



# FCC RF Test Report

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

**Model Number: HUAWEI U8666E-1,U8666E-1**

**Report No: SYBH(Z-RF)001062012-2002  
FCC ID: QISU8666E-1**

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

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## Notice

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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.
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# 1 General Information

<b>1.1 Applied Standard</b>	
Applied Rules:	47 CFR FCC Part 2:2011, Subpart J 47 CFR FCC Part 24:2011, Subpart E 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 Environmental Condition</b>	
Ambient Temperature:	20 – 25 °C
Ambient Relative Humidity:	45 – 55 %
Atmospheric Pressure:	101 kPa

## 2 Summary

Table 1 Summary of results

Test Case	FCC Part No.	Requirements	Result
PCS Band			
Transmitter Output Power	2.1046 & 24.232	Peak EIRP not exceed 2 W	Pass
Modulation Characteristics	2.104	Digital modulation	Pass
Occupied Bandwidth	2.104	(Not specified)	Pass
Band Edges Compliance	2.1051 & 24.238	Below -13 dBm/1%*EBW, in 1 MHz range	Pass
Spurious Emission at Antenna Terminals	2.1051 & 24.238	Below -13 dBm/1 kHz, 9 kHz to 150 kHz Below -13 dBm/10 kHz, 150 kHz to 30 MHz Below -13 dBm/1 MHz, 30 MHz to 10 <sup>th</sup> harmonics	Pass
Field Strength of Spurious Radiation	2.1053 & 24.238	Below -13 dBm/1 MHz	Pass
Frequency Stability	2.1055 & 24.235	Stay within the authorized frequency block	Pass

### 3 Product Description

#### 3.1 Product Information

##### 3.1.1 General Description

HUAWEI U8666E-1, U8666E-1 is subscriber equipment in the WCDMA/GSM system. The HSDPA/UMTS frequency band is Band I and Band VIII. The GSM/GPRS/EDGE frequency band includes GSM850 and GSM900 and DCS1800 and PCS1900, but only GSM1900 band test data 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, AGPS 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

Table 2 Board Information

HUAWEI Ascend Y 201 Pro; Skyline mini; HSDPA/UMTS/GPRS/GSM/EDGE Mobile Phone with Bluetooth		
HUAWEI U8666E-1,U8666E-1		
Board and Module		
Equipment Designation / Description	Software	Hardware
Main board of Mobile Phone	U8666E-1V100R001C00B918	HD2U8655M

##### 3.1.3 Adapter Technical Data

AC/DCAdapter Model	HW-050100U1W
Manufacturer	Huawei Technologies Co., Ltd.
Input Voltage	~100-240V 50/60Hz 0.2A
Output Voltage	5V  1A
Rated Power	5W

AC/DCAdapter Model	HW-050100A1W
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AC/DCAdapter Model	HW-050100E1W
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Input Voltage	~100-240V 50/60Hz 0.2A
Output Voltage	5V  1A
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AC/DCAdapter Model	HW-050100B1W
Manufacturer	Huawei Technologies Co., Ltd.
Input Voltage	~100-240V 50/60Hz 0.2A
Output Voltage	5V  1A
Rated Power	5W

### 3.1.4 Battery Technical Data

Name	Manufacture	Description
Rechargeable Li-ion	Huawei Technologies Co., Ltd.	Battery Model: HB5K1 Rated capacity: 1250mAh Nominal Voltage:  +3.7V Charging Voltage:  +4.2V

Name	Manufacture	Description
Rechargeable Li-ion	Huawei Technologies Co., Ltd.	Battery Model: HB5K1H Rated capacity: 1400mAh 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
TX Output Power (per Antenna Port)	GSM system: 30dBm;
Channel Spacing(s) / Bandwidth(s)	GSM system: 200 kHz
Designation of Emissions	GSM system: 246KGXW (GMSK modulation), 245KG7W (8PSK modulation)



### 4.3 Antenna Gain

Antenna Gain(dBi)	1.7
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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 4.2 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		
		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

### 5.2 Test Modes

Test Mode	Test Modes Description
TM1	GSM/GPRS, GMSK modulation
TM2	EDGE, 8PSK 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

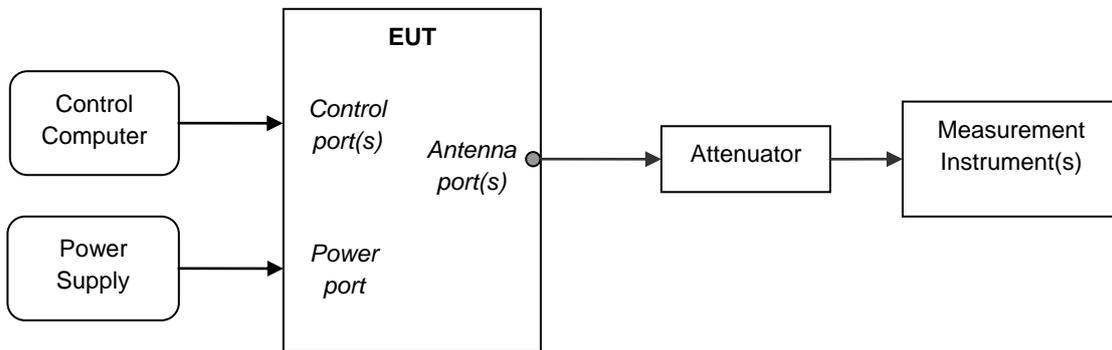
NOTE: VL= lower extreme test voltage  
 VN= nominal voltage  
 VH= upper extreme test voltage  
 TN= normal temperature

## 5.4 Test Setup

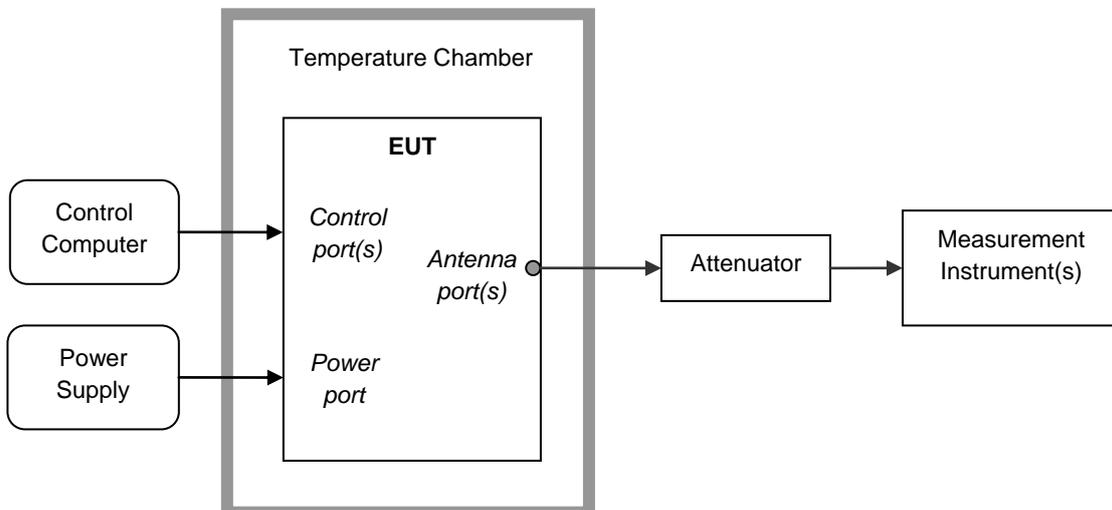
### 5.4.1 General Test Setup Configurations

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



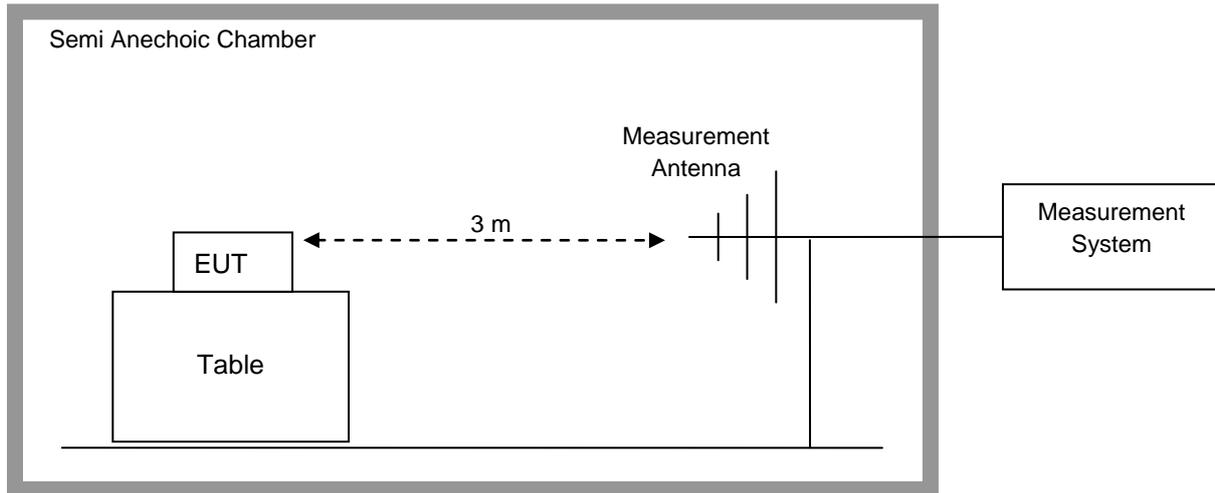
#### 5.4.4 Test Setup 3

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.

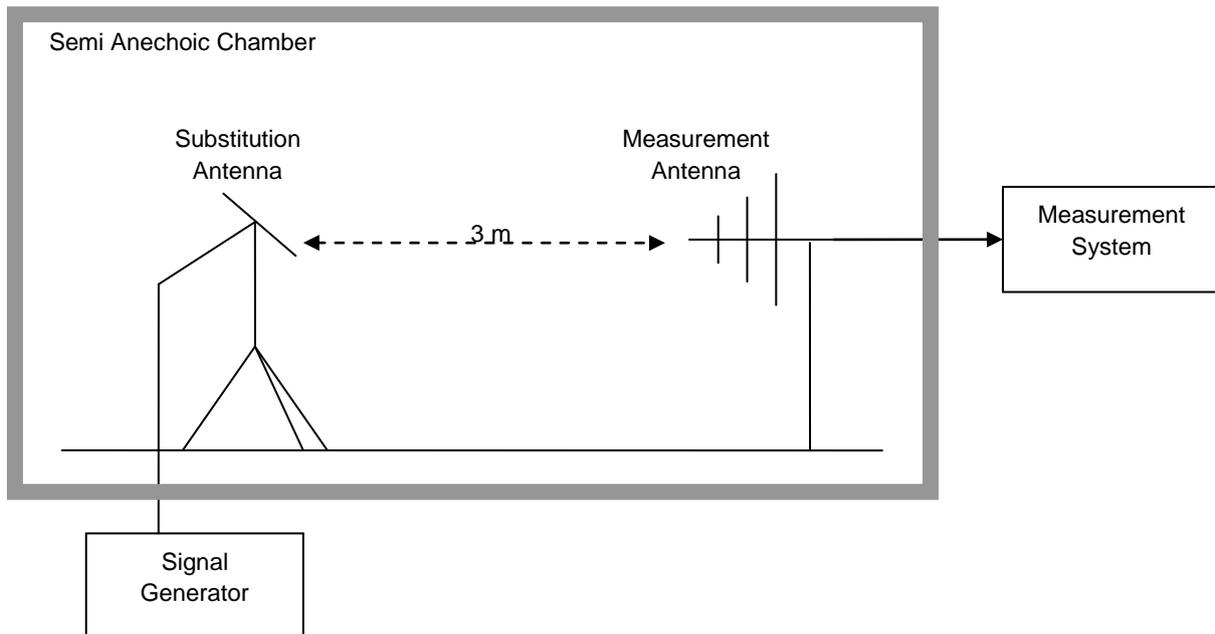
#### Step 1: Pre-test to find the Maximum ERP or EIRP

1. Connect the test system according to 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 T, M, B respectively.  
Complete the test data.



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

1. Measurement setup is according to the following figures. 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 item 5). 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
Modulation Characteristics	Test Configuration	Ambient Temperature & Rated Voltage
	Test Setup	Test Setup 1
	RF Channels (TX)	M
	Test Mode	TM1/TM2
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
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
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
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
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

## 6 Main Test Instruments

Table 3 Main Test Equipments

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	MY49420179	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
Spectrum analyzer	R&S	FSU3	200474	Mar., 05, 2013
Spectrum analyzer	R&S	FSU43	100144	Mar., 05, 2013
Double-Ridged Waveguide Horn Antenna (1G~18GHz)	R&S	HF907	100304	Apr., 05, 2013
Double-Ridged Waveguide Horn Antenna (1G~18GHz)	R&S	HF907	100391	Apr., 05, 2013
Trilog Broadband Antenna (30M~3GHz)	SCHWARZBECK	VULB 9163	9163-521	Jul., 07, 2012
Pyramidal Horn Antenna(26GHz-40GHz)	ETS-Lindgren	3160-10	00123940	Feb., 27, 2013
Pyramidal Horn Antenna(18GHz-26.5GHz)	ETS-Lindgren	3160-09	00125912	Feb.,27, 2013

## 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	Radiated Spurious Emissions	Appendix F
7	Frequency Stability	Appendix G
8	Photos of Radiated Spurious Emissions	Appendix H

NOTE: There is no test data in Appendix H, only Photos of Test Setup for Field Strength of Spurious Radiation.

## 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 & Part24.232



## Conducted Power of Transmitter

Table 1 Measurement Results

TEST CONDITIONS	RF Output Power (Conducted)					
	Channel512(B)		Channel661(M)		Channel810(T)	
	1850.2MHz		1880.0MHz		1909.8MHz	
	dBm		dBm		dBm	
$T_{nom} / V_{nom}$	Measured	Limit	Measured	Limit	Measured	Limit
TM1	29.85	33	29.56	33	29.38	33
TM2	26.51	33	26.17	33	26.01	33



## Peak-to-Average Ratio

Table 1 Measurement Results

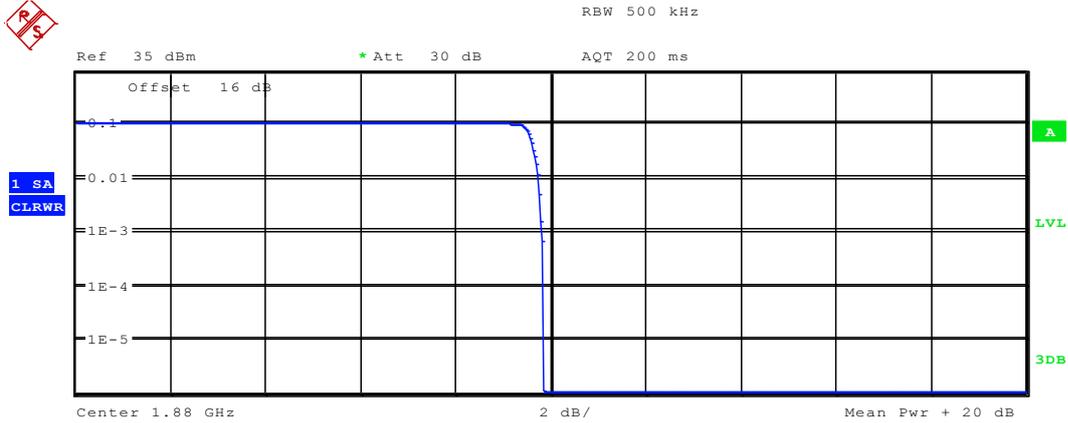
TEST CONDITIONS	Channel512(B)		Channel661(M)		Channel810(T)	
	1850.2MHz		1880.0MHz		1909.8MHz	
	dBm		dBm		dBm	
$T_{nom} / V_{nom}$	Measured	Limit	Measured	Limit	Measured	Limit
TM1	9.73	13.0	9.84	13.0	9.66	13.0
TM2	12.76	13.0	12.88	13.0	12.82	13.0



## Test Plot of Peak-to-Average Ratio

Note: All relevant operation modes have been tested, and the worst case Plot is included in this report.

### TM1

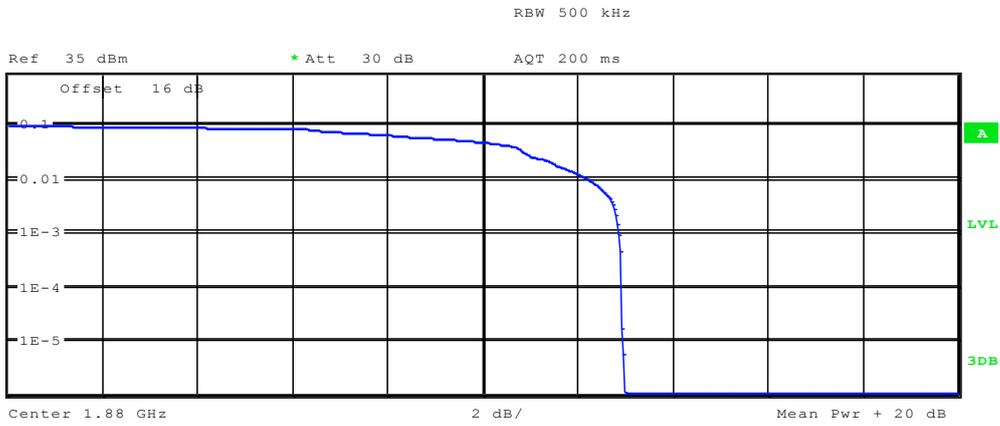


Complementary Cumulative Distribution Function  
 NOF samples: 100000, Usable BW: 424kHz

Trace 1	
Mean	16.75 dBm
Peak	26.60 dBm
Crest	9.85 dB
10 %	9.39 dB
1 %	9.74 dB
.1 %	9.84 dB
.01 %	9.87 dB



TM2



Complementary Cumulative Distribution Function  
 NOF samples: 100000, Usable BW: 424kHz

Trace 1	
Mean	13.24 dBm
Peak	26.24 dBm
Crest	13.00 dB
10 %	2.60 dB
1 %	12.24 dB
.1 %	12.88 dB
.01 %	12.95 dB



## Effective Isotropic Radiated Power of Transmitter (EIRP)

Table 2 Substitution Results

Test Mode	Freq. [MHz]	Meas. Level [dBm]	Substitution Antenna Type	SGP [dBm]	Substitution Gain [dBi]	Cable Loss [dB]	Substitution Level (EIRP) [dBm]	FCC limit [dBm]	Result
TM1	1850.2	31.55	Horn Ant.	28.08	4.5	1	31.58	33	Pass
TM1	1880.0	31.26	Horn Ant.	27.75	4.5	1	31.25	33	Pass
TM1	1909.8	31.08	Horn Ant.	27.25	4.8	1	31.05	33	Pass
TM2	1850.2	28.21	Horn Ant.	24.72	4.5	1	28.22	33	Pass
TM2	1880.0	27.87	Horn Ant.	24.35	4.5	1	27.85	33	Pass
TM2	1909.8	27.71	Horn Ant.	23.90	4.8	1	27.70	33	Pass

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

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

b, SGP=Signal Generator Level

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



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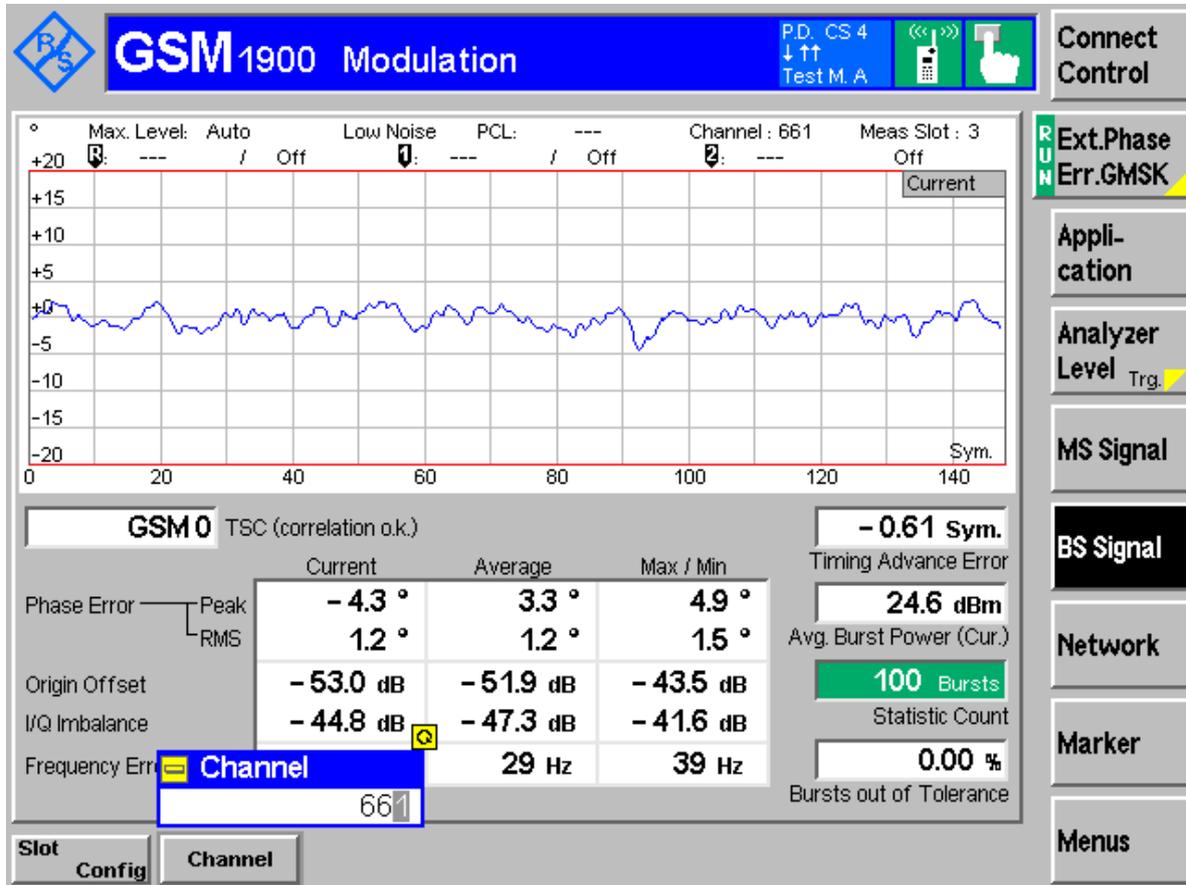
## Appendix B

# Modulation Characteristics

According to FCC Part 2.1047 & Part24 Subpart E

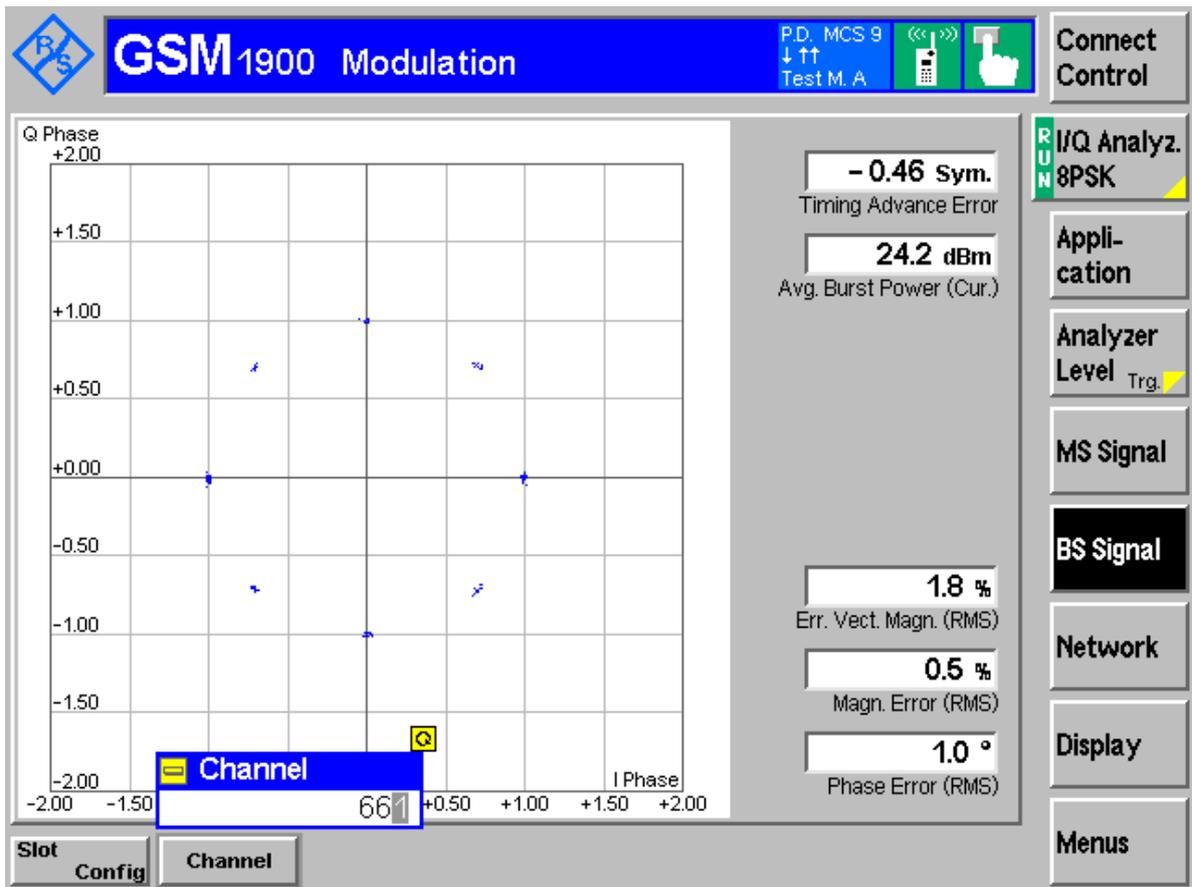


## TM1:GPRS/GSM Channel 661





## TM2:EDGE Channel 661



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



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# Appendix C

## Occupied Bandwidth According to FCC Part 2.1049 & Part24 Subpart E



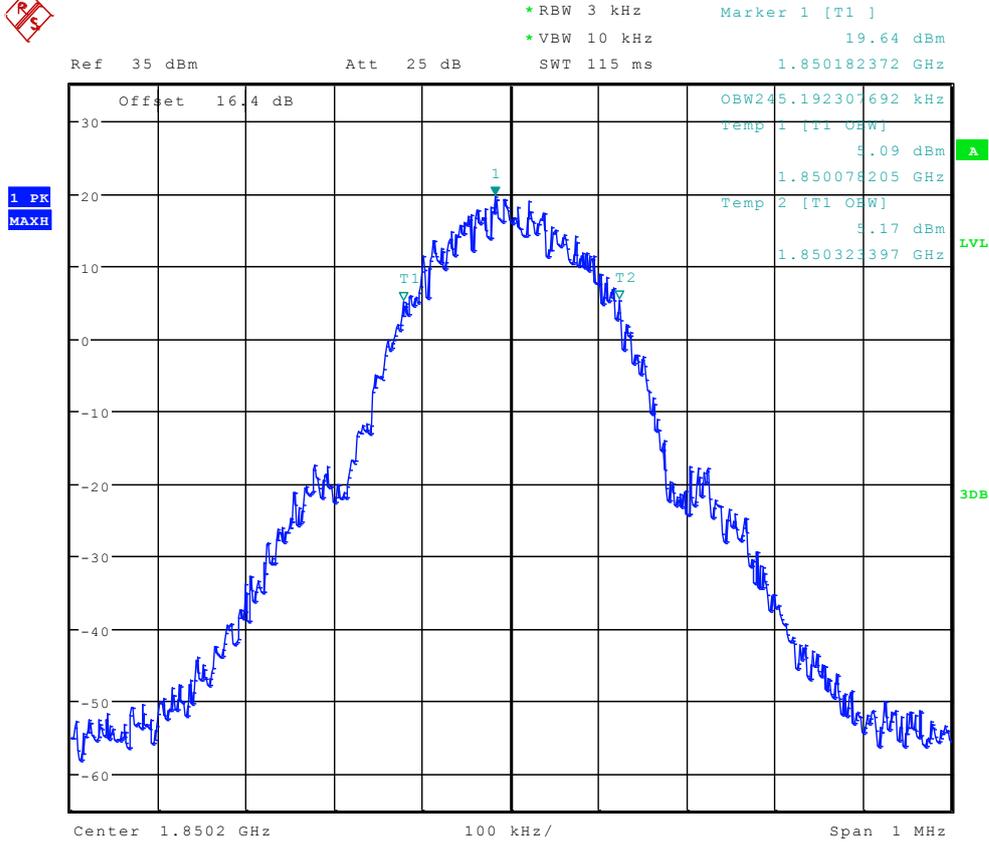
Result Table

Table 1 Measurement Results

Test Mode	RF Channel	Occupied Bandwidth [kHz]	Verdict
TM1	512	245.19	Pass
	661	246.79	Pass
	810	243.59	Pass
TM2	512	245.19	Pass
	661	245.19	Pass
	810	245.19	Pass

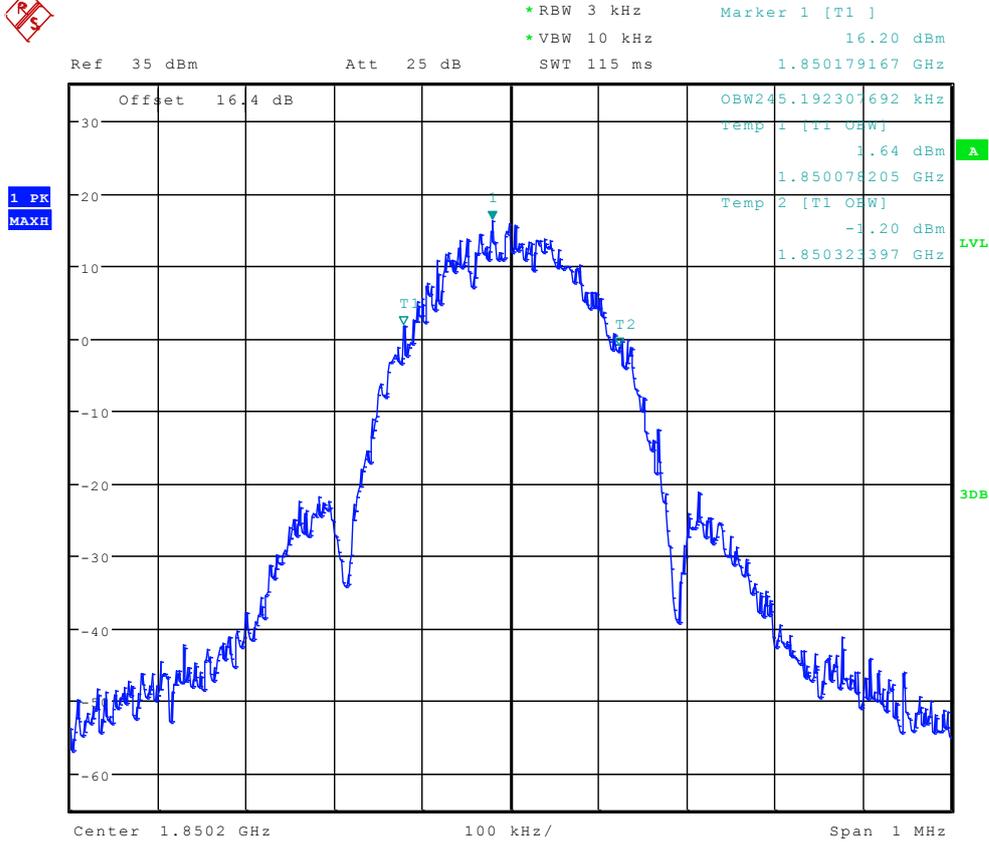


## TM1:GPRS/GSM Channel 512





# TM2:EDGE Channel 512

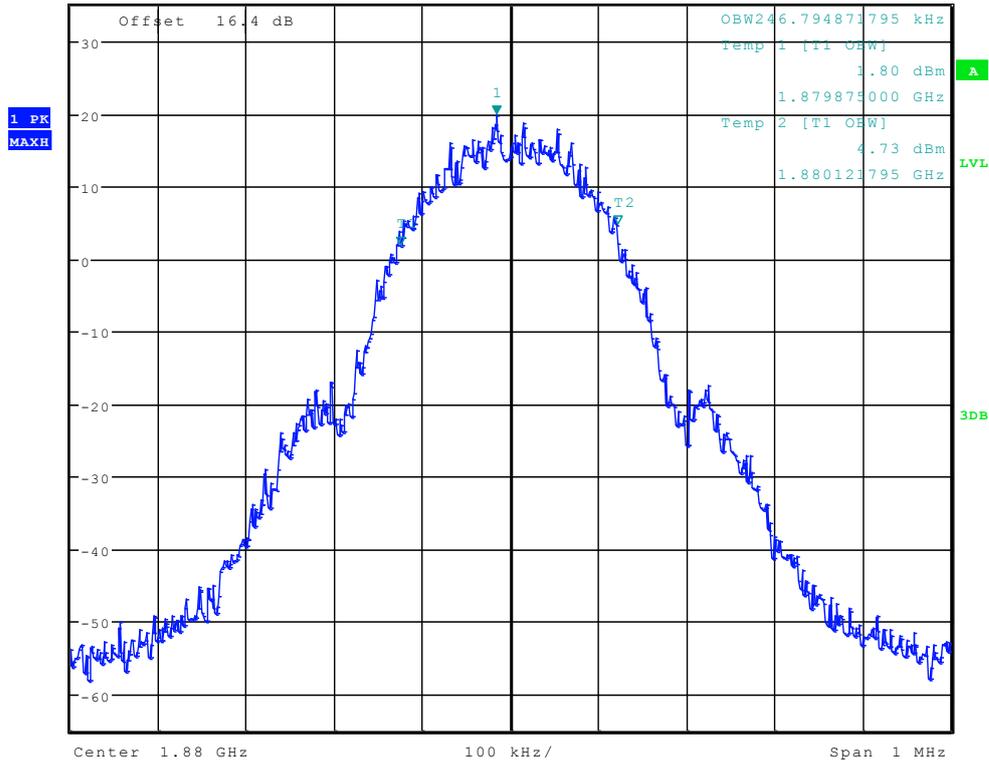




## TM1:GPRS/GSM Channel 661



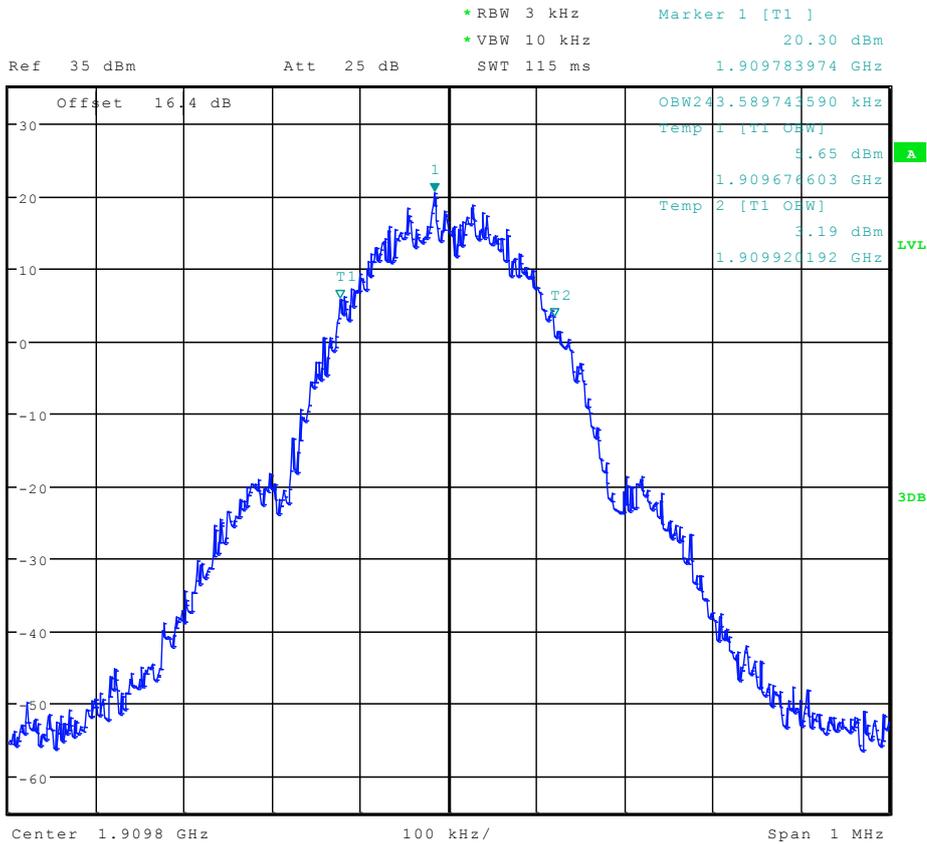
\*RBW 3 kHz                      Marker 1 [T1 ]  
 \*VBW 10 kHz                      19.68 dBm  
 Ref 35 dBm                      Att 25 dB                      SWT 115 ms                      1.879983974 GHz







## TM1:GPRS/GSM Channel 810







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## Appendix D

# Band Edges Compliance

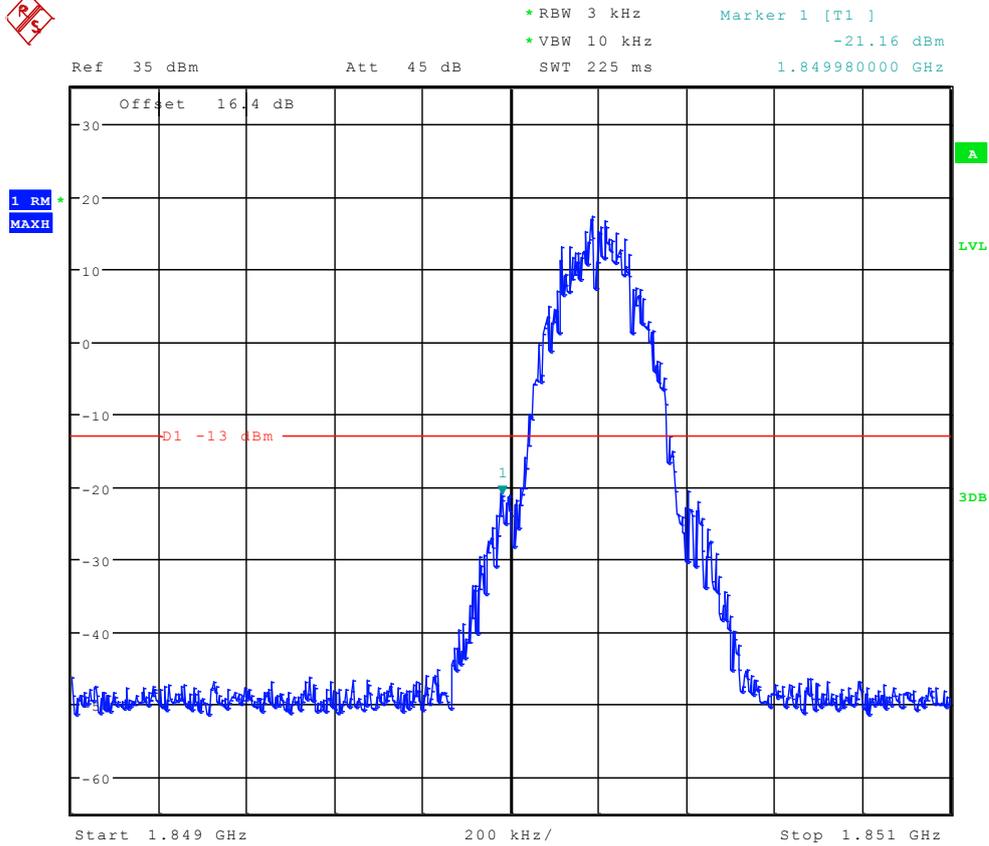
According to FCC Part 2.1051 & Part24 Subpart E



# TM1:GPRS/GSM

## Left Edge

### Channel 512

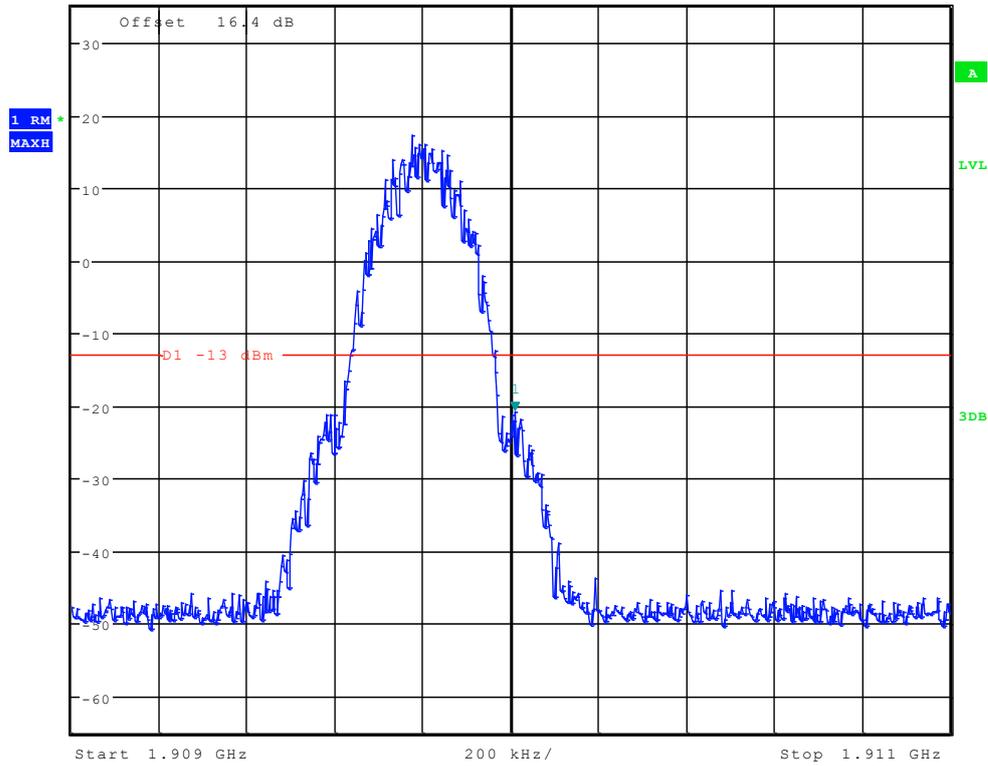




## Right Edge Channel 810



Ref 35 dBm      Att 45 dB      RBW 3 kHz      Marker 1 [T1]      -20.75 dBm  
\* VBW 10 kHz      SWT 225 ms      1.910010000 GHz

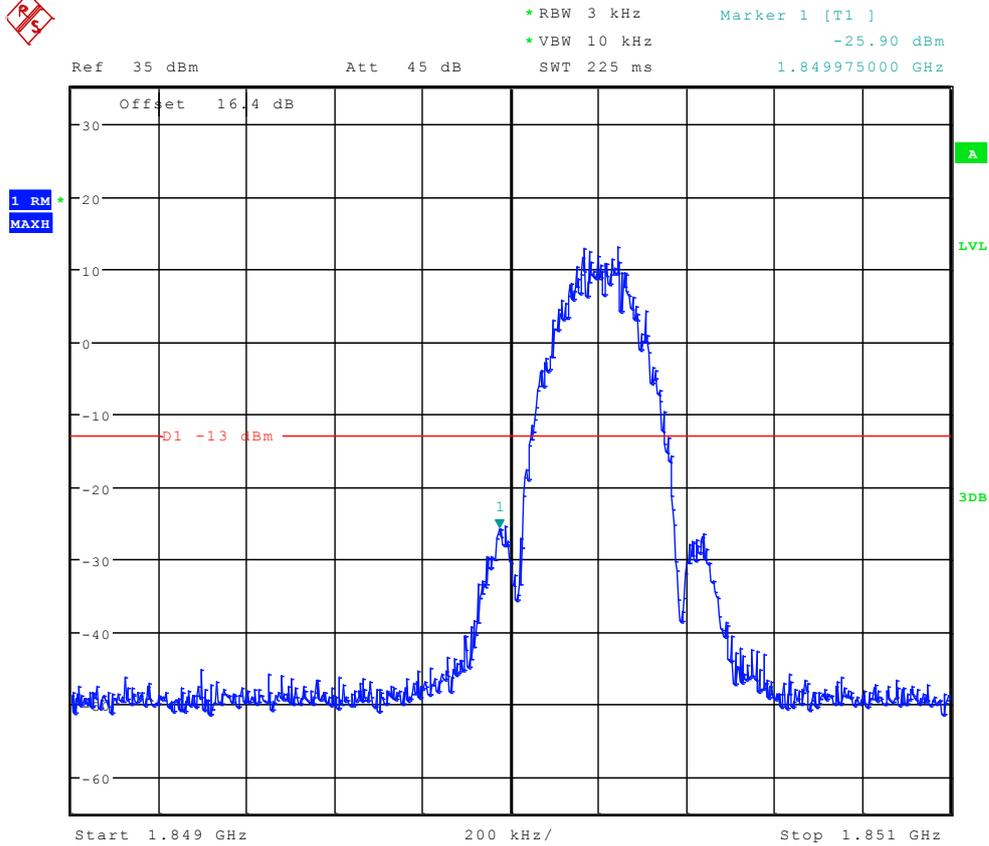




# TM2:EDGE

## Left Edge

### Channel 512

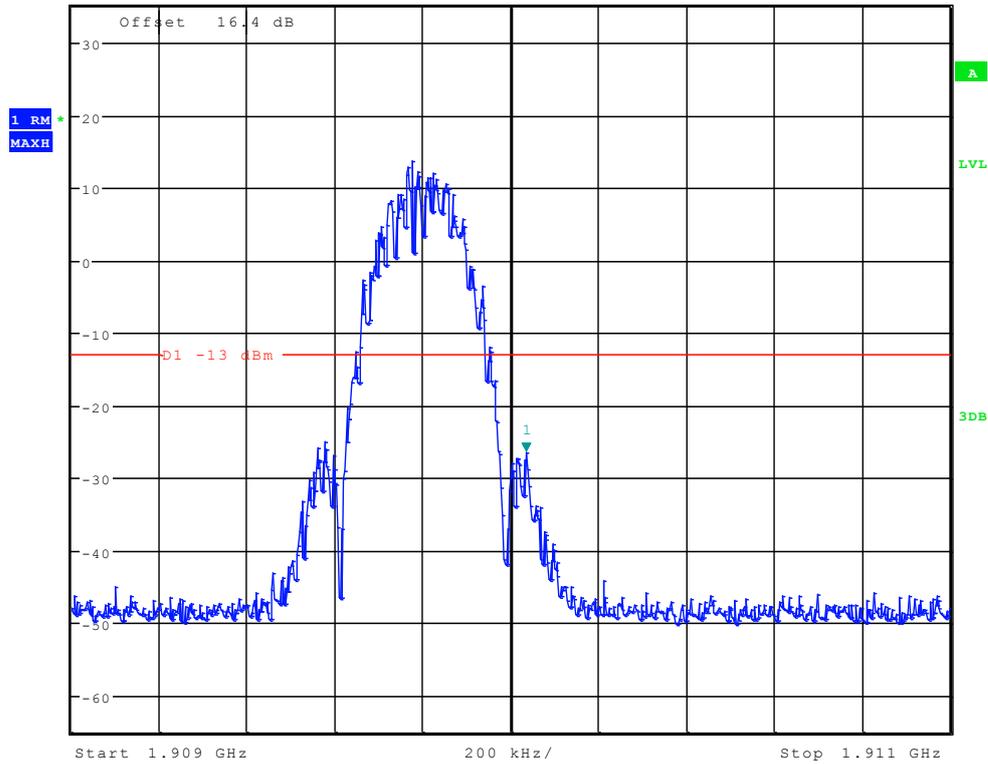




## Right Edge Channel 810



Ref 35 dBm      Att 45 dB      RBW 3 kHz      Marker 1 [T1]      -26.43 dBm  
VBW 10 kHz      1.910035000 GHz  
SWT 225 ms



The END



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## Appendix E

# Spurious Emission at Antenna Terminal

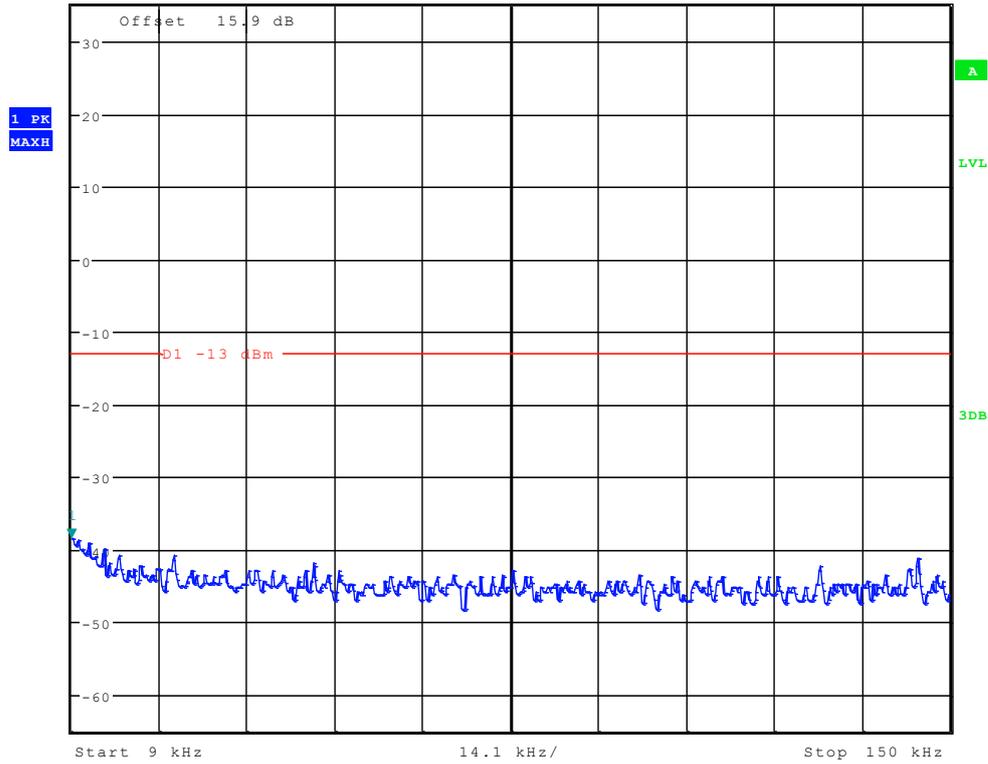
According to FCC Part 2.1051 & Part24 Subpart E



## TM1:GPRS/GSM Channel 512

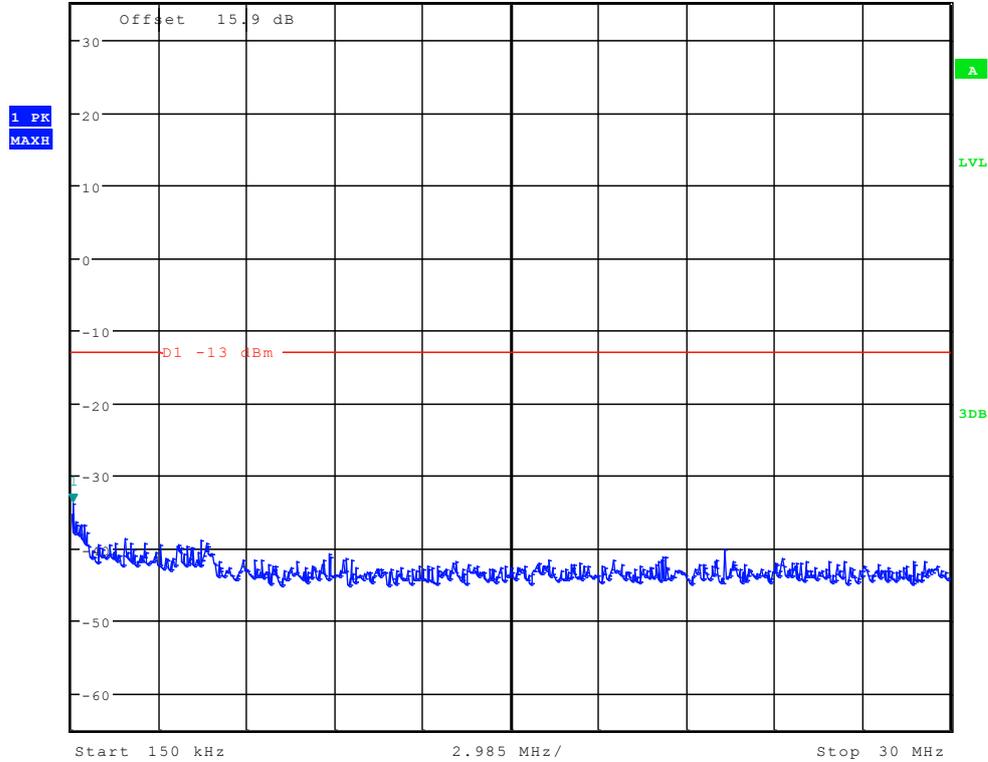


\*RBW 1 kHz                      Marker 1 [T1 ]  
 \*VBW 10 kHz                     -38.38 dBm  
 Ref 35 dBm                      Att 45 dB                      SWT 145 ms                      9.000000000 kHz



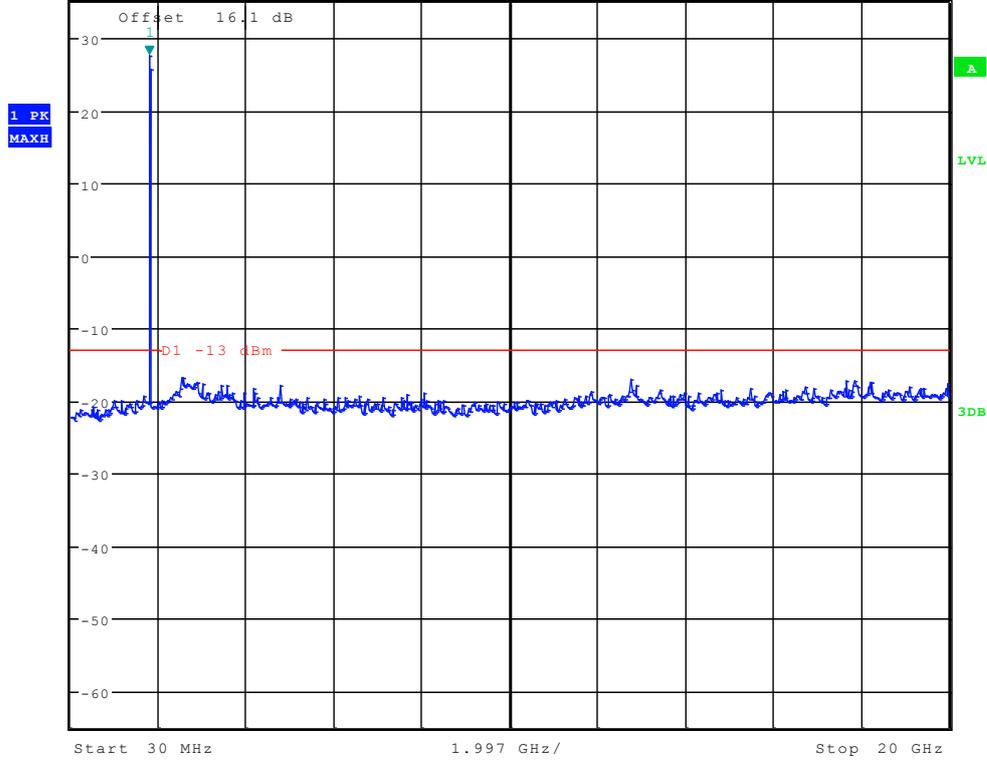


\*RBW 10 kHz      Marker 1 [T1 ]  
 \*VBW 30 kHz      -33.76 dBm  
 Ref 35 dBm      Att 45 dB      SWT 300 ms      197.836538462 kHz



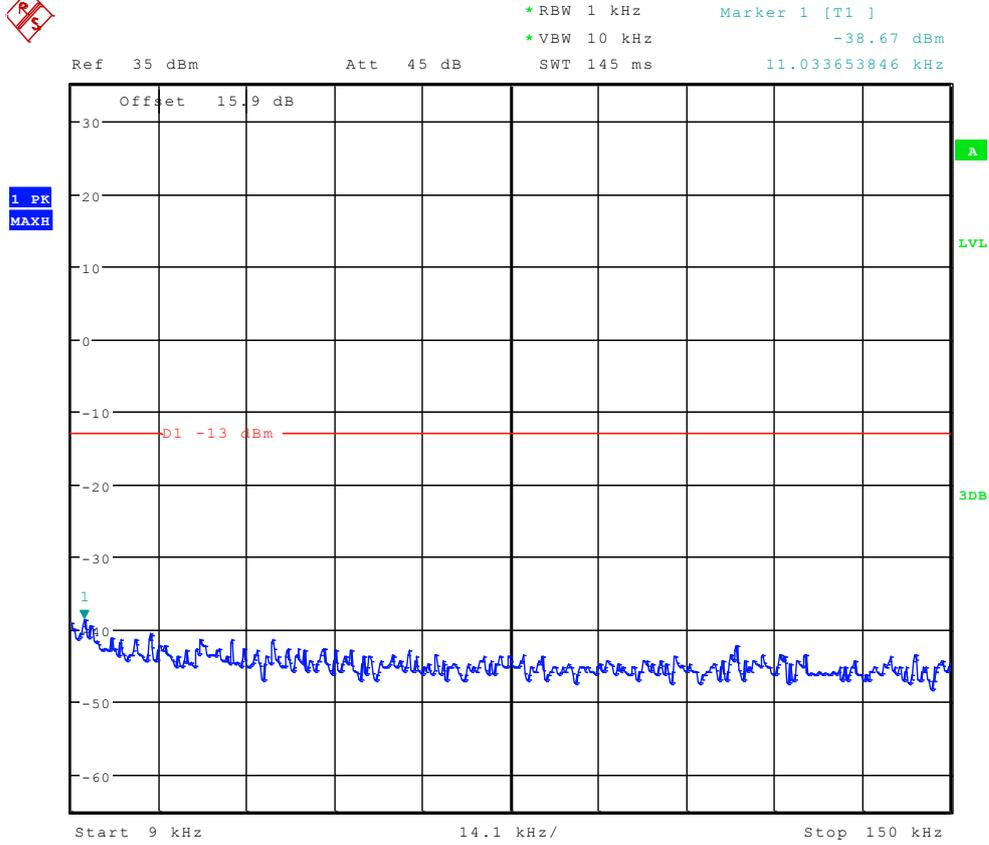


\* RBW 1 MHz      Marker 1 [T1 ]  
\* VBW 3 MHz      27.49 dBm  
Ref 35 dBm      Att 45 dB      SWT 115 ms      1.822179487 GHz



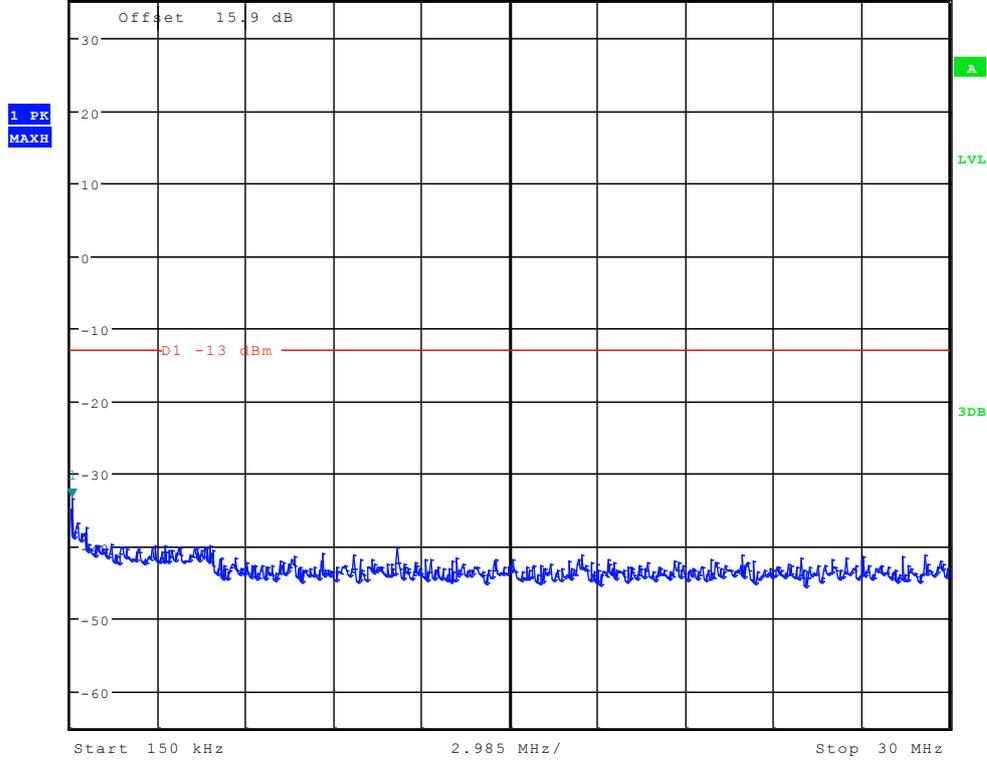


### Channel 661



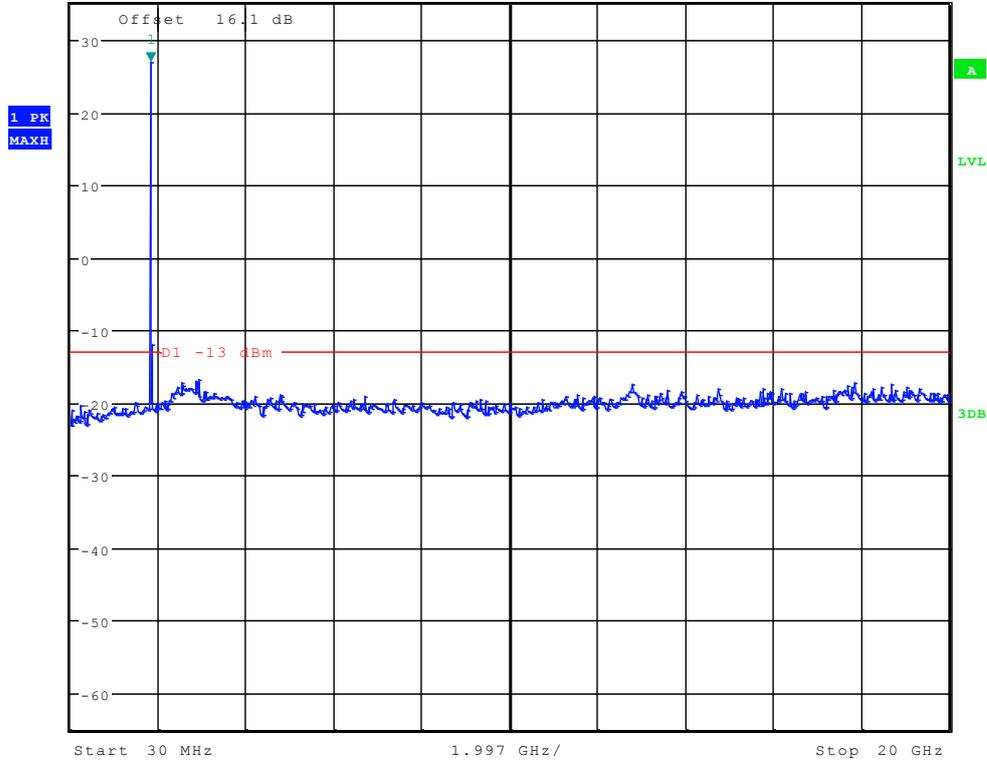


\* RBW 10 kHz      Marker 1 [T1 ]  
 \* VBW 30 kHz      -33.32 dBm  
 Ref 35 dBm      Att 45 dB      SWT 300 ms      197.836538462 kHz





\* RBW 1 MHz      Marker 1 [T1 ]  
 \* VBW 3 MHz      26.87 dBm  
 Ref 35 dBm      Att 45 dB      SWT 115 ms      1.854182692 GHz

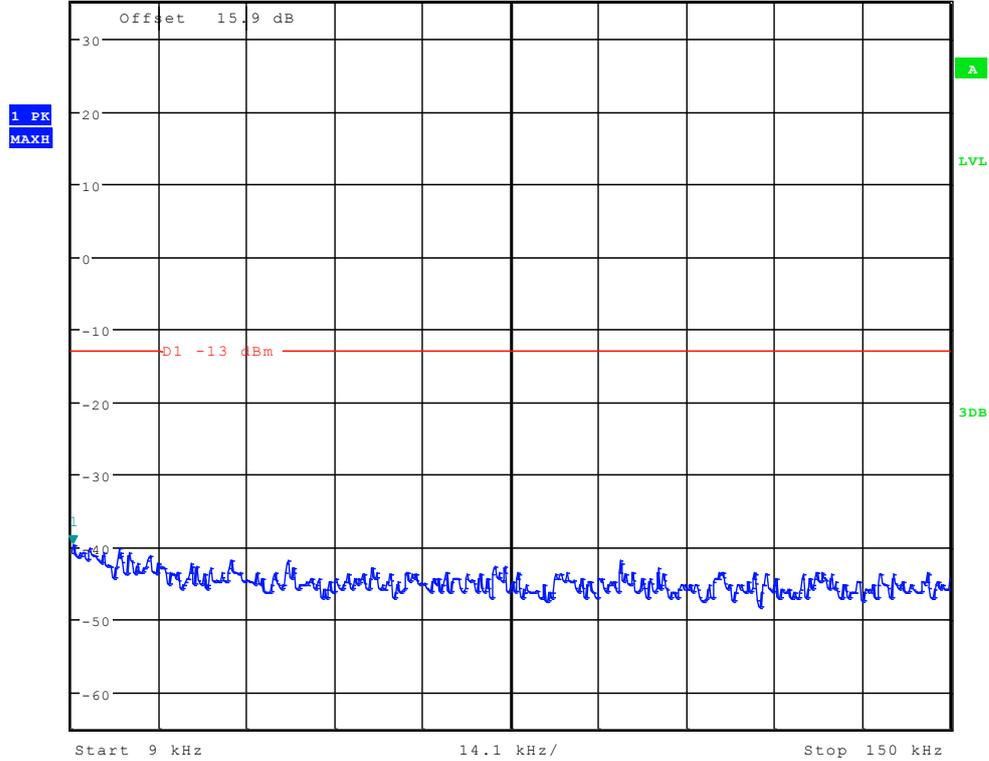




# Channel 810

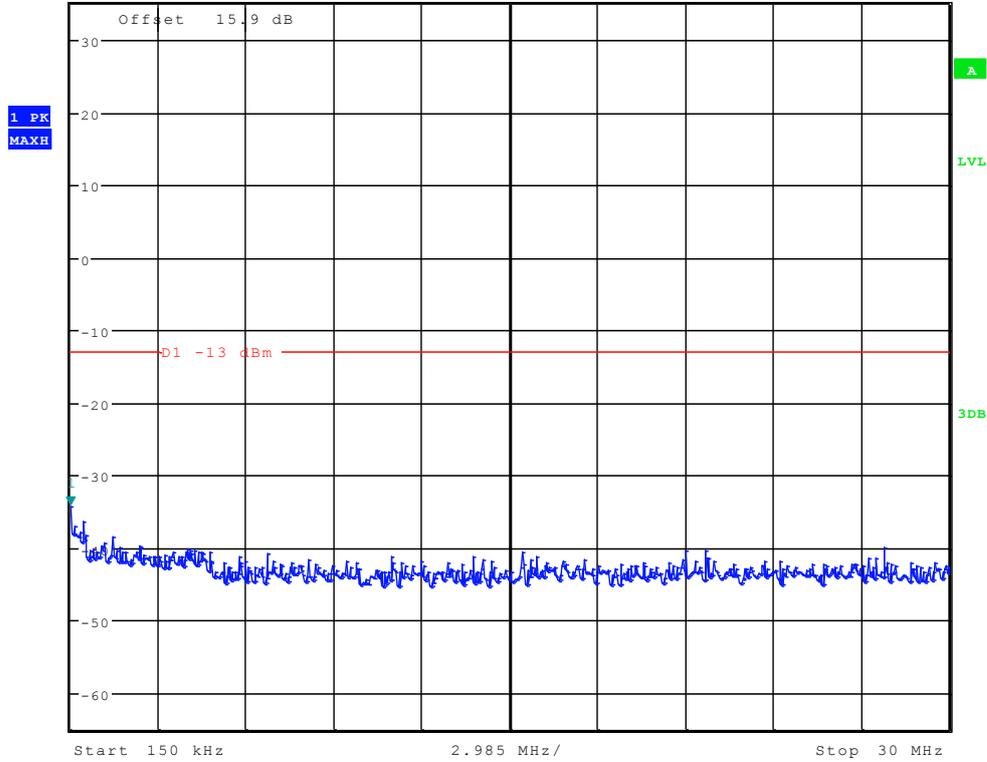


\*RBW 1 kHz      Marker 1 [T1 ]  
 \*VBW 10 kHz      -39.61 dBm  
 Ref 35 dBm      Att 45 dB      SWT 145 ms      9.225961538 kHz



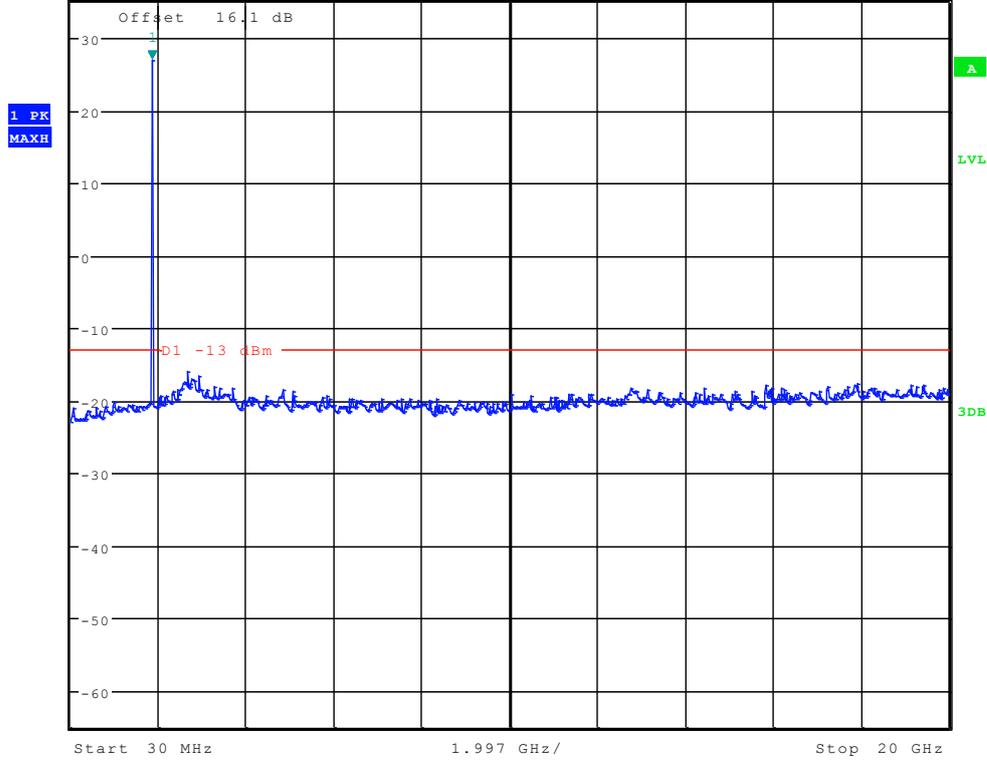


\*RBW 10 kHz      Marker 1 [T1 ]  
 \*VBW 30 kHz      -34.22 dBm  
 Ref 35 dBm      Att 45 dB      SWT 300 ms      150.00000000 kHz





\* RBW 1 MHz      Marker 1 [T1 ]  
\* VBW 3 MHz      26.97 dBm  
Ref 35 dBm      Att 45 dB      SWT 115 ms      1.886185897 GHz

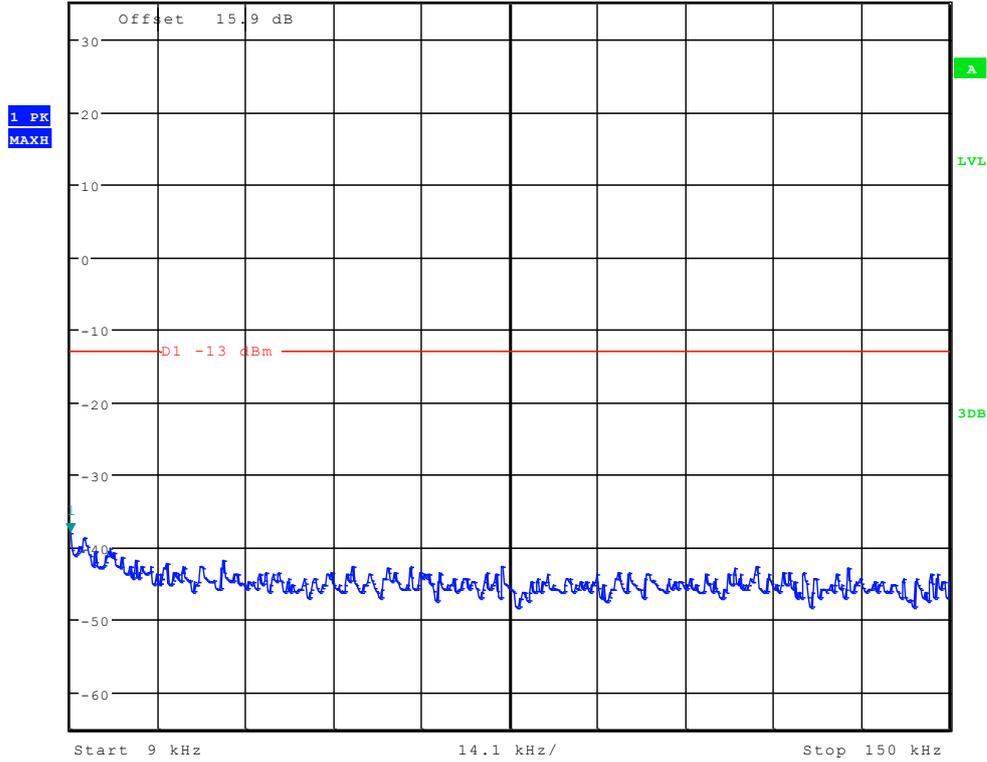




## TM2:EDGE Channel 512

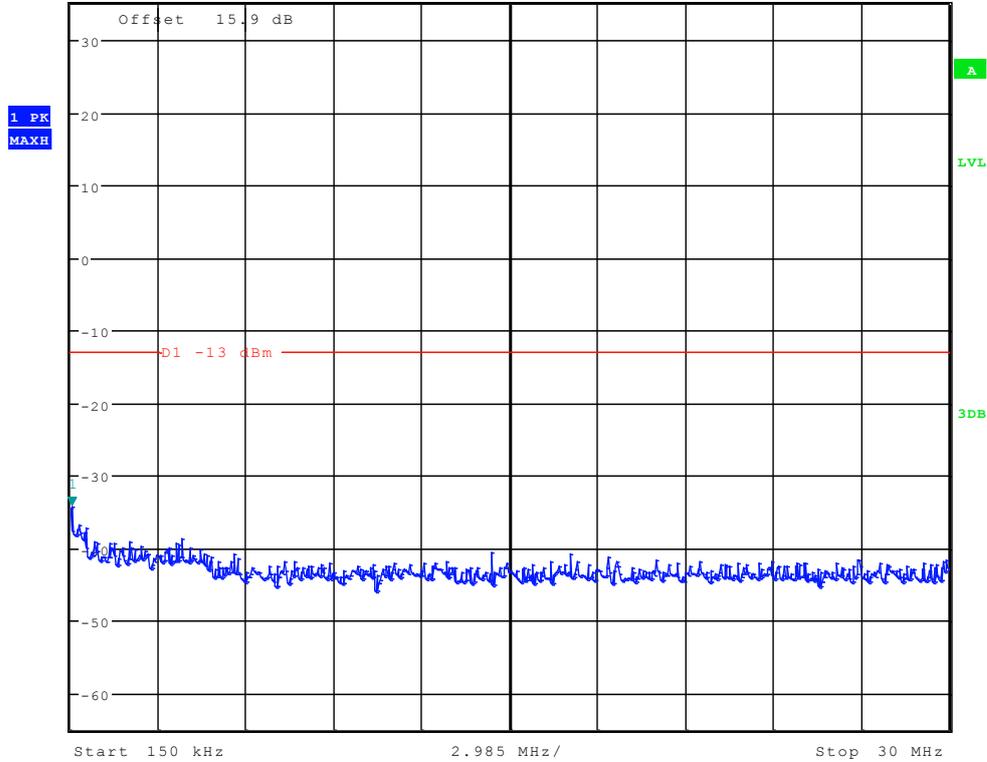


Ref 35 dBm Att 45 dB SWT 145 ms  
 \*RBW 1 kHz \*VBW 10 kHz  
 Marker 1 [T1] -37.92 dBm  
 9.000000000 kHz



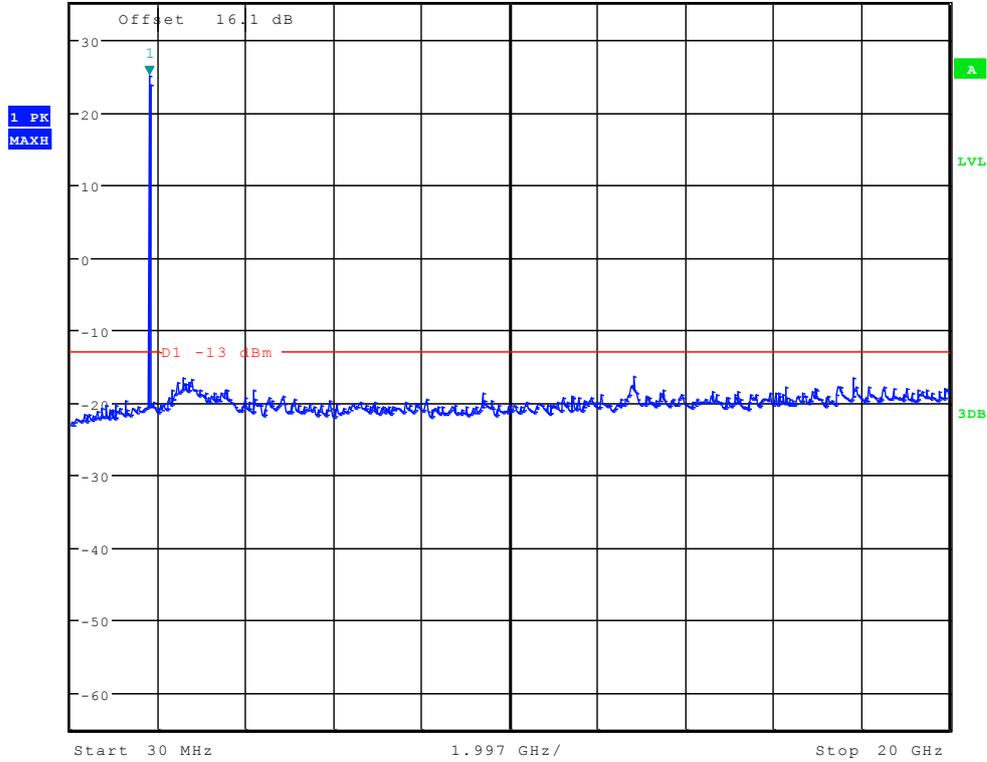


\*RBW 10 kHz      Marker 1 [T1 ]  
 \*VBW 30 kHz      -34.22 dBm  
 Ref 35 dBm      Att 45 dB      SWT 300 ms      197.836538462 kHz





\* RBW 1 MHz      Marker 1 [T1 ]  
\* VBW 3 MHz      24.99 dBm  
Ref 35 dBm      Att 45 dB      SWT 115 ms      1.822179487 GHz

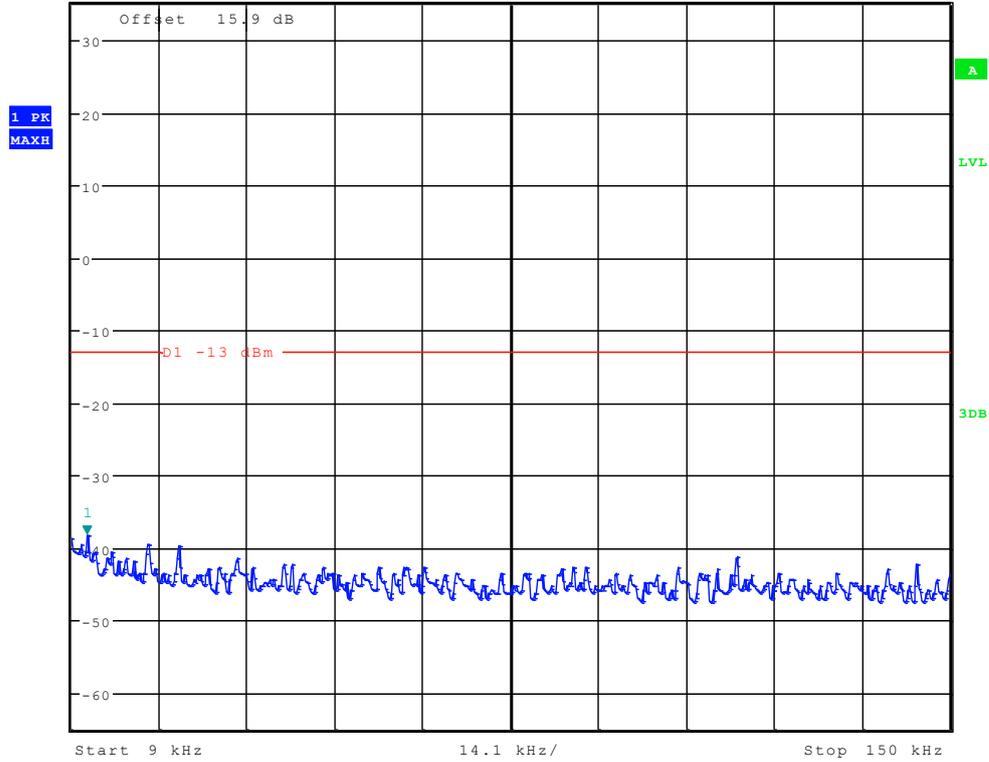




### Channel 661

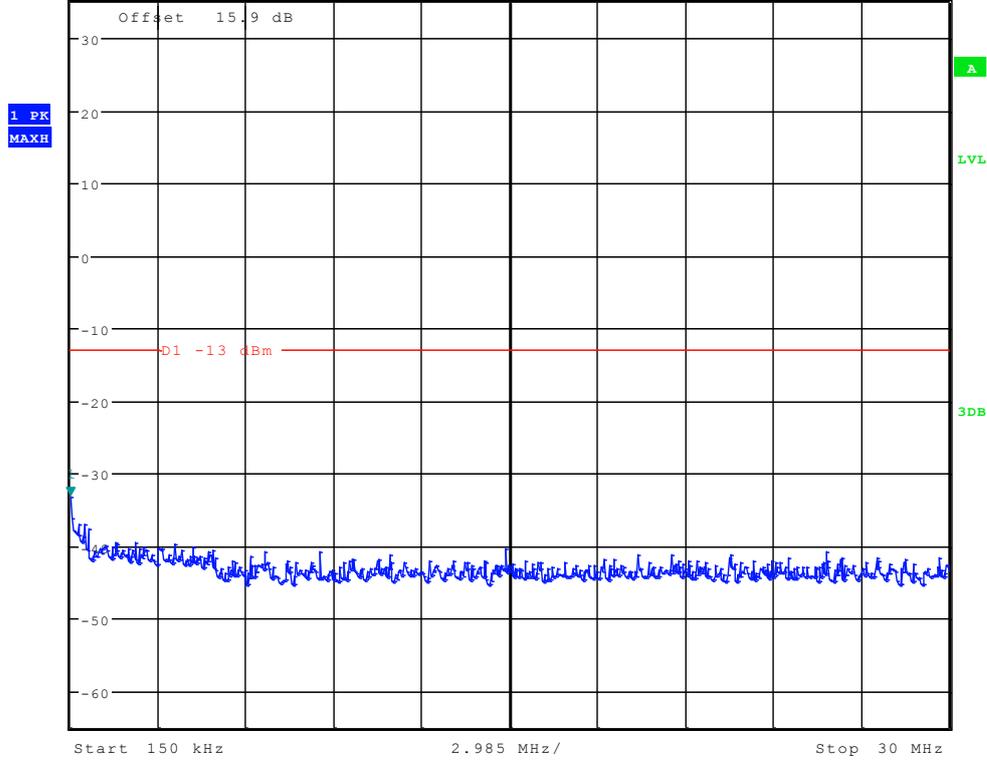


Ref 35 dBm      Att 45 dB      \*RBW 1 kHz      Marker 1 [T1]      -38.19 dBm  
 \*VBW 10 kHz      SWT 145 ms      11.485576923 kHz



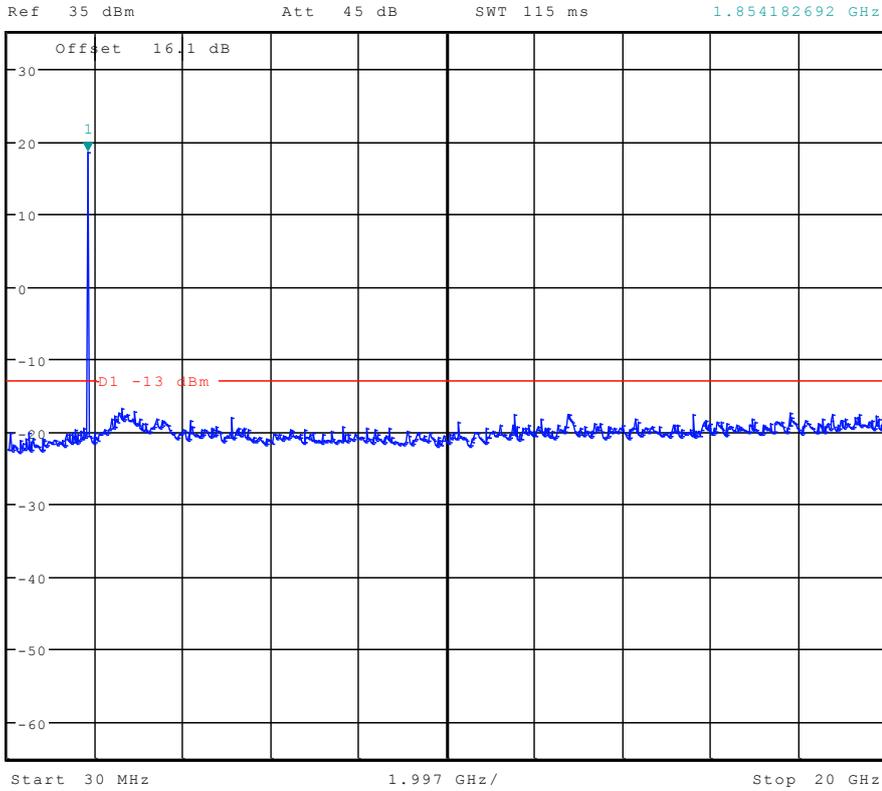


\* RBW 10 kHz      Marker 1 [T1 ]  
 \* VBW 30 kHz      -33.11 dBm  
 Ref 35 dBm      Att 45 dB      SWT 300 ms      150.00000000 kHz





\*RBW 1 MHz      Marker 1 [T1 ]  
\*VBW 3 MHz      18.41 dBm  
SWT 115 ms      1.854182692 GHz

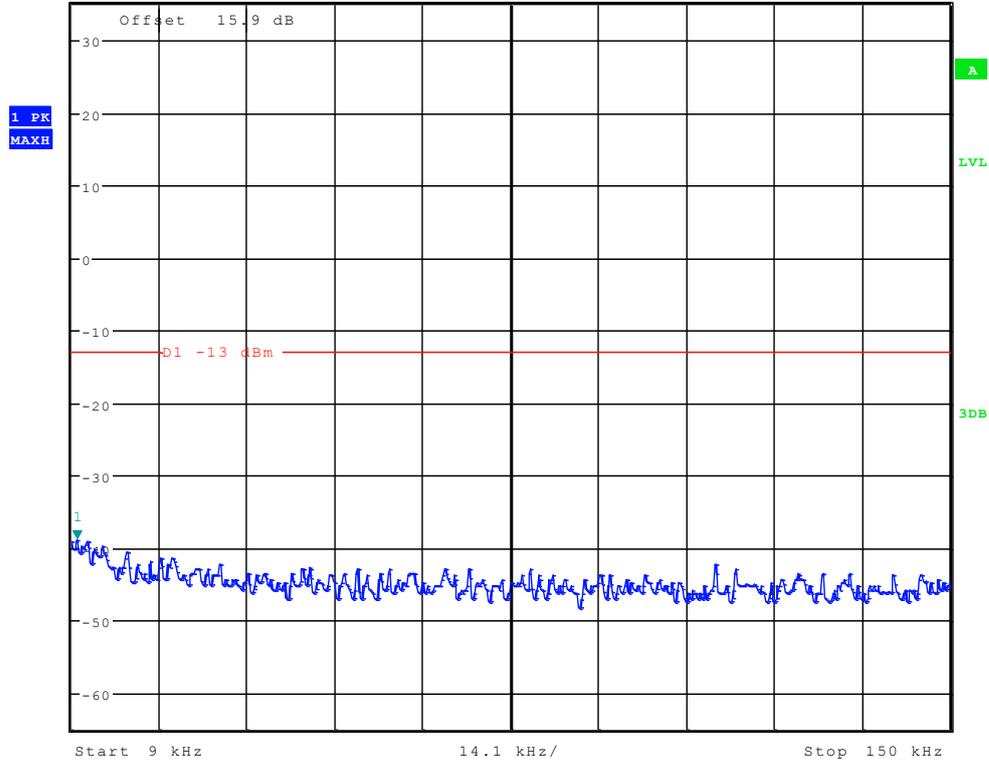




### Channel 810

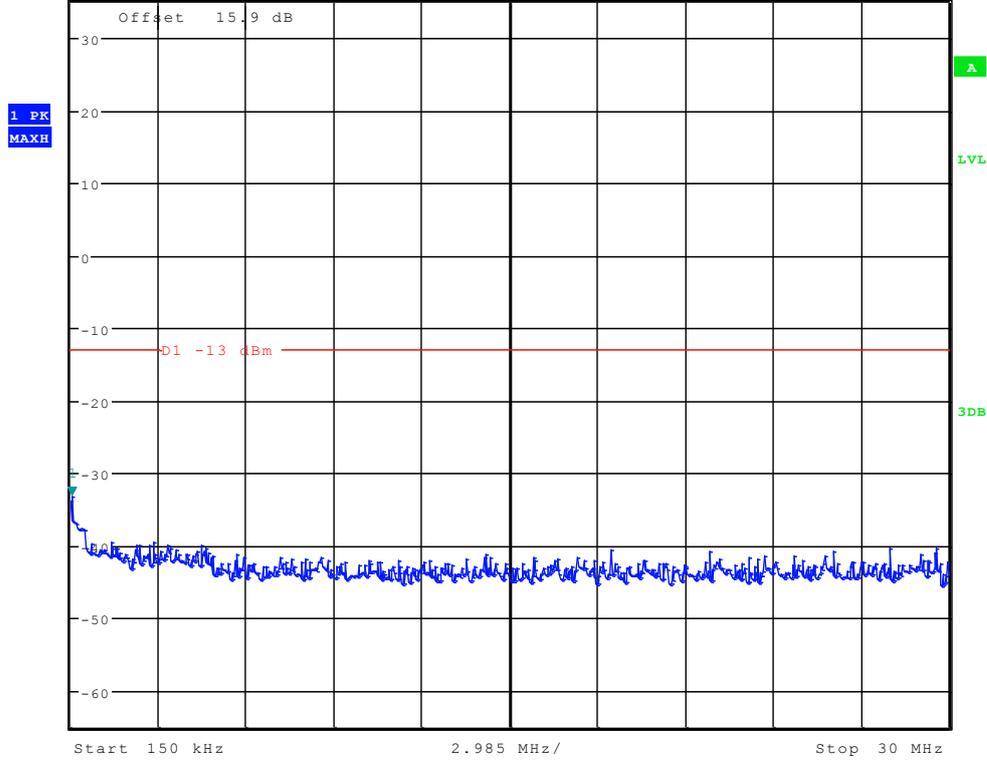


Ref 35 dBm      Att 45 dB      \*RBW 1 kHz      Marker 1 [T1]      -38.87 dBm  
 \*VBW 10 kHz      SWT 145 ms      9.903846154 kHz



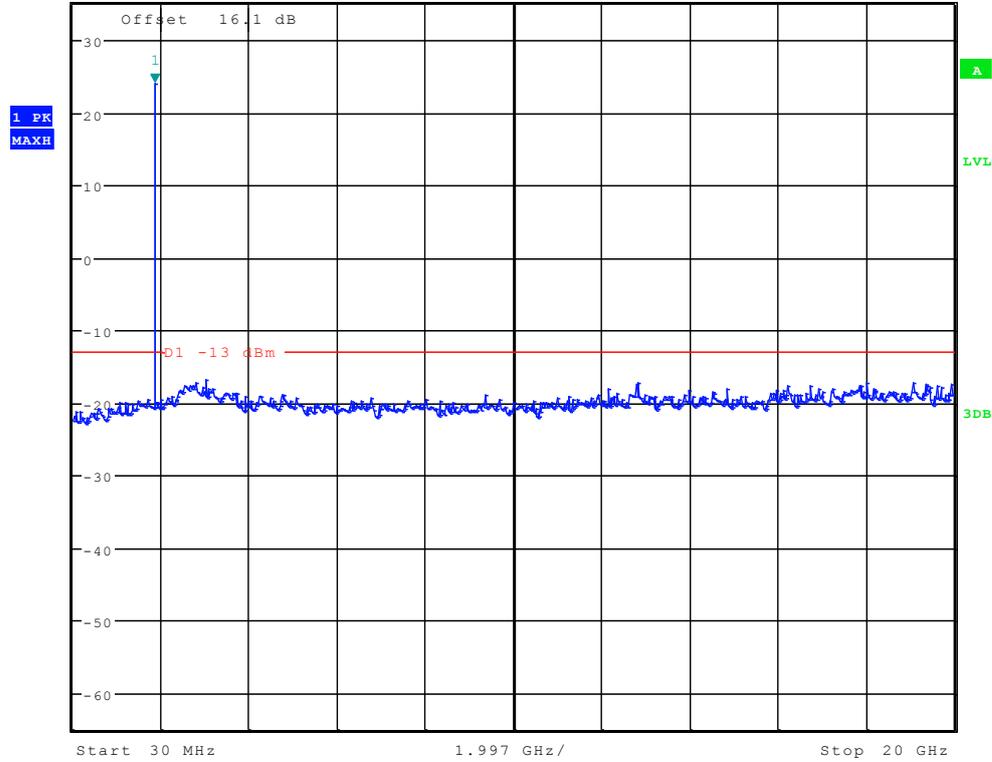


\* RBW 10 kHz      Marker 1 [T1 ]  
 \* VBW 30 kHz      -33.27 dBm  
 Ref 35 dBm      Att 45 dB      SWT 300 ms      197.836538462 kHz





\* RBW 1 MHz      Marker 1 [T1 ]  
 \* VBW 3 MHz      23.98 dBm  
 Ref 35 dBm      Att 45 dB      SWT 115 ms      1.886185897 GHz



The END



# Appendix F

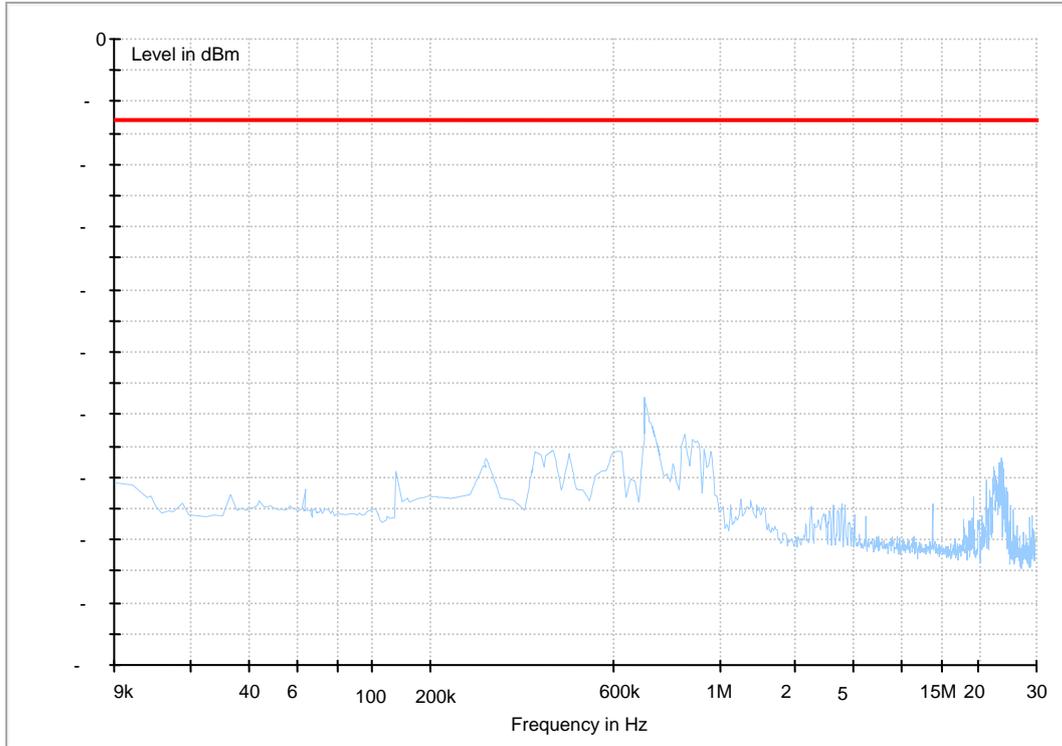
## Radiated spurious emission

According to FCC Part 2.1053& Part 24.238



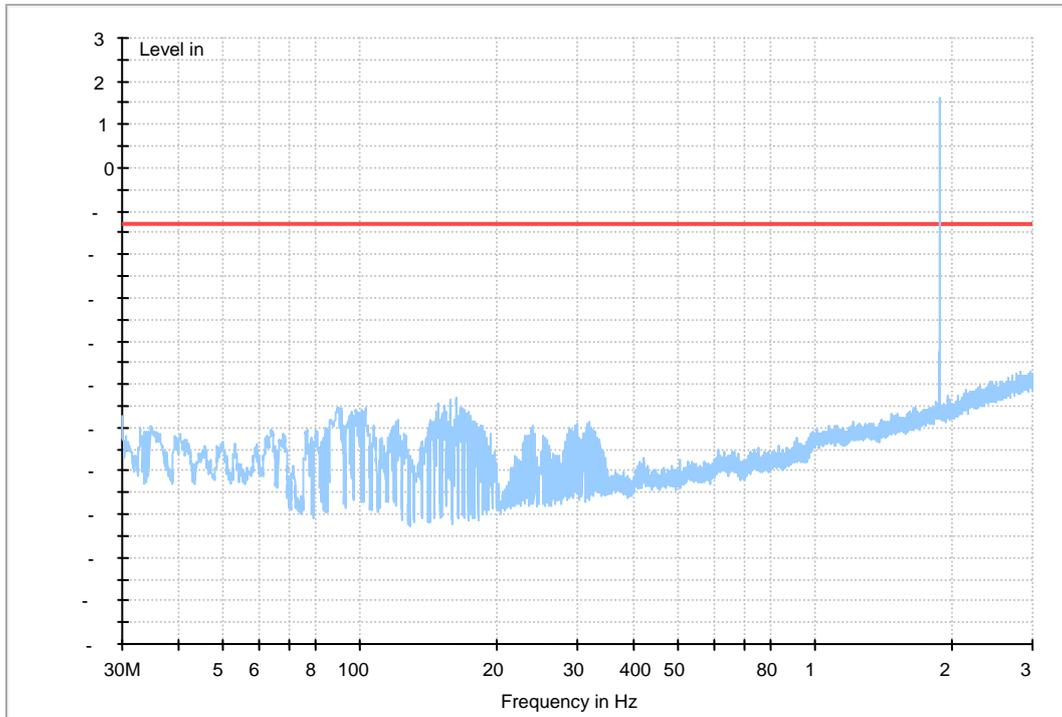
## GSM 1900

(9 kHz-30MHz)



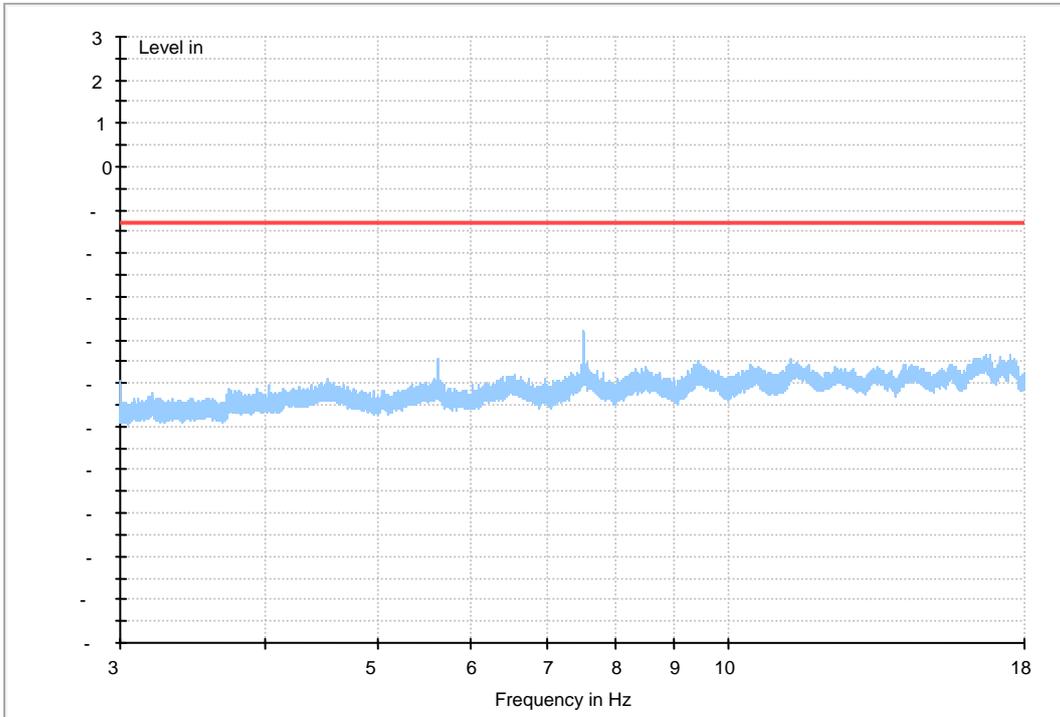


**(30MHz~3GHz)**



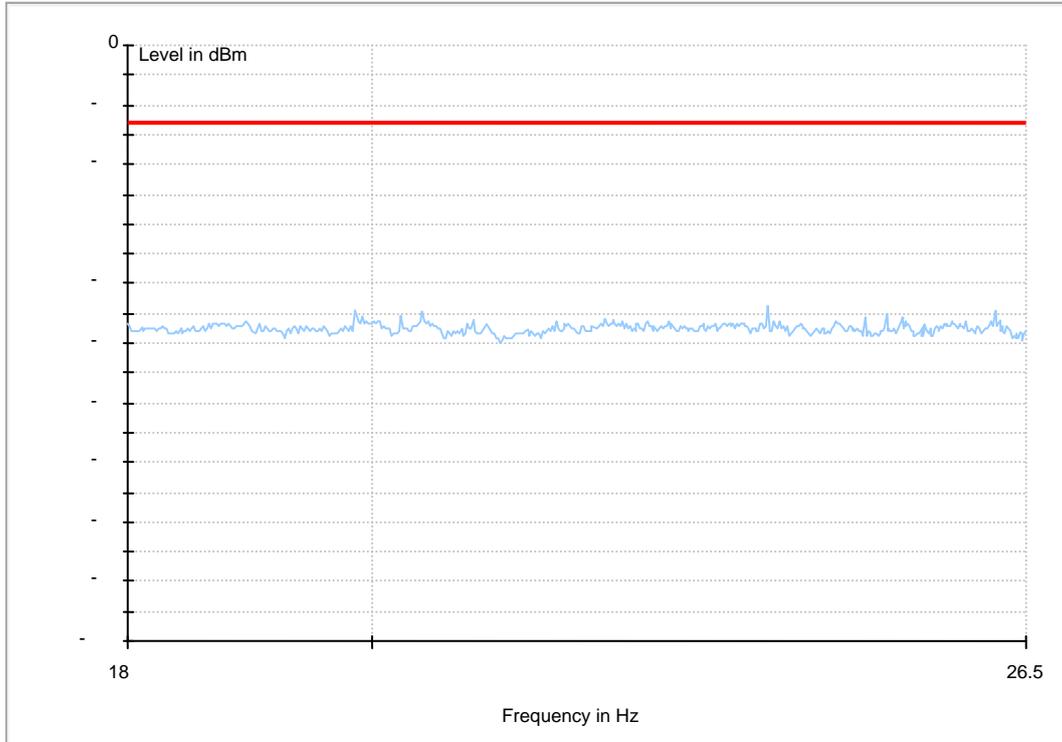


**(3GHz~18GHz)**





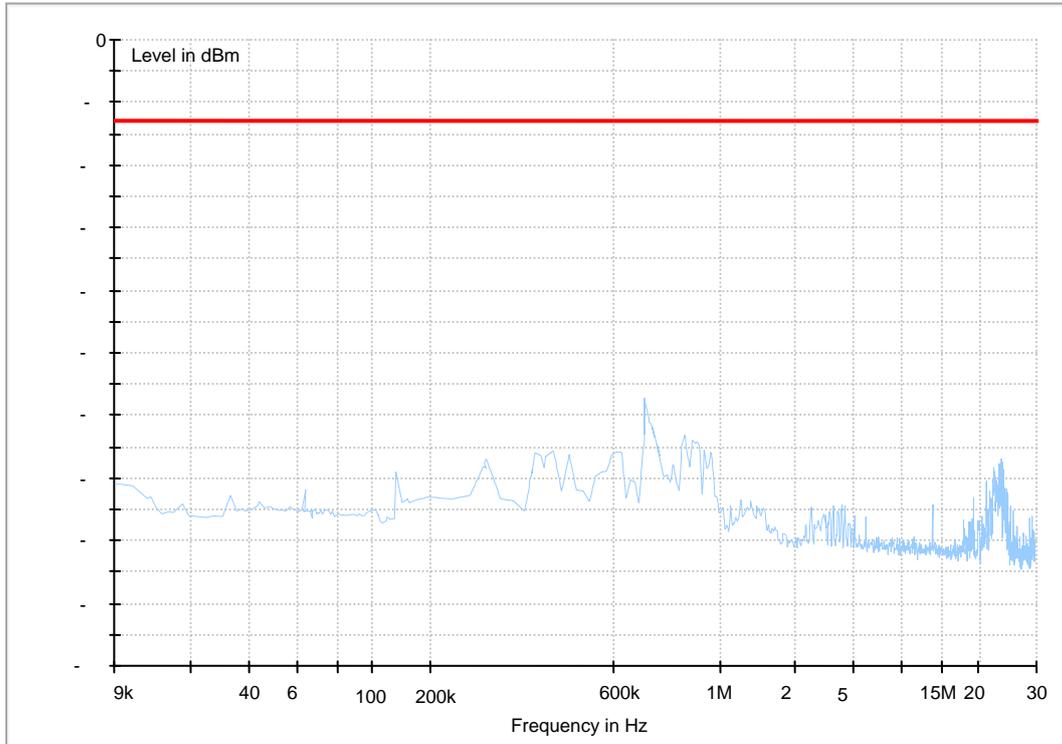
**(18GHz-26.5GHz)**





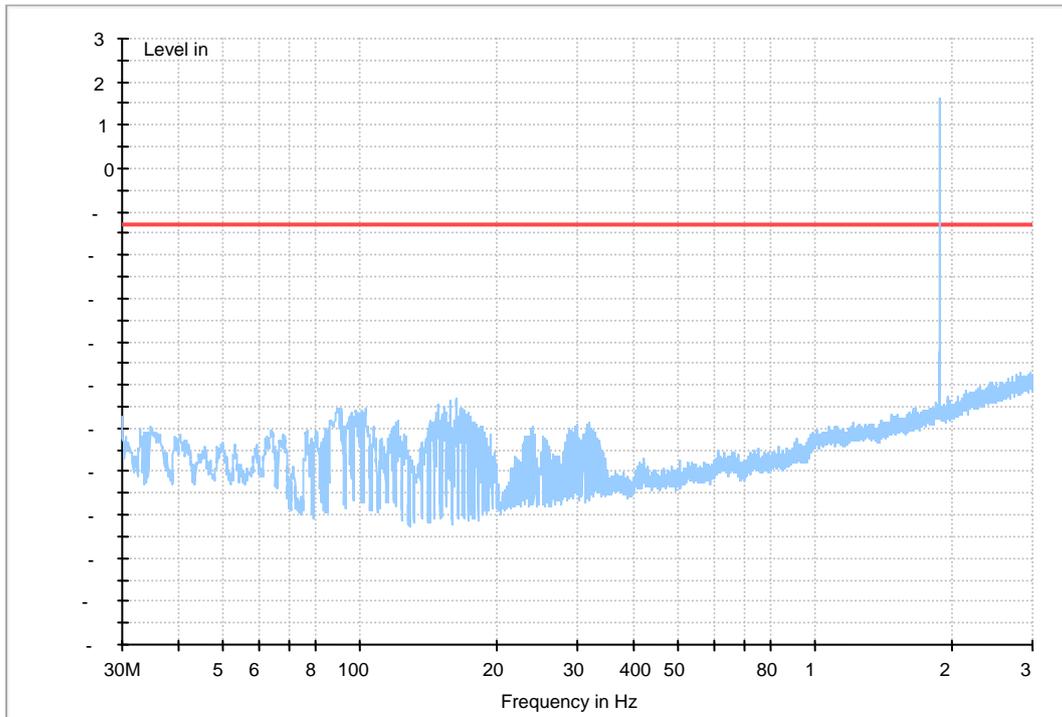
## GPRS 1900

(9kHz-30MHz)



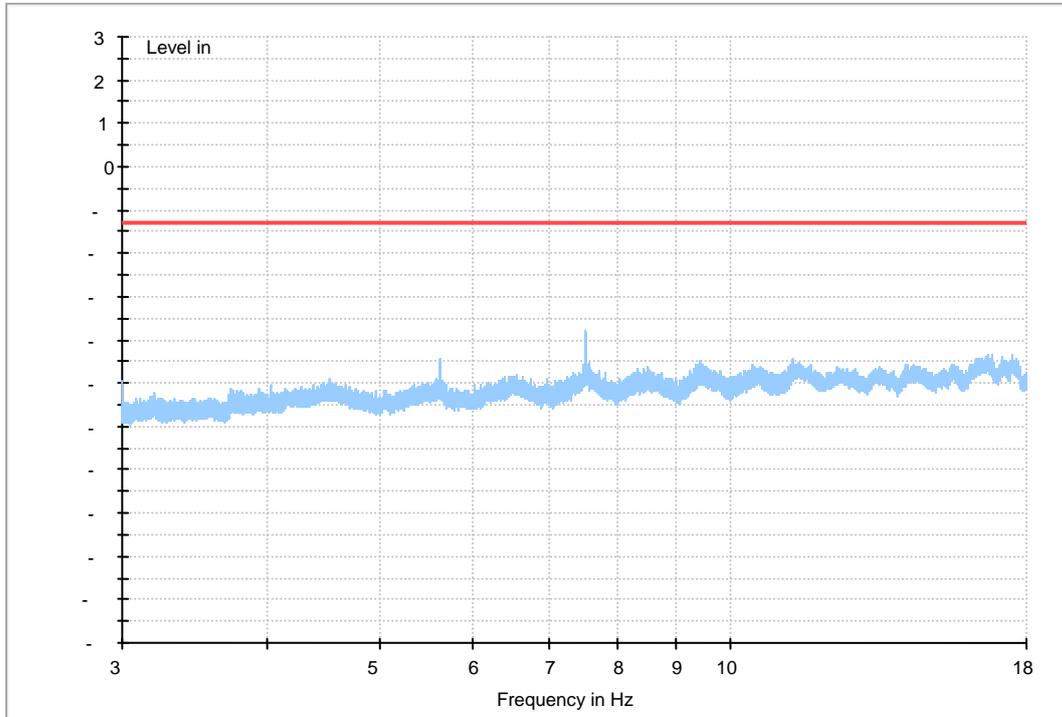


**(30MHz~3GHz)**



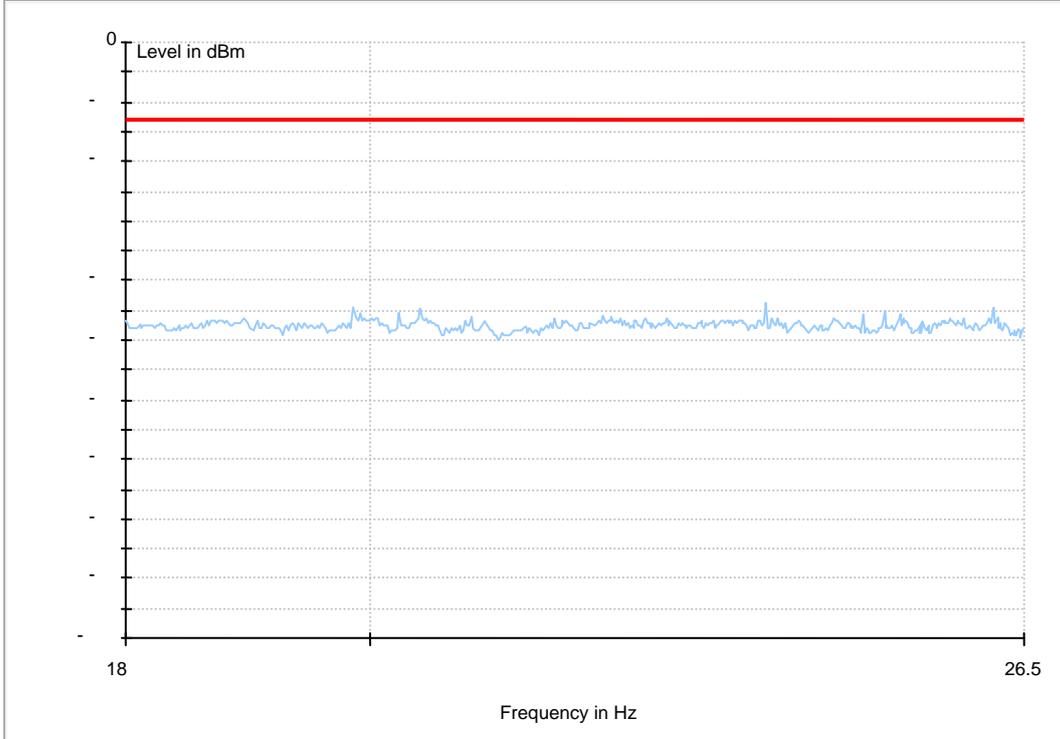


**(3GHz~18GHz)**





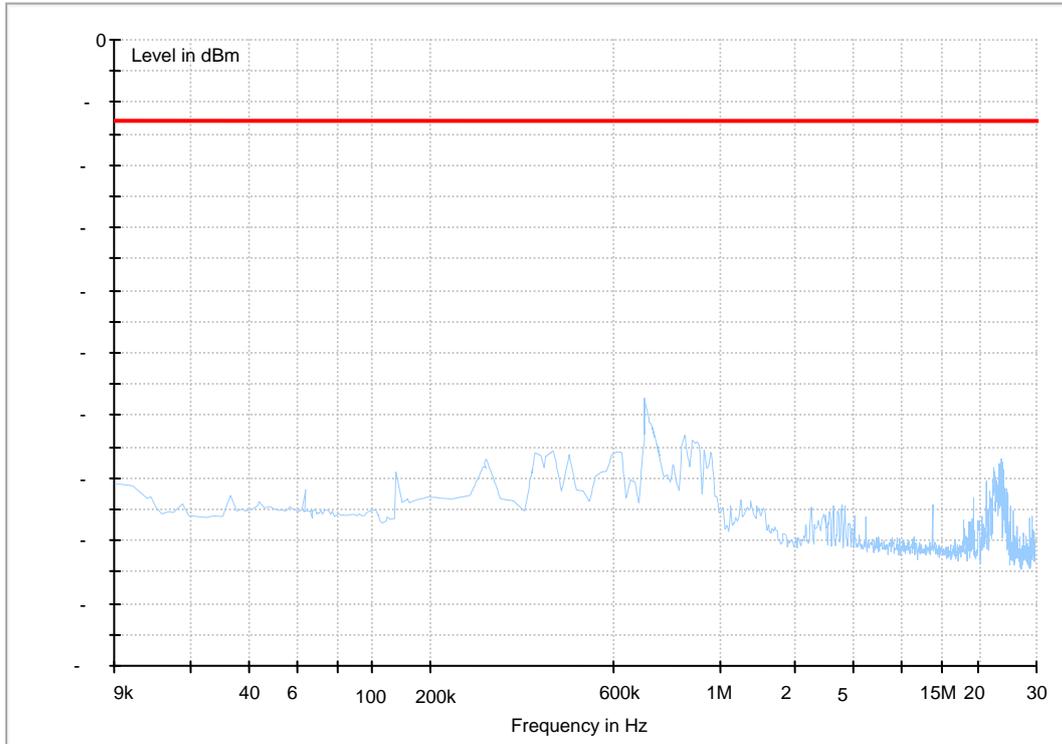
**(18GHz-26.5GHz)**





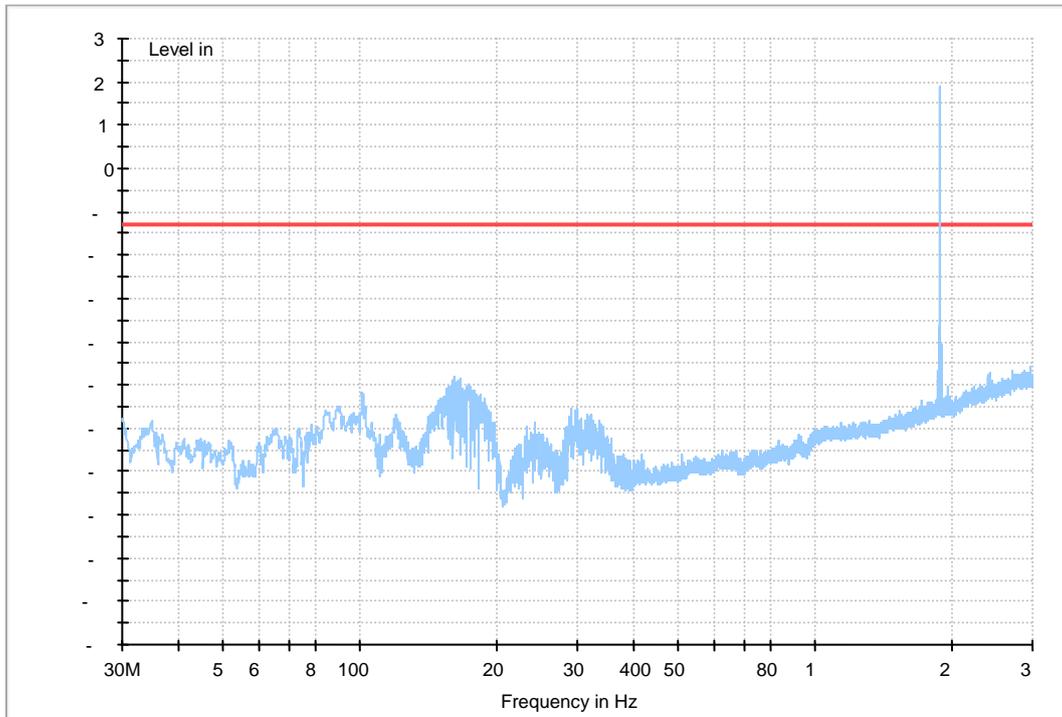
## EDGE 1900

(9kHz-30MHz)



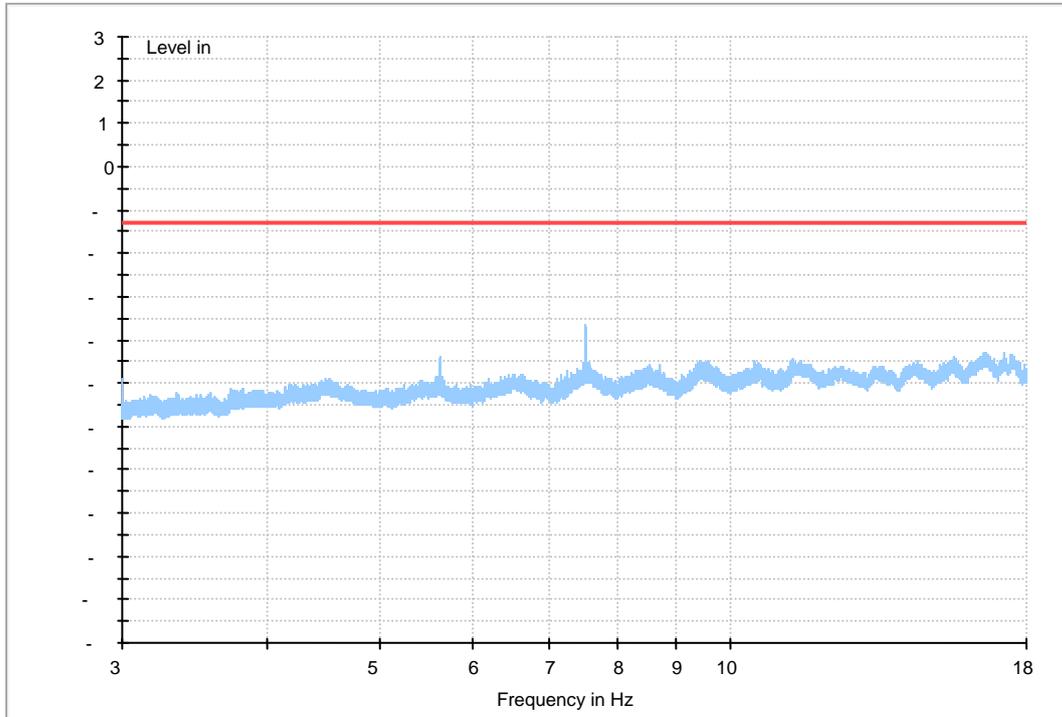


**(30MHz~3GHz)**



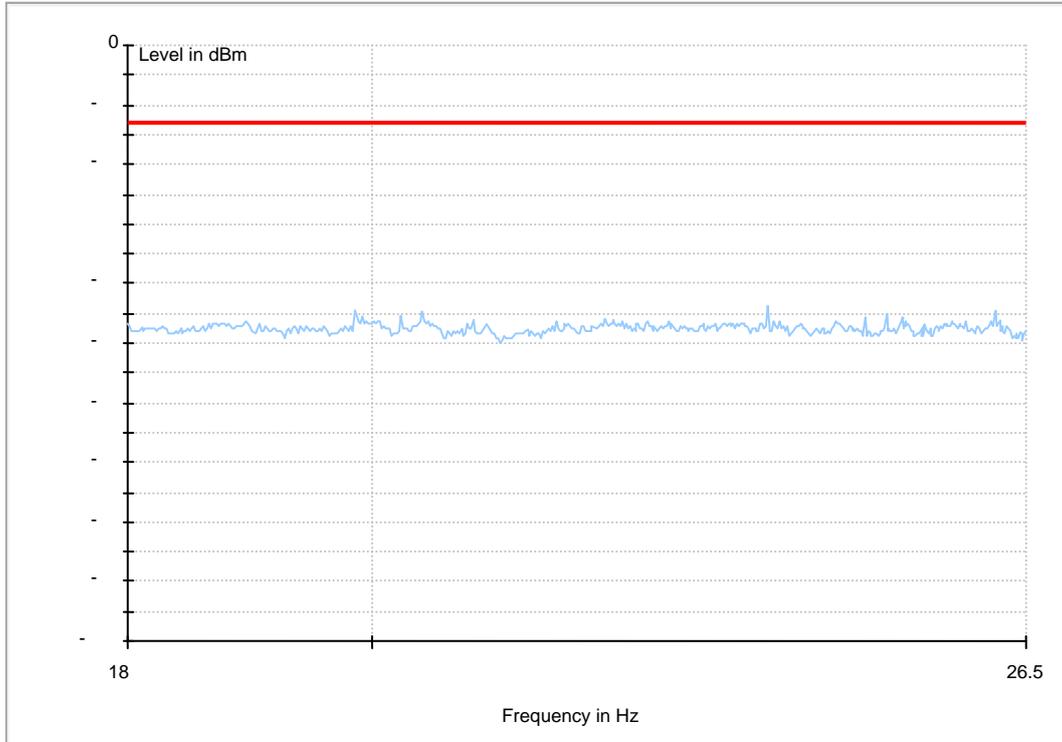


**(3GHz~18GHz)**





**(18GHz-26.5GHz)**



The END



## Appendix G

# 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	17	0.00904	---	±2.5	Pass
			-20 °C	20	0.01064	---	±2.5	Pass
			-10 °C	-11	-0.00585	---	±2.5	Pass
			0 °C	13	0.00691	---	±2.5	Pass
			10 °C	22	0.01170	---	±2.5	Pass
			20 °C	-8	-0.00426	---	±2.5	Pass
			30 °C	-10	-0.00532	---	±2.5	Pass
			40 °C	15	0.00798	---	±2.5	Pass
			50 °C	-15	-0.00798	---	±2.5	Pass
TM 2	M	VN	-30 °C	11	0.00585	---	±2.5	Pass
			-20 °C	-12	-0.00638	---	±2.5	Pass
			-10 °C	15	0.00798	---	±2.5	Pass
			0 °C	-17	-0.00904	---	±2.5	Pass
			10 °C	12	0.00638	---	±2.5	Pass
			20 °C	12	0.00638	---	±2.5	Pass
			30 °C	-10	-0.00532	---	±2.5	Pass
			40 °C	9	0.00479	---	±2.5	Pass
			50 °C	11	0.00585	---	±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	-0.00904	---	±2.5	Pass
			VN	20	0.01064	---	±2.5	Pass
			VH	13	0.00691	---	±2.5	Pass
TM 2	M	20 °C	VL	11	0.00585	---	±2.5	Pass
			VN	-11	-0.00585	---	±2.5	Pass
			VH	14	0.00745	---	±2.5	Pass

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