



# Appendix B

## WCDMA Band V



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## 1. Effective (Isotropic) Radiated Power

### 1.1. Test Result

Band	Channel	Conducted Power (dBm)	ERP (dBm)	Limit(dBm)	Verdict
Band V	4132	23.50	19.44	38.45	PASS
Band V	4182	23.42	19.36	38.45	PASS
Band V	4233	23.43	19.37	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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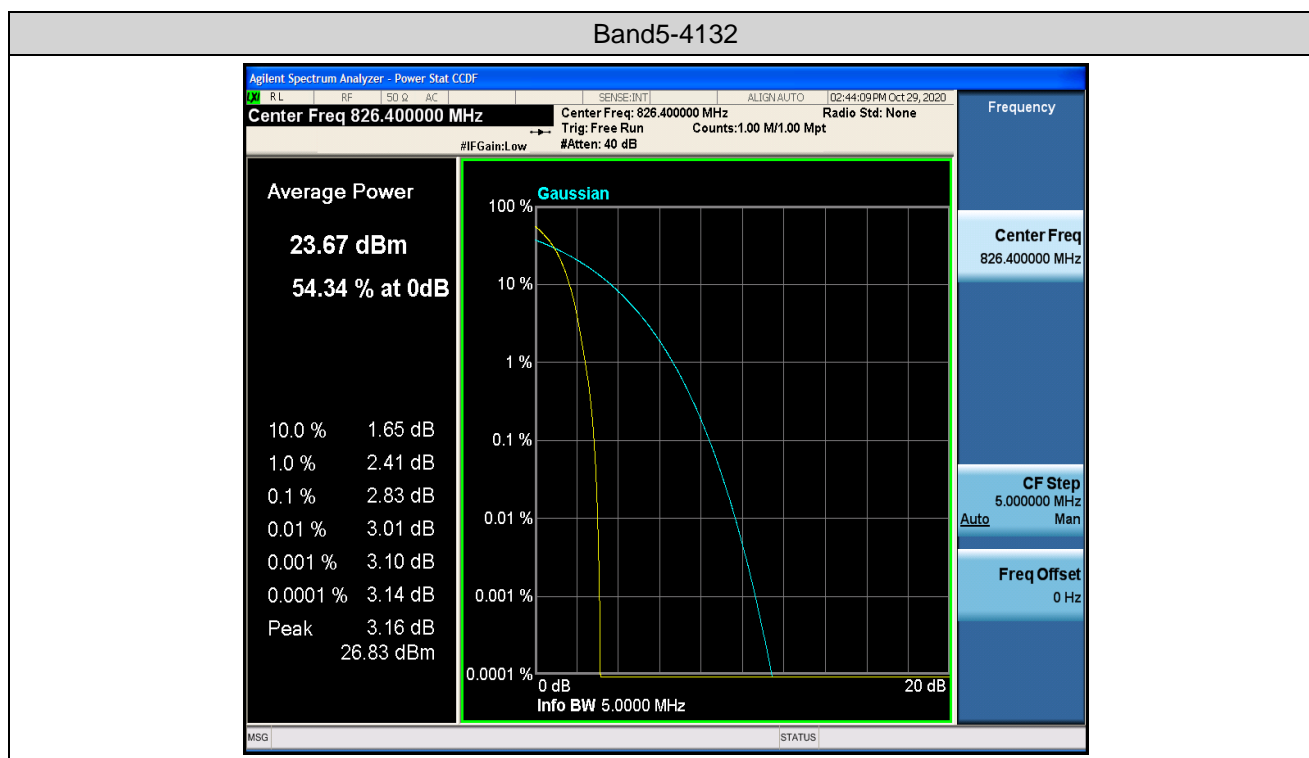
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## 2. Peak-to-Average Ratio(CCDF)

### 2.1. Test Result

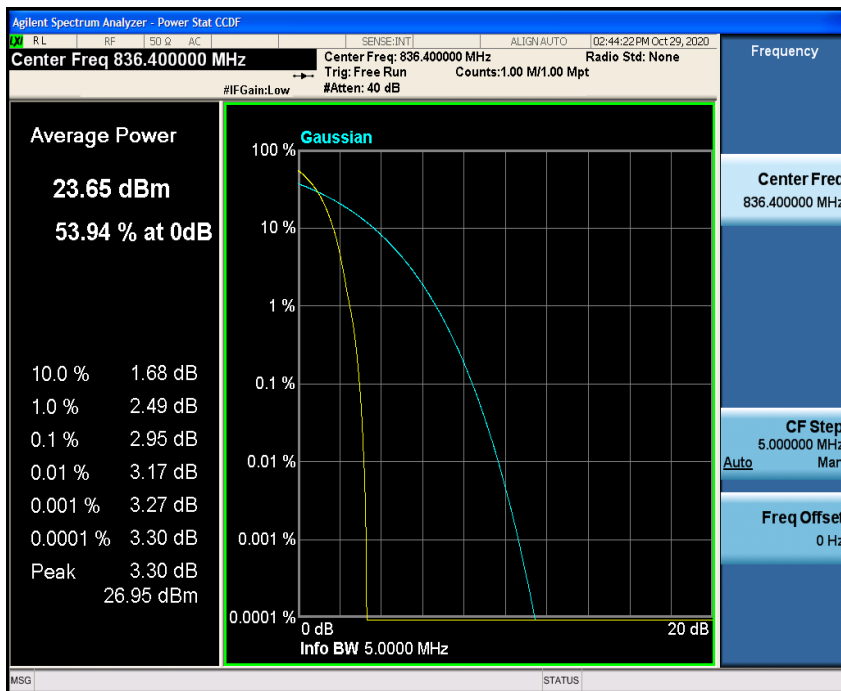
Band	Channel	Peak-to-Average Ratio(dB)	Limit(dB)	Verdict
Band5	4132	2.83	13	PASS
Band5	4182	2.95	13	PASS
Band5	4233	2.85	13	PASS

### 2.2. Test Plots

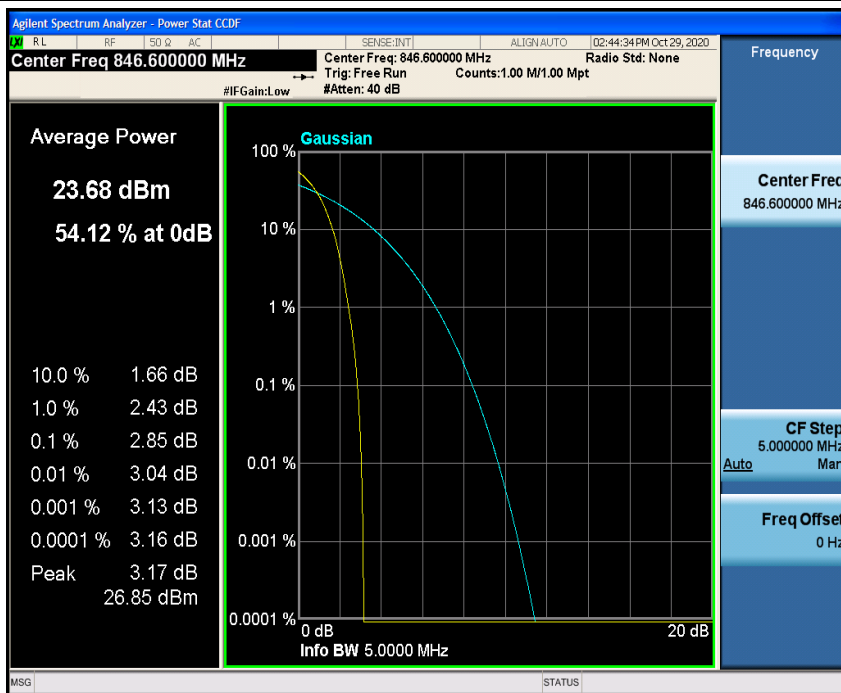




**Band5-4182**



**Band5-4233**



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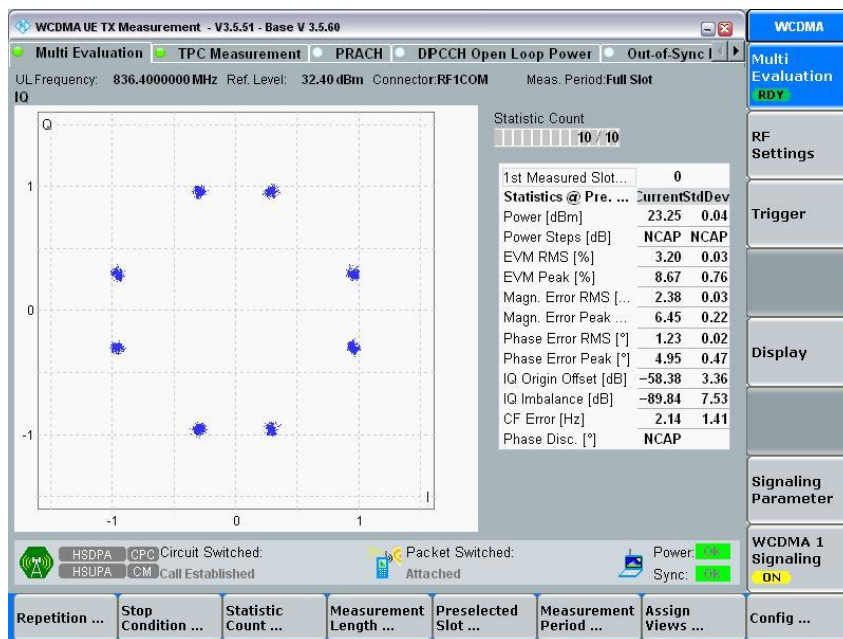
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### 3. Modulation Characteristics

#### 3.1. Test Band = WCDMA Band V

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

##### 3.1.1.1. Test Channel = MCH



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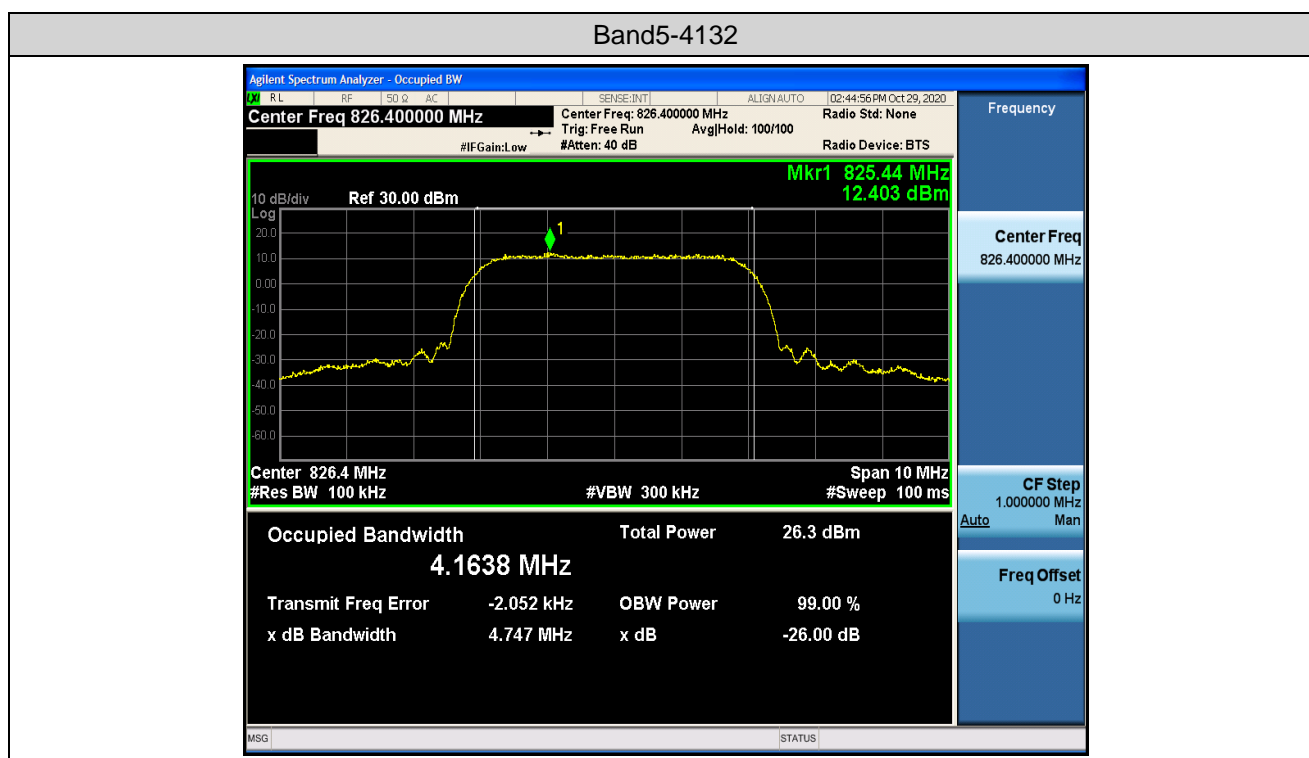


## 4. 26dB Bandwidth and Occupied Bandwidth

### 4.1. Test Result

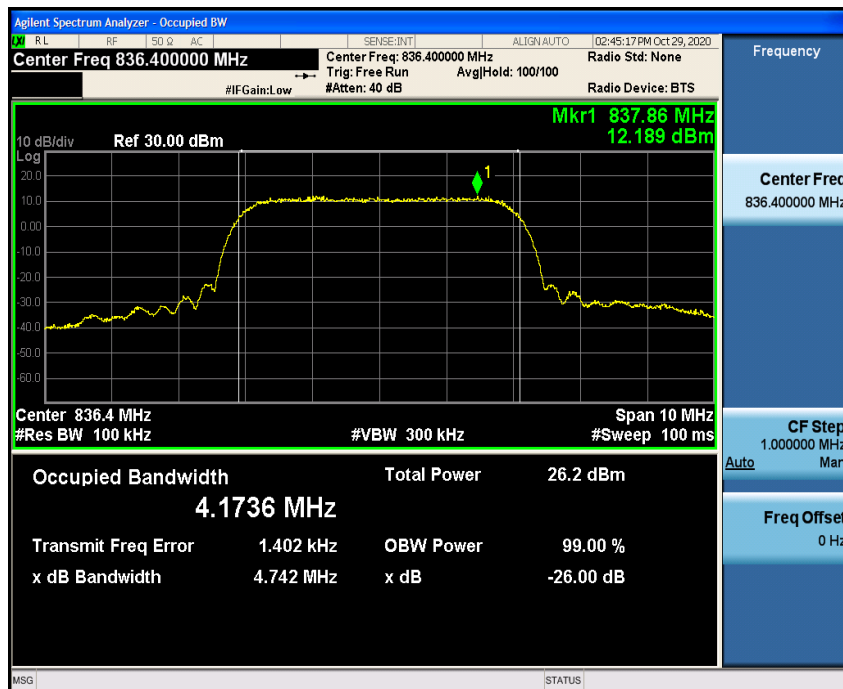
Band	Channel	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Limit(MHz)	Verdict
Band5	4132	4.1638	4.747	---	PASS
Band5	4182	4.1736	4.742	---	PASS
Band5	4233	4.1653	4.736	---	PASS

### 4.2. Test Plots

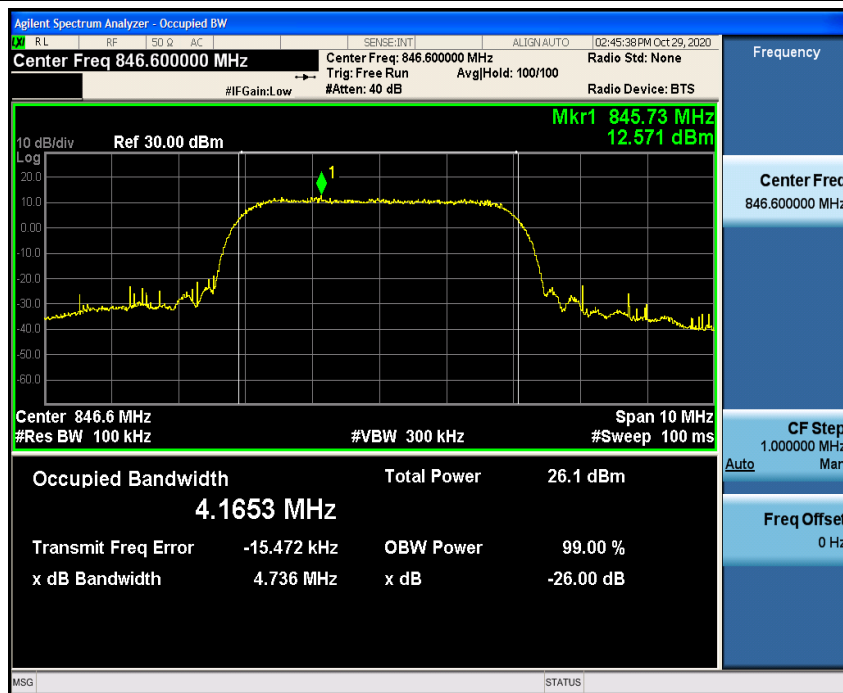




## Band5-4182



## Band5-4233



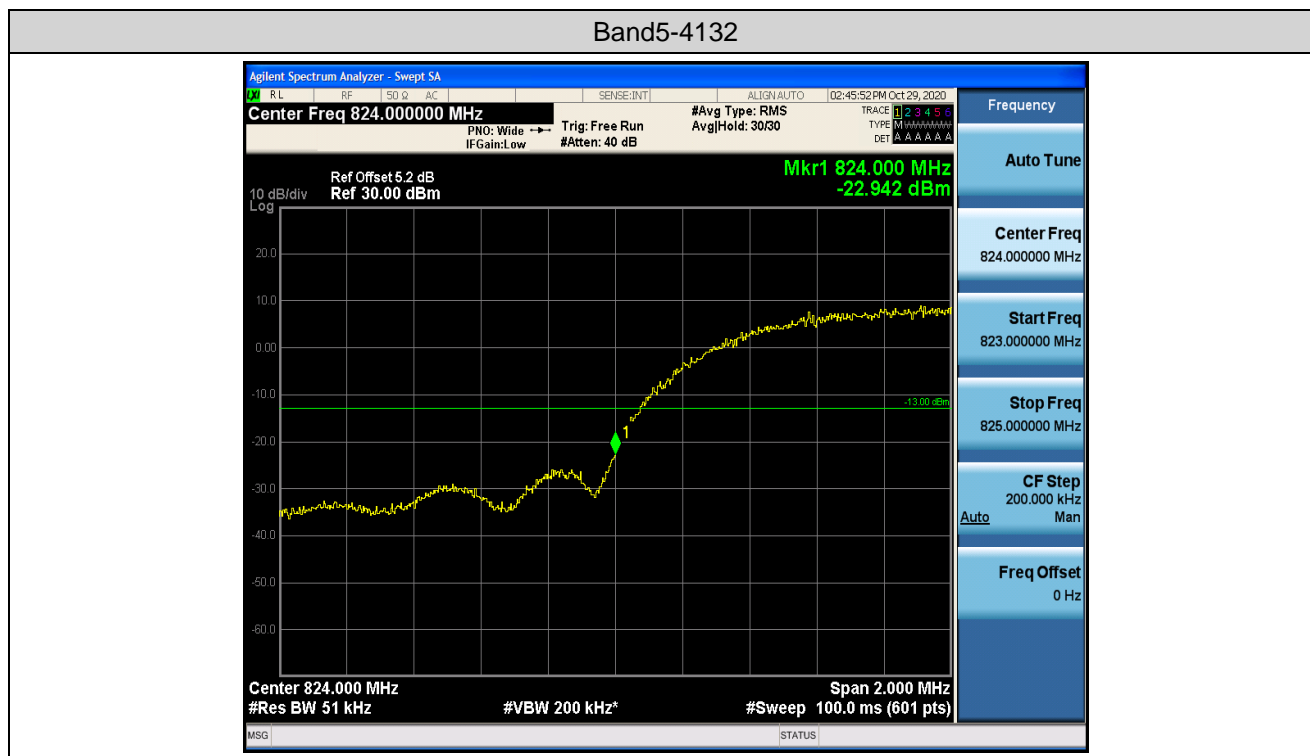
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## 5. Band Edge Compliance

### 5.1. Test Plots



**Band5-4233**



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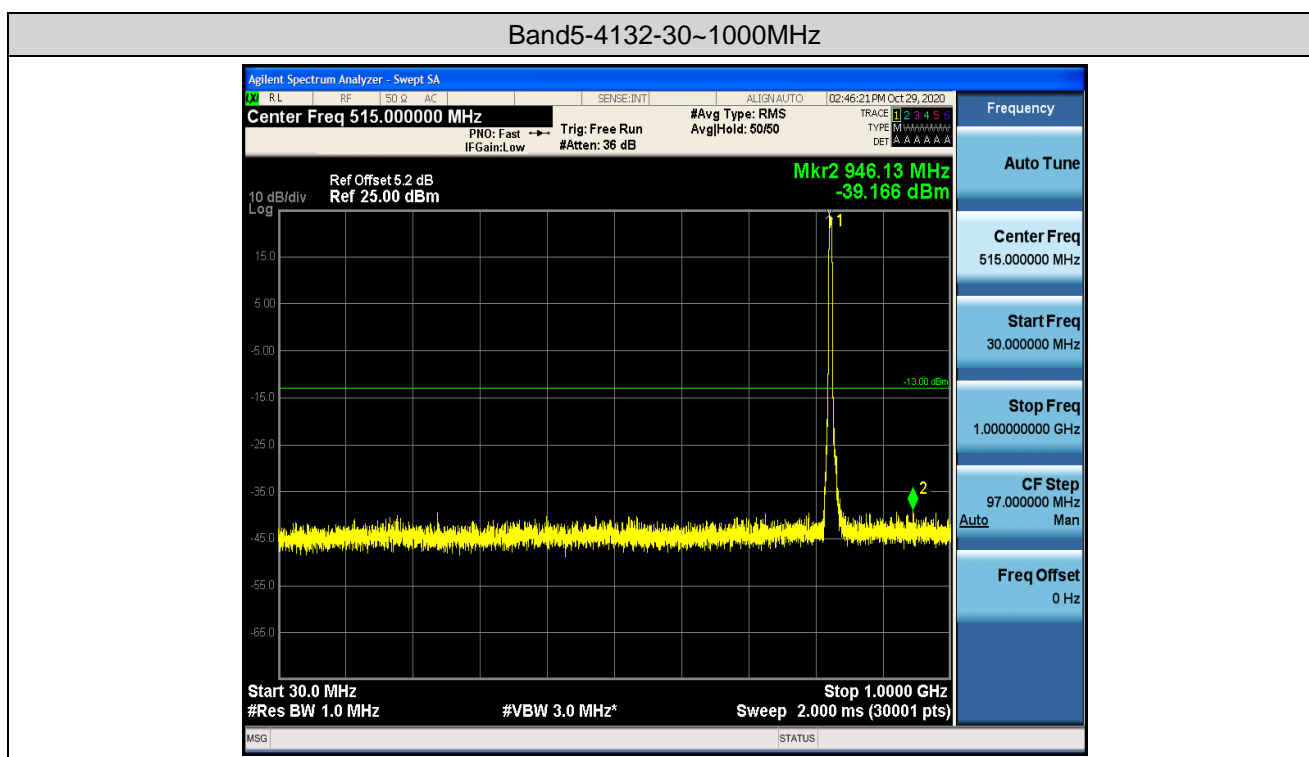


## 6. Spurious Emission at Antenna Terminal

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 =  $k * (\text{Span} / RBW)$ " 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

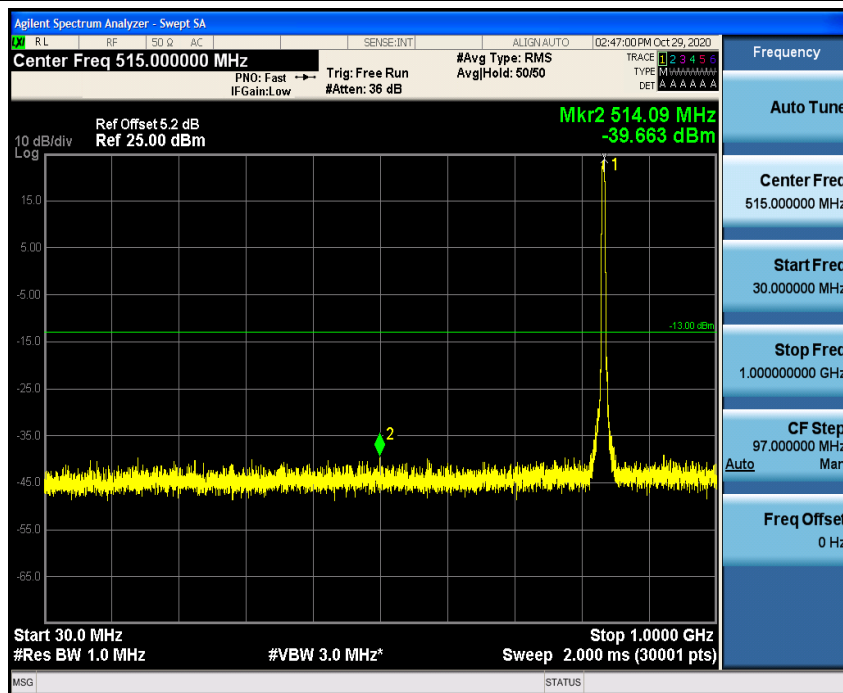




**Band5-4132-1000~10000MHz**



**Band5-4182-30~1000MHz**



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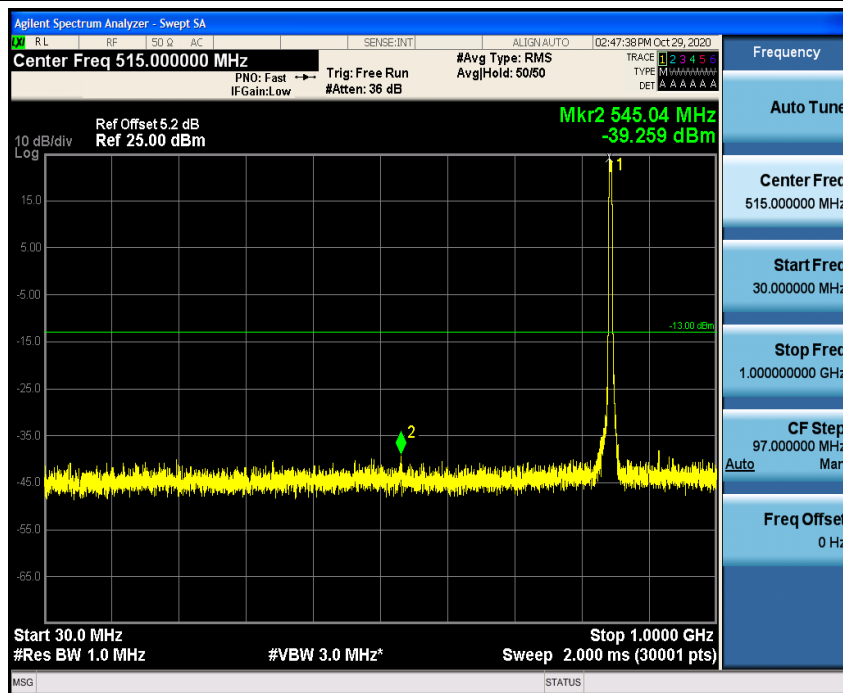
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**Band5-4182-1000~10000MHz**



**Band5-4233-30~1000MHz**



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Band5-4233-1000~10000MHz



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## 7. Field Strength of Spurious Radiation

### Firstly Supply:

#### 7.1 Test Band = WCDMA\_V\_TM1

##### 7.1.1 Test Channel = Low Channel

Suspected Data List					
NO.	Freq. [MHz]	Level [dBm]	Limit [dBm]	Margin [dB]	Polarity
1	41.2526	-61.43	-13.00	48.43	Horizontal
2	99.2130	-75.14	-13.00	62.14	Horizontal
3	228.1809	-68.25	-13.00	55.25	Horizontal
4	1651.3303	-55.55	-13.00	42.55	Horizontal
5	2480.2961	-49.18	-13.00	36.18	Horizontal
6	4136.6046	-59.38	-13.00	46.38	Horizontal



## 7.2 Test Band = WCDMA\_V\_TM1

### 7.2.1 Test Channel = Low Channel

Suspected Data List					
NO.	Freq. [MHz]	Level [dBm]	Limit [dBm]	Margin [dB]	Polarity
1	30.5820	-67.95	-13.00	54.95	Vertical
2	110.5625	-64.59	-13.00	51.59	Vertical
3	380.6725	-67.65	-13.00	54.65	Vertical
4	1650.9302	-59.28	-13.00	46.28	Vertical
5	2703.1406	-51.34	-13.00	38.34	Vertical
6	4135.4378	-62.19	-13.00	49.19	Vertical



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### 7.3 Test Band = WCDMA\_V\_TM1

#### 7.3.1 Test Channel = Middle Channel

Suspected Data List					
NO.	Freq. [MHz]	Level [dBm]	Limit [dBm]	Margin [dB]	Polarity
1	41.1071	-63.77	-13.00	50.77	Horizontal
2	109.2530	-75.70	-13.00	62.70	Horizontal
3	231.0426	-67.80	-13.00	54.80	Horizontal
4	1674.9350	-57.03	-13.00	44.03	Horizontal
5	2512.3025	-46.40	-13.00	33.40	Horizontal
6	4177.4392	-59.89	-13.00	46.89	Horizontal



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## 7.4 Test Band = WCDMA\_V\_TM1

### 7.4.1 Test Channel = Middle Channel

Suspected Data List					
NO.	Freq. [MHz]	Level [dBm]	Limit [dBm]	Margin [dB]	Polarity
1	30.8245	-68.79	-13.00	55.79	Vertical
2	110.1260	-64.75	-13.00	51.75	Vertical
3	373.5427	-67.66	-13.00	54.66	Vertical
4	1866.9734	-58.89	-13.00	45.89	Vertical
5	2512.7025	-50.54	-13.00	37.54	Vertical
6	4176.0392	-61.74	-13.00	48.74	Vertical





7.5 Test Band = WCDMA\_V\_TM1

7.5.1 Test Channel = High Channel

Suspected Data List					
NO.	Freq. [MHz]	Level [dBm]	Limit [dBm]	Margin [dB]	Polarity
1	42.3196	-62.76	-13.00	49.76	Horizontal
2	101.2986	-74.77	-13.00	61.77	Horizontal
3	234.1952	-68.03	-13.00	55.03	Horizontal
4	1690.9382	-58.76	-13.00	45.76	Horizontal
5	2695.1390	-50.25	-13.00	37.25	Horizontal
6	9310.9437	-52.67	-13.00	39.67	Horizontal





## 7.6 Test Band = WCDMA\_V\_TM1

### 7.6.1 Test Channel = High Channel

Suspected Data List					
NO.	Freq. [MHz]	Level [dBm]	Limit [dBm]	Margin [dB]	Polarity
1	30.6305	-70.08	-13.00	57.08	Vertical
2	110.2230	-64.19	-13.00	51.19	Vertical
3	369.1290	-67.86	-13.00	54.86	Vertical
4	1668.1336	-60.30	-13.00	47.30	Vertical
5	2696.3393	-51.31	-13.00	38.31	Vertical
6	9880.0627	-52.08	-13.00	39.08	Vertical





## Secondly Supply:

### 7.7 Test Band = WCDMA\_V\_TM1

#### 7.7.1 Test Channel = Middle Channel

Suspected Data List					
NO.	Freq. [MHz]	Level [dBm]	Limit [dBm]	Margin [dB]	Polarity
1	44.5992	-63.50	-13.00	50.50	Horizontal
2	223.1852	-69.03	-13.00	56.03	Horizontal
3	507.9429	-65.24	-13.00	52.24	Horizontal
4	1674.5349	-59.40	-13.00	46.40	Horizontal
5	2699.9400	-50.01	-13.00	37.01	Horizontal
6	7391.0130	-56.12	-13.00	43.12	Horizontal





## 7.8 Test Band = WCDMA\_V\_TM1

### 7.8.1 Test Channel = Middle Channel

Suspected Data List					
NO.	Freq. [MHz]	Level [dBm]	Limit [dBm]	Margin [dB]	Polarity
1	79.1330	-66.62	-13.00	53.62	Vertical
2	111.6296	-64.19	-13.00	51.19	Vertical
3	602.3286	-63.50	-13.00	50.50	Vertical
4	2695.9392	-51.29	-13.00	38.29	Vertical
5	8018.4673	-55.05	-13.00	42.05	Vertical
6	9572.2857	-51.97	-13.00	38.97	Vertical

#### 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
Band5	4132	VL	NT	0.53	0.000641	±2.5	PASS
Band5	4132	VN	NT	0.26	0.000315	±2.5	PASS
Band5	4132	VH	NT	0.51	0.000617	±2.5	PASS
Band5	4182	VL	NT	-0.09	-0.000108	±2.5	PASS
Band5	4182	VN	NT	-0.09	-0.000108	±2.5	PASS
Band5	4182	VH	NT	-0.04	-0.000048	±2.5	PASS
Band5	4233	VL	NT	-1.51	-0.001784	±2.5	PASS
Band5	4233	VN	NT	-1.32	-0.001559	±2.5	PASS
Band5	4233	VH	NT	-1.36	-0.001606	±2.5	PASS

### 8.2. Frequency Vs Temperature

Temperature							
Band	Channel	Voltage (Vdc)	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band5	4132	NV	-30	0.66	0.000799	±2.5	PASS
Band5	4132	NV	-20	0.93	0.001125	±2.5	PASS
Band5	4132	NV	-10	0.67	0.000811	±2.5	PASS
Band5	4132	NV	0	0.97	0.001174	±2.5	PASS
Band5	4132	NV	10	1.22	0.001476	±2.5	PASS
Band5	4132	NV	20	1.08	0.001307	±2.5	PASS
Band5	4132	NV	30	0.91	0.001101	±2.5	PASS
Band5	4132	NV	40	1.02	0.001234	±2.5	PASS
Band5	4132	NV	50	1.20	0.001452	±2.5	PASS
Band5	4182	NV	-30	-0.17	-0.000203	±2.5	PASS
Band5	4182	NV	-20	-0.06	-0.000072	±2.5	PASS
Band5	4182	NV	-10	-0.16	-0.000191	±2.5	PASS
Band5	4182	NV	0	0.04	0.000048	±2.5	PASS
Band5	4182	NV	10	-0.06	-0.000072	±2.5	PASS
Band5	4182	NV	20	-0.19	-0.000227	±2.5	PASS
Band5	4182	NV	30	-0.14	-0.000167	±2.5	PASS



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Band5	4182	NV	40	0.03	0.000036	±2.5	PASS
Band5	4182	NV	50	0.03	0.000036	±2.5	PASS
Band5	4233	NV	-30	-1.29	-0.001524	±2.5	PASS
Band5	4233	NV	-20	-1.27	-0.001500	±2.5	PASS
Band5	4233	NV	-10	-1.34	-0.001583	±2.5	PASS
Band5	4233	NV	0	-1.39	-0.001642	±2.5	PASS
Band5	4233	NV	10	-1.48	-0.001748	±2.5	PASS
Band5	4233	NV	20	-1.39	-0.001642	±2.5	PASS
Band5	4233	NV	30	-1.53	-0.001807	±2.5	PASS
Band5	4233	NV	40	-1.42	-0.001677	±2.5	PASS
Band5	4233	NV	50	-1.66	-0.001961	±2.5	PASS

The End



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