3.4 Emission Mask

3.4.1 Limit of Emission Mask

The power of any emission must be attenuated below the unmodulated carrier power (P) as follows.

(1) On any frequency removed from the assigned frequency by more than 50 percent, but not more than 100 percent of the authorized bandwidth: At least 25 dB.

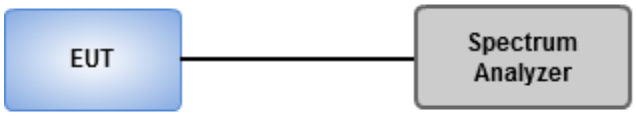
(2) On any frequency removed from the assigned frequency by more than 100 percent, but not more than 250 percent of the authorized bandwidth: At least 35 dB.

(3) On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least 43 + 10 log (P) dB.

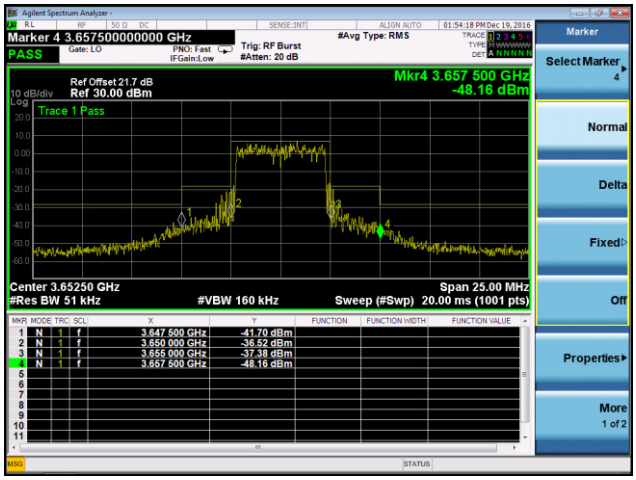
3.4.2 Test Procedures

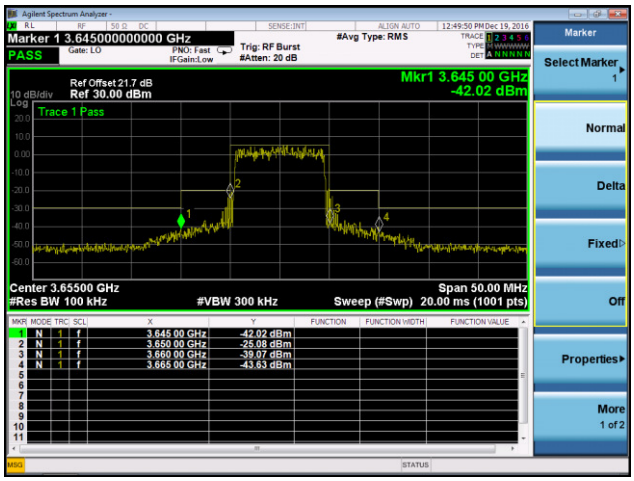
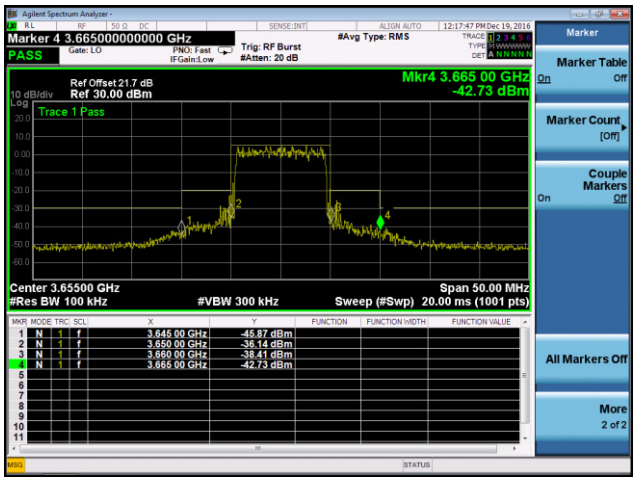
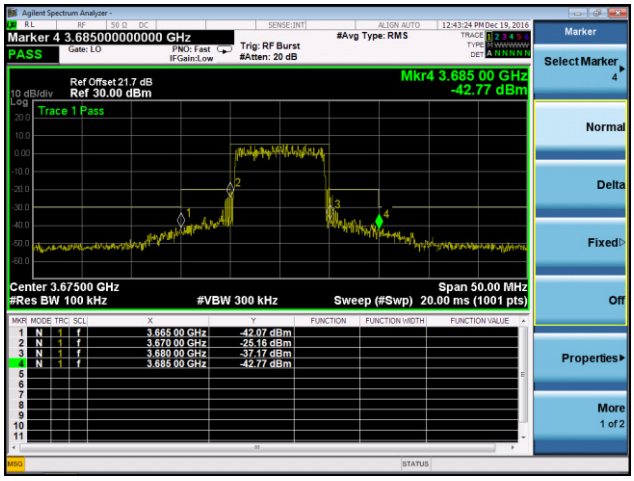
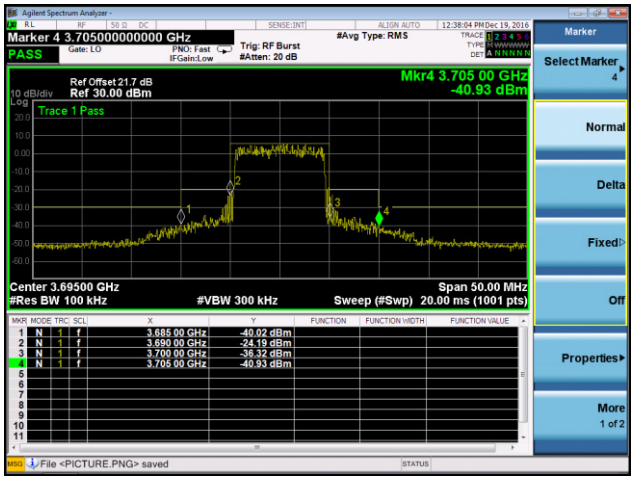
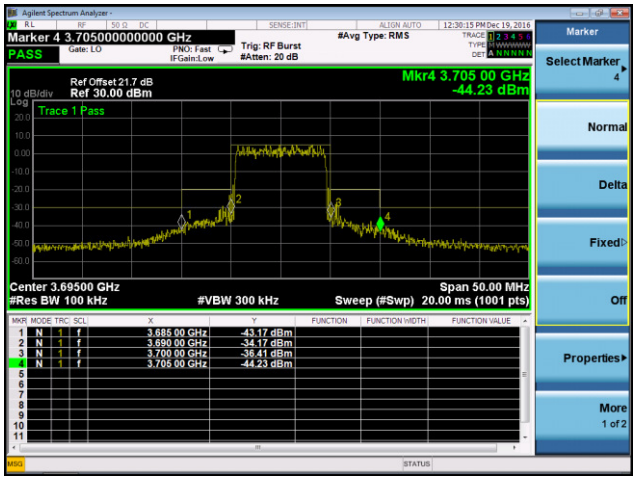
1. Set RBW=1% of 26dBc bandwidth, VBW=3 X RBW, detector=RMS, Sweep time = Auto.
2. Set EUT to transmit modulation signal to spectrum analyzer and confirm that the signal complies the limit or not.
3. Record the max trace value and capture the test plot.

3.4.3 Test Setup

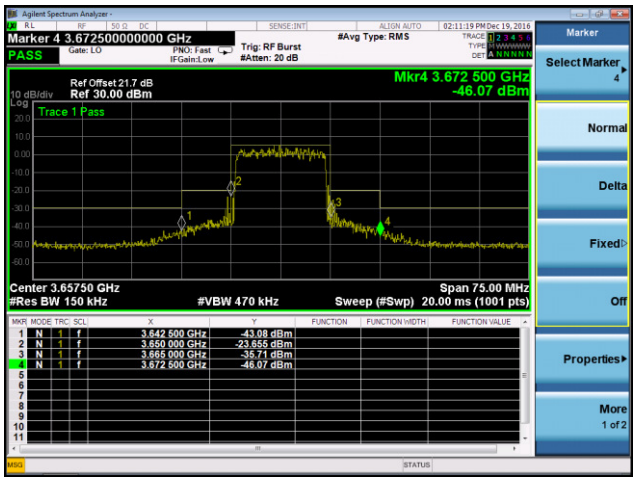


3.4.4 Test Result of Emission Mask

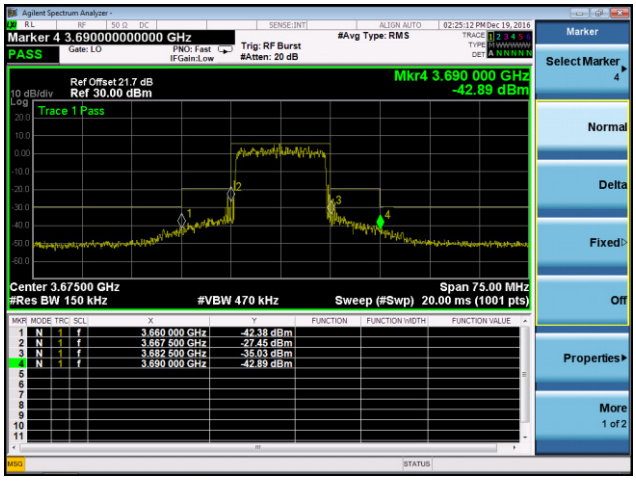
Low Ch.	QPSK, CB: 5MHz	Low Ch.	16QAM, CB: 5MHz
			
Mid. Ch.	**QPSK, CB: 5MHz**	**Mid. Ch.**	**16QAM, CB: 5MHz**
			
High Ch.	**QPSK, CB: 5MHz**	**High Ch.**	**16QAM, CB: 5MHz**
			

Low Ch.	QPSK, CB: 10MHz	Low Ch.	16QAM, CB: 10MHz
			
Mid. Ch.	**QPSK, CB: 10MHz**	**Mid. Ch.**	**16QAM, CB: 10MHz**
			
High Ch.	**QPSK, CB: 10MHz**	**High Ch.**	**16QAM, CB: 10MHz**
			

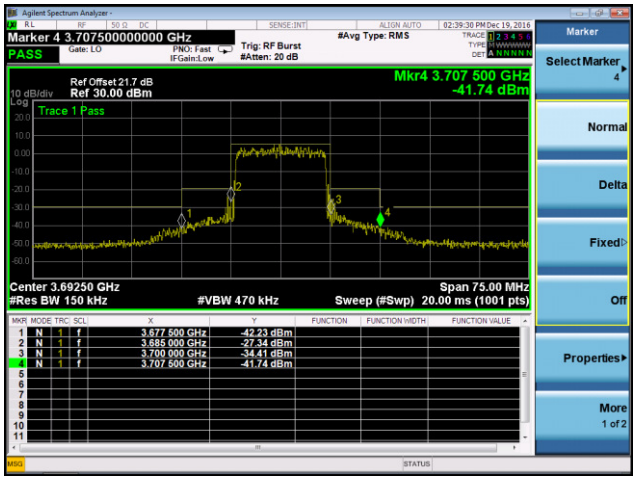
Low Ch.	QPSK, CB: 15MHz	Low Ch.	16QAM, CB: 15MHz

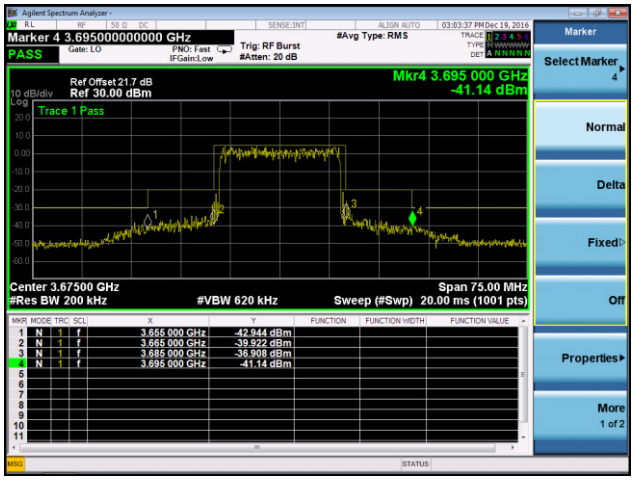
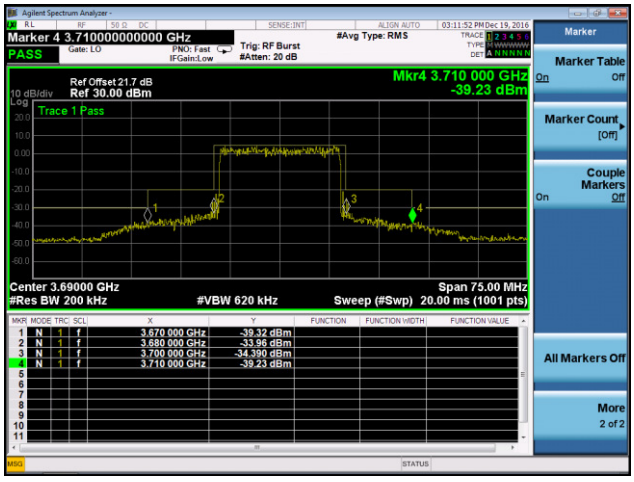
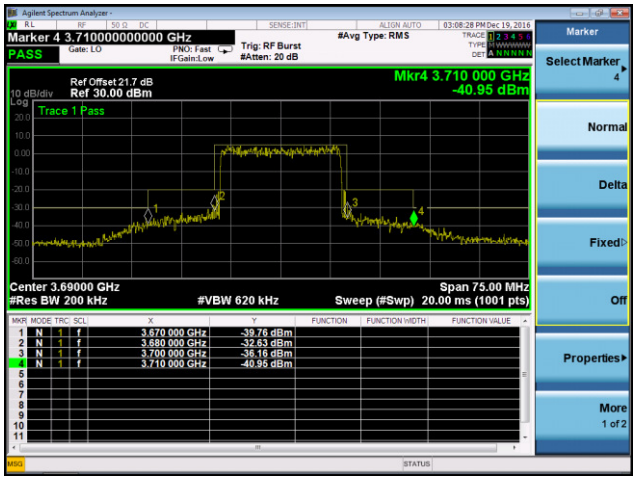


Mid. Ch.	QPSK, CB: 15MHz	Mid. Ch.	16QAM, CB: 15MHz



High Ch.	QPSK, CB: 15MHz	High Ch.	16QAM, CB: 15MHz



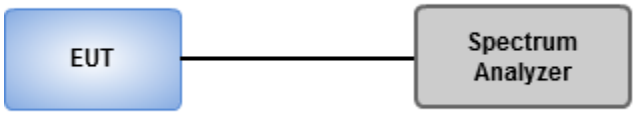
Low Ch.	QPSK, CB: 20MHz	Low Ch.	16QAM, CB: 20MHz
			
Mid. Ch.	**QPSK, CB: 20MHz**	**Mid. Ch.**	**16QAM, CB: 20MHz**
			
High Ch.	**QPSK, CB: 20MHz**	**High Ch.**	**16QAM, CB: 20MHz**
			

3.5 26dBc Bandwidth

3.5.1 Test Procedures

1. Set resolution bandwidth (RBW) = 51 ~ 200 kHz, Video bandwidth=160 ~ 620kHz for channel bandwidth 5 ~ 20 MHz.
2. Detector = Peak, Trace mode = max hold.
3. Sweep = auto couple, Allow the trace to stabilize.
4. Using 26dBc and occupied bandwidth measurement function of spectrum analyzer to measure 26dBc and occupied bandwidth.

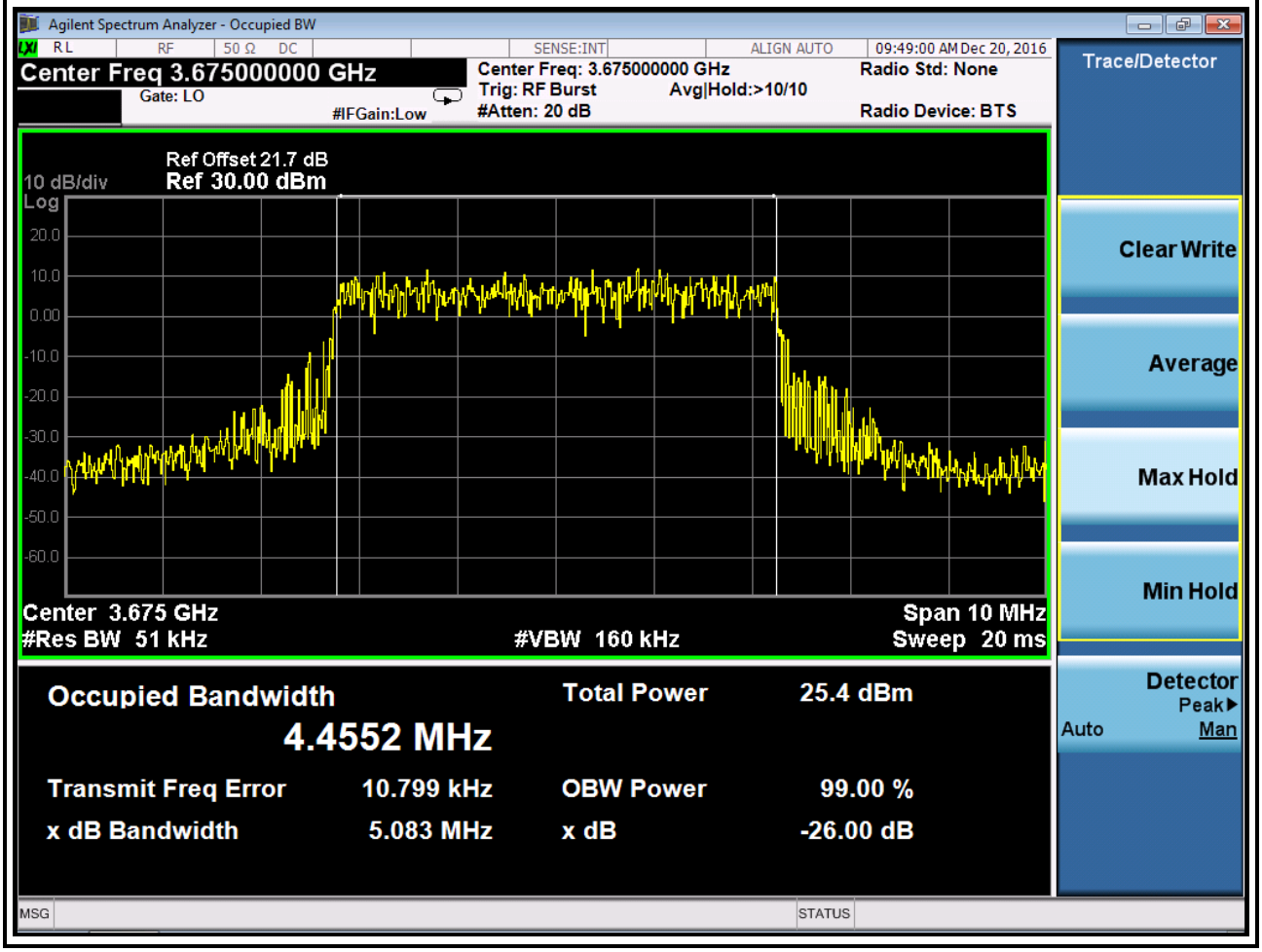
3.5.2 Test Setup



3.5.3 Test Result of 26dBc Bandwidth

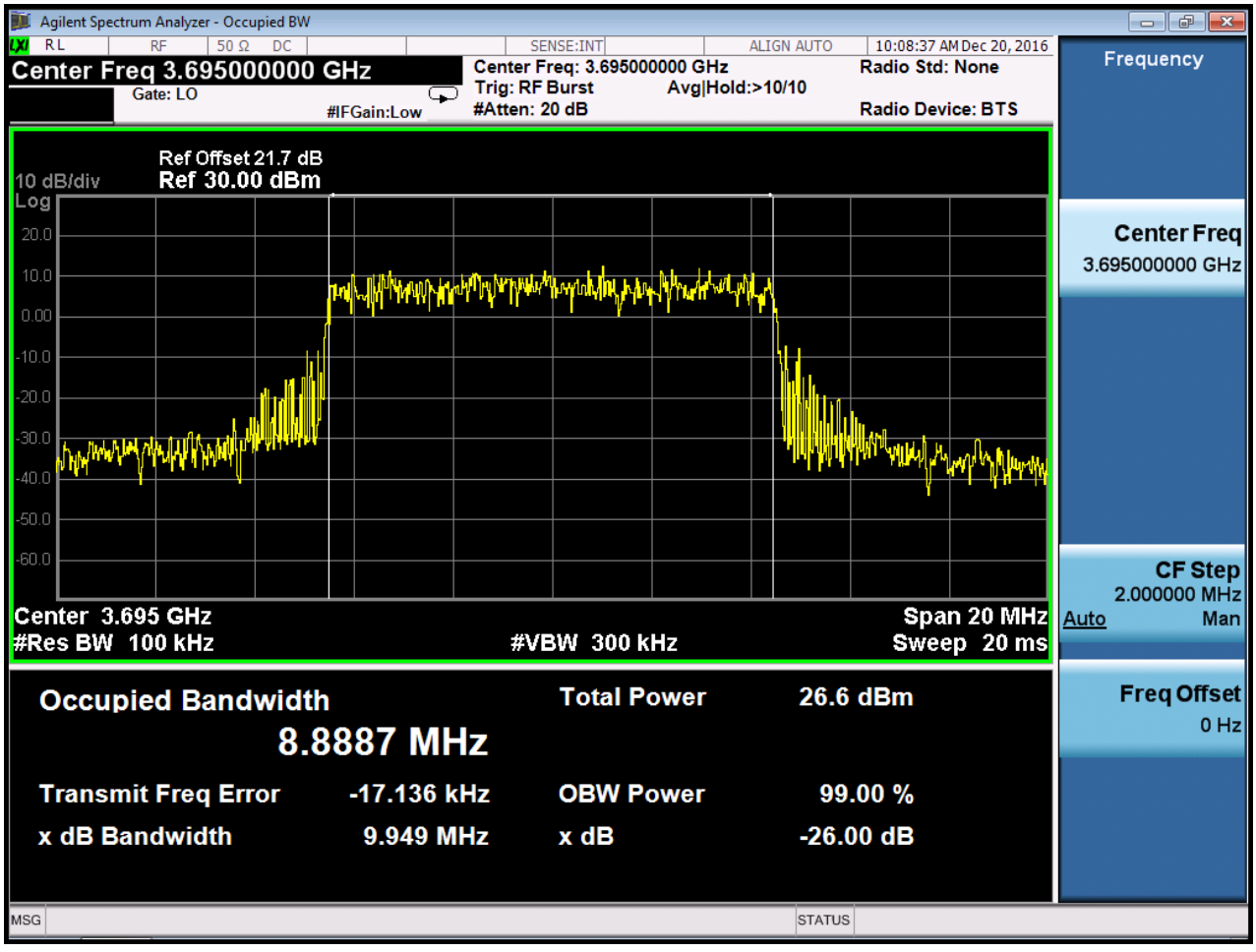
Channel Bandwidth	Modulation	Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	Occupied Bandwidth (MHz)
5MHz	QPSK	44115	3652.5	5.074	4.4525
5MHz	QPSK	44340	3675.0	5.083	4.4552
5MHz	QPSK	44565	3697.5	5.062	4.4590
5MHz	16QAM	44115	3652.5	5.082	4.4569
5MHz	16QAM	44340	3675.0	5.062	4.4613
5MHz	16QAM	44565	3697.5	5.062	4.4622

Worst plot



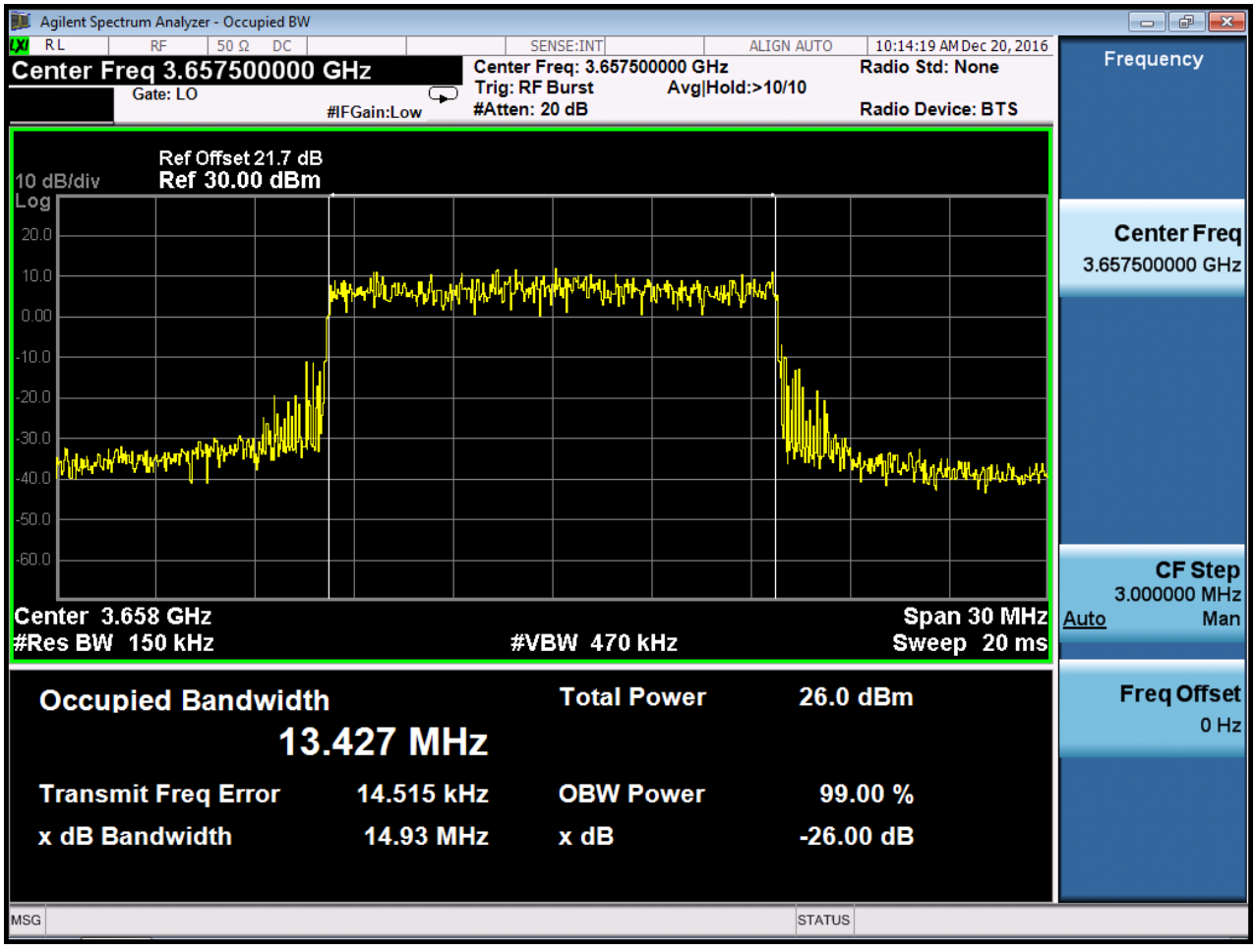
Channel Bandwidth	Modulation	Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	Occupied Bandwidth (MHz)
10MHz	QPSK	44140	3655.0	9.796	8.8872
10MHz	QPSK	44340	3675.0	9.797	8.8852
10MHz	QPSK	44540	3695.0	9.796	8.8801
10MHz	16QAM	44140	3655.0	9.733	8.8746
10MHz	16QAM	44340	3675.0	9.734	8.8757
10MHz	16QAM	44540	3695.0	9.949	8.8887

Worst plot



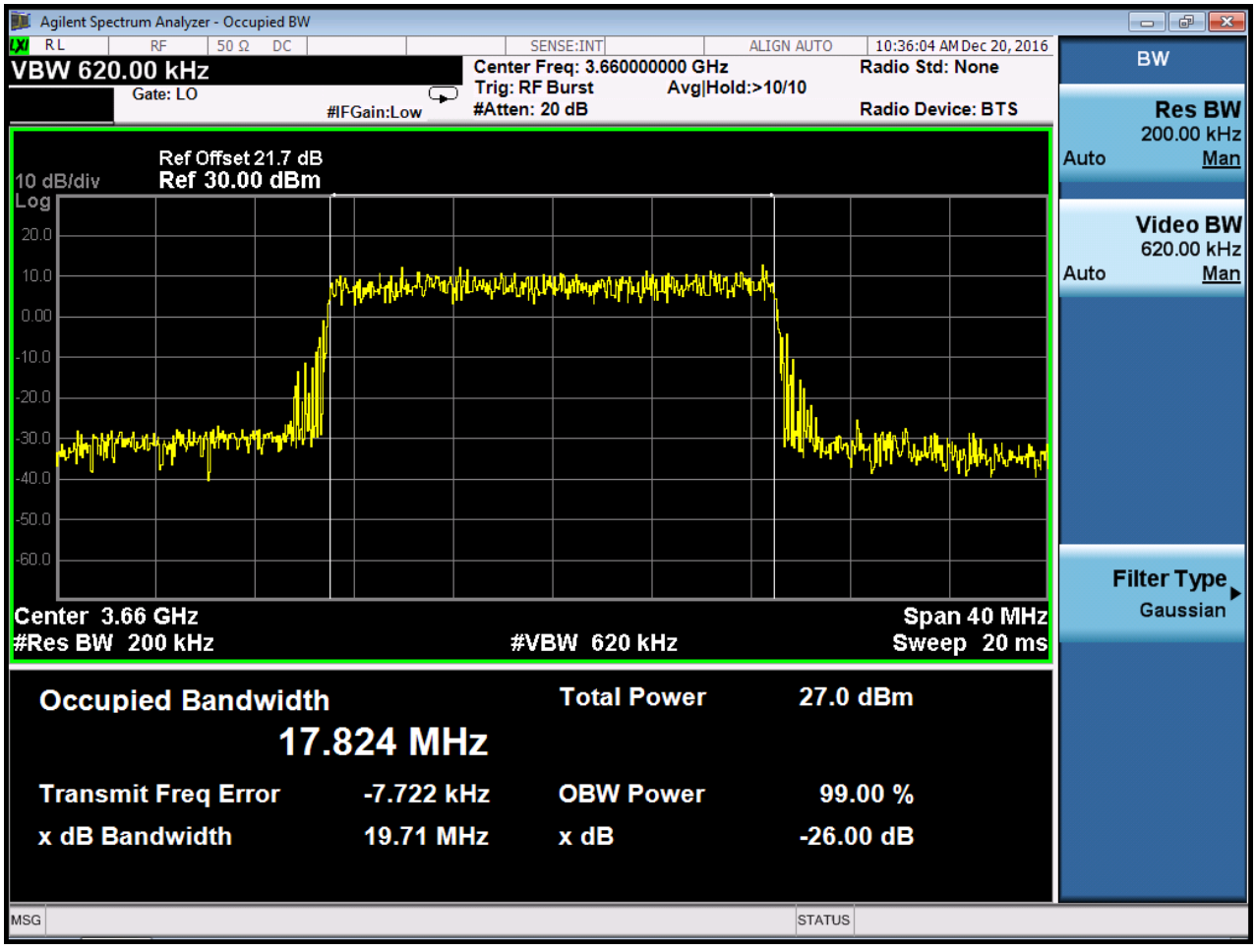
Channel Bandwidth	Modulation	Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	Occupied Bandwidth (MHz)
15MHz	QPSK	44165	3657.5	14.93	13.427
15MHz	QPSK	44340	3675.0	14.63	13.360
15MHz	QPSK	44515	3692.5	14.63	13.364
15MHz	16QAM	44165	3657.5	14.89	13.399
15MHz	16QAM	44340	3675.0	14.58	13.359
15MHz	16QAM	44515	3692.5	14.92	13.327

Worst plot



Channel Bandwidth	Modulation	Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	Occupied Bandwidth (MHz)
20MHz	QPSK	44190	3660.0	19.70	17.830
20MHz	QPSK	44340	3675.0	19.43	17.874
20MHz	QPSK	44490	3690.0	19.45	17.886
20MHz	16QAM	44190	3660.0	19.71	17.824
20MHz	16QAM	44340	3675.0	19.71	17.822
20MHz	16QAM	44490	3690.0	19.49	17.766

Worst plot



3.6 Frequency Stability

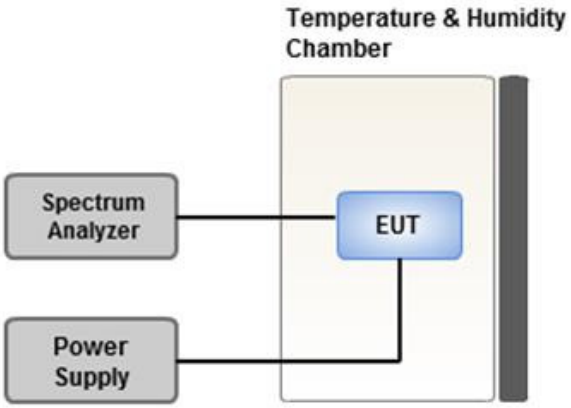
3.6.1 Limit of Frequency Stability

The frequency stability shall be less +/- 2.5ppm.

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: 3675 MHz	Frequency Drift (ppm)	
Temperature (°C)	Frequency Error (ppm)	Limit (ppm)
T20°CVmax	0.012	2.5
T20°CVmin	0.013	2.5
T55°CVnom	0.014	2.5
T50°CVnom	0.013	2.5
T40°CVnom	0.010	2.5
T30°CVnom	0.010	2.5
T20°CVnom	0.011	2.5
T10°CVnom	0.011	2.5
T0°CVnom	0.011	2.5
T-10°CVnom	0.011	2.5
T-20°CVnom	0.012	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: 3675 MHz	Frequency Drift (ppm)	
Temperature (°C)	Frequency Error (ppm)	Limit (ppm)
T20°CVmax	0.014	2.5
T20°CVmin	0.014	2.5
T55°CVnom	0.013	2.5
T50°CVnom	0.013	2.5
T40°CVnom	0.014	2.5
T30°CVnom	0.011	2.5
T20°CVnom	0.014	2.5
T10°CVnom	0.012	2.5
T0°CVnom	0.014	2.5
T-10°CVnom	0.013	2.5
T-20°CVnom	0.013	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: 3675 MHz	Frequency Drift (ppm)	
Temperature (°C)	Frequency Error (ppm)	Limit (ppm)
T20°CVmax	0.013	2.5
T20°CVmin	0.011	2.5
T55°CVnom	0.014	2.5
T50°CVnom	0.014	2.5
T40°CVnom	0.015	2.5
T30°CVnom	0.013	2.5
T20°CVnom	0.011	2.5
T10°CVnom	0.011	2.5
T0°CVnom	0.010	2.5
T-10°CVnom	0.011	2.5
T-20°CVnom	0.013	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: 3675 MHz	Frequency Drift (ppm)	
Temperature (°C)	Frequency Error (ppm)	Limit (ppm)
T20°CVmax	0.014	2.5
T20°CVmin	0.014	2.5
T55°CVnom	0.013	2.5
T50°CVnom	0.013	2.5
T40°CVnom	0.014	2.5
T30°CVnom	0.014	2.5
T20°CVnom	0.013	2.5
T10°CVnom	0.011	2.5
T0°CVnom	0.010	2.5
T-10°CVnom	0.010	2.5
T-20°CVnom	0.011	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

==END==