

APPLICATION FOR STATION LICENSE
GOLDEN ISLES BROADCASTING, LLC
WRJY FM RADIO STATION
CH 281A - 104.1 MHZ - 3.9 KW
BRUNSWICK, GEORGIA
October 2015

EXHIBIT B

Measurements to demonstrate compliance with §73.317 of the Commission's rules for suppression of spurious emissions for FM transmission were conducted on October 22, 2015 utilizing the calibrated directional coupler, which is built into the output section of the Shively 3 Way Star Junction and 32734 branch combiner, Agilent E4411B Spectrum Analyzer and three Microwave Filter Company 2-section notch filters. The measurement technique, graphic, and tabular presentation of the results of these measurements are included in this exhibit, as well as the details of the Shively 32734 Combiner. Three frequency Intermodulation products

Measurement Procedure

- The Agilent E4411B spectrum analyzer was fed via a 10 dB pad from the forward power port of the precision directional coupler, which is built into the combiner output.

- Triple cascaded notch filters tuned to 93.7 MHz, 104.1 MHz, and 105.9 MHz were placed between the 10 dB pad and the RF input to the spectrum analyzer.

- The reference level for the fundamental FM carriers were established without the notch filters in the circuit.

- With the notch filters in circuit, the fundamentals are reduced by approximately 50 db which allows the instrument gain and available dynamic range to be increased without overloading the 1st mixer within the spectrum analyzer. Due to the reduced noise floor, accurate assessment of the intermodulation product levels can be established.
- The graphic presentation of each measurement was saved, printed, and included with this report.

Measurement Results

A tabulation of the measurement results is found in Exhibit B1. Individual graphic presentation of the fundamental frequency levels and each potential intermodulation frequency measurement found in Exhibits B2 through B31.

By analysis of these measurements of spurious frequencies it is believed that WRJY is in compliance with the guidelines of §73.317 of the Commission's rules.

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EXHIBIT B1

§73.317 db Attenuation =
 <65 db minimum <80 db maximum
 or
 43+10LOG(power in watts)

INTERMOD FREQUENCY (MHz)	SIGNAL LEVEL (dBm)	REFERENCE	REFERENCE	REFERENCE
		93.7 MHz	104.1 MHz	105.9 MHz
		SIGNAL LEVEL	SIGNAL LEVEL	SIGNAL LEVEL
		-8.8	-12.3	-6.7
		6.15	3.36	11.88
		-80.0	-78.3	-80.0
91.9	-100.1	-91.3	-87.8	-93.4
102.9	-102.9	-94.1	-90.6	-96.2
102.3	-98.4	-89.6	-86.2	-91.7
83.3	-99.4	-90.6	-87.1	-92.7
114.5	-99.1	-90.3	-86.9	-92.4
95.5	-107.5	-98.7	-95.2	-100.8
116.3	-99.4	-90.6	-87.1	-92.7
107.7	-99.1	-90.3	-86.8	-92.4
118.1	-98.4	-89.6	-86.1	-91.7
69.3	-99.0	-90.2	-86.8	-92.3
79.7	-98.3	-89.5	-86.0	-91.6
90.1	-99.0	-90.2	-86.8	-92.3
71.1	-98.1	-89.3	-85.8	-91.4
72.9	-98.9	-90.0	-86.6	-92.1
112.7	-103.1	-94.3	-90.8	-96.4
85.1	-102.8	-94.0	-90.5	-96.1
124.9	-102.2	-93.4	-89.9	-95.5
97.3	-100.0	-91.2	-87.7	-93.3
126.7	-104.9	-96.1	-92.6	-98.2
128.5	-104.9	-96.1	-92.6	-98.2
109.5	-102.7	-93.9	-90.4	-96.0
119.9	-102.0	-93.2	-89.7	-95.3
130.3	-102.9	-94.1	-90.6	-96.2
81.5	-97.0	-88.2	-84.7	-90.3

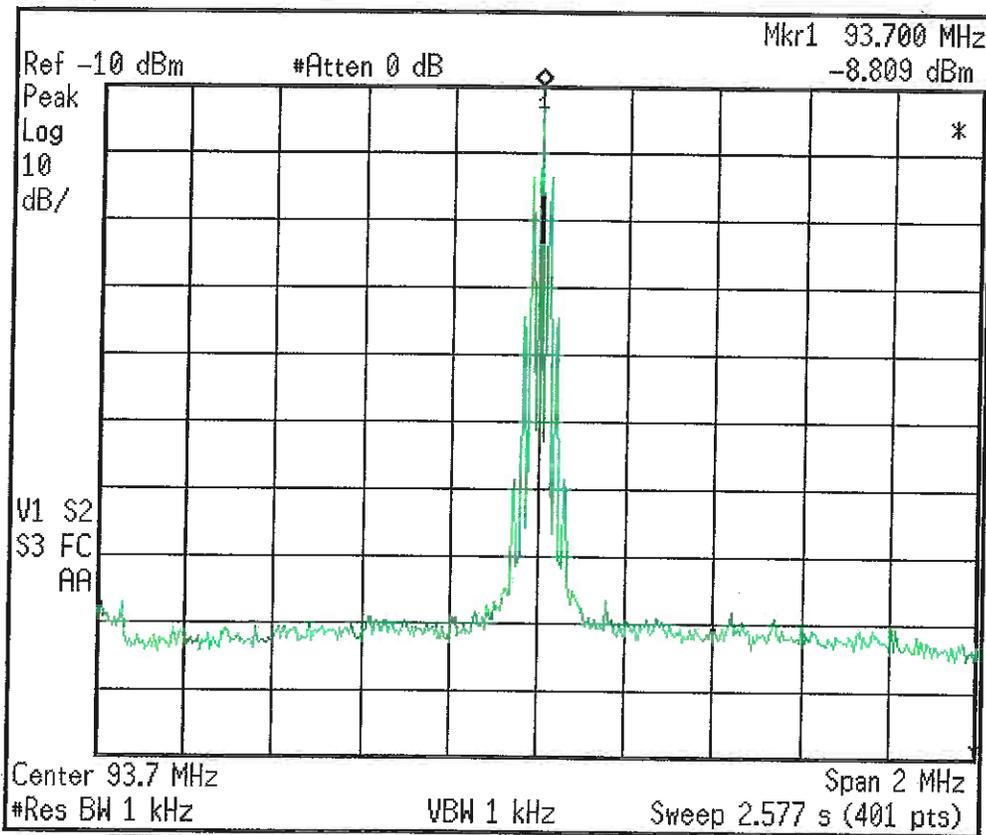
Transmitter Power (kW)
 Required Spur Suppression

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EXHIBIT B2

WBQQ Reference

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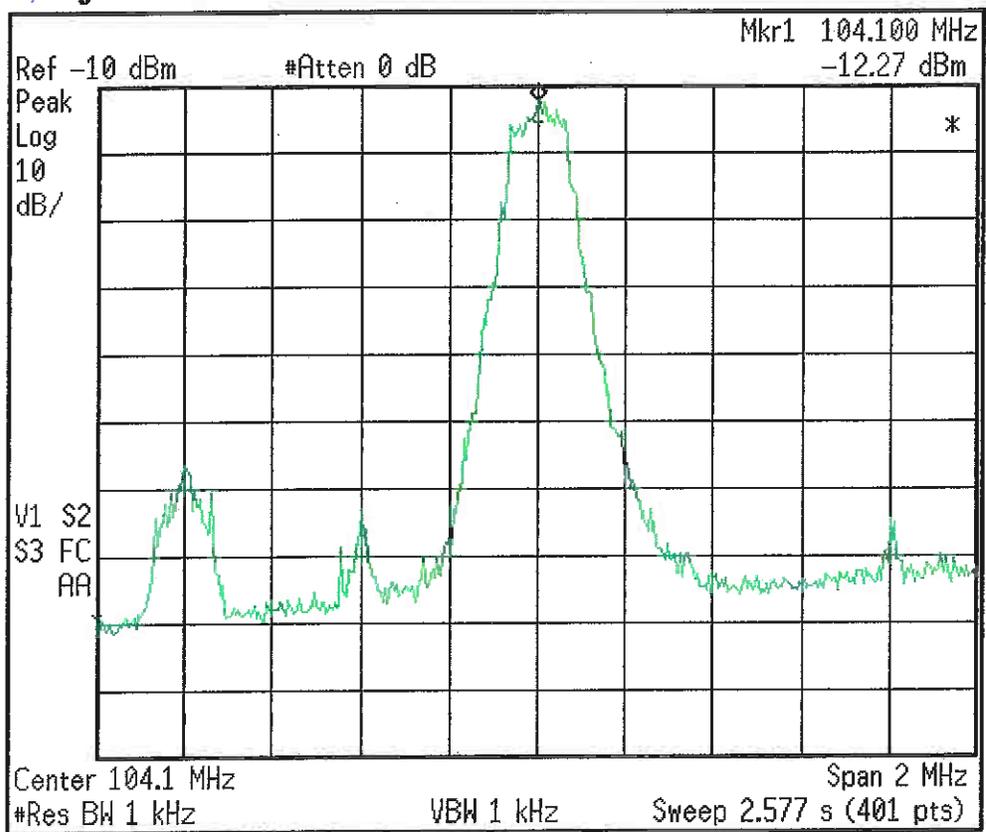


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EXHIBIT B3

WRJY Reference

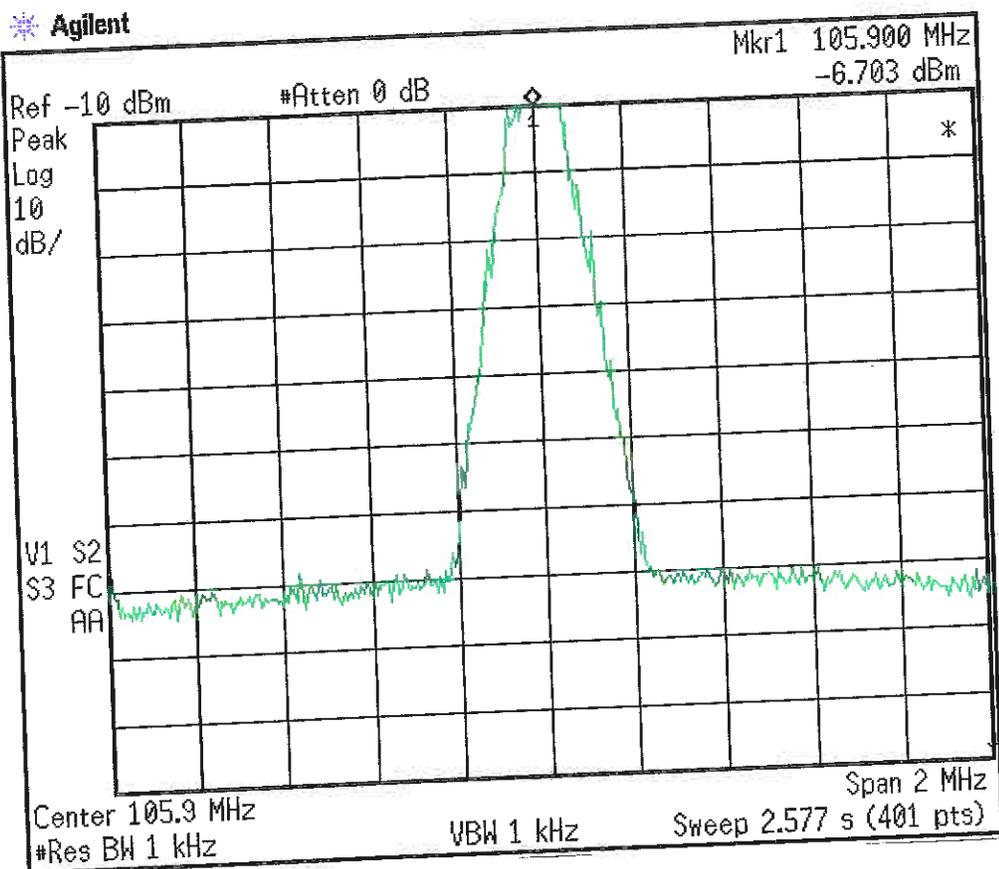
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EXHIBIT B4

WXMK Reference



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EXHIBIT B5

Calculations Intermod Frequencies

Brunswick GA

INTERMOD STUDY

Brunswick, GA

0 : 0 : 00.000 0 : 0 : 00.000
3 station branched
// -----

TRANSMIT FREQUENCIES

93.7MHz : 104.1MHz : 105.9MHz :
// -----

HIT WINDOW LIMITS

LOWER LIMIT: 75MHz : UPPER LIMIT: 136MHz :
// -----

IN THE THIRD ORDER:

10 products checked, 7 hits found
93.7 MHz is involved in 5 hits 71.4%
104.1 MHz is involved in 5 hits 71.4%
105.9 MHz is involved in 5 hits 71.4%

IN THE FIFTH ORDER:

21 products checked, 9 hits found
104.1 MHz is involved in 8 hits 88.9%
105.9 MHz is involved in 8 hits 88.9%
93.7 MHz is involved in 7 hits 77.8%

// -----

THIRD ORDER HITS:

105.900000 - 93.700000 - 93.700000 = ± 81.500000
104.100000 - 93.700000 - 93.700000 = ± 83.300000
105.900000 - 104.100000 - 104.100000 = ±102.300000
105.900000 + 105.900000 - 104.100000 = ±107.700000
104.100000 + 104.100000 - 93.700000 = ±114.500000
105.900000 + 104.100000 - 93.700000 = ±116.300000
105.900000 + 105.900000 - 93.700000 = ±118.100000

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FIFTH ORDER HITS:

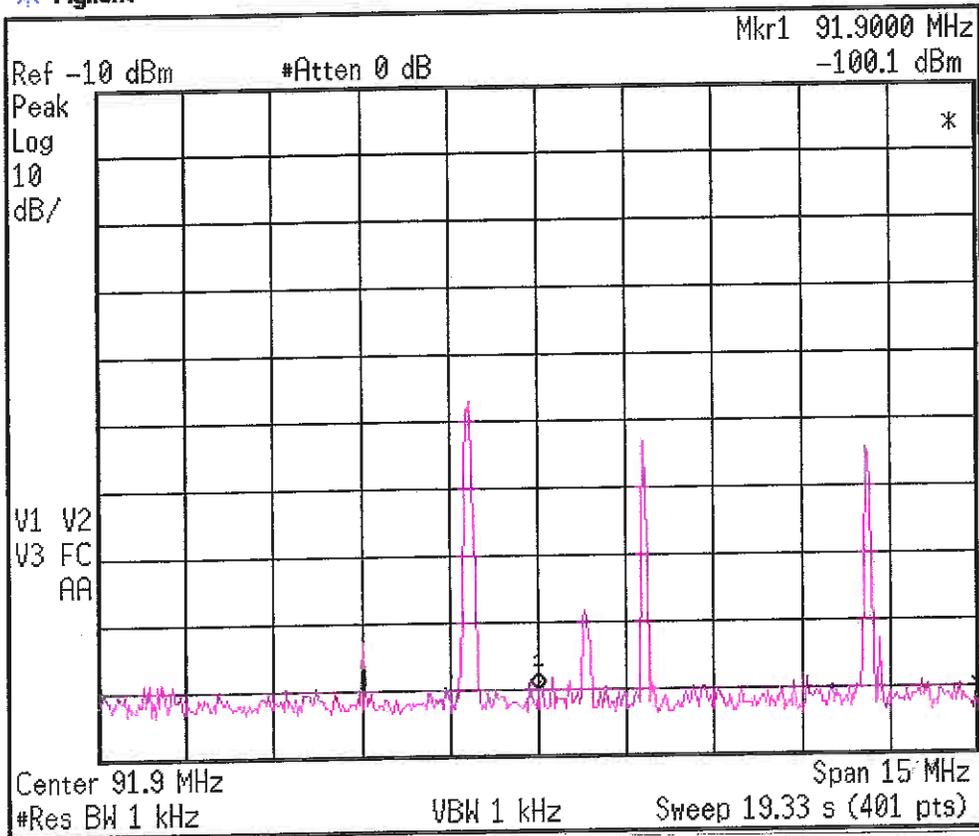
105.900000 + 105.900000 - 104.100000 - 104.100000 + 93.700000 = ± 97.300000
105.900000 + 105.900000 - 104.100000 - 104.100000 - 104.100000 = ±100.500000
105.900000 + 105.900000 + 105.900000 - 104.100000 - 104.100000 = ±109.500000
105.900000 - 104.100000 - 104.100000 - 104.100000 + 93.700000 = ±112.700000
105.900000 + 105.900000 + 105.900000 - 104.100000 - 93.700000 = ±119.900000
104.100000 + 104.100000 + 104.100000 - 93.700000 - 93.700000 = ±124.900000
105.900000 + 104.100000 + 104.100000 - 93.700000 - 93.700000 = ±126.700000
105.900000 + 105.900000 + 104.100000 - 93.700000 - 93.700000 = ±128.500000
105.900000 + 105.900000 + 105.900000 - 93.700000 - 93.700000 = ±130.300000

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EXHIBIT B6

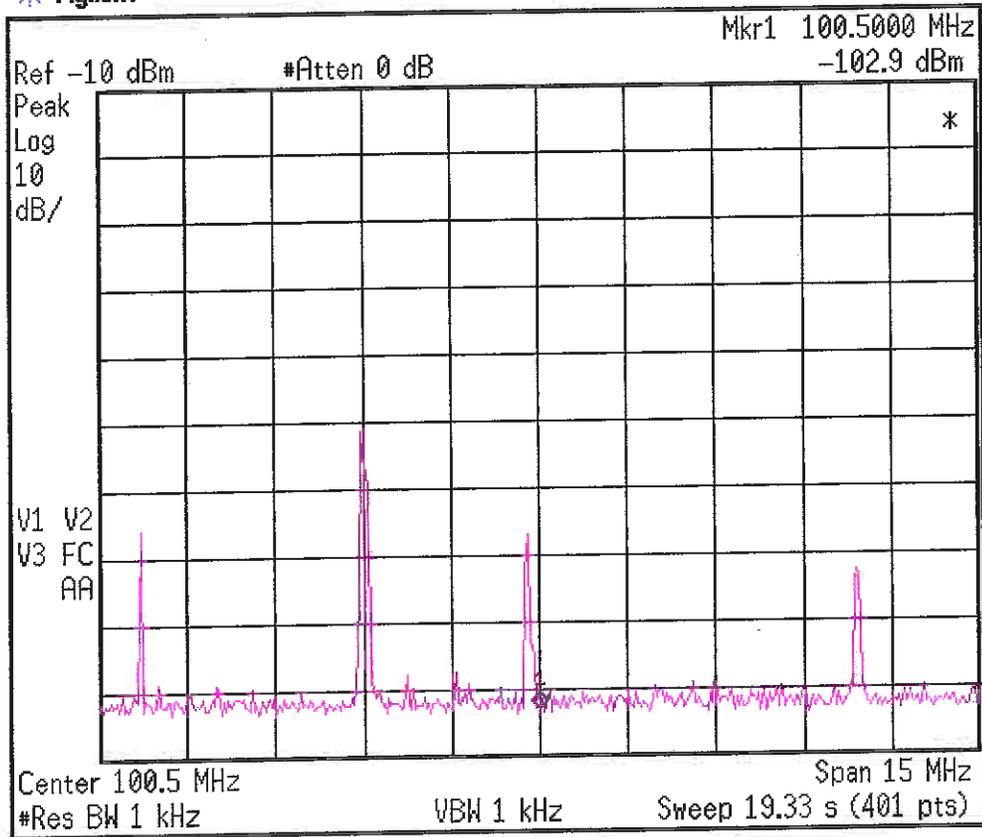
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EXHIBIT B7

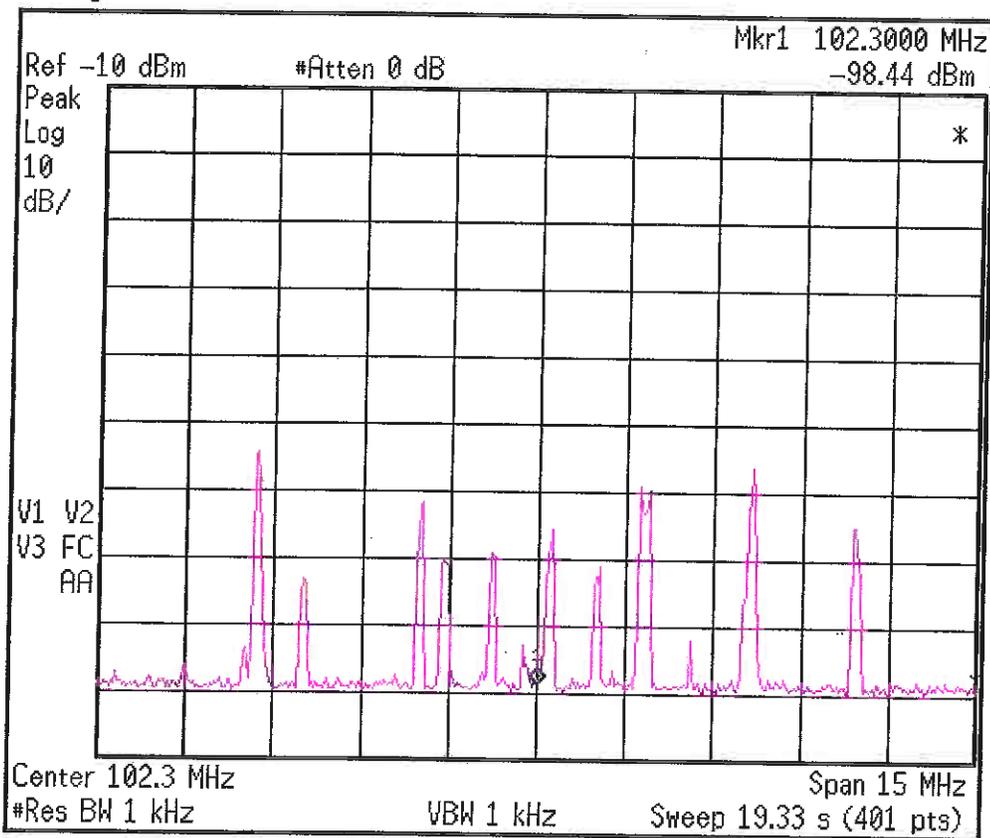
* Agilent



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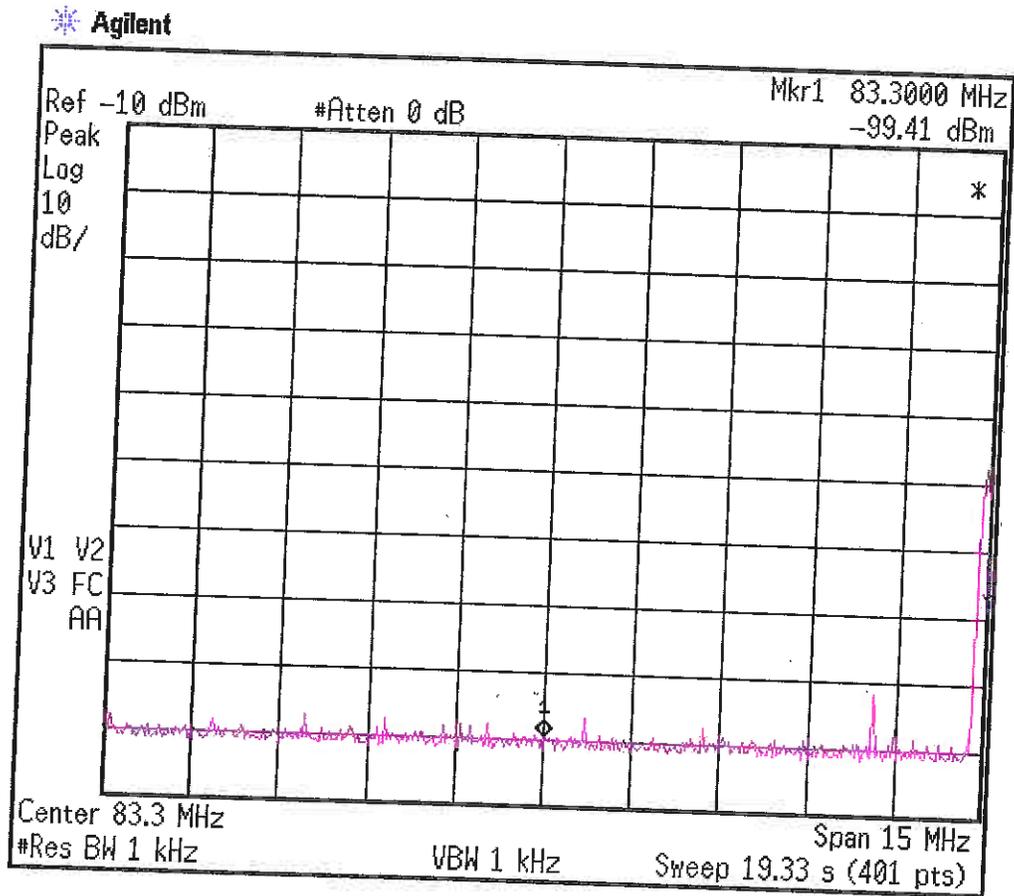
EXHIBIT B8

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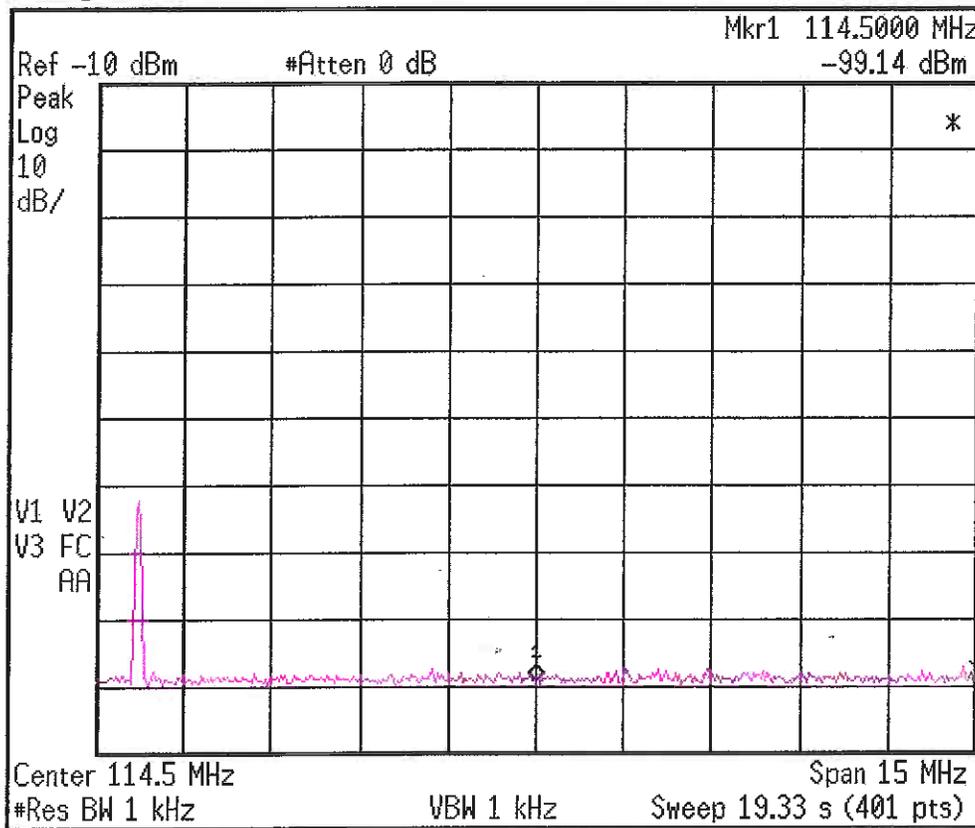
EXHIBIT B9



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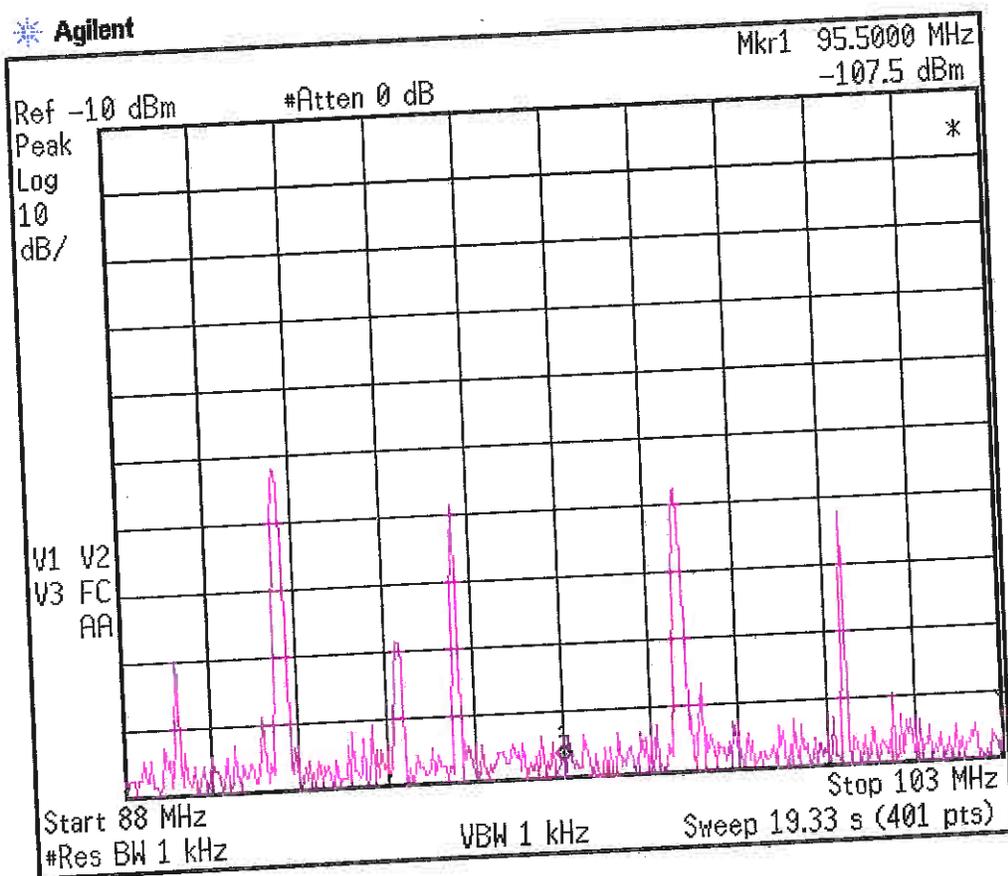
EXHIBIT B10

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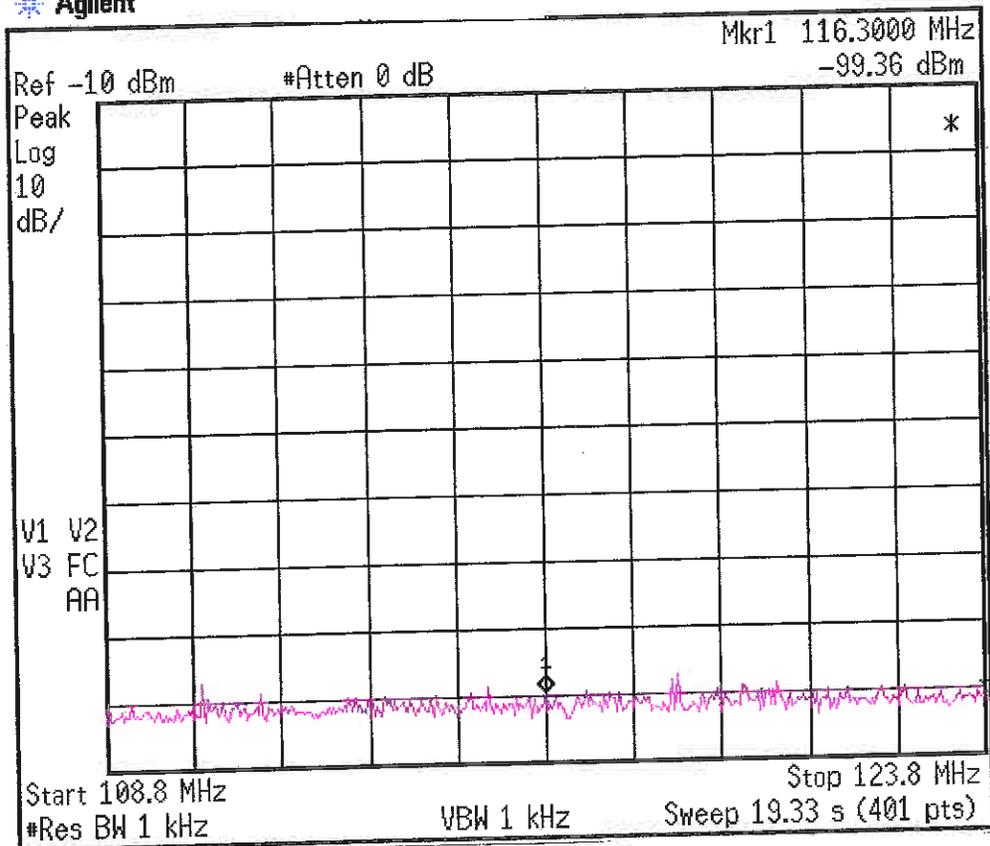
EXHIBIT B11



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EXHIBIT B12

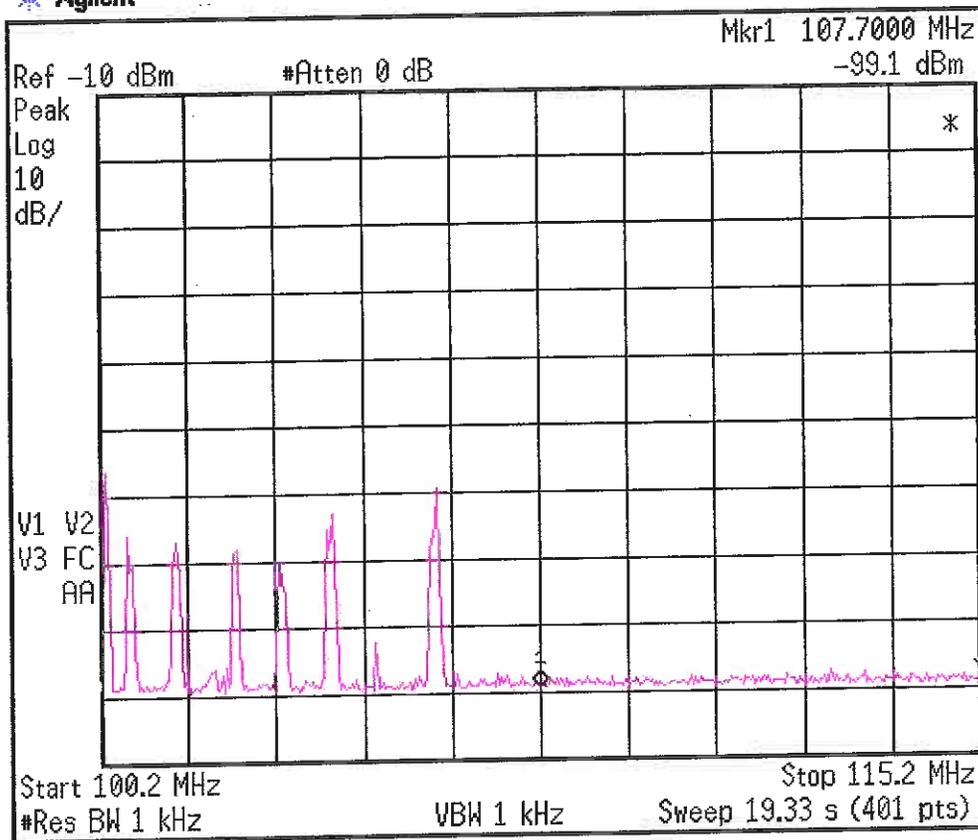
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EXHIBIT B13

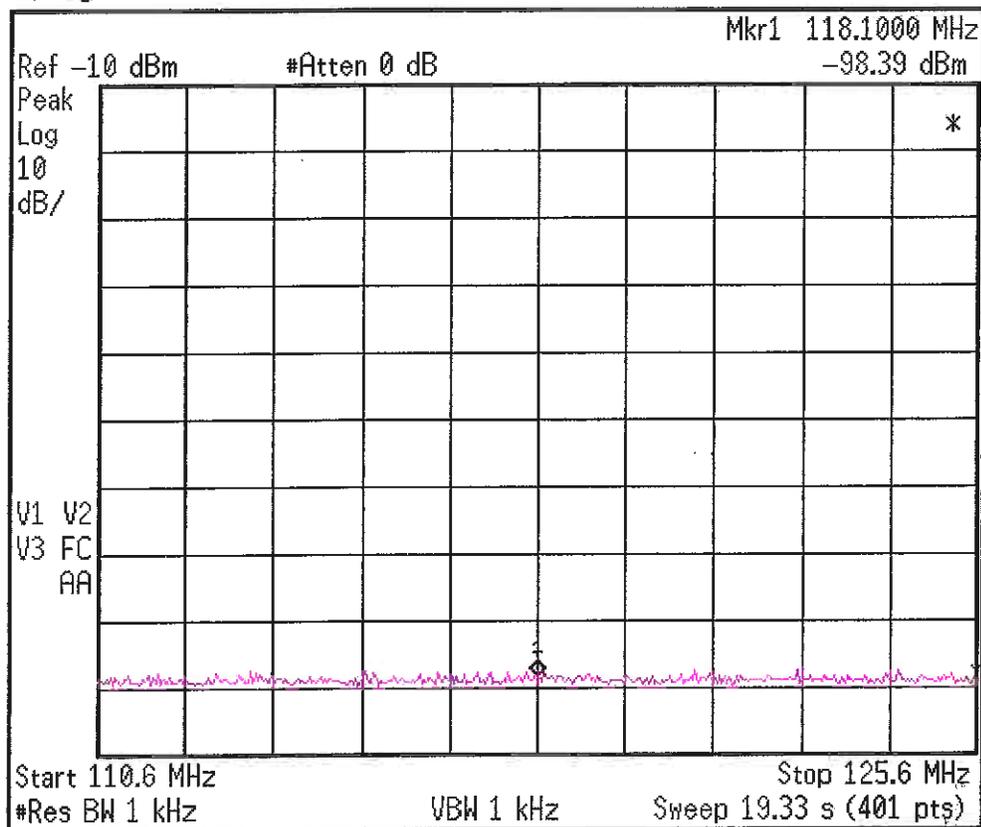
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EXHIBIT B14

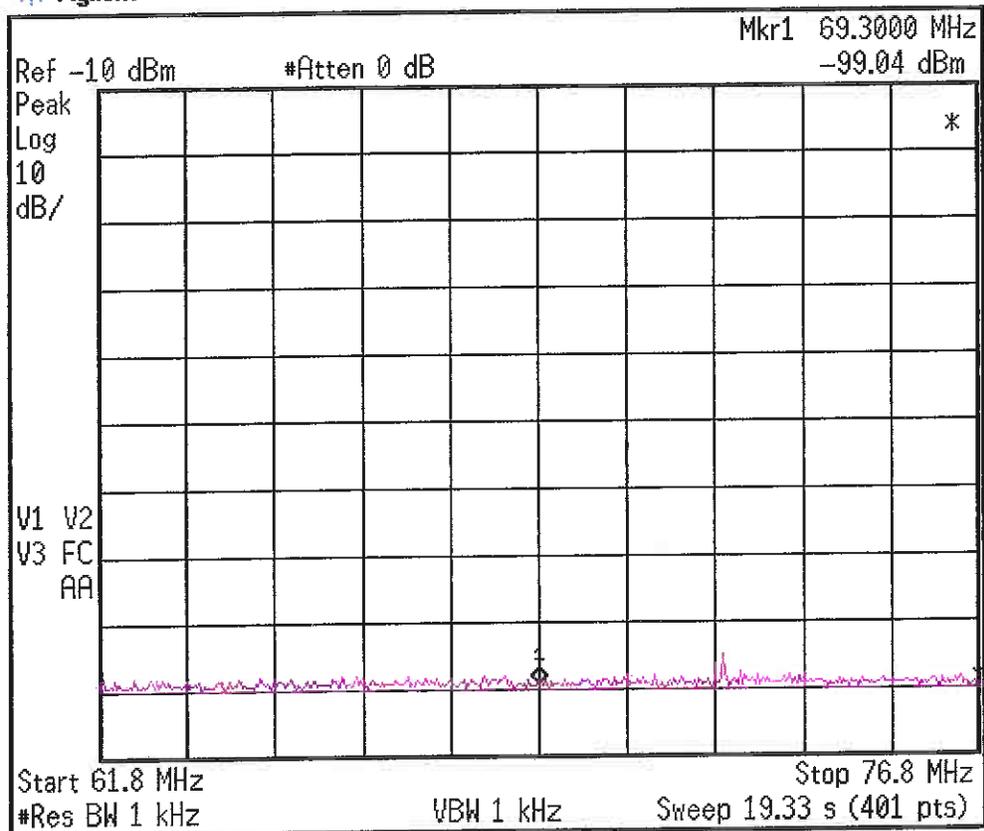
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EXHIBIT B15

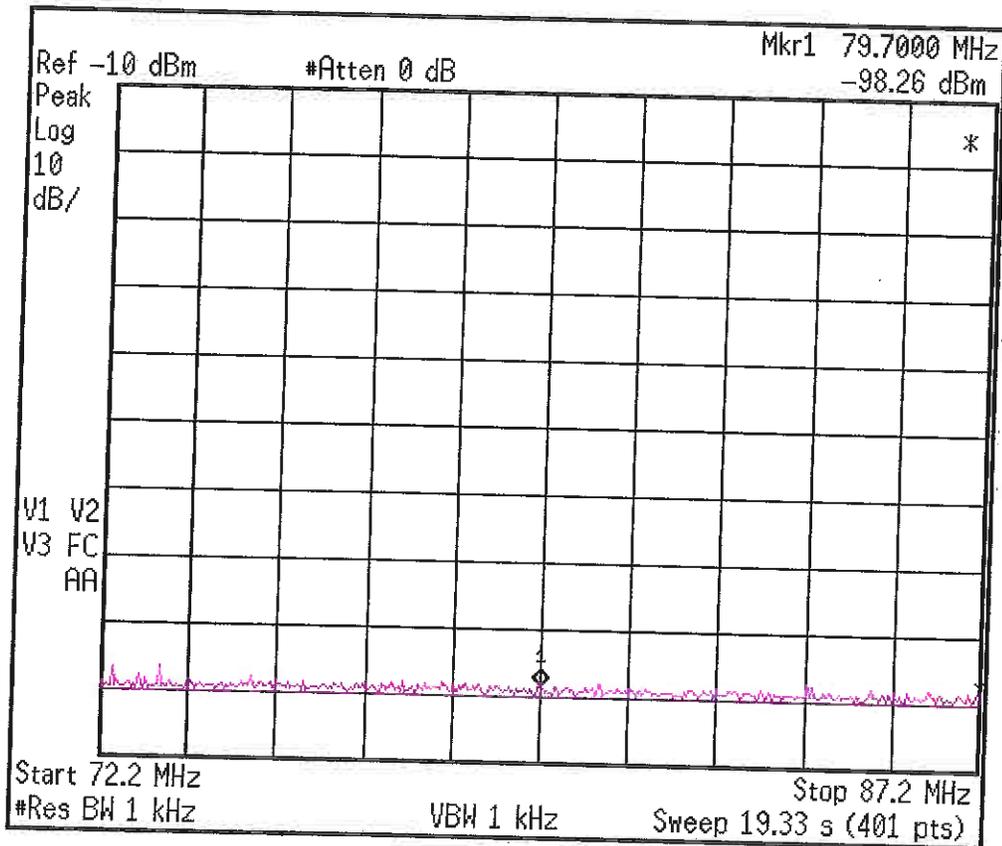
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EXHIBIT B16

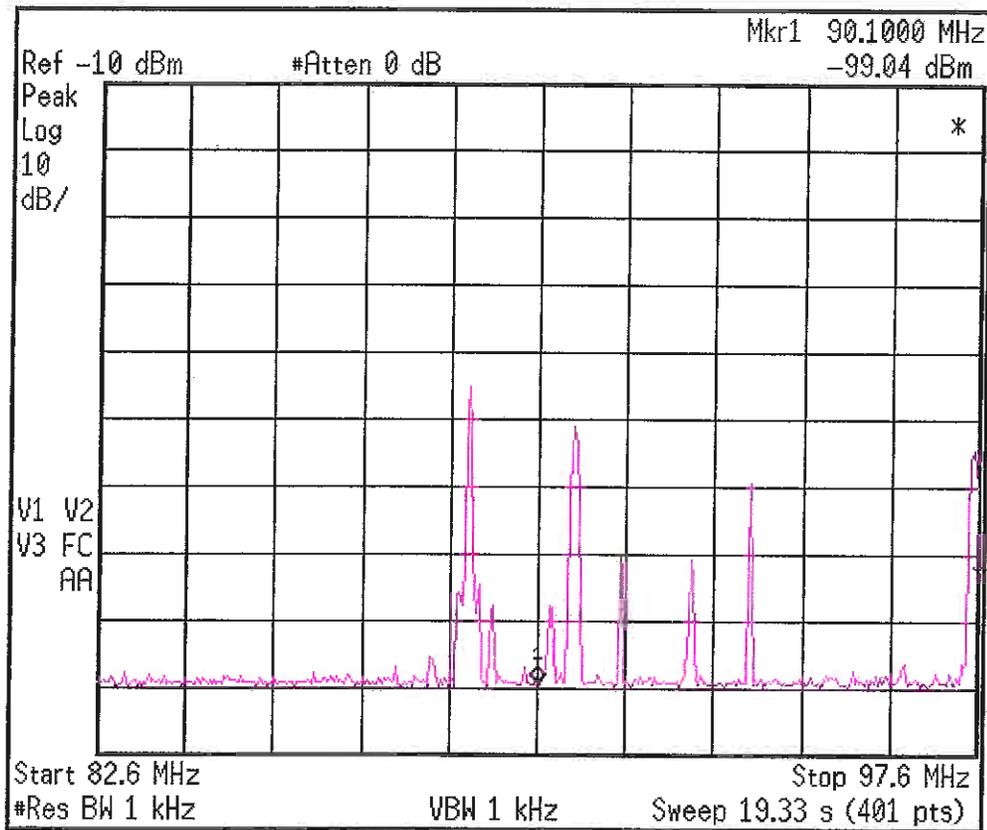
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EXHIBIT B17

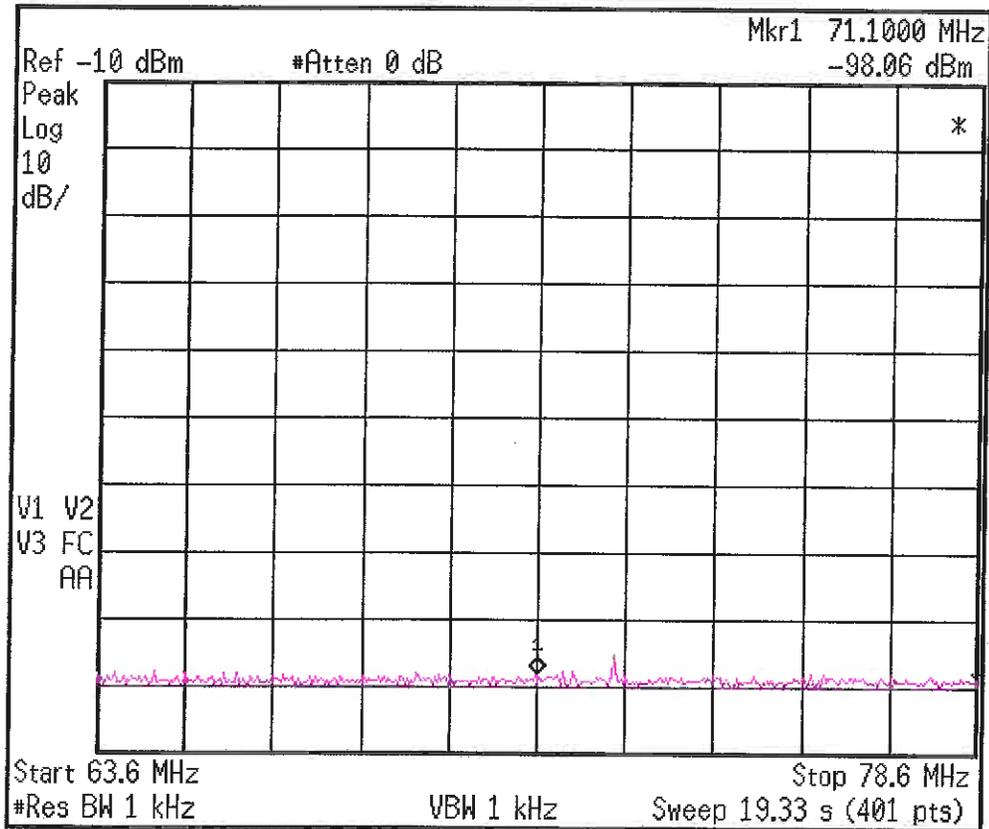
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EXHIBIT B18

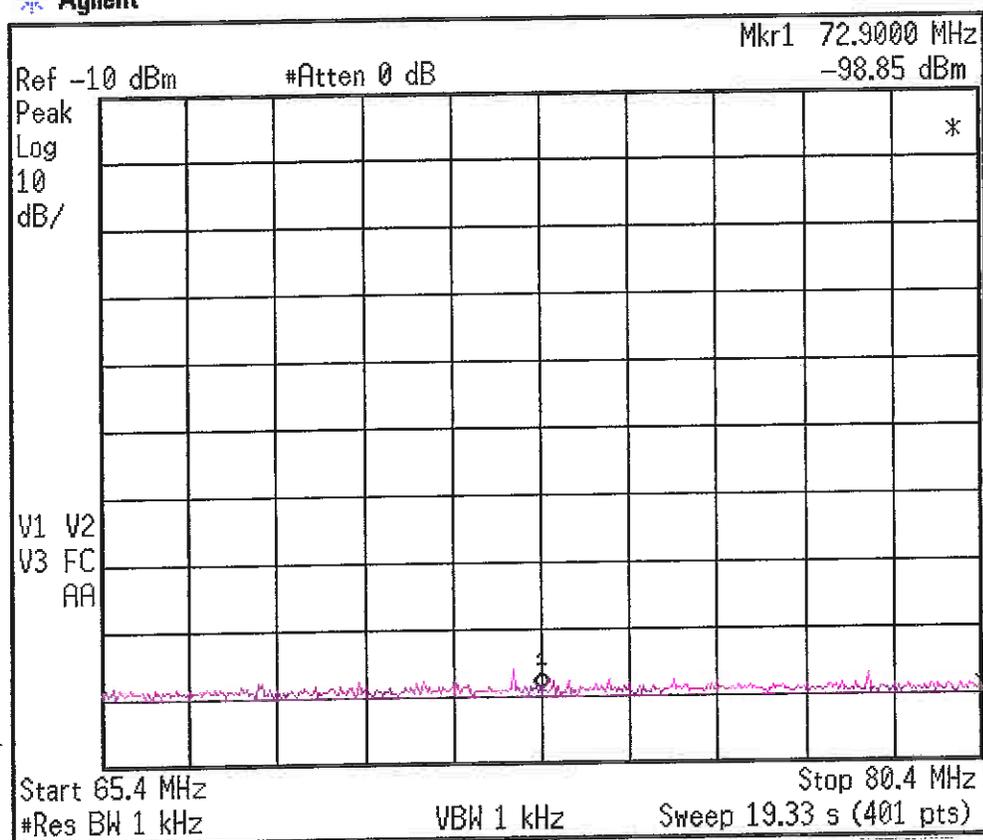
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EXHIBIT B19

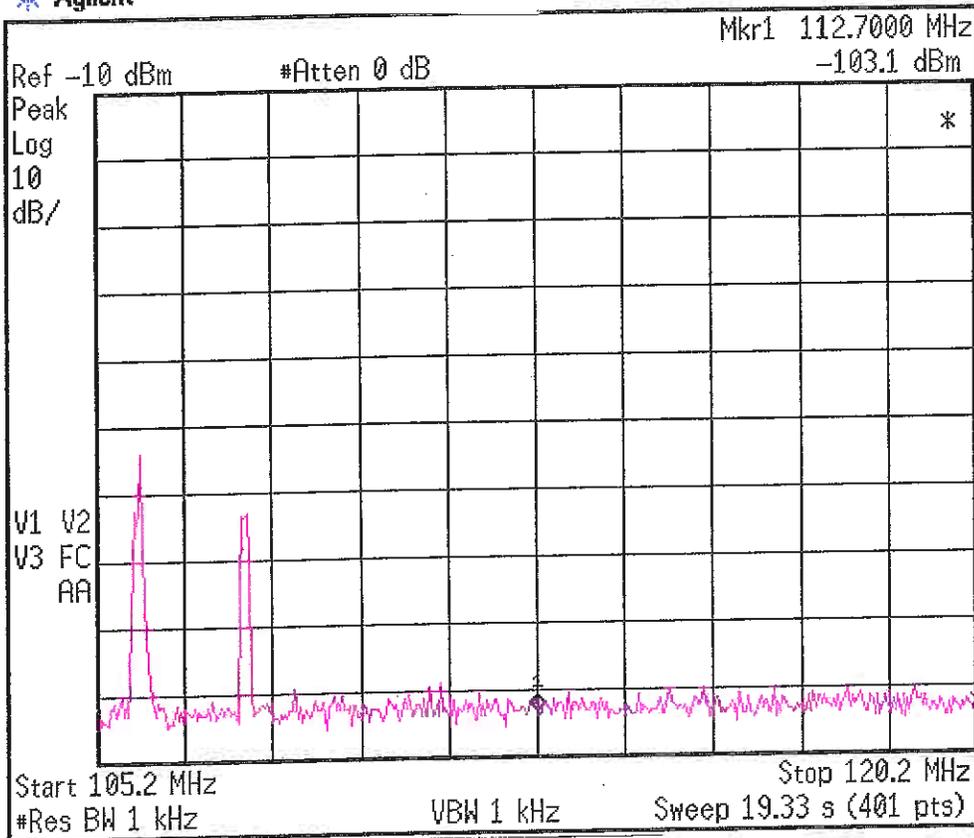
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EXHIBIT B20

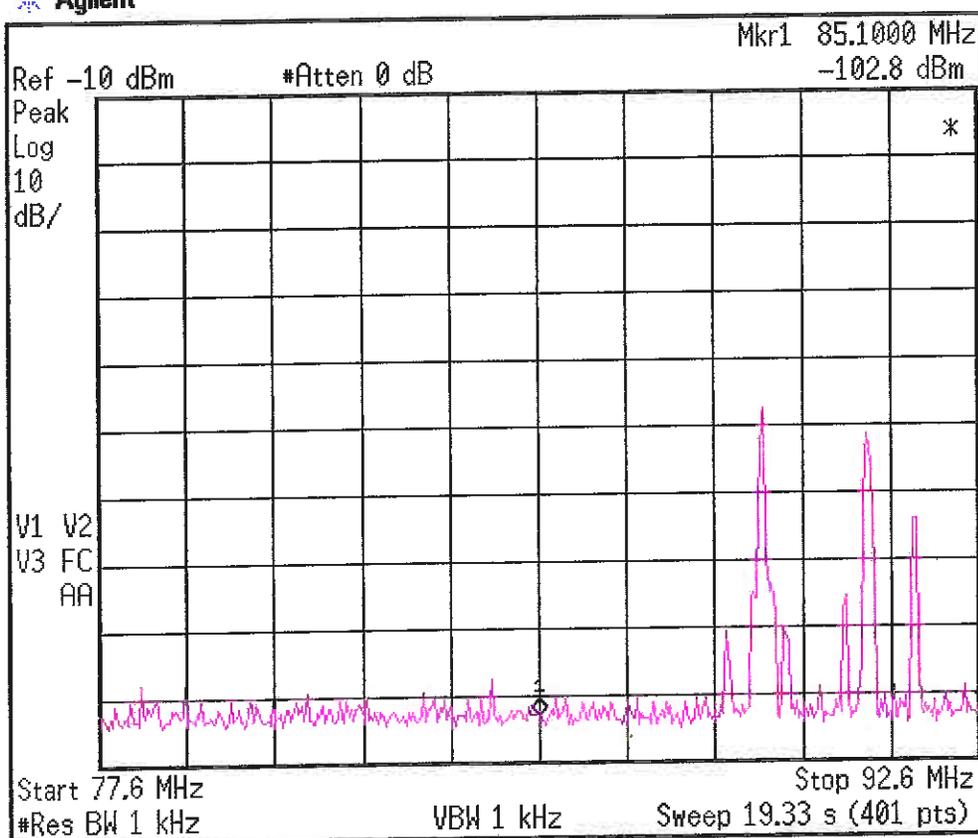
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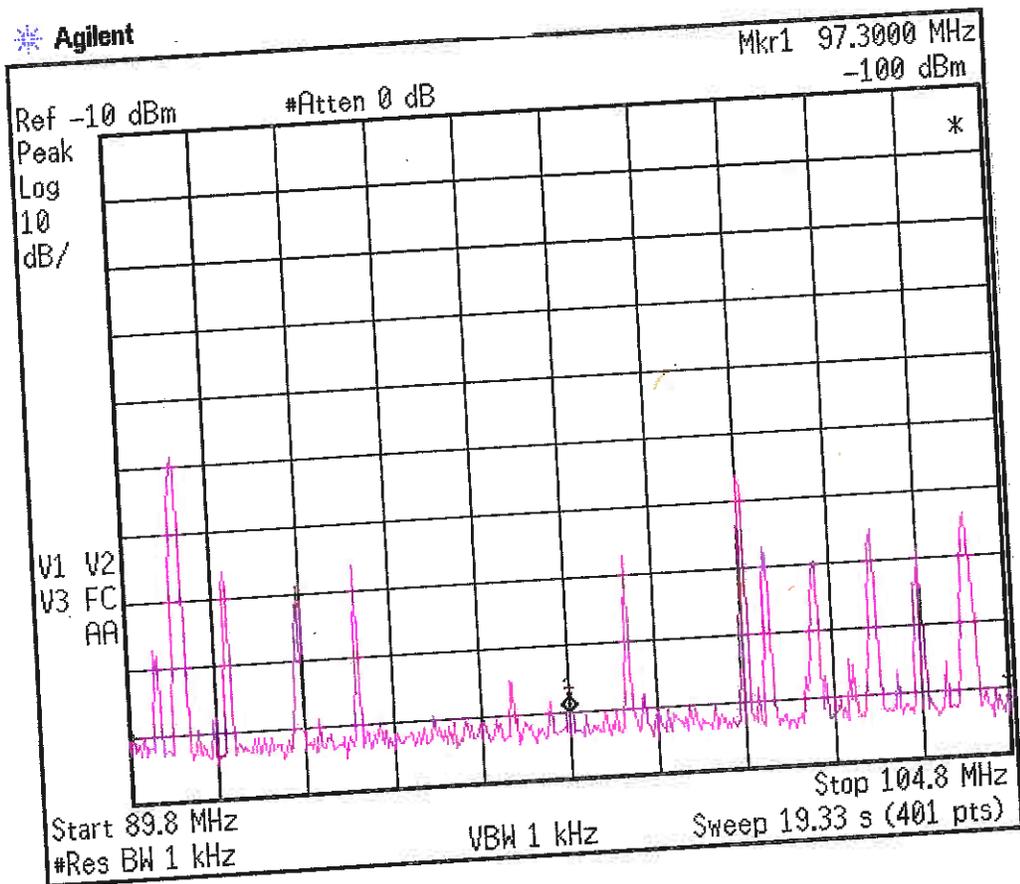
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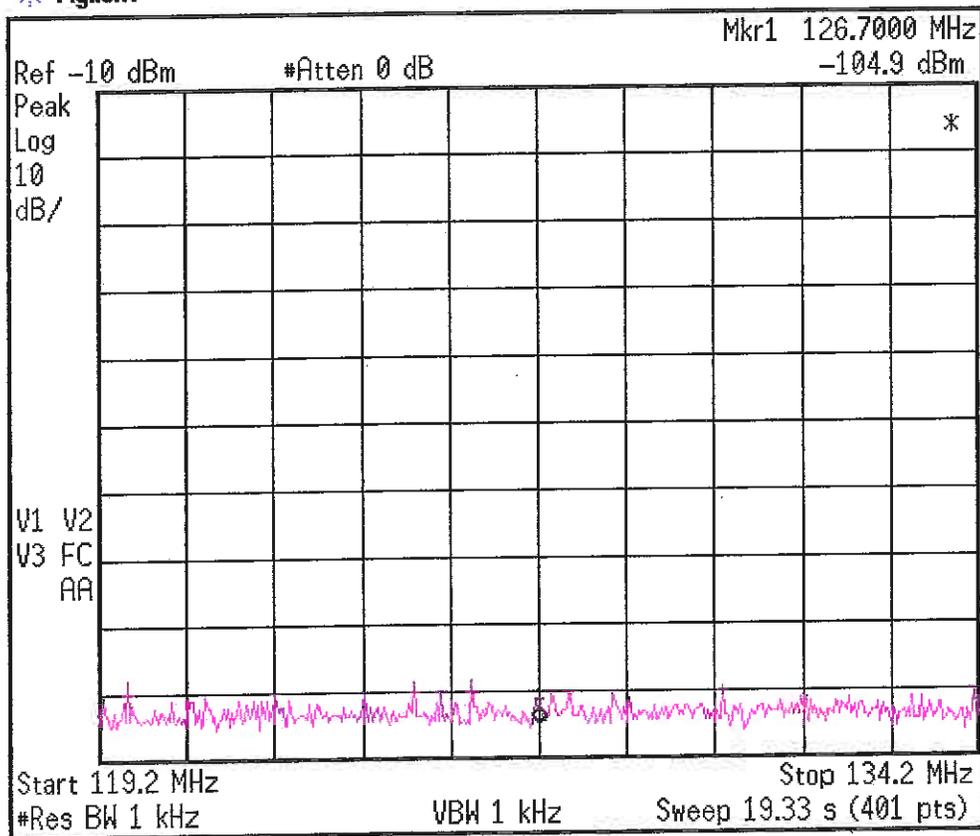
EXHIBIT B23



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EXHIBIT B24

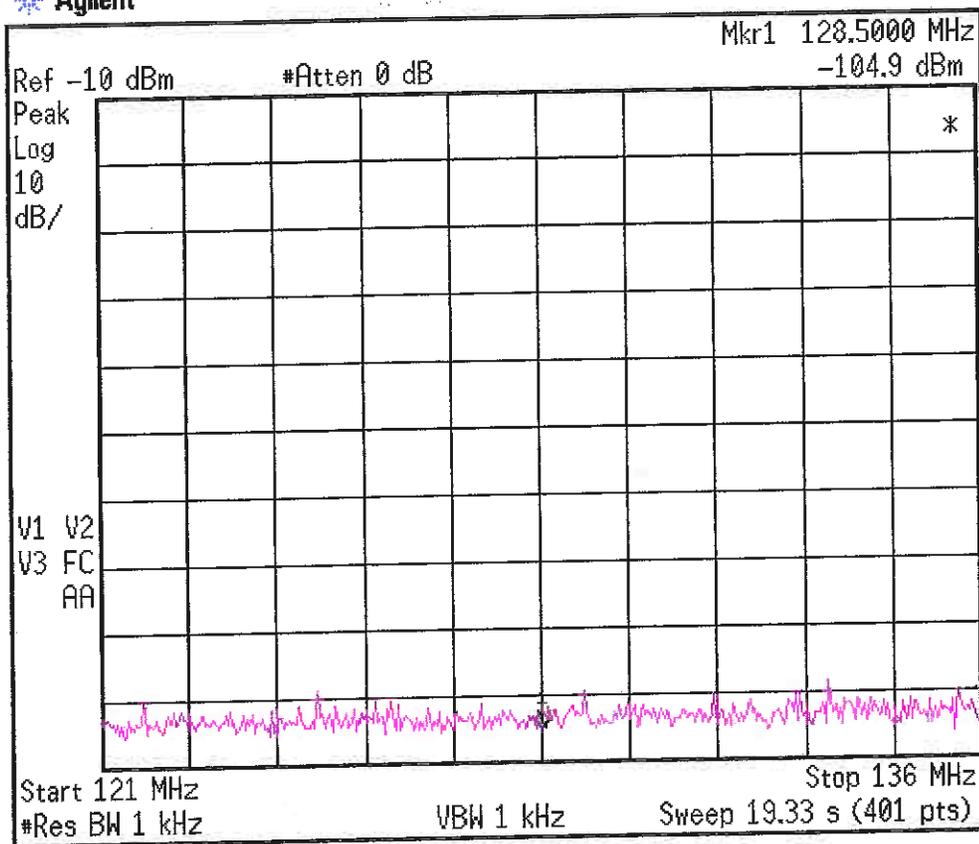
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EXHIBIT B25

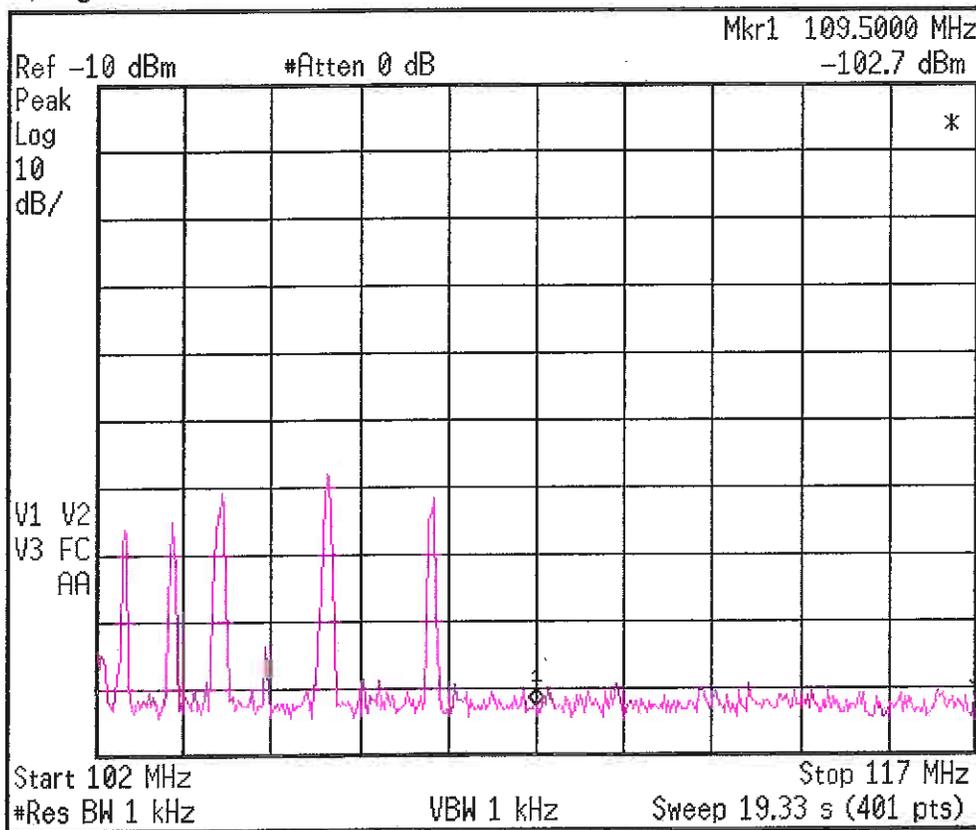
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EXHIBIT B26

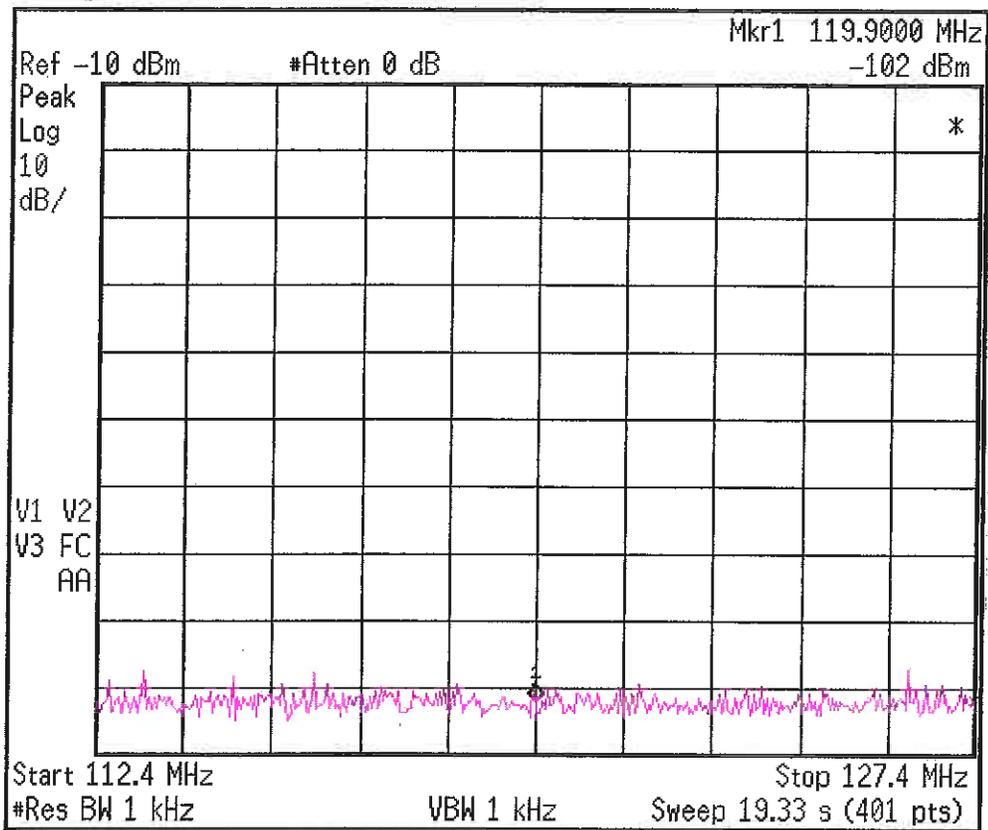
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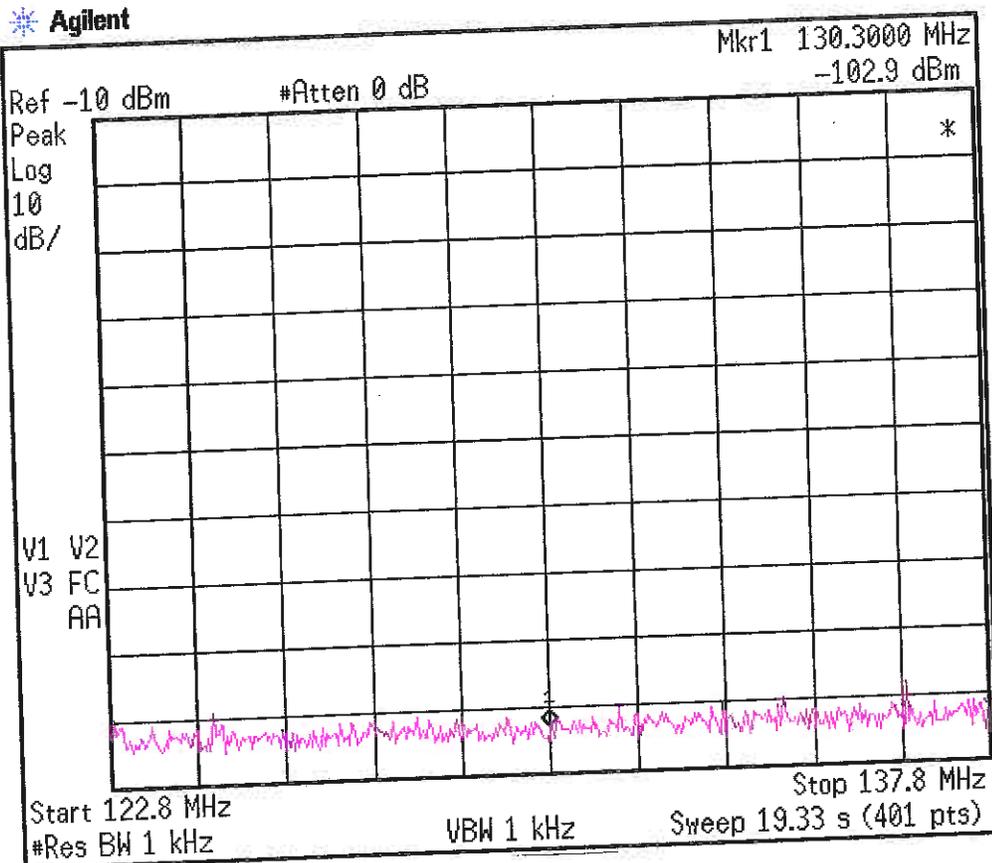
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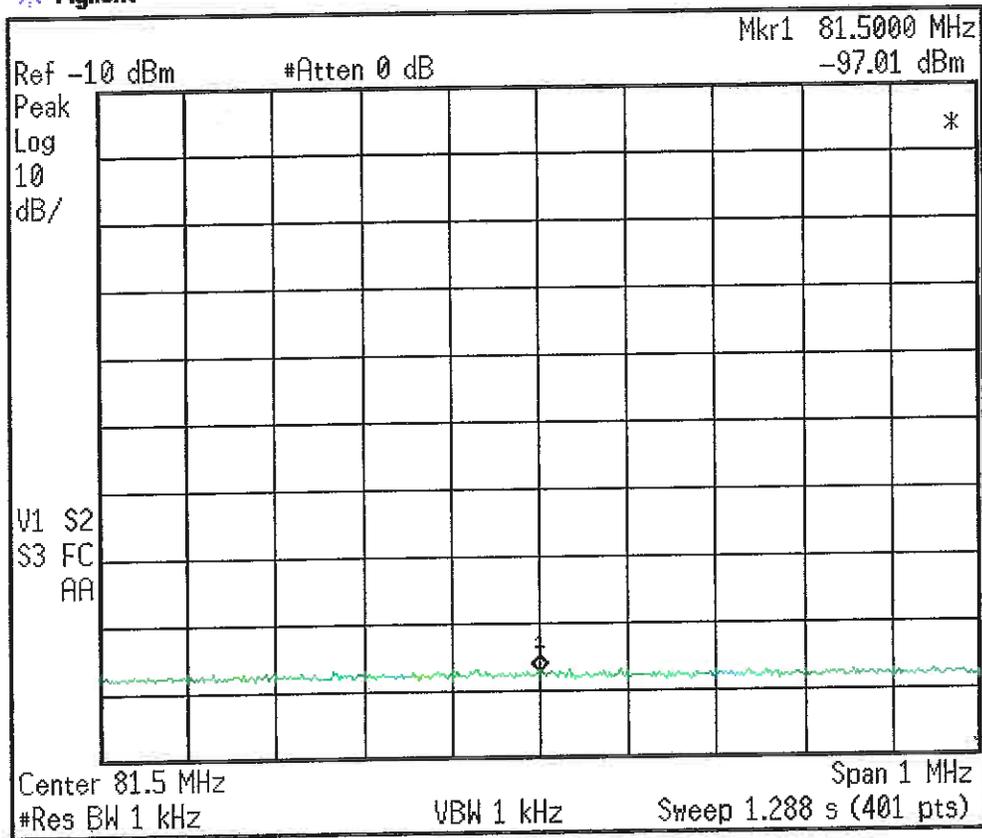
EXHIBIT B28



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EXHIBIT B29

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EXHIBIT B30

Brunswick GA

INTERMOD STUDY

Brunswick, GA

0 : 0 : 00.000 0 : 0 : 00.000
3 station branched
// -----

TRANSMIT FREQUENCIES

93.7MHz : 104.1MHz : 105.9MHz :
// -----

HIT WINDOW LIMITS

LOWER LIMIT: 75MHz : UPPER LIMIT: 136MHz :

// -----

IN THE THIRD ORDER:

10 products checked, 7 hits found
93.7 MHz is involved in 5 hits 71.4%
104.1 MHz is involved in 5 hits 71.4%
105.9 MHz is involved in 5 hits 71.4%

IN THE FIFTH ORDER:

21 products checked, 9 hits found
104.1 MHz is involved in 8 hits 88.9%
105.9 MHz is involved in 8 hits 88.9%
93.7 MHz is involved in 7 hits 77.8%

// -----

THIRD ORDER HITS:

105.900000 - 93.700000 - 93.700000 = ± 81.500000
104.100000 - 93.700000 - 93.700000 = ± 83.300000
105.900000 - 104.100000 - 104.100000 = ±102.300000
105.900000 + 105.900000 - 104.100000 = ±107.700000
104.100000 + 104.100000 - 93.700000 = ±114.500000
105.900000 + 104.100000 - 93.700000 = ±116.300000
105.900000 + 105.900000 - 93.700000 = ±118.100000

// -----

FIFTH ORDER HITS:

105.900000 + 105.900000 - 104.100000 - 104.100000 + 93.700000 = ± 97.300000
105.900000 + 105.900000 - 104.100000 - 104.100000 - 104.100000 = ±100.500000
105.900000 + 105.900000 + 105.900000 - 104.100000 - 104.100000 = ±109.500000
105.900000 - 104.100000 - 104.100000 - 104.100000 + 93.700000 = ±112.700000
105.900000 + 105.900000 + 105.900000 - 104.100000 - 93.700000 = ±119.900000
104.100000 + 104.100000 + 104.100000 - 93.700000 - 93.700000 = ±124.900000
105.900000 + 104.100000 + 104.100000 - 93.700000 - 93.700000 = ±126.700000
105.900000 + 105.900000 + 104.100000 - 93.700000 - 93.700000 = ±128.500000
105.900000 + 105.900000 + 105.900000 - 93.700000 - 93.700000 = ±130.300000

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EXHIBIT B31

**Three frequency
intermodulation products**

Frequency 1:	93.700
Frequency 2:	104.100
Frequency 3:	105.900

Intermodulation products:

3rd order	91.900
3rd order	100.500
3rd order	102.300
3rd order	83.300
3rd order	114.500
3rd order	95.500
3rd order	116.300
3rd order	107.700
3rd order	118.100
5th order	89.300
5th order	79.700
5th order	90.100
5th order	71.100
5th order	100.500
5th order	72.900
5th order	112.700
5th order	85.100
5th order	124.900
5th order	97.300
5th order	126.700
5th order	128.500
5th order	109.500
5th order	119.900
5th order	130.300