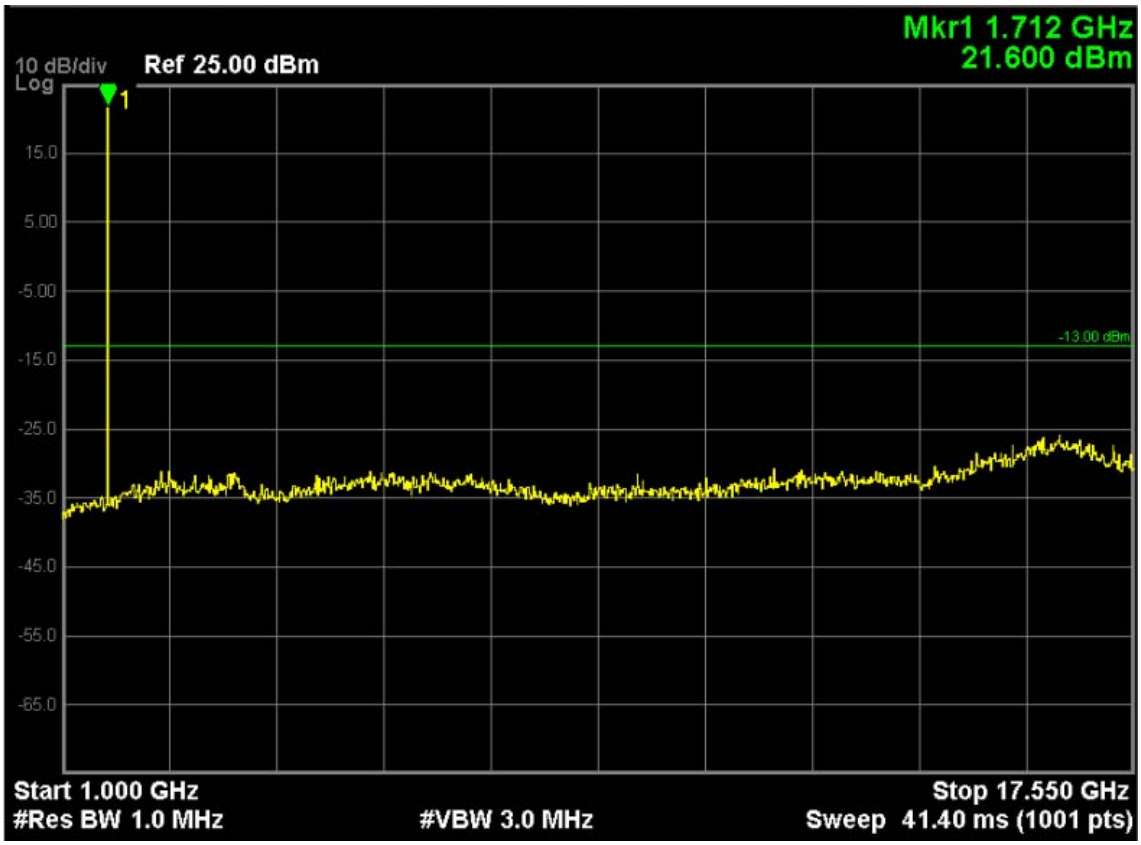
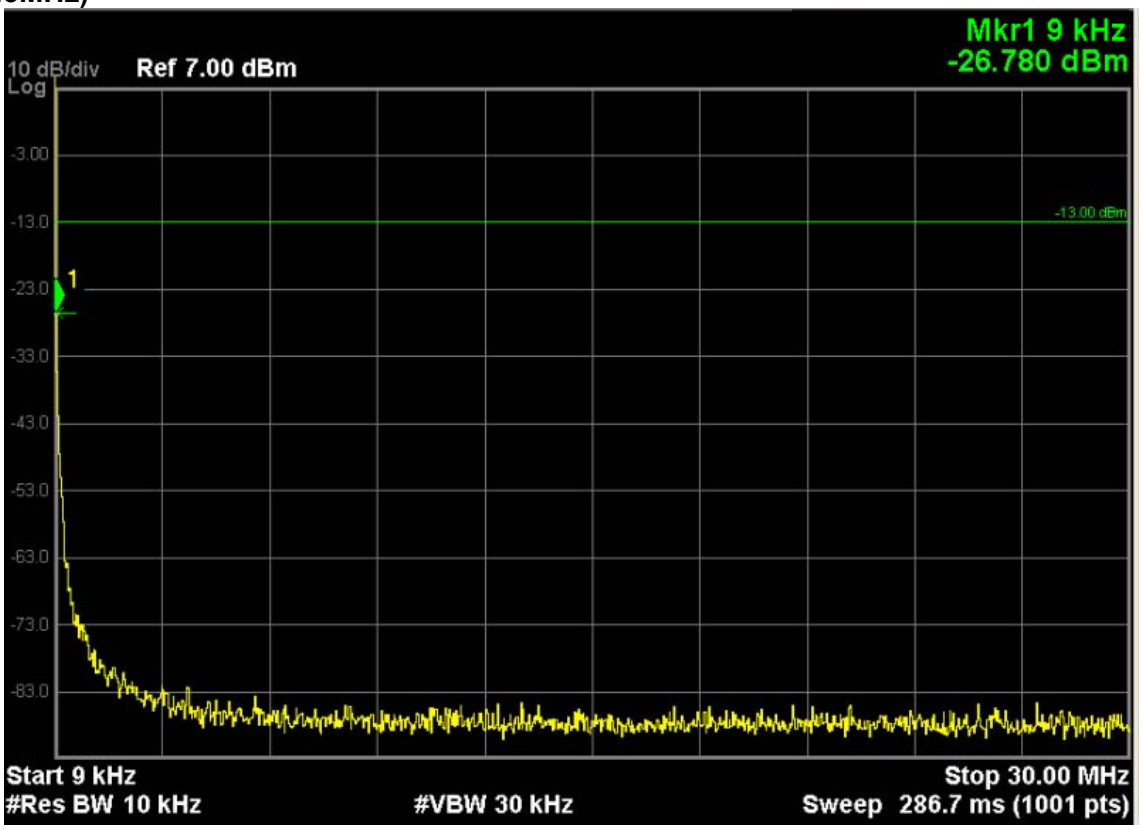
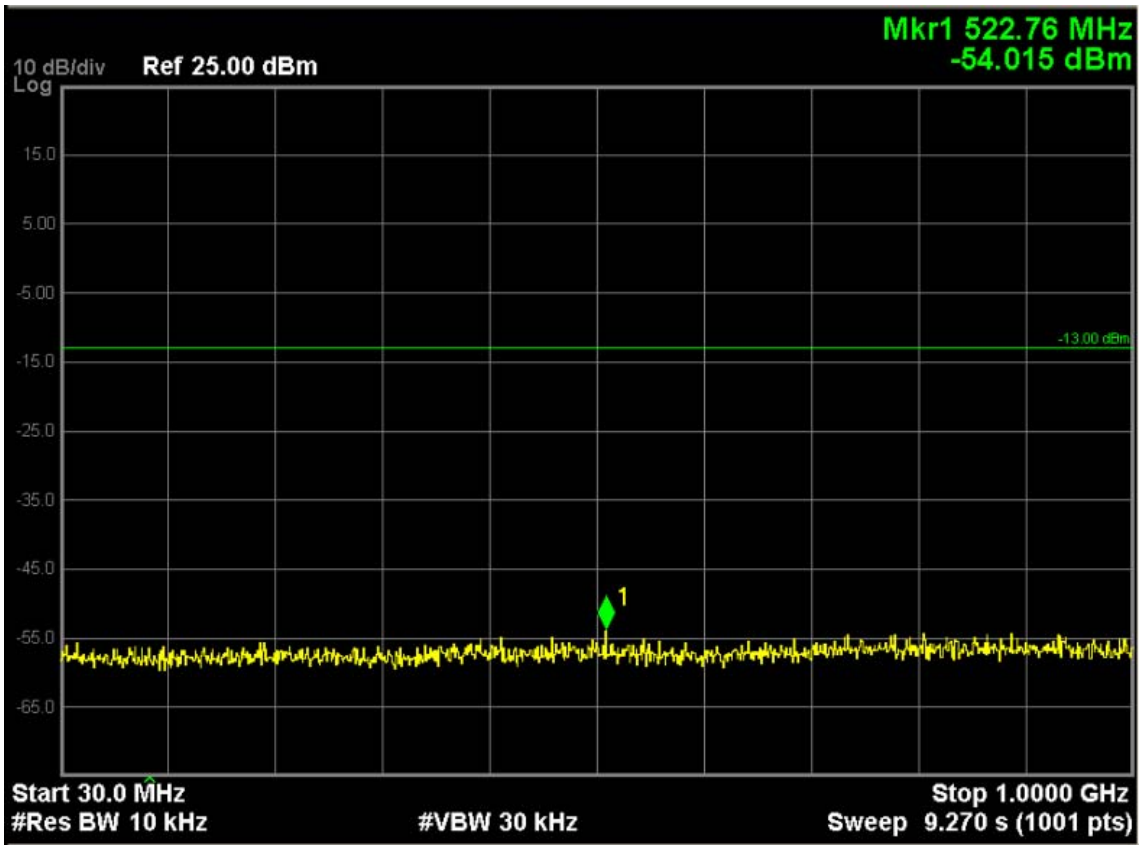
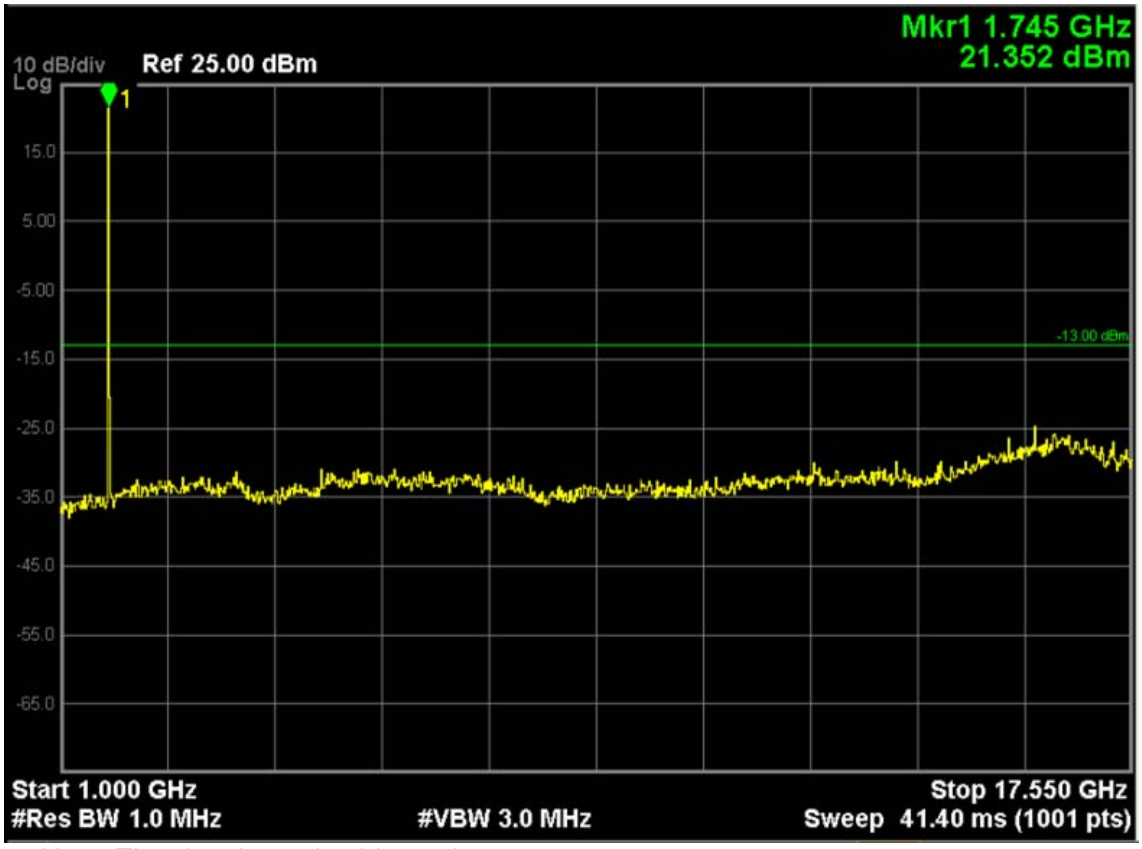


Note: The signal at point 1 is carrier

LTE Band 4 (16-QAM, Band Width 5MHz,RB Size 1,RB Offset 0,Channel 20375,Frequeny 1752.5MHz)

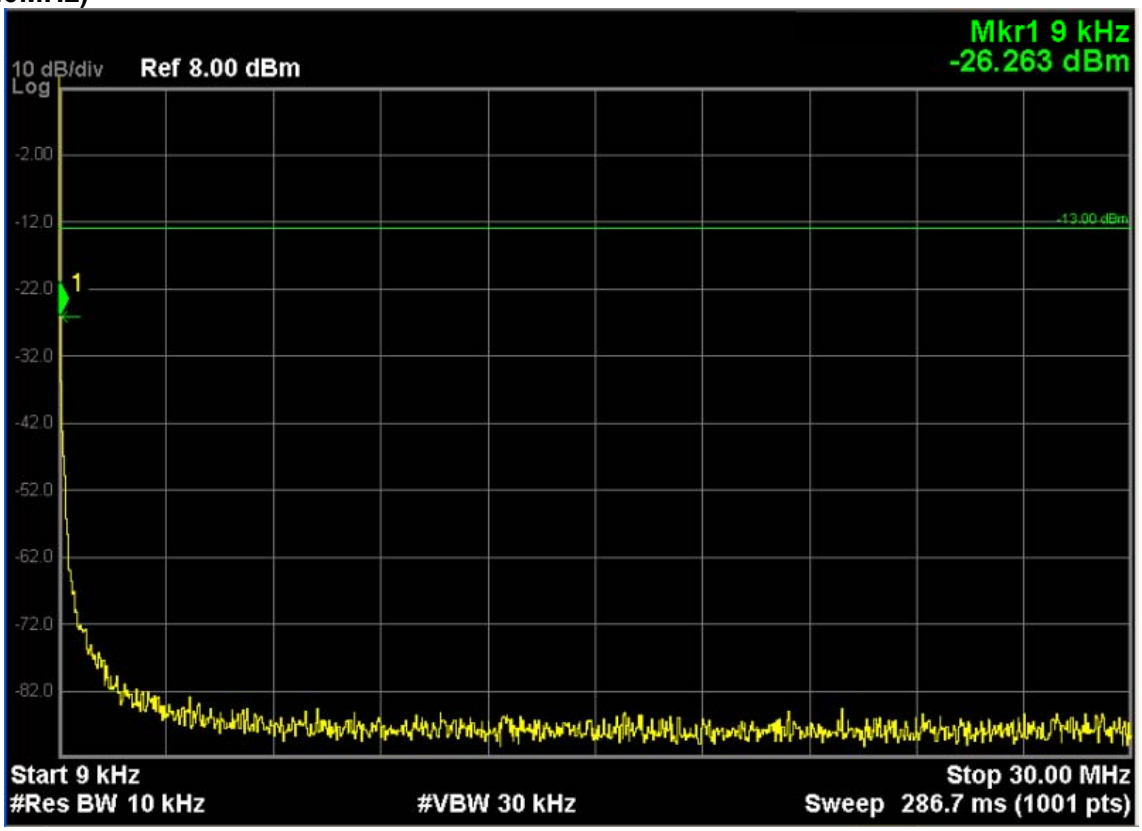


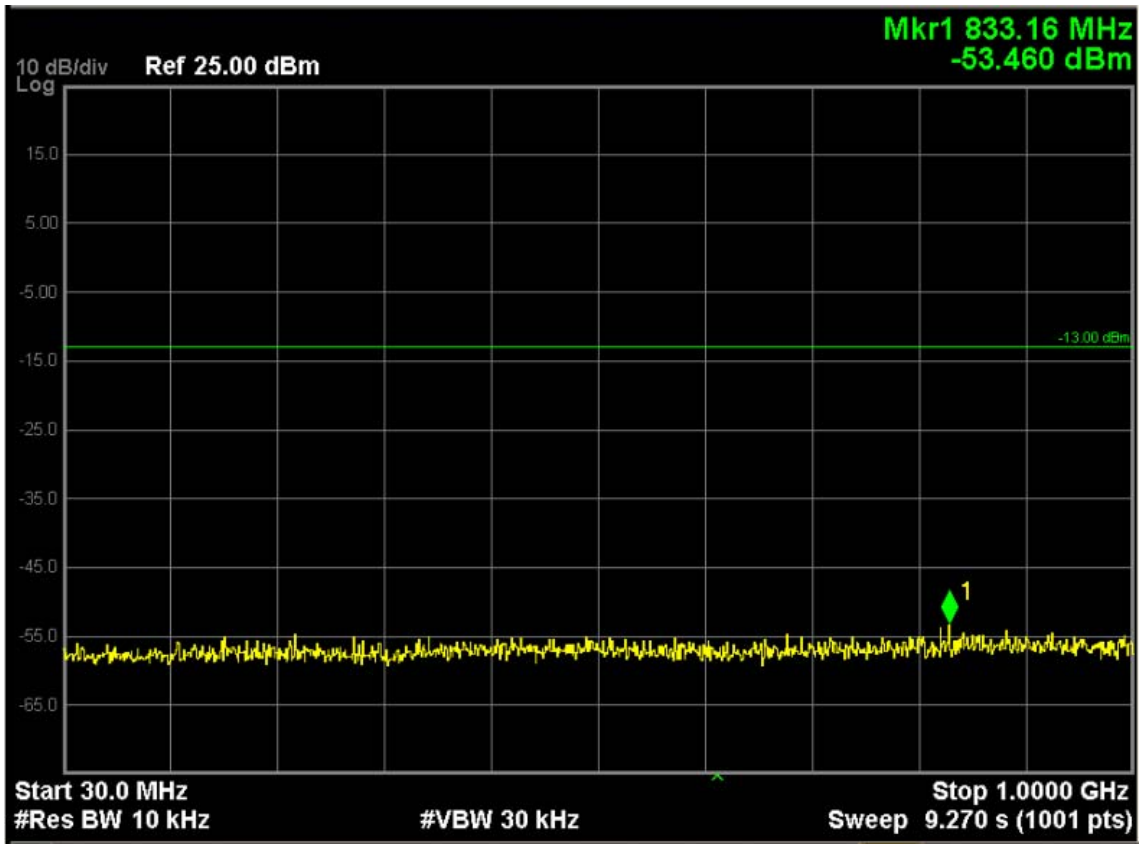


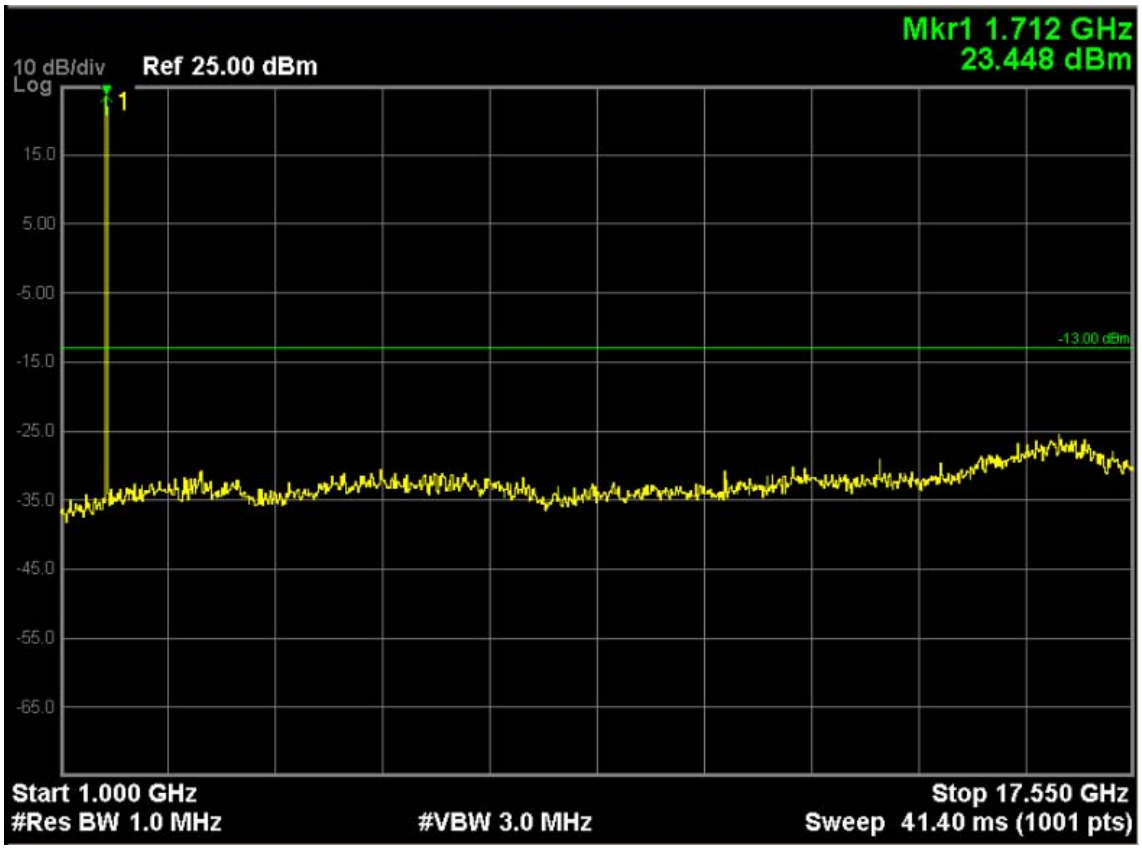


Note: The signal at point 1 is carrier

LTE Band 4 (QPSK, Band Width 10MHz,RB Size 1,RB Offset 49,Channel 20000,Frequeny 1715.0MHz)

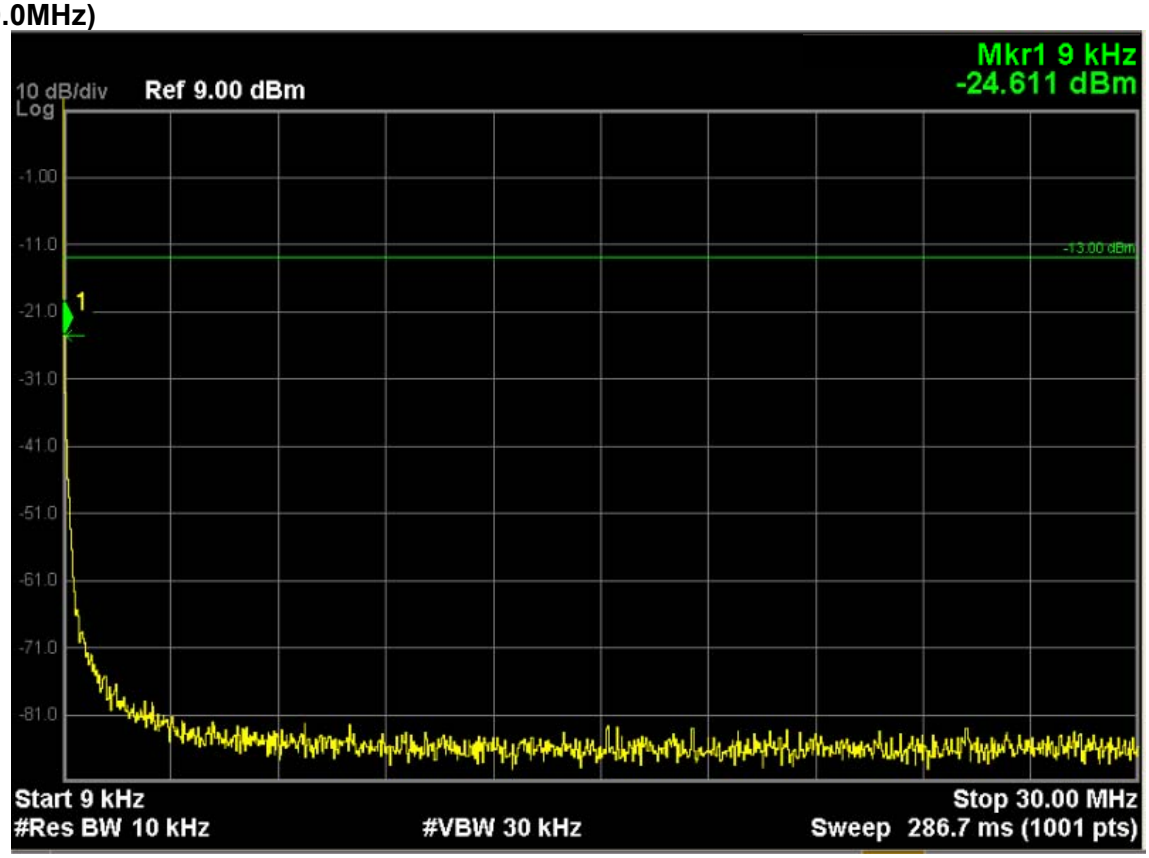


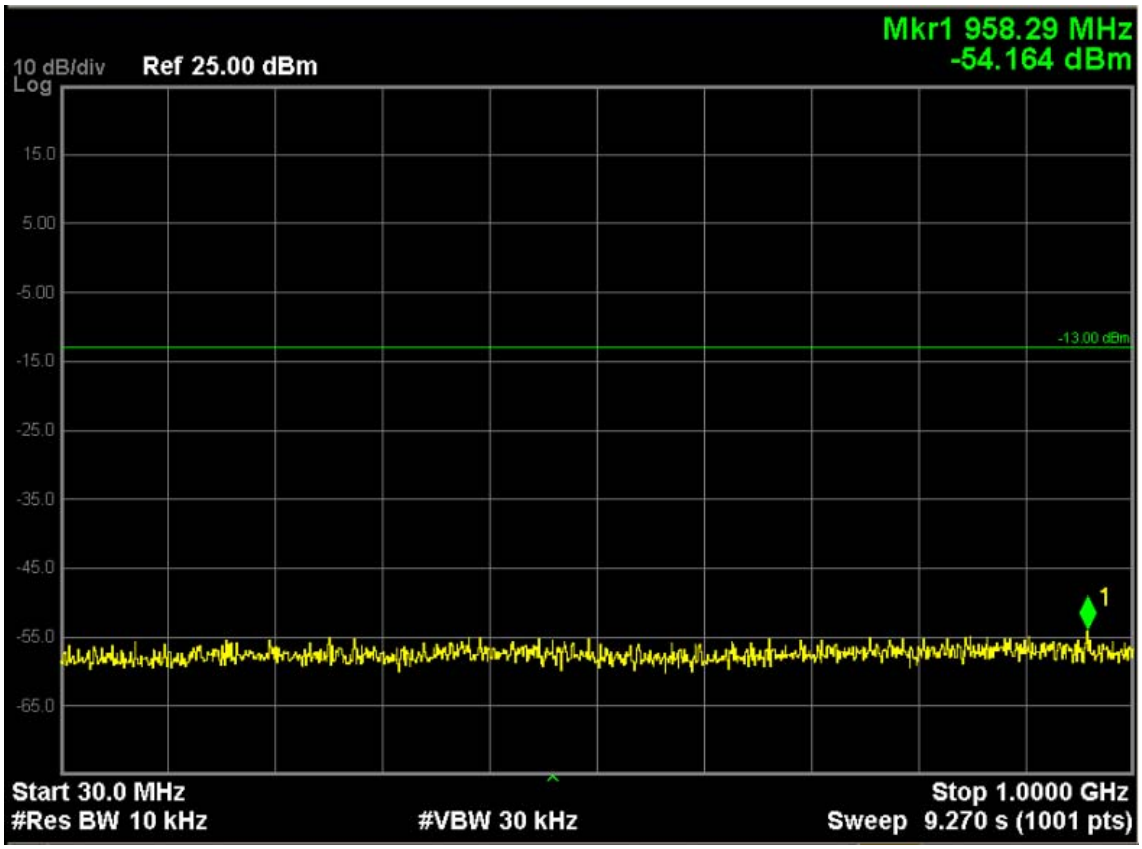


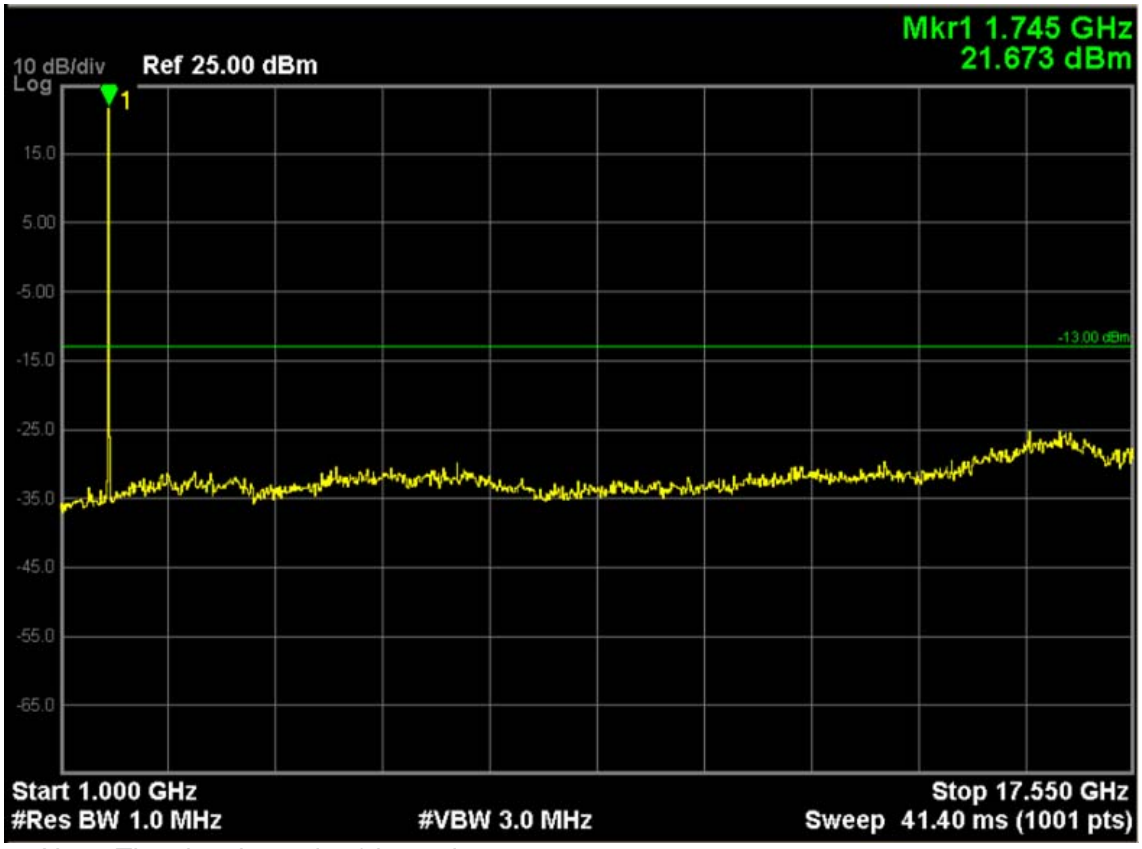


Note: The signal at point 1 is carrier

LTE Band 4 (16-QAM, Band Width 10MHz,RB Size 1,RB Offset 0,Channel 20350,Frequeny 1750.0MHz)

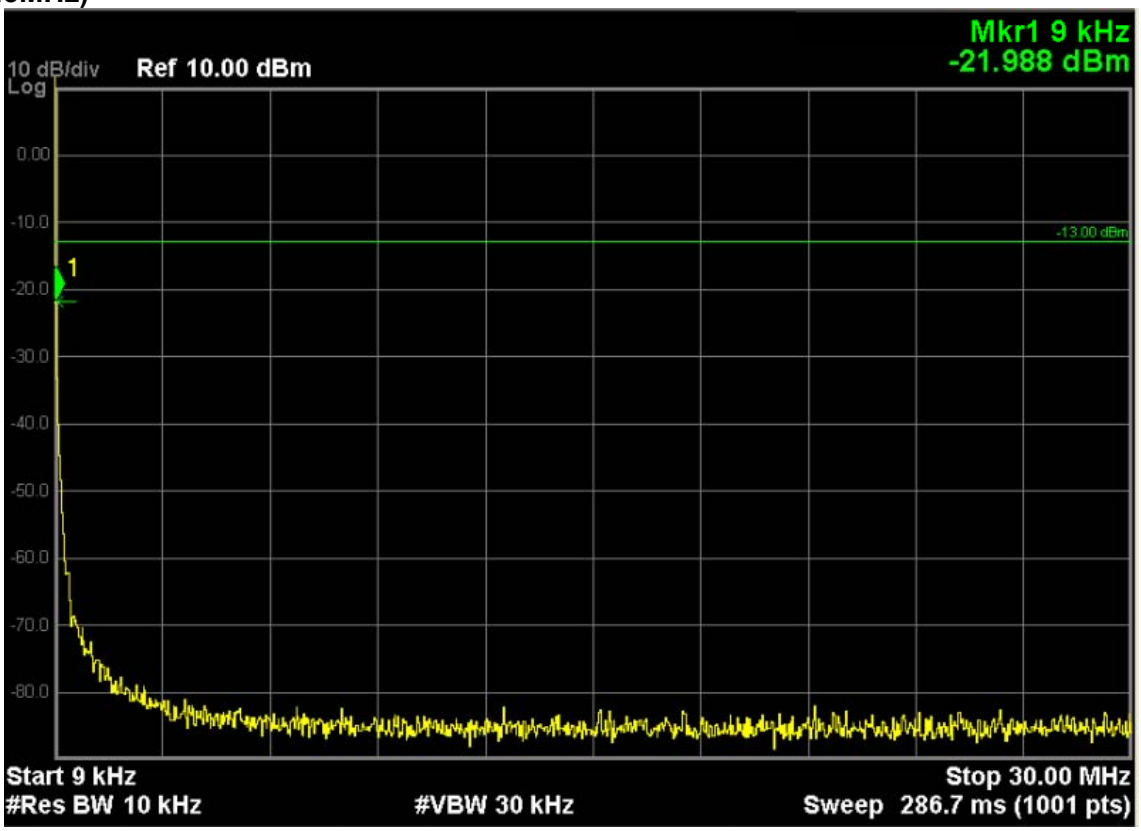


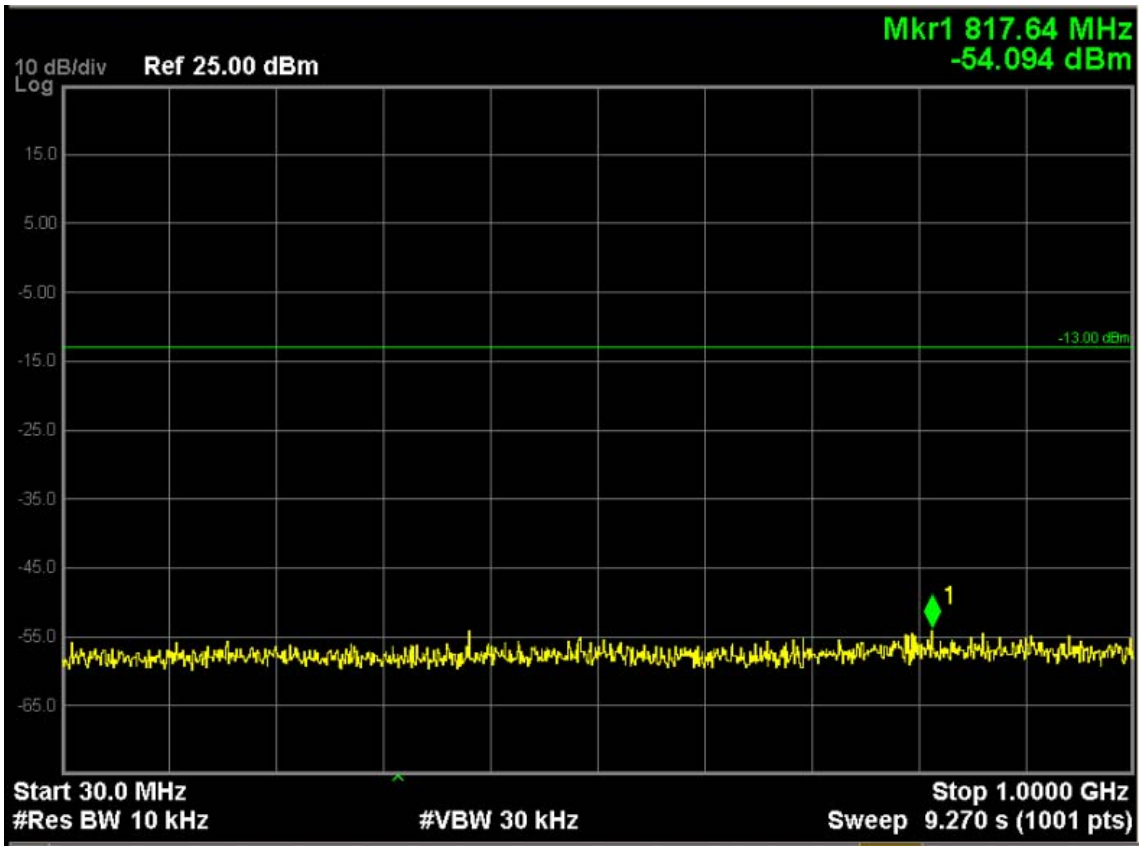


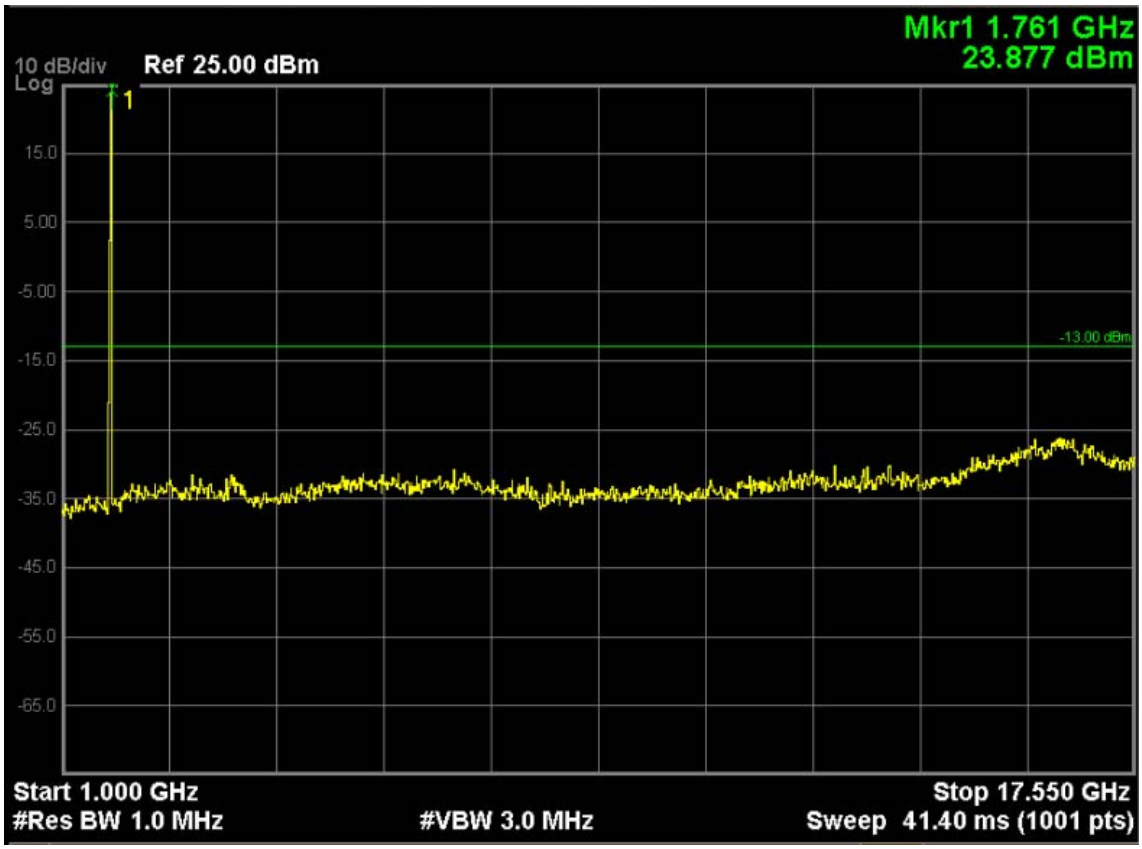


Note: The signal at point 1 is carrier

LTE Band 4 (QPSK, Band Width 15MHz,RB Size 1,RB Offset 74,Channel 20325,Frequeny 1747.5MHz)

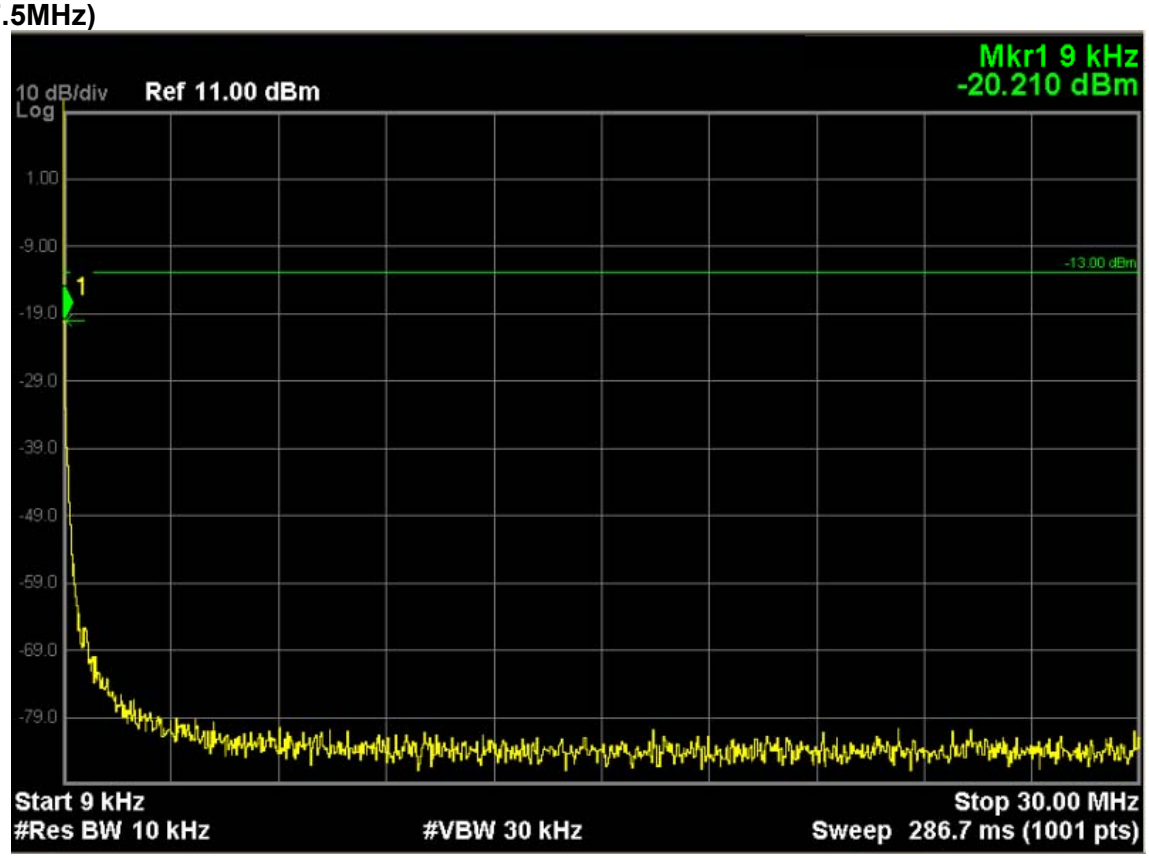


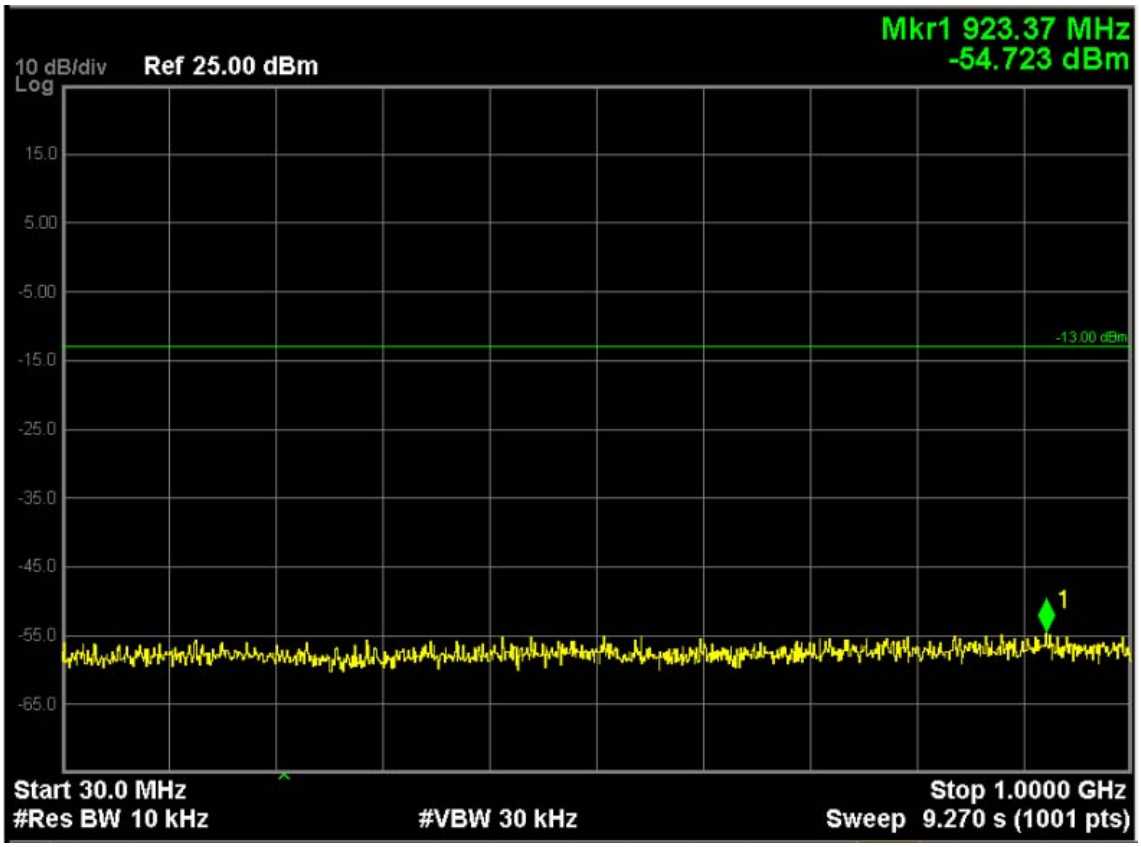


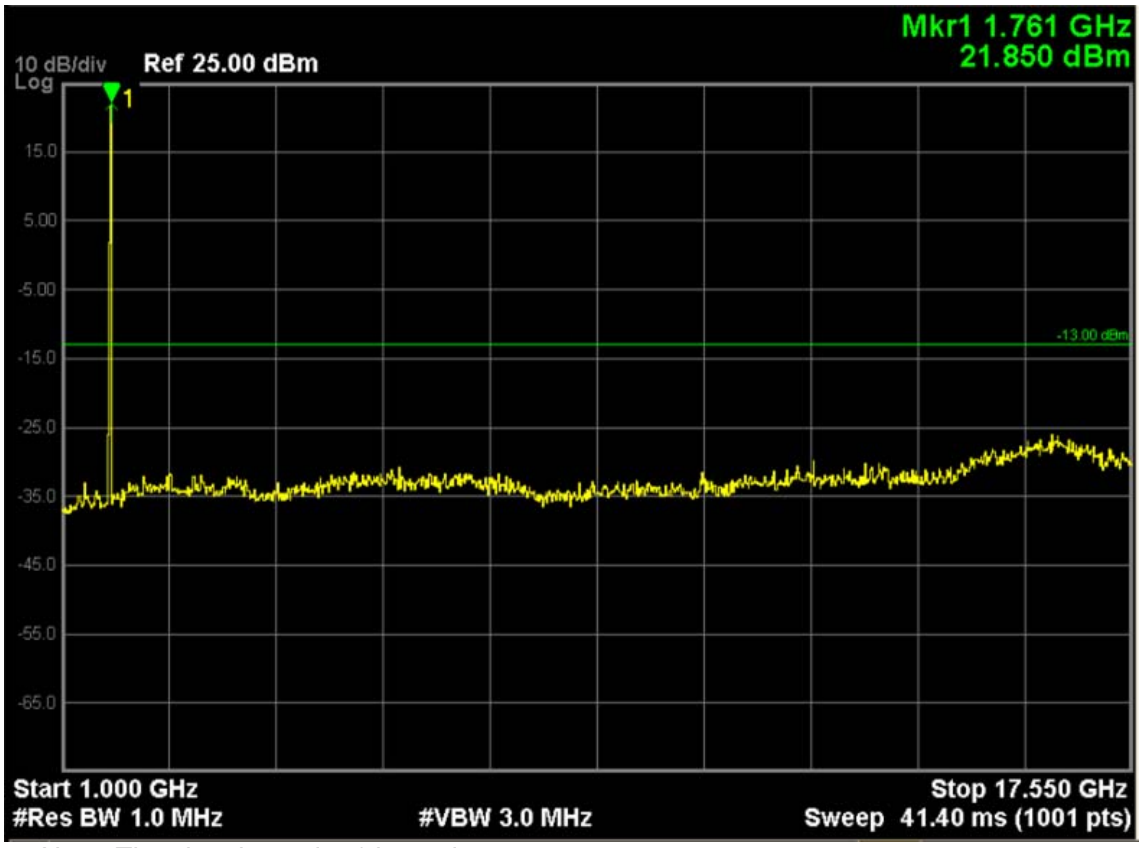


Note: The signal at point 1 is carrier

LTE Band 4 (16-QAM, Band Width 15MHz,RB Size 1,RB Offset 74,Channel 20325,Frequeny 1747.5MHz)

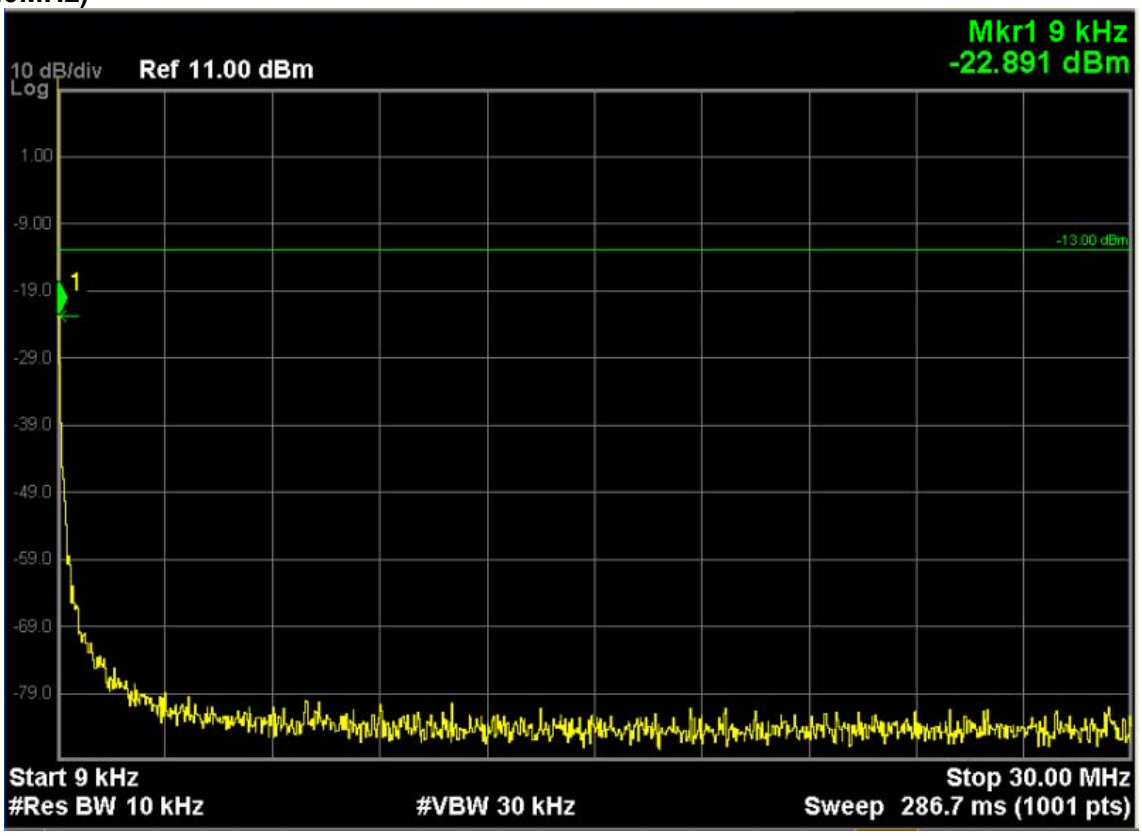


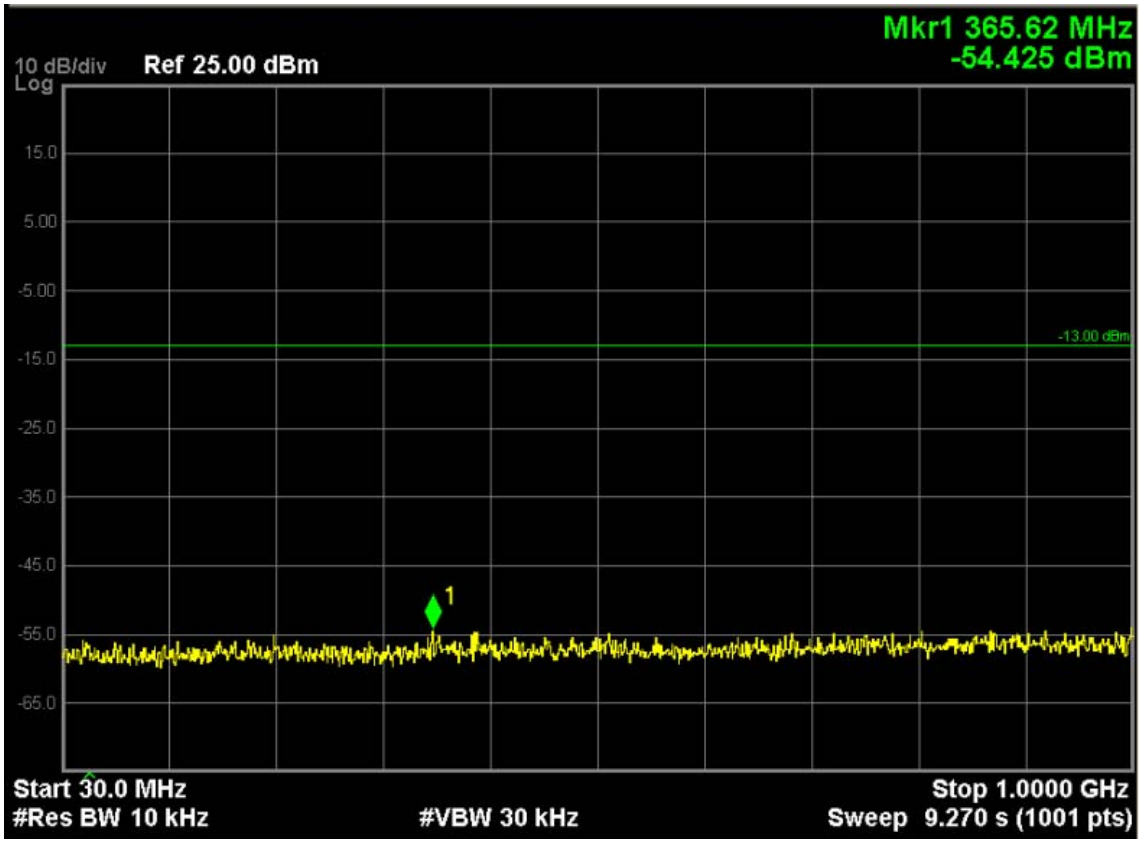


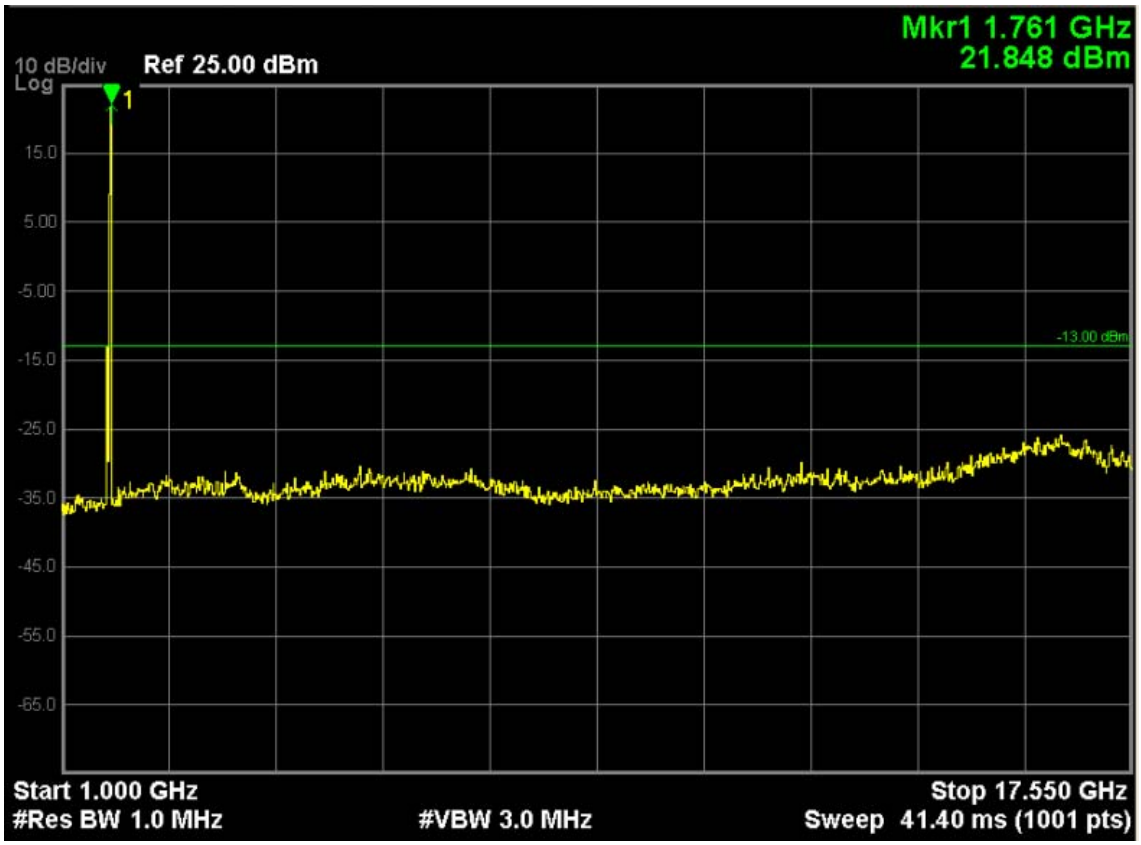


Note: The signal at point 1 is carrier

LTE Band 4 (QPSK, Band Width 20MHz,RB Size 1,RB Offset 99,Channel 20300,Frequeny 1745.0MHz)

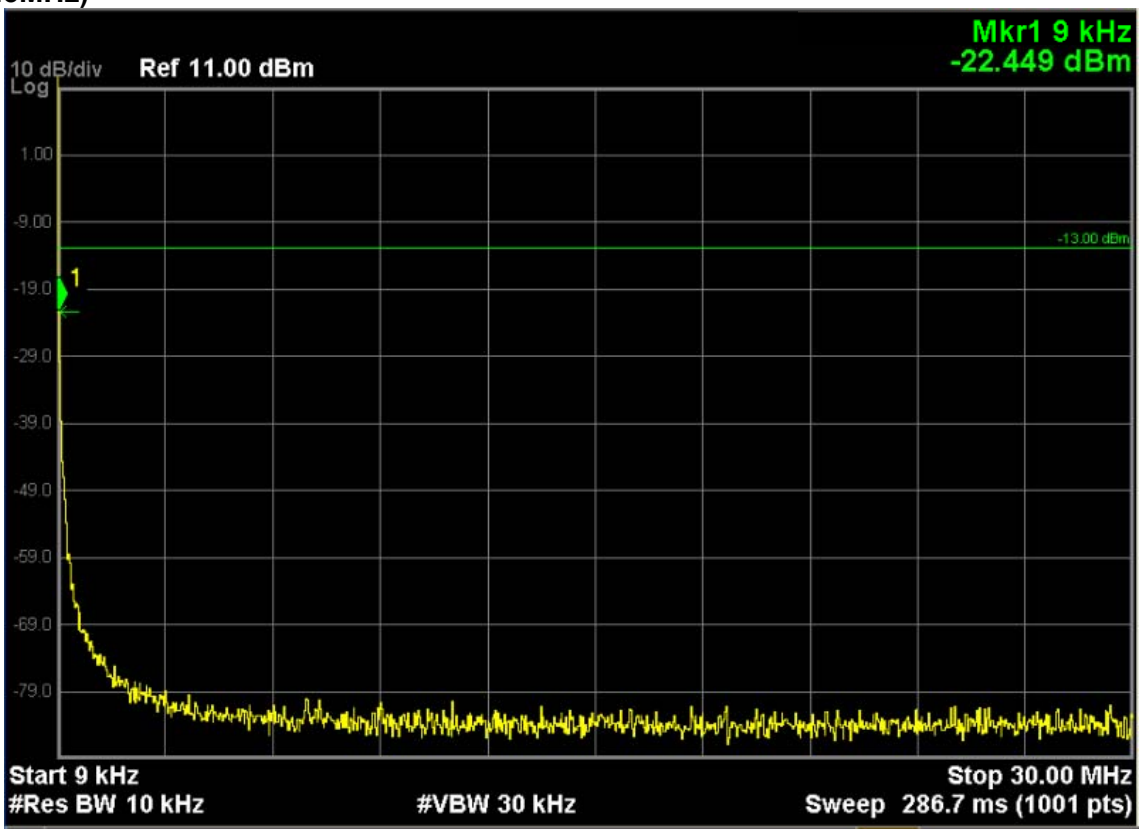


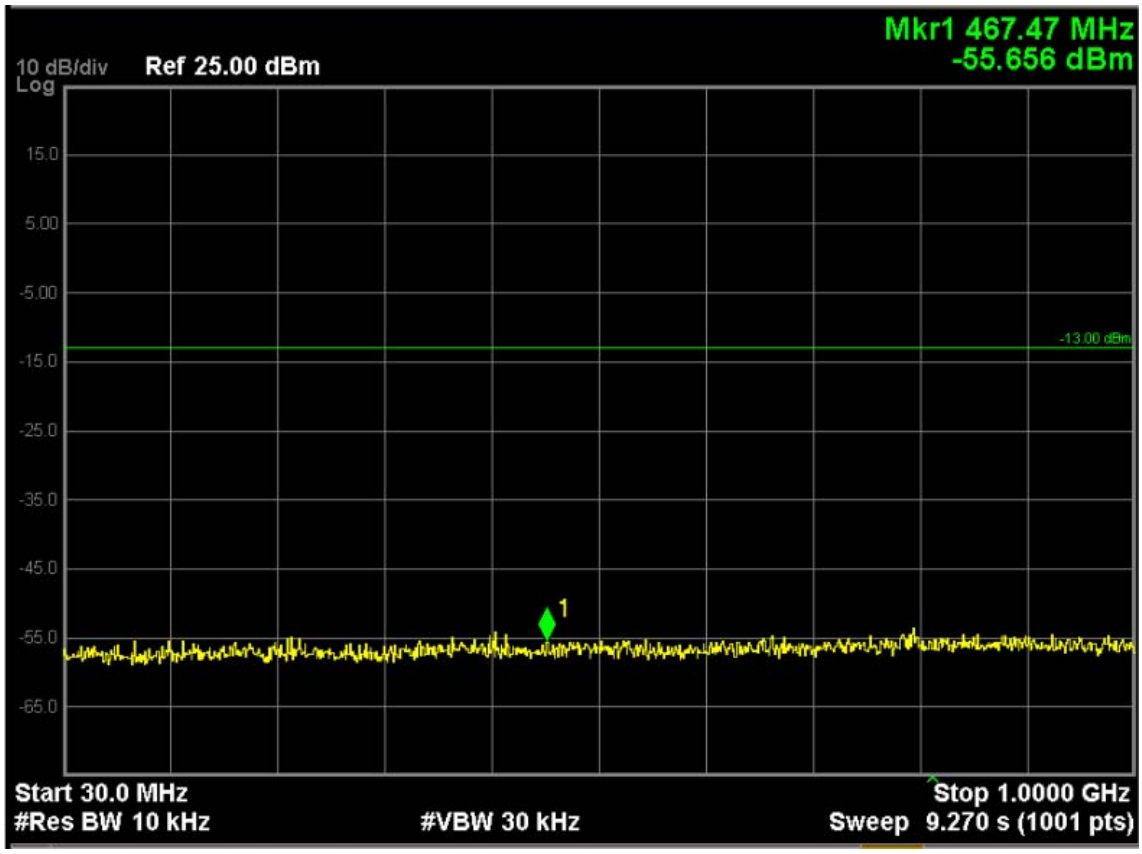


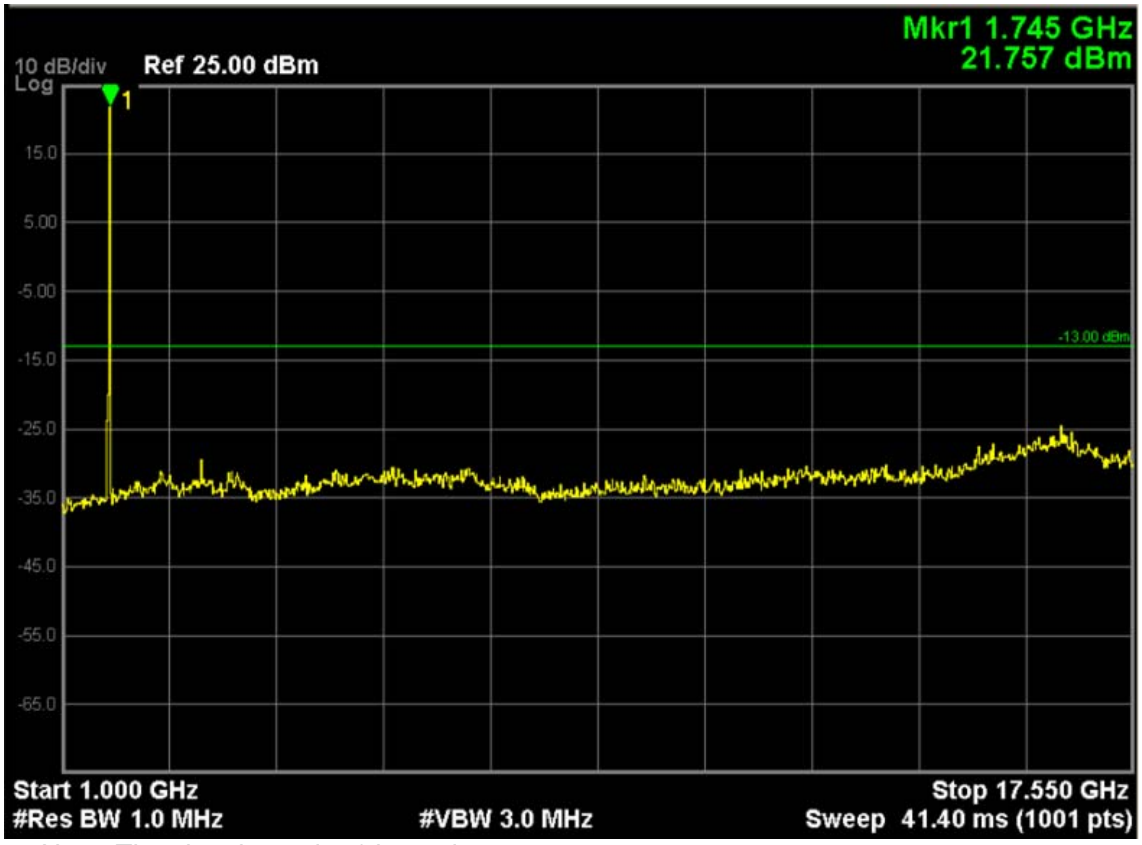


Note: The signal at point 1 is carrier

LTE Band 4 (16-QAM, Band Width 20MHz,RB Size 1,RB Offset 99,Channel 20175,Frequeny 1732.5MHz)

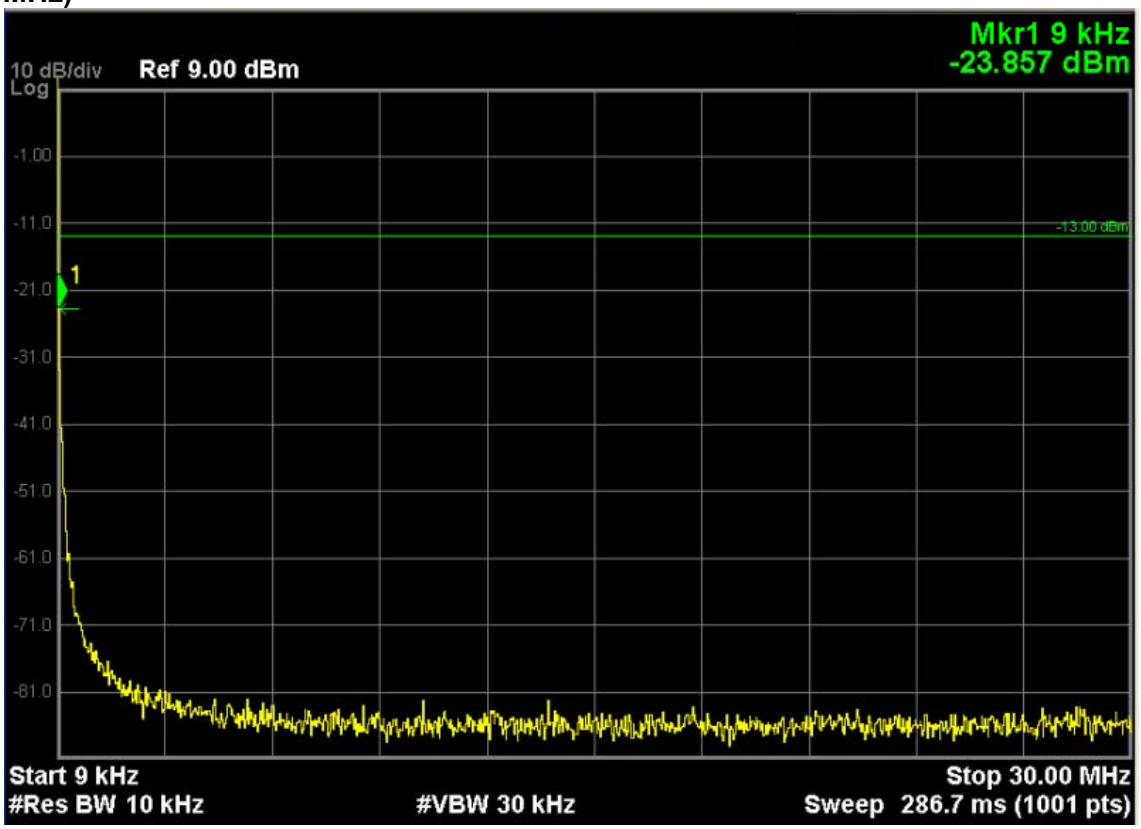


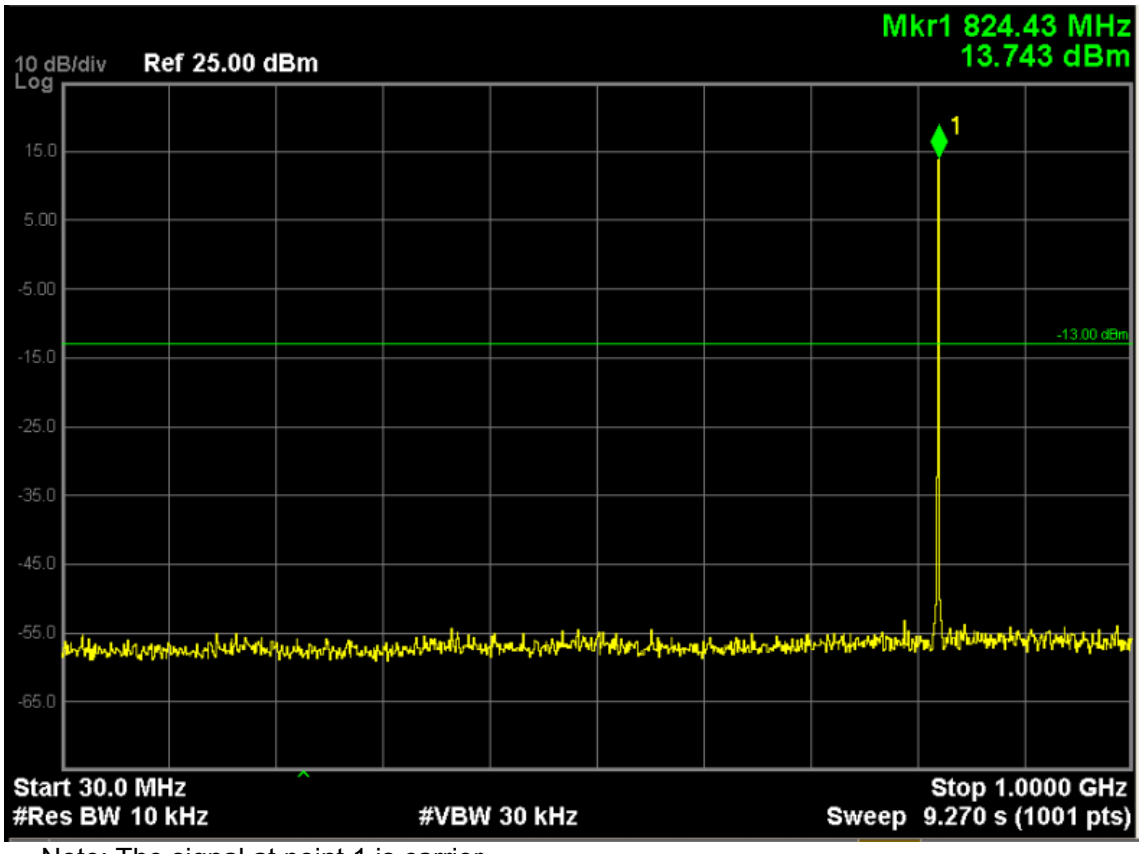




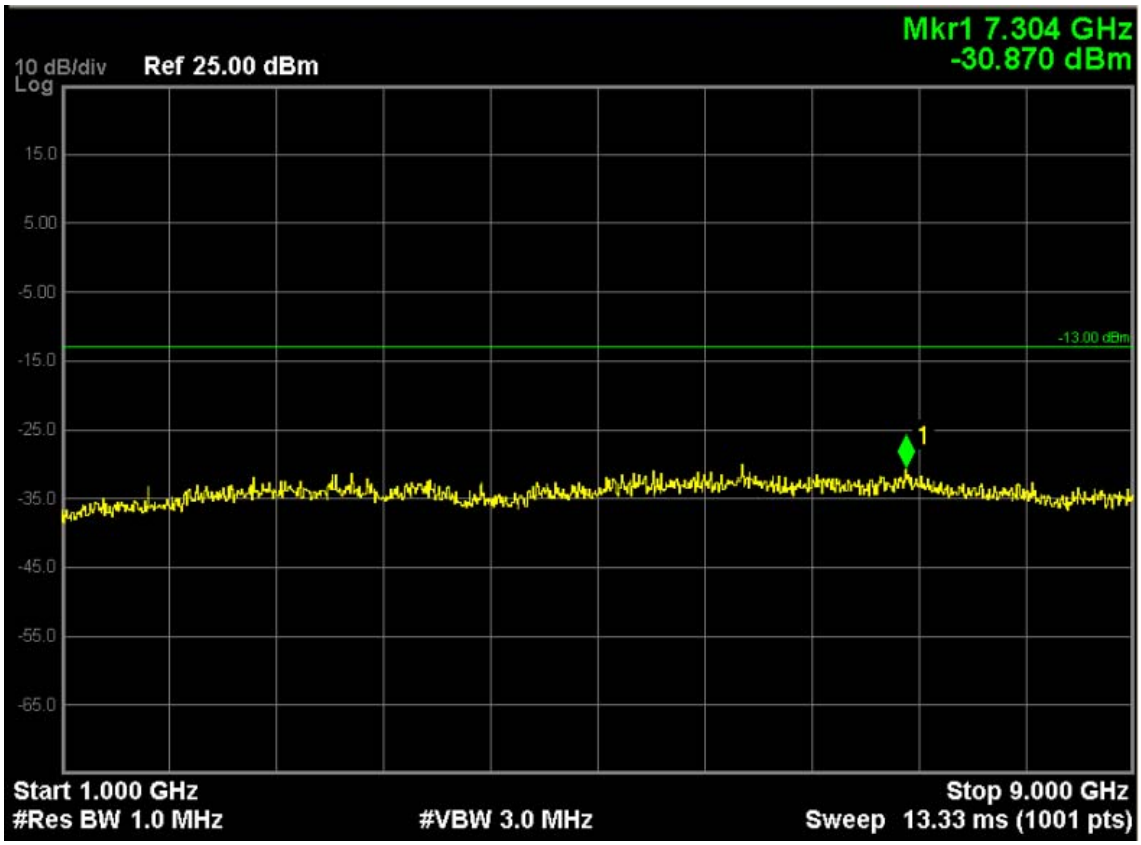
Note: The signal at point 1 is carrier

LTE Band 5 (QPSK, Band Width 1.4MHz,RB Size 1,RB Offset 0,Channel 20407,Frequeny 824.7MHz)

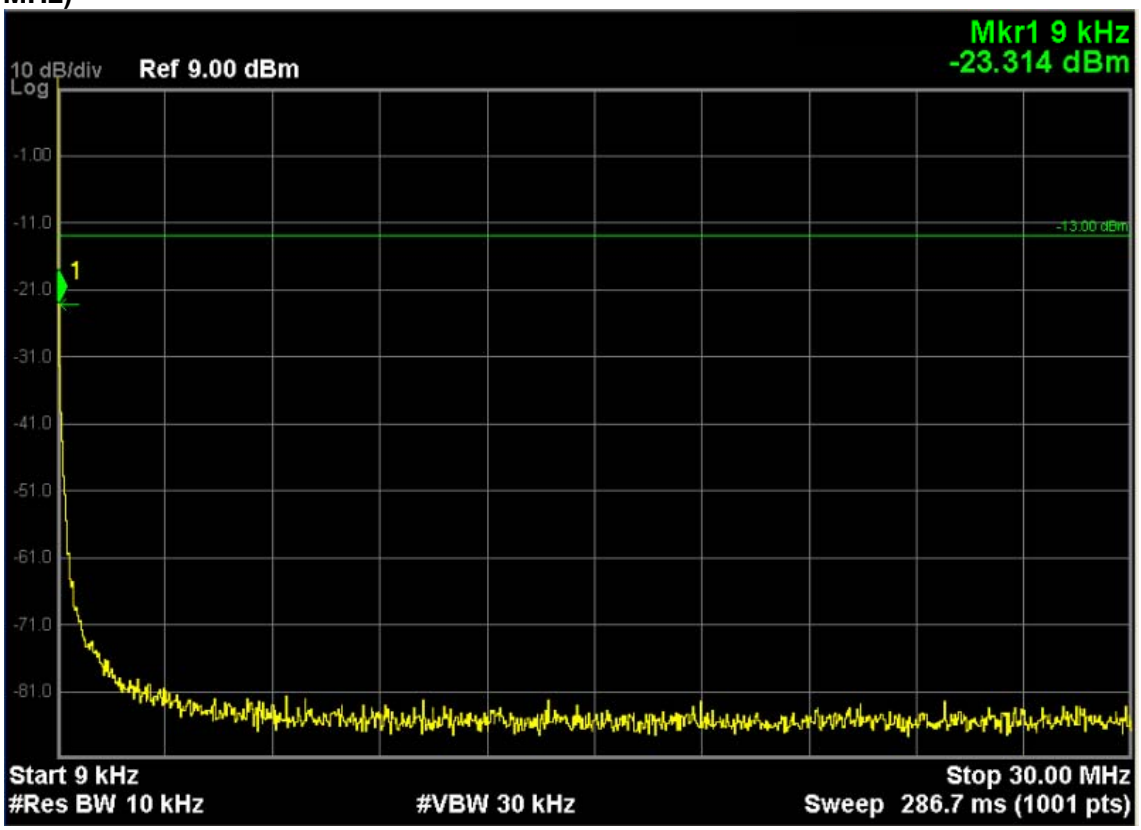


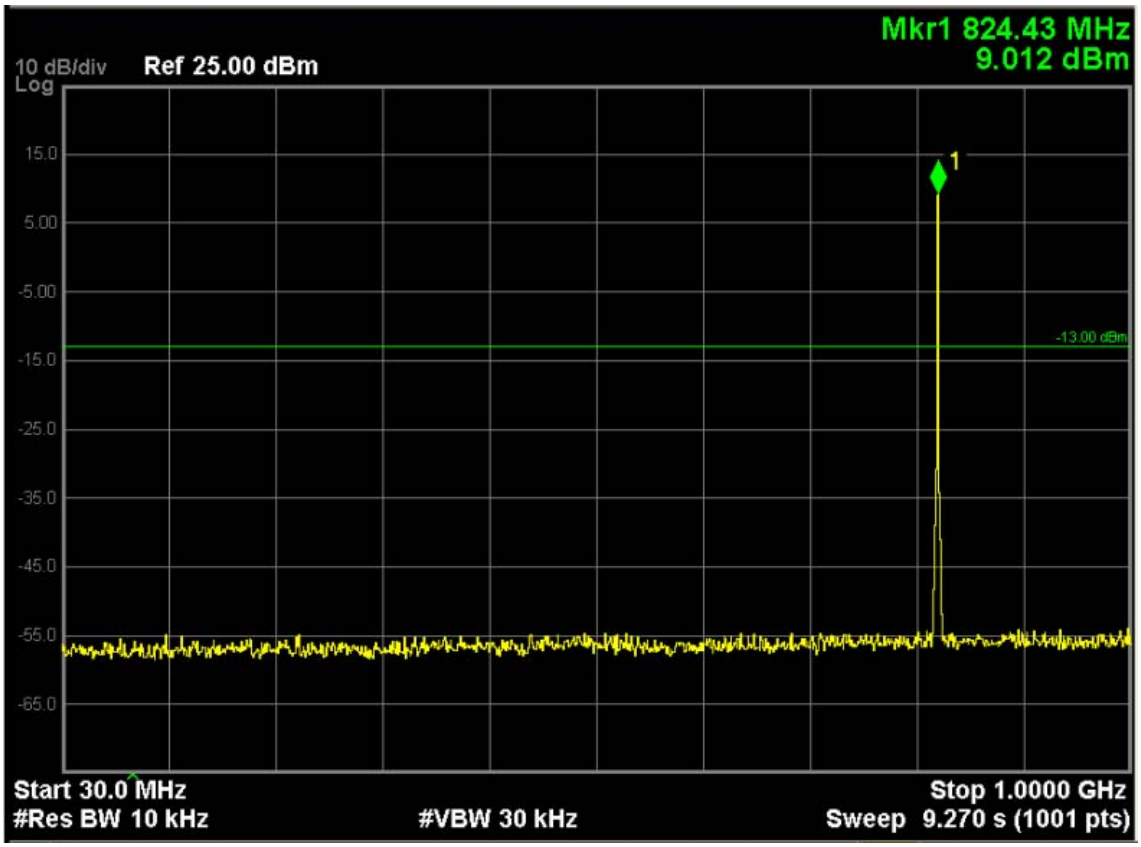


Note: The signal at point 1 is carrier

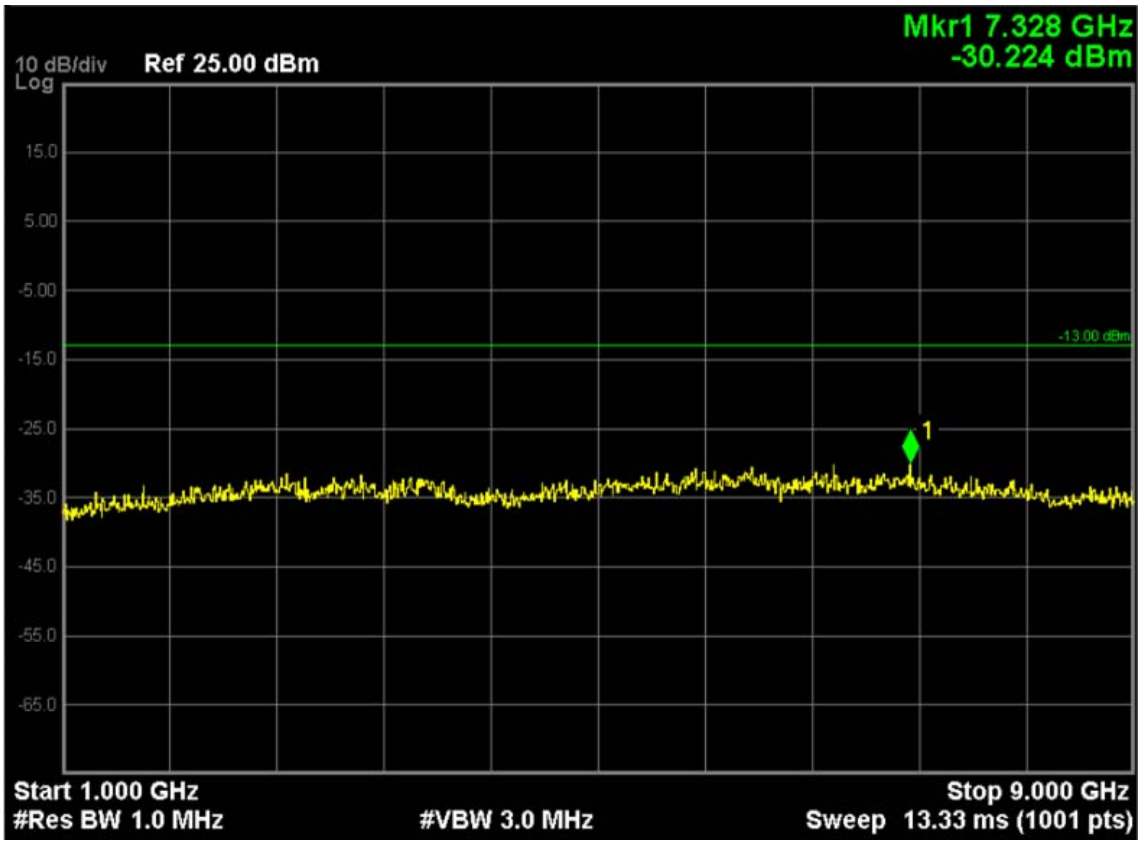


LTE Band 5 (16-QAM, Band Width 1.4MHz,RB Size 5,RB Offset 1,Channel 20407,Frequeny 824.7MHz)

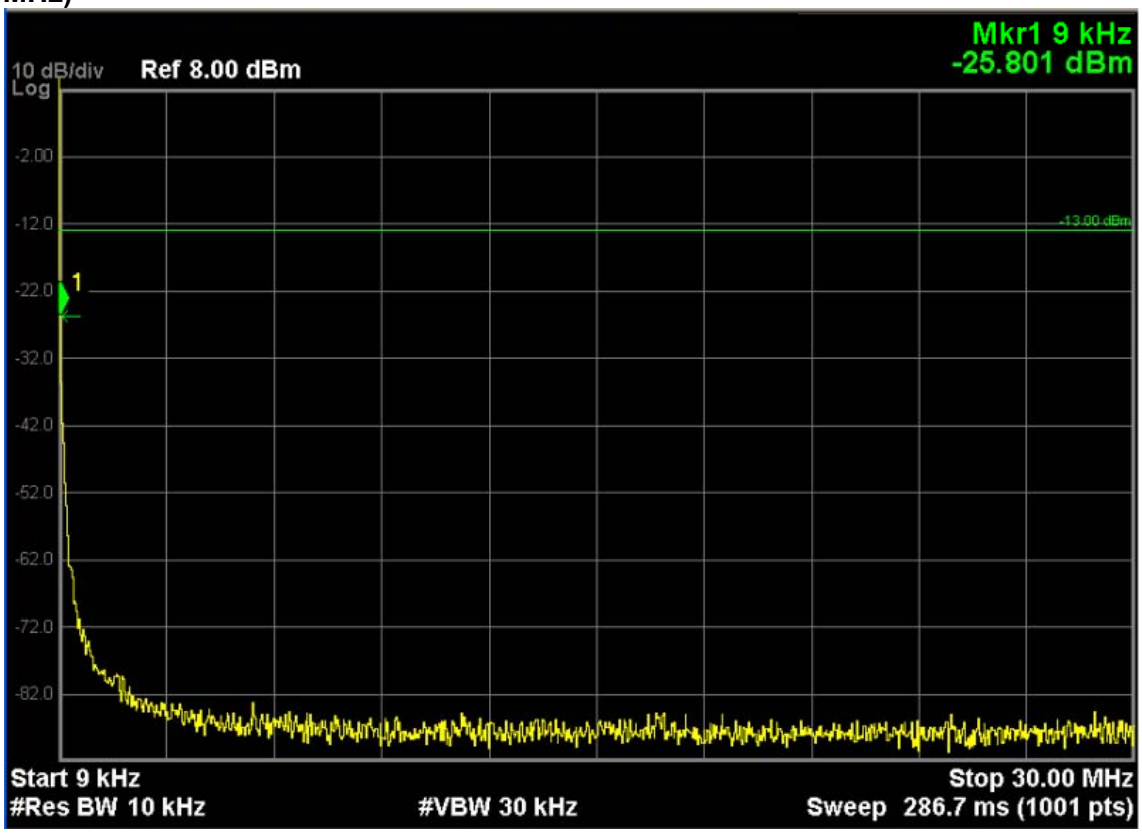


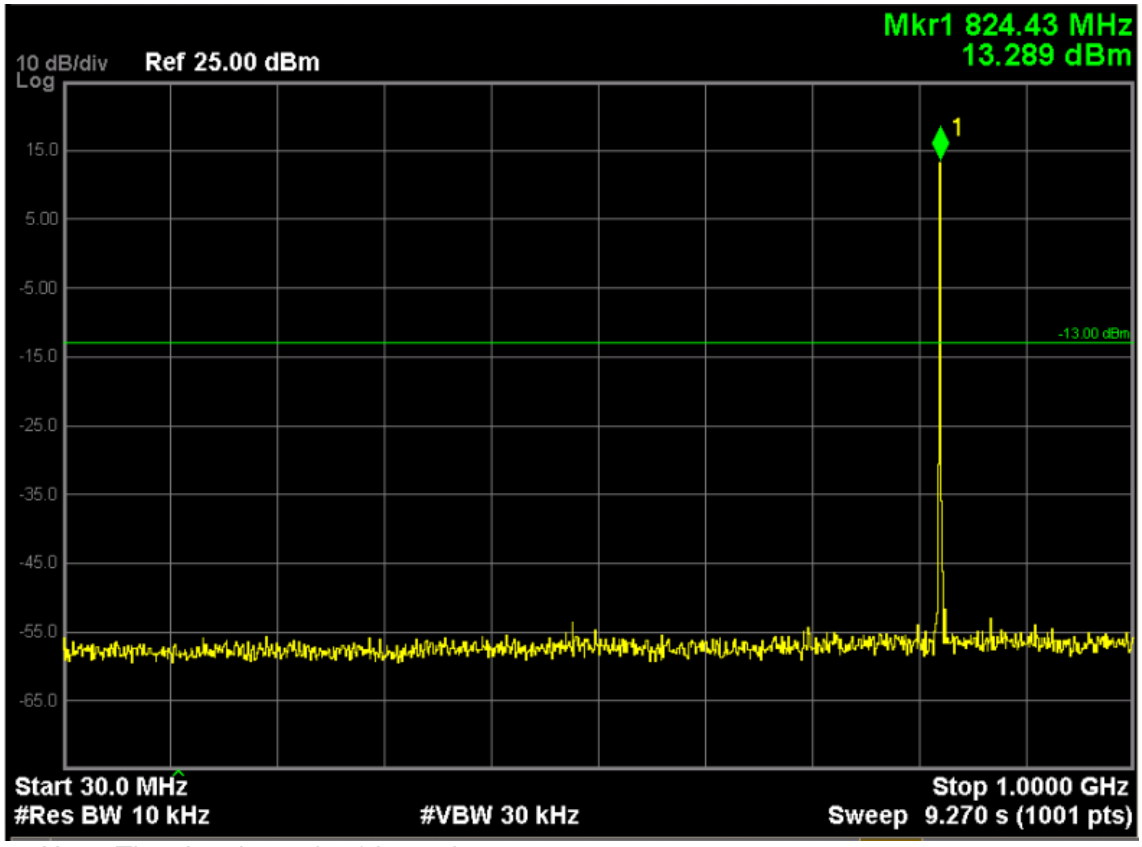


Note: The signal at point 1 is carrier

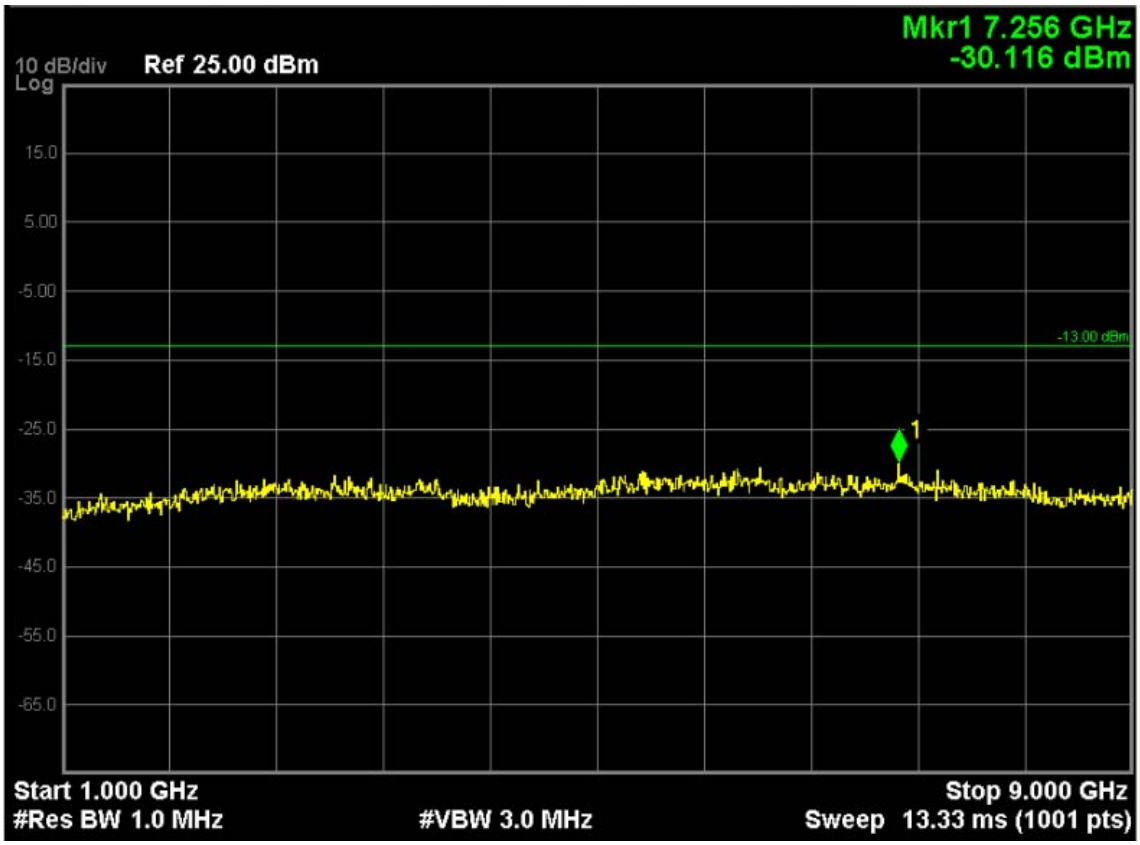


LTE Band 5 (QPSK, Band Width 3MHz,RB Size 1,RB Offset 0,Channel 20415,Frequeny 825.5MHz)

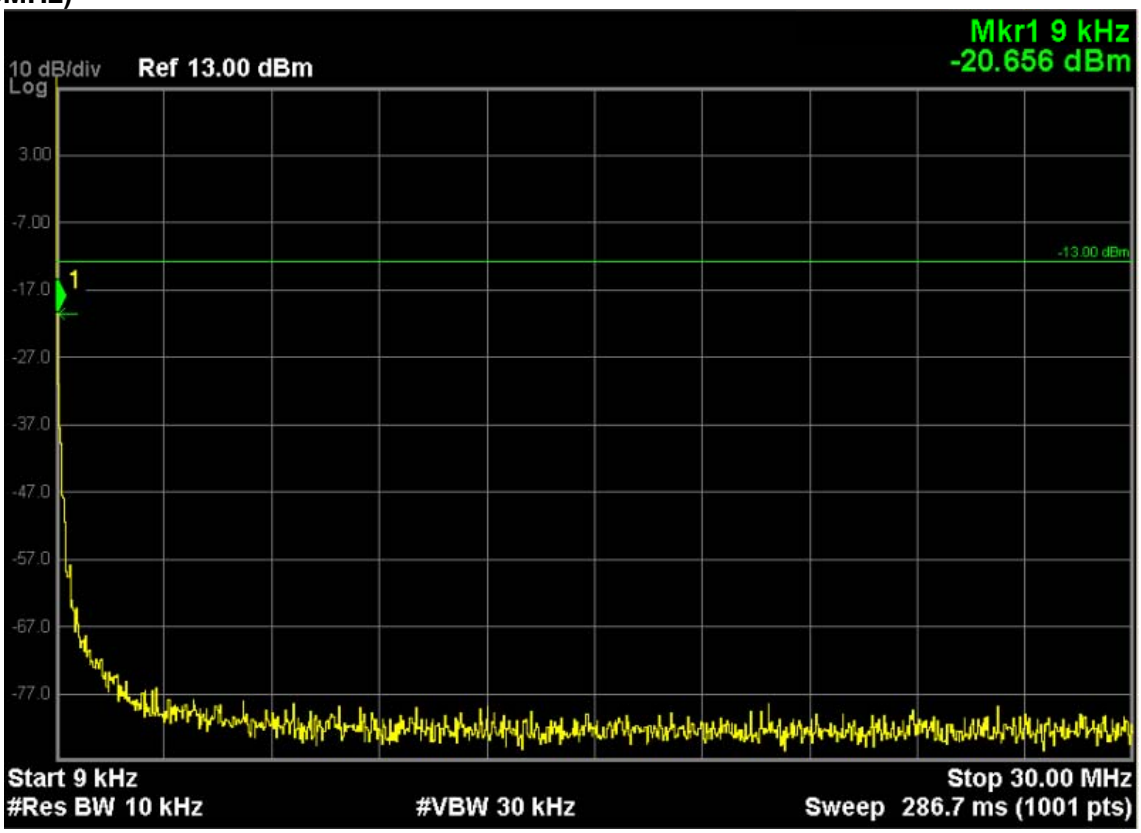


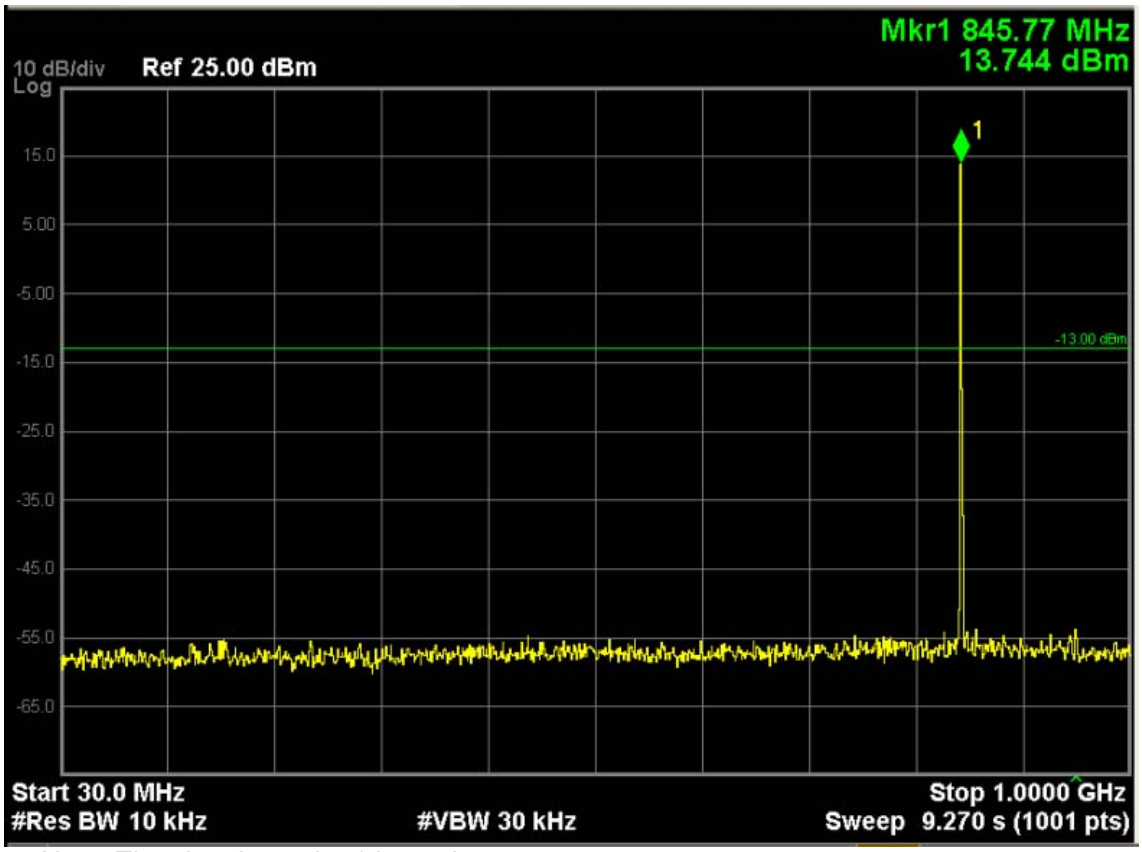


Note: The signal at point 1 is carrier

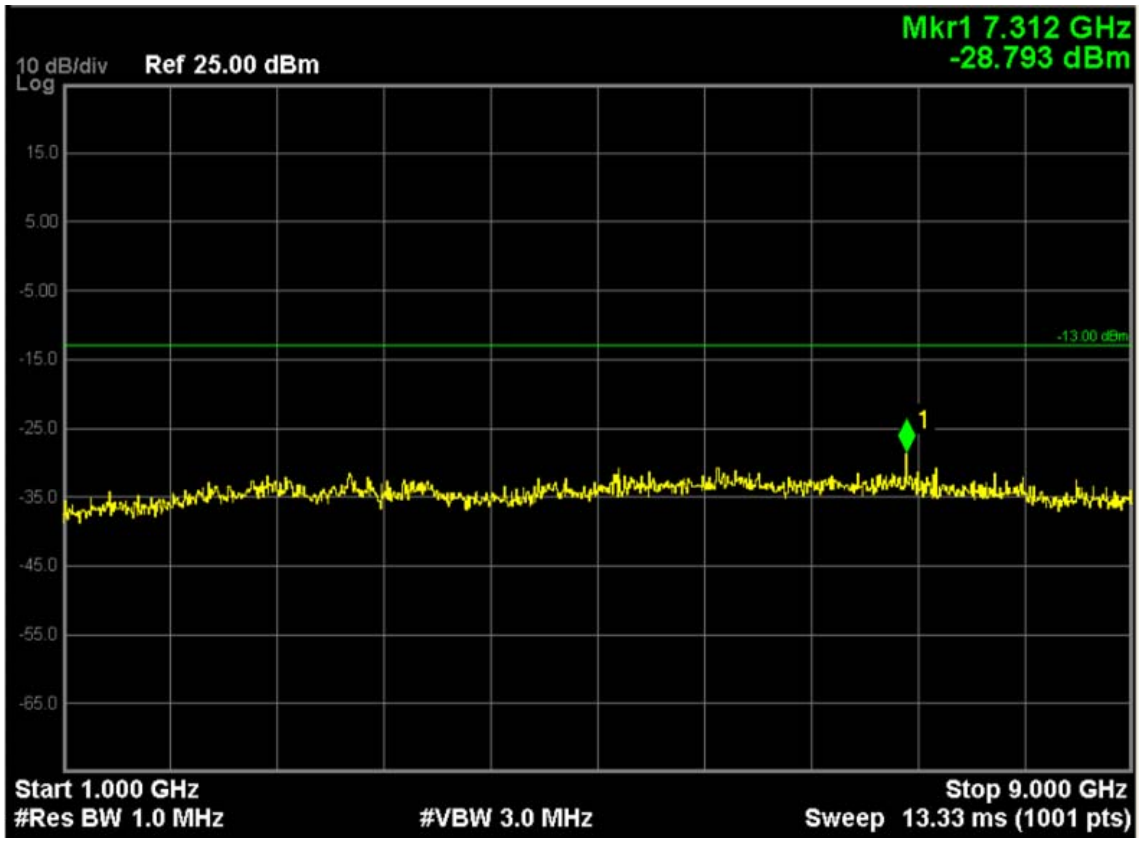


LTE Band 5 (16-QAM, Band Width 3MHz,RB Size 1,RB Offset 0,Channel 20635,Frequeny 847.5MHz)

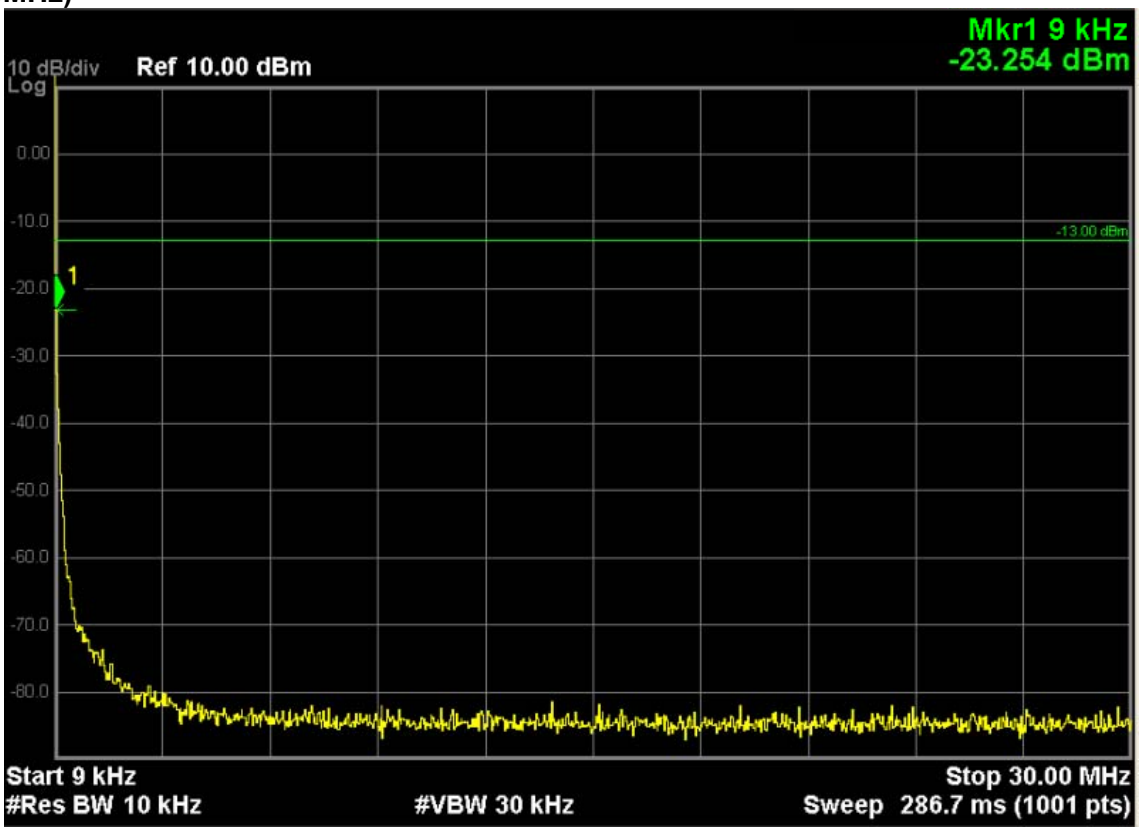


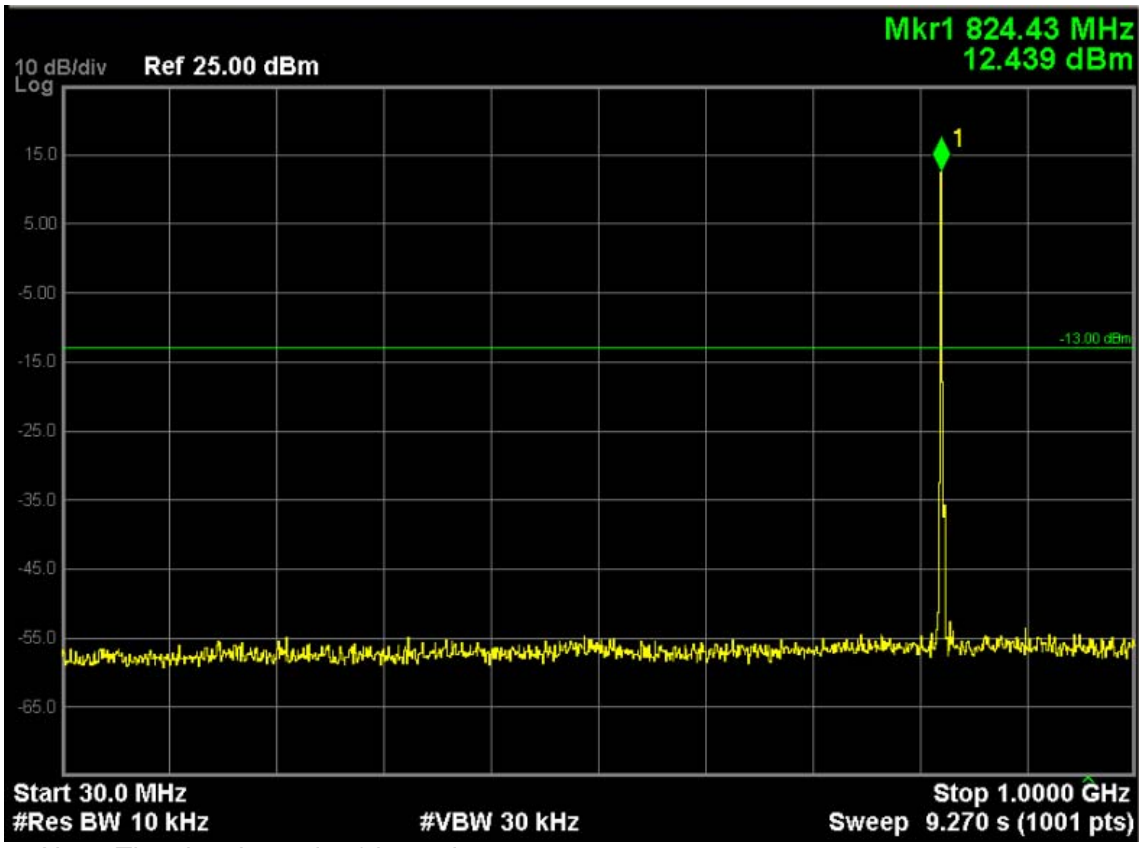


Note: The signal at point 1 is carrier

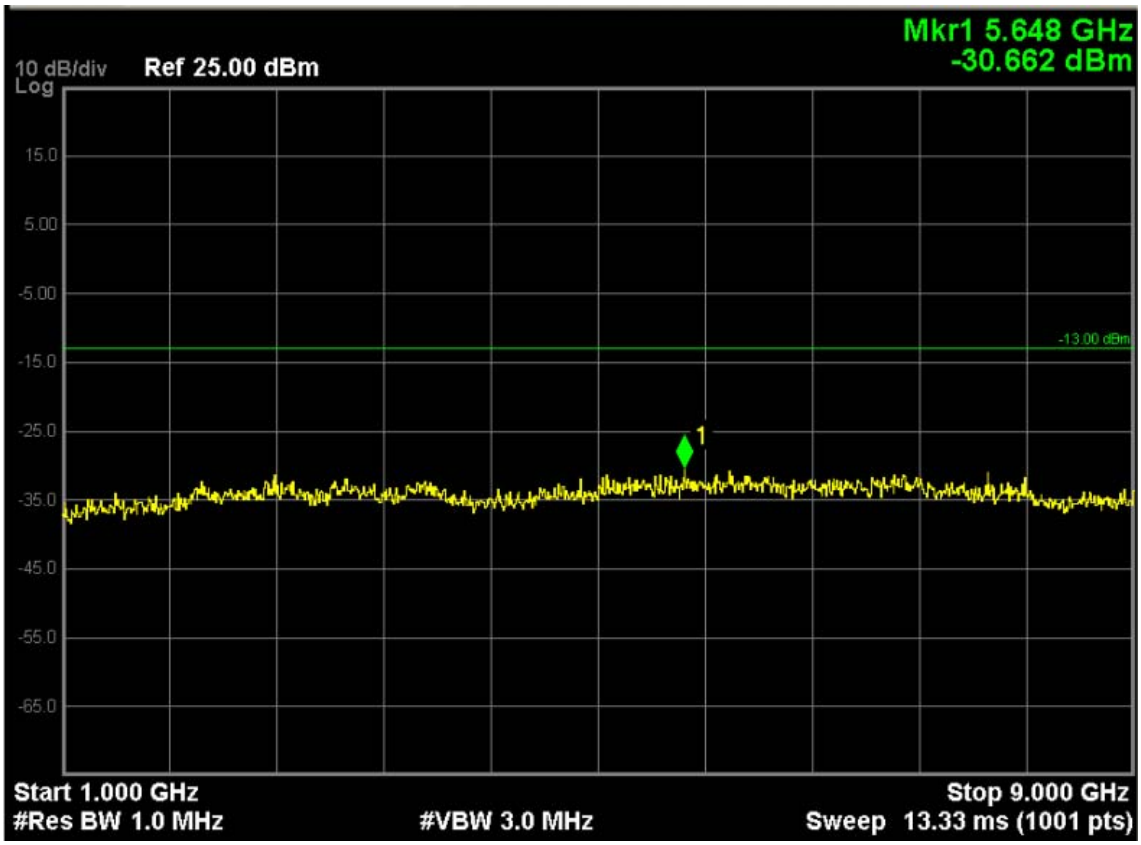


LTE Band 5 (QPSK, Band Width 5MHz,RB Size 1,RB Offset 0,Channel 20425,Frequeny 826.5MHz)

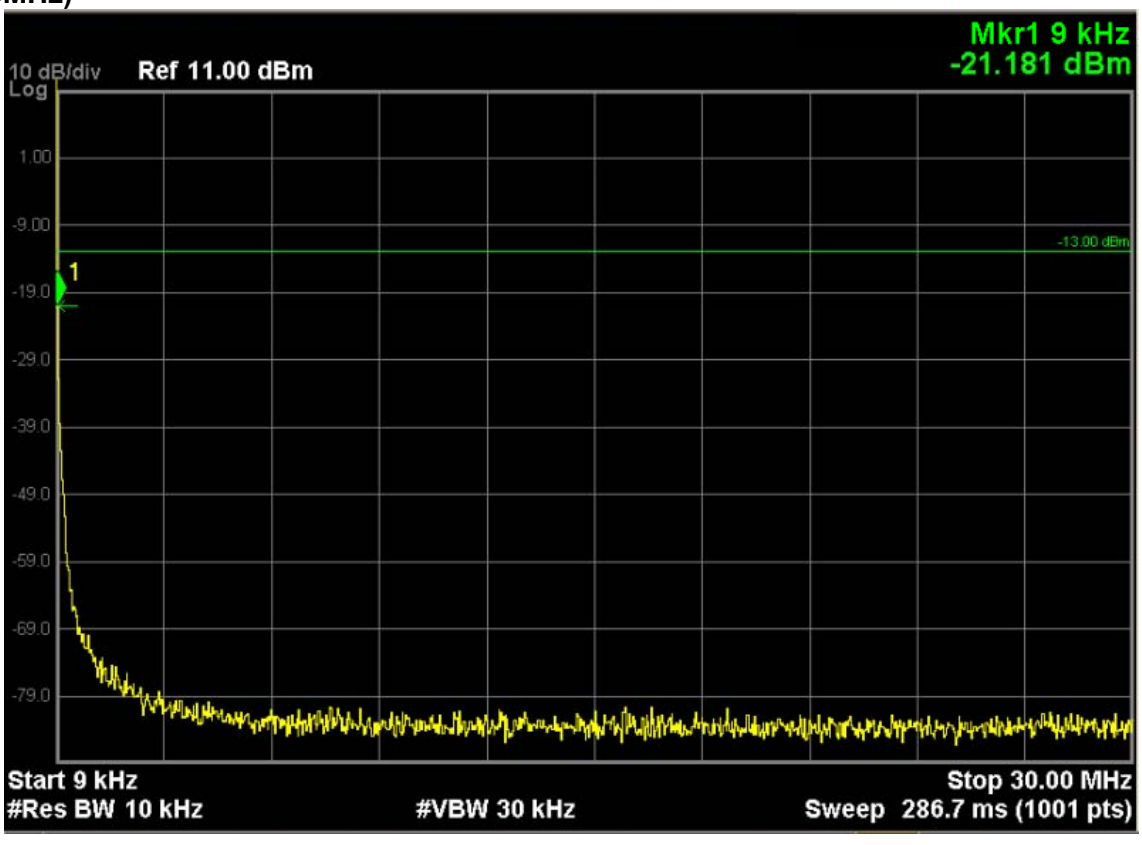


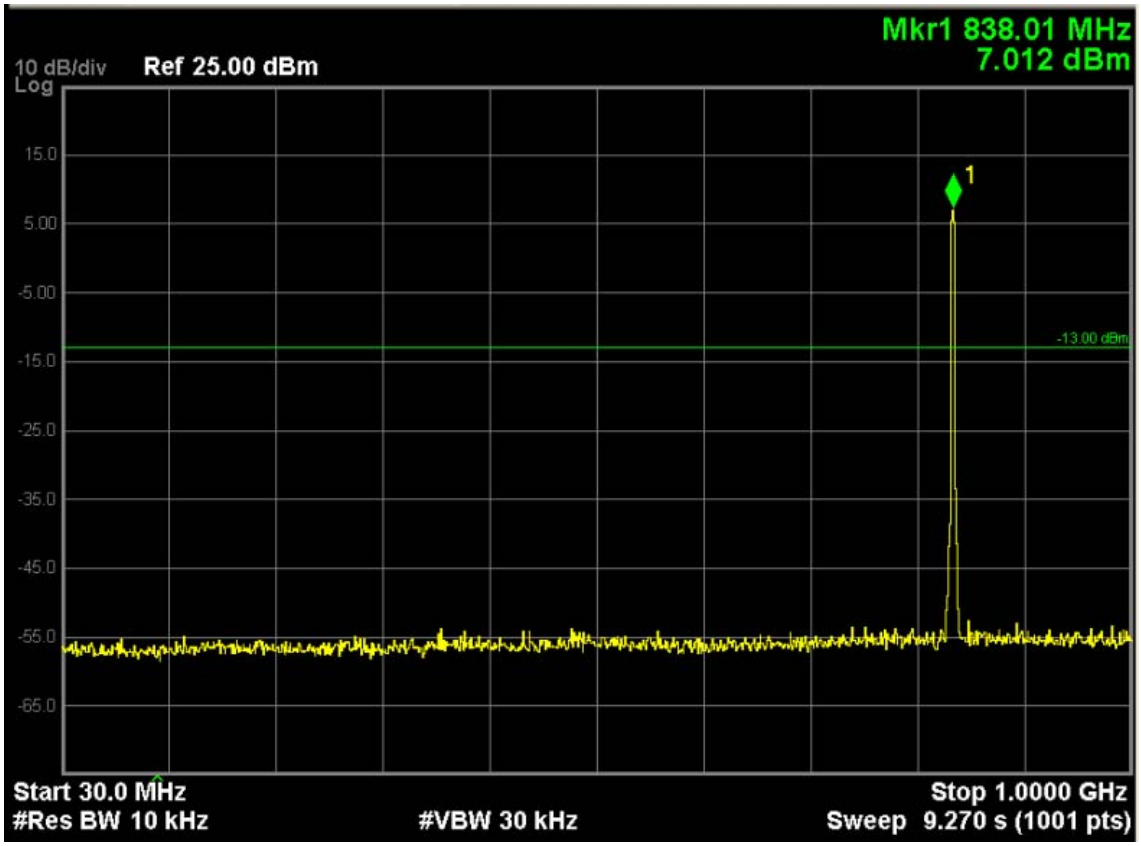


Note: The signal at point 1 is carrier

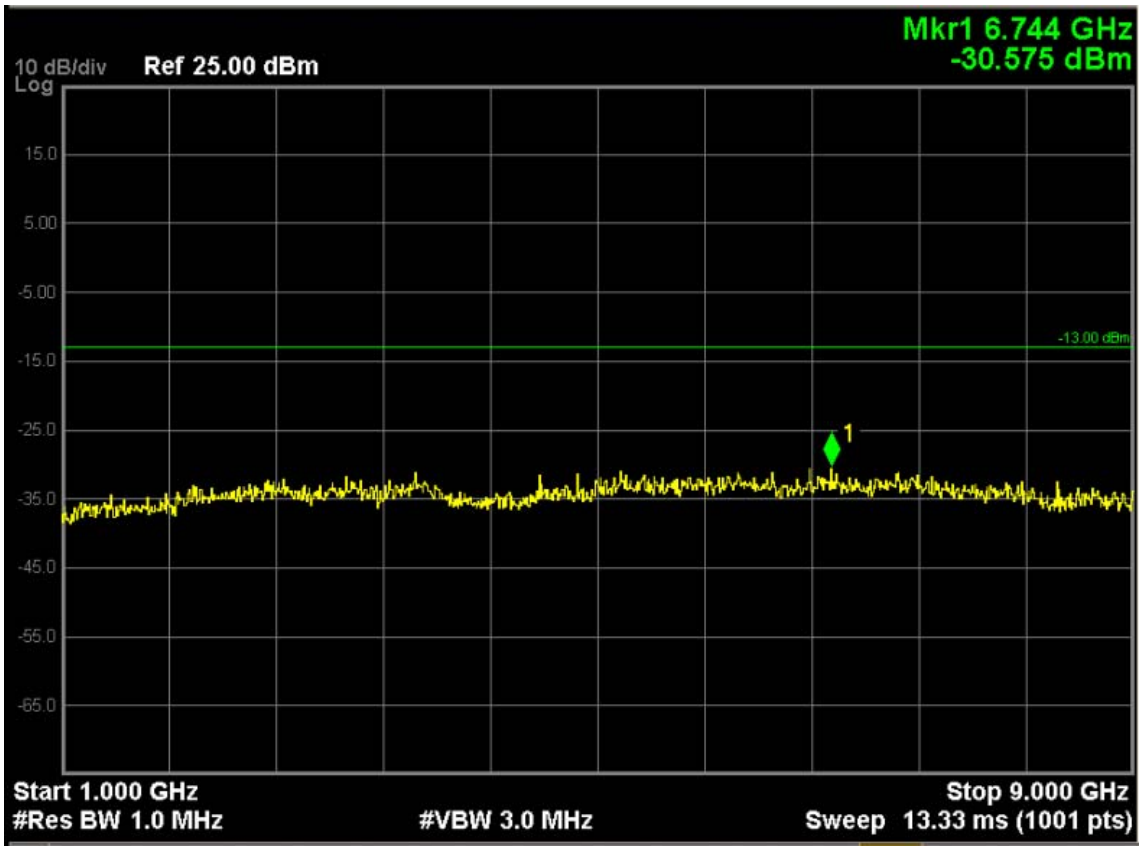


LTE Band 5 (16-QAM, Band Width 5MHz,RB Size 8,RB Offset 17,Channel 20525,Frequeny 836.5MHz)

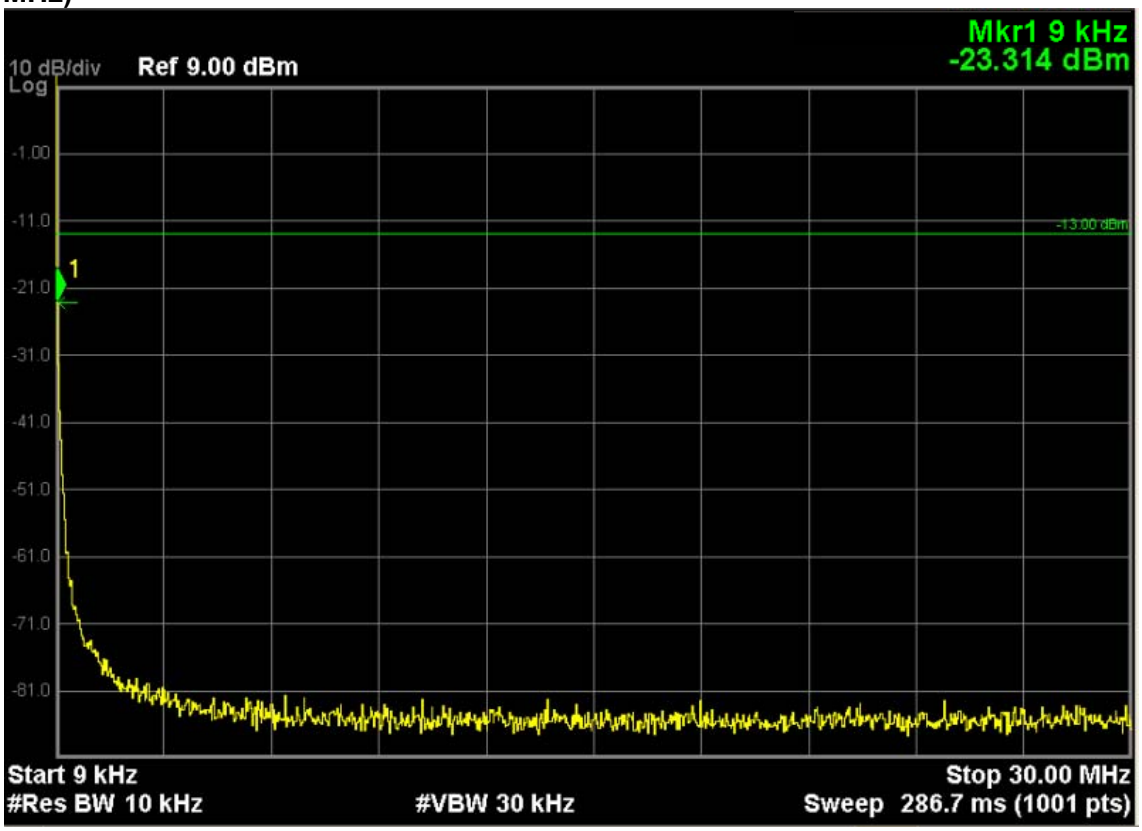


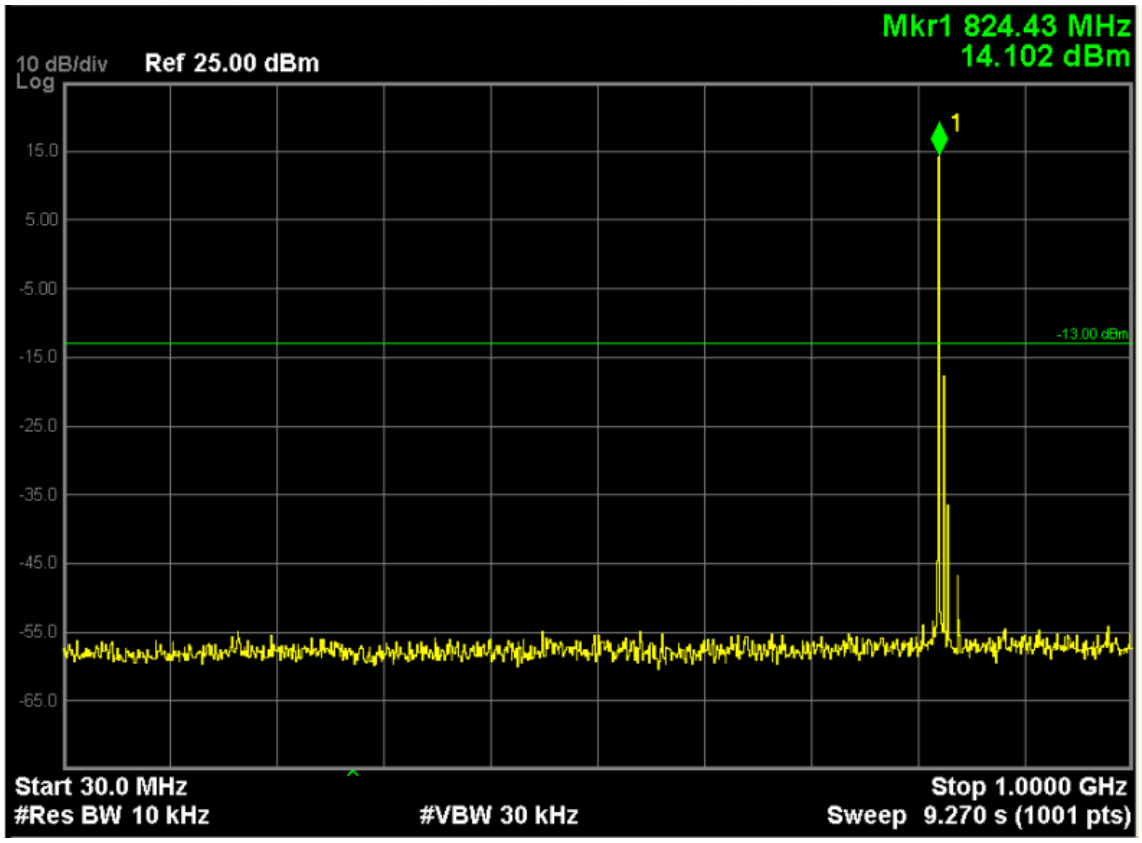


Note: The signal at point 1 is carrier

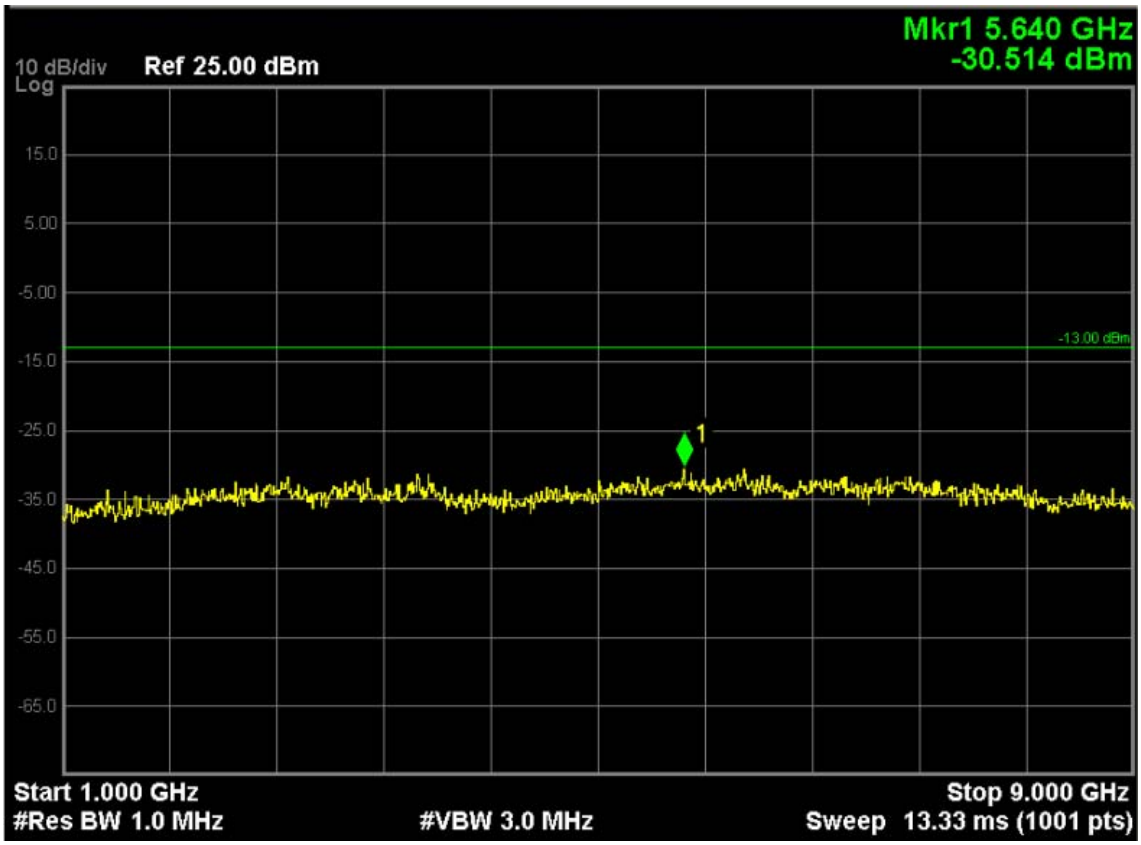


LTE Band 5 (QPSK, Band Width 10MHz,RB Size 1,RB Offset 0,Channel 20450,Frequeny 829.0MHz)

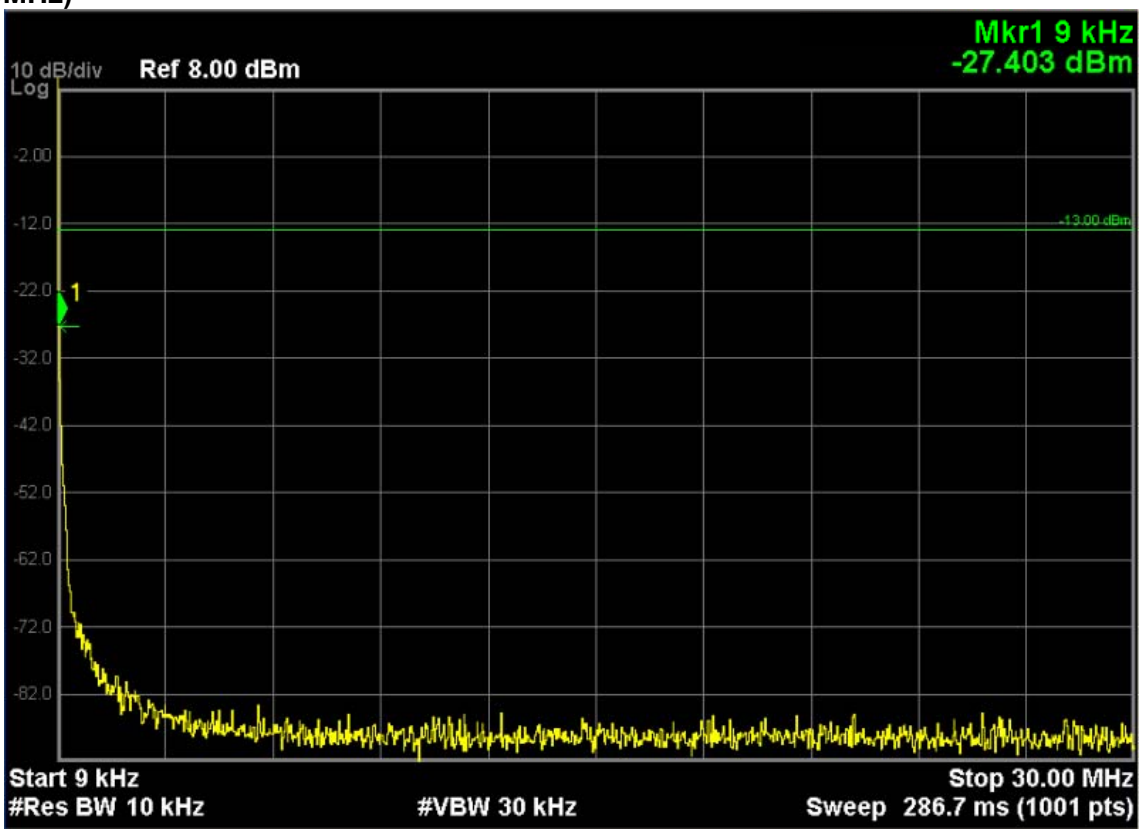


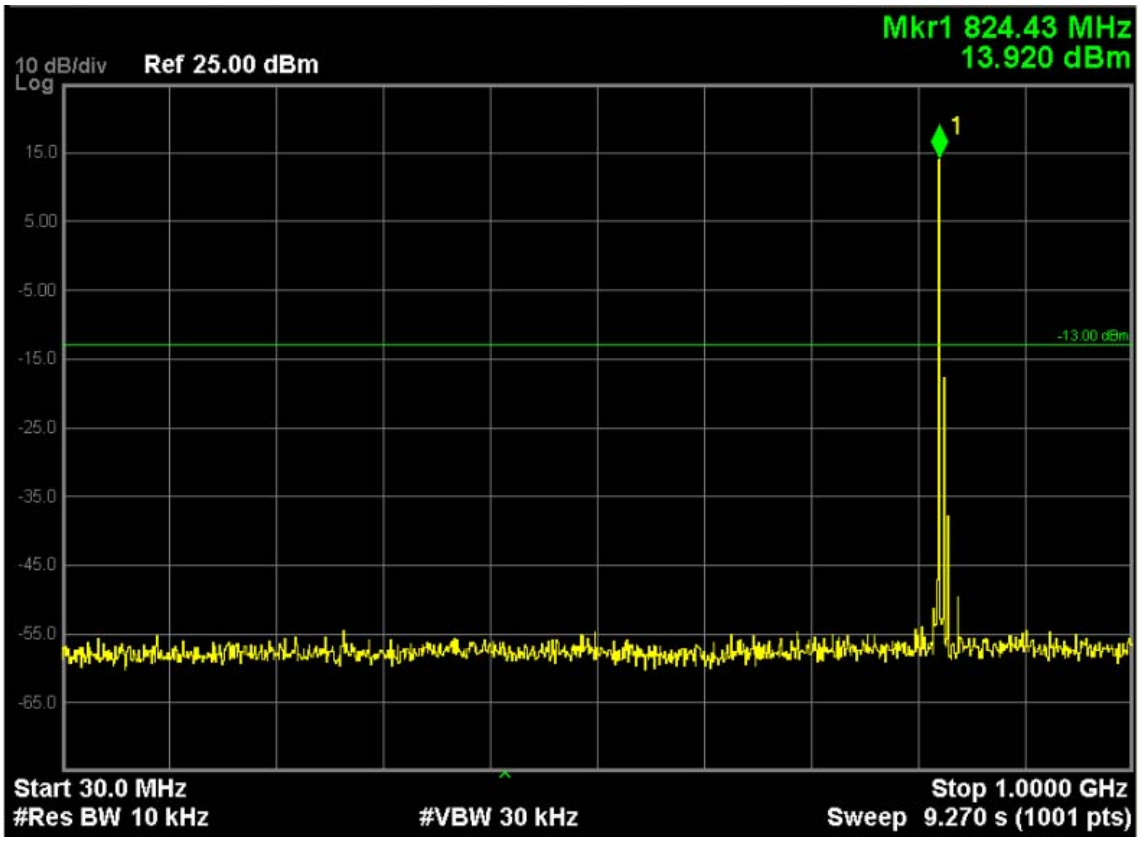


Note: The signal at point 1 is carrier

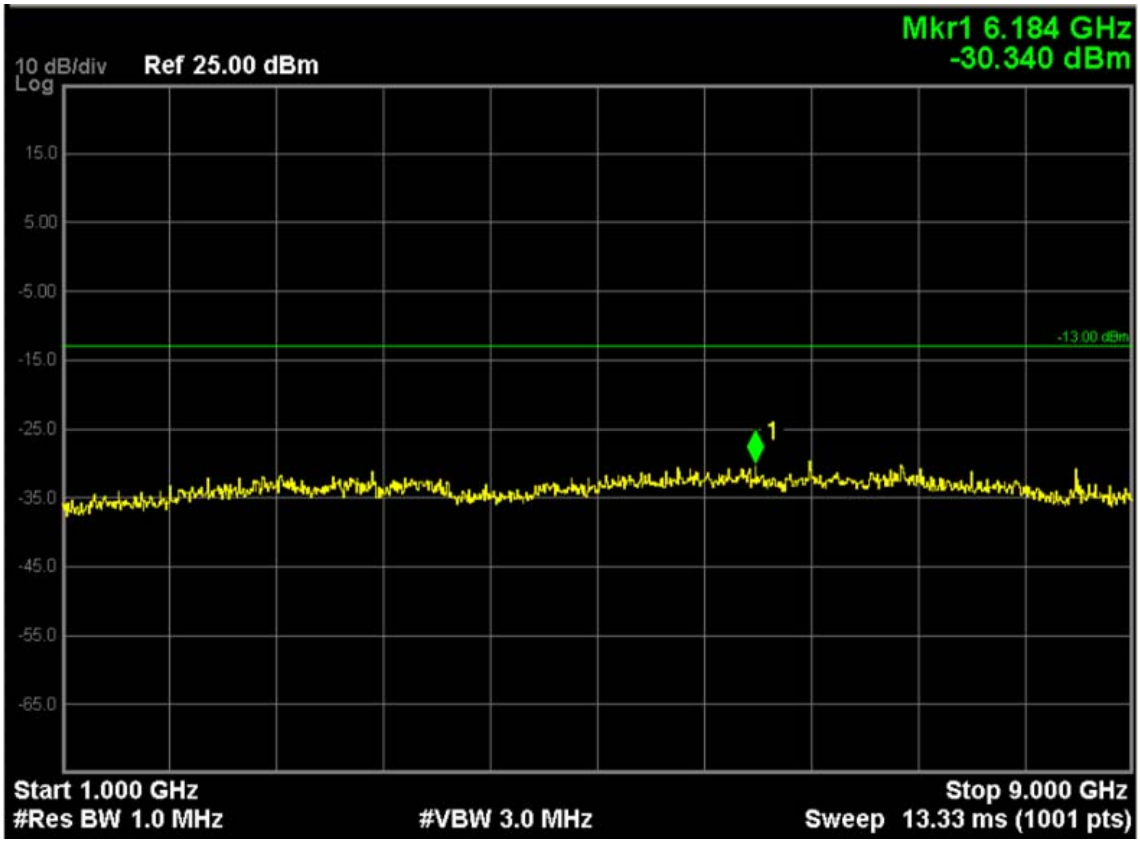


LTE Band 5 (16-QAM, Band Width 10MHz,RB Size 1,RB Offset 0,Channel 20450,Frequeny 829.0MHz)

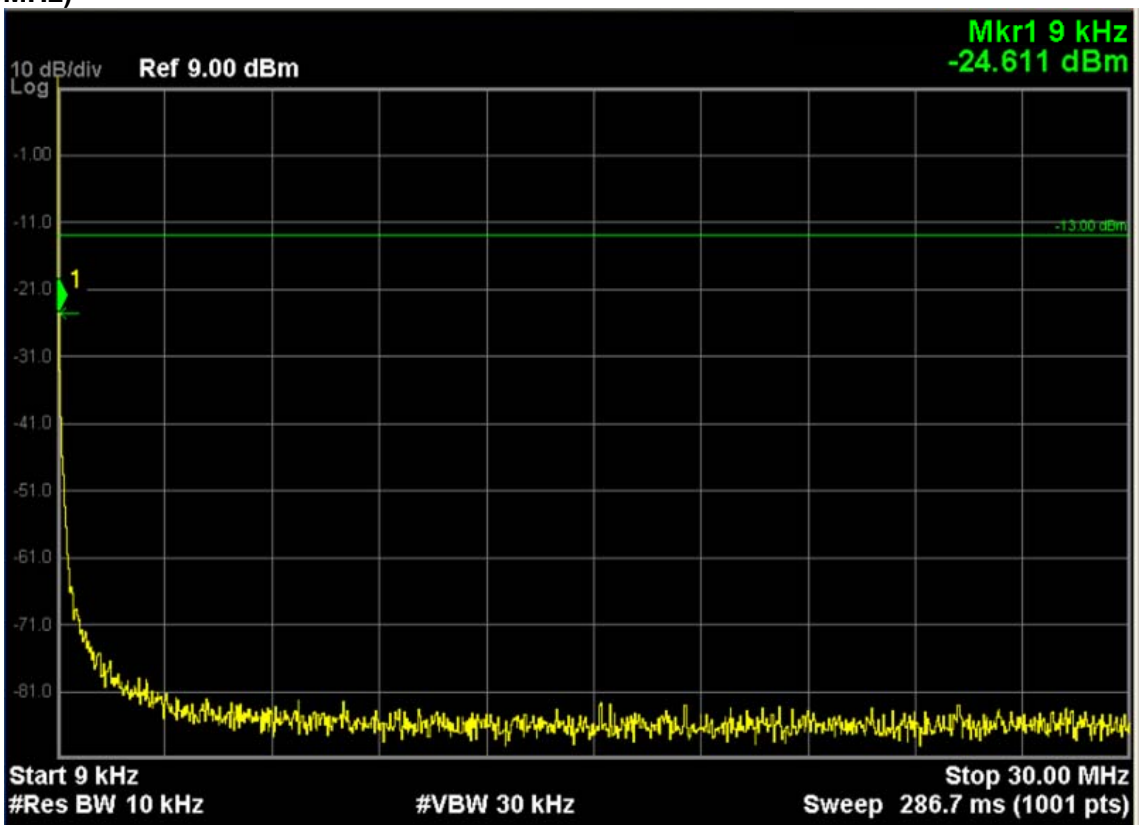


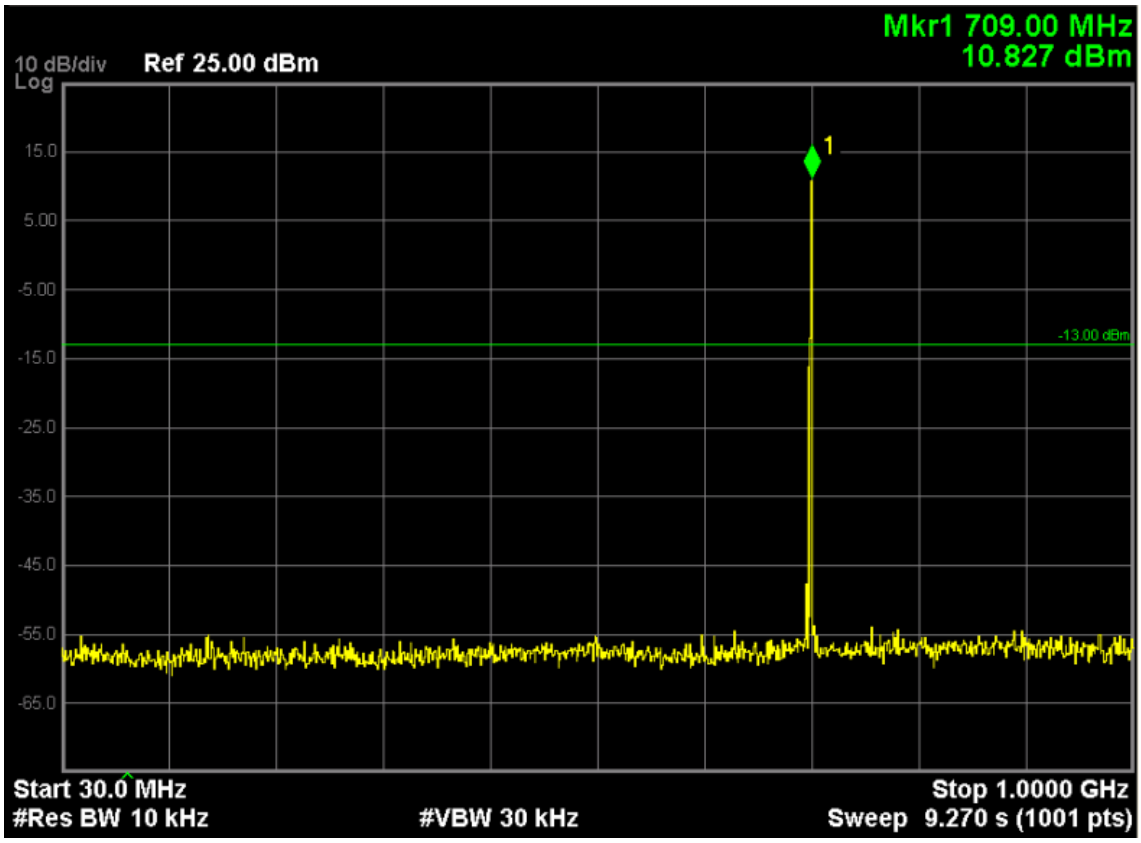


Note: The signal at point 1 is carrier

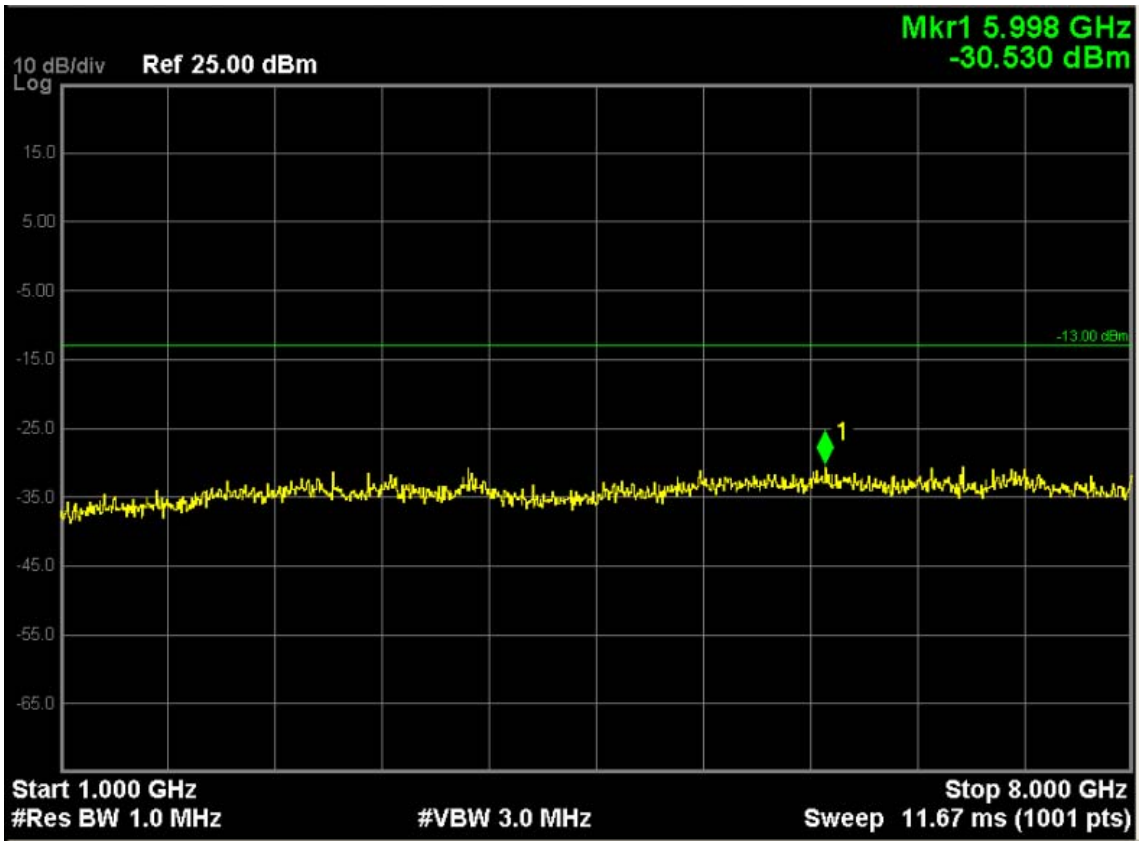


LTE Band 17 (QPSK, Band Width 5MHz,RB Size 1,RB Offset 24,Channel 23755,Frequeny 706.5MHz)

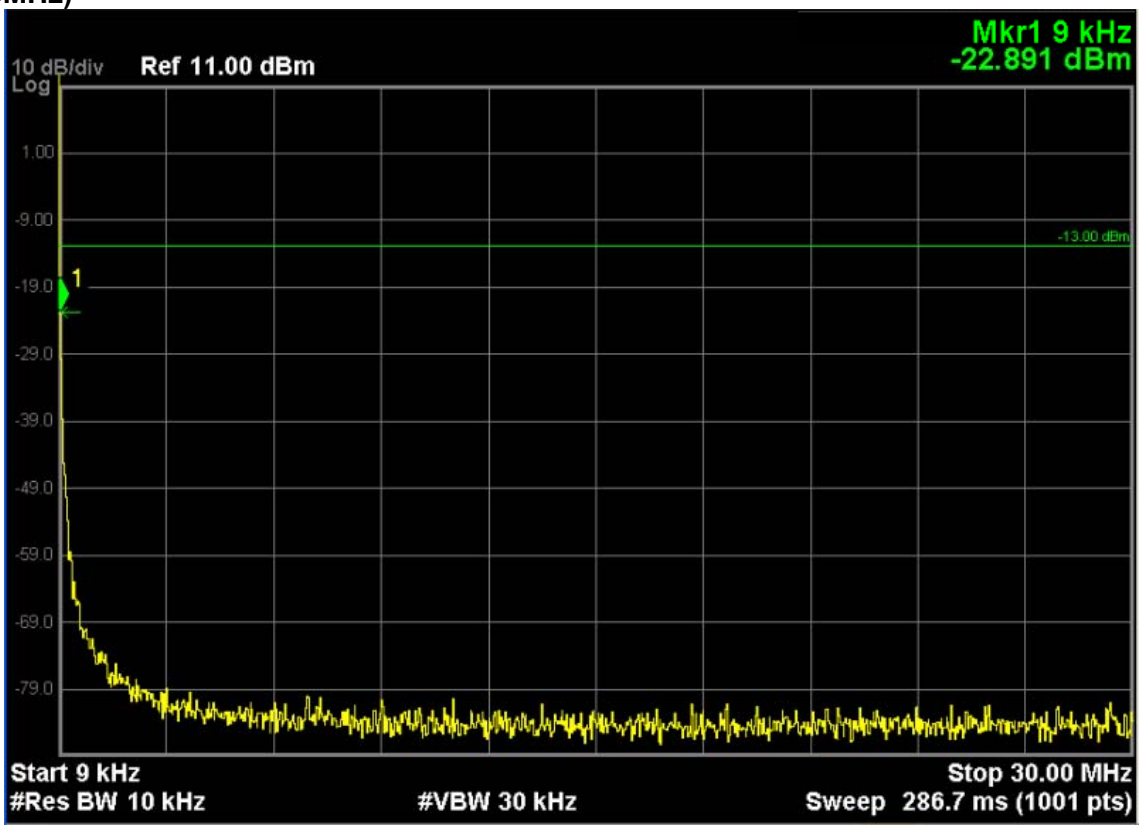


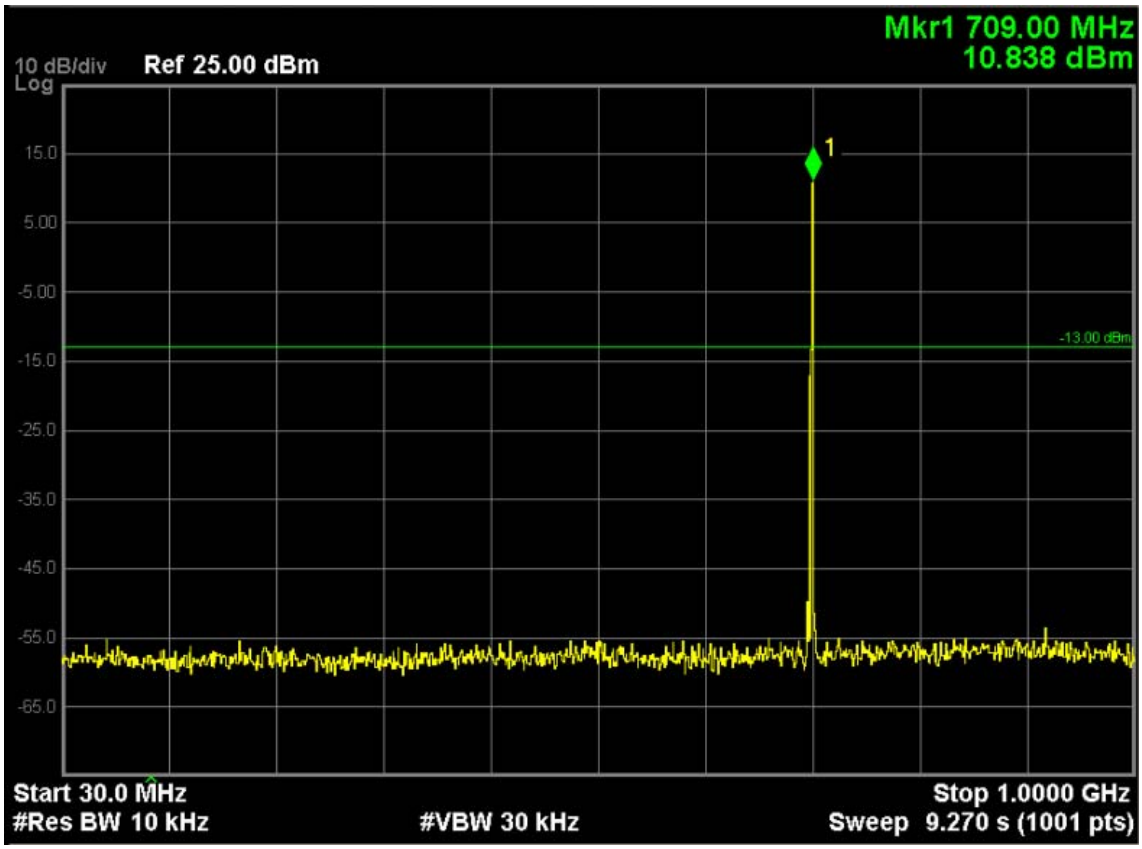


Note: The signal at point 1 is carrier

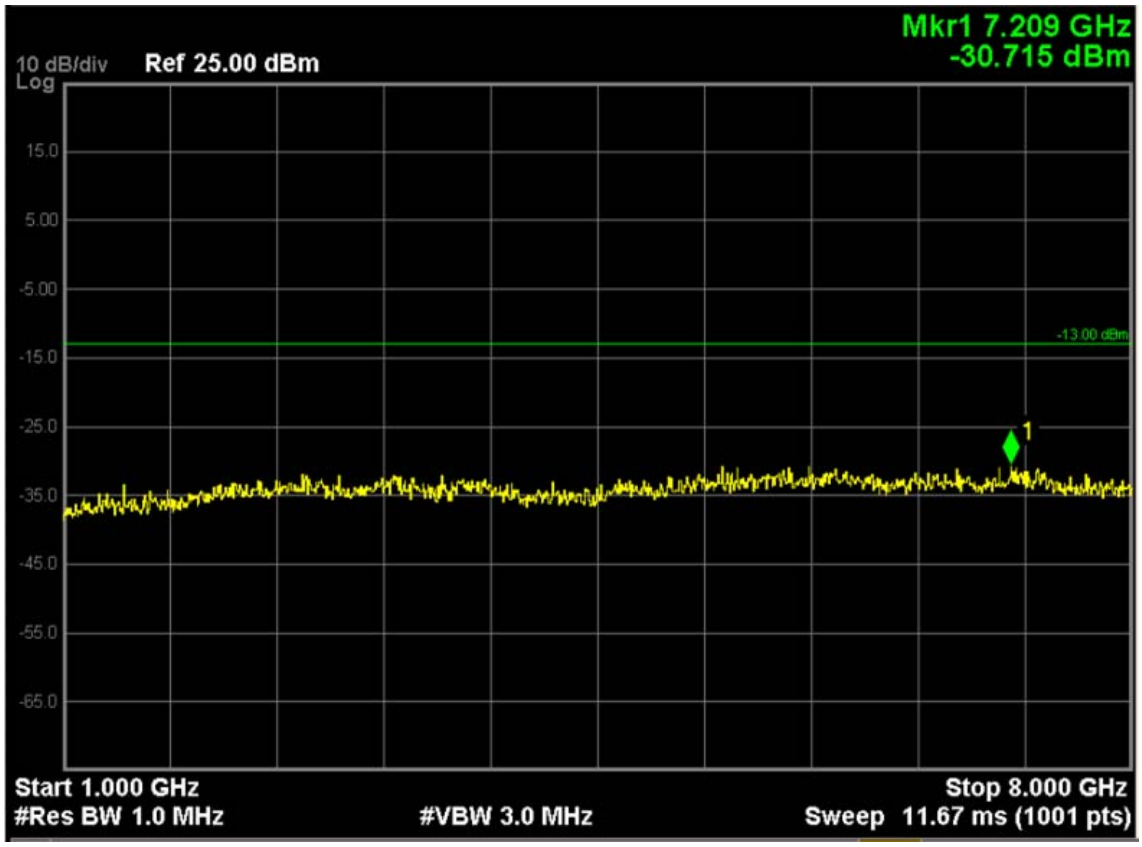


LTE Band 17 (16-QAM, Band Width 5MHz,RB Size 1,RB Offset 24,Channel 23755,Frequeny 706.5MHz)

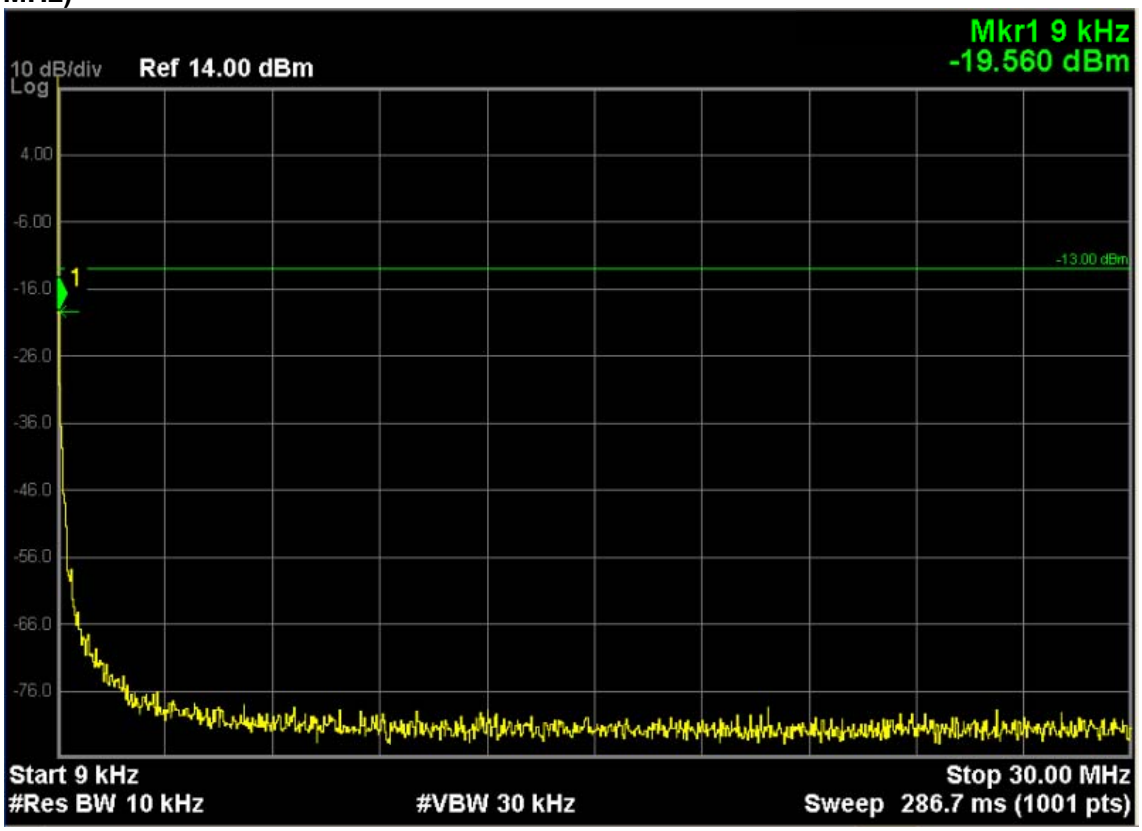


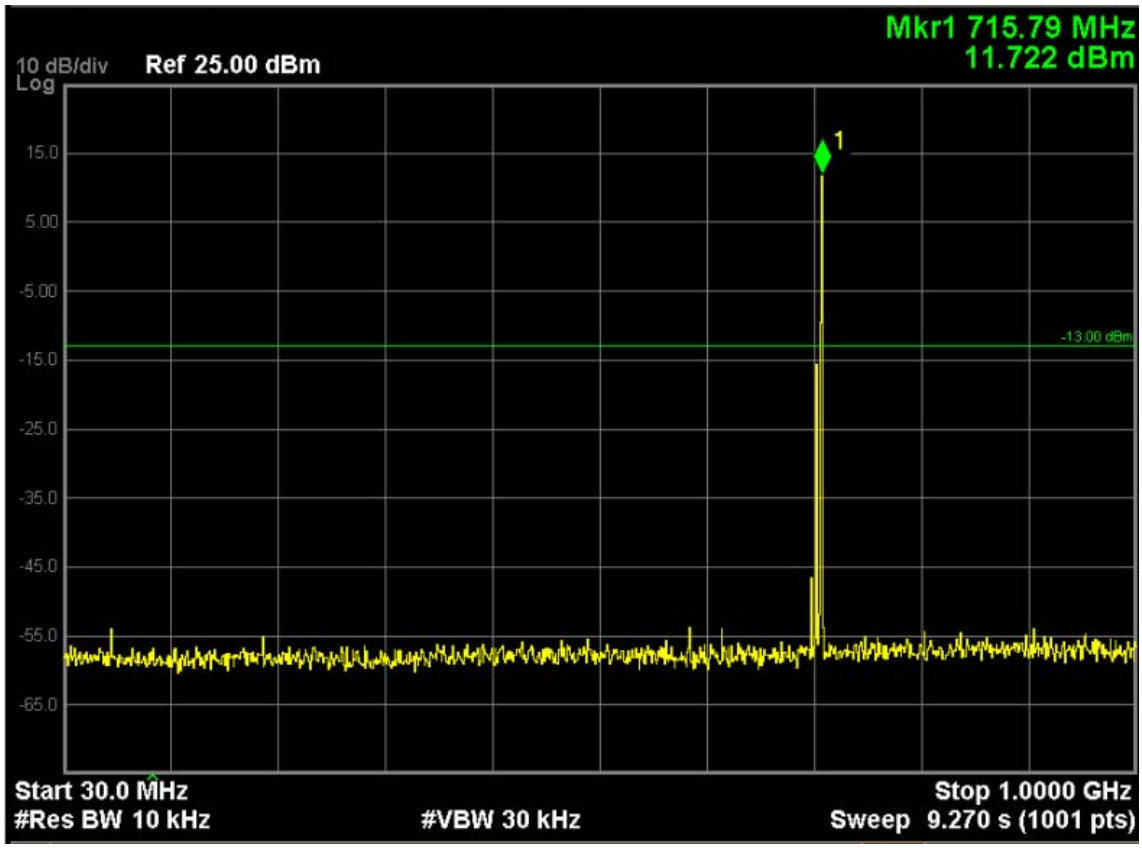


Note: The signal at point 1 is carrier

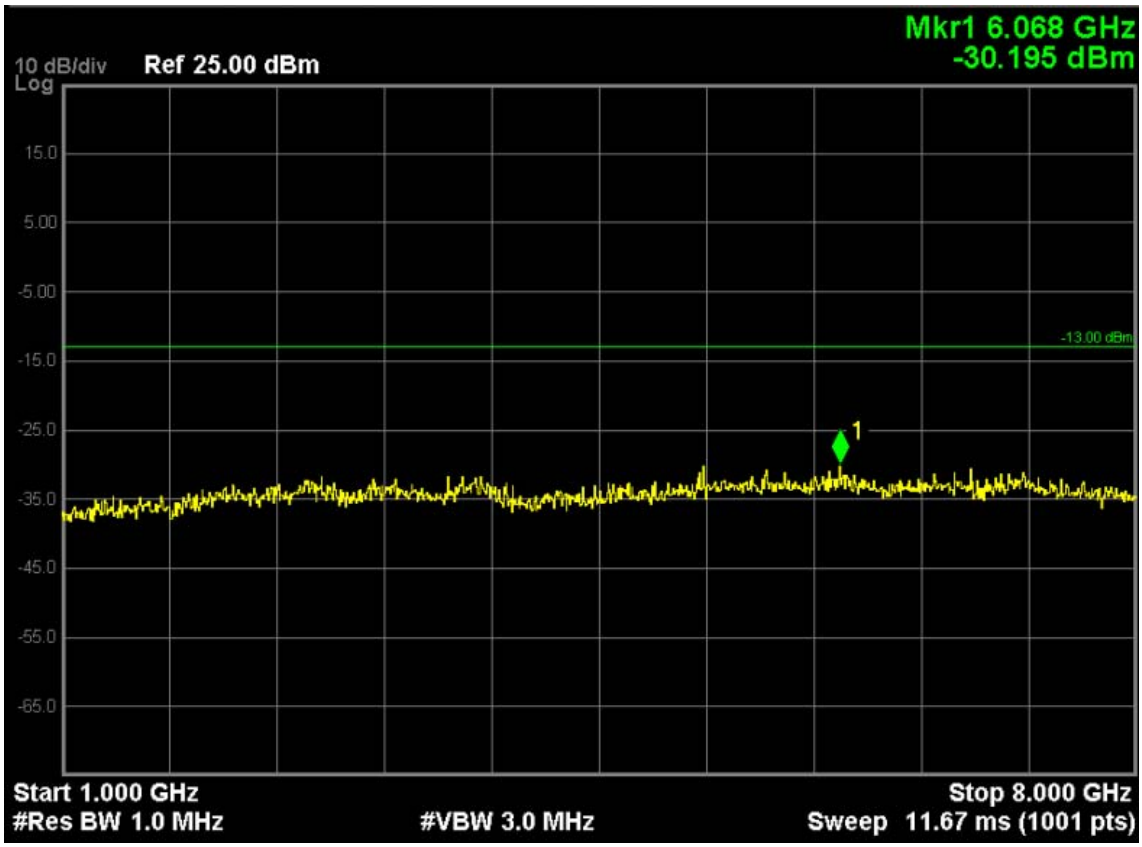


LTE Band 17 (QPSK, Band Width 10MHz,RB Size 1,RB Offset 49,Channel 23800,Frequeny 711.0MHz)

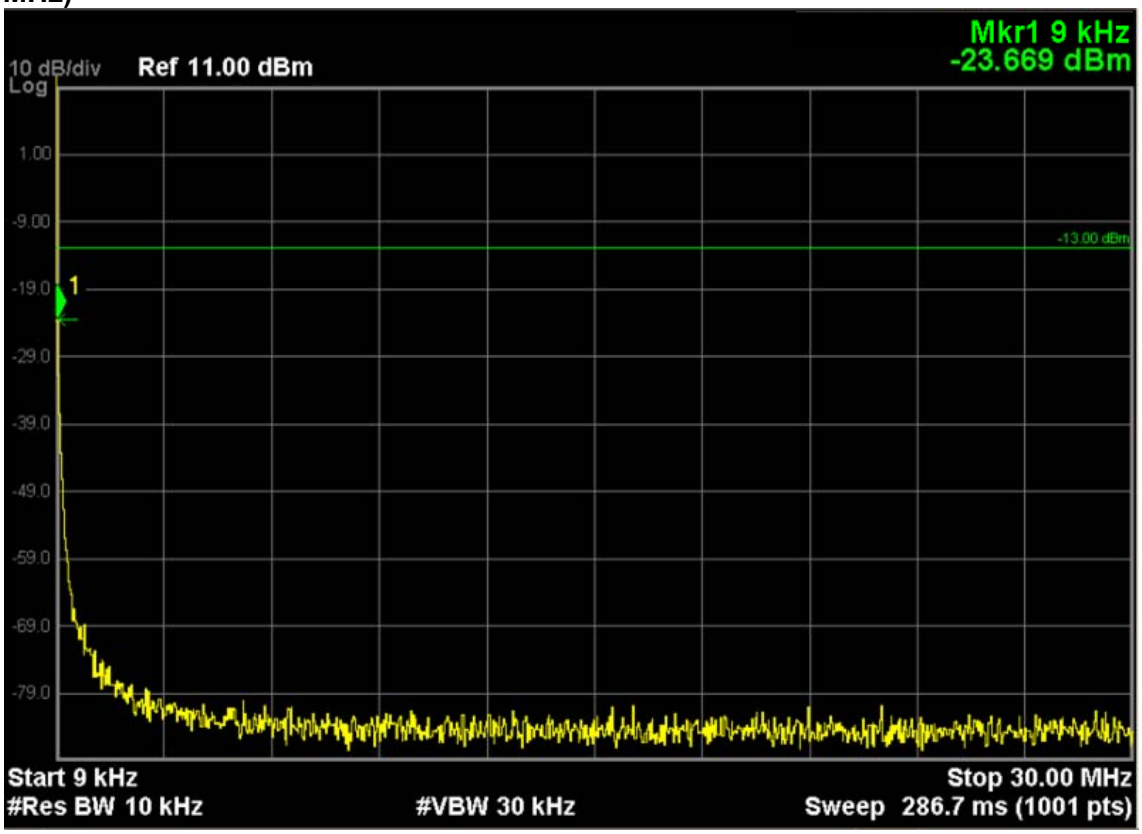


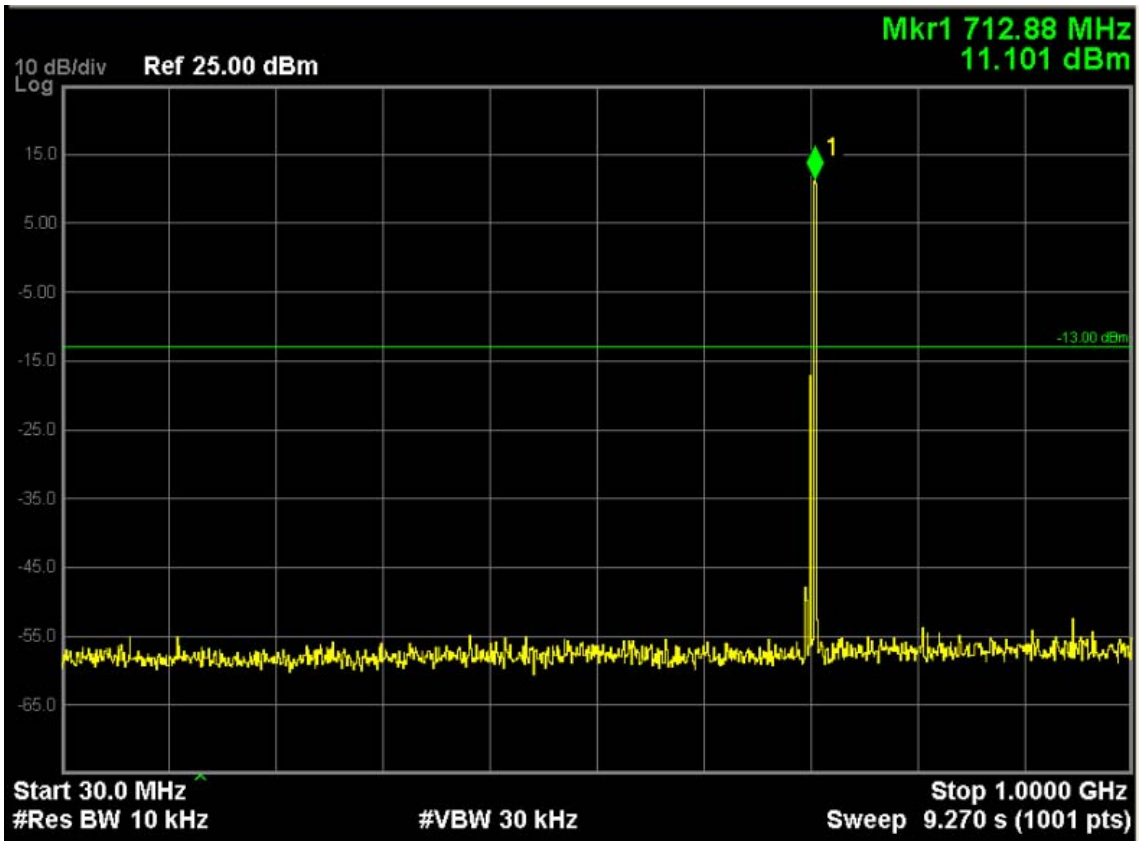


Note: The signal at point 1 is carrier

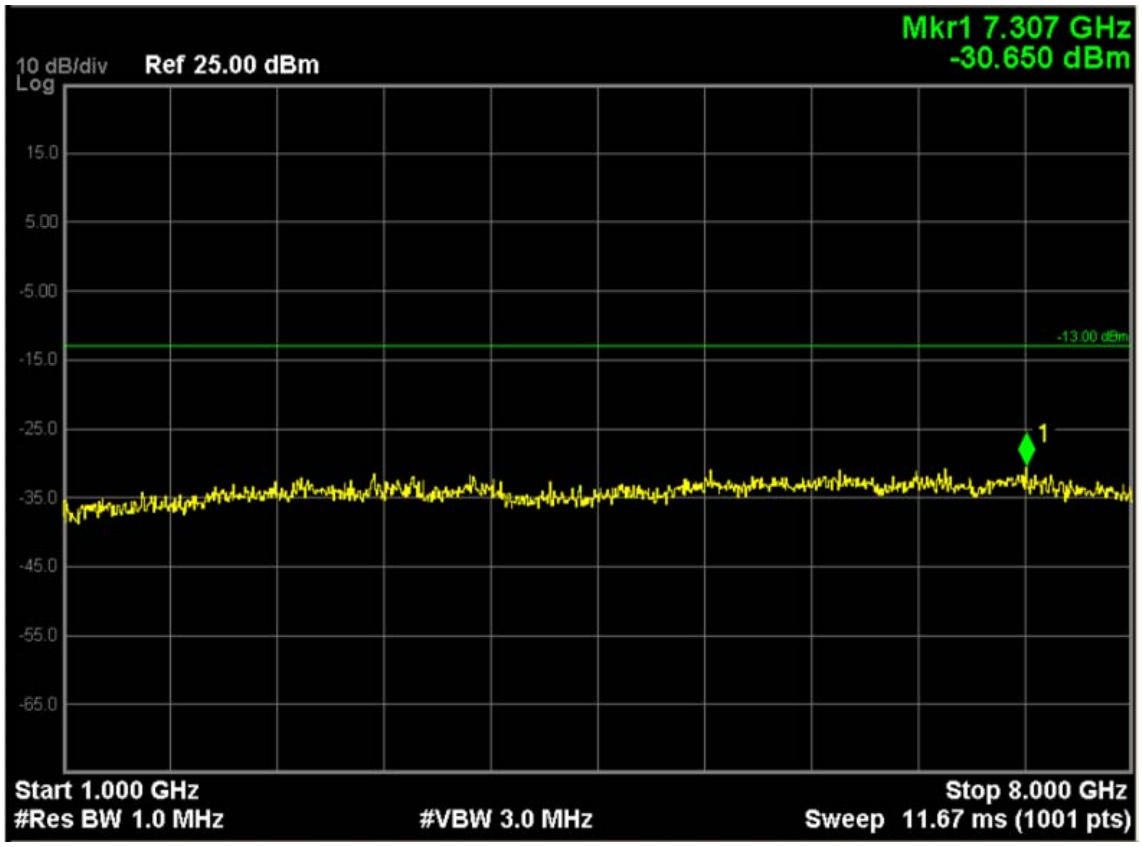


LTE Band 17 (16-QAM, Band Width 10MHz,RB Size 1,RB Offset 49,Channel 23780,Frequeny 709.0MHz)





Note: The signal at point 1 is carrier



Radiated Spurious Measurement:

LTE Band 2 (16-QAM, Band Width 1.4MHz,RB Size 1,RB Offset 5,Channel 18607,Frequeny 1850.7MHz)

9KHz to 30MHz

The low frequency, which started from 9KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line, and that was not reported per 2.1057 (c).

30MHz to 1GHz

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)
Channel 18607 (1850.7MHz)							
667.8	H	-50.21	2.97	-2.16	-55.34	-13.00	-42.34
667.8	V	-48.33	2.97	-2.16	-53.46	-13.00	-40.46

Above 1GHz

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)
Channel 18607 (1850.7MHz)							
3702.0	H	-55.62	8.12	12.6	-51.14	-13.00	-38.14
3702.0	V	-58.49	8.12	12.6	-54.01	-13.00	-41.01
5553.2	H	-50.36	9.89	13.1	-47.15	-13.00	-34.15
5553.2	V	-52.48	9.89	13.1	-49.27	-13.00	-36.27

LTE Band 2 (16-QAM, Band Width 3MHz,RB Size 1,RB Offset 0,Channel 18900,Frequeny 1880.0MHz)

9KHz to 30MHz

The low frequency, which started from 9KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line, and that was not reported per 2.1057 (c).

30MHz to 1GHz

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Channel 18900 (1880MHz)							
732.7	H	-49.58	3.42	-2.56	-55.56	-13.00	-42.56
732.7	V	-51.64	3.42	-2.56	-57.62	-13.00	-44.62

Above 1GHz

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Channel 18900 (1880MHz)							
3760	H	-48.03	8.85	12.6	-44.28	-13.00	-31.28
3760	V	-53.23	8.85	12.6	-49.48	-13.00	-36.48
5640	H	-51.29	10.79	13.1	-48.98	-13.00	-35.98
5640	V	-57.39	10.79	13.1	-55.08	-13.00	-42.08

LTE Band 2 (QPSK, Band Width 5MHz,RB Size 1,RB Offset 24,Channel 18625,Frequeny 1852.5MHz)

9KHz to 30MHz

The low frequency, which started from 9KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line, and that was not reported per 2.1057 (c).

30MHz to 1GHz

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Channel 18625 (1852.5MHz)							
702.4	H	-48.68	3.52	-2.87	-55.07	-13.00	-42.07
702.4	V	-50.36	3.52	-2.87	-56.75	-13.00	-43.75

Above 1GHz

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Channel 18625 (1852.5MHz)							
3705	H	-47.36	8.12	12.6	-42.88	-13.00	-29.88
3705	V	-50.47	8.12	12.6	-45.99	-13.00	-32.99
5557.5	H	-50.26	9.89	13.1	-47.05	-13.00	-34.05
5557.5	V	-54.32	9.89	13.1	-51.11	-13.00	-38.11

LTE Band 2 (QPSK, Band Width 10MHz,RB Size 1,RB Offset 49,Channel 18650,Frequeny 1855.0MHz)

9KHz to 30MHz

The low frequency, which started from 9KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line, and that was not reported per 2.1057 (c).

30MHz to 1GHz

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Channel 18650 (1855MHz)							
716.8	H	-47.63	3.52	-2.87	-54.02	-13.00	-41.02
716.8	V	-52.79	3.52	-2.87	-59.18	-13.00	-46.18

Above 1GHz

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Channel 18650 (1855MHz)							
3710	H	-46.12	8.12	12.6	-41.64	-13.00	-28.64
3710	V	-50.74	8.12	12.6	-46.26	-13.00	-33.26
5565	H	-52.08	9.89	13.1	-48.87	-13.00	-35.87
5565	V	-56.42	9.89	13.1	-53.21	-13.00	-40.21

LTE Band 2 (QPSK, Band Width 15MHz,RB Size 1,RB Offset 74,Channel 18675,Frequeny 1857.5MHz)

9KHz to 30MHz

The low frequency, which started from 9KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line, and that was not reported per 2.1057 (c).

30MHz to 1GHz

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Channel 18675 (1857.5MHz)							
694.5	H	-48.34	3.52	-2.87	-54.73	-13.00	-41.73
694.5	V	-52.64	3.52	-2.87	-59.03	-13.00	-46.03

Above 1GHz

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Channel 18675 (1857.5MHz)							
3715	H	-44.03	8.12	12.6	-39.55	-13.00	-26.55
3715	V	-49.23	8.12	12.6	-44.75	-13.00	-31.75
5572.5	H	-49.26	9.89	13.1	-46.05	-13.00	-33.05
5572.5	V	-53.47	9.89	13.1	-50.26	-13.00	-37.26

LTE Band 2 (QPSK, Band Width 20MHz,RB Size 1,RB Offset 0,Channel 19100,Frequeny 1900.0MHz)

9KHz to 30MHz

The low frequency, which started from 9KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line, and that was not reported per 2.1057 (c).

30MHz to 1GHz

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Channel 19100 (1900.0MHz)							
708.4	H	-48.69	3.52	-2.87	-55.08	-13.00	-42.08
708.4	V	-50.54	3.52	-2.87	-56.93	-13.00	-43.93

Above 1GHz

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Channel 19100 (1900.0MHz)							
3800	H	-48.03	9.12	12.6	-44.55	-13.00	-31.55
3800	V	-53.23	9.12	12.6	-49.75	-13.00	-36.75
5700	H	-51.29	10.98	13.1	-49.17	-13.00	-36.17
5700	V	-57.39	10.98	13.1	-55.27	-13.00	-42.27

LTE Band 4 (QPSK, Band Width 1.4MHz,RB Size 1,RB Offset 0,Channel 19957,Frequeny 1710.7MHz)

9KHz to 30MHz

The low frequency, which started from 9KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line, and that was not reported per 2.1057 (c).

30MHz to 1GHz

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Channel 19957 (1710.7MHz)							
724.8	H	-49.68	3.42	-2.56	-55.66	-13.00	-42.66
724.8	V	-52.35	3.42	-2.56	-58.33	-13.00	-45.33

Above 1GHz

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Channel 19957 (1710.7MHz)							
3421.4	H	-48.03	8.56	11.53	-45.06	-13.00	-32.06
3421.4	V	-53.23	8.56	11.53	-50.26	-13.00	-37.26
5132.0	H	-51.29	9.68	12.80	-48.17	-13.00	-35.17
5132.0	V	-57.39	9.68	12.80	-54.27	-13.00	-41.27

LTE Band 4 (QPSK, Band Width 3MHz,RB Size 1,RB Offset 0,Channel 19965,Frequeny 1711.5MHz)

9KHz to 30MHz

The low frequency, which started from 9KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line, and that was not reported per 2.1057 (c).

30MHz to 1GHz

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Channel 19965 (1711.5MHz)							
720.7	H	-46.32	3.42	-2.56	-52.30	-13.00	-39.30
720.7	V	-50.24	3.42	-2.56	-56.22	-13.00	-43.22

Above 1GHz

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Channel 19965 (1711.5MHz)							
3423	H	-48.87	8.56	11.53	-45.90	-13.00	-32.90
3423	V	-52.47	8.56	11.53	-49.50	-13.00	-36.50
5134.5	H	-50.29	9.68	12.80	-47.17	-13.00	-34.17
5134.5	V	-55.62	9.68	12.80	-52.50	-13.00	-39.50

LTE Band 4 (QPSK, Band Width 5MHz,RB Size 1,RB Offset 0,Channel 19975,Frequeny 1712.5MHz)

9KHz to 30MHz

The low frequency, which started from 9KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line, and that was not reported per 2.1057 (c).

30MHz to 1GHz

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Channel 19975 (1712.5MHz)							
730.6	H	-47.88	3.42	-2.56	-53.86	-13.00	-40.86
730.6	V	-52.46	3.42	-2.56	-58.44	-13.00	-45.44

Above 1GHz

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Channel 19975 (1712.5MHz)							
3425	H	-48.22	8.56	11.53	-45.25	-13.00	-32.25
3425	V	-53.46	8.56	11.53	-50.49	-13.00	-37.49
5137.5	H	-51.14	9.68	12.80	-48.02	-13.00	-35.02
5137.5	V	-57.63	9.68	12.80	-54.51	-13.00	-41.51

LTE Band 4 (QPSK, Band Width 10MHz,RB Size 1,RB Offset 49,Channel 20000,Frequeny 1715.0MHz)

9KHz to 30MHz

The low frequency, which started from 9KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line, and that was not reported per 2.1057 (c).

30MHz to 1GHz

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Channel 20000 (1715MHz)							
727.3	H	-49.45	3.42	-2.56	-55.43	-13.00	-42.43
727.3	V	-51.82	3.42	-2.56	-57.80	-13.00	-44.80

Above 1GHz

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Channel 20000 (1715MHz)							
3430	H	-47.69	8.56	11.53	-44.72	-13.00	-31.72
3430	V	-54.85	8.56	11.53	-51.88	-13.00	-38.88
5145	H	-50.44	9.68	12.80	-47.32	-13.00	-34.32
5145	V	-56.59	9.68	12.80	-53.47	-13.00	-40.47

LTE Band 4 (QPSK, Band Width 15MHz,RB Size 1,RB Offset 74,Channel 20325,Frequeny 1747.5MHz)

9KHz to 30MHz

The low frequency, which started from 9KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line, and that was not reported per 2.1057 (c).

30MHz to 1GHz

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Channel 20325 (1747.5MHz)							
738.2	H	-48.26	3.42	-2.56	-54.24	-13.00	-41.24
738.2	V	-52.47	3.42	-2.56	-58.45	-13.00	-45.45

Above 1GHz

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Channel 20325 (1747.5MHz)							
3495	H	-49.24	8.56	11.53	-46.27	-13.00	-33.27
3495	V	-52.34	8.56	11.53	-49.37	-13.00	-36.37
5242.5	H	-50.56	9.68	12.80	-47.44	-13.00	-34.44
5242.5	V	-55.42	9.68	12.80	-52.30	-13.00	-39.30

LTE Band 4 (QPSK, Band Width 20MHz,RB Size 1,RB Offset 99,Channel 20300,Frequeny 1745.0MHz)

9KHz to 30MHz

The low frequency, which started from 9KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line, and that was not reported per 2.1057 (c).

30MHz to 1GHz

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Channel 20300 (1745MHz)							
734.0	H	-48.65	3.42	-2.56	-54.58	-13.00	-41.58
734.0	V	-53.20	3.42	-2.56	-59.18	-13.00	-56.18

Above 1GHz

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Channel 20300 (1745MHz)							
3490	H	-47.66	8.56	11.53	-44.69	-13.00	-31.69
3490	V	-52.47	8.56	11.53	-49.50	-13.00	-36.50
5235	H	-50.53	9.68	12.80	-47.41	-13.00	-34.41
5235	V	-56.98	9.68	12.80	-53.86	-13.00	-40.86

LTE Band 5 (QPSK, Band Width 1.4MHz,RB Size 1,RB Offset 0,Channel 20407,Frequeny 824.7MHz)

9KHz to 30MHz

The low frequency, which started from 9KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line, and that was not reported per 2.1057 (c).

30MHz to 1GHz

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Channel 20407 (824.7MHz)							
598.6	H	-45.41	2.86	-2.44	-50.71	-13.00	-37.71
598.6	V	-48.06	2.86	-2.44	-53.36	-13.00	-40.36

Above 1GHz

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Channel 20407 (824.7MHz)							
1649.5	H	-40.85	6.13	9.40	-37.58	-13.00	-24.58
1649.5	V	-43.29	6.13	9.40	-40.02	-13.00	-27.02
2474	H	-48.77	7.32	10.5	-45.59	-13.00	-32.59
2474	V	-52.36	7.32	10.5	-49.18	-13.00	-36.18
3299	H	-50.64	8.43	11.5	-47.57	-13.00	-34.57
3299	V	-54.42	8.43	11.5	-51.35	-13.00	-38.35

LTE Band 5 (QPSK, Band Width 3MHz,RB Size 1,RB Offset 0,Channel 20415,Frequeny 825.5MHz)

9KHz to 30MHz

The low frequency, which started from 9KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line, and that was not reported per 2.1057 (c).

30MHz to 1GHz

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Channel 20415 (825.5MHz)							
584.2	H	-43.55	2.86	-2.44	-48.85	-13.00	-35.85
584.2	V	-49.60	2.86	-2.44	-54.90	-13.00	-41.90

Above 1GHz

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Channel 20415 (825.5MHz)							
1651	H	-41.54	6.13	9.40	-38.27	-13.00	-25.27
1651	V	-44.39	6.13	9.40	-41.12	-13.00	-28.12
2476.5	H	-46.85	7.32	10.5	-43.67	-13.00	-30.67
2476.5	V	-51.92	7.32	10.5	-48.74	-13.00	-35.74
3302	H	-48.22	8.43	11.5	-45.15	-13.00	-32.15
3302	V	-53.41	8.43	11.5	-50.34	-13.00	-37.34

LTE Band 5 (QPSK, Band Width 5MHz,RB Size 1,RB Offset 0,Channel 20425,Frequeny 826.5MHz)

9KHz to 30MHz

The low frequency, which started from 9KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line, and that was not reported per 2.1057 (c).

30MHz to 1GHz

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Channel 20425 (826.5MHz)							
591.0	H	-48.68	2.86	-2.44	-53.98	-13.00	-40.98
591.0	V	-50.22	2.86	-2.44	-55.52	-13.00	-42.52

Above 1GHz

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Channel 20425 (826.5MHz)							
1653	H	-40.68	6.13	9.40	-37.41	-13.00	-24.41
1653	V	-44.61	6.13	9.40	-41.34	-13.00	-28.34
2479.5	H	-46.87	7.32	10.5	-43.69	-13.00	-30.69
2479.5	V	-52.31	7.32	10.5	-49.13	-13.00	-36.13
3306	H	-49.63	8.43	11.5	-46.56	-13.00	-33.56
3306	V	-55.24	8.43	11.5	-52.17	-13.00	-39.17

LTE Band 5 (QPSK, Band Width 5MHz,RB Size 1,RB Offset 0,Channel 20450,Frequeny 829.0MHz)

9KHz to 30MHz

The low frequency, which started from 9KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line, and that was not reported per 2.1057 (c).

30MHz to 1GHz

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Channel 20450 (829MHz)							
594.3	H	-47.28	2.86	-2.44	-52.58	-13.00	-39.58
594.3	V	-50.34	2.86	-2.44	-55.64	-13.00	-42.64

Above 1GHz

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Channel 20450 (829MHz)							
1658	H	-42.64	6.13	9.40	-39.37	-13.00	-26.37
1658	V	-45.92	6.13	9.40	-42.02	-13.00	-29.02
2487	H	-45.26	7.32	10.5	-42.08	-13.00	-29.08
2487	V	-49.88	7.32	10.5	-46.70	-13.00	-33.70
3316	H	-49.16	8.43	11.5	-46.09	-13.00	-33.09
3316	V	-54.72	8.43	11.5	-51.65	-13.00	-38.65

LTE Band 17 (QPSK, Band Width 5MHz,RB Size 1,RB Offset 24,Channel 23755,Frequeny 706.5MHz)

9KHz to 30MHz

The low frequency, which started from 9KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line, and that was not reported per 2.1057 (c).

30MHz to 1GHz

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Channel 23755 (706.5MHz)							
580.6	H	-47.54	2.80	-2.39	-52.73	-13.00	-39.73
580.6	V	-50.36	2.80	-2.39	-56.55	-13.00	-43.55

Above 1GHz

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Channel 23755 (706.5MHz)							
1413	H	-38.57	5.26	8.08	-35.75	-13.00	-22.75
1413	V	-41.23	5.26	8.08	-38.41	-13.00	-25.41
2119.5	H	-40.26	6.62	10.42	-36.46	-13.00	-23.46
2119.5	V	-44.58	6.62	10.42	-40.78	-13.00	-27.78
2826	H	-46.38	8.02	11.15	-43.25	-13.00	-30.25
2826	V	-50.12	8.02	11.15	-46.99	-13.00	-33.99

LTE Band 17 (QPSK, Band Width 10MHz,RB Size 1,RB Offset 49,Channel 23780,Frequeny 709.0MHz)

9KHz to 30MHz

The low frequency, which started from 9KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line, and that was not reported per 2.1057 (c).

30MHz to 1GHz

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Channel 23780 (709MHz)							
585.6	H	-45.34	2.80	-2.39	-51.53	-13.00	-38.53
585.6	V	-50.24	2.80	-2.39	-56.43	-13.00	-43.43

Above 1GHz

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Channel 23780 (709MHz)							
1418	H	-39.44	5.26	8.08	-36.62	-13.00	-23.62
1418	V	-42.42	5.26	8.08	-39.60	-13.00	-26.60
2127	H	-41.68	6.62	10.42	-37.88	-13.00	-24.88
2127	V	-48.52	6.62	10.42	-44.72	-13.00	-31.72
2836	H	-46.12	8.02	11.15	-42.99	-13.00	-29.99
2836	V	-49.87	8.02	11.15	-46.74	-13.00	-33.74

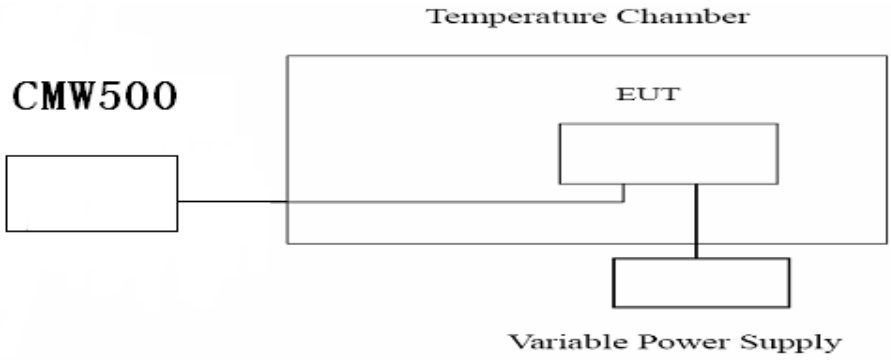
7. Frequency Stability Under Temperature & Voltage Variations

7.1. Test Equipment

Instrument	Manufacturer	Model	Serial No.	Cali. Due Date
Spectrum Analyzer	Agilent	N9038A	MY51210142	12/17/2014
Radio Communication Tester	R&S	CMW500	147483	10/15/2015
DC Power Supply	Agilent	6612C	MY43002989	03/03/2015
Temperature Chamber	WEISS	DU/20/40	58226017340050	01/03/2015

The measure equipment had been calibrated once a year.

7.2. Test Setup



7.3. Limit

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Limit	< ±2.5 ppm

7.4. Test Procedure

1. The testing follows FCC KDB 972268 v02v02 Section 9.0;
2. Frequency Stability Under Temperature Variations:
The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or CMW500. The EUT was placed inside the temperature chamber.
EUT 20℃ operating frequency as reference frequency. Turn EUT off and set the chamber temperature to -20℃. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10℃ increased per stage until the highest temperature of +50℃ reached.
3. Frequency Stability Under Voltage Variations:
Set chamber temperature to 20℃. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage.
Reduce the input voltage to specify extreme voltage variation (±15%) and endpoint, record the maximum frequency change.

7.5. Uncertainty

The measurement uncertainty is defined as±10 Hz.

7.6. Test Result

LTE Band 2 (QPSK, Band Width 1.4MHz,RB Size 1,RB Offset 0,Channel 18900)

Frequency Stability under Temperature

Temperature Interval (℃)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
-20	1880.0	-7.20	±2091
-10	1880.0	5.68	±2091
0	1880.0	2.27	±2091
10	1880.0	-1.36	±2091
20	1880.0	9.56	±2091
30	1880.0	2.89	±2091
40	1880.0	3.67	±2091
50	1880.0	2.40	±2091

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
3.2	1880.0	5.63	±2091
3.8	1880.0	0.32	±2091
4.4	1880.0	-3.92	±2091

LTE Band 2 (16-QAM, Band Width 1.4MHz,RB Size 1,RB Offset 5,Channel 18607)

Frequency Stability under Temperature

Temperature Interval (℃)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
-20	1850.7	1.30	±2091
-10	1850.7	-1.62	±2091
0	1850.7	3.56	±2091
10	1850.7	5.66	±2091
20	1850.7	2.41	±2091
30	1850.7	-2.80	±2091
40	1850.7	-3.02	±2091
50	1850.7	2.40	±2091

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
3.2	1850.7	3.29	±2091
3.8	1850.7	0.31	±2091
4.4	1850.7	0.54	±2091

LTE Band 2 (QPSK, Band Width 3MHz,RB Size 1,RB Offset 0,Channel 18900)

Frequency Stability under Temperature

Temperature Interval (℃)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
-20	1880.0	3.65	±2091
-10	1880.0	4.20	±2091
0	1880.0	-2.54	±2091
10	1880.0	1.02	±2091
20	1880.0	2.41	±2091
30	1880.0	-0.65	±2091
40	1880.0	1.25	±2091
50	1880.0	3.02	±2091

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
3.2	1880.0	-3.65	±2091
3.8	1880.0	2.46	±2091
4.4	1880.0	7.04	±2091

LTE Band 2 (16-QAM, Band Width 3MHz,RB Size 1,RB Offset 0,Channel 18900)

Frequency Stability under Temperature

Temperature Interval (℃)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
-20	1880.0	5.36	±2091
-10	1880.0	-2.10	±2091
0	1880.0	-4.06	±2091
10	1880.0	5.21	±2091
20	1880.0	1.38	±2091
30	1880.0	2.47	±2091
40	1880.0	-2.09	±2091
50	1880.0	-1.33	±2091

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
3.2	1880.0	-0.32	±2091
3.8	1880.0	0.45	±2091
4.4	1880.0	1.54	±2091

LTE Band 2 (QPSK, Band Width 5MHz,RB Size 1,RB Offset 24,Channel 18625)

Frequency Stability under Temperature

Temperature Interval (℃)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
-20	1852.5	3.54	±2091
-10	1852.5	2.16	±2091
0	1852.5	2.03	±2091
10	1852.5	-0.38	±2091
20	1852.5	-1.08	±2091
30	1852.5	0.87	±2091
40	1852.5	2.56	±2091
50	1852.5	0.77	±2091

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
3.2	1852.5	3.87	±2091
3.8	1852.5	5.69	±2091
4.4	1852.5	-2.45	±2091

LTE Band 2 (16-QAM, Band Width 5MHz,RB Size 1,RB Offset 24, Channel 18625)

Frequency Stability under Temperature

Temperature Interval (℃)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
-20	1852.5	2.35	±2091
-10	1852.5	1.89	±2091
0	1852.5	2.74	±2091
10	1852.5	-2.36	±2091
20	1852.5	-1.24	±2091
30	1852.5	0.66	±2091
40	1852.5	1.35	±2091
50	1852.5	2.08	±2091

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
3.2	1852.5	-2.69	±2091
3.8	1852.5	-1.05	±2091
4.4	1852.5	2.64	±2091

LTE Band 2 (QPSK, Band Width 10MHz,RB Size 1,RB Offset 49, Channel 18650)

Frequency Stability under Temperature

Temperature Interval (℃)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
-20	1855.0	3.24	±2091
-10	1855.0	-1.65	±2091
0	1855.0	4.32	±2091
10	1855.0	-0.21	±2091
20	1855.0	3.00	±2091
30	1855.0	-2.51	±2091
40	1855.0	-0.78	±2091
50	1855.0	2.66	±2091

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
3.2	1855.0	6.89	±2091
3.8	1855.0	5.12	±2091
4.4	1855.0	0.74	±2091

LTE Band 2 (16-QAM, Band Width 10MHz,RB Size 1,RB Offset 49, Channel 18900)

Frequency Stability under Temperature

Temperature Interval (℃)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
-20	1880.0	5.21	±2091
-10	1880.0	-2.36	±2091
0	1880.0	5.24	±2091
10	1880.0	4.12	±2091
20	1880.0	3.57	±2091
30	1880.0	-1.38	±2091
40	1880.0	2.75	±2091
50	1880.0	4.65	±2091

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
3.2	1880.0	-2.74	±2091
3.8	1880.0	1.09	±2091
4.4	1880.0	2.58	±2091

LTE Band 2 (QPSK, Band Width 15MHz,RB Size 1,RB Offset 74, Channel 18675)

Frequency Stability under Temperature

Temperature Interval (℃)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
-20	1857.5	3.24	±2091
-10	1857.5	1.05	±2091
0	1857.5	-2.65	±2091
10	1857.5	5.64	±2091
20	1857.5	2.15	±2091
30	1857.5	3.51	±2091
40	1857.5	-2.46	±2091
50	1857.5	-1.84	±2091

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
3.2	1857.5	-3.61	±2091
3.8	1857.5	2.38	±2091
4.4	1857.5	-4.76	±2091

LTE Band 2 (16-QAM, Band Width 15MHz,RB Size 1,RB Offset 0, Channel 19125)

Frequency Stability under Temperature

Temperature Interval (℃)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
-20	1902.5	5.23	±2091
-10	1902.5	2.47	±2091
0	1902.5	-3.26	±2091
10	1902.5	2.14	±2091
20	1902.5	-2.75	±2091
30	1902.5	0.47	±2091
40	1902.5	1.35	±2091
50	1902.5	-2.30	±2091

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
3.2	1902.5	-2.68	±2091
3.8	1902.5	3.45	±2091
4.4	1902.5	1.24	±2091

LTE Band 2 (QPSK, Band Width 20MHz,RB Size 1,RB Offset 0, Channel 19100)

Frequency Stability under Temperature

Temperature Interval (℃)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
-20	1900.0	0.25	±2091
-10	1900.0	-1.24	±2091
0	1900.0	3.26	±2091
10	1900.0	2.55	±2091
20	1900.0	4.75	±2091
30	1900.0	-3.14	±2091
40	1900.0	-5.98	±2091
50	1900.0	4.12	±2091

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
3.2	1900.0	2.05	±2091
3.8	1900.0	-3.55	±2091
4.4	1900.0	-2.14	±2091

LTE Band 2 (16-QAM, Band Width 20MHz,RB Size 1,RB Offset 99,Channel 18900)

Frequency Stability under Temperature

Temperature Interval (℃)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
-20	1880.0	4.21	±2091
-10	1880.0	-3.62	±2091
0	1880.0	2.08	±2091
10	1880.0	-2.11	±2091
20	1880.0	-3.21	±2091
30	1880.0	-0.12	±2091
40	1880.0	2.31	±2091
50	1880.0	2.01	±2091

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
3.2	1880.0	4.25	±2091
3.8	1880.0	-3.26	±2091
4.4	1880.0	2.08	±2091

LTE Band 4 (QPSK, Band Width 1.4MHz,RB Size 1,RB Offset 0,Channel 19957)

Frequency Stability under Temperature

Temperature Interval (℃)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
-20	1710.7	3.23	±2091
-10	1710.7	-1.20	±2091
0	1710.7	-1.43	±2091
10	1710.7	-0.58	±2091
20	1710.7	2.10	±2091
30	1710.7	3.49	±2091
40	1710.7	2.87	±2091
50	1710.7	2.96	±2091

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
3.2	1710.7	5.07	±2091
3.8	1710.7	3.23	±2091
4.4	1710.7	-4.55	±2091

LTE Band 4 (16-QAM, Band Width 1.4MHz,RB Size 1,RB Offset 0,Channel 19957)

Frequency Stability under Temperature

Temperature Interval (℃)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
-20	1710.7	3.22	±2091
-10	1710.7	-1.07	±2091
0	1710.7	-5.23	±2091
10	1710.7	3.22	±2091
20	1710.7	1.09	±2091
30	1710.7	-1.24	±2091
40	1710.7	-2.71	±2091
50	1710.7	2.95	±2091

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
3.2	1710.7	-4.22	±2091
3.8	1710.7	-3.41	±2091
4.4	1710.7	-2.61	±2091

LTE Band 4 (QPSK, Band Width 3MHz,RB Size 1,RB Offset 0,Channel 19965)

Frequency Stability under Temperature

Temperature Interval (℃)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
-20	1711.5	-0.35	±2091
-10	1711.5	2.14	±2091
0	1711.5	3.25	±2091
10	1711.5	1.44	±2091
20	1711.5	-1.26	±2091
30	1711.5	-5.34	±2091
40	1711.5	2.01	±2091
50	1711.5	-2.68	±2091

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
3.2	1711.5	2.39	±2091
3.8	1711.5	-1.20	±2091
4.4	1711.5	3.44	±2091

LTE Band 4 (16-QAM, Band Width 3MHz,RB Size 1,RB Offset 0,Channel 20385)

Frequency Stability under Temperature

Temperature Interval (℃)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
-20	1753.5	4.32	±2091
-10	1753.5	-3.20	±2091
0	1753.5	1.25	±2091
10	1753.5	3.22	±2091
20	1753.5	2.45	±2091
30	1753.5	-2.78	±2091
40	1753.5	-6.54	±2091
50	1753.5	-2.04	±2091

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
3.2	1753.5	2.87	±2091
3.8	1753.5	-0.35	±2091
4.4	1753.5	1.54	±2091

LTE Band 4 (QPSK, Band Width 5MHz,RB Size 1,RB Offset 0,Channel 19975)

Frequency Stability under Temperature

Temperature Interval (℃)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
-20	1712.5	-2.35	±2091
-10	1712.5	6.21	±2091
0	1712.5	4.33	±2091
10	1712.5	2.01	±2091
20	1712.5	5.13	±2091
30	1712.5	-2.40	±2091
40	1712.5	-3.22	±2091
50	1712.5	-2.01	±2091

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
3.2	1712.5	2.14	±2091
3.8	1712.5	-2.30	±2091
4.4	1712.5	-0.58	±2091

LTE Band 4 (16-QAM, Band Width 5MHz,RB Size 1,RB Offset 0,Channel 20375)

Frequency Stability under Temperature

Temperature Interval (℃)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
-20	1752.5	3.65	±2091
-10	1752.5	2.14	±2091
0	1752.5	2.87	±2091
10	1752.5	-3.62	±2091
20	1752.5	-1.02	±2091
30	1752.5	-3.04	±2091
40	1752.5	2.44	±2091
50	1752.5	4.62	±2091

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
3.2	1752.5	6.31	±2091
3.8	1752.5	-1.47	±2091
4.4	1752.5	4.56	±2091

LTE Band 4 (QPSK, Band Width 10MHz,RB Size 1,RB Offset 49,Channel 20000)

Frequency Stability under Temperature

Temperature Interval (℃)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
-20	1715.0	-3.20	±2091
-10	1715.0	2.01	±2091
0	1715.0	5.64	±2091
10	1715.0	-2.52	±2091
20	1715.0	-3.62	±2091
30	1715.0	-0.14	±2091
40	1715.0	4.64	±2091
50	1715.0	5.12	±2091

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
3.2	1715.0	3.52	±2091
3.8	1715.0	2.31	±2091
4.4	1715.0	0.27	±2091

LTE Band 4 (16-QAM, Band Width 10MHz,RB Size 1,RB Offset 0,Channel 20350)

Frequency Stability under Temperature

Temperature Interval (℃)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
-20	1750.0	5.74	±2091
-10	1750.0	-2.35	±2091
0	1750.0	-4.03	±2091
10	1750.0	6.32	±2091
20	1750.0	5.10	±2091
30	1750.0	2.11	±2091
40	1750.0	3.17	±2091
50	1750.0	0.09	±2091

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
3.2	1750.0	3.21	±2091
3.8	1750.0	-2.55	±2091
4.4	1750.0	-2.64	±2091

LTE Band 4 (QPSK, Band Width 15MHz,RB Size 1,RB Offset 74,Channel 20325)

Frequency Stability under Temperature

Temperature Interval (℃)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
-20	1747.5	2.34	±2091
-10	1747.5	1.30	±2091
0	1747.5	6.05	±2091
10	1747.5	-0.45	±2091
20	1747.5	-1.24	±2091
30	1747.5	-0.38	±2091
40	1747.5	0.94	±2091
50	1747.5	5.76	±2091

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
3.2	1747.5	3.57	±2091
3.8	1747.5	-2.19	±2091
4.4	1747.5	0.47	±2091

LTE Band 4 (16-QAM, Band Width 15MHz,RB Size 1,RB Offset 74,Channel 20325)

Frequency Stability under Temperature

Temperature Interval (℃)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
-20	1747.5	-2.64	±2091
-10	1747.5	3.45	±2091
0	1747.5	2.10	±2091
10	1747.5	0.27	±2091
20	1747.5	-2.36	±2091
30	1747.5	-4.56	±2091
40	1747.5	-3.21	±2091
50	1747.5	-3.65	±2091

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
3.2	1747.5	0.23	±2091
3.8	1747.5	-4.32	±2091
4.4	1747.5	1.28	±2091

LTE Band 4 (QPSK, Band Width 20MHz,RB Size 1,RB Offset 99,Channel 20300)

Frequency Stability under Temperature

Temperature Interval (℃)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
-20	1745.0	2.98	±2091
-10	1745.0	-3.87	±2091
0	1745.0	1.28	±2091
10	1745.0	0.72	±2091
20	1745.0	3.21	±2091
30	1745.0	-2.67	±2091
40	1745.0	2.60	±2091
50	1745.0	1.42	±2091

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
3.2	1745.0	-2.01	±2091
3.8	1745.0	-0.05	±2091
4.4	1745.0	3.24	±2091

LTE Band 4 (16-QAM, Band Width 20MHz,RB Size 1,RB Offset 99,Channel 20175)

Frequency Stability under Temperature

Temperature Interval (℃)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
-20	1732.5	3.65	±2091
-10	1732.5	2.34	±2091
0	1732.5	5.69	±2091
10	1732.5	4.23	±2091
20	1732.5	-1.02	±2091
30	1732.5	3.01	±2091
40	1732.5	-3.27	±2091
50	1732.5	-2.54	±2091

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
3.2	1732.5	3.65	±2091
3.8	1732.5	-4.20	±2091
4.4	1732.5	1.02	±2091

LTE Band 5 (QPSK, Band Width 1.4MHz,RB Size 1,RB Offset 0,Channel 20407)

Frequency Stability under Temperature

Temperature Interval (℃)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
-20	824.7	0.32	±2091
-10	824.7	-5.32	±2091
0	824.7	1.44	±2091
10	824.7	3.56	±2091
20	824.7	5.27	±2091
30	824.7	-1.11	±2091
40	824.7	3.64	±2091
50	824.7	-5.86	±2091

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
3.2	824.7	3.62	±2091
3.8	824.7	-4.25	±2091
4.4	824.7	1.64	±2091

LTE Band 5 (16-QAM, Band Width 1.4MHz,RB Size 5,RB Offset 1,Channel 20407)

Frequency Stability under Temperature

Temperature Interval (℃)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
-20	824.7	-3.54	±2091
-10	824.7	0.68	±2091
0	824.7	-4.56	±2091
10	824.7	2.31	±2091
20	824.7	1.02	±2091
30	824.7	-3.21	±2091
40	824.7	-2.58	±2091
50	824.7	3.62	±2091

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
3.2	824.7	1.05	±2091
3.8	824.7	-3.77	±2091
4.4	824.7	6.59	±2091

LTE Band 5 (QPSK, Band Width 3MHz,RB Size 1,RB Offset 0,Channel 20415)

Frequency Stability under Temperature

Temperature Interval (℃)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
-20	825.5	-3.33	±2091
-10	825.5	0.14	±2091
0	825.5	1.46	±2091
10	825.5	-2.57	±2091
20	825.5	-3.62	±2091
30	825.5	3.14	±2091
40	825.5	-5.47	±2091
50	825.5	3.41	±2091

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
3.2	825.5	-2.32	±2091
3.8	825.5	3.65	±2091
4.4	825.5	-4.75	±2091

LTE Band 5 (16-QAM, Band Width 3MHz,RB Size 1,RB Offset 0,Channel 20635)

Frequency Stability under Temperature

Temperature Interval (℃)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
-20	847.5	-2.63	±2091
-10	847.5	3.21	±2091
0	847.5	1.75	±2091
10	847.5	-1.84	±2091
20	847.5	-2.65	±2091
30	847.5	-3.68	±2091
40	847.5	2.94	±2091
50	847.5	3.83	±2091

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
3.2	847.5	3.26	±2091
3.8	847.5	-2.32	±2091
4.4	847.5	0.47	±2091

LTE Band 5 (QPSK, Band Width 5MHz,RB Size 1,RB Offset 0,Channel 20425)

Frequency Stability under Temperature

Temperature Interval (℃)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
-20	826.5	3.16	±2091
-10	826.5	-2.74	±2091
0	826.5	-1.65	±2091
10	826.5	-2.58	±2091
20	826.5	3.96	±2091
30	826.5	2.85	±2091
40	826.5	-4.63	±2091
50	826.5	4.12	±2091

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
3.2	826.5	2.36	±2091
3.8	826.5	-4.95	±2091
4.4	826.5	1.47	±2091

LTE Band 5 (16-QAM, Band Width 5MHz,RB Size 8,RB Offset 17,Channel 20525)

Frequency Stability under Temperature

Temperature Interval (℃)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
-20	836.5	-5.62	±2091
-10	836.5	3.54	±2091
0	836.5	1.20	±2091
10	836.5	3.00	±2091
20	836.5	2.46	±2091
30	836.5	1.55	±2091
40	836.5	4.33	±2091
50	836.5	-2.65	±2091

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
3.2	836.5	2.54	±2091
3.8	836.5	-6.21	±2091
4.4	836.5	3.47	±2091

LTE Band 5 (QPSK, Band Width 10MHz,RB Size 1,RB Offset 0,Channel 20450)

Frequency Stability under Temperature

Temperature Interval (℃)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
-20	829.0	-4.84	±2091
-10	829.0	-2.64	±2091
0	829.0	-1.02	±2091
10	829.0	0.65	±2091
20	829.0	3.74	±2091
30	829.0	2.69	±2091
40	829.0	1.56	±2091
50	829.0	-4.85	±2091

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
3.2	829.0	2.45	±2091
3.8	829.0	3.27	±2091
4.4	829.0	-4.00	±2091

LTE Band 5 (16-QAM, Band Width 10MHz,RB Size 1,RB Offset 0,Channel 20450)

Frequency Stability under Temperature

Temperature Interval (℃)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
-20	829.0	3.26	±2091
-10	829.0	1.47	±2091
0	829.0	-3.21	±2091
10	829.0	0.57	±2091
20	829.0	-3.47	±2091
30	829.0	2.66	±2091
40	829.0	-3.14	±2091
50	829.0	-2.87	±2091

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
3.2	829.0	1.45	±2091
3.8	829.0	-3.28	±2091
4.4	829.0	5.21	±2091

LTE Band 17 (QPSK, Band Width 5MHz,RB Size 1,RB Offset 24,Channel 23755)

Frequency Stability under Temperature

Temperature Interval (℃)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
-20	706.5	3.68	±2091
-10	706.5	-2.47	±2091
0	706.5	-2.87	±2091
10	706.5	-1.90	±2091
20	706.5	3.07	±2091
30	706.5	2.96	±2091
40	706.5	-4.57	±2091
50	706.5	-2.51	±2091

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
3.2	706.5	-3.62	±2091
3.8	706.5	2.34	±2091
4.4	706.5	1.68	±2091

LTE Band 17 (16-QAM, Band Width 5MHz,RB Size 1,RB Offset 24,Channel 23755)

Frequency Stability under Temperature

Temperature Interval (℃)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
-20	706.5	4.26	±2091
-10	706.5	-3.65	±2091
0	706.5	5.14	±2091
10	706.5	-2.01	±2091
20	706.5	3.22	±2091
30	706.5	-1.22	±2091
40	706.5	-5.62	±2091
50	706.5	3.47	±2091

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
3.2	706.5	2.65	±2091
3.8	706.5	-4.31	±2091
4.4	706.5	-2.97	±2091

LTE Band 17 (QPSK, Band Width 10MHz,RB Size 1,RB Offset 49,Channel 23780)

Frequency Stability under Temperature

Temperature Interval (℃)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
-20	709.0	3.24	±2091
-10	709.0	-2.68	±2091
0	709.0	4.57	±2091
10	709.0	1.03	±2091
20	709.0	0.35	±2091
30	709.0	-2.11	±2091
40	709.0	-3.08	±2091
50	709.0	-4.01	±2091

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
3.2	709.0	-2.64	±2091
3.8	709.0	-2.10	±2091
4.4	709.0	3.14	±2091

LTE Band 17 (16-QAM, Band Width 10MHz,RB Size 1,RB Offset 49,Channel 23800)

Frequency Stability under Temperature

Temperature Interval (℃)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
-20	711.0	3.21	±2091
-10	711.0	-4.21	±2091
0	711.0	3.65	±2091
10	711.0	-1.03	±2091
20	711.0	-2.33	±2091
30	711.0	-4.27	±2091
40	711.0	2.64	±2091
50	711.0	5.28	±2091

Frequency Stability under Voltage

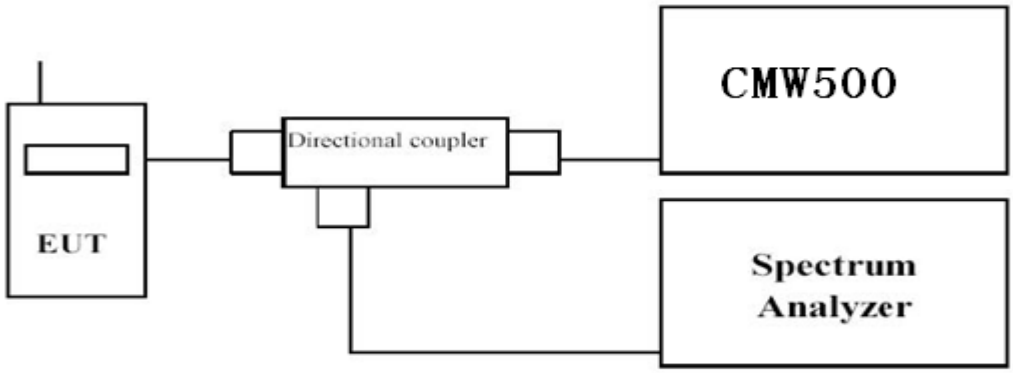
DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit(Hz)
3.2	711.0	2.64	±2091
3.8	711.0	3.01	±2091
4.4	711.0	-2.69	±2091

8. Peak to Average

8.1. Test Equipment

Instrument	Manufacturer	Model	Serial No.	Cali. Due Date
Spectrum Analyzer	Agilent	N9038A	MY51210142	12/17/2014
Radio Communication Tester	R&S	CMW500	147483	10/15/2015
Signal Generator	Agilent	N5183A	MY50140938	01/03/2015
Preamplifier	CEM	EM30180	3008A0245	02/28/2015
DC Power Supply	Agilent	6612C	MY43002989	03/03/2015

8.2. Test Setup



8.3. Limit

In addition, the transmitter's peak-to-average power ratio (PAPR) shall not exceed 13 dB for more than 0.1% of the time using a signal corresponding to the highest PAPR during periods of continuous transmission.

8.4. Test Procedure

A peak to average ratio measurement is performed at the conducted port of the EUT. For LTE signals, the spectrum analyzers Complementary Cumulative Distribution Function(CCDF) measurement profile is used to determine the largest deviation between the average and the peak power of the EUT in a given a bandwidth. The CCDF curve shows how much time the peak waveform spends at or above a given average power level. The percent of time the signal spends at or above the level defines the probability for that particular power level.

Procedure:
1. The testing follows FCC KDB 972268 v02v02 Section 5.7.1;
2. Place the EUT on a bench and set it in transmitting mode.
3. Connect a low loss RF cable from the antenna port to a spectrum analyzer and CMW500 by a Directional Couple.
4. EUT Communicate with CMW500, then select a channel for testing.
5. Add a correction factor to the display of spectrum, and then test.
6. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;

8.5. Uncertainty

The measurement uncertainty is defined as ±1.2 dB.

8.6. Test Result

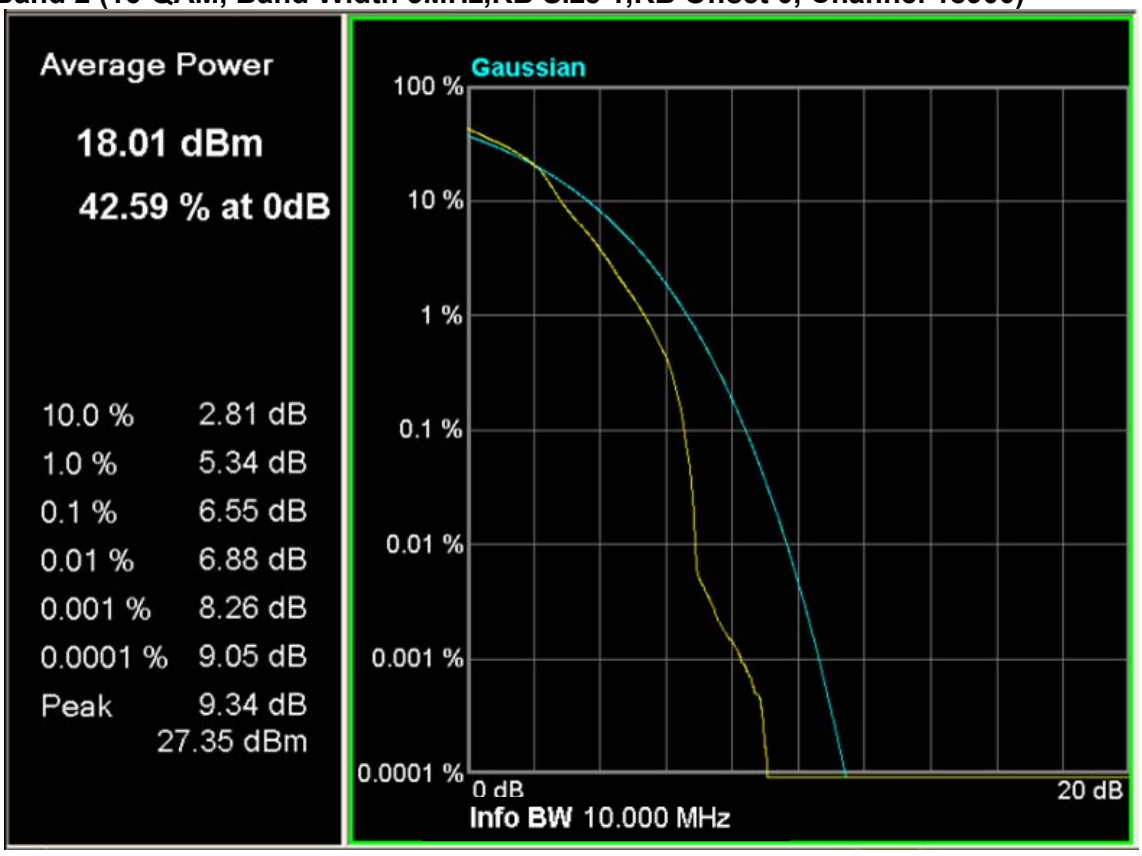
Band	Band Width (MHz)	Channel	Frequeny (MHz)	Modulation	RB Configuration		Test Result	Limit (dB)
					RB Size	RB Offset		
LTE Band 2	1.4	18900	1880.0	QPSK	1	0	8.35	＜13
		18607	1850.7	16-QAM	1	5	9.20	
	3	18900	1880.0	QPSK	1	0	8.66	
		18900	1880.0	16-QAM	1	0	9.34	
	5	18625	1852.5	QPSK	1	24	8.95	
		18625	1852.5	16-QAM	1	24	9.71	
	10	18650	1855.0	QPSK	1	49	7.21	
		18900	1880.0	16-QAM	1	49	6.75	
	15	18675	1857.5	QPSK	1	74	6.34	
		19125	1902.5	16-QAM	1	0	5.81	
	20	19100	1900.0	QPSK	1	0	5.74	
		18900	1880.0	16-QAM	1	99	7.22	
LTE Band 4	1.4	19957	1710.7	QPSK	1	0	6.04	
		19957	1710.7	16-QAM	1	0	6.71	
	3	19965	1711.5	QPSK	1	0	6.16	
		20385	1753.5	16-QAM	1	0	7.39	
	5	19975	1712.5	QPSK	1	0	5.80	
		20375	1752.5	16-QAM	1	0	6.61	
	10	20000	1715.0	QPSK	1	49	6.40	
		20350	1750.0	16-QAM	1	49	7.12	
	15	20325	1747.5	QPSK	1	74	6.08	
		20325	1747.5	16-QAM	1	74	7.25	
	20	20300	1745.0	QPSK	1	99	6.10	
		20175	1732.5	16-QAM	1	99	7.14	

LTE Band 2 (QPSK, Band Width 1.4MHz,RB Size 1,RB Offset 0, Channel 18900)

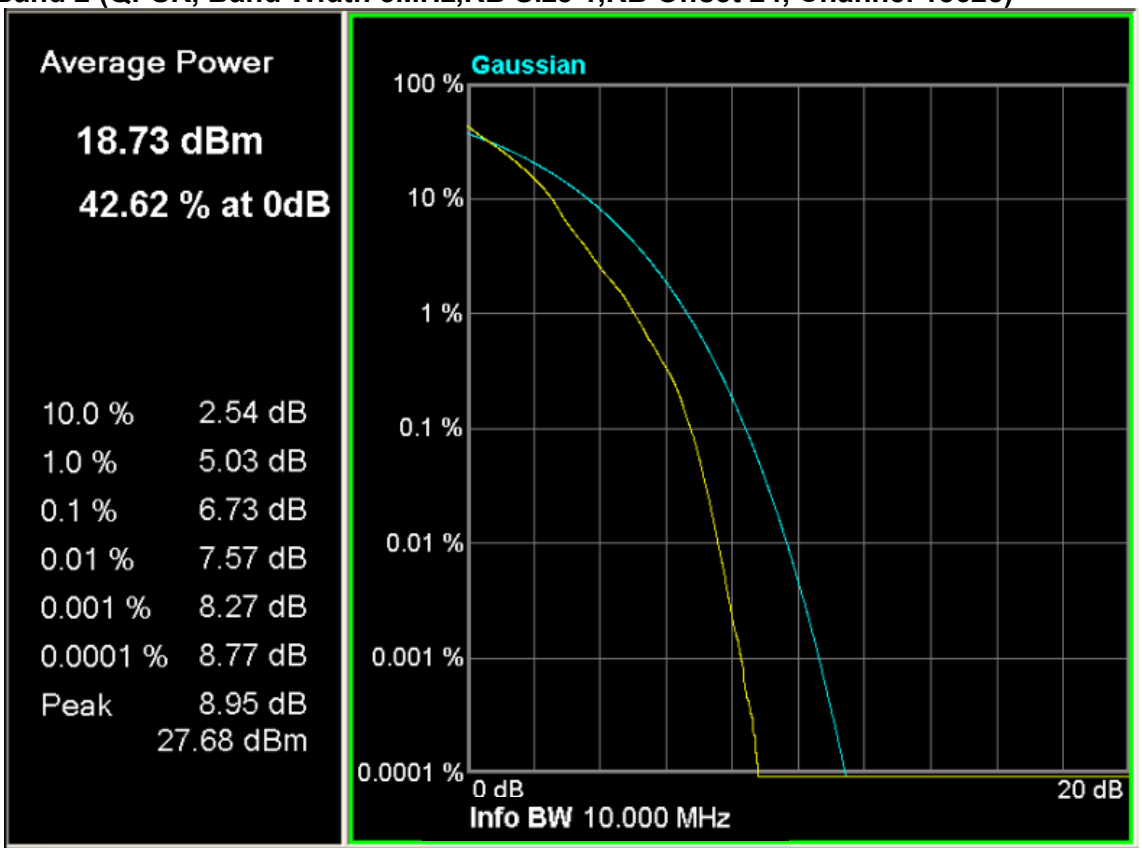
LTE Band 2 (16-QAM, Band Width 1.4MHz,RB Size 1,RB Offset 5, Channel 18607)

LTE Band 2 (QPSK, Band Width 3MHz,RB Size 1,RB Offset 0, Channel 18900)

LTE Band 2 (16-QAM, Band Width 3MHz,RB Size 1,RB Offset 0, Channel 18900)

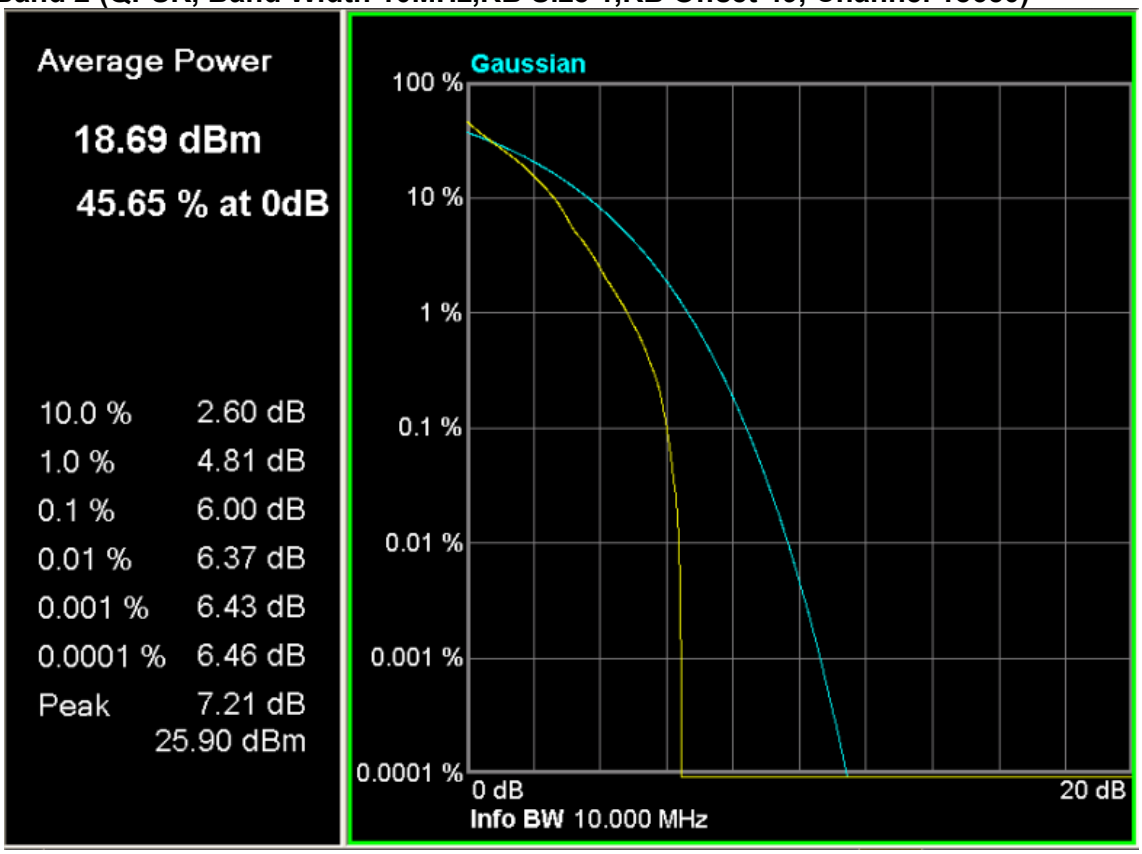


LTE Band 2 (QPSK, Band Width 5MHz,RB Size 1,RB Offset 24, Channel 18625)



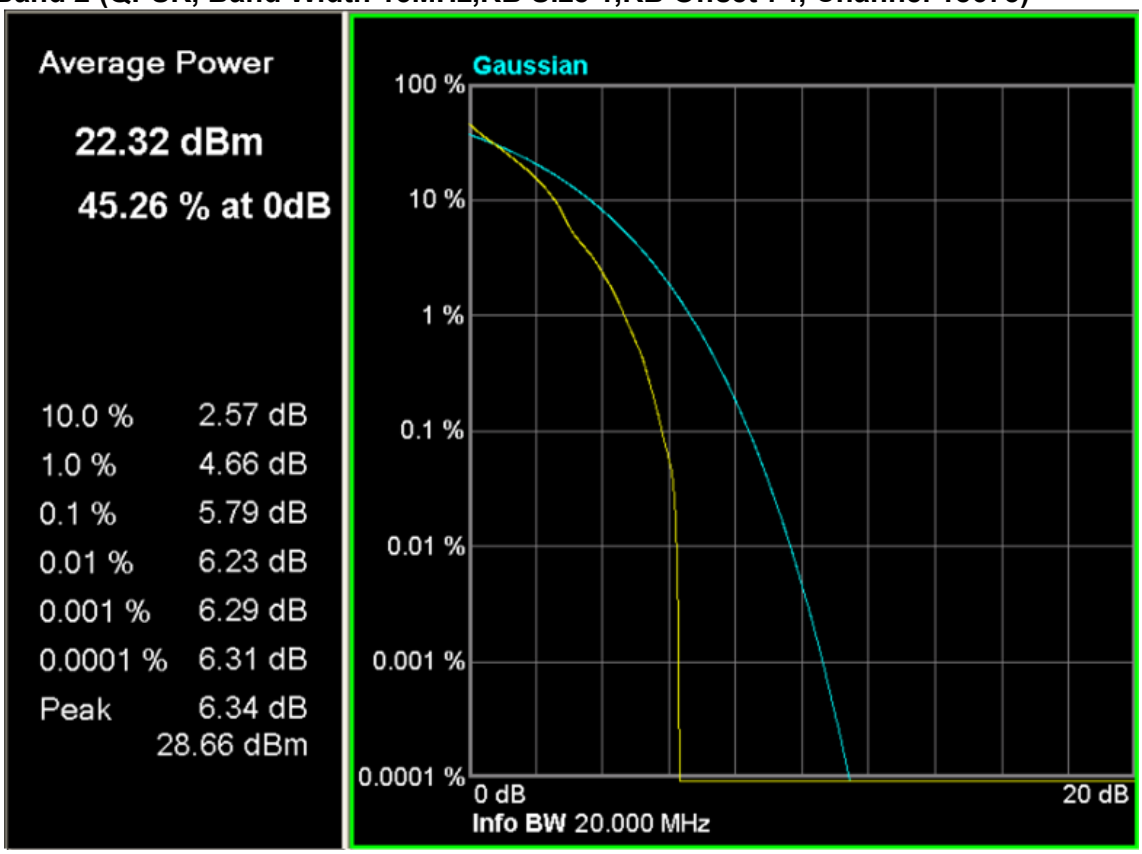
LTE Band 2 (16-QAM, Band Width 5MHz,RB Size 1,RB Offset 24, Channel 18625)

LTE Band 2 (QPSK, Band Width 10MHz,RB Size 1,RB Offset 49, Channel 18650)



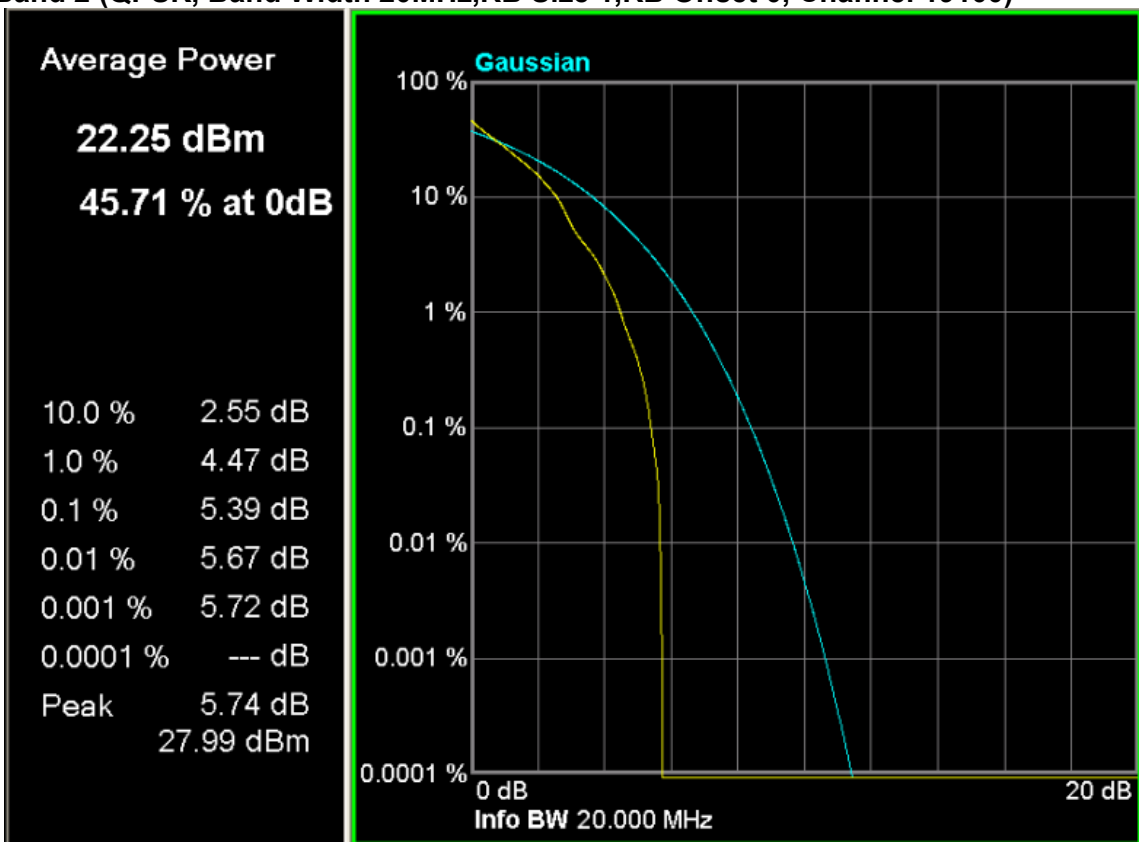
LTE Band 2 (16-QAM, Band Width 10MHz,RB Size 1,RB Offset 49, Channel 18900)

LTE Band 2 (QPSK, Band Width 15MHz,RB Size 1,RB Offset 74, Channel 18675)



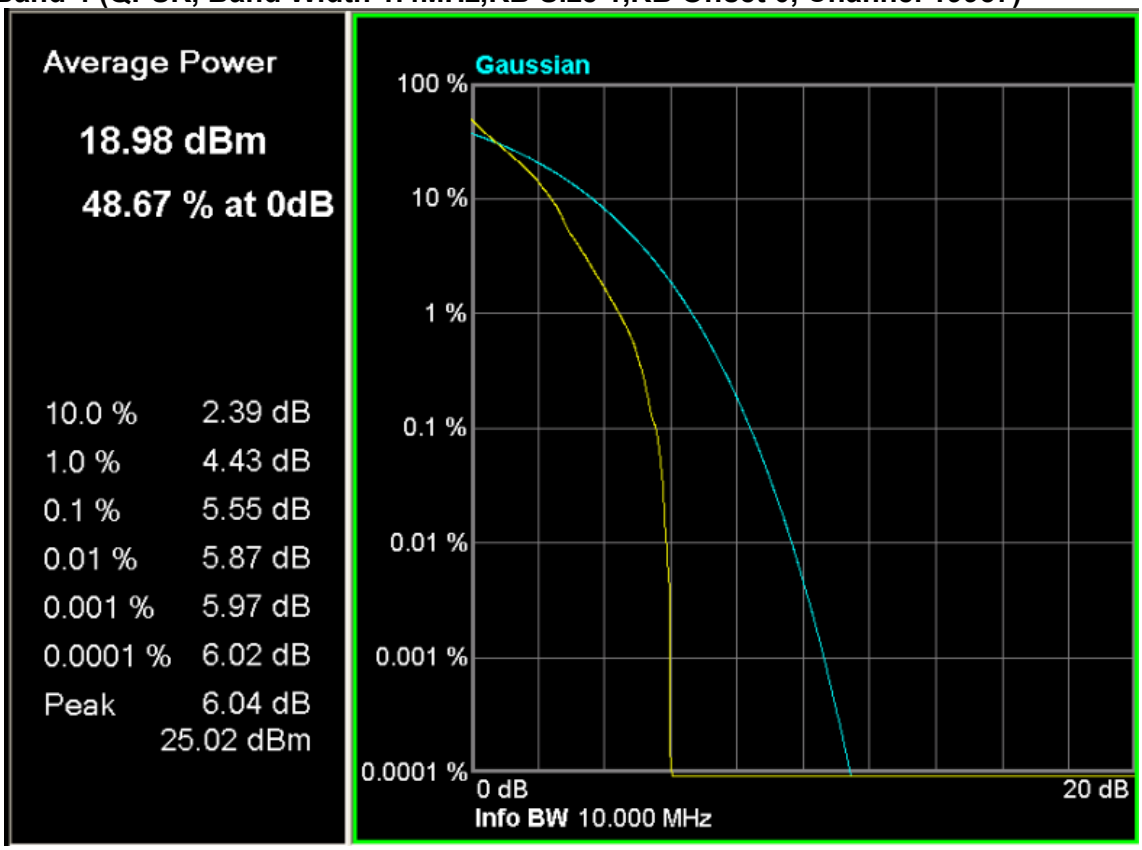
LTE Band 2 (16-QAM, Band Width 15MHz,RB Size 1,RB Offset 0, Channel 19125)

LTE Band 2 (QPSK, Band Width 20MHz,RB Size 1,RB Offset 0, Channel 19100)



LTE Band 2 (16-QAM, Band Width 20MHz,RB Size 1,RB Offset 99, Channel 18900)

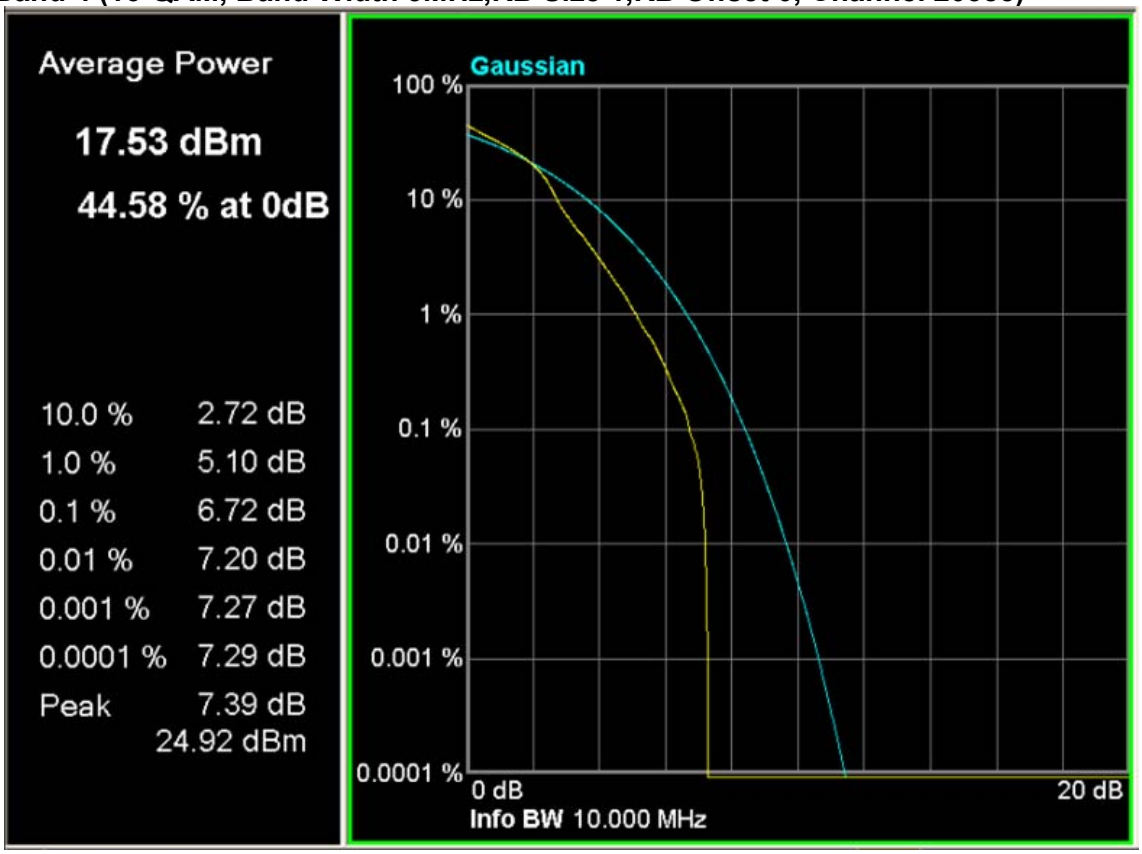
LTE Band 4 (QPSK, Band Width 1.4MHz,RB Size 1,RB Offset 0, Channel 19957)



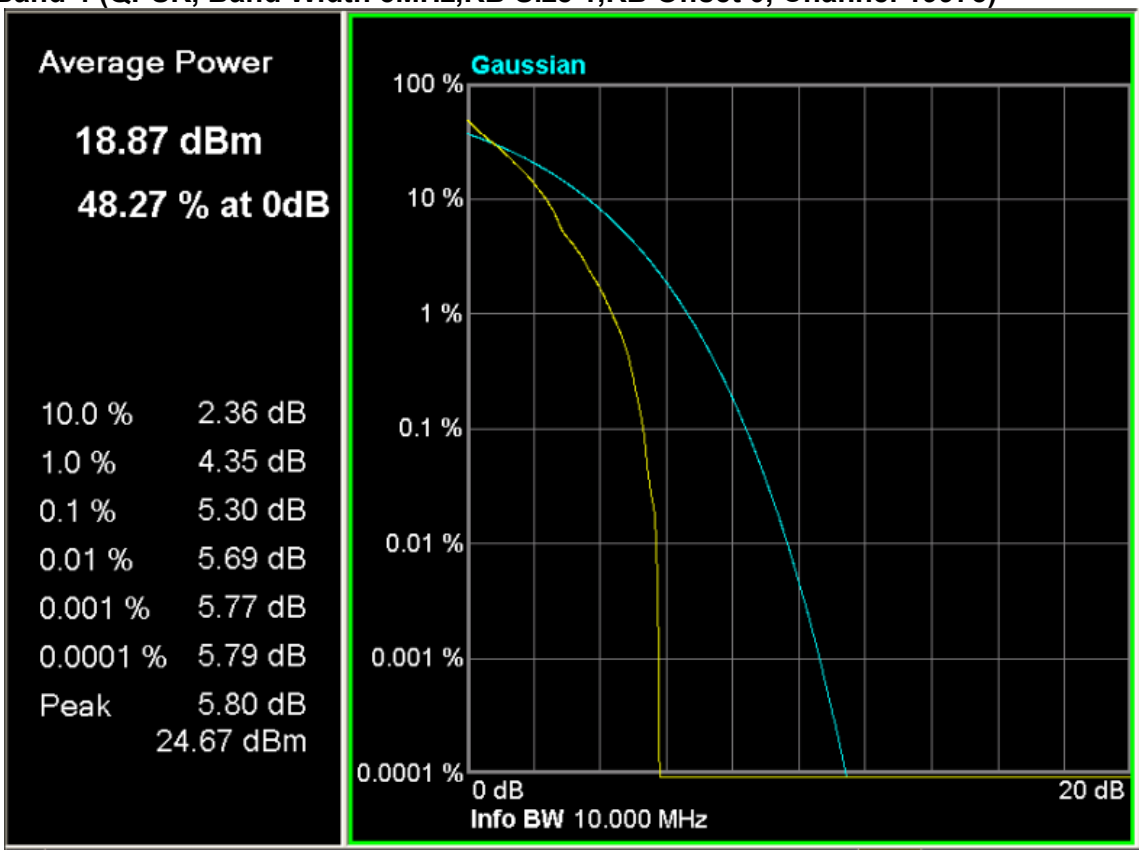
LTE Band 4 (16-QAM, Band Width 1.4MHz,RB Size 1,RB Offset 0, Channel 19957)

LTE Band 4 (QPSK, Band Width 3MHz,RB Size 1,RB Offset 0, Channel 19965)

LTE Band 4 (16-QAM, Band Width 3MHz,RB Size 1,RB Offset 0, Channel 20385)



LTE Band 4 (QPSK, Band Width 5MHz,RB Size 1,RB Offset 0, Channel 19975)



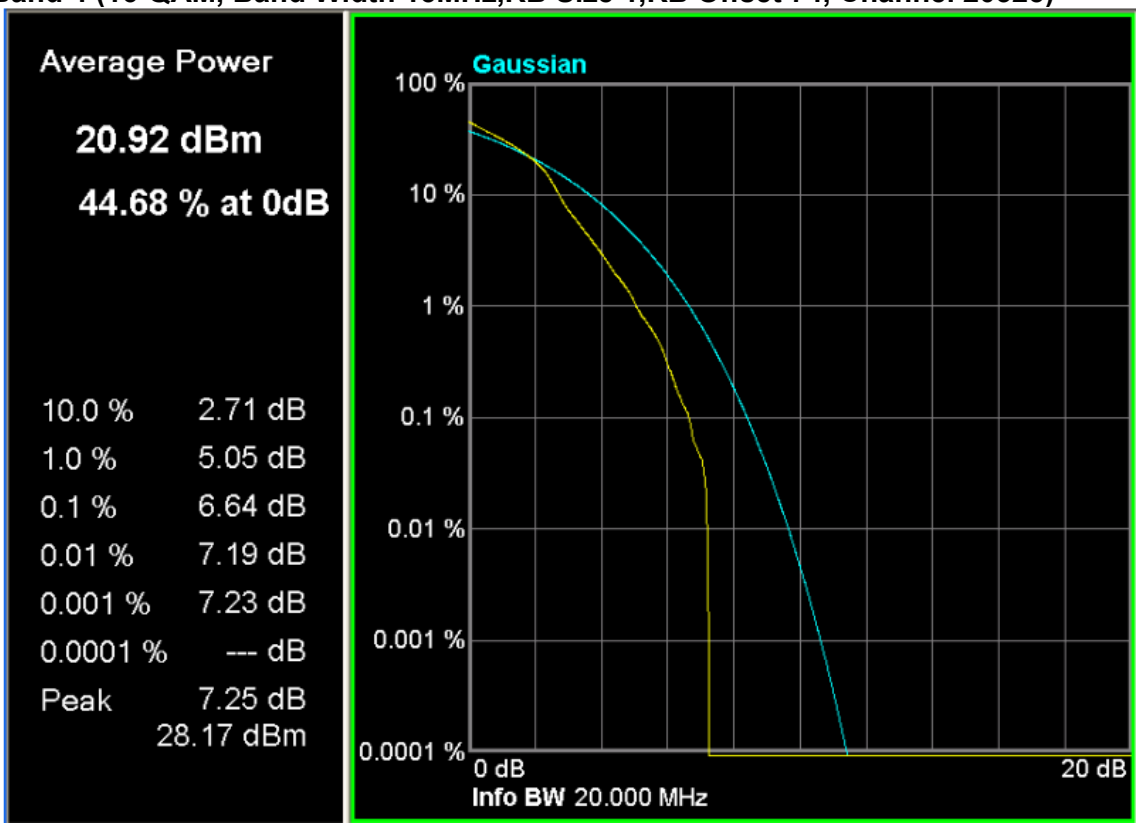
LTE Band 4 (16-QAM, Band Width 5MHz,RB Size 1,RB Offset 0, Channel 20375)

LTE Band 4 (QPSK, Band Width 10MHz,RB Size 1,RB Offset 49, Channel 20000)

LTE Band 4 (16-QAM, Band Width 10MHz,RB Size 1,RB Offset 0, Channel 20350)

LTE Band 4 (QPSK, Band Width 15MHz,RB Size 1,RB Offset 74, Channel 20325)

LTE Band 4 (16-QAM, Band Width 15MHz,RB Size 1,RB Offset 74, Channel 20325)



LTE Band 4 (QPSK, Band Width 20MHz,RB Size 1,RB Offset 99, Channel 20300)

LTE Band 4 (16-QAM, Band Width 20MHz,RB Size 1,RB Offset 99, Channel 20175)

10.Attachment

PHOTOGRAPHS OF TEST SETUP

Please refer to the file named “RF Setup Photos”.

PHOTOGRAPHS OF EUT

Please refer to the two files named“External Photos”and” Internal Photos” .

----End of the report----