



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	23.58	21.08	33.00	PASS
Band II	9400	23.61	21.11	33.00	PASS
Band II	9538	23.66	21.16	33.00	PASS

Band	Channel	Conducted Power (dBm)	ERP (dBm)	Limit(dBm)	Verdict
Band V	4132	25.35	18.20	38.45	PASS
Band V	4182	25.31	18.16	38.45	PASS
Band V	4233	25.34	18.19	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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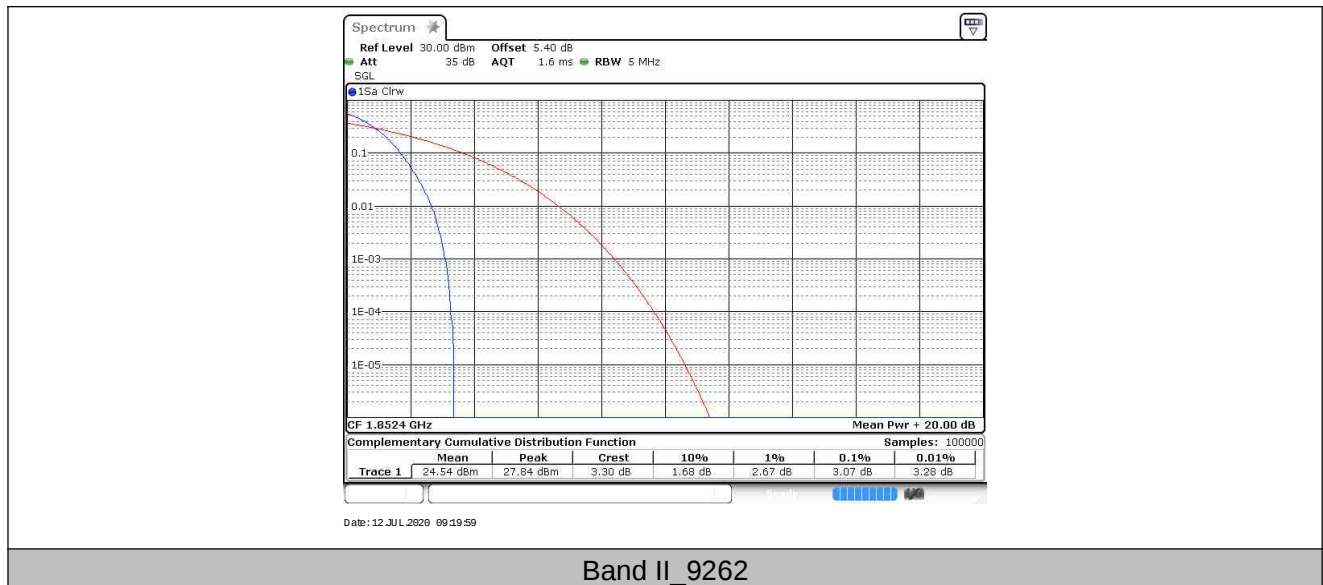


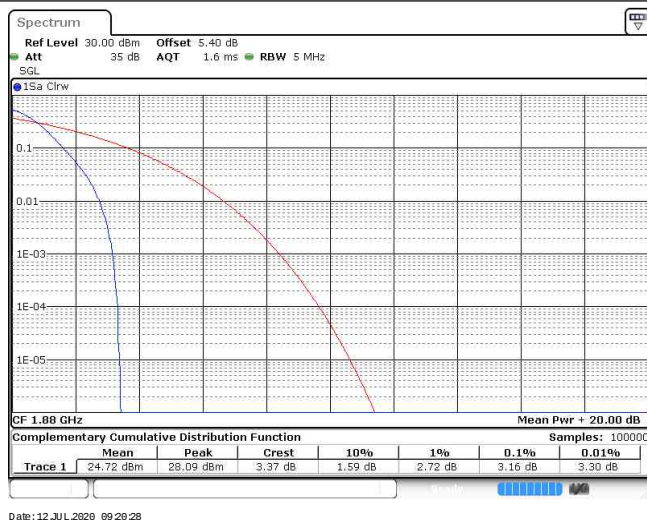
2. Peak-to-Average Ratio(CCDF)

2.1. Test Result

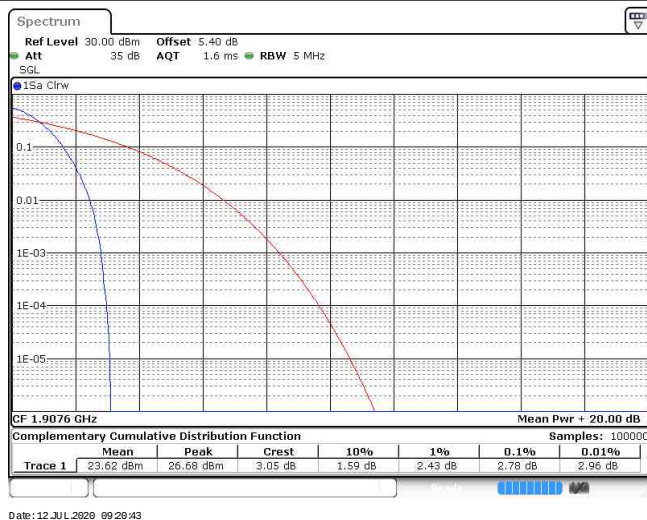
Band	Channel	Peak-to-Average Ratio(dB)	Limit(dB)	Verdict
Band II	9262	3.07	13	PASS
Band II	9400	3.16	13	PASS
Band II	9538	2.78	13	PASS
Band V	4132	2.67	13	PASS
Band V	4182	2.72	13	PASS
Band V	4233	2.67	13	PASS

2.2. Test Plots



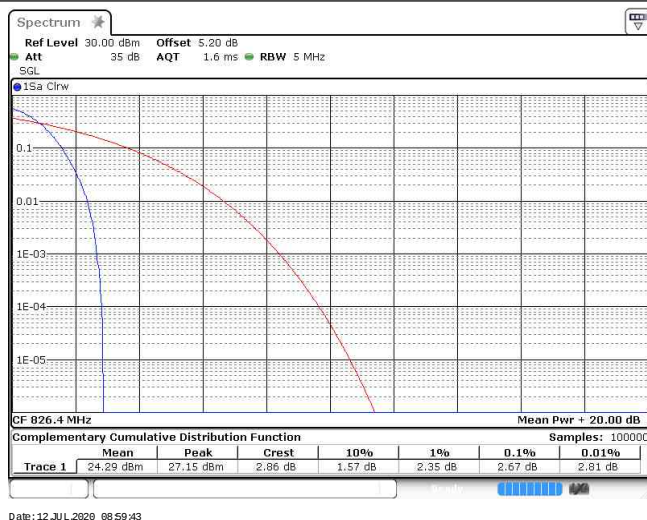


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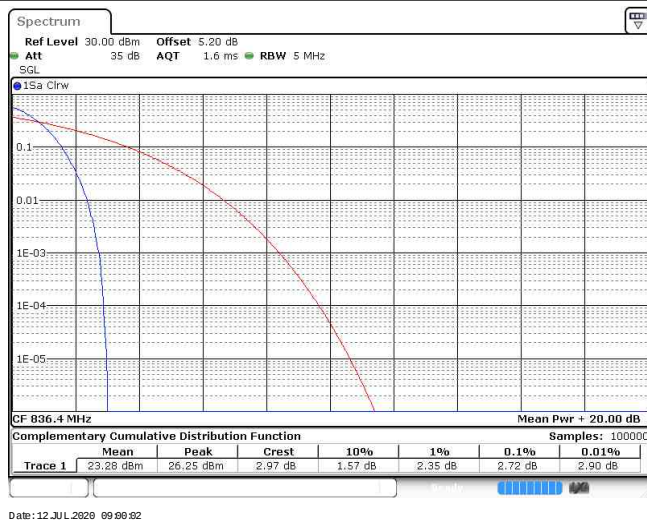


Band II_9538



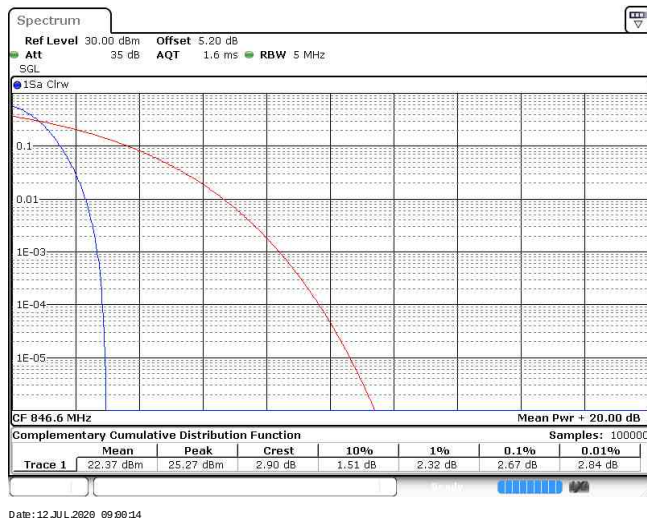


Band V_4132



Band V_4182





Band V_4233

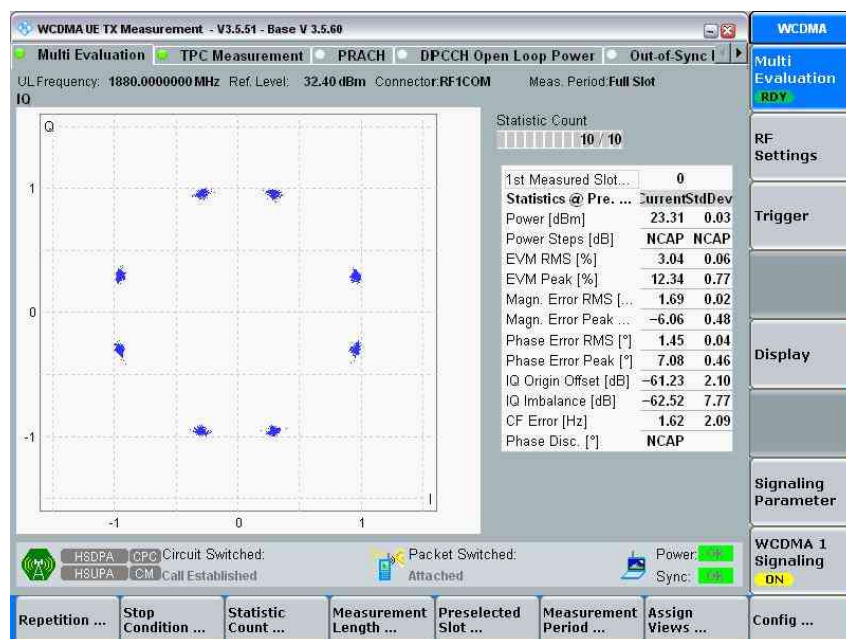


3. Modulation Characteristics

3.1. Test Band = WCDMA Band II

3.1.1. Test Mode = UMTS/TM1

3.1.1.1. Test Channel = MCH

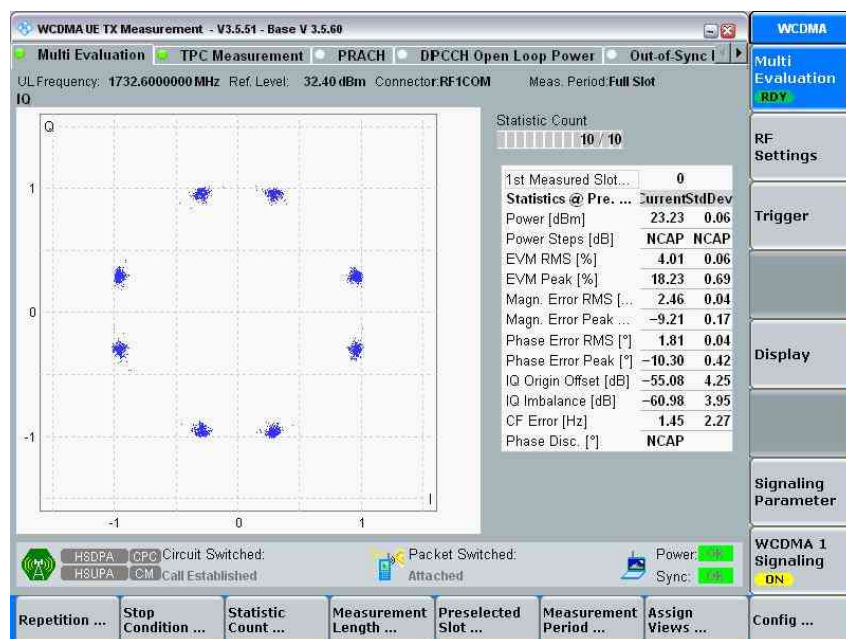


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3.2. Test Band = WCDMA Band IV

3.2.1. Test Mode = UMTS/TM1

3.2.1.1. Test Channel = MCH



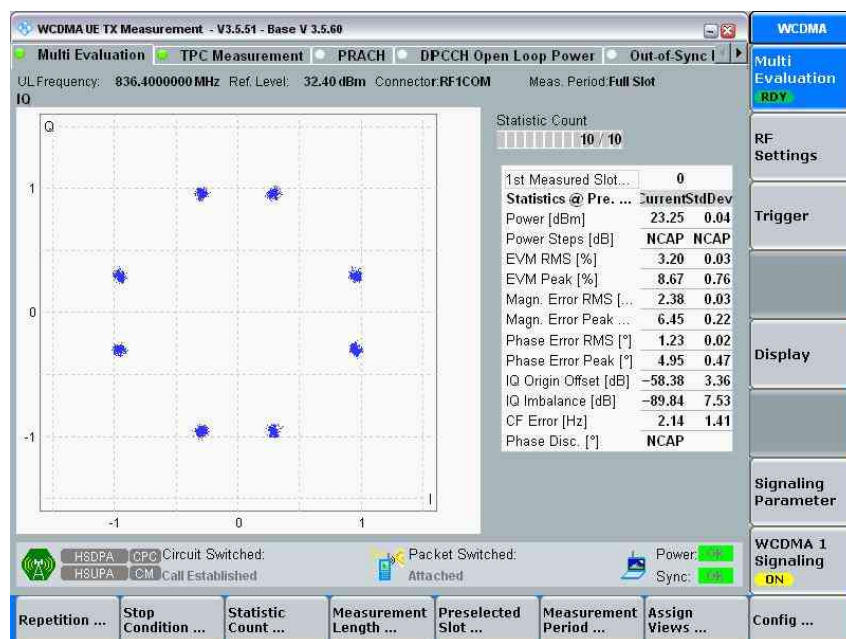
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3.3. Test Band = WCDMA Band V

3.3.1. Test Mode = UMTS/TM1

3.3.1.1. Test Channel = MCH



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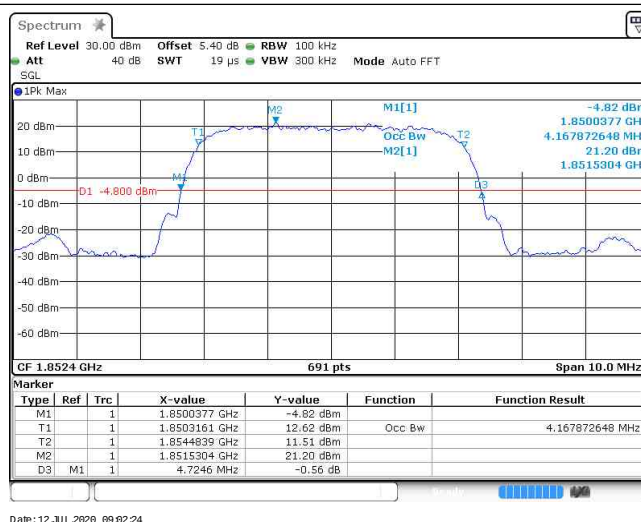


4. 26dB Bandwidth and Occupied Bandwidth

4.1. Test Result

Band	Channel	Occupied Bandwidth (kHz)	26dB Bandwidth (kHz)	Limit(kHz)	Verdict
Band II	9262	4167.9	4725	---	PASS
Band II	9400	4196.8	4739	---	PASS
Band II	9538	4167.9	4754	---	PASS
Band V	4132	4167.9	4768	---	PASS
Band V	4182	4153.4	4754	---	PASS
Band V	4233	4167.9	4754	---	PASS

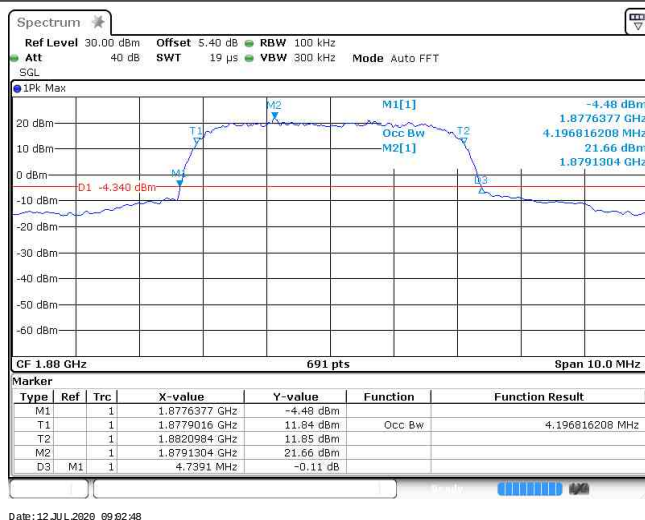
4.2. Test Plots



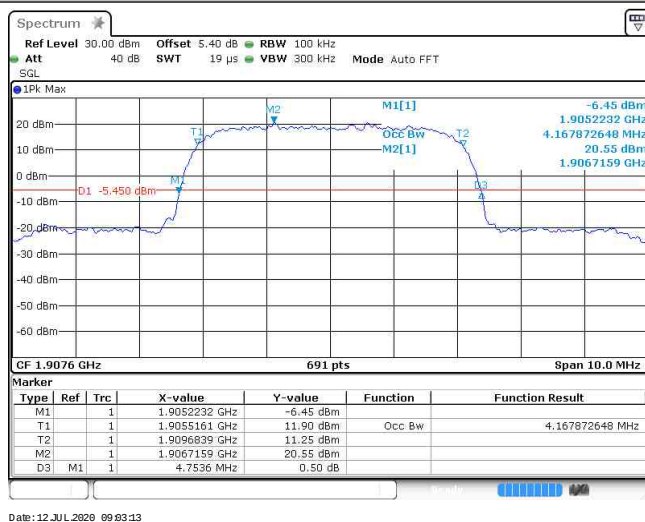
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Band II_9262



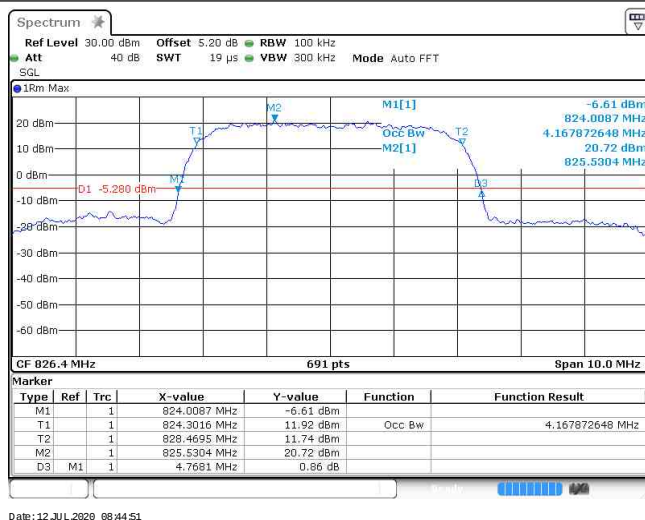


Band II_9400

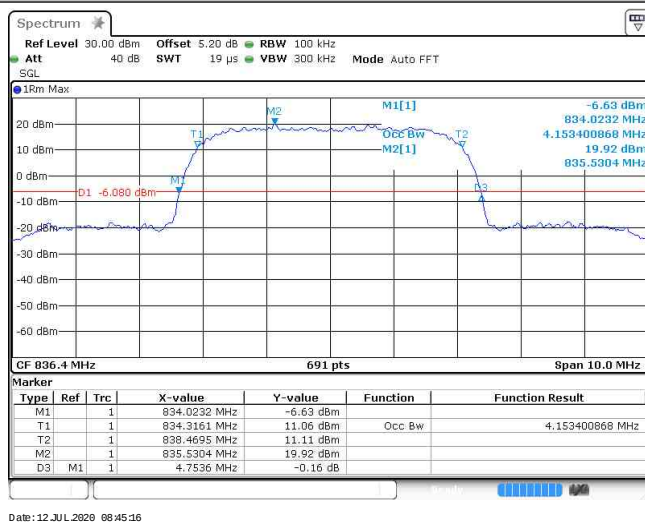


Band II_9538





Band V_4132



Band V_4182

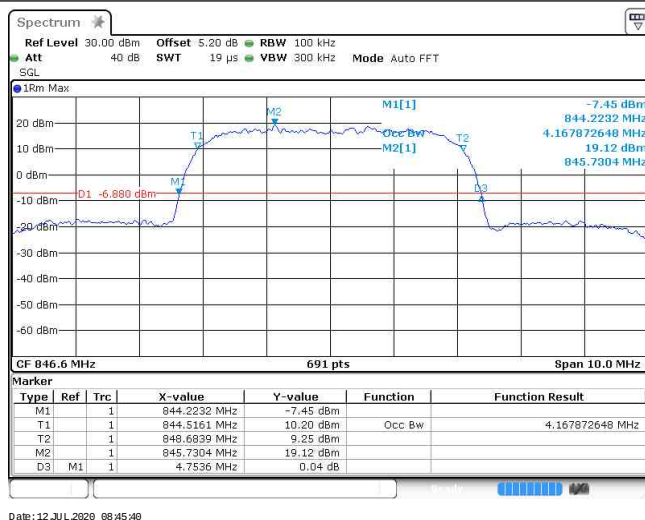


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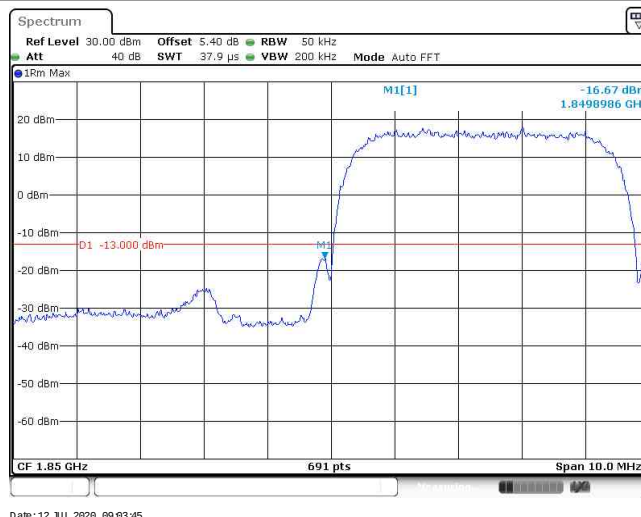


Band V_4233

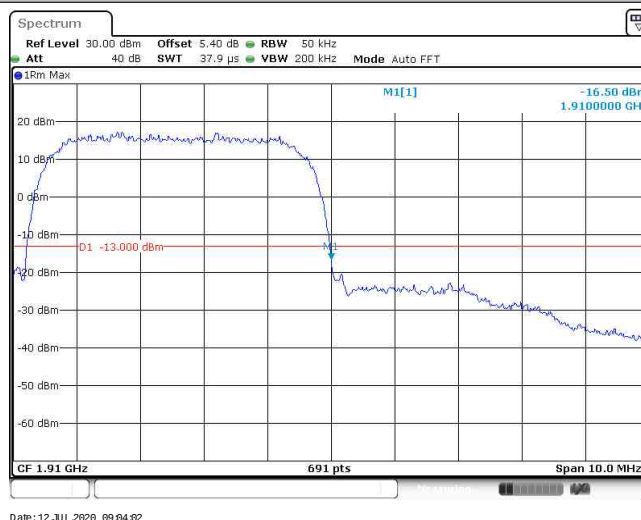


5. Band Edge Compliance

5.1. Test Plots



Band II_9262

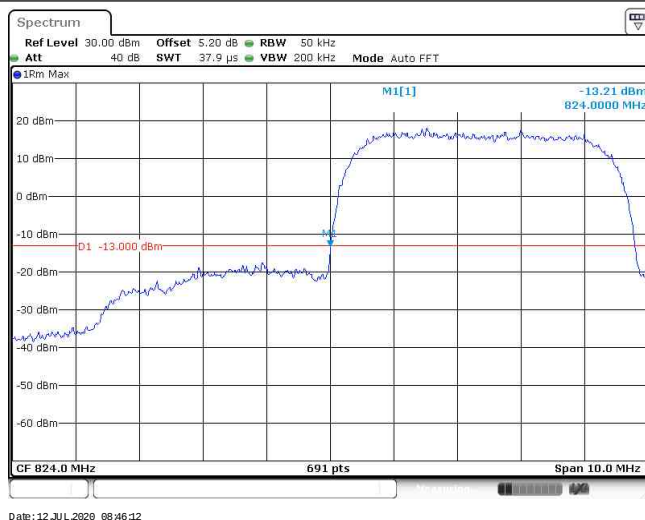


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Band V 4132



Band V 4233



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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 = $k * (Span / RBW)$ " 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

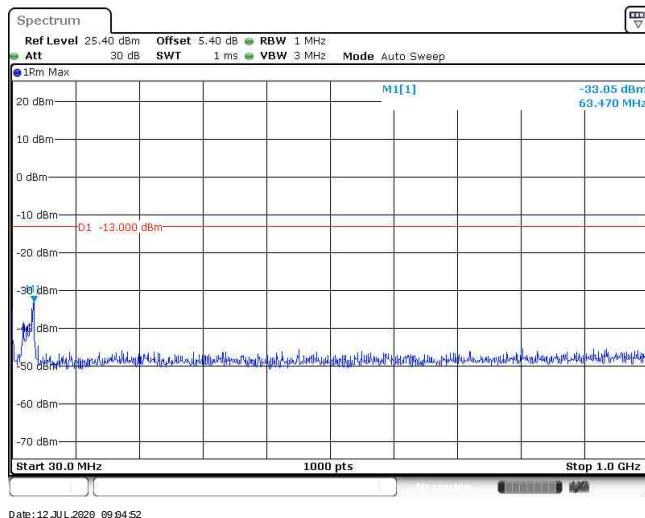


Band II_9262



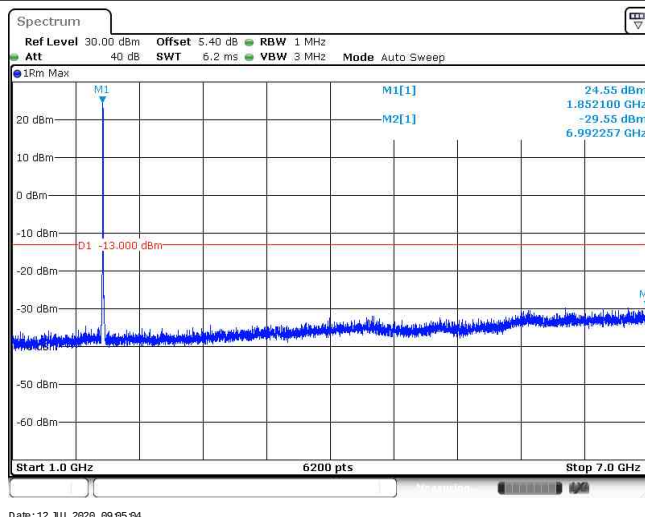
Band II_9262





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Band II_9262



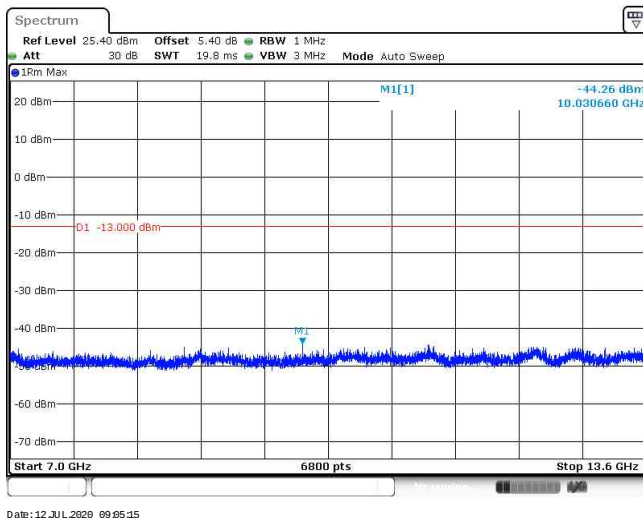
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Band II_9262

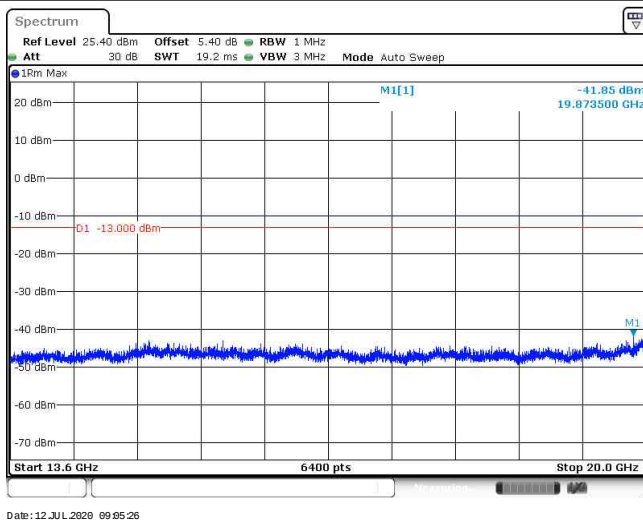


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Band II_9262



Band II_9262



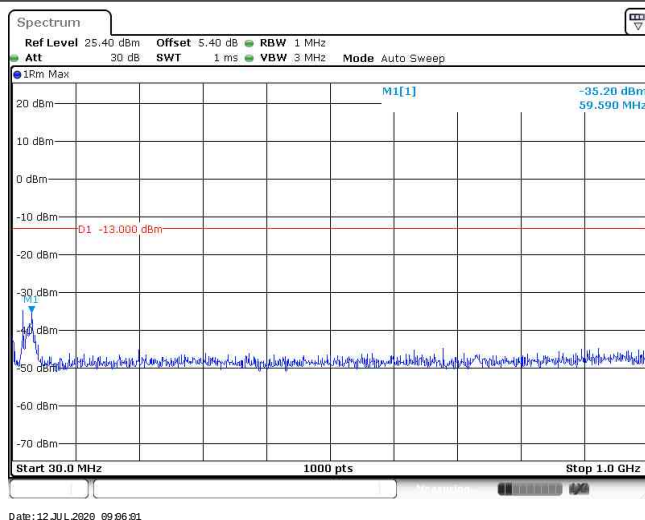


Band II_9400

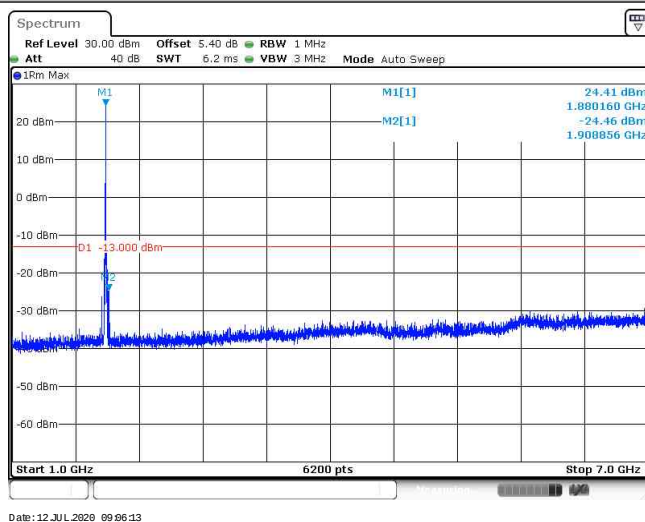


Band II_9400



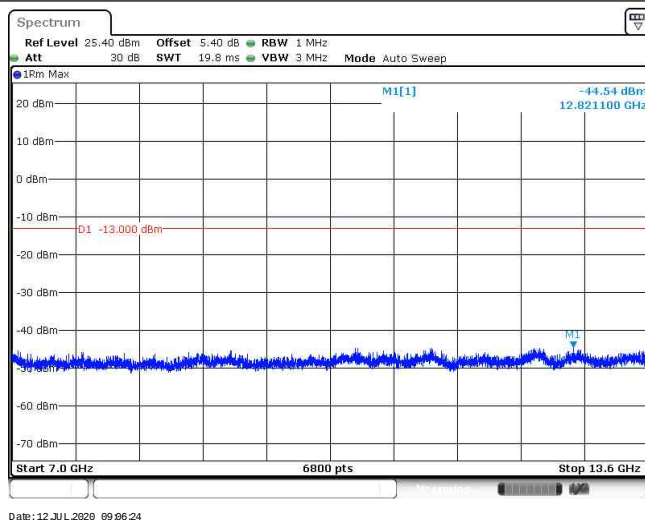


Band II_9400

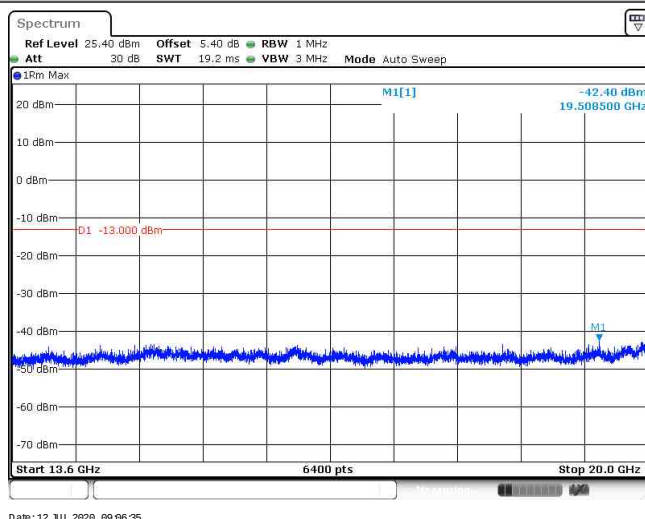


Band II_9400





Band II_9400



Band II_9400



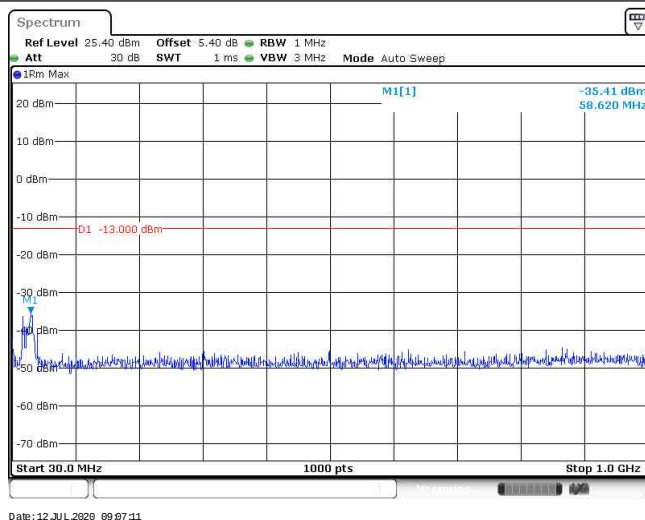


Band II_9538

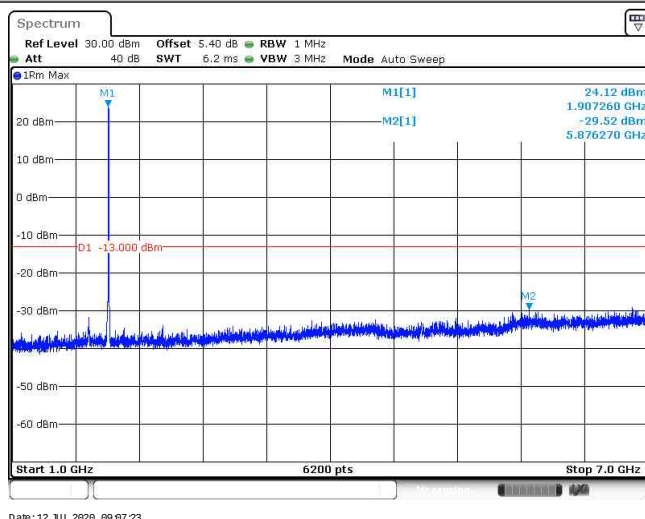


Band II_9538



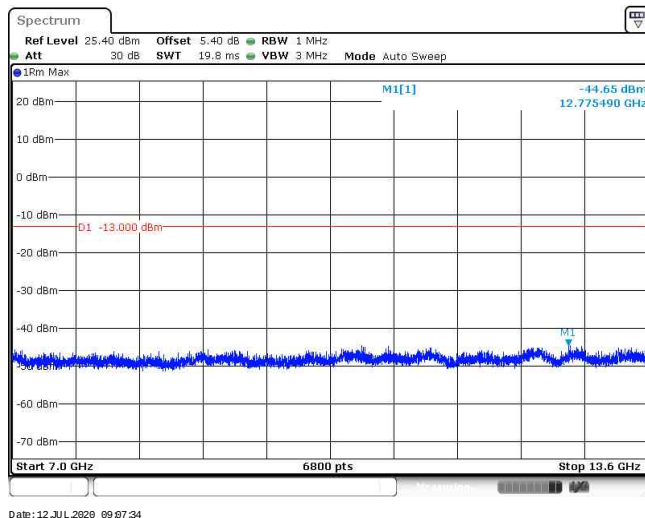


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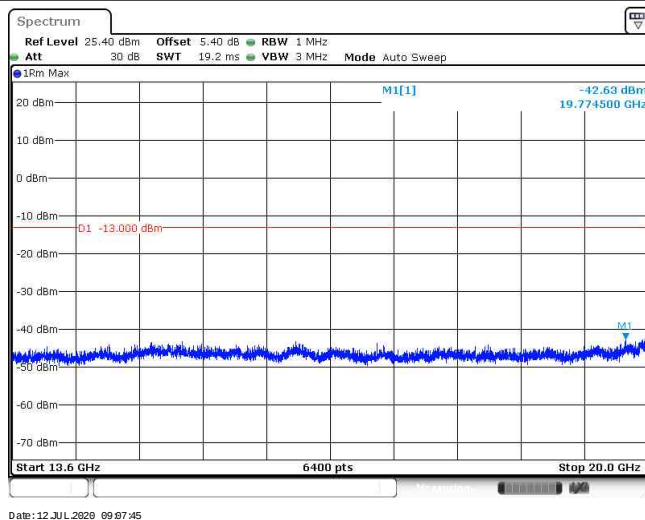


Band II_9538





Band II_9538



Band II_9538



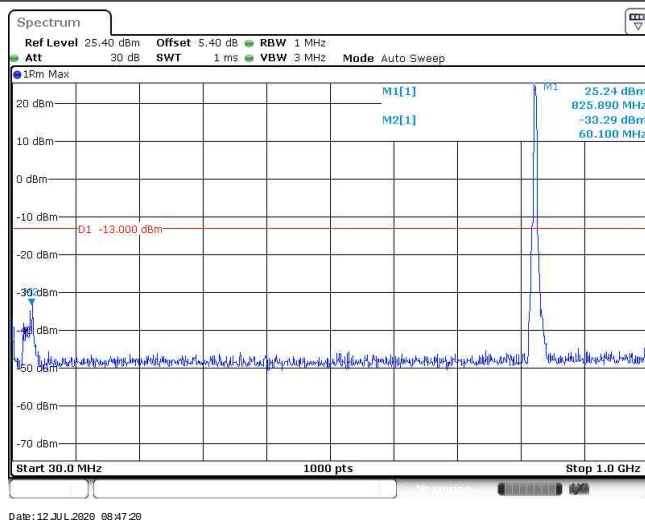


Band V_4132



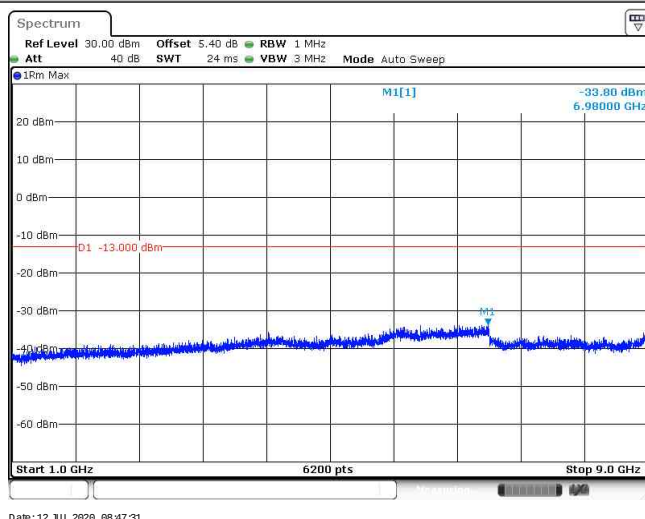
Band V_4132





Date: 12 JUL 2020 08:47:20

Band V_4132



Date: 12 JUL 2020 08:47:31

Band V_4132



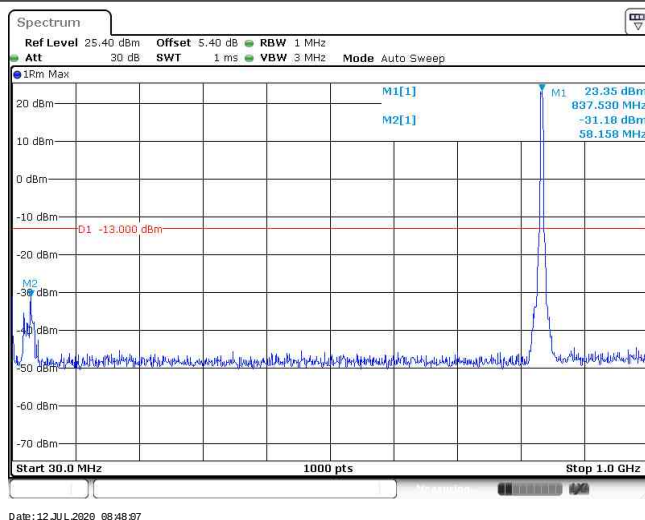


Band V_4182

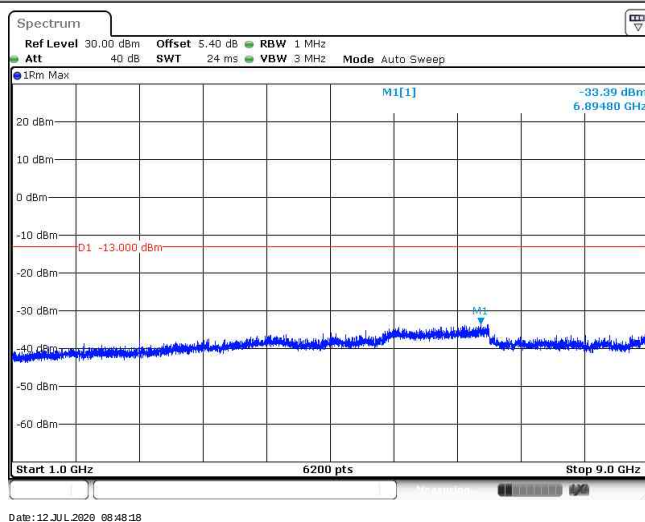


Band V_4182





Band V_4182



Band V_4182



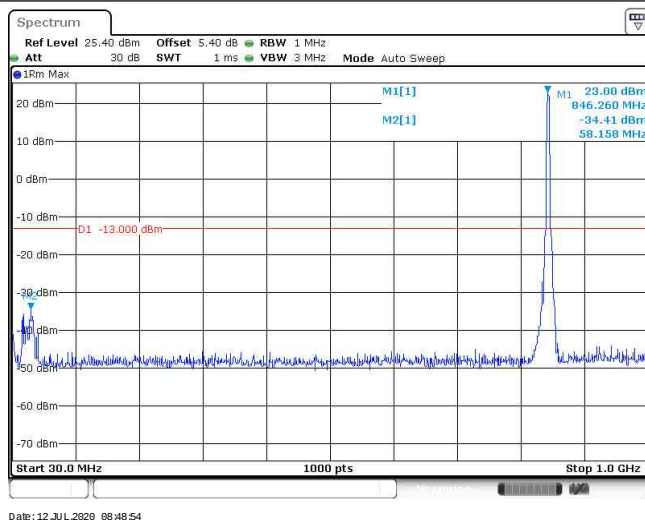


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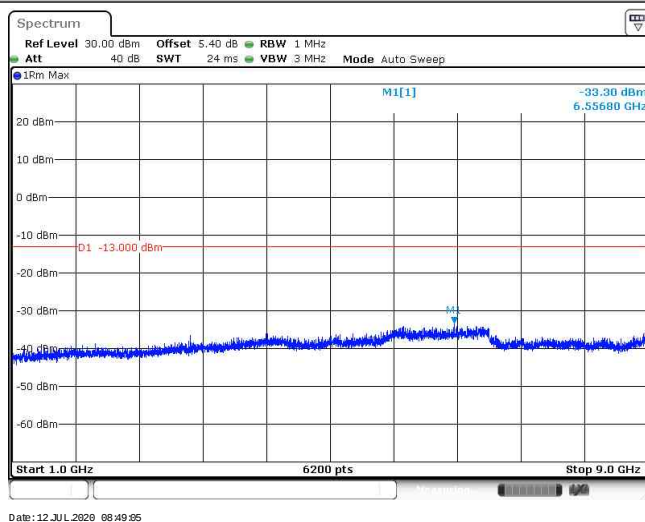


Band V_4233





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
110.1745	-64.67	-13.00	51.67	Vertical
749.2910	-62.02	-13.00	49.02	Vertical
2695.9392	-36.49	-13.00	23.49	Vertical
3702.5234	-57.71	-13.00	44.71	Vertical
14494.3831	-47.07	-13.00	34.07	Vertical
17991.4997	-39.57	-13.00	26.57	Vertical
41.8346	-64.58	-13.00	51.58	Horizontal
681.7756	-62.98	-13.00	49.98	Horizontal
2699.5399	-35.62	-13.00	22.62	Horizontal
3703.0234	-58.38	-13.00	45.38	Horizontal
16392.9464	-43.33	-13.00	30.33	Horizontal
17999.5000	-43.77	-13.00	30.77	Horizontal





7.1.1.2. Test Channel = MCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Polarization
110.6110	-65.13	-13.00	52.13	Vertical
2693.5387	-36.67	-13.00	23.67	Vertical
3762.0254	-57.68	-13.00	44.68	Vertical
5637.0879	-59.58	-13.00	46.58	Vertical
14686.3895	-47.09	-13.00	34.09	Vertical
17997.9999	-39.66	-13.00	26.66	Vertical
44.5992	-63.31	-13.00	50.31	Horizontal
2697.9396	-35.47	-13.00	22.47	Horizontal
3758.0253	-57.64	-13.00	44.64	Horizontal
5641.5881	-60.28	-13.00	47.28	Horizontal
16391.4464	-43.07	-13.00	30.07	Horizontal
17990.9997	-44.26	-13.00	31.26	Horizontal

7.1.1.3. Test Channel = HCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Polarization
108.0404	-65.50	-13.00	52.50	Vertical
2714.7429	-36.67	-13.00	23.67	Vertical
3813.5271	-57.44	-13.00	44.44	Vertical
5725.0908	-59.05	-13.00	46.05	Vertical
14483.8828	-47.01	-13.00	34.01	Vertical
17994.4998	-39.32	-13.00	26.32	Vertical
41.7861	-63.96	-13.00	50.96	Horizontal
582.4911	-63.96	-13.00	50.96	Horizontal
2702.3405	-35.32	-13.00	22.32	Horizontal
3816.5272	-58.45	-13.00	45.45	Horizontal
5719.5907	-58.82	-13.00	45.82	Horizontal
16389.4463	-43.06	-13.00	30.06	Horizontal



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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
110.3200	-64.85	-13.00	51.85	Vertical
581.3271	-64.77	-13.00	51.77	Vertical
1654.1308	-60.80	-13.00	47.80	Vertical
2480.2961	-53.31	-13.00	40.31	Vertical
14457.8819	-47.47	-13.00	34.47	Vertical
17999.0000	-39.44	-13.00	26.44	Vertical
43.0472	-64.29	-13.00	51.29	Horizontal
540.6820	-65.12	-13.00	52.12	Horizontal
1654.1308	-60.02	-13.00	47.02	Horizontal
2479.8960	-50.93	-13.00	37.93	Horizontal
16392.9464	-43.25	-13.00	30.25	Horizontal
17999.5000	-44.26	-13.00	31.26	Horizontal





7.2.1.2. Test Channel = MCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Polarization
112.6966	-64.79	-13.00	51.79	Vertical
600.0975	-63.79	-13.00	50.79	Vertical
2701.5403	-51.96	-13.00	38.96	Vertical
7456.6486	-55.53	-13.00	42.53	Vertical
14520.8840	-47.31	-13.00	34.31	Vertical
17997.4999	-39.52	-13.00	26.52	Vertical
43.9202	-64.24	-13.00	51.24	Horizontal
509.3495	-65.23	-13.00	52.23	Horizontal
2701.5403	-50.85	-13.00	37.85	Horizontal
7468.1489	-56.09	-13.00	43.09	Horizontal
16399.9467	-43.36	-13.00	30.36	Horizontal
17997.4999	-44.05	-13.00	31.05	Horizontal

7.2.1.3. Test Channel = HCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Polarization
110.2715	-65.02	-13.00	52.02	Vertical
586.9533	-64.79	-13.00	51.79	Vertical
2694.7389	-52.08	-13.00	39.08	Vertical
7454.6485	-55.76	-13.00	42.76	Vertical
14497.3832	-46.95	-13.00	33.95	Vertical
17999.5000	-39.62	-13.00	26.62	Vertical
41.4951	-64.01	-13.00	51.01	Horizontal
539.7605	-64.57	-13.00	51.57	Horizontal
2700.3401	-50.71	-13.00	37.71	Horizontal
7484.6495	-55.72	-13.00	42.72	Horizontal
16392.4464	-43.10	-13.00	30.10	Horizontal
17999.5000	-43.92	-13.00	30.92	Horizontal

Remark:



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- 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

BAND	Channel	Voltage (Vdc)	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band II	9262	VL	TN	5.23	0.002823	±2.5	PASS
Band II	9262	VN	TN	-12.96	-0.006994	±2.5	PASS
Band II	9262	VH	TN	3.99	0.002155	±2.5	PASS
Band II	9400	VL	TN	10.26	0.005458	±2.5	PASS
Band II	9400	VN	TN	-12.99	-0.006911	±2.5	PASS
Band II	9400	VH	TN	7.76	0.004127	±2.5	PASS
Band II	9538	VL	TN	14.55	0.007630	±2.5	PASS
Band II	9538	VN	TN	0.27	0.000143	±2.5	PASS
Band II	9538	VH	TN	7.57	0.003969	±2.5	PASS
Band V	4132	VL	TN	-2.08	-0.002511	±2.5	PASS
Band V	4132	VN	TN	-13.64	-0.016504	±2.5	PASS
Band V	4132	VH	TN	0.16	0.000198	±2.5	PASS
Band V	4182	VL	TN	-3.03	-0.003619	±2.5	PASS
Band V	4182	VN	TN	9.20	0.010995	±2.5	PASS
Band V	4182	VH	TN	3.52	0.004203	±2.5	PASS
Band V	4233	VL	TN	7.93	0.009361	±2.5	PASS
Band V	4233	VN	TN	14.22	0.016797	±2.5	PASS
Band V	4233	VH	TN	8.71	0.010284	±2.5	PASS

8.2. Frequency Vs Temperature

BAND	Channel	Voltage (Vdc)	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band II	9262	VN	-30	2.63	0.001420	±2.5	PASS
Band II	9262	VN	-20	5.77	0.003116	±2.5	PASS
Band II	9262	VN	-10	1.56	0.000842	±2.5	PASS
Band II	9262	VN	0	14.80	0.007988	±2.5	PASS
Band II	9262	VN	10	3.52	0.001901	±2.5	PASS
Band II	9262	VN	20	-7.70	-0.004155	±2.5	PASS
Band II	9262	VN	30	-10.82	-0.005843	±2.5	PASS



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Band II	9262	VN	40	7.43	0.004009	±2.5	PASS
Band II	9262	VN	50	6.57	0.003548	±2.5	PASS
Band II	9400	VN	-30	9.70	0.005158	±2.5	PASS
Band II	9400	VN	-20	4.29	0.002282	±2.5	PASS
Band II	9400	VN	-10	0.45	0.000238	±2.5	PASS
Band II	9400	VN	0	1.54	0.000817	±2.5	PASS
Band II	9400	VN	10	-11.34	-0.006034	±2.5	PASS
Band II	9400	VN	20	6.71	0.003569	±2.5	PASS
Band II	9400	VN	30	-2.14	-0.001139	±2.5	PASS
Band II	9400	VN	40	-0.73	-0.000389	±2.5	PASS
Band II	9400	VN	50	-6.75	-0.003593	±2.5	PASS
Band II	9538	VN	-30	5.35	0.002804	±2.5	PASS
Band II	9538	VN	-20	-10.67	-0.005595	±2.5	PASS
Band II	9538	VN	-10	12.41	0.006503	±2.5	PASS
Band II	9538	VN	0	-12.36	-0.006481	±2.5	PASS
Band II	9538	VN	10	14.48	0.007591	±2.5	PASS
Band II	9538	VN	20	9.40	0.004930	±2.5	PASS
Band II	9538	VN	30	-14.47	-0.007586	±2.5	PASS
Band II	9538	VN	40	4.21	0.002205	±2.5	PASS
Band II	9538	VN	50	-10.82	-0.005673	±2.5	PASS
Band V	4132	VN	-30	-6.59	-0.007974	±2.5	PASS
Band V	4132	VN	-20	6.22	0.007527	±2.5	PASS
Band V	4132	VN	-10	3.06	0.003699	±2.5	PASS
Band V	4132	VN	0	4.99	0.006035	±2.5	PASS
Band V	4132	VN	10	5.86	0.007094	±2.5	PASS
Band V	4132	VN	20	0.35	0.000426	±2.5	PASS
Band V	4132	VN	30	-9.53	-0.011530	±2.5	PASS
Band V	4132	VN	40	10.85	0.013127	±2.5	PASS
Band V	4132	VN	50	-9.99	-0.012094	±2.5	PASS
Band V	4182	VN	-30	-3.70	-0.004429	±2.5	PASS
Band V	4182	VN	-20	6.63	0.007926	±2.5	PASS
Band V	4182	VN	-10	-4.23	-0.005060	±2.5	PASS
Band V	4182	VN	0	-2.07	-0.002474	±2.5	PASS
Band V	4182	VN	10	13.57	0.016227	±2.5	PASS
Band V	4182	VN	20	6.29	0.007518	±2.5	PASS
Band V	4182	VN	30	-9.74	-0.011649	±2.5	PASS
Band V	4182	VN	40	-9.08	-0.010857	±2.5	PASS



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Band V	4182	VN	50	-14.88	-0.017787	±2.5	PASS
Band V	4233	VN	-30	10.98	0.012969	±2.5	PASS
Band V	4233	VN	-20	-1.67	-0.001972	±2.5	PASS
Band V	4233	VN	-10	3.32	0.003927	±2.5	PASS
Band V	4233	VN	0	9.00	0.010628	±2.5	PASS
Band V	4233	VN	10	-1.58	-0.001864	±2.5	PASS
Band V	4233	VN	20	9.48	0.011200	±2.5	PASS
Band V	4233	VN	30	0.42	0.000493	±2.5	PASS
Band V	4233	VN	40	7.64	0.009019	±2.5	PASS
Band V	4233	VN	50	6.85	0.008087	±2.5	PASS

The End

