Appendix B

WCDMA Band V

CONTENT

1. Effective (Isotropic) Radiated Power

1.1. Test Result

Band	Channel	Conducted Power (dBm)	ERP (dBm)	Limit(dBm)	Verdict
Band V	4132	22.68	21.03	38.45	PASS
Band V	4182	22.75	21.10	38.45	PASS
Band V	4233	22.70	21.05	38.45	PASS

Remark:

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

ERP [dBm] = Conducted Power [dBm] + Gain [dBd]

EIRP [dBm] = Conducted Power [dBm] + Gain [dBi]

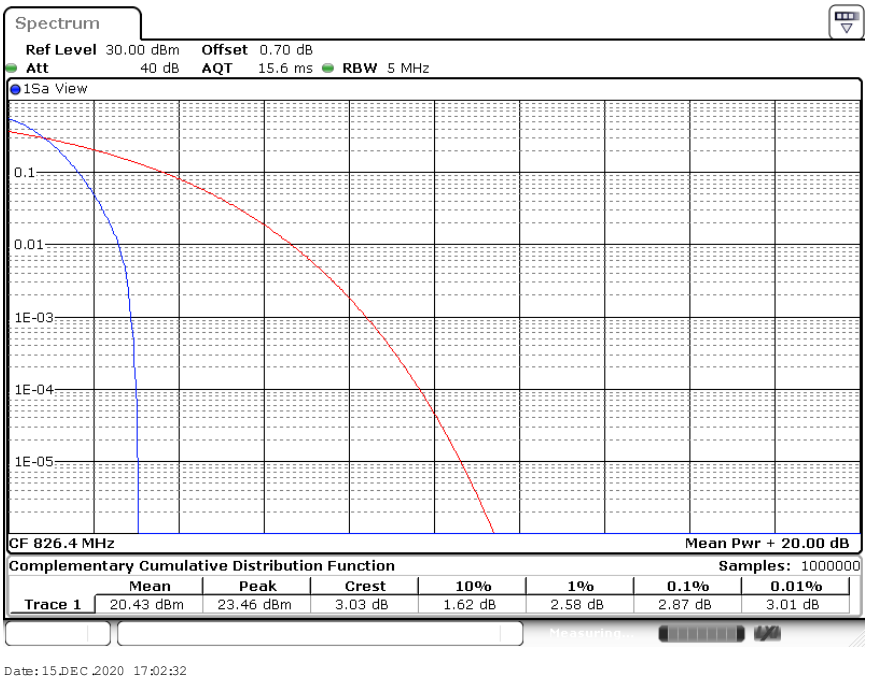
2. Peak-to-Average Ratio(CCDF)

2.1. Test Result

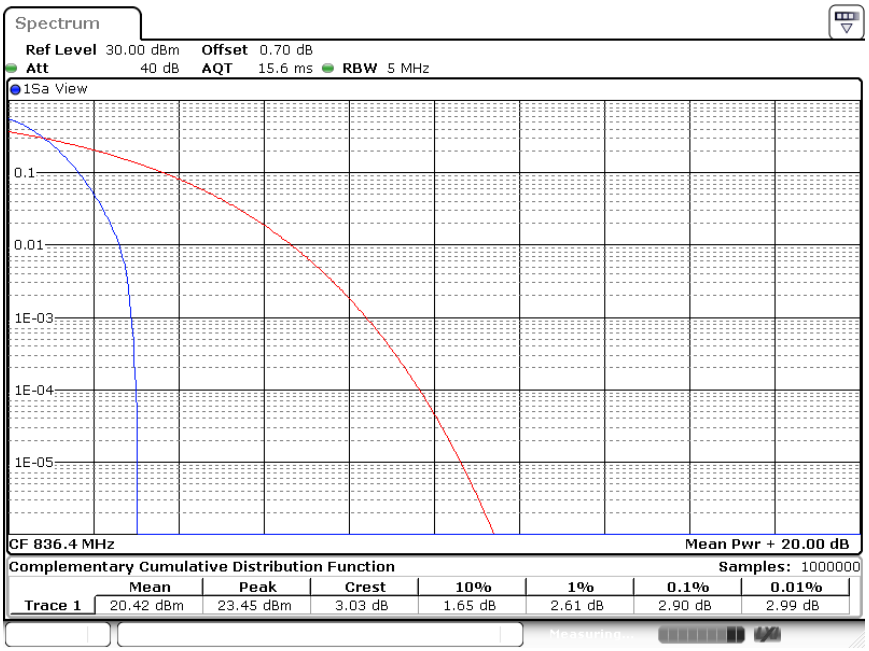
Band	Channel	Peak-to-Average Ratio(dB)	Limit(dB)	Verdict
Band5	4132	2.87	13	PASS
Band5	4182	2.90	13	PASS
Band5	4233	3.01	13	PASS

2.2. Test Plots

Band5-4132



Band5-4182



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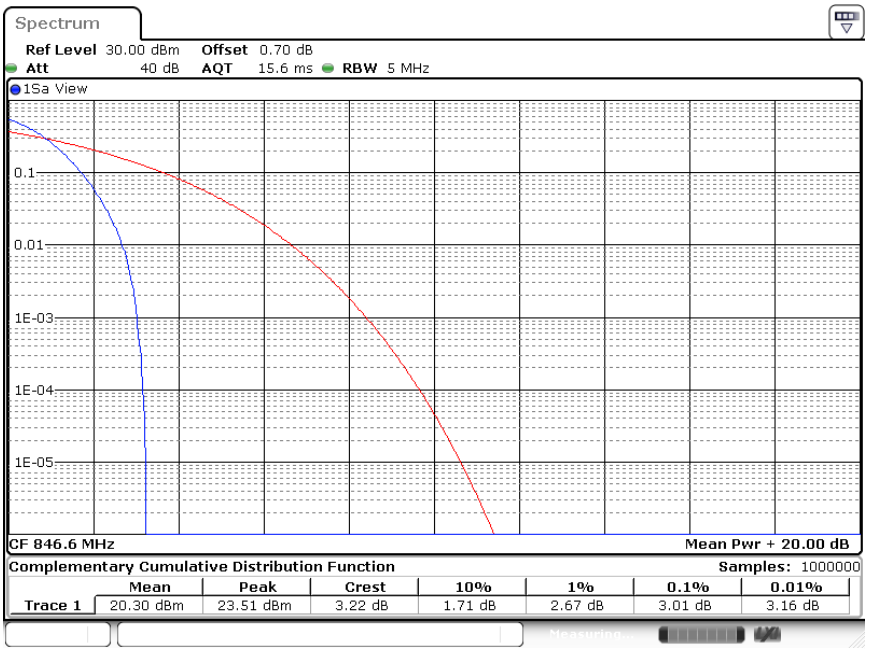
Band5-4233



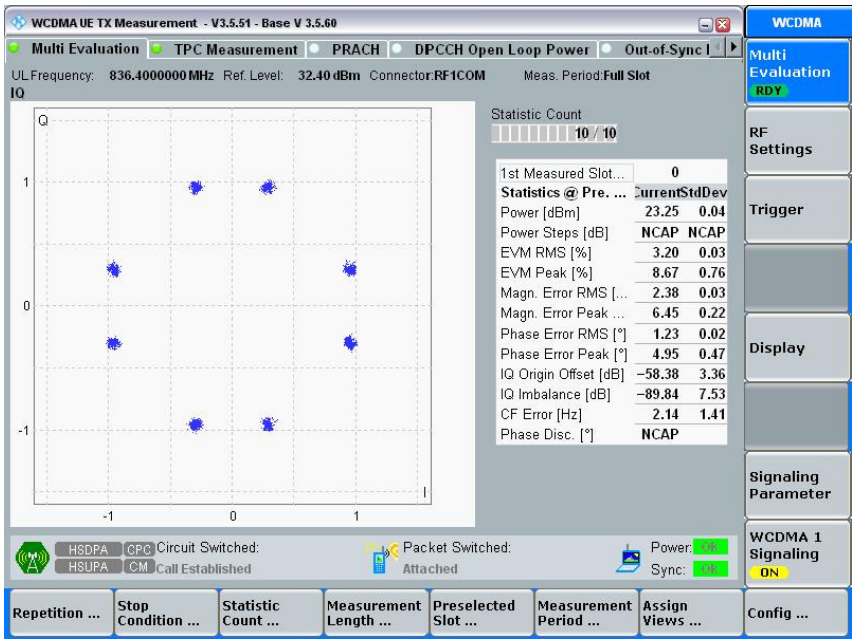
Date: 15.DEC.2020 17:03:01

3. Modulation Characteristics

3.1. Test Band = WCDMA Band V

3.1.1. Test Mode = UMTS/TM1

3.1.1.1. Test Channel = MCH



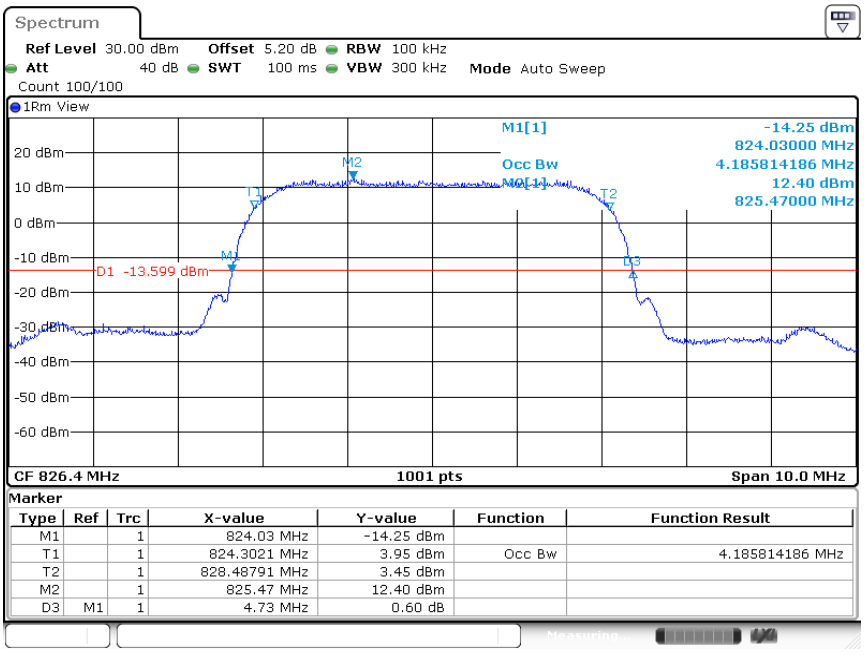
4. 26dB Bandwidth and Occupied Bandwidth

4.1. Test Result

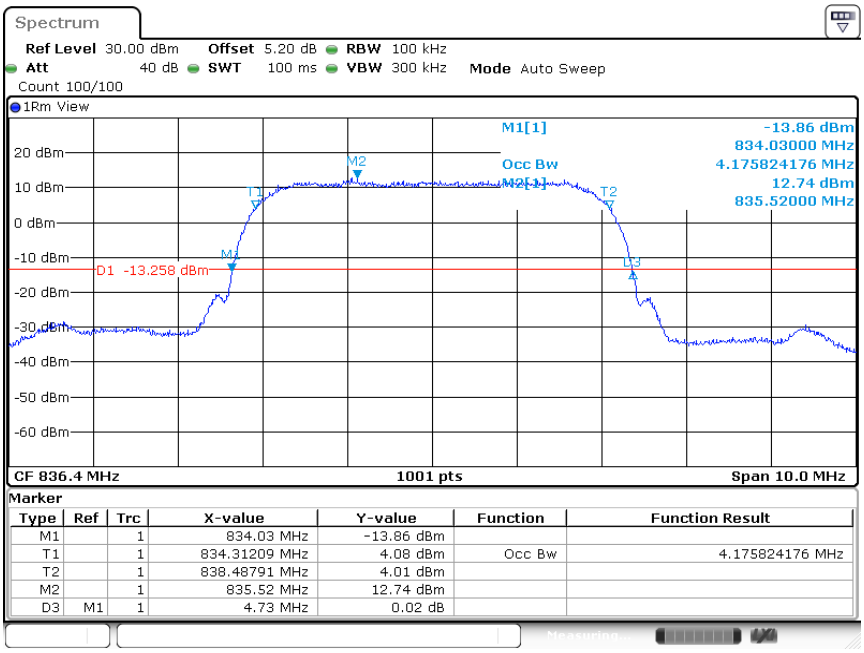
Band	Channel	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Limit(MHz)	Verdict
Band5	4132	4.186	4.730	---	PASS
Band5	4182	4.176	4.730	---	PASS
Band5	4233	4.176	4.740	---	PASS

4.2. Test Plots

Band5-4132



Band5-4182



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	834.03 MHz	-13.86 dBm		
T1		1	834.31209 MHz	4.08 dBm	Occ Bw	4.175824176 MHz
T2		1	838.48791 MHz	4.01 dBm		
M2		1	835.52 MHz	12.74 dBm		
D3	M1	1	4.73 MHz	0.02 dB		

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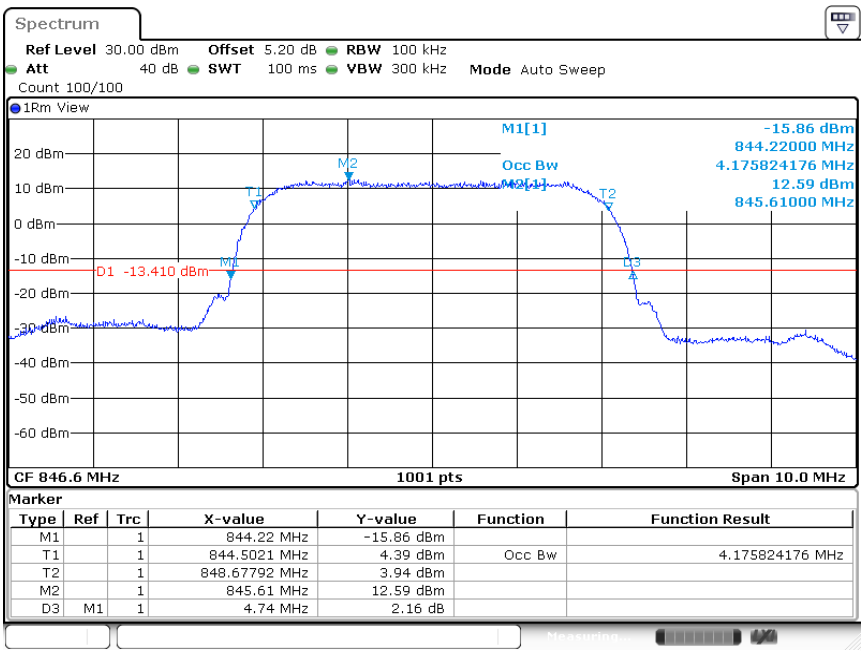
Band5-4233



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	844.22 MHz	-15.86 dBm		
T1		1	844.5021 MHz	4.39 dBm	Occ Bw	4.175824176 MHz
T2		1	848.67792 MHz	3.94 dBm		
M2		1	845.61 MHz	12.59 dBm		
D3	M1	1	4.74 MHz	2.16 dB		

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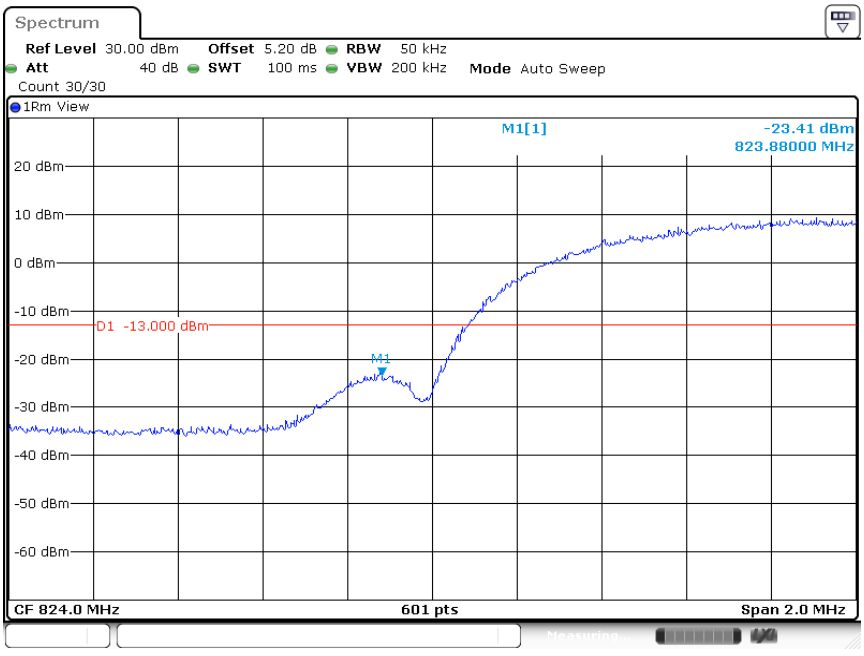
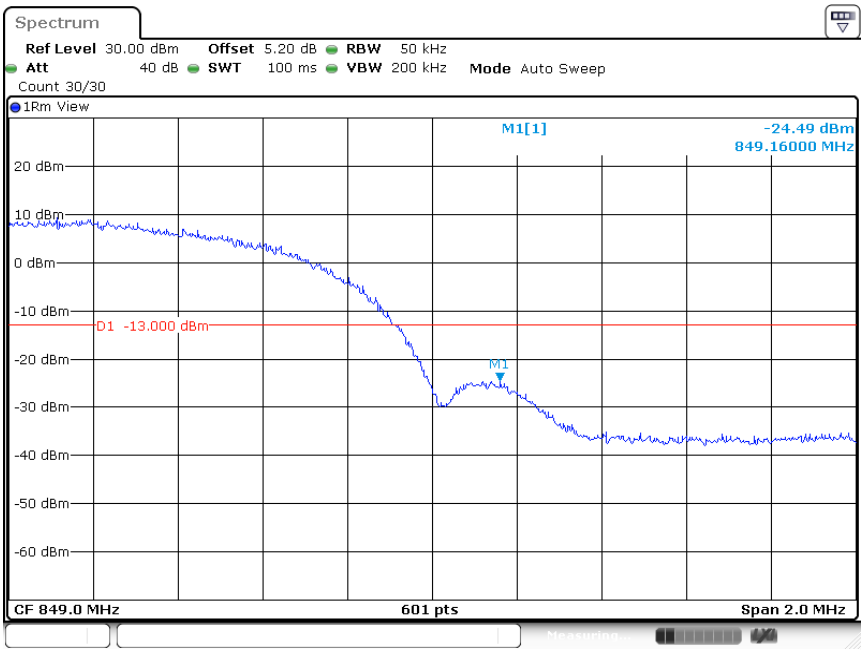
5. Band Edge Compliance

5.1. Test Plots

Band5-4132



Band5-4233



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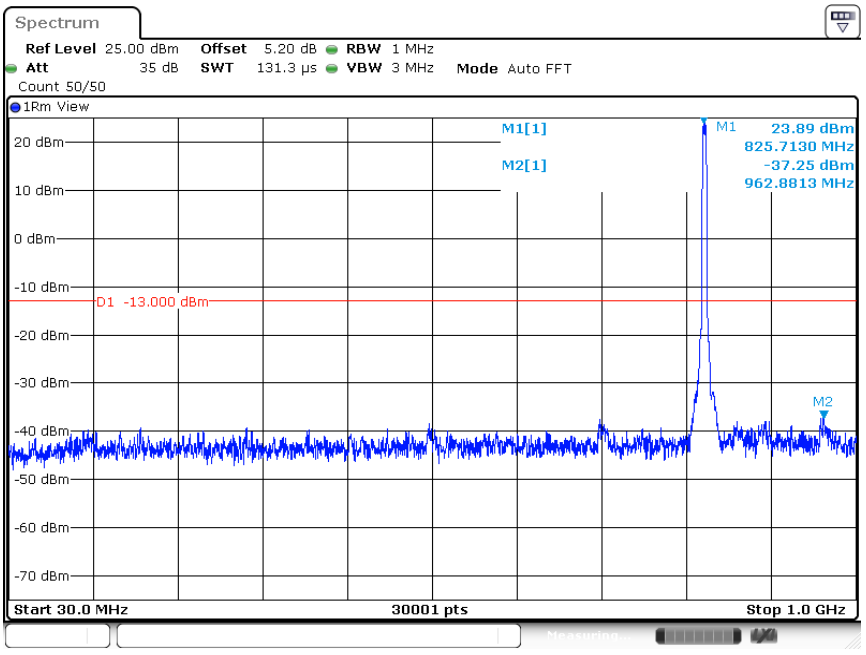
6. Spurious Emission at Antenna Terminal

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.

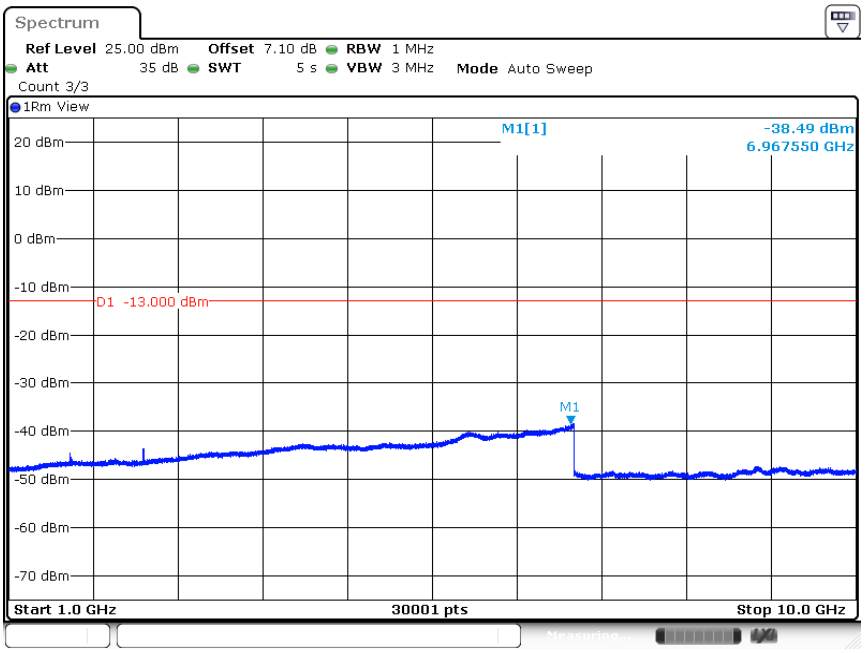
Remark2: only the worst case data displayed in this report.

6.1. Test Plots

Band5-4132-30~1000MHz

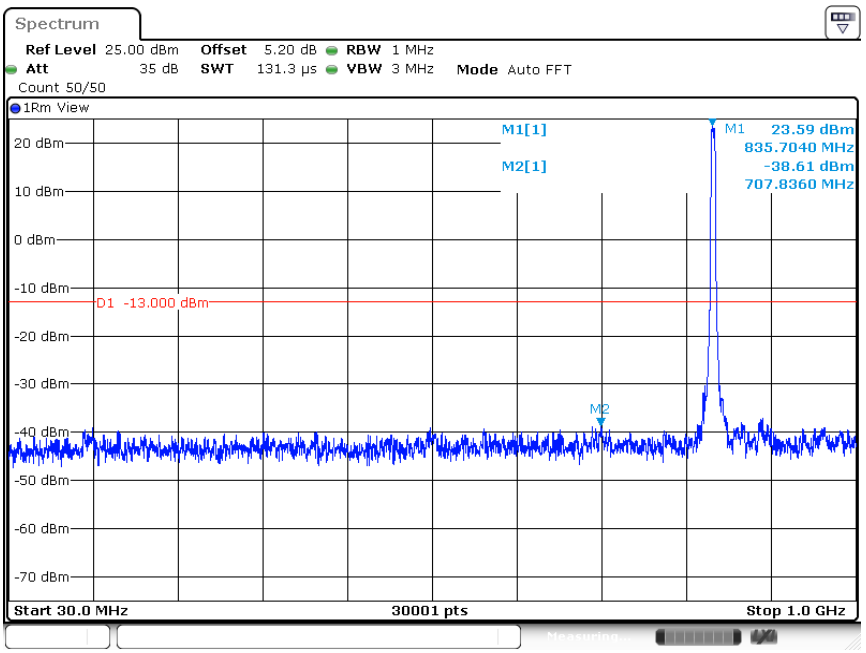


Band5-4132-1000~10000MHz



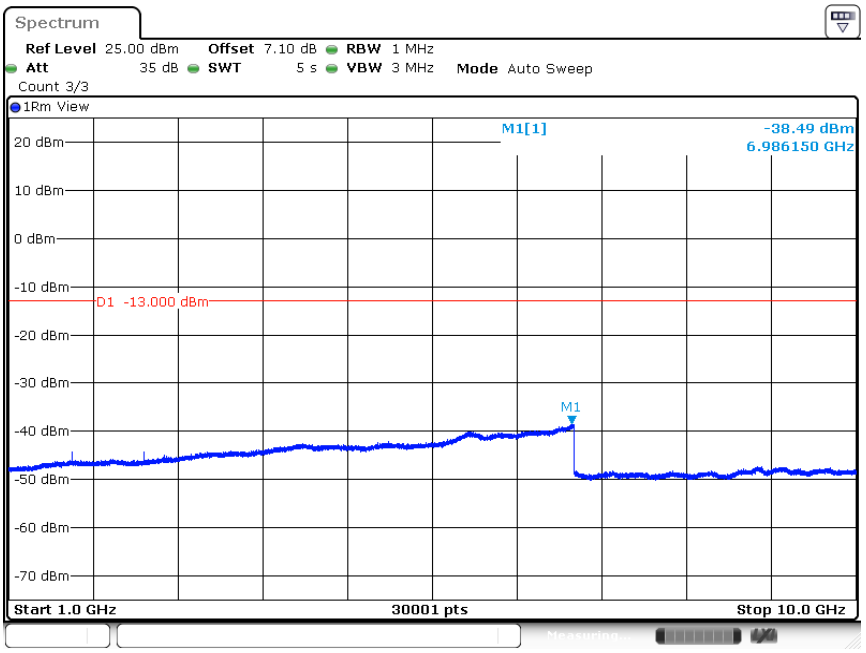
Date: 1.DEC.2020 10:24:01

Band5-4182-30~1000MHz



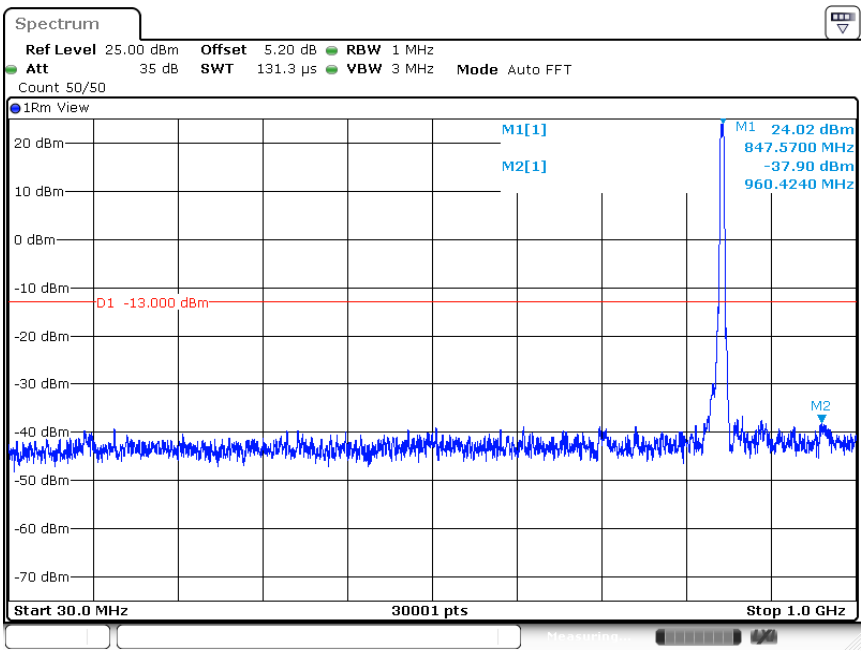
Date: 1.DEC.2020 10:24:18

Band5-4182-1000~10000MHz



Date: 1.DEC.2020 10:24:43

Band5-4233-30~1000MHz



Date: 1.DEC.2020 10:24:59

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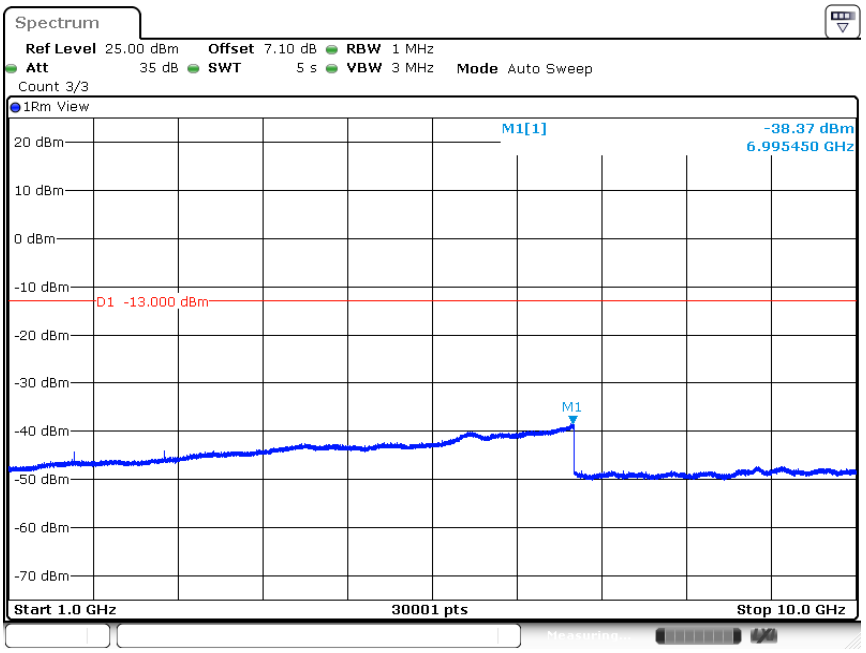
Band5-4233-1000~10000MHz



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7. Field Strength of Spurious Radiation

7.1. Test Band = WCDMA Band V

7.1.1.Test Mode =WCDMA/TM1

7.1.1.1. Test Channel = LCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Polarization
63.500000	-78.98	-13.00	65.98	Vertical
104.300000	-79.49	-13.00	66.49	Vertical
355.350000	-69.59	-13.00	56.59	Vertical
1654.500000	-64.11	-13.00	51.11	Vertical
2312.500000	-59.37	-13.00	46.37	Vertical
4438.125000	-65.45	-13.00	52.45	Vertical
62.300000	-75.04	-13.00	62.04	Horizontal
104.300000	-83.23	-13.00	70.23	Horizontal
423.650000	-70.18	-13.00	57.18	Horizontal
1595.000000	-65.16	-13.00	52.16	Horizontal
2209.000000	-59.16	-13.00	46.16	Horizontal
4293.337500	-65.15	-13.00	52.15	Horizontal

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7.1.1.2. Test Channel = MCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Polarization
63.750000	-78.63	-13.00	65.63	Vertical
104.250000	-82.67	-13.00	69.67	Vertical
349.300000	-77.11	-13.00	64.11	Vertical
1525.500000	-66.03	-13.00	53.03	Vertical
2581.500000	-58.16	-13.00	45.16	Vertical
4305.525000	-65.04	-13.00	52.04	Vertical
104.300000	-83.25	-13.00	70.25	Horizontal
420.550000	-69.82	-13.00	56.82	Horizontal
1515.000000	-65.50	-13.00	52.50	Horizontal
2238.500000	-59.12	-13.00	46.12	Horizontal
4206.562500	-65.33	-13.00	52.33	Horizontal
7961.287500	-61.69	-13.00	48.69	Horizontal

7.1.1.3. Test Channel = HCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Polarization
64.150000	-78.89	-13.00	65.89	Vertical
104.300000	-82.35	-13.00	69.35	Vertical
403.750000	-75.13	-13.00	62.13	Vertical
1476.000000	-65.95	-13.00	52.95	Vertical
2467.000000	-58.76	-13.00	45.76	Vertical
4415.700000	-65.02	-13.00	52.02	Vertical
63.700000	-75.36	-13.00	62.36	Horizontal
104.300000	-83.38	-13.00	70.38	Horizontal
423.450000	-69.91	-13.00	56.91	Horizontal
1691.500000	-62.93	-13.00	49.93	Horizontal
2681.500000	-57.31	-13.00	44.31	Horizontal
6026.400000	-63.58	-13.00	50.58	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

Voltage							
Band	Channel	Voltage (Vdc)	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band5	4132	VL	NT	-15.38	-0.018611	±2.5	PASS
Band5	4132	VN	NT	-5.40	-0.006534	±2.5	PASS
Band5	4132	VH	NT	-8.22	-0.009947	±2.5	PASS
Band5	4182	VL	NT	-11.41	-0.013642	±2.5	PASS
Band5	4182	VN	NT	-2.94	-0.003515	±2.5	PASS
Band5	4182	VH	NT	-5.95	-0.007114	±2.5	PASS
Band5	4233	VL	NT	-13.18	-0.015568	±2.5	PASS
Band5	4233	VN	NT	-3.91	-0.004618	±2.5	PASS
Band5	4233	VH	NT	-13.05	-0.015415	±2.5	PASS

8.2. Frequency Vs Temperature

Temperature							
Band	Channel	Voltage (Vdc)	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band5	4132	NV	-30	-4.55	-0.005506	±2.5	PASS
Band5	4132	NV	-20	-10.48	-0.012682	±2.5	PASS
Band5	4132	NV	-10	-9.69	-0.011726	±2.5	PASS
Band5	4132	NV	0	-7.25	-0.008773	±2.5	PASS
Band5	4132	NV	10	-10.67	-0.012911	±2.5	PASS
Band5	4132	NV	20	-12.97	-0.015695	±2.5	PASS
Band5	4132	NV	30	-15.93	-0.019276	±2.5	PASS
Band5	4132	NV	40	-8.26	-0.009995	±2.5	PASS
Band5	4132	NV	50	-15.37	-0.018599	±2.5	PASS
Band5	4182	NV	-30	-6.96	-0.008321	±2.5	PASS
Band5	4182	NV	-20	-8.32	-0.009947	±2.5	PASS
Band5	4182	NV	-10	-4.49	-0.005368	±2.5	PASS
Band5	4182	NV	0	-9.98	-0.011932	±2.5	PASS
Band5	4182	NV	10	-7.43	-0.008883	±2.5	PASS
Band5	4182	NV	20	-10.25	-0.012255	±2.5	PASS
Band5	4182	NV	30	-13.55	-0.016200	±2.5	PASS

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Band5	4182	NV	40	-13.32	-0.015925	±2.5	PASS
Band5	4182	NV	50	-14.62	-0.017480	±2.5	PASS
Band5	4233	NV	-30	-12.01	-0.014186	±2.5	PASS
Band5	4233	NV	-20	-13.17	-0.015556	±2.5	PASS
Band5	4233	NV	-10	-7.97	-0.009414	±2.5	PASS
Band5	4233	NV	0	-14.34	-0.016938	±2.5	PASS
Band5	4233	NV	10	-8.04	-0.009497	±2.5	PASS
Band5	4233	NV	20	-13.09	-0.015462	±2.5	PASS
Band5	4233	NV	30	-11.80	-0.013938	±2.5	PASS
Band5	4233	NV	40	-5.89	-0.006957	±2.5	PASS
Band5	4233	NV	50	-9.99	-0.011800	±2.5	PASS

The End

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