

Appendix B

WCDMA Band II & IV & V





CONTENT

1.	EFFECTIVE (ISOTROPIC) RADIATED POWER.....	4
1.1.	TEST RESULT	4
2.	PEAK-TO-AVERAGE RATIO(CCDF)	5
2.1.	TEST RESULT	5
2.2.	TEST PLOTS FOR QPSK	6
2.3.	TEST PLOTS FOR 16QAM.....	10
3.	MODULATION CHARACTERISTICS.....	15
3.1.	TEST BAND = WCDMA BAND II.....	15
3.1.1.	TEST MODE = UMTS/TM1	15
3.1.1.1.	TEST CHANNEL = MCH.....	15
3.1.2.	TEST MODE = UMTS/TM2	15
3.1.2.1.	TEST CHANNEL = MCH.....	15
3.2.	TEST BAND = WCDMA BAND IV	16
3.2.1.	TEST MODE = UMTS/TM1	16
3.2.1.1.	TEST CHANNEL = MCH.....	16
3.2.2.	TEST MODE = UMTS/TM2	16
3.2.2.1.	TEST CHANNEL = MCH.....	16
3.3.	TEST BAND = WCDMA BAND V	17
3.3.1.	TEST MODE = UMTS/TM1	17
3.3.1.1.	TEST CHANNEL = MCH.....	17
3.3.2.	TEST MODE = UMTS/TM2	17
3.3.2.1.	TEST CHANNEL = MCH.....	17
4.	26DB BANDWIDTH AND OCCUPIED BANDWIDTH	18
4.1.	TEST RESULT	18
4.2.	TEST PLOTS FOR QPSK	19
4.3.	TEST PLOTS FOR 16QAM.....	23
5.	BAND EDGE COMPLIANCE	28
5.1.	TEST PLOTS FOR QPSK	28
5.2.	TEST PLOTS FOR 16QAM.....	31



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6.	SPURIOUS EMISSION AT ANTENNA TERMINAL	34
6.1.	TEST PLOTS FOR QPSK	34
6.2.	TEST PLOTS FOR 16QAM.....	58
7.	FIELD STRENGTH OF SPURIOUS RADIATION.....	82
7.1.	TEST BAND = WCDMA BAND II.....	82
7.1.1.	TEST MODE =WCDMA/TM1.....	82
7.1.1.1.	TEST CHANNEL = LCH	82
7.1.1.2.	TEST CHANNEL = MCH.....	82
7.1.1.3.	TEST CHANNEL = HCH	83
7.2.	TEST BAND = WCDMA BAND IV	83
7.2.1.	TEST MODE =WCDMA/TM1.....	83
7.2.1.1.	TEST CHANNEL = LCH	83
7.2.1.2.	TEST CHANNEL = MCH.....	84
7.2.1.3.	TEST CHANNEL = HCH	84
7.3.	TEST BAND = WCDMA BAND V	85
7.3.1.	TEST MODE =WCDMA/TM1.....	85
7.3.1.1.	TEST CHANNEL = LCH	85
7.3.1.2.	TEST CHANNEL = MCH.....	85
7.3.1.3.	TEST CHANNEL = HCH	86
8.	FREQUENCY STABILITY	87
8.1.	FREQUENCY VS VOLTAGE	87
8.2.	FREQUENCY VS TEMPERATURE	88





1. Effective (Isotropic) Radiated Power

1.1. Test Result

Band	Modulation	Channel	Conducted Power(dBm)	EIRP (dBm)	Limit (dBm)	Verdict
Band II	QPSK	9262	23.62	23.75	33.00	PASS
Band II	QPSK	9400	23.52	23.65	33.00	PASS
Band II	QPSK	9538	23.39	23.52	33.00	PASS
Band II	16QAM	9262	20.52	20.65	33.00	PASS
Band II	16QAM	9400	20.66	20.79	33.00	PASS
Band II	16QAM	9538	20.52	20.65	33.00	PASS
Band IV	QPSK	1312	22.31	23.02	30.00	PASS
Band IV	QPSK	1413	22.35	23.06	30.00	PASS
Band IV	QPSK	1513	22.36	23.07	30.00	PASS
Band IV	16QAM	1312	19.38	20.09	30.00	PASS
Band IV	16QAM	1413	19.22	19.93	30.00	PASS
Band IV	16QAM	1513	19.16	19.87	30.00	PASS

Band	Modulation	Channel	Conducted Power(dBm)	ERP (dBm)	Limit (dBm)	Verdict
Band V	QPSK	4132	23.08	19.44	38.45	PASS
Band V	QPSK	4182	23.12	19.48	38.45	PASS
Band V	QPSK	4233	23.01	19.37	38.45	PASS
Band V	16QAM	4132	19.82	16.18	38.45	PASS
Band V	16QAM	4182	19.69	16.05	38.45	PASS
Band V	16QAM	4233	19.58	15.94	38.45	PASS

Remark:

a: For getting the EIRP (Efficient Isotropic Radiated Power), the following formula should be taken to calculate it,

$ERP [dBm] = \text{Conducted Power} [dBm] + \text{Gain} [dBi]$

$EIRP [dBm] = \text{Conducted Power} [dBm] + \text{Gain} [dBi]$



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2. Peak-to-Average Ratio(CCDF)

2.1. Test Result

Band	Modulation	Channel	Peak-to-Average Ratio(dB)	Limit(dB)	Verdict
Band II	QPSK	9262	3.19	13	PASS
Band II	QPSK	9400	3.33	13	PASS
Band II	QPSK	9538	3.07	13	PASS
Band II	16QAM	9262	3.01	13	PASS
Band II	16QAM	9400	3.01	13	PASS
Band II	16QAM	9538	2.96	13	PASS
Band IV	QPSK	1312	3.04	13	PASS
Band IV	QPSK	1413	3.07	13	PASS
Band IV	QPSK	1513	3.01	13	PASS
Band IV	16QAM	1312	3.04	13	PASS
Band IV	16QAM	1413	3.07	13	PASS
Band IV	16QAM	1513	3.07	13	PASS
Band V	QPSK	4132	2.72	13	PASS
Band V	QPSK	4182	2.72	13	PASS
Band V	QPSK	4233	2.72	13	PASS
Band V	16QAM	4132	2.72	13	PASS
Band V	16QAM	4182	2.72	13	PASS
Band V	16QAM	4233	2.72	13	PASS

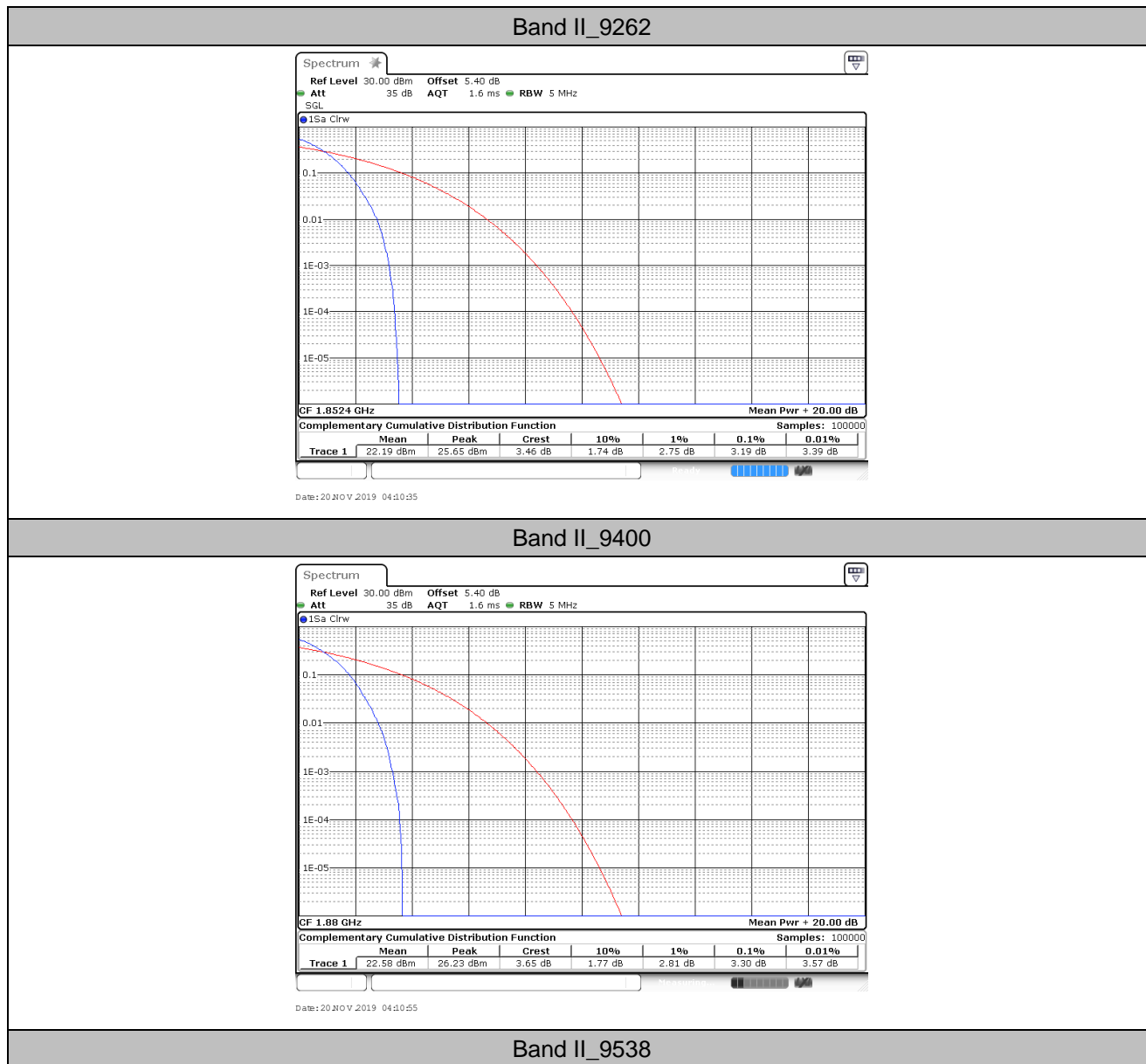


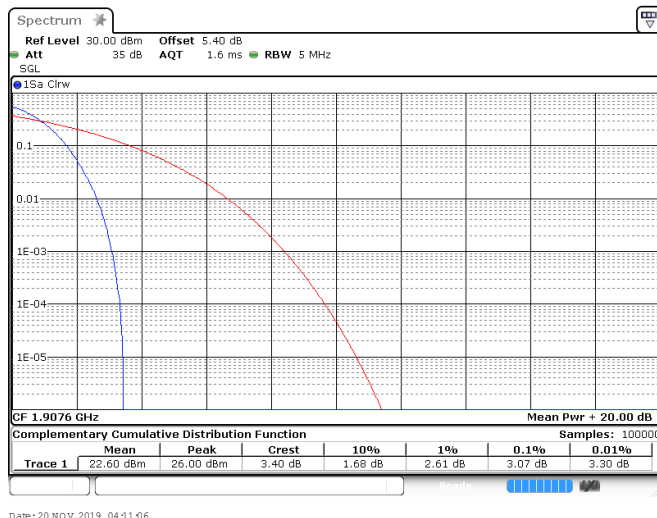
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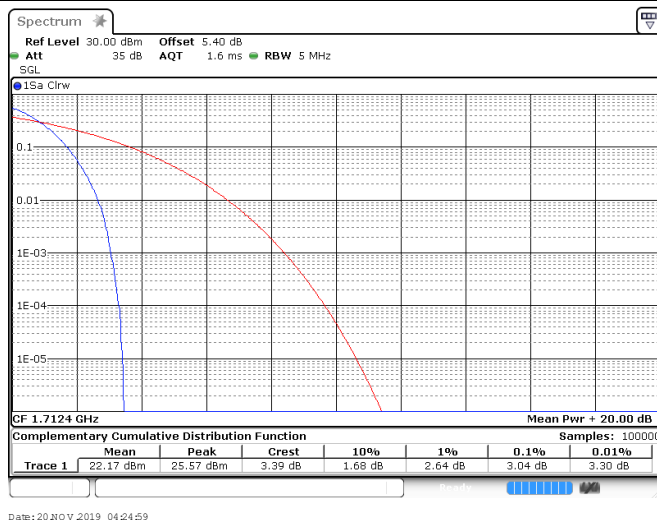
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2.2. Test Plots for QPSK



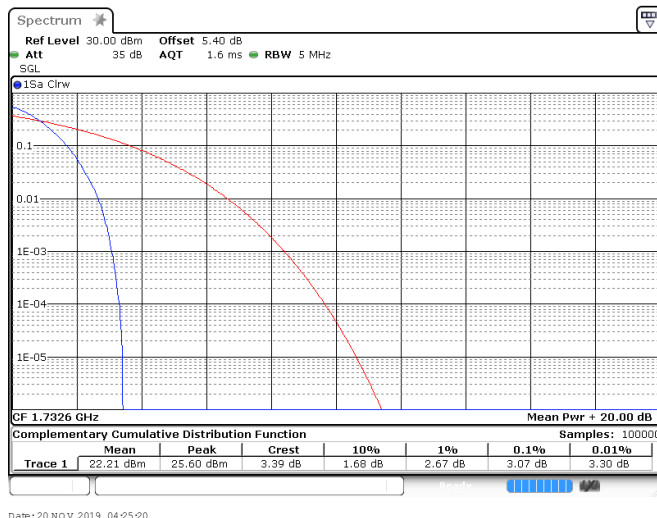


Band IV_1312

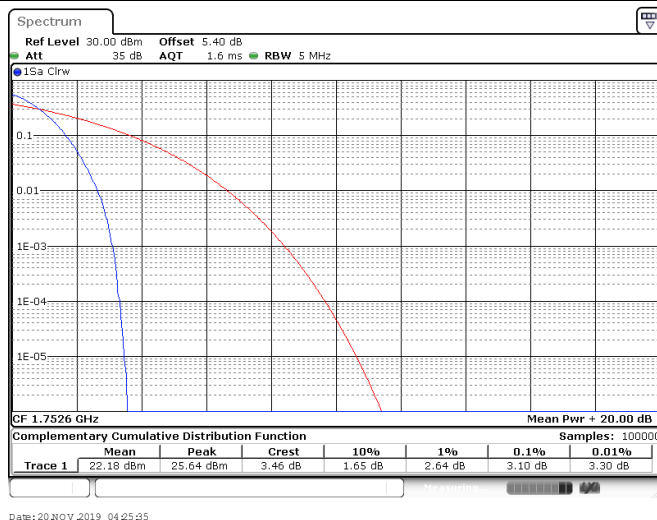


Band IV_1413



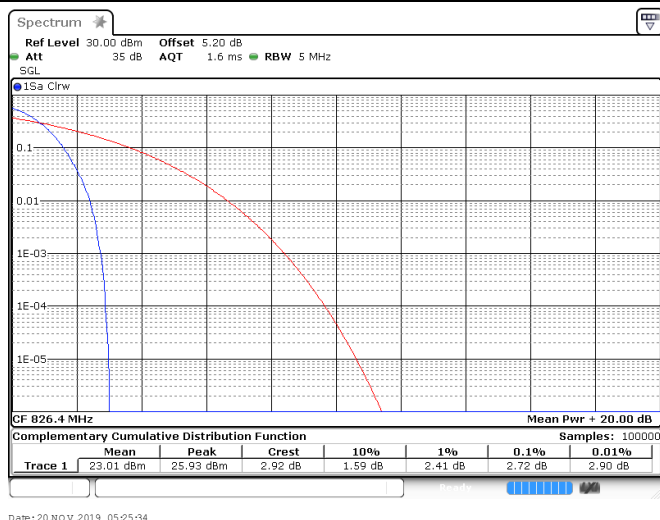


Band IV_1513

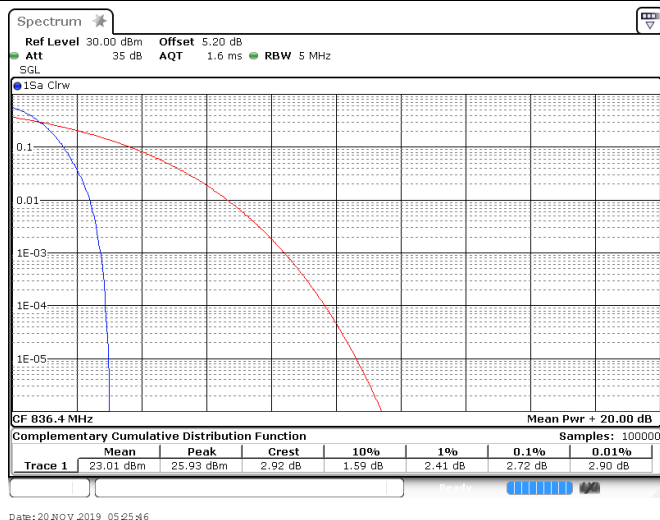


Band V_4132



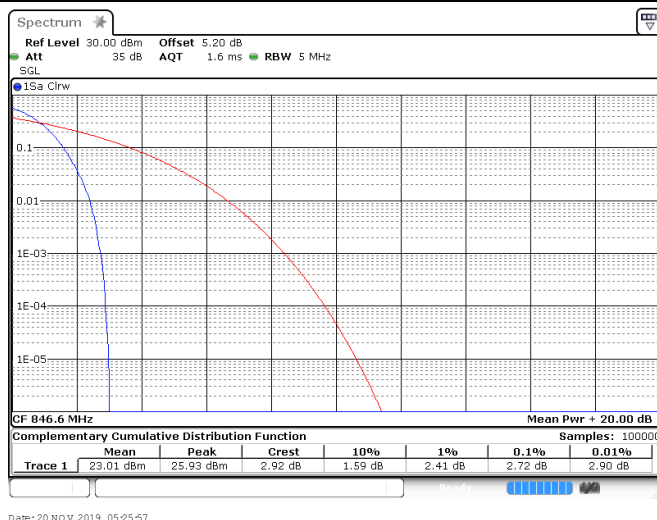


Band V_4182



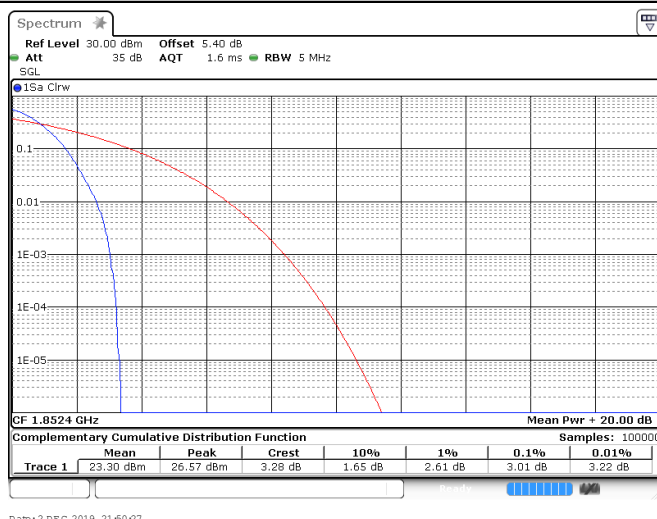
Band V_4233





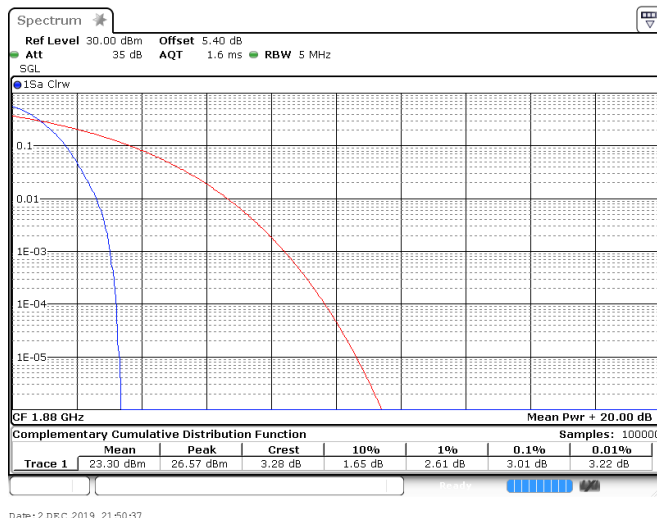
2.3. Test Plots for 16QAM

Band II_9262

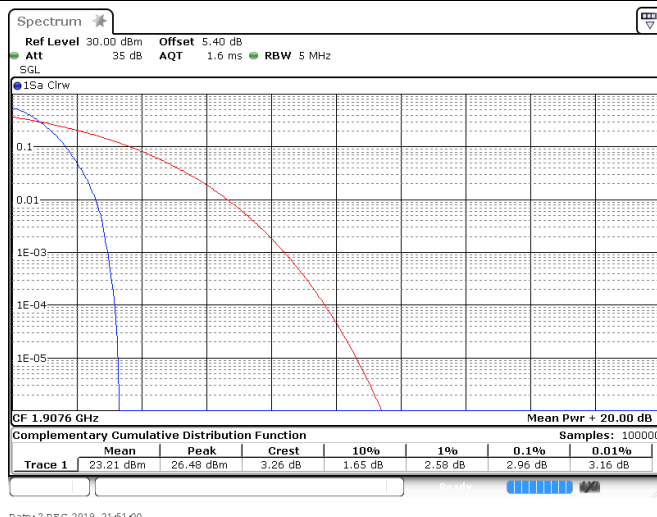


Band II_9400



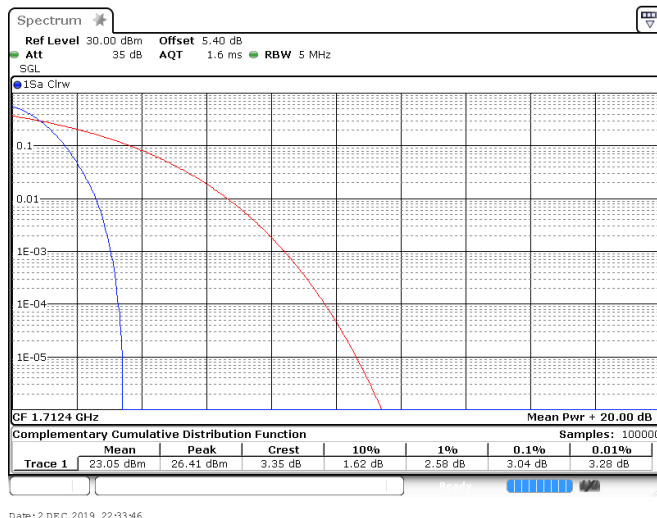


Band II_9538

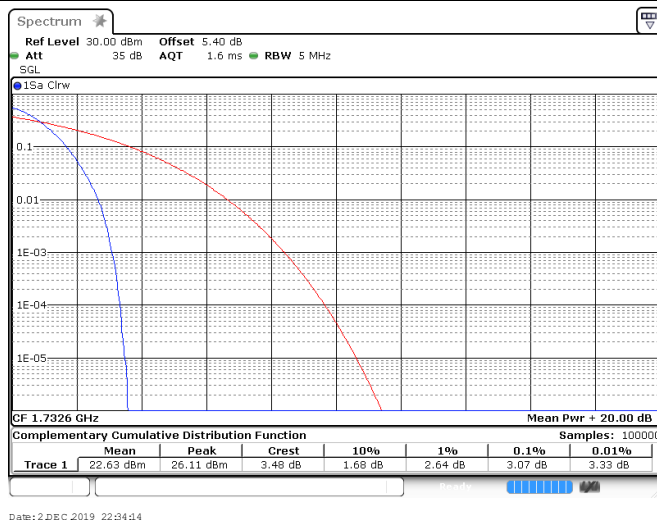


Band IV_1312



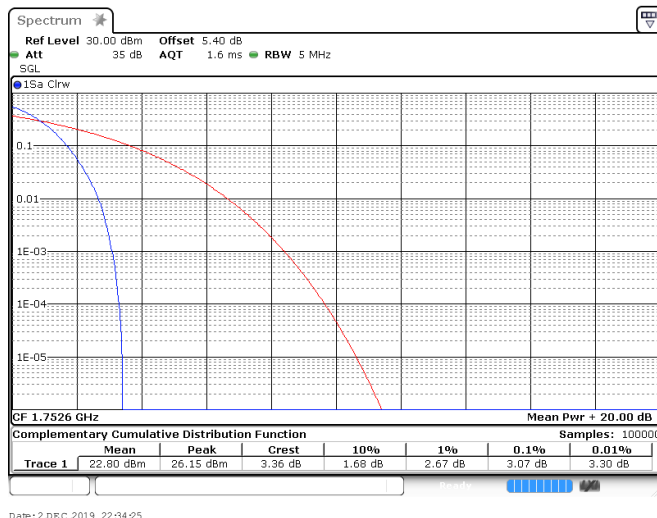


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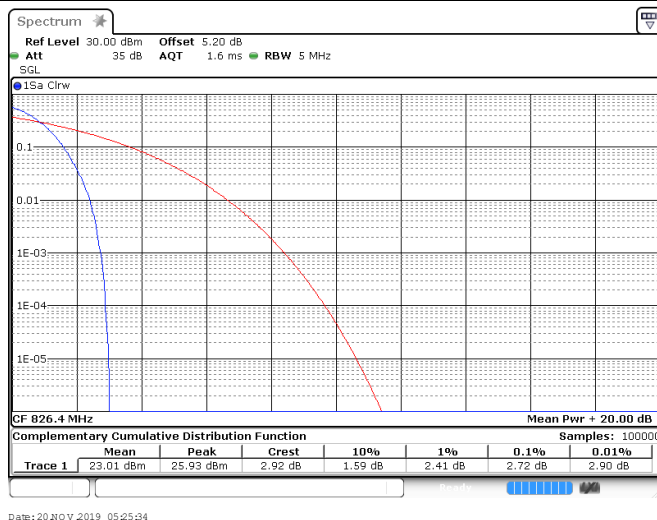


Band IV_1513





Band V_4132

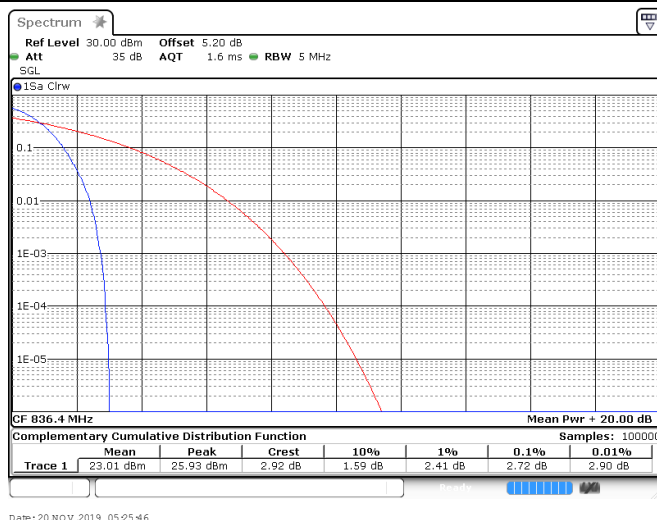


Band V_4182

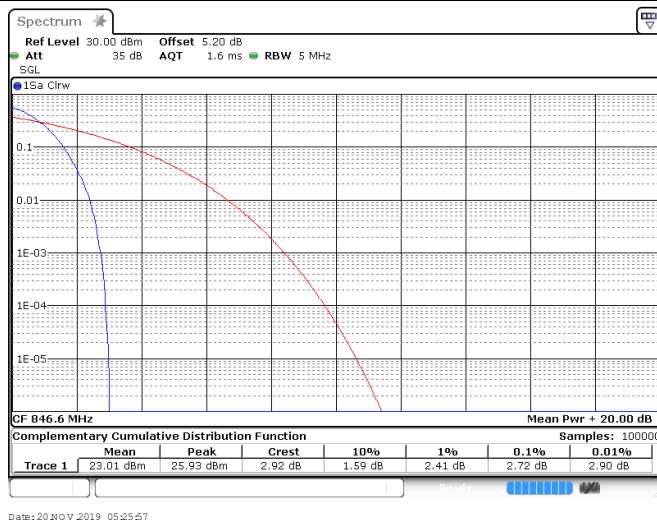


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Band V_4233

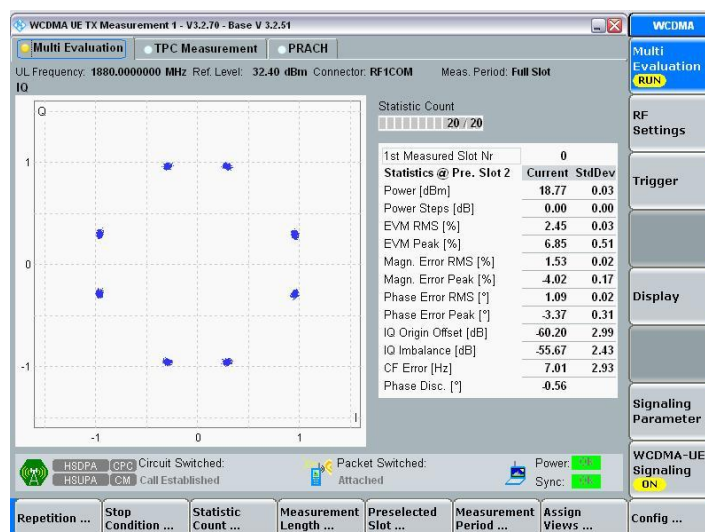


3. Modulation Characteristics

3.1. Test Band = WCDMA Band II

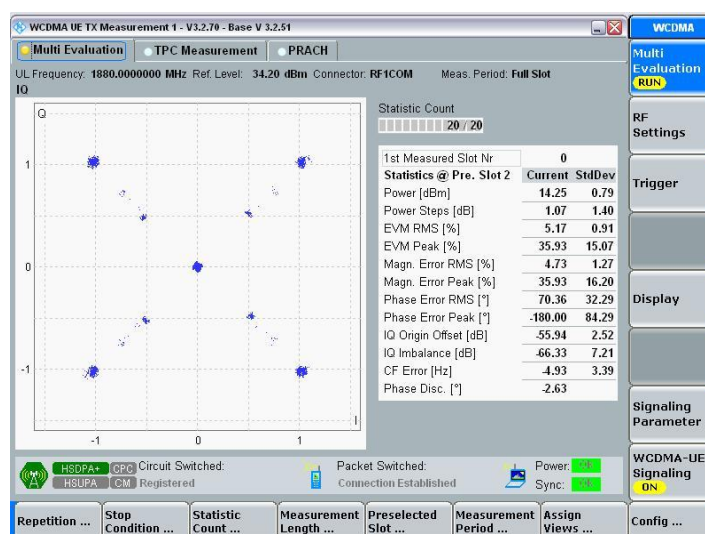
3.1.1. Test Mode = UMTS/TM1

3.1.1.1. Test Channel = MCH



3.1.2. Test Mode = UMTS/TM2

3.1.2.1. Test Channel = MCH



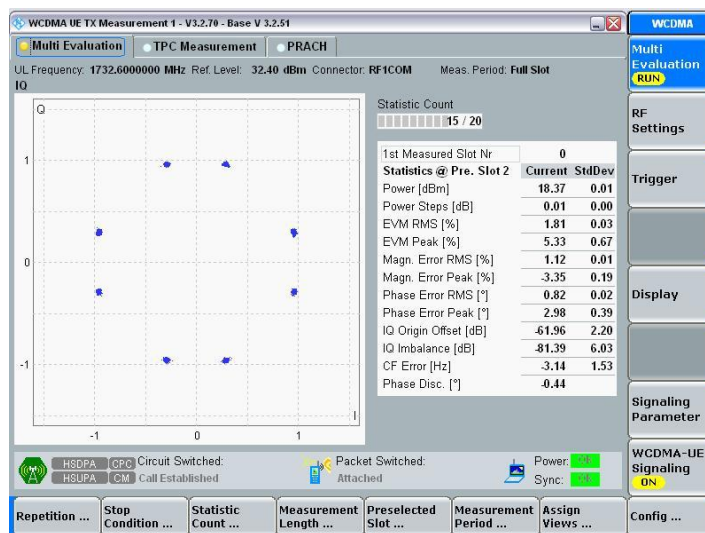
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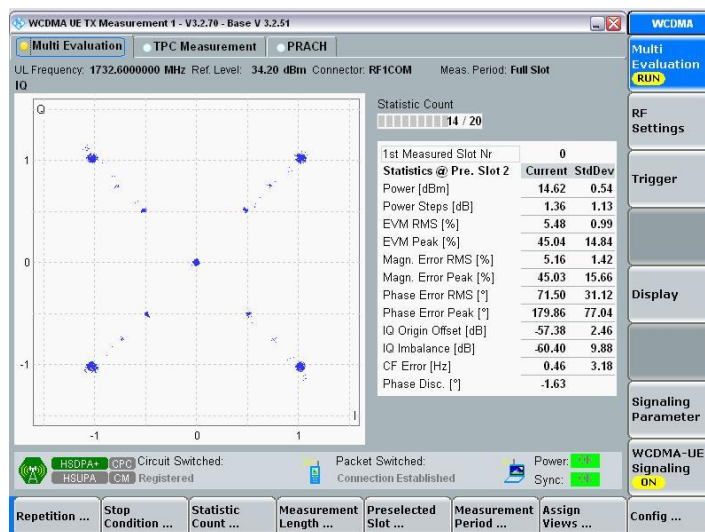
3.2.1. Test Mode = UMTS/TM1

3.2.1.1. Test Channel = MCH



3.2.2. Test Mode = UMTS/TM2

3.2.2.1. Test Channel = MCH



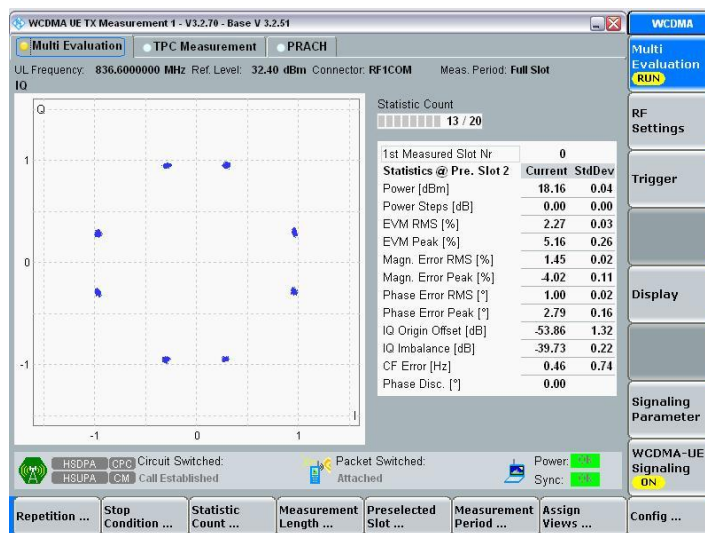
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3.3. Test Band = WCDMA Band V

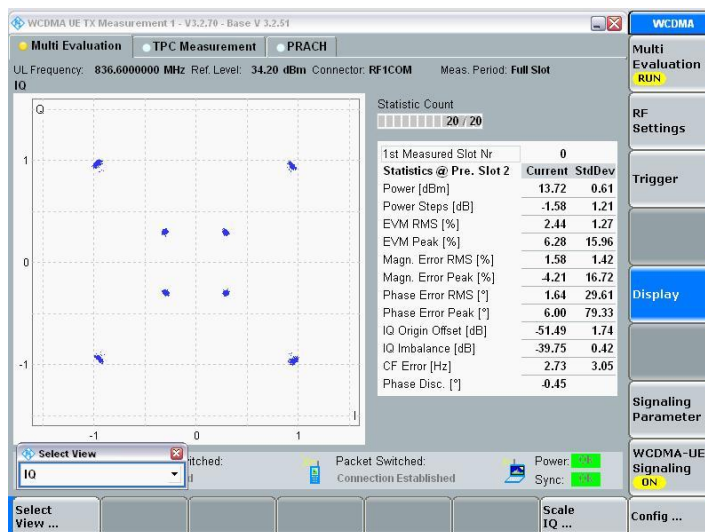
3.3.1. Test Mode = UMTS/TM1

3.3.1.1. Test Channel = MCH



3.3.2. Test Mode = UMTS/TM2

3.3.2.1. Test Channel = MCH





4. 26dB Bandwidth and Occupied Bandwidth

4.1. Test Result

BAND	Modulation	Channel	Occupied Bandwidth (kHz)	26dB Bandwidth (kHz)	Limit(kHz)	Verdict
Band II	QPSK	9262	4153.4	4725	---	PASS
Band II	QPSK	9400	4153.4	4725	---	PASS
Band II	QPSK	9538	4153.4	4739	---	PASS
Band II	16QAM	9262	4167.9	4739	---	PASS
Band II	16QAM	9400	4167.9	4725	---	PASS
Band II	16QAM	9538	4153.4	4739	---	PASS
Band IV	QPSK	1312	4124.5	4710	---	PASS
Band IV	QPSK	1413	4167.9	4739	---	PASS
Band IV	QPSK	1513	4167.9	4725	---	PASS
Band IV	16QAM	1312	4153.4	4725	---	PASS
Band IV	16QAM	1413	4167.9	4725	---	PASS
Band IV	16QAM	1513	4153.4	4725	---	PASS
Band V	QPSK	4132	4153.4	4754	---	PASS
Band V	QPSK	4182	4167.9	4768	---	PASS
Band V	QPSK	4233	4167.9	4754	---	PASS
Band V	16QAM	4132	4153.4	4754	---	PASS
Band V	16QAM	4182	4153.4	4725	---	PASS
Band V	16QAM	4233	4153.4	4754	---	PASS

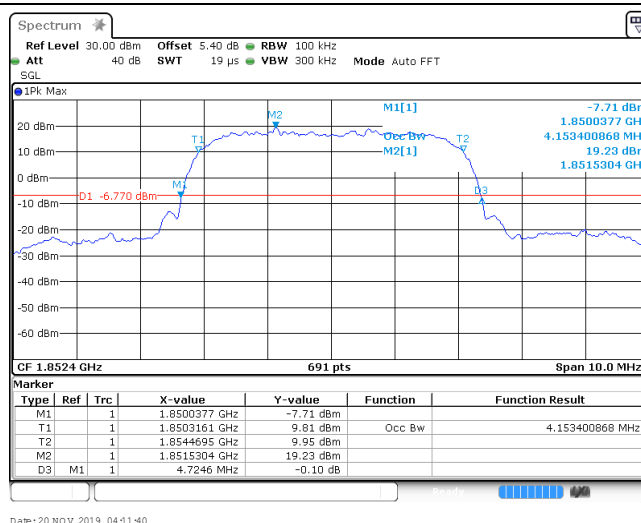


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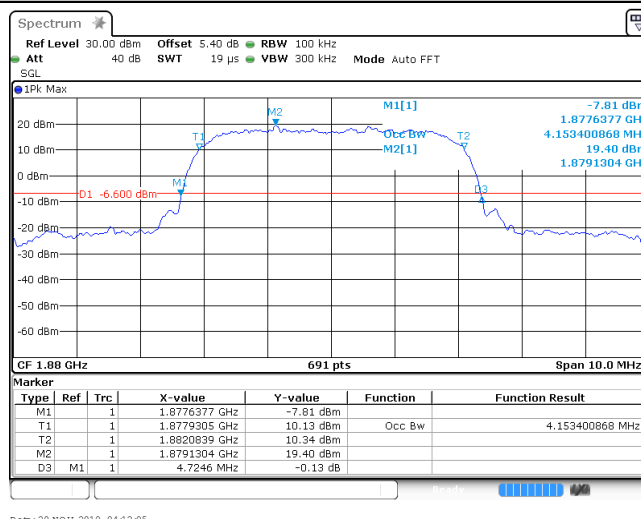


4.2. Test Plots for QPSK



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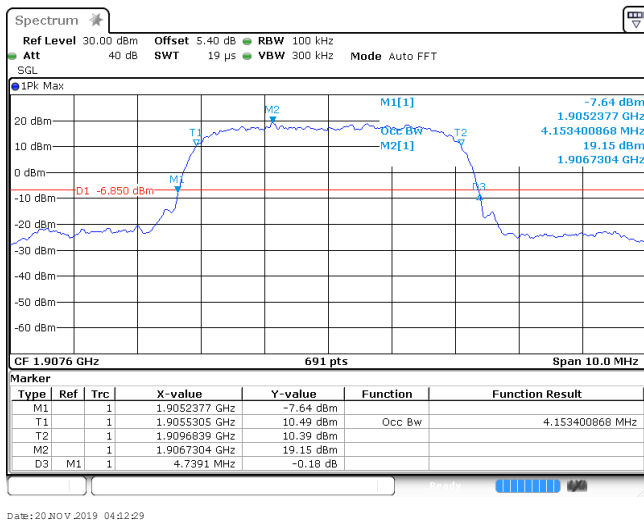
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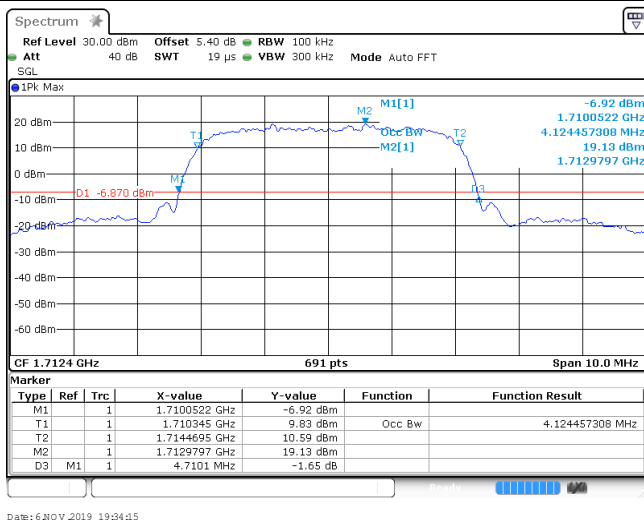
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Band II_9400



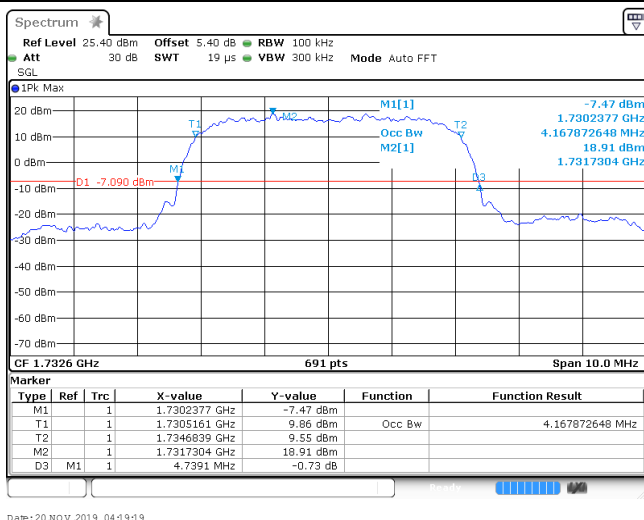


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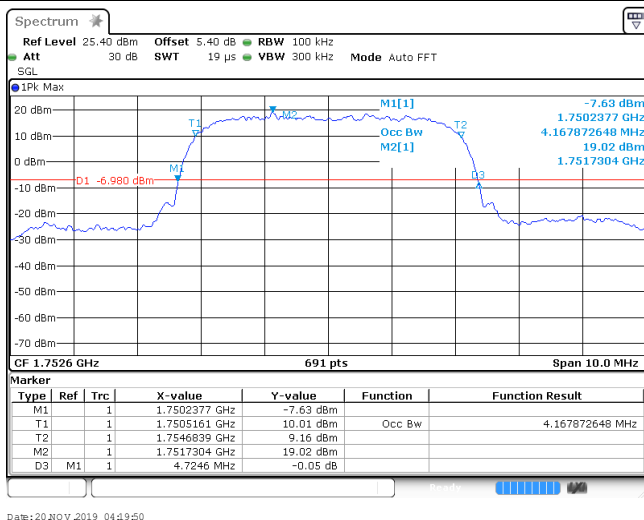


Band IV_1312



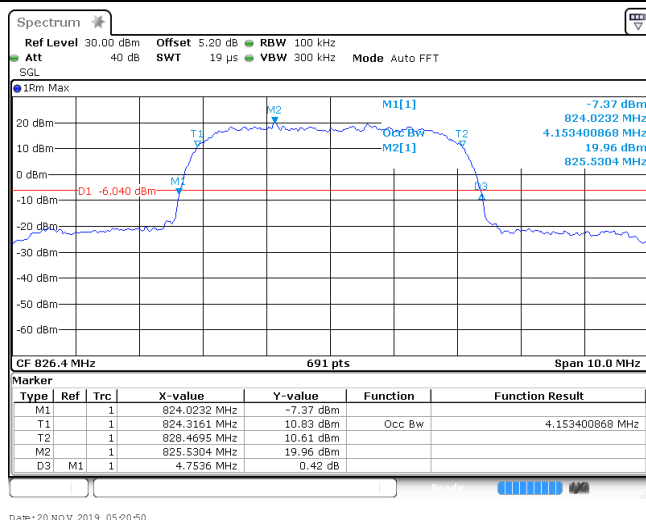


Band IV_1413

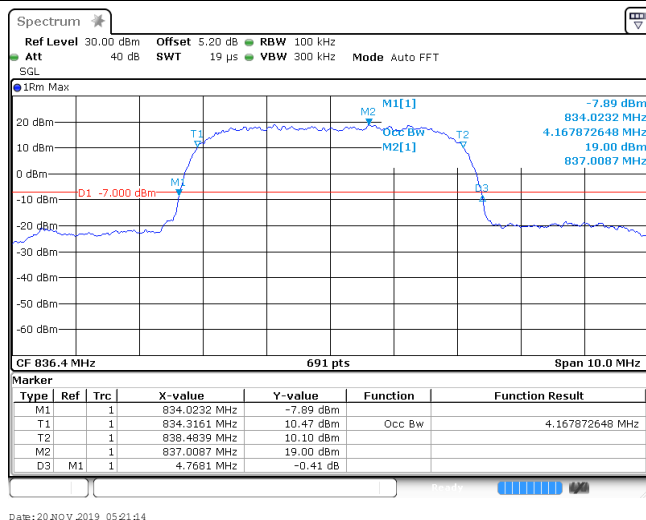


Band IV_1513



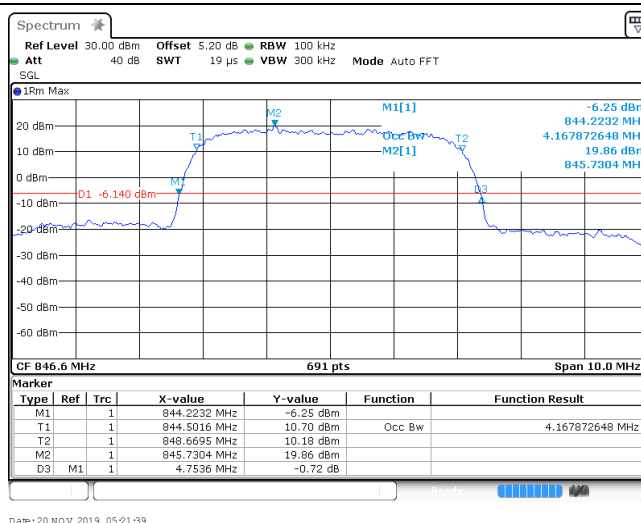


Band V_4132



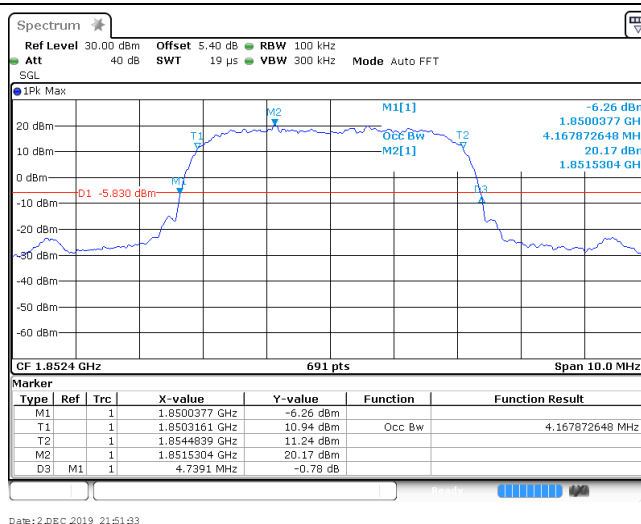
Band V_4182





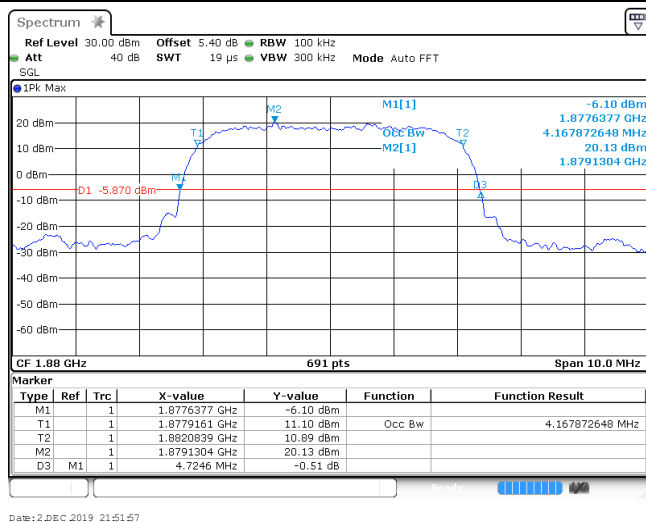
Band V_4233

4.3. Test Plots for 16QAM

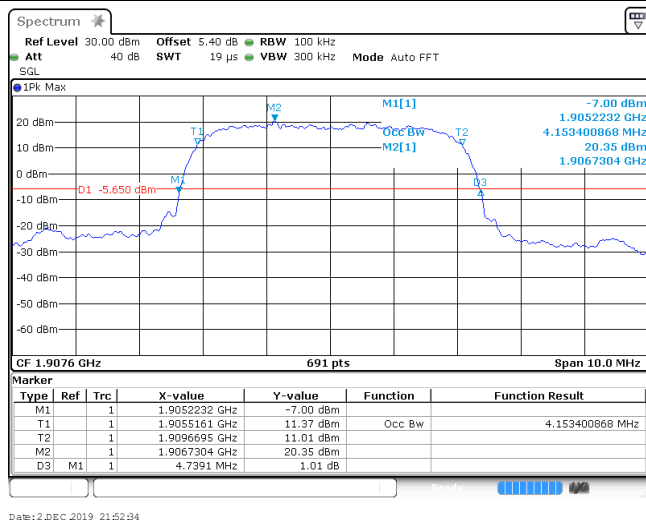


Band II_9262





Band II_9400

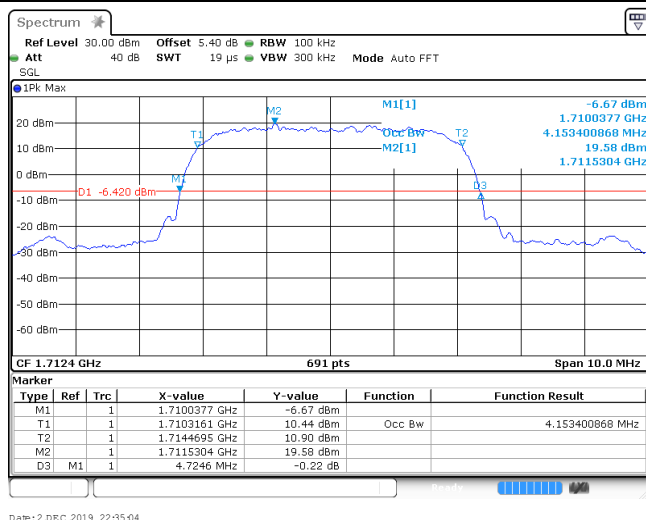


Band II_9538

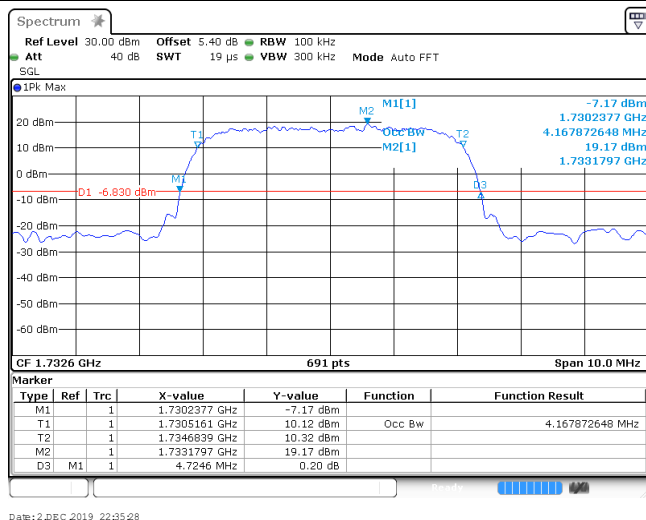


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Band IV_1413

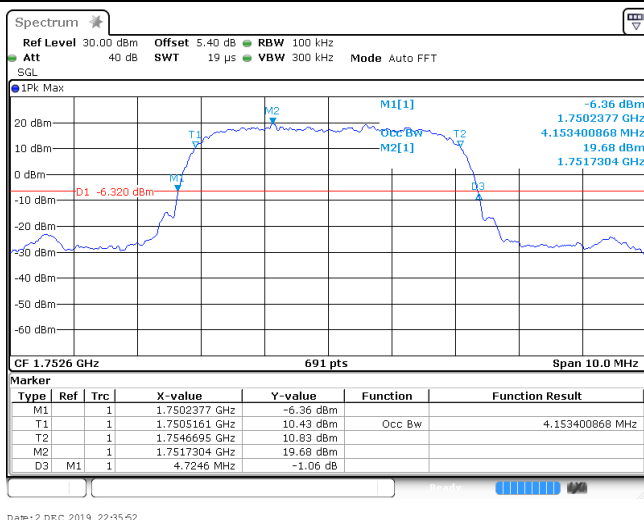


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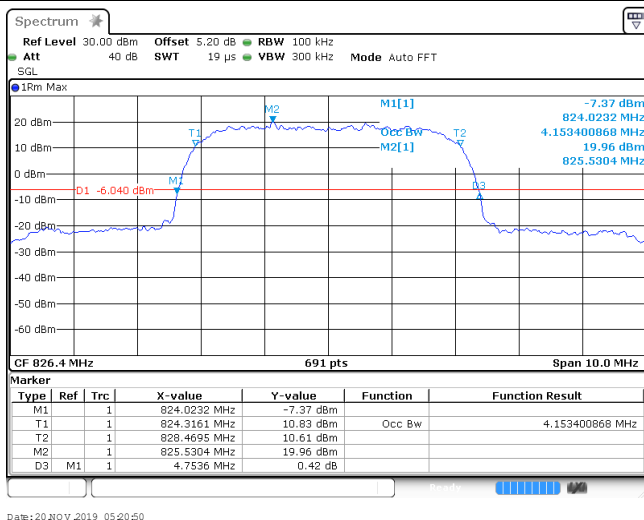
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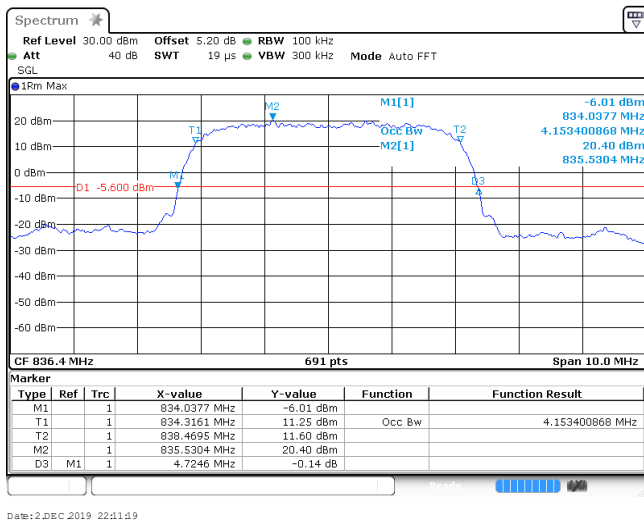


Band IV_1513

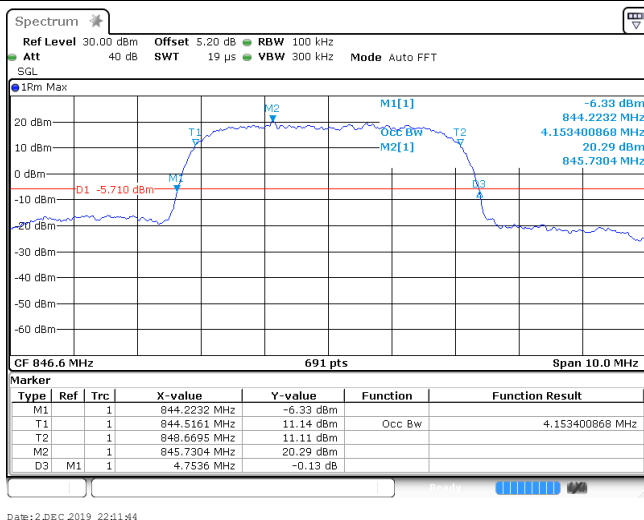


Band V_4132





Band V_4182



Band V_4233

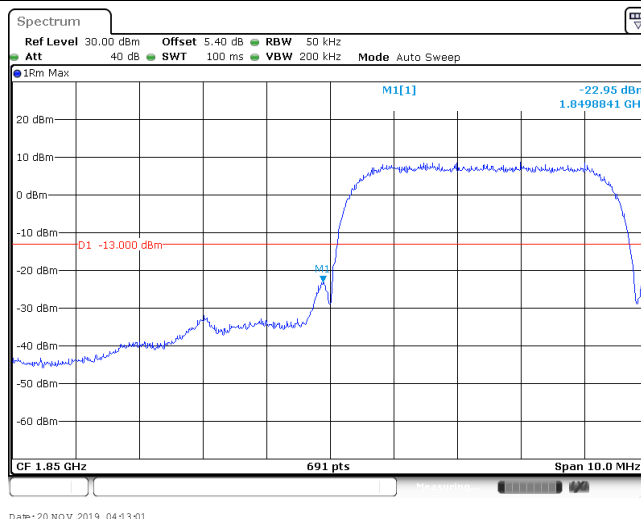


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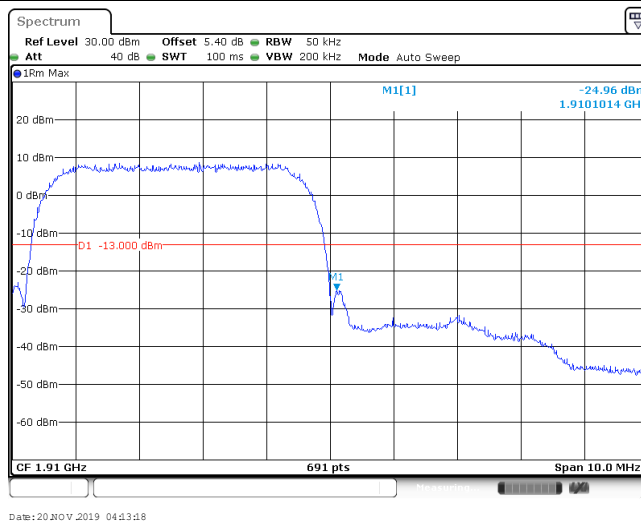
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5. Band Edge Compliance

5.1. Test Plots for QPSK



Band II_9262



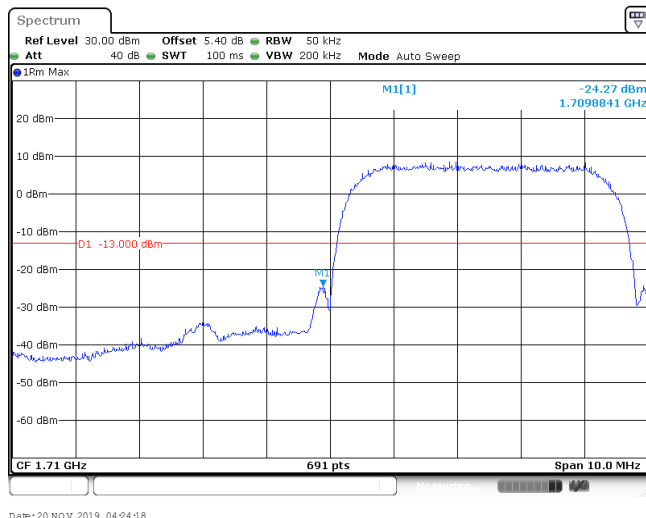
Band II_9538



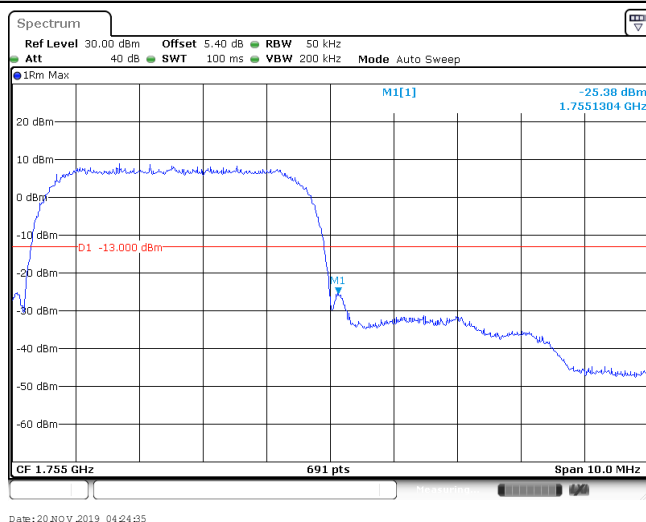
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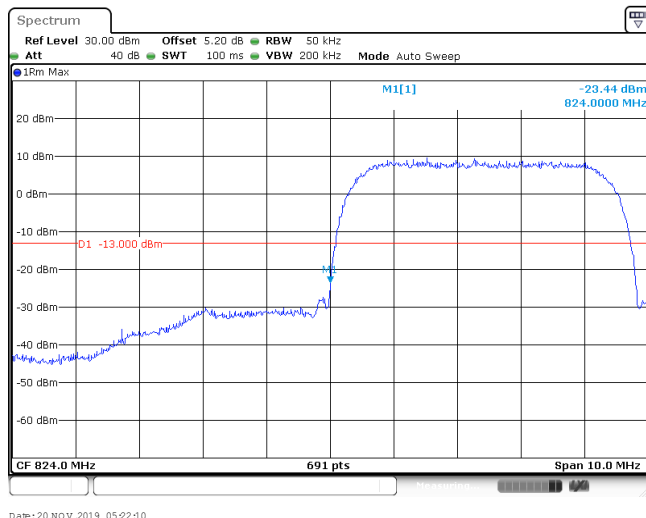


Band IV_1312

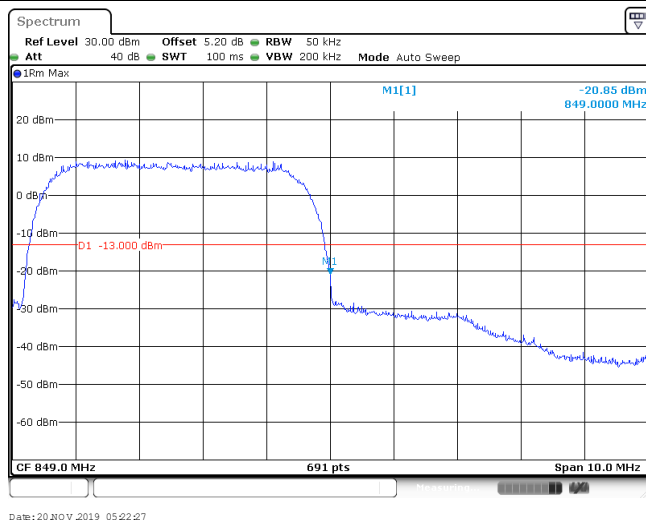


Band IV_1513





Band V_4132



Band V_4233



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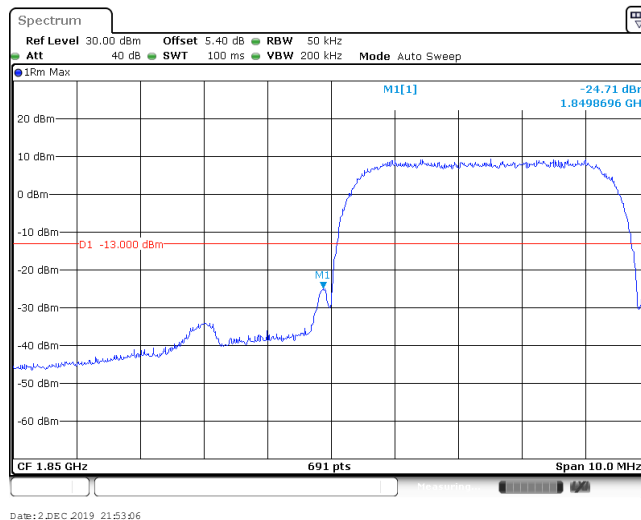
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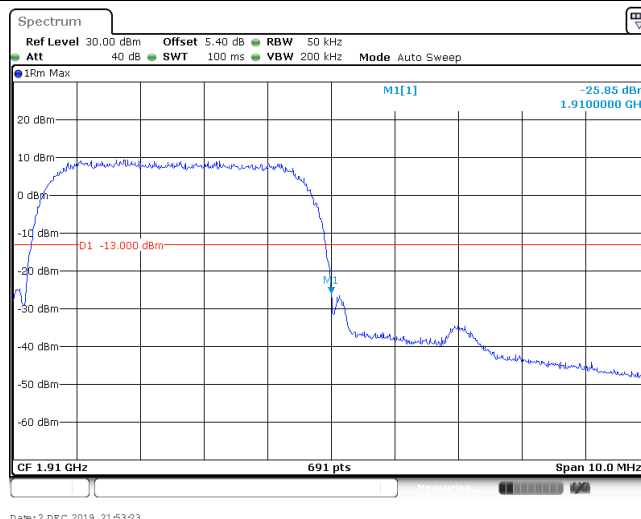
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5.2. Test Plots for 16QAM

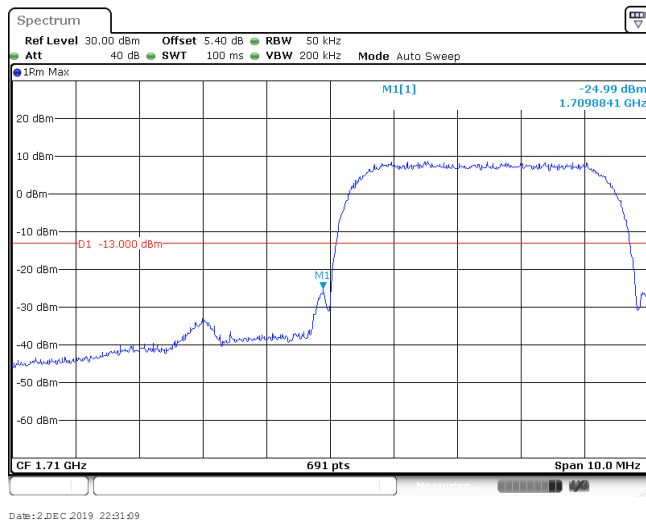


Band II_9262

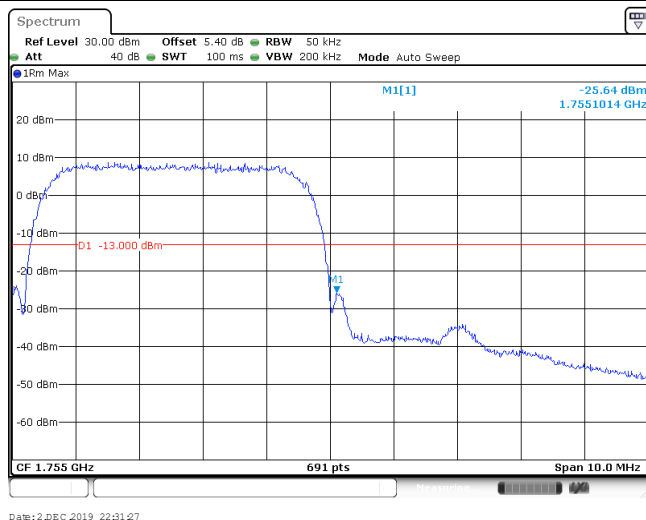


Band II_9538





Band IV_1312



Band IV_1513

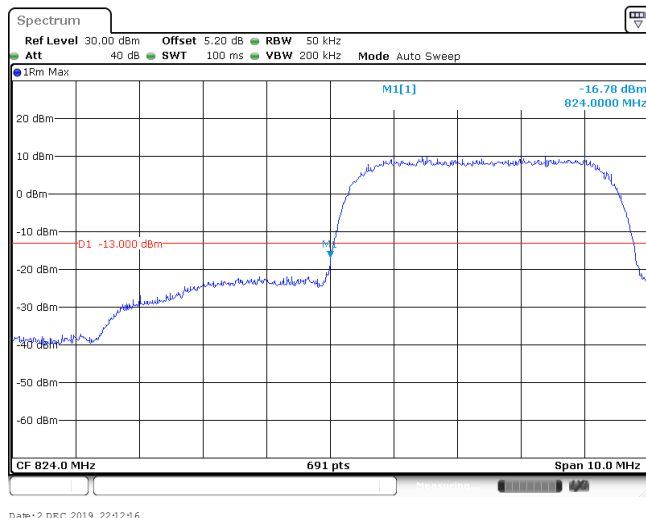


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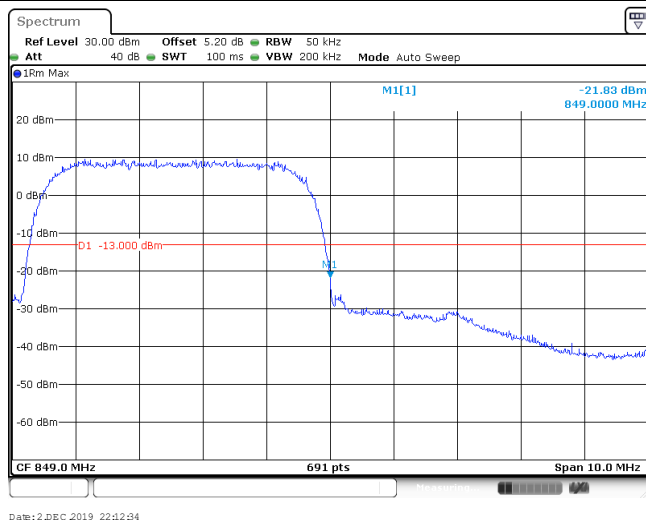
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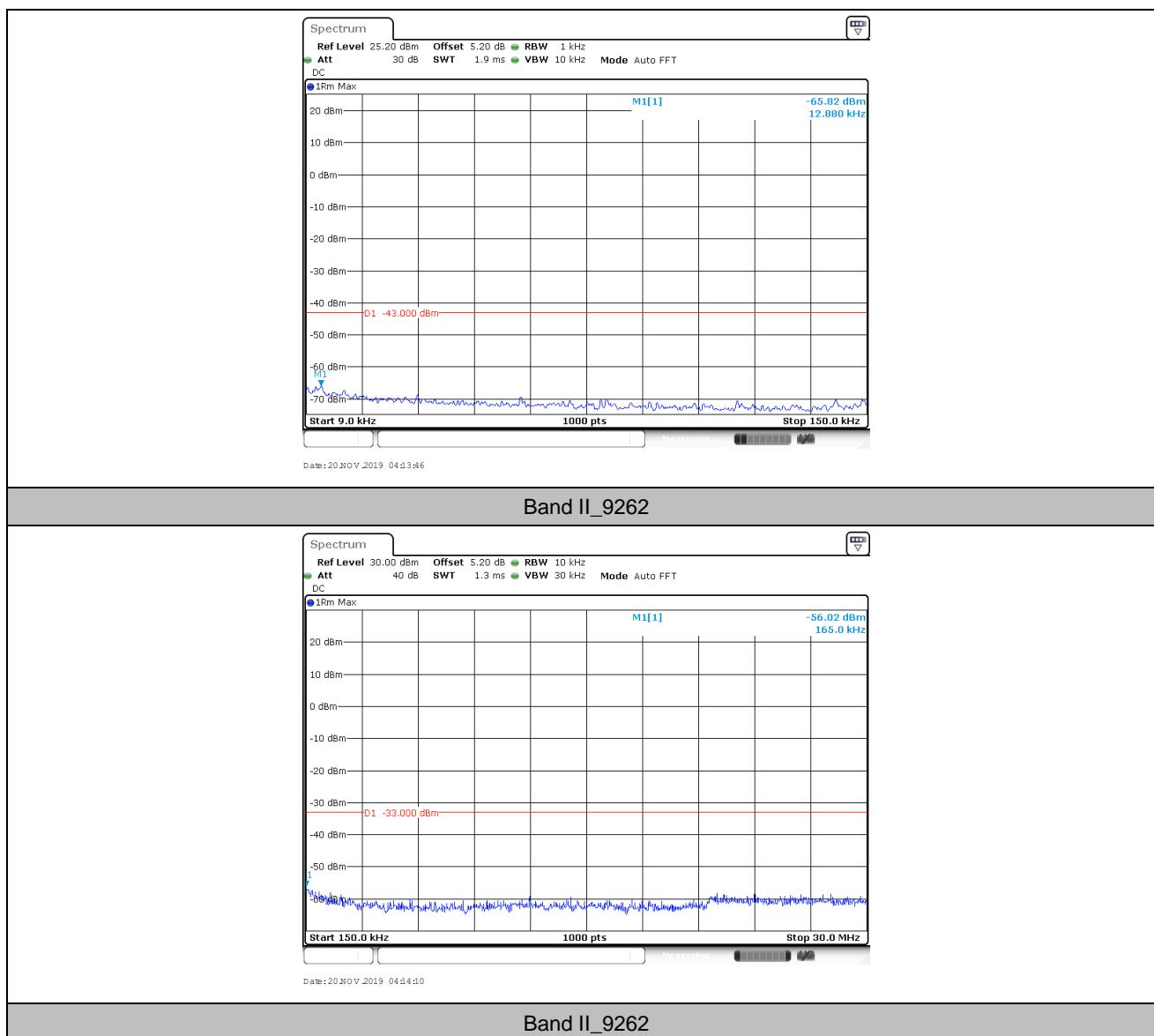


6. Spurious Emission at Antenna Terminal

Remark1: For the averaged unwanted emissions measurements, the measurement points in each sweep is greater than twice the Span/RBW in order to ensure bin-to-bin spacing of $< RBW/2$ so that narrowband signals are not lost between frequency bins. As to the present test item, the "Measurement Points = $k * (\text{Span} / RBW)$ " with k between 4 and 5, which results in an acceptable level error of less than 0.5 dB.

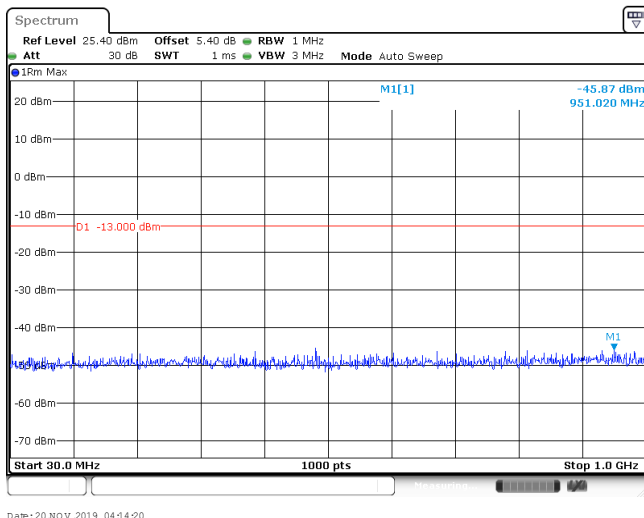
Remark2: only the worst case data displayed in this report.

6.1. Test Plots for QPSK

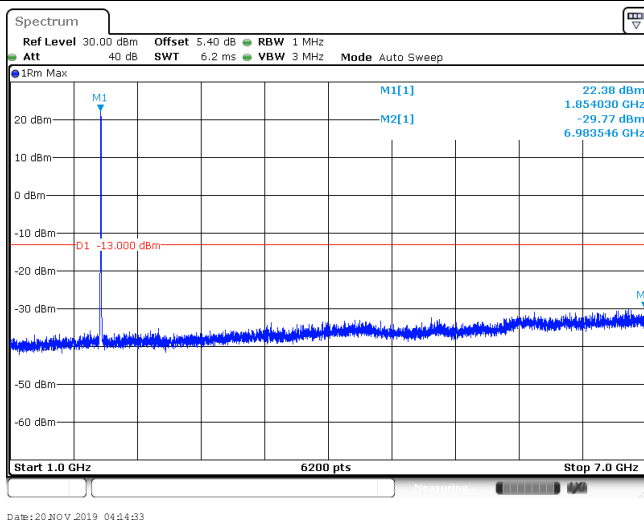


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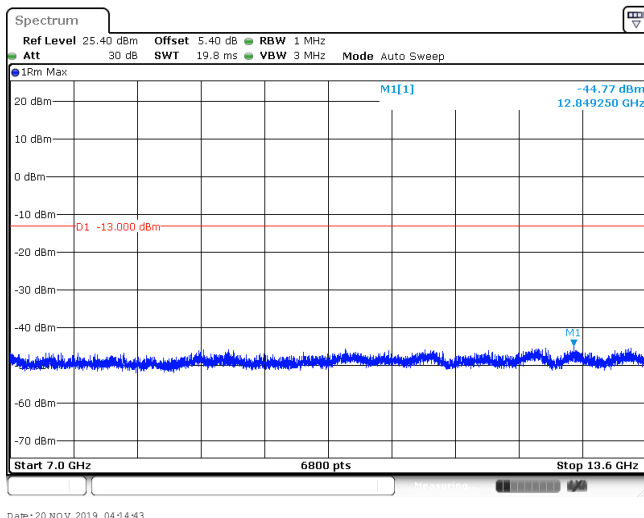


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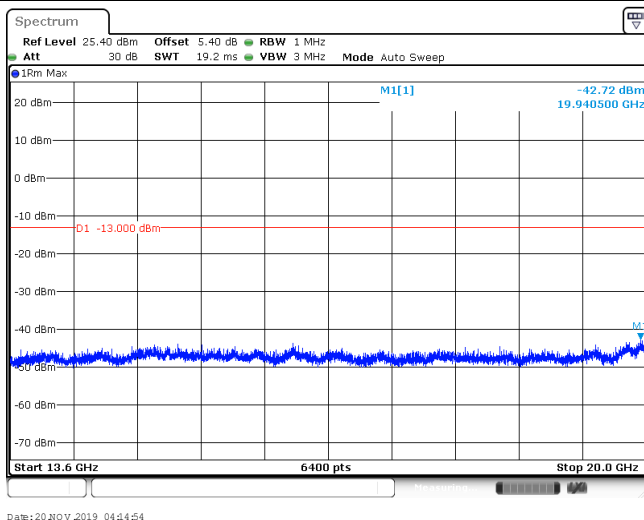


Band II_9262





Band II_9262

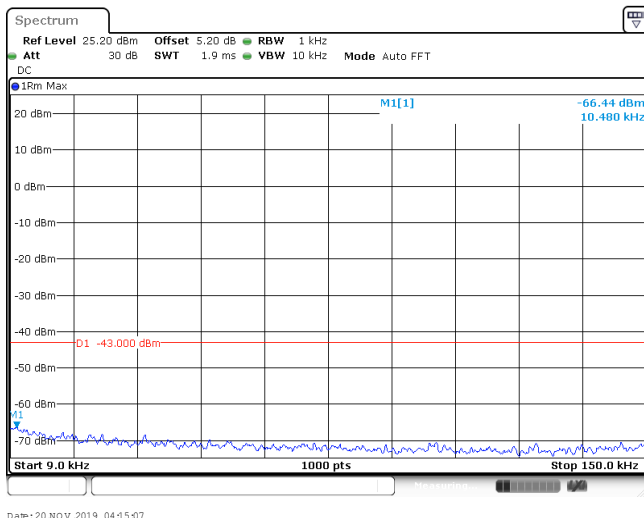


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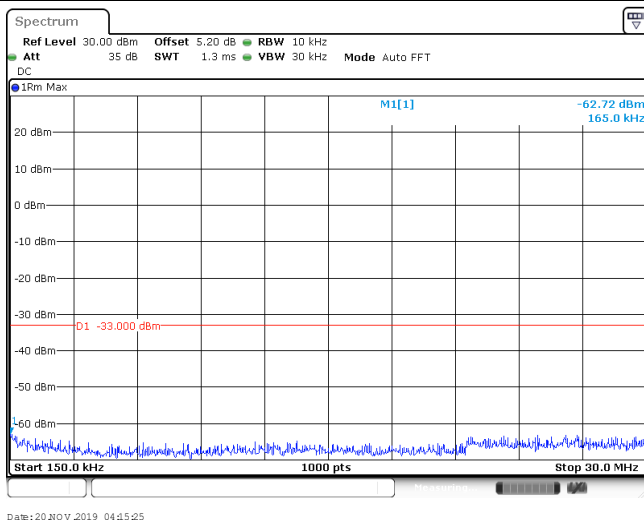


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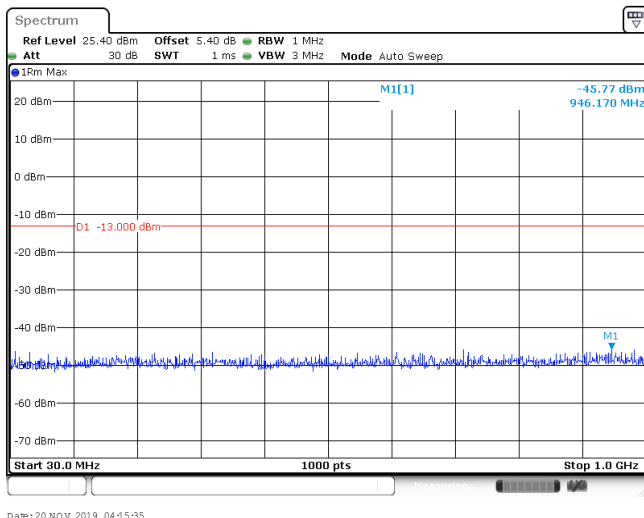


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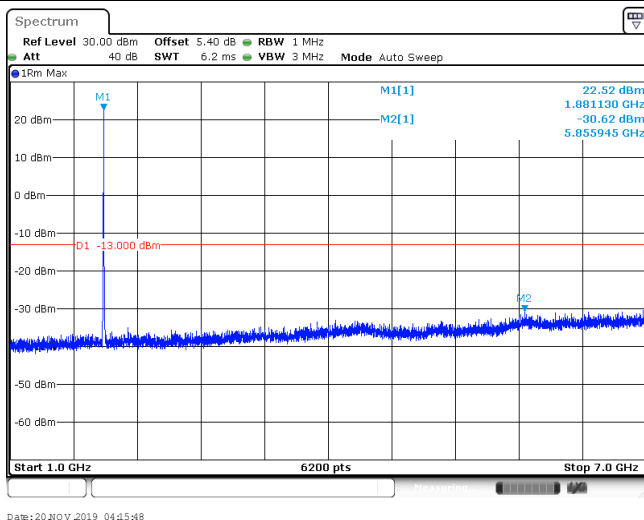


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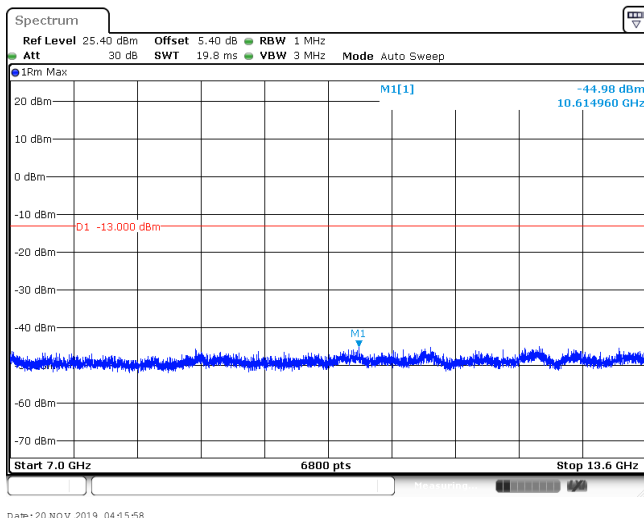
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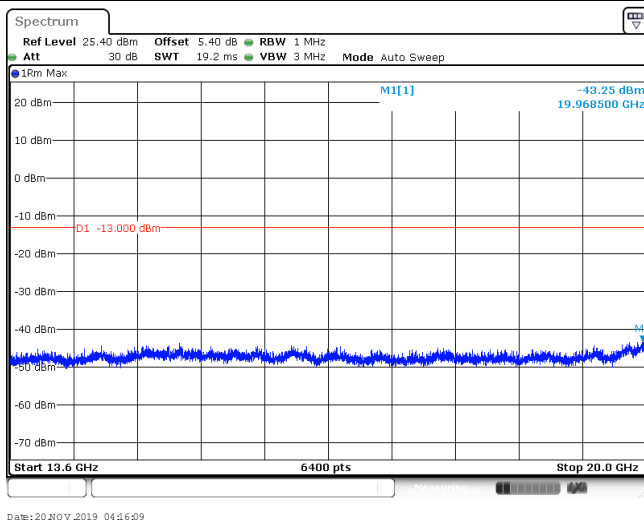
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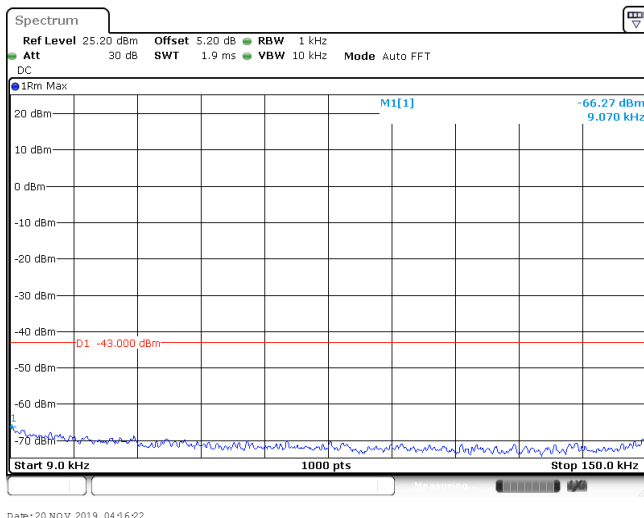


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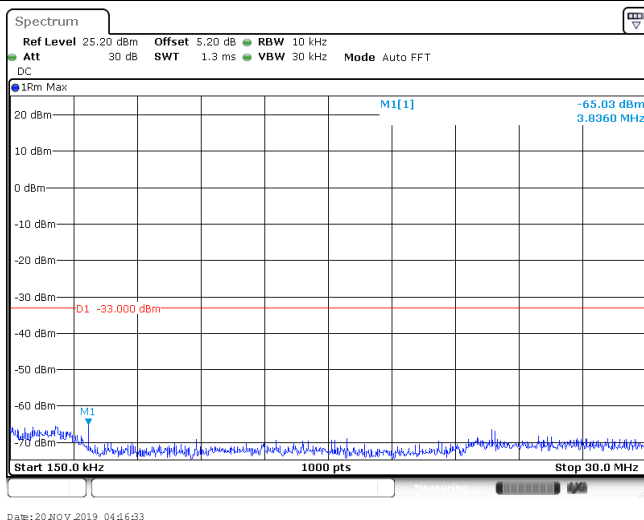


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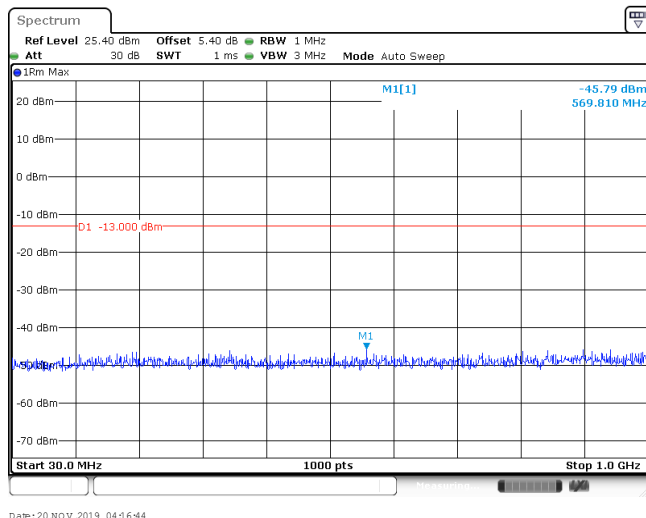


Band II_9538

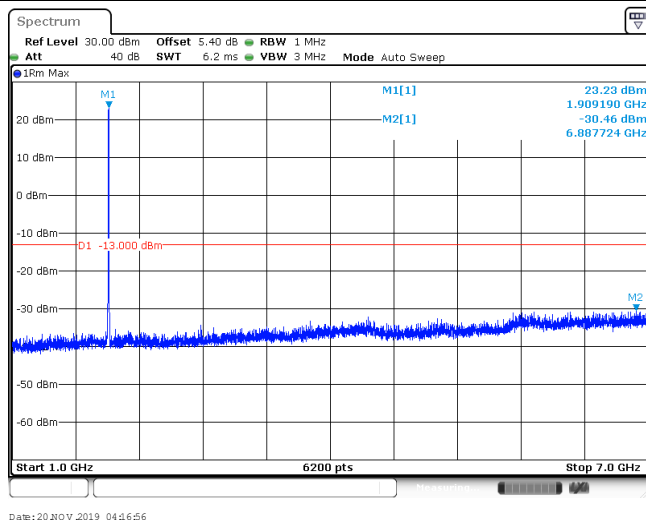


Band II_9538



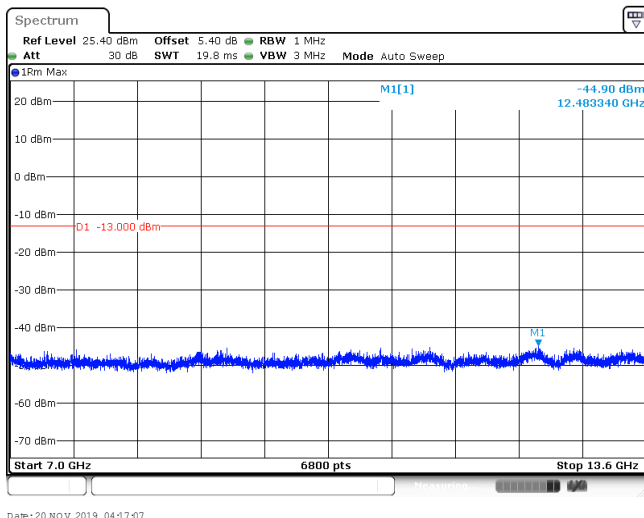


Band II_9538

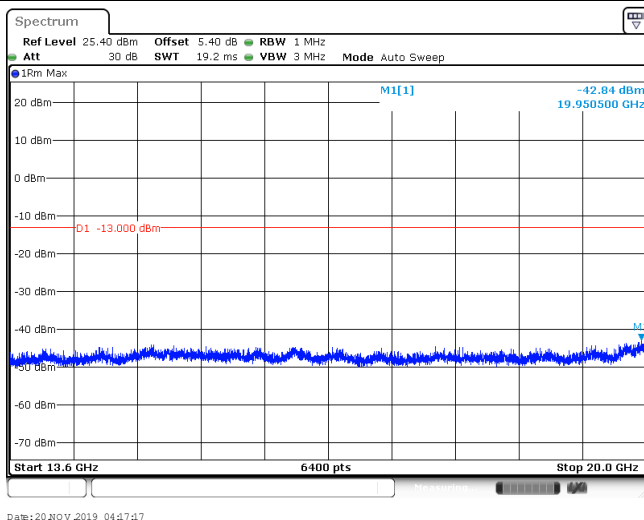


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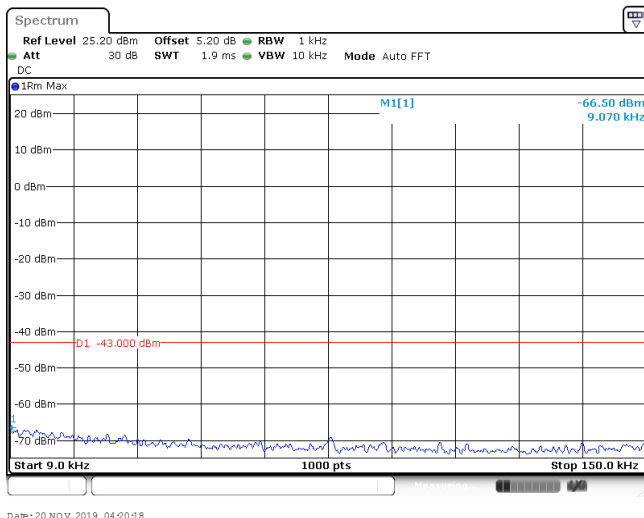


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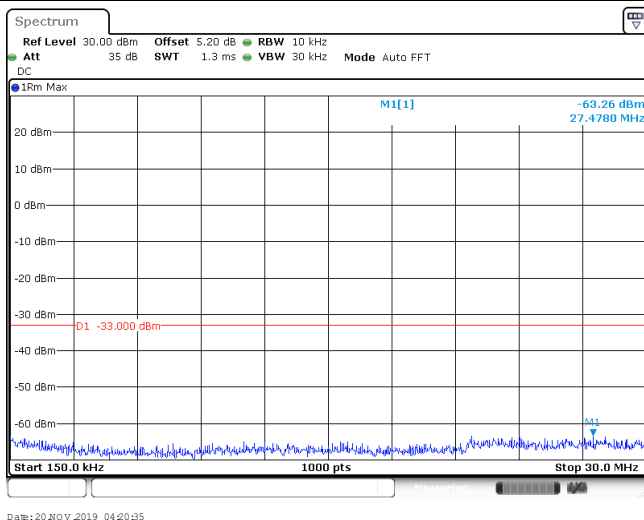


Band II_9538





Band IV_1312



Band IV_1312

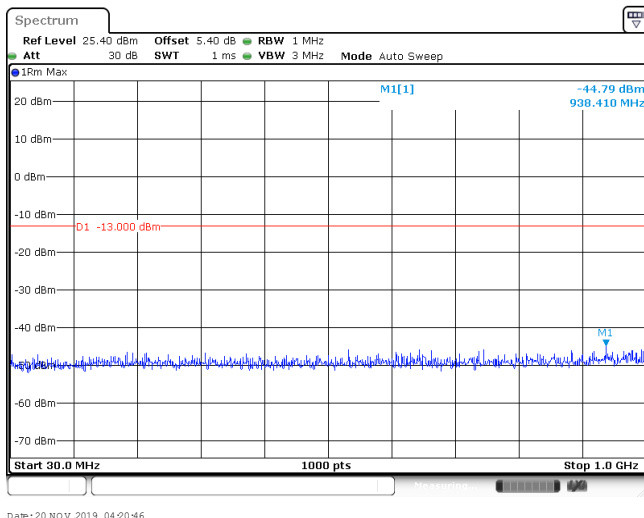


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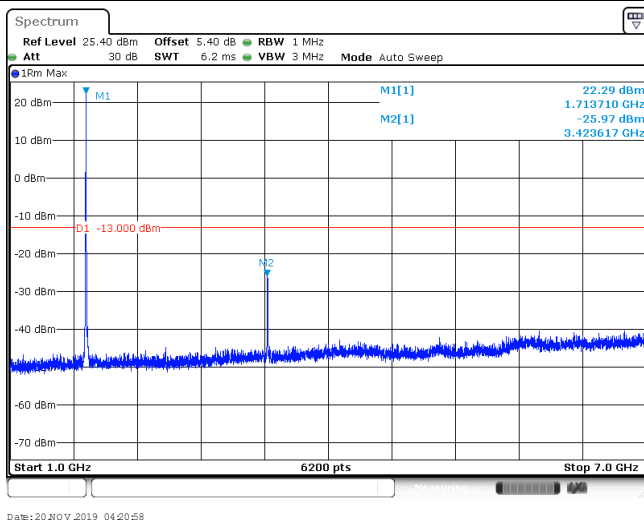
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Band IV_1312



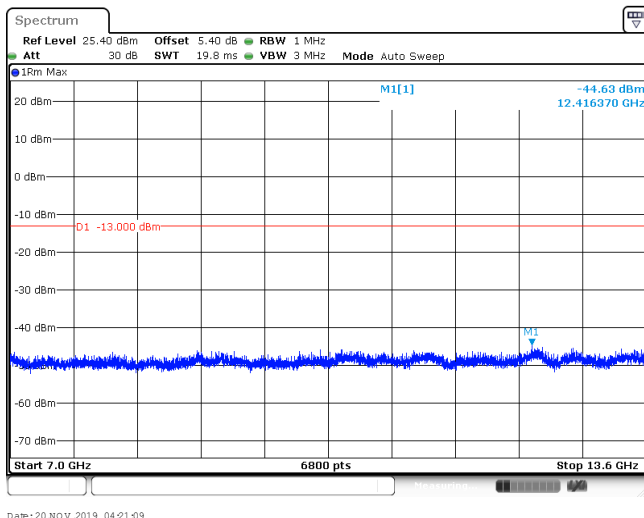
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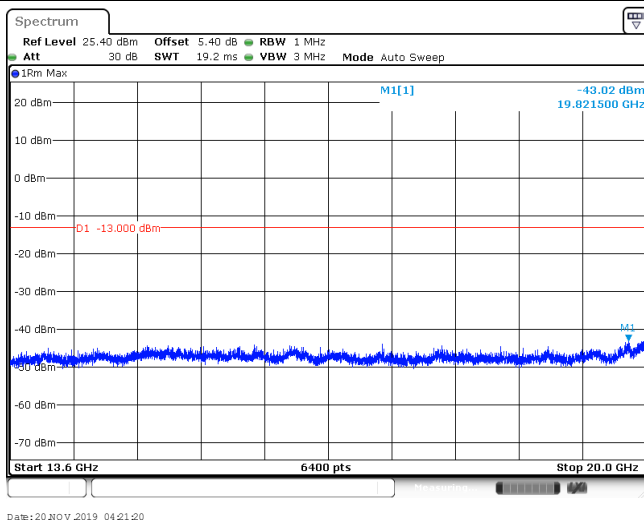
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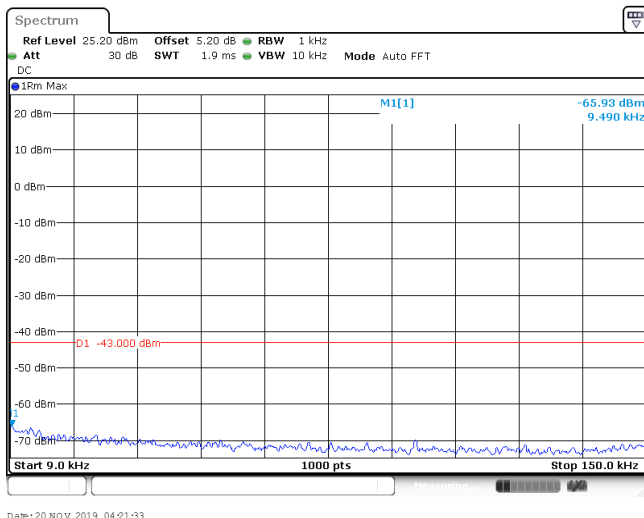


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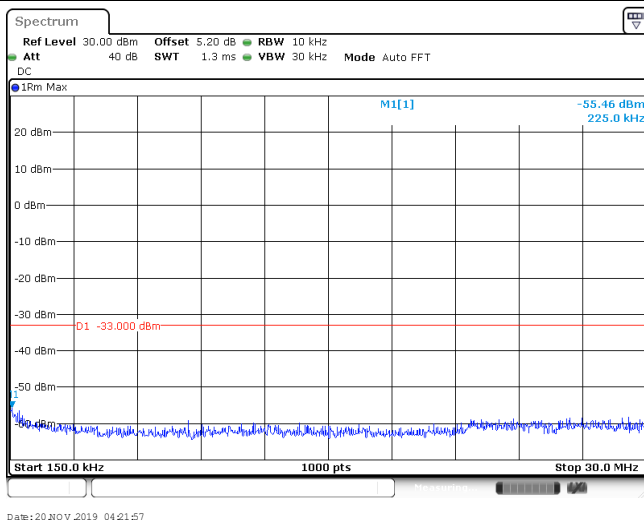


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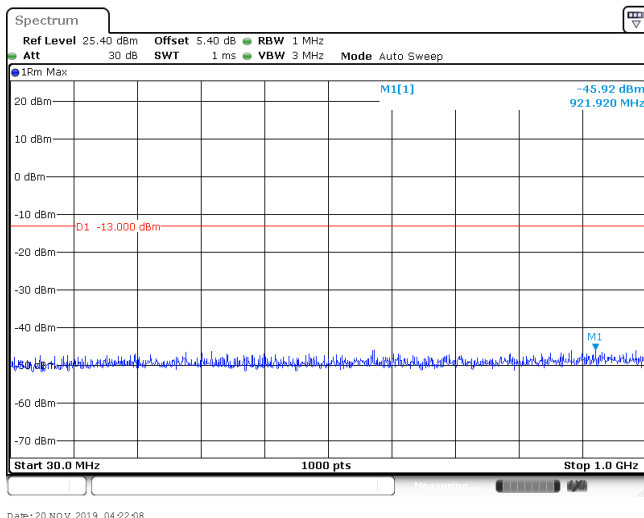


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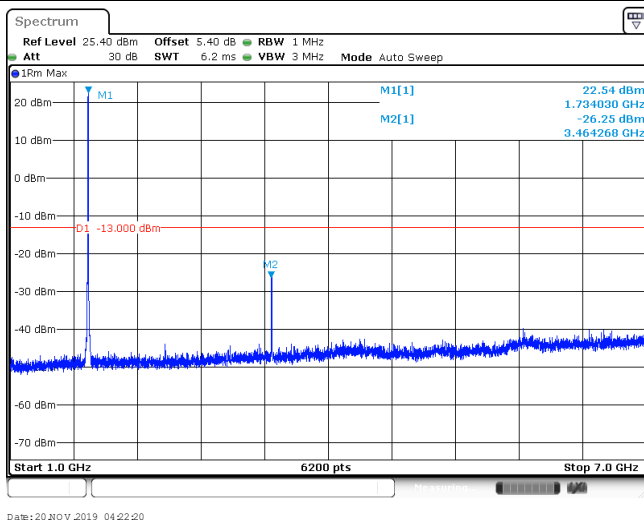


Band IV_1413





Band IV_1413



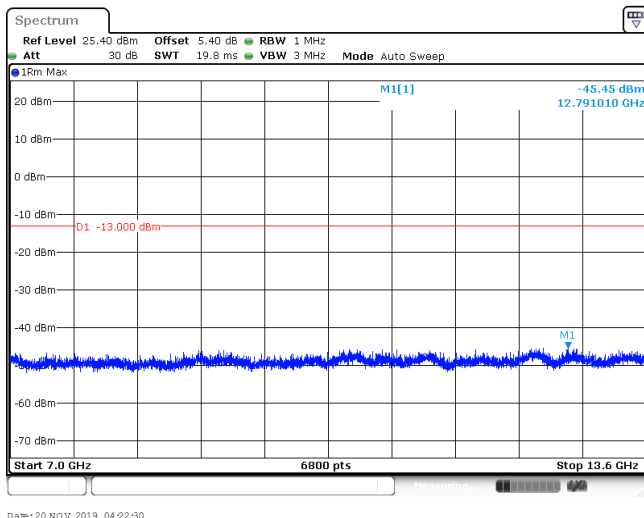
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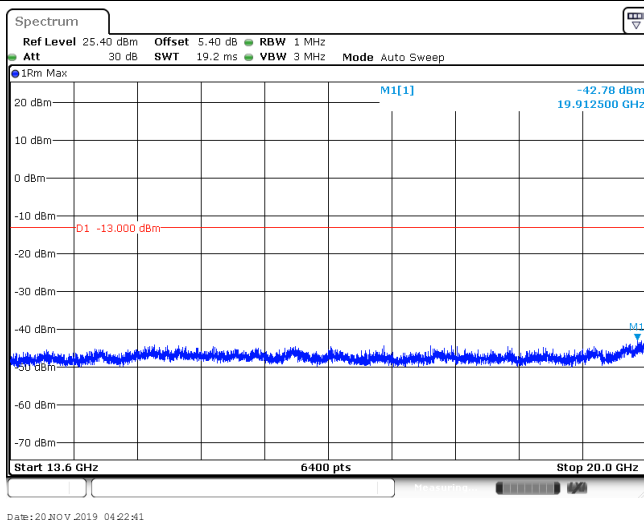
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Band IV_1413



Band IV_1413

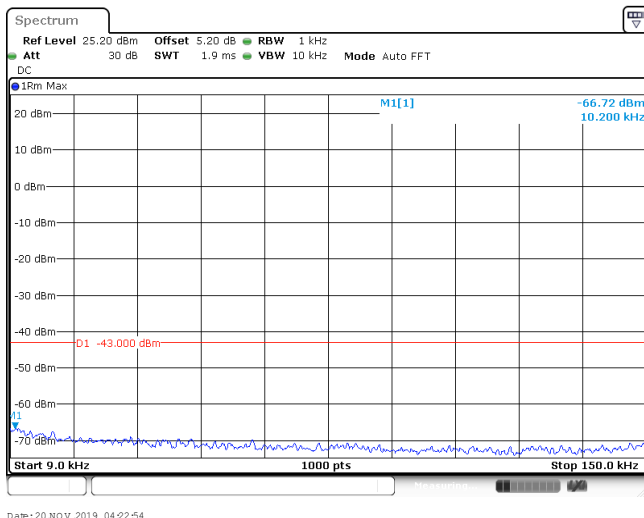


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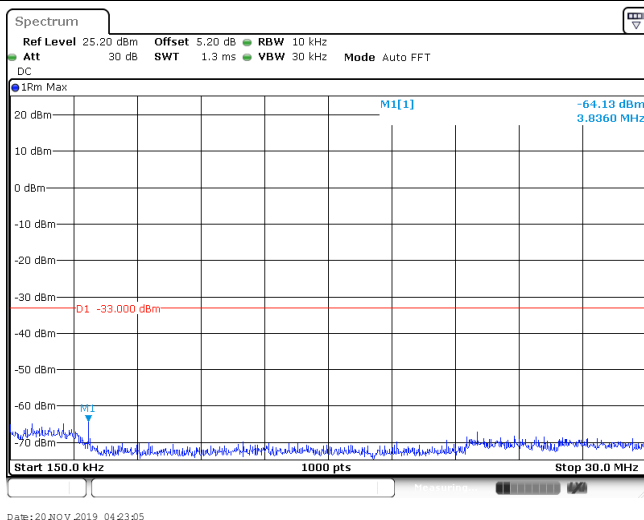
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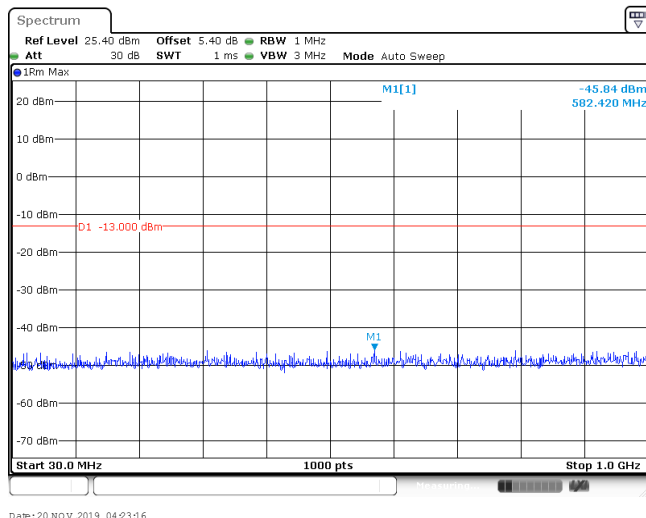


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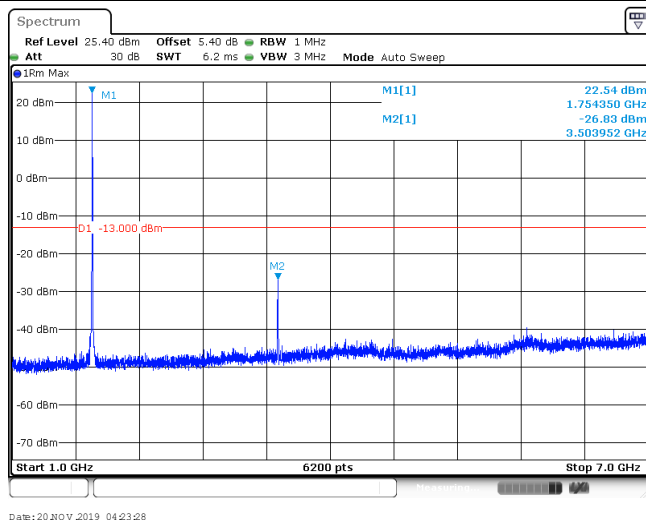


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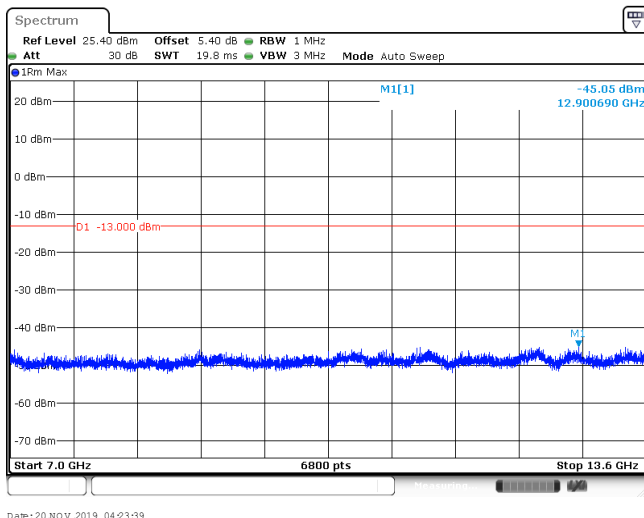


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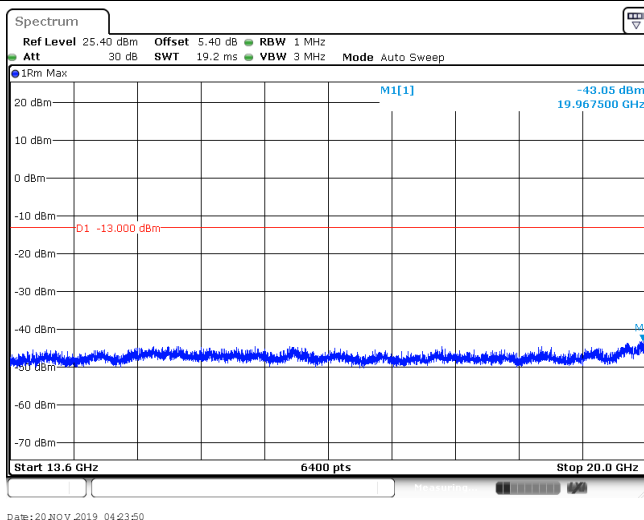


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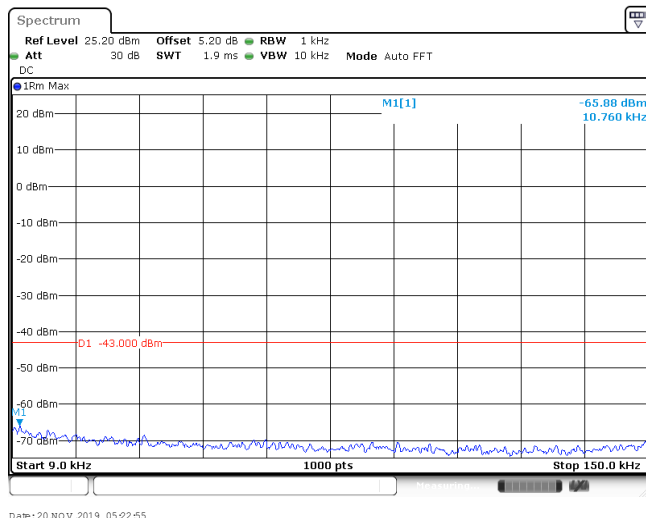
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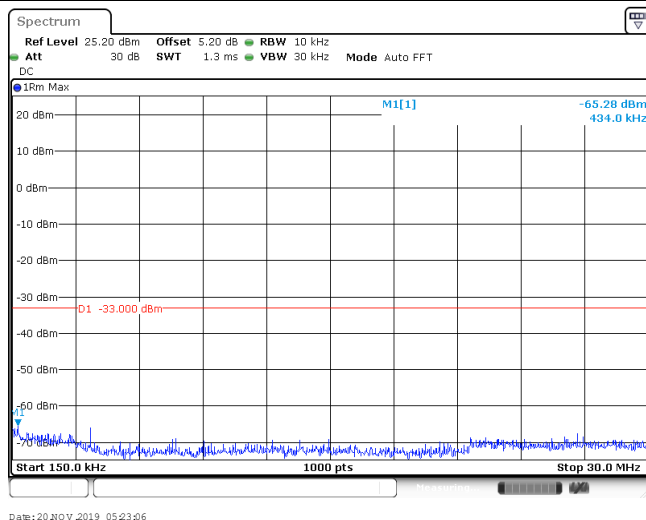
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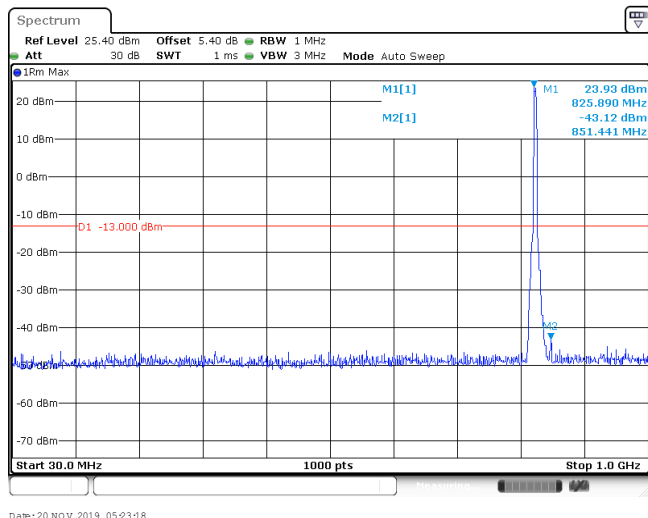


Band V_4132

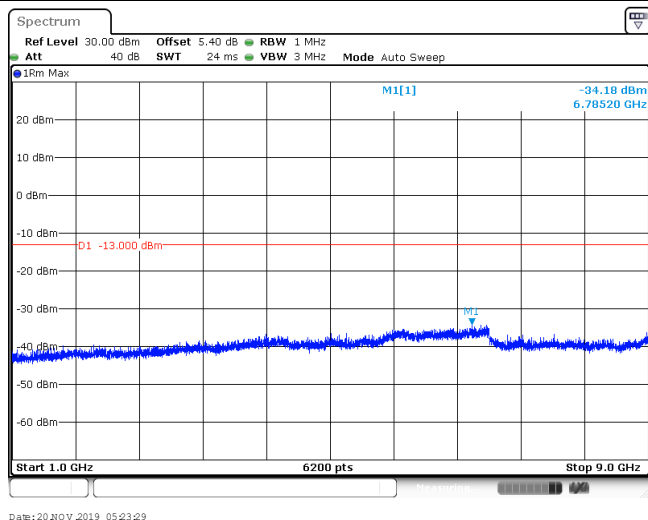


Band V_4132





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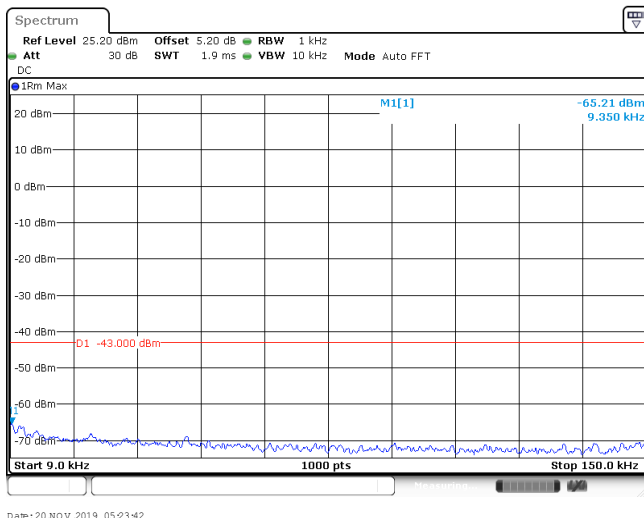


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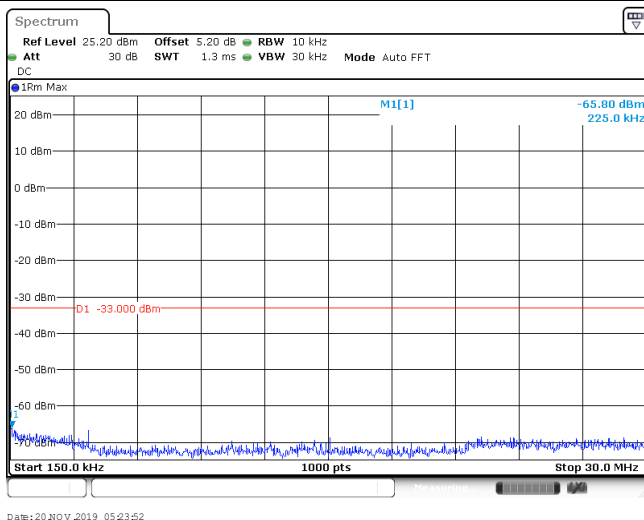


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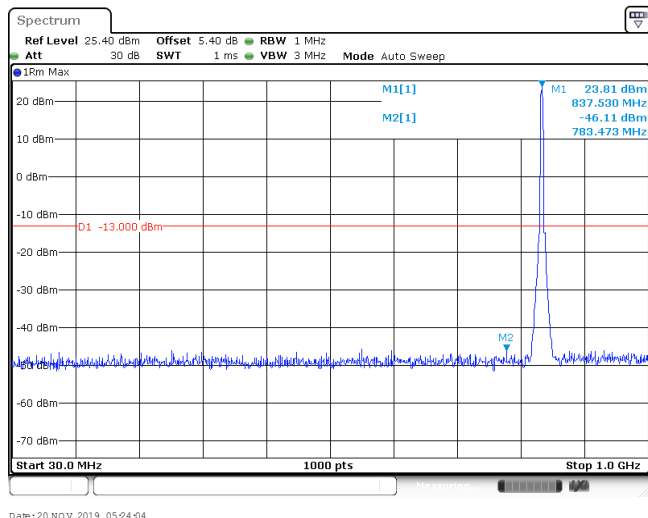
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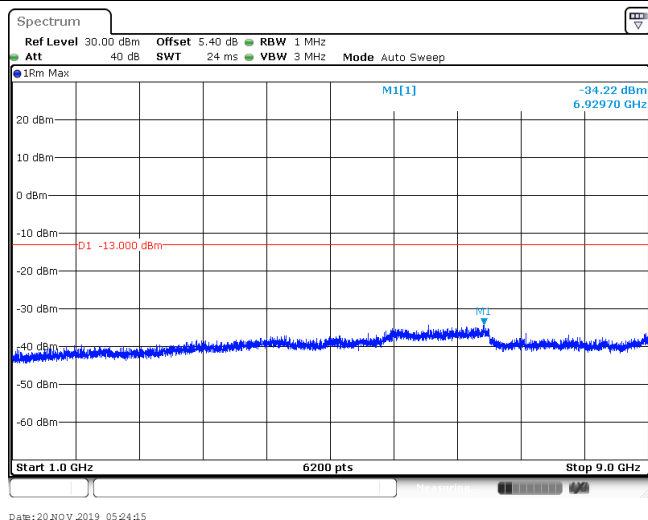
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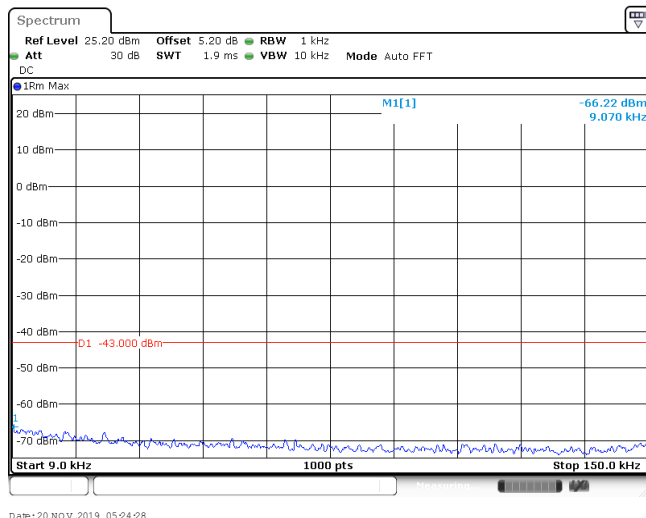


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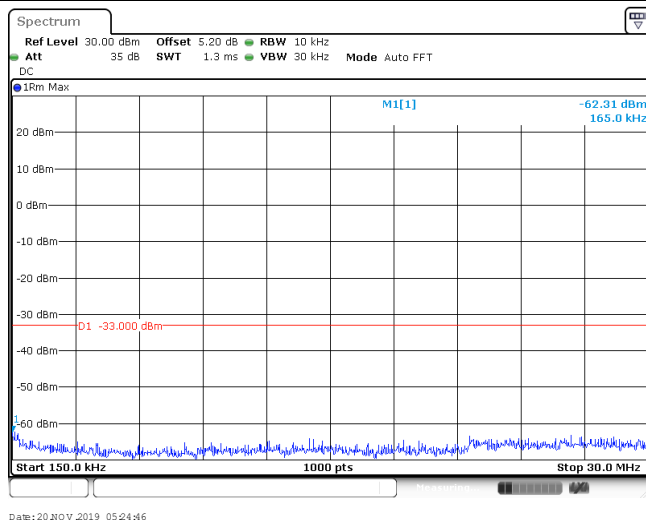


Band V_4182





Band V_4233



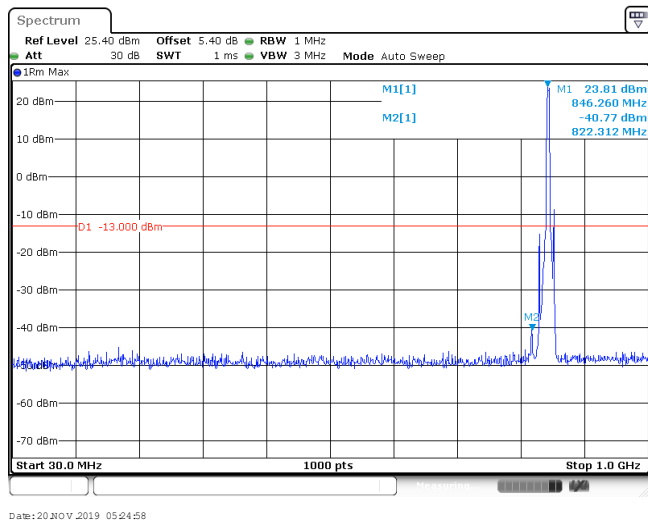
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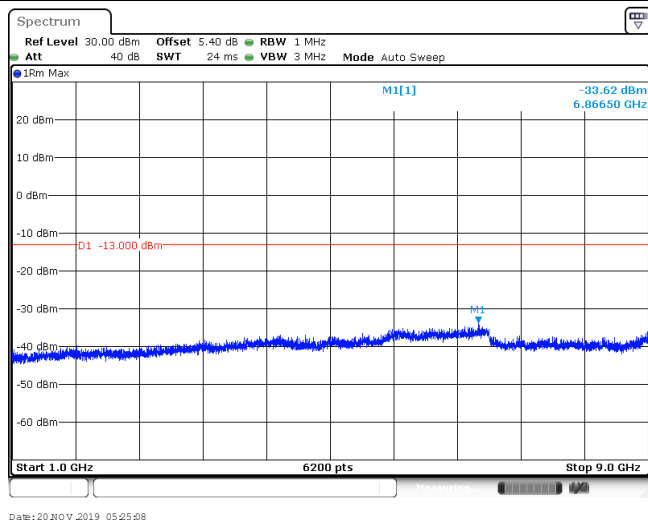
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Band V_4233



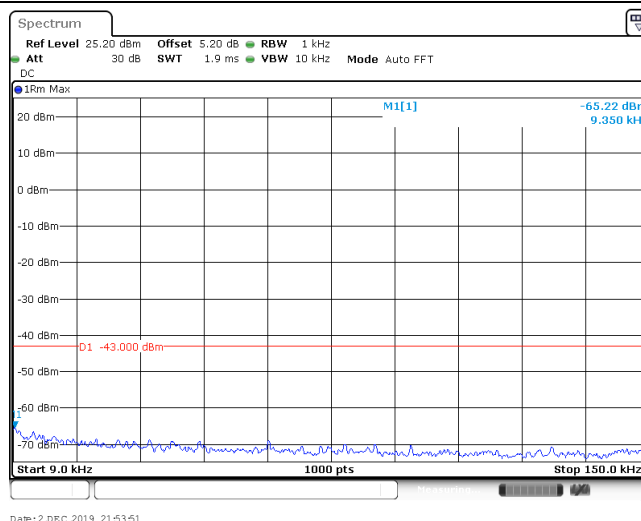
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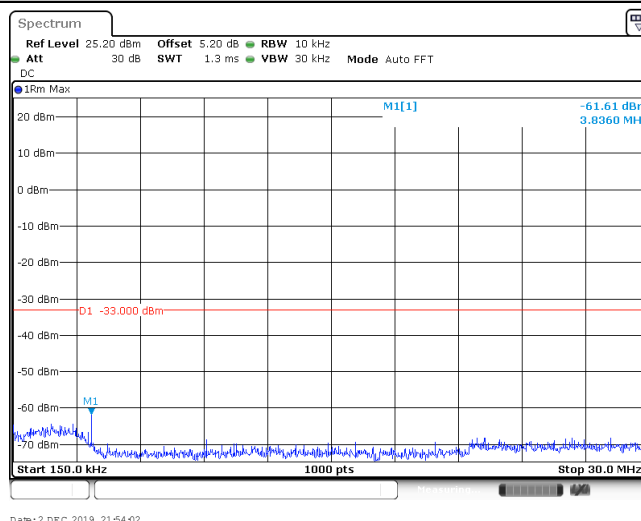
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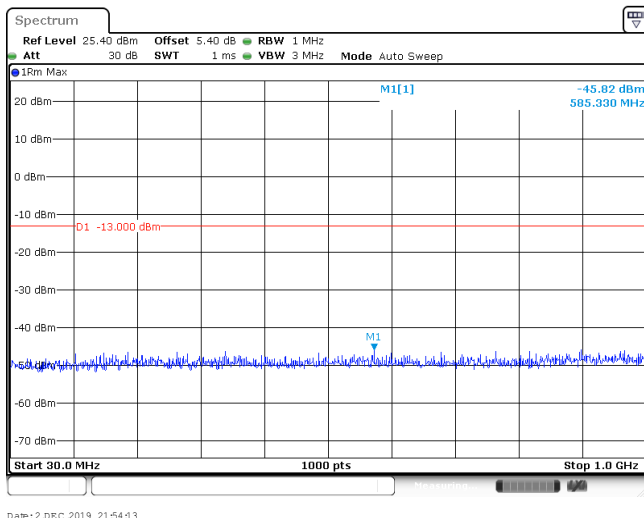


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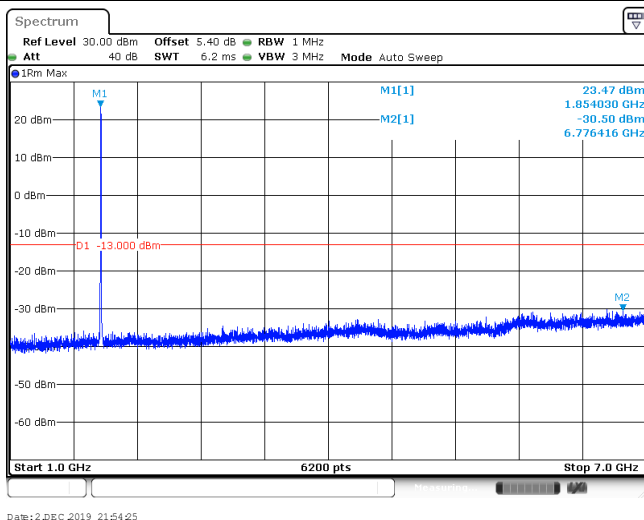


Band II_9262





Band II_9262



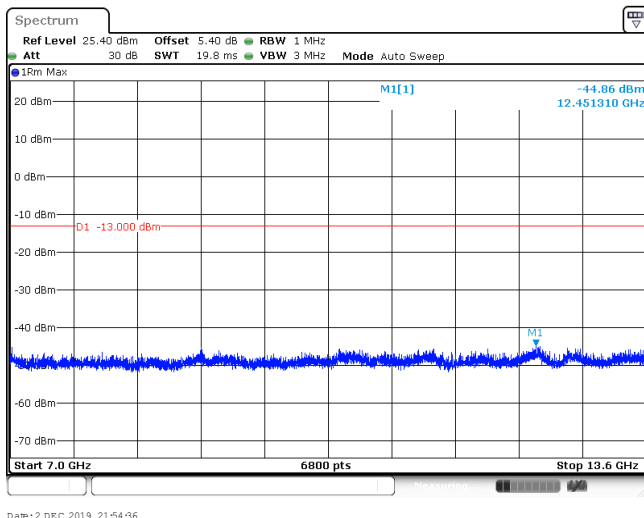
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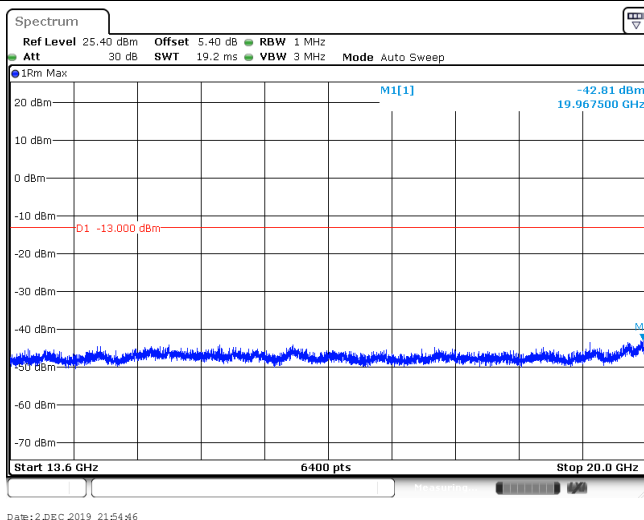
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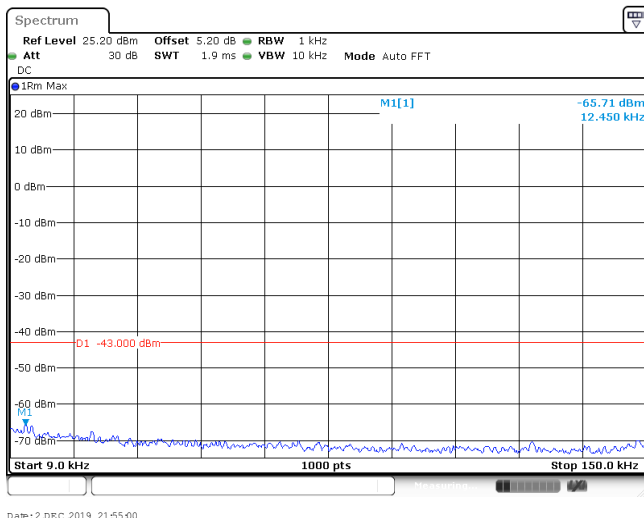
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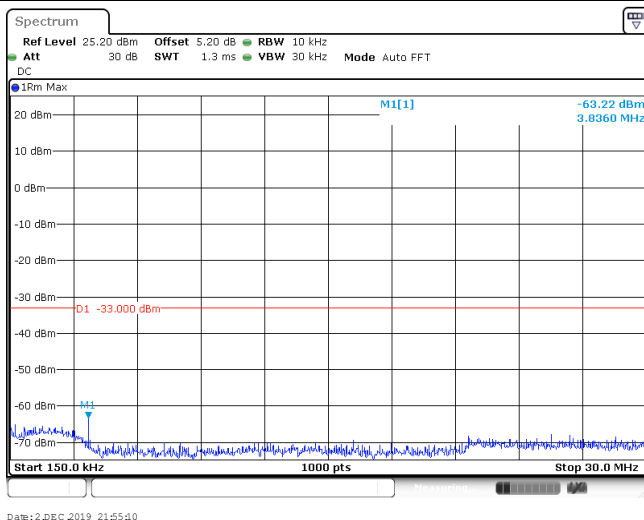
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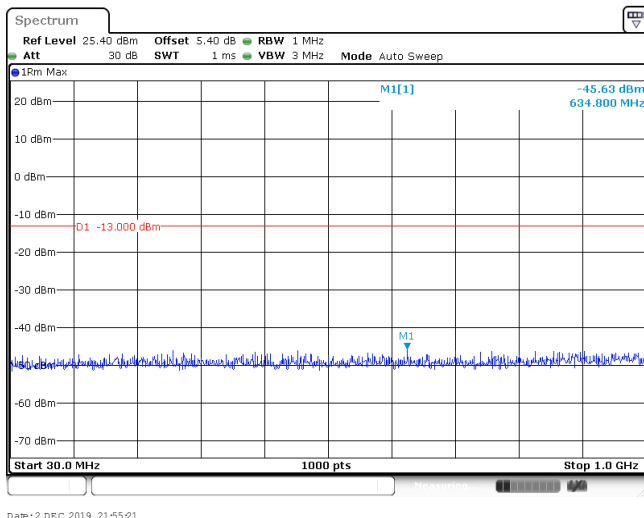


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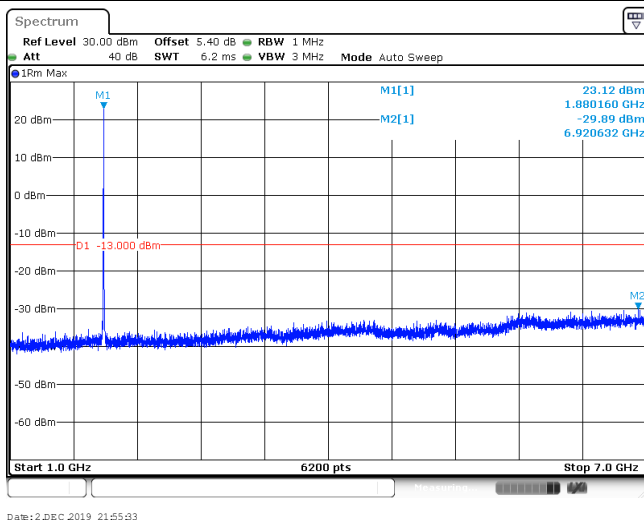


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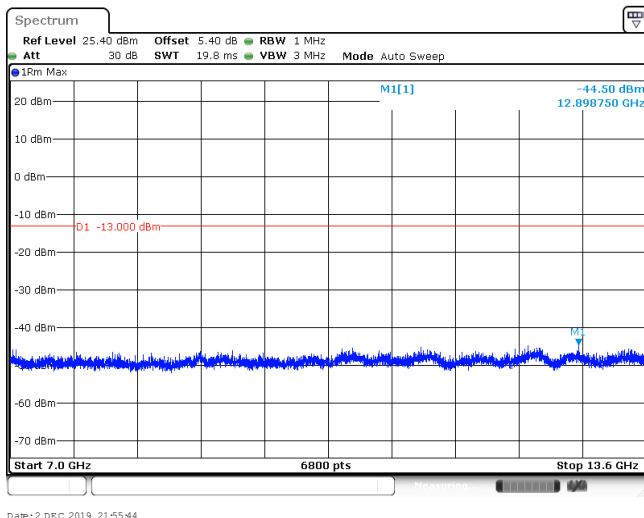
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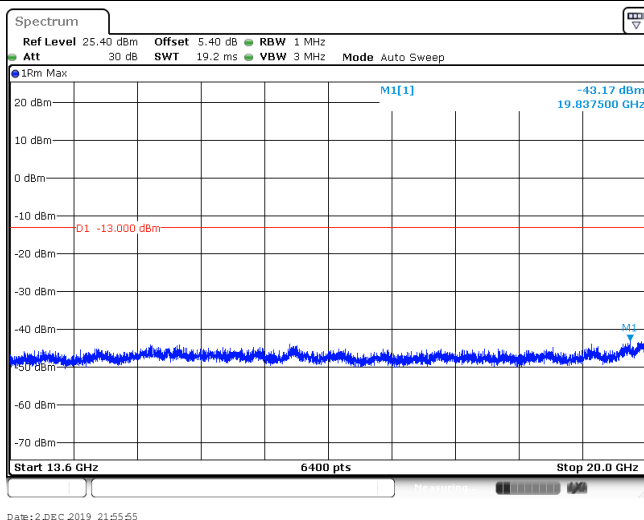
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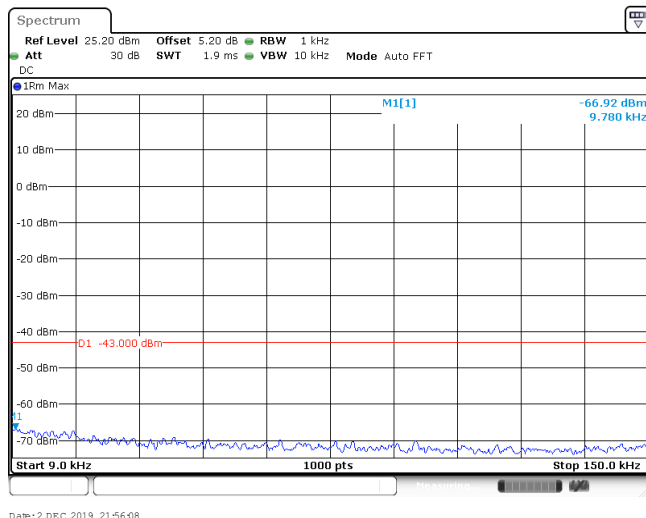


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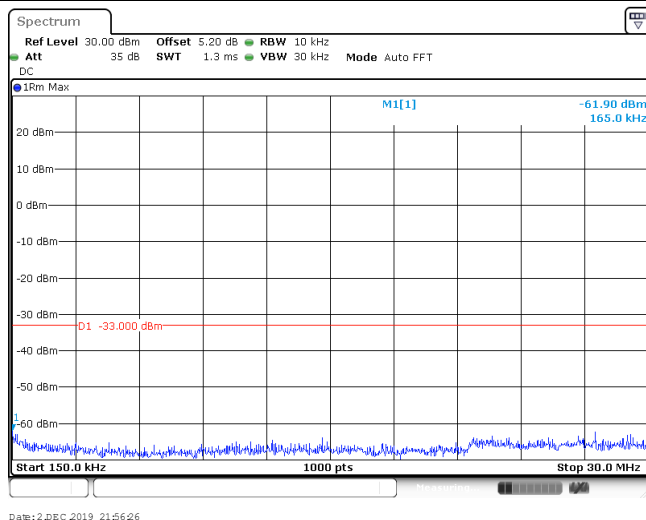
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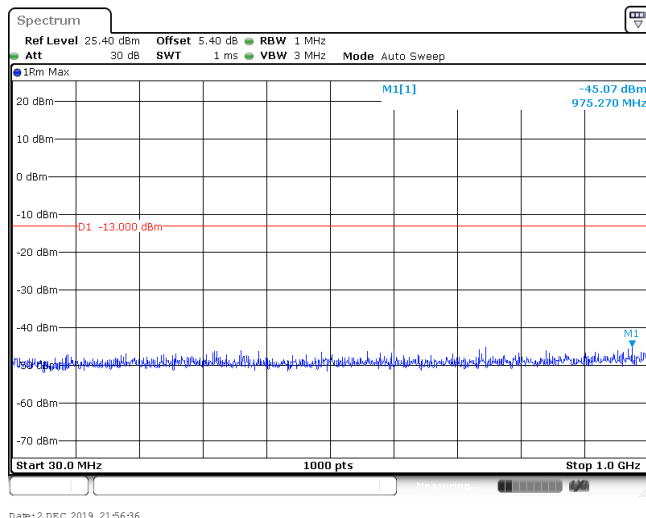


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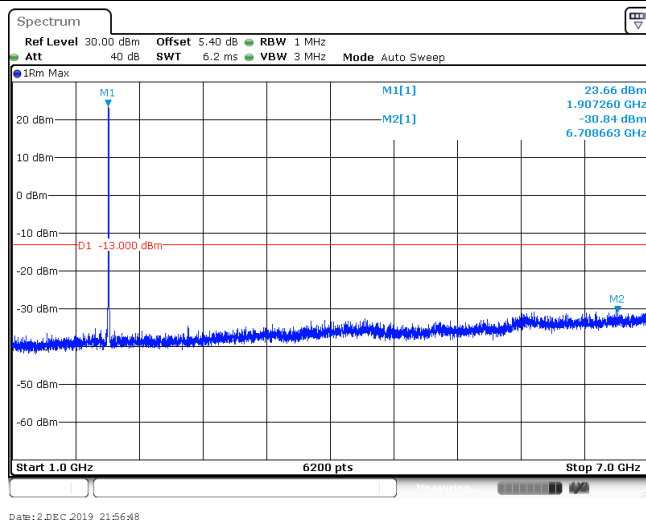


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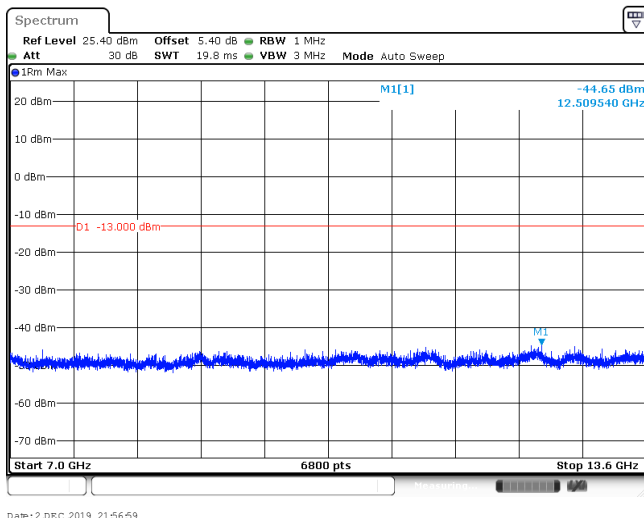
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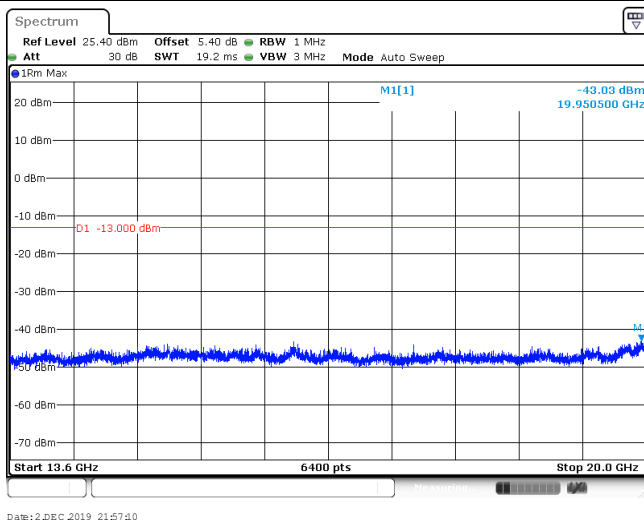
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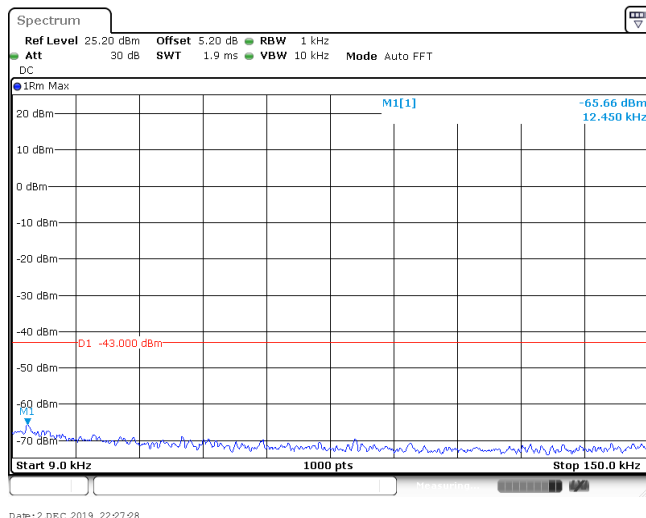


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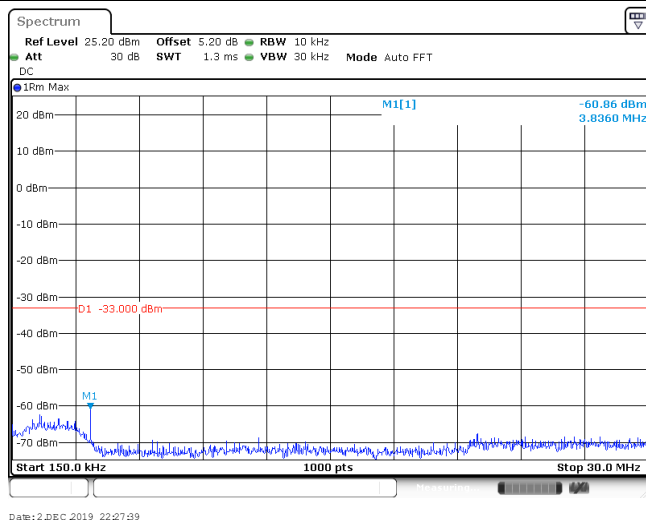


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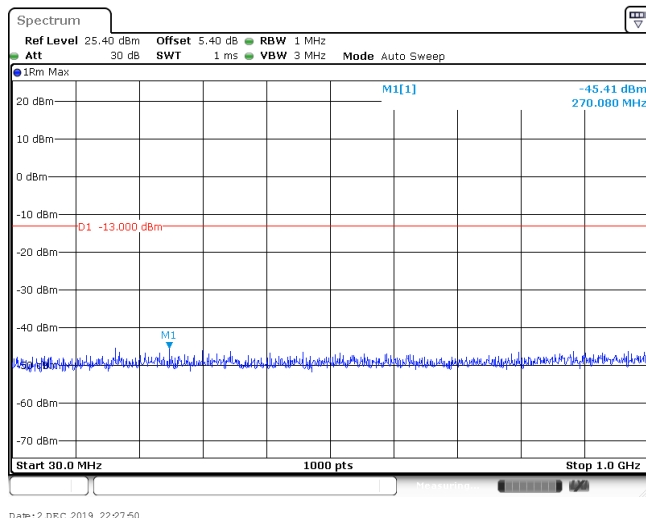


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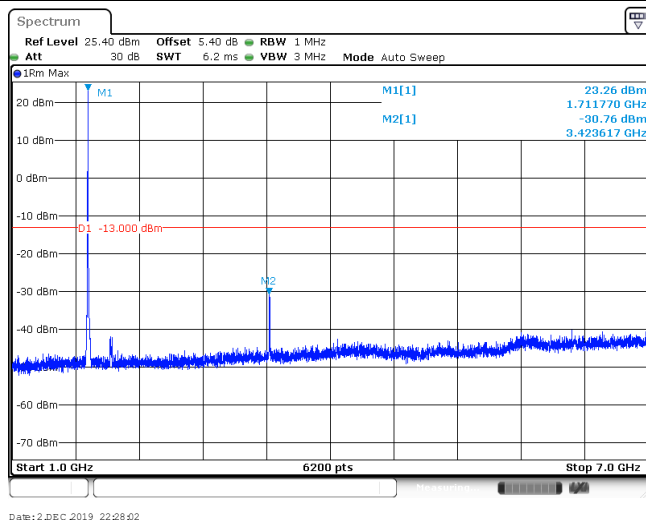


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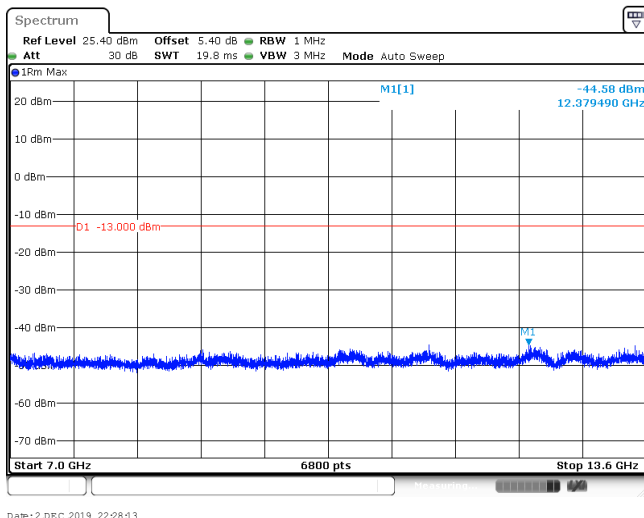


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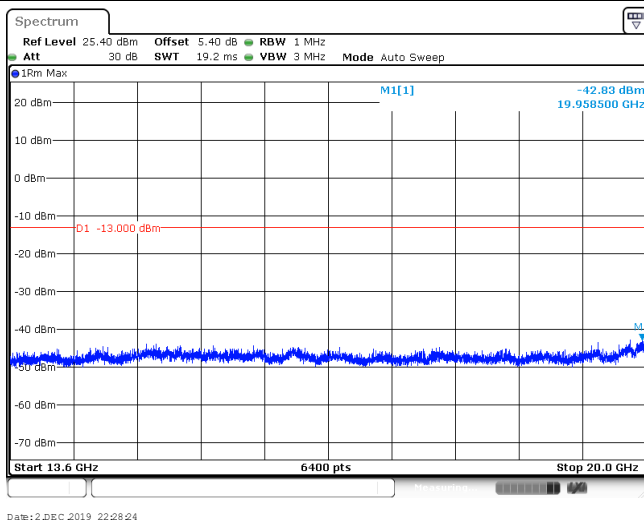


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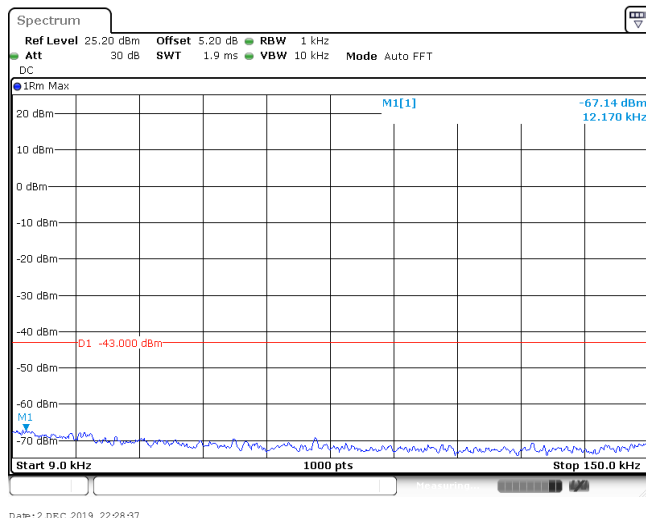


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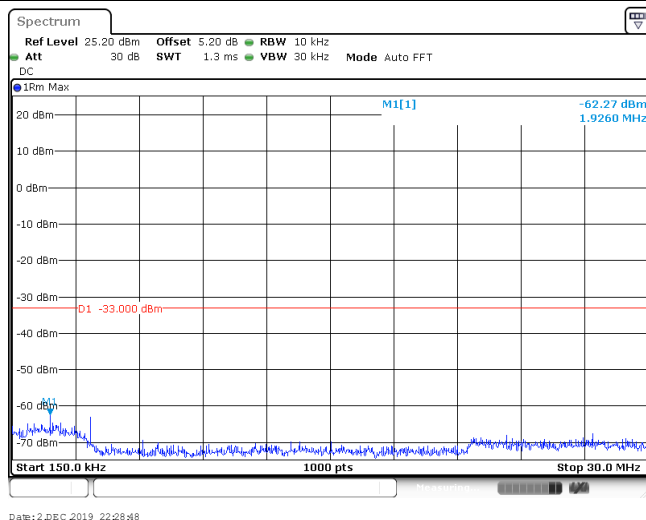
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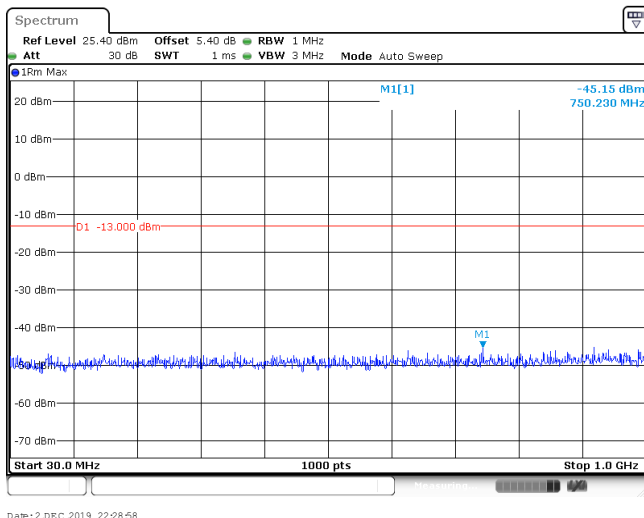


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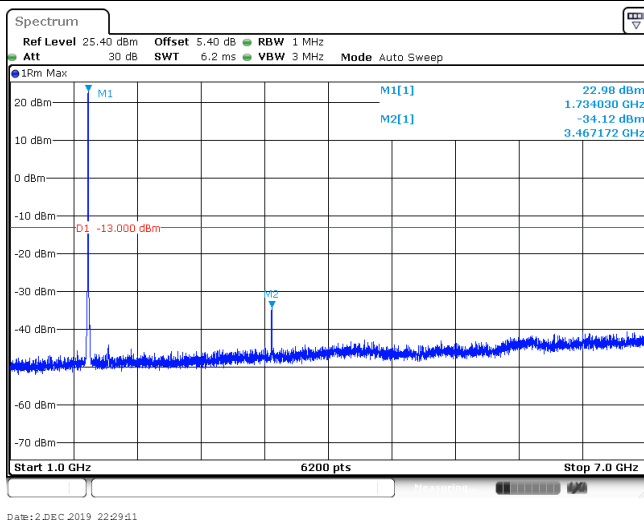


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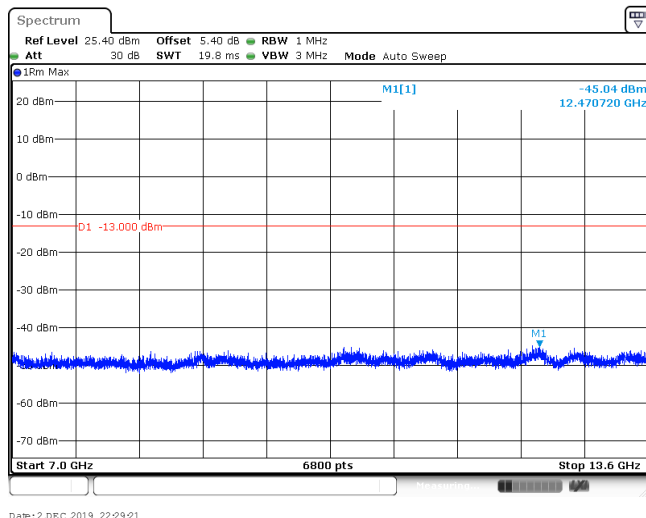
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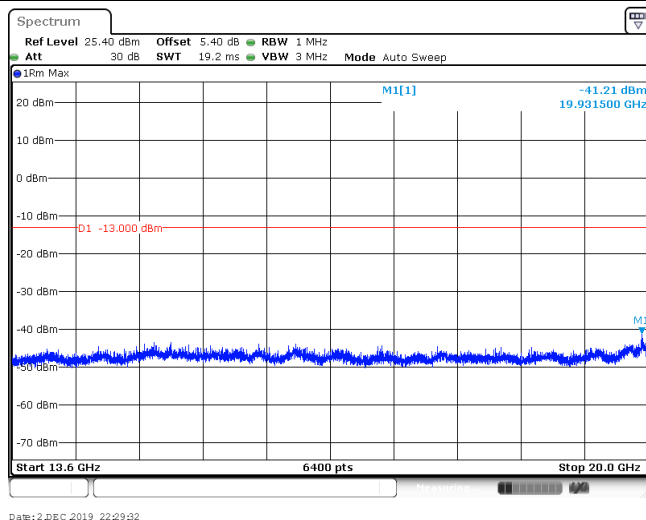
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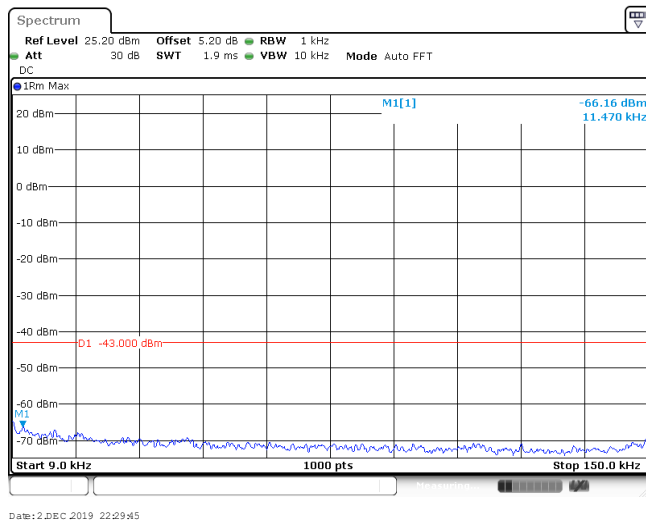


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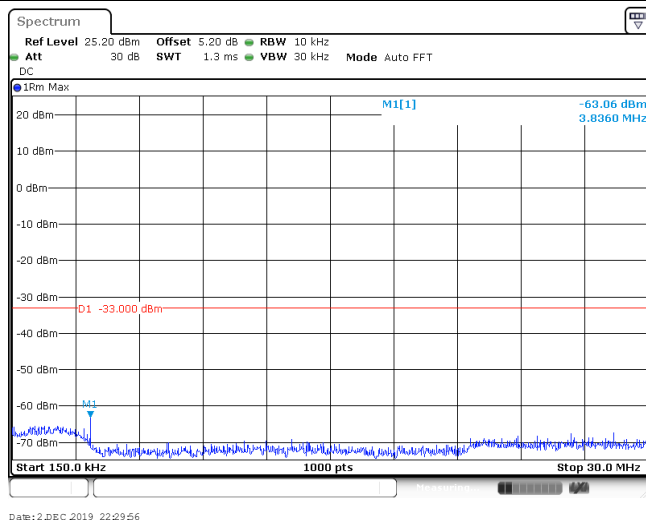


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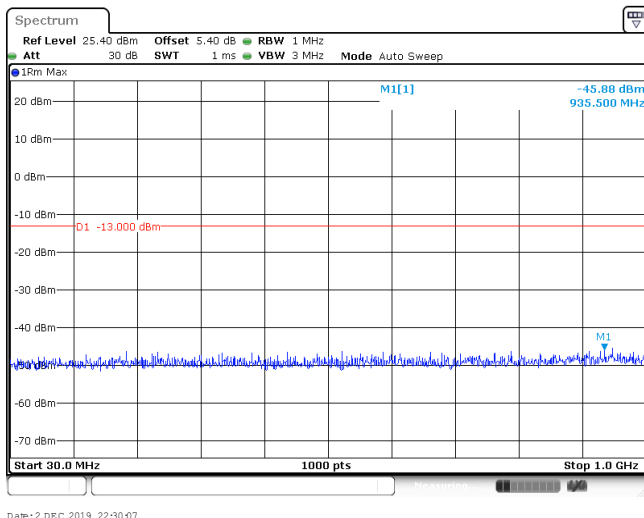


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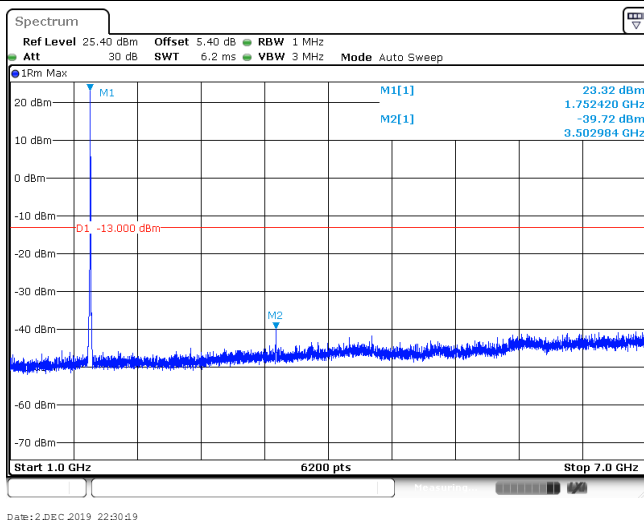


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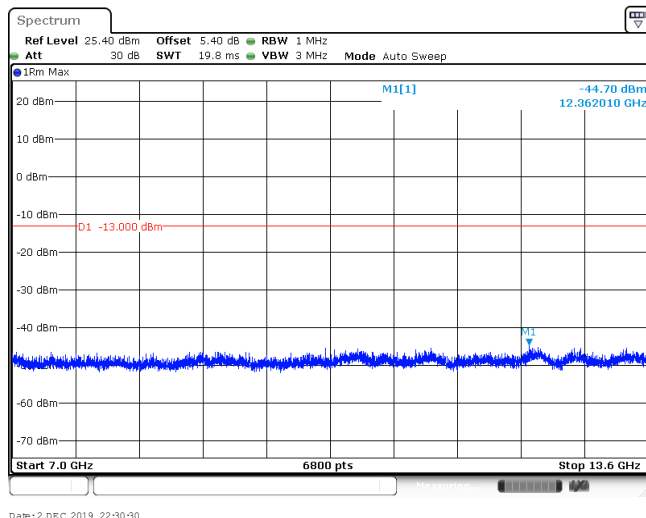
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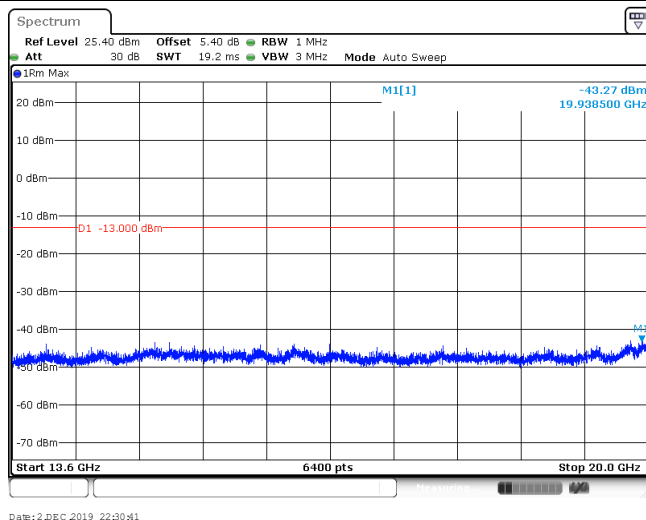
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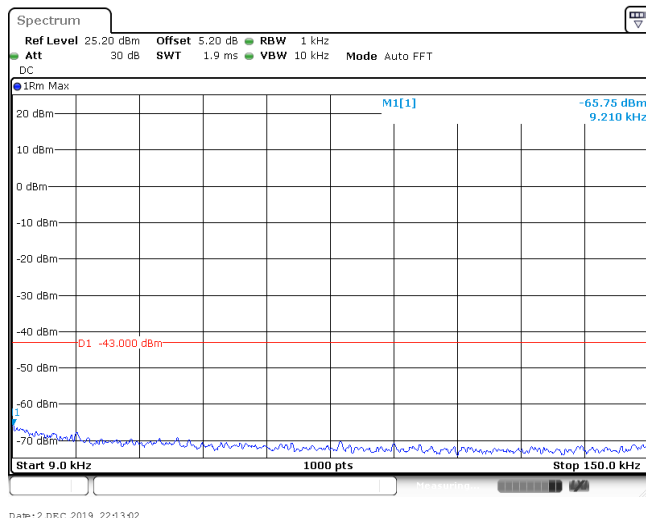


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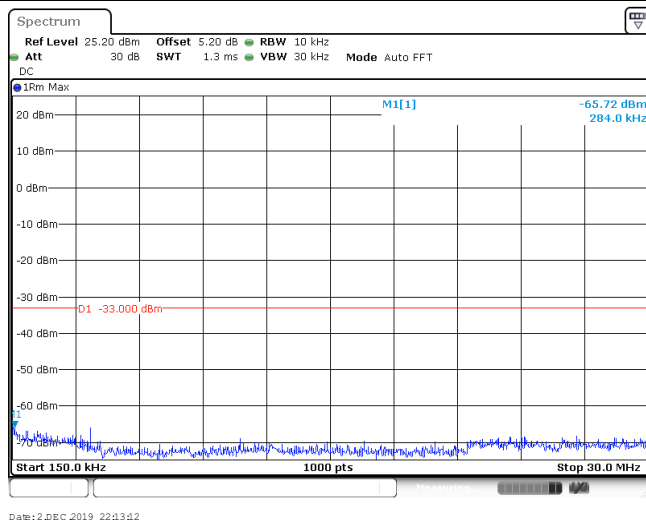


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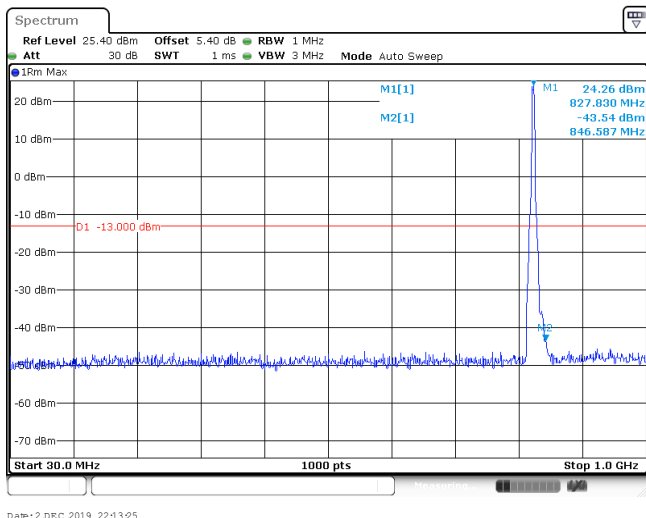


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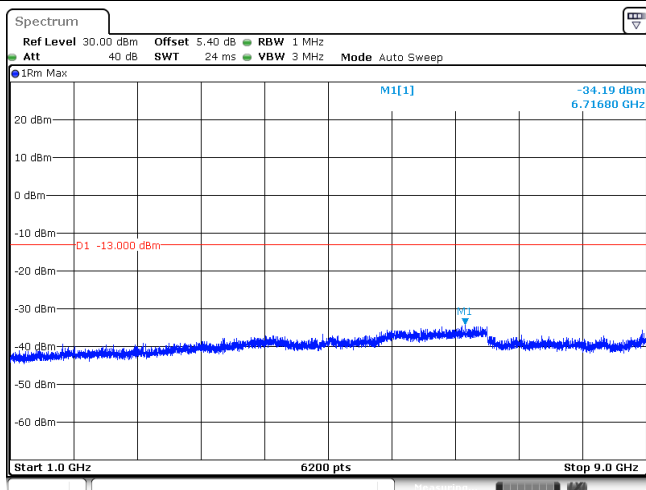
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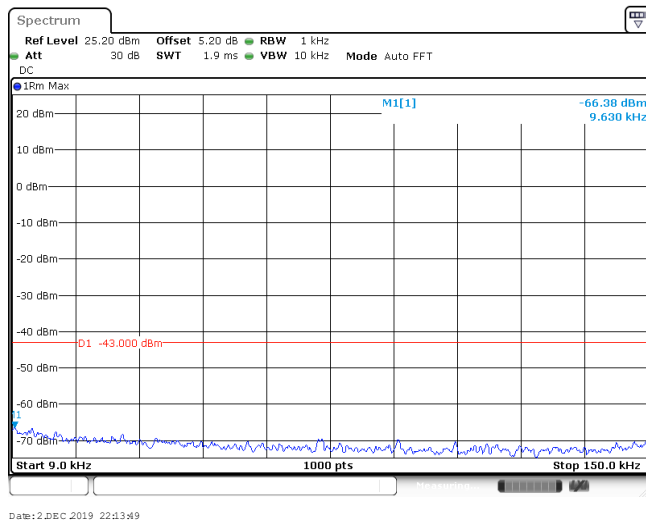
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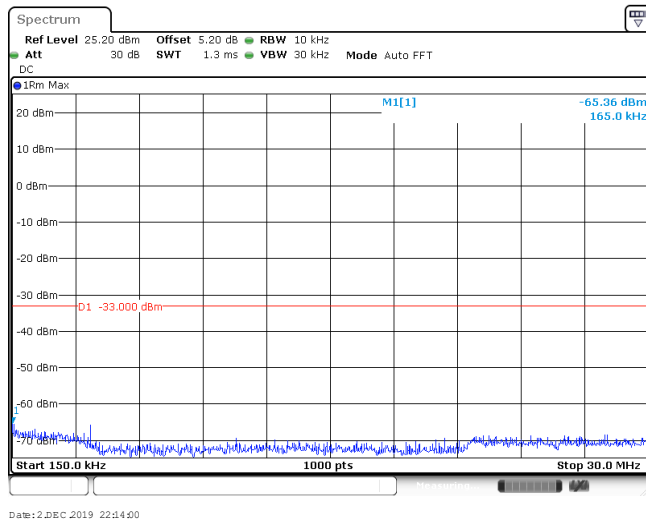


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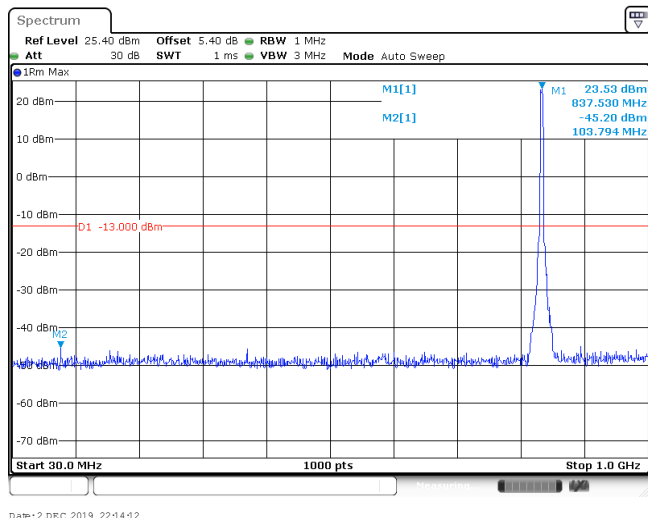


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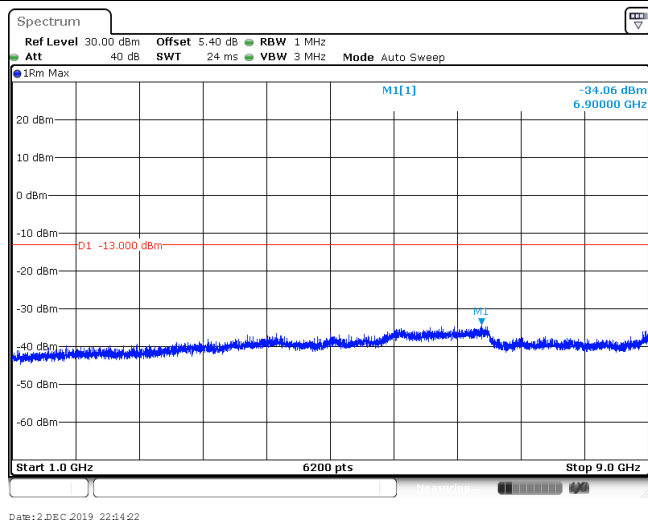


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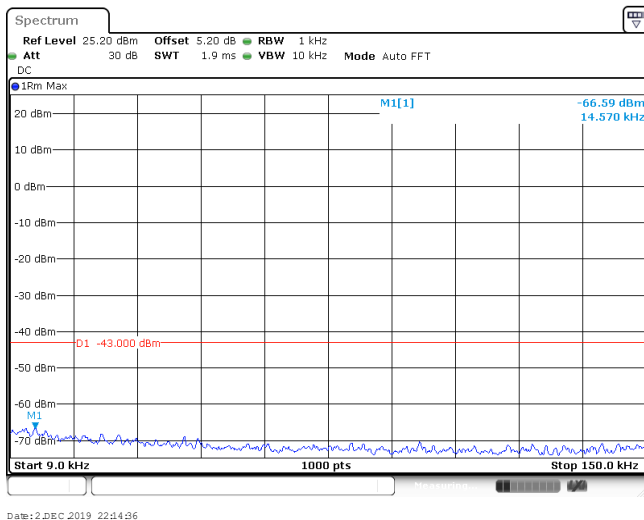


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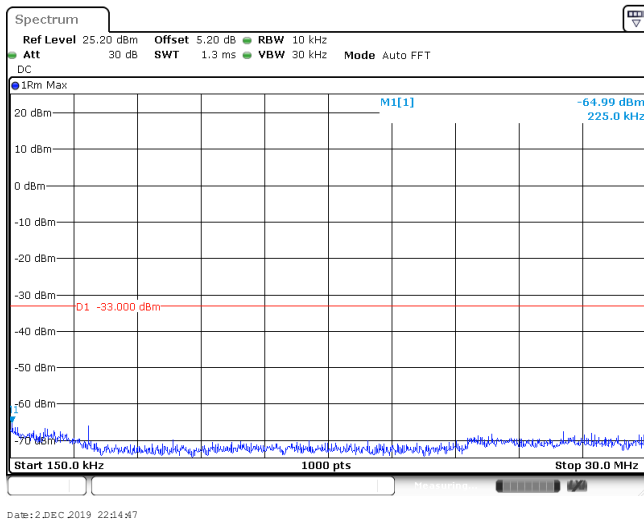


Band V_4182





Band V_4233

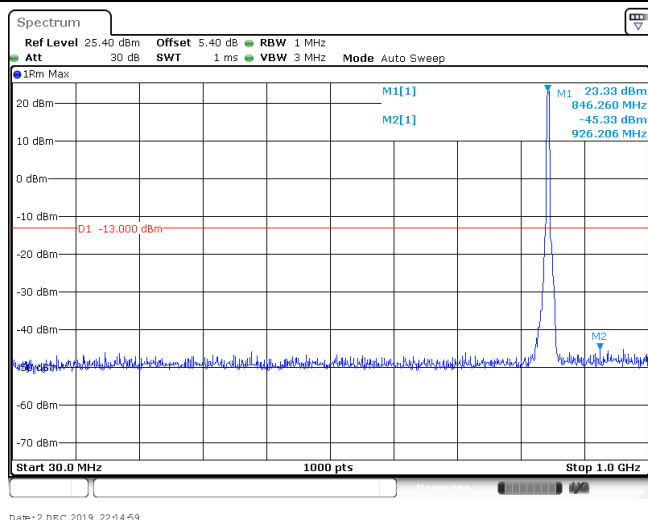


Band V_4233

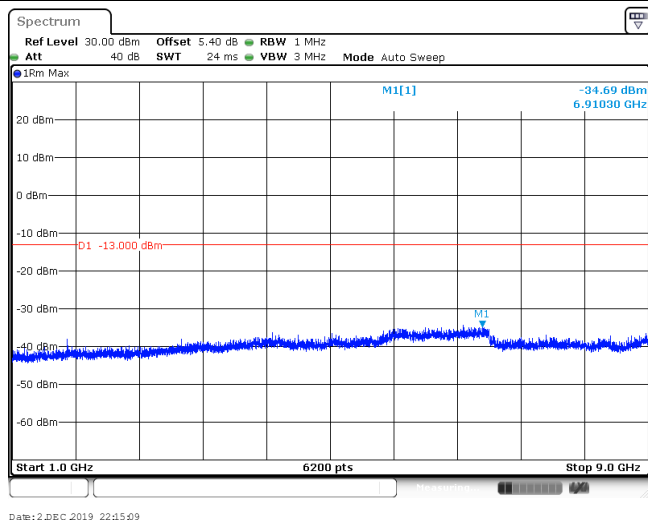


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Band V_4233



Band V_4233



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7. Field Strength of Spurious Radiation

7.1. Test Band = WCDMA Band II

7.1.1. Test Mode = WCDMA/TM1

7.1.1.1. Test Channel = LCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Height [cm]	Angle [°]	Polarization
59.5865	-67.14	-13.00	54.14	177	98	Vertical
71.4696	-64.69	-13.00	51.69	185	224	Vertical
791.8276	-62.25	-13.00	49.25	175	161	Vertical
3706.0235	-40.43	-13.00	27.43	195	35	Vertical
7413.6471	-48.63	-13.00	35.63	184	35	Vertical
17984.9995	-33.52	-13.00	20.52	152	193	Vertical
41.6891	-64.60	-13.00	51.60	187	35	Horizontal
778.4894	-62.39	-13.00	49.39	156	194	Horizontal
2700.7401	-36.04	-13.00	23.04	174	53	Horizontal
3706.0235	-43.00	-13.00	30.00	152	257	Horizontal
9294.2098	-48.46	-13.00	35.46	192	4	Horizontal
16398.4466	-37.69	-13.00	24.69	274	194	Horizontal

7.1.1.2. Test Channel = MCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Height [cm]	Angle [°]	Polarization
111.4356	-65.36	-13.00	52.36	284	353	Vertical
727.3679	-62.63	-13.00	49.63	265	321	Vertical
3761.5254	-40.47	-13.00	27.47	271	4	Vertical
7515.1505	-47.80	-13.00	34.80	248	35	Vertical
9398.2133	-45.26	-13.00	32.26	229	35	Vertical
17995.9999	-33.75	-13.00	20.75	263	225	Vertical
44.0172	-64.68	-13.00	51.68	271	169	Horizontal



622.0206	-63.61	-13.00	50.61	259	133	Horizontal
2700.7401	-35.66	-13.00	22.66	257	36	Horizontal
3761.5254	-41.48	-13.00	28.48	284	236	Horizontal
7523.6508	-51.32	-13.00	38.32	263	236	Horizontal
16384.4461	-37.13	-13.00	24.13	274	201	Horizontal

7.1.1.3. Test Channel = HCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Height [cm]	Angle [°]	Polarization
115.4128	-65.31	-13.00	52.31	241	130	Vertical
3817.0272	-37.89	-13.00	24.89	268	4	Vertical
5719.5907	-48.91	-13.00	35.91	271	67	Vertical
7626.1542	-45.11	-13.00	32.11	259	35	Vertical
9532.7178	-43.66	-13.00	30.66	247	35	Vertical
17996.4999	-33.39	-13.00	20.39	258	225	Vertical
43.8232	-64.63	-13.00	51.63	184	39	Horizontal
768.0129	-55.91	-13.00	42.91	178	293	Horizontal
3817.0272	-40.41	-13.00	27.41	195	261	Horizontal
5719.5907	-48.01	-13.00	35.01	182	325	Horizontal
7626.6542	-50.78	-13.00	37.78	174	356	Horizontal
16393.9465	-37.62	-13.00	24.62	158	325	Horizontal

7.2. Test Band = WCDMA Band IV

7.2.1. Test Mode = WCDMA/TM1

7.2.1.1. Test Channel = LCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Height [cm]	Angle [°]	Polarization
113.9092	-65.05	-13.00	52.05	174	226	Vertical
625.1733	-64.03	-13.00	51.03	165	35	Vertical
2111.8224	-36.65	-13.00	23.65	184	131	Vertical
3422.5141	-36.69	-13.00	23.69	165	226	Vertical



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6845.6282	-51.09	-13.00	38.09	194	99	Vertical
17971.9991	-33.62	-13.00	20.62	152	226	Vertical
46.0058	-64.52	-13.00	51.52	271	257	Horizontal
768.0129	-58.76	-13.00	45.76	256	321	Horizontal
2701.1402	-35.95	-13.00	22.95	147	291	Horizontal
3423.5141	-29.95	-13.00	16.95	195	257	Horizontal
6849.6283	-50.47	-13.00	37.47	174	226	Horizontal
16401.4467	-37.78	-13.00	24.78	158	226	Horizontal

7.2.1.2. Test Channel = MCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Height [cm]	Angle [°]	Polarization
111.6781	-65.27	-13.00	52.27	187	129	Vertical
791.4396	-62.06	-13.00	49.06	174	4	Vertical
2131.8264	-36.27	-13.00	23.27	165	232	Vertical
3467.0156	-37.64	-13.00	24.64	195	192	Vertical
6933.1311	-50.09	-13.00	37.09	182	192	Vertical
17997.4999	-33.48	-13.00	20.48	162	224	Vertical
45.7633	-64.69	-13.00	51.69	174	68	Horizontal
768.0129	-62.26	-13.00	49.26	195	198	Horizontal
2701.5403	-35.74	-13.00	22.74	184	337	Horizontal
3467.0156	-31.91	-13.00	18.91	175	267	Horizontal
6934.6312	-49.82	-13.00	36.82	165	334	Horizontal
16395.4465	-37.69	-13.00	24.69	188	134	Horizontal

7.2.1.3. Test Channel = HCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Height [cm]	Angle [°]	Polarization
117.1104	-64.92	-13.00	51.92	184	130	Vertical
733.0912	-63.32	-13.00	50.32	175	161	Vertical
2151.8304	-36.85	-13.00	23.85	184	201	Vertical
3503.0168	-37.92	-13.00	24.92	162	224	Vertical



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7014.6338	-50.35	-13.00	37.35	274	193	Vertical
17989.9997	-33.16	-13.00	20.16	195	193	Vertical
41.3011	-64.11	-13.00	51.11	271	67	Horizontal
232.9826	-68.76	-13.00	55.76	254	132	Horizontal
751.7161	-62.40	-13.00	49.40	248	230	Horizontal
2701.5403	-35.92	-13.00	22.92	275	249	Horizontal
3507.0169	-30.75	-13.00	17.75	269	262	Horizontal
16399.9467	-37.41	-13.00	24.41	221	262	Horizontal

7.3. Test Band = WCDMA Band V

7.3.1. Test Mode = WCDMA/TM1

7.3.1.1. Test Channel = LCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Height [cm]	Angle [°]	Polarization
111.2901	-63.80	-13.00	50.80	184	250	Vertical
1650.9302	-56.84	-13.00	43.84	175	168	Vertical
3302.5101	-53.51	-13.00	40.51	162	43	Vertical
4127.0376	-47.93	-13.00	34.93	187	360	Vertical
4953.0651	-46.96	-13.00	33.96	199	183	Vertical
17907.9969	-33.06	-13.00	20.06	215	360	Vertical
40.3795	-63.83	-13.00	50.83	271	118	Horizontal
1651.3303	-52.61	-13.00	39.61	248	288	Horizontal
3301.5101	-51.60	-13.00	38.60	263	252	Horizontal
4128.0376	-48.13	-13.00	35.13	287	252	Horizontal
4953.0651	-47.37	-13.00	34.37	247	348	Horizontal
16399.9467	-36.69	-13.00	23.69	259	348	Horizontal

7.3.1.2. Test Channel = MCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Height [cm]	Angle [°]	Polarization
116.8678	-64.27	-13.00	51.27	271	260	Vertical



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1674.1348	-56.40	-13.00	43.40	265	158	Vertical
3349.5117	-52.45	-13.00	39.45	248	360	Vertical
4187.0396	-47.66	-13.00	34.66	269	4	Vertical
5024.5675	-46.00	-13.00	33.00	247	192	Vertical
17987.4996	-32.92	-13.00	19.92	258	192	Vertical
43.2412	-64.71	-13.00	51.71	241	178	Horizontal
238.2209	-68.37	-13.00	55.37	285	211	Horizontal
1674.5349	-52.92	-13.00	39.92	235	291	Horizontal
3341.5114	-52.21	-13.00	39.21	263	252	Horizontal
4186.5396	-46.23	-13.00	33.23	247	252	Horizontal
16397.4466	-37.17	-13.00	24.17	259	322	Horizontal

7.3.1.3. Test Channel = HCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Height [cm]	Angle [°]	Polarization
107.5554	-64.78	-13.00	51.78	271	356	Vertical
1694.9390	-56.29	-13.00	43.29	258	326	Vertical
3390.5130	-54.47	-13.00	41.47	265	5	Vertical
4227.5409	-49.07	-13.00	36.07	274	5	Vertical
5074.0691	-46.18	-13.00	33.18	258	39	Vertical
17993.4998	-33.28	-13.00	20.28	226	319	Vertical
40.1855	-63.44	-13.00	50.44	174	76	Horizontal
1691.7383	-55.39	-13.00	42.39	158	18	Horizontal
3382.5128	-53.74	-13.00	40.74	162	253	Horizontal
4228.0409	-47.29	-13.00	34.29	188	253	Horizontal
5073.5691	-47.69	-13.00	34.69	178	221	Horizontal
16394.9465	-36.61	-13.00	23.61	195	358	Horizontal

Remark:

- 1 According to 971168 D01 Power Meas License Digital Systems, The amplitudes of unwanted emissions that are attenuated more than 20 dB below the applicable limit are not required to be reported.
- 2 The disturbance below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the worst case data had been displayed.



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8. Frequency Stability

8.1. Frequency Vs Voltage

Band	Modulation	Channel	Voltage (Vdc)	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band II	QPSK	9262	VL	TN	-15.61	-0.008425	±2.5	PASS
Band II	QPSK	9262	VN	TN	-11.12	-0.006000	±2.5	PASS
Band II	QPSK	9262	VH	TN	-12.33	-0.006657	±2.5	PASS
Band II	QPSK	9400	VL	TN	-9.93	-0.005285	±2.5	PASS
Band II	QPSK	9400	VN	TN	-16.52	-0.008789	±2.5	PASS
Band II	QPSK	9400	VH	TN	-10.54	-0.005608	±2.5	PASS
Band II	QPSK	9538	VL	TN	-16.08	-0.008429	±2.5	PASS
Band II	QPSK	9538	VN	TN	-7.76	-0.004068	±2.5	PASS
Band II	QPSK	9538	VH	TN	-13.38	-0.007015	±2.5	PASS
Band II	16QAM	9262	VL	TN	-6.78	-0.003661	±2.5	PASS
Band II	16QAM	9262	VN	TN	-10.49	-0.005665	±2.5	PASS
Band II	16QAM	9262	VH	TN	1.13	0.000612	±2.5	PASS
Band II	16QAM	9400	VL	TN	-3.11	-0.001652	±2.5	PASS
Band II	16QAM	9400	VN	TN	-10.46	-0.005566	±2.5	PASS
Band II	16QAM	9400	VH	TN	-1.86	-0.000991	±2.5	PASS
Band II	16QAM	9538	VL	TN	2.19	0.001149	±2.5	PASS
Band II	16QAM	9538	VN	TN	14.04	0.007362	±2.5	PASS
Band II	16QAM	9538	VH	TN	-9.42	-0.004940	±2.5	PASS
Band IV	QPSK	1312	VL	TN	-10.66	-0.006224	±2.5	PASS
Band IV	QPSK	1312	VN	TN	-11.84	-0.006917	±2.5	PASS
Band IV	QPSK	1312	VH	TN	-15.03	-0.008780	±2.5	PASS
Band IV	QPSK	1413	VL	TN	-9.05	-0.005222	±2.5	PASS
Band IV	QPSK	1413	VN	TN	-6.99	-0.004033	±2.5	PASS
Band IV	QPSK	1413	VH	TN	-11.04	-0.006370	±2.5	PASS
Band IV	QPSK	1513	VL	TN	-4.36	-0.002489	±2.5	PASS
Band IV	QPSK	1513	VN	TN	-7.73	-0.004412	±2.5	PASS
Band IV	QPSK	1513	VH	TN	-4.23	-0.002412	±2.5	PASS
Band IV	16QAM	1312	VL	TN	-6.14	-0.003585	±2.5	PASS
Band IV	16QAM	1312	VN	TN	-13.77	-0.008041	±2.5	PASS
Band IV	16QAM	1312	VH	TN	2.27	0.001324	±2.5	PASS
Band IV	16QAM	1413	VL	TN	2.03	0.001174	±2.5	PASS
Band IV	16QAM	1413	VN	TN	2.64	0.001525	±2.5	PASS
Band IV	16QAM	1413	VH	TN	-3.72	-0.002146	±2.5	PASS
Band IV	16QAM	1513	VL	TN	-11.97	-0.006830	±2.5	PASS
Band IV	16QAM	1513	VN	TN	1.12	0.000641	±2.5	PASS
Band IV	16QAM	1513	VH	TN	-12.06	-0.006882	±2.5	PASS
Band V	QPSK	4132	VL	TN	-10.16	-0.012290	±2.5	PASS
Band V	QPSK	4132	VN	TN	-7.32	-0.008854	±2.5	PASS
Band V	QPSK	4132	VH	TN	-8.38	-0.010135	±2.5	PASS



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Band V	QPSK	4182	VL	TN	-10.74	-0.012845	± 2.5	PASS
Band V	QPSK	4182	VN	TN	-10.21	-0.012203	± 2.5	PASS
Band V	QPSK	4182	VH	TN	-8.08	-0.009655	± 2.5	PASS
Band V	QPSK	4233	VL	TN	-13.25	-0.015647	± 2.5	PASS
Band V	QPSK	4233	VN	TN	-11.75	-0.013881	± 2.5	PASS
Band V	QPSK	4233	VH	TN	-4.22	-0.004985	± 2.5	PASS
Band V	16QAM	4132	VL	TN	3.31	0.004009	± 2.5	PASS
Band V	16QAM	4132	VN	TN	-13.34	-0.016145	± 2.5	PASS
Band V	16QAM	4132	VH	TN	2.51	0.003035	± 2.5	PASS
Band V	16QAM	4182	VL	TN	0.05	0.000061	± 2.5	PASS
Band V	16QAM	4182	VN	TN	-9.44	-0.011288	± 2.5	PASS
Band V	16QAM	4182	VH	TN	-12.27	-0.014671	± 2.5	PASS
Band V	16QAM	4233	VL	TN	4.27	0.005042	± 2.5	PASS
Band V	16QAM	4233	VN	TN	-3.27	-0.003862	± 2.5	PASS
Band V	16QAM	4233	VH	TN	-12.98	-0.015332	± 2.5	PASS

8.2. Frequency Vs Temperature

Band	Modulation	Channel	Voltage (Vdc)	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band II	QPSK	9262	VN	-30	-13.00	-0.007020	± 2.5	PASS
Band II	QPSK	9262	VN	-20	-11.15	-0.006020	± 2.5	PASS
Band II	QPSK	9262	VN	-10	-13.85	-0.007475	± 2.5	PASS
Band II	QPSK	9262	VN	0	-12.30	-0.006641	± 2.5	PASS
Band II	QPSK	9262	VN	10	-9.78	-0.005278	± 2.5	PASS
Band II	QPSK	9262	VN	20	-15.00	-0.008097	± 2.5	PASS
Band II	QPSK	9262	VN	30	-8.63	-0.004657	± 2.5	PASS
Band II	QPSK	9262	VN	40	-11.20	-0.006047	± 2.5	PASS
Band II	QPSK	9262	VN	50	-7.36	-0.003973	± 2.5	PASS
Band II	QPSK	9400	VN	-30	-9.33	-0.004961	± 2.5	PASS
Band II	QPSK	9400	VN	-20	-16.59	-0.008827	± 2.5	PASS
Band II	QPSK	9400	VN	-10	-16.49	-0.008769	± 2.5	PASS
Band II	QPSK	9400	VN	0	-11.23	-0.005973	± 2.5	PASS
Band II	QPSK	9400	VN	10	-11.79	-0.006274	± 2.5	PASS
Band II	QPSK	9400	VN	20	-15.21	-0.008092	± 2.5	PASS
Band II	QPSK	9400	VN	30	-15.16	-0.008062	± 2.5	PASS
Band II	QPSK	9400	VN	40	-9.67	-0.005144	± 2.5	PASS
Band II	QPSK	9400	VN	50	-9.71	-0.005167	± 2.5	PASS
Band II	QPSK	9538	VN	-30	-8.58	-0.004496	± 2.5	PASS
Band II	QPSK	9538	VN	-20	-17.27	-0.009055	± 2.5	PASS
Band II	QPSK	9538	VN	-10	-10.99	-0.005759	± 2.5	PASS
Band II	QPSK	9538	VN	0	-11.69	-0.006130	± 2.5	PASS
Band II	QPSK	9538	VN	10	-12.35	-0.006475	± 2.5	PASS
Band II	QPSK	9538	VN	20	-9.82	-0.005148	± 2.5	PASS
Band II	QPSK	9538	VN	30	-13.90	-0.007285	± 2.5	PASS
Band II	QPSK	9538	VN	40	-14.64	-0.007675	± 2.5	PASS



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Band II	QPSK	9538	VN	50	-5.41	-0.002838	± 2.5	PASS
Band II	16QAM	9262	VN	-30	12.84	0.006931	± 2.5	PASS
Band II	16QAM	9262	VN	-20	5.61	0.003026	± 2.5	PASS
Band II	16QAM	9262	VN	-10	-0.24	-0.000131	± 2.5	PASS
Band II	16QAM	9262	VN	0	-10.31	-0.005566	± 2.5	PASS
Band II	16QAM	9262	VN	10	-10.15	-0.005478	± 2.5	PASS
Band II	16QAM	9262	VN	20	13.86	0.007481	± 2.5	PASS
Band II	16QAM	9262	VN	30	-12.39	-0.006687	± 2.5	PASS
Band II	16QAM	9262	VN	40	4.56	0.002459	± 2.5	PASS
Band II	16QAM	9262	VN	50	-1.28	-0.000693	± 2.5	PASS
Band II	16QAM	9400	VN	-30	2.37	0.001261	± 2.5	PASS
Band II	16QAM	9400	VN	-20	1.18	0.000629	± 2.5	PASS
Band II	16QAM	9400	VN	-10	9.46	0.005033	± 2.5	PASS
Band II	16QAM	9400	VN	0	14.08	0.007490	± 2.5	PASS
Band II	16QAM	9400	VN	10	8.08	0.004298	± 2.5	PASS
Band II	16QAM	9400	VN	20	-1.36	-0.000725	± 2.5	PASS
Band II	16QAM	9400	VN	30	-3.23	-0.001717	± 2.5	PASS
Band II	16QAM	9400	VN	40	10.04	0.005342	± 2.5	PASS
Band II	16QAM	9400	VN	50	-4.01	-0.002135	± 2.5	PASS
Band II	16QAM	9538	VN	-30	11.59	0.006073	± 2.5	PASS
Band II	16QAM	9538	VN	-20	-8.53	-0.004470	± 2.5	PASS
Band II	16QAM	9538	VN	-10	-1.75	-0.000915	± 2.5	PASS
Band II	16QAM	9538	VN	0	12.56	0.006585	± 2.5	PASS
Band II	16QAM	9538	VN	10	-12.29	-0.006440	± 2.5	PASS
Band II	16QAM	9538	VN	20	-7.17	-0.003761	± 2.5	PASS
Band II	16QAM	9538	VN	30	-11.31	-0.005928	± 2.5	PASS
Band II	16QAM	9538	VN	40	-1.09	-0.000570	± 2.5	PASS
Band II	16QAM	9538	VN	50	-11.70	-0.006132	± 2.5	PASS
Band IV	QPSK	1312	VN	-30	-10.98	-0.006412	± 2.5	PASS
Band IV	QPSK	1312	VN	-20	-10.31	-0.006023	± 2.5	PASS
Band IV	QPSK	1312	VN	-10	-13.00	-0.007594	± 2.5	PASS
Band IV	QPSK	1312	VN	0	-10.58	-0.006178	± 2.5	PASS
Band IV	QPSK	1312	VN	10	-13.57	-0.007924	± 2.5	PASS
Band IV	QPSK	1312	VN	20	-12.19	-0.007117	± 2.5	PASS
Band IV	QPSK	1312	VN	30	-5.03	-0.002936	± 2.5	PASS
Band IV	QPSK	1312	VN	40	-5.46	-0.003187	± 2.5	PASS
Band IV	QPSK	1312	VN	50	-7.20	-0.004202	± 2.5	PASS
Band IV	QPSK	1413	VN	-30	-8.97	-0.005177	± 2.5	PASS
Band IV	QPSK	1413	VN	-20	-8.88	-0.005123	± 2.5	PASS
Band IV	QPSK	1413	VN	-10	-8.97	-0.005177	± 2.5	PASS
Band IV	QPSK	1413	VN	0	-9.95	-0.005742	± 2.5	PASS
Band IV	QPSK	1413	VN	10	-9.87	-0.005697	± 2.5	PASS
Band IV	QPSK	1413	VN	20	-13.92	-0.008034	± 2.5	PASS
Band IV	QPSK	1413	VN	30	-10.70	-0.006176	± 2.5	PASS
Band IV	QPSK	1413	VN	40	-9.33	-0.005383	± 2.5	PASS
Band IV	QPSK	1413	VN	50	-5.94	-0.003426	± 2.5	PASS
Band IV	QPSK	1513	VN	-30	-7.06	-0.004028	± 2.5	PASS



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Band IV	QPSK	1513	VN	-20	-10.02	-0.005718	± 2.5	PASS
Band IV	QPSK	1513	VN	-10	-11.16	-0.006367	± 2.5	PASS
Band IV	QPSK	1513	VN	0	-13.35	-0.007619	± 2.5	PASS
Band IV	QPSK	1513	VN	10	-9.35	-0.005334	± 2.5	PASS
Band IV	QPSK	1513	VN	20	-12.78	-0.007293	± 2.5	PASS
Band IV	QPSK	1513	VN	30	-14.67	-0.008370	± 2.5	PASS
Band IV	QPSK	1513	VN	40	-6.33	-0.003612	± 2.5	PASS
Band IV	QPSK	1513	VN	50	-6.98	-0.003983	± 2.5	PASS
Band IV	16QAM	1312	VN	-30	-10.89	-0.006357	± 2.5	PASS
Band IV	16QAM	1312	VN	-20	-10.16	-0.005933	± 2.5	PASS
Band IV	16QAM	1312	VN	-10	5.65	0.003299	± 2.5	PASS
Band IV	16QAM	1312	VN	0	5.17	0.003017	± 2.5	PASS
Band IV	16QAM	1312	VN	10	-6.00	-0.003504	± 2.5	PASS
Band IV	16QAM	1312	VN	20	10.83	0.006325	± 2.5	PASS
Band IV	16QAM	1312	VN	30	-1.43	-0.000836	± 2.5	PASS
Band IV	16QAM	1312	VN	40	7.75	0.004524	± 2.5	PASS
Band IV	16QAM	1312	VN	50	0.57	0.000332	± 2.5	PASS
Band IV	16QAM	1413	VN	-30	2.80	0.001618	± 2.5	PASS
Band IV	16QAM	1413	VN	-20	-13.68	-0.007894	± 2.5	PASS
Band IV	16QAM	1413	VN	-10	-13.84	-0.007987	± 2.5	PASS
Band IV	16QAM	1413	VN	0	13.83	0.007980	± 2.5	PASS
Band IV	16QAM	1413	VN	10	-7.74	-0.004467	± 2.5	PASS
Band IV	16QAM	1413	VN	20	0.45	0.000261	± 2.5	PASS
Band IV	16QAM	1413	VN	30	11.14	0.006429	± 2.5	PASS
Band IV	16QAM	1413	VN	40	2.11	0.001216	± 2.5	PASS
Band IV	16QAM	1413	VN	50	8.12	0.004684	± 2.5	PASS
Band IV	16QAM	1513	VN	-30	13.64	0.007785	± 2.5	PASS
Band IV	16QAM	1513	VN	-20	-10.89	-0.006212	± 2.5	PASS
Band IV	16QAM	1513	VN	-10	10.34	0.005900	± 2.5	PASS
Band IV	16QAM	1513	VN	0	-8.19	-0.004672	± 2.5	PASS
Band IV	16QAM	1513	VN	10	-12.53	-0.007151	± 2.5	PASS
Band IV	16QAM	1513	VN	20	1.42	0.000808	± 2.5	PASS
Band IV	16QAM	1513	VN	30	9.45	0.005391	± 2.5	PASS
Band IV	16QAM	1513	VN	40	9.89	0.005644	± 2.5	PASS
Band IV	16QAM	1513	VN	50	4.71	0.002689	± 2.5	PASS
Band V	QPSK	4132	VN	-30	-11.29	-0.013658	± 2.5	PASS
Band V	QPSK	4132	VN	-20	-9.91	-0.011987	± 2.5	PASS
Band V	QPSK	4132	VN	-10	-6.13	-0.007417	± 2.5	PASS
Band V	QPSK	4132	VN	0	-13.14	-0.015899	± 2.5	PASS
Band V	QPSK	4132	VN	10	-10.31	-0.012472	± 2.5	PASS
Band V	QPSK	4132	VN	20	-5.86	-0.007089	± 2.5	PASS
Band V	QPSK	4132	VN	30	-8.54	-0.010334	± 2.5	PASS
Band V	QPSK	4132	VN	40	-12.97	-0.015700	± 2.5	PASS
Band V	QPSK	4132	VN	50	-8.51	-0.010300	± 2.5	PASS
Band V	QPSK	4182	VN	-30	-2.35	-0.002813	± 2.5	PASS
Band V	QPSK	4182	VN	-20	-14.46	-0.017291	± 2.5	PASS
Band V	QPSK	4182	VN	-10	-9.41	-0.011254	± 2.5	PASS



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Band V	QPSK	4182	VN	0	-9.53	-0.011399	± 2.5	PASS
Band V	QPSK	4182	VN	10	-11.13	-0.013306	± 2.5	PASS
Band V	QPSK	4182	VN	20	-8.61	-0.010296	± 2.5	PASS
Band V	QPSK	4182	VN	30	-14.10	-0.016864	± 2.5	PASS
Band V	QPSK	4182	VN	40	-7.70	-0.009210	± 2.5	PASS
Band V	QPSK	4182	VN	50	-12.82	-0.015333	± 2.5	PASS
Band V	QPSK	4233	VN	-30	-8.11	-0.009581	± 2.5	PASS
Band V	QPSK	4233	VN	-20	-5.24	-0.006193	± 2.5	PASS
Band V	QPSK	4233	VN	-10	-12.29	-0.014515	± 2.5	PASS
Band V	QPSK	4233	VN	0	-12.61	-0.014895	± 2.5	PASS
Band V	QPSK	4233	VN	10	-9.76	-0.011532	± 2.5	PASS
Band V	QPSK	4233	VN	20	-11.14	-0.013163	± 2.5	PASS
Band V	QPSK	4233	VN	30	-7.25	-0.008558	± 2.5	PASS
Band V	QPSK	4233	VN	40	-5.97	-0.007055	± 2.5	PASS
Band V	QPSK	4233	VN	50	-13.08	-0.015452	± 2.5	PASS
Band V	16QAM	4132	VN	-30	0.57	0.000685	± 2.5	PASS
Band V	16QAM	4132	VN	-20	5.29	0.006397	± 2.5	PASS
Band V	16QAM	4132	VN	-10	3.73	0.004516	± 2.5	PASS
Band V	16QAM	4132	VN	0	13.80	0.016694	± 2.5	PASS
Band V	16QAM	4132	VN	10	-11.05	-0.013369	± 2.5	PASS
Band V	16QAM	4132	VN	20	-7.23	-0.008752	± 2.5	PASS
Band V	16QAM	4132	VN	30	-0.75	-0.000910	± 2.5	PASS
Band V	16QAM	4132	VN	40	-8.29	-0.010030	± 2.5	PASS
Band V	16QAM	4132	VN	50	-4.35	-0.005263	± 2.5	PASS
Band V	16QAM	4182	VN	-30	-14.91	-0.017825	± 2.5	PASS
Band V	16QAM	4182	VN	-20	13.90	0.016620	± 2.5	PASS
Band V	16QAM	4182	VN	-10	-13.00	-0.015548	± 2.5	PASS
Band V	16QAM	4182	VN	0	3.91	0.004674	± 2.5	PASS
Band V	16QAM	4182	VN	10	9.41	0.011255	± 2.5	PASS
Band V	16QAM	4182	VN	20	-0.60	-0.000721	± 2.5	PASS
Band V	16QAM	4182	VN	30	-14.68	-0.017553	± 2.5	PASS
Band V	16QAM	4182	VN	40	-2.85	-0.003403	± 2.5	PASS
Band V	16QAM	4182	VN	50	-12.86	-0.015377	± 2.5	PASS
Band V	16QAM	4233	VN	-30	4.29	0.005066	± 2.5	PASS
Band V	16QAM	4233	VN	-20	-2.75	-0.003254	± 2.5	PASS
Band V	16QAM	4233	VN	-10	5.01	0.005915	± 2.5	PASS
Band V	16QAM	4233	VN	0	-0.76	-0.000898	± 2.5	PASS
Band V	16QAM	4233	VN	10	-8.91	-0.010521	± 2.5	PASS
Band V	16QAM	4233	VN	20	12.22	0.014433	± 2.5	PASS
Band V	16QAM	4233	VN	30	3.21	0.003793	± 2.5	PASS
Band V	16QAM	4233	VN	40	2.13	0.002515	± 2.5	PASS
Band V	16QAM	4233	VN	50	-3.30	-0.003897	± 2.5	PASS

The End



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