



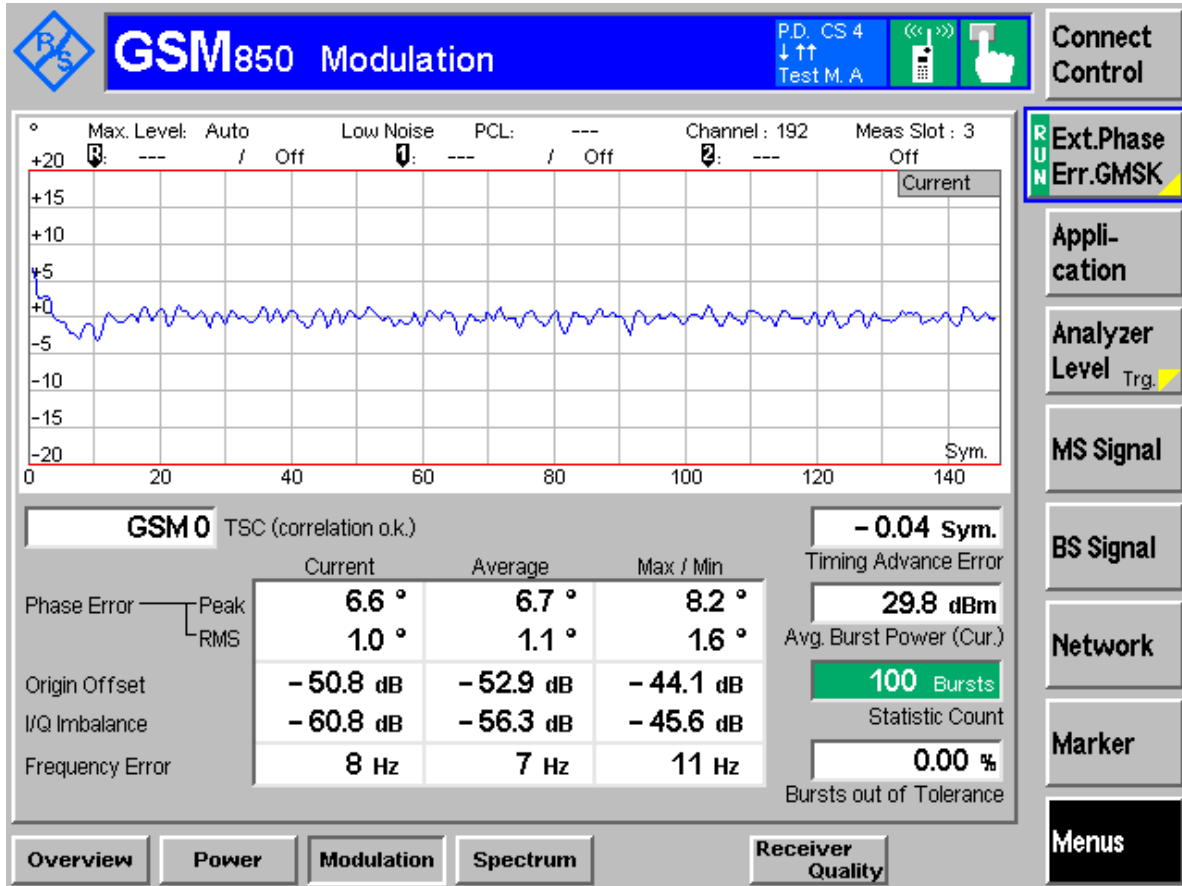
# Appendix A

## Modulation Characteristics

According to FCC Part 2.1047 & Part22 Subpart H  
& RSS-132

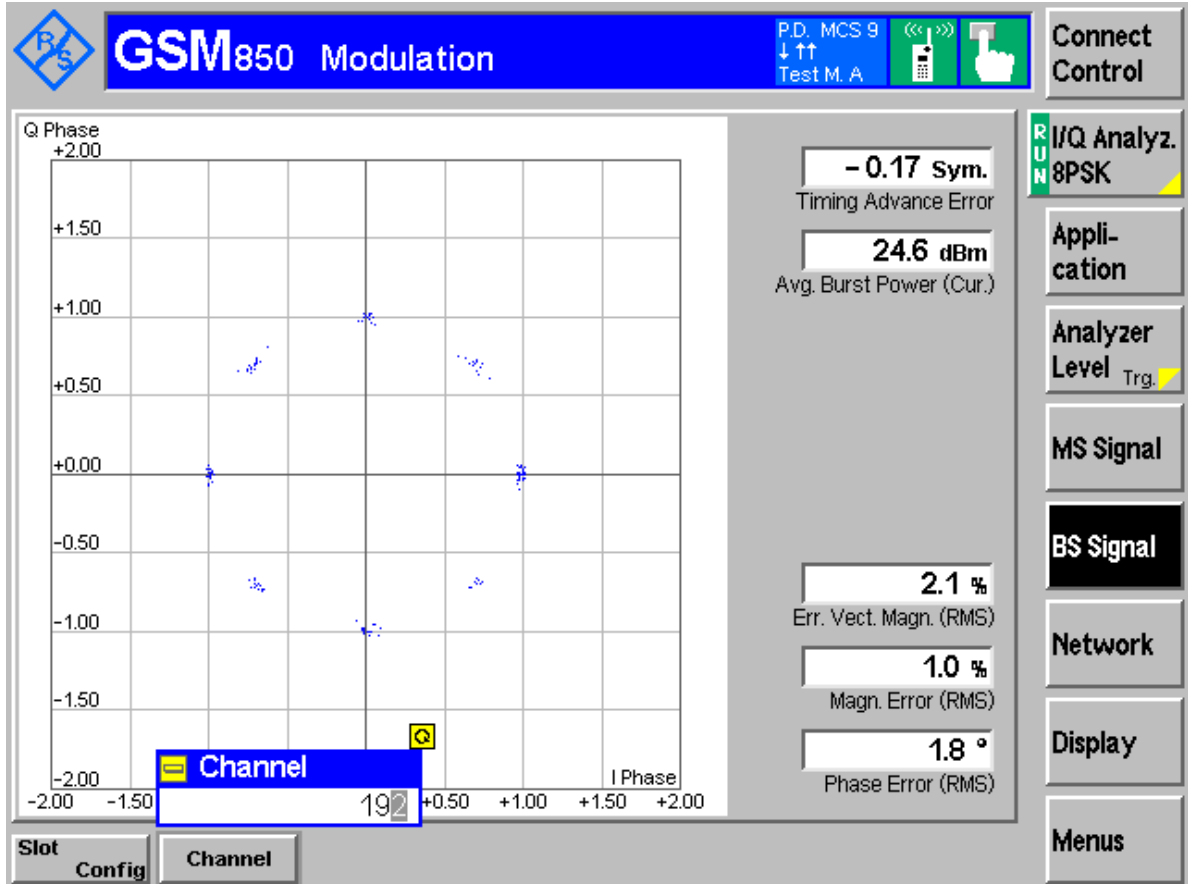


## TM1:GPRS/GSM Channel 192





# TM2:EDGE Channel 192





# TM3: WCDMA Channel 4182

**WCDMA FDD** Band **V** Modulation

CM OFF HSUPA HSDPA

Connect Control

Measurement Length: 2560 Chip

Q Phase

I Phase

RF Channel: 4182

Err. Vect. Magn. (RMS): 3.2 %

Magn. Error (RMS): 1.8 %

Phase Error (RMS): 1.5 °

Slot Number: 0

UE Power: 22.17 dBm

I/Q Origin Offset: -39.85 dB

I/Q Imbalance: -42.03 dB

RF Channel RF Frequency RF Freq.Offset Release 5 Guard Per.

I/Q Analyz. WCDMA

Applic. 1 Applic. 2

Analyzer Lev. Trigg.

Ana.Set. UE Signal

HSDPA HSUPA BS Sig. Lvl.

BS Signal Settings

Display

Menus



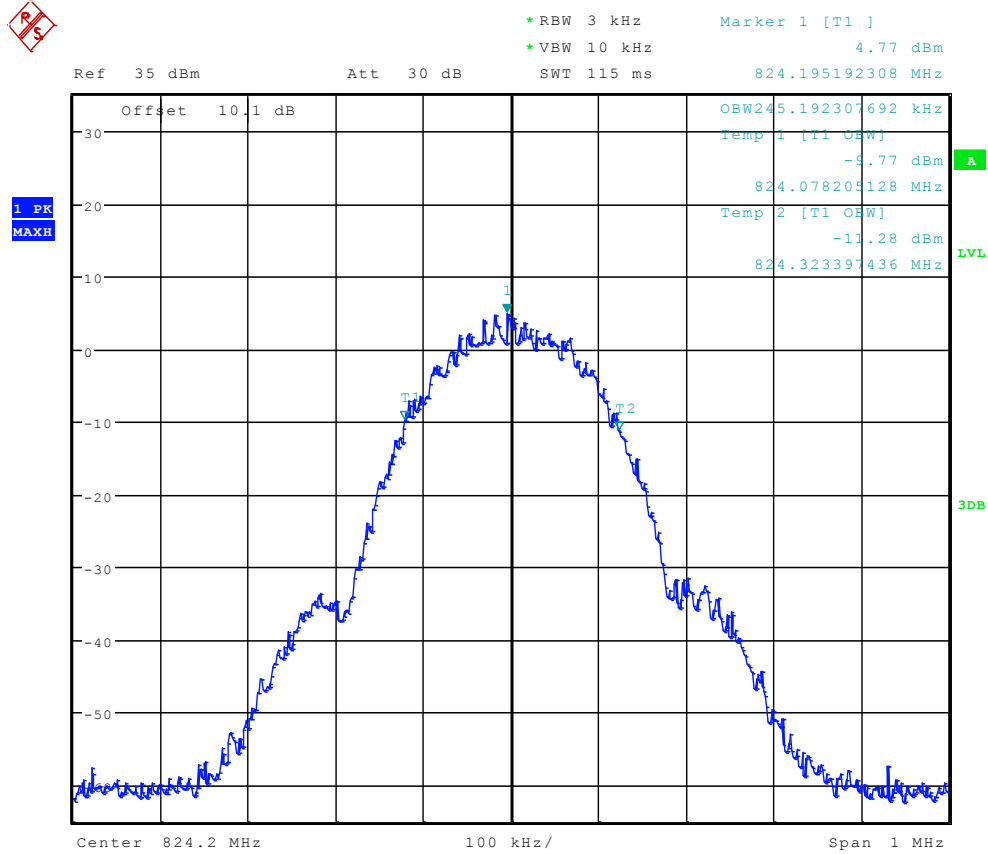
## **Appendix B**

# Occupied Bandwidth

According to FCC Part 2.1049 & Part 22 Subpart H  
& RSS-132

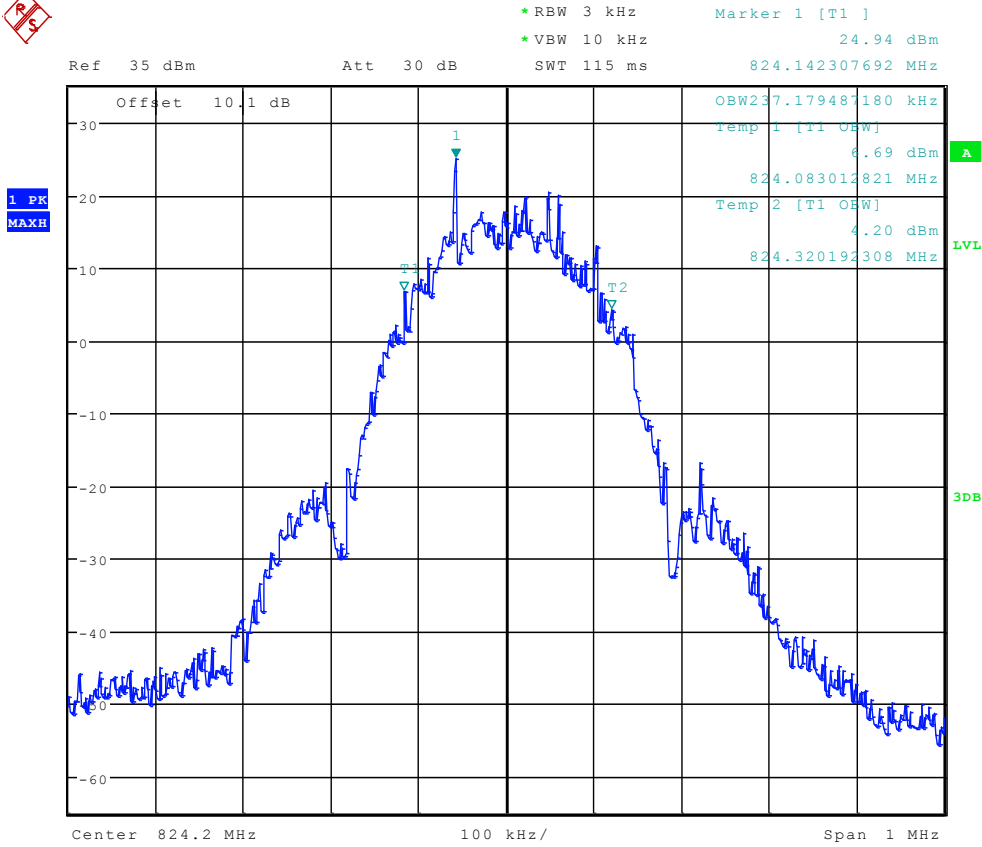


## Channel 128 (TM1:GPRS/GSM)





# Channel 128 (TM2:EDGE)

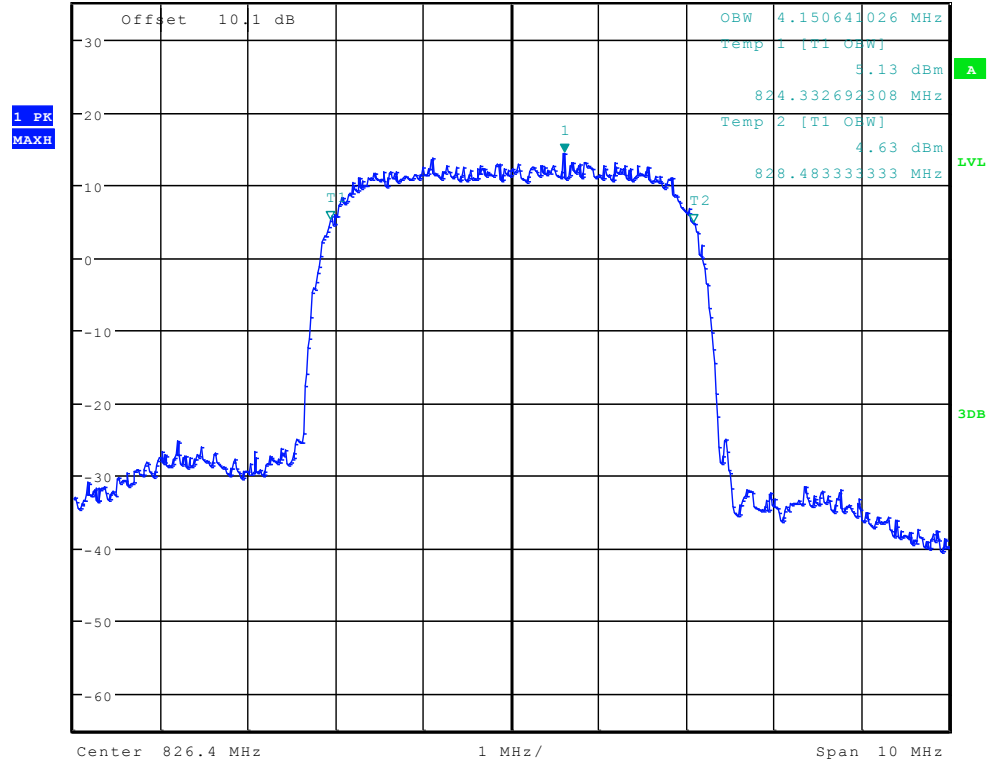




## Channel 4132 (TM3: WCDMA)



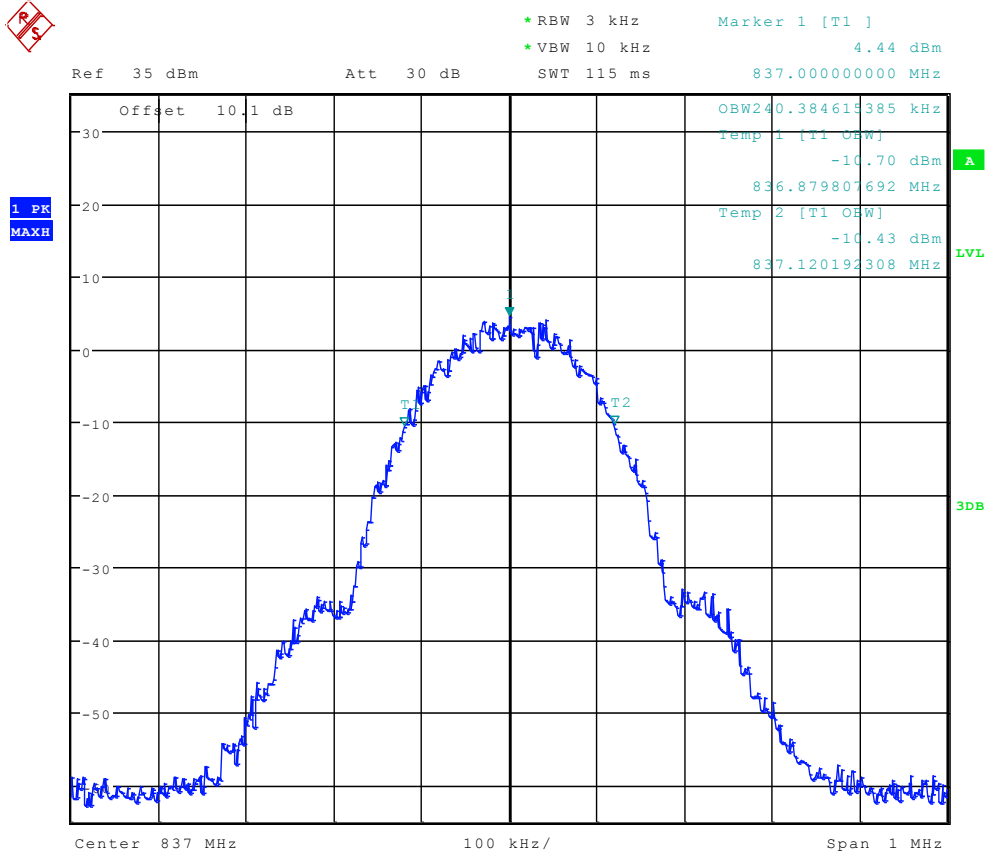
\*RBW 50 kHz      Marker 1 [T1 ]  
 \*VBW 500 kHz      14.29 dBm  
 Ref 35 dBm      Att 30 dB      SWT 5 ms      827.008974359 MHz





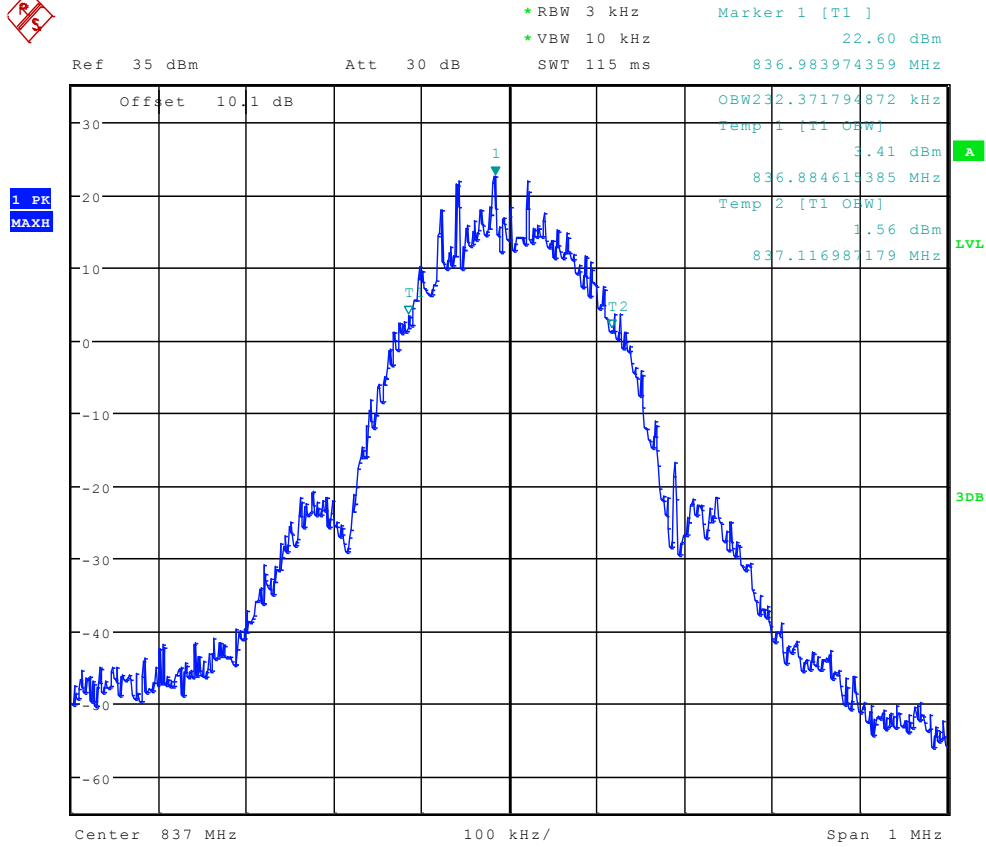


## Channel 192 (TM1:GPRS/GSM)





## Channel 192 (TM2:EDGE)

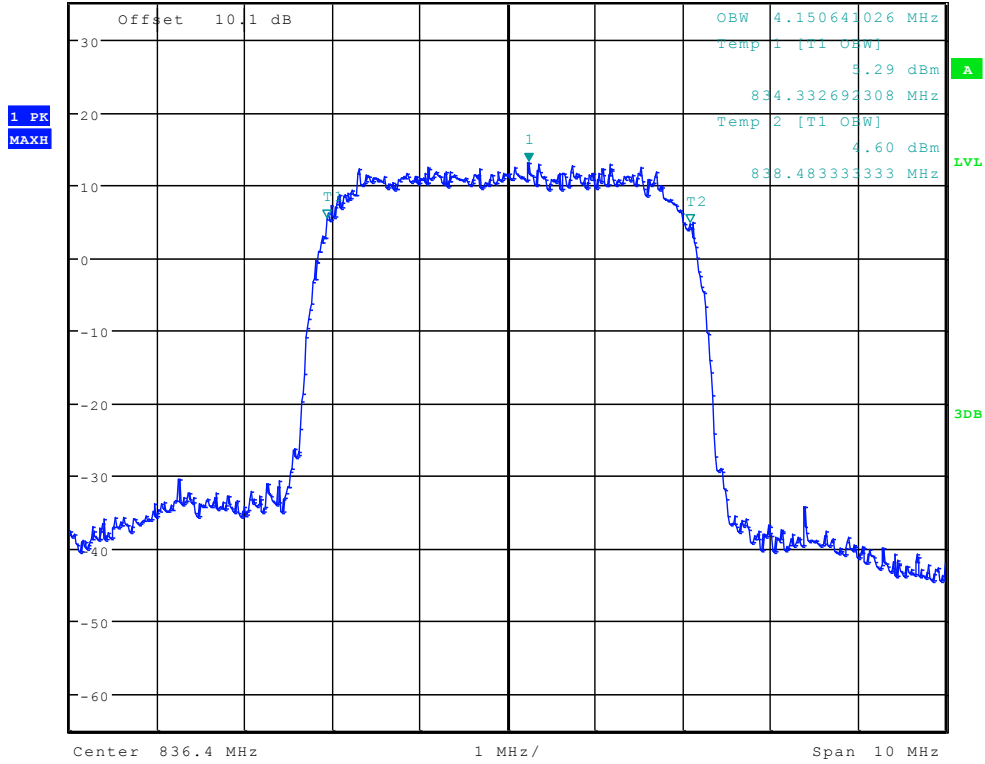




## Channel 4182 (TM3: WCDMA)

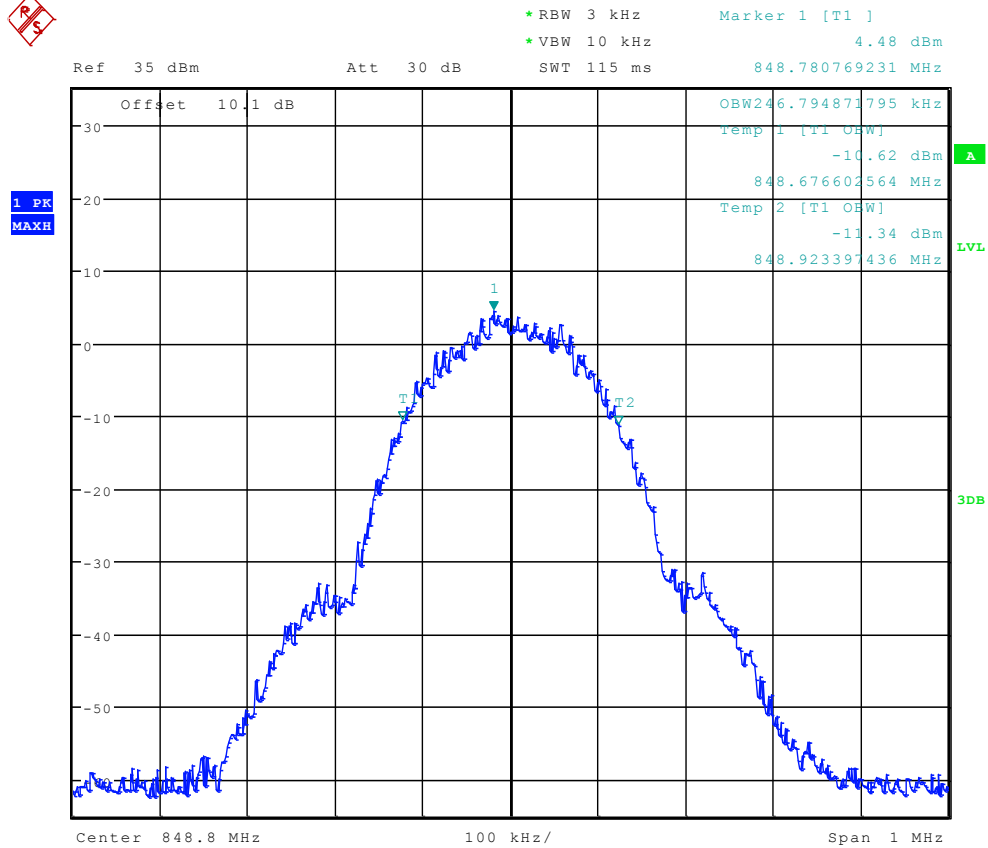


\*RBW 50 kHz      Marker 1 [T1 ]  
 \*VBW 500 kHz      13.11 dBm  
 Ref 35 dBm      Att 30 dB      SWT 5 ms      836.640384615 MHz



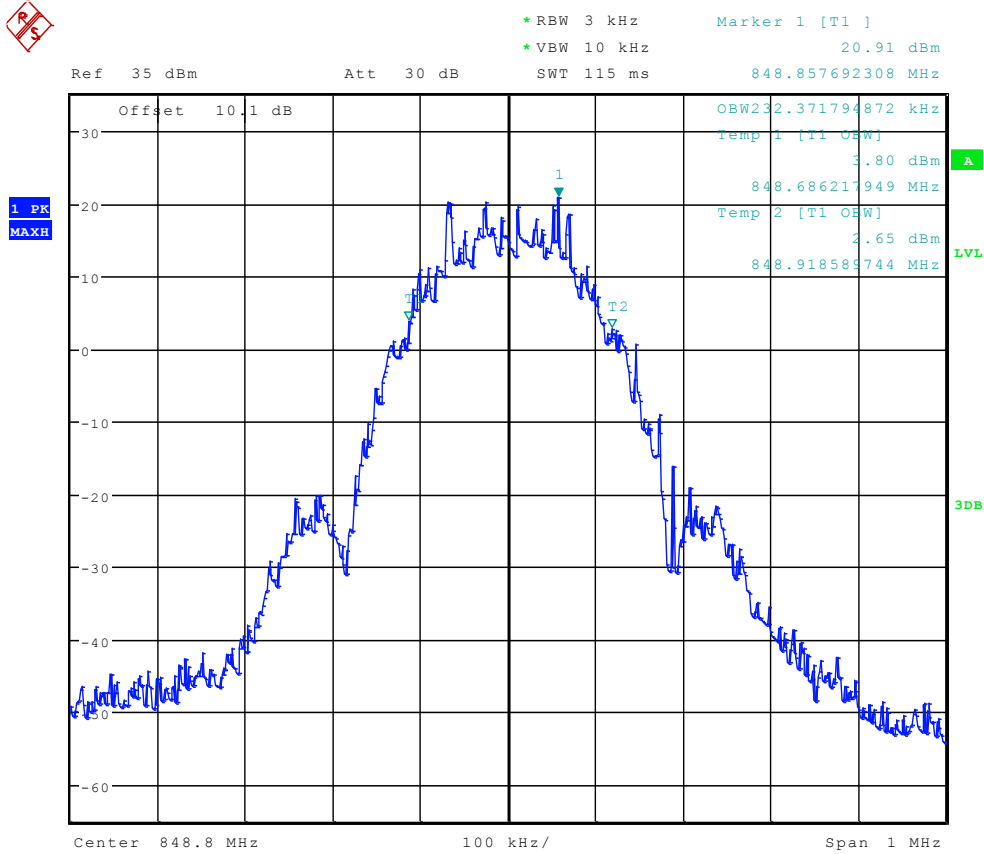


## Channel 251 (TM1:GPRS/GSM)



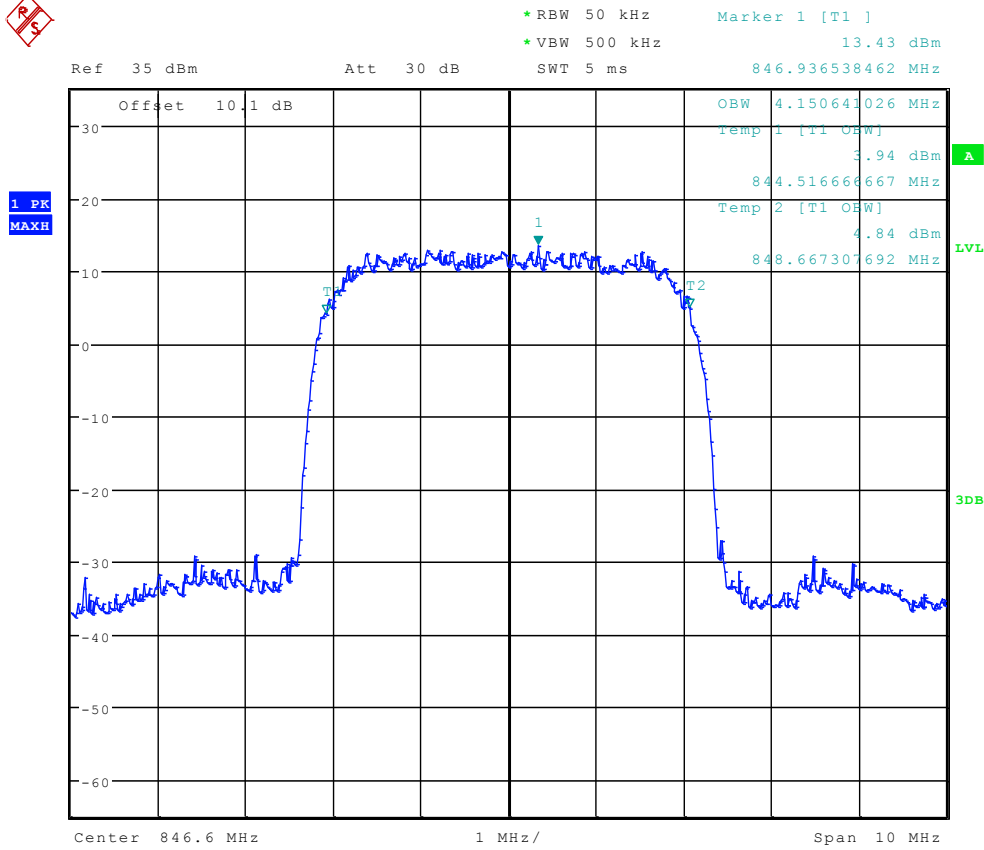


## Channel 251 (TM2:EDGE)





## Channel 4233 (TM3: WCDMA)





## Appendix C

### Band Edges Compliance

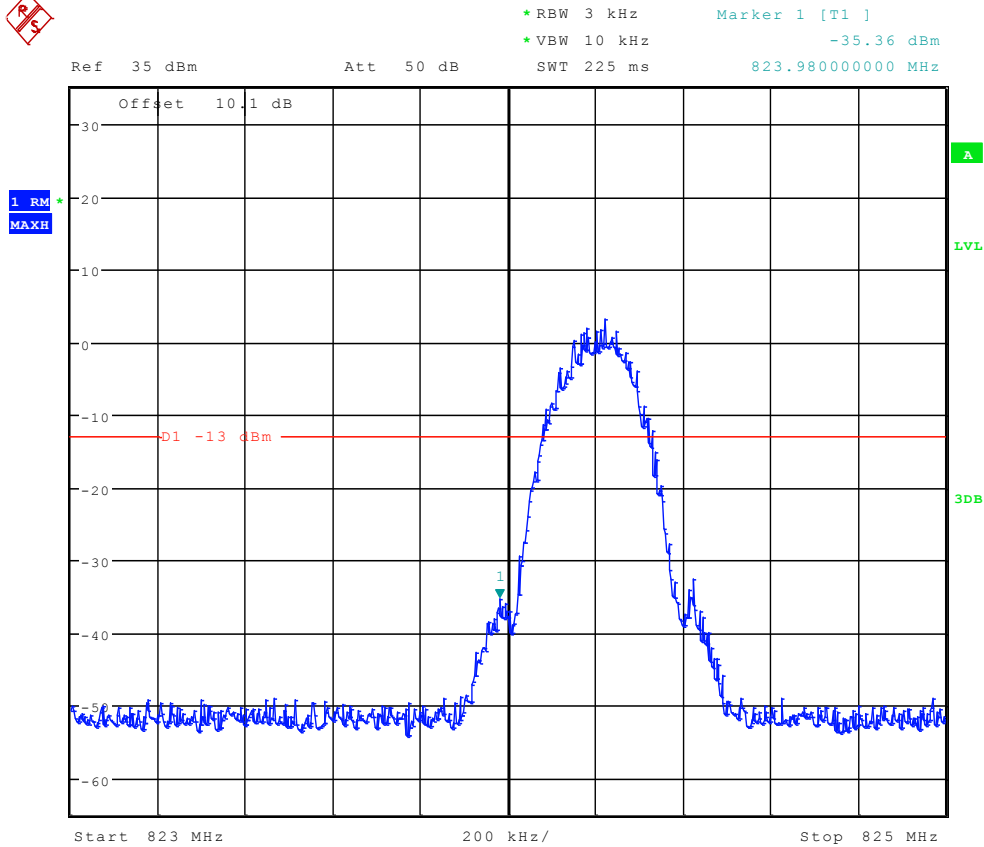
According to FCC Part 2.1051 & Part 22 Subpart H  
& RSS-132



# TM1:GPRS/GSM

## Left Edge

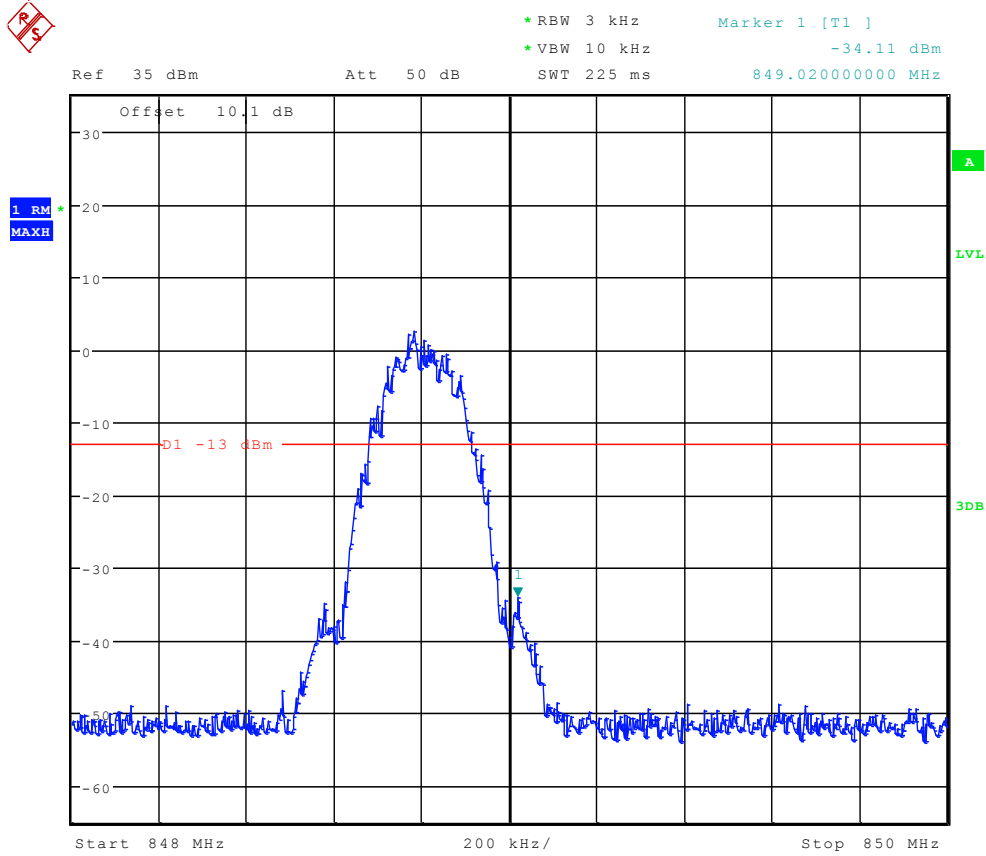
### Channel 128







## Right Edge Channel 251

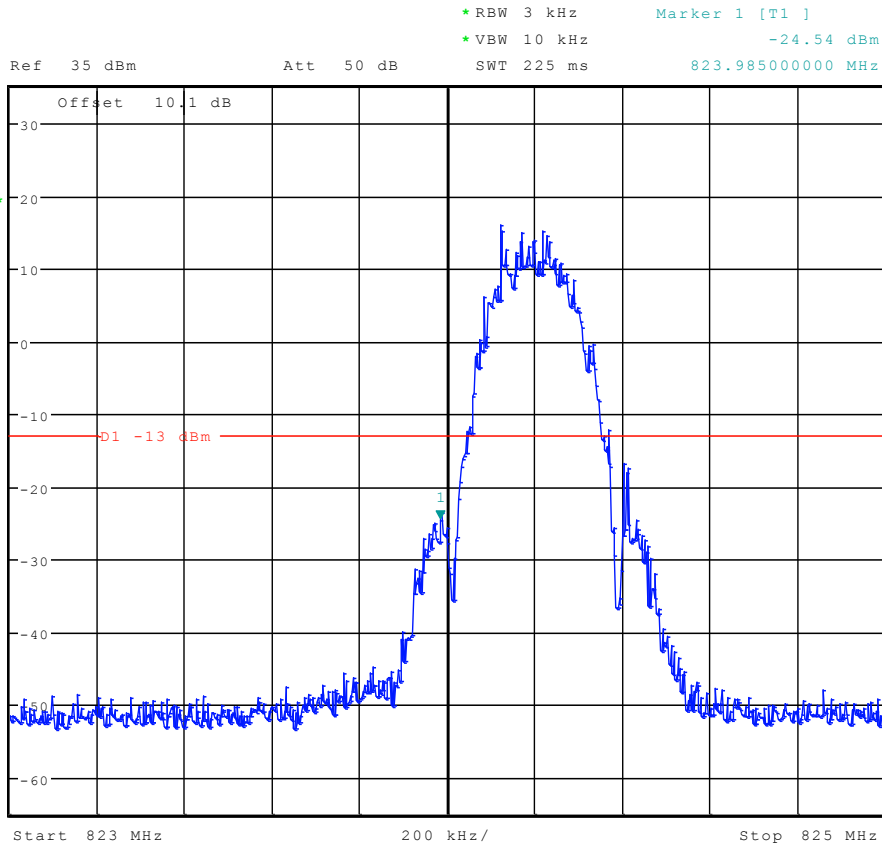




# TM2:EDGE

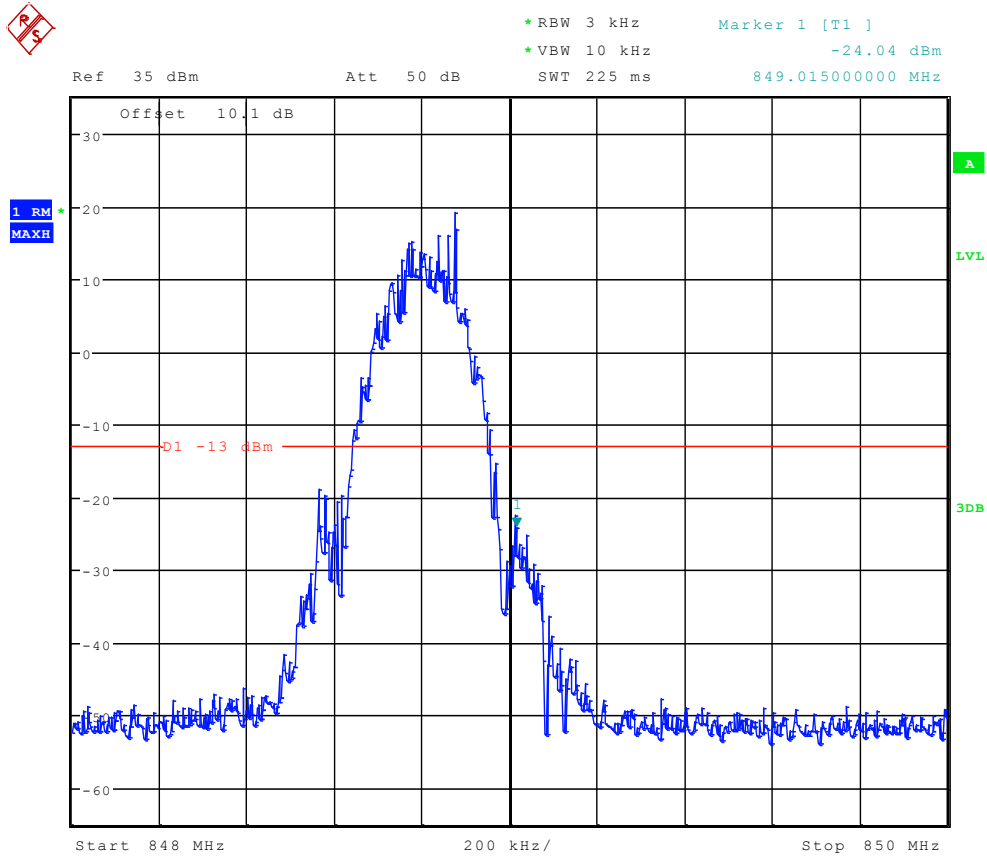
## Left Edge

### Channel 128





## Right Edge Channel 251

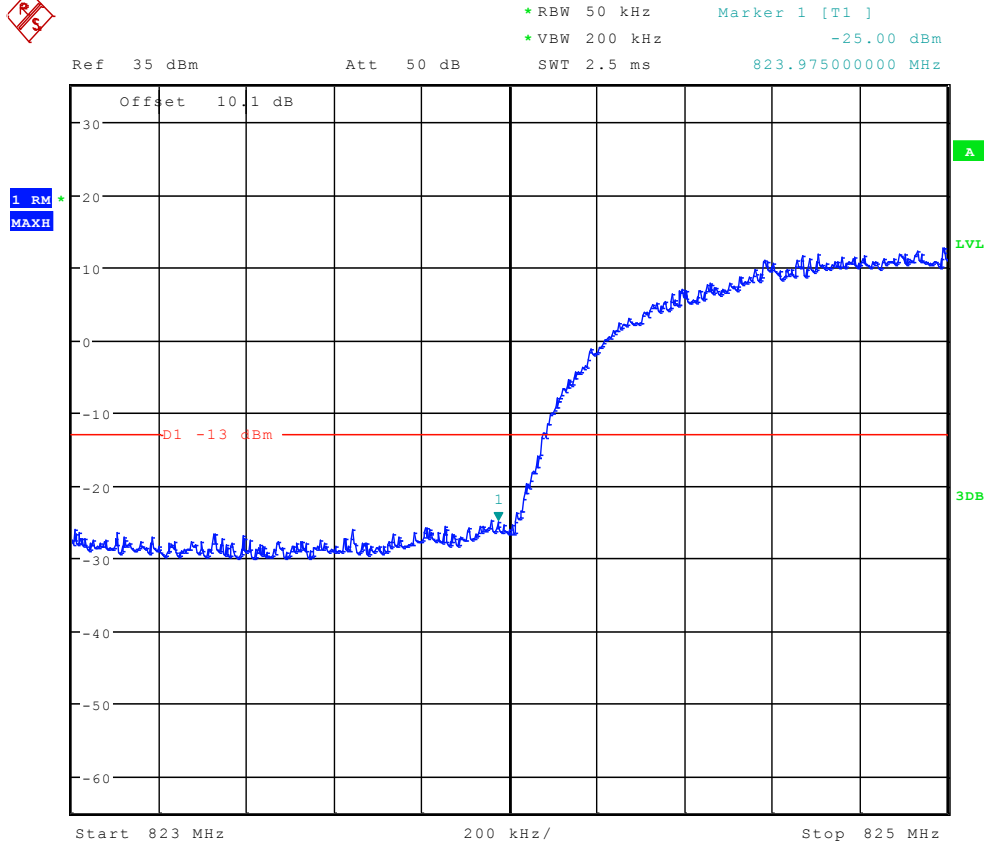




# TM3: WCDMA

## Left Edge

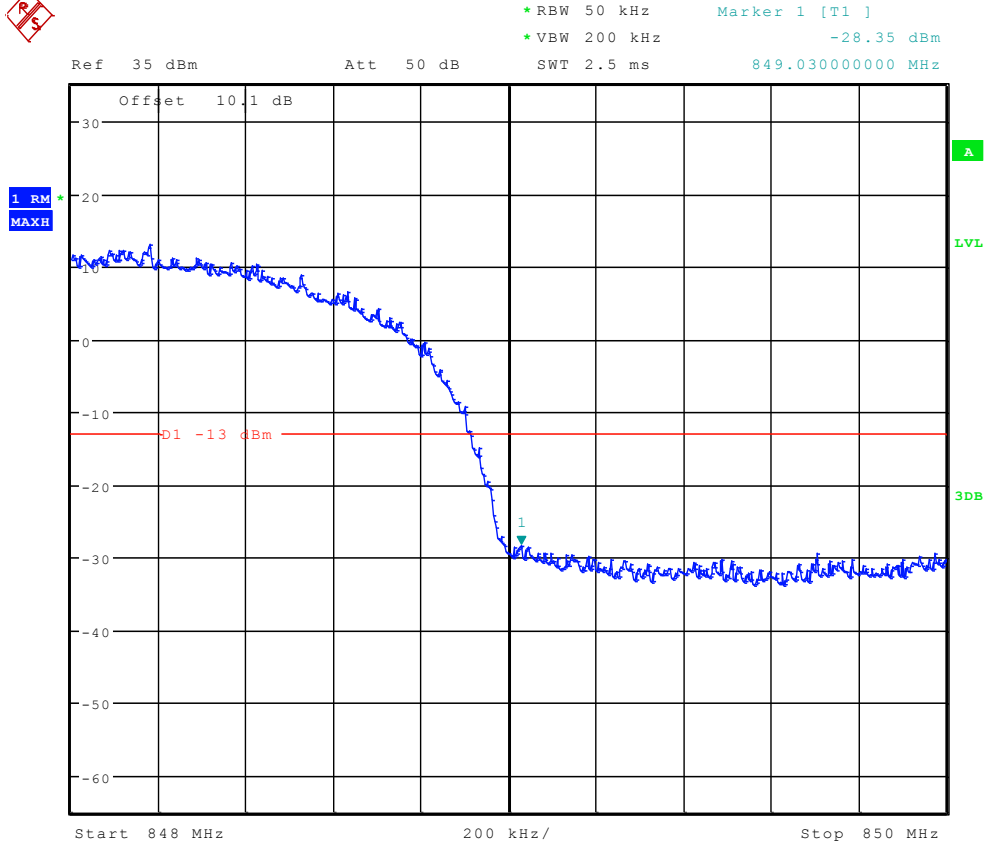
### Channel 4132



## Right Edge



### Channel 4233





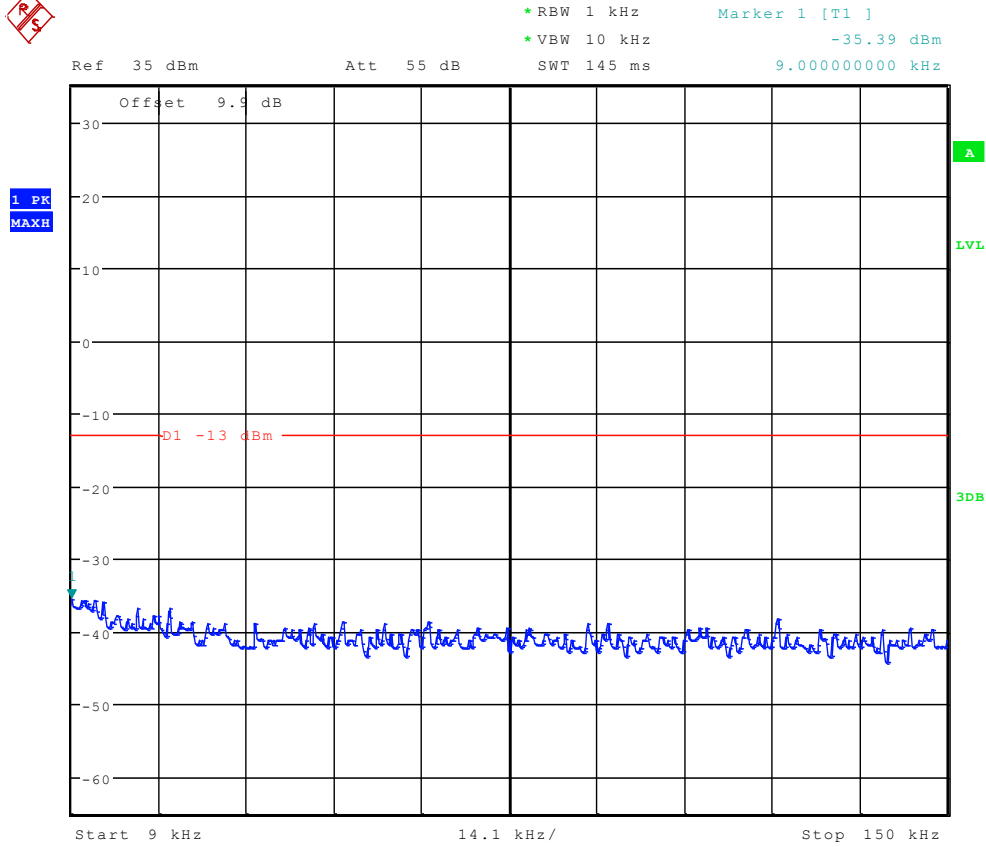
## Appendix D

# Spurious Emission at Antenna Terminal

According to FCC Part 2.1051 & Part 22 Subpart H  
& RSS-132

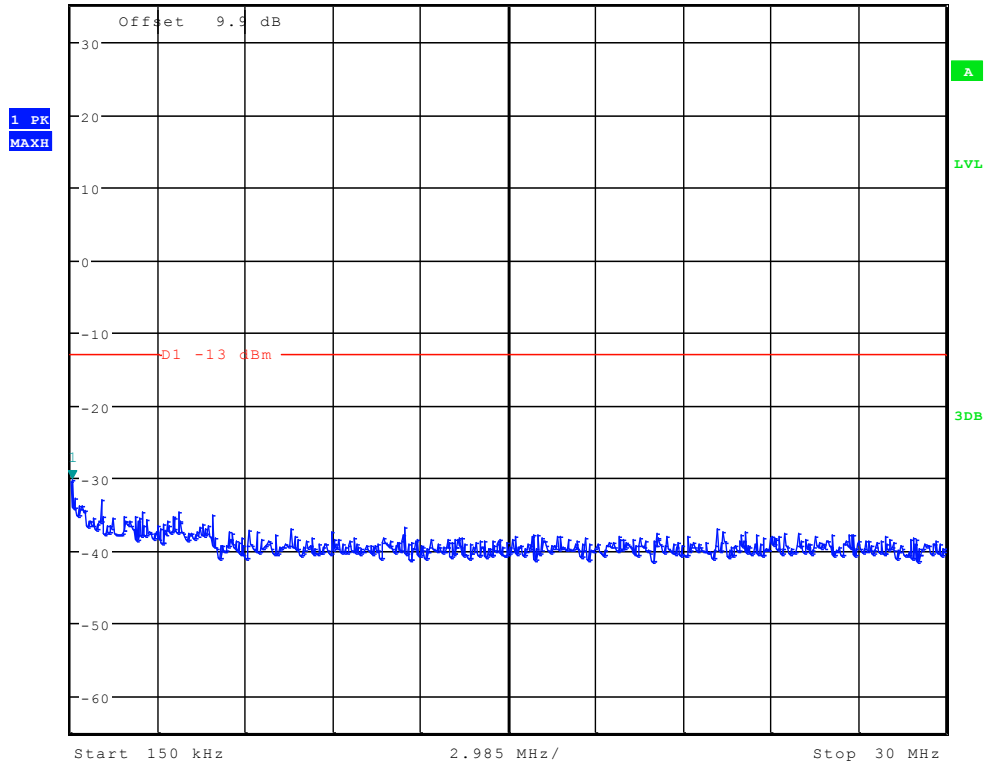


# TM1:GPRS/GSM Channel 128





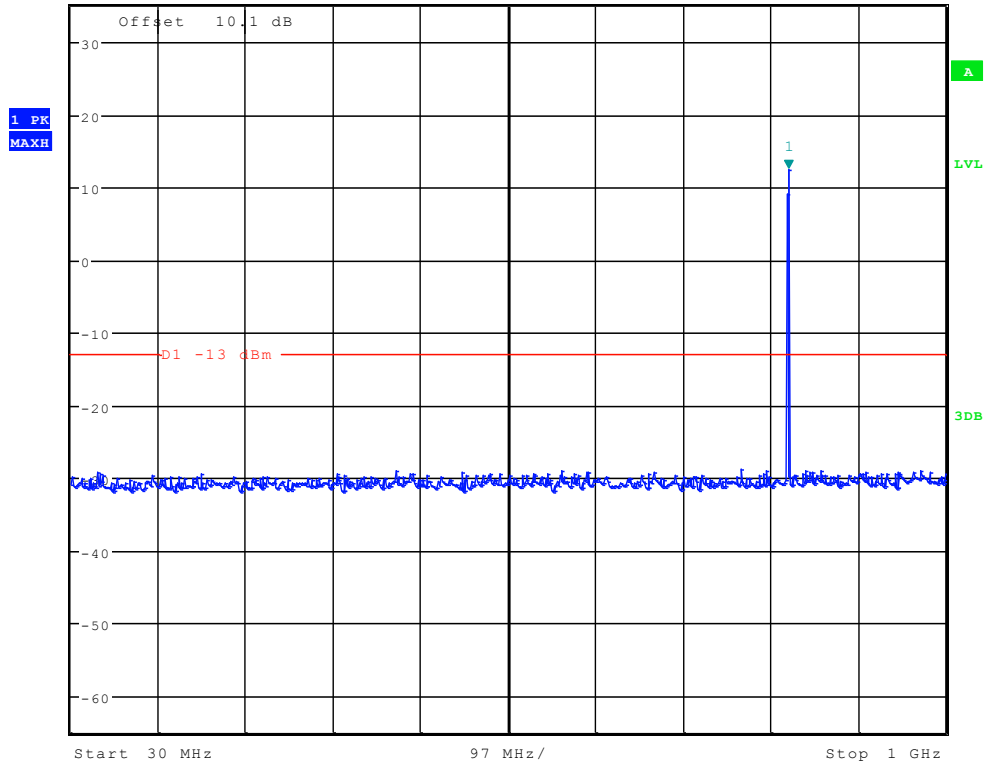
\*RBW 10 kHz      Marker 1 [T1 ]  
\*VBW 30 kHz      -30.22 dBm  
Ref 35 dBm      Att 55 dB      SWT 300 ms      197.836538462 kHz





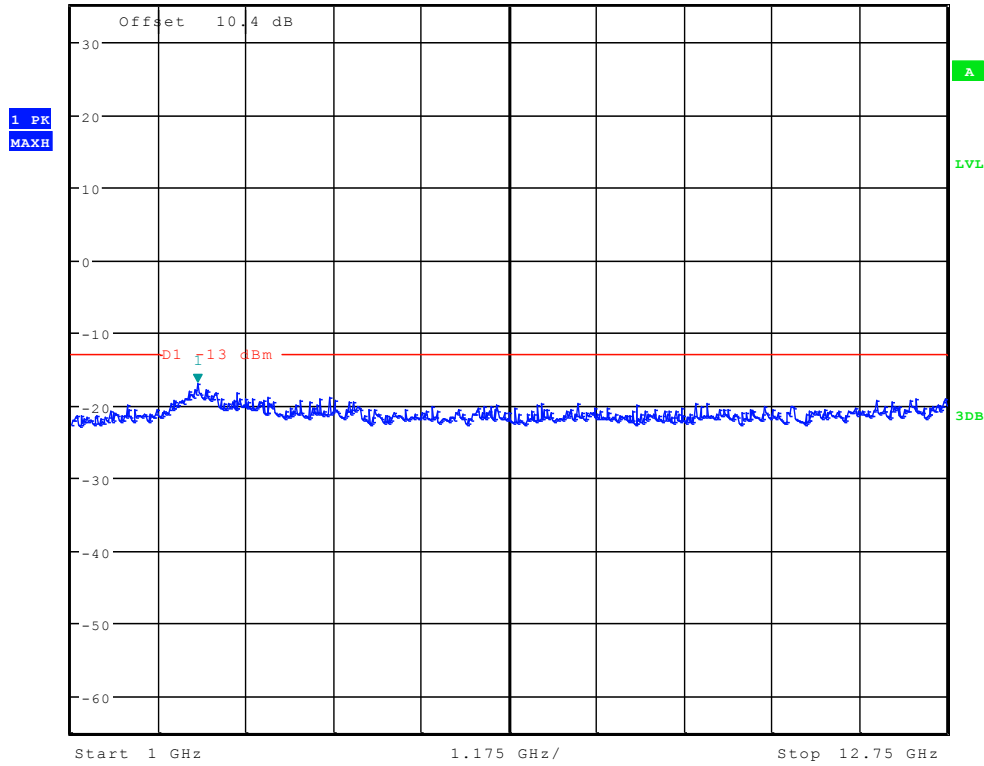


\*RBW 100 kHz      Marker 1 [T1 ]  
\*VBW 300 kHz      12.39 dBm  
Ref 35 dBm      Att 50 dB      SWT 100 ms      825.897435897 MHz



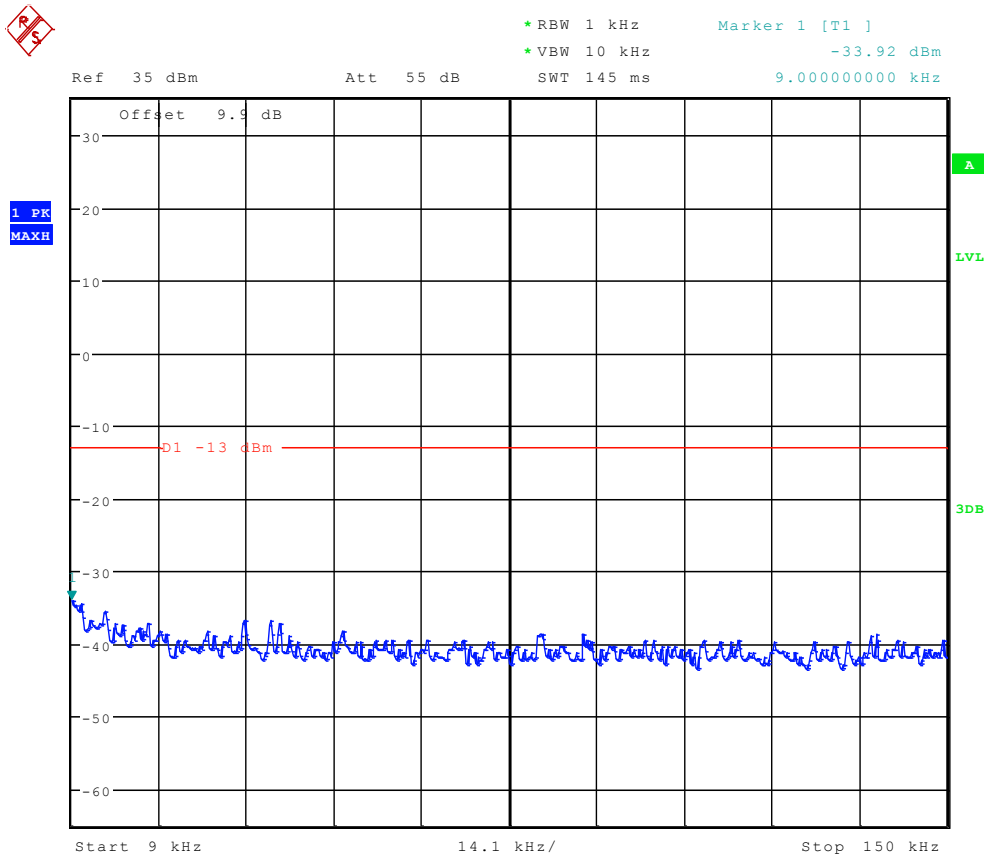


\*RBW 1 MHz      Marker 1 [T1 ]  
\*VBW 3 MHz      -17.03 dBm  
Ref 35 dBm      Att 50 dB      SWT 70 ms      2.694711538 GHz



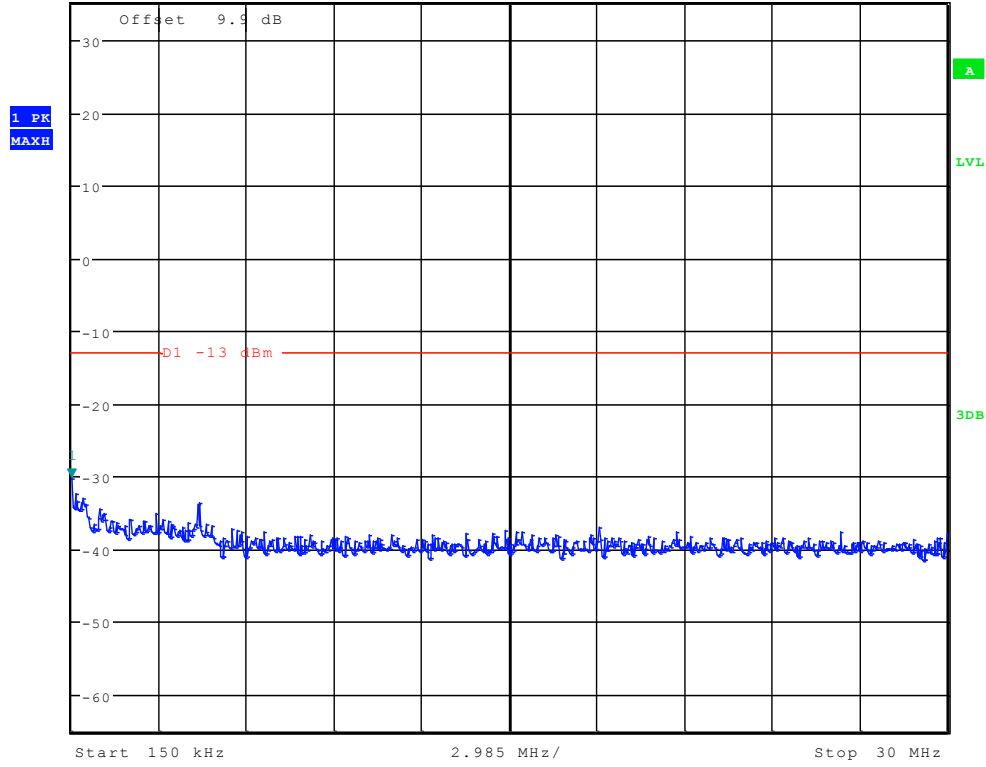


# Channel 192



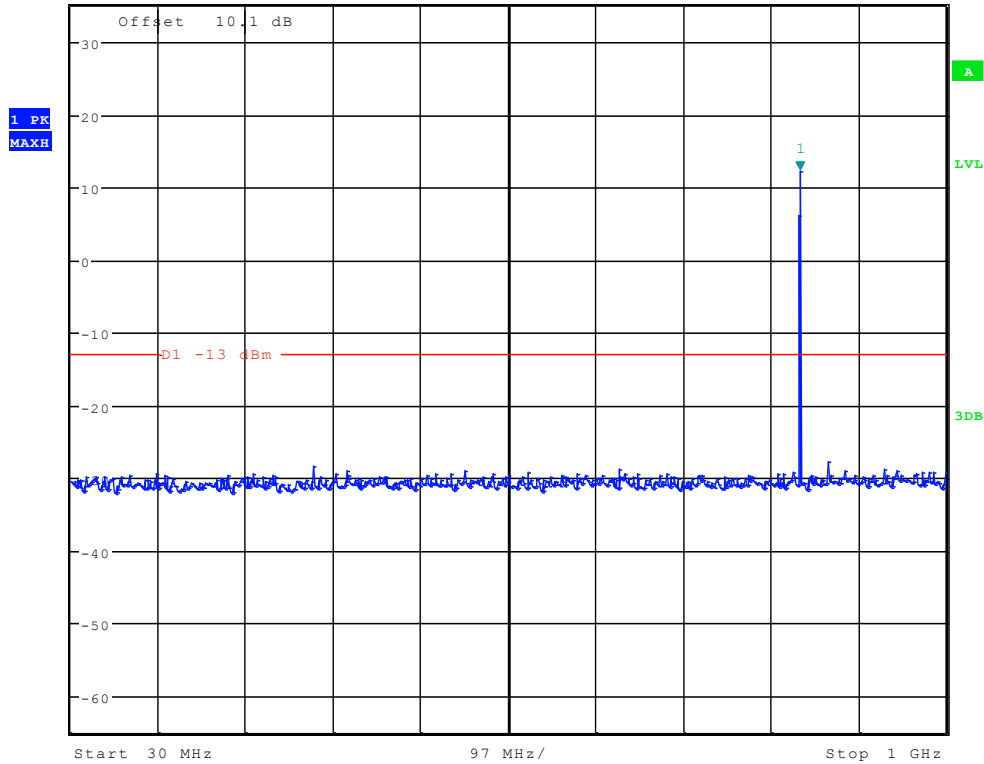


Ref 35 dBm Att 55 dB SWT 300 ms 150.00000000 kHz  
\*RBW 10 kHz Marker 1 [T1 ]  
\*VBW 30 kHz -30.22 dBm



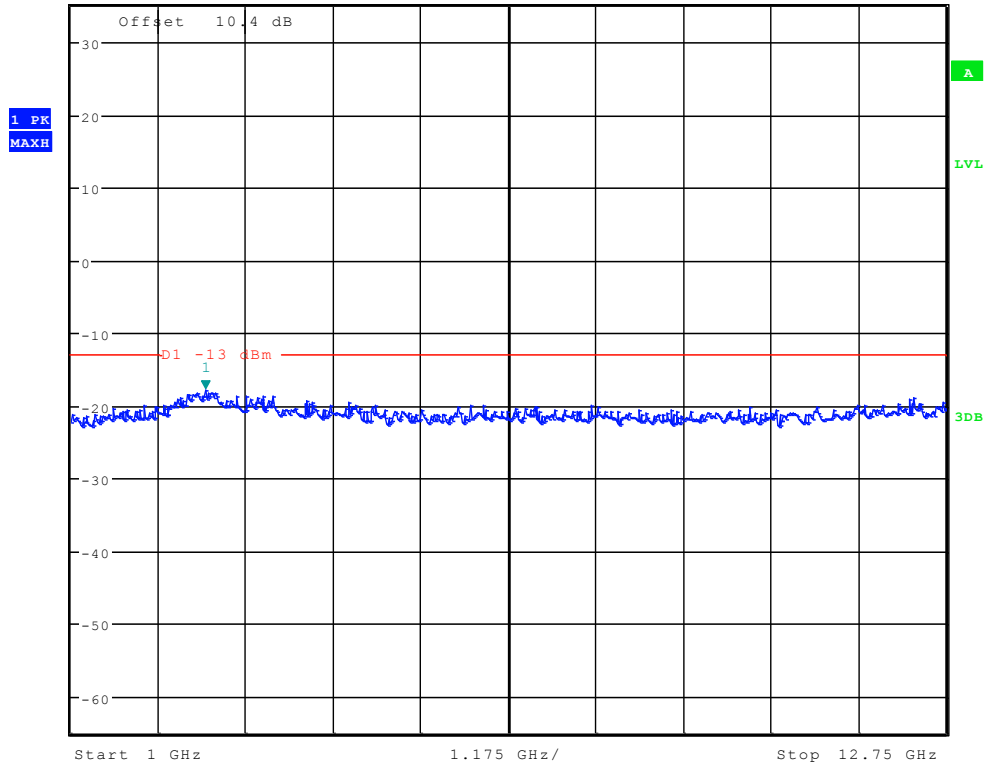


\* RBW 100 kHz      Marker 1 [T1 ]  
\* VBW 300 kHz      12.31 dBm  
Ref 35 dBm      Att 50 dB      SWT 100 ms      838.333333333 MHz



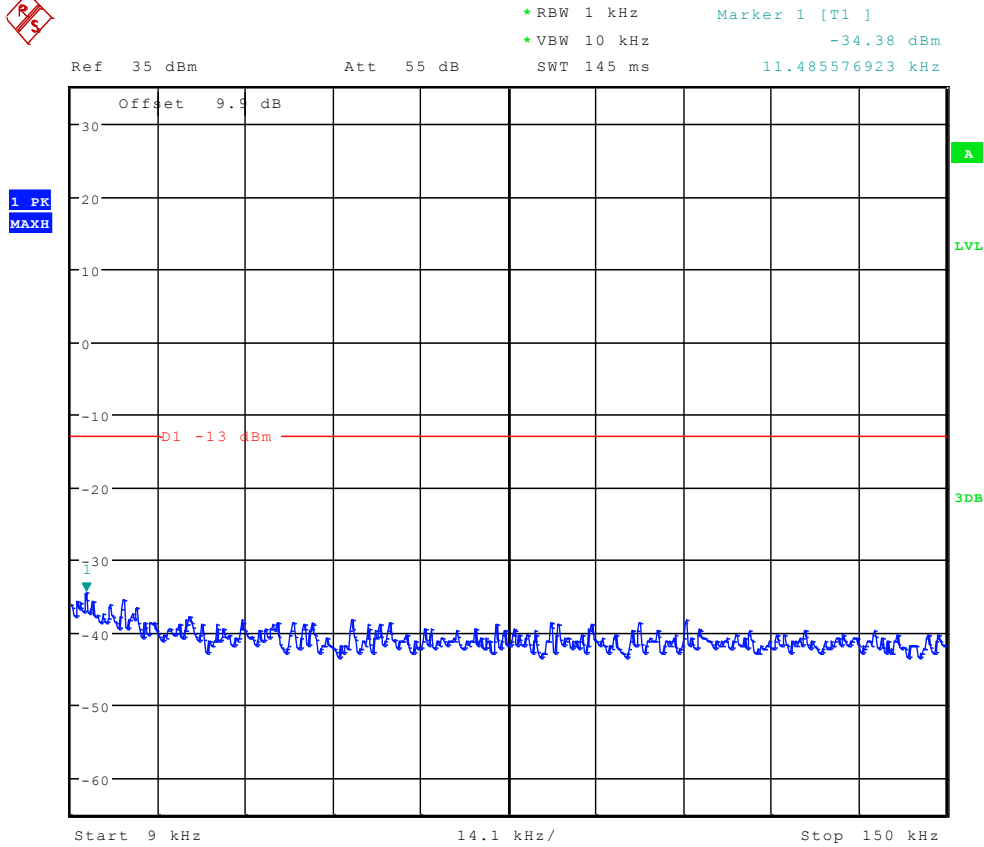


\*RBW 1 MHz      Marker 1 [T1 ]  
\*VBW 3 MHz      -17.80 dBm  
Ref 35 dBm      Att 50 dB      SWT 70 ms      2.807692308 GHz



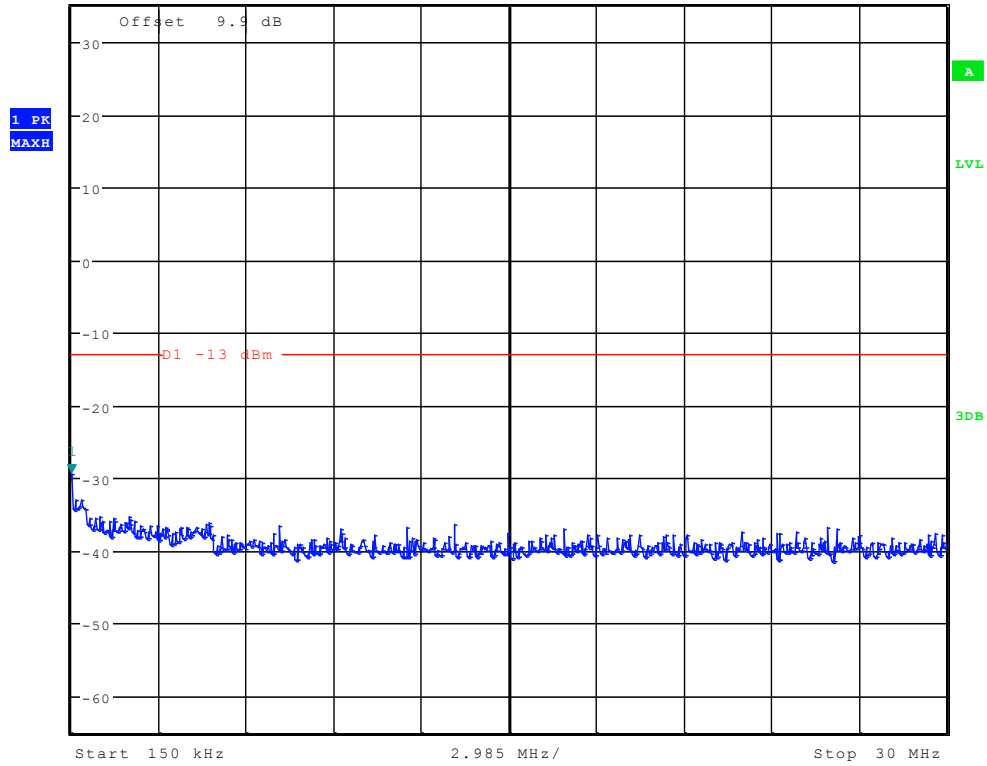


# Channel 251

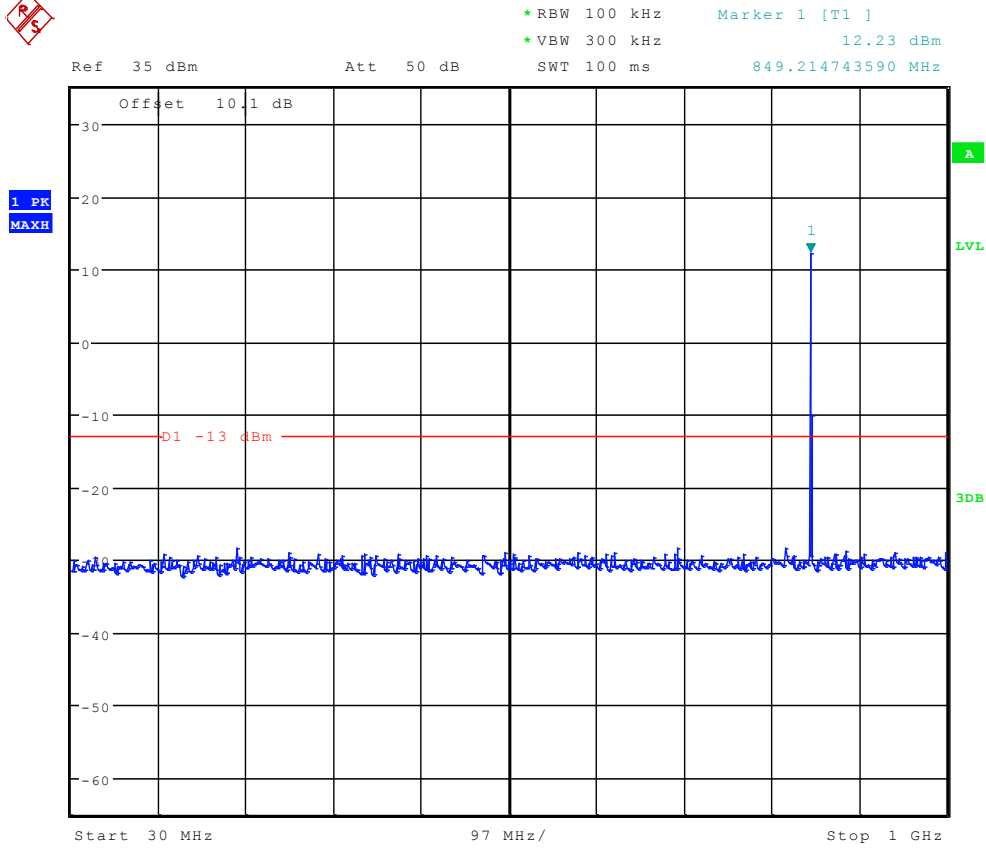




\*RBW 10 kHz      Marker 1 [T1 ]  
 \*VBW 30 kHz      -29.32 dBm  
 Ref 35 dBm      Att 55 dB      SWT 300 ms      150.000000000 kHz

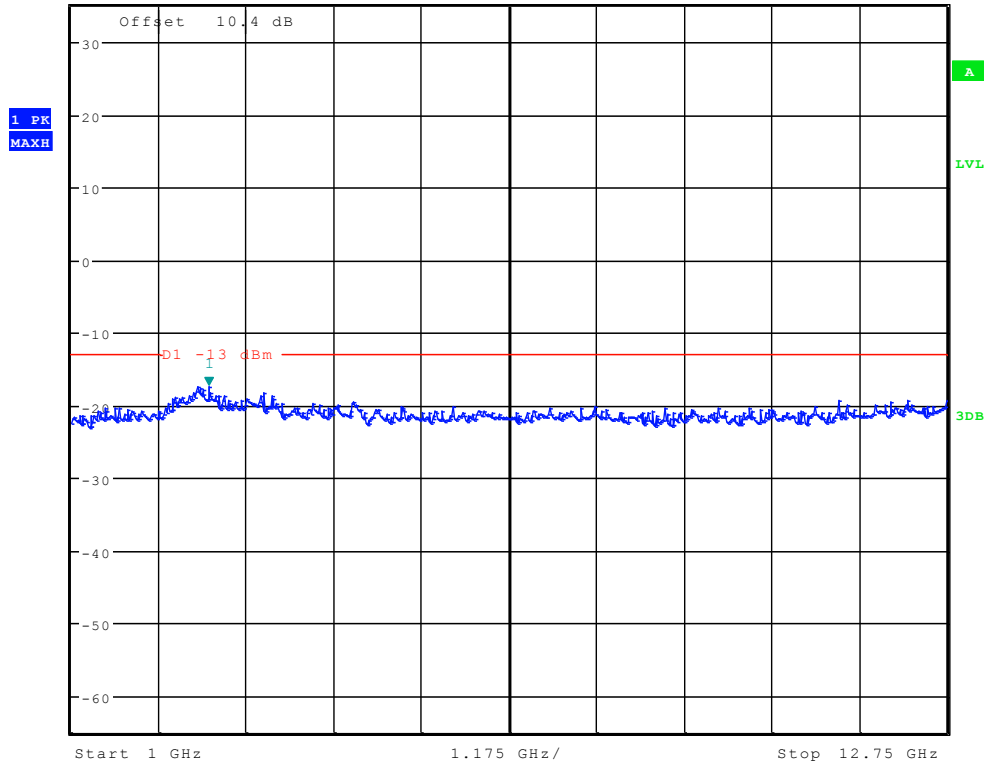








\*RBW 1 MHz      Marker 1 [T1 ]  
\*VBW 3 MHz      -17.31 dBm  
Ref 35 dBm      Att 50 dB      SWT 70 ms      2.845352564 GHz

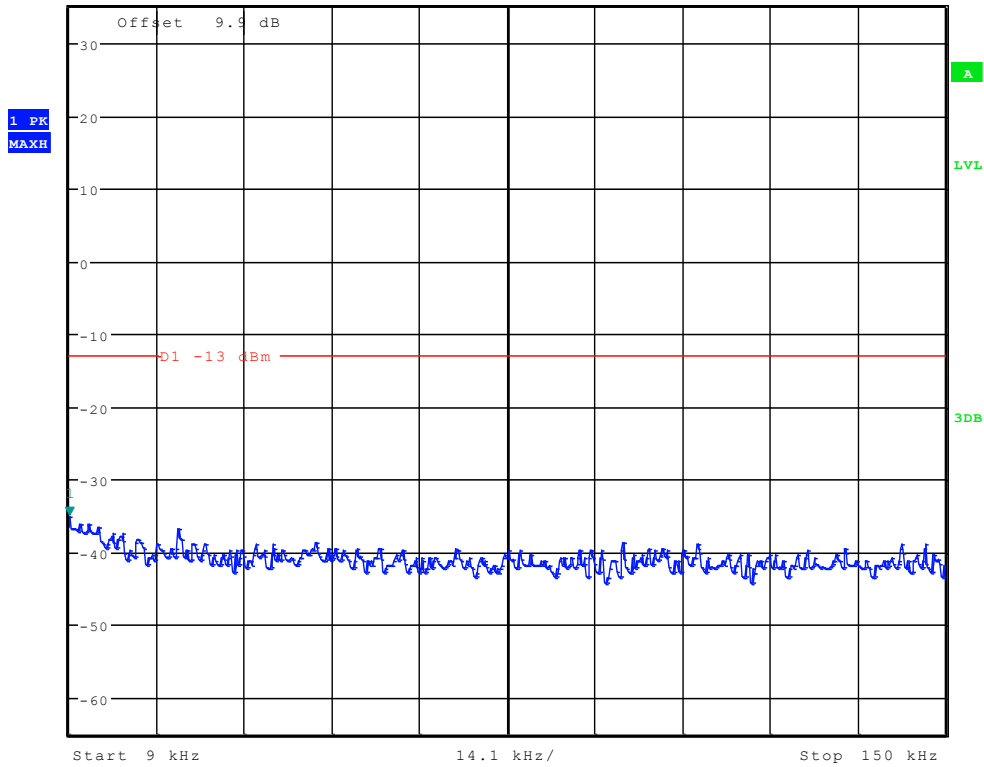




# TM2:EDGE Channel 128

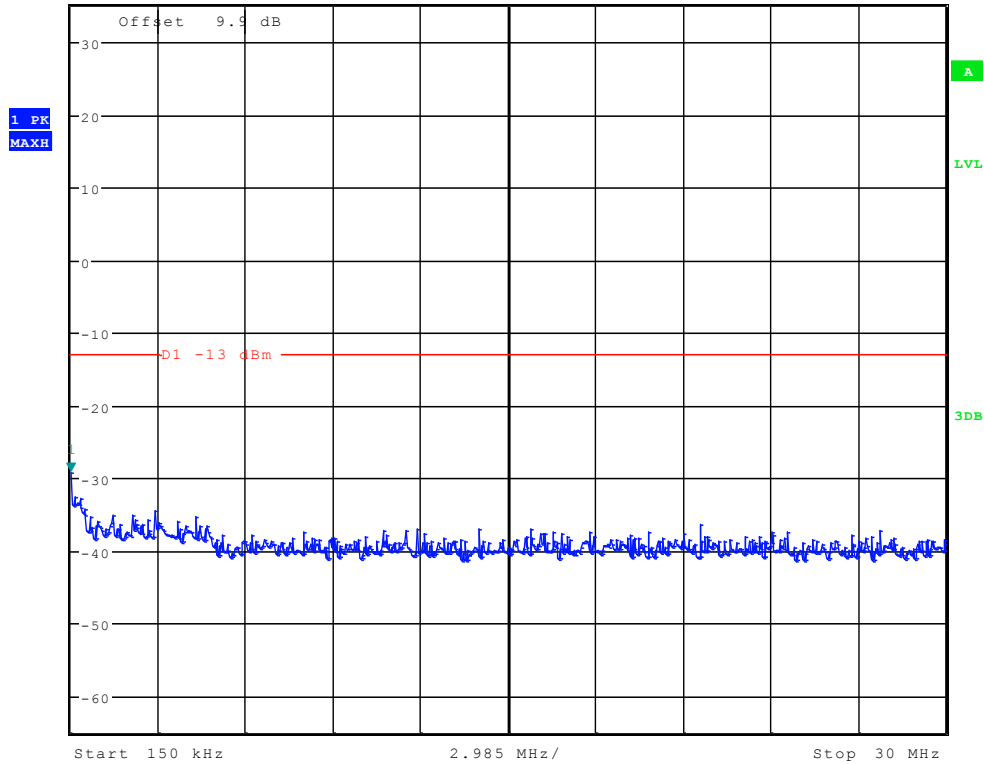


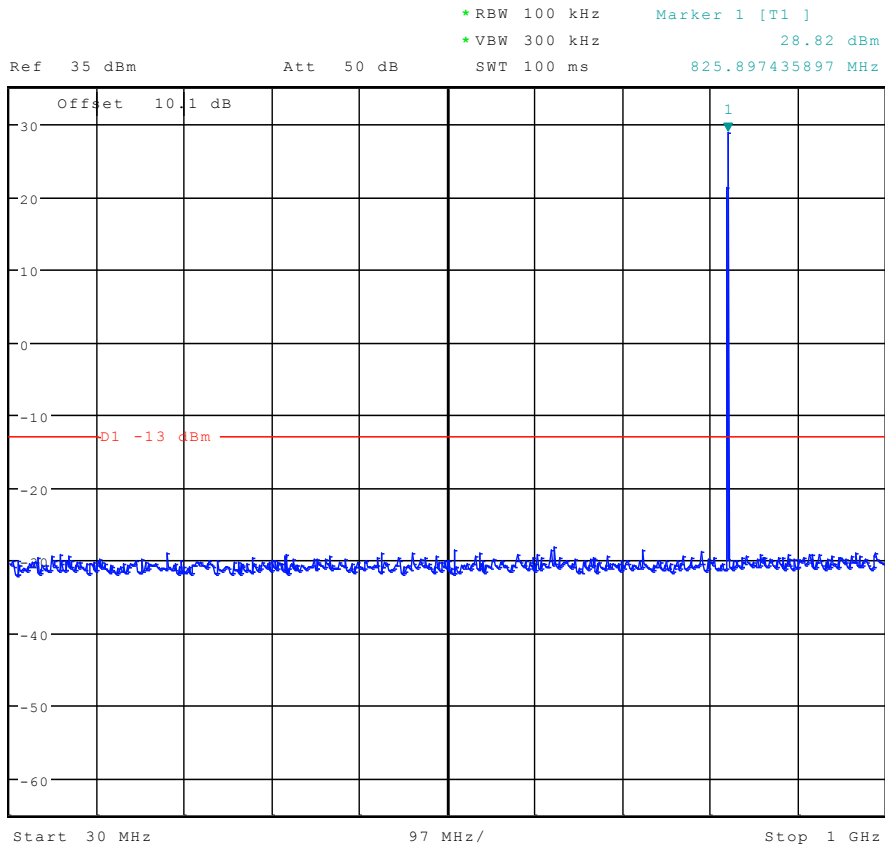
\*RBW 1 kHz      Marker 1 [T1 ]  
\*VBW 10 kHz      -35.08 dBm  
Ref 35 dBm      Att 55 dB      SWT 145 ms      9.000000000 kHz





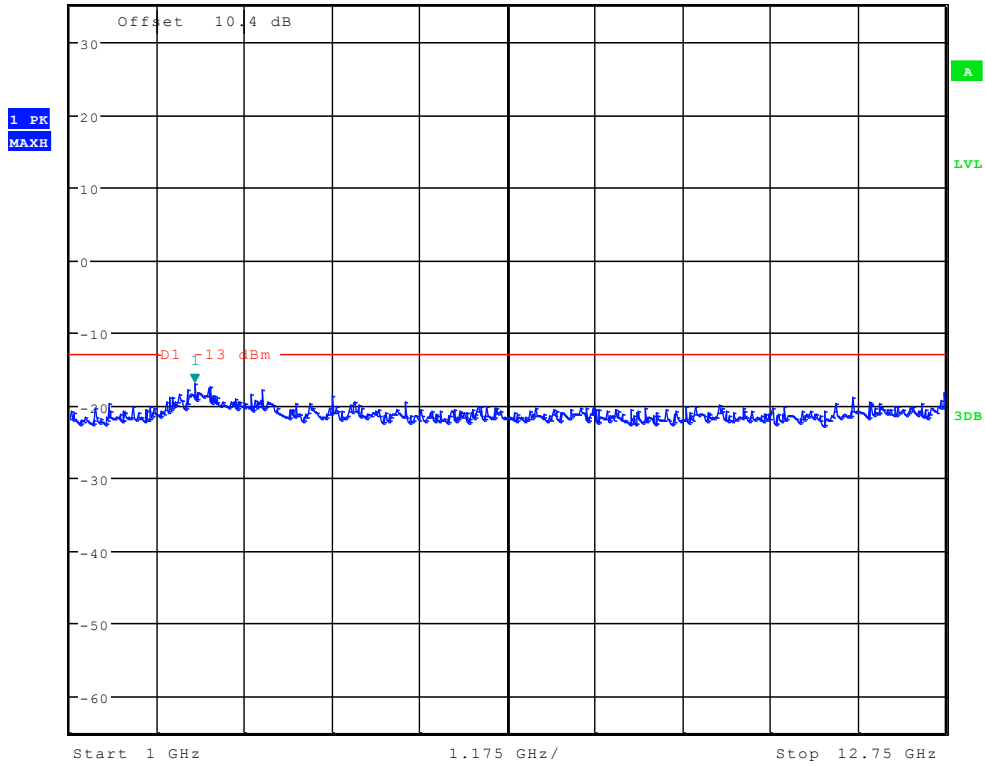
\*RBW 10 kHz      Marker 1 [T1 ]  
\*VBW 30 kHz      -29.27 dBm  
Ref 35 dBm      Att 55 dB      SWT 300 ms      150.00000000 kHz







\*RBW 1 MHz      Marker 1 [T1 ]  
\*VBW 3 MHz      -16.94 dBm  
Ref 35 dBm      Att 50 dB      SWT 70 ms      2.675881410 GHz

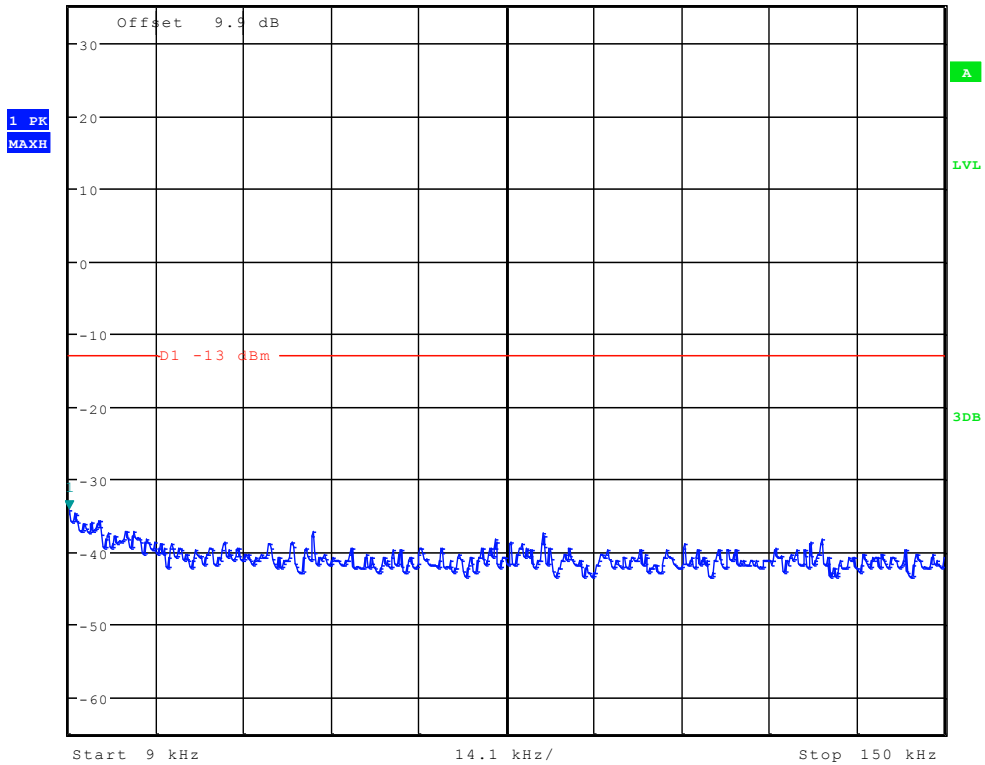




# Channel 192

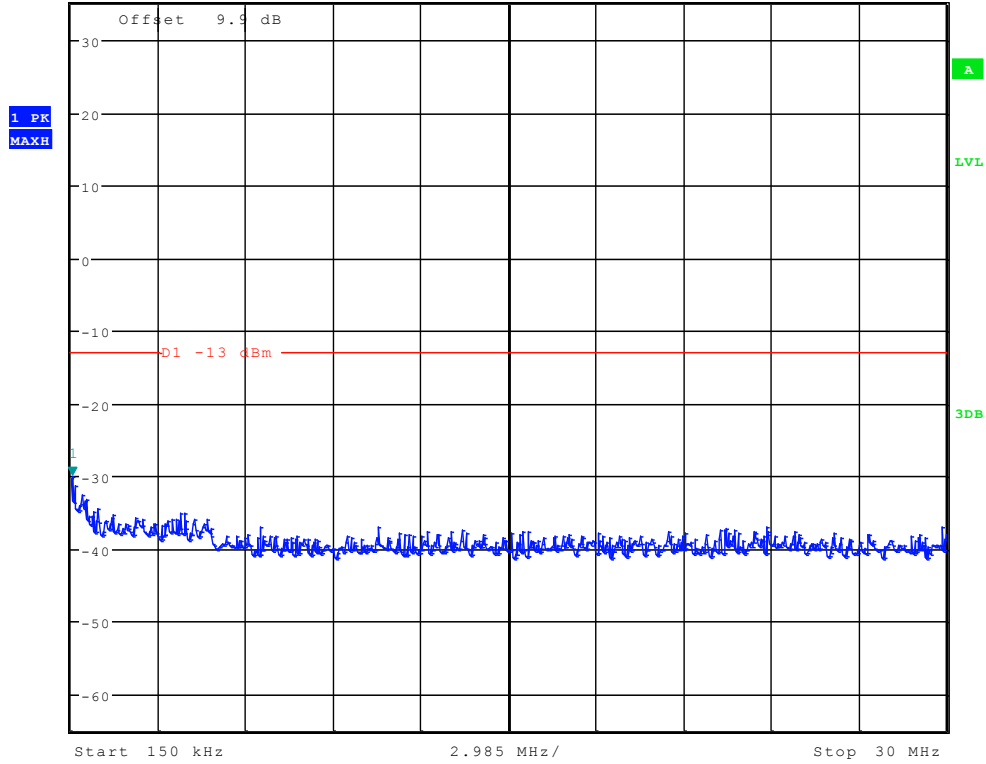


\*RBW 1 kHz      Marker 1 [T1 ]  
\*VBW 10 kHz      -34.19 dBm  
Ref 35 dBm      Att 55 dB      SWT 145 ms      9.000000000 kHz

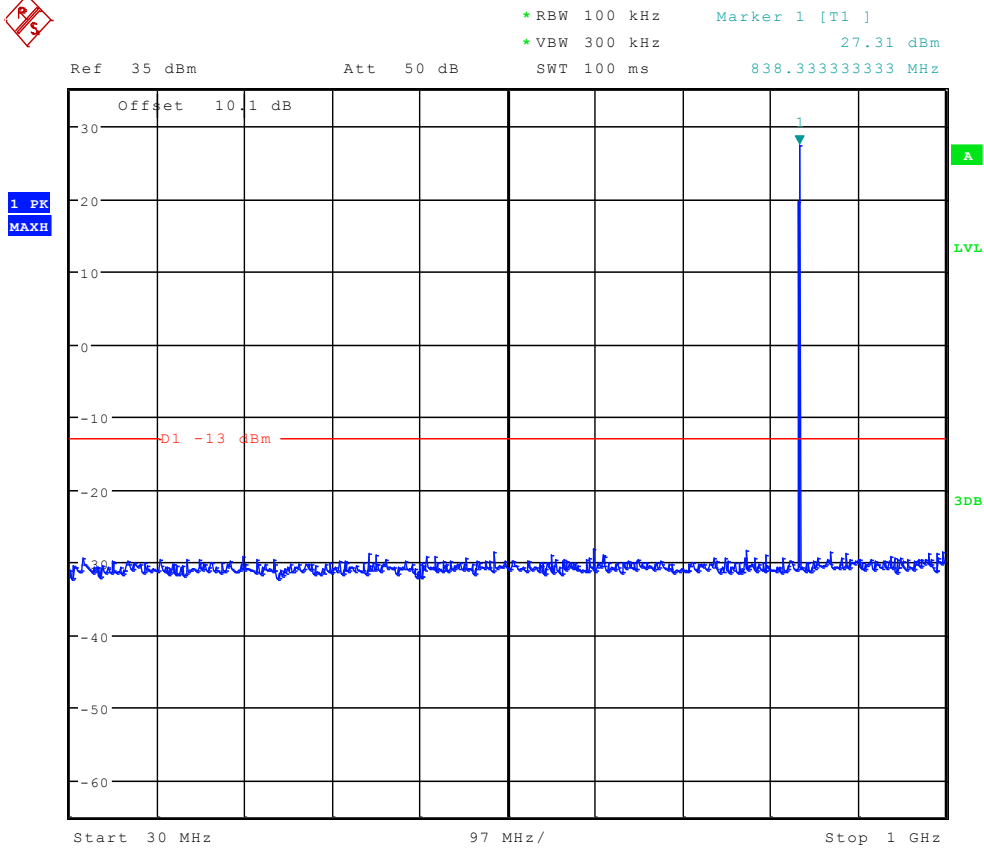




\*RBW 10 kHz      Marker 1 [T1 ]  
\*VBW 30 kHz      -30.04 dBm  
Ref 35 dBm      Att 55 dB      SWT 300 ms      197.836538462 kHz

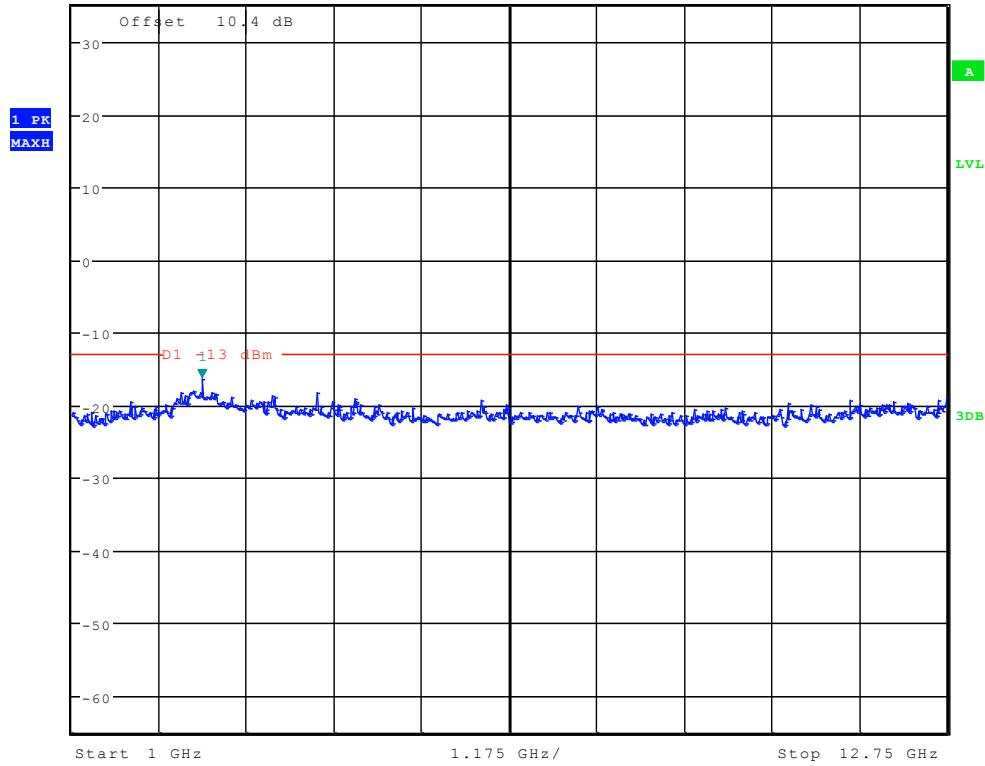






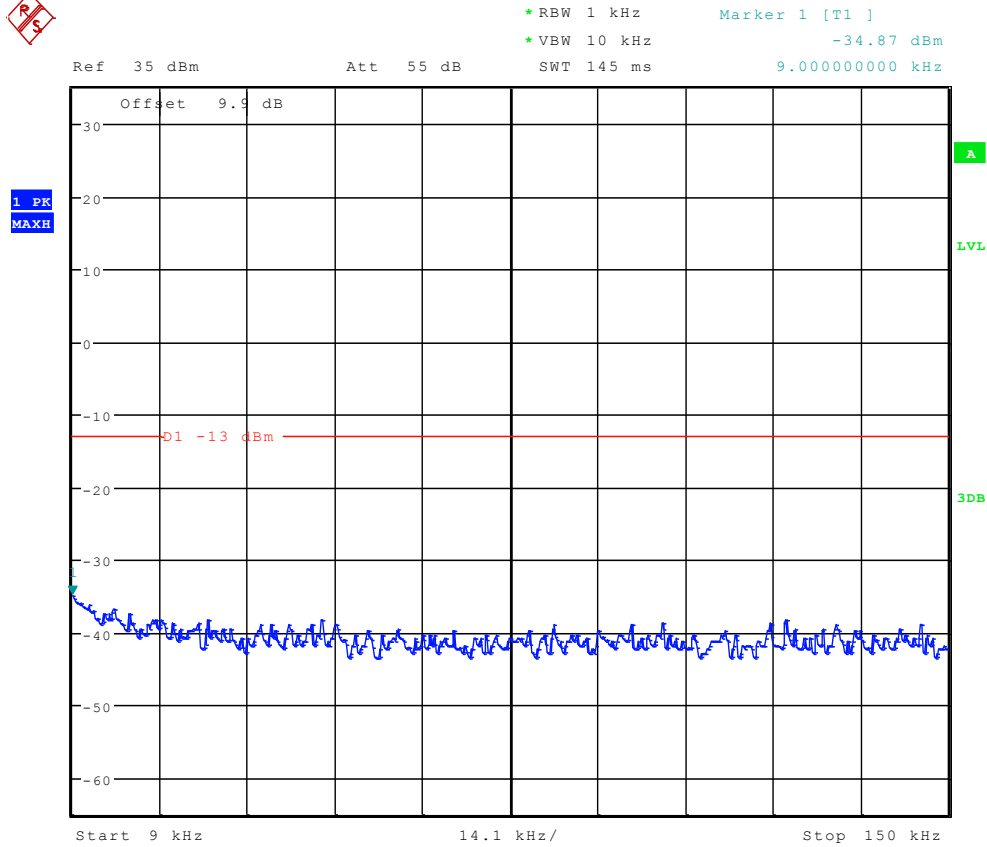


\*RBW 1 MHz      Marker 1 [T1 ]  
\*VBW 3 MHz      -16.40 dBm  
Ref 35 dBm      Att 50 dB      SWT 70 ms      2.751201923 GHz



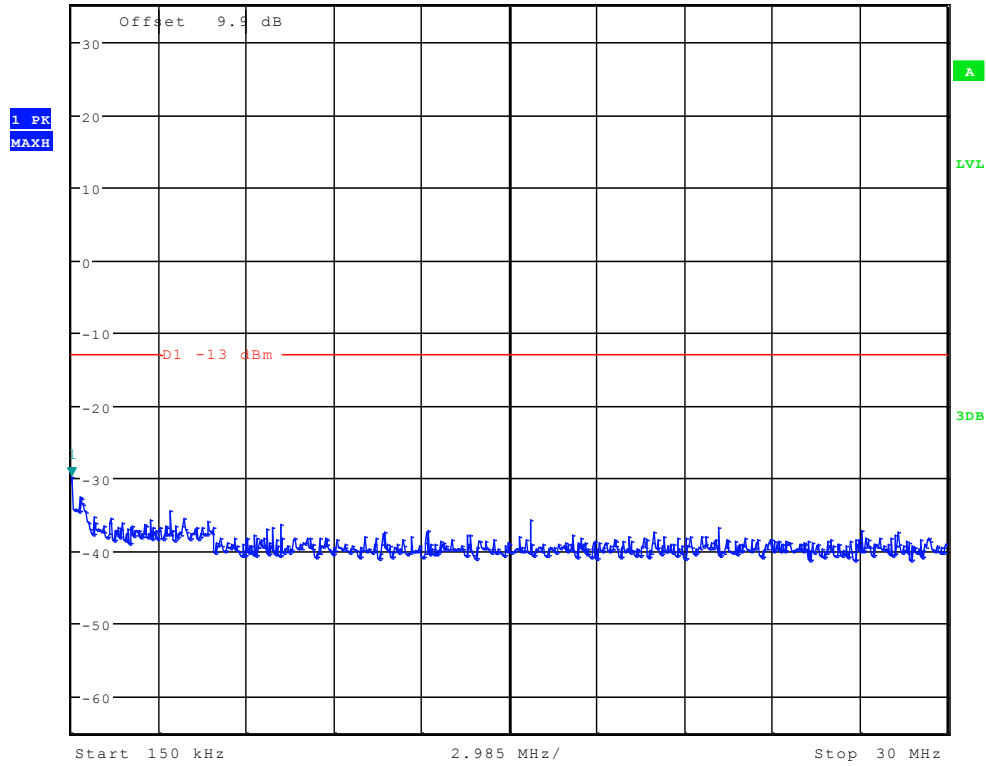


# Channel 251



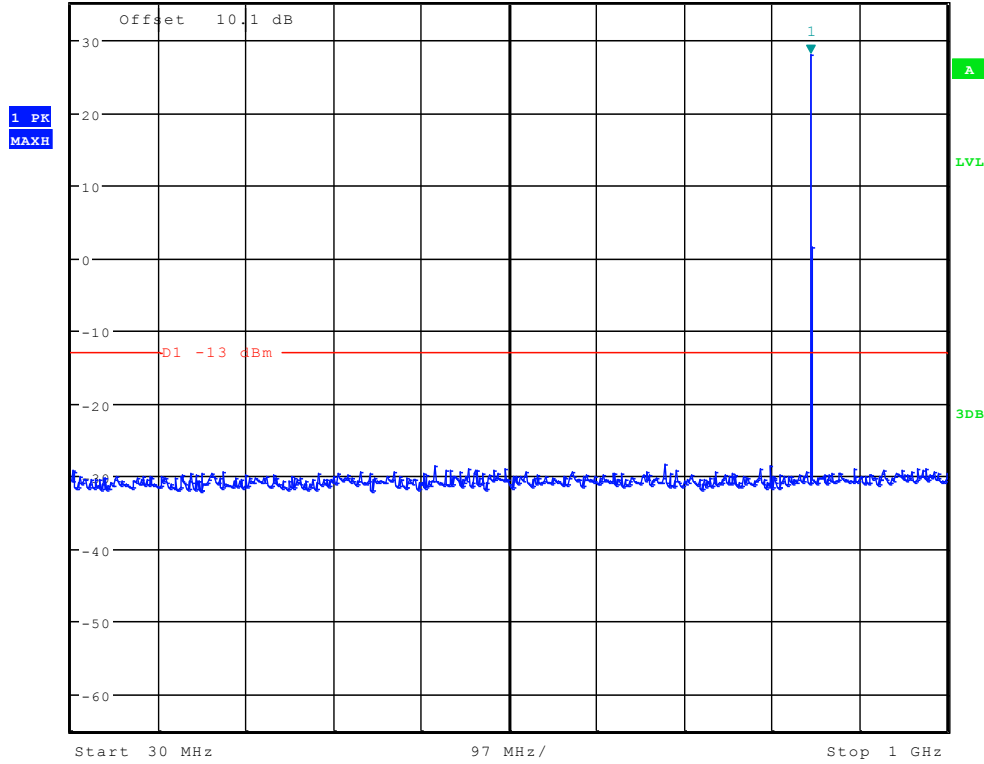


Ref 35 dBm Att 55 dB SWT 300 ms 150.00000000 kHz  
\*RBW 10 kHz Marker 1 [T1 ]  
\*VBW 30 kHz -29.87 dBm



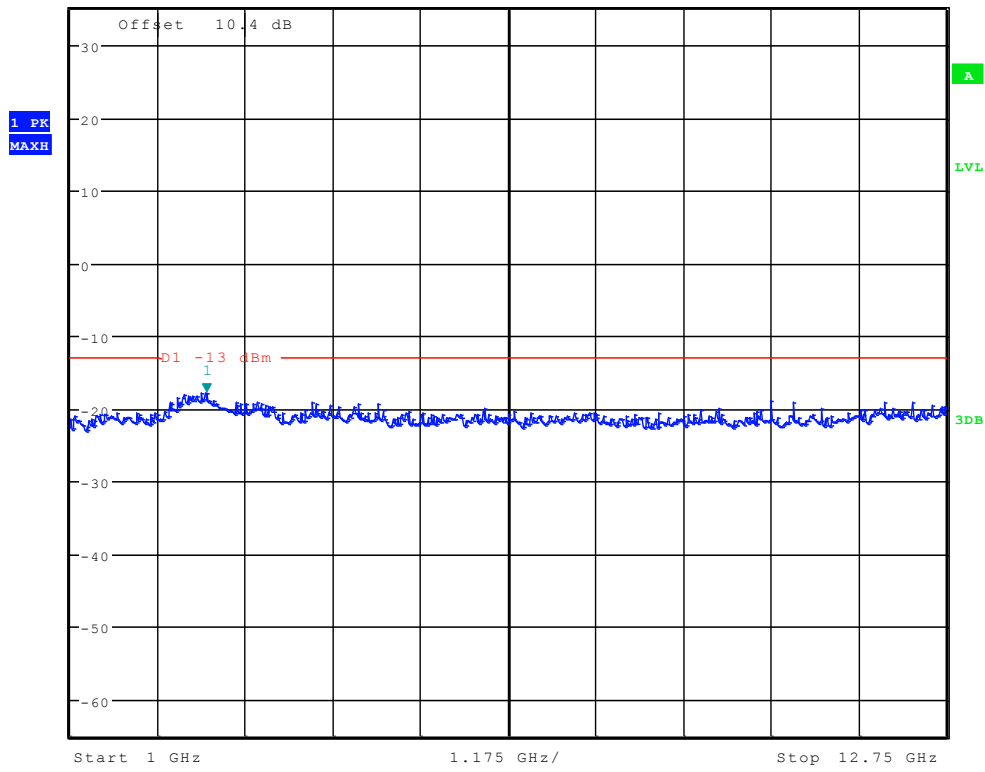


\*RBW 100 kHz      Marker 1 [T1 ]  
\*VBW 300 kHz      27.87 dBm  
Ref 35 dBm      Att 50 dB      SWT 100 ms      849.214743590 MHz



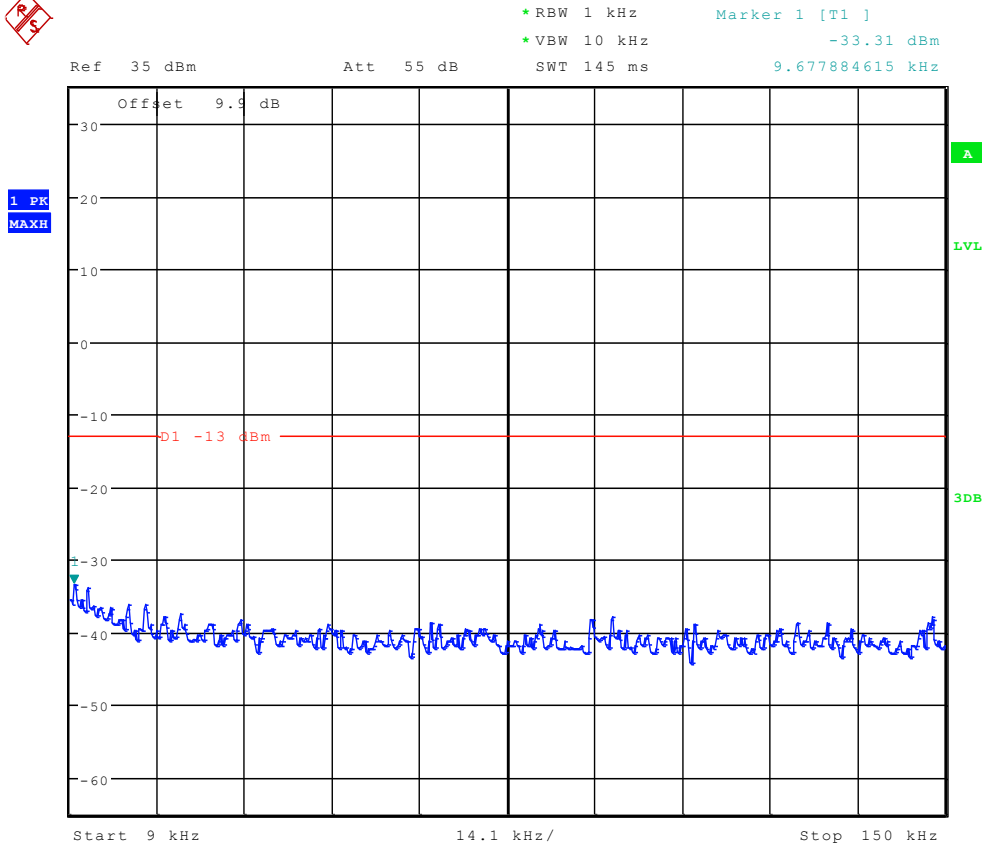


\*RBW 1 MHz      Marker 1 [T1 ]  
\*VBW 3 MHz      -17.87 dBm  
Ref 35 dBm      Att 50 dB      SWT 70 ms      2.826522436 GHz



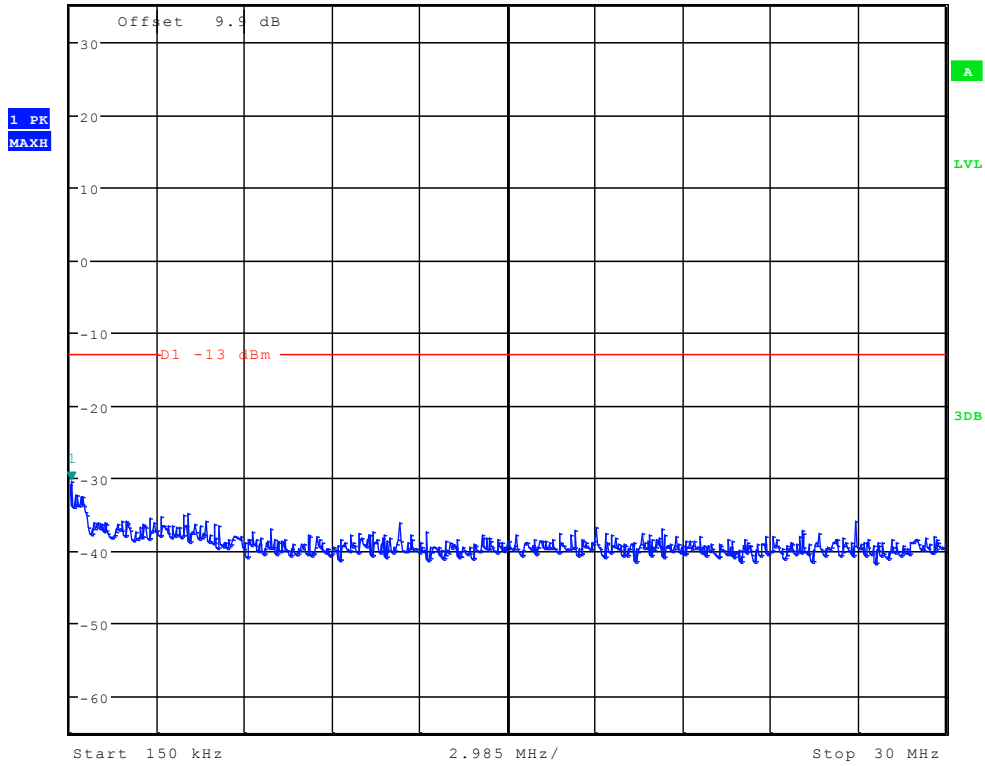


# TM3: WCDMA Channel 4132





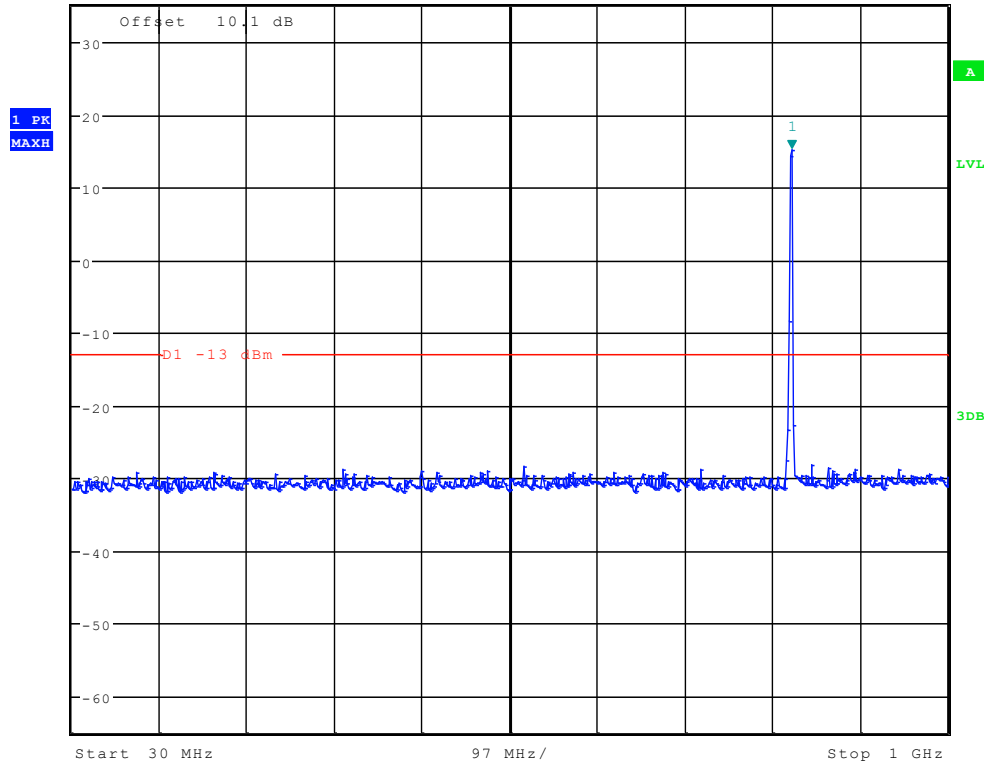
\*RBW 10 kHz      Marker 1 [T1 ]  
\*VBW 30 kHz      -30.52 dBm  
Ref 35 dBm      Att 55 dB      SWT 300 ms      197.836538462 kHz





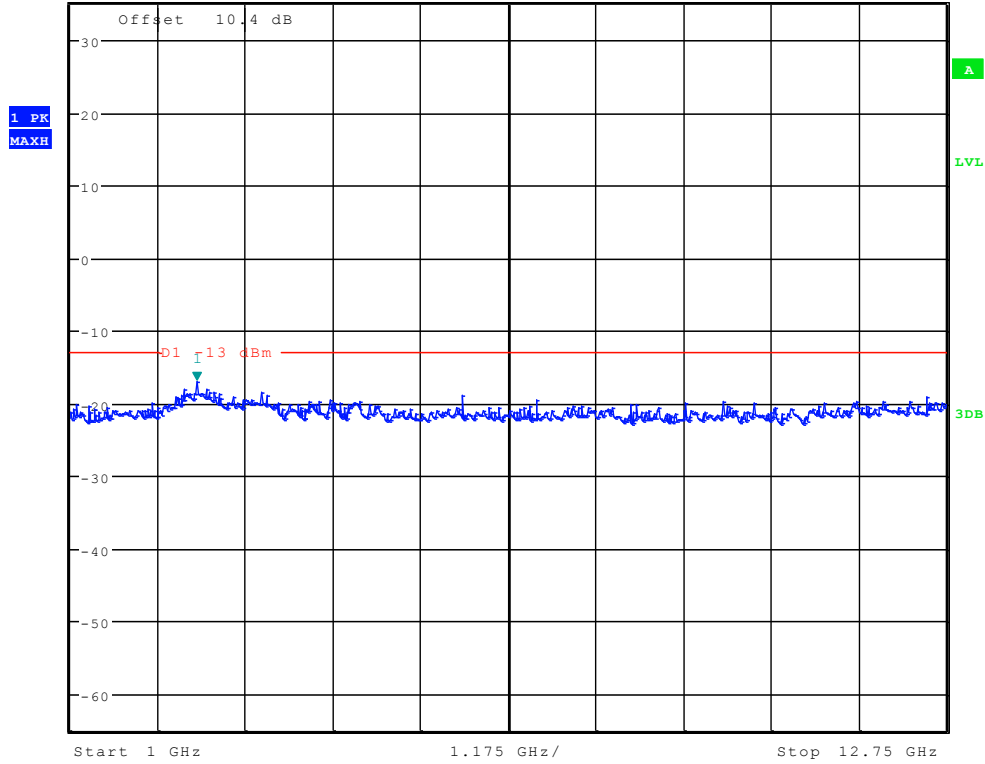


\*RBW 100 kHz      Marker 1 [T1 ]  
 \*VBW 300 kHz      15.10 dBm  
 Ref 35 dBm      Att 50 dB      SWT 100 ms      827.451923077 MHz





\* RBW 1 MHz      Marker 1 [T1 ]  
 \* VBW 3 MHz      -17.08 dBm  
 Ref 35 dBm      Att 50 dB      SWT 70 ms      2.694711538 GHz

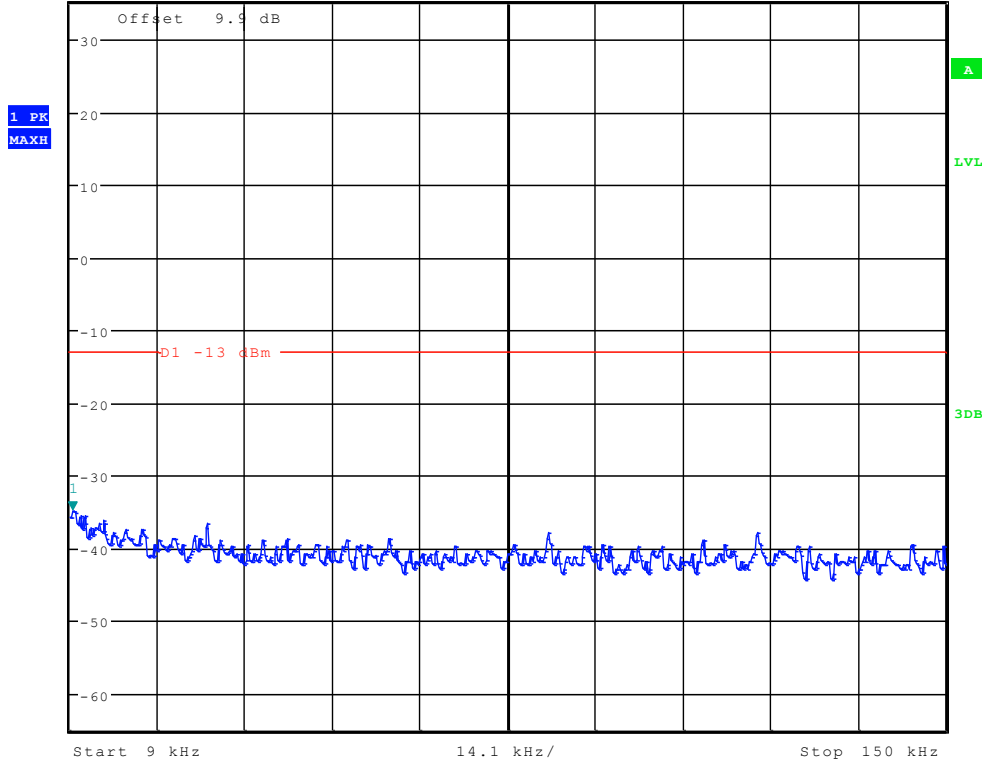




# Channel 4182

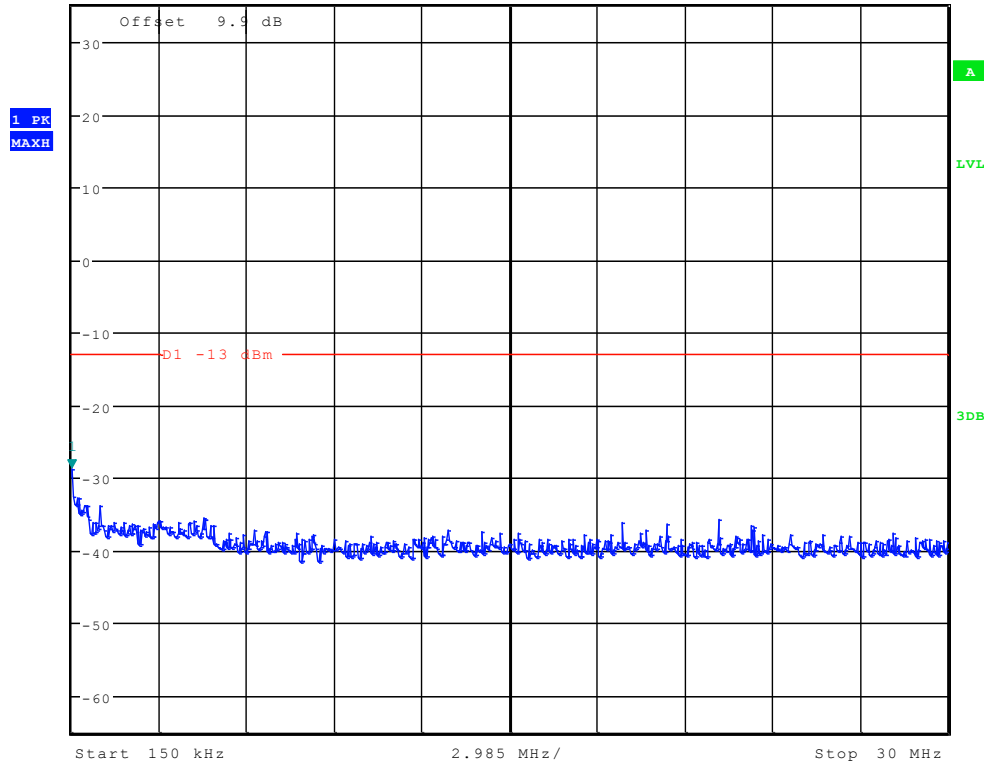


\*RBW 1 kHz      Marker 1 [T1 ]  
 \*VBW 10 kHz      -34.87 dBm  
 Ref 35 dBm      Att 55 dB      SWT 145 ms      9.451923077 kHz



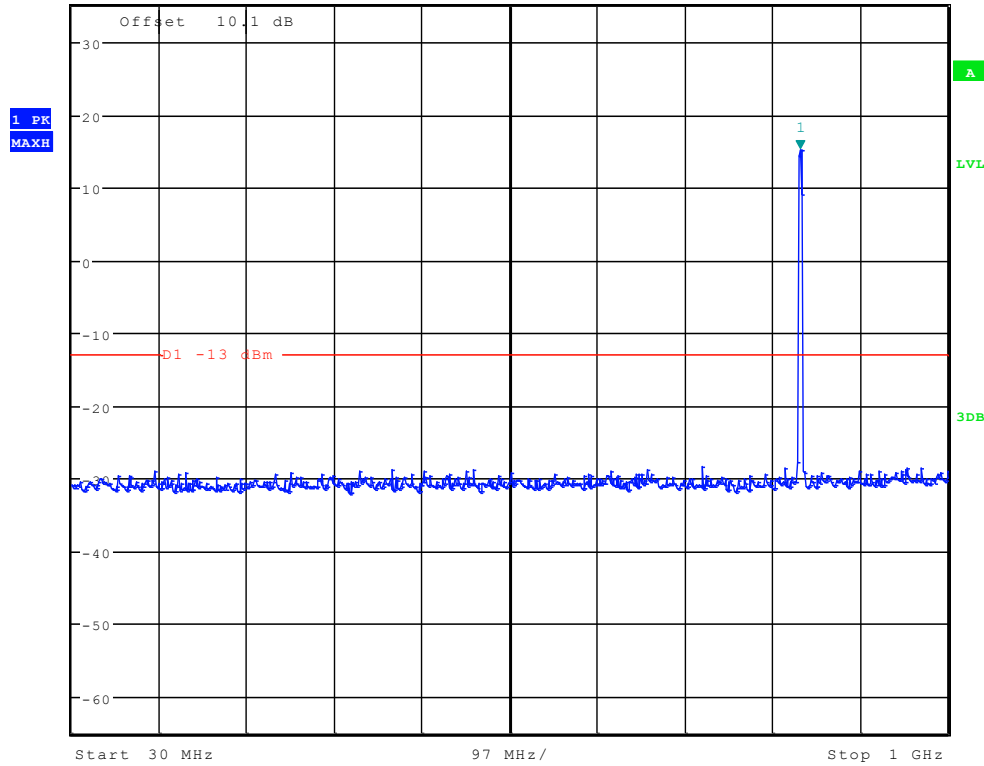


\*RBW 10 kHz      Marker 1 [T1 ]  
\*VBW 30 kHz      -28.75 dBm  
Ref 35 dBm      Att 55 dB      SWT 300 ms      150.000000000 kHz



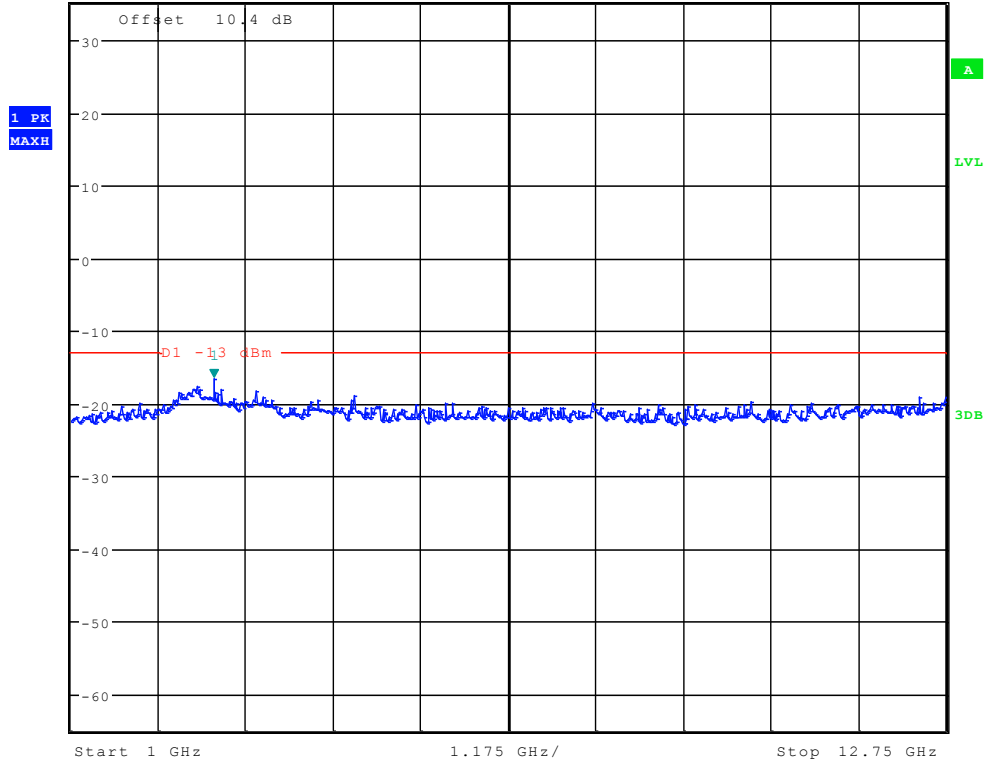


\*RBW 100 kHz      Marker 1 [T1 ]  
 \*VBW 300 kHz      15.17 dBm  
 Ref 35 dBm      Att 50 dB      SWT 100 ms      836.778846154 MHz





Ref 35 dBm Att 50 dB SWT 70 ms  
\*RBW 1 MHz Marker 1 [T1 ]  
\*VBW 3 MHz -16.58 dBm  
2.920673077 GHz

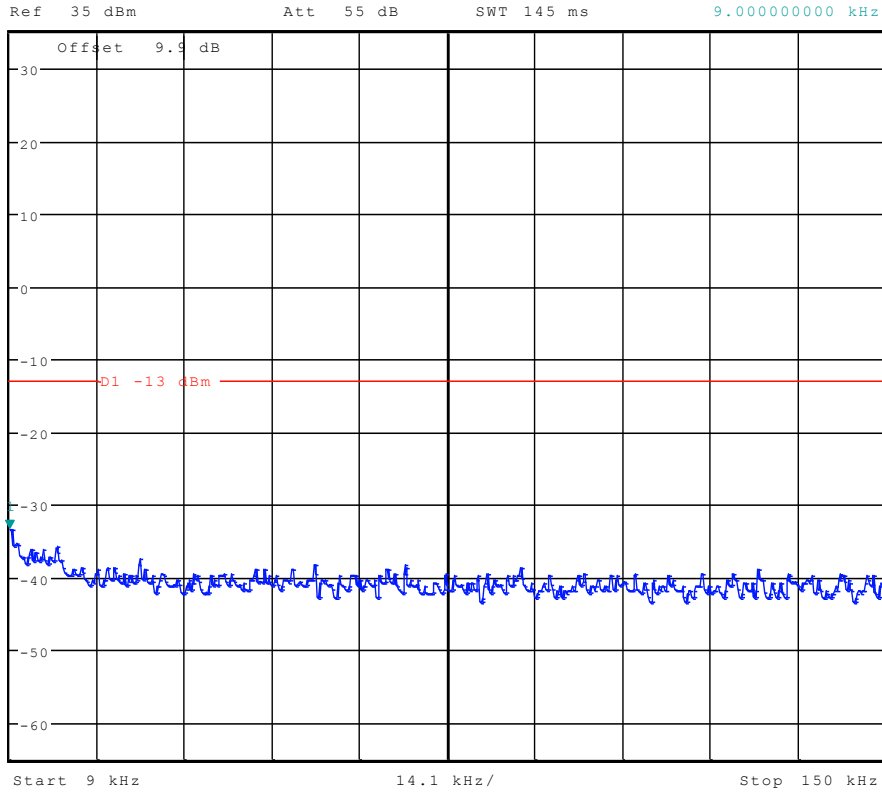




# Channel 4233

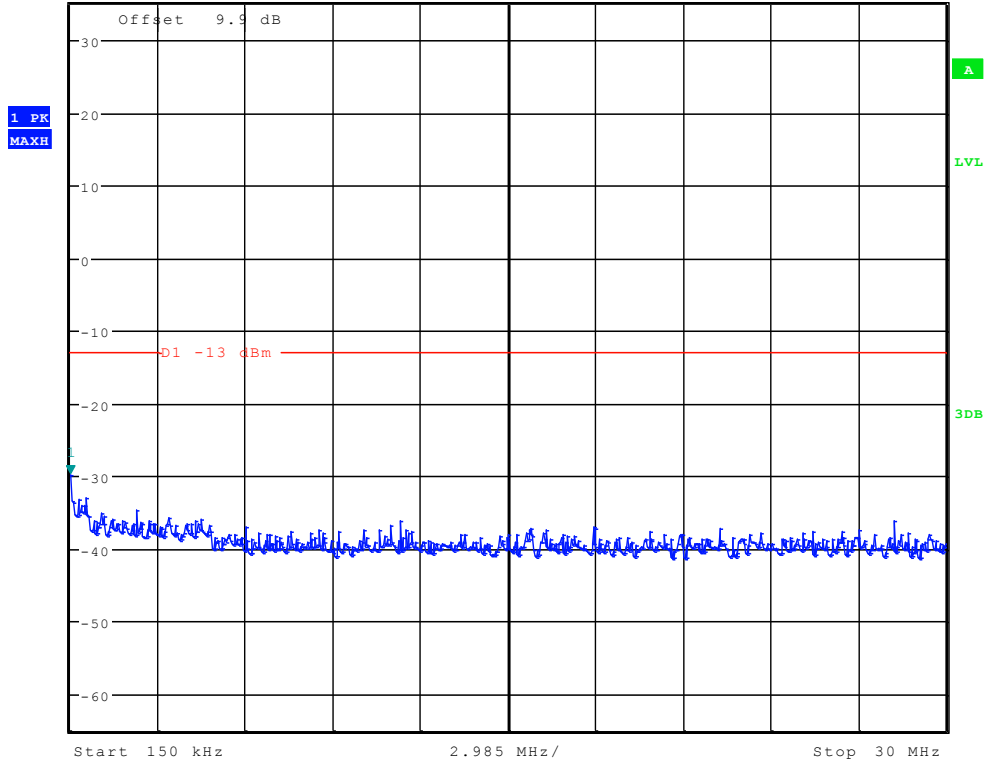


\*RBW 1 kHz      Marker 1 [T1 ]  
 \*VBW 10 kHz      -33.31 dBm  
 SWT 145 ms      9.000000000 kHz





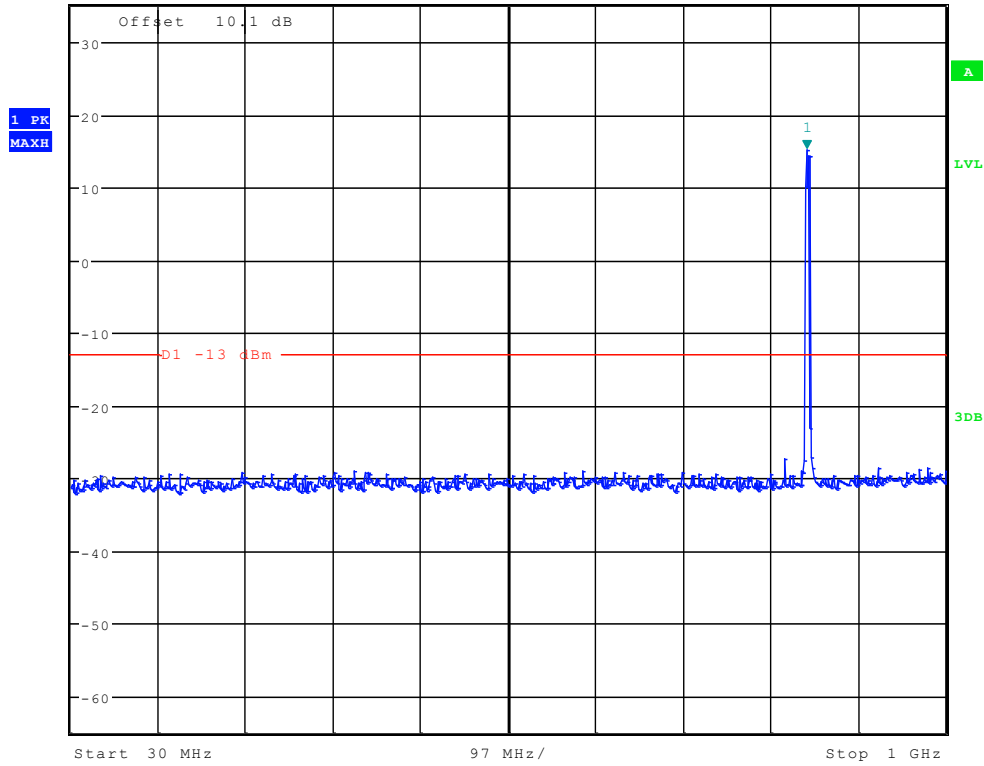
\*RBW 10 kHz      Marker 1 [T1 ]  
 \*VBW 30 kHz      -29.76 dBm  
 Ref 35 dBm      Att 55 dB      SWT 300 ms      150.000000000 kHz





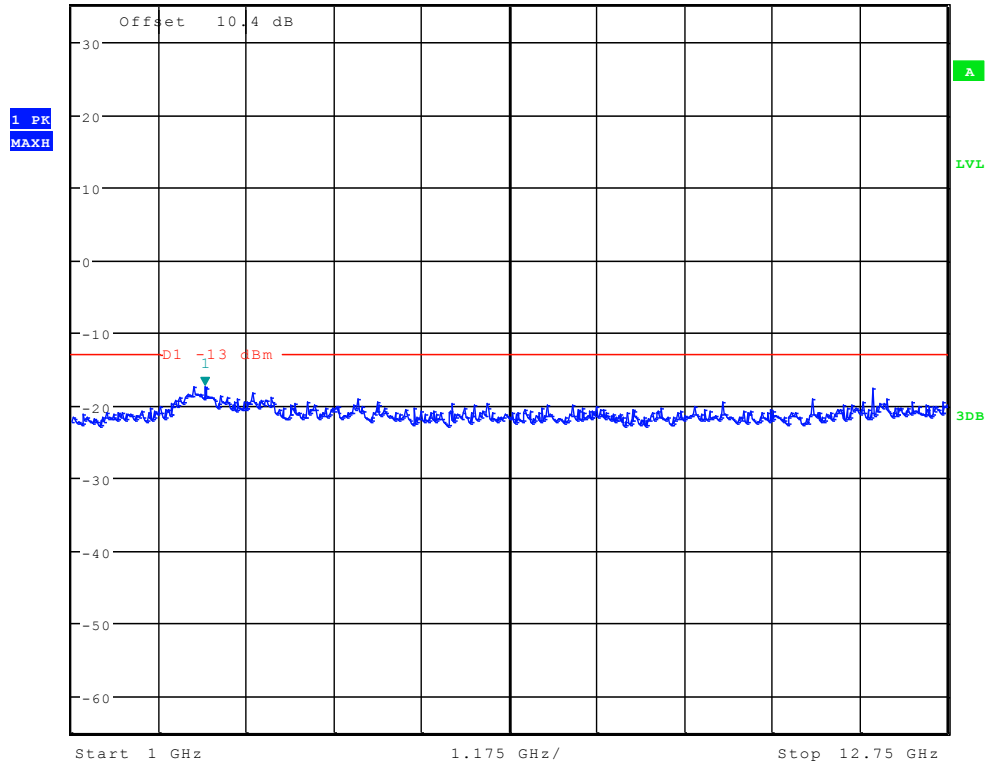


\*RBW 100 kHz      Marker 1 [T1 ]  
 \*VBW 300 kHz      15.06 dBm  
 Ref 35 dBm      Att 50 dB      SWT 100 ms      846.105769231 MHz





\*RBW 1 MHz      Marker 1 [T1 ]  
\*VBW 3 MHz      -17.33 dBm  
Ref 35 dBm      Att 50 dB      SWT 70 ms      2.788862179 GHz





## Appendix E

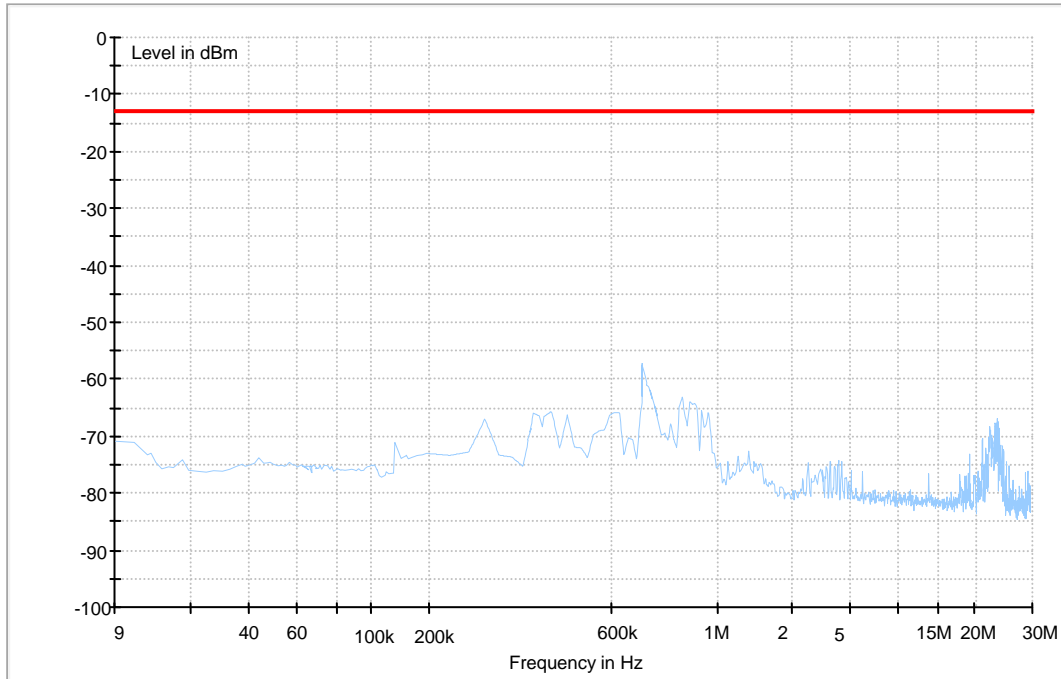
# Field Strength of Spurious Emissions

According to FCC Part 2.1053 & Part 22.917  
& RSS-132



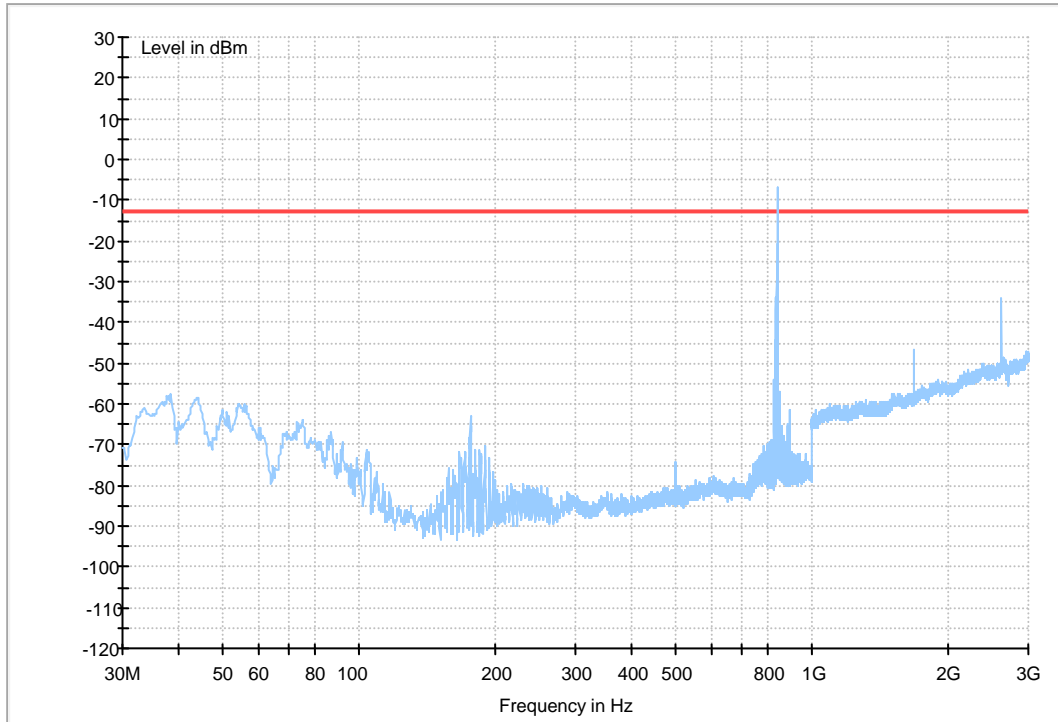
## GPRS 850

Traffic Mode (9kHz-30MHz)



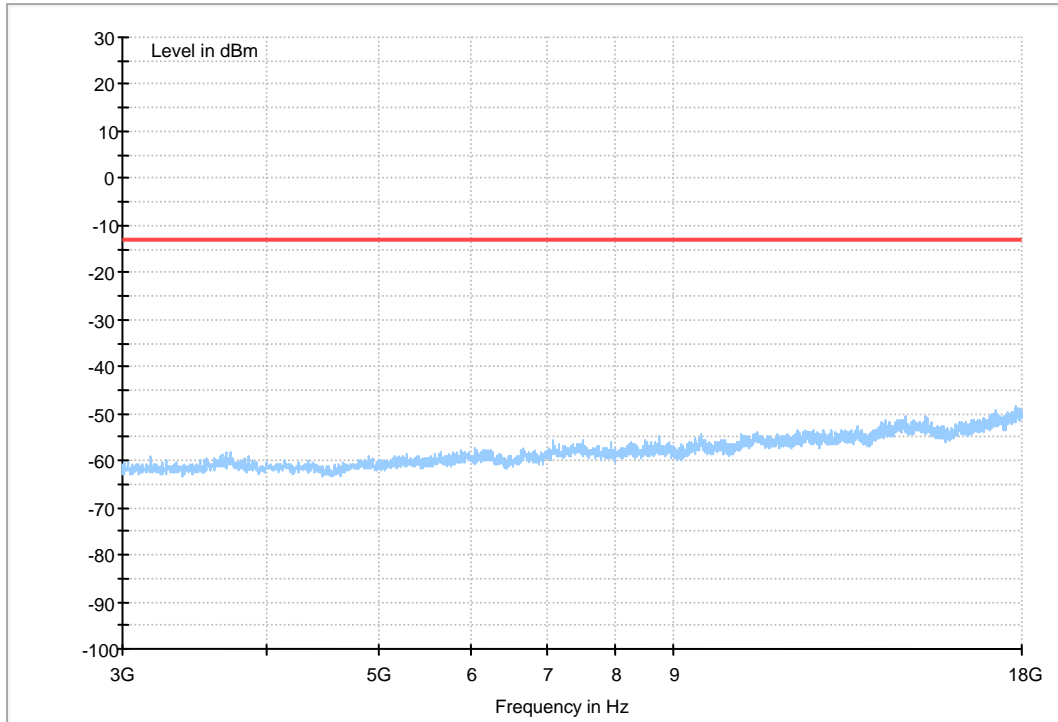


### Traffic Mode (30MHz-3GHz)





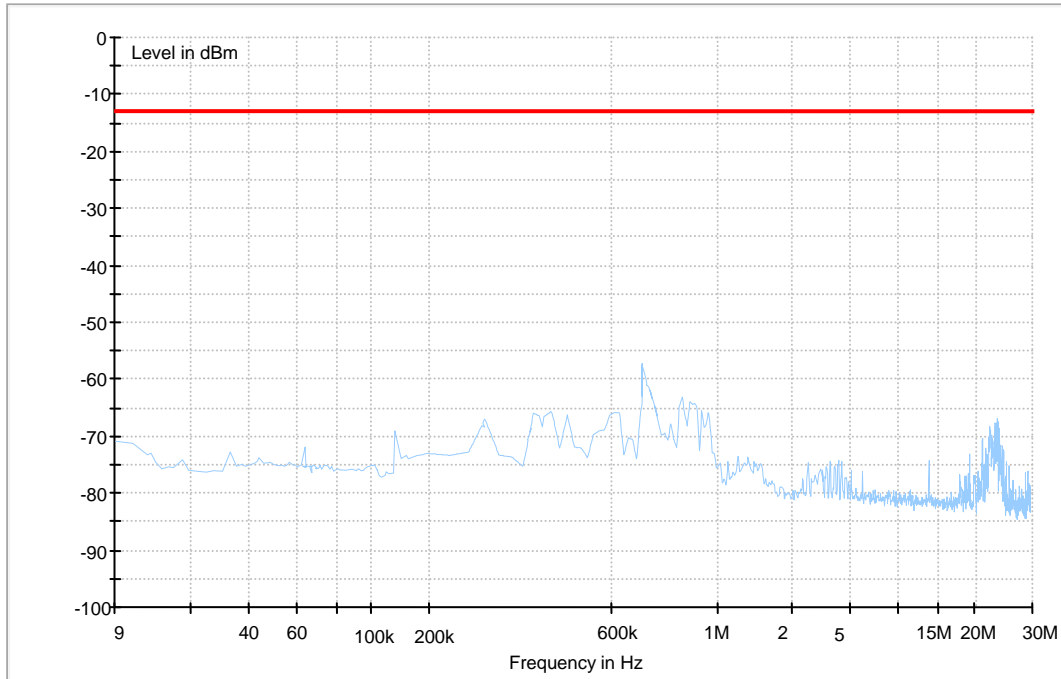
### Traffic Mode (3GHz-18GHz)





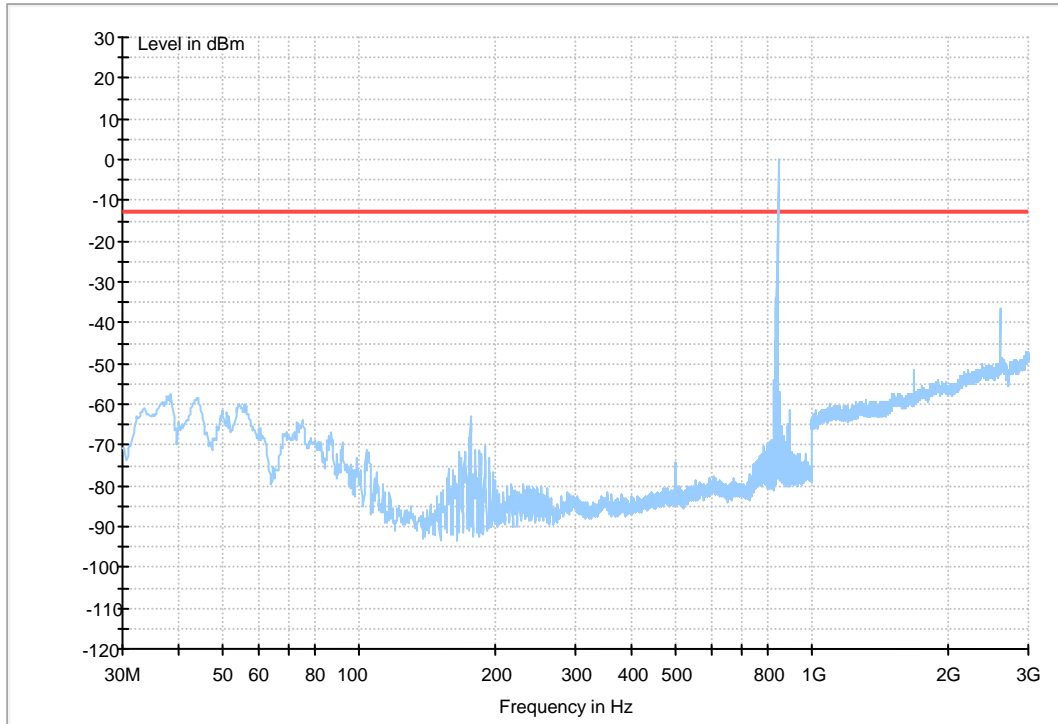
## EDGE 850

Traffic Mode (9kHz-30MHz)





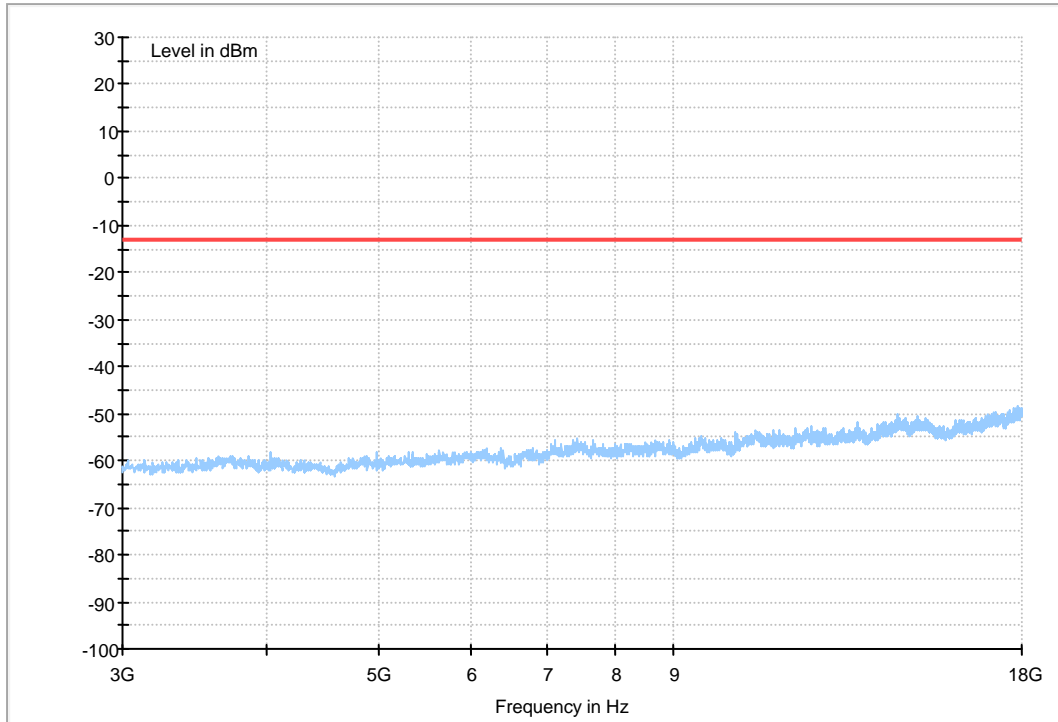
### Traffic Mode (30MHz-3GHz)







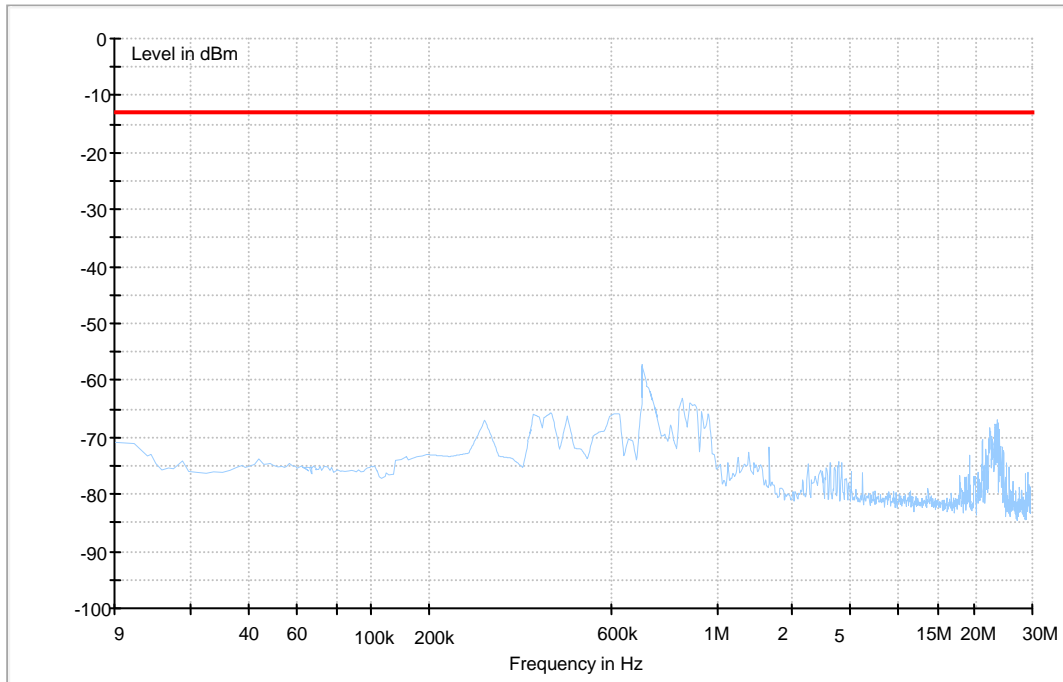
### Traffic Mode (3GHz-18GHz)





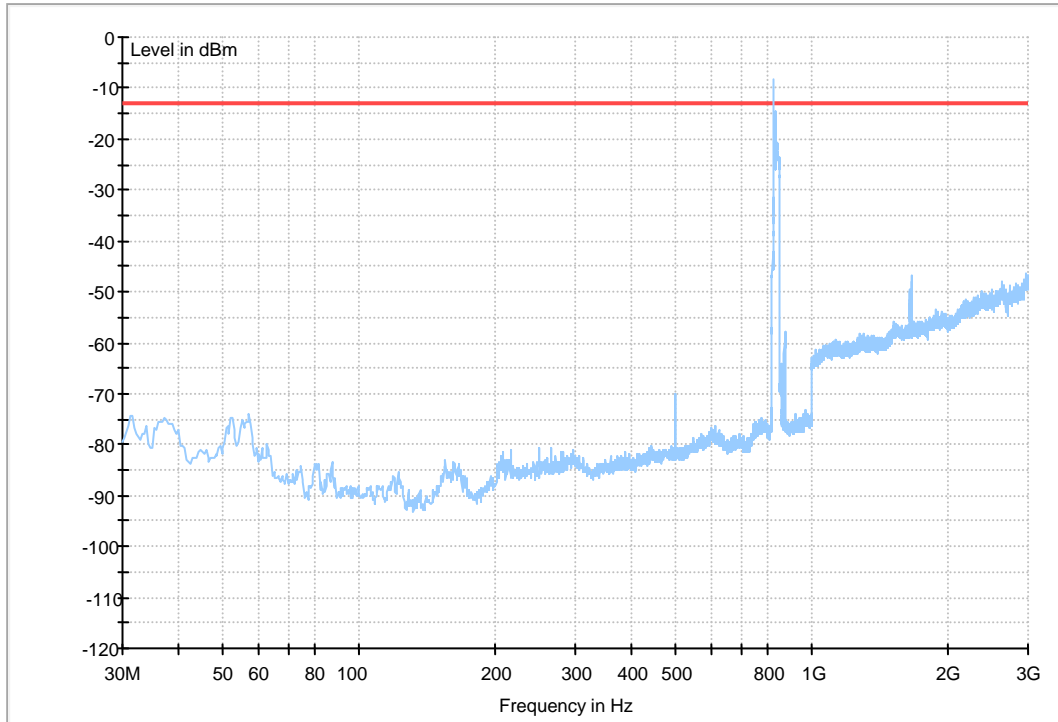
## WCDMA 850

Traffic Mode (9kHz-30MHz)



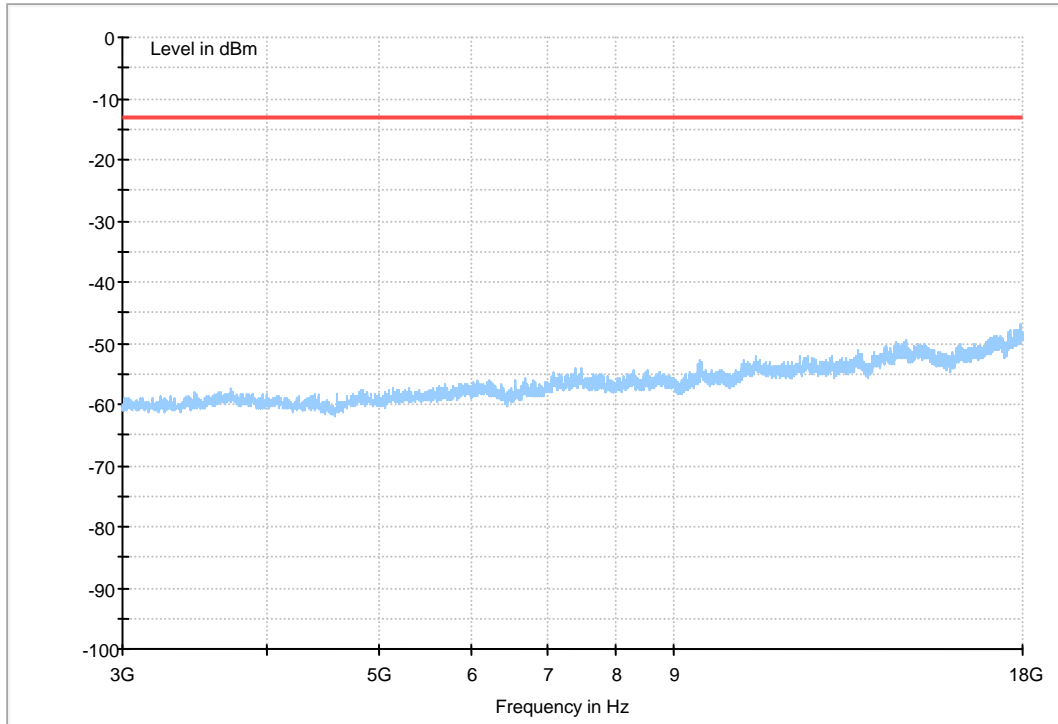


### Traffic Mode (30MHz-3GHz)





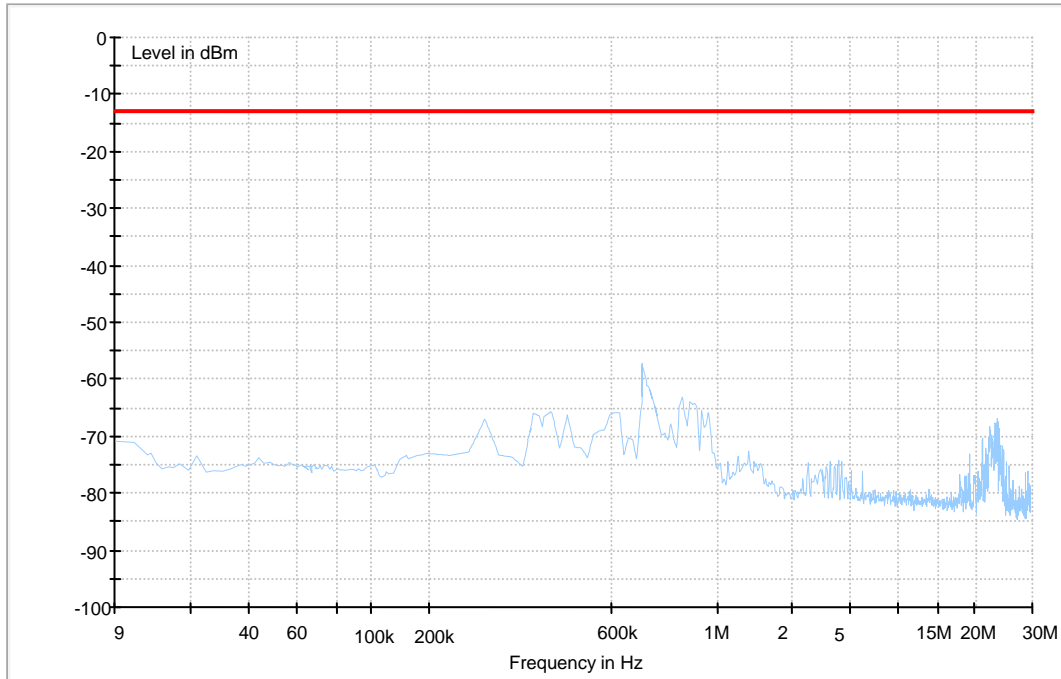
### Traffic Mode (3GHz-18GHz)





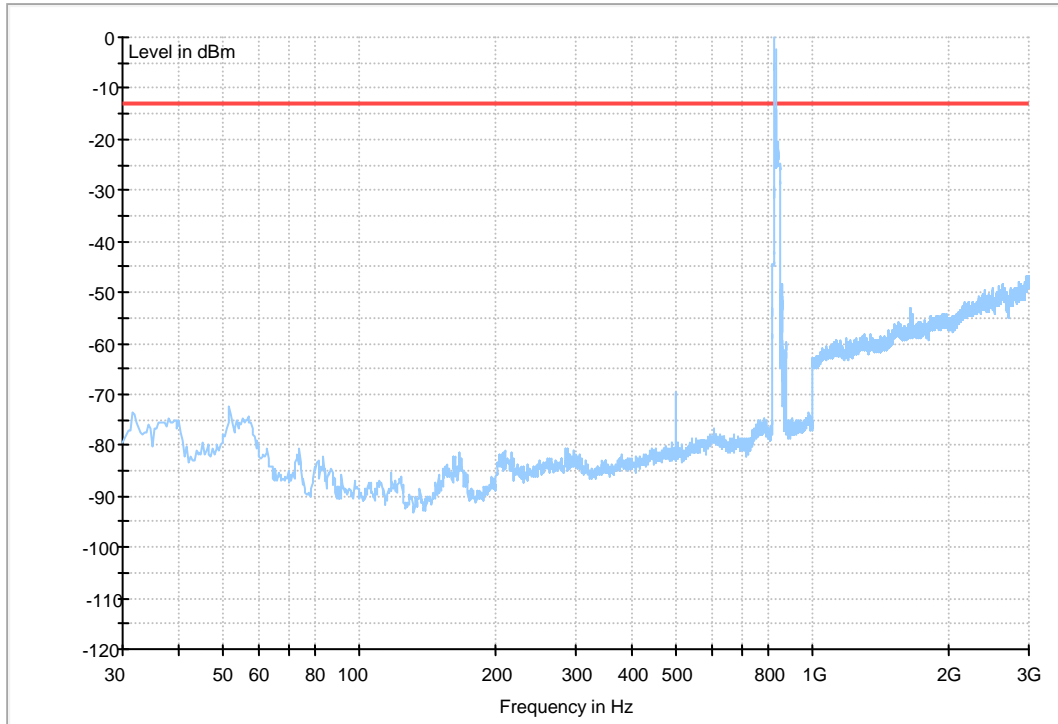
## HSUPA 850

Traffic Mode (9kHz-30MHz)



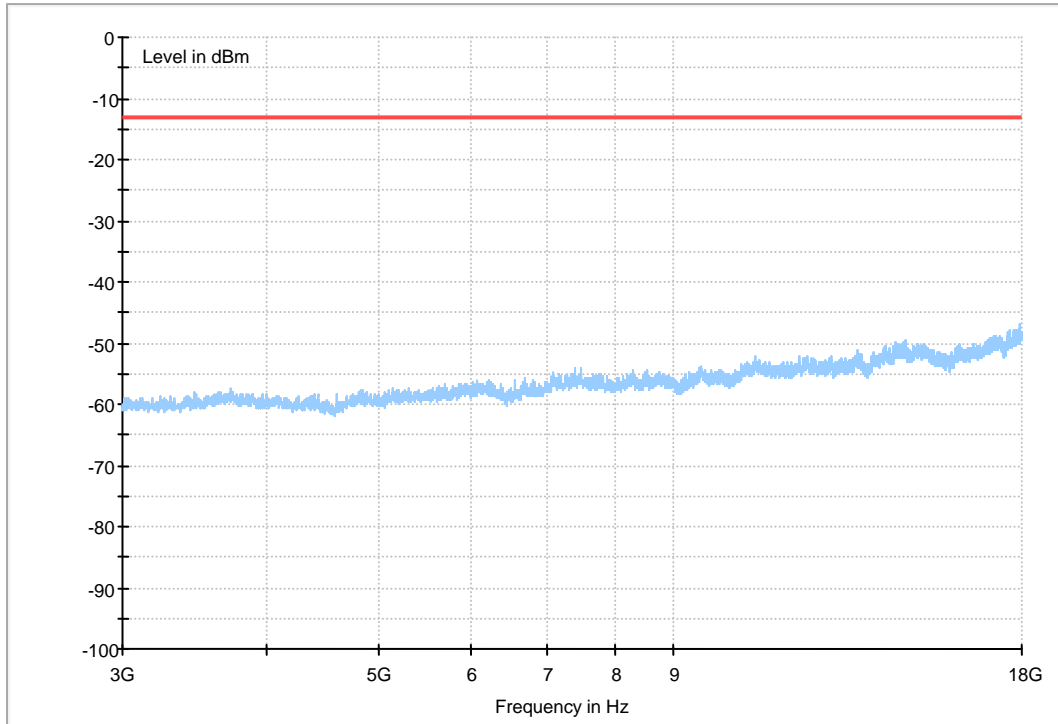


### Traffic Mode (30MHz-3GHz)





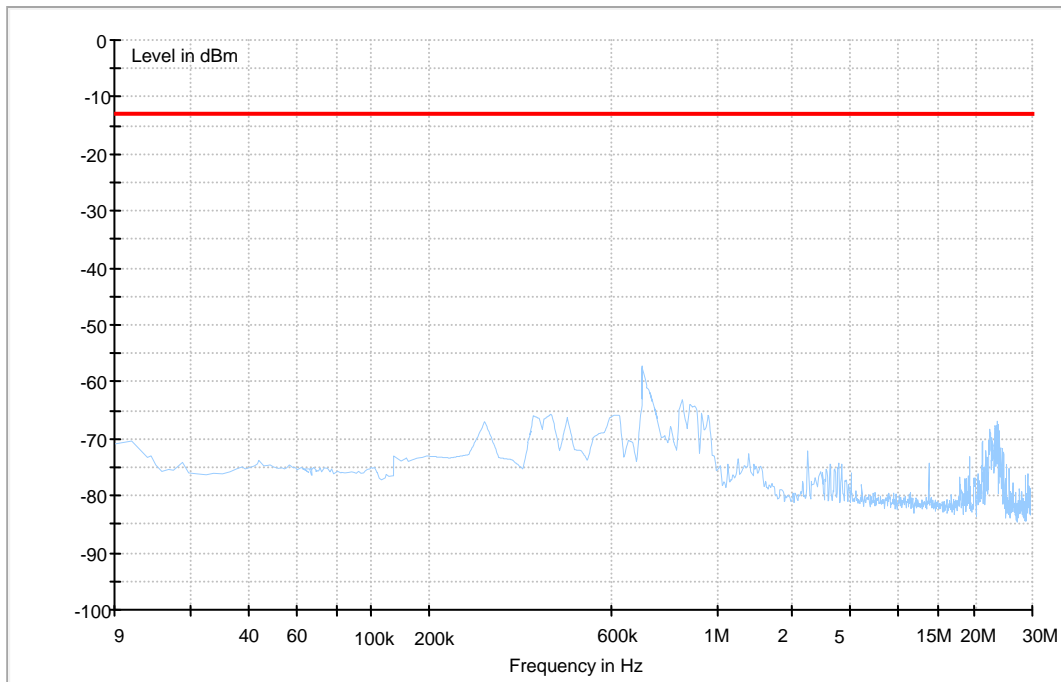
### Traffic Mode (3GHz-18GHz)





## HSDPA 850

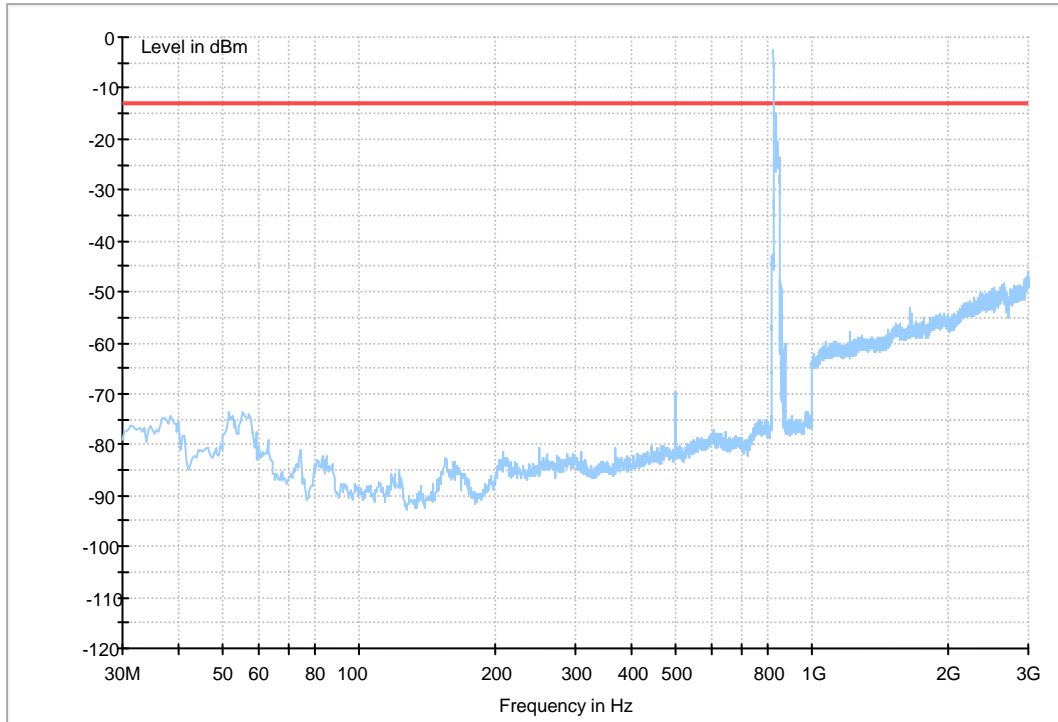
Traffic Mode (9kHz-30MHz)





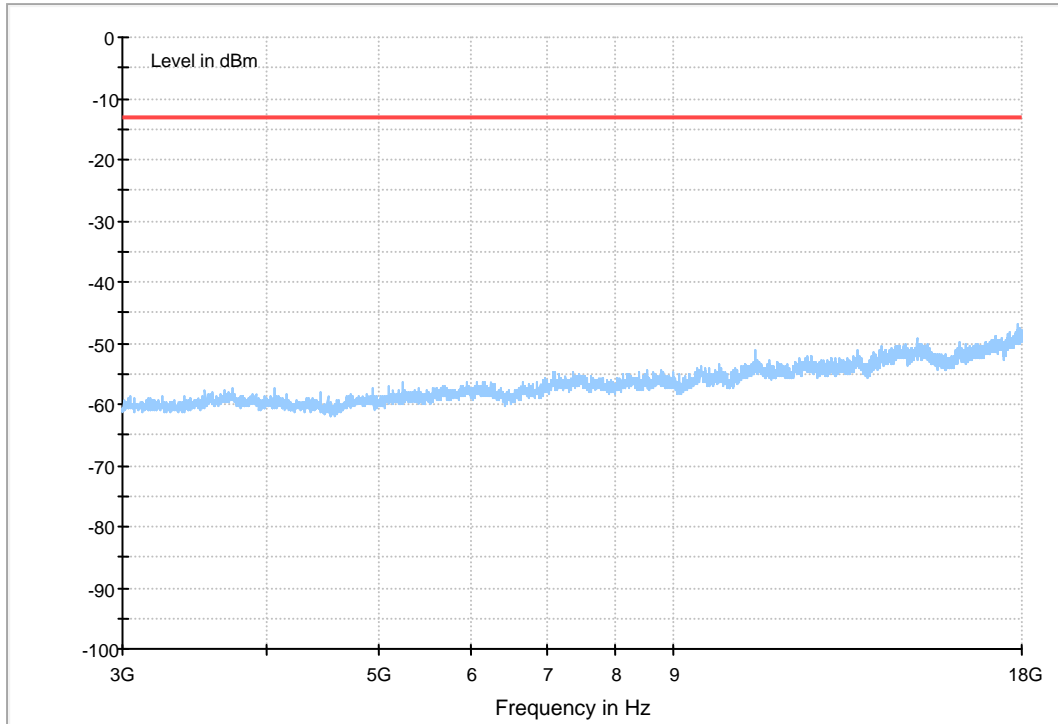


### Traffic Mode (30MHz-3GHz)





### Traffic Mode (3GHz-18GHz)





FCC Test Report of UMG587/E587u-5  
FCC ID: QISE587U-5  
IC ID: 6369A-E587U5



---

# Appendix F

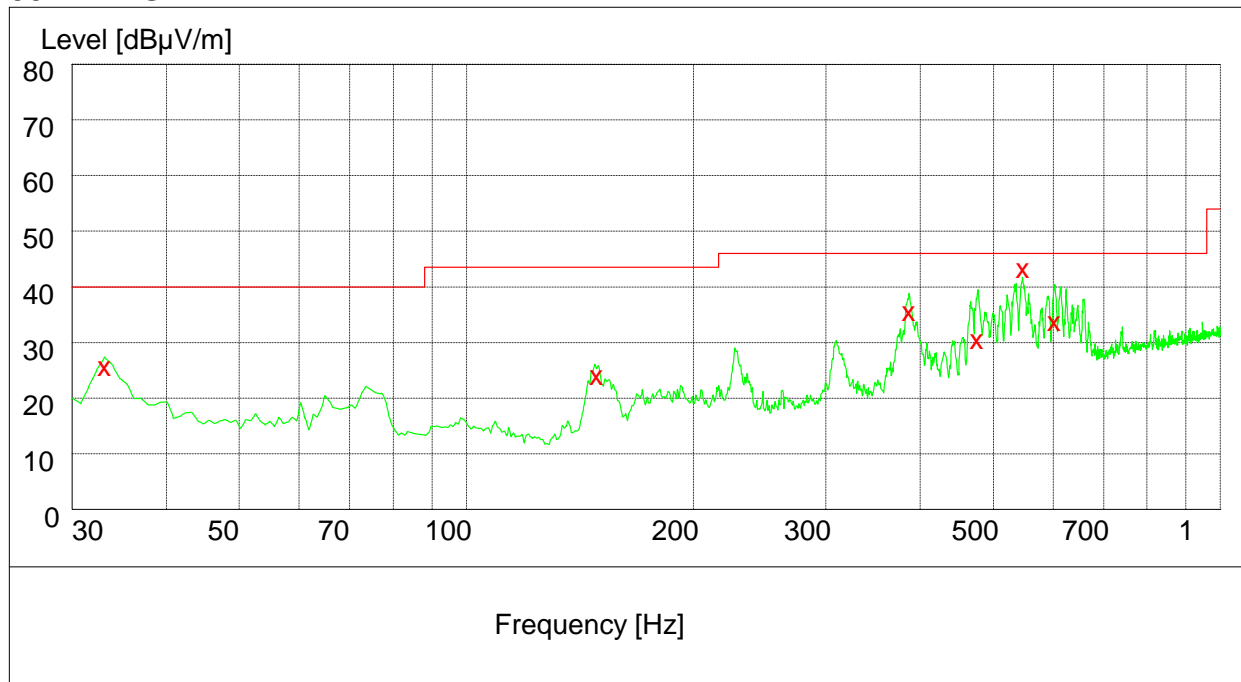
# Receiver Spurious Emissions

According to RSS-132



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

### 30MHz-1GHz

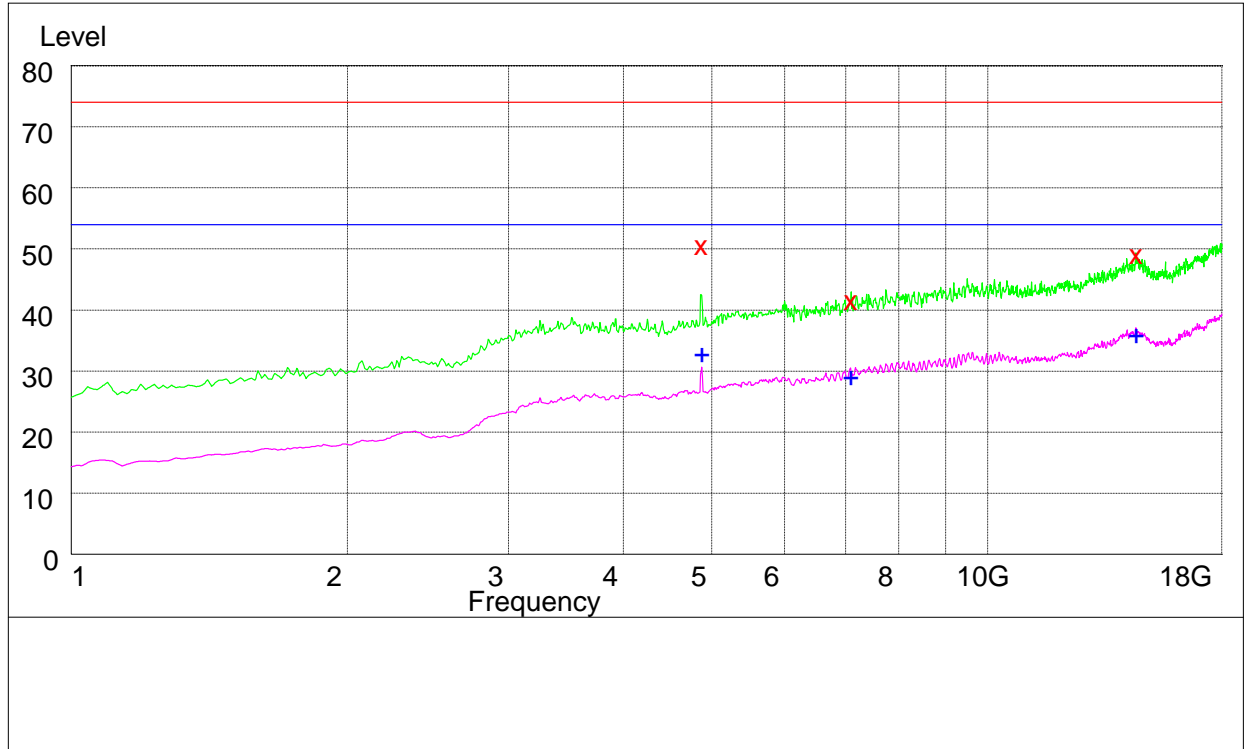


#### MEASUREMENT RESULT: QP Detector

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarisation
33.600000	26.50	11.8	40.0	13.5	100.0	56.00	HORIZONTAL
158.300000	23.10	9.7	43.5	20.4	100.0	120.00	HORIZONTAL
386.760000	36.10	17.8	46.0	9.9	100.0	324.00	HORIZONTAL
476.700000	30.80	19.5	46.0	15.2	100.0	282.00	HORIZONTAL
547.620000	42.70	21.3	46.0	3.3	100.0	125.00	HORIZONTAL
602.280000	34.30	22.5	46.0	11.7	100.0	226.00	HORIZONTAL



**1GHz-18GHz**



**MEASUREMENT RESULT: PK Detector**

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Height cm	Azimuth deg	Polarisation
4876.500000	50.50	-3.5	74.0	23.5	161.0	206.00	HORIZONTAL
7094.000000	41.90	1.3	74.0	32.1	165.0	316.00	HORIZONTAL
14524.000000	49.40	14.9	74.0	24.6	100.0	291.00	VERTICAL

**MEASUREMENT RESULT: AV Detector**

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Height cm	Azimuth deg	Polarisation
4872.500000	33.20	-3.3	54.0	20.8	100.0	33.00	VERTICAL
7086.000000	29.40	1.5	54.0	24.6	102.0	48.00	HORIZONTAL
14519.000000	36.40	14.9	54.0	17.6	100.0	186.00	VERTICAL



# Appendix G

## Photos of Test Setup



## Field Strength of Spurious Emissions



Radiated Spurious Emission (below 3GHz)



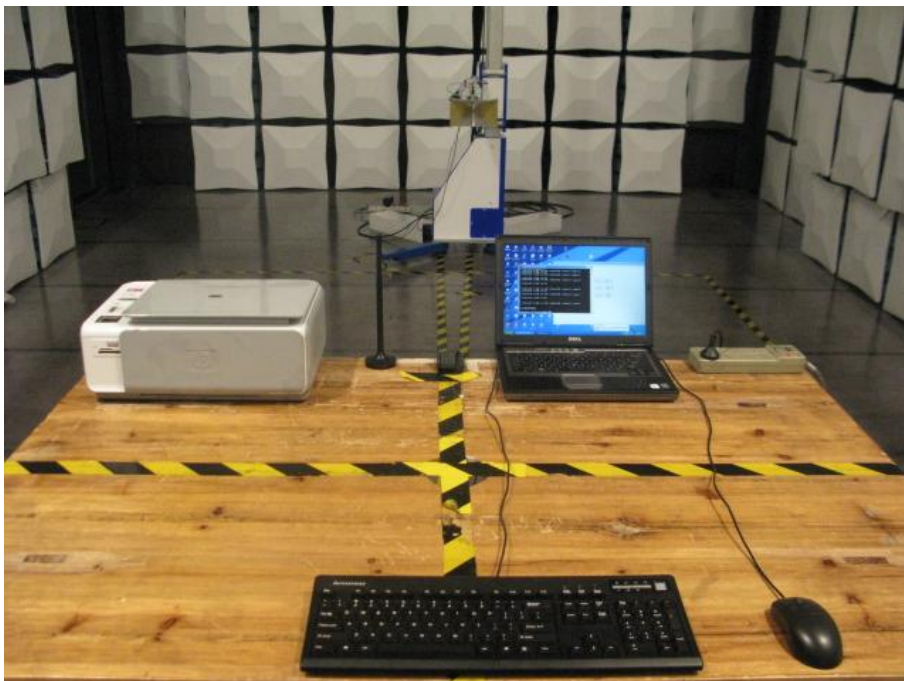
Radiated Spurious Emission (3GHz to18GHz)



## Receiver Spurious Emissions



Radiated Disturbance Emissions (30MHz-1GHz)



Radiated Disturbance Emissions (above 1GHz)