

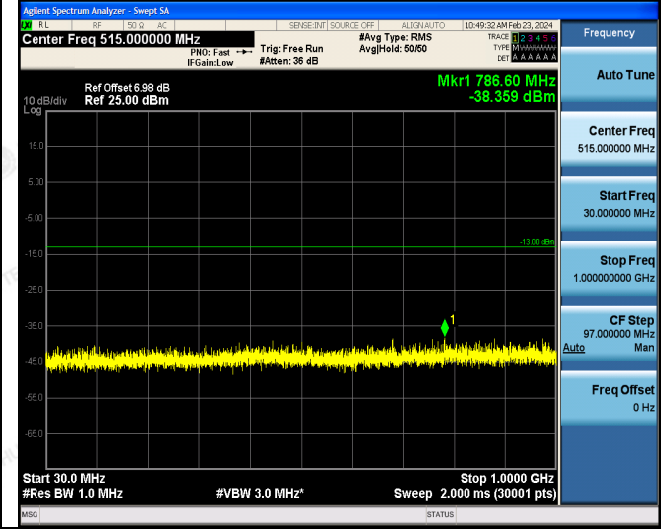
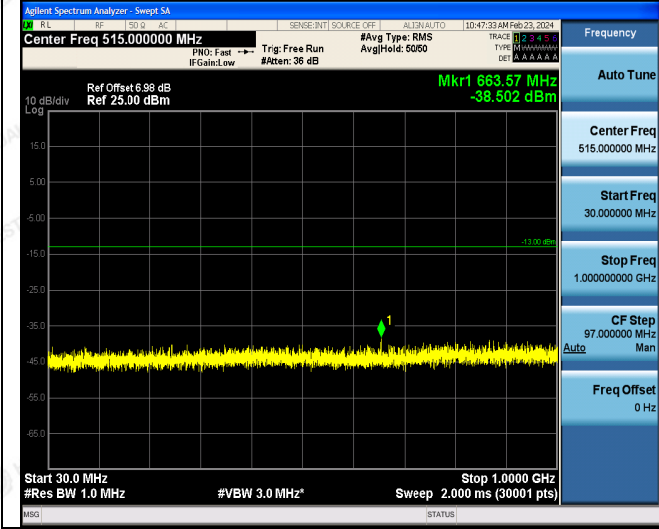


LTE FDD Band 4-1.4MHz Channel Bandwidth

Low Channel

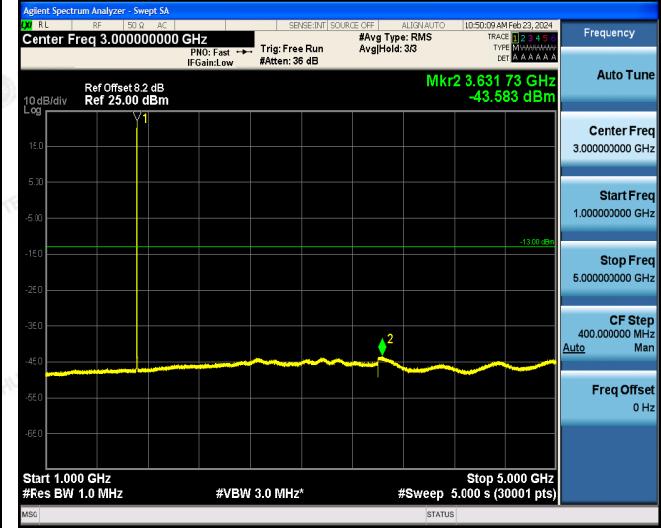
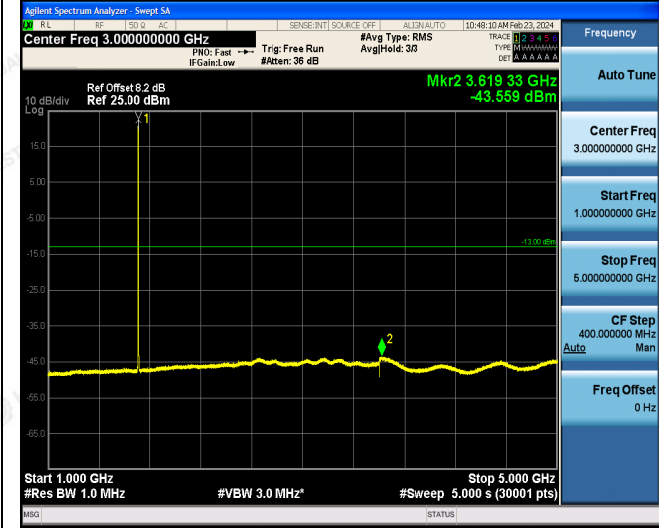
QPSK

16QAM



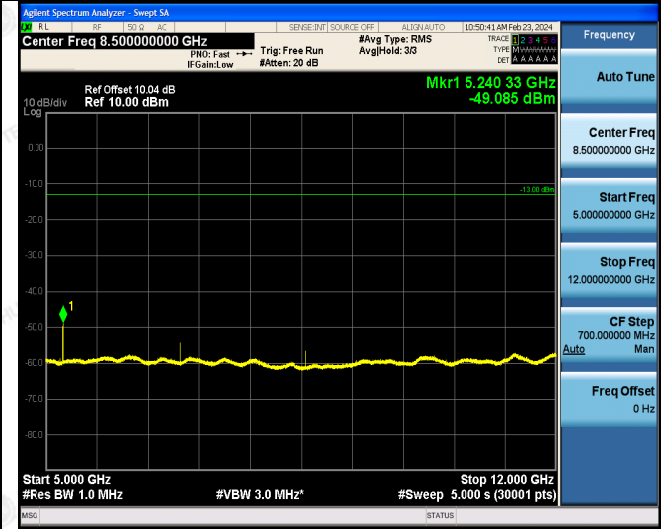
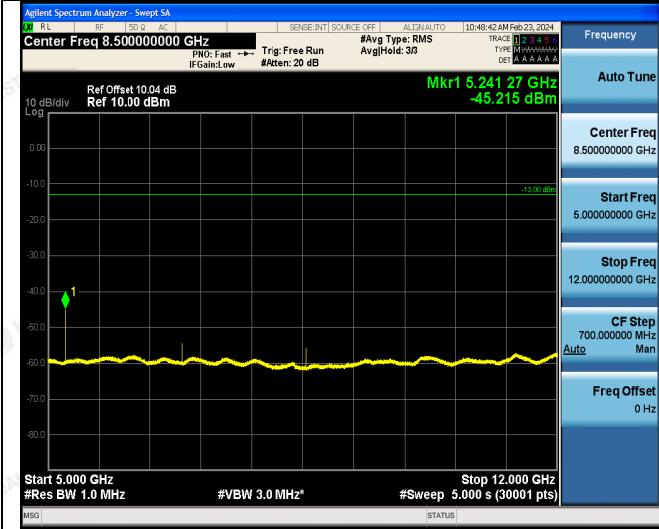
30MHz~1GHz

30MHz~1GHz



1GHz~5GHz

1GHz~5GHz



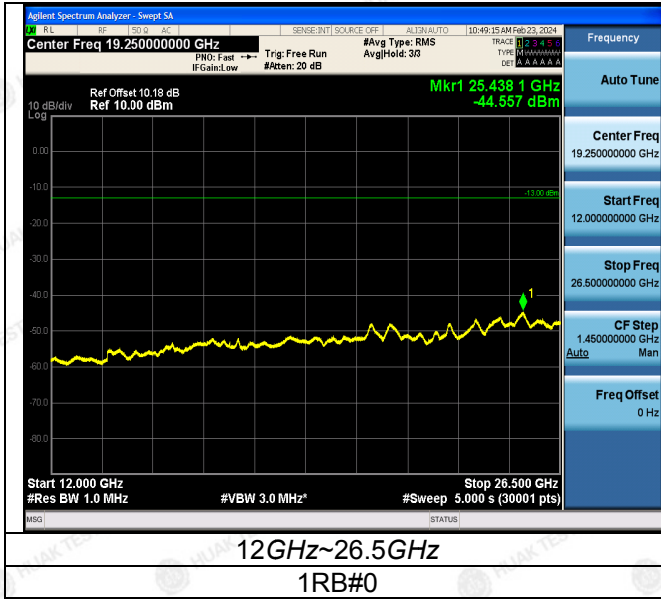
5GHz~12GHz

5GHz~12GHz

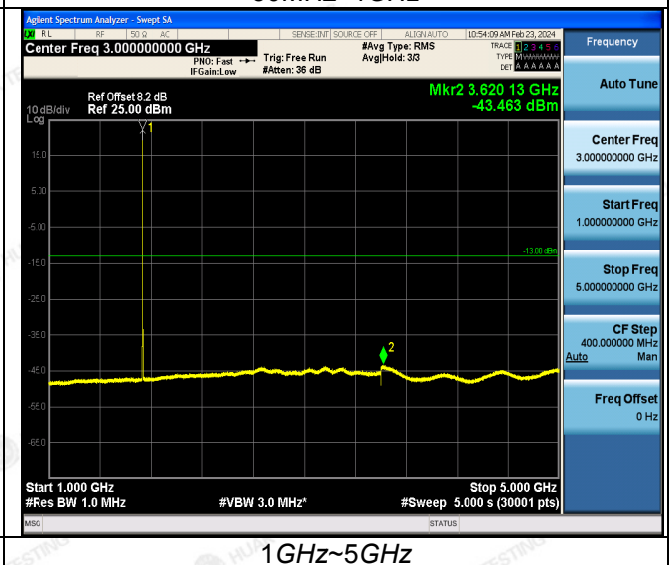
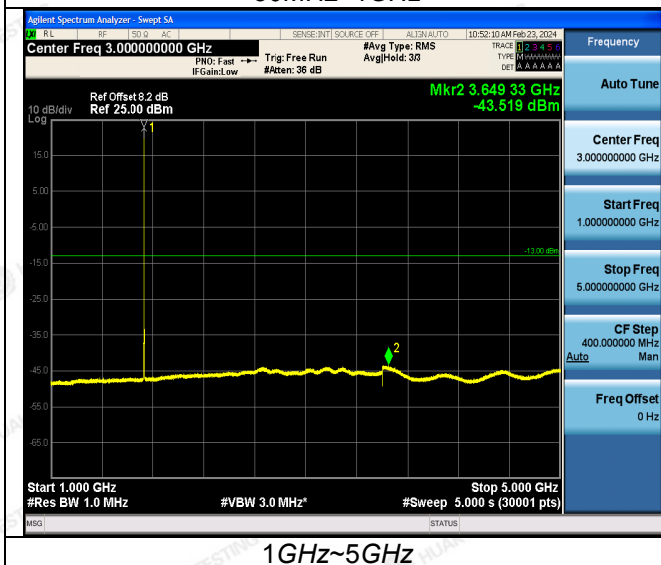
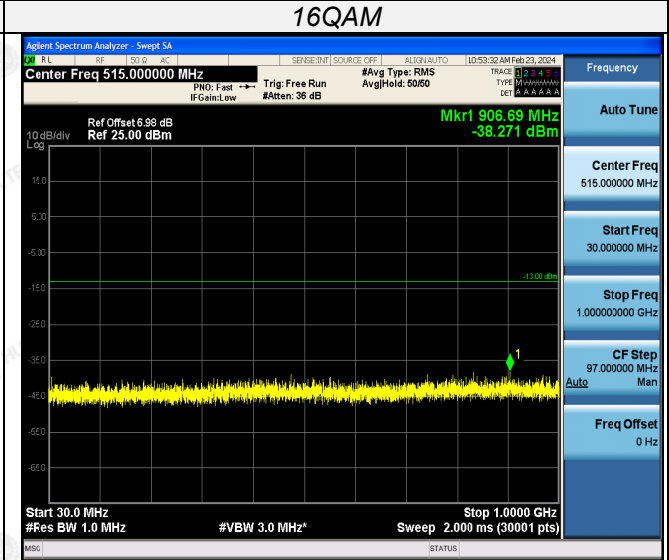
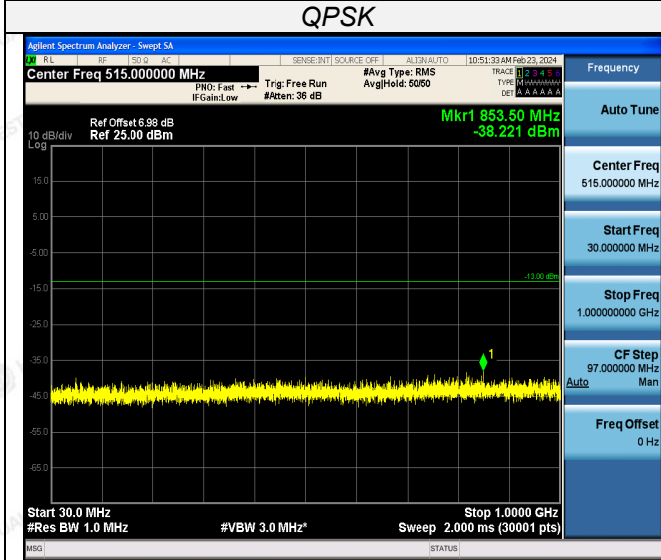
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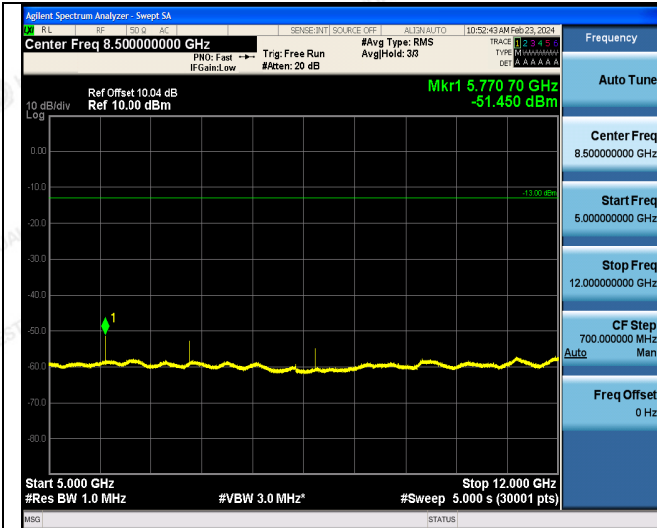
LTE FDD Band 4-1.4MHz Channel Bandwidth  
Middle Channel



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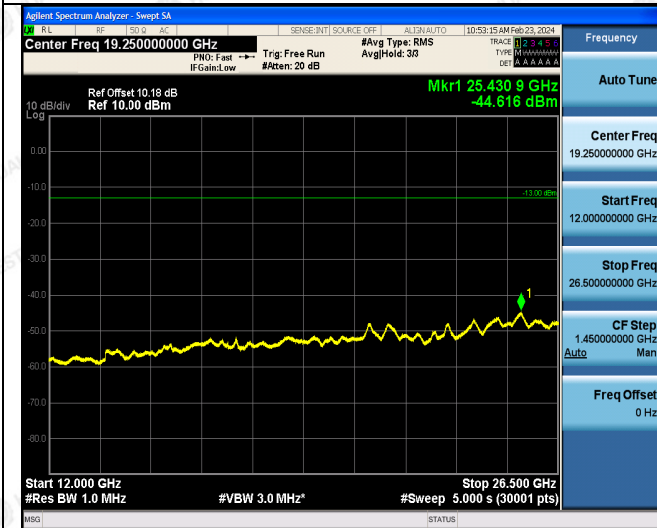
Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China



5GHz~12GHz



5GHz~12GHz



12GHz~26.5GHz

1RB#0



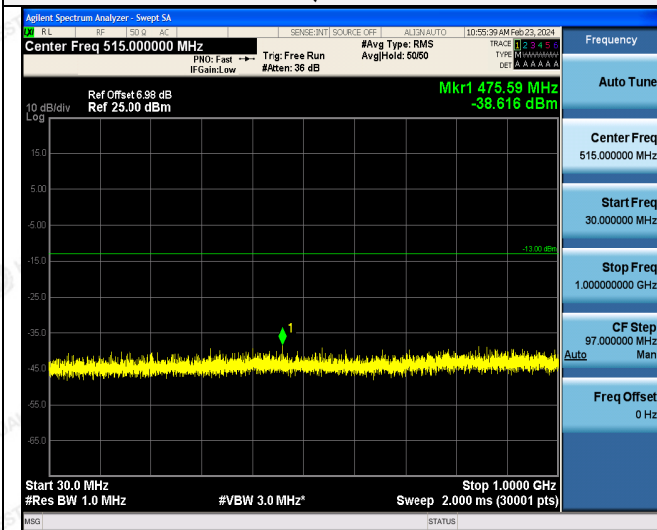
12GHz~26.5GHz

1RB#0

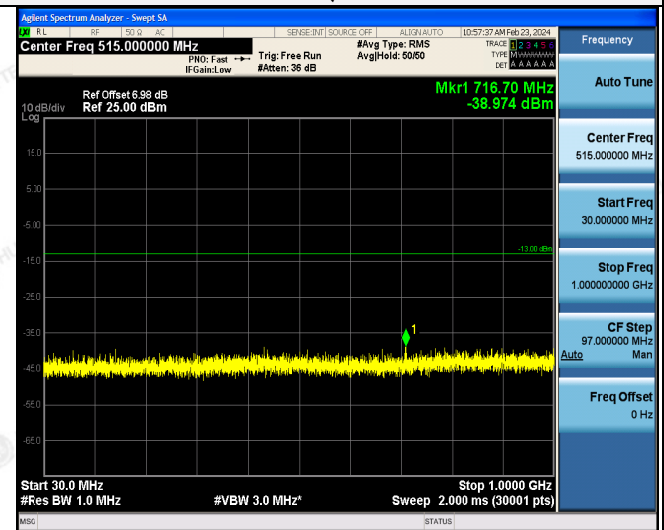
LTE FDD Band 4-1.4MHz Channel Bandwidth  
High Channel

QPSK

16QAM



30MHz~1GHz

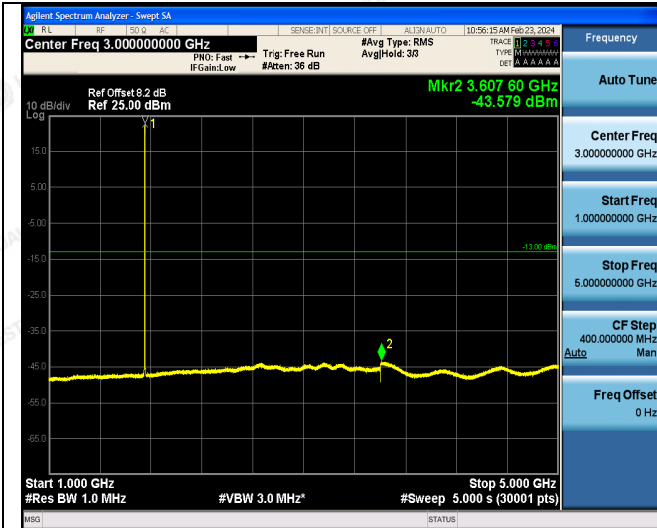


30MHz~1GHz

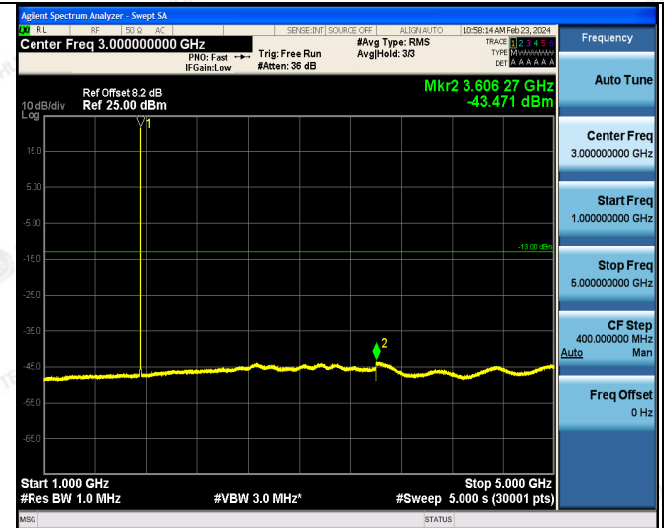
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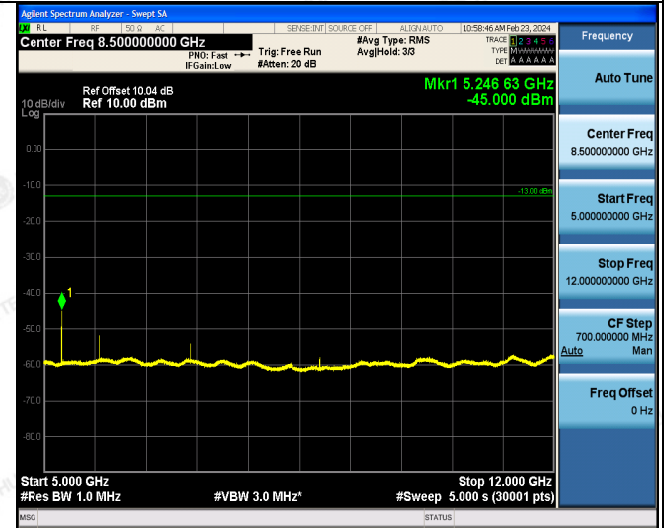
1GHz~5GHz



1GHz~5GHz



5GHz~12GHz



5GHz~12GHz



12GHz~26.5GHz

1RB#0



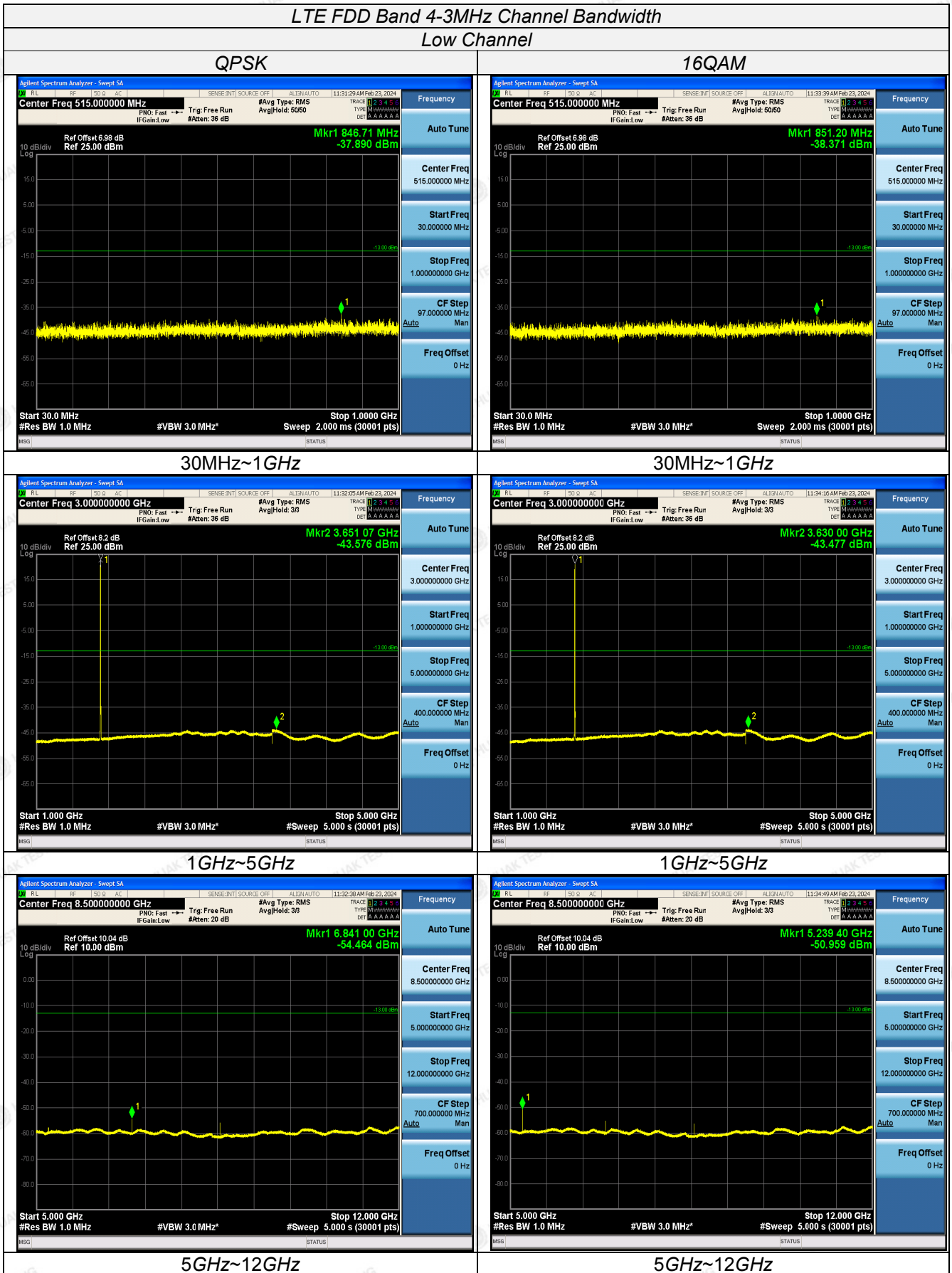
12GHz~26.5GHz

1RB#0

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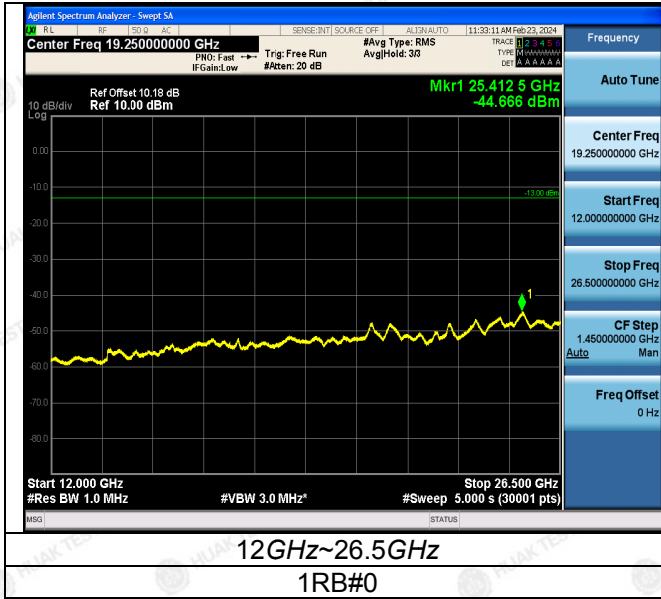
Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China



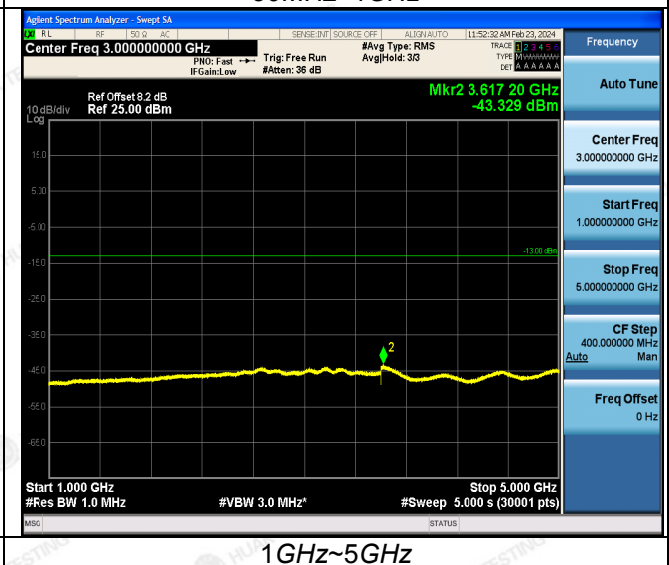
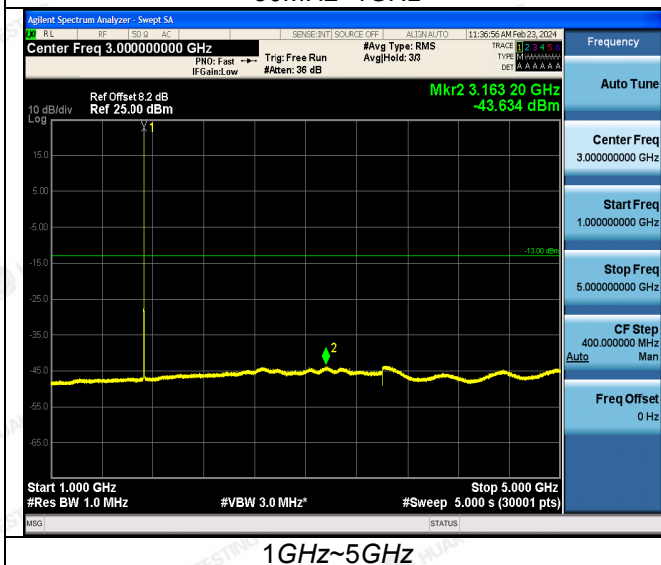
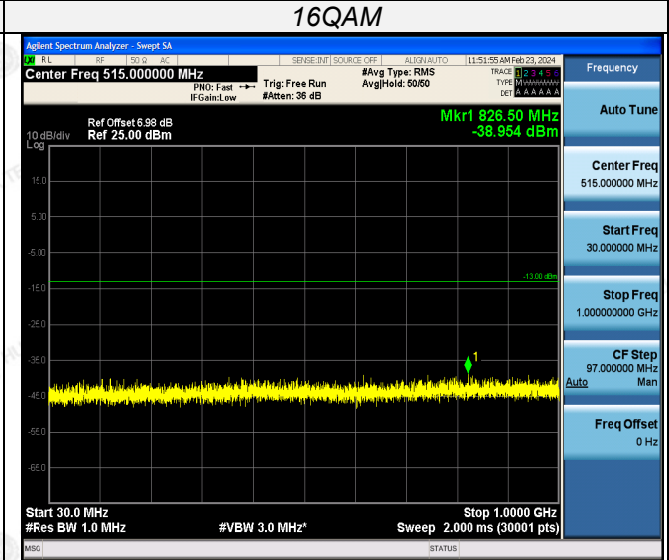
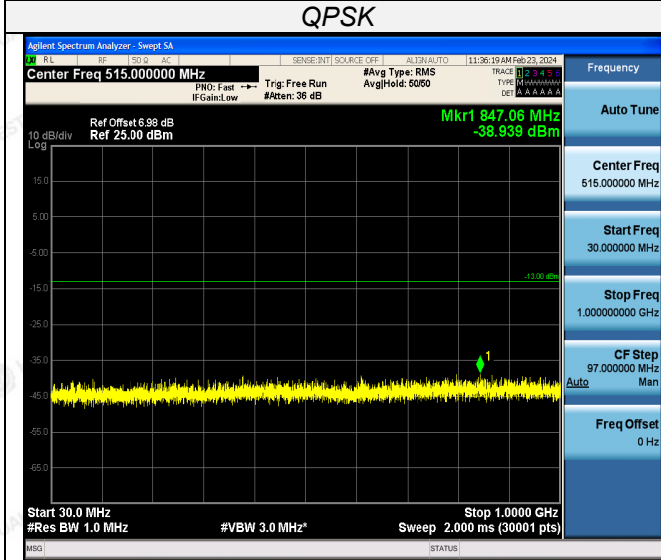
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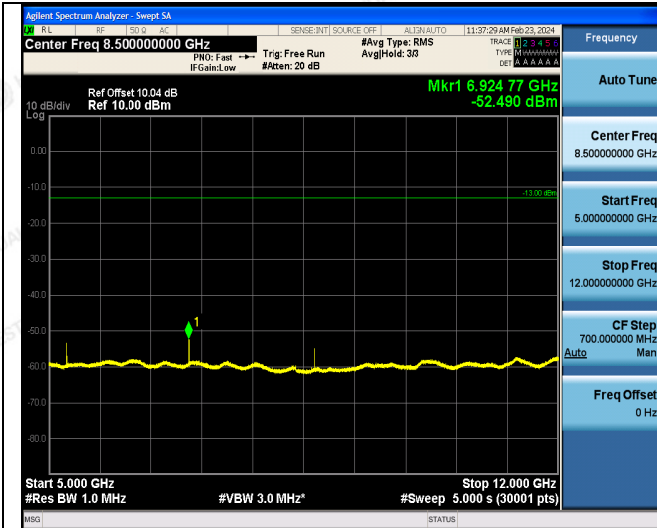
LTE FDD Band 4-3MHz Channel Bandwidth Middle Channel



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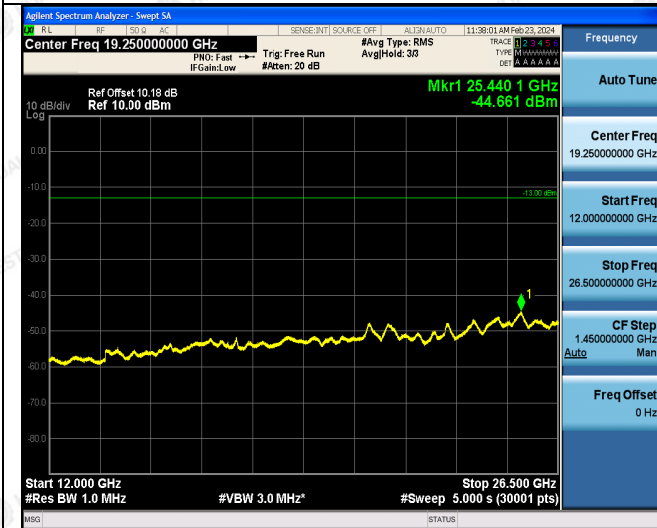
Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China



5GHz~12GHz



5GHz~12GHz



12GHz~26.5GHz

1RB#0



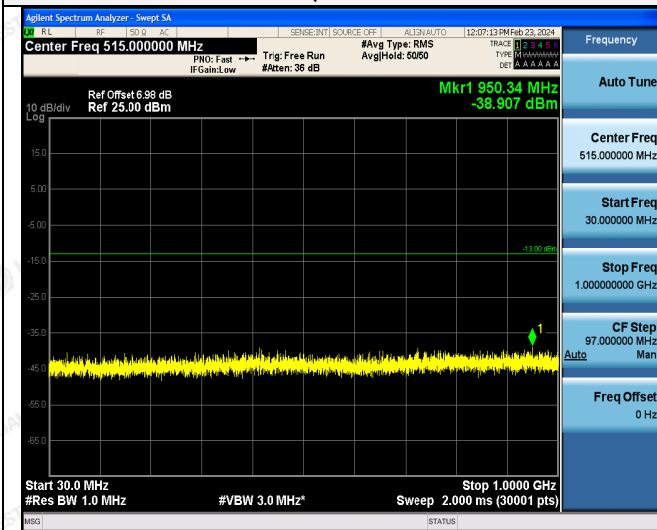
12GHz~26.5GHz

1RB#0

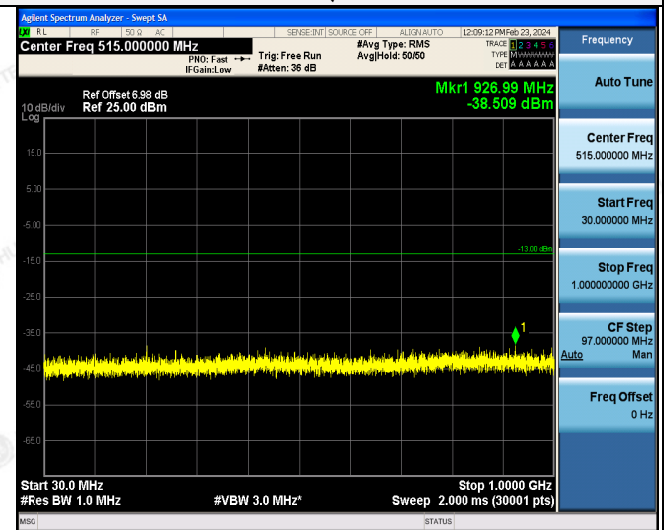
LTE FDD Band 4-3MHz Channel Bandwidth High Channel

QPSK

16QAM



30MHz~1GHz

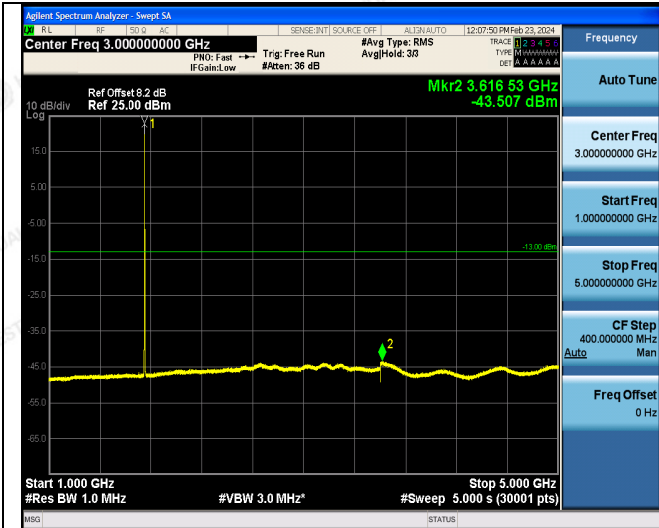


30MHz~1GHz

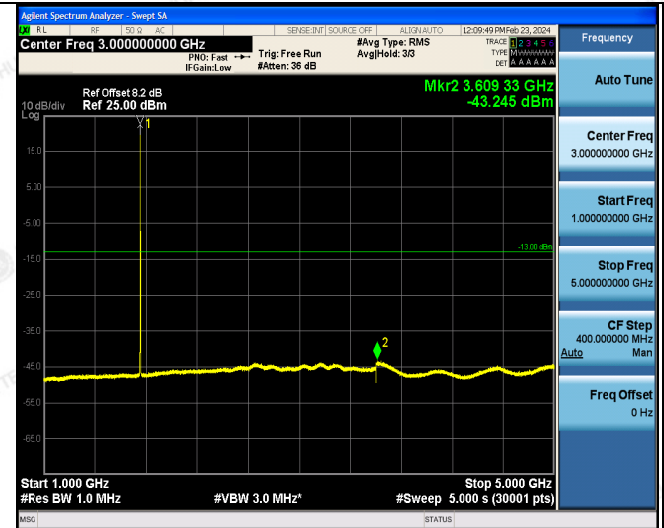
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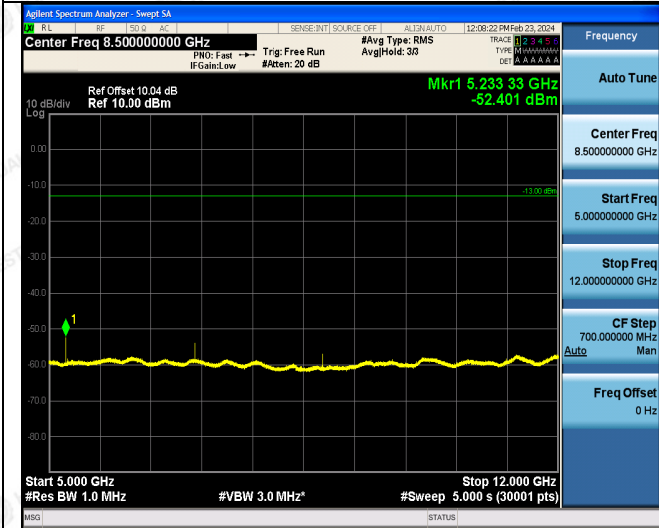
Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China



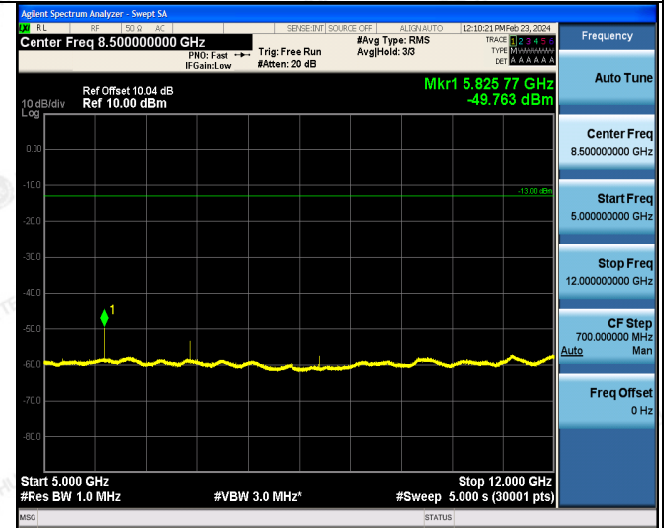
1GHz~5GHz



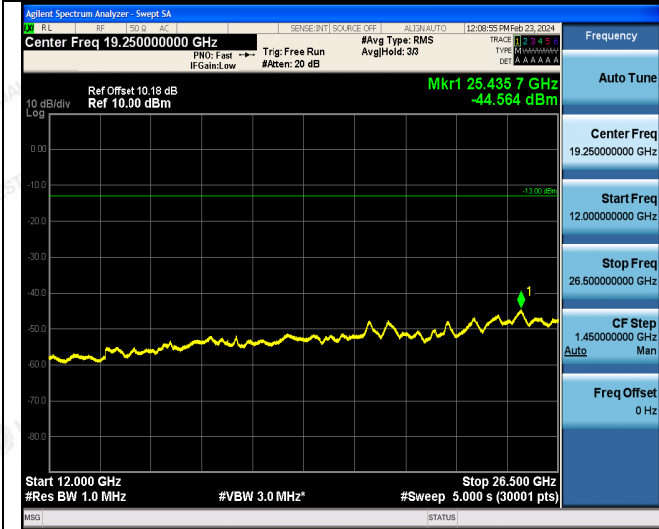
1GHz~5GHz



5GHz~12GHz

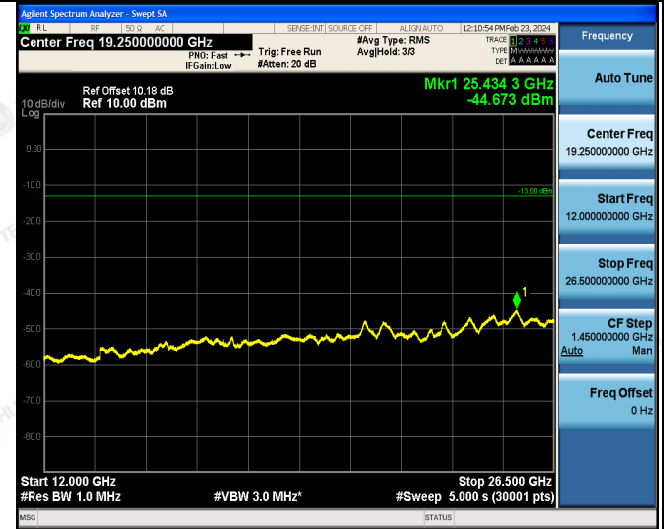


5GHz~12GHz



12GHz~26.5GHz

1RB#0



12GHz~26.5GHz

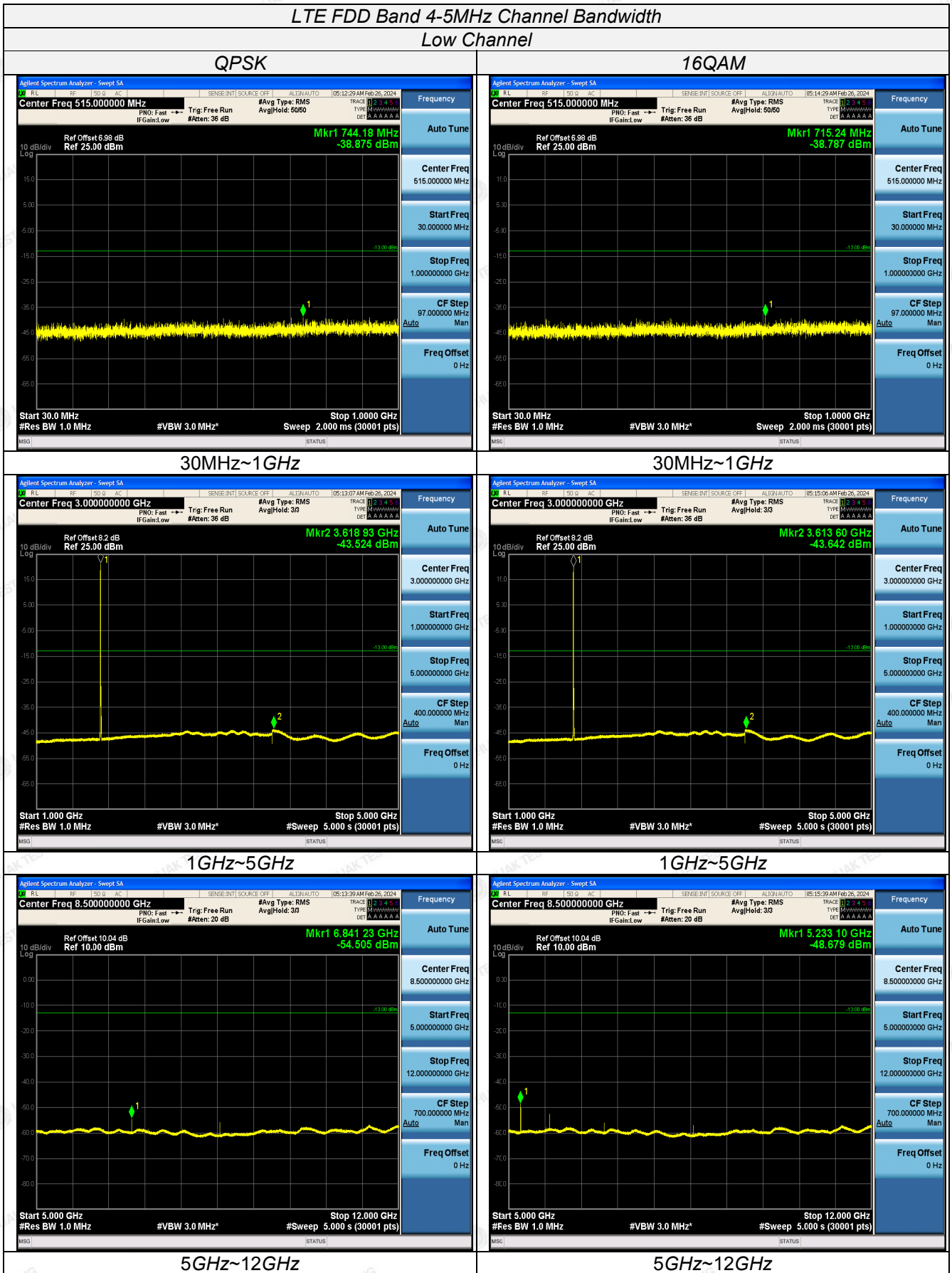
1RB#0

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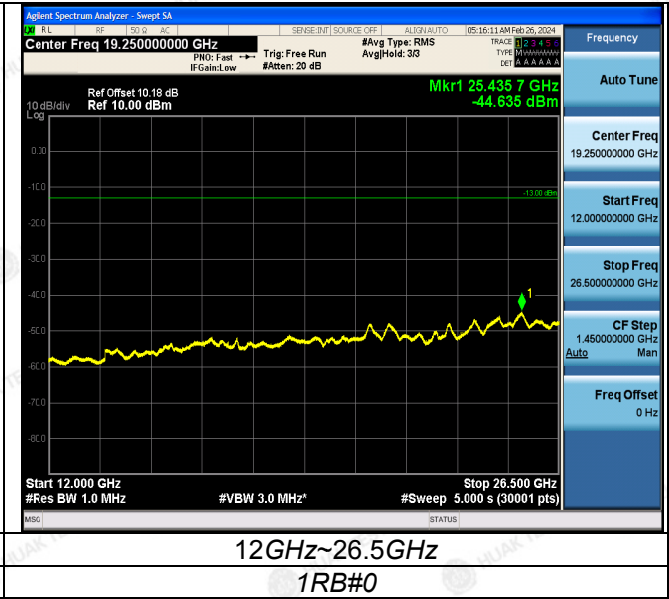
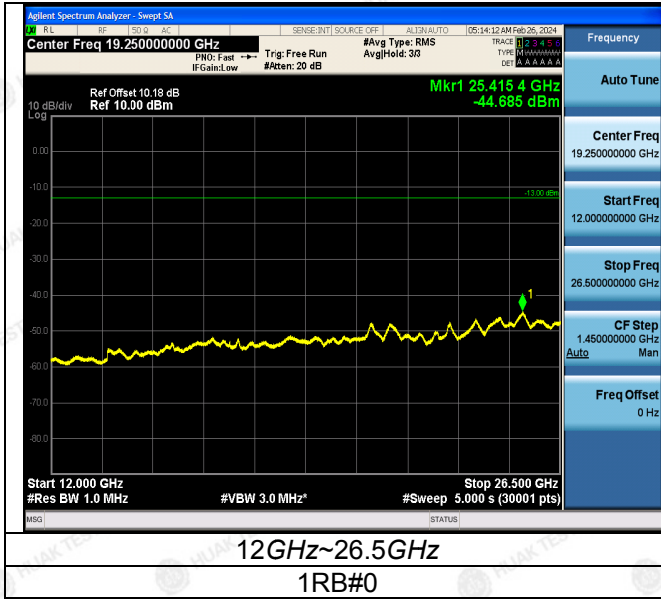




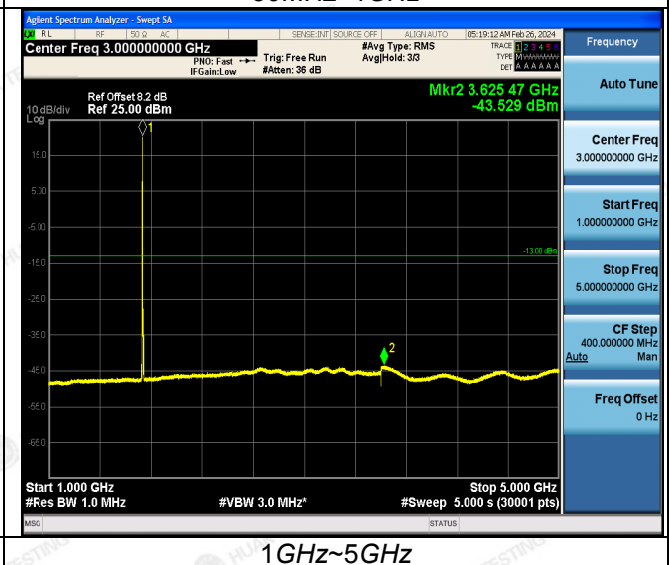
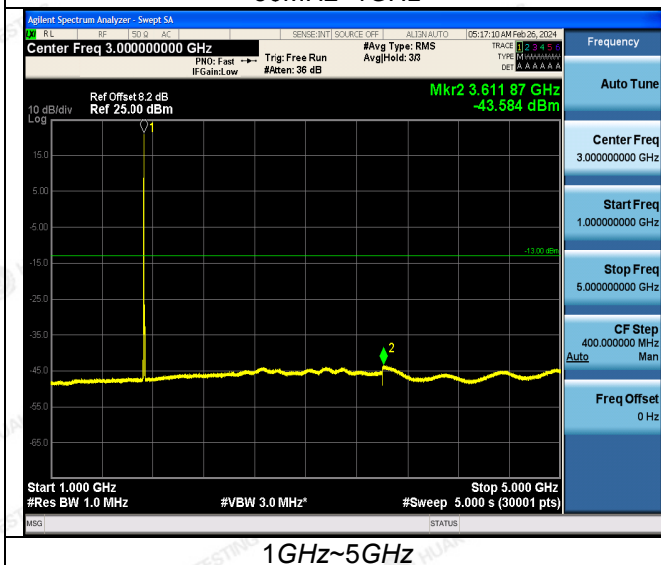
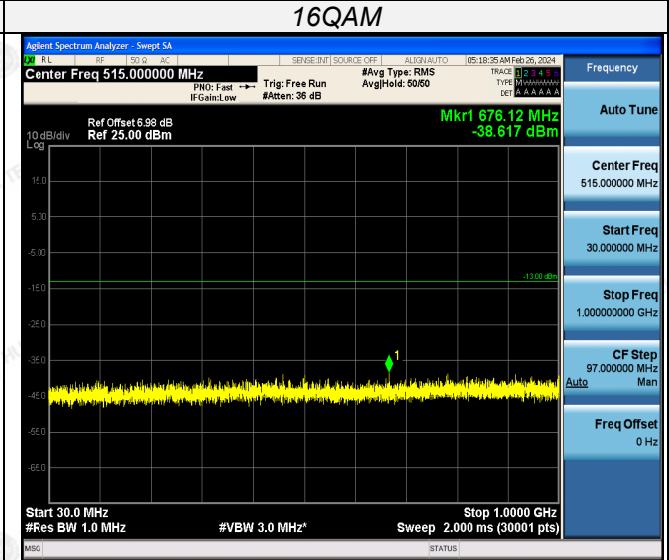
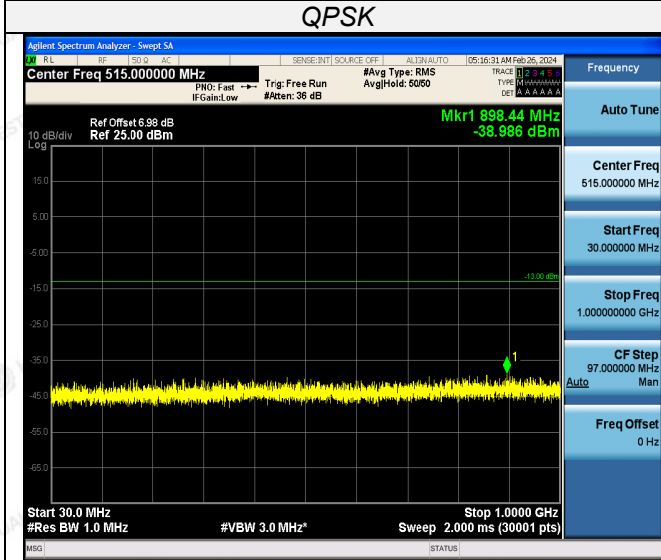
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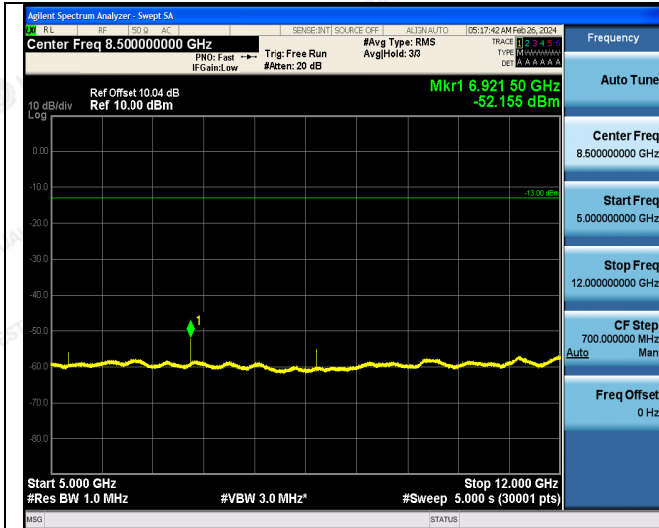
LTE FDD Band 4-5MHz Channel Bandwidth  
Middle Channel



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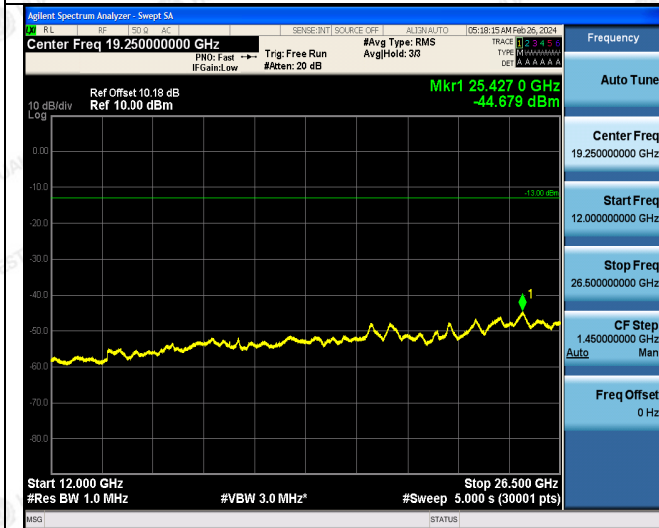
Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China



5GHz~12GHz



5GHz~12GHz



12GHz~26.5GHz

1RB#0



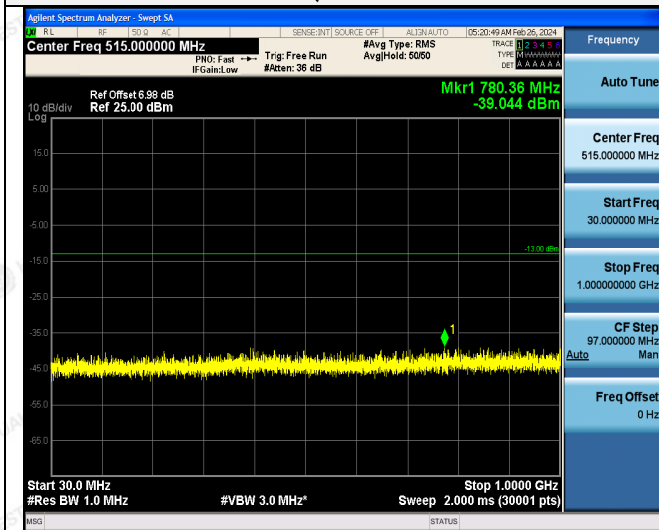
12GHz~26.5GHz

1RB#0

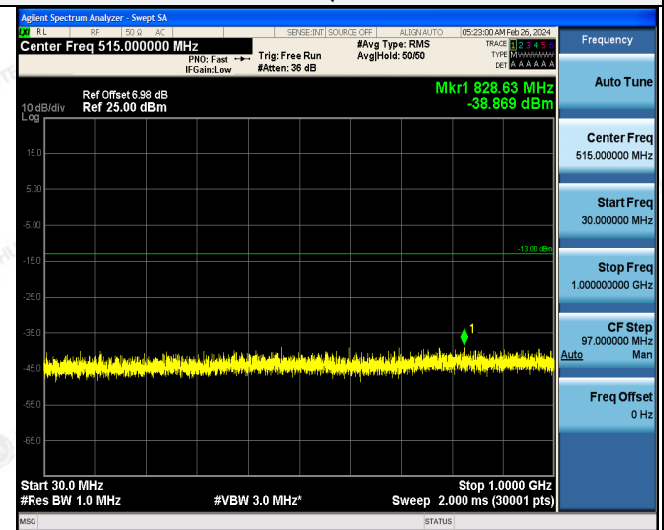
LTE FDD Band 4-5MHz Channel Bandwidth High Channel

QPSK

16QAM



30MHz~1GHz



30MHz~1GHz

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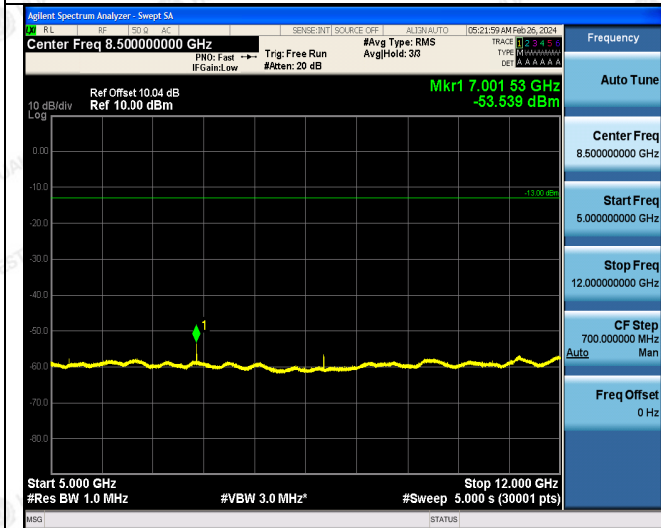
Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China



1GHz~5GHz



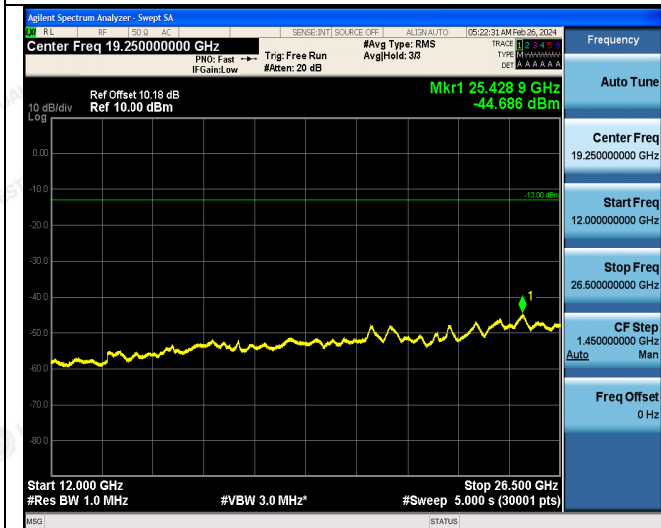
1GHz~5GHz



5GHz~12GHz



5GHz~12GHz



12GHz~26.5GHz  
1RB#0



12GHz~26.5GHz  
1RB#0

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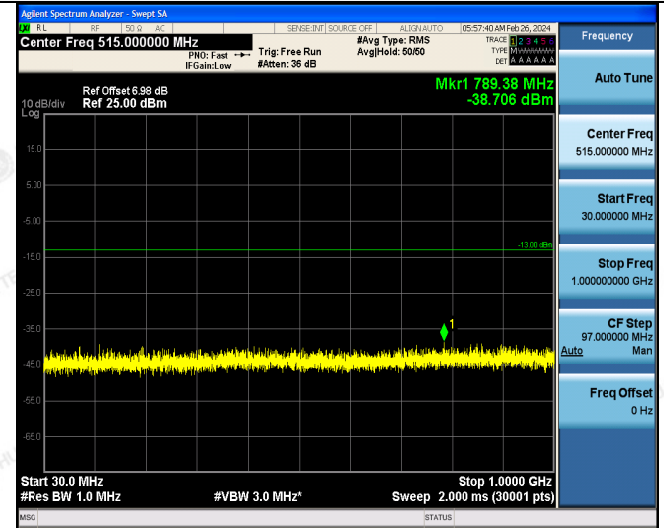
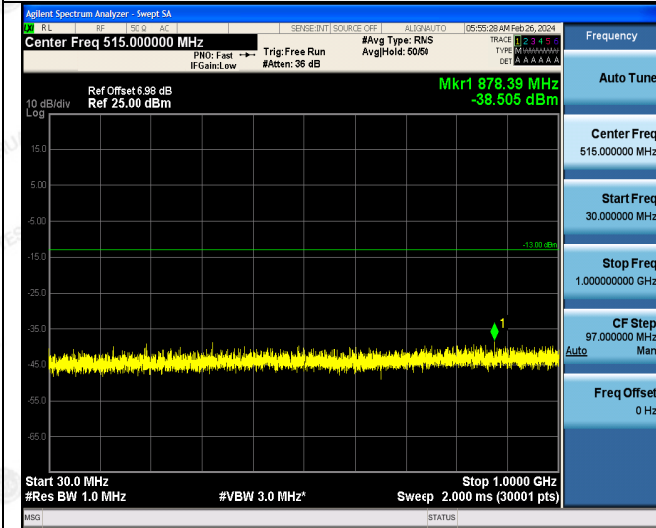


LTE FDD Band 4-10MHz Channel Bandwidth

Low Channel

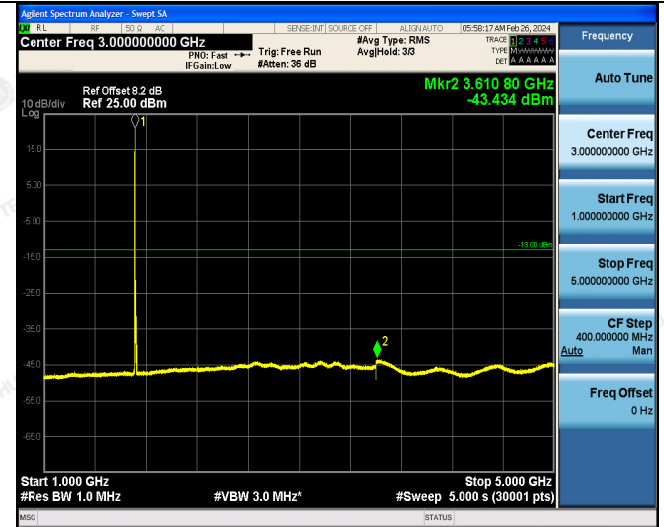
QPSK

16QAM



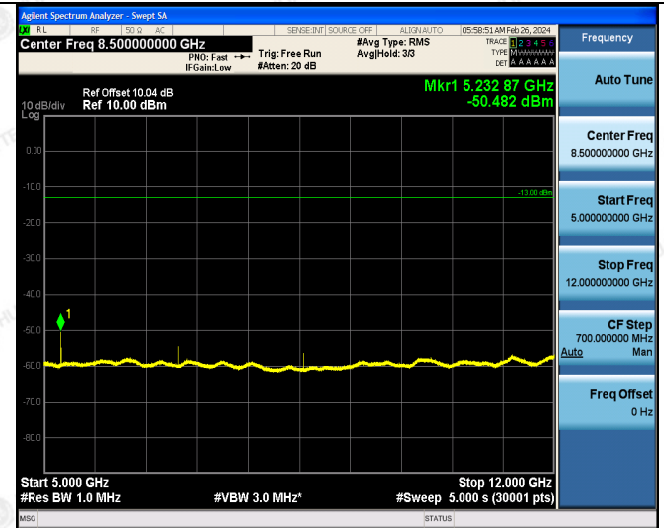
30MHz~1GHz

30MHz~1GHz



1GHz~5GHz

1GHz~5GHz



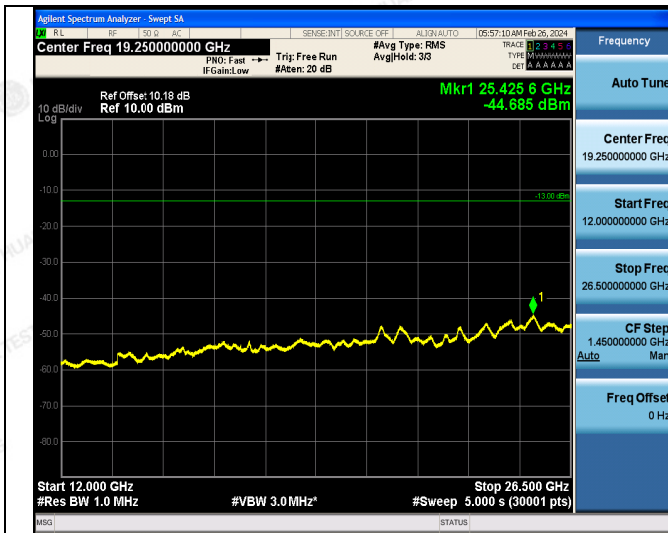
5GHz~12GHz

5GHz~12GHz

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12GHz~26.5GHz  
1RB#0

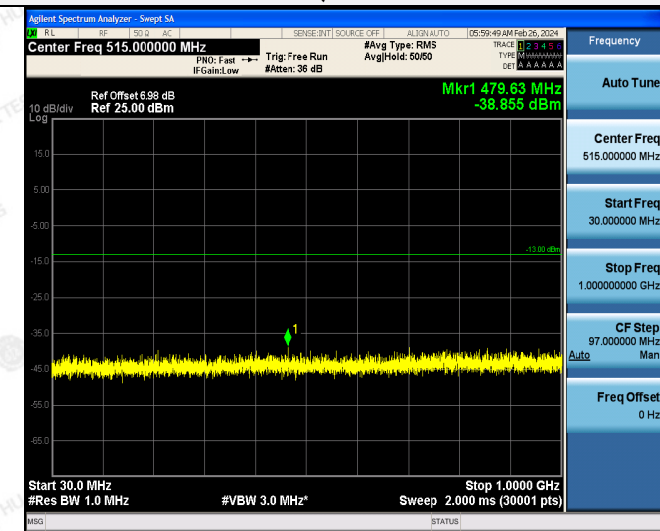


12GHz~26.5GHz  
1RB#0

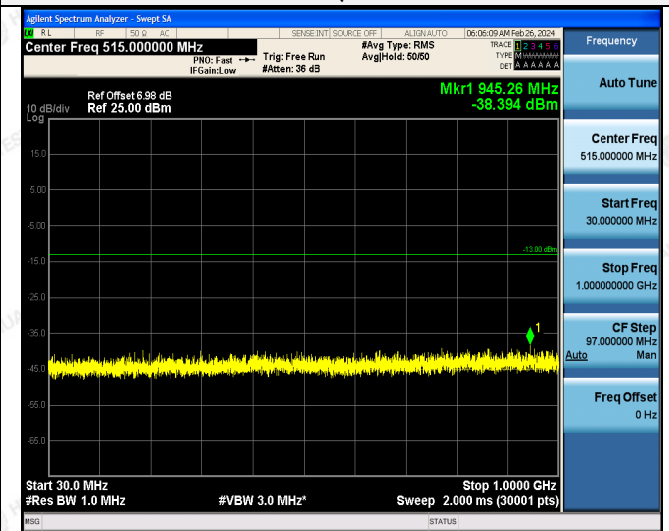
LTE FDD Band 4-10MHz Channel Bandwidth  
Middle Channel

QPSK

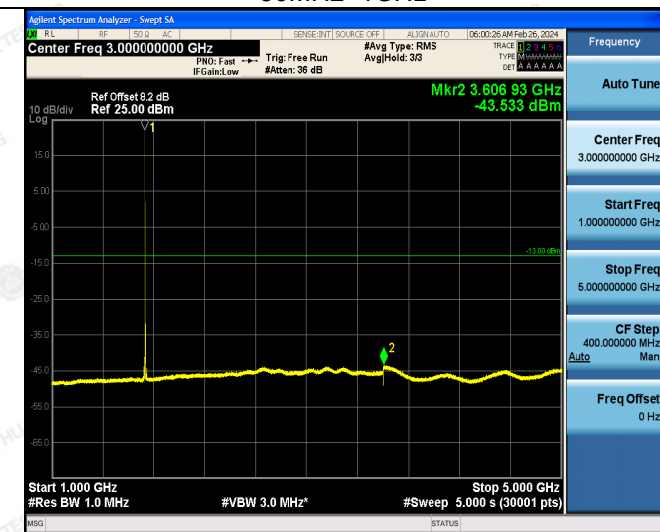
16QAM



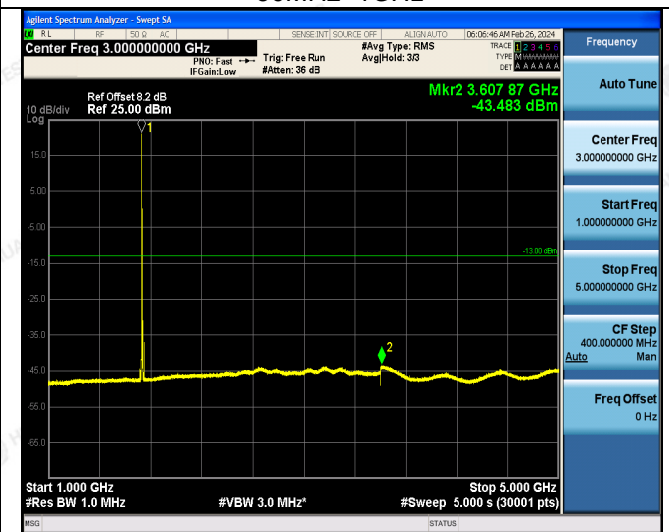
30MHz~1GHz



30MHz~1GHz



1GHz~5GHz

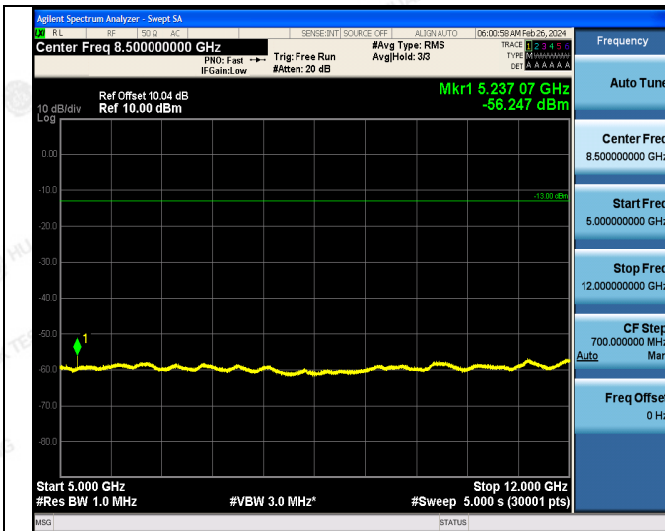


1GHz~5GHz

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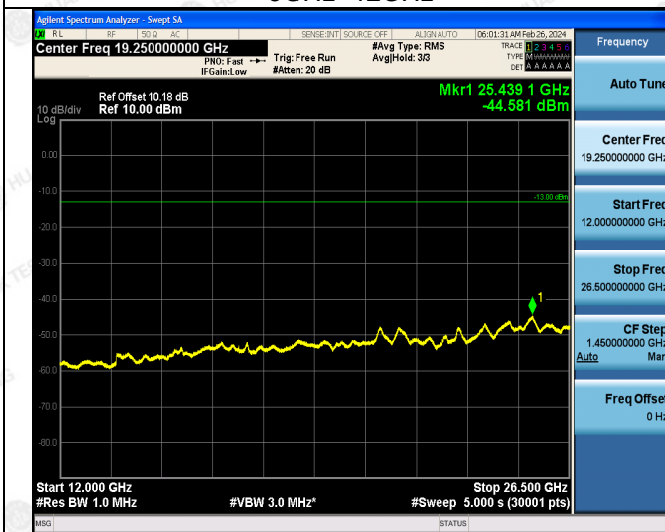
Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China



5GHz~12GHz



5GHz~12GHz



12GHz~26.5GHz

1RB#0



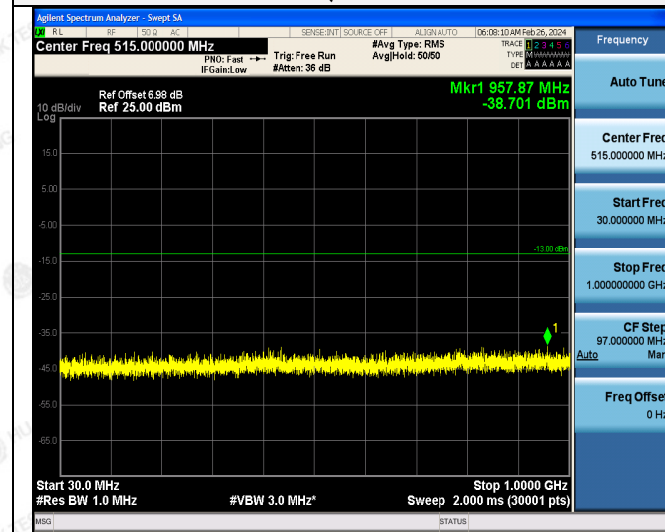
12GHz~26.5GHz

1RB#0

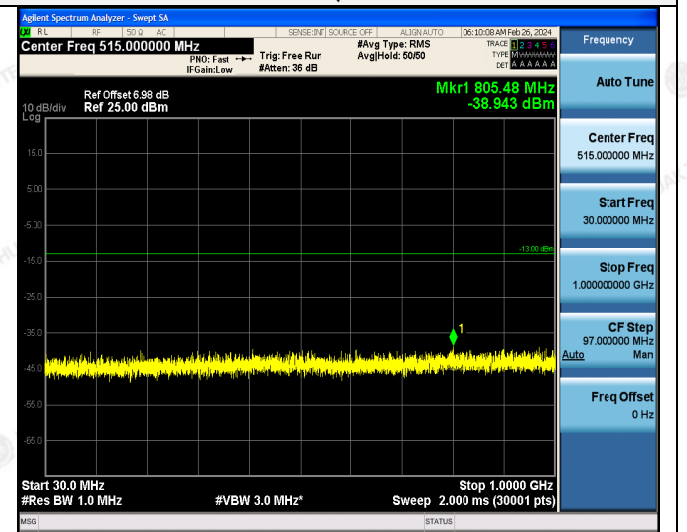
LTE FDD Band 4-10MHz Channel Bandwidth High Channel

QPSK

16QAM



30MHz~1GHz

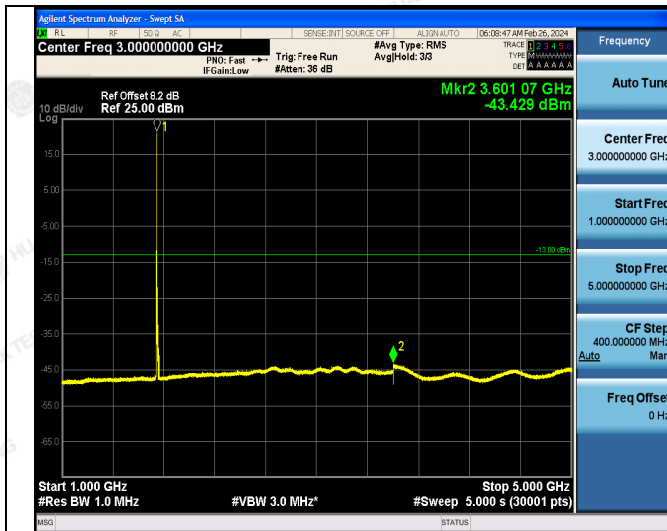


30MHz~1GHz

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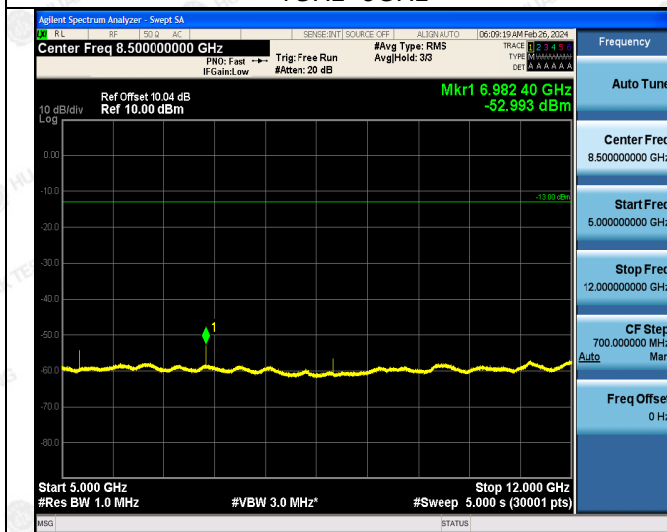
Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China



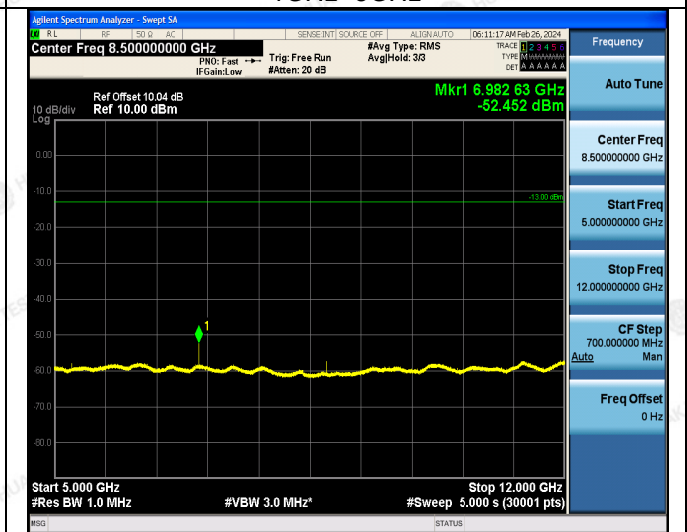
1GHz~5GHz



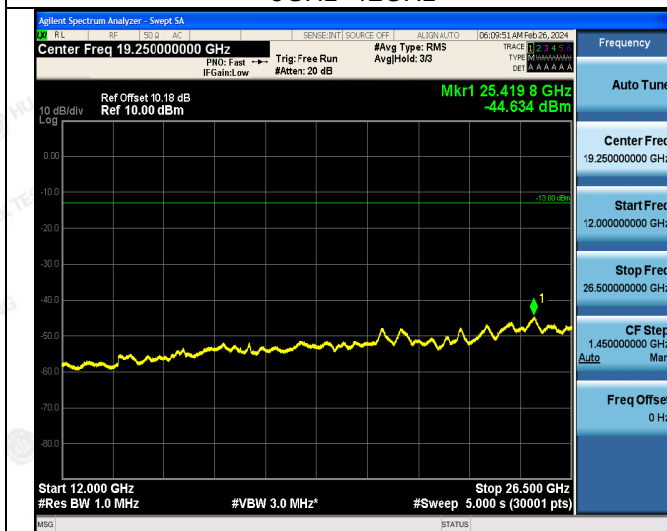
1GHz~5GHz



5GHz~12GHz



5GHz~12GHz



12GHz~26.5GHz

1RB#0



12GHz~26.5GHz

1RB#0

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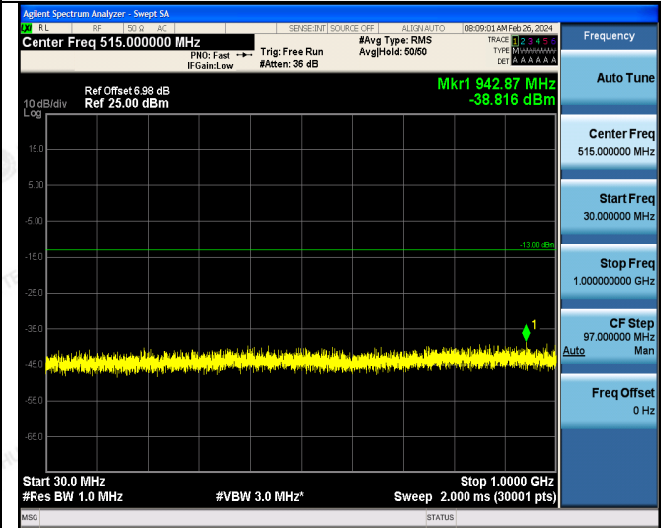
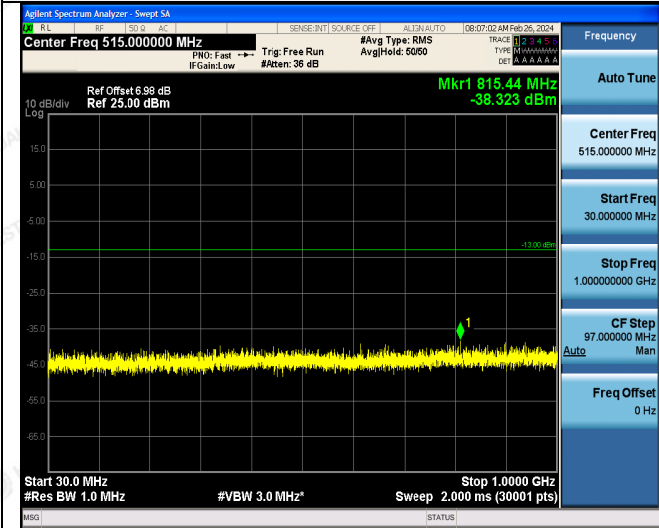


LTE FDD Band 4-15MHz Channel Bandwidth

Low Channel

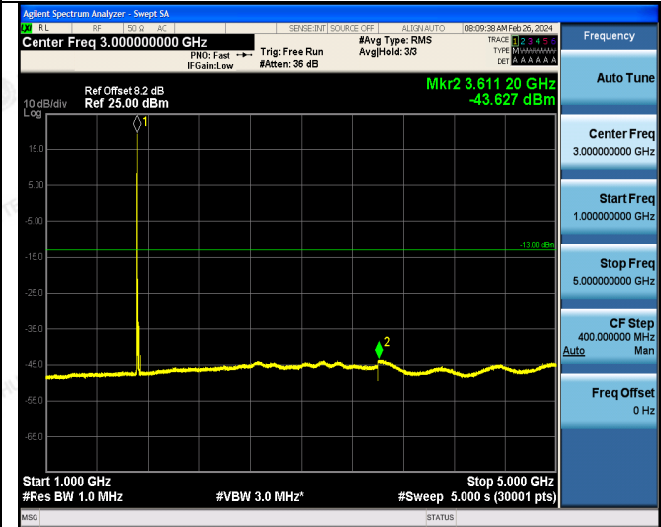
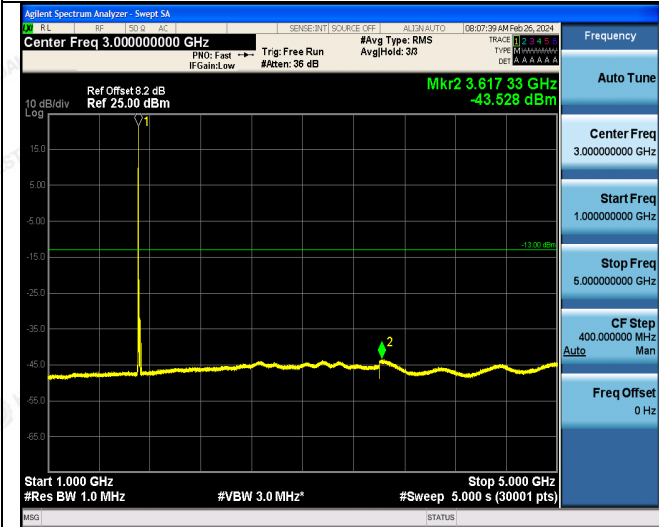
QPSK

16QAM



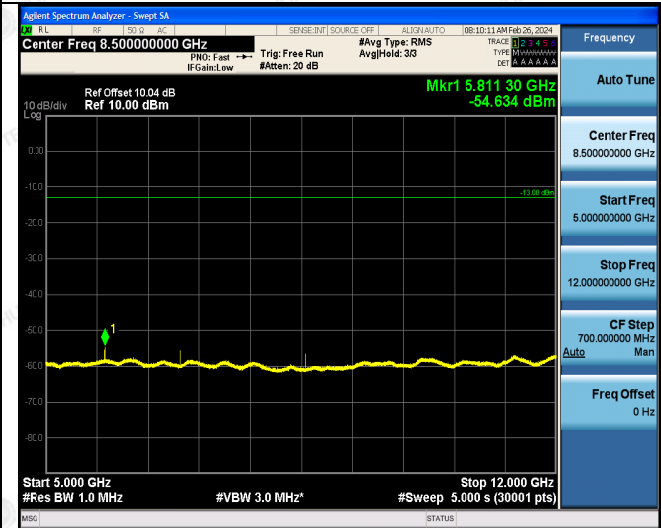
30MHz~1GHz

30MHz~1GHz



1GHz~5GHz

1GHz~5GHz



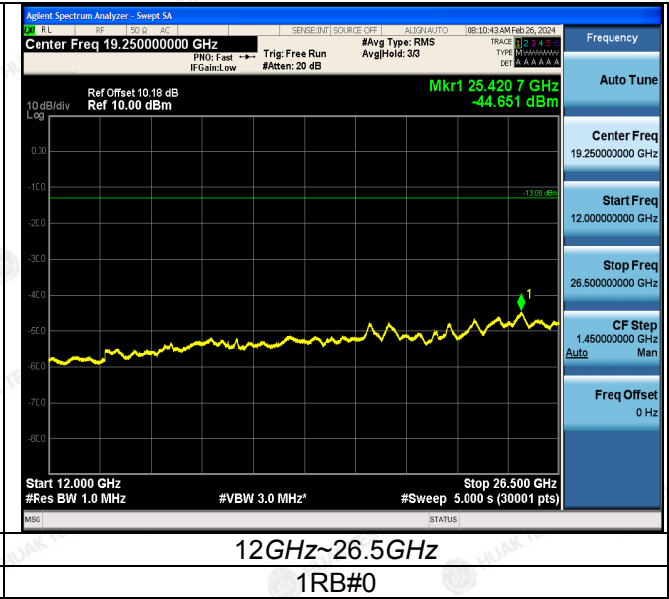
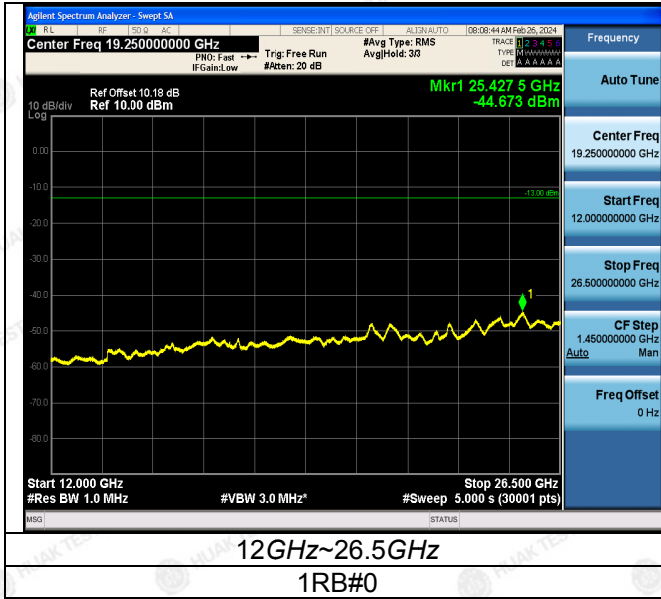
5GHz~12GHz

5GHz~12GHz

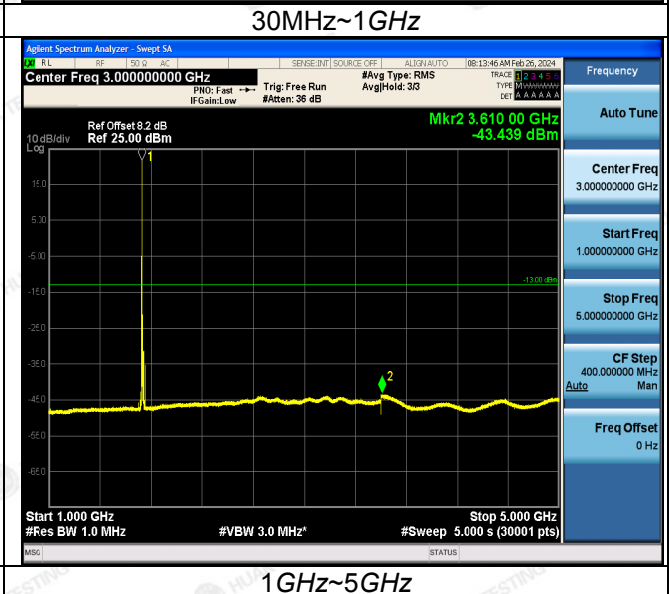
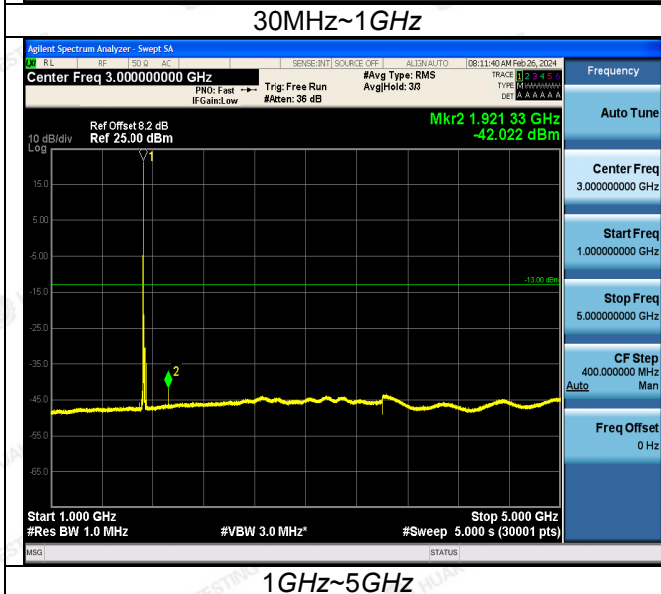
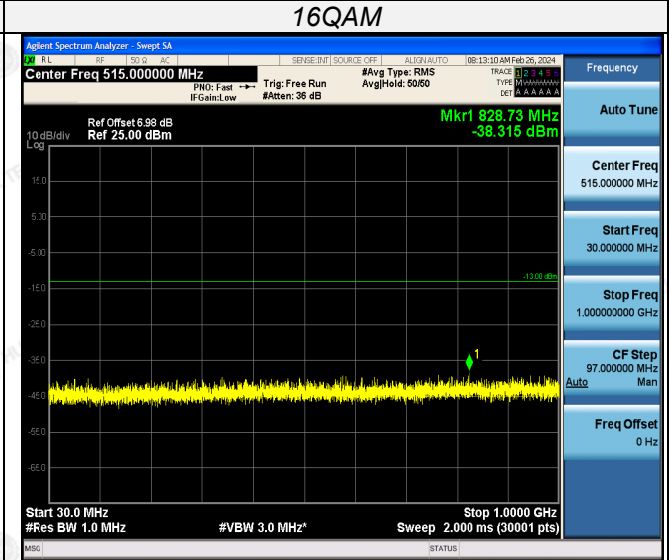
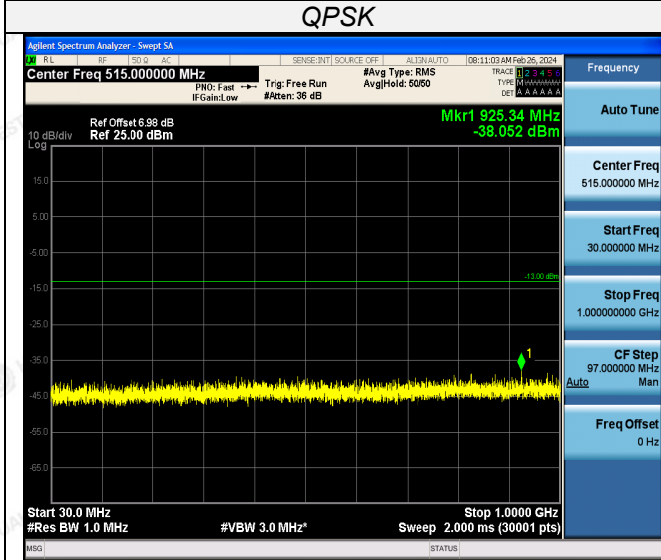
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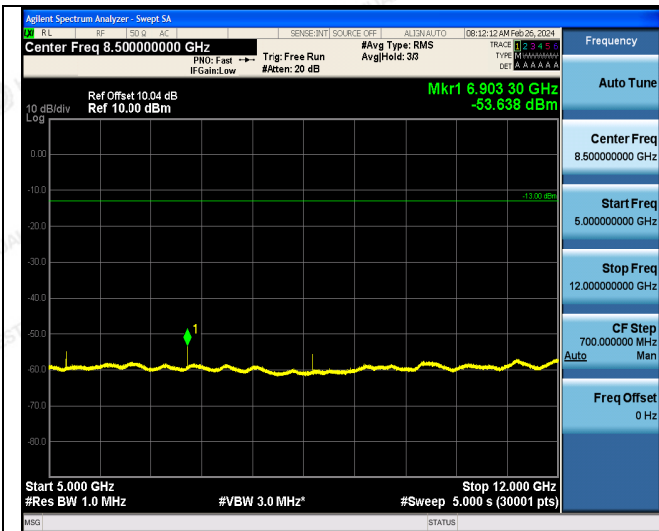
LTE FDD Band 4-15MHz Channel Bandwidth Middle Channel



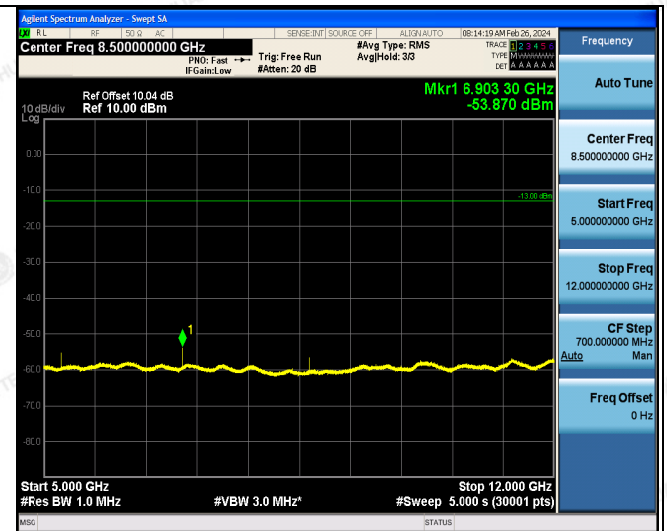
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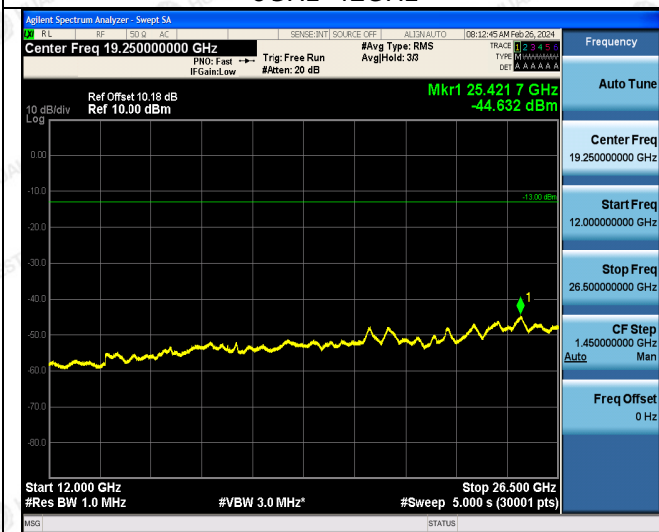
Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China



5GHz~12GHz



5GHz~12GHz



12GHz~26.5GHz

1RB#0



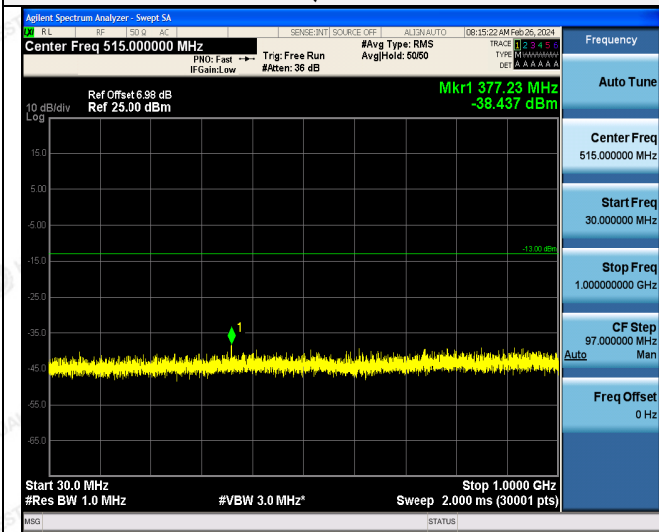
12GHz~26.5GHz

1RB#0

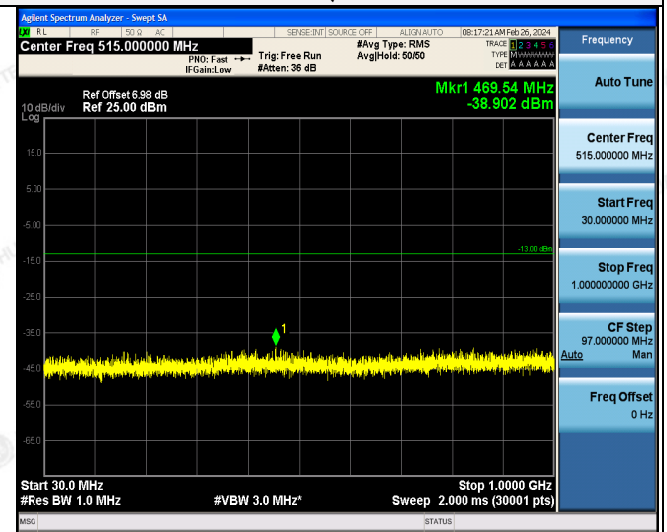
LTE FDD Band 4-15MHz Channel Bandwidth  
High Channel

QPSK

16QAM



30MHz~1GHz

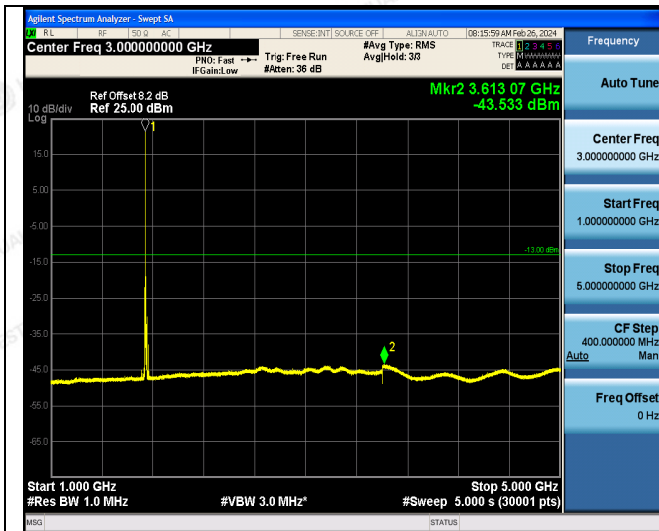


30MHz~1GHz

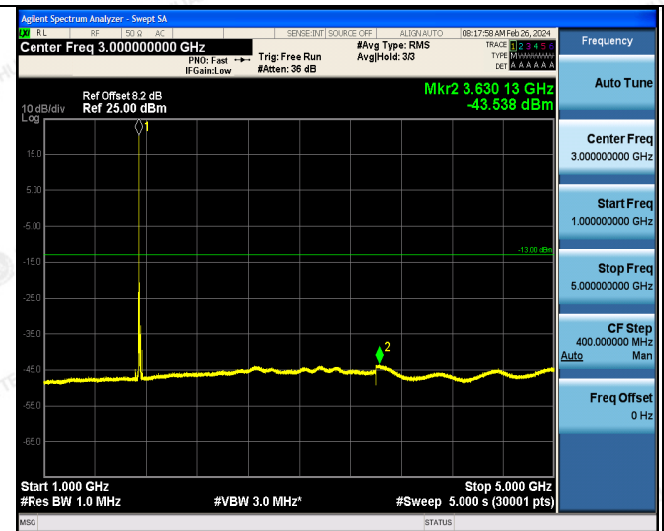
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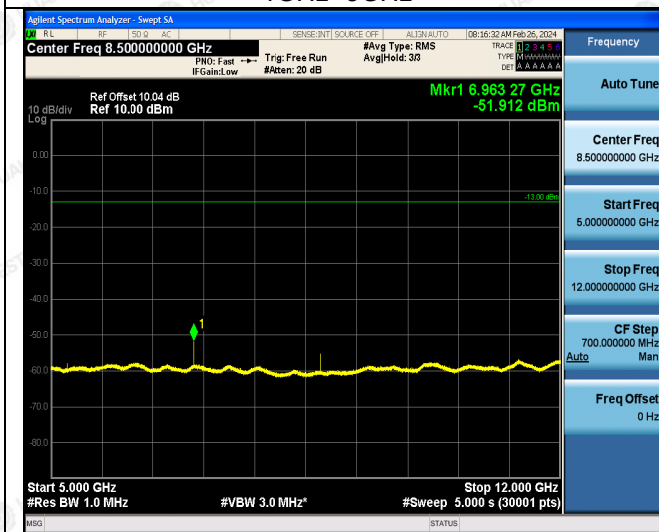
Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China



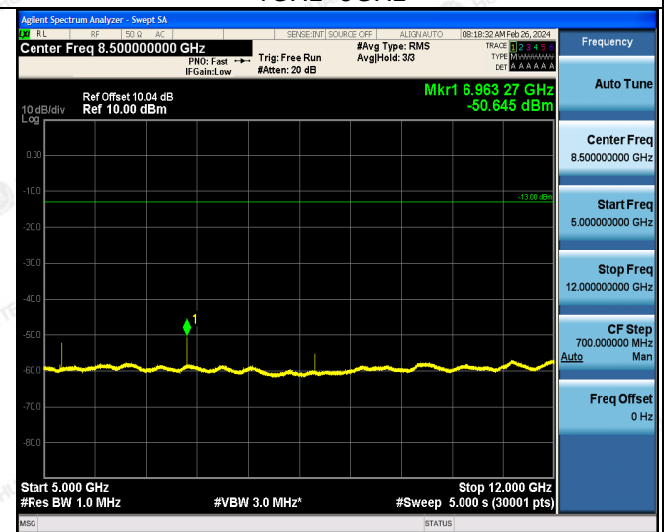
1GHz~5GHz



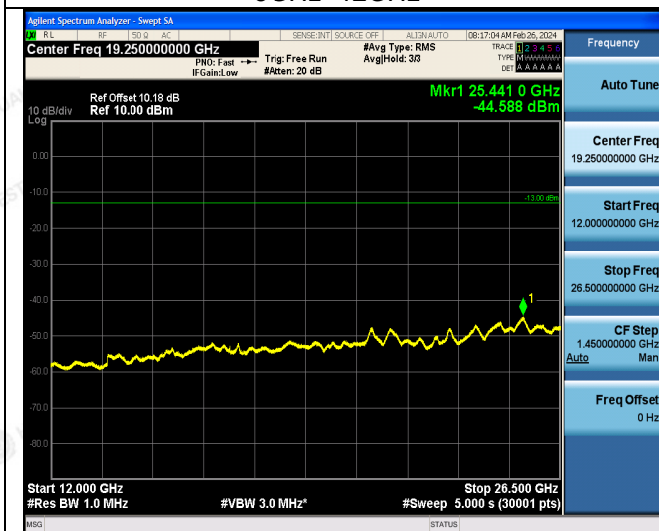
1GHz~5GHz



5GHz~12GHz



5GHz~12GHz



12GHz~26.5GHz

1RB#0



12GHz~26.5GHz

1RB#0

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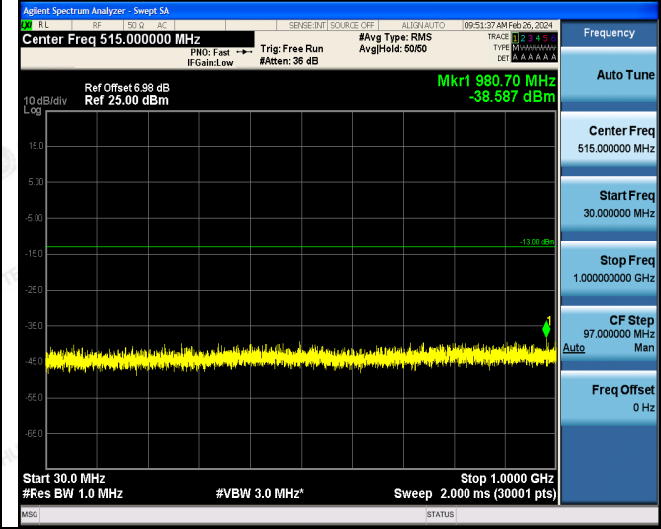
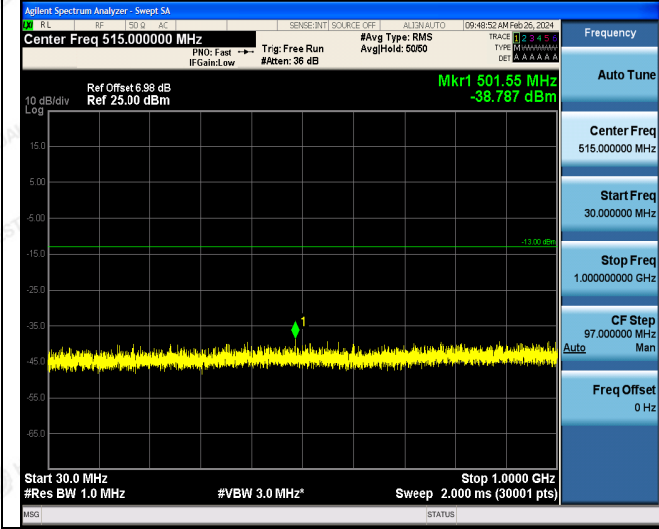


LTE FDD Band 4-20MHz Channel Bandwidth

Low Channel

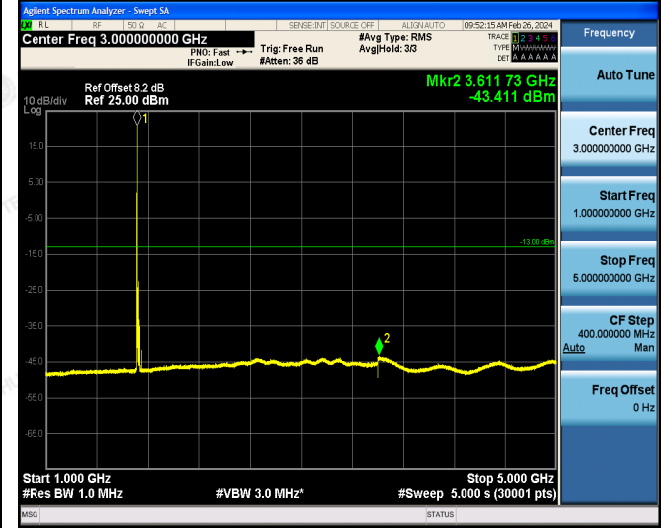
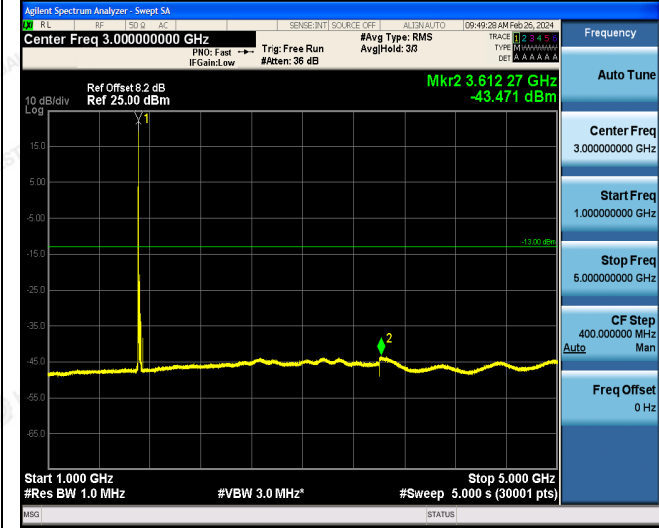
QPSK

16QAM



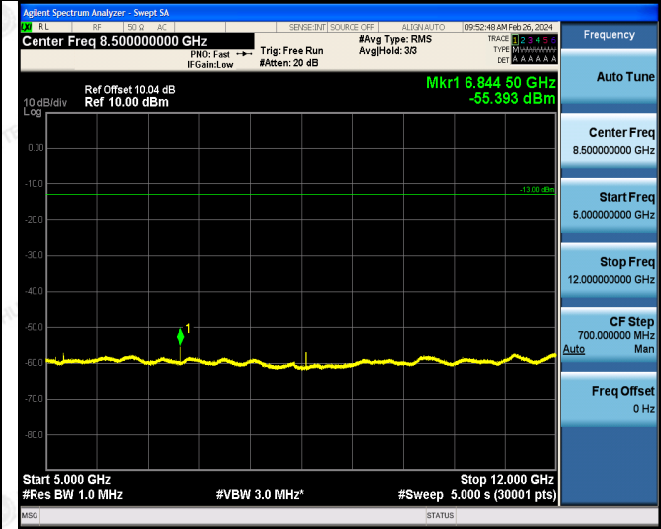
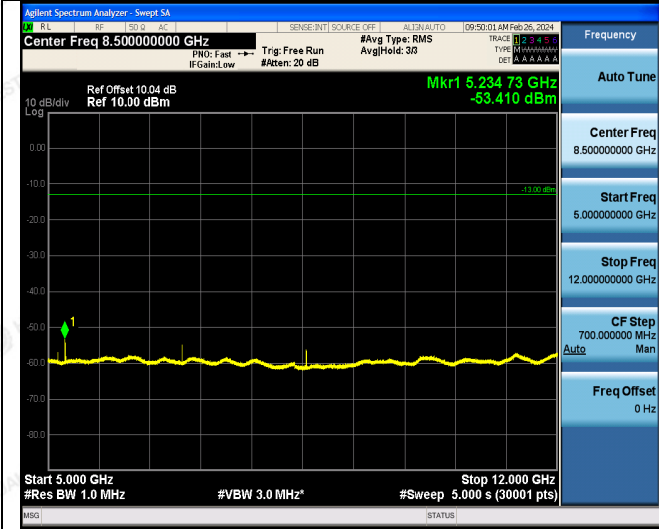
30MHz~1GHz

30MHz~1GHz



1GHz~5GHz

1GHz~5GHz



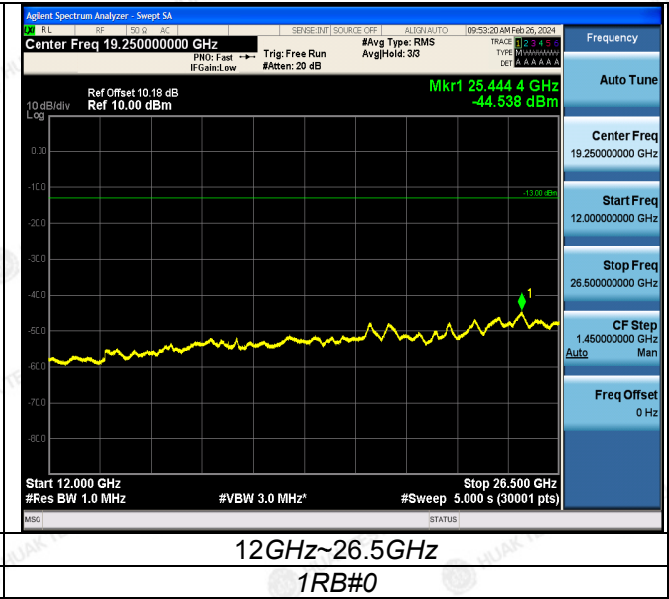
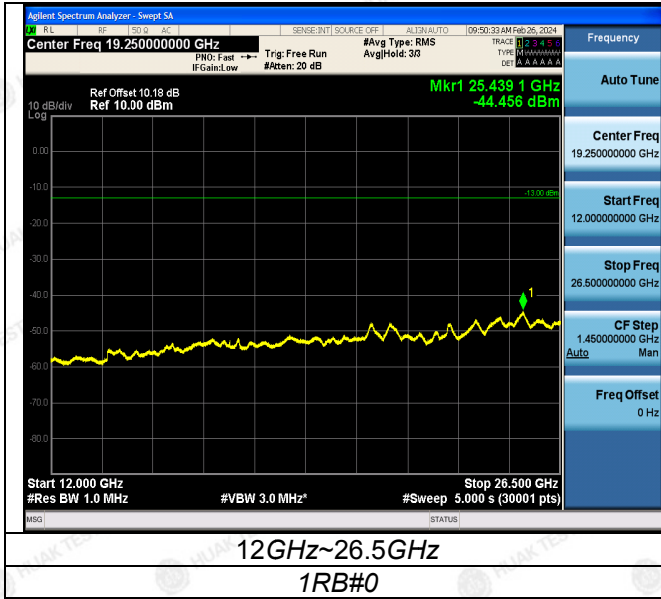
5GHz~12GHz

5GHz~12GHz

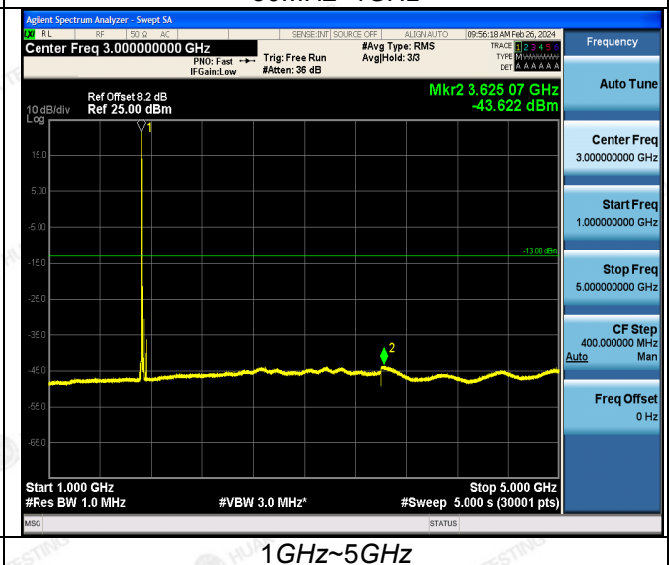
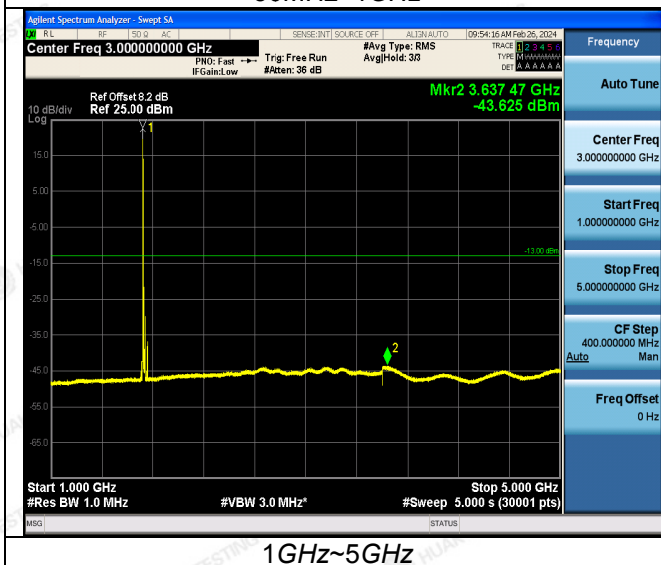
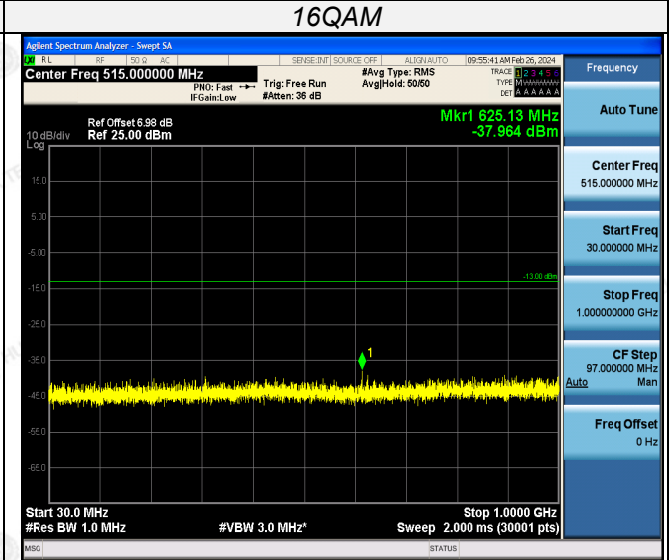
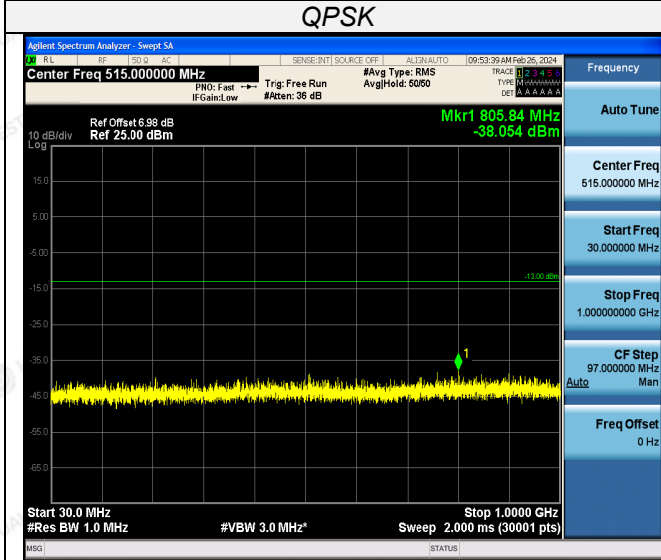
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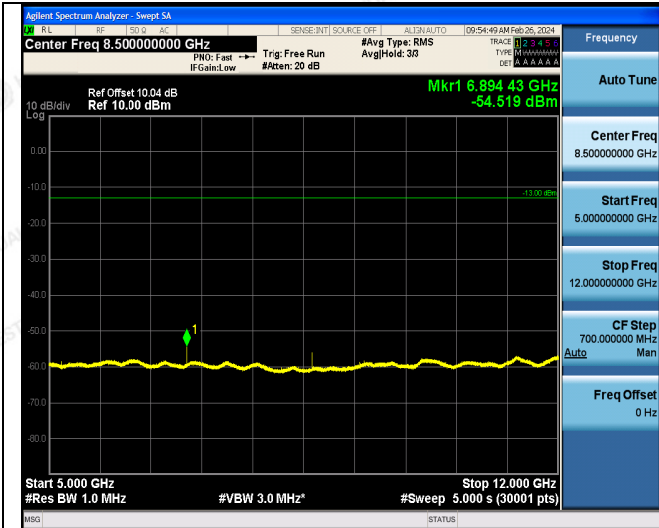
LTE FDD Band 4-20MHz Channel Bandwidth  
Middle Channel



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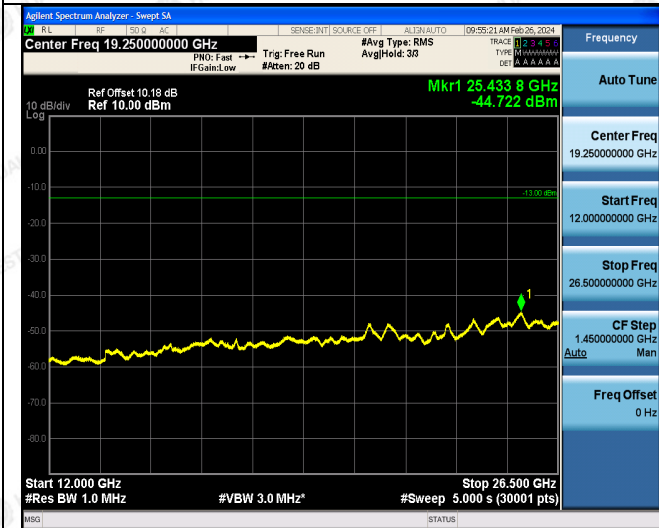
Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China



5GHz~12GHz



5GHz~12GHz



12GHz~26.5GHz

1RB#0



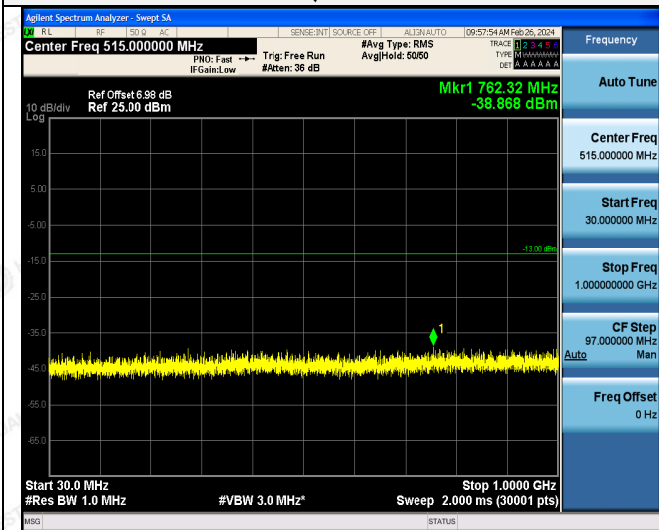
12GHz~26.5GHz

1RB#0

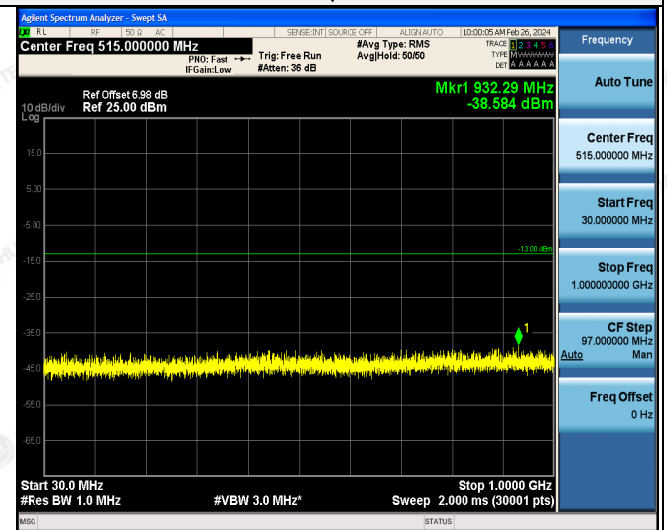
LTE FDD Band 4-20MHz Channel Bandwidth  
High Channel

QPSK

16QAM



30MHz~1GHz

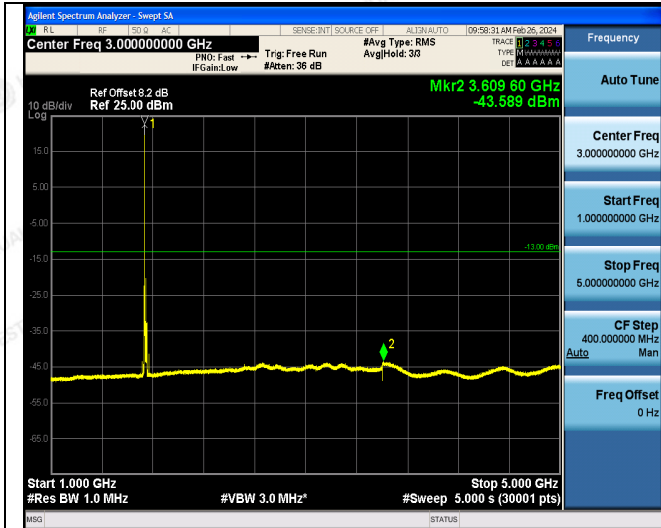


30MHz~1GHz

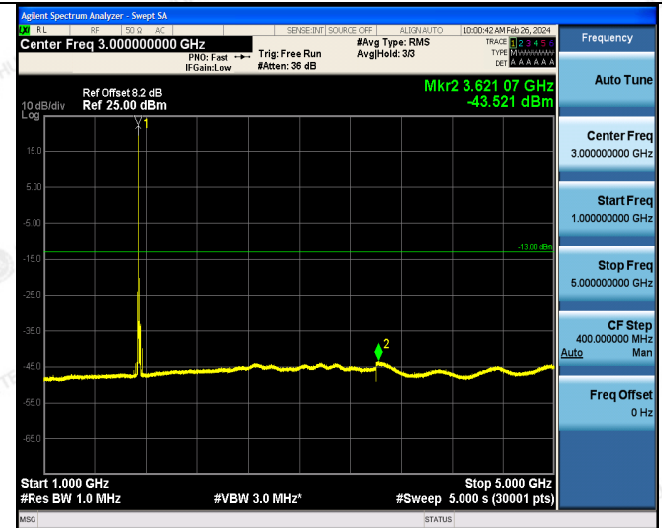
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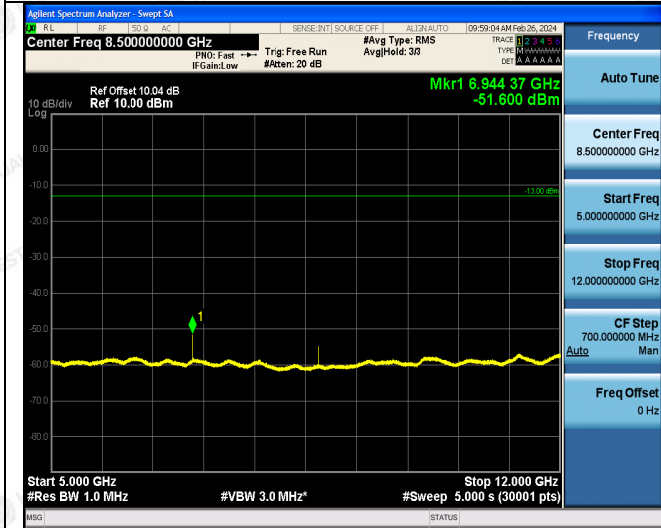
Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China



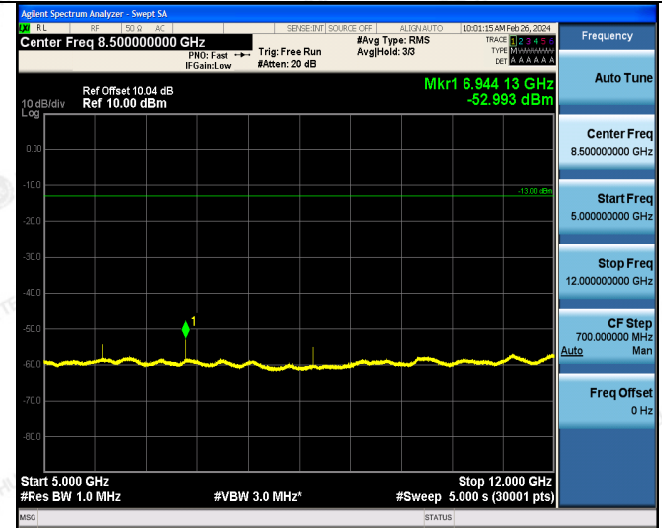
1GHz~5GHz



1GHz~5GHz



5GHz~12GHz



5GHz~12GHz



12GHz~26.5GHz

1RB#0



12GHz~26.5GHz

1RB#0

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Radiated Measurement:

Remark:

1. We were tested all RB Configuration refer 3GPP TS136 521 for each Channel Bandwidth of LTE FDD Band 4; recorded worst case for each Channel Bandwidth of LTE FDD Band 4.
2.  $EIRP = P_{Mea}(dBm) - P_{cl}(dB) + G_a(dBi)$
3. We were not recorded other points as values lower than limits.
4.  $Margin = Limit - EIRP$

LTE FDD Band 4 Channel Bandwidth 1.4MHz\_QPSK\_Low Channel

Frequency (MHz)	PMea (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3421.4	-44.15	4.02	3.00	12.5	-35.67	-13.00	22.67	H
5132.1	-49.56	5.11	3.00	13.38	-41.29	-13.00	28.29	H
3421.4	-52.81	4.02	3.00	12.5	-44.33	-13.00	31.33	V
5132.1	-50.85	5.11	3.00	13.38	-42.58	-13.00	29.58	V

LTE FDD Band 4 Channel Bandwidth 1.4MHz\_QPSK\_Middle Channel

Frequency (MHz)	PMea (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3465.0	-43.9	4.02	3.00	12.45	-35.47	-13.00	22.47	H
5197.5	-48.22	5.11	3.00	13.38	-39.95	-13.00	26.95	H
3465.0	-49.29	4.02	3.00	12.45	-40.86	-13.00	27.86	V
5197.5	-47.06	5.11	3.00	13.38	-38.79	-13.00	25.79	V

LTE FDD Band 4 Channel Bandwidth 1.4MHz\_QPSK\_High Channel

Frequency (MHz)	PMea (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3508.6	-44.34	4.02	3.00	12.21	-36.15	-13.00	23.15	H
5262.9	-46.56	5.11	3.00	13.26	-38.41	-13.00	25.41	H
3508.6	-47.86	4.02	3.00	12.21	-39.67	-13.00	26.67	V
5262.9	-48.03	5.11	3.00	13.26	-39.88	-13.00	26.88	V

LTE FDD Band 4 Channel Bandwidth 3MHz\_QPSK\_Low Channel

Frequency (MHz)	PMea (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3423.0	-47.67	4.02	3.00	12.5	-39.19	-13.00	26.19	H
5134.5	-51.23	5.11	3.00	13.38	-42.96	-13.00	29.96	H
3423.0	-51.66	4.02	3.00	12.5	-43.18	-13.00	30.18	V
5134.5	-47.57	5.11	3.00	13.38	-39.3	-13.00	26.3	V

LTE FDD Band 4 Channel Bandwidth 3MHz\_QPSK\_Middle Channel

Frequency (MHz)	PMea (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3465.0	-44.83	4.02	3.00	12.45	-36.4	-13.00	23.4	H
5197.5	-47.03	5.11	3.00	13.38	-38.76	-13.00	25.76	H
3465.0	-50.25	4.02	3.00	12.45	-41.82	-13.00	28.82	V
5197.5	-47.93	5.11	3.00	13.38	-39.66	-13.00	26.66	V

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LTE FDD Band 4\_Channel Bandwidth 3MHz\_QPSK\_High Channel

Frequency (MHz)	PMea (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3507.0	-42.92	4.02	3.00	12.21	-34.73	-13.00	21.73	H
5260.5	-48.02	5.11	3.00	13.26	-39.87	-13.00	26.87	H
3507.0	-49.45	4.02	3.00	12.21	-41.26	-13.00	28.26	V
5260.5	-47.95	5.11	3.00	13.26	-39.8	-13.00	26.8	V

LTE FDD Band 4\_Channel Bandwidth 5MHz\_QPSK\_Low Channel

Frequency (MHz)	PMea (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3425.0	-46.46	4.02	3.00	12.5	-37.98	-13.00	24.98	H
5137.5	-52.1	5.11	3.00	13.38	-43.83	-13.00	30.83	H
3425.0	-54.96	4.02	3.00	12.5	-46.48	-13.00	33.48	V
5137.5	-52.61	5.11	3.00	13.38	-44.34	-13.00	31.34	V

LTE FDD Band 4\_Channel Bandwidth 5MHz\_QPSK\_Middle Channel

Frequency (MHz)	PMea (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3465.0	-44.32	4.02	3.00	12.45	-35.89	-13.00	22.89	H
5197.5	-47.39	5.11	3.00	13.38	-39.12	-13.00	26.12	H
3465.0	-50.19	4.02	3.00	12.45	-41.76	-13.00	28.76	V
5197.5	-46.86	5.11	3.00	13.38	-38.59	-13.00	25.59	V

LTE FDD Band 4\_Channel Bandwidth 5MHz\_QPSK\_High Channel

Frequency (MHz)	PMea (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3505.0	-42.21	4.02	3.00	12.21	-34.02	-13.00	21.02	H
5257.5	-47.68	5.11	3.00	13.26	-39.53	-13.00	26.53	H
3505.0	-48.37	4.02	3.00	12.21	-40.18	-13.00	27.18	V
5257.5	-47.7	5.11	3.00	13.26	-39.55	-13.00	26.55	V

LTE FDD Band 4\_Channel Bandwidth 10MHz\_QPSK\_Low Channel

Frequency (MHz)	PMea (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3430.0	-49.14	4.02	3.00	12.5	-40.66	-13.00	27.66	H
5145.0	-51.88	5.11	3.00	13.38	-43.61	-13.00	30.61	H
3430.0	-51.92	4.02	3.00	12.5	-43.44	-13.00	30.44	V
5145.0	-52.11	5.11	3.00	13.38	-43.84	-13.00	30.84	V

LTE FDD Band 4\_Channel Bandwidth 10MHz\_QPSK\_Middle Channel

Frequency (MHz)	PMea (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3465.0	-43.53	4.02	3.00	12.45	-35.1	-13.00	22.1	H
5197.5	-47.63	5.11	3.00	13.38	-39.36	-13.00	26.36	H
3465.0	-48.45	4.02	3.00	12.45	-40.02	-13.00	27.02	V
5197.5	-48.09	5.11	3.00	13.38	-39.82	-13.00	26.82	V

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LTE FDD Band 4 Channel Bandwidth 10MHz\_QPSK\_High Channel

Frequency (MHz)	PMea (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3500.0	-42.23	4.02	3.00	12.21	-34.04	-13.00	21.04	H
5250.0	-47.19	5.11	3.00	13.26	-39.04	-13.00	26.04	H
3500.0	-48.67	4.02	3.00	12.21	-40.48	-13.00	27.48	V
5250.0	-49.43	5.11	3.00	13.26	-41.28	-13.00	28.28	V

LTE FDD Band 4 Channel Bandwidth 15MHz\_QPSK\_Low Channel

Frequency (MHz)	PMea (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3435.0	-47.01	4.02	3.00	12.5	-38.53	-13.00	25.53	H
5152.5	-51.97	5.11	3.00	13.38	-43.7	-13.00	30.7	H
3435.0	-51.43	4.02	3.00	12.5	-42.95	-13.00	29.95	V
5152.5	-54.69	5.11	3.00	13.38	-46.42	-13.00	33.42	V

LTE FDD Band 4 Channel Bandwidth 15MHz\_QPSK\_Middle Channel

Frequency (MHz)	PMea (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3465.0	-44.4	4.02	3.00	12.45	-35.97	-13.00	22.97	H
5197.5	-46.84	5.11	3.00	13.38	-38.57	-13.00	25.57	H
3465.0	-50.18	4.02	3.00	12.45	-41.75	-13.00	28.75	V
5197.5	-48.22	5.11	3.00	13.38	-39.95	-13.00	26.95	V

LTE FDD Band 4 Channel Bandwidth 15MHz\_QPSK\_High Channel

Frequency (MHz)	PMea (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3495.0	-42.54	4.02	3.00	12.21	-34.35	-13.00	21.35	H
5242.5	-47.07	5.11	3.00	13.26	-38.92	-13.00	25.92	H
3495.0	-49.57	4.02	3.00	12.21	-41.38	-13.00	28.38	V
5242.5	-47.75	5.11	3.00	13.26	-39.6	-13.00	26.6	V

LTE FDD Band 4 Channel Bandwidth 20MHz\_QPSK\_Low Channel

Frequency (MHz)	PMea (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3440.0	-50.39	4.02	3.00	12.5	-41.91	-13.00	28.91	H
5160.0	-50.68	5.11	3.00	13.38	-42.41	-13.00	29.41	H
3440.0	-51.72	4.02	3.00	12.5	-43.24	-13.00	30.24	V
5160.0	-51.96	5.11	3.00	13.38	-43.69	-13.00	30.69	V

LTE FDD Band 4 Channel Bandwidth 20MHz\_QPSK\_Middle Channel

Frequency (MHz)	PMea (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3465.0	-40.39	4.02	3.00	12.45	-31.96	-13.00	18.96	H
5197.5	-48.26	5.11	3.00	13.38	-39.99	-13.00	26.99	H
3465.0	-49.08	4.02	3.00	12.45	-40.65	-13.00	27.65	V
5197.5	-47.02	5.11	3.00	13.38	-38.75	-13.00	25.75	V

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LTE FDD Band 4 Channel Bandwidth 20MHz\_QPSK\_High Channel

Frequency (MHz)	PMea (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3490.0	-42.58	4.02	3.00	12.21	-34.39	-13.00	21.39	H
5235.0	-46.33	5.11	3.00	13.26	-38.18	-13.00	25.18	H
3490.0	-49.26	4.02	3.00	12.21	-41.07	-13.00	28.07	V
5235.0	-48.56	5.11	3.00	13.26	-40.41	-13.00	27.41	V

LTE FDD Band 4 Channel Bandwidth 1.4MHz\_16QAM\_Low Channel

Frequency (MHz)	PMea (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3421.4	-49.52	4.02	3.00	12.5	-41.04	-13.00	28.04	H
5132.1	-52.29	5.11	3.00	13.38	-44.02	-13.00	31.02	H
3421.4	-54.92	4.02	3.00	12.5	-46.44	-13.00	33.44	V
5132.1	-48.24	5.11	3.00	13.38	-39.97	-13.00	26.97	V

LTE FDD Band 4 Channel Bandwidth 1.4MHz\_16QAM\_Middle Channel

Frequency (MHz)	PMea (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3465.0	-44.64	4.02	3.00	12.45	-36.21	-13.00	23.21	H
5197.5	-48.17	5.11	3.00	13.38	-39.9	-13.00	26.9	H
3465.0	-49.23	4.02	3.00	12.45	-40.8	-13.00	27.8	V
5197.5	-46.96	5.11	3.00	13.38	-38.69	-13.00	25.69	V

LTE FDD Band 4 Channel Bandwidth 1.4MHz\_16QAM\_High Channel

Frequency (MHz)	PMea (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3508.6	-42.29	4.02	3.00	12.21	-34.1	-13.00	21.1	H
5262.9	-46.86	5.11	3.00	13.26	-38.71	-13.00	25.71	H
3508.6	-50.22	4.02	3.00	12.21	-42.03	-13.00	29.03	V
5262.9	-48.08	5.11	3.00	13.26	-39.93	-13.00	26.93	V

LTE FDD Band 4 Channel Bandwidth 3MHz\_16QAM\_Low Channel

Frequency (MHz)	PMea (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3423.0	-46.81	4.02	3.00	12.5	-38.33	-13.00	25.33	H
5134.5	-51.21	5.11	3.00	13.38	-42.94	-13.00	29.94	H
3423.0	-51.11	4.02	3.00	12.5	-42.63	-13.00	29.63	V
5134.5	-51.41	5.11	3.00	13.38	-43.14	-13.00	30.14	V

LTE FDD Band 4 Channel Bandwidth 3MHz\_16QAM\_Middle Channel

Frequency (MHz)	PMea (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3465.0	-44.21	4.02	3.00	12.45	-35.78	-13.00	22.78	H
5197.5	-47.38	5.11	3.00	13.38	-39.11	-13.00	26.11	H
3465.0	-50.03	4.02	3.00	12.45	-41.6	-13.00	28.6	V
5197.5	-47.23	5.11	3.00	13.38	-38.96	-13.00	25.96	V

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LTE FDD Band 4 Channel Bandwidth 3MHz\_16QAM\_High Channel

Frequency (MHz)	PMea (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3507.0	-43.05	4.02	3.00	12.21	-34.86	-13.00	21.86	H
5260.5	-47.09	5.11	3.00	13.26	-38.94	-13.00	25.94	H
3507.0	-48.4	4.02	3.00	12.21	-40.21	-13.00	27.21	V
5260.5	-47.48	5.11	3.00	13.26	-39.33	-13.00	26.33	V

LTE FDD Band 4 Channel Bandwidth 5MHz\_16QAM\_Low Channel

Frequency (MHz)	PMea (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3425.0	-45.39	4.02	3.00	12.5	-36.91	-13.00	23.91	H
5137.5	-55.94	5.11	3.00	13.38	-47.67	-13.00	34.67	H
3425.0	-51.95	4.02	3.00	12.5	-43.47	-13.00	30.47	V
5137.5	-47.44	5.11	3.00	13.38	-39.17	-13.00	26.17	V

LTE FDD Band 4 Channel Bandwidth 5MHz\_16QAM\_Middle Channel

Frequency (MHz)	PMea (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3465.0	-44.48	4.02	3.00	12.45	-36.05	-13.00	23.05	H
5197.5	-48.11	5.11	3.00	13.38	-39.84	-13.00	26.84	H
3465.0	-49.12	4.02	3.00	12.45	-40.69	-13.00	27.69	V
5197.5	-48.12	5.11	3.00	13.38	-39.85	-13.00	26.85	V

LTE FDD Band 4 Channel Bandwidth 5MHz\_16QAM\_High Channel

Frequency (MHz)	PMea (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3505.0	-42.69	4.02	3.00	12.21	-34.5	-13.00	21.5	H
5257.5	-48.24	5.11	3.00	13.26	-40.09	-13.00	27.09	H
3505.0	-48.67	4.02	3.00	12.21	-40.48	-13.00	27.48	V
5257.5	-47.57	5.11	3.00	13.26	-39.42	-13.00	26.42	V

LTE FDD Band 4 Channel Bandwidth 10MHz\_16QAM\_Low Channel

Frequency (MHz)	PMea (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3430.0	-48.86	4.02	3.00	12.5	-40.38	-13.00	27.38	H
5145.0	-49.13	5.11	3.00	13.38	-40.86	-13.00	27.86	H
3430.0	-53.33	4.02	3.00	12.5	-44.85	-13.00	31.85	V
5145.0	-50.44	5.11	3.00	13.38	-42.17	-13.00	29.17	V

LTE FDD Band 4 Channel Bandwidth 10MHz\_16QAM\_Middle Channel

Frequency (MHz)	PMea (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3465.0	-43.91	4.02	3.00	12.45	-35.48	-13.00	22.48	H
5197.5	-47.38	5.11	3.00	13.38	-39.11	-13.00	26.11	H
3465.0	-49.77	4.02	3.00	12.45	-41.34	-13.00	28.34	V
5197.5	-47.72	5.11	3.00	13.38	-39.45	-13.00	26.45	V

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LTE FDD Band 4 Channel Bandwidth 10MHz\_16QAM\_High Channel

Frequency (MHz)	PMea (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3500.0	-42.02	4.02	3.00	12.21	-33.83	-13.00	20.83	H
5250.0	-46.64	5.11	3.00	13.26	-38.49	-13.00	25.49	H
3500.0	-49.28	4.02	3.00	12.21	-41.09	-13.00	28.09	V
5250.0	-48.24	5.11	3.00	13.26	-40.09	-13.00	27.09	V

LTE FDD Band 4 Channel Bandwidth 15MHz\_16QAM\_Low Channel

Frequency (MHz)	PMea (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3435.0	-46.43	4.02	3.00	12.5	-37.95	-13.00	24.95	H
5152.5	-49.08	5.11	3.00	13.38	-40.81	-13.00	27.81	H
3435.0	-54.25	4.02	3.00	12.5	-45.77	-13.00	32.77	V
5152.5	-53.13	5.11	3.00	13.38	-44.86	-13.00	31.86	V

LTE FDD Band 4 Channel Bandwidth 15MHz\_16QAM\_Middle Channel

Frequency (MHz)	PMea (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3465.0	-44.41	4.02	3.00	12.45	-35.98	-13.00	22.98	H
5197.5	-46.22	5.11	3.00	13.38	-37.95	-13.00	24.95	H
3465.0	-49.86	4.02	3.00	12.45	-41.43	-13.00	28.43	V
5197.5	-46.96	5.11	3.00	13.38	-38.69	-13.00	25.69	V

LTE FDD Band 4 Channel Bandwidth 15MHz\_16QAM\_High Channel

Frequency (MHz)	PMea (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3495.0	-43.13	4.02	3.00	12.21	-34.94	-13.00	21.94	H
5242.5	-47.59	5.11	3.00	13.26	-39.44	-13.00	26.44	H
3495.0	-48.82	4.02	3.00	12.21	-40.63	-13.00	27.63	V
5242.5	-48.34	5.11	3.00	13.26	-40.19	-13.00	27.19	V

LTE FDD Band 4 Channel Bandwidth 20MHz\_16QAM\_Low Channel

Frequency (MHz)	PMea (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3440.0	-48.67	4.02	3.00	12.5	-40.19	-13.00	27.19	H
5160.0	-51.95	5.11	3.00	13.38	-43.68	-13.00	30.68	H
3440.0	-50.62	4.02	3.00	12.5	-42.14	-13.00	29.14	V
5160.0	-51.07	5.11	3.00	13.38	-42.8	-13.00	29.8	V

LTE FDD Band 4 Channel Bandwidth 20MHz\_16QAM\_Middle Channel

Frequency (MHz)	PMea (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3465.0	-44.22	4.02	3.00	12.45	-35.79	-13.00	22.79	H
5197.5	-46.68	5.11	3.00	13.38	-38.41	-13.00	25.41	H
3465.0	-48.95	4.02	3.00	12.45	-40.52	-13.00	27.52	V
5197.5	-48.44	5.11	3.00	13.38	-40.17	-13.00	27.17	V

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LTE FDD Band 4\_Channel Bandwidth 20MHz\_16QAM\_High Channel

Frequency (MHz)	PMea (dBm)	Pcl (dB)	Diatance	Ga Antenna Gain(dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3490.0	-41.18	4.02	3.00	12.21	-32.99	-13.00	19.99	H
5235.0	-47.23	5.11	3.00	13.26	-39.08	-13.00	26.08	H
3490.0	-48.11	4.02	3.00	12.21	-39.92	-13.00	26.92	V
5235.0	-47.96	5.11	3.00	13.26	-39.81	-13.00	26.81	V

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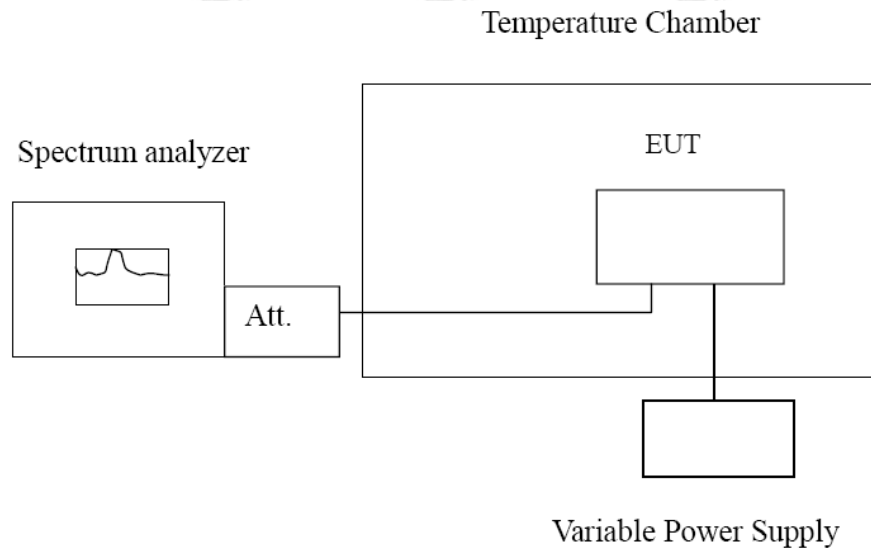
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### 3.6 Frequency Stability Under Temperature & Voltage Variations

#### LIMIT

According to §27.54, §2.1055 requirement, the frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation and should not exceed 2.5ppm.

#### TEST CONFIGURATION



#### TEST PROCEDURE

The EUT was setup according to EIA/TIA 603D.

##### **Frequency Stability Under Temperature Variations:**

In order to measure the carrier frequency under the condition of AFC lock, it is necessary to make measurements with the EUT in a "call mode". This is accomplished with the use of R&S CMW500 DIGITAL RADIO COMMUNICATION TESTER.

1. Measure the carrier frequency at room temperature.
2. Subject the EUT to overnight soak at -30°C.
3. With the EUT, powered via nominal voltage, connected to the CMW500 and in a simulated call on middle channel for LTE band 4, measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.
4. Repeat the above measurements at 10°C increments from -30°C to +50°C. Allow at least 1.5 hours at each temperature, unpowered, before making measurements.
5. Re-measure carrier frequency at room temperature with nominal voltage. Vary supply voltage from minimum voltage to maximum voltage, in 0.1V increments re-measuring carrier frequency at each voltage. Pause at nominal voltage for 1.5 hours unpowered, to allow any self-heating to stabilize, before continuing.
6. Subject the EUT to overnight soak at +50°C.
7. With the EUT, powered via nominal voltage, connected to the CMW500 and in a simulated call on the centre channel, measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.
8. Repeat the above measurements at 10 °C increments from +50°C to -30°C. Allow at least 1.5 hours at each temperature, unpowered, before making measurements.
9. At all temperature levels hold the temperature to +/- 0.5°C during the measurement procedure.

##### **Frequency Stability Under Voltage Variations:**

Set chamber temperature to 20°C. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.

Reduce the input voltage to specify extreme voltage variation ( $\pm 15\%$ ) and endpoint, record the maximum frequency change.





**TEST RESULTS**

Remark:

1. We tested all RB Configuration refer 3GPP TS136 521 for each Channel Bandwidth of LTE FDD Band 4; recorded worst case.

LTE Band 4, 1.4MHz bandwidth, QPSK (worst case of all bandwidths).

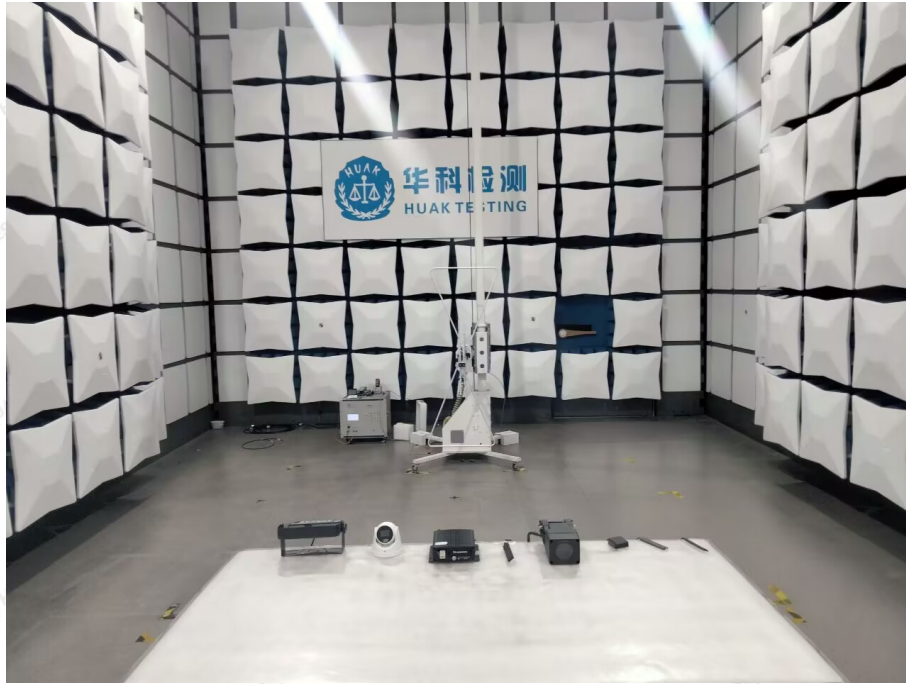
LTE FDD Band 4				
DC Power(V)	Temperature (°C)	Frequency error(Hz)	Frequency error(ppm)	Verdict
10.2	20	6.32	0.003694	PASS
12.0	20	5.12	0.002993	PASS
13.8	20	5.29	0.003092	PASS
12.0	-30	5.75	0.003361	PASS
12.0	-20	4.95	0.002894	PASS
12.0	-10	5.71	0.003338	PASS
12.0	0	6.87	0.004016	PASS
12.0	10	3.99	0.002332	PASS
12.0	20	3.73	0.002180	PASS
12.0	30	3.88	0.002240	PASS
12.0	40	-5.66	-0.003267	PASS
12.0	50	-1.96	-0.001131	PASS

LTE Band 4, 1.4MHz bandwidth , 16QAM (worst case of all bandwidths)

LTE FDD Band 4				
DC Power(V)	Temperature (°C)	Frequency error(Hz)	Frequency error(ppm)	Verdict
10.2	20	4.62	0.002701	PASS
12.0	20	3.26	0.001906	PASS
13.8	20	6.58	0.003846	PASS
12.0	-30	6.52	0.003811	PASS
12.0	-20	2.92	0.001707	PASS
12.0	-10	-4.95	-0.002894	PASS
12.0	0	3.86	0.002256	PASS
12.0	10	5.18	0.003028	PASS
12.0	20	4.01	0.002344	PASS
12.0	30	2.56	0.001478	PASS
12.0	40	-2.96	-0.001709	PASS
12.0	50	-4.36	-0.002517	PASS



#### 4 Test Setup Photos of the EUT



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## **5 Photos of the EUT**

Reference to the report: ANNEX A of external photos and ANNEX B of internal photos.

.....**End of Report**.....

