



Appendix A: Transmitter Output Power



1 Result Table

1.1 Average Power (Total)

EUT Conf.	Average Power [dBm]	Antenna Gain [dBi]	EIRP [W]	ERP [W]	Verdict
1U_B	48.95	7	787.10	479.94	Pass
1U_M	48.76	7	753.41	459.39	Pass
1U_T	48.91	7	779.88	475.54	Pass
2U_B	45.88/46.11	7	797.47	486.26	Pass
2U_M	45.89/45.86	7	775.47	472.84	Pass
2U_T	46.04/45.84	7	787.36	480.10	Pass
3U_B	42.78/42.99/43.08	7	593.38	361.82	Pass
3U_T	42.96/42.94/42.72	7	582.93	355.45	Pass
1G_GMSK_B	48.48	7	706.37	430.71	Pass
1G_GMSK_M	48.85	7	769.18	469.01	Pass
1G_GMSK_T	48.83	7	765.65	466.86	Pass
1G_8PSK_B	48.49	7	707.99	431.70	Pass
1G_8PSK_M	48.86	7	770.96	470.10	Pass
1G_8PSK_T	48.88	7	774.52	472.27	Pass
2G_GMSK_B	45.76/45.89	7	766.67	467.48	Pass
2G_GMSK_M	45.86/45.79	7	766.61	467.44	Pass
2G_GMSK_T	46.01/45.83	7	783.71	477.87	Pass
2G_8PSK_B	45.79/45.84	7	764.83	466.36	Pass
2G_8PSK_M	45.83/45.74	7	759.60	463.17	Pass
2G_8PSK_T	46.03/45.89	7	790.89	482.25	Pass
3G_GMSK_B	43.94/44.08/44.34	7	777.09	473.83	Pass
3G_GMSK_M	44.25/44.2/44.12	7	789.19	481.22	Pass
3G_GMSK_T	44.35/44.07/43.8	7	769.25	469.05	Pass
3G_8PSK_B	43.95/44.05/44.38	7	778.41	474.64	Pass
3G_8PSK_M	44.31/44.33/44.36	7	815.62	497.33	Pass
3G_8PSK_T	44.38/44.29/44.15	7	804.61	490.62	Pass
4G_GMSK_B	42.72/42.92/42.96/43.09	7	786.22	479.40	Pass
4G_GMSK_M	42.99/42.99/42.85/42.92	7	788.64	480.88	Pass
4G_GMSK_T	43.2/43.08/42.92/42.59	7	791.48	482.61	Pass
4G_8PSK_B	40.97/41.11/41.13/41.26	7	518.75	316.31	Pass
4G_8PSK_M	41.15/41.17/41.07/41.16	7	521.02	317.70	Pass
4G_8PSK_T	41.14/41.26/41.16/40.96	7	520.26	317.23	Pass
5G_GMSK_B	41.51/41.83/41.86/42.09/42.08	7	772.52	471.05	Pass
5G_GMSK_M	41.86/41.94/41.93/41.89/41.91	7	777.34	473.99	Pass
5G_GMSK_T	42.1/42.08/41.91/41.83/41.55	7	775.99	473.16	Pass
5G_8PSK_B	40.06/40.10/40.16/40.25/40.27	7	521.05	317.71	Pass



EUT Conf.	Average Power [dBm]	Antenna Gain [dBi]	EIRP [W]	ERP [W]	Verdict
5G_8PSK_M	40.12/40.19/40.18/40.13/40.25	7	521.71	318.11	Pass
5G_8PSK_T	40.25/40.22/40.14/40.17/41.25	7	553.05	337.23	Pass
6G_GMSK_B	40.29/40.48/40.61/40.77/40.63/40.81	7	690.82	421.23	Pass
6G_GMSK_M	40.77/40.79/40.64/40.73/40.68/40.66	7	708.57	432.06	Pass
6G_GMSK_T	40.85/40.87/40.92/40.72/40.51/40.23	7	704.99	429.87	Pass
6G_8PSK_B	38.72/38.92/38.91/38.95/38.85/39.11	7	468.10	285.43	Pass
6G_8PSK_M	39.05/38.96/38.84/38.95/38.92/38.86	7	470.15	286.68	Pass
6G_8PSK_T	39.02/39.04/39.05/38.95/38.75/38.59	7	467.22	284.89	Pass
7G_GMSK_B	37.25/37.46/37.56/37.76/37.78/37.78/37.91	7	408.25	248.94	Pass
7G_GMSK_M	37.59/37.71/37.68/37.8/37.79/37.76/37.63	7	414.05	252.47	Pass
7G_GMSK_T	37.97/37.94/37.89/37.9/37.87/37.66/37.56	7	425.67	259.56	Pass
7G_8PSK_B	35.65/35.68/35.76/35.97/35.98/35.98/36.11	7	271.65	165.64	Pass
7G_8PSK_M	36.17/35.91/35.96/35.83/35.99/35.96/35.83	7	276.22	168.43	Pass
7G_8PSK_T	36.12/36.11/36.05/36.1/36.05/35.88/35.79	7	280.36	170.95	Pass
8G_GMSK_B	36.78/36.93/36.95/36.96/37.06/37.02/37.11/37.12	7	401.21	244.64	Pass
8G_GMSK_M	36.73/36.82/36.83/36.86/36.87/36.82/36.85/36.79	7	385.71	235.19	Pass
8G_GMSK_T	37.01/37.06/37.02/37.06/37.08/36.89/36.91/36.72	7	399.16	243.39	Pass
8G_8PSK_B	35.02/35.15/35.17/35.17/35.17/35.24/35.33/35.32	7	265.37	161.81	Pass
8G_8PSK_M	34.98/35.04/35.05/35.07/35.09/35.05/35.07/35.02	7	256.30	156.28	Pass
8G_8PSK_T	35.25/35.27/35.24/35.28/35.29/35.06/35.13/34.95	7	264.64	161.36	Pass
1G1U_B	1G:45.38 1U:45.98	7	743.18	453.16	Pass
1G1U_T	1G:45.37 1U:45.94	7	738.74	450.45	Pass
1G2U_B	1G:45.20 2U:42.86/43.06	7	728.36	444.12	Pass
1G2U_T	1G:45.45 2U:43.01/42.88	7	746.60	455.24	Pass
2G1U_B	2G:43.92/44.89 1U:42.98	7	755.32	460.56	Pass
2G1U_T	2G:44.80/43.95 1U:42.95	7	749.33	456.91	Pass
3G1U_B	3G: 42.55/42.65/43.07 1U: 42.98	7	767.16	467.78	Pass
3G1U_T	3G: 43.07/42.48/42.16 1U: 43.01	7	745.97	454.86	Pass

1.2 Average Power (Spectral Density)

(Not applicable)



1.3 Peak-to-Average Ratio

(Not applicable)

2 Test Plot

NOTE: Only the test plots for the measurements of Peak-to-Average Ratio are supplied.

(Not applicable)



Appendix B: Bandwidth



1 Result Table

1.1 Occupied Bandwidth

EUT Conf.	Occupied Bandwidth [MHz]	Verdict
1U_B	4.1680	Pass
1U_M	4.1692	Pass
1U_T	4.1645	Pass
1G_GMSK_B	0.24523	Pass
1G_GMSK_M	0.24657	Pass
1G_GMSK_T	0.24630	Pass
1G_8PSK_B	0.25206	Pass
1G_8PSK_M	0.25430	Pass
1G_8PSK_T	0.25202	Pass

1.2 Emission Bandwidth

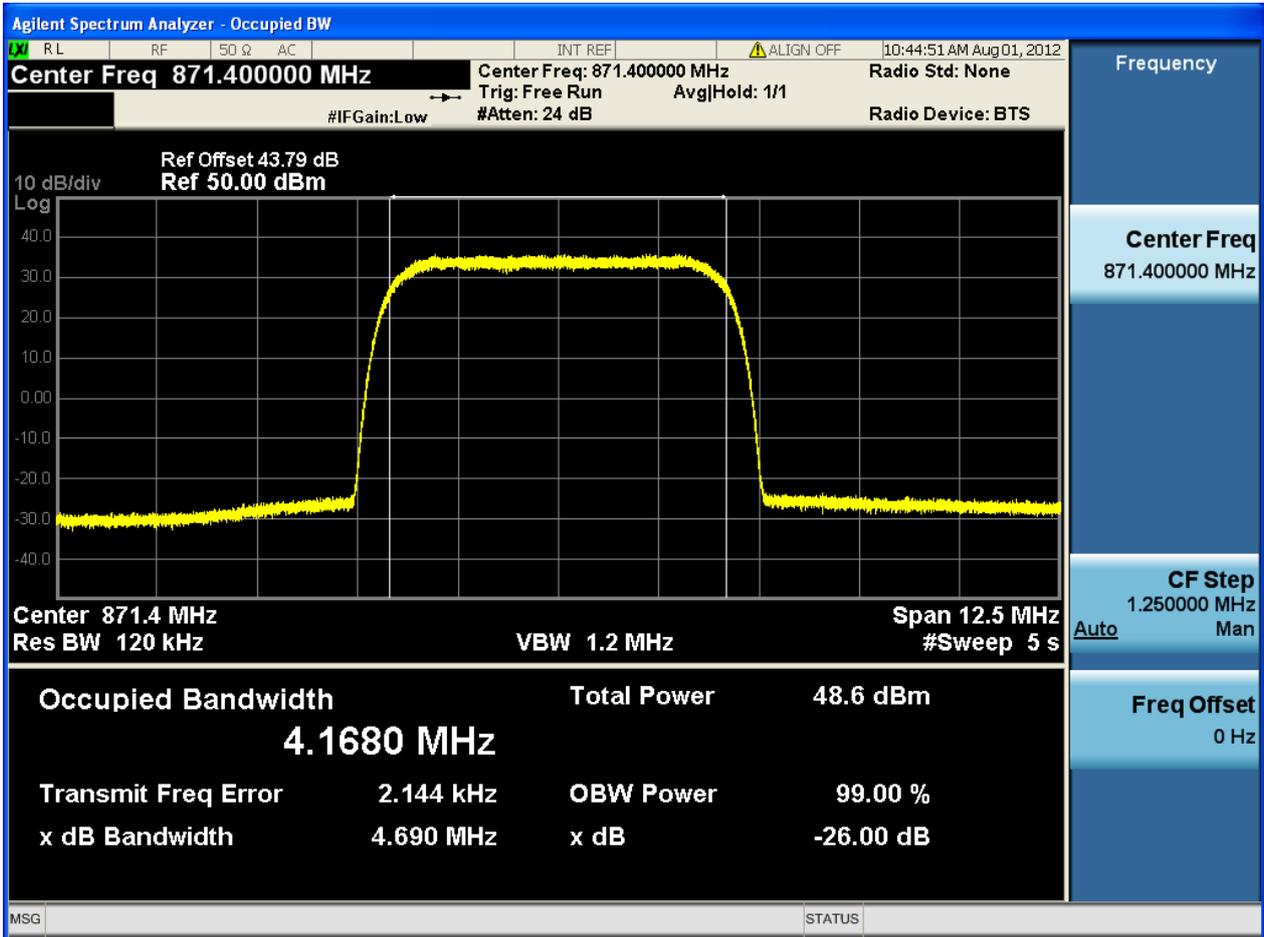
(Not applicable)



2 Test Plot

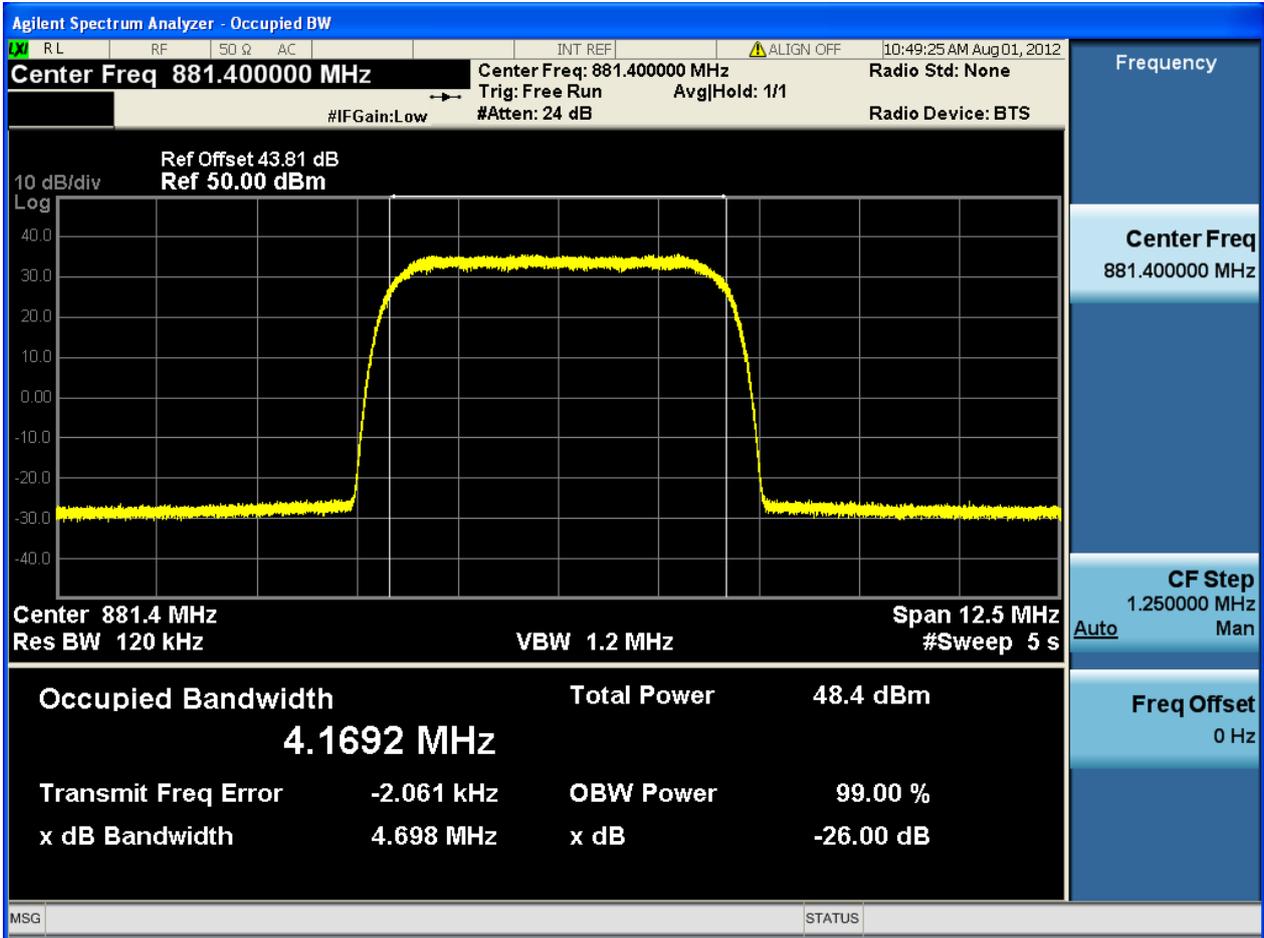
2.1 Occupied Bandwidth

2.1.1 1U_B

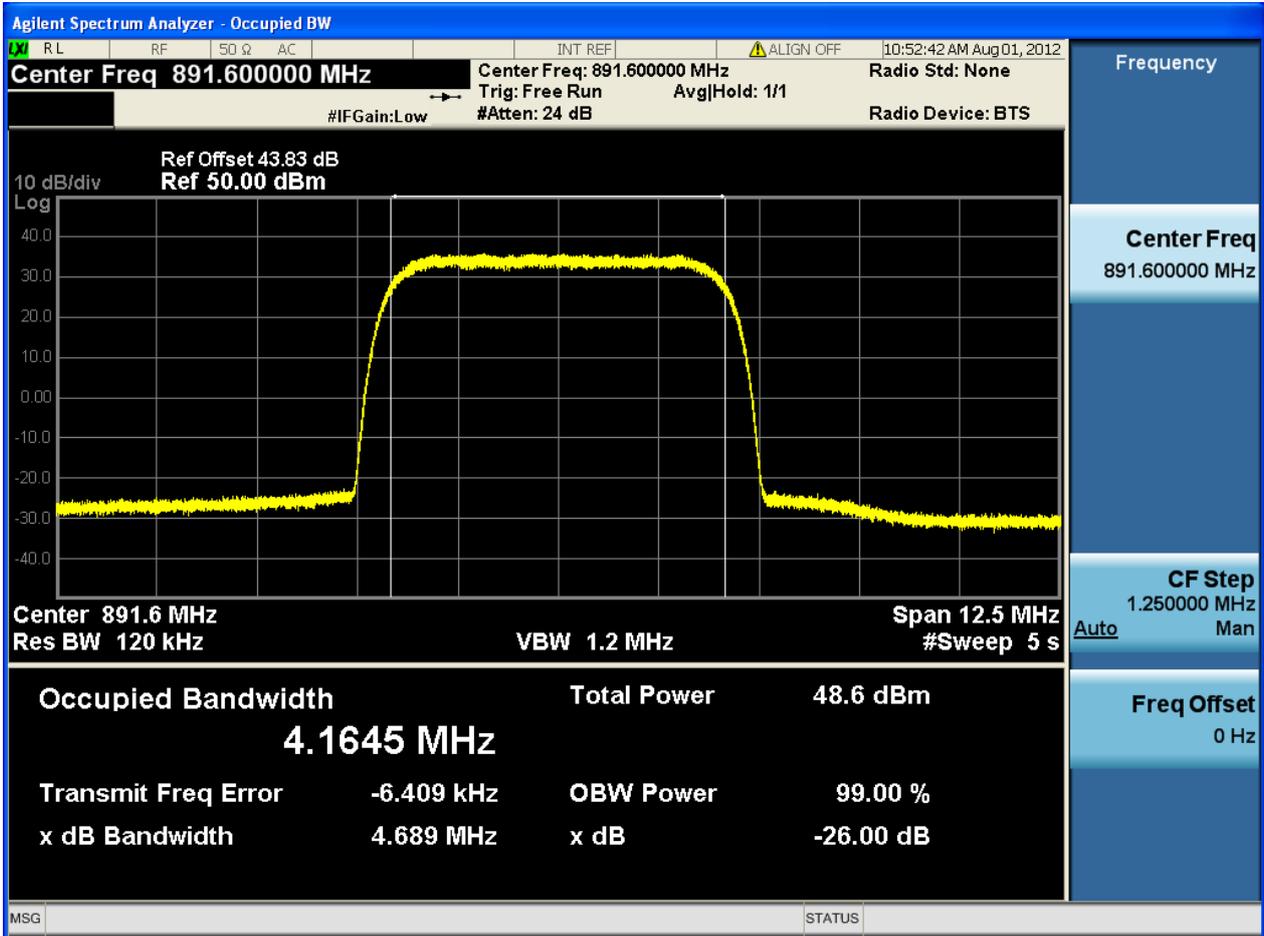




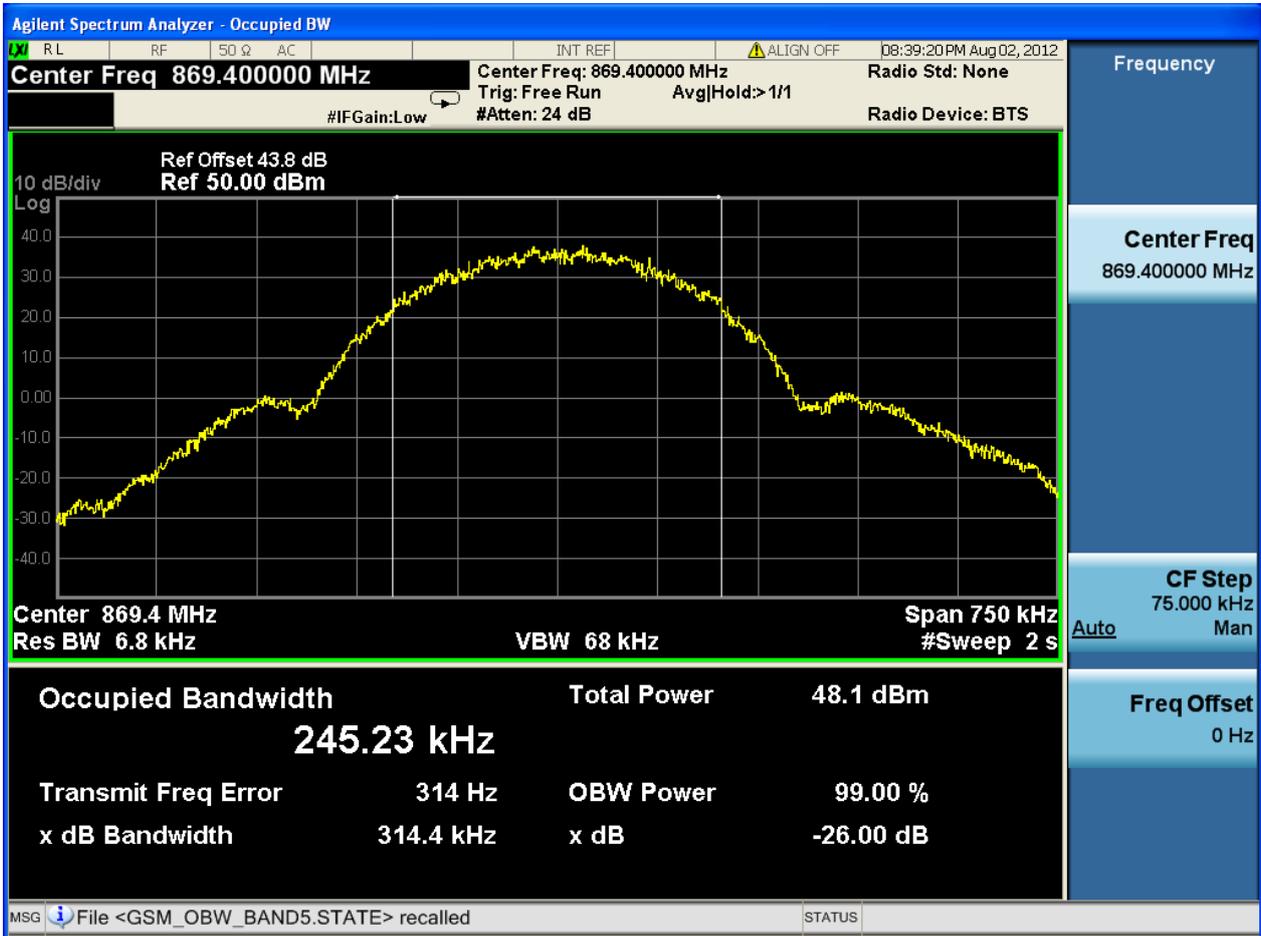
2.1.2 1U_M



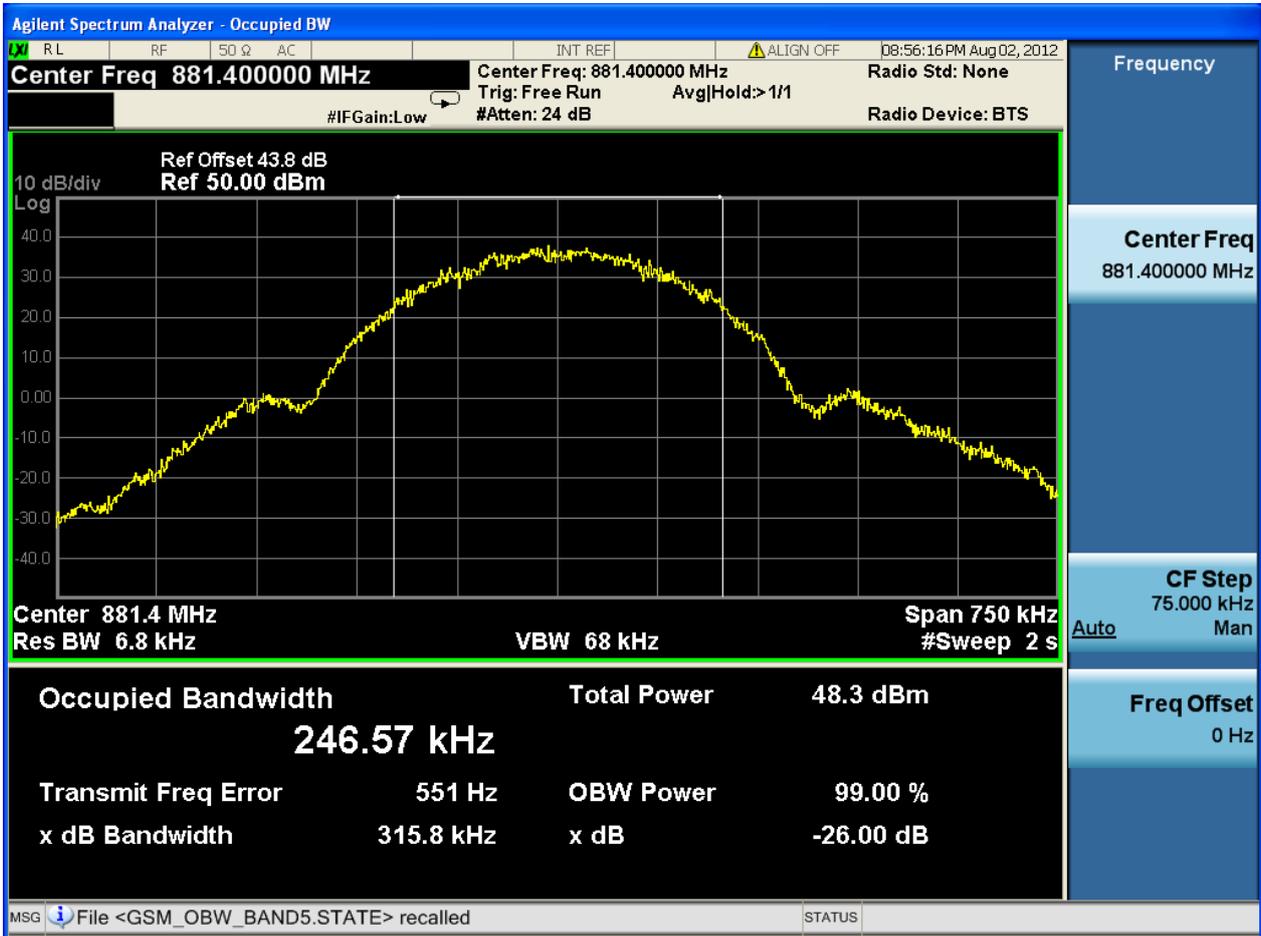
2.1.3 1U_T



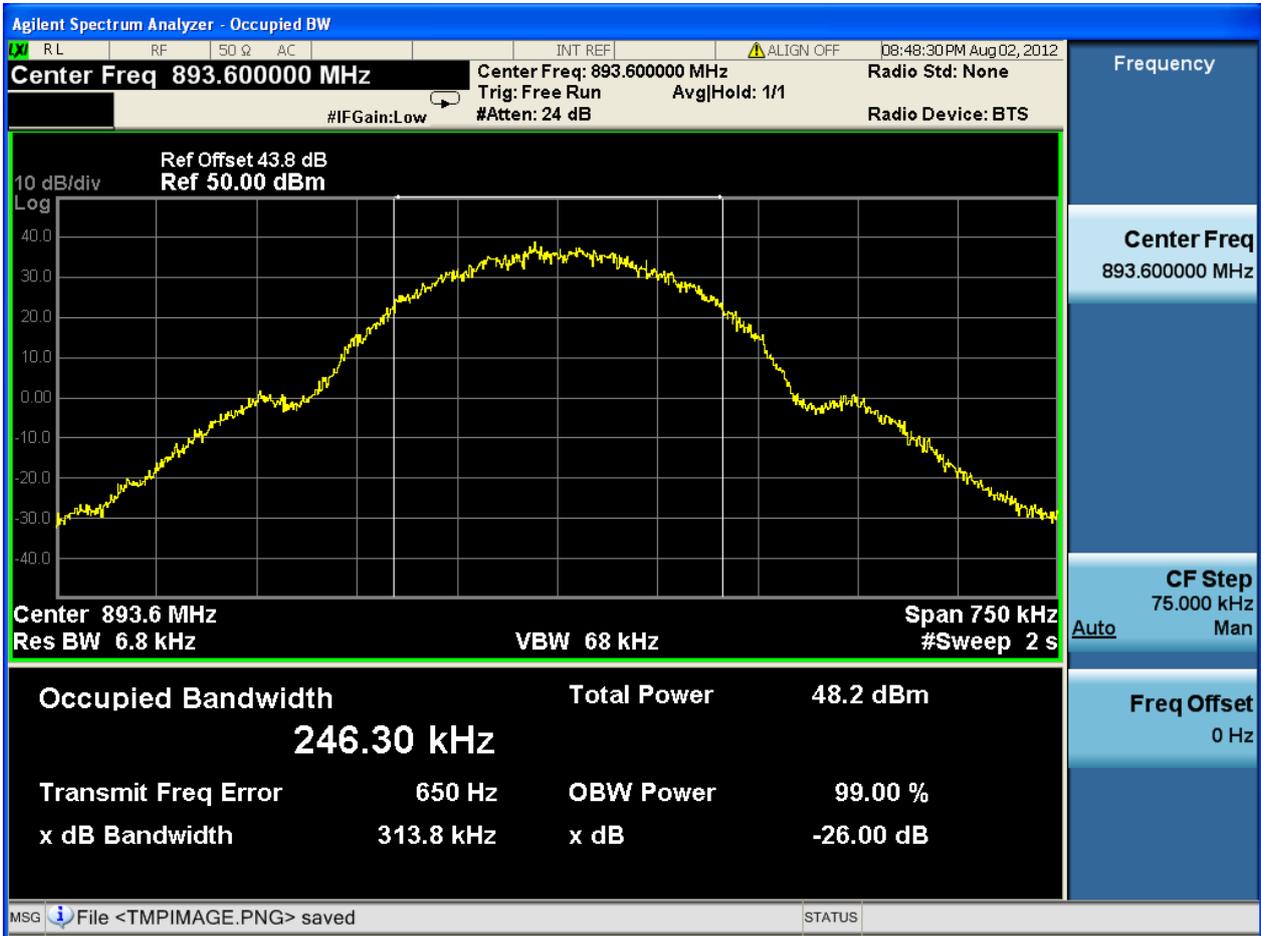
2.1.4 1G_GMSK_B



2.1.5 1G_GMSK_M

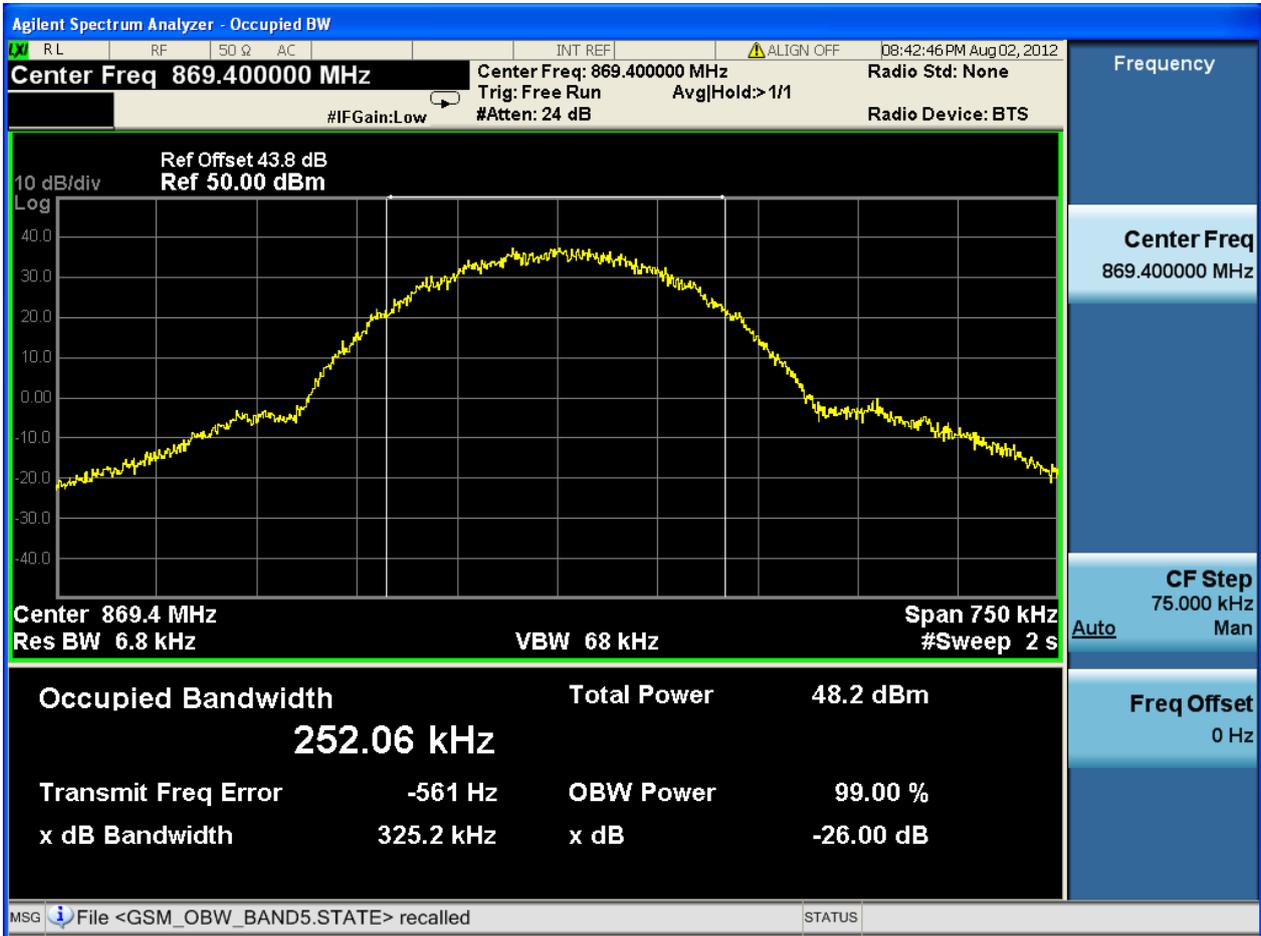


2.1.6 1G_GMSK_T

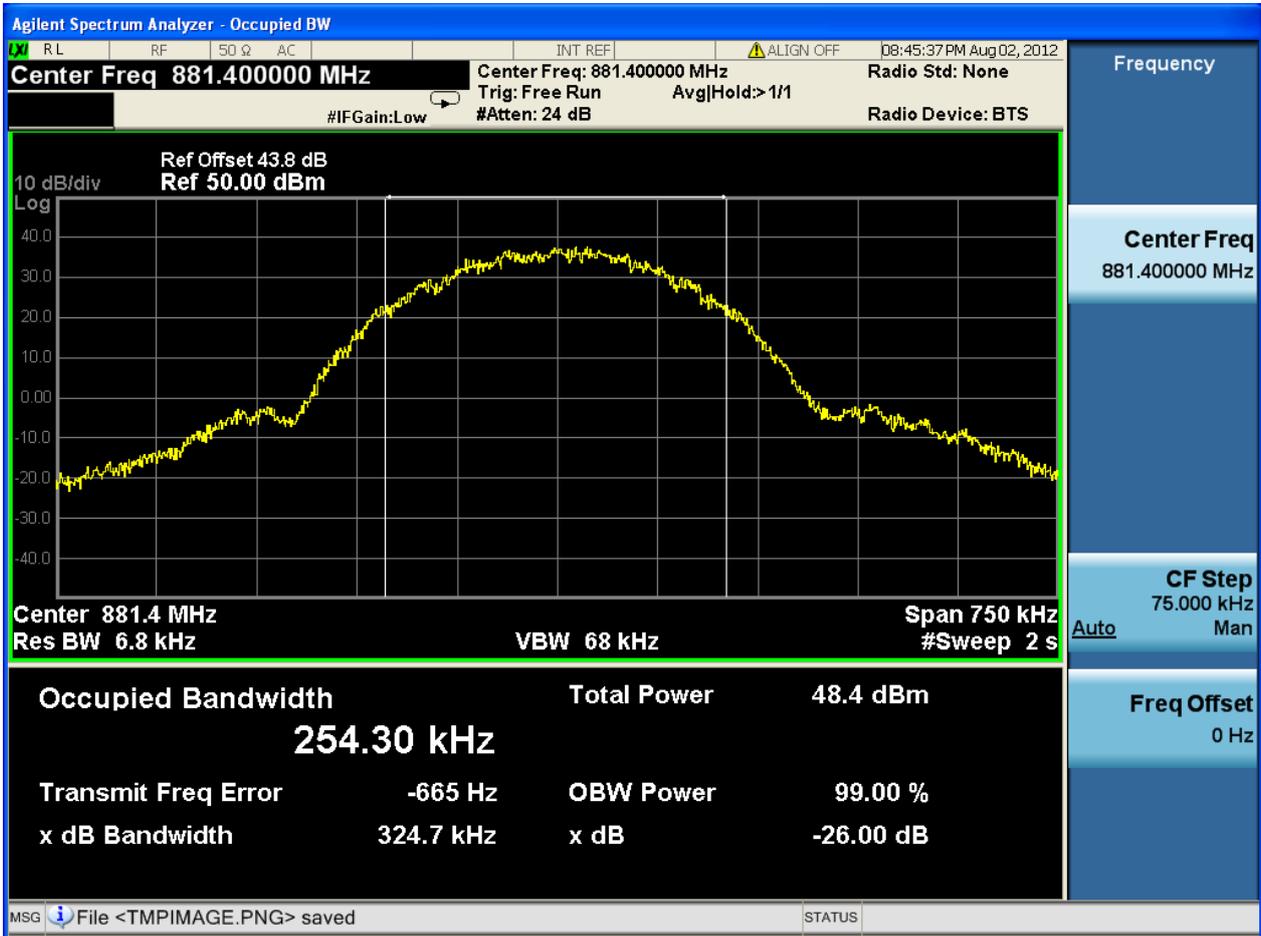




2.1.7 1G_8PSK_B

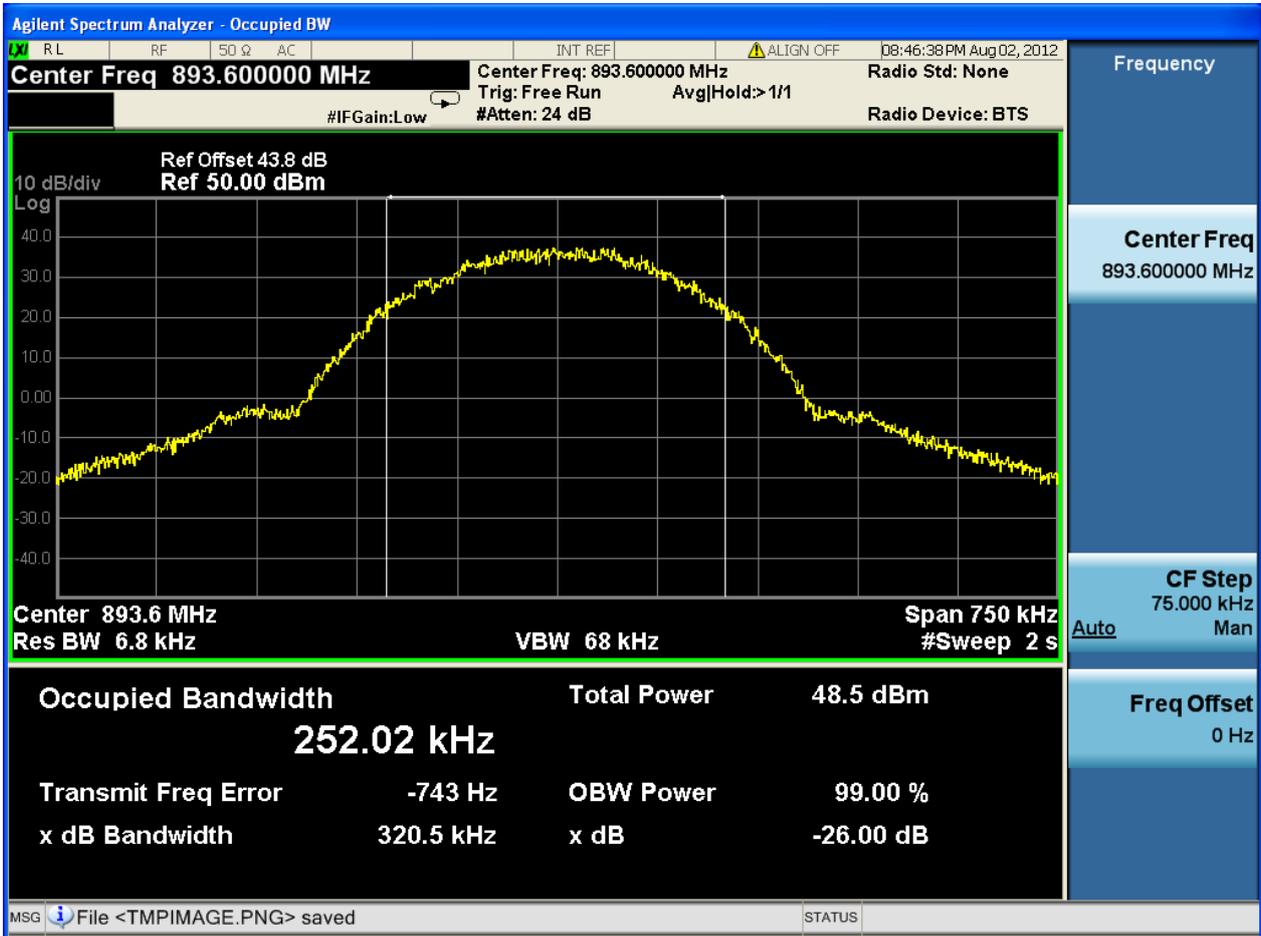


2.1.8 1G_8PSK_M





2.1.9 1G_8PSK_T





2.2 Emission Bandwidth

(Not applicable)



Appendix C: Band Edges Compliance



1 Result Table

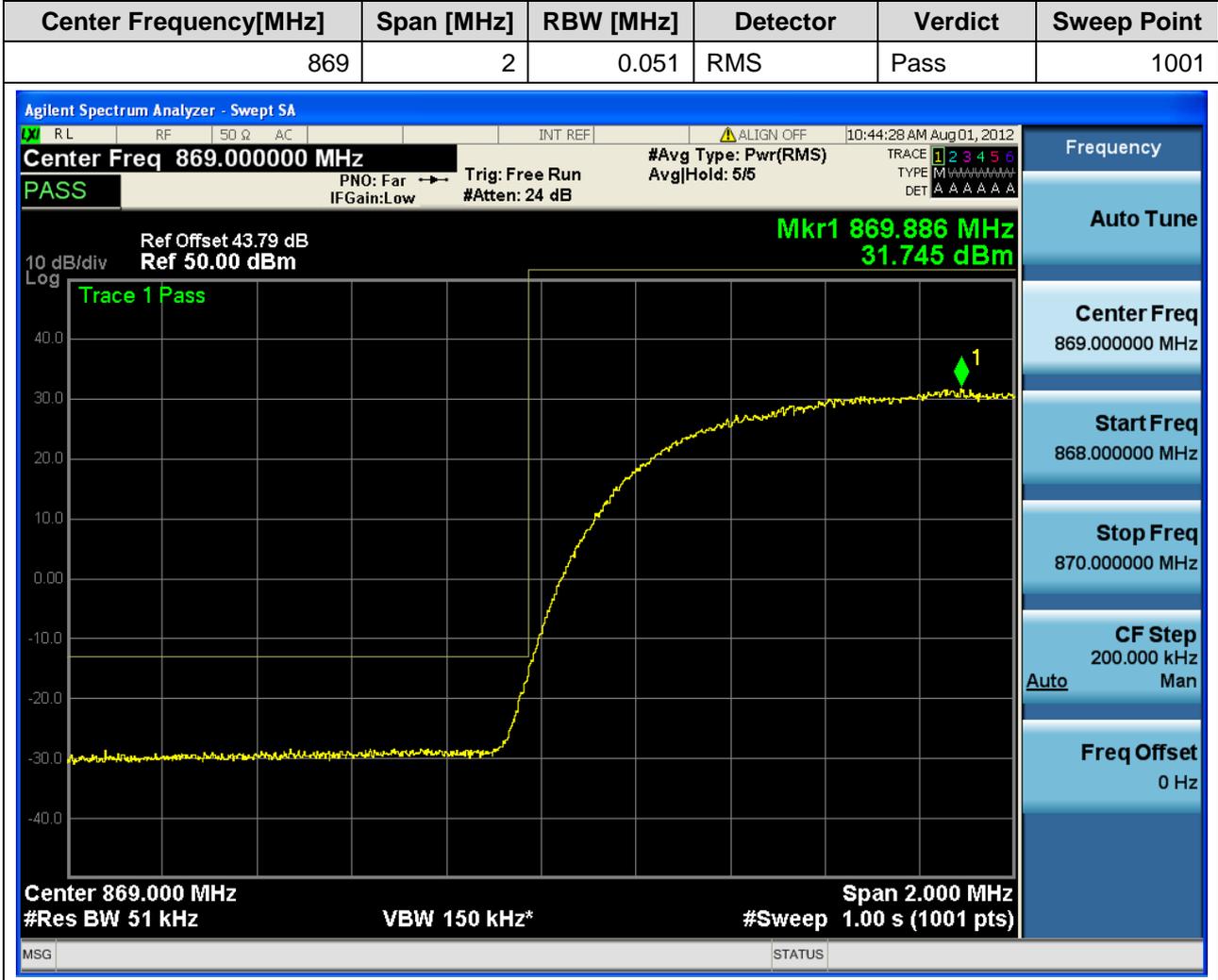
NOTE: The offset of measurement filter -3dB point may be considered when identifying the maximum emission for e.g. the CDMA, WCDMA, WiMAX, LTE systems.

EUT Conf.	Verdict
1U_B	Pass
1U_T	Pass
2U_B	Pass
2U_T	Pass
3U_B	Pass
3U_T	Pass
1G_GMSK_B	Pass
1G_GMSK_T	Pass
8G_GMSK_B	Pass
8G_GMSK_T	Pass
1G1U_B	Pass
1G1U_T	Pass
3G1U_B	Pass
3G1U_T	Pass



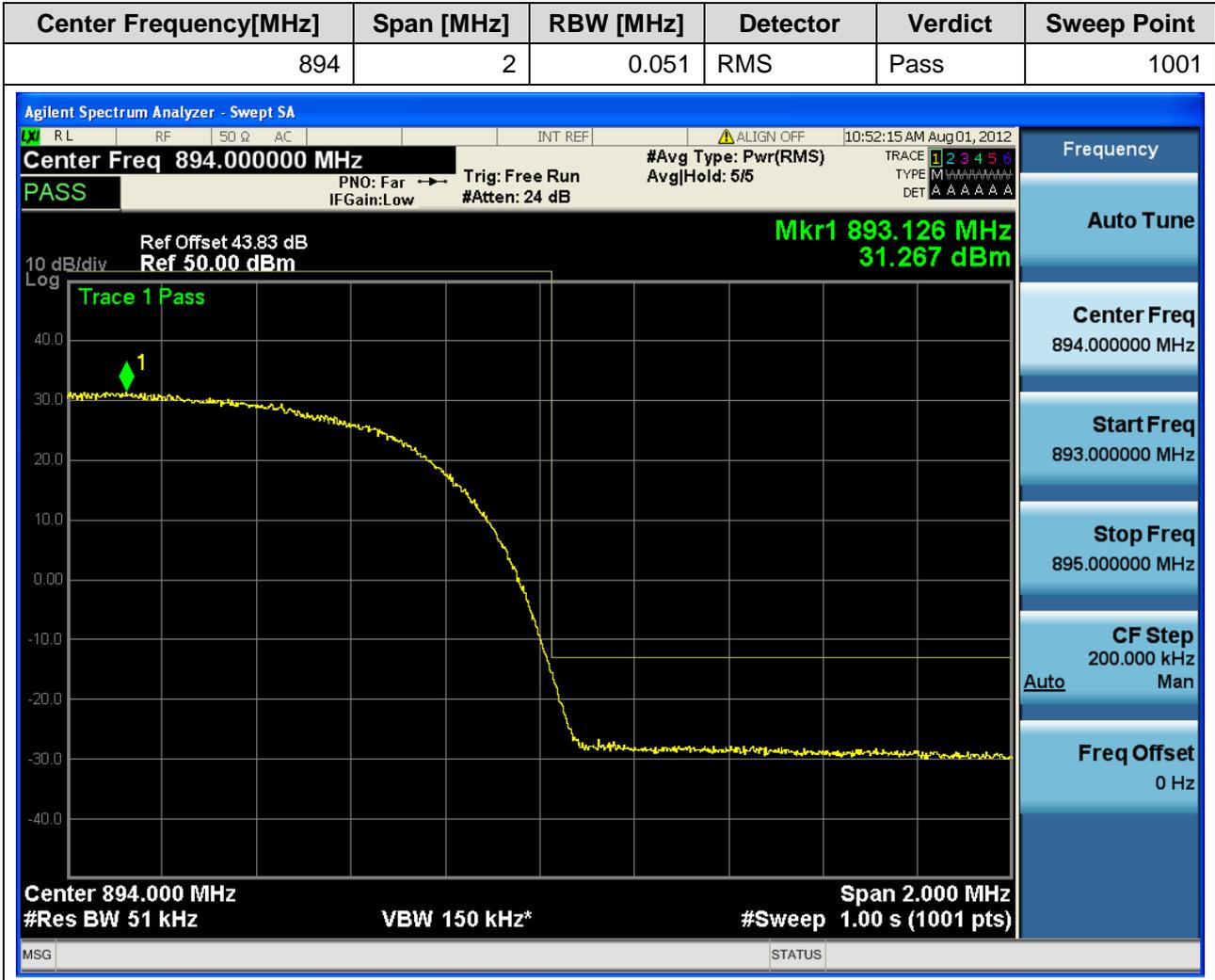
2 Test Plot

2.1 1U_B



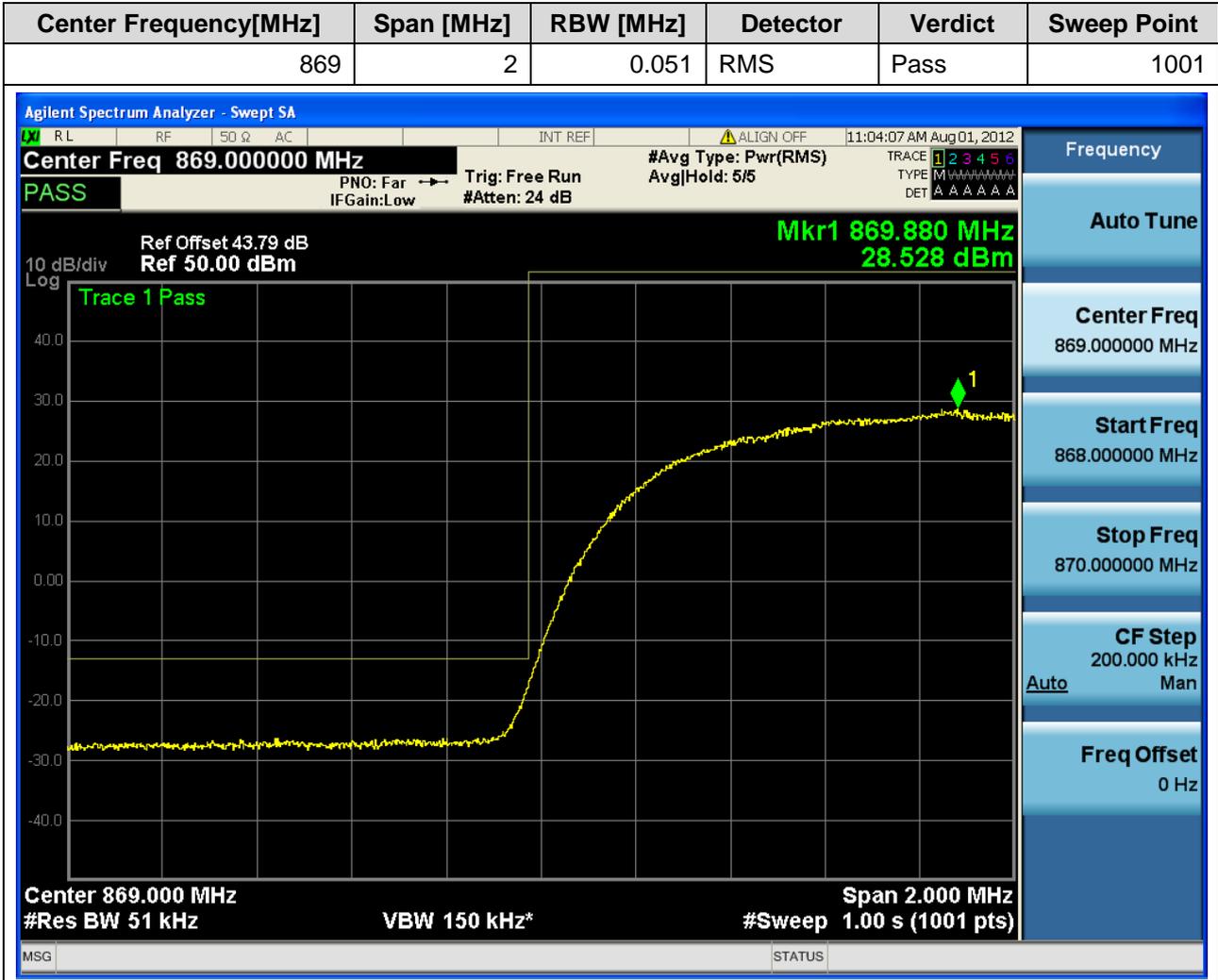


2.2 1U_T





2.3 2U_B



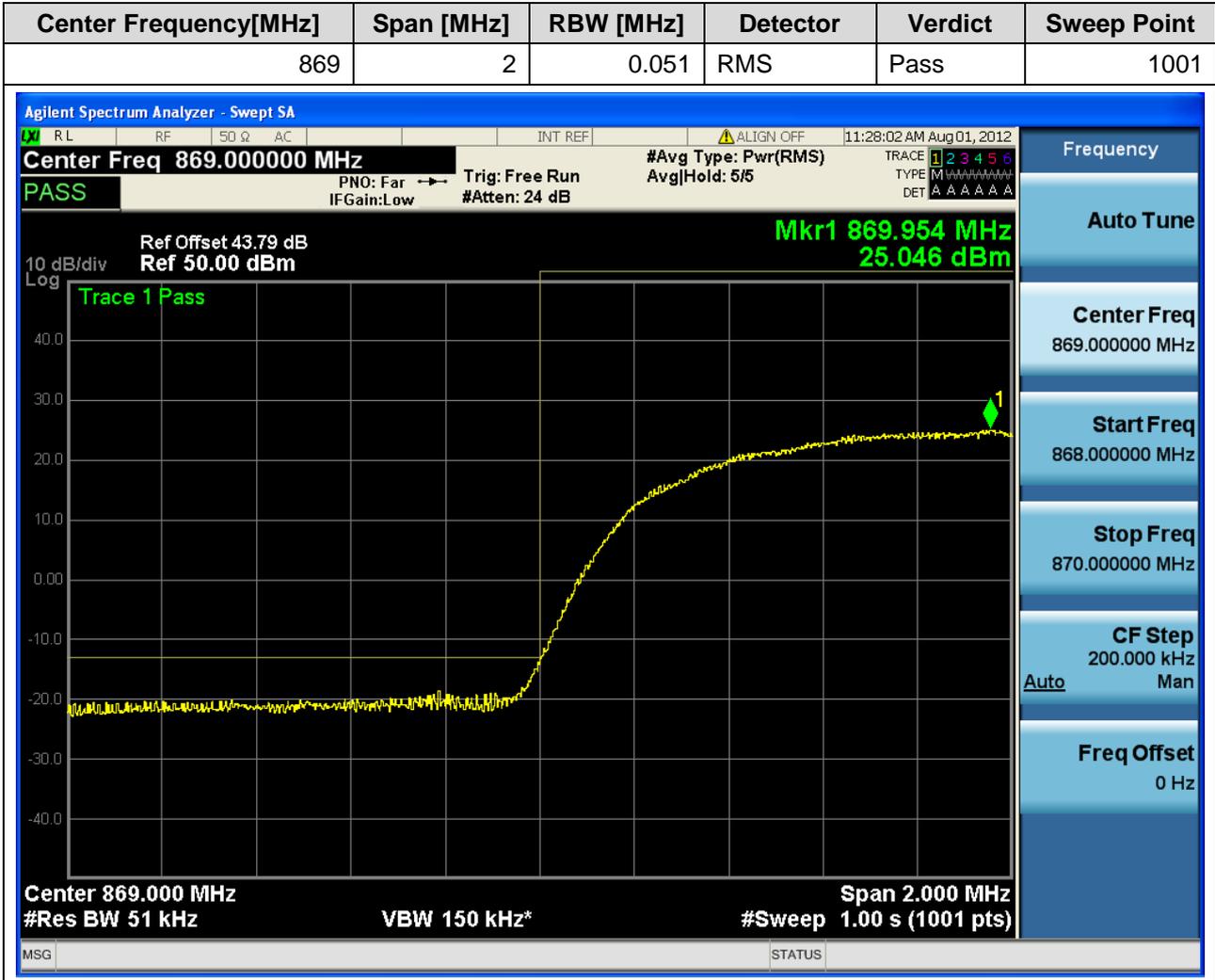


2.4 2U_T



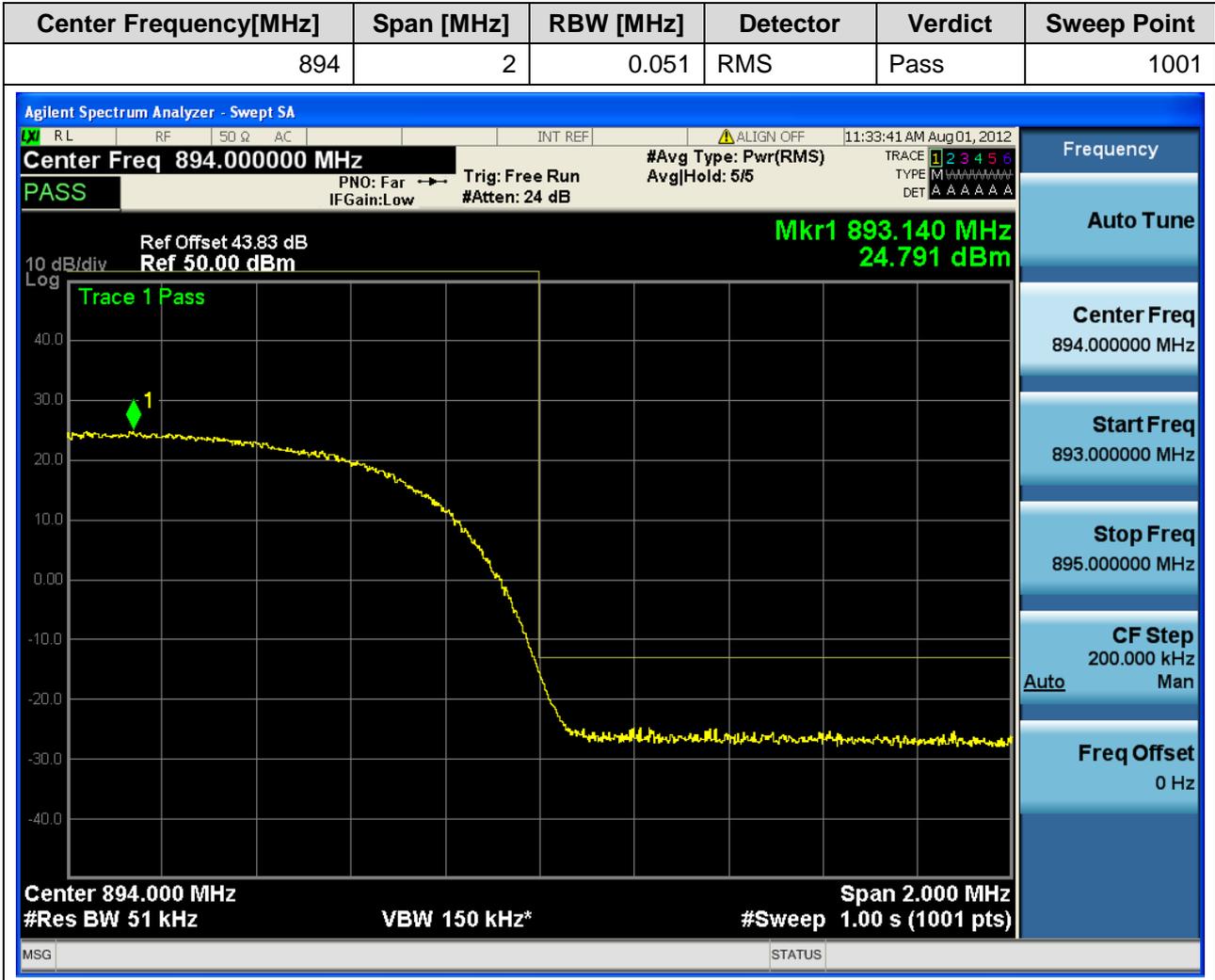


2.5 3U_B





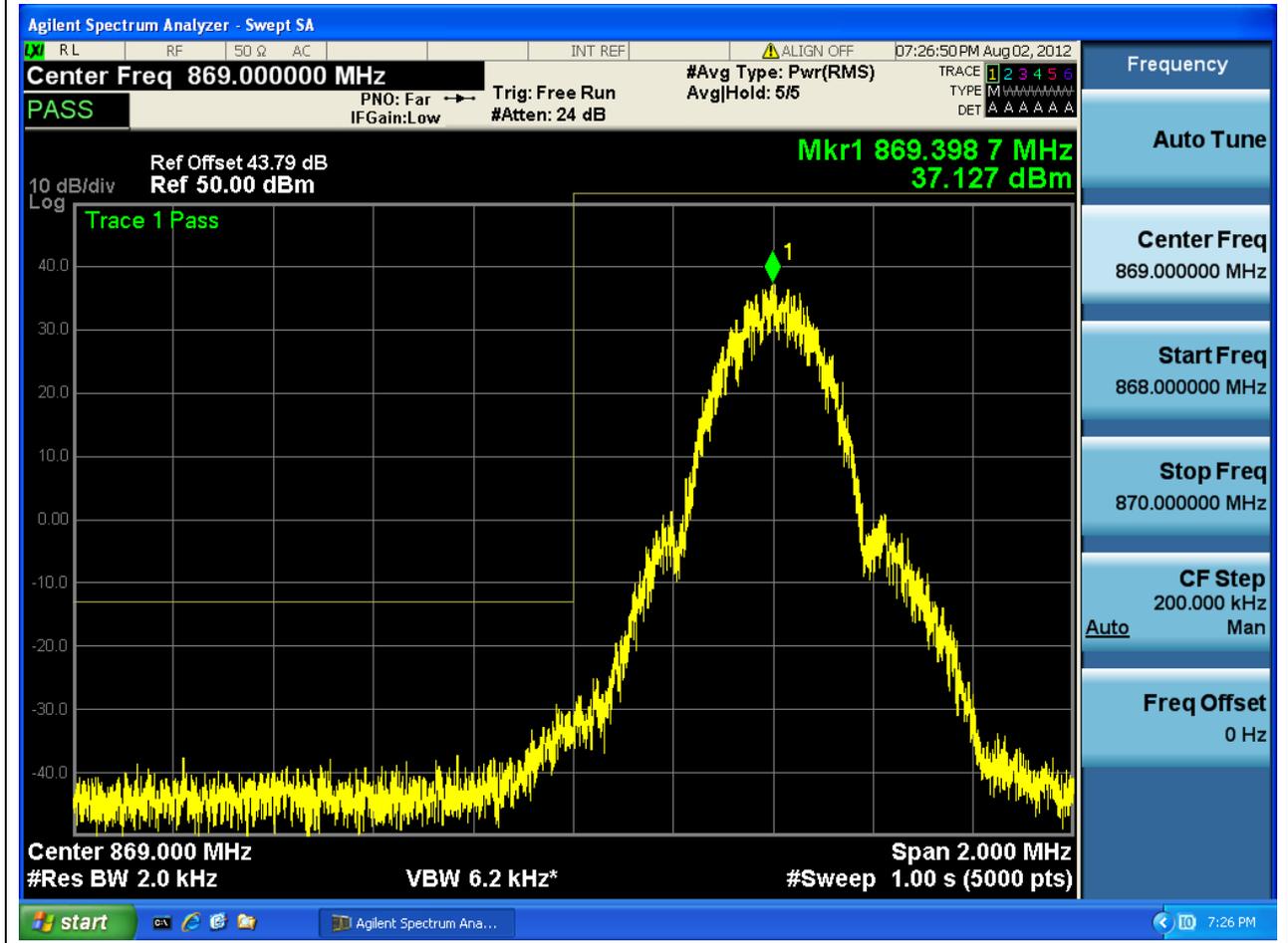
2.6 3U_T





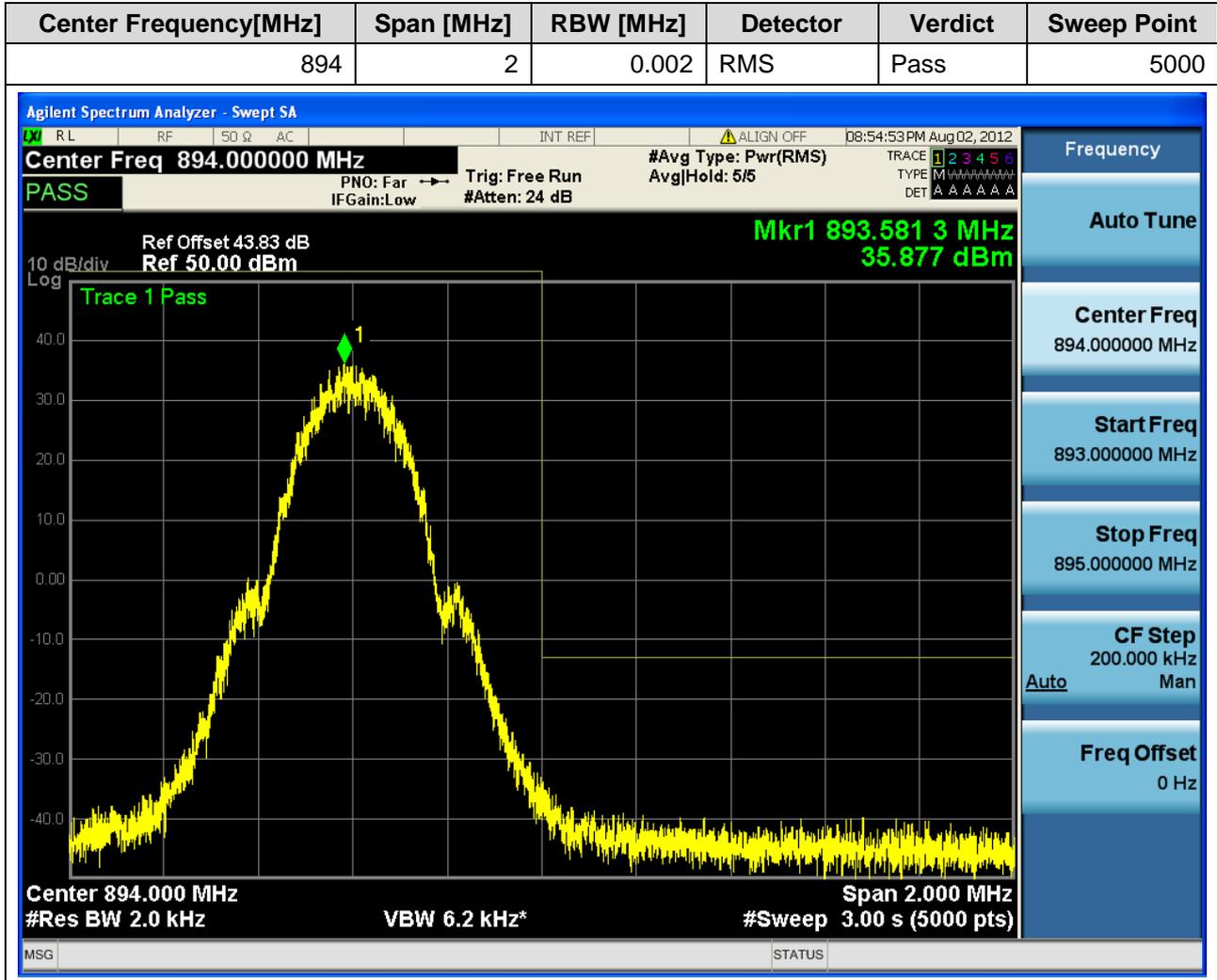
2.7 1G_GMSK_B

Center Frequency[MHz]	Span [MHz]	RBW [MHz]	Detector	Verdict	Sweep Point
869	2	0.002	RMS	Pass	5000





2.8 1G_GMSK_T



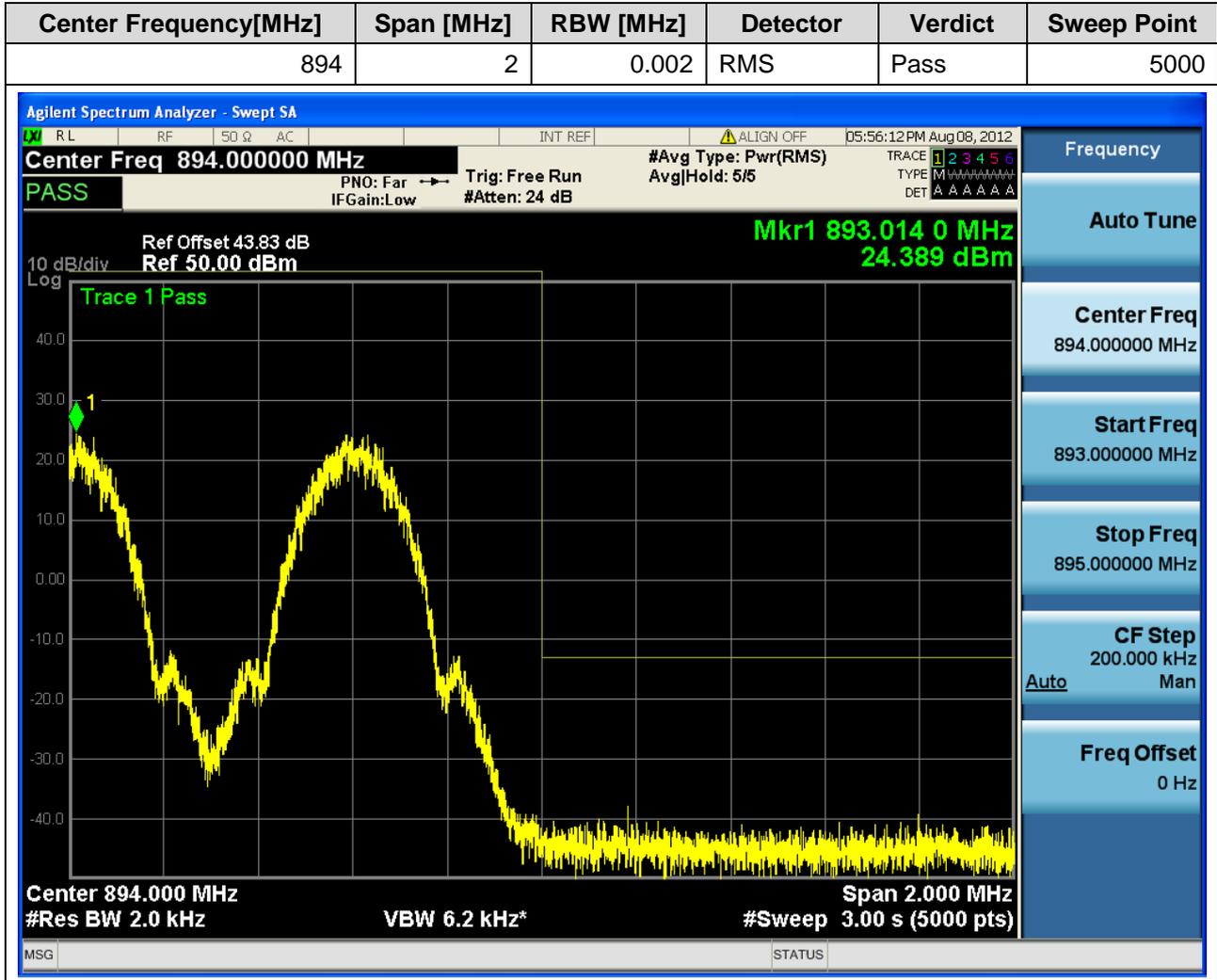


2.9 8G_GMSK_B



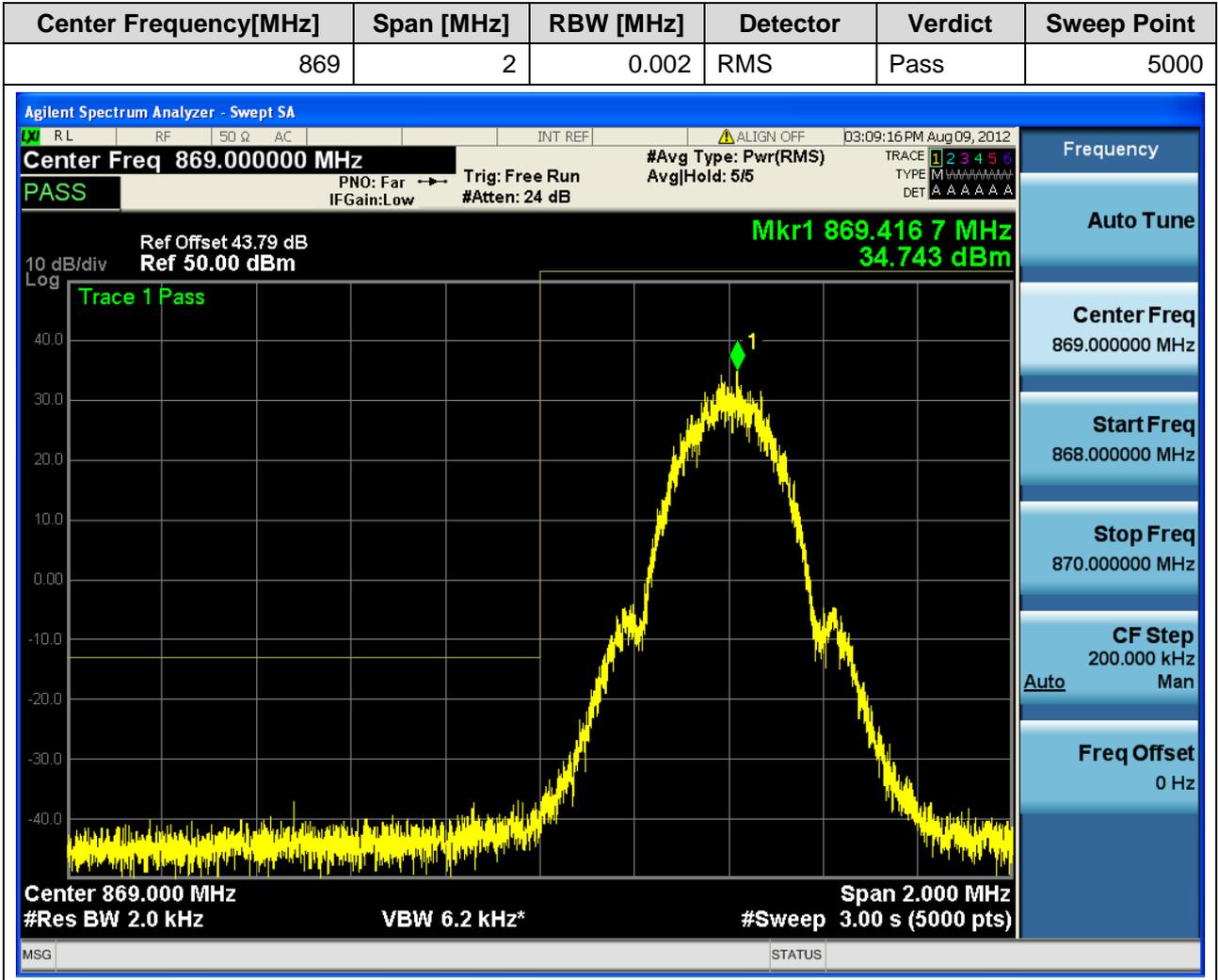


2.10 8G_GMSK_T



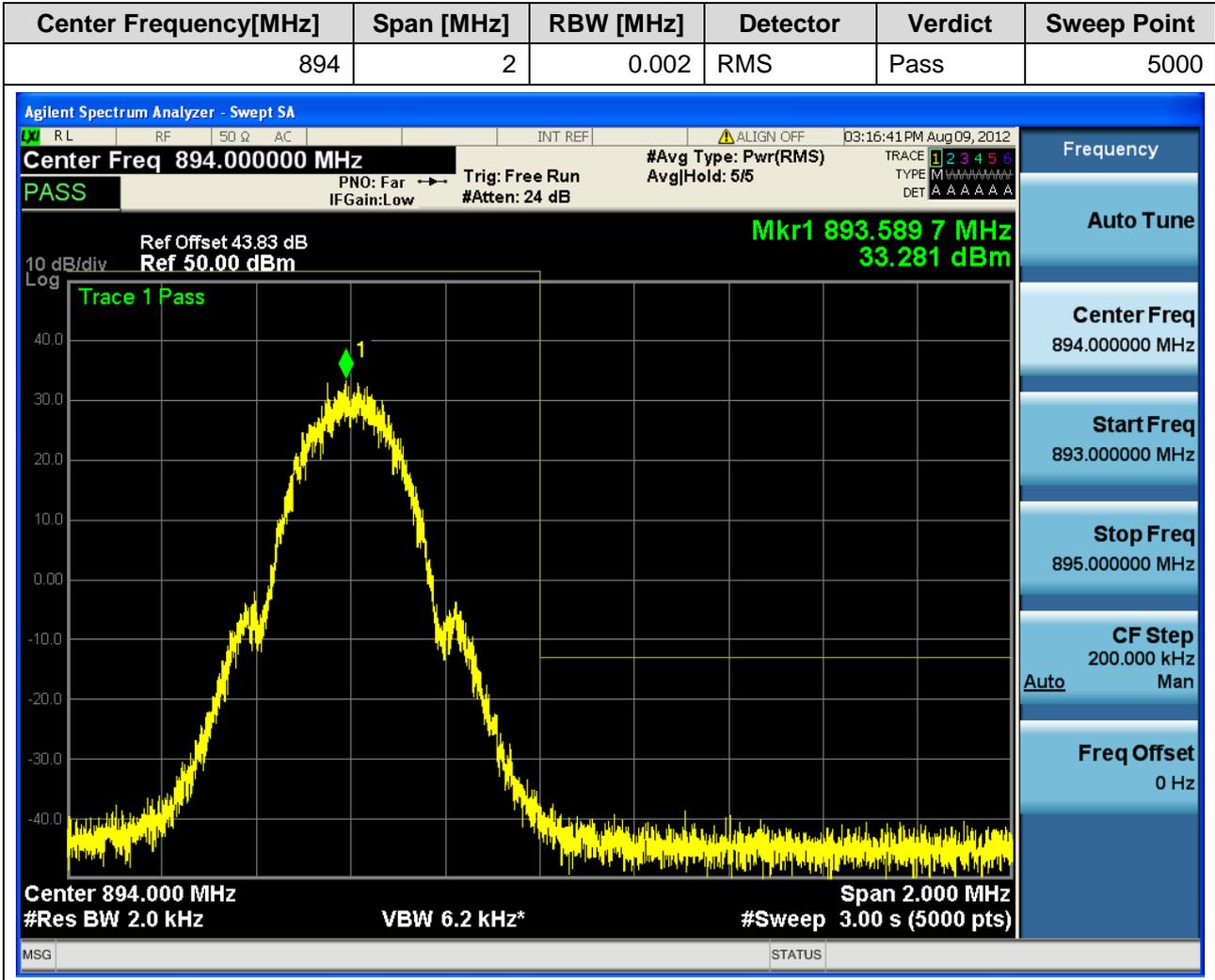


2.11 1G1U_B





2.12 1G1U_T





2.13 3G1U_B





2.14 3G1U_T





Appendix D: Spurious Emission at Antenna Terminals

1 Result Table

NOTE: For the averaged unwanted emissions measurements, the measurement points in each sweep is greater than twice the Span/RBW in order to ensure bin-to-bin spacing of $< RBW/2$ so that narrowband signals are not lost between frequency bins. As to the present test item, the "Measurement Points = $k * (Span / RBW)$ " with k between 4 and 5, which results in an acceptable level error of less than 0.5 dB.

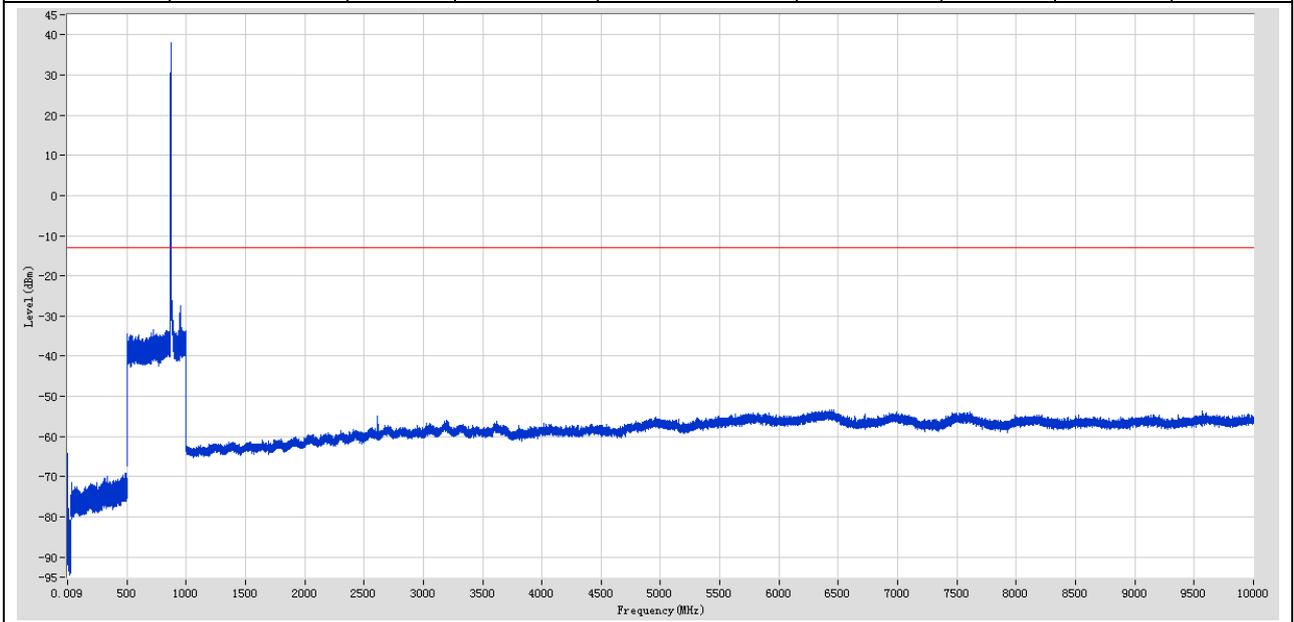
EUT Conf.	Verdict
1U_B	Pass
1U_M	Pass
1U_T	Pass
2U_B	Pass
2U_M	Pass
2U_T	Pass
3U_B	Pass
3U_T	Pass
1G_GMSK_B	Pass
1G_GMSK_M	Pass
1G_GMSK_T	Pass
8G_GMSK_B	Pass
8G_GMSK_T	Pass
1G1U_B	Pass
1G1U_T	Pass
3G1U_B	Pass
3G1U_T	Pass



2 Test Plot

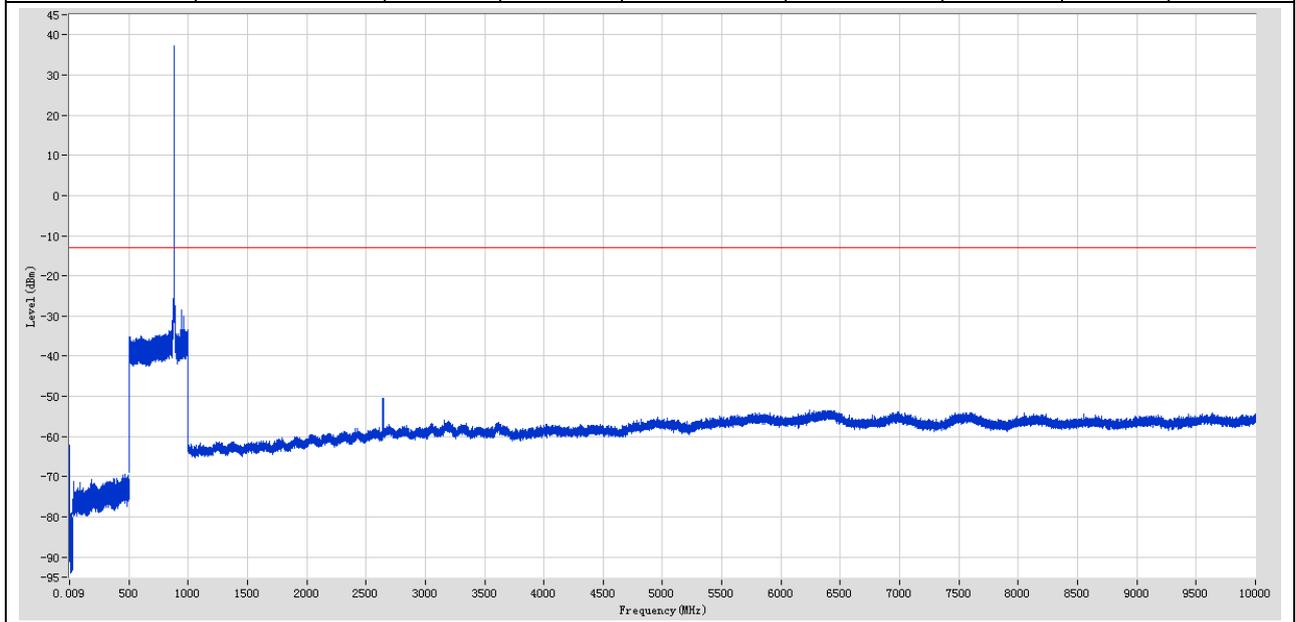
2.1 1U_B

Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detector	Frequency [Hz]	Emission [dBm]	Limit [dBm]	Verdict	Sweep Point
0.009	0.15	0.001	RMS	12.243 k	-64.11	-13	Pass	1001
0.15	30	0.01	RMS	162.001 k	-66.15	-13	Pass	14925
30	500	0.1	RMS	494.639772 M	-69.05	-13	Pass	23500
500	1000	0.1	RMS	870.394816 M	37.92	-13	Fail	25000
1000	10000	1	RMS	1000 M	-34.24	-13	Pass	45000



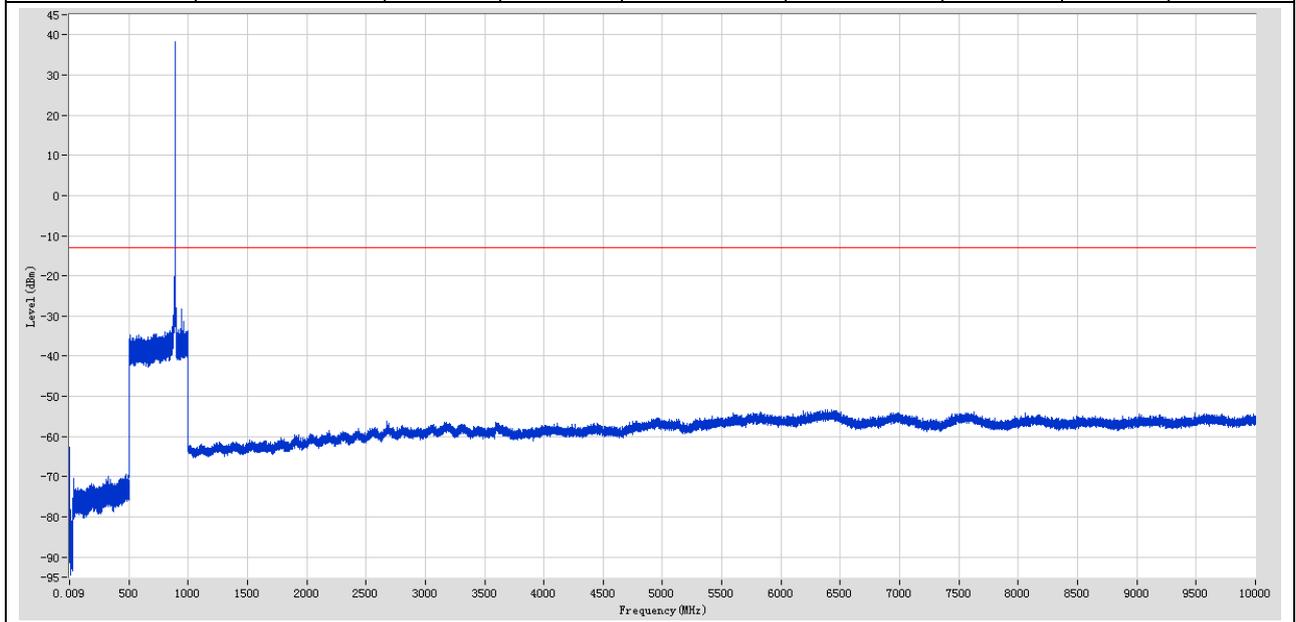
2.2 1U_M

Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detect or	Frequency [Hz]	Emission [dBm]	Limit [dBm]	Verdict	Sweep Point
0.009	0.15	0.001	RMS	9.141 k	-62.12	-13	Pass	1001
0.15	30	0.01	RMS	160.001 k	-64.11	-13	Pass	14925
30	500	0.1	RMS	471.47878 6 M	-69.42	-13	Pass	23500
500	1000	0.1	RMS	879.83519 3 M	37.31	-13	Fail	25000
1000	10000	1	RMS	1000 M	-34.84	-13	Pass	45000



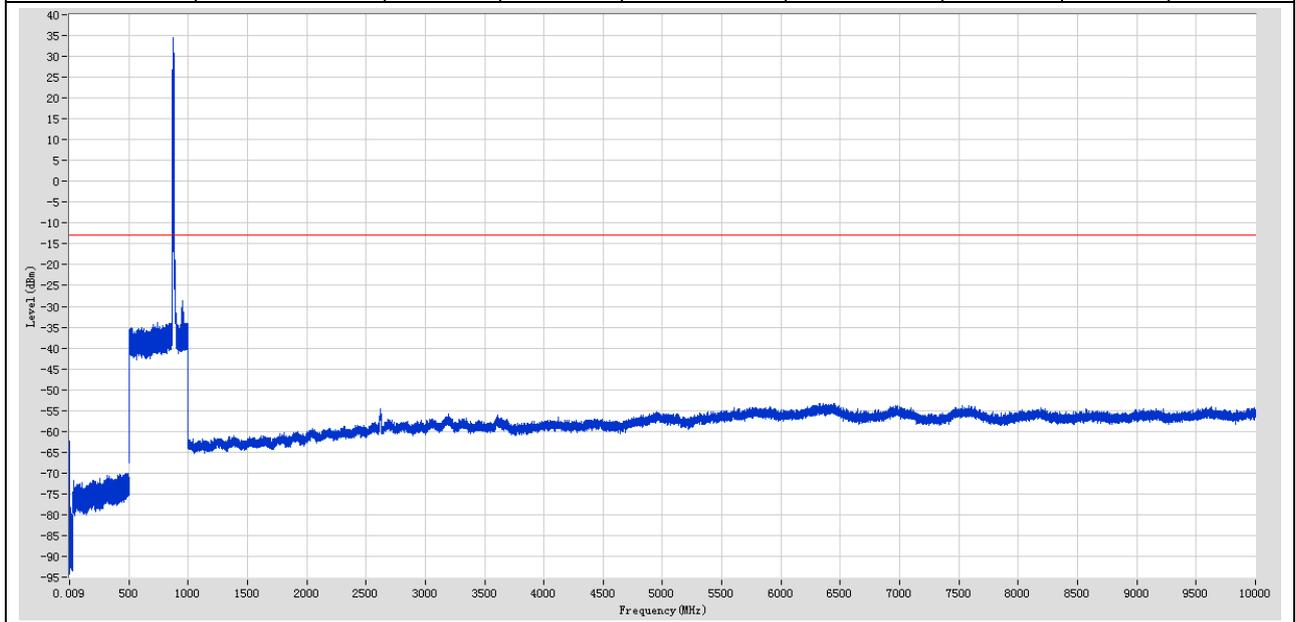
2.3 1U_T

Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detect or	Frequency [Hz]	Emission [dBm]	Limit [dBm]	Verdict	Sweep Point
0.009	0.15	0.001	RMS	10.269 k	-62.77	-13	Pass	1001
0.15	30	0.01	RMS	150 k	-65.98	-13	Pass	14925
30	500	0.1	RMS	478.25907 5 M	-69.39	-13	Pass	23500
500	1000	0.1	RMS	890.67562 7 M	38.15	-13	Fail	25000
1000	10000	1	RMS	1000 M	-33.62	-13	Pass	45000



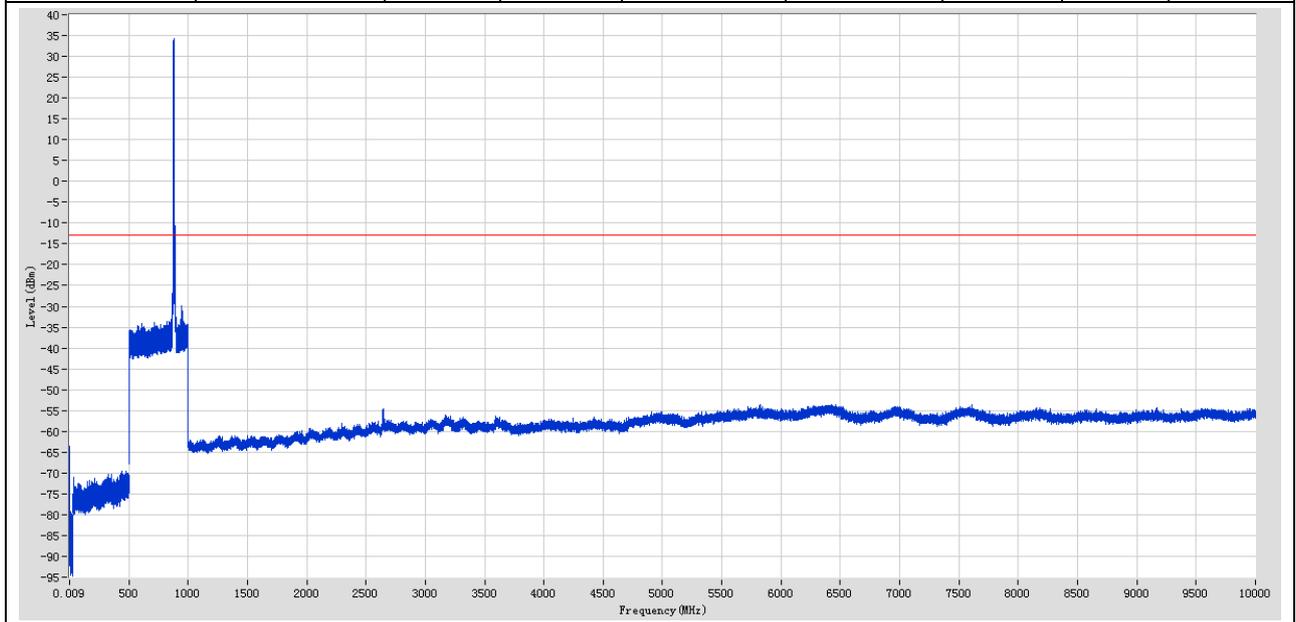
2.4 2U_B

Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detect or	Frequency [Hz]	Emission [dBm]	Limit [dBm]	Verdict	Sweep Point
0.009	0.15	0.001	RMS	9.141 k	-62.33	-13	Pass	1001
0.15	30	0.01	RMS	168.001 k	-64.97	-13	Pass	14925
30	500	0.1	RMS	495.2998 M	-70.05	-13	Pass	23500
500	1000	0.1	RMS	870.474819 M	34.57	-13	Fail	25000
1000	10000	1	RMS	1000 M	-35	-13	Pass	45000



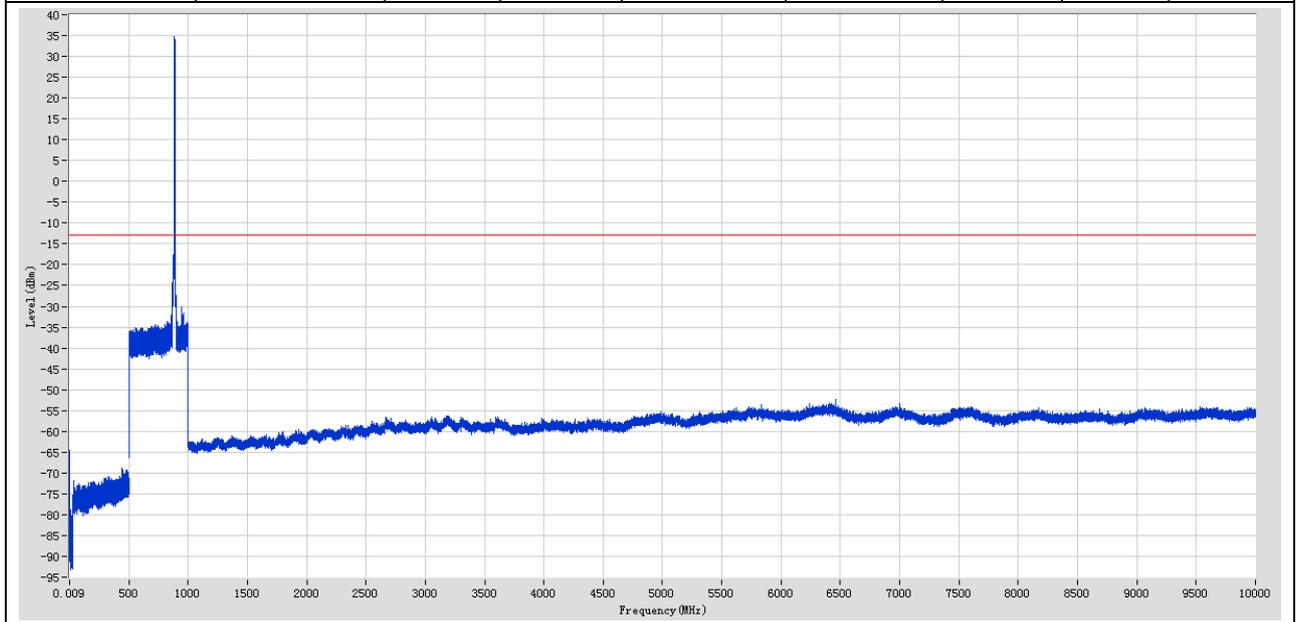
2.5 2U_M

Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detect or	Frequency [Hz]	Emission [dBm]	Limit [dBm]	Verdict	Sweep Point
0.009	0.15	0.001	RMS	11.256 k	-63.45	-13	Pass	1001
0.15	30	0.01	RMS	154 k	-64.78	-13	Pass	14925
30	500	0.1	RMS	438.81739 6 M	-69.53	-13	Pass	23500
500	1000	0.1	RMS	884.21536 9 M	34.16	-13	Fail	25000
1000	10000	1	RMS	1000 M	-34.33	-13	Pass	45000



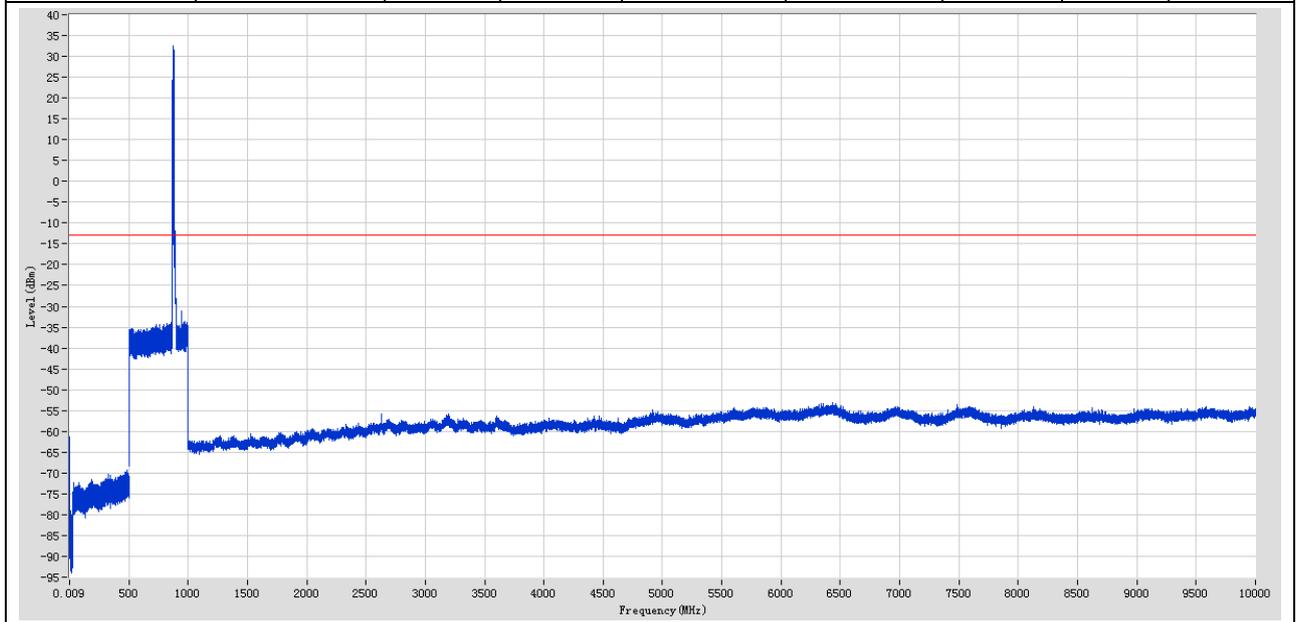
2.6 2U_T

Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detect or	Frequency [Hz]	Emission [dBm]	Limit [dBm]	Verdict	Sweep Point
0.009	0.15	0.001	RMS	10.269 k	-64.56	-13	Pass	1001
0.15	30	0.01	RMS	150 k	-65.09	-13	Pass	14925
30	500	0.1	RMS	443.51759 6 M	-68.82	-13	Pass	23500
500	1000	0.1	RMS	886.91547 7 M	34.64	-13	Fail	25000
1000	10000	1	RMS	1000 M	-34.74	-13	Pass	45000



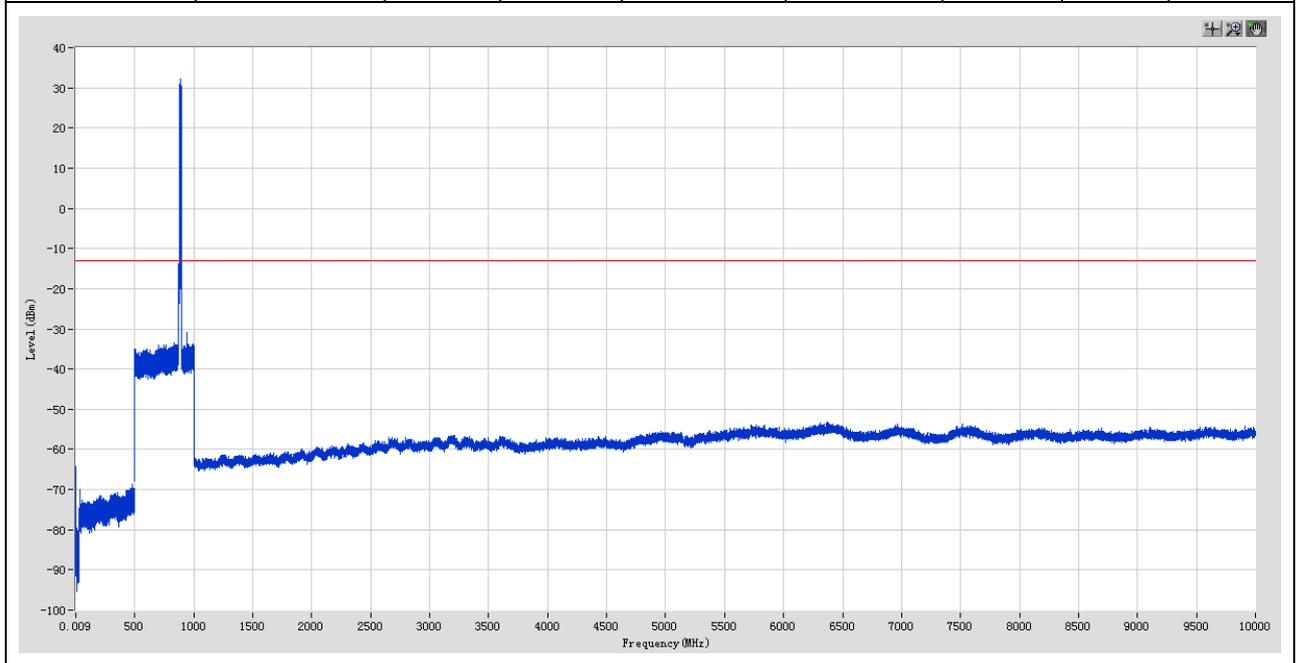
2.7 3U_B

Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detect or	Frequency [Hz]	Emission [dBm]	Limit [dBm]	Verdict	Sweep Point
0.009	0.15	0.001	RMS	9.282 k	-61.27	-13	Pass	1001
0.15	30	0.01	RMS	152 k	-65.45	-13	Pass	14925
30	500	0.1	RMS	486.69943 4 M	-69.26	-13	Pass	23500
500	1000	0.1	RMS	871.71486 9 M	32.63	-13	Fail	25000
1000	10000	1	RMS	1000 M	-34.52	-13	Pass	45000



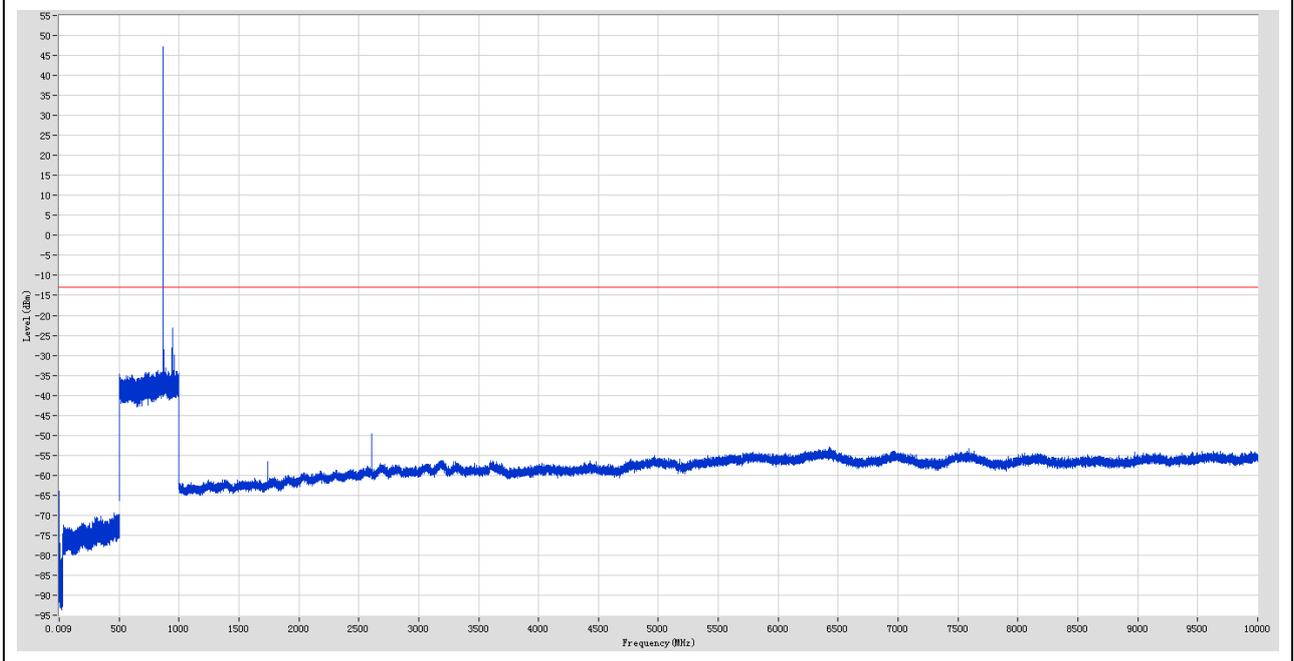
2.8 3U_T

Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detect or	Frequency [Hz]	Emission [dBm]	Limit [dBm]	Verdict	Sweep Point
0.009	0.15	0.001	RMS	11.115 k	-64.3	-13	Pass	1001
0.15	30	0.01	RMS	150 k	-66.46	-13	Pass	14925
30	500	0.1	RMS	482.65926 2 M	-68.62	-13	Pass	23500
500	1000	0.1	RMS	882.89531 6 M	32.12	-13	Fail	25000
1000	10000	1	RMS	1000 M	-34.24	-13	Pass	45000



2.9 1G_GMSK_B

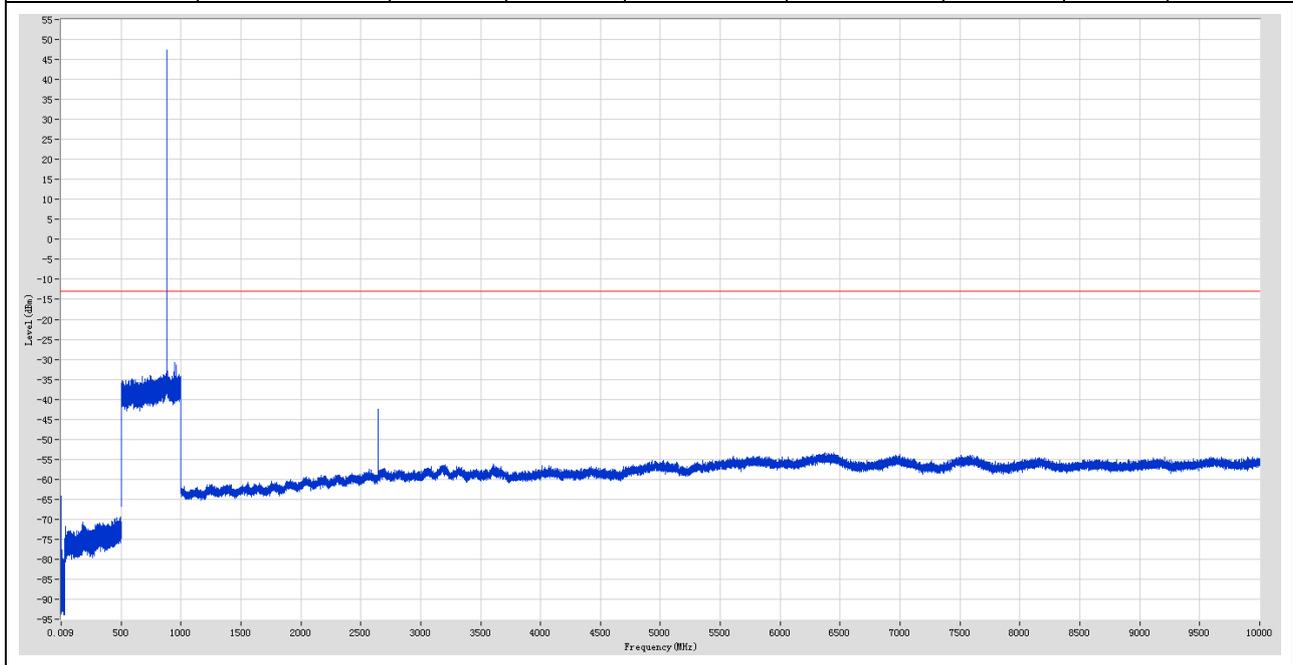
Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detector	Frequency [Hz]	Emission [dBm]	Limit [dBm]	Verdict	Sweep Point
0.009	0.15	0.001	RMS	9.846 k	-63.99	-13	Pass	1001
0.15	30	0.01	RMS	170.001 k	-65.11	-13	Pass	14925
30	500	0.1	RMS	458.41823 1 M	-69.35	-13	Pass	23500
500	1000	0.1	RMS	869.41477 7 M	47.13	-13	Fail	25000
1000	10000	1	RMS	1000 M	-34.63	-13	Pass	45000





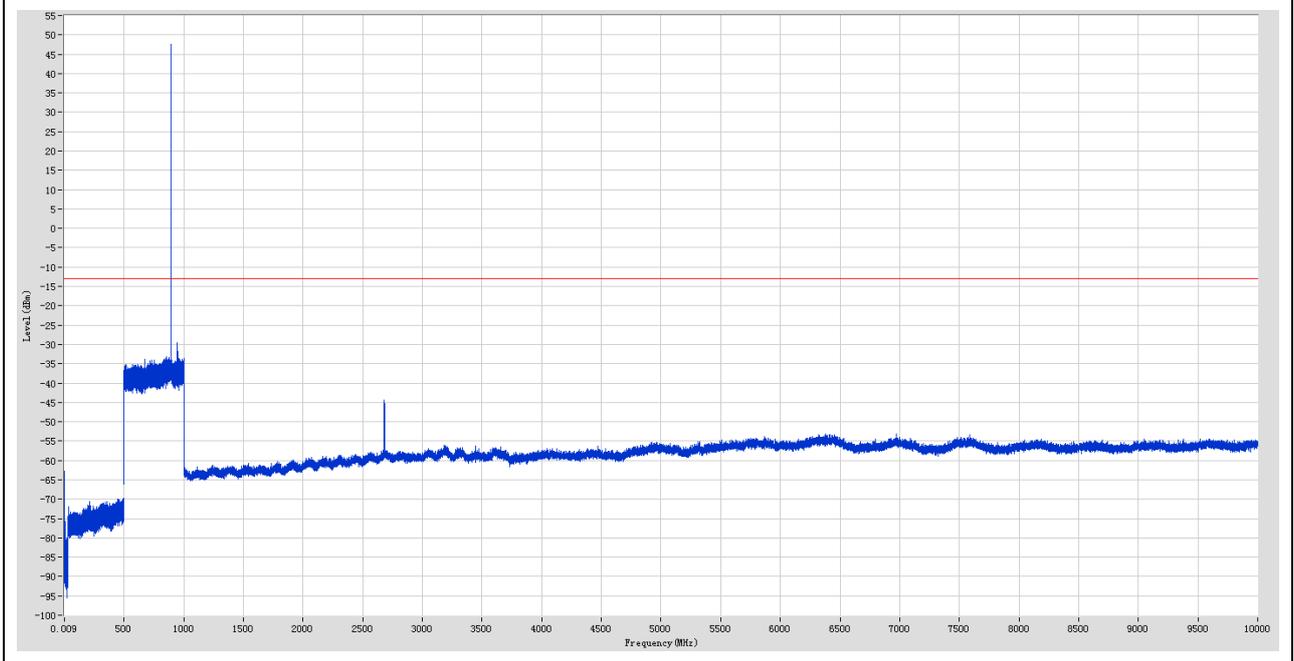
2.10 1G_GMSK_M

Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detector	Frequency [Hz]	Emission [dBm]	Limit [dBm]	Verdict	Sweep Point
0.009	0.15	0.001	RMS	10.833 k	-64.78	-13	Pass	1001
0.15	30	0.01	RMS	152 k	-64.27	-13	Pass	14925
30	500	0.1	RMS	495.61981 4 M	-69.42	-13	Pass	23500
500	1000	0.1	RMS	881.35525 4 M	47.42	-13	Fail	25000
1000	10000	1	RMS	1000 M	-34.67	-13	Pass	45000



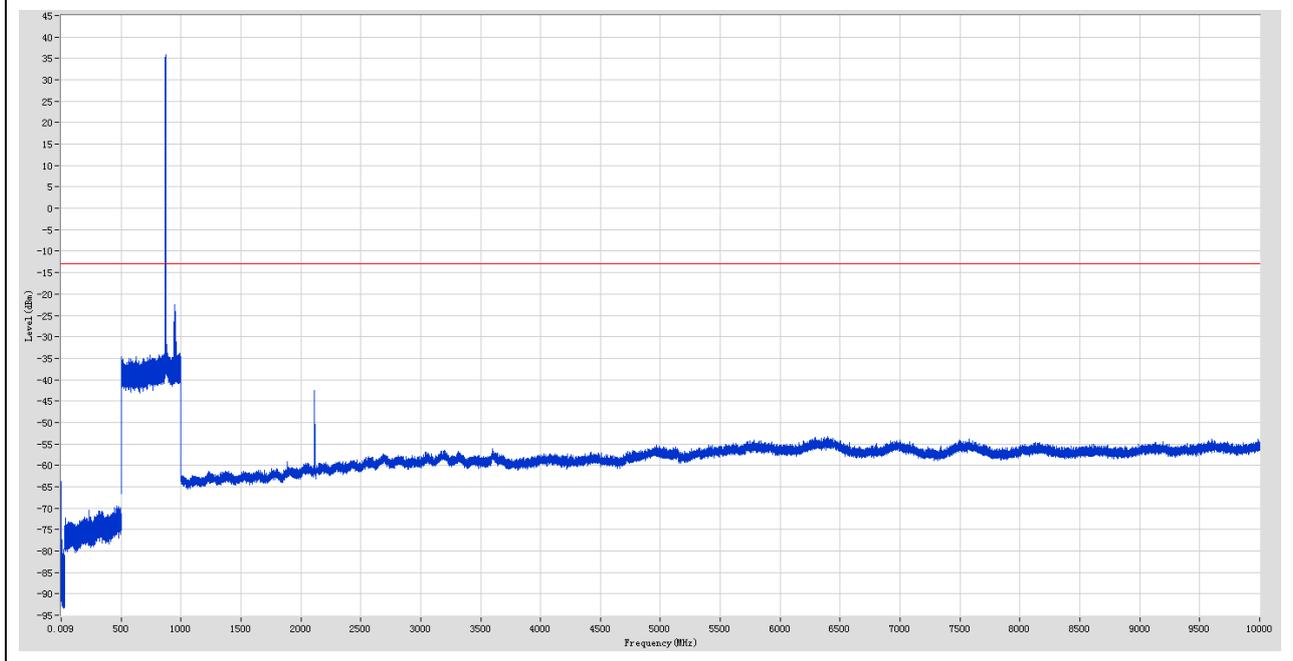
2.11 1G_GMSK_T

Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detector	Frequency [Hz]	Emission [dBm]	Limit [dBm]	Verdict	Sweep Point
0.009	0.15	0.001	RMS	9 k	-62.68	-13	Pass	1001
0.15	30	0.01	RMS	150 k	-65.1	-13	Pass	14925
30	500	0.1	RMS	499.65998 6 M	-69.66	-13	Pass	23500
500	1000	0.1	RMS	893.55574 2 M	47.53	-13	Fail	25000
1000	10000	1	RMS	1000 M	-33.56	-13	Pass	45000



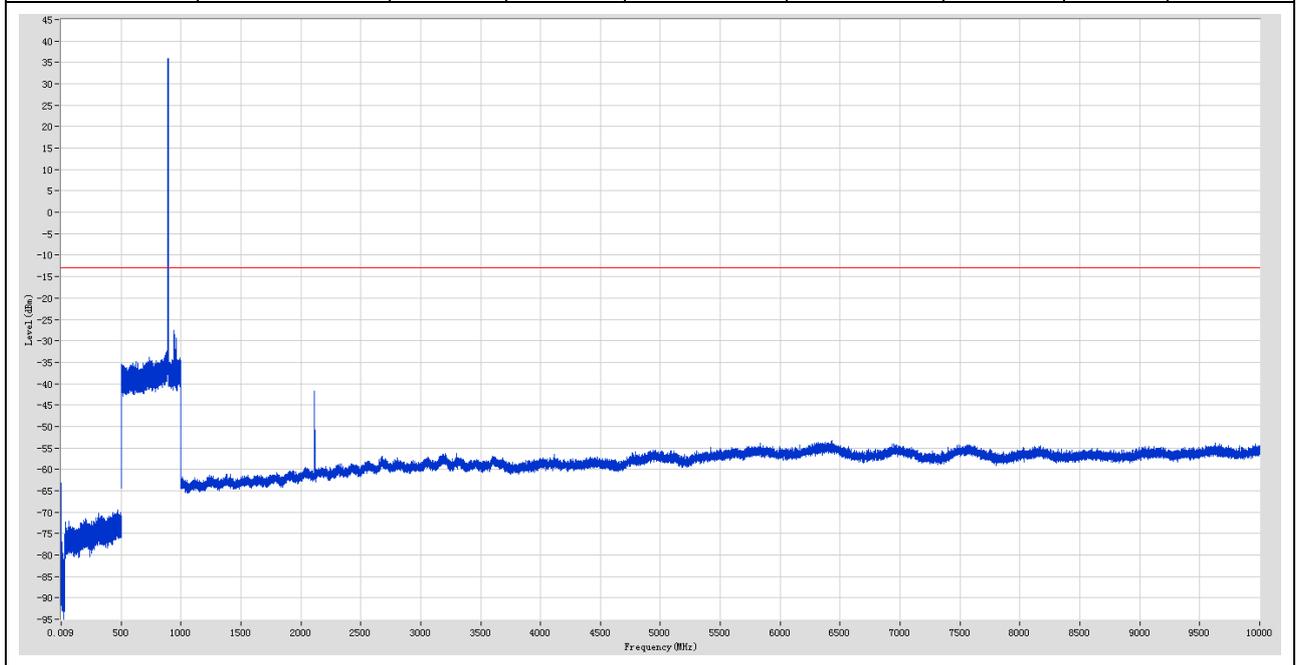
2.12 8G_GMSK_B

Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detect or	Frequency [Hz]	Emission [dBm]	Limit [dBm]	Verdict	Sweep Point
0.009	0.15	0.001	RMS	9.564 k	-63.79	-13	Pass	1001
0.15	30	0.01	RMS	168.001 k	-64.55	-13	Pass	14925
30	500	0.1	RMS	466.25856 4 M	-69.42	-13	Pass	23500
500	1000	0.1	RMS	871.17484 7 M	35.83	-13	Fail	25000
1000	10000	1	RMS	1000 M	-34.65	-13	Pass	45000



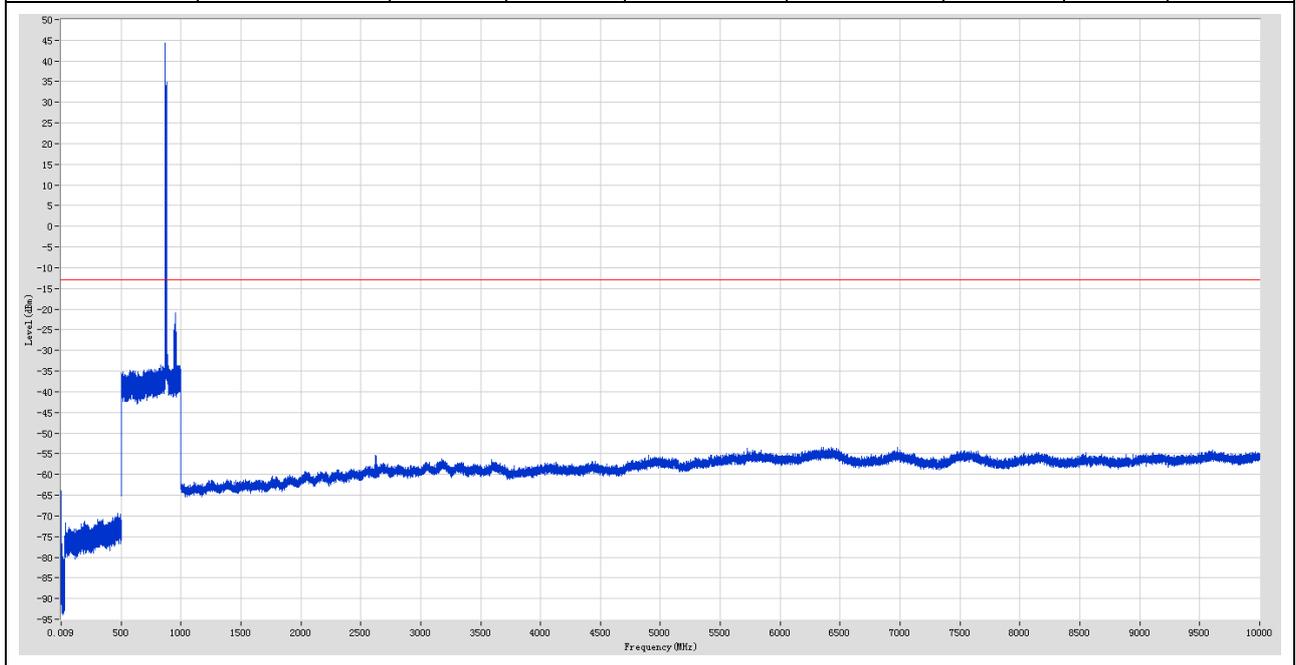
2.13 8G_GMSK_T

Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detect or	Frequency [Hz]	Emission [dBm]	Limit [dBm]	Verdict	Sweep Point
0.009	0.15	0.001	RMS	9.423 k	-63.16	-13	Pass	1001
0.15	30	0.01	RMS	170.001 k	-65.33	-13	Pass	14925
30	500	0.1	RMS	474.75892 6 M	-69.38	-13	Pass	23500
500	1000	0.1	RMS	889.39557 6 M	35.96	-13	Fail	25000
1000	10000	1	RMS	1000 M	-34.69	-13	Pass	45000



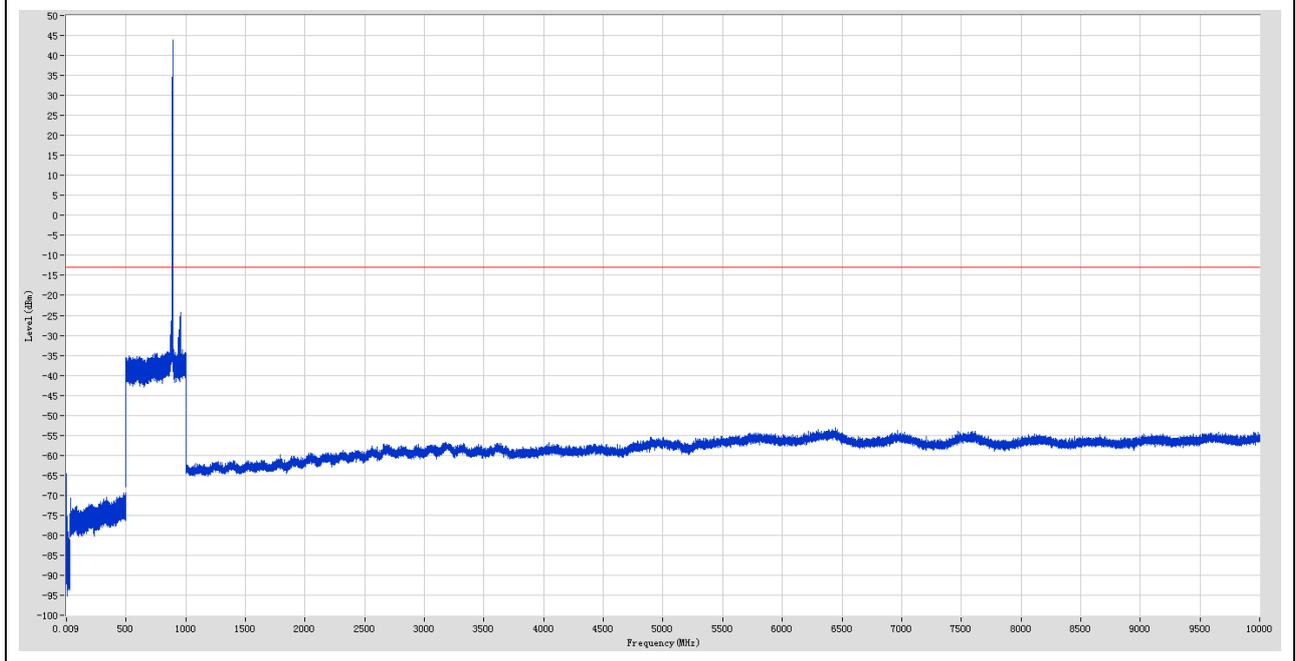
2.14 1G1U_B

Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detect or	Frequency [Hz]	Emission [dBm]	Limit [dBm]	Verdict	Sweep Point
0.009	0.15	0.001	RMS	10.128 k	-64.04	-13	Pass	1001
0.15	30	0.01	RMS	166.001 k	-65.56	-13	Pass	14925
30	500	0.1	RMS	475.63896 3 M	-69.45	-13	Pass	23500
500	1000	0.1	RMS	869.39477 6 M	44.41	-13	Fail	25000
1000	10000	1	RMS	1000 M	-34.94	-13	Pass	45000



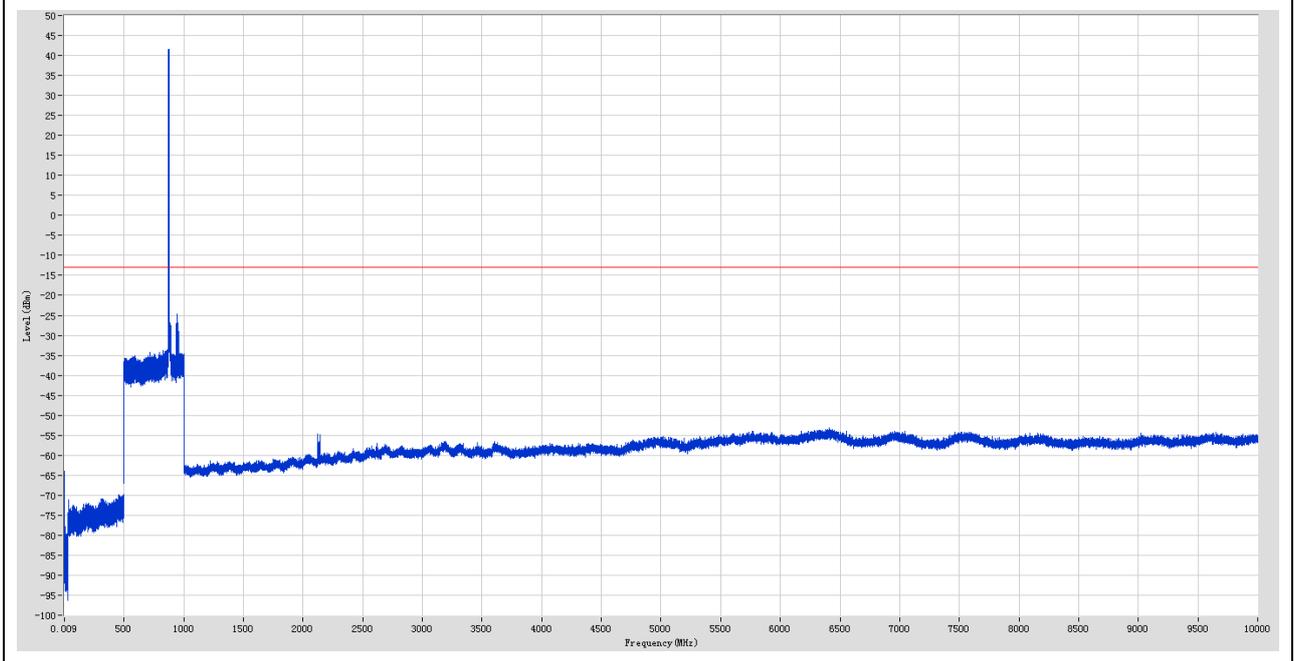
2.15 1G1U_T

Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detect or	Frequency [Hz]	Emission [dBm]	Limit [dBm]	Verdict	Sweep Point
0.009	0.15	0.001	RMS	9.846 k	-64.76	-13	Pass	1001
0.15	30	0.01	RMS	166.001 k	-64.62	-13	Pass	14925
30	500	0.1	RMS	495.11979 2 M	-69.31	-13	Pass	23500
500	1000	0.1	RMS	893.63574 5 M	43.82	-13	Fail	25000
1000	10000	1	RMS	1000 M	-34.44	-13	Pass	45000



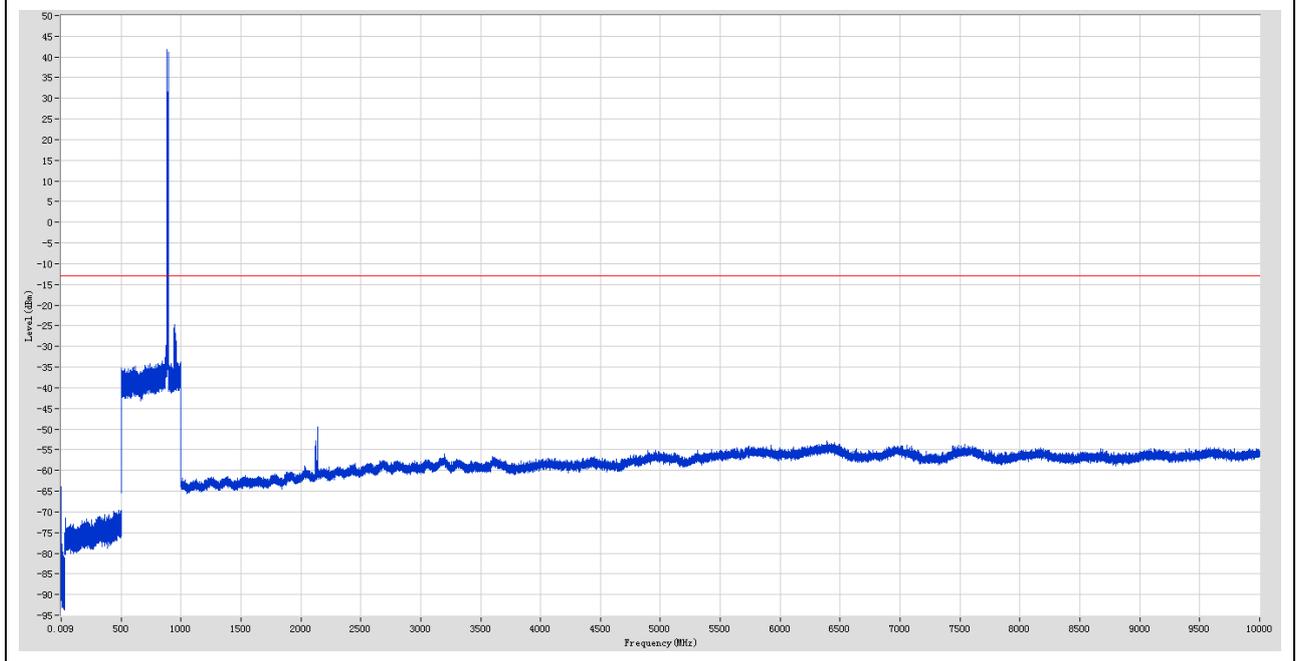
2.16 3G1U_B

Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detector	Frequency [Hz]	Emission [dBm]	Limit [dBm]	Verdict	Sweep Point
0.009	0.15	0.001	RMS	9.846 k	-63.86	-13	Pass	1001
0.15	30	0.01	RMS	152 k	-65.16	-13	Pass	14925
30	500	0.1	RMS	494.53976 8 M	-69.74	-13	Pass	23500
500	1000	0.1	RMS	881.01524 1 M	41.63	-13	Fail	25000
1000	10000	1	RMS	1000 M	-34.61	-13	Pass	45000



2.17 3G1U_T

Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detect or	Frequency [Hz]	Emission [dBm]	Limit [dBm]	Verdict	Sweep Point
0.009	0.15	0.001	RMS	14.499 k	-63.86	-13	Pass	1001
0.15	30	0.01	RMS	152 k	-65.84	-13	Pass	14925
30	500	0.1	RMS	482.83927 M	-69.61	-13	Pass	23500
500	1000	0.1	RMS	881.955278 M	41.83	-13	Fail	25000
1000	10000	1	RMS	1000 M	-35.14	-13	Pass	45000





Appendix E: Field Strength of Spurious Radiation



1 Result Table

EUT Conf.	Verdict
1G_GMSK_M	Pass



Appendix F: Frequency Stability

1 Result Table

1.1 Frequency Error

(1) Frequency Error vs. Temperature:

EUT Conf.	Voltage	Temperature	Freq. Error [Hz]	Freq. vs. rated [ppm]	Freq. vs. 20 °C [ppm]	Verdict
1G_GMSK_M	100%	-30 °C	28.33	0.03214	0.00636	Pass
		-20 °C	30.27	0.03434	0.00851	Pass
		-10 °C	-10.31	-0.01170	-0.03638	Pass
		0 °C	26.18	0.02970	0.00398	Pass
		+10 °C	20.64	0.02342	-0.00215	Pass
		+20 °C	22.58	0.02562	0	Pass
		+30 °C	-12.78	-0.01450	-0.03912	Pass
		+40 °C	-15.33	-0.01739	-0.04194	Pass
		+50 °C	11.42	0.01296	-0.01235	Pass

(2) Frequency Error vs. Voltage:

EUT Conf.	Temperature	Voltage	Freq. Error [Hz]	Freq. vs. rated [ppm]	Freq. vs. 20 °C [ppm]	Verdict
1G_GMSK_M	+20 °C	85 %	21.34	0.02421	-0.00135	Pass
		100 %	22.56	0.02560	0	Pass
		115 %	18.94	0.02149	-0.00400	Pass

1.2 Frequency Range

(Not applicable)



Appendix G: Receiver Spurious Emissions



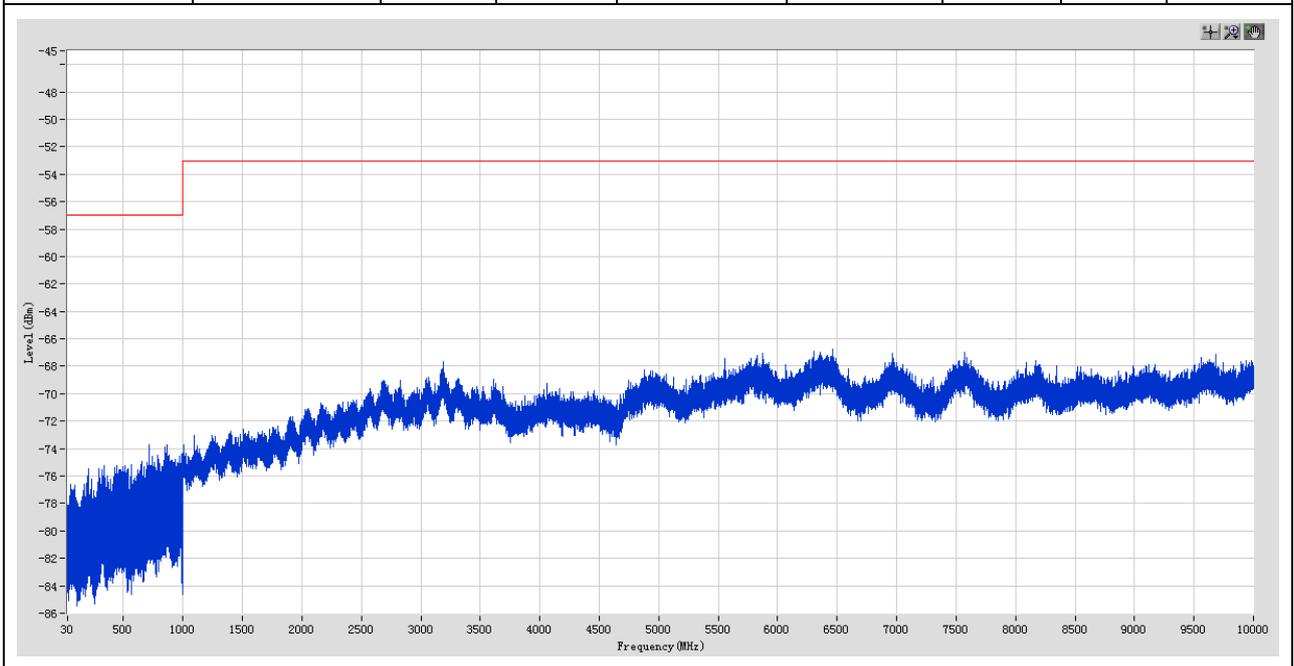
1 Result Table

EUT Conf.	Verdict
1U_M	Pass
1G_GMSK_M	Pass

2 Test Plot

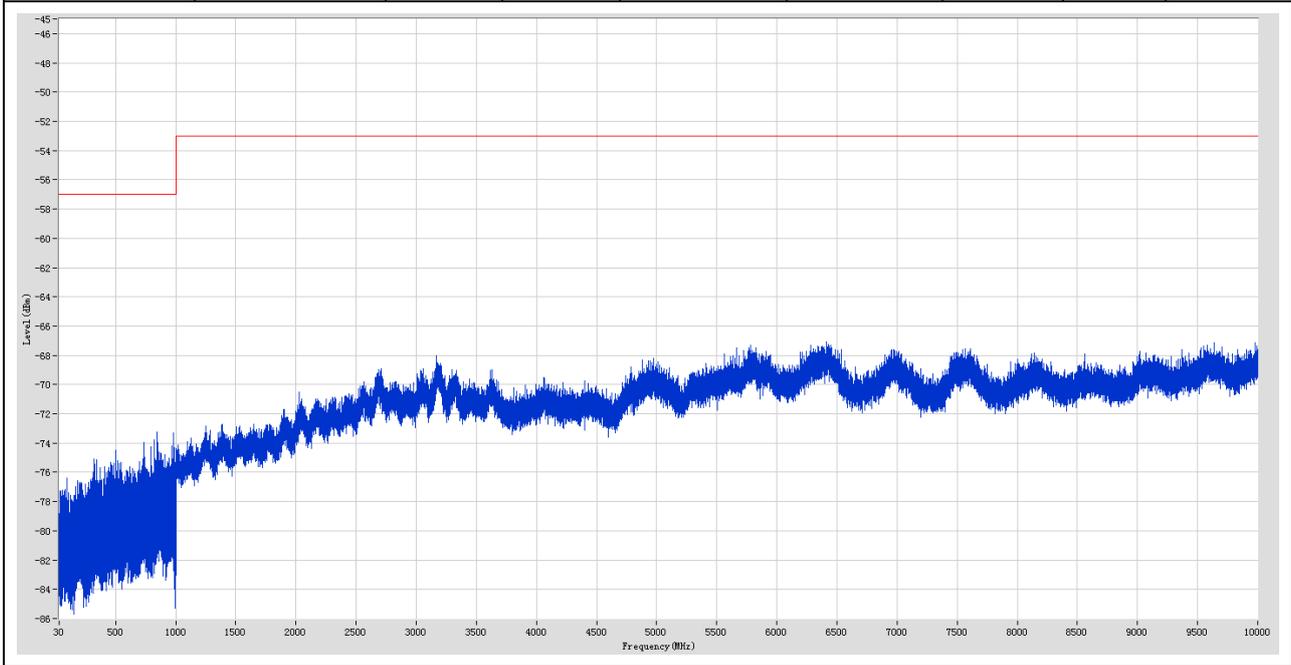
2.1 1U_M

Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detect or	Frequency [Hz]	Emission [dBm]	Limit [dBm]	Verdict	Sweep Point
30	1000	0.12	Peak	865.724893 M	-73.7	-57	Pass	41002
1000	10000	1	RMS	6459.53648 5 M	-66.76	-53	Pass	45000



2.2 1G_GMSK_M

Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detect or	Frequency [Hz]	Emission [dBm]	Limit [dBm]	Verdict	Sweep Point
30	1000	0.12	Peak	842.25230 6 M	-73.24	-57	Pass	41002
1000	10000	1	RMS	6414.7353 65 M	-67.1	-53	Pass	45000

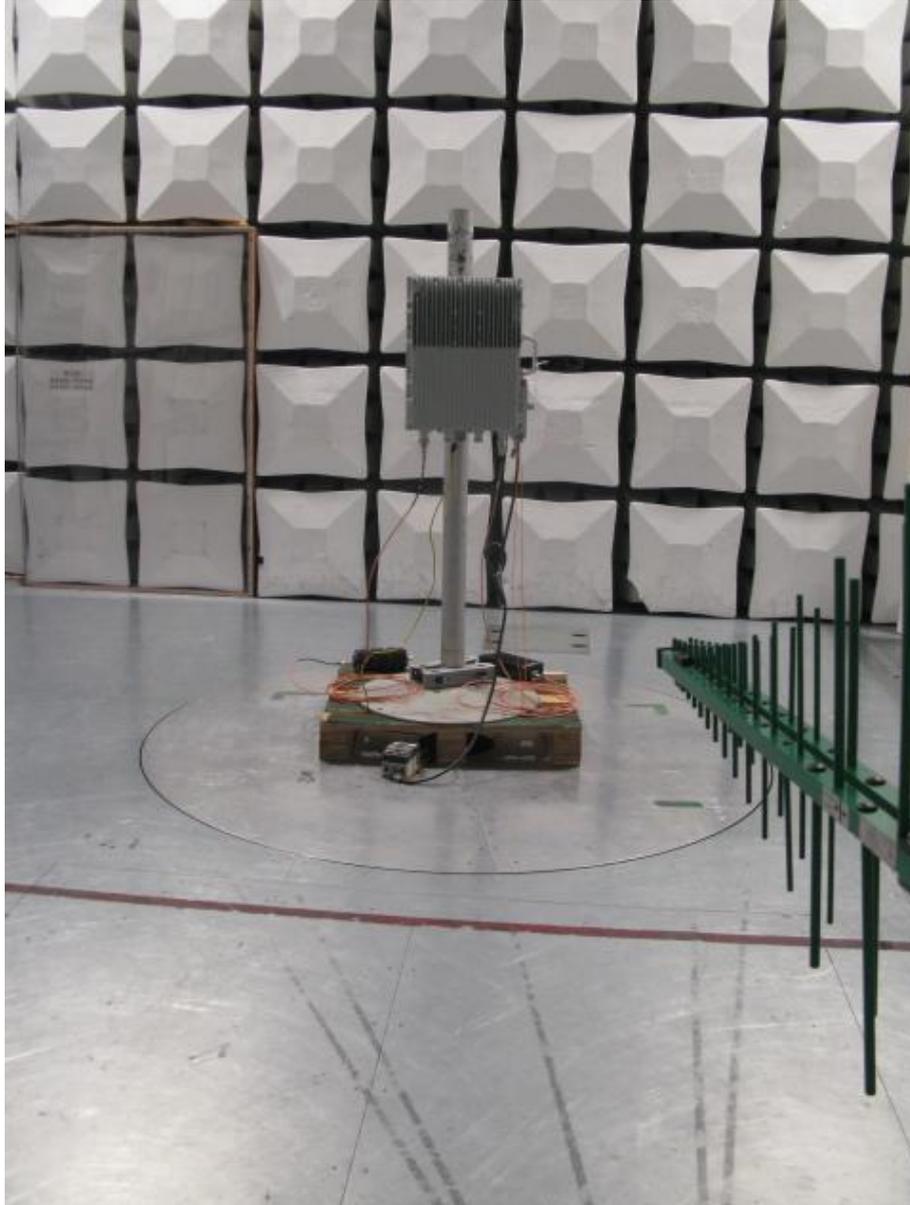




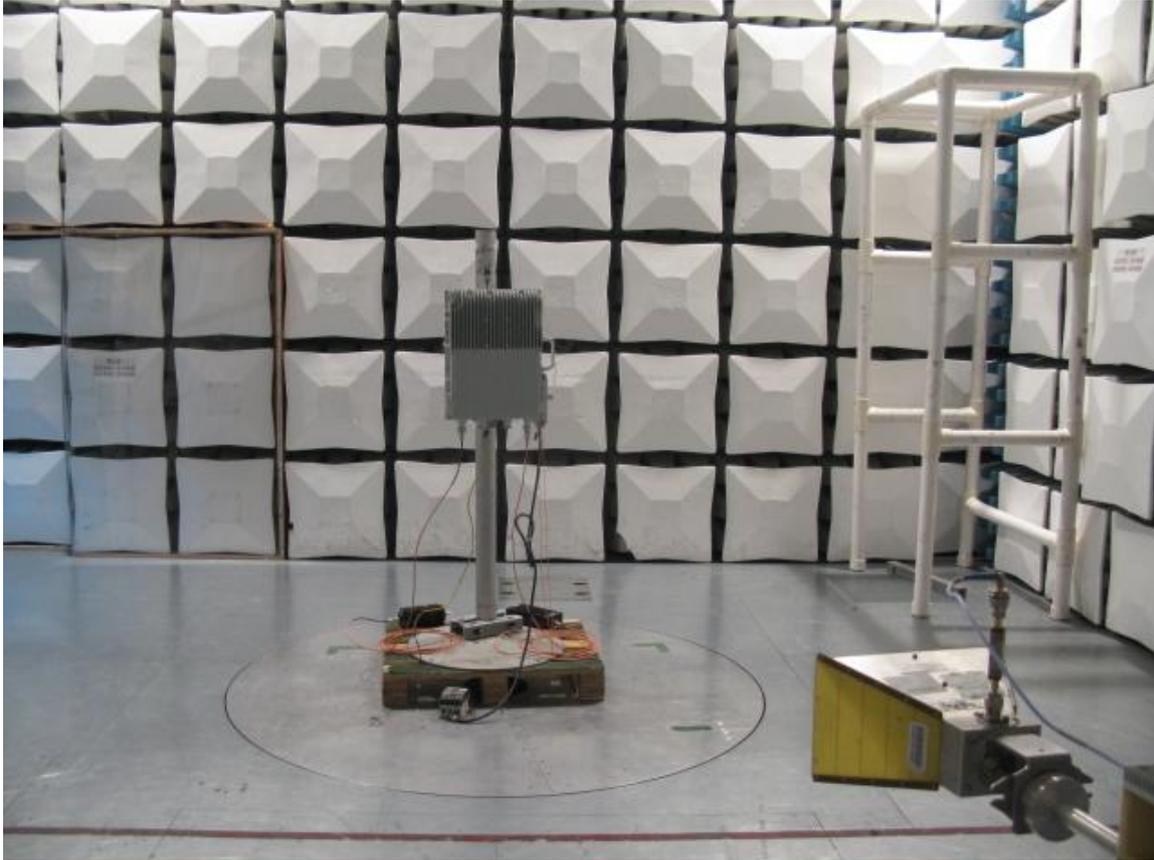
Appendix H: Photos of Test Setups

1 Test Setup 3

1.1 Frequency range below 1 GHz



1.2 Frequency range above 1 GHz



END