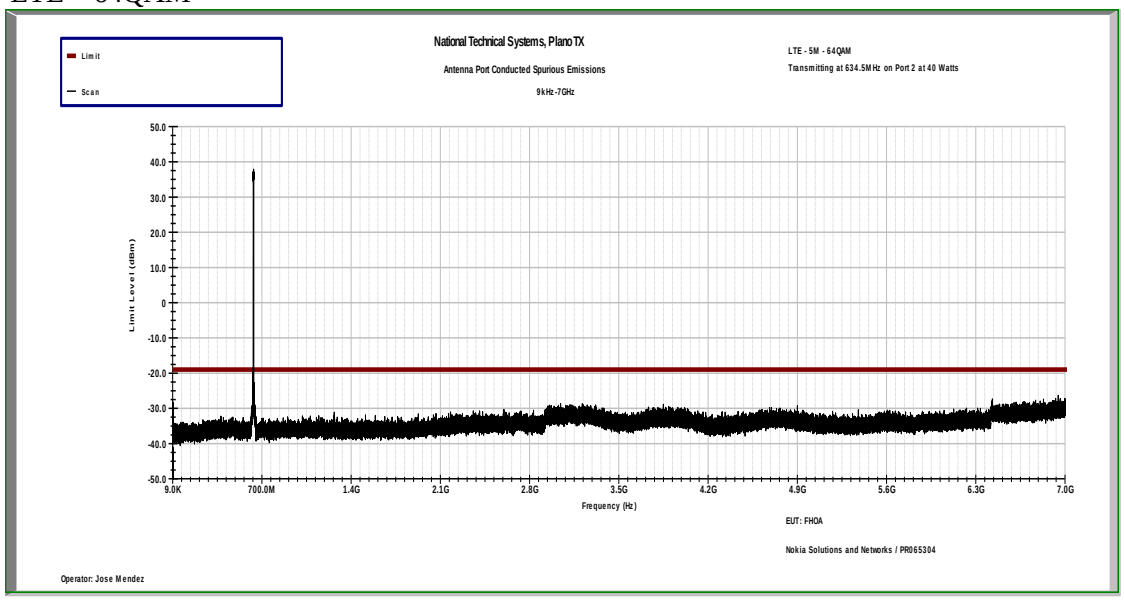
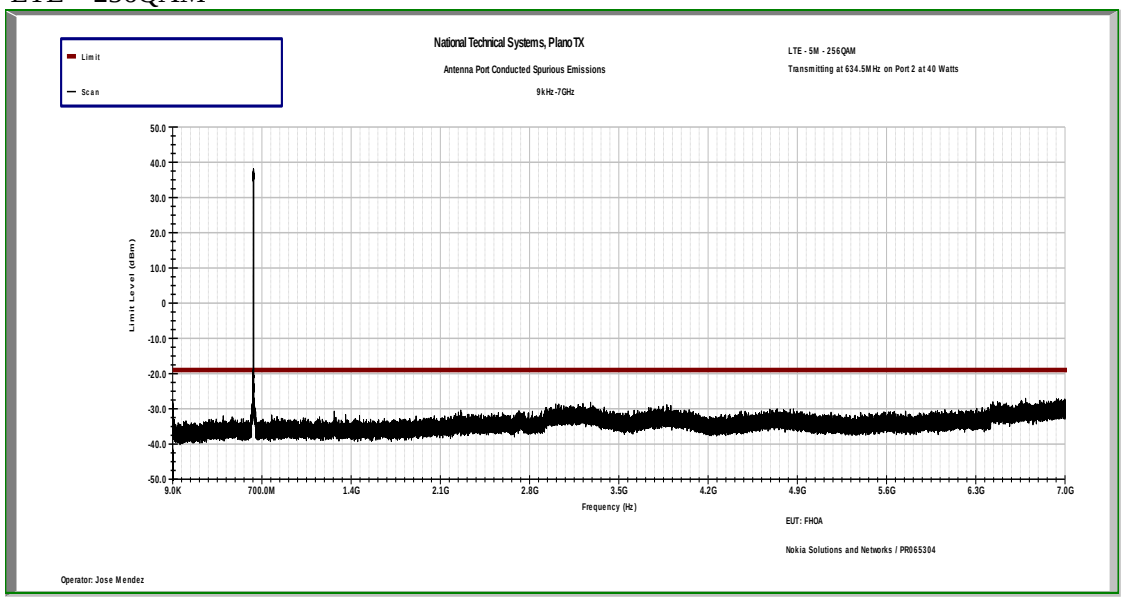
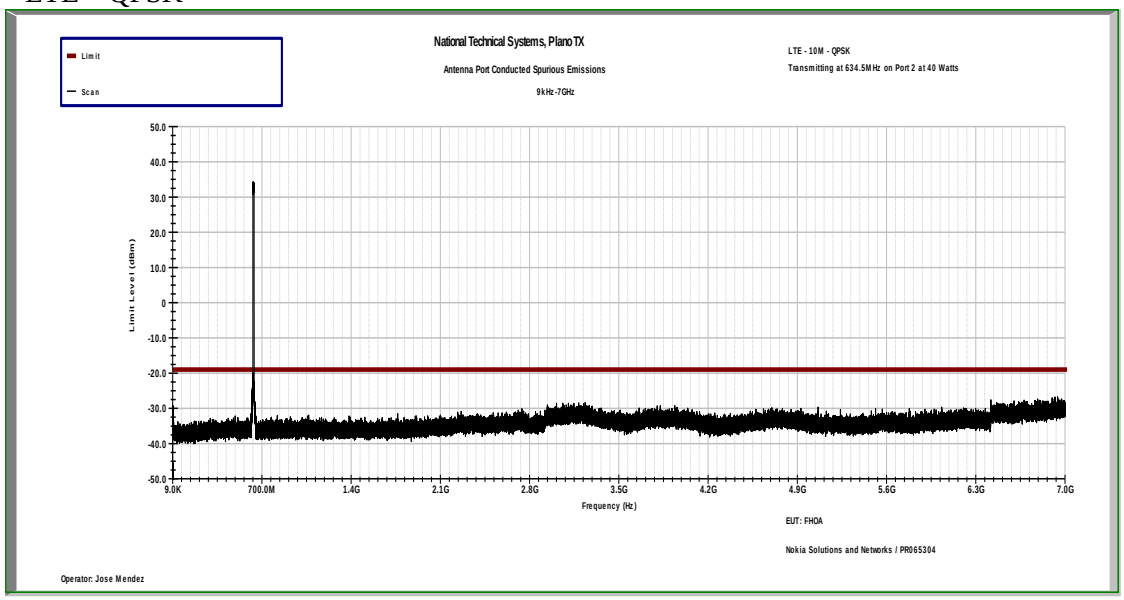
5M – LTE – 64QAM



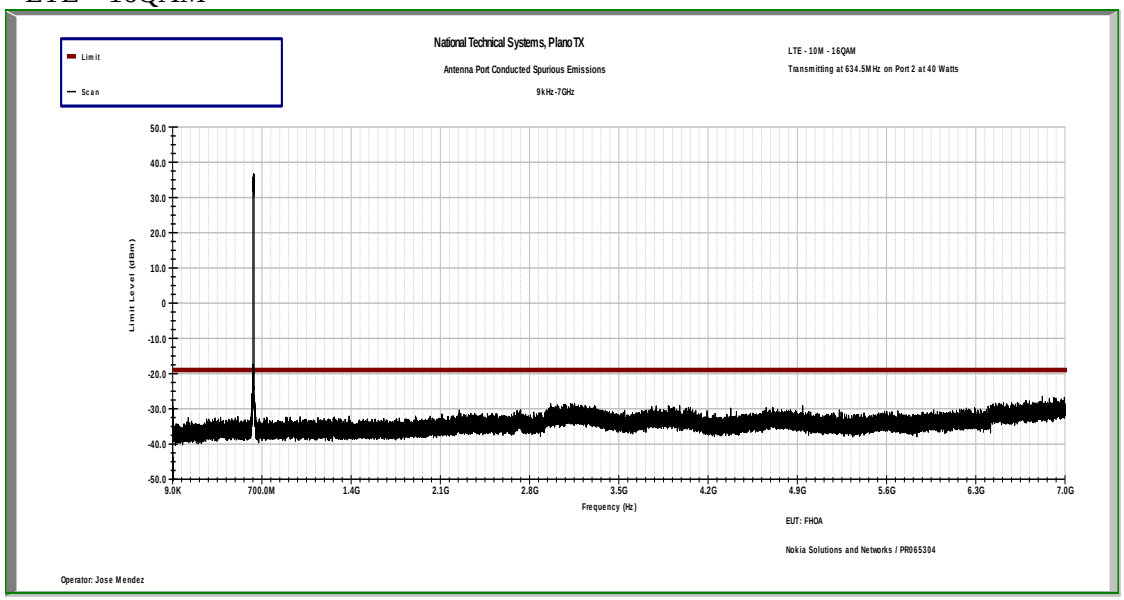
5M – LTE – 256QAM



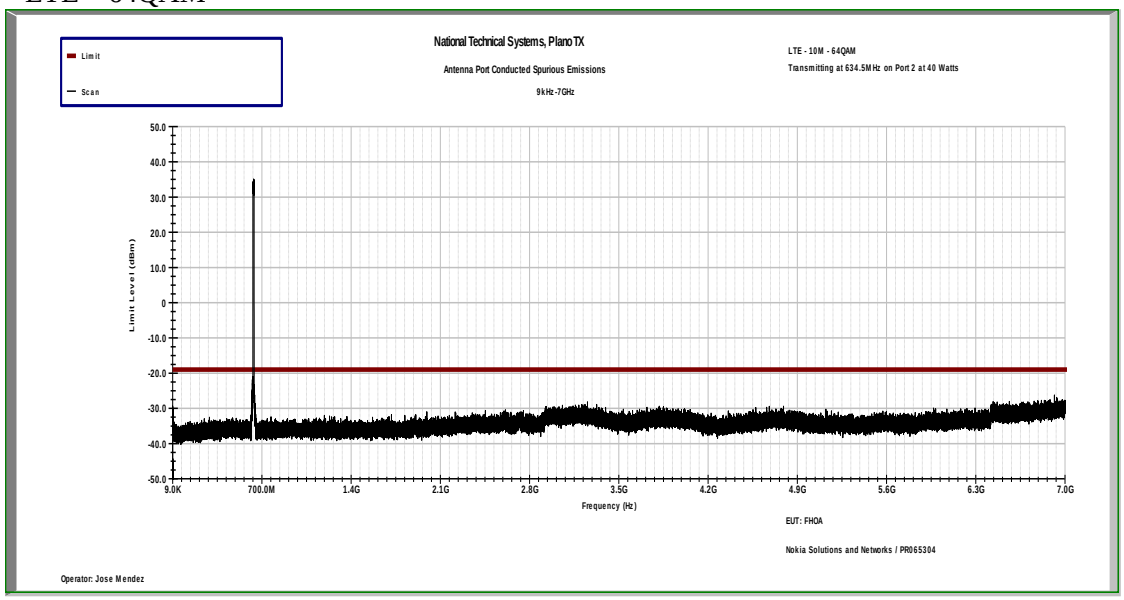
10M – LTE – QPSK



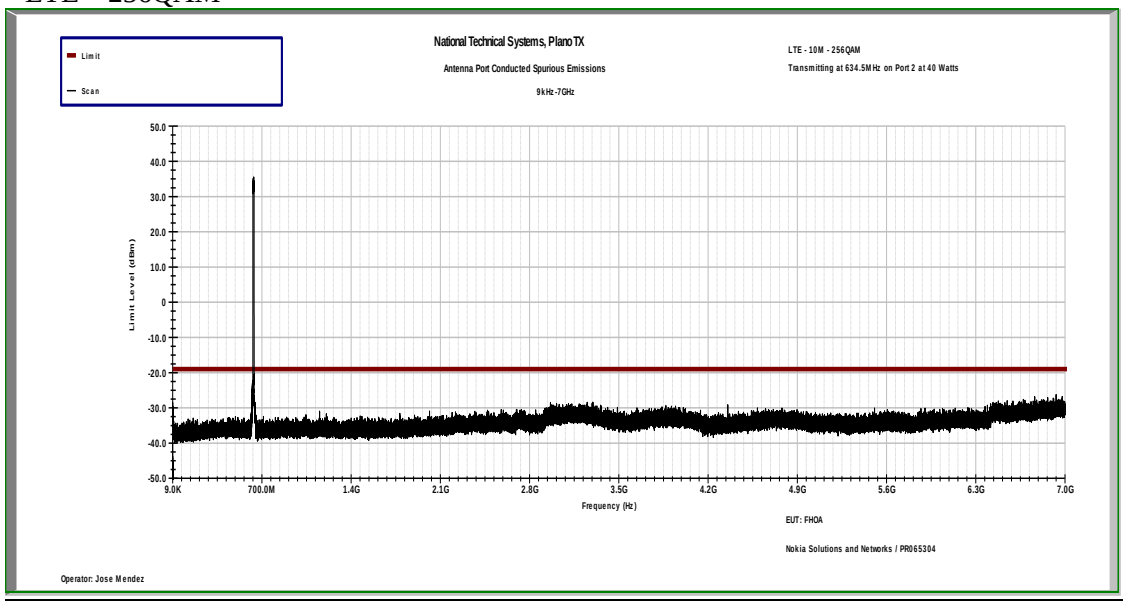
10M – LTE – 16QAM



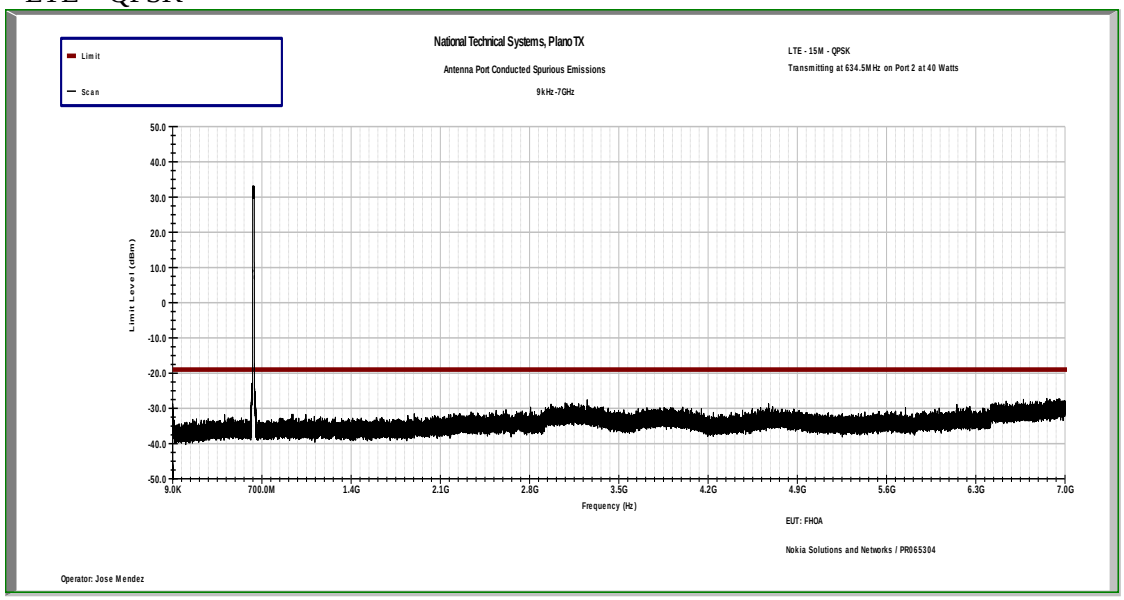
10M – LTE – 64QAM



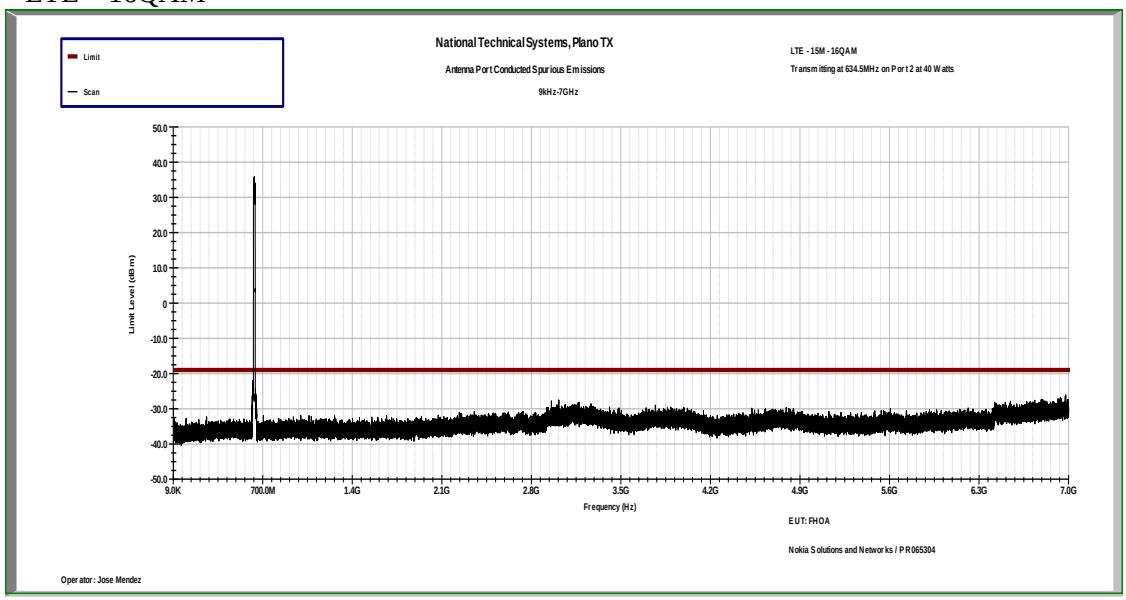
10M – LTE – 256QAM



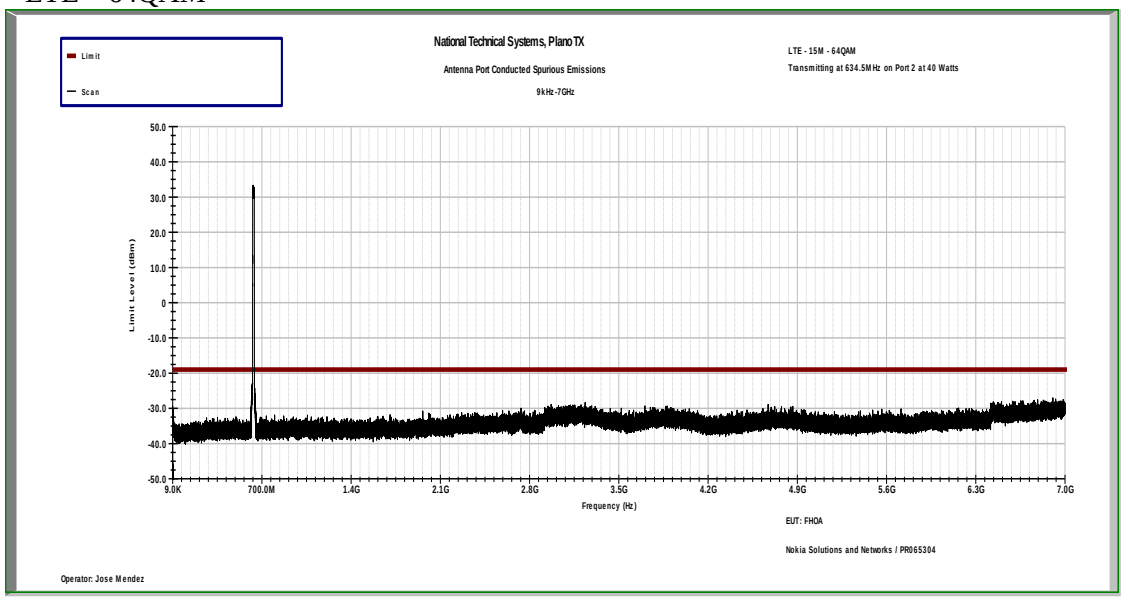
15M – LTE – QPSK



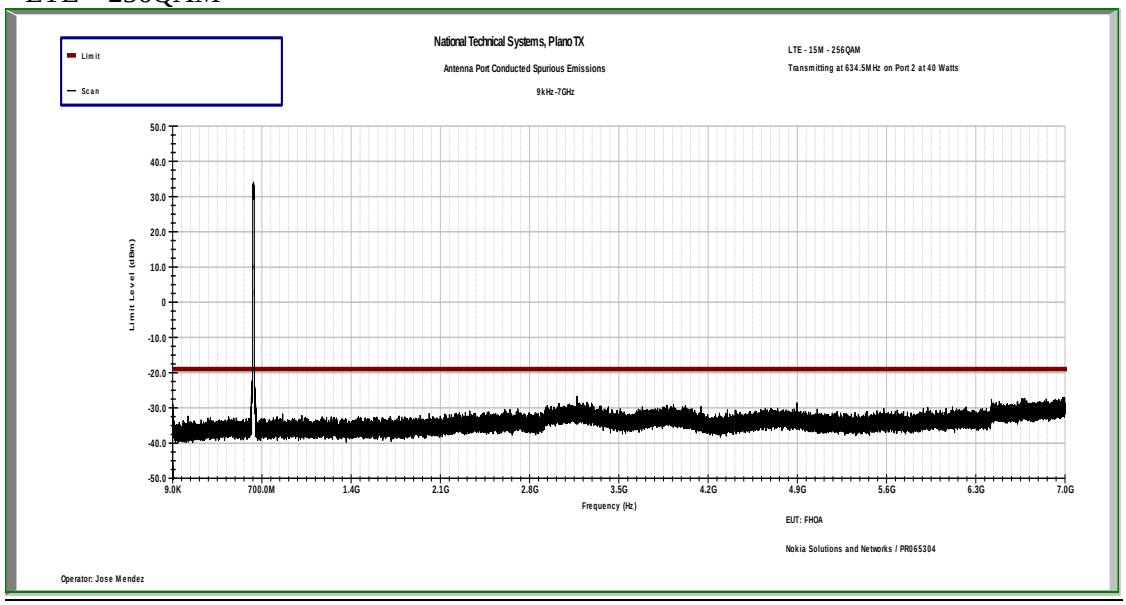
15M – LTE – 16QAM



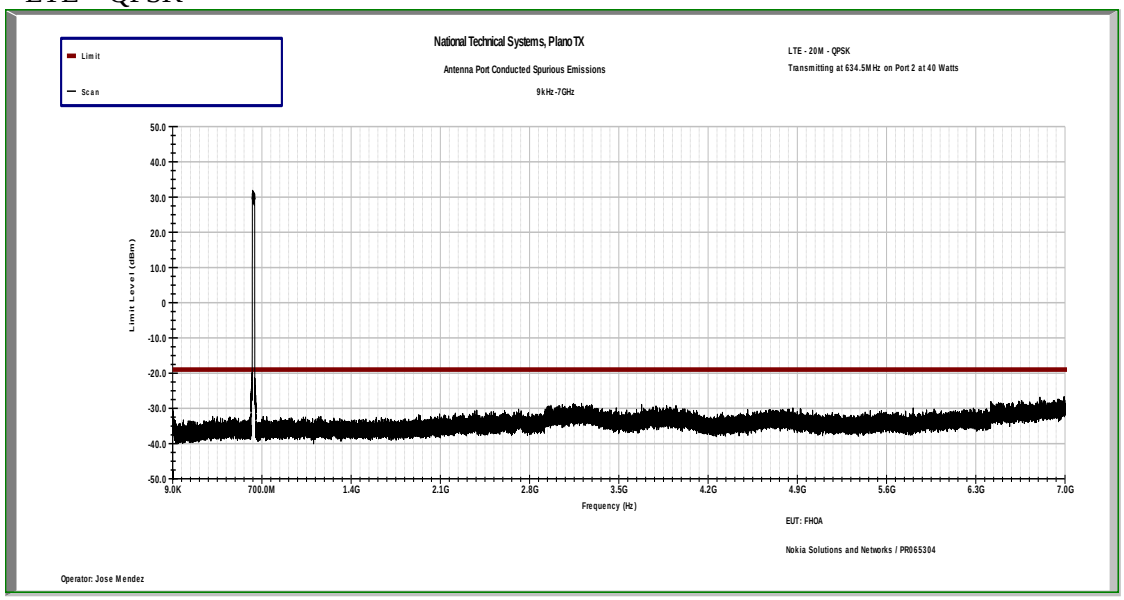
15M – LTE – 64QAM



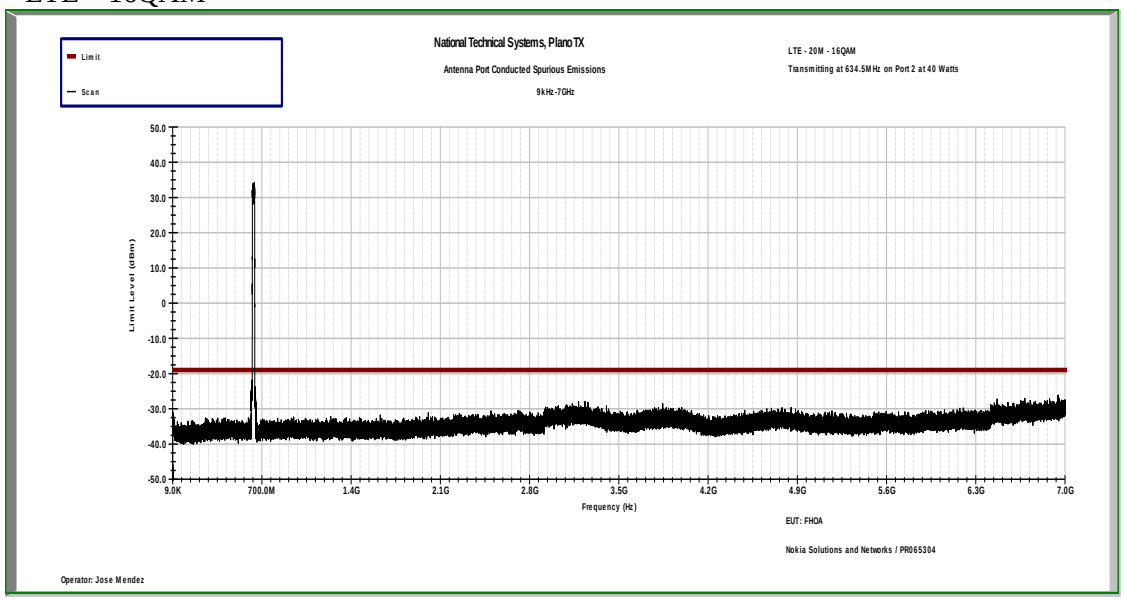
15M – LTE – 256QAM



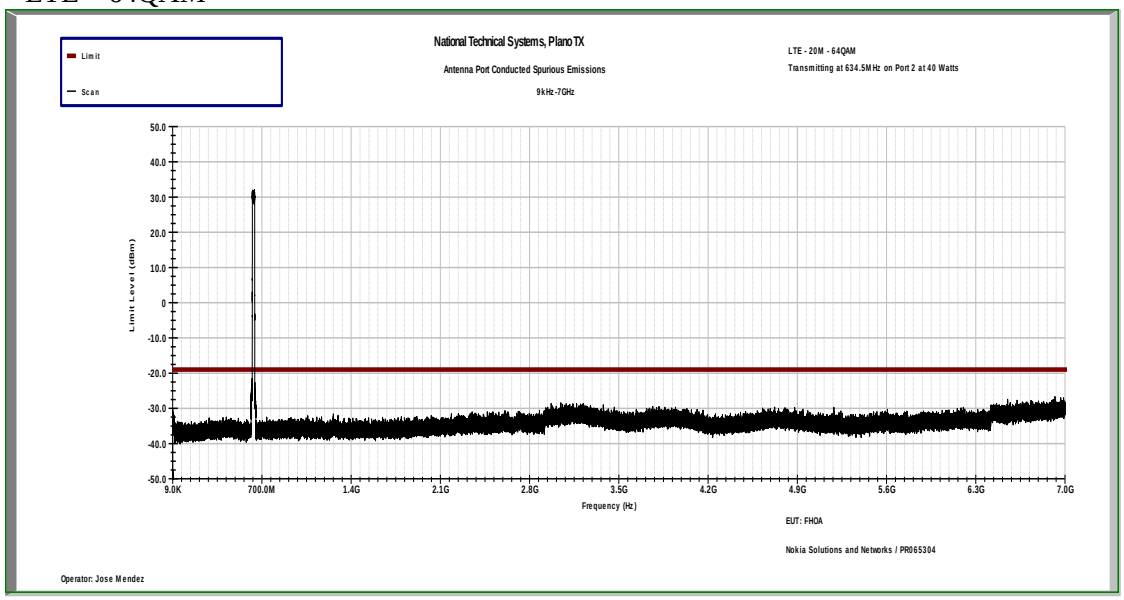
20M – LTE – QPSK



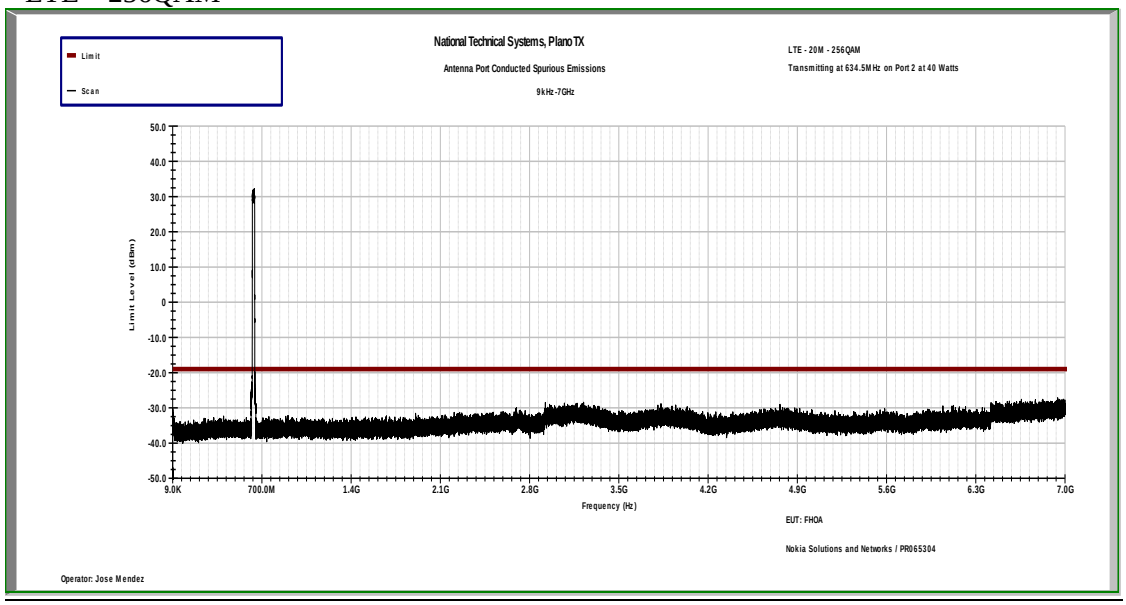
20M – LTE – 16QAM



20M – LTE – 64QAM



20M – LTE – 256QAM



Transmitter Radiated Spurious Emissions

Antenna port conducted spurious emissions tests produced similar results for all modulations and channel bandwidth modes. Preliminary scans for radiated spurious emissions were performed in 30MHz – 7GHz frequency range in the following configuration:

The FHOA operation was at maximum power on all four antenna ports using QPSK modulation and 5MHz LTE bandwidth. Ant 1 transmit frequency was bottom channel (619.5MHz), Ant 2/Ant 3 transmit frequency was center channel (634.5MHz) and Ant 4 transmit frequency was top channel (649.5MHz).

Final maximized peak radiated emissions were measured in this mode. During testing all 4 antenna ports of the base station were terminated with 50ohm termination blocks.

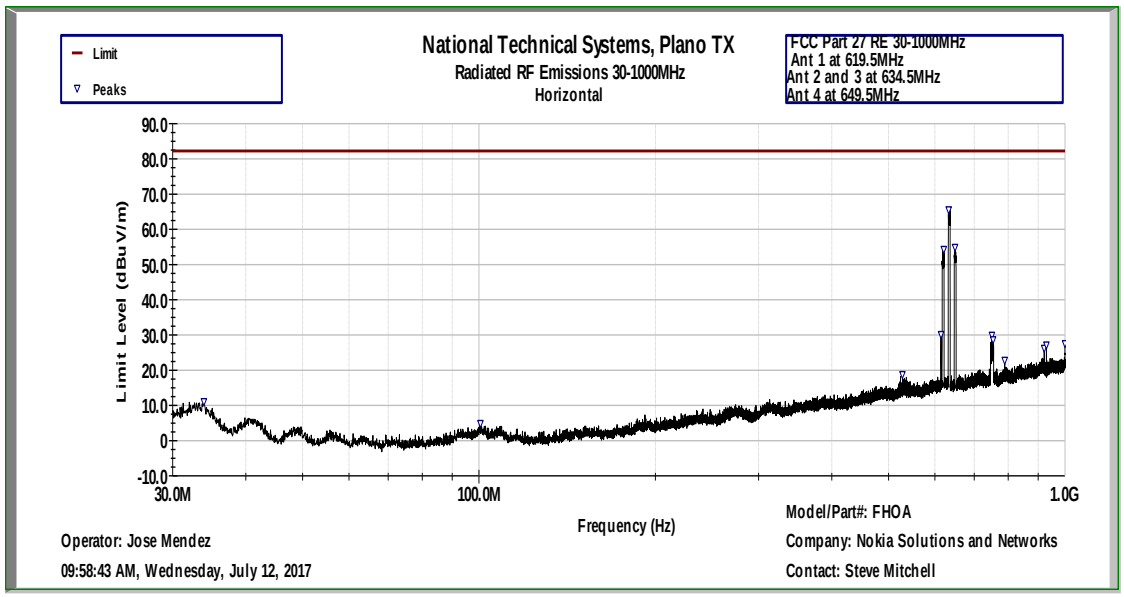
Frequency	Polarity	Peaks Raw	Preamp	Antenna	Cable-Loss	Peaks Corrected	Limit	Margin
MHz	V/H	dBuV/m	dB	dB	dB	dBuV/m	dBuV/m	dB
6021.14	H	39.939	-31.753	34.549	5.403	48.137	82.2	-34.063
6024.42	V	48.016	-31.76	34.556	5.407	48.016	82.2	-34.184
5569.58	H	40.527	-31.729	34.083	5.133	48.014	82.2	-34.186
3818.79	V	45.602	-32.325	32.75	4.144	45.602	82.2	-36.598
3832.63	H	40.861	-32.309	32.776	4.171	45.499	82.2	-36.701
4273.48	V	45.256	-31.993	32.149	3.929	45.256	82.2	-36.944
1000	V	44.245	-37.715	23.9	3.204	33.634	82.2	-48.566
921.59	V	42.315	-38.683	23.9	2.832	30.359	82.2	-51.841
614.38	H	46.503	-38.737	20.775	1.623	30.161	82.2	-52.039
750.51	H	44.245	-38.503	22.28	1.925	29.946	82.2	-52.254
752.25	V	44.18	-38.496	22.21	1.929	29.822	82.2	-52.378
753.9	H	43.068	-38.49	22.144	1.933	28.654	82.2	-53.546
748.65	V	43.001	-38.51	22.219	1.921	28.629	82.2	-53.571
614.38	V	44.068	-38.737	20.775	1.623	27.726	82.2	-54.474
929.59	V	39.449	-38.58	23.9	2.87	27.63	82.2	-54.57
1000	H	38.15	-37.715	23.9	3.204	27.539	82.2	-54.661
929.63	H	38.988	-38.58	23.9	2.871	27.17	82.2	-55.03
921.59	H	38.177	-38.683	23.9	2.832	26.221	82.2	-55.979
789.23	H	36.576	-38.664	22.823	2.073	22.812	82.2	-59.388
527.97	V	39.738	-38.952	19.021	1.459	21.266	82.2	-60.934
528.01	H	37.254	-38.952	19.019	1.459	18.78	82.2	-63.42
124.53	V	45.523	-39.914	7.446	0.648	13.704	82.2	-68.496
126.39	V	45.316	-39.917	7.3	0.652	13.351	82.2	-68.849
123.36	V	43.48	-39.911	7.5	0.646	11.714	82.2	-70.486
125.59	V	43.164	-39.916	7.341	0.651	11.24	82.2	-70.96
33.03	V	34.18	-39.752	16.481	0.272	11.181	82.2	-71.019
33.92	H	34.594	-39.754	15.947	0.276	11.064	82.2	-71.136
116.21	V	40.189	-39.88	8.079	0.627	9.015	82.2	-73.185
191.99	V	36.964	-39.788	10.8	0.815	8.79	82.2	-73.41
127.32	V	39.728	-39.919	7.3	0.654	7.764	82.2	-74.436
89.9	V	38.978	-39.856	7.98	0.549	7.651	82.2	-74.549
90.46	V	38.625	-39.854	8.046	0.552	7.369	82.2	-74.831
100.57	H	34.995	-39.825	9.1	0.596	4.866	82.2	-77.334

Highest noise floor of the measurement instrumentation was more than 20dB below the 82.2dBuV/m at 3m limit (equivalent to –13dBm EIRP).

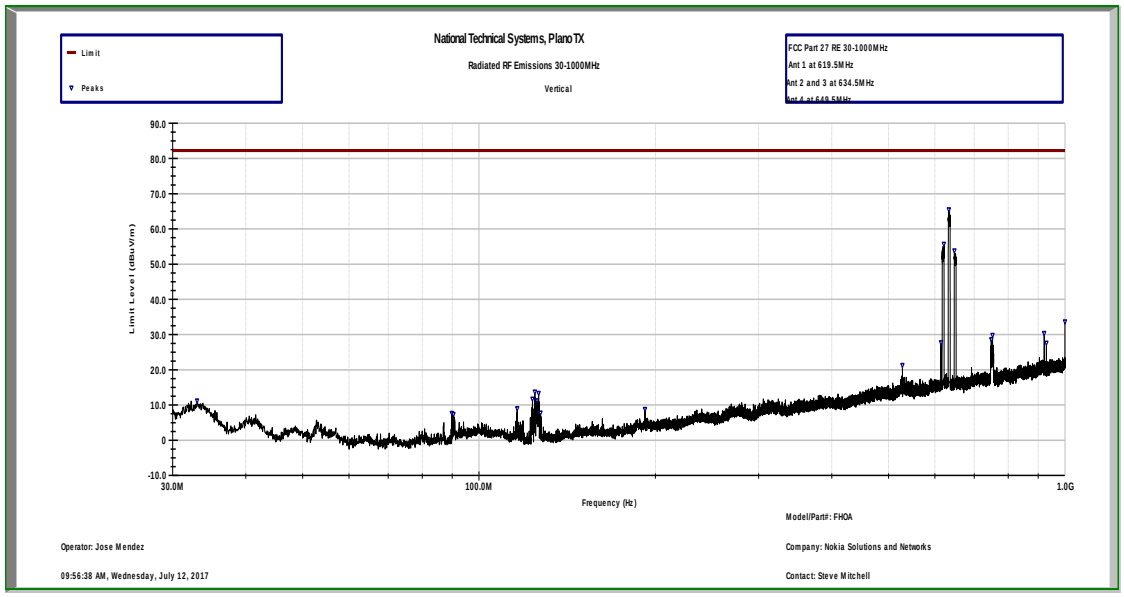
Since all maximized readings were more than 20dB below the 82.2dBuV/m at 3m limit (equivalent to -13dBm EIRP), substitution measurements were not performed.

TILE software was used for all prescans and plots included on the following pages.

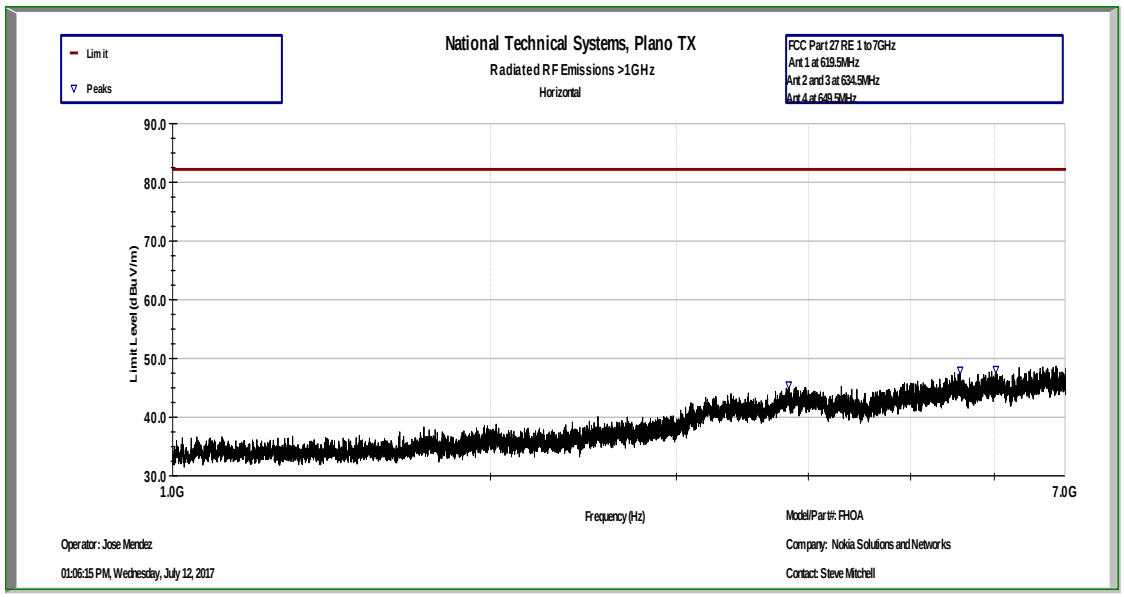
30MHz – 1GHz Peak Prescan at 3m – H



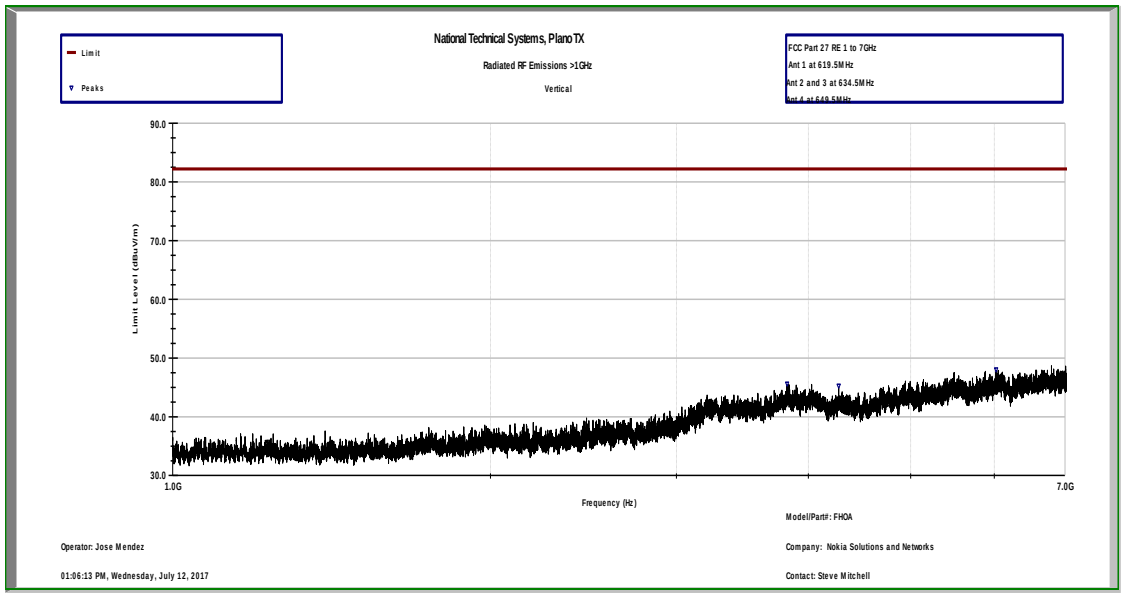
30MHz – 1GHz Peak Prescan at 3m – V



1GHz – 7GHz Peak Prescan at 3m – H



1GHz – 7GHz Peak Prescan at 3m – V



Frequency Stability

In order to demonstrate carrier frequency stability at extreme temperatures and voltages, frequency error was measured in the following configuration:

Transmitting in 5MHz-QPSK-LTE mode at Low and High channels on Port 2.

Nominal operating voltage of the product is declared as 48VDC.

Frequency error results are listed below for extreme voltages and temperatures.

Extreme Voltages	Lower Bandedge Limit -19dBm 617.00MHz	Upper Bandedge Limit -19dBm 652.0MHz
40.8 VDC/ 20 Degrees C	-28.5 dBm	-29.773 dBm
55.2 VDC/ 20 Degrees C	-27.74 dBm	-30.459 dBm
Extreme Temperatures		
48VDC -30	-28.643 dBm	-28.765 dBm
48VDC -20	-28.766 dBm	-28.752 dBm
48VDC -10	-29.068 dBm	-29.653 dBm
48VDC 0	-30.589 dBm	-29.361 dBm
48VDC 10	-29.354 dBm	-29.528 dBm
48VDC 20	-28.16 dBm	-29.451 dBm
48VDC 30	-27.735 dBm	-30.185 dBm
48VDC 40	-28.308 dBm	-29.412 dBm
48VDC 50	-28.044 dBm	-30.420 dBm

Results above are deemed sufficient to demonstrate carrier frequency stability for all other channel bandwidth modes and modulations since all carriers are controlled by the same frequency stabilization circuitry that was subjected to the extreme conditions under this test.

End of Report

This page is intentionally blank and
marks the last page of this test report.