

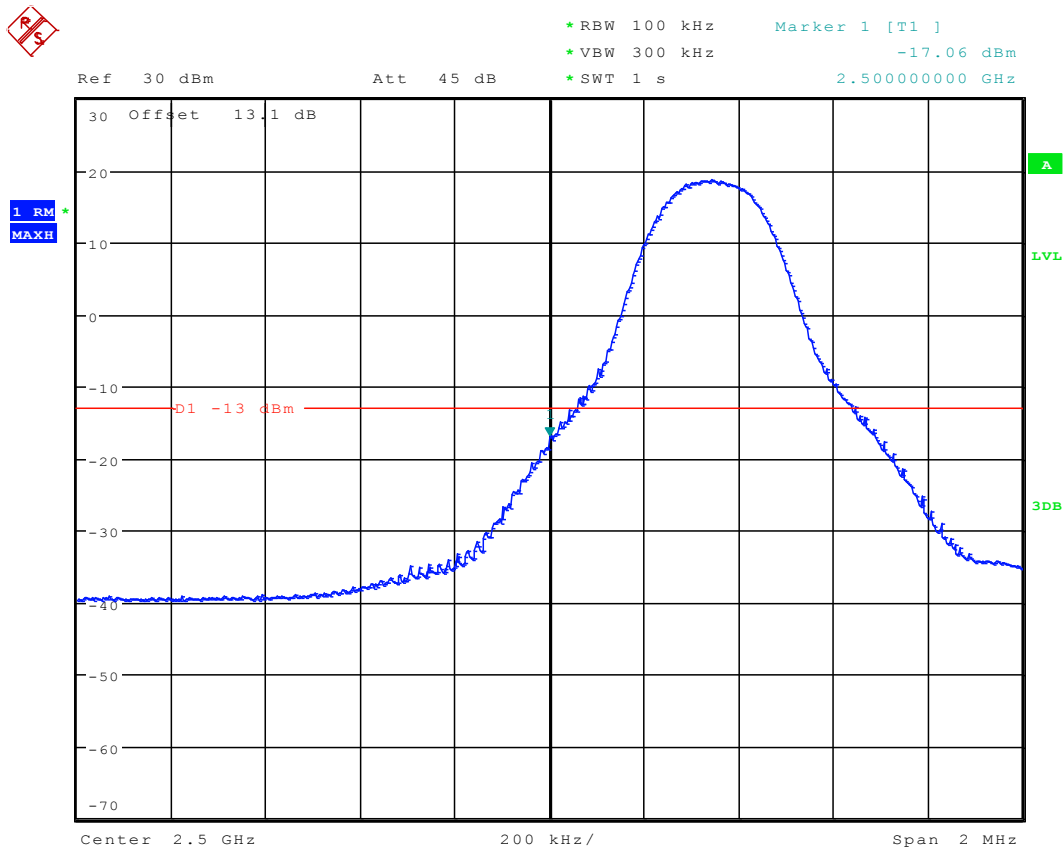


1.2 Test Mode=TM7

1.2.1 Channel Bandwidth = Lowest (5 MHz)

1.2.1.1 Channel= L

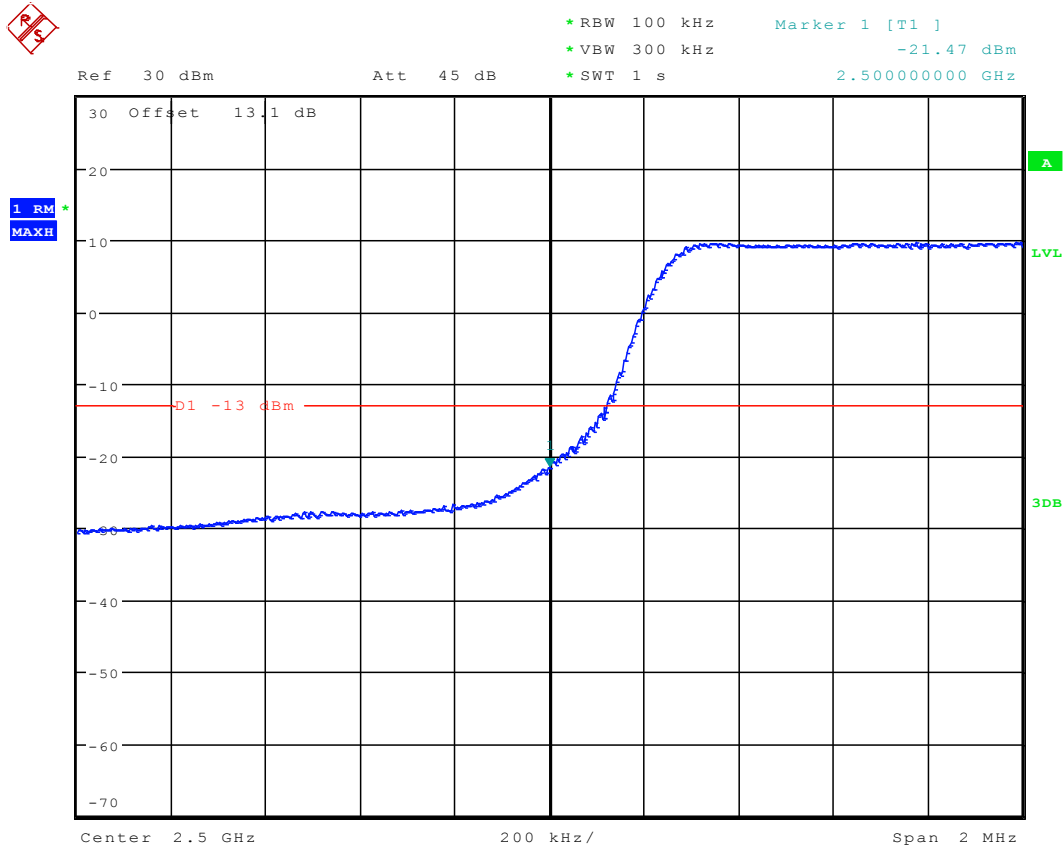
1.2.1.1.1 QPSK/1RB #0



Date: 9.JUL.2012 21:53:43



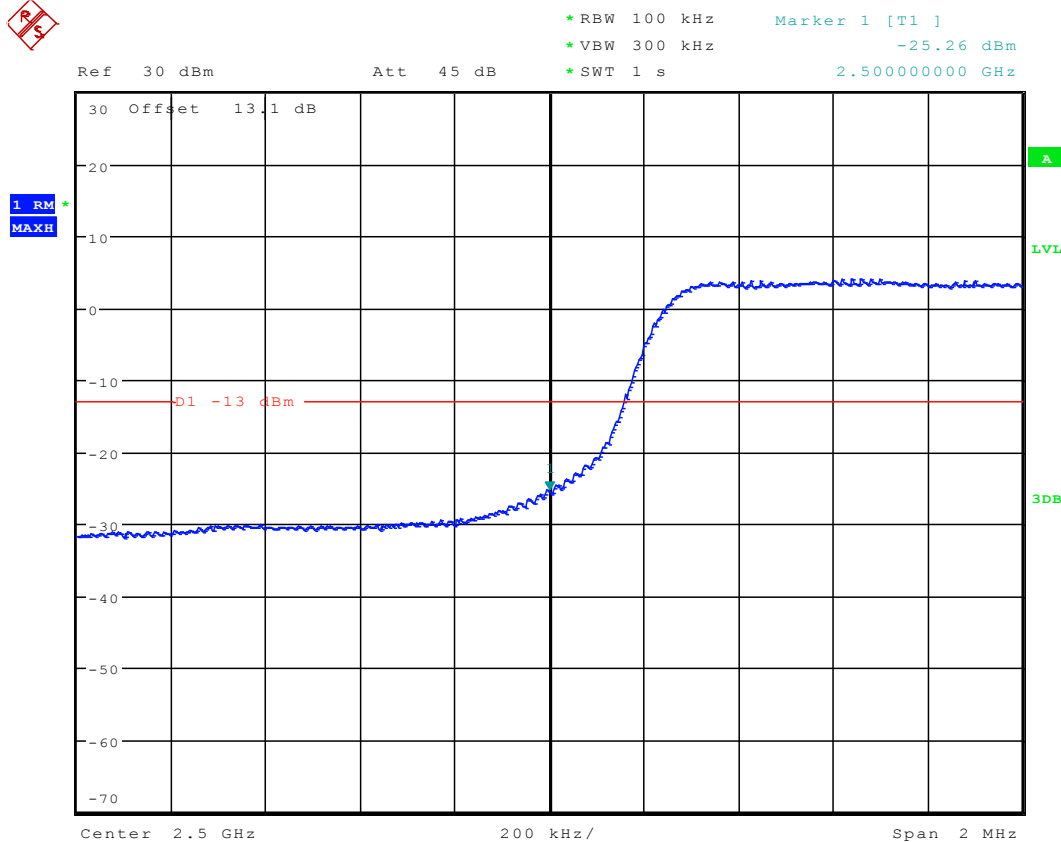
1.2.1.1.2 QPSK/Partial RBs /RB #0



Date: 9.JUL.2012 21:54:14



1.2.1.1.3 QPSK/full RBs

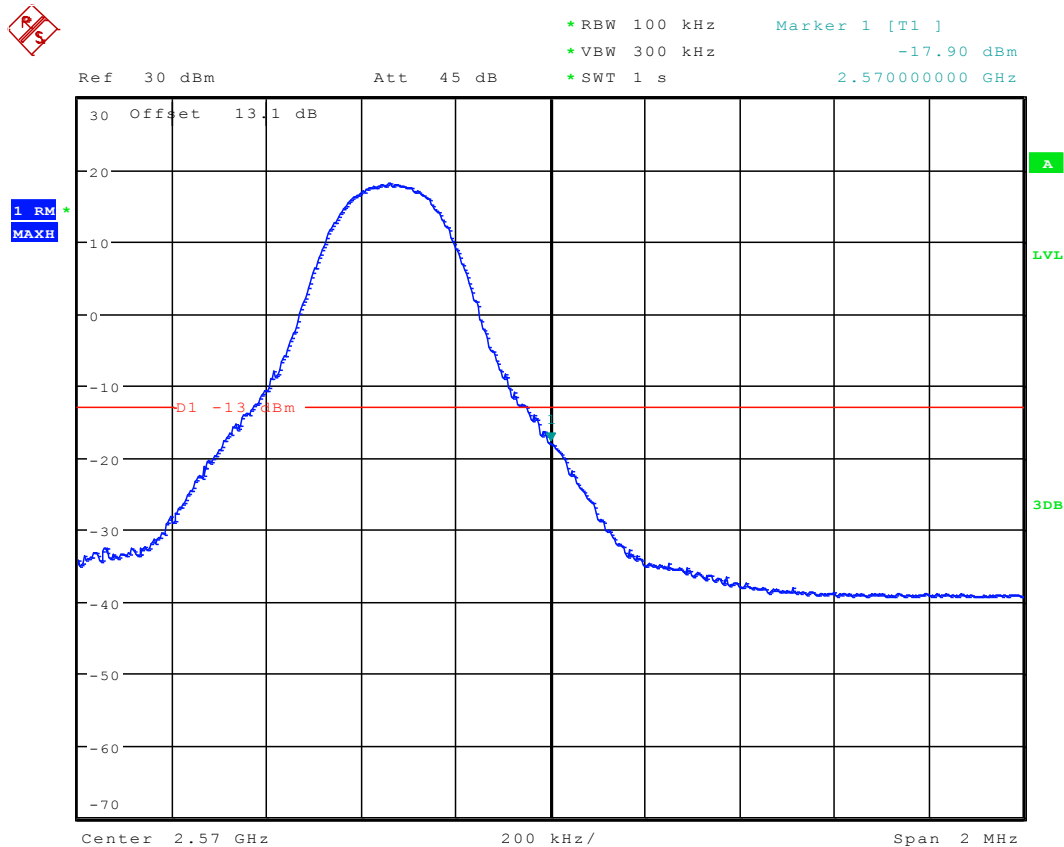


Date: 9.JUL.2012 21:54:43



1.2.1.2 Channel= H

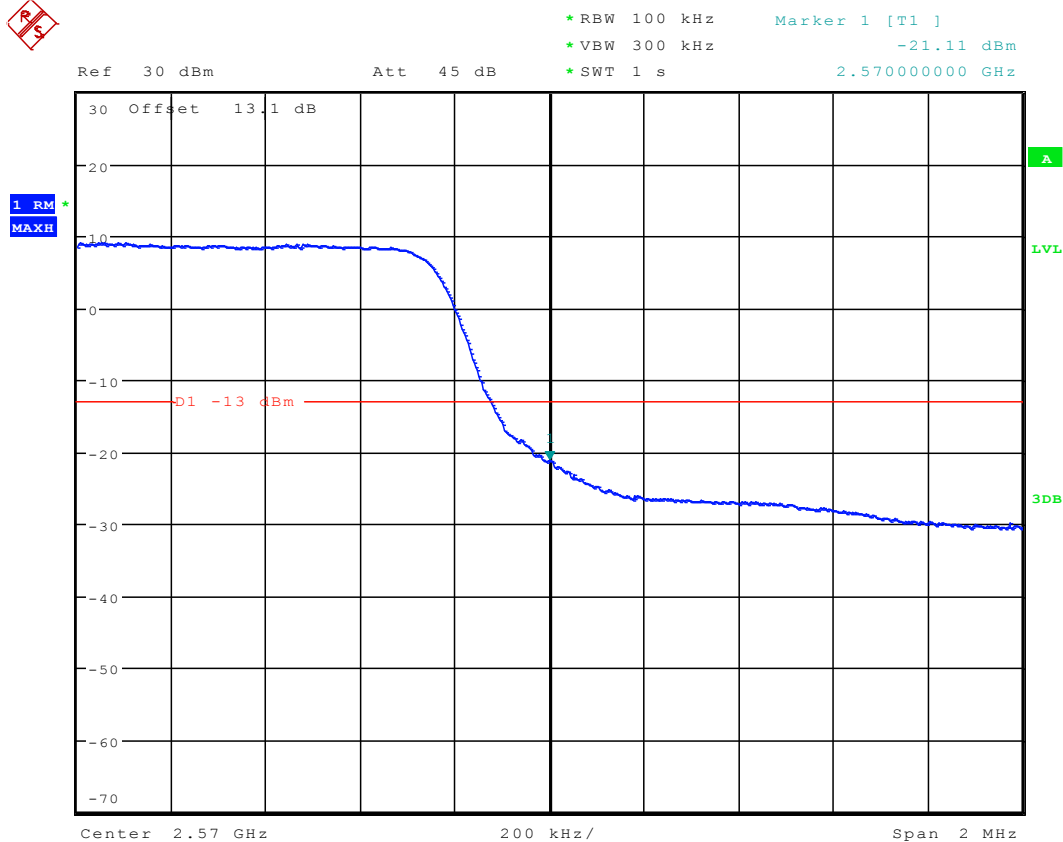
1.2.1.2.1 QPSK/1RB #max



Date: 9.JUL.2012 22:03:53



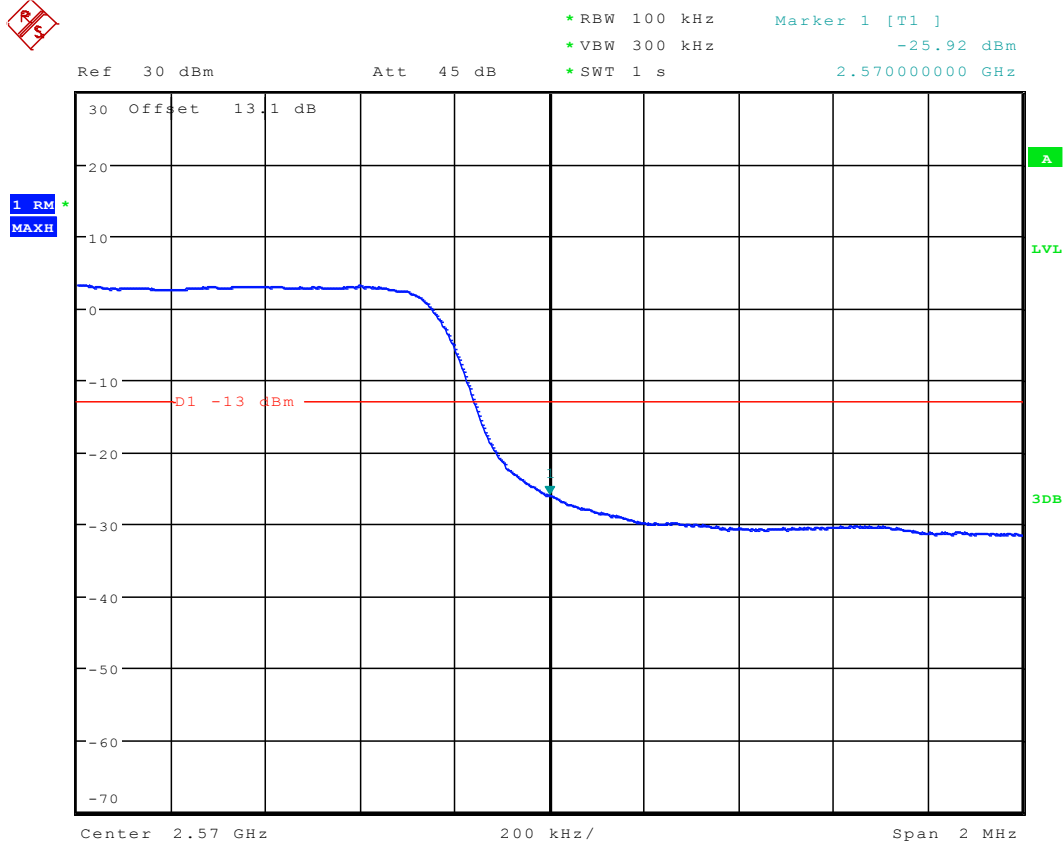
1.2.1.2.2 QPSK/Partial RBs /RB #max



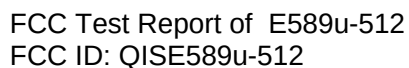
Date: 9.JUL.2012 22:03:27



1.2.1.2.3 QPSK/full RBs

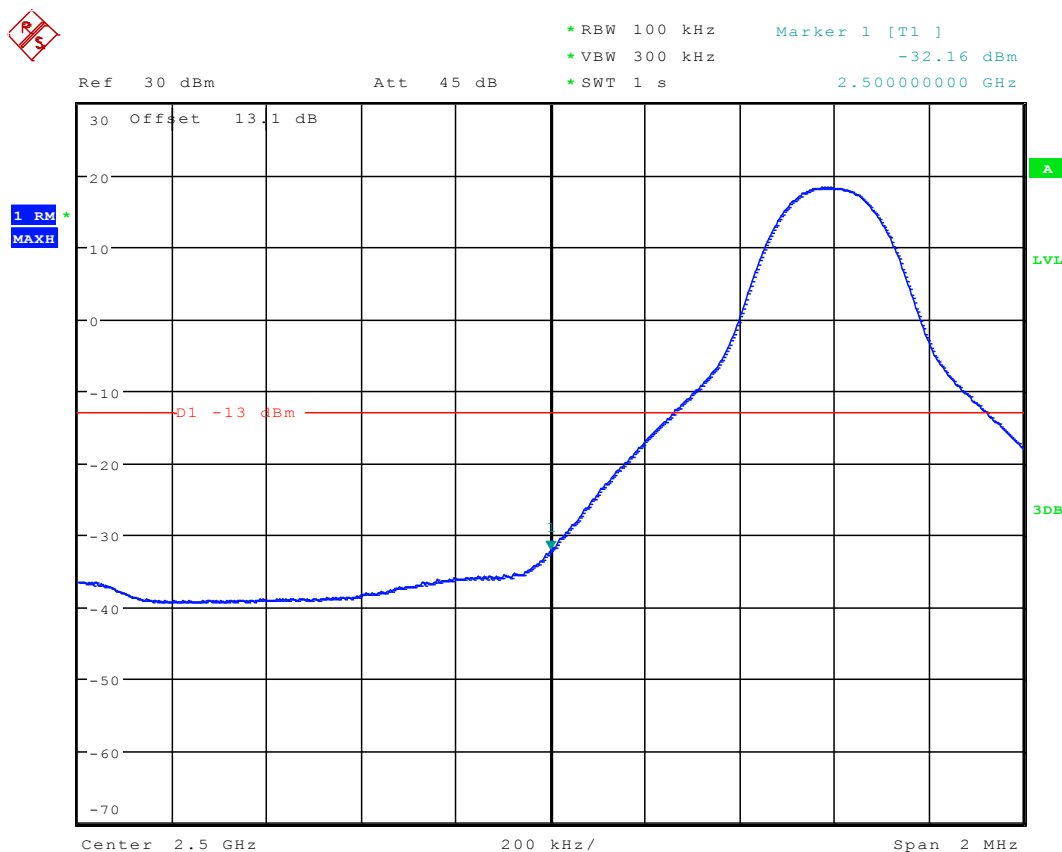


Date: 9.JUL.2012 22:02:28



1.2.2.1 Channel= L

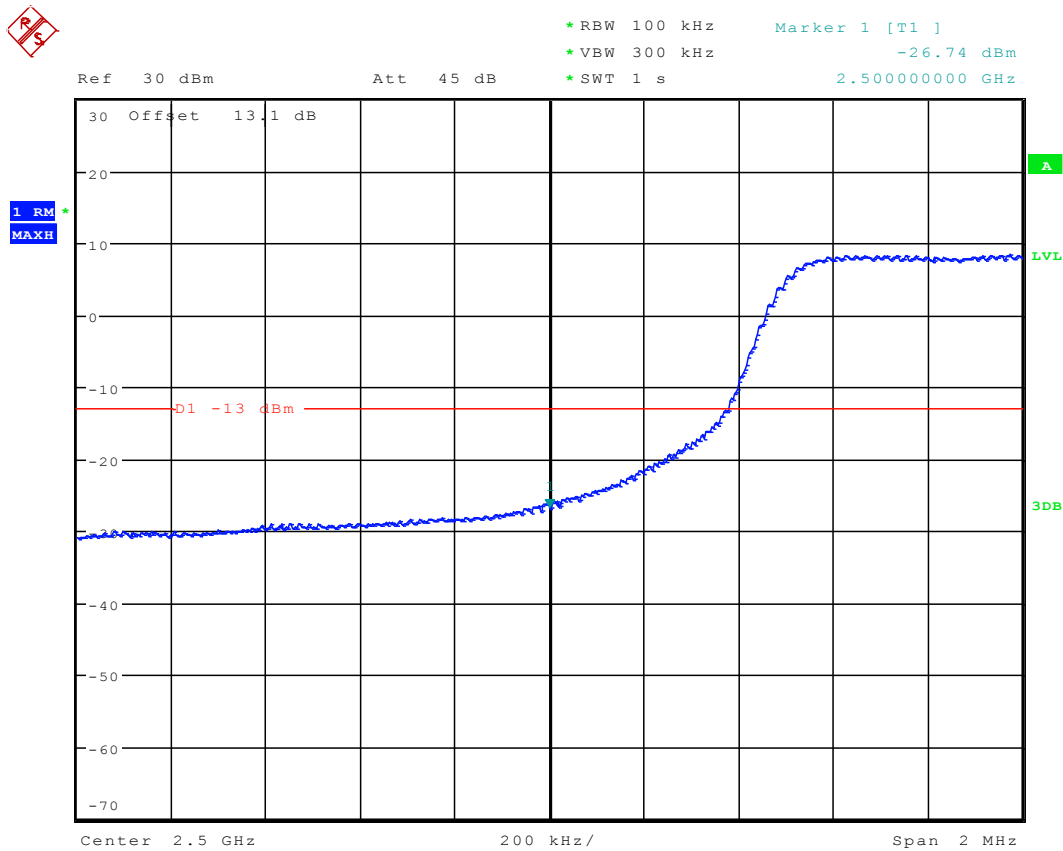
1.2.2.1.1 QPSK/1RB #0



Date: 9.JUL.2012 22:14:44



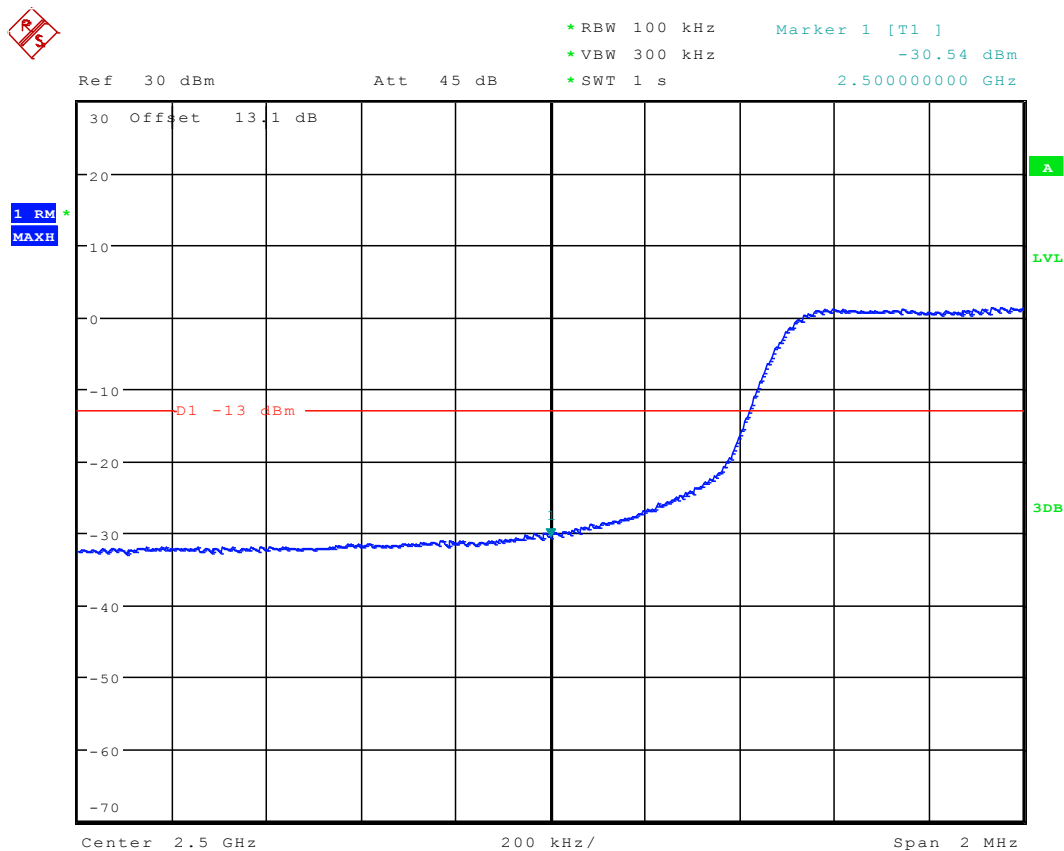
1.2.2.1.2 QPSK/Partial RBs /RB #0



Date: 9.JUL.2012 22:13:10



1.2.2.1.3 QPSK/full RBs

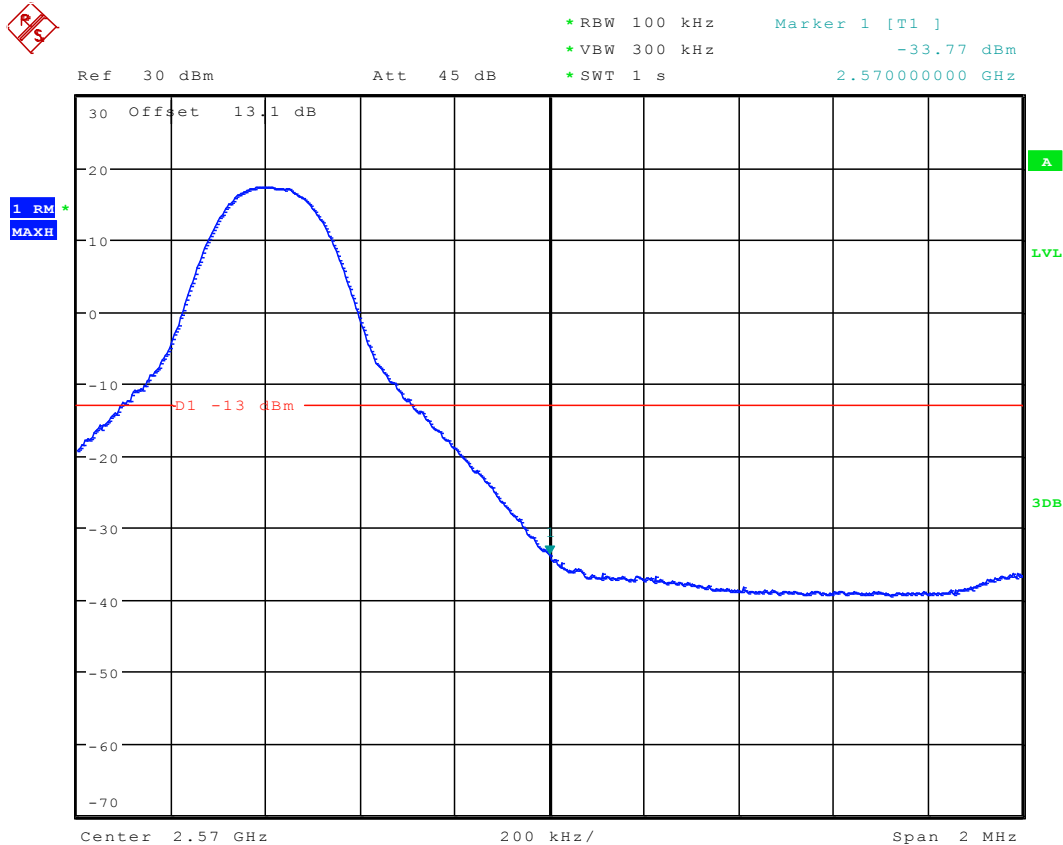


Date: 9.JUL.2012 22:12:02



1.2.2.2 Channel= H

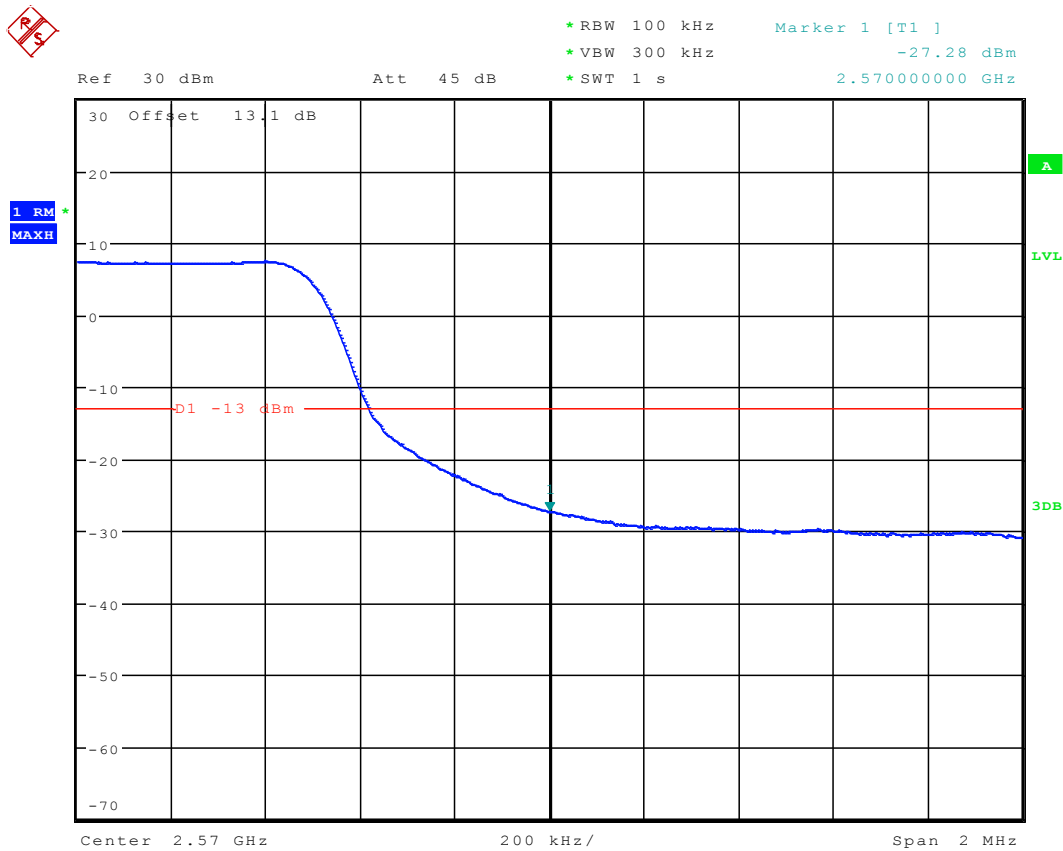
1.2.2.2.1 QPSK/1RB #max



Date: 9.JUL.2012 22:08:56

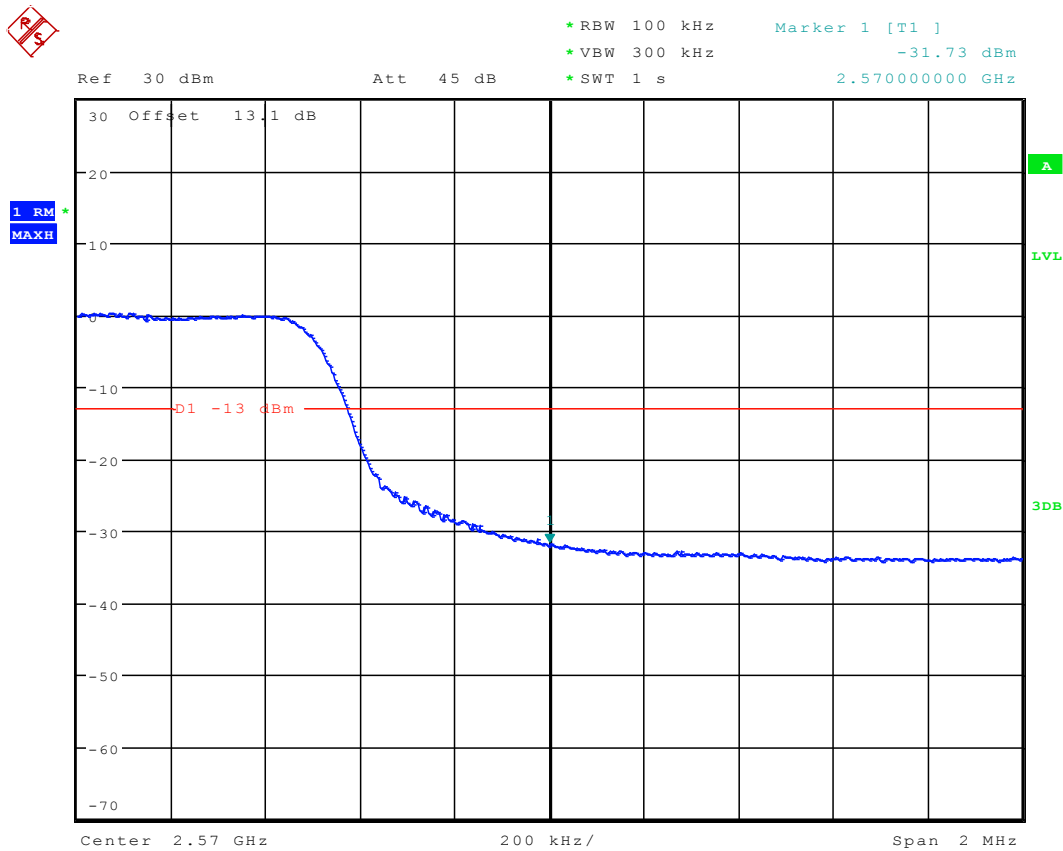


1.2.2.2.2 QPSK/Partial RBs /RB #max



Date: 9.JUL.2012 22:09:45

1.2.2.2.3 QPSK/full RBs



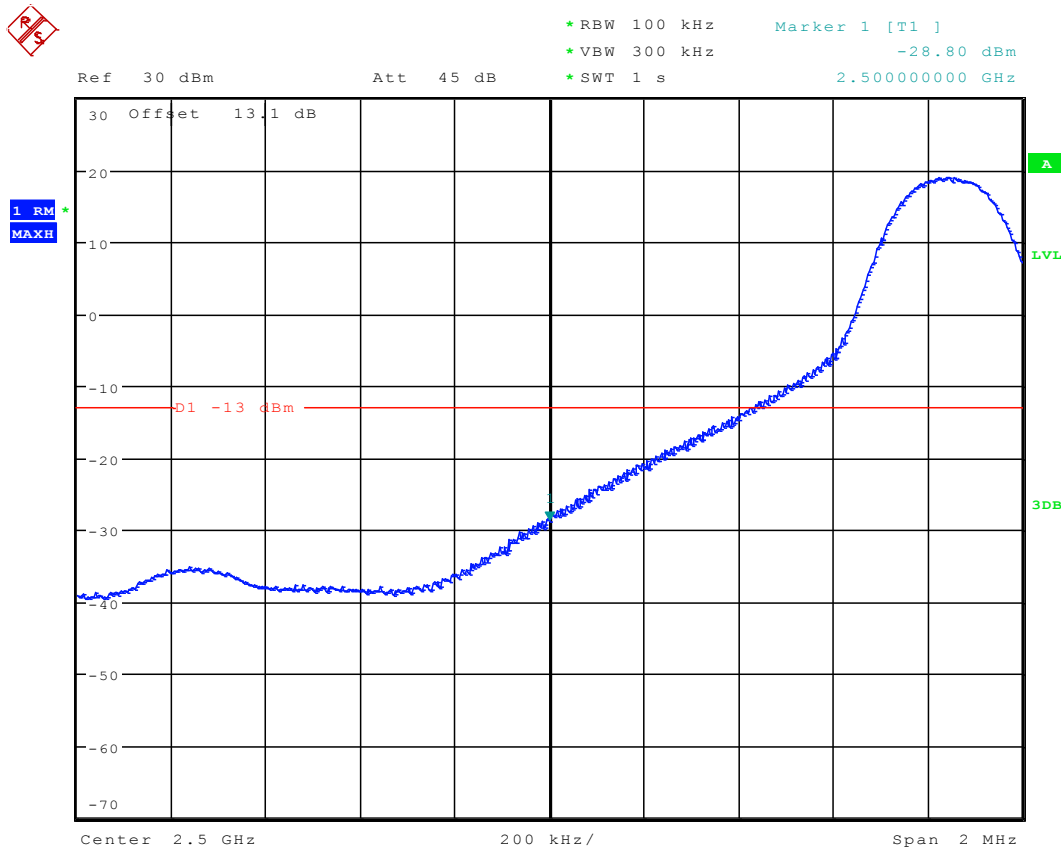
Date: 9.JUL.2012 22:10:07



1.2.3 Channel Bandwidth = 15 MHz

1.2.3.1 Channel= L

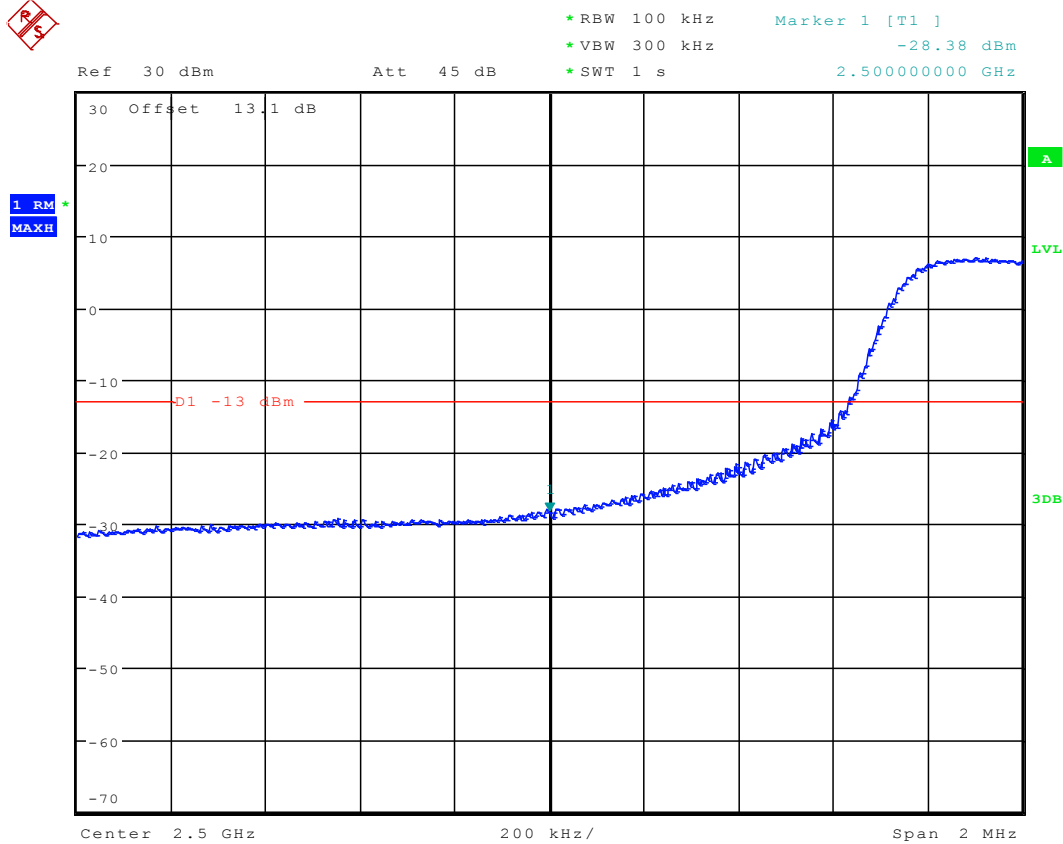
1.2.3.1.1 QPSK/1RB #0



Date: 9.JUL.2012 22:43:19



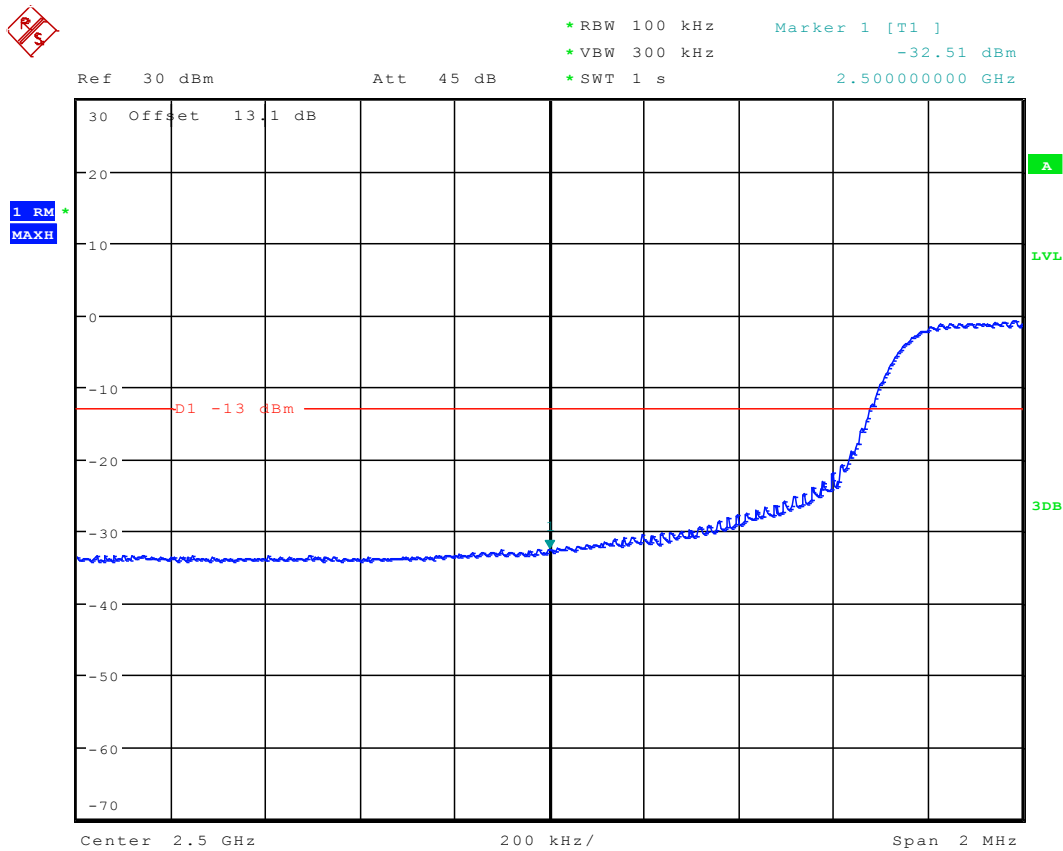
1.2.3.1.2 QPSK/Partial RBs /RB #0



Date: 9.JUL.2012 22:43:37



1.2.3.1.3 QPSK/full RBs

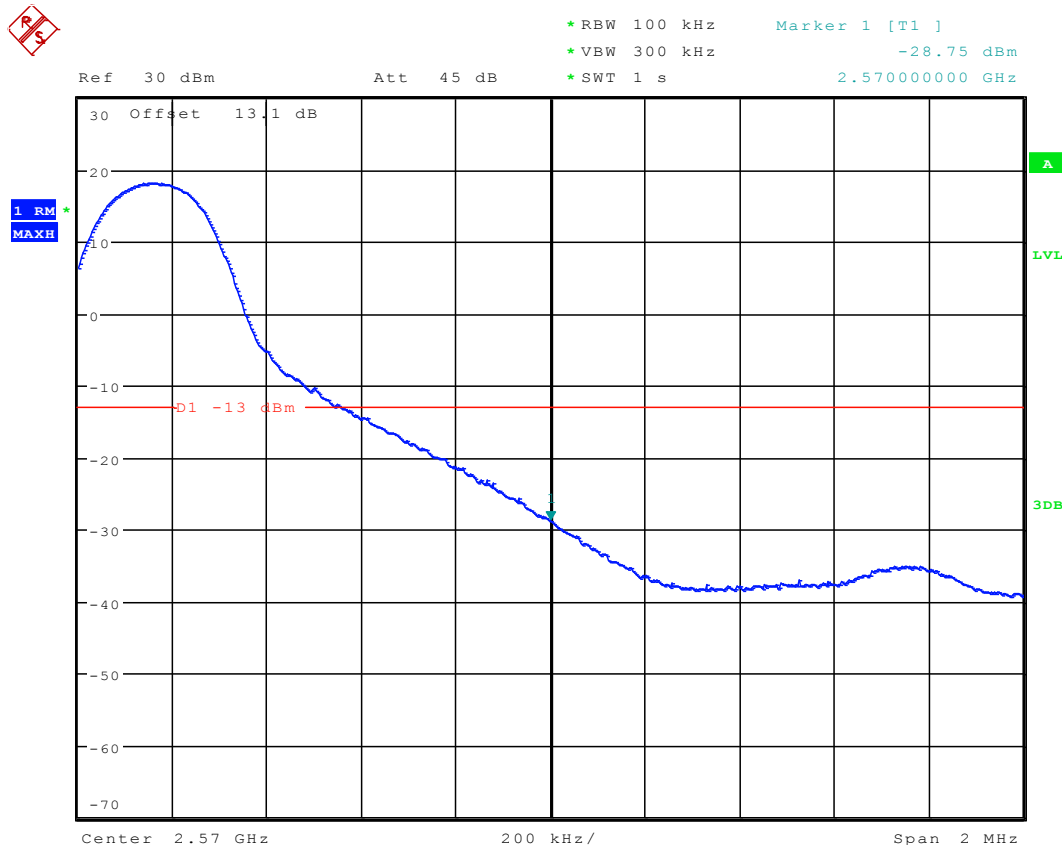


Date: 9.JUL.2012 22:44:06



1.2.3.2 Channel= H

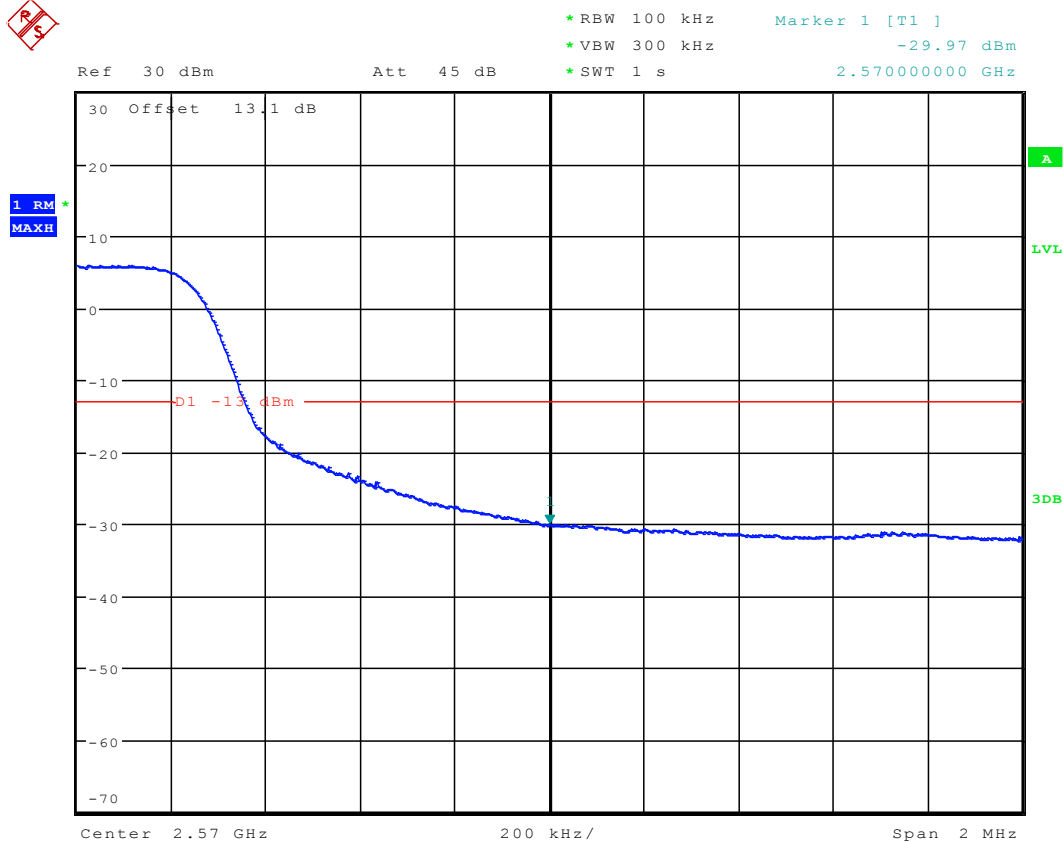
1.2.3.2.1 QPSK/1RB #max



Date: 9.JUL.2012 22:45:55



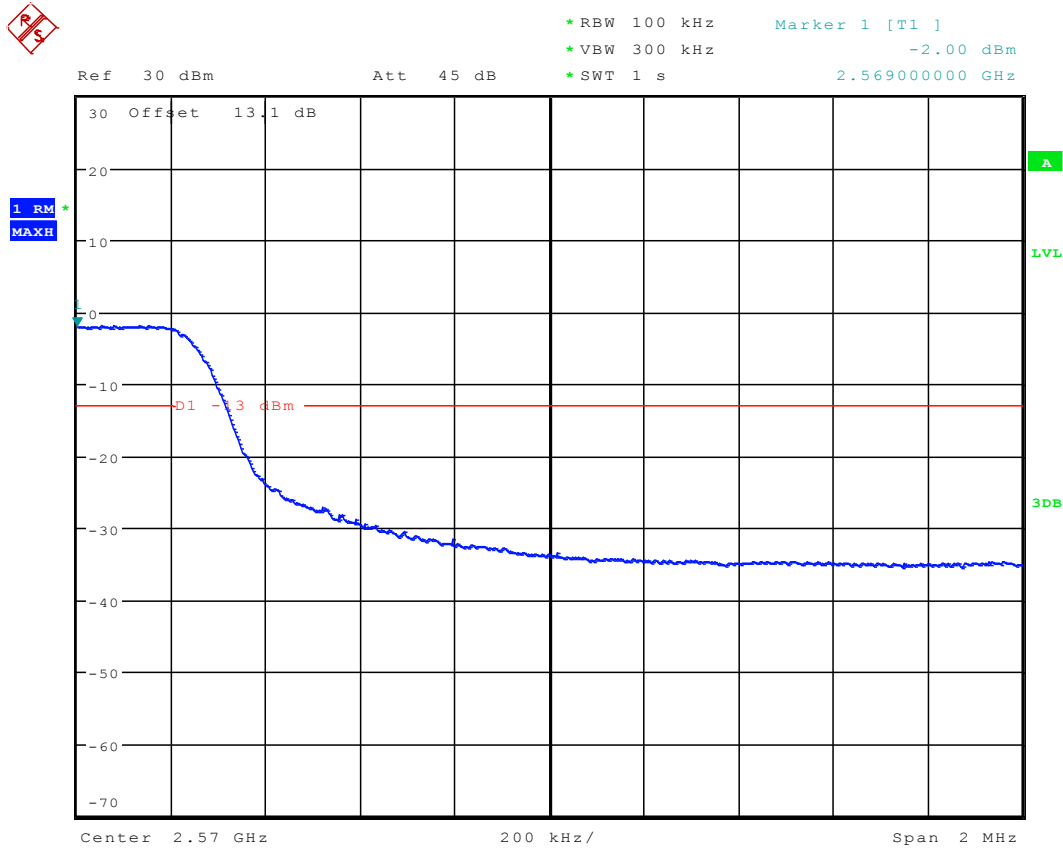
1.2.3.2.2 QPSK/Partial RBs /RB #max



Date: 9.JUL.2012 22:45:27



1.2.3.2.3 QPSK/full RBs



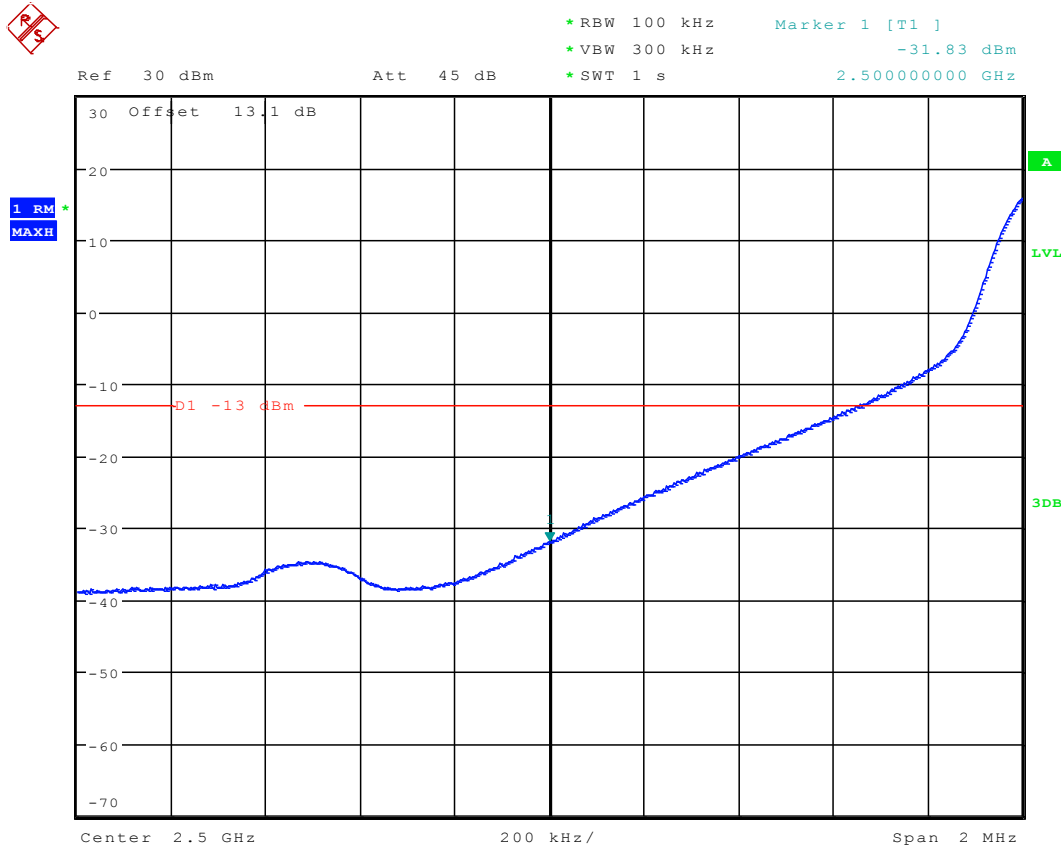
Date: 9.JUL.2012 22:44:42



1.2.4 Channel Bandwidth = Highest (20 MHz)

1.2.4.1 Channel= L

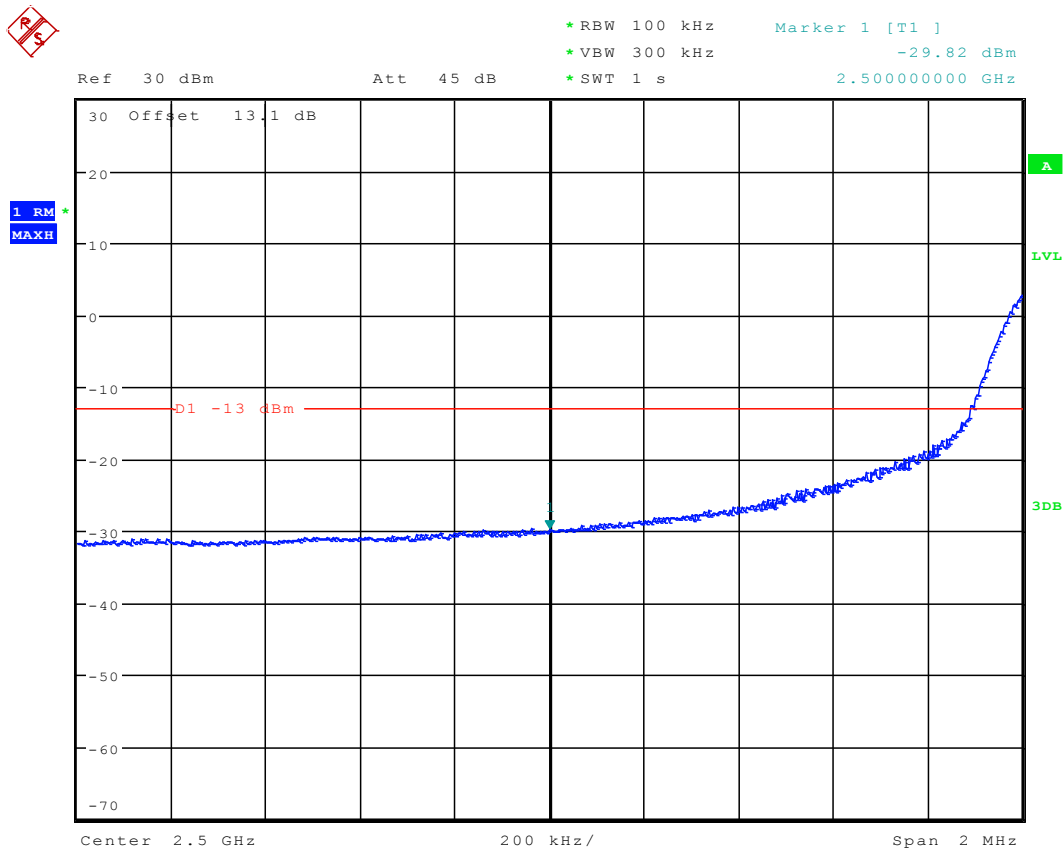
1.2.4.1.1 QPSK/1RB #0



Date: 7.JUL.2012 01:39:47



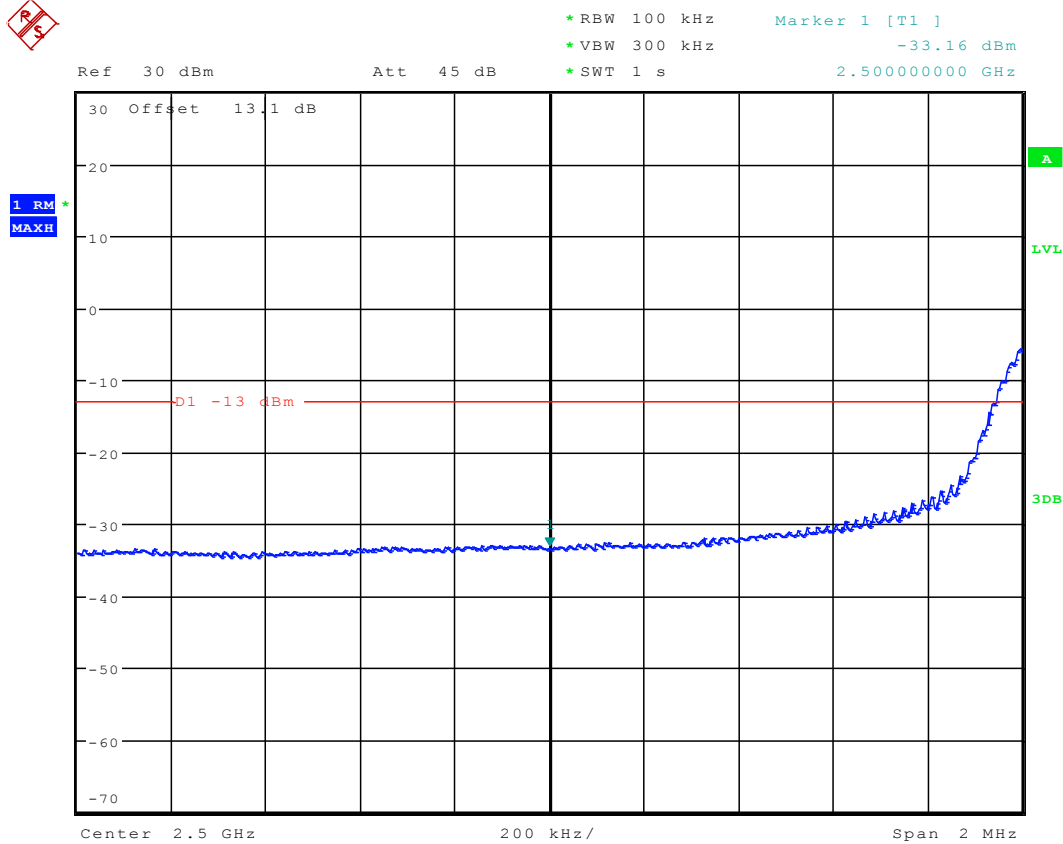
1.2.4.1.2 QPSK/Partial RBs /RB #0



Date: 7.JUL.2012 01:40:21



1.2.4.1.3 QPSK/full RBs

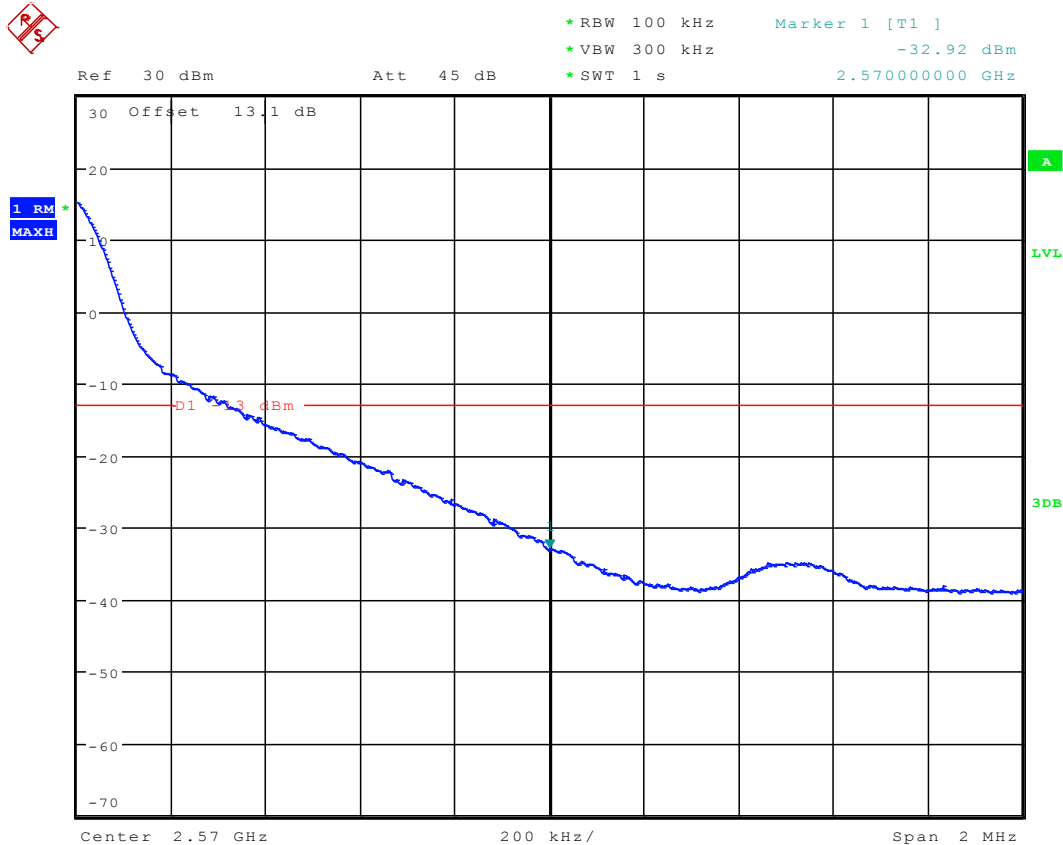


Date: 7.JUL.2012 01:40:44



1.2.4.2 Channel= H

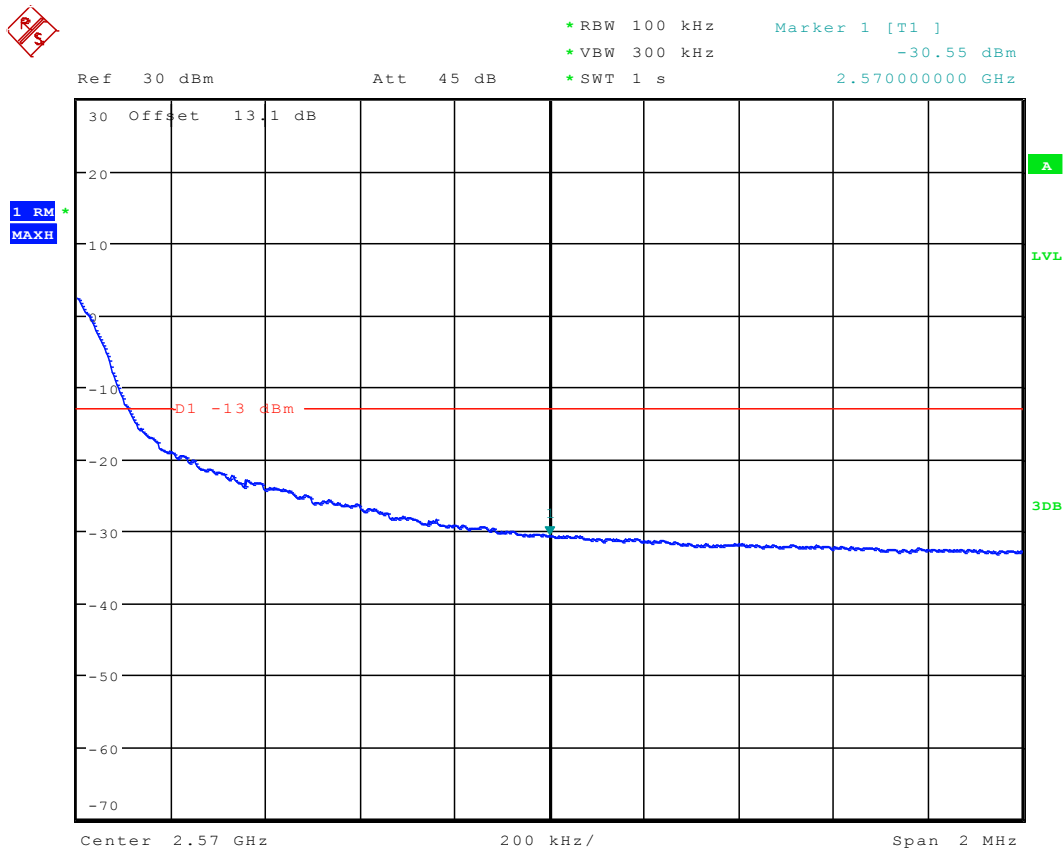
1.2.4.2.1 QPSK/1RB #max



Date: 7.JUL.2012 01:38:14



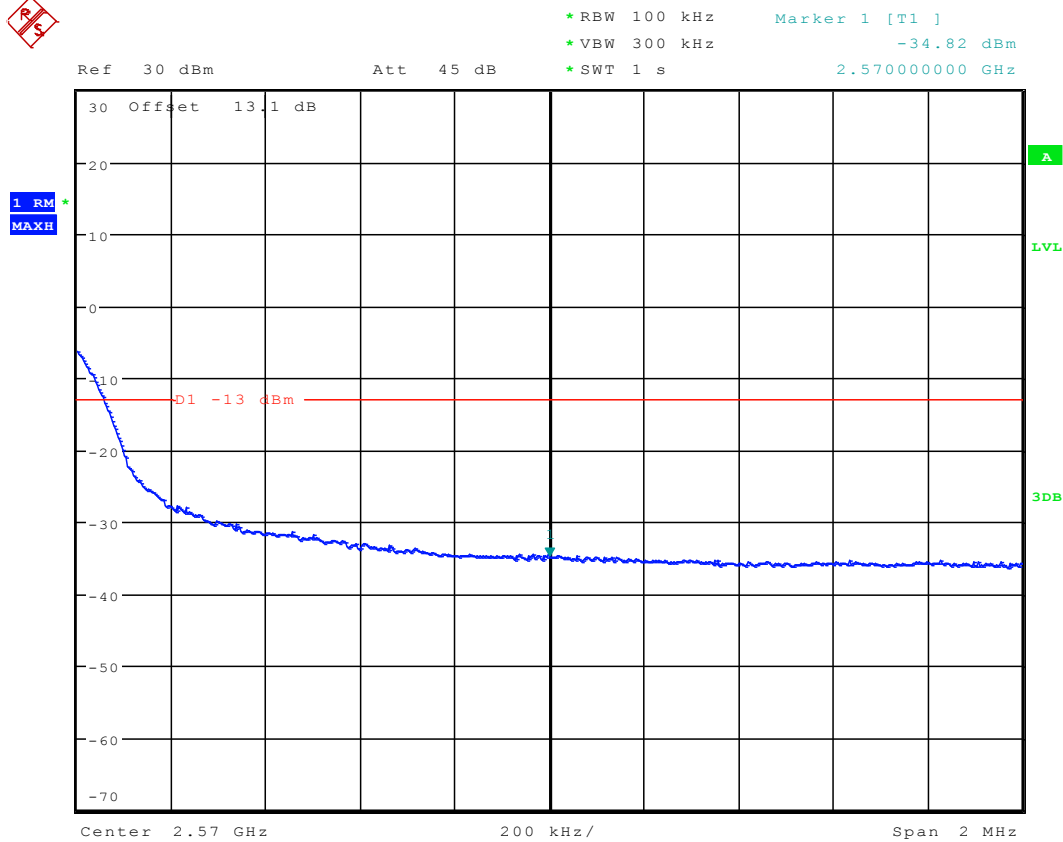
1.2.4.2.2 QPSK/Partial RBs /RB #max



Date: 7.JUL.2012 01:37:46



1.2.4.2.3 QPSK/full RBs



Date: 7.JUL.2012 01:37:19

-----END-----



Appendix E

Spurious Emission at Antenna Terminal

According to FCC Part 2.1051 & FCC Part 27C & 27M



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1 For Band 7

NOTE1: QPSK output power higher than 16QAM, so only test the QPSK mode.

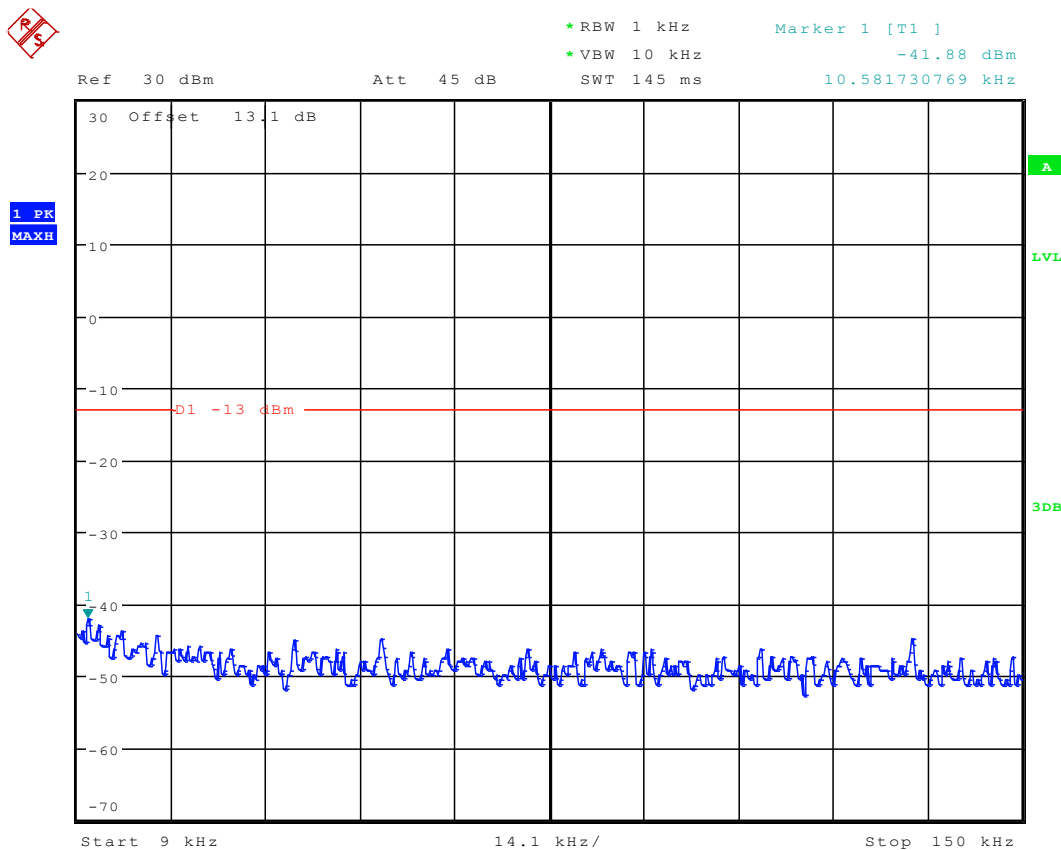
NOTE2: All relevant operation modes have been tested, and the 1RB&full RB case data is included in this report.

1.1 Test Mode=TM6

1.1.1 Channel Bandwidth = Lowest (5 MHz)

1.1.1.1 Channel = L

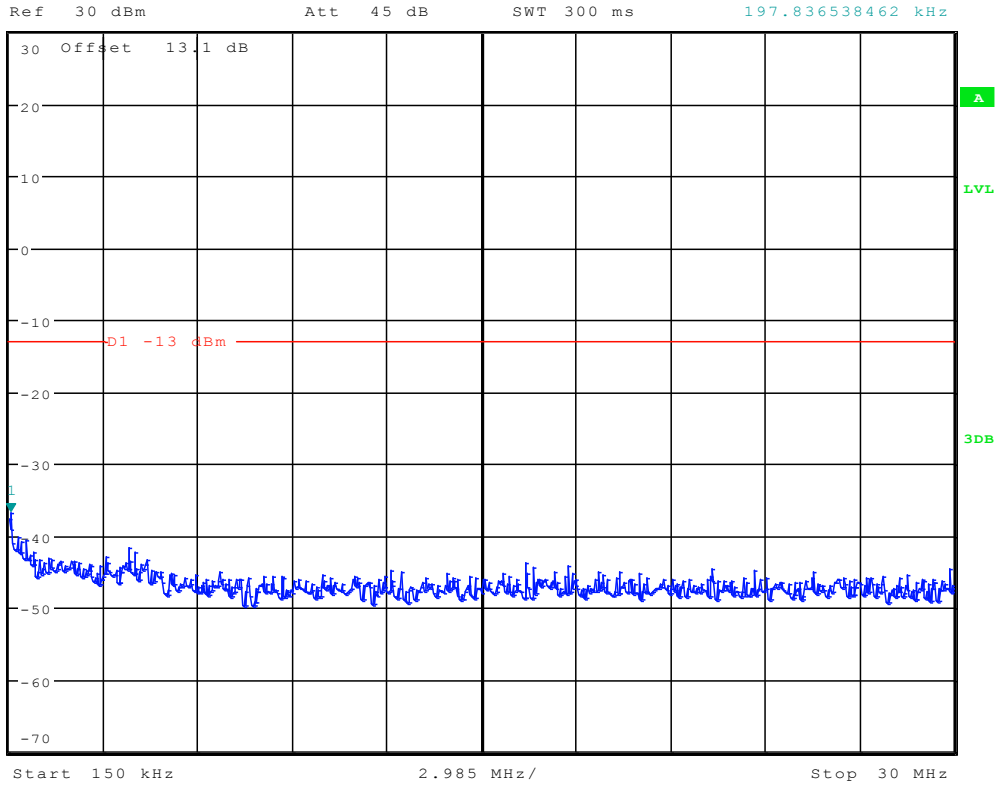
1.1.1.1.1 QPSK/1RBs /RB #0



Date: 7.JUL.2012 00:07:56



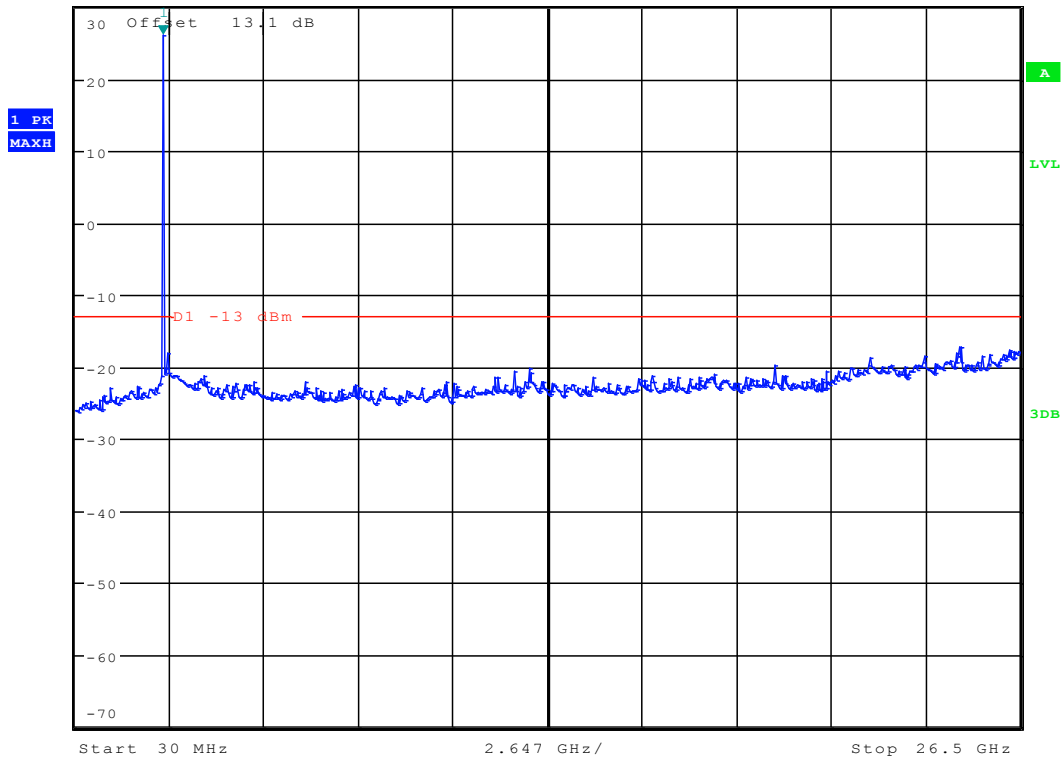
*RBW 10 kHz Marker 1 [T1]
*VBW 30 kHz -36.73 dBm
SWT 300 ms 197.836538462 kHz



Date: 7.JUL.2012 00:08:20



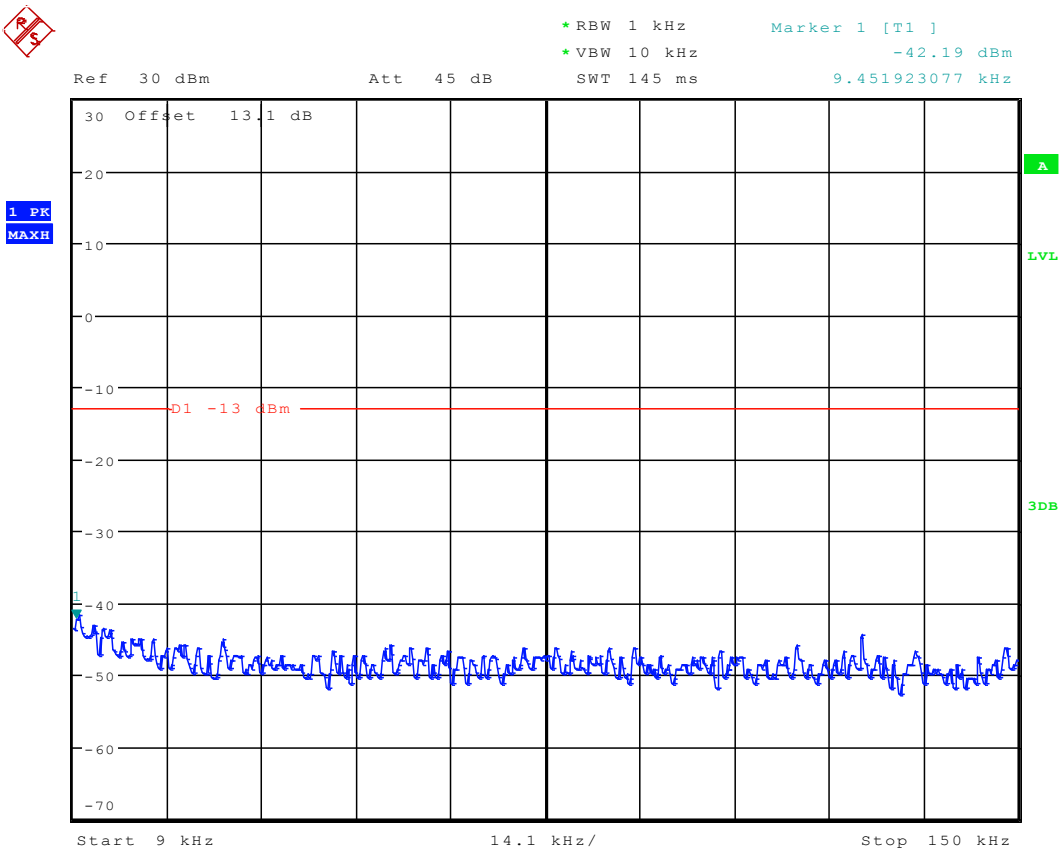
* RBW 1 MHz Marker 1 [T1]
* VBW 3 MHz 26.21 dBm
Ref 30 dBm Att 45 dB SWT 155 ms 2.490352564 GHz



Date: 7.JUL.2012 00:08:46



1.1.1.1.2 QPSK/1RBs /RB #max



Date: 7.JUL.2012 00:09:47



*RBW 10 kHz Marker 1 [T1]
*VBW 30 kHz -35.21 dBm
SWT 300 ms 197.836538462 kHz

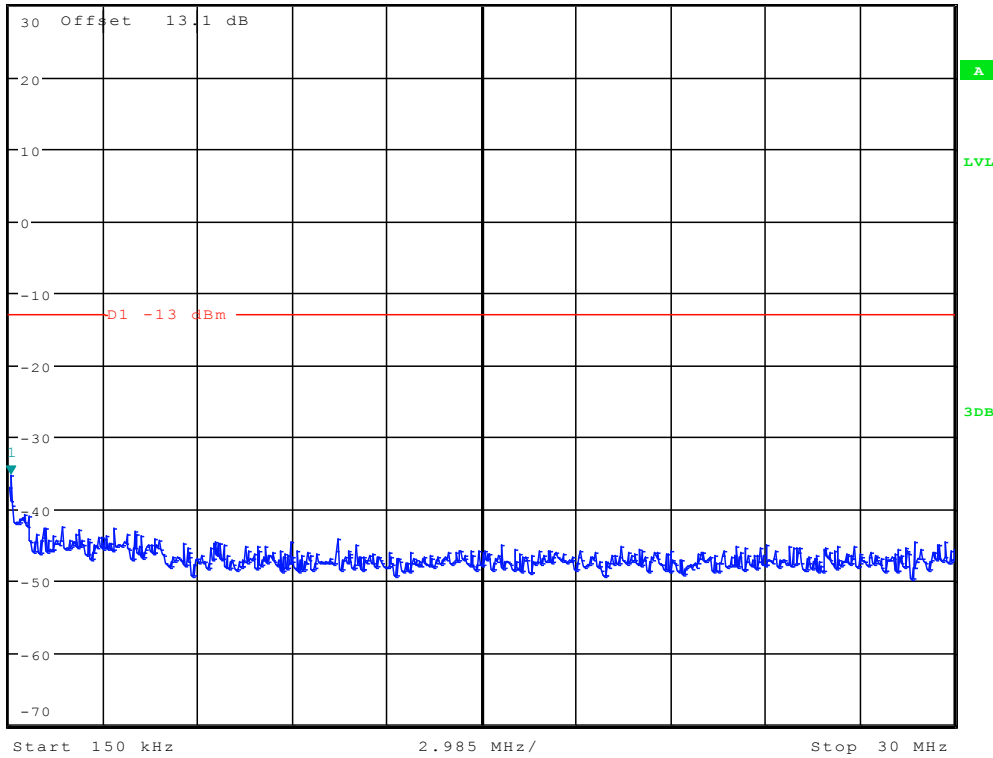
Ref 30 dBm

Att 45 dB

SWT 300 ms

197.836538462 kHz

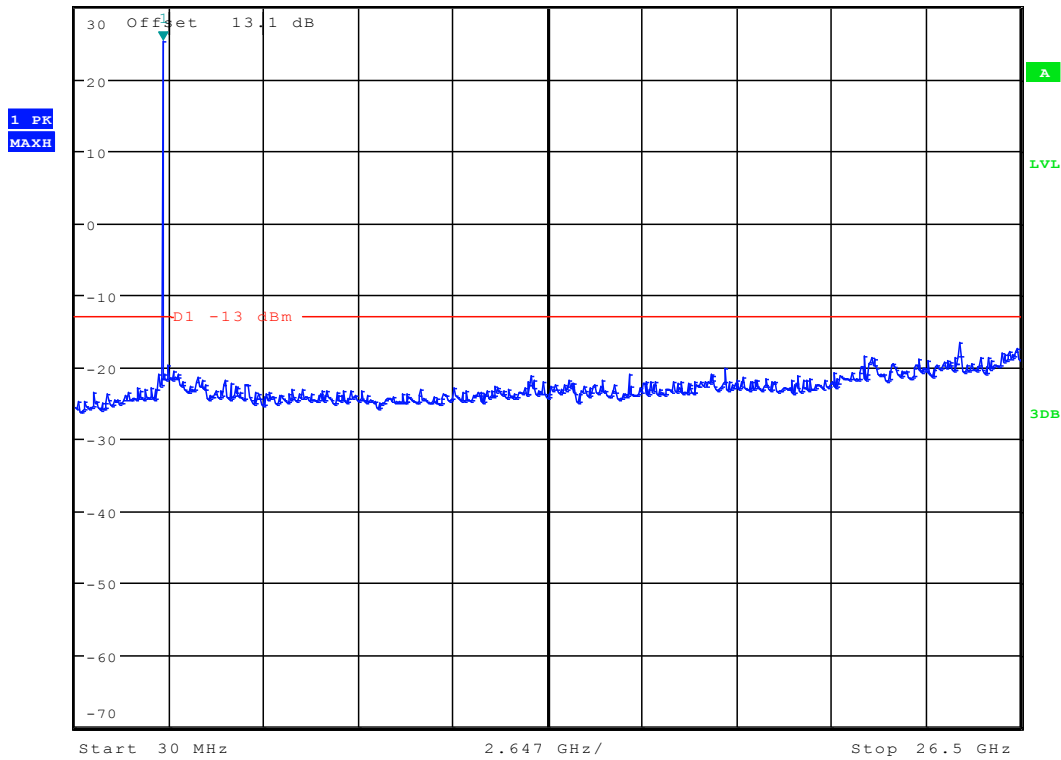
1 PK
MAXH



Date: 7.JUL.2012 00:09:27



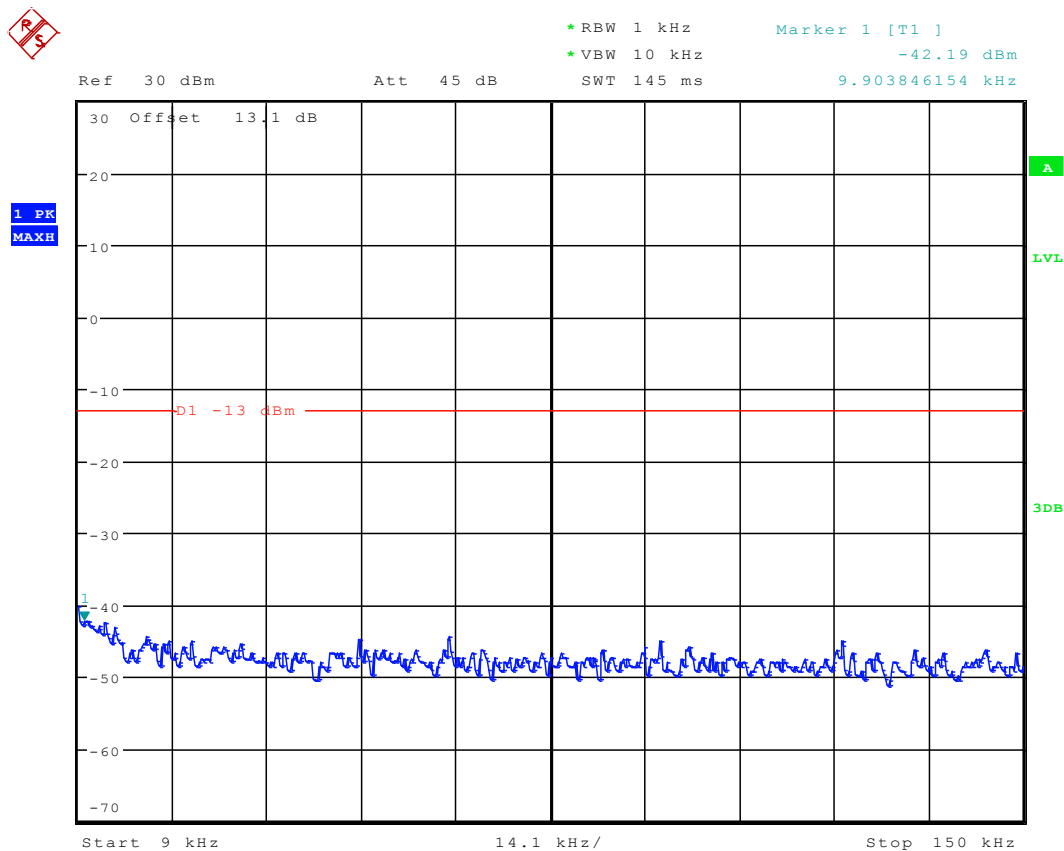
* RBW 1 MHz Marker 1 [T1]
* VBW 3 MHz 25.23 dBm
Ref 30 dBm Att 45 dB SWT 155 ms 2.490352564 GHz



Date: 7.JUL.2012 00:09:07



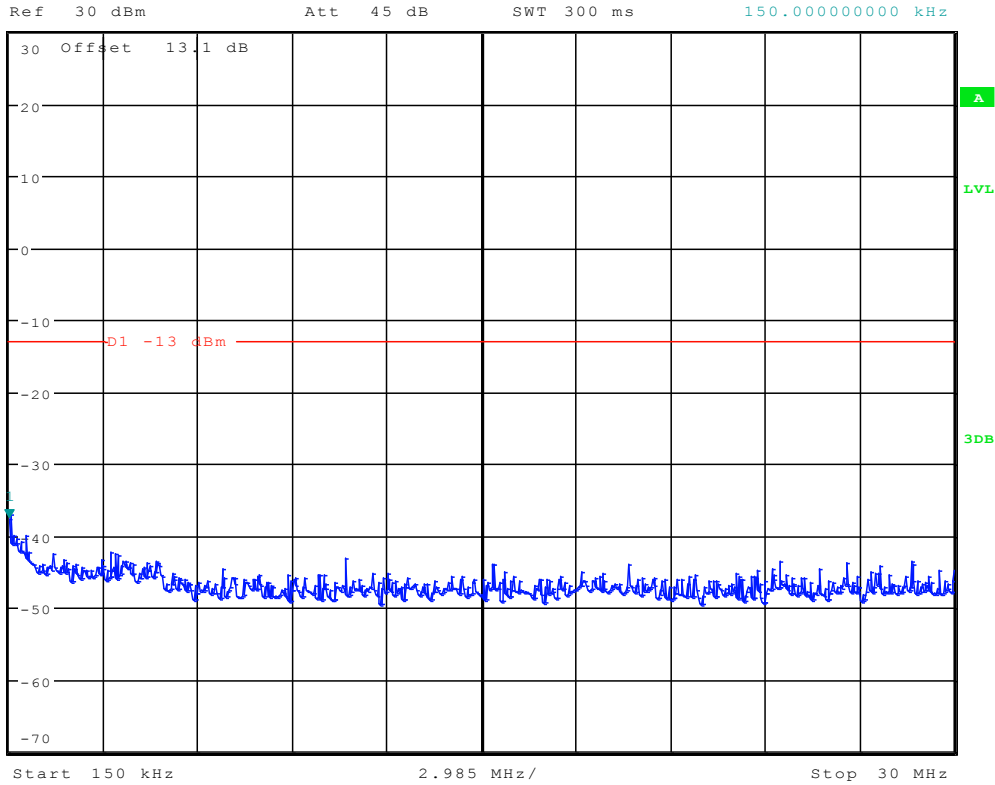
1.1.1.1.3 QPSK/full RBs



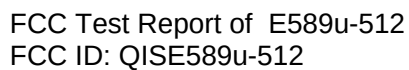
Date: 7.JUL.2012 00:10:21



*RBW 10 kHz Marker 1 [T1]
*VBW 30 kHz -37.63 dBm
SWT 300 ms 150.00000000 kHz



Date: 7.JUL.2012 00:10:46



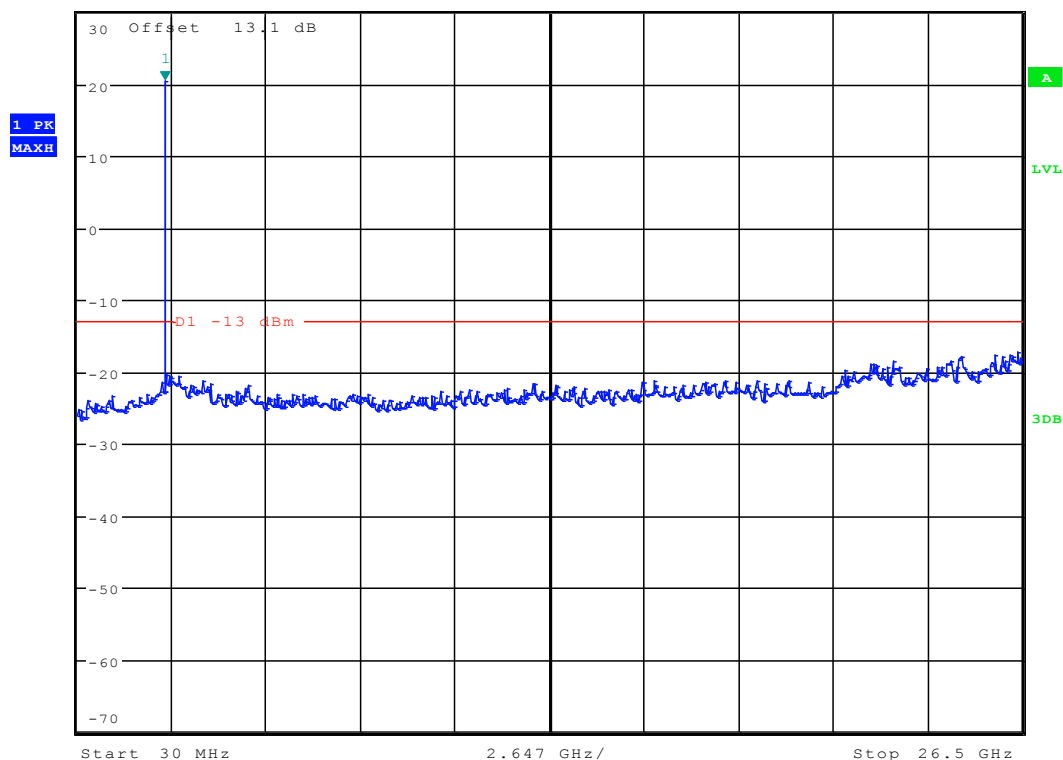
```
*RBW 1 MHz      Marker 1 [T1 ]
*VBW 3 MHz      20.50 dBm
SWT 155 ms      2.490352564 GHz
```

Ref 30 dBm

Att 45 dB

SWT 155 ms

2.490352564 GHz

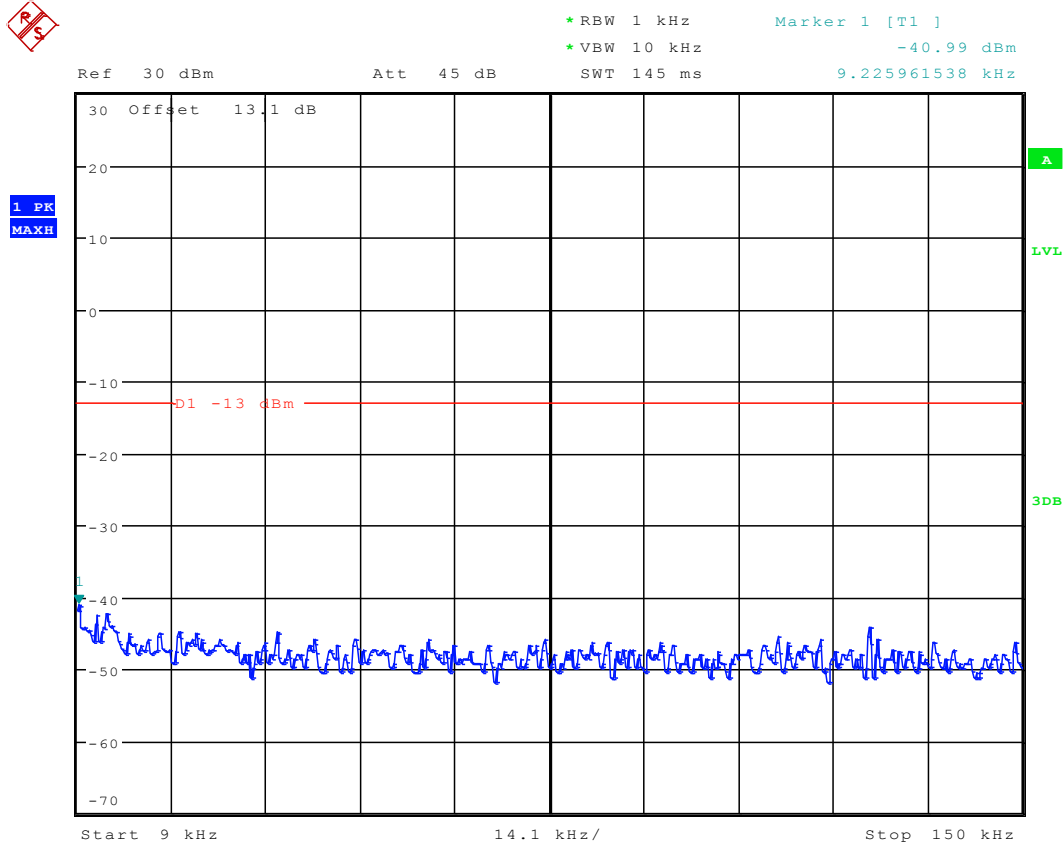


Date: 7.JUL.2012 00:11:03



1.1.1.2 Channel = M

1.1.1.2.1 QPSK/1RBs /RB #0



Date: 7.JUL.2012 00:14:23



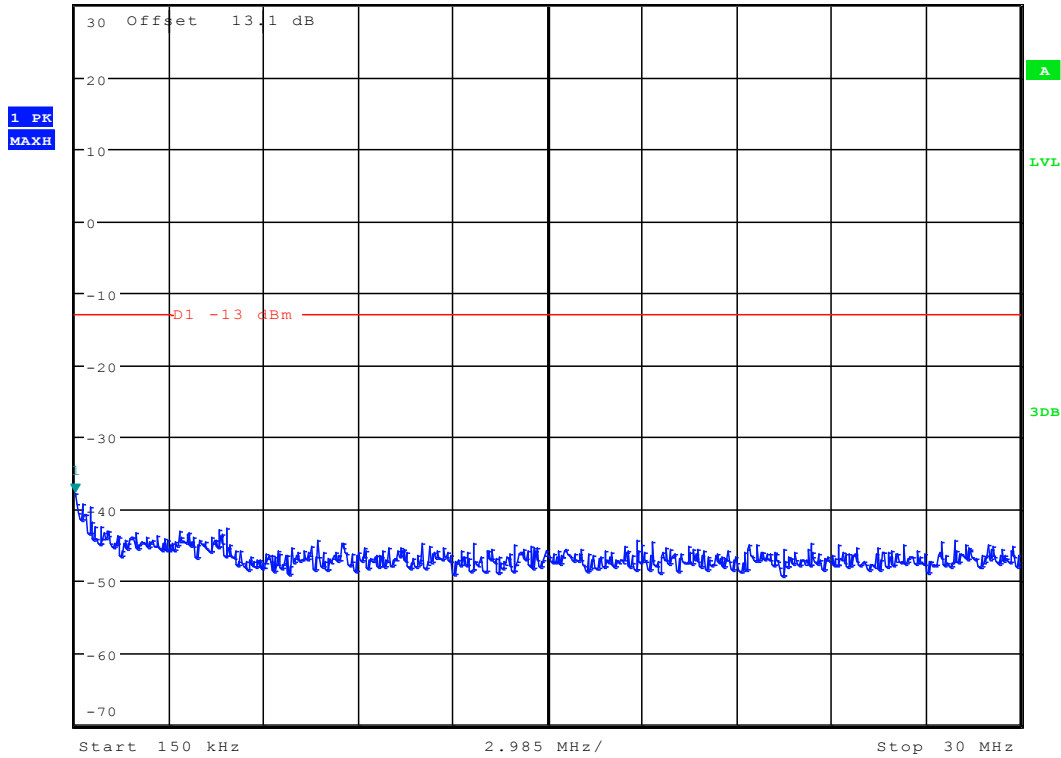
*RBW 10 kHz Marker 1 [T1]
*VBW 30 kHz -37.69 dBm
SWT 300 ms 150.00000000 kHz

Ref 30 dBm

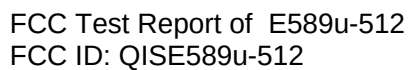
Att 45 dB

SWT 300 ms

150.00000000 kHz



Date: 7.JUL.2012 00:14:03



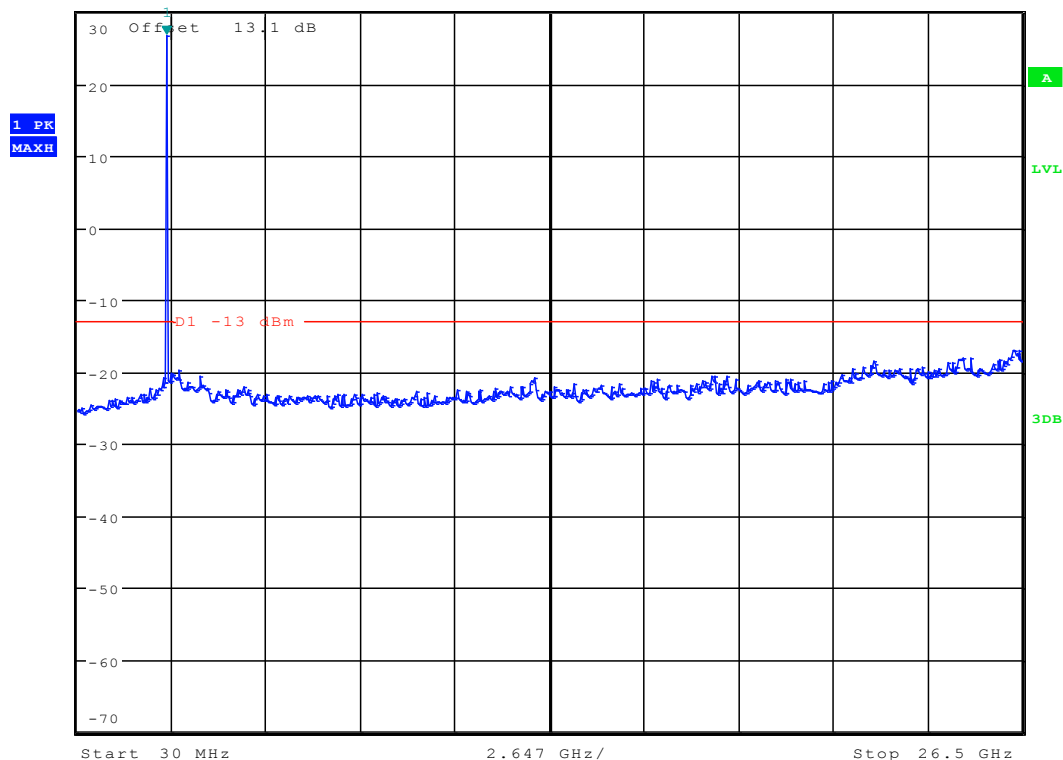
```
* RBW 1 MHz           Marker 1 [T1 ]
* VBW 3 MHz           26.66 dBm
* SWT 720 ms          2.532772436 GHz
```

Ref 30 dBm

Att 45 dB

* SWT 720 ms

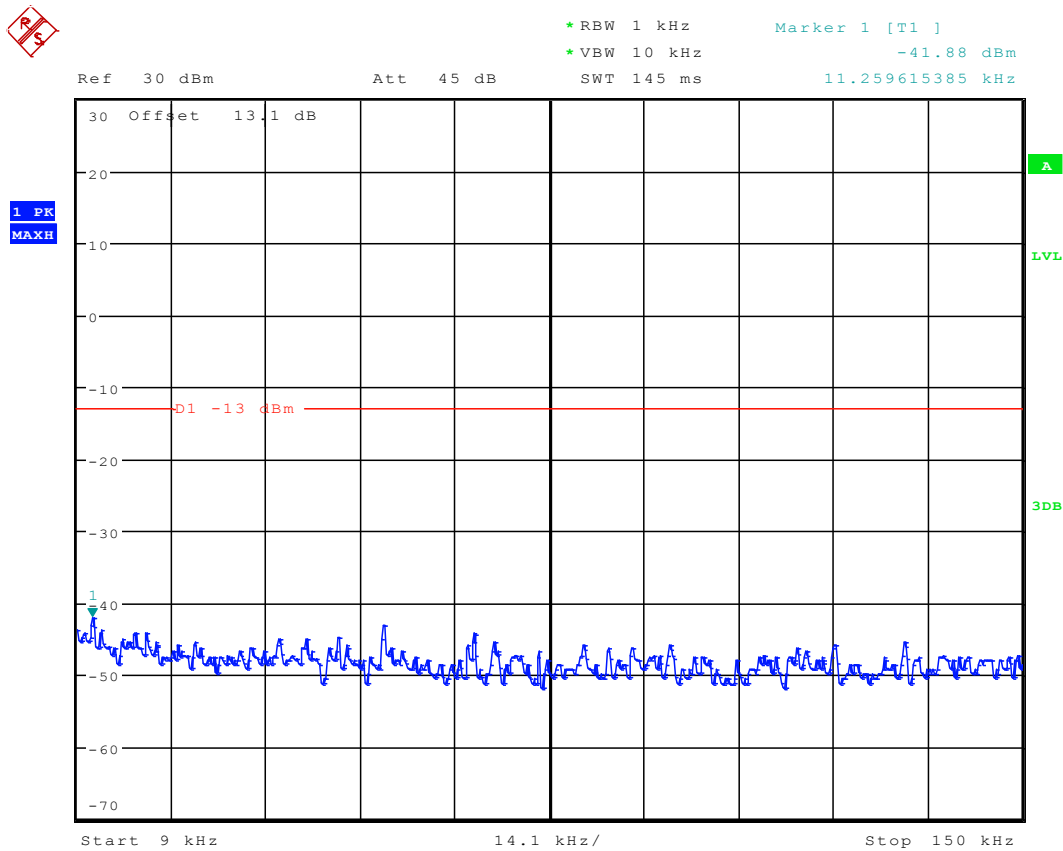
2.532772436 GHz



Date: 7.JUL.2012 00:13:30



1.1.1.2.2 QPSK/1RBs /RB #max



Date: 7.JUL.2012 00:12:35



*RBW 10 kHz Marker 1 [T1]
*VBW 30 kHz -37.02 dBm
SWT 300 ms 197.836538462 kHz

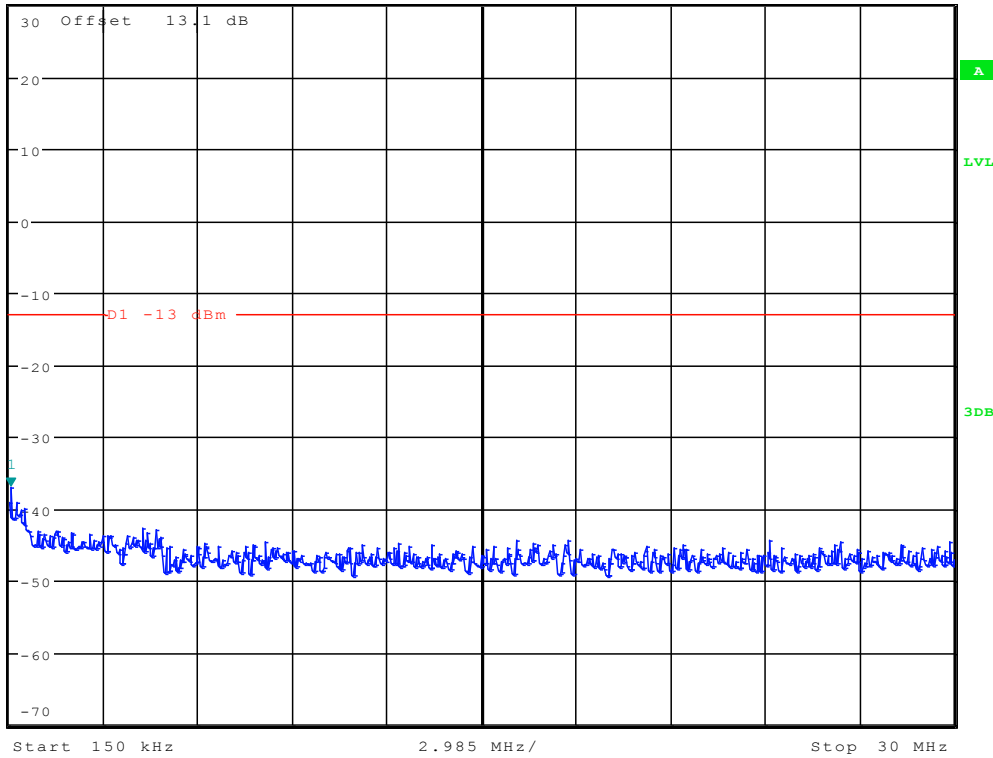
Ref 30 dBm

Att 45 dB

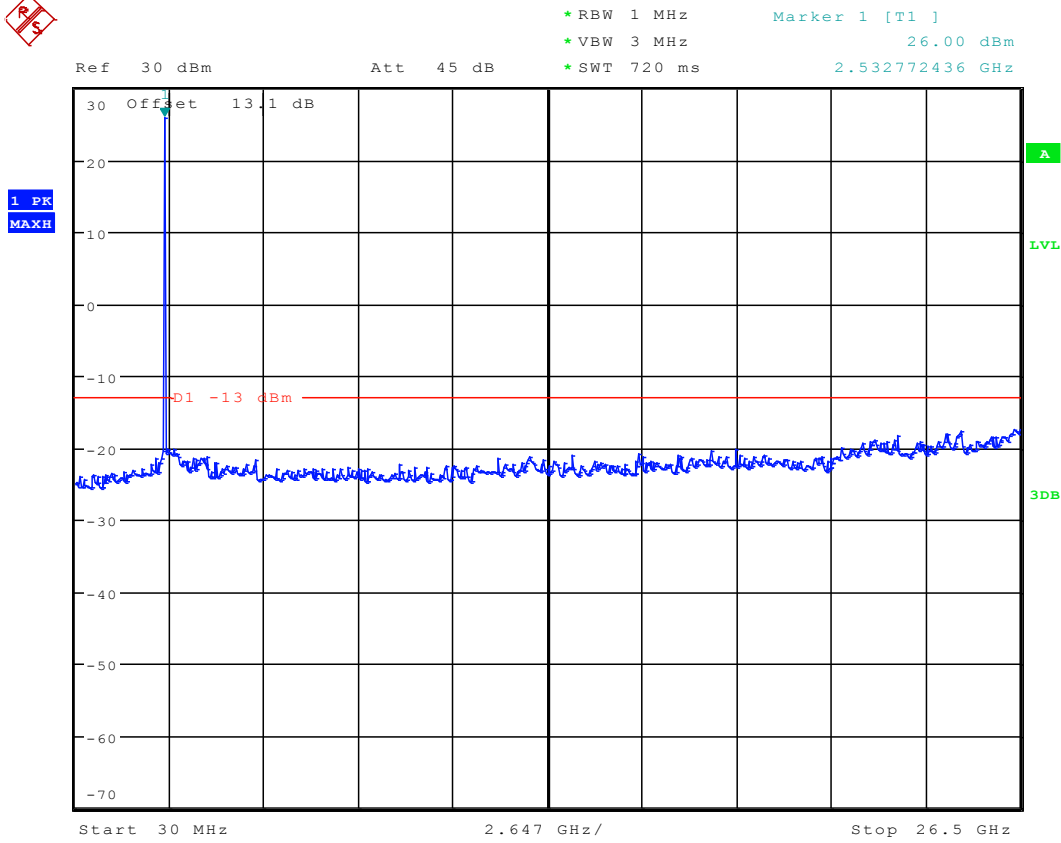
SWT 300 ms

197.836538462 kHz

1 PK
MAXH



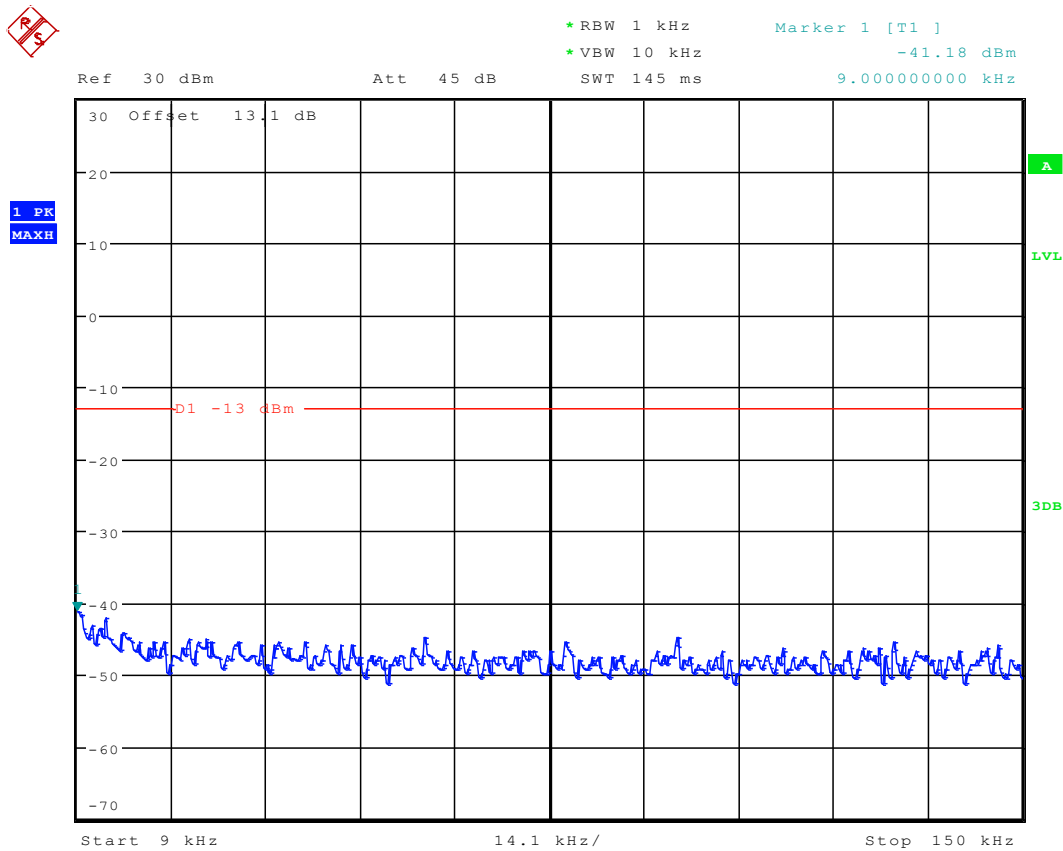
Date: 7.JUL.2012 00:12:52



Date: 7.JUL.2012 00:13:09



1.1.1.2.3 QPSK/full RBs



Date: 7.JUL.2012 00:12:14



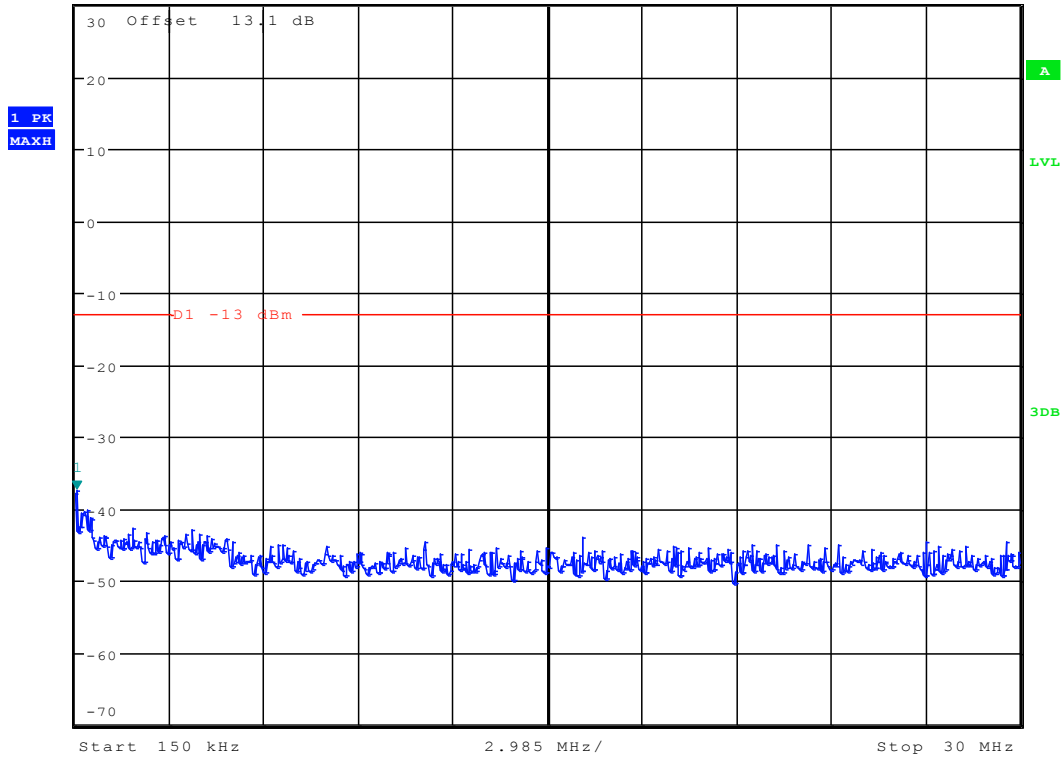
*RBW 10 kHz Marker 1 [T1]
*VBW 30 kHz -37.32 dBm
SWT 300 ms 197.836538462 kHz

Ref 30 dBm

Att 45 dB

SWT 300 ms

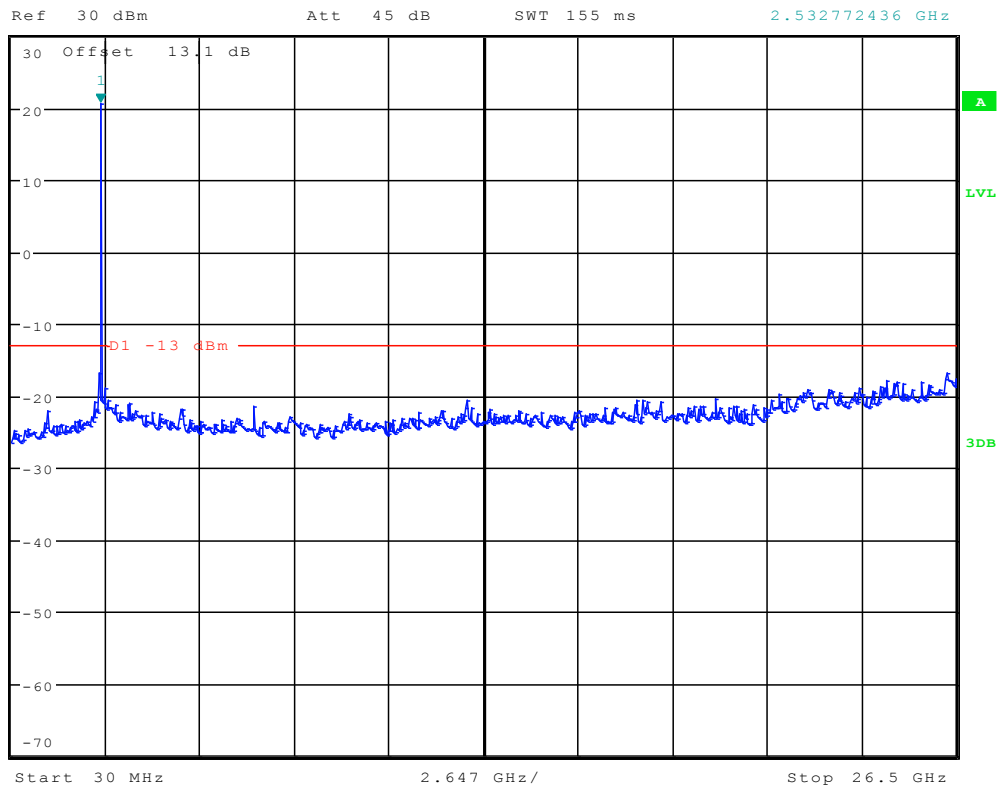
197.836538462 kHz



Date: 7.JUL.2012 00:11:57



* RBW 1 MHz Marker 1 [T1]
* VBW 3 MHz 20.59 dBm
SWT 155 ms 2.532772436 GHz

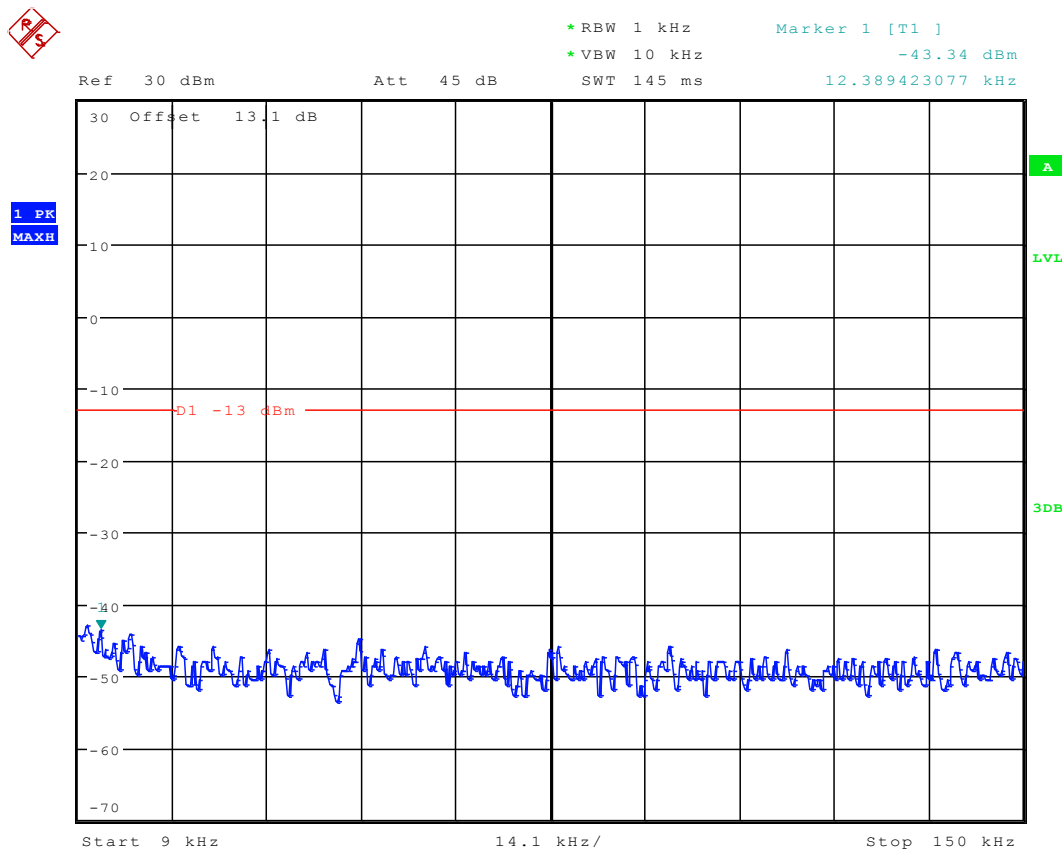


Date: 7.JUL.2012 00:11:32



1.1.1.3 Channel = H

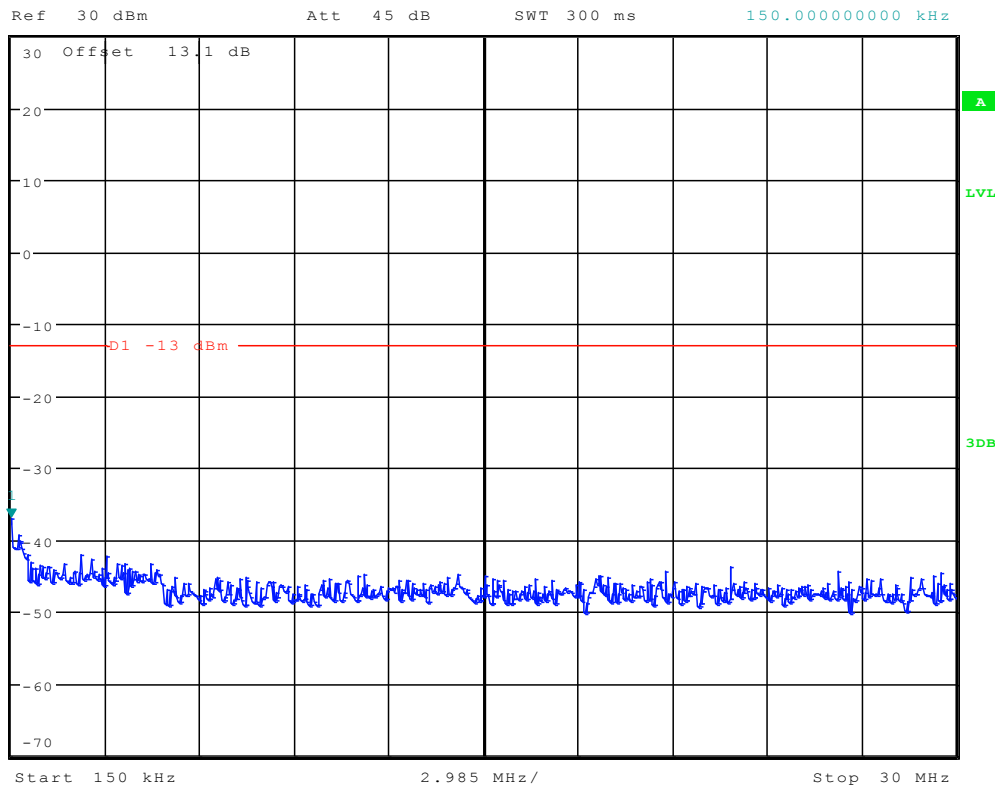
1.1.1.3.1 QPSK/1RBs /RB #0



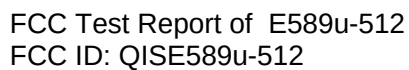
Date: 7.JUL.2012 00:14:51



*RBW 10 kHz Marker 1 [T1]
*VBW 30 kHz -37.02 dBm
SWT 300 ms 150.00000000 kHz



Date: 7.JUL.2012 00:15:09



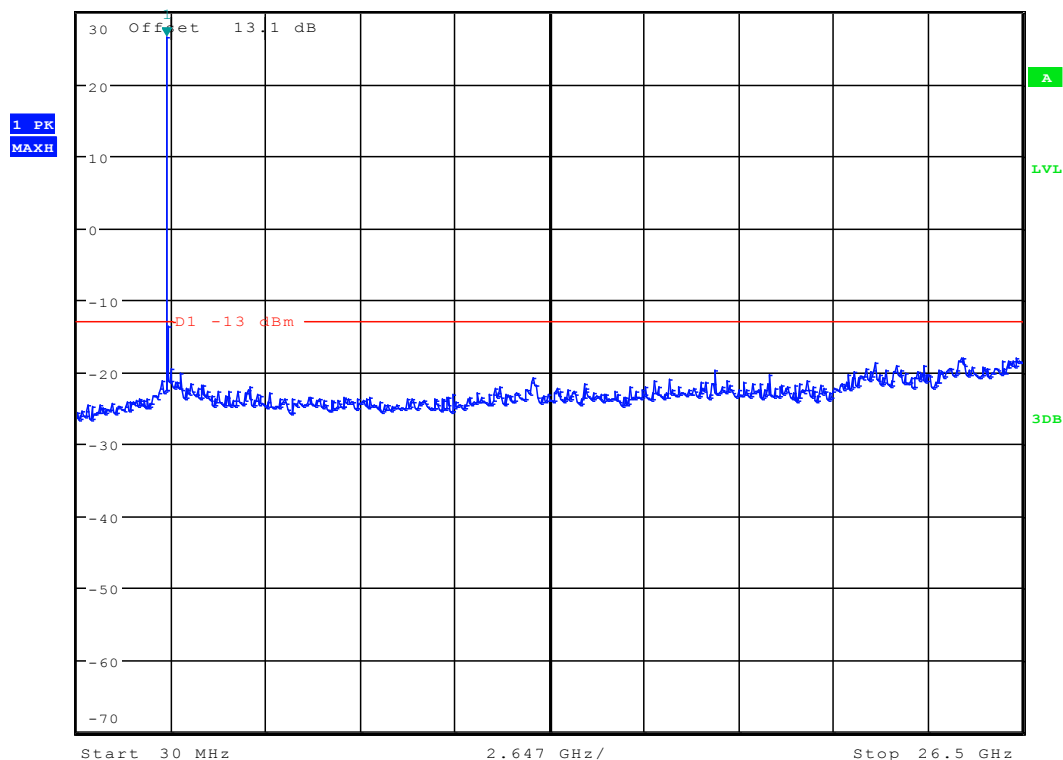
```
*RBW 1 MHz      Marker 1 [T1 ]
*VBW 3 MHz      26.54 dBm
SWT 155 ms      2.532772436 GHz
```

Ref 30 dBm

Att 45 dB

SWT 155 ms

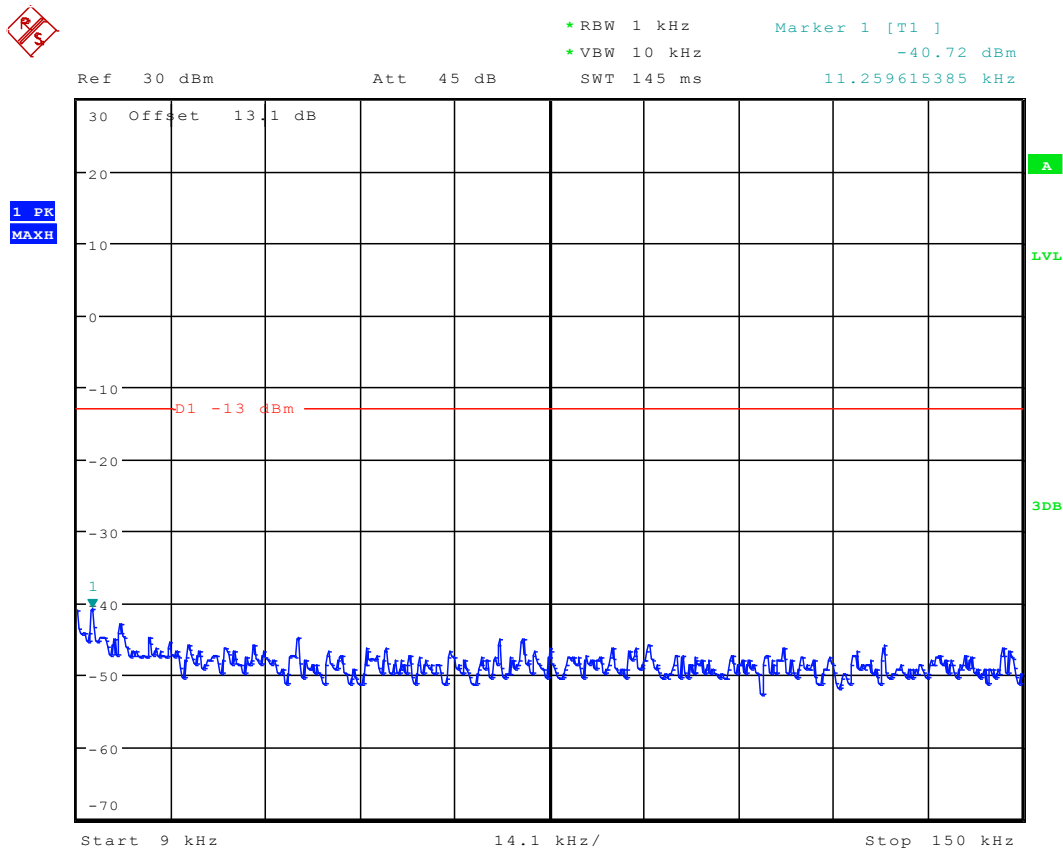
2.532772436 GHz



Date: 7.JUL.2012 00:15:24



1.1.1.3.2 QPSK/1RBs /RB #max



Date: 7.JUL.2012 00:16:28



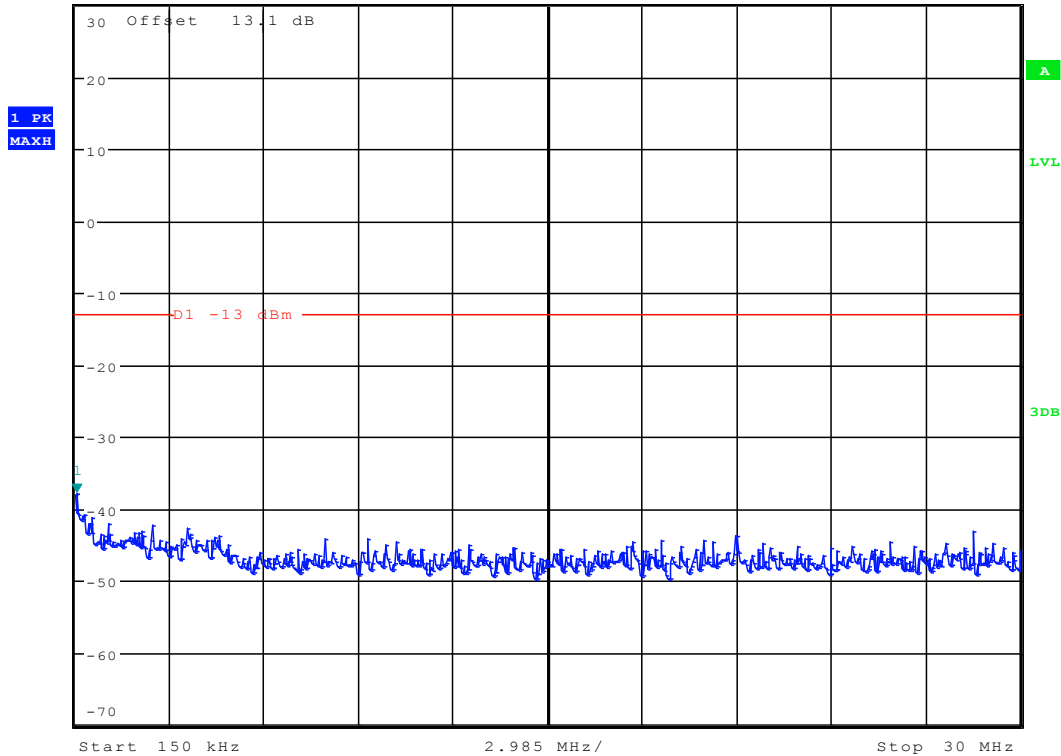
*RBW 10 kHz Marker 1 [T1]
*VBW 30 kHz -37.69 dBm
SWT 300 ms 197.836538462 kHz

Ref 30 dBm

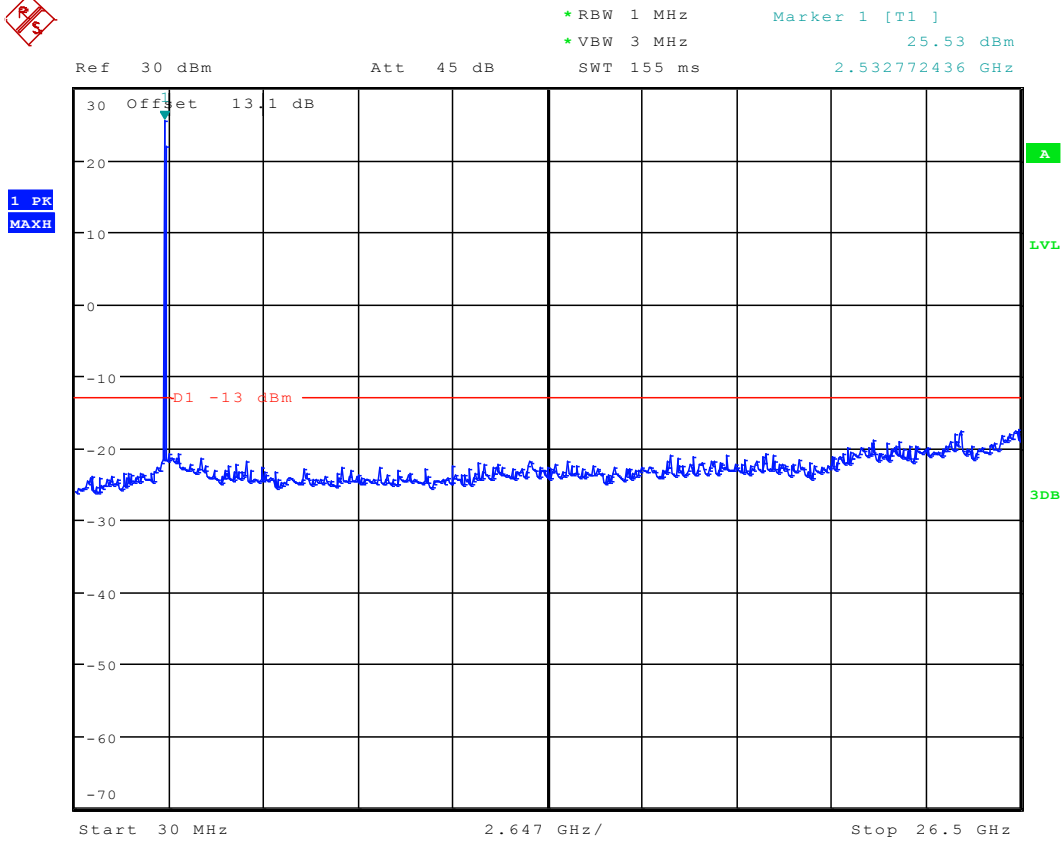
Att 45 dB

SWT 300 ms

197.836538462 kHz



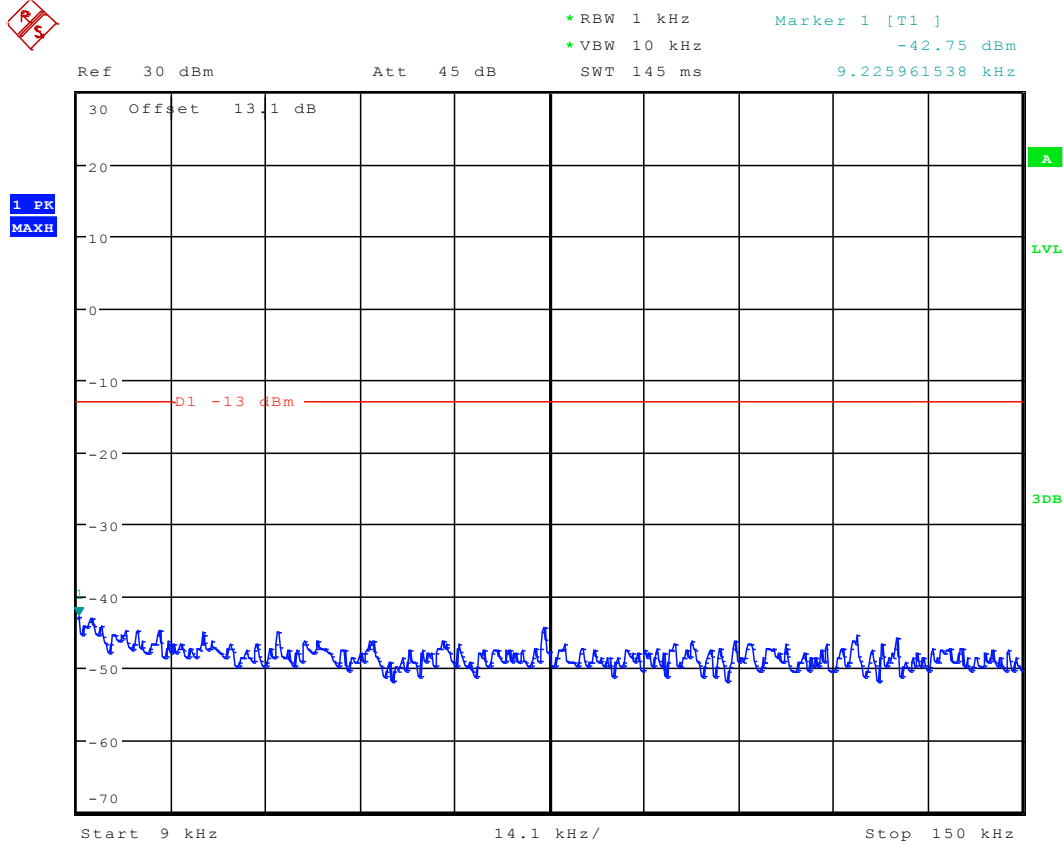
Date: 7.JUL.2012 00:16:06



Date: 7.JUL.2012 00:15:49



1.1.1.3.3 QPSK/full RBs



Date: 7.JUL.2012 00:16:56



*RBW 10 kHz Marker 1 [T1]
*VBW 30 kHz -35.80 dBm
SWT 300 ms 150.00000000 kHz

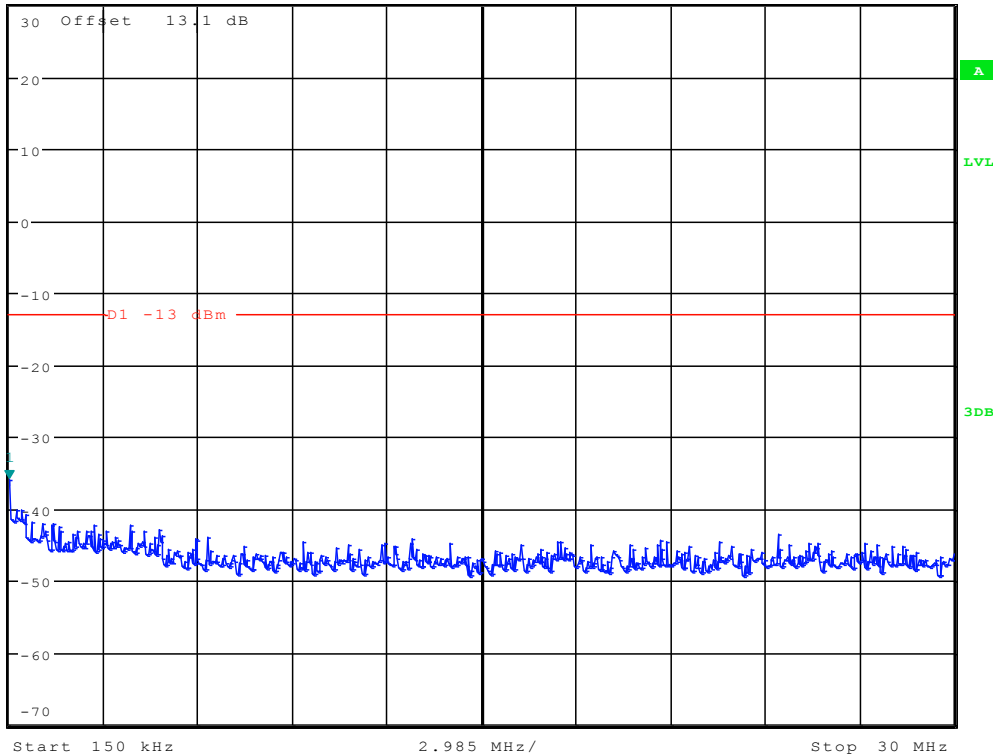
Ref 30 dBm

Att 45 dB

SWT 300 ms

150.00000000 kHz

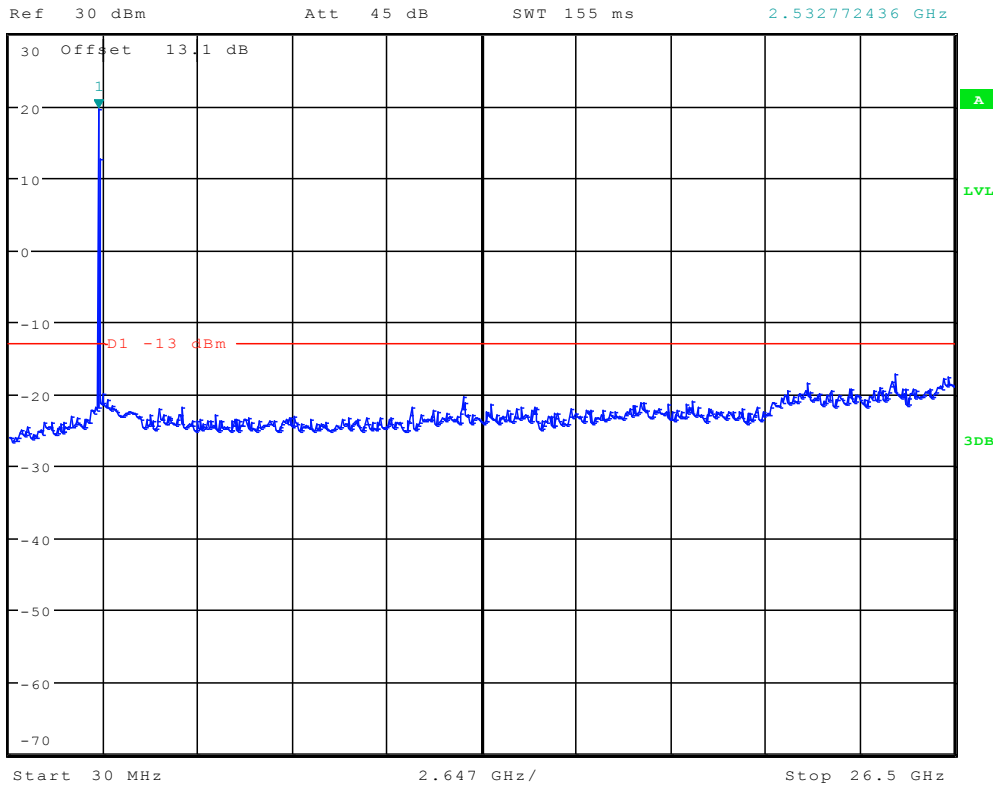
1 PK
MAXH



Date: 7.JUL.2012 00:17:16



* RBW 1 MHz
* VBW 3 MHz
Marker 1 [T1]
19.65 dBm
2.532772436 GHz



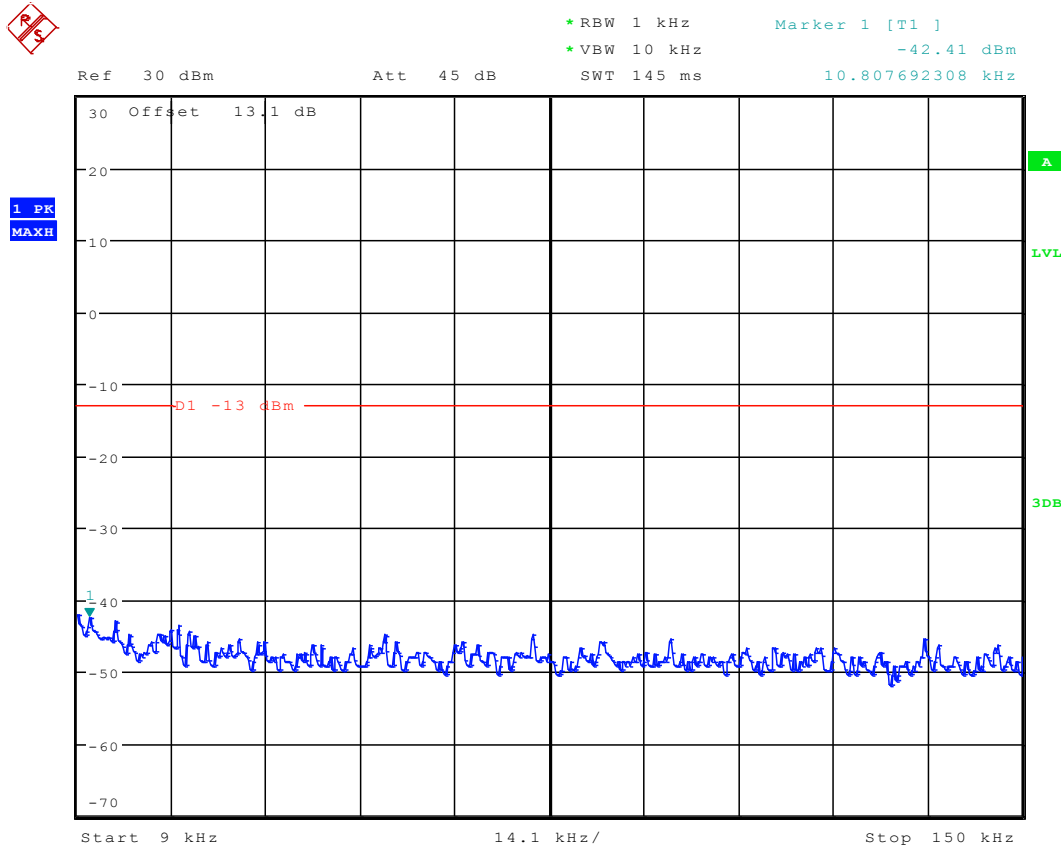
Date: 7.JUL.2012 00:17:31



1.1.2 Channel Bandwidth = Highest (20 MHz)

1.1.2.1 Channel = L

1.1.2.1.1 QPSK/1RBs /RB #0



Date: 7.JUL.2012 00:21:17



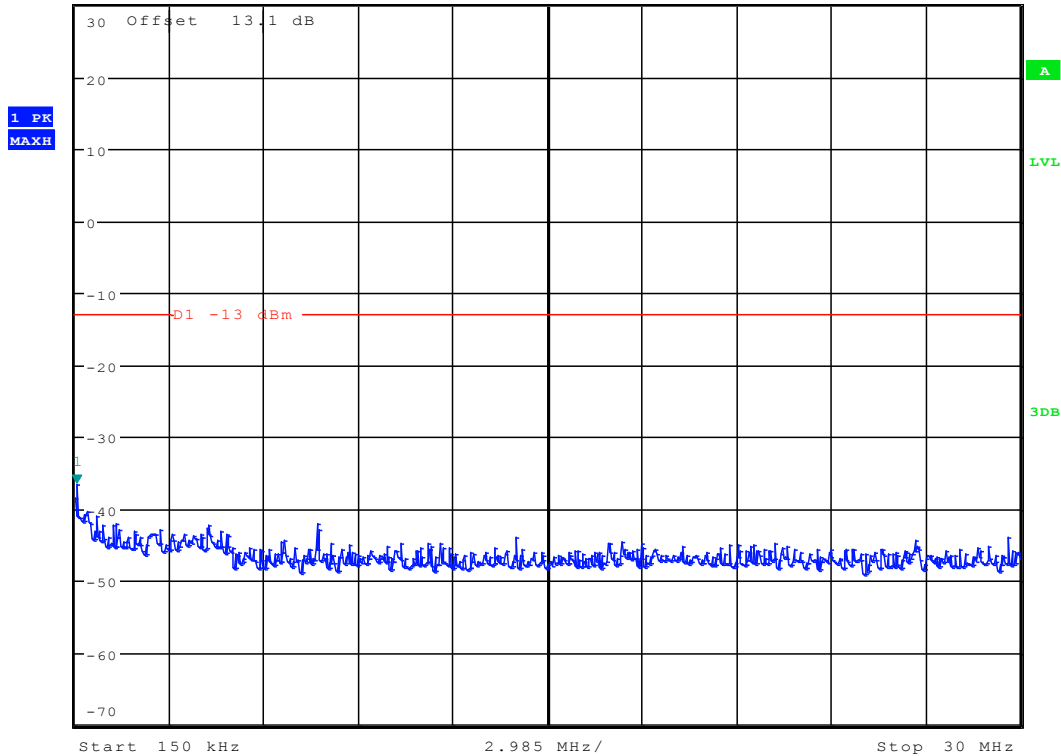
*RBW 10 kHz Marker 1 [T1]
*VBW 30 kHz -36.56 dBm
SWT 300 ms 197.836538462 kHz

Ref 30 dBm

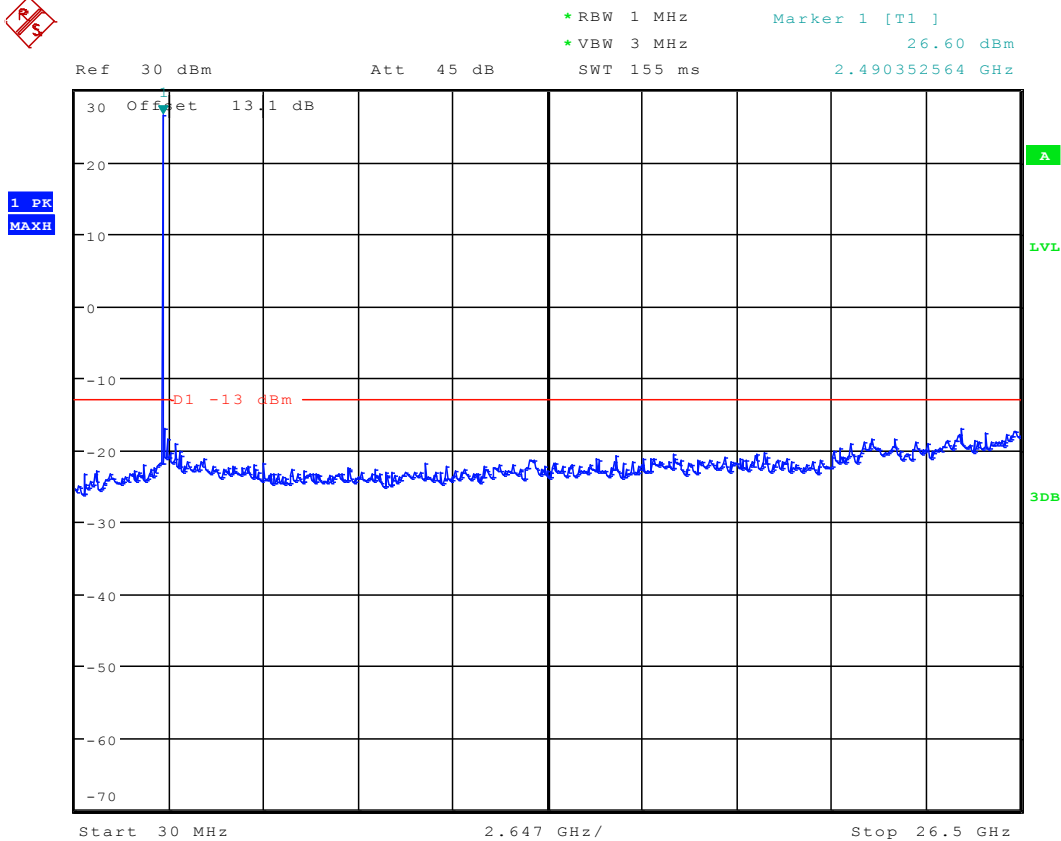
Att 45 dB

SWT 300 ms

197.836538462 kHz



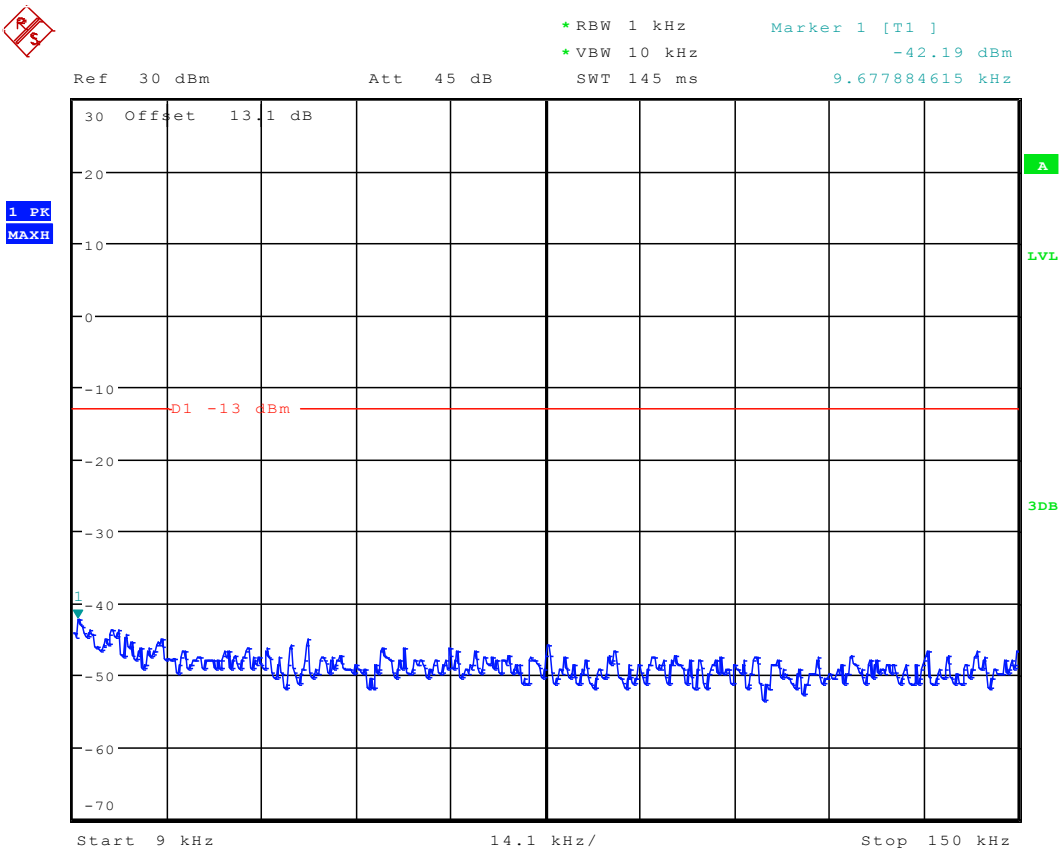
Date: 7.JUL.2012 00:20:58



Date: 7.JUL.2012 00:20:31



1.1.2.1.2 QPSK/1RBs /RB #max



Date: 7.JUL.2012 00:21:43



*RBW 10 kHz Marker 1 [T1]
*VBW 30 kHz -37.02 dBm
SWT 300 ms 150.00000000 kHz

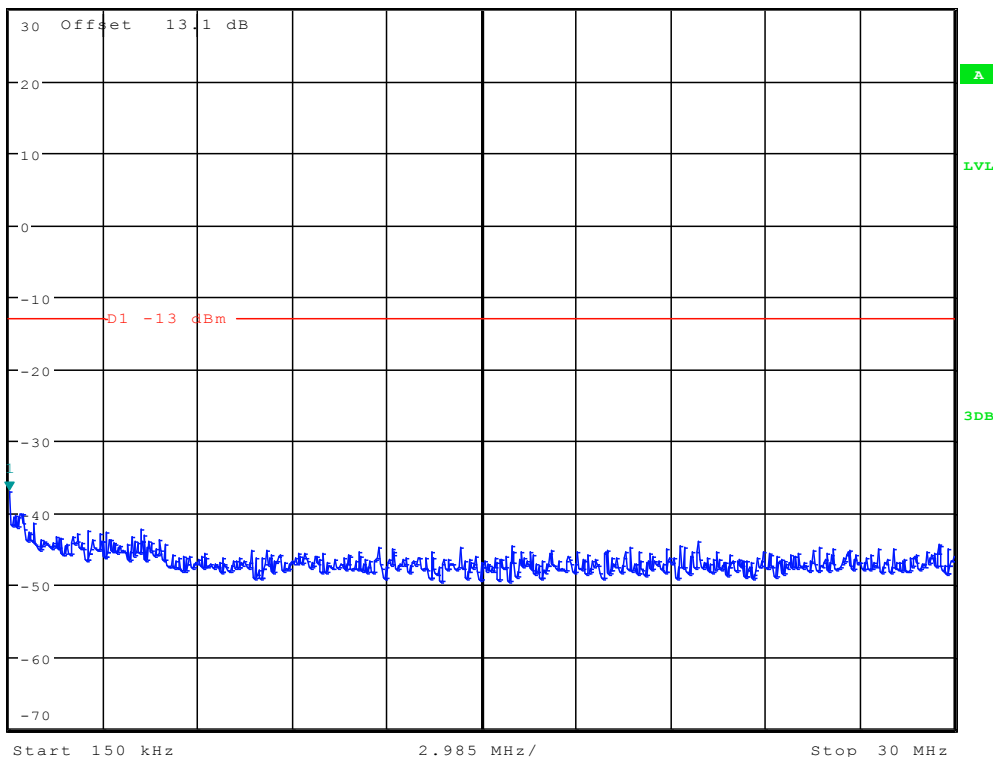
Ref 30 dBm

Att 45 dB

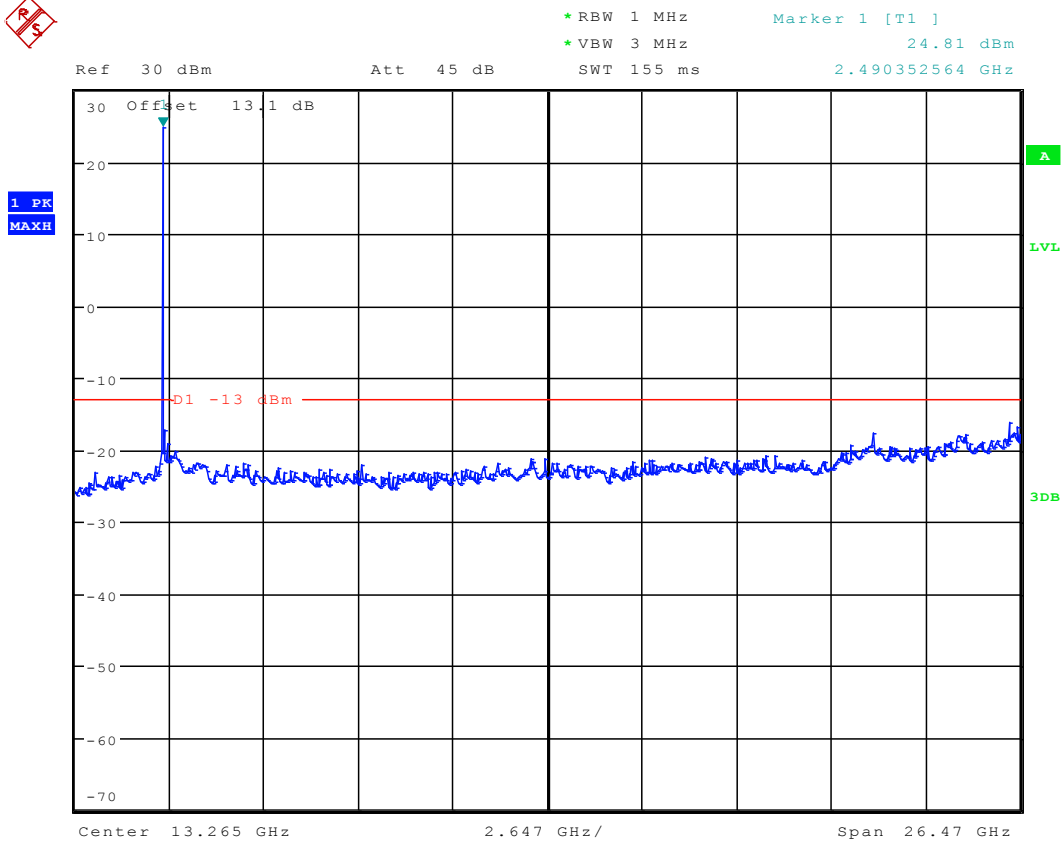
SWT 300 ms

150.00000000 kHz

1 PK
MAXH



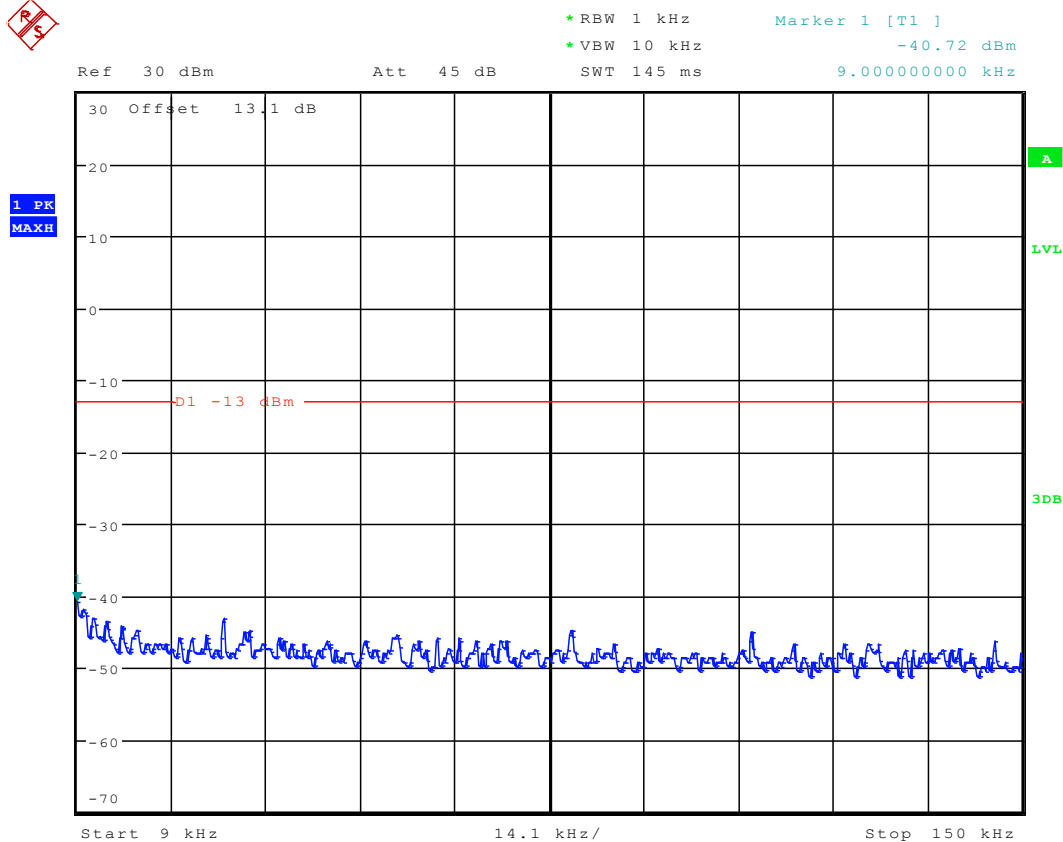
Date: 7.JUL.2012 00:22:06



Date: 7.JUL.2012 00:22:43



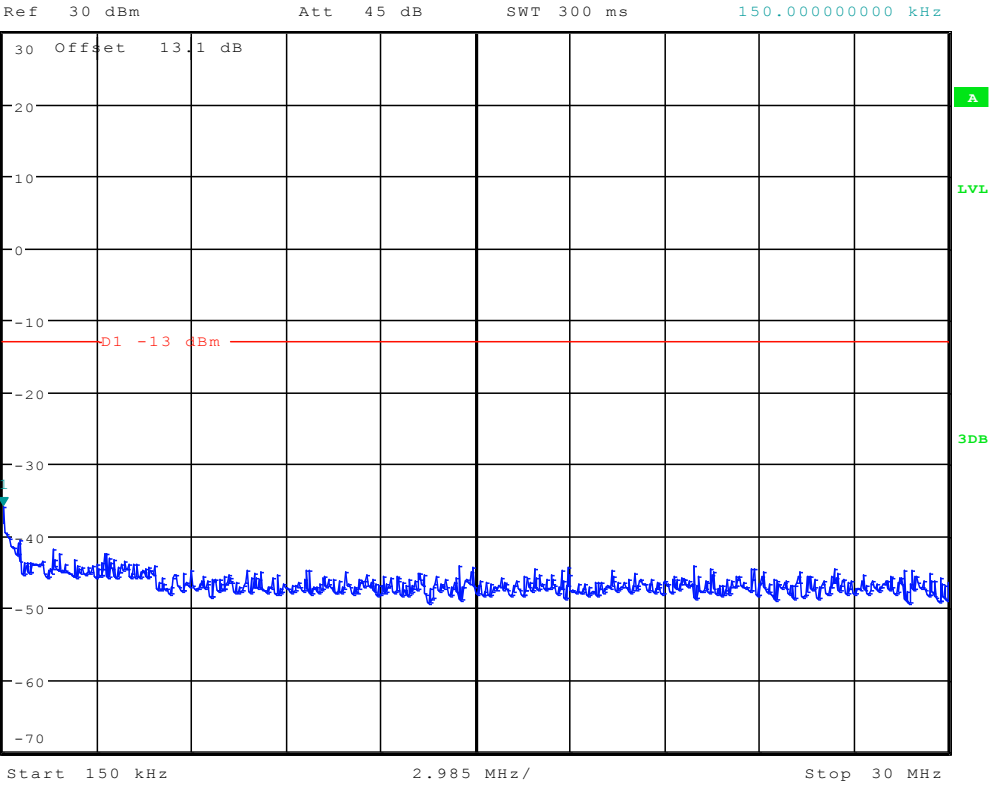
1.1.2.1.3 QPSK/full RBs



Date: 7.JUL.2012 00:24:48



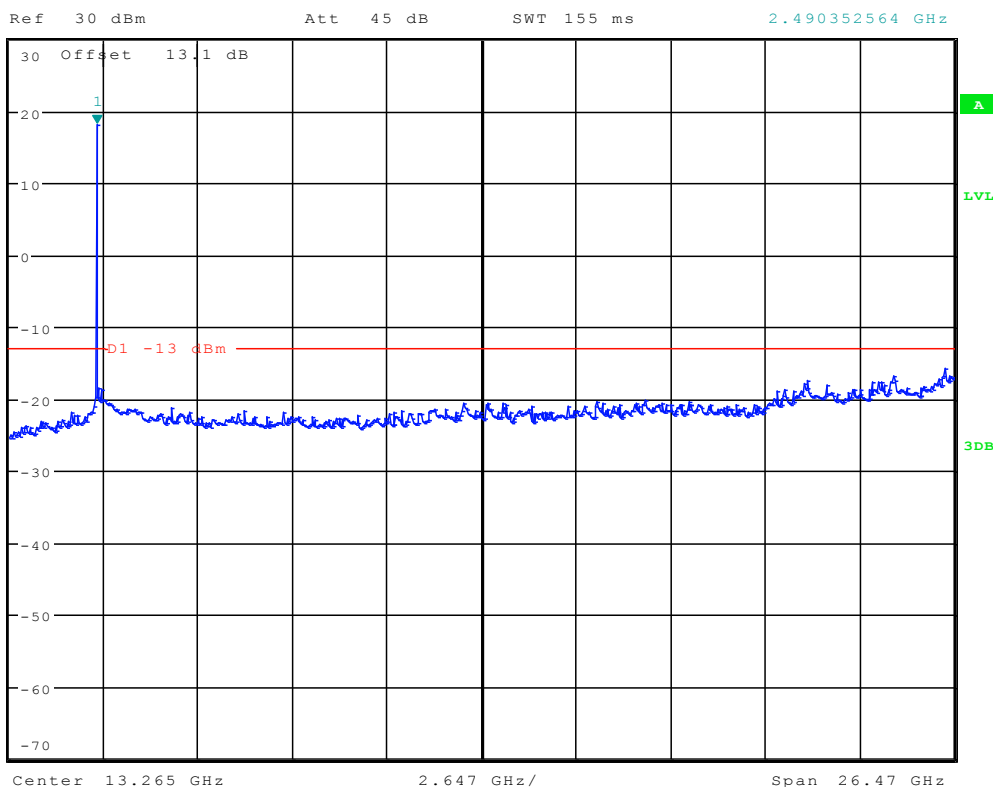
*RBW 10 kHz Marker 1 [T1]
*VBW 30 kHz -35.80 dBm
SWT 300 ms 150.00000000 kHz



Date: 7.JUL.2012 00:24:31



* RBW 1 MHz
* VBW 3 MHz
Marker 1 [T1]
18.03 dBm
2.490352564 GHz

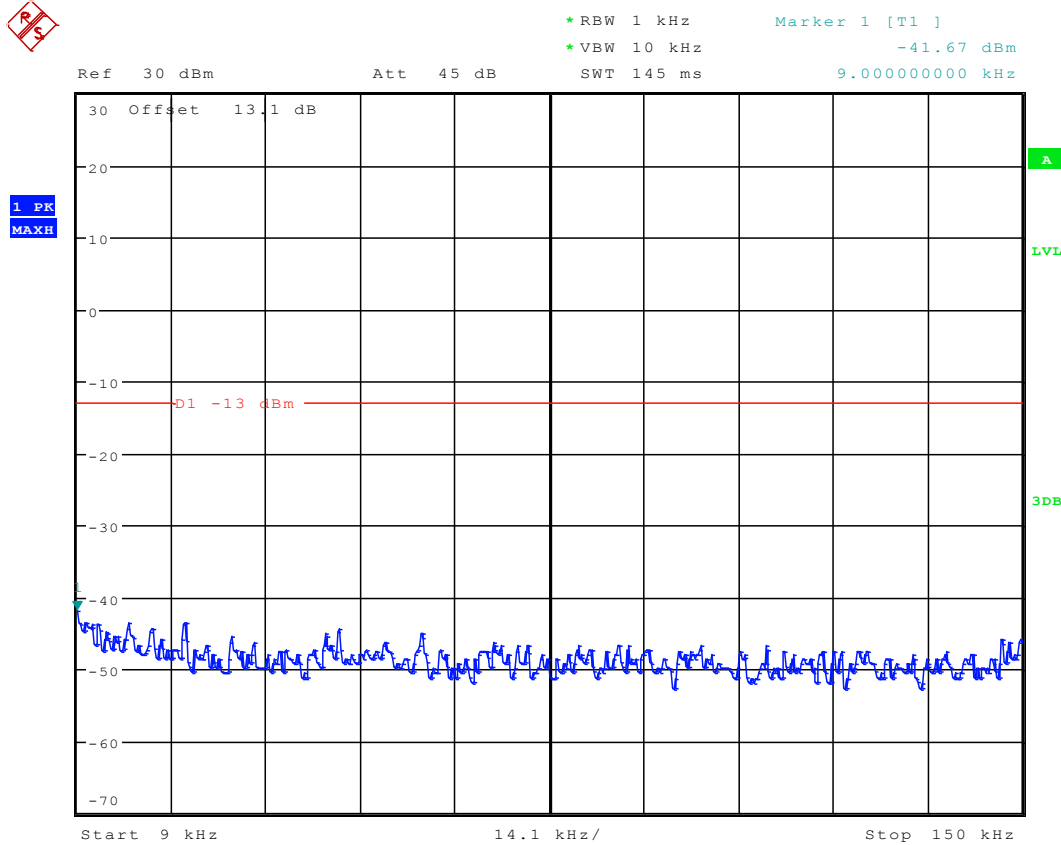


Date: 7.JUL.2012 00:24:02



1.1.2.2 Channel = M

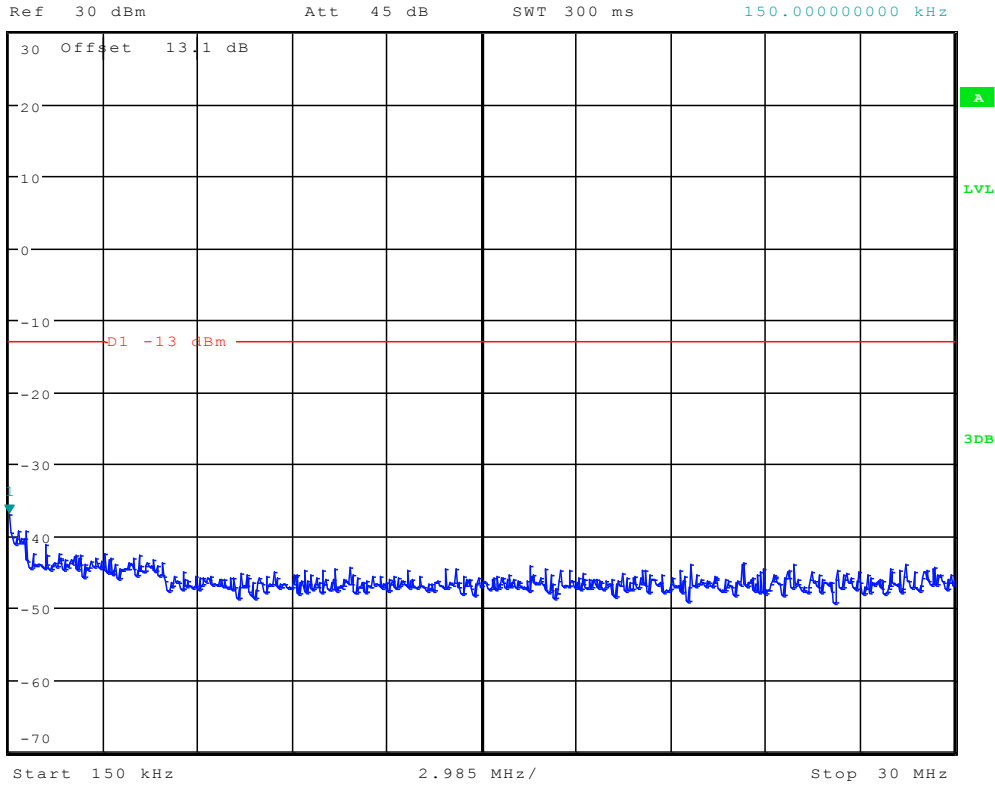
1.1.2.2.1 QPSK/1RBs /RB #0



Date: 7.JUL.2012 00:27:52



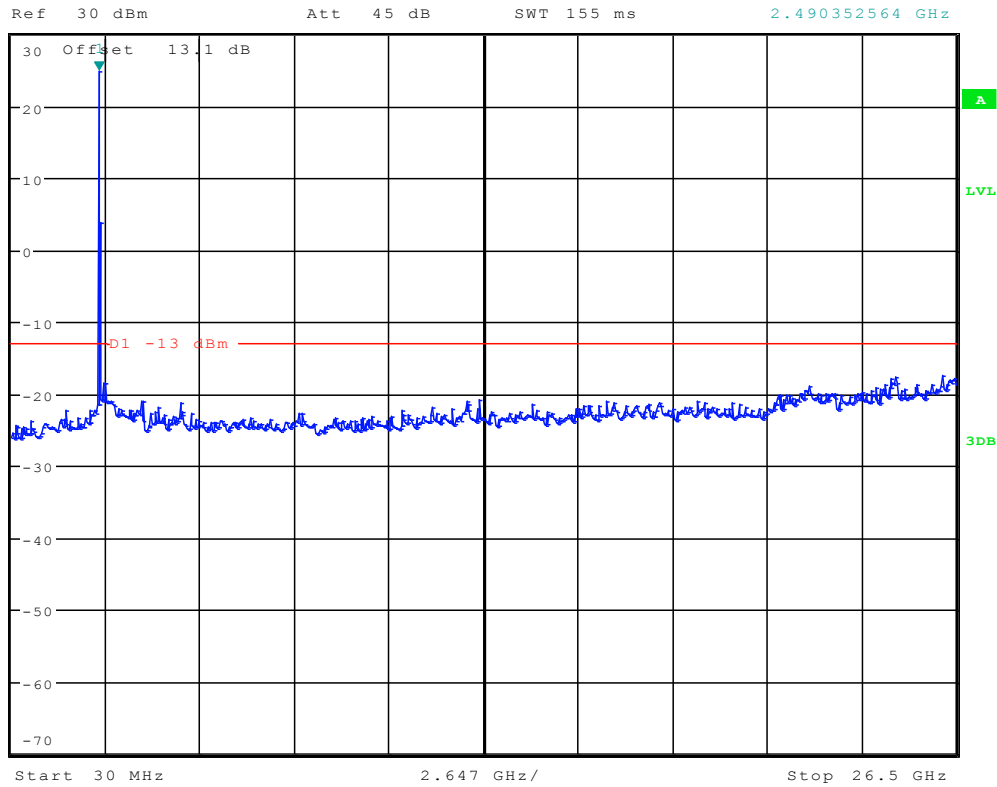
*RBW 10 kHz Marker 1 [T1]
*VBW 30 kHz -37.02 dBm
SWT 300 ms 150.00000000 kHz



Date: 7.JUL.2012 00:28:30



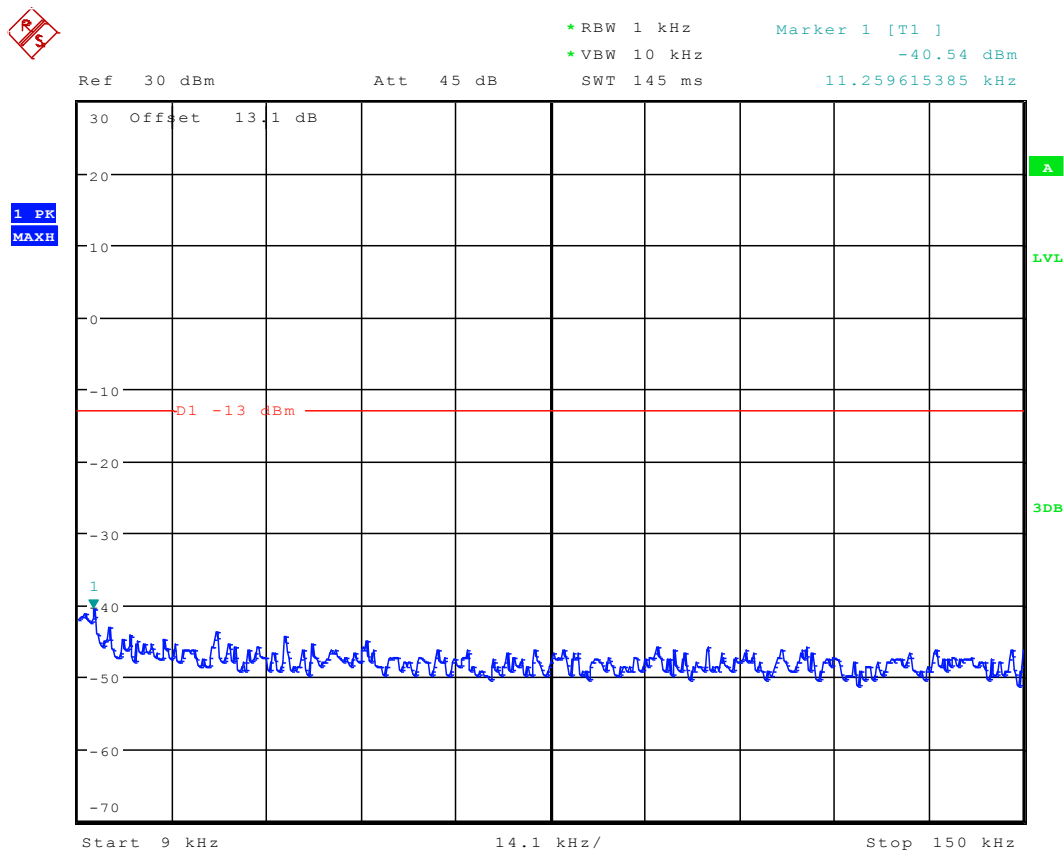
* RBW 1 MHz
* VBW 3 MHz
Marker 1 [T1]
24.82 dBm
2.490352564 GHz



Date: 7.JUL.2012 00:28:45



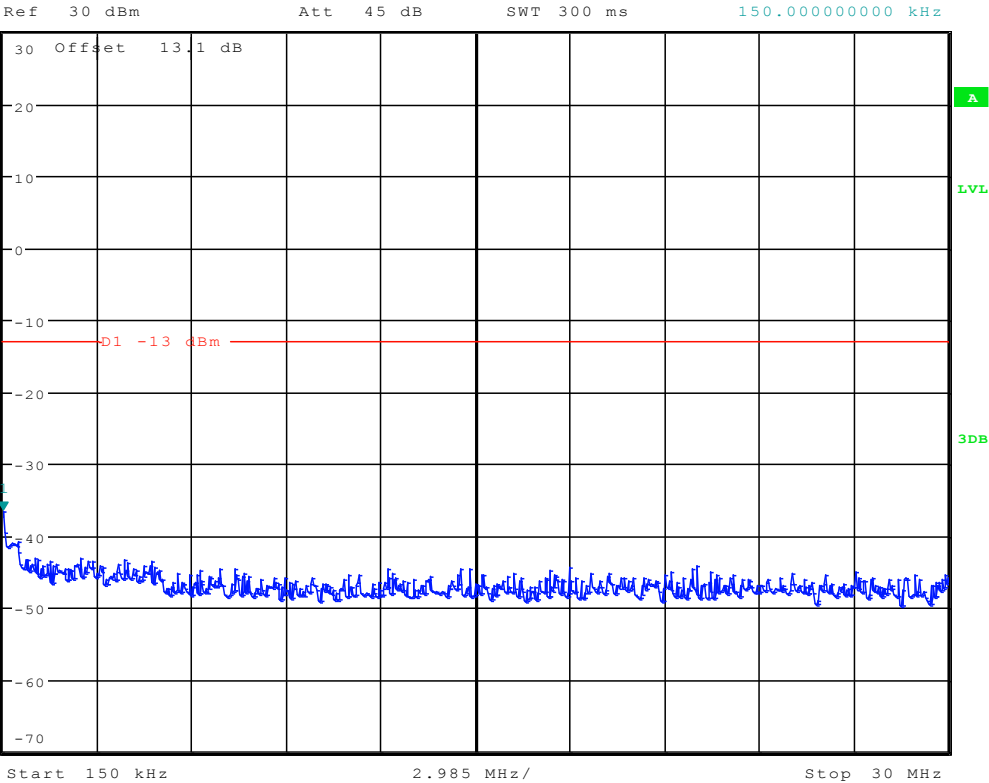
1.1.2.2.2 QPSK/1RBs /RB #max



Date: 7.JUL.2012 00:27:28



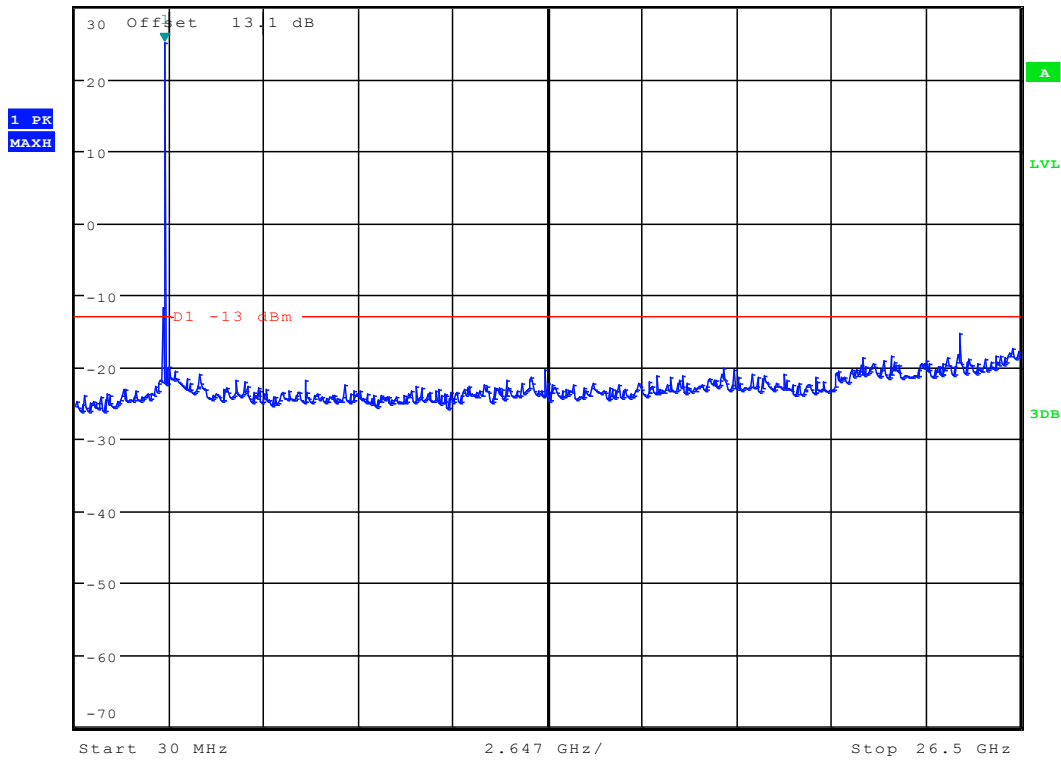
*RBW 10 kHz Marker 1 [T1]
*VBW 30 kHz -36.39 dBm
SWT 300 ms 150.00000000 kHz



Date: 7.JUL.2012 00:27:09



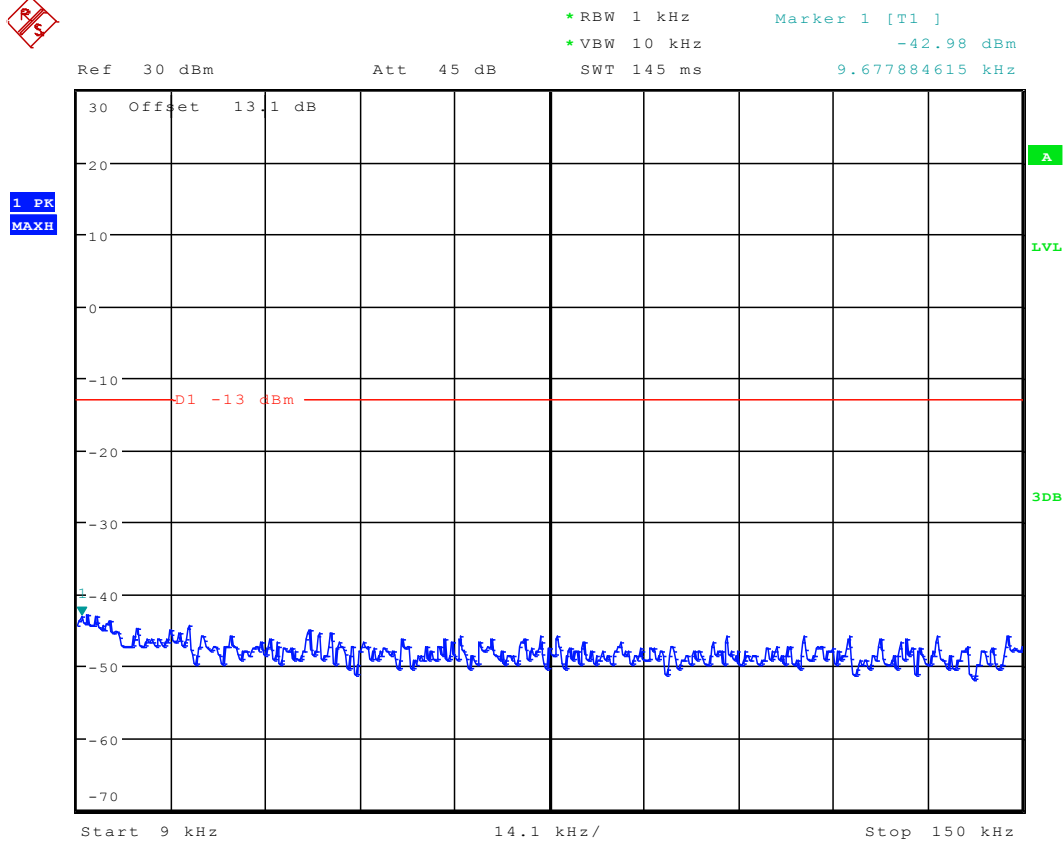
* RBW 1 MHz Marker 1 [T1]
* VBW 3 MHz 25.06 dBm
Ref 30 dBm Att 45 dB SWT 155 ms 2.532772436 GHz



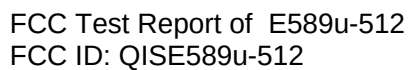
Date: 7.JUL.2012 00:26:50



1.1.2.2.3 QPSK/full RBs



Date: 7.JUL.2012 00:25:25



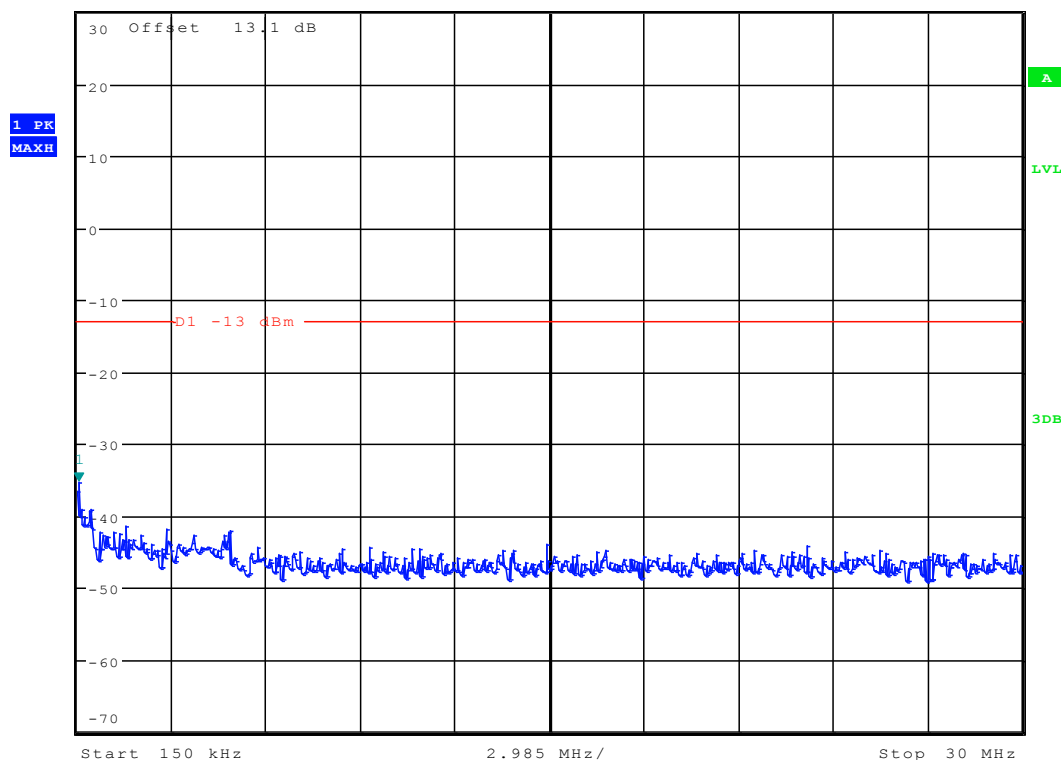
```
*RBW 10 kHz      Marker 1 [T1 ]
*VBW 30 kHz      -35.26 dBm
SWT 300 ms      197.836538462 kHz
```

Ref 30 dBm

Att 45 dB

SWT 300 ms

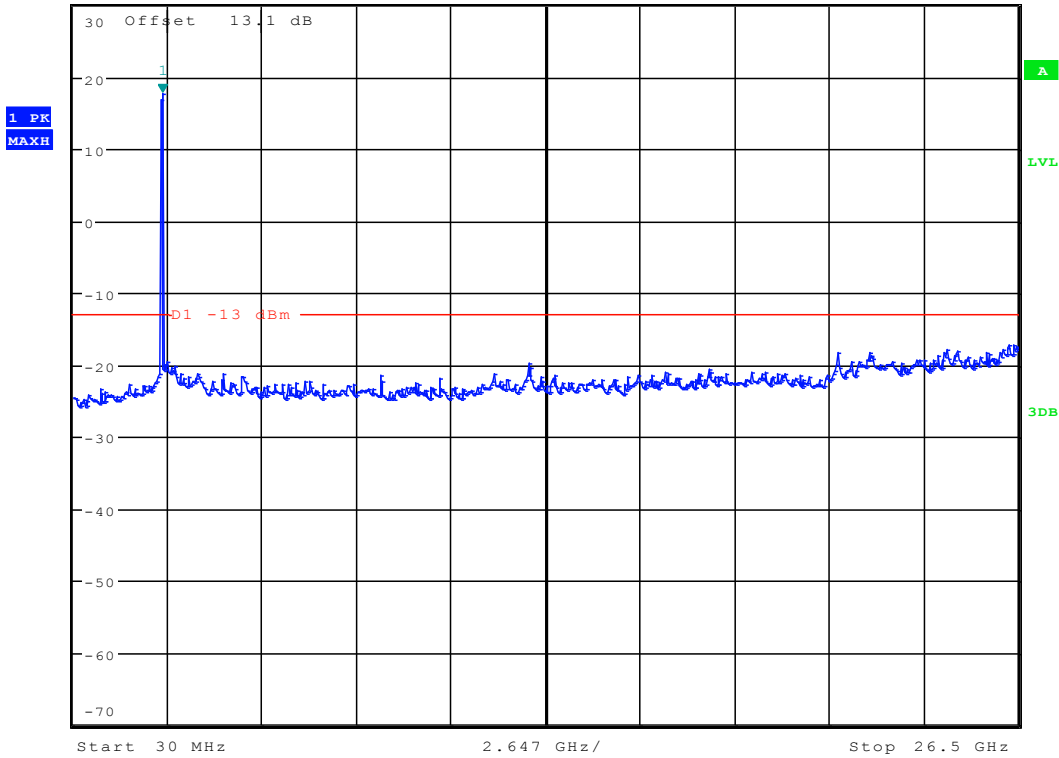
197.836538462 kHz



Date: 7.JUL.2012 00:25:48



* RBW 1 MHz Marker 1 [T1]
* VBW 3 MHz 17.68 dBm
Ref 30 dBm Att 45 dB SWT 155 ms 2.532772436 GHz

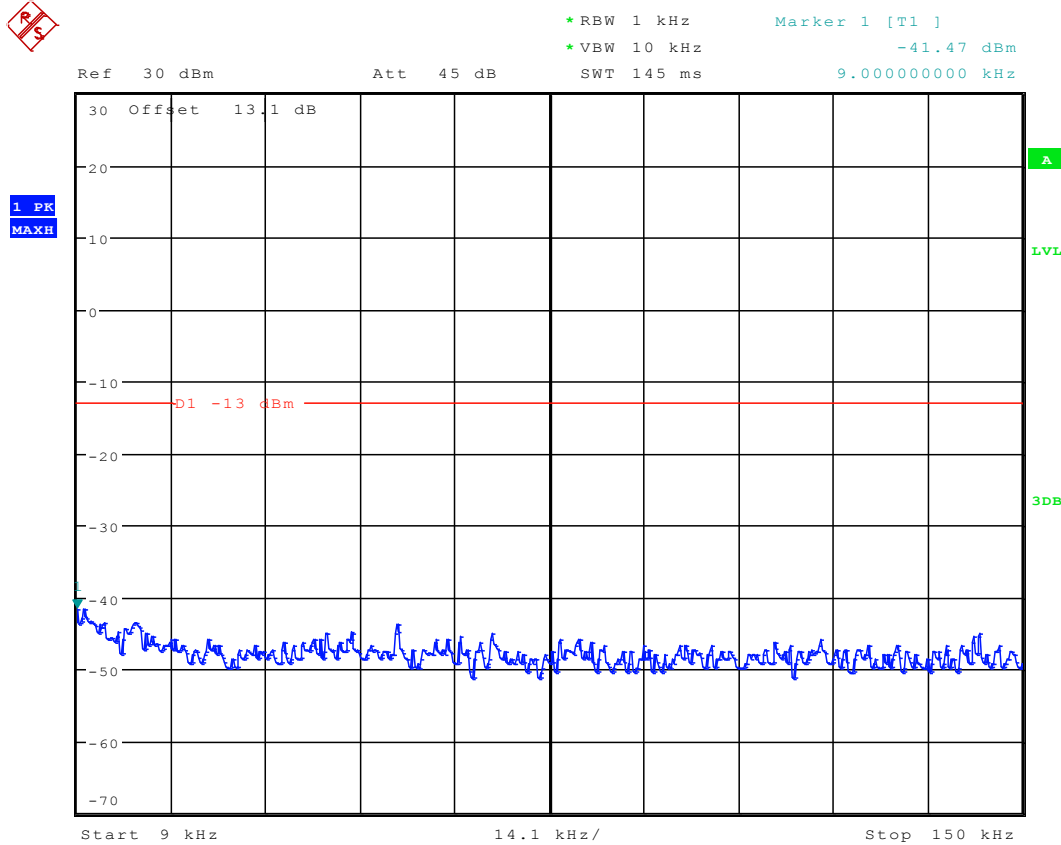


Date: 7.JUL.2012 00:26:23



1.1.2.3 Channel = H

1.1.2.3.1 QPSK/1RBs /RB #0



Date: 7.JUL.2012 00:51:40



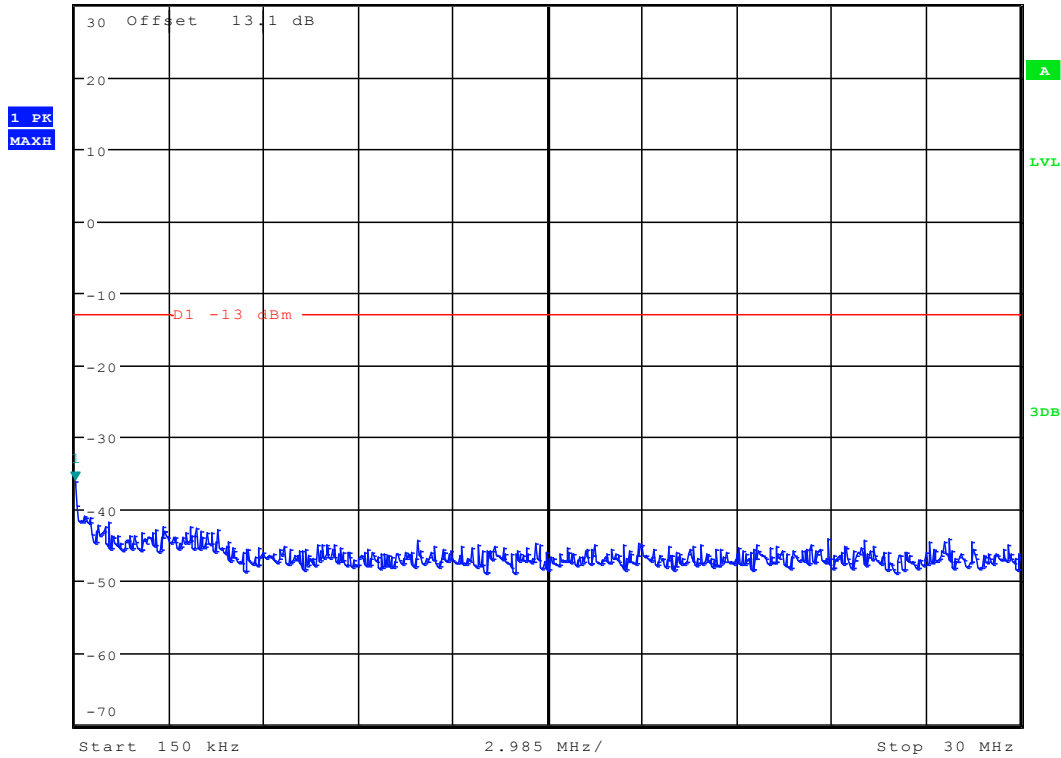
*RBW 10 kHz Marker 1 [T1]
*VBW 30 kHz -36.12 dBm
SWT 300 ms 150.00000000 kHz

Ref 30 dBm

Att 45 dB

SWT 300 ms

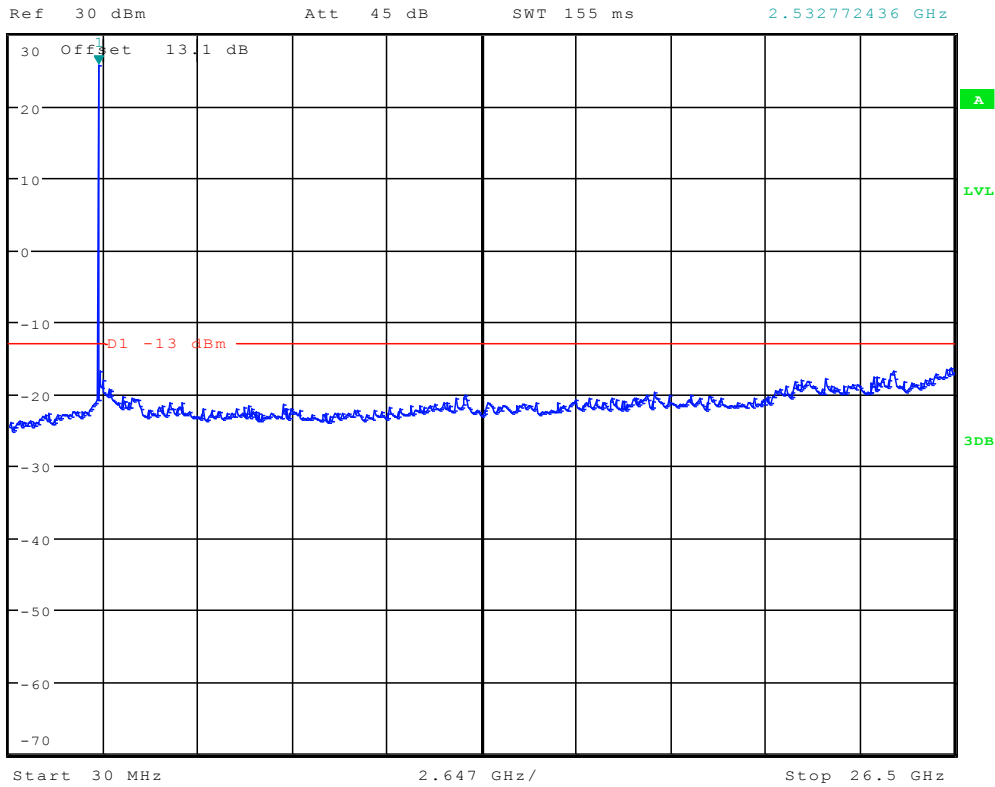
150.00000000 kHz



Date: 7.JUL.2012 00:51:12



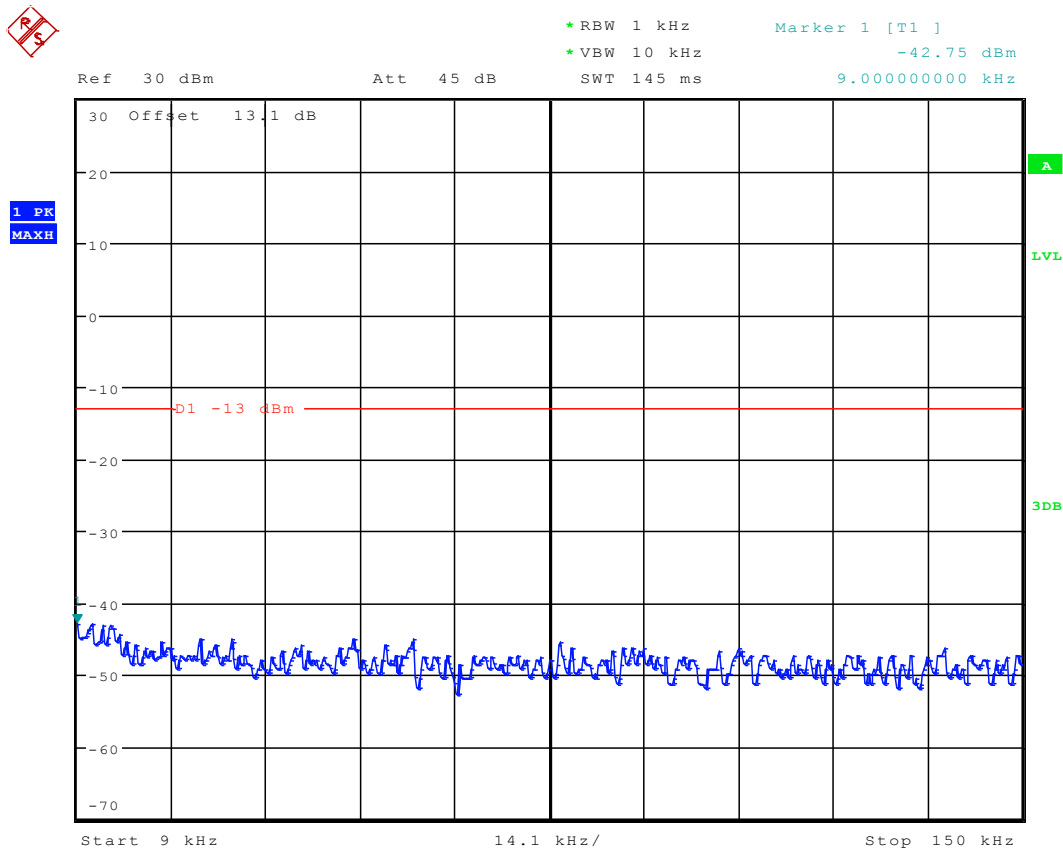
* RBW 1 MHz
* VBW 3 MHz
Marker 1 [T1]
25.72 dBm
2.532772436 GHz



Date: 7.JUL.2012 00:50:48



1.1.2.3.2 QPSK/1RBs /RB #max



Date: 7.JUL.2012 00:52:11



*RBW 10 kHz Marker 1 [T1]
*VBW 30 kHz -37.38 dBm
SWT 300 ms 150.00000000 kHz

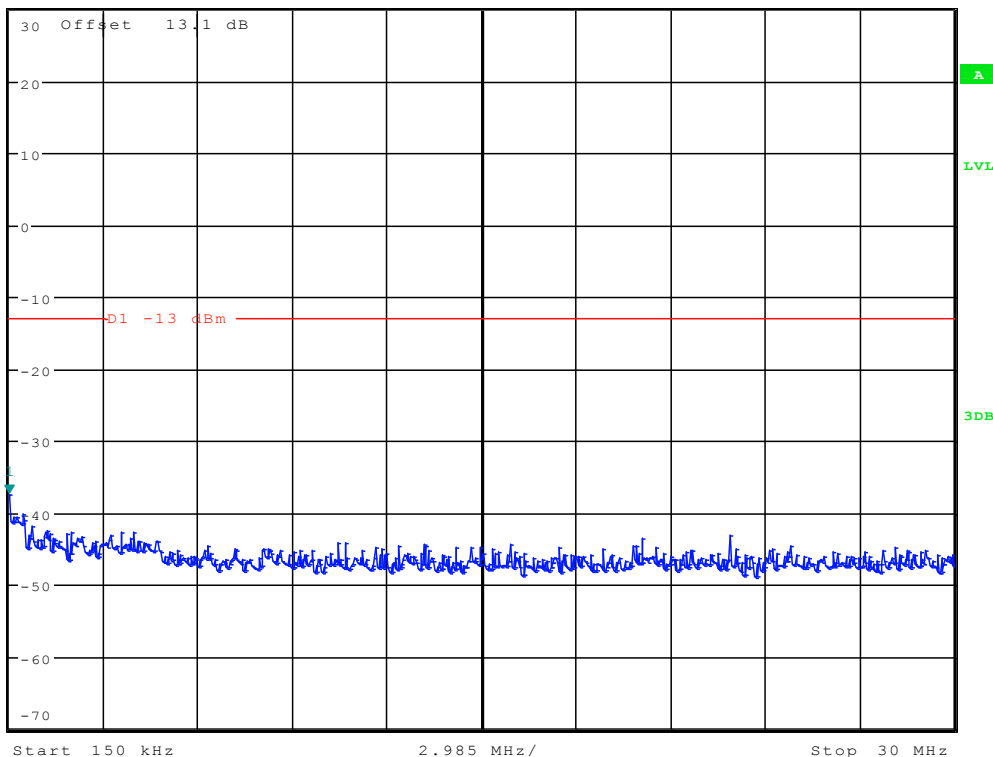
Ref 30 dBm

Att 45 dB

SWT 300 ms

150.00000000 kHz

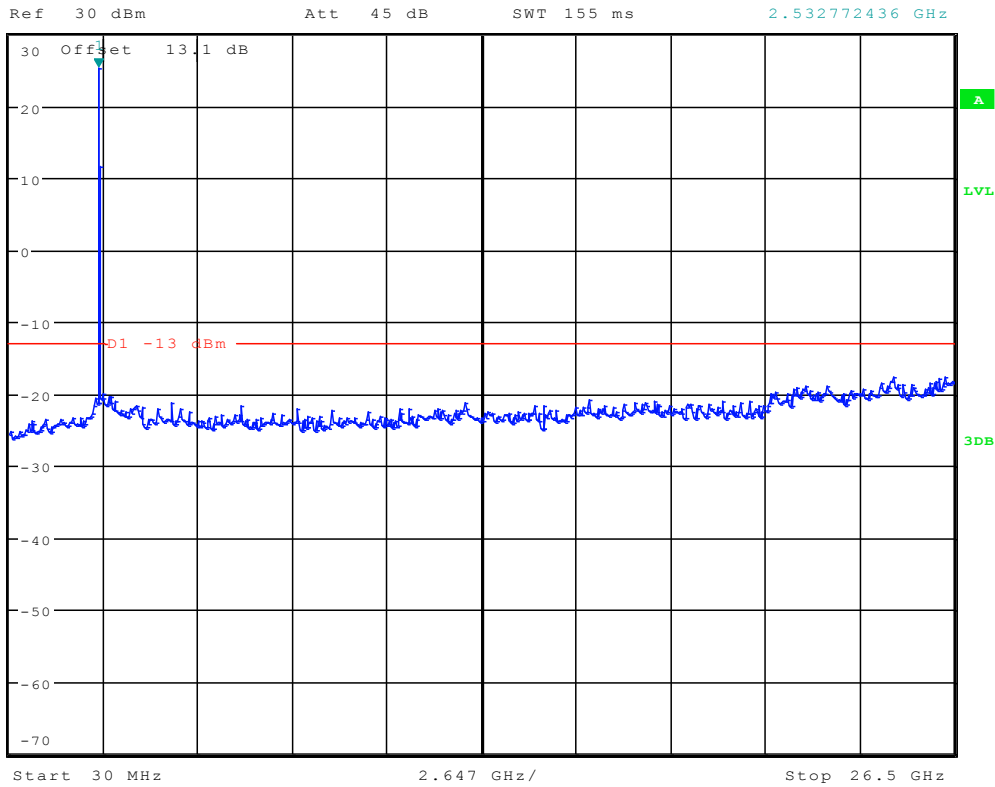
1 PK
MAXH



Date: 7.JUL.2012 00:52:44



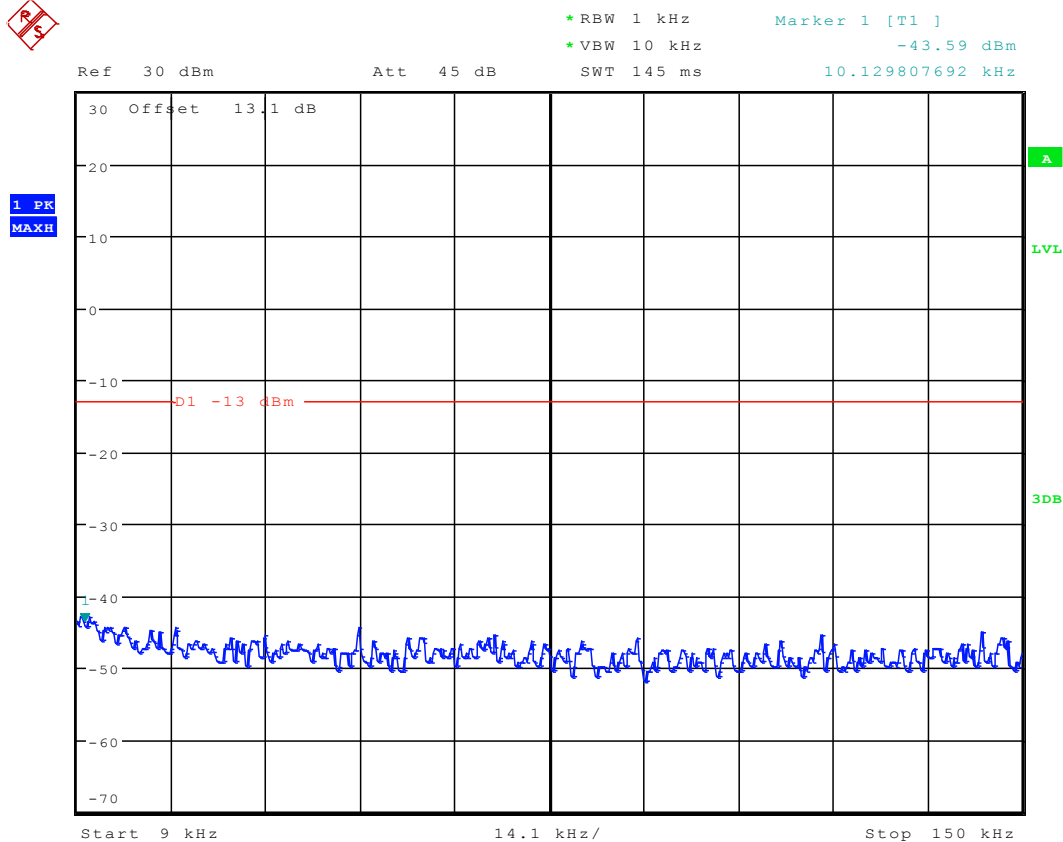
* RBW 1 MHz
* VBW 3 MHz
Marker 1 [T1]
25.19 dBm
2.532772436 GHz



Date: 7.JUL.2012 00:53:07



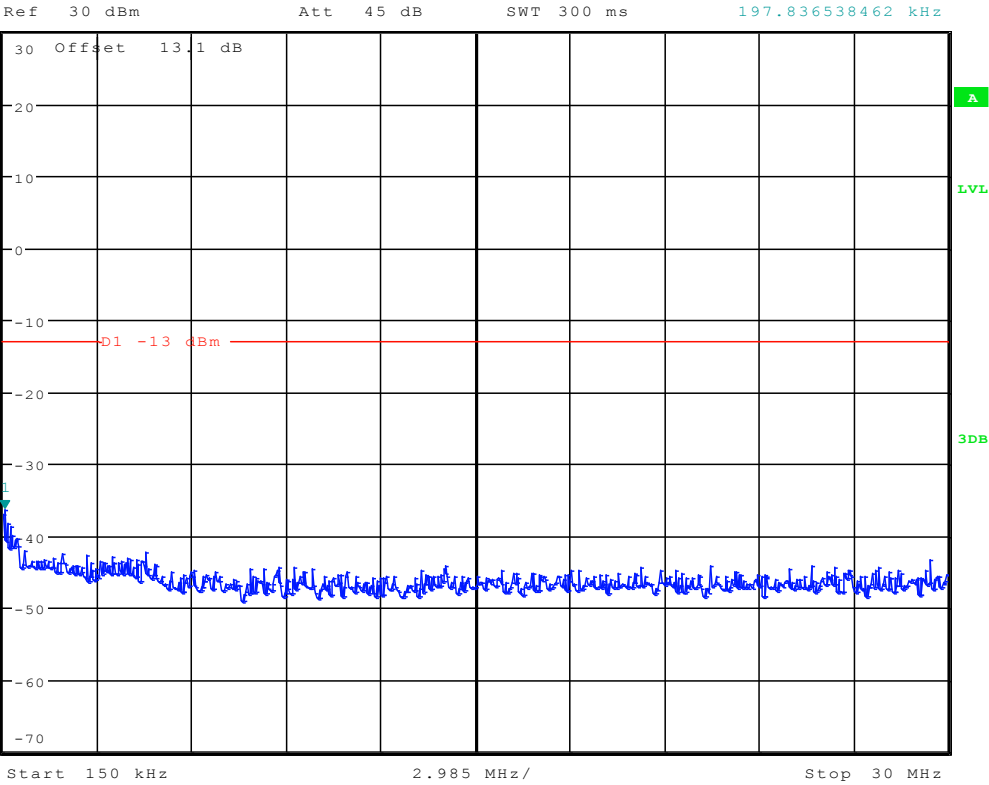
1.1.2.3.3 QPSK/full RBs



Date: 7.JUL.2012 00:54:14



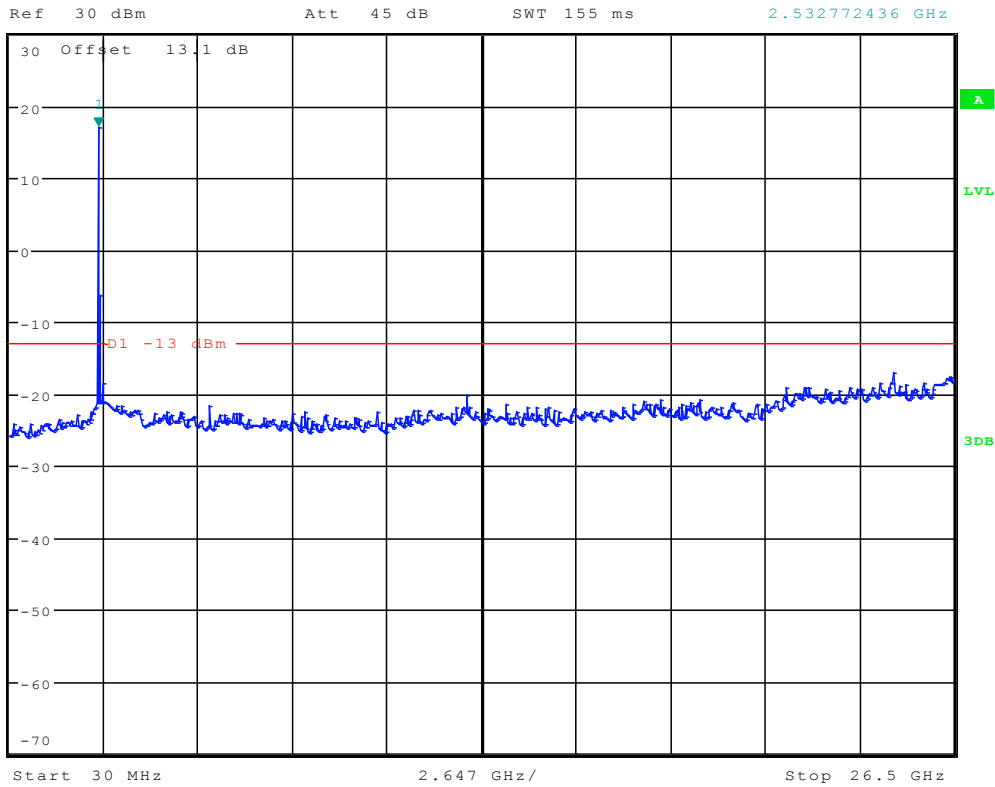
*RBW 10 kHz Marker 1 [T1]
*VBW 30 kHz -36.33 dBm
SWT 300 ms 197.836538462 kHz



Date: 7.JUL.2012 00:53:54



* RBW 1 MHz Marker 1 [T1]
* VBW 3 MHz 17.04 dBm
SWT 155 ms 2.532772436 GHz



Date: 7.JUL.2012 00:53:31

-----END-----



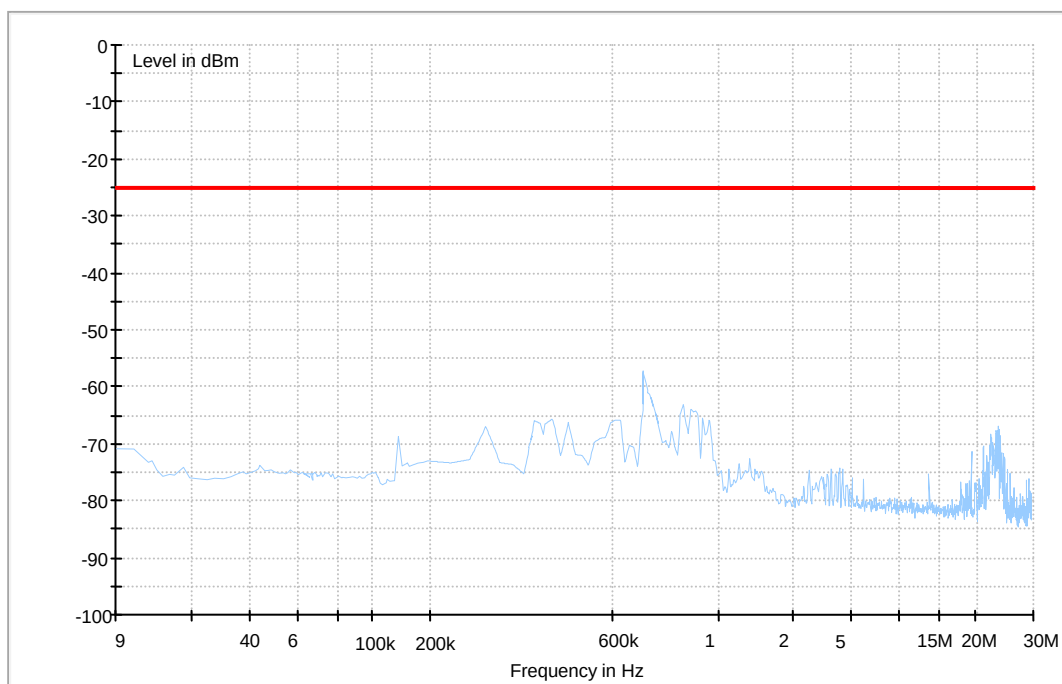
Appendix F

Radiated spurious emission



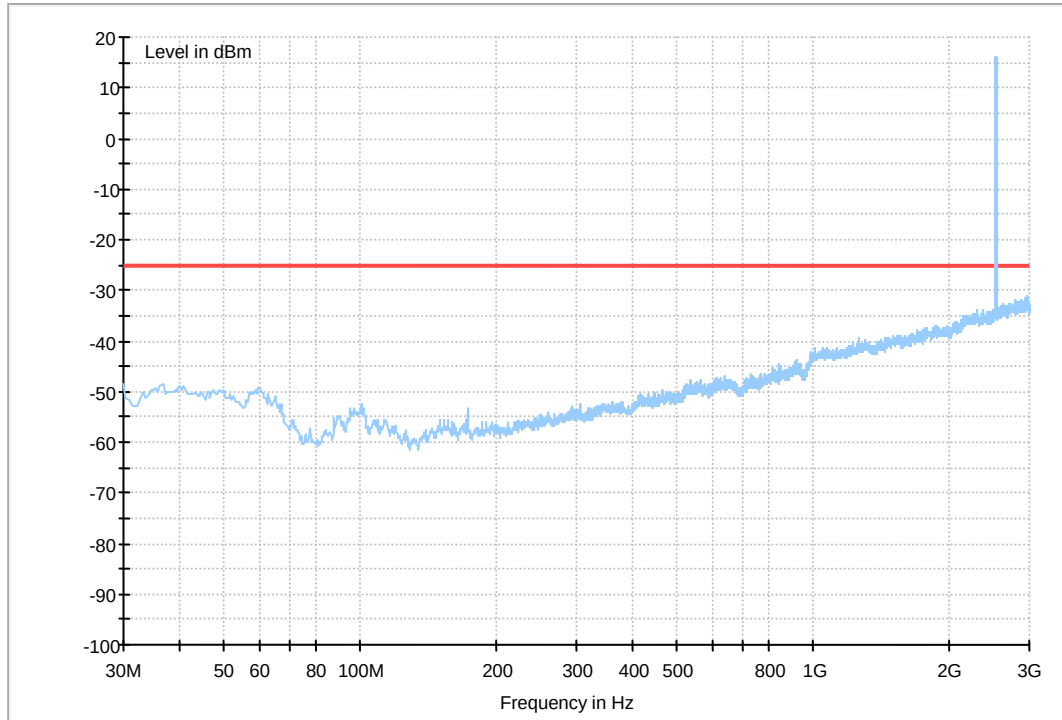
- Note: 1. Simultaneous transmission was investigated and no new emissions were found.
2. $RBW \geq 1 \text{ MHz}$, $VBW > 3 \times RBW$.
3. This device was tested in all configurations and the mid channel test data in this report.

LTE Band VII
(BW=5MHz Channel 21100 1RB/#RB MAX)
Traffic Mode (9kHz-30MHz)



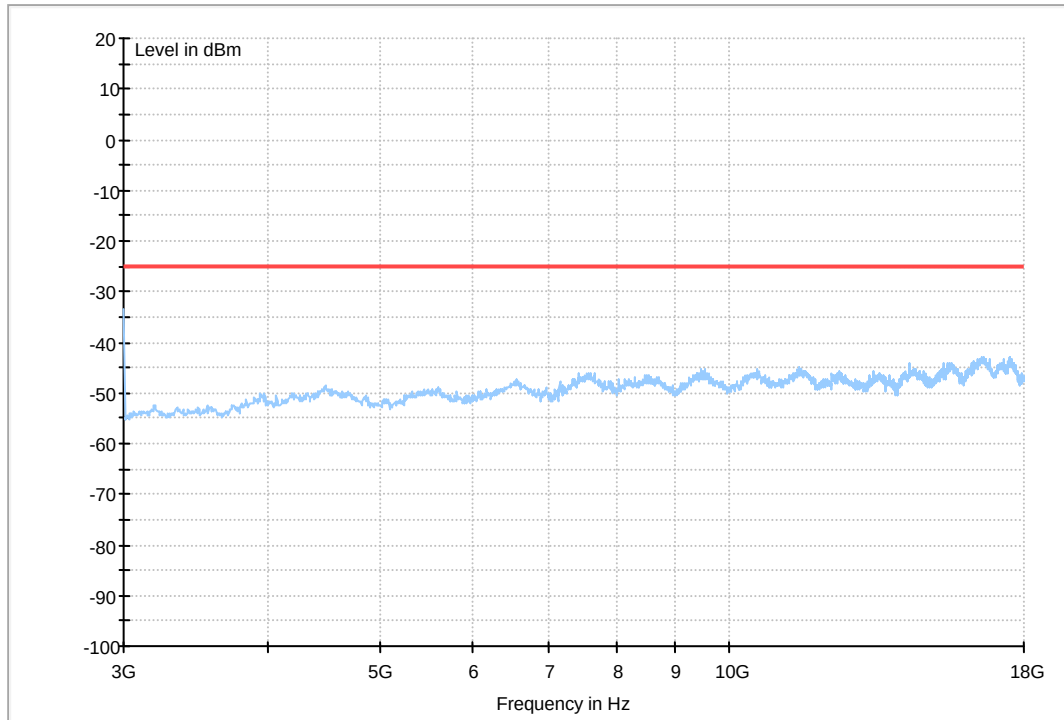


Traffic Mode (30MHz-3GHz)



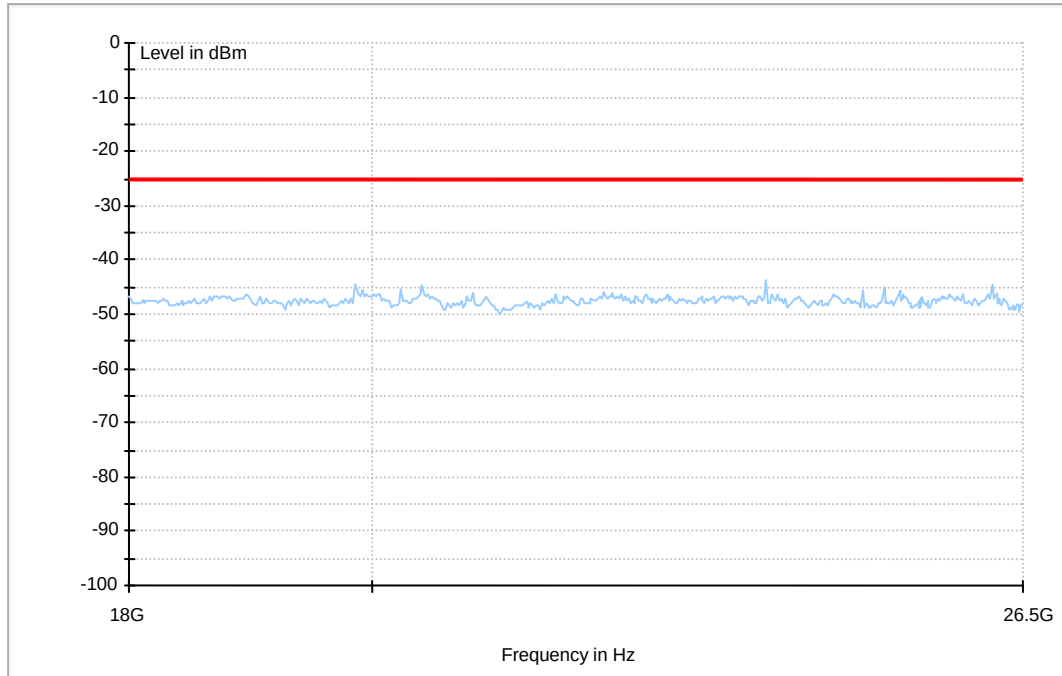


Traffic Mode (3GHz-18GHz)





Traffic Mode (18GHz-26.5GHz)

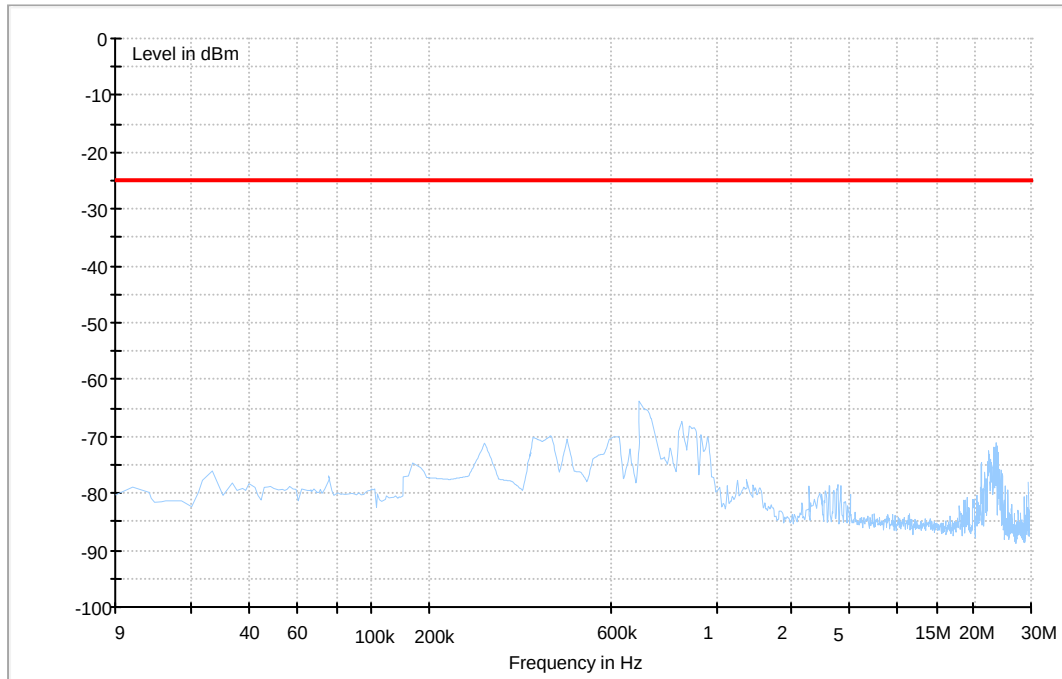




LTE Band VII

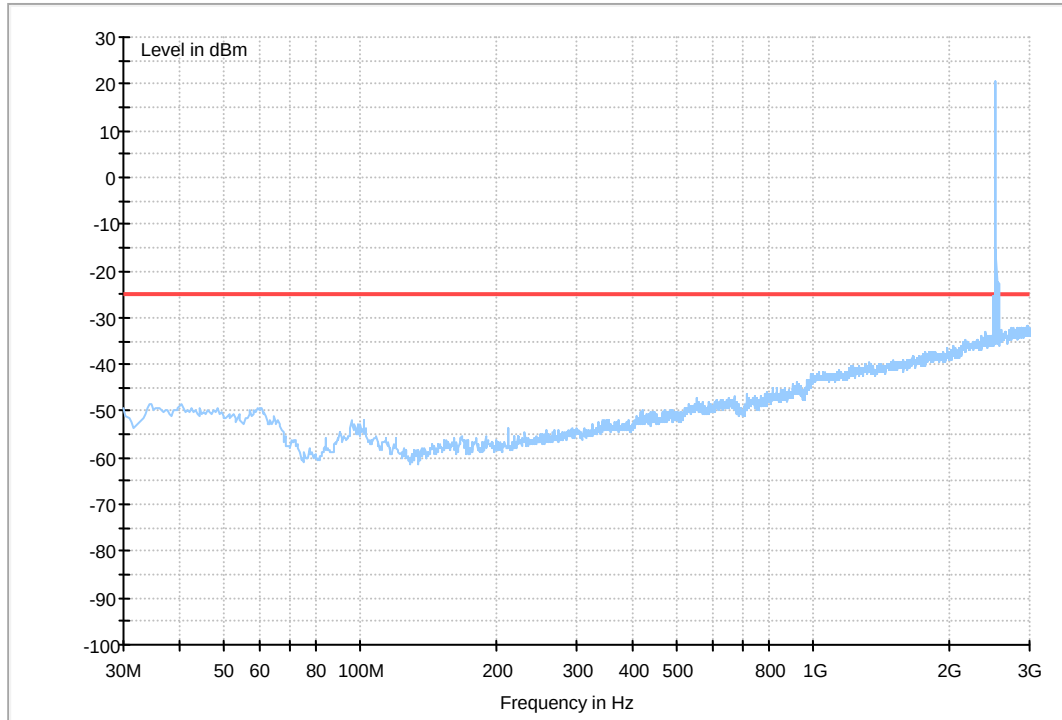
(BW=20MHz Channel 21100 1RB/#RB MAX)

Traffic Mode (9kHz-30MHz)



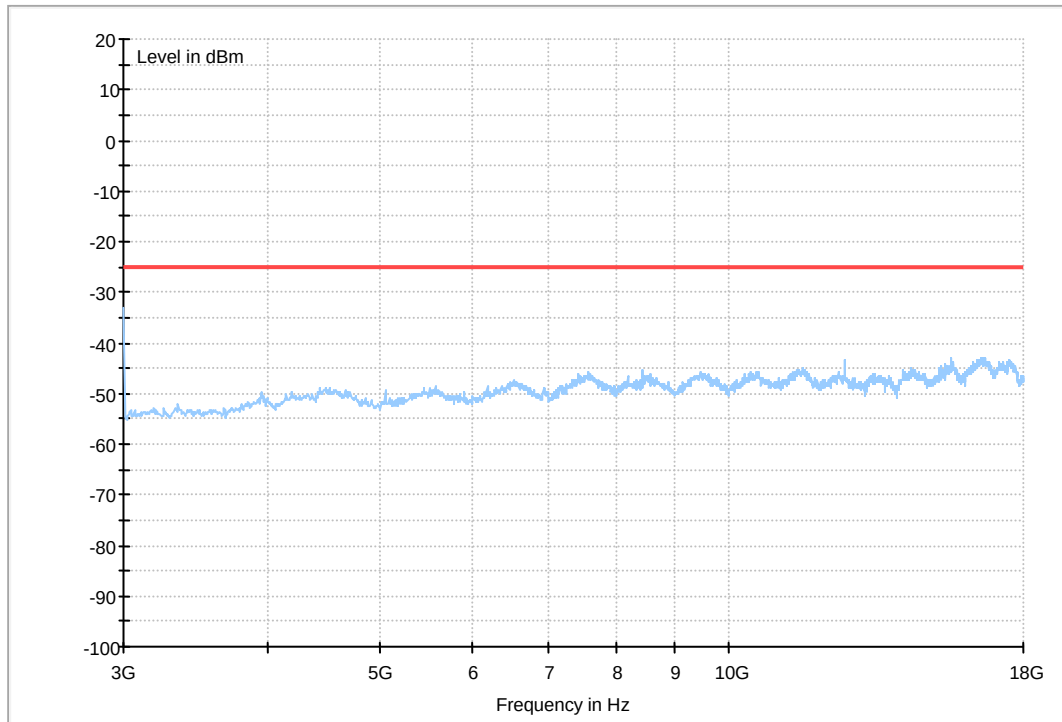


Traffic Mode (30MHz-3GHz)



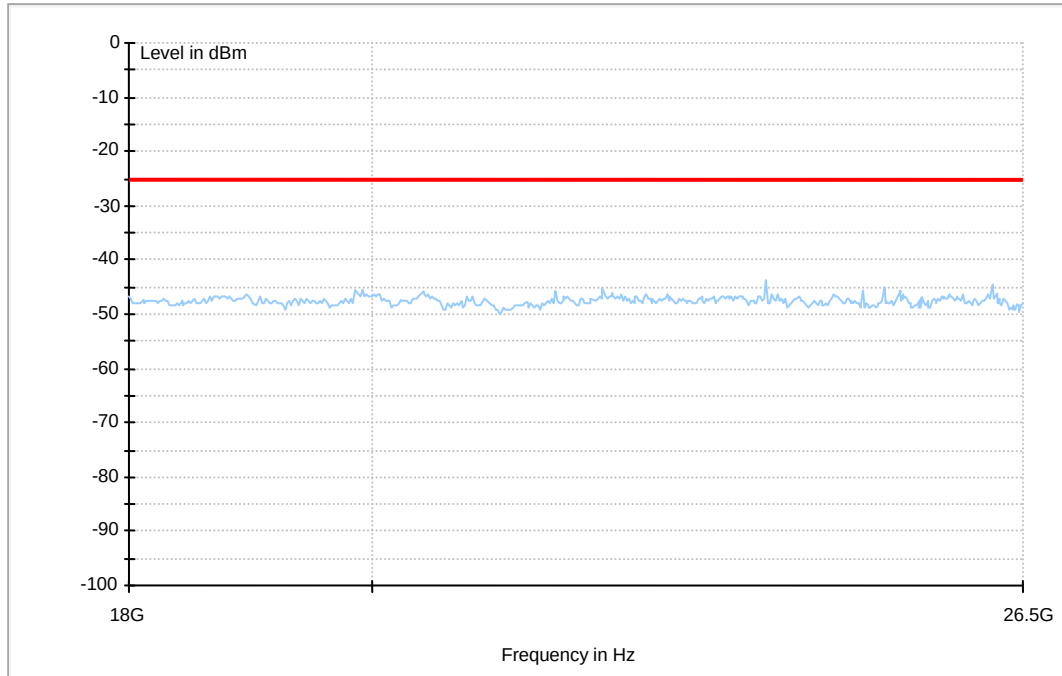


Traffic Mode (3GHz-18GHz)





Traffic Mode (18GHz-26.5GHz)



-----END-----



Appendix G

Frequency Stability

According to FCC Part 2.1051 & FCC Part 27C & 27M



Frequency Error vs. Temperature:

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

Table 1 Measurement Results (LTE) BAND 7

Test Mode	RF Ch.	Volt.	Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Freq. vs. 20 °C [ppm]	Limit [ppm]	Verdict
TM6(5M)	M	VN	-30 °C	-9	-0.00355	---	±2.5	Pass
			-20 °C	17	0.00671	---	±2.5	Pass
			-10 °C	12	0.00473	---	±2.5	Pass
			0 °C	-8	-0.00316	---	±2.5	Pass
			10 °C	19	0.00750	---	±2.5	Pass
			20 °C	-7	-0.00276	---	±2.5	Pass
			30 °C	25	0.00986	---	±2.5	Pass
			40 °C	13	0.00513	---	±2.5	Pass
TM6(10M)	M	VN	50 °C	-23	-0.00907	---	±2.5	Pass
			-30 °C	-21	-0.00828	---	±2.5	Pass
			-20 °C	-15	-0.00592	---	±2.5	Pass
			-10 °C	9	0.00355	---	±2.5	Pass
			0 °C	-8	-0.00316	---	±2.5	Pass
			10 °C	-16	-0.00631	---	±2.5	Pass
			20 °C	25	0.00986	---	±2.5	Pass
			30 °C	21	0.00828	---	±2.5	Pass
TM6(15M)	M	VN	40 °C	11	0.00434	---	±2.5	Pass
			50 °C	18	0.00710	---	±2.5	Pass
			-30 °C	-15	-0.00592	---	±2.5	Pass
			-20 °C	-8	-0.00316	---	±2.5	Pass
			-10 °C	-12	-0.00473	---	±2.5	Pass
			0 °C	-16	-0.00631	---	±2.5	Pass
			10 °C	16	0.00631	---	±2.5	Pass
			20 °C	20	0.00789	---	±2.5	Pass
TM6(20M)	M	VN	30 °C	-7	-0.00276	---	±2.5	Pass
			40 °C	12	0.00473	---	±2.5	Pass
			50 °C	-11	-0.00434	---	±2.5	Pass
			-30 °C	16	0.00631	---	±2.5	Pass
			-20 °C	22	0.00868	---	±2.5	Pass
			-10 °C	10	0.00394	---	±2.5	Pass
			0 °C	25	0.00986	---	±2.5	Pass
			10 °C	-15	-0.00592	---	±2.5	Pass
			20 °C	13	0.00513	---	±2.5	Pass
			30 °C	-19	-0.00750	---	±2.5	Pass
			40 °C	-11	-0.00434	---	±2.5	Pass
			50 °C	13	0.00513	---	±2.5	Pass



Frequency Error vs. Voltage:

Table 2 Measurement Results (LTE) BAND 7

Test Mode	RF Ch.	Temp.	Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Freq. vs. 20 °C [ppm]	Limit [ppm]	Verdict
TM6(5M)	M	20 °C	VL	23	0.00907	---	±2.5	Pass
			VN	17	0.00671	---	±2.5	Pass
			VH	8	0.00316	---	±2.5	Pass
TM6(10M)	M	20 °C	VL	-20	-0.00789	---	±2.5	Pass
			VN	-23	-0.00907	---	±2.5	Pass
			VH	-7	-0.00276	---	±2.5	Pass
TM6(15M)	M	20 °C	VL	22	0.00868	---	±2.5	Pass
			VN	13	0.00513	---	±2.5	Pass
			VH	15	0.00592	---	±2.5	Pass
TM6(20M)	M	20 °C	VL	-22	-0.00868	---	±2.5	Pass
			VN	25	0.00986	---	±2.5	Pass
			VH	11	0.00434	---	±2.5	Pass

-----END-----