

# 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	23.67	24.57	33.00	PASS
Band II	9400	23.58	24.48	33.00	PASS
Band II	9538	23.62	24.52	33.00	PASS

Band	Channel	Conducted Power (dBm)	EIRP (dBm)	Limit(dBm)	Verdict
Band V	4132	23.77	20.22	38.45	PASS
Band V	4182	23.48	19.93	38.45	PASS
Band V	4233	23.61	20.06	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]



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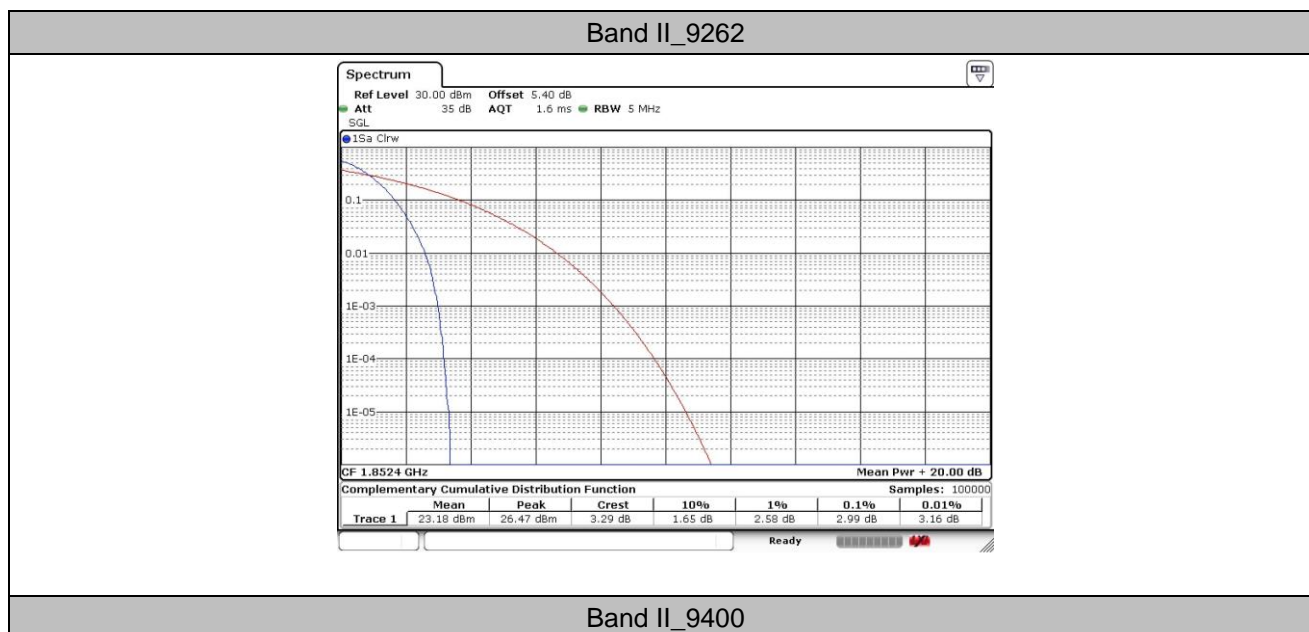


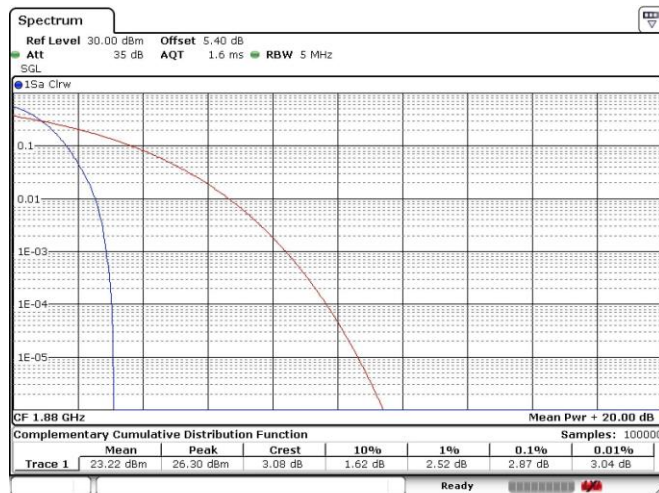
## 2. Peak-to-Average Ratio(CCDF)

### 2.1. Test Result

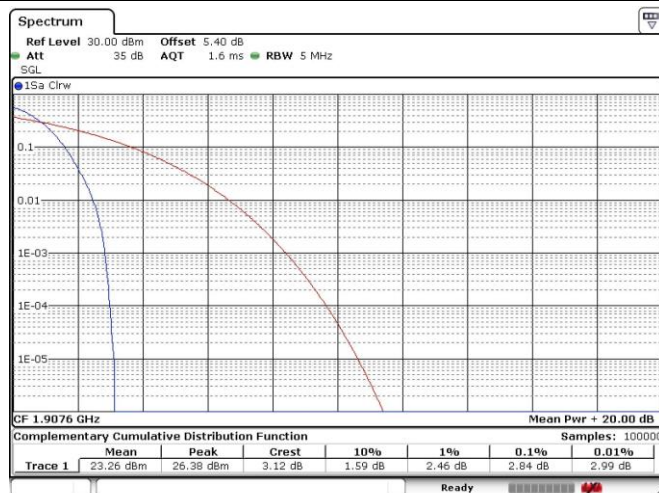
Band	Channel	Peak-to-Average Ratio(dB)	Limit(dB)	Verdict
Band II	9262	2.99	13.00	PASS
Band II	9400	2.87	13.00	PASS
Band II	9538	2.84	13.00	PASS
Band V	4132	2.70	13.00	PASS
Band V	4182	2.96	13.00	PASS
Band V	4233	2.99	13.00	PASS

### 2.2. Test Plots



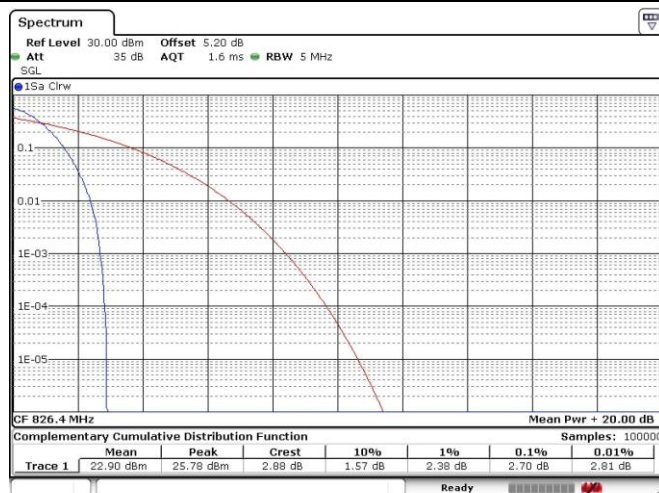


Band II\_9538

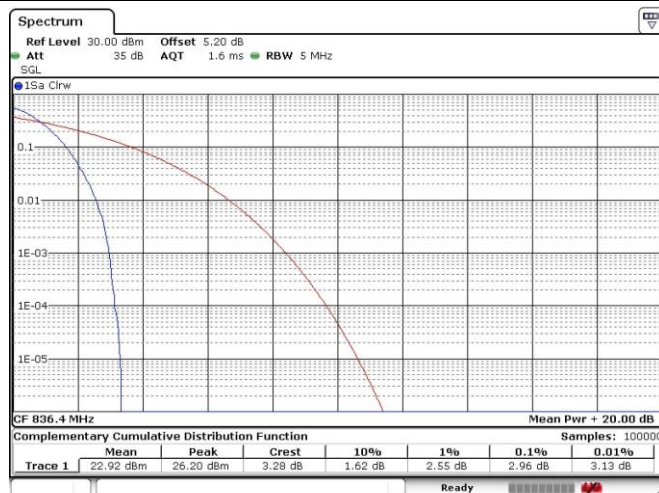


Band V\_4132



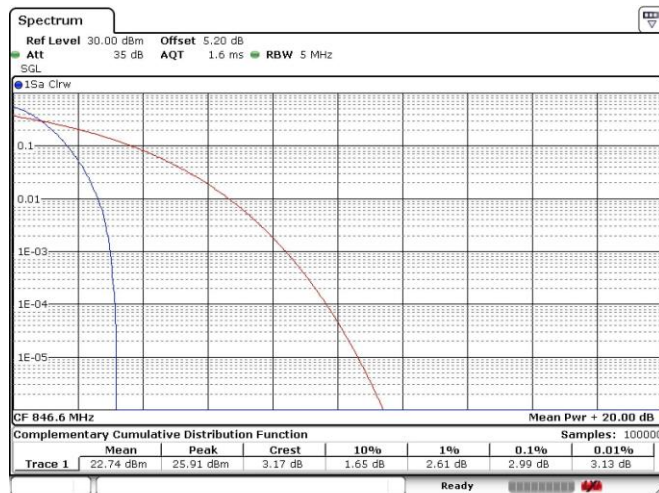


Band V\_4182



Band V\_4233



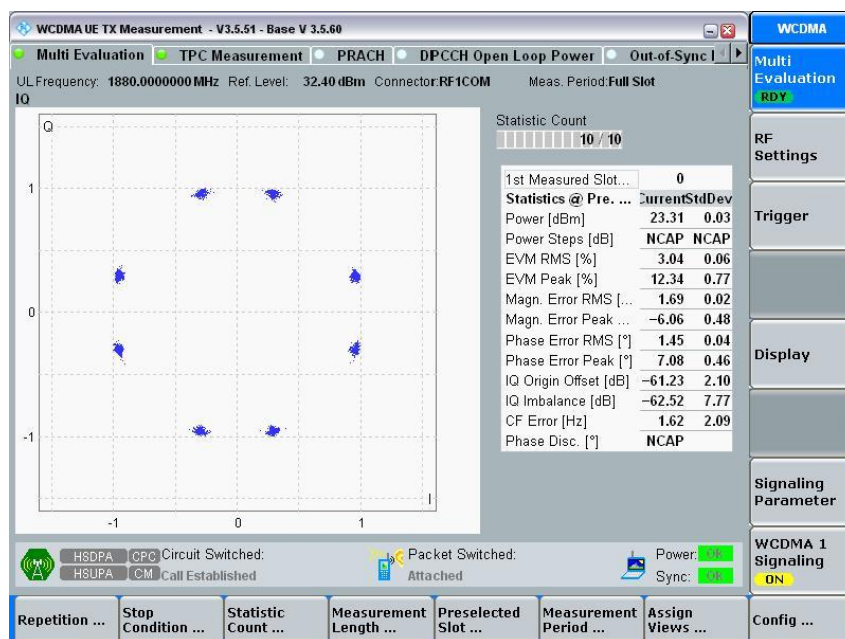


### 3. Modulation Characteristics

#### 3.1. Test Band = WCDMA Band II

##### 3.1.1. Test Mode = UMTS/TM1

##### 3.1.1.1. Test Channel = MCH

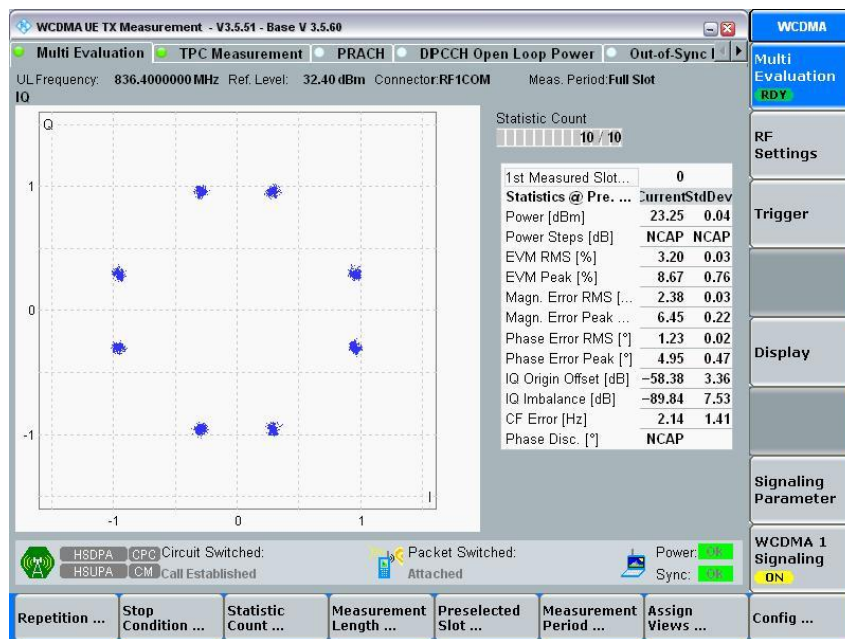


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## 3.2. Test Band = WCDMA Band V

### 3.2.1. Test Mode = UMTS/TM1

#### 3.2.1.1. Test Channel = MCH



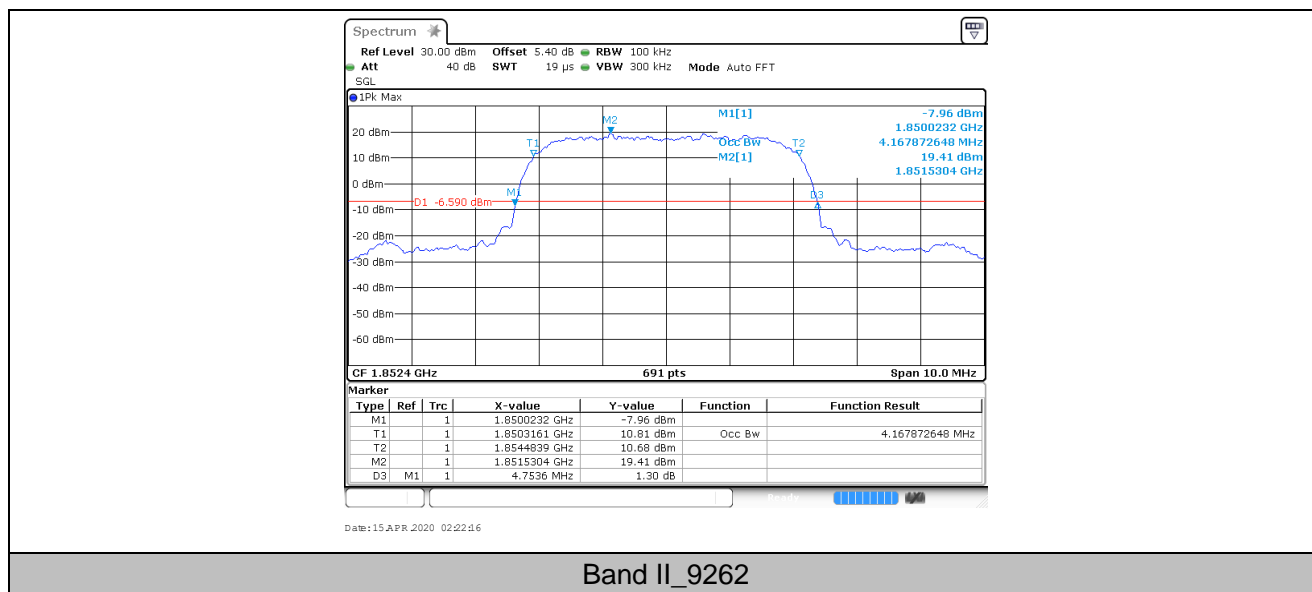


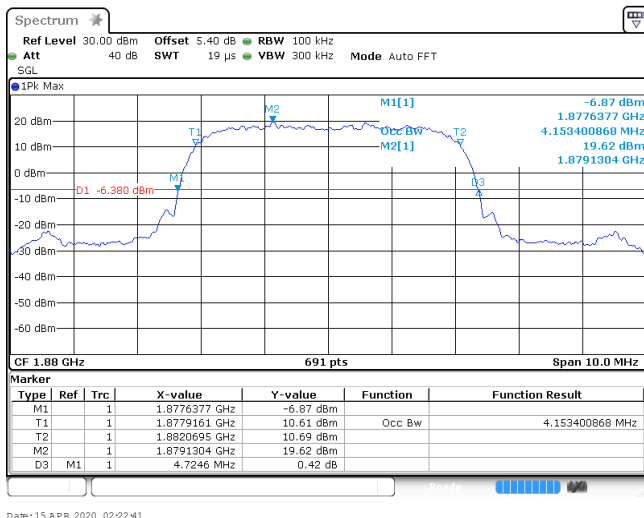
## 4. 26dB Bandwidth and Occupied Bandwidth

### 4.1. Test Result

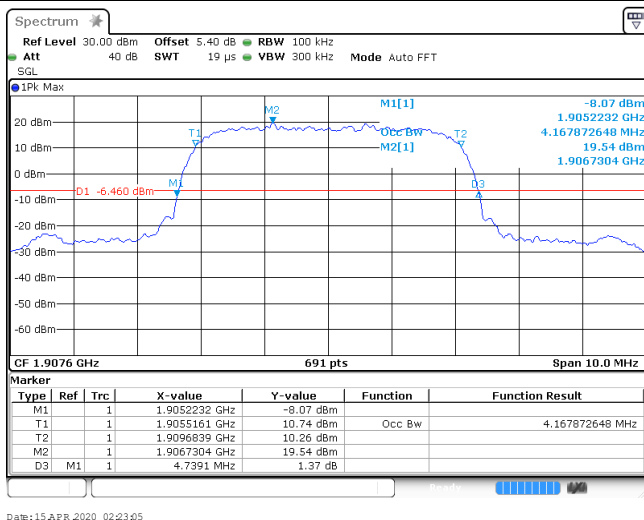
Band	Channel	Occupied Bandwidth (kHz)	26dB Bandwidth (kHz)	Limit(kHz)	Verdict
Band II	9262	4167.9	4754	---	PASS
Band II	9400	4153.4	4725	---	PASS
Band II	9538	4167.9	4739	---	PASS
Band V	4132	4153.4	4725	---	PASS
Band V	4182	4153.4	4725	---	PASS
Band V	4233	4153.4	4710	---	PASS

### 4.2. Test Plots



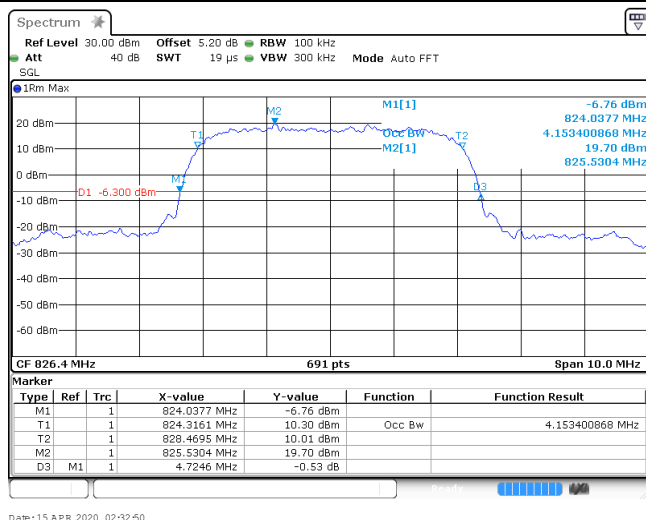


## Band II\_9400

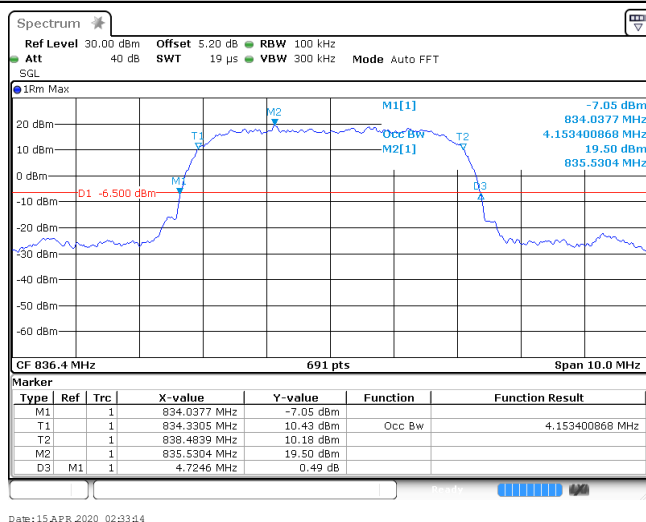


## Band II\_9538



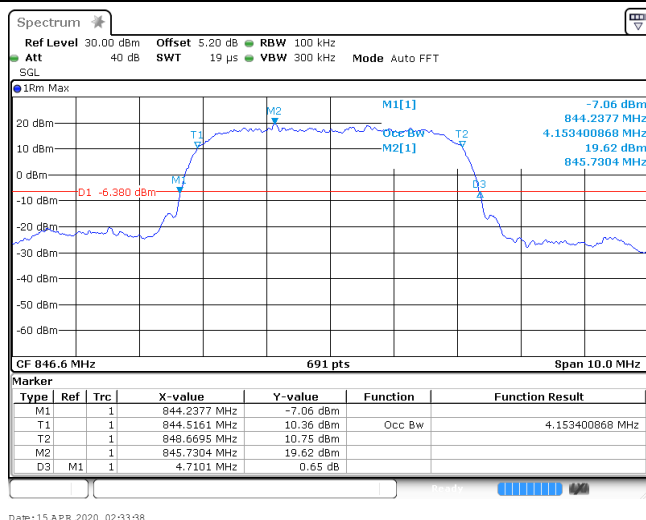


## Band V\_4132



## Band V\_4182



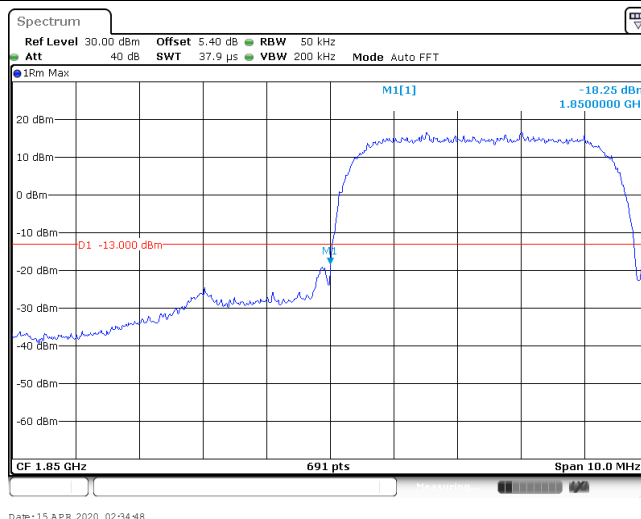


Band V\_4233

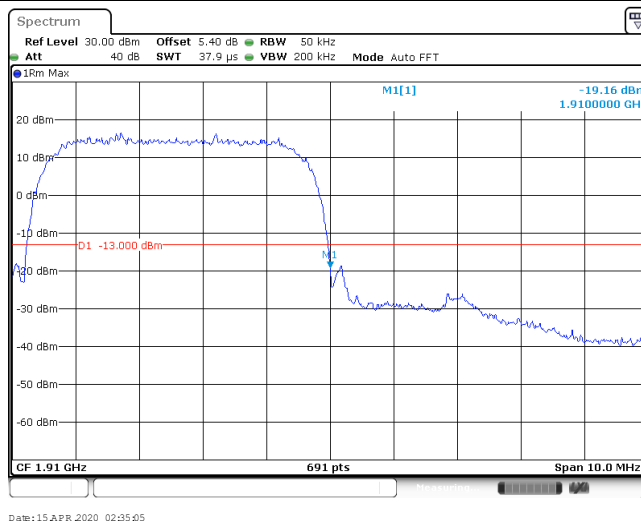


## 5. Band Edge Compliance

### 5.1. Test Plots

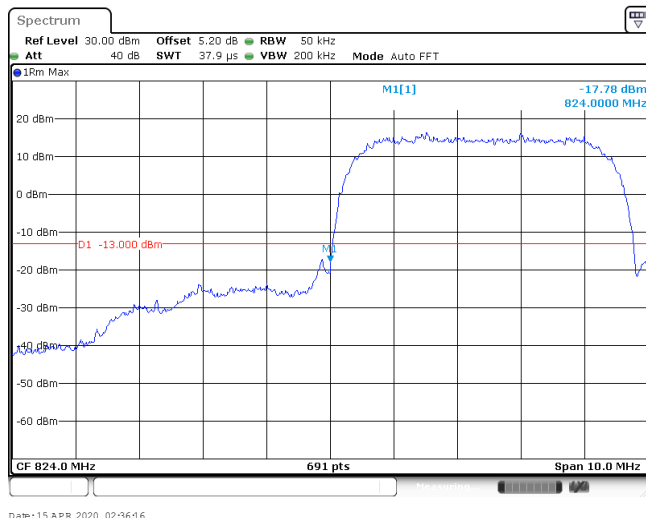


Band II\_9262

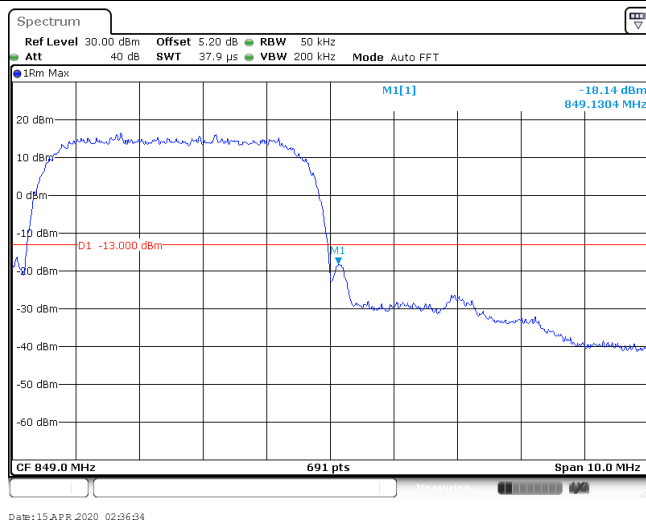


Band II\_9538





**Band V\_4132**



**Band V\_4233**



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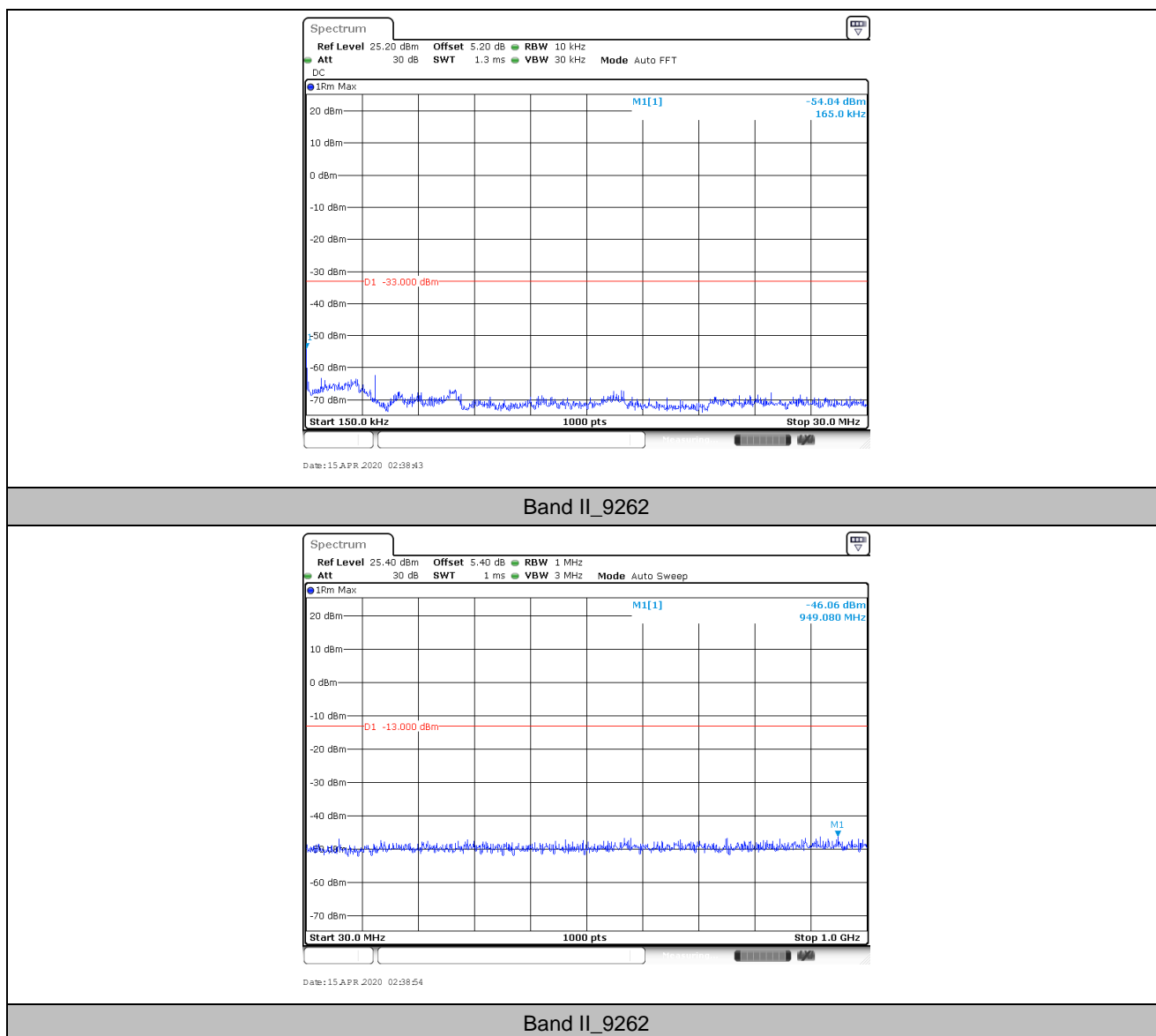


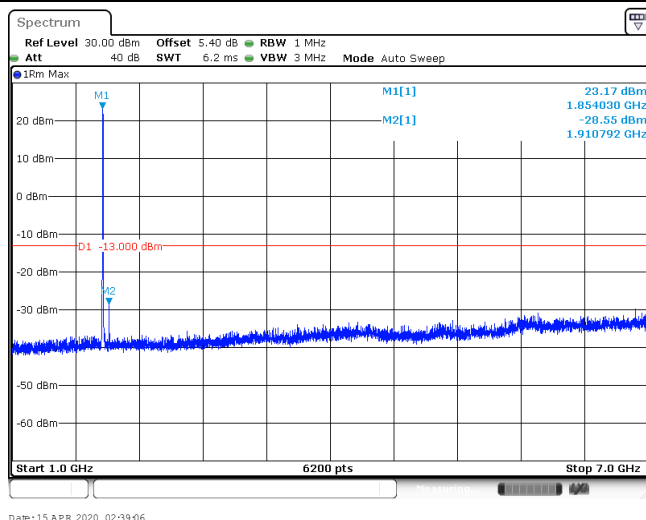
## 6. Spurious Emission at Antenna Terminal

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 =  $k * (\text{Span} / RBW)$ " with  $k$  between 4 and 5, which results in an acceptable level error of less than 0.5 dB.

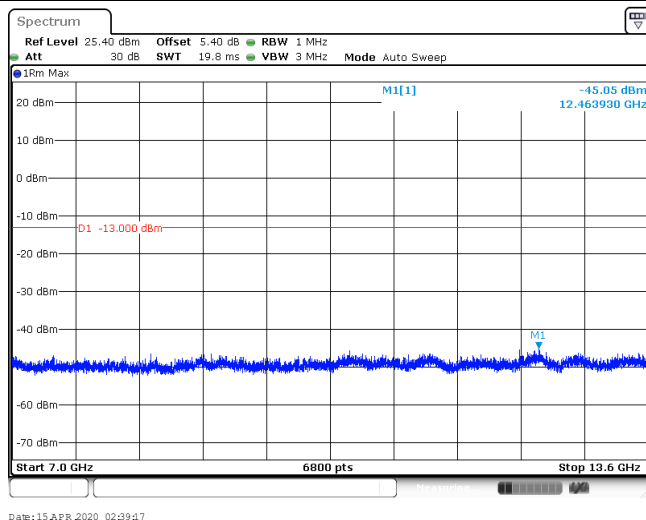
Remark2: only the worst case data displayed in this report.

### 6.1. Test Plots





Band II\_9262

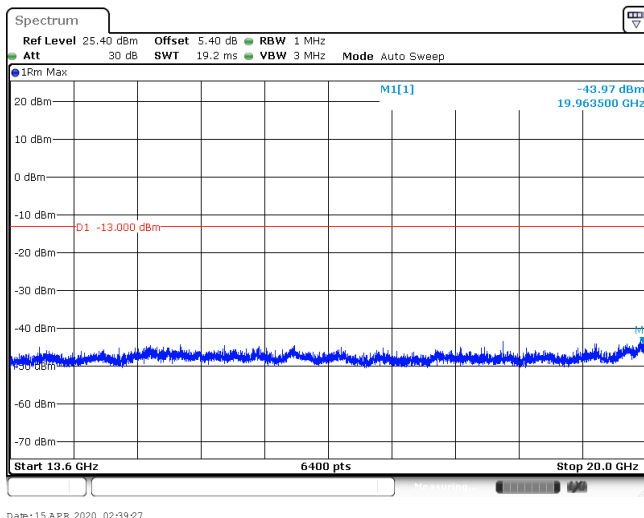


Band II\_9262

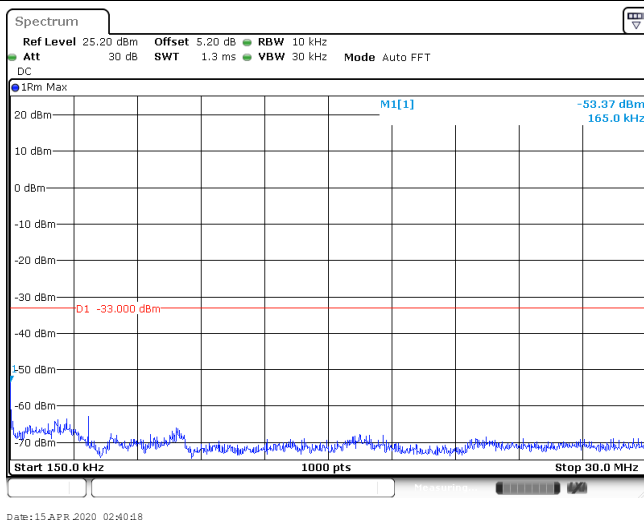


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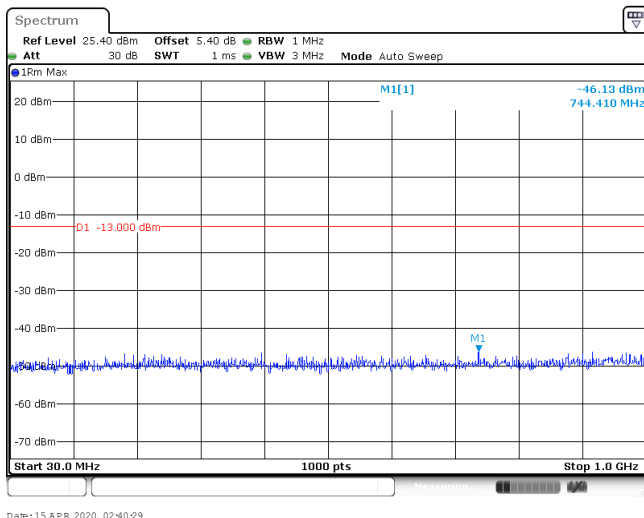


Band II\_9262

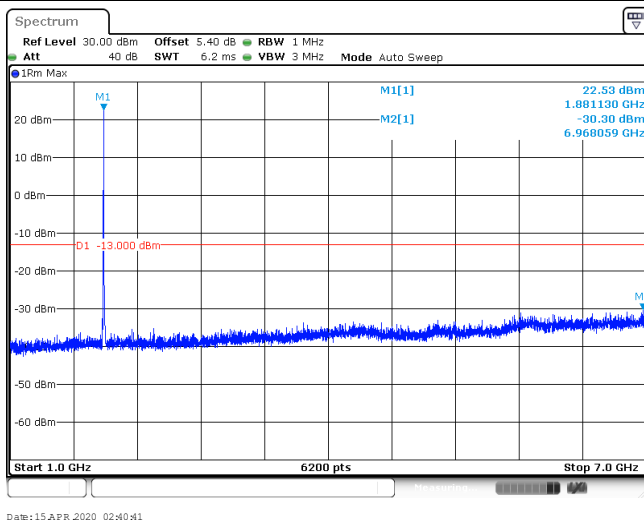


Band II\_9400





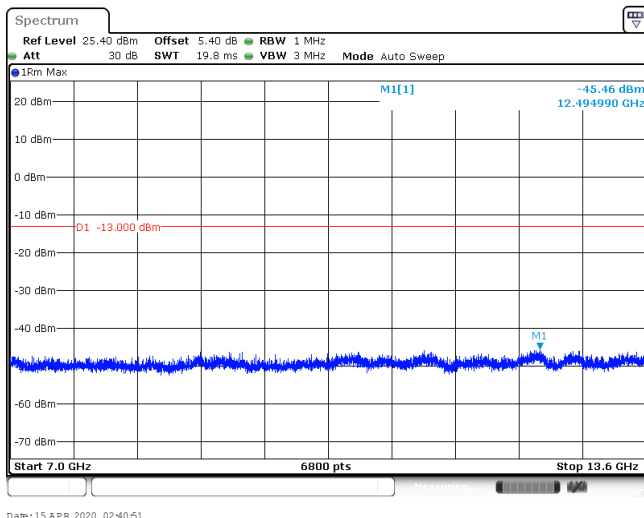
Band II\_9400



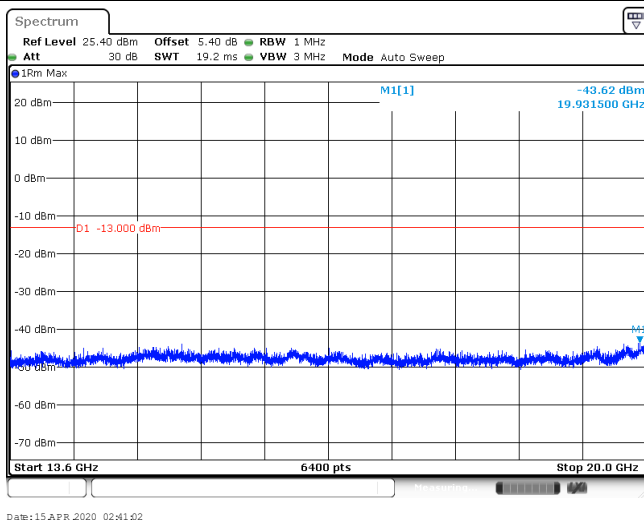
Band II\_9400



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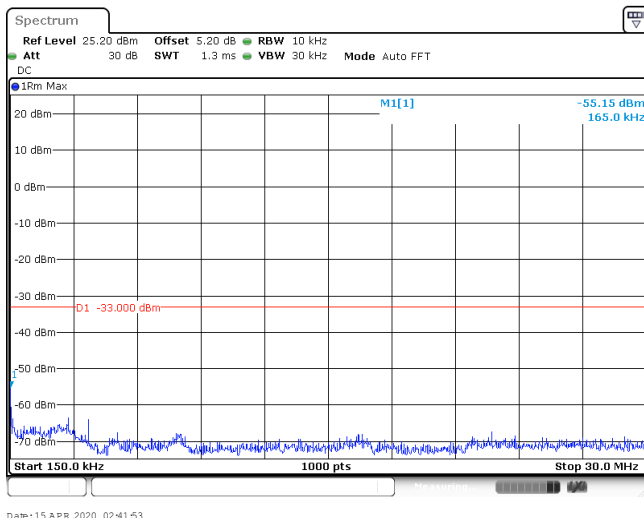
Band II\_9400



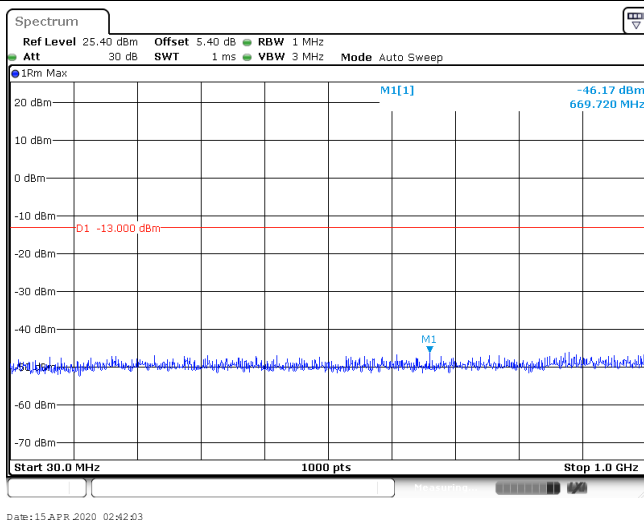
Band II\_9400



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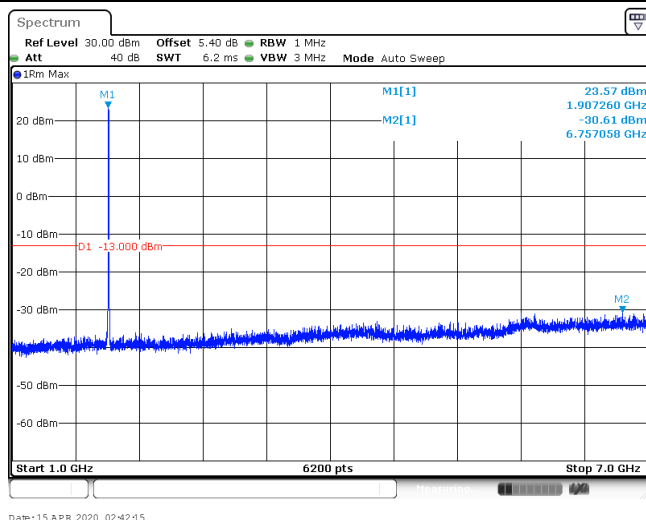


Band II\_9538

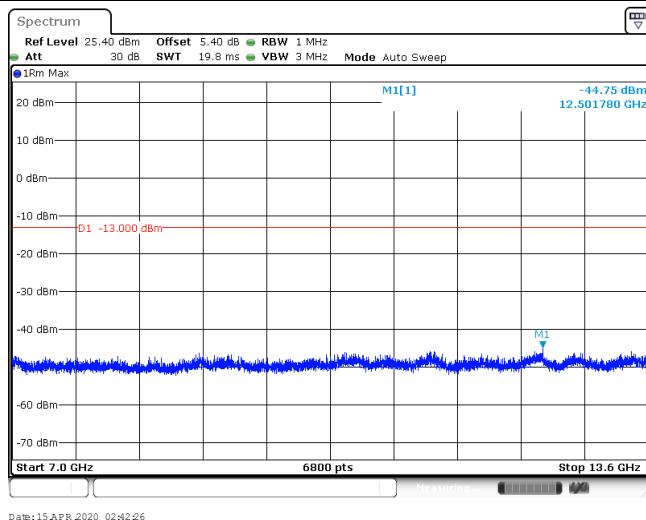


Band II\_9538





Band II\_9538

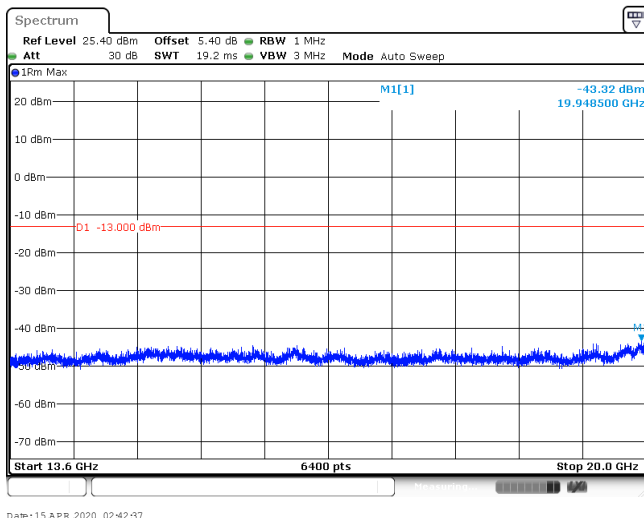


Band II\_9538



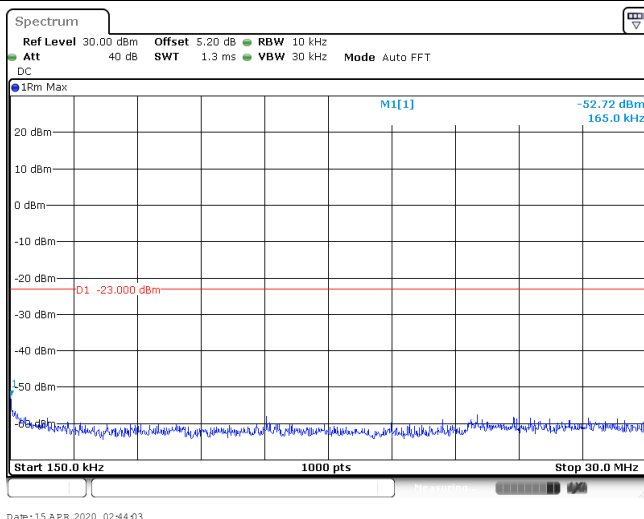
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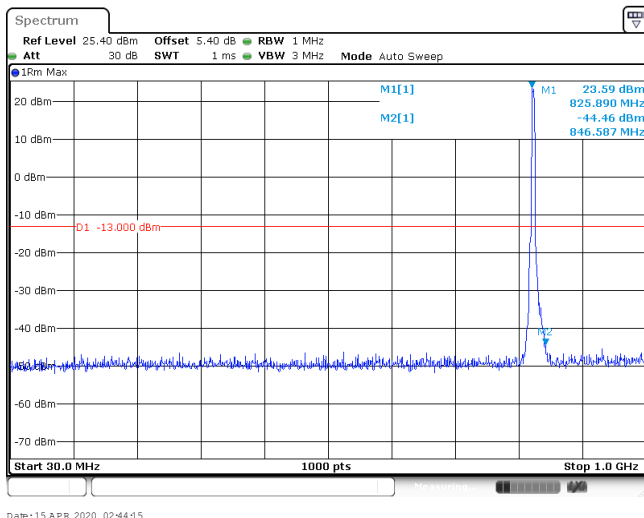
Band II\_9538

Band V\_4132

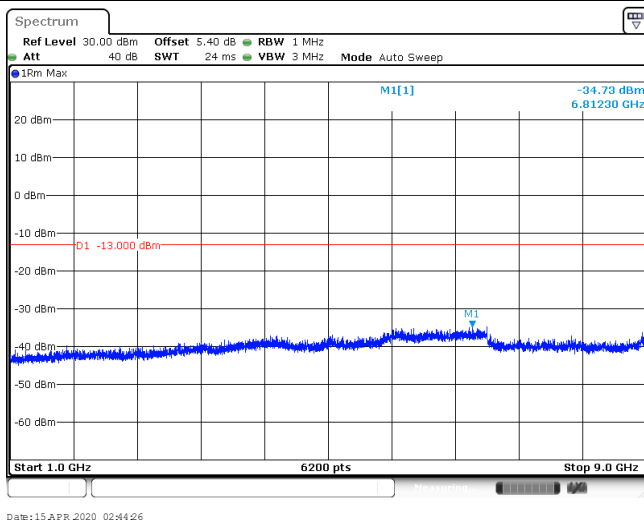


Band V\_4132



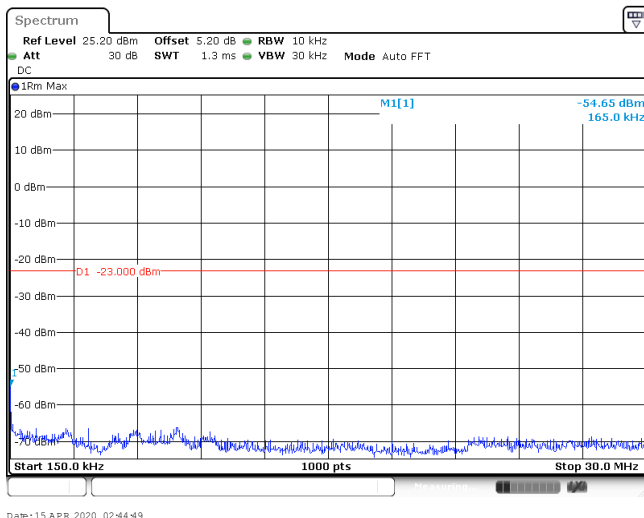


Band V\_4132

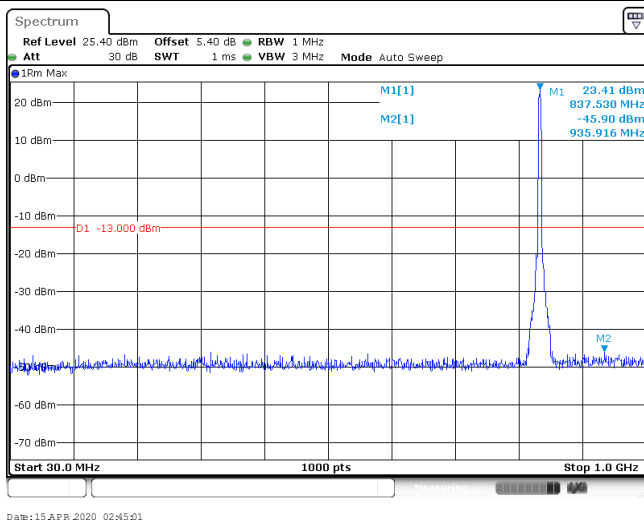


Band V\_4132





Band V\_4182

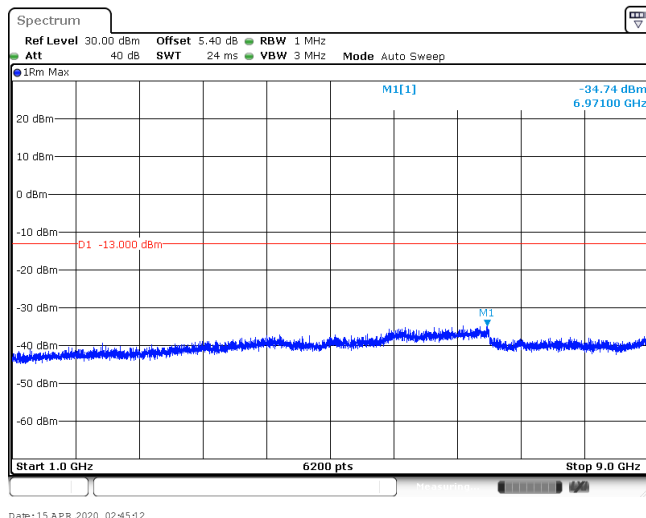


Band V\_4182

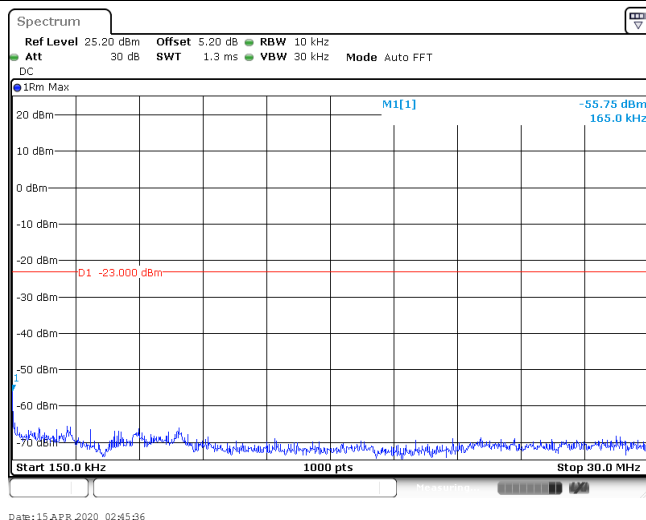


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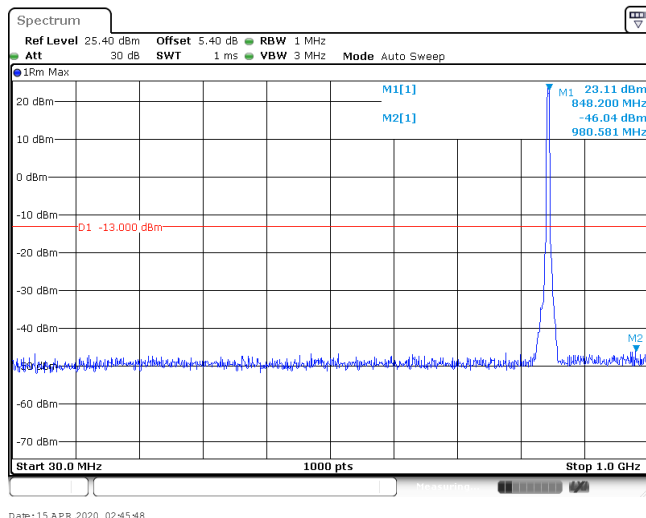


Band V\_4182

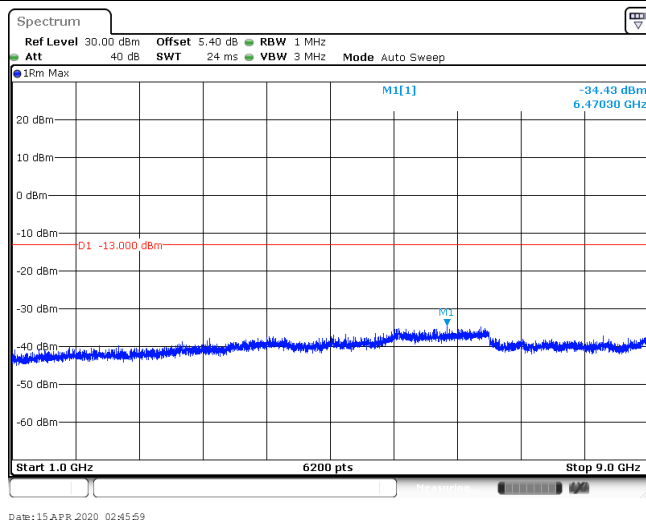


Band V\_4233





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
49.8375	-67.17	-13.00	54.17	Vertical
111.2416	-64.78	-13.00	51.78	Vertical
2710.3421	-36.55	-13.00	23.55	Vertical
3706.5236	-53.04	-13.00	40.04	Vertical
14685.8895	-46.54	-13.00	33.54	Vertical
17995.4999	-38.55	-13.00	25.55	Vertical
43.4837	-64.35	-13.00	51.35	Horizontal
606.4028	-63.97	-13.00	50.97	Horizontal
2694.7389	-35.27	-13.00	22.27	Horizontal
3706.5236	-56.93	-13.00	43.93	Horizontal
5554.5852	-56.54	-13.00	43.54	Horizontal
16398.9466	-42.38	-13.00	29.38	Horizontal

##### 7.1.1.2. Test Channel = MCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Polarization
56.8703	-65.33	-13.00	52.33	Vertical
620.4200	-64.12	-13.00	51.12	Vertical
2693.1386	-36.56	-13.00	23.56	Vertical
3761.5254	-49.03	-13.00	36.03	Vertical
5642.0881	-56.11	-13.00	43.11	Vertical
14482.8828	-46.71	-13.00	33.71	Vertical
44.7447	-64.12	-13.00	51.12	Horizontal
579.1930	-63.19	-13.00	50.19	Horizontal



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2699.5399	-35.24	-13.00	22.24	Horizontal
3758.5253	-53.28	-13.00	40.28	Horizontal
5642.5881	-50.74	-13.00	37.74	Horizontal
16384.9462	-42.85	-13.00	29.85	Horizontal

### 7.1.1.3. Test Channel = HCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Polarization
56.9673	-65.03	-13.00	52.03	Vertical
512.8901	-65.88	-13.00	52.88	Vertical
2699.5399	-36.43	-13.00	23.43	Vertical
3813.0271	-50.27	-13.00	37.27	Vertical
5720.0907	-51.49	-13.00	38.49	Vertical
17999.5000	-38.40	-13.00	25.40	Vertical
44.4537	-63.95	-13.00	50.95	Horizontal
497.0784	-64.66	-13.00	51.66	Horizontal
2695.1390	-35.12	-13.00	22.12	Horizontal
3813.5271	-53.42	-13.00	40.42	Horizontal
5725.5909	-46.02	-13.00	33.02	Horizontal
16363.9455	-42.14	-13.00	29.14	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
50.2740	-65.55	-13.00	52.55	Vertical
108.8164	-64.66	-13.00	51.66	Vertical
1674.5349	-58.75	-13.00	45.75	Vertical
2457.0914	-29.89	-13.00	16.89	Vertical
14491.3830	-46.48	-13.00	33.48	Vertical
17997.4999	-38.23	-13.00	25.23	Vertical
42.2226	-63.85	-13.00	50.85	Horizontal
389.5000	-68.01	-13.00	55.01	Horizontal
1674.9350	-55.51	-13.00	42.51	Horizontal
2465.4931	-27.02	-13.00	14.02	Horizontal
9320.2107	-51.63	-13.00	38.63	Horizontal
16385.9462	-42.36	-13.00	29.36	Horizontal

#### 7.2.1.2. Test Channel = MCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Polarization
49.7890	-67.18	-13.00	54.18	Vertical
114.5397	-63.59	-13.00	50.59	Vertical
1651.3303	-58.52	-13.00	45.52	Vertical
2463.8928	-21.83	-13.00	8.83	Vertical
14682.8894	-46.28	-13.00	33.28	Vertical
17999.5000	-38.48	-13.00	25.48	Vertical
42.1741	-64.55	-13.00	51.55	Horizontal
482.3336	-66.17	-13.00	53.17	Horizontal
1654.1308	-55.33	-13.00	42.33	Horizontal
2463.8928	-20.33	-13.00	7.33	Horizontal



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9345.2115	-51.38	-13.00	38.38	Horizontal
16397.4466	-42.65	-13.00	29.65	Horizontal

### 7.2.1.3. Test Channel = HCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Polarization
49.2555	-66.68	-13.00	53.68	Vertical
110.7080	-64.39	-13.00	51.39	Vertical
1694.9390	-57.11	-13.00	44.11	Vertical
2464.6929	-21.71	-13.00	8.71	Vertical
14455.8819	-46.89	-13.00	33.89	Vertical
17999.5000	-38.72	-13.00	25.72	Vertical
41.5436	-63.66	-13.00	50.66	Horizontal
513.3752	-65.59	-13.00	52.59	Horizontal
1694.9390	-55.61	-13.00	42.61	Horizontal
2465.8932	-22.36	-13.00	9.36	Horizontal
16337.4446	-44.04	-13.00	31.04	Horizontal
17997.9999	-43.14	-13.00	30.14	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	Channel	Voltage (Vdc)	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band II	9262	VL	TN	11.69	0.006309	±2.5	PASS
Band II	9262	VN	TN	11.31	0.006105	±2.5	PASS
Band II	9262	VH	TN	11.49	0.006205	±2.5	PASS
Band II	9400	VL	TN	12.16	0.006468	±2.5	PASS
Band II	9400	VN	TN	12.67	0.006742	±2.5	PASS
Band II	9400	VH	TN	11.86	0.006308	±2.5	PASS
Band II	9538	VL	TN	8.13	0.004259	±2.5	PASS
Band II	9538	VN	TN	8.95	0.004691	±2.5	PASS
Band II	9538	VH	TN	9.39	0.004923	±2.5	PASS
Band V	4132	VL	TN	-0.69	-0.000831	±2.5	PASS
Band V	4132	VN	TN	-1.58	-0.001913	±2.5	PASS
Band V	4132	VH	TN	-0.21	-0.000260	±2.5	PASS
Band V	4182	VL	TN	-0.11	-0.000128	±2.5	PASS
Band V	4182	VN	TN	-0.34	-0.000402	±2.5	PASS
Band V	4182	VH	TN	-0.21	-0.000248	±2.5	PASS
Band V	4233	VL	TN	-0.36	-0.000431	±2.5	PASS
Band V	4233	VN	TN	0.05	0.000059	±2.5	PASS
Band V	4233	VH	TN	-1.04	-0.001233	±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	9.78	0.005282	±2.5	PASS
Band II	9262	VN	-20	11.94	0.006444	±2.5	PASS
Band II	9262	VN	-10	11.77	0.006356	±2.5	PASS
Band II	9262	VN	0	12.59	0.006796	±2.5	PASS
Band II	9262	VN	10	9.27	0.005004	±2.5	PASS
Band II	9262	VN	20	11.71	0.006321	±2.5	PASS
Band II	9262	VN	30	11.30	0.006101	±2.5	PASS
Band II	9262	VN	40	11.22	0.006058	±2.5	PASS
Band II	9262	VN	50	11.42	0.006166	±2.5	PASS
Band II	9400	VN	-30	11.54	0.006141	±2.5	PASS
Band II	9400	VN	-20	12.84	0.006829	±2.5	PASS
Band II	9400	VN	-10	11.89	0.006327	±2.5	PASS
Band II	9400	VN	0	11.17	0.005943	±2.5	PASS
Band II	9400	VN	10	11.06	0.005882	±2.5	PASS
Band II	9400	VN	20	13.04	0.006936	±2.5	PASS



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Band II	9400	VN	30	12.39	0.006589	±2.5	PASS
Band II	9400	VN	40	11.82	0.006289	±2.5	PASS
Band II	9400	VN	50	11.87	0.006316	±2.5	PASS
Band II	9538	VN	-30	9.93	0.005208	±2.5	PASS
Band II	9538	VN	-20	8.03	0.004207	±2.5	PASS
Band II	9538	VN	-10	10.59	0.005553	±2.5	PASS
Band II	9538	VN	0	9.58	0.005021	±2.5	PASS
Band II	9538	VN	10	9.51	0.004987	±2.5	PASS
Band II	9538	VN	20	10.01	0.005246	±2.5	PASS
Band II	9538	VN	30	9.03	0.004732	±2.5	PASS
Band II	9538	VN	40	9.52	0.004991	±2.5	PASS
Band II	9538	VN	50	9.58	0.005021	±2.5	PASS
Band V	4132	VN	-30	-0.06	-0.000078	±2.5	PASS
Band V	4132	VN	-20	-0.63	-0.000762	±2.5	PASS
Band V	4132	VN	-10	0.01	0.000009	±2.5	PASS
Band V	4132	VN	0	-0.21	-0.000251	±2.5	PASS
Band V	4132	VN	10	-1.04	-0.001255	±2.5	PASS
Band V	4132	VN	20	-0.71	-0.000857	±2.5	PASS
Band V	4132	VN	30	0.06	0.000069	±2.5	PASS
Band V	4132	VN	40	-0.19	-0.000234	±2.5	PASS
Band V	4132	VN	50	-0.11	-0.000138	±2.5	PASS
Band V	4182	VN	-30	0.84	0.001001	±2.5	PASS
Band V	4182	VN	-20	0.65	0.000778	±2.5	PASS
Band V	4182	VN	-10	-0.17	-0.000205	±2.5	PASS
Band V	4182	VN	0	0.45	0.000539	±2.5	PASS
Band V	4182	VN	10	-0.64	-0.000761	±2.5	PASS
Band V	4182	VN	20	-0.04	-0.000051	±2.5	PASS
Band V	4182	VN	30	-0.26	-0.000308	±2.5	PASS
Band V	4182	VN	40	-0.25	-0.000299	±2.5	PASS
Band V	4182	VN	50	0.27	0.000325	±2.5	PASS
Band V	4233	VN	-30	-0.73	-0.000862	±2.5	PASS
Band V	4233	VN	-20	-0.92	-0.001090	±2.5	PASS
Band V	4233	VN	-10	-1.09	-0.001284	±2.5	PASS
Band V	4233	VN	0	-0.53	-0.000625	±2.5	PASS
Band V	4233	VN	10	-0.73	-0.000862	±2.5	PASS
Band V	4233	VN	20	-0.74	-0.000870	±2.5	PASS
Band V	4233	VN	30	-0.33	-0.000389	±2.5	PASS
Band V	4233	VN	40	-0.74	-0.000879	±2.5	PASS
Band V	4233	VN	50	-1.04	-0.001225	±2.5	PASS

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