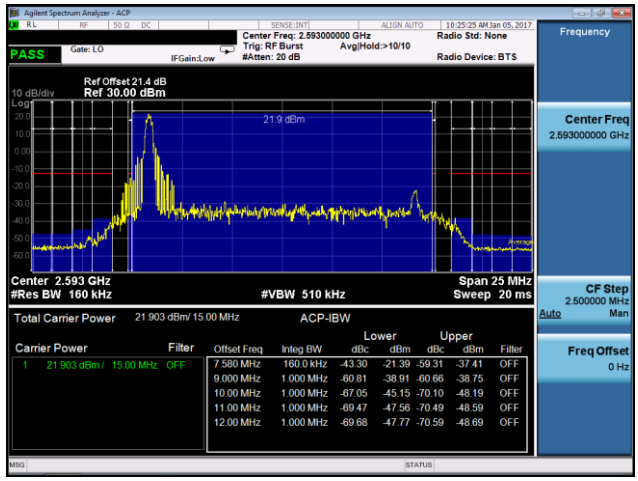
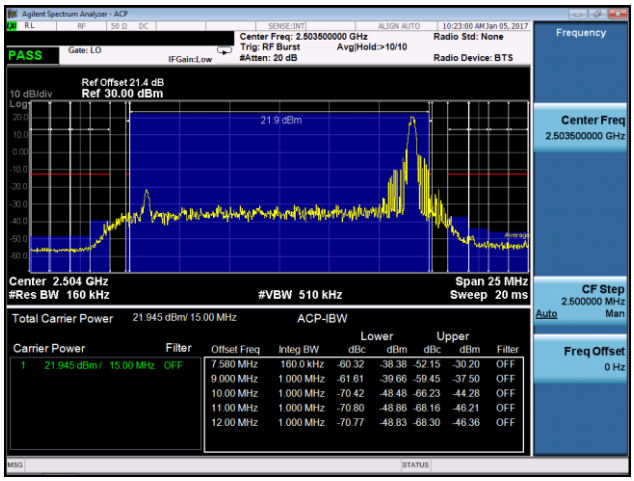
Mode	LTE Band 41, CB: 15MHz

QPSK, Low Channel, 1RB Low

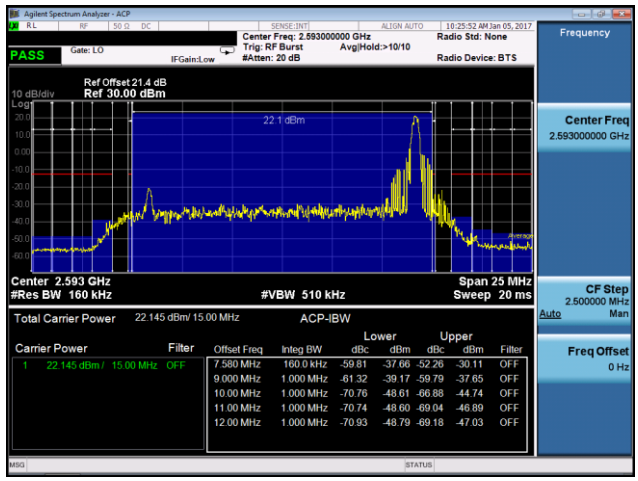
QPSK, Mid. Channel, 1RB Low



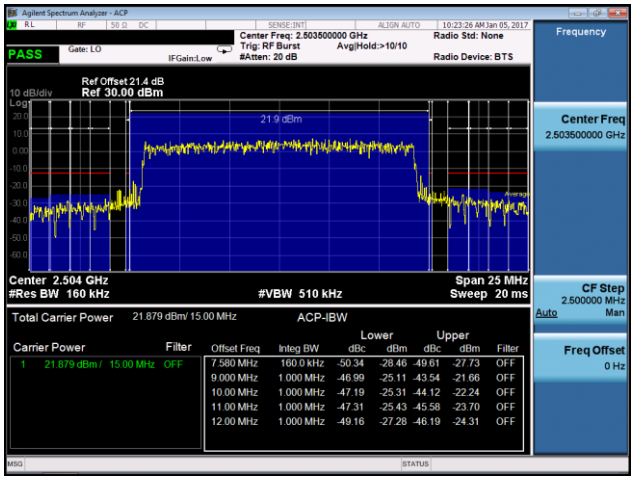
QPSK, Low Channel, 1RB High



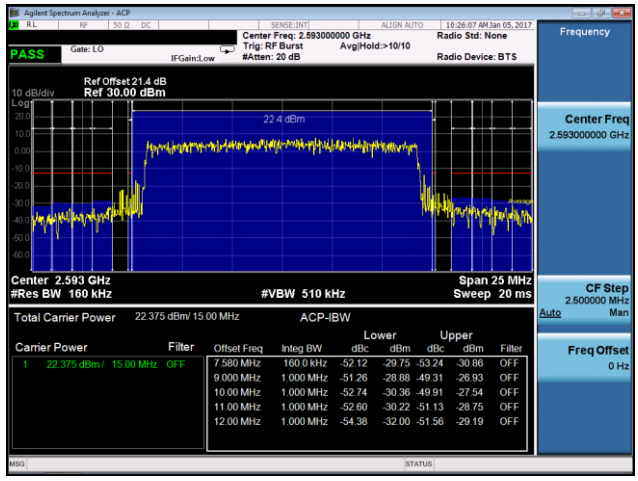
QPSK, Mid. Channel, 1RB High



QPSK, Low Channel, Full RB



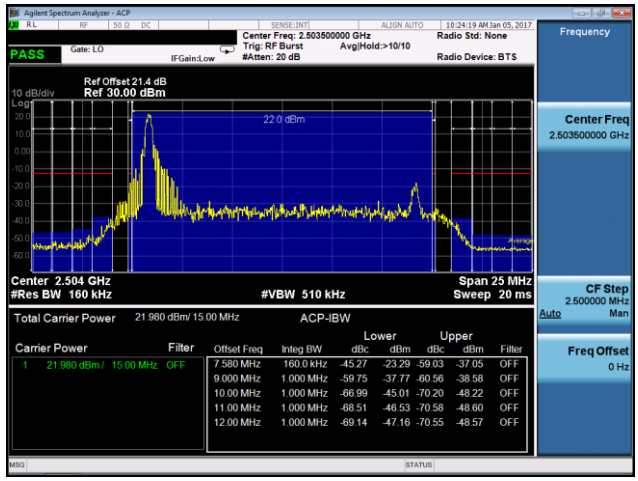
QPSK, Mid. Channel, Full RB



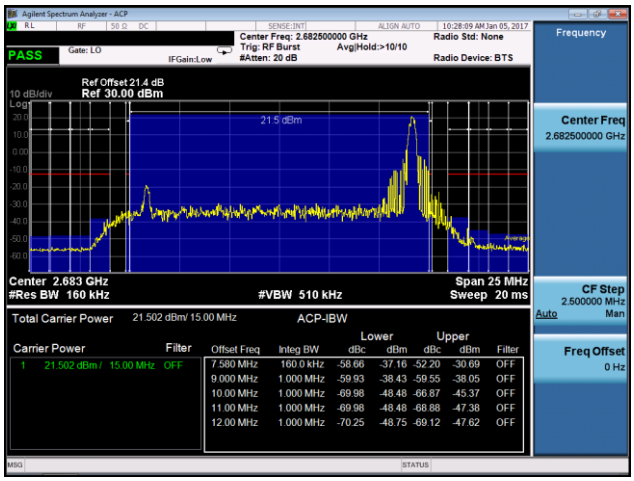
Mode	LTE Band 41, CB: 15MHz

QPSK, High Channel, 1RB Low

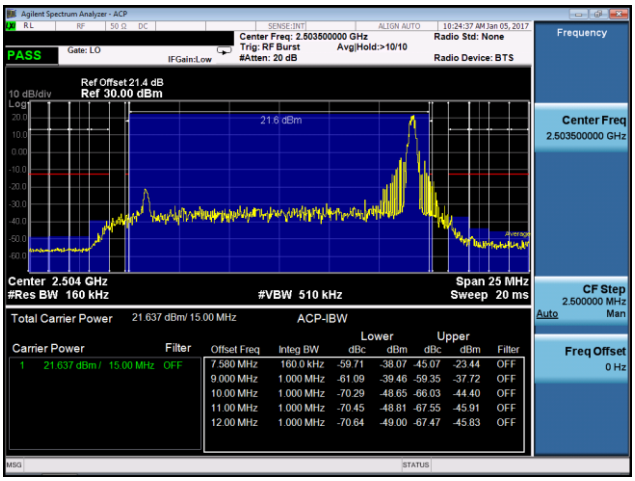
16QAM, Low Channel, 1RB Low



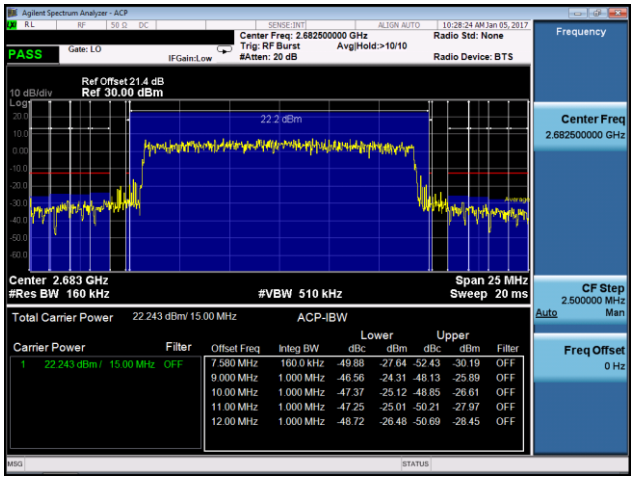
QPSK, High Channel, 1RB High



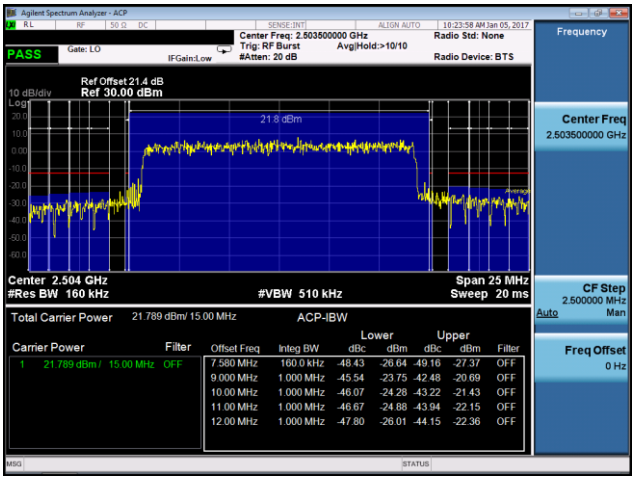
16QAM, Low Channel, 1RB High



QPSK, High Channel, Full RB



16QAM, Low Channel, Full RB

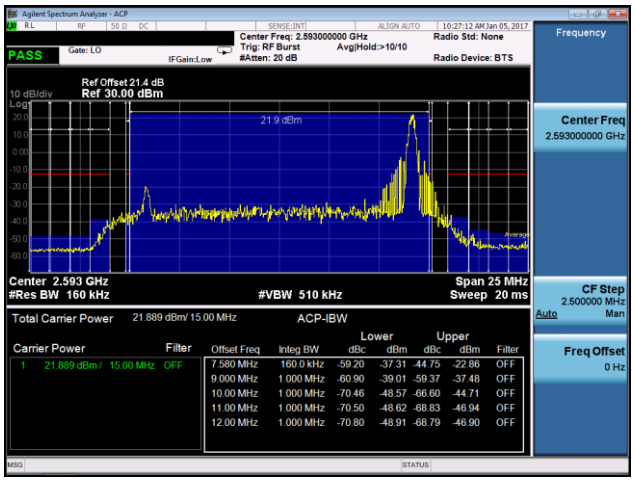


Mode	LTE Band 41, CB: 15MHz

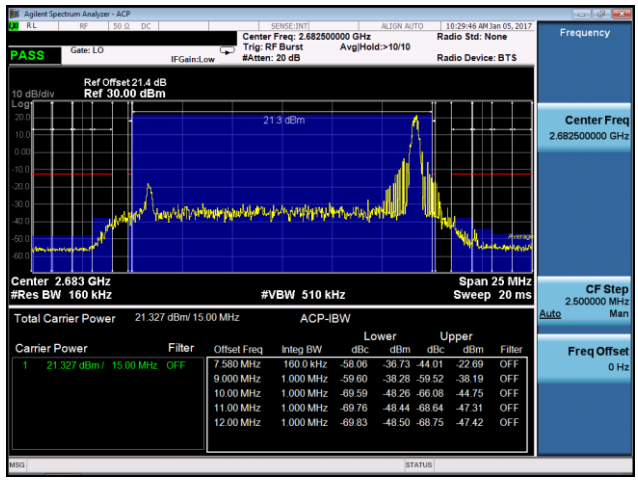
16QAM, Mid. Channel, 1RB Low

16QAM, High Channel, 1RB Low

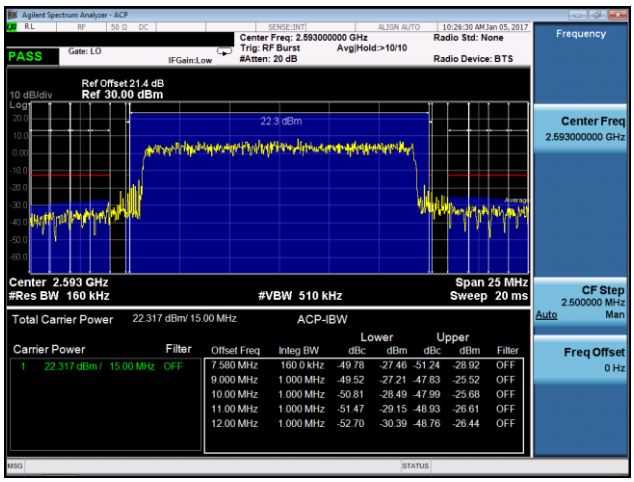
16QAM, Mid. Channel, 1RB High



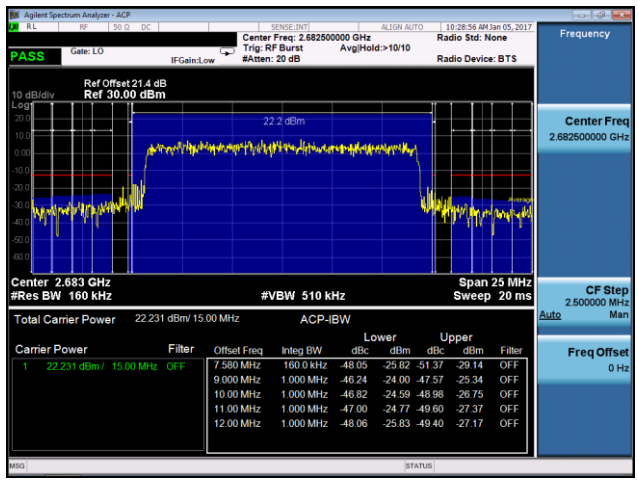
16QAM, High Channel, 1RB High



16QAM, Mid. Channel, Full RB

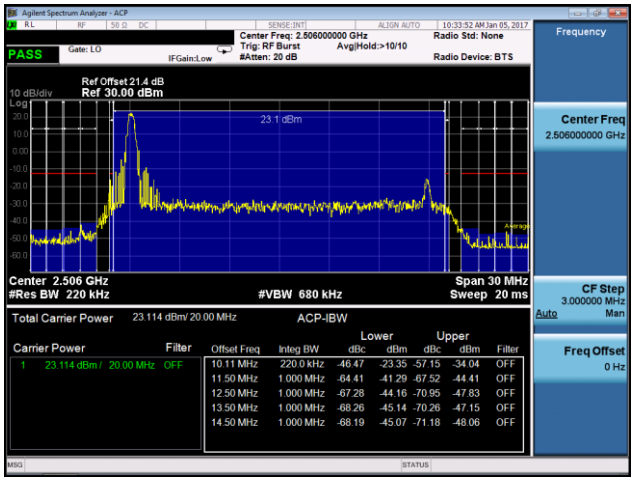


16QAM, High Channel, Full RB

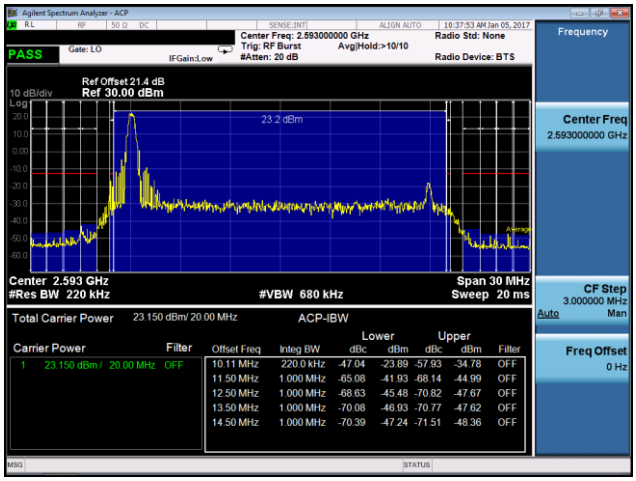


Mode	LTE Band 41, CB: 20MHz

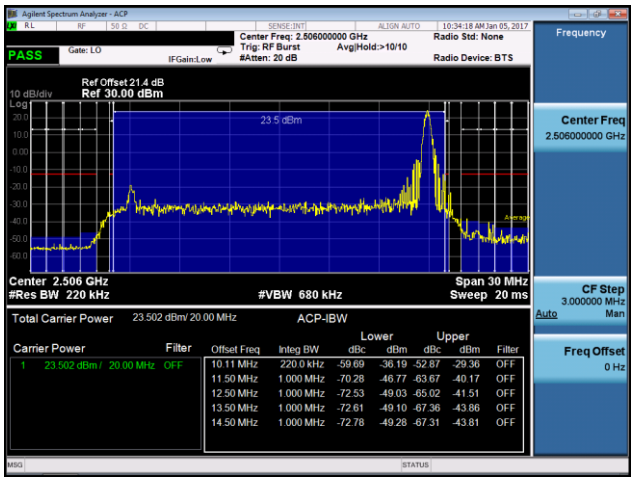
QPSK, Low Channel, 1RB Low



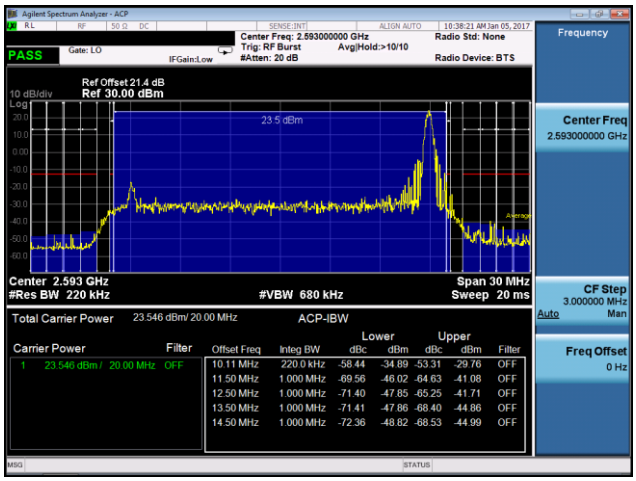
QPSK, Mid. Channel, 1RB Low



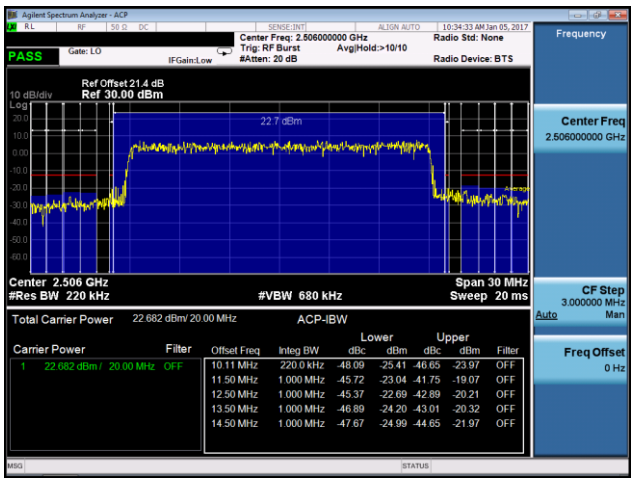
QPSK, Low Channel, 1RB High



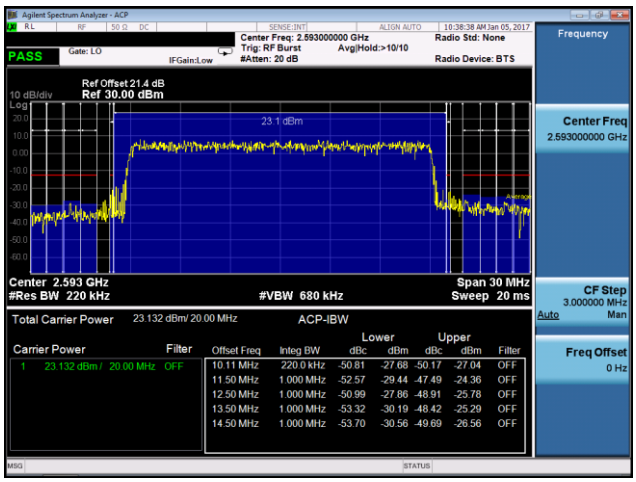
QPSK, Mid. Channel, 1RB High



QPSK, Low Channel, Full RB

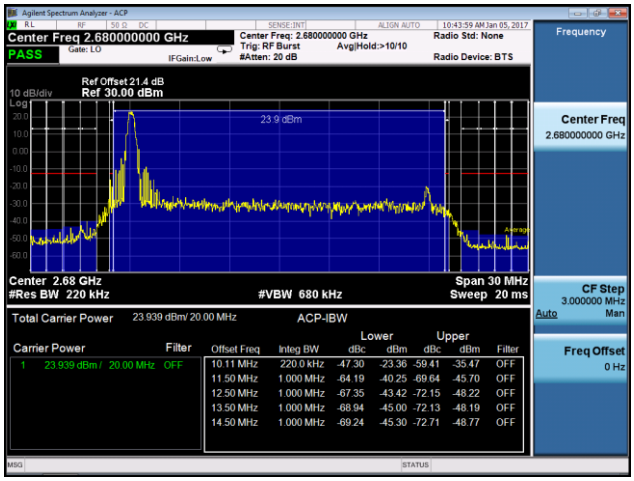


QPSK, Mid. Channel, Full RB

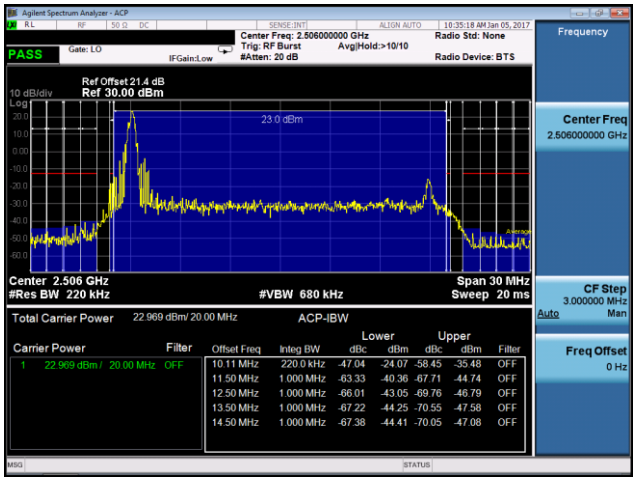


Mode	LTE Band 41, CB: 20MHz

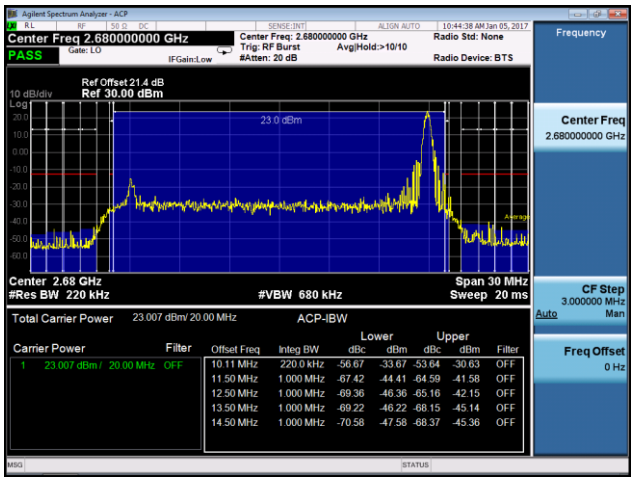
QPSK, High Channel, 1RB Low



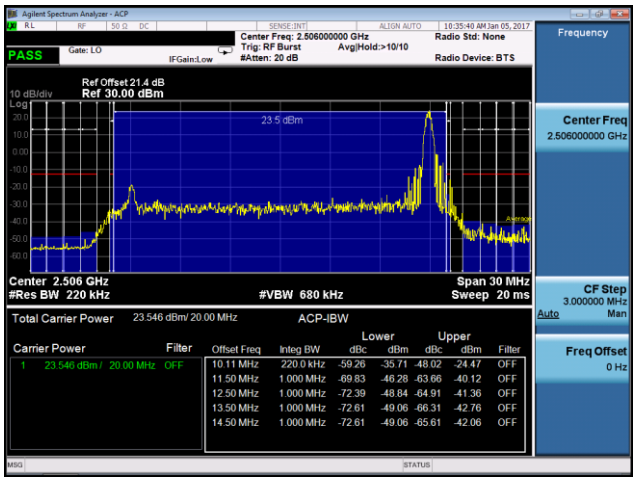
16QAM, Low Channel, 1RB Low



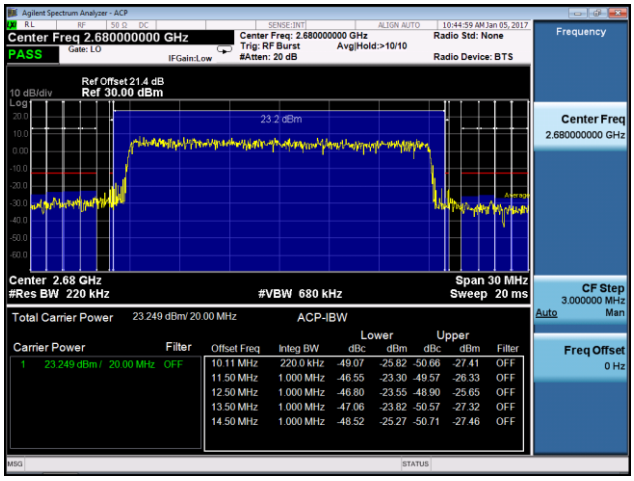
QPSK, High Channel, 1RB High



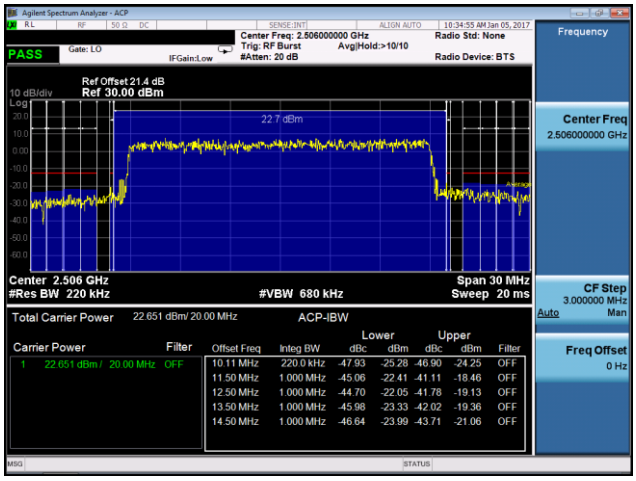
16QAM, Low Channel, 1RB High



QPSK, High Channel, Full RB

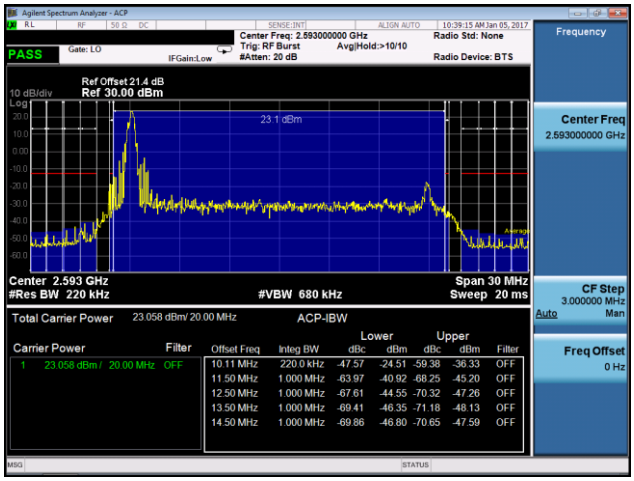


16QAM, Low Channel, Full RB

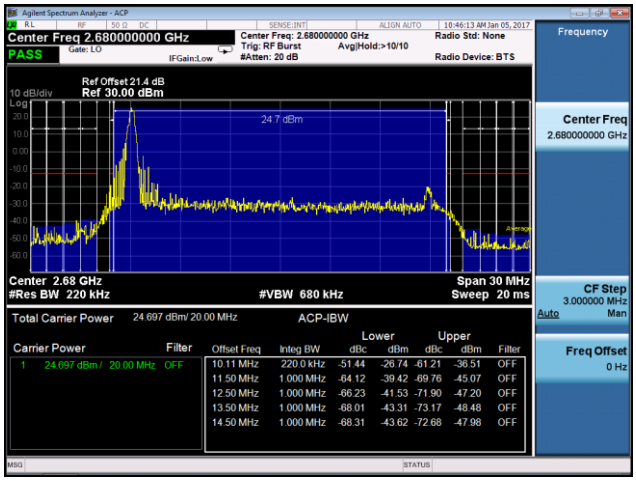


Mode	LTE Band 41, CB: 20MHz

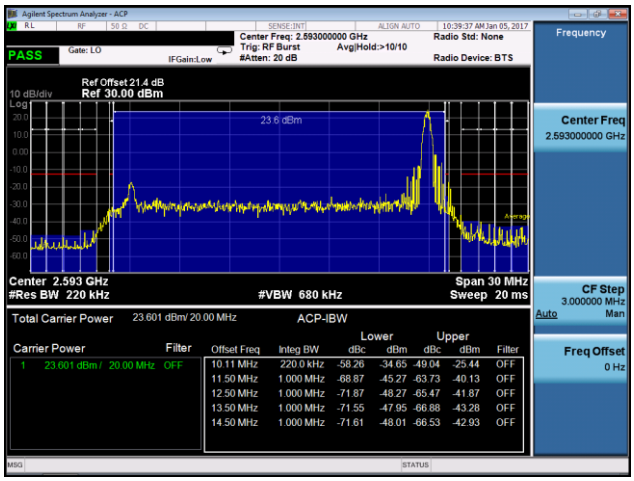
16QAM, Mid. Channel, 1RB Low



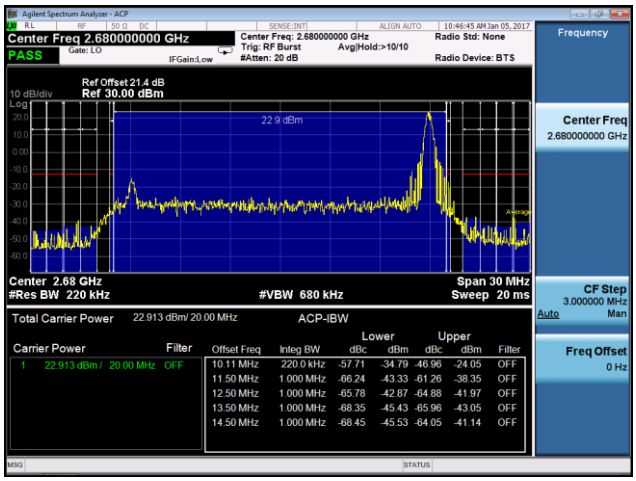
16QAM, High Channel, 1RB Low



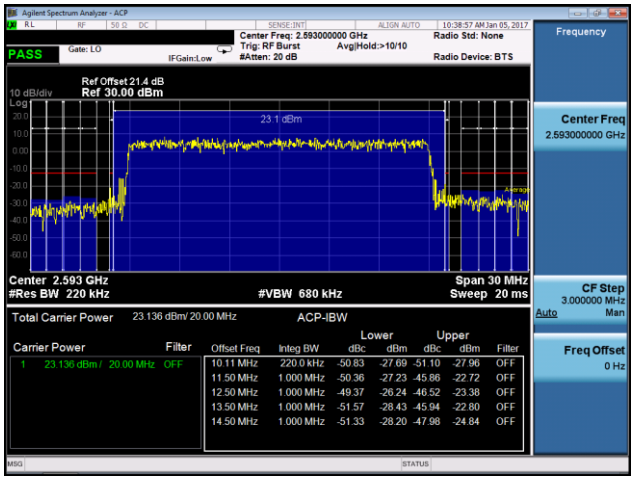
16QAM, Mid. Channel, 1RB High



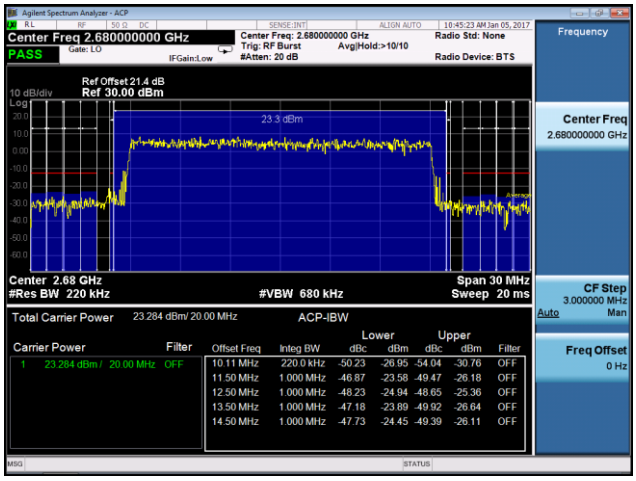
16QAM, High Channel, 1RB High



16QAM, Mid. Channel, Full RB



16QAM, High Channel, Full RB

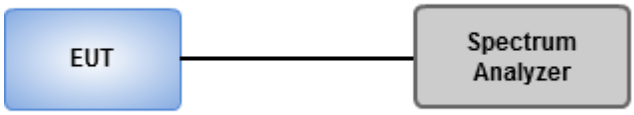


3.5 Emission and Occupied Bandwidth

3.5.1 Test Procedures

1. Set resolution bandwidth (RBW) = 62~220 kHz, Video bandwidth = 200 ~ 680 kHz for 5 ~ 20 MHz channel bandwidth
2. Set Detector = Peak, Trace mode = max hold, Sweep = auto couple, Allow the trace to stabilize.
3. Using 26dB and occupied bandwidth measurement function of spectrum analyzer to measure bandwidth

3.5.2 Test Setup

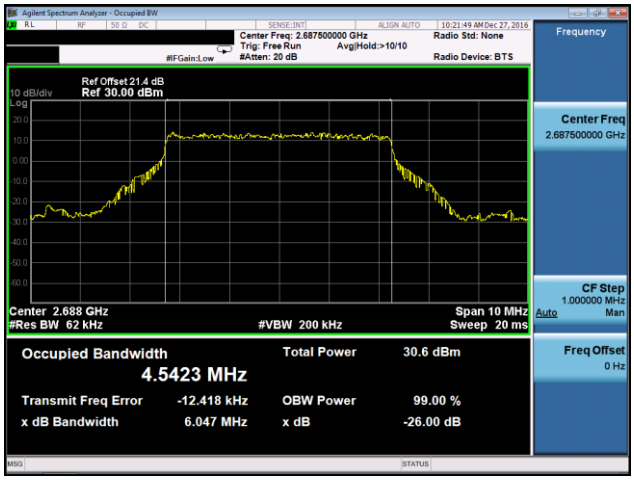


3.5.3 Test Result of Occupied Bandwidth

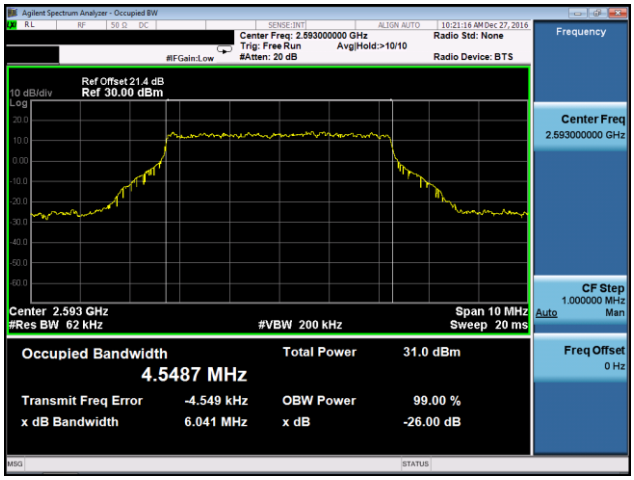
Channel Bandwidth (MHz)	Modulation	Frequency (MHz)	26dB BW (MHz)	99% OBW (MHz)
5	QPSK	2498.5	5.843	4.5433
5	QPSK	2593.0	6.041	4.5487
5	QPSK	2687.5	6.047	4.5423
5	16QAM	2498.5	5.564	4.5085
5	16QAM	2593.0	5.496	4.5009
5	16QAM	2687.5	5.485	4.5011

Worst plots

26dB BW



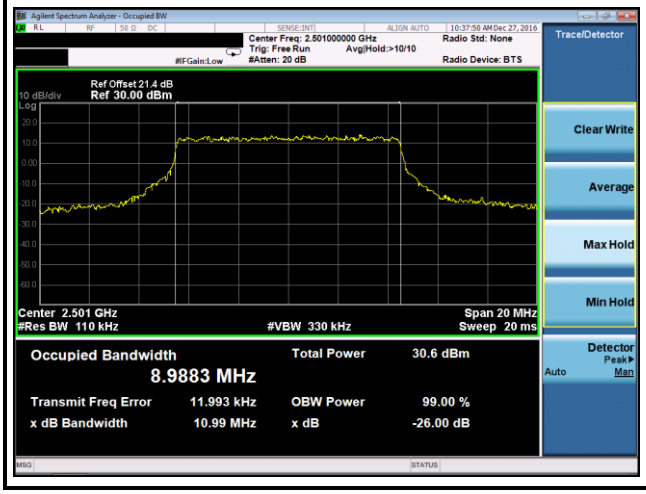
99% OBW



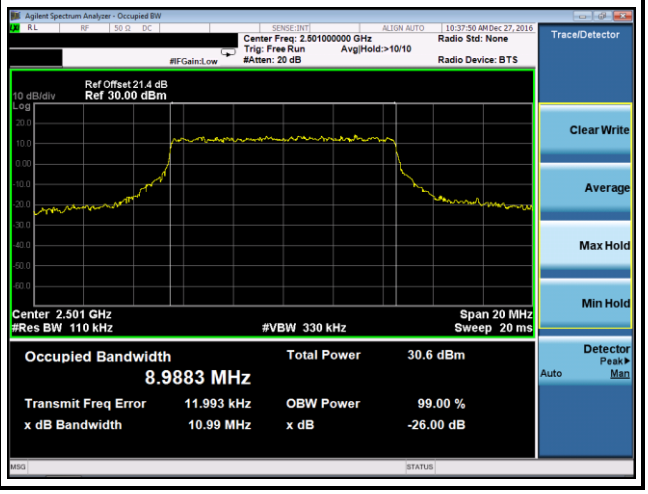
Channel Bandwidth (MHz)	Modulation	Frequency (MHz)	26dB BW (MHz)	99% OBW (MHz)
10	QPSK	2501.0	10.89	8.9786
10	QPSK	2593.0	10.84	8.9605
10	QPSK	2685.0	10.83	8.9668
10	16QAM	2501.0	10.99	8.9883
10	16QAM	2593.0	10.95	8.9742
10	16QAM	2685.0	10.93	8.9750

Worst plots

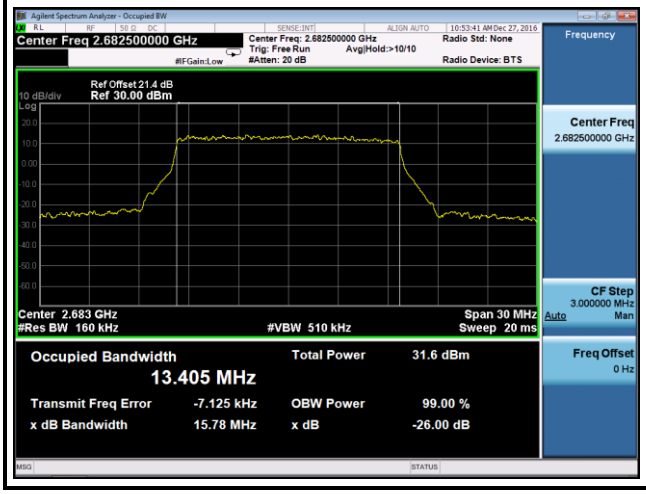
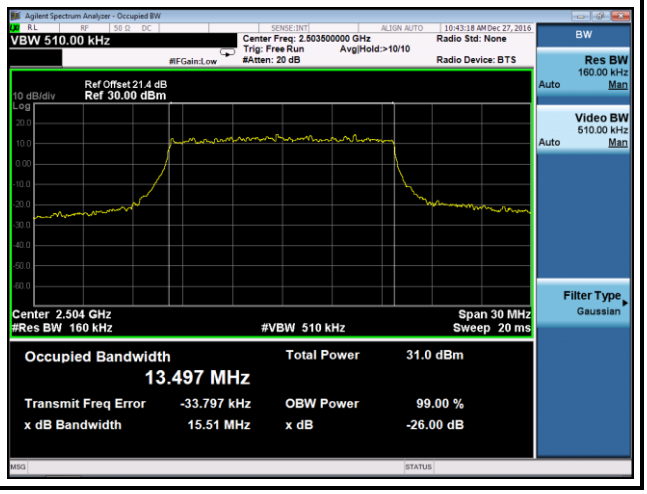
26dB BW



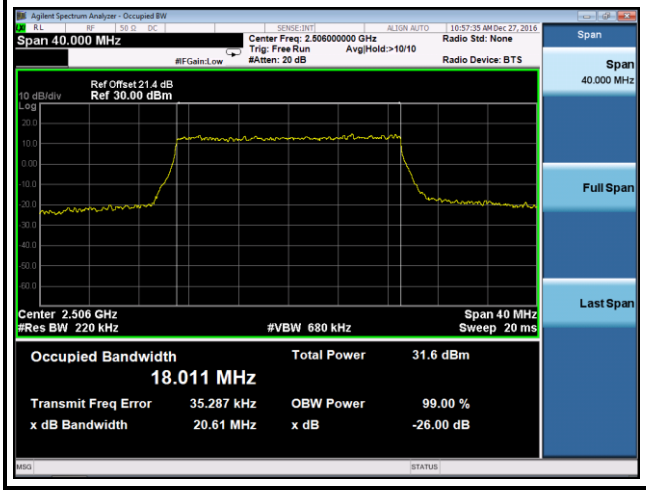
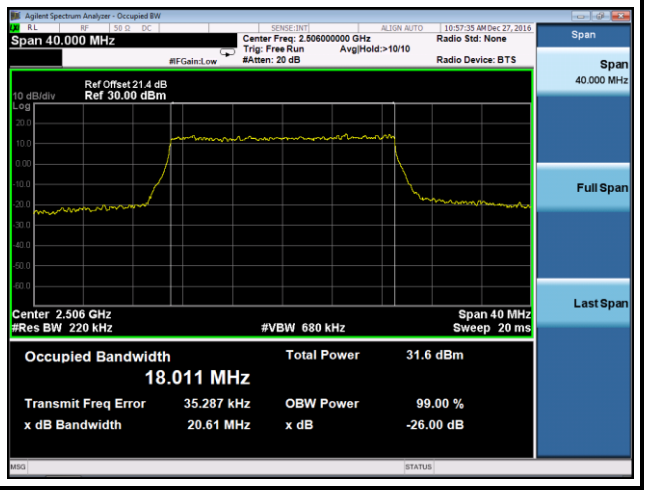
99% OBW



Channel Bandwidth (MHz)	Modulation	Frequency (MHz)	26dB BW (MHz)	99% OBW (MHz)
15	QPSK	2503.5	15.62	13.421
15	QPSK	2593.0	15.70	13.415
15	QPSK	2682.5	15.78	13.405
15	16QAM	2503.5	15.51	13.497
15	16QAM	2593.0	15.37	13.458
15	16QAM	2682.5	15.53	13.432

Worst plots	
26dB BW	**99% OBW**
	

Channel Bandwidth (MHz)	Modulation	Frequency (MHz)	26dB BW (MHz)	99% OBW (MHz)
20	QPSK	2506.0	20.61	18.011
20	QPSK	2593.0	20.49	17.958
20	QPSK	2680.0	20.39	17.948
20	16QAM	2506.0	20.16	17.979
20	16QAM	2593.0	20.05	17.981
20	16QAM	2680.0	20.18	17.992

Worst plots	
26dB BW	**99% OBW**
	

3.6 Frequency Stability

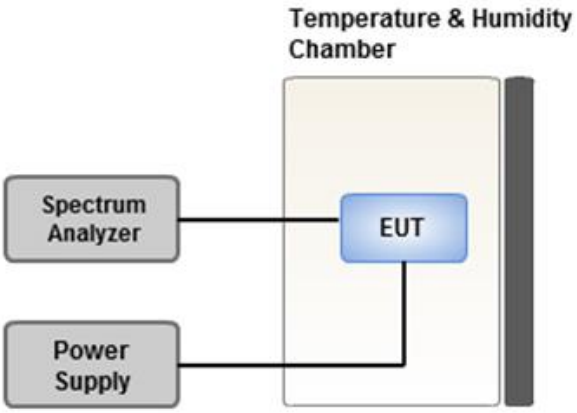
3.6.1 Limit of Frequency Stability

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation

3.6.2 Test Procedures

1. EUT was placed at temperature chamber and connected to an external power supply.
2. Temperature and voltage condition shall be tested to confirm frequency stability.
3. Temperature range is from -40~55°C and voltage range is from lowest to highest working voltage.
4. Tem Link up EUT and simulator. Confirm frequency drift value of simulator and record it.

3.6.3 Test Setup



3.6.4 Test Result of Frequency Stability

Channel Bandwidth: 5MHz

Frequency: 2593.0MHz	Frequency Drift (ppm)	
Temperature (°C)	Frequency Error (ppm)	Limit (ppm)
T20°CVmax	0.020	2.5
T20°CVmin	0.016	2.5
T55°CVnom	0.021	2.5
T50°CVnom	0.017	2.5
T40°CVnom	0.012	2.5
T30°CVnom	0.015	2.5
T20°CVnom	0.016	2.5
T10°CVnom	0.014	2.5
T0°CVnom	0.015	2.5
T-10°CVnom	0.017	2.5
T-20°CVnom	0.016	2.5
T-30°CVnom	0.014	2.5
T-40°CVnom	0.014	2.5
Vnom [Vac]: 120	Vmax [Vac]: 138	Vmin [Vac]: 102
Tnom [°C]: 20	Tmax [°C]: 55	Tmin [°C]: -40

Channel Bandwidth: 10MHz

Frequency: 2593.0MHz	Frequency Drift (ppm)	
Temperature (°C)	Frequency Error (ppm)	Limit (ppm)
T20°CVmax	0.017	2.5
T20°CVmin	0.015	2.5
T55°CVnom	0.020	2.5
T50°CVnom	0.018	2.5
T40°CVnom	0.015	2.5
T30°CVnom	0.013	2.5
T20°CVnom	0.018	2.5
T10°CVnom	0.016	2.5
T0°CVnom	0.013	2.5
T-10°CVnom	0.019	2.5
T-20°CVnom	0.017	2.5
T-30°CVnom	0.014	2.5
T-40°CVnom	0.014	2.5
Vnom [Vac]: 120	Vmax [Vac]: 138	Vmin [Vac]: 102
Tnom [°C]: 20	Tmax [°C]: 55	Tmin [°C]: -40

Channel Bandwidth: 15MHz

Frequency: 2593.0MHz	Frequency Drift (ppm)	
Temperature (°C)	Frequency Error (ppm)	Limit (ppm)
T20°CVmax	0.016	2.5
T20°CVmin	0.014	2.5
T55°CVnom	0.013	2.5
T50°CVnom	0.010	2.5
T40°CVnom	0.017	2.5
T30°CVnom	0.020	2.5
T20°CVnom	0.018	2.5
T10°CVnom	0.017	2.5
T0°CVnom	0.016	2.5
T-10°CVnom	0.018	2.5
T-20°CVnom	0.019	2.5
T-30°CVnom	0.014	2.5
T-40°CVnom	0.014	2.5
Vnom [Vac]: 120	Vmax [Vac]: 138	Vmin [Vac]: 102
Tnom [°C]: 20	Tmax [°C]: 55	Tmin [°C]: -40

Channel Bandwidth: 20MHz

Frequency: 2593.0MHz	Frequency Drift (ppm)	
Temperature (°C)	Frequency Error (ppm)	Limit (ppm)
T20°CVmax	0.019	2.5
T20°CVmin	0.013	2.5
T55°CVnom	0.014	2.5
T50°CVnom	0.015	2.5
T40°CVnom	0.012	2.5
T30°CVnom	0.012	2.5
T20°CVnom	0.013	2.5
T10°CVnom	0.015	2.5
T0°CVnom	0.013	2.5
T-10°CVnom	0.015	2.5
T-20°CVnom	0.016	2.5
T-30°CVnom	0.014	2.5
T-40°CVnom	0.014	2.5
Vnom [Vac]: 120	Vmax [Vac]: 138	Vmin [Vac]: 102
Tnom [°C]: 20	Tmax [°C]: 55	Tmin [°C]: -40

4 Test laboratory information

Established in 2012, ICC provides foremost EMC & RF Testing and advisory consultation services by our skilled engineers and technicians. Our services employ a wide variety of advanced edge test equipment and one of the widest certification extents in the business.

International Certification Corp (EMC and Wireless Communication Laboratory), it is our definitive objective is to institute long term, trust-based associations with our clients. The expectation we set up with our clients is based on outstanding service, practical expertise and devotion to a certified value structure. Our passion is to grant our clients with best EMC / RF services by oriented knowledgeable and accommodating staff.

Our Test sites are located at Linkou District and Kwei Shan District. Location map can be found on our website http://www.icertifi.com.tw.

Linkou	**Kwei Shan**	**Kwei Shan Site II**
Tel: 886-2-2601-1640	Tel: 886-3-271-8666	Tel: 886-3-271-8640
No. 30-2, Ding Fwu Tsuen, Lin Kou District, New Taipei City, Taiwan, R.O.C.	No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan District, Tao Yuan City 333, Taiwan, R.O.C.	No. 14-1, Lane 19, Wen San 3rd St., Kwei Shan District, Tao Yuan City 333, Taiwan, R.O.C..

If you have any suggestion, please feel free to contact us as below information

Tel: 886-3-271-8666
Fax: 886-3-318-0155
Email: ICC_Service@icertifi.com.tw

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