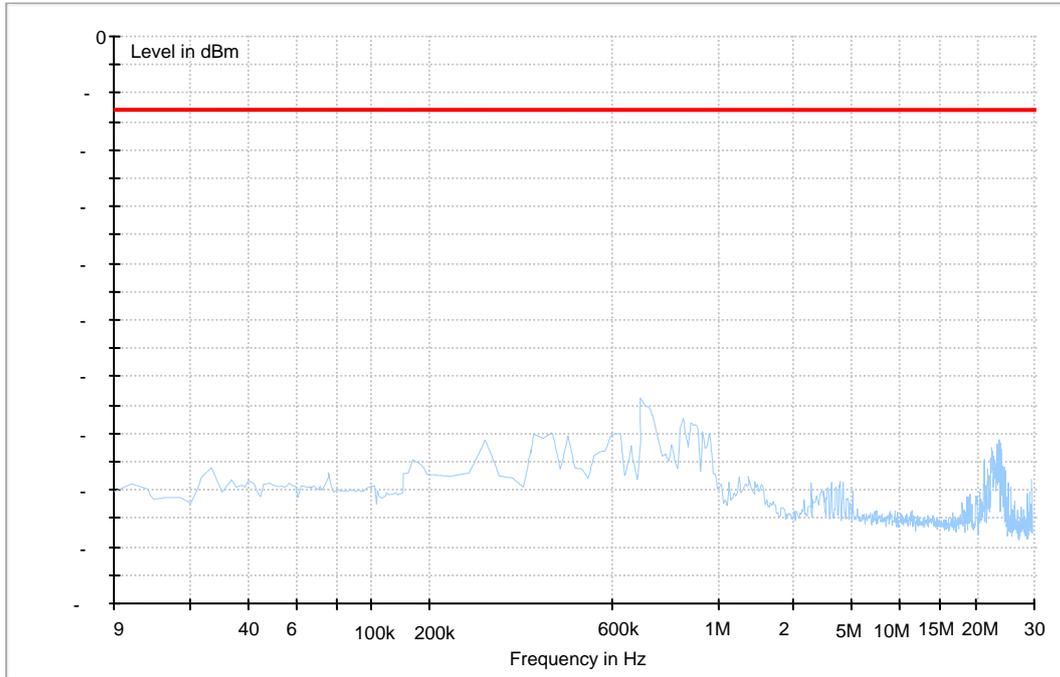
Traffic Mode (18GHz-26.5GHz)





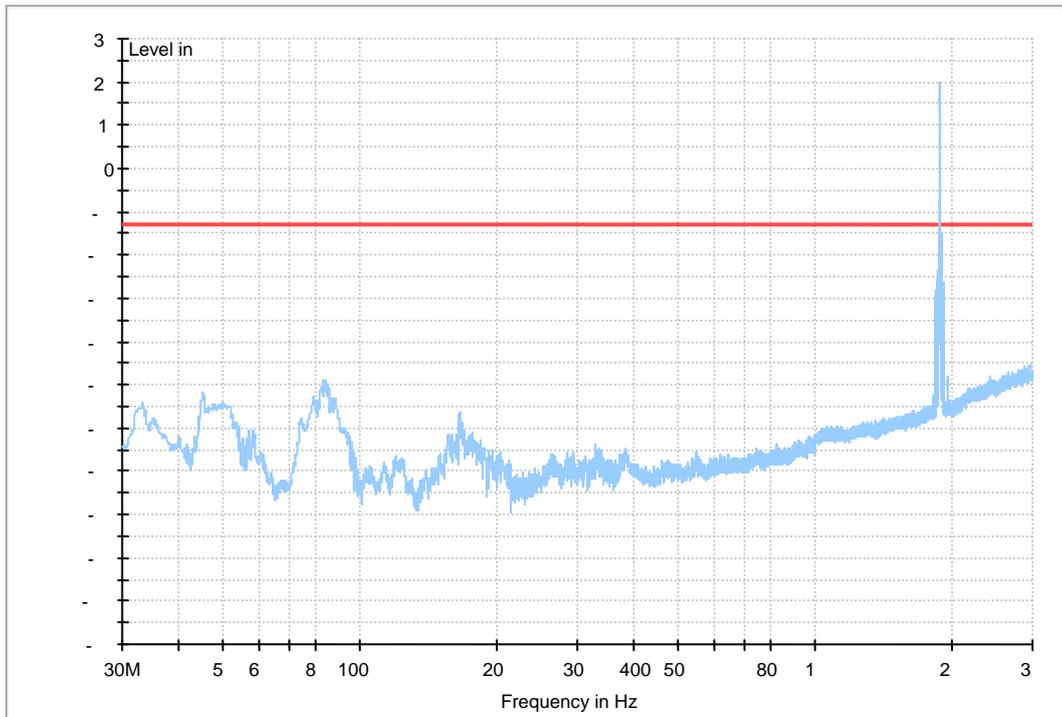
HSDPA Band II

Traffic Mode (9kHz-30MHz)



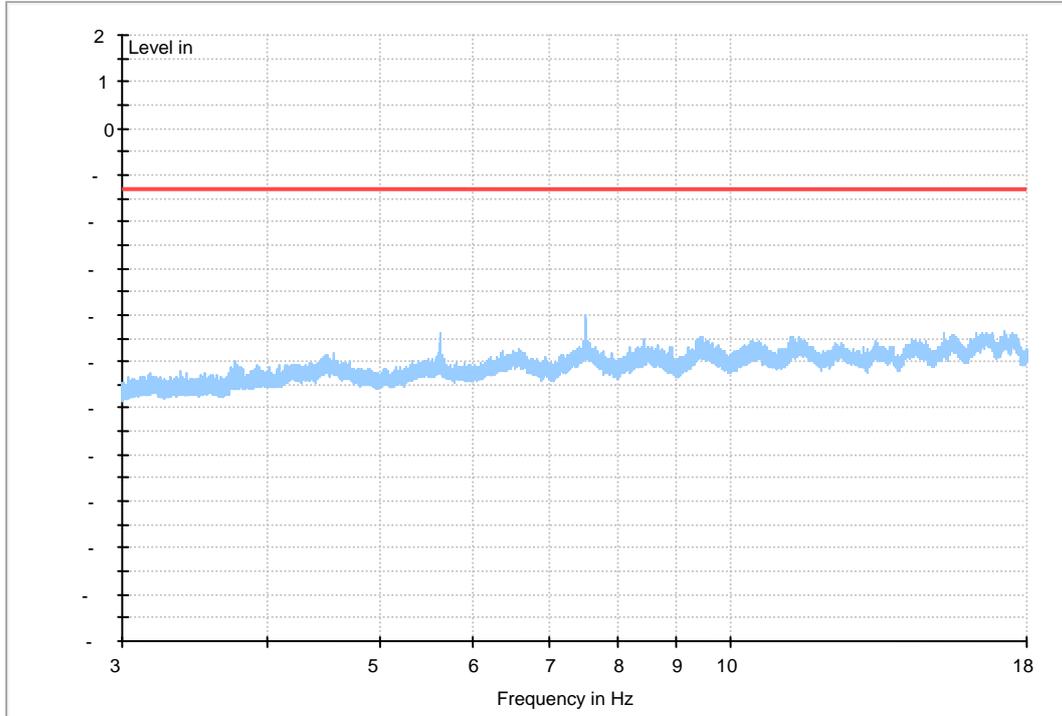


Traffic Mode (30MHz-3GHz)



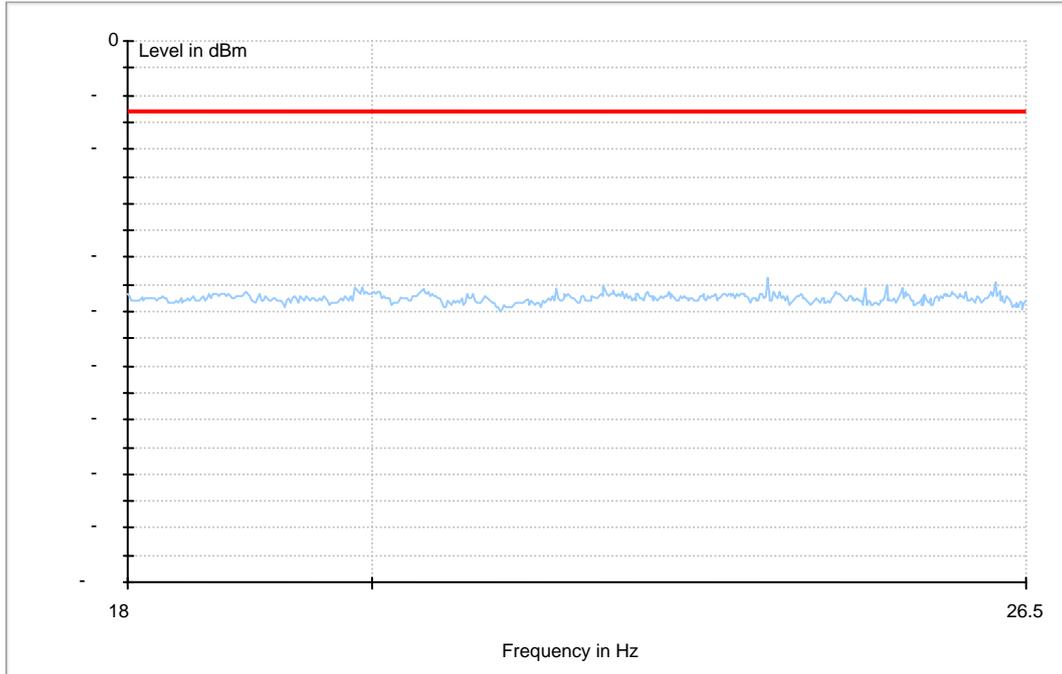


Traffic Mode (3GHz-18GHz)





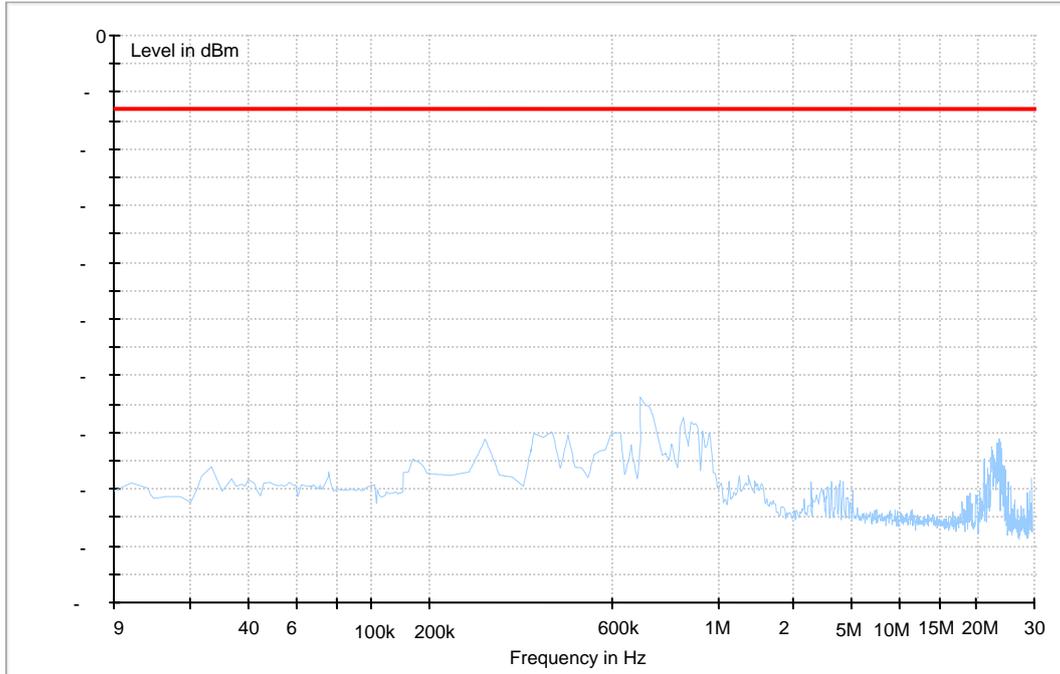
Traffic Mode (18GHz-26.5GHz)





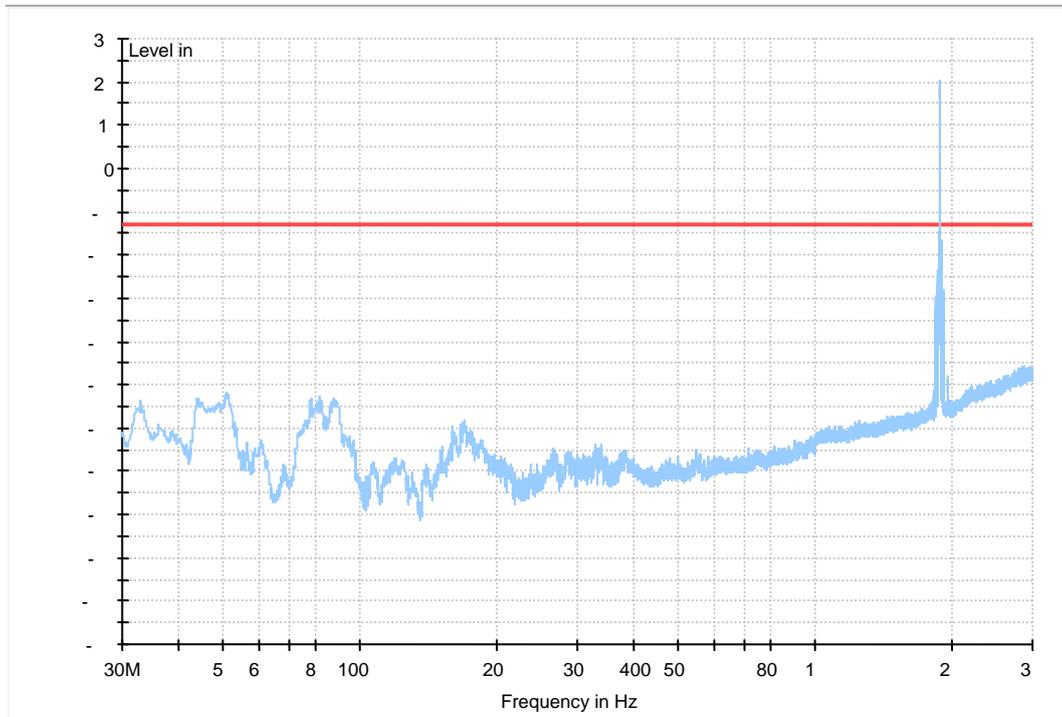
HSUPA Band II

Traffic Mode (9kHz-30MHz)



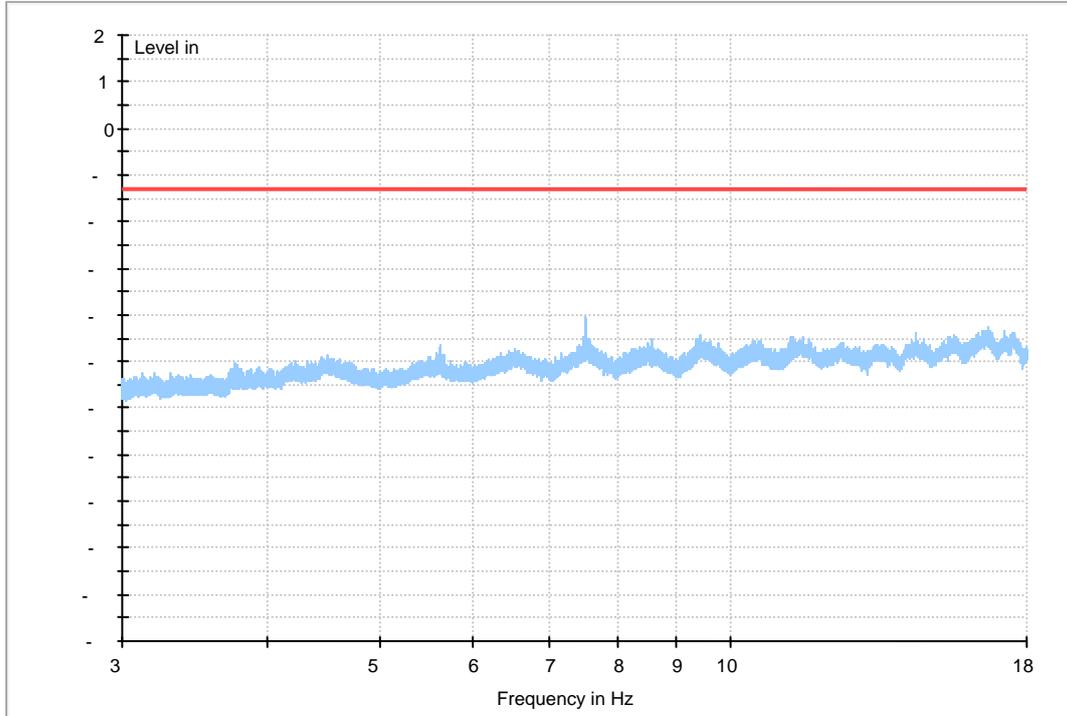


Traffic Mode (30MHz-3GHz)



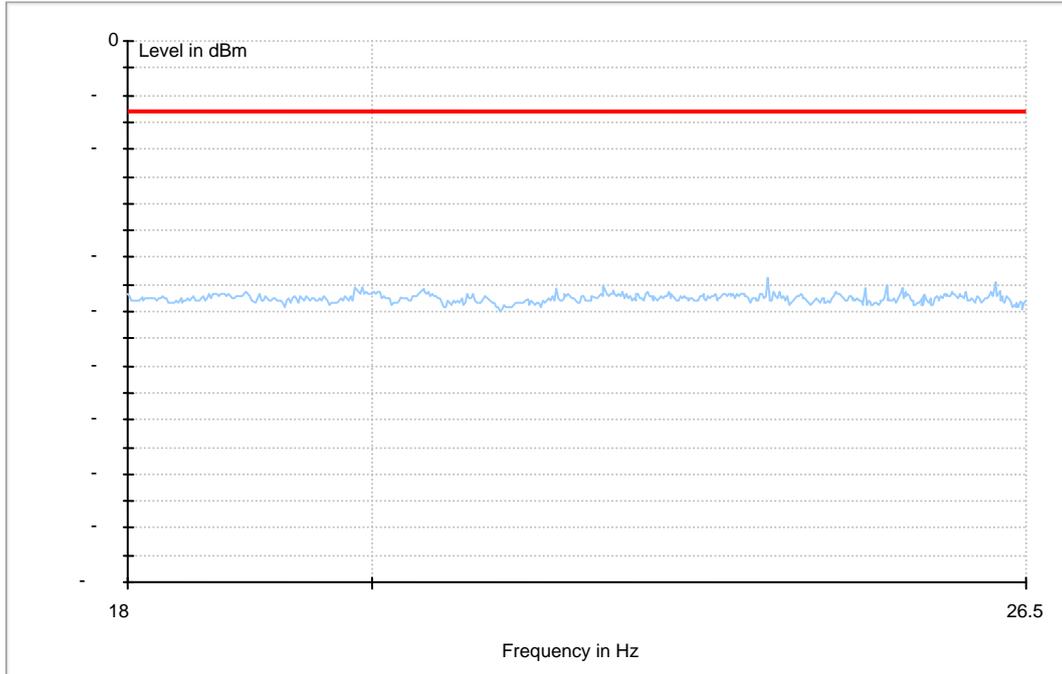


Traffic Mode (3GHz-18GHz)





Traffic Mode (18GHz-26.5GHz)



END



FCC&IC Test Report of E5776s-501
FCC ID: QISE5776S-501
IC : 6369A-E5776S

Appendix F

Frequency Stability According to FCC Part 2.1055& Part 24.235



Frequency Error vs. Temperature:

Test Mode	RF Ch.	Volt.	Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Freq. vs. 20 °C [ppm]	Limit [ppm]	Verdict
TM 1	M	VN	-30 °C	26	0.01501	---	±2.5	Pass
			-20 °C	11	0.00635	---	±2.5	Pass
			-10 °C	17	0.00981	---	±2.5	Pass
			0 °C	15	0.00866	---	±2.5	Pass
			10 °C	9	0.00520	---	±2.5	Pass
			20 °C	-17	-0.00981	---	±2.5	Pass
			30 °C	8	0.00462	---	±2.5	Pass
			40 °C	23	0.01328	---	±2.5	Pass
			50 °C	18	0.01039	---	±2.5	Pass
TM 2	M	VN	-30 °C	18	0.01039	---	±2.5	Pass
			-20 °C	-15	-0.00866	---	±2.5	Pass
			-10 °C	-24	-0.01385	---	±2.5	Pass
			0 °C	7	0.00404	---	±2.5	Pass
			10 °C	23	0.01328	---	±2.5	Pass
			20 °C	22	0.01270	---	±2.5	Pass
			30 °C	-8	-0.00462	---	±2.5	Pass
			40 °C	-19	-0.01097	---	±2.5	Pass
			50 °C	25	0.01443	---	±2.5	Pass
TM 3	M	VN	-30 °C	-24	-0.01385	---	±2.5	Pass
			-20 °C	-9	-0.00520	---	±2.5	Pass
			-10 °C	-7	-0.00404	---	±2.5	Pass
			0 °C	-18	-0.01039	---	±2.5	Pass
			10 °C	7	0.00404	---	±2.5	Pass
			20 °C	-25	-0.01443	---	±2.5	Pass
			30 °C	23	0.01328	---	±2.5	Pass
			40 °C	8	0.00462	---	±2.5	Pass
			50 °C	-12	-0.00693	---	±2.5	Pass



Frequency Error vs. Voltage:

Test Mode	RF Ch.	Temp.	Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Freq. vs. 20 °C [ppm]	Limit [ppm]	Verdict
TM 1	M	TN	VL	-8	-0.00462	---	±2.5	Pass
			VN	-16	-0.00924	---	±2.5	Pass
			VH	-13	-0.00750	---	±2.5	Pass
TM 2	M	TN	VL	27	0.01559	---	±2.5	Pass
			VN	9	0.00520	---	±2.5	Pass
			VH	15	0.00866	---	±2.5	Pass
TM 3	M	TN	VL	7	0.00404	---	±2.5	Pass
			VN	-19	-0.01097	---	±2.5	Pass
			VH	11	0.00635	---	±2.5	Pass

END



Appendix G

Receiver Spurious Emission



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

30MHz-1GHz

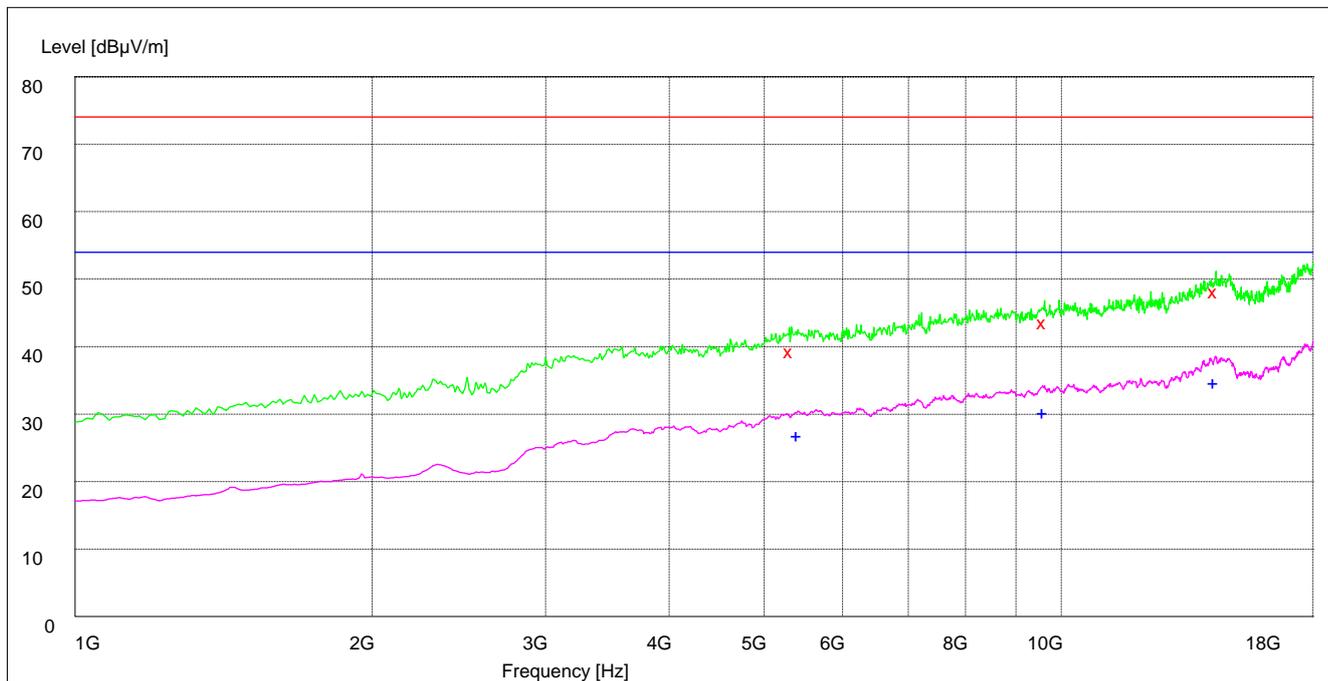


MEASUREMENT RESULT: QP Detector

Frequency	Level	Transducer	Limit	Margin	Height	Azimuth	Polarisation
MHz	dBµV/m	dB	dBµV/m	dB	cm	deg	
31.740000	30.50	14.7	40.0	9.5	100.0	272.00	VERTICAL
39.540000	27.30	15.3	40.0	12.7	100.0	289.00	VERTICAL
69.780000	20.50	11.0	40.0	19.5	126.0	46.00	VERTICAL
197.580000	21.80	12.3	43.5	21.7	100.0	340.00	VERTICAL
356.760000	24.70	16.8	46.0	21.3	100.0	231.00	HORIZONTAL
643.740000	29.60	21.8	46.0	16.4	200.0	212.00	VERTICAL



1GHz to 18 GHz



MEASUREMENT RESULT: PK Detector

Frequency	Level	Transducer	Limit	Margin	Height	Azimuth	Polarisation
MHz	dBµV/m	dB	dBµV/m	dB	cm	deg	
5321.800000	40.60	-1.1	74.0	33.4	148.0	0.00	VERTICAL
9615.400000	44.90	6.0	74.0	29.1	100.0	26.00	VERTICAL
14349.100000	49.40	16.6	74.0	24.6	117.0	60.00	HORIZONTAL

MEASUREMENT RESULT: AV Detector

Frequency	Level	Transducer	Limit	Margin	Height	Azimuth	Polarisation
MHz	dBµV/m	dB	dBµV/m	dB	cm	deg	
5413.400000	28.20	-0.8	54.0	25.8	135.0	136.00	VERTICAL
9614.900000	31.60	6.0	54.0	22.4	100.0	99.00	VERTICAL
14323.500000	36.10	16.5	54.0	17.9	148.0	176.00	VERTICAL

END