Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 12			
	Channel Bandwidth 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.0	700.500005	0.007	714.499995	-0.007
3.4	700.499995	-0.007	714.500003	0.004
4.6	700.500004	0.006	714.500005	0.007

Note: The applicant defined the normal working voltage is from 3.4Vdc to 4.6Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 12			
	Channel Bandwidth 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	700.500005	0.007	714.499997	-0.004
-30	700.500004	0.006	714.500001	0.001
-20	700.499999	-0.001	714.500004	0.006
-10	700.499997	-0.004	714.500005	0.007
0	700.500001	0.001	714.499997	-0.004
10	700.499996	-0.006	714.499999	-0.001
20	700.499996	-0.006	714.499998	-0.003
30	700.500003	0.004	714.499996	-0.006
40	700.500004	0.006	714.500003	0.004
50	700.499995	-0.007	714.499995	-0.007
60	700.500004	0.006	714.500005	0.007
70	700.500002	0.003	714.499996	-0.006
80	700.499999	-0.001	714.499996	-0.006
85	700.500005	0.007	714.499998	-0.003

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 12			
	Channel Bandwidth 5MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.0	701.499997	-0.004	713.500001	0.001
3.4	701.500001	0.001	713.500005	0.007
4.6	701.499997	-0.004	713.500005	0.007

Note: The applicant defined the normal working voltage is from 3.4Vdc to 4.6Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 12			
	Channel Bandwidth 5MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	701.500001	0.001	713.499996	-0.006
-30	701.499995	-0.007	713.500002	0.003
-20	701.500003	0.004	713.500001	0.001
-10	701.500003	0.004	713.499999	-0.001
0	701.500003	0.004	713.499998	-0.003
10	701.499999	-0.001	713.500002	0.003
20	701.500001	0.001	713.500003	0.004
30	701.500005	0.007	713.500003	0.004
40	701.500003	0.004	713.500003	0.004
50	701.499996	-0.006	713.500005	0.007
60	701.500001	0.001	713.499996	-0.006
70	701.499999	-0.001	713.500001	0.001
80	701.500001	0.001	713.500005	0.007
85	701.499997	-0.004	713.500004	0.006

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 12			
	Channel Bandwidth 10MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.0	704.000005	0.007	710.999998	-0.003
3.4	703.999999	-0.001	710.999999	-0.001
4.6	703.999995	-0.007	710.999998	-0.003

Note: The applicant defined the normal working voltage is from 3.4Vdc to 4.6Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 12			
	Channel Bandwidth 10MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	704.000002	0.003	711.000002	0.003
-30	703.999997	-0.004	710.999995	-0.007
-20	703.999995	-0.007	711.000002	0.003
-10	704.000004	0.006	710.999996	-0.006
0	704.000001	0.001	710.999996	-0.006
10	703.999999	-0.001	710.999996	-0.006
20	703.999997	-0.004	710.999998	-0.003
30	703.999996	-0.006	710.999999	-0.001
40	703.999997	-0.004	710.999997	-0.004
50	704.000003	0.004	710.999999	-0.001
60	703.999995	-0.007	710.999998	-0.003
70	703.999998	-0.003	711.000005	0.007
80	703.999997	-0.004	710.999999	-0.001
85	703.999997	-0.004	711.000004	0.006

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 17			
	Channel Bandwidth 5MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.0	706.499997	-0.004	713.499995	-0.007
3.4	706.500002	0.003	713.500004	0.006
4.6	706.500001	0.001	713.499997	-0.004

Note: The applicant defined the normal working voltage is from 3.4Vdc to 4.6Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 17			
	Channel Bandwidth 5MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	706.499998	-0.003	713.500004	0.006
-30	706.499996	-0.006	713.499998	-0.003
-20	706.499995	-0.007	713.500005	0.007
-10	706.500004	0.006	713.499996	-0.006
0	706.500001	0.001	713.499997	-0.004
10	706.499998	-0.003	713.500003	0.004
20	706.499999	-0.001	713.499997	-0.004
30	706.499997	-0.004	713.499997	-0.004
40	706.499995	-0.007	713.499997	-0.004
50	706.499998	-0.003	713.500001	0.001
60	706.499999	-0.001	713.499999	-0.001
70	706.499996	-0.006	713.499996	-0.006
80	706.500004	0.006	713.500001	0.001
85	706.500003	0.004	713.500005	0.007

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 17			
	Channel Bandwidth 10MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.0	709.000002	0.003	711.000003	0.004
3.4	708.999995	-0.007	711.000002	0.003
4.6	708.999997	-0.004	710.999996	-0.006

Note: The applicant defined the normal working voltage is from 3.4Vdc to 4.6Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 17			
	Channel Bandwidth 10MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	708.999997	-0.004	710.999997	-0.004
-30	709.000004	0.006	710.999997	-0.004
-20	708.999999	-0.001	711.000002	0.003
-10	709.000005	0.007	711.000004	0.006
0	709.000004	0.006	711.000004	0.006
10	708.999995	-0.007	710.999996	-0.006
20	708.999999	-0.001	711.000004	0.006
30	709.000001	0.001	710.999996	-0.006
40	708.999996	-0.006	711.000003	0.004
50	709.000002	0.003	710.999999	-0.001
60	709.000005	0.007	711.000002	0.003
70	709.000005	0.007	710.999998	-0.003
80	708.999996	-0.006	711.000001	0.001
85	709.000001	0.001	710.999999	-0.001

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 66			
	Channel Bandwidth: 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.0	1710.700004	0.002	1779.300003	0.002
3.4	1710.699995	-0.003	1779.299995	-0.003
4.6	1710.700005	0.003	1779.300005	0.003

Note: The applicant defined the normal working voltage is from 3.4Vdc to 4.6Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 66			
	Channel Bandwidth: 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	1710.699995	-0.003	1779.300001	0.001
-30	1710.700003	0.002	1779.299996	-0.002
-20	1710.699998	-0.001	1779.300004	0.002
-10	1710.699999	-0.001	1779.299997	-0.002
0	1710.699997	-0.002	1779.299998	-0.001
10	1710.699997	-0.002	1779.299996	-0.002
20	1710.700001	0.001	1779.300005	0.003
30	1710.699995	-0.003	1779.300002	0.001
40	1710.699998	-0.001	1779.299995	-0.003
50	1710.700002	0.001	1779.299998	-0.001
60	1710.700001	0.001	1779.300005	0.003
70	1710.699997	-0.002	1779.300002	0.001
80	1710.700004	0.002	1779.299997	-0.002
85	1710.699995	-0.003	1779.300002	0.001

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 66			
	Channel Bandwidth: 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.0	1711.500003	0.002	1778.500004	0.002
3.4	1711.500003	0.002	1778.500004	0.002
4.6	1711.500001	0.001	1778.500003	0.002

Note: The applicant defined the normal working voltage is from 3.4Vdc to 4.6Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 66			
	Channel Bandwidth: 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	1711.500005	0.003	1778.500003	0.002
-30	1711.499999	-0.001	1778.500002	0.001
-20	1711.500002	0.001	1778.500001	0.001
-10	1711.500005	0.003	1778.500003	0.002
0	1711.499997	-0.002	1778.499997	-0.002
10	1711.499998	-0.001	1778.500005	0.003
20	1711.499997	-0.002	1778.499999	-0.001
30	1711.500004	0.002	1778.499998	-0.001
40	1711.499995	-0.003	1778.499995	-0.003
50	1711.500005	0.003	1778.500005	0.003
60	1711.499995	-0.003	1778.499999	-0.001
70	1711.500002	0.001	1778.499996	-0.002
80	1711.499995	-0.003	1778.500001	0.001
85	1711.499999	-0.001	1778.499996	-0.002

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 66			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.0	1712.499998	-0.001	1777.500001	0.001
3.4	1712.499997	-0.002	1777.499999	-0.001
4.6	1712.499997	-0.002	1777.499998	-0.001

Note: The applicant defined the normal working voltage is from 3.4Vdc to 4.6Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 66			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	1712.499997	-0.002	1777.500004	0.002
-30	1712.499998	-0.001	1777.500003	0.002
-20	1712.499996	-0.002	1777.500001	0.001
-10	1712.499997	-0.002	1777.499999	-0.001
0	1712.499995	-0.003	1777.499998	-0.001
10	1712.499997	-0.002	1777.499998	-0.001
20	1712.500003	0.002	1777.499997	-0.002
30	1712.500005	0.003	1777.499996	-0.002
40	1712.499997	-0.002	1777.499999	-0.001
50	1712.500001	0.001	1777.499998	-0.001
60	1712.499997	-0.002	1777.500005	0.003
70	1712.500001	0.001	1777.500002	0.001
80	1712.499998	-0.001	1777.499997	-0.002
85	1712.499999	-0.001	1777.499998	-0.001

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 66			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.0	1714.999997	-0.002	1775.000003	0.002
3.4	1714.999995	-0.003	1775.000004	0.002
4.6	1714.999999	-0.001	1774.999995	-0.003

Note: The applicant defined the normal working voltage is from 3.4Vdc to 4.6Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 66			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	1715.000005	0.003	1774.999996	-0.002
-30	1715.000004	0.002	1774.999995	-0.003
-20	1715.000002	0.001	1775.000004	0.002
-10	1715.000002	0.001	1775.000002	0.001
0	1714.999998	-0.001	1774.999995	-0.003
10	1715.000004	0.002	1775.000001	0.001
20	1714.999996	-0.002	1774.999998	-0.001
30	1715.000005	0.003	1775.000003	0.002
40	1715.000003	0.002	1775.000004	0.002
50	1715.000004	0.002	1774.999995	-0.003
60	1714.999996	-0.002	1774.999995	-0.003
70	1715.000005	0.003	1775.000003	0.002
80	1715.000001	0.001	1775.000005	0.003
85	1714.999999	-0.001	1774.999999	-0.001

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 66			
	Channel Bandwidth: 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.0	1717.500005	0.003	1772.499999	-0.001
3.4	1717.500002	0.001	1772.499995	-0.003
4.6	1717.500001	0.001	1772.500004	0.002

Note: The applicant defined the normal working voltage is from 3.4Vdc to 4.6Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 66			
	Channel Bandwidth: 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	1717.500001	0.001	1772.500004	0.002
-30	1717.499998	-0.001	1772.499996	-0.002
-20	1717.499996	-0.002	1772.499996	-0.002
-10	1717.499995	-0.003	1772.499999	-0.001
0	1717.500005	0.003	1772.500004	0.002
10	1717.499998	-0.001	1772.499997	-0.002
20	1717.499997	-0.002	1772.500002	0.001
30	1717.499997	-0.002	1772.500005	0.003
40	1717.500002	0.001	1772.499996	-0.002
50	1717.500001	0.001	1772.500004	0.002
60	1717.499996	-0.002	1772.500003	0.002
70	1717.499995	-0.003	1772.499998	-0.001
80	1717.500001	0.001	1772.500005	0.003
85	1717.500002	0.001	1772.500003	0.002

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 66			
	Channel Bandwidth: 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.0	1720.000002	0.001	1769.999996	-0.002
3.4	1720.000003	0.002	1770.000004	0.002
4.6	1719.999995	-0.003	1770.000001	0.001

Note: The applicant defined the normal working voltage is from 3.4Vdc to 4.6Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 66			
	Channel Bandwidth: 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	1720.000004	0.002	1769.999999	-0.001
-30	1719.999995	-0.003	1769.999996	-0.002
-20	1719.999995	-0.003	1770.000005	0.003
-10	1719.999996	-0.002	1770.000002	0.001
0	1719.999998	-0.001	1769.999996	-0.002
10	1719.999999	-0.001	1769.999998	-0.001
20	1719.999995	-0.003	1770.000004	0.002
30	1719.999999	-0.001	1770.000002	0.001
40	1720.000004	0.002	1769.999995	-0.003
50	1719.999998	-0.001	1769.999996	-0.002
60	1719.999997	-0.002	1769.999995	-0.003
70	1719.999999	-0.001	1770.000004	0.002
80	1719.999999	-0.001	1769.999997	-0.002
85	1719.999995	-0.003	1770.000004	0.002

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 71			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.0	665.499997	-0.005	695.500002	0.003
3.4	665.500005	0.008	695.500004	0.006
4.6	665.500004	0.006	695.499995	-0.007

Note: The applicant defined the normal working voltage is from 3.4Vdc to 4.6Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 71			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	665.500002	0.003	695.500002	0.003
-30	665.500005	0.008	695.500005	0.007
-20	665.499999	-0.002	695.500004	0.006
-10	665.499995	-0.008	695.499998	-0.003
0	665.500005	0.008	695.499995	-0.007
10	665.500002	0.003	695.500004	0.006
20	665.499997	-0.005	695.499999	-0.001
30	665.499997	-0.005	695.499995	-0.007
40	665.500005	0.008	695.499998	-0.003
50	665.499995	-0.008	695.500002	0.003
60	665.500002	0.003	695.499999	-0.001
70	665.500001	0.002	695.499997	-0.004
80	665.500001	0.002	695.499995	-0.007
85	665.500003	0.005	695.500004	0.006

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 71			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.0	667.999998	-0.003	693.000003	0.004
3.4	667.999998	-0.003	693.000004	0.006
4.6	668.000002	0.003	693.000005	0.007

Note: The applicant defined the normal working voltage is from 3.4Vdc to 4.6Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 71			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	668.000004	0.006	693.000001	0.001
-30	667.999999	-0.001	693.000002	0.003
-20	668.000004	0.006	693.000002	0.003
-10	667.999998	-0.003	693.000002	0.003
0	667.999998	-0.003	692.999996	-0.006
10	668.000001	0.001	692.999995	-0.007
20	667.999997	-0.004	693.000003	0.004
30	667.999996	-0.006	692.999995	-0.007
40	667.999999	-0.001	693.000001	0.001
50	668.000004	0.006	692.999998	-0.003
60	667.999995	-0.007	693.000002	0.003
70	668.000001	0.001	693.000005	0.007
80	668.000003	0.004	693.000003	0.004
85	668.000001	0.001	692.999999	-0.001

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 71			
	Channel Bandwidth: 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.0	670.500005	0.007	690.500001	0.001
3.4	670.499998	-0.003	690.499995	-0.007
4.6	670.499998	-0.003	690.500005	0.007

Note: The applicant defined the normal working voltage is from 3.4Vdc to 4.6Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 71			
	Channel Bandwidth: 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	670.500005	0.007	690.500004	0.006
-30	670.499996	-0.006	690.499998	-0.003
-20	670.500003	0.004	690.499997	-0.004
-10	670.500004	0.006	690.499999	-0.001
0	670.500003	0.004	690.500004	0.006
10	670.500004	0.006	690.499997	-0.004
20	670.500005	0.007	690.499997	-0.004
30	670.500002	0.003	690.500003	0.004
40	670.500005	0.007	690.499997	-0.004
50	670.499996	-0.006	690.499995	-0.007
60	670.499999	-0.001	690.499996	-0.006
70	670.499999	-0.001	690.499997	-0.004
80	670.500005	0.007	690.499997	-0.004
85	670.499998	-0.003	690.500003	0.004

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 71			
	Channel Bandwidth: 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.0	672.999996	-0.006	687.999997	-0.004
3.4	672.999998	-0.003	688.000004	0.006
4.6	673.000003	0.004	688.000004	0.006

Note: The applicant defined the normal working voltage is from 3.4Vdc to 4.6Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 71			
	Channel Bandwidth: 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	672.999998	-0.003	688.000001	0.001
-30	673.000004	0.006	688.000005	0.007
-20	673.000004	0.006	687.999995	-0.007
-10	673.000004	0.006	687.999998	-0.003
0	672.999999	-0.001	687.999996	-0.006
10	673.000002	0.003	688.000001	0.001
20	672.999999	-0.001	687.999999	-0.001
30	673.000002	0.003	687.999997	-0.004
40	673.000005	0.007	688.000005	0.007
50	673.000002	0.003	687.999998	-0.003
60	672.999999	-0.001	687.999997	-0.004
70	673.000004	0.006	688.000005	0.007
80	673.000004	0.006	688.000005	0.007
85	672.999995	-0.007	688.000003	0.004

4.4 Emission Bandwidth Measurement

4.4.1 Limits of Emission Bandwidth Measurement

According to FCC 2.1049, the occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 % of the total mean power radiated by a given emission.

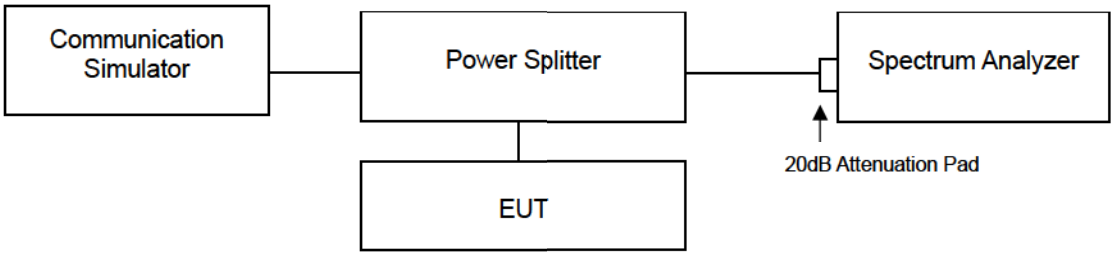
4.4.2 Test Procedure

For the 26dBc bandwidth measurement method, please refer to section 5.4.3 of ANSI C63.26.

a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be wide enough to see sufficient roll off of the signal to make the measurement.
b) The nominal RBW shall be in the range of 1% to 5% of the anticipated OBW, and the VBW shall be set ≥ 3 × RBW.
c) Set the reference level of the instrument as required to prevent the signal amplitude from exceeding the maximum spectrum analyzer input mixer level for linear operation. See guidance provided in 4.2.3.
d) The dynamic range of the spectrum analyzer at the selected RBW shall be more than 10 dB below the target "−X dB" requirement, i.e., if the requirement calls for measuring the −26 dB OBW, the spectrum analyzer noise floor at the selected RBW shall be at least 36 dB below the reference level.
e) Set spectrum analyzer detection mode to peak, and the trace mode to max hold.
f) Determine the following reference values: Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace (this is the reference value).
g) Determine the "−X dB amplitude" as equal to (Reference Value − X). Alternatively, this calculation can be performed on the spectrum analyzer using the delta-marker measurement function.
h) Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display such that each marker is at or slightly below the "−X dB amplitude" determined in step f). If a marker is below this "−X dB amplitude" value it should be as close as possible to this value. The OBW is the positive frequency difference between the two markers.
i) The OBW shall be reported by providing plot(s) of the measuring instrument display, to include markers depicting the relevant frequency and amplitude information (e.g., marker table). The frequency and amplitude axis and scale shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

For the occupied bandwidth measurement method, please refer to section 5.4.4 of ANSI C63.26.

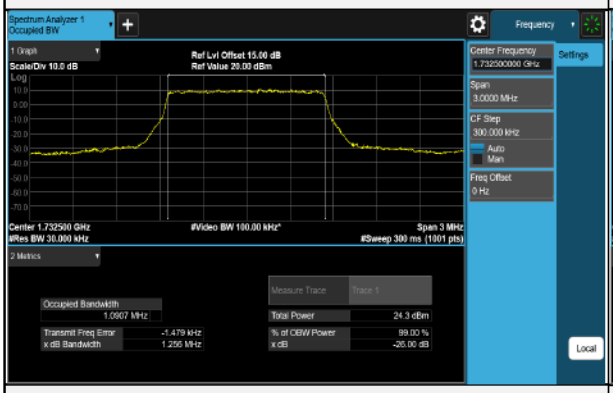
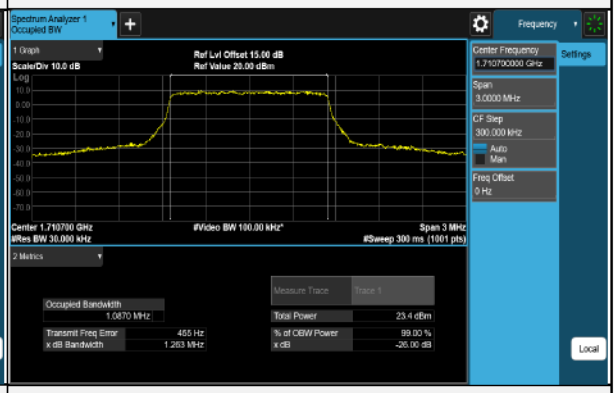
4.4.3 Test Setup



4.4.4 Test Result

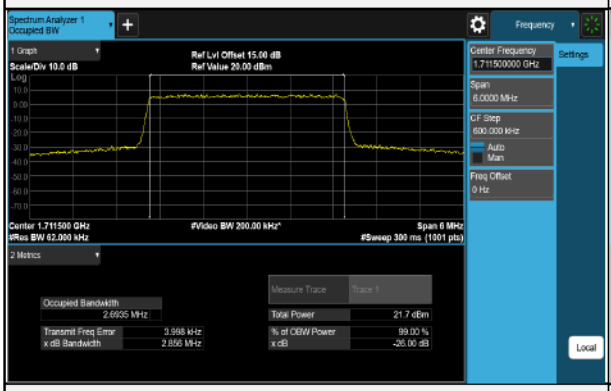
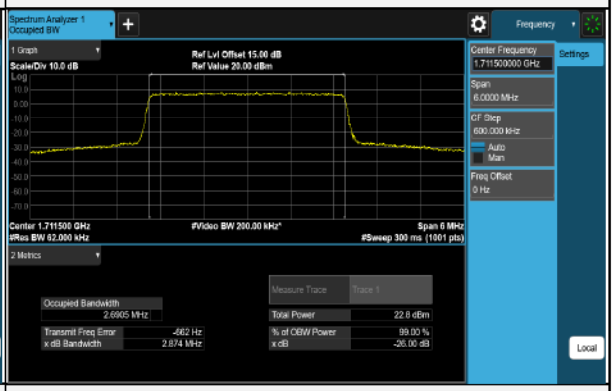
LTE Band 4 (Channel Bandwidth 1.4MHz)

Test Condition	Channel	Frequency (MHz)	Occupied bandwidth (MHz)	26dB Bandwidth (MHz)
QPSK	19957	1710.7	1.0888	1.249
QPSK	20175	1732.5	1.0907	1.256
QPSK	20393	1754.3	1.0903	1.259
16QAM	19957	1710.7	1.0870	1.263
16QAM	20175	1732.5	1.0876	1.256
16QAM	20393	1754.3	1.0871	1.257
64QAM	19957	1710.7	1.0878	1.258
64QAM	20175	1732.5	1.0877	1.250
64QAM	20393	1754.3	1.0870	1.260

Spectrum Plot of Worst Value	
Occupied bandwidth	26dB Bandwidth
	
QPSK CH 20175 (1732.5MHz)	16QAM CH 19957 (1710.7MHz)

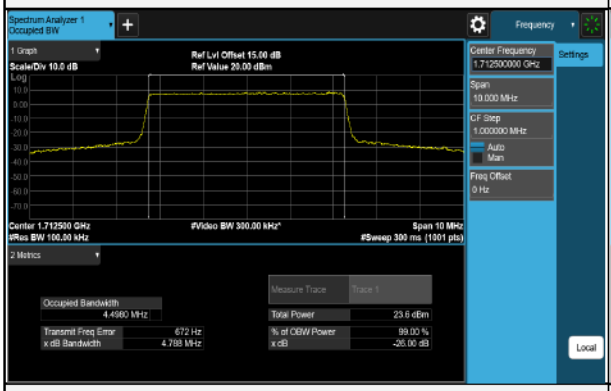
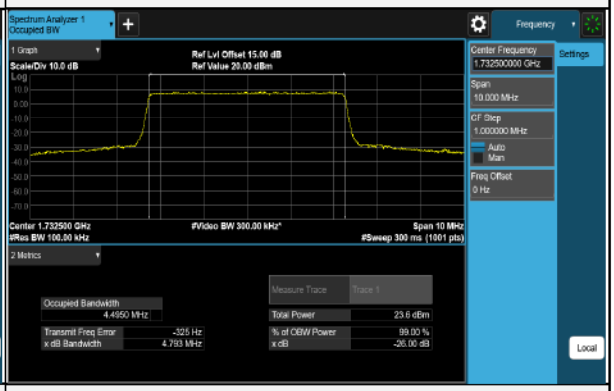
LTE Band 4 (Channel Bandwidth 3MHz)

Test Condition	Channel	Frequency (MHz)	Occupied bandwidth (MHz)	26dB Bandwidth (MHz)
QPSK	19965	1711.5	2.6918	2.870
QPSK	20175	1732.5	2.6894	2.860
QPSK	20385	1753.5	2.6920	2.871
16QAM	19965	1711.5	2.6905	2.874
16QAM	20175	1732.5	2.6897	2.867
16QAM	20385	1753.5	2.6894	2.874
64QAM	19965	1711.5	2.6935	2.856
64QAM	20175	1732.5	2.6909	2.861
64QAM	20385	1753.5	2.6932	2.860

Spectrum Plot of Worst Value	
Occupied bandwidth	26dB Bandwidth
	
64QAM CH 19965 (1711.5MHz)	16QAM CH 19965 (1711.5MHz)

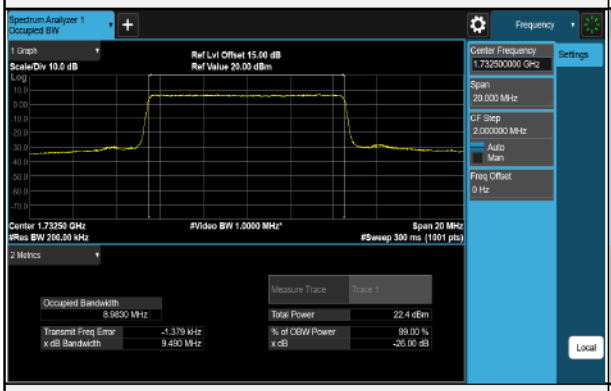
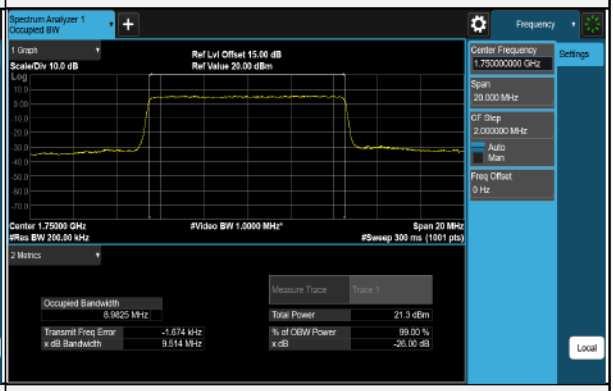
LTE Band 4 (Channel Bandwidth 5MHz)

Test Condition	Channel	Frequency (MHz)	Occupied bandwidth (MHz)	26dB Bandwidth (MHz)
QPSK	19975	1712.5	4.4980	4.788
QPSK	20175	1732.5	4.4950	4.793
QPSK	20375	1752.5	4.4945	4.773
16QAM	19975	1712.5	4.4908	4.774
16QAM	20175	1732.5	4.4889	4.768
16QAM	20375	1752.5	4.4906	4.772
64QAM	19975	1712.5	4.4962	4.782
64QAM	20175	1732.5	4.4960	4.778
64QAM	20375	1752.5	4.4923	4.777

Spectrum Plot of Worst Value	
Occupied bandwidth	26dB Bandwidth
	
QPSK CH 19975 (1712.5MHz)	QPSK CH 20175 (1732.5MHz)

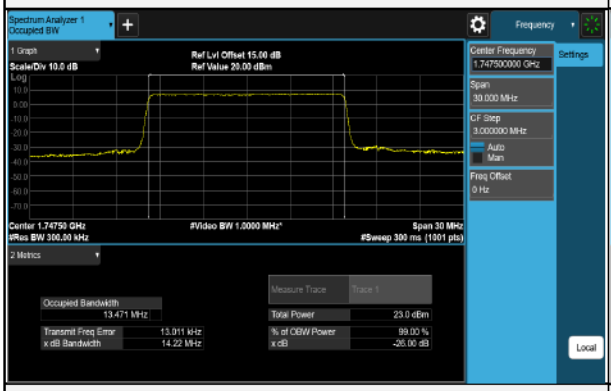
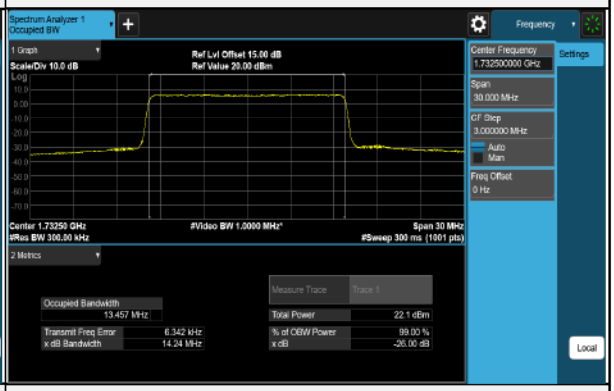
LTE Band 4 (Channel Bandwidth 10MHz)

Test Condition	Channel	Frequency (MHz)	Occupied bandwidth (MHz)	26dB Bandwidth (MHz)
QPSK	20000	1715	8.9800	9.498
QPSK	20175	1732.5	8.9823	9.508
QPSK	20350	1750	8.9808	9.499
16QAM	20000	1715	8.9720	9.510
16QAM	20175	1732.5	8.9830	9.490
16QAM	20350	1750	8.9811	9.494
64QAM	20000	1715	8.9759	9.511
64QAM	20175	1732.5	8.9805	9.504
64QAM	20350	1750	8.9825	9.514

Spectrum Plot of Worst Value	
Occupied bandwidth	26dB Bandwidth
	
16QAM CH 20175 (1732.5MHz)	64QAM CH 20350 (1750MHz)

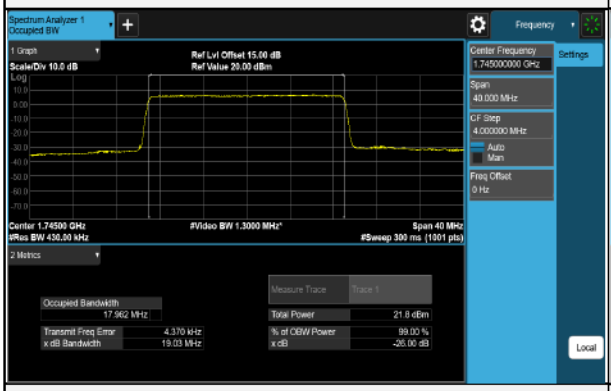
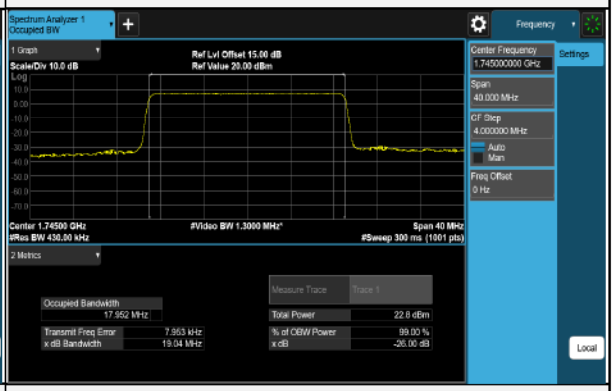
LTE Band 4 (Channel Bandwidth 15MHz)

Test Condition	Channel	Frequency (MHz)	Occupied bandwidth (MHz)	26dB Bandwidth (MHz)
QPSK	20025	1717.5	13.466	14.23
QPSK	20175	1732.5	13.460	14.23
QPSK	20325	1747.5	13.471	14.23
16QAM	20025	1717.5	13.447	14.23
16QAM	20175	1732.5	13.457	14.24
16QAM	20325	1747.5	13.458	14.24
64QAM	20025	1717.5	13.440	14.23
64QAM	20175	1732.5	13.451	14.23
64QAM	20325	1747.5	13.453	14.23

Spectrum Plot of Worst Value	
Occupied bandwidth	26dB Bandwidth
	
QPSK CH 20325 (1747.5MHz)	16QAM CH 20175 (1732.5MHz)

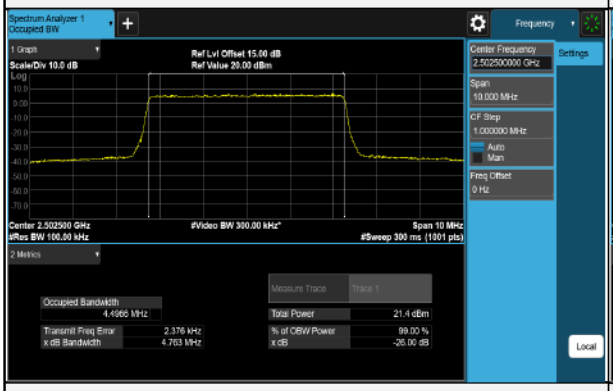
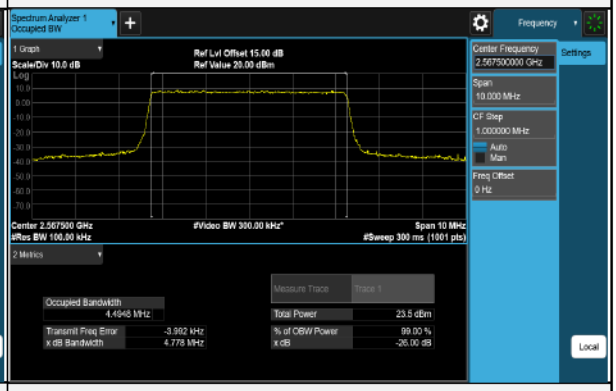
LTE Band 4 (Channel Bandwidth 20MHz)

Test Condition	Channel	Frequency (MHz)	Occupied bandwidth (MHz)	26dB Bandwidth (MHz)
QPSK	20050	1720	17.946	19.03
QPSK	20175	1732.5	17.959	19.03
QPSK	20300	1745	17.952	19.04
16QAM	20050	1720	17.957	19.02
16QAM	20175	1732.5	17.958	19.04
16QAM	20300	1745	17.962	19.03
64QAM	20050	1720	17.941	19.03
64QAM	20175	1732.5	17.956	19.03
64QAM	20300	1745	17.953	19.03

Spectrum Plot of Worst Value	
Occupied bandwidth	26dB Bandwidth
	
16QAM CH 20300 (1745MHz)	QPSK CH 20300 (1745MHz)

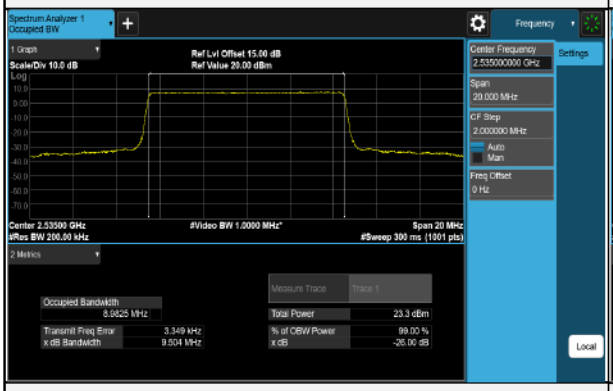
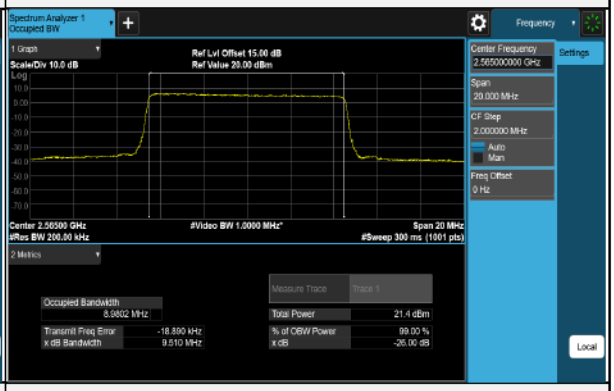
LTE Band 7 (Channel Bandwidth 5MHz)

Test Condition	Channel	Frequency (MHz)	Occupied bandwidth (MHz)	26dB Bandwidth (MHz)
QPSK	20775	2502.5	4.4871	4.767
QPSK	21100	2535	4.4922	4.771
QPSK	21425	2567.5	4.4948	4.778
16QAM	20775	2502.5	4.4896	4.770
16QAM	21100	2535	4.4884	4.764
16QAM	21425	2567.5	4.4934	4.773
64QAM	20775	2502.5	4.4966	4.763
64QAM	21100	2535	4.4965	4.774
64QAM	21425	2567.5	4.4924	4.770

Spectrum Plot of Worst Value	
Occupied bandwidth	26dB Bandwidth
	
64QAM CH 20775 (2502.5MHz)	QPSK CH 21425 (2567.5MHz)

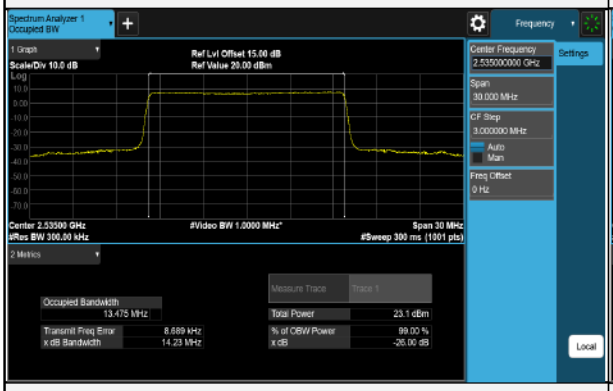
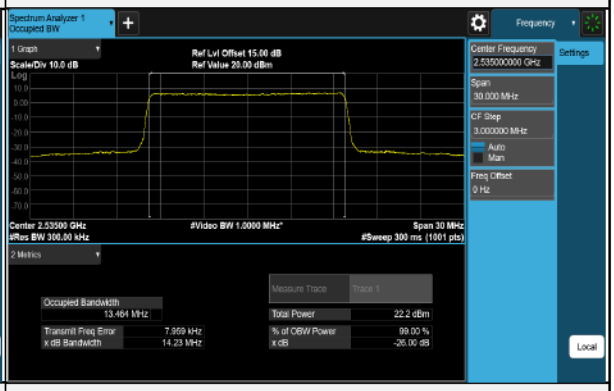
LTE Band 7 (Channel Bandwidth 10MHz)

Test Condition	Channel	Frequency (MHz)	Occupied bandwidth (MHz)	26dB Bandwidth (MHz)
QPSK	20800	2505	8.9797	9.501
QPSK	21100	2535	8.9825	9.504
QPSK	21400	2565	8.9816	9.495
16QAM	20800	2505	8.9725	9.490
16QAM	21100	2535	8.9812	9.497
16QAM	21400	2565	8.9770	9.487
64QAM	20800	2505	8.9784	9.502
64QAM	21100	2535	8.9825	9.504
64QAM	21400	2565	8.9802	9.510

Spectrum Plot of Worst Value	
Occupied bandwidth	26dB Bandwidth
	
QPSK CH 21100 (2535MHz)	64QAM CH 21400 (2565MHz)

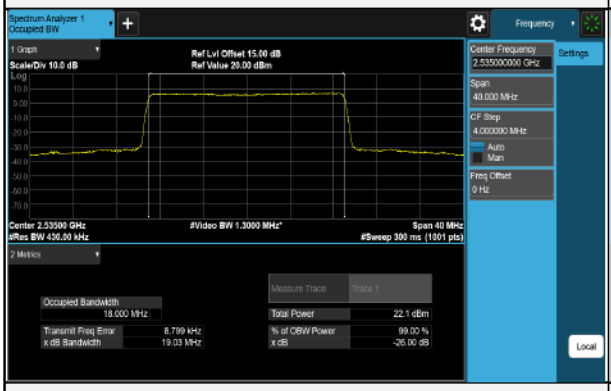
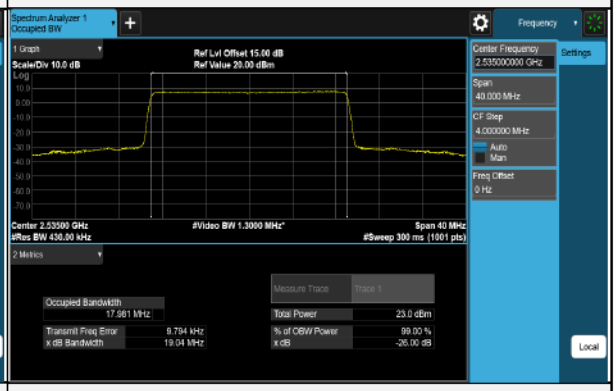
LTE Band 7 (Channel Bandwidth 15MHz)

Test Condition	Channel	Frequency (MHz)	Occupied bandwidth (MHz)	26dB Bandwidth (MHz)
QPSK	20825	2507.5	13.459	14.22
QPSK	21100	2535	13.475	14.23
QPSK	21375	2562.5	13.466	14.21
16QAM	20825	2507.5	13.442	14.23
16QAM	21100	2535	13.464	14.23
16QAM	21375	2562.5	13.447	14.22
64QAM	20825	2507.5	13.439	14.22
64QAM	21100	2535	13.467	14.23
64QAM	21375	2562.5	13.442	14.20

Spectrum Plot of Worst Value	
Occupied bandwidth	26dB Bandwidth
	
QPSK CH 21100 (2535MHz)	16QAM CH 21100 (2535MHz)

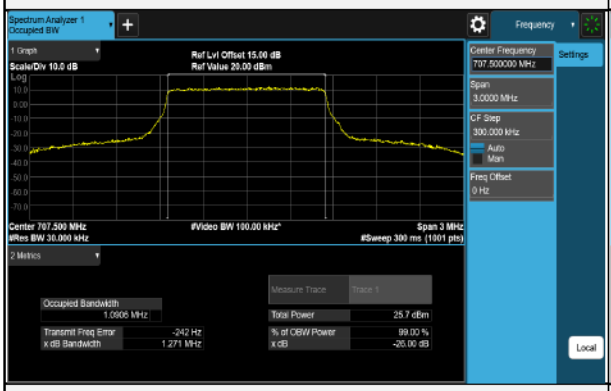
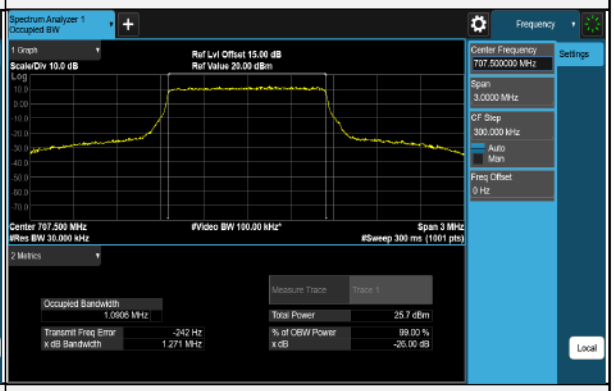
LTE Band 7 (Channel Bandwidth 20MHz)

Test Condition	Channel	Frequency (MHz)	Occupied bandwidth (MHz)	26dB Bandwidth (MHz)
QPSK	20850	2510	17.902	19.00
QPSK	21100	2535	17.981	19.04
QPSK	21350	2560	17.915	18.98
16QAM	20850	2510	17.911	19.01
16QAM	21100	2535	18.000	19.03
16QAM	21350	2560	17.923	18.98
64QAM	20850	2510	17.910	19.01
64QAM	21100	2535	17.986	19.03
64QAM	21350	2560	17.916	18.99

Spectrum Plot of Worst Value	
Occupied bandwidth	26dB Bandwidth
	
16QAM CH 21100 (2535MHz)	QPSK CH 21100 (2535MHz)

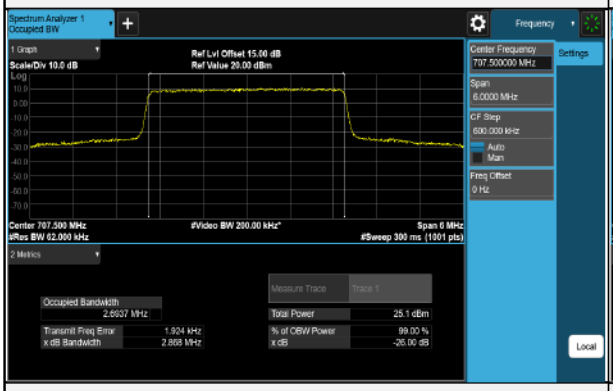
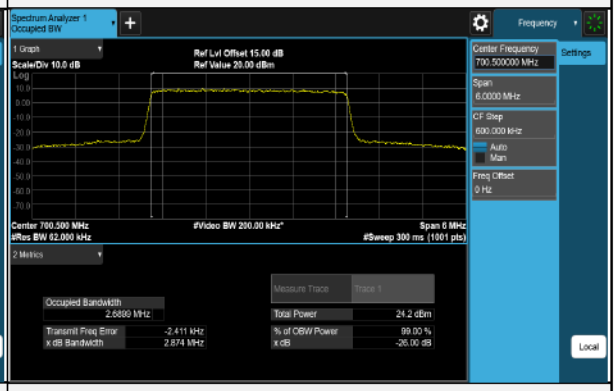
LTE Band 12 (Channel Bandwidth 1.4MHz)

Test Condition	Channel	Frequency (MHz)	Occupied bandwidth (MHz)	26dB Bandwidth (MHz)
QPSK	23017	699.7	1.0873	1.251
QPSK	23095	707.5	1.0906	1.271
QPSK	23173	715.3	1.0897	1.256
16QAM	23017	699.7	1.0857	1.251
16QAM	23095	707.5	1.0866	1.263
16QAM	23173	715.3	1.0873	1.256
64QAM	23017	699.7	1.0887	1.250
64QAM	23095	707.5	1.0883	1.250
64QAM	23173	715.3	1.0881	1.251

Spectrum Plot of Worst Value	
Occupied bandwidth	26dB Bandwidth
	
QPSK CH 23095 (707.5MHz)	QPSK CH 23095 (707.5MHz)

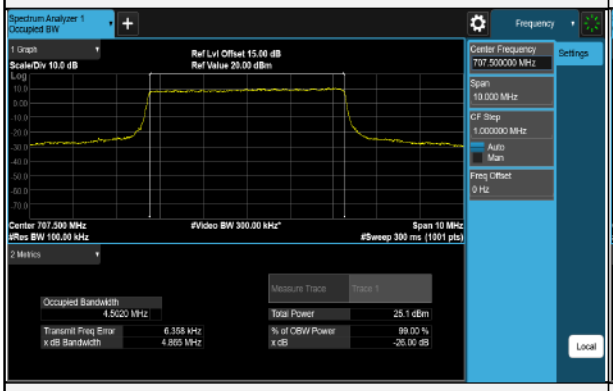
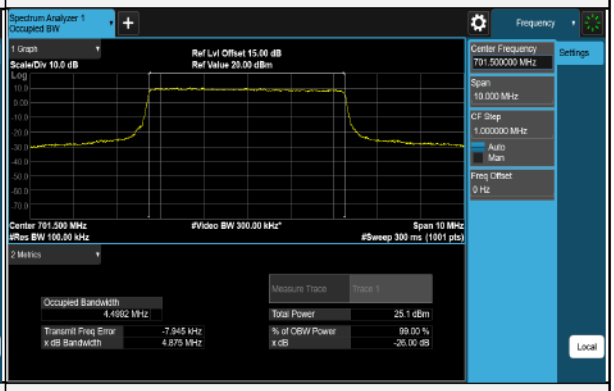
LTE Band 12 (Channel Bandwidth 3MHz)

Test Condition	Channel	Frequency (MHz)	Occupied bandwidth (MHz)	26dB Bandwidth (MHz)
QPSK	23025	700.5	2.6914	2.866
QPSK	23095	707.5	2.6937	2.868
QPSK	23165	714.5	2.6931	2.869
16QAM	23025	700.5	2.6899	2.874
16QAM	23095	707.5	2.6929	2.868
16QAM	23165	714.5	2.6886	2.871
64QAM	23025	700.5	2.6916	2.861
64QAM	23095	707.5	2.6923	2.860
64QAM	23165	714.5	2.6925	2.861

Spectrum Plot of Worst Value	
Occupied bandwidth	26dB Bandwidth
	
QPSK CH 23095 (707.5MHz)	16QAM CH 23025 (700.5MHz)

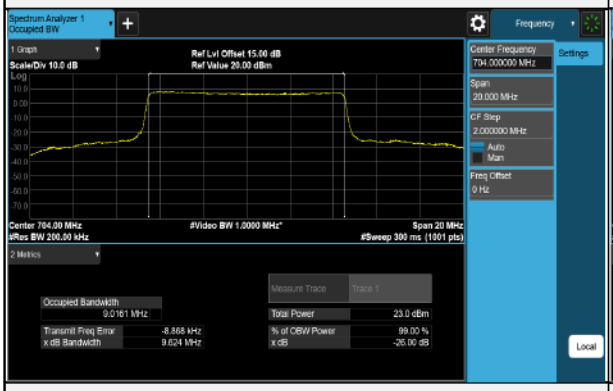
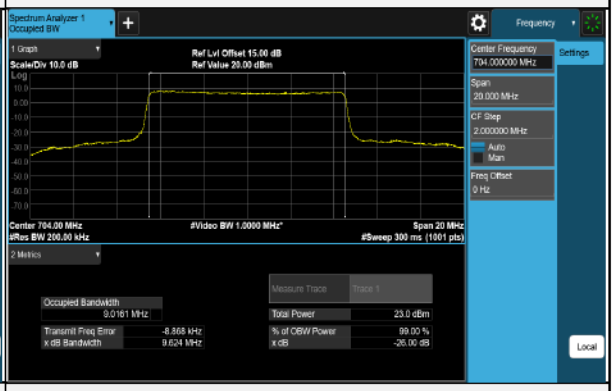
LTE Band 12 (Channel Bandwidth 5MHz)

Test Condition	Channel	Frequency (MHz)	Occupied bandwidth (MHz)	26dB Bandwidth (MHz)
QPSK	23035	701.5	4.4992	4.875
QPSK	23095	707.5	4.5020	4.865
QPSK	23155	713.5	4.4966	4.833
16QAM	23035	701.5	4.4932	4.870
16QAM	23095	707.5	4.4989	4.851
16QAM	23155	713.5	4.4919	4.840
64QAM	23035	701.5	4.4973	4.832
64QAM	23095	707.5	4.5003	4.857
64QAM	23155	713.5	4.4932	4.838

Spectrum Plot of Worst Value	
Occupied bandwidth	26dB Bandwidth
	
QPSK CH 23095 (707.5MHz)	QPSK CH 23035 (701.5MHz)

LTE Band 12 (Channel Bandwidth 10MHz)

Test Condition	Channel	Frequency (MHz)	Occupied bandwidth (MHz)	26dB Bandwidth (MHz)
QPSK	23060	704	9.0139	9.598
QPSK	23095	707.5	8.9916	9.546
QPSK	23130	711	8.9435	9.506
16QAM	23060	704	9.0153	9.549
16QAM	23095	707.5	8.9870	9.538
16QAM	23130	711	8.9372	9.504
64QAM	23060	704	9.0161	9.624
64QAM	23095	707.5	8.9939	9.553
64QAM	23130	711	8.9441	9.519

Spectrum Plot of Worst Value	
Occupied bandwidth	26dB Bandwidth
	
64QAM CH 23060 (704MHz)	64QAM CH 23060 (704MHz)