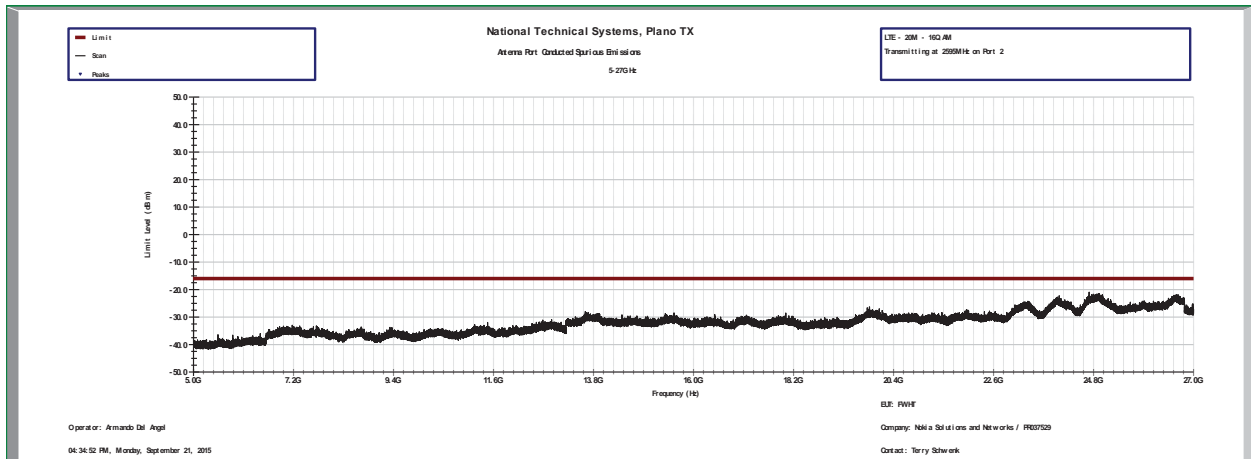
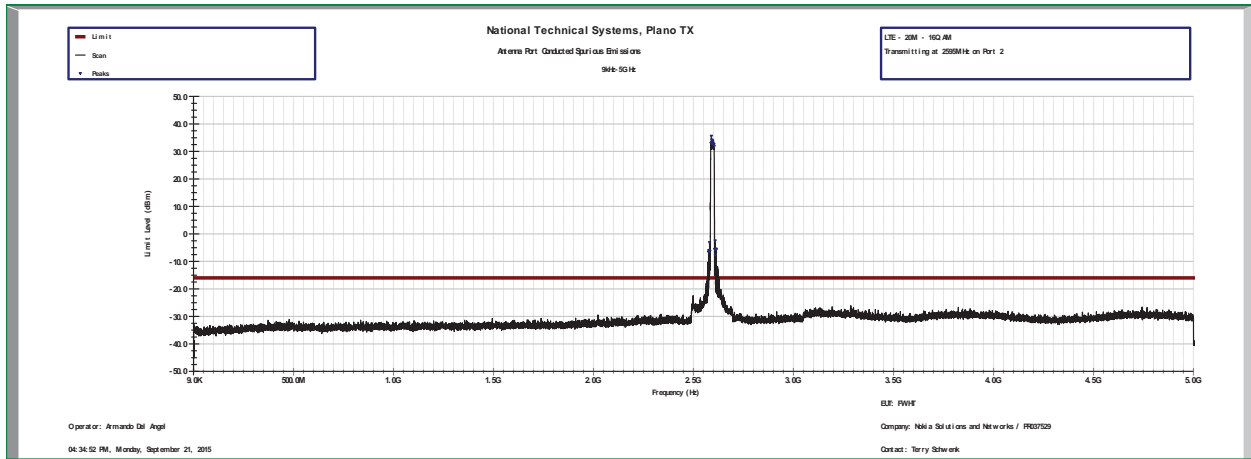
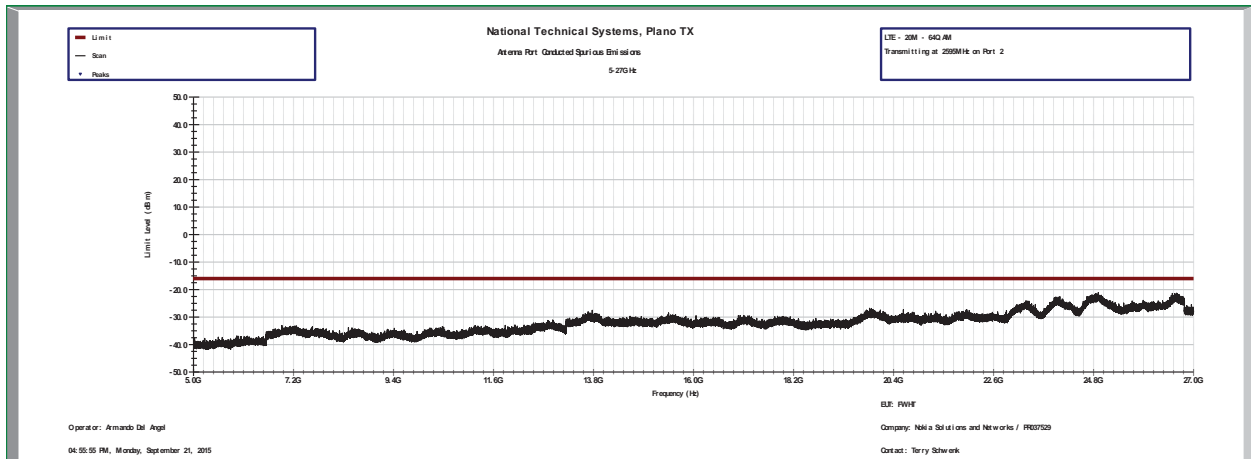
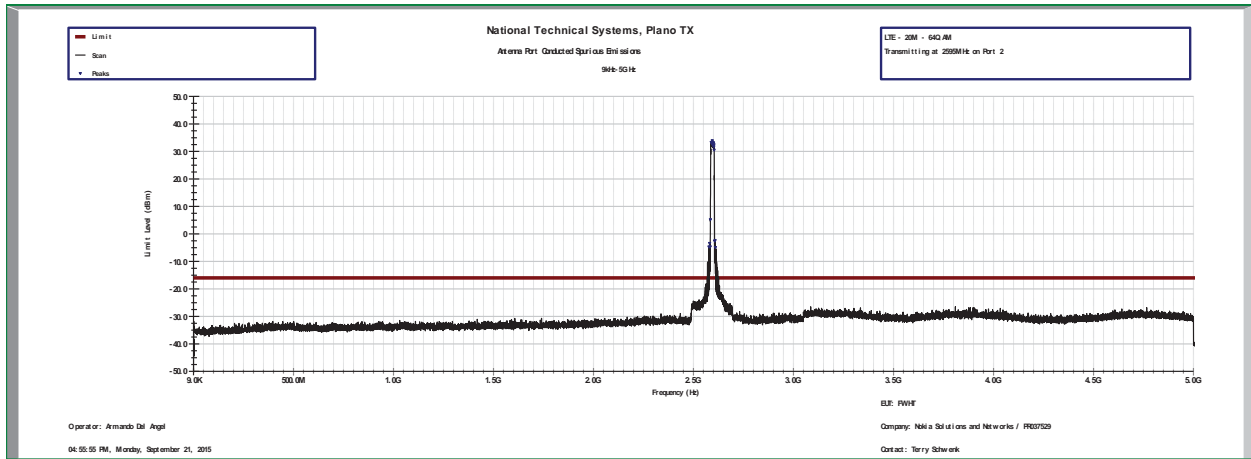


20M – LTE – 16QAM – Center Channel (2595MHz)



20M – LTE – 64QAM – Center Channel (2595MHz)



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 – 27GHz frequency range in the following configuration:

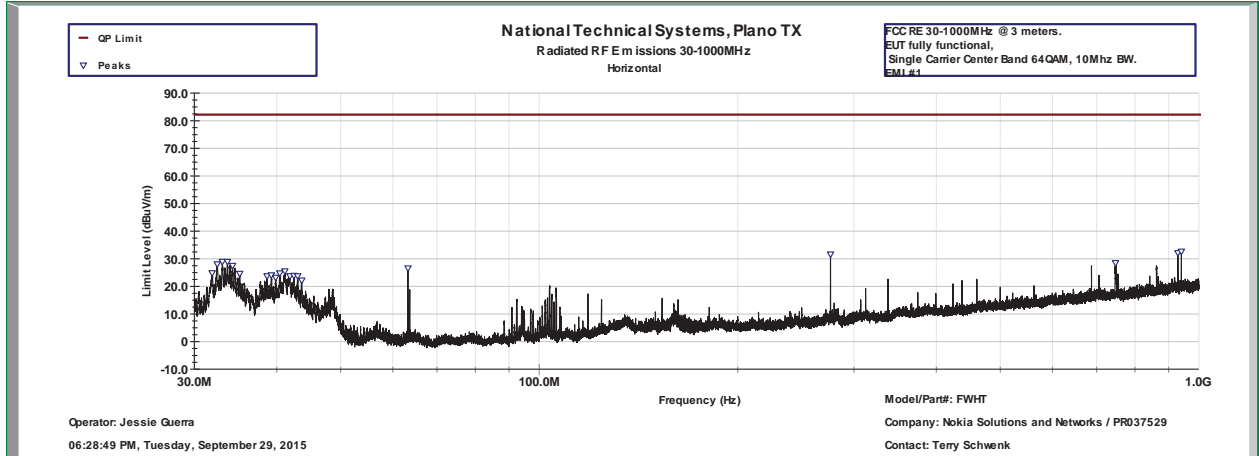
Transmitting in 10MHz-64QAM-LTE mode at center channel (2595MHz) on all 2 ports.

Final maximized peak radiated emissions were measured in this mode. Measurement distance was 3m. During testing all 2 antenna ports of the base station were terminated with 50ohm termination blocks and unit was transmitting on all of its ports at full power as described above.

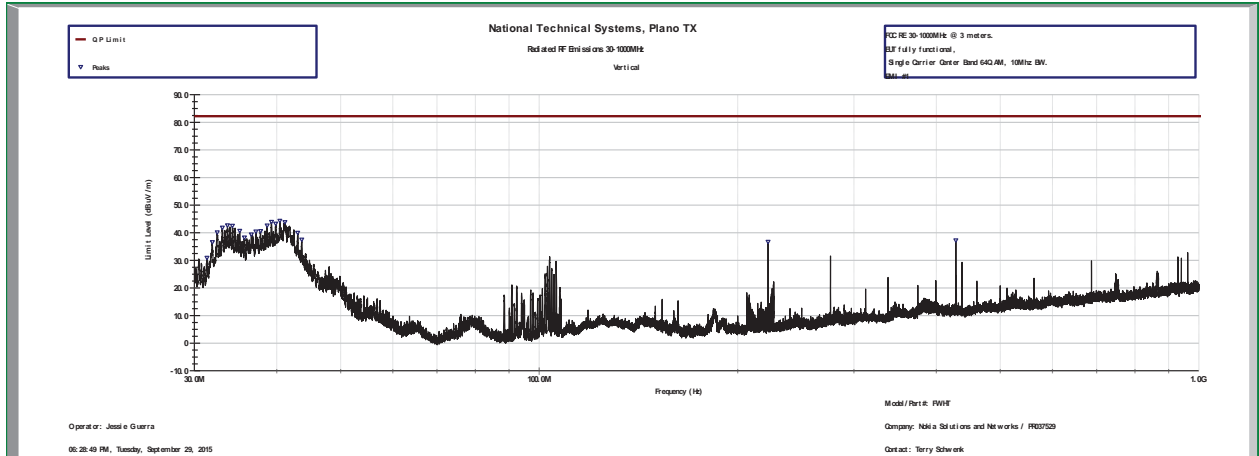
Frequency (MHz)	Polarity (H/V)	Raw Reading at 3m (dBuV)	Amplifier Gain (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Corrected Field Strength at 3m (dBuV/m)	Limit at 3m (dBuV/m)	Margin (dB)
5190	V	40.02	-44.152	33.728	4.729	34.325	82.2	-47.875
5190	H	42.04	-44.152	33.728	4.729	36.345	82.2	-45.855
7784.6	H	41.66	-41.882	38.361	7.324	45.463	82.2	-36.737
7785.04	V	41.09	-41.882	38.361	7.324	44.893	82.2	-37.307
10380.03	V	38	-44.776	40.006	8.107	41.337	82.2	-40.863
10380.29	H	39.47	-44.776	40.006	8.107	42.807	82.2	-39.393
12974.62	H	38.96	-44.905	25.362	2.421	21.838	82.2	-60.362
12974.51	V	39.27	-43.194	36.771	5.044	37.891	82.2	-44.309
1469.1	V	41.27	-43.196	36.772	5.042	39.888	82.2	-42.312
1130.00 (NF)	H	41.43	-44.908	25.196	2.619	24.337	82.2	-57.863
18163.35 (NF)	V	38.05	-46.018	44.782	11.912	48.726	82.2	-33.474
25948.39	V	40.58	-45.437	46.333	14.959	56.435	82.2	-25.765
25949.56	H	40.51	-45.432	46.334	14.96	56.372	82.2	-25.828
Corrected Field Strength = Raw Reading + Amplifier Gain + Antenna Factor + Cable Loss								
Negative margin indicates a passing result.								
Detector: Peak, RBW=1MHz, VBW=3MHz, Max-hold								
NF: Noise Floor								

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 these levels as well, substitution measurements were not performed. TILE software was used for all preliminary scans and plots included on the following pages.

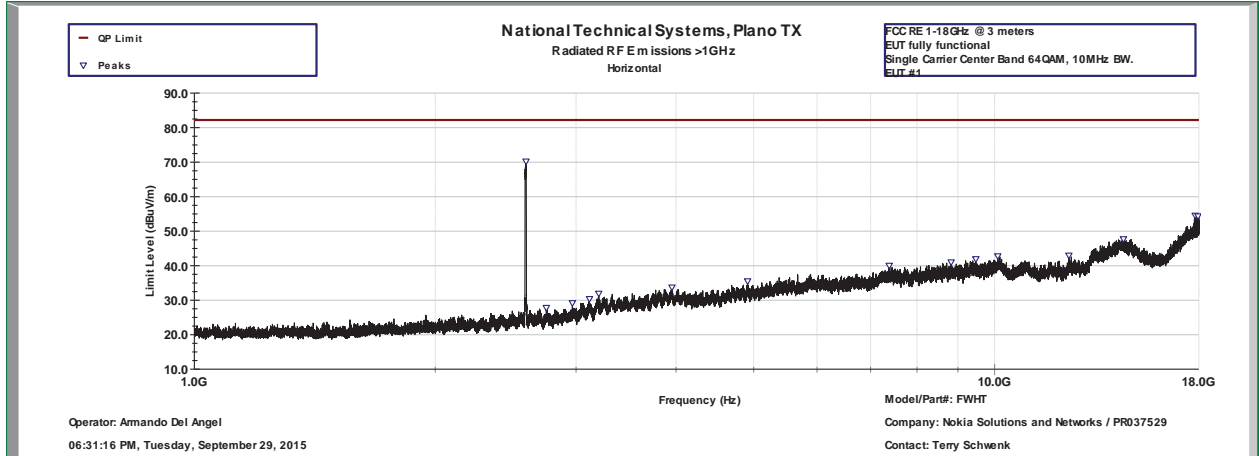
30MHz – 1GHz Peak Prescan at 3m - H



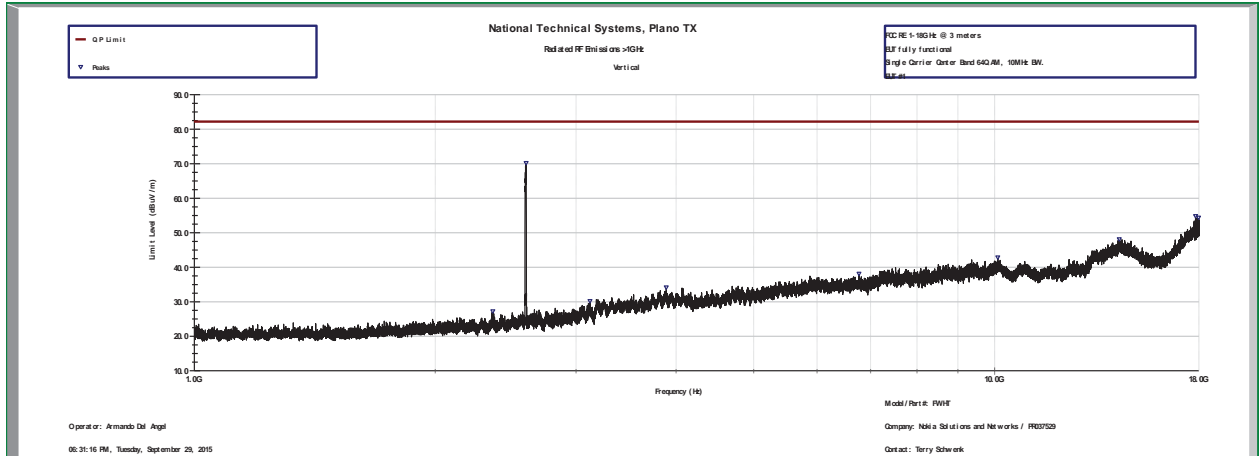
30MHz – 1GHz Peak Prescan at 3m - V



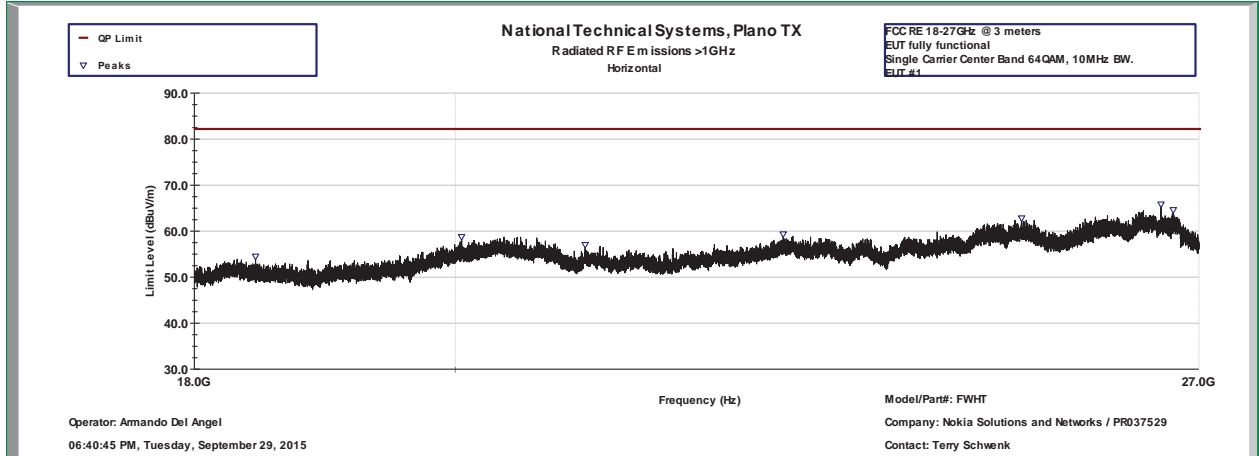
1GHz – 18GHz Peak Prescan at 3m – H



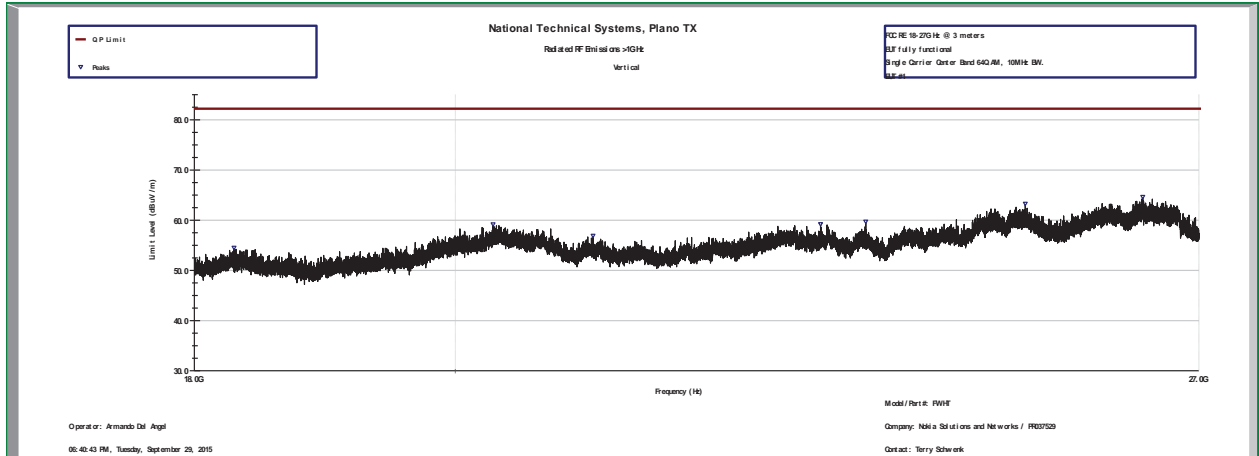
1GHz – 18GHz Peak Prescan at 3m – V



18GHz – 24GHz Peak Prescan at 3m – H



18GHz – 24GHz Peak Prescan at 3m – V



Frequency Stability

In order to demonstrate carrier frequency stability at extreme temperatures and voltages, frequency Bandedge was measured in the following configuration (Worst case from conducted Port Bandedge measurement):

Transmitting in 15MHz-64QAM-LTE mode at Low channel (2503.5MHz) and High Channel (2682.5MHz) on port 2.

Nominal operating voltage of the product is declared as 115VAC.

Amplitude at the bandedges are compared with the limit used during the bandedge measurement (-16.01dBm).

Extreme Voltages

	2496MHz	2690MHz	Limit
20C	Amplitude (dBm)	Amplitude (dBm)	dBm
97.7V	-20.98dBm	-21.66dBm	-16.01dBm
132.25V	-21.98dBm	-21.57dBm	-16.01dBm

Extreme Temperatures

	2496MHz	2690MHz	Limit
115VAC	Amplitude (dBm)	Amplitude (dBm)	dBm
-30	-23.53dBm	-23.7dBm	-16.01dBm
-20	-23.23dBm	-23.52dBm	-16.01dBm
-10	-22.22dBm	-23.11dBm	-16.01dBm
0	-23.08dBm	-22.34dBm	-16.01dBm
10	-21.10dBm	-20.6dBm	-16.01dBm
20	-22.22dBm	-21.12dBm	-16.01dBm
30	-23.61dBm	-20.71dBm	-16.01dBm
40	-21.46dBm	-21.18dBm	-16.01dBm
50	-22.03dBm	-20.94dBm	-16.01dBm

Based on the results above, highest amplitude at any bandedge was -20.6dBm, which ensures that the transmitted signal remains in its authorized frequency block at extreme voltages and temperatures.

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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