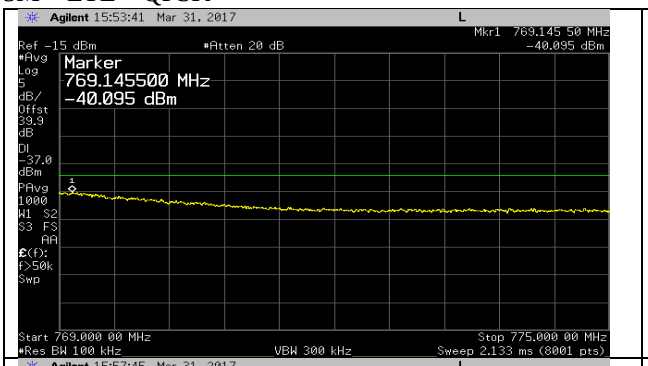
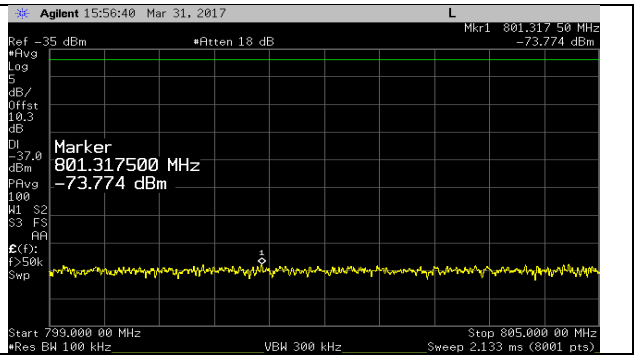
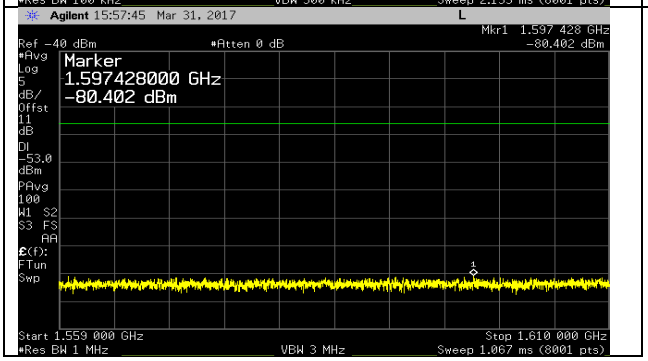
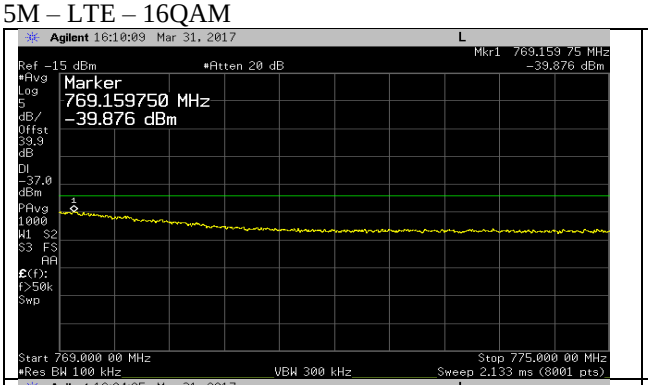
5M – LTE – QPSK

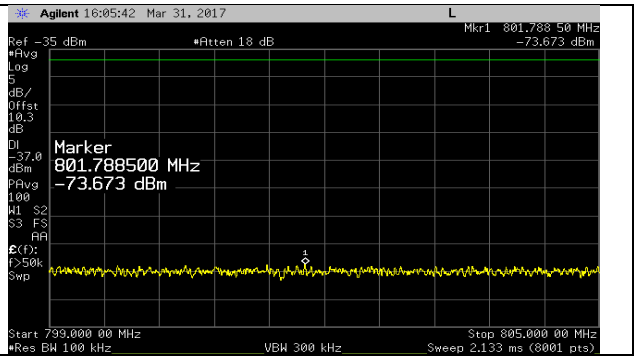


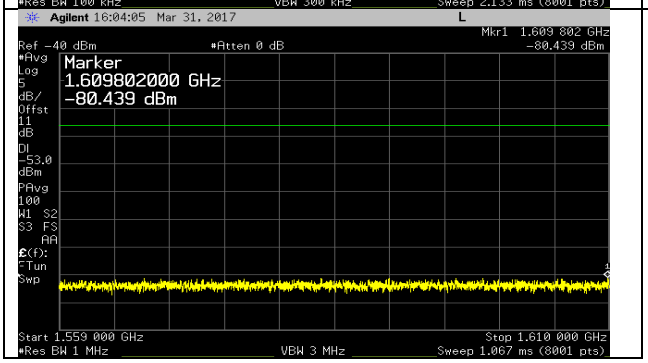




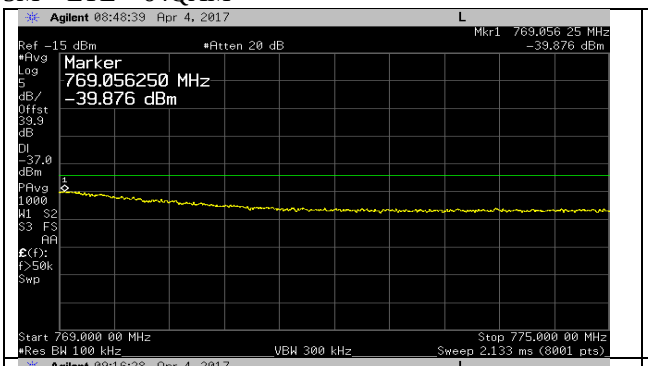
5M – LTE – 16QAM

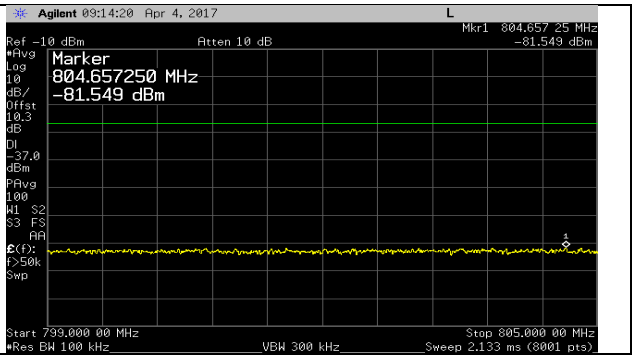


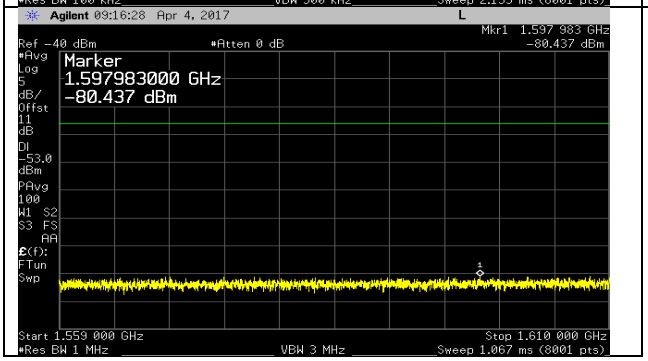




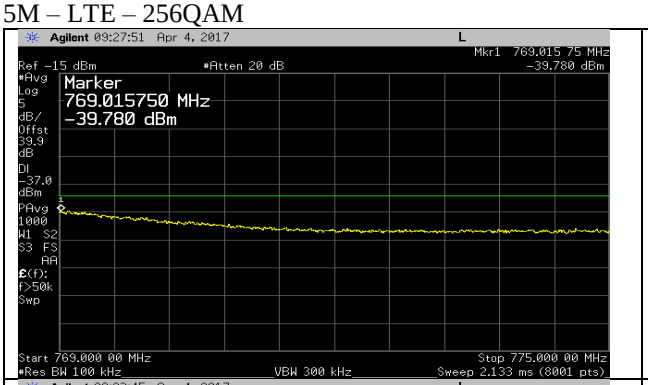
5M – LTE – 64QAM

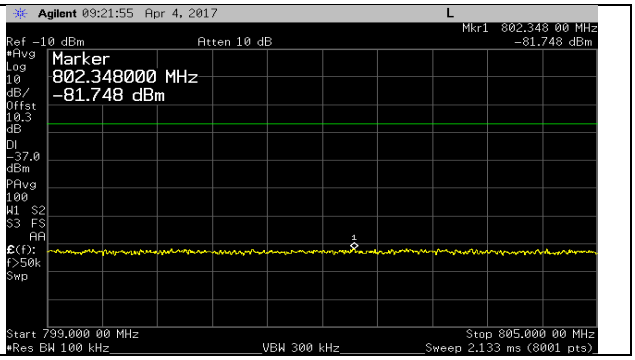


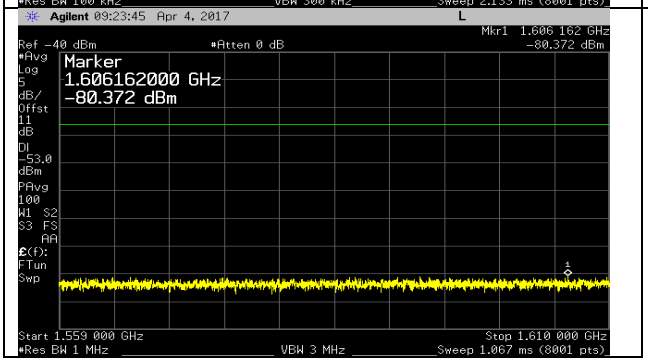




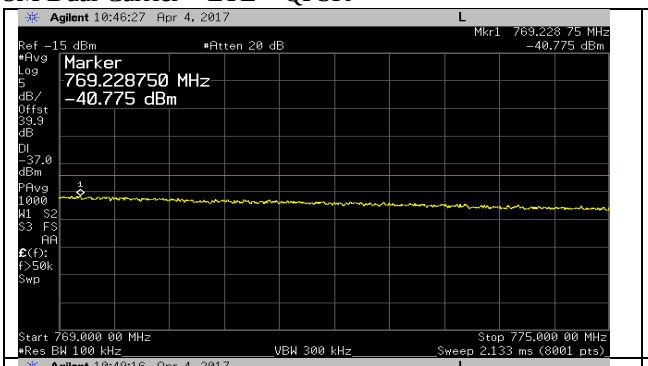
5M – LTE – 256QAM

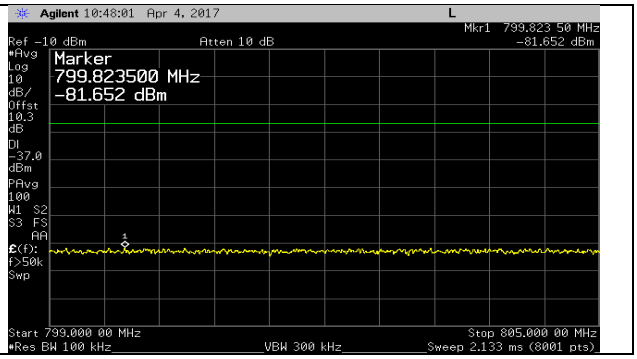


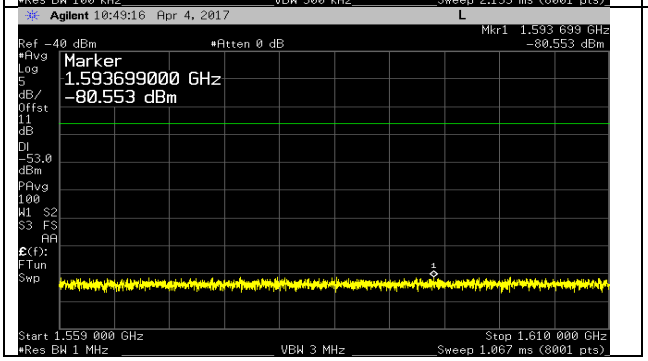




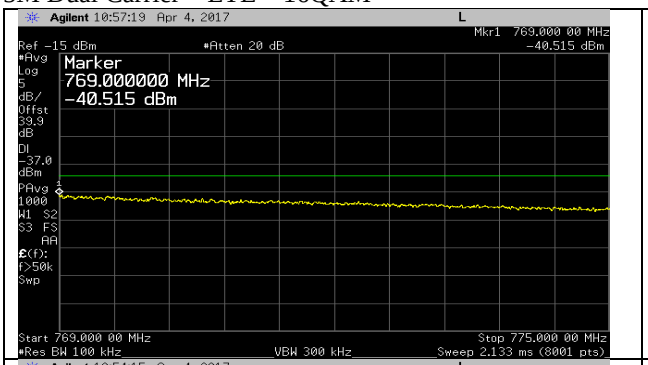
5M Dual Carrier – LTE – QPSK

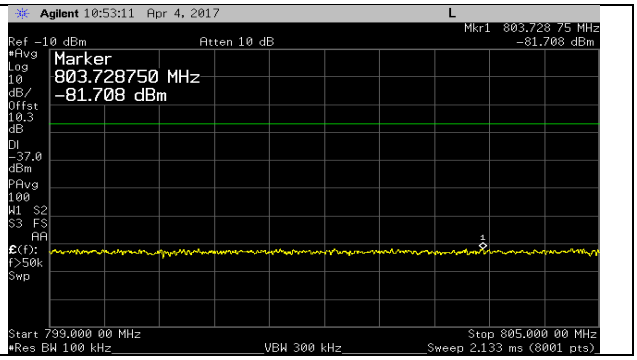


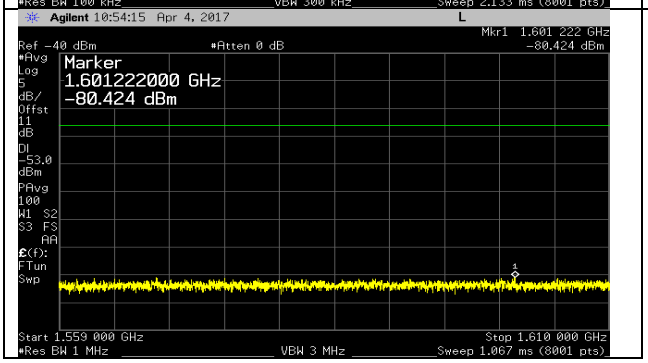




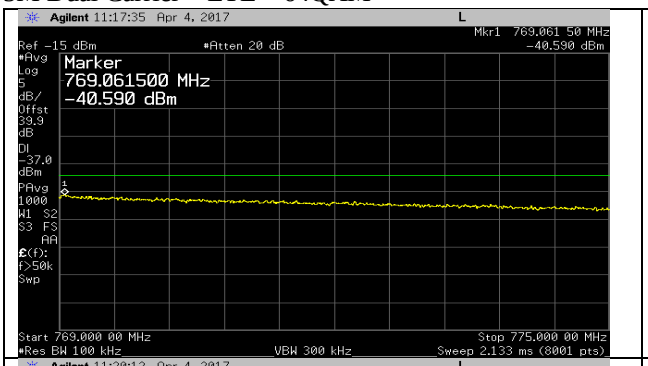
5M Dual Carrier – LTE – 16QAM

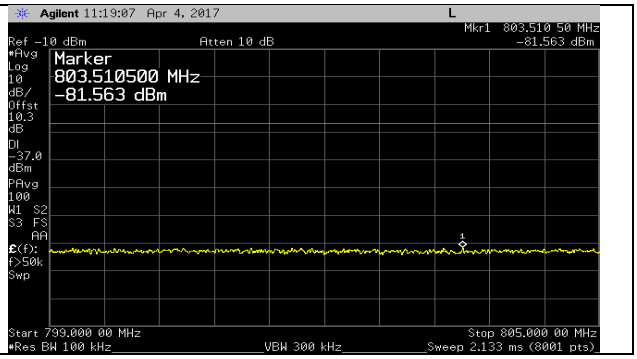


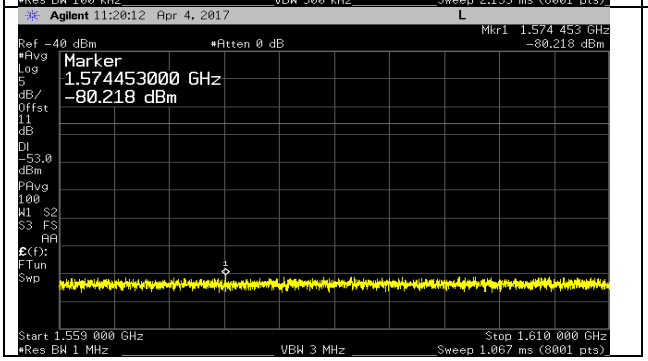




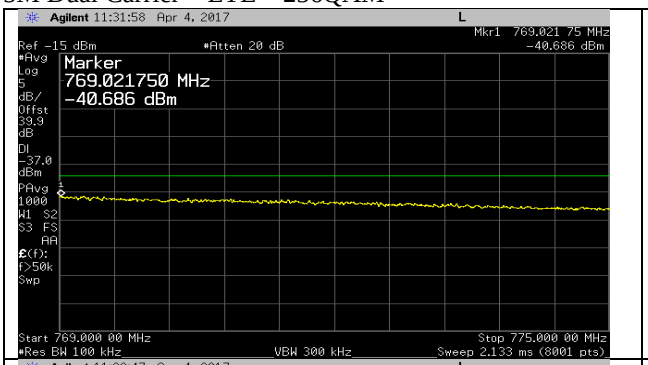
5M Dual Carrier – LTE – 64QAM

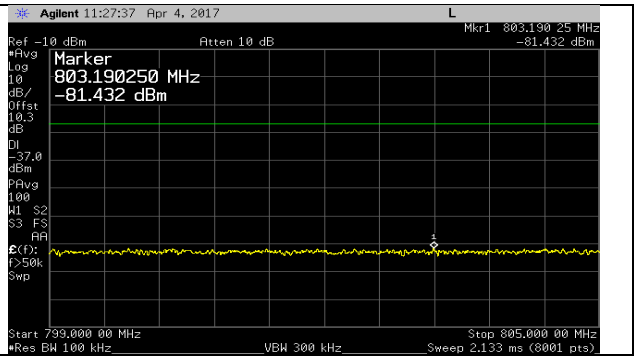


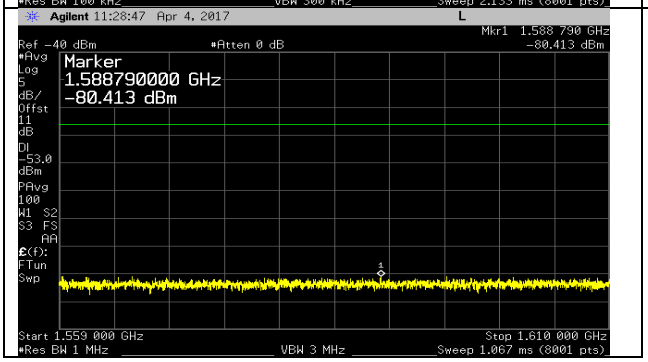




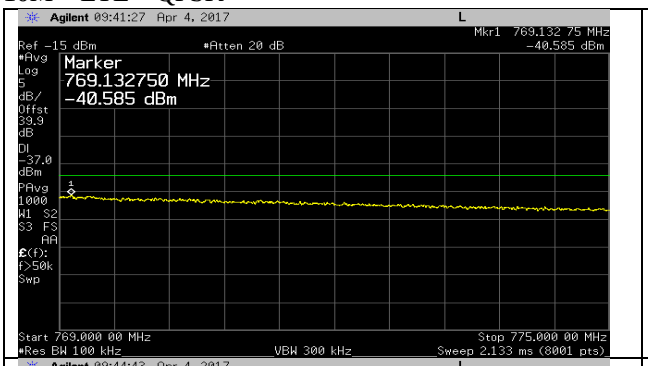
5M Dual Carrier – LTE – 256QAM

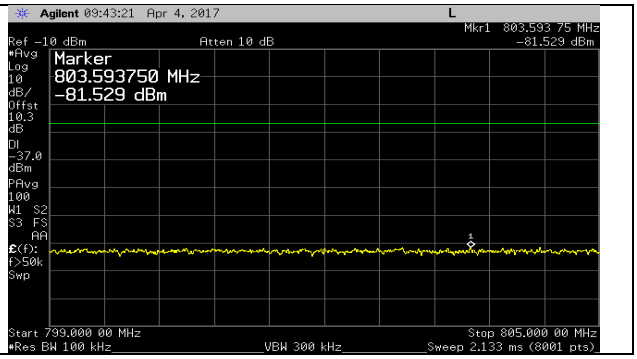


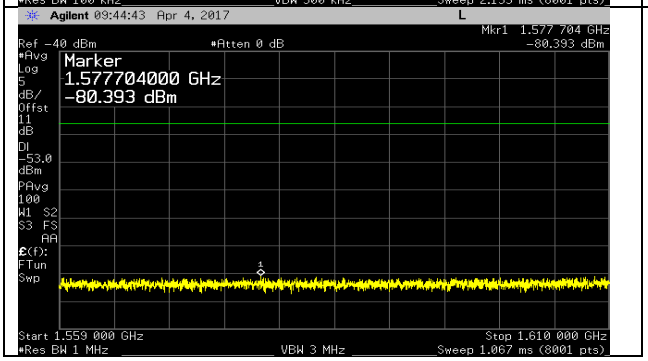




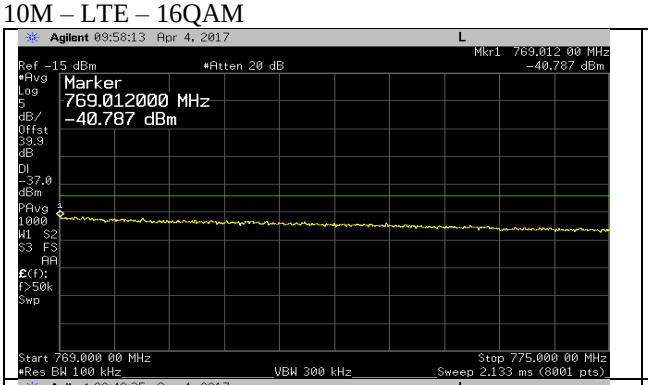
10M – LTE – QPSK

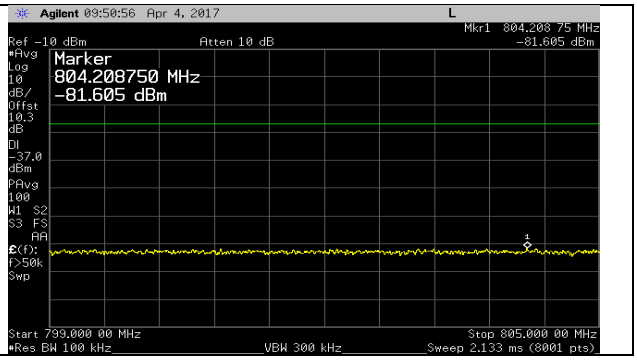


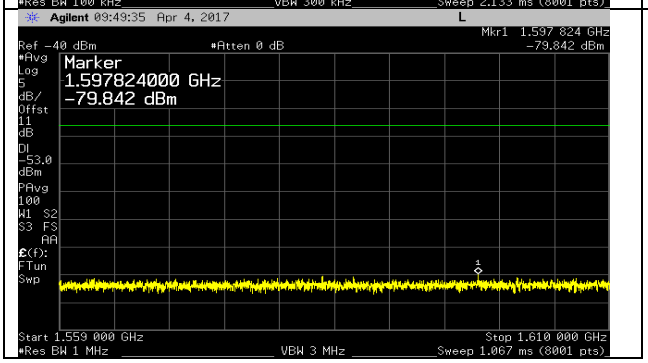




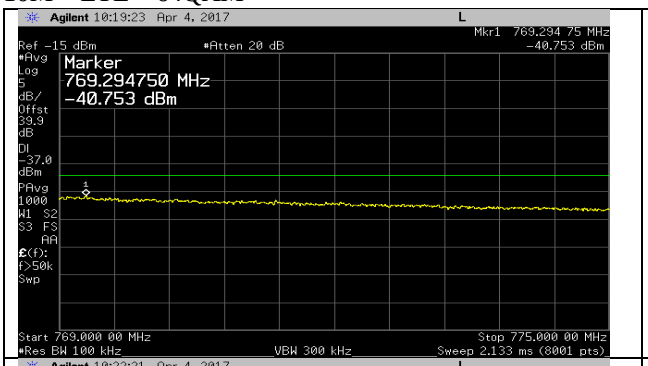
10M – LTE – 16QAM

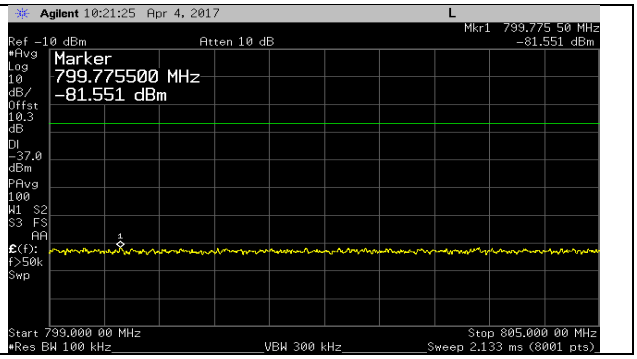


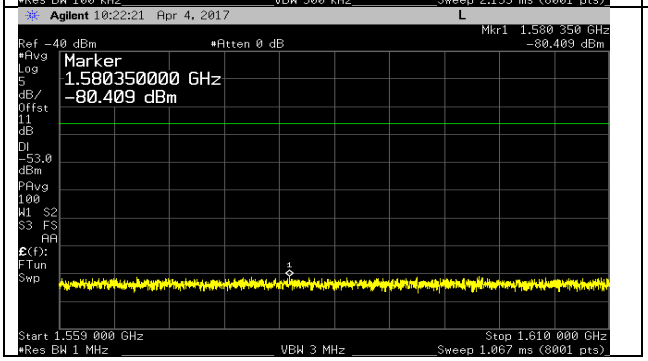




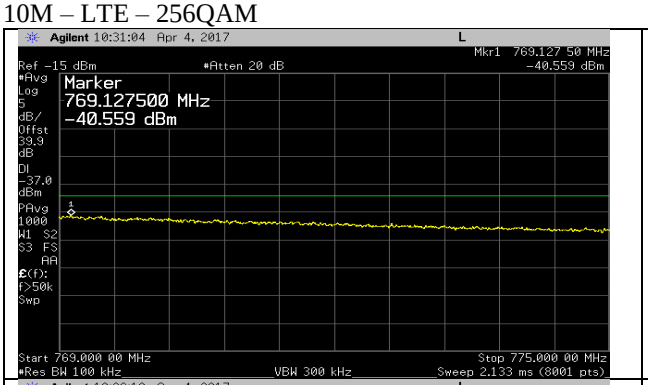
10M – LTE – 64QAM

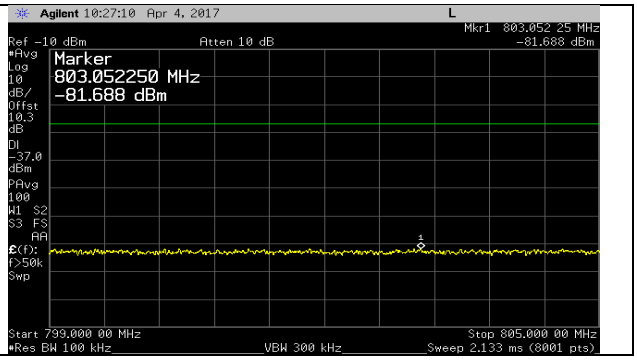


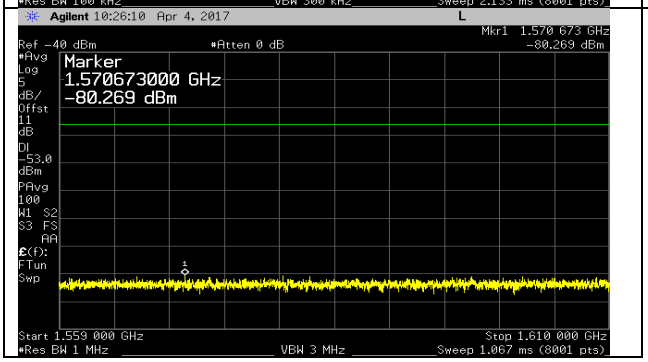




10M – LTE – 256QAM







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 – 8GHz frequency range in the following configuration:

The FRBI operation was at maximum power (60 watts per port) on antenna ports 1 & 4 using QPSK modulation and 5MHz LTE bandwidth. Antenna 1 and Antenna 4 transmit frequency was the center channel (763MHz).

Final maximized peak radiated emissions were measured in this mode. During testing all 2 antenna ports of the base station were terminated with 50ohm termination blocks.

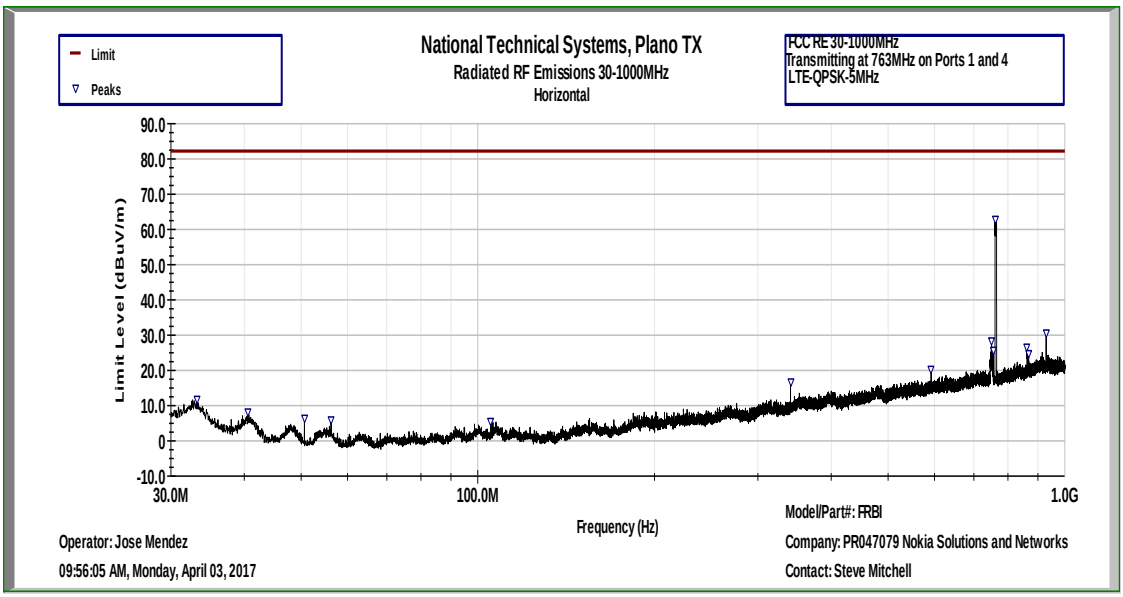
Frequency	Polarity	Peaks Raw	Preamp	Antenna	Cable-Loss	Peak Corrected	Limit	Margin
MHz	V/H	dVuV/m	dB	dB	dB	dBuV/m	dBuV/m	dB
7480	V	44.809	36.442	-46.3	5.342	40.293	82.2	-41.907
7700	V	44.645	36.308	-46.11	5.321	40.165	82.2	-42.035
7540	H	44.783	36.381	-46.3	5.276	40.14	82.2	-42.06
7390	V	44.116	36.439	-46.286	5.577	39.846	82.2	-42.354
7690	H	44.318	36.308	-46.113	5.321	39.834	82.2	-42.366
7850	H	44.217	36.492	-46.1	5.098	39.706	82.2	-42.494
8000	V	43.948	36.767	-46.1	5.081	39.696	82.2	-42.504
7850	V	44.2	36.482	-46.1	5.089	39.671	82.2	-42.529
8710	H	41.357	37.565	-45.925	5.798	38.794	82.2	-43.406
6950	V	44.342	35.22	-46	5.021	38.583	82.2	-43.617
6940	H	44.135	35.22	-46	5.02	38.375	82.2	-43.825
5450	V	40.183	34.065	-46.2	4.935	32.982	82.2	-49.218
4910	H	40.889	33.137	-46.292	4.605	32.338	82.2	-49.862
5380	H	39.512	33.969	-46.2	4.869	32.15	82.2	-50.05
6080	H	38.031	34.333	-46.023	5.472	31.812	82.2	-50.388
4750	H	40.457	32.868	-46.152	4.553	31.724	82.2	-50.476
4920	V	40.078	33.158	-46.281	4.627	31.581	82.2	-50.619
6070	V	37.813	34.326	-46.028	5.466	31.576	82.2	-50.624
5210	V	39.228	33.809	-46.2	4.739	31.575	82.2	-50.625
3990	H	40.811	32.589	-46.2	4.272	31.471	82.2	-50.729
Corrected Field Strength = Raw Readings + Amplifier Gain + Antenna Factor + Cable Loss								
Negative Margin Indicates a Passing Result								
Detector: Peak, RBW= 100kHz <1GHz> 1MHz, VBW= 300kHz<1GHz>3MHz, Max-Hold								

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

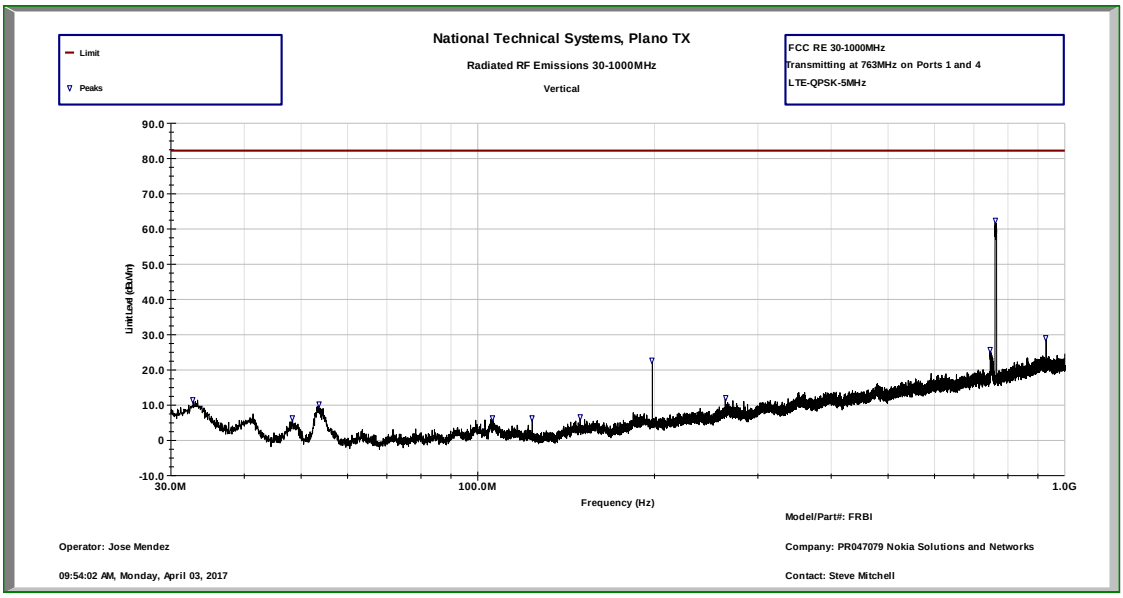
Since all maximized readings were more than 20dB below the 82.2dBuV/m at 3m limit (equivalent to -13dBm EIRP), substitution measurements were not performed.

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

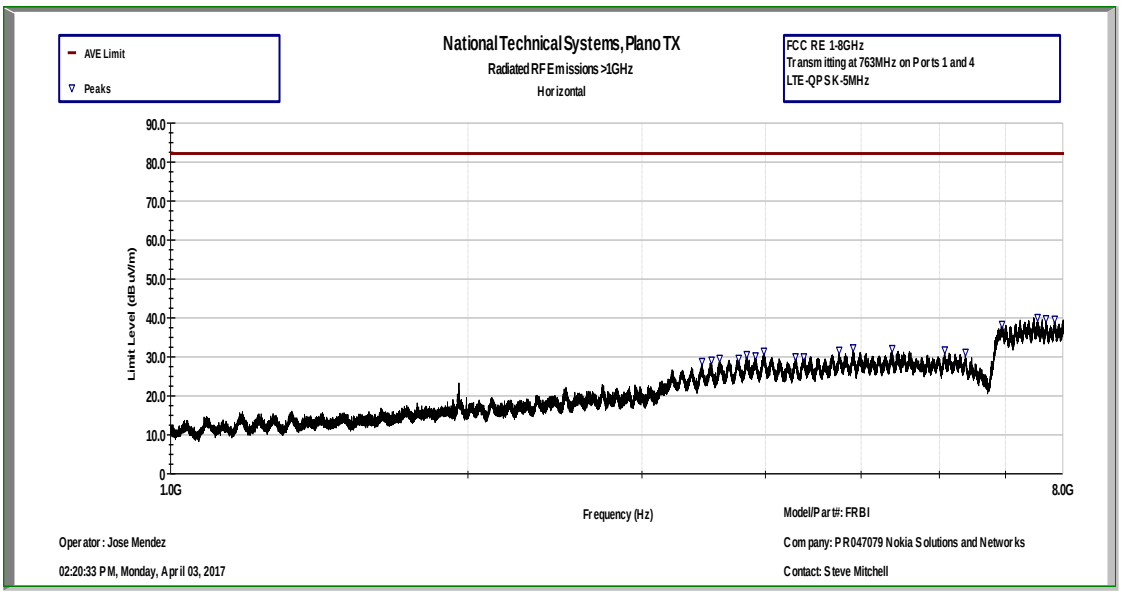
30MHz – 1GHz Peak Prescan at 3m – H



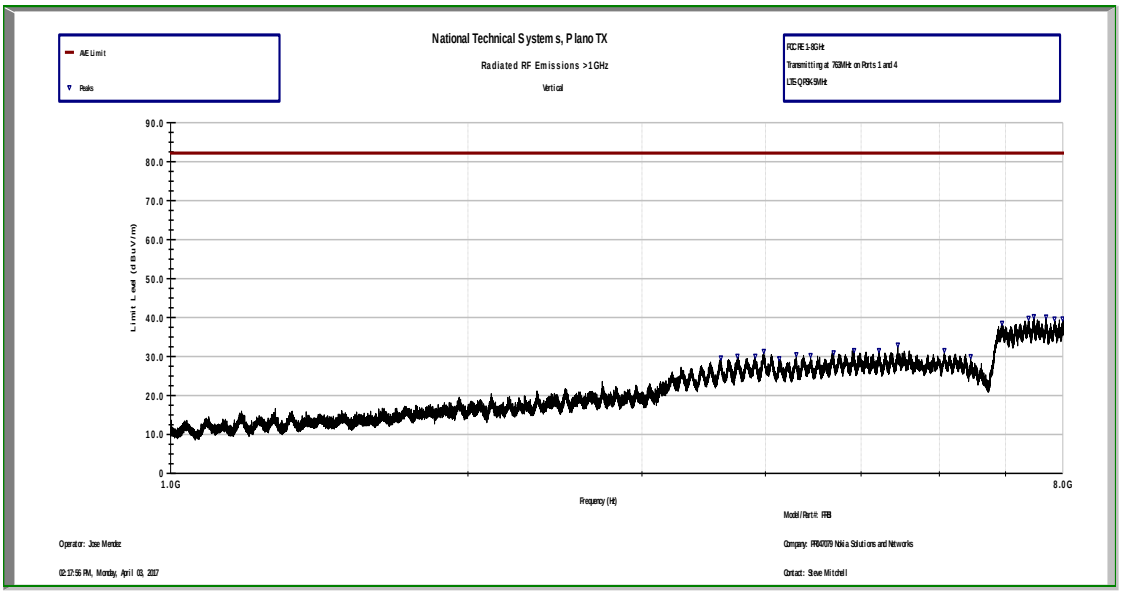
30MHz – 1GHz Peak Prescan at 3m – V



1GHz – 8GHz Peak Prescan at 3m – H



1GHz – 8GHz 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 10MHz-64QAM-LTE mode at center channel (763MHz) on Port 1.

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

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

Extreme Voltages

20C	Freq. Error (mHz)
40.8VDC	471
55.2VDC	391

Extreme Temperatures

48VDC	Freq. Error (mHz)
-30	761
-20	666
-10	390
0	550
10	680
20	390
30	593
40	617
50	654

Based on the results above, highest recorded frequency error is 0.000891ppm, which is below the 1ppm limit.

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

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