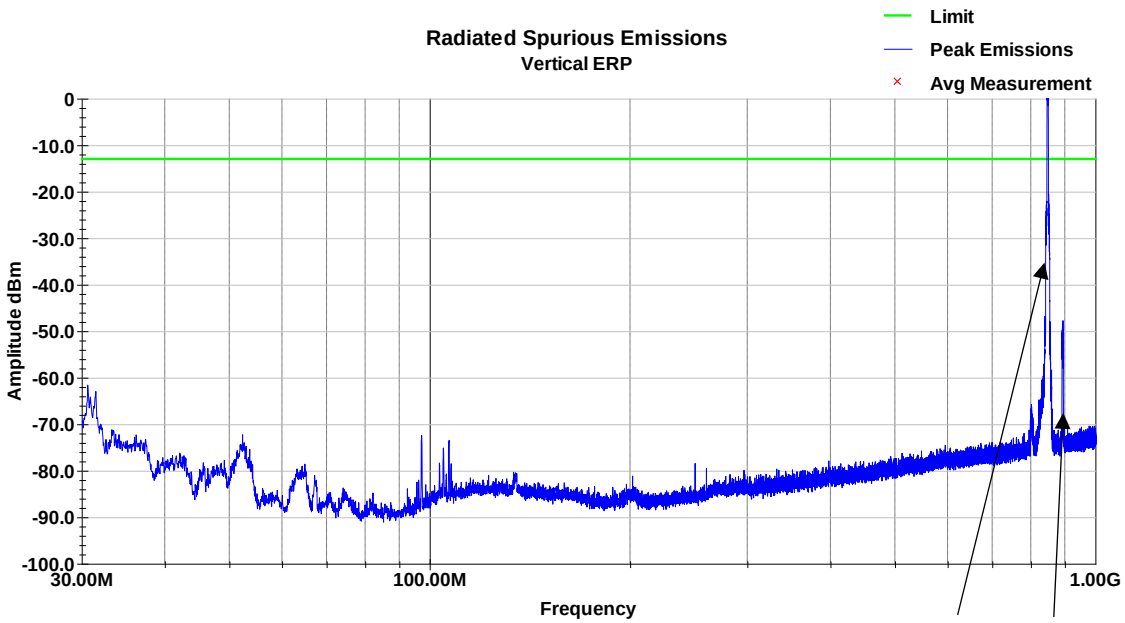
WCDMA Band 5, QPSK modulation

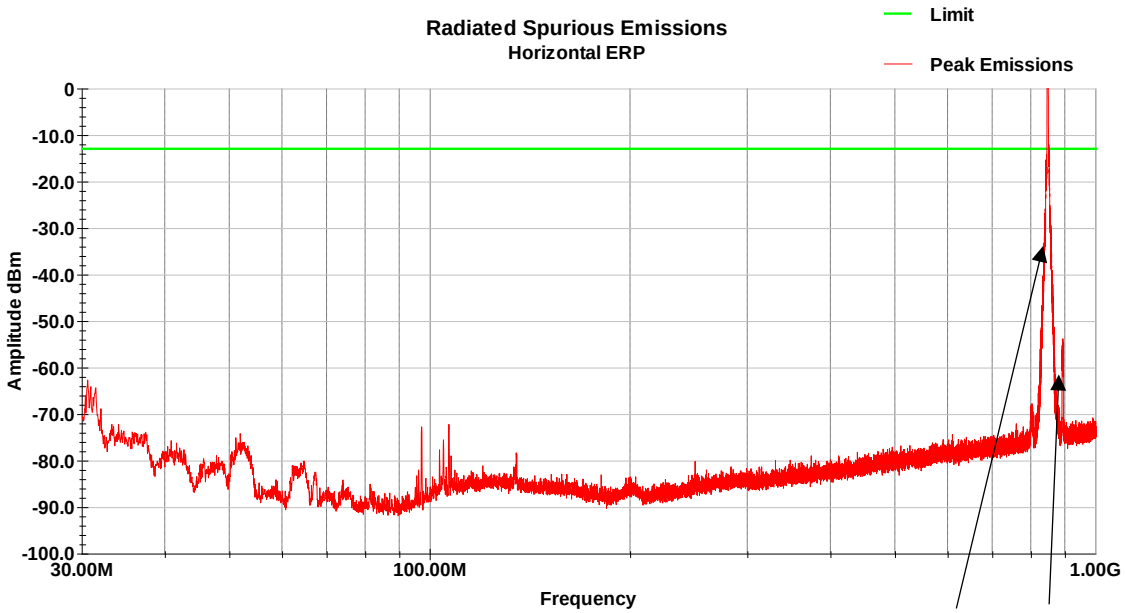
High channel (846.6MHz)

Vertical Plot (30-1000MHz)



Uplink Downlink

Horizontal Plot (30-1000MHz)



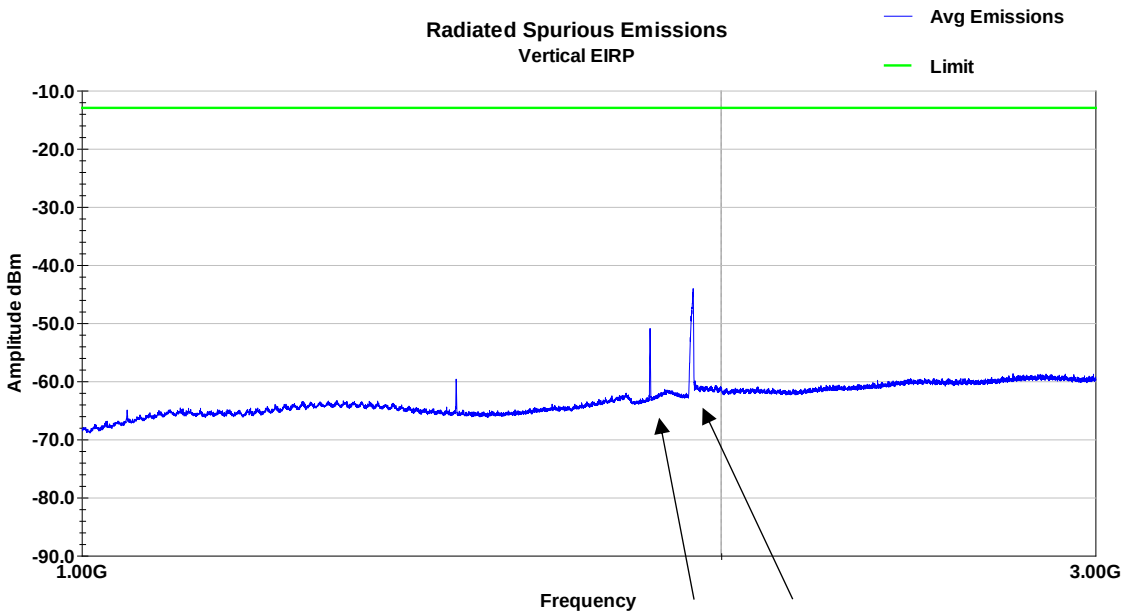
Uplink Downlink

3.8 *Test Data Above 1GHz*

LTE Band 2, QPSK modulation, 10MHz Bandwidth

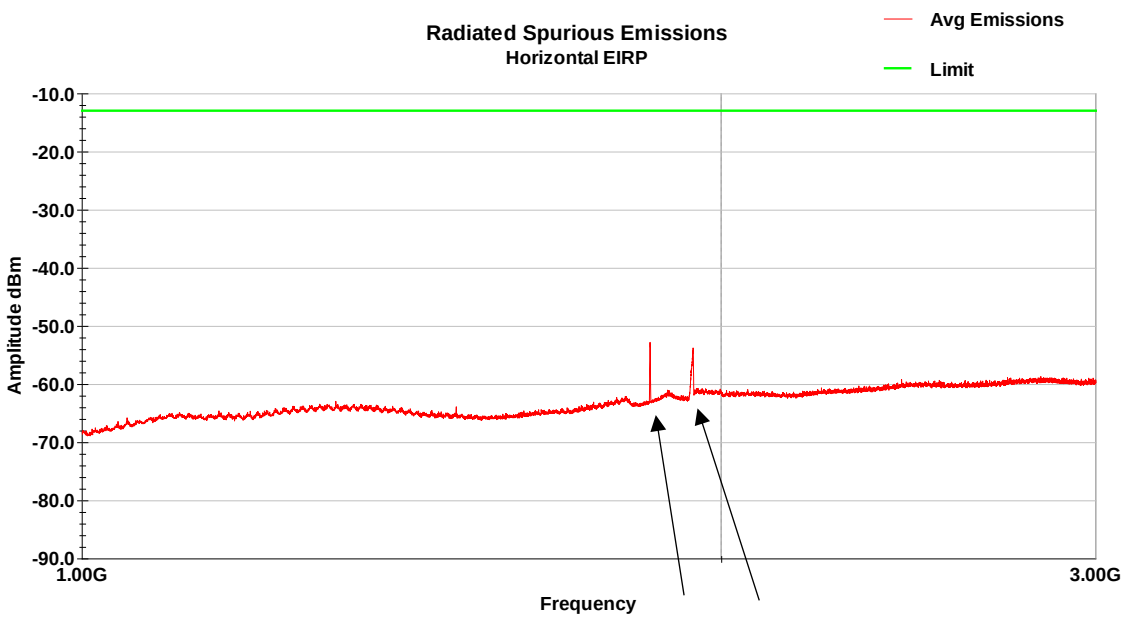
Low Channel (1855MHz)

Vertical Plot (1-3GHz)



Uplink Downlink

Horizontal Plot (1-3GHz)

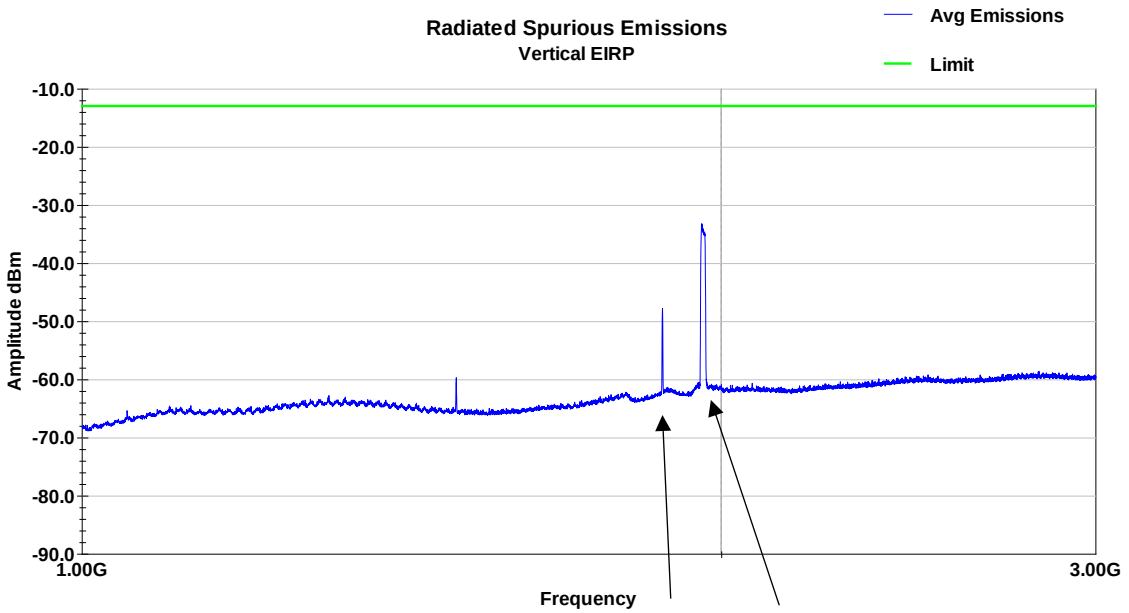


Uplink Downlink

LTE Band 2, QPSK modulation, 10MHz Bandwidth

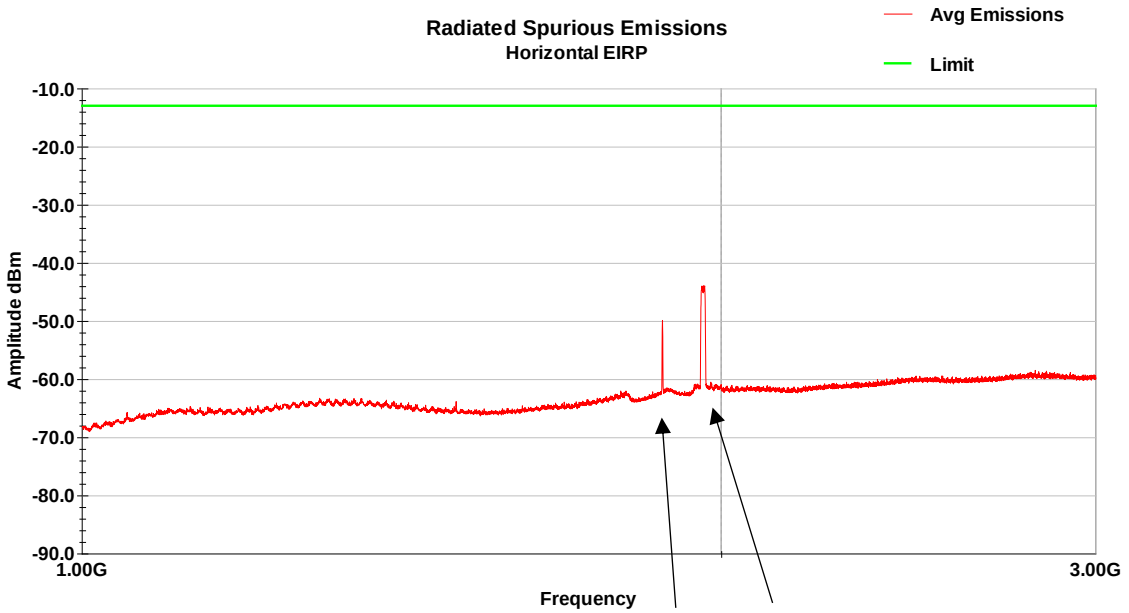
Mid Channel (1880 MHz)

Vertical Plot (1-3GHz)



Uplink Downlink

Horizontal Plot (1-3GHz)

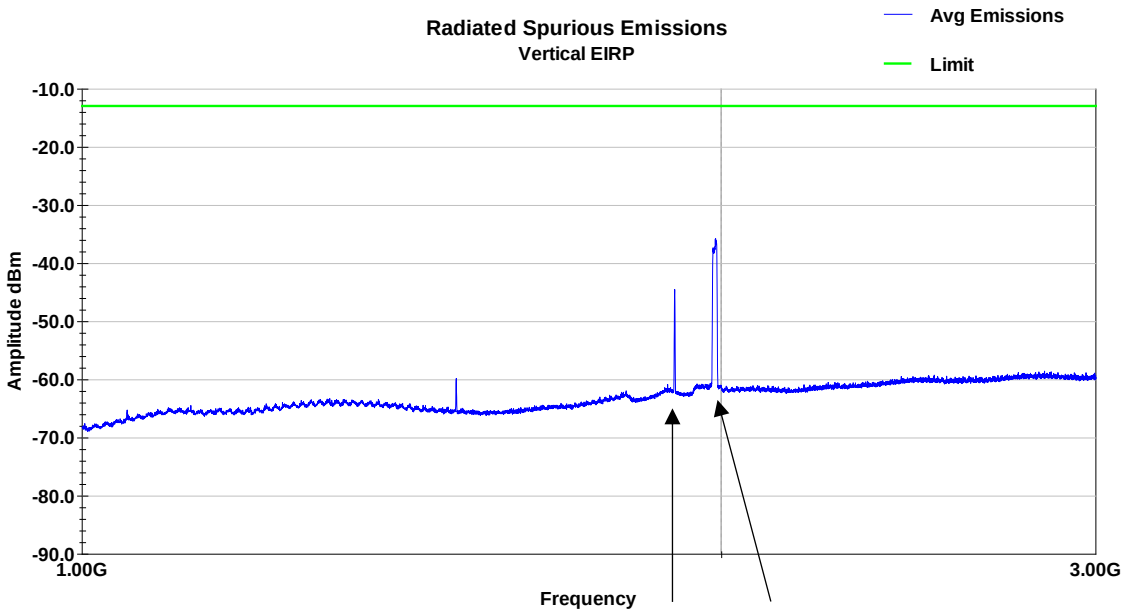


Uplink Downlink

LTE Band 2, QPSK modulation, 10MHz Bandwidth

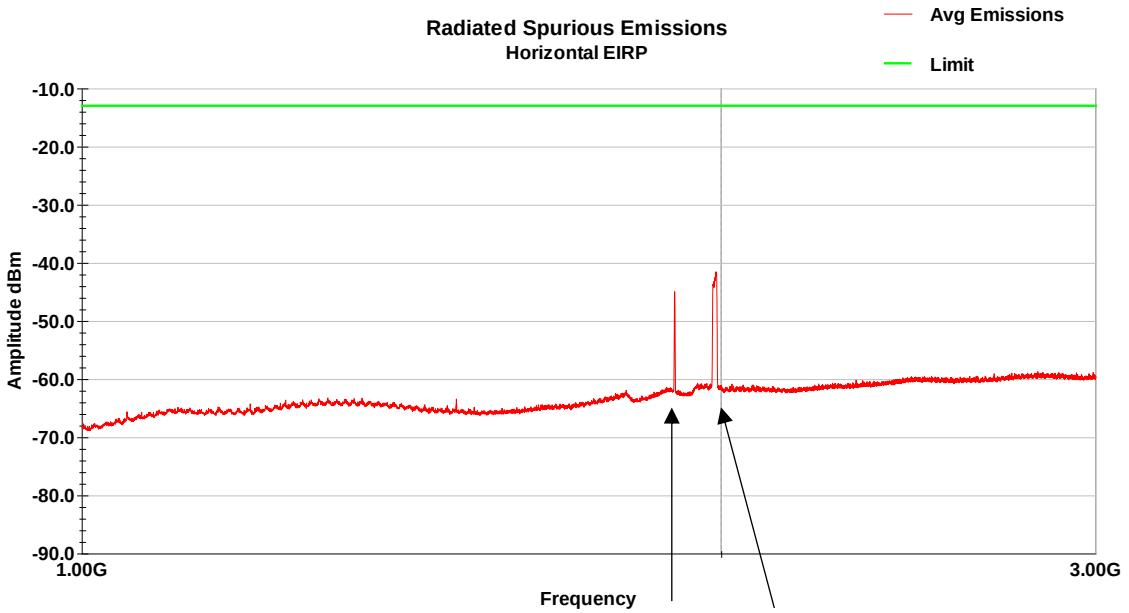
High Channel (1905 MHz)

Vertical Plot (1-3GHz)



Uplink Downlink

Horizontal Plot (1-3GHz)

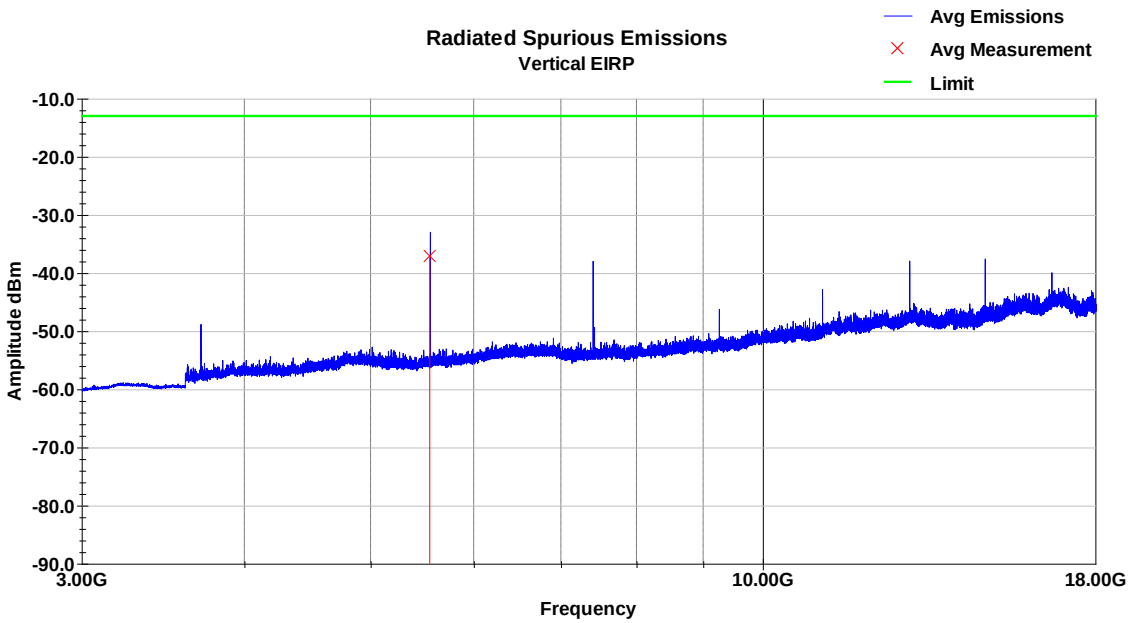


Uplink Downlink

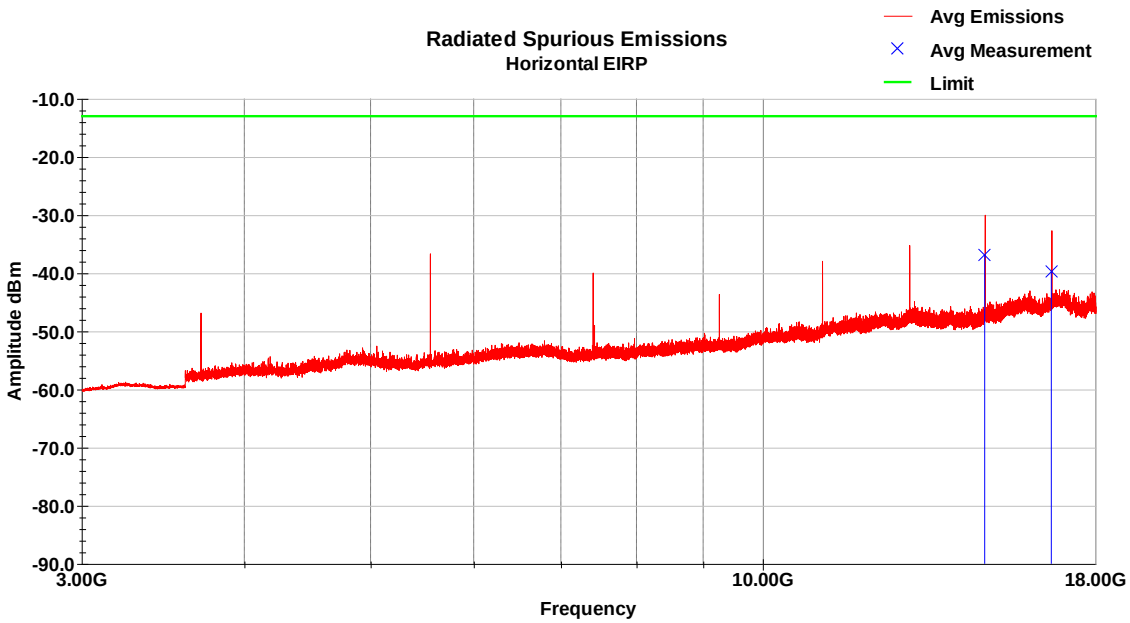
LTE Band 2, QPSK modulation, 10MHz Bandwidth

Low Channel (1855MHz)

Vertical Plot (3-18GHz)



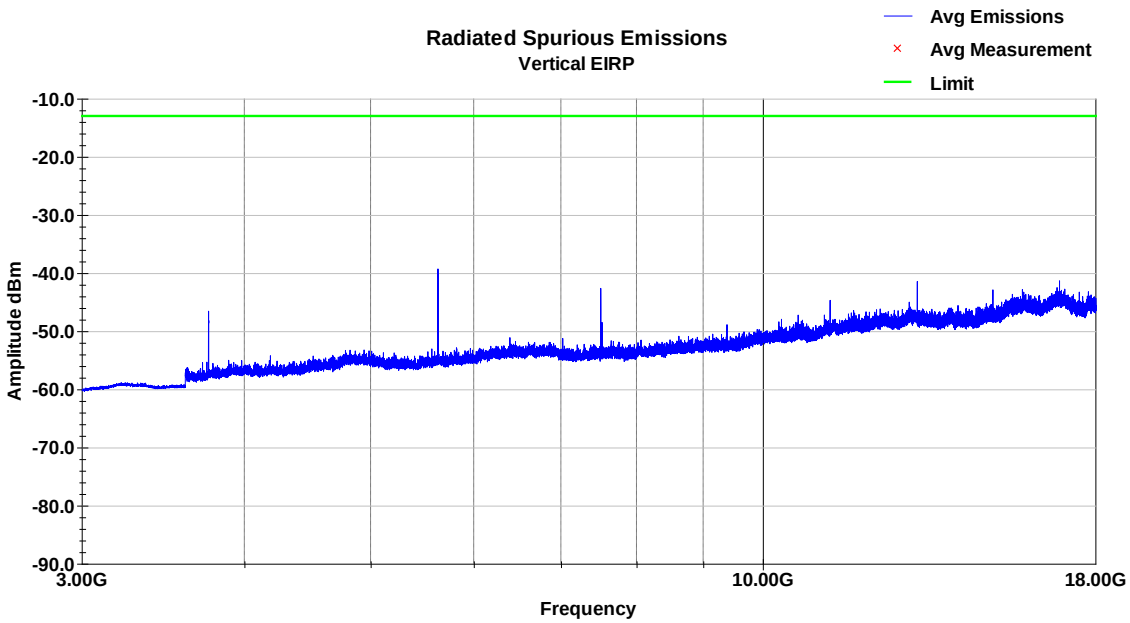
Horizontal Plot (3-18GHz)



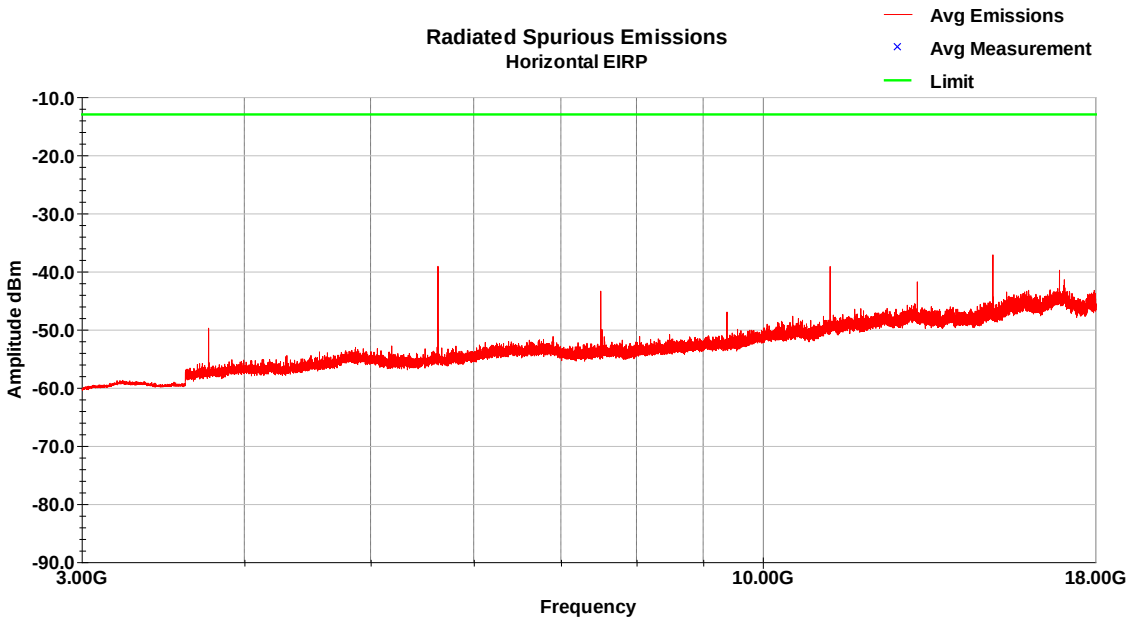
LTE Band 2, QPSK modulation, 10MHz Bandwidth

Mid Channel (1880 MHz)

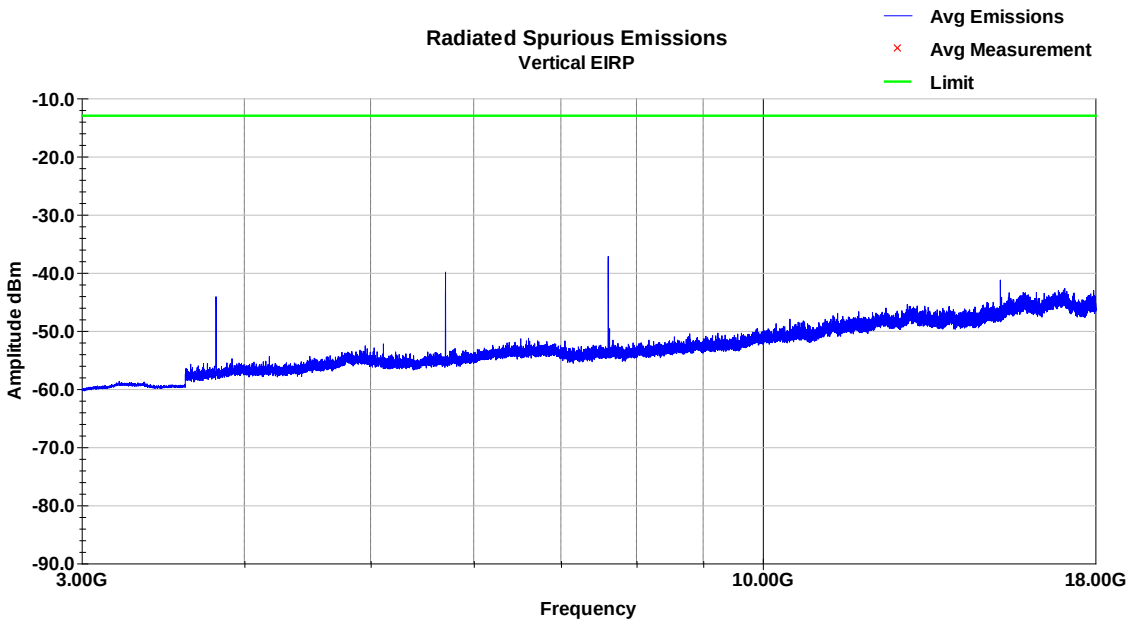
Vertical Plot (3-18GHz)



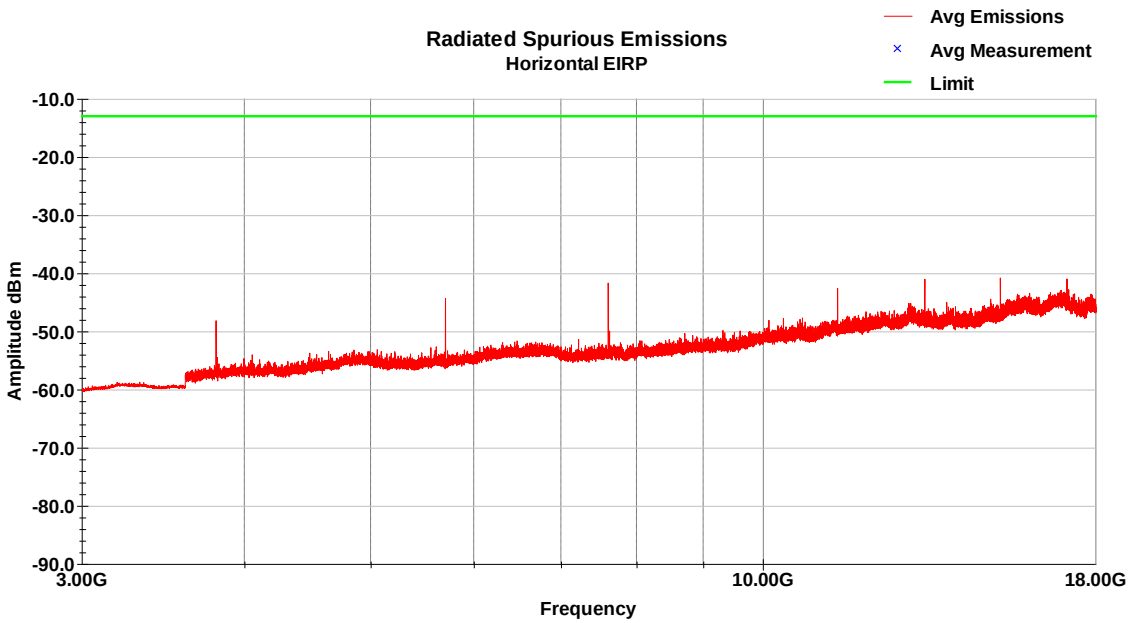
Horizontal Plot (3-18GHz)



LTE Band 2, QPSK modulation, 10MHz Bandwidth
High Channel (1905 MHz)
Vertical Plot (3-18GHz)



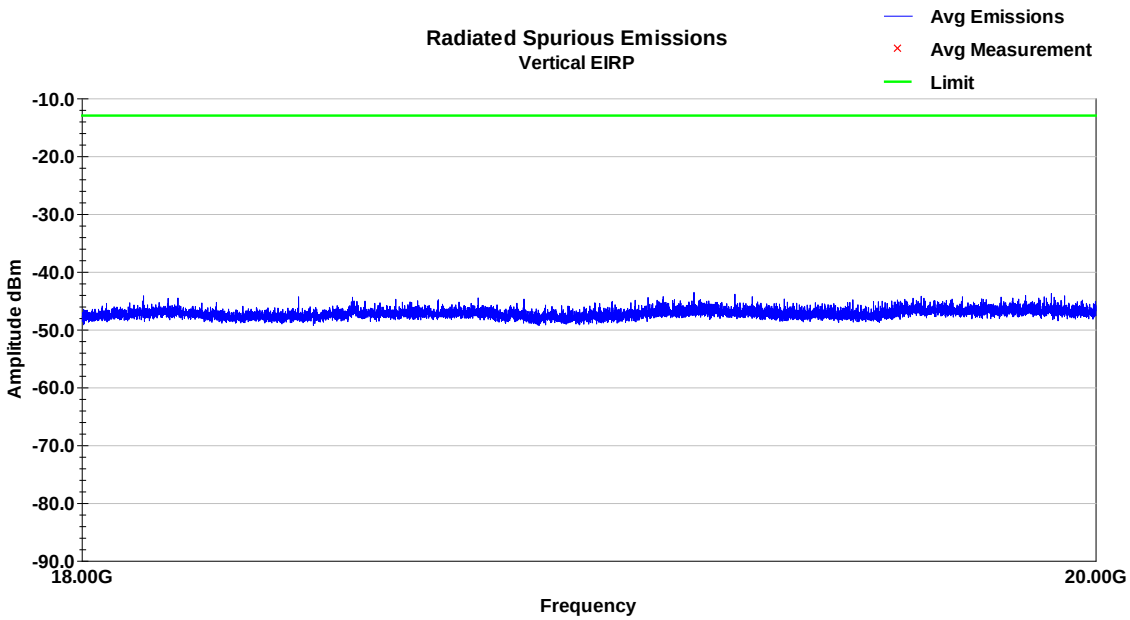
Horizontal Plot (3-18GHz)



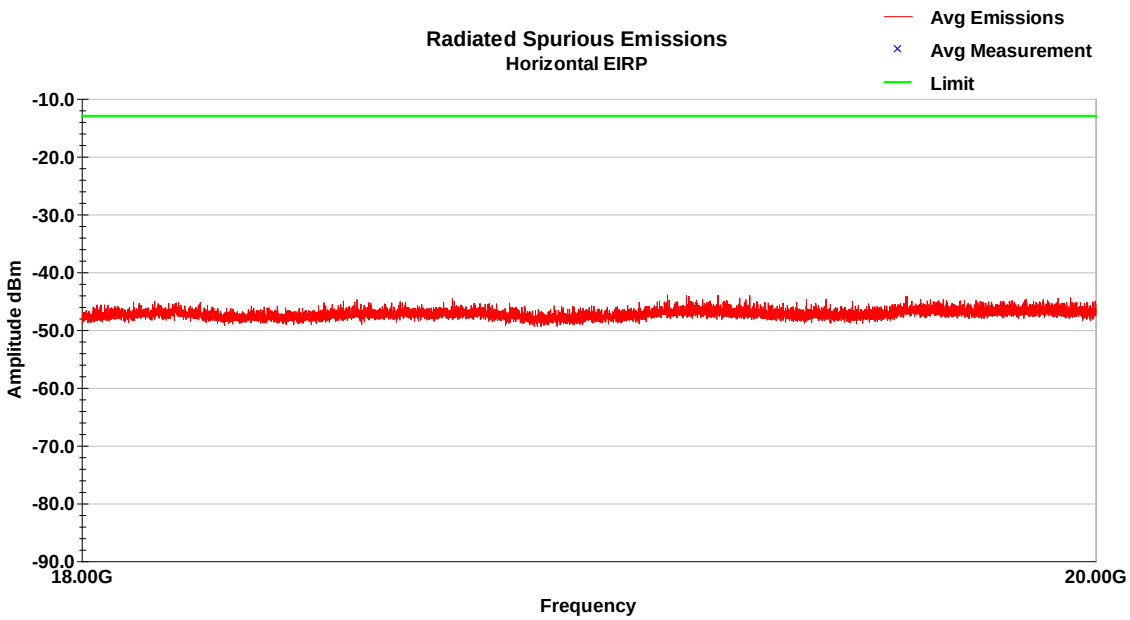
LTE Band 2, QPSK modulation, 10MHz Bandwidth

Low Channel (1855 MHz)
Note: Low Mid and High Channel Plots look similar

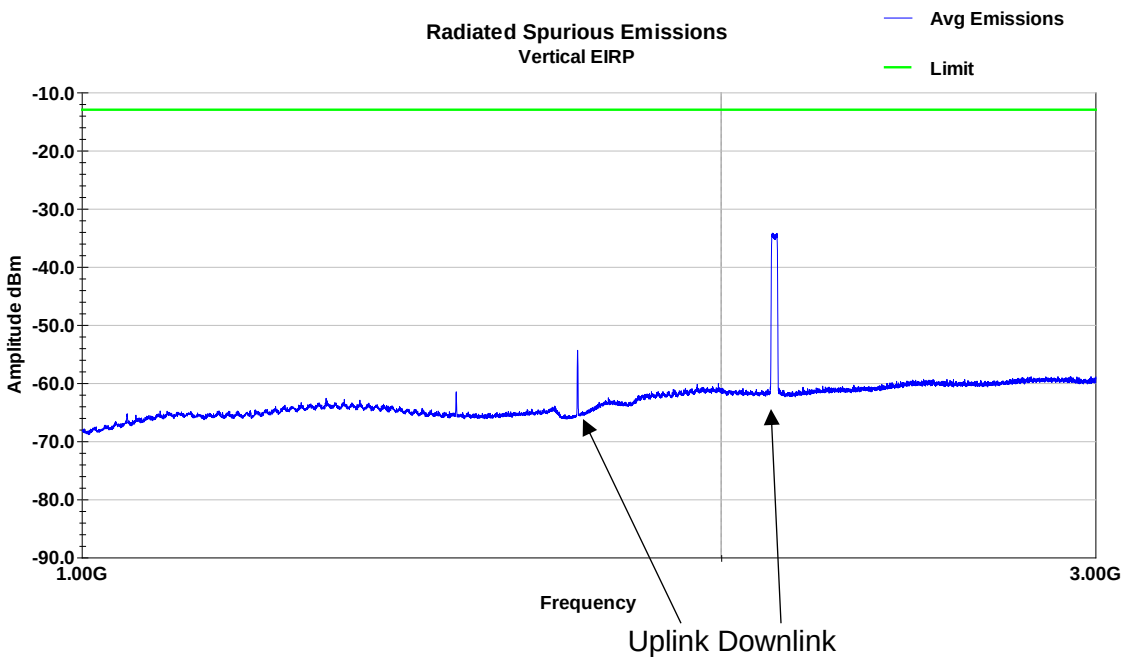
Vertical Plot (18-20GHz)



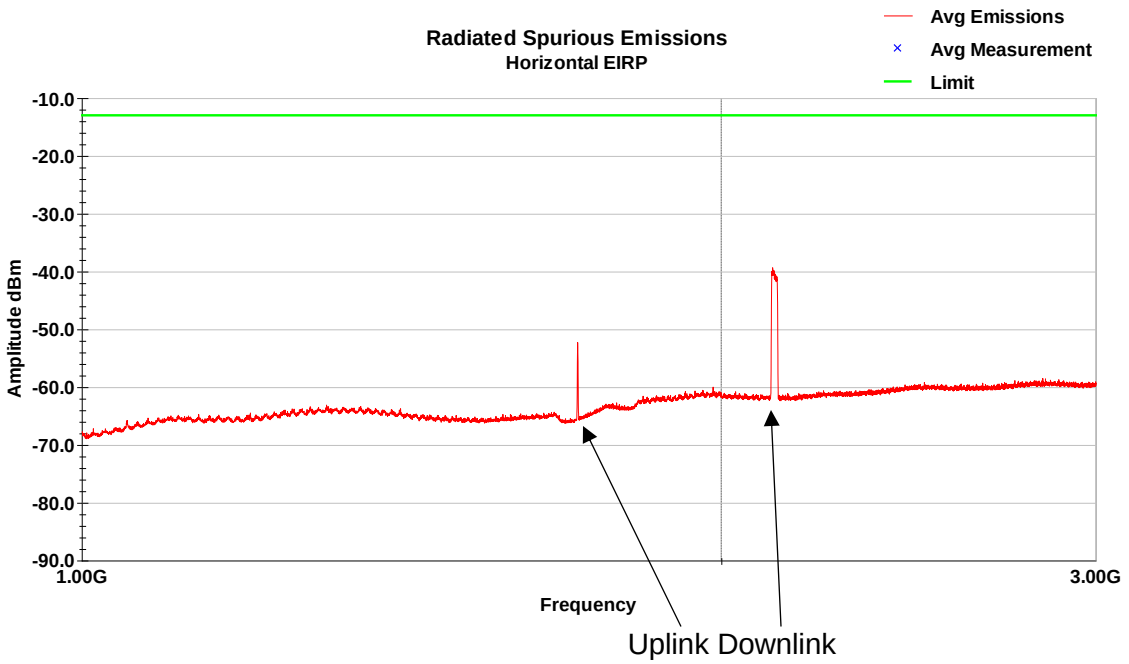
Horizontal Plot (18-20GHz)



LTE Band 4, QPSK modulation, 15MHz Bandwidth
Low Channel (1717.5 MHz)
Vertical Plot (1-3GHz)



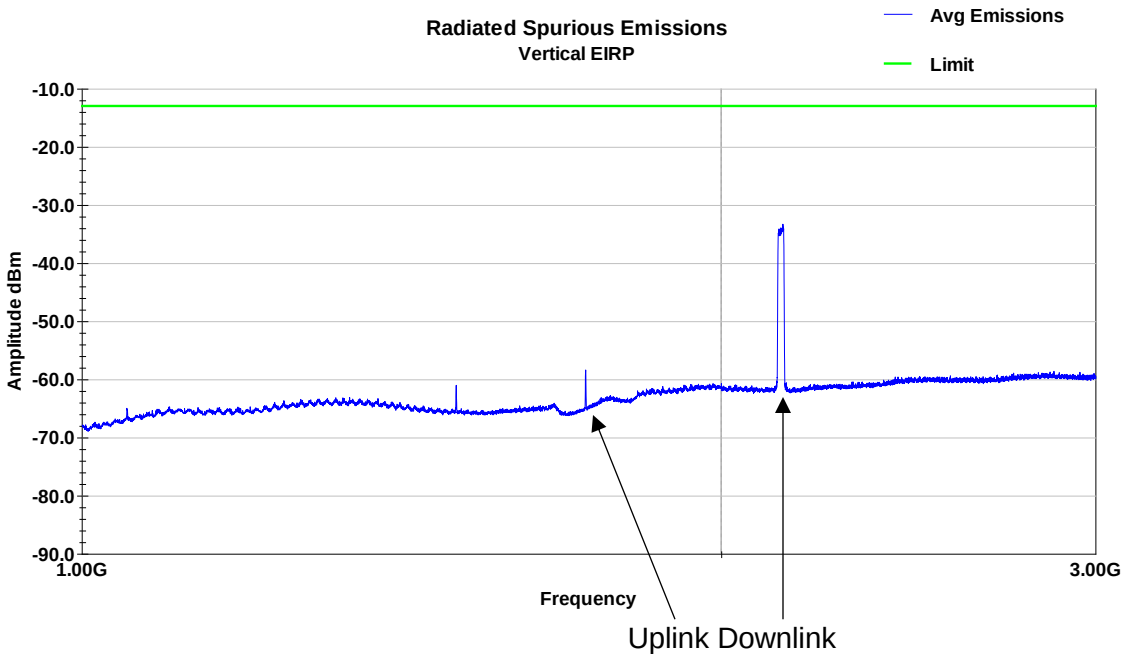
Horizontal Plot (1-3GHz)



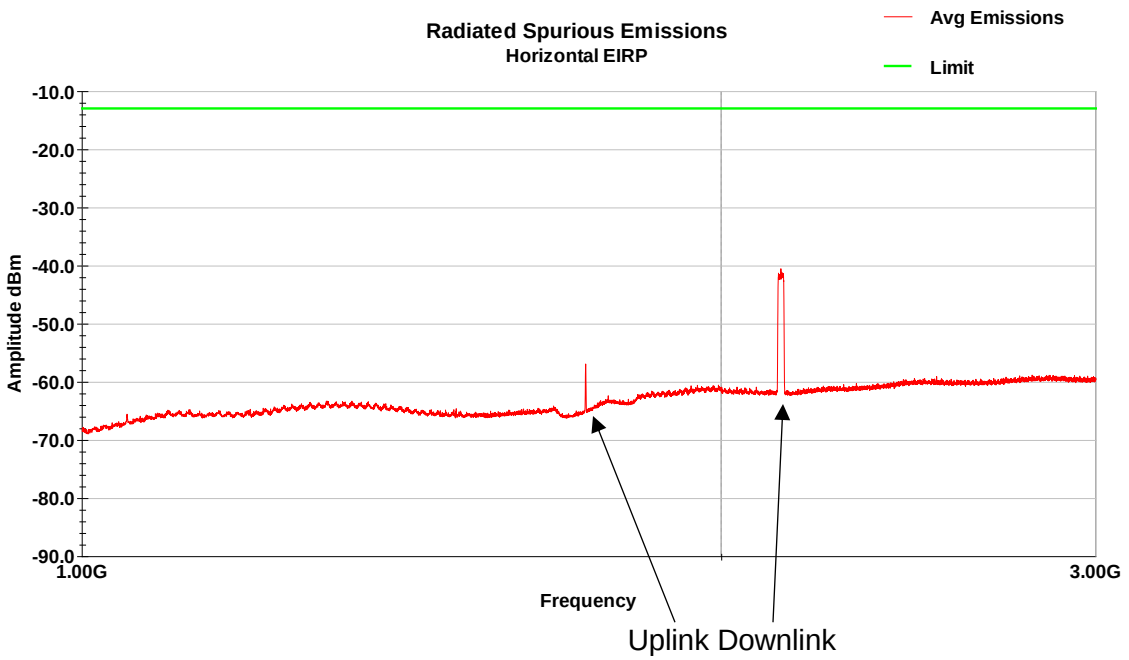
LTE Band 4, QPSK modulation, 15MHz Bandwidth

Mid Channel (1732.5 MHz)

Vertical Plot (1-3GHz)



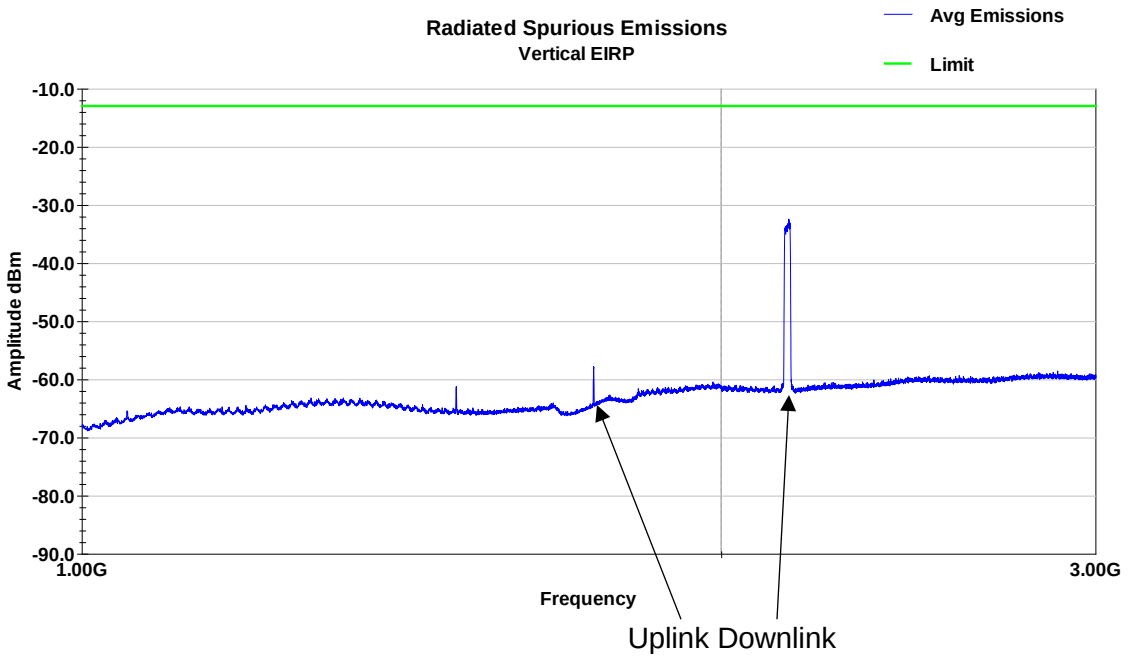
Horizontal Plot (1-3GHz)



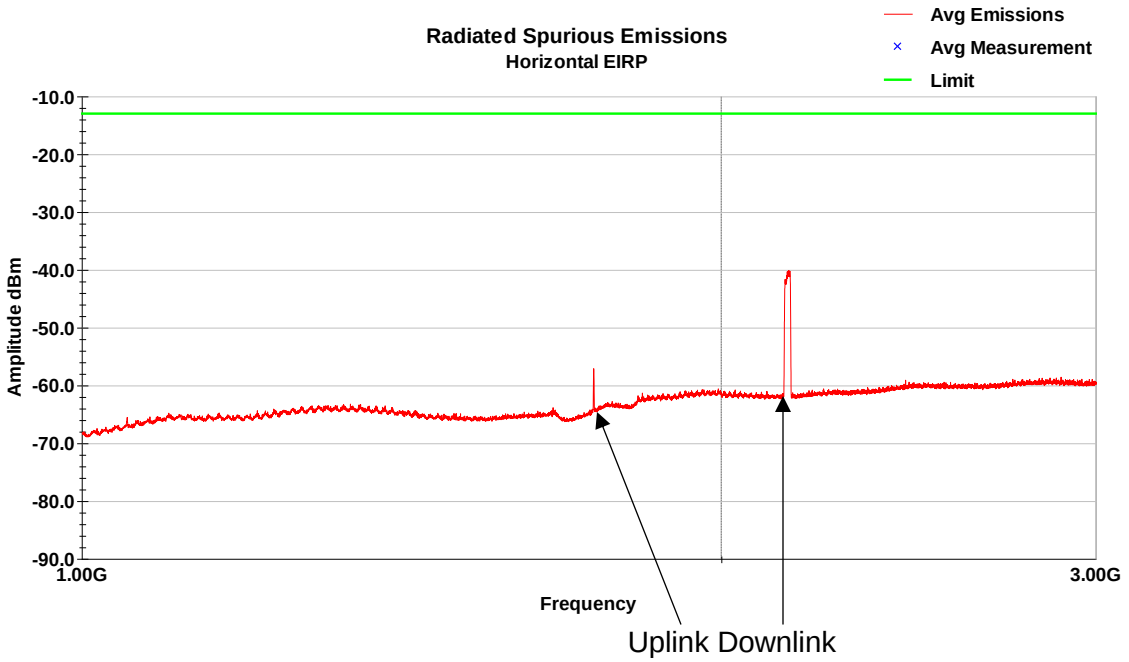
LTE Band 4, QPSK modulation, 15MHz Bandwidth

High Channel (1747.5 MHz)

Vertical Plot (1-3GHz)



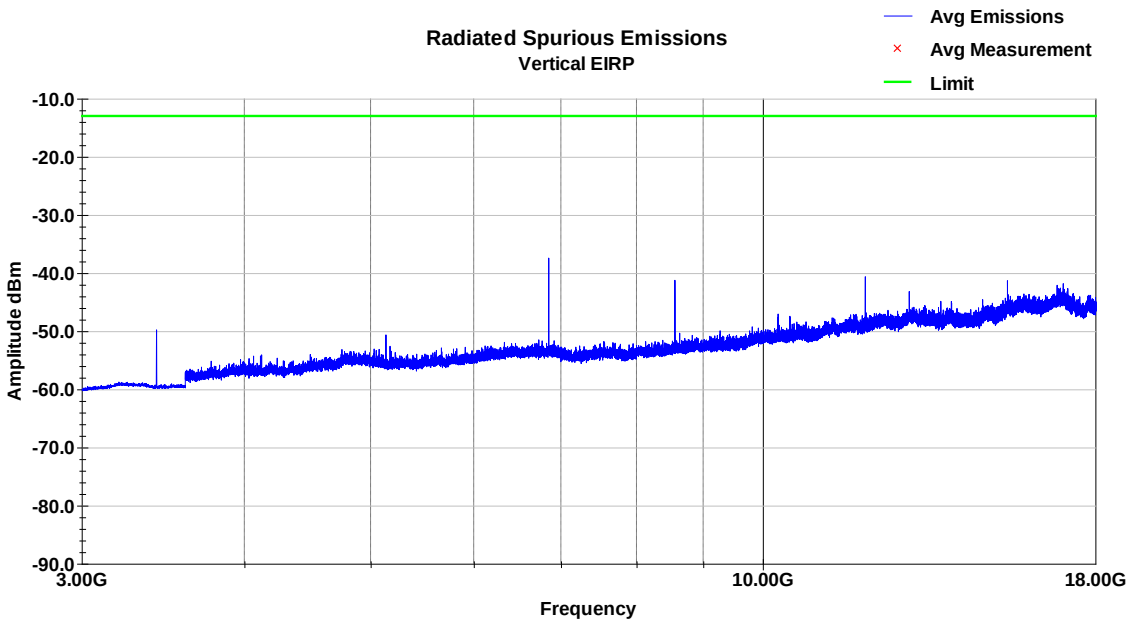
Horizontal Plot (1-3GHz)



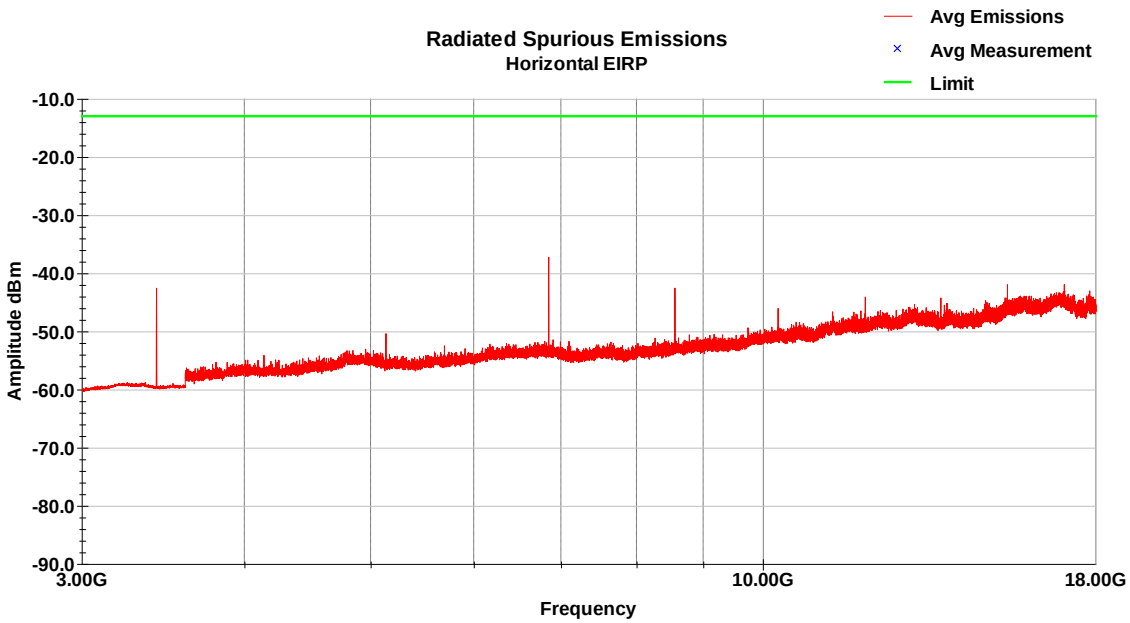
LTE Band 4, QPSK modulation, 15MHz Bandwidth

Low Channel (1717.5 MHz)

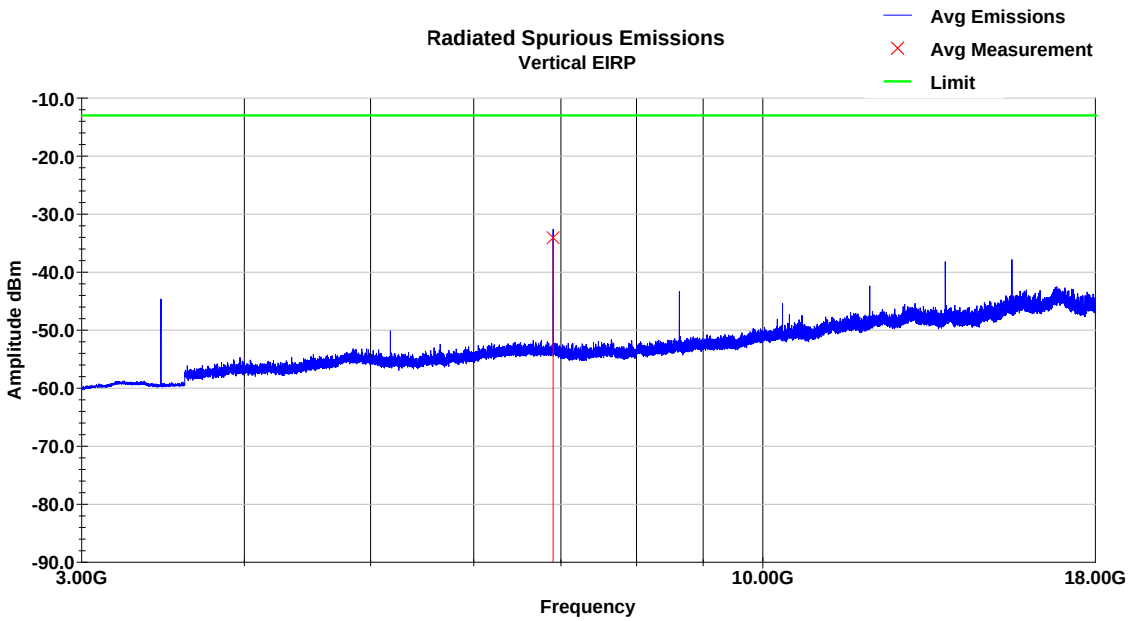
Vertical Plot (3-18GHz)



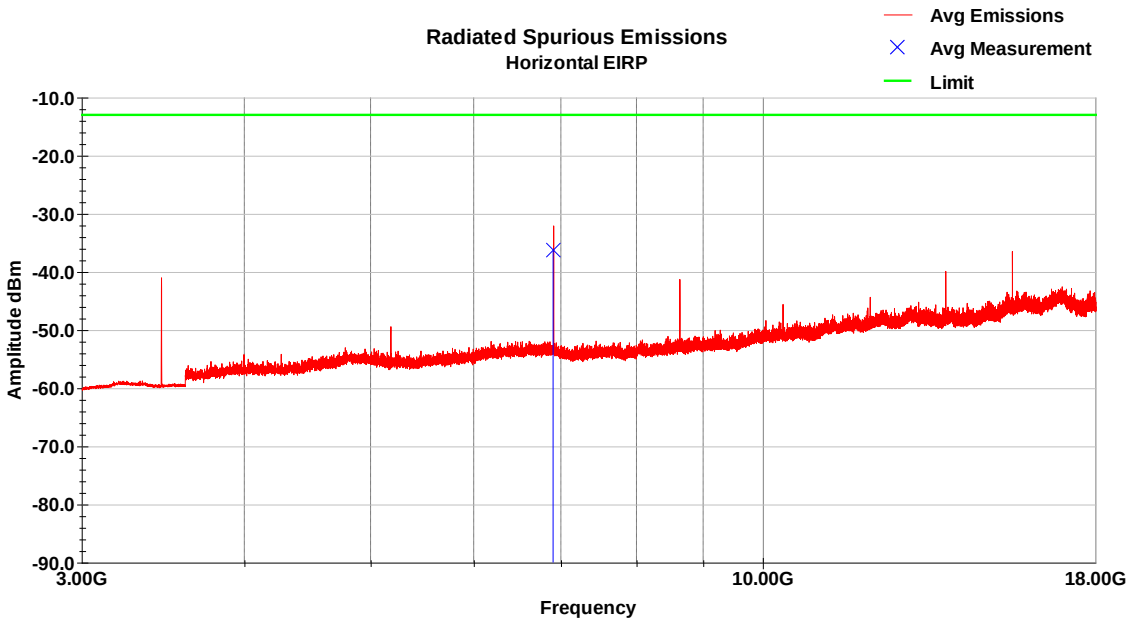
Horizontal Plot (3-18GHz)



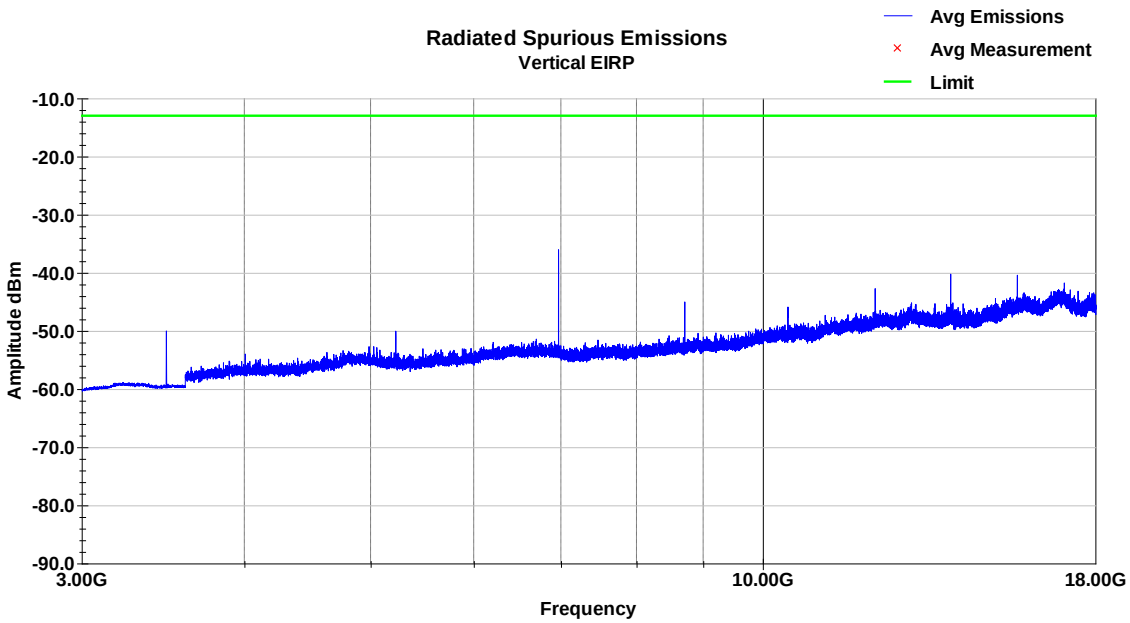
LTE Band 4, QPSK modulation, 15MHz Bandwidth
Mid Channel (1732.5 MHz)
Vertical Plot (3-18GHz)



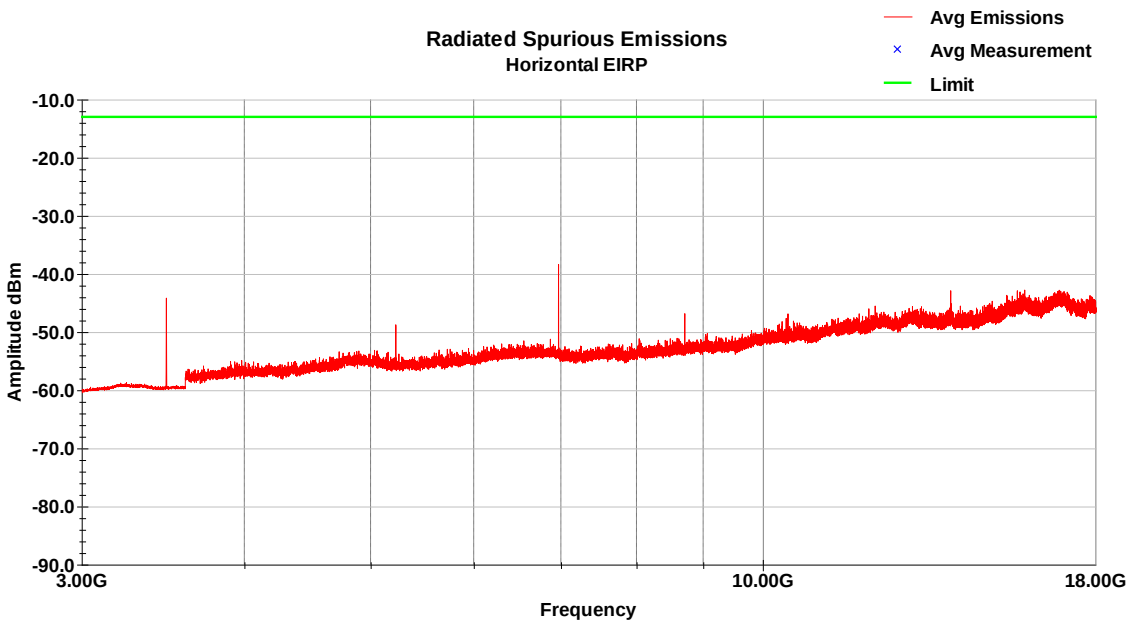
Horizontal Data (3-18GHz)



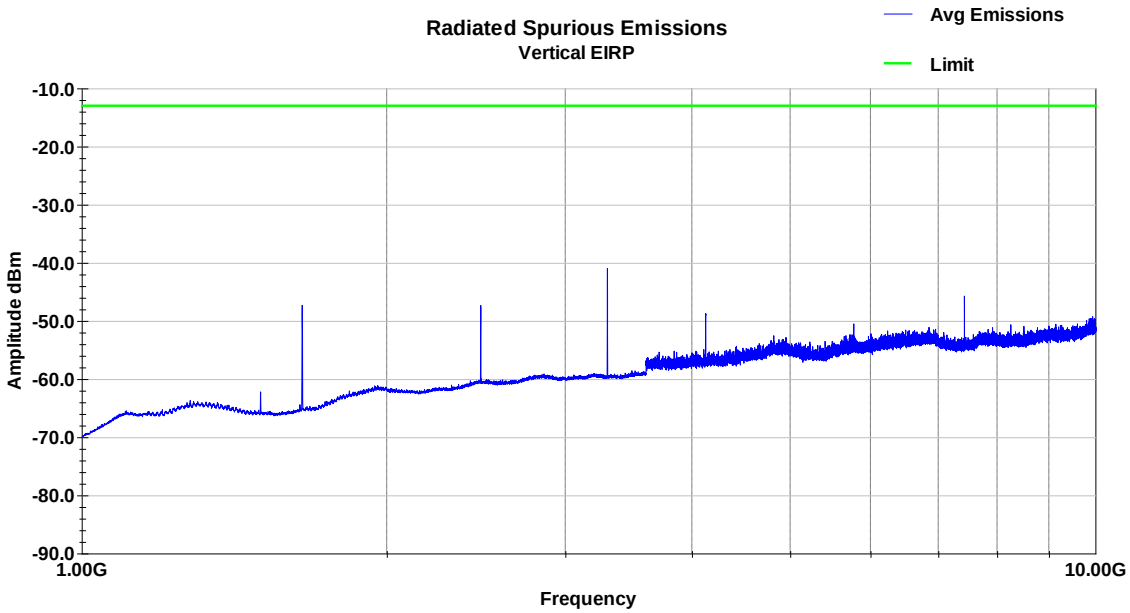
LTE Band 4, QPSK modulation, 15MHz Bandwidth
High Channel (1747.5 MHz)
Vertical Plot (3-18GHz)



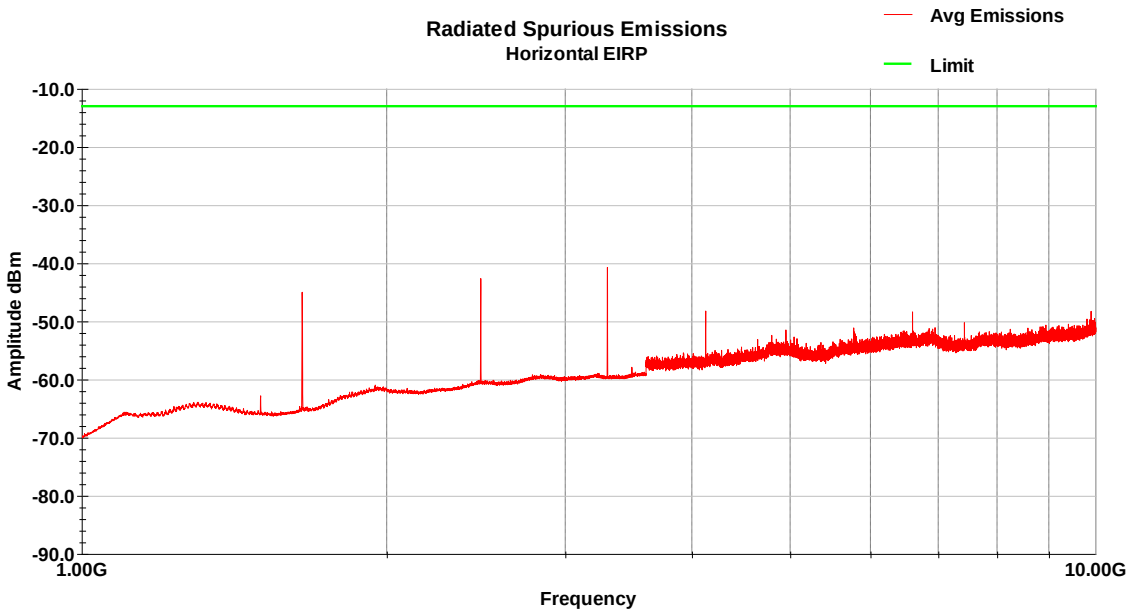
Vertical Data (3-18GHz)



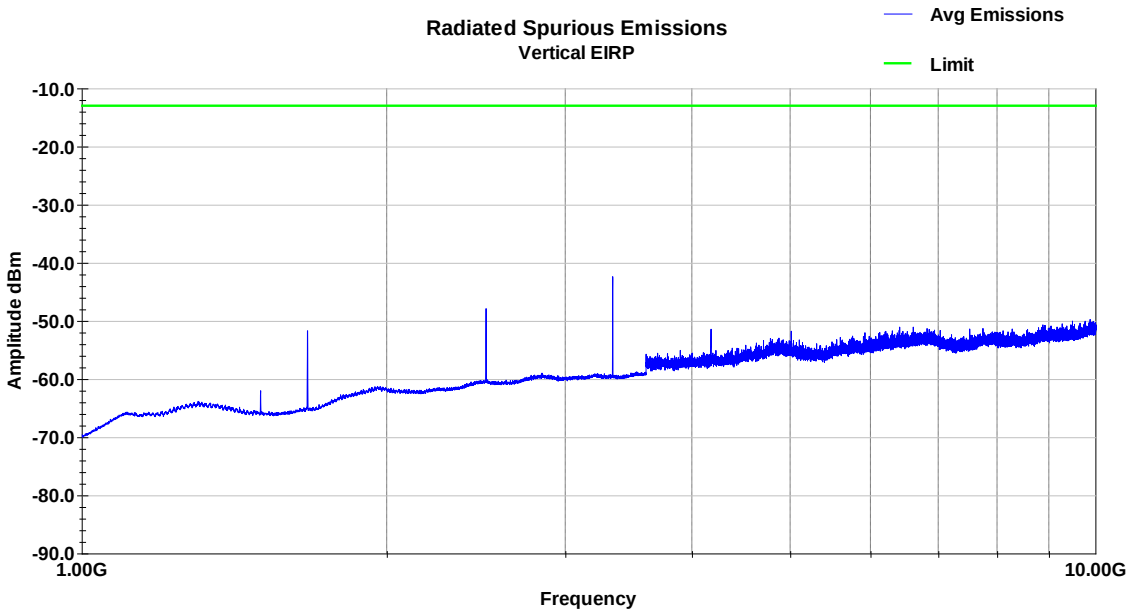
LTE Band 5, QPSK modulation, 5MHz Bandwidth
Low Channel (826.5 MHz)
Vertical Plot (1-10GHz)



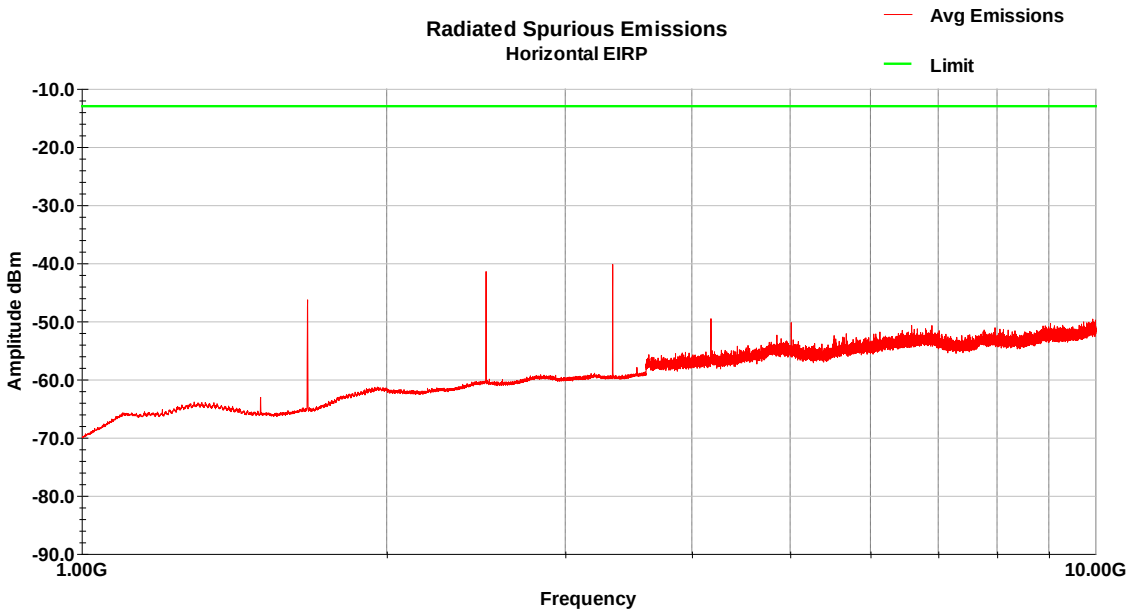
Horizontal Plot (1-10GHz)



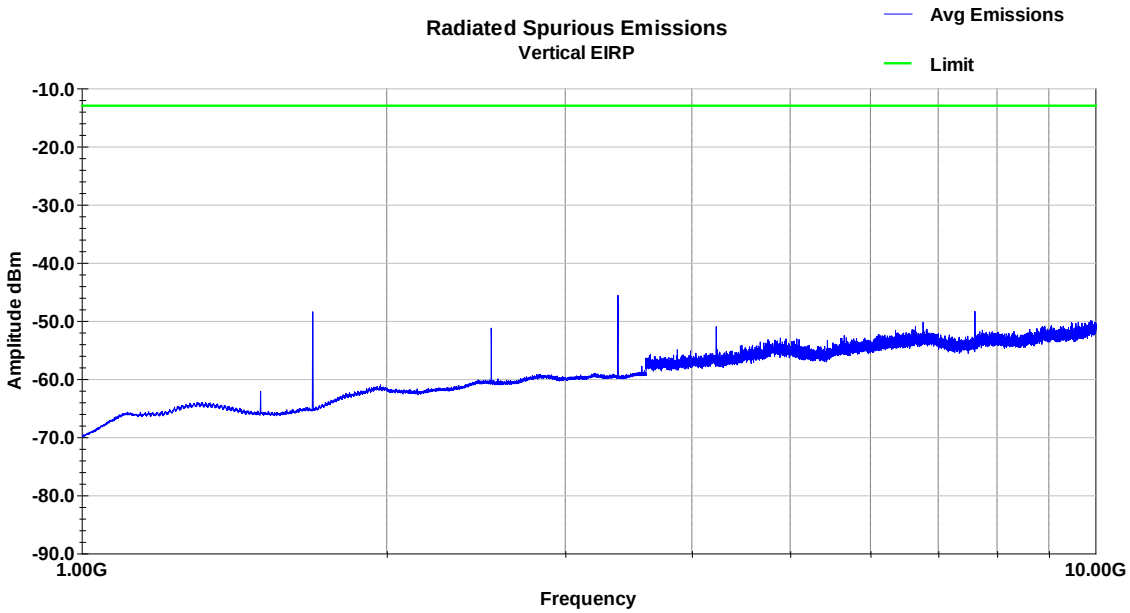
LTE Band 5, QPSK modulation, 5MHz Bandwidth
Mid Channel (836.5 MHz)
Vertical Plot (1-10GHz)



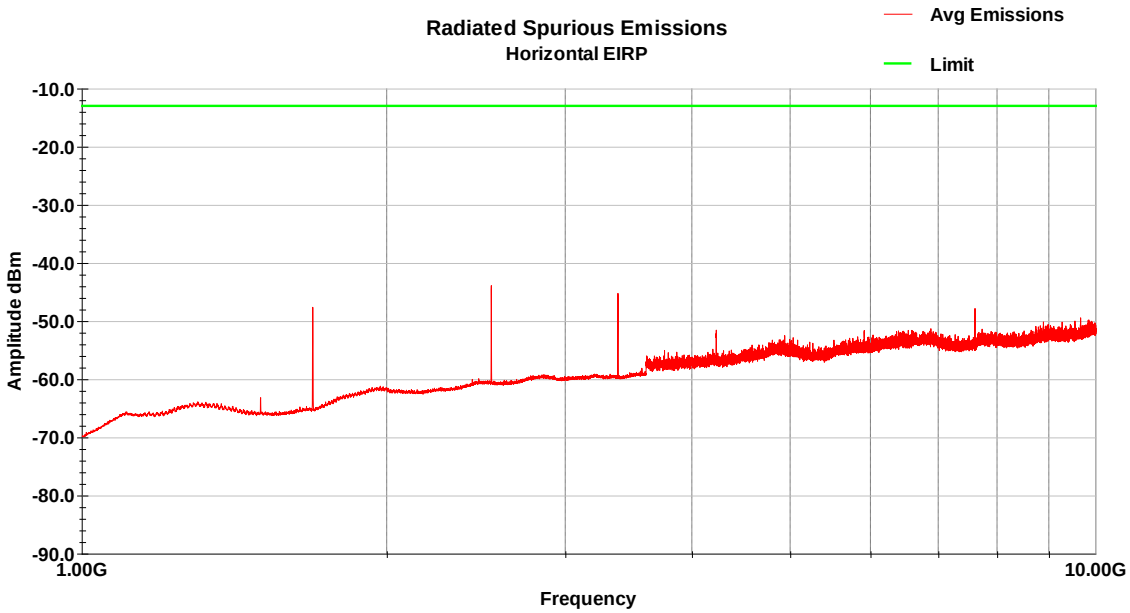
Horizontal Plot (1-10GHz)



LTE Band 5, QPSK modulation, 5MHz Bandwidth
High Channel (846.5 MHz)
Vertical Plot (1-10GHz)



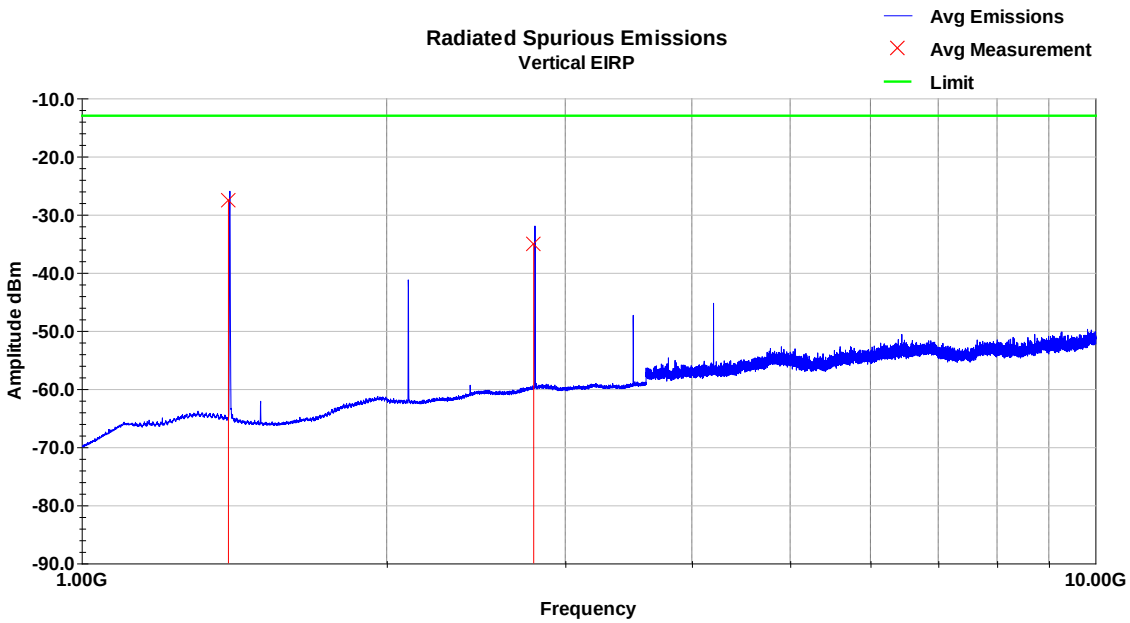
Horizontal Plot (1-10GHz)



LTE Band 12, QPSK modulation, 5MHz Bandwidth

Low Channel (701.5 MHz)

Vertical Plot (1-10GHz)



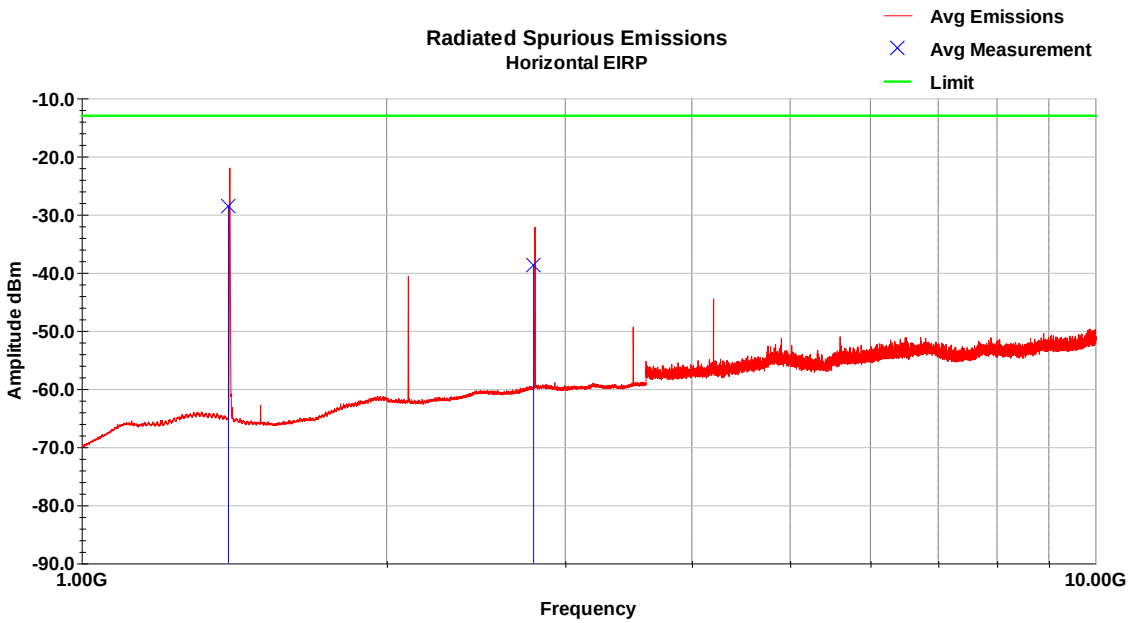
Vertical Data (1-10GHz)

Frequency MHz	Raw Avg dBm	Polarity V/H	Azimuth degrees	Height cm	AF dB/m	Loss dB	Amp dB	Avg Value dBm	Limit dBm	Margin dB
1395.98	-24.1	V	141.0	175.0	29.3	2.3	35.0	-27.5	-13.0	-14.5
2792.42	-36.6	V	120.0	102.0	33.2	3.3	35.0	-35.1	-13.0	-22.1
= Level + AF + CL - Amp										
n = QP Value - Limit										

LTE Band 12, QPSK modulation, 5MHz Bandwidth

Low Channel (701.5 MHz)

Horizontal Plot (1-10GHz)



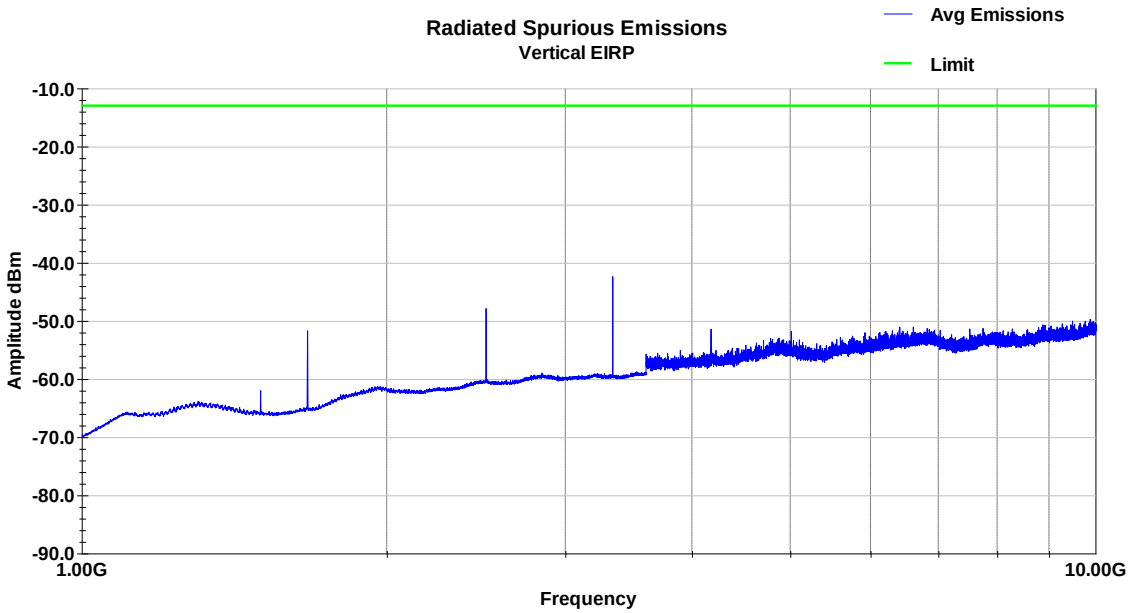
Horizontal Data (1-10GHz)

Frequency MHz	Raw Avg dBm	Polarity V/H	Azimuth degrees	Height cm	AF dB/m	Loss dB	Amp dB	Avg Value dBm	Limit dBm	Margin dB
1396.10	-25.3	H	305.0	162.0	29.3	2.3	35.0	-28.6	-13.0	-15.6
2792.30	-40.3	H	296.0	154.0	33.2	3.3	35.0	-38.7	-13.0	-25.7
QP Value = Level + AF + CL - Amp										
Margin = QP Value - Limit										

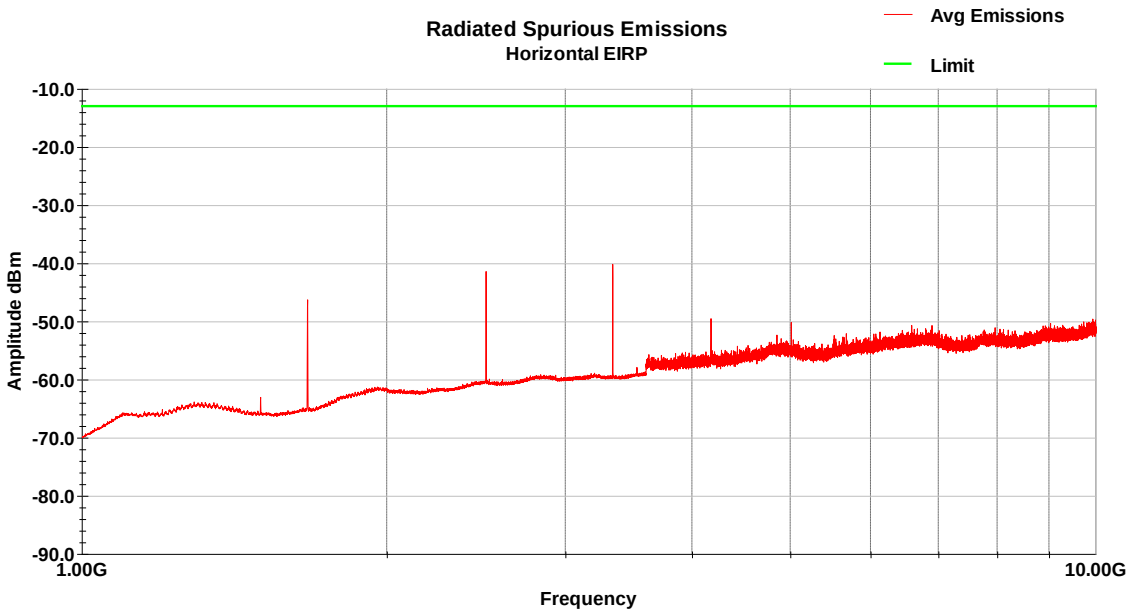
LTE Band 12, QPSK modulation, 5MHz Bandwidth

Mid Channel (707.5 MHz)

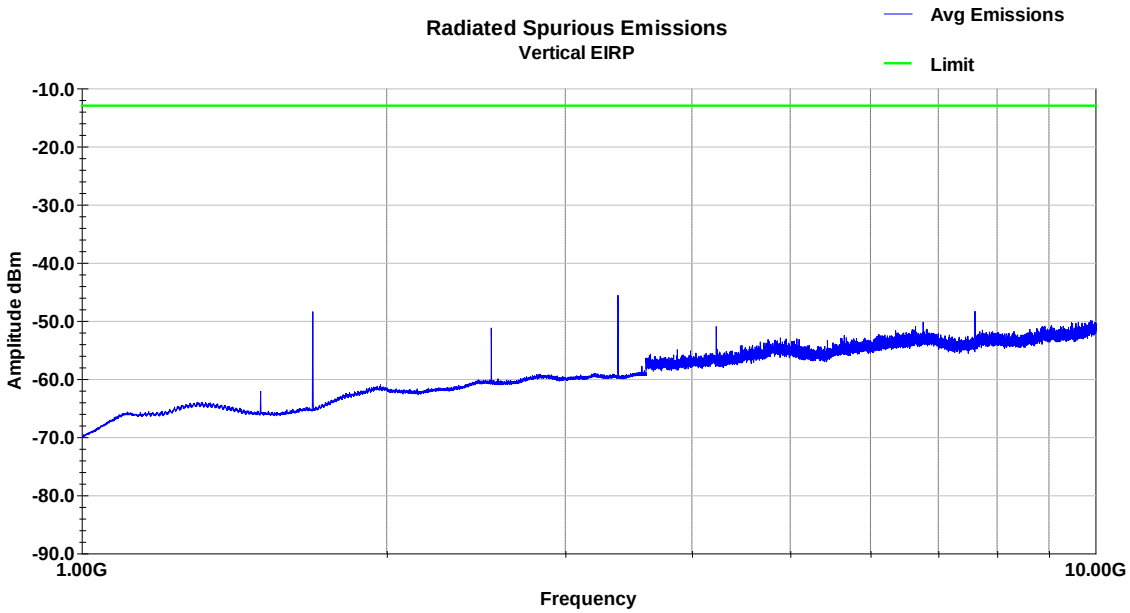
Vertical Plot (1-10GHz)



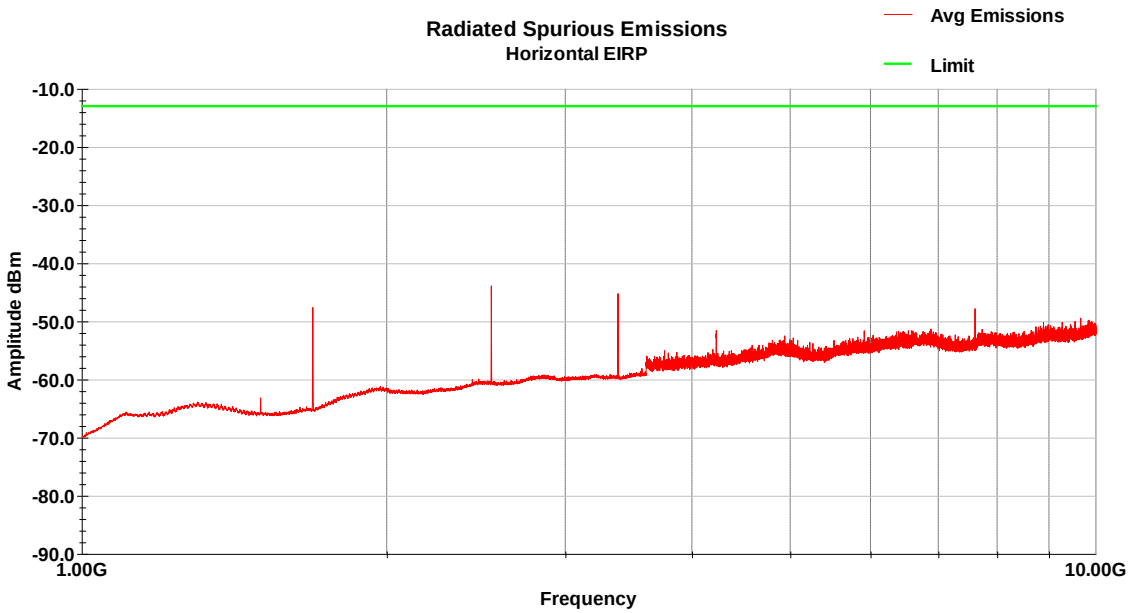
Horizontal Plot Mid (1-10GHz)



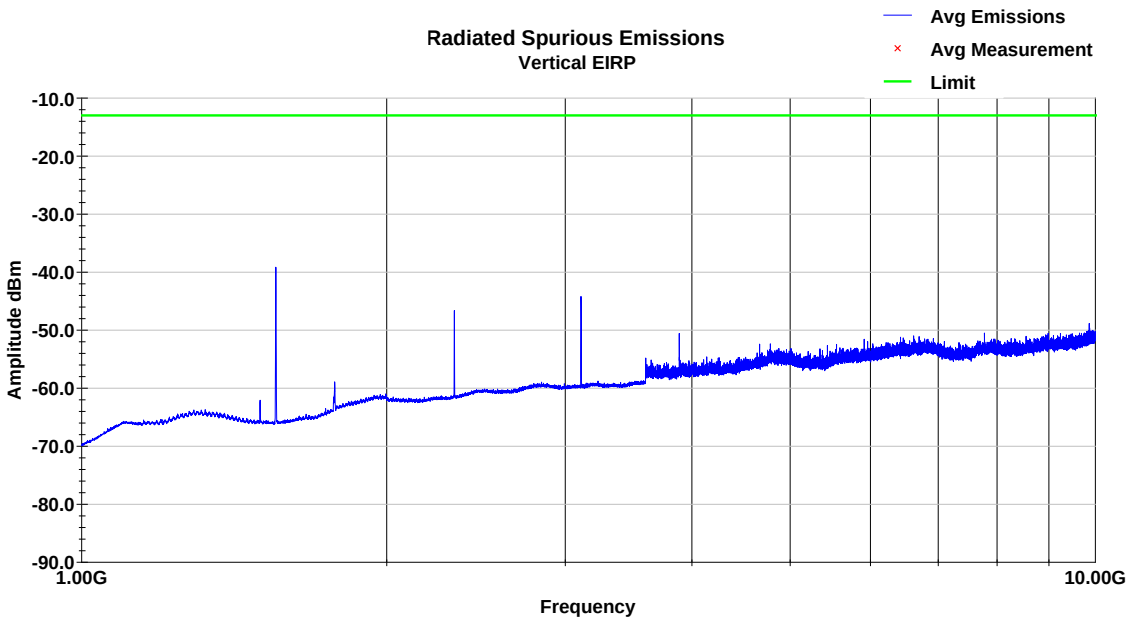
LTE Band 12, QPSK modulation, 5MHz Bandwidth
High Channel (713.5 MHz)
Vertical Plot (1-10GHz)



Horizontal Plot High (1-10GHz)

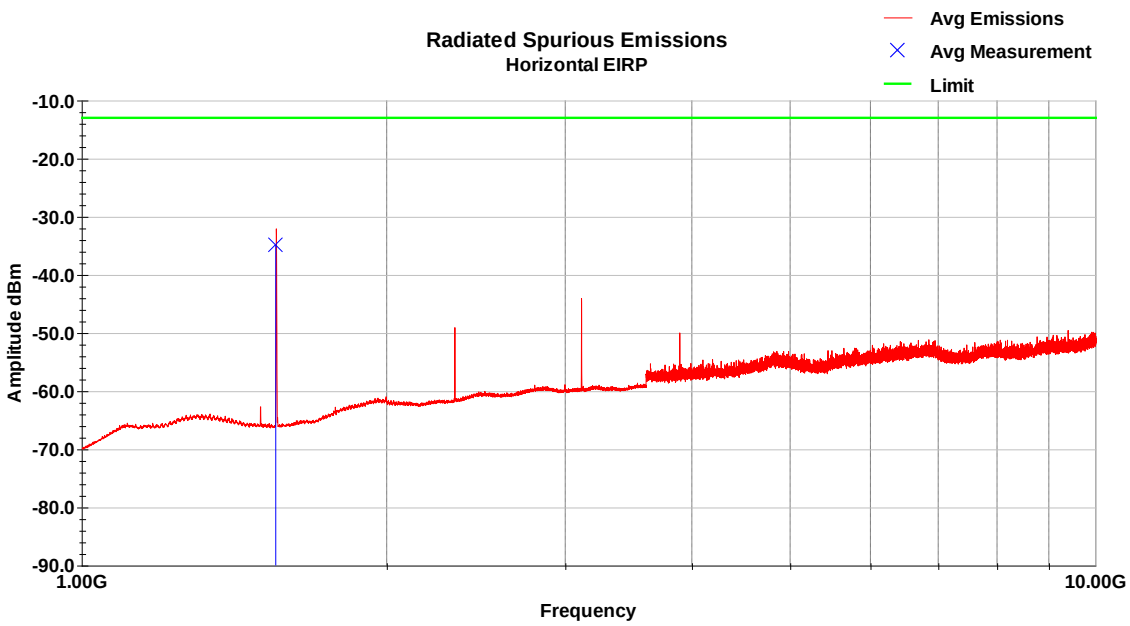


LTE Band 13, QPSK modulation, 5MHz Bandwidth
Low Channel (779.5 MHz)
Vertical Plot (1-10GHz)



No emissions within 20dB of the limit

Horizontal Plot Low (1-10GHz)



Horizontal Data Low (1-10GHz)

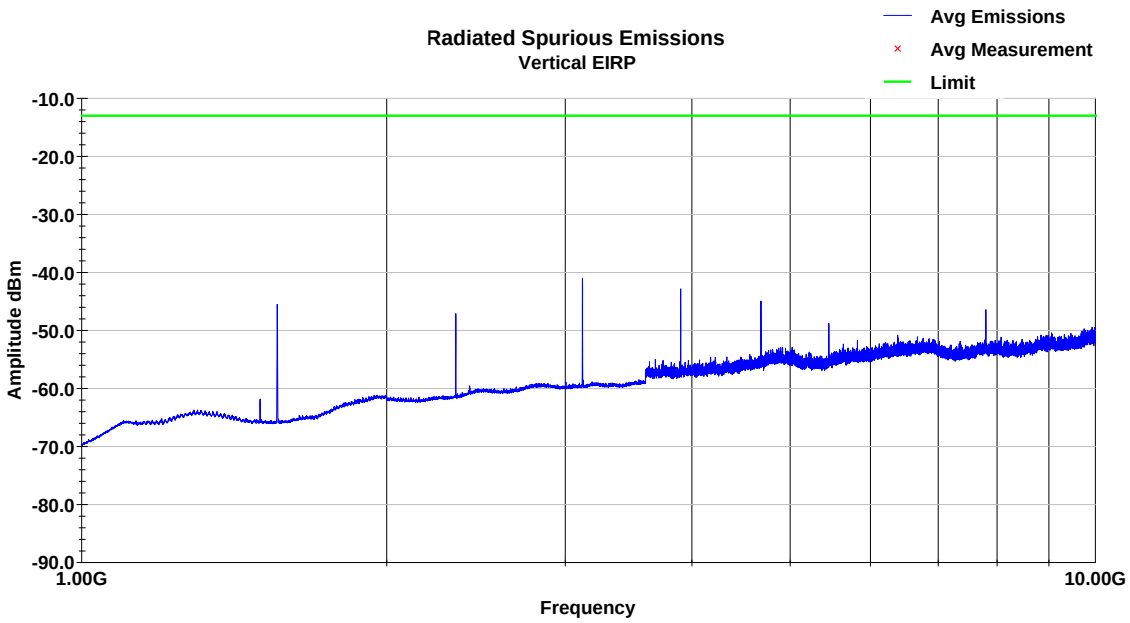
Frequency	Raw Avg	Polarity	Azimuth	Height	AF	Loss	Amp	Avg Value	Limit	Margin
MHz	dBm	V/H	degrees	cm	dB/m	dB	dB	dBm	dBm	dB
1554.56	-30.4	H	326	100	28	2.4	34.9	-34.908	-13	-21.908

QP Value = Level + AF + CL - Amp
Margin = QP Value - Limit

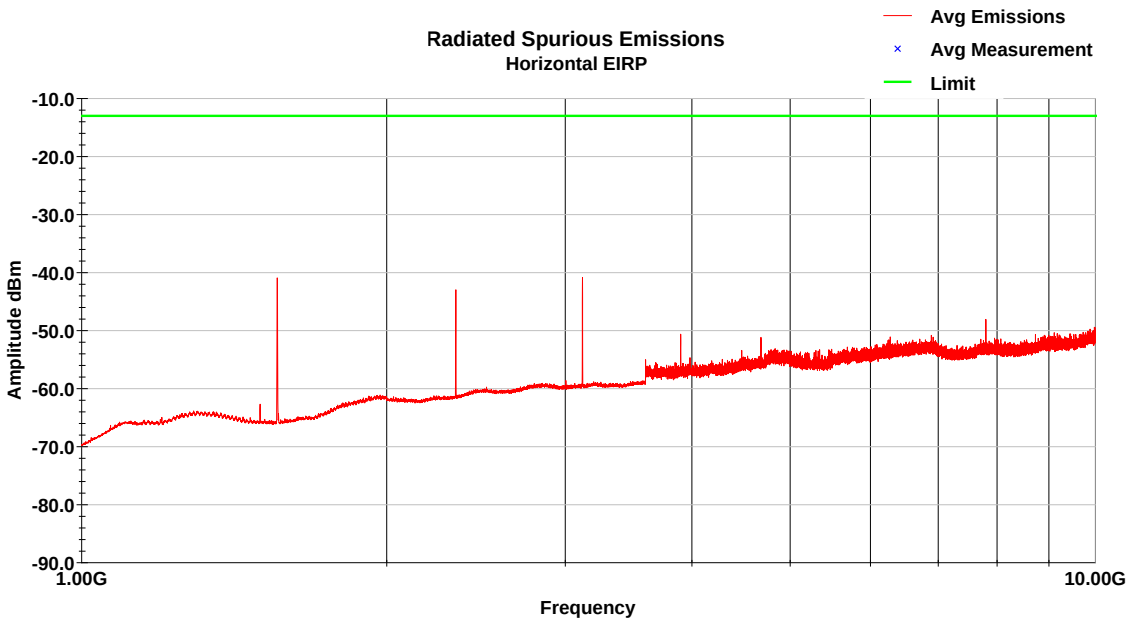
LTE Band 13, QPSK modulation, 5MHz Bandwidth

Mid Channel (782 MHz)

Vertical Plot (1-10GHz)



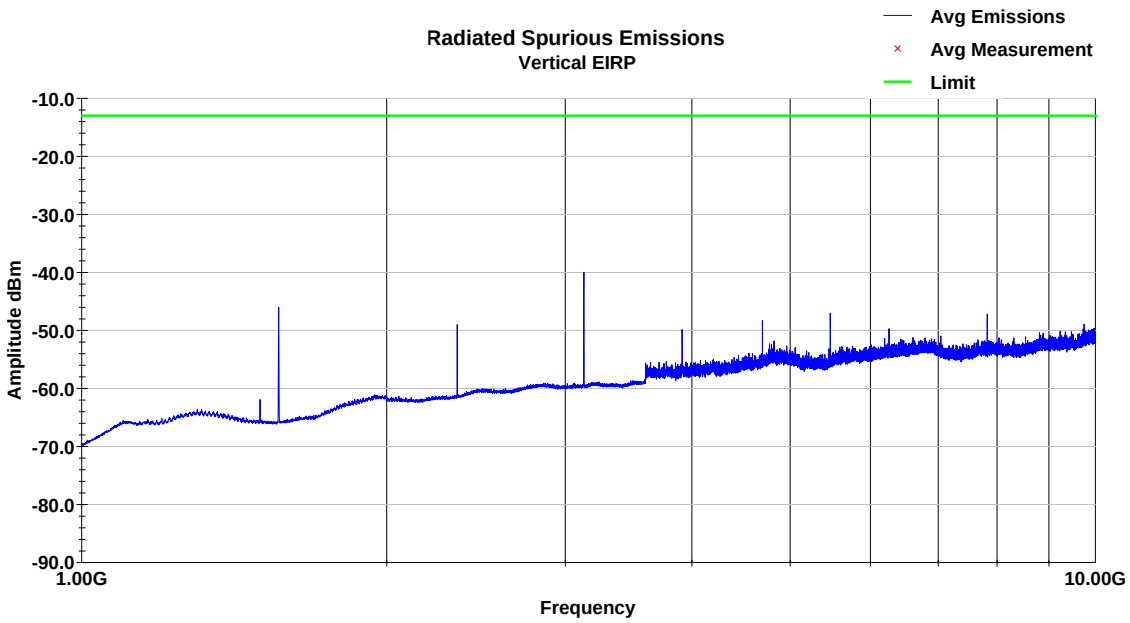
Horizontal Plot (1-10GHz)



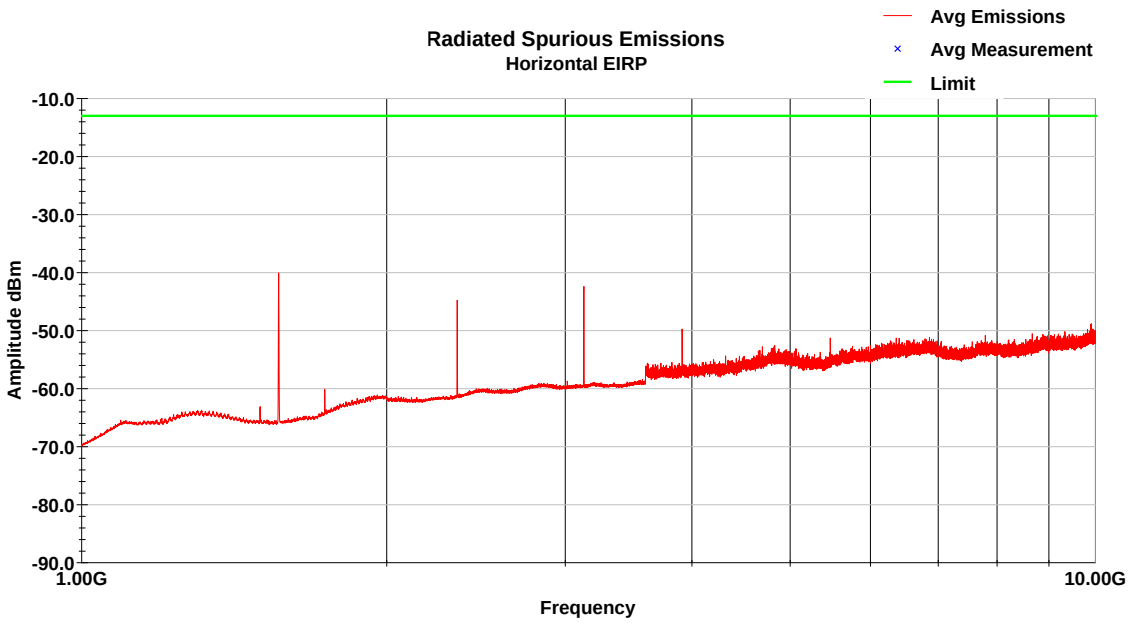
LTE Band 13, QPSK modulation, 5MHz Bandwidth

High Channel (784.5 MHz)

Vertical Plot (1-10GHz)



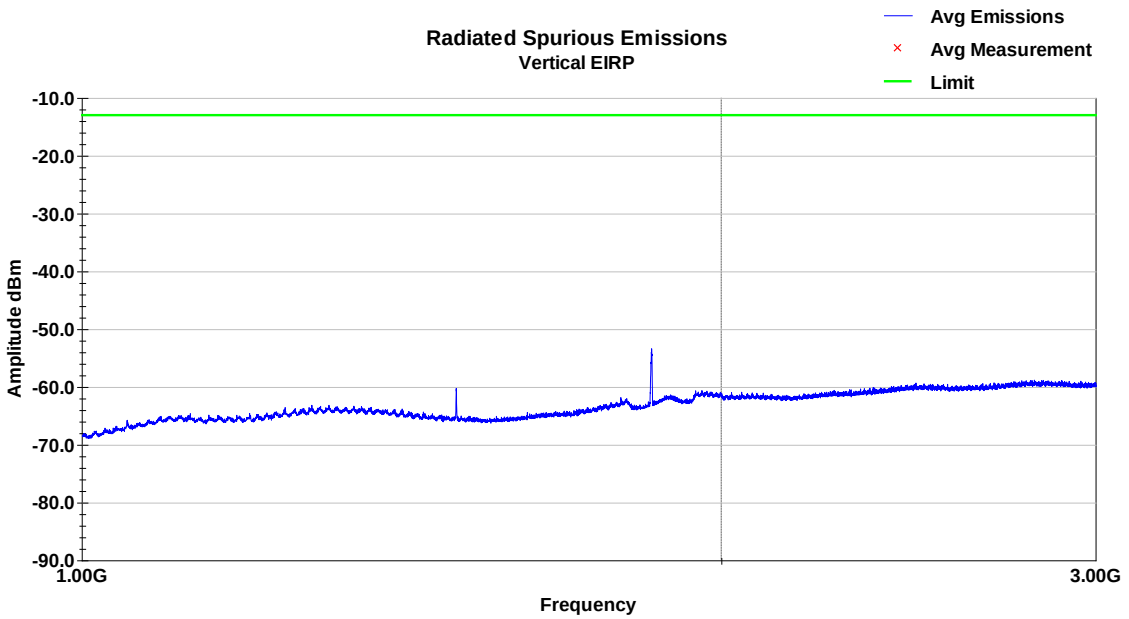
Horizontal Plot (1-10GHz)



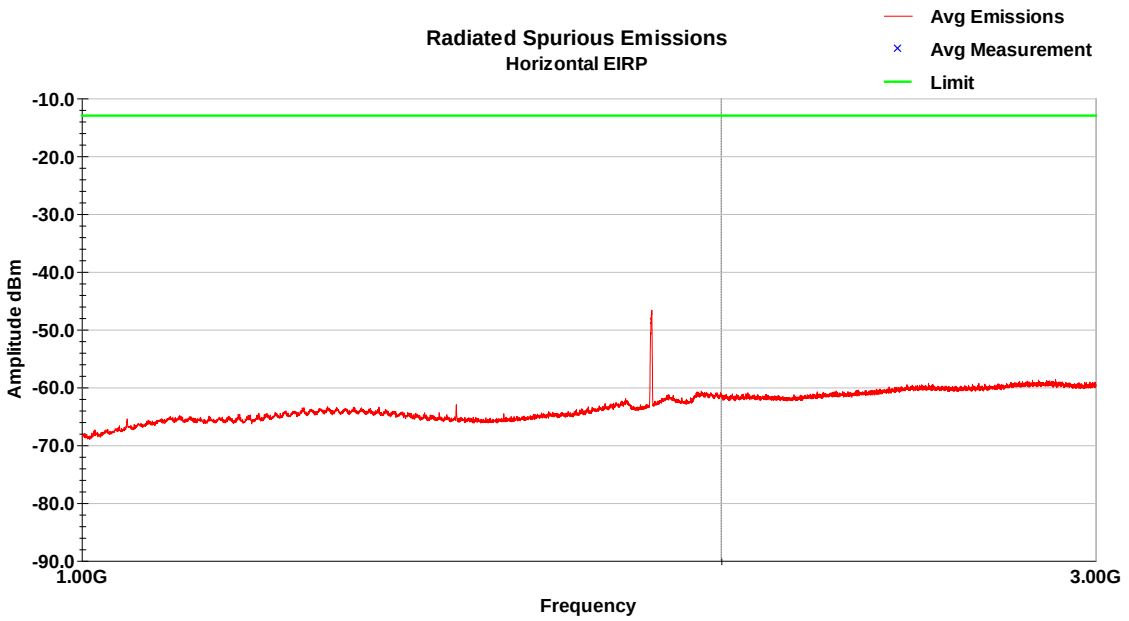
WCDMA Band 2, QPSK modulation,

Low Channel (1852.4 MHz)

Vertical Plot (1-3GHz)



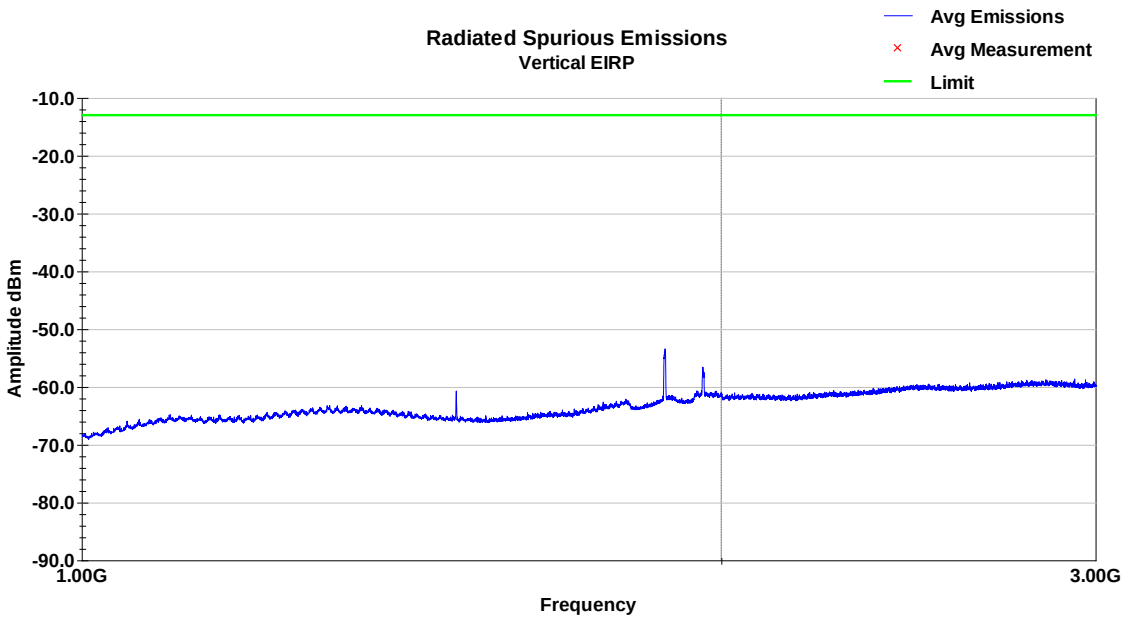
Horizontal Plot (1-3GHz)



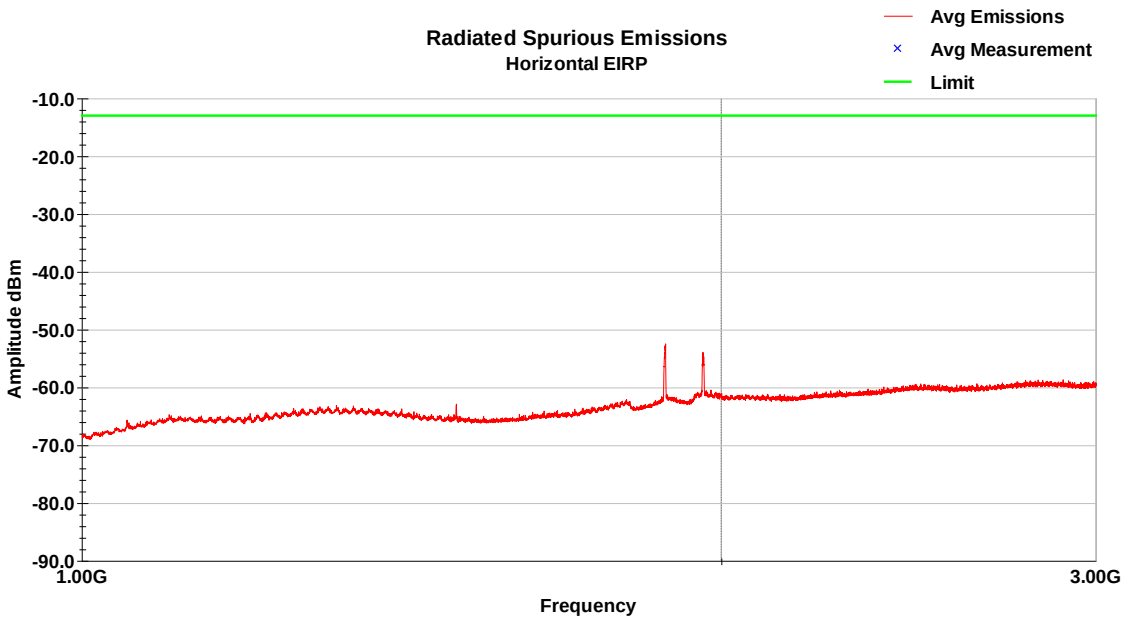
WCDMA Band 2, QPSK modulation,

Mid Channel (1880 MHz)

Vertical Plot (1-3GHz)



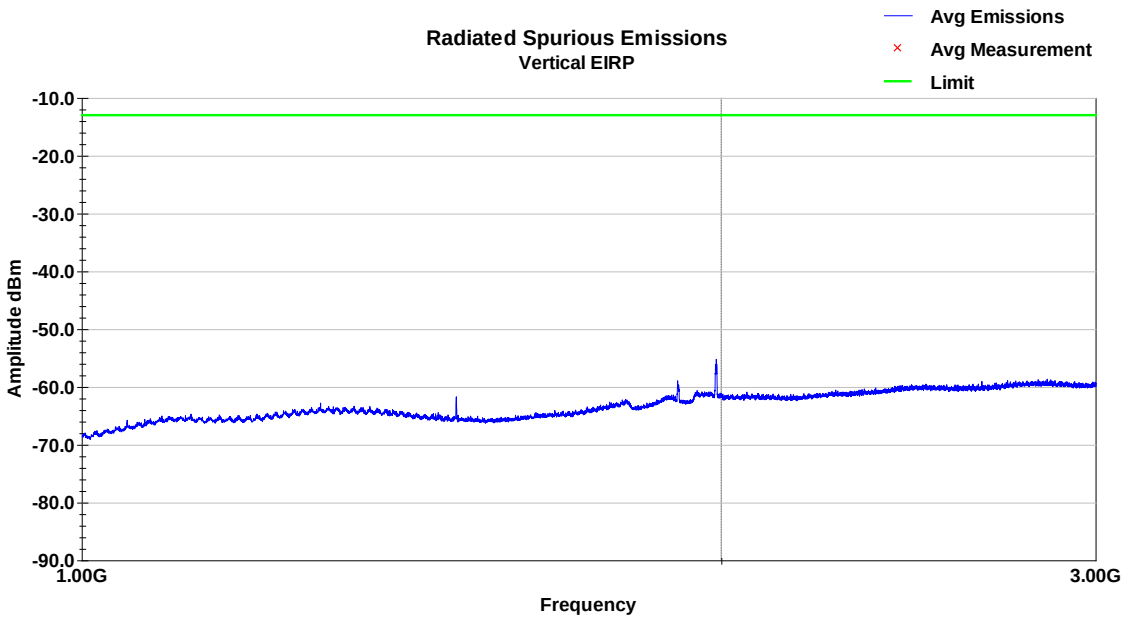
Horizontal Plot (1-3GHz)



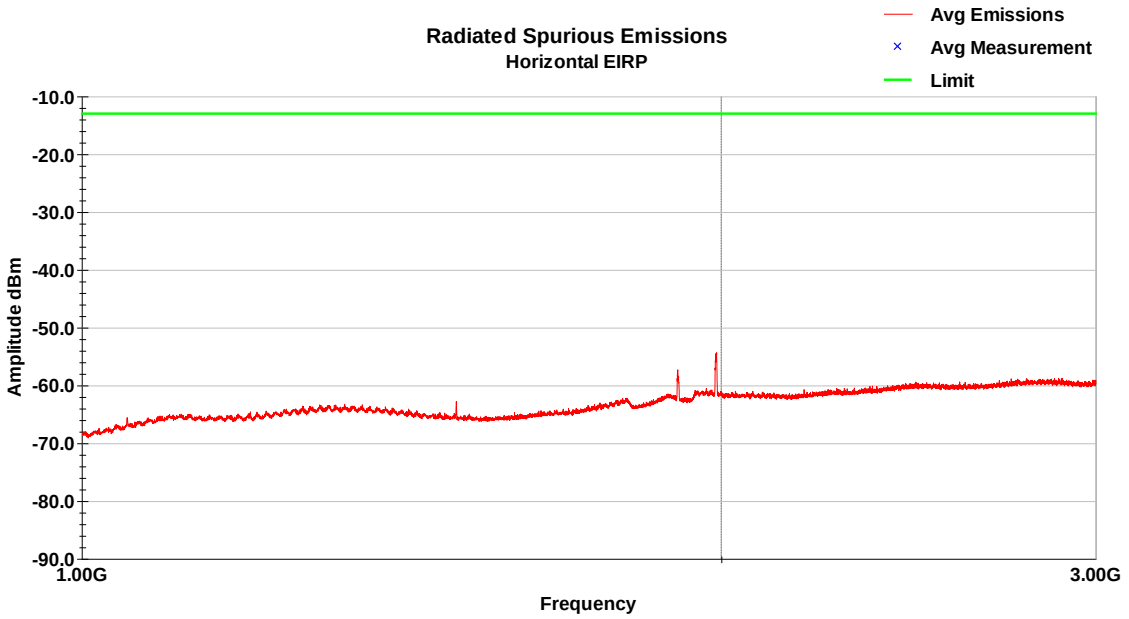
WCDMA Band 2, QPSK modulation,

High Channel (1907.6 MHz)

Vertical Plot (1-3GHz)



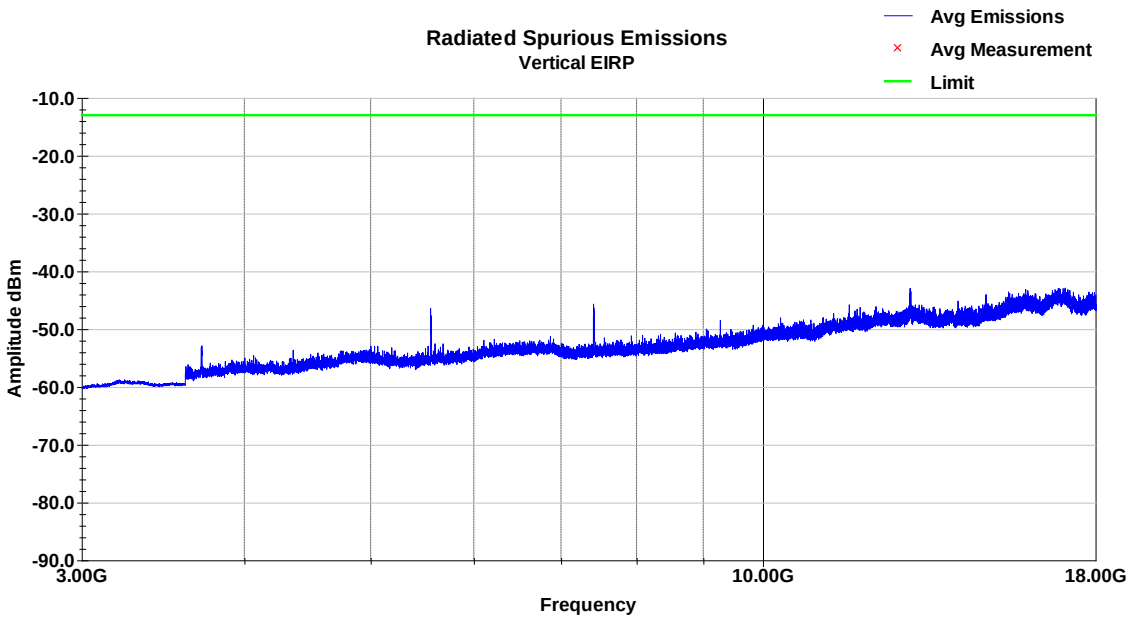
Horizontal Plot (1-3GHz)



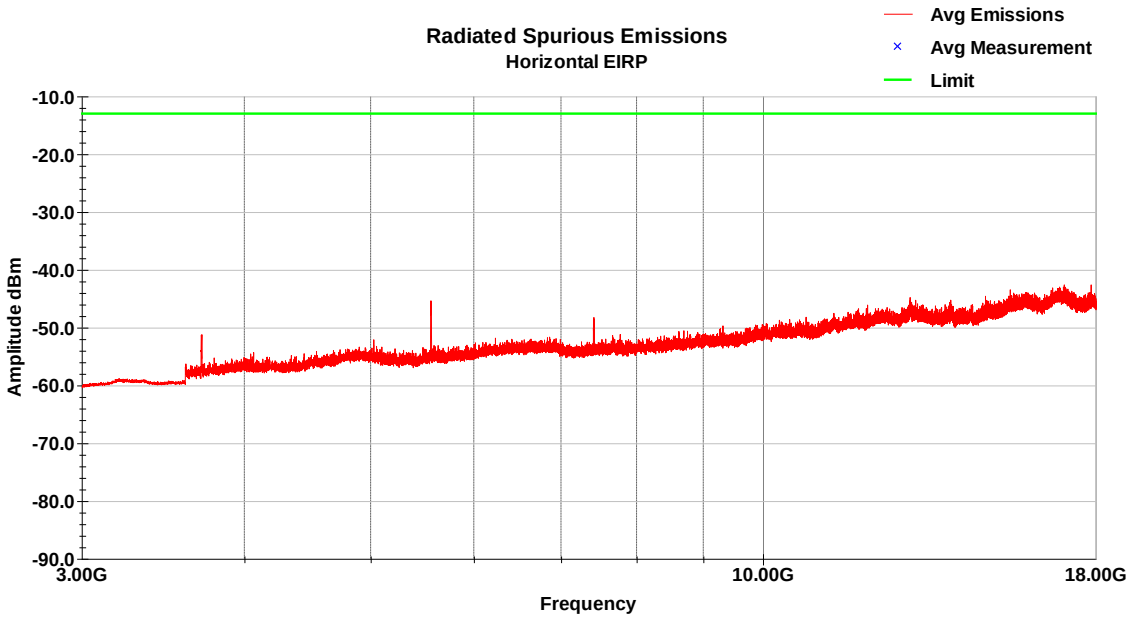
WCDMA Band 2, QPSK modulation,

Low Channel (1852.4 MHz)

Vertical Plot (3-18GHz)



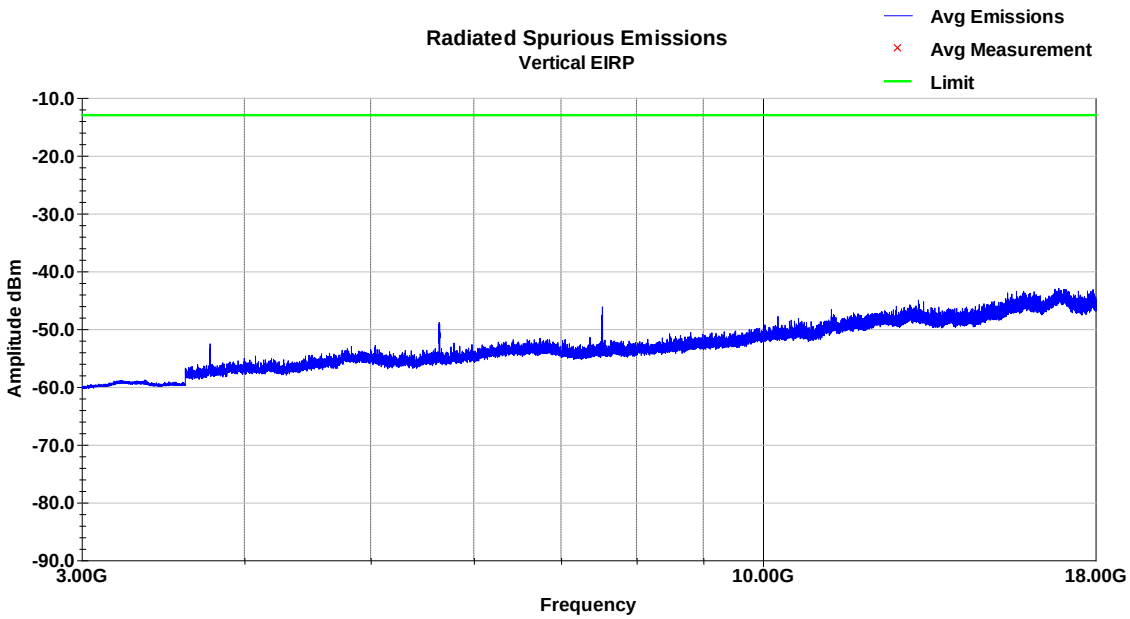
Horizontal Plot (3-18GHz)



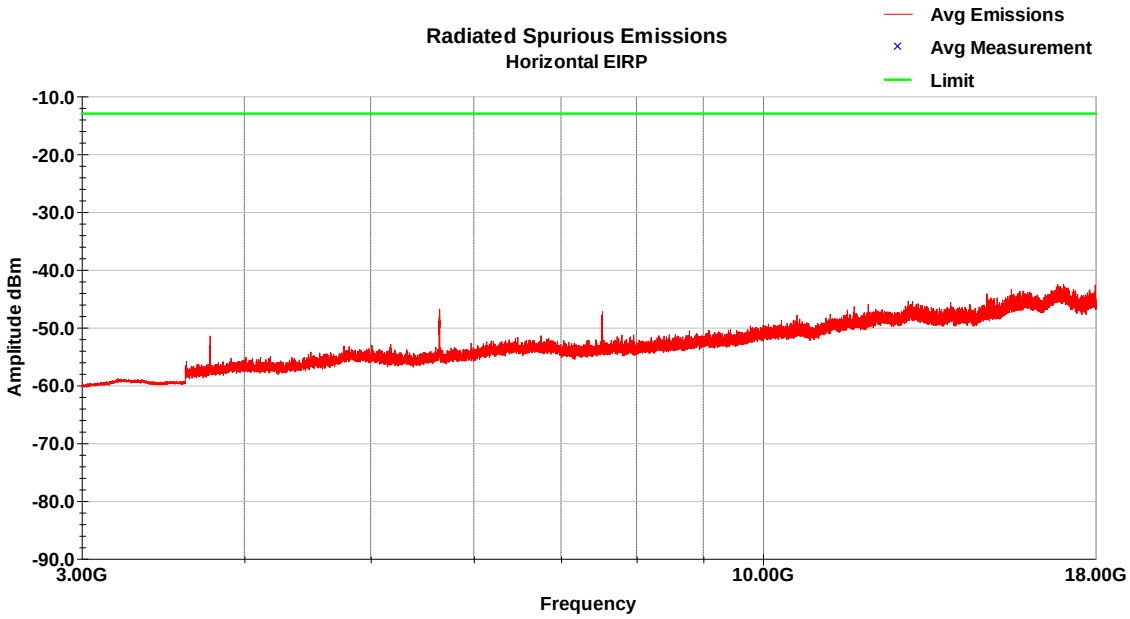
WCDMA Band 2, QPSK modulation,

Mid Channel (1880 MHz)

Vertical Plot (3-18GHz)



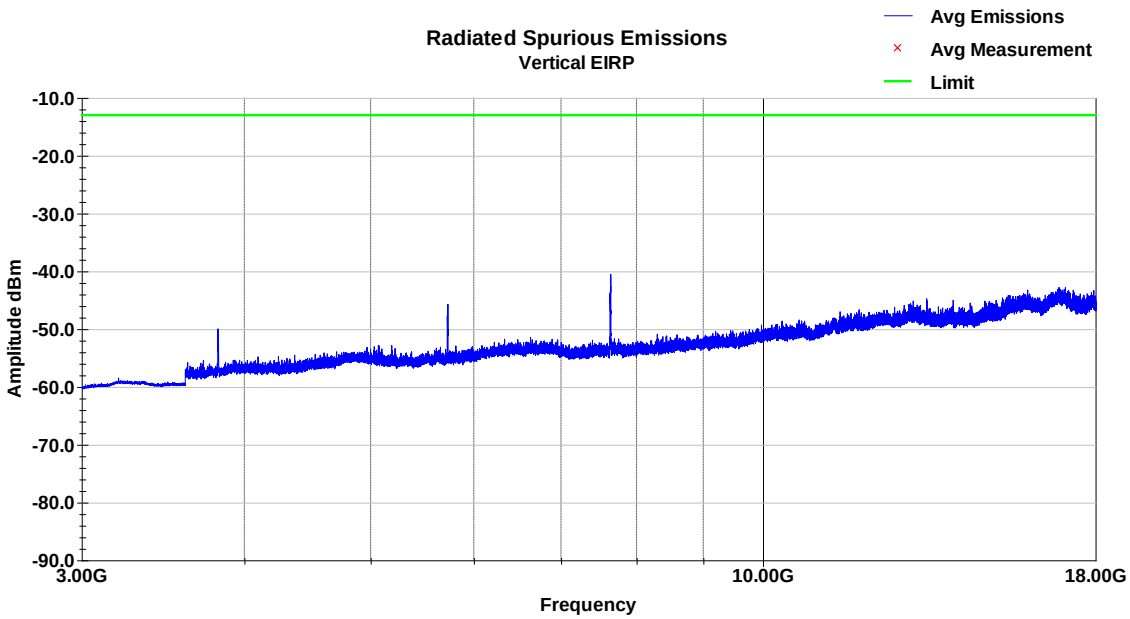
Horizontal Plot (3-18GHz)



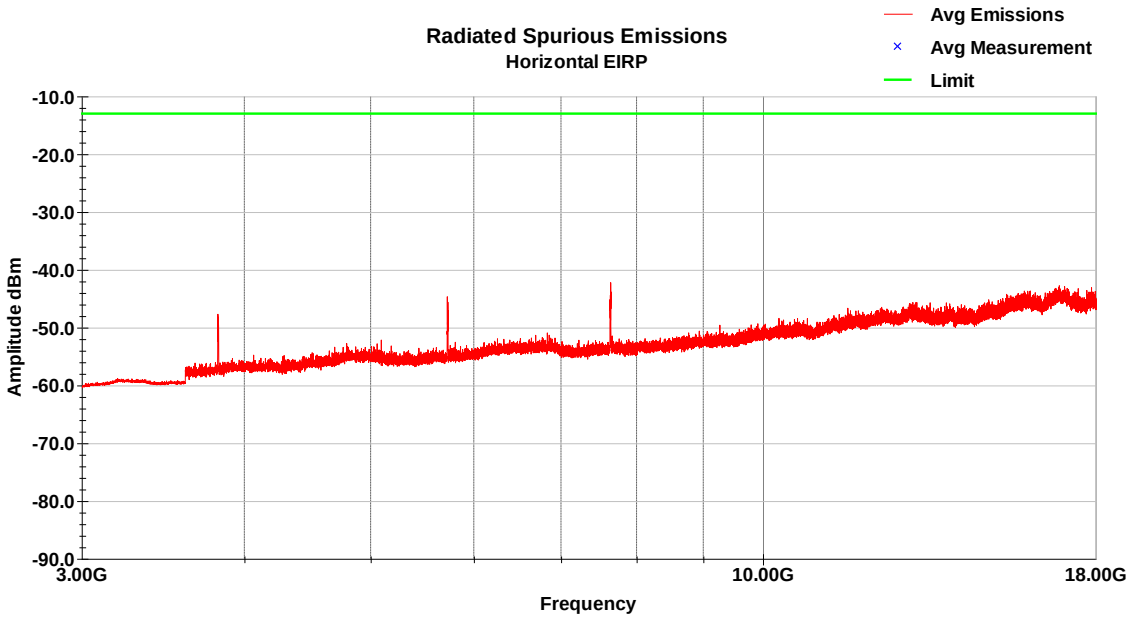
WCDMA Band 2, QPSK modulation,

High Channel (1907.6 MHz)

Vertical Plot (3-18GHz)



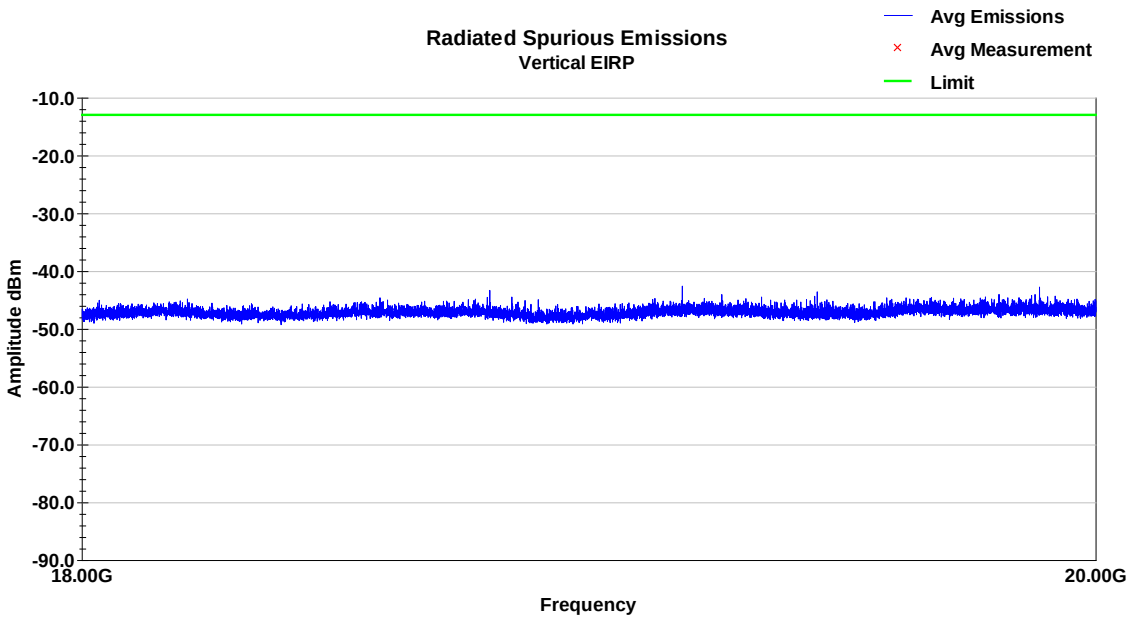
Horizontal Plot (3-18GHz)



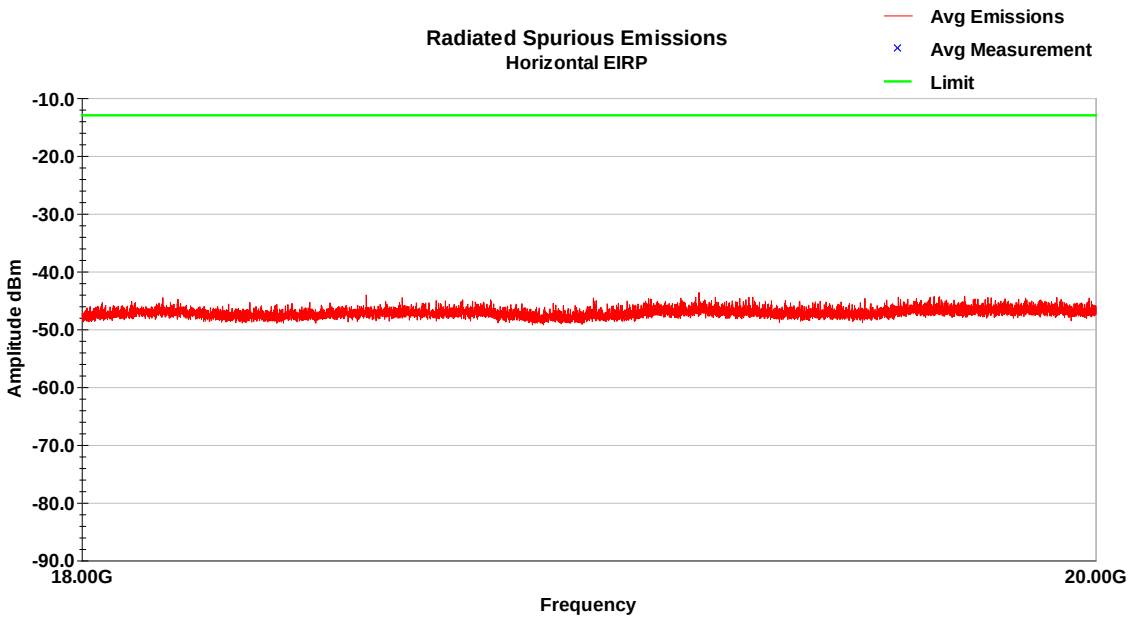
WCDMA Band 2, QPSK modulation,

Low Channel (1852.4 MHz)
Note: Low Mid and High Channel Plots look similar

Vertical Plot (18-20GHz)



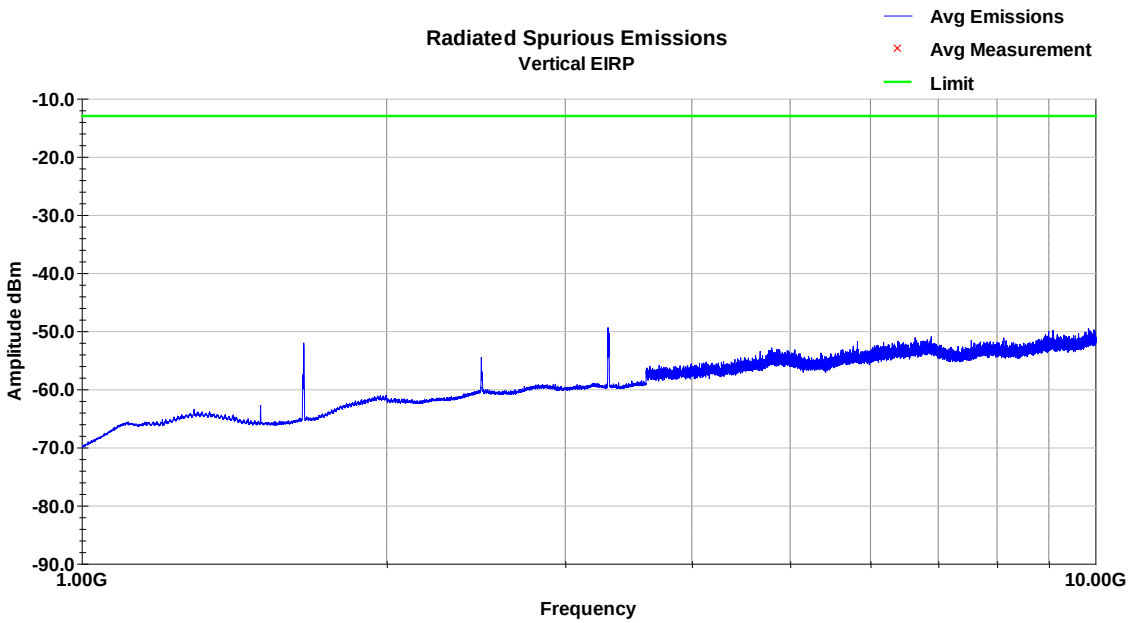
Horizontal Plot (1-10GHz)



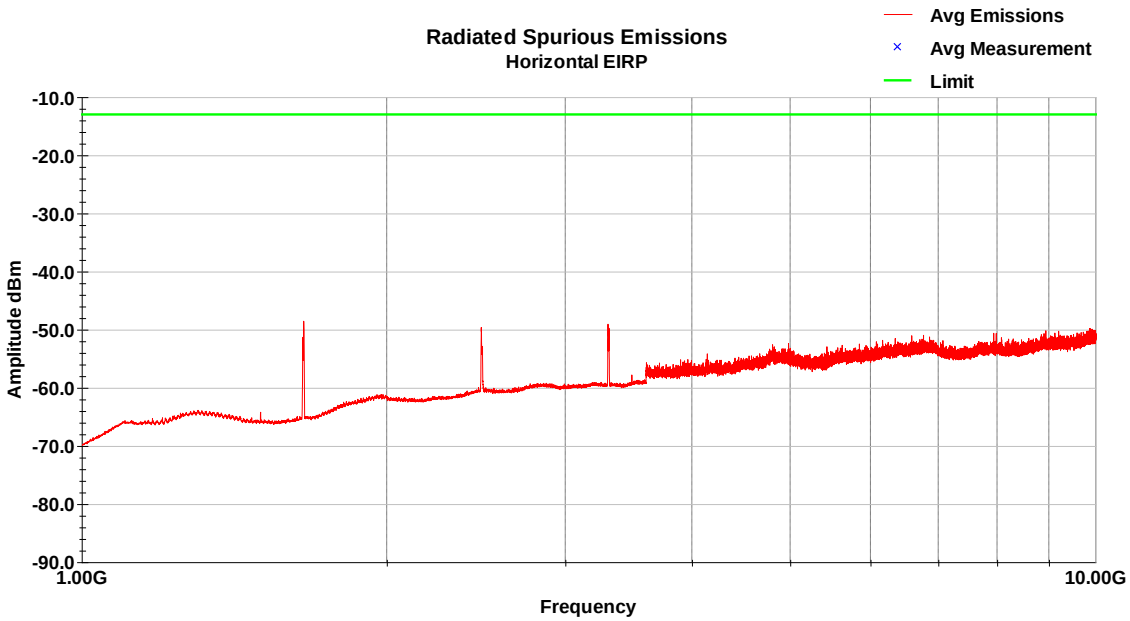
WCDMA Band 5, QPSK modulation,

Low Channel (826.4 MHz)

Vertical Plot (1-10GHz)



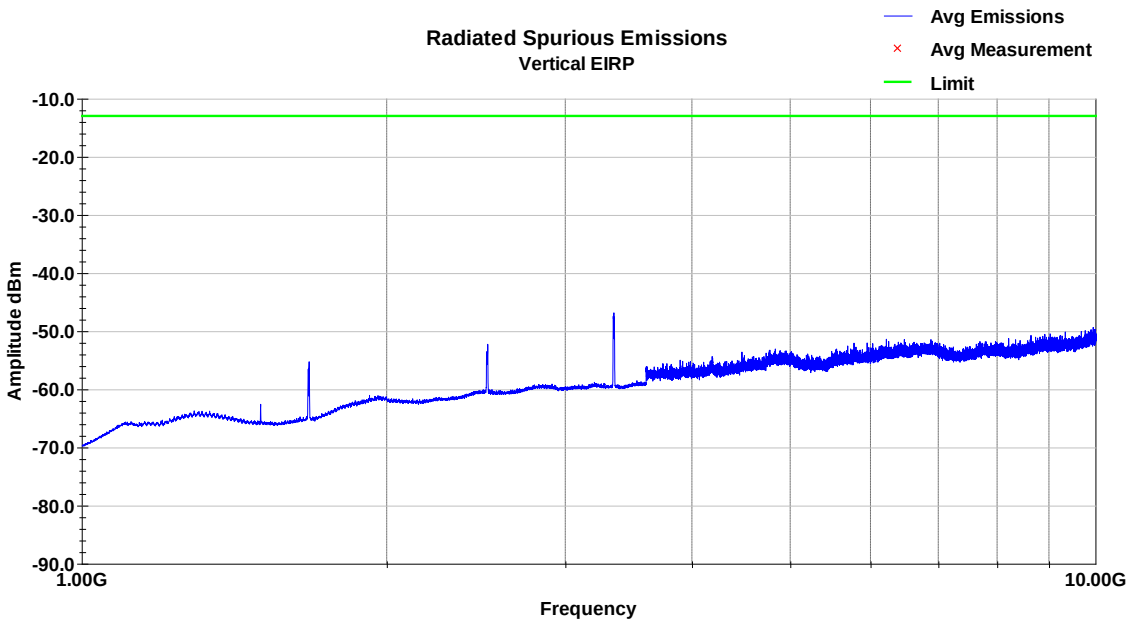
Horizontal Plot (1-10GHz)



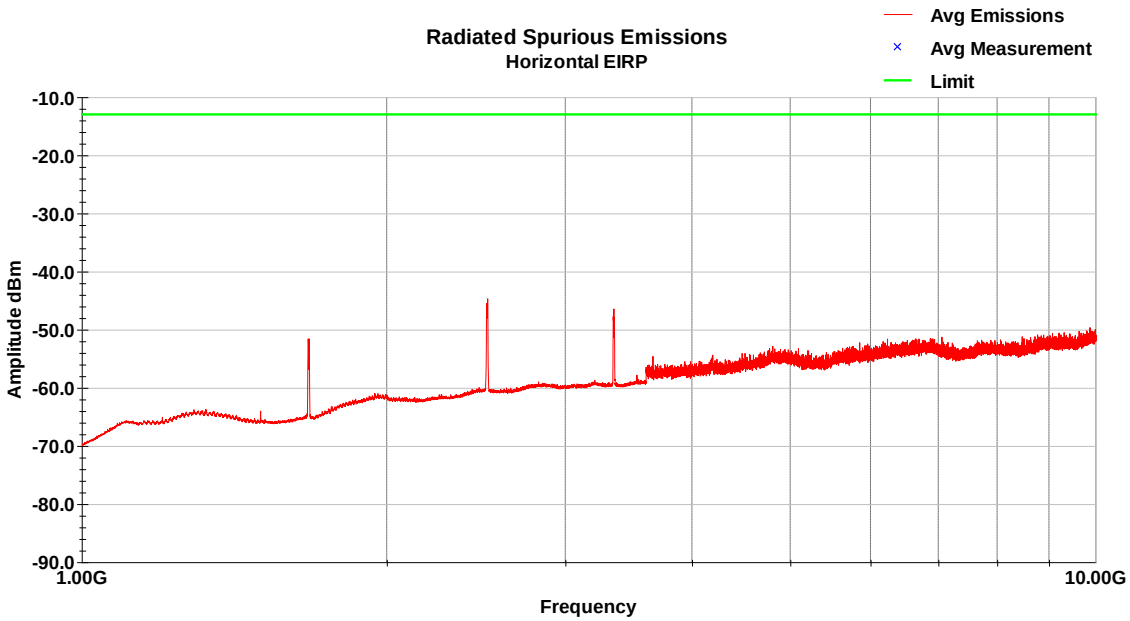
WCDMA Band 5, QPSK modulation,

Mid Channel (836.4 MHz)

Vertical Plot (1-10GHz)



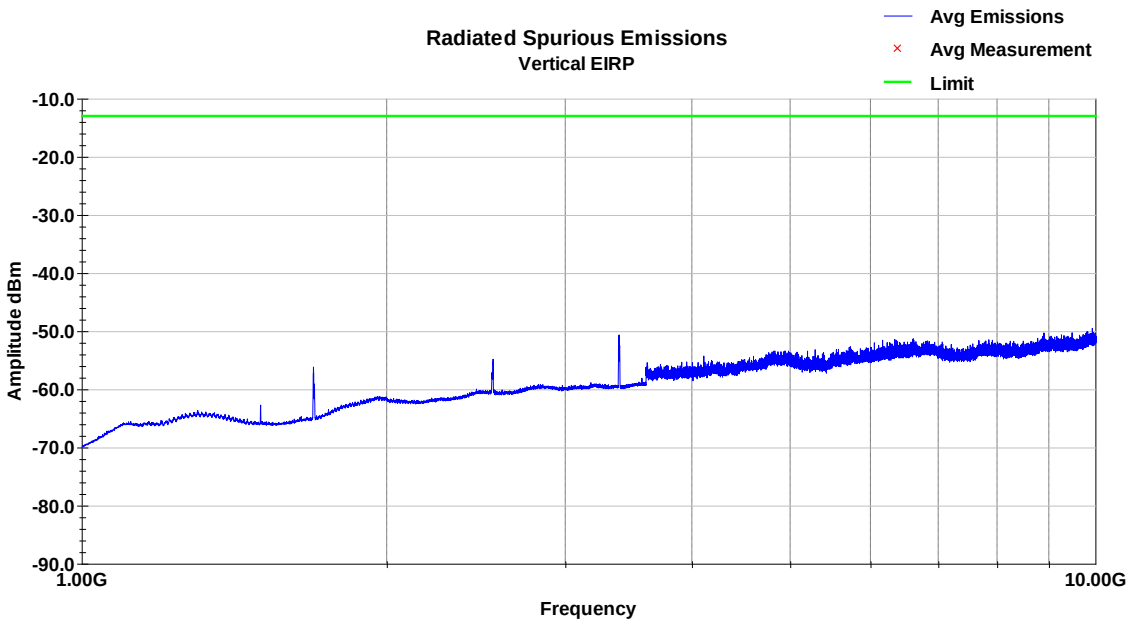
Horizontal Plot (1-10GHz)



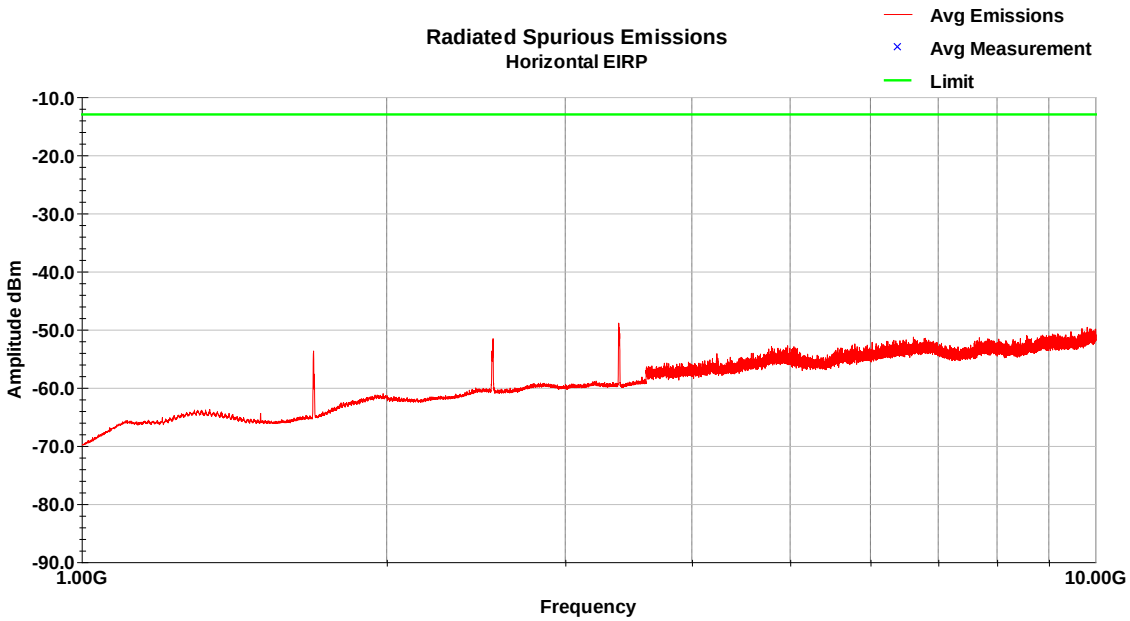
WCDMA Band 5, QPSK modulation,

High Channel (846.6 MHz)

Vertical Plot (1-10GHz)



Horizontal Plot (1-10GHz)



4 Measurement Uncertainty

The measurement uncertainty figures are calculated in accordance with TR 100 028-1 [2] and correspond to an expansion factor (coverage factor) k = 2 (which provides confidence levels of 95.45 % in the case where the distributions characterizing the actual measurement uncertainties are normal (Gaussian)).

	Expanded Uncertainty for Normal k factor equal to 2	
Parameter	Required	Laboratory Actual
Radio Frequency	±1 x 10-5	±9.8 x 10-8
total RF power, conducted	±1.5 dB	±1.2 dB
RF power density, conducted	±3 dB	±0.7 dB
spurious emissions, conducted	±3 dB	±2.1 dB
all emissions, radiated	±6 dB	±4.8 dB
temperature	±1°C	±0.5°C
humidity	±5 %	±3.5%
DC and low frequency voltages	±3 %	±0.4%

5 Revision History

Revision Level	Description of changes	Revision Date
Draft	--	14 August 2020
0	Initial release	25 August 2020
1	Added PMN, HVIN, FVIN & HMN in section 2.3	16 September 2020
2	Added test setup block diagrams (section 3.5) Added measurement uncertainty (section 4)	19 October 2020