



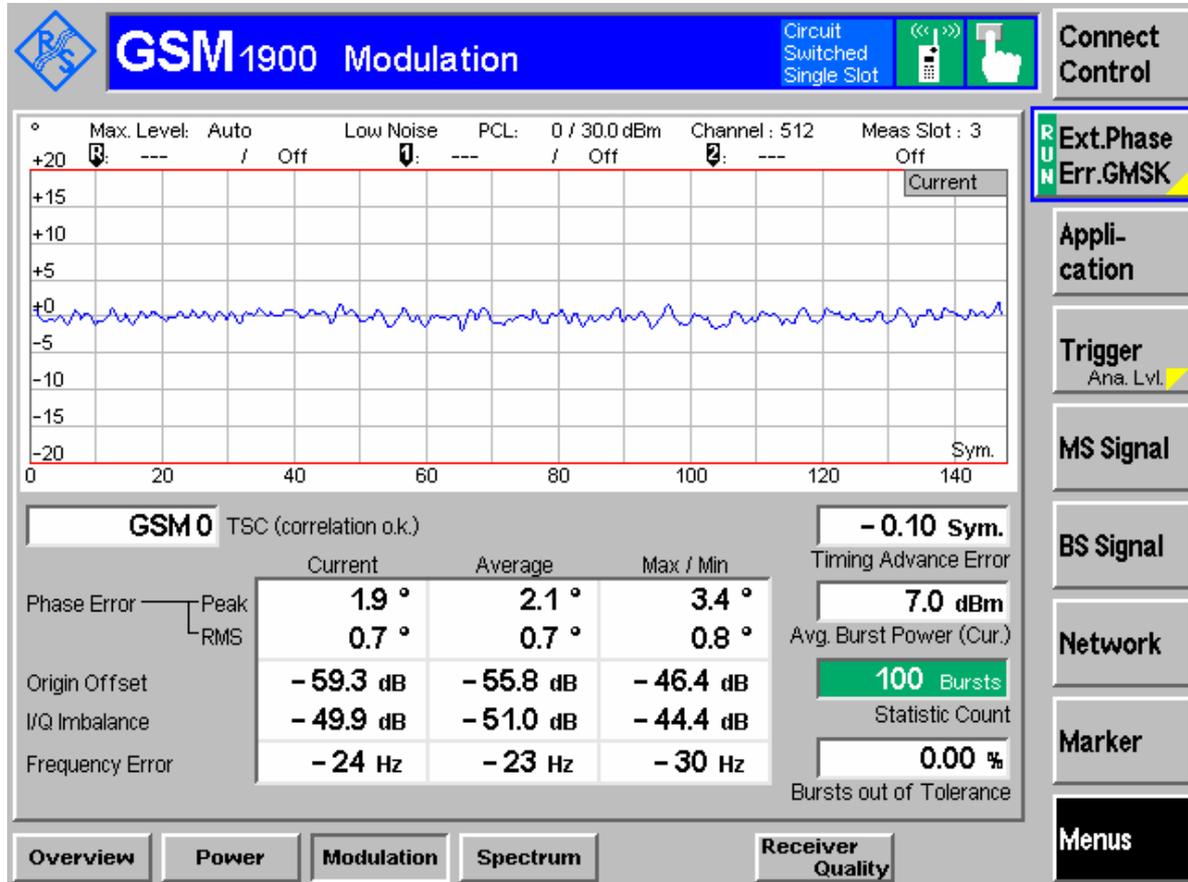
---

# Appendix A

## Modulation Characteristics

According to FCC Part 2.1047 & Part24 Subpart E

## Channel 512 ( TM1:GPRS/GSM )



## Channel 661

**GSM1900** Modulation
Circuit Switched Single Slot
◀ ▶
👆

Max. Level: Auto
Low Noise: --- / Off
PCL: 0 / 30.0 dBm
Channel: 661
Meas Slot: 3

Ext.Phase Err.GMSK

	Current	Average	Max / Min
Phase Error — Peak	1.9 °	2.1 °	3.3 °
RMS	0.6 °	0.7 °	0.8 °
Origin Offset	-57.9 dB	-55.9 dB	-48.1 dB
I/Q Imbalance	-57.9 dB	-53.5 dB	-46.1 dB
Frequency Error	-26 Hz	-23 Hz	-29 Hz

- 0.07 Sym.	Timing Advance Error
6.2 dBm	Avg. Burst Power (Cur.)
100 Bursts	Statistic Count
0.00 %	Bursts out of Tolerance

Overview
Power
Modulation
Spectrum
Receiver Quality

Connect Control

Ext.Phase Err.GMSK

Application

Trigger Ana. Lvl. ▾

MS Signal

BS Signal

Network

Marker

Menus

# Channel 810

**GSM1900 Modulation**
Circuit Switched Single Slot
<< >>
Connect Control

Max. Level: Auto    Low Noise    PCL: 0 / 30.0 dBm    Channel : 810    Meas Slot : 3  
+20    --- / Off    --- / Off    ---    ---    Off

**GSM 0** TSC (correlation o.k.)

	Current	Average	Max / Min
Phase Error — Peak	1.6 °	2.0 °	3.1 °
RMS	0.7 °	0.6 °	0.8 °
Origin Offset	-54.2 dB	-55.9 dB	-47.8 dB
I/Q Imbalance	-63.6 dB	-58.2 dB	-48.2 dB
Frequency Error	35 Hz	35 Hz	40 Hz

- 0.07 Sym.

Timing Advance Error

6.7 dBm

Avg. Burst Power (Cur.)

100 Bursts

Statistic Count

0.00 %

Bursts out of Tolerance

Overview
Power
Modulation
Spectrum
Receiver Quality

Ext.Phase Err.GMSK

Application

Trigger Ana. Lvl.

MS Signal

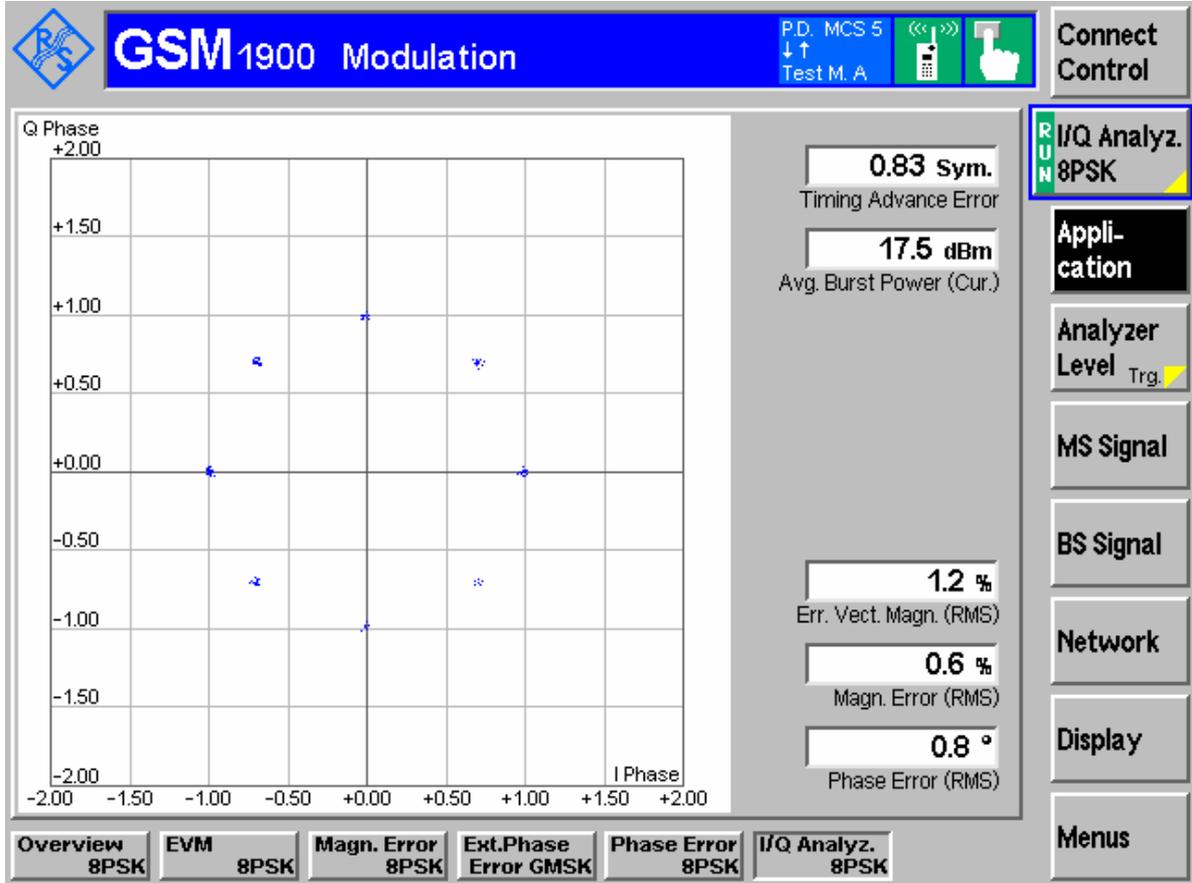
BS Signal

Network

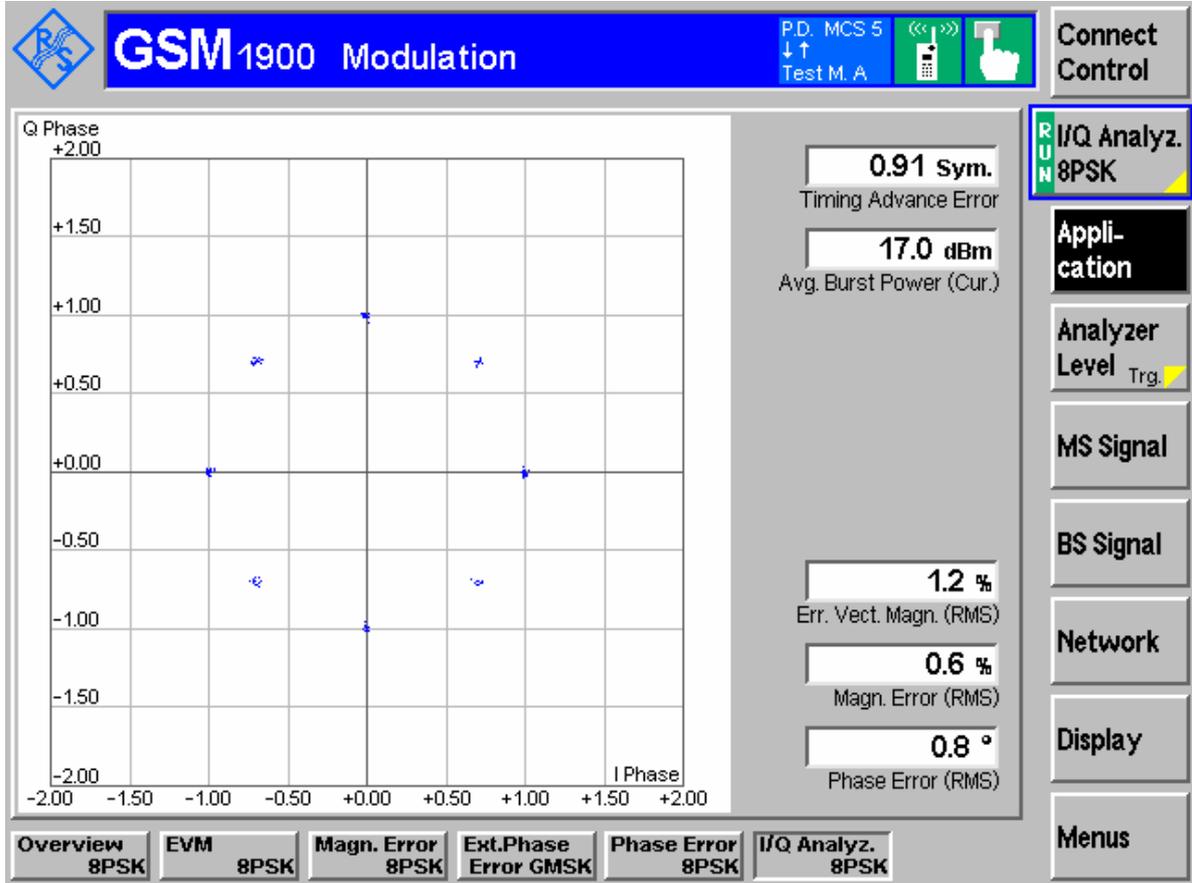
Marker

Menus

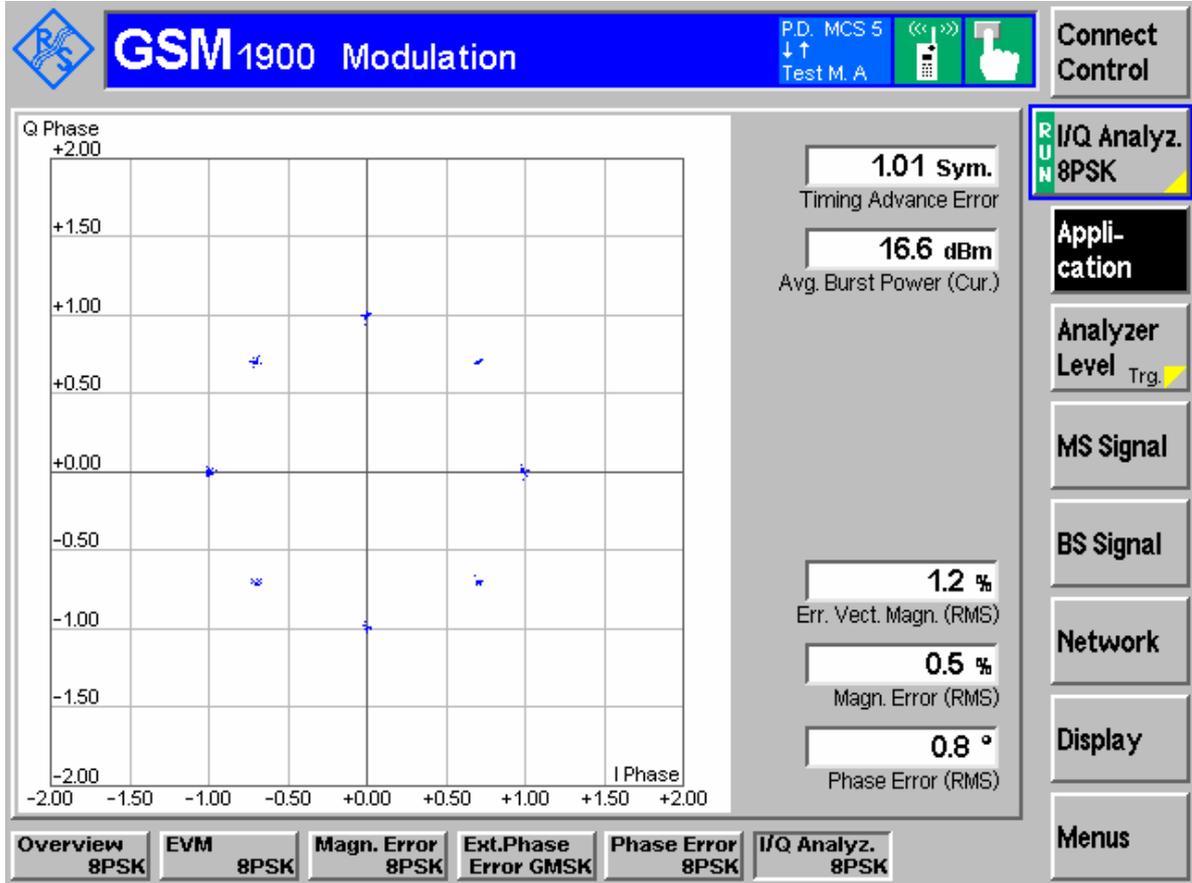
### Channel 512 ( TM1:EDGE )



# Channel 661



# Channel 810





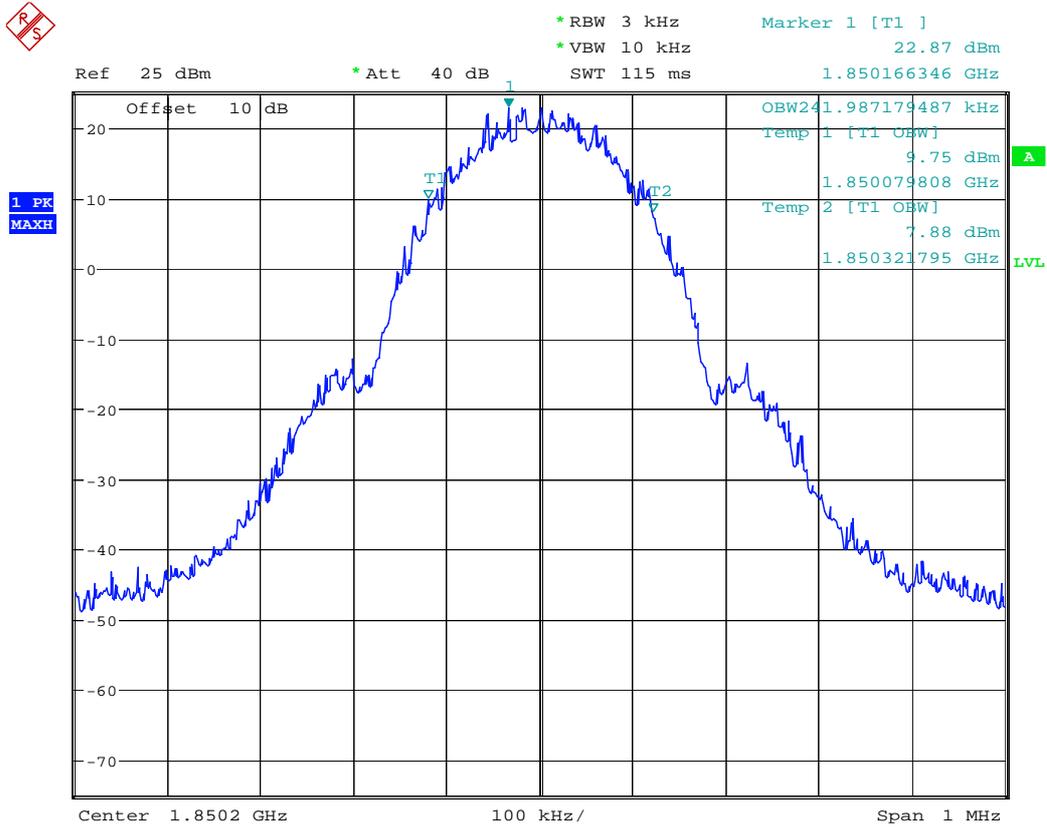
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## Appendix B

# Occupied Bandwidth

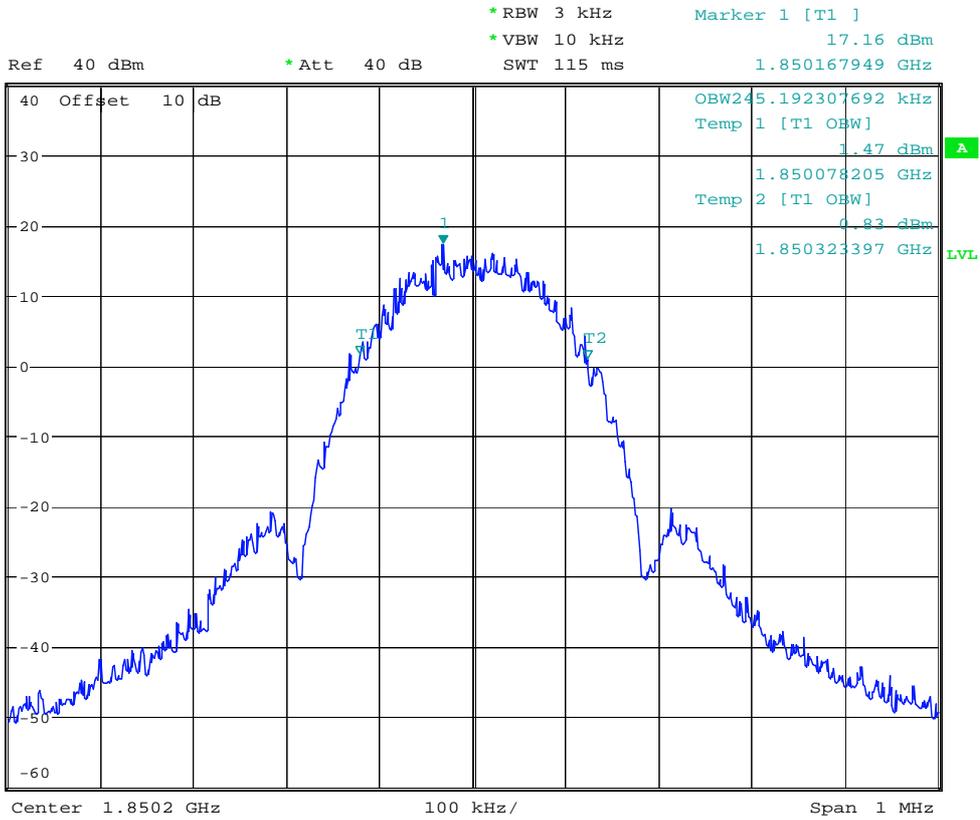
According to FCC Part 2.1049 & Part 24 Subpart E

# TM1:GPRS/GSM Channel 512



Date: 20.JUL.2007 02:01:46

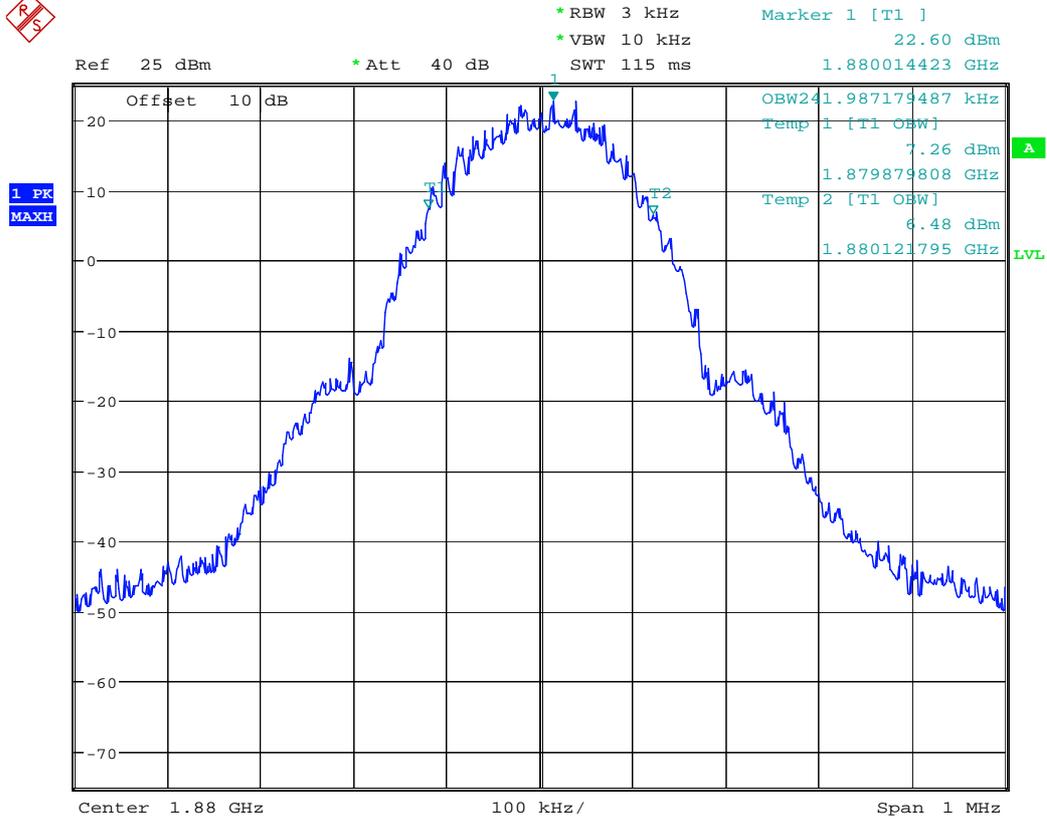
# TM2:EDGE Channel 512



Date: 20.JUL.2007 02:15:50



# TM1:GPRS/GSM Channel 661



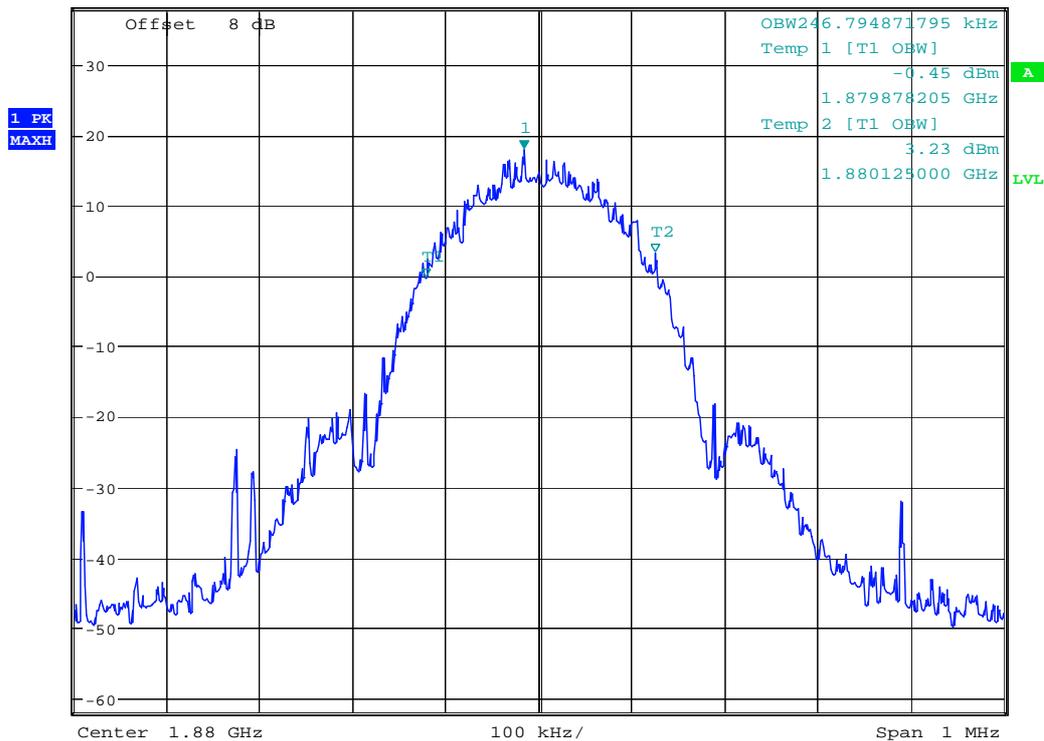
Date: 20.JUL.2007 02:02:45



# TM2:EDGE Channel 661

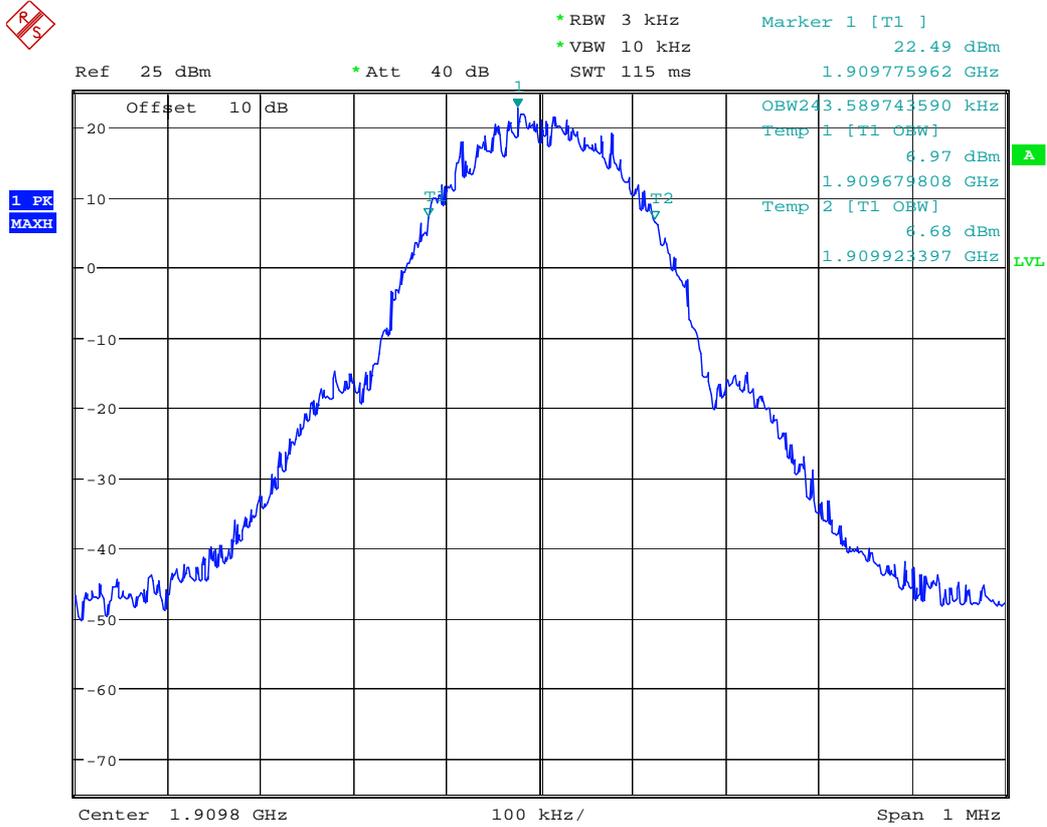


Ref 38 dBm      \*Att 40 dB      \*RBW 3 kHz      \*VBW 10 kHz      Marker 1 [T1]      17.88 dBm  
 SWT 115 ms      1.879983974 GHz



Date: 20.JUL.2007 02:17:50

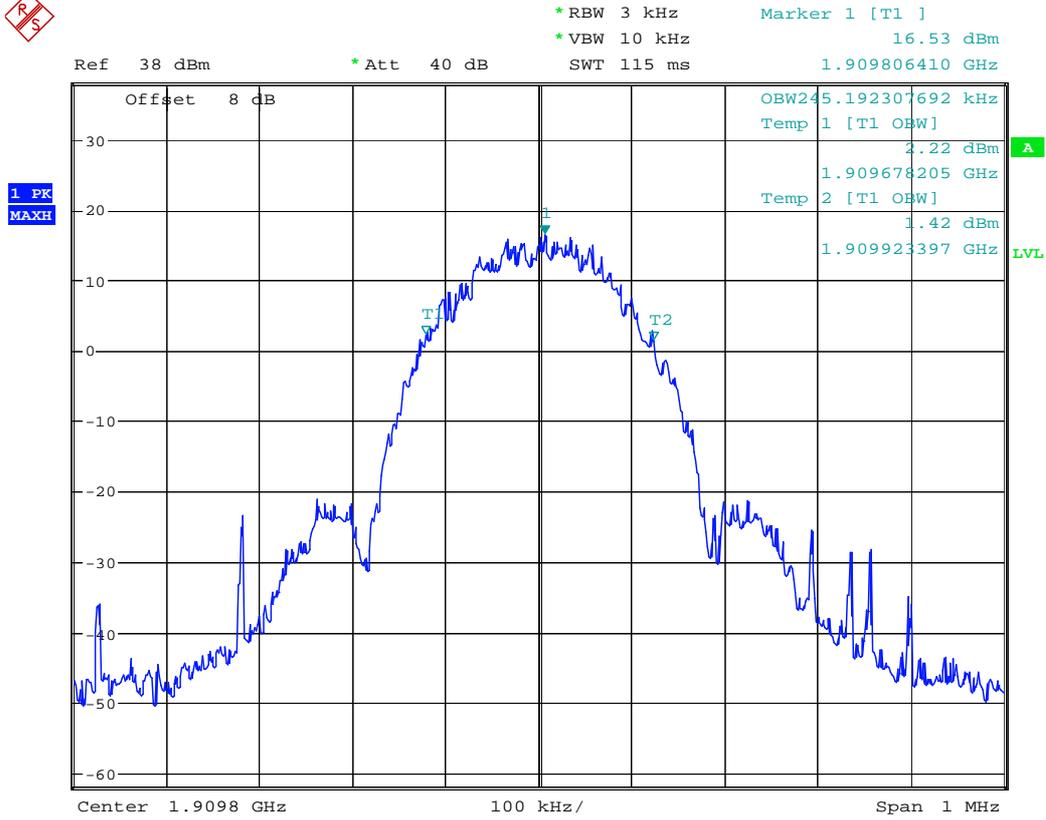
# TM1:GPRS/GSM Channel 810



Date: 20.JUL.2007 02:04:50



# TM2: EDGE Channel 810



Date: 20.JUL.2007 02:18:46



# Appendix C

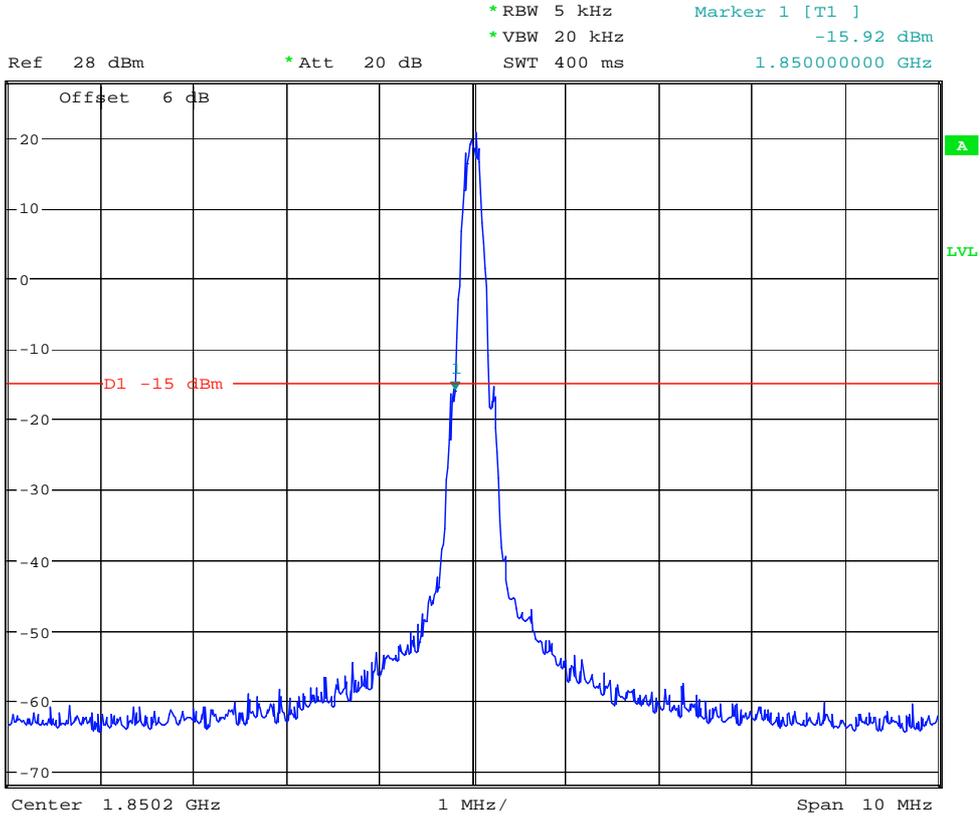
## Band Edges Compliance According to FCC Part 2.1051 & 24.238



# TM1:GPRS/GSM

## Left Edge

### Channel 512

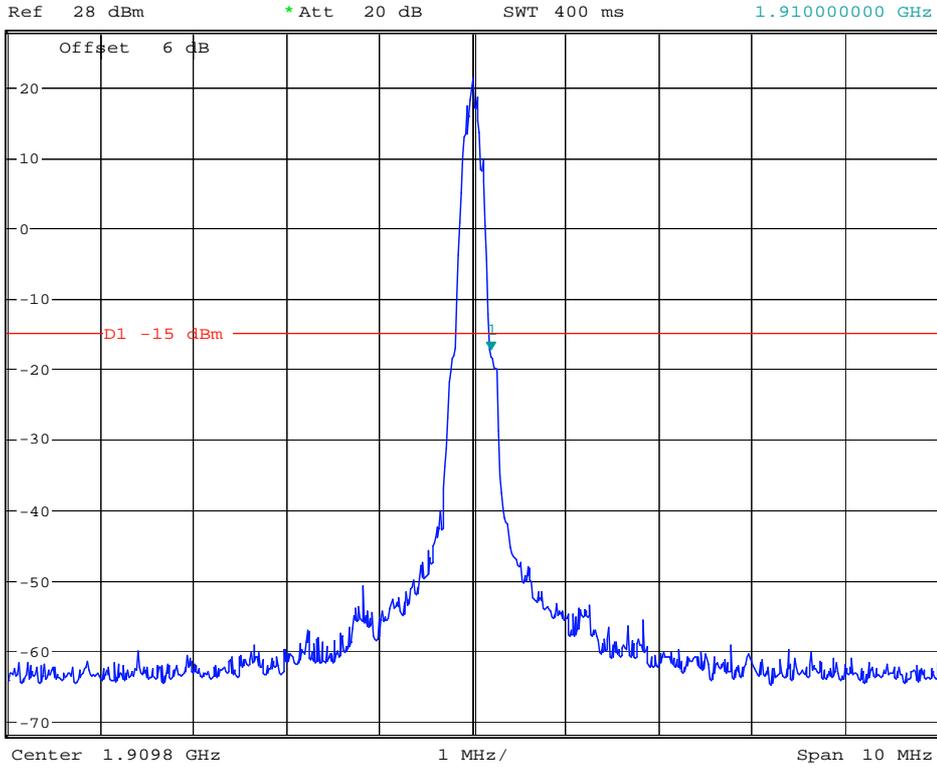


Date: 20.JUL.2007 20:13:18

### Right Edge Channel 810



\*RBW 5 kHz      Marker 1 [T1 ]  
\*VBW 20 kHz      -17.59 dBm  
SWT 400 ms      1.910000000 GHz



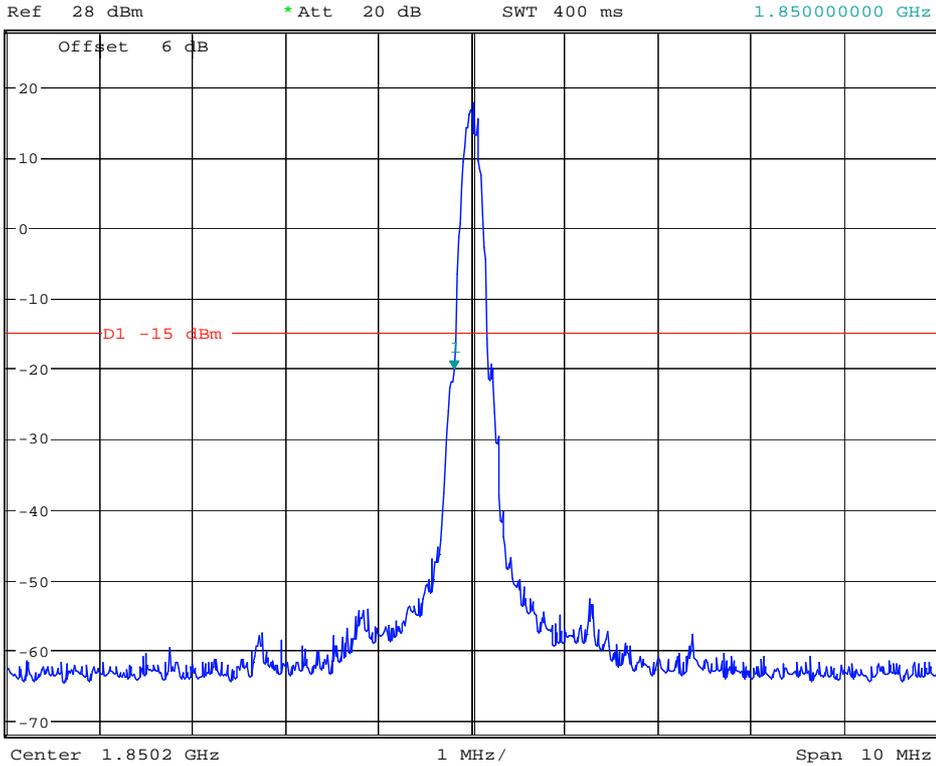
Date: 20.JUL.2007 20:14:37



# EDGE Left Edge Channel 512



\*RBW 5 kHz      Marker 1 [T1 ]  
\*VBW 20 kHz      -20.18 dBm  
SWT 400 ms      1.850000000 GHz



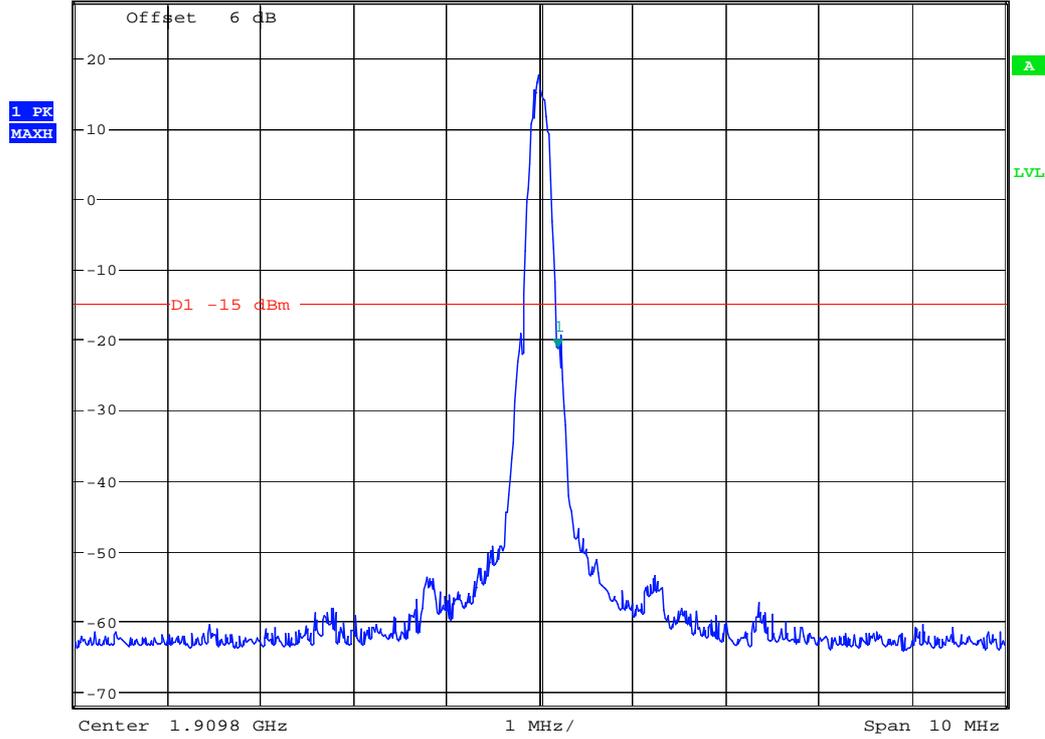
Date: 20.JUL.2007 20:18:00



### Right Edge Channel 810



Ref 28 dBm      \* Att 20 dB      \* RBW 5 kHz      \* VBW 20 kHz      Marker 1 [T1 ]  
SWT 400 ms      1.910000000 GHz      -21.27 dBm



Date: 20.JUL.2007 20:17:16

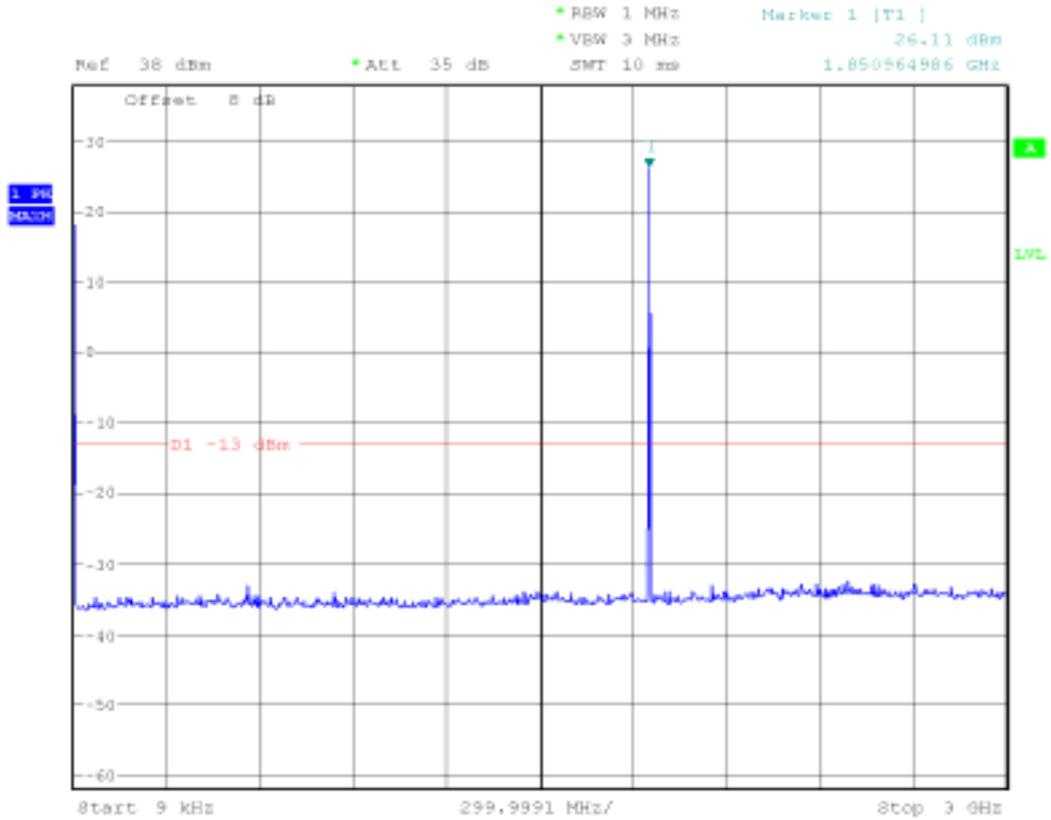
## Appendix D

# Spurious Emission at Antenna Terminal

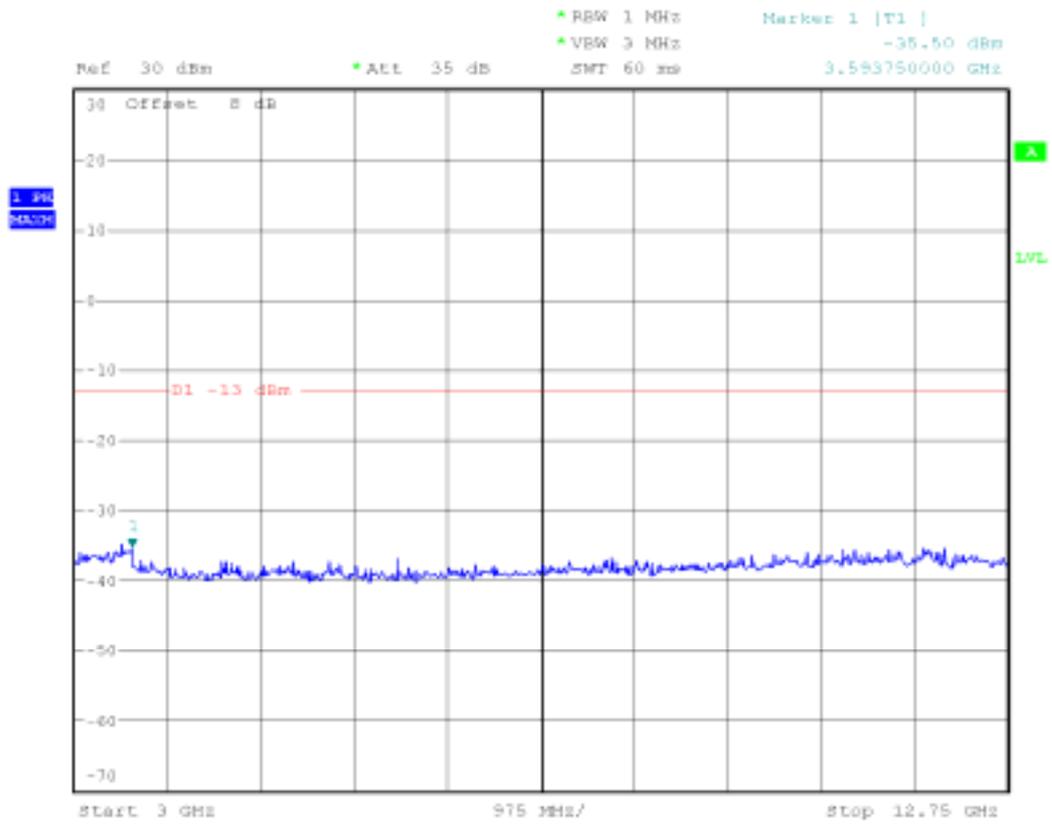
According to FCC Part 2.1051 & 24.238

# TM1:GPRS/GSM

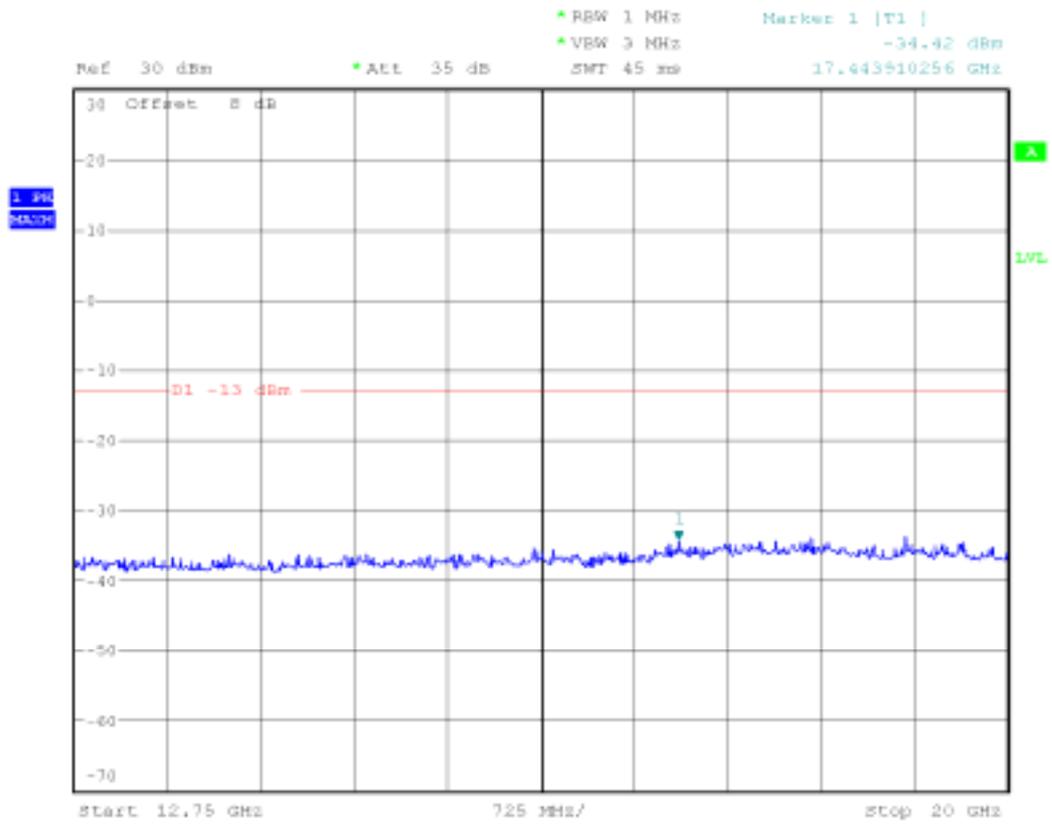
## Channel 512



Date: 20.JUL.2007 20:41:21

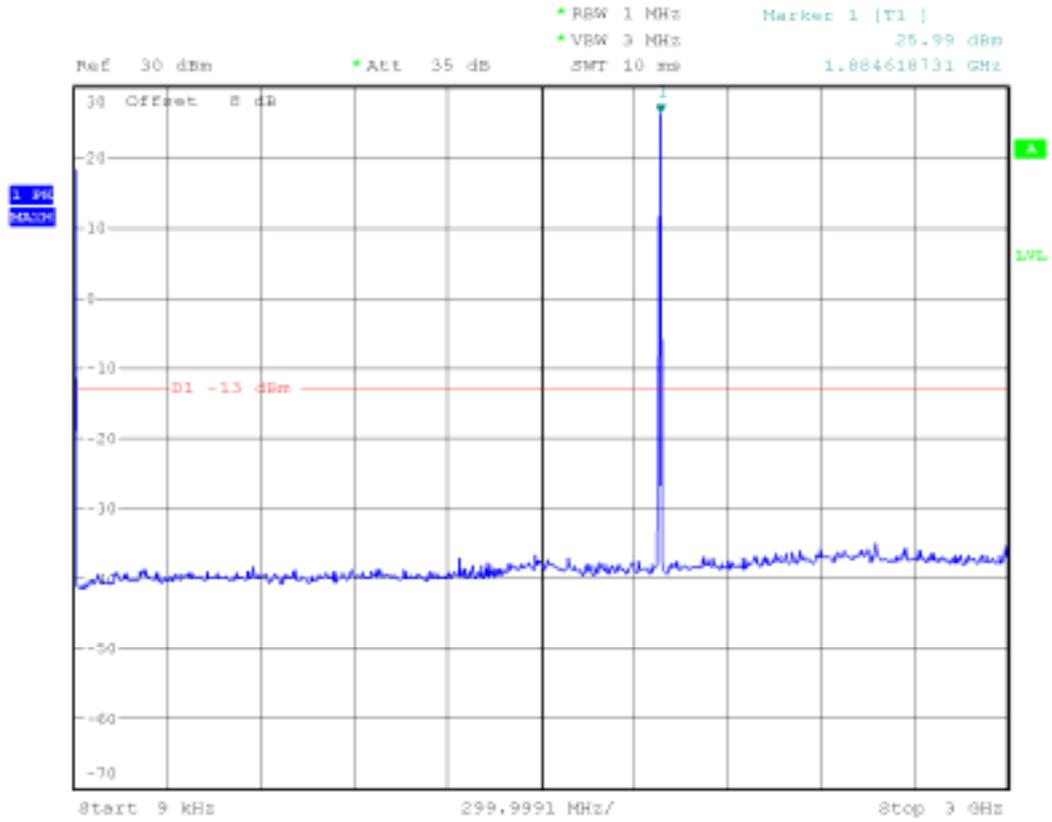


Date: 20.JUL.2007 20:44:26

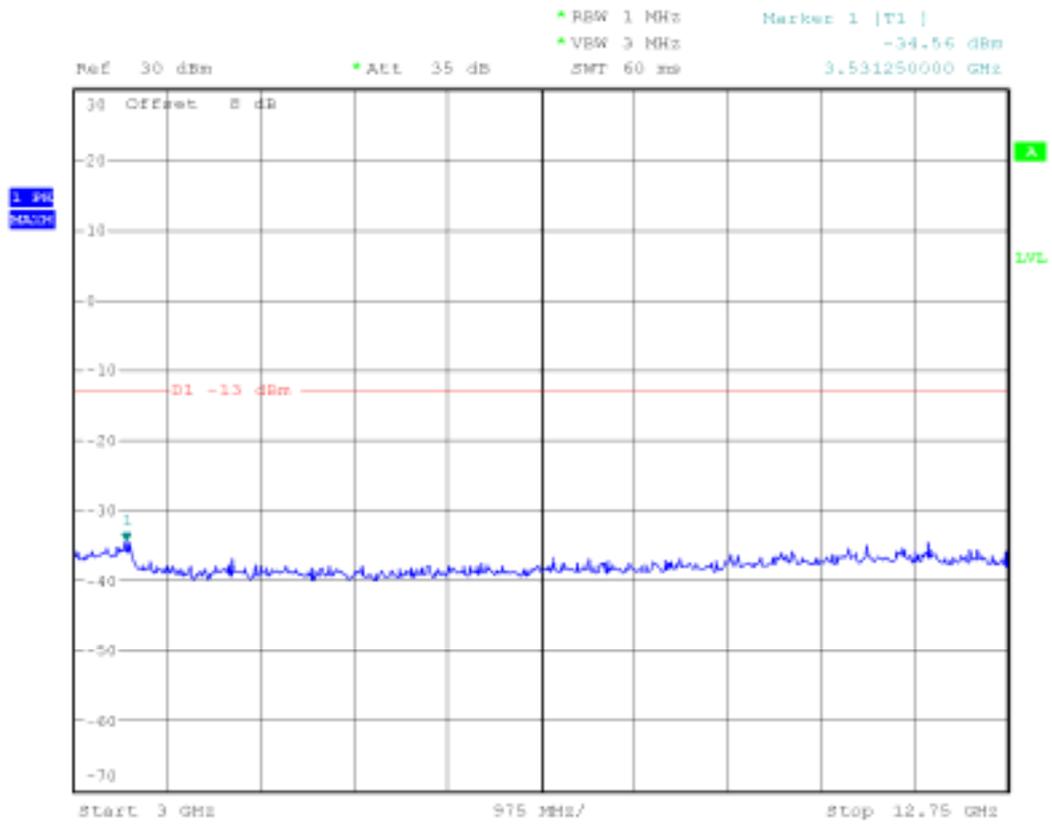


Date: 20-JUL-2007 20:44:52

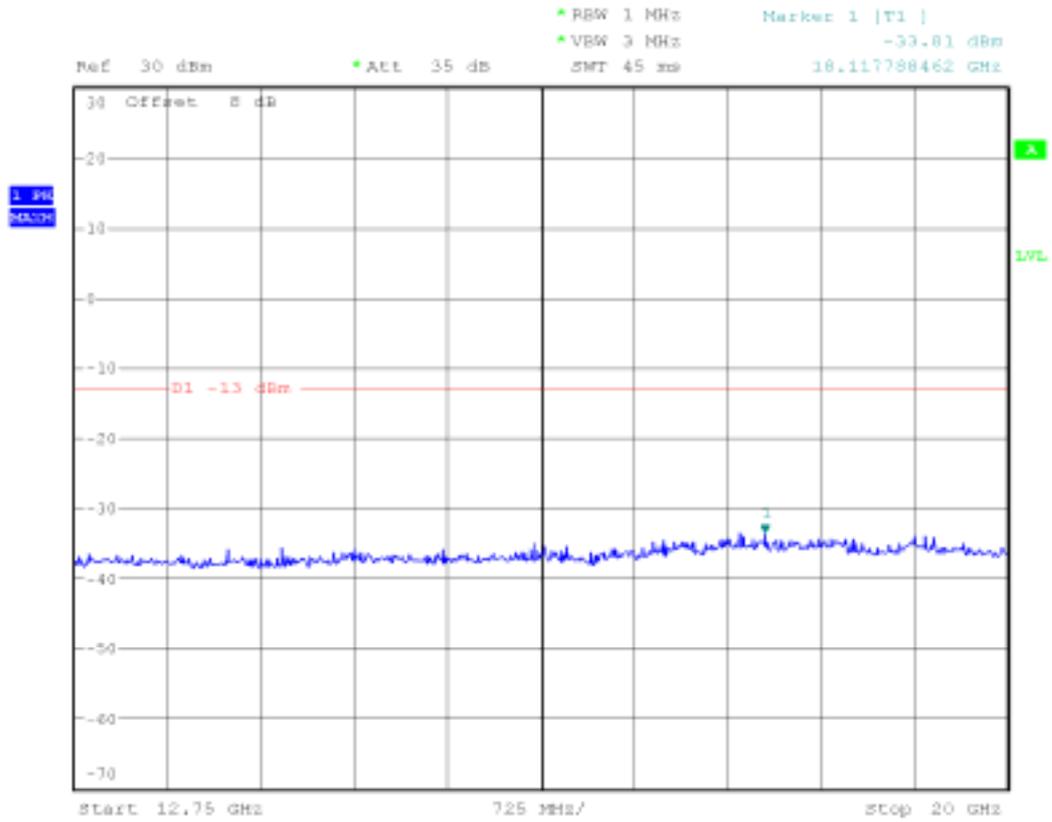
# Channel 661



Date: 20.JUL.2007 20:45:39

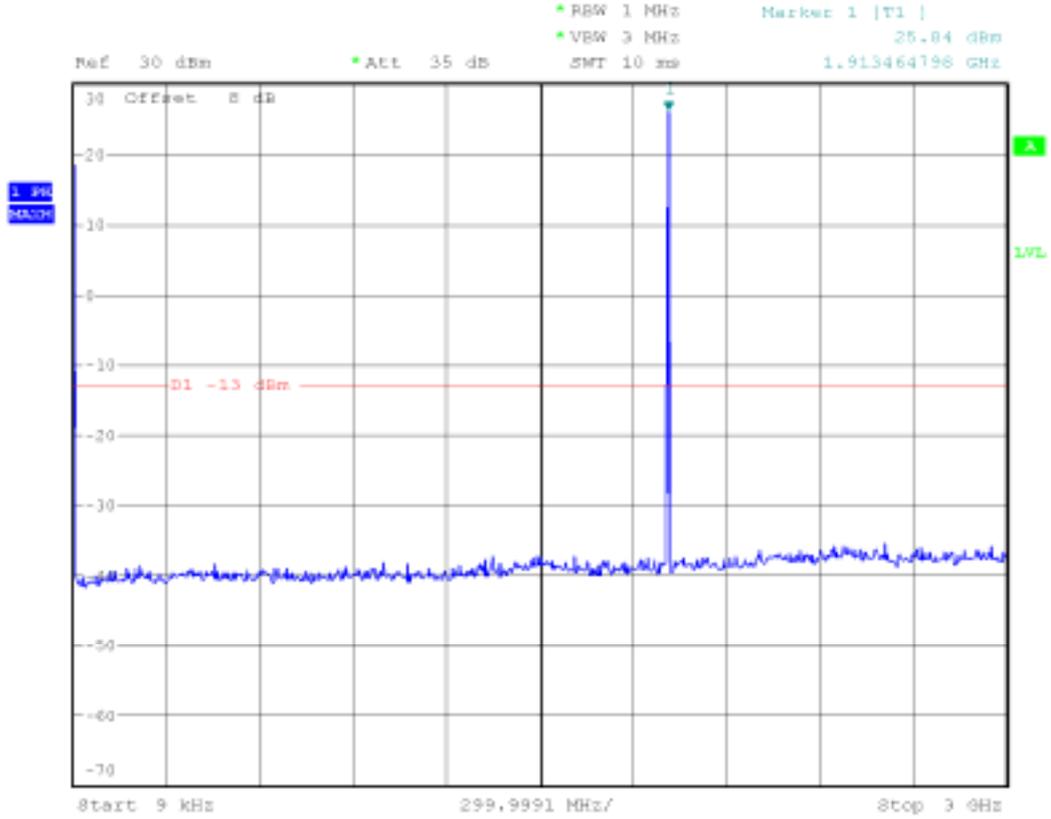


Date: 20.JUL.2007 20:46:18

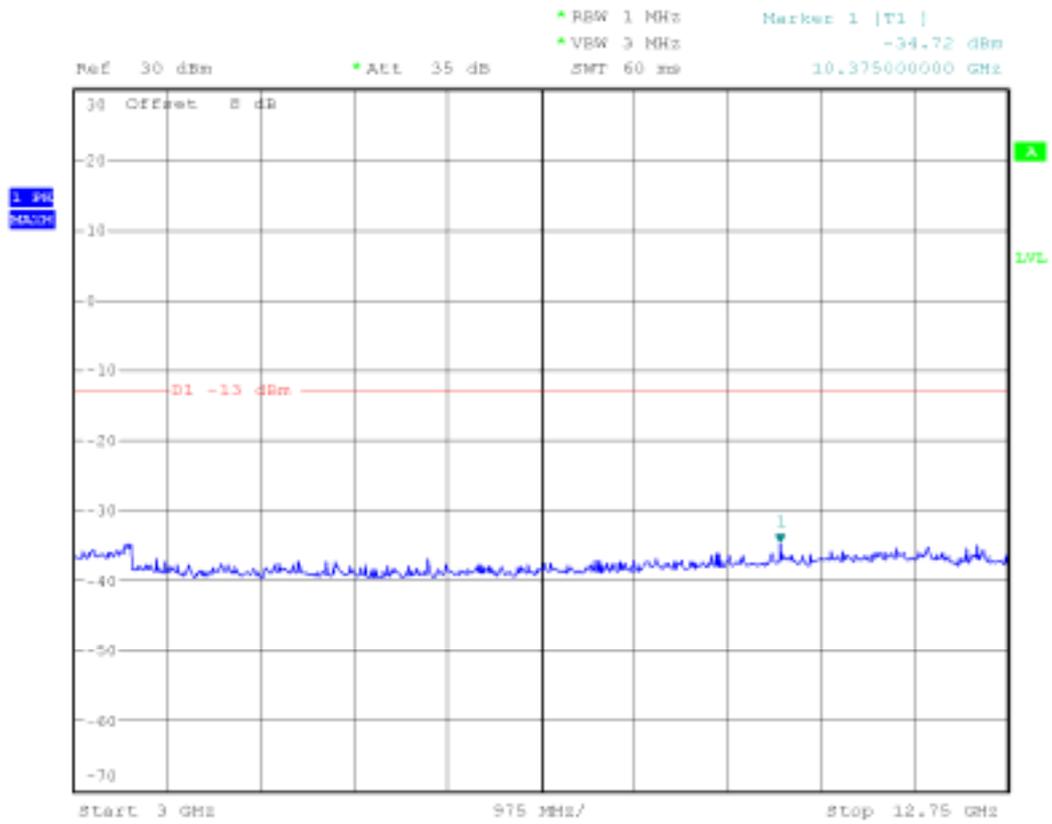


Date: 20.JUL.2007 20:46:45

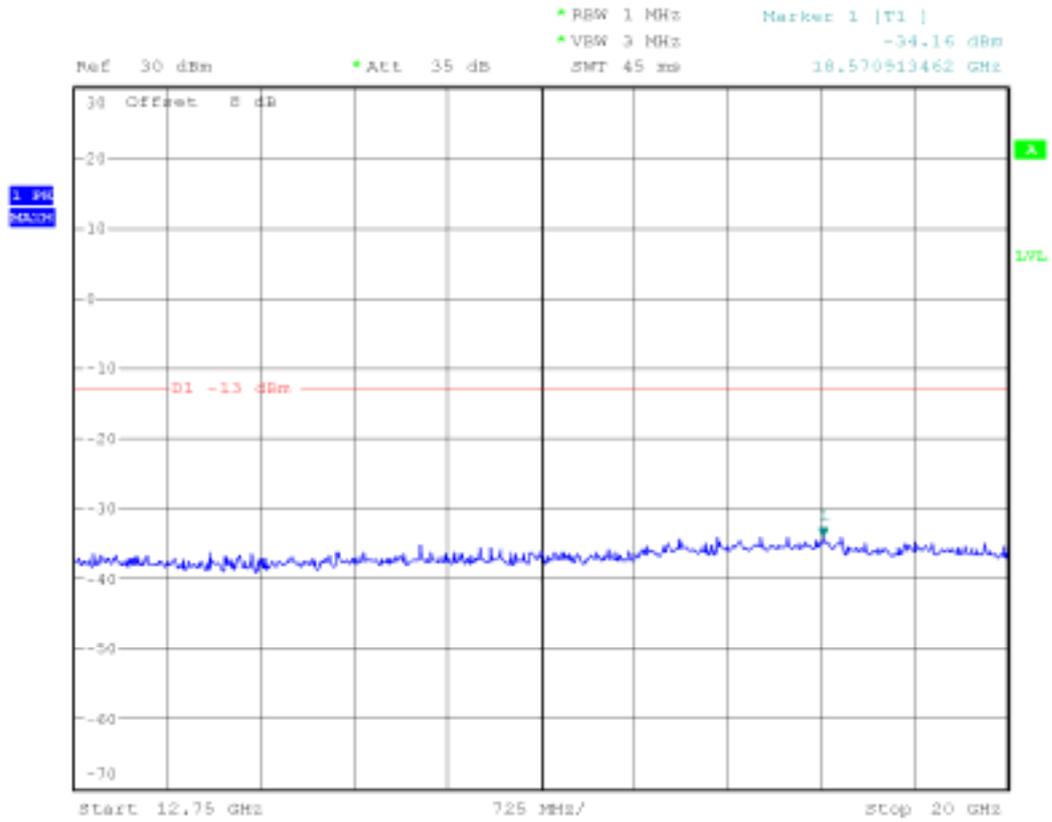
# Channel 810



Date: 20.JUL.2007 20:47:29

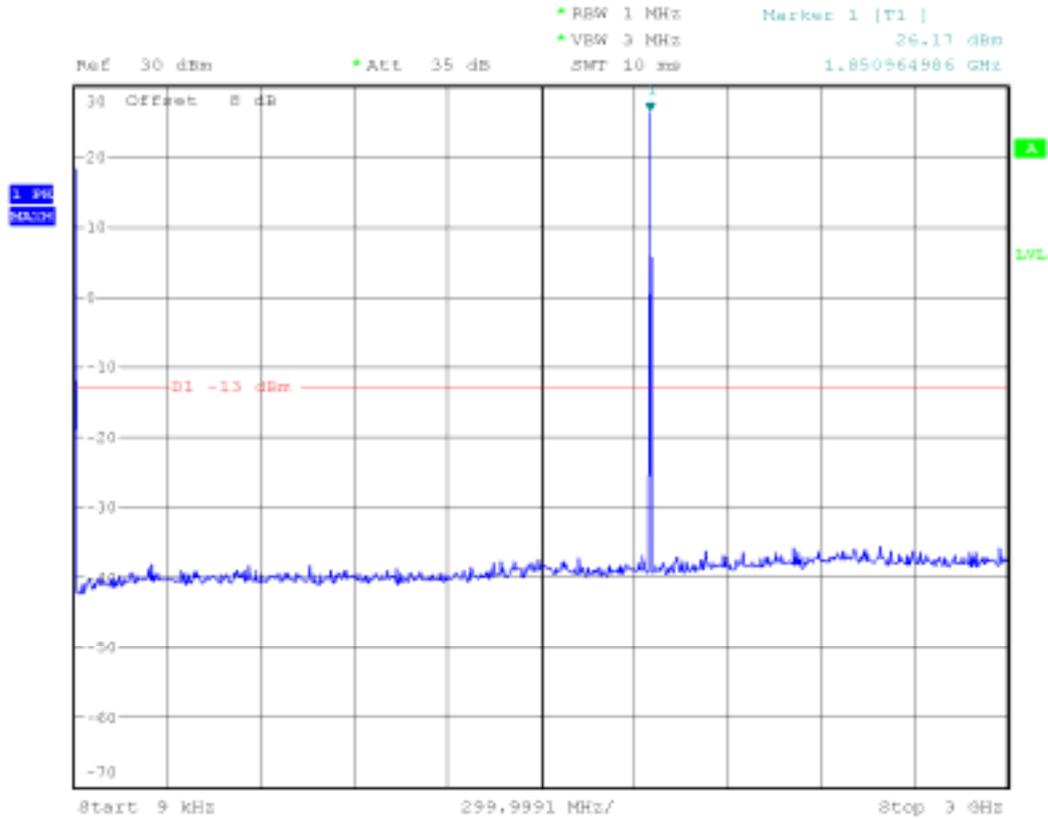


Date: 20.JUL.2007 20:48:10

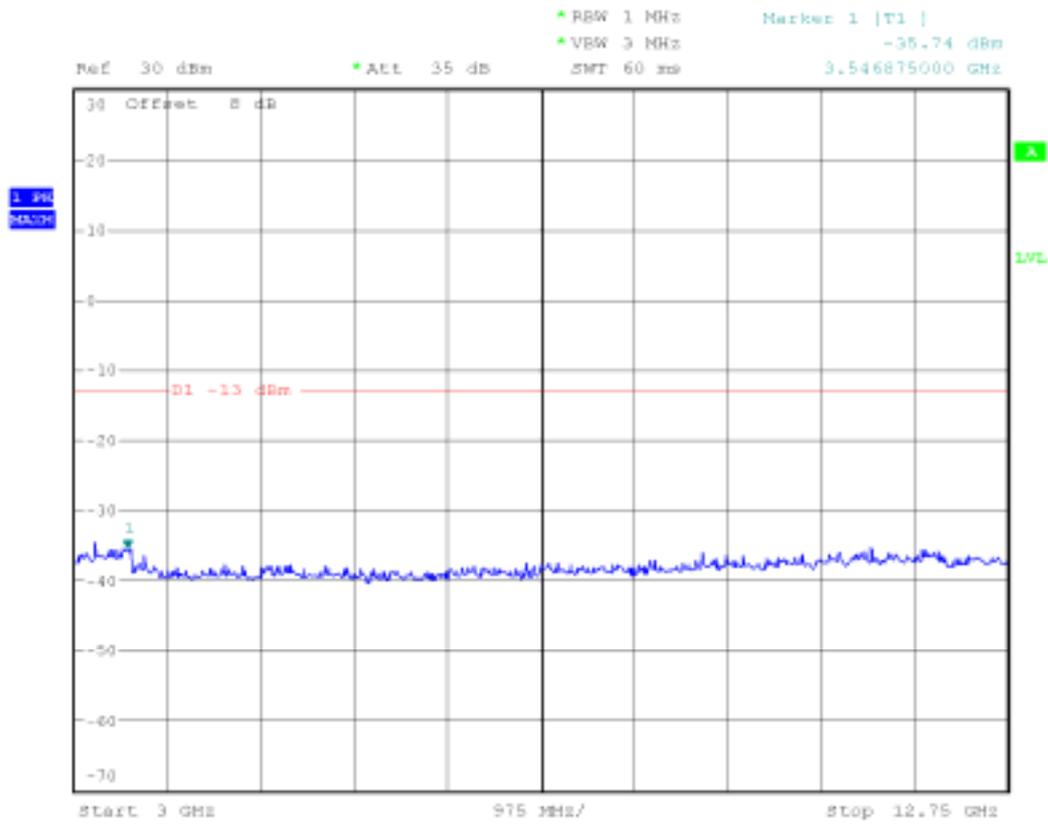


Date: 20.JUL.2007 20:48:37

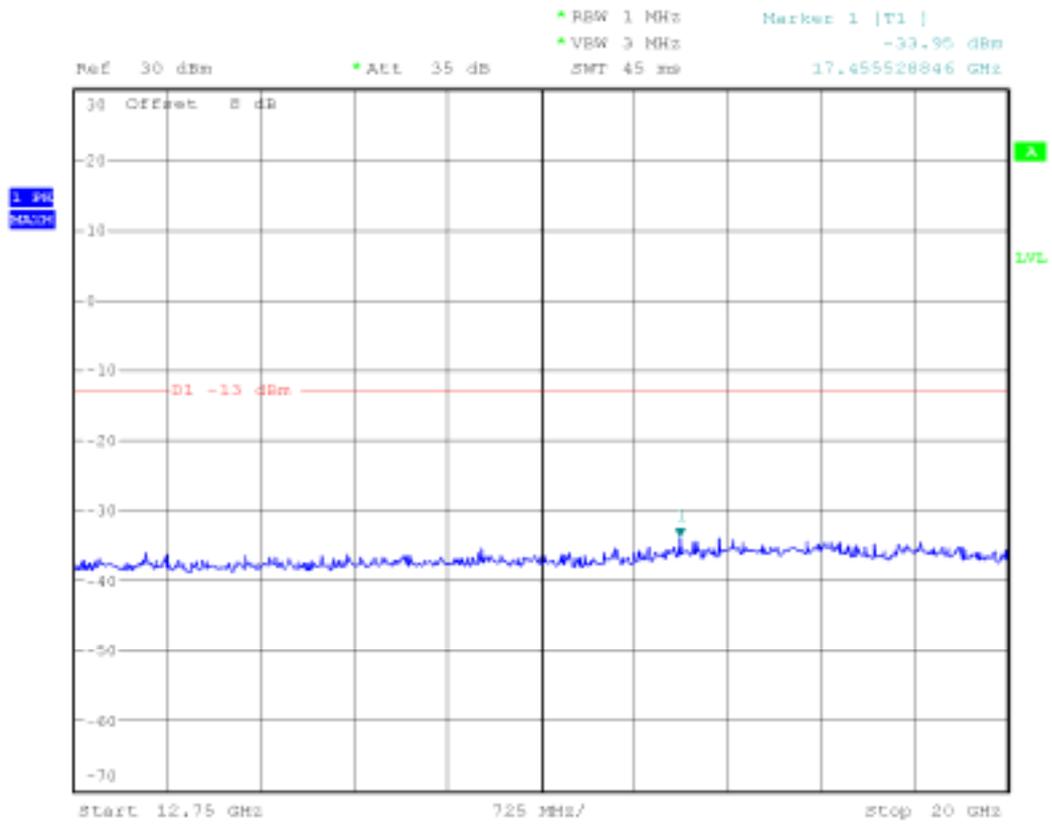
# TM2:EDGE Channel 512



Date: 20.JUL.2007 20:52:16

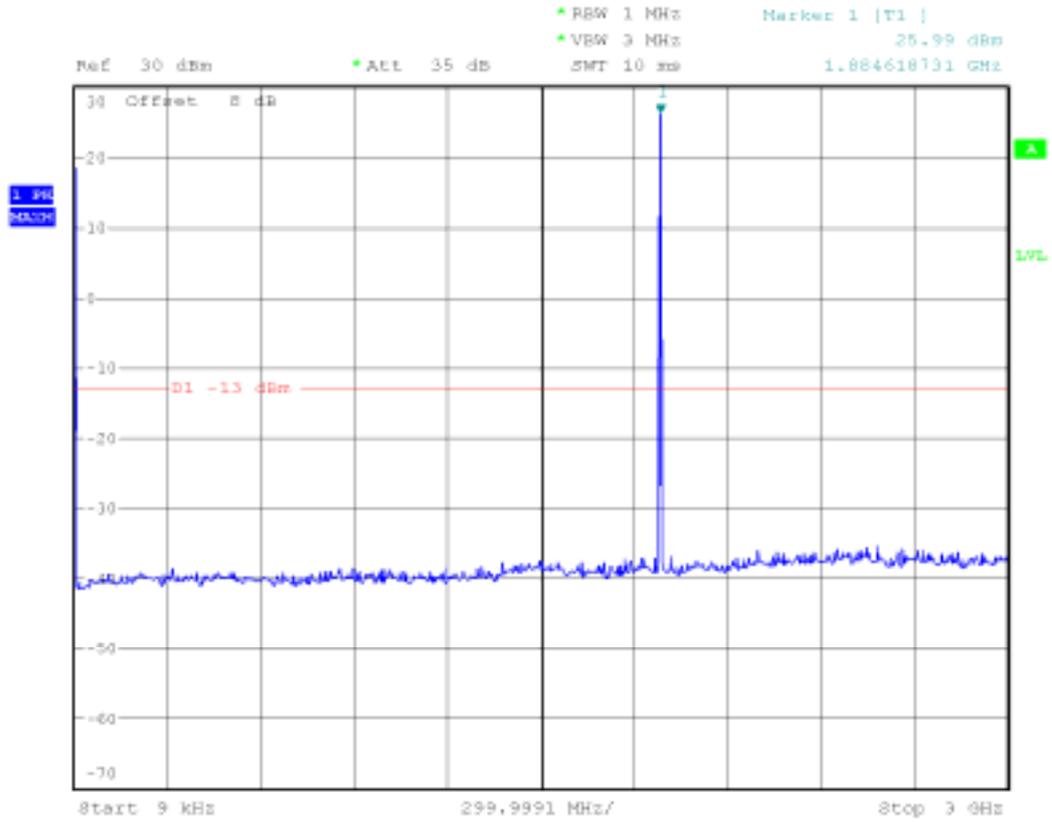


Date: 20.JUL.2007 20:52:46

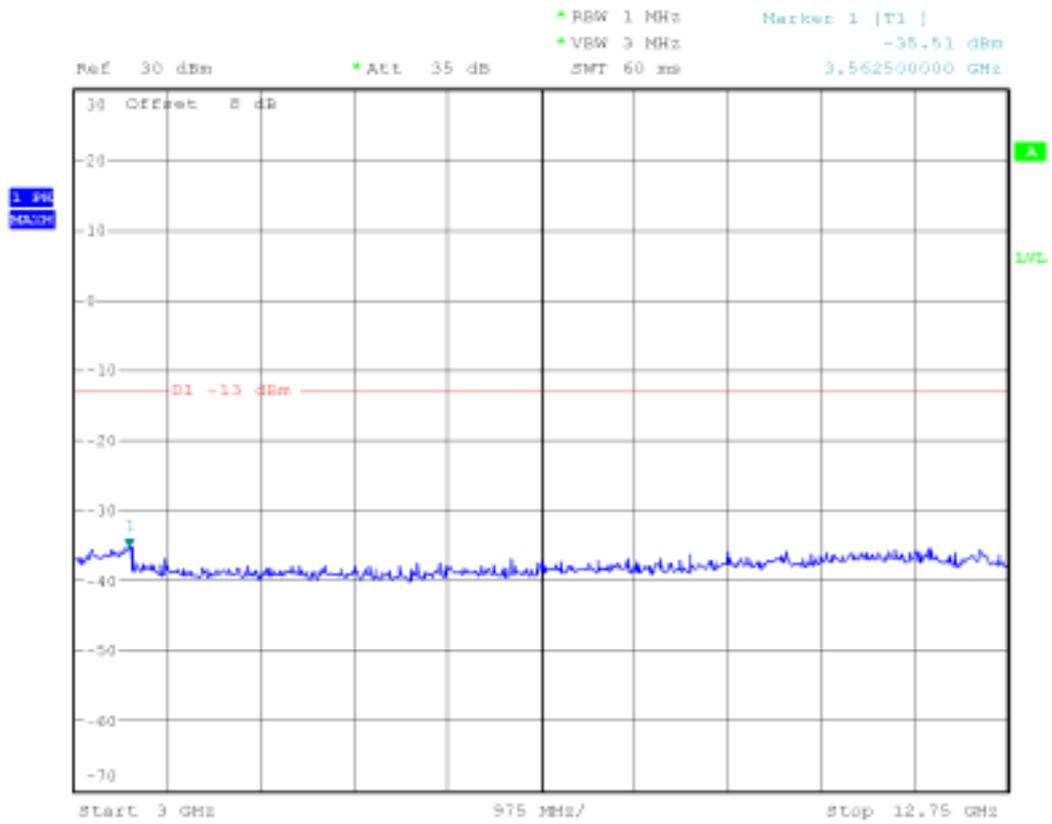


Date: 20.JUL.2007 20:53:20

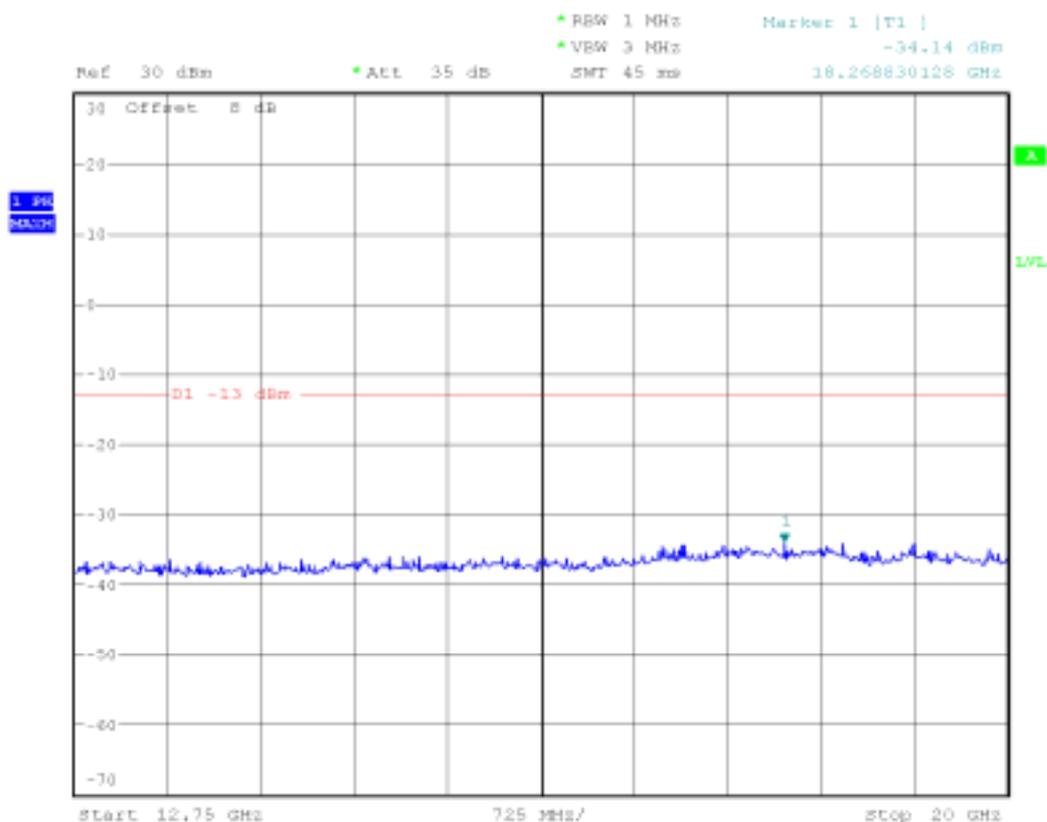
# Channel 661



Date: 20.JUL.2007 20:50:43

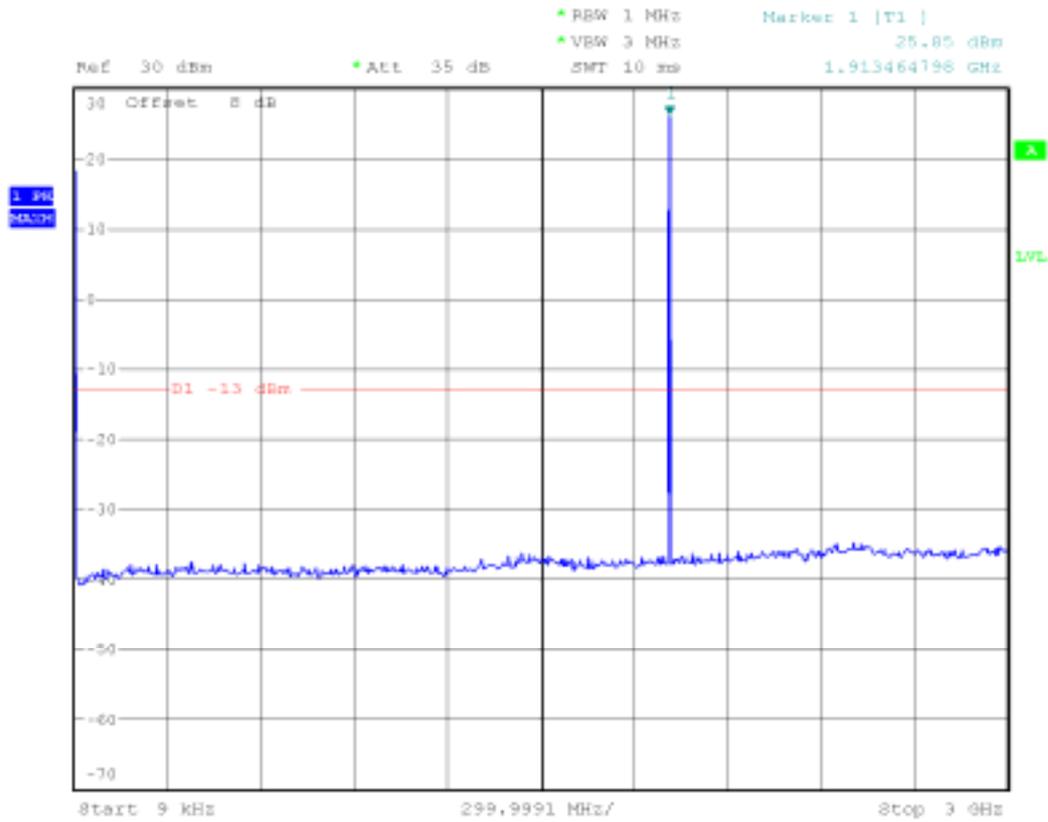


Date: 20.JUL.2007 20:51:12

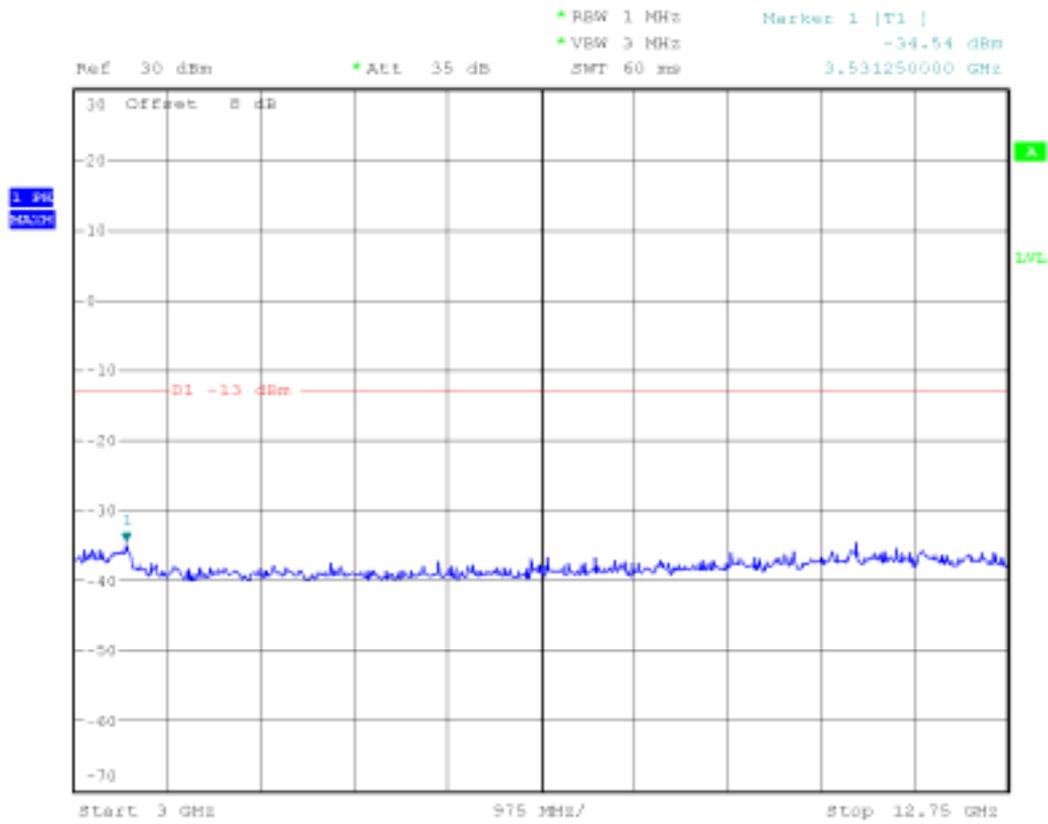


Date: 20.JUL.2007 20:51:30

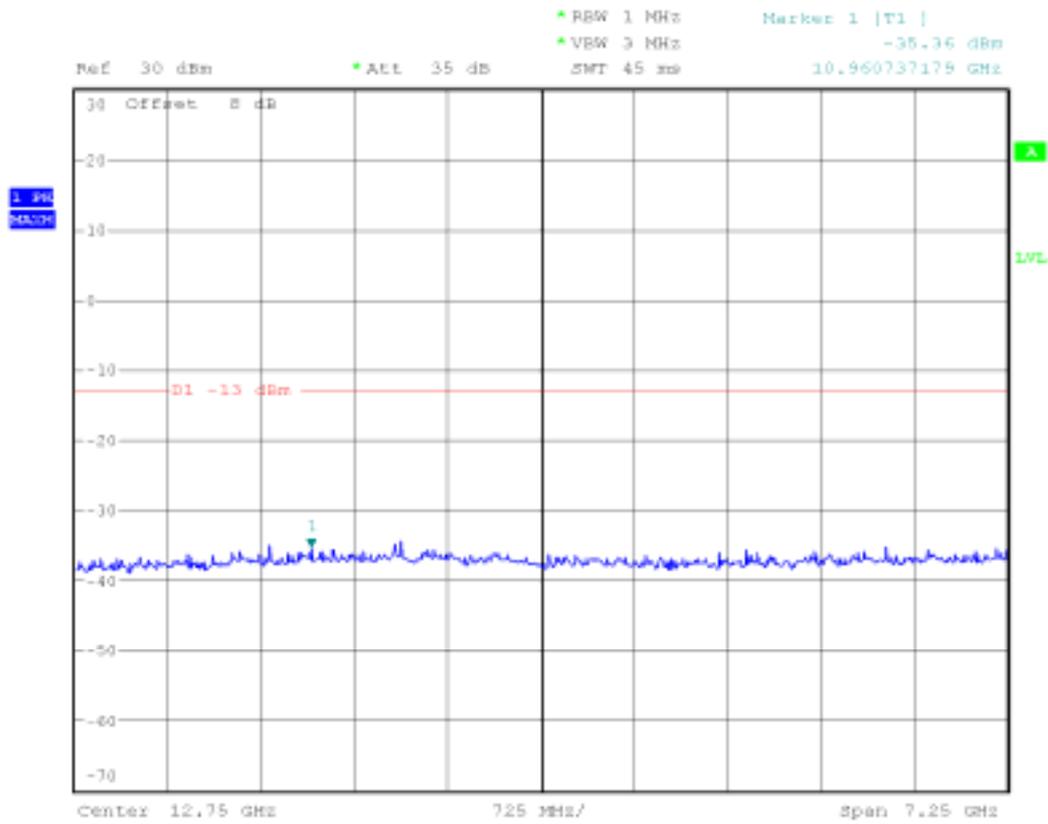
# Channel 810



Date: 20.JUL.2007 20:58:02



Date: 20.JUL.2007 20:58:30



Date: 20.JUL.2007 20:59:30

## Appendix E

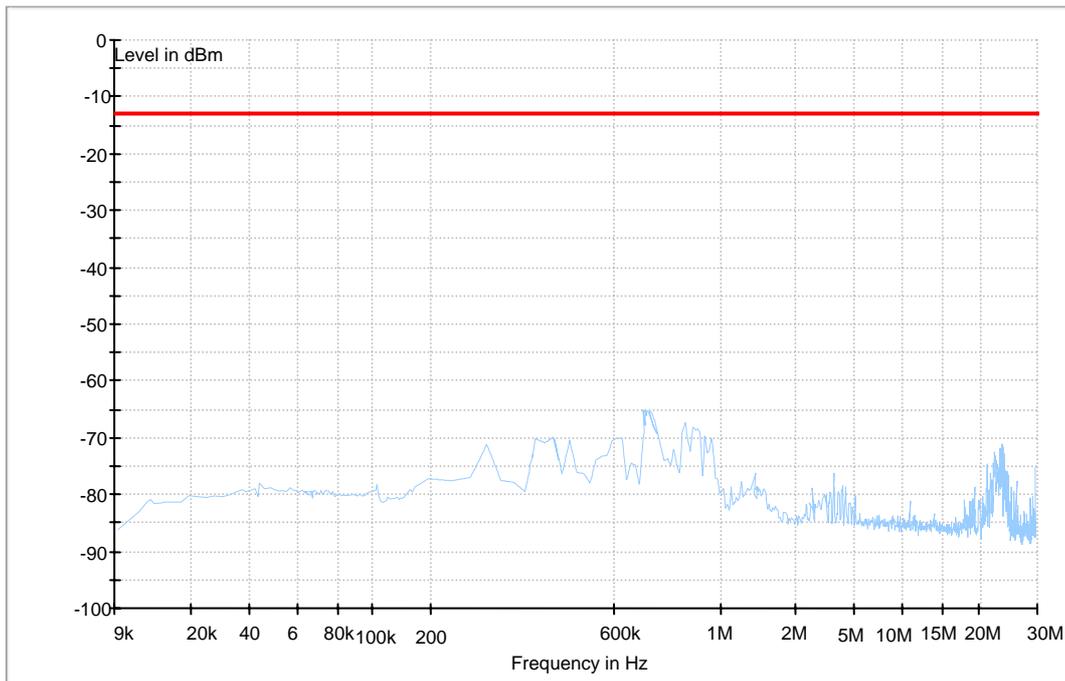
# Radiated Spurious Emission

According to FCC Part 2.1053 & 24.238

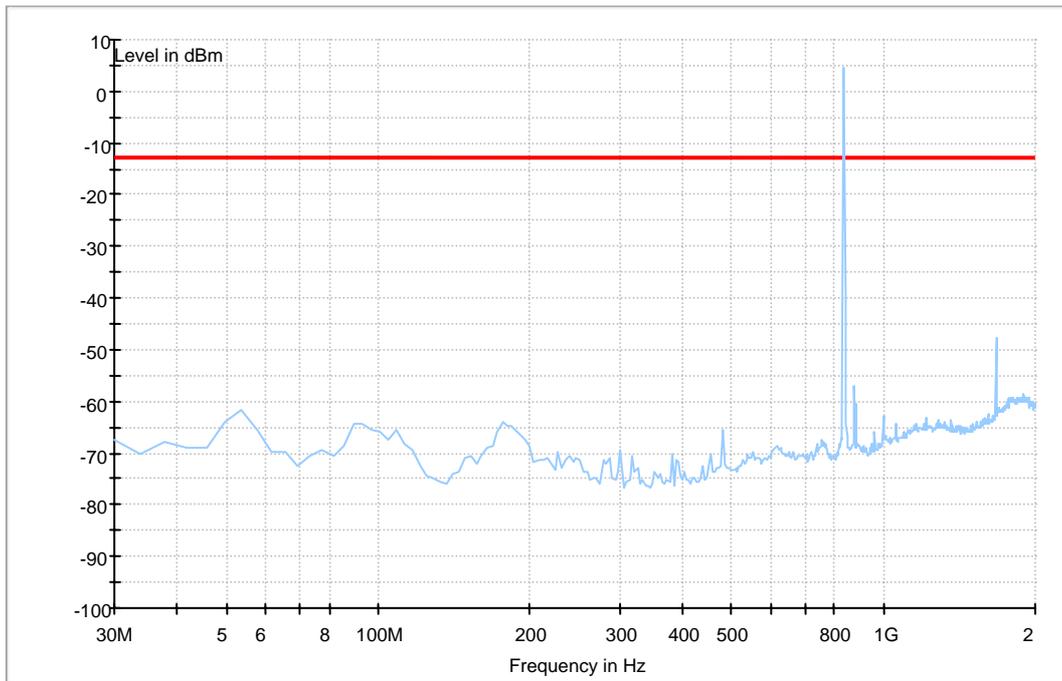
# 1 Test Result of E960 (Gateway mode)

## 1.1 GPRS1900

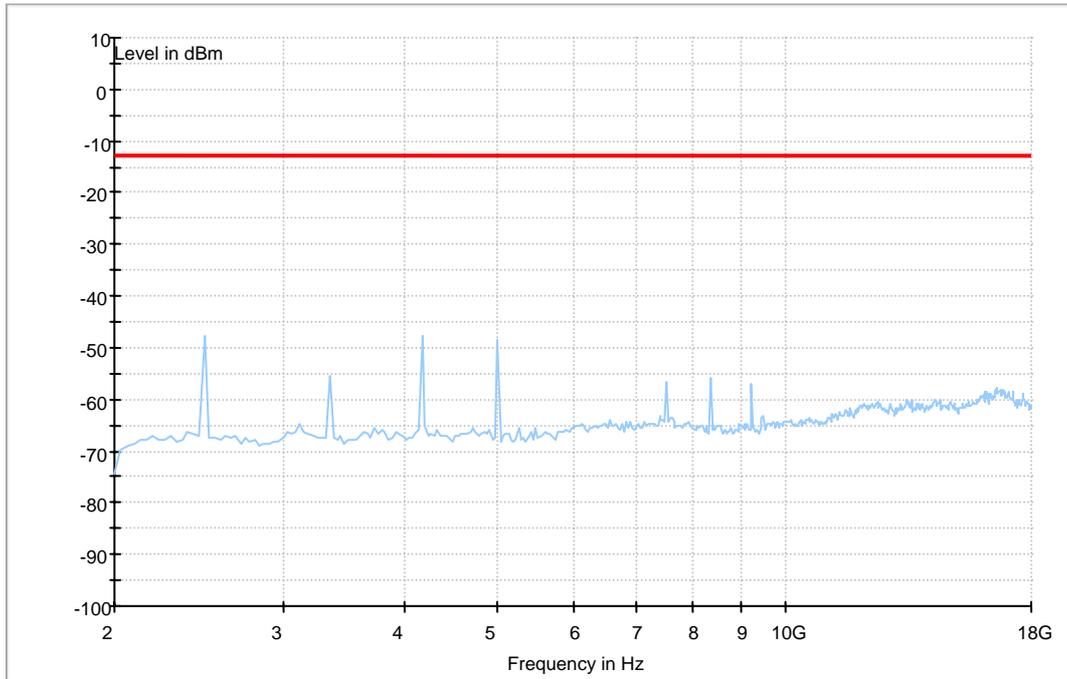
### Traffic Mode (9kHz-30MHz)



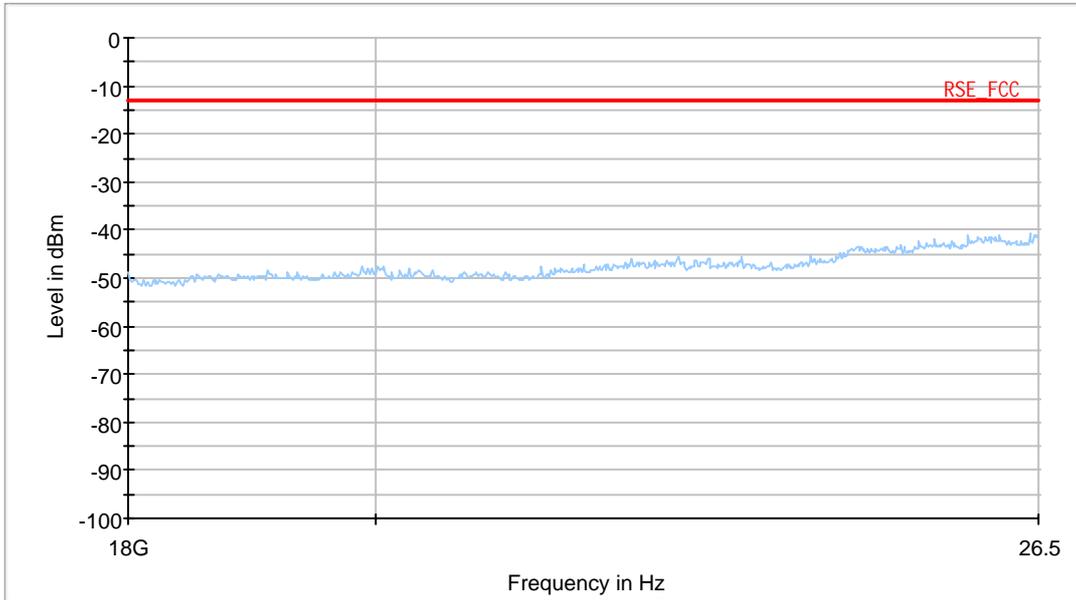
### Traffic Mode (30MHz-2GHz)



### Traffic Mode (2GHz-18GHz)

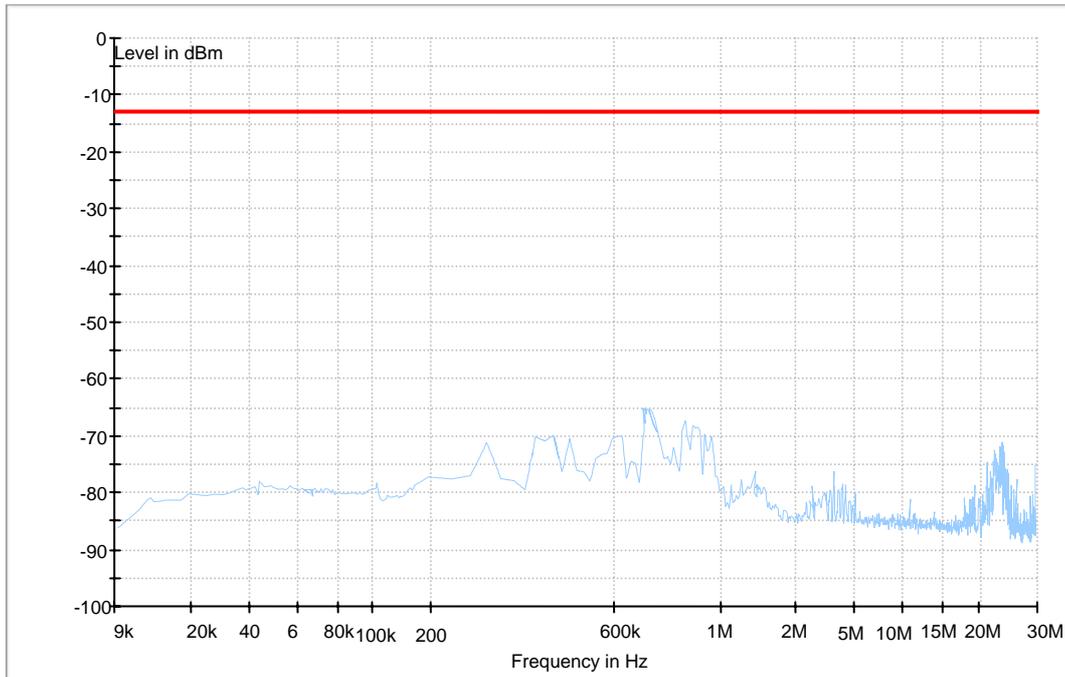


### Traffic Mode (18GHz-26GHz)

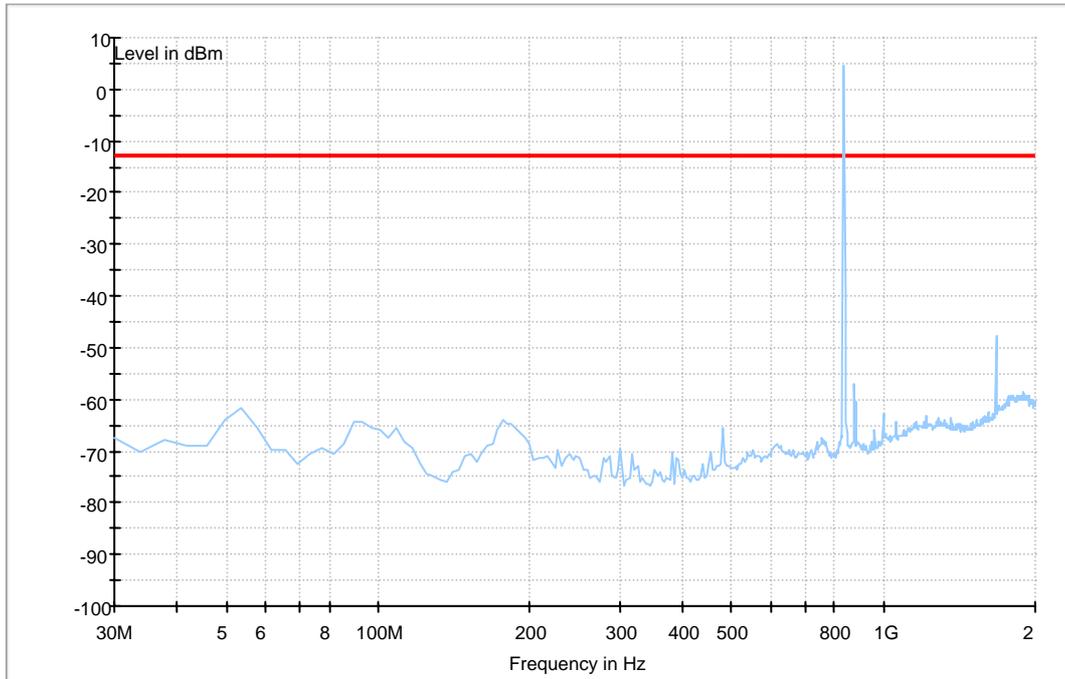


## 1.2 EGPRS1900

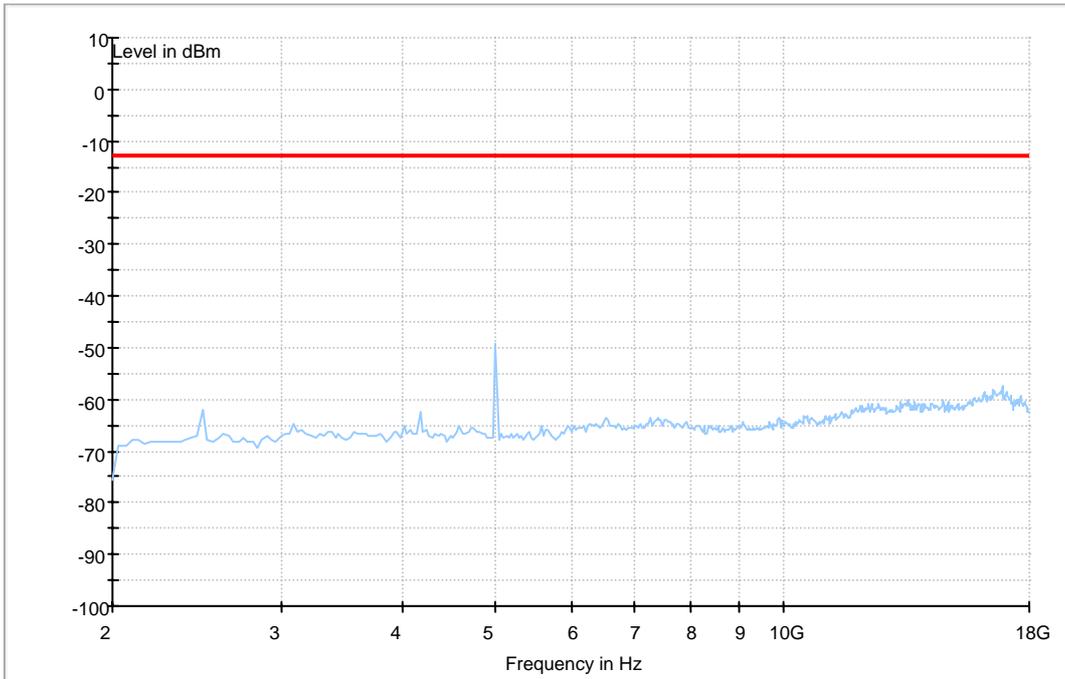
### Traffic Mode (9kHz-30MHz)



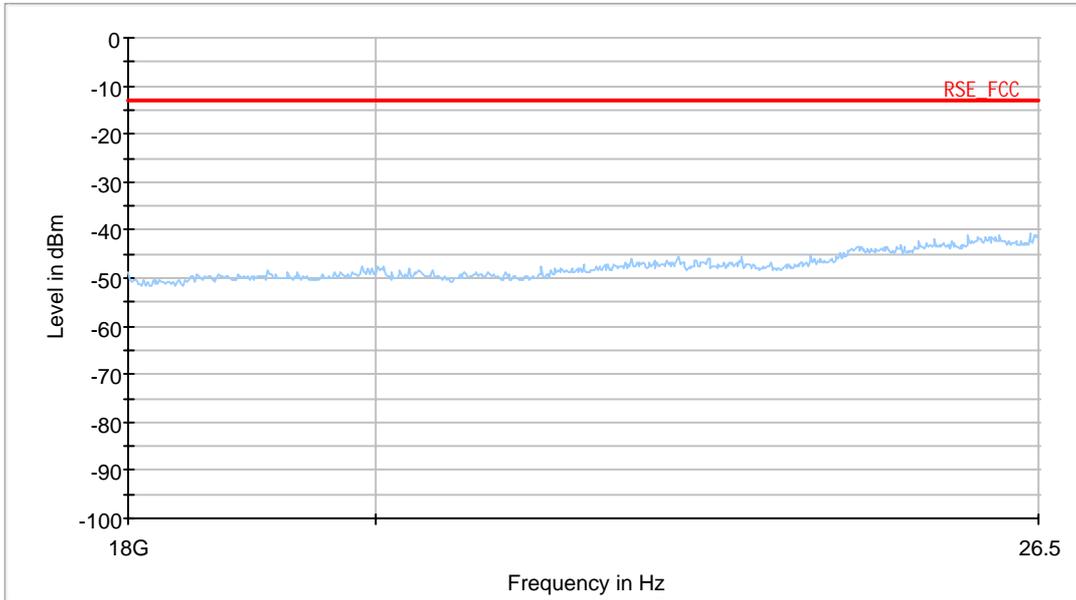
### Traffic Mode (30MHz-2GHz)



### Traffic Mode (2GHz-18GHz)



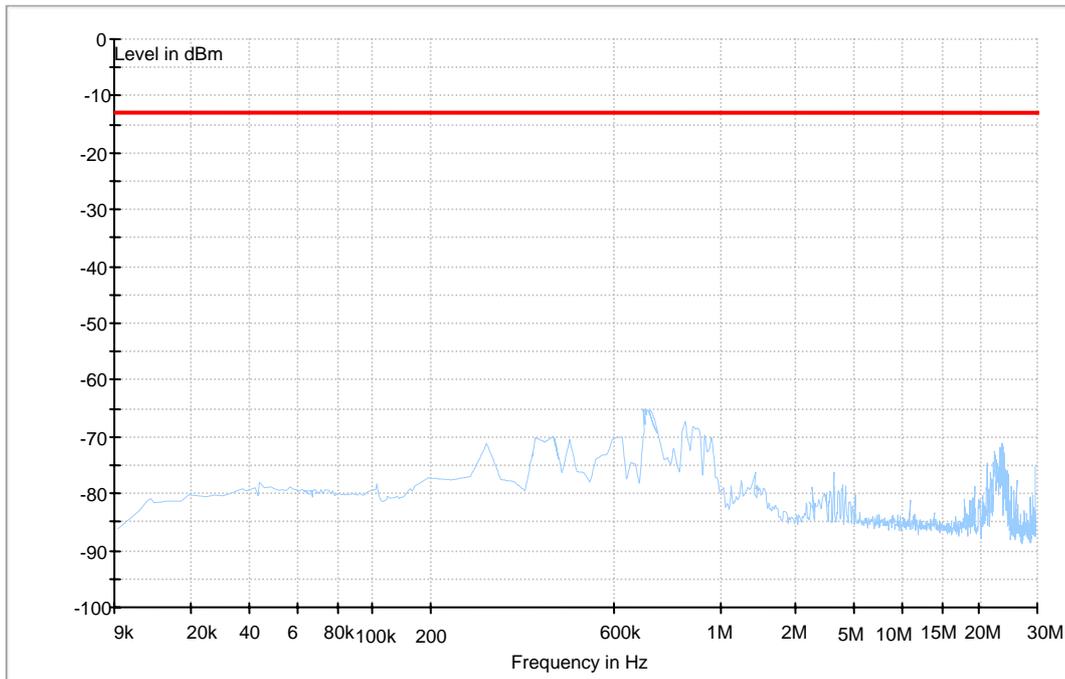
### Traffic Mode (18GHz-26GHz)



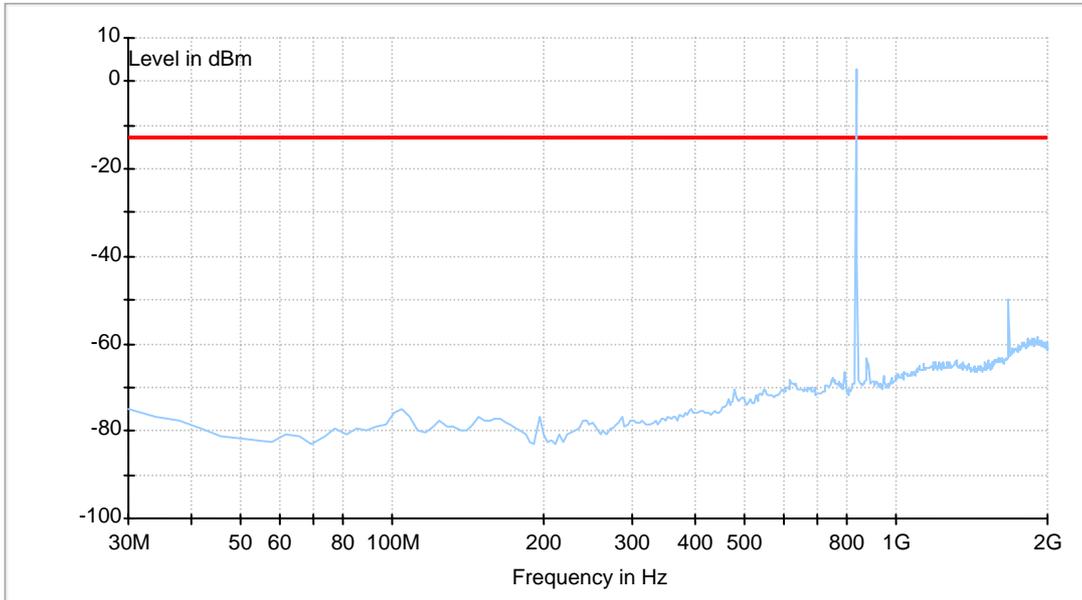
## 2 Test Result of E960(modem mode)

### 2.1 GPRS1900

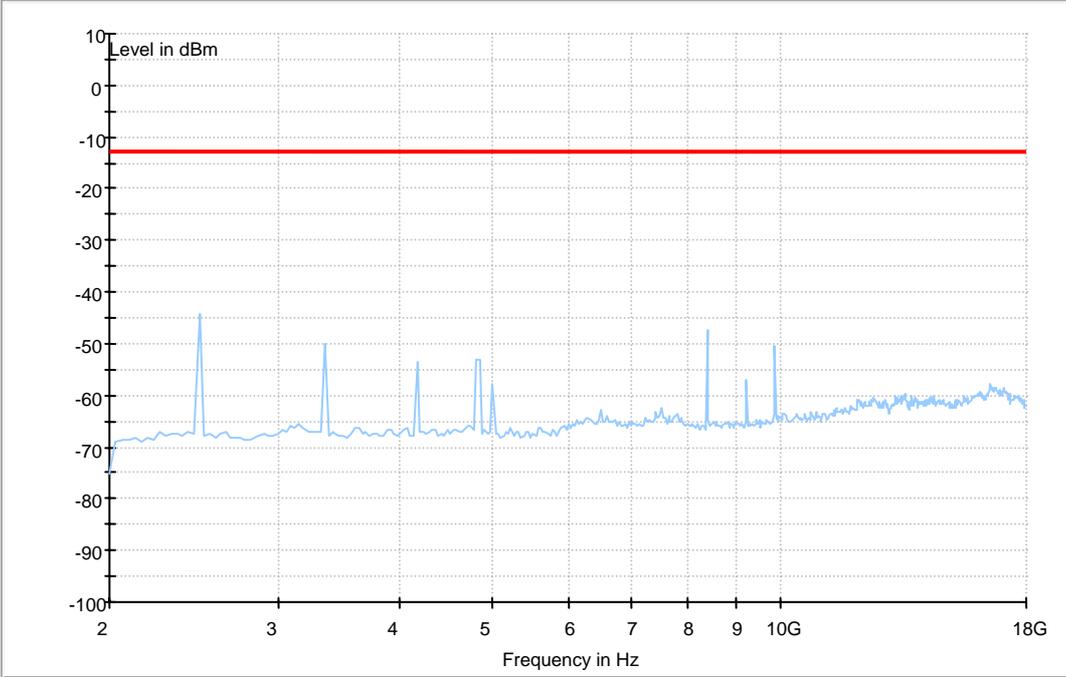
#### Traffic Mode (9kHz-30MHz)



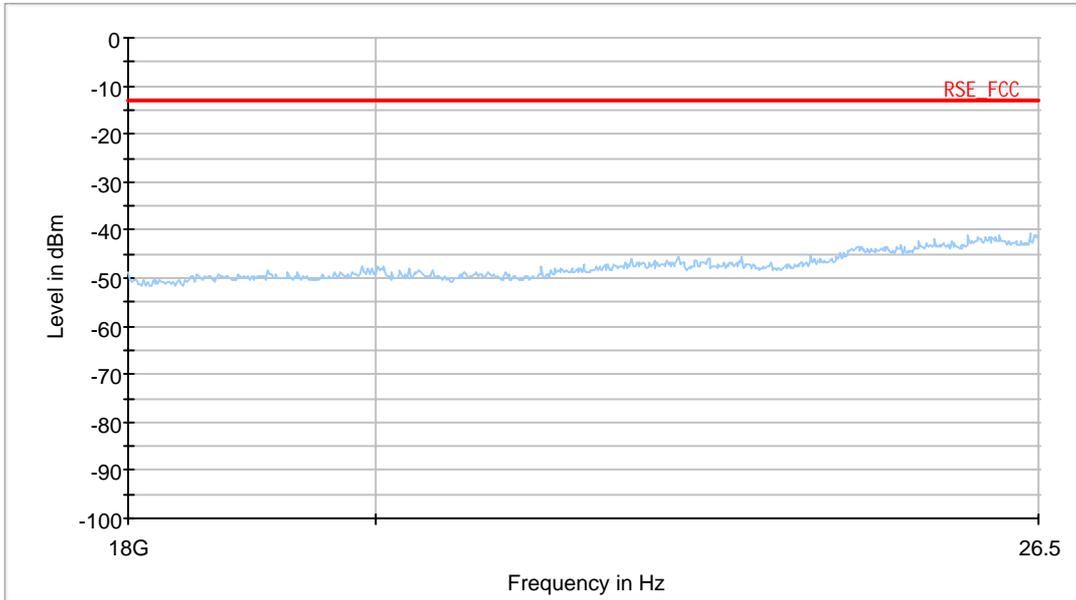
### Traffic Mode (30MHz-2GHz)



### Traffic Mode (2GHz-18GHz)

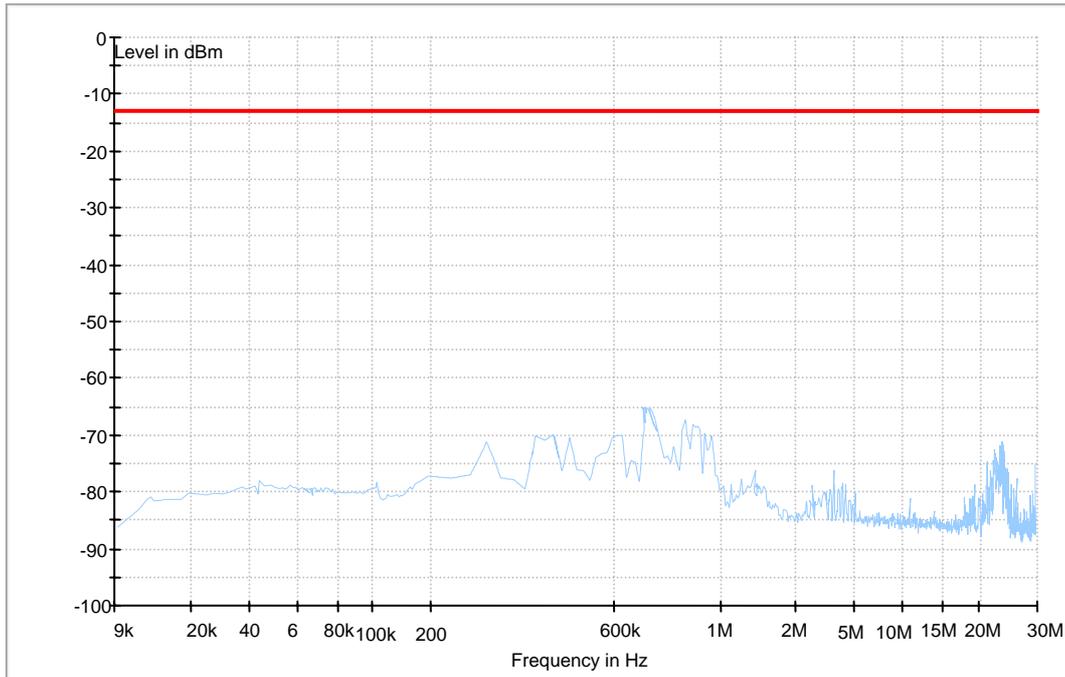


### Traffic Mode (18GHz-26GHz)

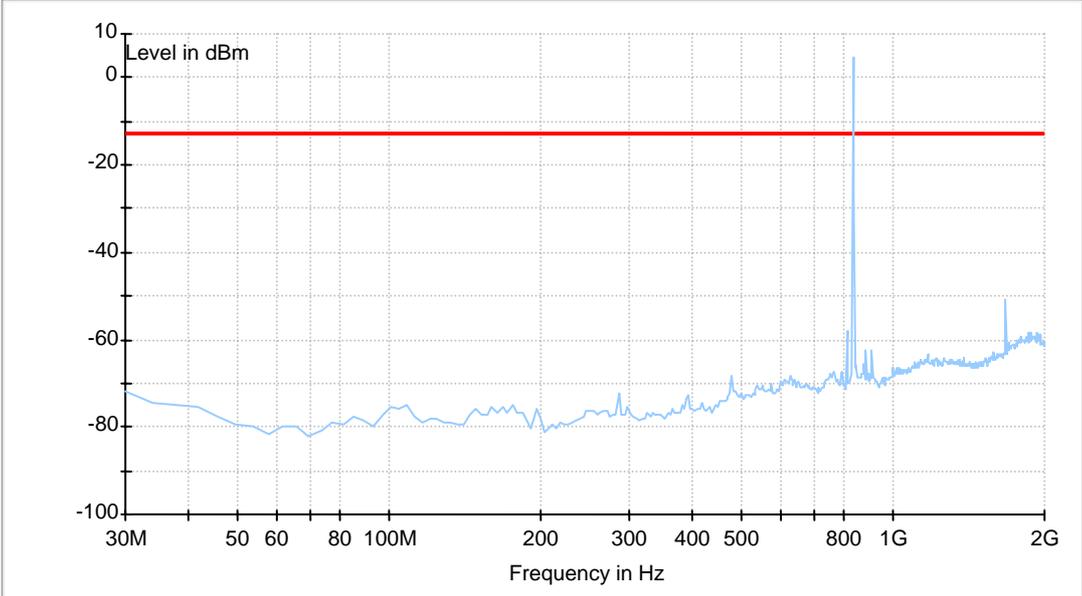


EGPRS1900

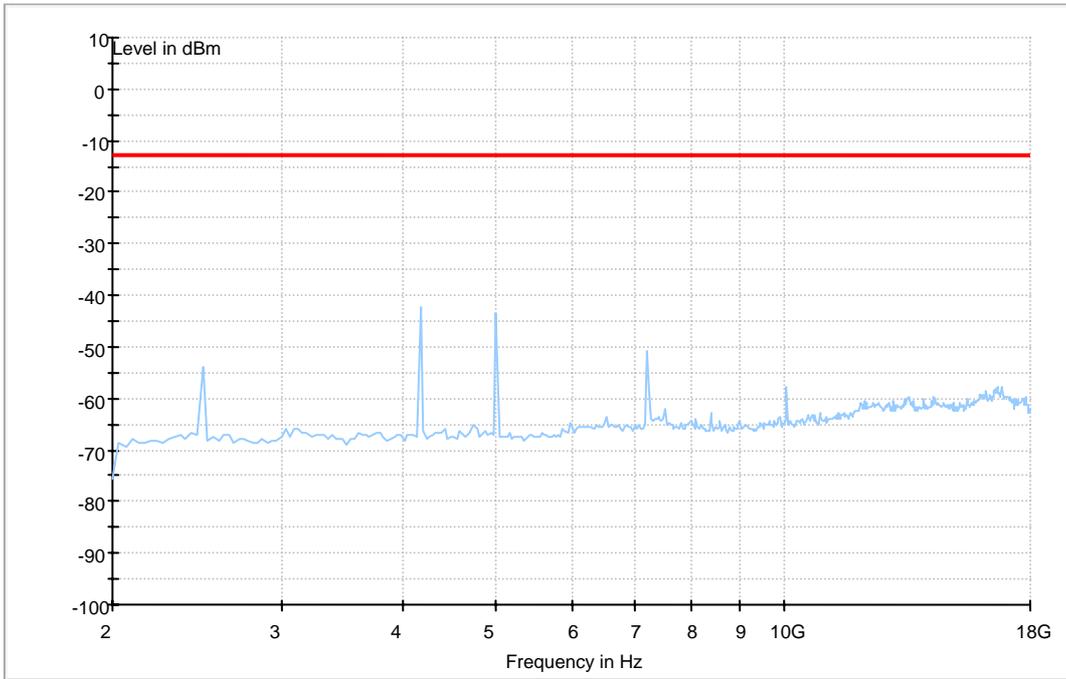
Traffic Mode (9kHz-30MHz)



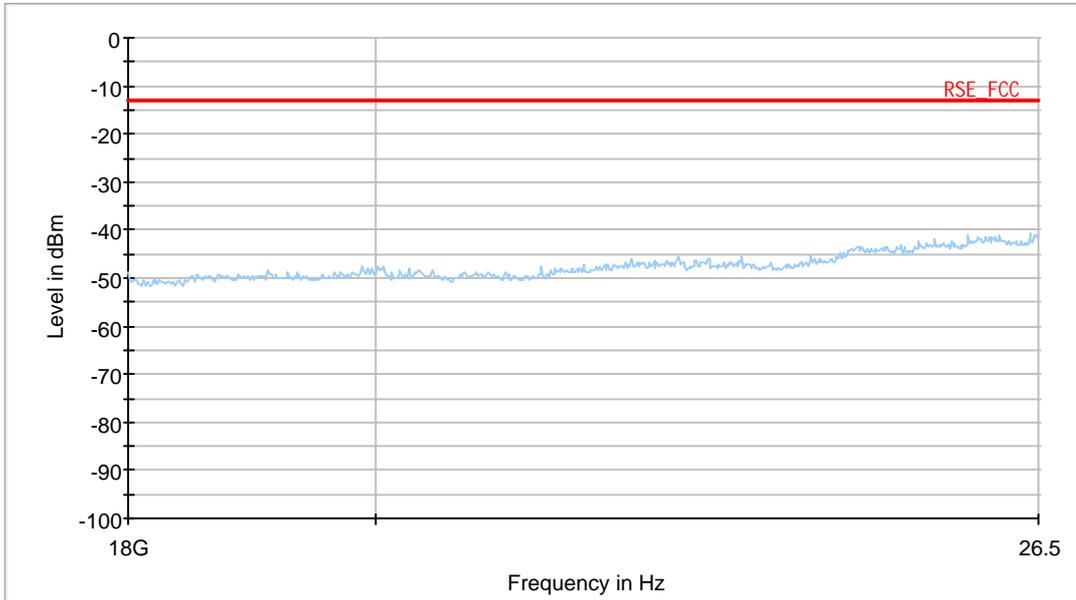
### Traffic Mode (30MHz-2GHz)



### Traffic Mode (2GHz-18GHz)



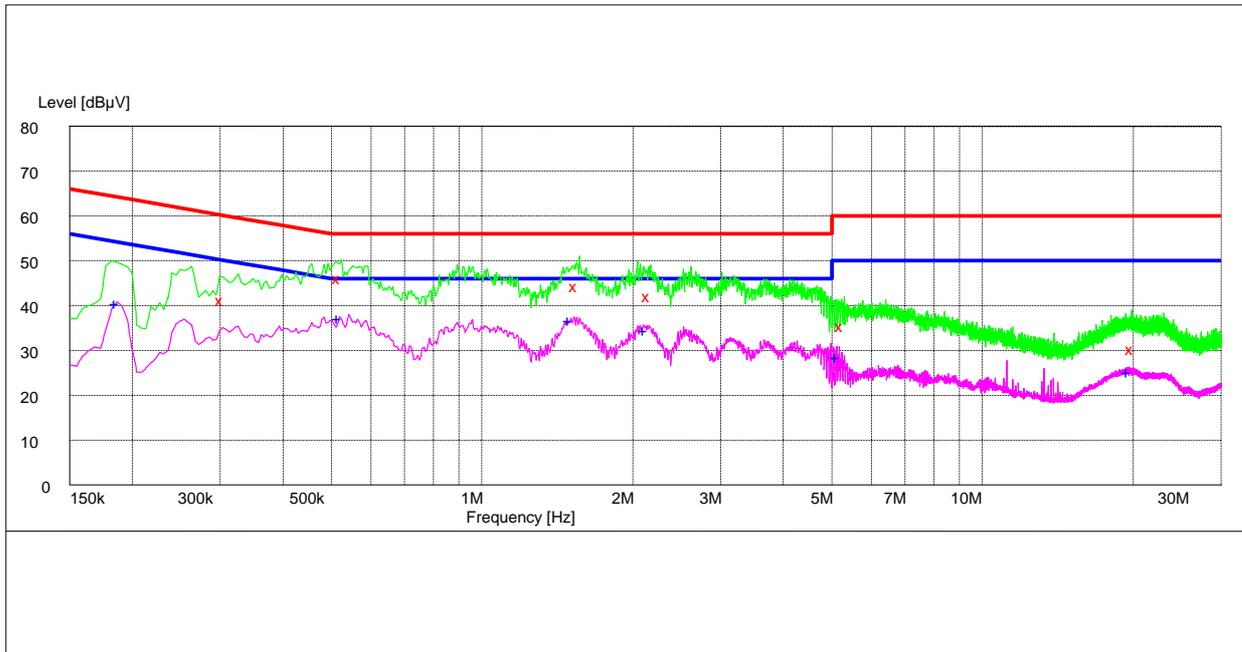
### Traffic Mode (18GHz-26GHz)



## Appendix F

# Conducted Emission at Power Port

According to FCC Part 15.107



MEASUREMENT RESULT:QP DECTER

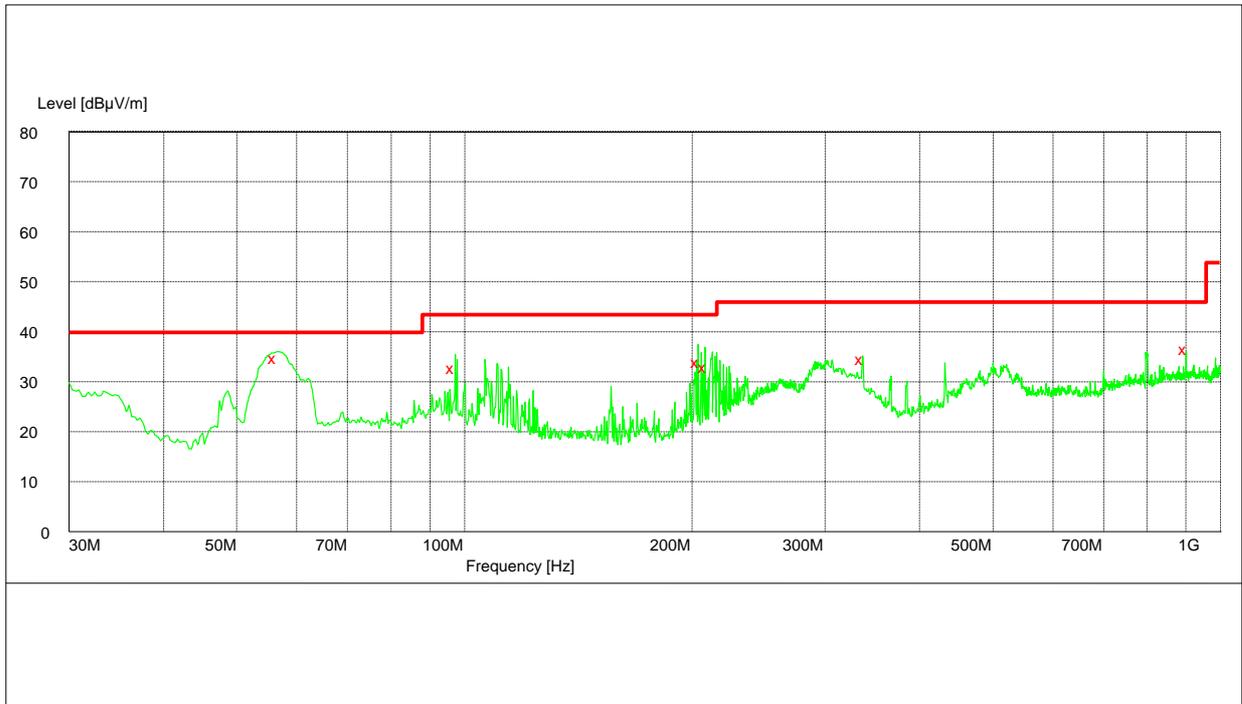
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.303000	41.50	10.3	60	18.7	QP	L3	GND
0.519000	46.40	10.0	56	9.6	QP	L3	GND
1.545000	44.50	9.9	56	11.5	QP	L3	GND
2.161500	42.40	10.1	56	13.6	QP	L3	GND
5.257500	35.70	10.2	60	24.3	QP	N	GND
19.990500	30.60	13.1	60	29.4	QP	N	GND

MEASUREMENT RESULT:AV DECTER

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.186000	40.90	10.6	54	13.3	AV	L3	GND
0.519000	37.50	10.0	46	8.5	AV	L3	GND
1.500000	37.10	9.9	46	8.9	AV	L3	GND
2.125500	34.90	10.1	46	11.1	AV	L3	GND
5.140500	28.80	10.1	50	21.2	AV	N	GND
19.612500	25.40	12.9	50	24.6	AV	L3	GND

## Appendix G

# Radiated Emission of Enclosure in Idle Mode According to FCC Part 15.109



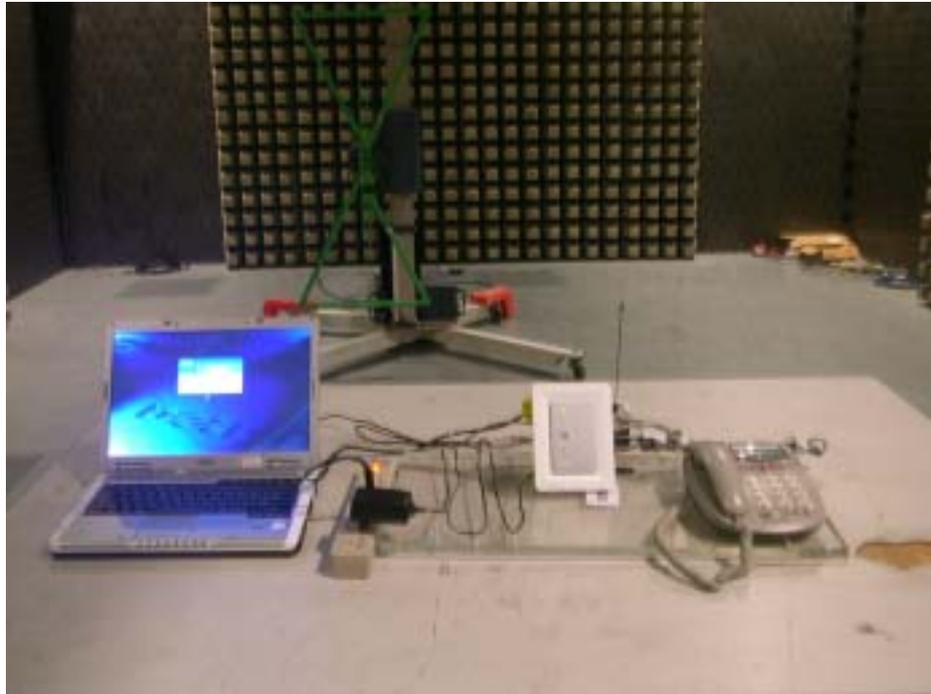
MEASUREMENT RESULT: QP DECTER

Frequency ( MHz )	Level ( dBµV/m )	Transd ( dB )	Limit ( dBµV/m )	Margin ( dB )	Height ( cm )	Azimuth ( deg )	Polarisation
56.280000	34.90	-15.8	40.0	5.1	120.0	343.00	VERTICAL
96.780000	32.80	-11.3	43.5	10.7	100.0	11.00	VERTICAL
204.000000	34.00	-11.5	43.5	9.5	133.0	0.00	HORIZONTAL
208.680000	33.10	-11.7	43.5	10.4	126.0	0.00	HORIZONTAL
336.000000	34.70	-5.9	46.0	11.3	100.0	178.00	HORIZONTAL
900.000000	36.60	1.4	46.0	9.4	120.0	171.00	VERTICAL

## Appendix H

### Photos of Test Setup

# 1 Radiated Emissions



Radiated Disturbance ( gateway mode )



Radiated Disturbance ( modem mode )

## 2 Radiated Spurious Emissions



Radiated Spurious Emission (below 2GHz, Gateway mode)



Radiated Spurious Emission (below 2GHz, Modem mode)



Radiated Spurious Emission (2GHz~18GHz, Gateway mode)



Radiated Spurious Emission (2GHz~18GHz, Modem mode)



Radiated Spurious Emission (18GHz~26GHz, Gateway mode)

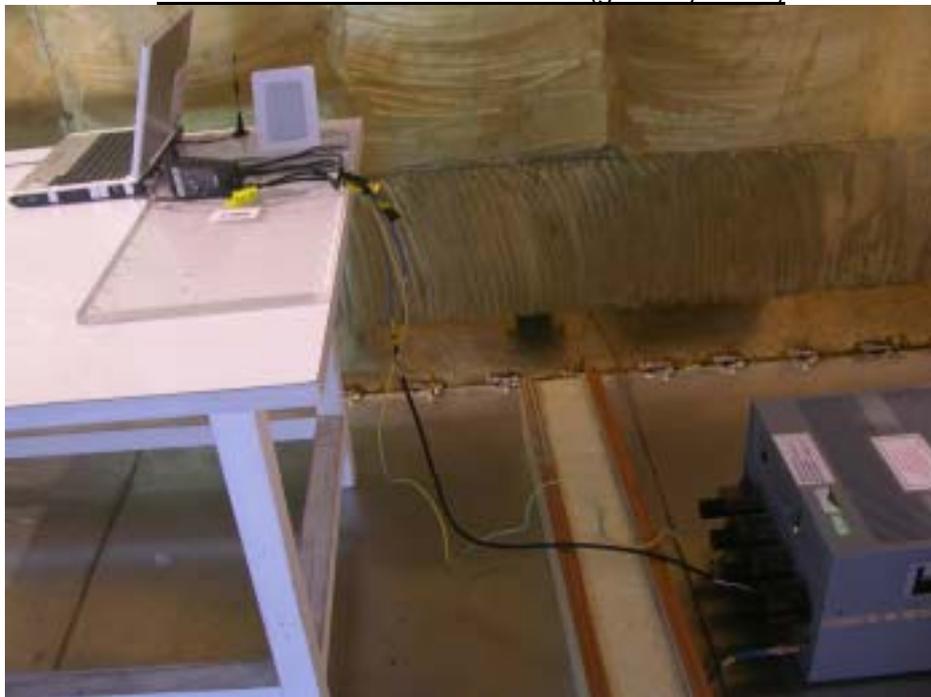


Radiated Spurious Emission (18GHz~26GHz, Modem mode)

### 3 Conducted Emissions



Conducted Emissions for AC Ports (gateway mode)



Conducted Emissions for Notebook AC Ports (modem mode)