

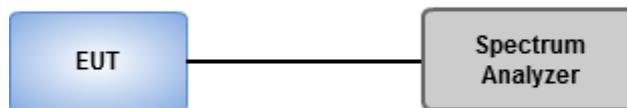
3.5 26dBc Bandwidth

3.5.1 Test Procedures

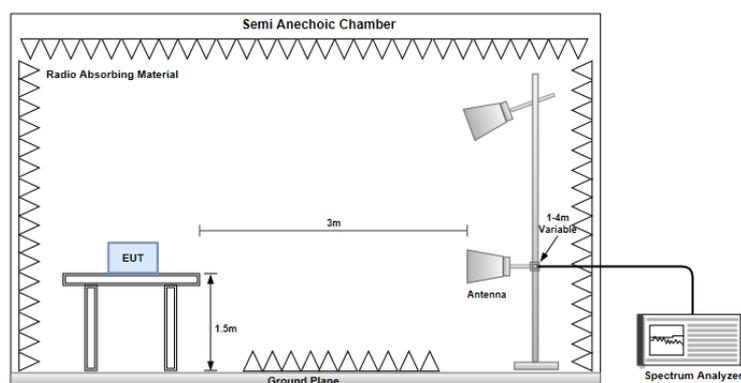
1. CB: 10MHz: Set resolution bandwidth (RBW) = 110 kHz, Video bandwidth (VBW) = 330 kHz.
CB: 20MHz: Set resolution bandwidth (RBW) = 220 kHz, Video bandwidth (VBW) = 680 kHz.
CB: 10+10MHz: Set resolution bandwidth (RBW) = 220 kHz, Video bandwidth (VBW) = 680 kHz.
CB: 10+20MHz: Set resolution bandwidth (RBW) = 330 kHz, Video bandwidth (VBW) = 1 MHz.
CB: 20+10MHz: Set resolution bandwidth (RBW) = 330 kHz, Video bandwidth (VBW) = 1 MHz.
CB: 20+20MHz: Set resolution bandwidth (RBW) = 430 kHz, Video bandwidth (VBW) = 1.3 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

CDD mode



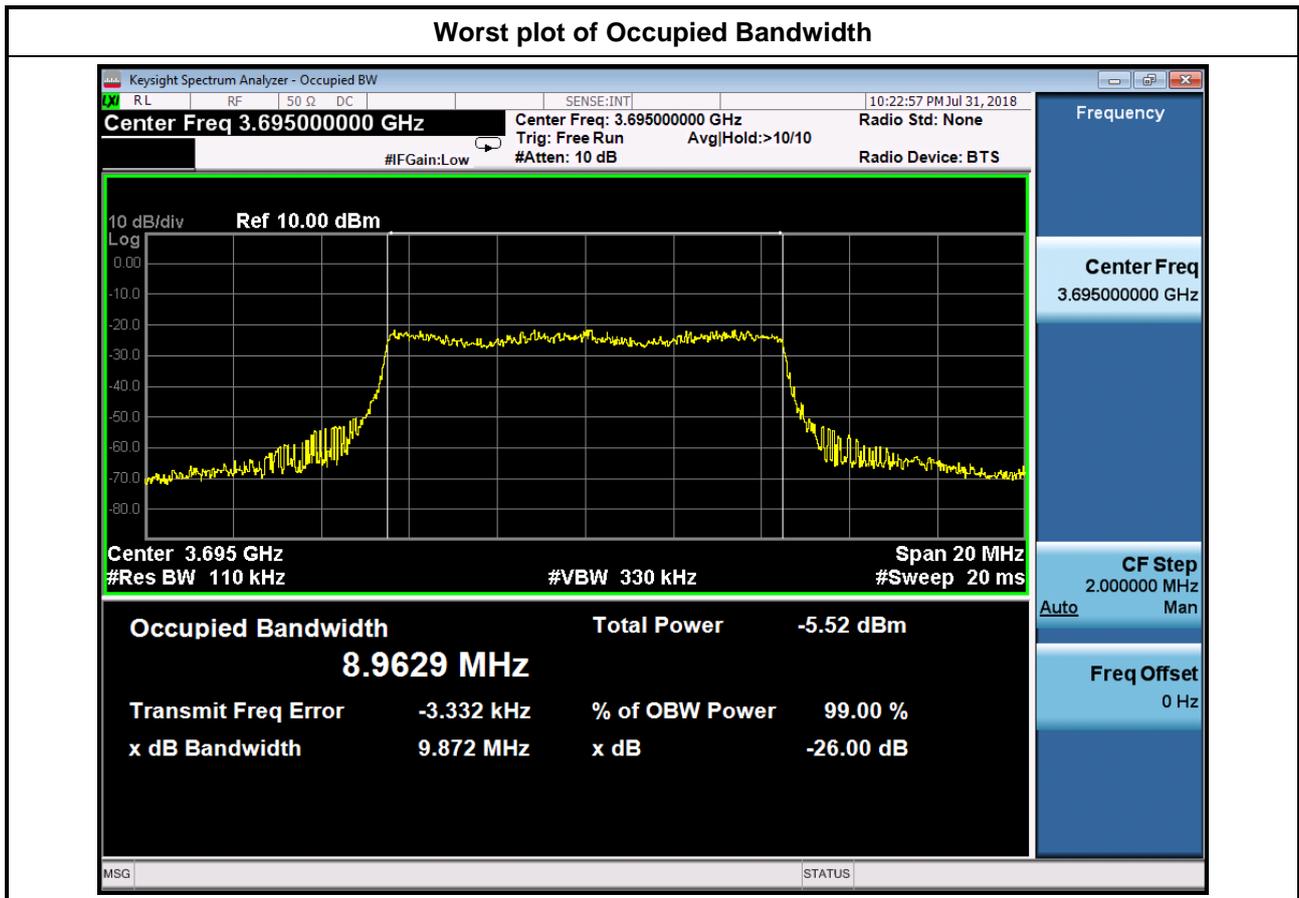
CA mode



3.5.3 Test Result of 26dBc Bandwidth (CDD Mode)

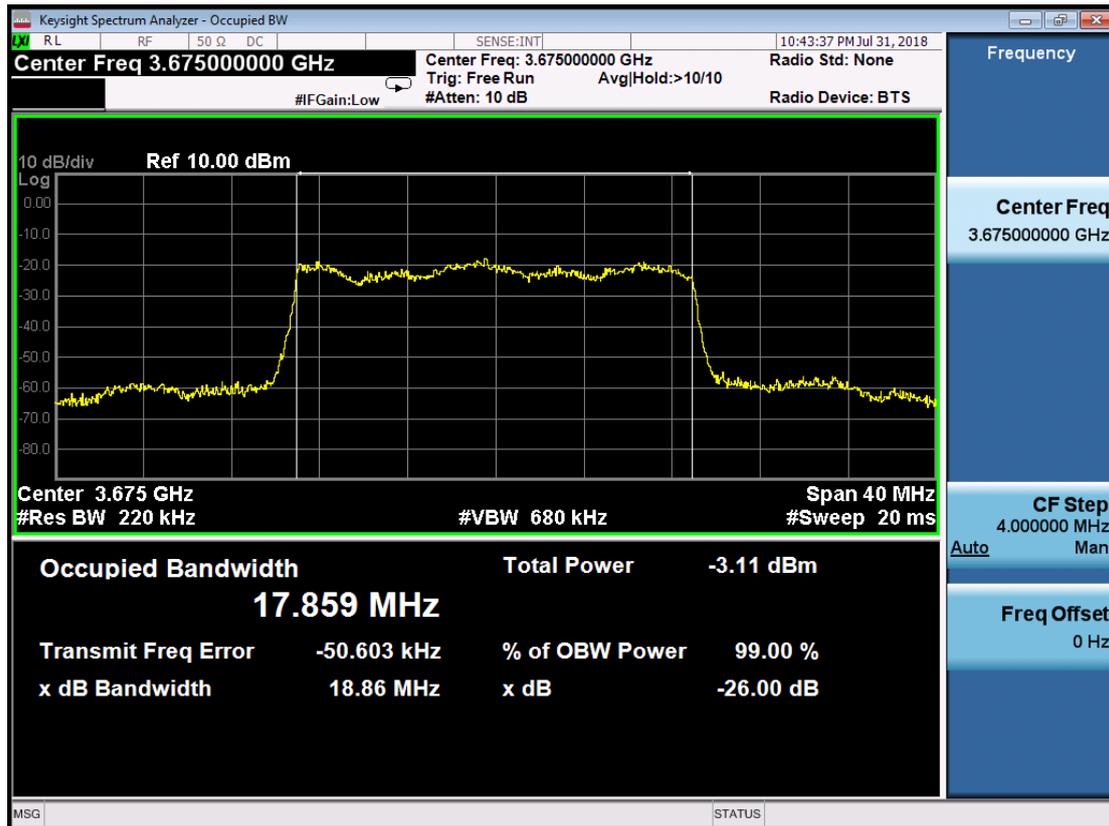
Channel Bandwidth	Modulation	Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	Occupied Bandwidth (MHz)
10MHz	QPSK	44140	3655.0	9.727	8.9480
10MHz	QPSK	44340	3675.0	9.618	8.9460
10MHz	QPSK	44540	3695.0	9.759	8.9194
10MHz	16QAM	44140	3655.0	9.681	8.9259
10MHz	16QAM	44340	3675.0	9.609	8.9111
10MHz	16QAM	44540	3695.0	9.829	8.9501
10MHz	64QAM	44140	3655.0	9.530	8.9002
10MHz	64QAM	44340	3675.0	9.844	8.9595
10MHz	64QAM	44540	3695.0	9.872	8.9629

Worst plot of Occupied Bandwidth



Channel Bandwidth	Modulation	Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	Occupied Bandwidth (MHz)
20MHz	QPSK	44190	3660.0	18.80	17.816
20MHz	QPSK	44340	3675.0	18.86	17.859
20MHz	QPSK	44490	3690.0	18.87	17.800
20MHz	16QAM	44190	3660.0	18.89	17.832
20MHz	16QAM	44340	3675.0	18.85	17.826
20MHz	16QAM	44490	3690.0	18.88	17.826
20MHz	64QAM	44190	3660.0	18.93	17.808
20MHz	64QAM	44340	3675.0	18.87	17.782
20MHz	64QAM	44490	3690.0	18.86	17.755

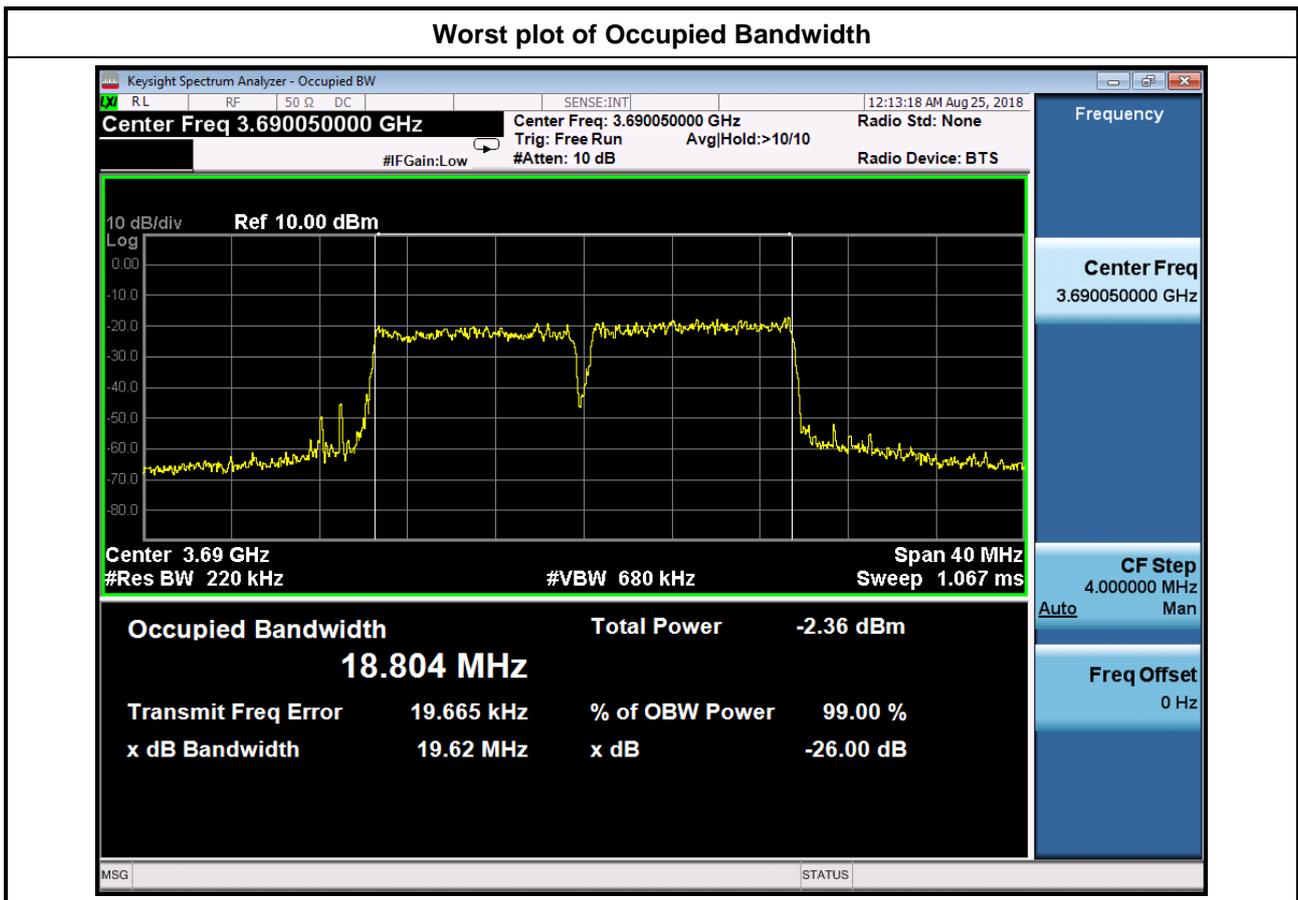
Worst plot of Occupied Bandwidth



3.5.4 Test Result of 26dBc Bandwidth (CA Mode)

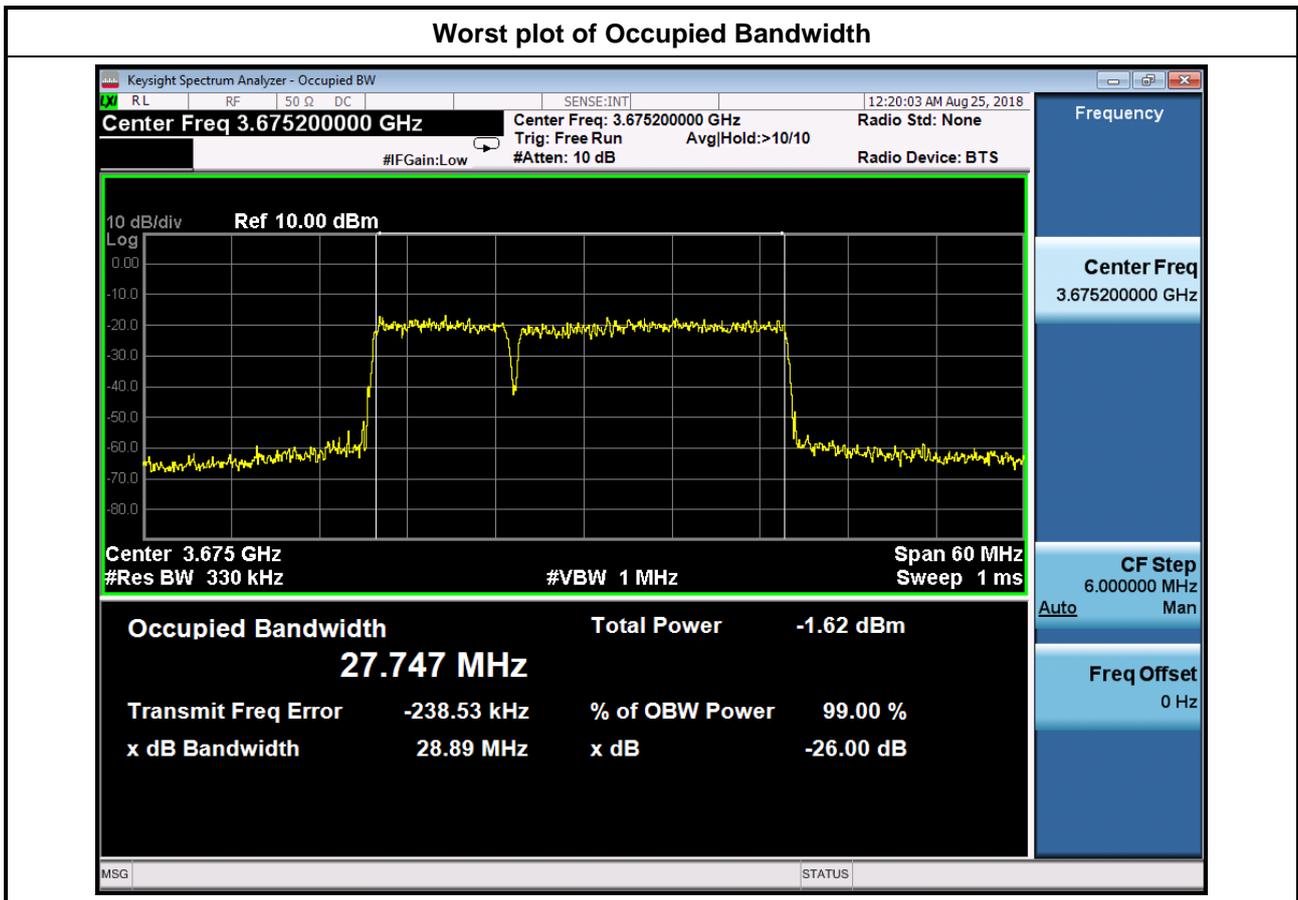
CB: 10+10MHz	PCC Freq. (MHz)	SCC Freq. (MHz)	26dBc Bandwidth (MHz)	Occupied Bandwidth (MHz)
QPSK	3655.0	3664.9	19.61	18.747
	3670.0	3679.9	19.63	18.778
	3685.1	3695.0	19.49	18.736
16QAM	3655.0	3664.9	19.67	18.757
	3670.0	3679.9	19.48	18.708
	3685.1	3695.0	19.47	18.765
64QAM	3655.0	3664.9	19.89	18.780
	3670.0	3679.9	20.13	18.729
	3685.1	3695.0	19.62	18.804

Worst plot of Occupied Bandwidth



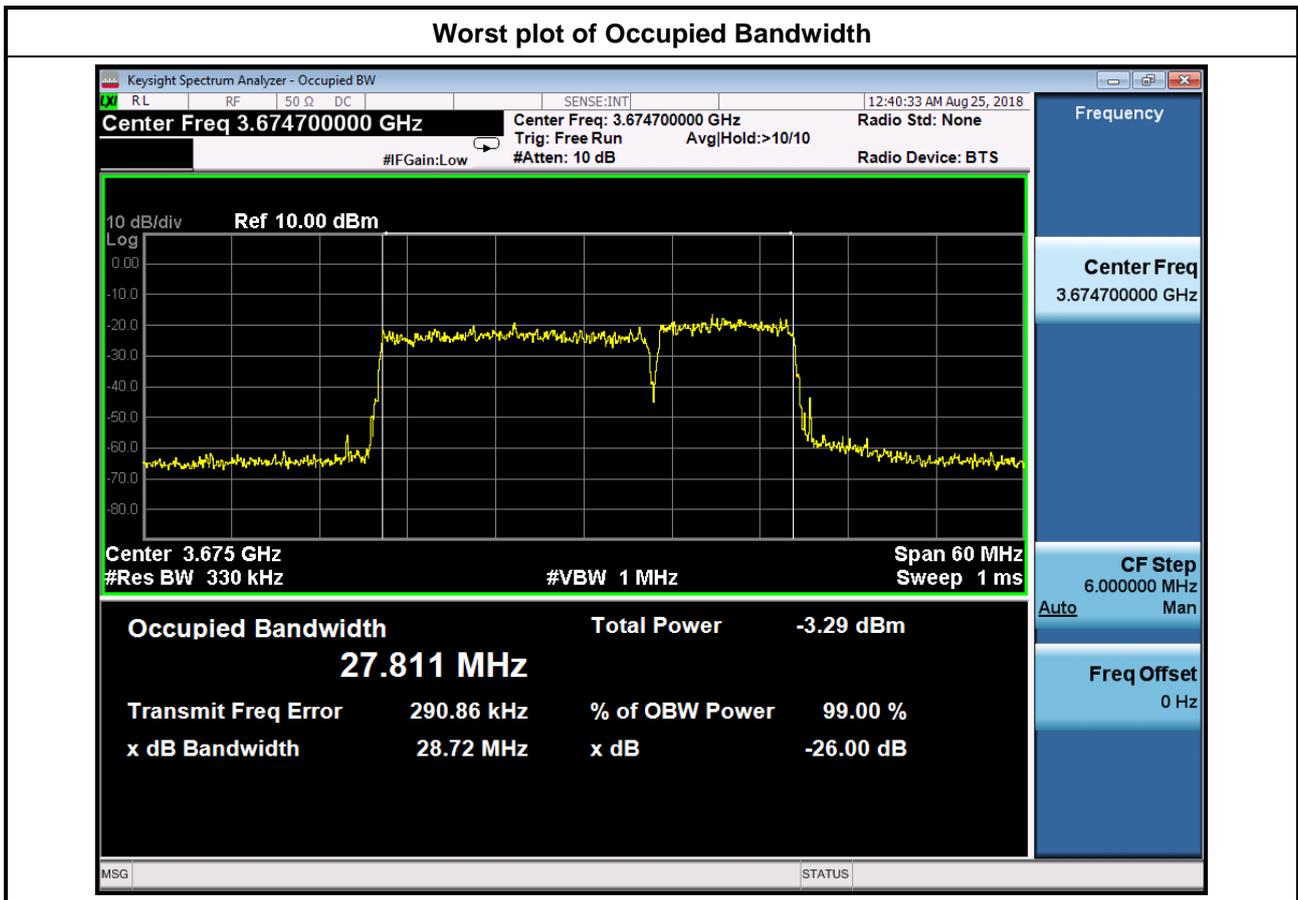
CB: 10+20MHz	PCC Freq. (MHz)	SCC Freq. (MHz)	26dBc Bandwidth (MHz)	Occupied Bandwidth (MHz)
QPSK	3655.5	3669.9	28.90	27.606
	3665.5	3679.9	28.89	27.747
	3675.6	3690.0	28.83	27.660
16QAM	3655.5	3669.9	28.79	27.683
	3665.5	3679.9	28.66	27.671
	3675.6	3690.0	28.72	27.656
64QAM	3655.5	3669.9	28.90	27.650
	3665.5	3679.9	28.80	27.740
	3675.6	3690.0	28.71	27.668

Worst plot of Occupied Bandwidth



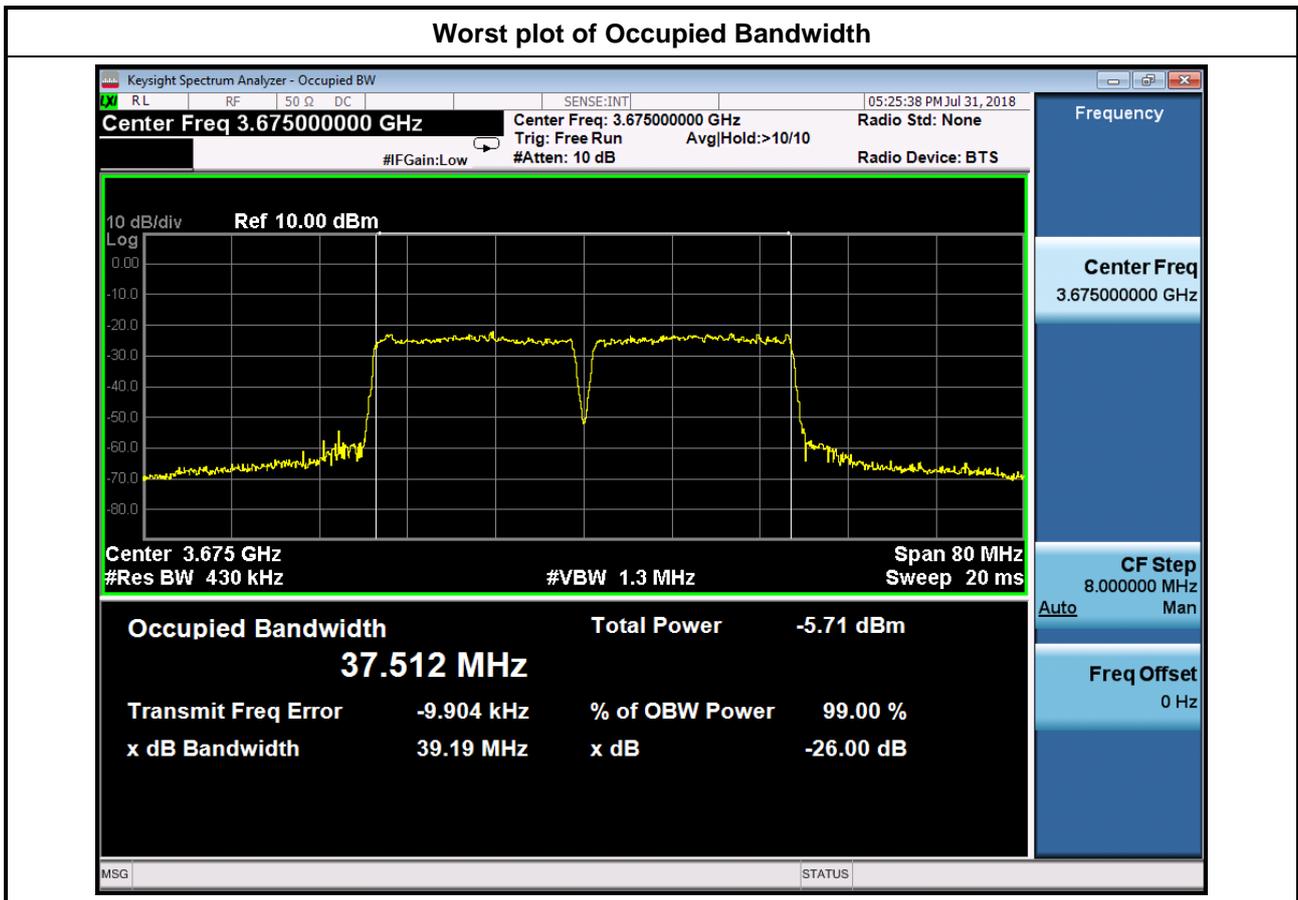
CB: 20+10MHz	PCC Freq. (MHz)	SCC Freq. (MHz)	26dBc Bandwidth (MHz)	Occupied Bandwidth (MHz)
QPSK	3660.0	3674.4	28.71	27.622
	3670.0	3684.4	28.81	27.639
	3680.1	3694.5	28.65	27.589
16QAM	3660.0	3674.4	28.65	27.611
	3670.0	3684.4	28.61	27.613
	3680.1	3694.5	28.77	27.652
64QAM	3660.0	3674.4	28.78	27.596
	3670.0	3684.4	28.72	27.811
	3680.1	3694.5	28.62	27.767

Worst plot of Occupied Bandwidth



CB: 20+20MHz	PCC Freq. (MHz)	SCC Freq. (MHz)	26dBc Bandwidth (MHz)	Occupied Bandwidth (MHz)
QPSK	3660.0	3679.8	39.15	37.482
	3665.1	3684.9	39.19	37.512
	3670.2	3690.0	39.11	37.456
16QAM	3660.0	3679.8	39.17	37.484
	3665.1	3684.9	39.14	37.499
	3670.2	3690.0	39.16	37.486
64QAM	3660.0	3679.8	39.21	37.485
	3665.1	3684.9	39.26	37.429
	3670.2	3690.0	39.19	37.427

Worst plot of Occupied Bandwidth



3.6 Frequency Stability

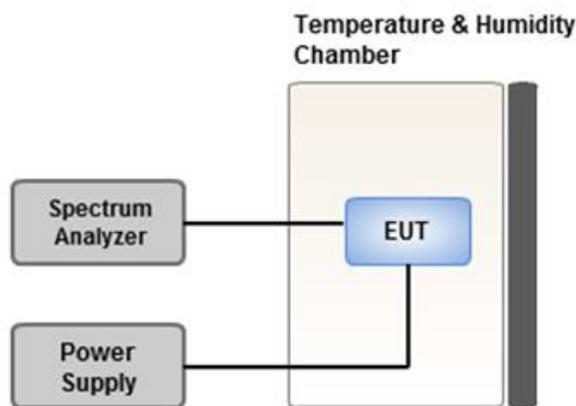
3.6.1 Limit of Frequency Stability

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. Confirm frequency drift value and record it.

3.6.3 Test Setup



3.6.4 Test Result of Frequency Stability (CDD Mode)

Channel Bandwidth: 10MHz

Frequency: 3675 MHz	Frequency Drift (ppm)	
Temperature (°C)	Frequency Error (ppm)	Limit (ppm)
T20°CVmax	-0.013	2.5
T20°CVmin	-0.012	2.5
T55°CVnom	-0.013	2.5
T50°CVnom	-0.01	2.5
T40°CVnom	-0.012	2.5
T30°CVnom	-0.011	2.5
T20°CVnom	-0.012	2.5
T10°CVnom	-0.013	2.5
T0°CVnom	-0.016	2.5
T-10°CVnom	-0.015	2.5
T-20°CVnom	-0.012	2.5
T-30°CVnom	-0.013	2.5
T-40°CVnom	-0.016	2.5
Vnom [V]: 120	Vmax [V]: 138	Vmin [V]: 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	-0.011	2.5
T20°CVmin	-0.016	2.5
T55°CVnom	-0.013	2.5
T50°CVnom	-0.014	2.5
T40°CVnom	-0.013	2.5
T30°CVnom	-0.012	2.5
T20°CVnom	-0.012	2.5
T10°CVnom	-0.013	2.5
T0°CVnom	-0.011	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	-0.017	2.5
Vnom [V]: 120	Vmax [V]: 138	Vmin [V]: 102
Tnom [°C]: 20	Tmax [°C]: 55	Tmin [°C]: -40

3.6.5 Test Result of Frequency Stability (CA Mode)

Channel Bandwidth: 10+10MHz

Frequency: 3670.0+3679.9 MHz	Frequency Drift (ppm)	
Temperature (°C)	Frequency Error (ppm)	Limit (ppm)
T20°CVmax	0.014	2.5
T20°CVmin	0.015	2.5
T55°CVnom	0.015	2.5
T50°CVnom	0.014	2.5
T40°CVnom	0.015	2.5
T30°CVnom	0.013	2.5
T20°CVnom	0.019	2.5
T10°CVnom	0.020	2.5
T0°CVnom	0.018	2.5
T-10°CVnom	0.020	2.5
T-20°CVnom	0.018	2.5
T-30°CVnom	0.020	2.5
T-40°CVnom	0.019	2.5
Vnom [V]: 120	Vmax [V]: 138	Vmin [V]: 102
Tnom [°C]: 20	Tmax [°C]: 55	Tmin [°C]: -40

Channel Bandwidth: 10+20MHz

Frequency: 3665.5+3679.9 MHz	Frequency Drift (ppm)	
Temperature (°C)	Frequency Error (ppm)	Limit (ppm)
T20°CVmax	0.011	2.5
T20°CVmin	0.019	2.5
T55°CVnom	0.008	2.5
T50°CVnom	0.019	2.5
T40°CVnom	-0.020	2.5
T30°CVnom	0.011	2.5
T20°CVnom	0.020	2.5
T10°CVnom	0.017	2.5
T0°CVnom	-0.016	2.5
T-10°CVnom	0.018	2.5
T-20°CVnom	0.011	2.5
T-30°CVnom	0.019	2.5
T-40°CVnom	0.011	2.5
Vnom [V]: 120	Vmax [V]: 138	Vmin [V]: 102
Tnom [°C]: 20	Tmax [°C]: 55	Tmin [°C]: -40

Channel Bandwidth: 20+10MHz

Frequency: 3670.0+3684.4 MHz	Frequency Drift (ppm)	
	Temperature (°C)	Frequency Error (ppm)
T20°CVmax	0.015	2.5
T20°CVmin	0.009	2.5
T55°CVnom	0.011	2.5
T50°CVnom	0.008	2.5
T40°CVnom	-0.018	2.5
T30°CVnom	0.016	2.5
T20°CVnom	0.014	2.5
T10°CVnom	0.014	2.5
T0°CVnom	-0.011	2.5
T-10°CVnom	0.018	2.5
T-20°CVnom	0.013	2.5
T-30°CVnom	-0.018	2.5
T-40°CVnom	-0.021	2.5
Vnom [V]: 120	Vmax [V]: 138	Vmin [V]: 102
Tnom [°C]: 20	Tmax [°C]: 55	Tmin [°C]: -40

Channel Bandwidth: 20+20MHz

Frequency: 3665.1+3684.9 MHz	Frequency Drift (ppm)	
	Temperature (°C)	Frequency Error (ppm)
T20°CVmax	0.018	2.5
T20°CVmin	0.014	2.5
T55°CVnom	-0.019	2.5
T50°CVnom	-0.020	2.5
T40°CVnom	0.020	2.5
T30°CVnom	0.016	2.5
T20°CVnom	0.008	2.5
T10°CVnom	0.009	2.5
T0°CVnom	0.009	2.5
T-10°CVnom	0.014	2.5
T-20°CVnom	0.013	2.5
T-30°CVnom	0.019	2.5
T-40°CVnom	0.014	2.5
Vnom [V]: 120	Vmax [V]: 138	Vmin [V]: 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

Tel: 886-2-2601-1640

No. 30-2, Ding Fwu Tsuen, Lin
Kou District, New Taipei City,
Taiwan, R.O.C.

Kwei Shan

Tel: 886-3-271-8666

No. 3-1, Lane 6, Wen San 3rd St.,
Kwei Shan District, Tao Yuan City
333, Taiwan, R.O.C.

Kwei Shan Site II

Tel: 886-3-271-8640

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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