



Appendix B

WCDMA BAND II & V



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1. Effective (Isotropic) Radiated Power Output Data

1.1. Test Result

BAND	Channel	Power(dBm)	EIRP(dBm)	Limit(dBm)	Verdict
BAND II	9262	22.06	23.83	33.00	PASS
BAND II	9400	21.94	23.71	33.00	PASS
BAND II	9538	21.92	23.69	33.00	PASS

BAND	Channel	Power(dBm)	ERP(dBm)	Limit(dBm)	Verdict
BAND V	4132	22.17	19.45	38.45	PASS
BAND V	4182	21.94	19.22	38.45	PASS
BAND V	4233	22.21	19.49	38.45	PASS

Note:

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

$$\text{EIRP [dBm]} = \text{SGP [dBm]} - \text{Cable Loss [dB]} + \text{Gain [dBi]}$$

$$\text{ERP [dBm]} = \text{SGP [dBm]} - \text{Cable Loss [dB]} + \text{Gain [dBd]}$$

b: SGP=Signal Generator Level

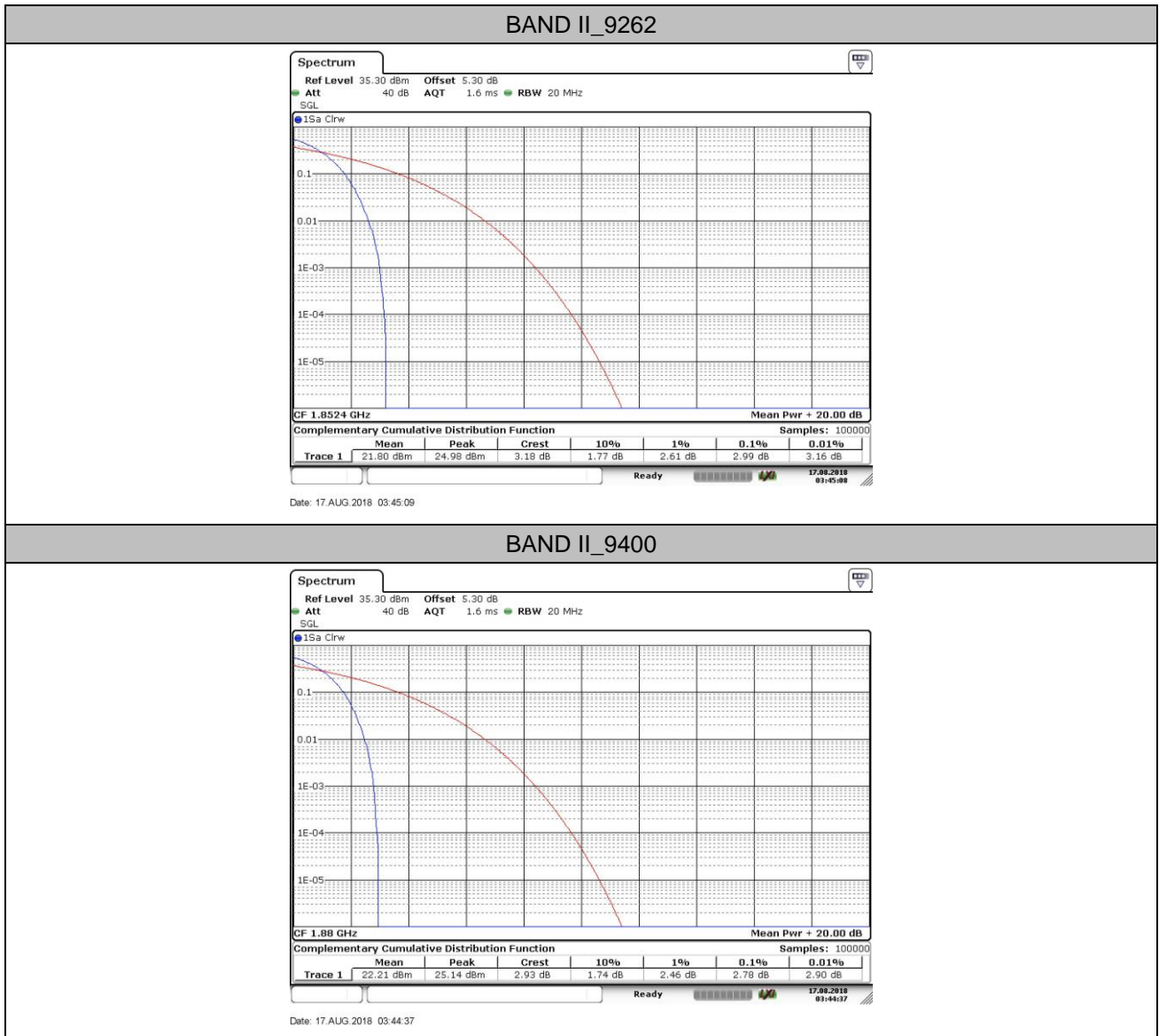


2. Peak-to-Average Ratio

2.1. Test Result

BAND	Channel	Peak-to-Average Ratio(dB)	Limit(dB)	Verdict
BAND II	9262	2.97	13	PASS
BAND II	9400	2.78	13	PASS
BAND II	9538	2.96	13	PASS
BAND V	4132	3.39	13	PASS
BAND V	4182	3.54	13	PASS
BAND V	4233	3.01	13	PASS

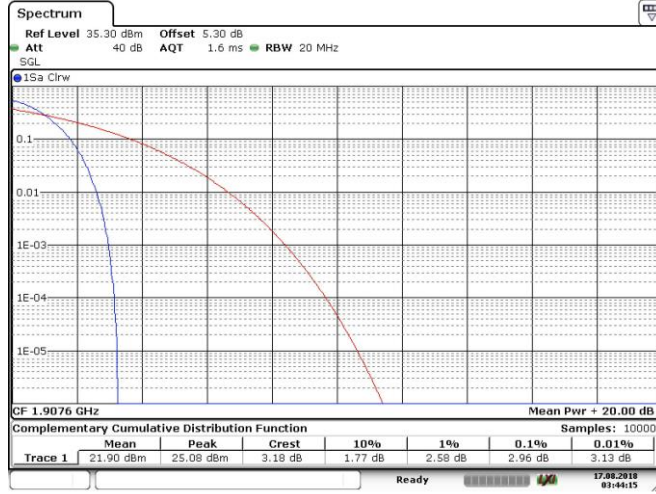
2.2. Test Plots



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BAND II_9538



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BAND V_4132

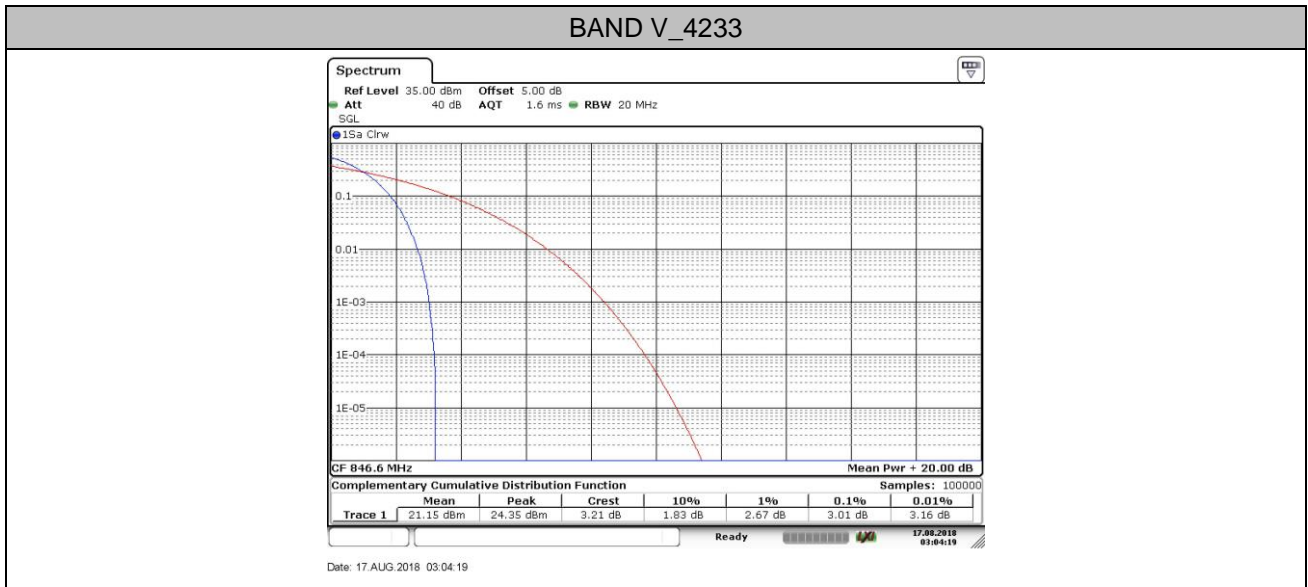


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BAND V_4182



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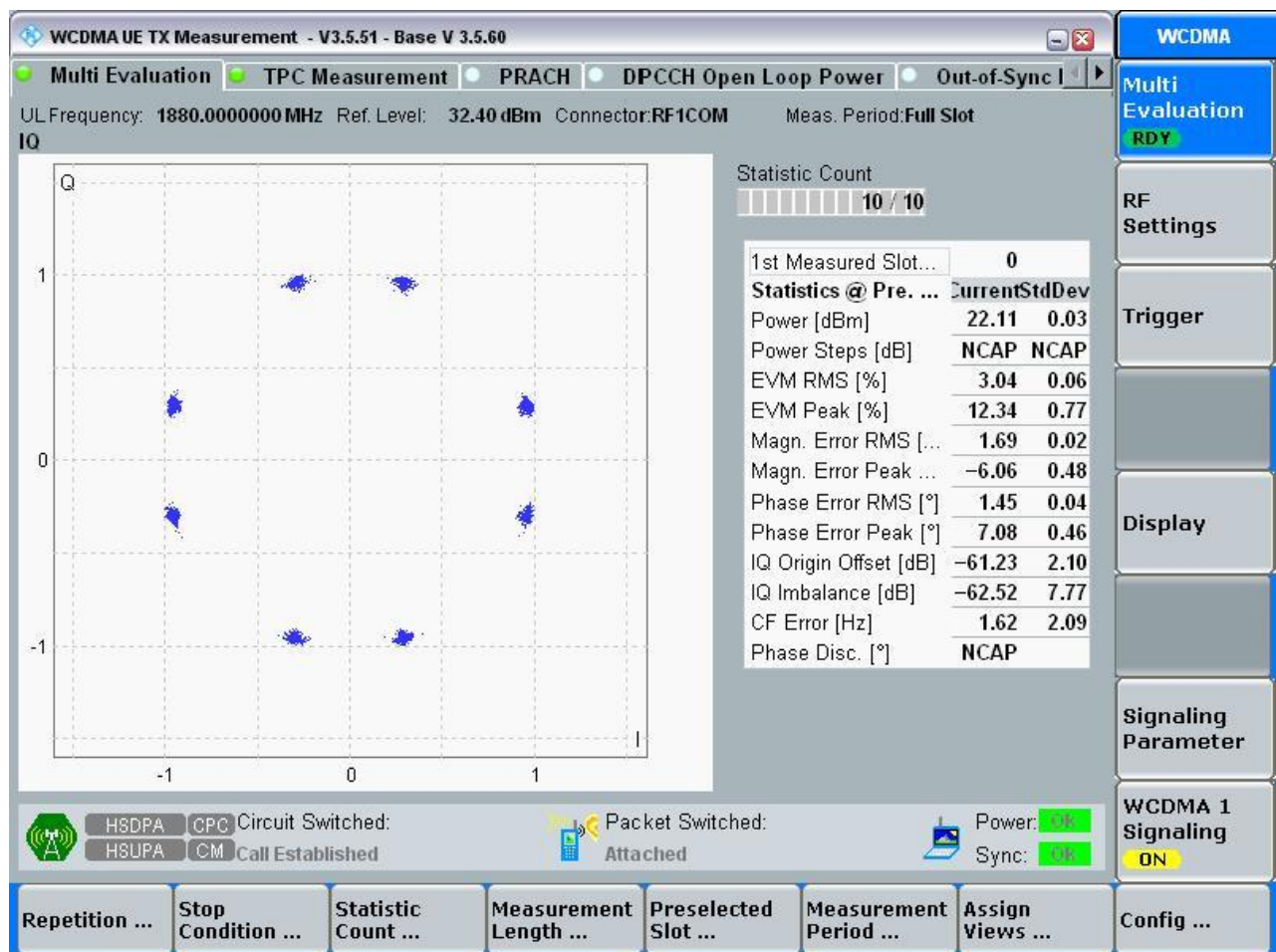
3. Modulation Characteristics

3.1. For WCDMA

3.1.1. Test BAND = WCDMA BAND II

3.1.1.1. Test Mode = UMTS/TM1

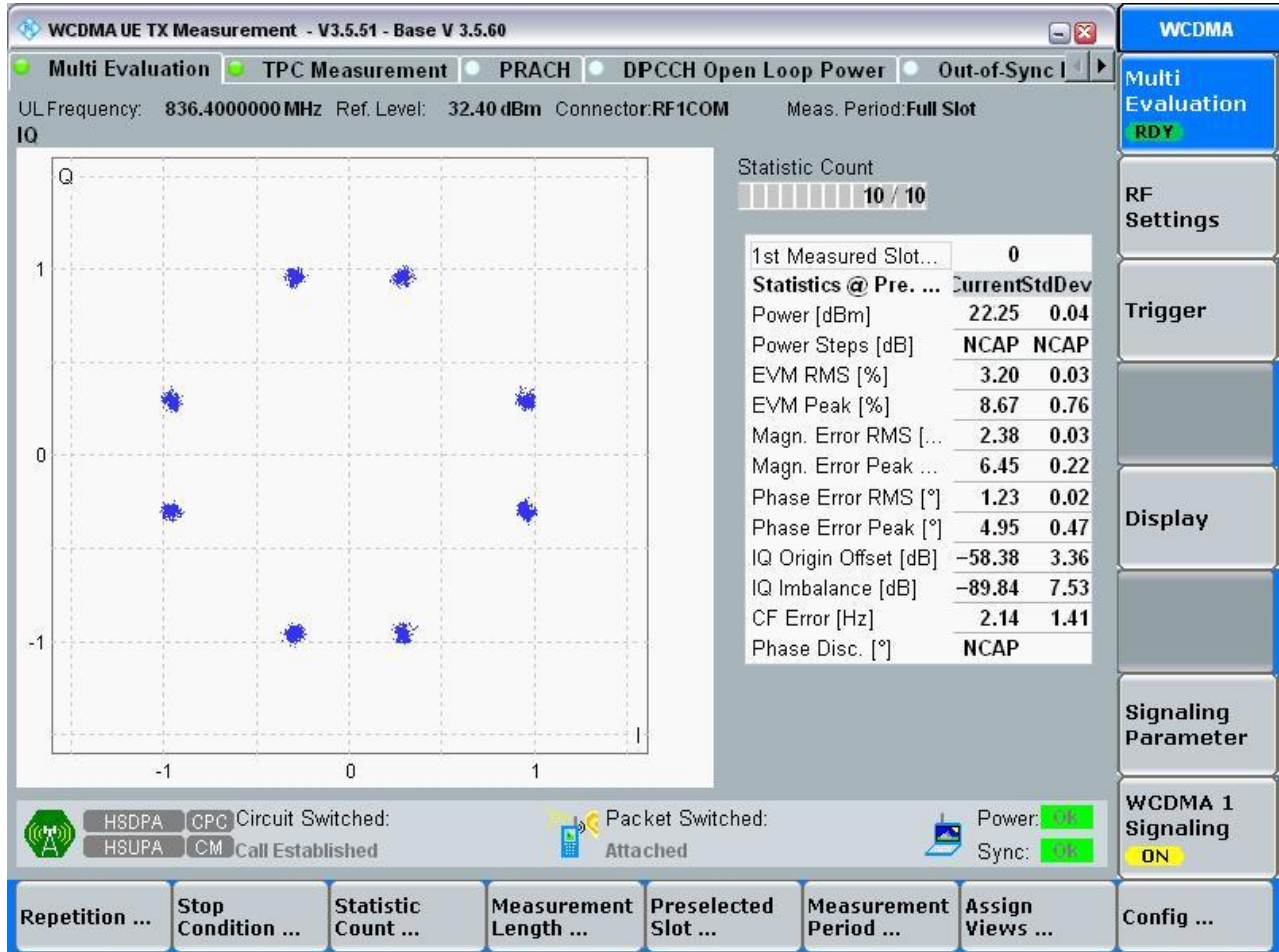
3.1.1.1.1. Test Channel = MCH



3.1.2. Test BAND = WCDMA BAND V

3.1.2.1. Test Mode = UMTS /TM1

3.1.2.1.1. Test Channel = MCH

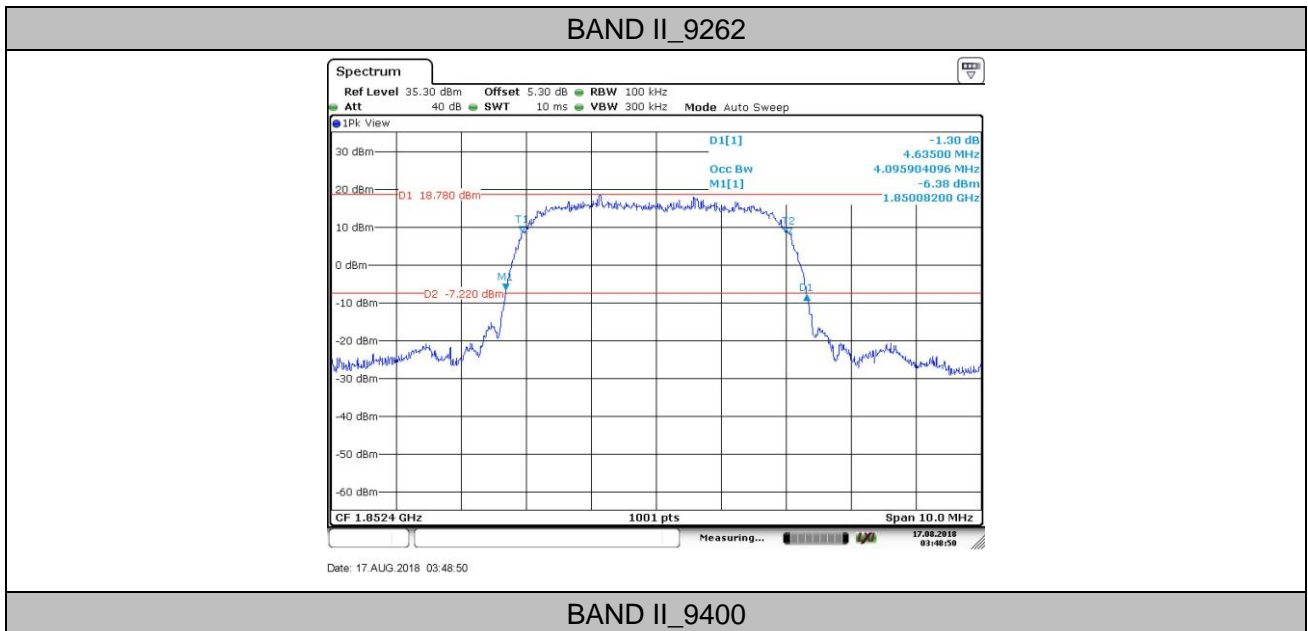


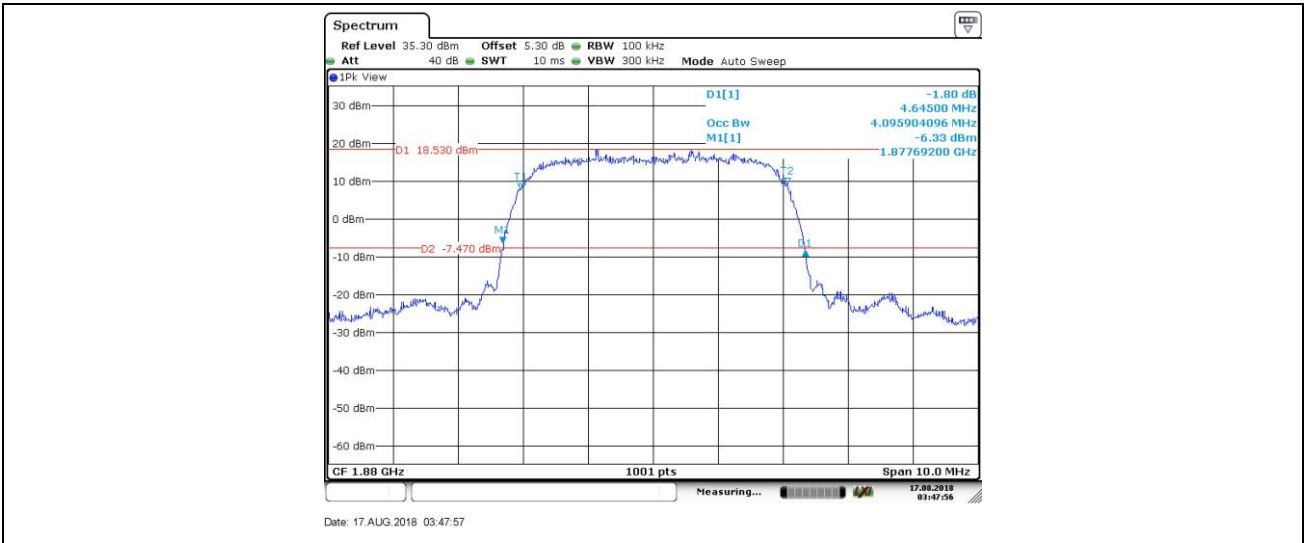
4. 26dB Bandwidth and Occupied Bandwidth

4.1. Test Result

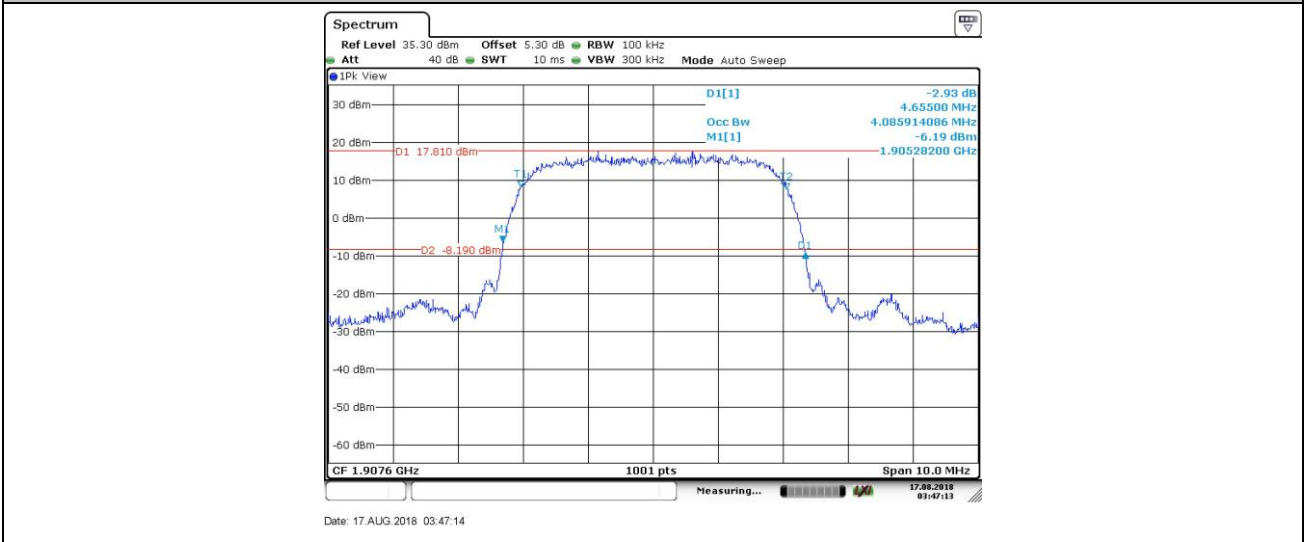
BAND	Channel	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Limit(kHz)	Verdict
BAND II	9262	4.096	4.63	---	PASS
BAND II	9400	4.096	4.65	---	PASS
BAND II	9538	4.086	4.66	---	PASS
BAND V	4132	4.086	4.64	---	PASS
BAND V	4182	4.096	4.64	---	PASS
BAND V	4233	4.096	4.64	---	PASS

4.2. Test Plots

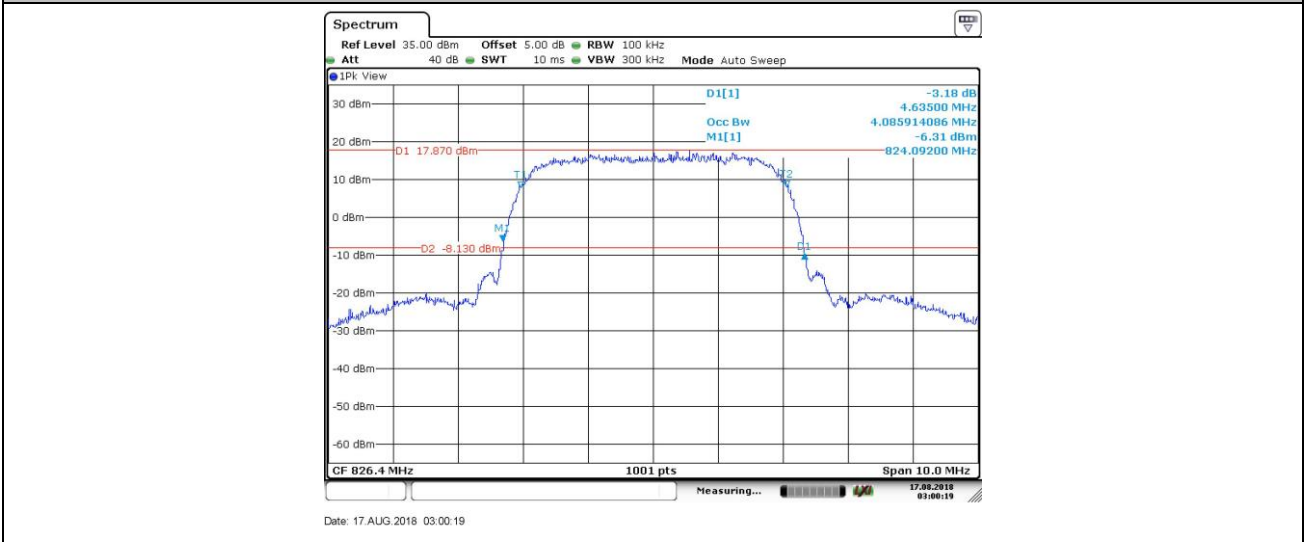




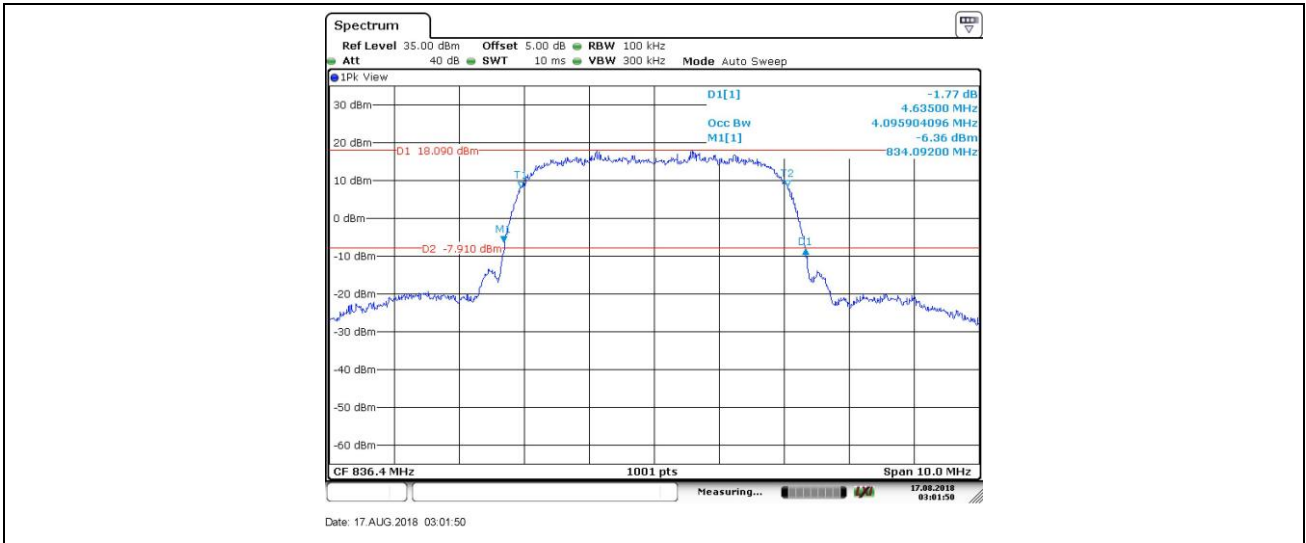
BAND II_9538



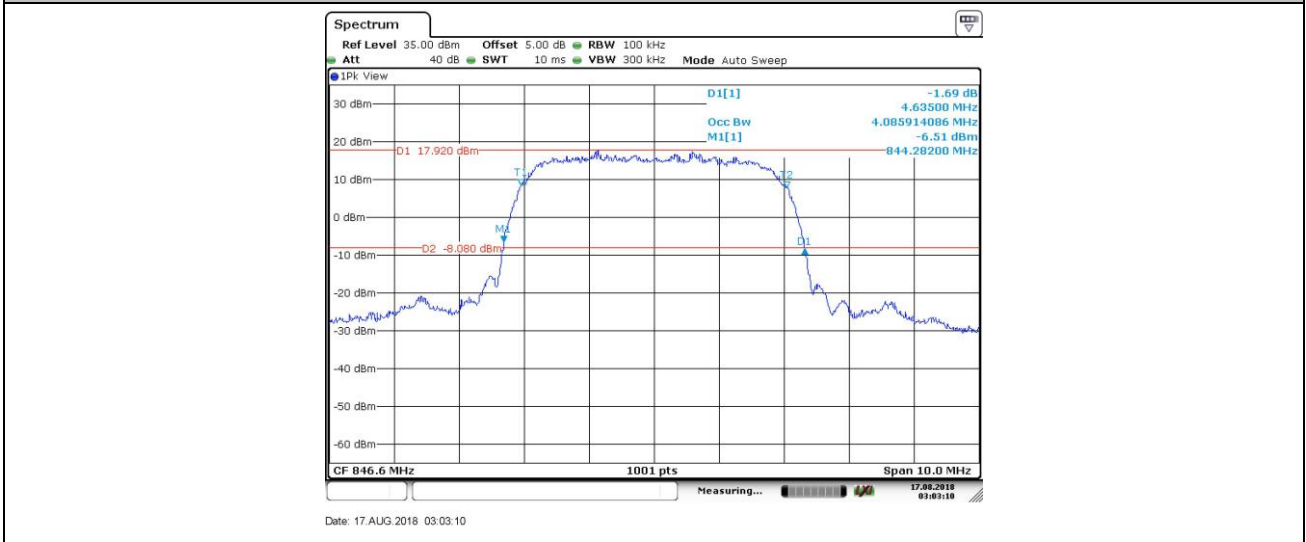
BAND V_4132



BAND V_4182

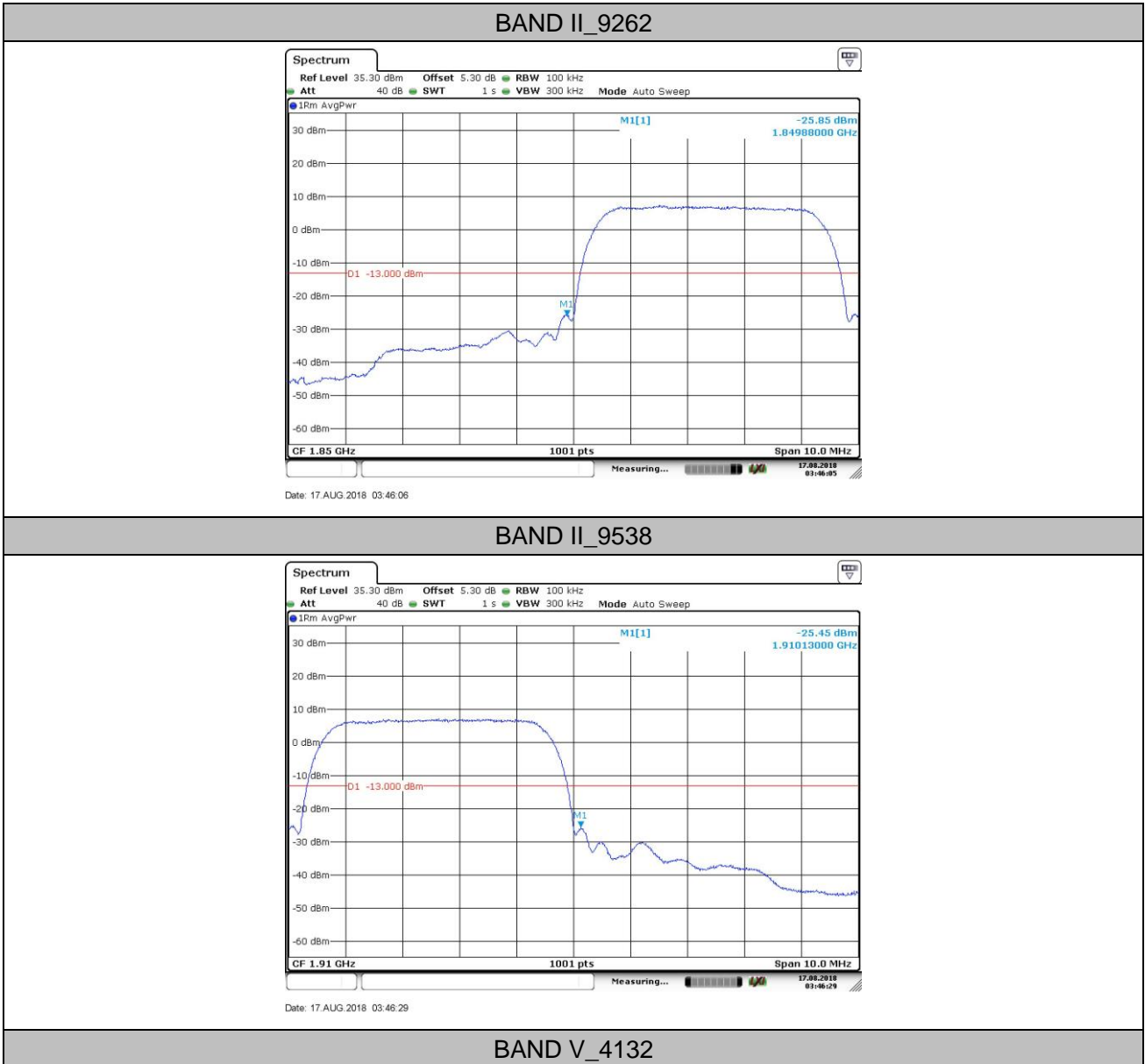


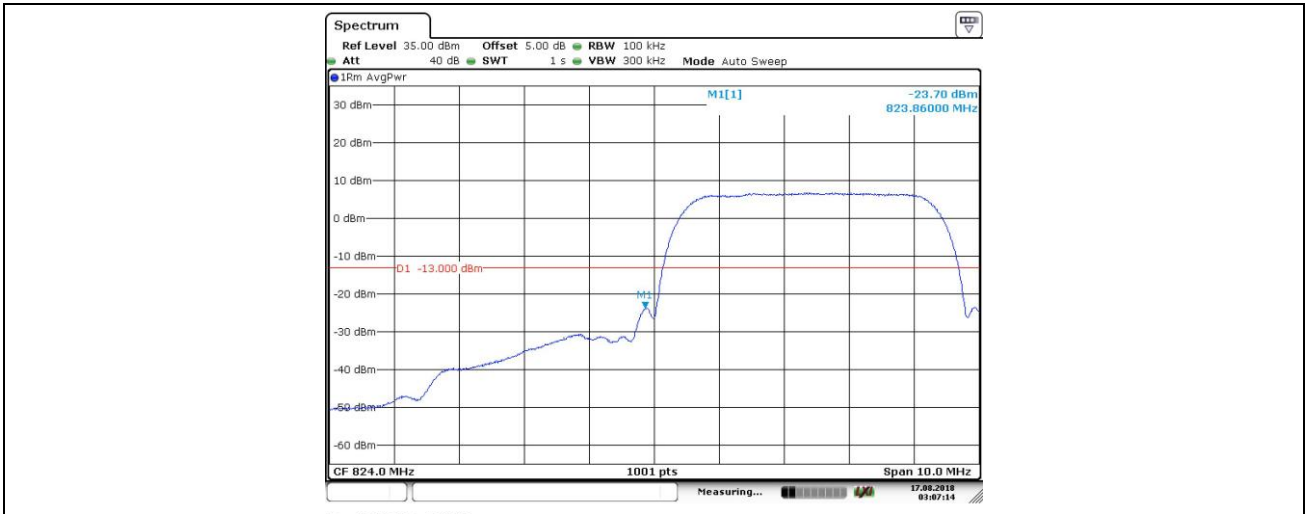
BAND V_4233



5. Band Edge Compliance

5.1. Test Plots





BAND V_4233

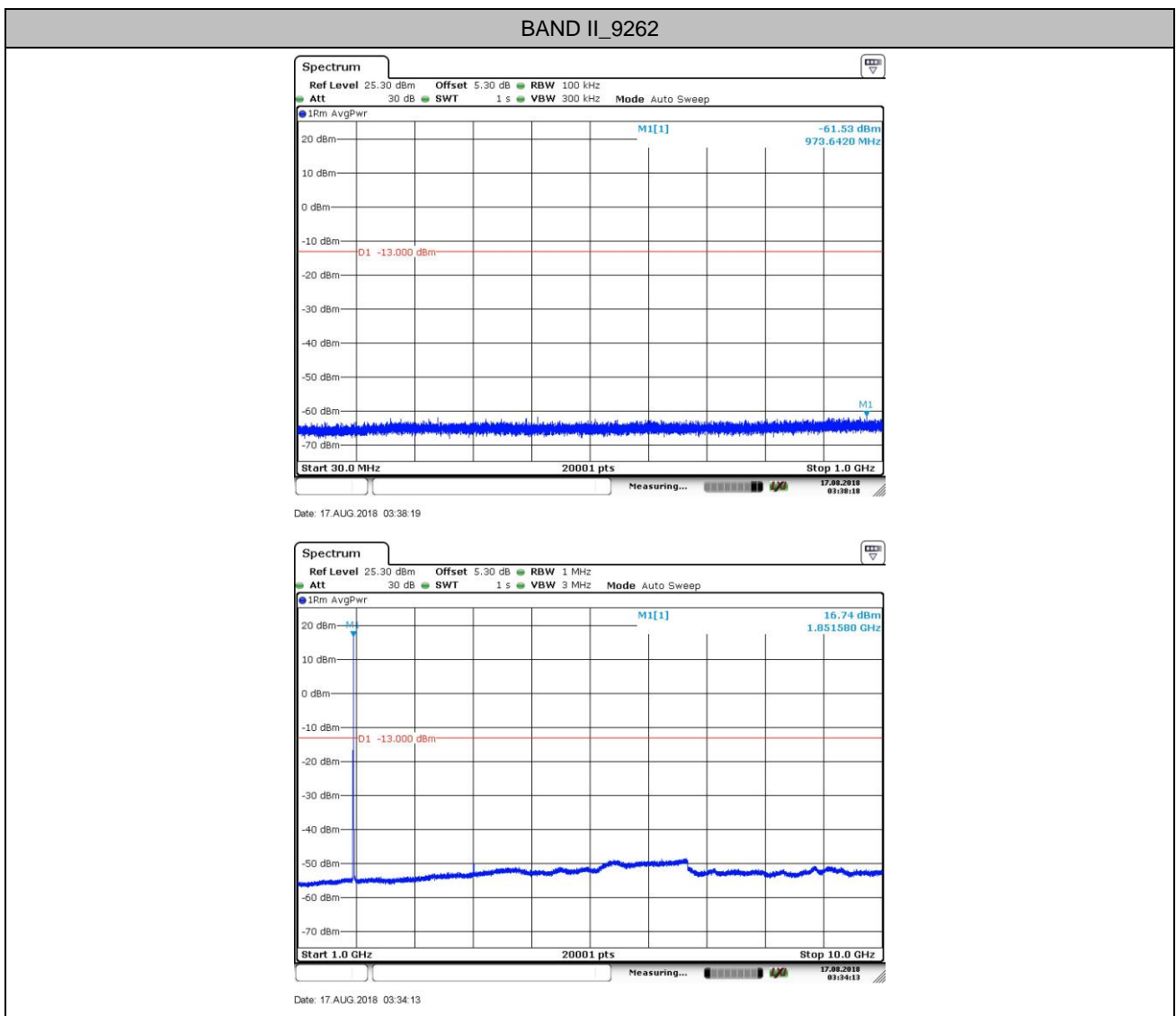


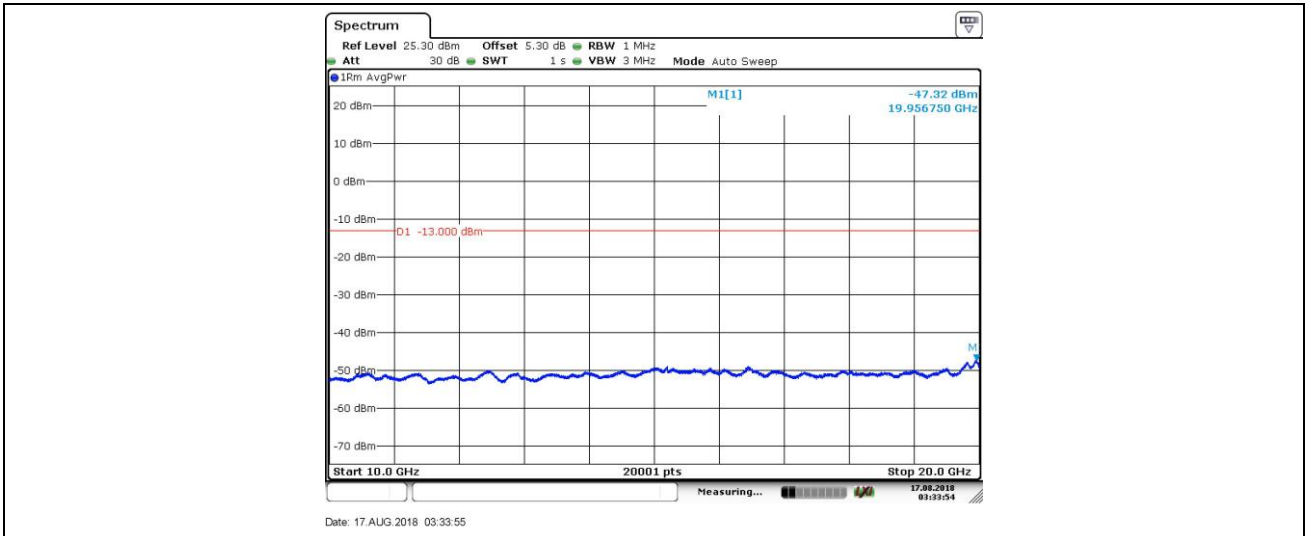
6. Spurious Emission at Antenna Terminal

NOTE1: 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.

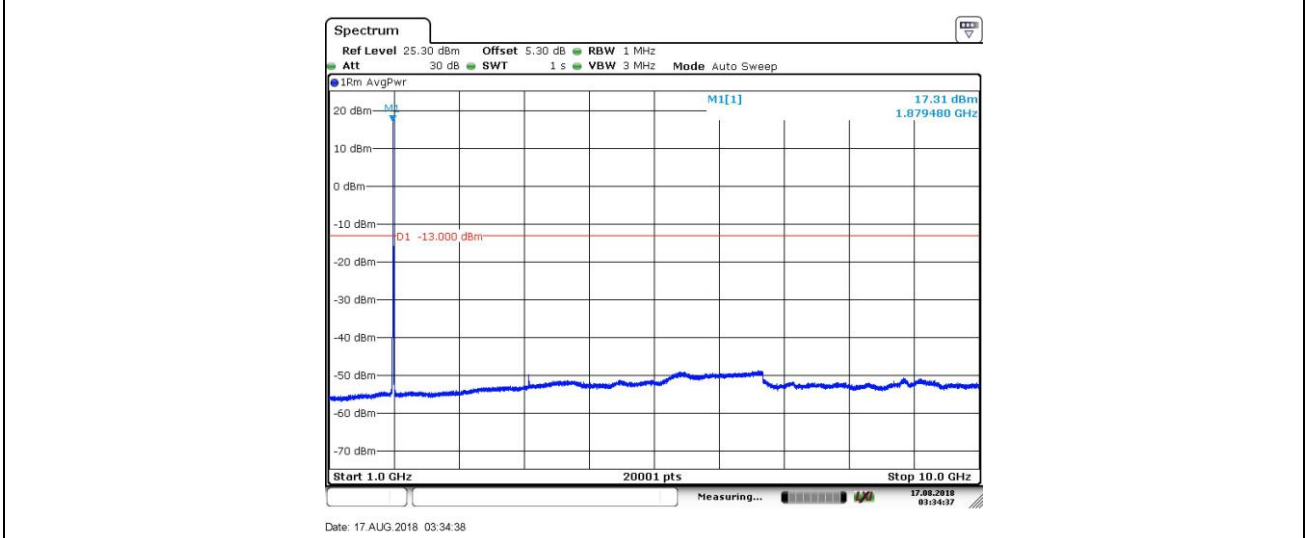
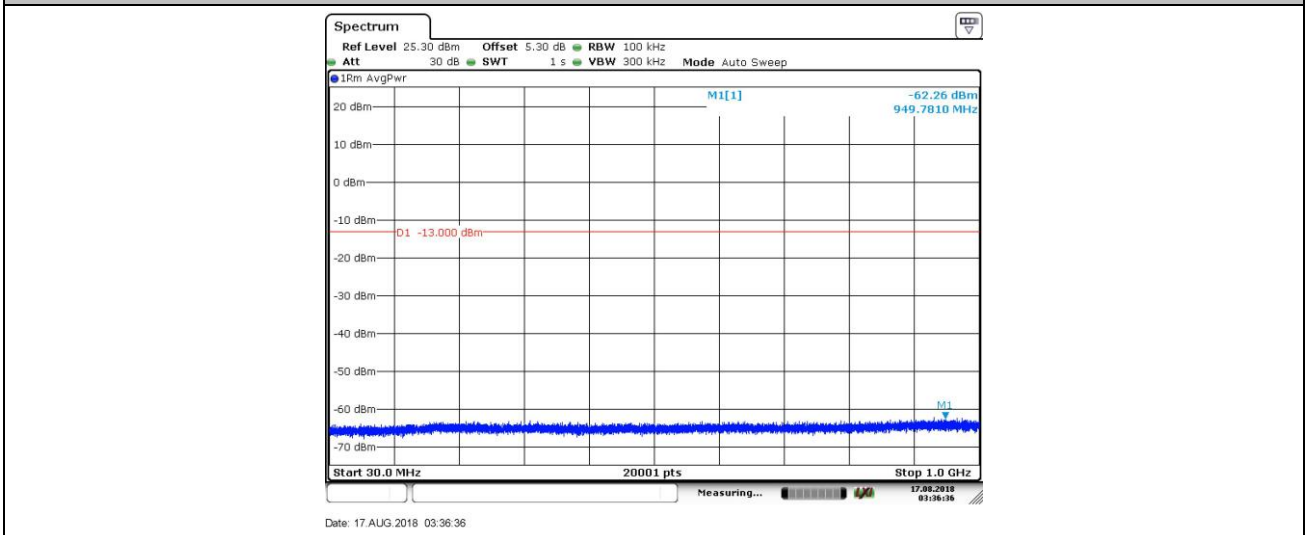
NOTE2: only the worst case data displayed in this report.

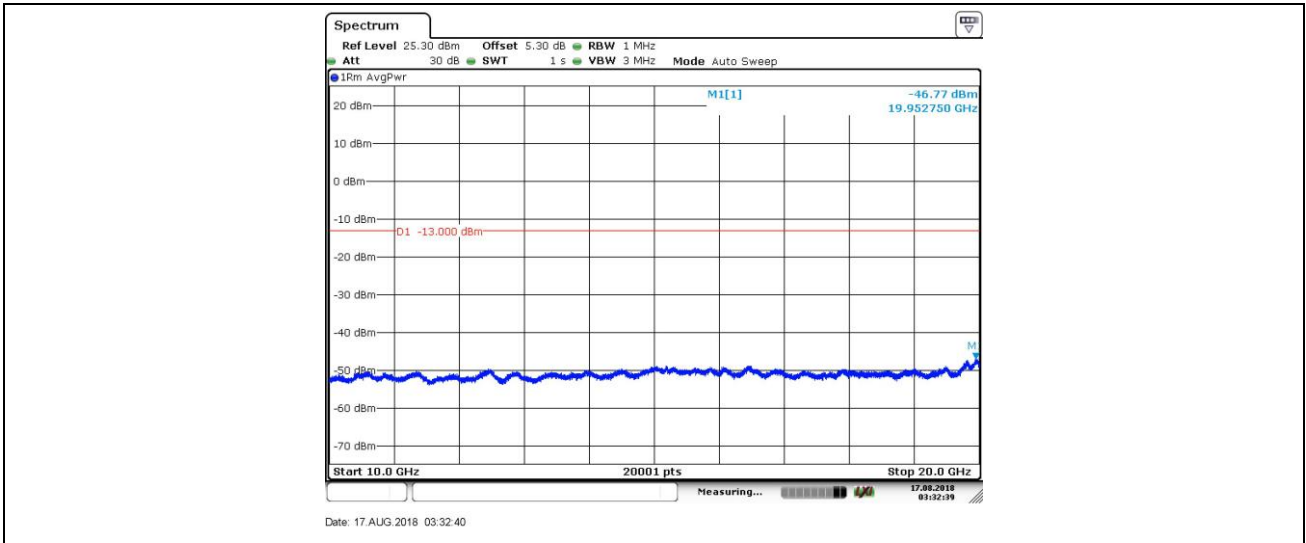
7.1. Test Plots



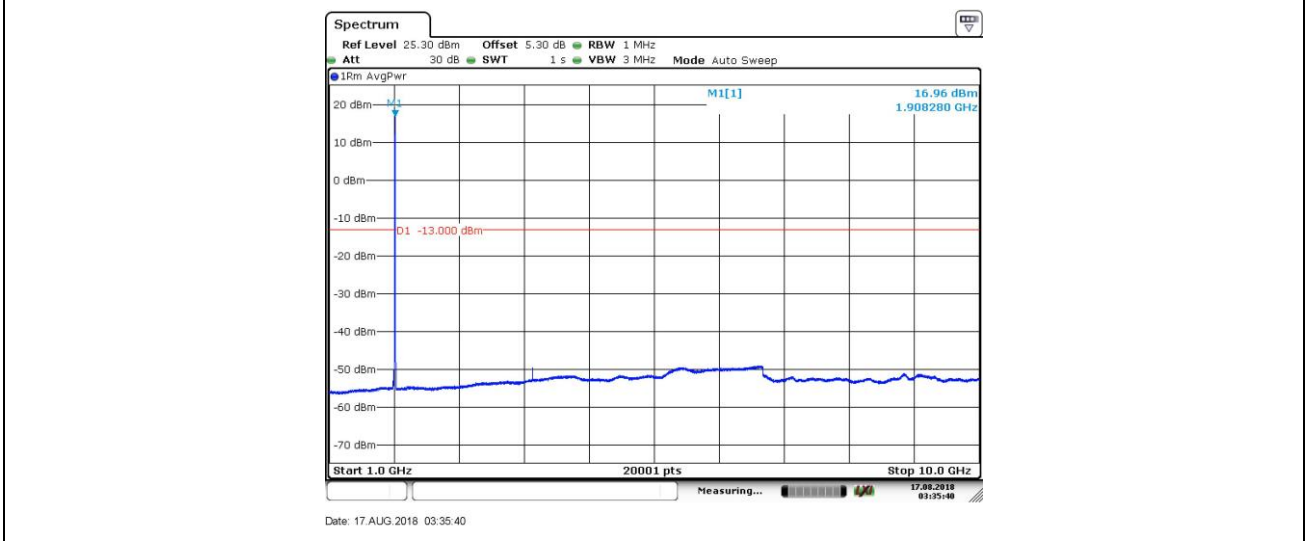
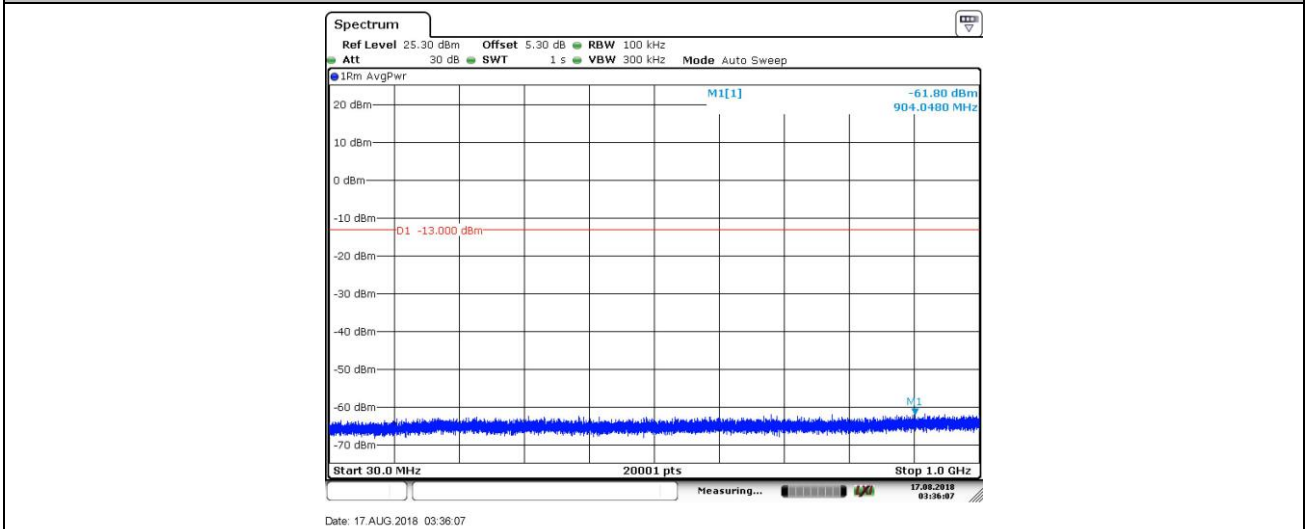


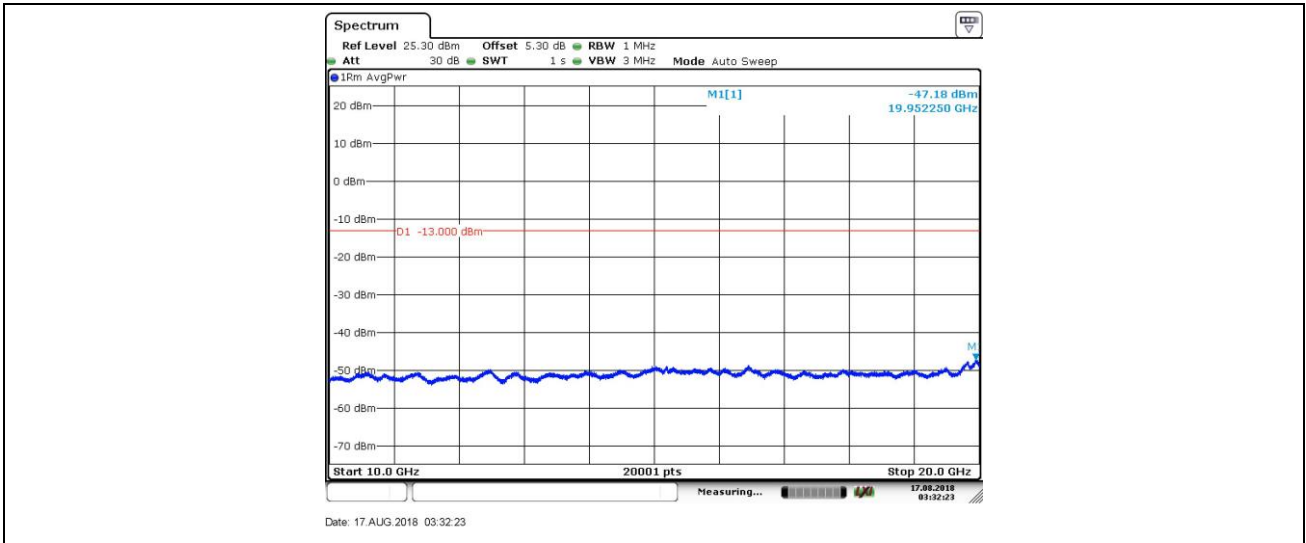
BAND II_9400



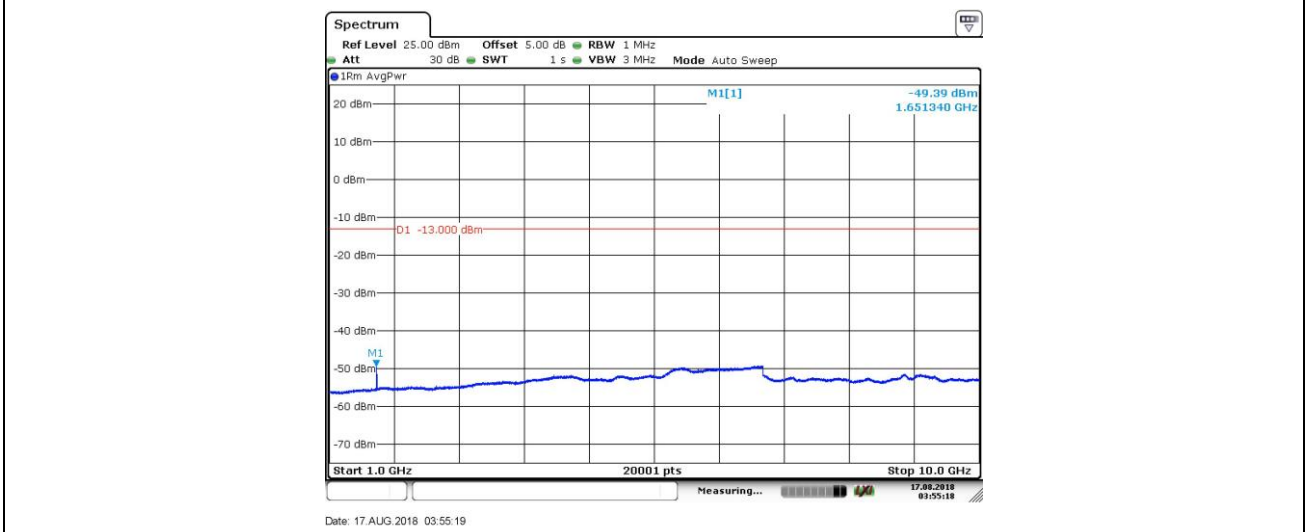
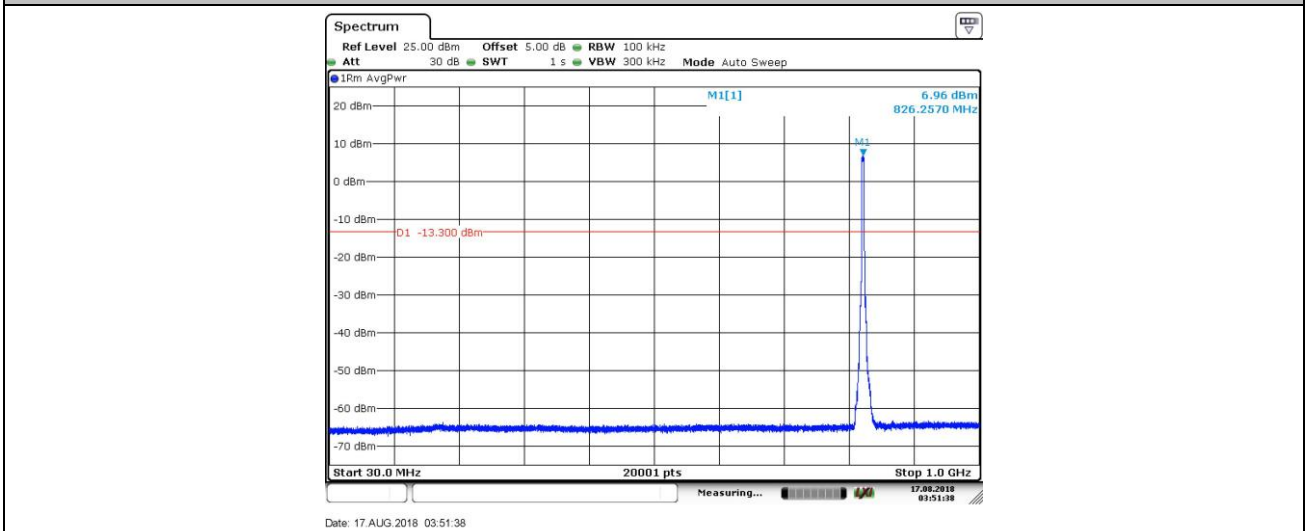


BAND II_9538

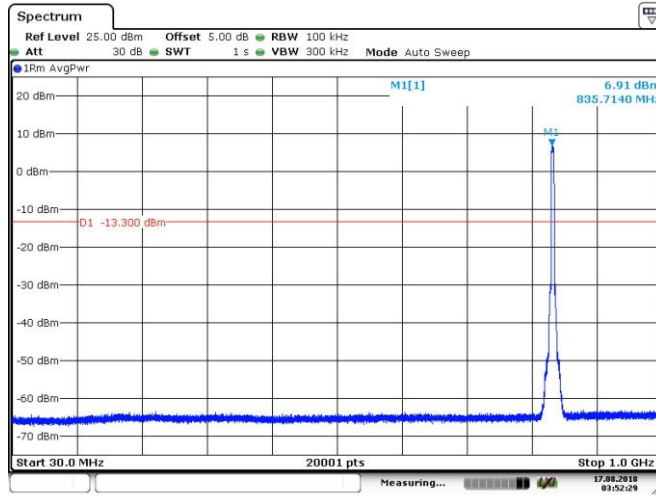




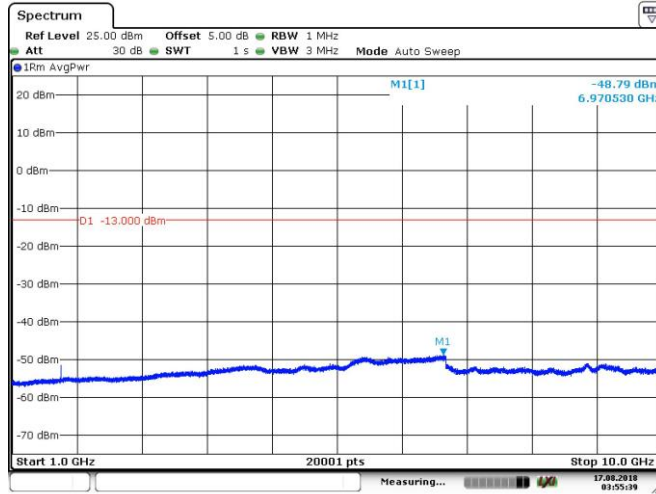
BAND V_4132



BAND V_4182

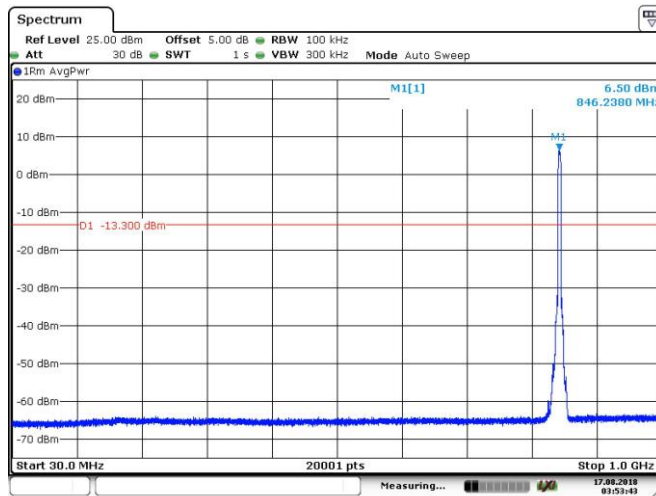


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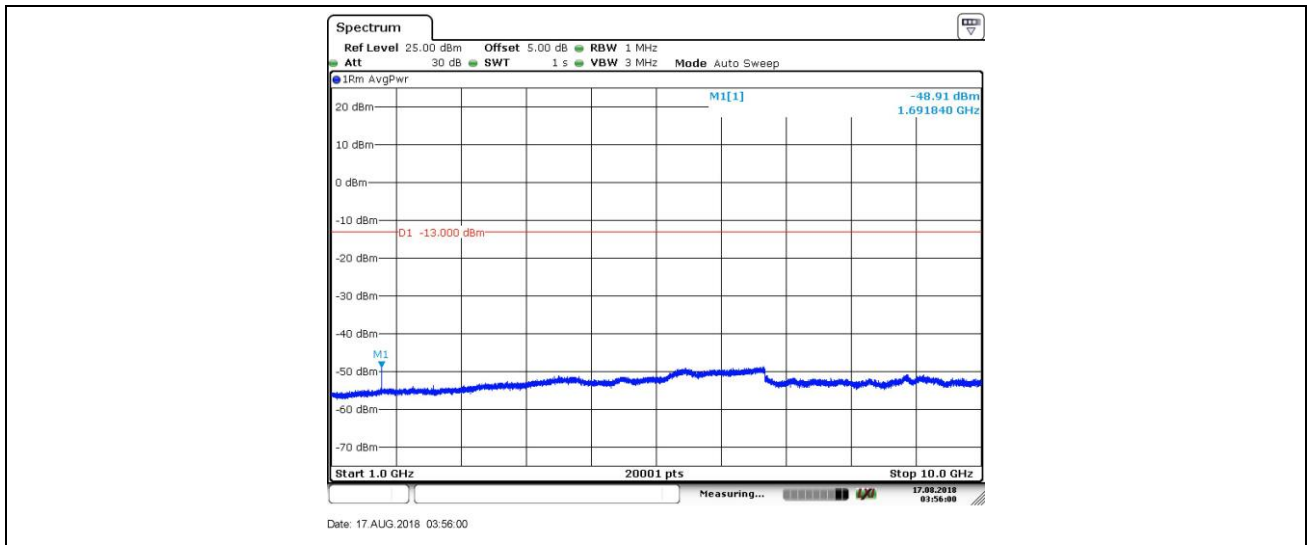


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BAND V_4233



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7. Field Strength of Spurious Radiation

7.1. For WCDMA

7.1.1. Test Band = WCDMA BAND II

7.1.1.1. Test Mode = UMTS/TM1

7.1.1.1.1. Test Channel = LCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin(dB)	Polarization
62.750000	-78.82	-13.00	65.82	Horizontal
104.300000	-83.87	-13.00	70.87	Horizontal
433.850000	-74.52	-13.00	61.52	Horizontal
3706.387500	-67.92	-13.00	54.92	Horizontal
5559.862500	-63.87	-13.00	50.87	Horizontal
7406.512500	-64.46	-13.00	51.46	Horizontal
63.350000	-82.00	-13.00	69.00	Vertical
104.300000	-82.34	-13.00	69.34	Vertical
400.000000	-78.30	-13.00	65.30	Vertical
3706.387500	-67.93	-13.00	54.93	Vertical
5554.012500	-62.86	-13.00	49.86	Vertical
7406.512500	-63.37	-13.00	50.37	Vertical

7.1.1.1.2. Test Channel = MCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin(dB)	Polarization
63.200000	-78.15	-13.00	65.15	Horizontal
104.300000	-83.74	-13.00	70.74	Horizontal
400.050000	-83.60	-13.00	70.60	Horizontal
3758.062500	-65.59	-13.00	52.59	Horizontal
5642.737500	-59.49	-13.00	46.49	Horizontal
7523.025000	-63.04	-13.00	50.04	Horizontal
64.550000	-82.09	-13.00	69.09	Vertical
104.250000	-81.46	-13.00	68.46	Vertical
400.050000	-80.12	-13.00	67.12	Vertical
3758.062500	-66.68	-13.00	53.68	Vertical
5642.737500	-59.00	-13.00	46.00	Vertical
7516.687500	-63.30	-13.00	50.30	Vertical



7.1.1.1.3. Test Channel = HCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin(dB)	Polarization
62.550000	-77.91	-13.00	64.91	Horizontal
104.250000	-84.30	-13.00	71.30	Horizontal
3813.150000	-64.79	-13.00	51.79	Horizontal
5719.275000	-61.02	-13.00	48.02	Horizontal
7627.350000	-61.30	-13.00	48.30	Horizontal
9533.475000	-62.75	-13.00	49.75	Horizontal
65.150000	-82.36	-13.00	69.36	Vertical
104.250000	-81.18	-13.00	68.18	Vertical
400.000000	-77.38	-13.00	64.38	Vertical
3812.662500	-65.30	-13.00	52.30	Vertical
5719.762500	-60.08	-13.00	47.08	Vertical
7633.200000	-61.65	-13.00	48.65	Vertical

7.1.2. Test Band = WCDMA BAND V

7.1.2.1. Test Mode = UMTS/TM1

7.1.2.1.1. Test Channel = LCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin(dB)	Polarization
62.350000	-77.94	-13.00	64.94	Horizontal
104.300000	-85.83	-13.00	72.83	Horizontal
602.120833	-79.73	-13.00	66.73	Horizontal
1654.500000	-60.54	-13.00	47.54	Horizontal
2476.000000	-58.69	-13.00	45.69	Horizontal
4180.725000	-68.04	-13.00	55.04	Horizontal
38.750000	-76.69	-13.00	63.69	Vertical
90.500000	-84.79	-13.00	71.79	Vertical
400.050000	-78.17	-13.00	65.17	Vertical
1654.000000	-62.14	-13.00	49.14	Vertical
2476.500000	-53.97	-13.00	40.97	Vertical
4342.575000	-67.43	-13.00	54.43	Vertical



7.1.2.1.2. Test Channel = MCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin(dB)	Polarization
62.400000	-77.98	-13.00	64.98	Horizontal
104.250000	-86.71	-13.00	73.71	Horizontal
613.120833	-79.22	-13.00	66.22	Horizontal
1671.000000	-62.09	-13.00	49.09	Horizontal
4209.487500	-67.42	-13.00	54.42	Horizontal
7679.512500	-65.26	-13.00	52.26	Horizontal
63.800000	-81.97	-13.00	68.97	Vertical
90.500000	-85.11	-13.00	72.11	Vertical
400.000000	-80.42	-13.00	67.42	Vertical
1674.500000	-60.51	-13.00	47.51	Vertical
4306.012500	-67.11	-13.00	54.11	Vertical
7244.662500	-64.93	-13.00	51.93	Vertical

7.1.2.1.3. Test Channel = HCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin(dB)	Polarization
62.850000	-78.02	-13.00	65.02	Horizontal
104.300000	-85.53	-13.00	72.53	Horizontal
611.516667	-79.19	-13.00	66.19	Horizontal
1691.500000	-59.58	-13.00	46.58	Horizontal
4423.500000	-67.42	-13.00	54.42	Horizontal
6475.875000	-65.54	-13.00	52.54	Horizontal
40.100000	-80.28	-13.00	67.28	Vertical
64.650000	-81.67	-13.00	68.67	Vertical
400.050000	-81.36	-13.00	68.36	Vertical
1691.500000	-59.89	-13.00	46.89	Vertical
4425.450000	-67.40	-13.00	54.40	Vertical
7242.225000	-64.94	-13.00	51.94	Vertical

NOTE:

- 1) The disturbance above 12.75GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.
- 2) We have tested all modulation and channels, but only the worst case data was displayed in this report.



8. Frequency Stability

9.1. Frequency Vs Voltage

Voltage							
BAND	Channel	Voltage (Vdc)	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
BAND II	9262	VL	TN	-1.68	-0.000907	2.5	PASS
BAND II	9262	VN	TN	-5.87	-0.003166	2.5	PASS
BAND II	9262	VH	TN	-2.42	-0.001305	2.5	PASS
BAND II	9400	VL	TN	14.68	0.007807	2.5	PASS
BAND II	9400	VN	TN	7.02	0.003732	2.5	PASS
BAND II	9400	VH	TN	25.83	0.013738	2.5	PASS
BAND II	9538	VL	TN	16.89	0.008853	2.5	PASS
BAND II	9538	VN	TN	11.64	0.006104	2.5	PASS
BAND II	9538	VH	TN	14.61	0.007656	2.5	PASS
BAND V	4132	VL	TN	4.94	0.005972	2.5	PASS
BAND V	4132	VN	TN	1.62	0.001956	2.5	PASS
BAND V	4132	VH	TN	-2.01	-0.002432	2.5	PASS
BAND V	4182	VL	TN	14.08	0.016830	2.5	PASS
BAND V	4182	VN	TN	17.07	0.020413	2.5	PASS
BAND V	4182	VH	TN	18.37	0.021961	2.5	PASS
BAND V	4233	VL	TN	10.79	0.012740	2.5	PASS
BAND V	4233	VN	TN	1.09	0.001284	2.5	PASS
BAND V	4233	VH	TN	16.82	0.019863	2.5	PASS



9.2. Frequency Vs Temperature

Temperature							
BAND	Channel	Voltage (Vdc)	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
BAND II	9262	VN	-30	-8.86	-0.004784	2.5	PASS
BAND II	9262	VN	-20	9.48	0.005120	2.5	PASS
BAND II	9262	VN	-10	24.50	0.013225	2.5	PASS
BAND II	9262	VN	0	26.56	0.014337	2.5	PASS
BAND II	9262	VN	10	-20.03	-0.010815	2.5	PASS
BAND II	9262	VN	20	-4.42	-0.002386	2.5	PASS
BAND II	9262	VN	30	33.85	0.018271	2.5	PASS
BAND II	9262	VN	40	28.24	0.015244	2.5	PASS
BAND II	9262	VN	50	7.80	0.004209	2.5	PASS
BAND II	9400	VN	-30	12.47	0.006635	2.5	PASS
BAND II	9400	VN	-20	21.45	0.011410	2.5	PASS
BAND II	9400	VN	-10	19.61	0.010432	2.5	PASS
BAND II	9400	VN	0	7.25	0.003858	2.5	PASS
BAND II	9400	VN	10	6.32	0.003359	2.5	PASS
BAND II	9400	VN	20	12.21	0.006494	2.5	PASS
BAND II	9400	VN	30	11.00	0.005851	2.5	PASS
BAND II	9400	VN	40	10.49	0.005581	2.5	PASS
BAND II	9400	VN	50	-5.04	-0.002682	2.5	PASS
BAND II	9538	VN	-30	12.10	0.006344	2.5	PASS
BAND II	9538	VN	-20	-11.01	-0.005774	2.5	PASS
BAND II	9538	VN	-10	17.75	0.009303	2.5	PASS
BAND II	9538	VN	0	2.73	0.001429	2.5	PASS
BAND II	9538	VN	10	14.95	0.007836	2.5	PASS
BAND II	9538	VN	20	7.22	0.003787	2.5	PASS
BAND II	9538	VN	30	10.38	0.005441	2.5	PASS
BAND II	9538	VN	40	-22.54	-0.011818	2.5	PASS
BAND II	9538	VN	50	36.10	0.018924	2.5	PASS
BAND V	4132	VN	-30	9.22	0.011156	2.5	PASS
BAND V	4132	VN	-20	7.07	0.008560	2.5	PASS
BAND V	4132	VN	-10	2.02	0.002441	2.5	PASS
BAND V	4132	VN	0	1.68	0.002034	2.5	PASS
BAND V	4132	VN	10	7.62	0.009226	2.5	PASS
BAND V	4132	VN	20	11.46	0.013865	2.5	PASS
BAND V	4132	VN	30	11.57	0.013995	2.5	PASS
BAND V	4132	VN	40	1.09	0.001316	2.5	PASS



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BAND V	4132	VN	50	9.57	0.011580	2.5	PASS
BAND V	4182	VN	-30	22.19	0.026527	2.5	PASS
BAND V	4182	VN	-20	25.01	0.029896	2.5	PASS
BAND V	4182	VN	-10	24.86	0.029717	2.5	PASS
BAND V	4182	VN	0	9.99	0.011947	2.5	PASS
BAND V	4182	VN	10	24.51	0.029306	2.5	PASS
BAND V	4182	VN	20	17.02	0.020353	2.5	PASS
BAND V	4182	VN	30	9.84	0.011767	2.5	PASS
BAND V	4182	VN	40	13.55	0.016197	2.5	PASS
BAND V	4182	VN	50	10.66	0.012750	2.5	PASS
BAND V	4233	VN	-30	-19.53	-0.023065	2.5	PASS
BAND V	4233	VN	-20	-1.75	-0.002070	2.5	PASS
BAND V	4233	VN	-10	14.87	0.017565	2.5	PASS
BAND V	4233	VN	0	-9.75	-0.011515	2.5	PASS
BAND V	4233	VN	10	19.99	0.023614	2.5	PASS
BAND V	4233	VN	20	6.72	0.007933	2.5	PASS
BAND V	4233	VN	30	20.30	0.023977	2.5	PASS
BAND V	4233	VN	40	-5.28	-0.006235	2.5	PASS
BAND V	4233	VN	50	-1.59	-0.001876	2.5	PASS

The End