



Appendix A

Transmitter Output Power According to FCC Part 2.1046 & Part22.913



Conducted Power of Transmitter

Measurement Results

TEST CONDITIONS		RF Output Power (Conducted)					
		Channel128(B)		Channel192(M)		Channel251(T)	
		824.2MHz		837.0MHz		848.8MHz	
		dBm		dBm		dBm	
T_{nom} / V_{nom}		Measured	Limit	Measured	Limit	Measured	Limit
TM1		32.48	38.5	32.53	38.5	32.49	38.5
TM2		25.94	38.5	25.79	38.5	25.56	38.5
TEST CONDITIONS		Channel4132(B)		Channel4182(M)		Channel4233(T)	
		826.4MHz		836.4MHz		846.6MHz	
		dBm		dBm		dBm	
T_{nom} / V_{nom}		Measured	Limit	Measured	Limit	Measured	Limit
TM3		21.63	38.5	21.71	38.5	21.97	38.5
TM4	Case1	21.61	38.5	21.62	38.5	21.94	38.5
	Case2	21.32	38.5	21.58	38.5	21.64	38.5
	Case3	21.12	38.5	21.05	38.5	21.28	38.5
	Case4	20.98	38.5	21.07	38.5	21.31	38.5
TM5	Case1	20.68	38.5	20.73	38.5	21.07	38.5
	Case2	18.73	38.5	18.69	38.5	19.05	38.5
	Case3	19.57	38.5	19.68	38.5	19.92	38.5
	Case4	19.48	38.5	19.53	38.5	19.51	38.5
	Case5	20.75	38.5	20.74	38.5	20.72	38.5

Note: RBW > emission bandwidth, VBW > 3 x RBW.



Measurement Results

TM6 & TM7 RF Output Power(Conducted) BAND 5				
Test Mode	TN/VN			
	Modulation	RB	Measured (dBm)	Limit (dBm)
Channel (B) 5MHz(BW)	QPSK	1RB#0	22.51	38.5
		1RB#max	22.59	38.5
		12RB#6	21.92	38.5
		Full	21.75	38.5
	16QAM	1RB#0	21.9	38.5
		1RB#max	21.86	38.5
		12RB#6	20.87	38.5
		Full	20.89	38.5
Channel (B) 10MHz(BW)	QPSK	1RB#0	22.32	38.5
		1RB#max	21.54	38.5
		25RB#13	21.65	38.5
		Full	21.53	38.5
	16QAM	1RB#0	21.7	38.5
		1RB#max	21.88	38.5
		25RB#13	20.88	38.5
		Full	20.53	38.5
Channel (M) 5MHz(BW)	QPSK	1RB#0	22.26	38.5
		1RB#max	22.36	38.5
		12RB#6	21.64	38.5
		Full	21.51	38.5
	16QAM	1RB#0	21.62	38.5
		1RB#max	21.74	38.5
		12RB#6	20.8	38.5
		Full	20.63	38.5
Channel (M) 10MHz(BW)	QPSK	1RB#0	21.87	38.5
		1RB#max	22.48	38.5
		25RB#13	21.56	38.5
		Full	21.31	38.5
	16QAM	1RB#0	21.45	38.5



		1RB#max	21.98	38.5
		25RB#13	20.65	38.5
		Full	20.43	38.5
Channel (T) 5MHz(BW)	QPSK	1RB#0	22.24	38.5
		1RB#max	21.9	38.5
		12RB#6	21.65	38.5
		Full	21.47	38.5
	16QAM	1RB#0	21.56	38.5
		1RB#max	21.21	38.5
		12RB#6	20.73	38.5
		Full	20.65	38.5
Channel (T) 10MHz(BW)	QPSK	1RB#0	22.33	38.5
		1RB#max	22.16	38.5
		25RB#13	21.48	38.5
		Full	21.23	38.5
	16QAM	1RB#0	21.79	38.5
		1RB#max	21.65	38.5
		25RB#13	20.66	38.5
		Full	20.39	38.5

Note: RBW > emission bandwidth, VBW > 3 x RBW.



Effective Radiated Power of Transmitter (ERP)

Test Mode	Freq. [MHz]	Meas. Level [dBm]	Substitution Antenna Type	SGP [dBm]	Substitution Gain [dBd]	Cable Loss [dB]	Substitution Level (ERP)	FCC limit [dBm]	Result
							[dBm]		
TM1	824.2	31.53	Dipole Ant.	34.90	-2.75	0.6	31.55	38.5	Pass
TM1	837.0	31.58	Dipole Ant.	35.03	-2.87	0.6	31.56	38.5	Pass
TM1	848.8	31.54	Dipole Ant.	34.97	-2.85	0.6	31.52	38.5	Pass
TM2	824.2	24.99	Dipole Ant.	28.32	-2.75	0.6	24.97	38.5	Pass
TM2	837.0	24.84	Dipole Ant.	28.30	-2.87	0.6	24.83	38.5	Pass
TM2	848.8	24.61	Dipole Ant.	28.07	-2.85	0.6	24.62	38.5	Pass
TM3	826.4	20.68	Dipole Ant.	23.83	-2.75	0.6	20.48	38.5	Pass
TM3	836.4	20.76	Dipole Ant.	24.03	-2.87	0.6	20.56	38.5	Pass
TM3	846.6	21.02	Dipole Ant.	24.27	-2.85	0.6	20.82	38.5	Pass



Test Mode			Meas. Level [dBm]	Substitution Antenna Type	SGP [dBm]	Substitution Gain [dBd]	Cable Loss [dB]	Substitution Level (ERP) [dBm]	FCC limit [dBm]	Result
Channel (B) 5MHz(BW)	QPSK	1 RB/#0	21.56	Horn Ant.	24.78	-2.75	0.6	21.43	38.5	Pass
		1 RB/#max	21.64	Horn Ant.	24.86	-2.75	0.6	21.51	38.5	Pass
		12 RB/#6	20.97	Horn Ant.	24.19	-2.75	0.6	20.84	38.5	Pass
		Full	20.8	Horn Ant.	24.02	-2.75	0.6	20.67	38.5	Pass
	16QAM	1 RB/#0	20.95	Horn Ant.	24.17	-2.75	0.6	20.82	38.5	Pass
		1 RB/#max	20.91	Horn Ant.	24.13	-2.75	0.6	20.78	38.5	Pass
		12 RB/#6	19.92	Horn Ant.	23.14	-2.75	0.6	19.79	38.5	Pass
		Full	19.94	Horn Ant.	23.16	-2.75	0.6	19.81	38.5	Pass
Channel (B) 10MHz(BW)	QPSK	1 RB/#0	21.37	Horn Ant.	24.59	-2.75	0.6	21.24	38.5	Pass
		1 RB/#max	20.59	Horn Ant.	23.81	-2.75	0.6	20.46	38.5	Pass
		25 RB/#13	20.7	Horn Ant.	23.92	-2.75	0.6	20.57	38.5	Pass
		Full	20.58	Horn Ant.	23.8	-2.75	0.6	20.45	38.5	Pass
	16QAM	1 RB/#0	20.75	Horn Ant.	23.97	-2.75	0.6	20.62	38.5	Pass
		1 RB/#max	20.93	Horn Ant.	24.15	-2.75	0.6	20.8	38.5	Pass
		25 RB/#13	19.93	Horn Ant.	23.15	-2.75	0.6	19.8	38.5	Pass
		Full	19.58	Horn Ant.	22.8	-2.75	0.6	19.45	38.5	Pass
Channel (M) 5MHz(BW)	QPSK	1 RB/#0	21.31	Horn Ant.	24.65	-2.87	0.6	21.18	38.5	Pass
		1 RB/#max	21.41	Horn Ant.	24.75	-2.87	0.6	21.28	38.5	Pass
		12 RB/#6	20.69	Horn Ant.	24.03	-2.87	0.6	20.56	38.5	Pass



		Full	20.56	Horn Ant.	23.9	-2.87	0.6	20.43	38.5	Pass
	16QAM	1 RB/#0	20.67	Horn Ant.	24.01	-2.87	0.6	20.54	38.5	Pass
		1 RB/#max	20.79	Horn Ant.	24.13	-2.87	0.6	20.66	38.5	Pass
		12 RB/#6	19.85	Horn Ant.	23.19	-2.87	0.6	19.72	38.5	Pass
		Full	19.68	Horn Ant.	23.02	-2.87	0.6	19.55	38.5	Pass
Channel (M) 10MHz(BW)	QPSK	1 RB/#0	20.92	Horn Ant.	24.26	-2.87	0.6	20.79	38.5	Pass
		1 RB/#max	21.53	Horn Ant.	24.87	-2.87	0.6	21.4	38.5	Pass
		25 RB/#13	20.61	Horn Ant.	23.95	-2.87	0.6	20.48	38.5	Pass
		Full	20.36	Horn Ant.	23.7	-2.87	0.6	20.23	38.5	Pass
	16QAM	1 RB/#0	20.5	Horn Ant.	23.84	-2.87	0.6	20.37	38.5	Pass
		1 RB/#max	21.03	Horn Ant.	24.37	-2.87	0.6	20.9	38.5	Pass
		25 RB/#13	19.7	Horn Ant.	23.04	-2.87	0.6	19.57	38.5	Pass
		Full	19.48	Horn Ant.	22.82	-2.87	0.6	19.35	38.5	Pass
Channel (T) 5MHz(BW)	QPSK	1 RB/#0	21.29	Horn Ant.	24.61	-2.85	0.6	21.16	38.5	Pass
		1 RB/#max	20.95	Horn Ant.	24.27	-2.85	0.6	20.82	38.5	Pass
		12 RB/#6	20.7	Horn Ant.	24.02	-2.85	0.6	20.57	38.5	Pass
		Full	20.52	Horn Ant.	23.84	-2.85	0.6	20.39	38.5	Pass
	16QAM	1 RB/#0	20.61	Horn Ant.	23.93	-2.85	0.6	20.48	38.5	Pass
		1 RB/#max	20.26	Horn Ant.	23.58	-2.85	0.6	20.13	38.5	Pass
		12 RB/#6	19.78	Horn Ant.	23.1	-2.85	0.6	19.65	38.5	Pass
		Full	19.7	Horn Ant.	23.02	-2.85	0.6	19.57	38.5	Pass
Channel (T)	QPSK	1 RB/#0	21.38	Horn Ant.	24.7	-2.85	0.6	21.25	38.5	Pass



10MHz(BW)		1 RB/#max	21.21	Horn Ant.	24.53	-2.85	0.6	21.08	38.5	Pass
		25 RB/#13	20.53	Horn Ant.	23.85	-2.85	0.6	20.4	38.5	Pass
		Full	20.28	Horn Ant.	23.6	-2.85	0.6	20.15	38.5	Pass
	16QAM	1 RB/#0	20.84	Horn Ant.	24.16	-2.85	0.6	20.71	38.5	Pass
		1 RB/#max	20.7	Horn Ant.	24.02	-2.85	0.6	20.57	38.5	Pass
		25 RB/#13	19.71	Horn Ant.	23.03	-2.85	0.6	19.58	38.5	Pass
		Full	19.44	Horn Ant.	22.76	-2.85	0.6	19.31	38.5	Pass

Note1: a, For getting the ERP (Efficient Radiated Power) in substitution method, the following formula should take to calculate it,

$$ERP [dBm] = SGP [dBm] - Cable Loss [dB] + Gain [dBd]$$

b, SGP=Signal Generator Level

Note2: RBW > emission bandwidth, VBW > 3 x RBW.

-----The END-----
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Appendix B

Modulation Characteristics

According to FCC Part 2.1047 & FCC Part 22.Subpart H



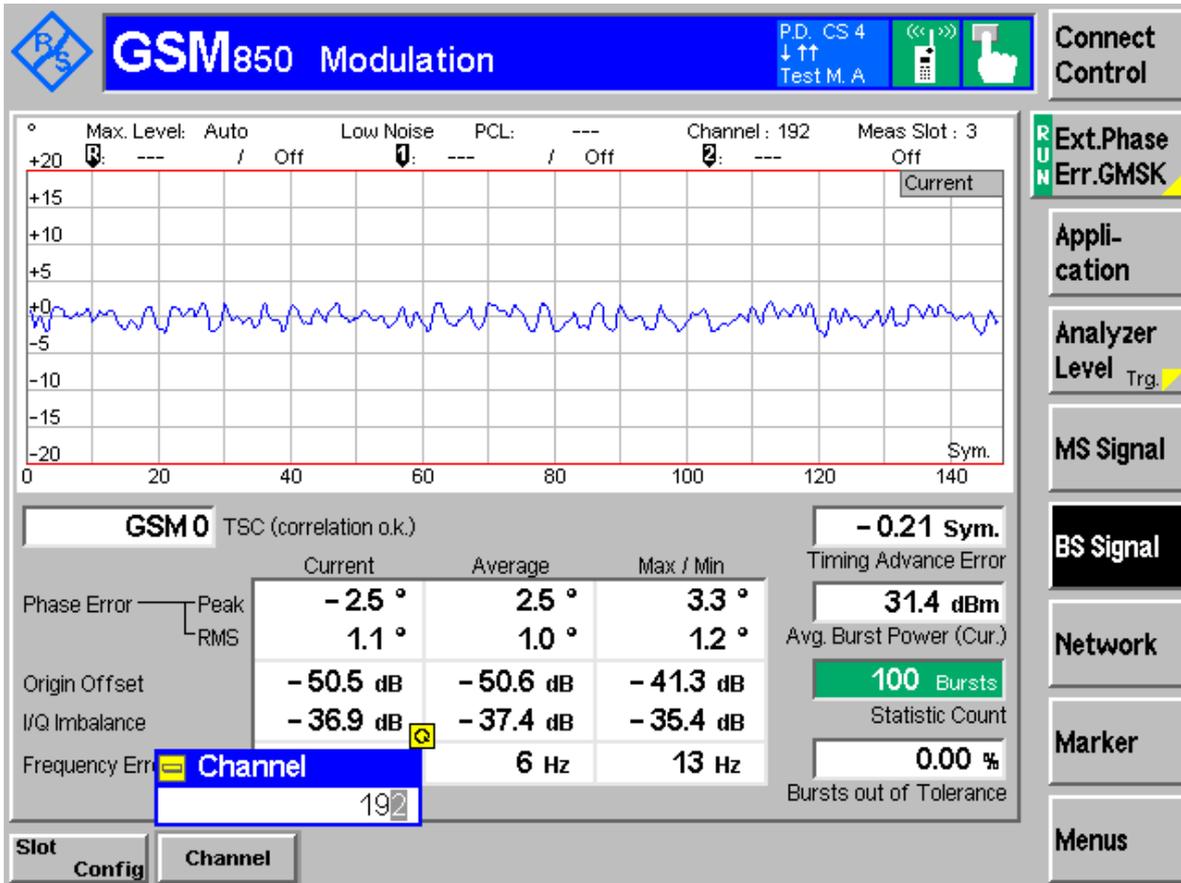
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1 For GPRS 850

1.1 Test Mode=TM1

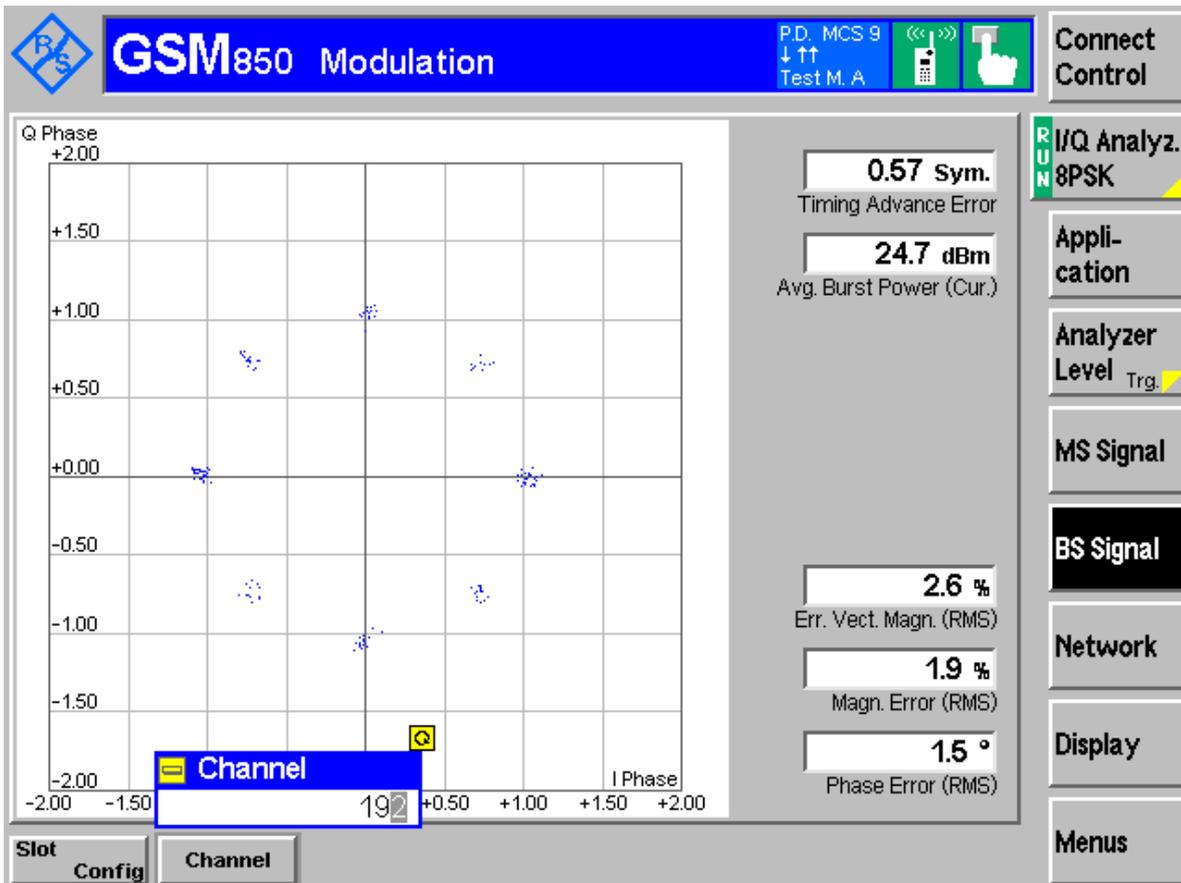
1.1.1 Channel M



2 For EDGE 850

2.1 Test Mode=TM 2

2.1.1 Channel M

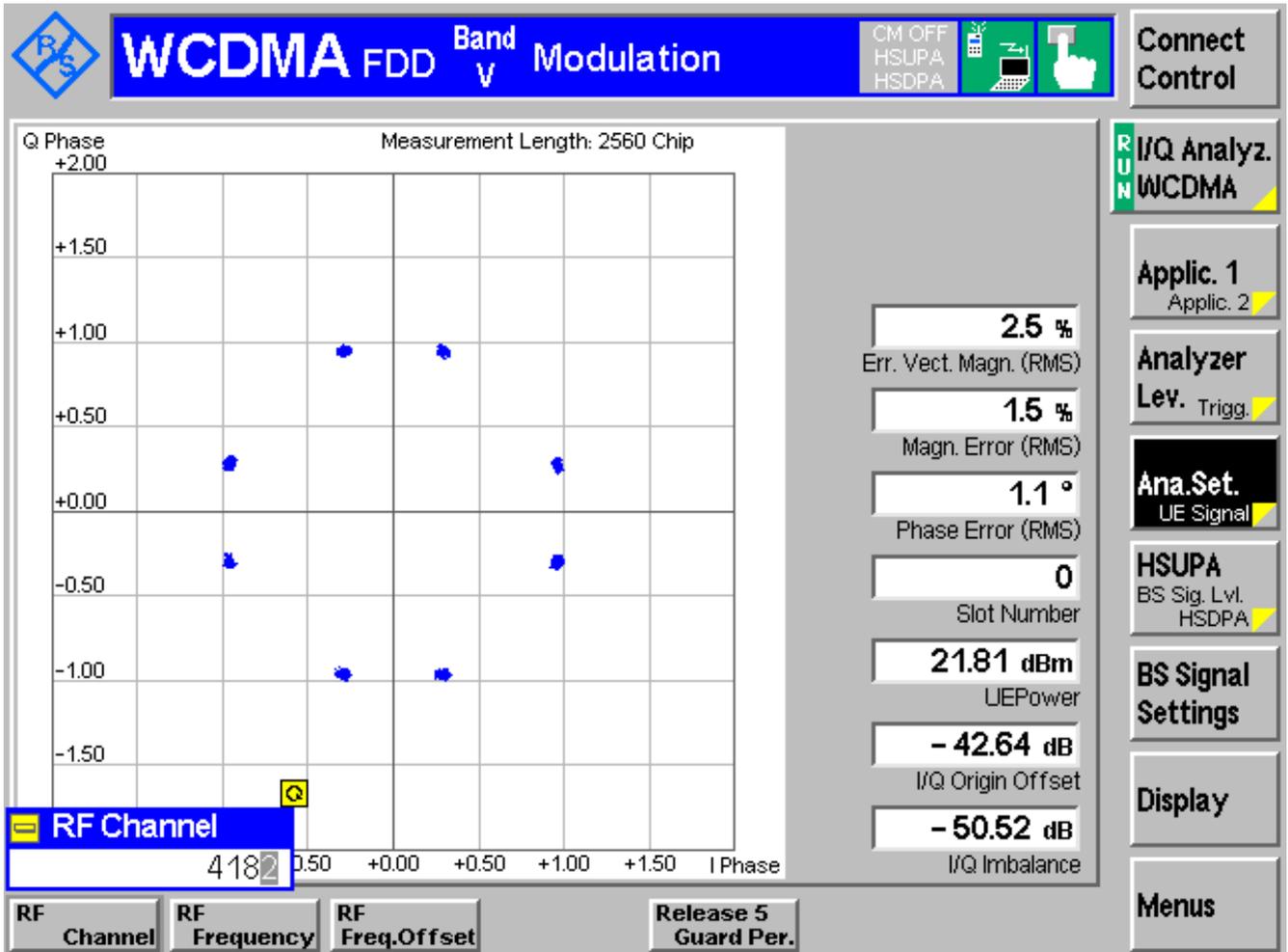




3 For WCDMA BAND 5

3.1 Test Mode=TM 3

3.1.1 Channel M



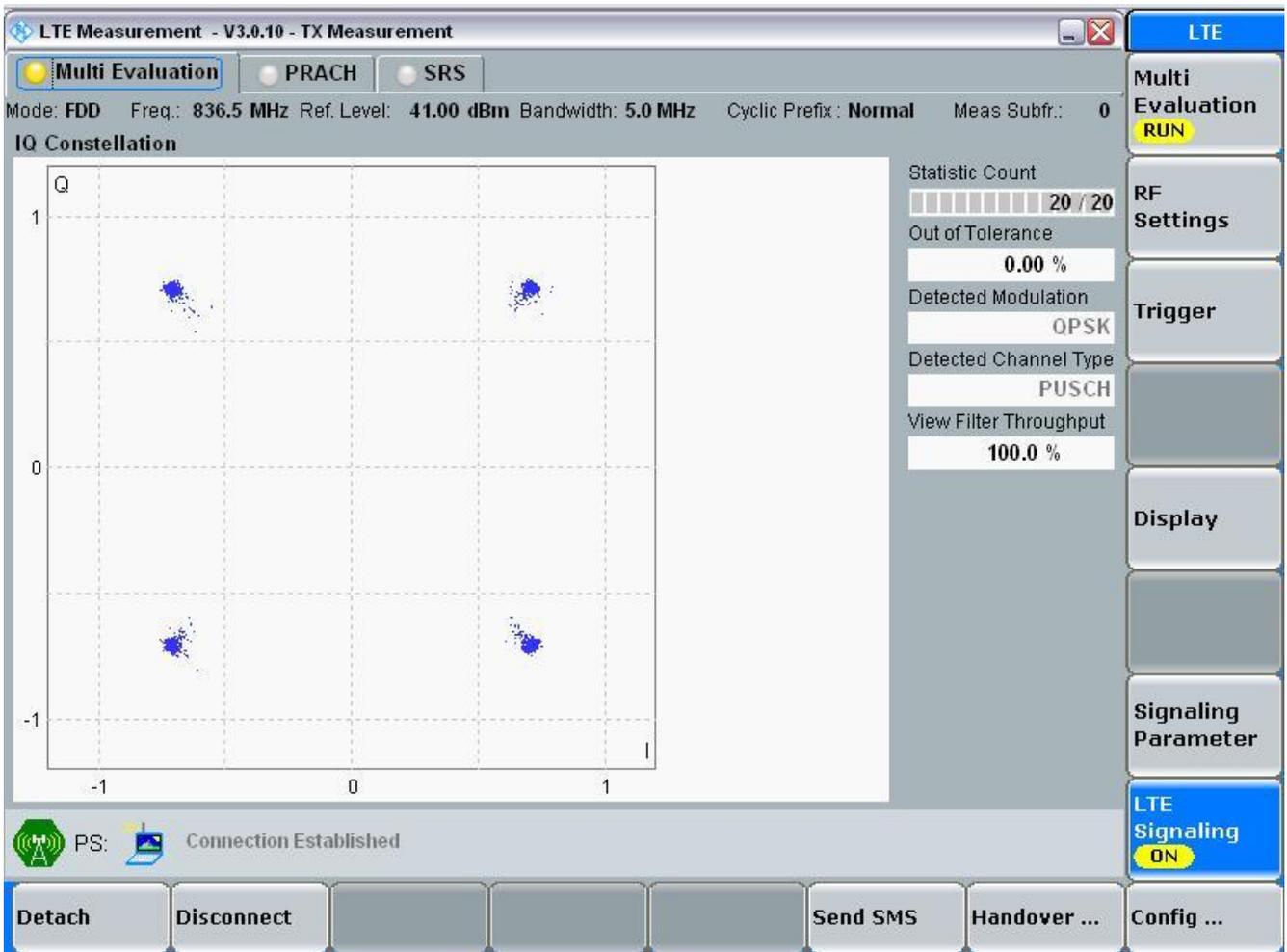
4 For LTE Band 5

4.1 Test Mode=TM6

4.1.1 Channel Bandwidth = 5 MHz

4.1.1.1 Channel =M

4.1.1.1.1 QPSK/full RBs

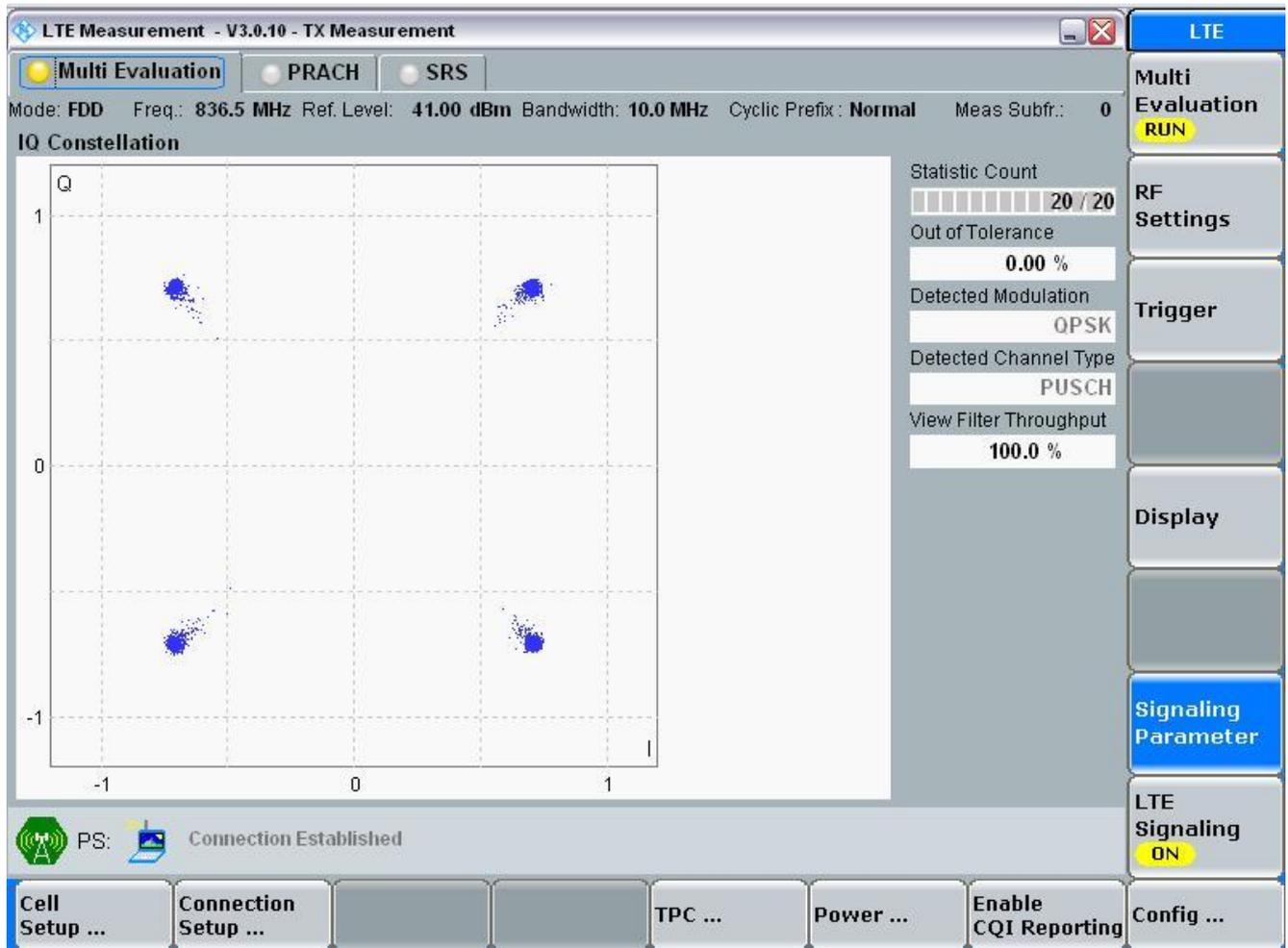




4.1.2 Channel Bandwidth = 10 MHz

4.1.2.1 Channel =M

4.1.2.1.1 QPSK/full RBs



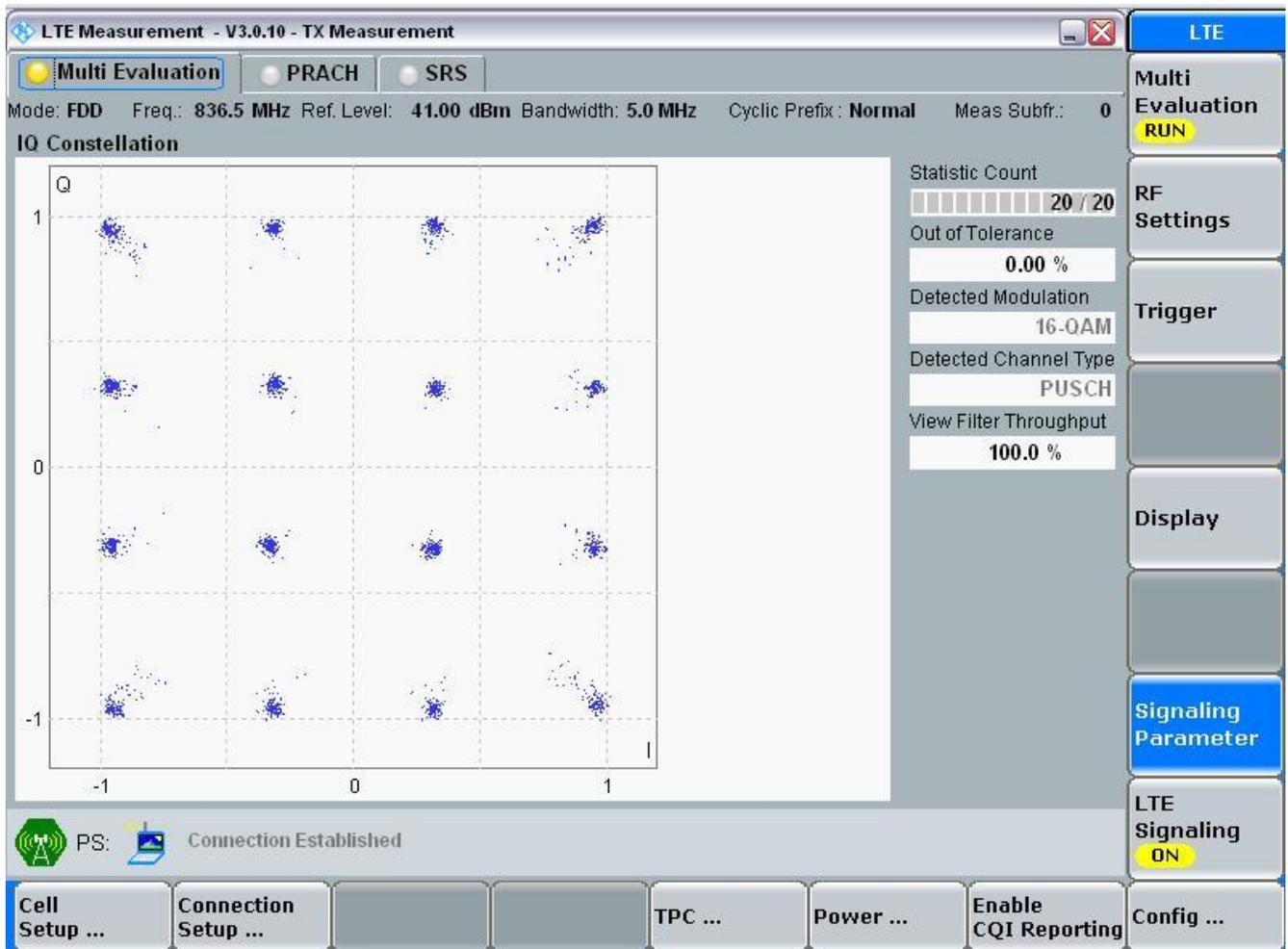


4.2 Test Mode=TM7

4.2.1 Channel Bandwidth = 5 MHz

4.2.1.1 Channel =M

4.2.1.1.1 16QAM/full RBs

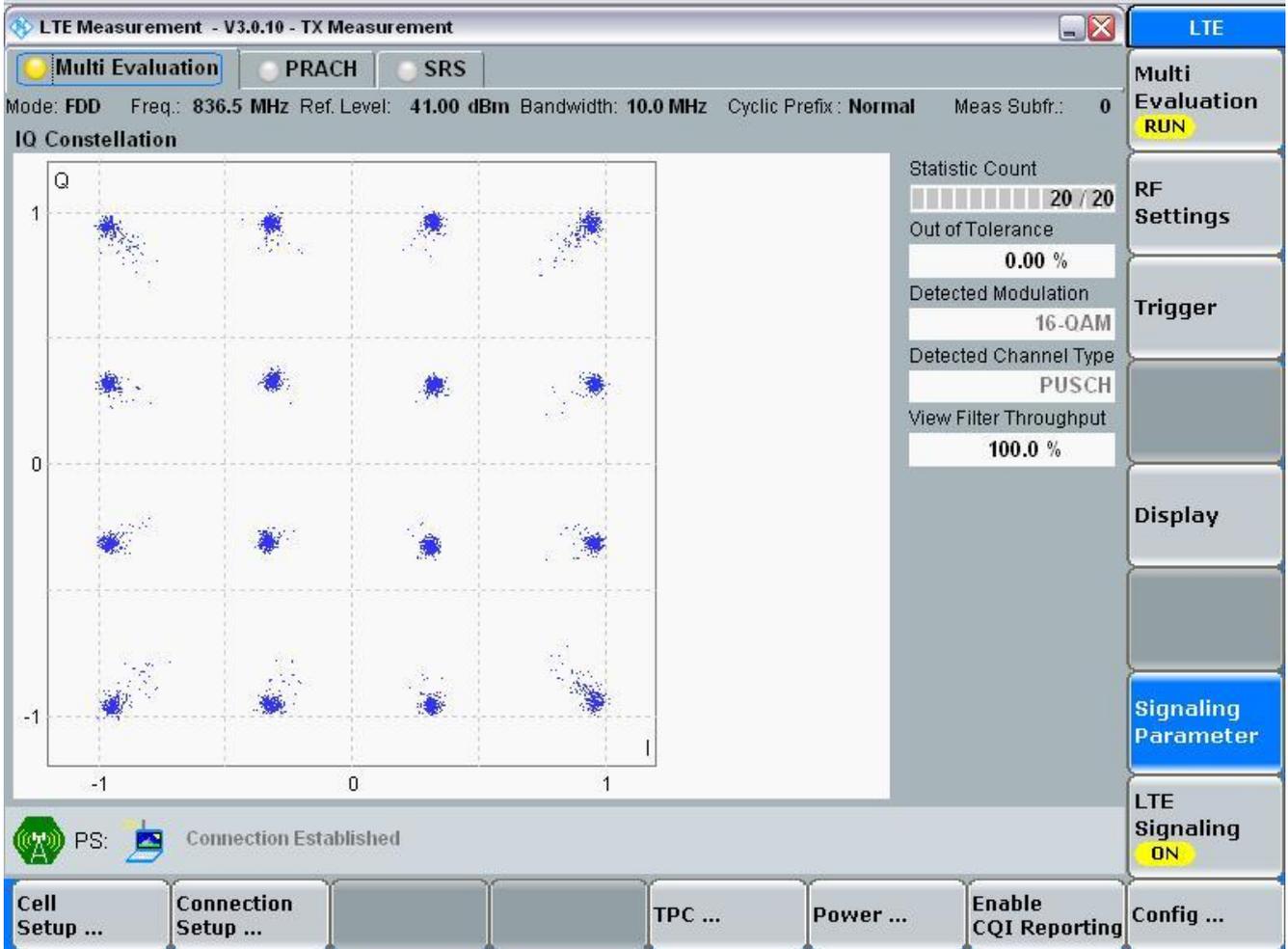




4.2.2 Channel Bandwidth = 10 MHz

4.2.2.1 Channel =M

4.2.2.1.1 16QAM/full RBs



-----END-----



Appendix C

Occupied Bandwidth

According to FCC part 2.1049 & FCC Part 22.Subpart H



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Result Table

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

Table 1 Measurement Results BAND 5

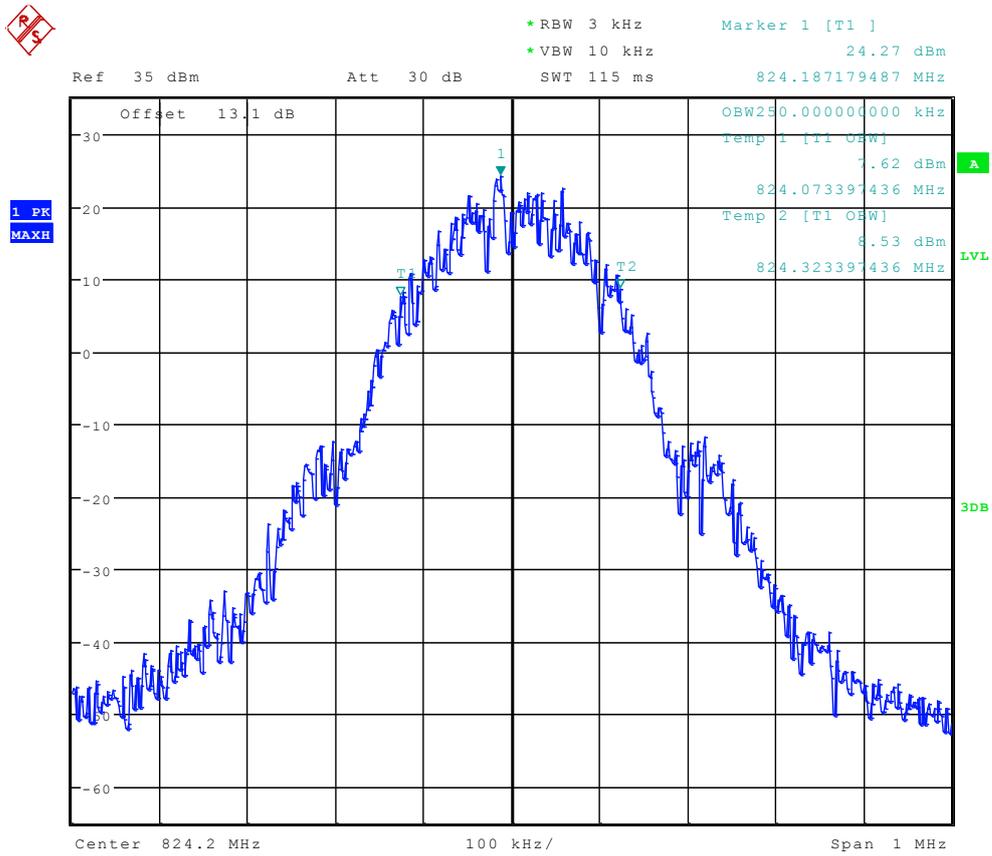
Test Mode	RF Ch.	RF Channel	Occupied Bandwidth [KHz]	Verdict
TM1		B	250.00	Pass
		M	245.19	Pass
		T	248.40	Pass
TM2		B	241.99	Pass
		M	253.20	Pass
		T	254.80	Pass
Test Mode	RF Ch.	RF Channel	Occupied Bandwidth [MHz]	Verdict
TM3		B	4.17	Pass
		M	4.17	Pass
		T	4.17	Pass
Test Mode	Carrier Conf.	RF Ch.	Occupied Bandwidth [MHz]	Verdict
TM6	5 MHz	B	4.47	Pass
		M	4.47	Pass
		T	4.48	Pass
	10 MHz	B	8.90	Pass
		M	8.91	Pass
		T	8.92	Pass
TM7	5 MHz	B	4.47	Pass
		M	4.48	Pass
		T	4.47	Pass
	10 MHz	B	8.92	Pass
		M	8.90	Pass
		T	8.91	Pass



1 For GPRS 850

1.1 Test Mode=TM1

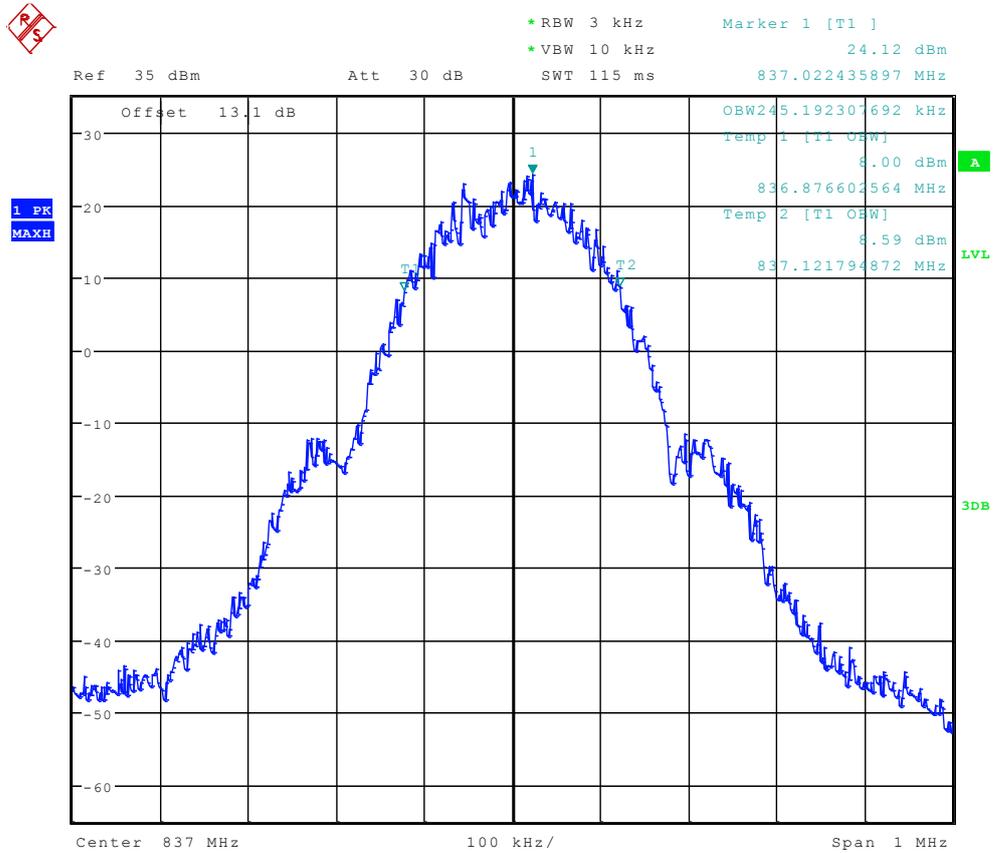
1.1.1 Channel = B



Date: 6.JUN.2012 09:07:13



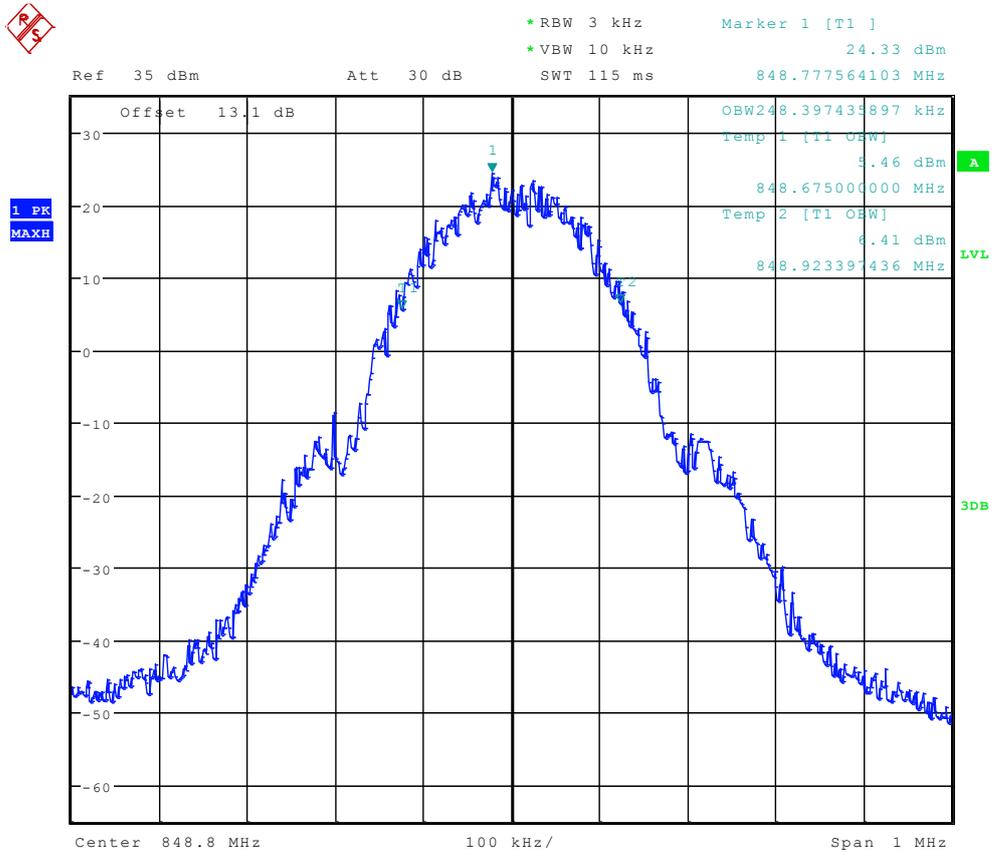
1.1.2 Channel = M



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1.1.3 Channel = T



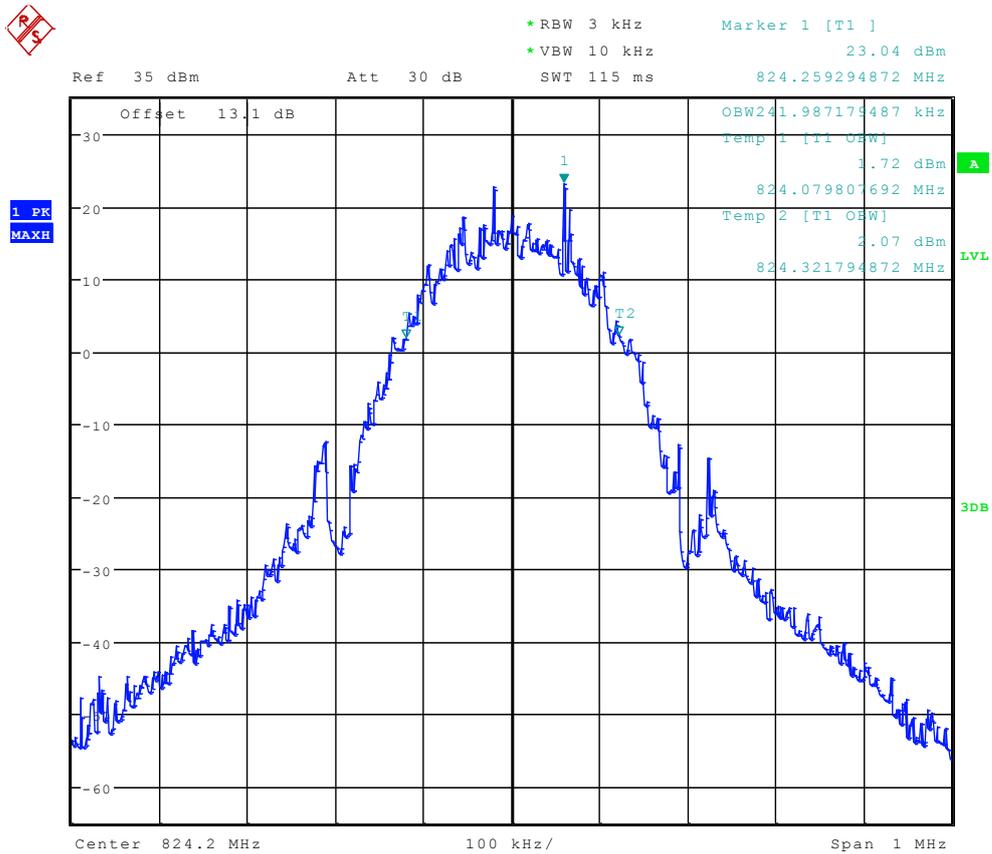
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2 For EDGE 850

2.1 Test Mode=TM 2

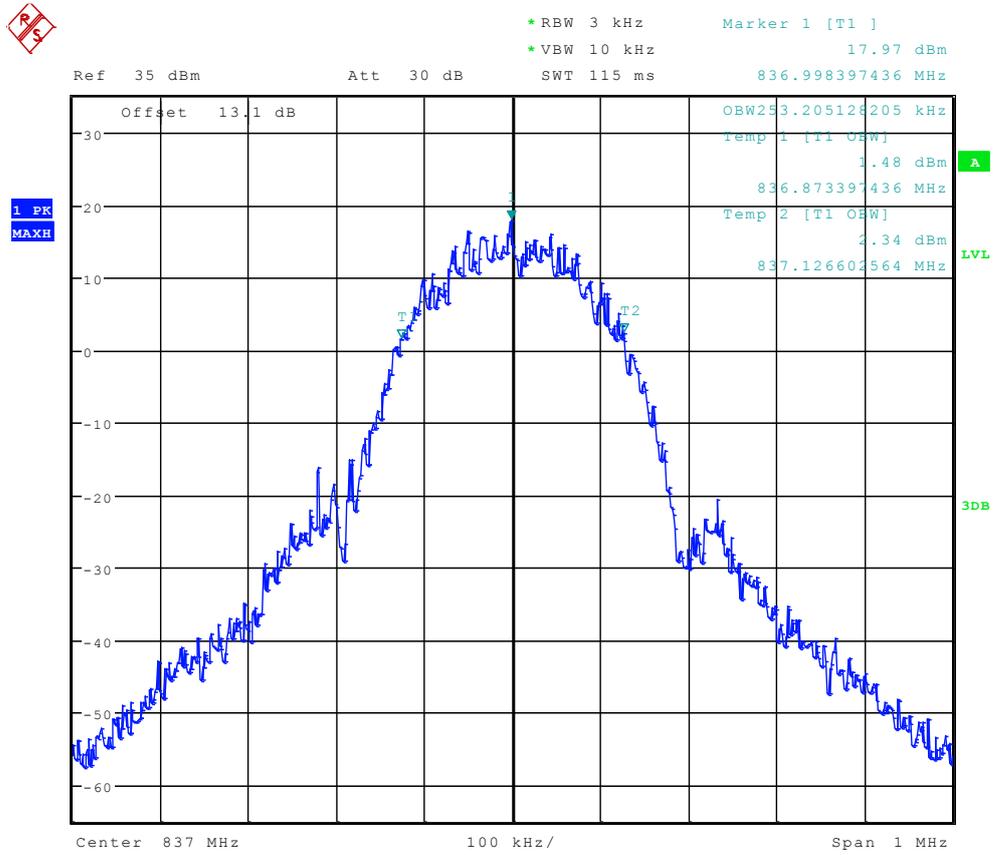
2.1.1 Channel = B



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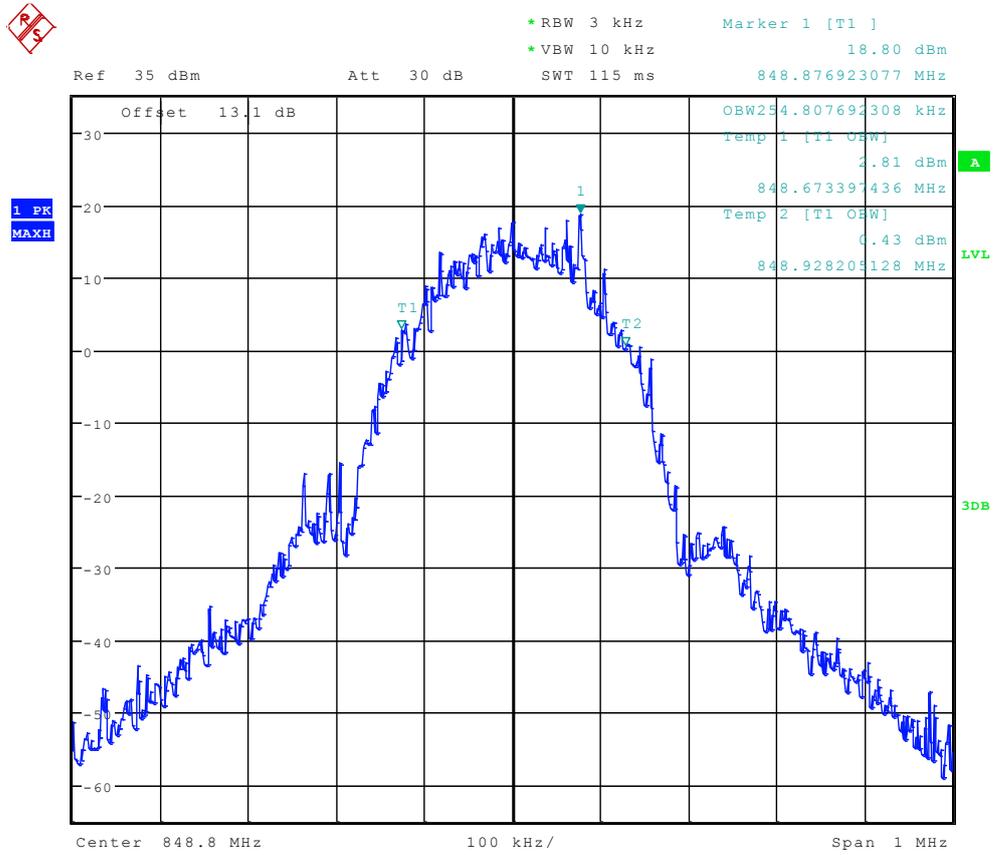
2.1.2 Channel = M



Date: 6.JUN.2012 09:17:29



2.1.3 Channel = T



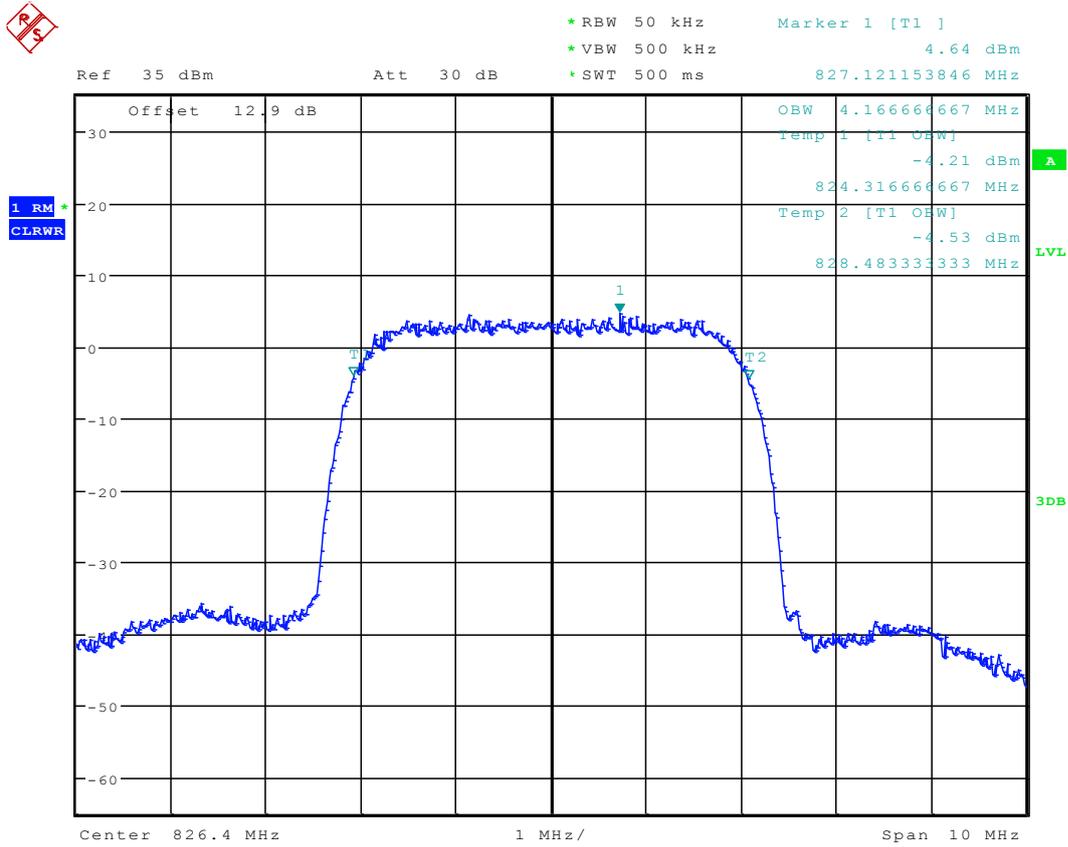
Date: 6.JUN.2012 09:17:42



3 For WCDMA Band 5

3.1 Test Mode=TM1

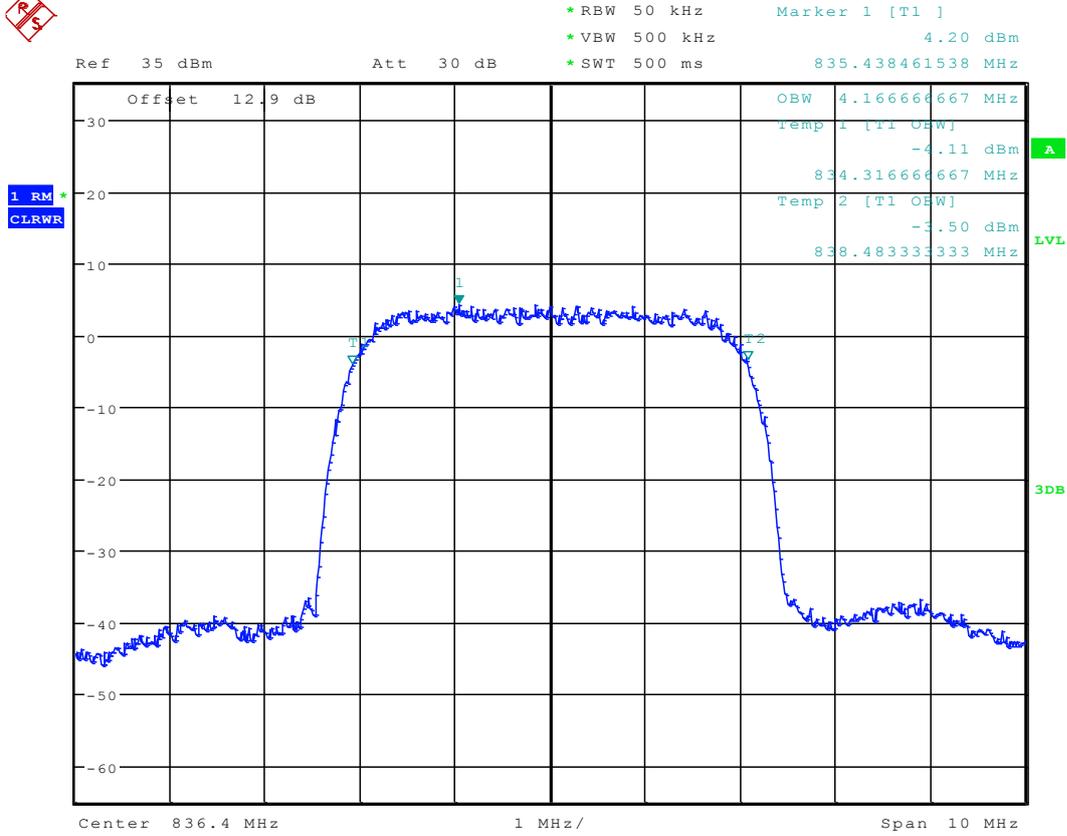
3.1.1 Channel = B



Date: 21.SEP.2012 09:21:41



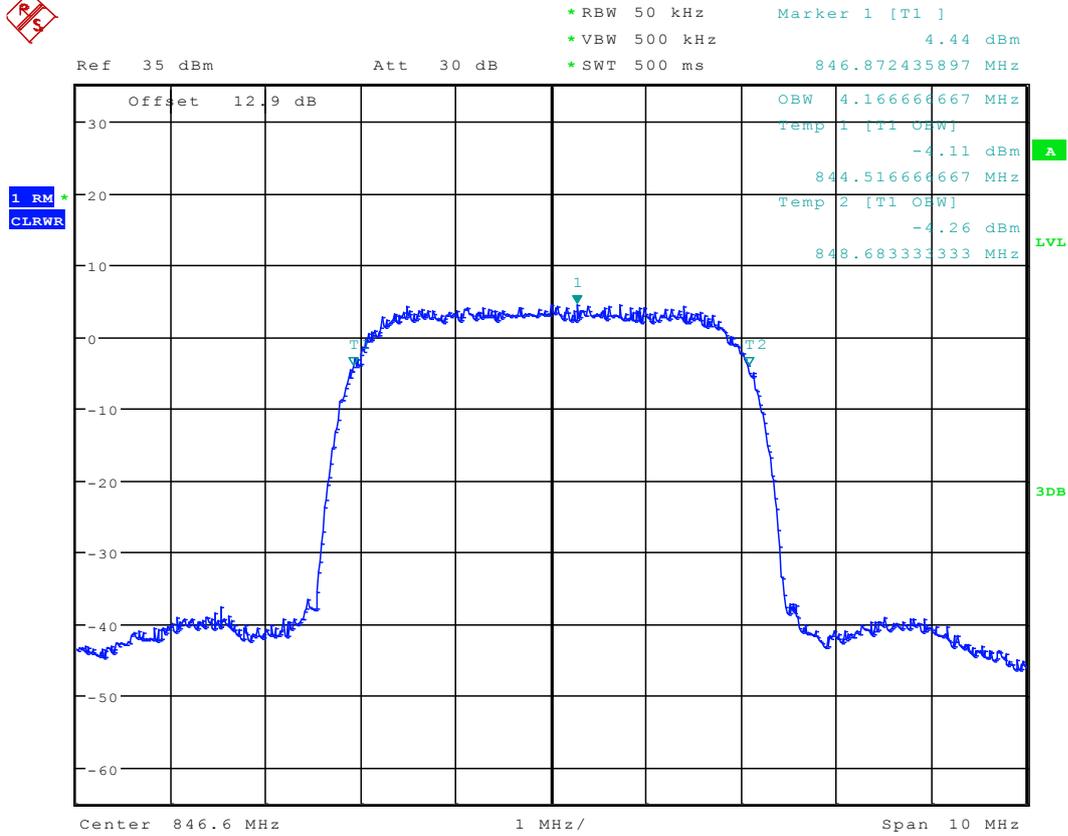
3.1.2 Channel = M



Date: 21.SEP.2012 09:21:55



3.1.3 Channel = T



Date: 21.SEP.2012 09:22:09



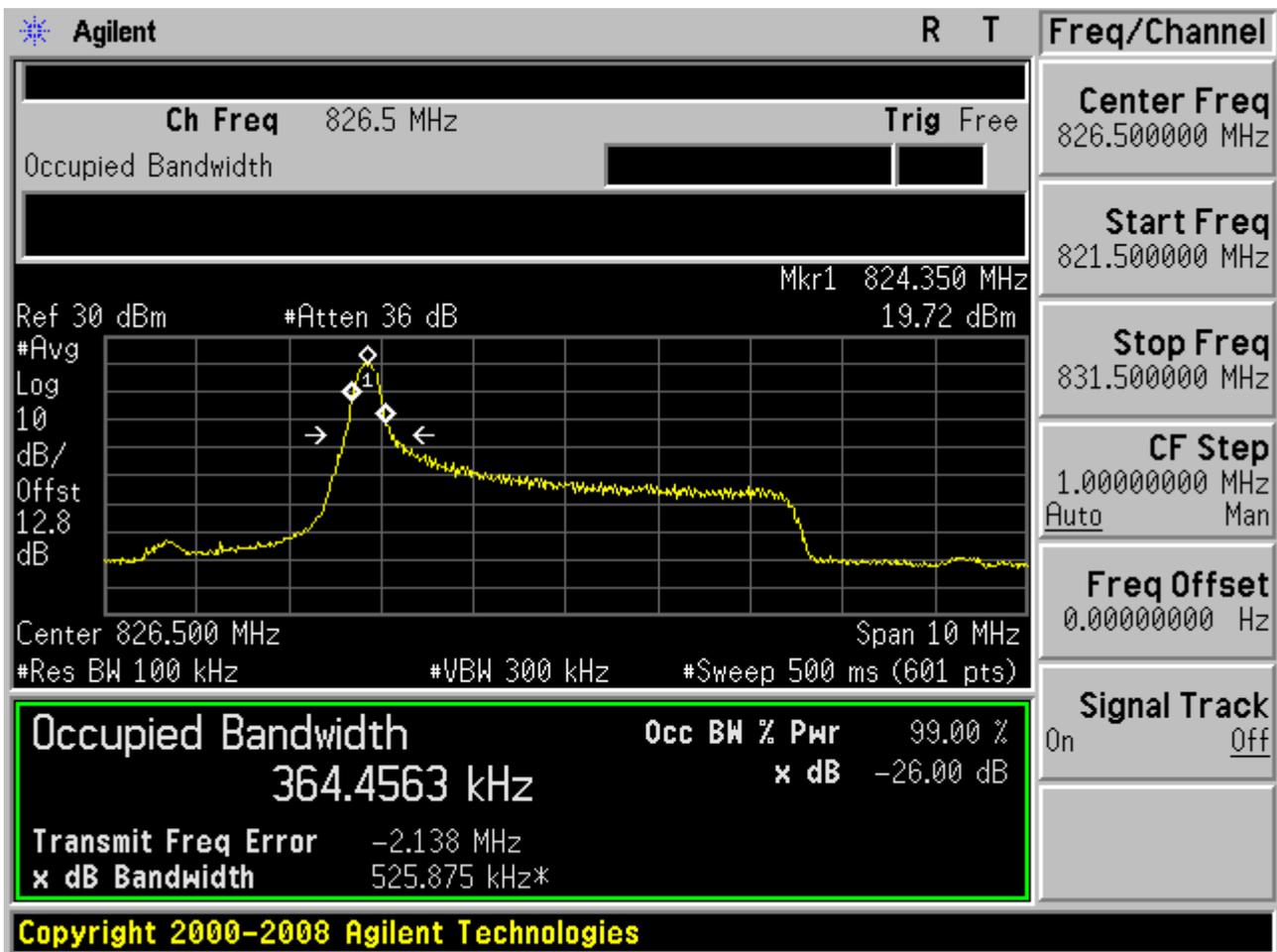
4 For LTE Band 5

4.1 Test Mode=TM6

4.1.1 Channel Bandwidth = 5 MHz

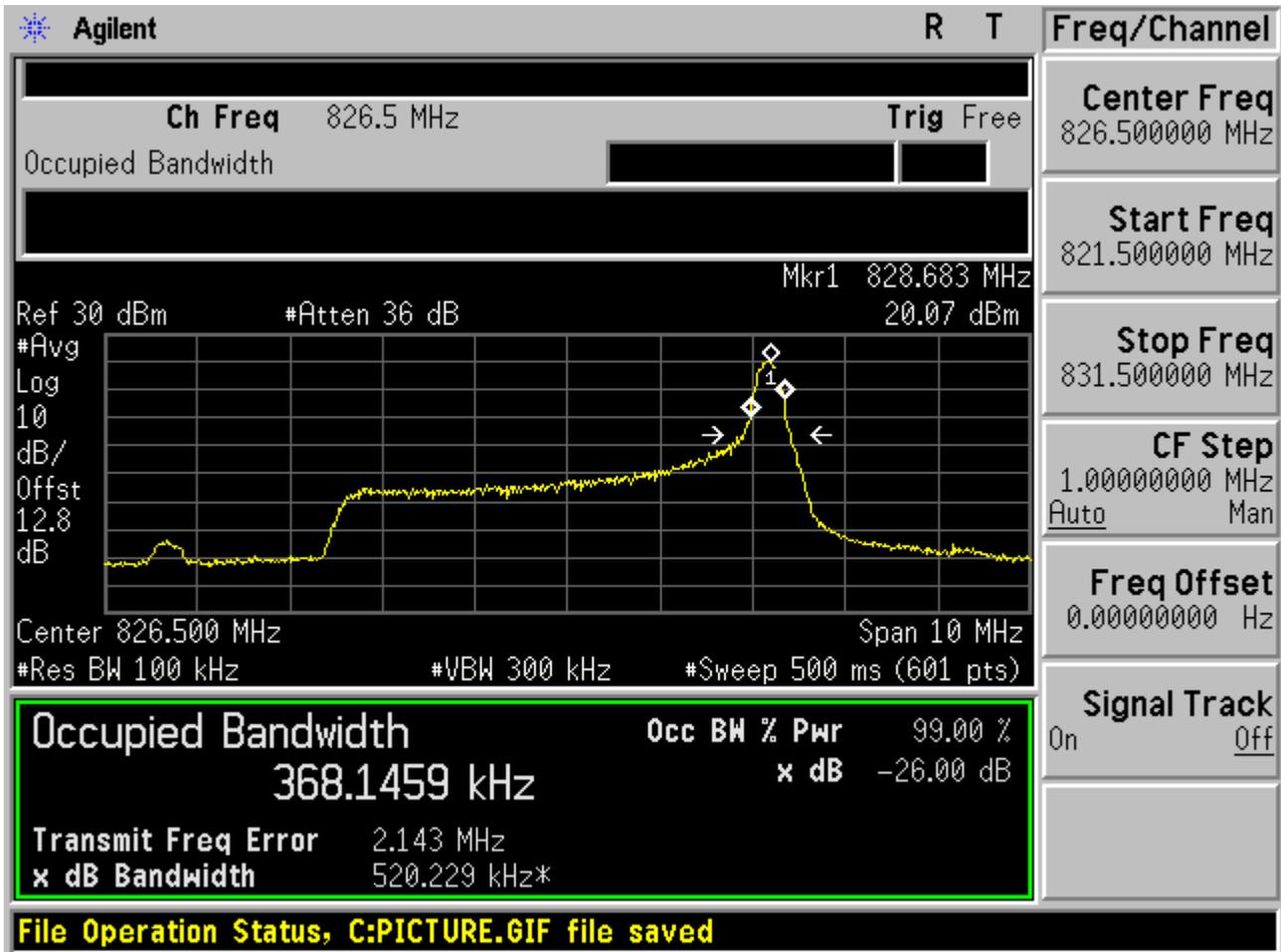
4.1.1.1 Channel = B

4.1.1.1.1 QPSK/1RB # 0



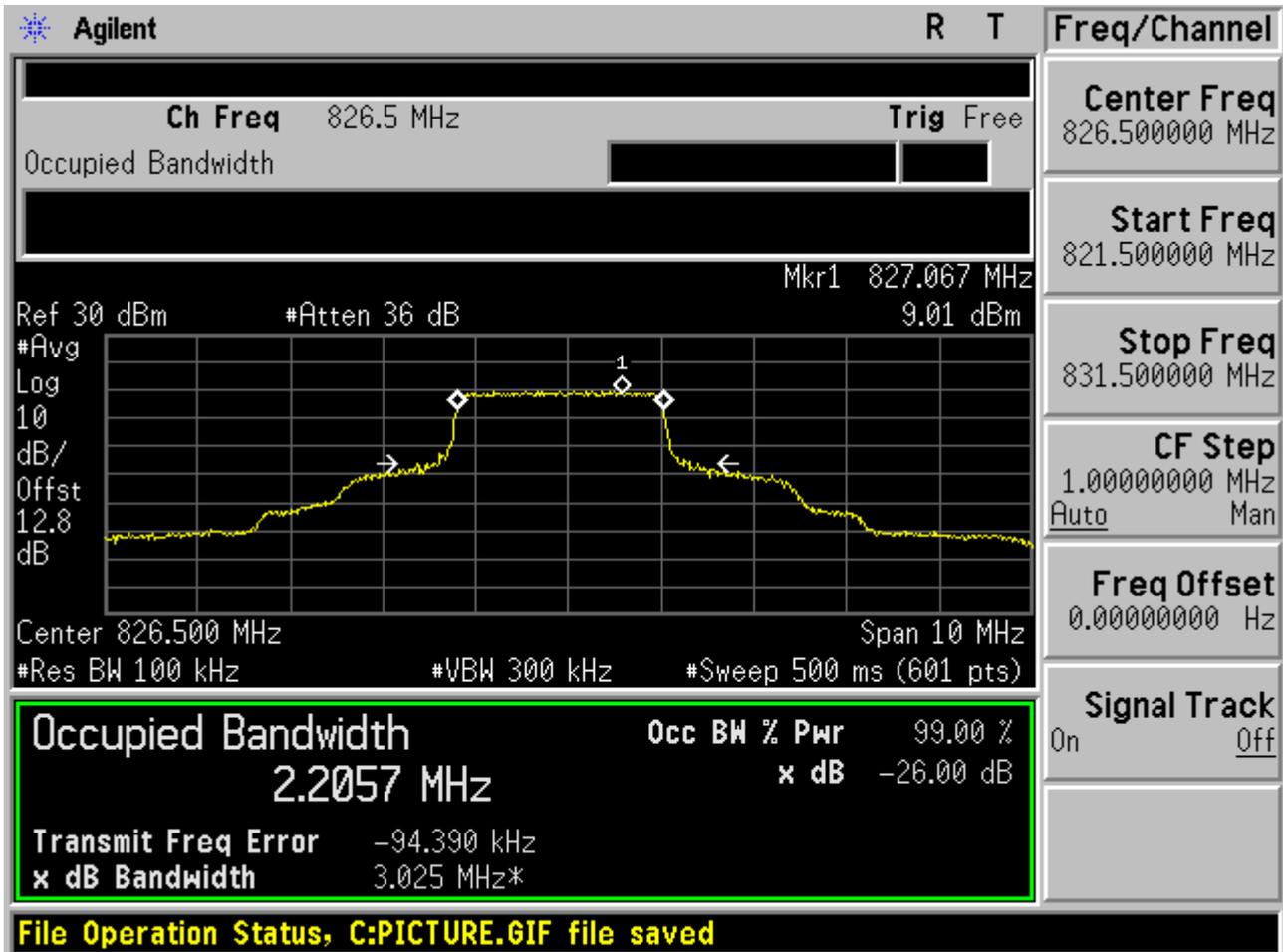


4.1.1.1.2 QPSK/1RB # max



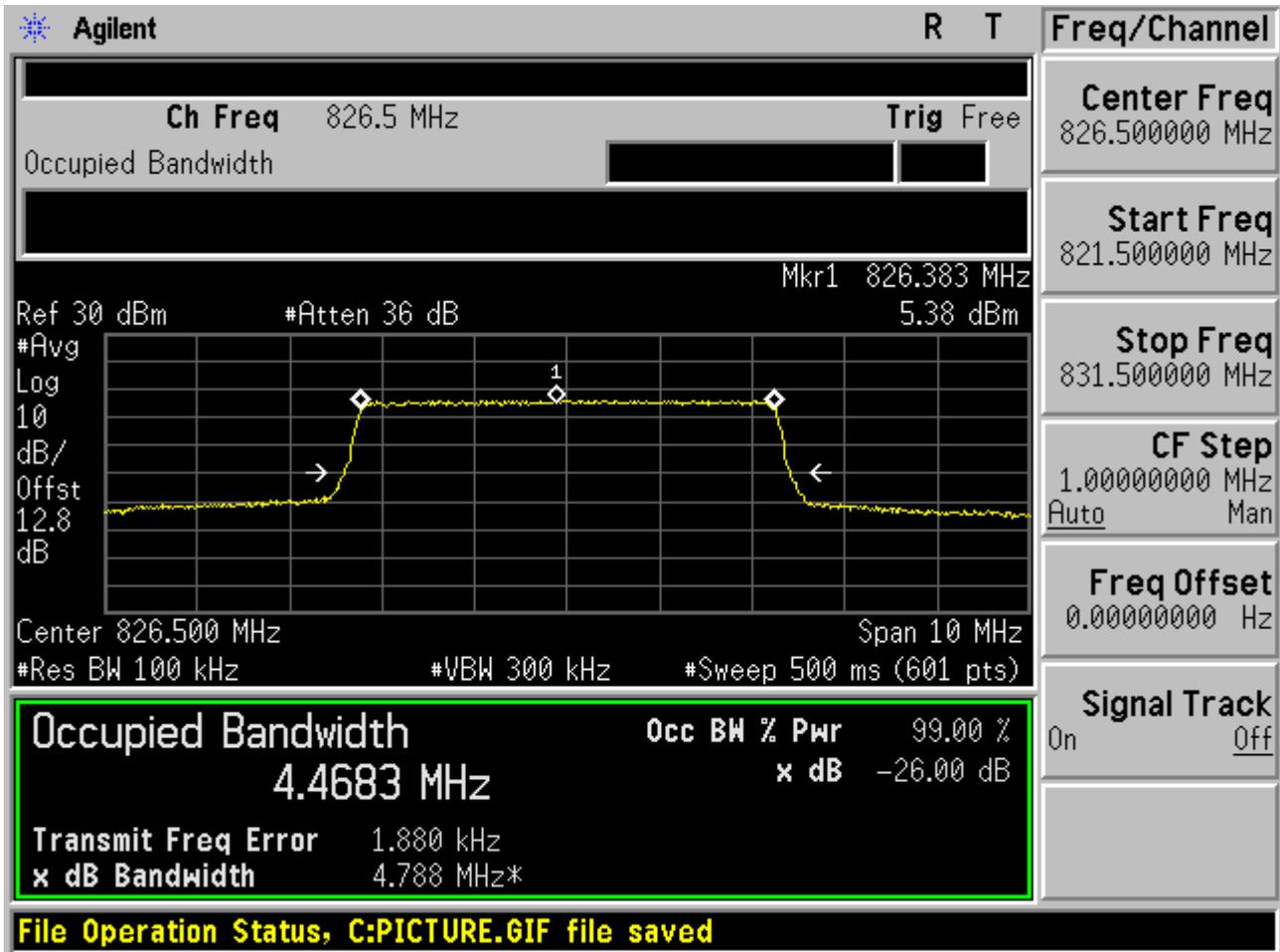


4.1.1.1.3 QPSK/non-1RB #mid/2





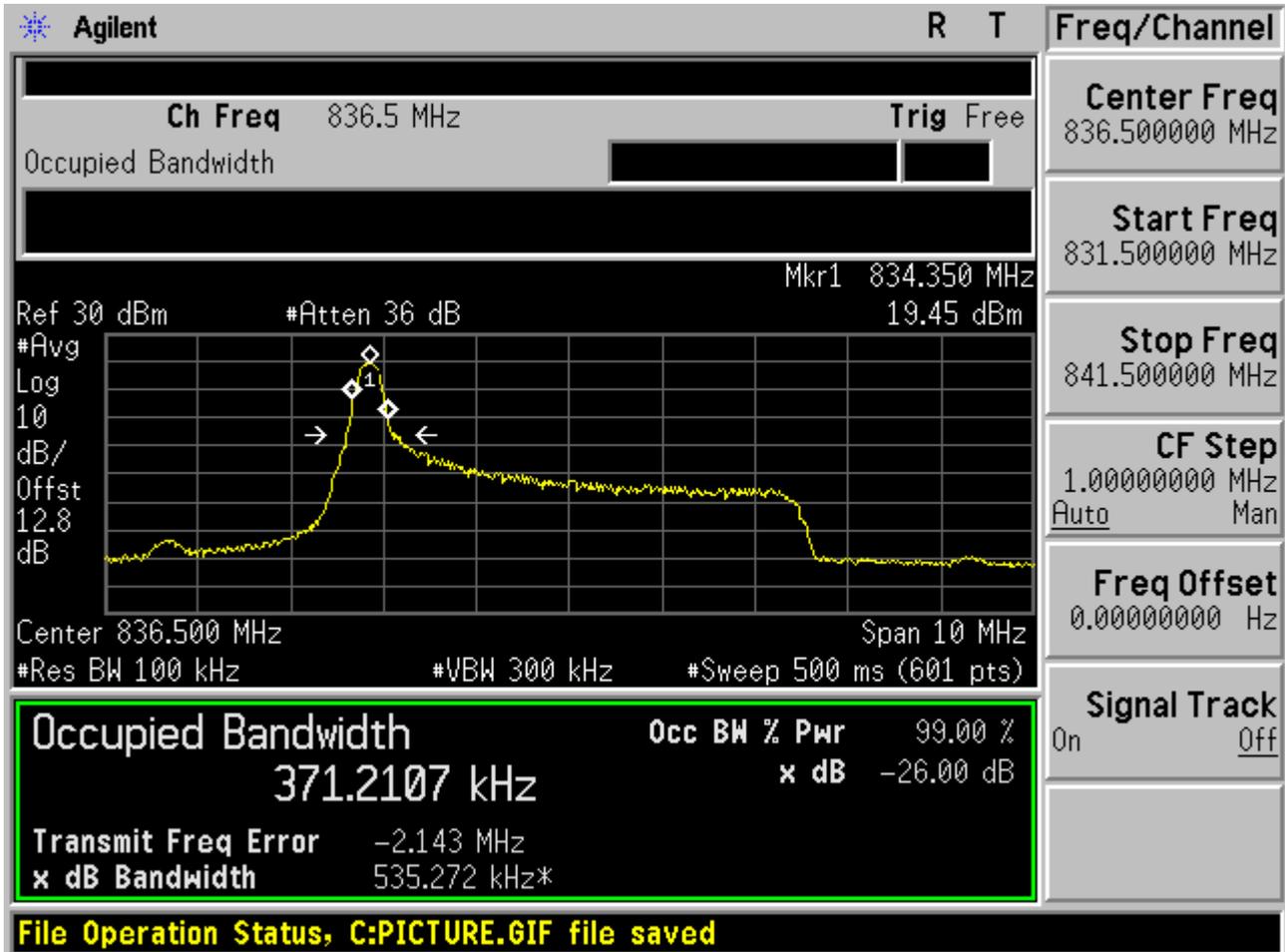
4.1.1.1.4 QPSK/full RBs





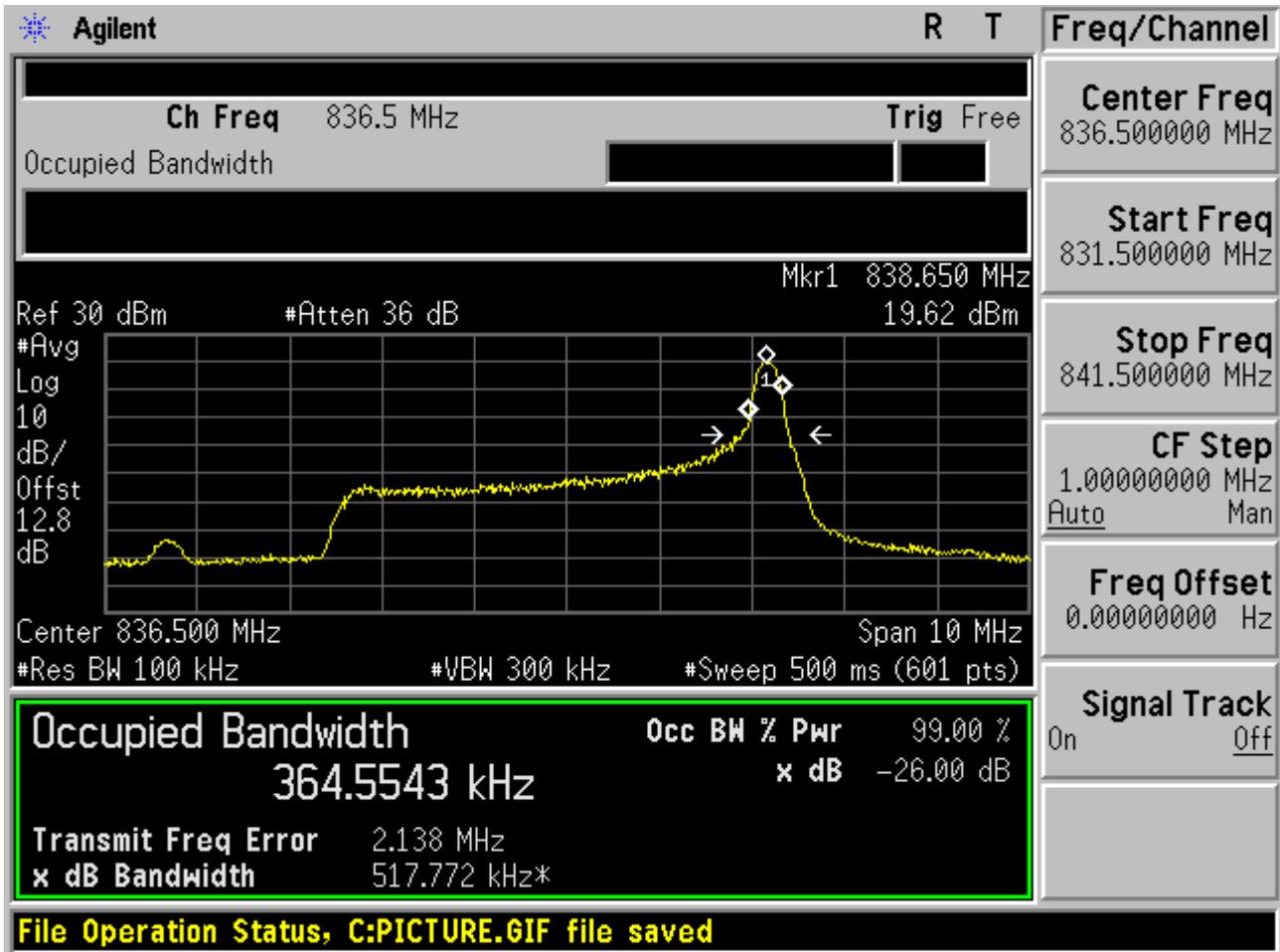
4.1.1.2 Channel =M

4.1.1.2.1 QPSK/1RB # 0



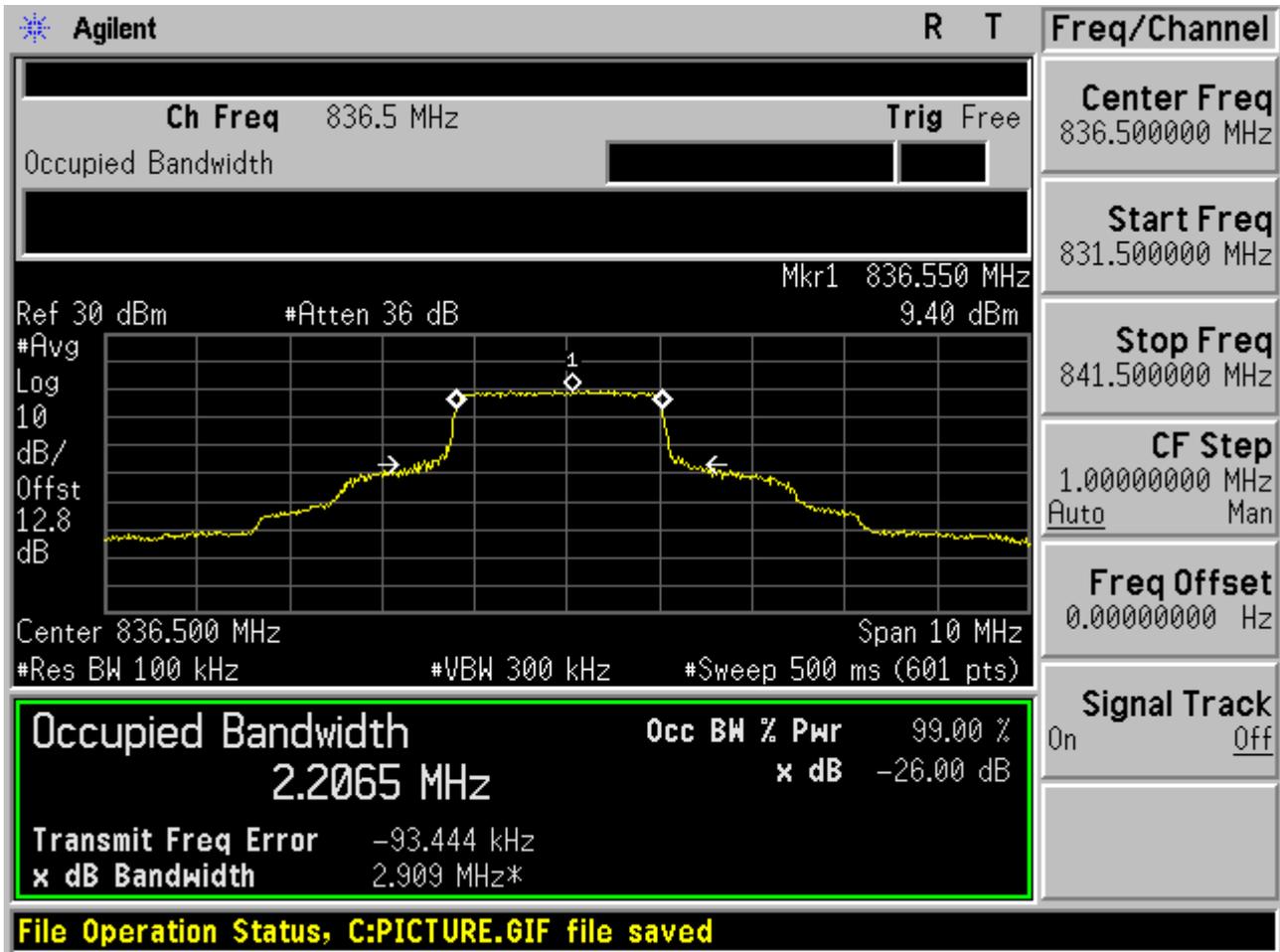


4.1.1.2.2 QPSK/1RB # max



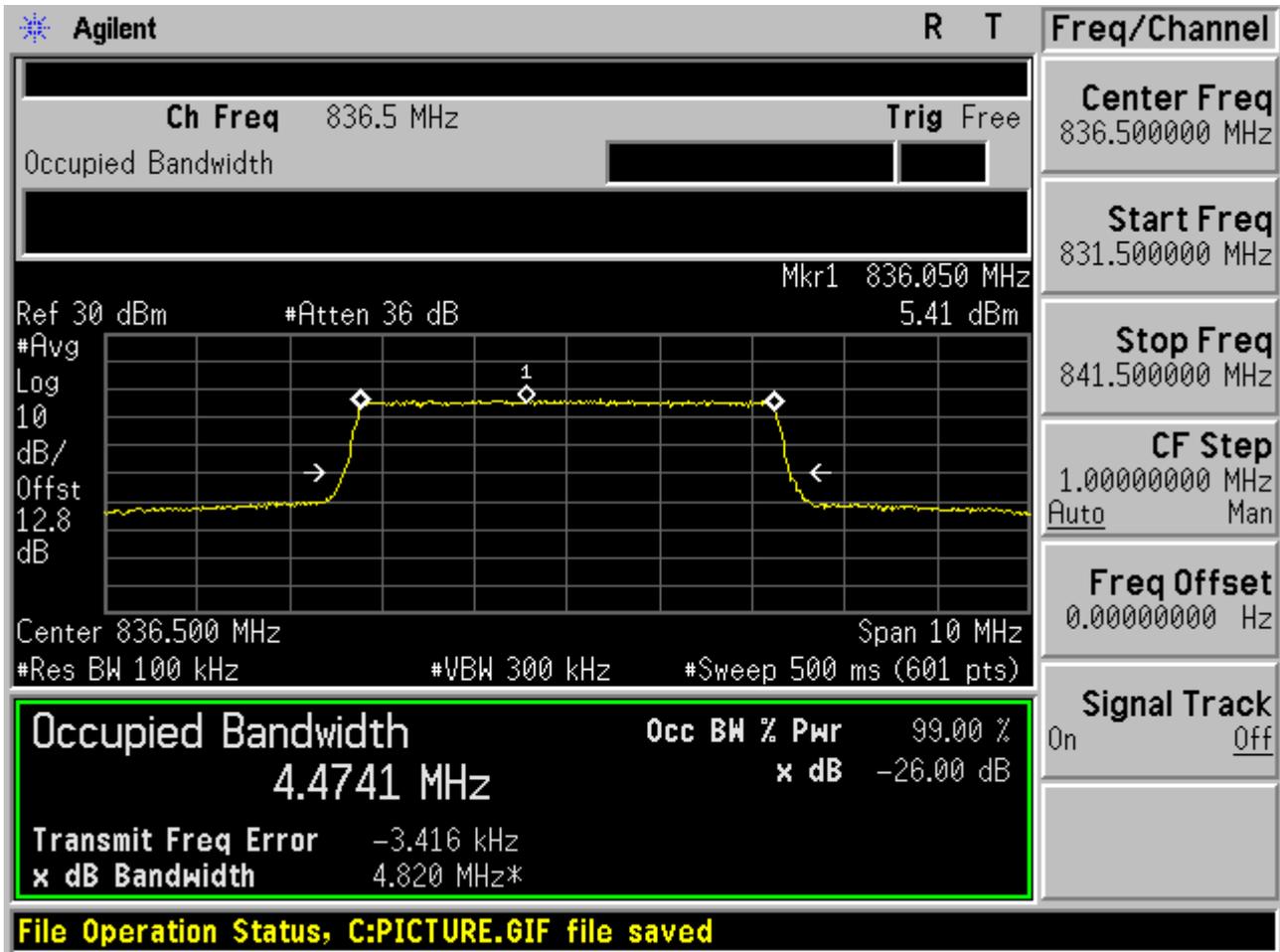


4.1.1.2.3 QPSK/non-1RB #mid/2





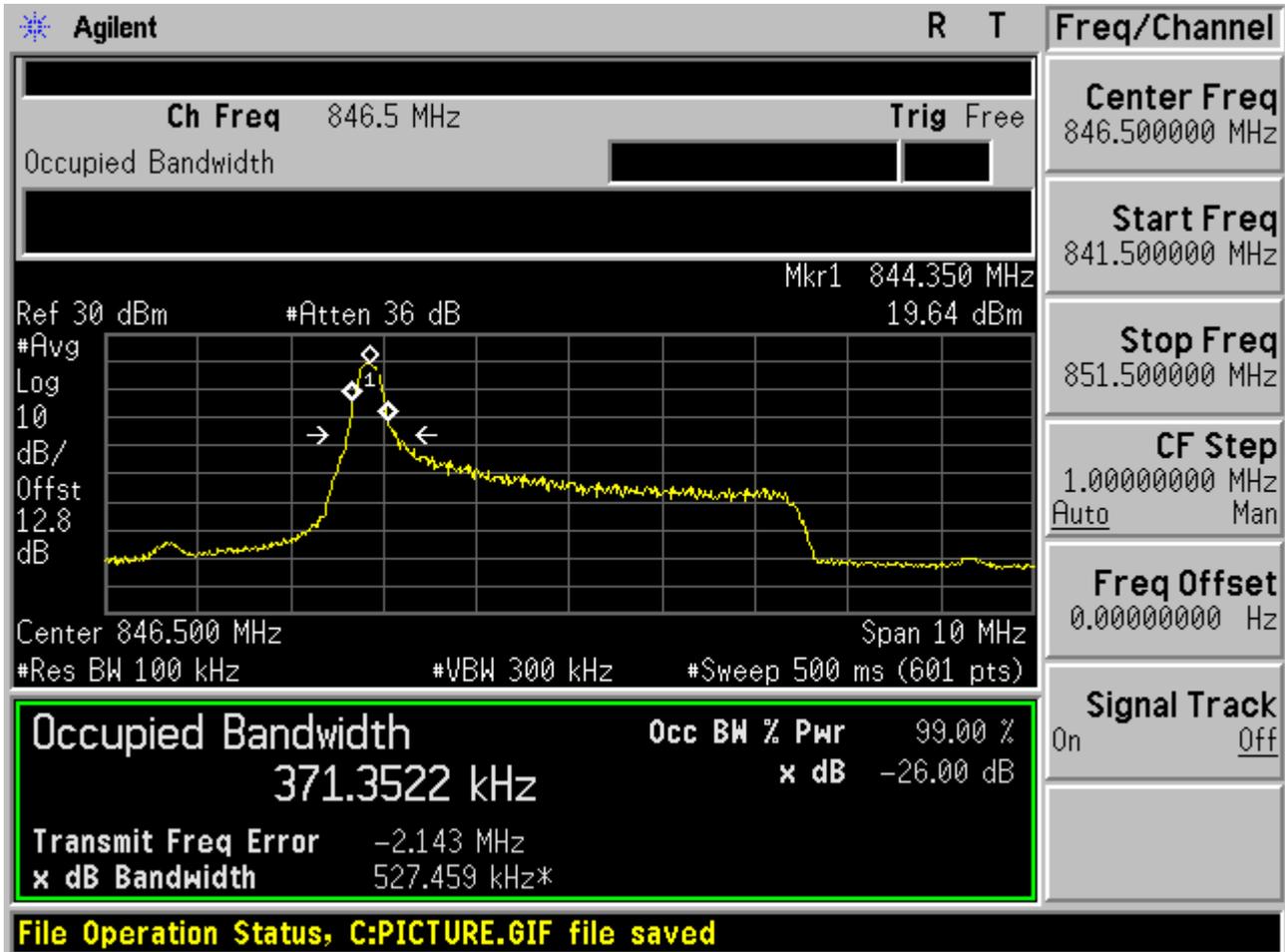
4.1.1.2.4 QPSK/full RBs





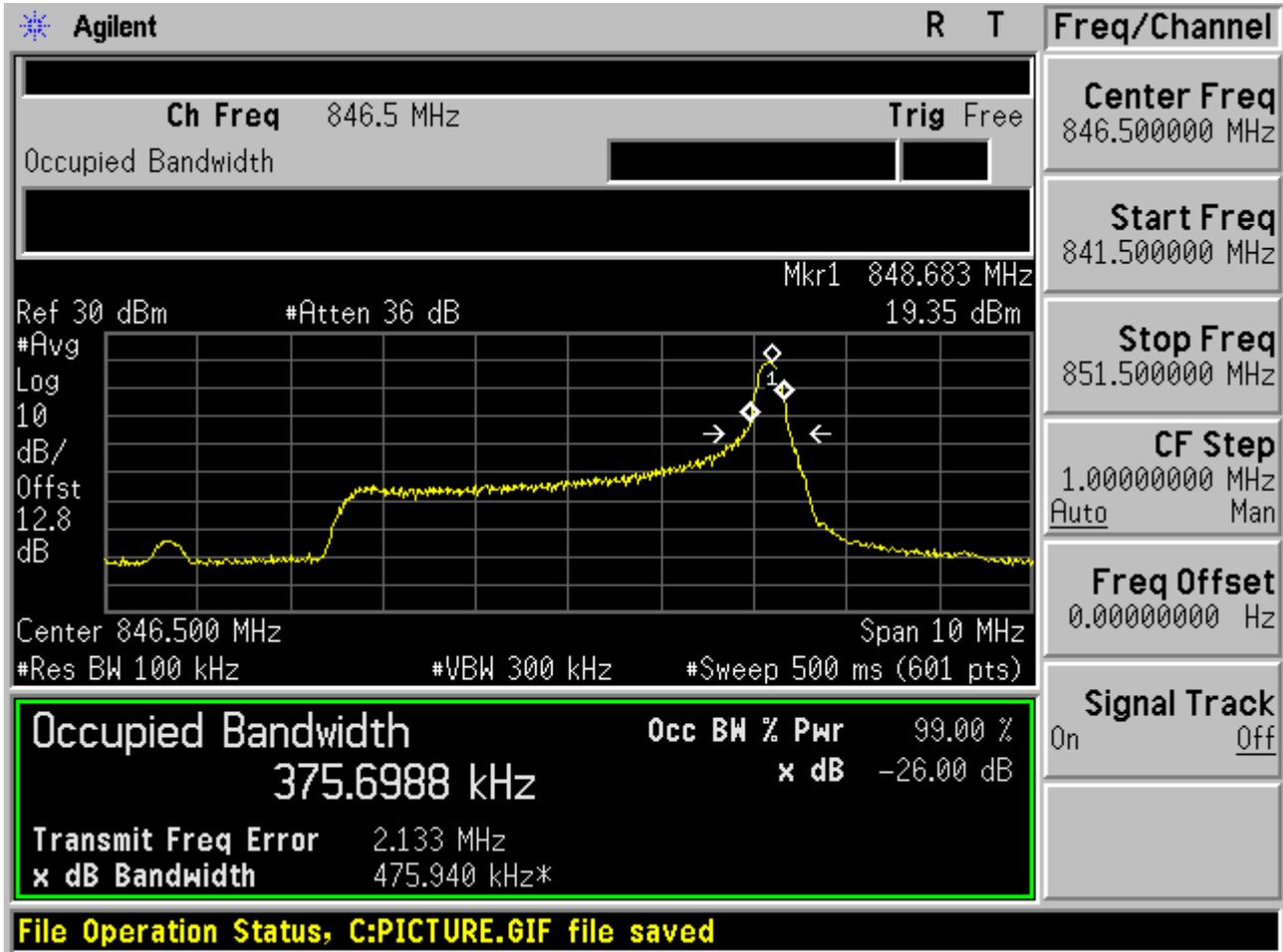
4.1.1.3 Channel = T

4.1.1.3.1 QPSK/1RB # 0



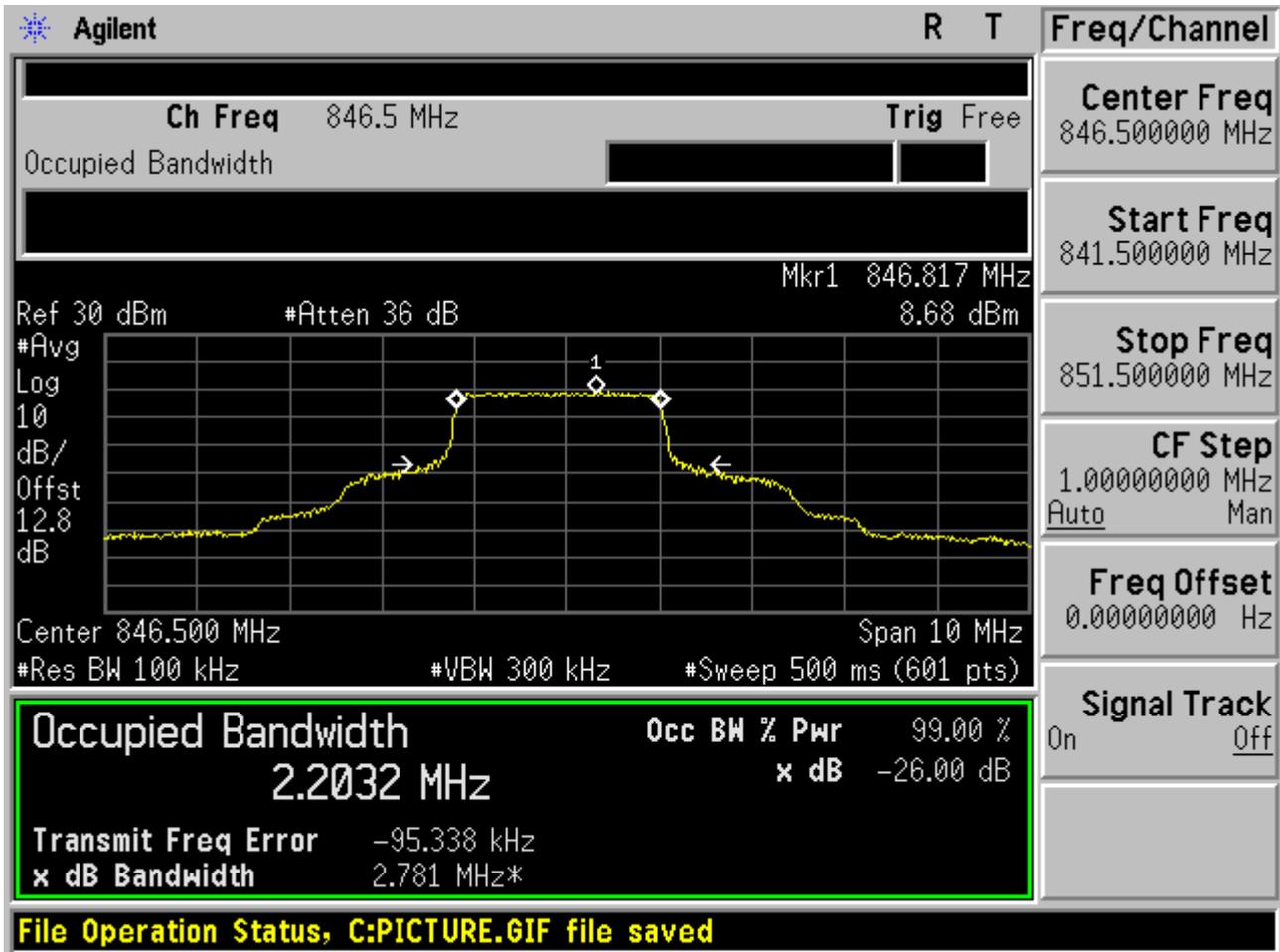


4.1.1.3.2 QPSK/1RB # max



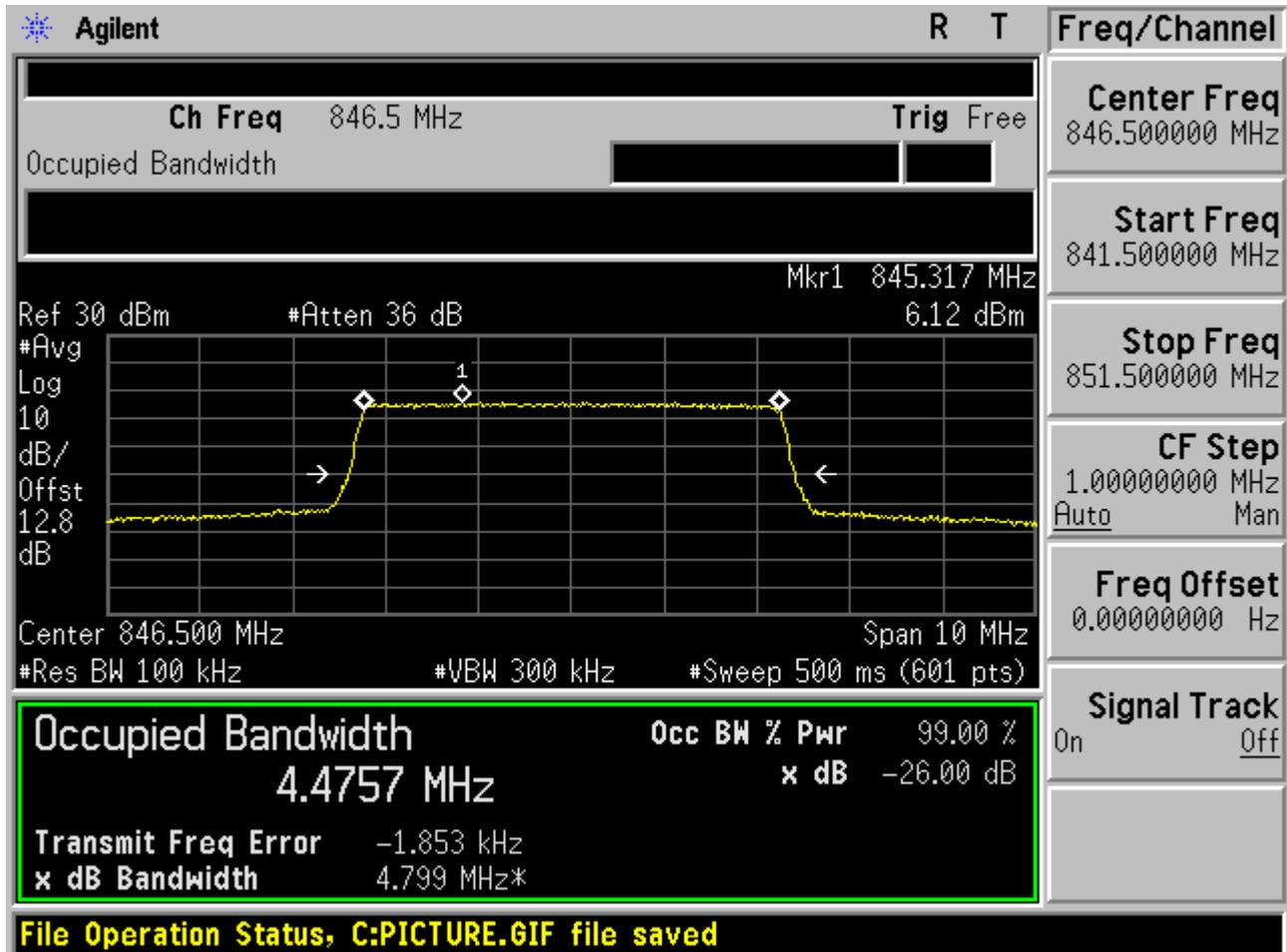


4.1.1.3.3 QPSK/non-1RB #mid/2





4.1.1.3.4 QPSK/full RBs

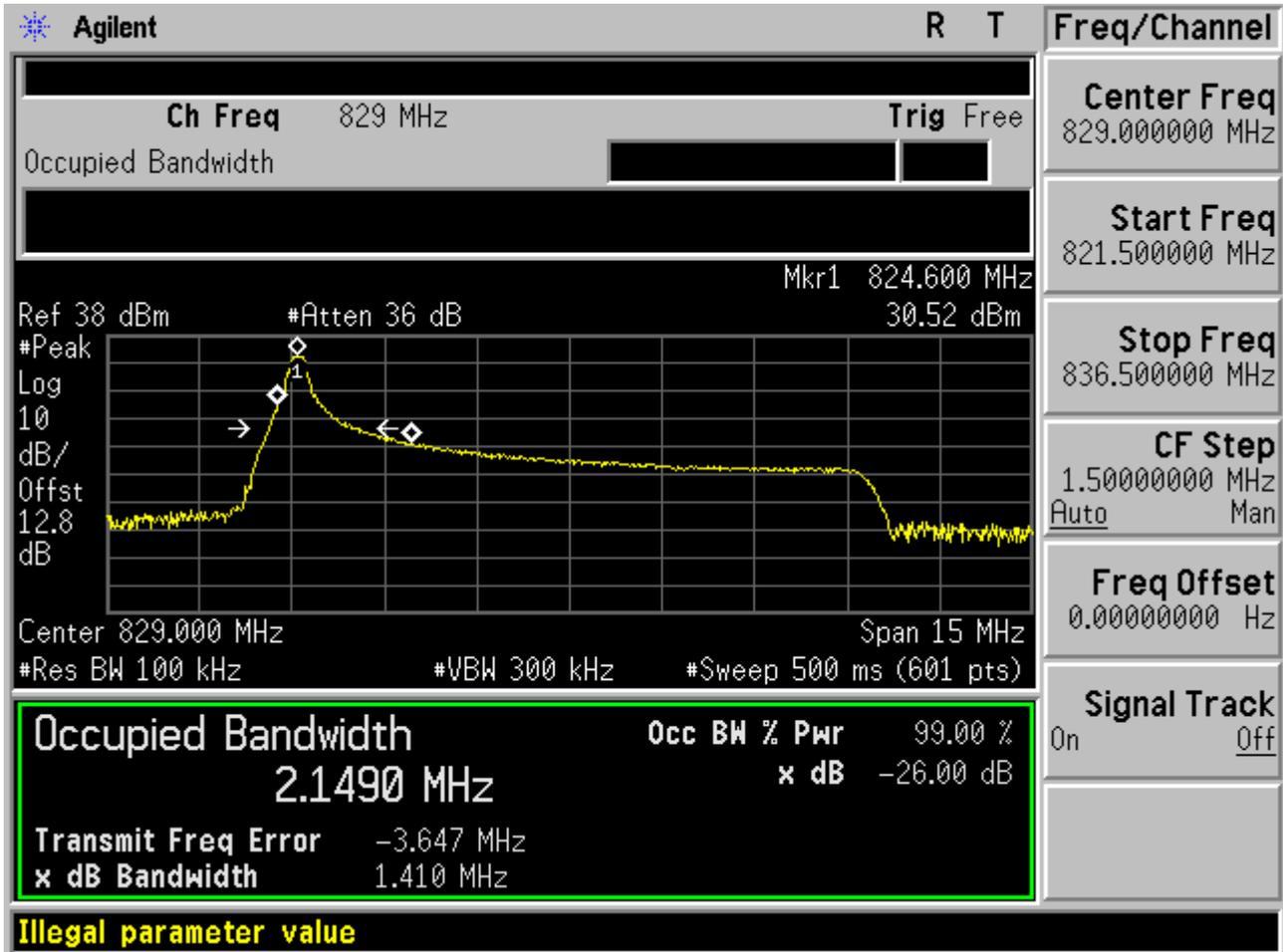




4.1.2 Channel Bandwidth = 10 MHz

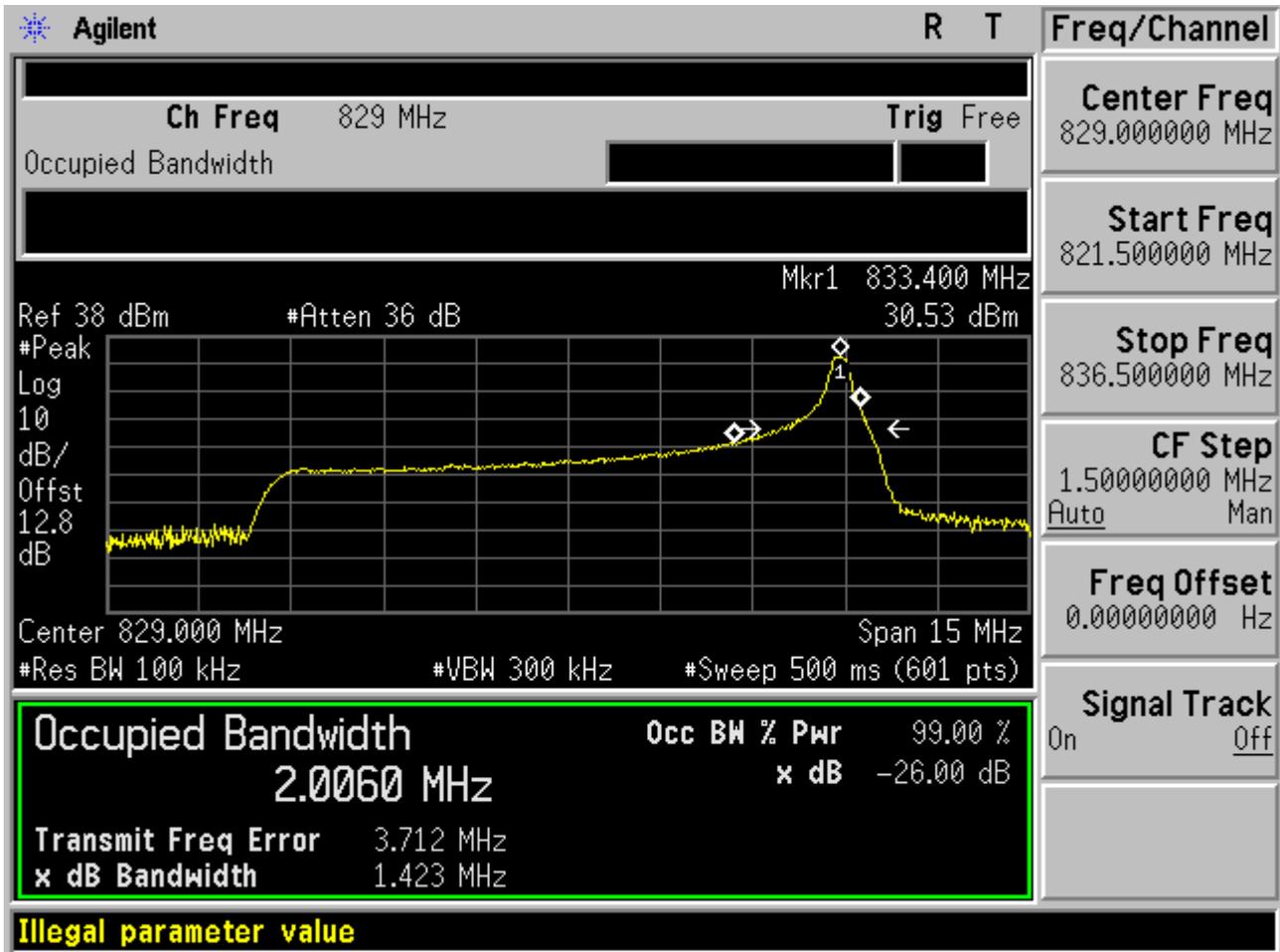
4.1.2.1 Channel = B

4.1.2.1.1 QPSK/1RB # 0



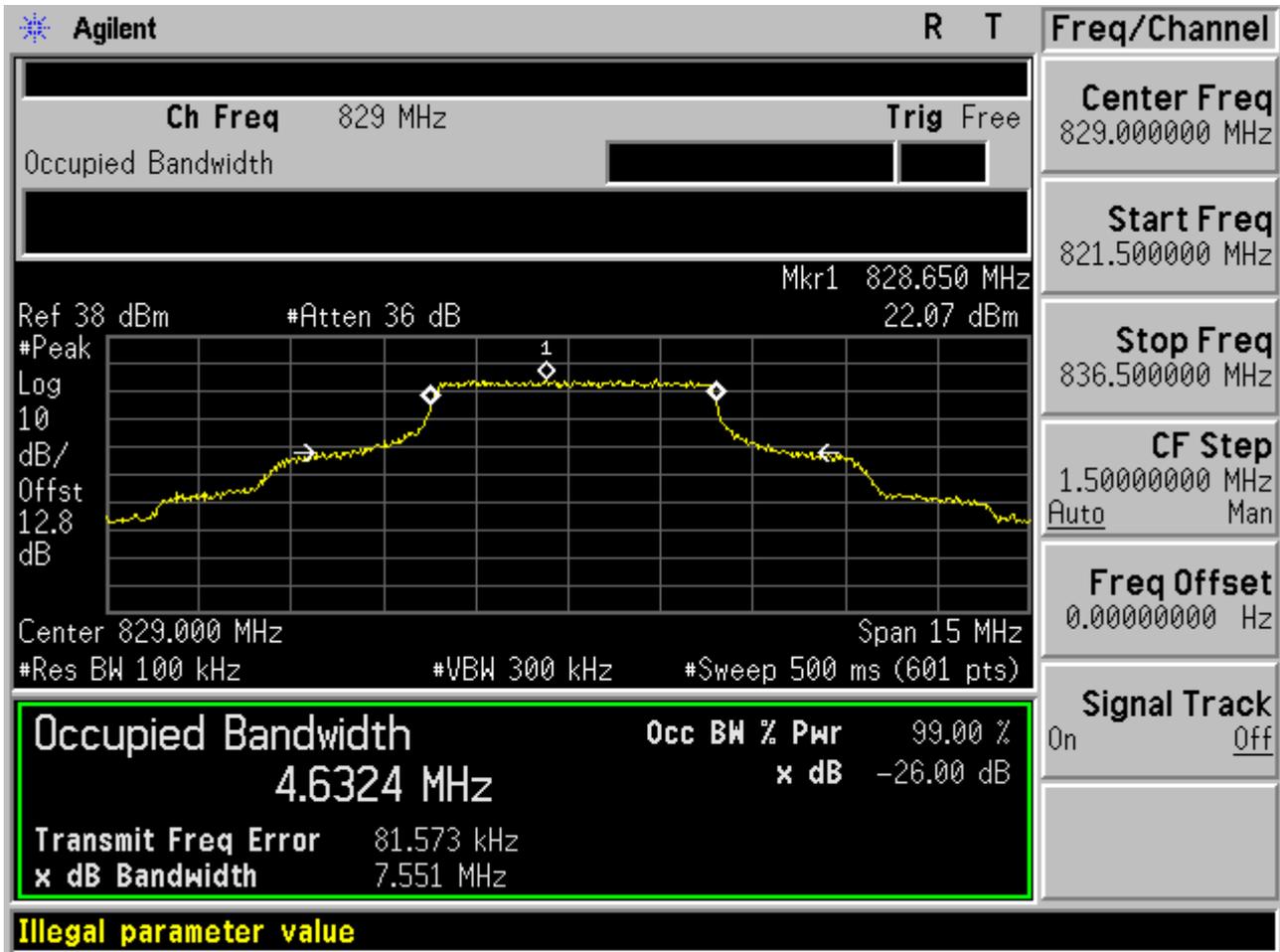


4.1.2.1.2 QPSK/1RB # max





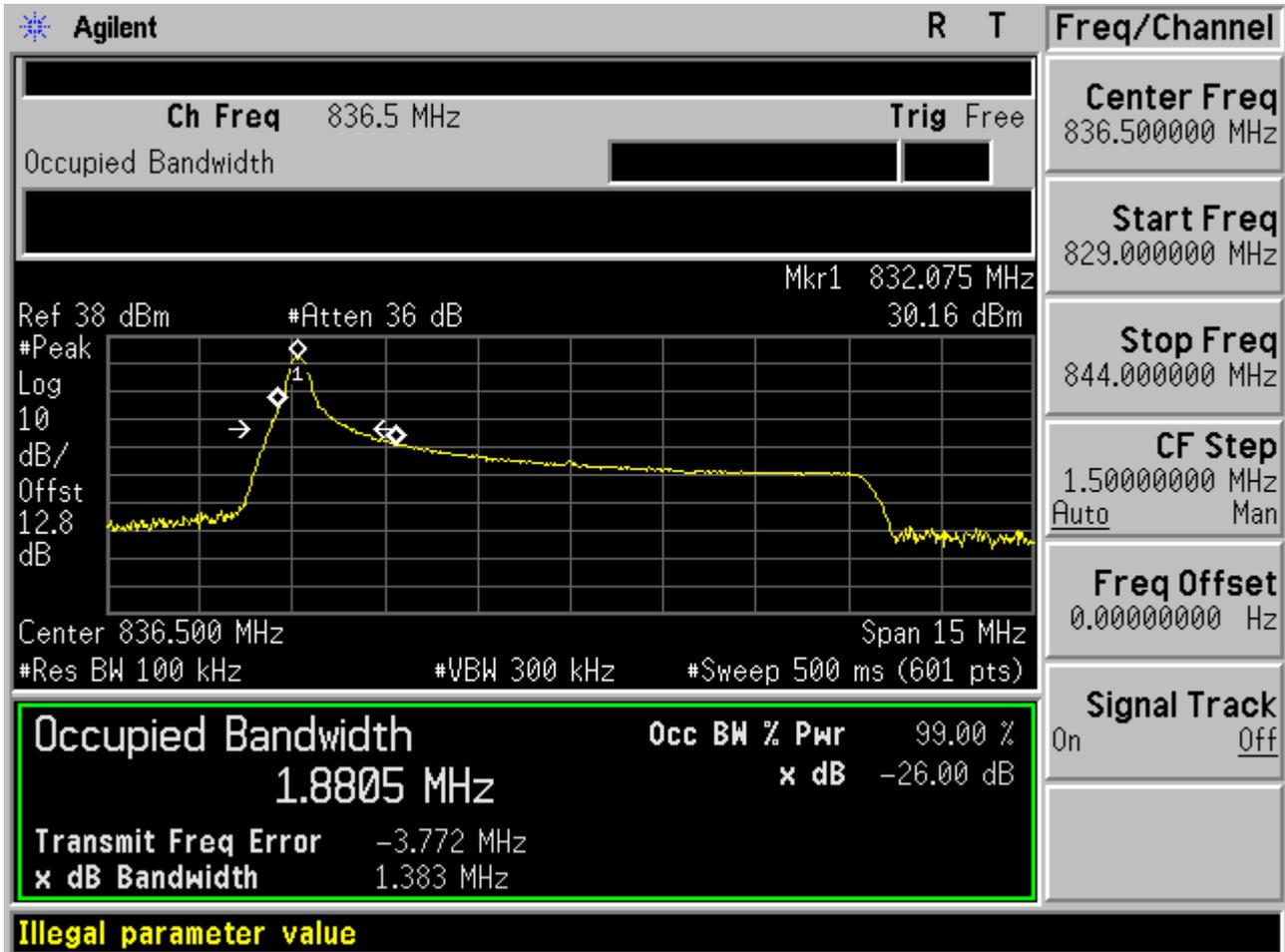
4.1.2.1.3 QPSK/non-1RB #mid/2





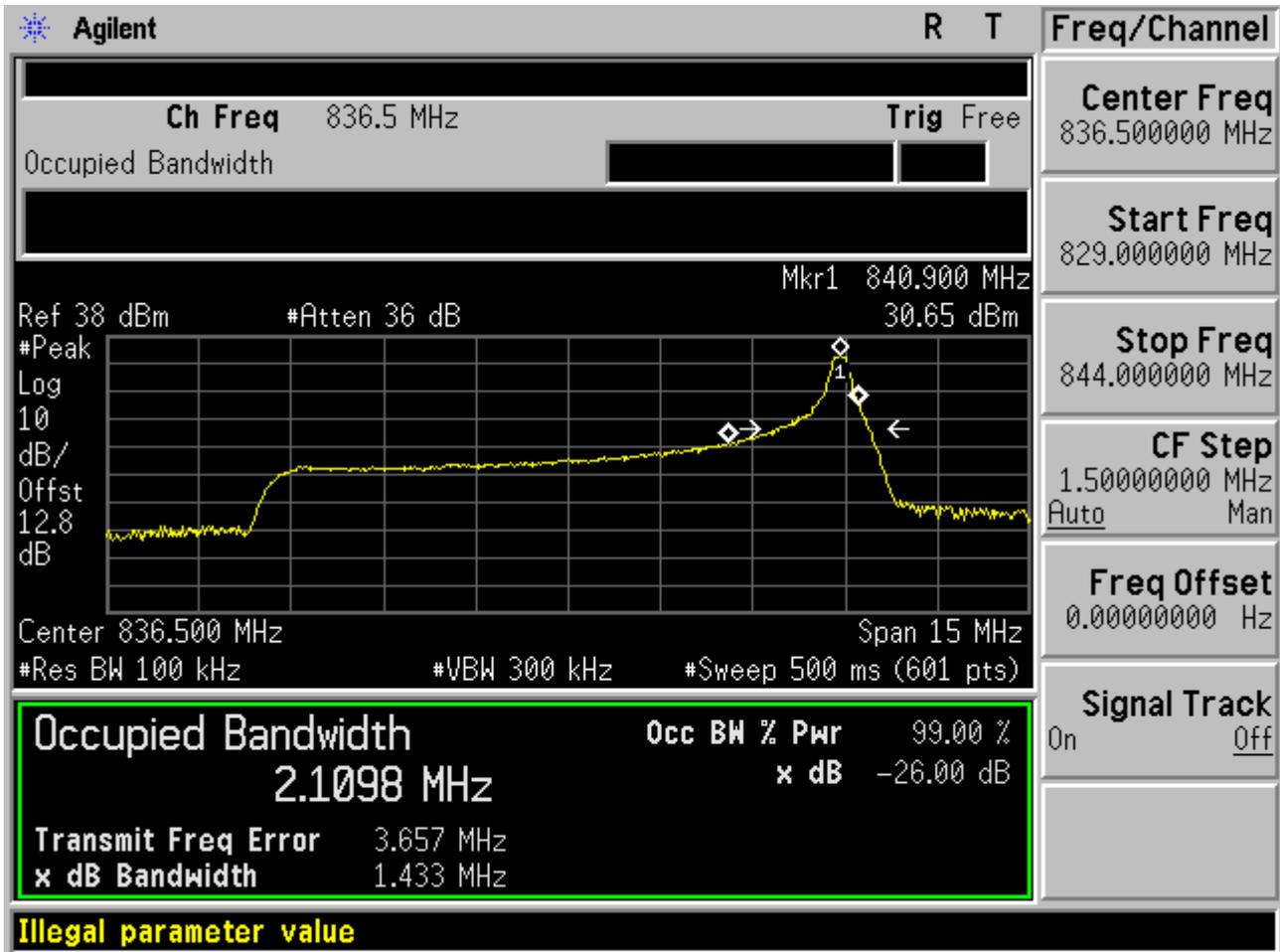
4.1.2.2 Channel =M

4.1.2.2.1 QPSK/1RB # 0



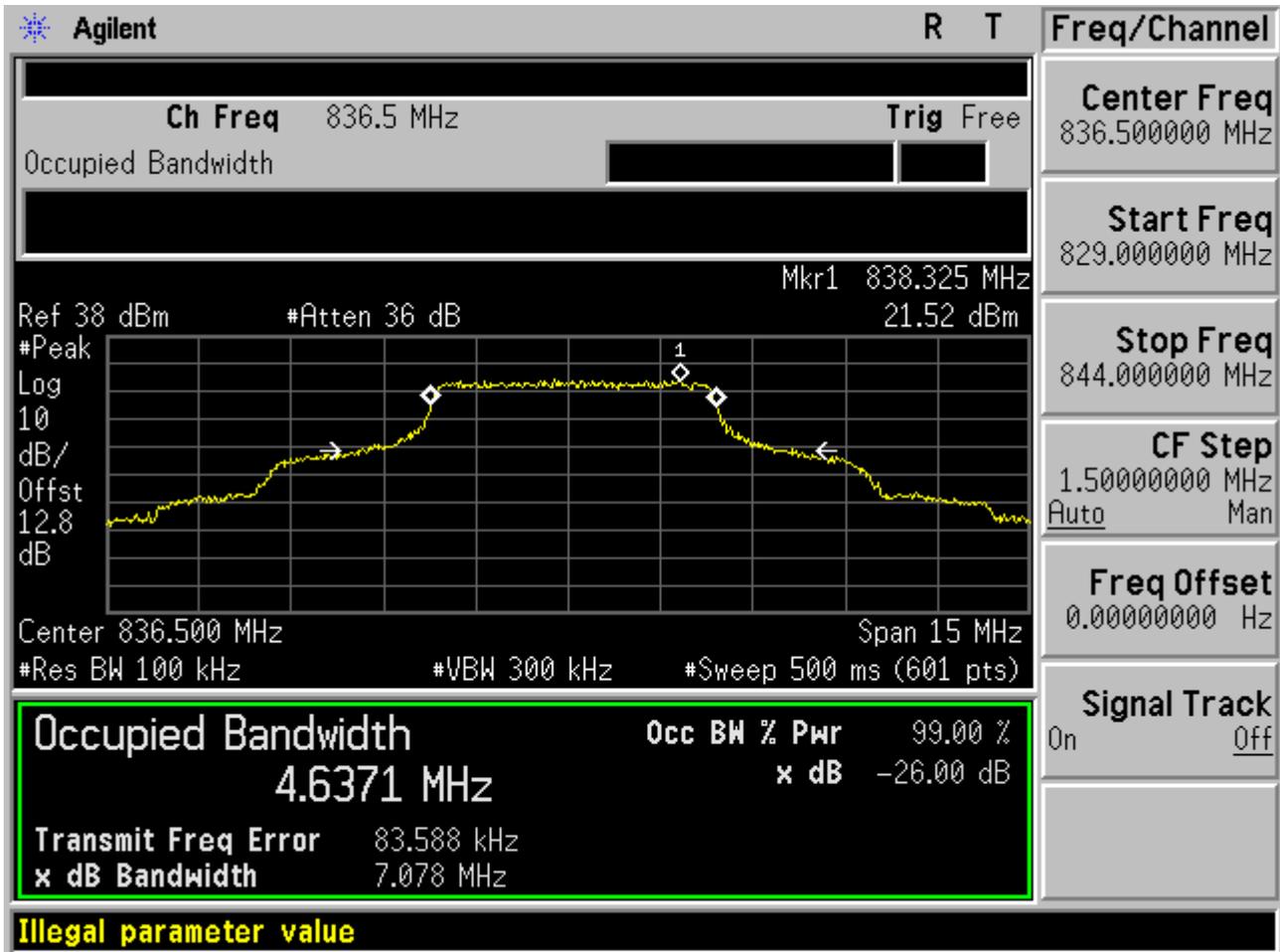


4.1.2.2.2 QPSK/1RB # max



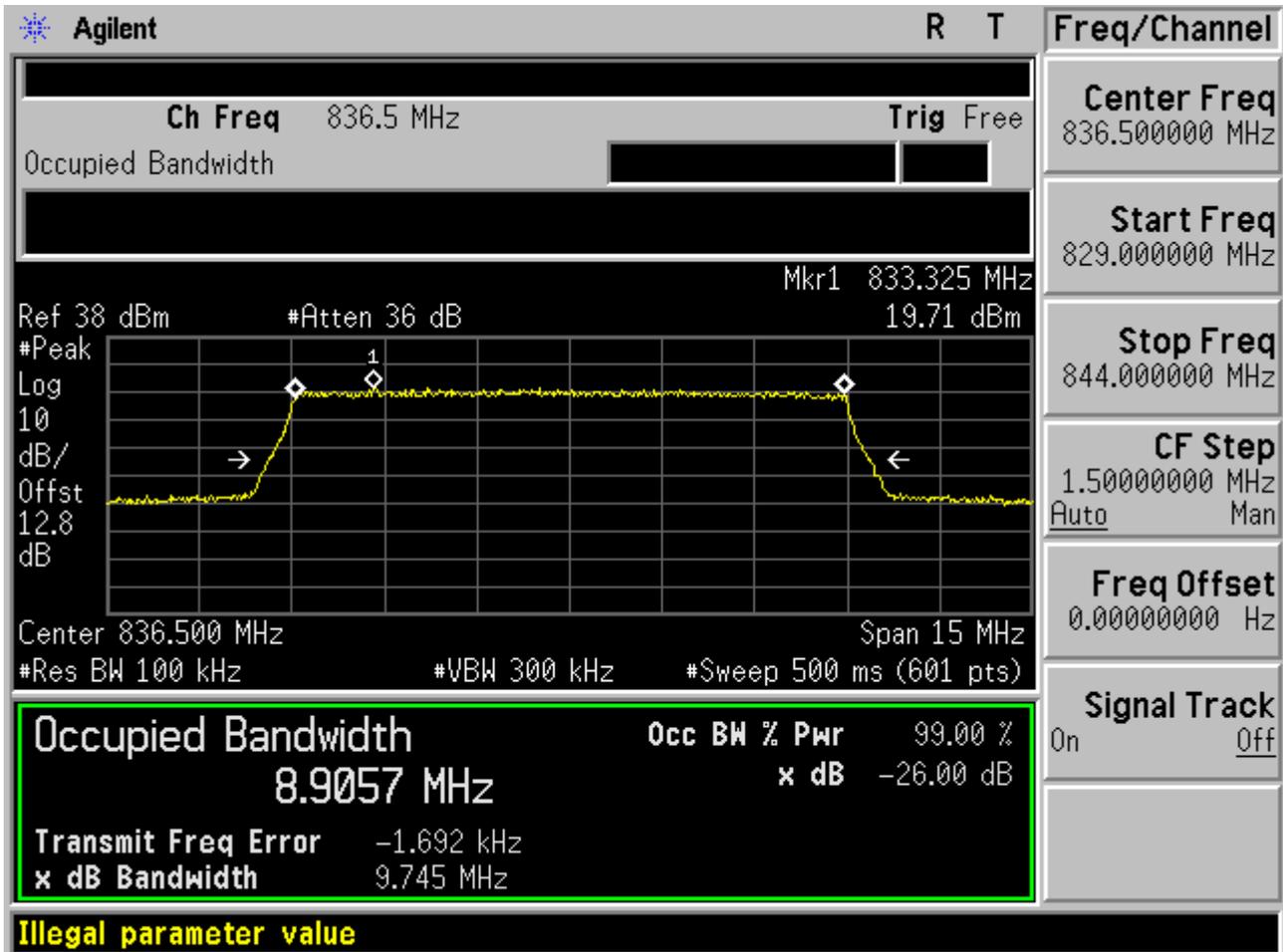


4.1.2.2.3 QPSK/non-1RB #mid/2





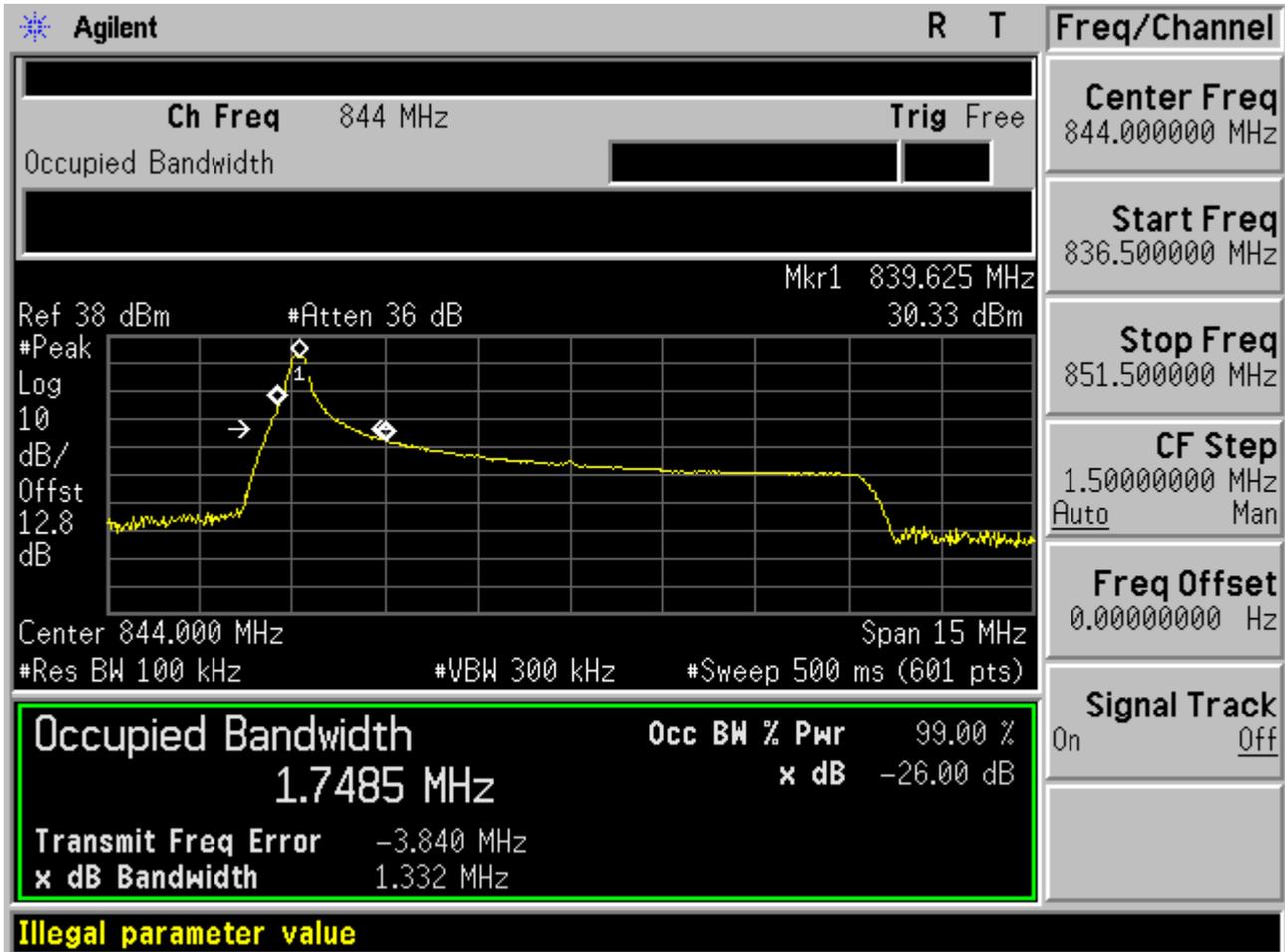
4.1.2.2.4 QPSK/full RBs





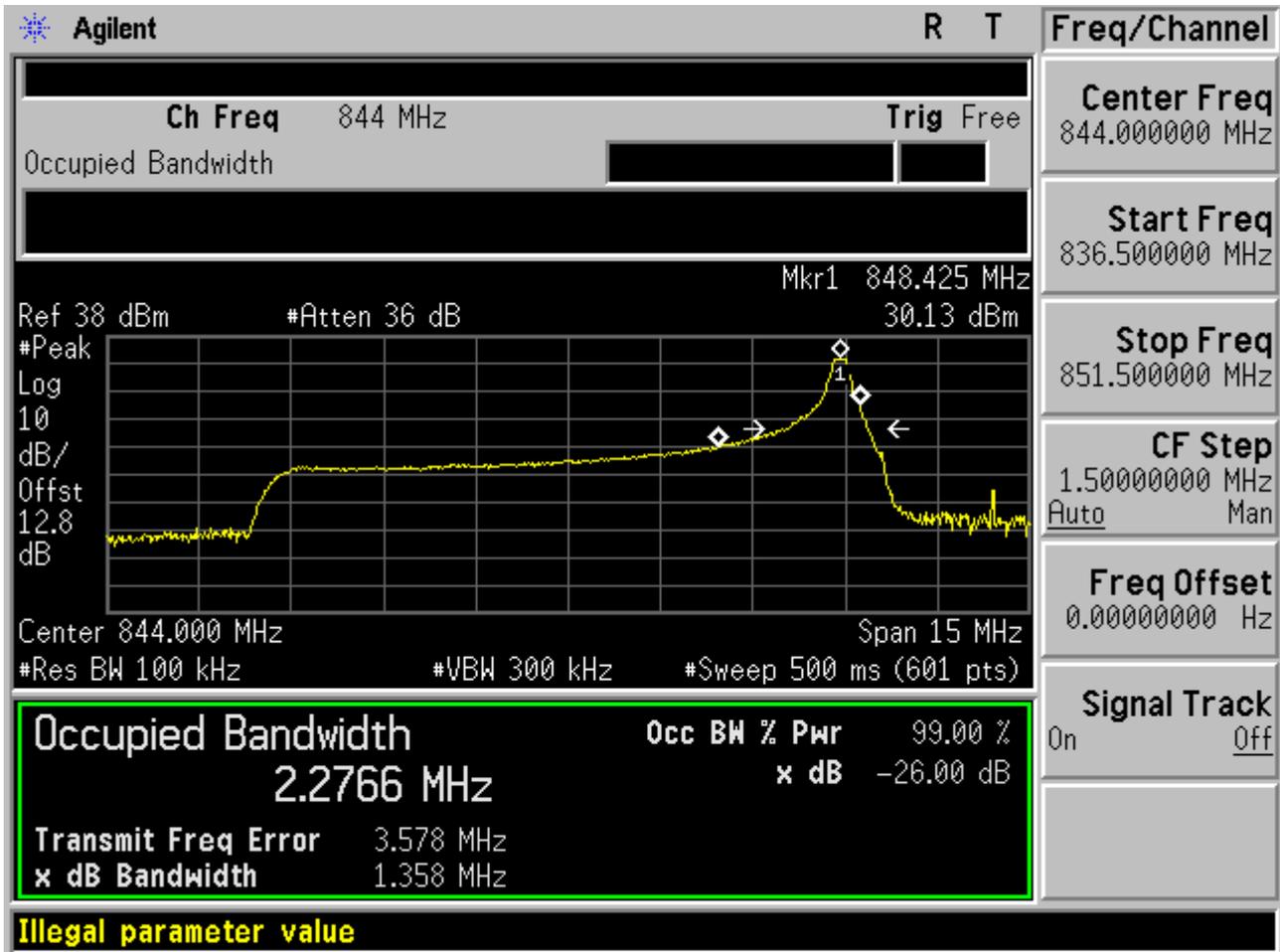
4.1.2.3 Channel = T

4.1.2.3.1 QPSK/1RB # 0



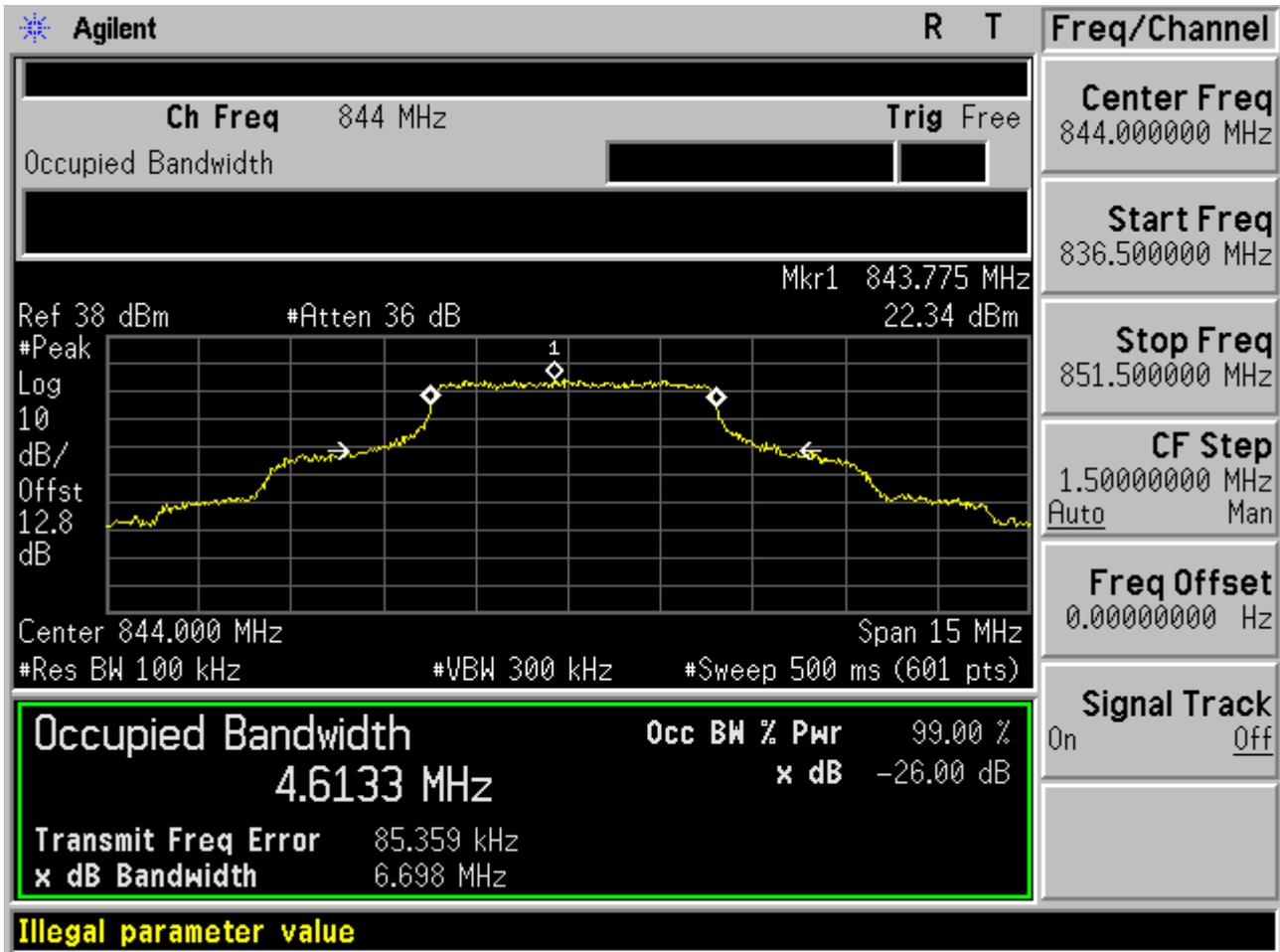


4.1.2.3.2 QPSK/1RB # max



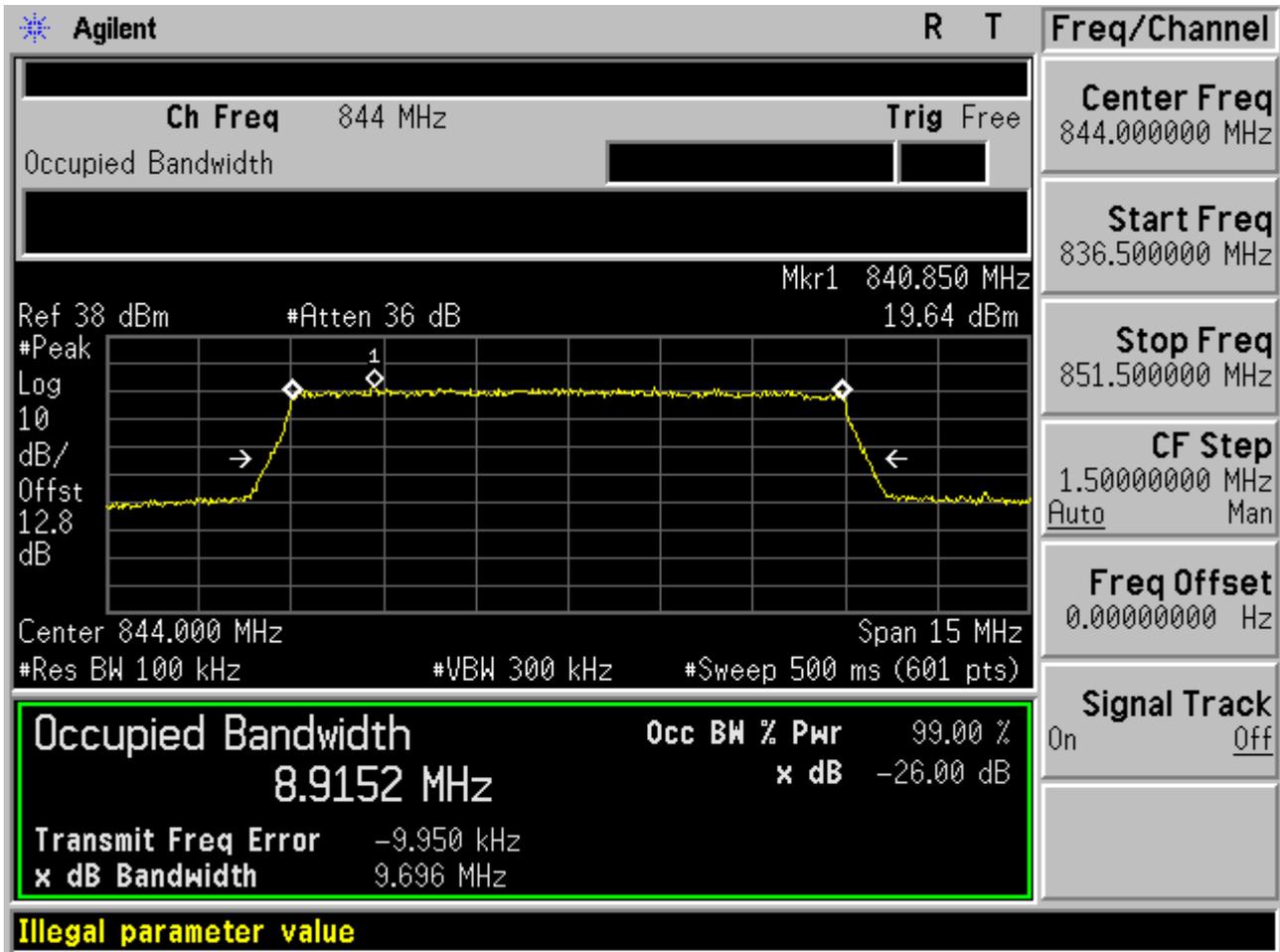


4.1.2.3.3 QPSK/non-1RB #mid/2





4.1.2.3.4 QPSK/full RBs



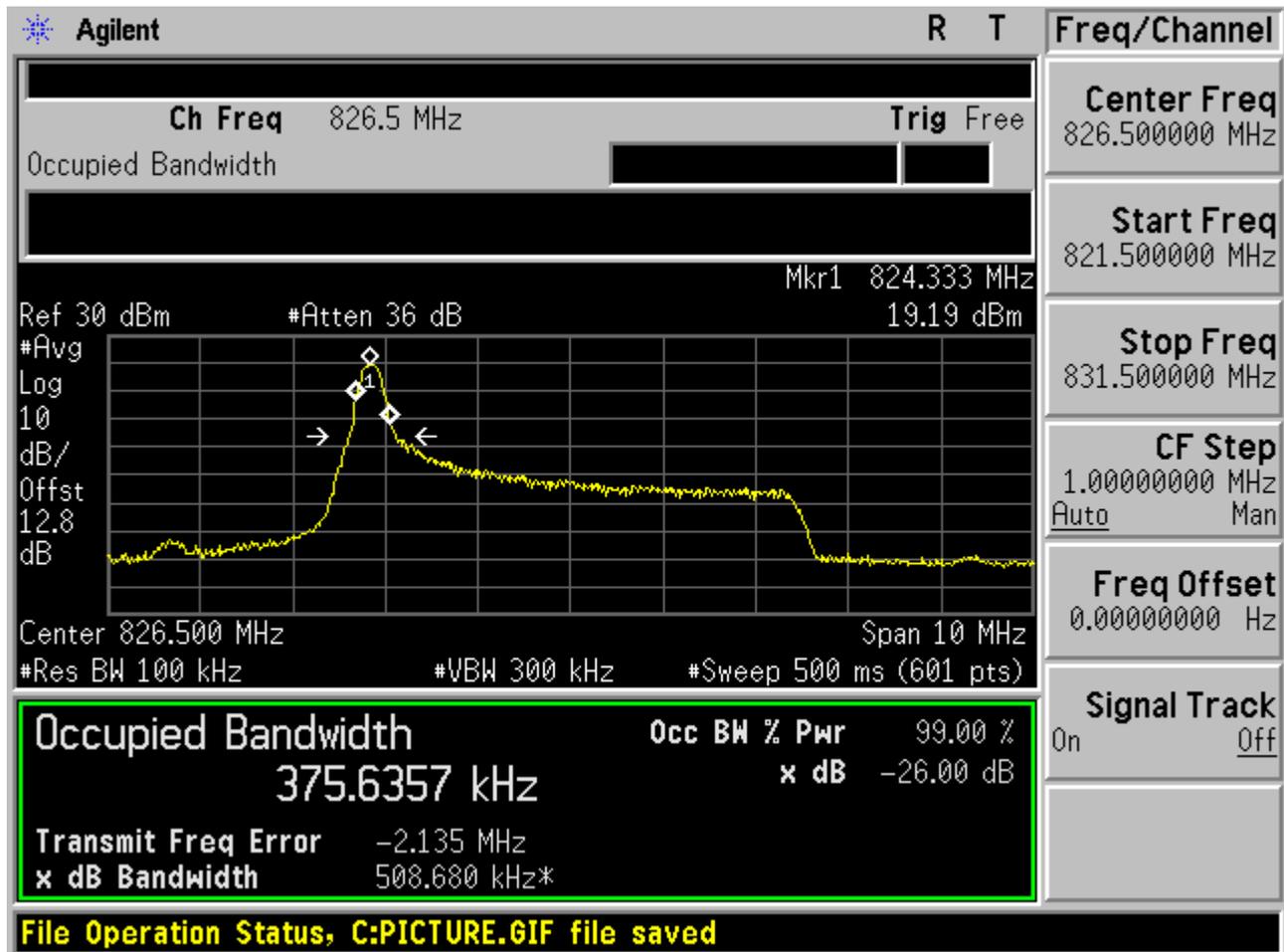


4.2 Test Mode=TM7

4.2.1 Channel Bandwidth = 5 MHz

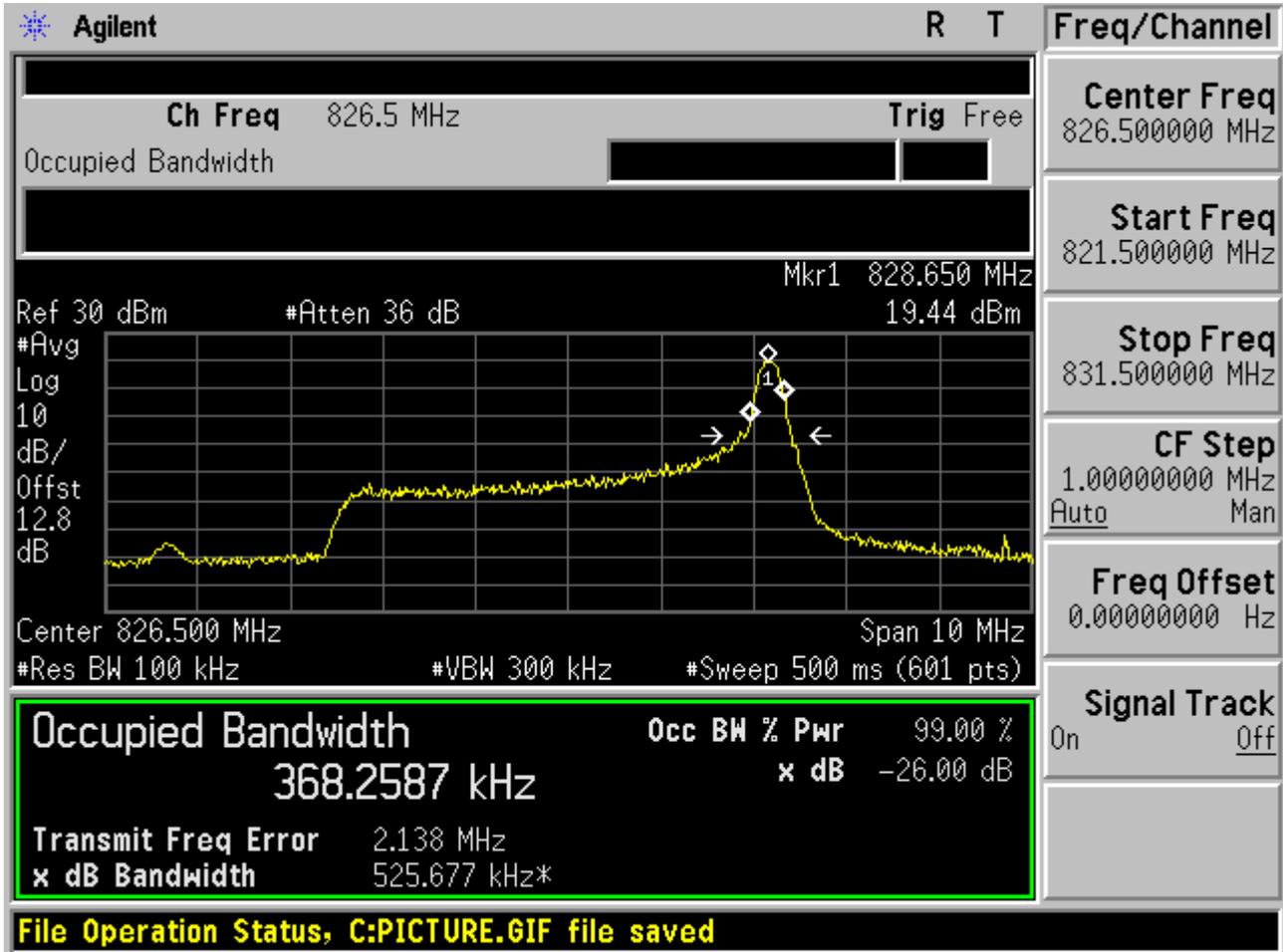
4.2.1.1 Channel =B

4.2.1.1.1 16QAM/1RB # 0



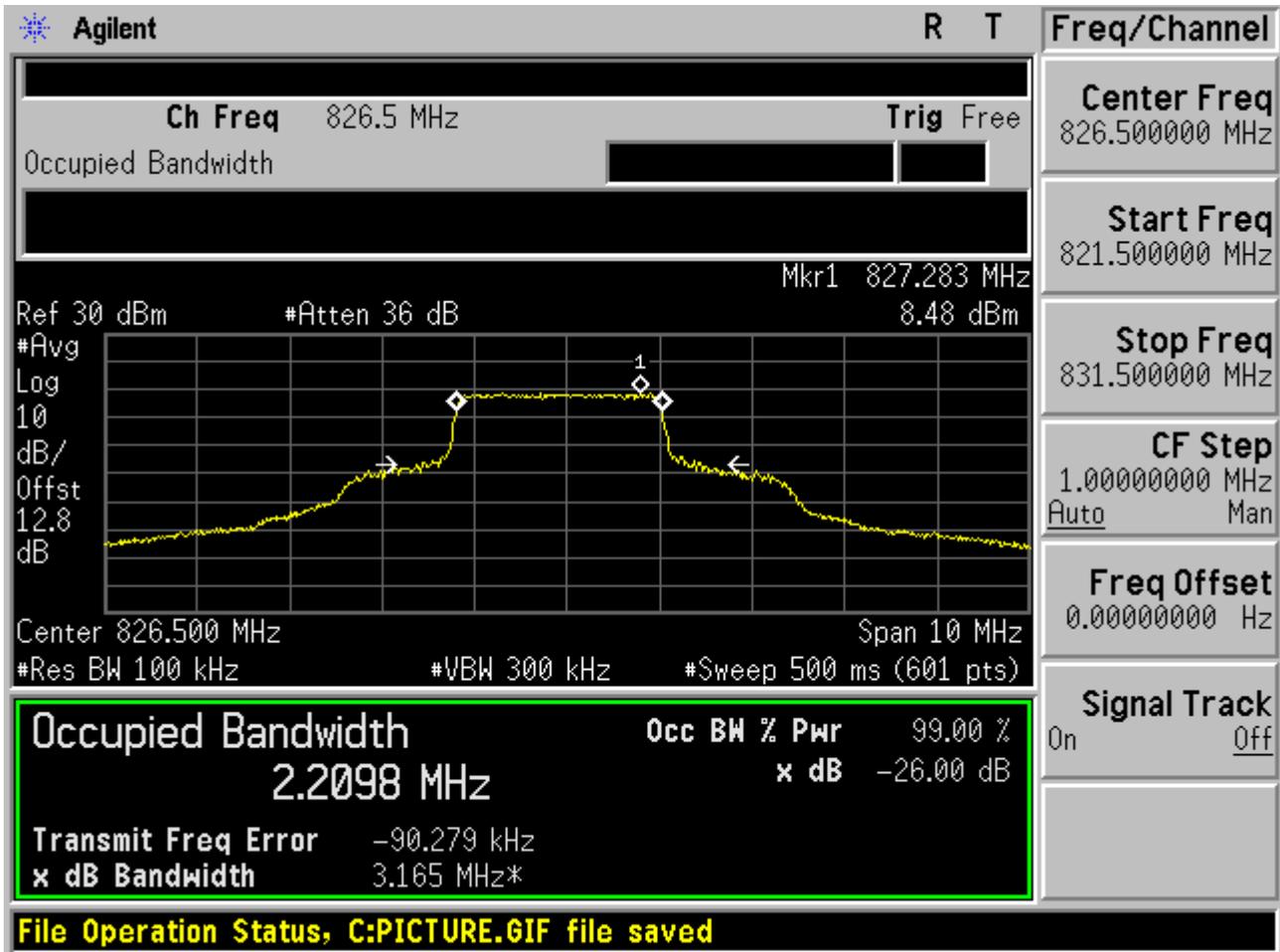


4.2.1.1.2 16QAM /1RB # max



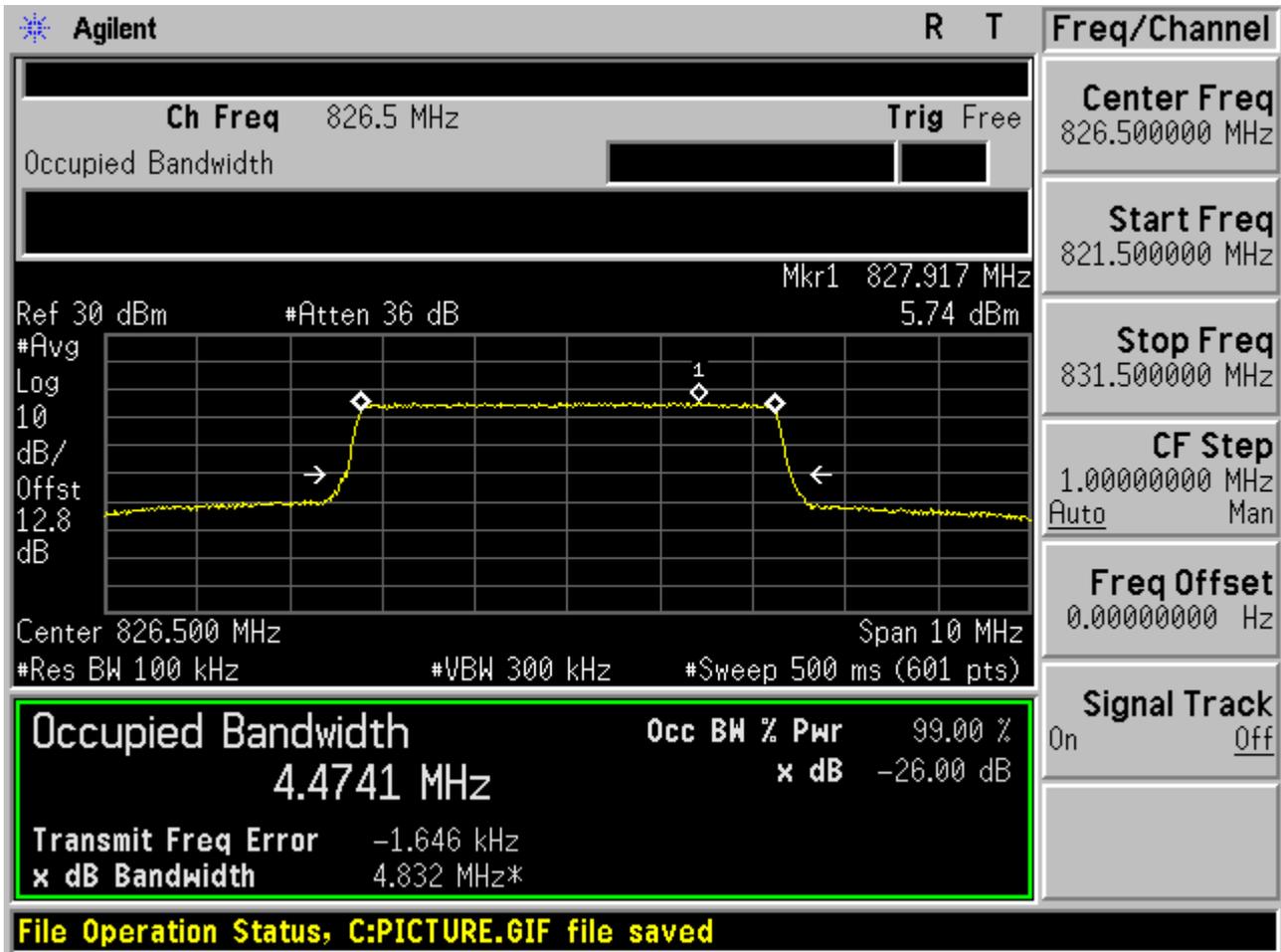


4.2.1.1.3 16QAM /non-1RB #mid/2





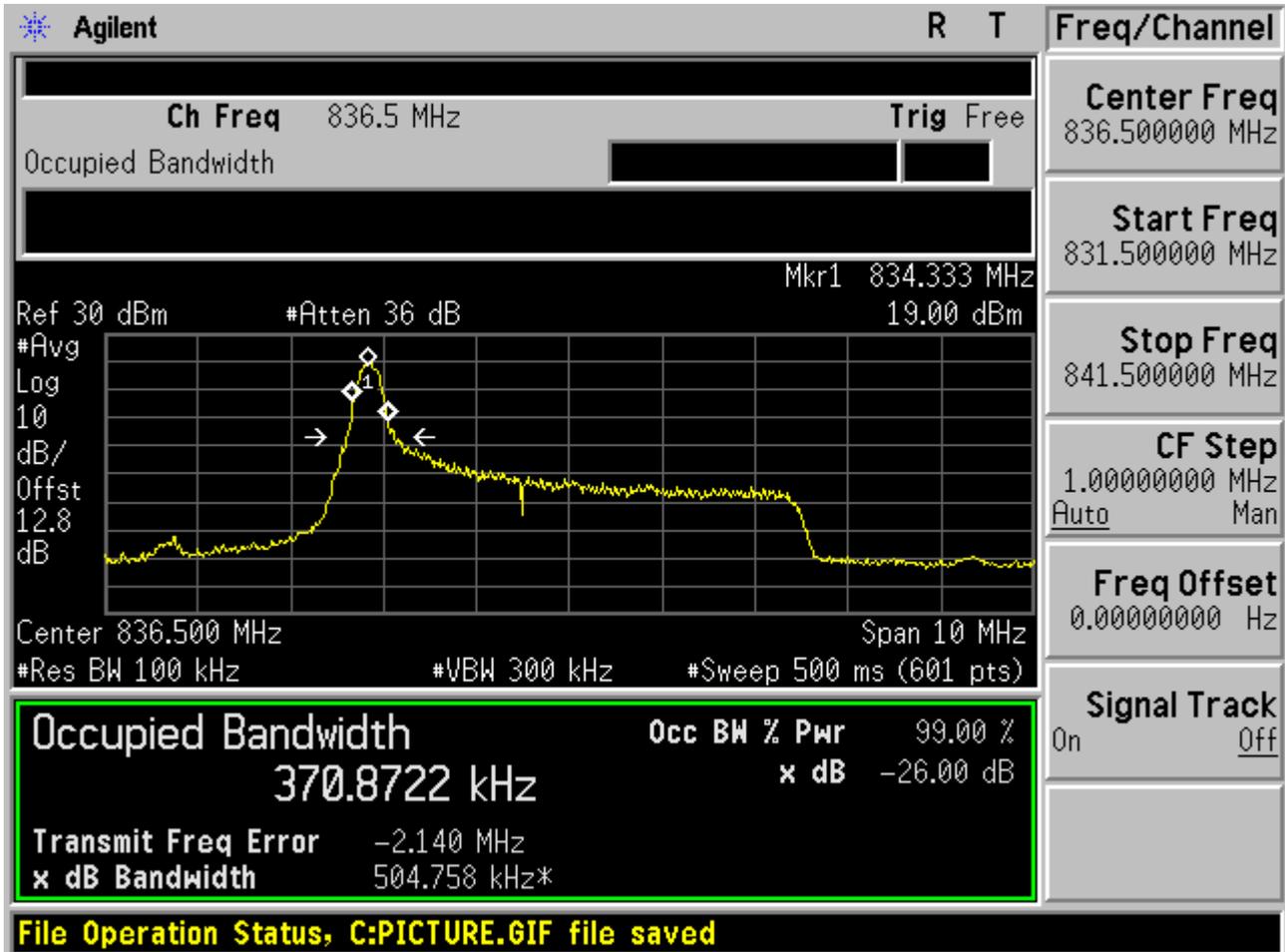
4.2.1.1.4 16QAM /full RBs





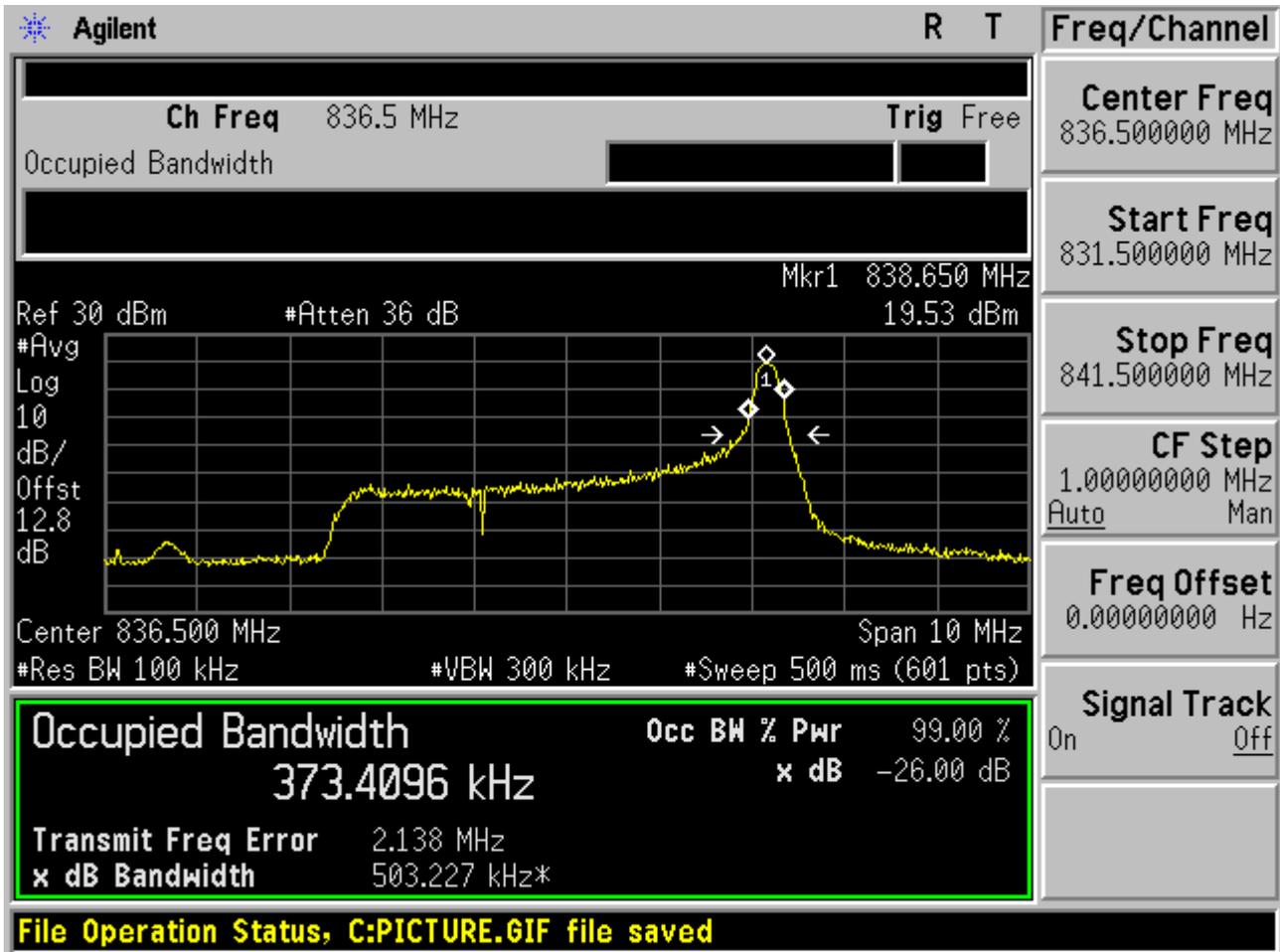
4.2.1.2 Channel =M

4.2.1.2.1 16QAM/1RB # 0



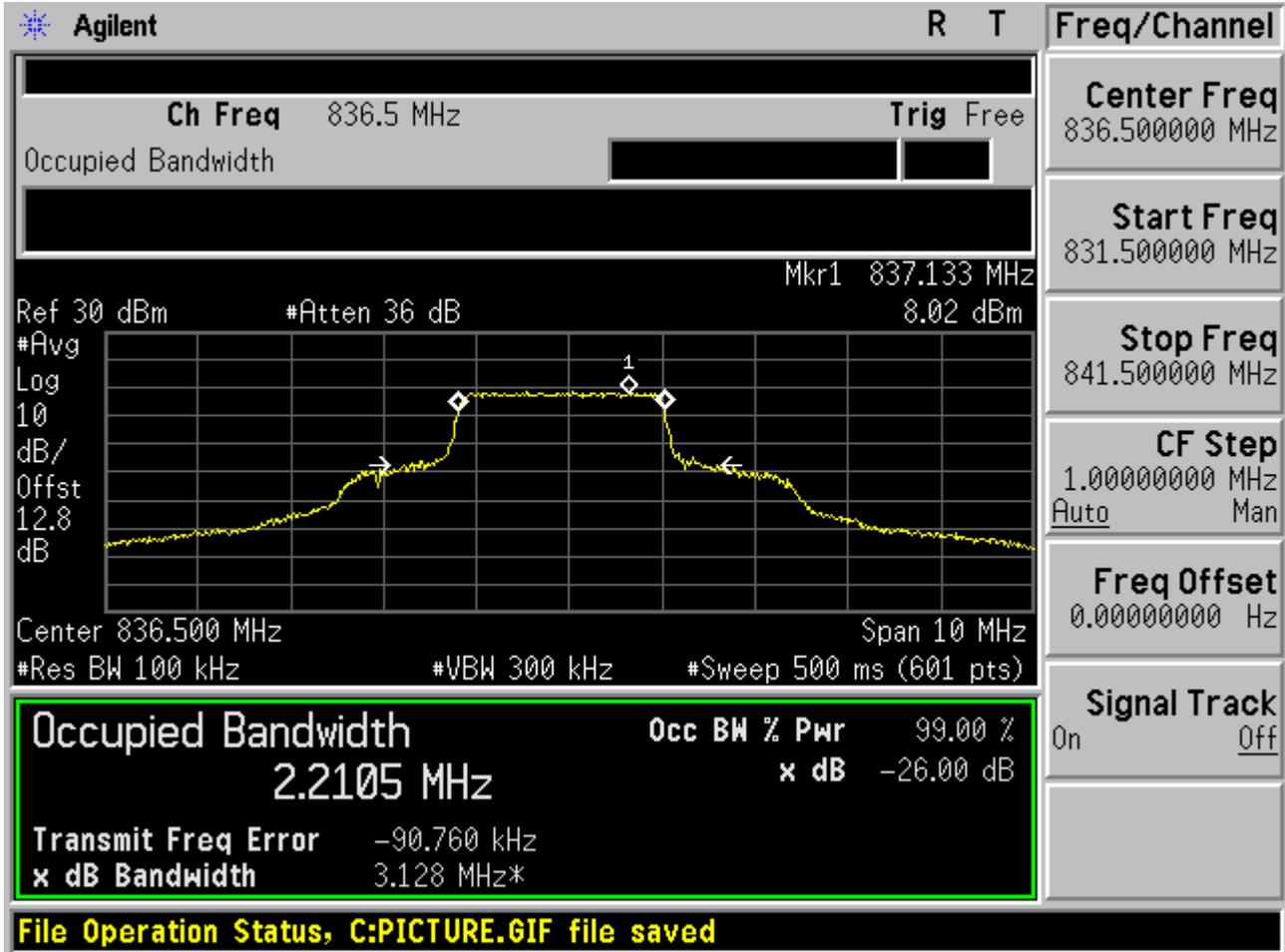


4.2.1.2.2 16QAM /1RB # max



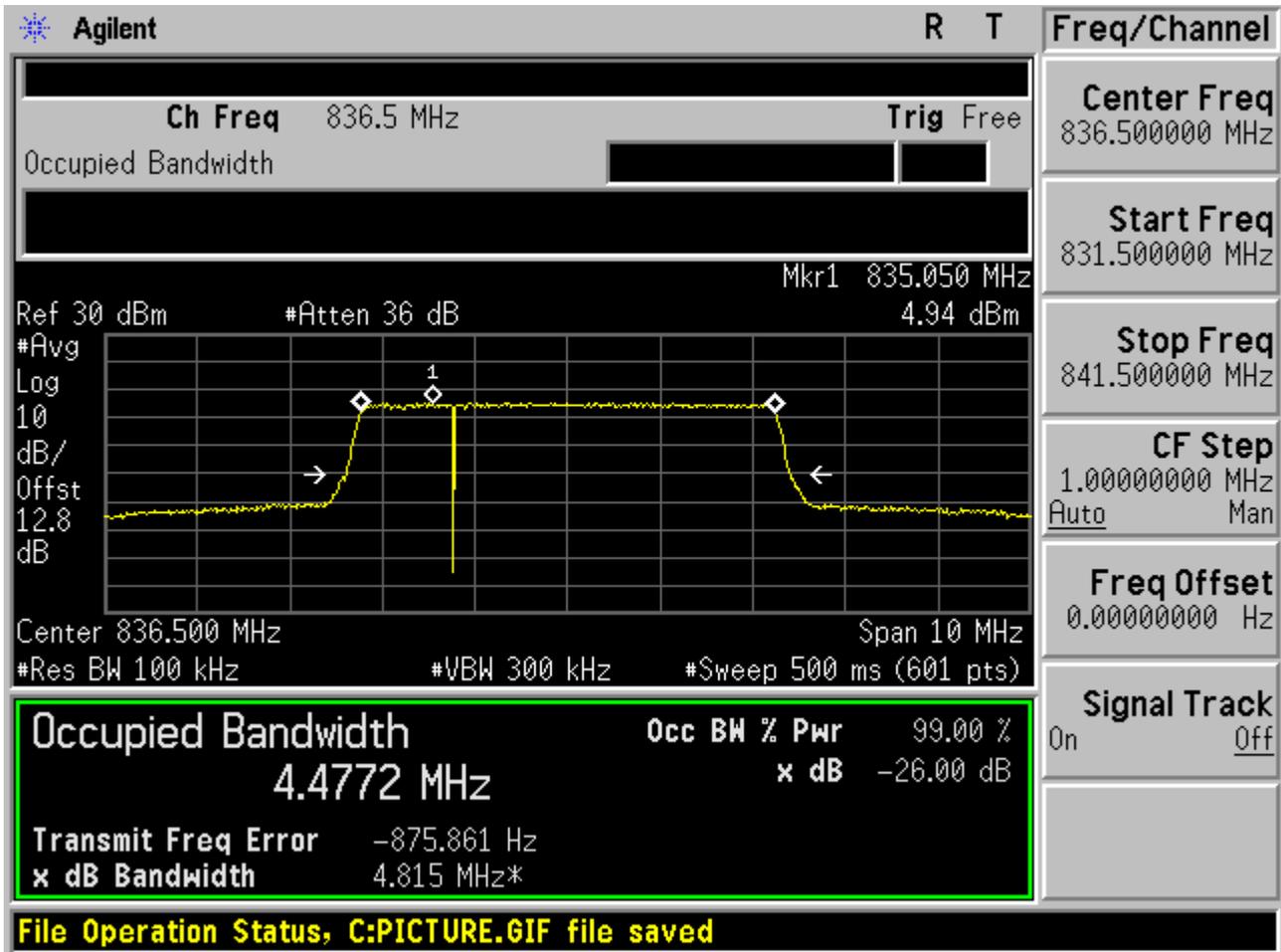


4.2.1.2.3 16QAM /non-1RB #mid/2





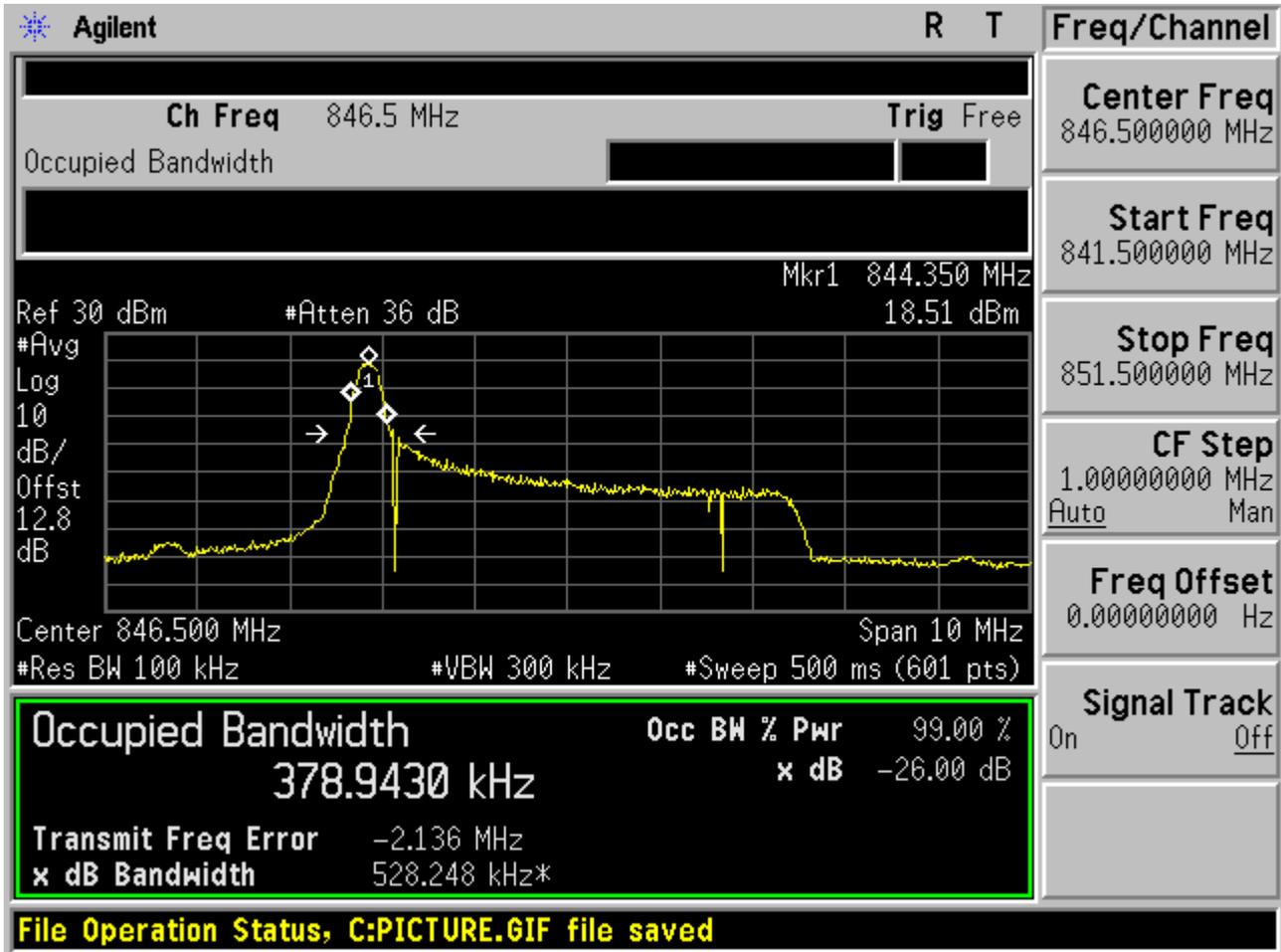
4.2.1.2.4 16QAM /full RBs





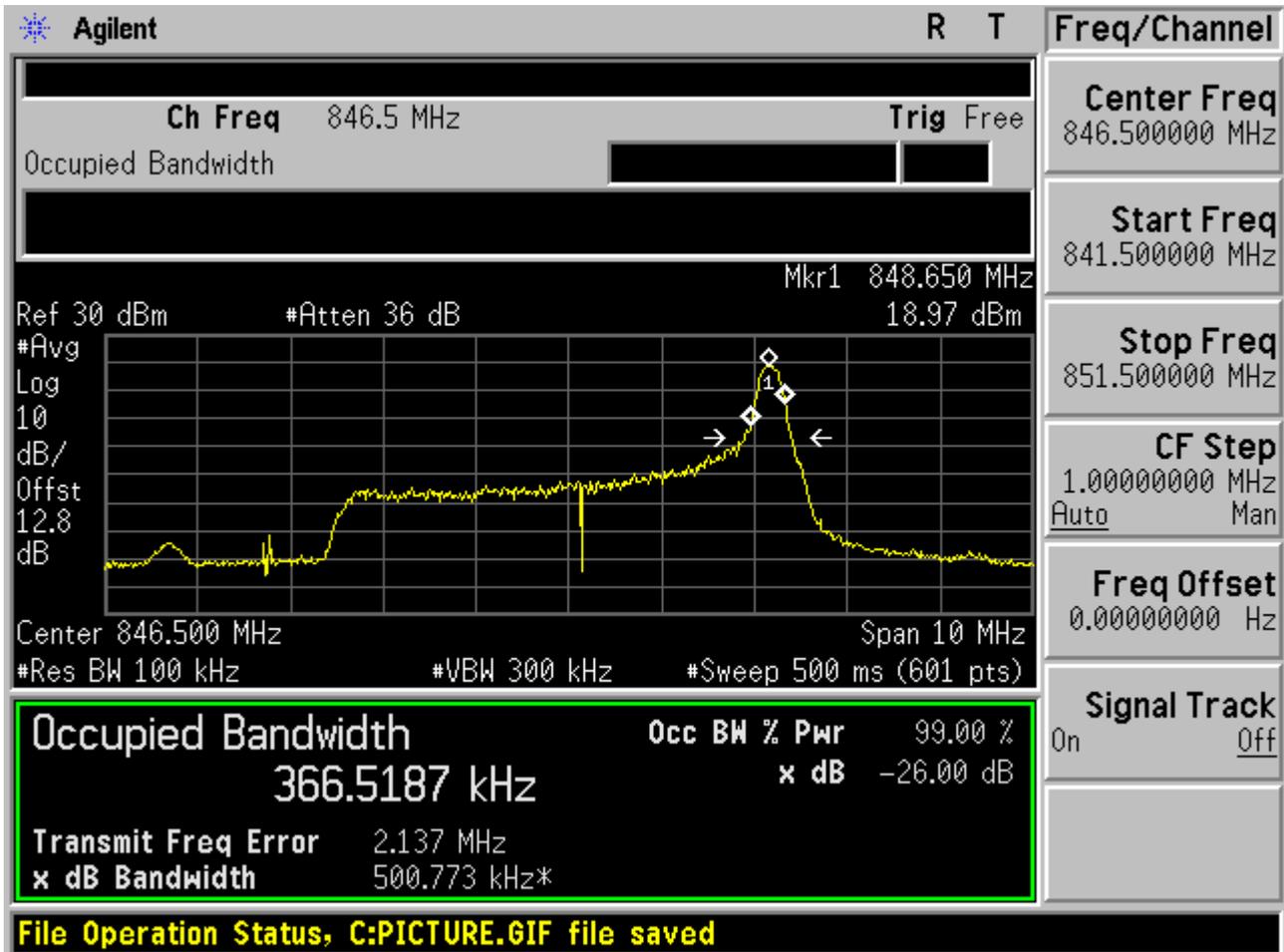
4.2.1.3 Channel = T

4.2.1.3.1 16QAM/1RB # 0



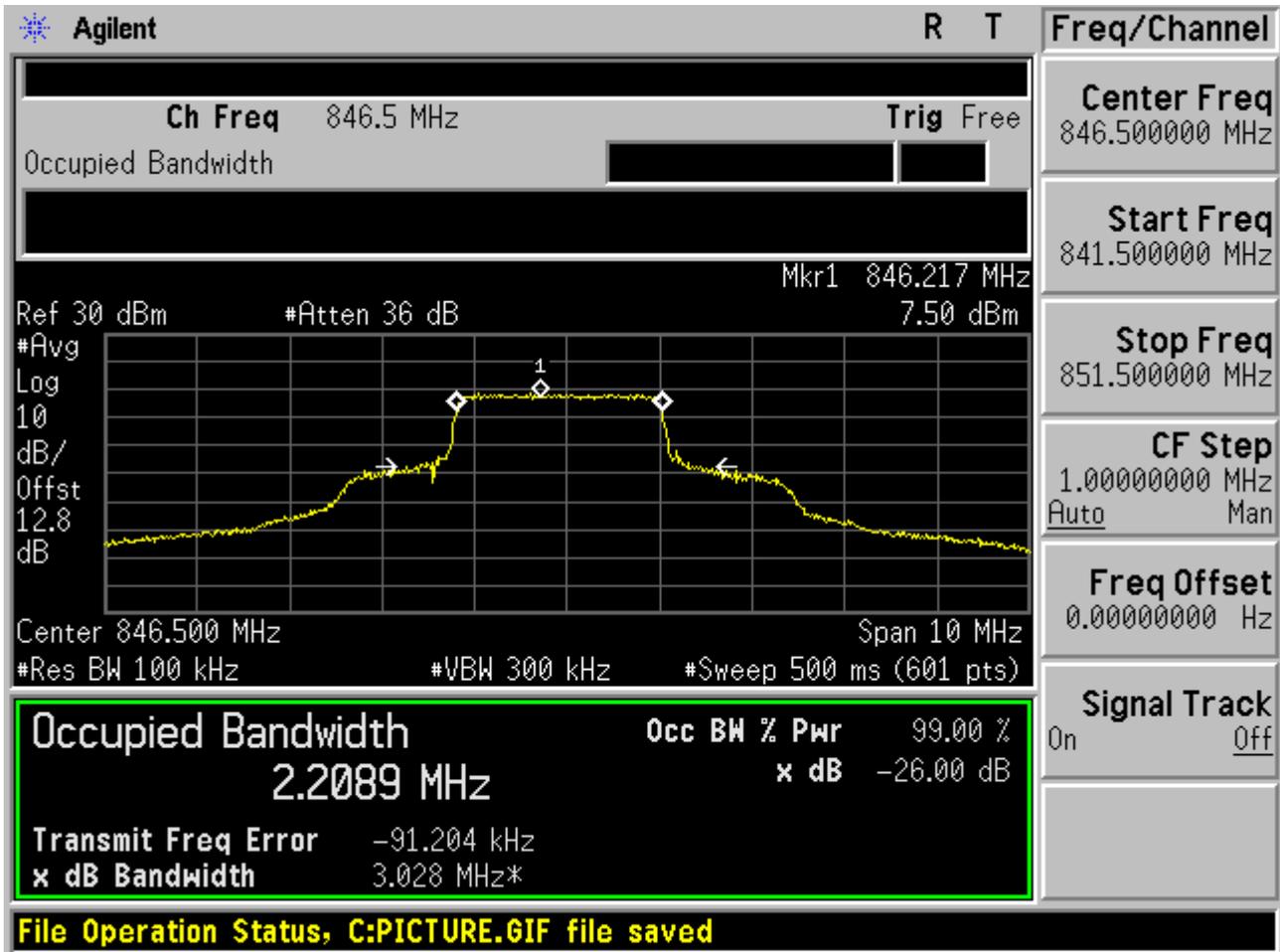


4.2.1.3.2 16QAM /1RB # max



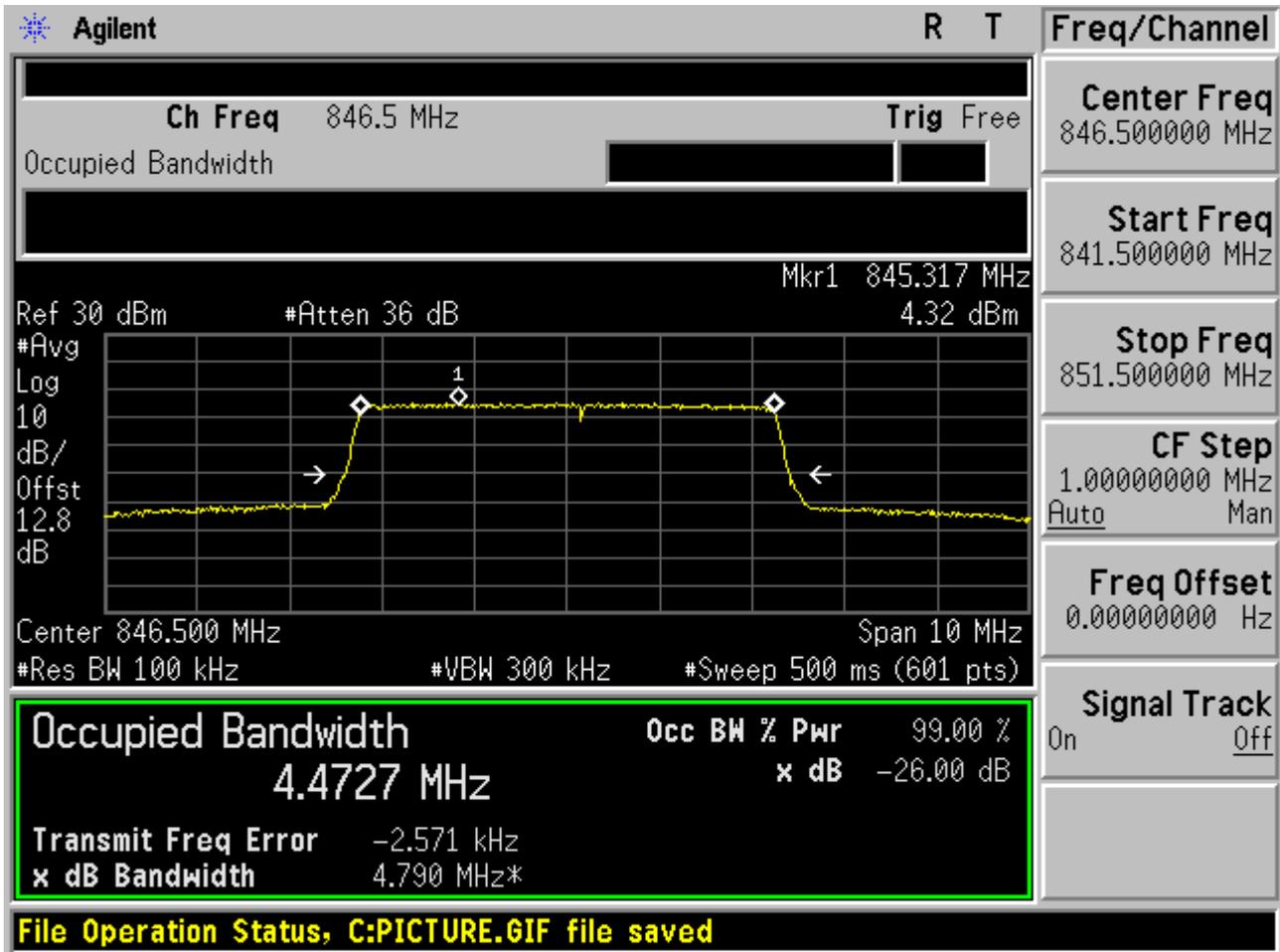


4.2.1.3.3 16QAM /non-1RB #mid/2





4.2.1.3.4 16QAM /full RBs

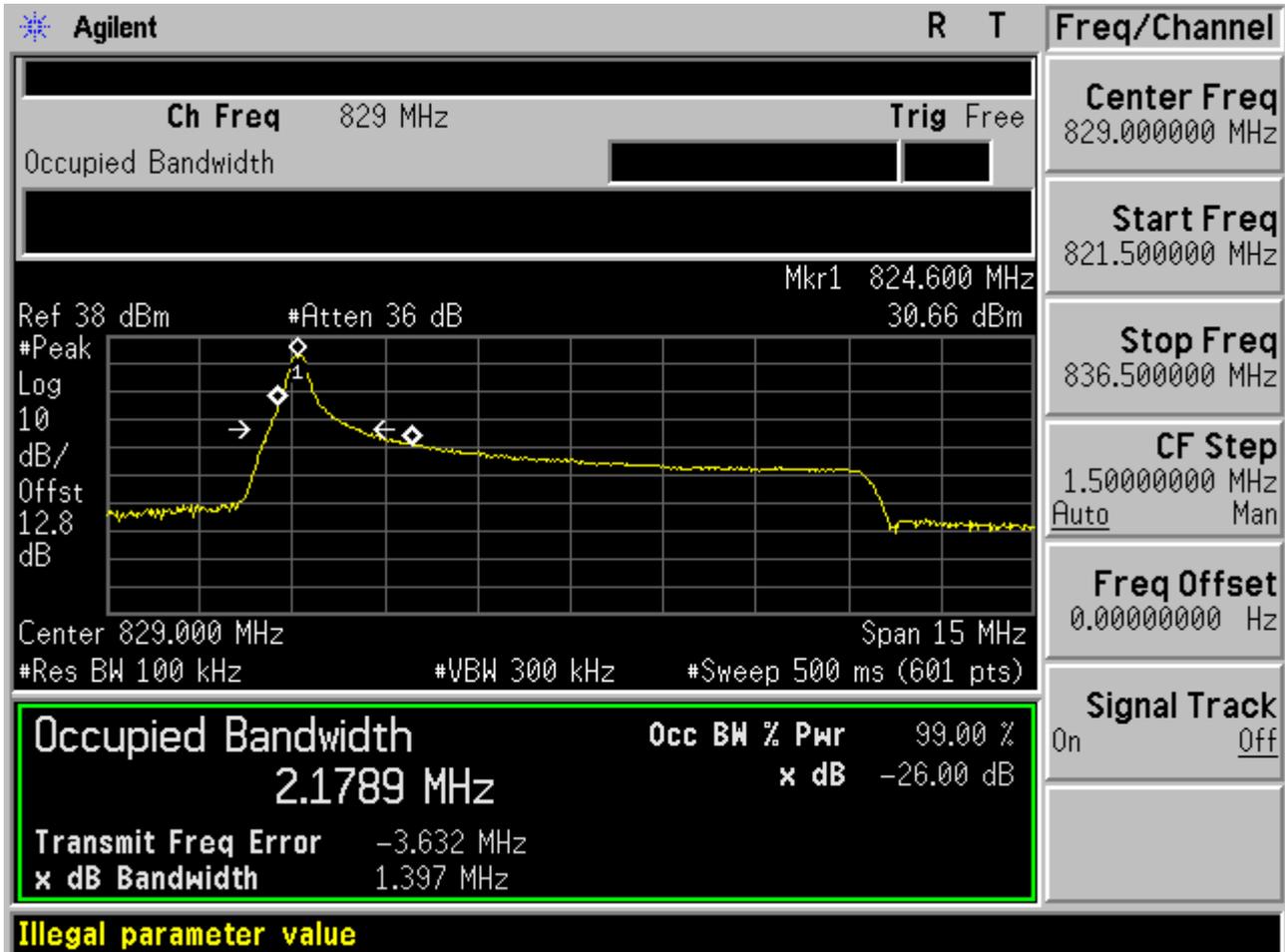




4.2.2 Channel Bandwidth = 10 MHz

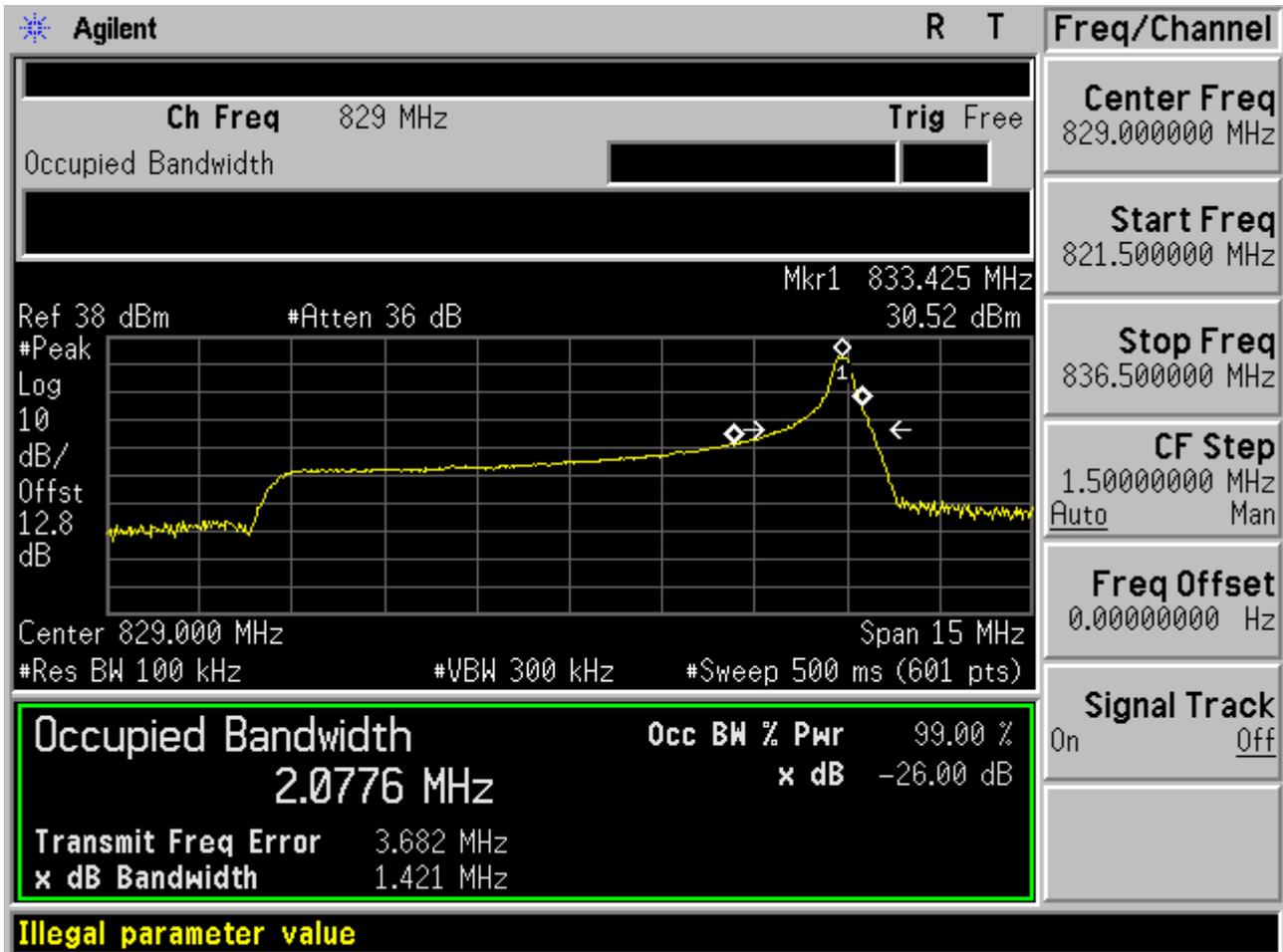
4.2.2.1 Channel =B

4.2.2.1.1 16QAM/1RB # 0



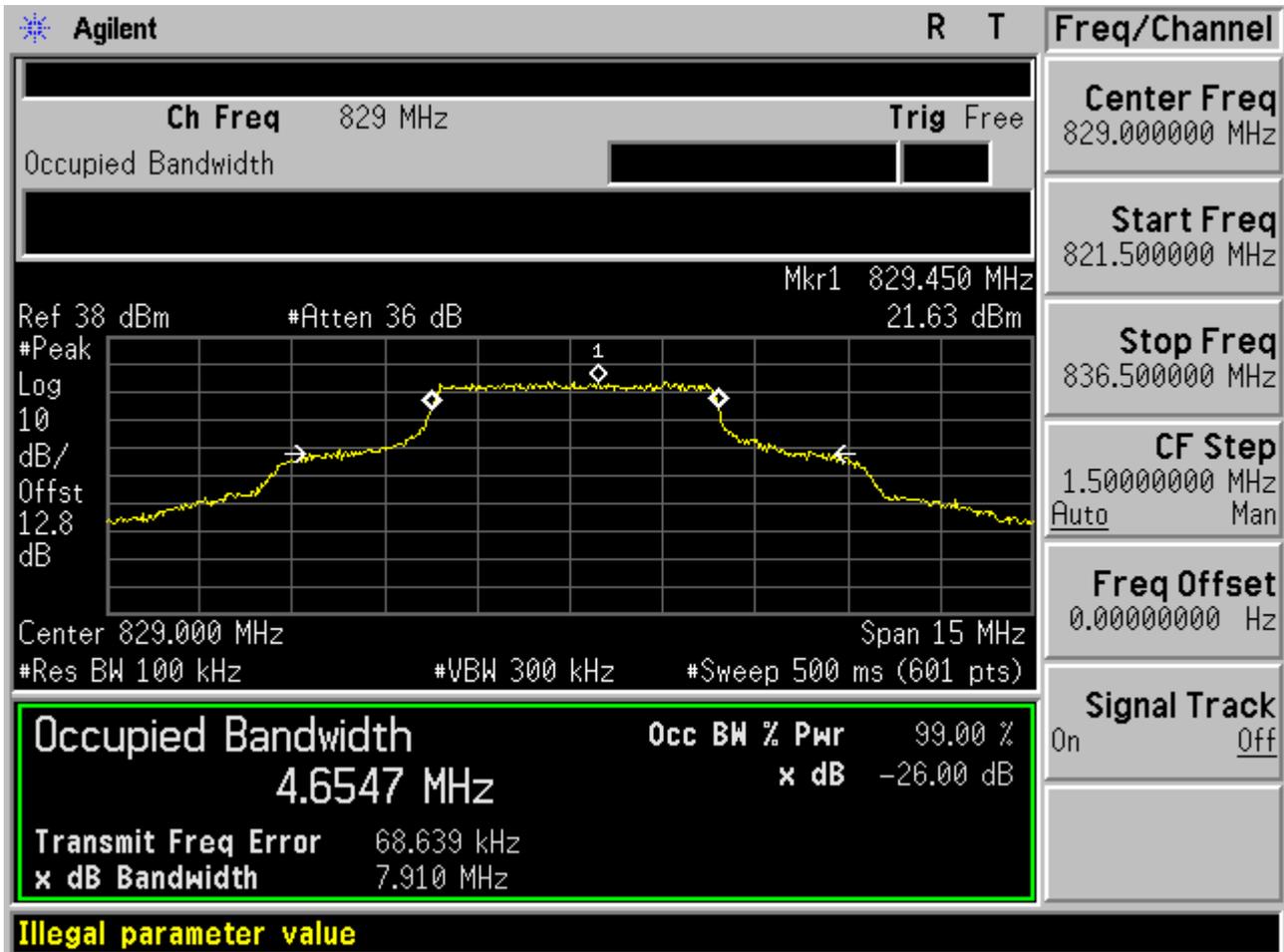


4.2.2.1.2 16QAM /1RB # max





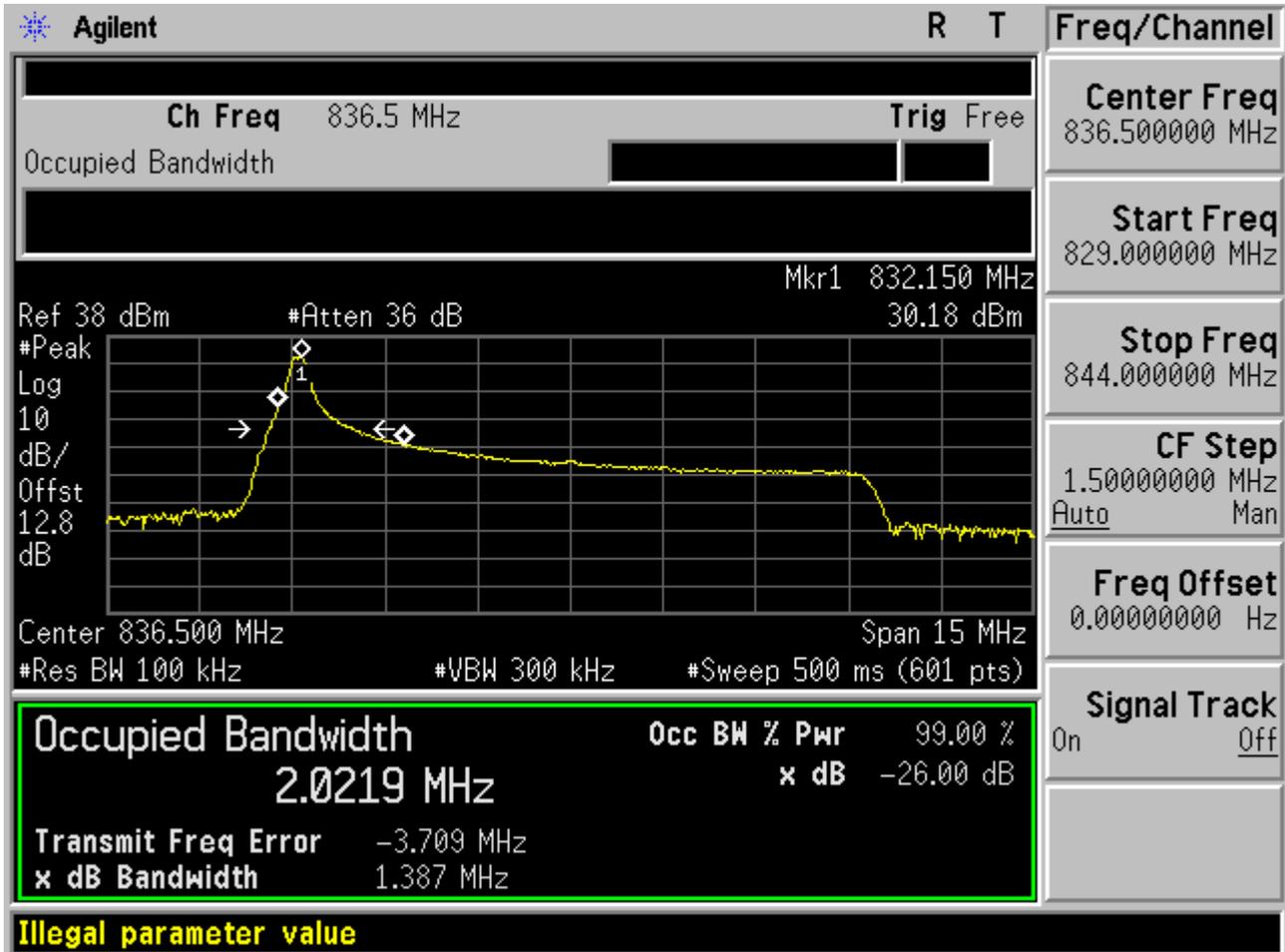
4.2.2.1.3 16QAM /non-1RB #mid/2





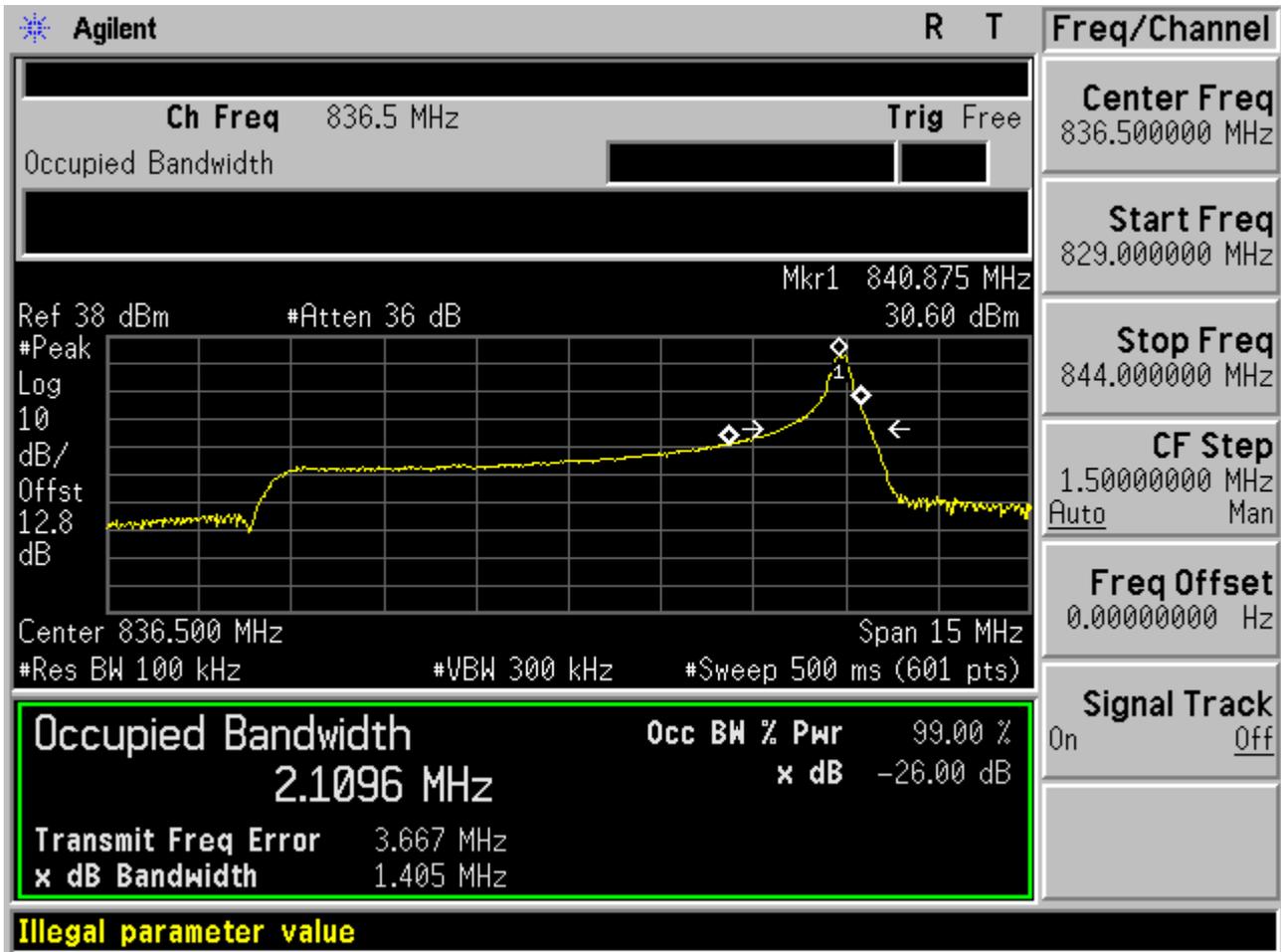
4.2.2.2 Channel =M

4.2.2.2.1 16QAM/1RB # 0



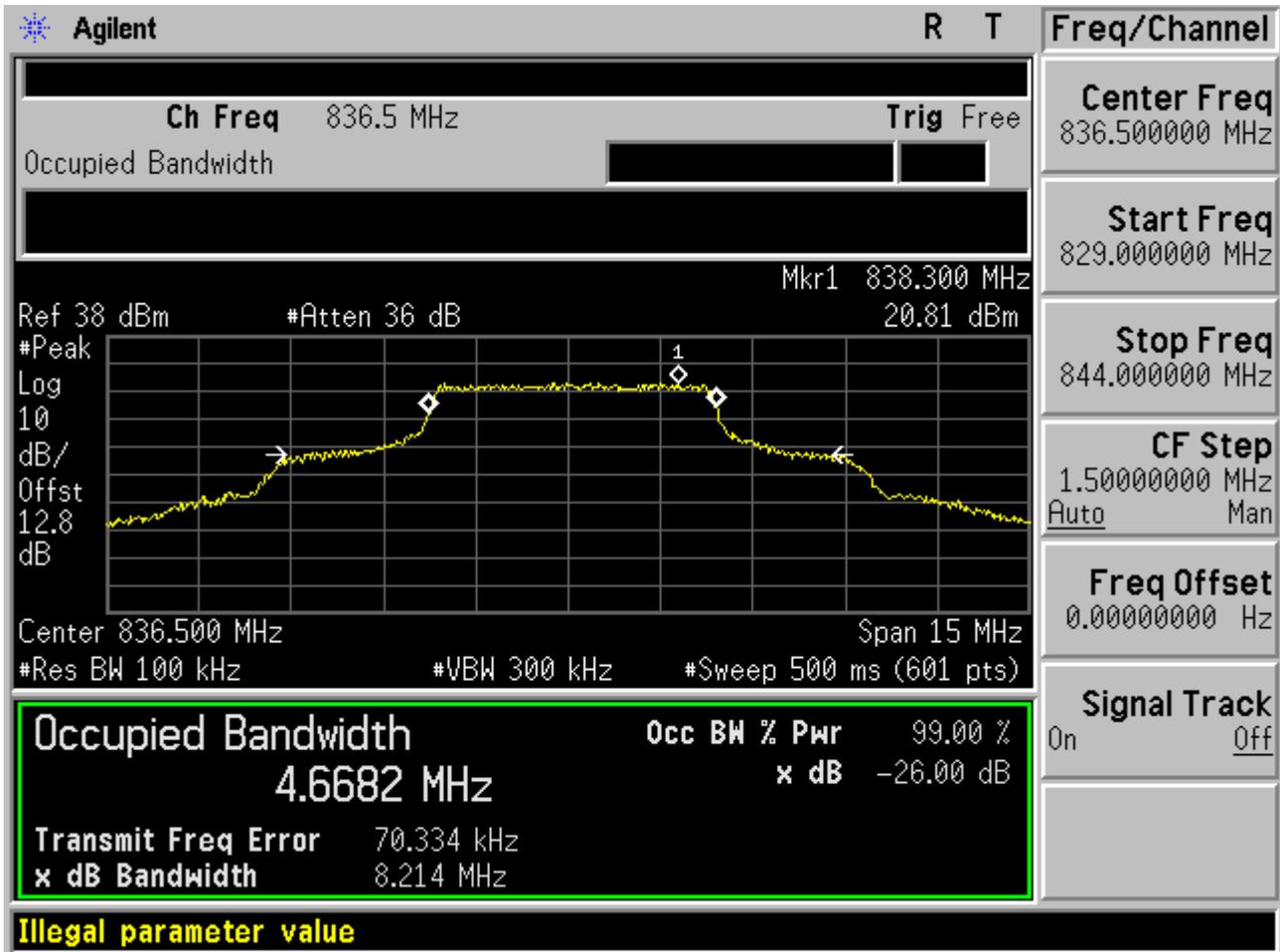


4.2.2.2.2 16QAM /1RB # max



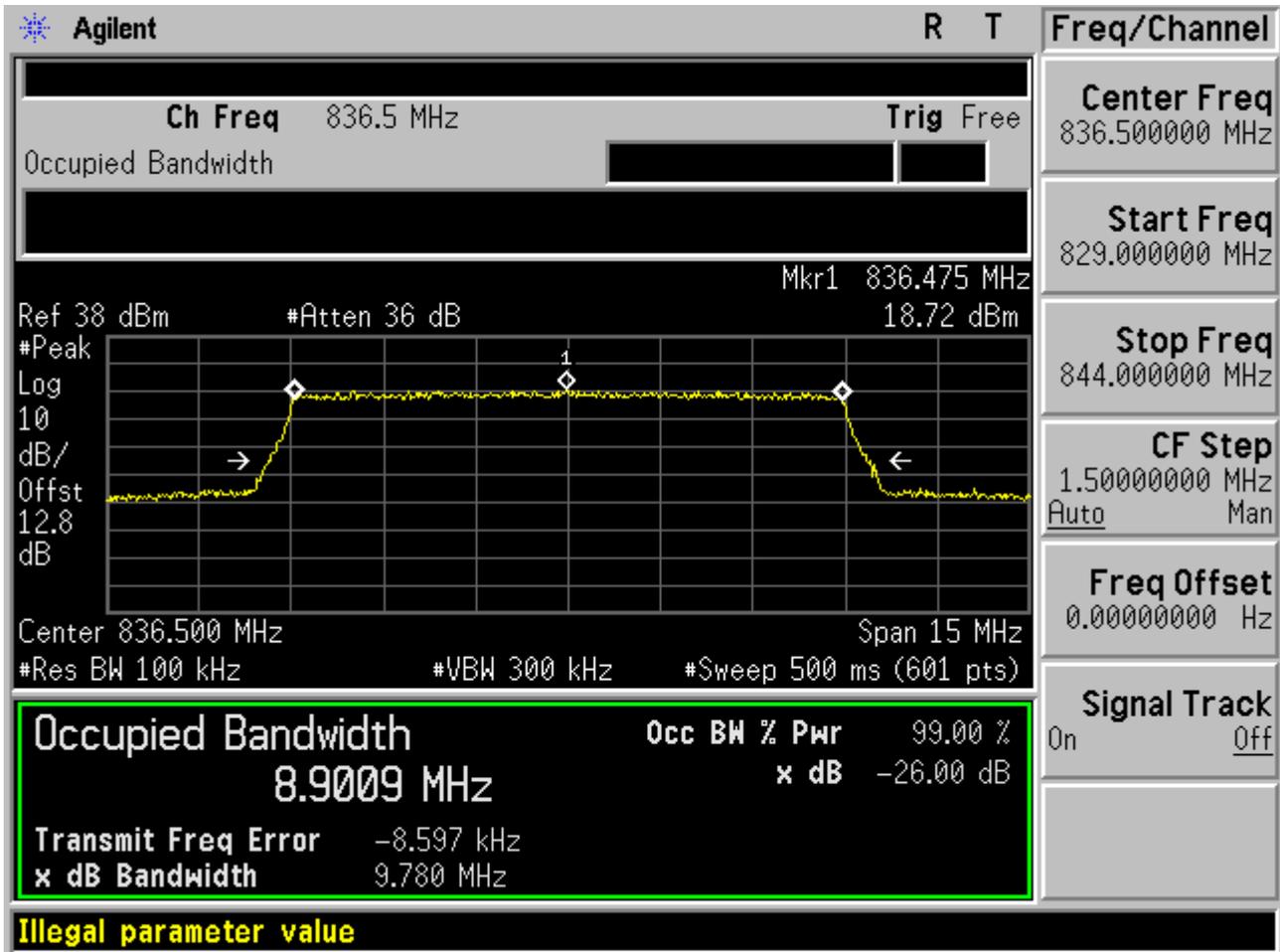


4.2.2.2.3 16QAM /non-1RB #mid/2





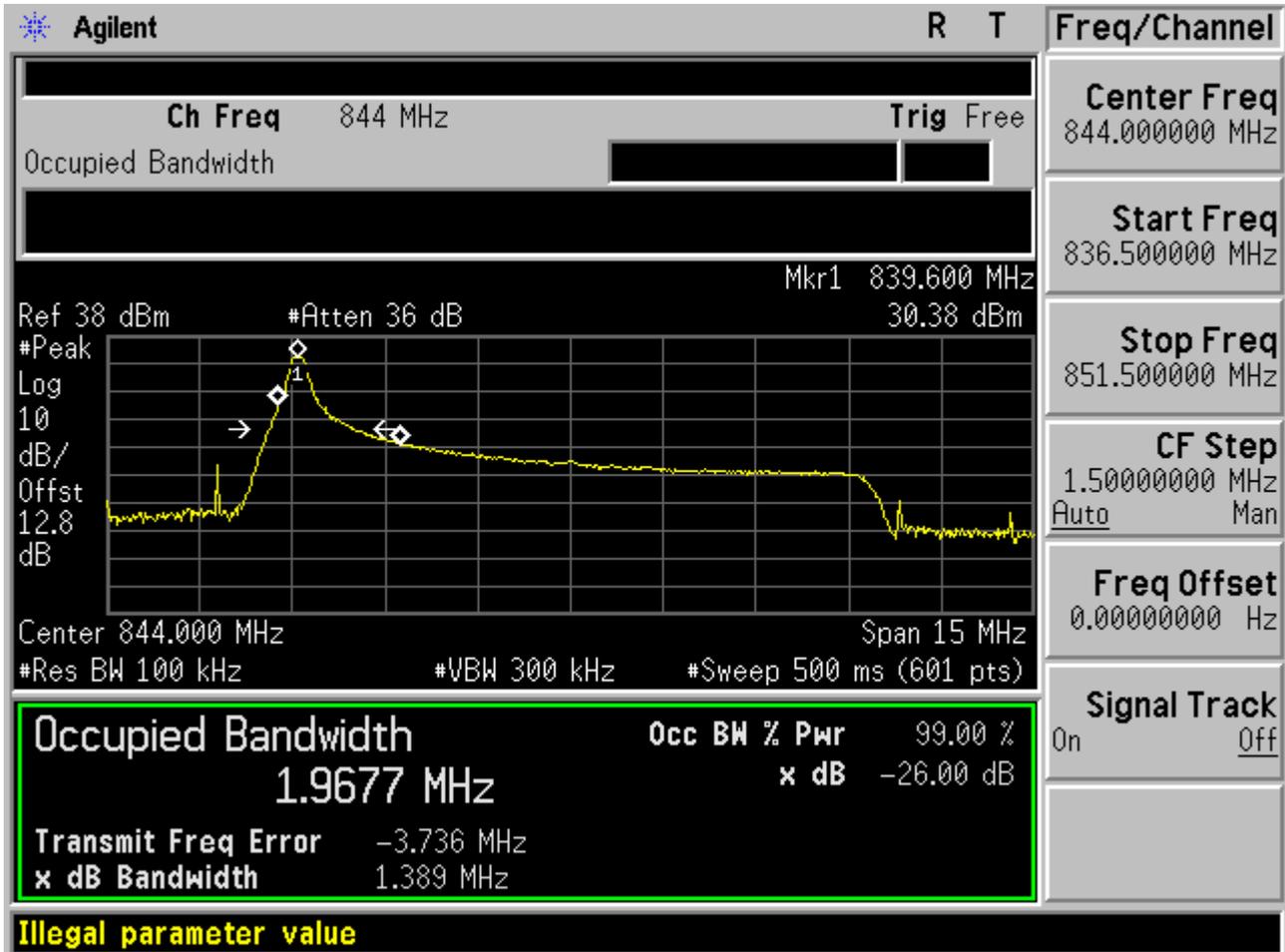
4.2.2.2.4 16QAM /full RBs





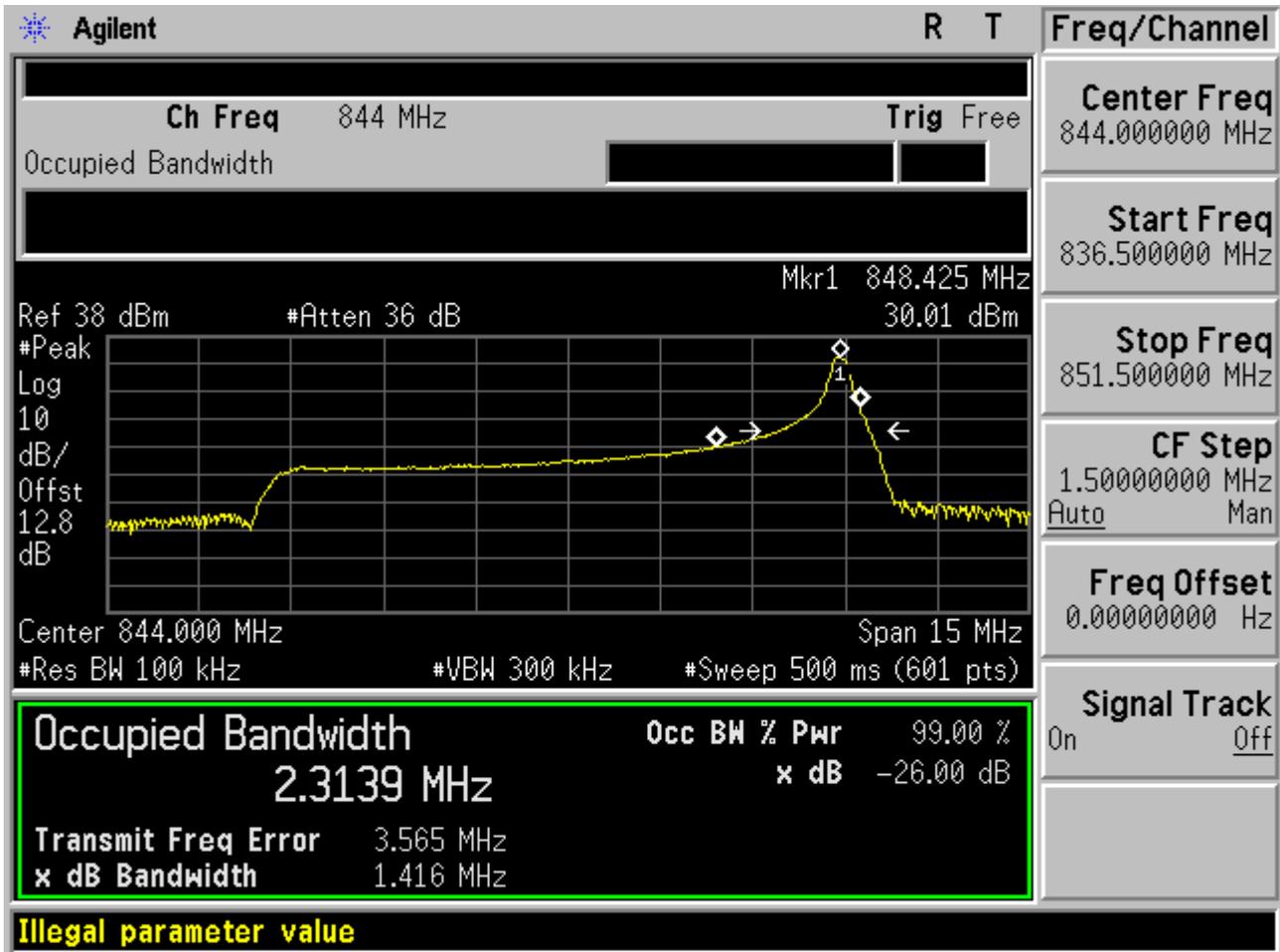
4.2.2.3 Channel = T

4.2.2.3.1 16QAM/1RB # 0



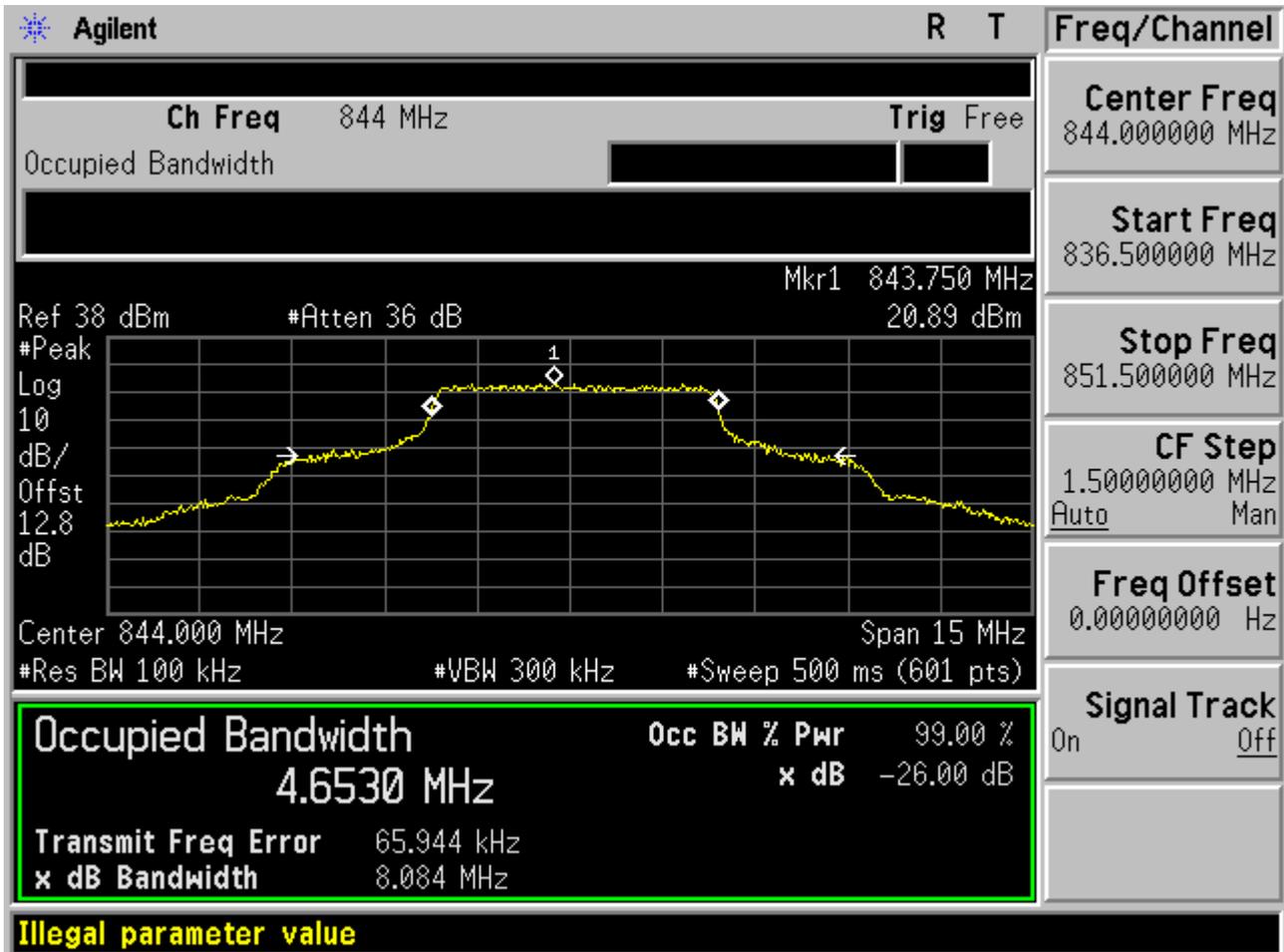


4.2.2.3.2 16QAM /1RB # max



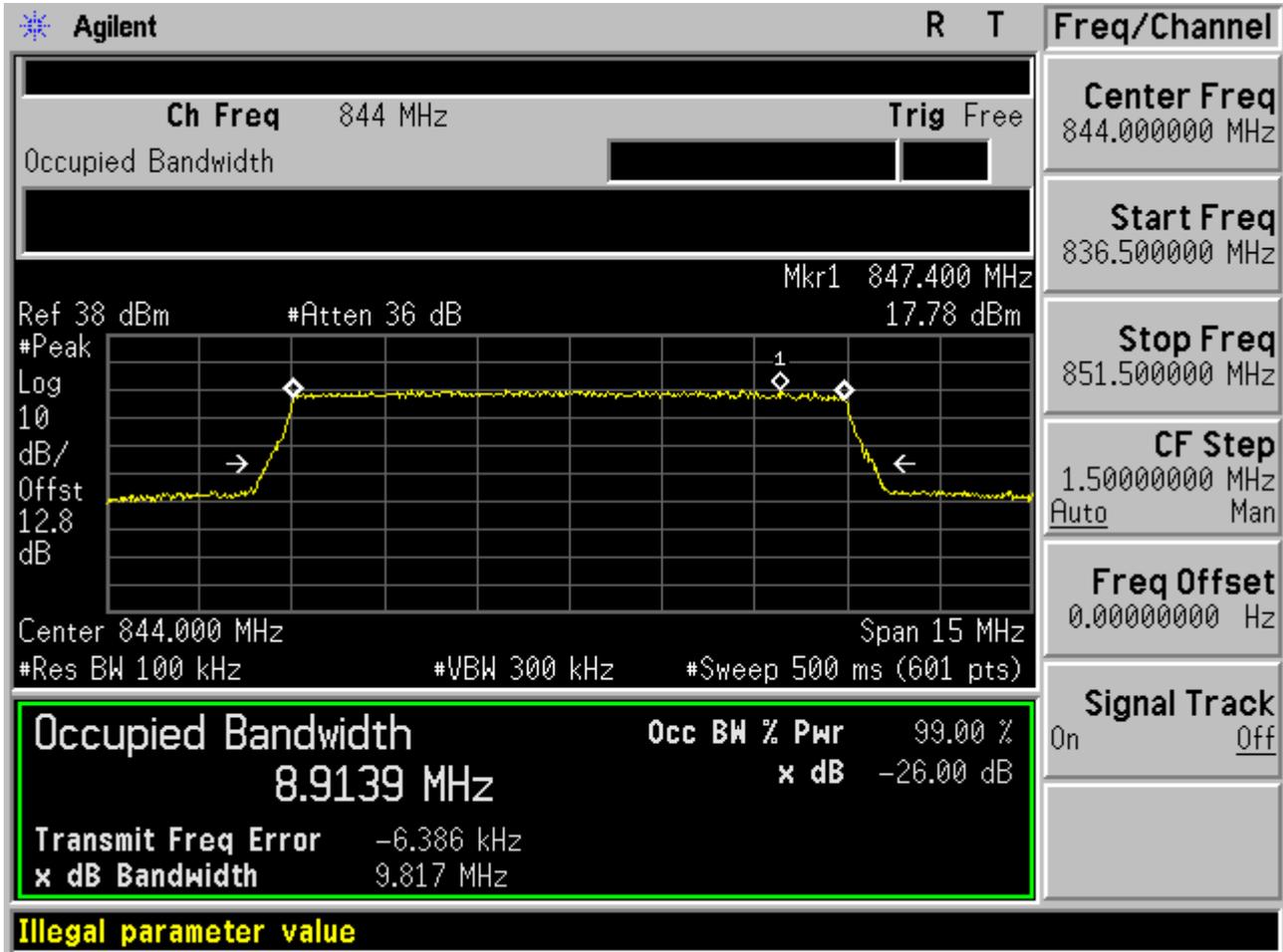


4.2.2.3.3 16QAM /non-1RB #mid/2





4.2.2.3.4 16QAM /full RBs



-----END-----



Appendix D

Band Edges Compliance According to FCC Part 2.1051 & 22.917



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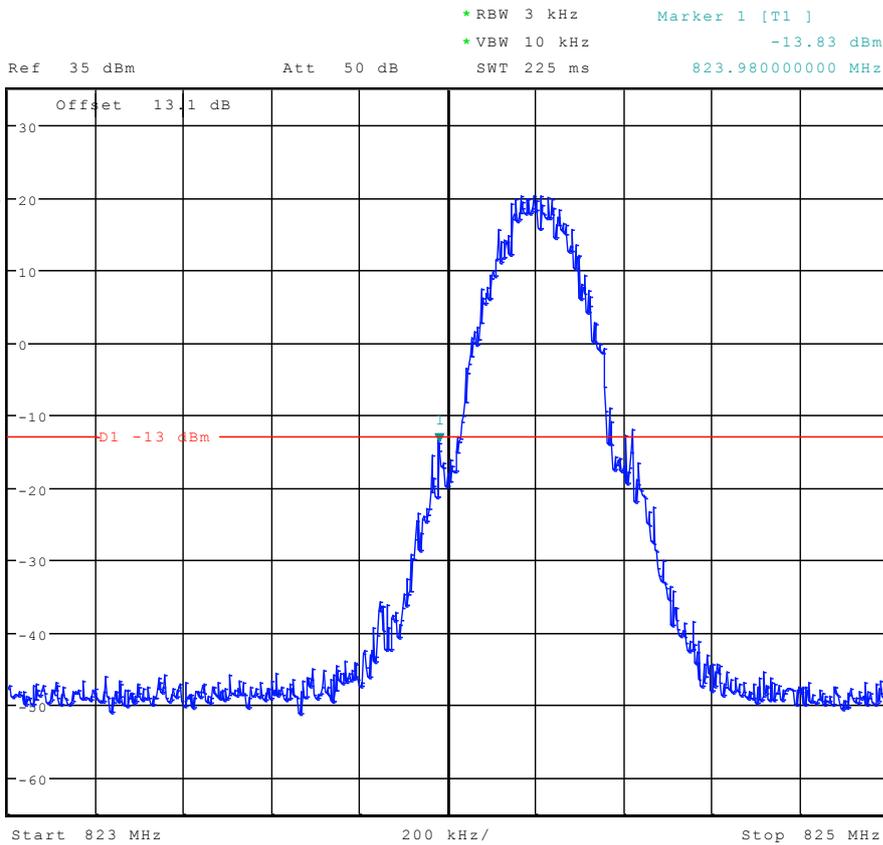
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1 For GPRS 850

1.1 Test Mode=TM1

1.1.1 Channel = B



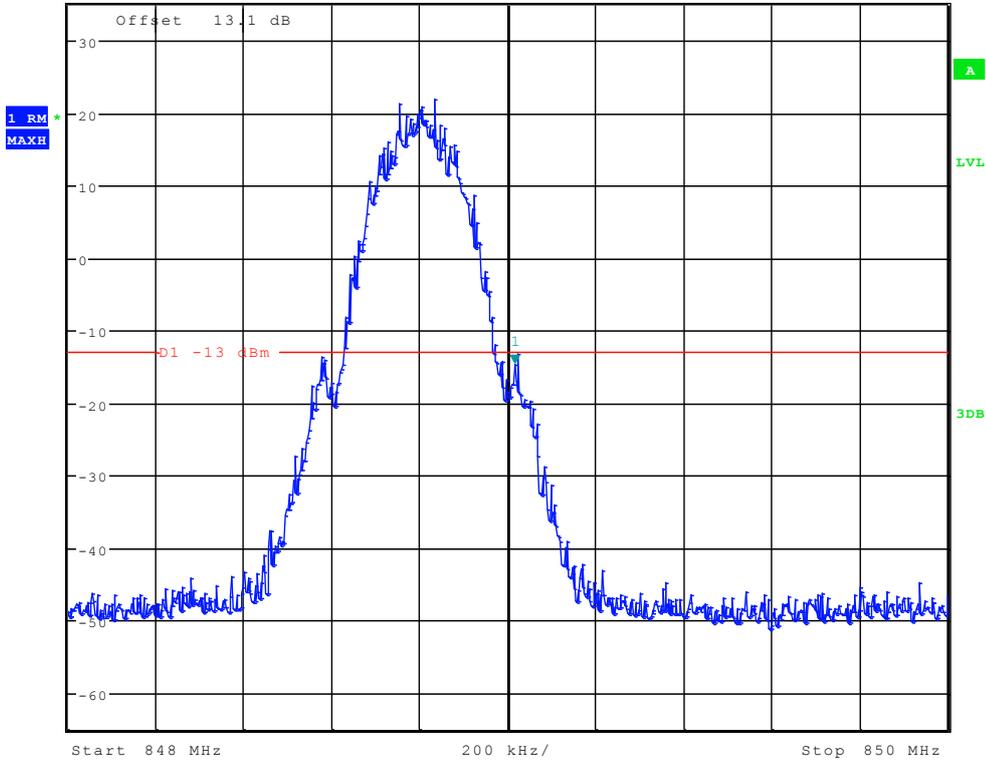
Date: 6.JUN.2012 09:10:50



1.1.2 Channel = T



* RBW 3 kHz Marker 1 [T1]
 * VBW 10 kHz -14.68 dBm
 Ref 35 dBm Att 50 dB SWT 225 ms 849.01500000 MHz



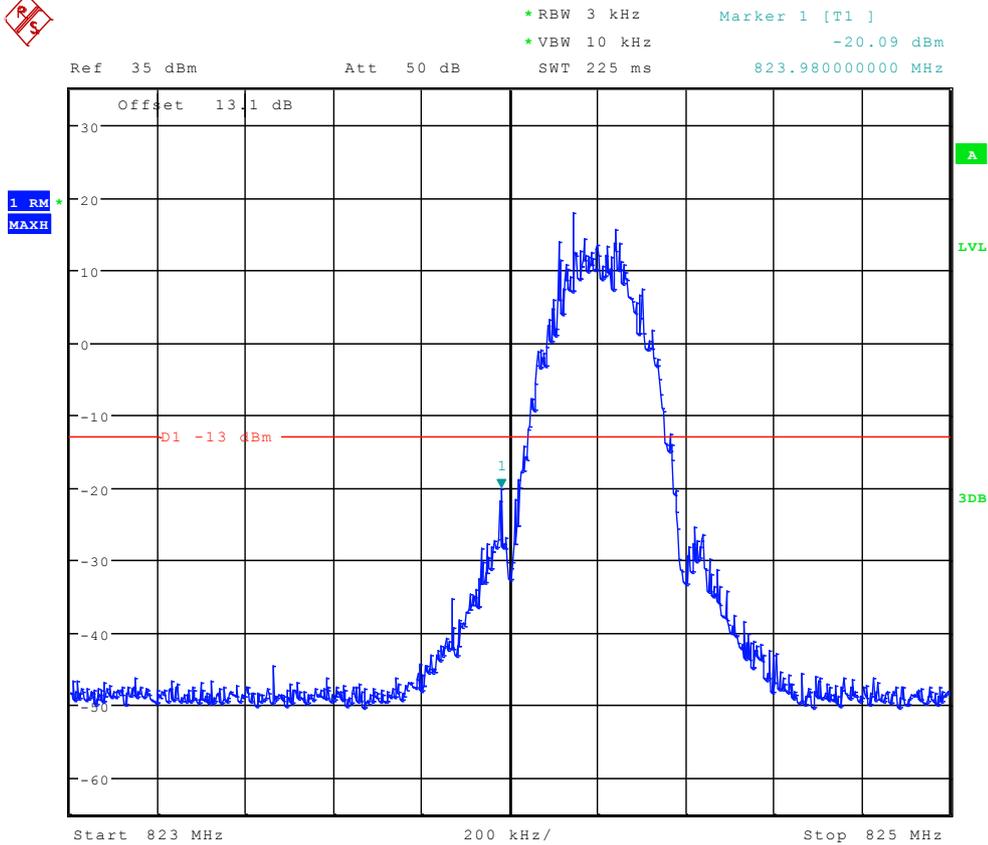
Date: 6.JUN.2012 09:11:03



2 For EDGE 850

2.1 Test Mode=TM2

2.1.1 Channel = B



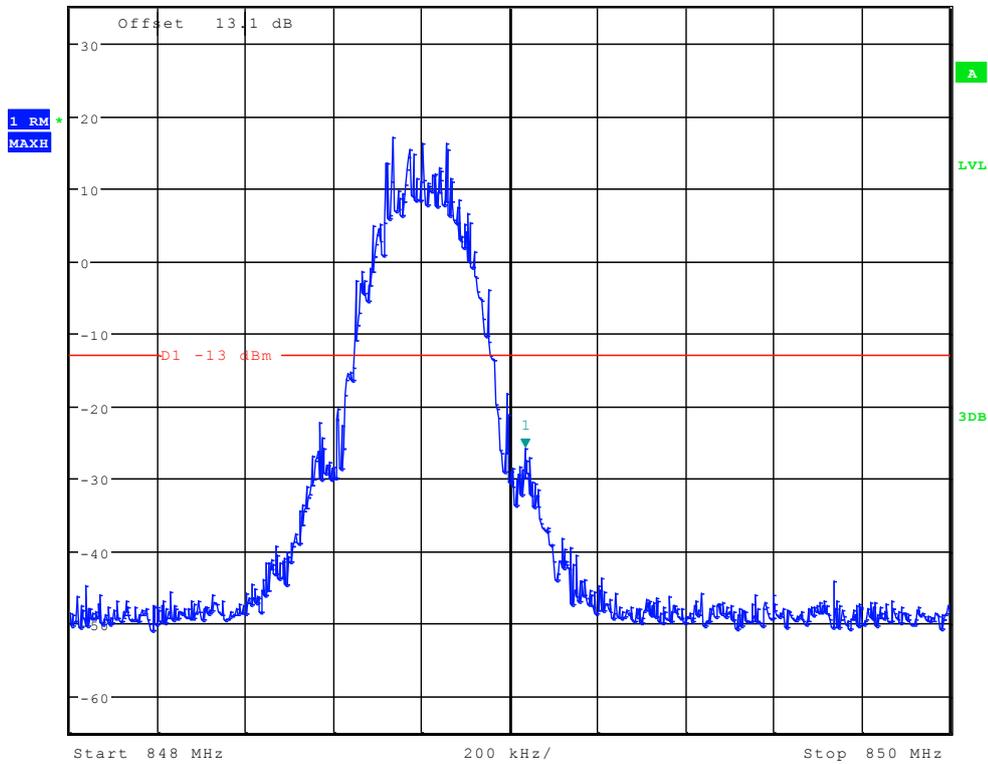
Date: 6.JUN.2012 09:20:55



2.1.2 Channel = T



* RBW 3 kHz Marker 1 [T1]
 * VBW 10 kHz -25.85 dBm
 Ref 35 dBm Att 50 dB SWT 225 ms 849.035000000 MHz



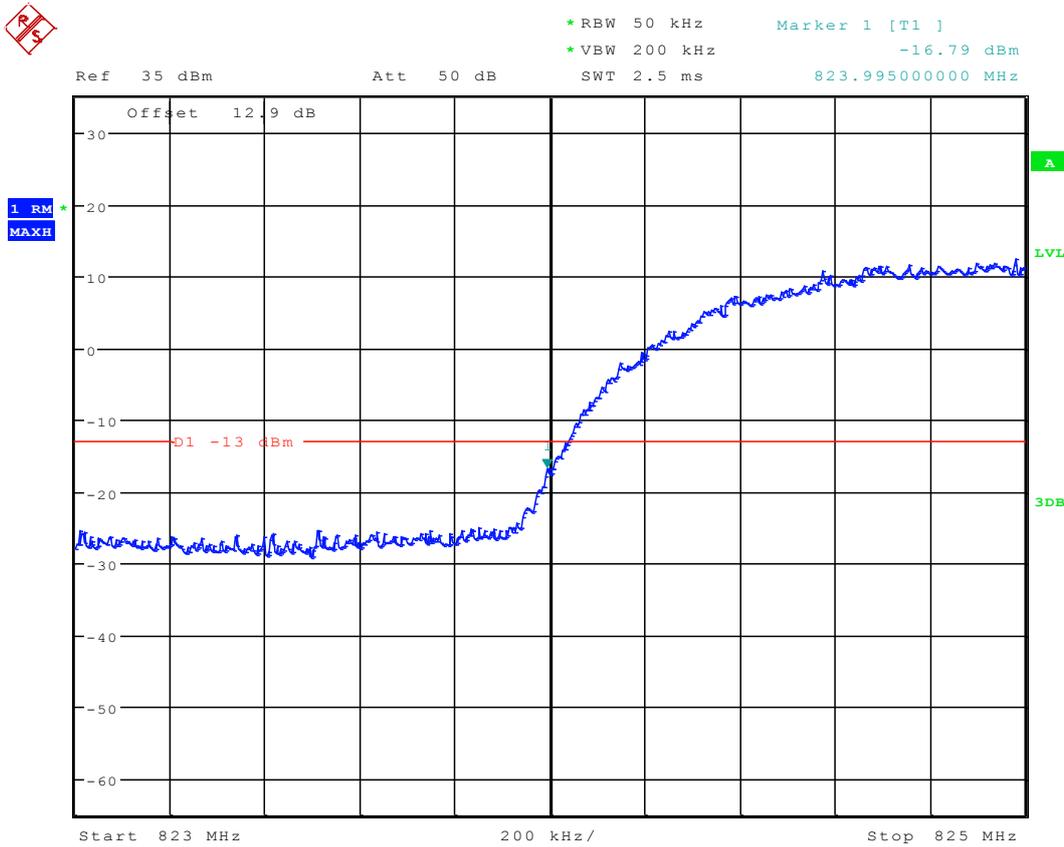
Date: 6.JUN.2012 09:21:08



3 For WCDMA Band 5

3.1 Test Mode=TM3

3.1.1 Channel = B



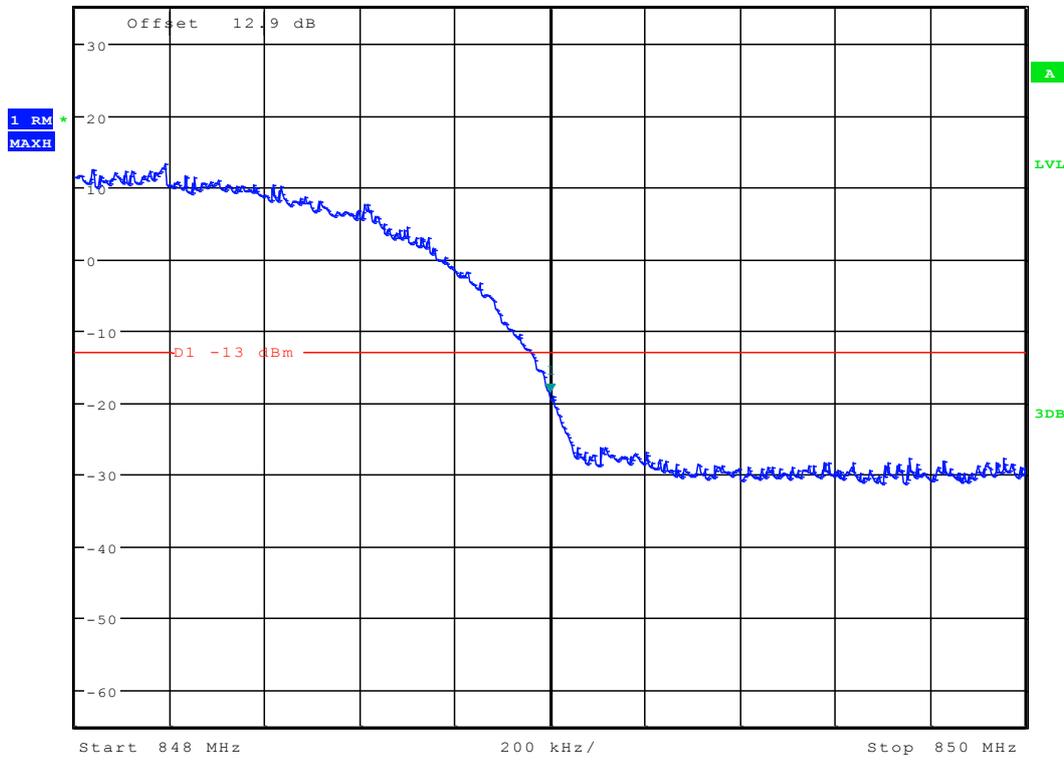
Date: 21.SEP.2012 09:13:44



3.1.2 Channel = T



*RBW 50 kHz Marker 1 [T1]
 *VBW 200 kHz -18.58 dBm
 Ref 35 dBm Att 50 dB SWT 2.5 ms 849.000000000 MHz



Date: 21.SEP.2012 09:13:57



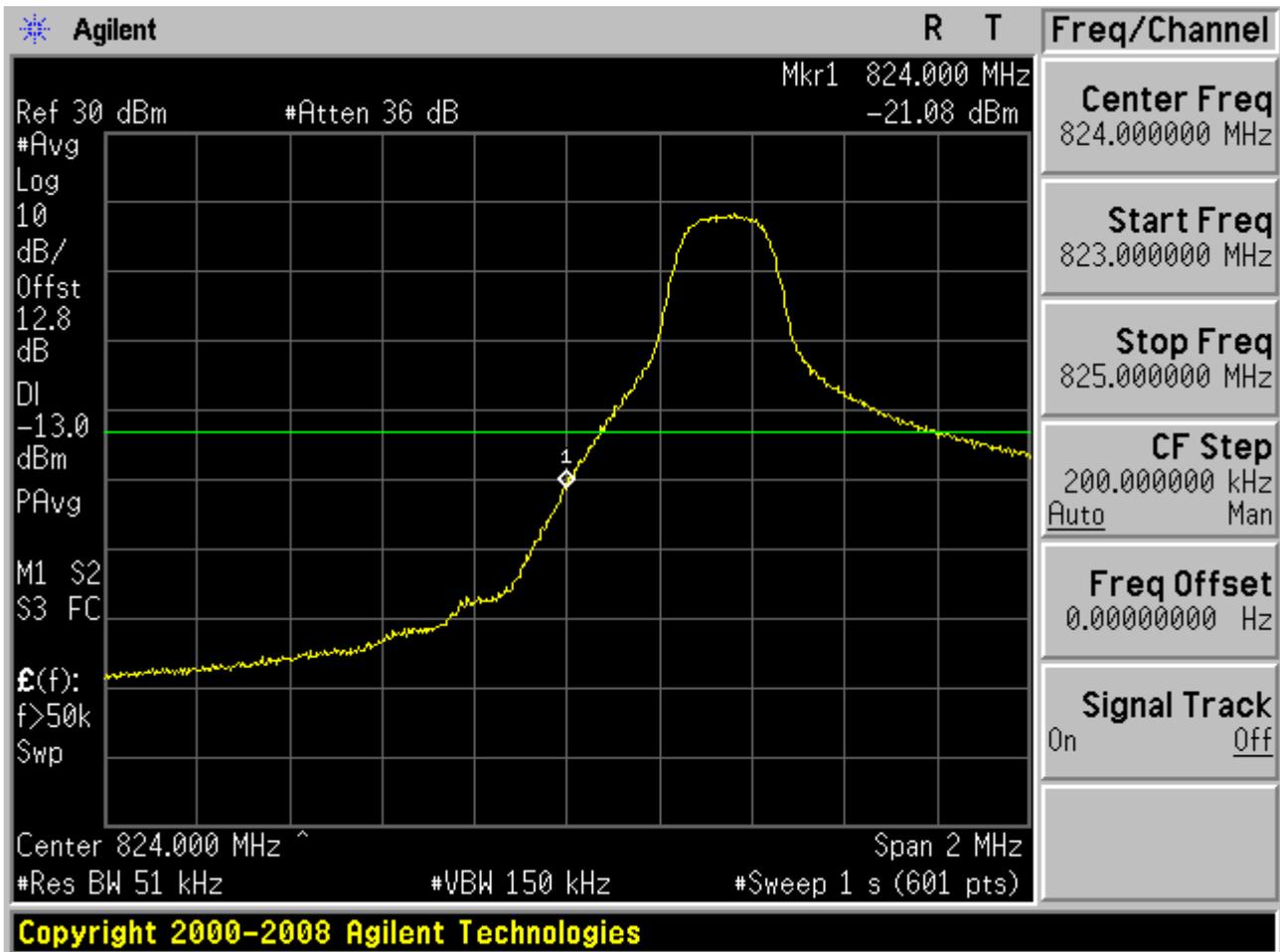
4 For LTE Band 5

4.1 Test Mode=TM6

4.1.1 Channel Bandwidth = 5 MHz

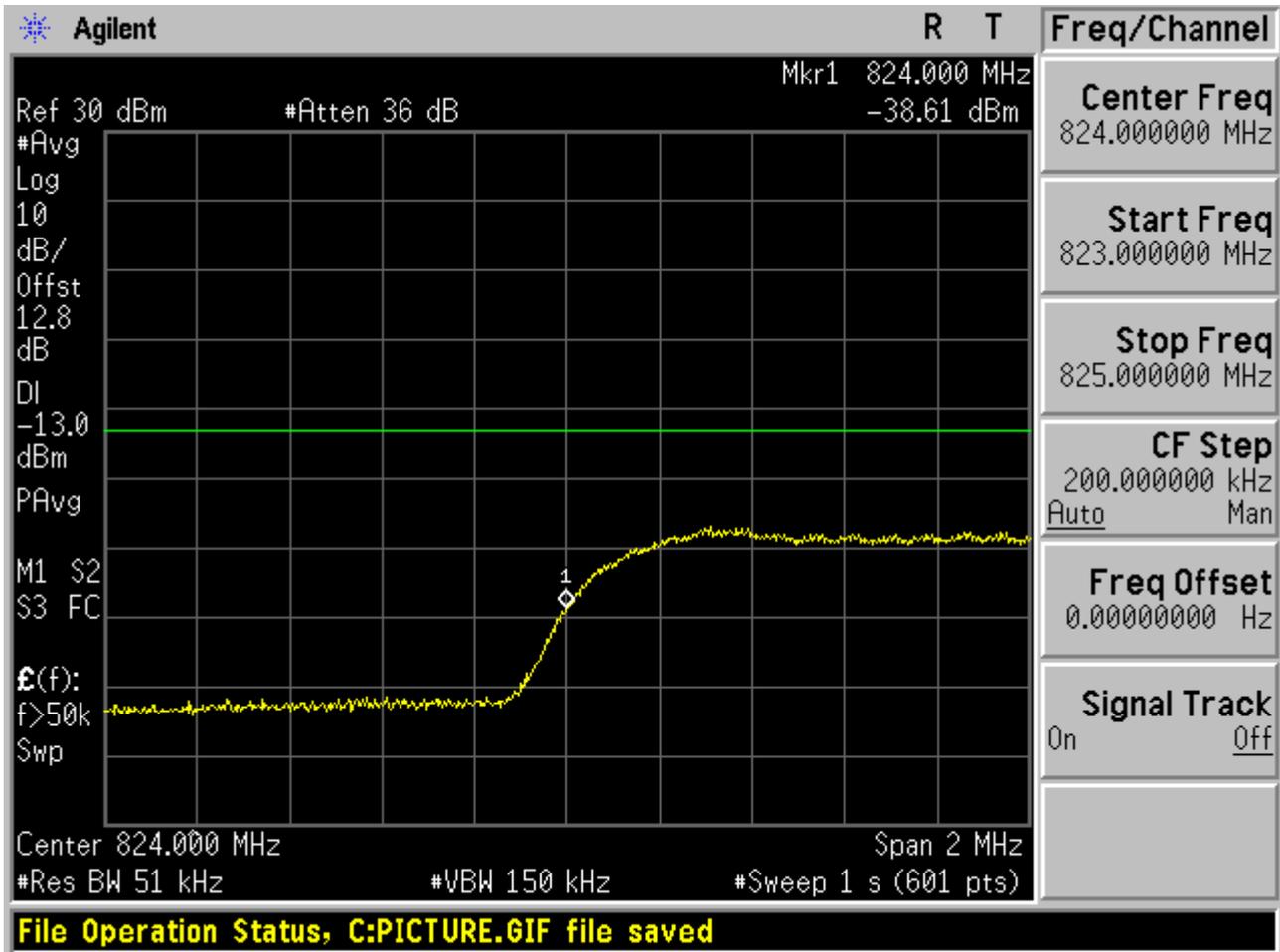
4.1.1.1 Channel= B

4.1.1.1.1 QPSK/1RB # 0



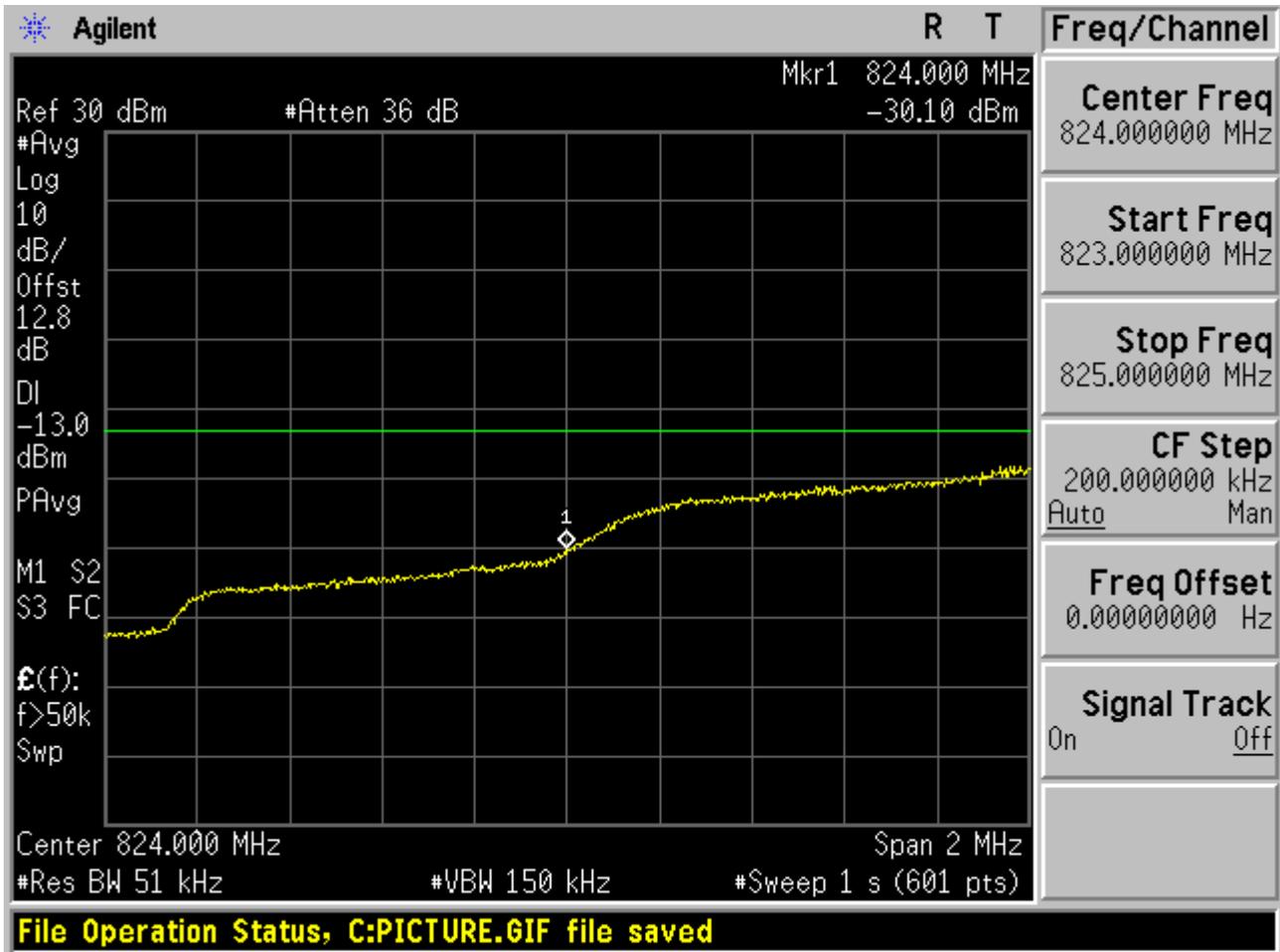


4.1.1.1.2 QPSK/1RB # max



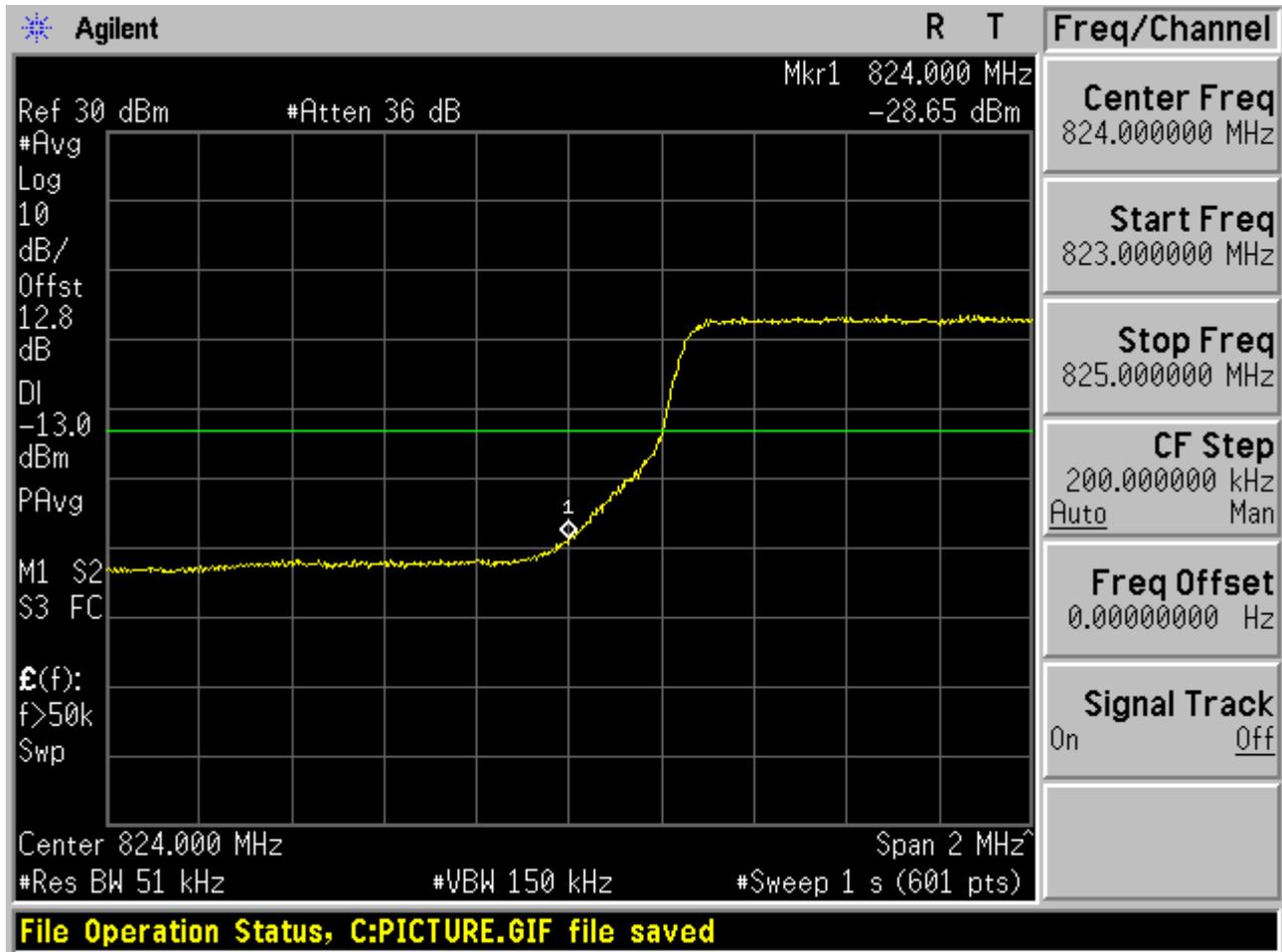


4.1.1.1.3 QPSK/non-1RB #mid/2





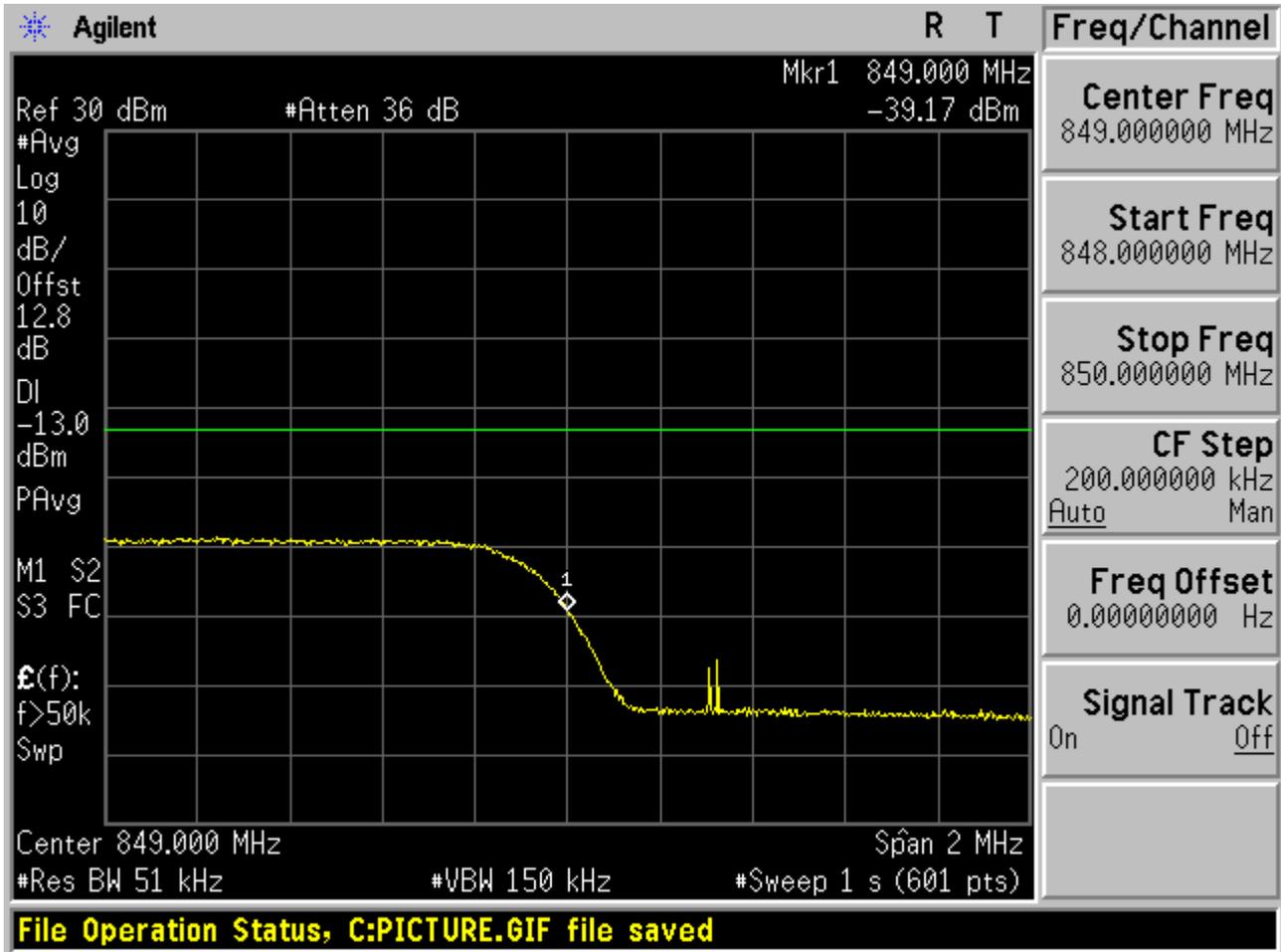
4.1.1.1.4 QPSK/full RBs





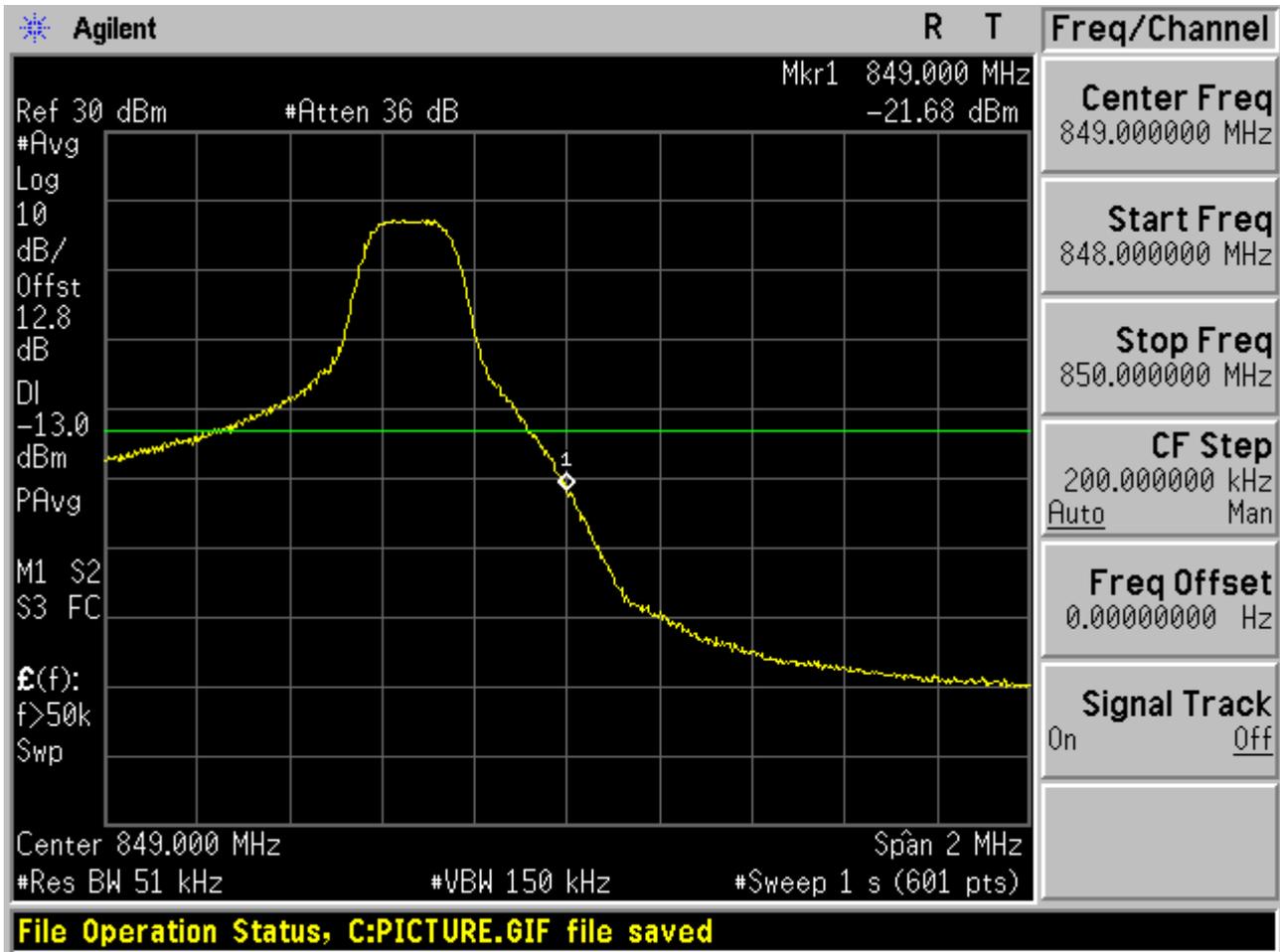
4.1.1.2 Channel= T

4.1.1.2.1 QPSK/1RB # 0



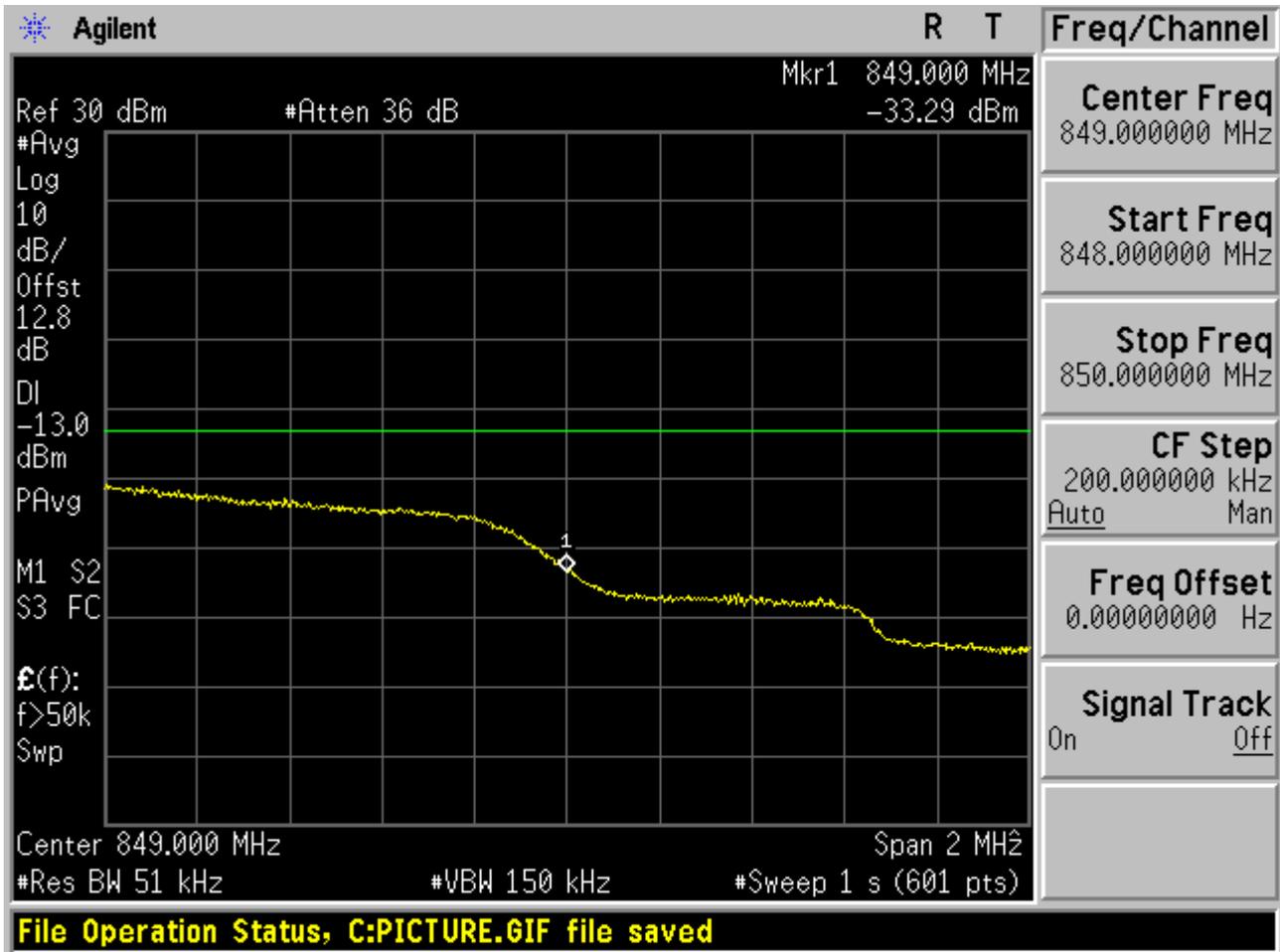


4.1.1.2.2 QPSK/1RB # max



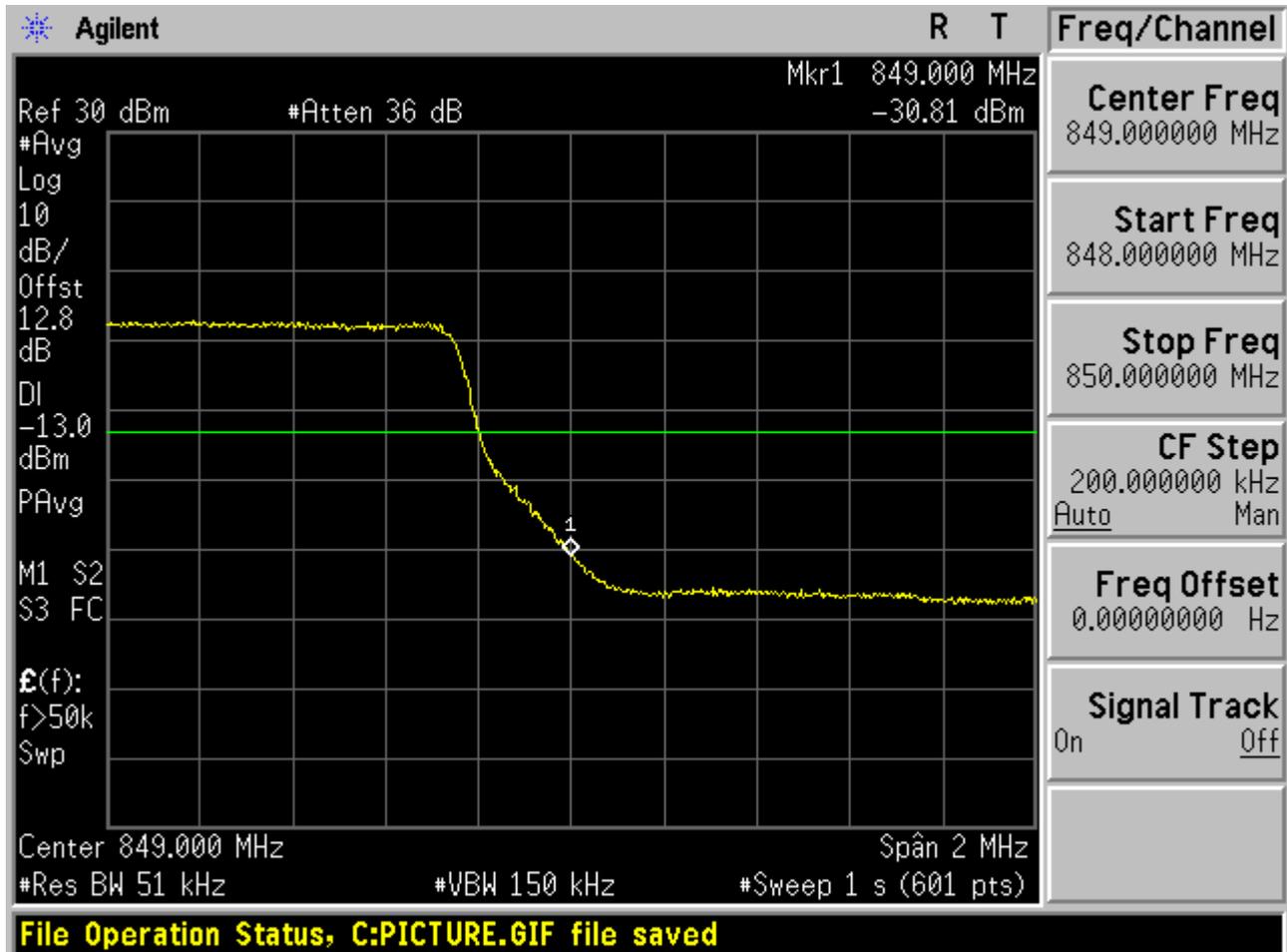


4.1.1.2.3 QPSK/non-1RB #mid/2





4.1.1.2.4 QPSK/full RBs

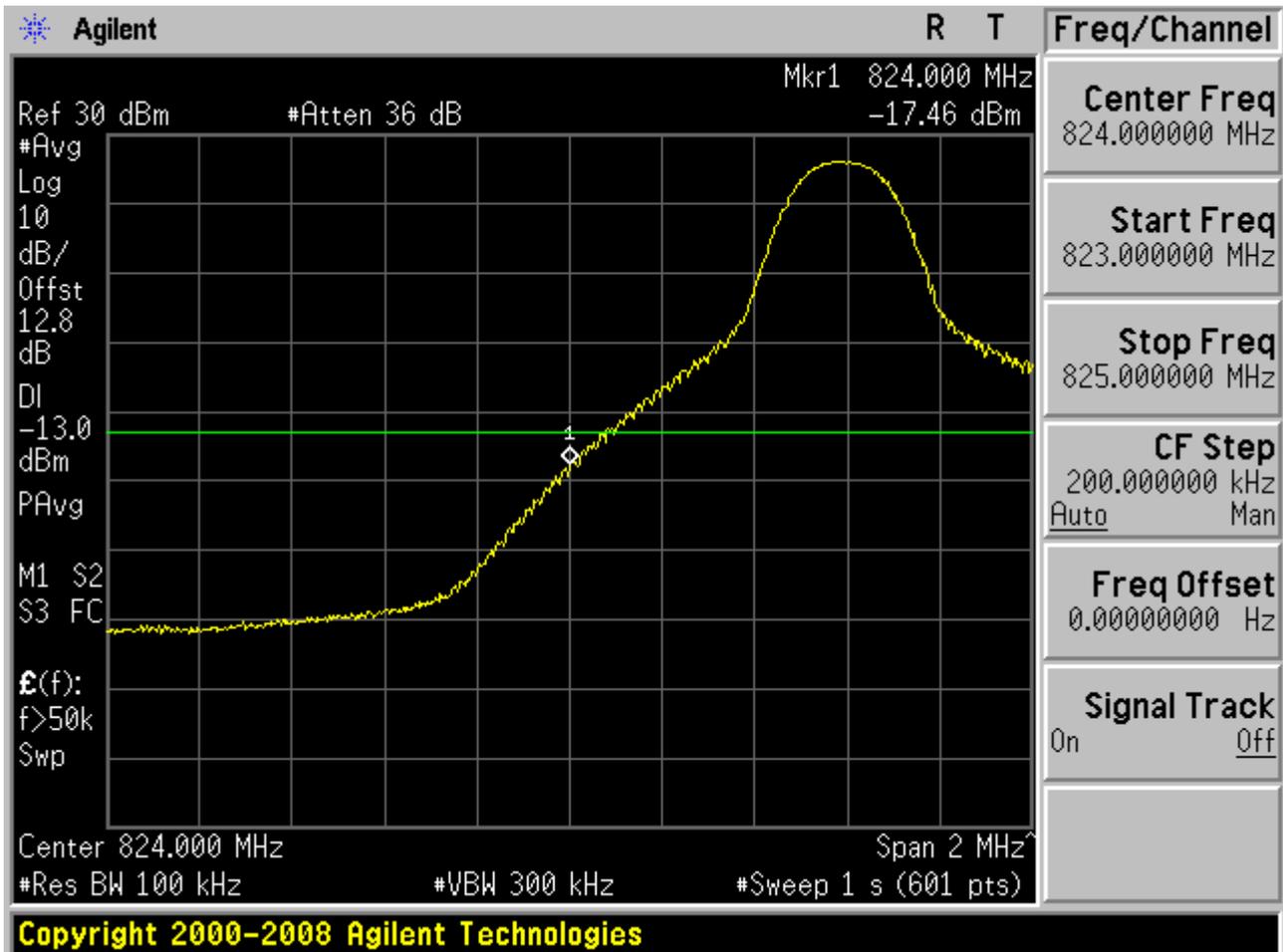




4.1.2 Channel Bandwidth = 10 MHz

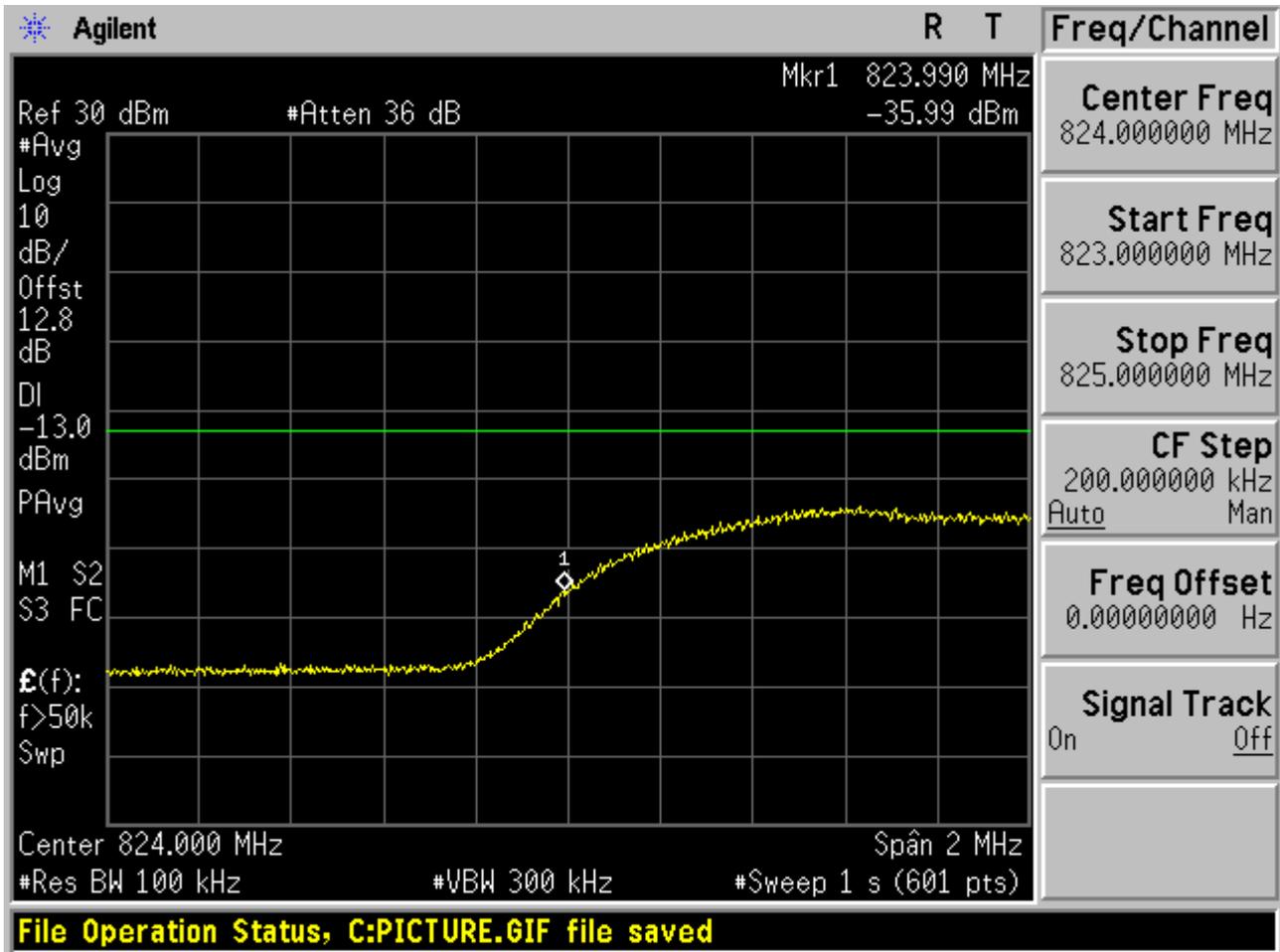
4.1.2.1 Channel= B

4.1.2.1.1 QPSK/1RB # 0



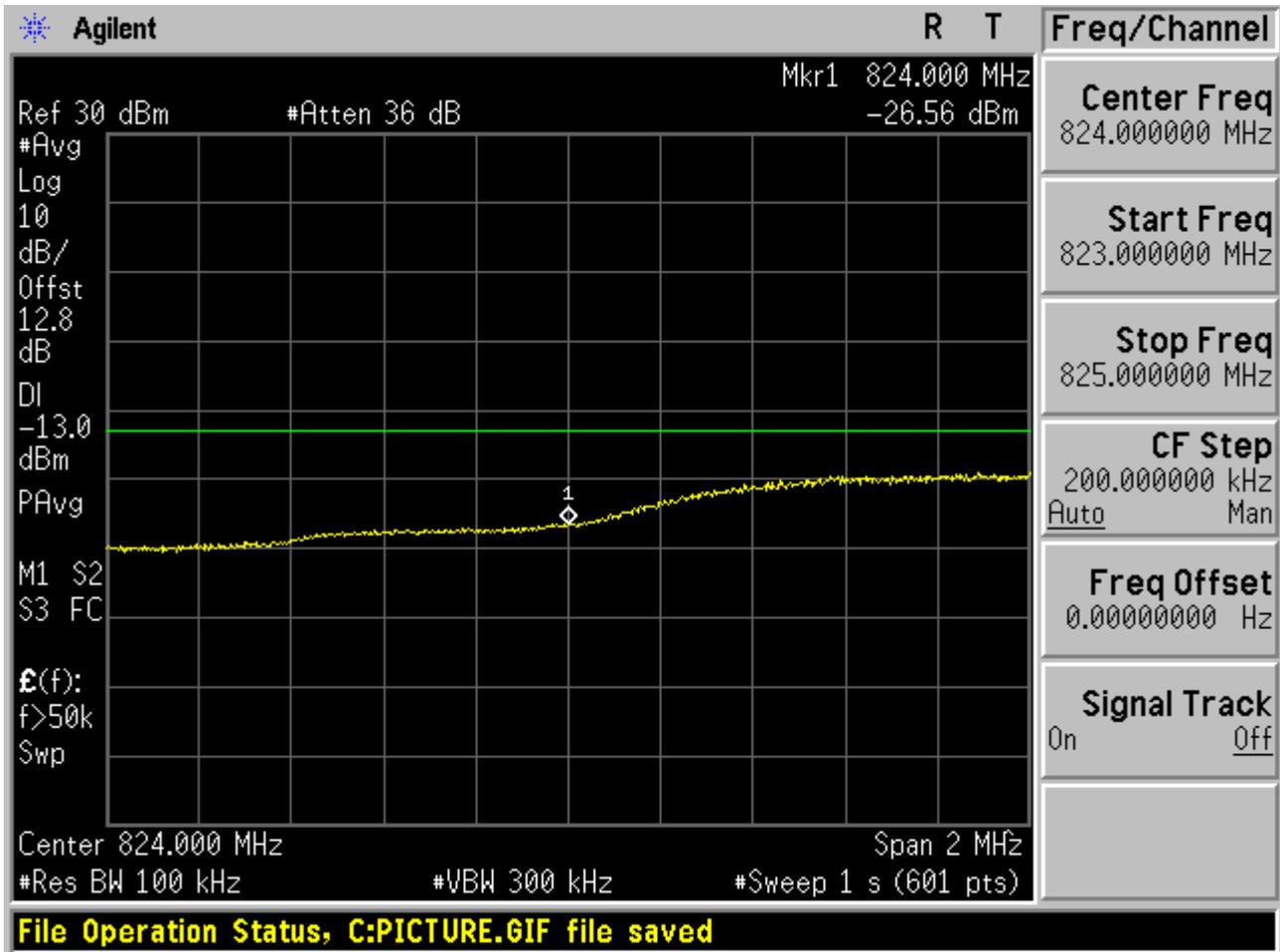


4.1.2.1.2 QPSK/1RB # max



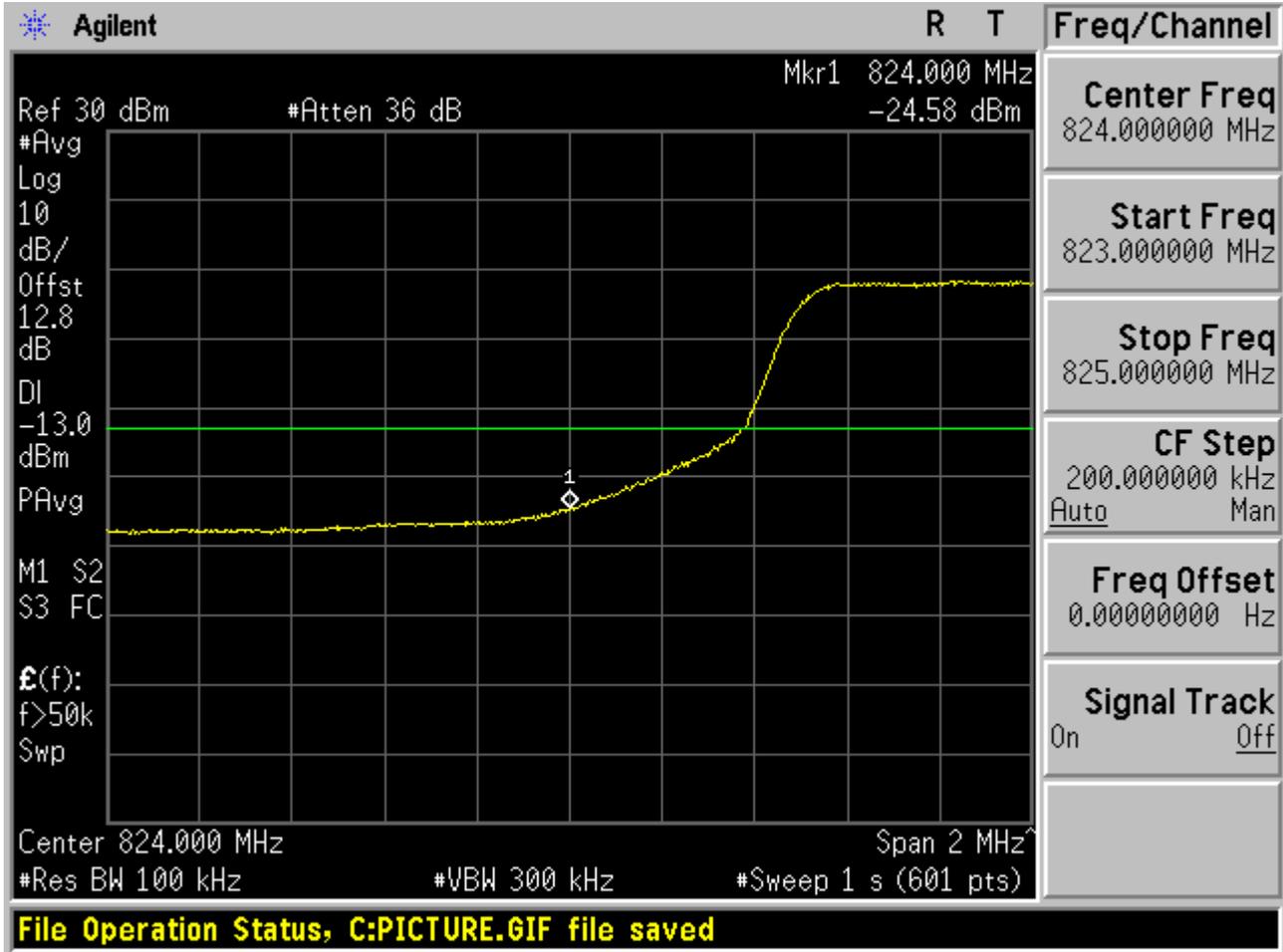


4.1.2.1.3 QPSK/non-1RB #mid/2





4.1.2.1.4 QPSK/full RBs





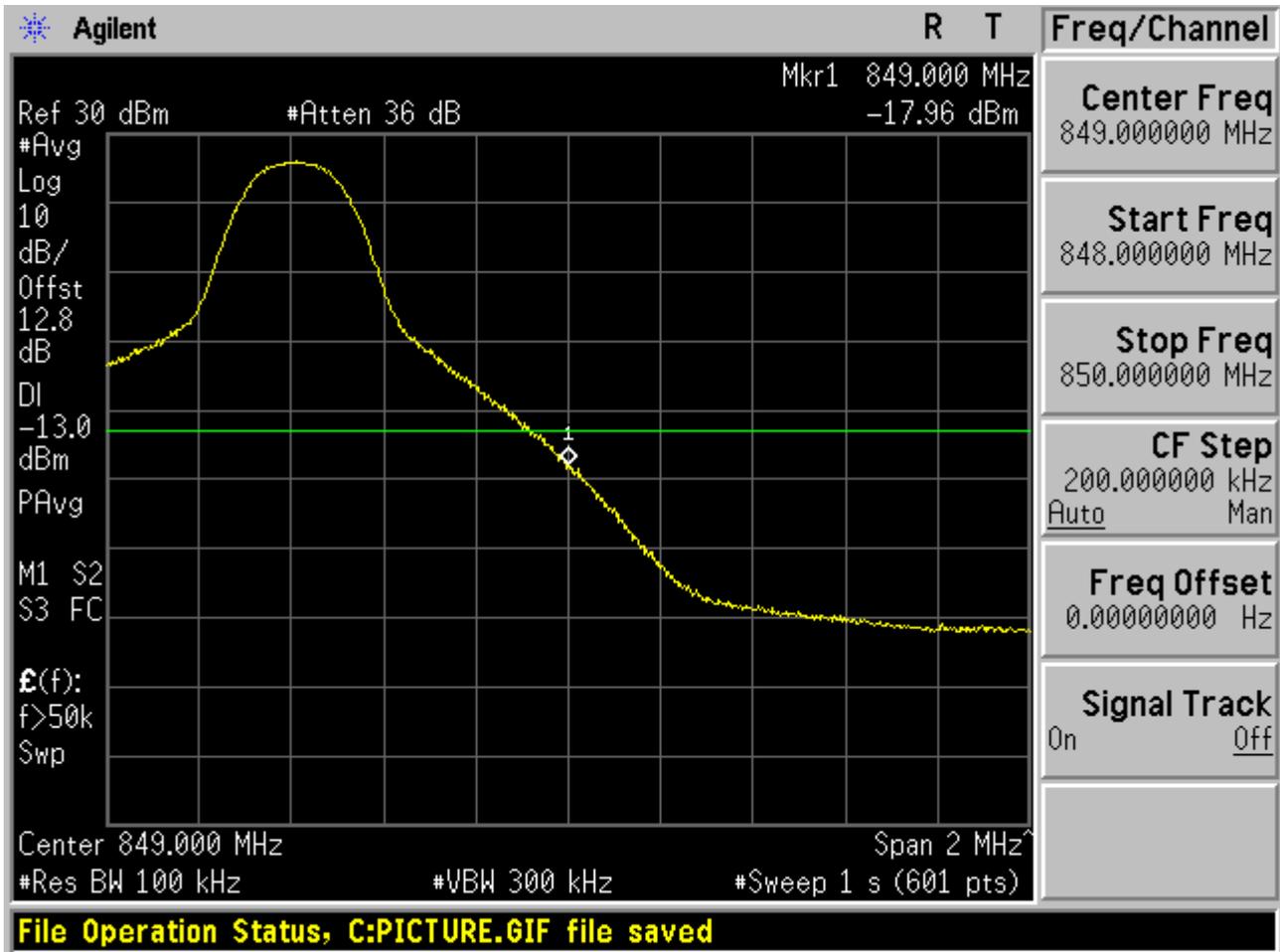
4.1.2.2 Channel= T

4.1.2.2.1 QPSK/1RB # 0



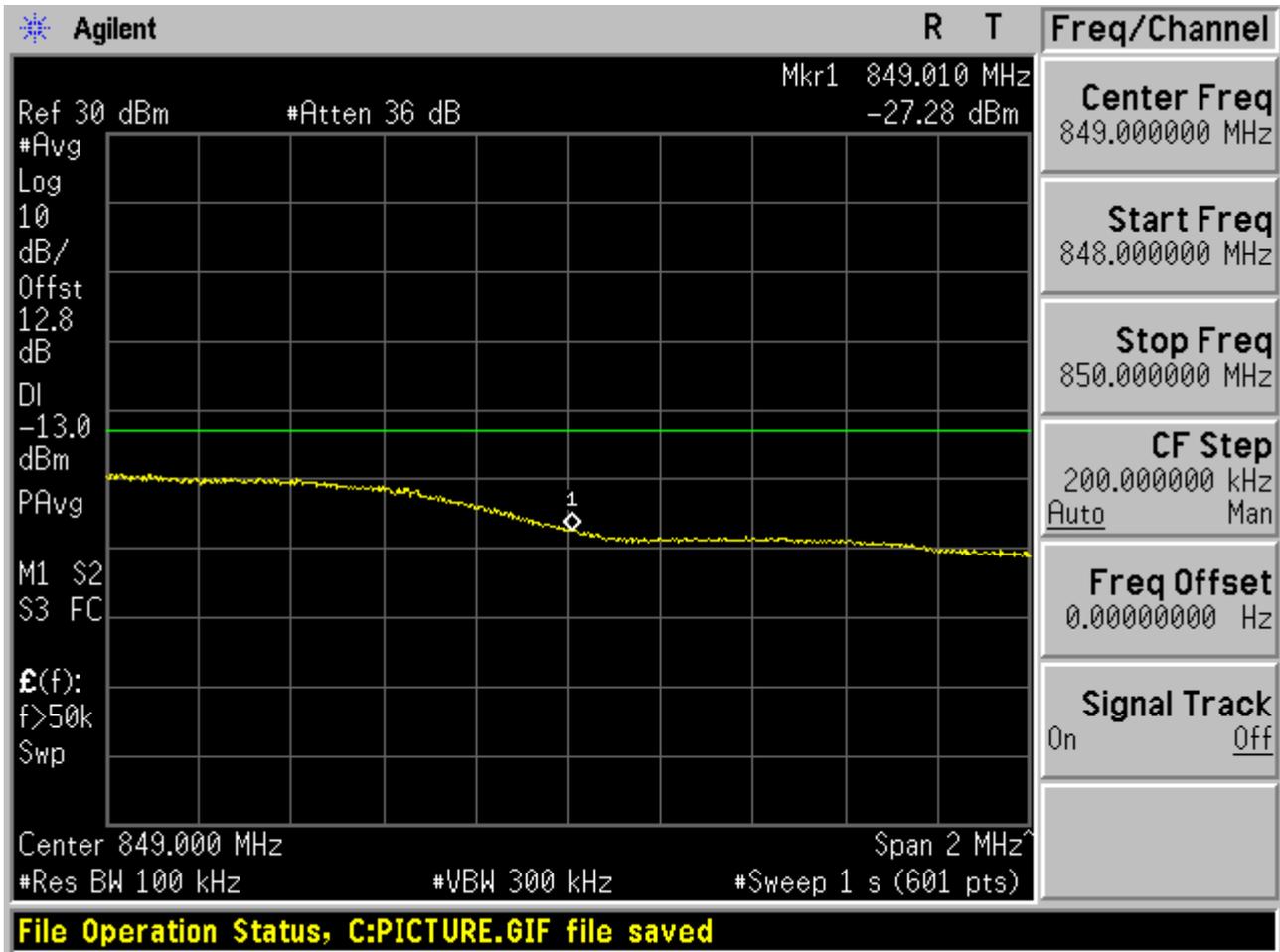


4.1.2.2.2 QPSK/1RB # max



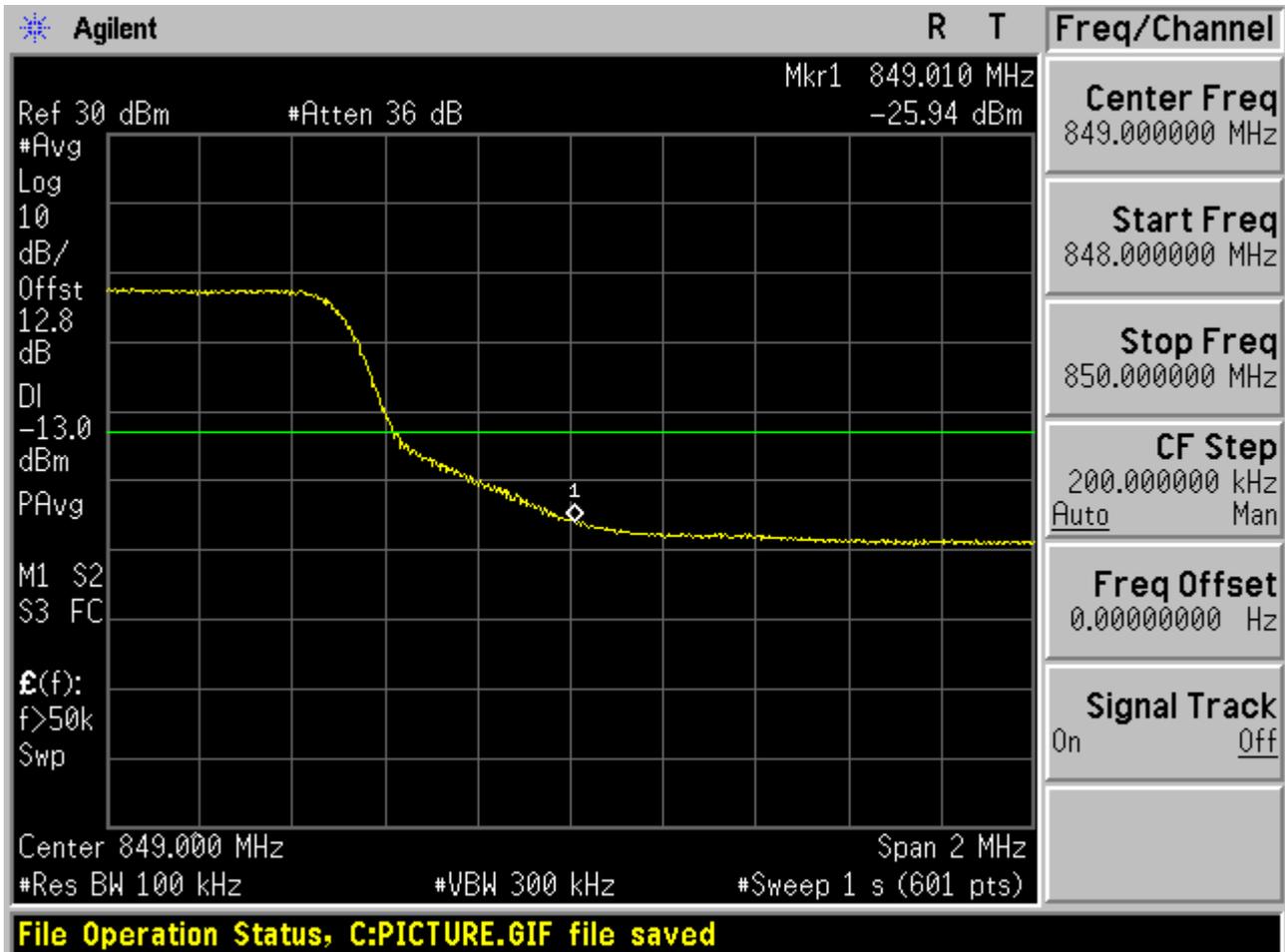


4.1.2.2.3 QPSK/non-1RB #mid/2





4.1.2.2.4 QPSK/full RBs



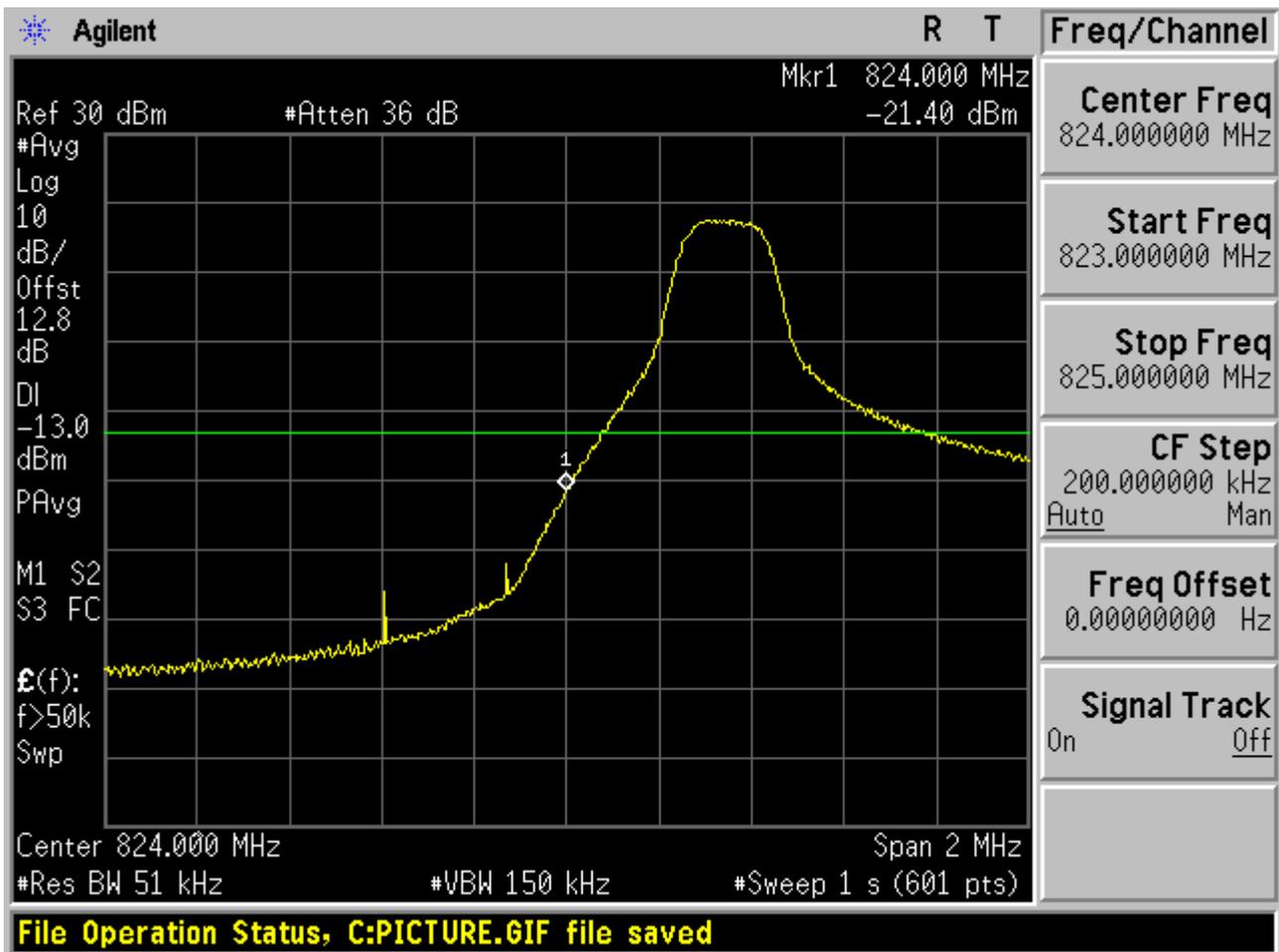


4.2 Test Mode=TM7

4.2.1 Channel Bandwidth = 5 MHz

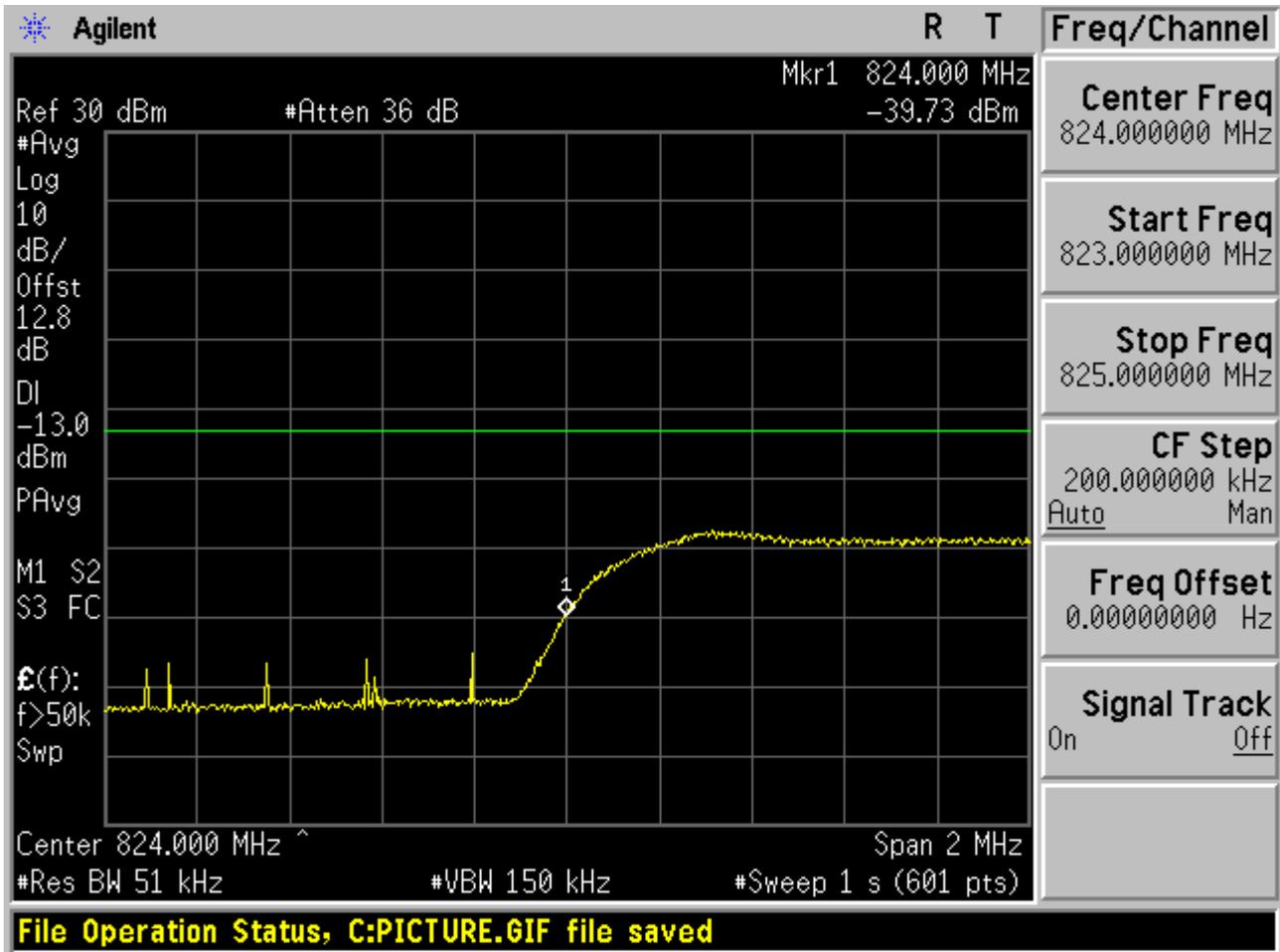
4.2.1.1 Channel= B

4.2.1.1.1 16QAM/1RB #0



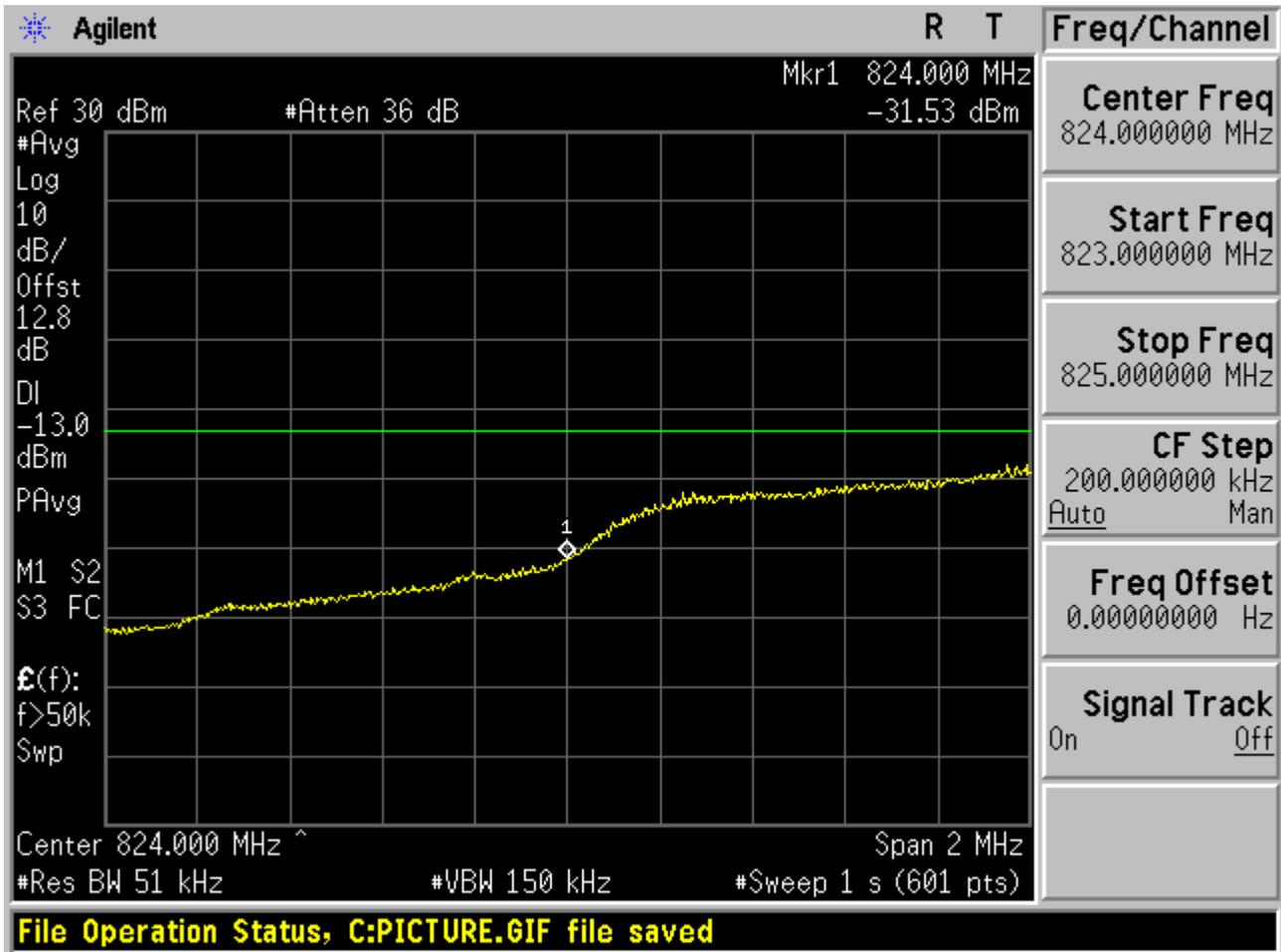


4.2.1.1.2 16QAM/1RB #max



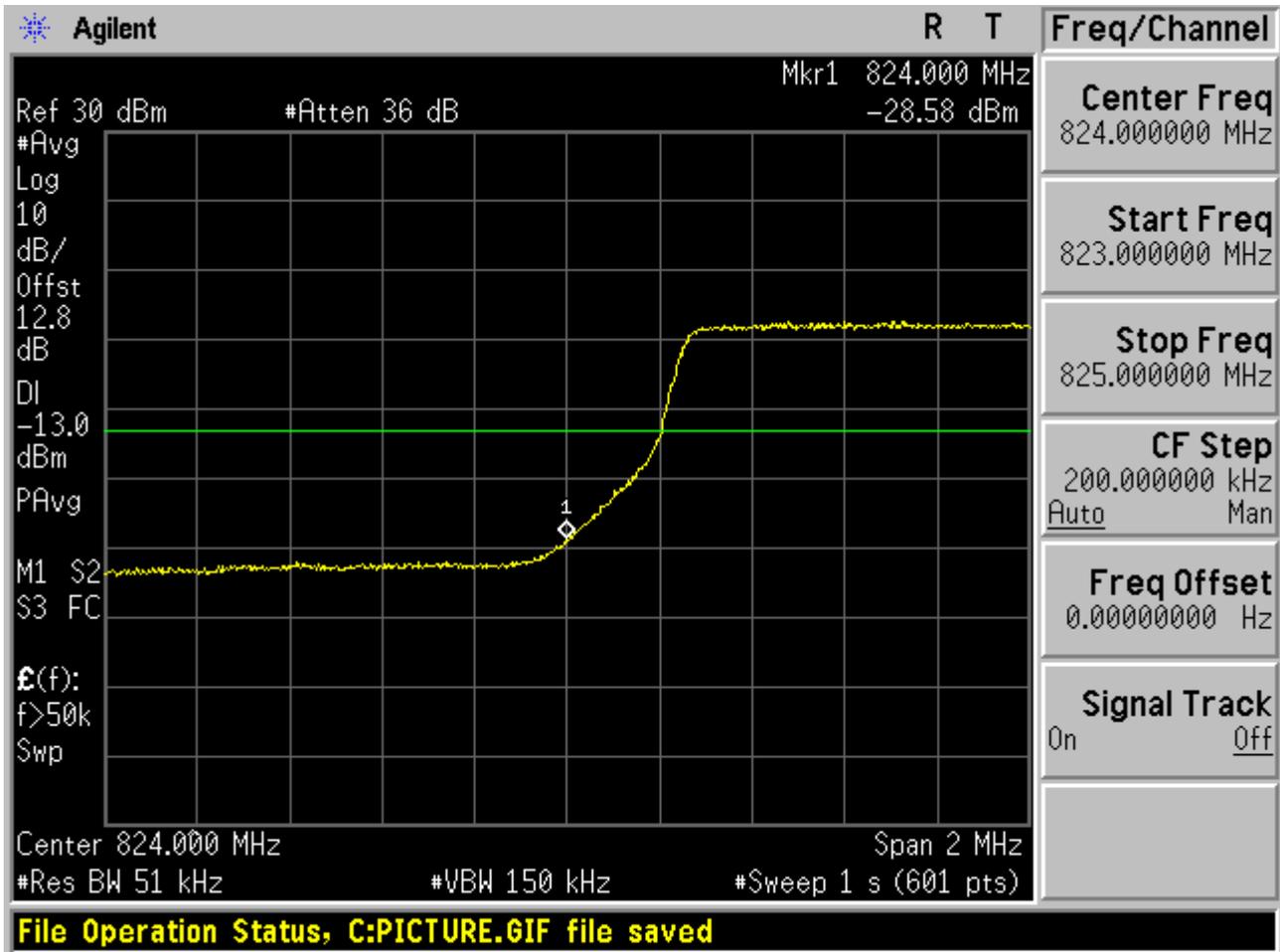


4.2.1.1.3 16QAM / non-1RB #mid/2





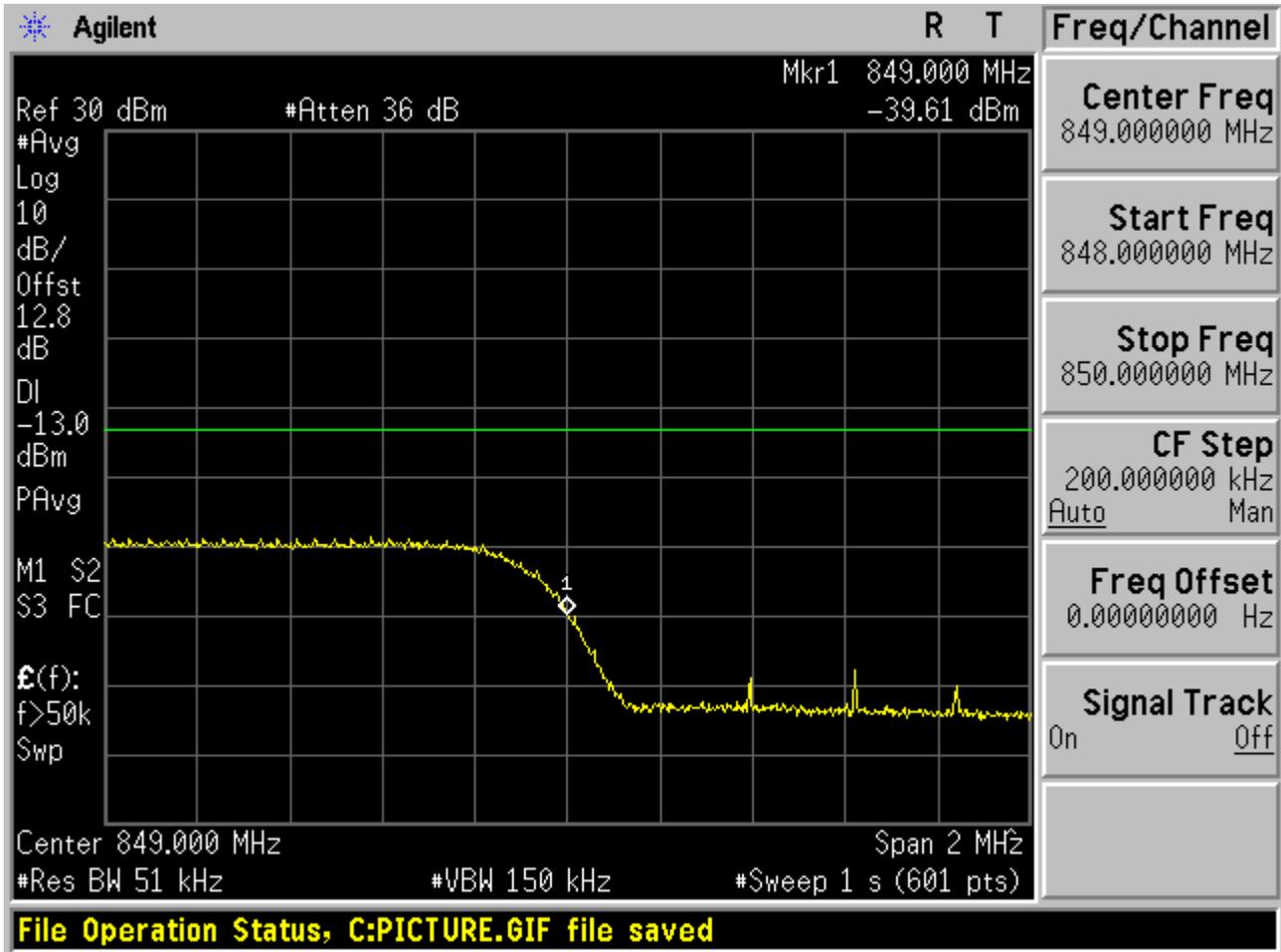
4.2.1.1.4 16QAM /full RBs





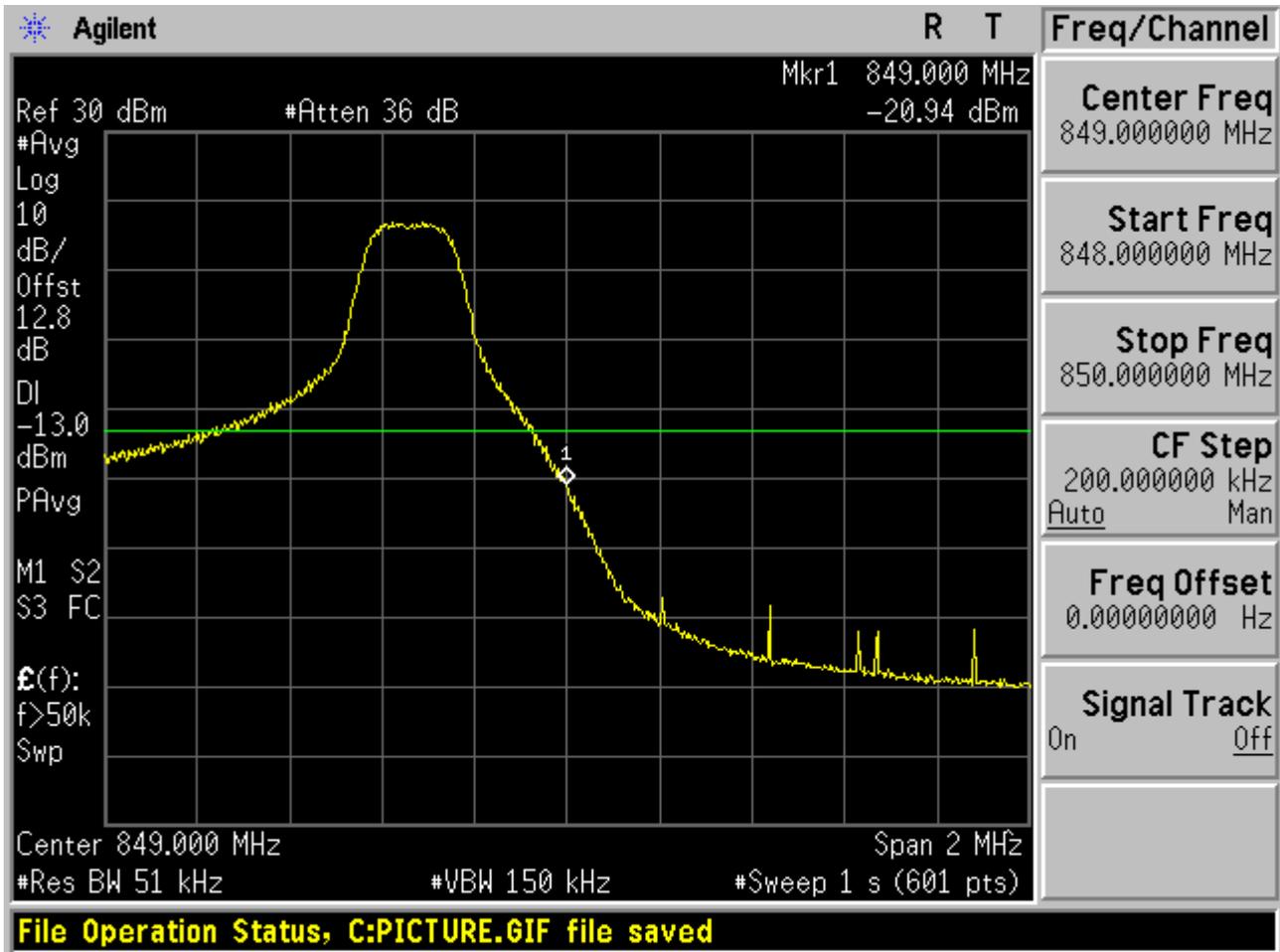
4.2.1.2 Channel= T

4.2.1.2.1 16QAM /1RB #0



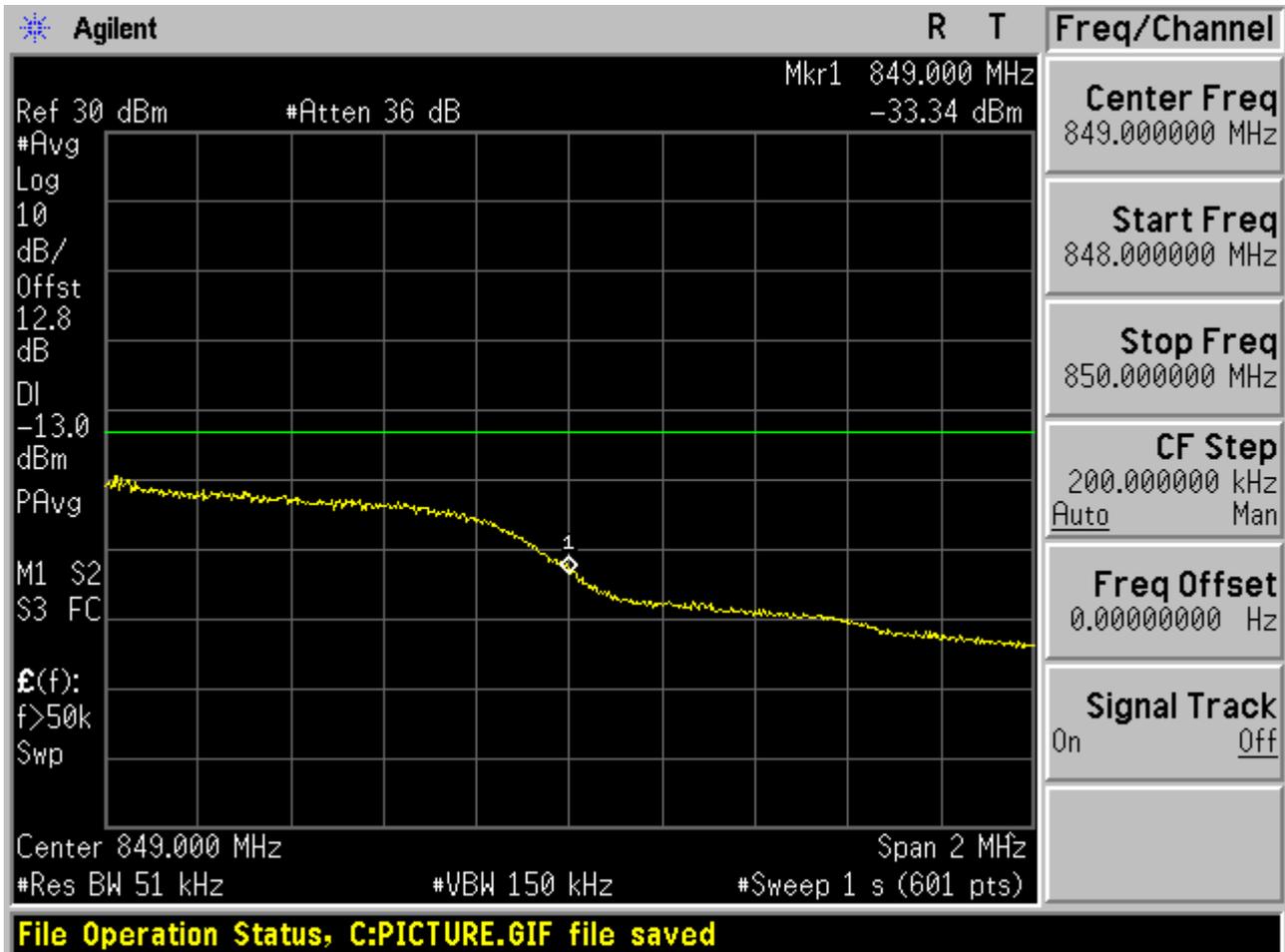


4.2.1.2.2 16QAM /1RB #max



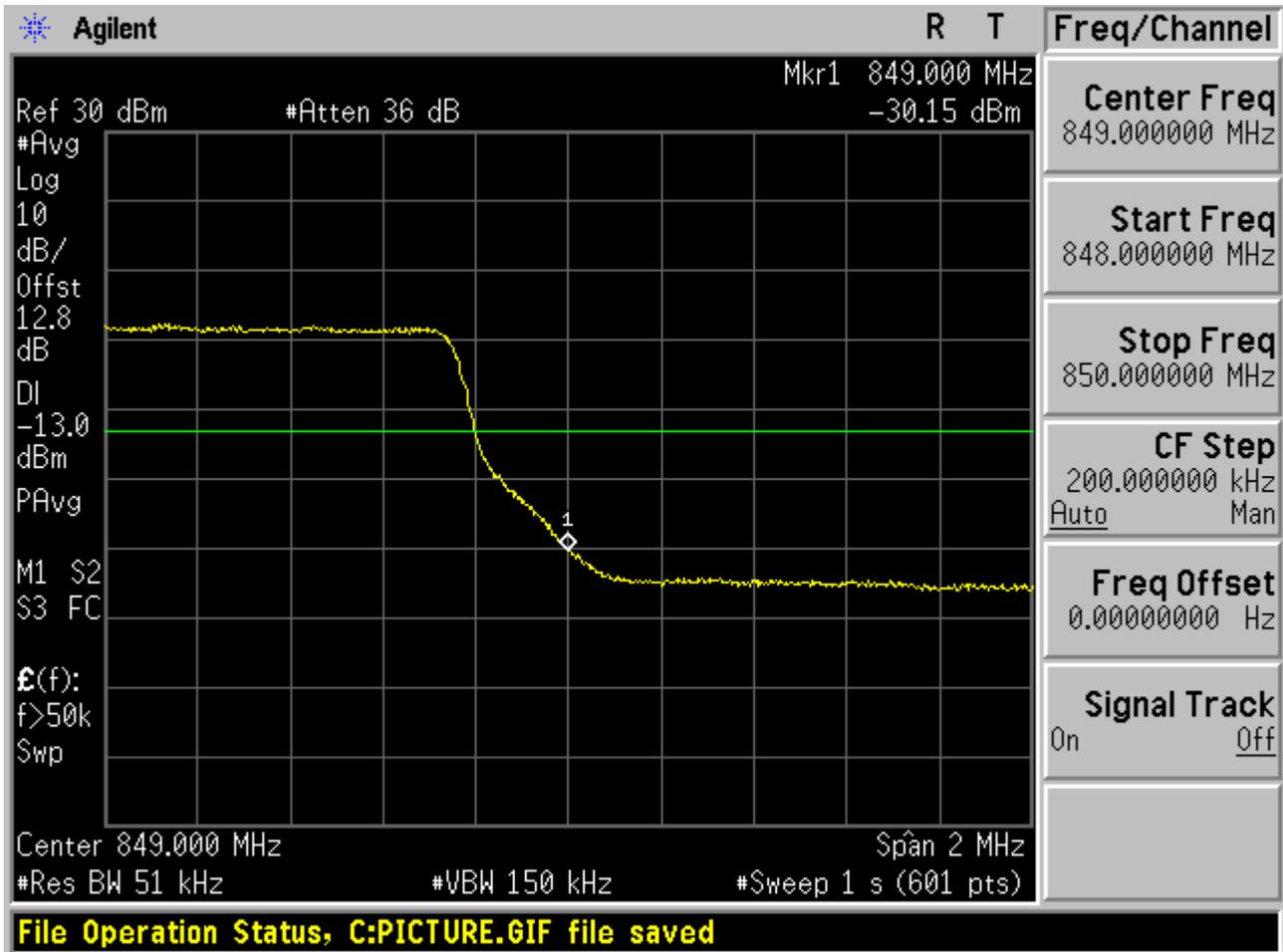


4.2.1.2.3 16QAM / non-1RB #mid/2





4.2.1.2.4 16QAM /full RBs

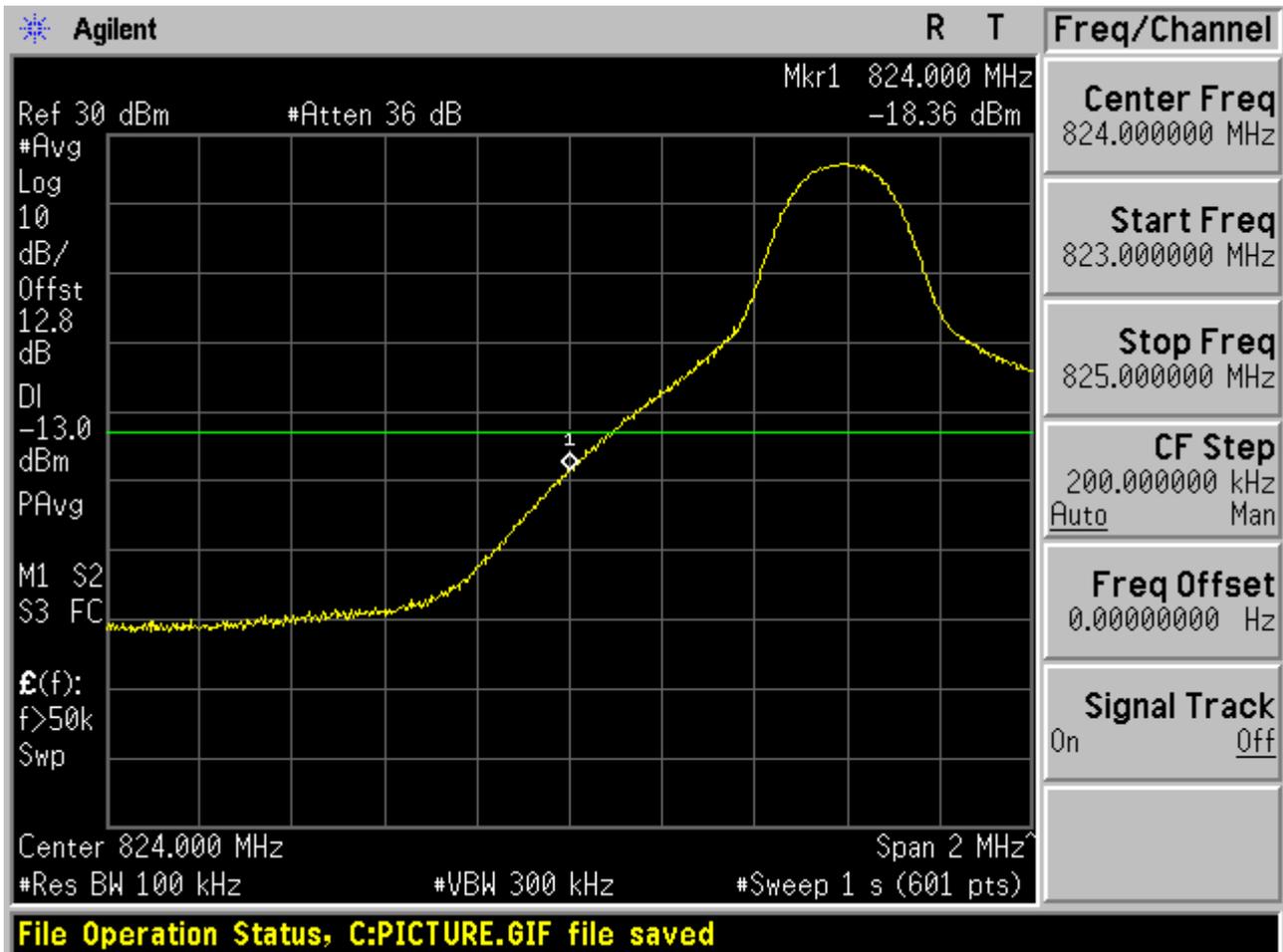




4.2.2 Channel Bandwidth = 10 MHz

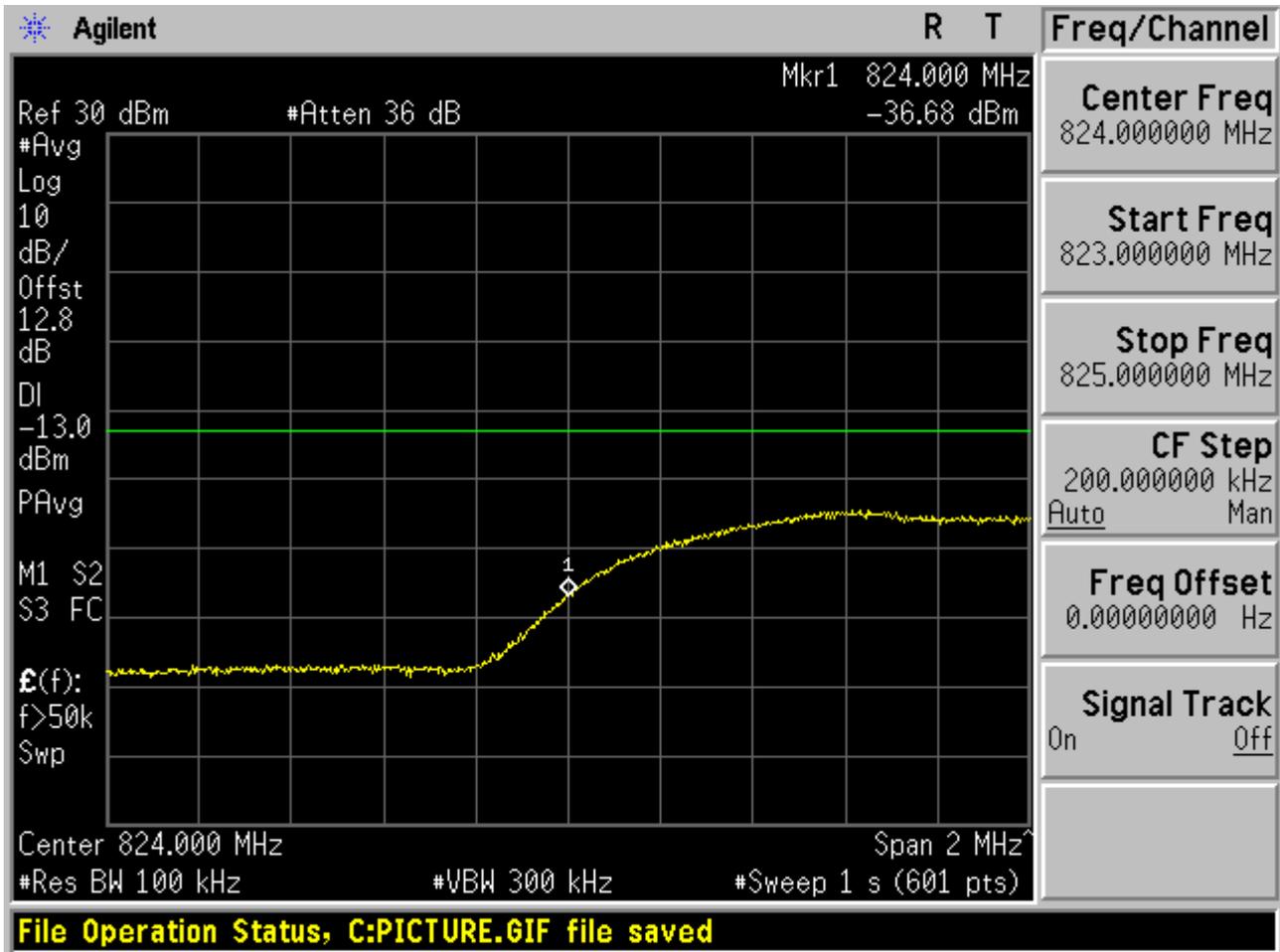
4.2.2.1 Channel= B

4.2.2.1.1 16QAM/1RB #0



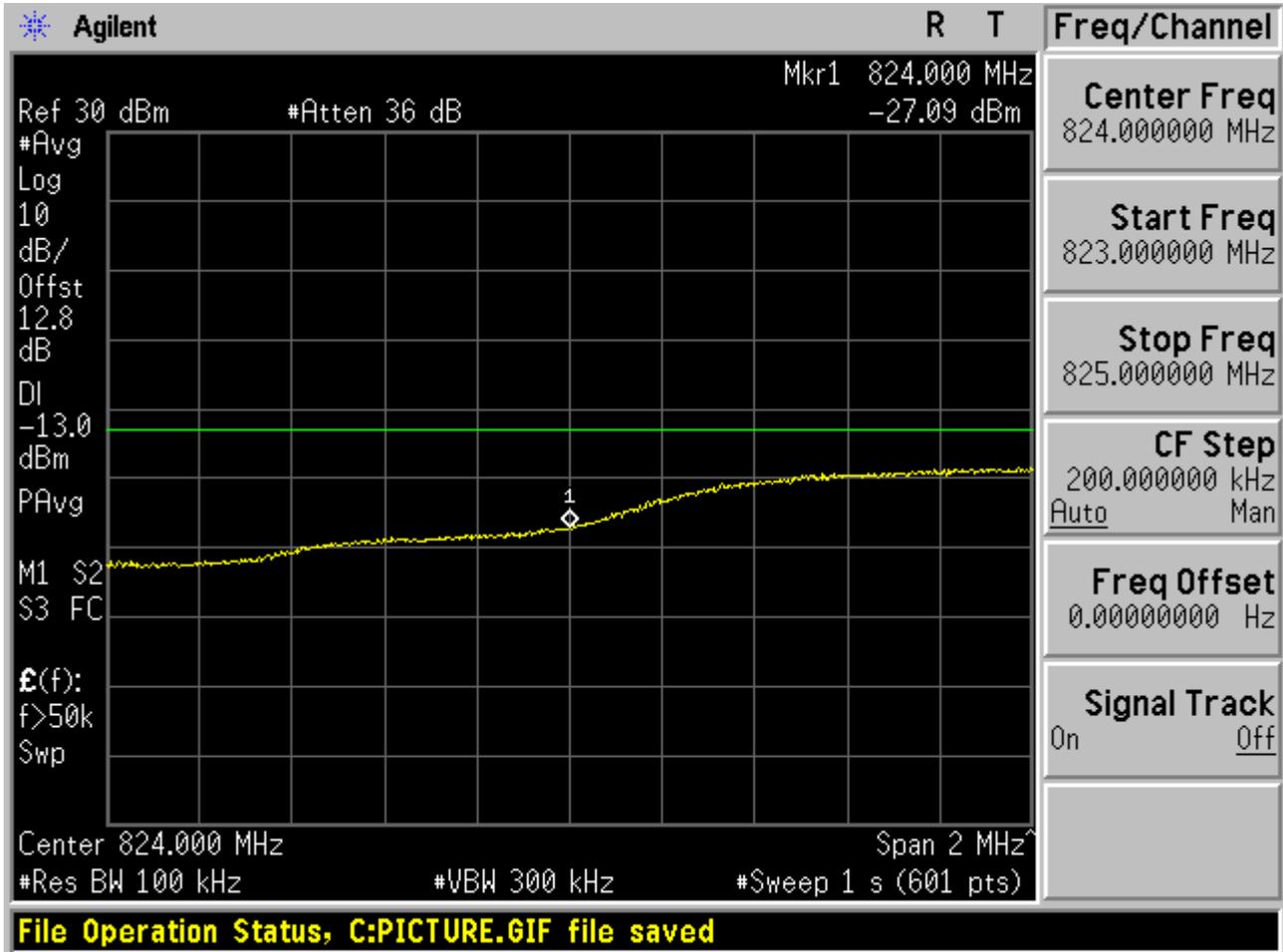


4.2.2.1.2 16QAM/1RB #max



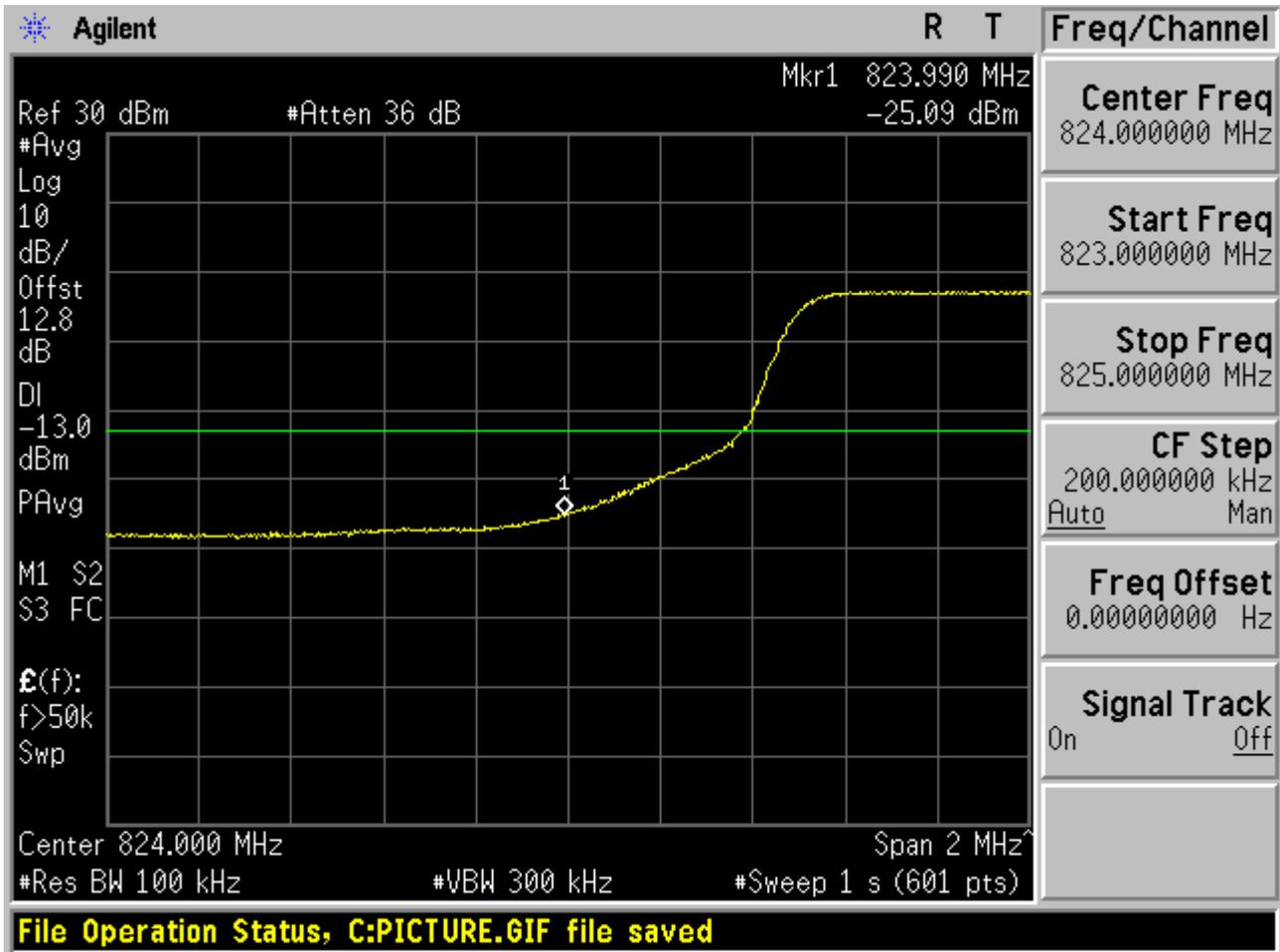


4.2.2.1.3 16QAM / non-1RB #mid/2





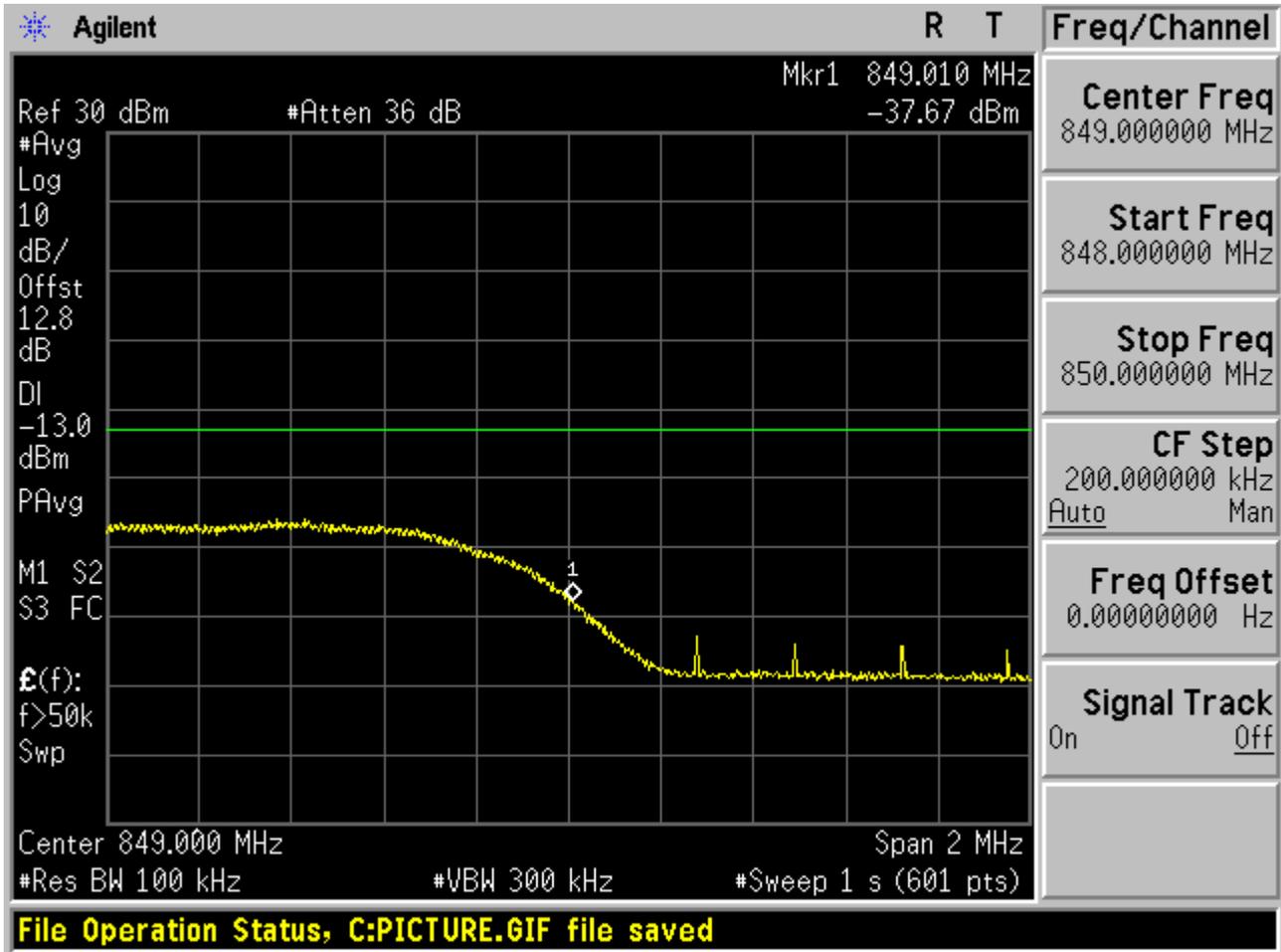
4.2.2.1.4 16QAM /full RBs





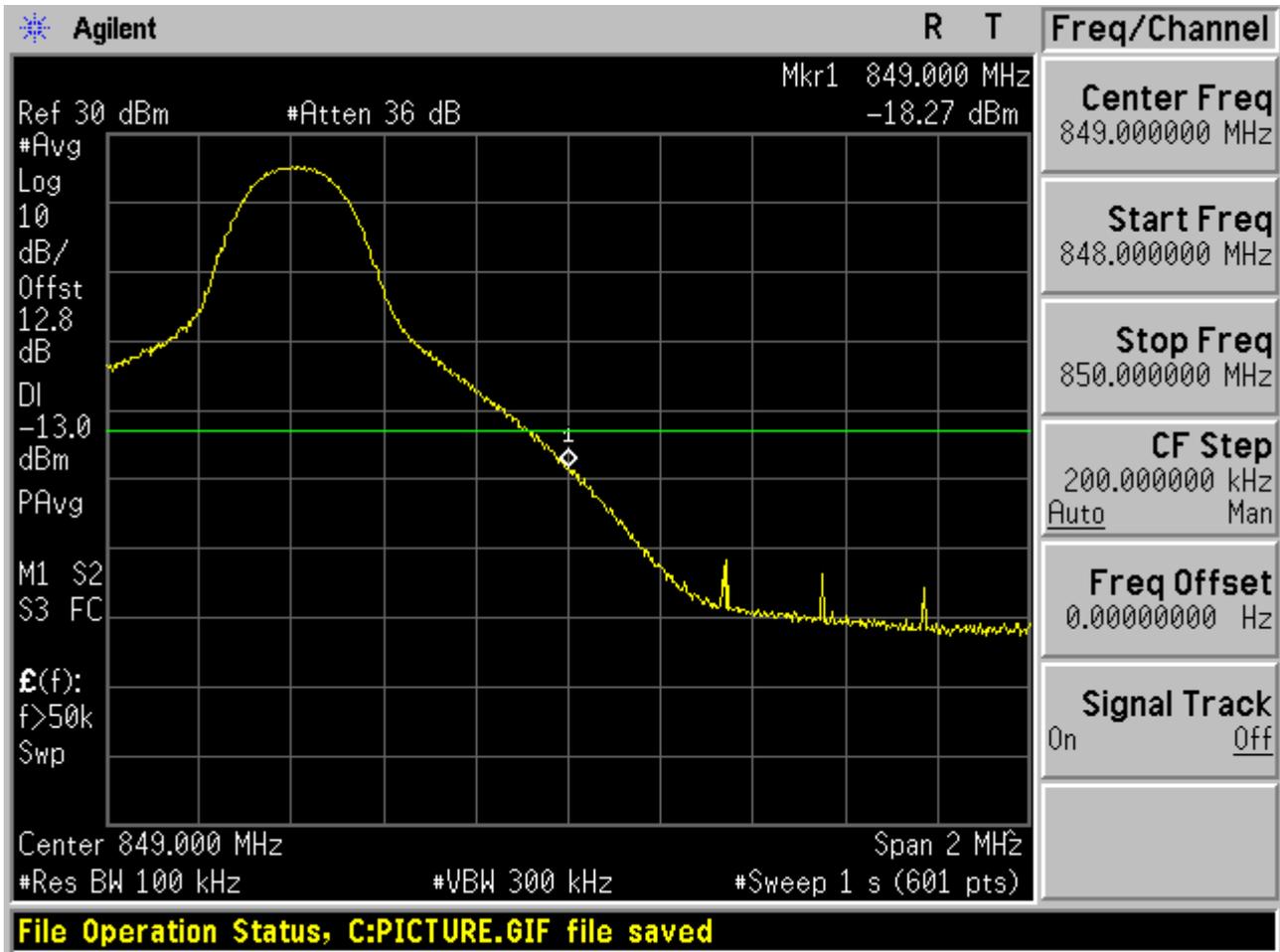
4.2.2.2 Channel= T

4.2.2.2.1 16QAM /1RB #0



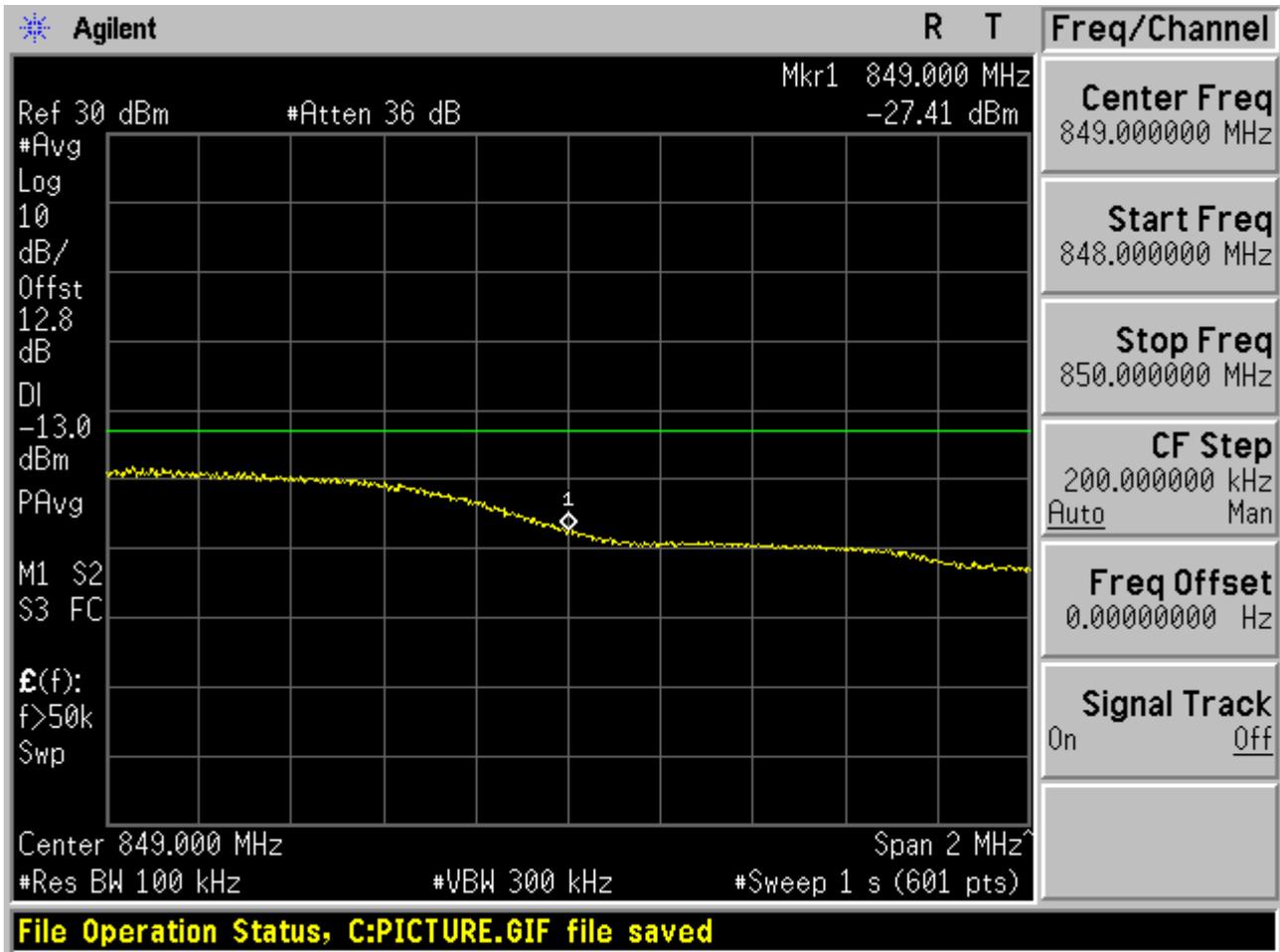


4.2.2.2.2 16QAM /1RB #max



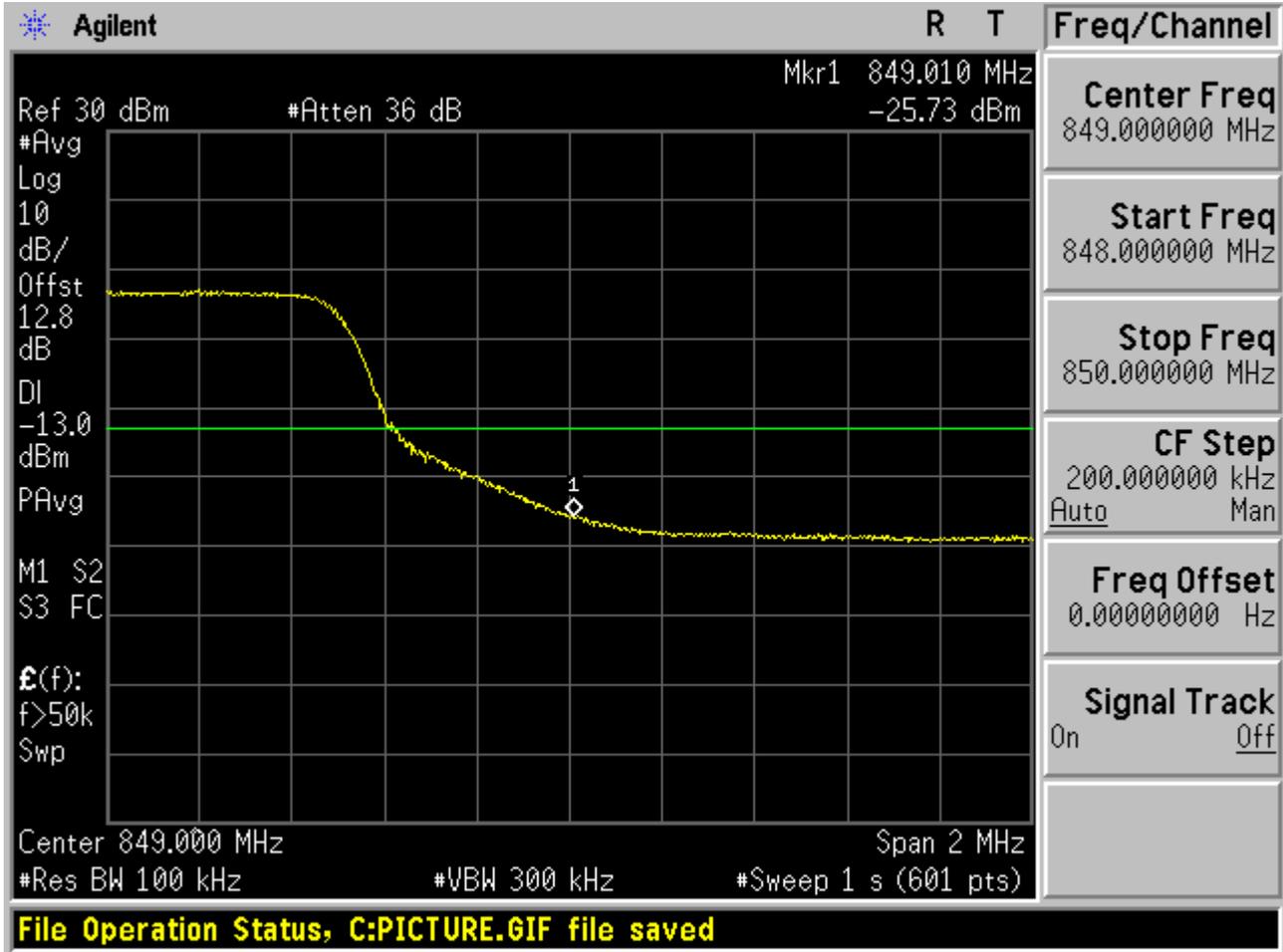


4.2.2.2.3 16QAM / non-1RB #mid/2





4.2.2.2.4 16QAM /full RBs



-----END-----



Appendix E

Spurious Emission at Antenna Terminal According to FCC Part 2.1051 & Part 22.917



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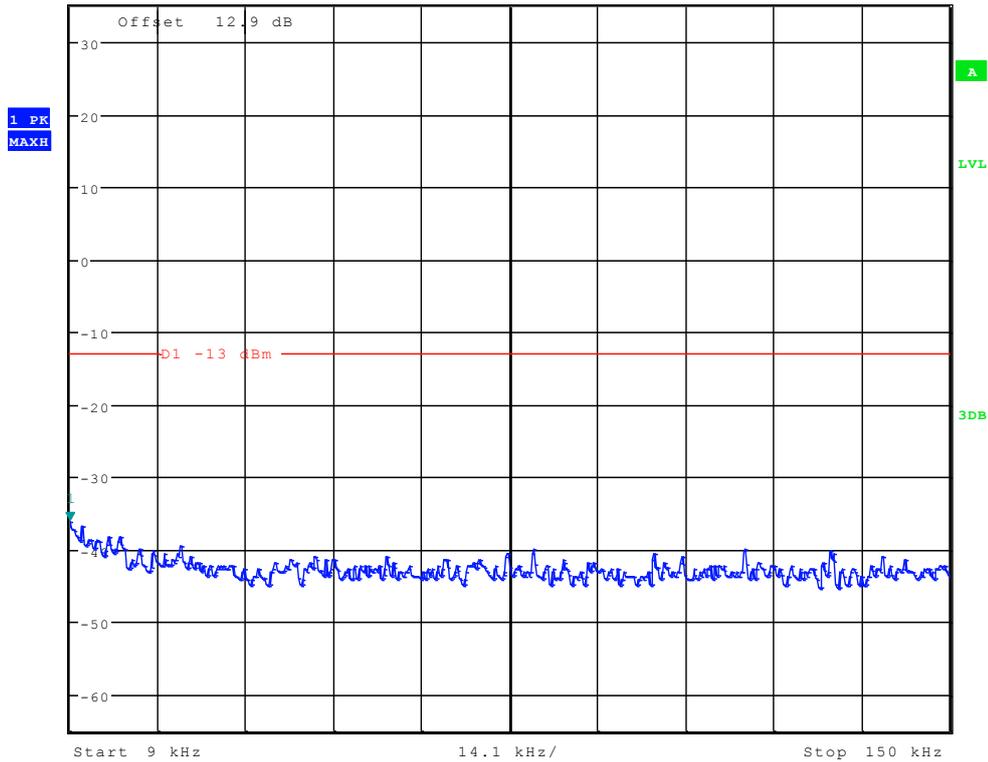
1 For GPRS 850

1.1 Test Mode=TM1

1.1.1 Channel = B



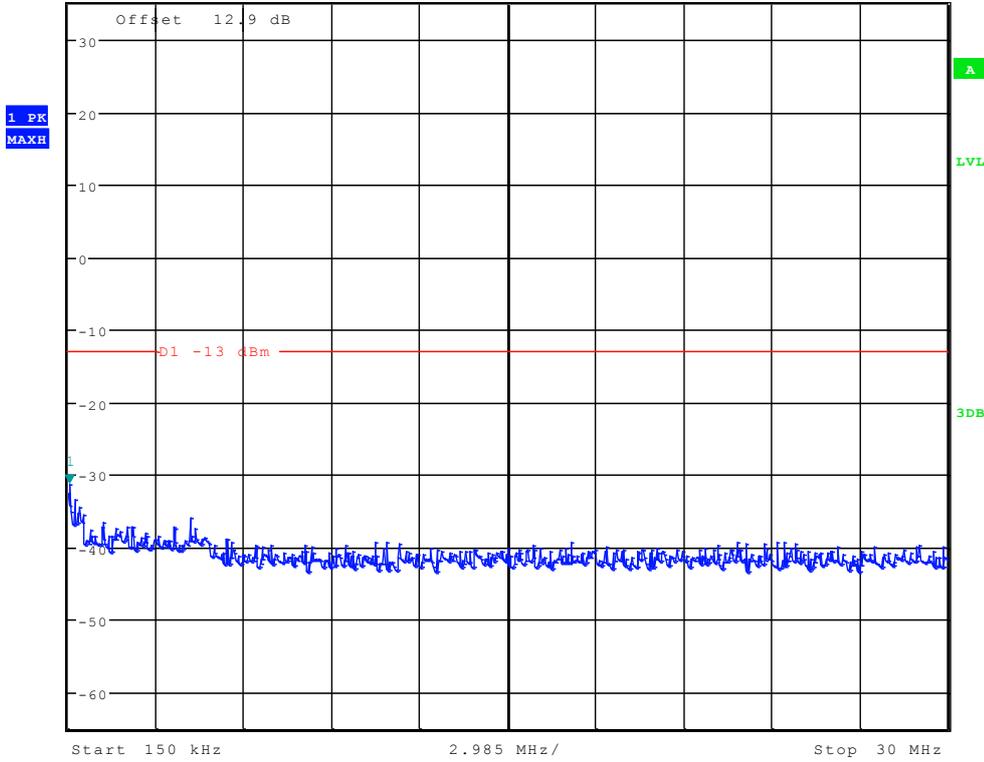
*RBW 1 kHz Marker 1 [T1]
*VBW 10 kHz -36.19 dBm
Ref 35 dBm Att 50 dB SWT 145 ms 9.000000000 kHz



Date: 6.JUN.2012 09:07:56



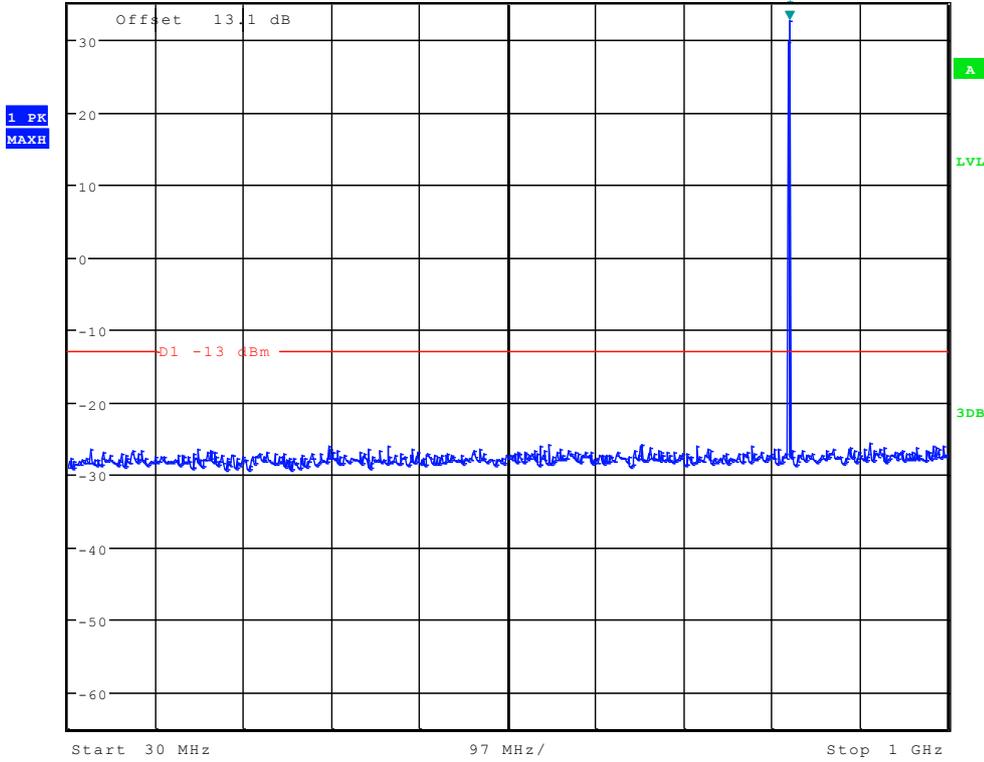
*RBW 10 kHz Marker 1 [T1]
 *VBW 30 kHz -31.32 dBm
 Ref 35 dBm Att 50 dB SWT 300 ms 197.836538462 kHz



Date: 6.JUN.2012 09:08:39



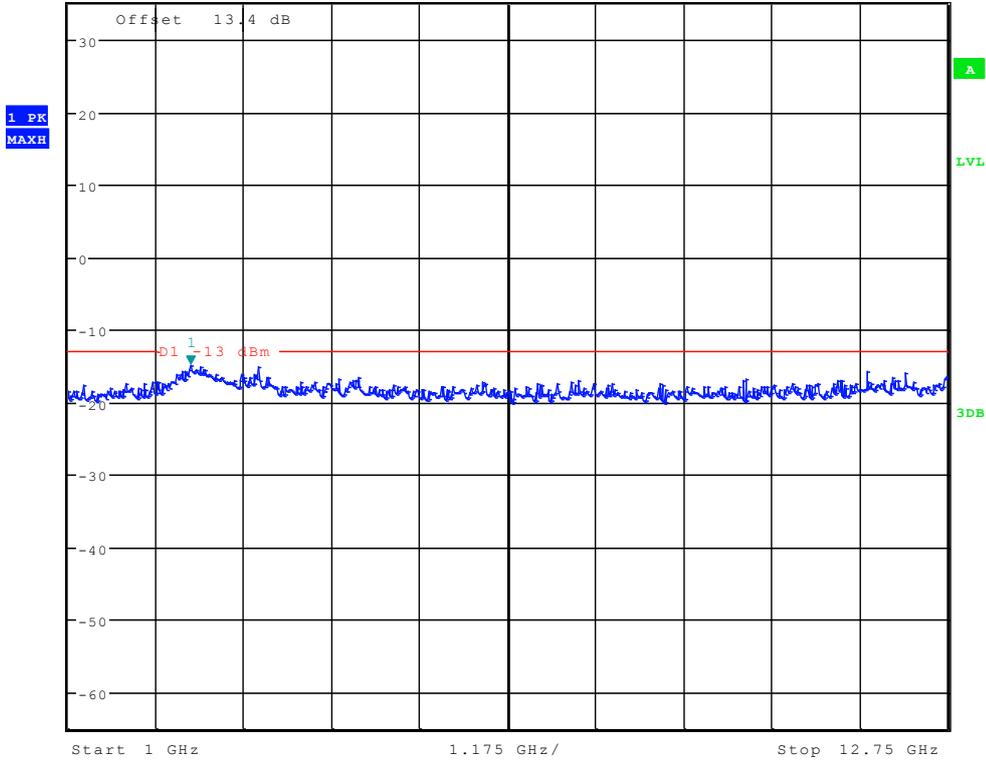
* RBW 100 kHz Marker 1 [T1]
* VBW 300 kHz 32.61 dBm
Ref 35 dBm Att 50 dB SWT 100 ms 825.897435897 MHz



Date: 6.JUN.2012 09:09:23



* RBW 1 MHz Marker 1 [T1]
 * VBW 3 MHz -14.80 dBm
 Ref 35 dBm Att 50 dB SWT 70 ms 2.638221154 GHz



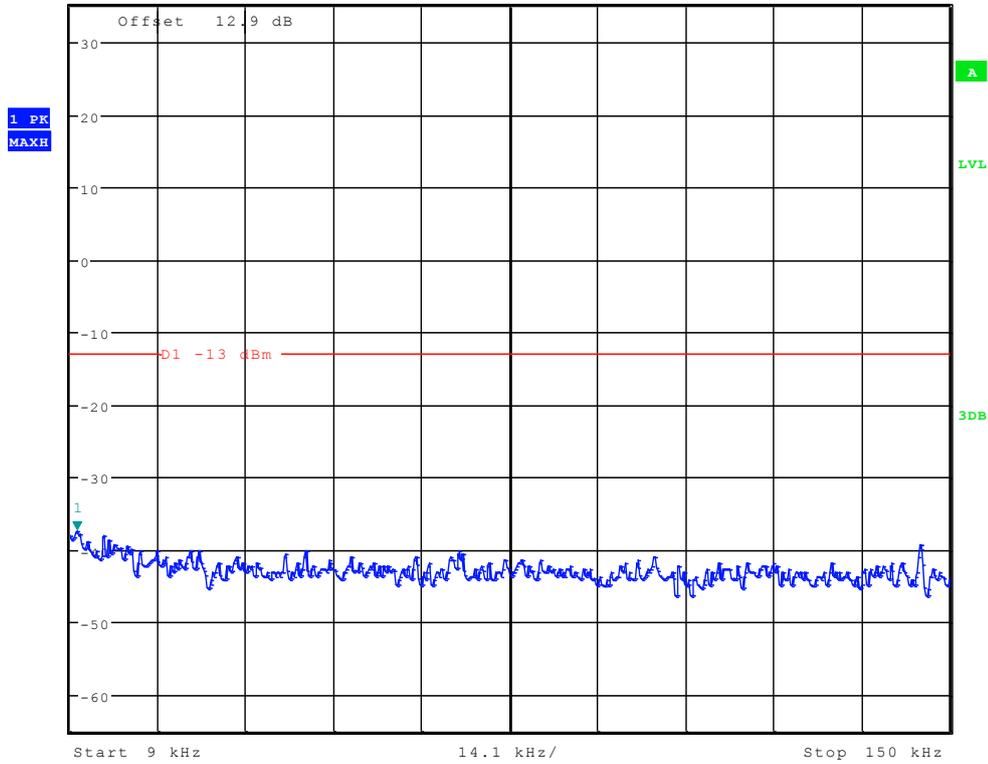
Date: 6.JUN.2012 09:10:07



1.1.2 Channel = M



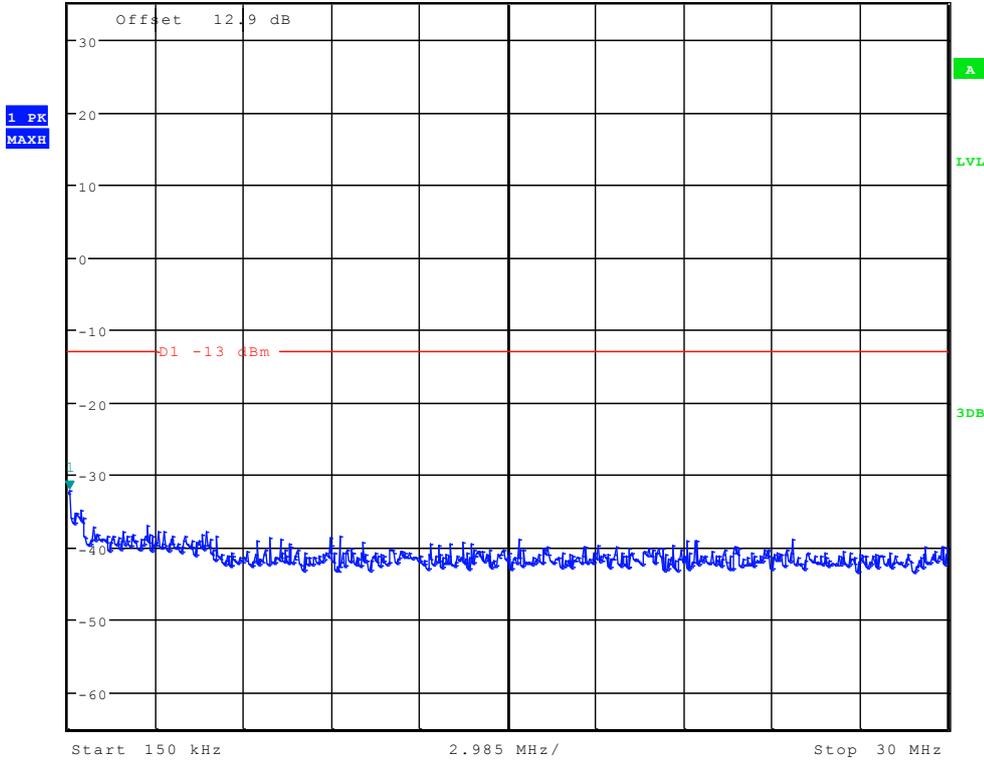
* RBW 1 kHz Marker 1 [T1]
 * VBW 10 kHz -37.39 dBm
 Ref 35 dBm Att 50 dB SWT 145 ms 10.129807692 kHz



Date: 6.JUN.2012 09:08:10



*RBW 10 kHz Marker 1 [T1]
*VBW 30 kHz -32.22 dBm
Ref 35 dBm Att 50 dB SWT 300 ms 197.836538462 kHz

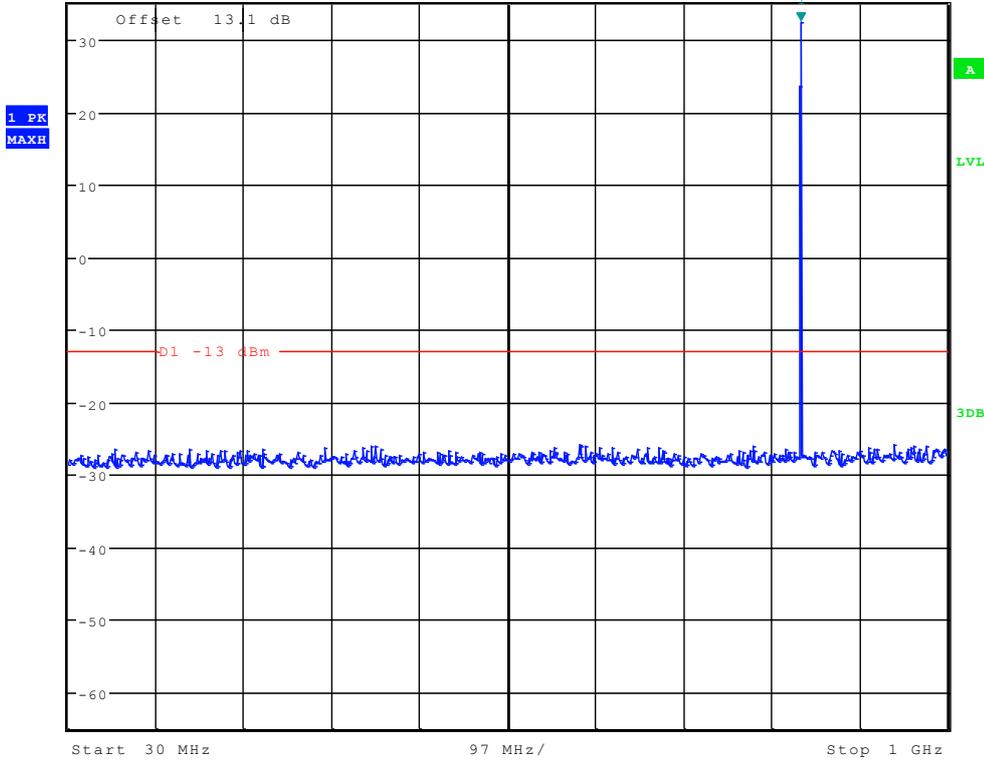


Date: 6.JUN.2012 09:08:54



* RBW 100 kHz Marker 1 [T1]
 * VBW 300 kHz 32.28 dBm

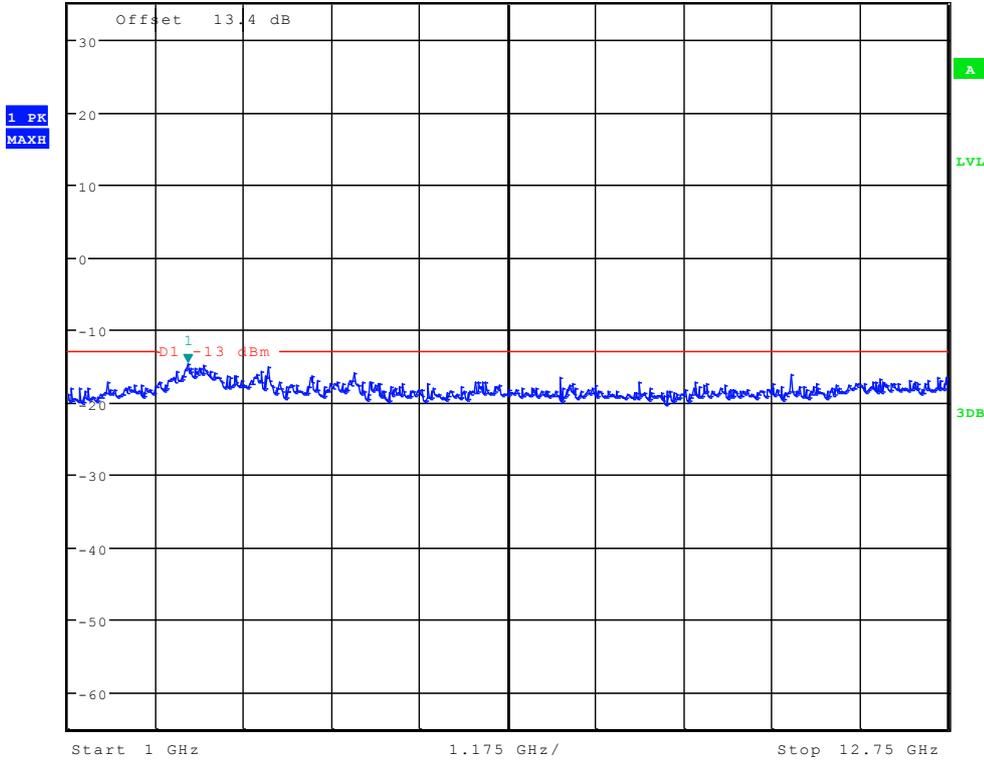
Ref 35 dBm Att 50 dB SWT 100 ms 838.333333333 MHz



Date: 6.JUN.2012 09:09:37



* RBW 1 MHz Marker 1 [T1]
* VBW 3 MHz -14.68 dBm
Ref 35 dBm Att 50 dB SWT 70 ms 2.600560897 GHz



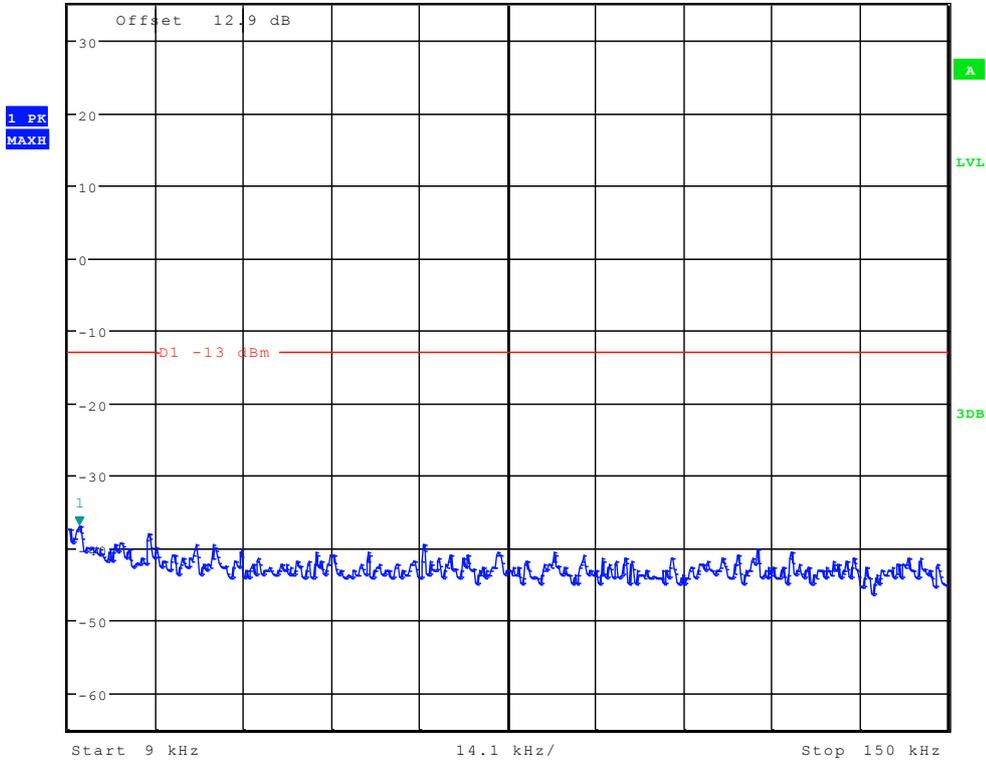
Date: 6.JUN.2012 09:10:21



1.1.3 Channel = T



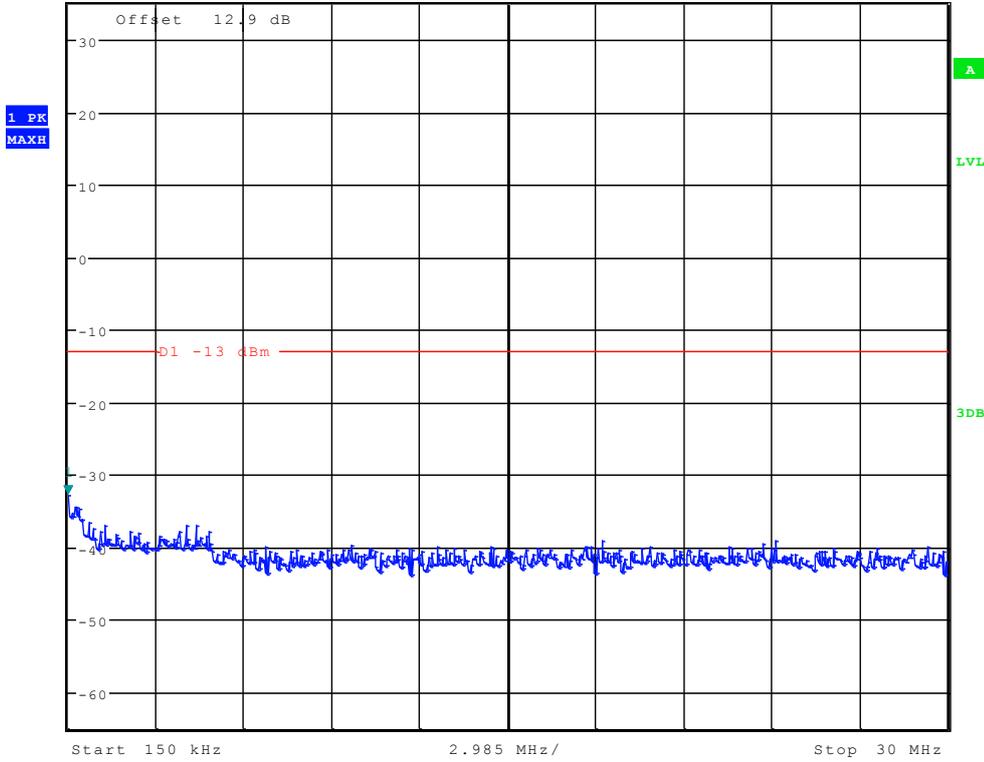
* RBW 1 kHz Marker 1 [T1]
* VBW 10 kHz -36.87 dBm
Ref 35 dBm Att 50 dB SWT 145 ms 10.807692308 kHz



Date: 6.JUN.2012 09:08:24



*RBW 10 kHz Marker 1 [T1]
*VBW 30 kHz -32.83 dBm
Ref 35 dBm Att 50 dB SWT 300 ms 150.000000000 kHz

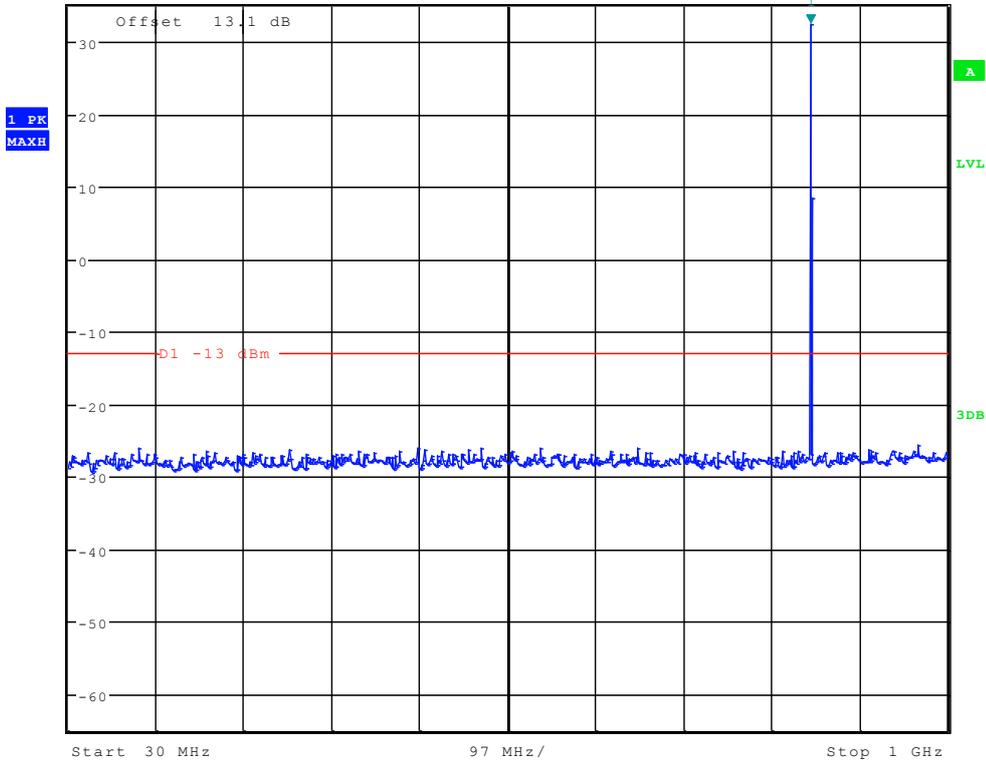


Date: 6.JUN.2012 09:09:08



* RBW 100 kHz Marker 1 [T1]
* VBW 300 kHz 32.34 dBm

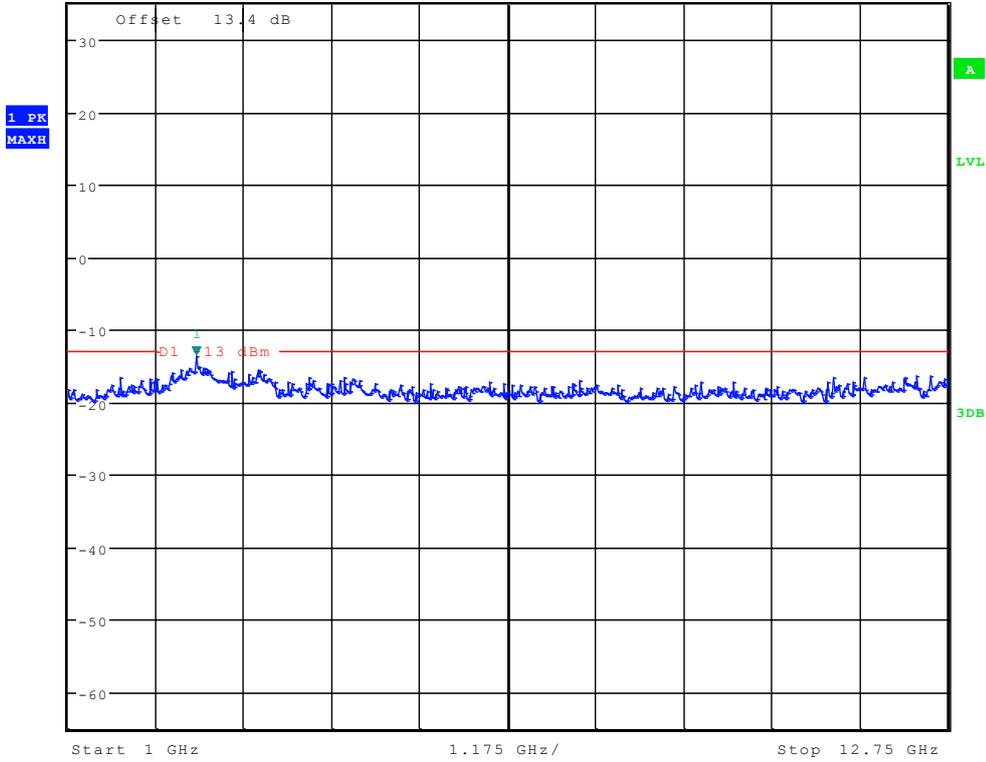
Ref 35 dBm Att 50 dB SWT 100 ms 849.214743590 MHz



Date: 6.JUN.2012 09:09:52



* RBW 1 MHz Marker 1 [T1]
 * VBW 3 MHz -13.58 dBm
 Ref 35 dBm Att 50 dB SWT 70 ms 2.713541667 GHz



Date: 6.JUN.2012 09:10:36



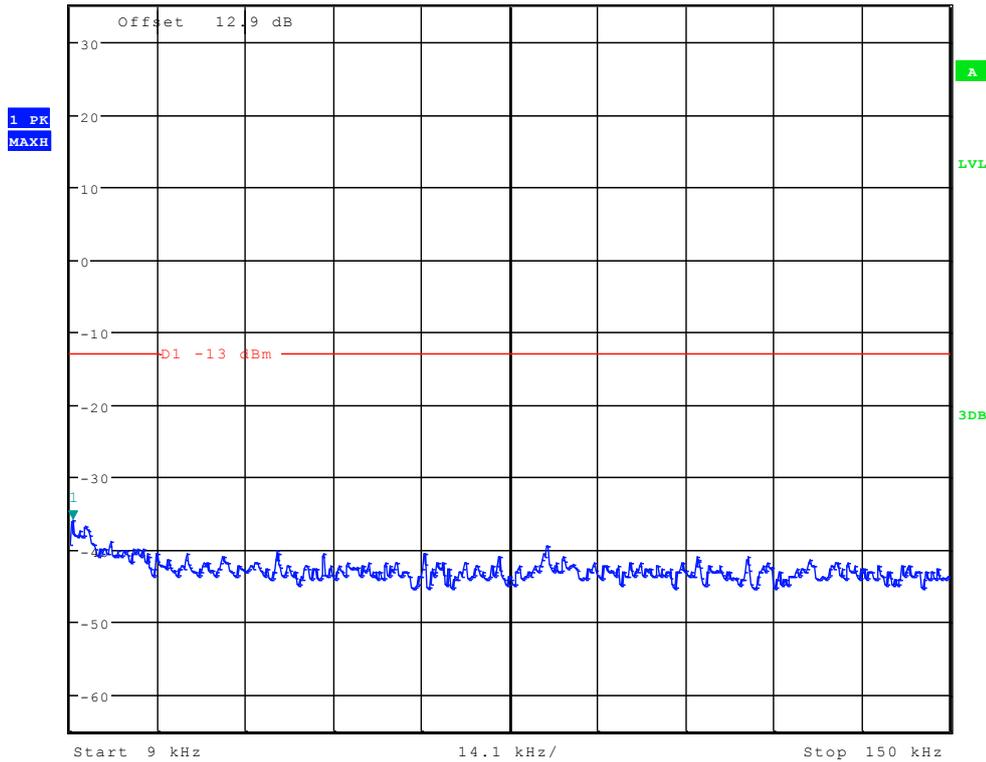
2 For EDGE 850

2.1 Test Mode=TM 2

2.1.1 Channel = B



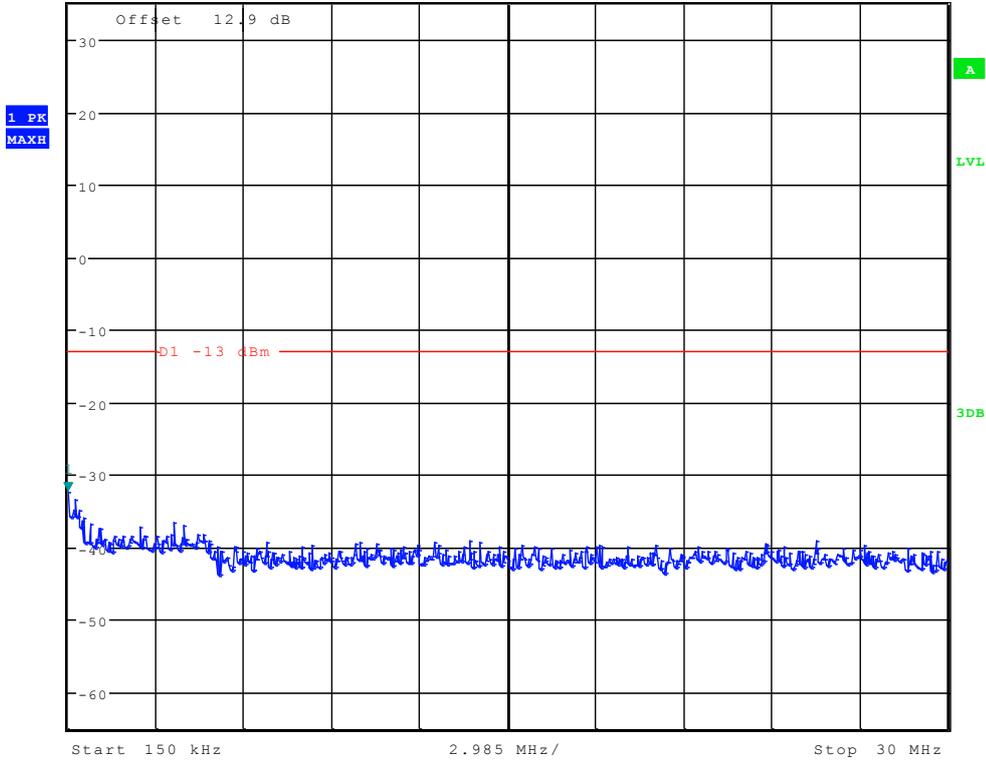
*RBW 1 kHz Marker 1 [T1]
 *VBW 10 kHz -35.92 dBm
 Ref 35 dBm Att 50 dB SWT 145 ms 9.451923077 kHz



Date: 6.JUN.2012 09:17:57



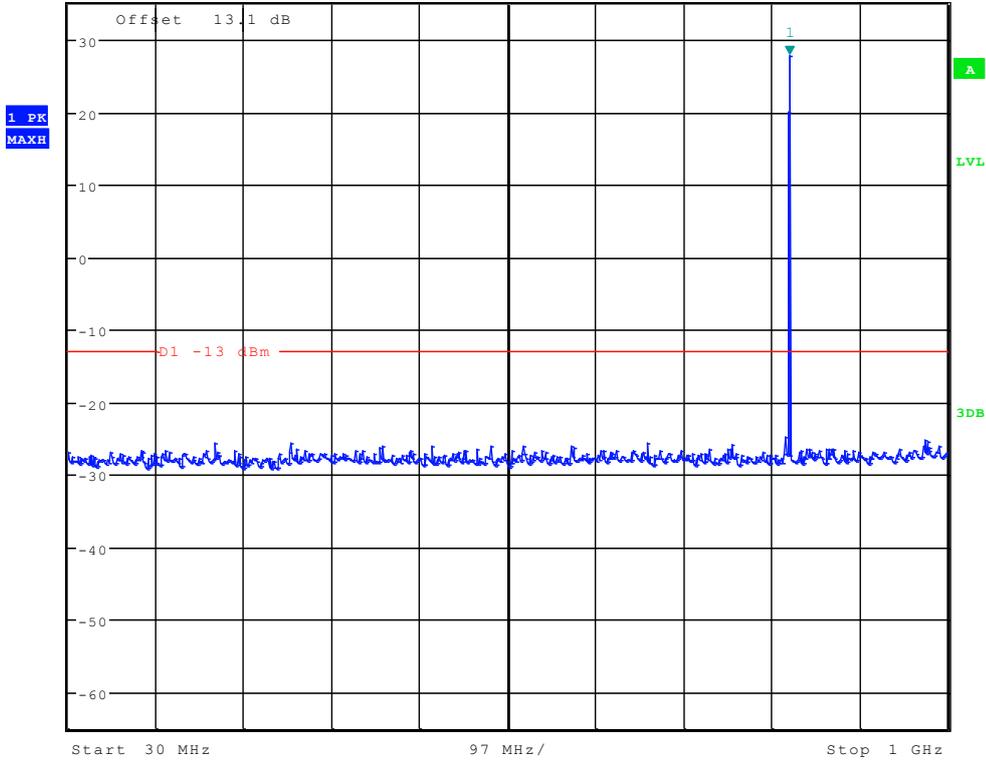
*RBW 10 kHz Marker 1 [T1]
 *VBW 30 kHz -32.34 dBm
 Ref 35 dBm Att 50 dB SWT 300 ms 150.000000000 kHz



Date: 6.JUN.2012 09:18:41



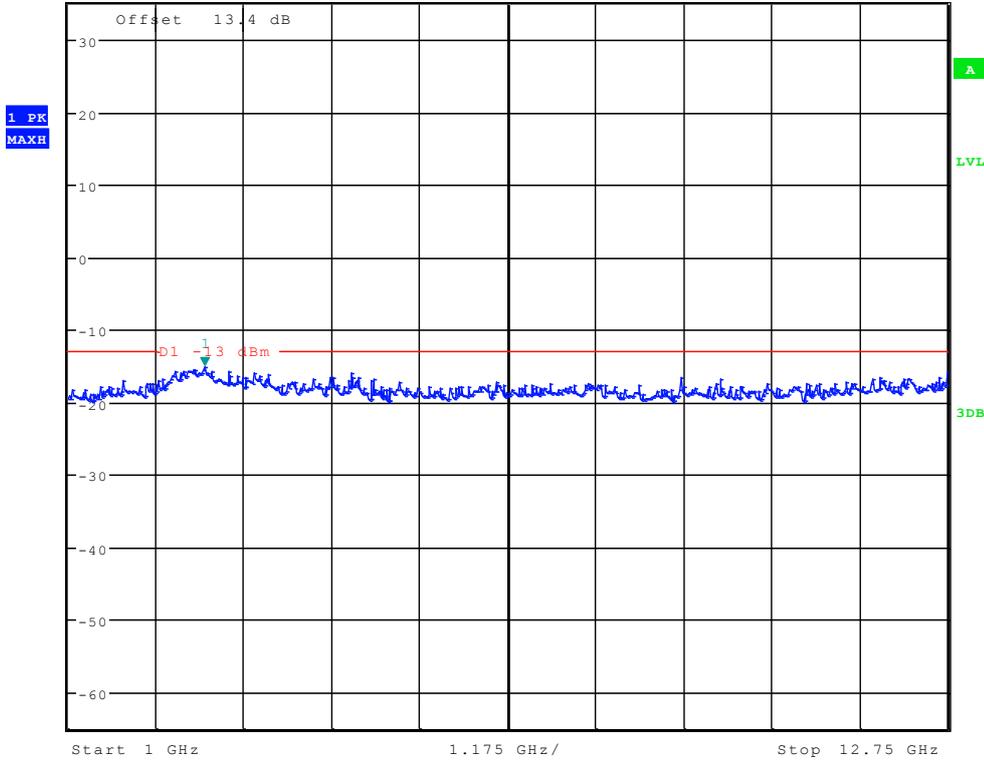
* RBW 100 kHz Marker 1 [T1]
 * VBW 300 kHz 27.71 dBm
 Ref 35 dBm Att 50 dB SWT 100 ms 825.897435897 MHz



Date: 6.JUN.2012 09:19:25



* RBW 1 MHz Marker 1 [T1]
 * VBW 3 MHz -15.04 dBm
 Ref 35 dBm Att 50 dB SWT 70 ms 2.826522436 GHz



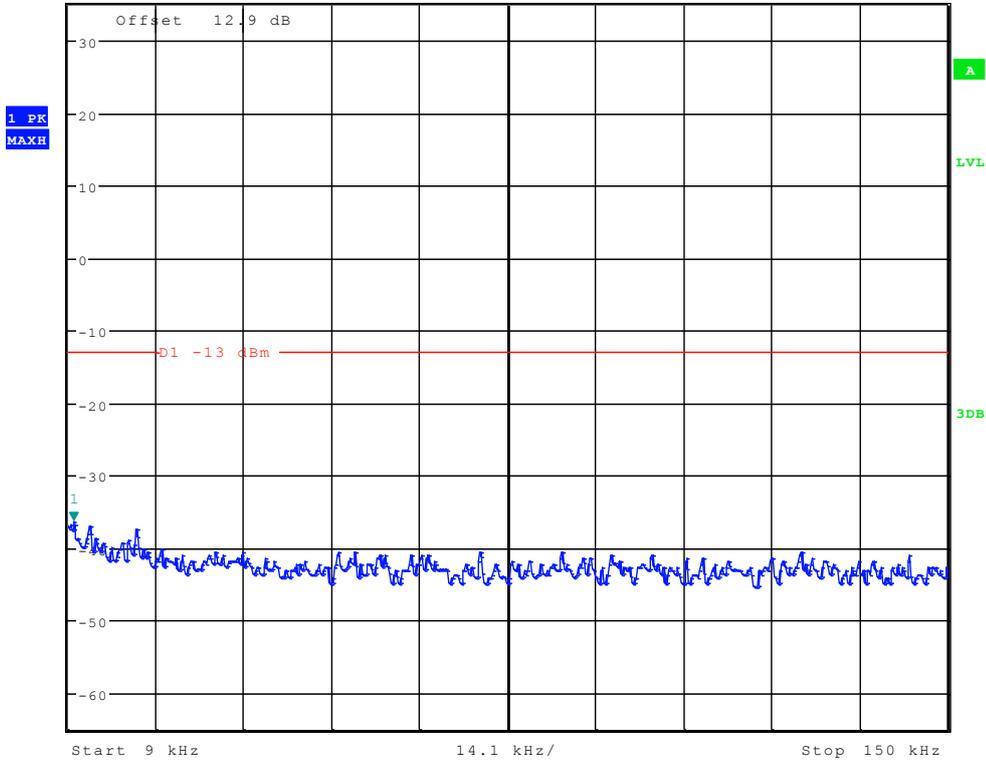
Date: 6.JUN.2012 09:20:08



2.1.2 Channel = M



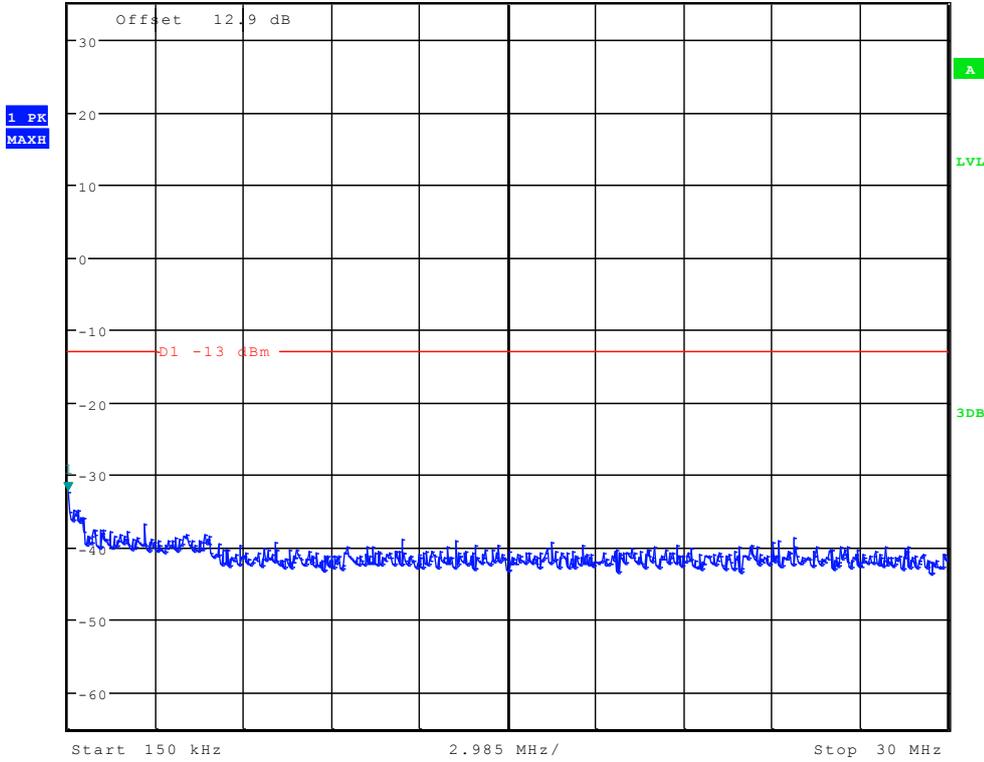
* RBW 1 kHz Marker 1 [T1]
* VBW 10 kHz -36.38 dBm
Ref 35 dBm Att 50 dB SWT 145 ms 9.903846154 kHz



Date: 6.JUN.2012 09:18:12



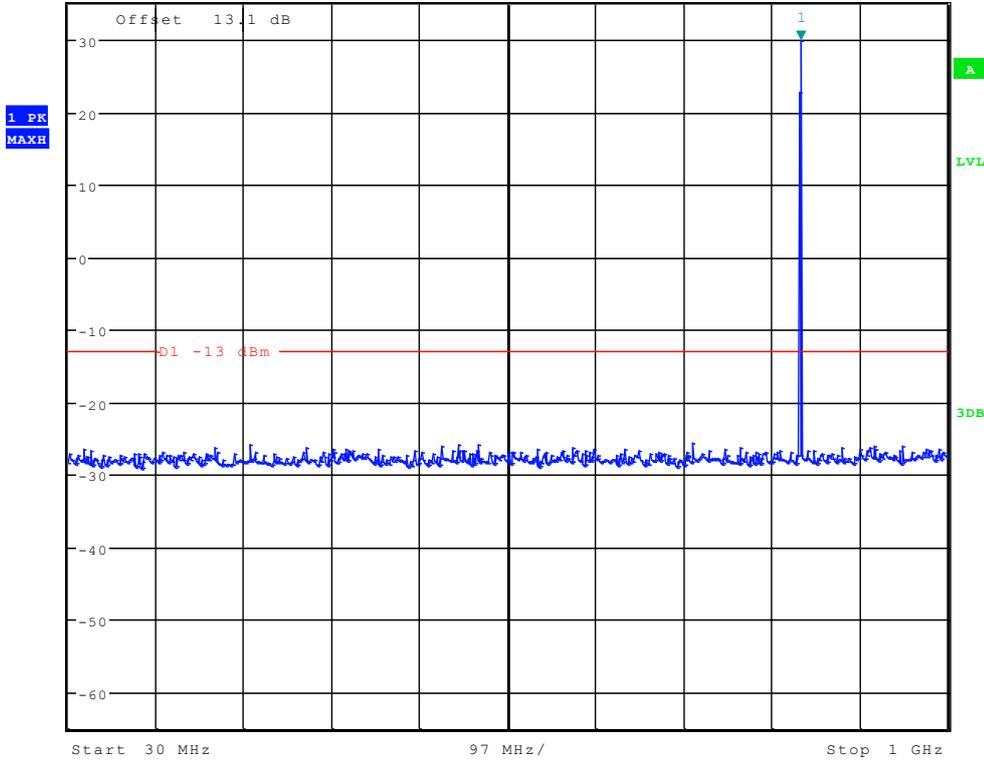
*RBW 10 kHz Marker 1 [T1]
 *VBW 30 kHz -32.34 dBm
 Ref 35 dBm Att 50 dB SWT 300 ms 150.000000000 kHz



Date: 6.JUN.2012 09:18:55



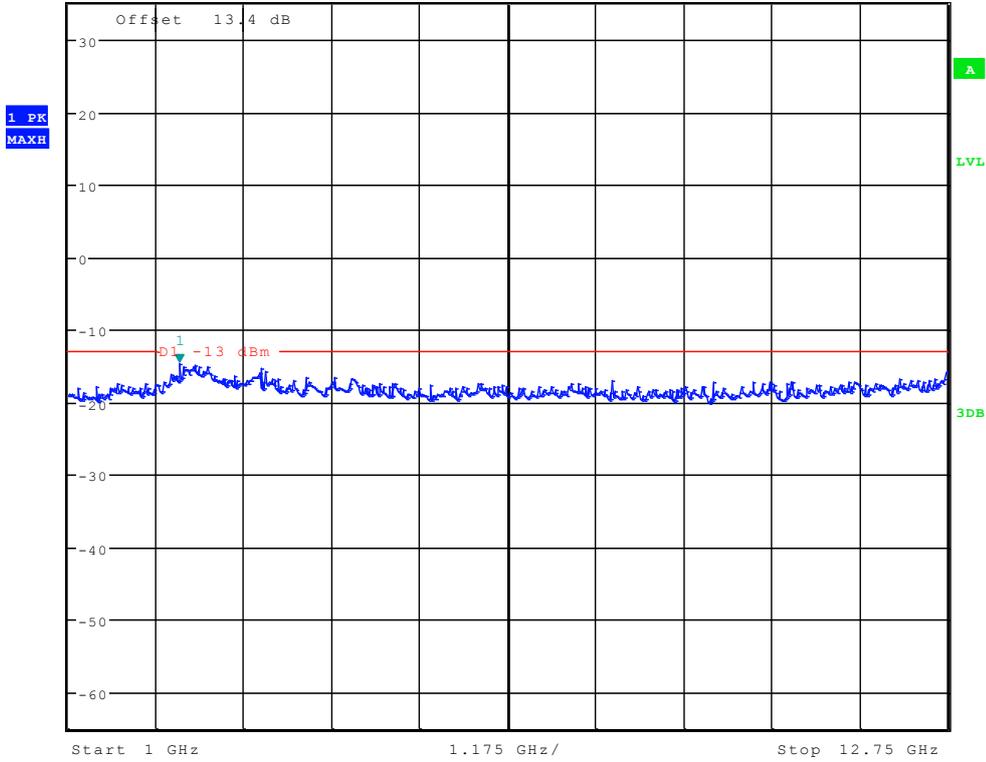
* RBW 100 kHz Marker 1 [T1]
 * VBW 300 kHz 29.86 dBm
 Ref 35 dBm Att 50 dB SWT 100 ms 838.333333333 MHz



Date: 6.JUN.2012 09:19:39



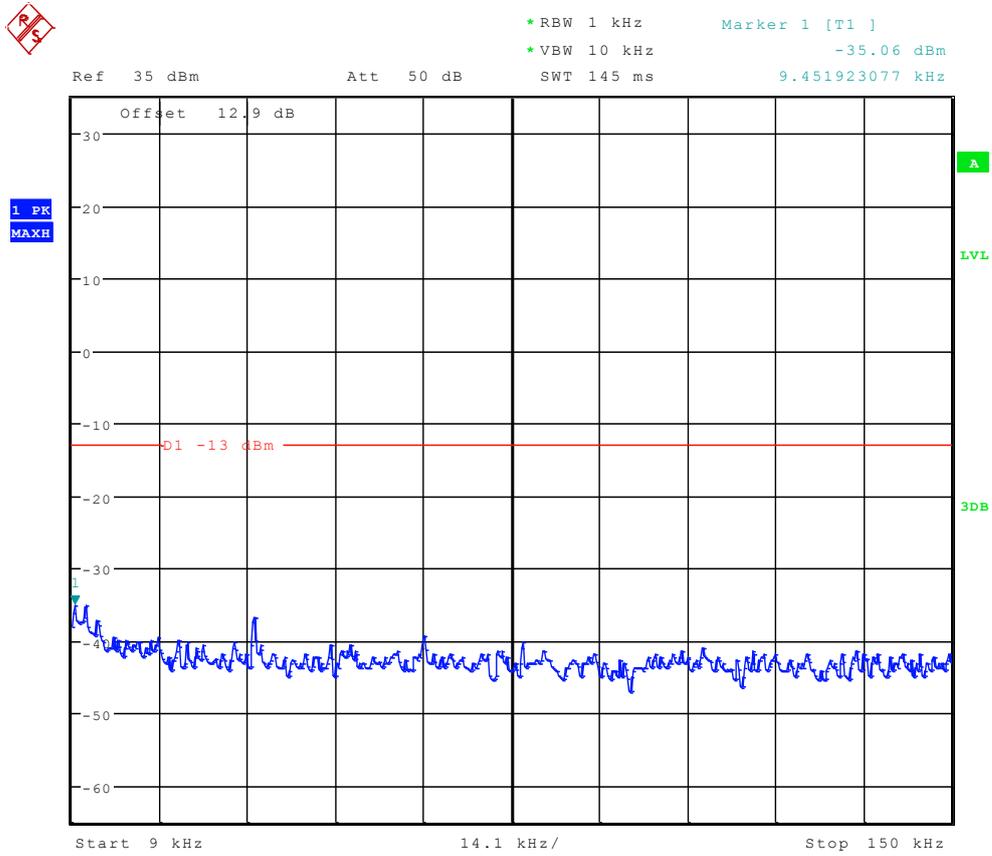
* RBW 1 MHz Marker 1 [T1]
 * VBW 3 MHz -14.74 dBm
 Ref 35 dBm Att 50 dB SWT 70 ms 2.487580128 GHz



Date: 6.JUN.2012 09:20:23



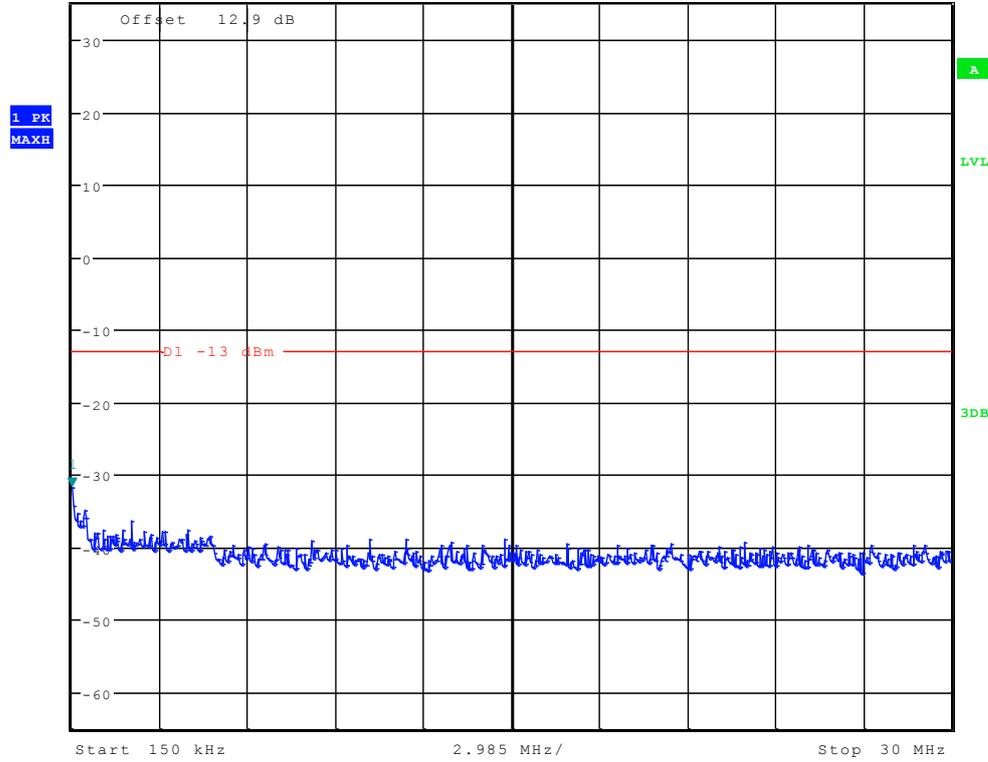
2.1.3 Channel = T



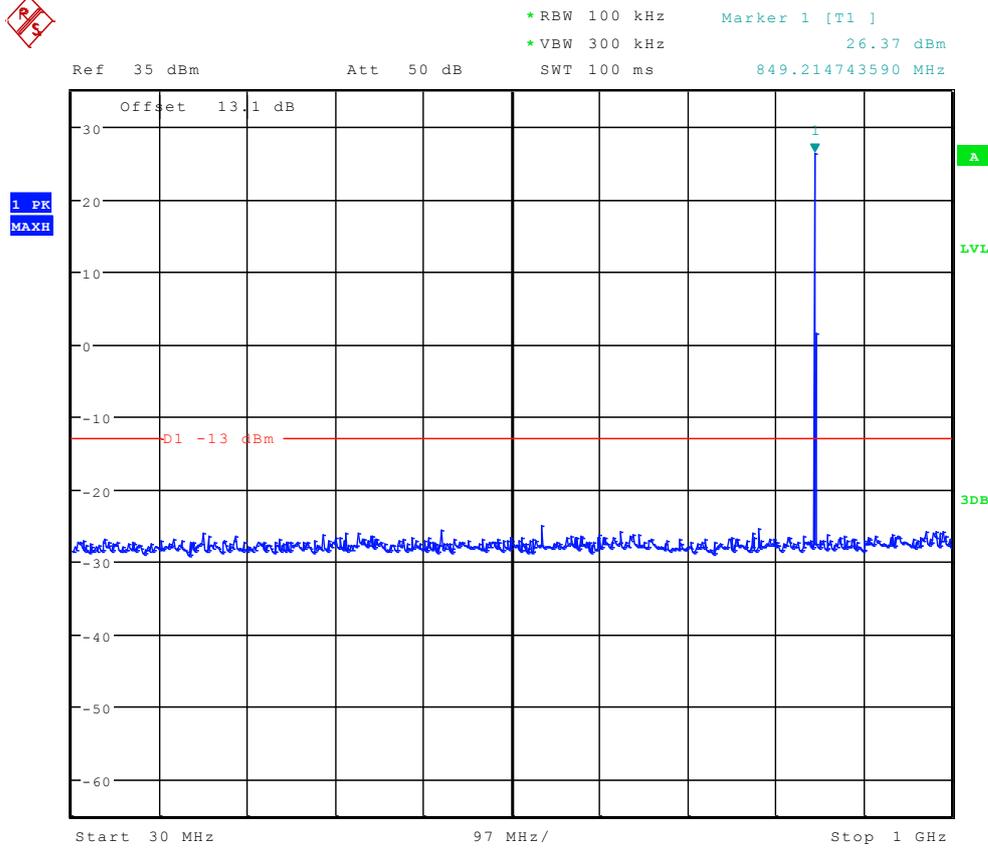
Date: 6.JUN.2012 09:18:26



*RBW 10 kHz Marker 1 [T1]
 *VBW 30 kHz -31.64 dBm
 Ref 35 dBm Att 50 dB SWT 300 ms 150.000000000 kHz



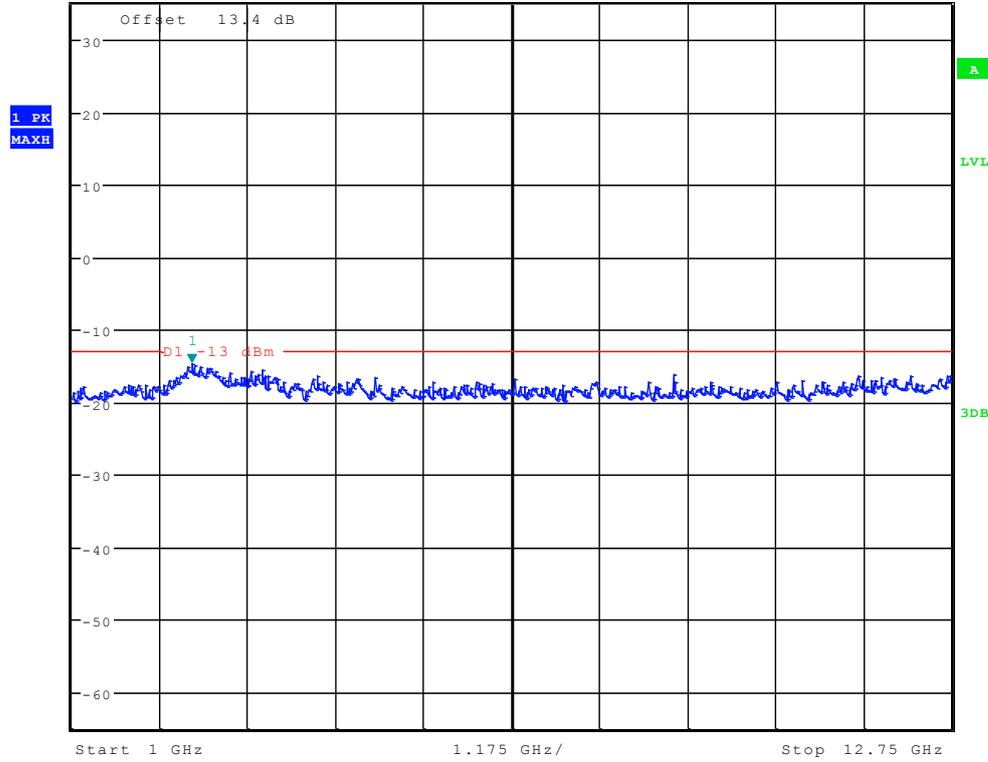
Date: 6.JUN.2012 09:19:10



Date: 6.JUN.2012 09:19:53



* RBW 1 MHz Marker 1 [T1]
 * VBW 3 MHz -14.73 dBm
 Ref 35 dBm Att 50 dB SWT 70 ms 2.600560897 GHz



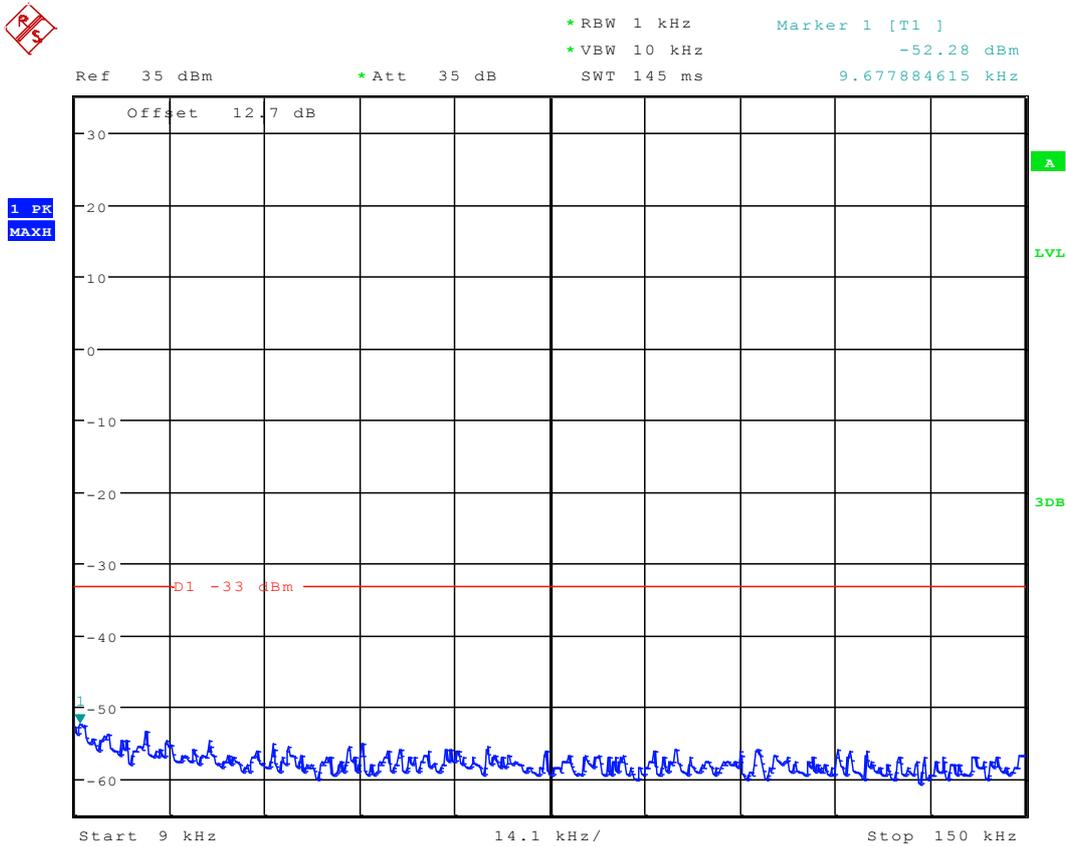
Date: 6.JUN.2012 09:20:37



3 For WCDMA Band 5

3.1 Test Mode=TM3

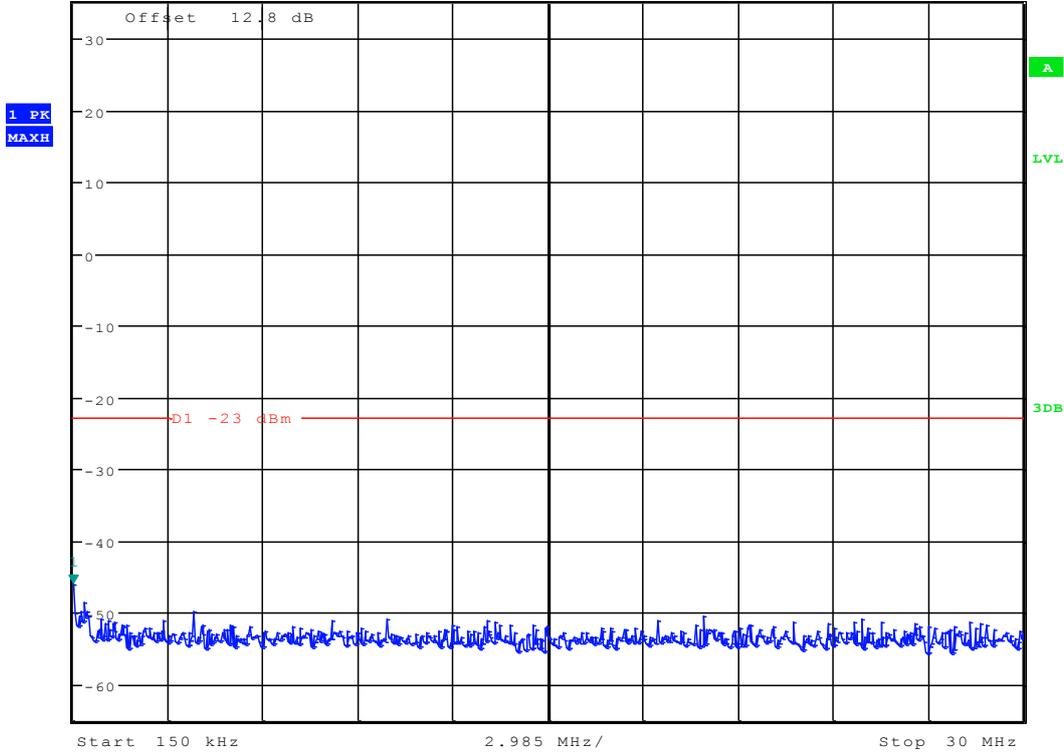
3.1.1 Channel = B



Date: 21.SEP.2012 09:14:12



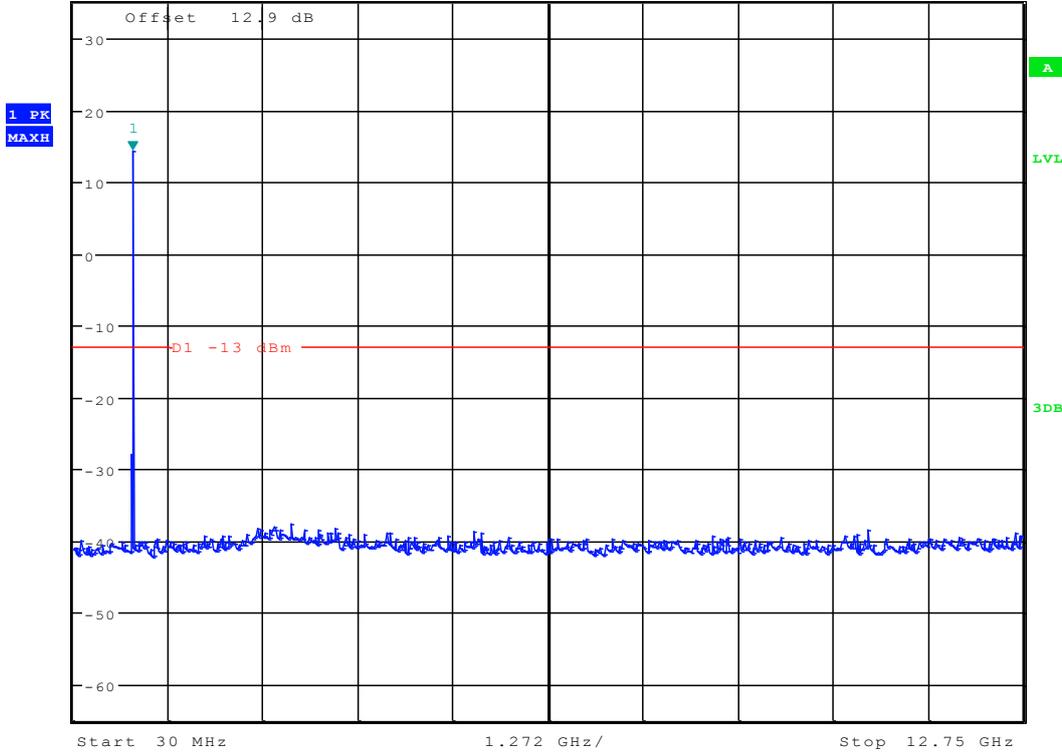
* RBW 10 kHz Marker 1 [T1]
 * VBW 30 kHz -46.00 dBm
 Ref 35 dBm * Att 35 dB SWT 300 ms 150.00000000 kHz



Date: 21.SEP.2012 09:14:56



* RBW 100 kHz Marker 1 [T1]
 * VBW 300 kHz 14.38 dBm
 Ref 35 dBm * Att 35 dB SWT 1.3 s 825.00000000 MHz



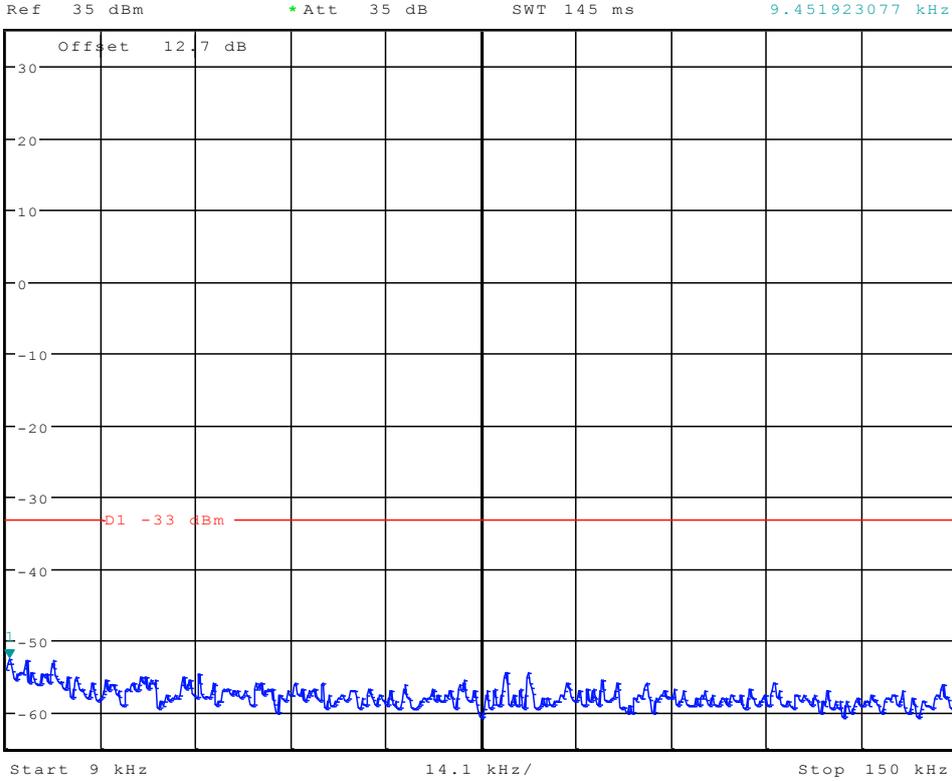
Date: 21.SEP.2012 09:15:40



3.1.2 Channel = M



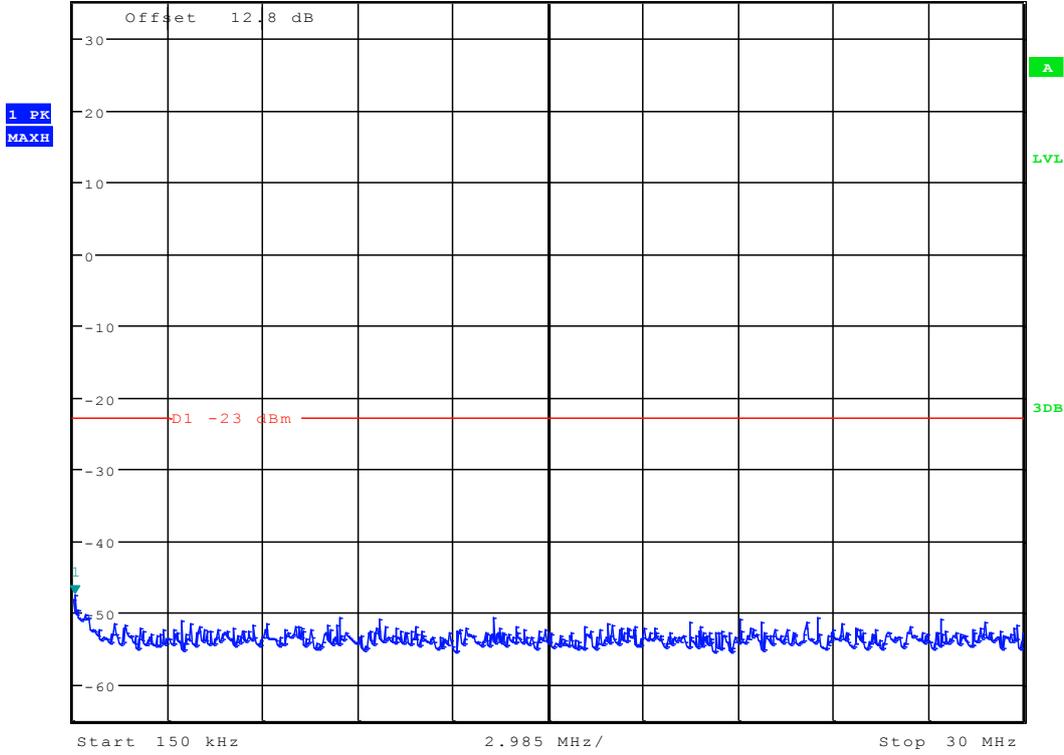
*RBW 1 kHz Marker 1 [T1]
*VBW 10 kHz -52.59 dBm
SWT 145 ms 9.451923077 kHz



Date: 21.SEP.2012 09:14:27



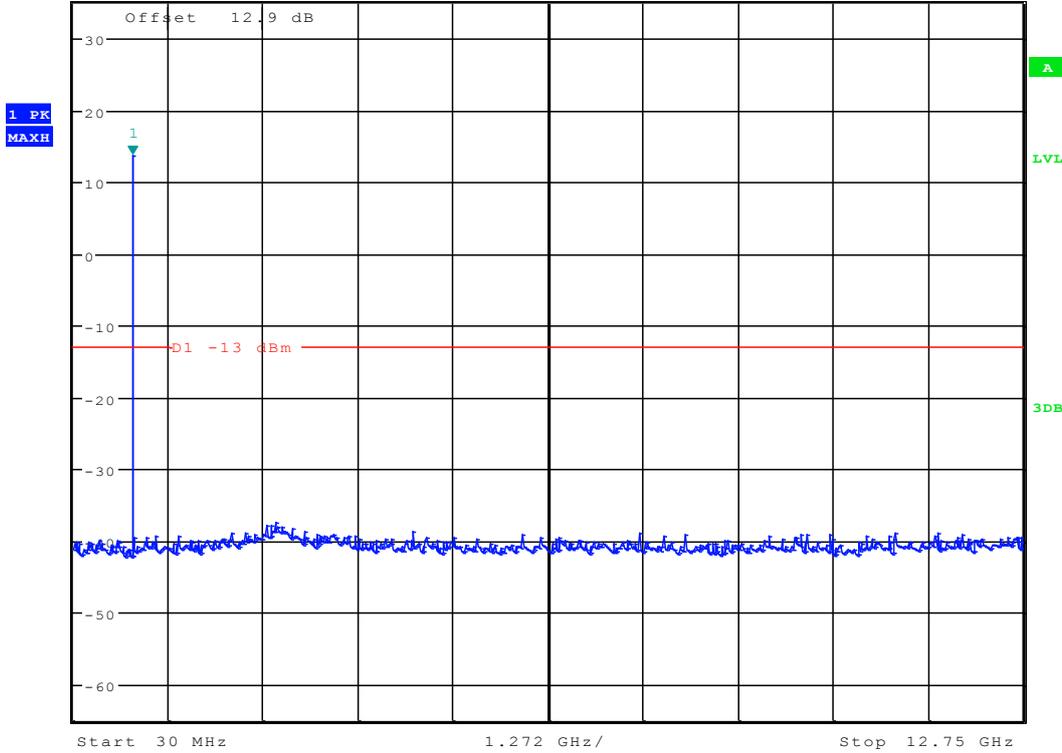
* RBW 10 kHz Marker 1 [T1]
 * VBW 30 kHz -47.44 dBm
 Ref 35 dBm * Att 35 dB SWT 300 ms 197.836538462 kHz



Date: 21.SEP.2012 09:15:10



* RBW 100 kHz Marker 1 [T1]
 * VBW 300 kHz 13.62 dBm
 Ref 35 dBm * Att 35 dB SWT 1.3 s 825.00000000 MHz



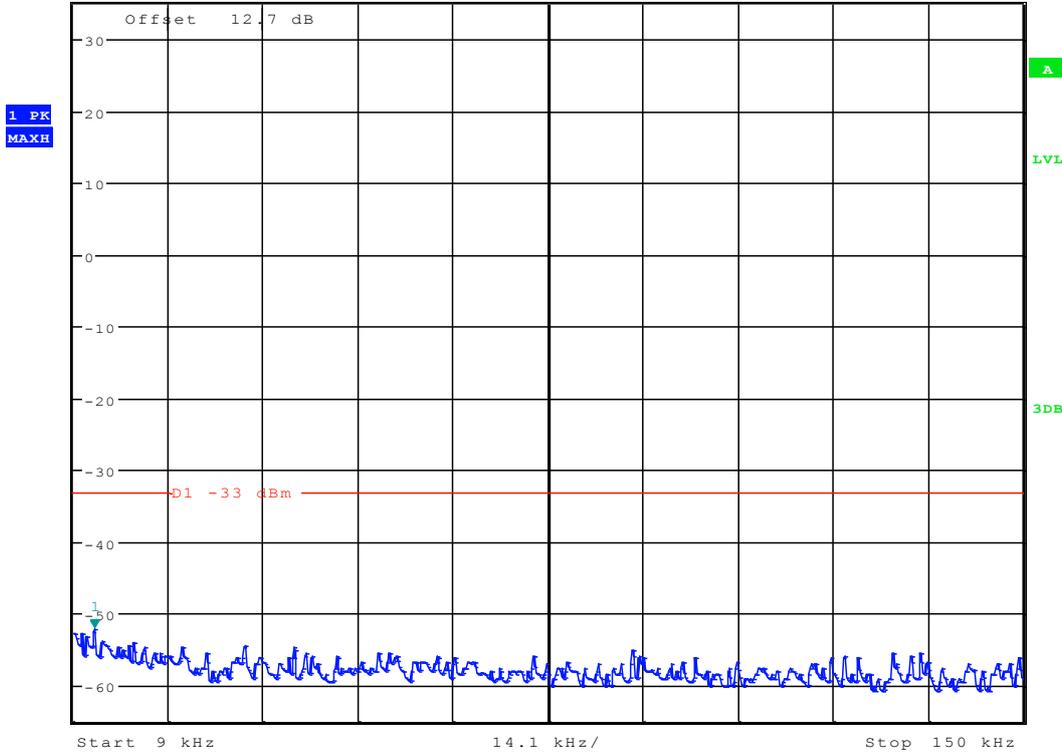
Date: 21.SEP.2012 09:15:54



3.1.3 Channel = T



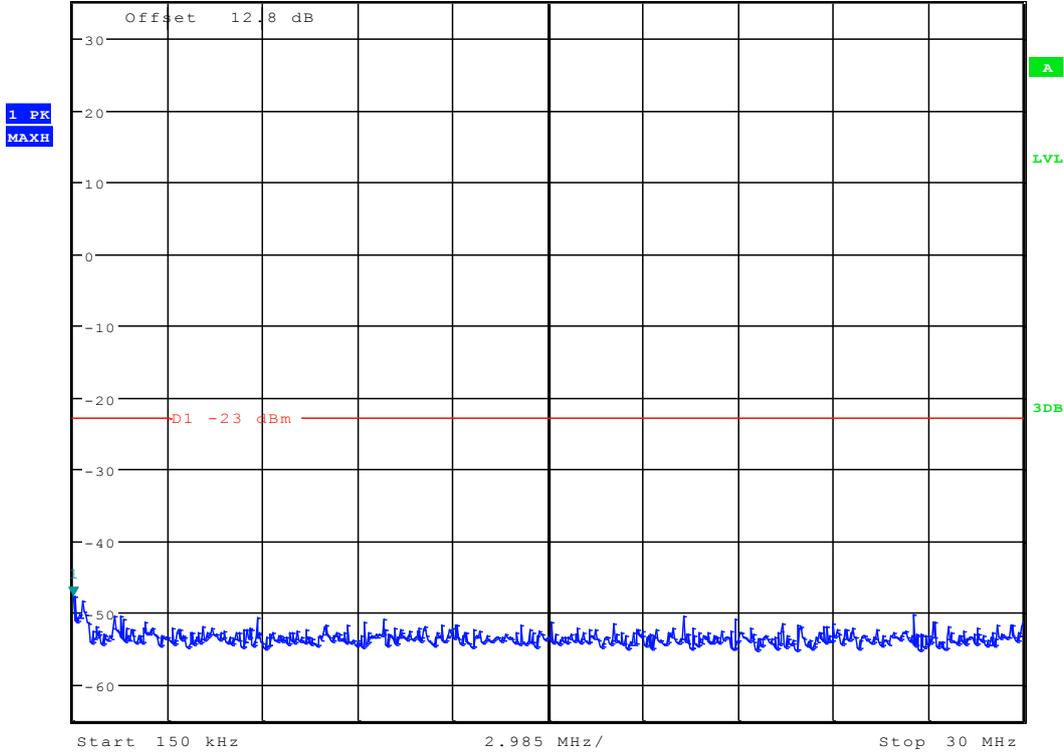
*RBW 1 kHz Marker 1 [T1]
 *VBW 10 kHz -52.07 dBm
 Ref 35 dBm *Att 35 dB SWT 145 ms 12.163461538 kHz



Date: 21.SEP.2012 09:14:41



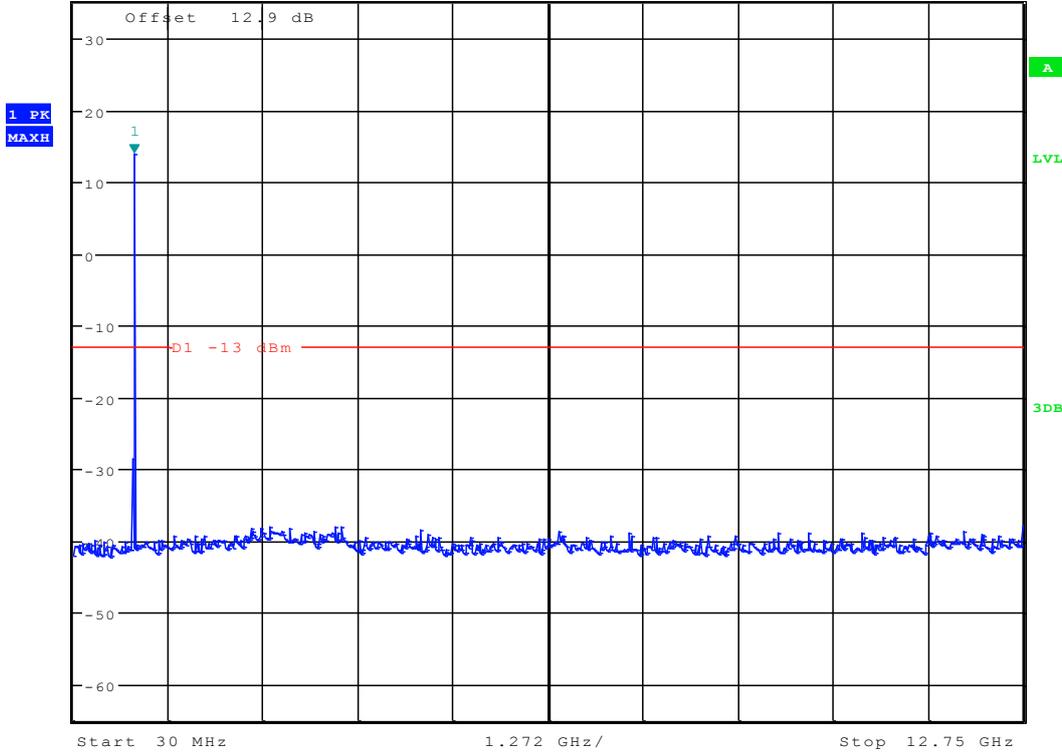
* RBW 10 kHz Marker 1 [T1]
 * VBW 30 kHz -47.68 dBm
 Ref 35 dBm * Att 35 dB SWT 300 ms 150.00000000 kHz



Date: 21.SEP.2012 09:15:25



* RBW 100 kHz Marker 1 [T1]
 * VBW 300 kHz 13.91 dBm
 Ref 35 dBm * Att 35 dB SWT 1.3 s 845.384615385 MHz



Date: 21.SEP.2012 09:16:09



4 For LTE Band 5

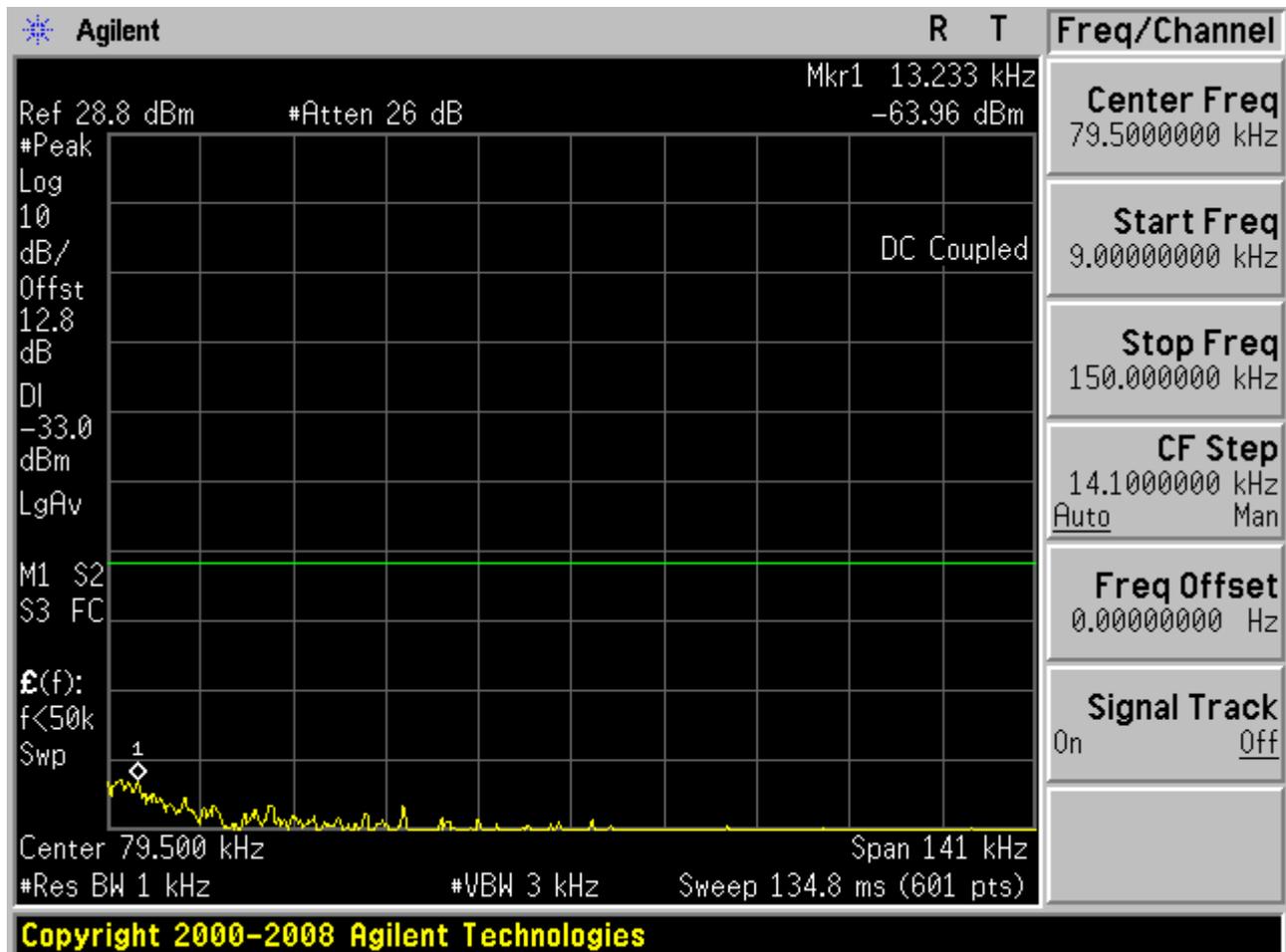
NOTE1: All relevant operation modes have been tested, and the 1RBs /RB#0 case data is included in this report.

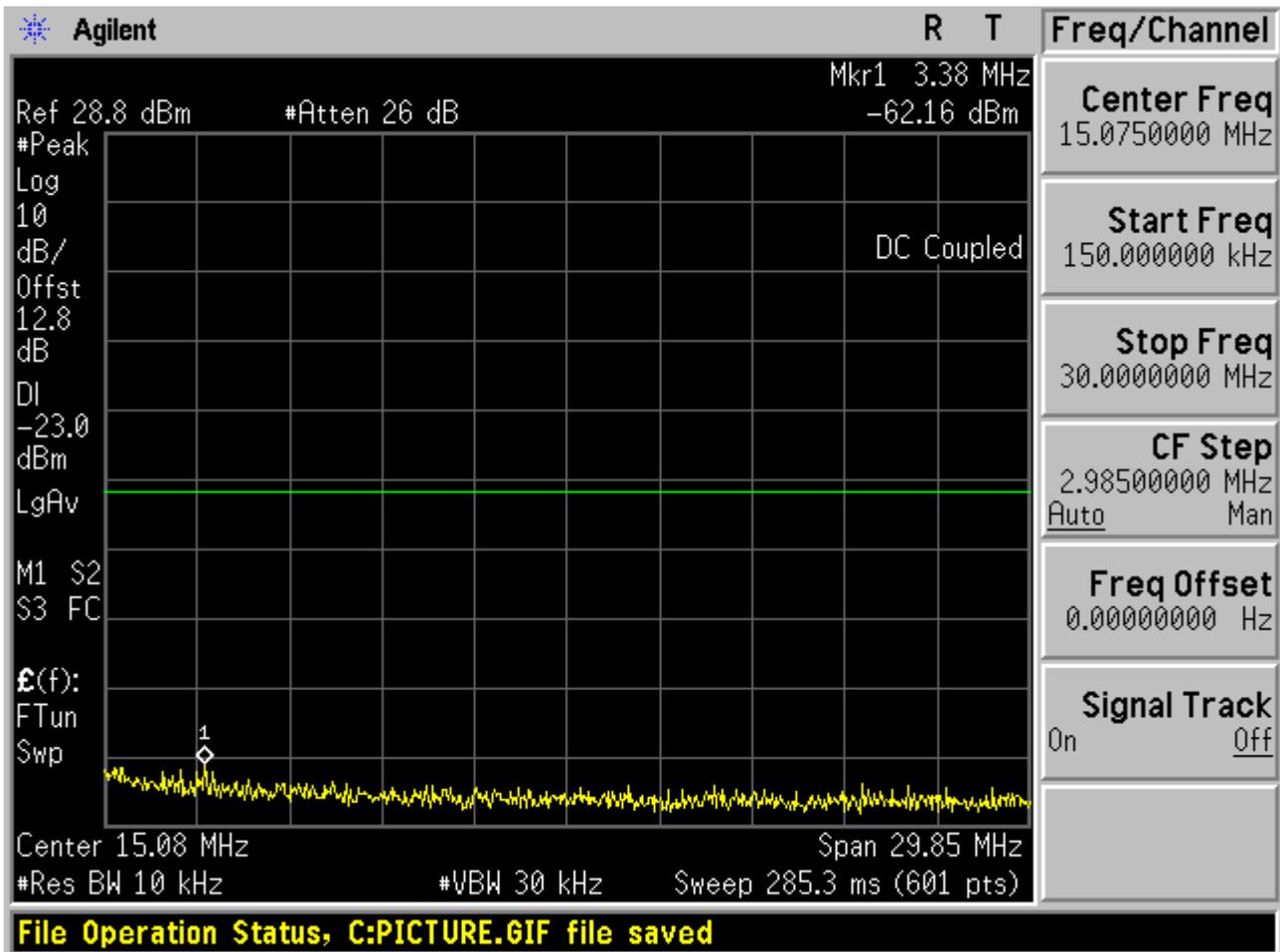
4.1 Test Mode=TM6

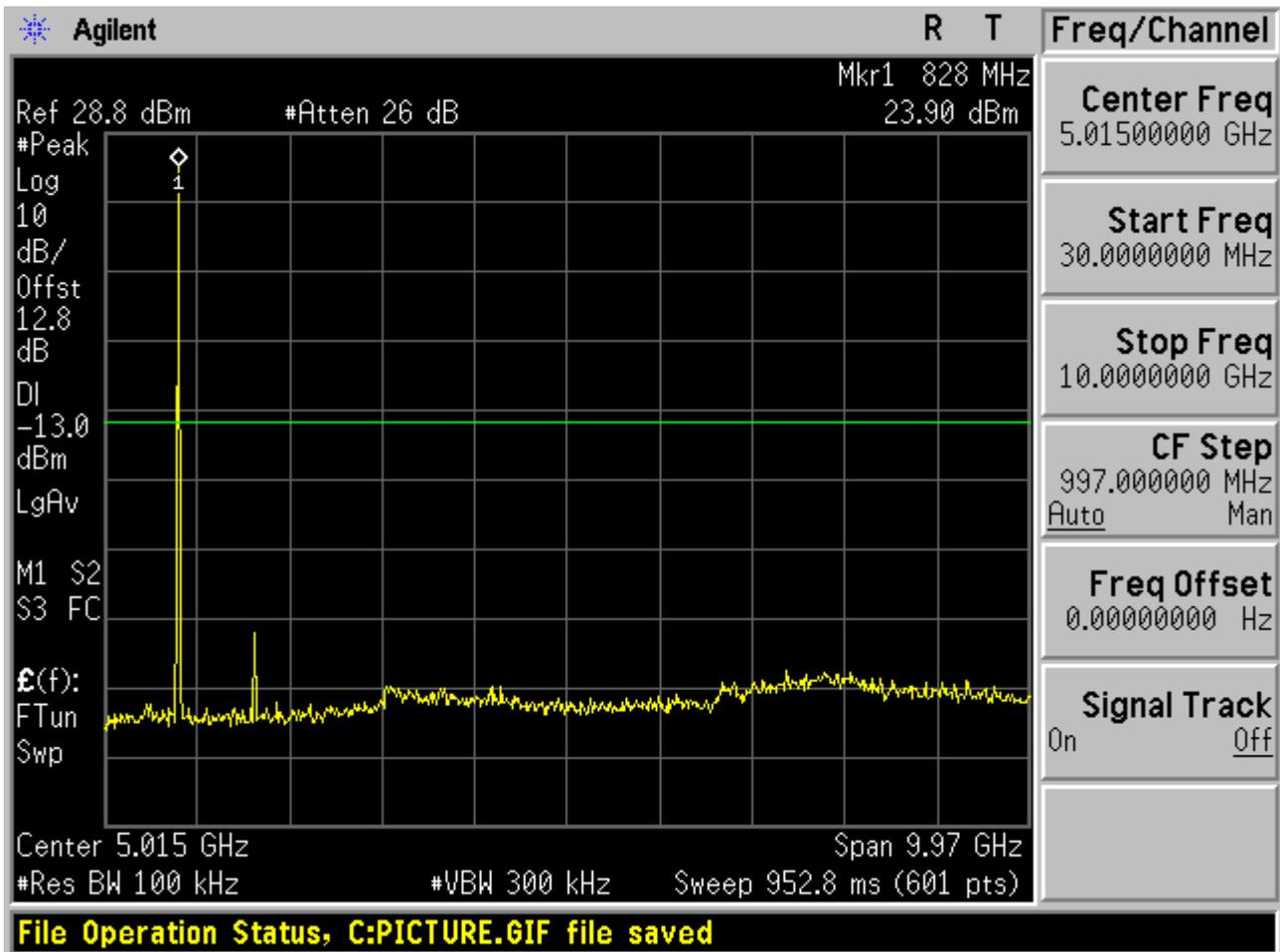
4.1.1 Channel Bandwidth = 5 MHz

4.1.1.1 Channel = B

4.1.1.1.1 QPSK/1RBs /RB #0



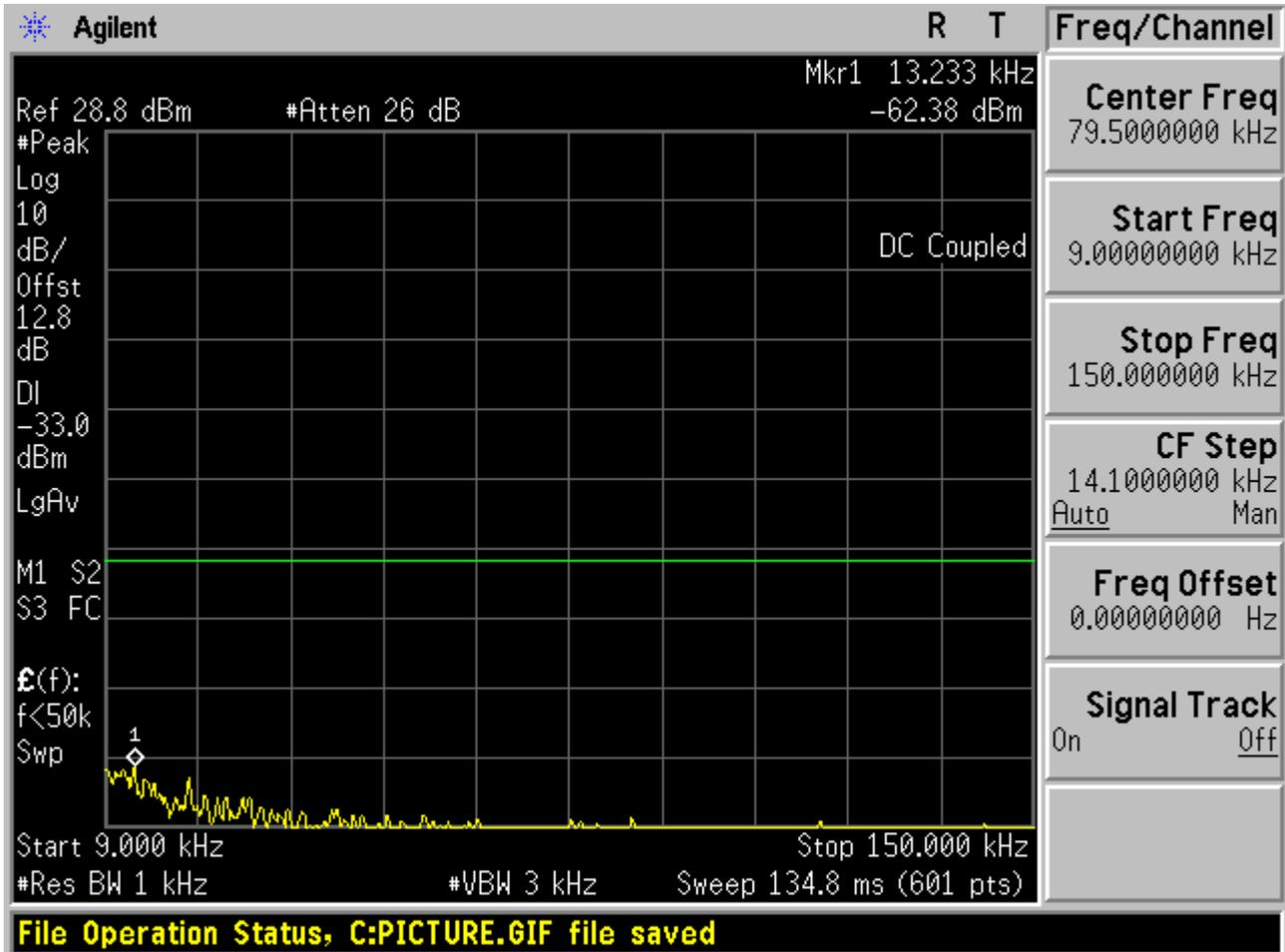


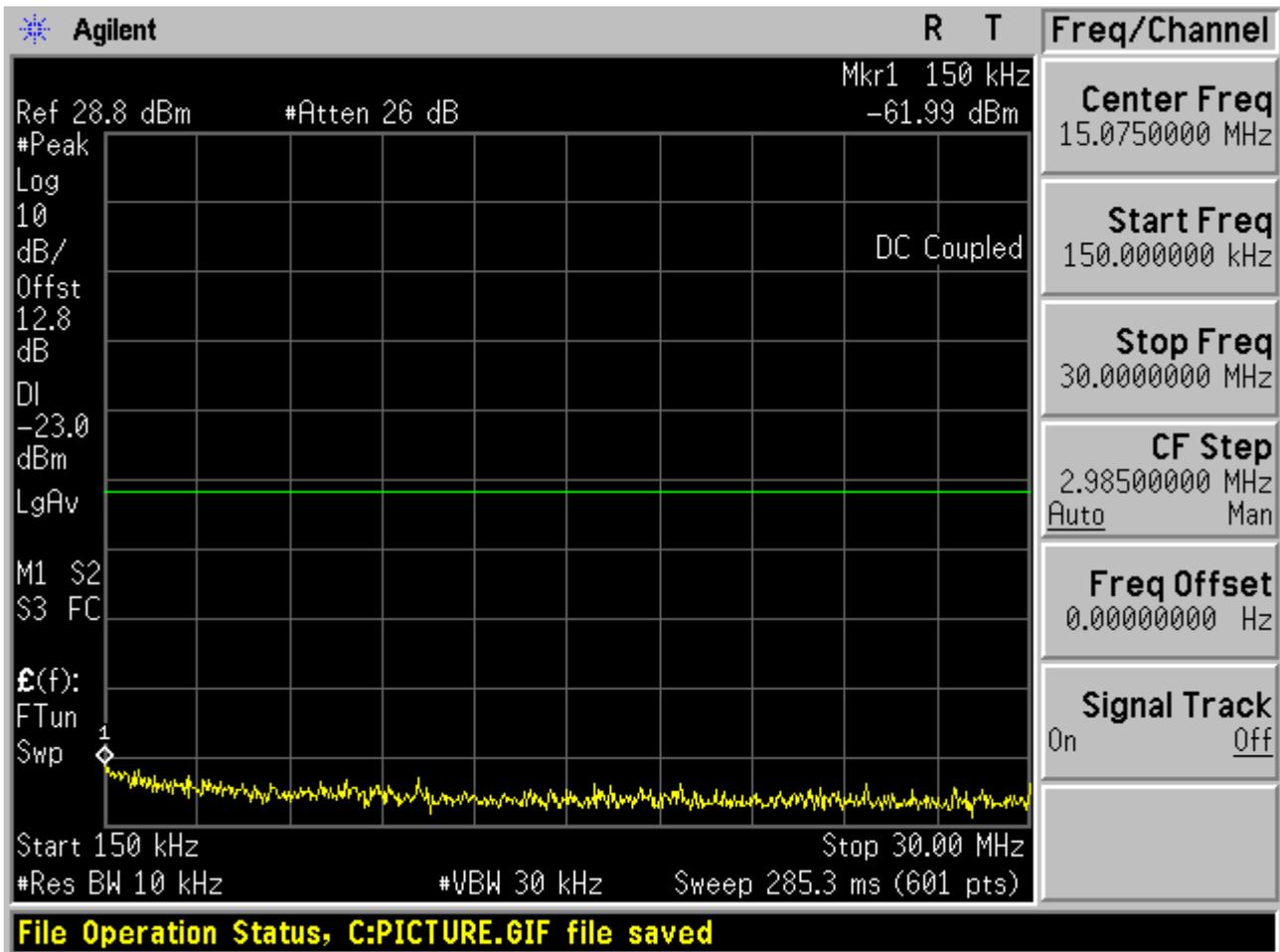


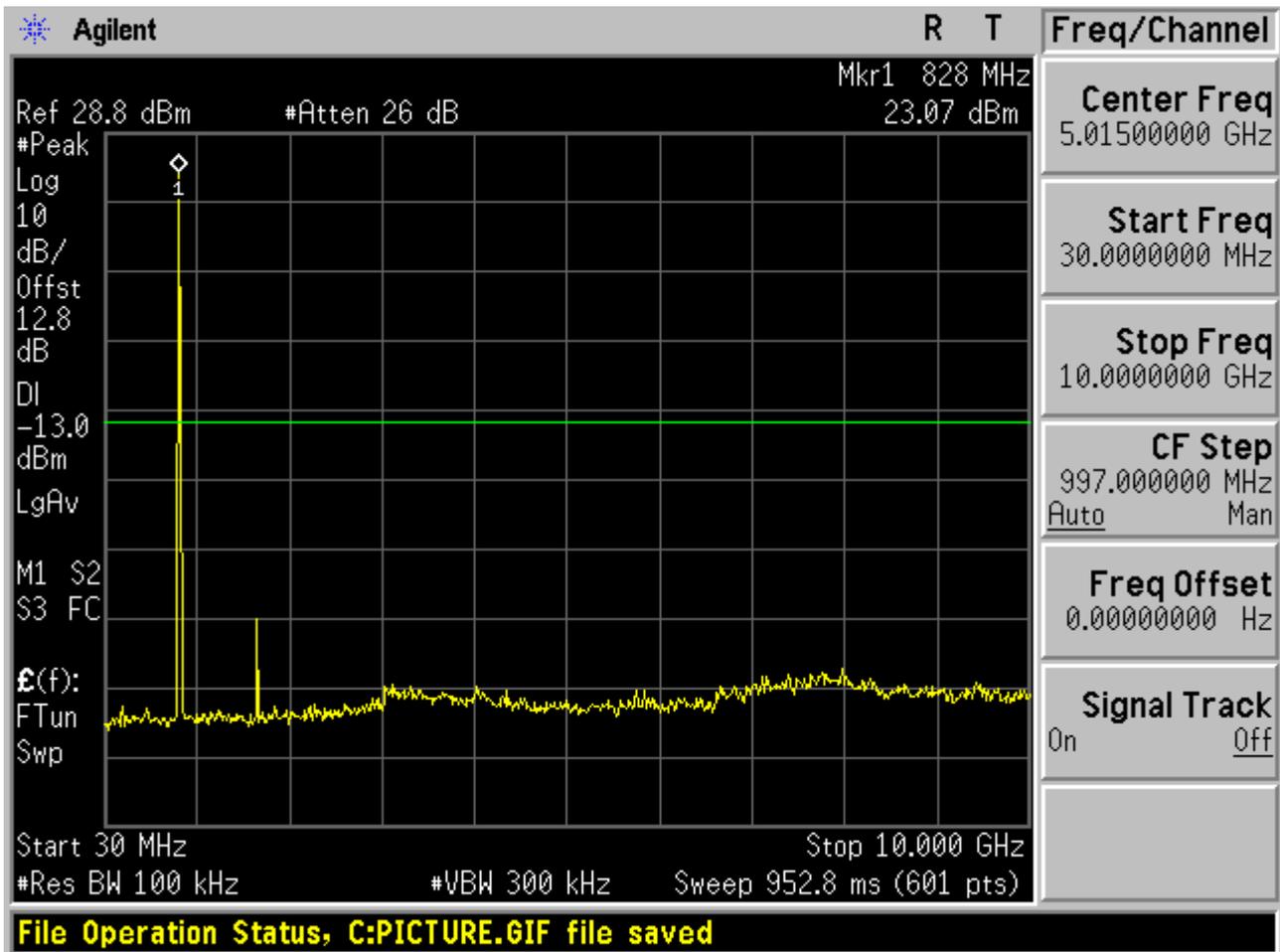


4.1.1.2 Channel = M

4.1.1.2.1 QPSK/1RBs /RB #0



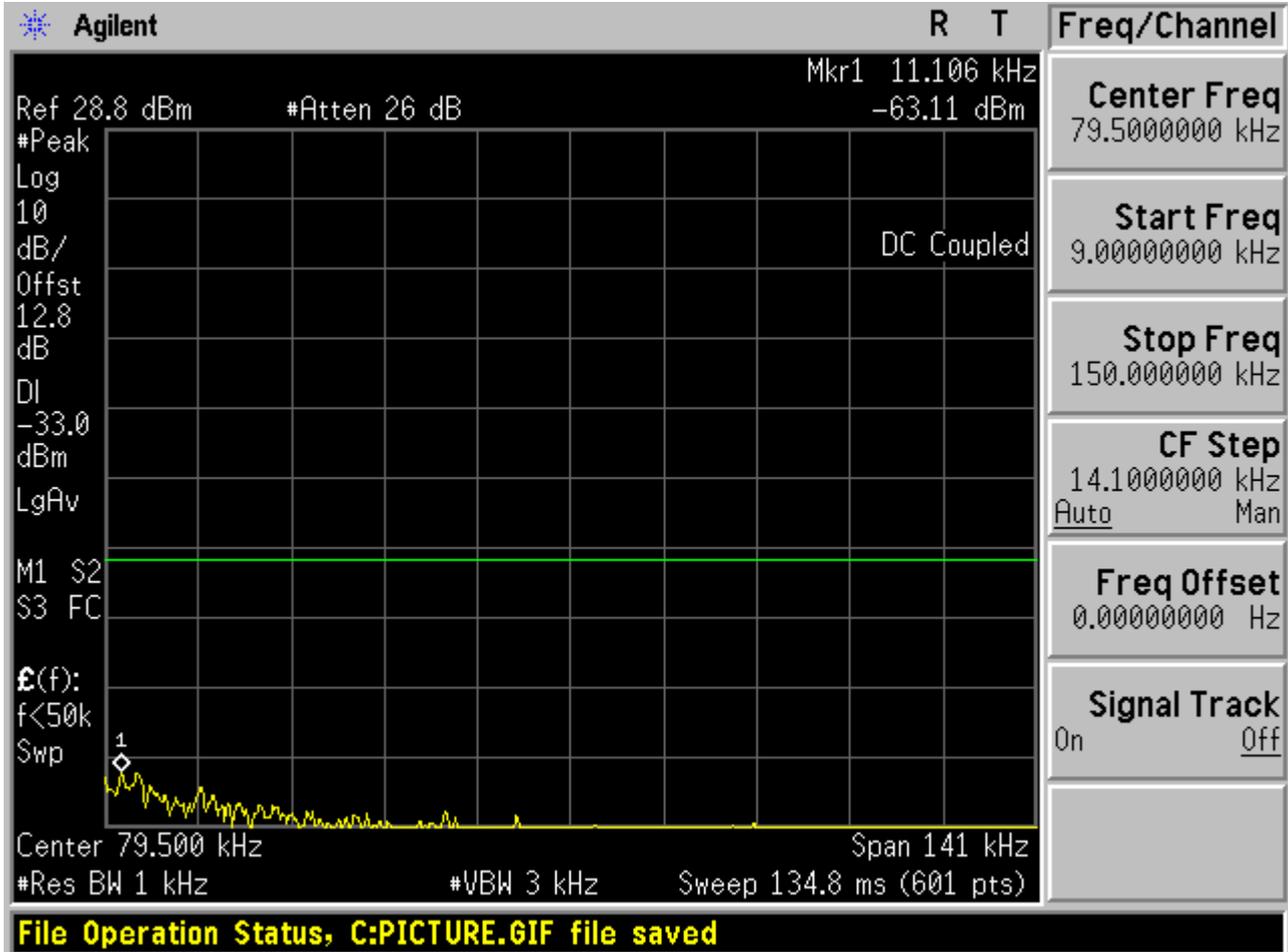


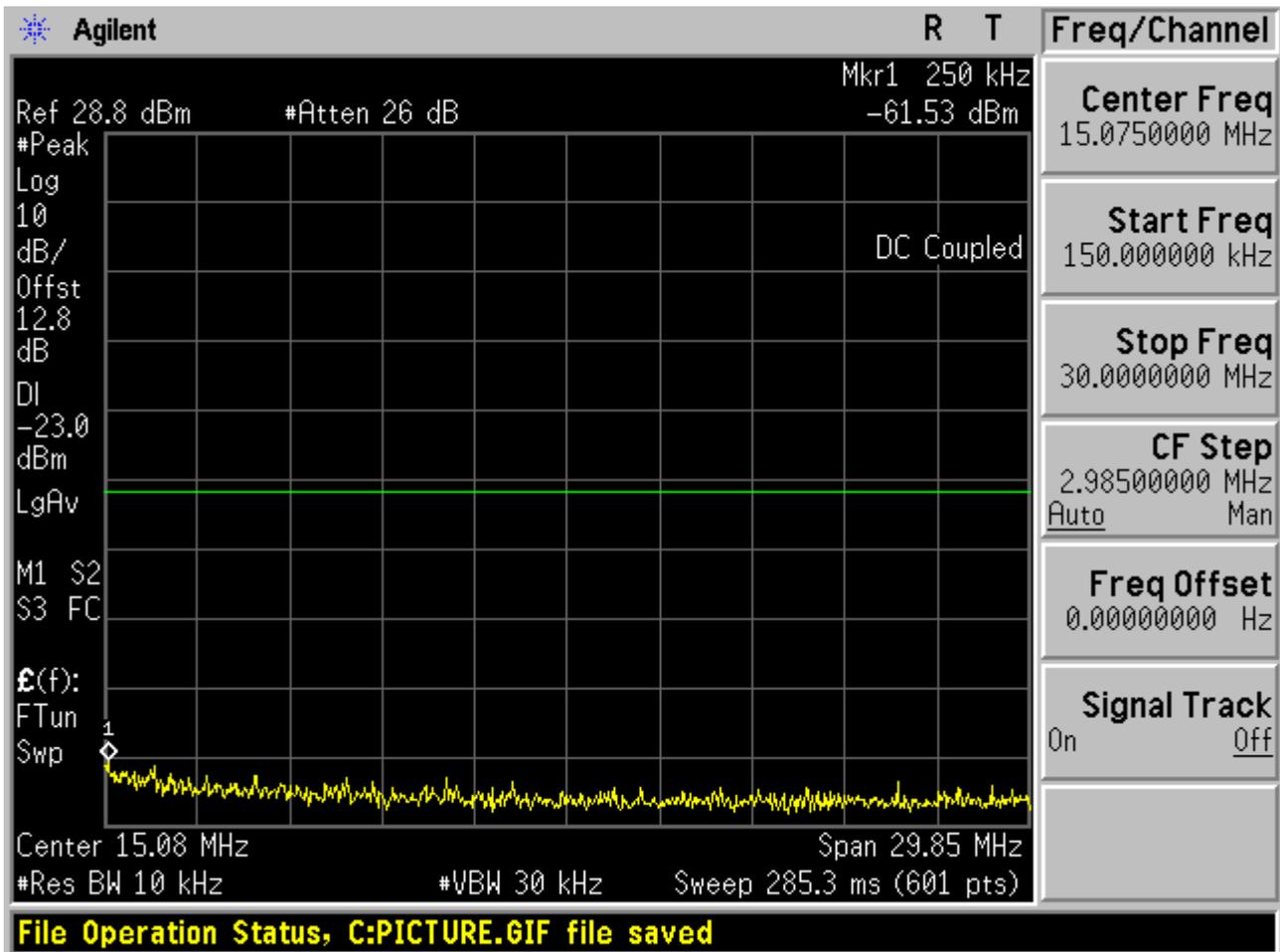


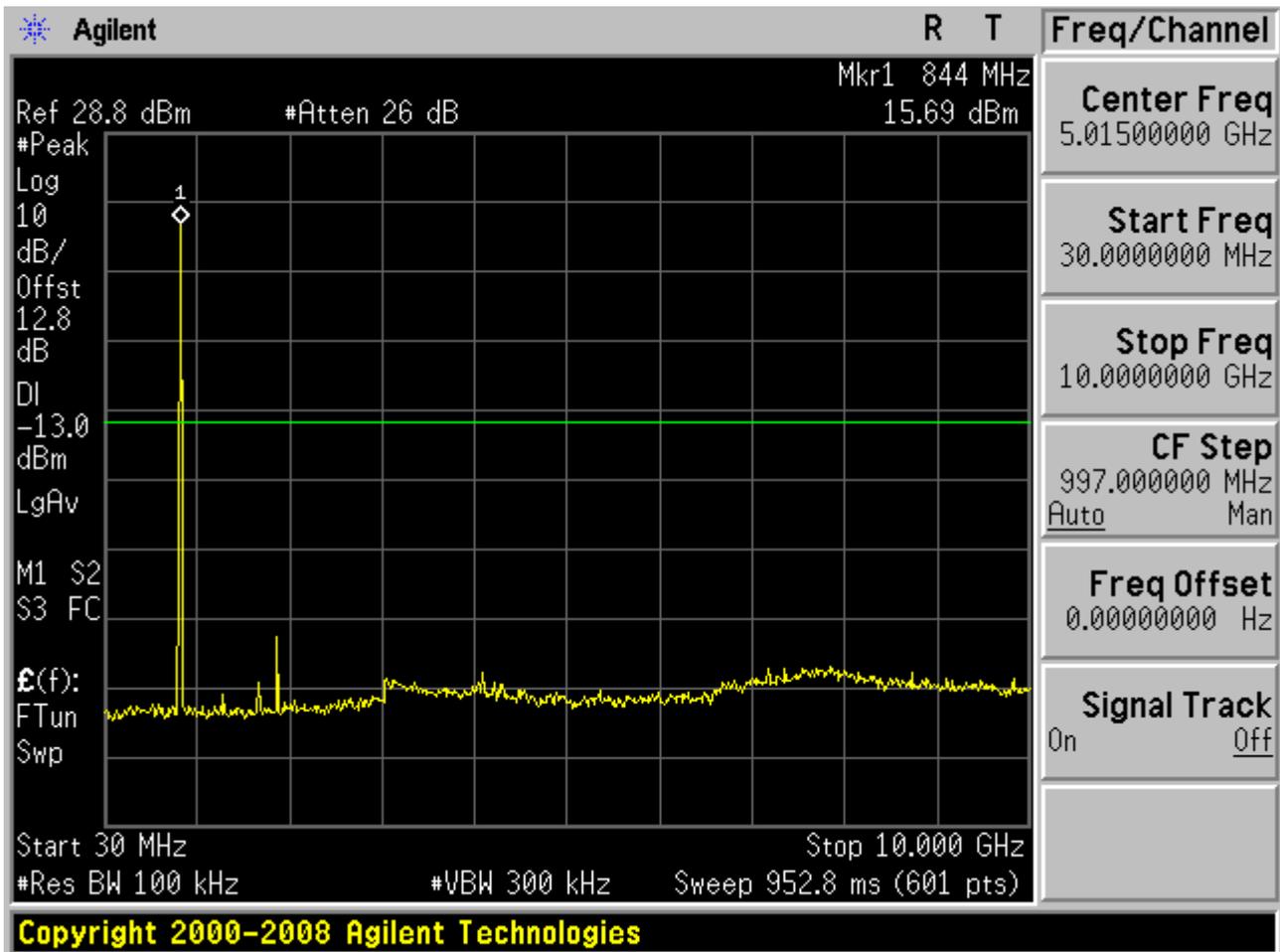


4.1.1.3 Channel = T

4.1.1.3.1 QPSK/1RBs /RB #0





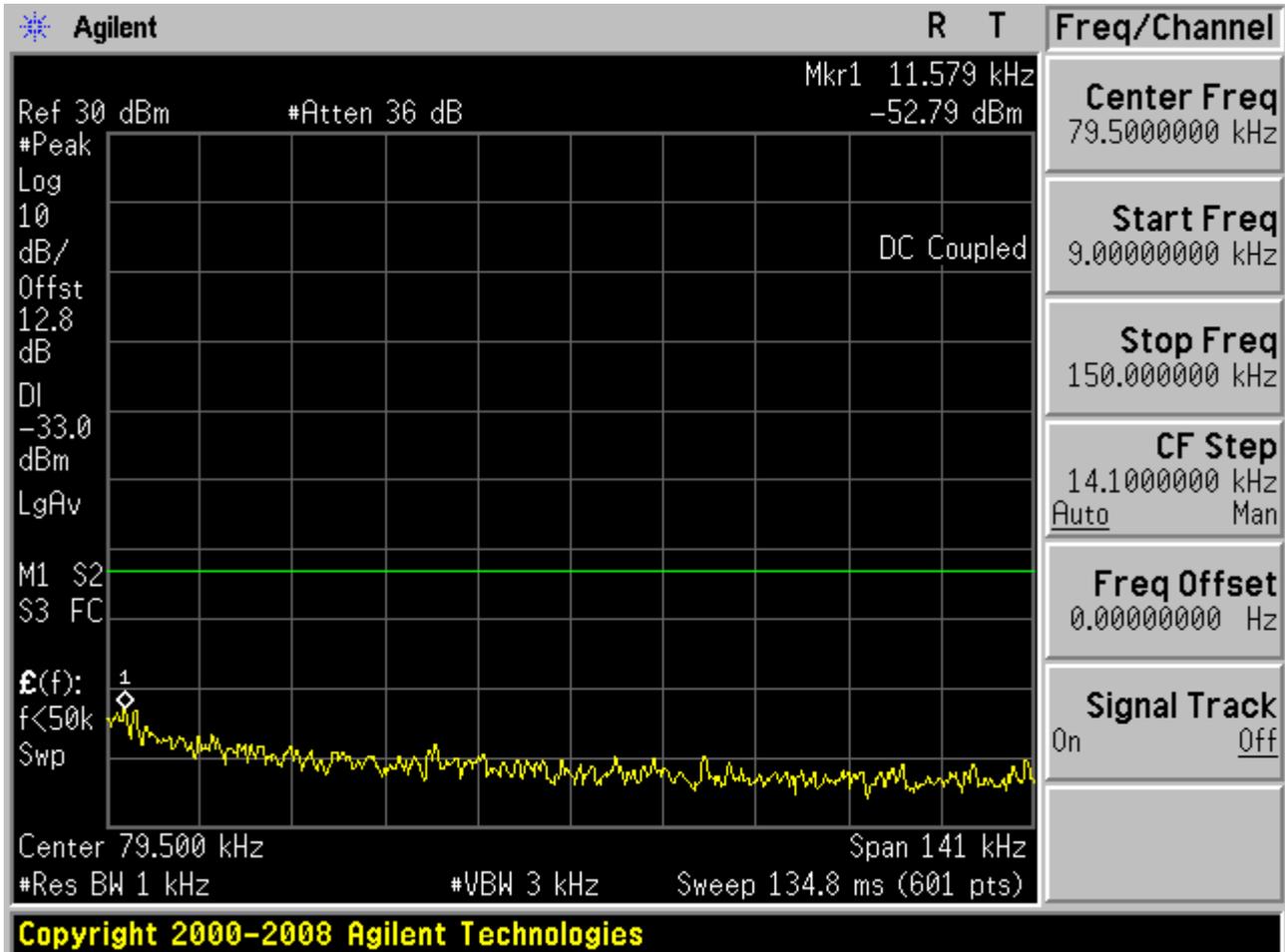


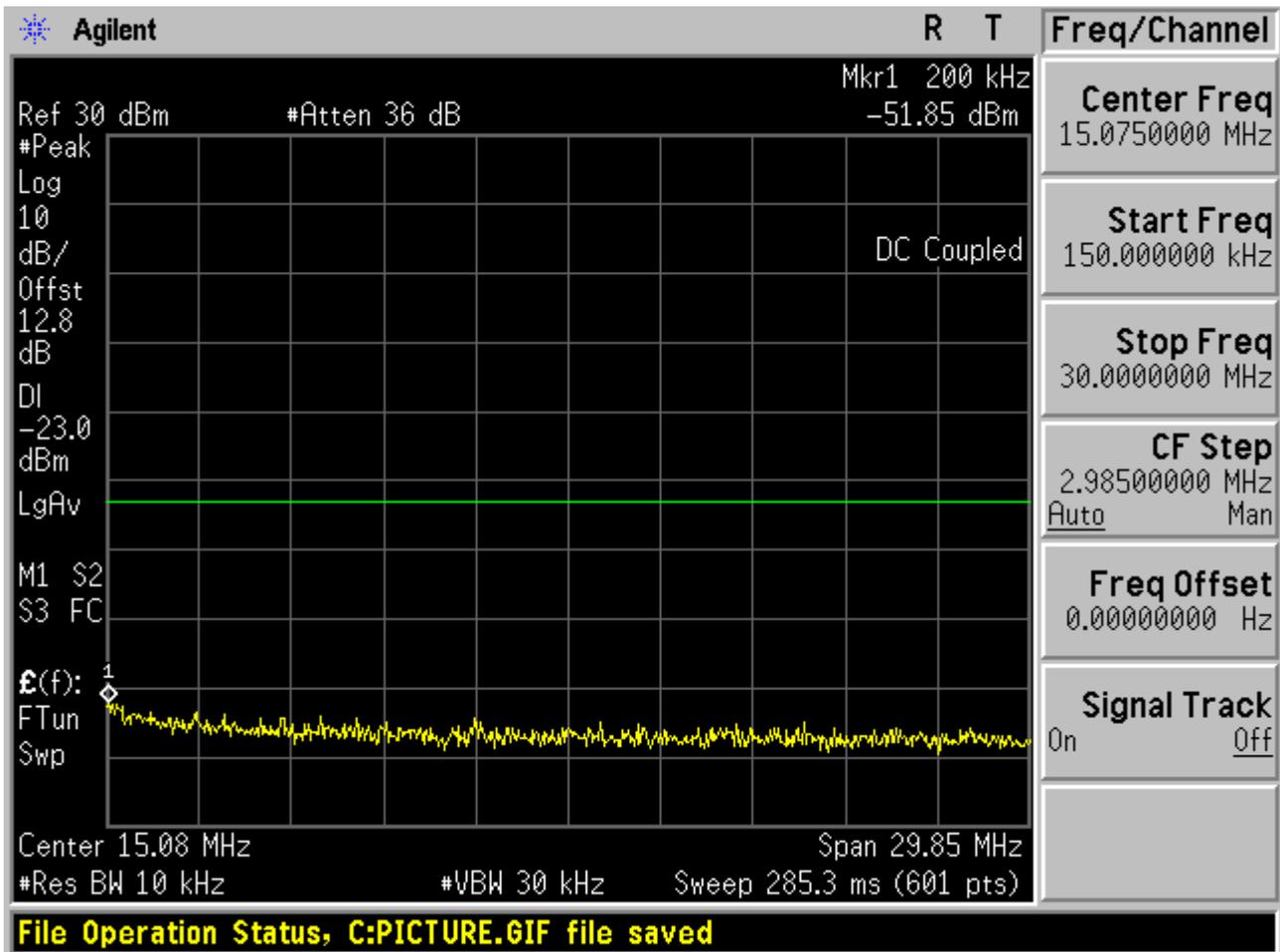


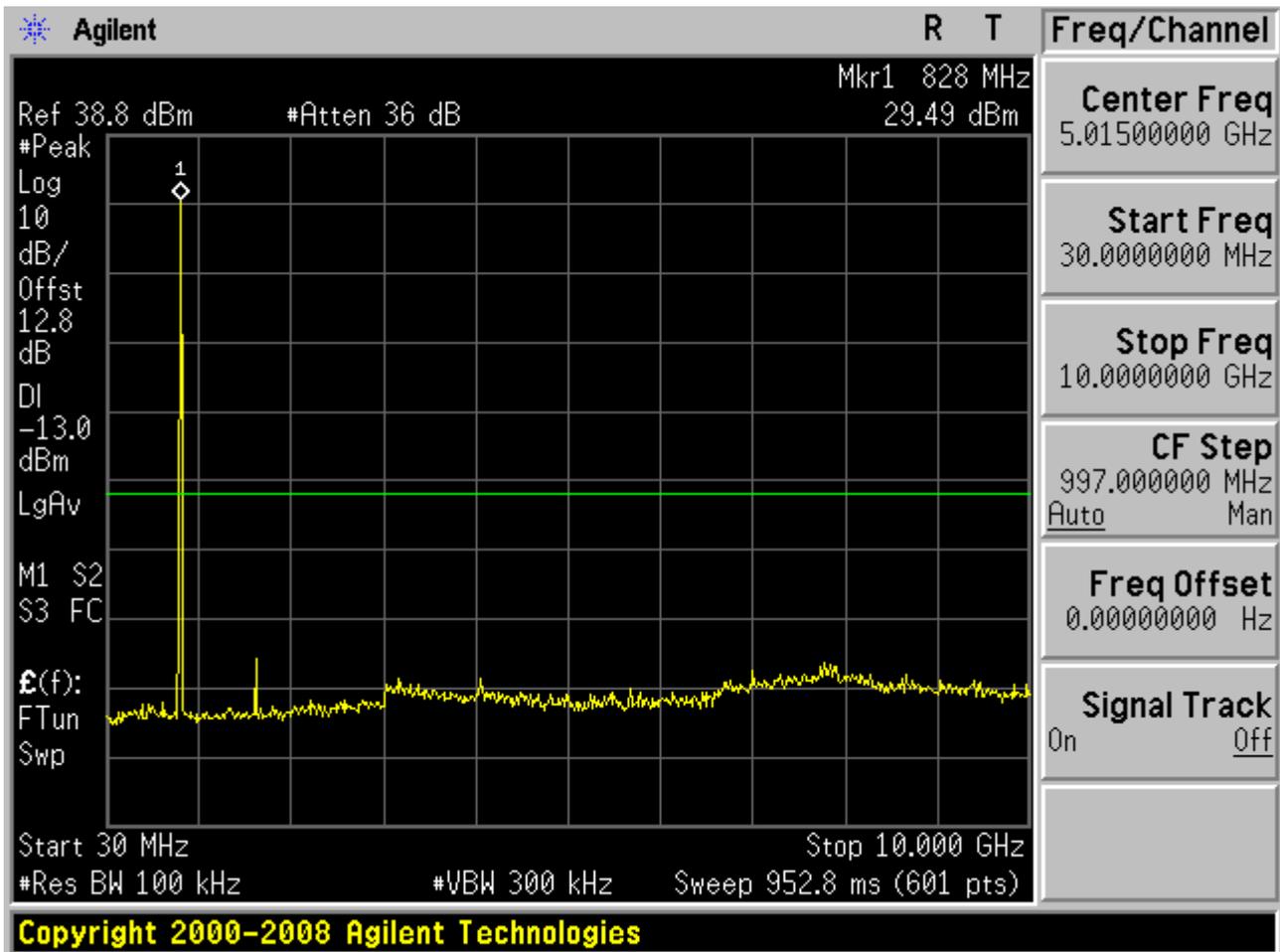
4.1.2 Channel Bandwidth = 10 MHz

4.1.2.1 Channel = B

4.1.2.1.1 QPSK/1RBs /RB #0



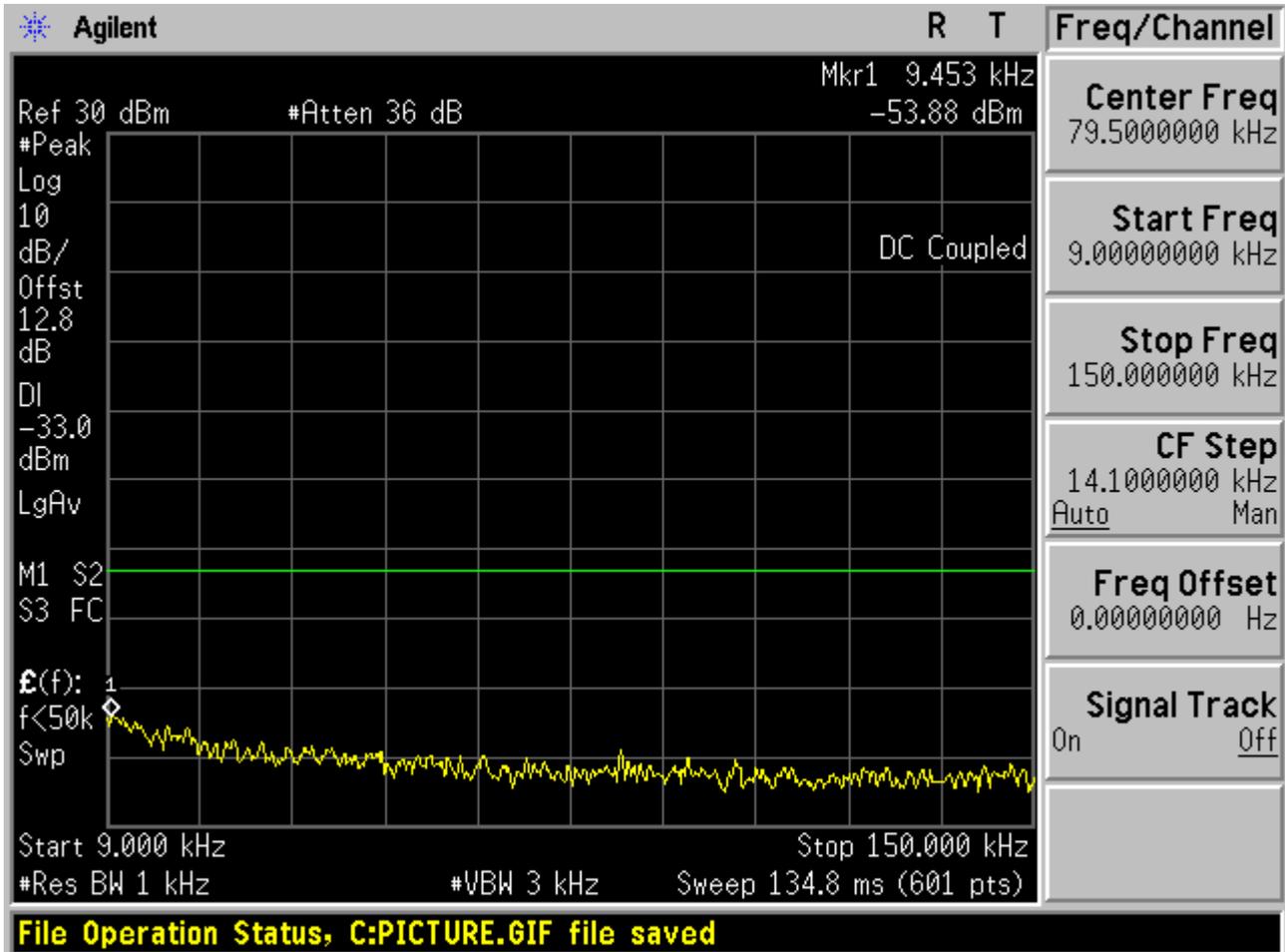


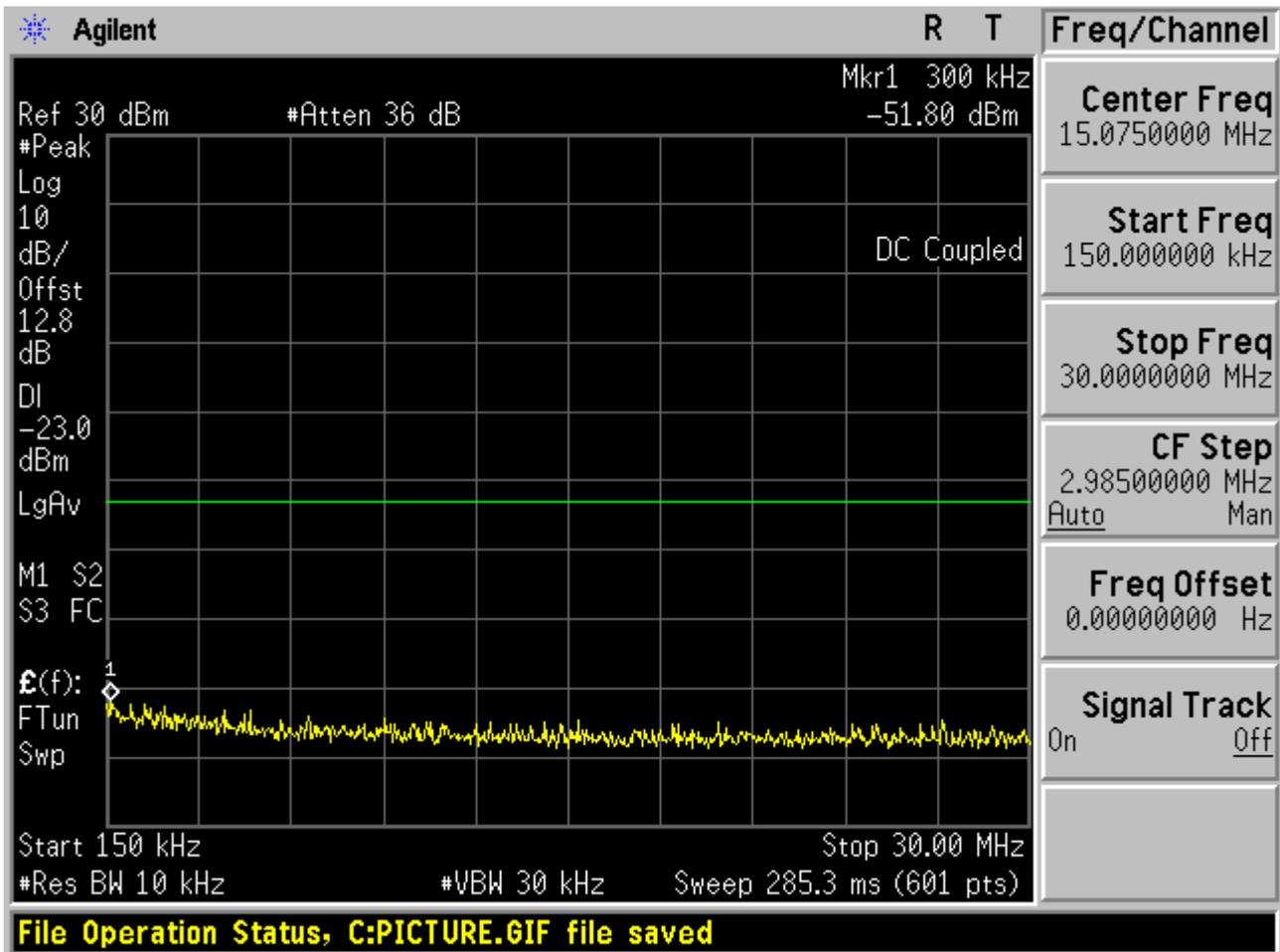


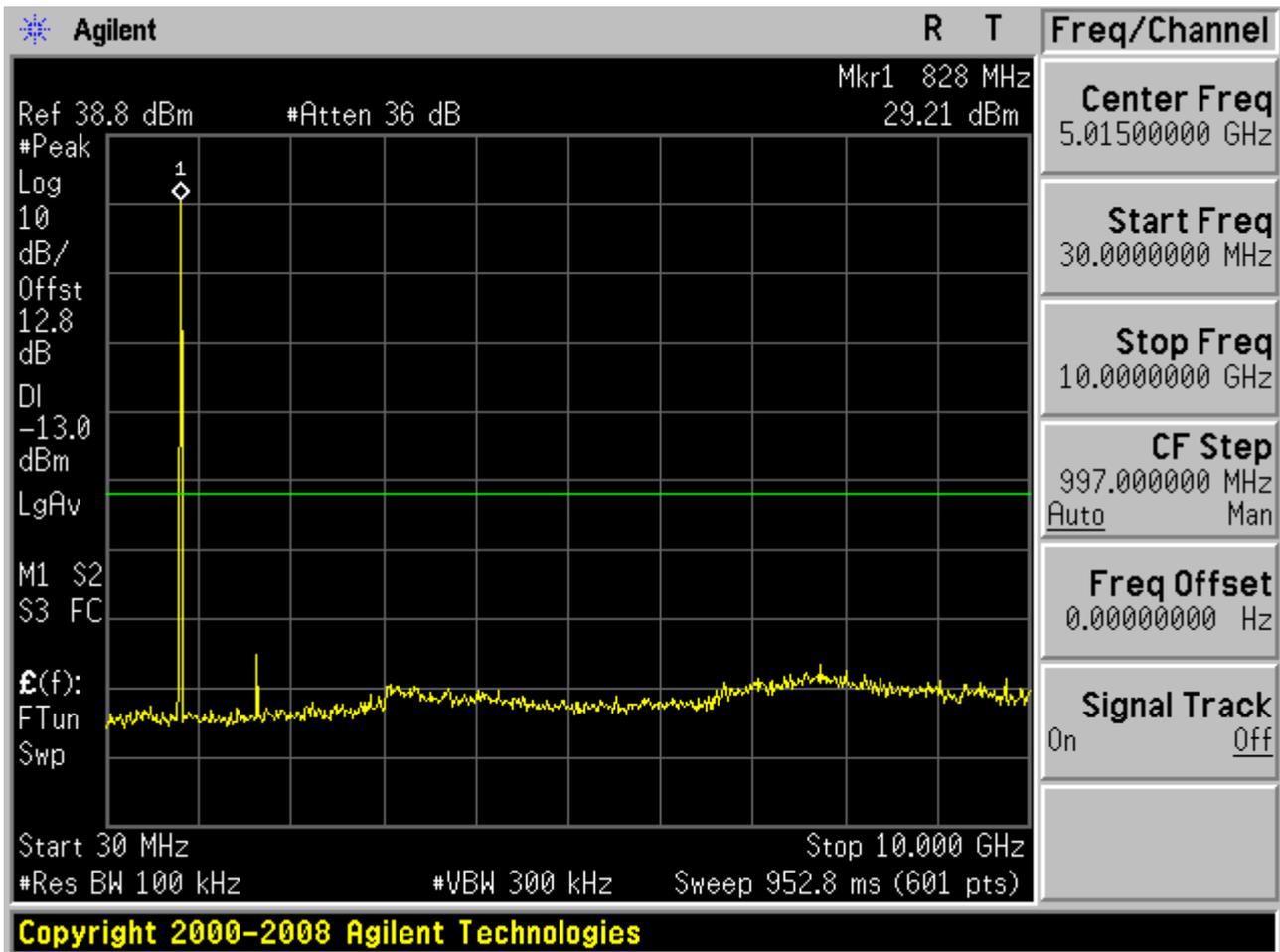


4.1.2.2 Channel = M

4.1.2.2.1 QPSK/1RBs /RB #0



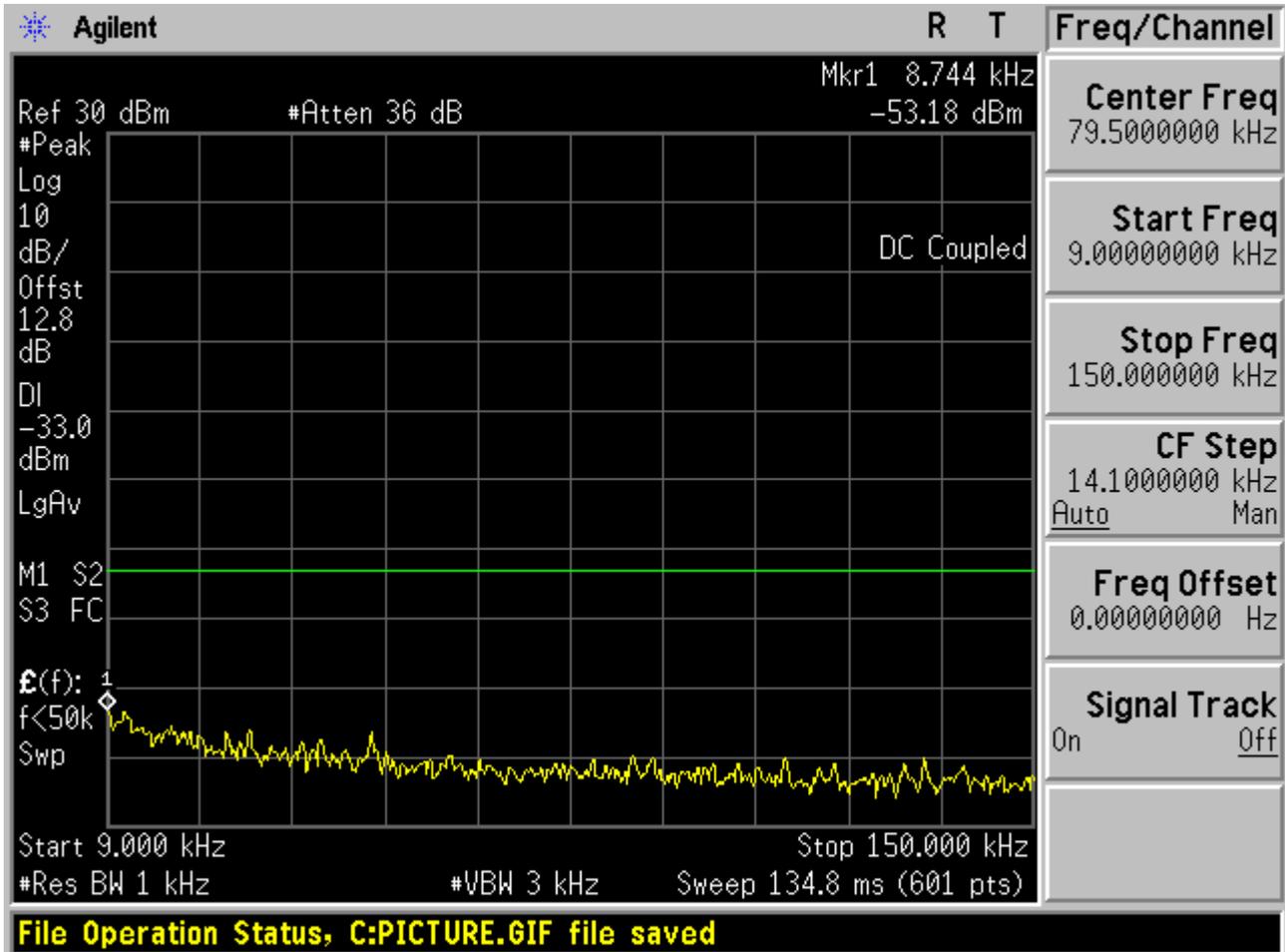


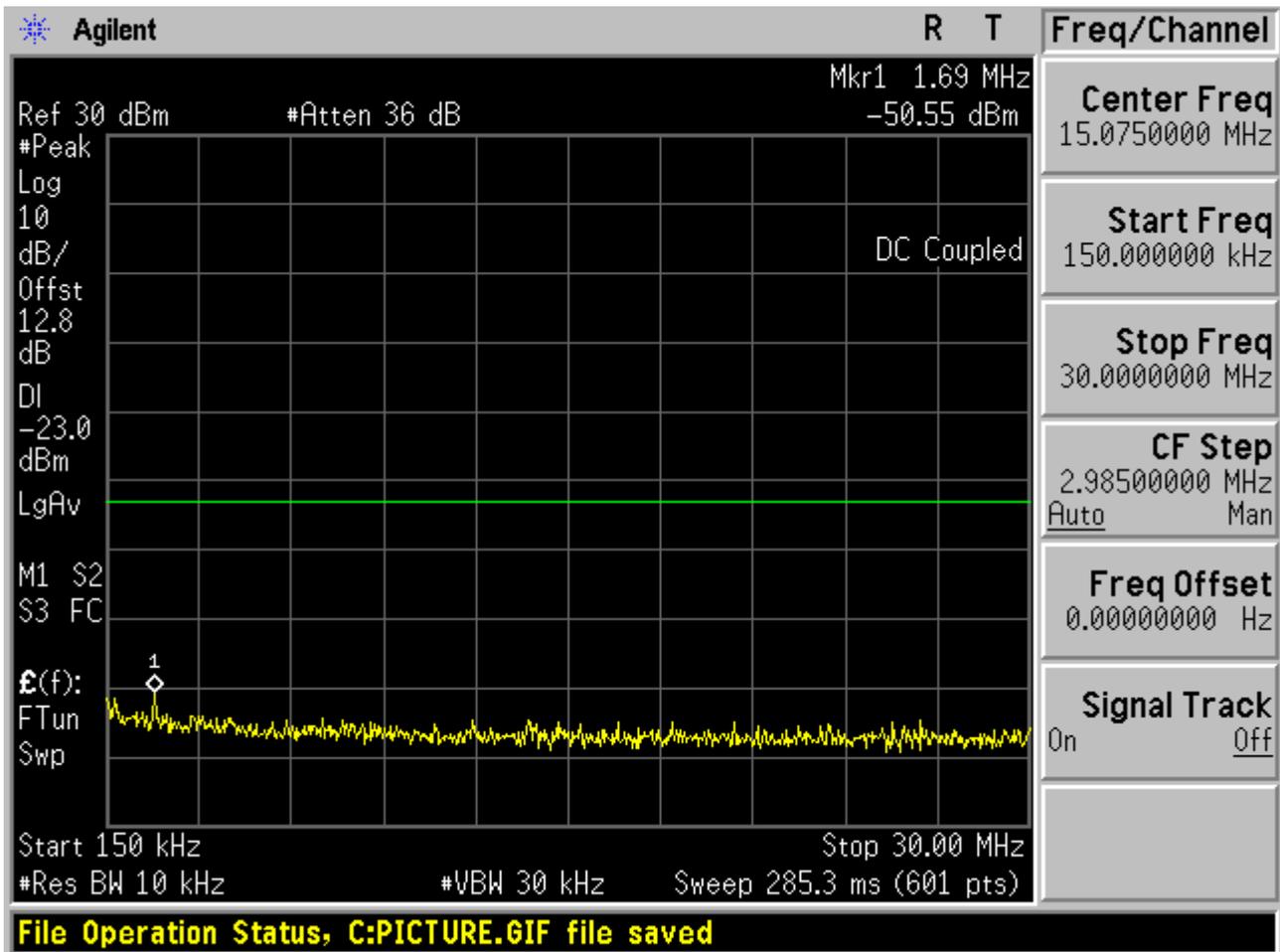


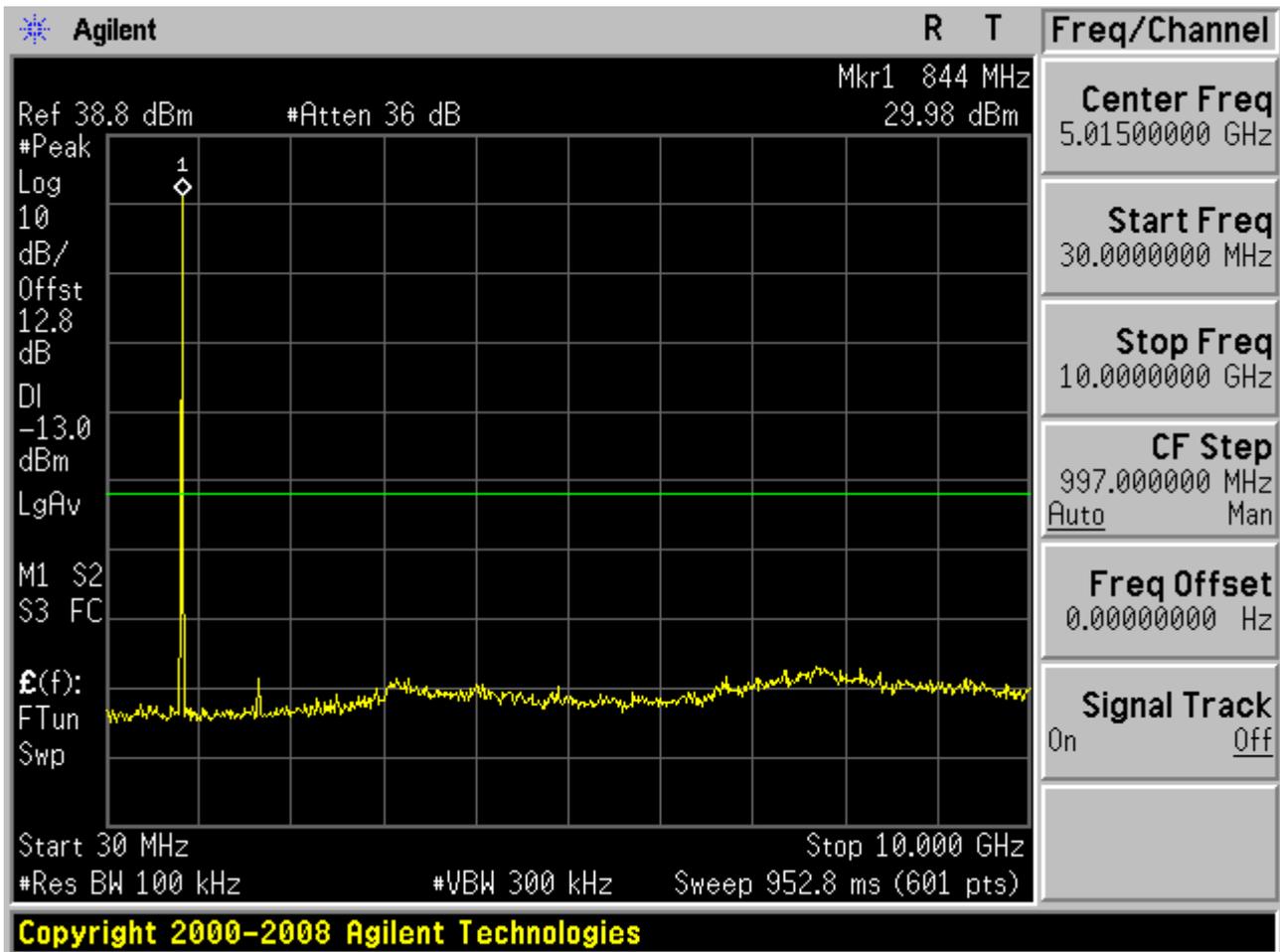


4.1.2.3 Channel = T

4.1.2.3.1 QPSK/1RBs /RB #0







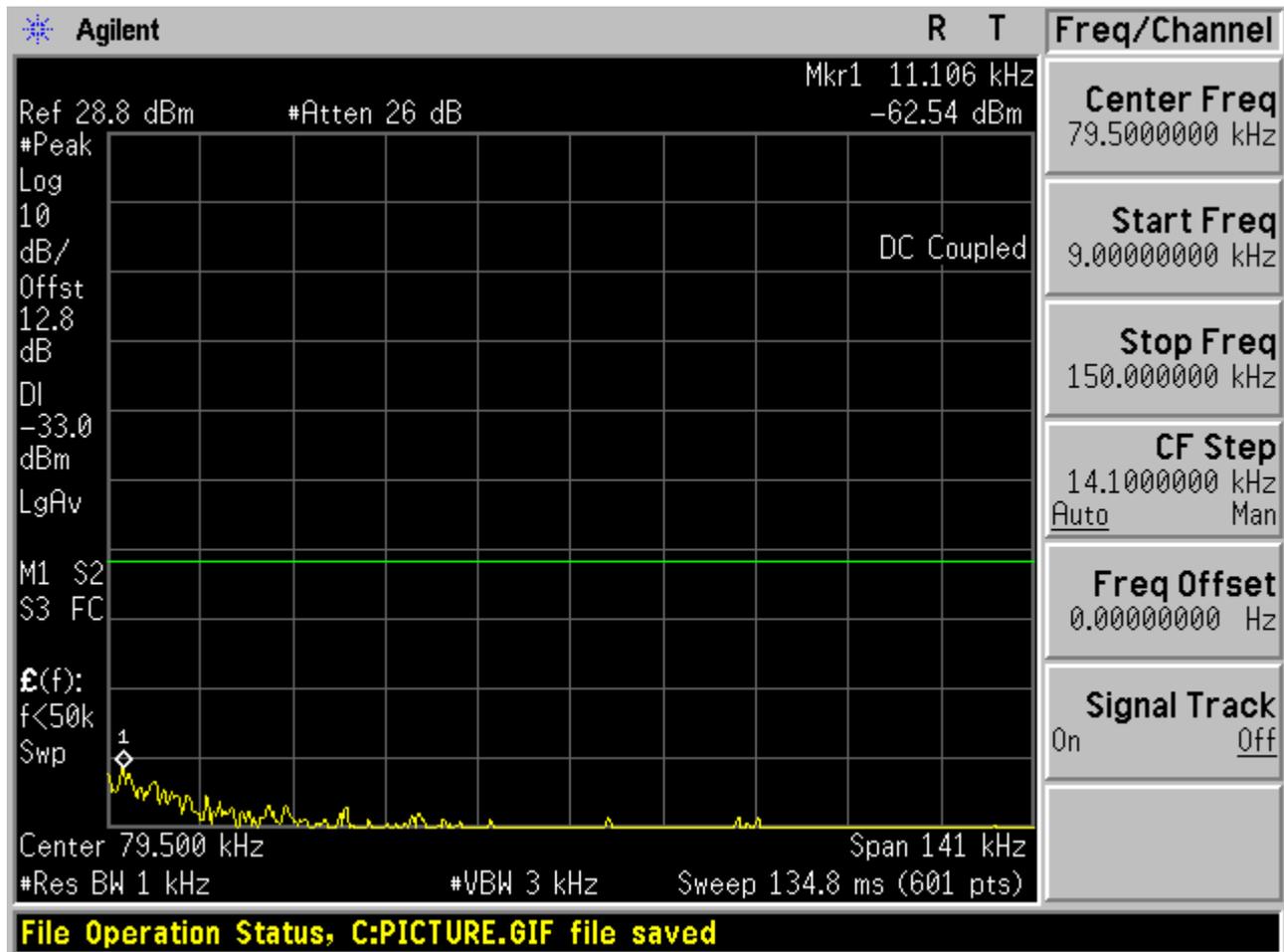


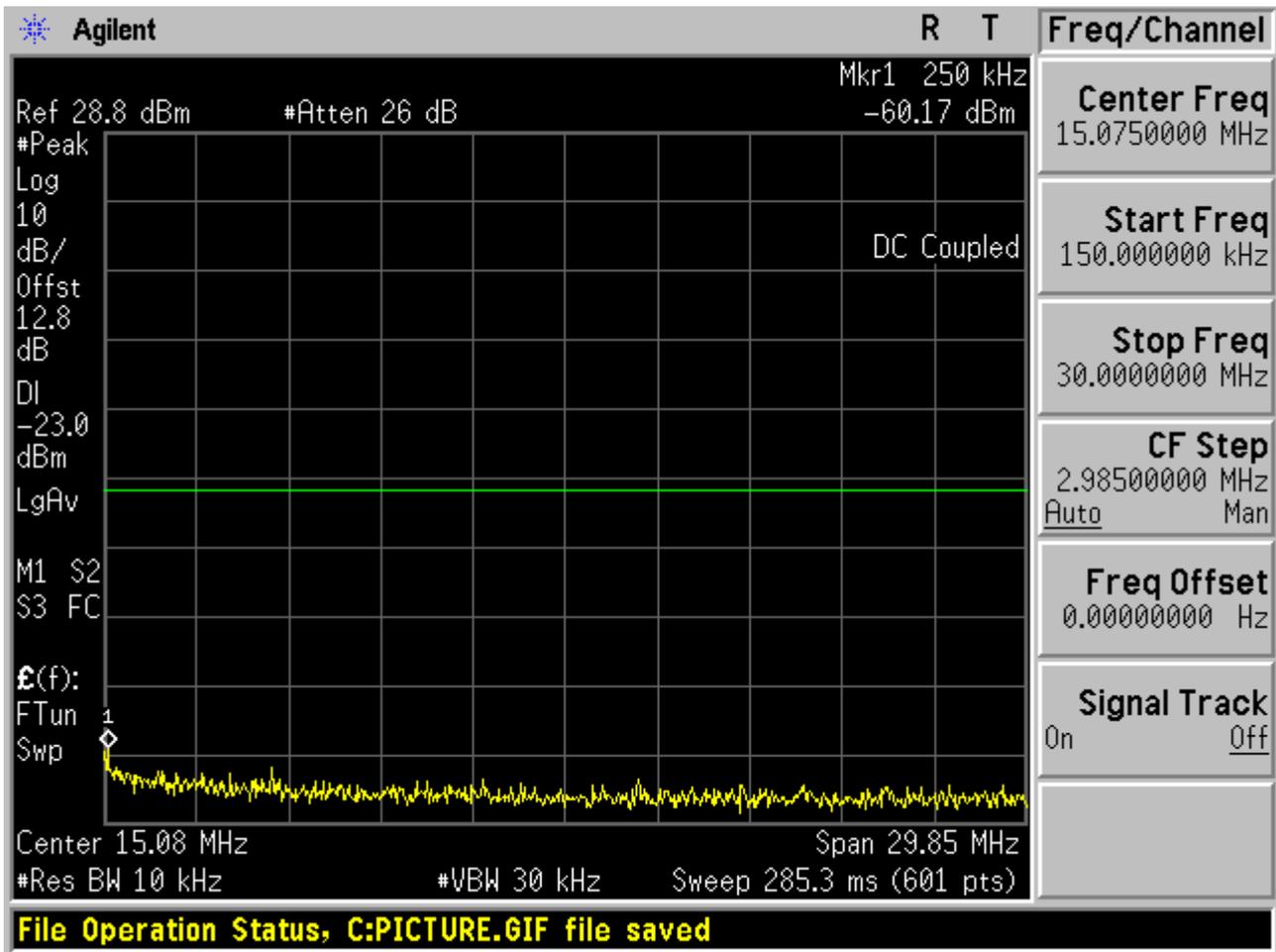
4.2 Test Mode=TM7

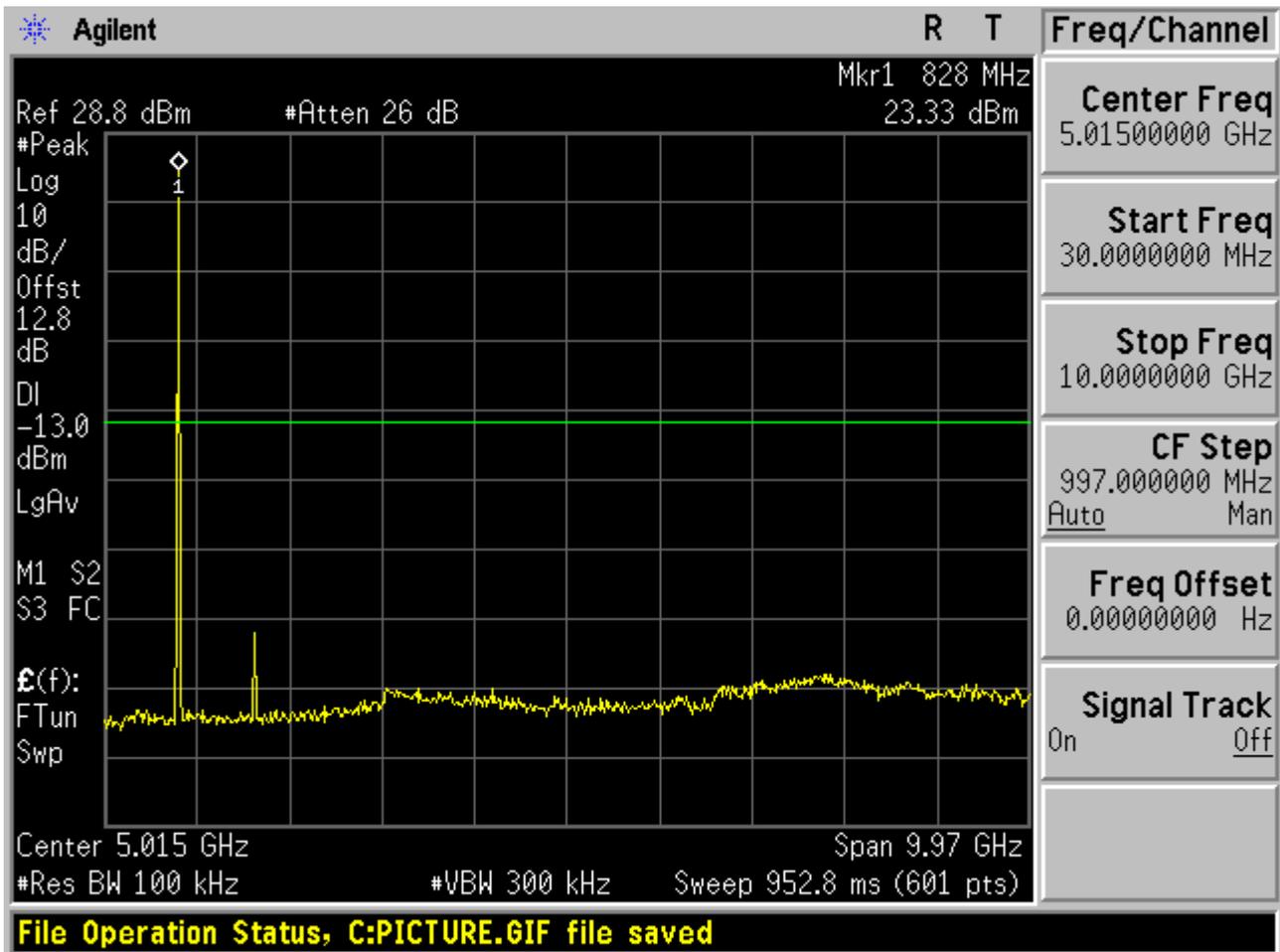
4.2.1 Channel Bandwidth = 5 MHz

4.2.1.1 Channel = B

4.2.1.1.1 16QAM/1RBs /RB #0



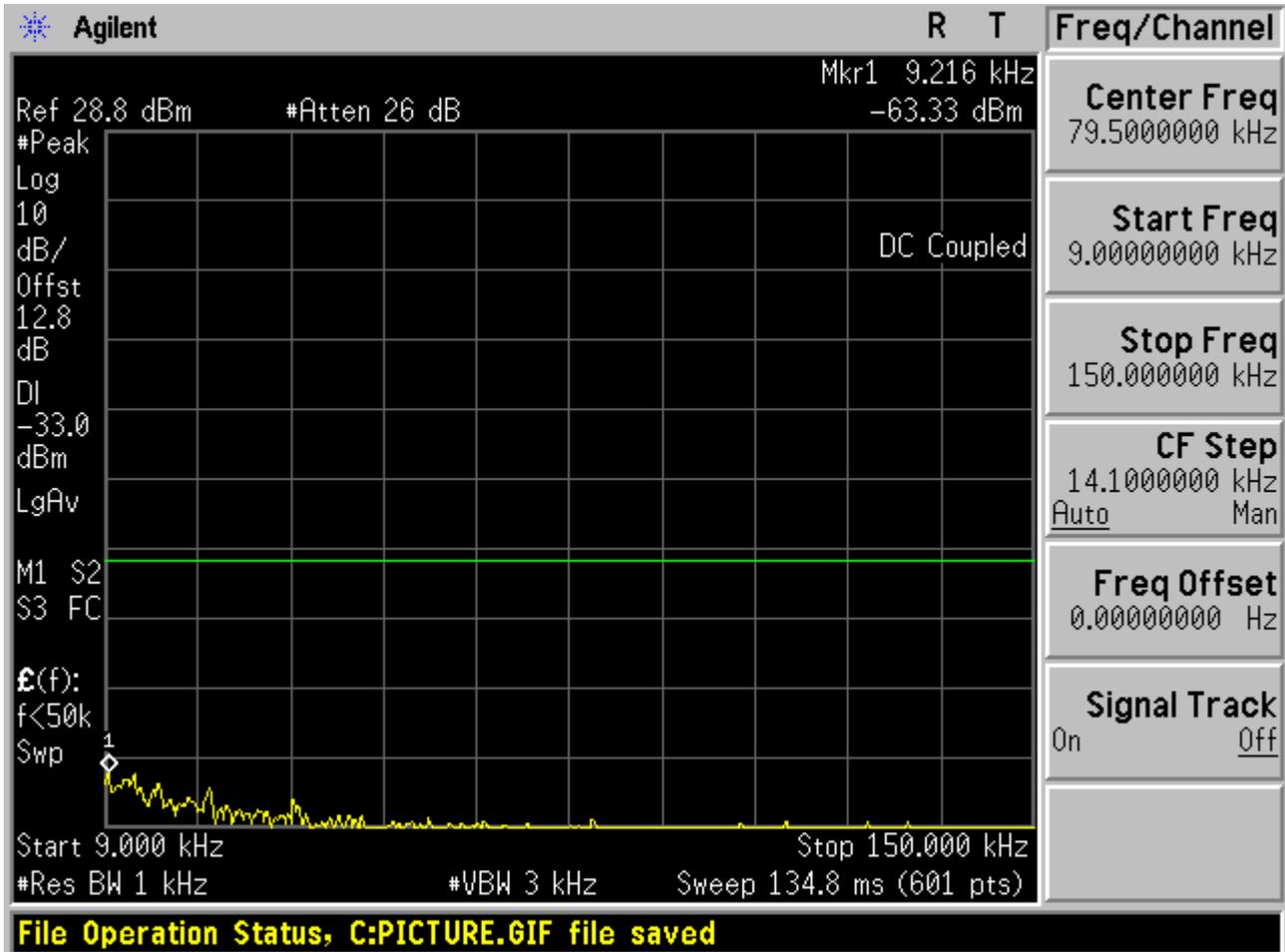


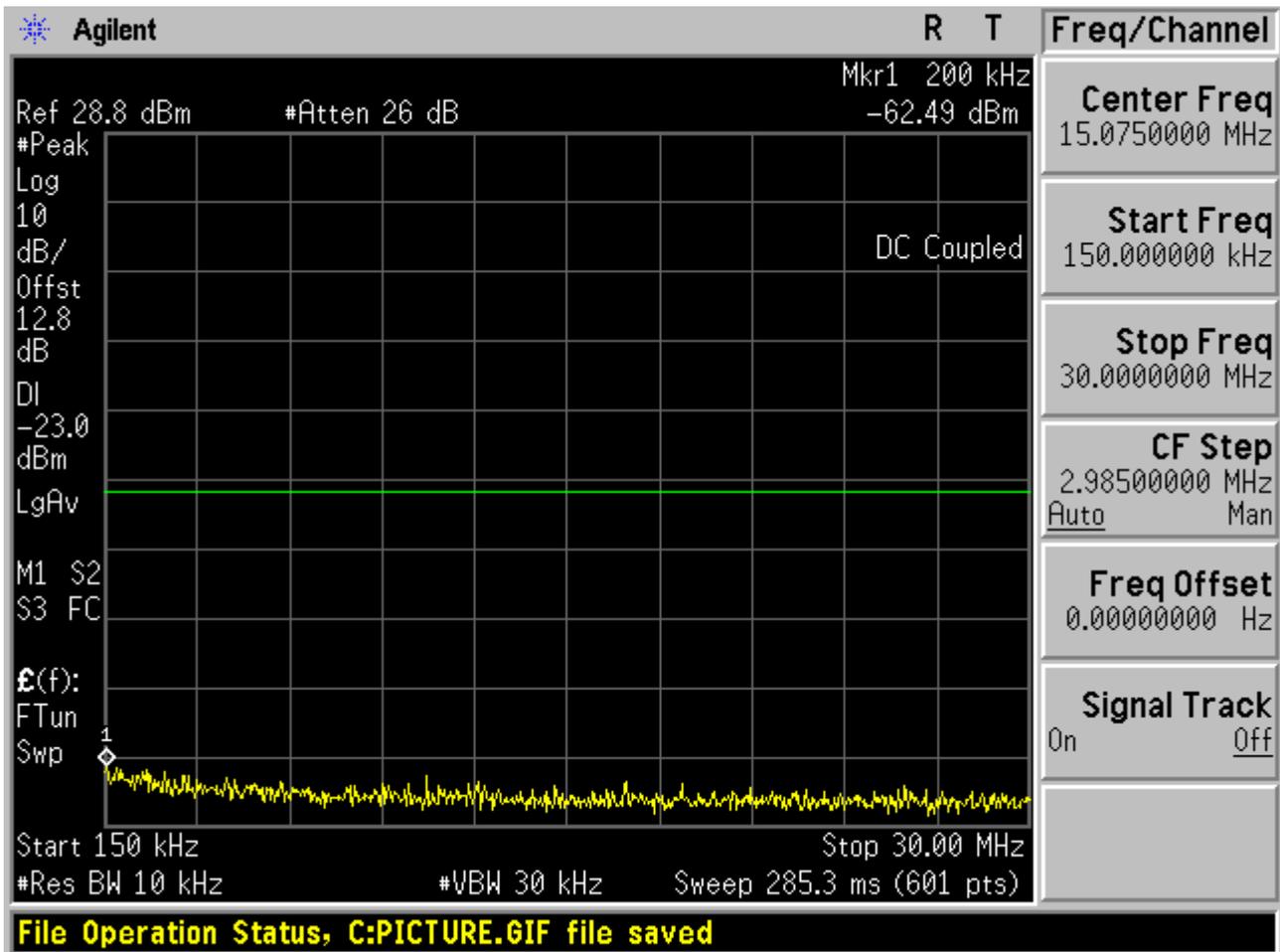


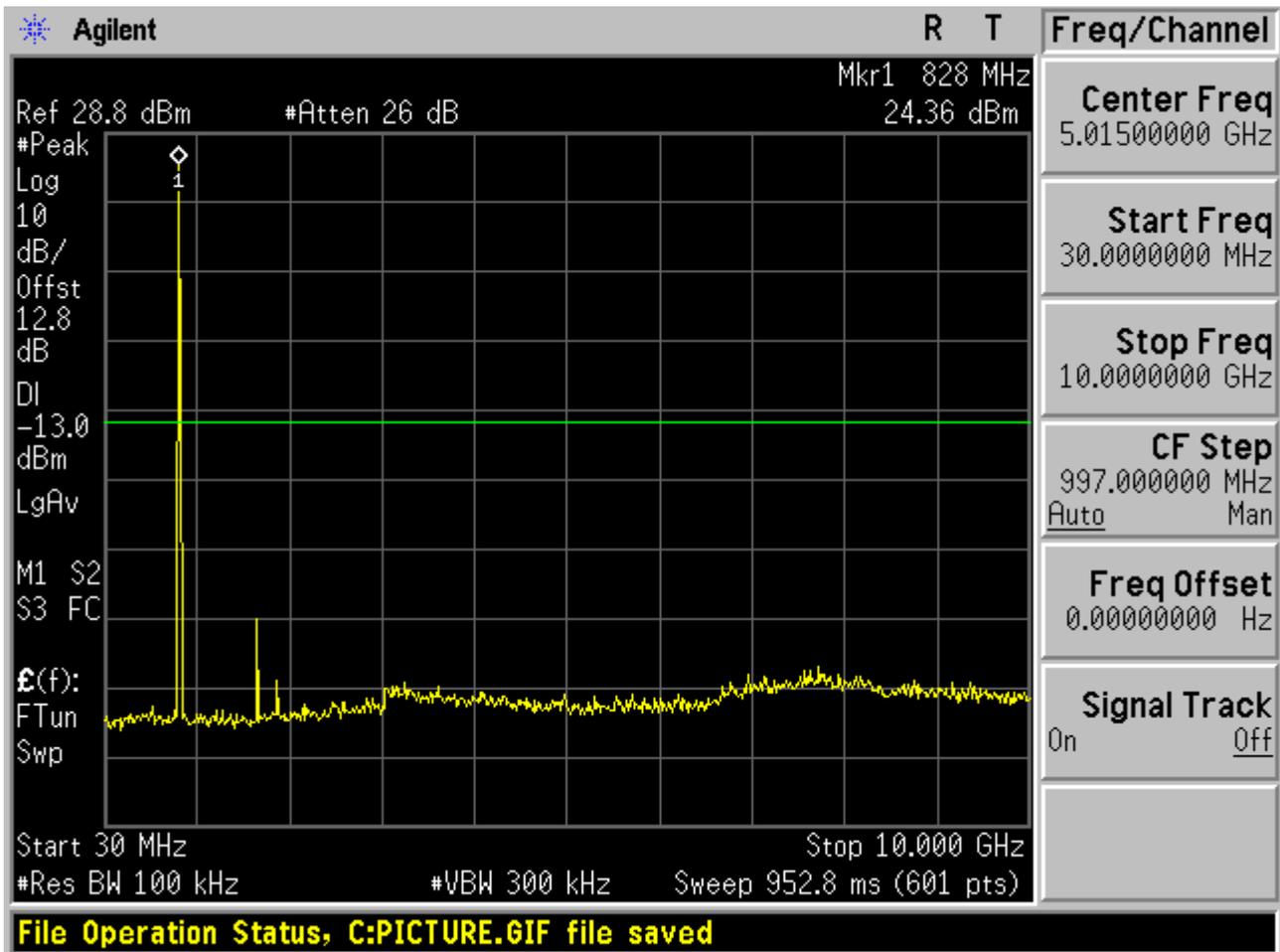


4.2.1.2 Channel = M

4.2.1.2.1 16QAM/1RBs /RB #0



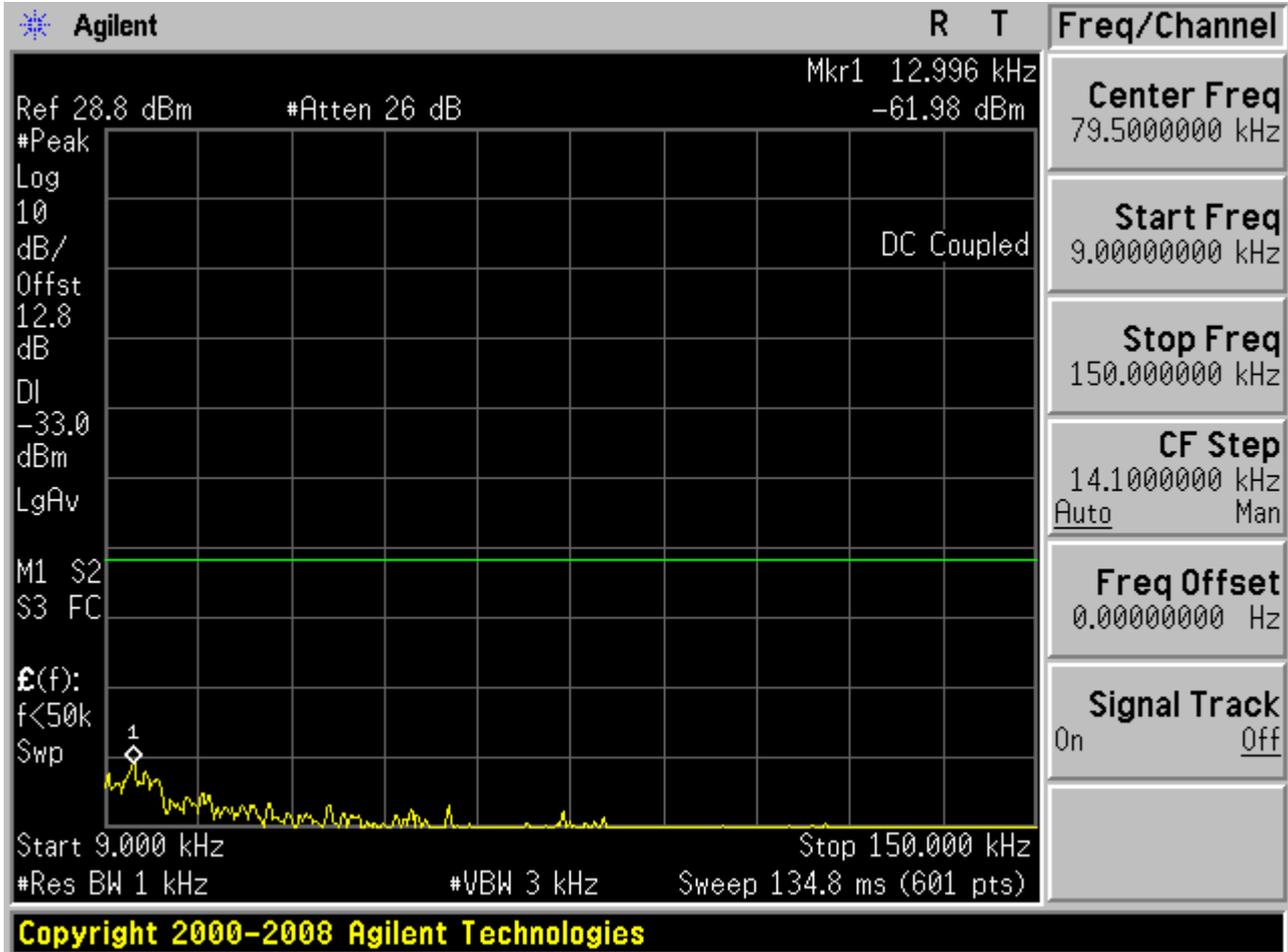


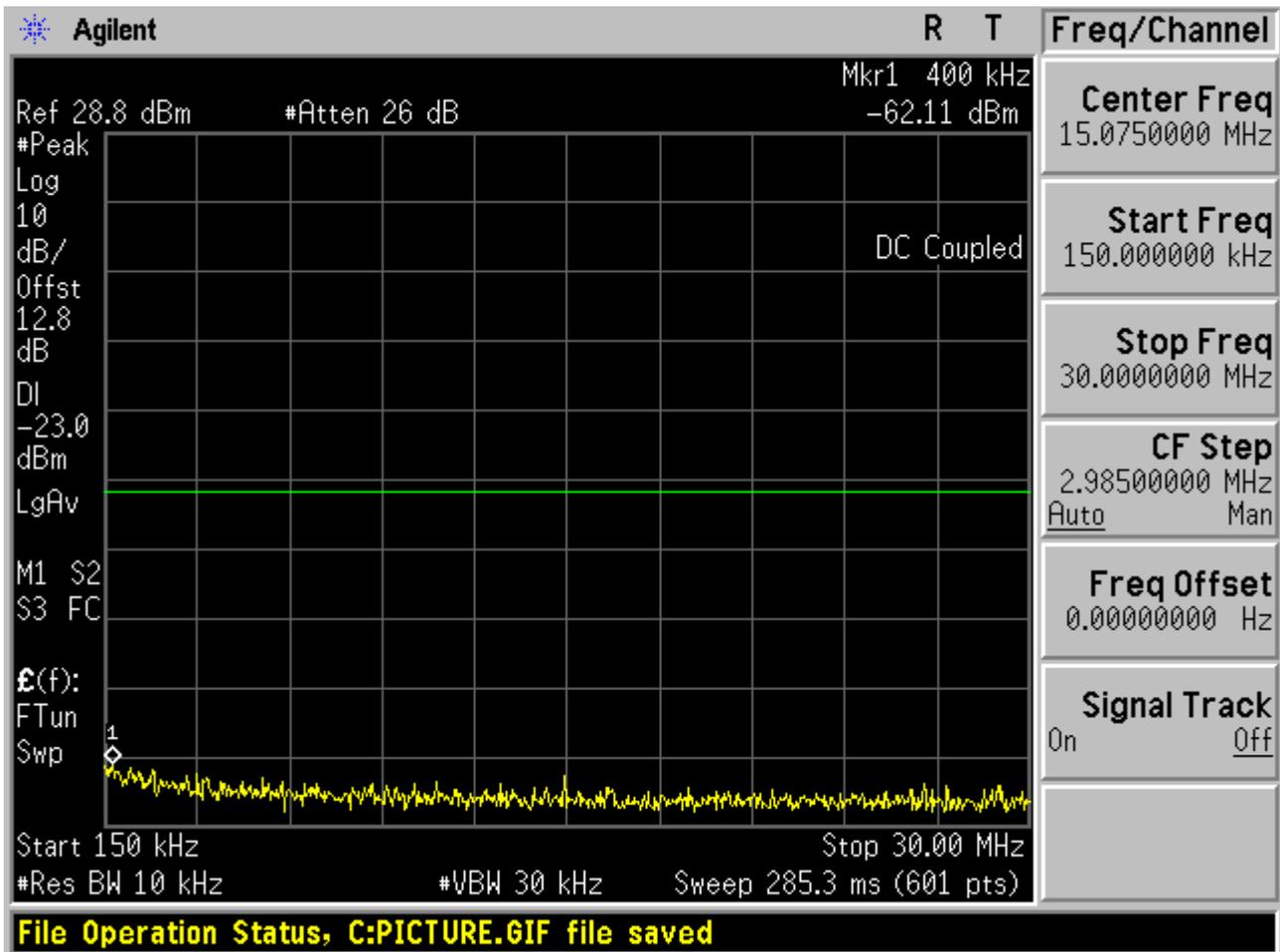


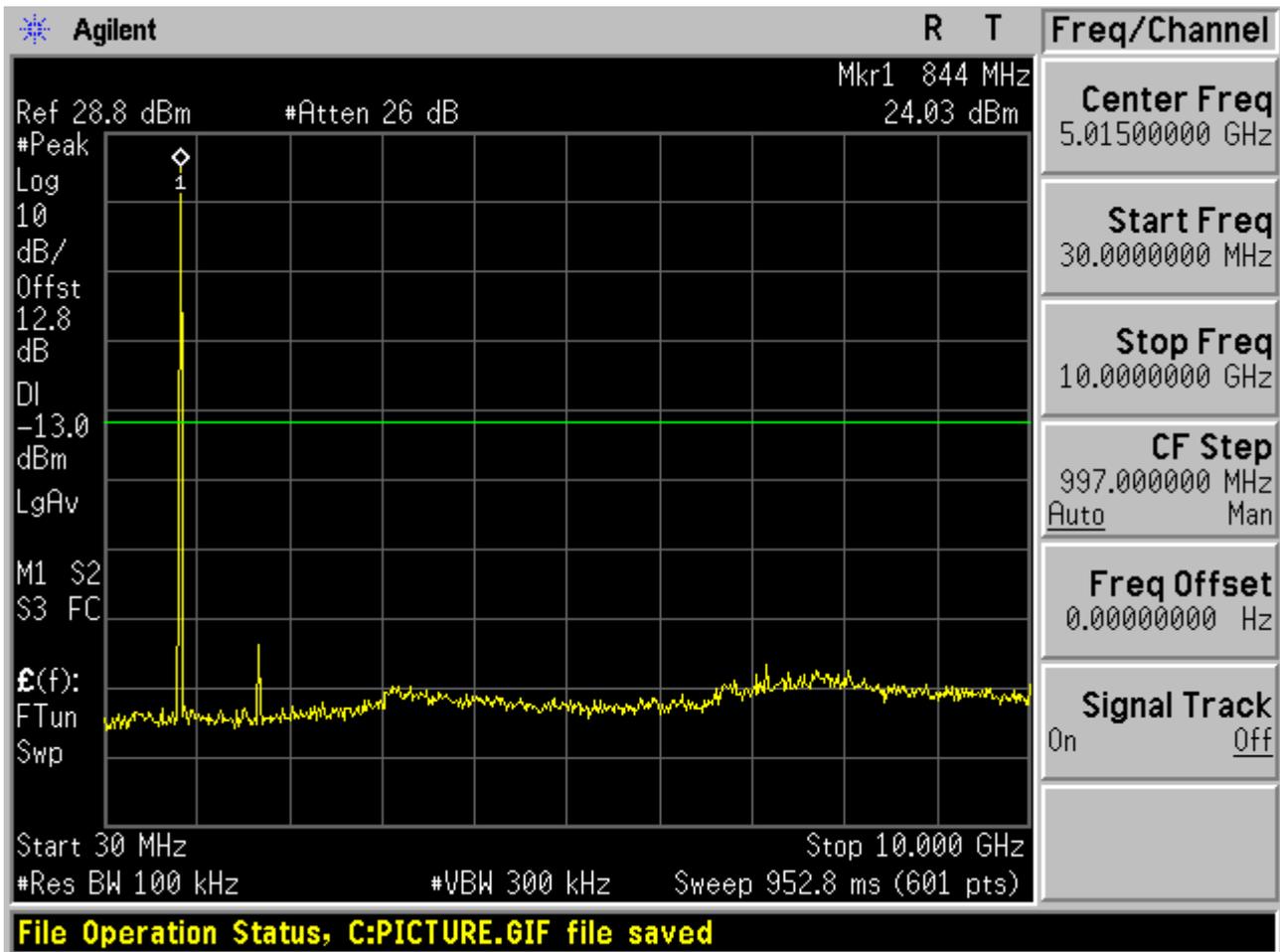


4.2.1.3 Channel = T

4.2.1.3.1 16QAM/1RBs /RB #0





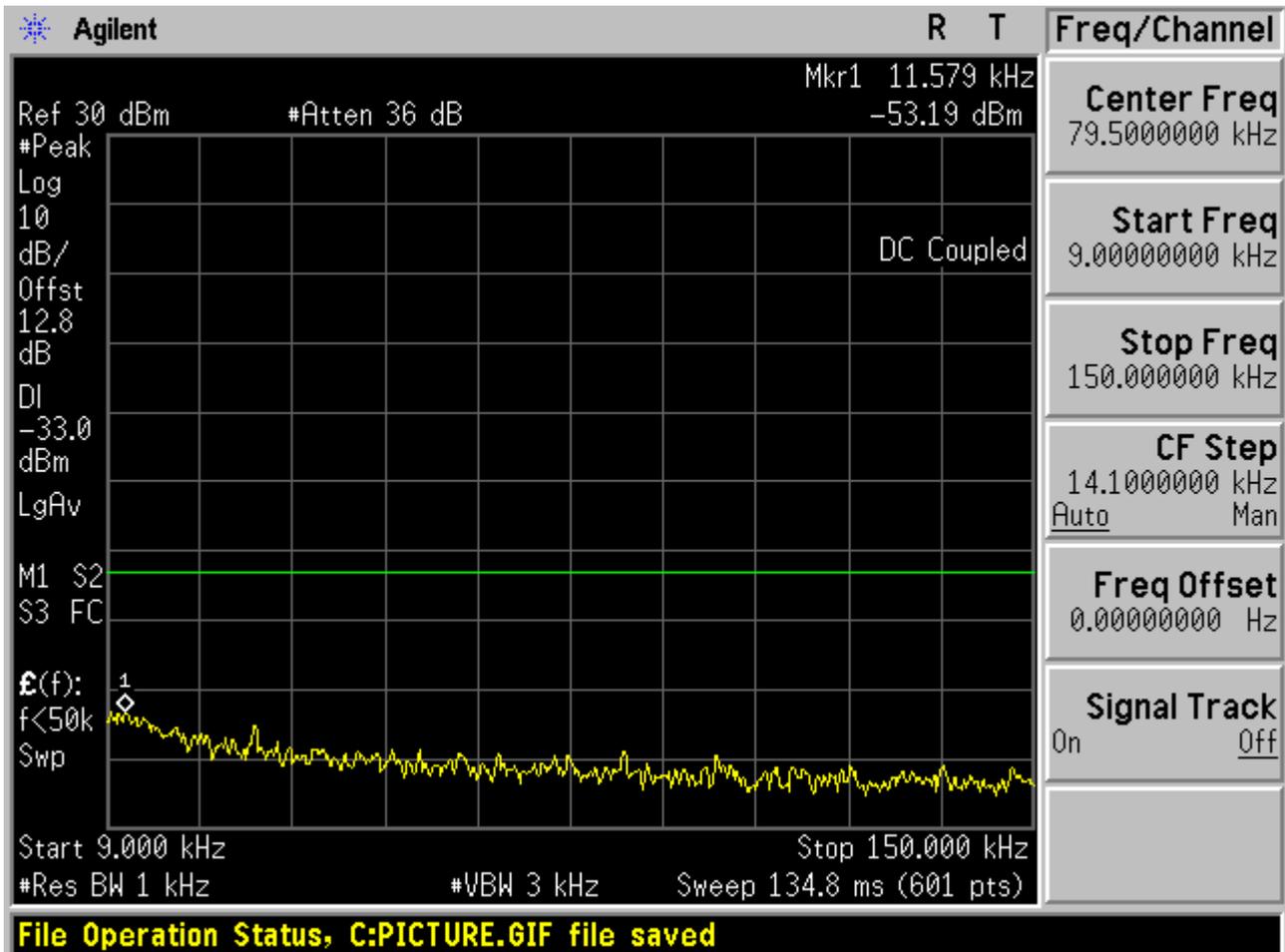


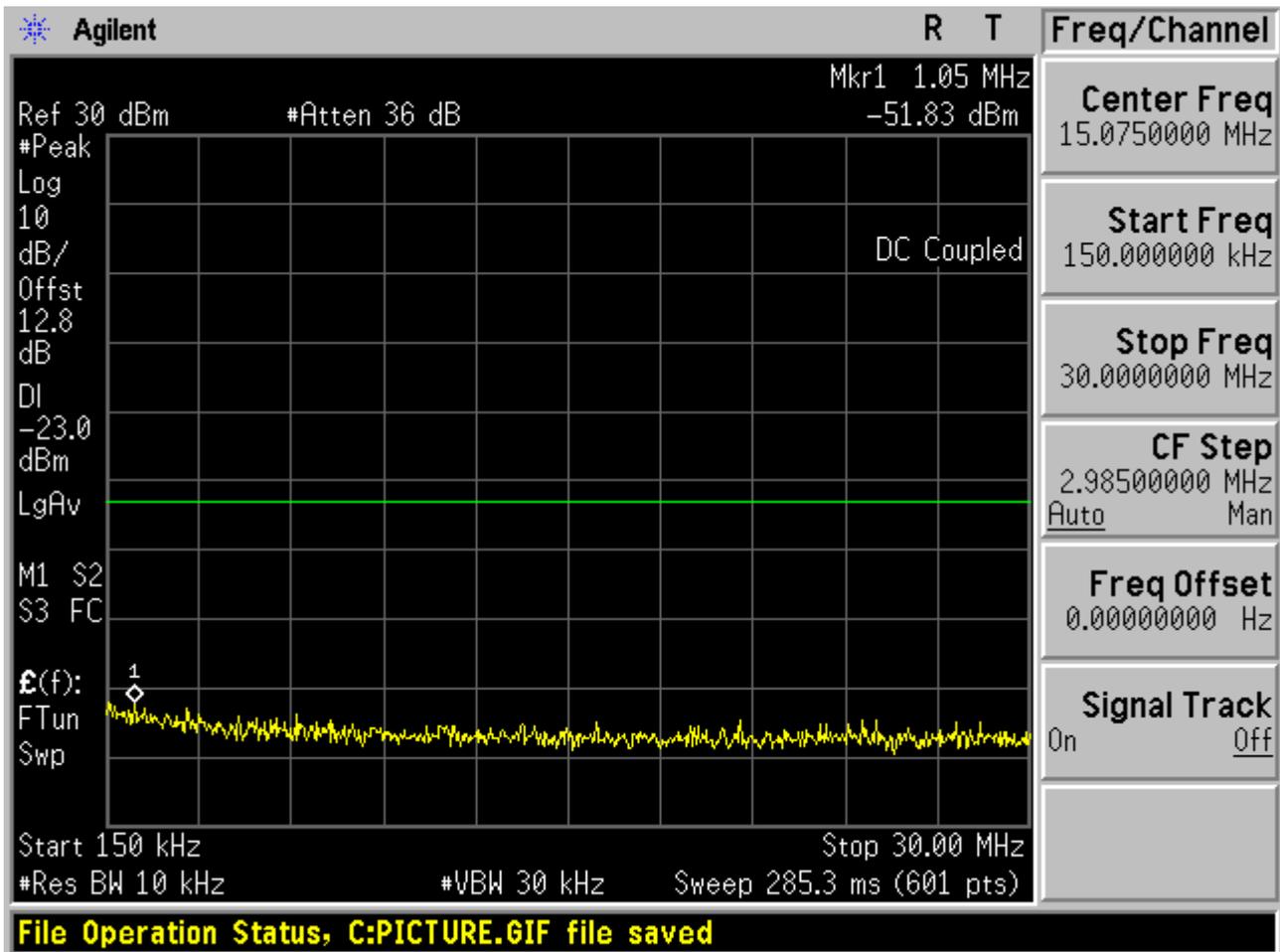


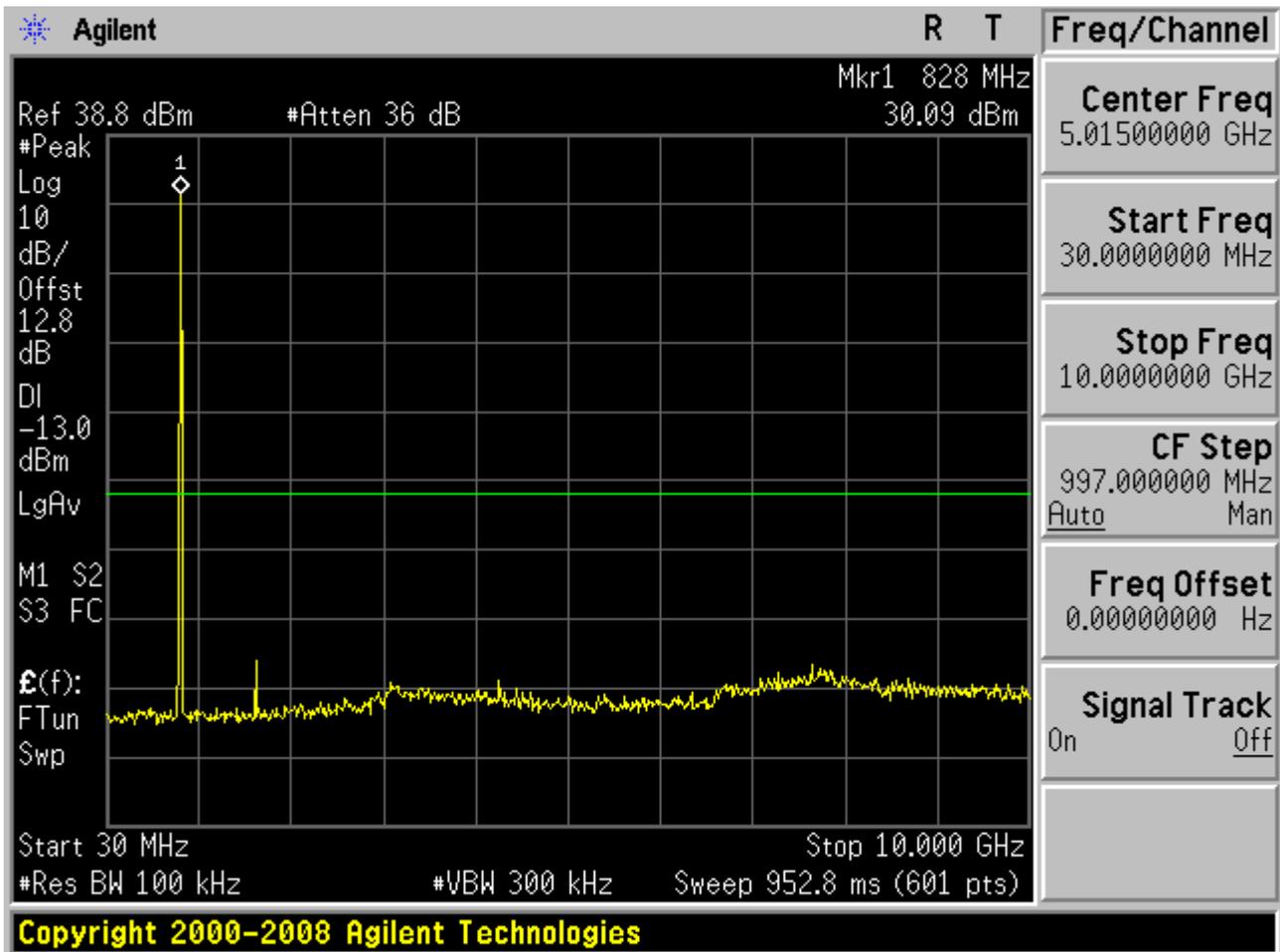
4.2.2 Channel Bandwidth = 10 MHz

4.2.2.1 Channel = B

4.2.2.1.1 16QAM/1RBs /RB #0



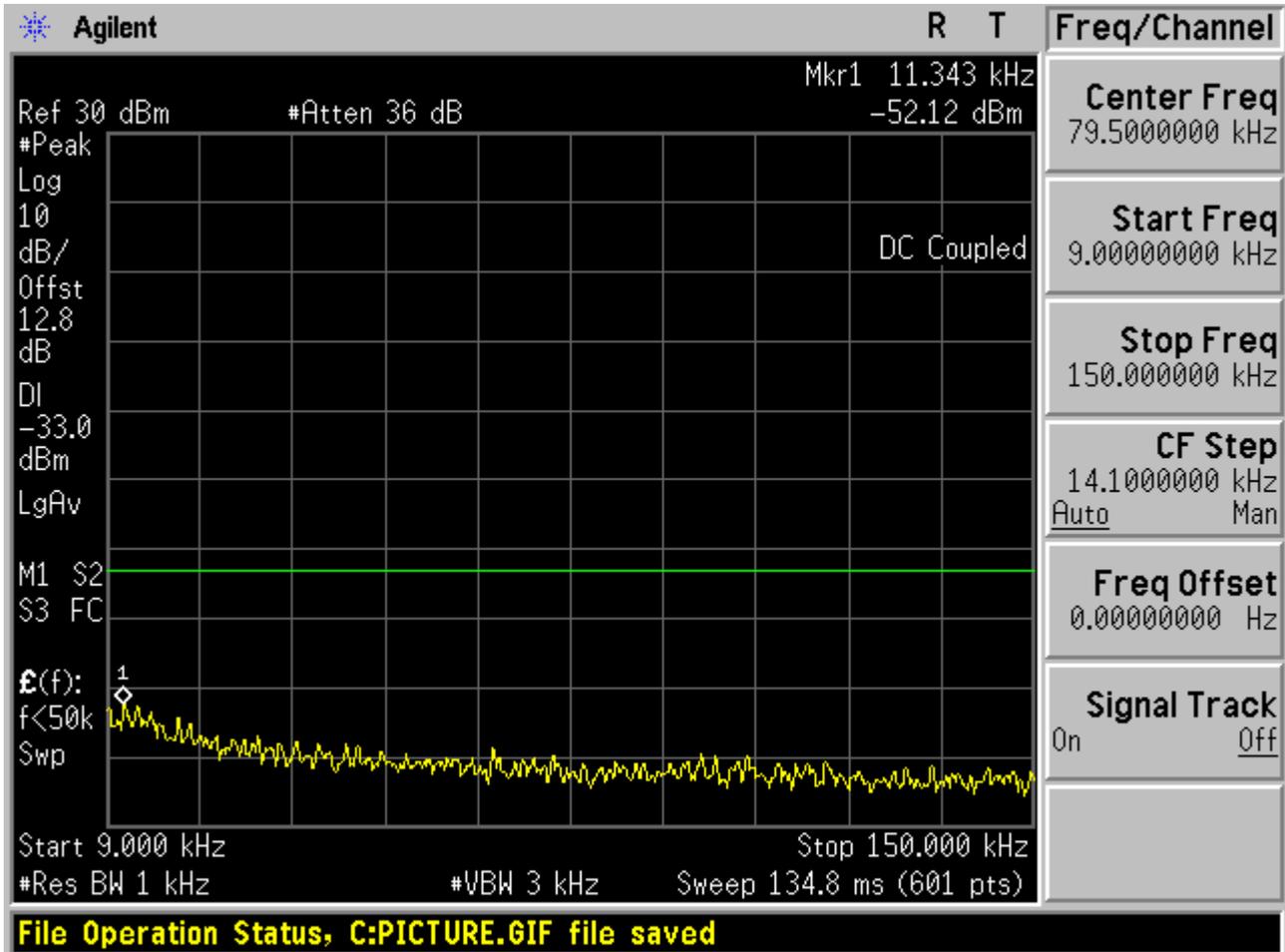


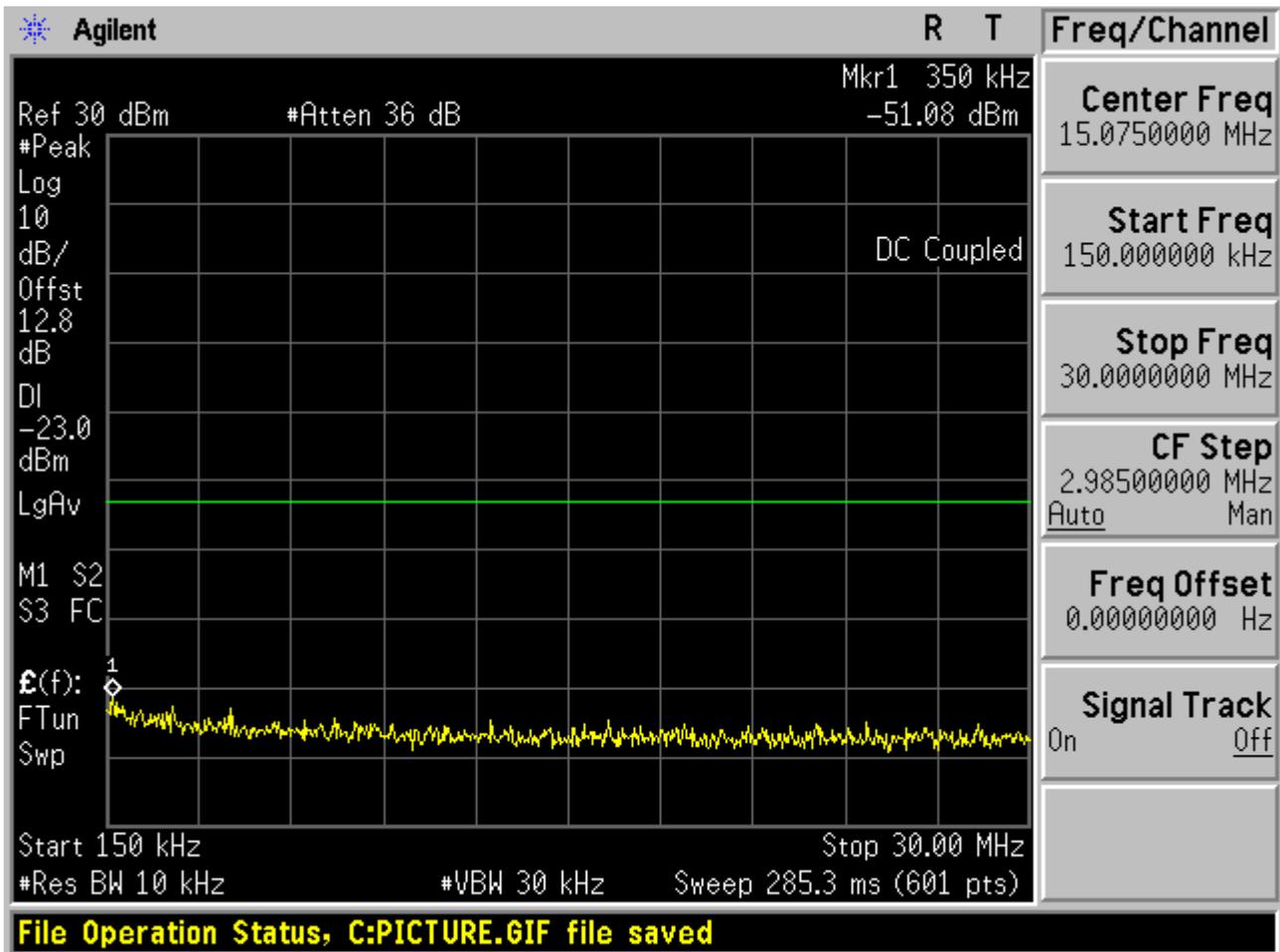


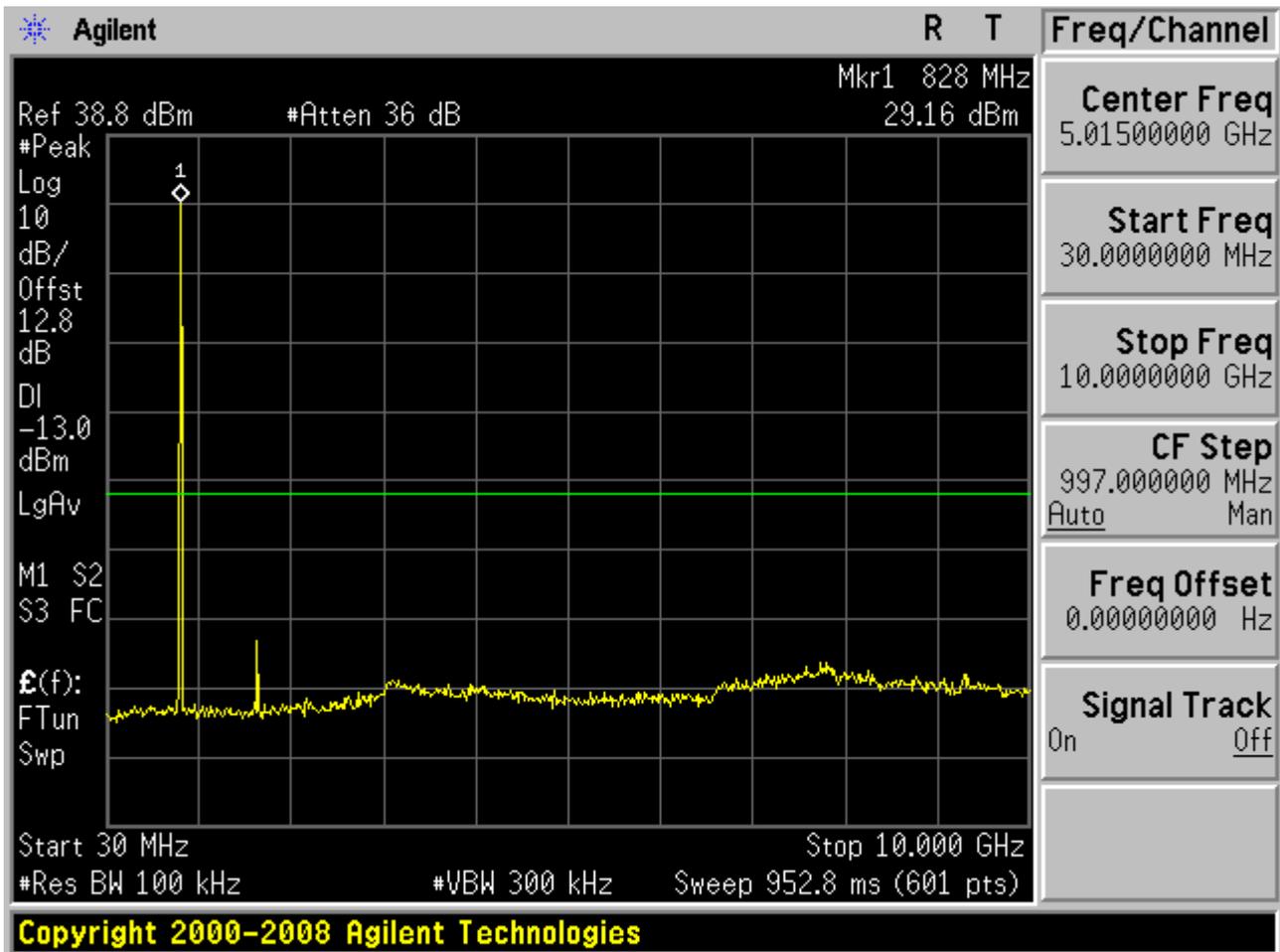


4.2.2.2 Channel = M

4.2.2.2.1 16QAM/1RBs /RB #0



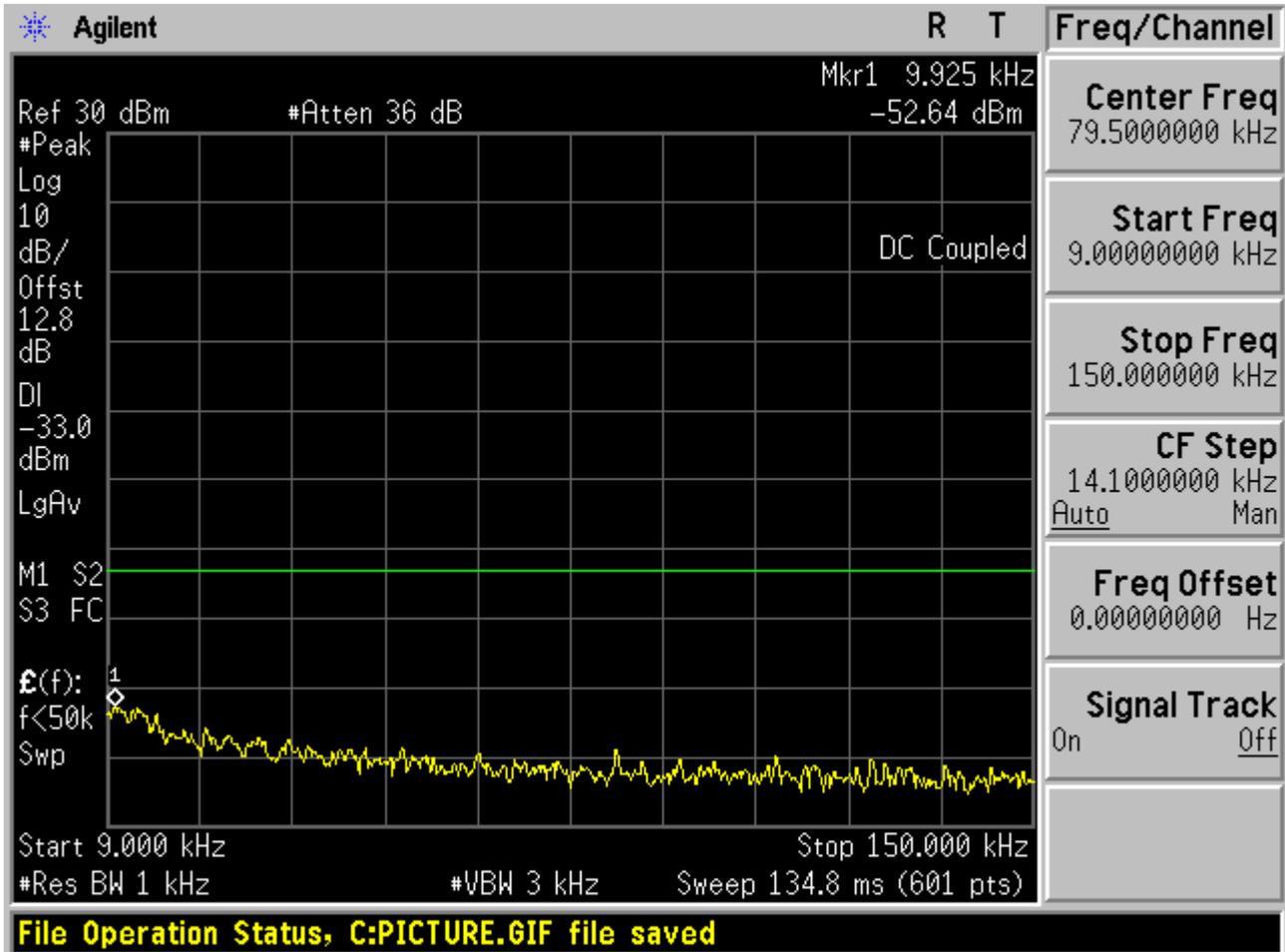


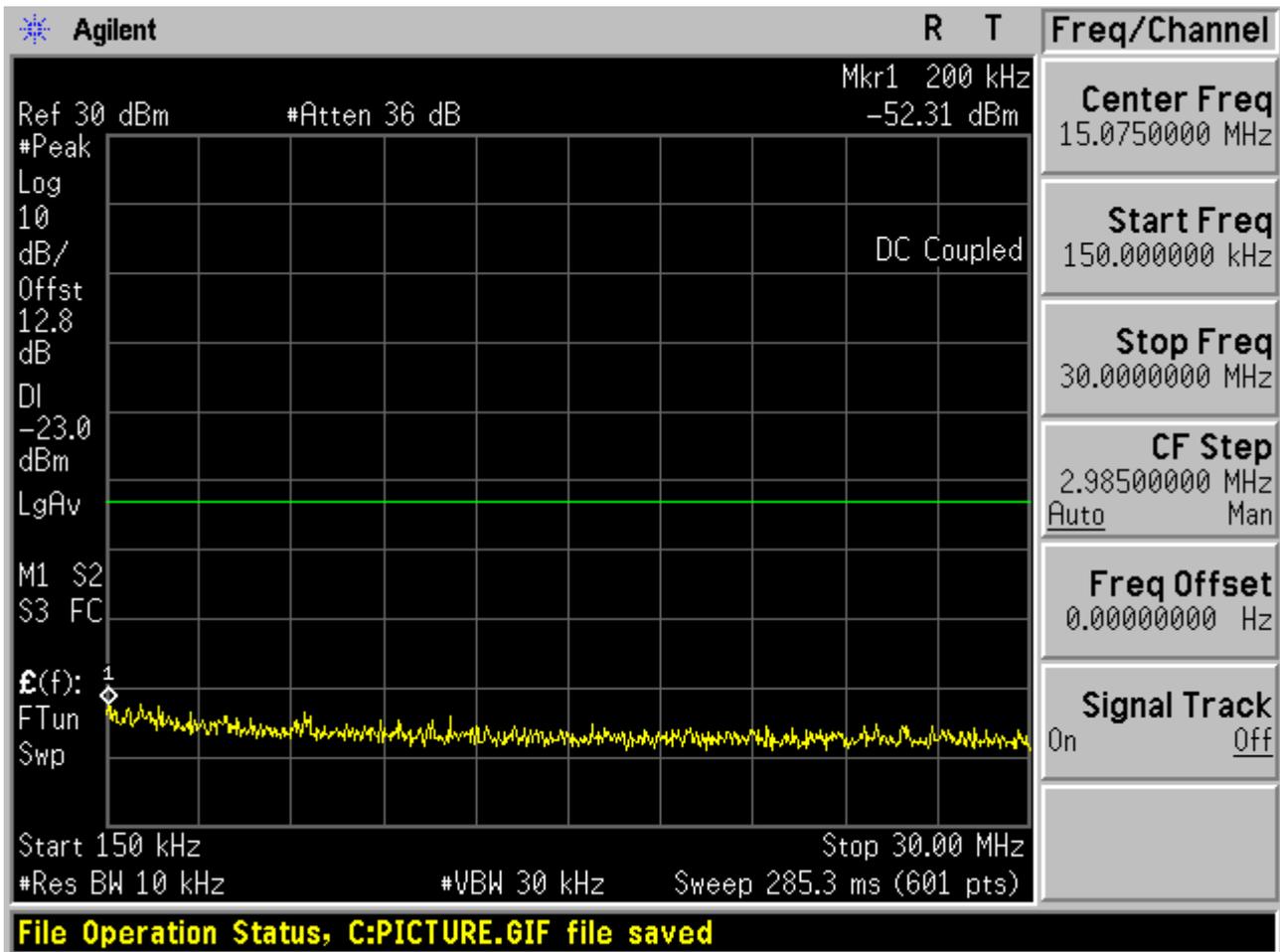


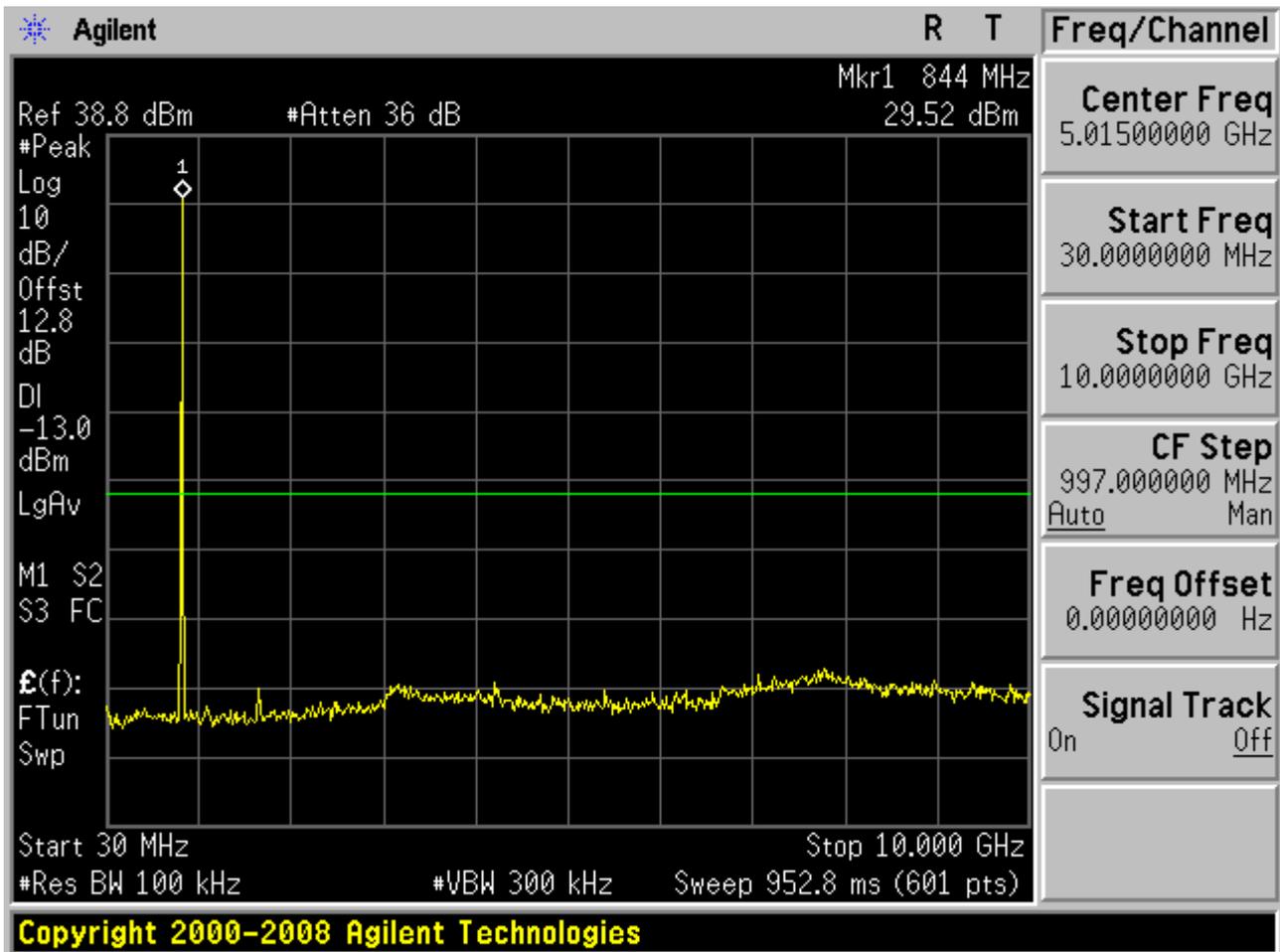


4.2.2.3 Channel = T

4.2.2.3.1 16QAM/1RBs /RB #0







-----END-----



Appendix F

Radiated spurious emission

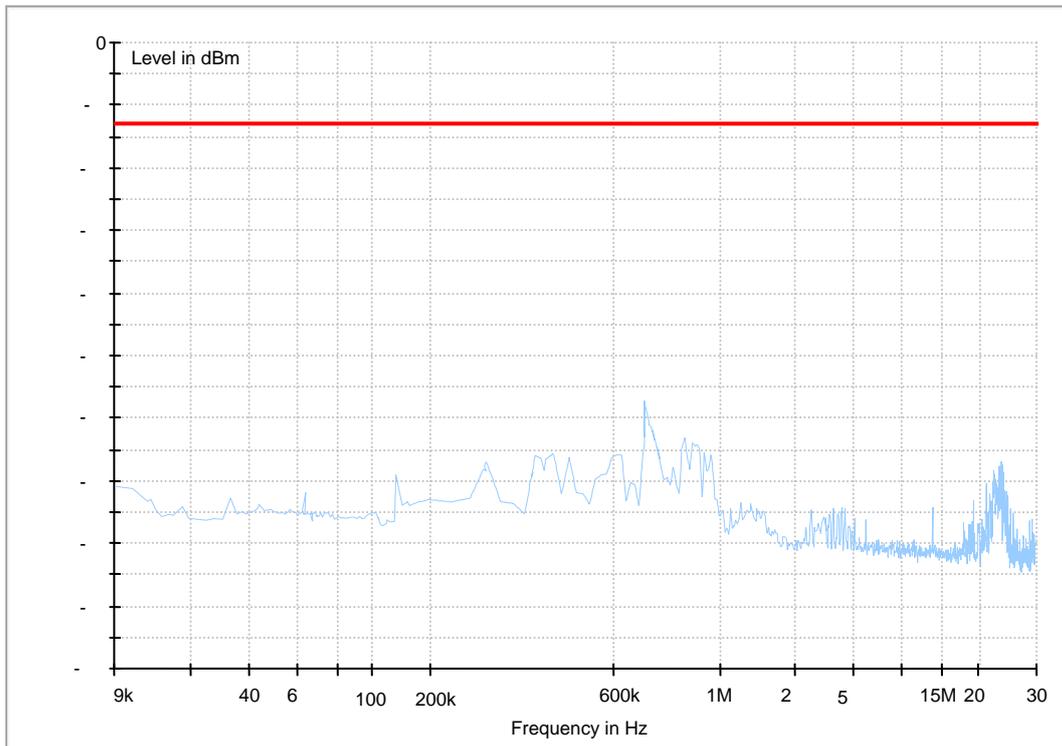
According to FCC Part 2.1053& Part 22.917



Note: 1. Simultaneous transmission was investigated and no new emissions were found.
2. $RBW \geq 1\text{MHz}$, $VBW > 3 \times RBW$.

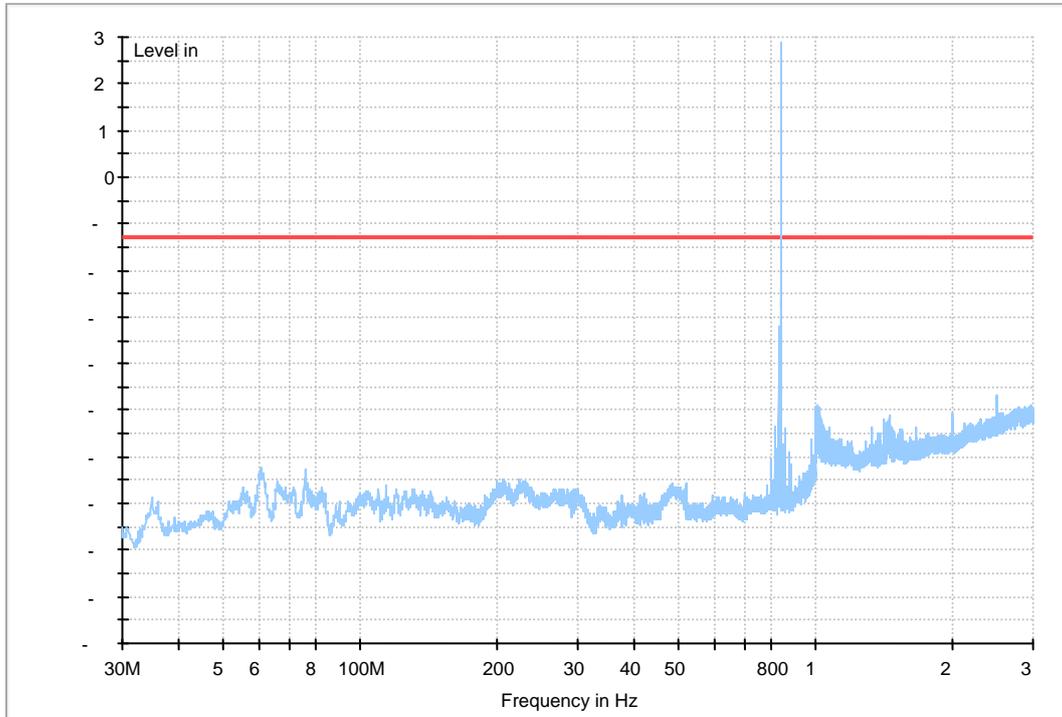
GPRS 850

Traffic Mode (9kHz-30MHz)



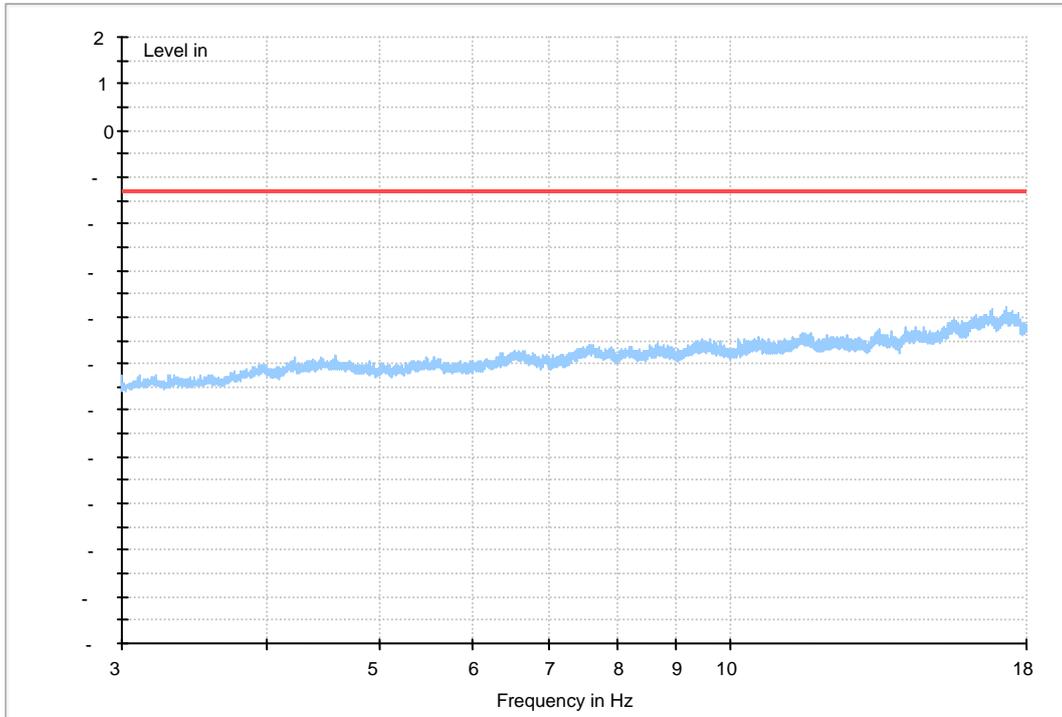


Traffic Mode (30MHz-3GHz)





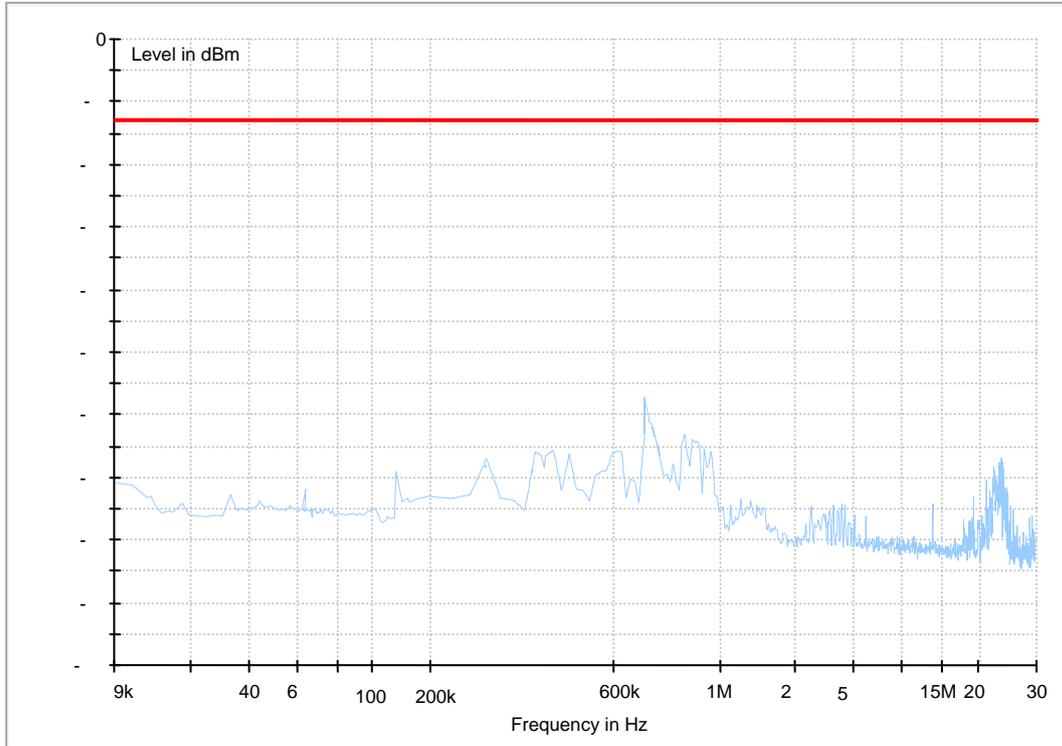
Traffic Mode (3GHz-18GHz)





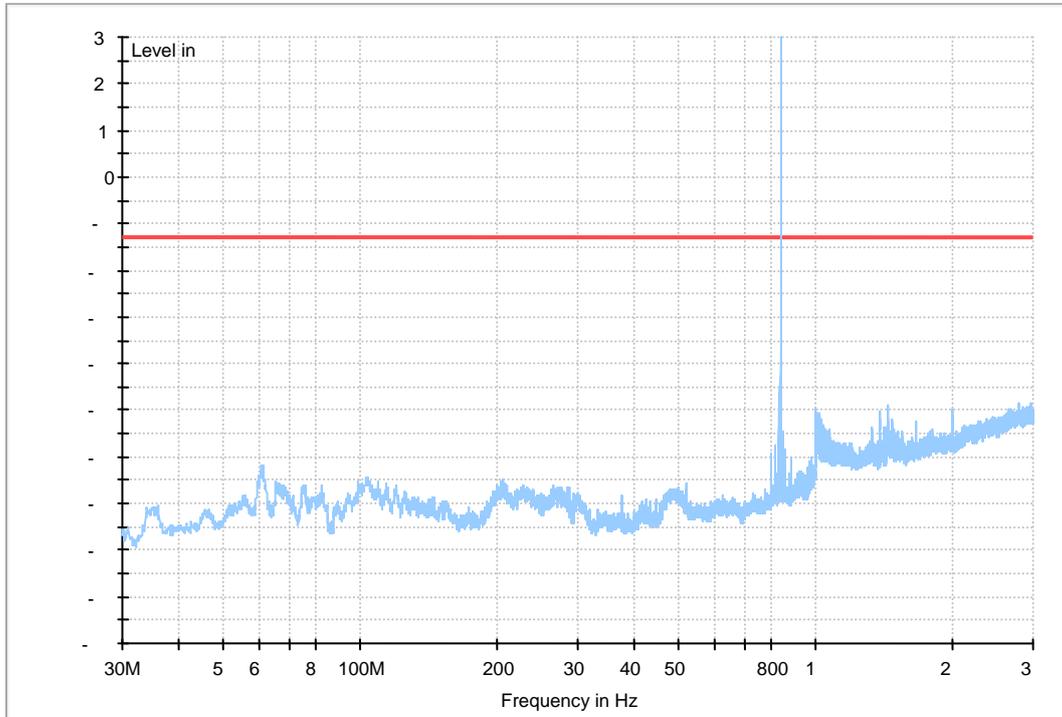
EDGE 850

Traffic Mode (9kHz-30MHz)



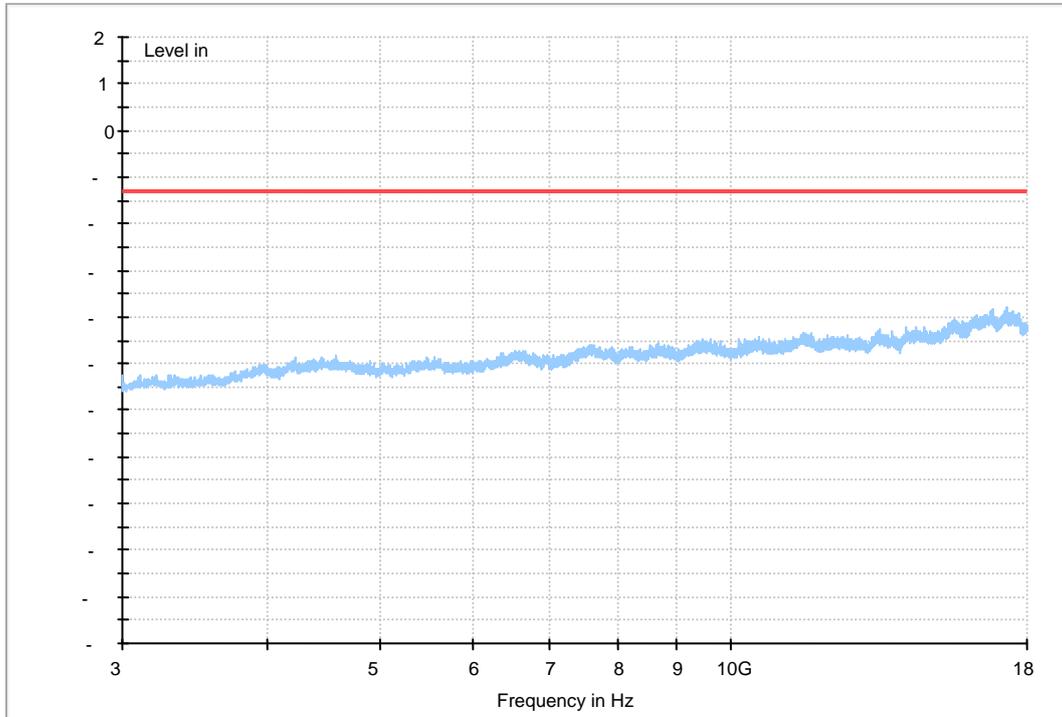


Traffic Mode (30MHz-3GHz)





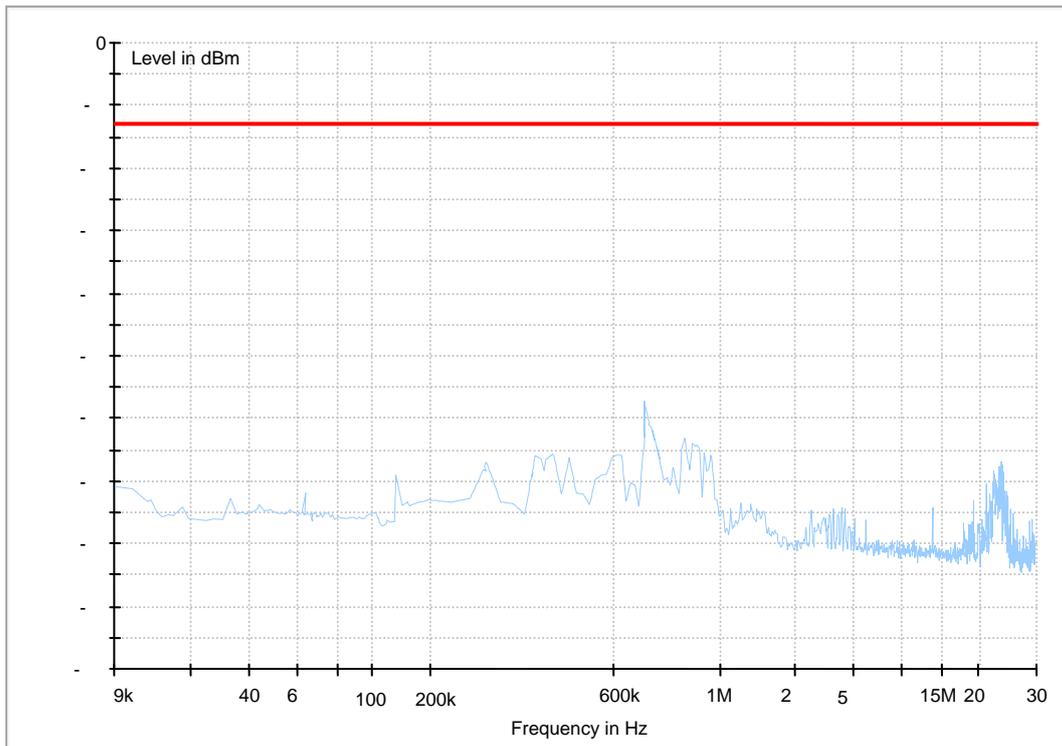
Traffic Mode (3GHz-18GHz)





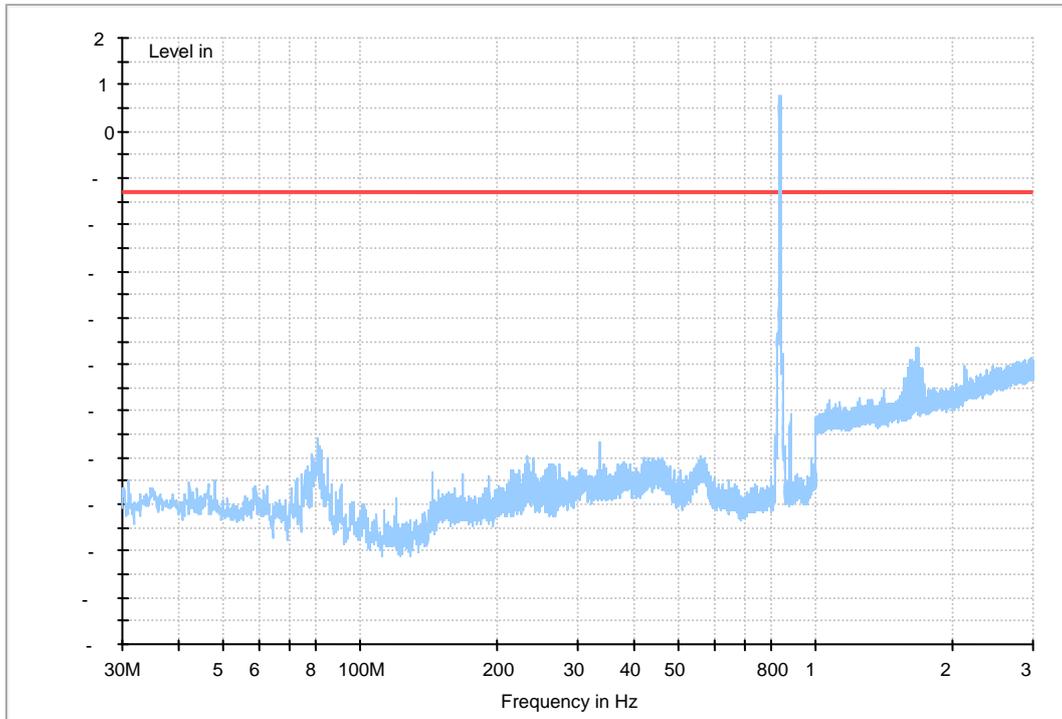
WCDMA Band V

(9KHz~30MHz)



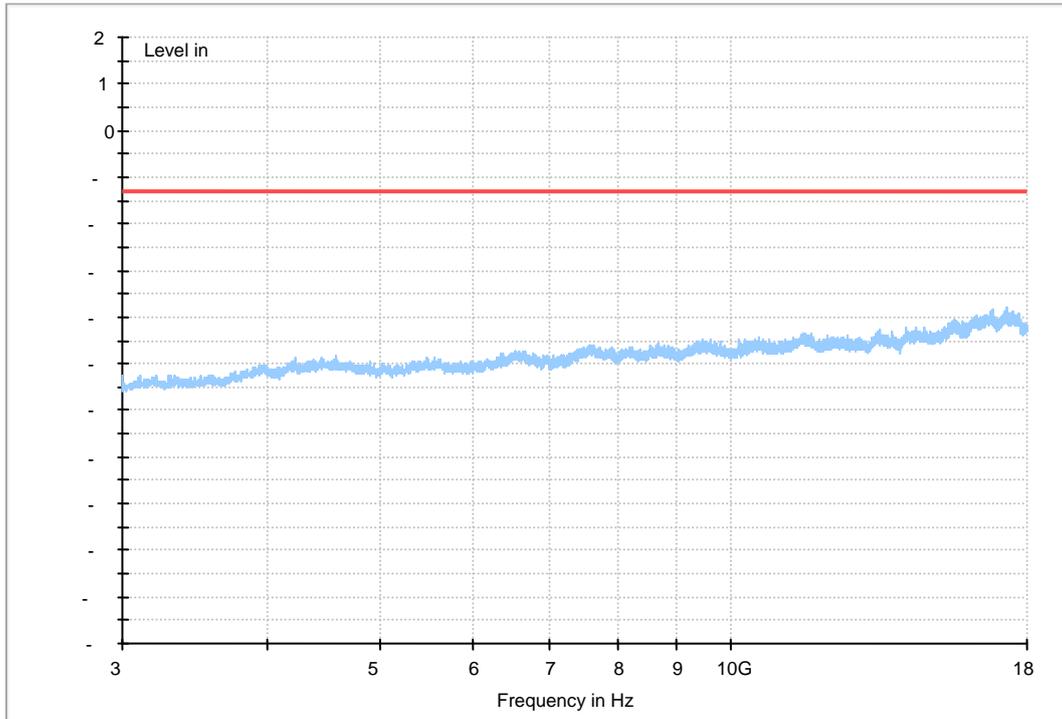


(30MHz~3GHz)





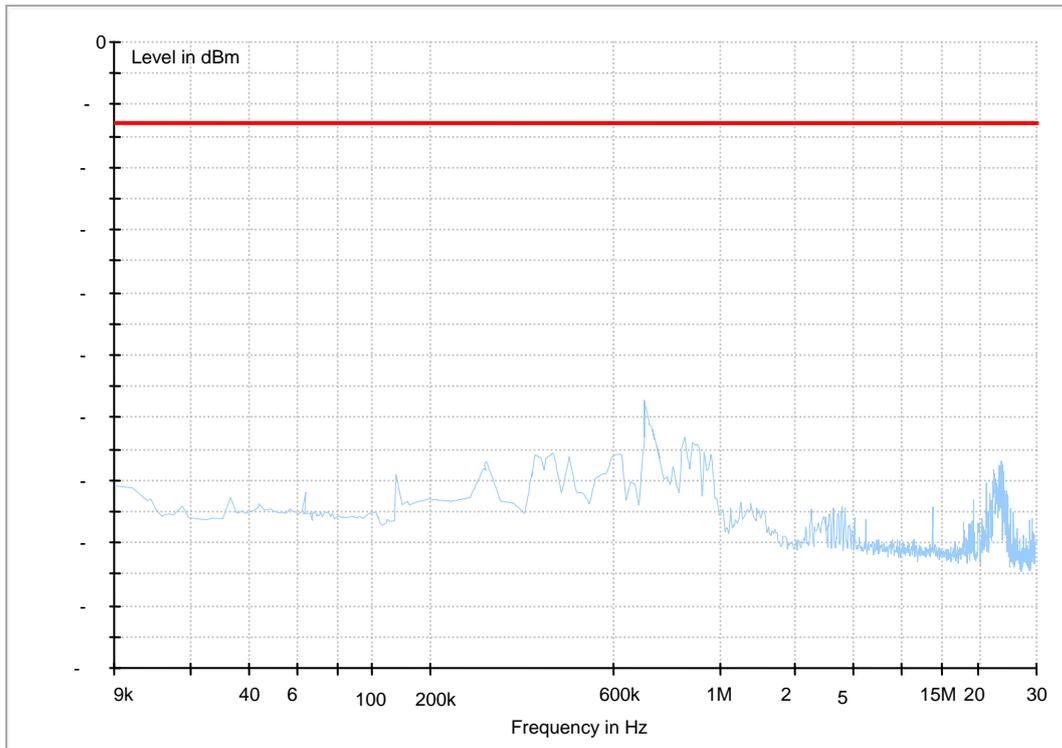
(3GHz~18GHz)





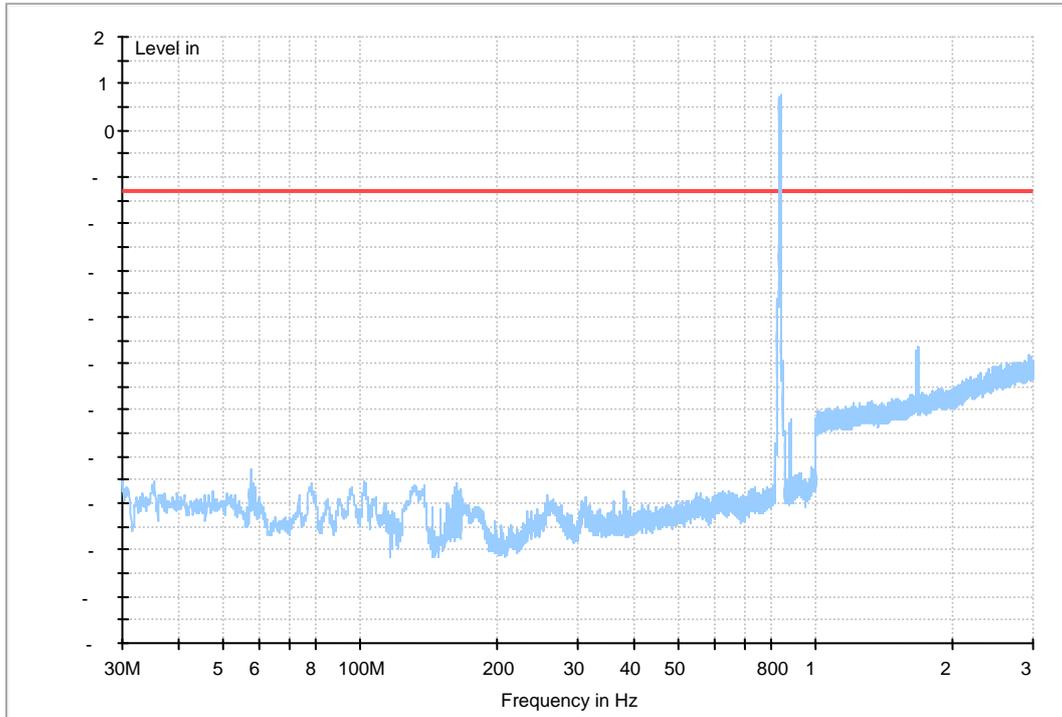
HSDPA Band V

(9KHz~30MHz)



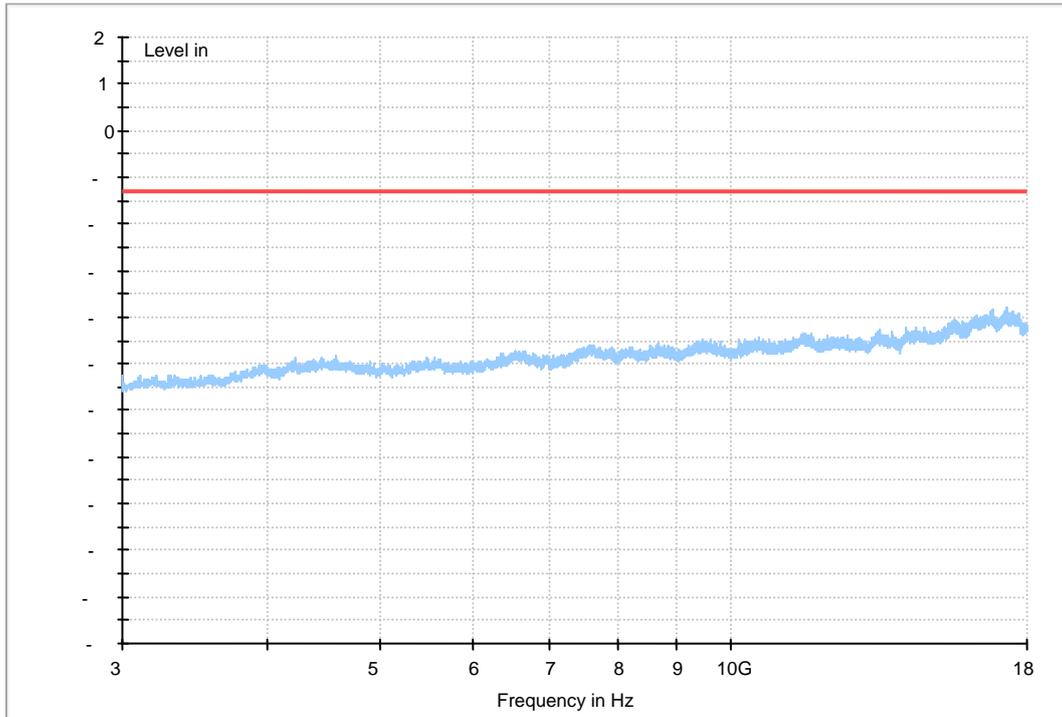


(30MHz~3GHz)





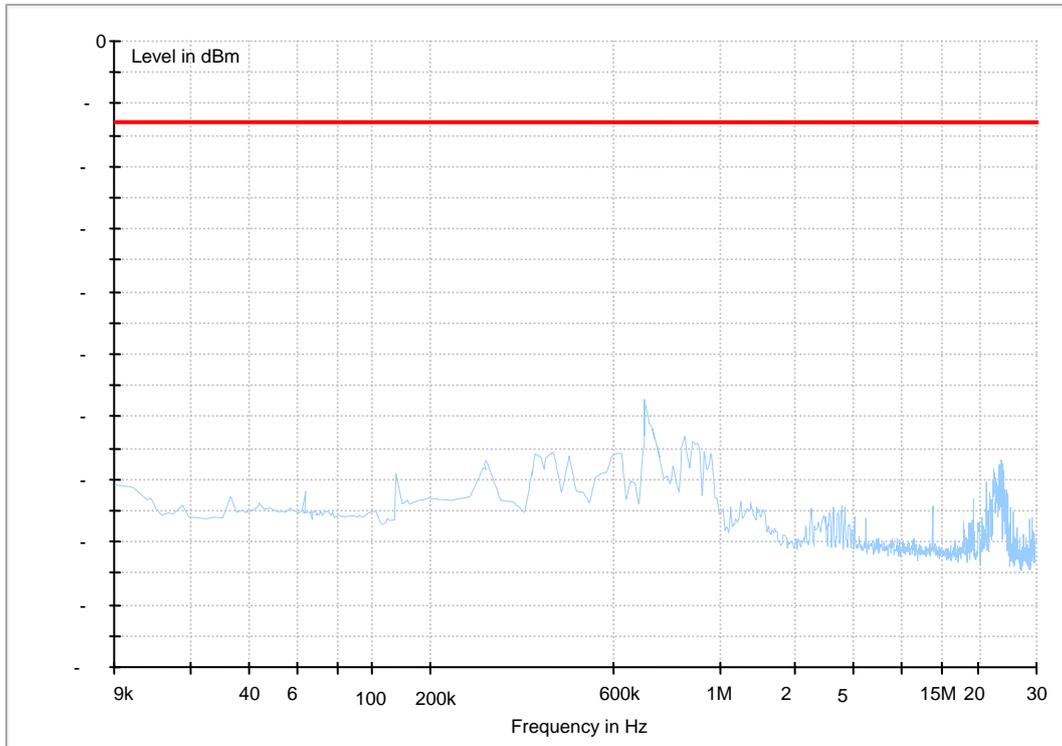
(3GHz~18GHz)





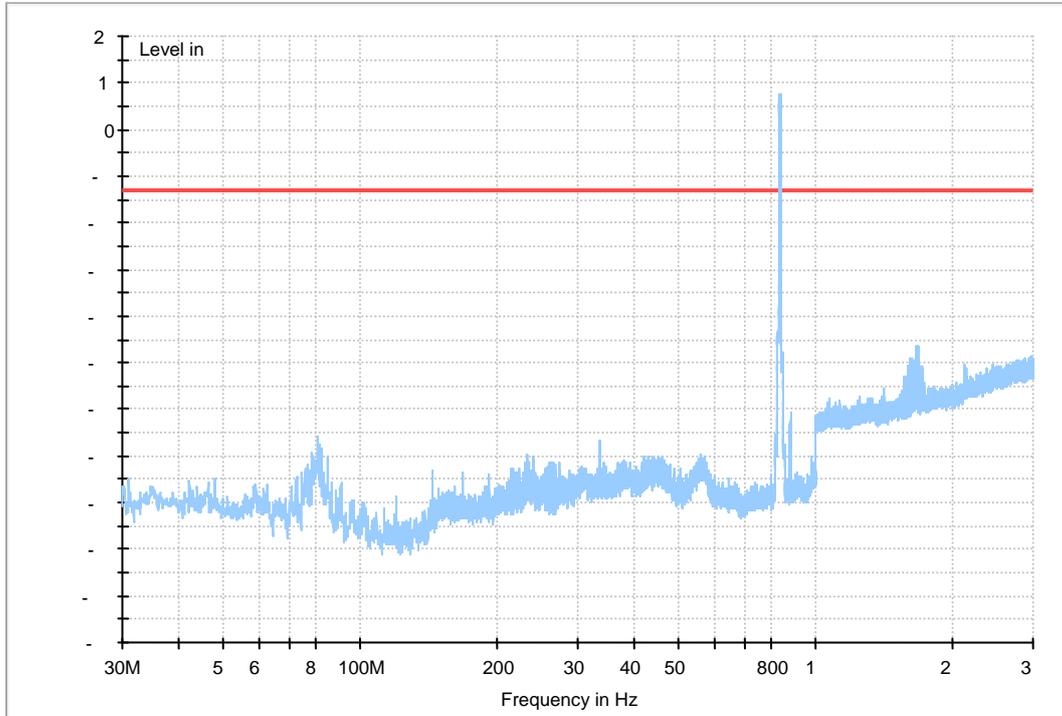
HSUPA Band V

Traffic Mode (9kHz-30MHz)



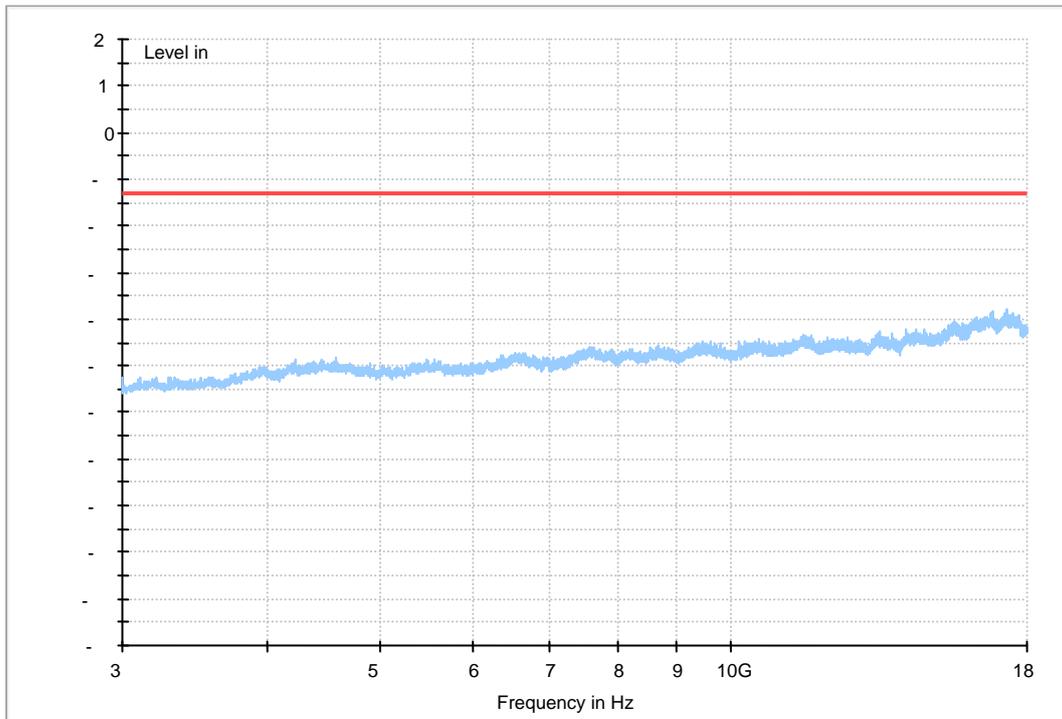


Traffic Mode (30MHz-3GHz)





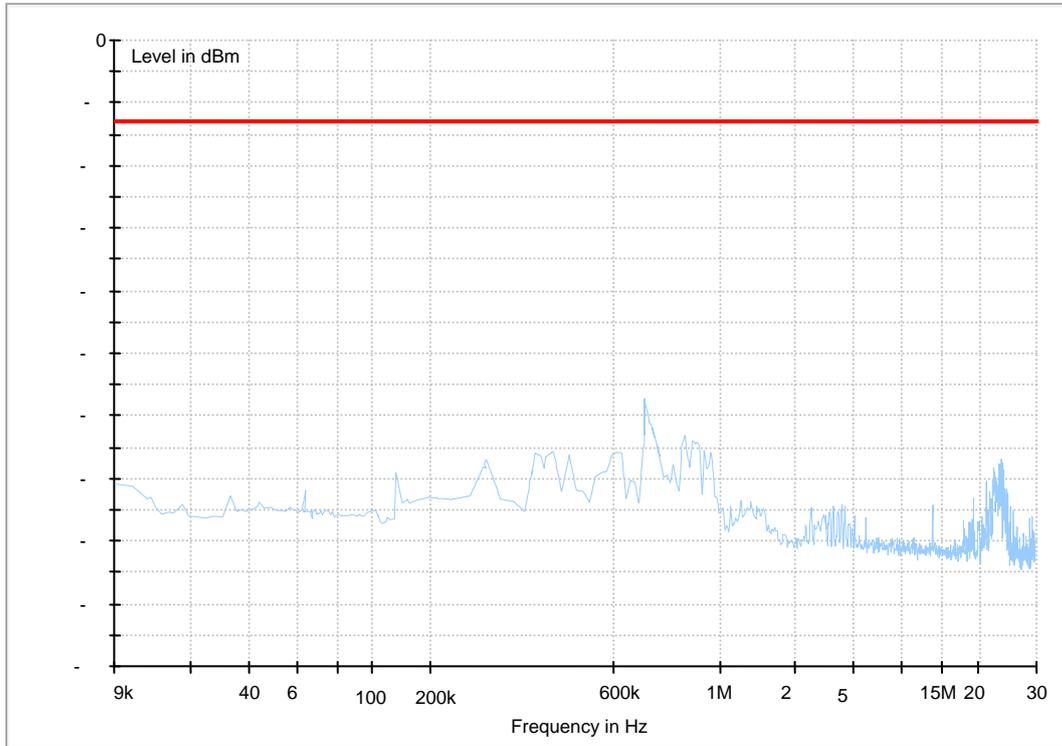
Traffic Mode (3GHz-18GHz)





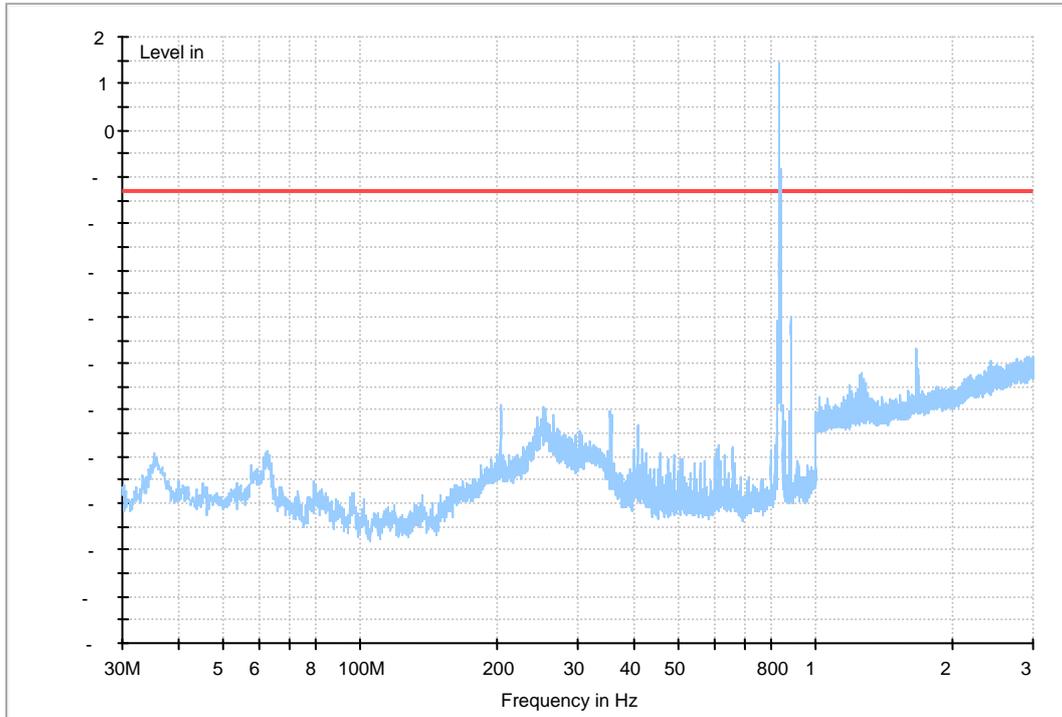
LTE-Band5-5MHz

(9kHz~30MHz)



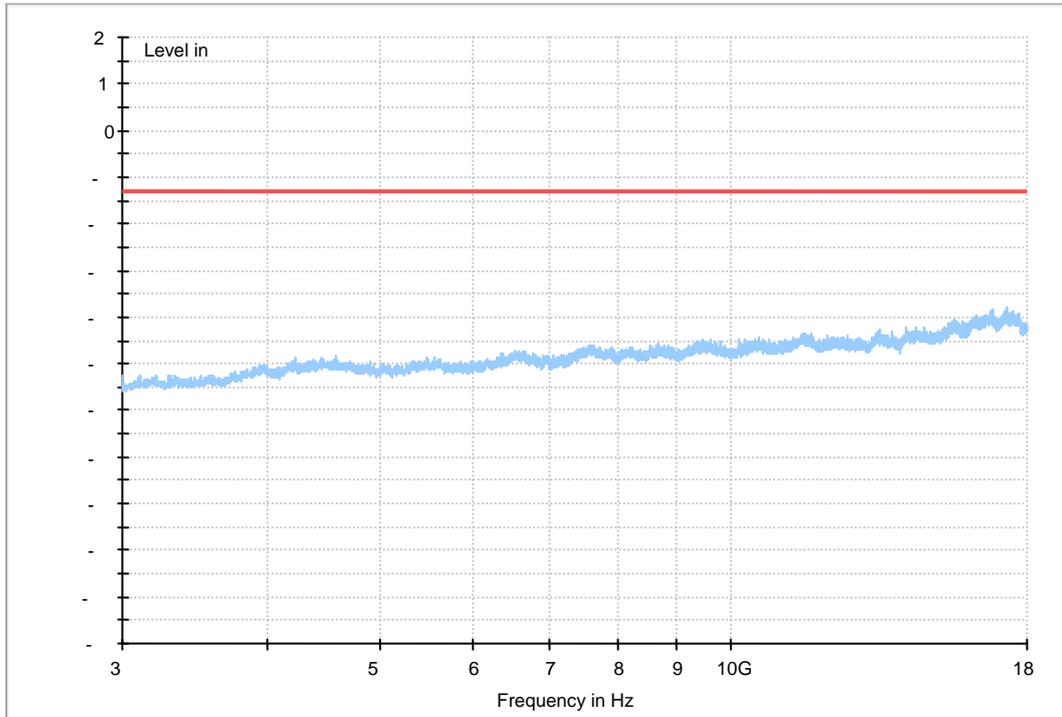


(30MHz~3GHz)





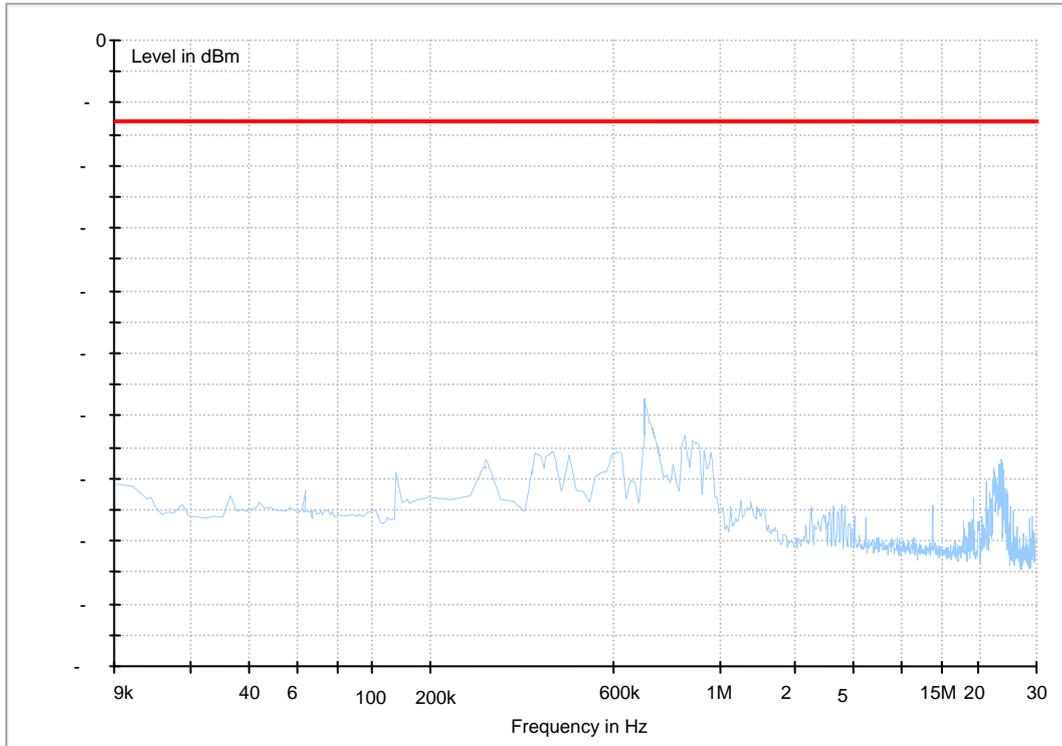
(3GHz~18GHz)





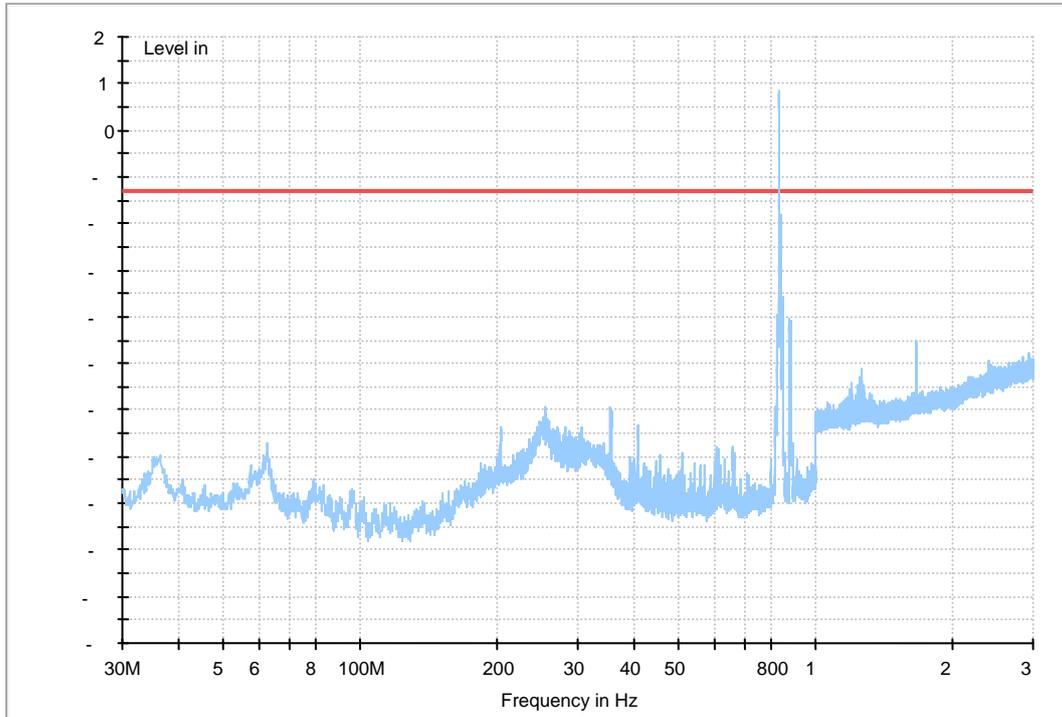
LTE-Band5-10MHz

(9kHz~30MHz)



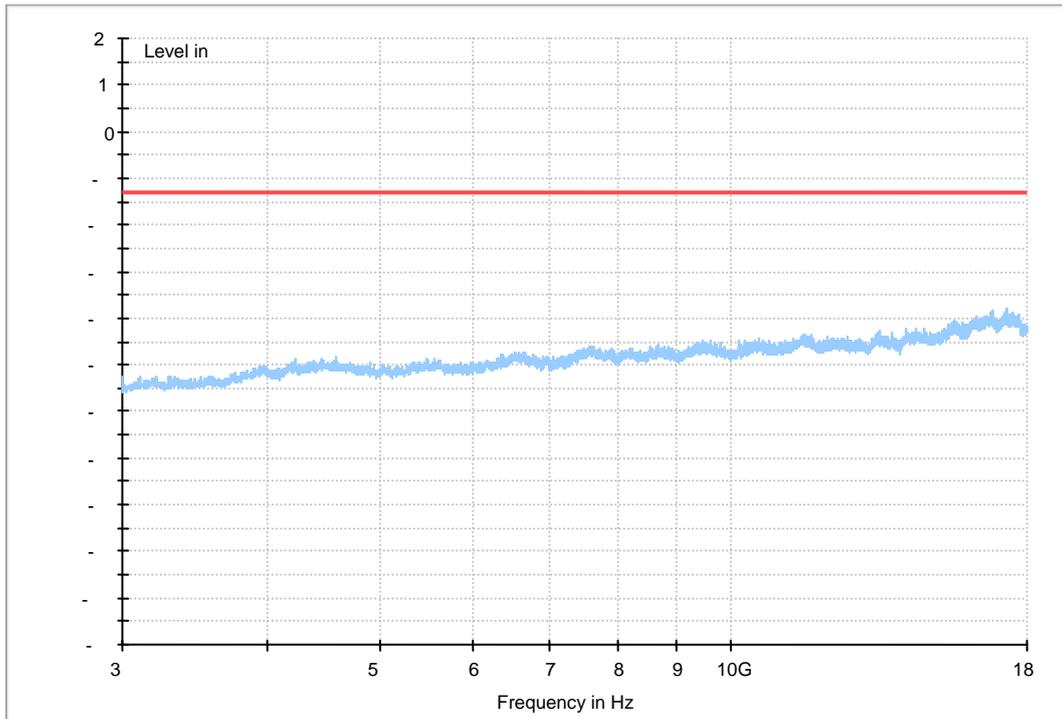


(30MHz~3GHz)





(3GHz~18GHz)



-----END-----



Appendix G

Frequency Stability

According to FCC Part 2.1055 & Part 22.355



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 BAND 5

Test Mode	RF Ch.	Volt.	Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Freq. vs. 20 °C [ppm]	Limit [ppm]	Verdict
TM 1	M	VN	-30 °C	-15	-0.01793	---	±2.5	Pass
			-20 °C	24	0.02869	---	±2.5	Pass
			-10 °C	18	0.02152	---	±2.5	Pass
			0 °C	18	0.02152	---	±2.5	Pass
			10 °C	-14	-0.01674	---	±2.5	Pass
			20 °C	25	0.02989	---	±2.5	Pass
			30 °C	7	0.00837	---	±2.5	Pass
			40 °C	-13	-0.01554	---	±2.5	Pass
			50 °C	-23	-0.02750	---	±2.5	Pass
TM 2	M	VN	-30 °C	-16	-0.00851	---	±2.5	Pass
			-20 °C	-11	-0.00585	---	±2.5	Pass
			-10 °C	23	0.01223	---	±2.5	Pass
			0 °C	18	0.00957	---	±2.5	Pass
			10 °C	11	0.00585	---	±2.5	Pass
			20 °C	-23	-0.01223	---	±2.5	Pass
			30 °C	-10	-0.00532	---	±2.5	Pass
			40 °C	-22	-0.01170	---	±2.5	Pass
			50 °C	25	0.01330	---	±2.5	Pass
TM 3	M	VN	-30 °C	-24	-0.01277	---	±2.5	Pass
			-20 °C	-21	-0.01117	---	±2.5	Pass
			-10 °C	8	0.00426	---	±2.5	Pass
			0 °C	6	0.00319	---	±2.5	Pass
			10 °C	26	0.01383	---	±2.5	Pass
			20 °C	-11	-0.00585	---	±2.5	Pass
			30 °C	-20	-0.01064	---	±2.5	Pass
			40 °C	-9	-0.00479	---	±2.5	Pass
			50 °C	-12	-0.00638	---	±2.5	Pass



Table 2 Measurement Results (LTE QPSK) BAND 5

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	-10	-0.01195	---	±2.5	Pass
			-20 °C	9	0.01076	---	±2.5	Pass
			-10 °C	-6	-0.00717	---	±2.5	Pass
			0 °C	11	0.01315	---	±2.5	Pass
			10 °C	10	0.01195	---	±2.5	Pass
			20 °C	-19	-0.02271	---	±2.5	Pass
			30 °C	-20	-0.02391	---	±2.5	Pass
			40 °C	-19	-0.02271	---	±2.5	Pass
			50 °C	-16	-0.01913	---	±2.5	Pass
TM6(10 M)	M	VN	-30 °C	-8	-0.00956	---	±2.5	Pass
			-20 °C	-12	-0.01435	---	±2.5	Pass
			-10 °C	-24	-0.02869	---	±2.5	Pass
			0 °C	21	0.02510	---	±2.5	Pass
			10 °C	-20	-0.02391	---	±2.5	Pass
			20 °C	-18	-0.02152	---	±2.5	Pass
			30 °C	-15	-0.01793	---	±2.5	Pass
			40 °C	28	0.03347	---	±2.5	Pass
			50 °C	11	0.01315	---	±2.5	Pass
			50 °C	-10	-0.01195	---	±2.5	Pass



Table 3 Measurement Results (LTE 16QAM) BAND 5

Test Mode	RF Ch.	Volt.	Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Freq. vs. 20 °C [ppm]	Limit [ppm]	Verdict
TM7(5M)	M	VN	-30 °C	-2	-0.00239	---	±2.5	Pass
			-20 °C	17	0.020311	---	±2.5	Pass
			-10 °C	2	0.002389	---	±2.5	Pass
			0 °C	19	0.0227	---	±2.5	Pass
			10 °C	18	0.021505	---	±2.5	Pass
			20 °C	-11	-0.01314	---	±2.5	Pass
			30 °C	-12	-0.01434	---	±2.5	Pass
			40 °C	-11	-0.01314	---	±2.5	Pass
			50 °C	-8	-0.00956	---	±2.5	Pass
TM7(10 M)	M	VN	-30 °C	-10	-0.01195	---	±2.5	Pass
			-20 °C	-4	-0.00478	---	±2.5	Pass
			-10 °C	-16	-0.01912	---	±2.5	Pass
			0 °C	29	0.034648	---	±2.5	Pass
			10 °C	-12	-0.01434	---	±2.5	Pass
			20 °C	-10	-0.01195	---	±2.5	Pass
			30 °C	-7	-0.00836	---	±2.5	Pass
			40 °C	36	0.043011	---	±2.5	Pass
			50 °C	19	0.0227	---	±2.5	Pass
			50 °C	-2	-0.00239	---	±2.5	Pass



Frequency Error vs. Voltage:

Table 4 Measurement Results BAND 5

Test Mode	RF Ch.	Temp.	Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Freq. vs. 20 °C [ppm]	Limit [ppm]	Verdict
TM 1	M	20 °C	VL	9	0.01076	---	±2.5	Pass
			VN	16	0.01913	---	±2.5	Pass
			VH	26	0.03109	---	±2.5	Pass
TM 2	M	20 °C	VL	19	0.01011	---	±2.5	Pass
			VN	-18	-0.00957	---	±2.5	Pass
			VH	13	0.00692	---	±2.5	Pass
TM 3	M	20 °C	VL	-13	-0.00691	---	±2.5	Pass
			VN	10	0.00532	---	±2.5	Pass
			VH	19	0.01011	---	±2.5	Pass

Table 5 Measurement Results (LTE QPSK) BAND 5

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	21	0.02511	---	±2.5	Pass
			VN	7	0.00837	---	±2.5	Pass
			VH	-17	-0.02033	---	±2.5	Pass
TM6(10 M)	M	20 °C	VL	22	0.02630	---	±2.5	Pass
			VN	15	0.01793	---	±2.5	Pass
			VH	18	0.02152	---	±2.5	Pass

Table 6 Measurement Results (LTE 16QAM) BAND 5

Test Mode	RF Ch.	Temp.	Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Freq. vs. 20 °C [ppm]	Limit [ppm]	Verdict
TM7(5M)	M	20 °C	VL	29	0.034648	---	±2.5	Pass
			VN	15	0.017921	---	±2.5	Pass
			VH	-9	-0.01075	---	±2.5	Pass
TM7(10 M)	M	20 °C	VL	30	0.035842	---	±2.5	Pass
			VN	23	0.027479	---	±2.5	Pass
			VH	26	0.031063	---	±2.5	Pass

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



Appendix H

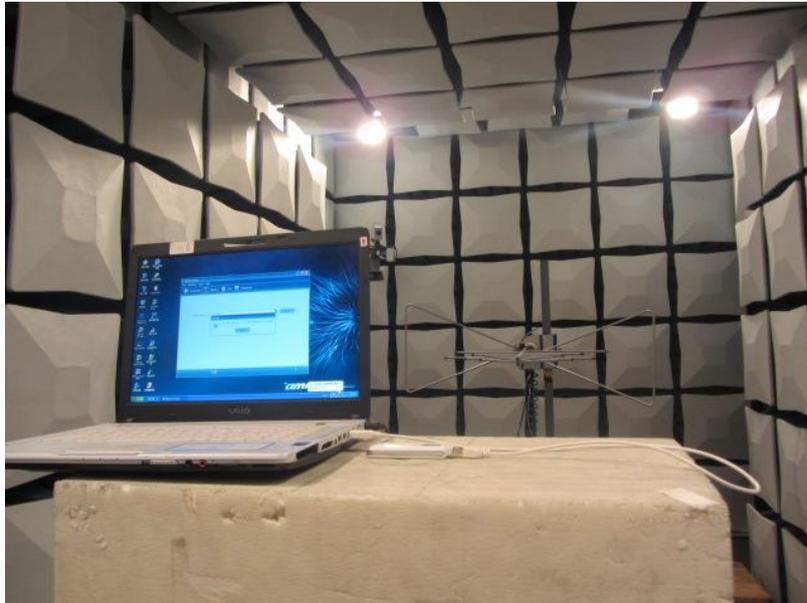
Photos of Radiated Spurious Emissions



Photos of Test Setup



1 Radiated Spurious Emissions



Radiated Spurious Emission (below 2GHz)



Radiated Spurious Emission (2GHz to18GHz)



Radiated Spurious Emission (18GHz to26.5GHz)