



# FCC RF Test Report

**Product Name: HUAWEI Ascend Y 201; Skyline mini; HSDPA/UMTS/GPRS/GSM/EDGE Mobile Phone with Bluetooth**

**Model Number: HUAWEI U8666-51, U8666-51**

**Report No: SYBH(Z-RF)011042012-2001**

**FCC ID: QISU8666-51**

**Reliability Laboratory of Huawei Technologies Co., Ltd.**

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

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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.



**Applicant:** Huawei Technologies Co., Ltd.  
**Address:** Huawei Base, Bantian, Longgang District, Shenzhen  
 518129, P.R. China  
**Date of Receipt Test Item:** Apr.12, 2012  
**Start Date of Test:** Apr.13, 2012  
**End Date of Test:** Apr.19, 2012

**Test Result:** Pass

Approved By Senior Engineer May.14, 2012 Dai Linjun *Dailinjun*  
 Date Name Signature

Reviewed By May.14, 2012 Cousy Xu *Cousy XU*  
 Date Name Signature

Operator May.14, 2012 Huang Qiuliang *Huang Qiuliang*  
 Date Name Signature

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# 1 General Information

<b>1.1 Applied Standard</b>	
Applied Rules:	47 CFR FCC Part 2:2010, Subpart J 47 CFR FCC Part 22:2010, Subpart H ANSI/TIA 603C:2004
<b>1.2 Test Location</b>	
Test Location 1:	Reliability Laboratory of Huawei Technologies Co., Ltd.
Address:	Huawei Base, Bantian, Longgang District, Shenzhen 518129, P.R. China
<b>1.3 Test Environment Condition</b>	
Ambient Temperature:	20 – 25 °C
Ambient Relative Humidity:	45 – 55 %
Atmospheric Pressure:	101 kPa



## 2 Summary

Test Case	FCC Part No.	Requirements	Result
Cellular Band			
Transmitter Output Power	2.1046 & 22.913	ERP not exceed 7 W Peak-to-average ratio not exceed 13 dB	Pass
Modulation Characteristics	2.1047	Digital modulation	Pass
Occupied Bandwidth	2.1049	(Not specified)	Pass
Band Edges Compliance	2.1051 & 917	Below -13 dBm/1%*EBW, in 1 MHz range	Pass
Spurious Emission at Antenna Terminals	2.1051 & 2.917	Below -13 dBm/1 kHz, 9 kHz to 150 kHz Below -13 dBm/10 kHz, 150 kHz to 30 MHz Below -13 dBm/100 kHz, 30 MHz to 10 <sup>th</sup> harmonics	Pass
Field Strength of Spurious Radiation	2.1053 & 22.917	Below -13 dBm/100 kHz	Pass
Frequency Stability	2.1055 & 22.355	Maintained within the tolerances of $\pm 2.5$ ppm	Pass

### 3 Product Description

#### 3.1 Product Information

##### 3.1.1 General Description

HUAWEI U8666-51/U8666-51/

HUAWEI Ascend Y 201; Skyline mini; HSDPA/UMTS/GPRS/GSM/EDGE Mobile Phone with Bluetooth is subscriber equipment in the WCDMA/GSM system. The HSDPA/UMTS frequency band is Band I, Band II and Band V. The GSM/GPRS/EDGE frequency band includes GSM 850, GSM900, DCS1800 and PCS1900. But only GSM 850 test data are included in this report. The Mobile Phone implements such functions as RF signal receiving/transmitting, HSDPA/UMTS and GSM/GPRS/EDGE protocol processing, voice, video, MMS service, GPS and WIFI etc. Externally it provides micro SD card interface, earphone port (to provide voice service) and USIM card interface. It also provides Bluetooth module to synchronize data between a PC and the phone, or to use the built-in modem of the phone to access the Internet with a PC, or to exchange data with other Bluetooth devices.

##### 3.1.2 Board Information

HUAWEI Ascend Y 201; Skyline mini; HSDPA/UMTS/GPRS/GSM/EDGE Mobile Phone with Bluetooth		
HUAWEI U8666-51, U8666-51		
Board and Module		
Hardware Version	Software Version	Description
HD1U8655M	U8666-51V100R001C00B878	Main Board

##### 3.1.3 Adapter Technical Data

AC/DC Adapter Model	HW-050100E1W
Manufacturer	Huawei Technologies Co., Ltd.
Input Voltage	100V-240V~50-60Hz, 0.2A
Output Voltage	5.0V  1A
Rated Power	5W

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Rated Power	5W

### 3.1.4 Battery Technical Data

Name	Manufacture	Description
Li-ion	Huawei Technologies Co., Ltd.	Battery Model: HB5K1 Rated capacity: 1250 mAh Nominal Voltage: $\overline{\text{---}}$ +3.7V Charging Voltage: $\overline{\text{---}}$ +4.2V

Name	Manufacture	Description
Li-ion	Huawei Technologies Co., Ltd.	Battery Model: HB5K1H Rated capacity: 1400 mAh Nominal Voltage: $\overline{\text{---}}$ +3.7V Charging Voltage: $\overline{\text{---}}$ +4.2V

## 4 Test Description

### 4.1 Supported Frequency Range

Characteristics	Description
Downlink	869 to 894 MHz;
Uplink	824 to 849 MHz

### 4.2 Transmitter / Receiver Characteristics

Characteristics	Description
System Type	GSM UMTS
TX Output Power (per Antenna Port)	GSM system: 33dBm; UMTS system: 24dBm;
Channel Spacing(s) / Bandwidth(s)	GSM system: 200 kHz UMTS system: 5 MHz
Designation of Emissions	GSM system: 246KGXW (GMSK modulation), 242KG7W (8PSK modulation) UMTS system: 4M18F9W

### 4.3 Antenna Gain

Antenna Gain(dBi)	-0.8
Antenna Gain(dBd)	-2.95

### 4.4 Power Supply

Specification	Description
Power Supply Type	Directly Connected to DC /AC Power Supply
Input to EUT (DC power)	DC Voltage Nominal: $\equiv$ 3.7 V DC Voltage Range: $\equiv$ 3.6 V to 4.2 V
Input to EUT (AC power)	AC Voltage Nominal: ~ 120 V (50/60 Hz) AC Voltage Range: ~100-240V

## 5 General Test Conditions / Configurations

### 5.1 RF Channels under Test

Test Mode	TX / RX	RF Channel		
		Bottom (B)	Middle (M)	Top (T)
TM1/TM2	TX	Channel 128	Channel 192	Channel 251
		824.2MHz	837.0MHz	848.8MHz
	RX	Channel 128	Channel 192	Channel 251
		869.2MHz	882.0MHz	893.8MHz
TM3/TM4	TX	Channel 4132	Channel 4182	Channel 4233
		826.4MHz	836.4MHz	846.6MHz
	RX	Channel 4357	Channel 4407	Channel 4458
		871.4MHz	881.4MHz	891.6MHz

### 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

### 5.3 Test Environments

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

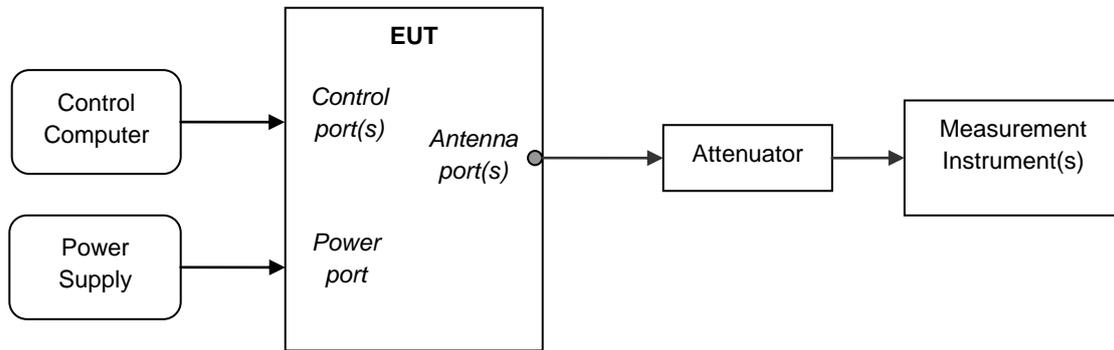
NOTE: VL= lower extreme test voltages  
VN= nominal voltage  
VH= upper extreme test voltage  
TN= normal temperature

## 5.4 Test Setups

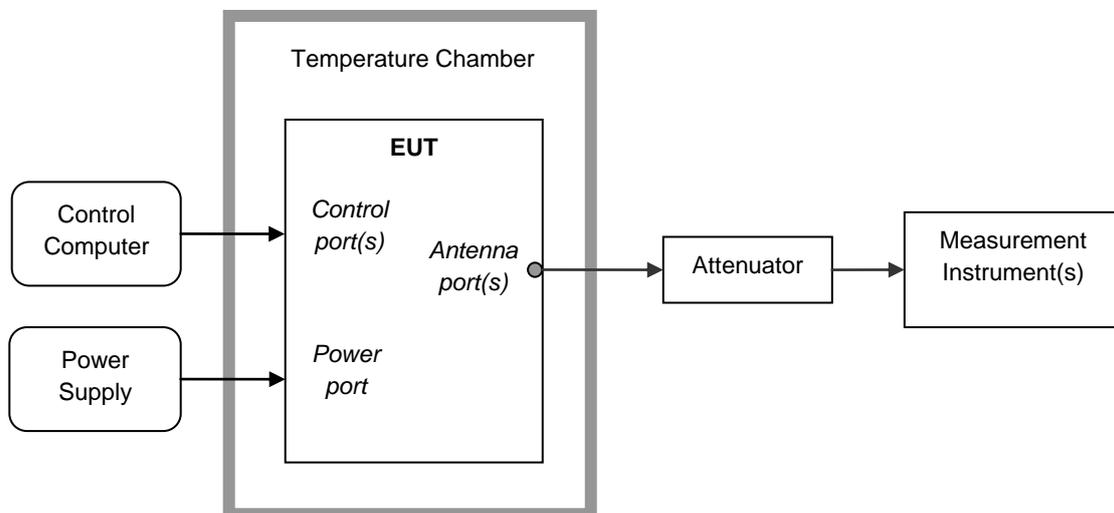
### 5.4.1 General Test Setup Configurations

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



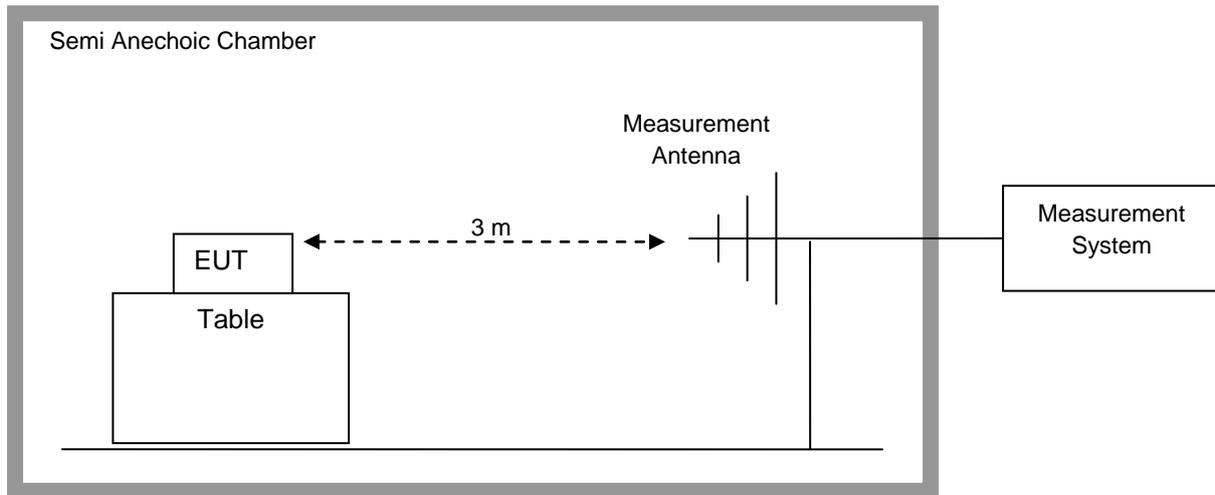
### 5.4.3 Test Setup 2



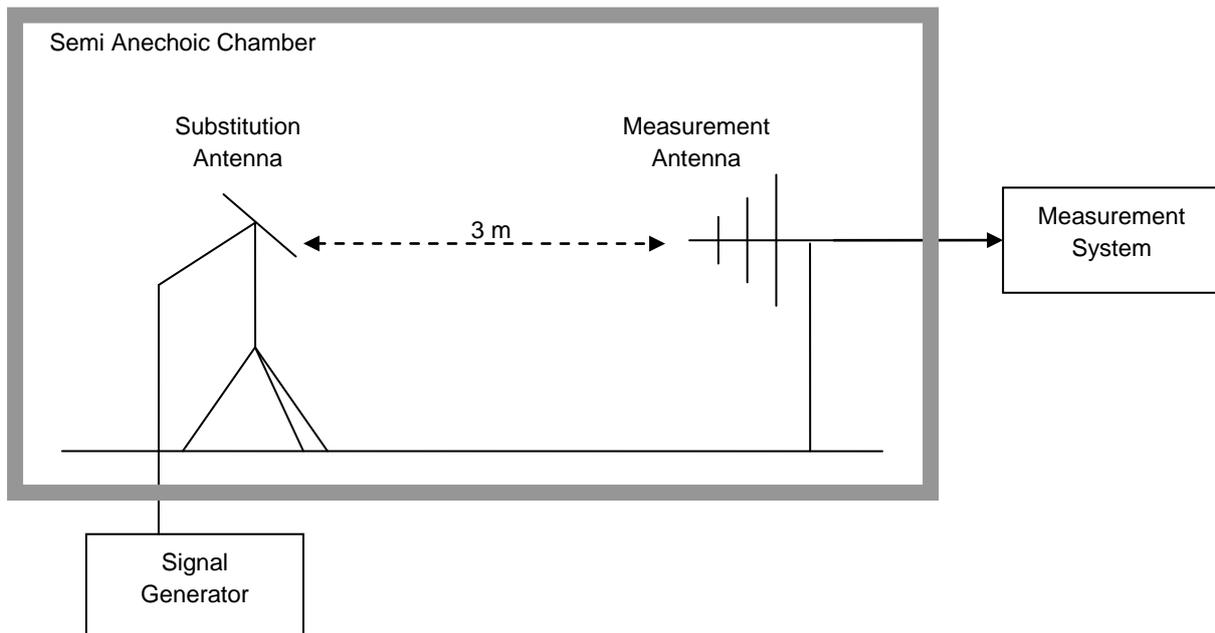
### 5.4.4 Test Setup 3

NOTE: Effective radiated power (ERP) refers to the radiation power output of the EUT, assuming all emissions are radiated from half-wave dipole antennas.

#### Step 1: Pre-test



#### Step 2: Substitution method to verify the maximum ERP



## 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)	B, M, T
	Test Mode	TM1/TM2/TM3/TM4
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)	B, M, T
	Test Mode	TM1/TM2/TM3
Band Edges Compliance	Test Configuration	Ambient Temperature & Rated Voltage
	Test Setup	Test Setup 1
	Detector	RMS
	RF Channels (TX)	B, T
	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)	B, M, T
	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/TM4
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



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Test Case	Test Conditions	
	RF Channels (TX)	M
	Test Mode	TM1/TM2/TM3

## 6 Main Test Instruments

Equipment Description	Manufacturer	Model	Serial Number	Calibrated until
Power supply	KEITHLEY	2303	1288003	Sep.27, 2012
Universal Radio Communication Tester	R&S	CMU200	117341	Jan.12, 2013
Universal Radio Communication Tester	Agilent	E5515C	MY50260239	Aug.31, 2012
Spectrum Analyzer	Agilent	E4440A	MY48250119	Jul.17, 2012
Signal Analyzer	R&S	FSQ31	200021	Sep.27, 2012
Temperature Chamber	WEISS	WKL64	24600294	Feb.13, 2013
Signal generator	Agilent	E8257D	MY49281095	Jul.09, 2012
Test receiver	R&S	ESU26	100150	May.29, 2012
Tunable Dipole	Schwarzbeck	D69250-UHAP/D69250-VHAP	919/1009	Jan.29, 2013
Tunable Dipole	Schwarzbeck	D69250-UHAP/D69250-VHAP	979/917	Jan.29, 2013
Horn Antenna	R & S	HF906	100683	May.15, 2012
Horn Antenna	R & S	HF906	100684	Jul.01, 2012
Broadband Antenna	Schwarzbeck	VULB 9163	9163-357	May.15, 2012
Broadband Antenna	Schwarzbeck	VULB 9163	9163-356	May.15, 2012

## 7 Test Results

No.	Test Item	Test Result
1	Transmitter Output Power	Appendix A
2	Modulation Characteristics	Appendix B
3	Occupied Bandwidth	Appendix C
4	Band Edges Compliance	Appendix D
5	Spurious Emission at Antenna Terminals	Appendix E
6	Field Strength of Spurious Radiation	Appendix F
7	Frequency Stability	Appendix G
8	Photos of Field Strength of Spurious Radiation	Appendix H

NOTE: The Appendix H only photos of Field Strength of Spurious Radiation, no test data.

## 8 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

-----The END-----



## Appendix A

# Transmitter Output Power

According to FCC Part 2.1046 & Part 22.913



## Conducted Power of Transmitter

Table 1 Measurement Results

		RF Output Power (Conducted)					
TEST CONDITIONS		Channel128(B)		Channel192(M)		Channel251(T)	
		824.2MHz		837.0MHz		848.8MHz	
		dBm		dBm		dBm	
$T_{nom} / V_{nom}$	Measured	Limit	Measured	Limit	Measured	Limit	
TM1	32.03	38.50	32.14	38.50	32.25	38.50	
TM2	26.75	38.50	26.93	38.50	27.08	38.50	
TEST CONDITIONS		Channel4132(B)		Channel4182(M)		Channel4233(T)	
		826.4MHz		836.4MHz		846.6MHz	
		dBm		dBm		dBm	
$T_{nom} / V_{nom}$	Measured	Limit	Measured	Limit	Measured	Limit	
TM3	22.37	38.50	22.45	38.50	22.36	38.50	
TM4	Case1	22.35	38.50	22.37	38.50	22.24	38.50
	Case2	22.09	38.50	22.02	38.50	22.16	38.50
	Case3	21.33	38.50	21.41	38.50	21.32	38.50
	Case4	21.35	38.50	21.33	38.50	21.18	38.50



## Effective Radiated Power of Transmitter (ERP)

Table 2 Substitution Results

Test Mode	Freq. [MHz]	Meas. Level [dBm]	Substitution Antenna Type	SGP [dBm]	Substitution Gain [dBd]	Cable Loss [dB]	Substitution Level (ERP) [dBm]	FCC limit [dBm]	Result
TM1	824.2	29.08	Dipole Ant.	32.41	-2.75	0.6	29.06	38.5	Pass
TM1	837.0	29.19	Dipole Ant.	32.65	-2.87	0.6	29.18	38.5	Pass
TM1	848.8	29.30	Dipole Ant.	32.77	-2.85	0.6	29.32	38.5	Pass
TM2	824.2	23.80	Dipole Ant.	27.16	-2.75	0.6	23.81	38.5	Pass
TM2	837.0	23.98	Dipole Ant.	27.42	-2.87	0.6	23.95	38.5	Pass
TM2	848.8	24.13	Dipole Ant.	27.59	-2.85	0.6	24.14	38.5	Pass
TM3	826.4	19.42	Dipole Ant.	22.78	-2.75	0.6	19.43	38.5	Pass
TM3	836.4	19.50	Dipole Ant.	22.97	-2.87	0.6	19.50	38.5	Pass
TM3	846.6	19.41	Dipole Ant.	22.85	-2.85	0.6	19.40	38.5	Pass

Note: a, For getting the ERP (Efficient Radiated Power) in substitution method, the following formula should take to calculate it,

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

b, SGP=Signal Generator Level

-----The END-----



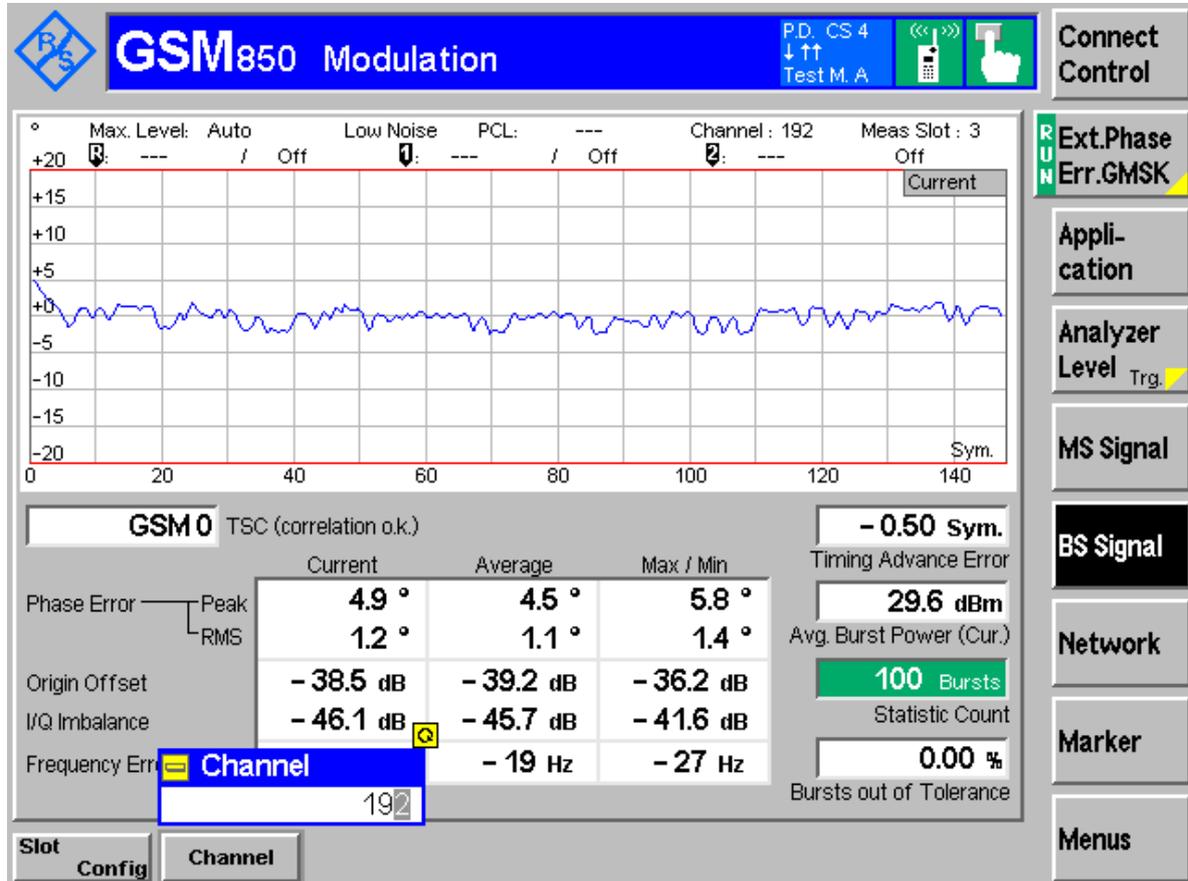
## **Appendix B**

# Modulation Characteristics

According to FCC Part 2.1047 & Part22 Subpart H

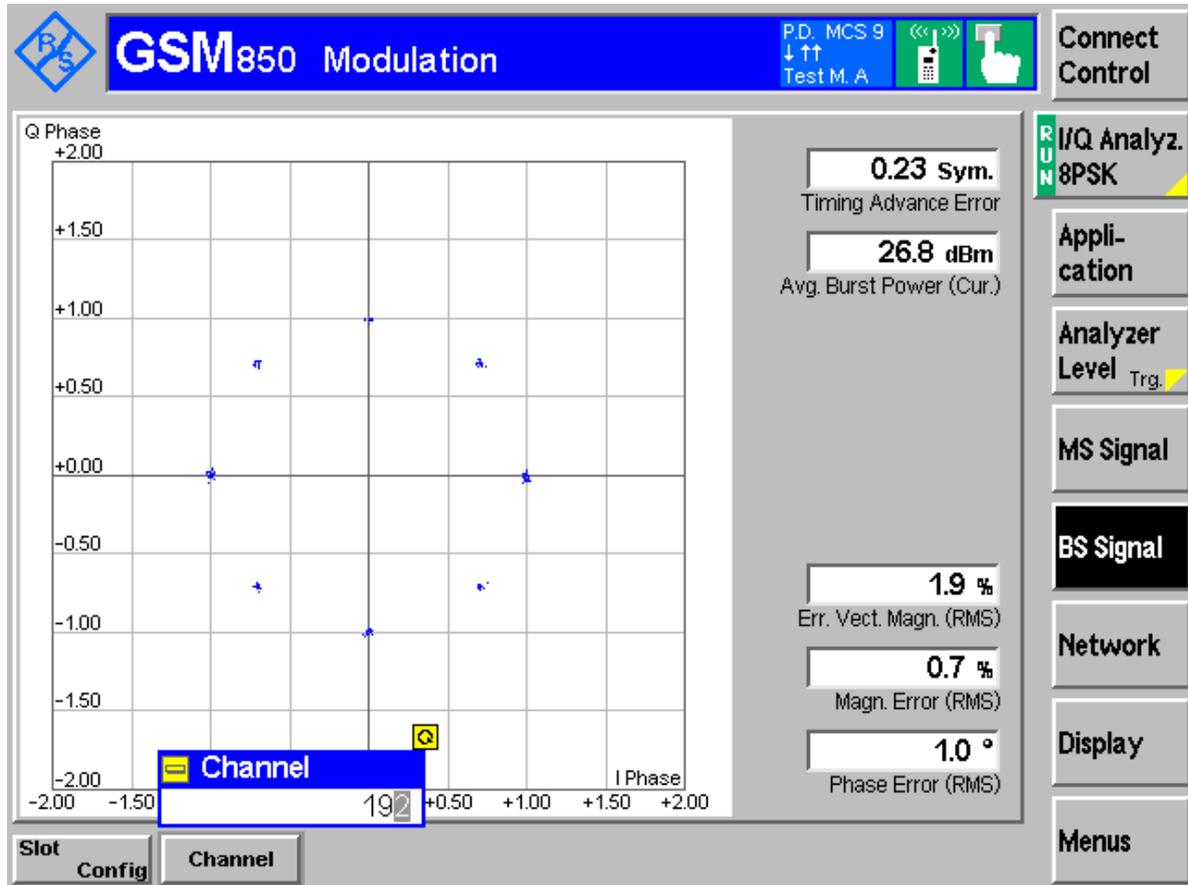


## Channel 192 (TM1:GPRS/GSM)



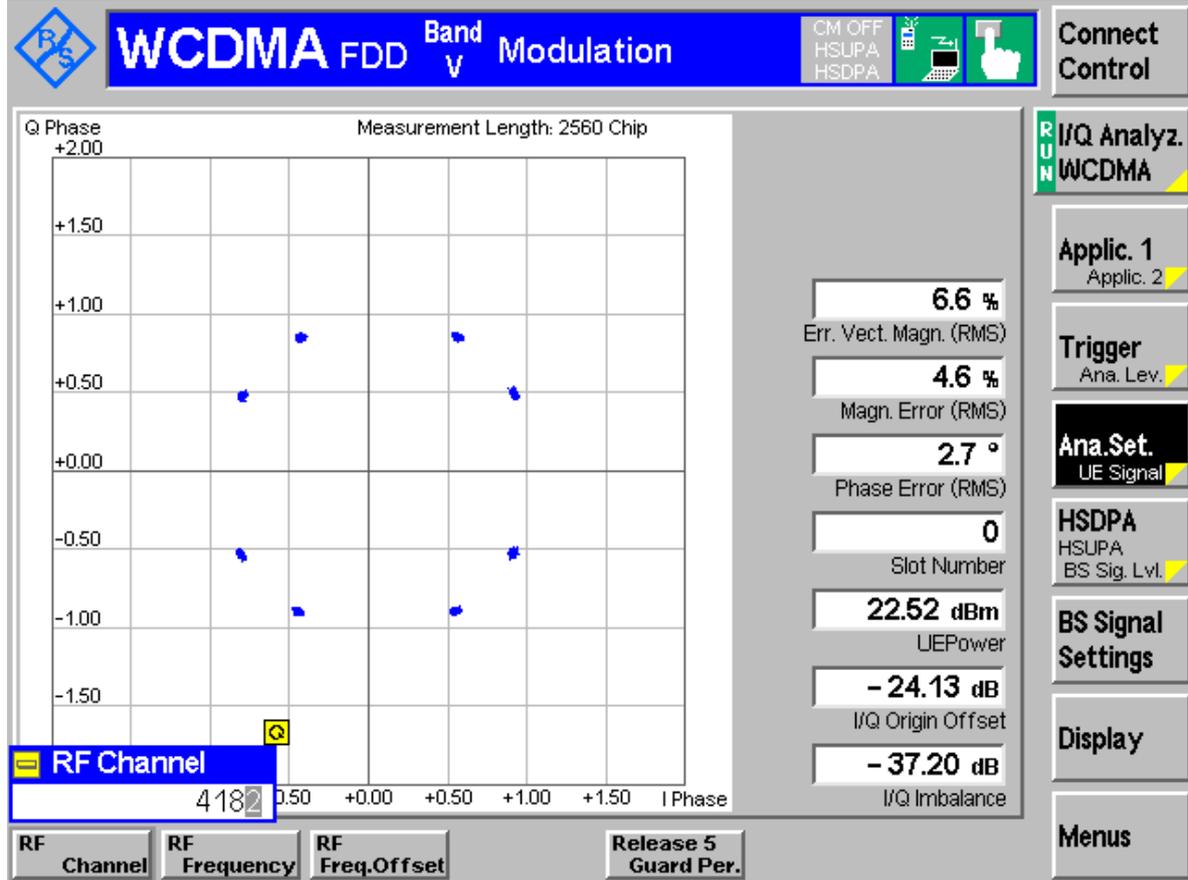


## Channel 192 (TM2:EDGE)





## Channel 4182 (TM3: WCDMA)



-----The END-----



## Appendix C

# Occupied Bandwidth

According to FCC Part 2.1049 & Part 22 Subpart H



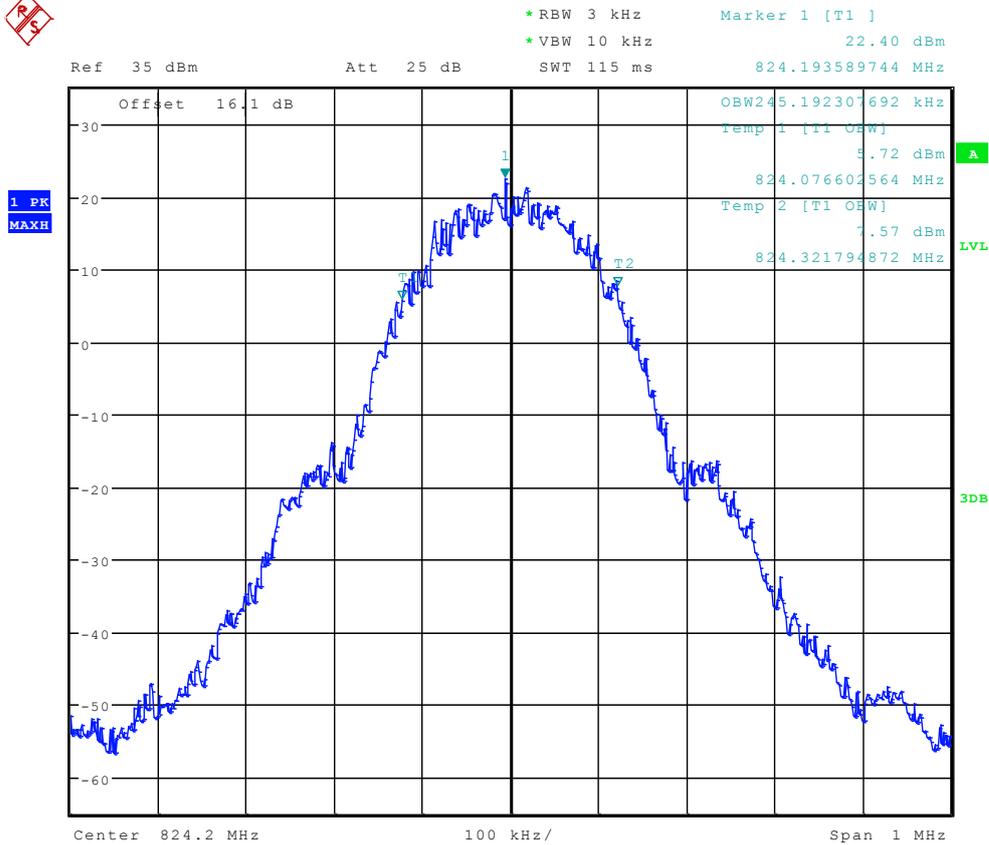
Result Table

Table 1 Measurement Results

Test Mode	RF Channel	Occupied Bandwidth [kHz]	Verdict
TM1	128	245.2	Pass
	192	242.0	Pass
	251	246.8	Pass
TM2	128	235.6	Pass
	192	242.0	Pass
	251	238.8	Pass
Test Mode	RF Channel	Occupied Bandwidth [MHz]	Verdict
TM3	4132	4.17	Pass
	4182	4.17	Pass
	4233	4.18	Pass



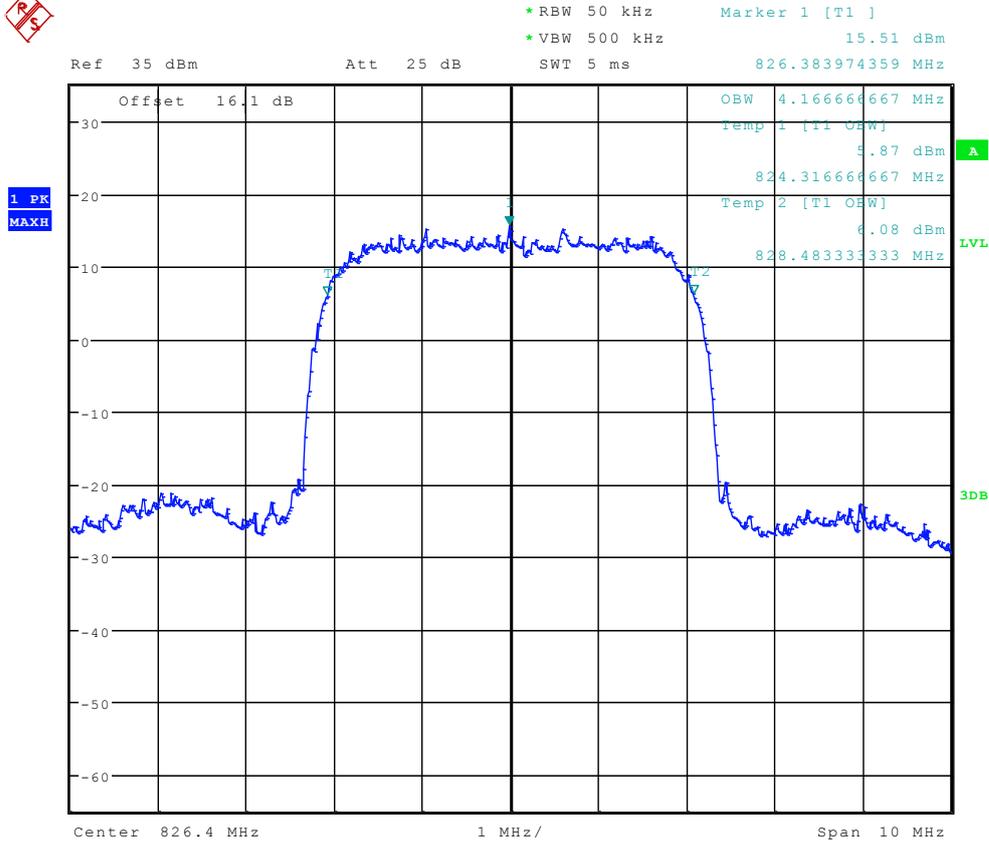
## Channel 128 (TM1:GPRS/GSM)





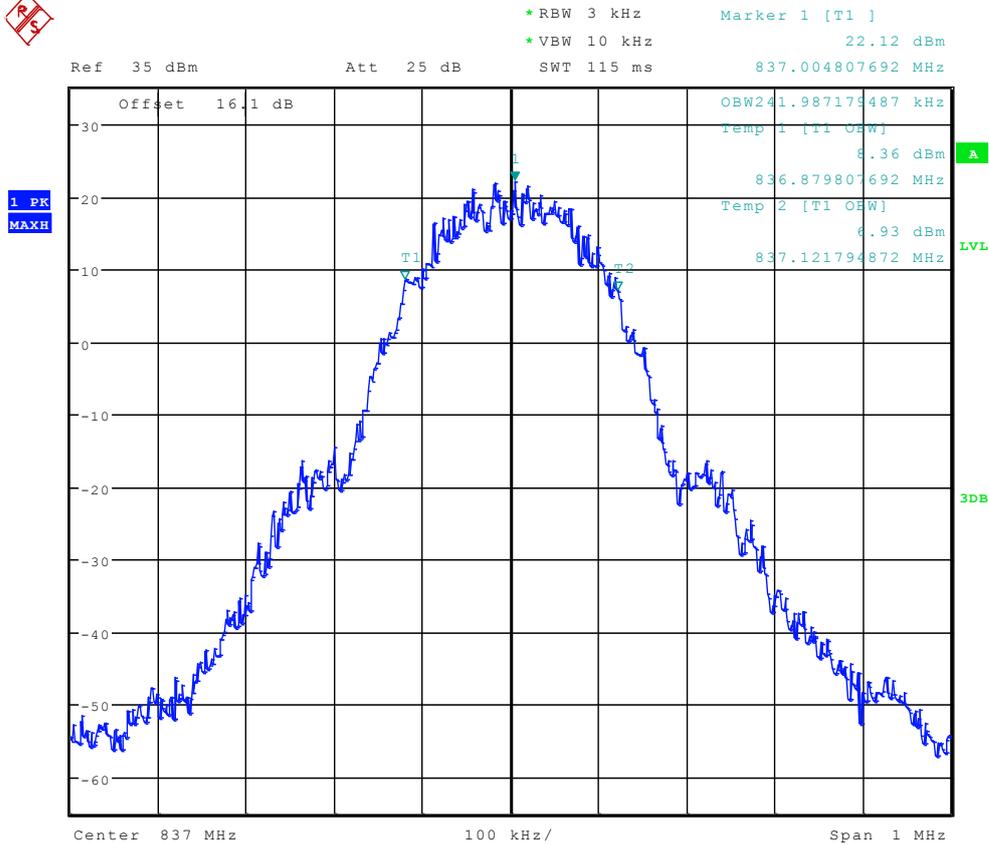


## Channel 4132 (TM3: WCDMA)



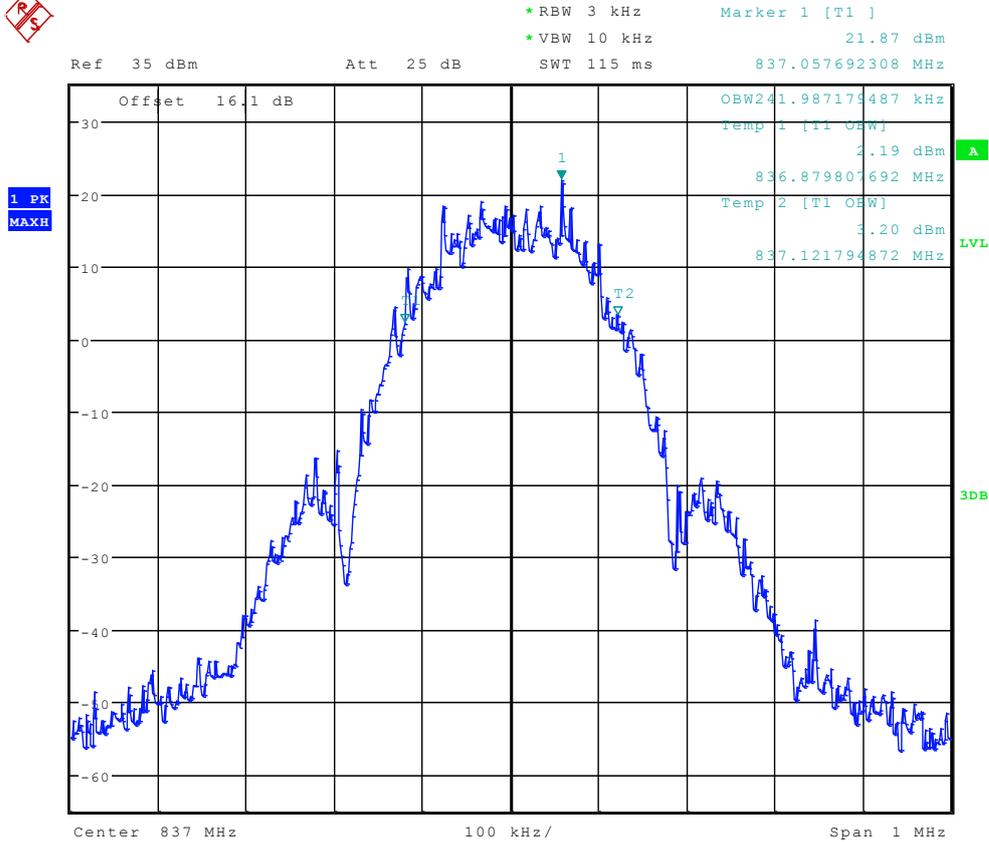


## Channel 192 (TM1:GPRS/GSM)





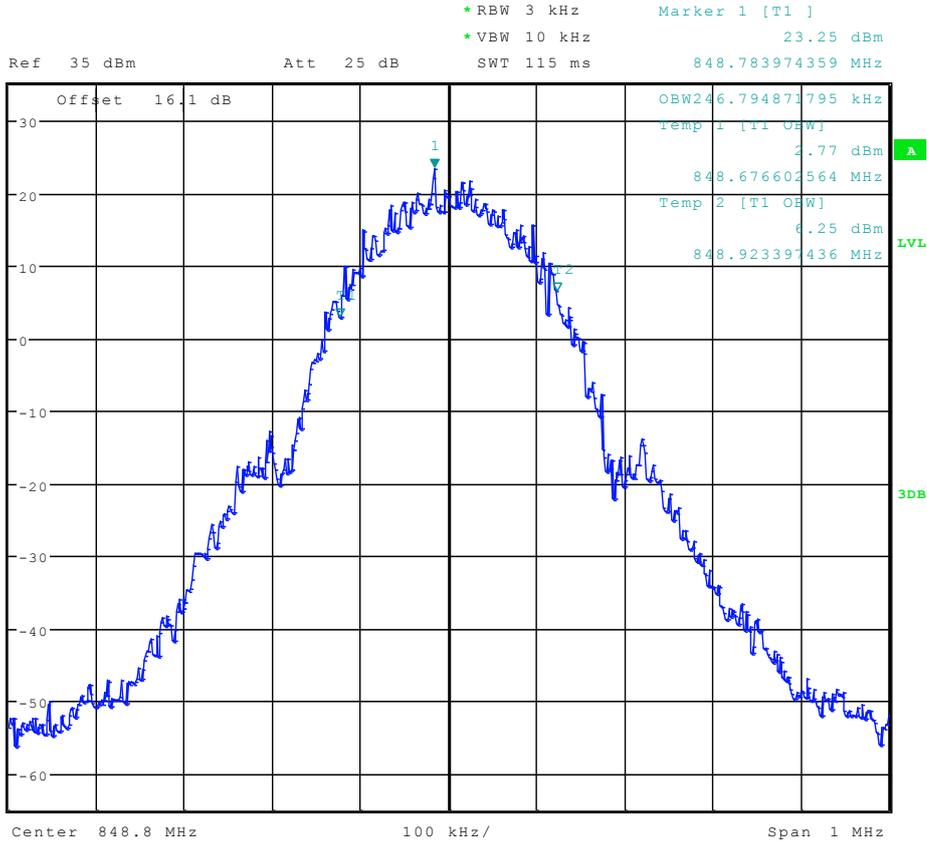
## Channel 192 (TM2:EDGE)







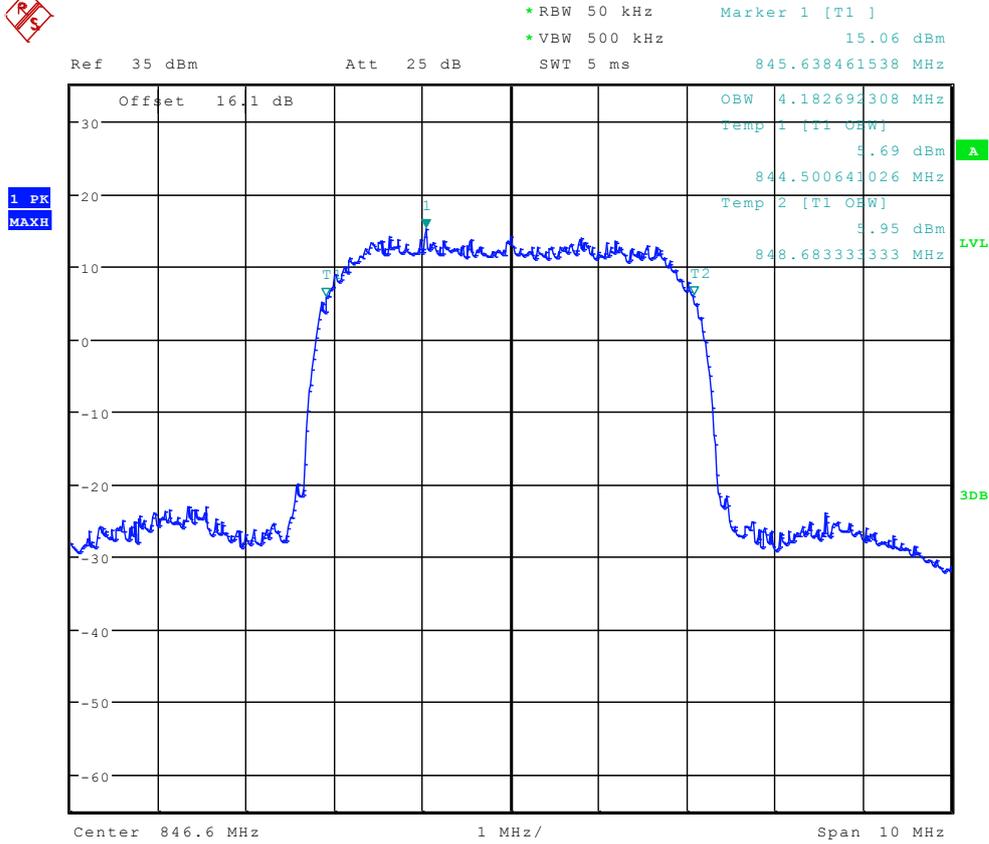
## Channel 251 (TM1:GPRS/GSM)







## Channel 4233 (TM3: WCDMA)



The END



## Appendix D

### Band Edges Compliance

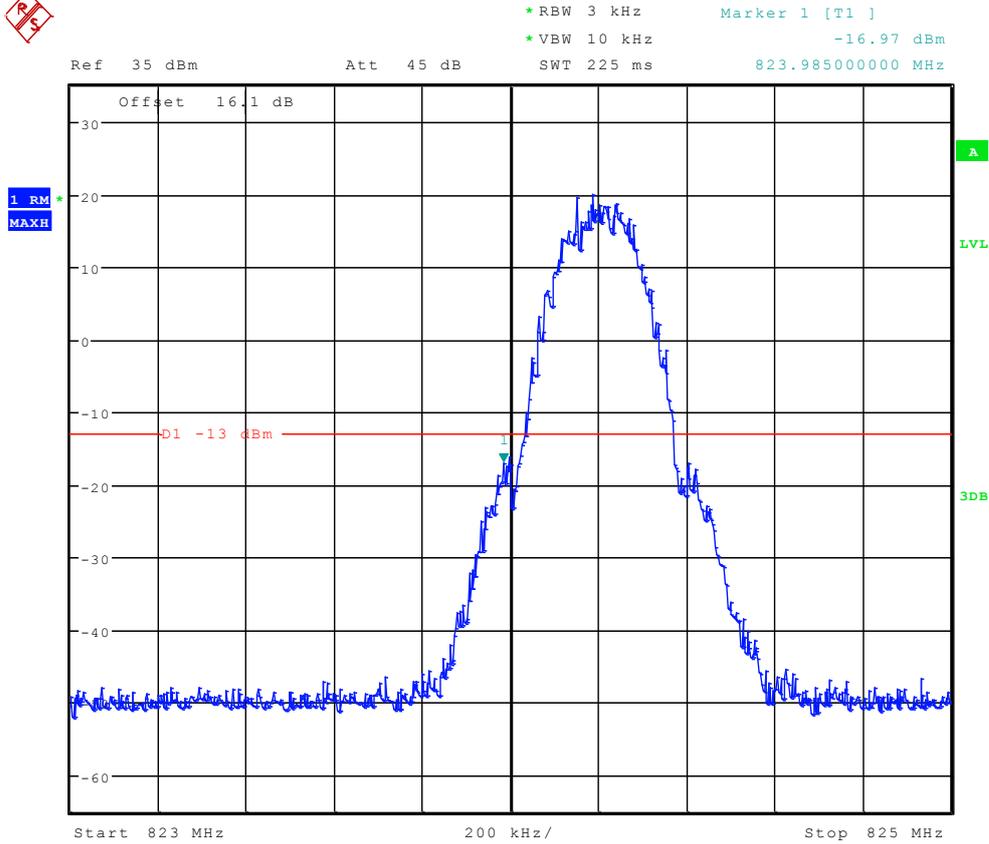
According to FCC Part 2.1051 & Part 22 Subpart H



# TM1:GPRS/GSM

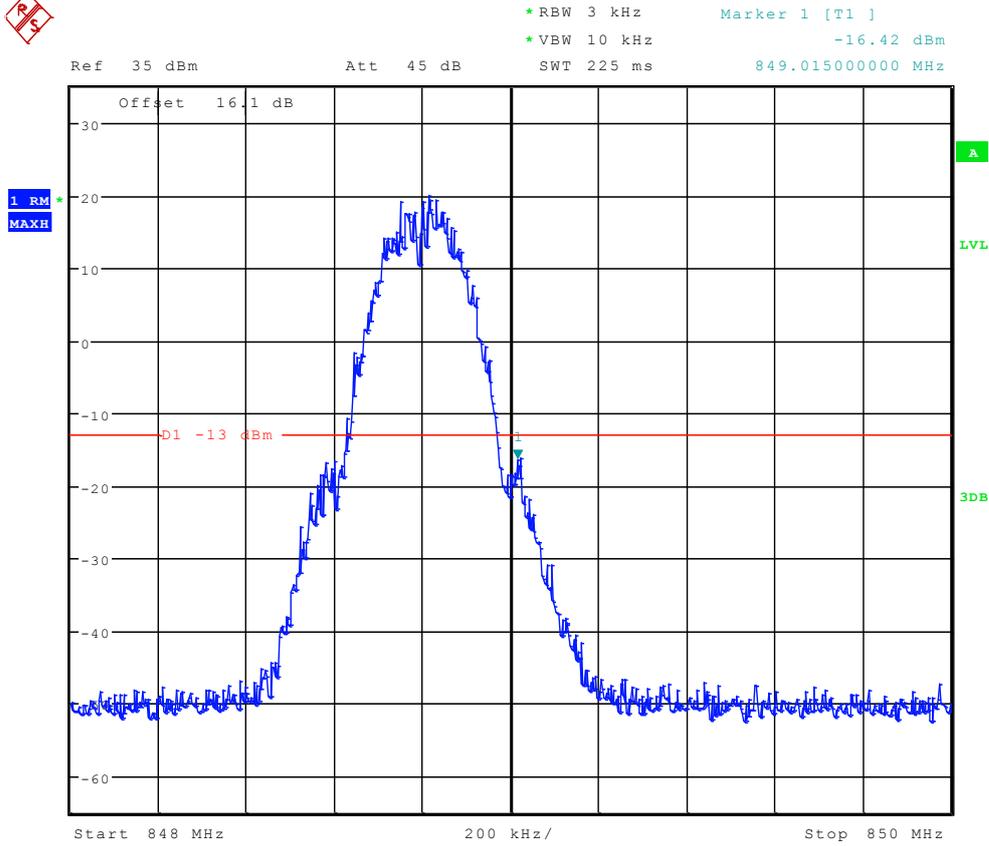
## Left Edge

### Channel 128





## Right Edge Channel 251

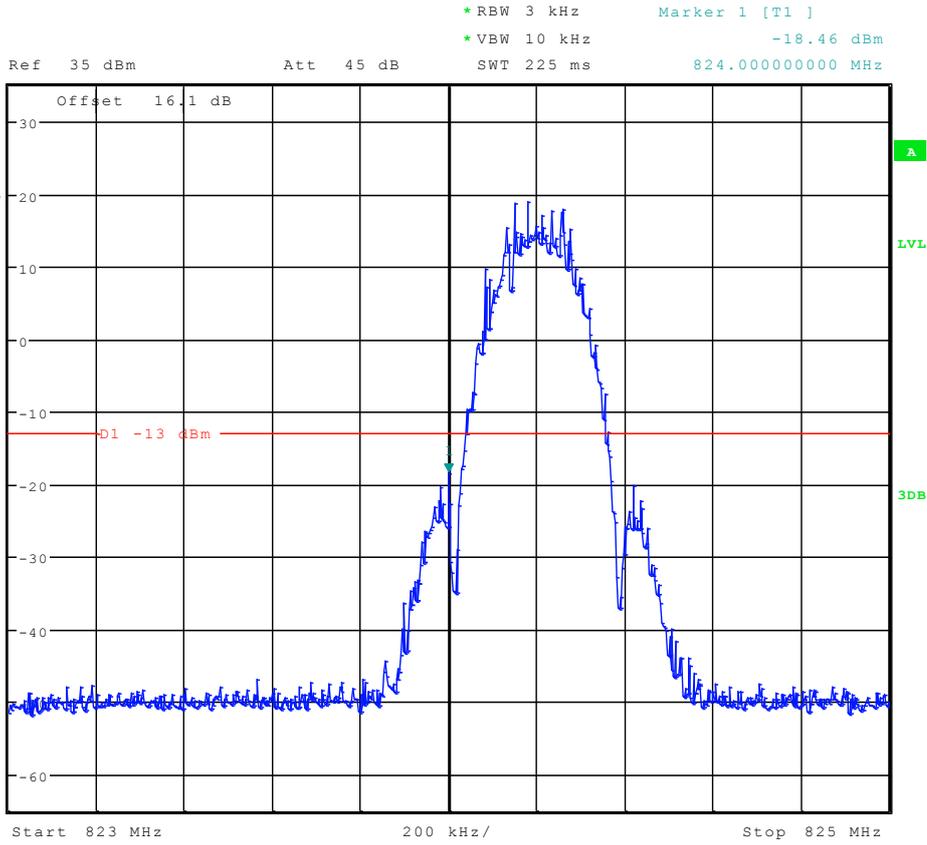




# TM2:EDGE

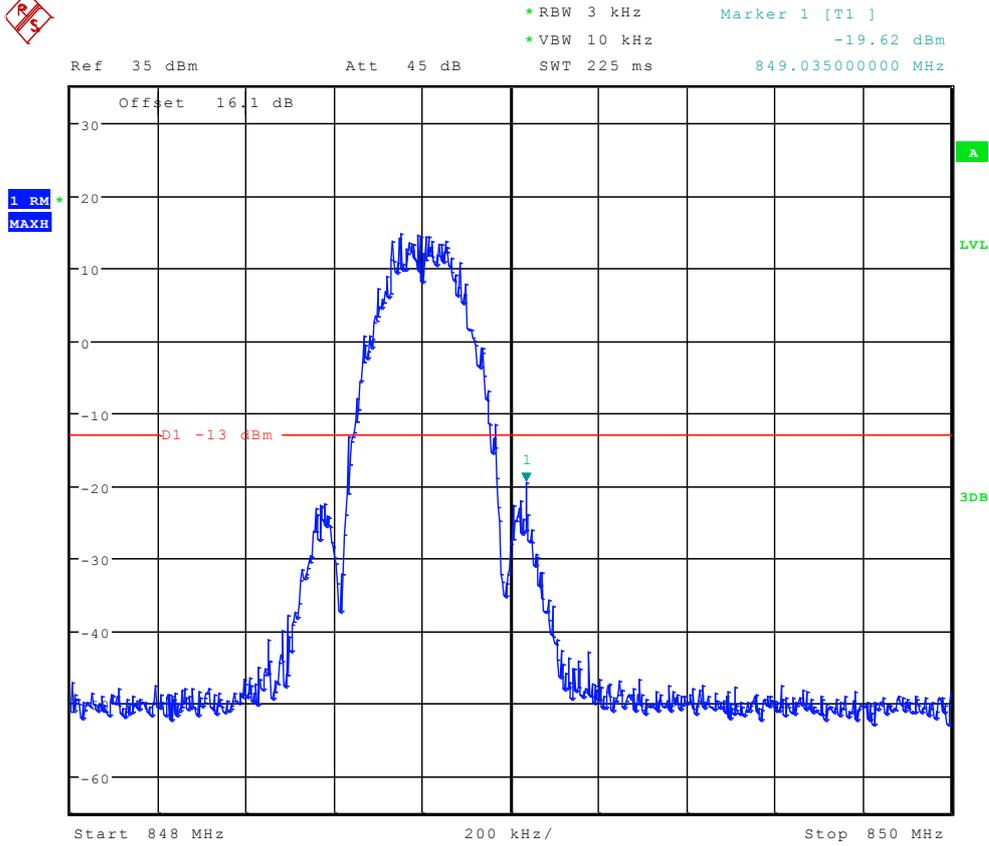
## Left Edge

### Channel 128





## Right Edge Channel 251





# TM3: WCDMA

## Left Edge

### Channel 4132

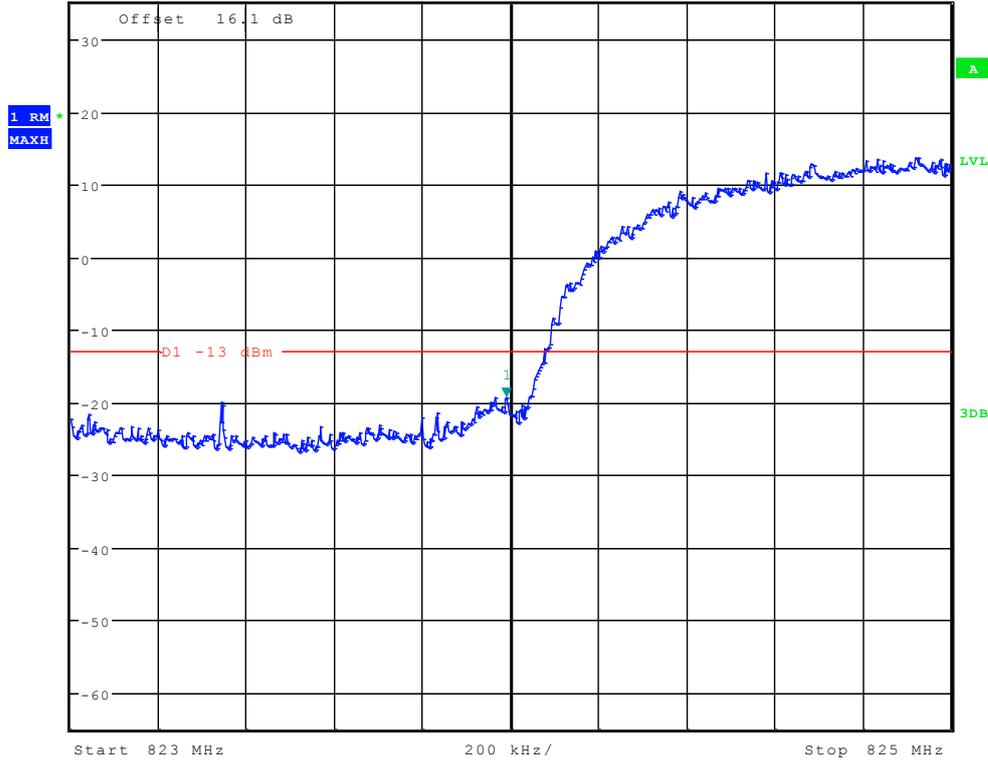


Ref 35 dBm Att 45 dB SWT 2.5 ms

\*RBW 50 kHz \*VBW 200 kHz

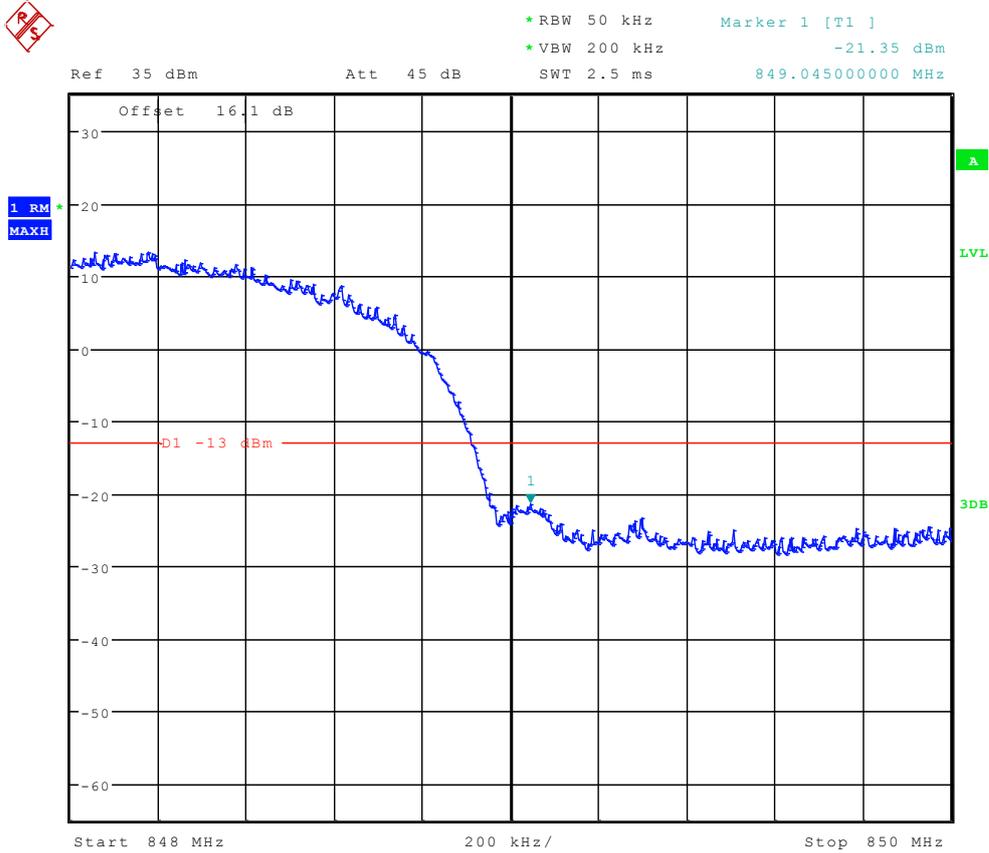
Marker 1 [T1] -19.30 dBm

823.990000000 MHz





### Right Edge Channel 4233



The END



## **Appendix E**

# Spurious Emission at Antenna Terminal

According to FCC Part 2.1051 & Part 22 Subpart H

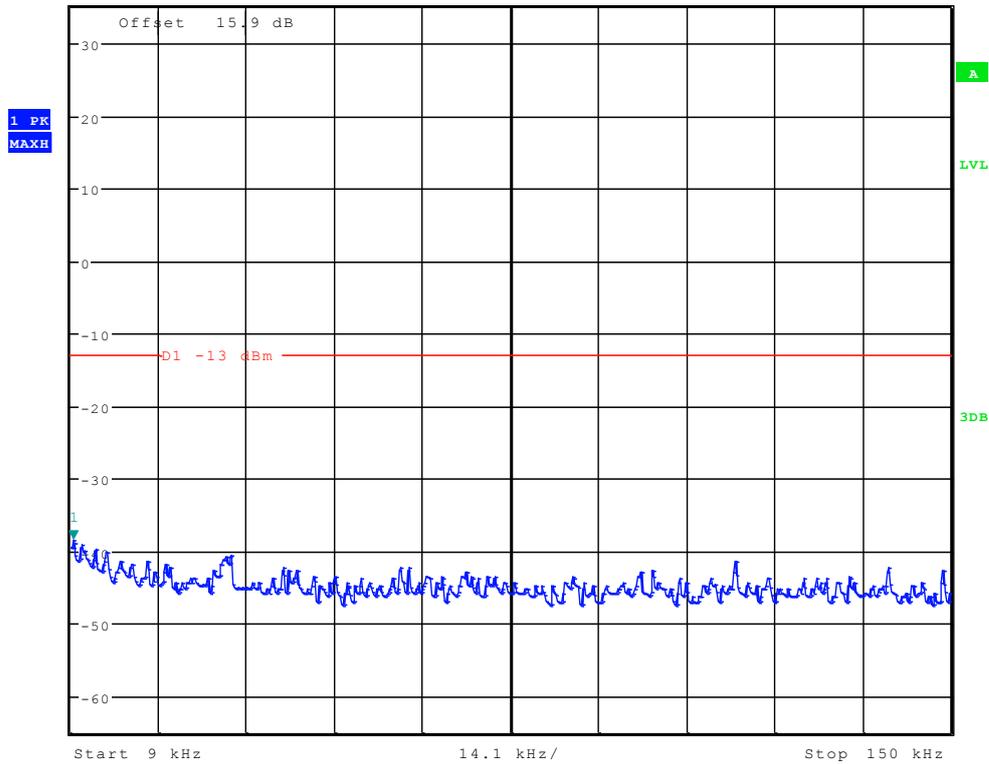


# TM1: GPRS/GSM

## Channel 128

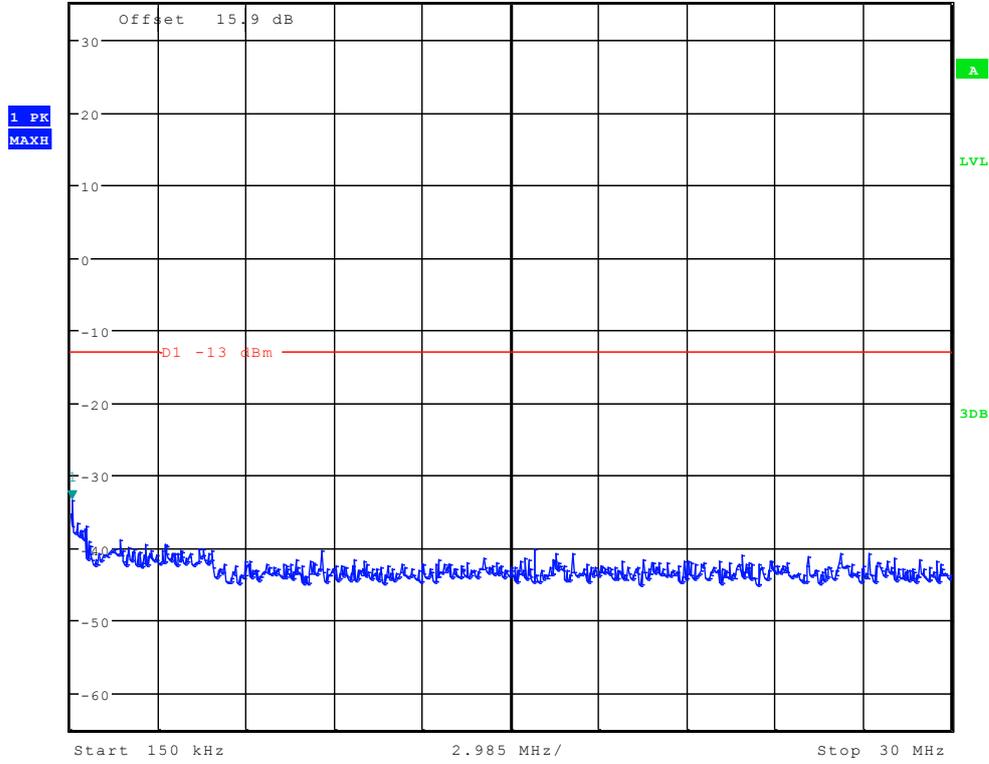


Ref 35 dBm      Att 45 dB      SWT 145 ms      Marker 1 [T1]      -38.38 dBm  
 \*RBW 1 kHz      \*VBW 10 kHz      9.451923077 kHz



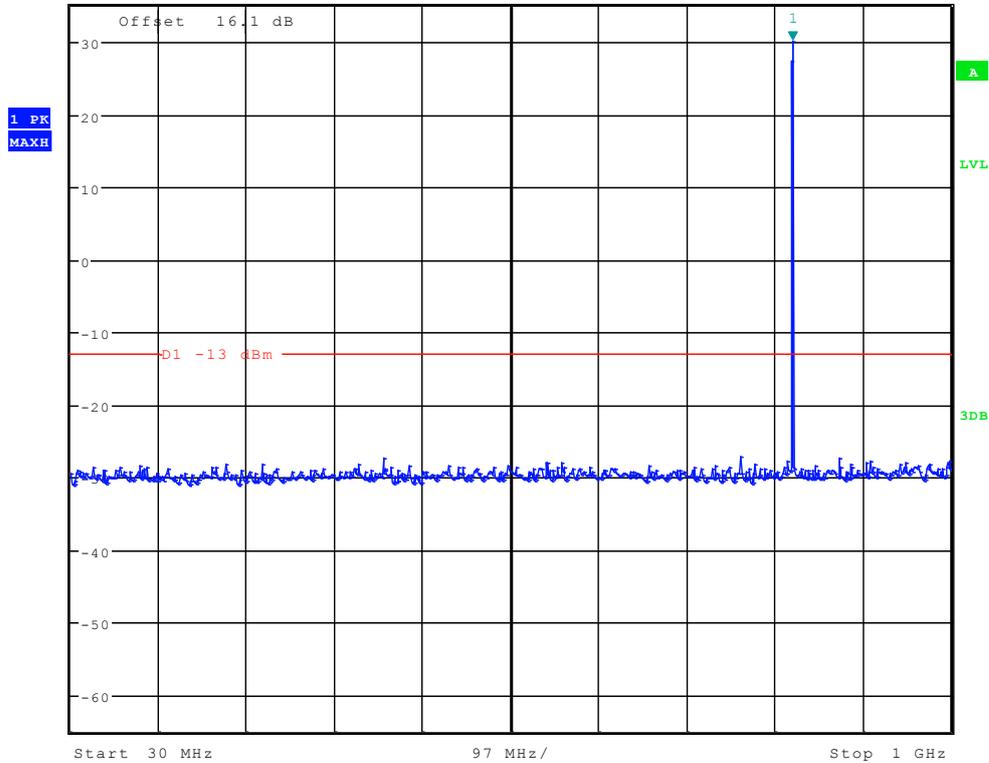


\*RBW 10 kHz      Marker 1 [T1 ]  
 \*VBW 30 kHz      -33.43 dBm  
 Ref 35 dBm      Att 45 dB      SWT 300 ms      197.836538462 kHz



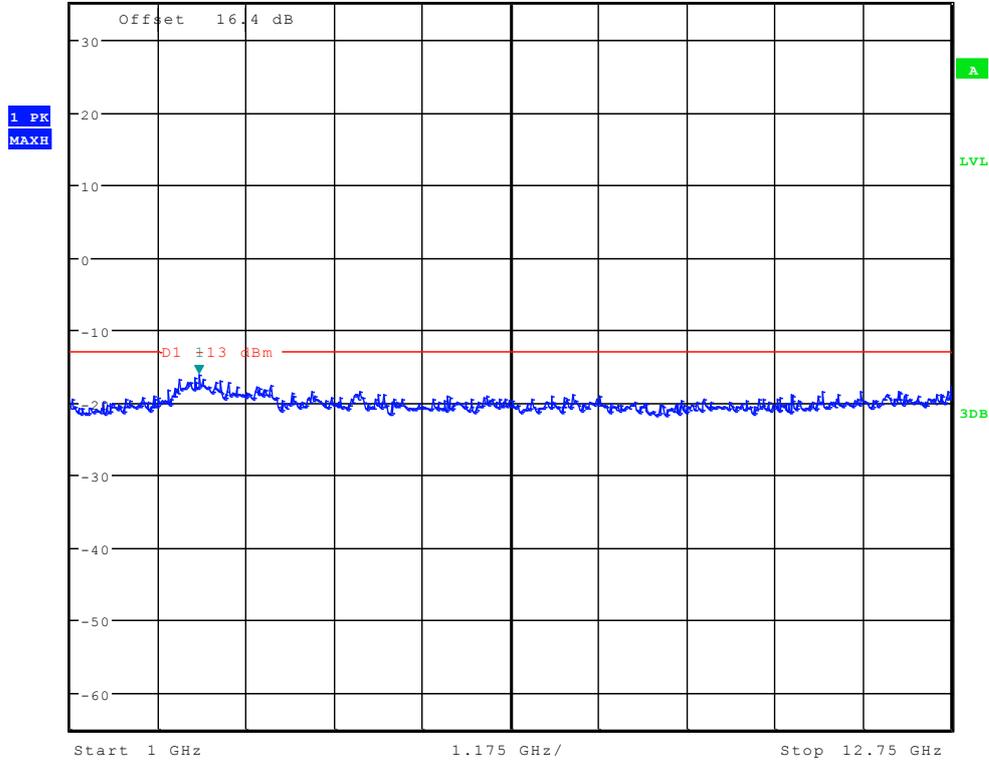


Ref 35 dBm Att 45 dB SWT 100 ms  
\*RBW 100 kHz Marker 1 [T1] 30.16 dBm  
\*VBW 300 kHz 825.897435897 MHz



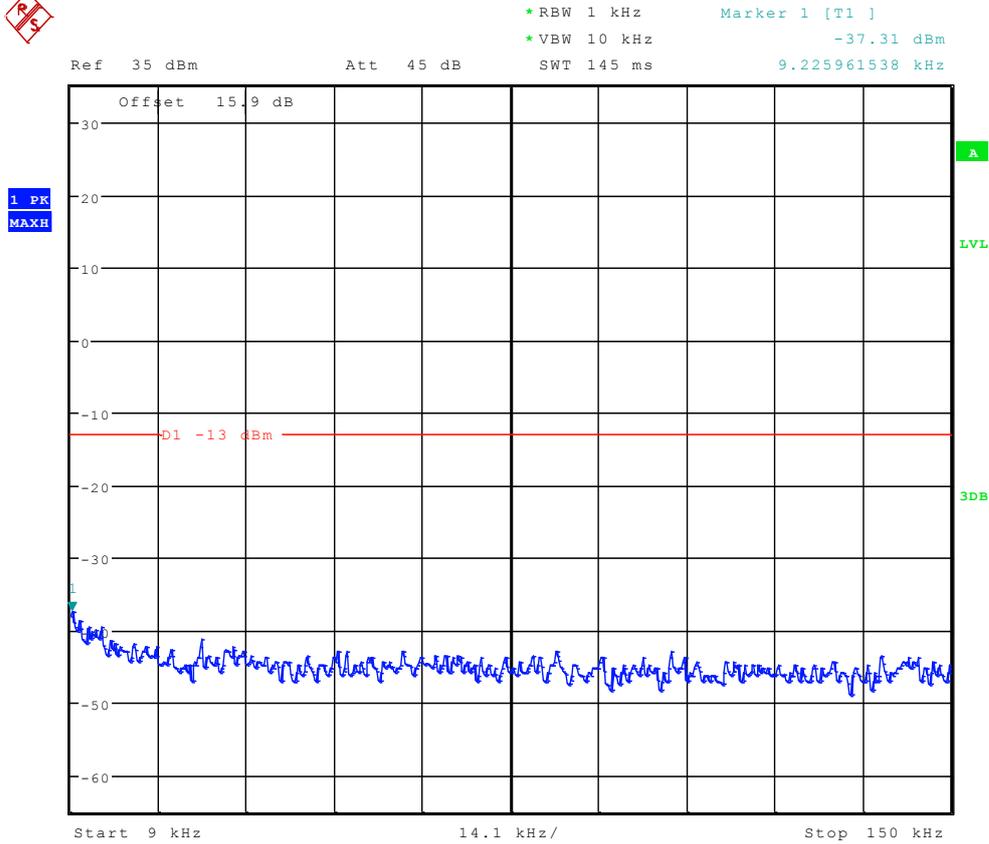


Ref 35 dBm      Att 45 dB      SWT 70 ms      \*RBW 1 MHz      Marker 1 [T1]      -16.11 dBm  
\*VBW 3 MHz      2.713541667 GHz



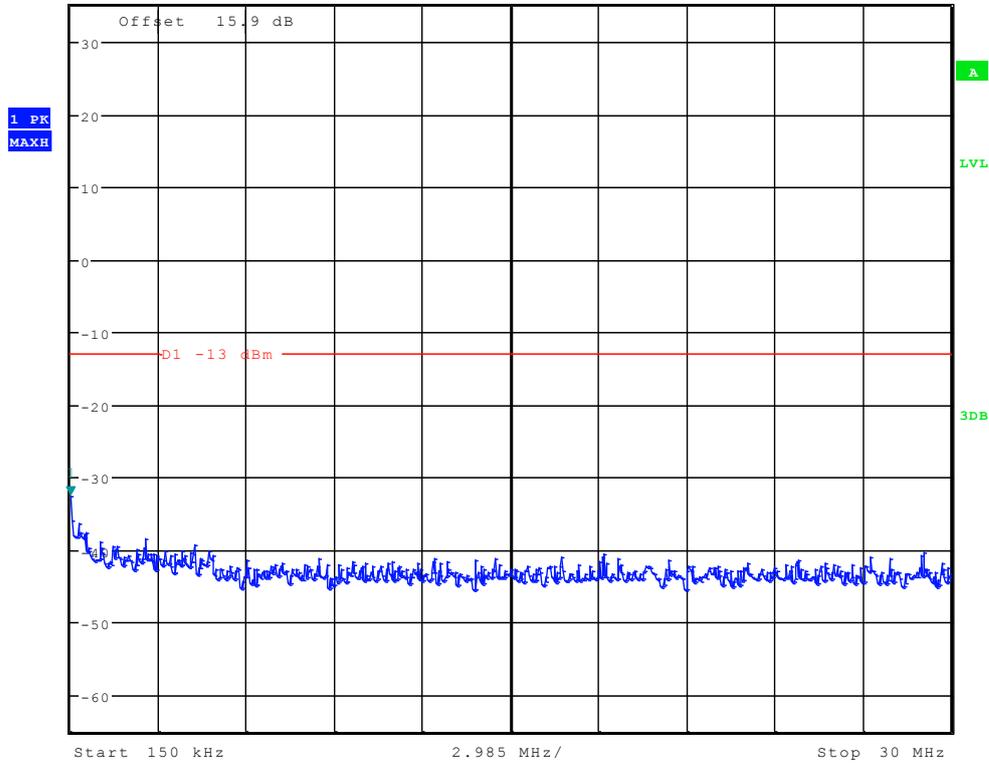


# Channel 192



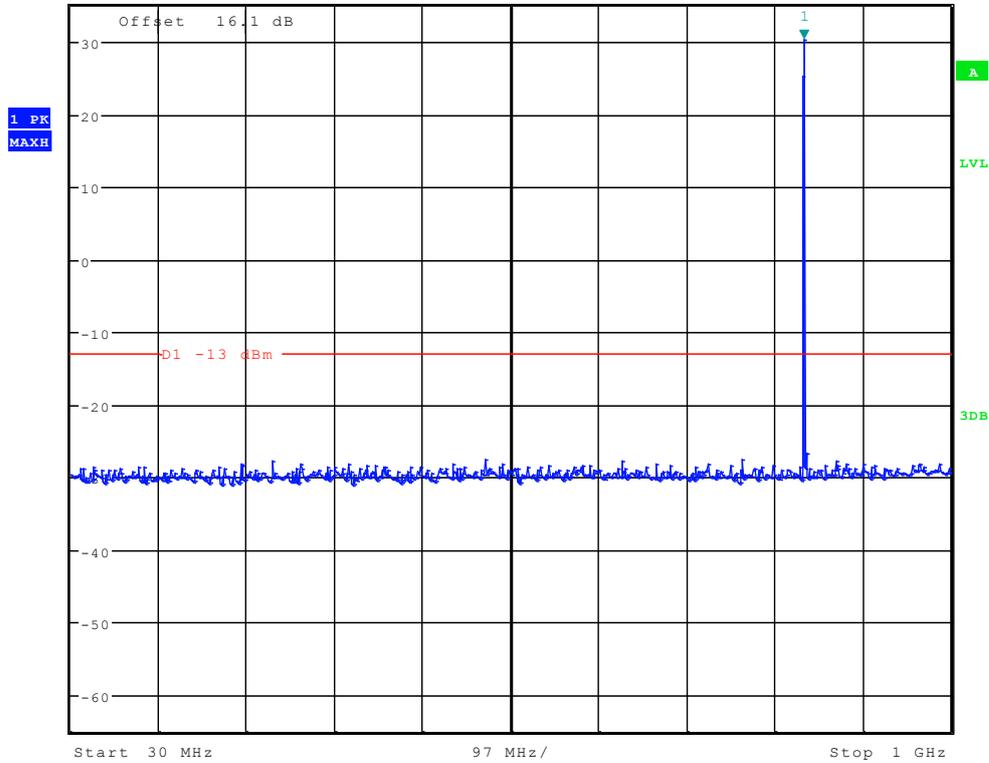


\*RBW 10 kHz      Marker 1 [T1 ]  
\*VBW 30 kHz      -32.51 dBm  
Ref 35 dBm      Att 45 dB      SWT 300 ms      150.000000000 kHz



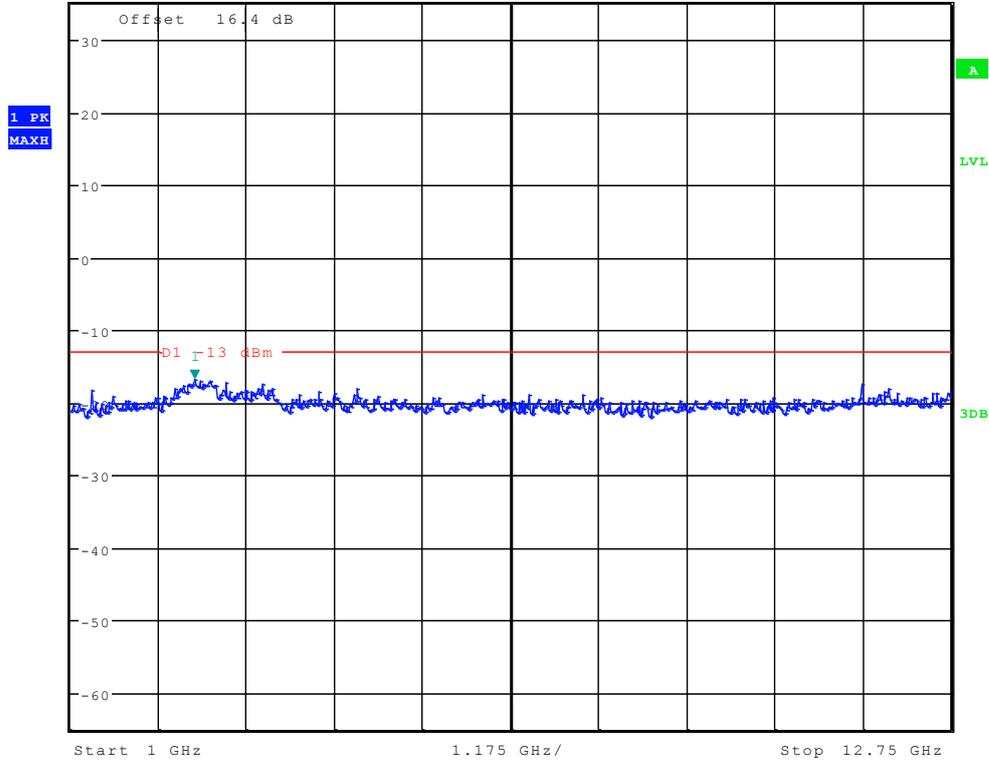


Ref 35 dBm Att 45 dB SWT 100 ms  
\*RBW 100 kHz Marker 1 [T1] 30.21 dBm  
\*VBW 300 kHz 838.333333333 MHz



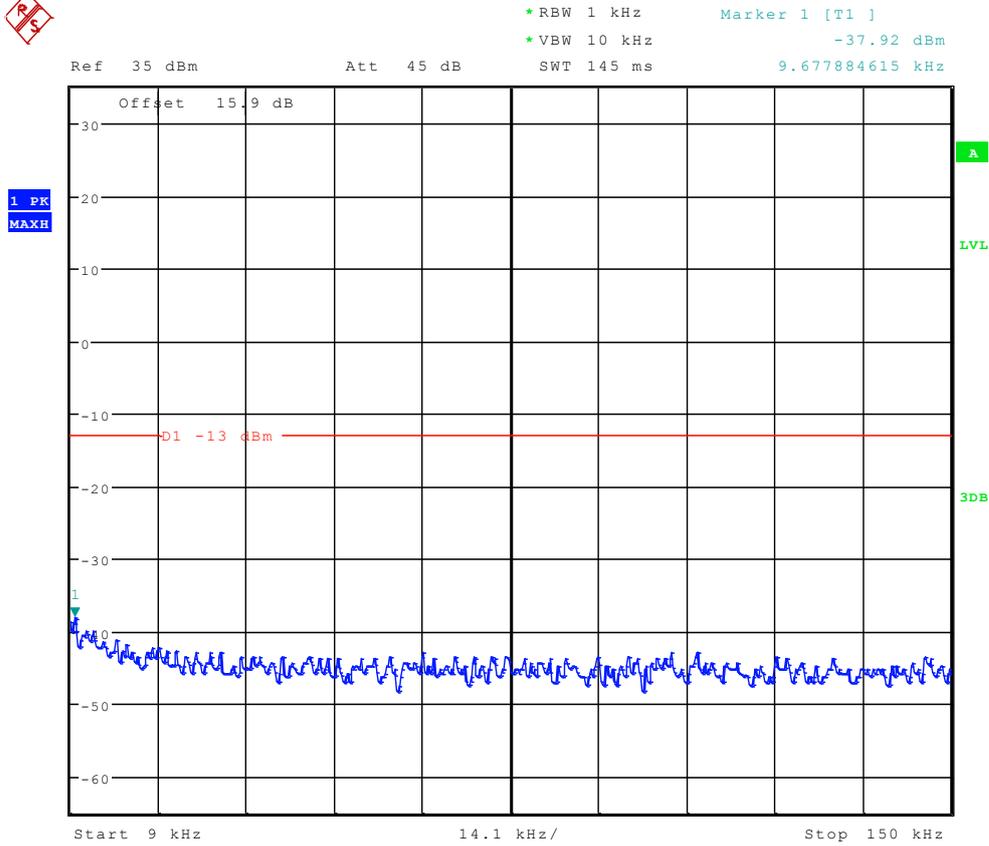


\*RBW 1 MHz      Marker 1 [T1 ]  
\*VBW 3 MHz      -16.70 dBm  
Ref 35 dBm      Att 45 dB      SWT 70 ms      2.657051282 GHz





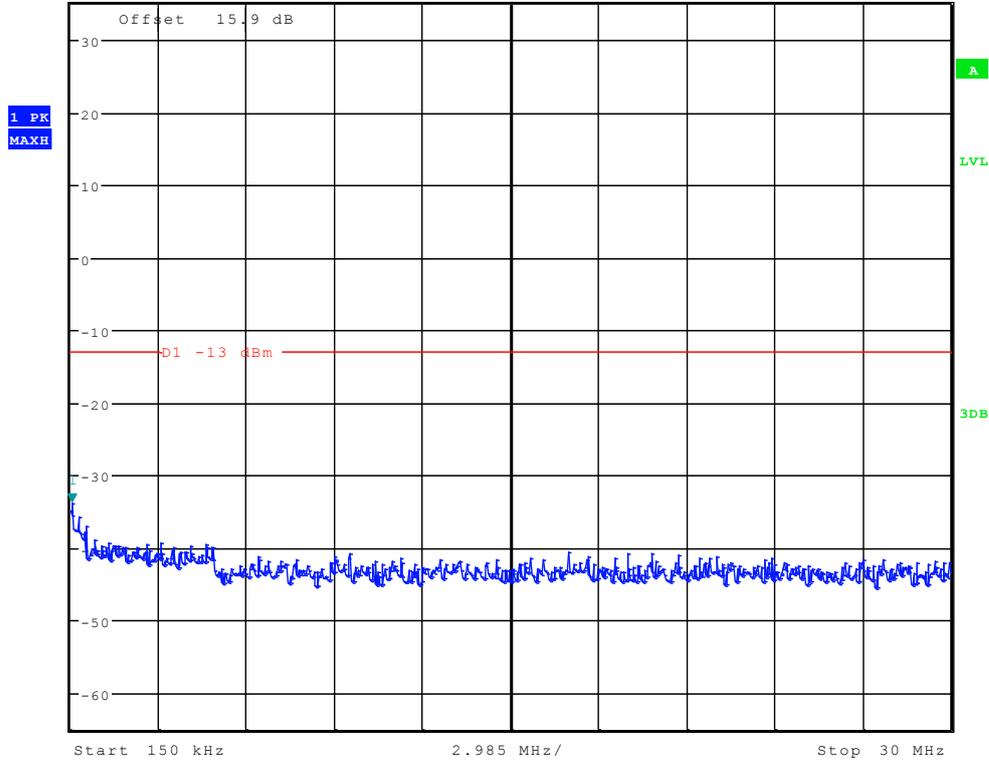
# Channel 251





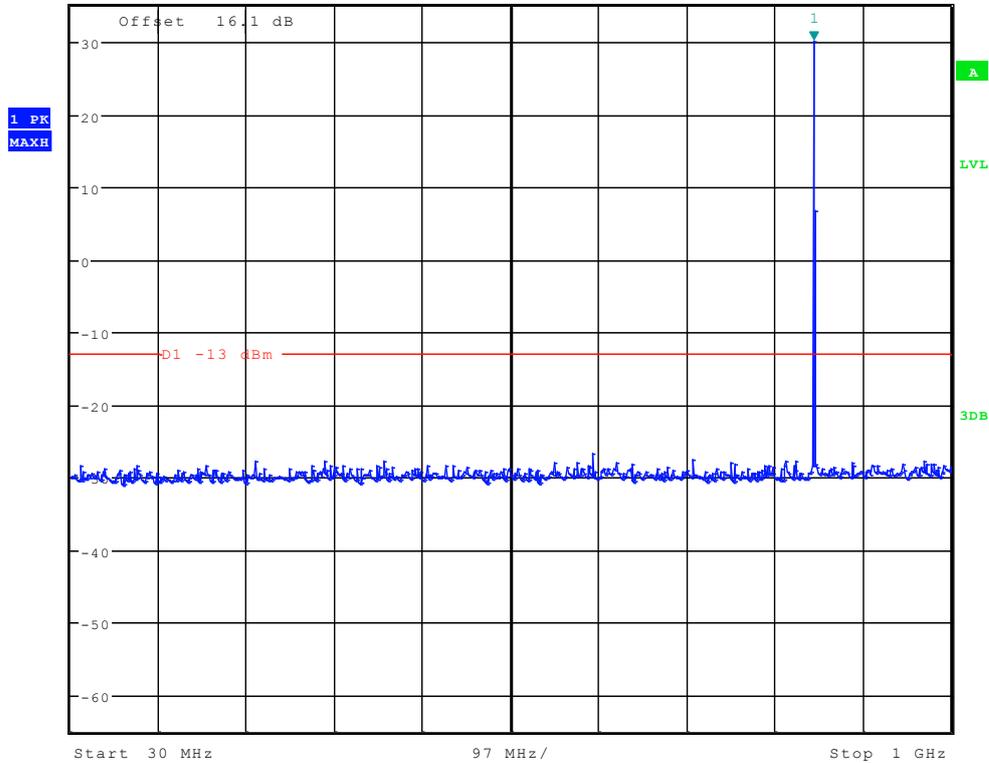
\*RBW 10 kHz      Marker 1 [T1 ]  
 \*VBW 30 kHz      -33.87 dBm

Ref 35 dBm      Att 45 dB      SWT 300 ms      197.836538462 kHz



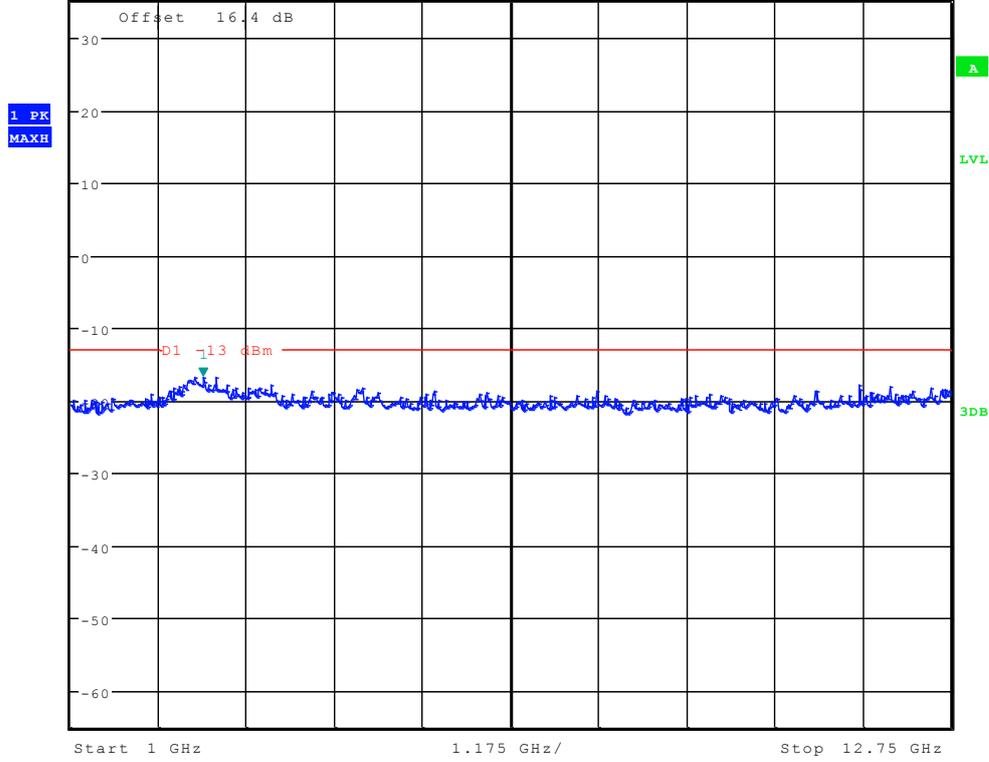


Ref 35 dBm Att 45 dB SWT 100 ms  
\*RBW 100 kHz Marker 1 [T1] 30.06 dBm  
\*VBW 300 kHz 849.214743590 MHz



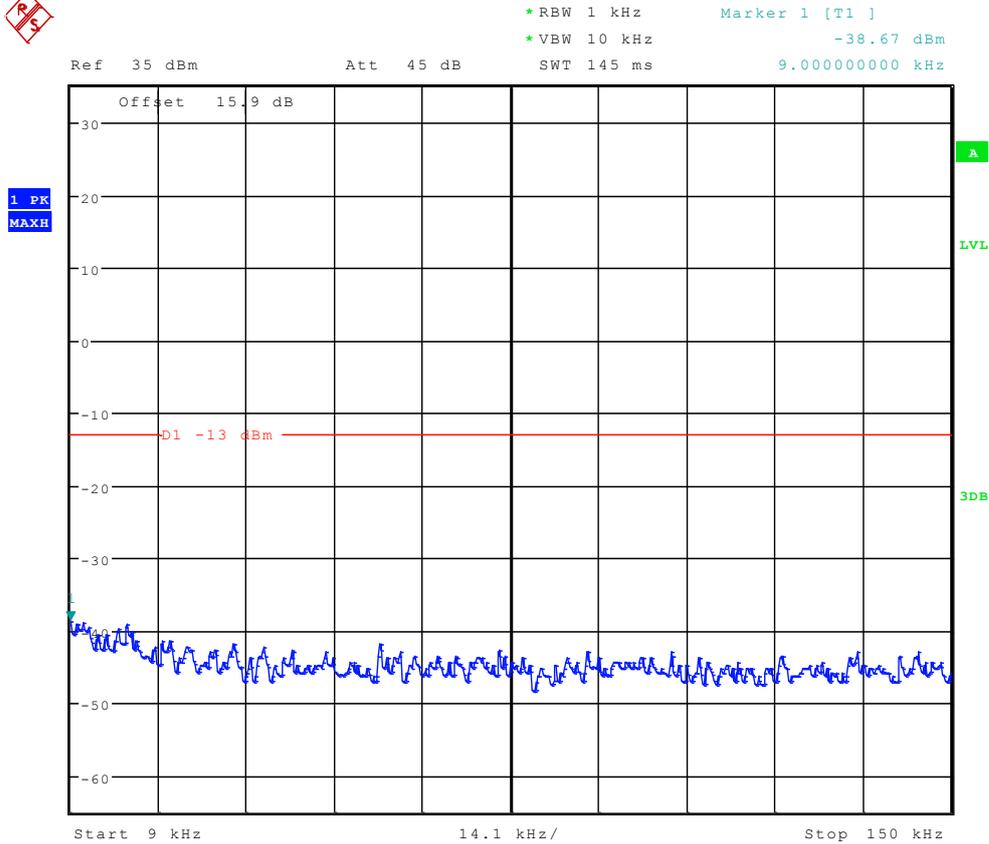


Ref 35 dBm Att 45 dB SWT 70 ms  
\*RBW 1 MHz Marker 1 [T1 ]  
\*VBW 3 MHz -16.73 dBm  
2.770032051 GHz



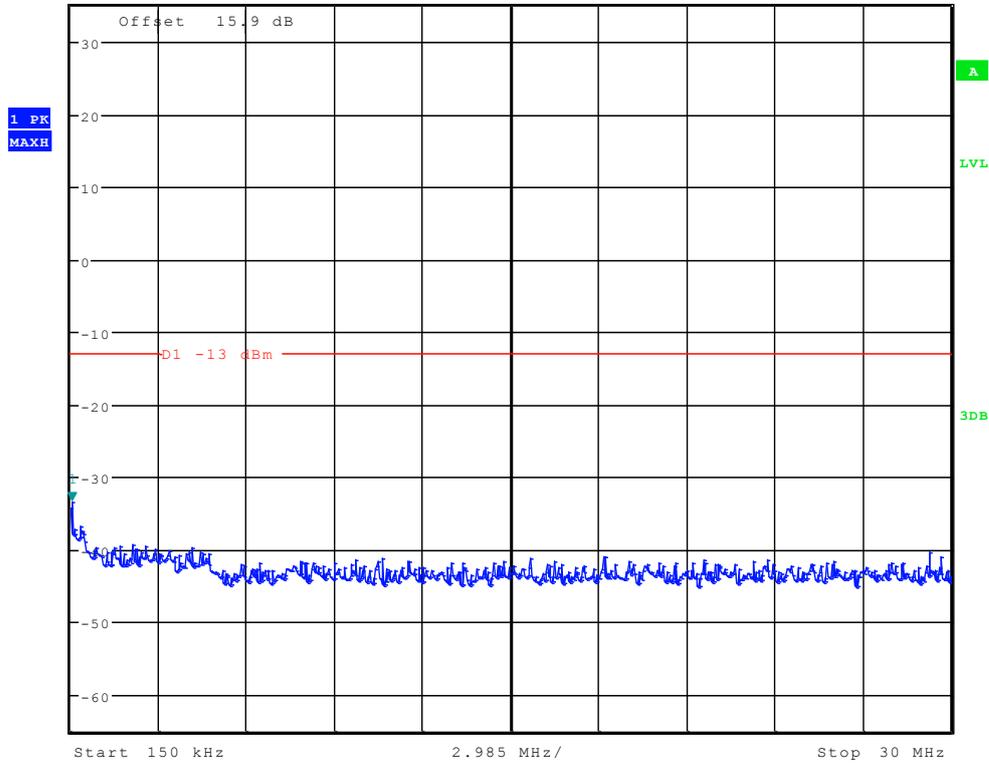


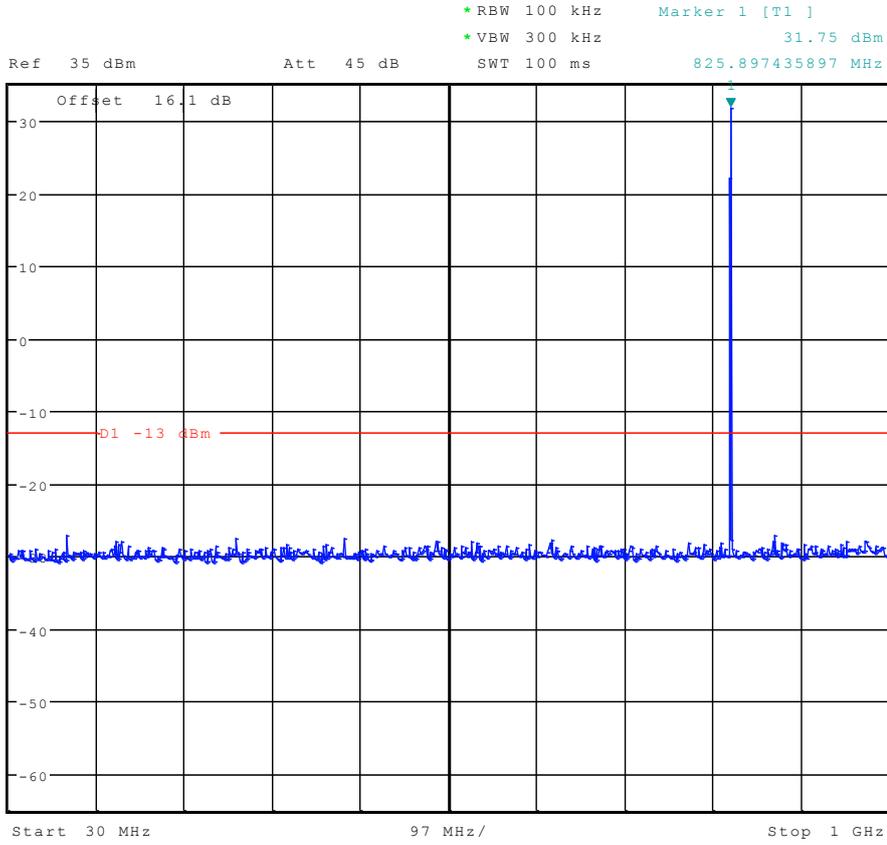
# TM2: EDGE Channel 128





\*RBW 10 kHz      Marker 1 [T1 ]  
\*VBW 30 kHz      -33.43 dBm  
Ref 35 dBm      Att 45 dB      SWT 300 ms      197.836538462 kHz

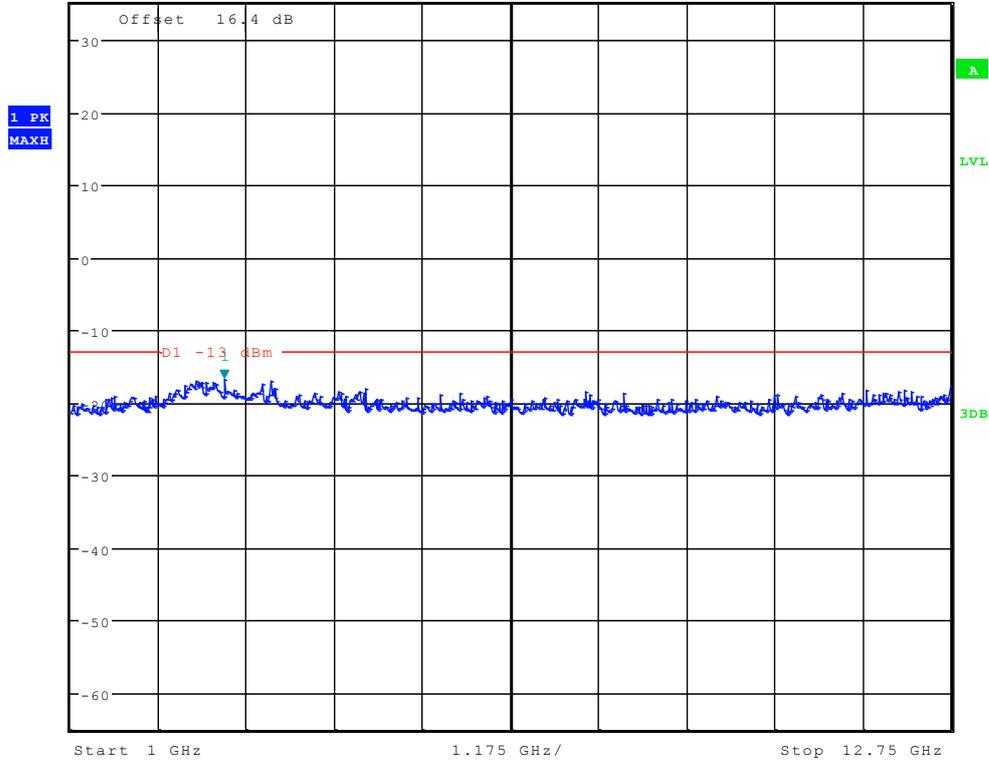






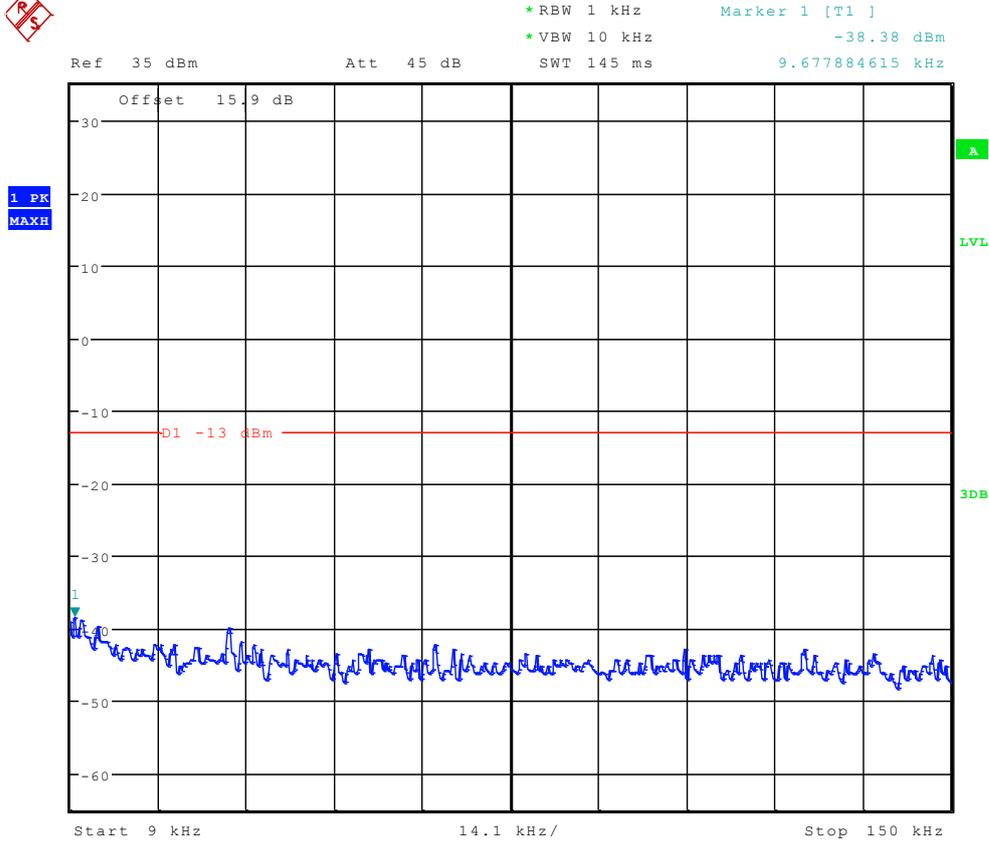
\*RBW 1 MHz      Marker 1 [T1 ]  
\*VBW 3 MHz      -16.72 dBm  
3.052483974 GHz

Ref 35 dBm      Att 45 dB      SWT 70 ms



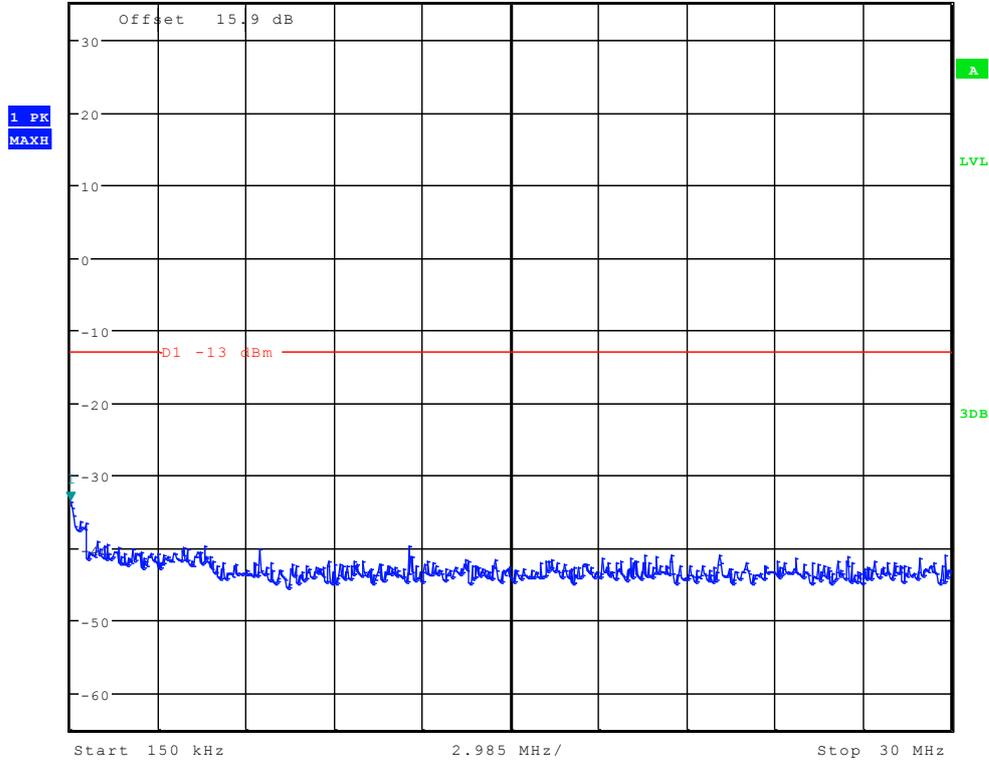


# Channel 192



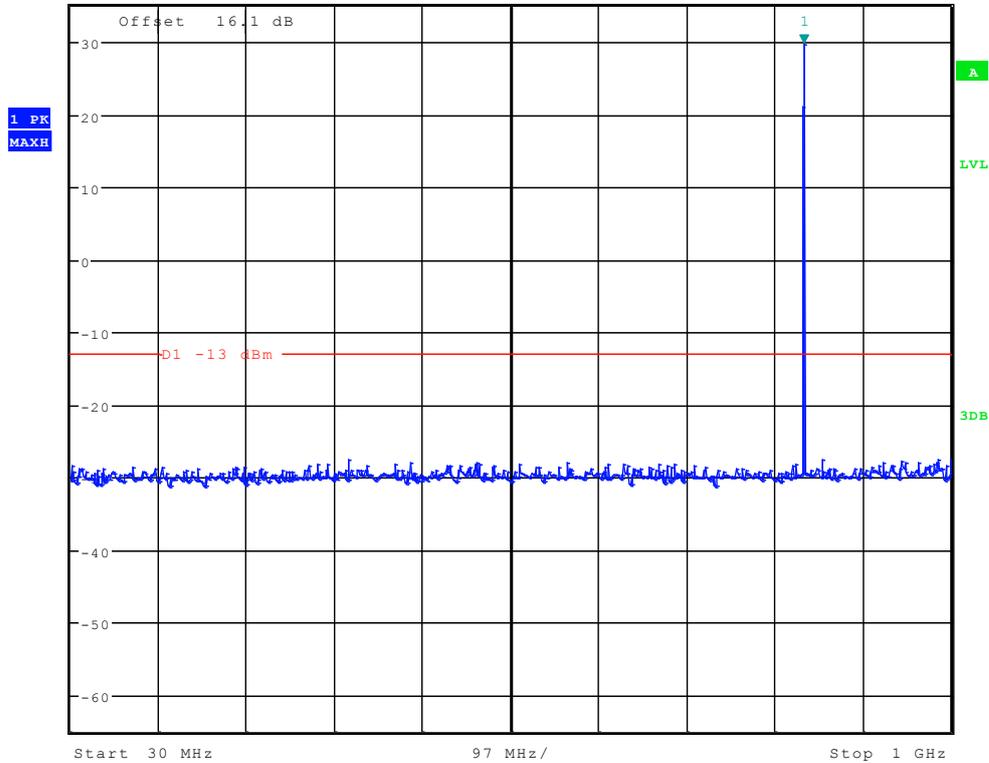


\*RBW 10 kHz      Marker 1 [T1 ]  
\*VBW 30 kHz      -33.59 dBm  
Ref 35 dBm      Att 45 dB      SWT 300 ms      150.000000000 kHz



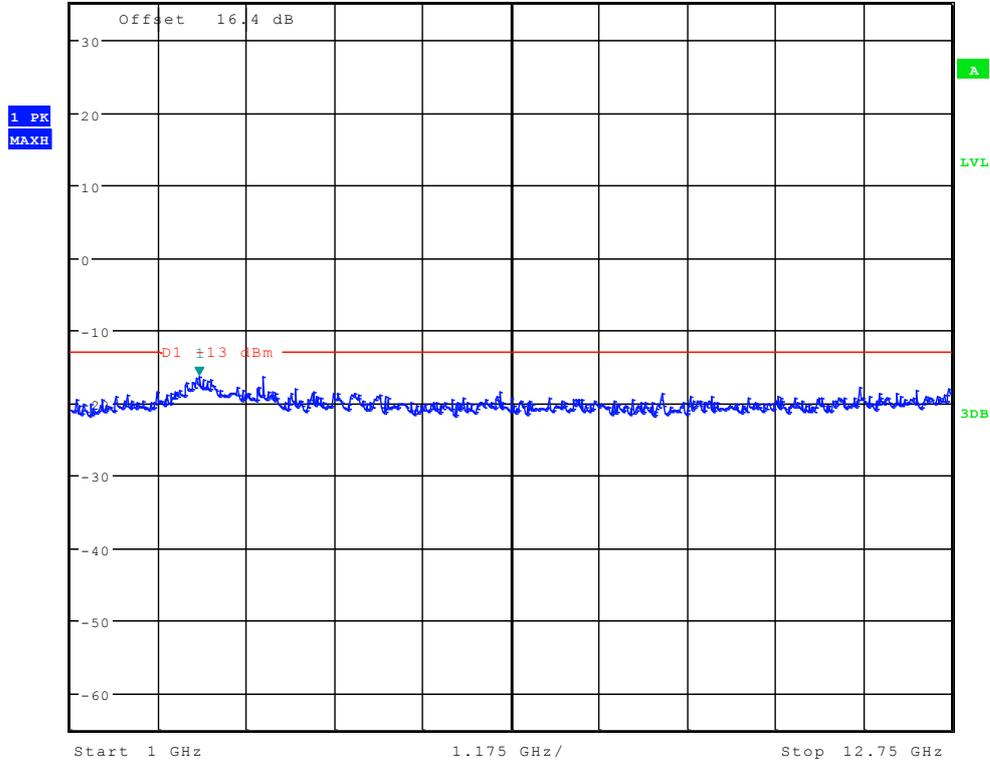


Ref 35 dBm Att 45 dB SWT 100 ms  
\*RBW 100 kHz Marker 1 [T1] 29.54 dBm  
\*VBW 300 kHz 838.3333333333 MHz





\* RBW 1 MHz      Marker 1 [T1 ]  
\* VBW 3 MHz      -16.35 dBm  
Ref 35 dBm      Att 45 dB      SWT 70 ms      2.713541667 GHz

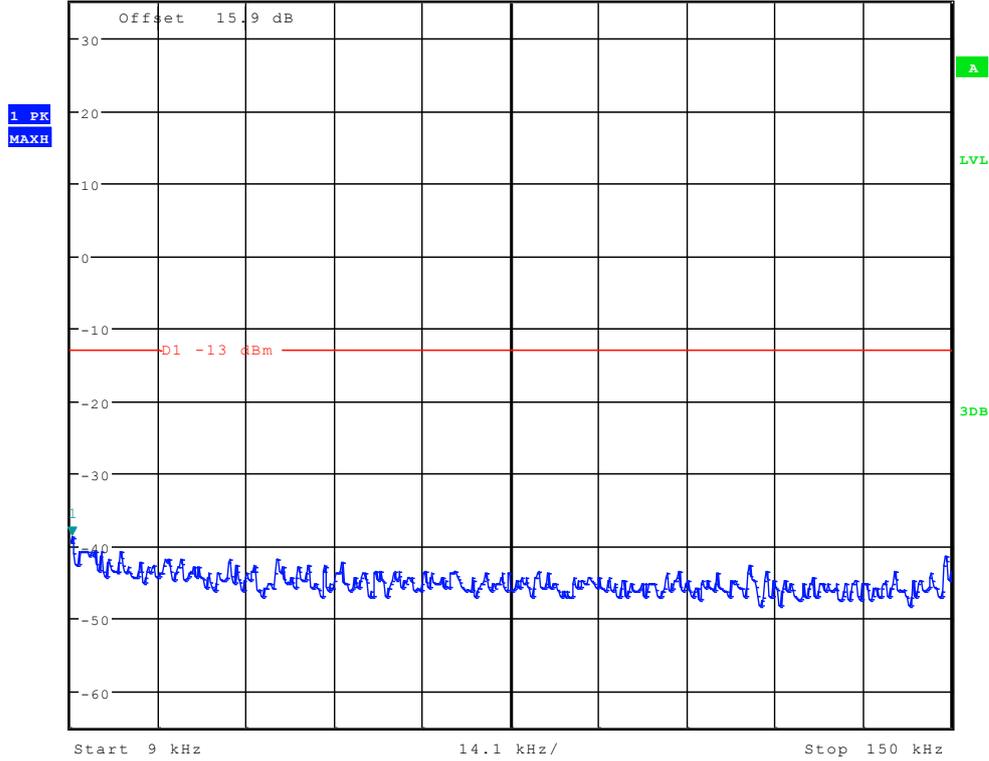




# Channel 251

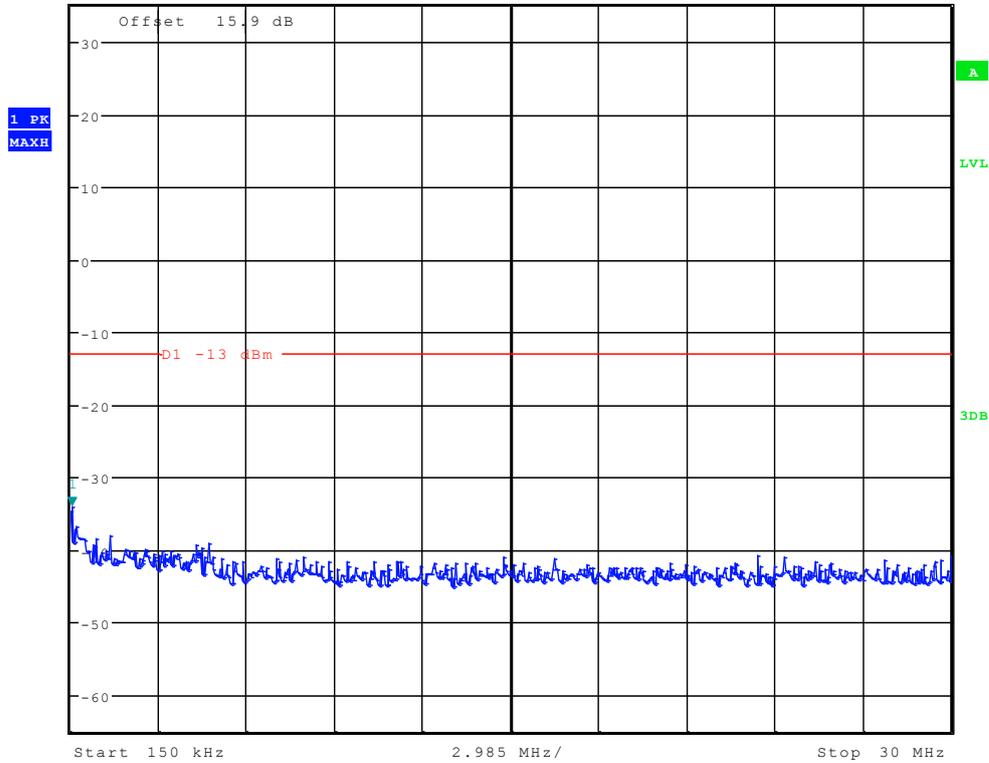


\*RBW 1 kHz      Marker 1 [T1 ]  
 \*VBW 10 kHz      -38.67 dBm  
 Ref 35 dBm      Att 45 dB      SWT 145 ms      9.225961538 kHz



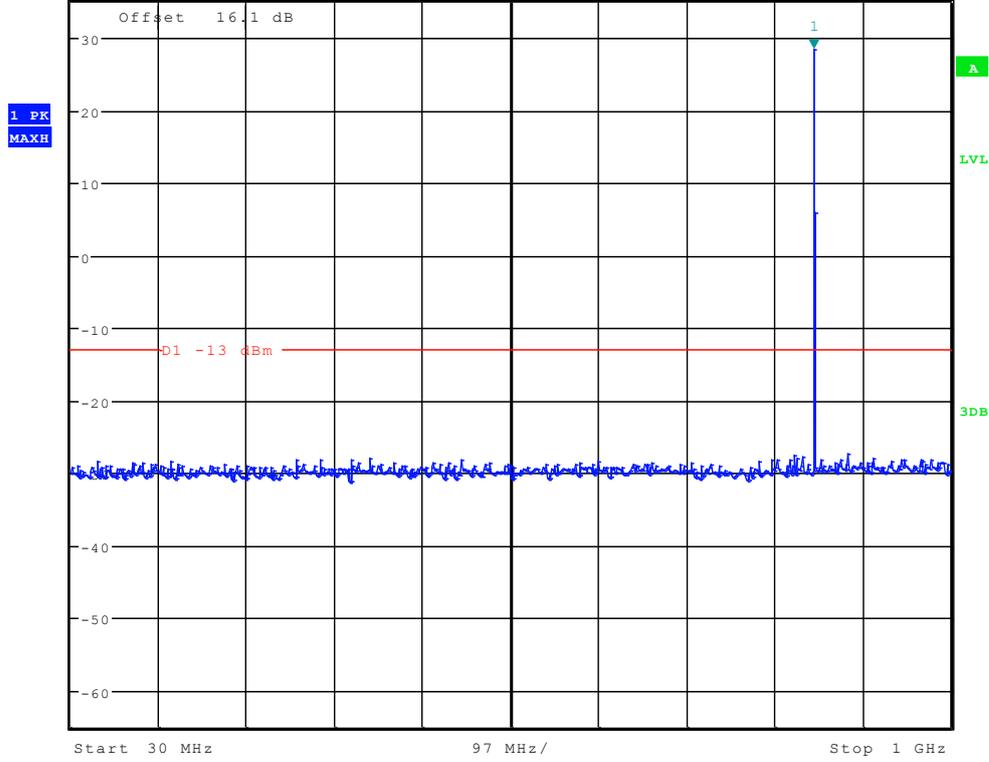


\*RBW 10 kHz      Marker 1 [T1 ]  
\*VBW 30 kHz      -34.04 dBm  
Ref 35 dBm      Att 45 dB      SWT 300 ms      197.836538462 kHz



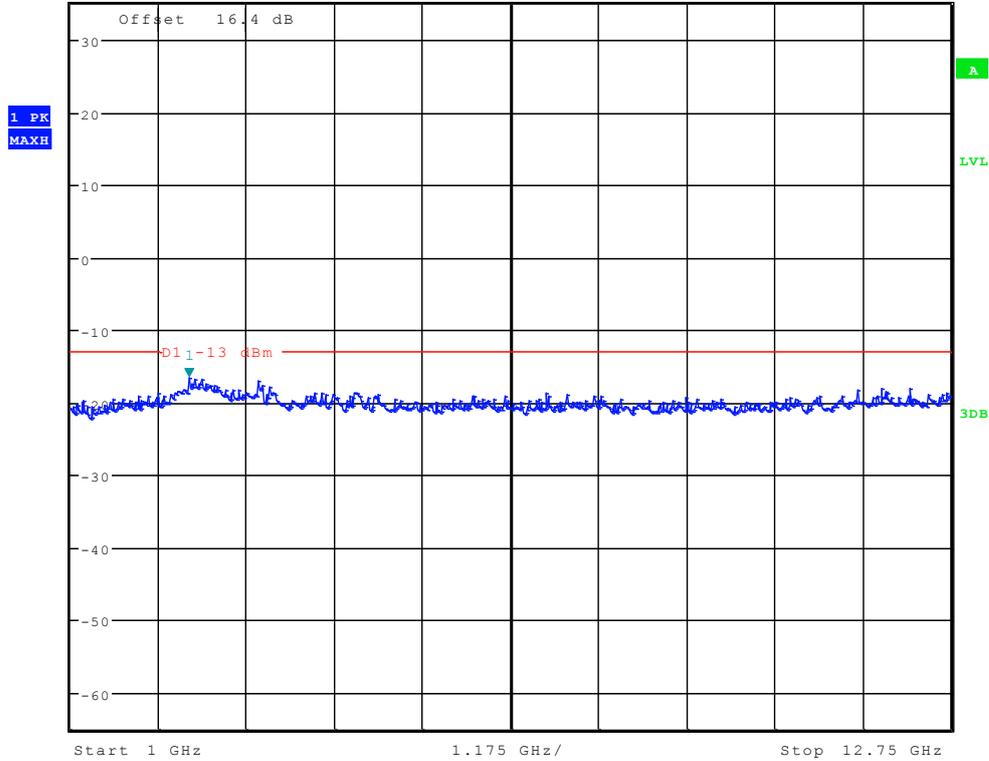


Ref 35 dBm Att 45 dB SWT 100 ms 849.214743590 MHz  
\*RBW 100 kHz Marker 1 [T1 ] 28.28 dBm  
\*VBW 300 kHz



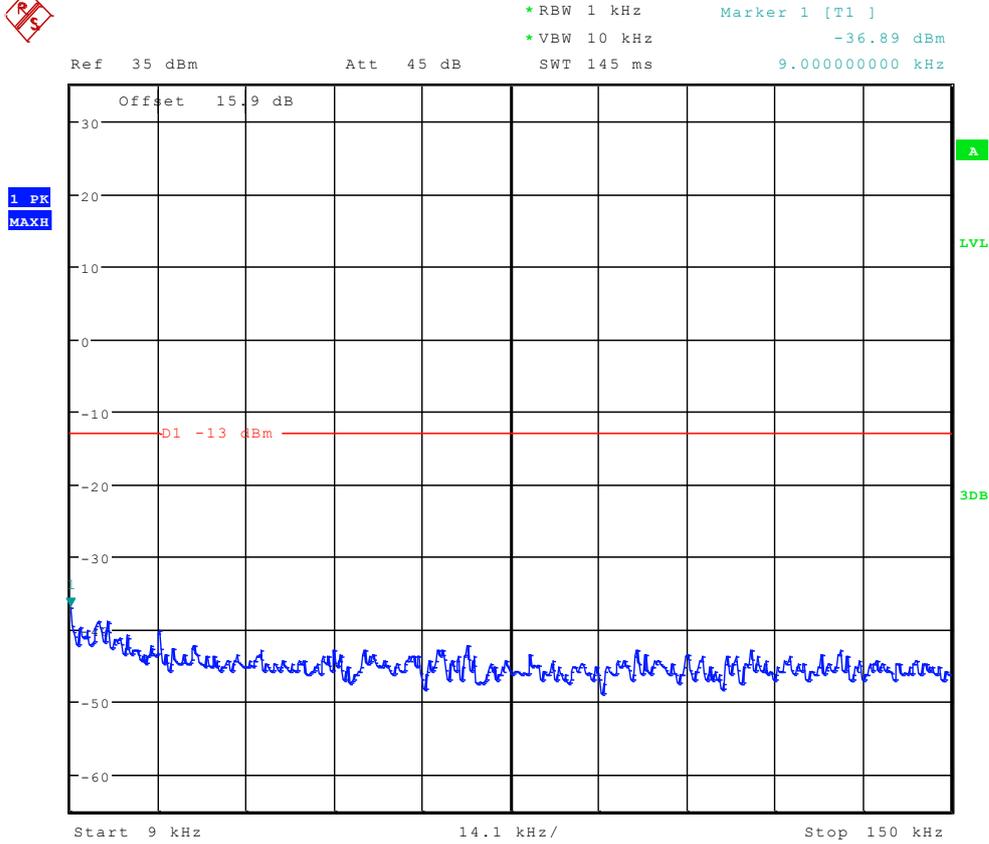


\*RBW 1 MHz      Marker 1 [T1 ]  
 \*VBW 3 MHz      -16.59 dBm  
 Ref 35 dBm      Att 45 dB      SWT 70 ms      2.581730769 GHz



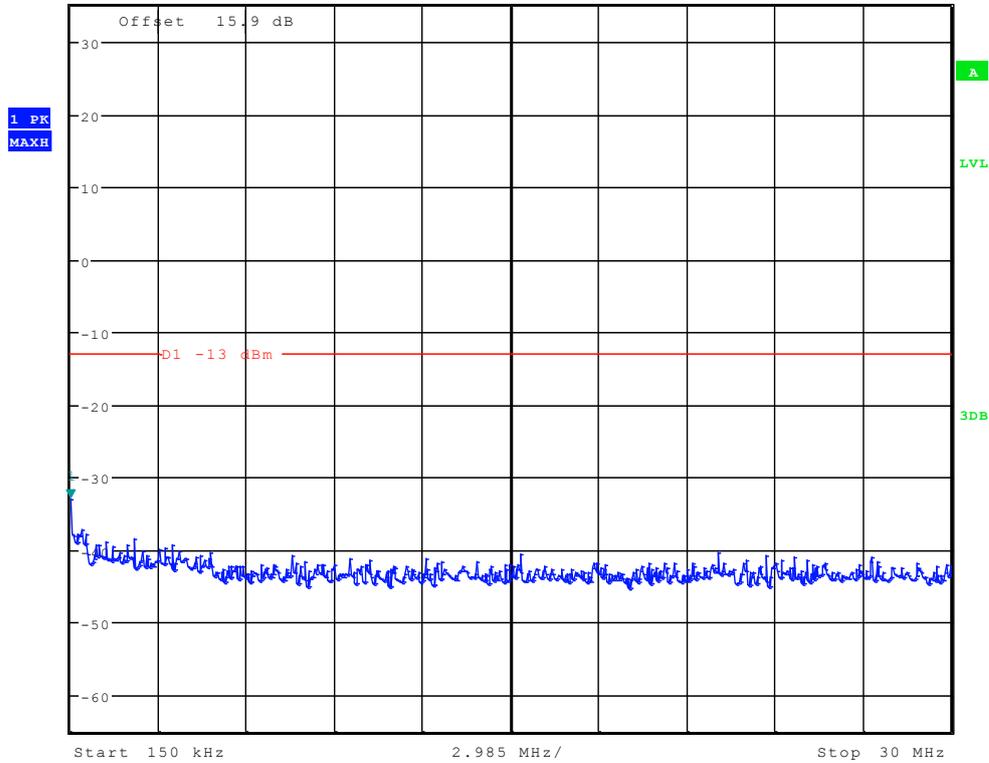


# TM3: WCDMA Channel 4132



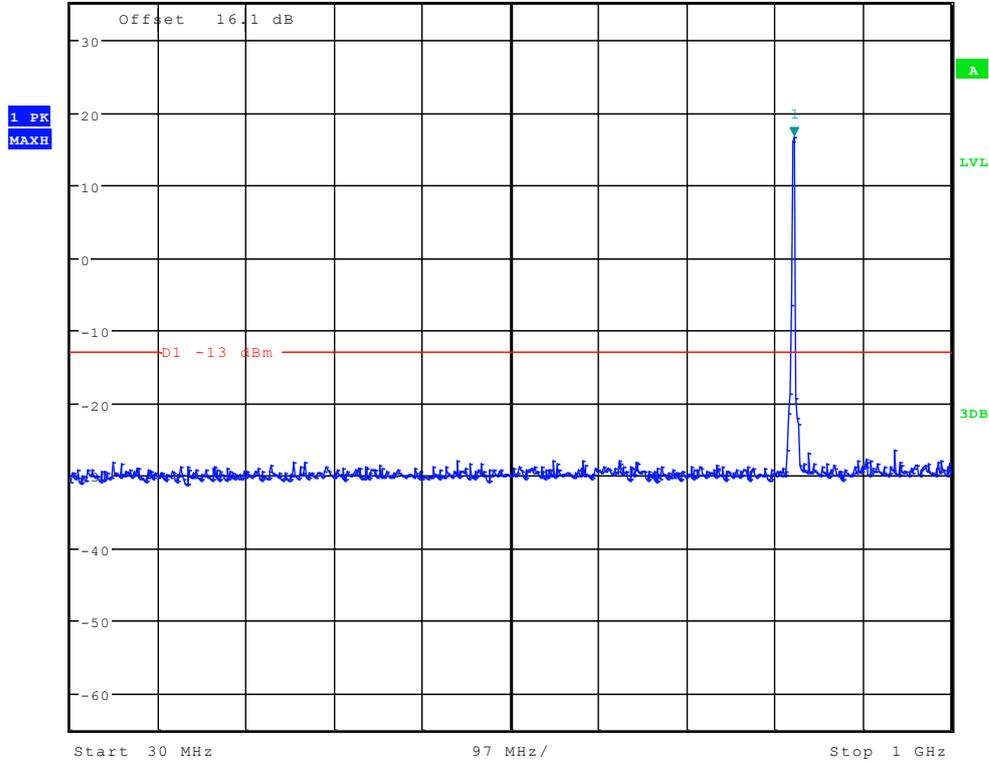


Ref 35 dBm Att 45 dB SWT 300 ms 150.00000000 kHz  
\*RBW 10 kHz Marker 1 [T1 ]  
\*VBW 30 kHz -32.90 dBm



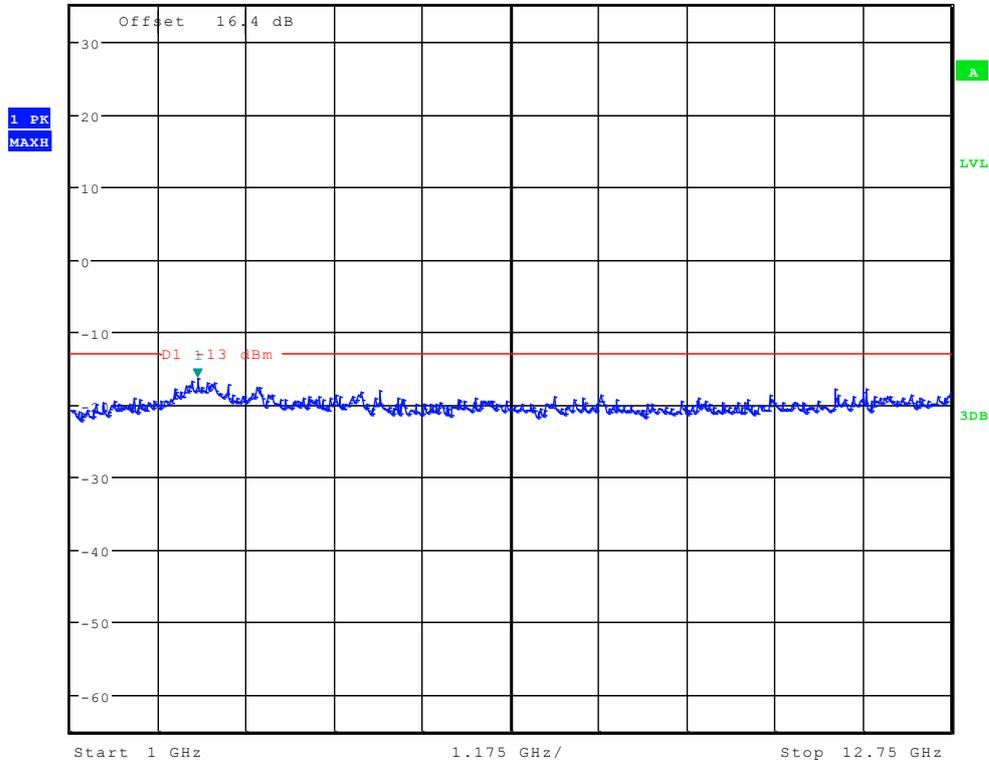


Ref 35 dBm Att 45 dB SWT 100 ms 827.451923077 MHz  
\*RBW 100 kHz Marker 1 [T1 ]  
\*VBW 300 kHz 16.68 dBm





\*RBW 1 MHz      Marker 1 [T1 ]  
 \*VBW 3 MHz      -16.42 dBm  
 Ref 35 dBm      Att 45 dB      SWT 70 ms      2.694711538 GHz

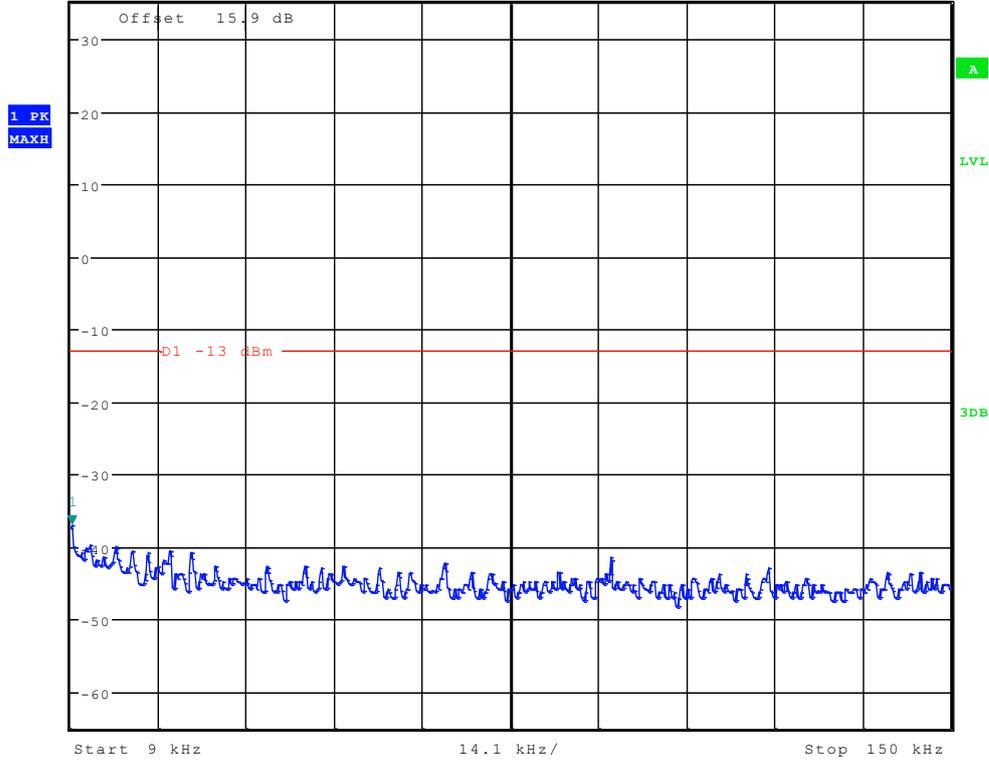




# Channel 4182

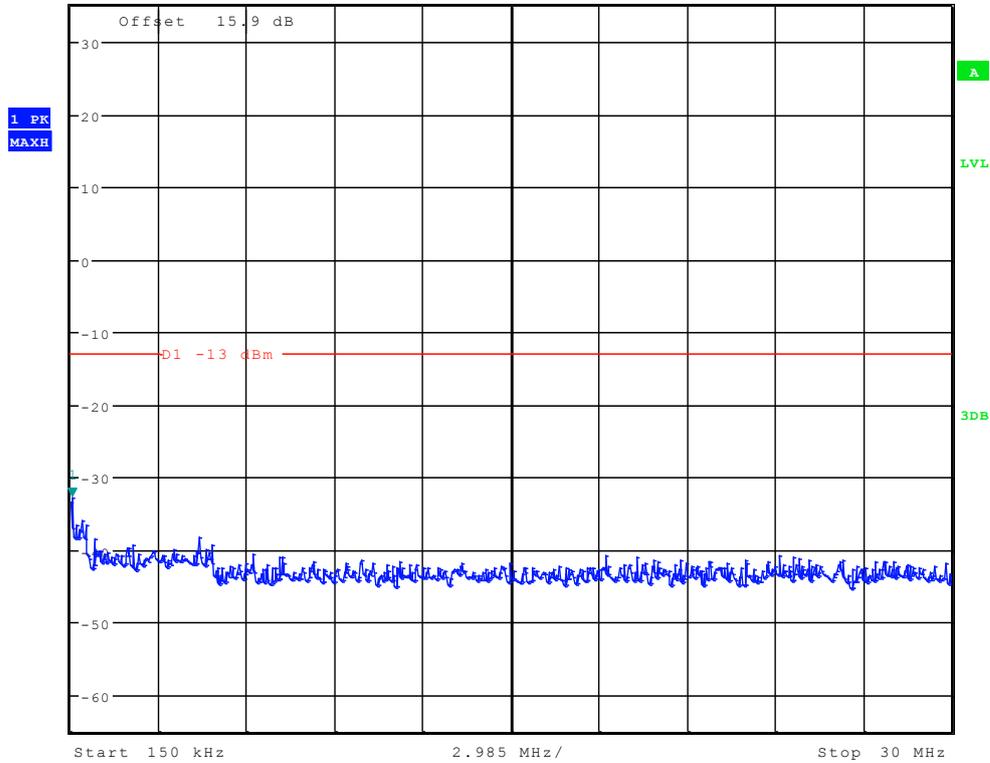


\*RBW 1 kHz      Marker 1 [T1 ]  
 \*VBW 10 kHz      -36.89 dBm  
 Ref 35 dBm      Att 45 dB      SWT 145 ms      9.225961538 kHz



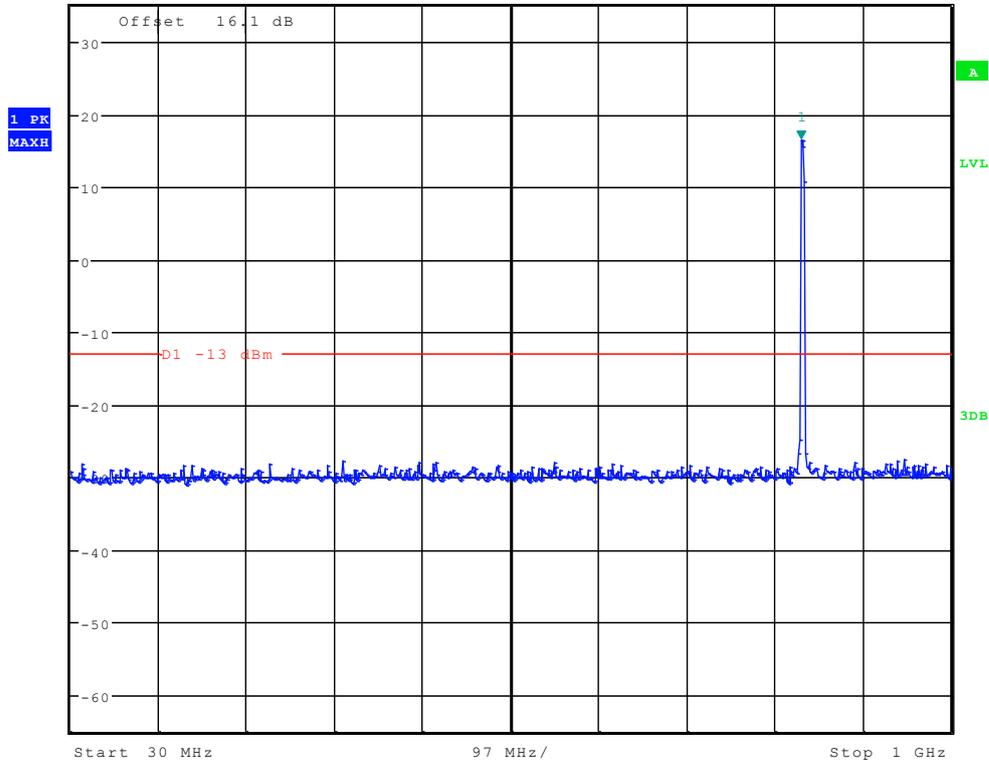


\* RBW 10 kHz      Marker 1 [T1 ]  
\* VBW 30 kHz      -32.80 dBm  
Ref 35 dBm      Att 45 dB      SWT 300 ms      197.836538462 kHz



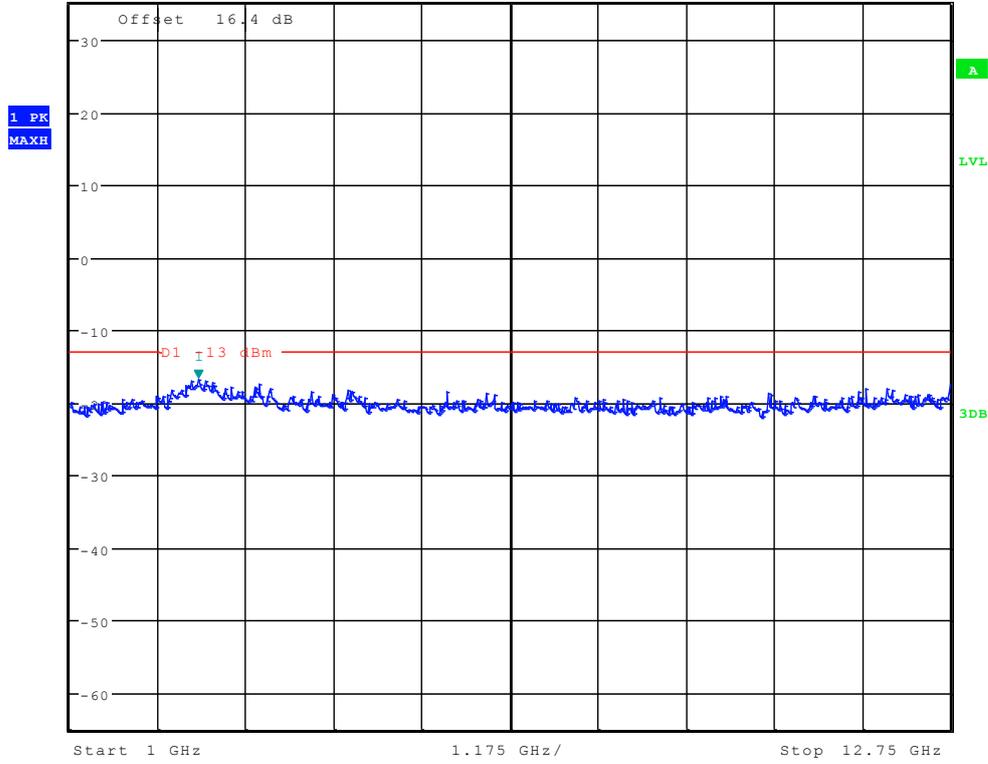


Ref 35 dBm Att 45 dB SWT 100 ms  
\*RBW 100 kHz Marker 1 [T1 ]  
\*VBW 300 kHz 16.47 dBm  
835.224358974 MHz





\* RBW 1 MHz      Marker 1 [T1 ]  
 \* VBW 3 MHz      -16.86 dBm  
 Ref 35 dBm      Att 45 dB      SWT 70 ms      2.713541667 GHz

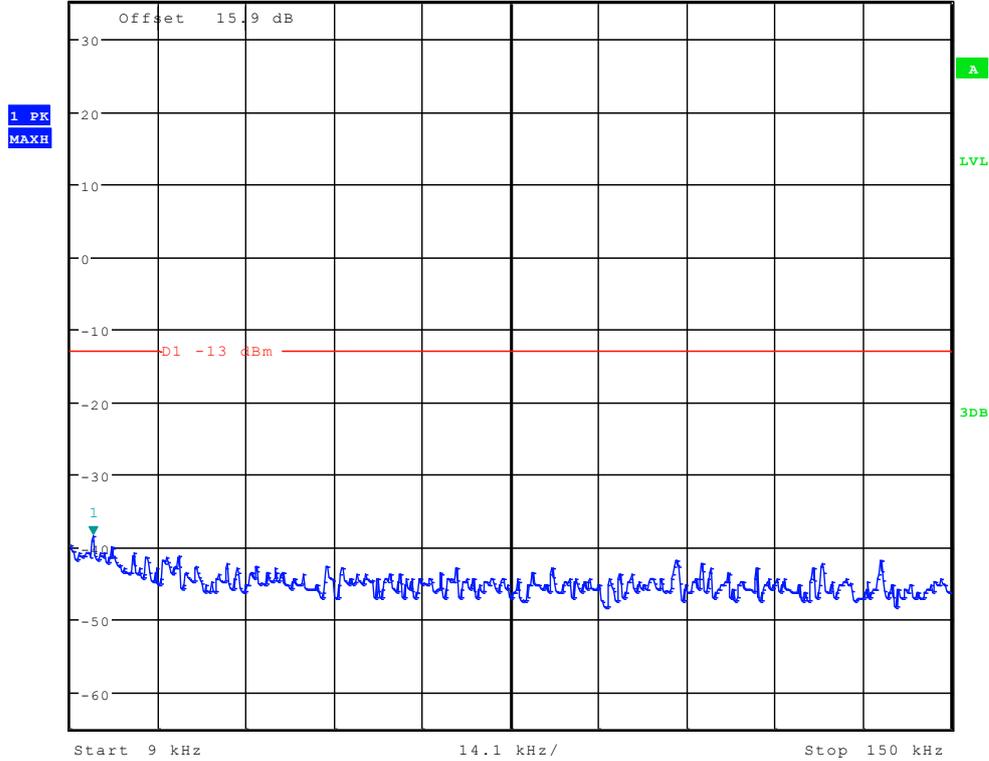




# Channel 4233

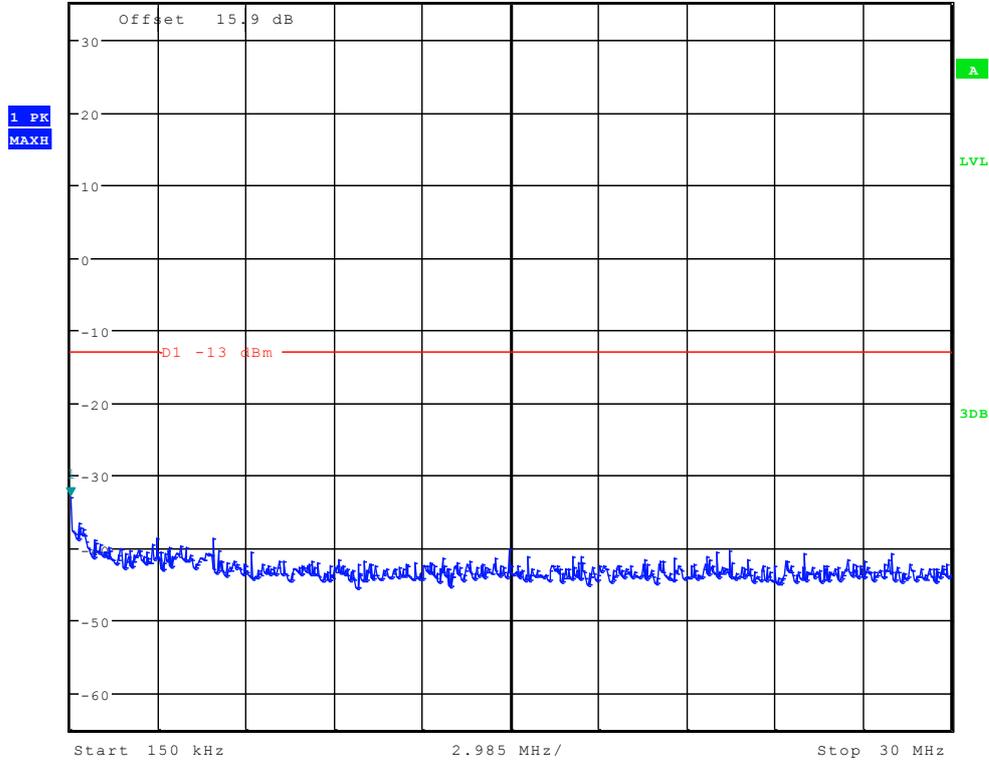


\*RBW 1 kHz      Marker 1 [T1 ]  
 \*VBW 10 kHz      -38.38 dBm  
 Ref 35 dBm      Att 45 dB      SWT 145 ms      12.615384615 kHz



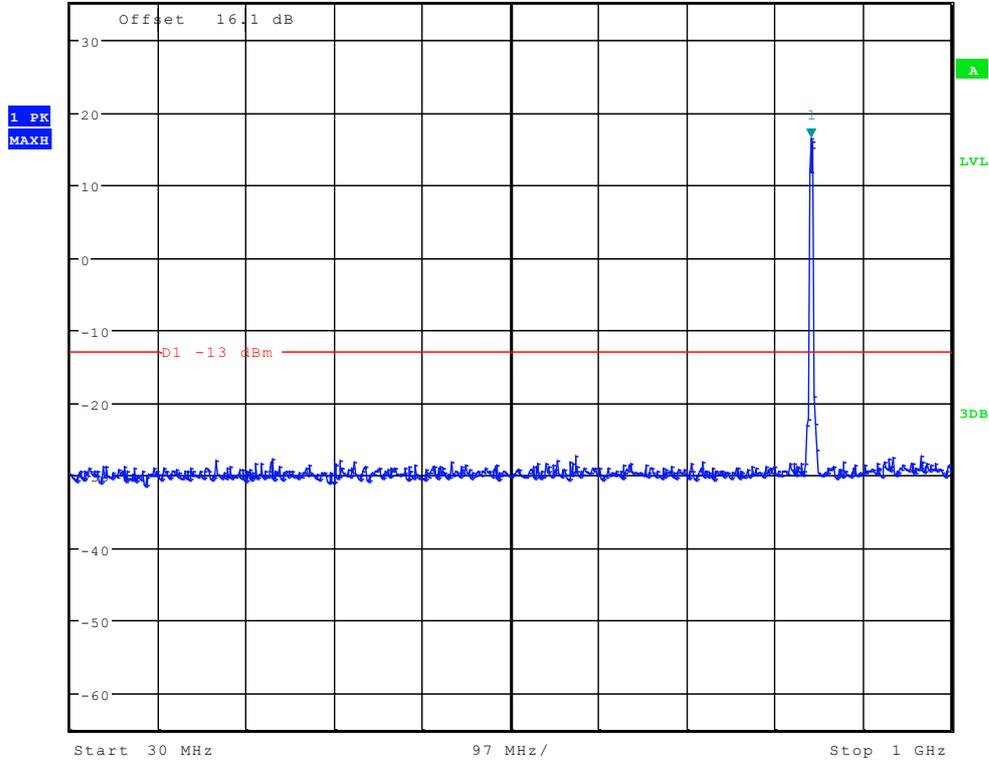


\*RBW 10 kHz      Marker 1 [T1 ]  
\*VBW 30 kHz      -32.90 dBm  
Ref 35 dBm      Att 45 dB      SWT 300 ms      150.000000000 kHz



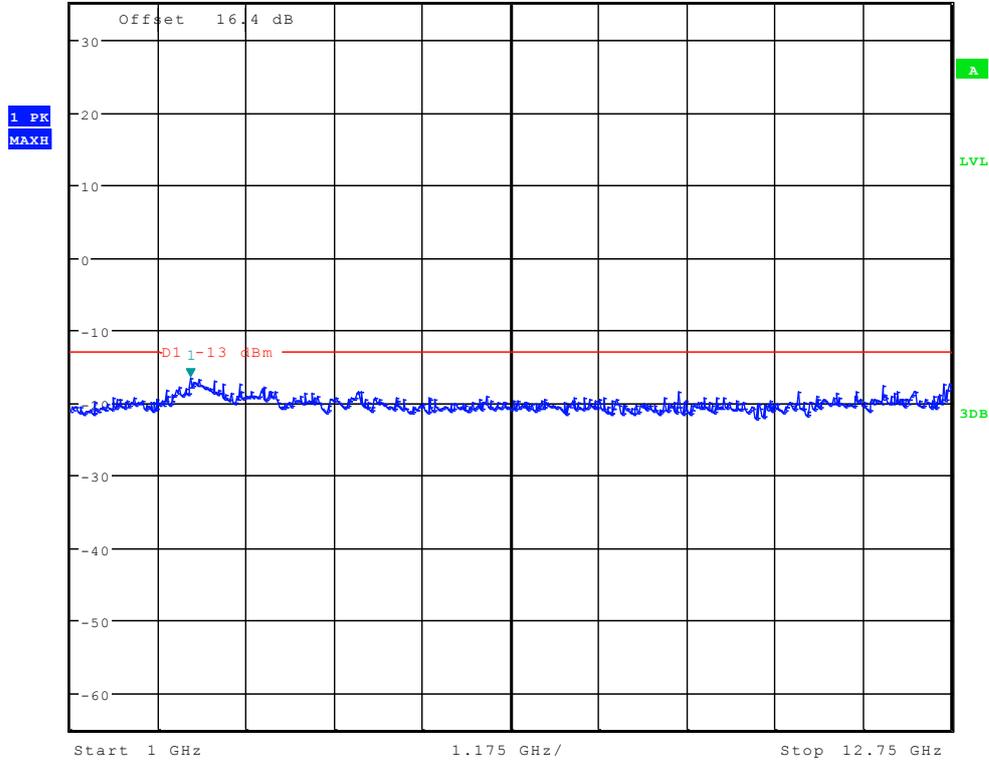


Ref 35 dBm Att 45 dB SWT 100 ms 846.105769231 MHz  
\*RBW 100 kHz Marker 1 [T1 ]  
\*VBW 300 kHz 16.31 dBm





Ref 35 dBm      Att 45 dB      SWT 70 ms      Marker 1 [T1]      -16.51 dBm  
2.600560897 GHz



The END



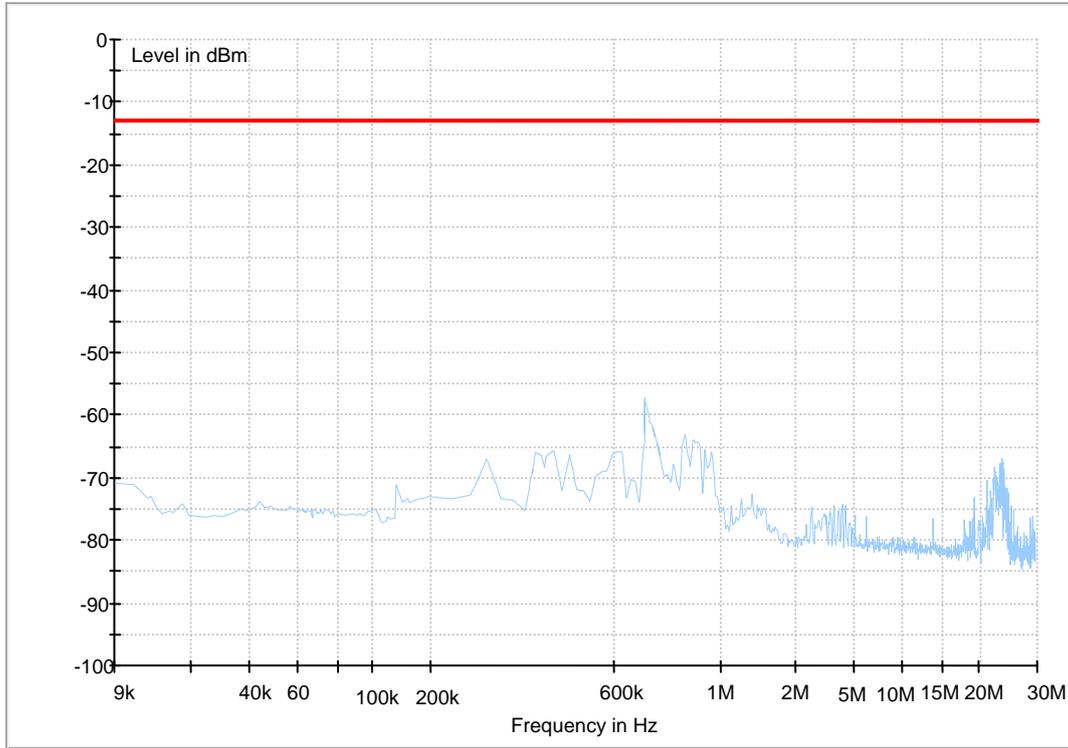
## Appendix F

# Field Strength of Spurious Radiation

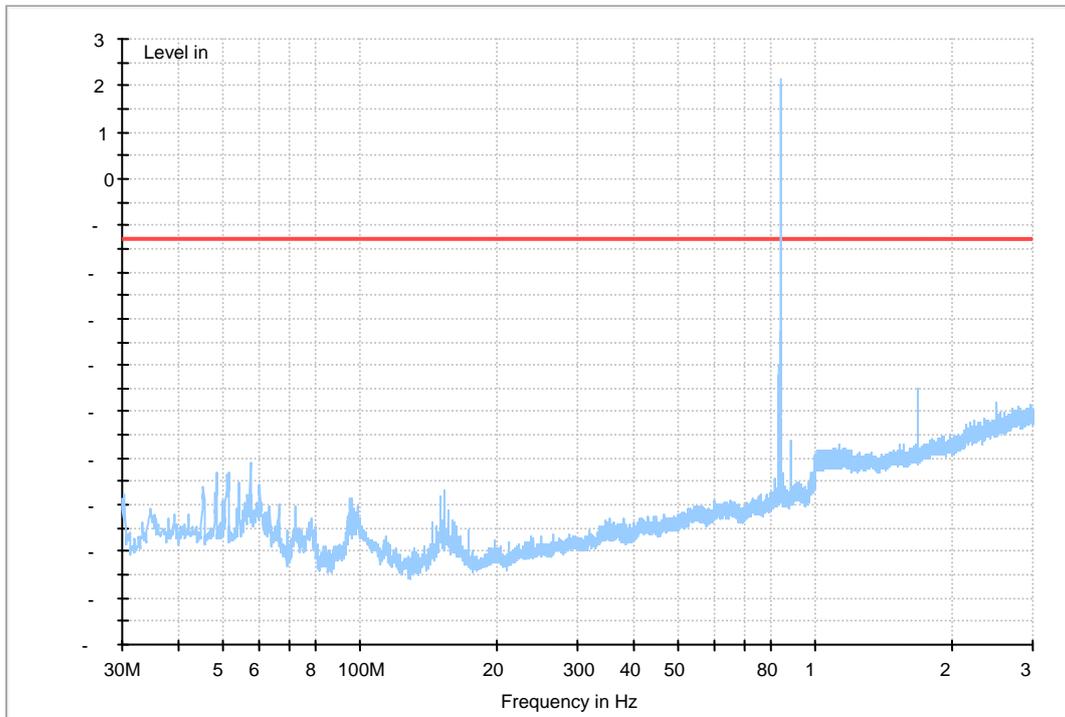
According to FCC Part 2.1053& Part 22.917

# GSM 850

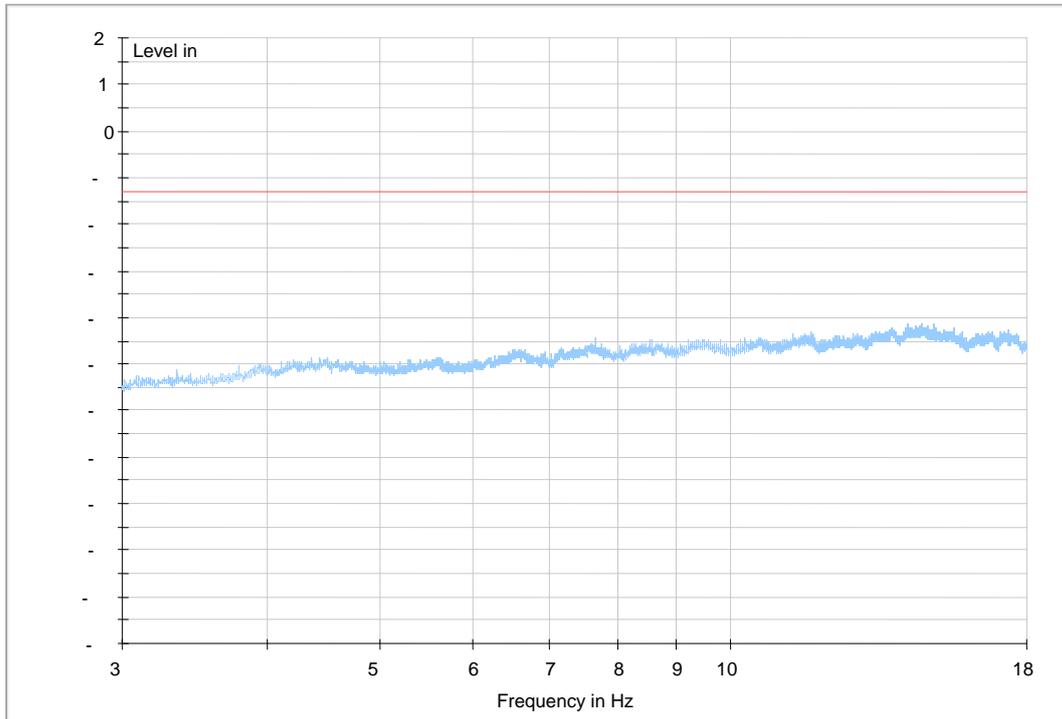
(9kHz~30MHz)



(30MHz~3GHz)

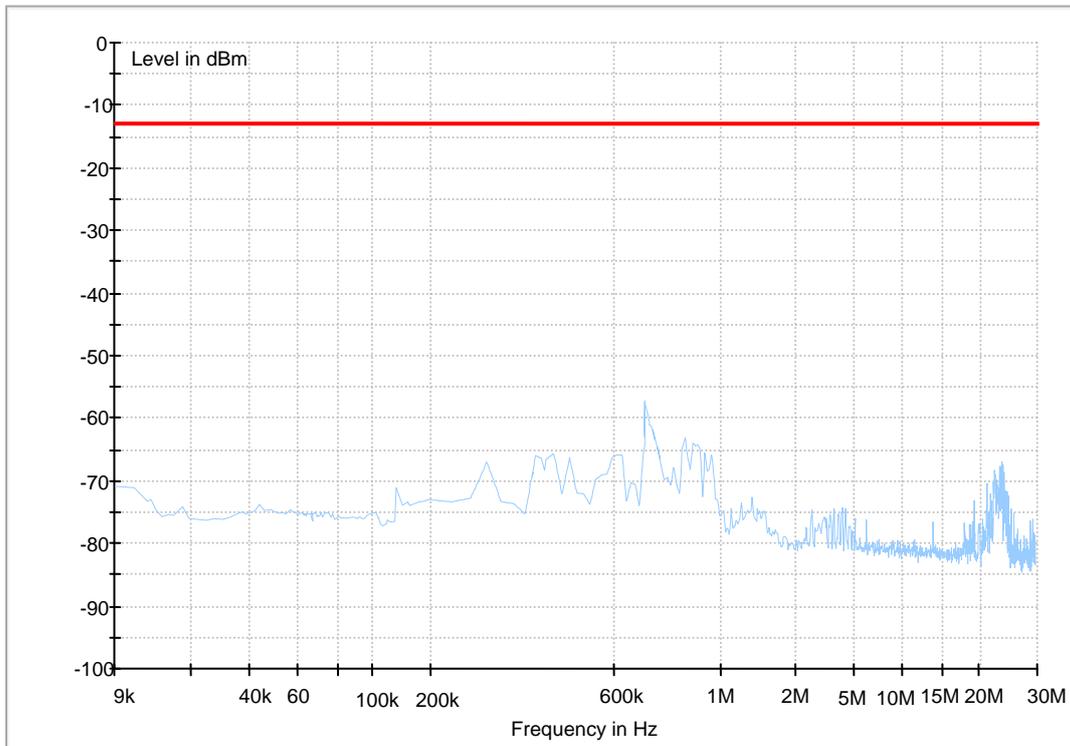


(3GHz~18GHz)

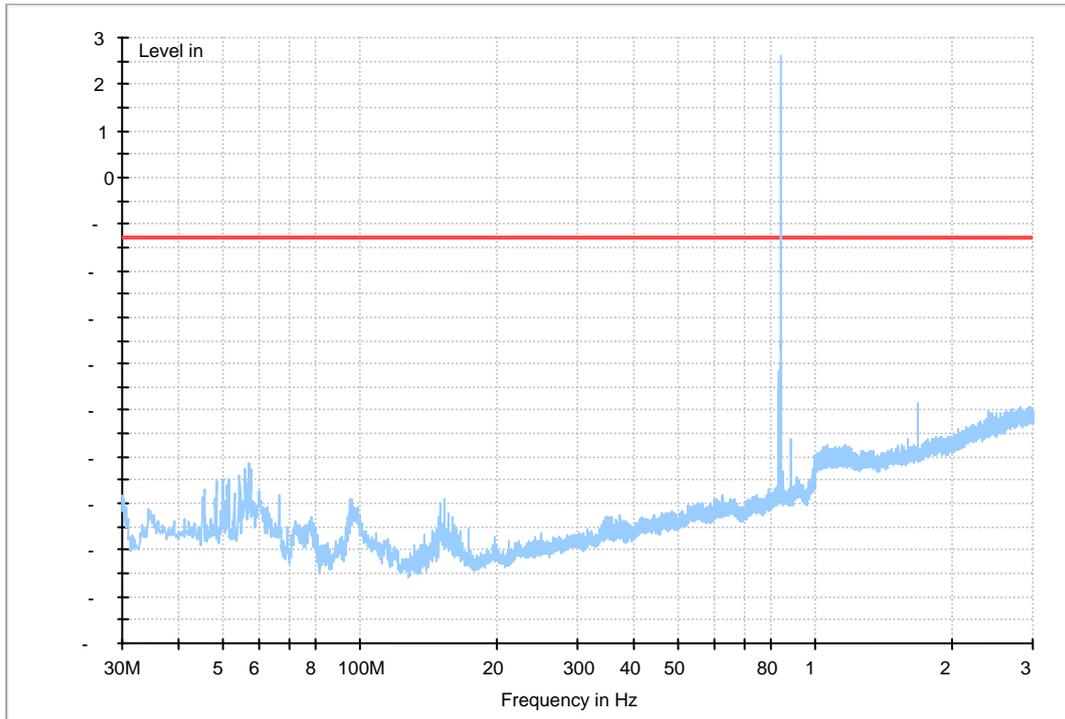


### GPRS 850

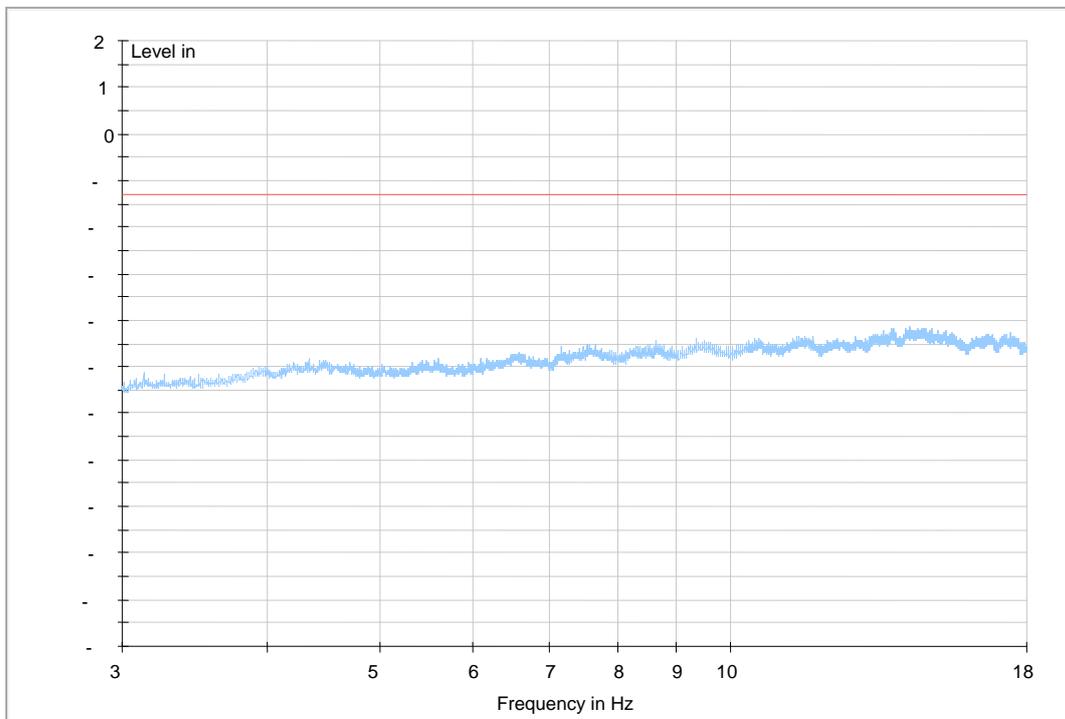
(9kHz~30MHz)



(30MHz~3GHz)

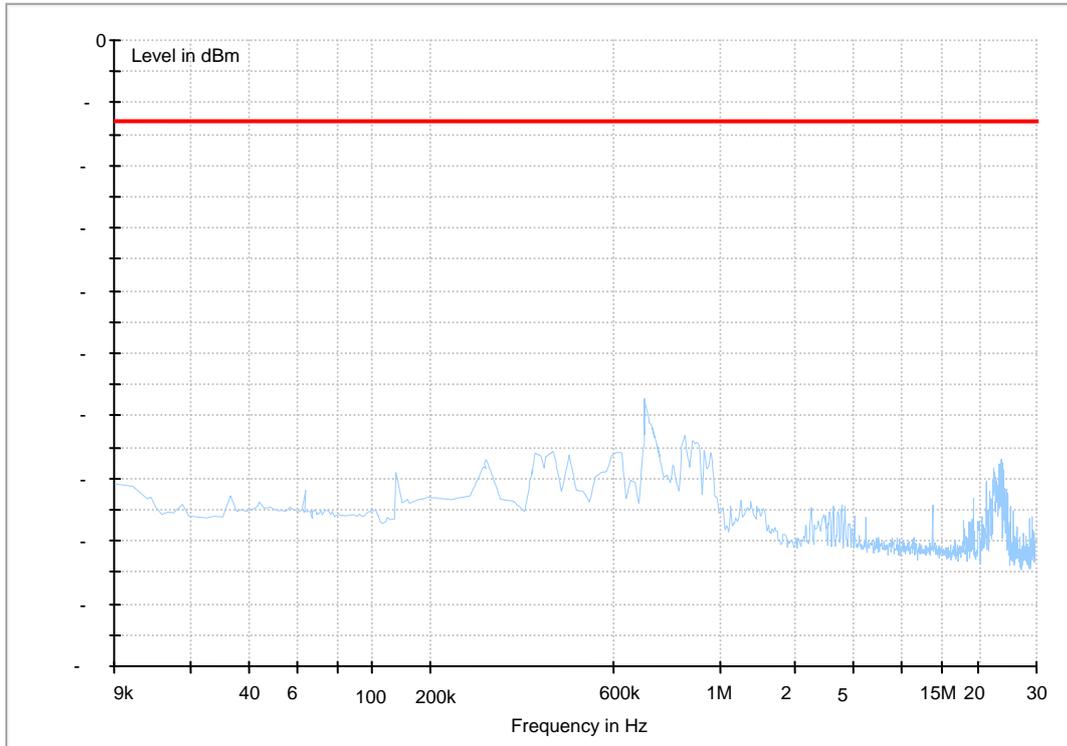


(3GHz~18GHz)

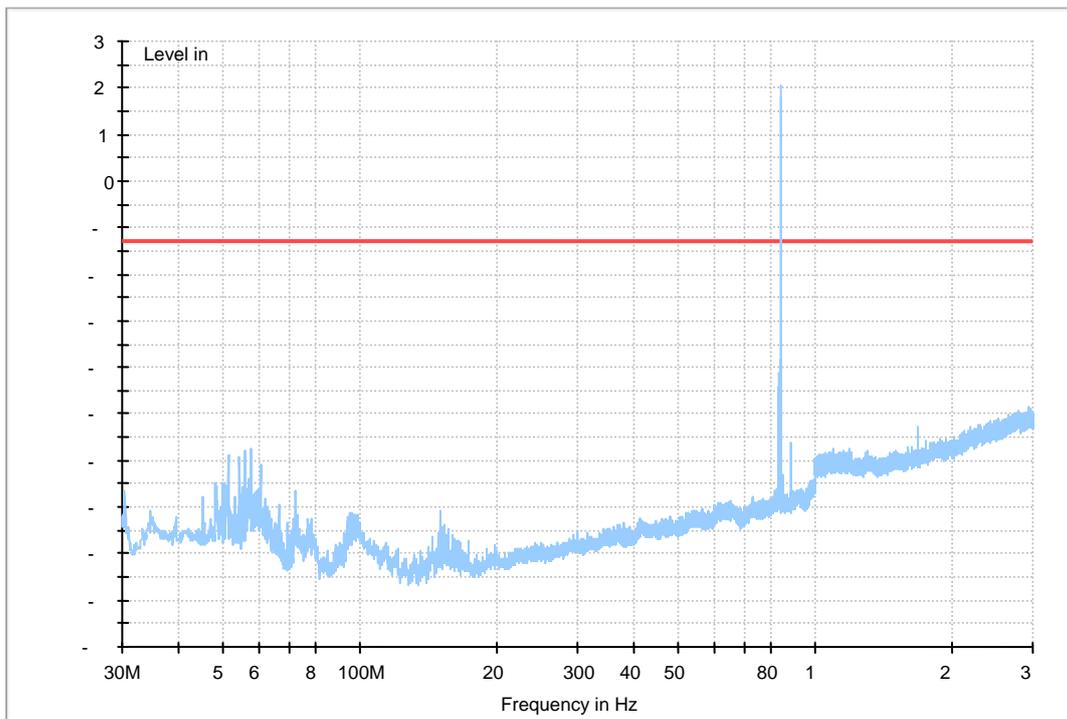


# EDGE 850

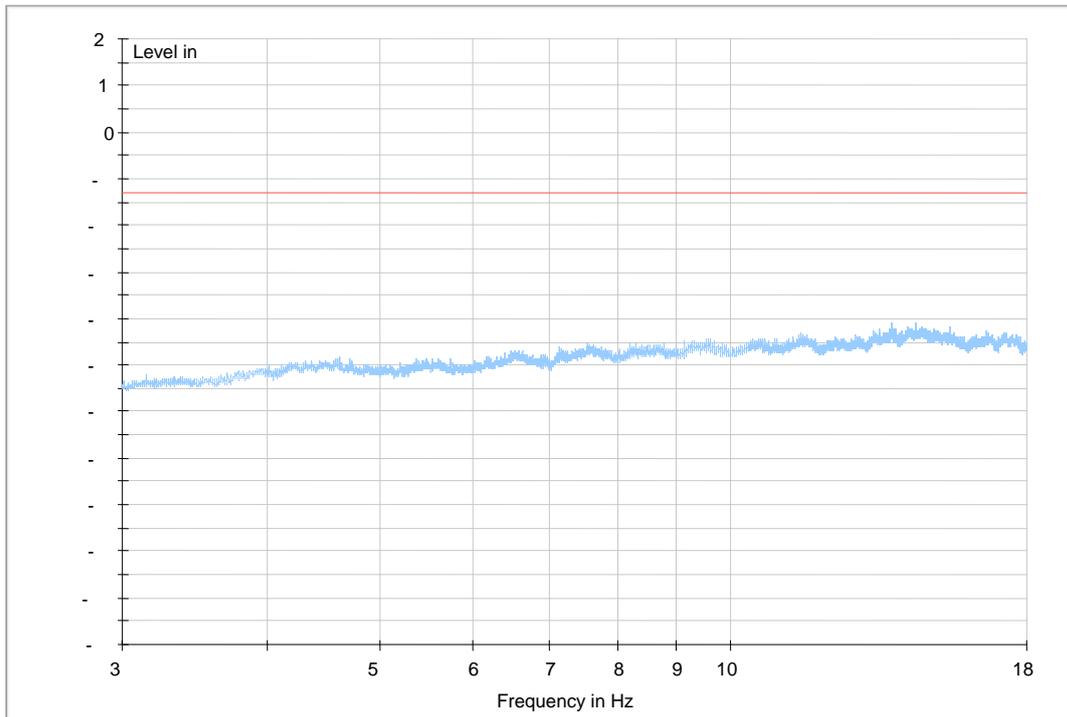
(9kHz~30MHz)



(30MHz~3GHz)

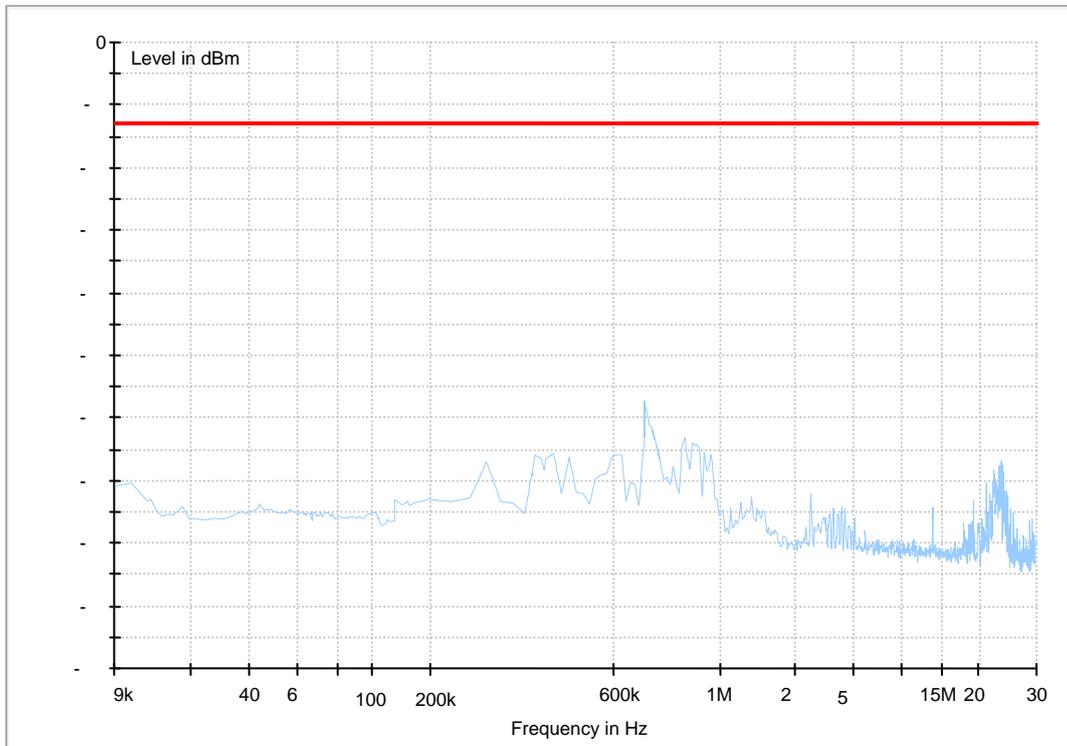


(3GHz~18GHz)

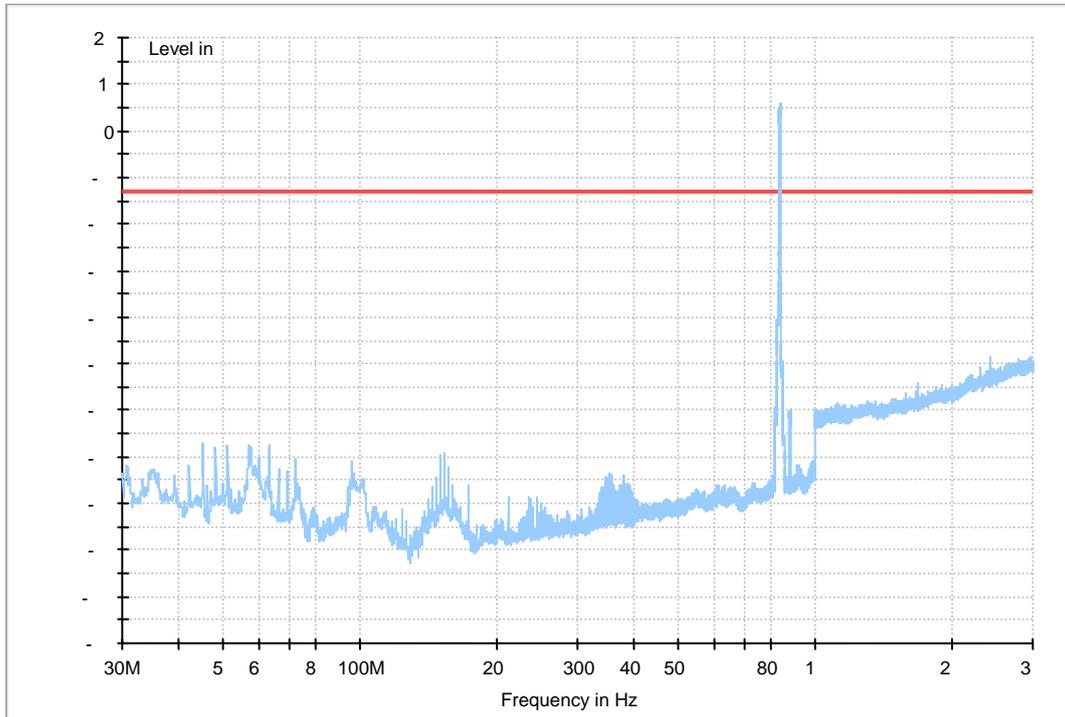


### WCDMA Band V

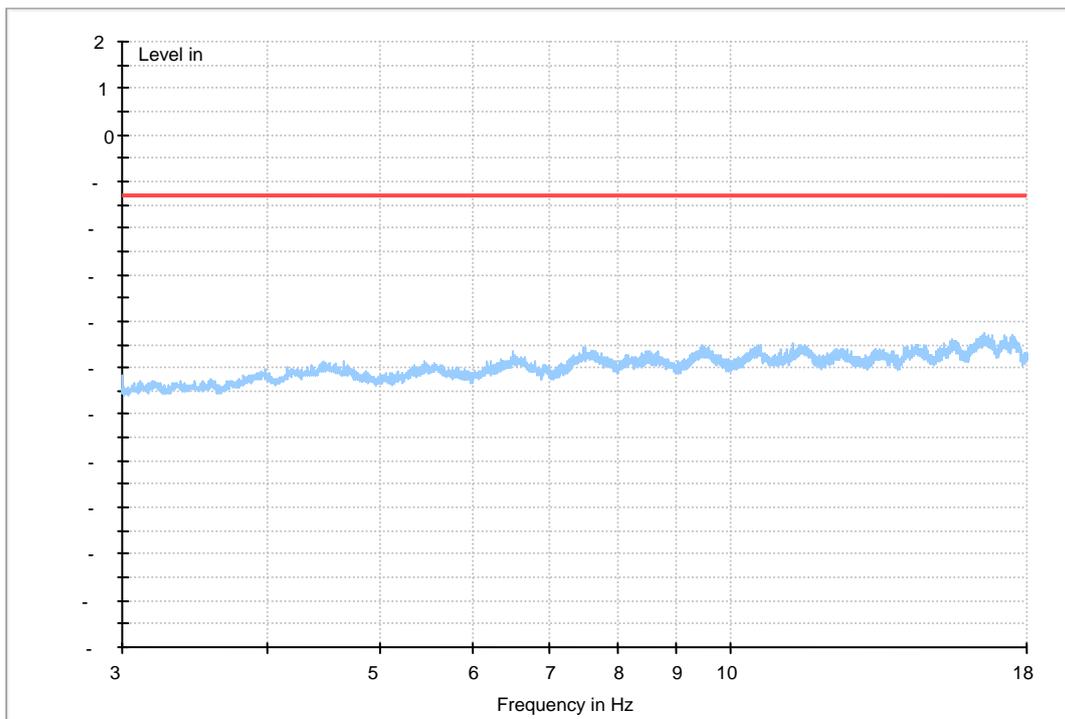
(9KHz~30MHz)



(30MHz~3GHz)

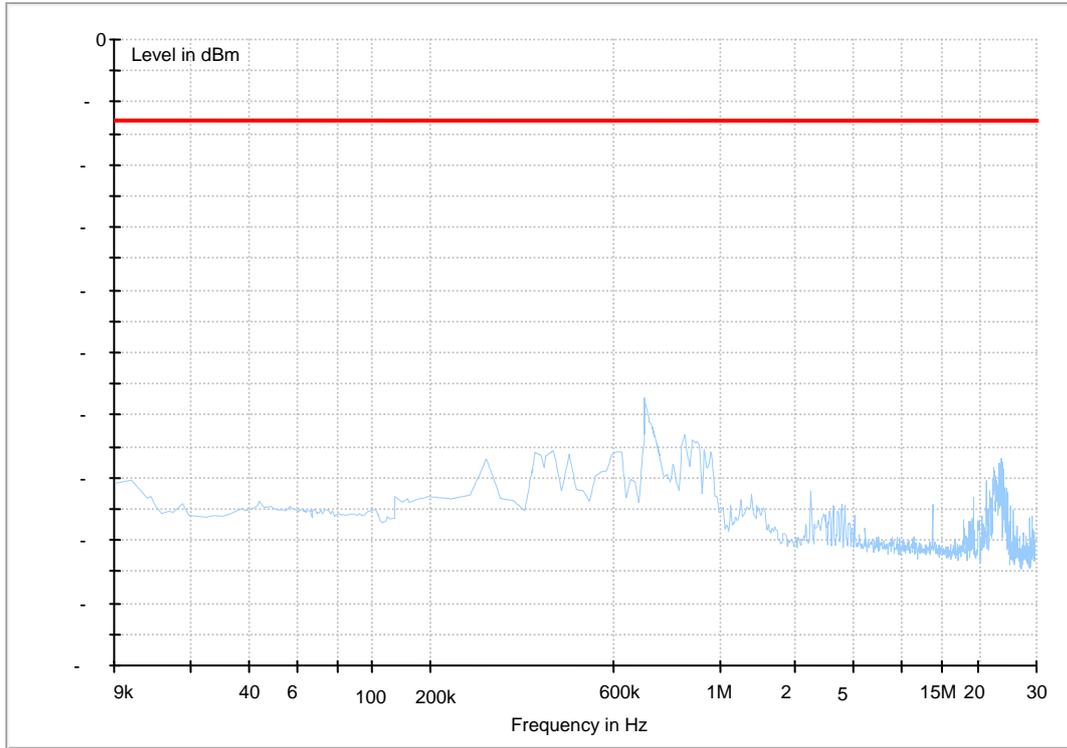


(3GHz~18GHz)

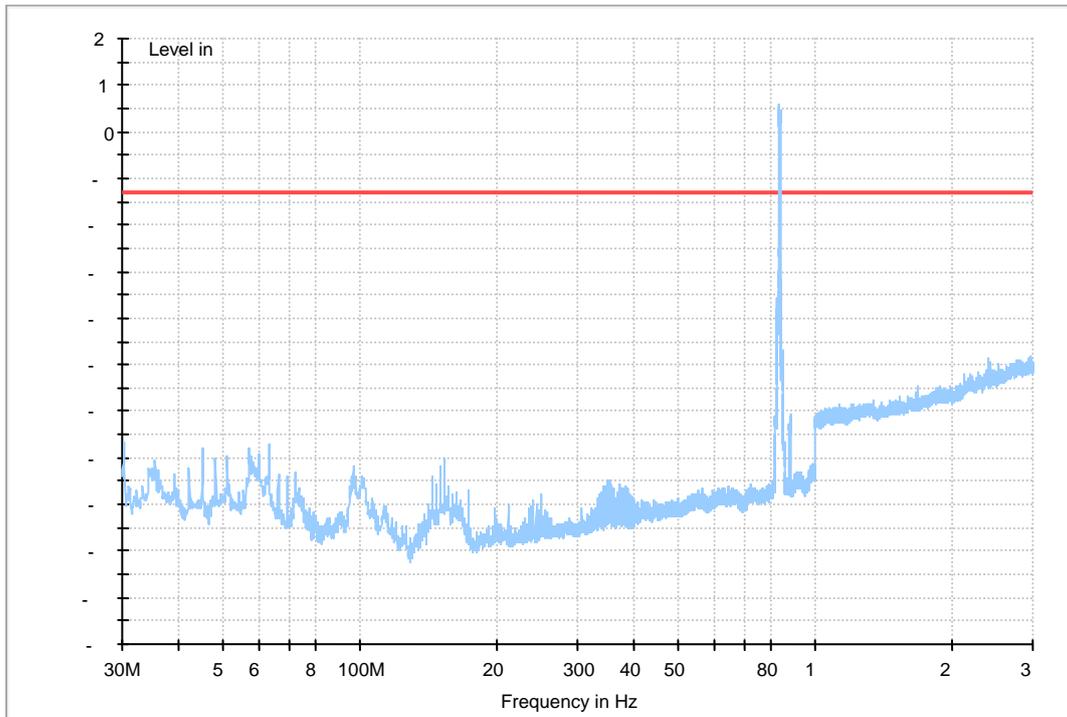


# HSDPA Band V

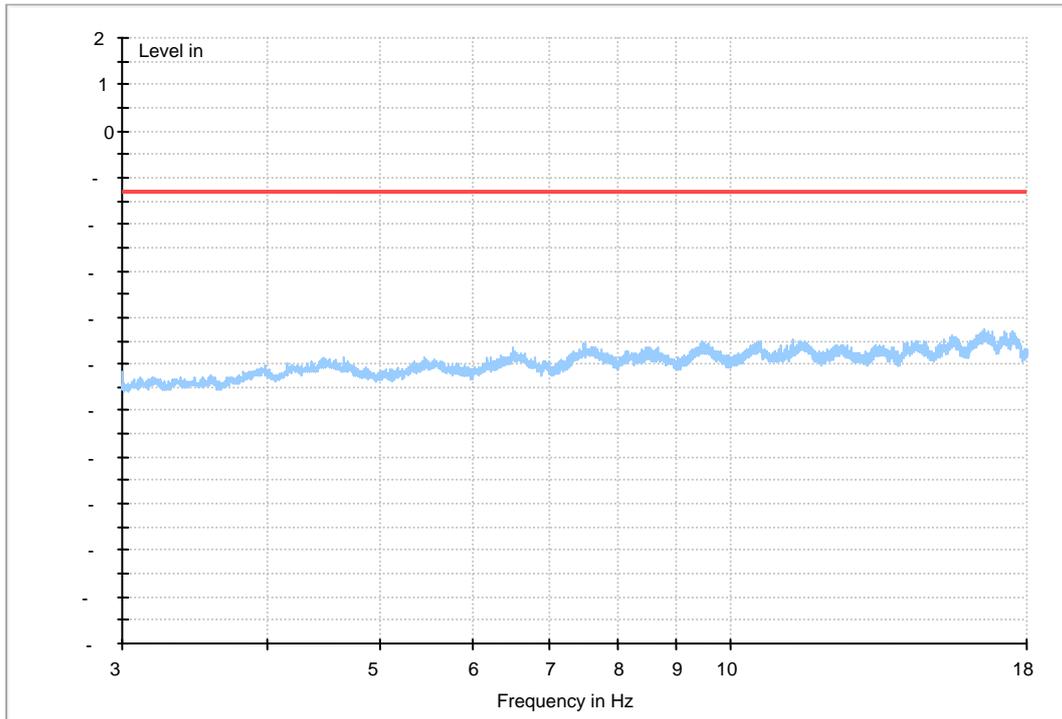
(9KHz~30MHz)



(30MHz~3GHz)



(3GHz~18GHz)



The END



# Appendix G

## Frequency Stability According to FCC Part 2.1055& Part 22.355



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	-15	-0.0179	---	±2.5	Pass
			-20 °C	20	0.0239	---	±2.5	Pass
			-10 °C	-11	-0.0131	---	±2.5	Pass
			0 °C	13	0.0155	---	±2.5	Pass
			10 °C	22	0.0263	---	±2.5	Pass
			20 °C	-8	-0.0096	---	±2.5	Pass
			30 °C	-10	-0.0119	---	±2.5	Pass
			40 °C	15	0.0179	---	±2.5	Pass
			50 °C	-13	-0.0155	---	±2.5	Pass
TM 2	M	VN	-30 °C	15	0.0179	---	±2.5	Pass
			-20 °C	-8	-0.0096	---	±2.5	Pass
			-10 °C	19	0.0227	---	±2.5	Pass
			0 °C	-11	-0.0131	---	±2.5	Pass
			10 °C	18	0.0215	---	±2.5	Pass
			20 °C	18	0.0215	---	±2.5	Pass
			30 °C	-14	-0.0167	---	±2.5	Pass
			40 °C	15	0.0179	---	±2.5	Pass
			50 °C	17	0.0203	---	±2.5	Pass
TM 3	M	VN	-30 °C	8	0.0096	---	±2.5	Pass
			-20 °C	10	0.0120	---	±2.5	Pass
			-10 °C	-14	-0.0167	---	±2.5	Pass
			0 °C	11	0.0132	---	±2.5	Pass
			10 °C	-19	-0.0227	---	±2.5	Pass
			20 °C	-18	-0.0215	---	±2.5	Pass
			30 °C	-15	-0.0179	---	±2.5	Pass
			40 °C	10	0.0120	---	±2.5	Pass
			50 °C	-17	-0.0203	---	±2.5	Pass



## Frequency Error vs. Voltage:

Test Mode	RF Ch.	Temp.	Volt.(V)	Freq. Error [Hz]	Freq. vs. rated [ppm]	Freq. vs. 20 °C [ppm]	Limit [ppm]	Verdict
TM 1	M	20 °C	VL	17	0.0203	---	±2.5	Pass
			VN	-14	-0.0167	---	±2.5	Pass
			VH	-16	-0.0191	---	±2.5	Pass
TM 2	M	20 °C	VL	19	0.0227	---	±2.5	Pass
			VN	-15	-0.0179	---	±2.5	Pass
			VH	12	0.0143	---	±2.5	Pass
TM 3	M	20 °C	VL	-17	-0.0203	---	±2.5	Pass
			VN	17	0.0203	---	±2.5	Pass
			VH	-16	-0.0191	---	±2.5	Pass

-----The END-----