



Appendix B

WCDMA Band II & V



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1. Effective (Isotropic) Radiated Power

1.1. Test Result

Band	Channel	Conducted Power (dBm)	EIRP (dBm)	Limit(dBm)	Verdict
Band II	9262	23.24	23.61	33.00	PASS
Band II	9400	23.25	23.62	33.00	PASS
Band II	9538	23.18	23.55	33.00	PASS

Band	Channel	Conducted Power (dBm)	EIRP (dBm)	Limit(dBm)	Verdict
Band V	4132	23.43	20.82	38.45	PASS
Band V	4182	23.61	21.00	38.45	PASS
Band V	4233	23.74	21.13	38.45	PASS

Remark:

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

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

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



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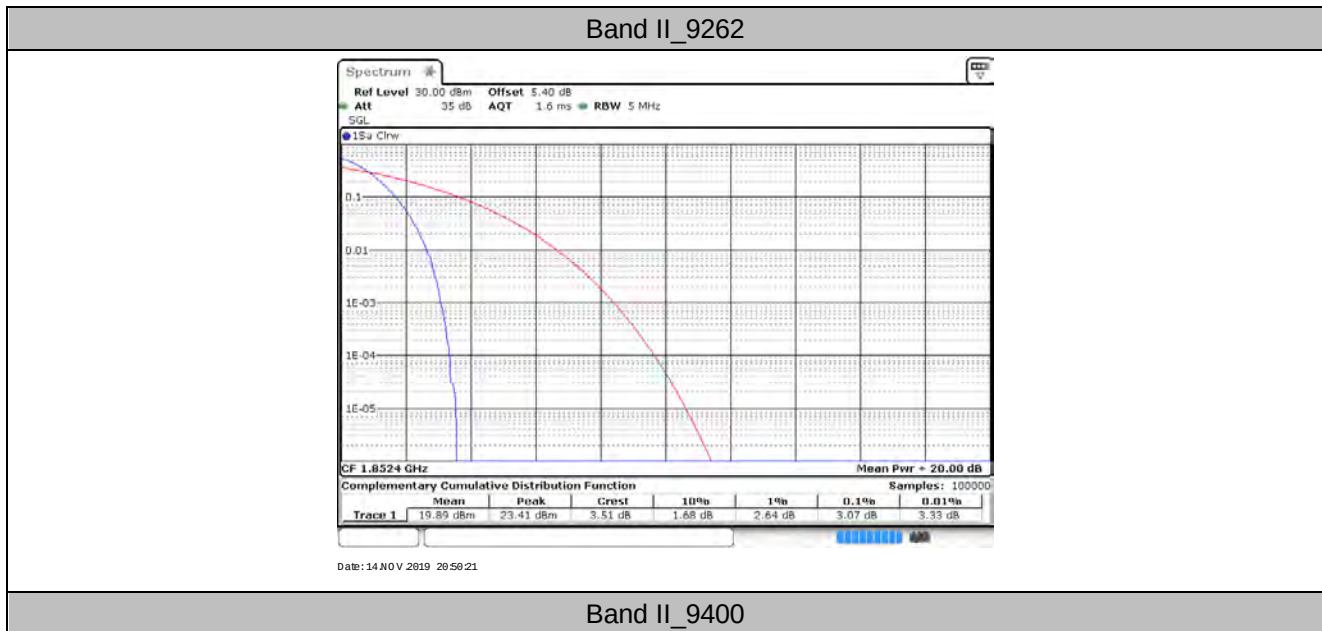


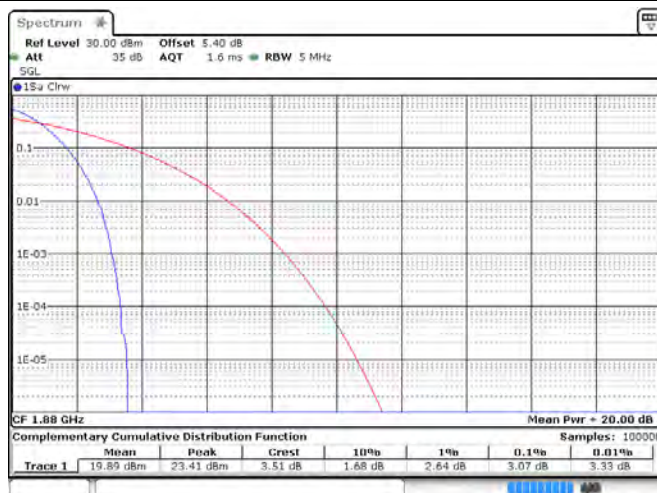
2. Peak-to-Average Ratio(CCDF)

2.1. Test Result

Band	Channel	Peak-to-Average Ratio(dB)	Limit(dB)	Verdict
Band II	9262	3.07	13	PASS
Band II	9400	3.07	13	PASS
Band II	9538	2.75	13	PASS
Band V	4132	3.04	13	PASS
Band V	4182	3.07	13	PASS
Band V	4233	2.90	13	PASS

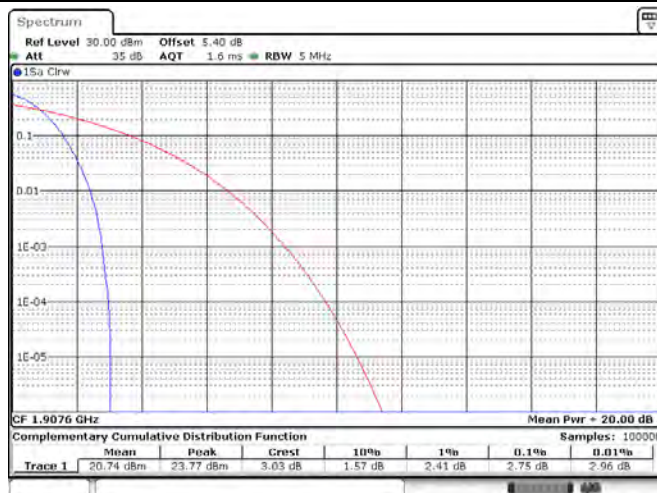
2.2. Test Plots





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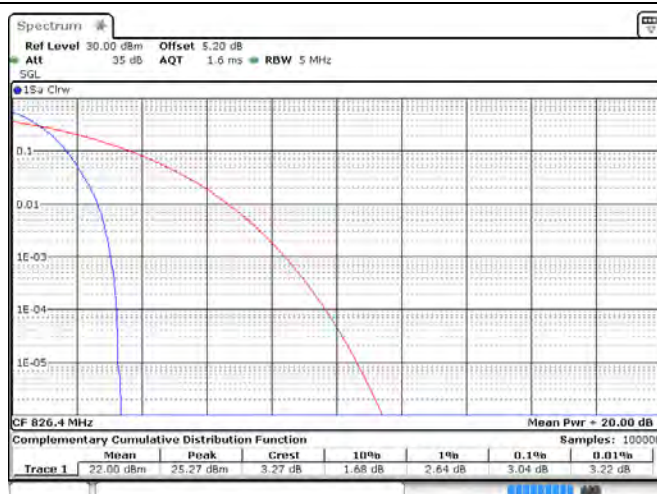
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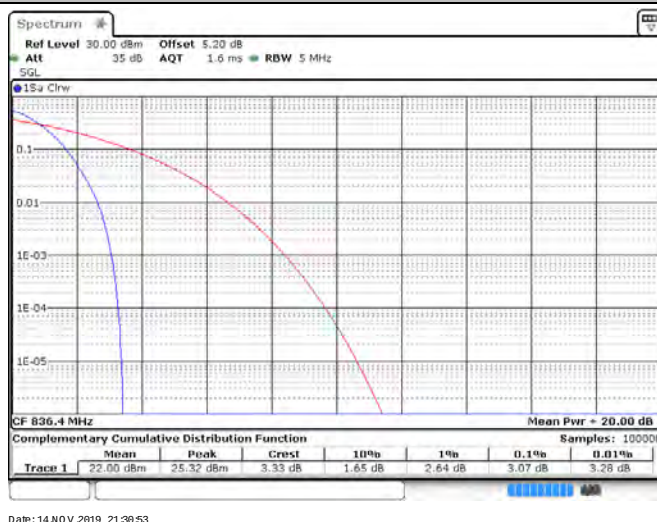
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Band V_4132





Band V_4182



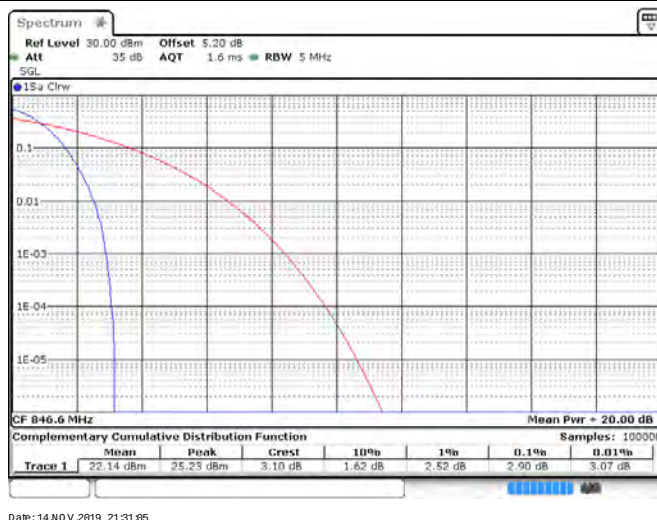
Band V_4233



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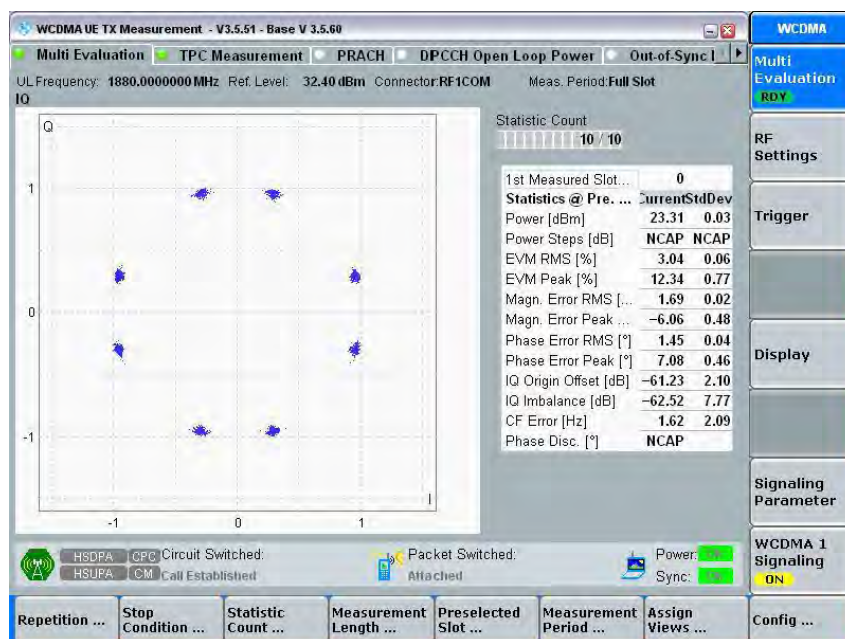


3. Modulation Characteristics

3.1. Test Band = WCDMA Band II

3.1.1. Test Mode = UMTS/TM1

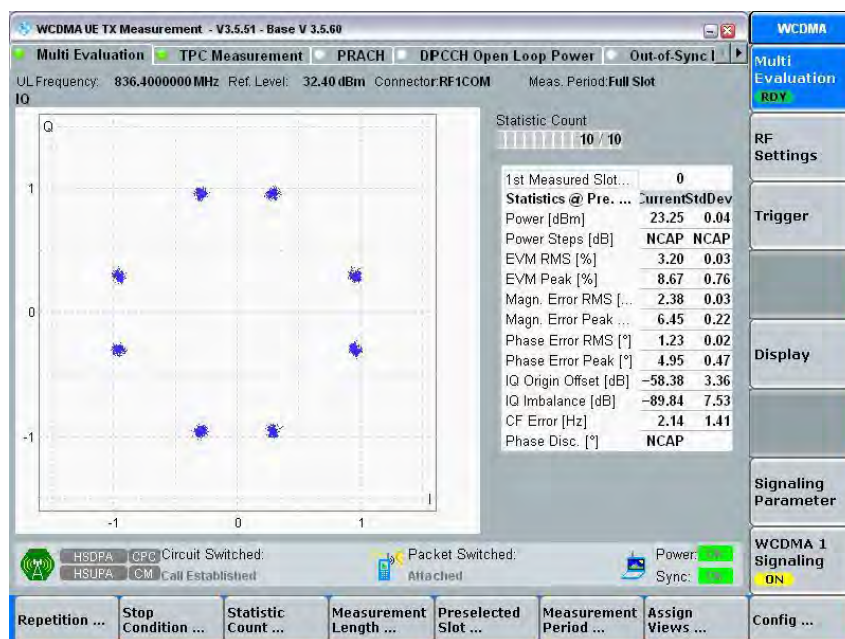
3.1.1.1. Test Channel = MCH



3.2. Test Band = WCDMA Band V

3.2.1. Test Mode = UMTS/TM1

3.2.1.1. Test Channel = MCH



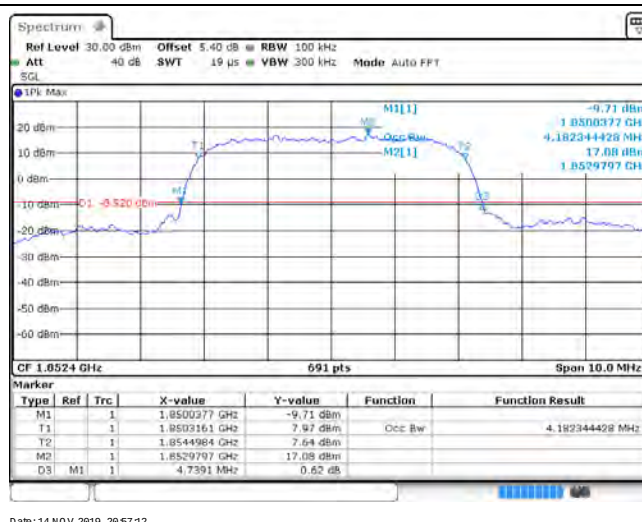


4. 26dB Bandwidth and Occupied Bandwidth

4.1. Test Result

Band	Channel	Occupied Bandwidth (kHz)	26dB Bandwidth (kHz)	Limit(kHz)	Verdict
Band II	9262	4182.3	4739	---	PASS
Band II	9400	4167.9	4725	---	PASS
Band II	9538	4167.9	4754	---	PASS
Band V	4132	4153.4	4725	---	PASS
Band V	4182	4167.9	4725	---	PASS
Band V	4233	4153.4	4725	---	PASS

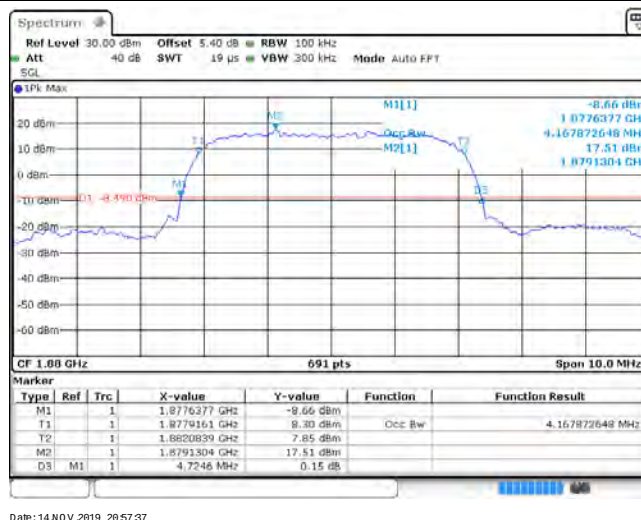
4.2. Test Plots



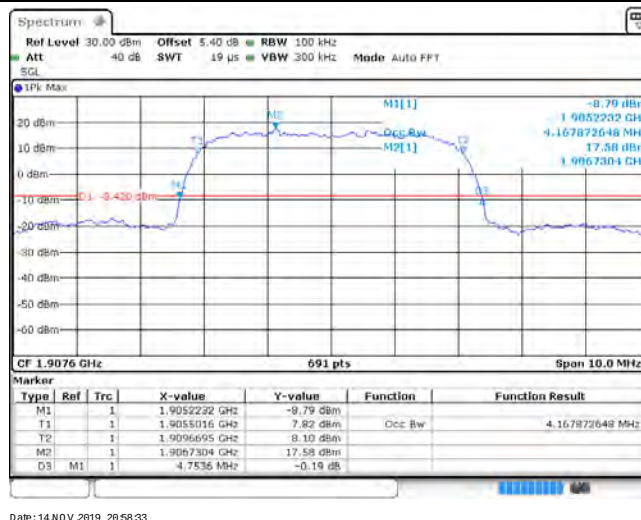
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Band II_9262



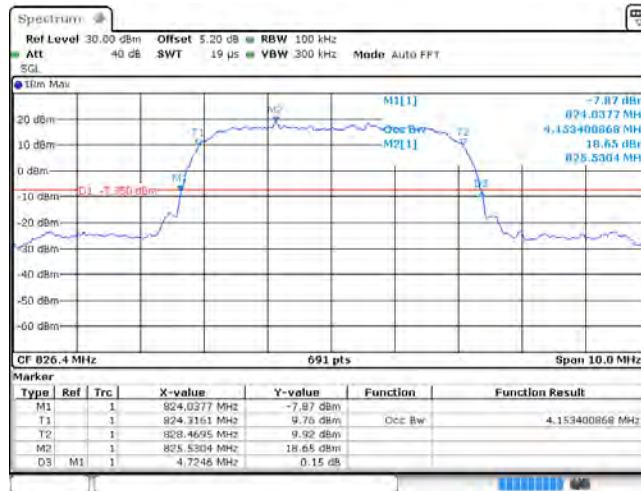


Band II_9400



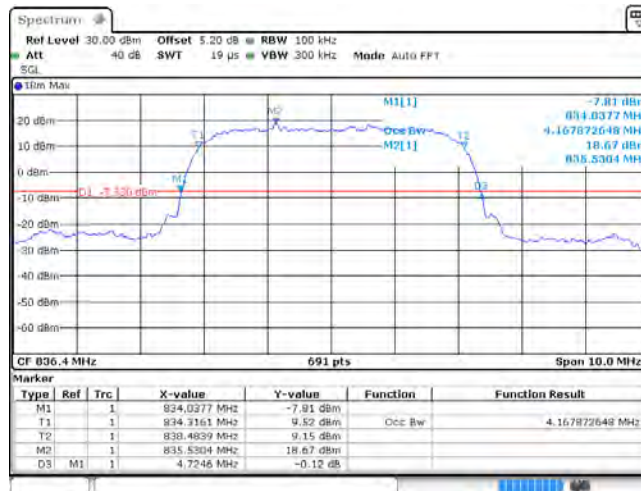
Band II_9538





Date: 14 NOV 2019 21:32:27

Band V_4132



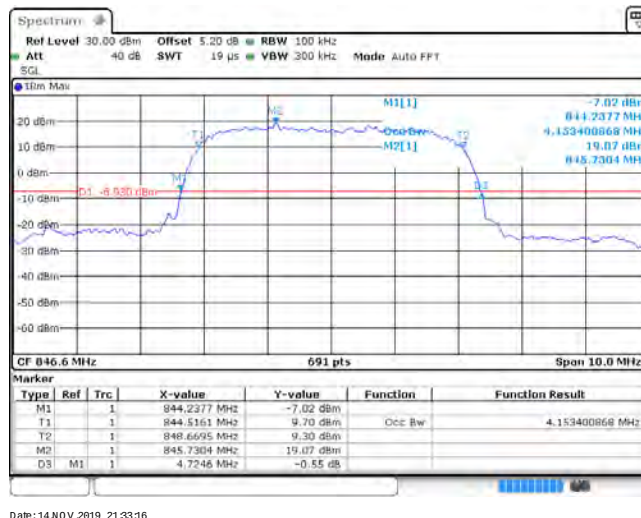
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Band V_4182



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Band V_4233



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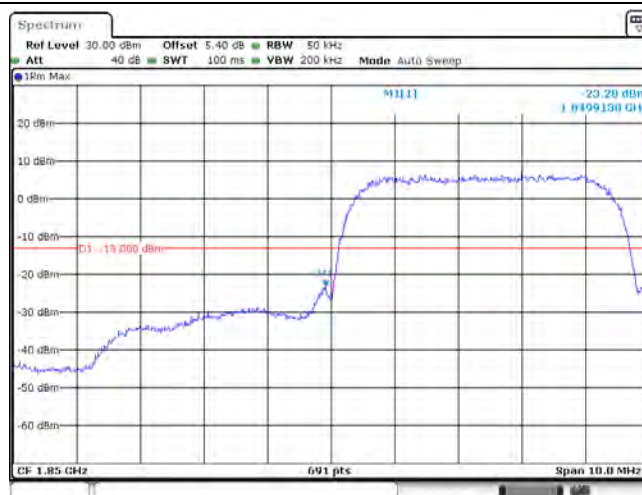
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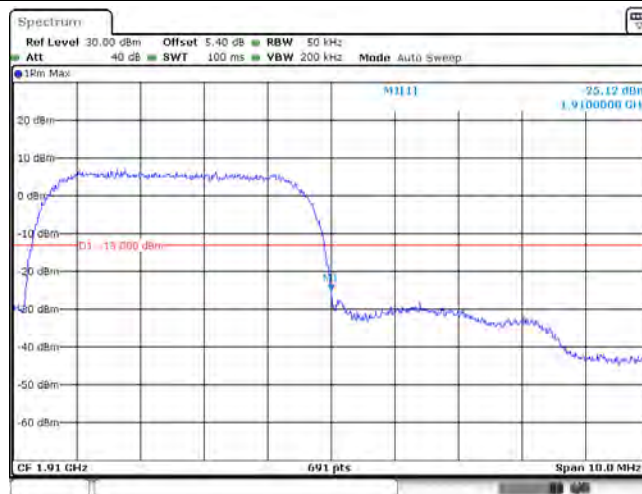
5. Band Edge Compliance

5.1. Test Plots



Date: 14 NOV 2019 20:59:55

Band II_9262



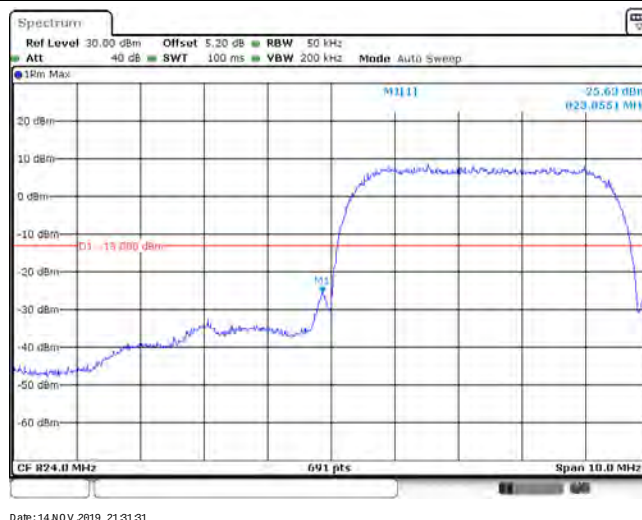
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Band II_9538

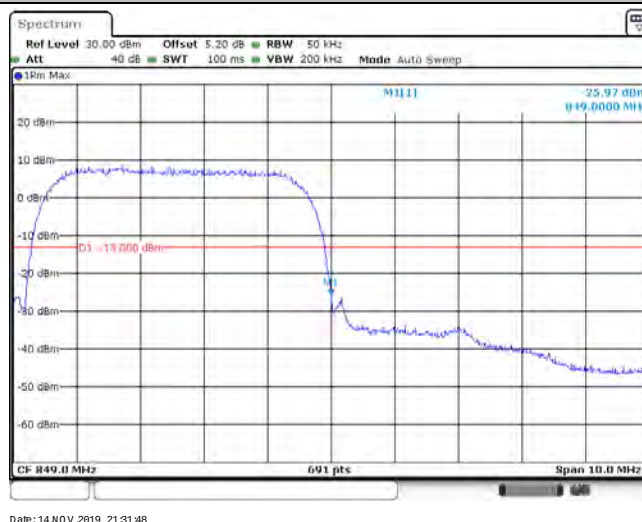


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Band V 4132



Band V_4233



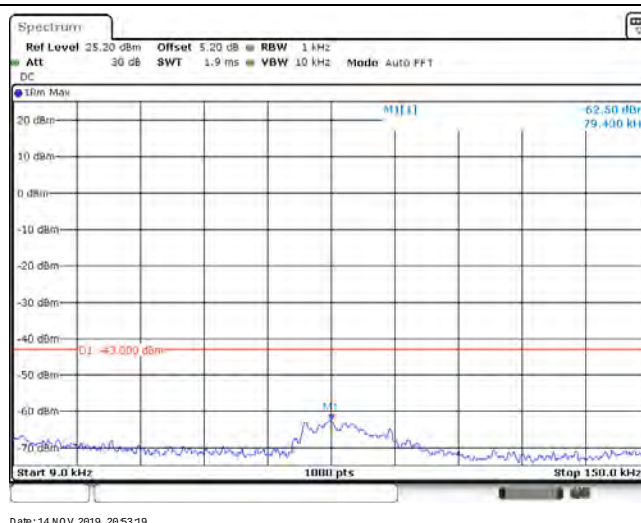


6. Spurious Emission at Antenna Terminal

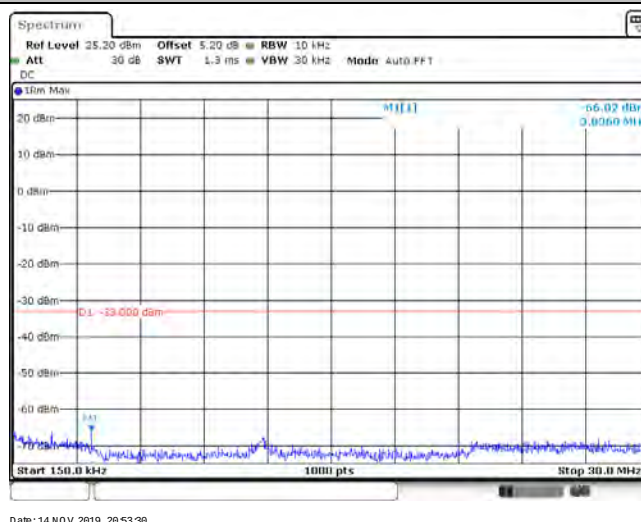
Remark1: For the averaged unwanted emissions measurements, the measurement points in each sweep is greater than twice the Span/RBW in order to ensure bin-to-bin spacing of $< RBW/2$ so that narrowband signals are not lost between frequency bins. As to the present test item, the "Measurement Points =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



Band II_9262

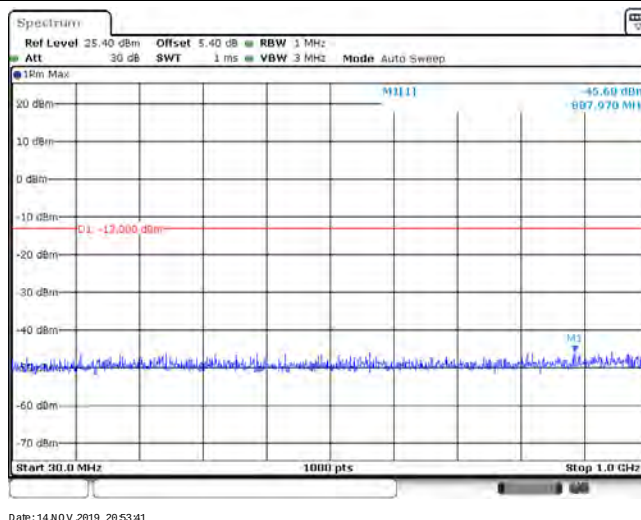


Band II_9262

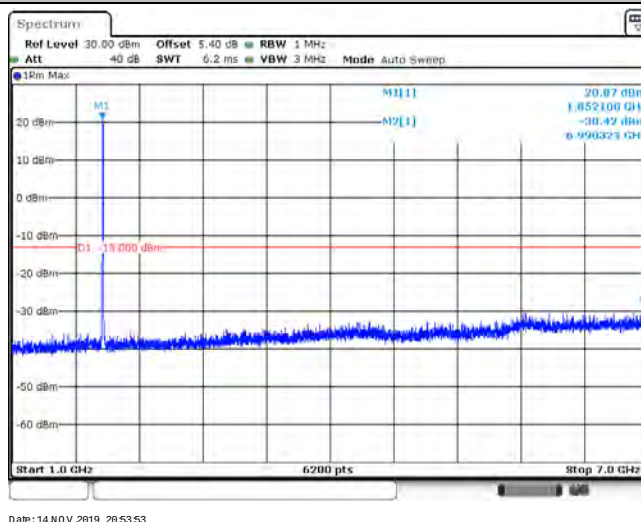


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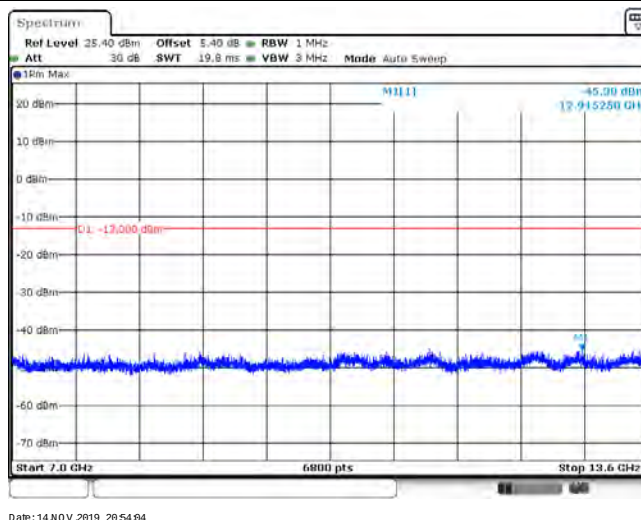


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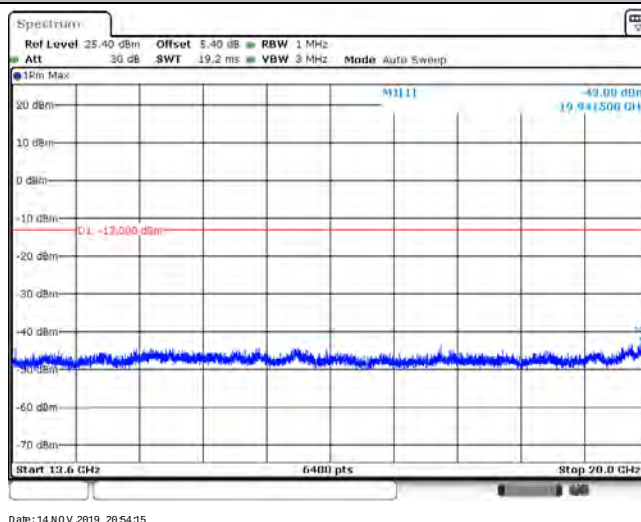


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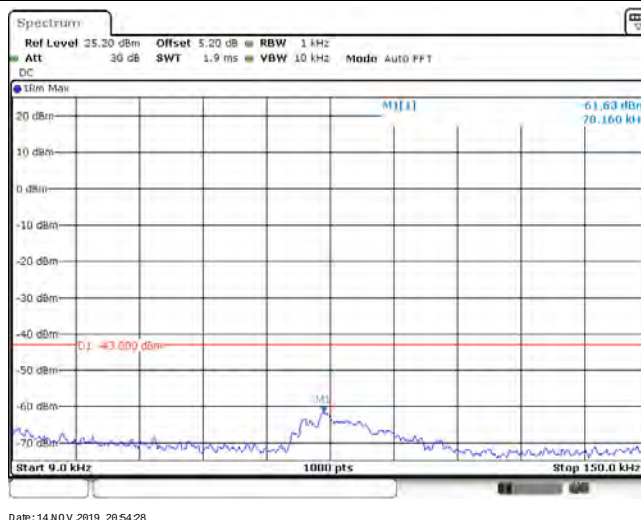


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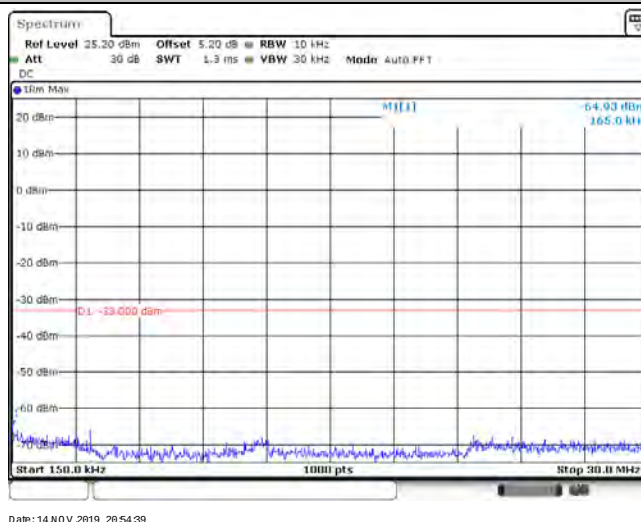


Band II_9262



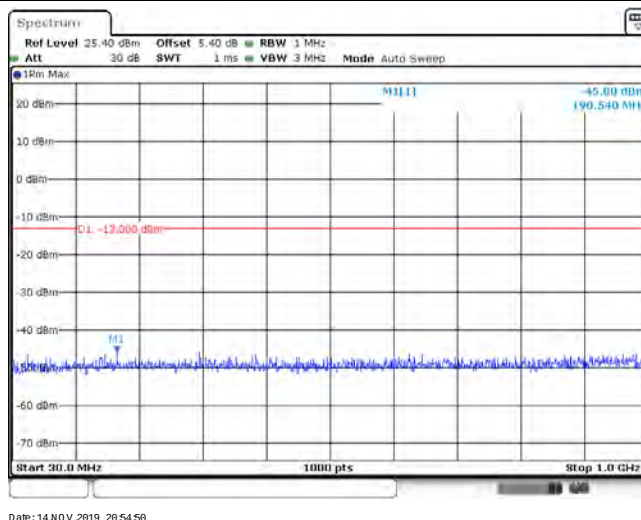


Band II_9400

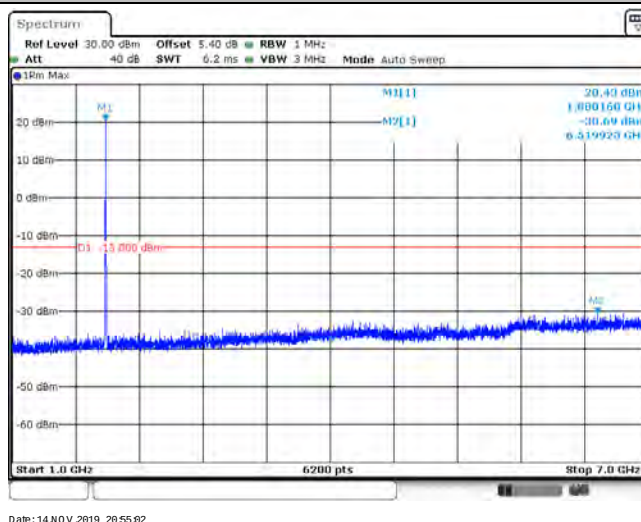


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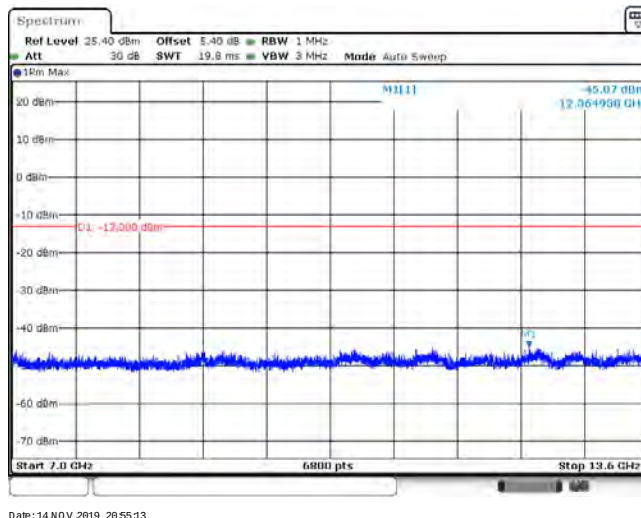


Band II_9400

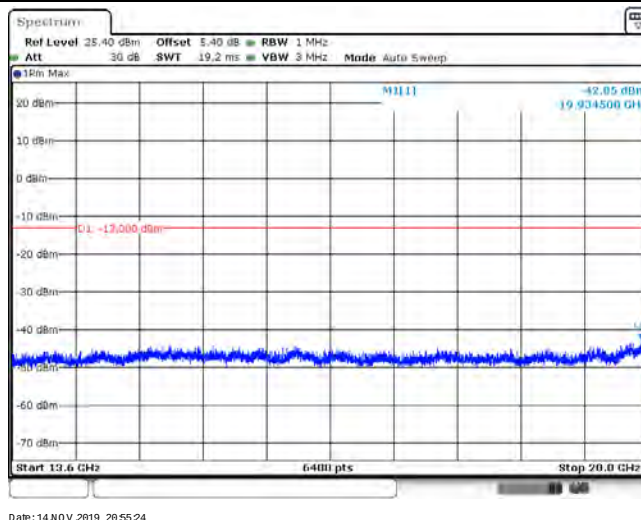


Band II_9400





Band II_9400

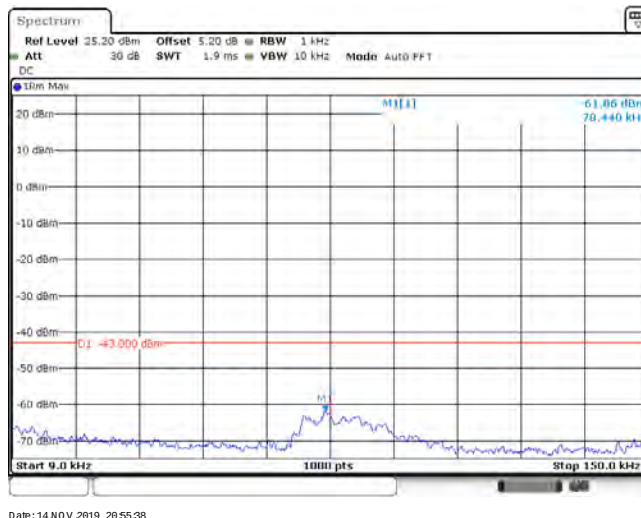


Band II_9400

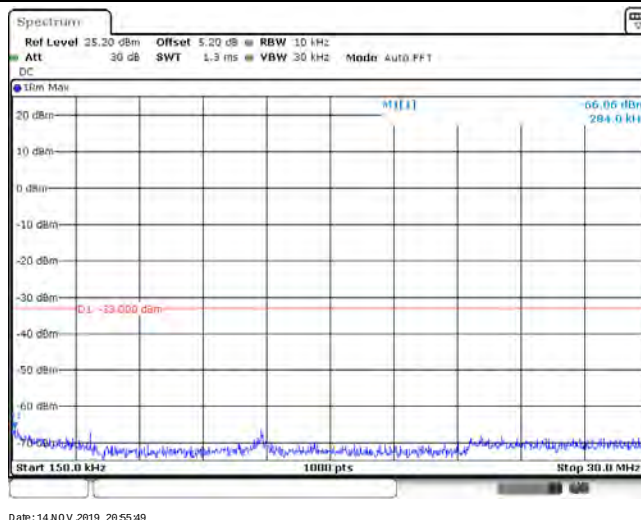


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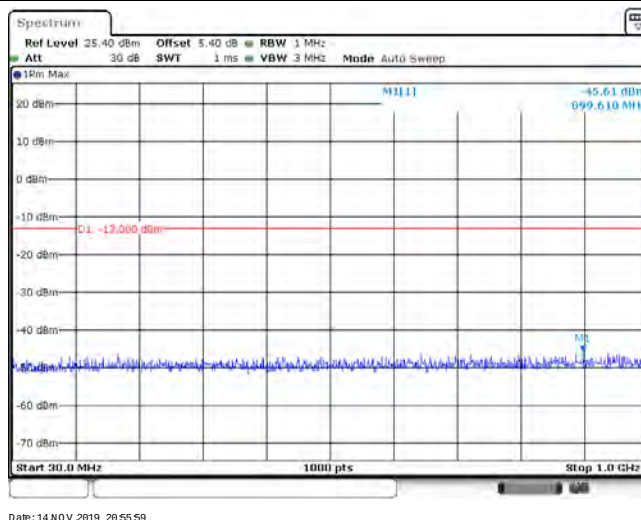


Band II_9538

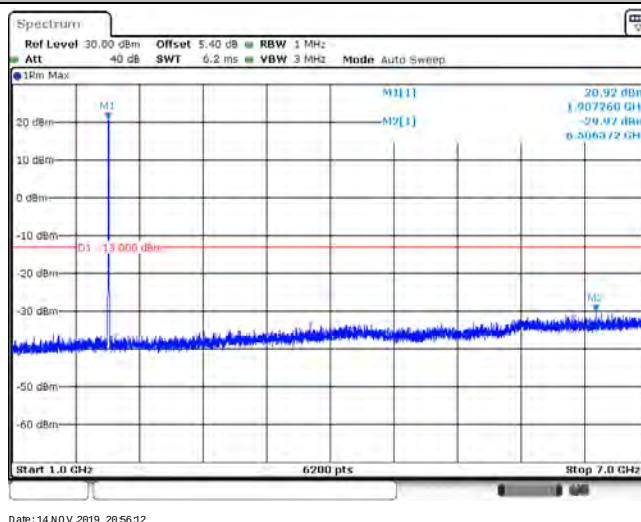


Band II_9538



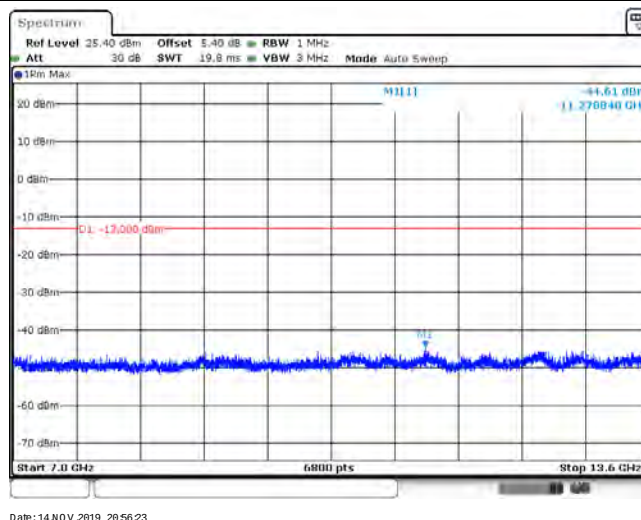


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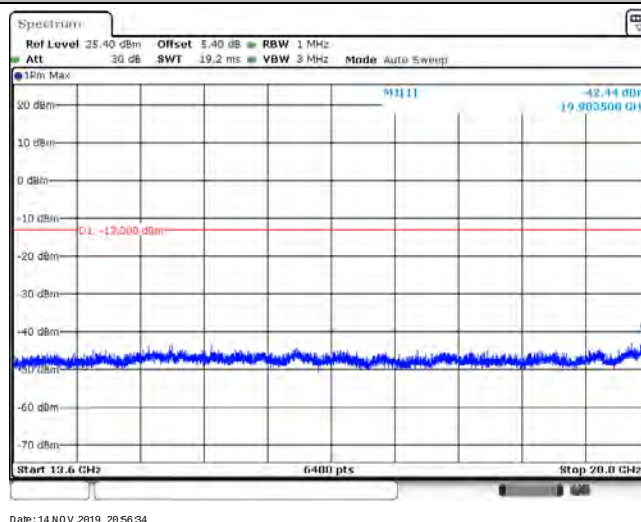


Band II_9538



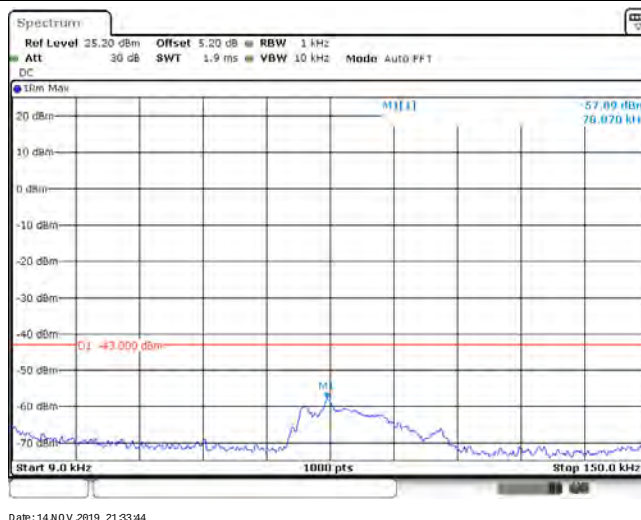


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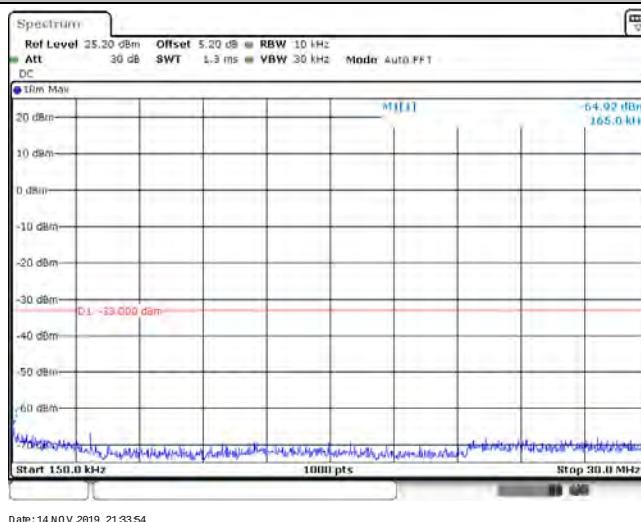


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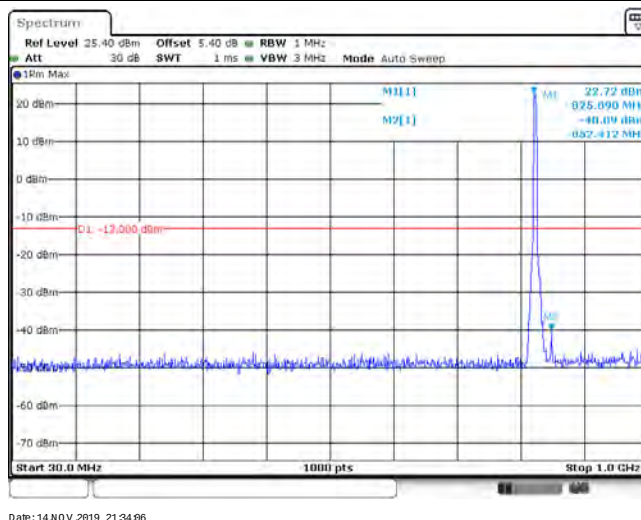


Band V_4132

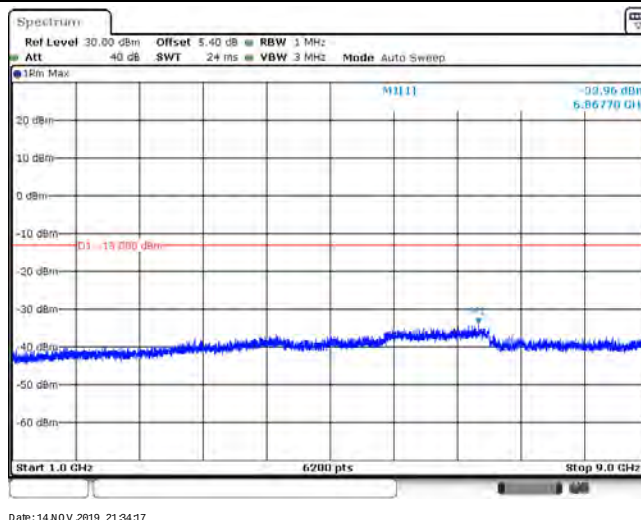


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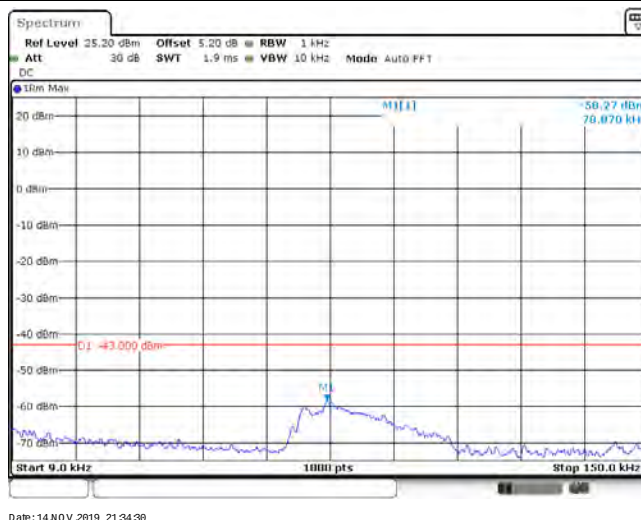


Band V_4132

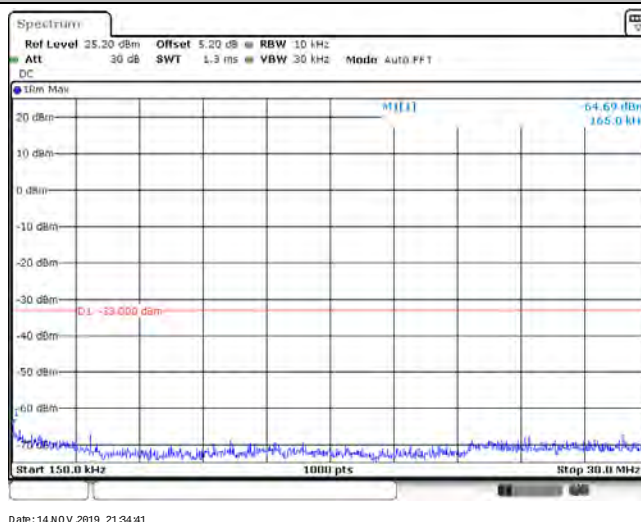


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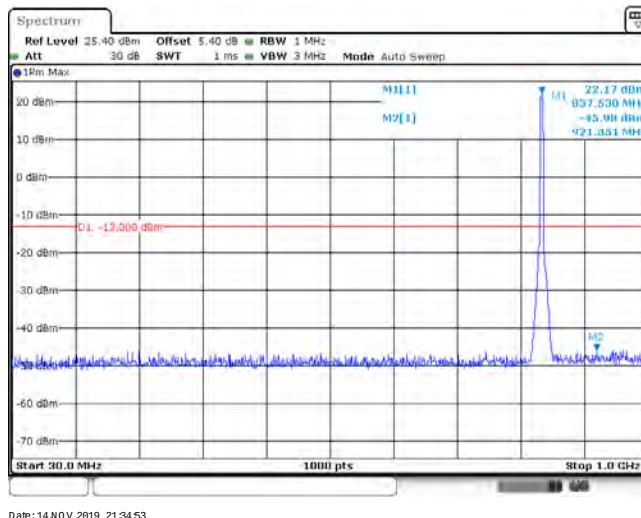


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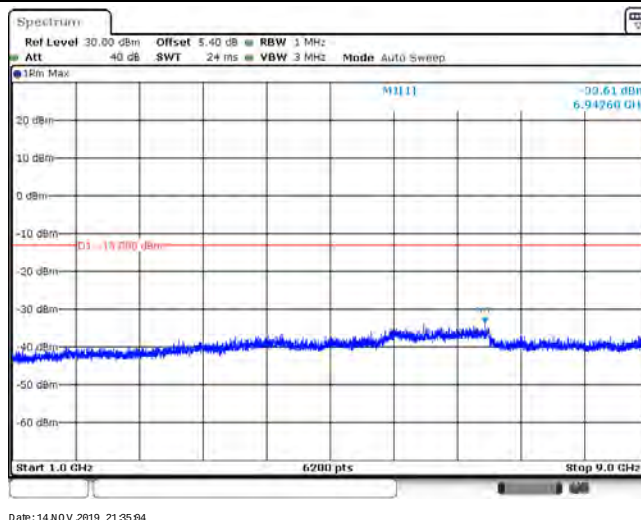


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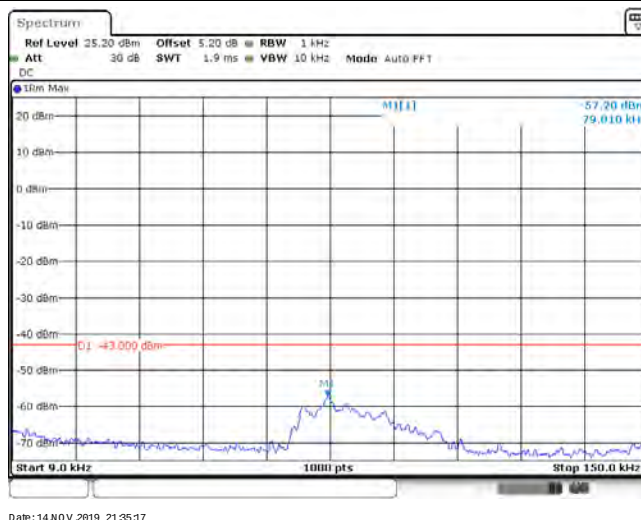


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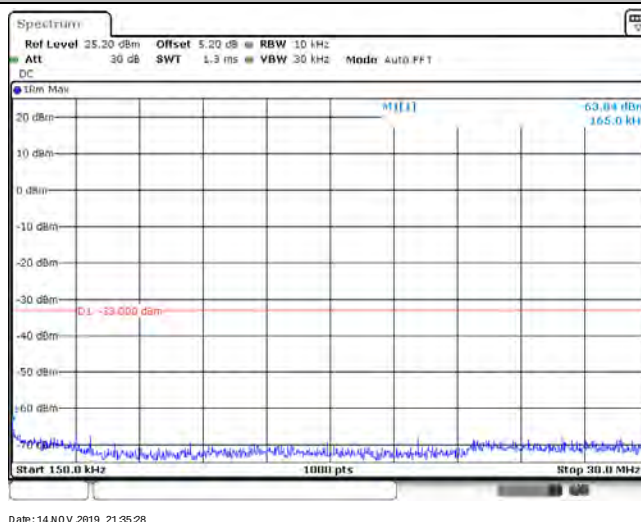


Band V_4182



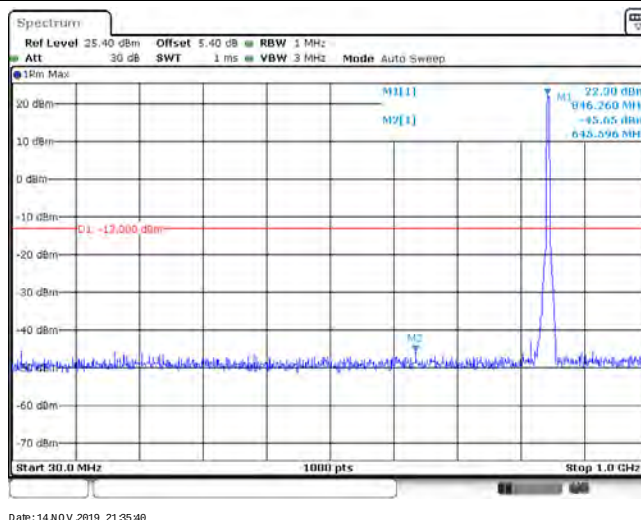


Band V_4233

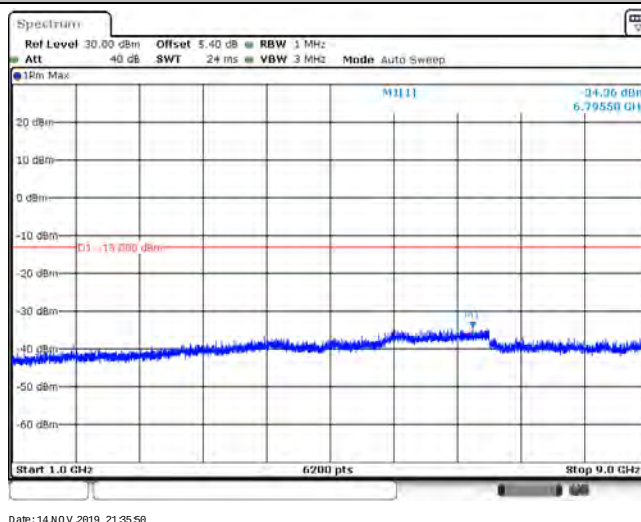


Band V_4233





Band V_4233



Band V_4233





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)	Polarization
66.6678	-64.21	-13.00	51.21	Vertical
116.1403	-64.68	-13.00	51.68	Vertical
235.0683	-67.21	-13.00	54.21	Vertical
1492.4985	-46.09	-13.00	33.09	Vertical
7350.6450	-52.75	-13.00	39.75	Vertical
17997.4999	-35.07	-13.00	22.07	Vertical
45.0358	-63.38	-13.00	50.38	Horizontal
155.1848	-68.80	-13.00	55.80	Horizontal
235.1168	-66.89	-13.00	53.89	Horizontal
1418.8838	-47.90	-13.00	34.90	Horizontal
8029.6677	-53.02	-13.00	40.02	Horizontal
16391.9464	-38.71	-13.00	25.71	Horizontal

7.1.1.2. Test Channel = MCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Polarization
66.6193	-64.58	-13.00	51.58	Vertical
114.1032	-64.80	-13.00	51.80	Vertical
2697.5395	-36.72	-13.00	23.72	Vertical
7347.6449	-52.44	-13.00	39.44	Vertical
17990.4997	-35.25	-13.00	22.25	Vertical
40.4280	-64.05	-13.00	51.05	Horizontal
158.2404	-69.43	-13.00	56.43	Horizontal
235.0683	-67.04	-13.00	54.04	Horizontal
2699.5399	-35.46	-13.00	22.46	Horizontal
7359.1453	-53.62	-13.00	40.62	Horizontal
16397.9466	-39.30	-13.00	26.30	Horizontal



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7.1.1.3. Test Channel = HCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Polarization
62.3996	-69.37	-13.00	56.37	Vertical
100.7165	-67.41	-13.00	54.41	Vertical
404.1477	-67.53	-13.00	54.53	Vertical
2702.3405	-36.66	-13.00	23.66	Vertical
8557.1852	-52.39	-13.00	39.39	Vertical
17995.4999	-35.55	-13.00	22.55	Vertical
41.3011	-64.29	-13.00	51.29	Horizontal
158.2404	-69.49	-13.00	56.49	Horizontal
235.0683	-66.99	-13.00	53.99	Horizontal
2698.7397	-35.38	-13.00	22.38	Horizontal
7362.1454	-53.21	-13.00	40.21	Horizontal
10640.7547	-48.22	-13.00	35.22	Horizontal

7.2. Test Band = WCDMA Band V

7.2.1. Test Mode = WCDMA/TM1

7.2.1.1. Test Channel = LCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Polarization
66.6678	-65.30	-13.00	52.30	Vertical
114.0062	-65.02	-13.00	52.02	Vertical
576.9618	-64.95	-13.00	51.95	Vertical
1651.3303	-58.35	-13.00	45.35	Vertical
2582.3165	-51.54	-13.00	38.54	Vertical
17996.4999	-35.33	-13.00	22.33	Vertical
40.4280	-64.02	-13.00	51.02	Horizontal
235.1168	-66.64	-13.00	53.64	Horizontal
526.8588	-64.75	-13.00	51.75	Horizontal
2581.9164	-50.87	-13.00	37.87	Horizontal
7368.1456	-53.41	-13.00	40.41	Horizontal
16392.4464	-39.16	-13.00	26.16	Horizontal





7.2.1.2. Test Channel = MCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Polarization
66.6678	-64.53	-13.00	51.53	Vertical
113.3272	-64.61	-13.00	51.61	Vertical
478.9869	-66.59	-13.00	53.59	Vertical
1892.9786	-55.87	-13.00	42.87	Vertical
7363.6455	-52.79	-13.00	39.79	Vertical
17990.9997	-35.51	-13.00	22.51	Vertical
44.5022	-63.88	-13.00	50.88	Horizontal
235.0683	-65.51	-13.00	52.51	Horizontal
351.5711	-67.98	-13.00	54.98	Horizontal
2576.3153	-51.21	-13.00	38.21	Horizontal
7351.6451	-53.34	-13.00	40.34	Horizontal
16383.9461	-39.44	-13.00	26.44	Horizontal

7.2.1.3. Test Channel = HCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Polarization
66.6678	-64.89	-13.00	51.89	Vertical
112.4541	-64.55	-13.00	51.55	Vertical
1902.9806	-57.77	-13.00	44.77	Vertical
2575.9152	-48.34	-13.00	35.34	Vertical
7377.1459	-52.42	-13.00	39.42	Vertical
17999.0000	-34.74	-13.00	21.74	Vertical
40.5735	-64.37	-13.00	51.37	Horizontal
158.2404	-68.93	-13.00	55.93	Horizontal
238.1724	-67.36	-13.00	54.36	Horizontal
1905.7812	-58.07	-13.00	45.07	Horizontal
2537.1074	-53.25	-13.00	40.25	Horizontal
16402.9468	-39.28	-13.00	26.28	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.





8. Frequency Stability

8.1. Frequency Vs Voltage

Voltage							
Band	Channel	Voltage (Vdc)	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band II	9262	VL	TN	-19.09	-0.010306	±2.5	PASS
Band II	9262	VN	TN	-10.64	-0.005742	±2.5	PASS
Band II	9262	VH	TN	-10.76	-0.005811	±2.5	PASS
Band II	9400	VL	TN	-7.88	-0.004193	±2.5	PASS
Band II	9400	VN	TN	-5.16	-0.002743	±2.5	PASS
Band II	9400	VH	TN	-18.86	-0.010033	±2.5	PASS
Band II	9538	VL	TN	-14.72	-0.007716	±2.5	PASS
Band II	9538	VN	TN	-10.21	-0.005351	±2.5	PASS
Band II	9538	VH	TN	-18.35	-0.009621	±2.5	PASS
Band V	4132	VL	TN	-6.45	-0.007807	±2.5	PASS
Band V	4132	VN	TN	-14.35	-0.017362	±2.5	PASS
Band V	4132	VH	TN	-6.66	-0.008058	±2.5	PASS
Band V	4182	VL	TN	-6.47	-0.007731	±2.5	PASS
Band V	4182	VN	TN	-15.21	-0.018181	±2.5	PASS
Band V	4182	VH	TN	-11.65	-0.013931	±2.5	PASS
Band V	4233	VL	TN	-13.41	-0.015841	±2.5	PASS
Band V	4233	VN	TN	-10.94	-0.012926	±2.5	PASS
Band V	4233	VH	TN	-11.88	-0.014033	±2.5	PASS

8.2. Frequency Vs Temperature

Temperature							
Band	Channel	Voltage (Vdc)	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band II	9262	VN	-30	-9.15	-0.004939	±2.5	PASS
Band II	9262	VN	-20	-14.53	-0.007846	±2.5	PASS
Band II	9262	VN	-10	-10.14	-0.005471	±2.5	PASS
Band II	9262	VN	0	-9.25	-0.004993	±2.5	PASS
Band II	9262	VN	10	-17.47	-0.009433	±2.5	PASS
Band II	9262	VN	20	-19.35	-0.010445	±2.5	PASS
Band II	9262	VN	30	-11.88	-0.006414	±2.5	PASS
Band II	9262	VN	40	-11.85	-0.006398	±2.5	PASS
Band II	9262	VN	50	-7.67	-0.004139	±2.5	PASS
Band II	9400	VN	-30	-19.01	-0.010113	±2.5	PASS
Band II	9400	VN	-20	-15.79	-0.008397	±2.5	PASS
Band II	9400	VN	-10	-15.36	-0.008168	±2.5	PASS
Band II	9400	VN	0	-14.41	-0.007666	±2.5	PASS
Band II	9400	VN	10	-12.21	-0.006494	±2.5	PASS



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Band II	9400	VN	20	-15.71	-0.008355	±2.5	PASS
Band II	9400	VN	30	-18.40	-0.009785	±2.5	PASS
Band II	9400	VN	40	-16.62	-0.008838	±2.5	PASS
Band II	9400	VN	50	-8.69	-0.004623	±2.5	PASS
Band II	9538	VN	-30	-22.32	-0.011702	±2.5	PASS
Band II	9538	VN	-20	-18.62	-0.009760	±2.5	PASS
Band II	9538	VN	-10	-17.17	-0.009003	±2.5	PASS
Band II	9538	VN	0	-13.17	-0.006903	±2.5	PASS
Band II	9538	VN	10	-13.68	-0.007173	±2.5	PASS
Band II	9538	VN	20	-13.83	-0.007248	±2.5	PASS
Band II	9538	VN	30	-11.16	-0.005849	±2.5	PASS
Band II	9538	VN	40	-19.92	-0.010442	±2.5	PASS
Band II	9538	VN	50	-12.36	-0.006479	±2.5	PASS
Band V	4132	VN	-30	-7.28	-0.008811	±2.5	PASS
Band V	4132	VN	-20	-4.14	-0.005011	±2.5	PASS
Band V	4132	VN	-10	-13.78	-0.016678	±2.5	PASS
Band V	4132	VN	0	-5.14	-0.006223	±2.5	PASS
Band V	4132	VN	10	-7.37	-0.008915	±2.5	PASS
Band V	4132	VN	20	-12.76	-0.015441	±2.5	PASS
Band V	4132	VN	30	-12.60	-0.015250	±2.5	PASS
Band V	4132	VN	40	-2.34	-0.002830	±2.5	PASS
Band V	4132	VN	50	-8.24	-0.009971	±2.5	PASS
Band V	4182	VN	-30	-11.39	-0.013614	±2.5	PASS
Band V	4182	VN	-20	-10.04	-0.012006	±2.5	PASS
Band V	4182	VN	-10	-9.94	-0.011887	±2.5	PASS
Band V	4182	VN	0	-11.02	-0.013178	±2.5	PASS
Band V	4182	VN	10	-12.06	-0.014418	±2.5	PASS
Band V	4182	VN	20	-8.54	-0.010211	±2.5	PASS
Band V	4182	VN	30	-5.49	-0.006568	±2.5	PASS
Band V	4182	VN	40	-11.57	-0.013828	±2.5	PASS
Band V	4182	VN	50	-5.82	-0.006961	±2.5	PASS
Band V	4233	VN	-30	-10.34	-0.012217	±2.5	PASS
Band V	4233	VN	-20	-10.81	-0.012774	±2.5	PASS
Band V	4233	VN	-10	-2.46	-0.002906	±2.5	PASS
Band V	4233	VN	0	-8.20	-0.009682	±2.5	PASS
Band V	4233	VN	10	-11.01	-0.013002	±2.5	PASS
Band V	4233	VN	20	-12.44	-0.014692	±2.5	PASS
Band V	4233	VN	30	-3.33	-0.003937	±2.5	PASS
Band V	4233	VN	40	-6.83	-0.008068	±2.5	PASS
Band V	4233	VN	50	-9.06	-0.010704	±2.5	PASS

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