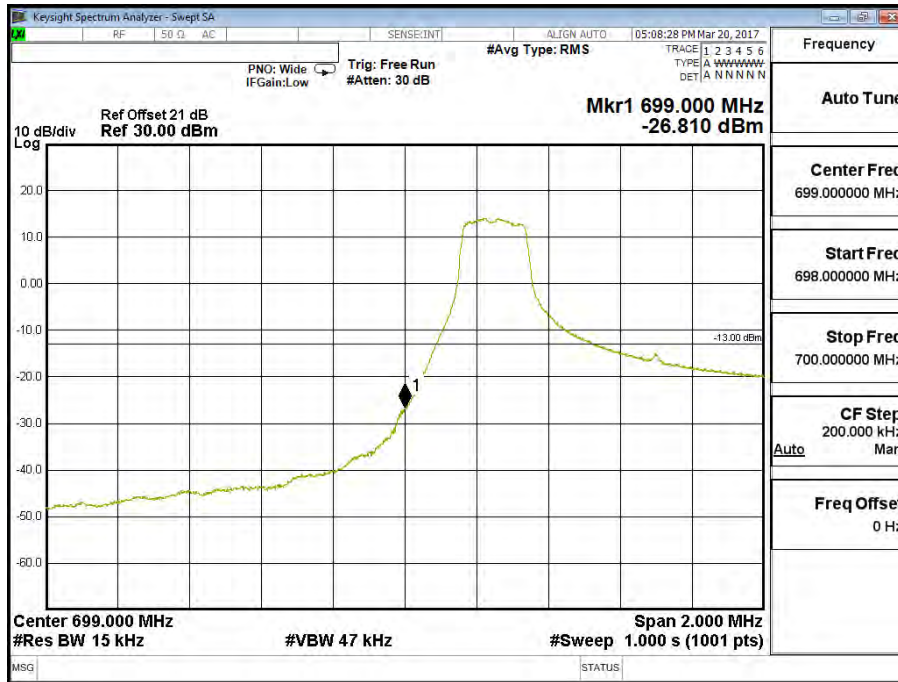
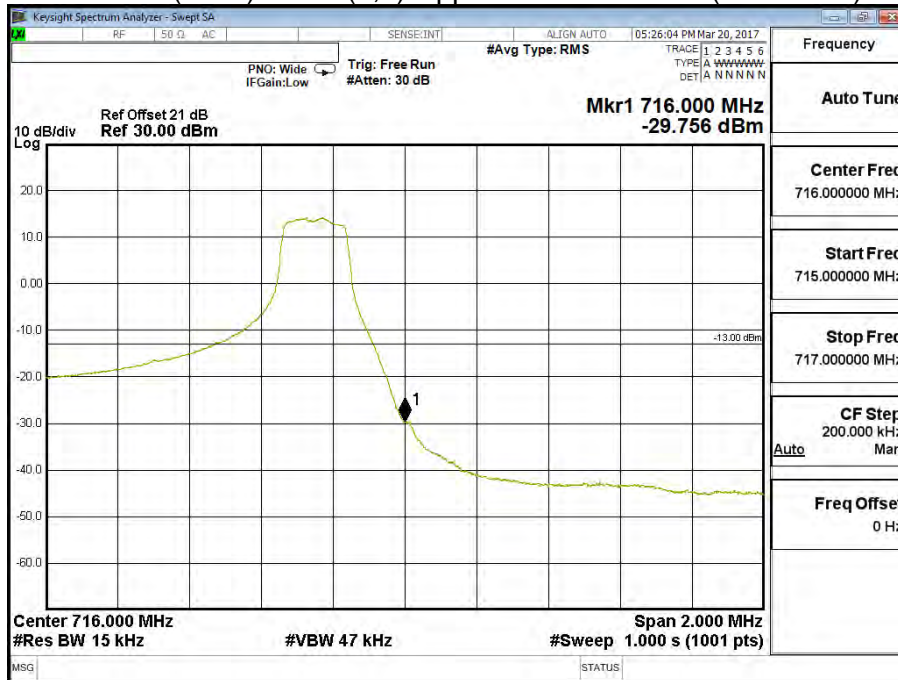


Product	Module		
Test Mode	Spurious Emission At Antenna Terminals (+/-1MHz)		
Date of Test	2017/03/20	Test Site	CTR
Test Condition	Block Edge Test (Band 12 (1.4M))		

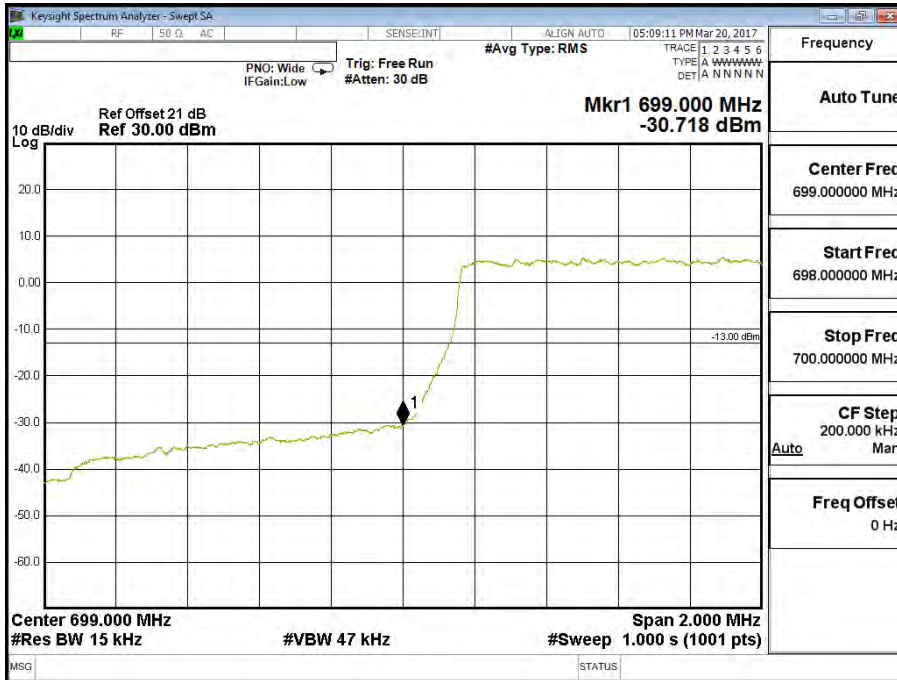
Band 12 (1.4M) QPSK(1,0) Lower Channel 23017 (699.7MHz)



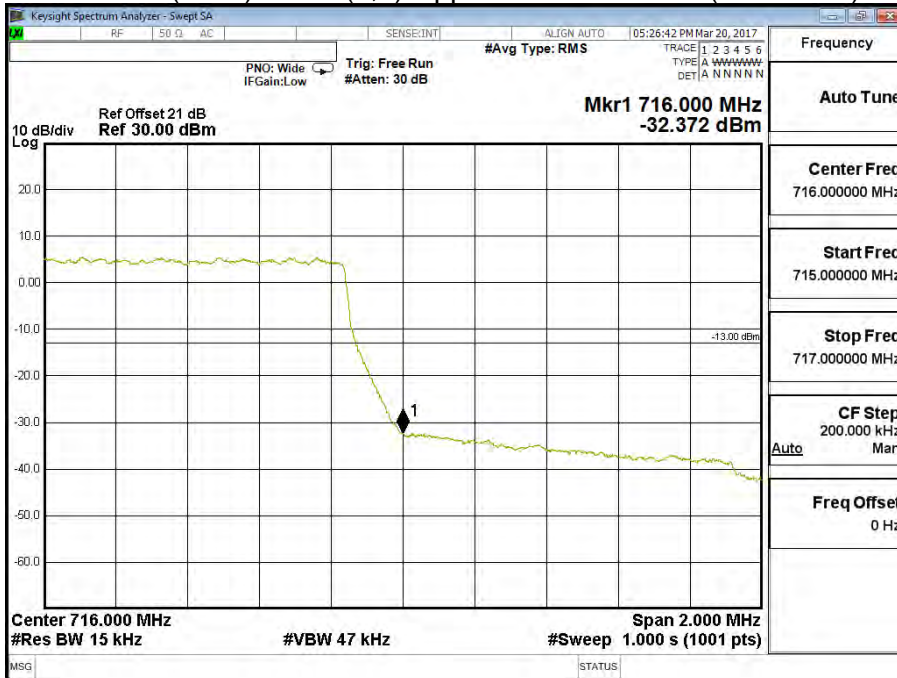
Band 12 (1.4M) QPSK(1,5) Upper Channel 23173 (715.3MHz)



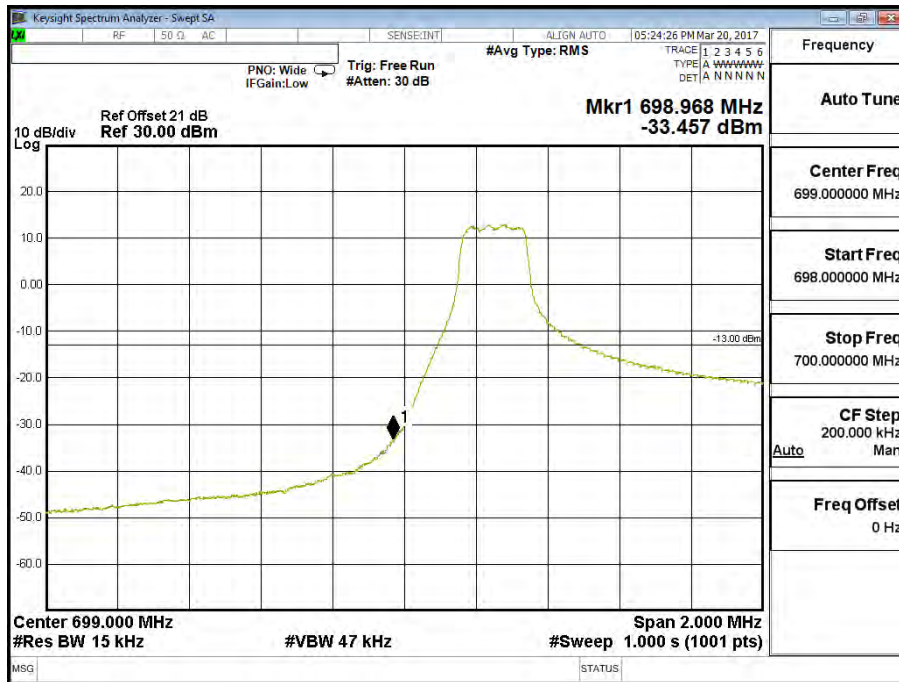
Band 12 (1.4M) QPSK(6,0) Lower Channel 23017 (699.7MHz)



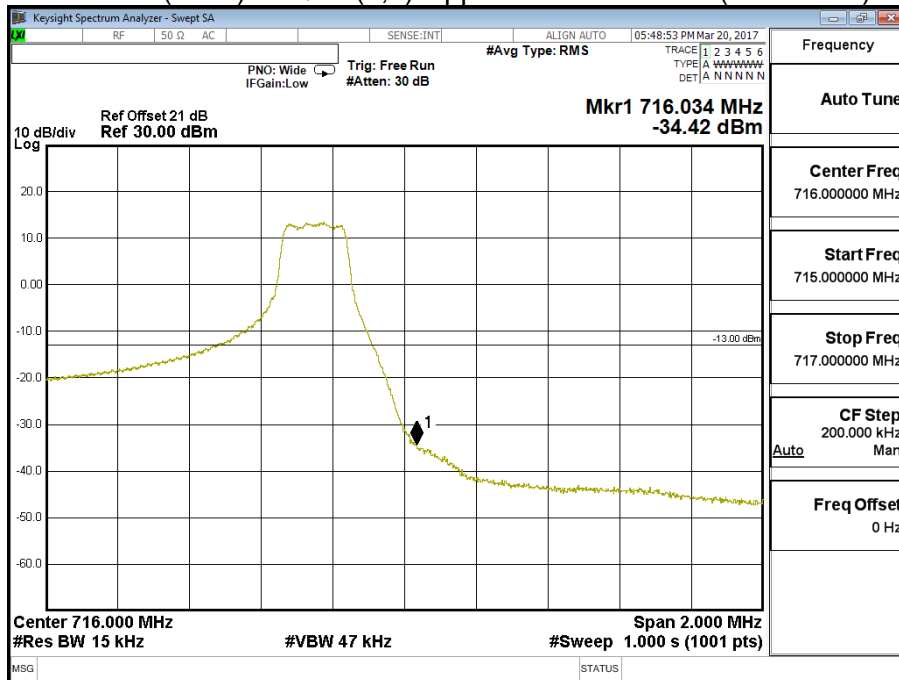
Band 12 (1.4M) QPSK(6,0) Upper Channel 23173 (715.3MHz)



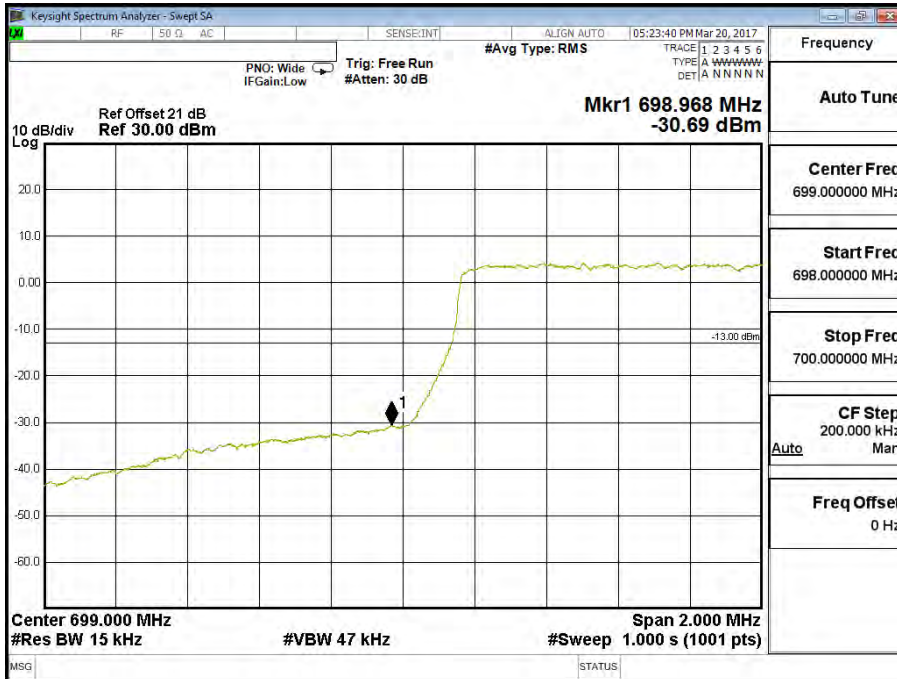
Band 12 (1.4M) 16QAM(1,0) Lower Channel 23017 (699.7MHz)



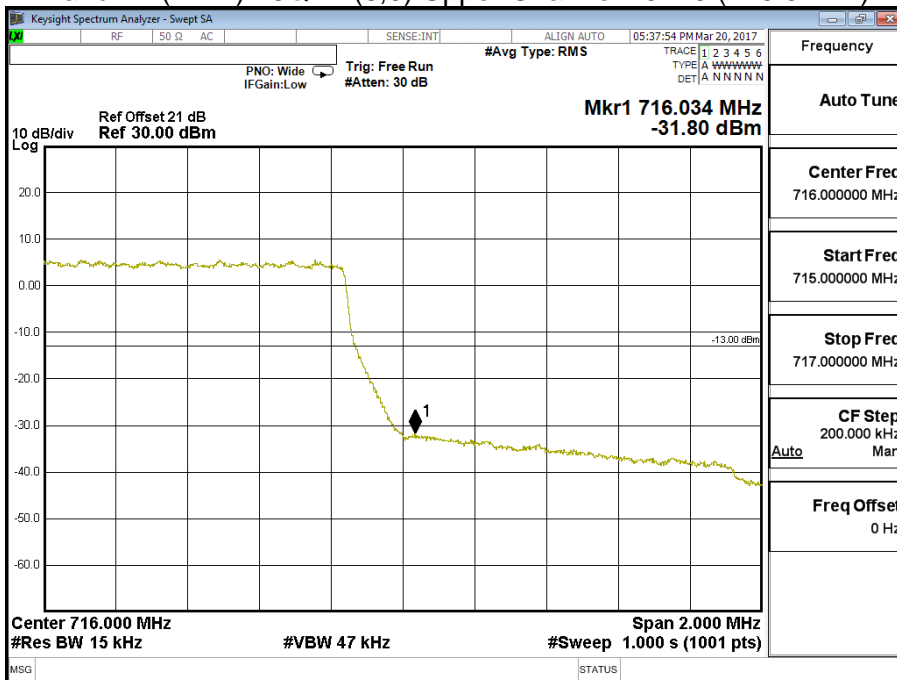
Band 12 (1.4M) 16QAM(1,5) Upper Channel 23173 (715.3MHz)



Band 12 (1.4M) 16QAM(6,0) Lower Channel 23017 (699.7MHz)

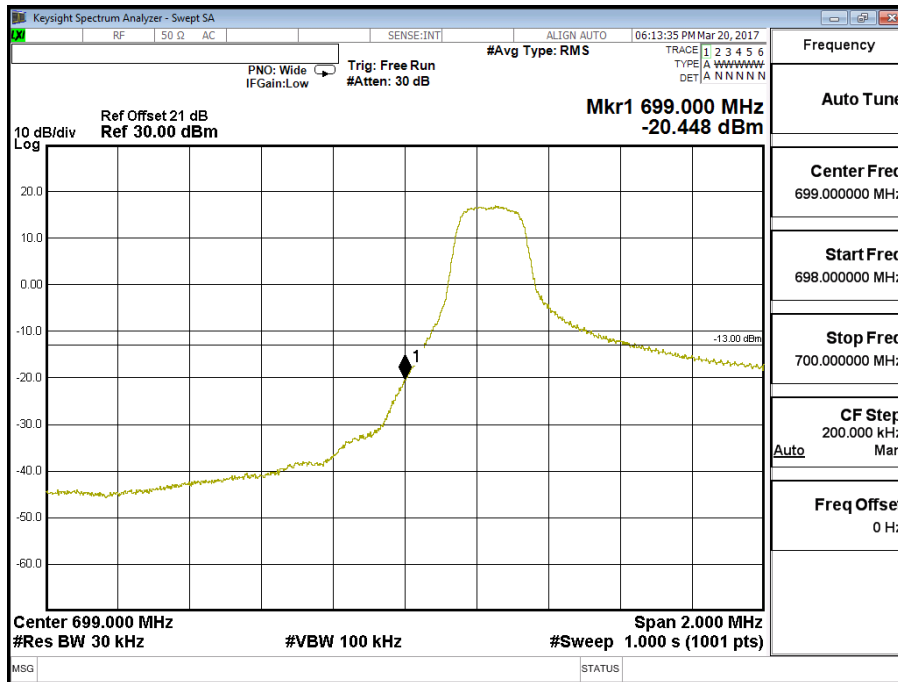


Band 12 (1.4M) 16QAM(6,0) Upper Channel 23173 (715.3MHz)

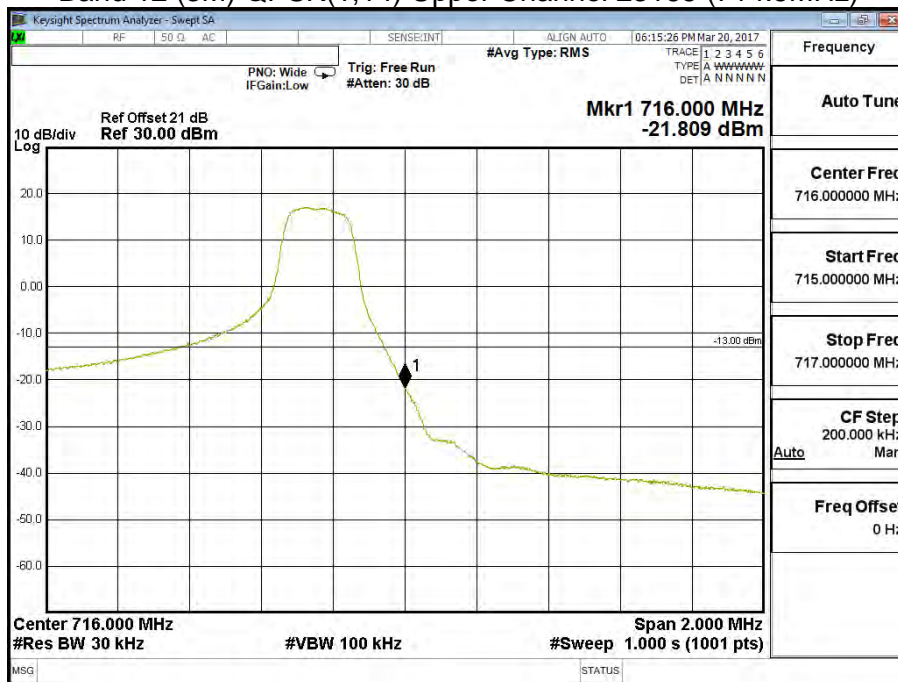


Product	Module		
Test Mode	Spurious Emission At Antenna Terminals (+/-1MHz)		
Date of Test	2017/03/20	Test Site	CTR
Test Condition	Block Edge Test (Band 12 (3M))		

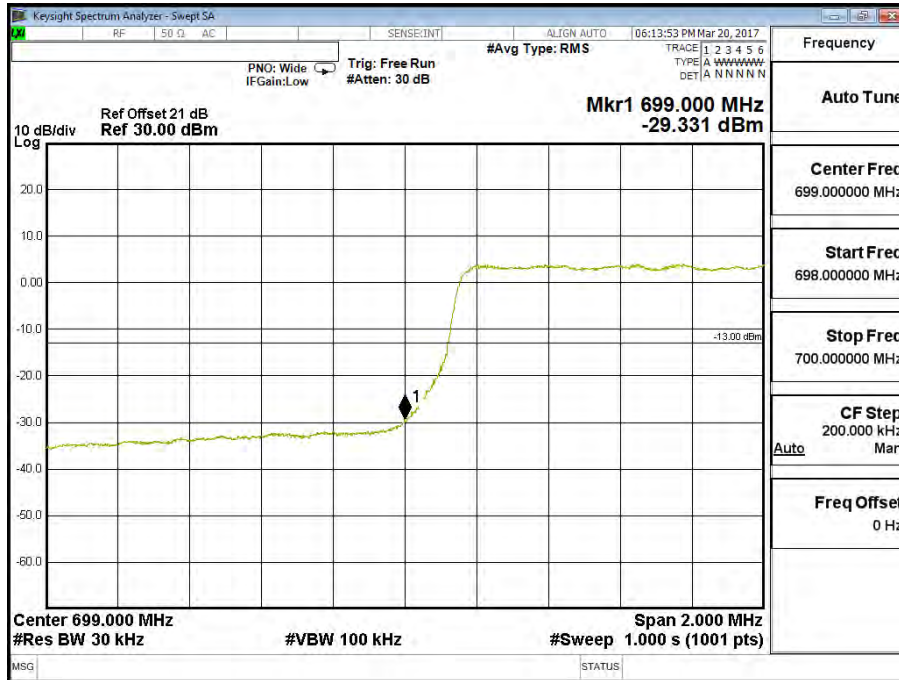
Band 12 (3M) QPSK(1,0) Lower Channel 23025 (700.5MHz)



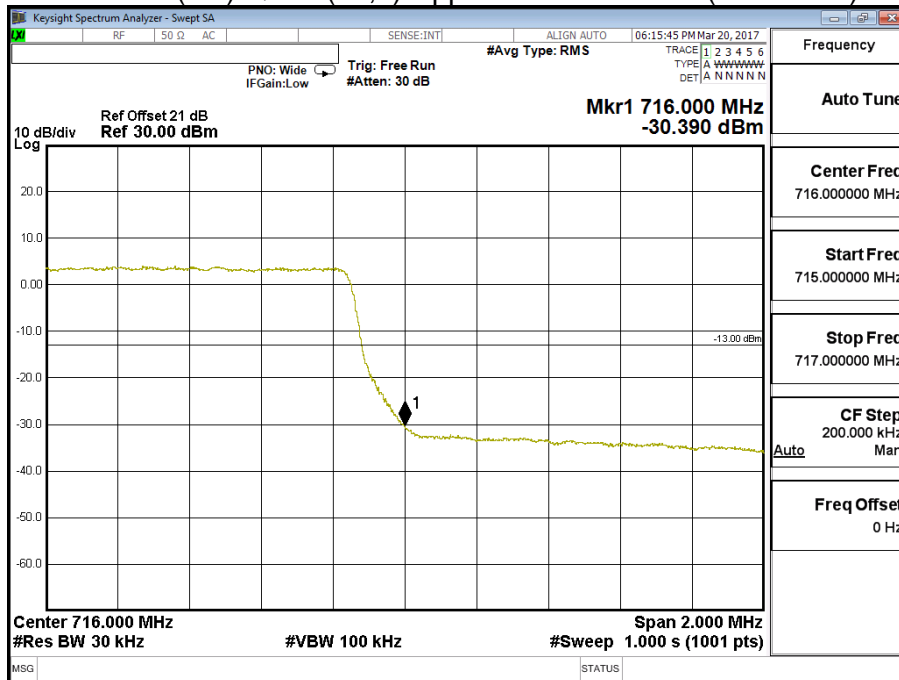
Band 12 (3M) QPSK(1,14) Upper Channel 23165 (714.5MHz)



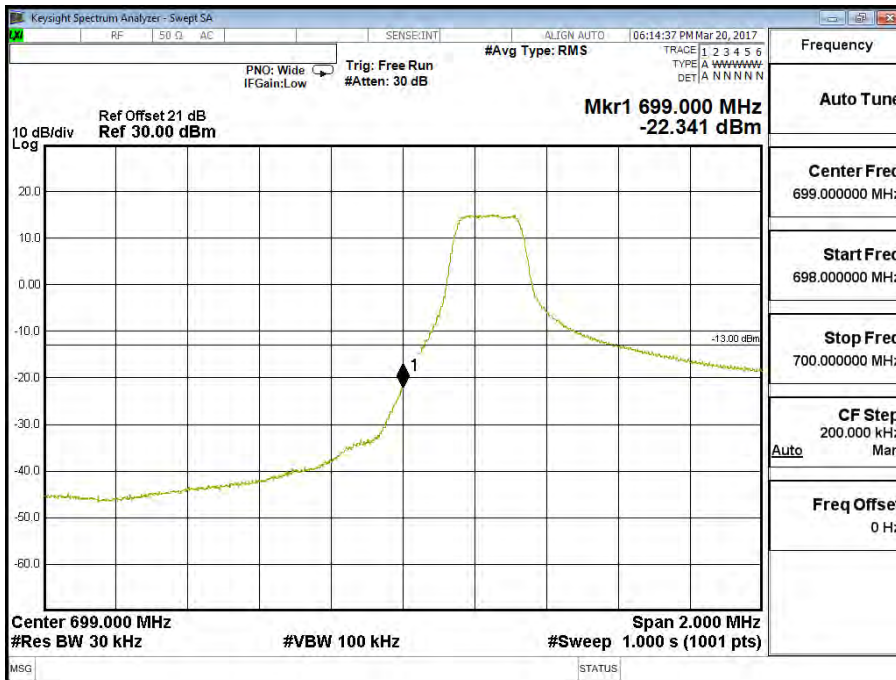
Band 12 (3M) QPSK(15,0) Lower Channel 23025 (700.5MHz)



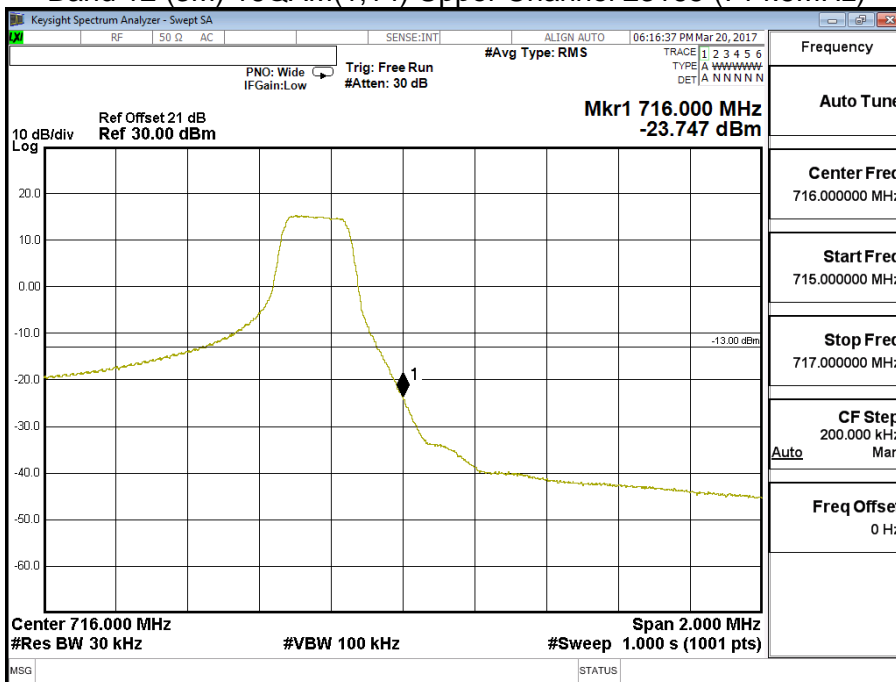
Band 12 (3M) QPSK(15,0) Upper Channel 23165 (714.5MHz)



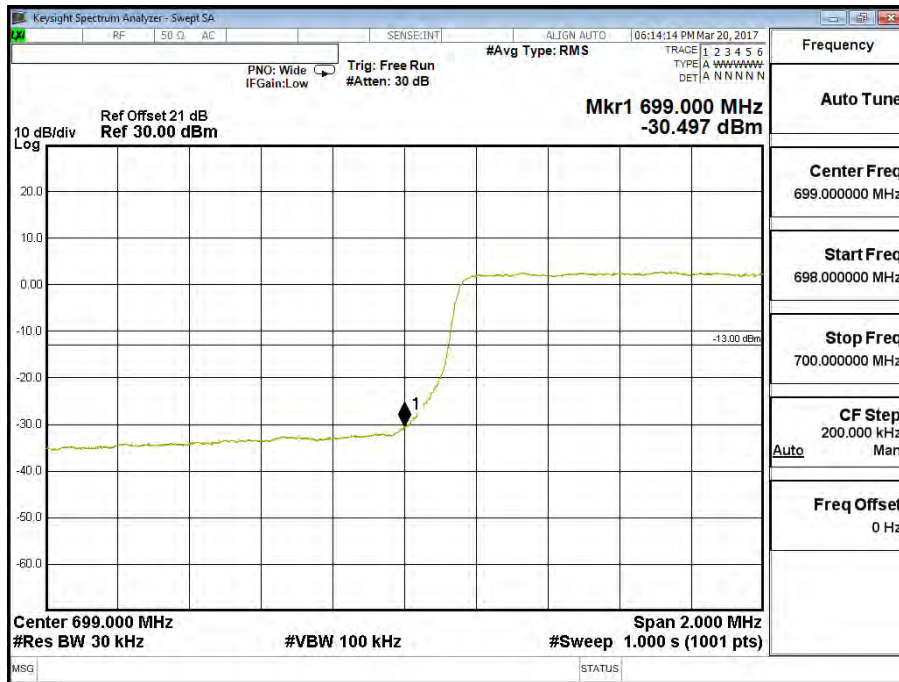
Band 12 (3M) 16QAM(1,0) Lower Channel 23025 (700.5MHz)



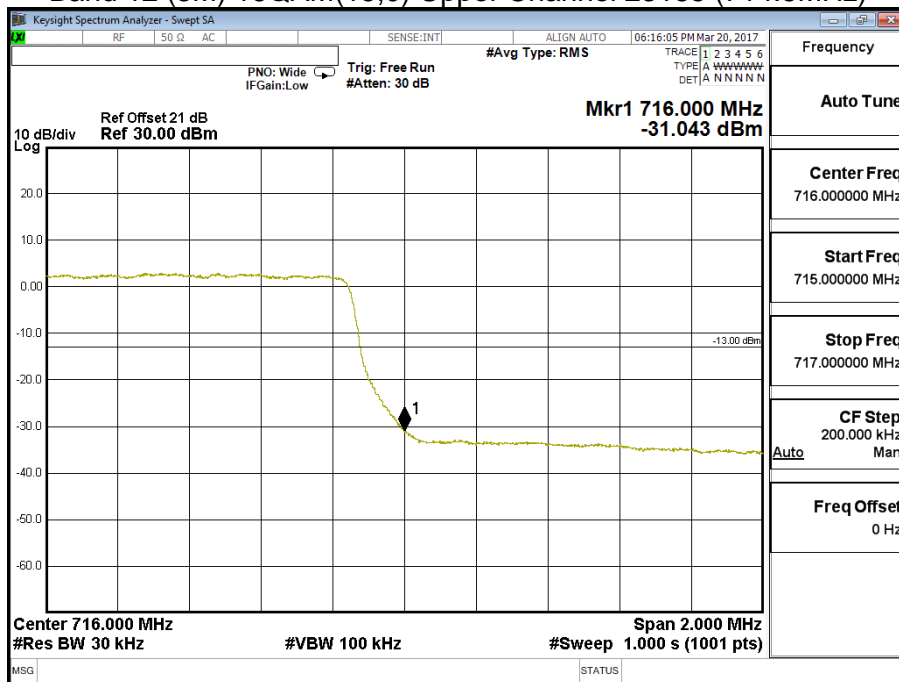
Band 12 (3M) 16QAM(1,14) Upper Channel 23165 (714.5MHz)



Band 12 (3M) 16QAM(15,0) Lower Channel 23025 (700.5MHz)

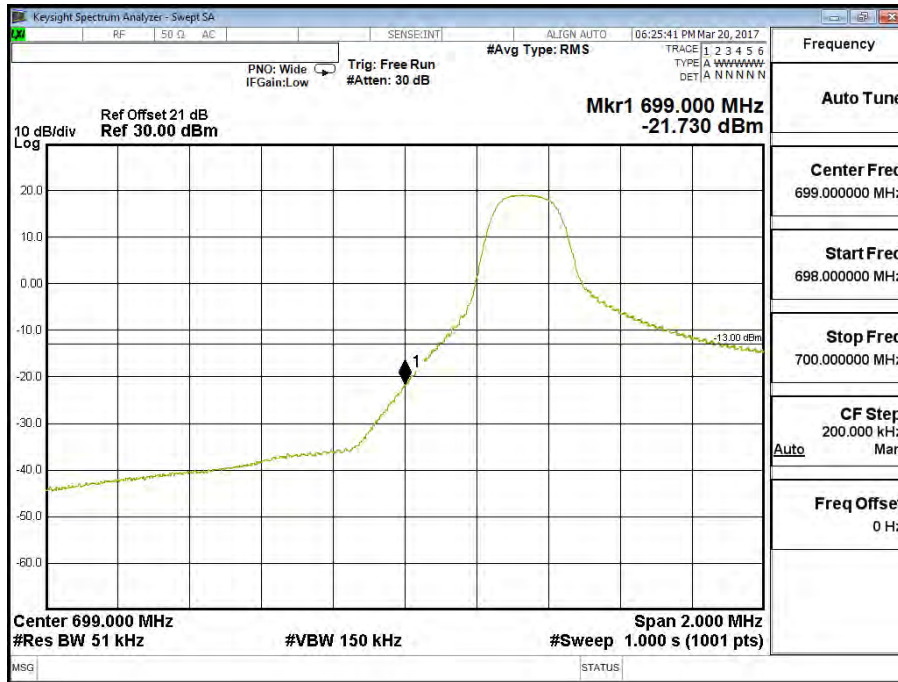


Band 12 (3M) 16QAM(15,0) Upper Channel 23165 (714.5MHz)

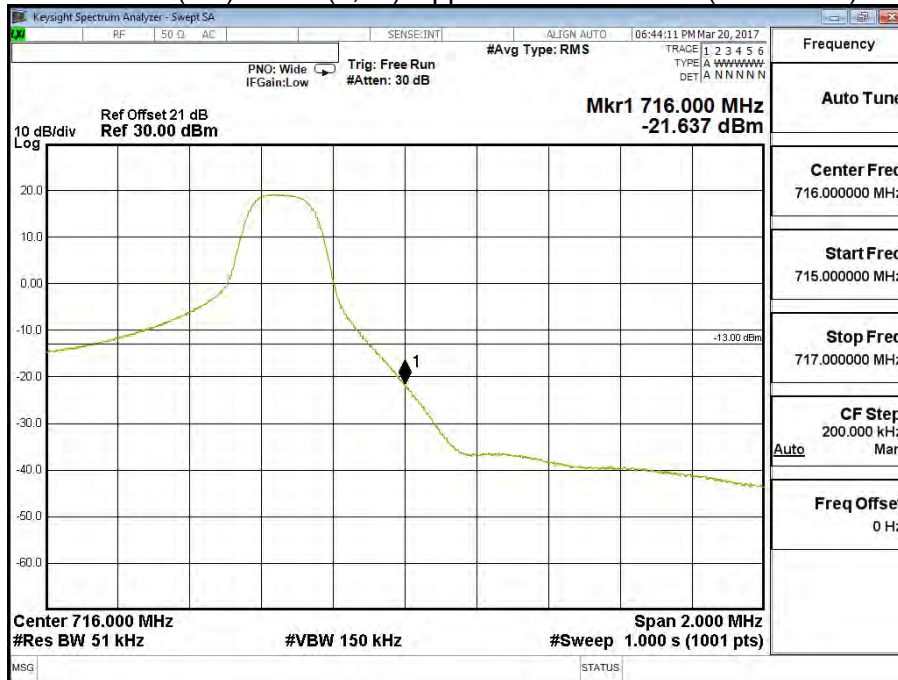


Product	Module		
Test Mode	Spurious Emission At Antenna Terminals (+/-1MHz)		
Date of Test	2017/03/20	Test Site	CTR
Test Condition	Block Edge Test (Band 12 (5M))		

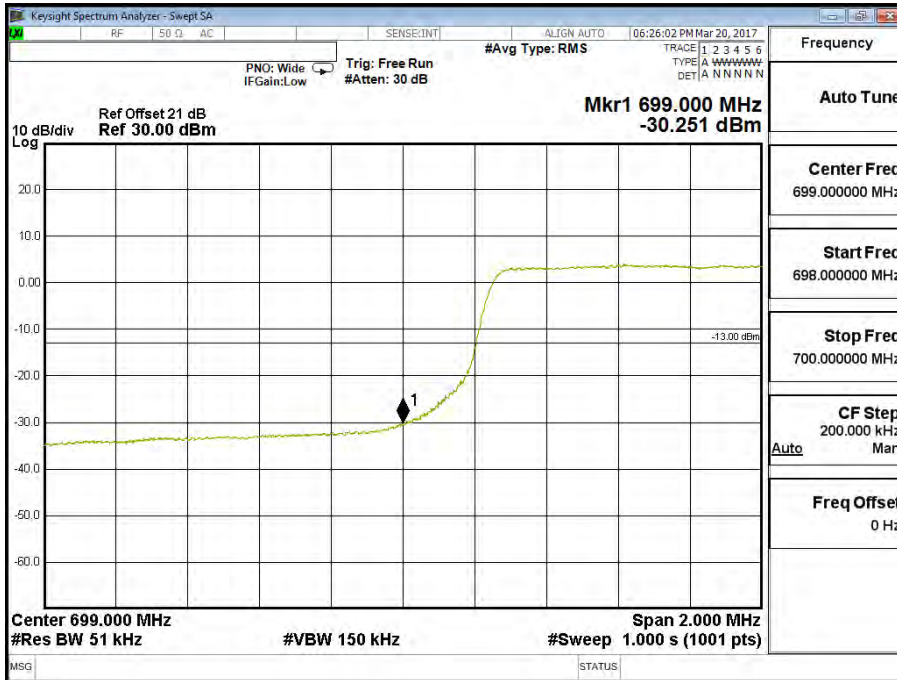
Band 12 (5M) QPSK(1,0) Lower Channel 23035 (701.5MHz)



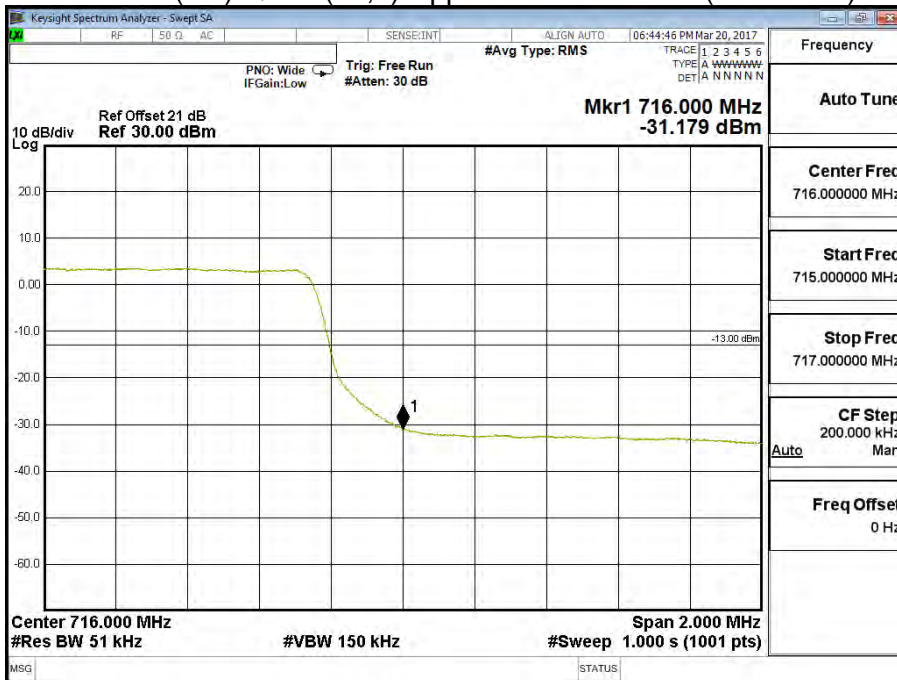
Band 12 (5M) QPSK(1,24) Upper Channel 23155 (713.5MHz)



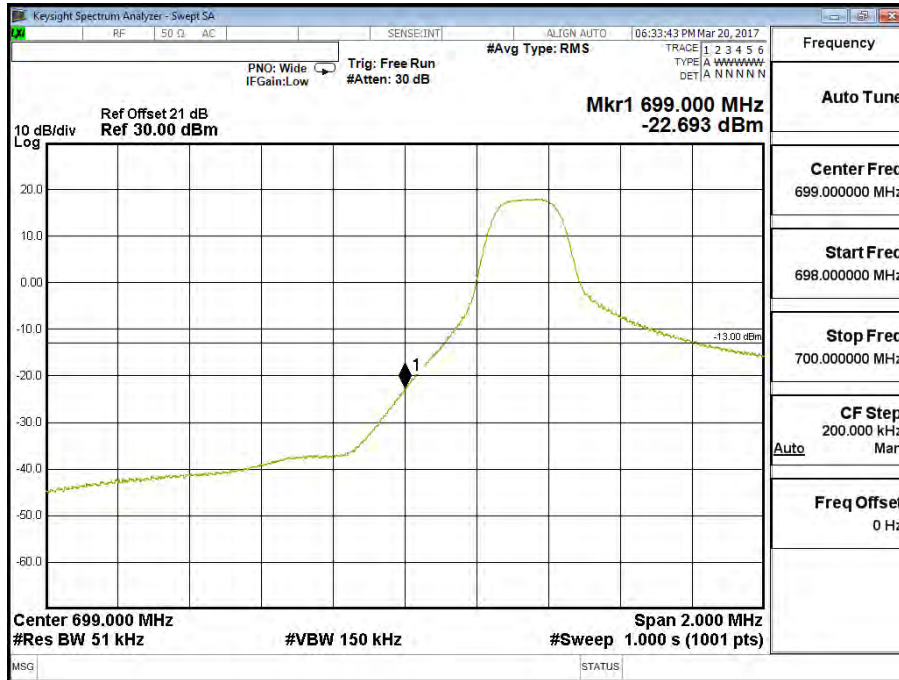
Band 12 (5M) QPSK(25,0) Lower Channel 23035 (701.5MHz)



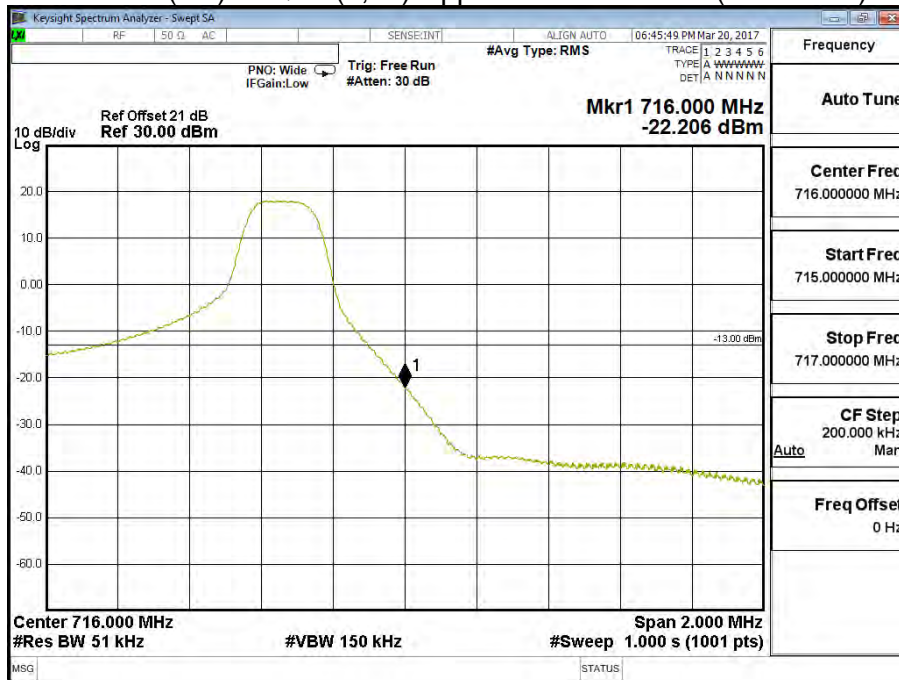
Band 12 (5M) QPSK(25,0) Upper Channel 23155 (713.5MHz)



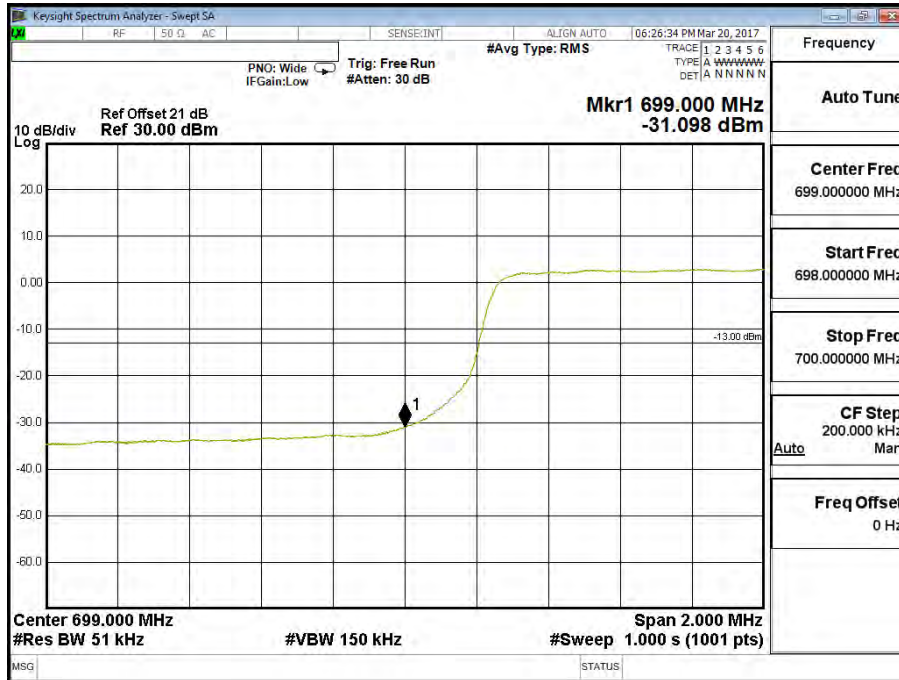
Band 12 (5M) 16QAM(1,0) Lower Channel 23035 (701.5MHz)



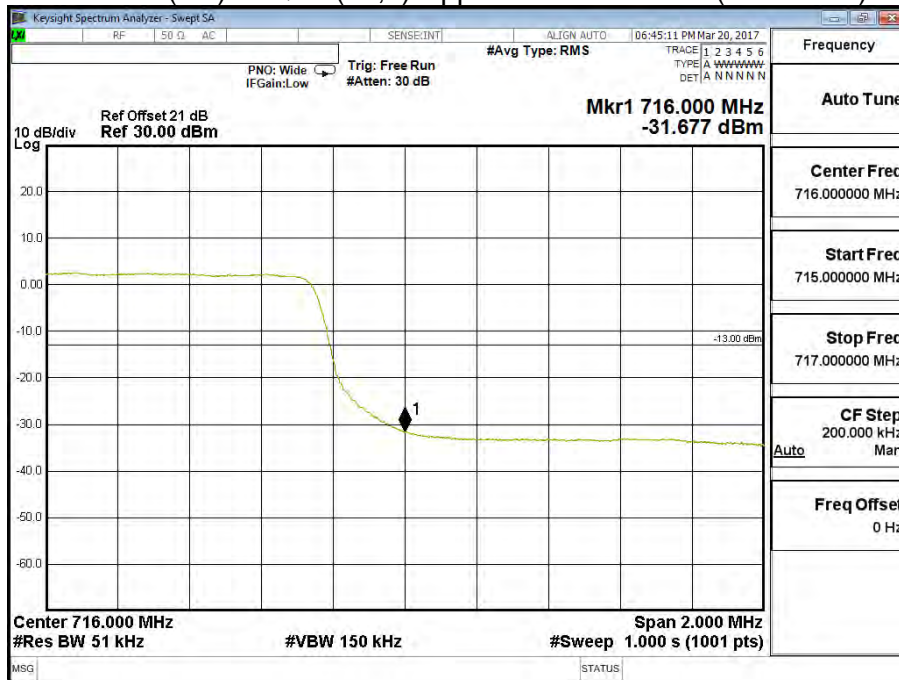
Band 12 (5M) 16QAM(1,24) Upper Channel 23155 (713.5MHz)



Band 12 (5M) 16QAM(25,0) Lower Channel 23035 (701.5MHz)

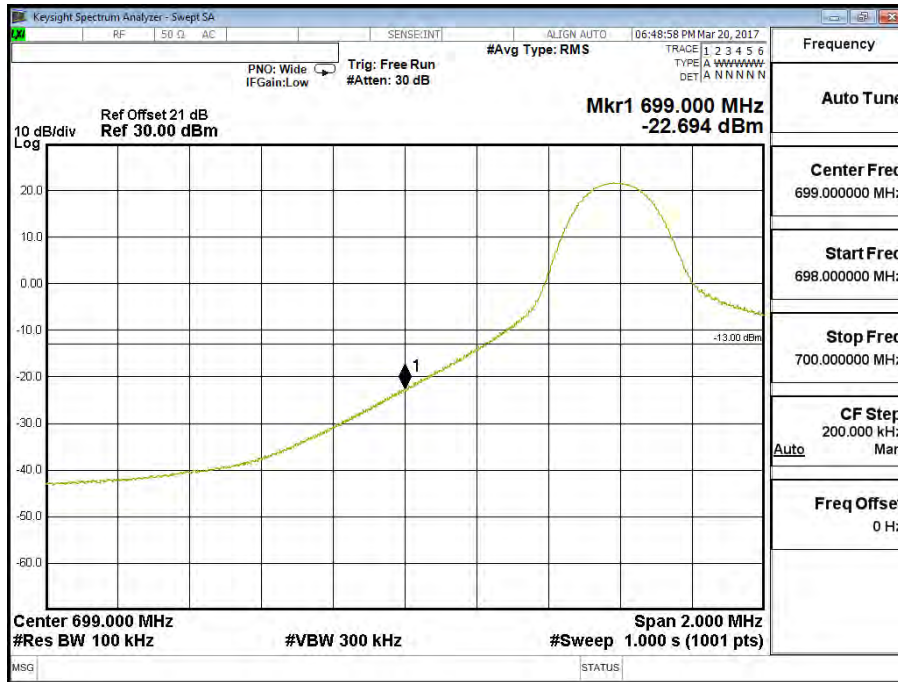


Band 12 (5M) 16QAM(25,0) Upper Channel 23155 (713.5MHz)

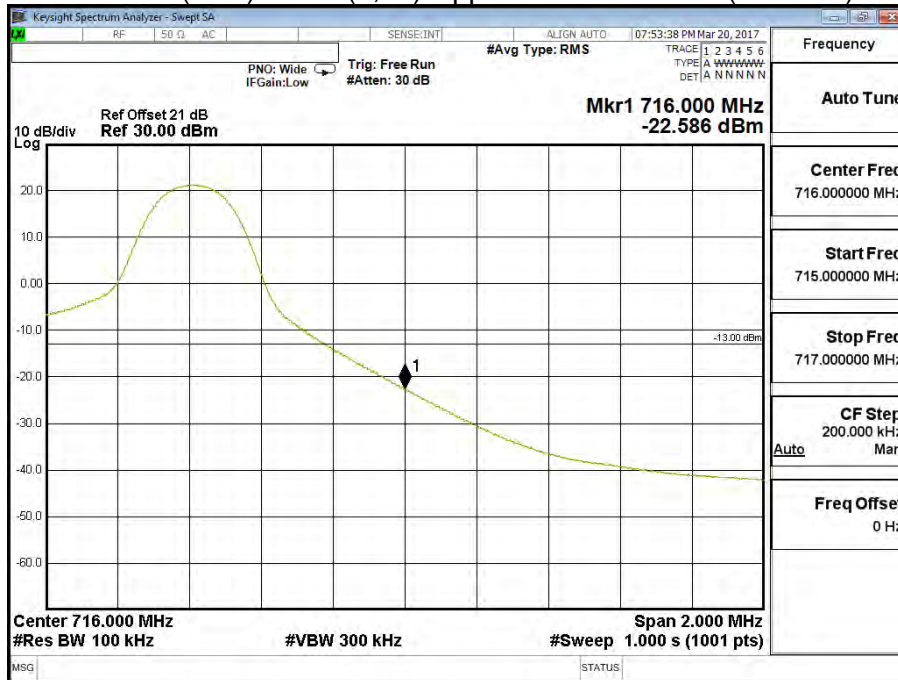


Product	Module		
Test Mode	Spurious Emission At Antenna Terminals (+/-1MHz)		
Date of Test	2017/03/20	Test Site	CTR
Test Condition	Block Edge Test (Band 12 (10M))		

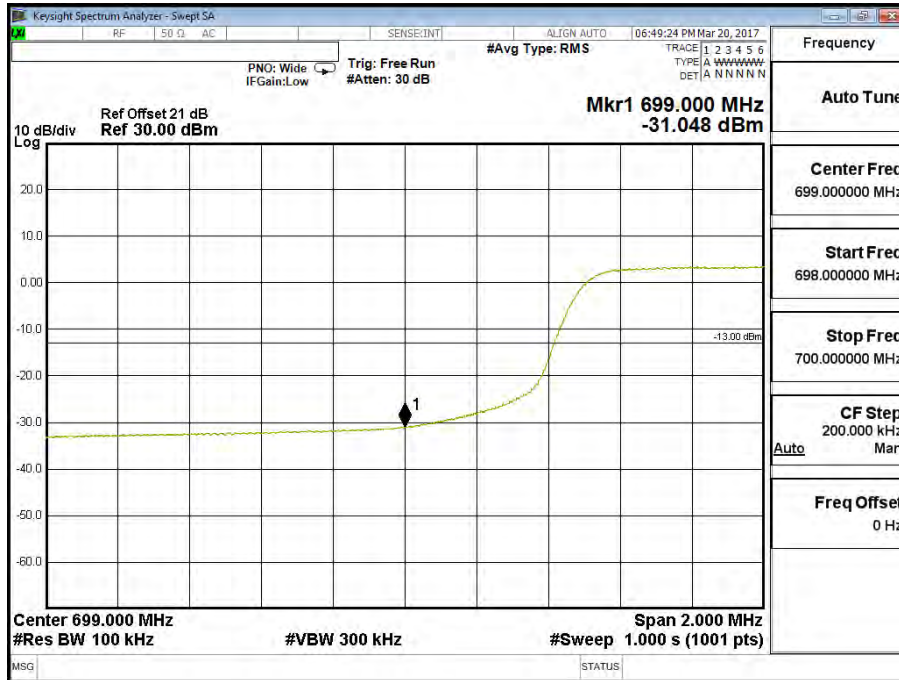
Band 12 (10M) QPSK(1,0) Lower Channel 23060 (704MHz)



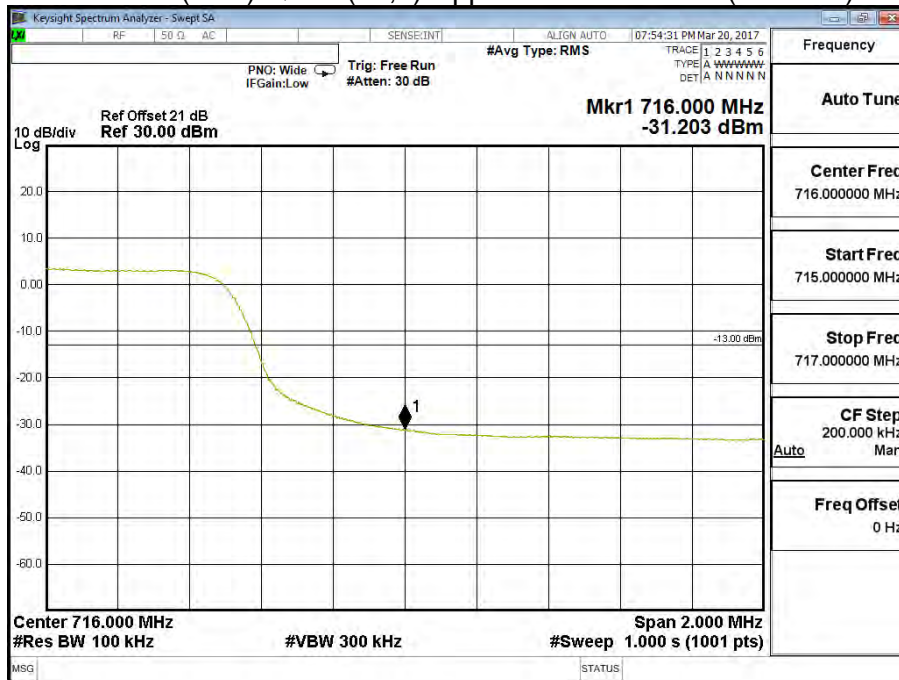
Band 12 (10M) QPSK(1,49) Upper Channel 23130 (711MHz)



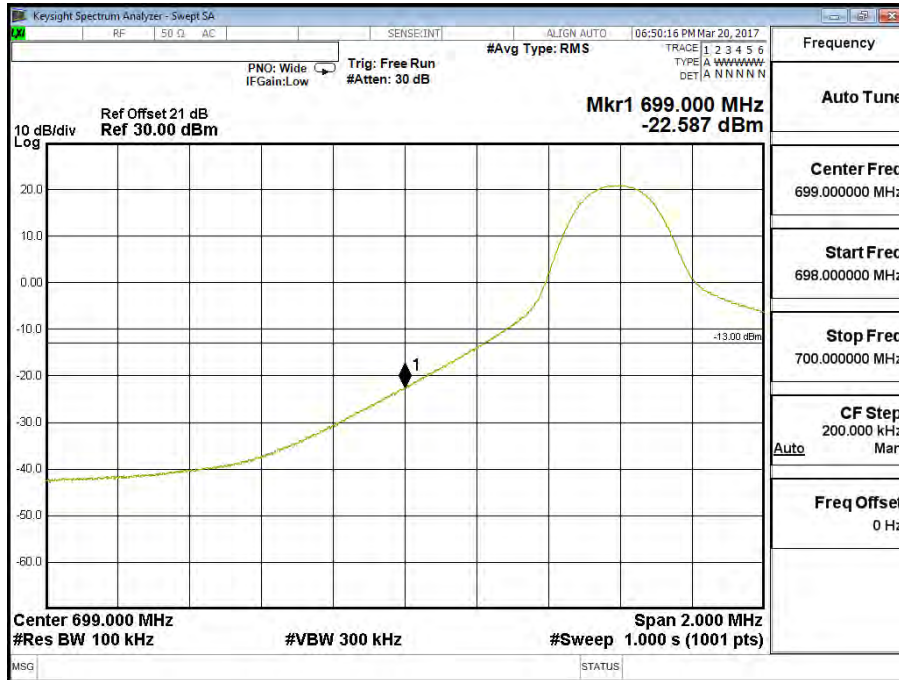
Band 12 (10M) QPSK(50,0) Lower Channel 23060 (704MHz)



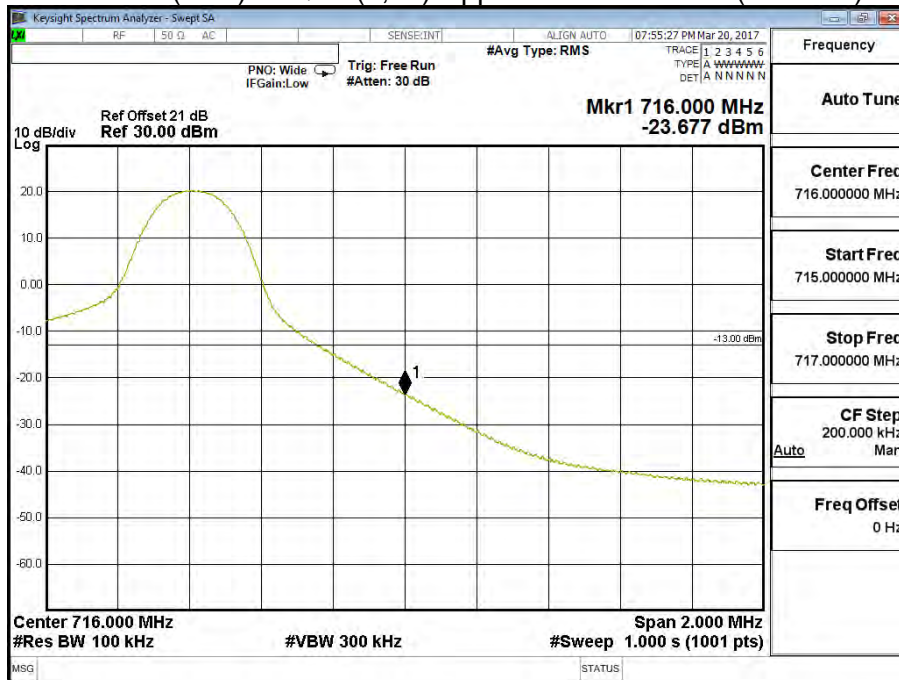
Band 12 (10M) QPSK(50,0) Upper Channel 23130 (711MHz)



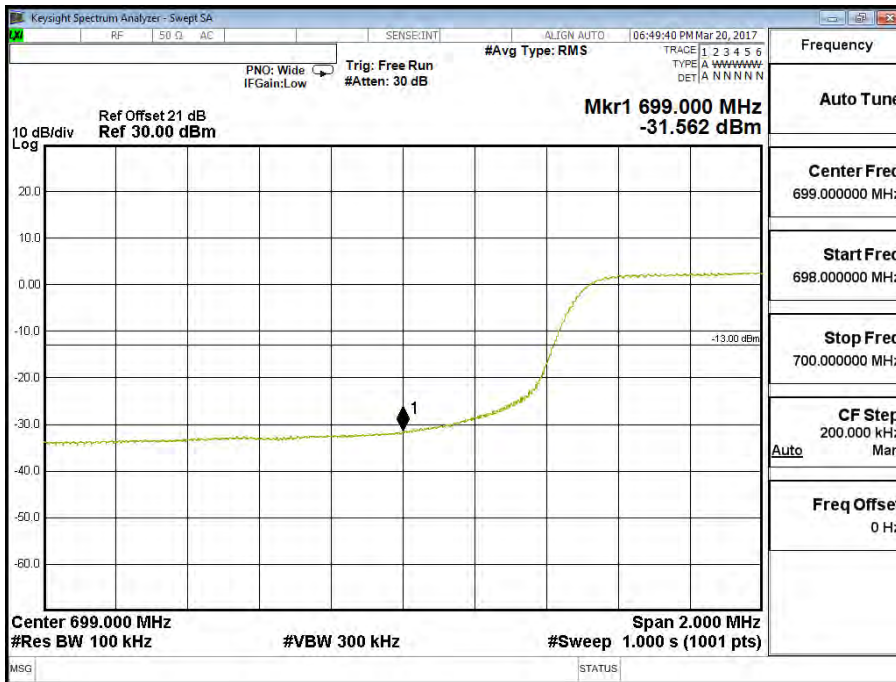
Band 12 (10M) 16QAM(1,0) Lower Channel 23060 (704MHz)



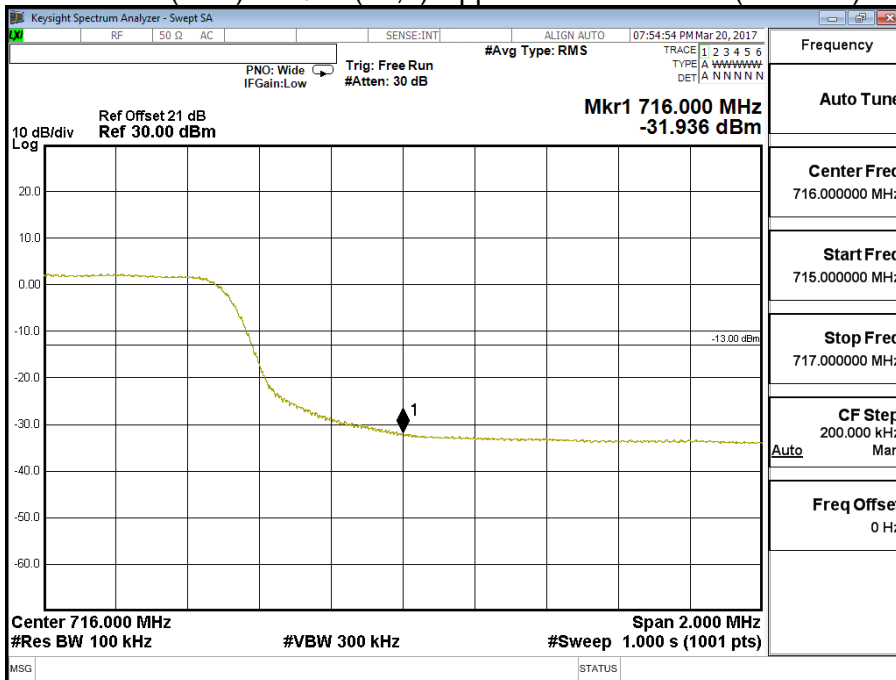
Band 12 (10M) 16QAM(1,49) Upper Channel 23130 (711MHz)



Band 12 (10M) 16QAM(50,0) Lower Channel 23060 (704MHz)



Band 12 (10M) 16QAM(50,0) Upper Channel 23130 (711MHz)



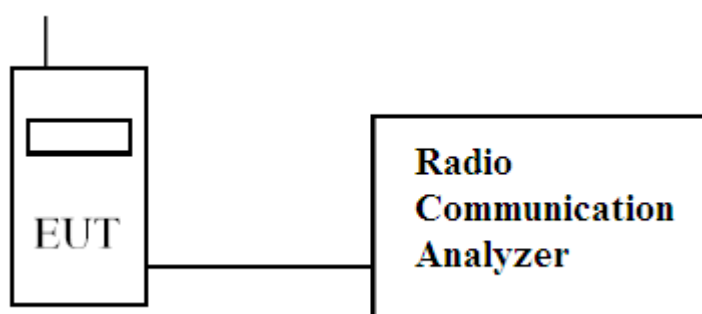
6. Spurious Emission

6.1. Test Specification

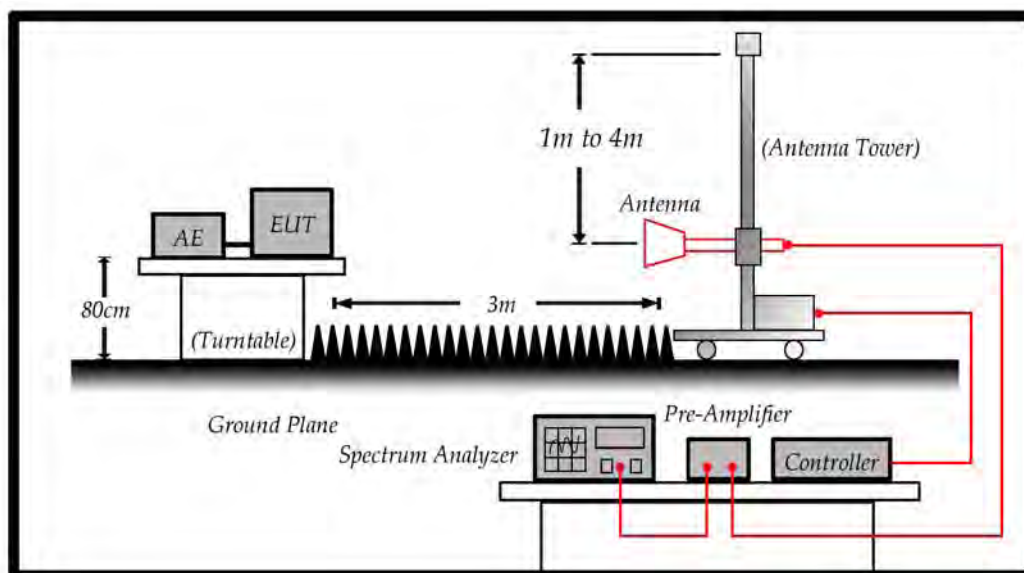
According to Part 2.1051, 2.1053, 24.238(a), 27.53.

6.2. Test Setup

6.2.1 Spurious emissions at antenna terminals.



6.2.2 Field strength of spurious radiation.



6.3. Limits

Limit	<-13dBm
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$43 + 10\text{Log}(P)$ down on the carrier where P is the power in Watts.

6.4. Test Procedure

In accordance with Part 2.1051, 2.1053, 24.238(a), 27.53., the spurious emissions from the antenna terminal were measured. The transmitter output power was attenuated using a combination of filters and attenuators and the frequency spectrum investigated from 30MHz to 20GHz. The EUT was set to transmit on full power. The EUT was tested on Low, middle and High channels for both power levels. The resolution and video bandwidth was set to 1MHz/3MHz in accordance with Part 2.1051, 2.1053, 24.238(a), 27.53. The spectrum analyzer detector was set to Max Hold. In addition, measurements were made up to the 10th harmonic of the fundamental. The device was then replaced with a substitution antenna, which input signal was adjusted until the received level matched that of the previously detected emission.

- (1) The EUT is tested with maximum rated TX power via the Base Station simulator.
- (2) The EUT is tested in three orthogonal planes, The worst case was showing in this report.

The EUT is placed on a turn table which is 1.5 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

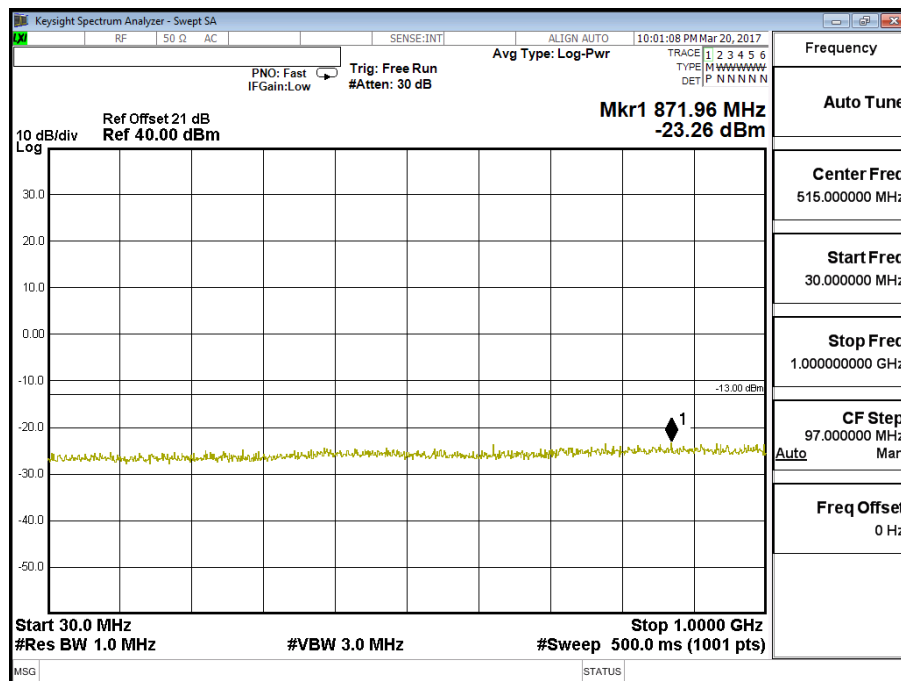
Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to TIA/EIA 603-D on radiated measurement.

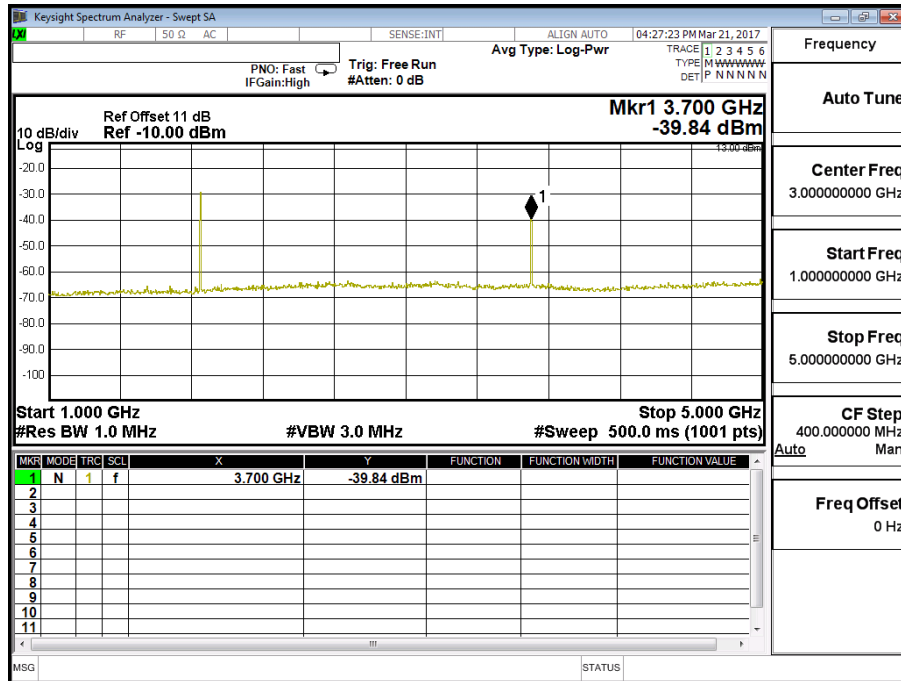
6.5. Test Result of Spurious Emission

Product	Module		
Test Mode	Spurious Emission (Conducted)		
Date of Test	2017/03/22	Test Site	CTR
Test Condition	LTE-Band 2 (1.4M)	Test Range	30MHz~20GHz

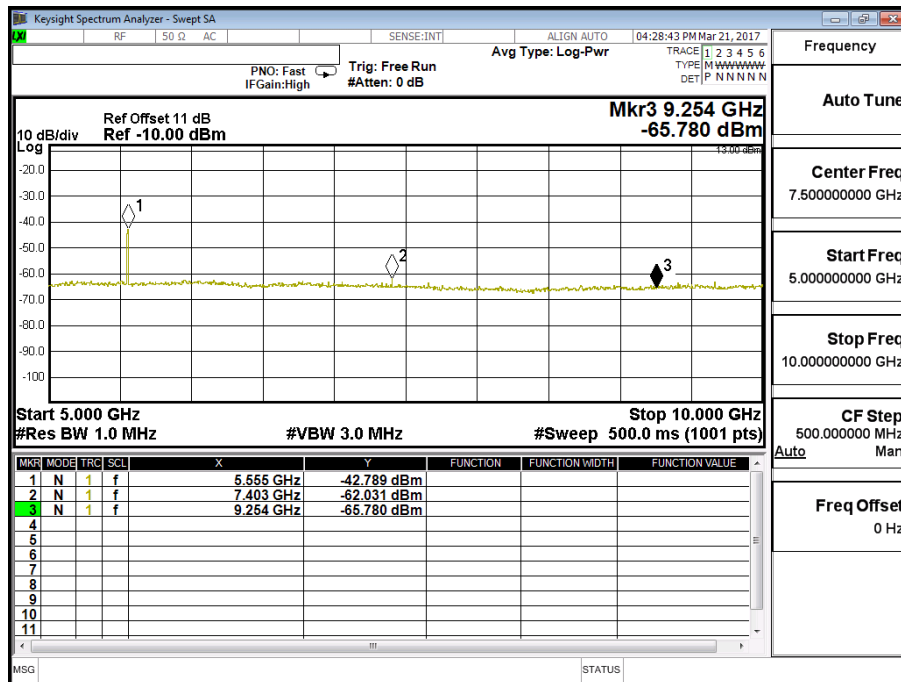
LTE-Band 2 (1.4M) QPSK(3,3) CH18607

Frequency (MHz)	Reading Level (dBm)	Path Loss (dB)	Emission Level (dBm)	Limit (dBm)
3700	-39.840	1.1	-38.740	-13
5555	-42.789	1.23	-41.559	-13
7403	-62.031	1.59	-60.441	-13
9254	-65.780	1.89	-63.890	-13
11104	-65.660	2.07	-63.590	-13
12955	-65.041	2.26	-62.781	-13
14806	-61.857	2.64	-59.217	-13
16656	-60.132	3.5	-56.632	-13
18507	-59.960	3.7	-56.260	-13

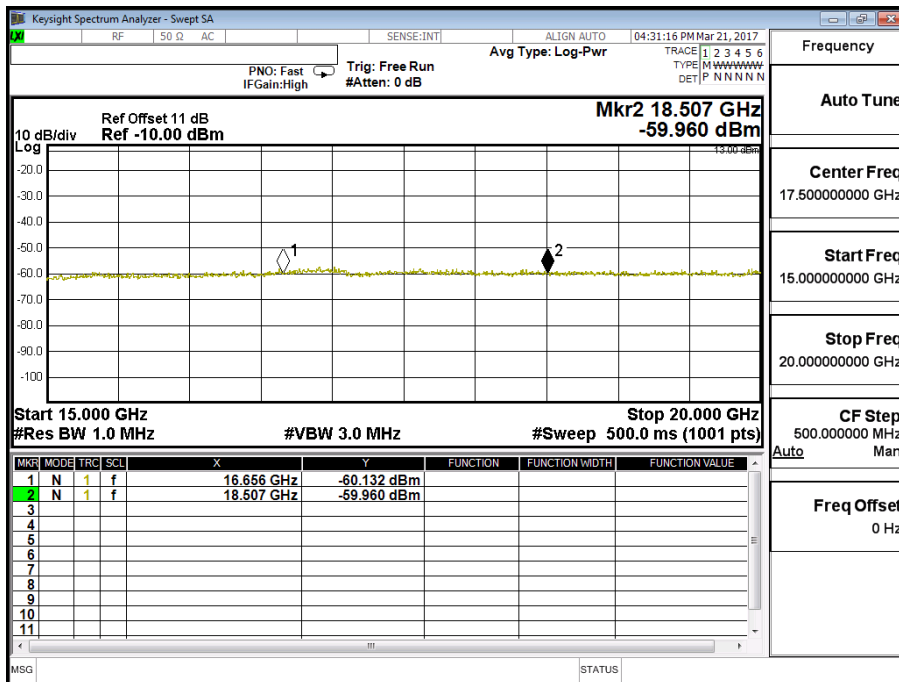
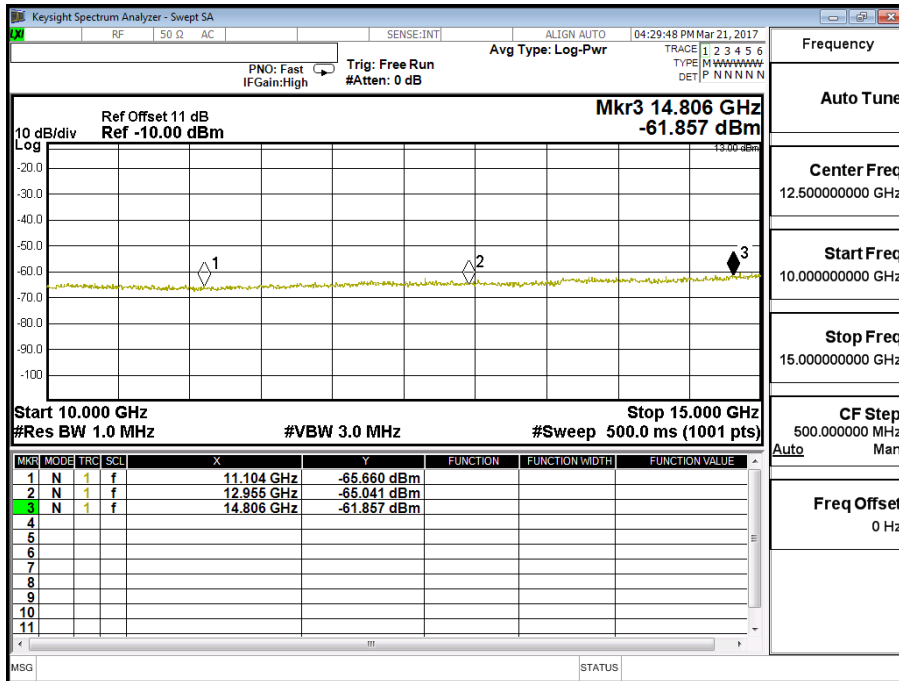




Frequency	Auto Tune
Center Freq	3.000000000 GHz
Start Freq	1.000000000 GHz
Stop Freq	5.000000000 GHz
CF Step	400.0000000 MHz Auto Man
Freq Offset	0 Hz



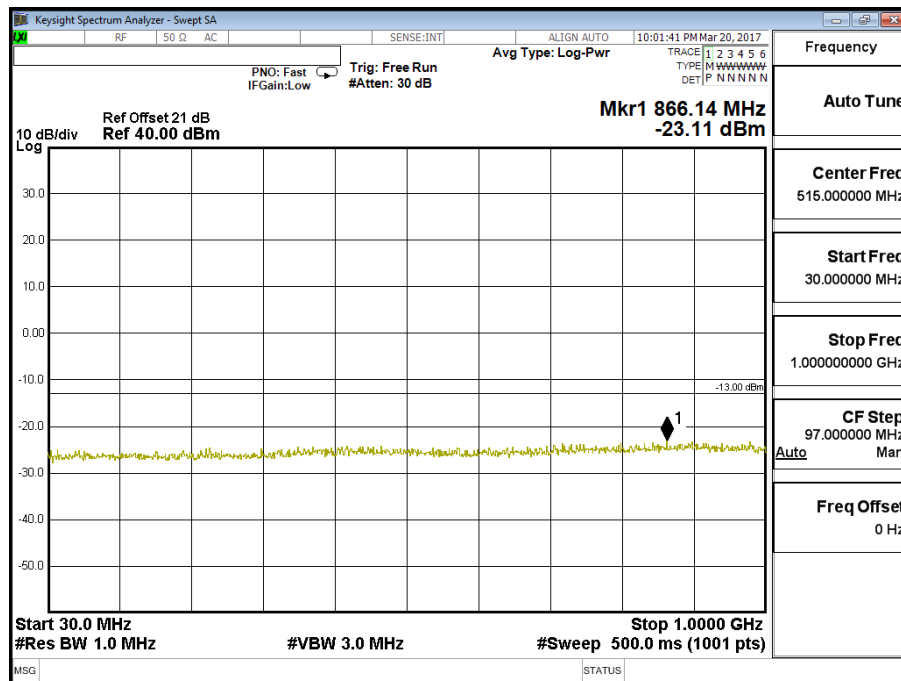
Frequency	Auto Tune
Center Freq	7.500000000 GHz
Start Freq	5.000000000 GHz
Stop Freq	10.000000000 GHz
CF Step	500.0000000 MHz Auto Man
Freq Offset	0 Hz

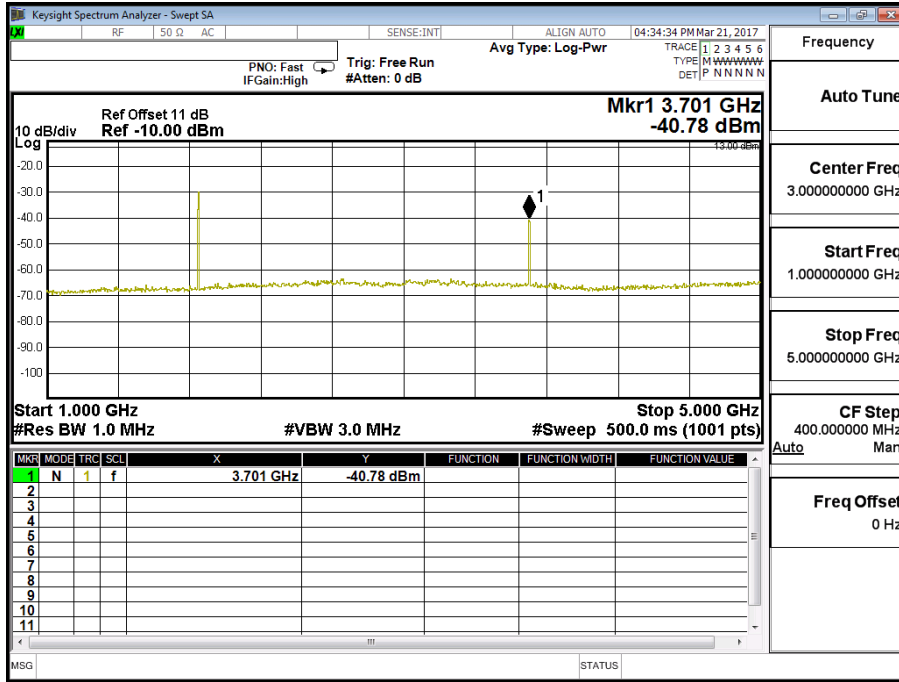


Product	Module		
Test Mode	Spurious Emission (Conducted)		
Date of Test	2017/03/22	Test Site	CTR
Test Condition	LTE-Band 2 (1.4M)	Test Range	30MHz~20GHz

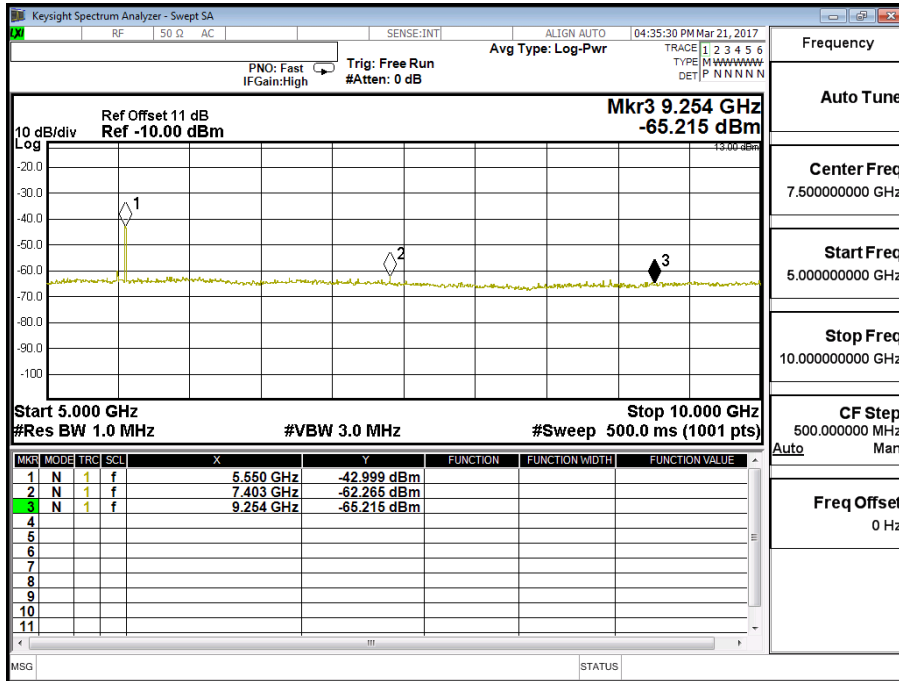
LTE-Band 2 (1.4M) 16QAM(3,2) CH18607

Frequency (MHz)	Reading Level (dBm)	Path Loss (dB)	Emission Level (dBm)	Limit (dBm)
3701	-40.780	1.1	-39.680	-13
5550	-42.999	1.23	-41.769	-13
7403	-62.265	1.59	-60.675	-13
9254	-65.215	1.89	-63.325	-13
11104	-66.058	2.07	-63.988	-13
12960	-62.737	2.26	-60.477	-13
14806	-60.688	2.64	-58.048	-13
16656	-60.240	3.5	-56.740	-13
18507	-60.582	3.7	-56.882	-13

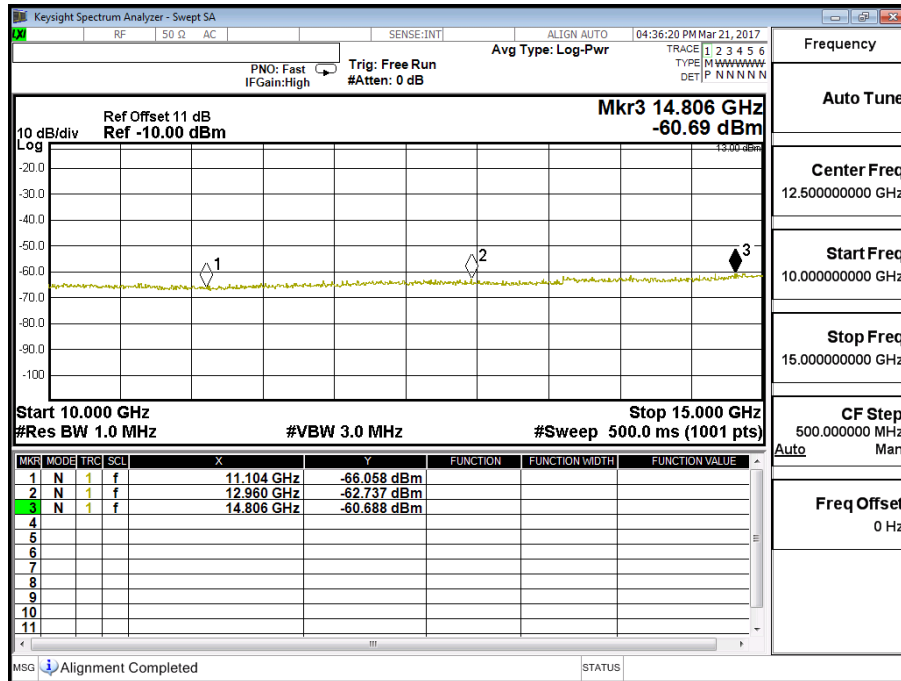




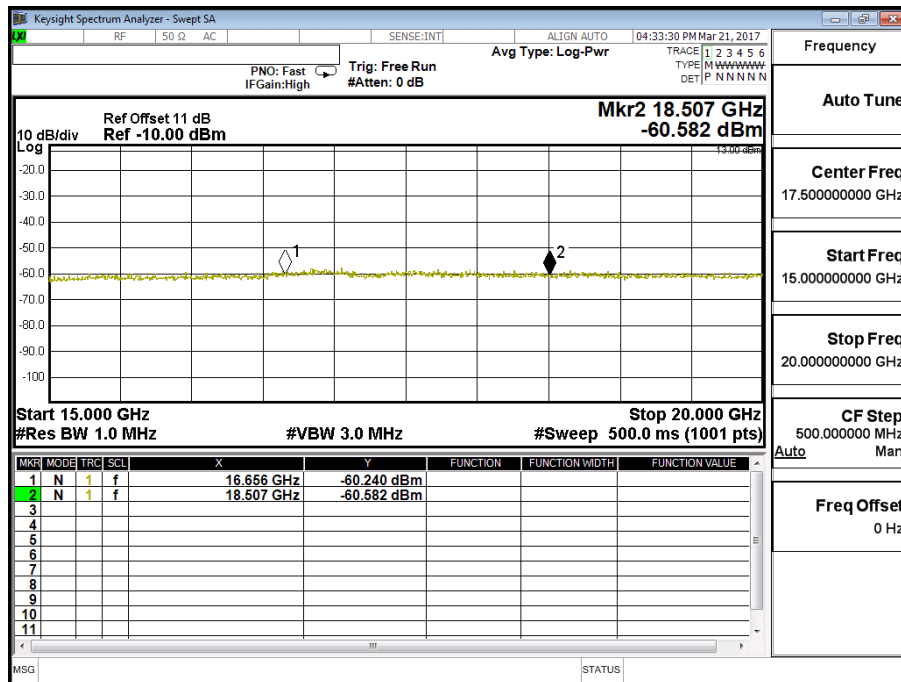
Frequency	Auto Tune
Center Freq	3.000000000 GHz
Start Freq	1.000000000 GHz
Stop Freq	5.000000000 GHz
CF Step	400.0000000 MHz Auto Man
Freq Offset	0 Hz



Frequency	Auto Tune
Center Freq	7.500000000 GHz
Start Freq	5.000000000 GHz
Stop Freq	10.000000000 GHz
CF Step	500.0000000 MHz Auto Man
Freq Offset	0 Hz



Frequency	Auto Tune
Center Freq	12.500000000 GHz
Start Freq	10.000000000 GHz
Stop Freq	15.000000000 GHz
CF Step	500.000000 MHz
	Auto Man
Freq Offset	0 Hz

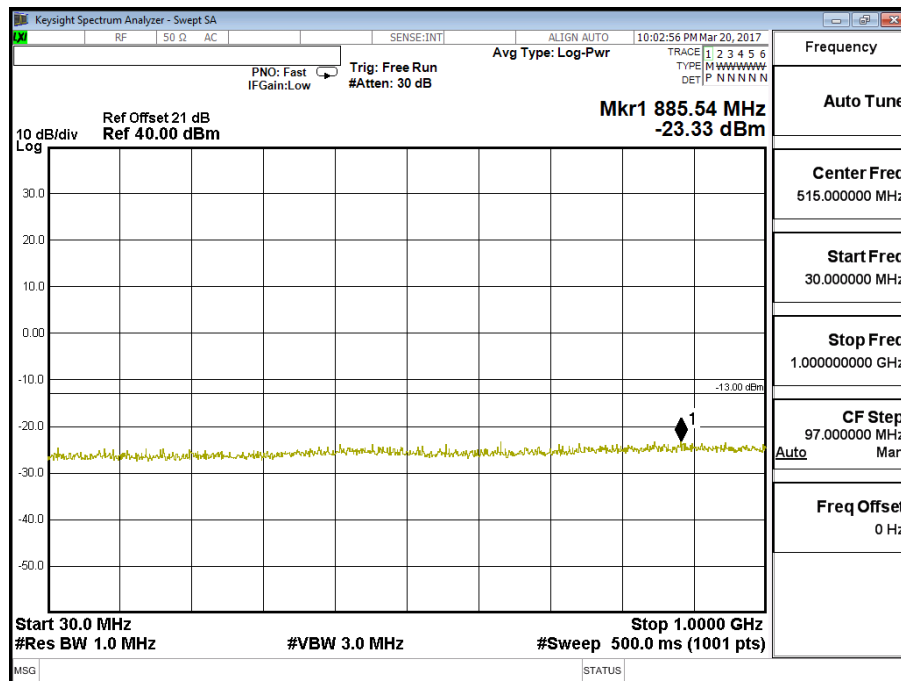


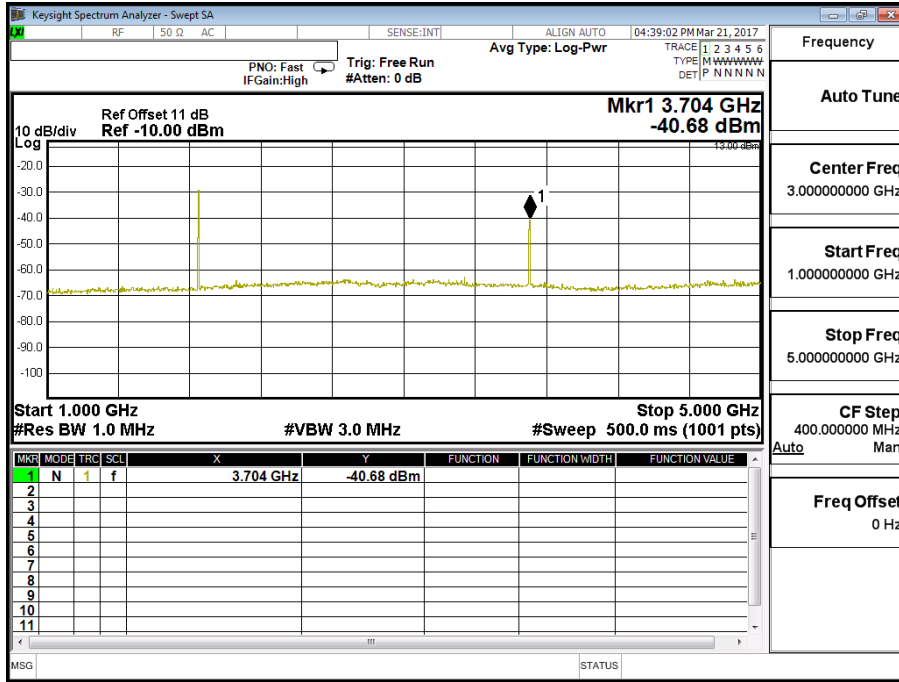
Frequency	Auto Tune
Center Freq	17.500000000 GHz
Start Freq	15.000000000 GHz
Stop Freq	20.000000000 GHz
CF Step	500.000000 MHz
	Auto Man
Freq Offset	0 Hz

Product	Module		
Test Mode	Spurious Emission (Conducted)		
Date of Test	2017/03/22	Test Site	CTR
Test Condition	LTE-Band 2 (3M)	Test Range	30MHz~20GHz

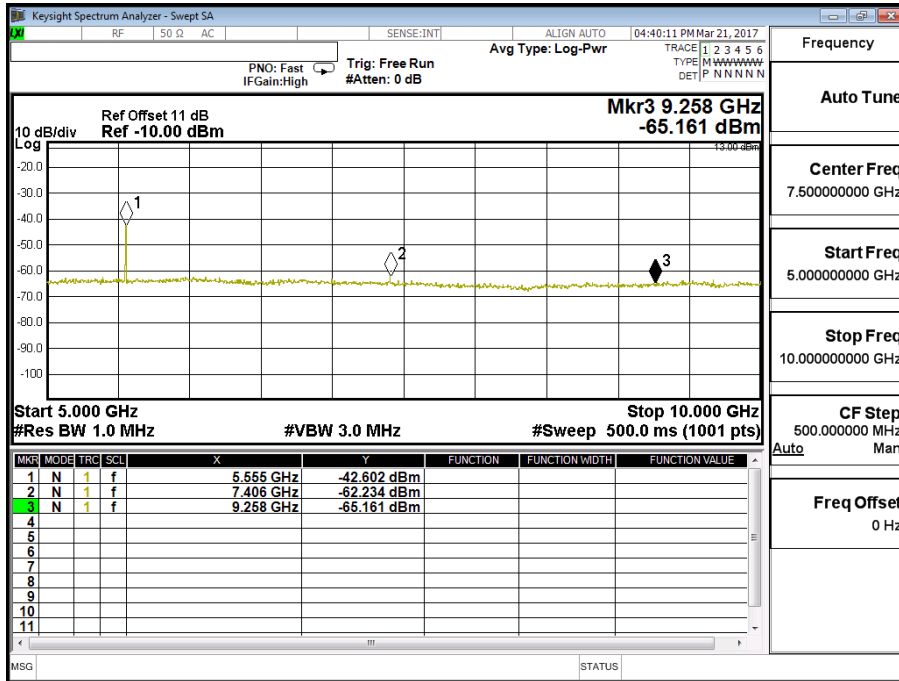
LTE-Band 2 (3M) QPSK(1,7) CH18615

Frequency (MHz)	Reading Level (dBm)	Path Loss (dB)	Emission Level (dBm)	Limit (dBm)
3704	-40.680	1.1	-39.580	-13
5555	-42.602	1.23	-41.372	-13
7406	-62.234	1.59	-60.644	-13
9258	-65.161	1.89	-63.271	-13
11109	-66.510	2.07	-64.440	-13
12961	-65.064	2.26	-62.804	-13
14812	-62.129	2.64	-59.489	-13
16664	-57.871	3.5	-54.371	-13
18510	-57.670	3.7	-53.970	-13

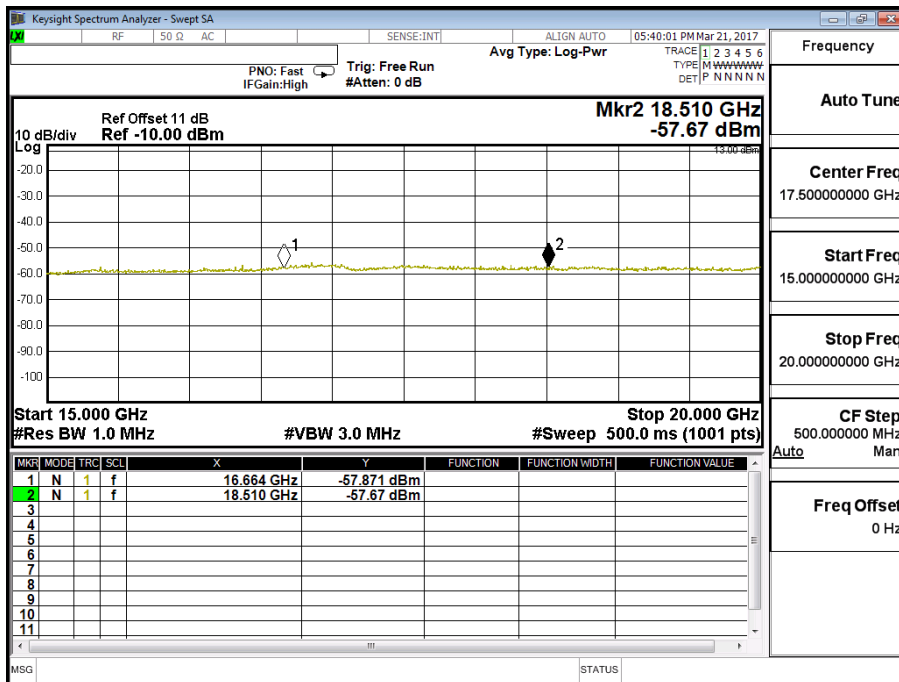
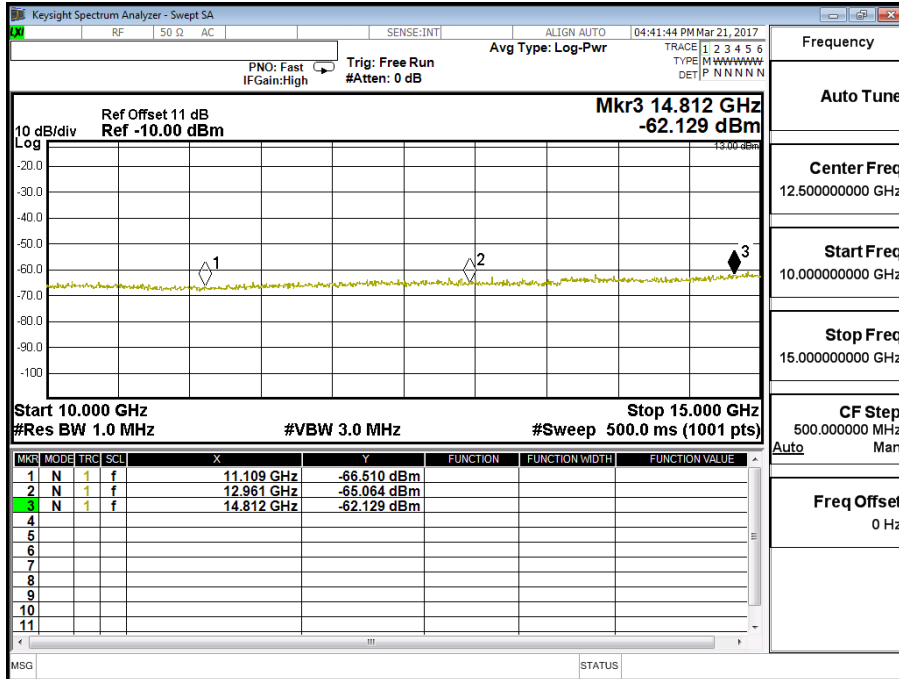




Frequency	Auto Tune
Center Freq	3.000000000 GHz
Start Freq	1.000000000 GHz
Stop Freq	5.000000000 GHz
CF Step	400.0000000 MHz Auto Man
Freq Offset	0 Hz



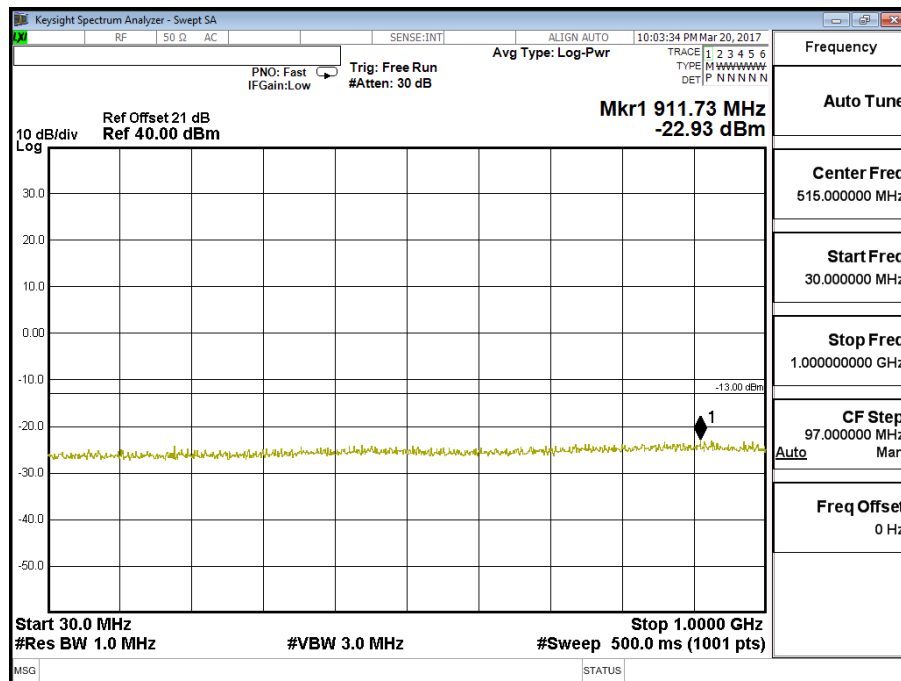
Frequency	Auto Tune
Center Freq	7.500000000 GHz
Start Freq	5.000000000 GHz
Stop Freq	10.000000000 GHz
CF Step	500.0000000 MHz Auto Man
Freq Offset	0 Hz

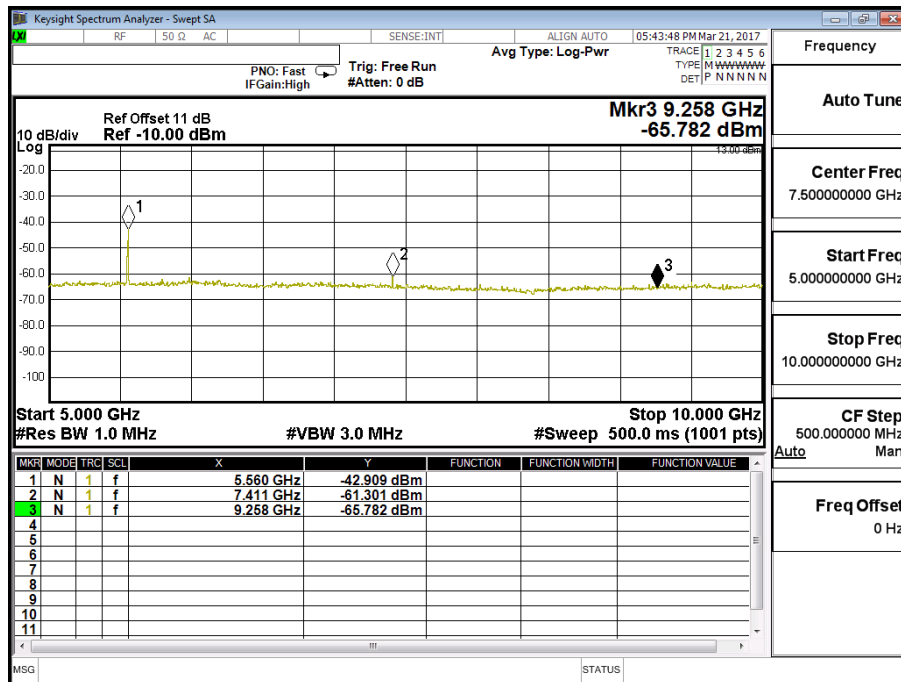
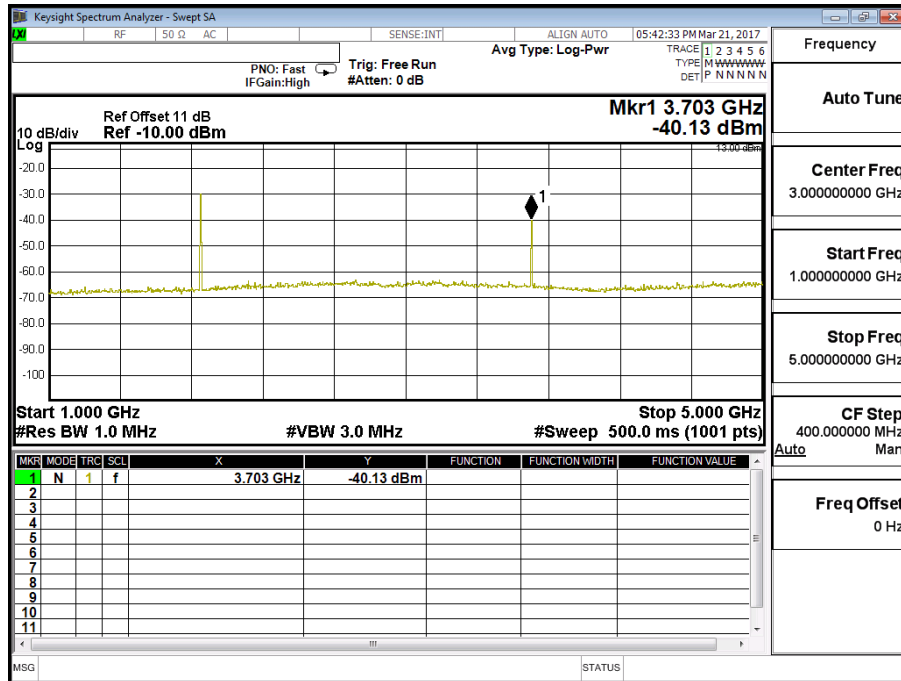


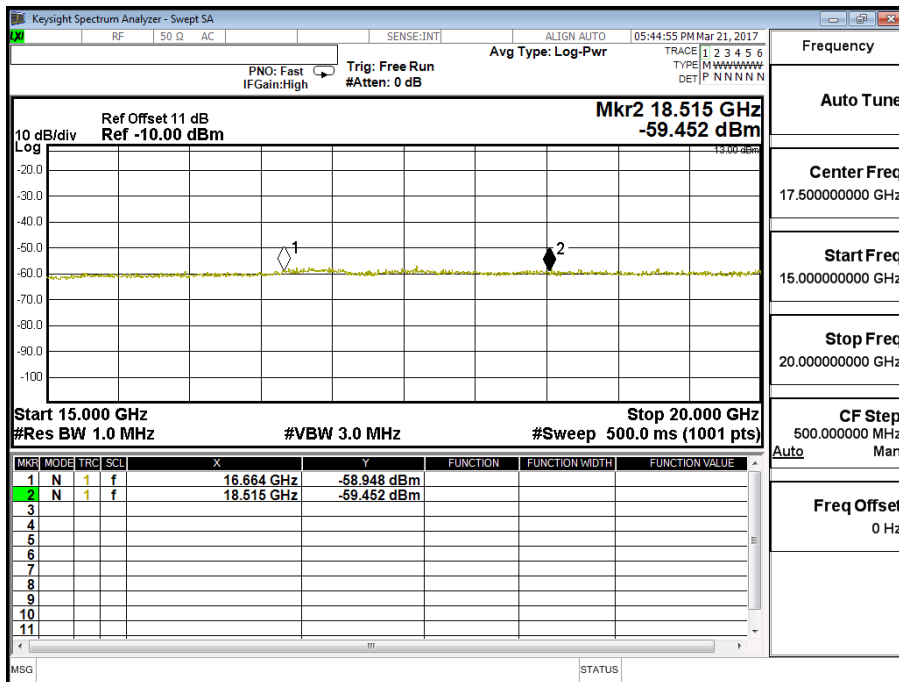
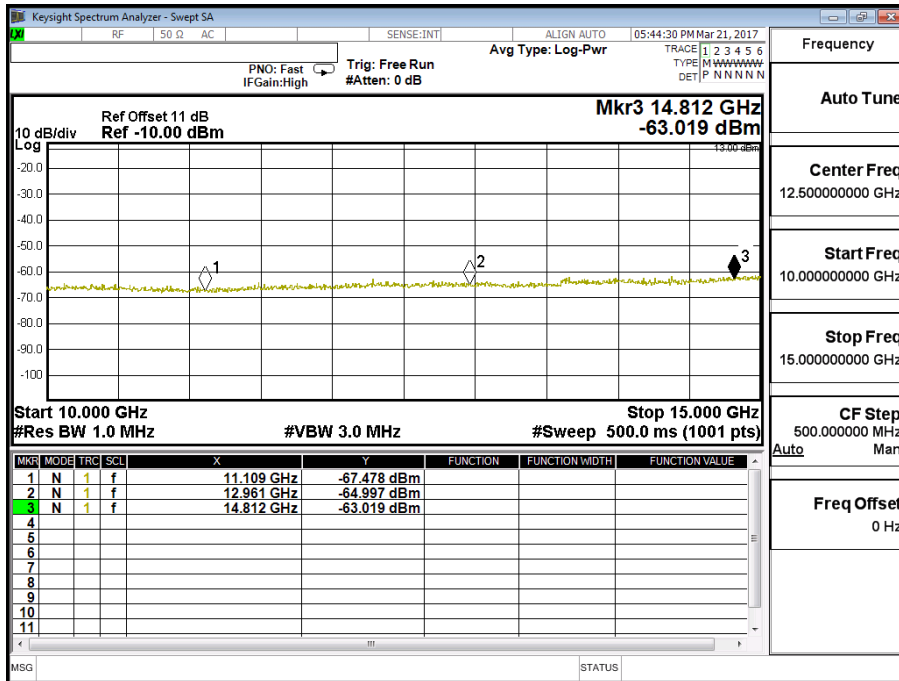
Product	Module		
Test Mode	Spurious Emission (Conducted)		
Date of Test	2017/03/22	Test Site	CTR
Test Condition	LTE-Band 2 (3M)	Test Range	30MHz~20GHz

LTE-Band 2 (3M) 16QAM(1,14) CH18615

Frequency (MHz)	Reading Level (dBm)	Path Loss (dB)	Emission Level (dBm)	Limit (dBm)
3703	-40.130	1.1	-39.030	-13
5560	-42.909	1.23	-41.679	-13
7411	-61.301	1.59	-59.711	-13
9258	-65.782	1.89	-63.892	-13
11109	-67.478	2.07	-65.408	-13
12961	-64.997	2.26	-62.737	-13
14812	-63.019	2.64	-60.379	-13
16664	-58.948	3.5	-55.448	-13
18515	-59.452	3.7	-55.752	-13



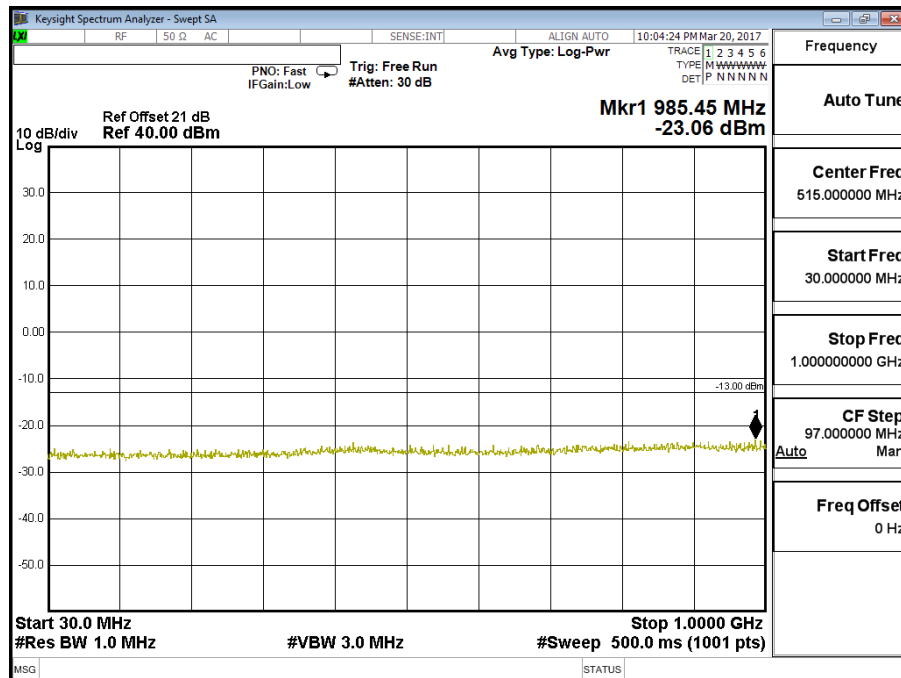


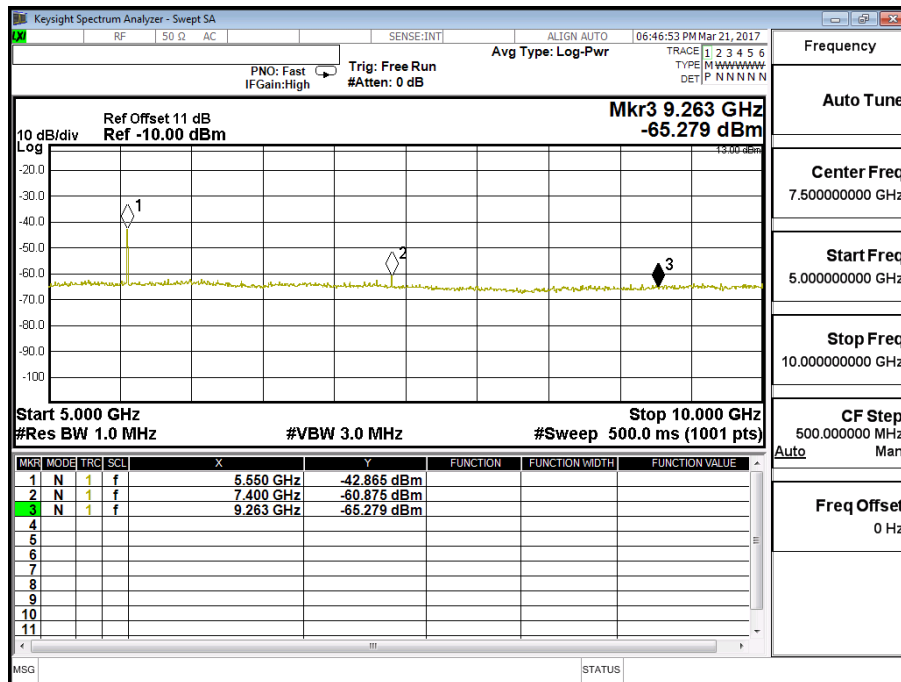
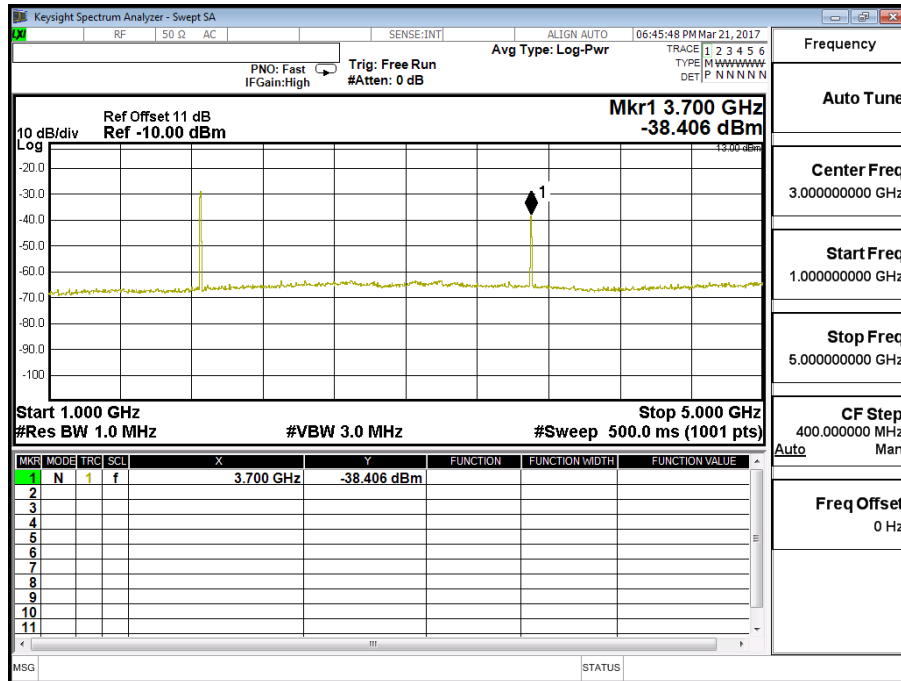


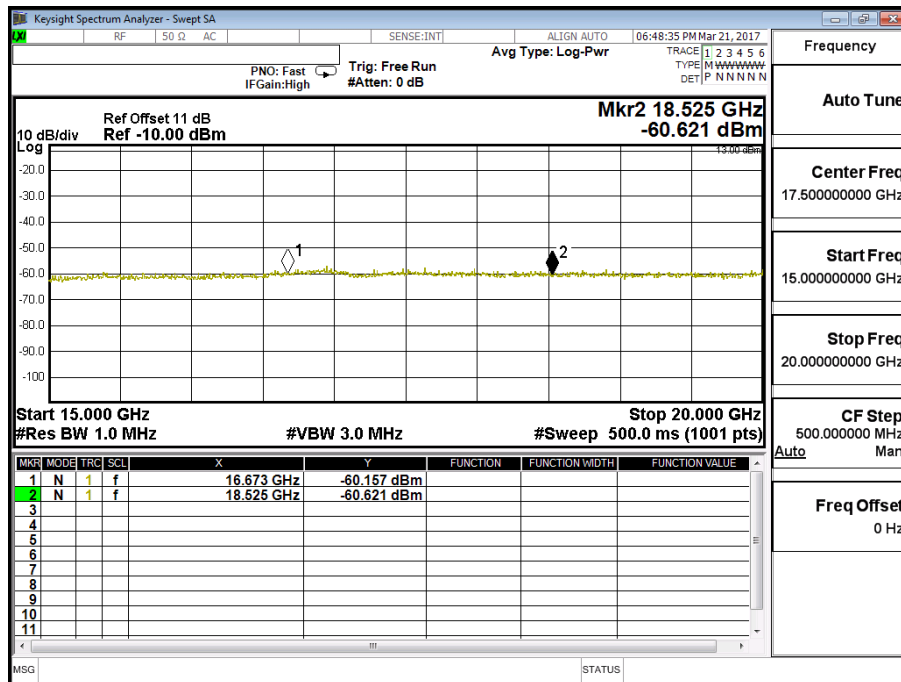
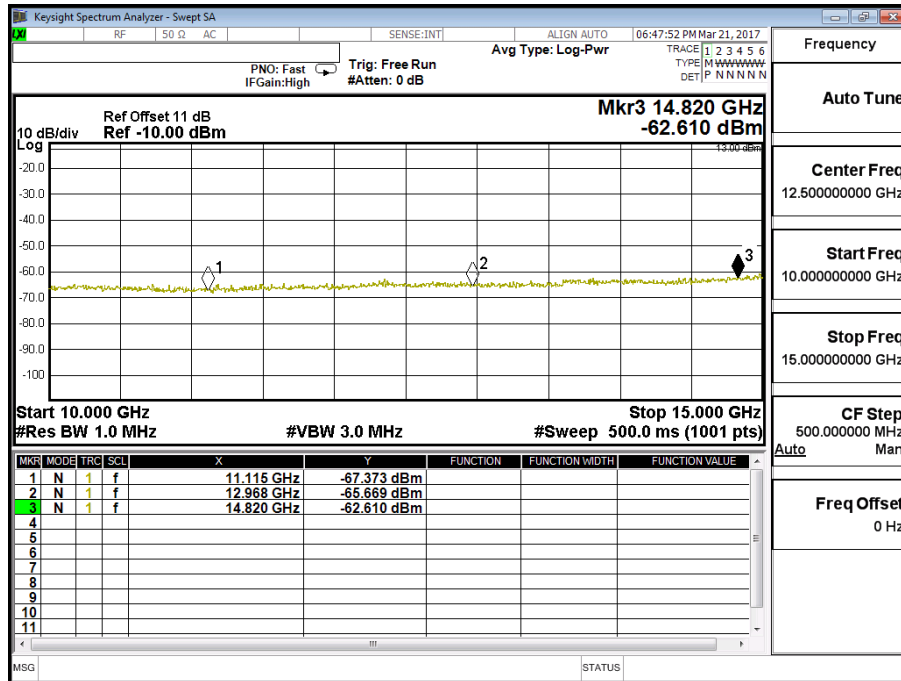
Product	Module		
Test Mode	Spurious Emission (Conducted)		
Date of Test	2017/03/22	Test Site	CTR
Test Condition	LTE-Band 2 (5M)	Test Range	30MHz~20GHz

LTE-Band 2 (5M) QPSK(1,0) CH18625

Frequency (MHz)	Reading Level (dBm)	Path Loss (dB)	Emission Level (dBm)	Limit (dBm)
3700	-38.406	1.1	-37.306	-13
5550	-42.865	1.23	-41.635	-13
7400	-60.875	1.59	-59.285	-13
9263	-65.279	1.89	-63.389	-13
11115	-67.373	2.07	-65.303	-13
12968	-65.669	2.26	-63.409	-13
14820	-62.610	2.64	-59.970	-13
16673	-60.157	3.5	-56.657	-13
18525	-60.621	3.7	-56.921	-13



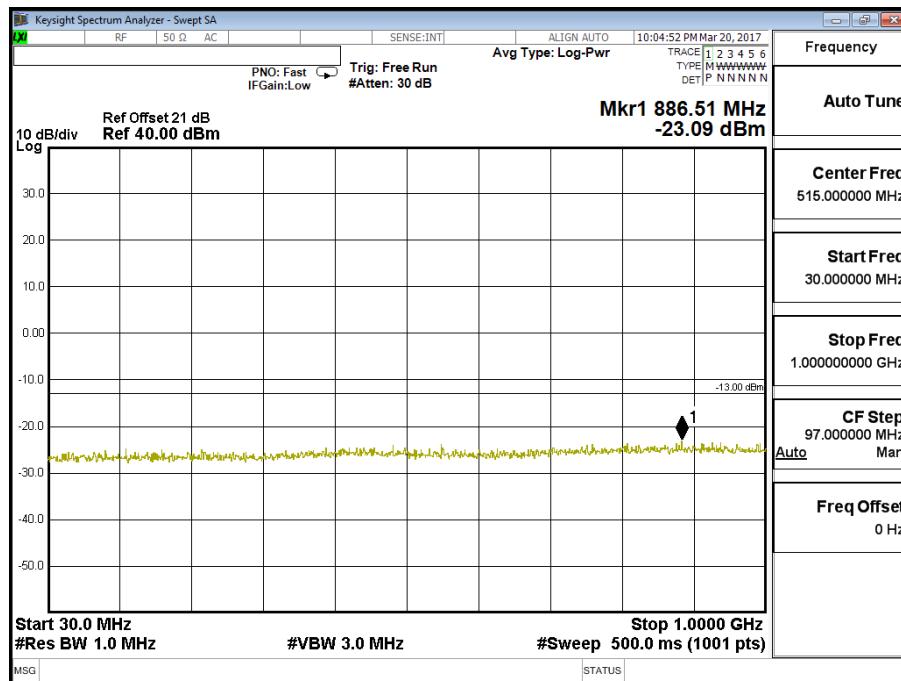


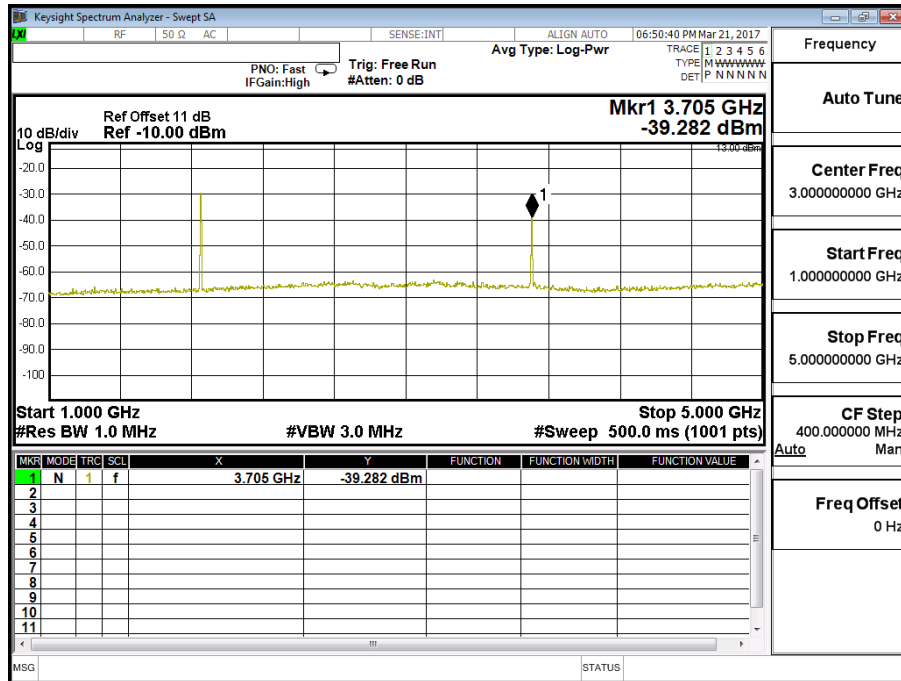


Product	Module		
Test Mode	Spurious Emission (Conducted)		
Date of Test	2017/03/22	Test Site	CTR
Test Condition	LTE-Band 2 (5M)	Test Range	30MHz~20GHz

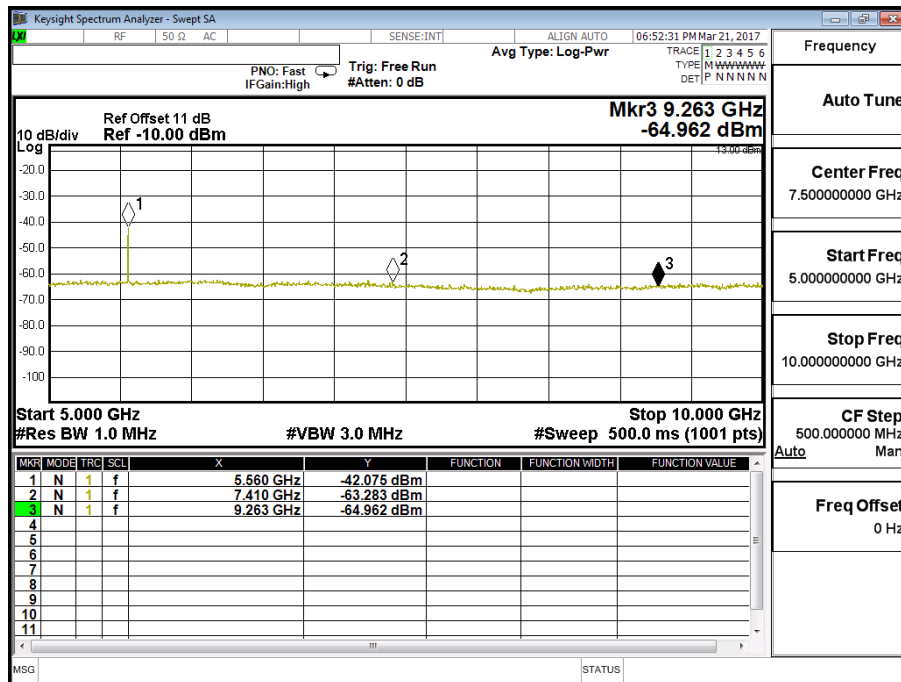
LTE- Band 2 (5M) 16QAM(1,12) CH18625

Frequency (MHz)	Reading Level (dBm)	Path Loss (dB)	Emission Level (dBm)	Limit (dBm)
3705	-39.282	1.1	-38.182	-13
5560	-42.075	1.23	-40.845	-13
7410	-63.283	1.59	-61.693	-13
9263	-64.962	1.89	-63.072	-13
11115	-65.920	2.07	-63.850	-13
12968	-64.618	2.26	-62.358	-13
14820	-60.825	2.64	-58.185	-13
16673	-59.749	3.5	-56.249	-13
18525	-60.126	3.7	-56.426	-13

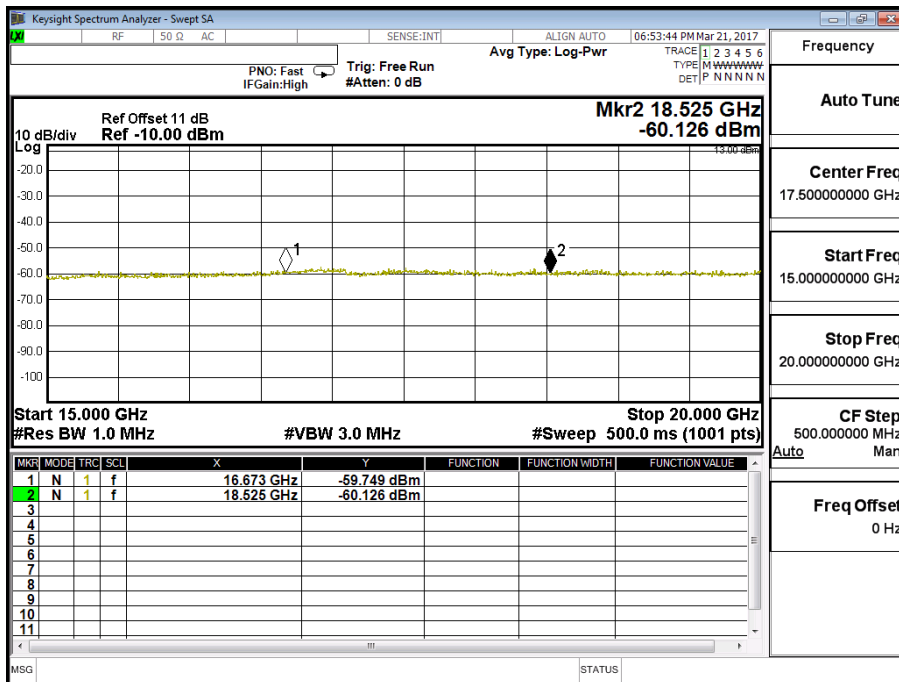
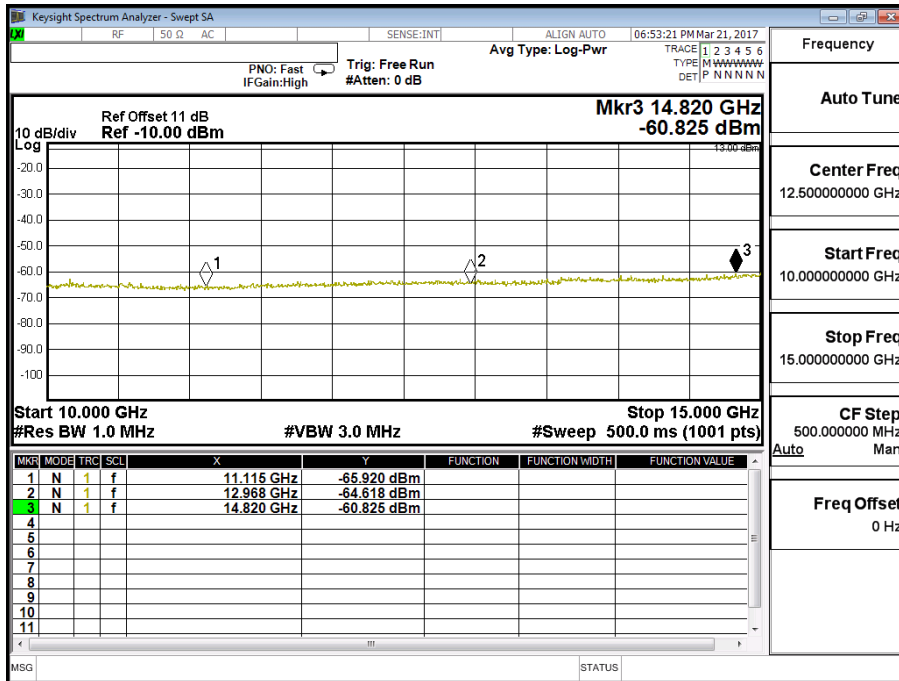




Frequency	Auto Tune
Center Freq	3.000000000 GHz
Start Freq	1.000000000 GHz
Stop Freq	5.000000000 GHz
CF Step	400.0000000 MHz Auto Man
Freq Offset	0 Hz



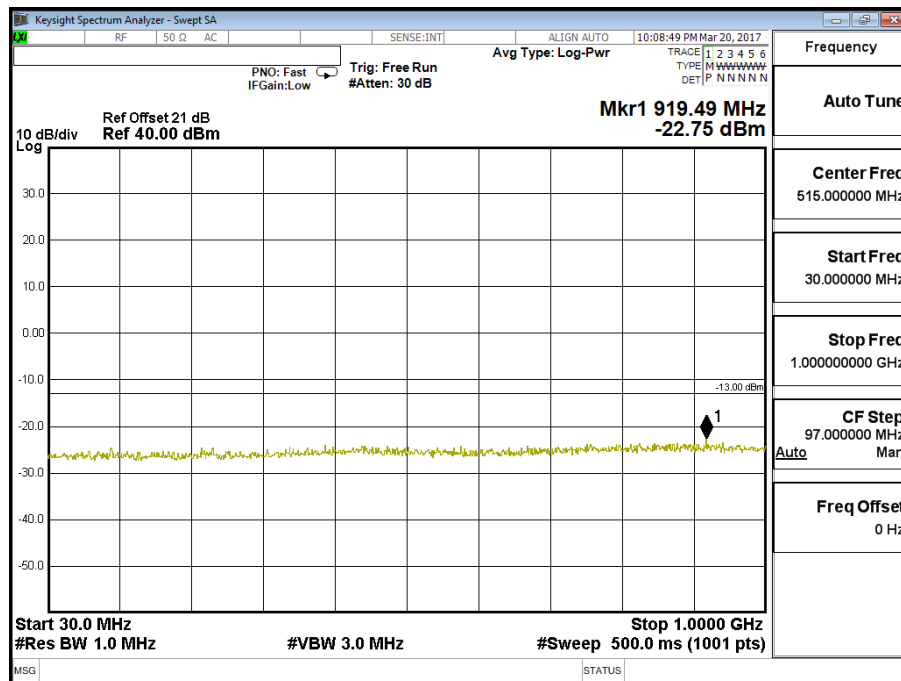
Frequency	Auto Tune
Center Freq	7.500000000 GHz
Start Freq	5.000000000 GHz
Stop Freq	10.000000000 GHz
CF Step	500.0000000 MHz Auto Man
Freq Offset	0 Hz

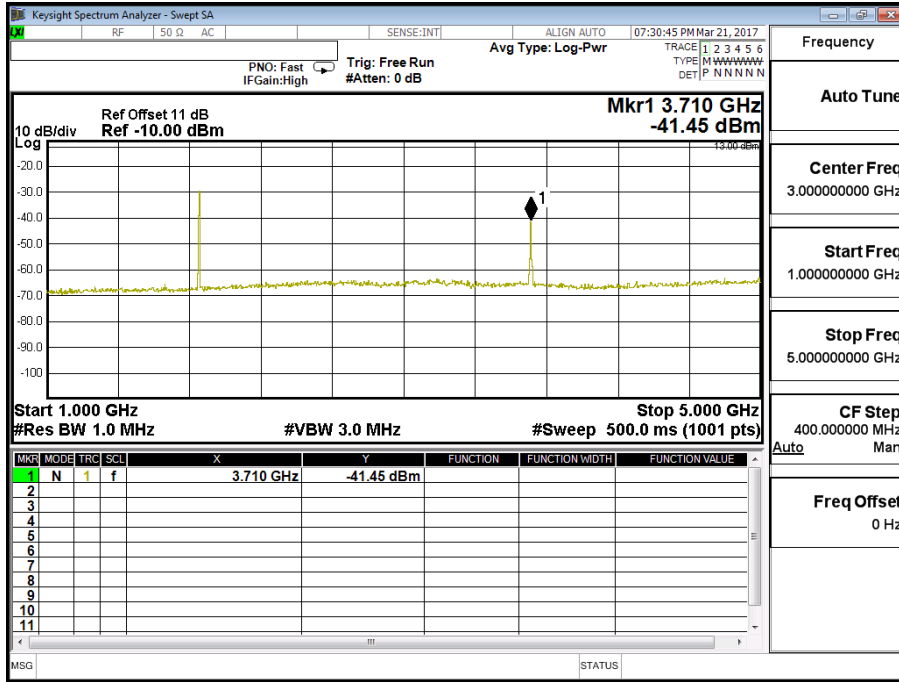


Product	Module		
Test Mode	Spurious Emission (Conducted)		
Date of Test	2017/03/22	Test Site	CTR
Test Condition	LTE-Band 2 (10M)	Test Range	30MHz~20GHz

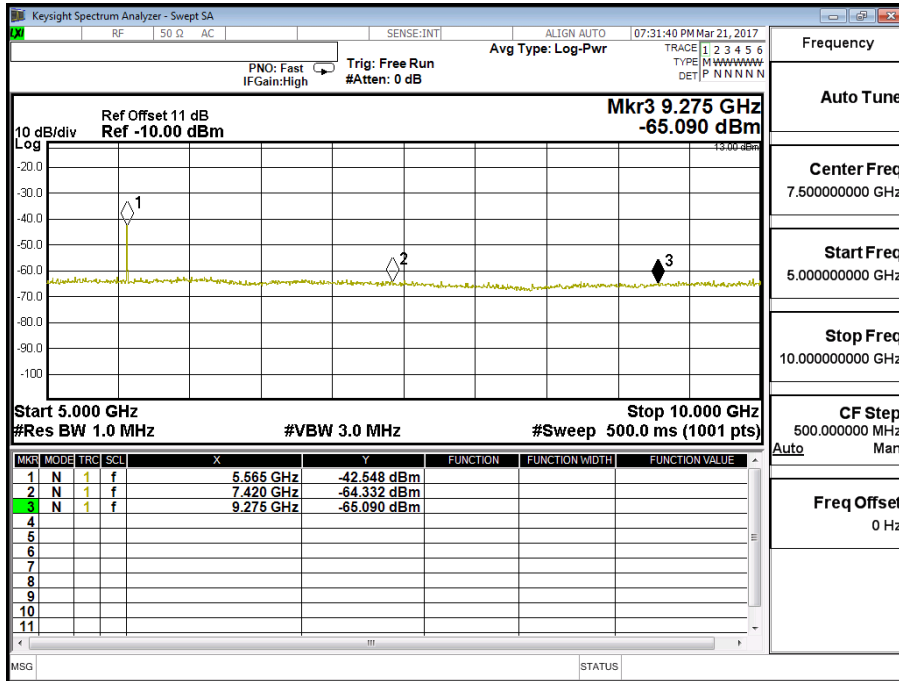
LTE- Band 2 (10M) QPSK(1,24) CH18650

Frequency (MHz)	Reading Level (dBm)	Path Loss (dB)	Emission Level (dBm)	Limit (dBm)
3710	-41.450	1.1	-40.350	-13
5565	-42.548	1.23	-41.318	-13
7420	-64.332	1.59	-62.742	-13
9275	-65.090	1.89	-63.200	-13
11130	-65.920	2.07	-63.850	-13
12985	-64.322	2.26	-62.062	-13
14840	-62.269	2.64	-59.629	-13
16700	-57.030	3.5	-53.530	-13
18555	-58.270	3.7	-54.570	-13

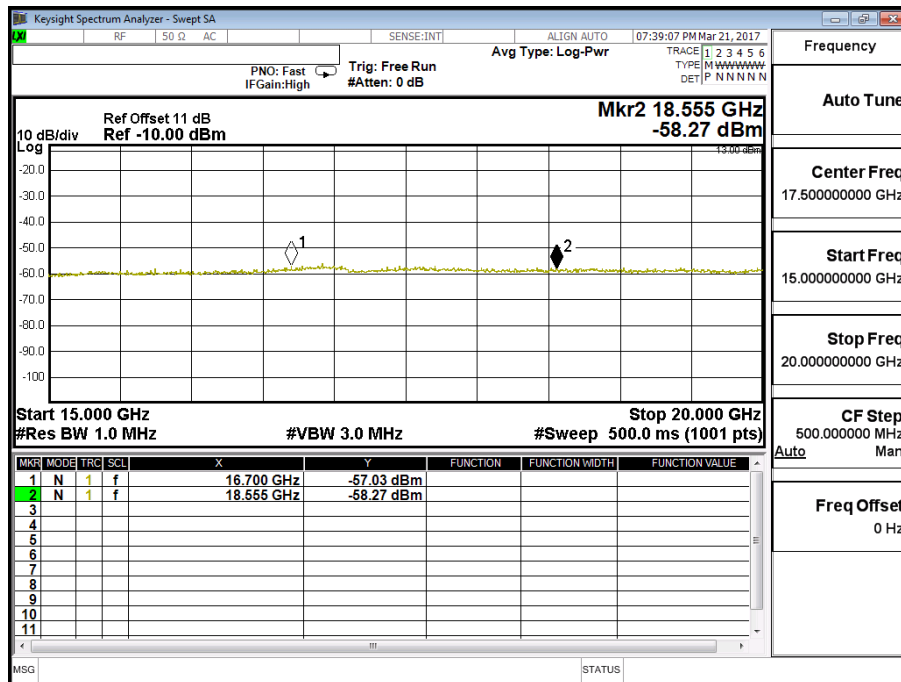
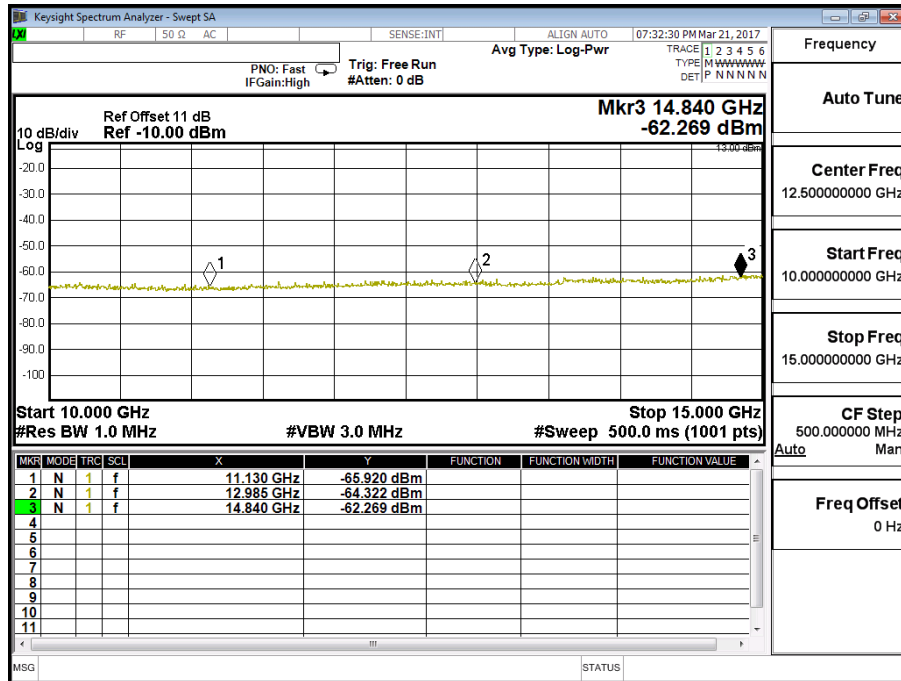




Frequency	Auto Tune
Center Freq	3.000000000 GHz
Start Freq	1.000000000 GHz
Stop Freq	5.000000000 GHz
CF Step	400.0000000 MHz Auto Man
Freq Offset	0 Hz



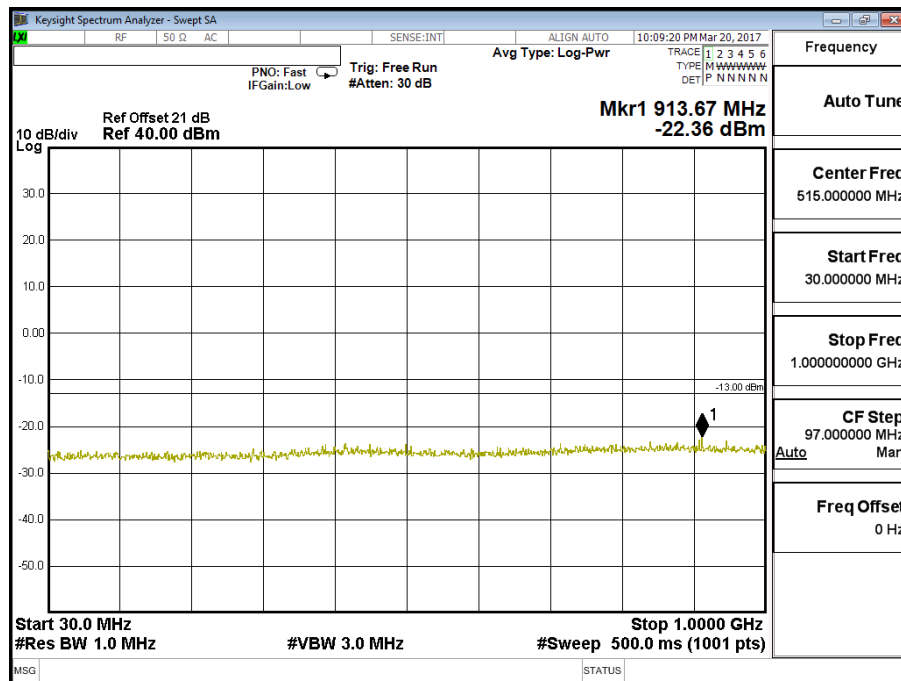
Frequency	Auto Tune
Center Freq	7.500000000 GHz
Start Freq	5.000000000 GHz
Stop Freq	10.000000000 GHz
CF Step	500.0000000 MHz Auto Man
Freq Offset	0 Hz

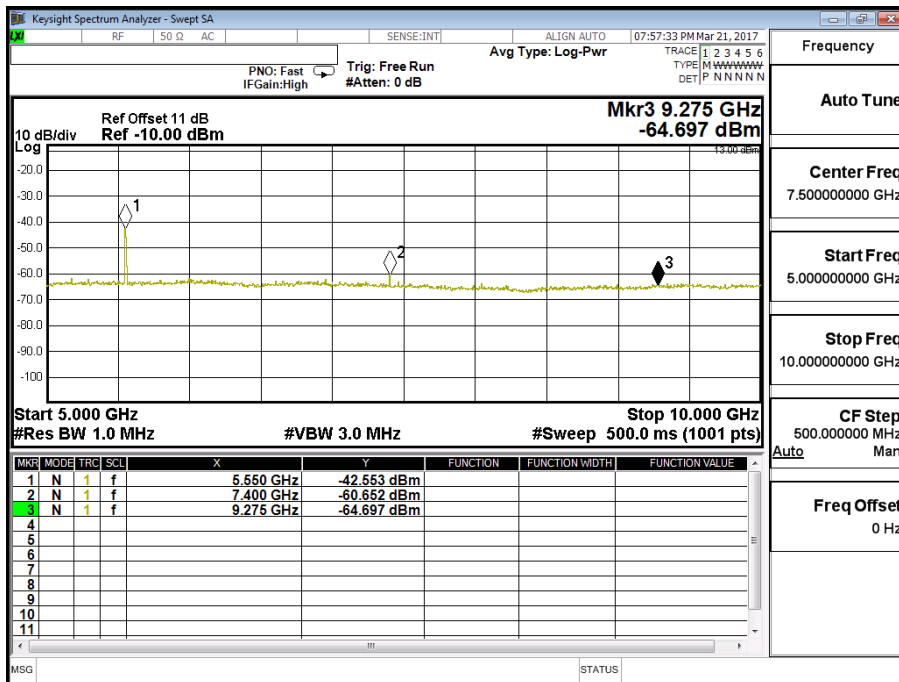
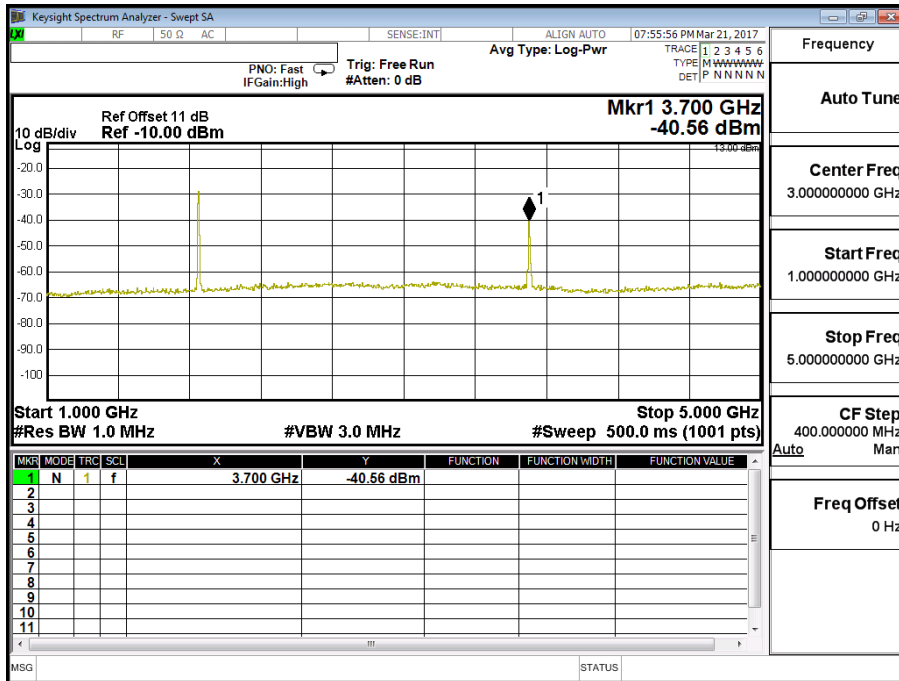


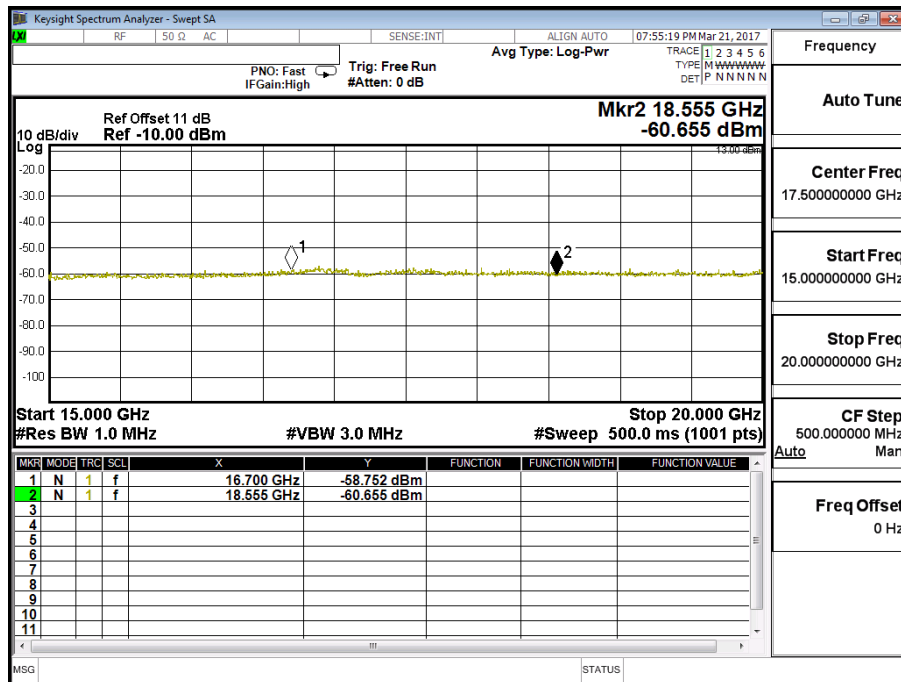
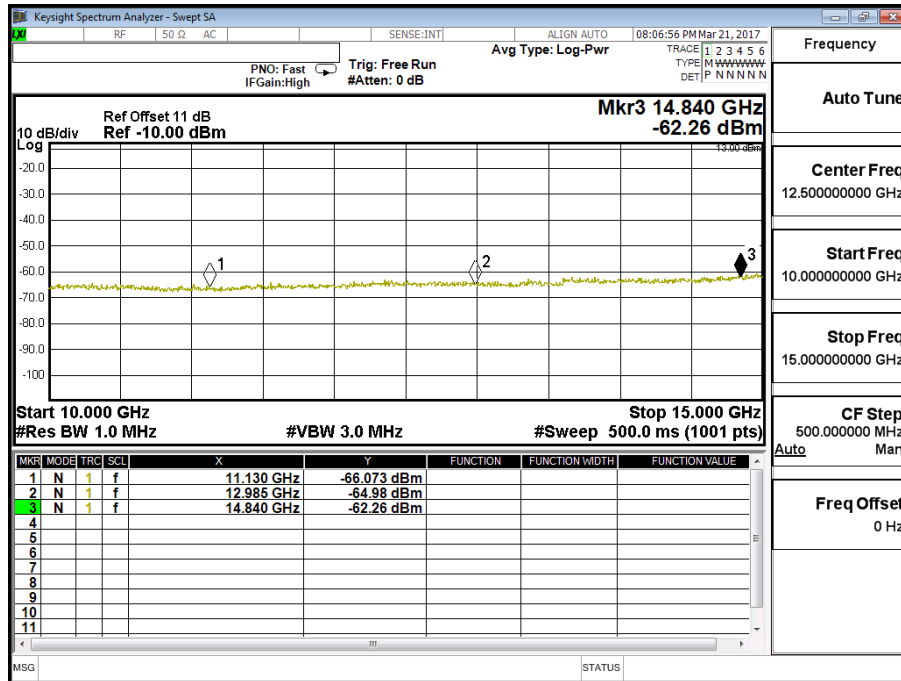
Product	Module		
Test Mode	Spurious Emission (Conducted)		
Date of Test	2017/03/22	Test Site	CTR
Test Condition	LTE-Band 2 (10M)	Test Range	30MHz~20GHz

LTE- Band 2 10M 16QAM(1,0) CH18650

Frequency (MHz)	Reading Level (dBm)	Path Loss (dB)	Emission Level (dBm)	Limit (dBm)
3700	-40.560	1.1	-39.460	-13
5550	-42.553	1.23	-41.323	-13
7400	-60.652	1.59	-59.062	-13
9275	-64.697	1.89	-62.807	-13
11130	-66.073	2.07	-64.003	-13
12985	-64.980	2.26	-62.720	-13
14840	-62.260	2.64	-59.620	-13
16700	-58.752	3.5	-55.252	-13
18555	-60.655	3.7	-56.955	-13



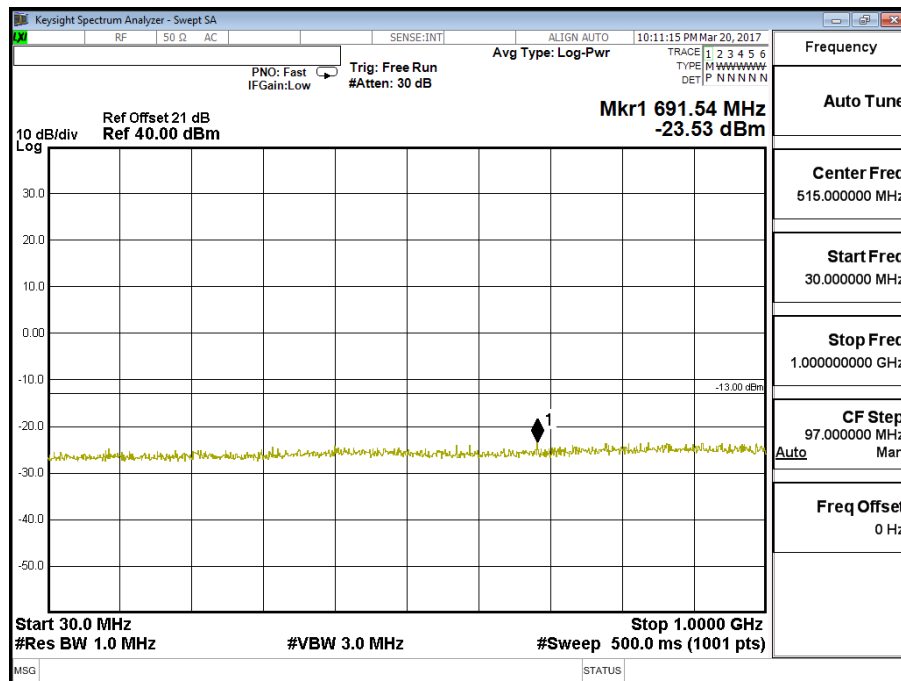


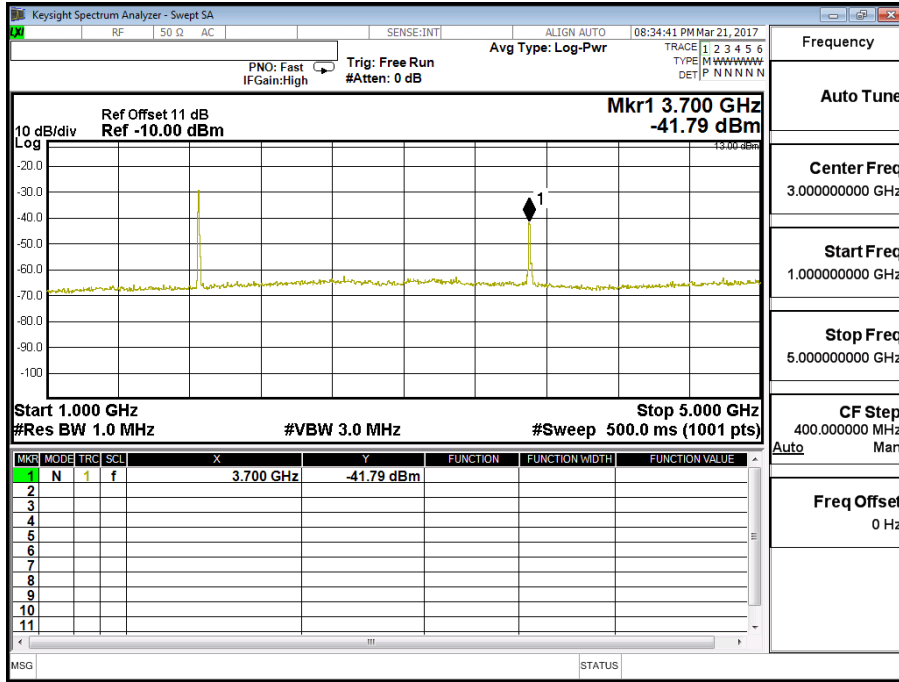


Product	Module		
Test Mode	Spurious Emission (Conducted)		
Date of Test	2017/03/22	Test Site	CTR
Test Condition	LTE-Band 2 15M	Test Range	30MHz~20GHz

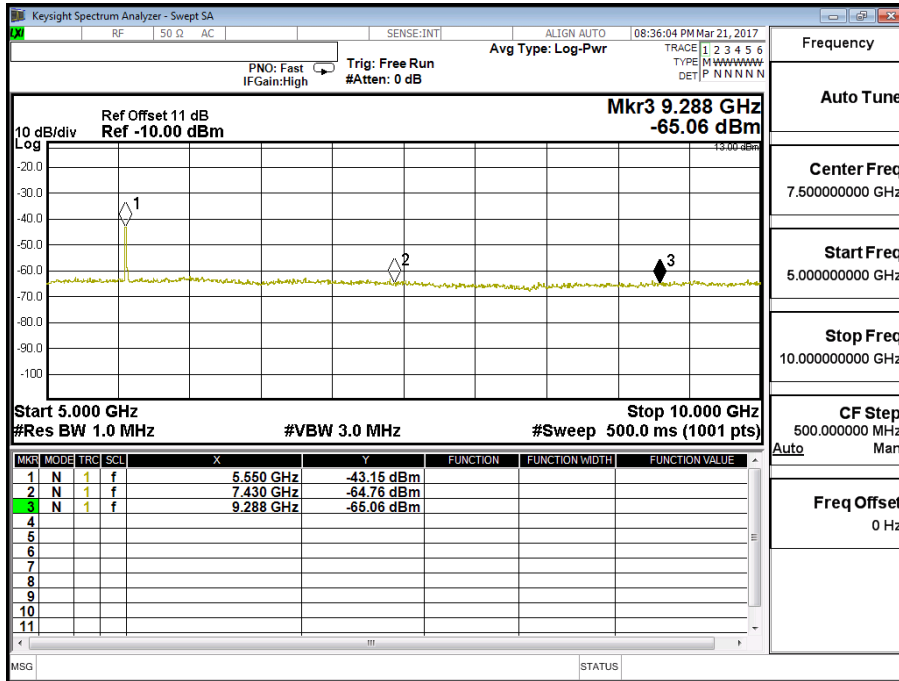
LTE-Band 2 15M QPSK(1,0) CH18675

Frequency (MHz)	Reading Level (dBm)	Path Loss (dB)	Emission Level (dBm)	Limit (dBm)
3700	-41.790	1.1	-40.690	-13
5550	-43.150	1.23	-41.920	-13
7430	-64.760	1.59	-63.170	-13
9288	-65.060	1.89	-63.170	-13
11145	-67.007	2.07	-64.937	-13
13003	-64.750	2.26	-62.490	-13
14860	-60.576	2.64	-57.936	-13
16718	-59.010	3.5	-55.510	-13
18575	-59.546	3.7	-55.846	-13

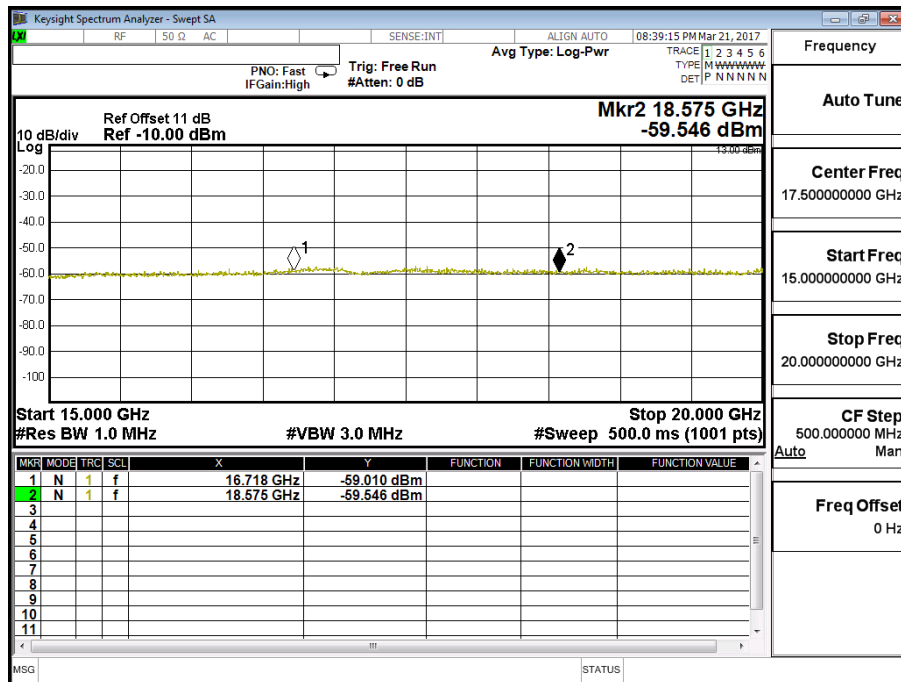
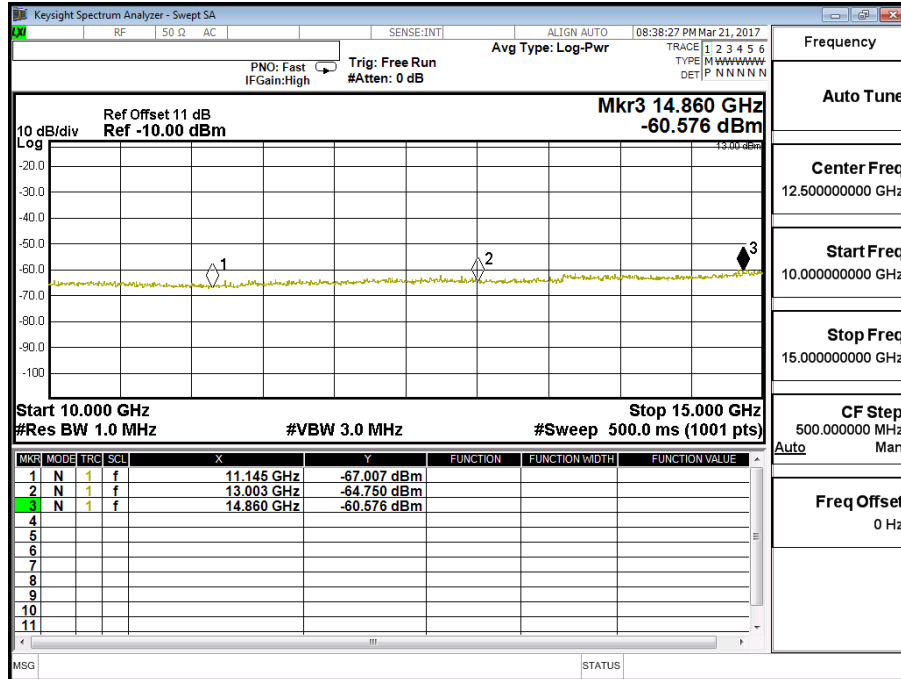




Frequency	Auto Tune
Center Freq	3.000000000 GHz
Start Freq	1.000000000 GHz
Stop Freq	5.000000000 GHz
CF Step	400.0000000 MHz Auto Man
Freq Offset	0 Hz



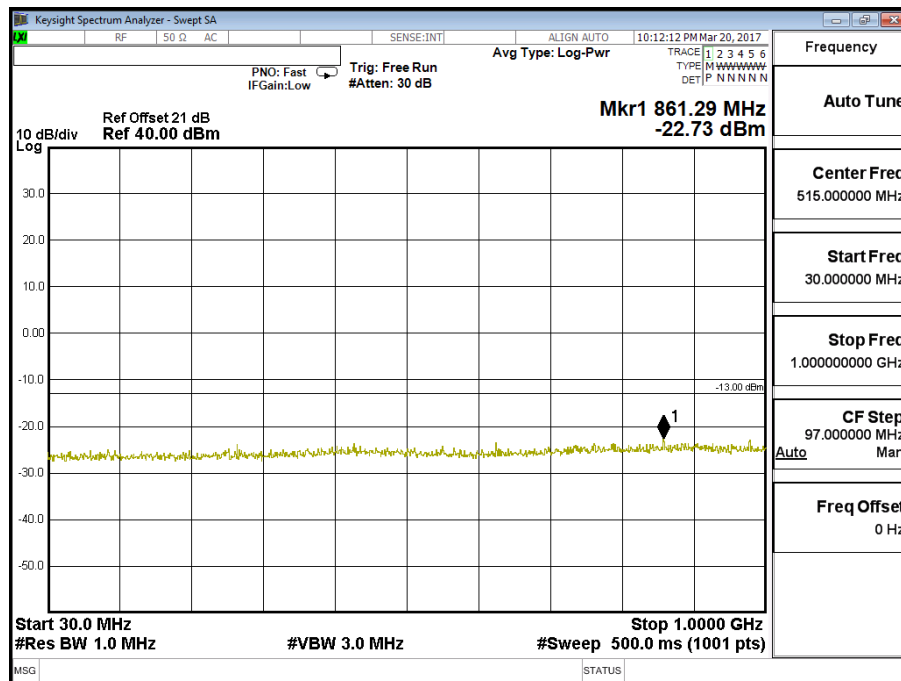
Frequency	Auto Tune
Center Freq	7.500000000 GHz
Start Freq	5.000000000 GHz
Stop Freq	10.000000000 GHz
CF Step	500.0000000 MHz Auto Man
Freq Offset	0 Hz

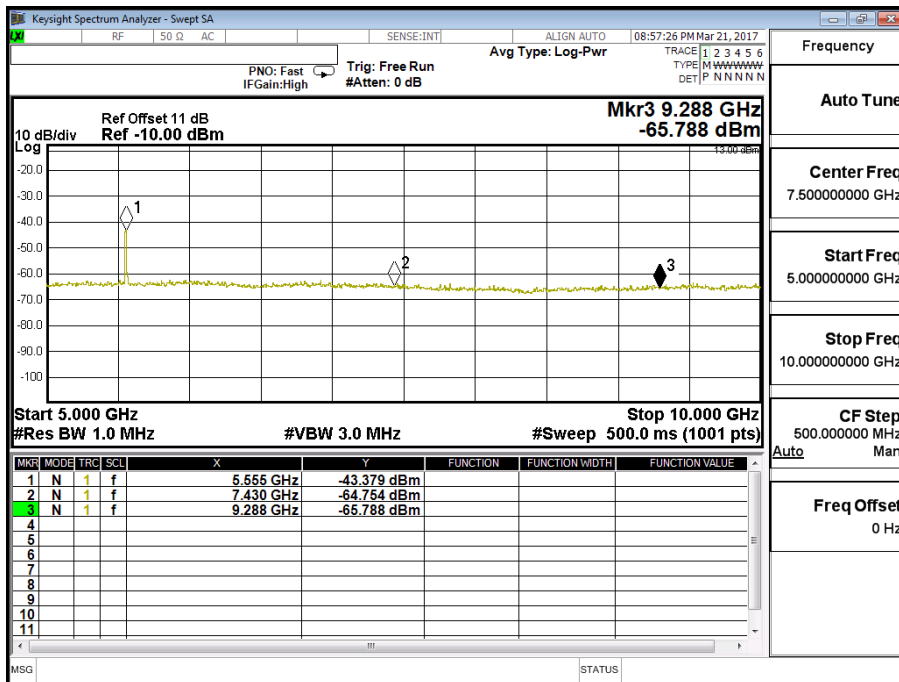
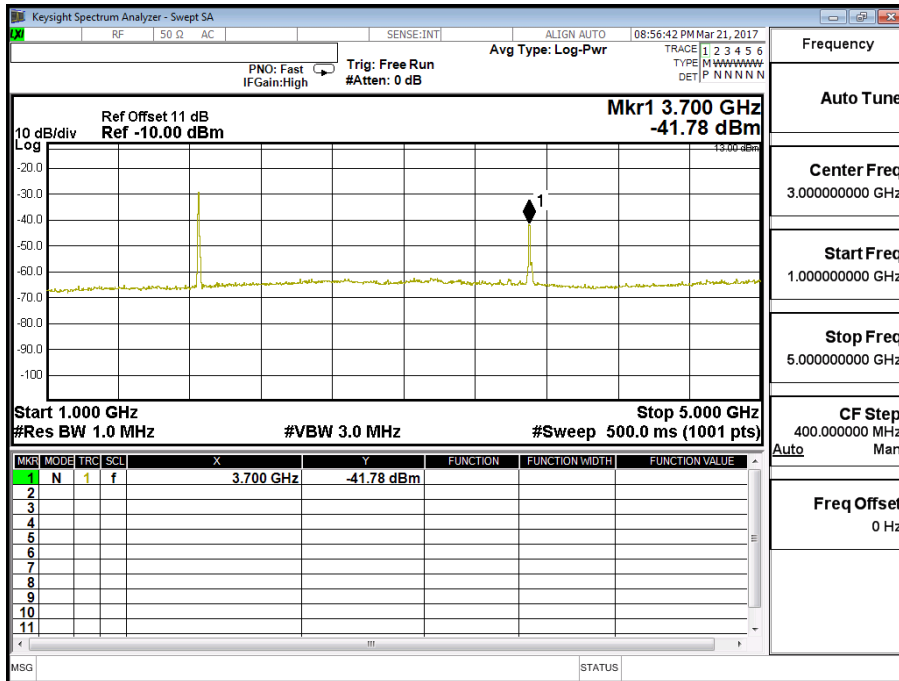


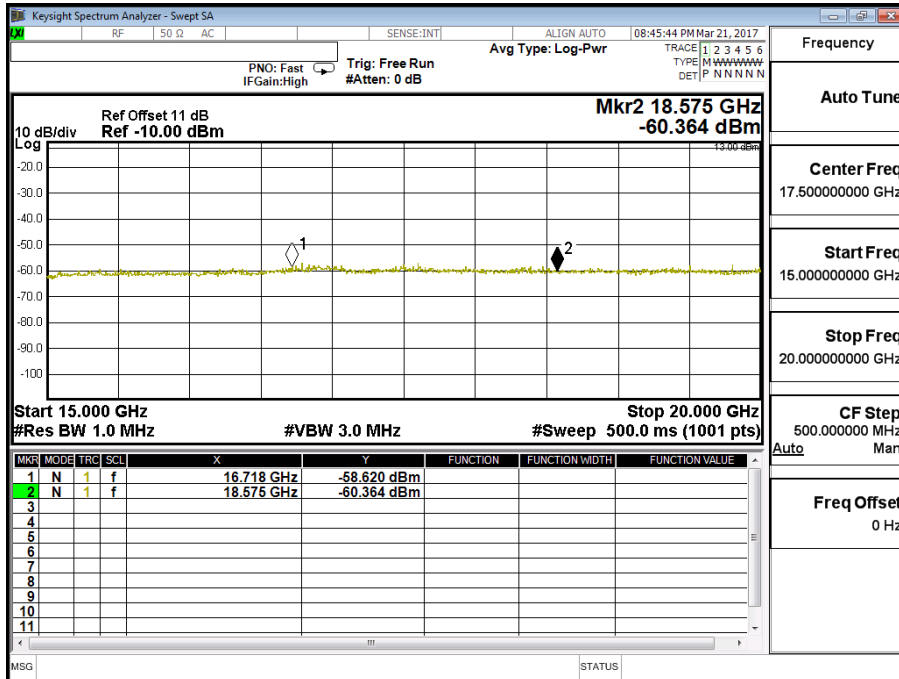
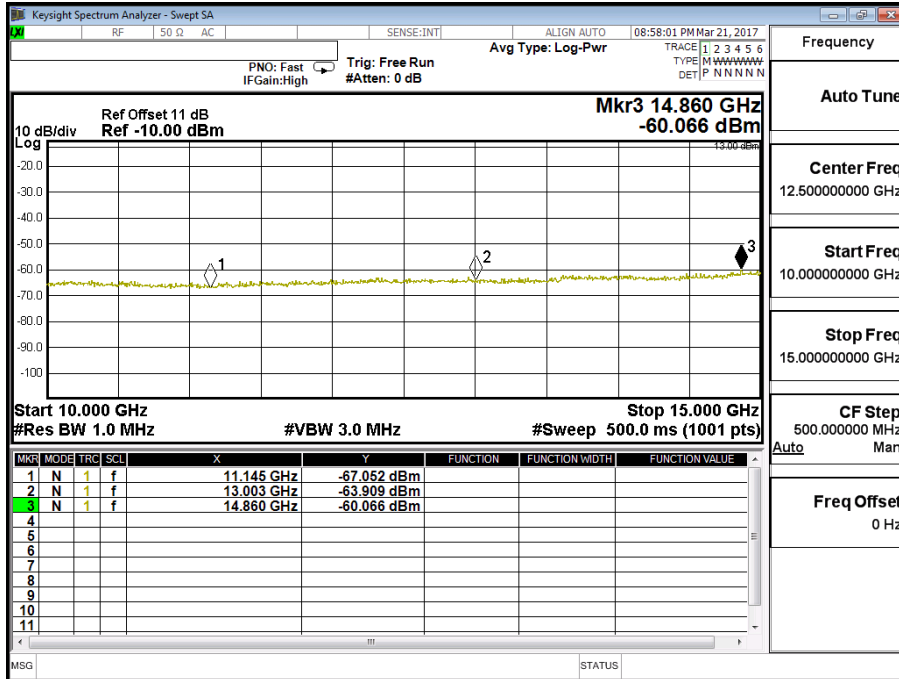
Product	Module		
Test Mode	Spurious Emission (Conducted)		
Date of Test	2017/03/22	Test Site	CTR
Test Condition	LTE-Band 2 (15M)	Test Range	30MHz~20GHz

LTE-Band 2 (15M) 16QAM(1,0) CH18675

Frequency (MHz)	Reading Level (dBm)	Path Loss (dB)	Emission Level (dBm)	Limit (dBm)
3700	-41.780	1.1	-40.680	-13
5555	-43.379	1.23	-42.149	-13
7430	-64.754	1.59	-63.164	-13
9288	-65.788	1.89	-63.898	-13
11145	-67.052	2.07	-64.982	-13
13003	-63.909	2.26	-61.649	-13
14860	-60.066	2.64	-57.426	-13
16718	-58.620	3.5	-55.120	-13
18575	-60.364	3.7	-56.664	-13



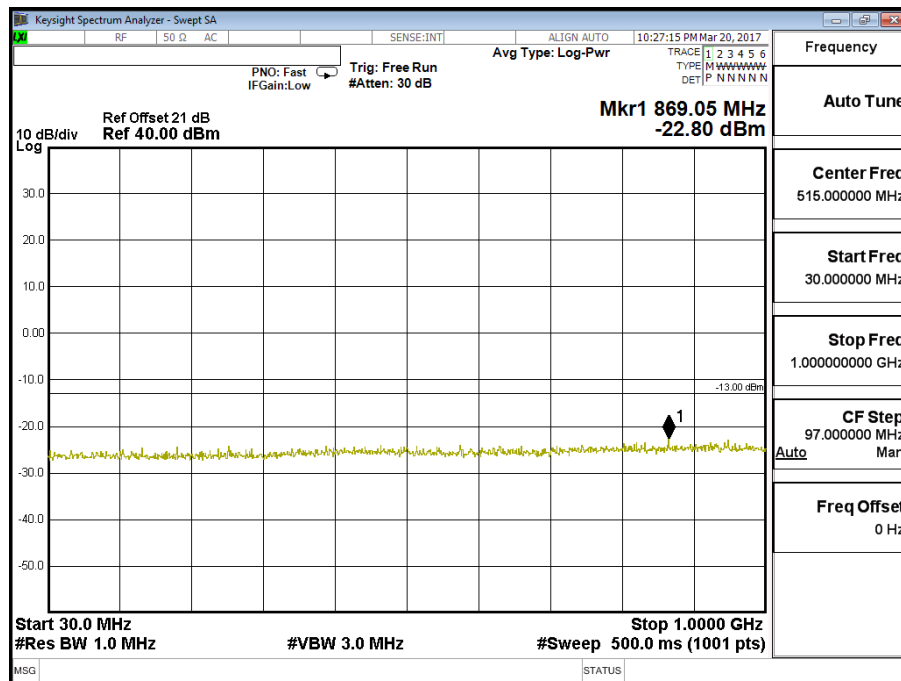


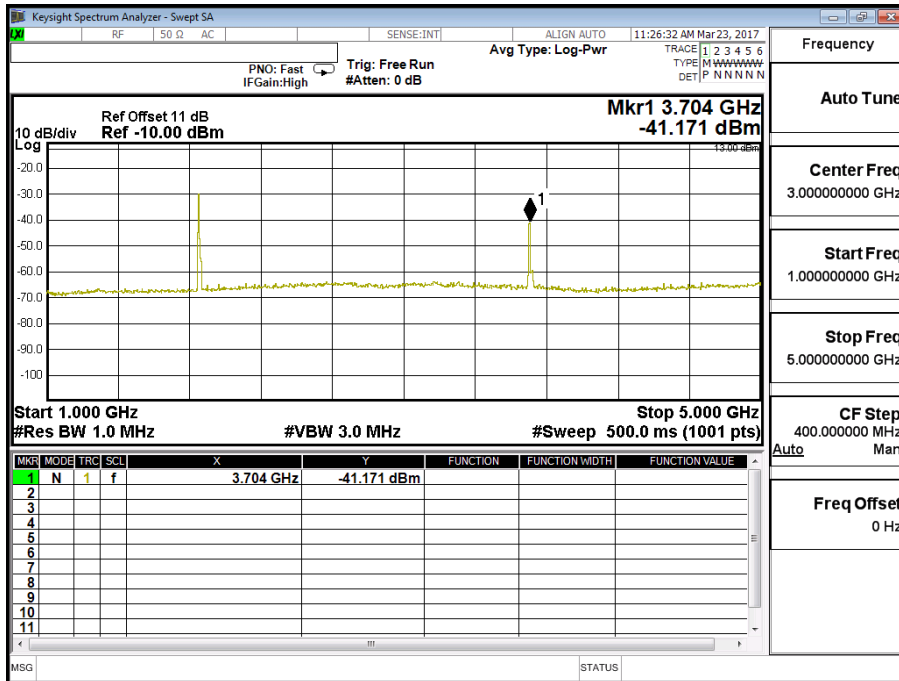


Product	Module		
Test Mode	Spurious Emission (Conducted)		
Date of Test	2017/03/22	Test Site	CTR
Test Condition	LTE-Band 2 (20M)	Test Range	30MHz~20GHz

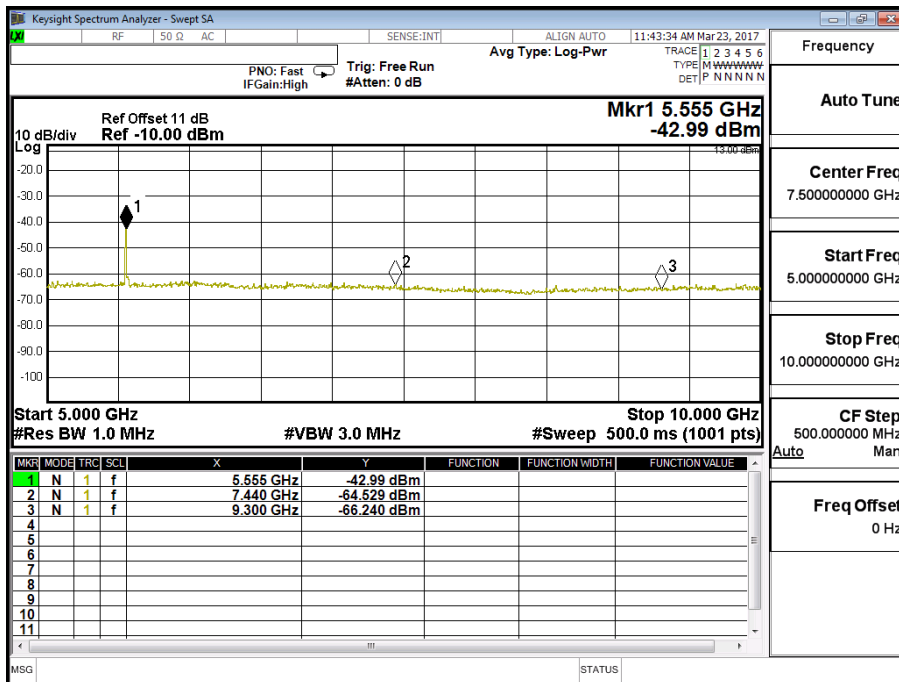
LTE-Band 2 (20M) QPSK(1,0) CH18700

Frequency (MHz)	Reading Level (dBm)	Path Loss (dB)	Emission Level (dBm)	Limit (dBm)
3704	-41.171	1.1	-40.071	-13
5555	-42.990	1.23	-41.760	-13
7440	-64.529	1.59	-62.939	-13
9300	-66.240	1.89	-64.350	-13
11160	-66.898	2.07	-64.828	-13
13020	-65.238	2.26	-62.978	-13
14880	-62.438	2.64	-59.798	-13
16740	-59.134	3.5	-55.634	-13
18600	-59.851	3.7	-56.151	-13

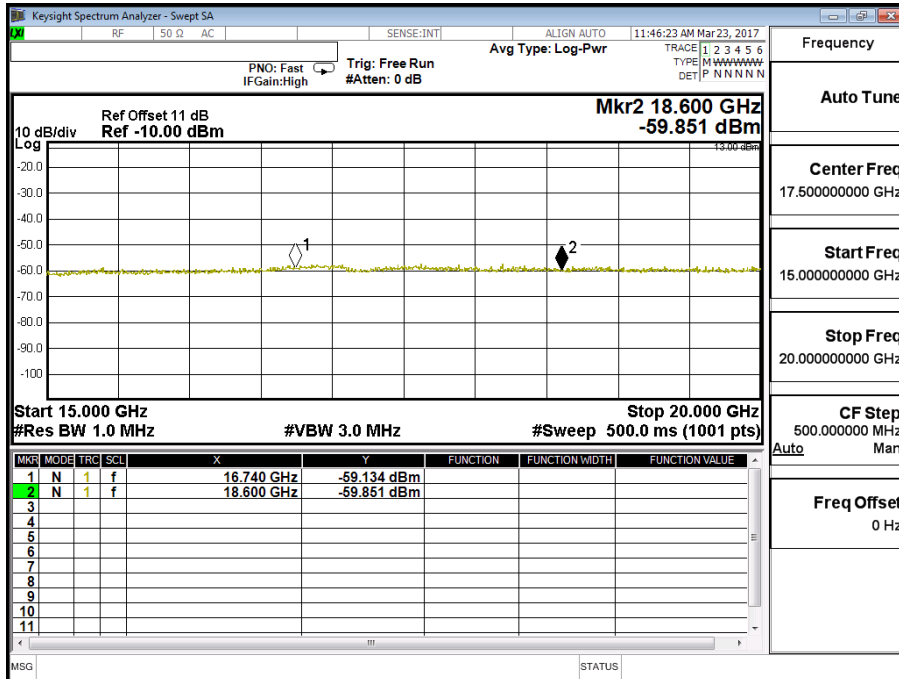
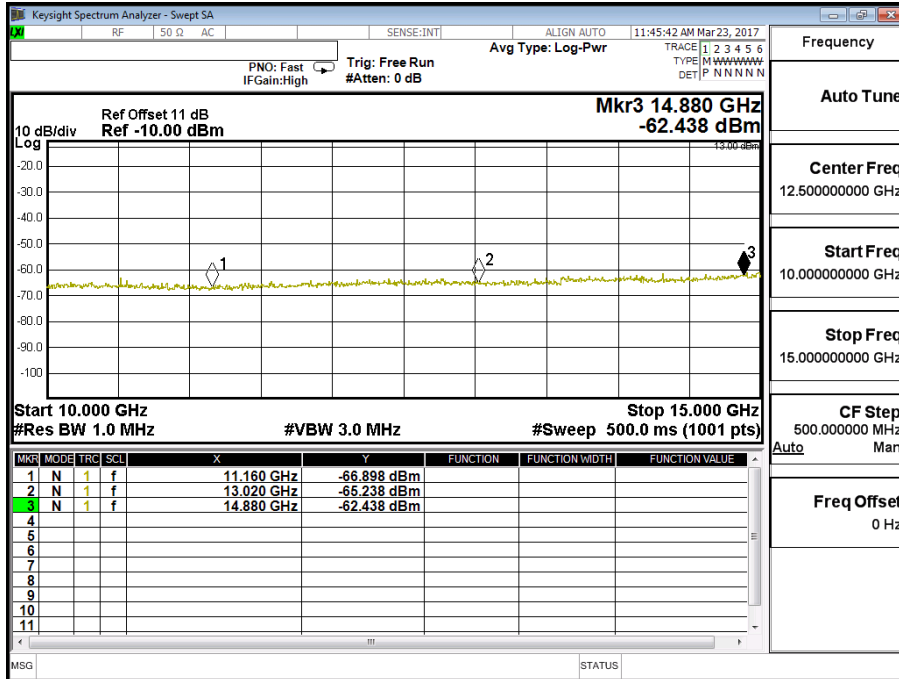




Frequency	Auto Tune
Center Freq	3.000000000 GHz
Start Freq	1.000000000 GHz
Stop Freq	5.000000000 GHz
CF Step	400.000000 MHz
	Auto Man
Freq Offset	0 Hz



Frequency	Auto Tune
Center Freq	7.500000000 GHz
Start Freq	5.000000000 GHz
Stop Freq	10.000000000 GHz
CF Step	500.000000 MHz
	Auto Man
Freq Offset	0 Hz



Product	Module		
Test Mode	Spurious Emission (Conducted)		
Date of Test	2017/03/22	Test Site	CTR
Test Condition	LTE-Band 2 (20M)	Test Range	30MHz~20GHz

LTE-Band 2 (20M) 16QAM(1,49) CH18700

Frequency (MHz)	Reading Level (dBm)	Path Loss (dB)	Emission Level (dBm)	Limit (dBm)
3720	-40.030	1.1	-38.930	-13
5580	-42.008	1.23	-40.778	-13
7440	-64.133	1.59	-62.543	-13
9300	-65.184	1.89	-63.294	-13
11160	-66.096	2.07	-64.026	-13
13020	-64.532	2.26	-62.272	-13
14880	-61.962	2.64	-59.322	-13
16740	-58.786	3.5	-55.286	-13
18600	-58.463	3.7	-54.763	-13

