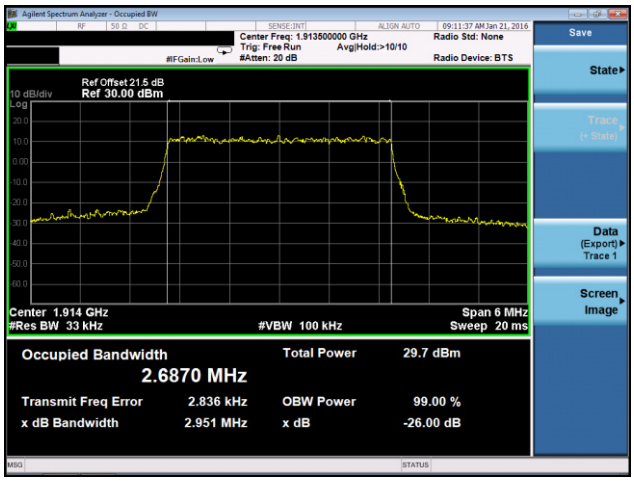
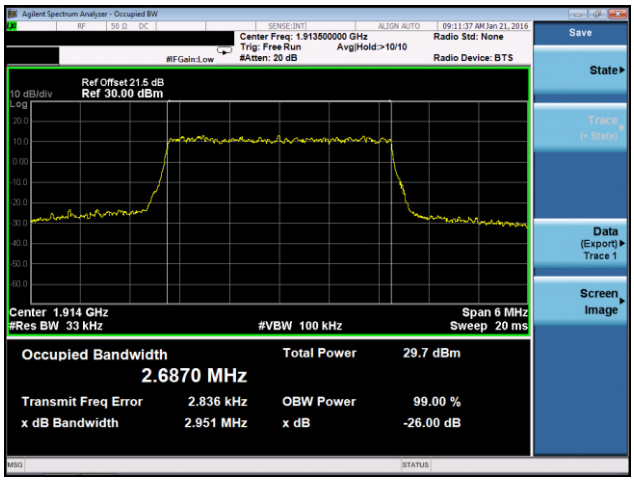
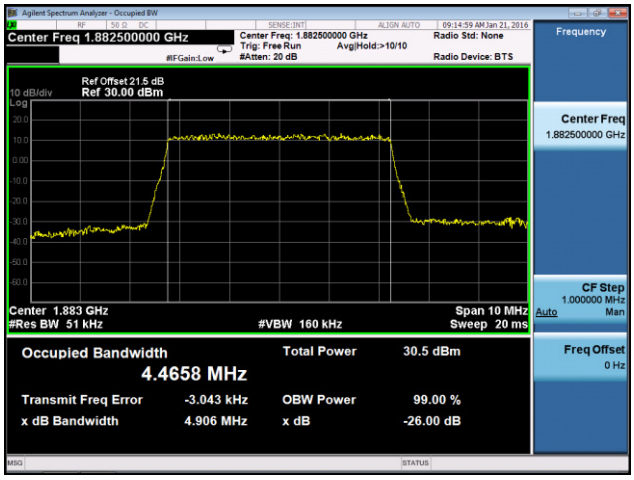
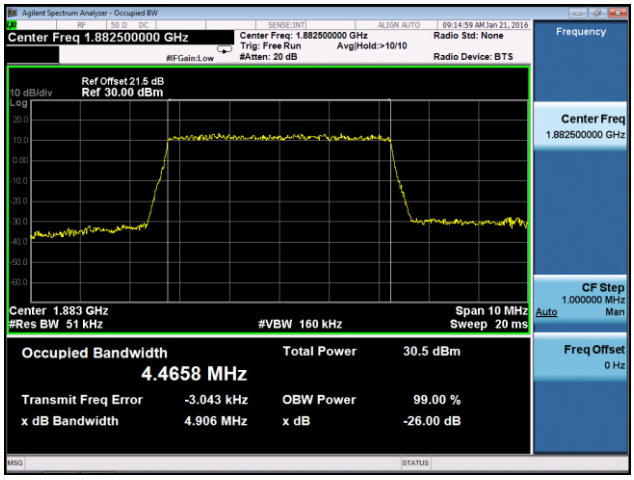
3.5.3 Test Result of Occupied Bandwidth

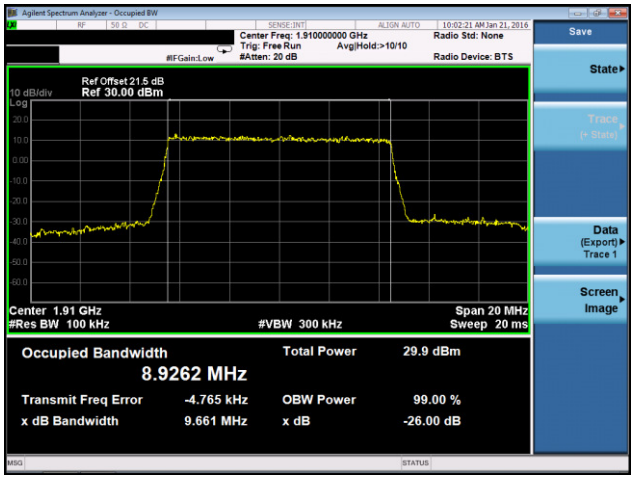
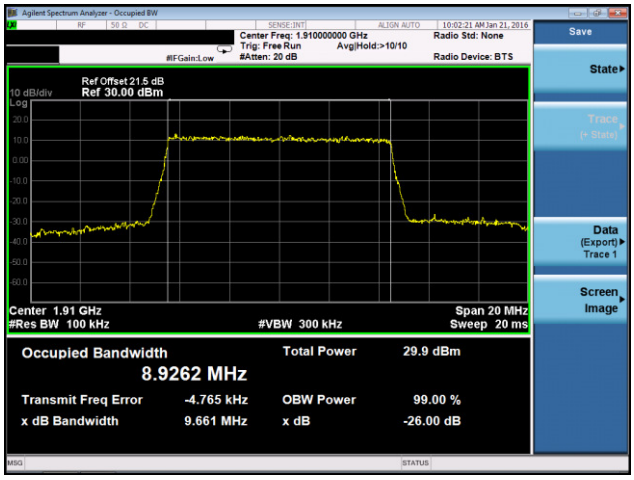
Channel Bandwidth (MHz)	Modulation	Frequency (MHz)	26dB BW (MHz)	99% OBW (MHz)
3	QPSK	1851.5	2.920	2.68
3	QPSK	1882.5	2.910	2.68
3	QPSK	1913.5	2.933	2.68
3	16QAM	1851.5	2.915	2.68
3	16QAM	1882.5	2.918	2.68
3	16QAM	1913.5	2.944	2.68
3	64QAM	1851.5	2.929	2.69
3	64QAM	1882.5	2.919	2.69
3	64QAM	1913.5	2.951	2.69

Worst plots	
26dB bandwidth	OBW
	

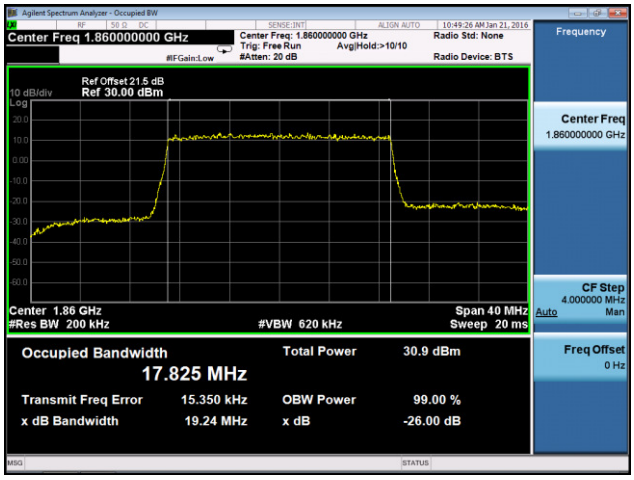
Channel Bandwidth (MHz)	Modulation	Frequency (MHz)	26dB BW (MHz)	99% OBW (MHz)
5	QPSK	1852.5	4.891	4.46
5	QPSK	1882.5	4.906	4.47
5	QPSK	1912.5	4.882	4.47
5	16QAM	1852.5	4.888	4.47
5	16QAM	1882.5	4.894	4.47
5	16QAM	1912.5	4.893	4.47
5	64QAM	1852.5	4.882	4.47
5	64QAM	1882.5	4.836	4.47
5	64QAM	1912.5	4.873	4.47

Worst plots	
26dB bandwidth	**OBW**
	

Channel Bandwidth (MHz)	Modulation	Frequency (MHz)	26dB BW (MHz)	99% OBW (MHz)
10	QPSK	1855.0	9.593	8.92
10	QPSK	1882.5	9.608	8.93
10	QPSK	1910.0	9.583	8.93
10	16QAM	1855.0	9.576	8.90
10	16QAM	1882.5	9.619	8.91
10	16QAM	1910.0	9.620	8.91
10	64QAM	1855.0	9.652	8.92
10	64QAM	1882.5	9.643	8.92
10	64QAM	1910.0	9.661	8.93

Worst plots	
26dB bandwidth	**OBW**
	

Channel Bandwidth (MHz)	Modulation	Frequency (MHz)	26dB BW (MHz)	99% OBW (MHz)
20	QPSK	1860.0	19.220	17.82
20	QPSK	1882.5	19.090	17.85
20	QPSK	1905.0	19.090	17.83
20	16QAM	1860.0	19.130	17.86
20	16QAM	1882.5	19.080	17.82
20	16QAM	1905.0	19.120	17.85
20	64QAM	1860.0	19.240	17.83
20	64QAM	1882.5	19.200	17.83
20	64QAM	1905.0	19.190	17.81

Worst plots	
26dB bandwidth	**OBW**
	

3.6 Peak to Average Ratio

3.6.1 Limit of Peak to Average Ratio

Peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

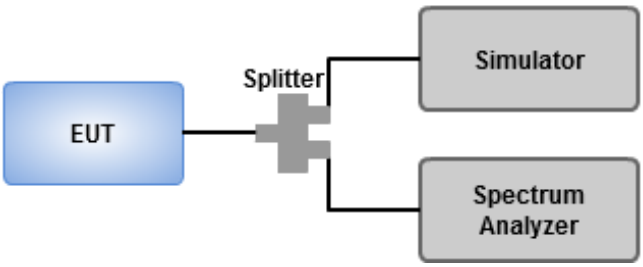
3.6.2 Test Procedures

1. Enable CCDF function of spectrum analyzer and set as below setting for LTE mode

Bandwidth (MHz)	RBW
3	3 MHz
5	5 MHz
10	10 MHz
20	20 MHz

2. Set the number of counts to a value that stabilizes the measured CCDF curve.
3. Record the maximum PAPR level associated with a probability of 0.1%.

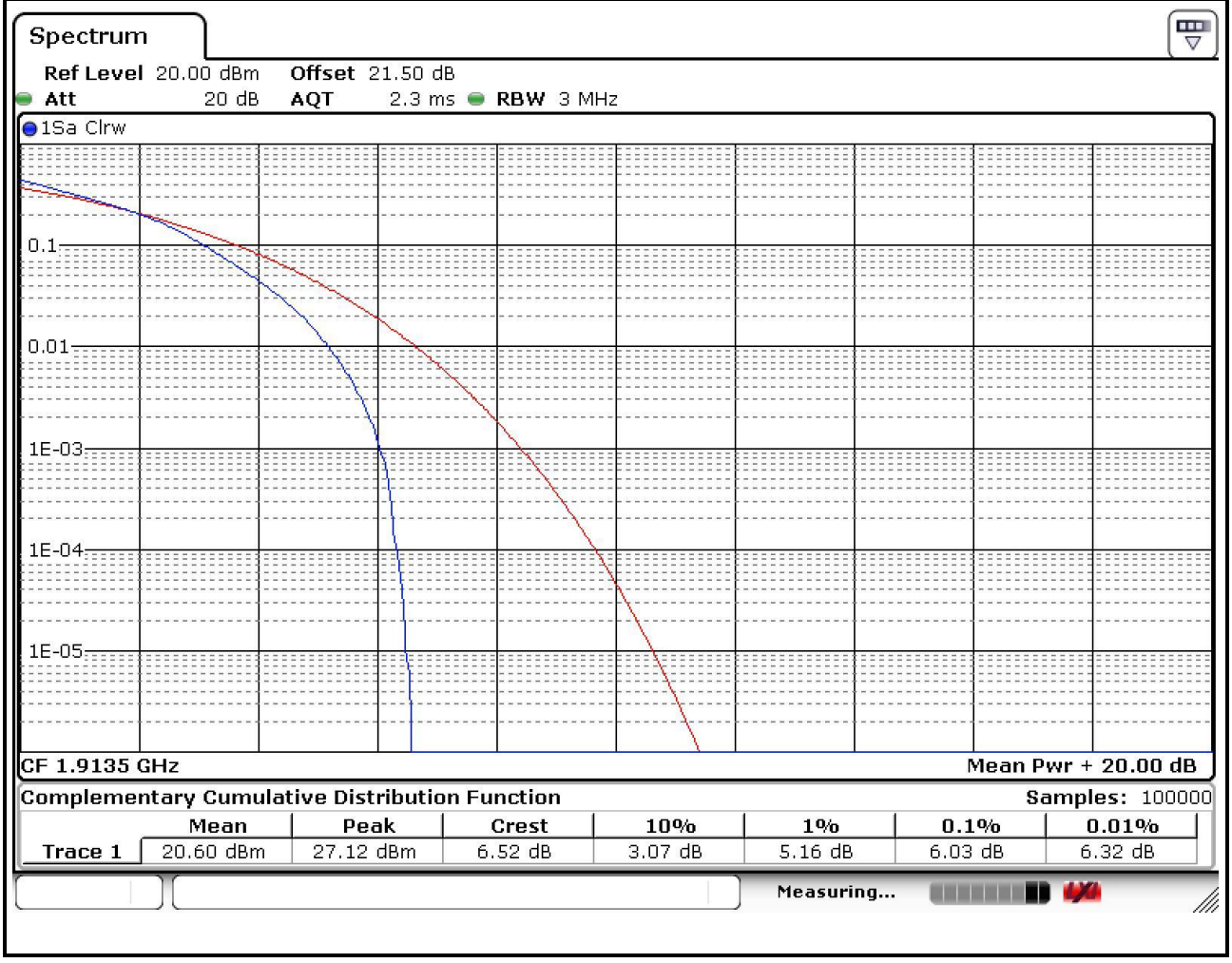
3.6.3 Test Setup



3.6.4 Test Result of Peak to Average ratio

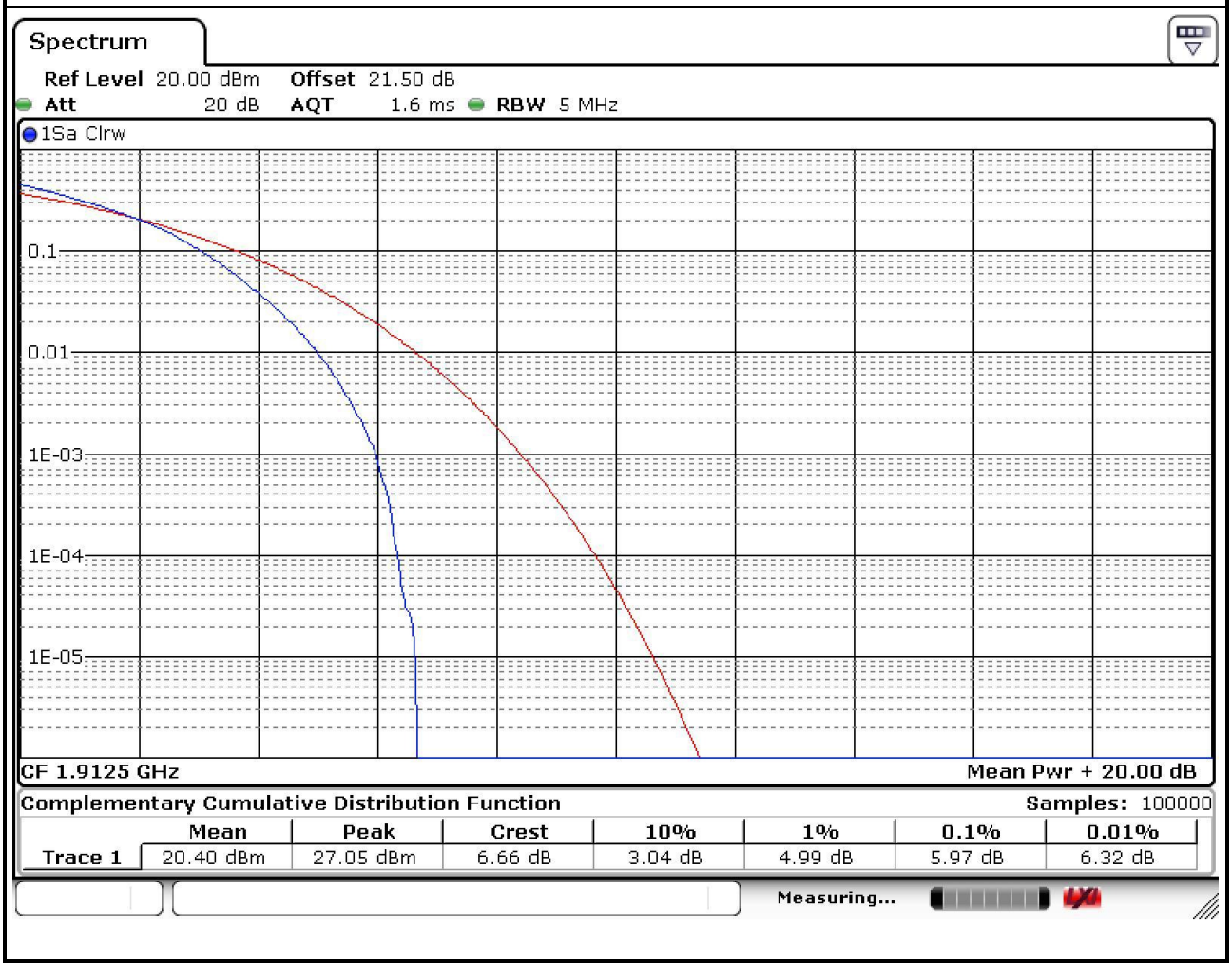
Channel Bandwidth (MHz)	Modulation	Frequency (MHz)	Peak to Average ratio (dB)
3	QPSK	1851.5	4.78
3	QPSK	1882.5	4.67
3	QPSK	1913.5	5.01
3	16QAM	1851.5	5.88
3	16QAM	1882.5	5.65
3	16QAM	1913.5	6.03
3	64QAM	1851.5	5.83
3	64QAM	1882.5	5.68
3	64QAM	1913.5	5.97

Worst plots



Channel Bandwidth (MHz)	Modulation	Frequency (MHz)	Peak to Average ratio (dB)
5	QPSK	1852.5	4.64
5	QPSK	1882.5	4.67
5	QPSK	1912.5	4.93
5	16QAM	1852.5	5.68
5	16QAM	1882.5	5.57
5	16QAM	1912.5	5.97
5	64QAM	1852.5	5.62
5	64QAM	1882.5	5.65
5	64QAM	1912.5	5.83

Worst plots



Channel Bandwidth (MHz)	Modulation	Frequency (MHz)	Peak to Average ratio (dB)
10	QPSK	1855.0	4.55
10	QPSK	1882.5	4.67
10	QPSK	1910.0	4.81
10	16QAM	1855.0	5.57
10	16QAM	1882.5	5.59
10	16QAM	1910.0	5.77
10	64QAM	1855.0	5.57
10	64QAM	1882.5	5.62
10	64QAM	1910.0	5.77

Worst plots

Channel Bandwidth (MHz)	Modulation	Frequency (MHz)	Peak to Average ratio (dB)
20	QPSK	1860.0	4.81
20	QPSK	1882.5	4.75
20	QPSK	1905.0	4.84
20	16QAM	1860.0	5.71
20	16QAM	1882.5	5.68
20	16QAM	1905.0	5.86
20	64QAM	1860.0	5.68
20	64QAM	1882.5	5.71
20	64QAM	1905.0	5.86

Worst plots

3.7 Frequency Stability

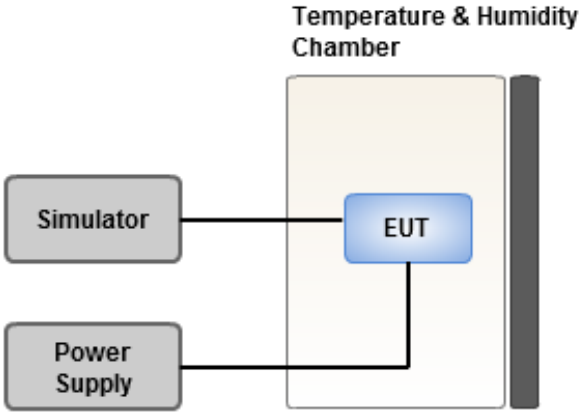
3.7.1 Limit of Frequency Stability

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

3.7.2 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 -40~60°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.

3.7.3 Test Setup



3.7.4 Test Result of Frequency Stability

LTE Band 25					
Temperature (°C)	Voltage (ac)	Frequency Drift (ppm)			
		CB: 3MHz	CB: 5MHz	CB: 10MHz	CB: 20MHz
60	120	0.012	0.012	0.013	0.014
50	120	0.011	0.011	0.012	0.013
40	120	0.010	0.012	0.013	0.012
30	120	0.012	0.010	0.012	0.012
20	120	0.011	0.010	0.010	0.013
10	120	0.010	0.011	0.010	0.011
0	120	0.013	0.012	0.012	0.009
-10	120	0.012	0.012	0.012	0.010
-20	120	0.010	0.010	0.013	0.011
-30	120	0.008	0.011	0.012	0.012
-40	120	0.007	0.011	0.011	0.010
20	138	0.011	0.013	0.012	0.013
20	102	0.009	0.010	0.011	0.012

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, 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 Hsiang. 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 Hsiang, Tao Yuan Hsien 333, Taiwan, R.O.C.	No. 14-1, Lane 19, Wen San 3rd St., Kwei Shan Hsiang, Tao Yuan Hsien 333, Taiwan, R.O.C.

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

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

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