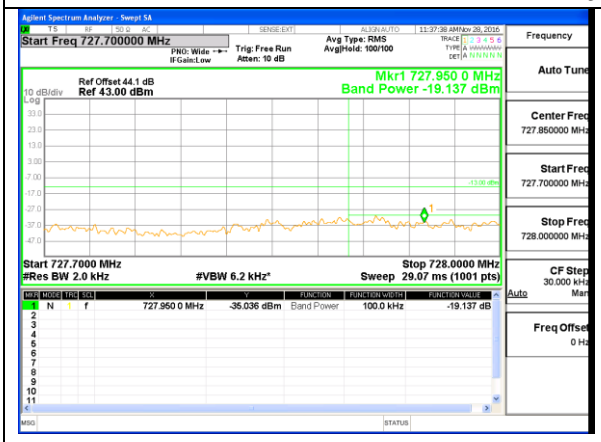
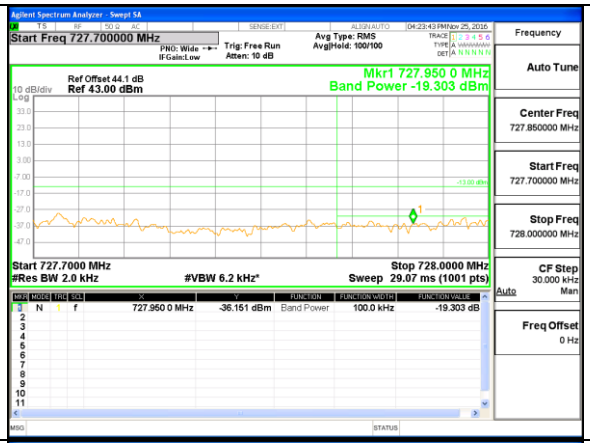
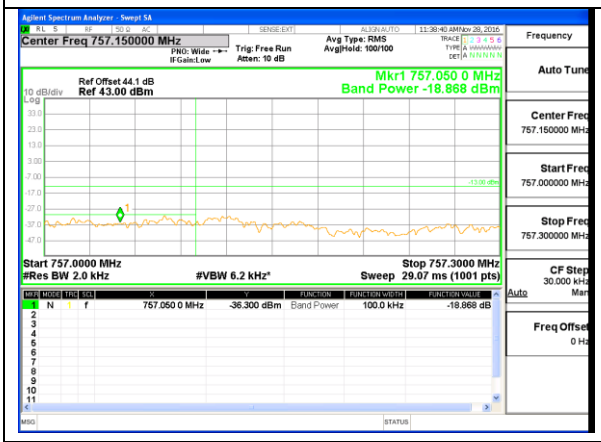
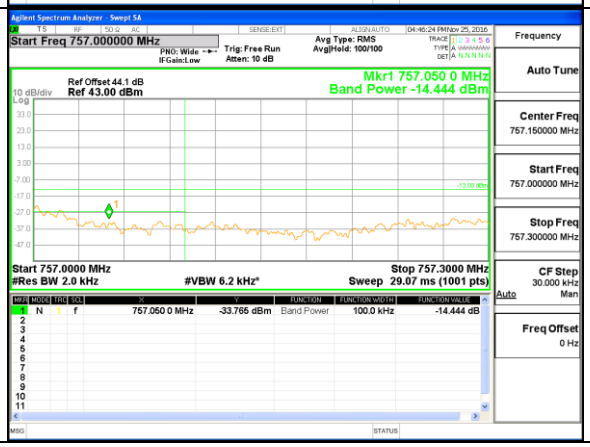
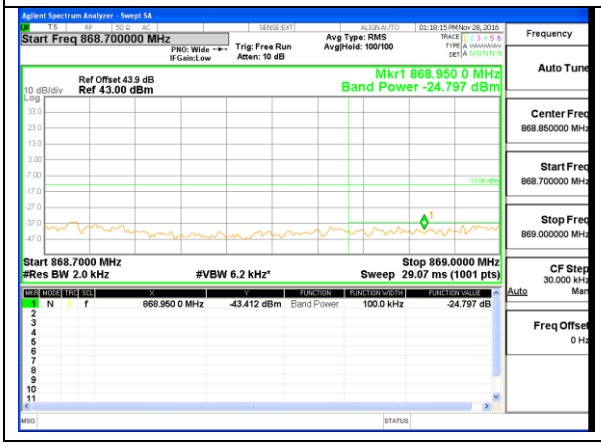
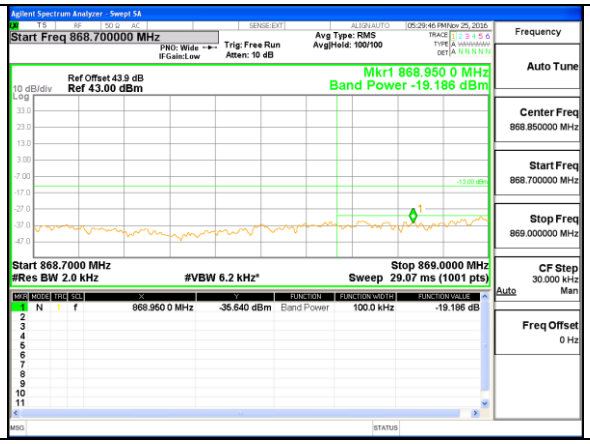
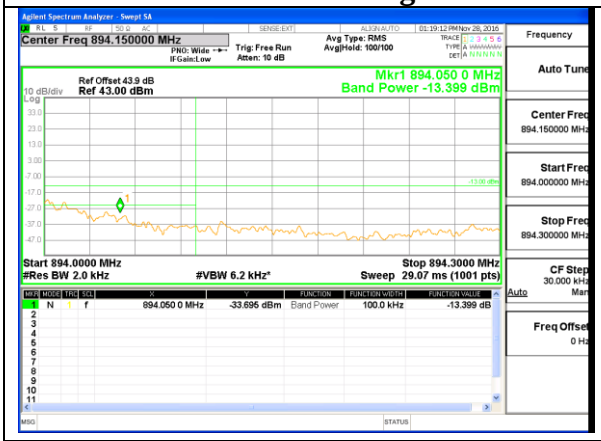
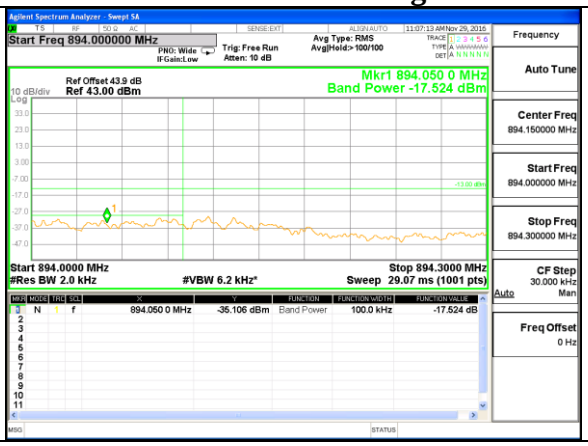
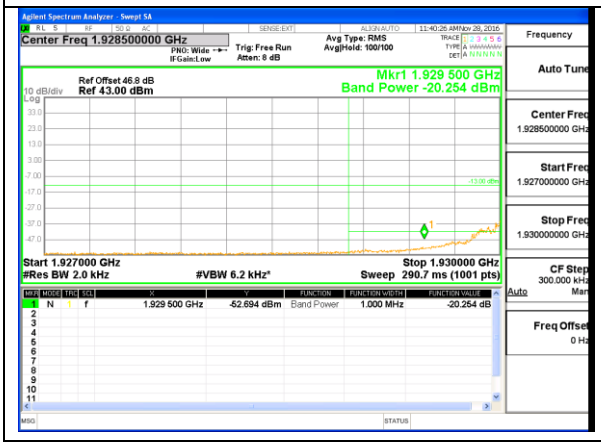
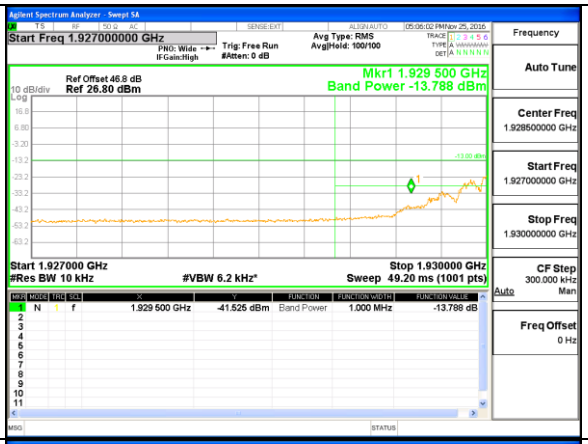
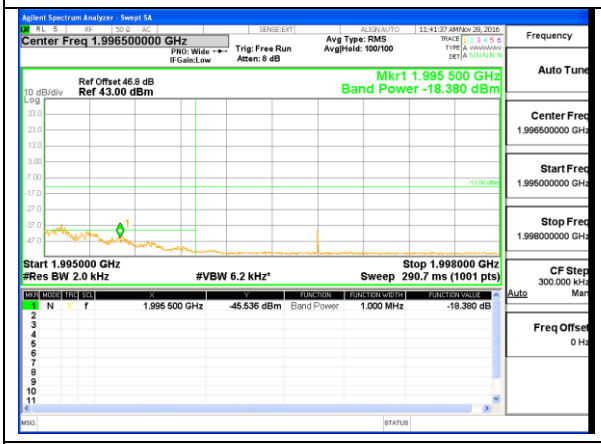
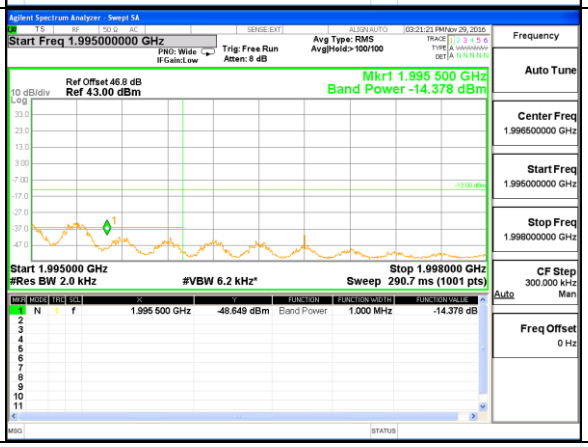
Figure 6-3 Out-of-band Emission in 300kHz or 3GHz Range – 2 Carriers Narrow Band Signal Applied on First or Last Channel in the Appropriate Operating Band

2 Carriers Narrow Band Signal - Nominal	2 Carriers Narrow Band Signal - AGC
Band 700	
	
	
Band 850	
	

2 Carriers Narrow Band Signal - Nominal	2 Carriers Narrow Band Signal - AGC
	
Band PCS	
	
	
Band AWS	

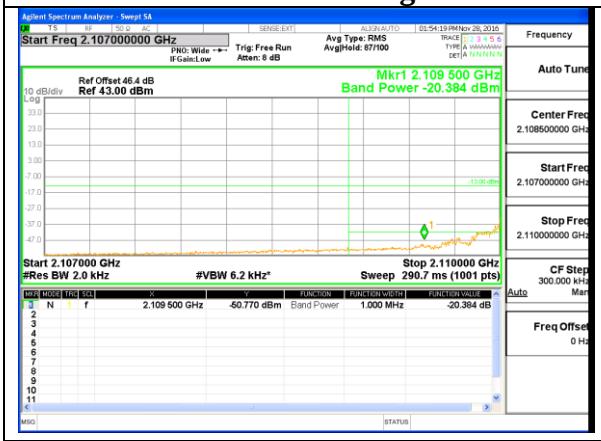
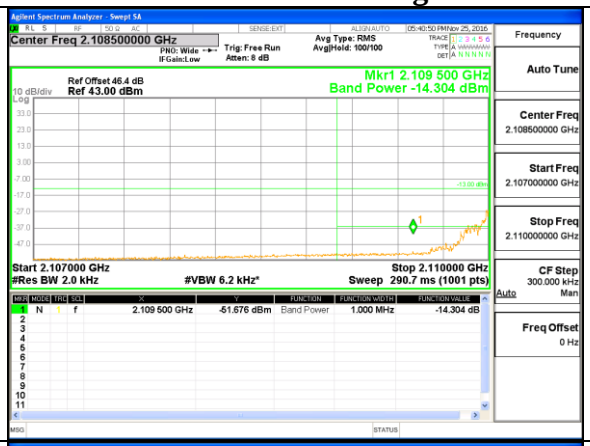
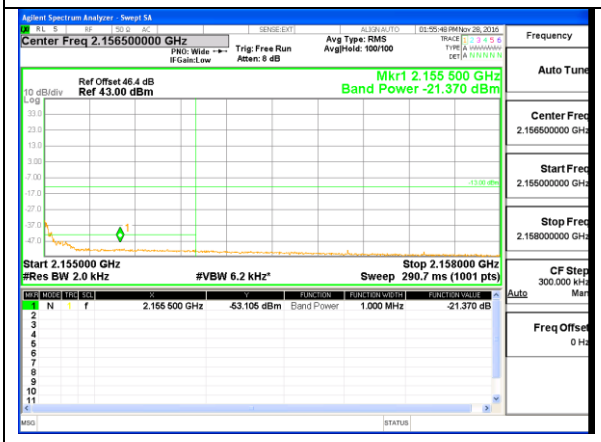
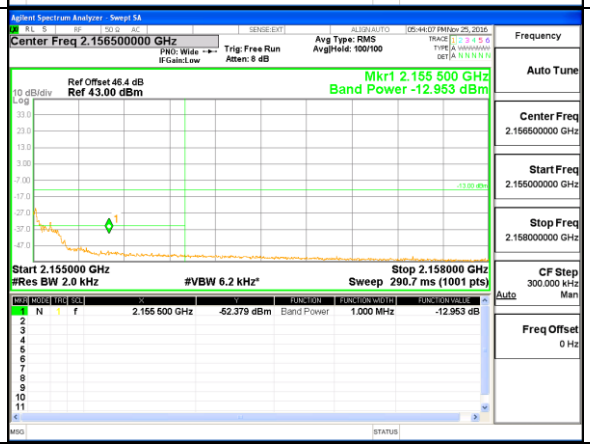
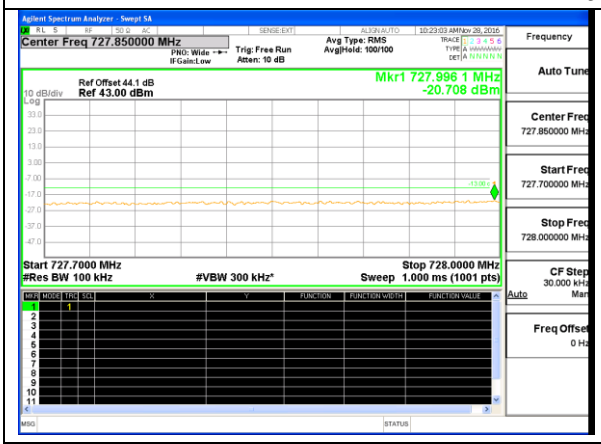
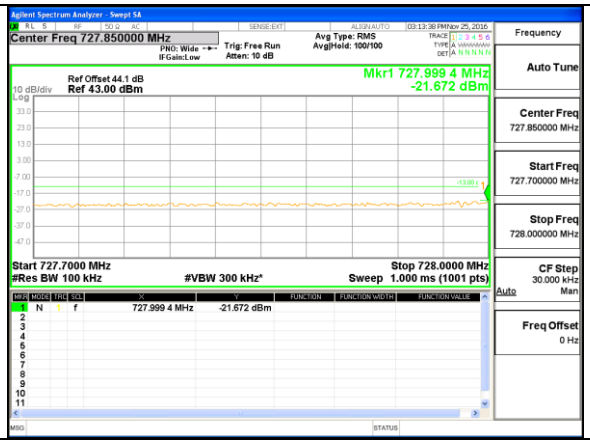
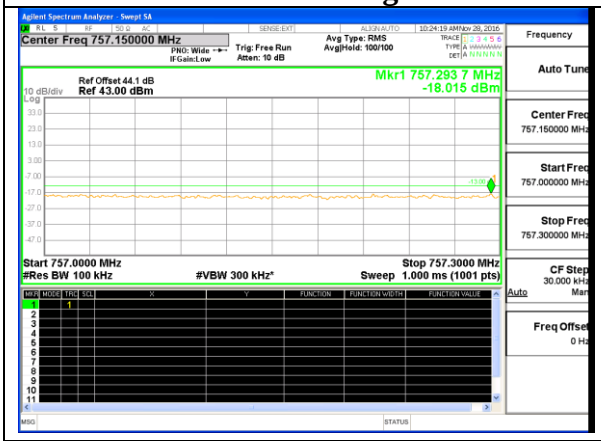
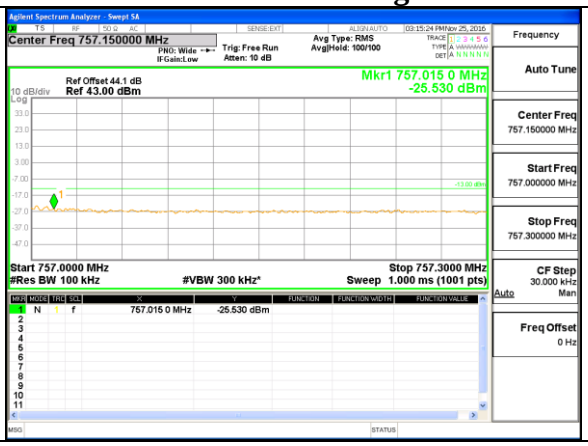
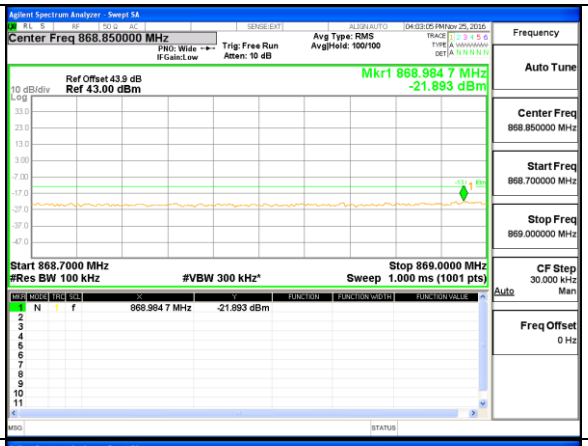
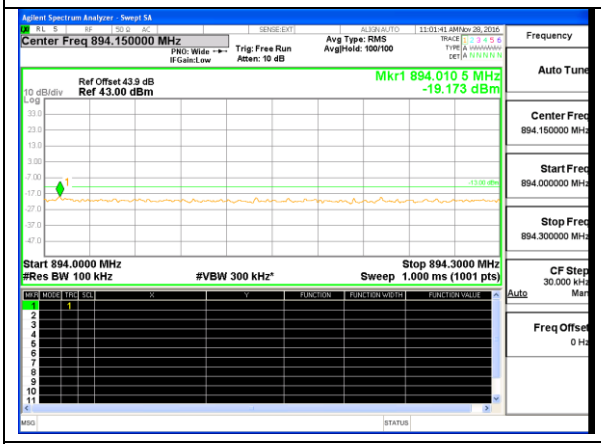
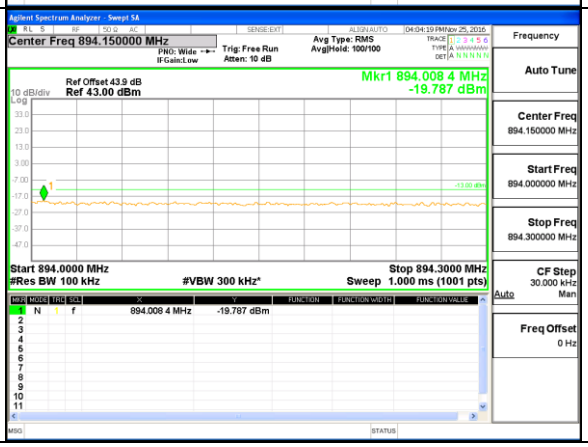
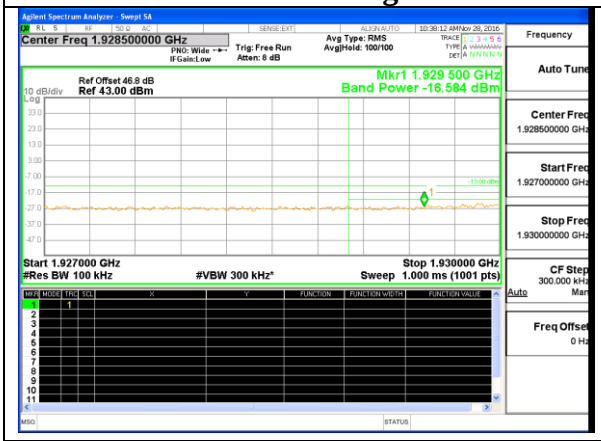
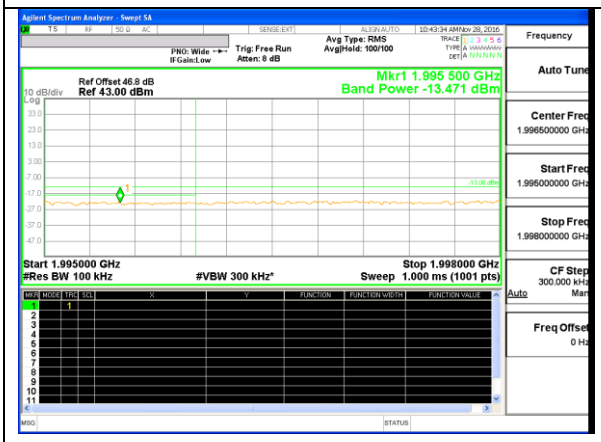
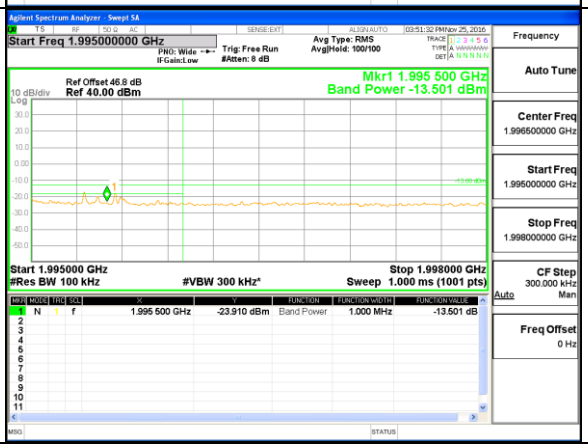
2 Carriers Narrow Band Signal - Nominal	2 Carriers Narrow Band Signal - AGC
	
	

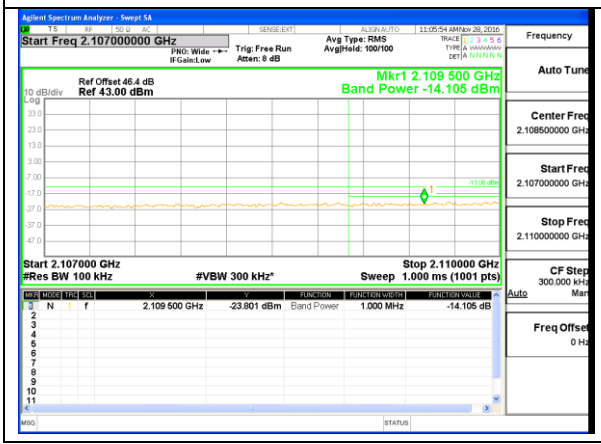
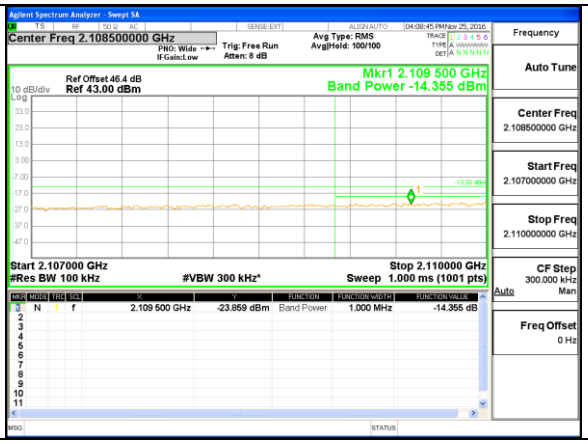
Figure 6-4 Out-of-band Emission in 300kHz or 3GHz Range – 2 Carriers Wide Band Signal Applied on First or Last Channel in the Appropriate Operating Band

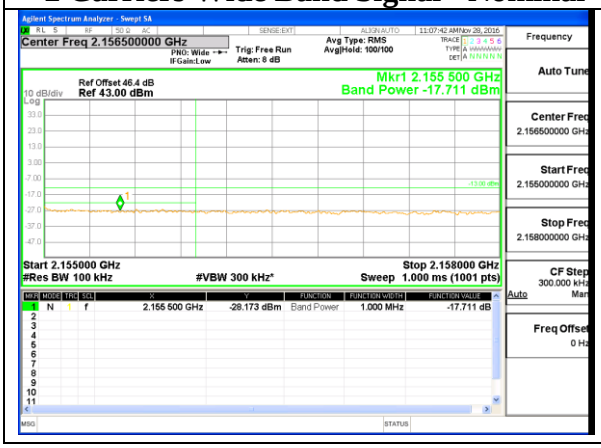
2 Carriers Wide Band Signal - Nominal	2 Carriers Wide Band Signal - AGC
Band 700	
	

2 Carriers Wide Band Signal - Nominal	2 Carriers Wide Band Signal - AGC
	
Band 850	
	
	
Band PCS	

2 Carriers Wide Band Signal - Nominal	2 Carriers Wide Band Signal - AGC
	
	

Band AWS

2 Carriers Wide Band Signal - Nominal	2 Carriers Wide Band Signal - AGC
	

6.3 Spurious Emission

6.3.1 Measurement Configuration

Measurements were performed at narrow band and wide band signal at the lowest, mid, and highest channel within the 700 MHz (728 – 757 MHz), 850 MHz (869 – 894 MHz), PCS (1930-1995 MHz) and AWS (2110-2155 MHz) band.

The spurious emission was measured within 9 kHz to the tenth harmonic of the highest fundamental frequency on each band of EUT, excluding the out-of-band range in the previous section 6.2. Normally the reference band width (RBW) in spurious emission measurement was specified to 100 kHz for the frequency range below 1 GHz and 1 MHz for the frequency range above 1 GHz.

6.3.2 Results

The spurious emission measurement is shown in Figure 6-6 for the four operating bands.

Conclusion:
No spurious emission is above the -13dBm limit.

Note:
Due to the smooth averaging effect of the spectrum analyzer, the emission measured in the specified RBW in the frequency range from upper block edge to 10th harmonics is higher than when the frequency range is zoomed into close by the operating band. See Figure 6-5 for the side to side comparison.
So in the Figure 6-6 the marker was set to 10MHz above the upper edge of the operating band.

Figure 6-5 Averaging Effect of Spectrum Analyzer

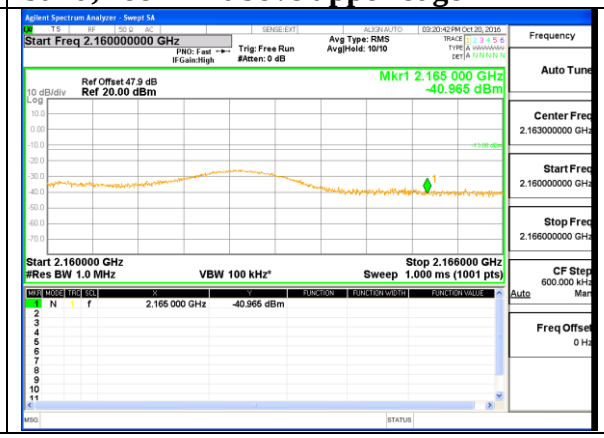
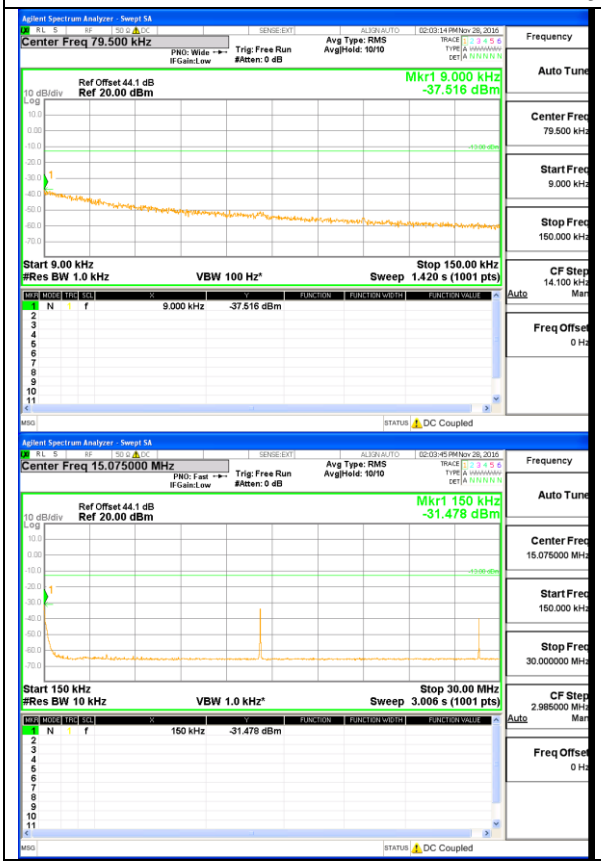
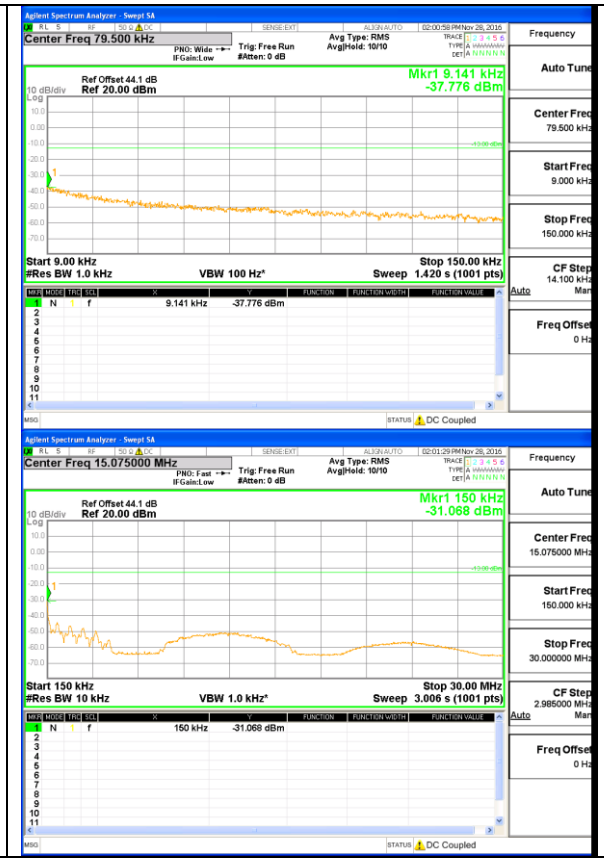
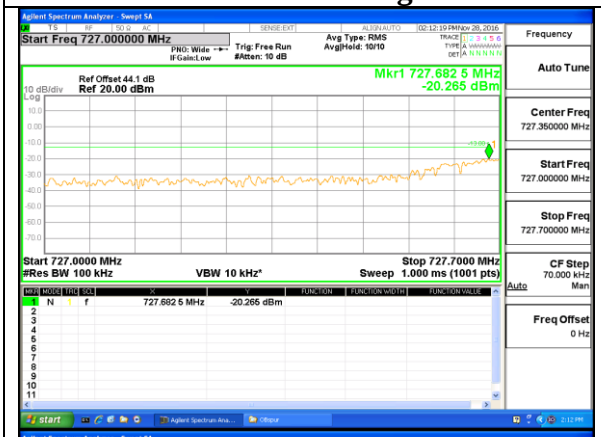
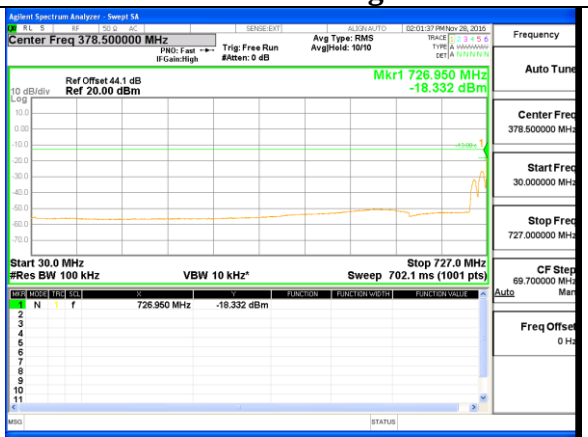
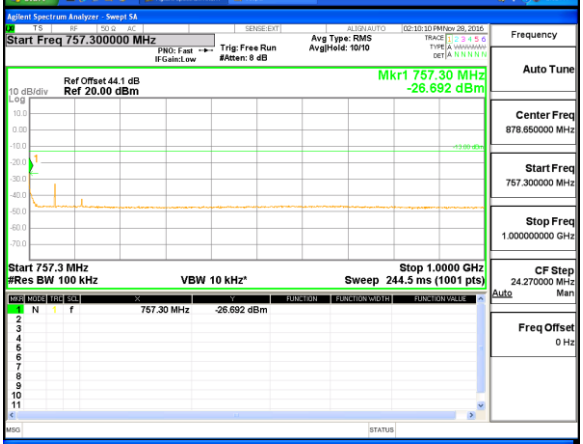
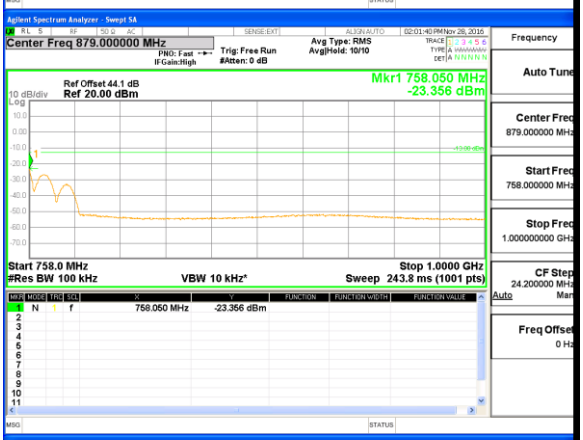
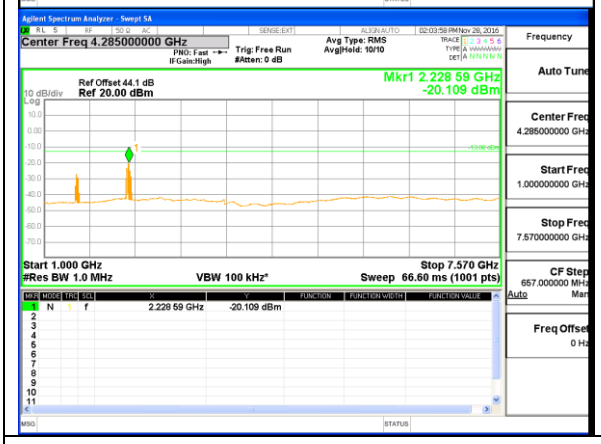
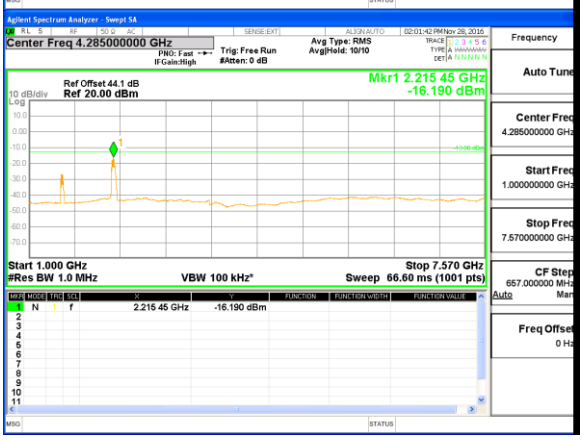
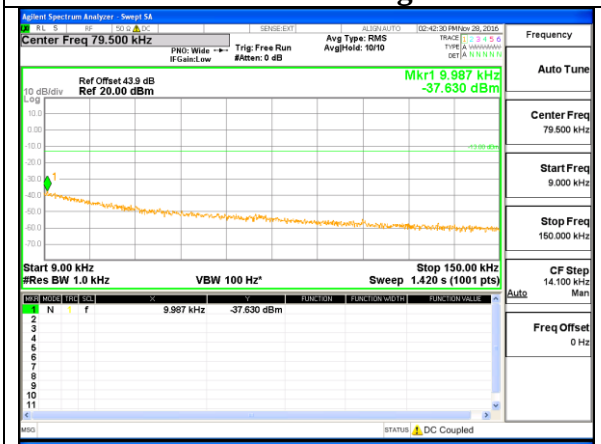
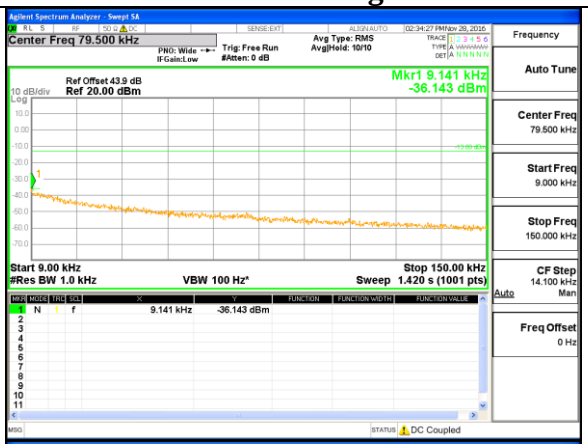
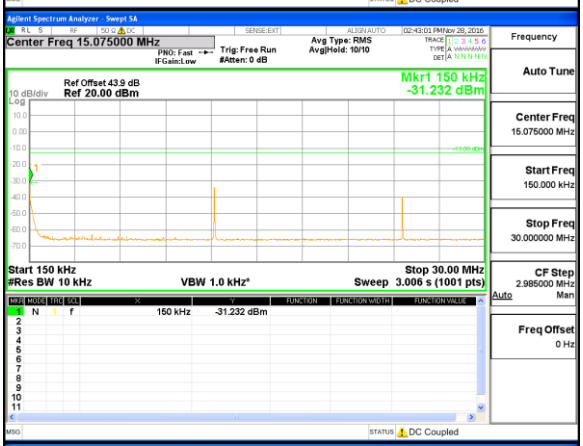
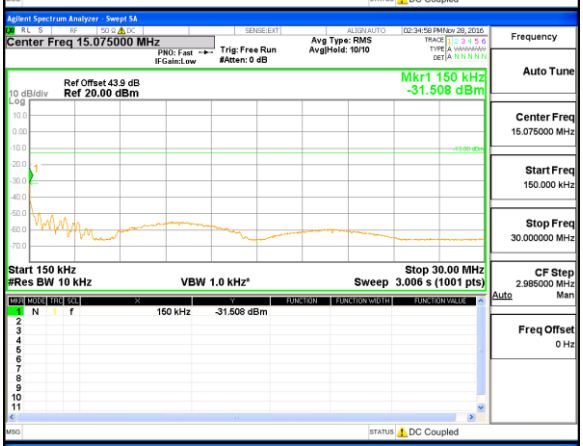
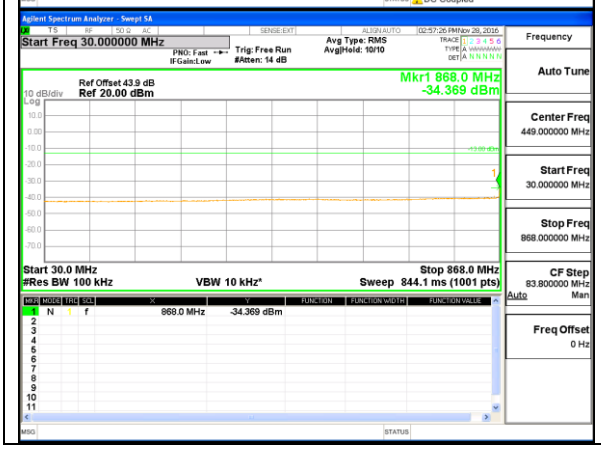
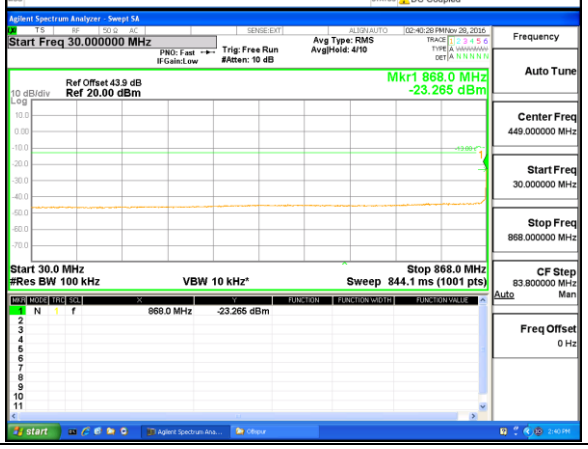
3-carrier wide band signal on AWS band, zoom out up to 10th harmonics	3-carrier narrow band signal on AWS band, zoom in above upper edge
	

Figure 6-6 Screen Captures of Spurious Emission 9 kHz – 10th Harmonics

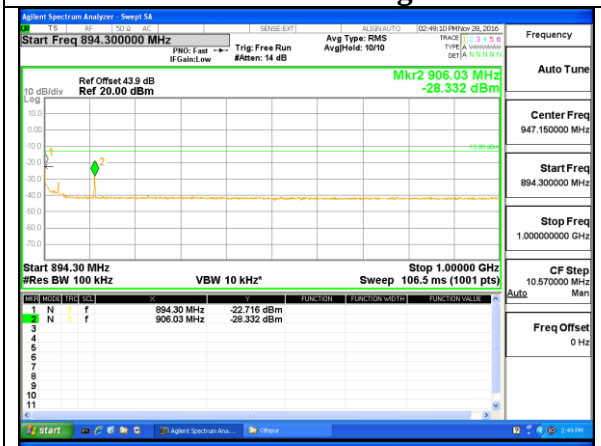
Narrow Band Signal	Wide Band Signal
Band 700	
	

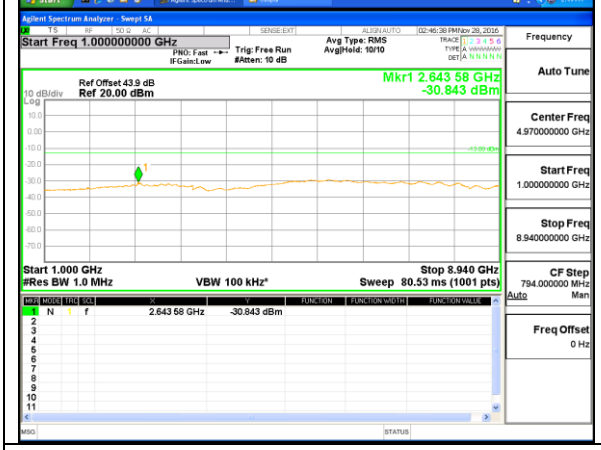
Narrow Band Signal	Wide Band Signal
	
	
	

Band 850

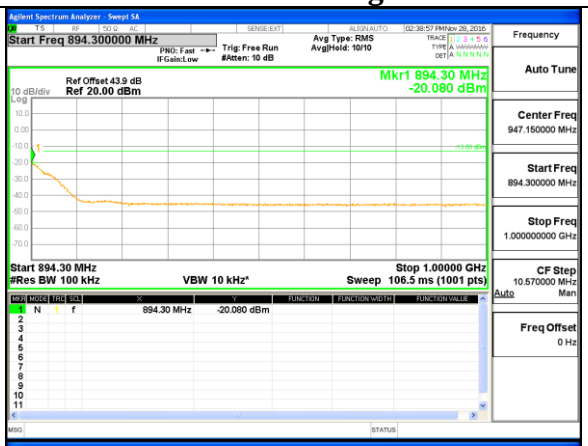
Narrow Band Signal	Wide Band Signal
	
	
	

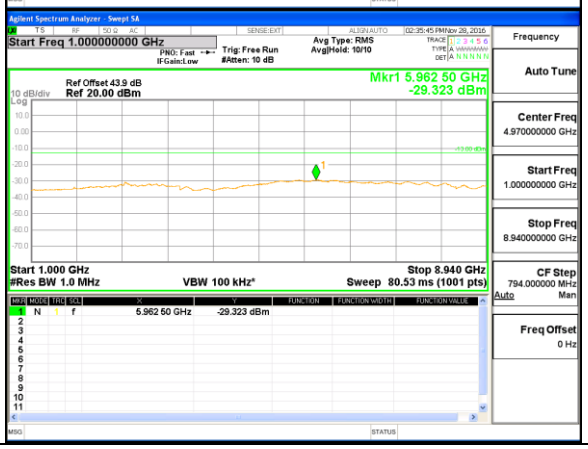
Narrow Band Signal



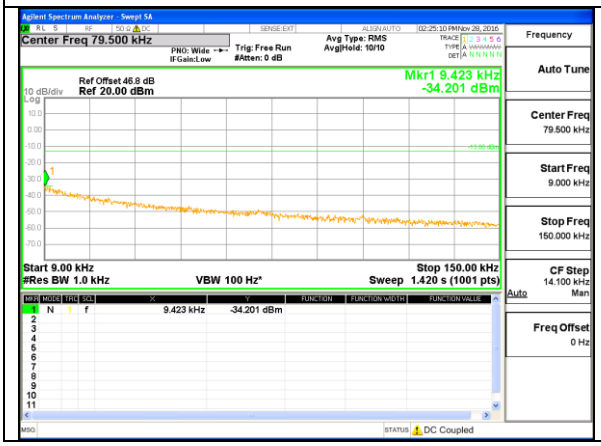


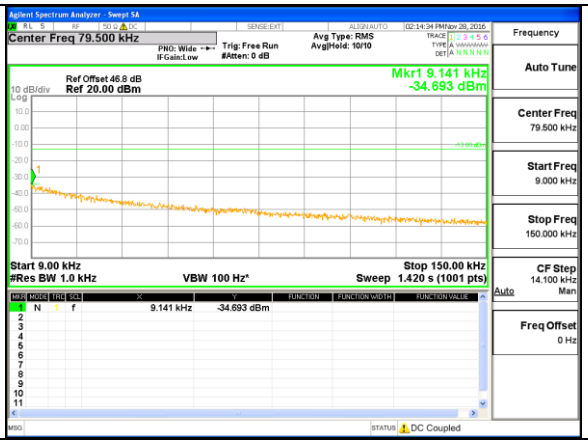
Wide Band Signal

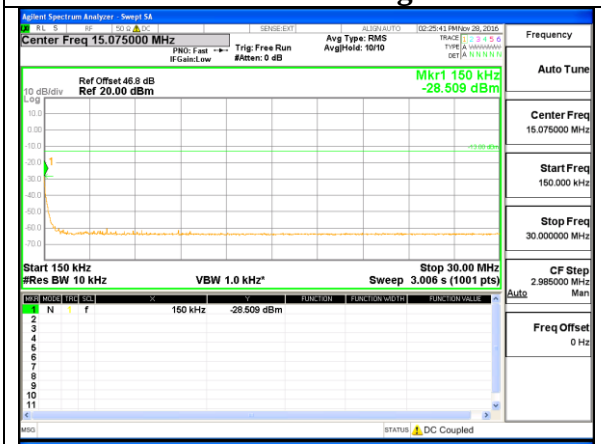
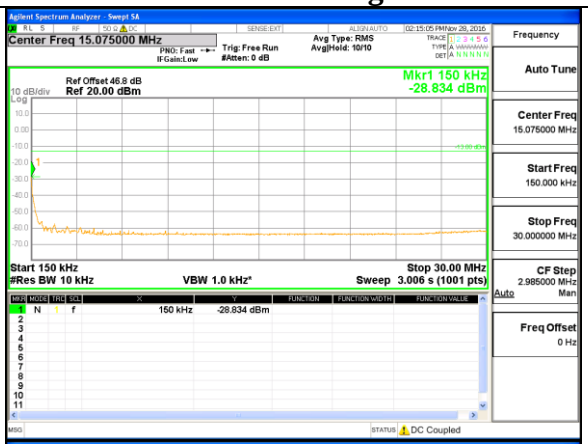
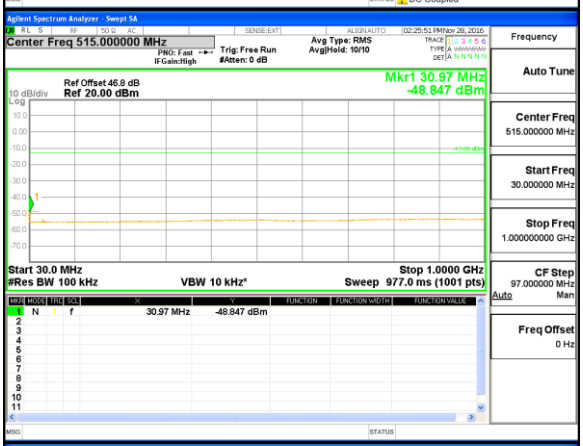
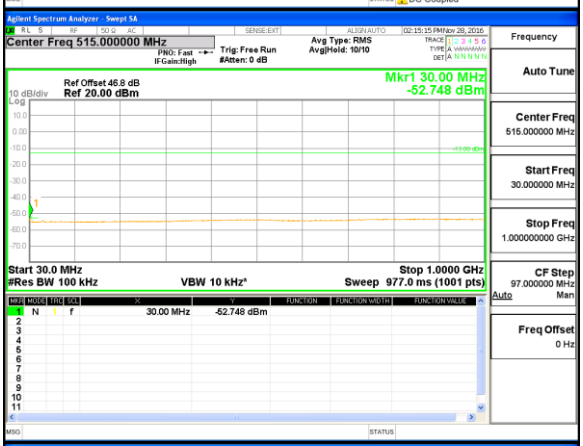
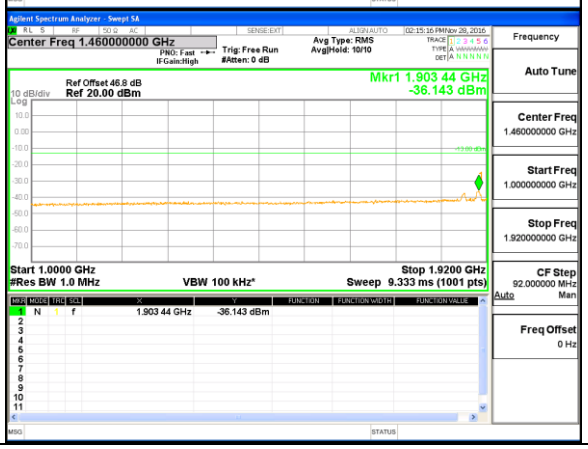


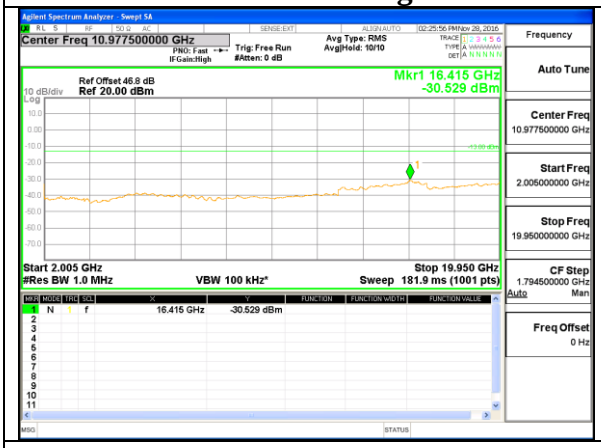
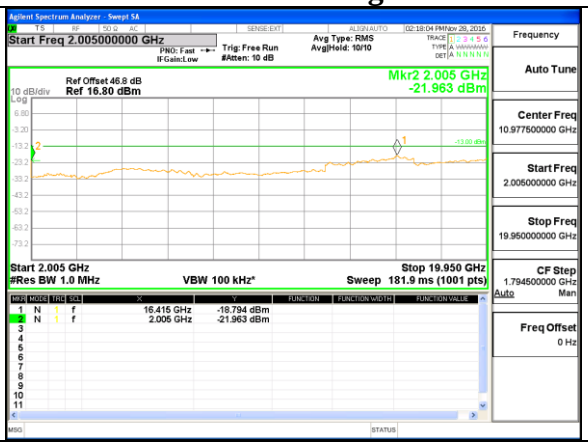


Band PCS

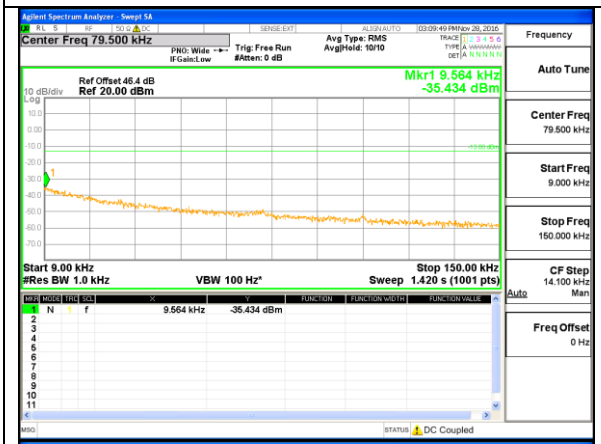


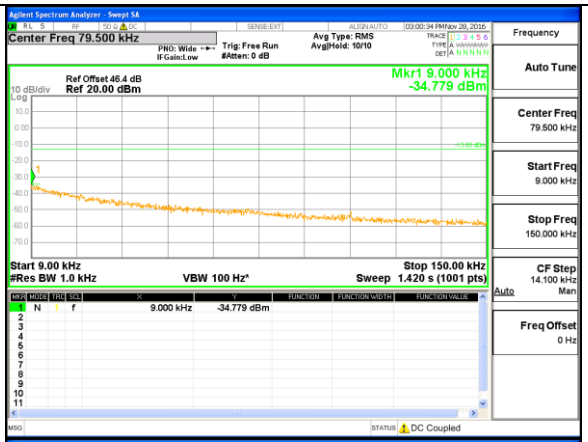


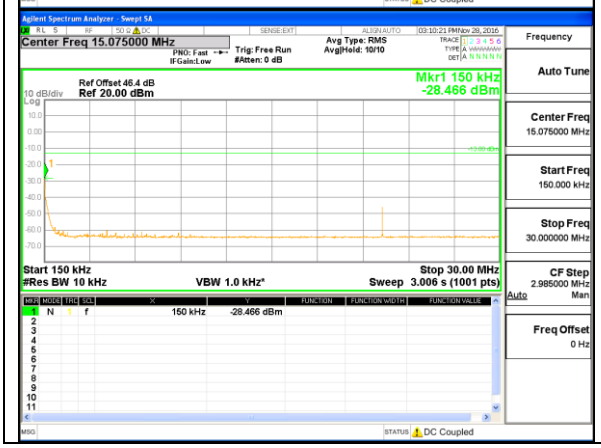
Narrow Band Signal	Wide Band Signal
	
	
	

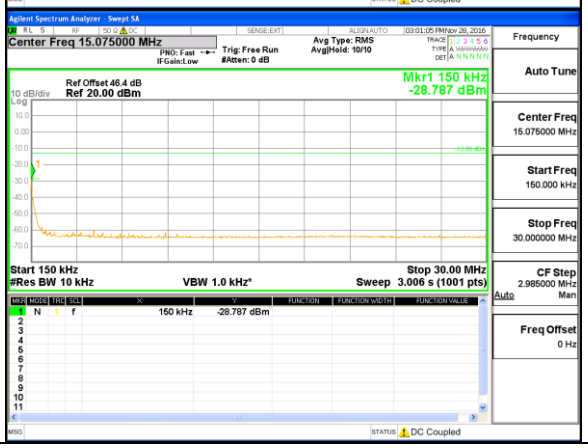
Narrow Band Signal	Wide Band Signal
	

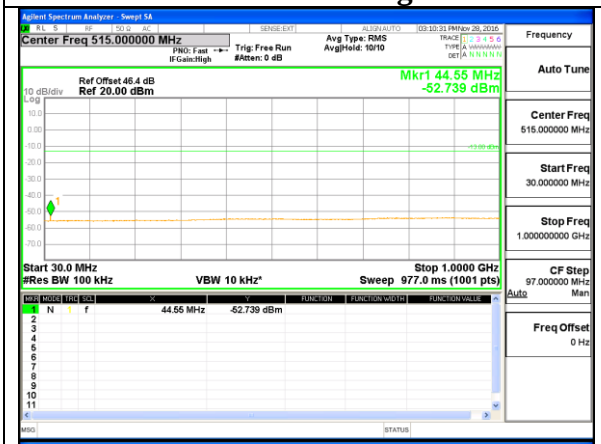
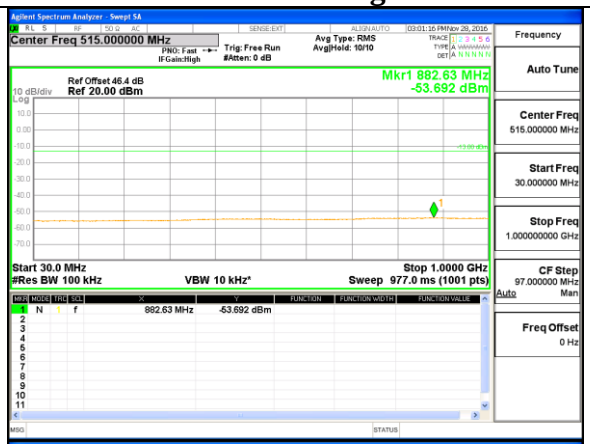
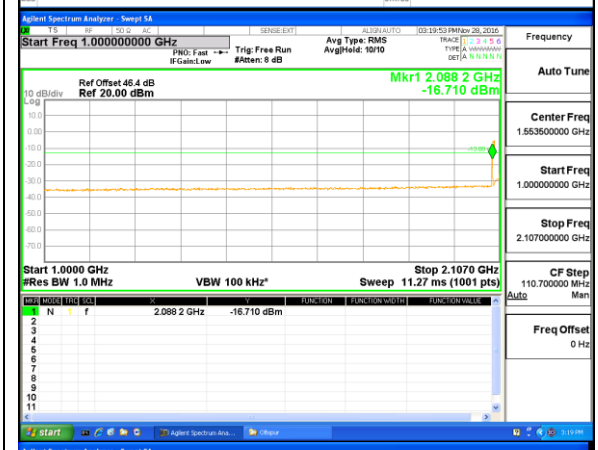
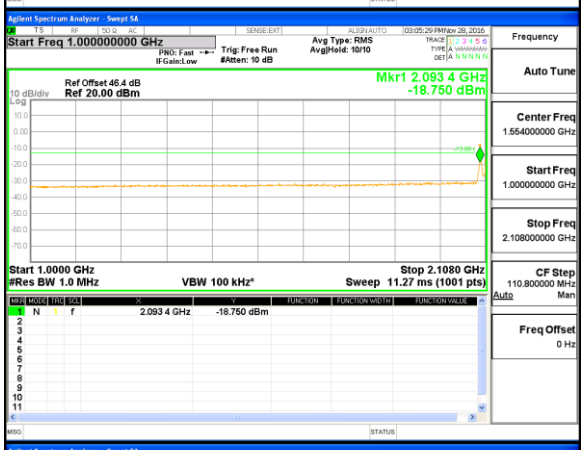
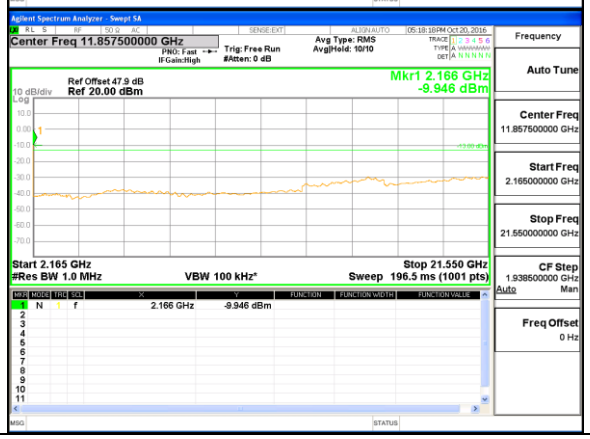
Band AWS









Narrow Band Signal	Wide Band Signal
	
	
	

6.4 Intermodulation Emission

6.4.1 Measurement Configuration

Measurements were performed at 3-tone narrow band and wide band signal within the 700 MHz (728 – 757 MHz), 850 MHz (869 – 894 MHz), PCS (1930-1995 MHz) and AWS (2110-2155 MHz) band.

KDB 971168 D03: The FCC normally requires that the IM test(s) be done with three signals of equal magnitude – at their highest rated output level – for each type of modulation. The signals are spaced so that two are near to each other at one edge of the pass band and the other signal is alone at the other edge of the pass band. This placement will potentially produce both in-band and out-of-band IM products.

The out-of-band emission and spurious emission caused by the intermodulation product is less severe compared to the signal configuration for the measurement shown in the previous emission tests.
Here only in-band intermodulation emission will be reported.

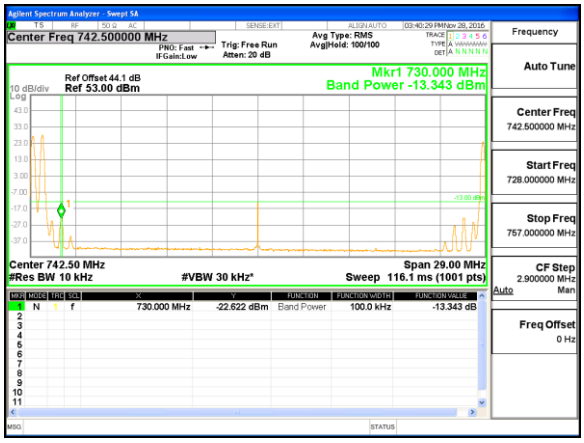
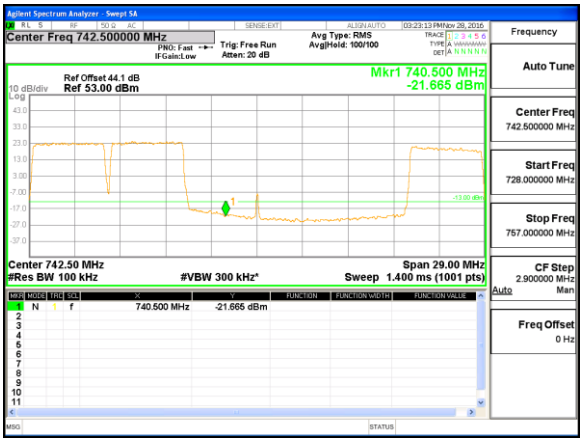
Normally the reference band width (RBW) in spurious emission measurement was specified to 100 kHz for the frequency range below 1 GHz and 1 MHz for the frequency range above 1GHz. And in analogue to out-of-band emission test, the integrated emission power in the specified reference band was measured and captured if a RBW relaxation was applied.

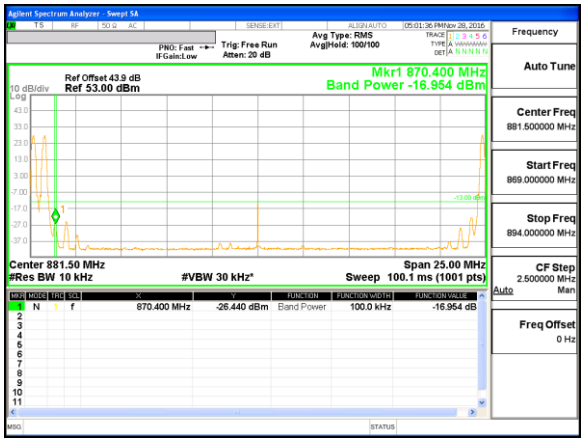
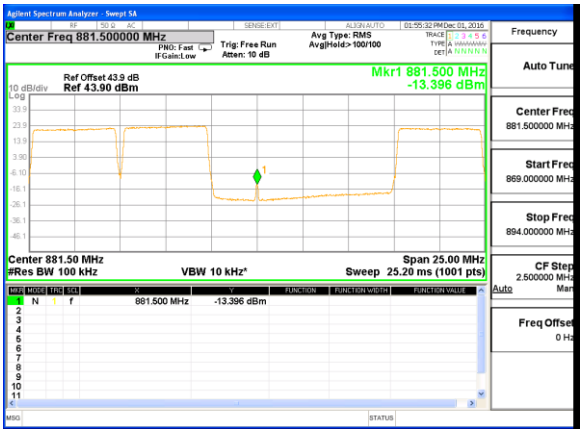
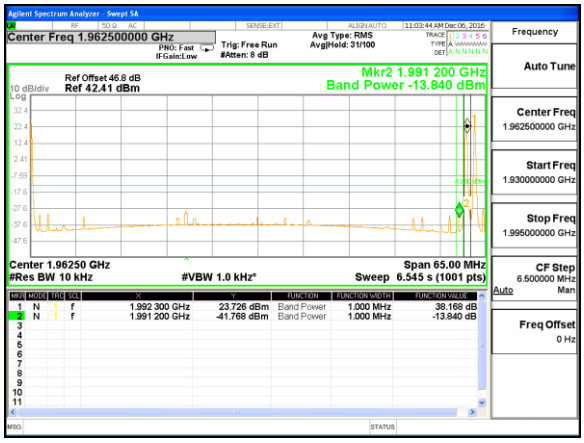
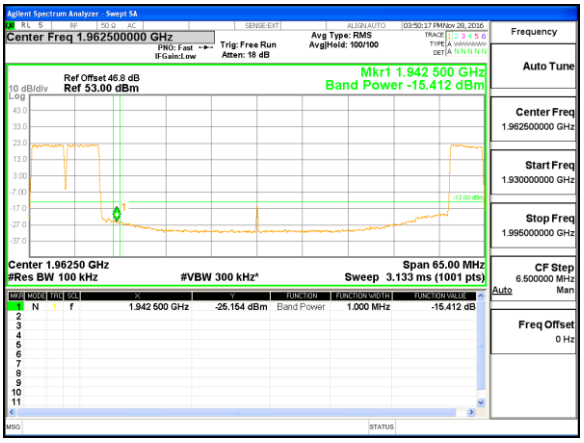
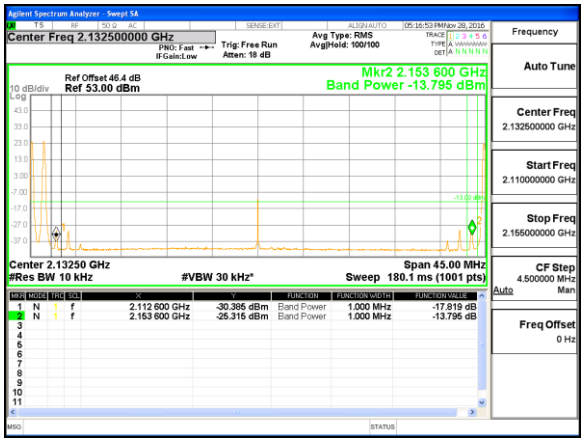
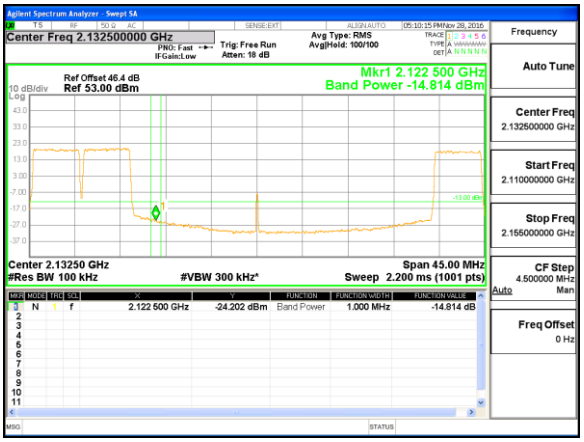
6.4.2 Results – In-band Intermodulation Emission

The measurement trace of intermodulation in-band was shown in Figure 6-7.

Conclusion:
The intermodulation emission was below the -13dBm limit.

Figure 6-7 Screen Captures of Intermodulation Emission

Narrow Band Signal	Wide Band Signal
Band 700	
	

Narrow Band Signal	Wide Band Signal
Band 850	
	
Band PCS	
	
Band AWS