SPURIOUS EMISSION PRODUCT REPORT

FM TRANSLATOR STATIONS

W228DL - SPRINGFIELD, IL (FACILITY ID: 154931)
W266BZ - SPRINGFIELD, IL (FACILITY ID: 148810)
W298AP - SPRINGFIELD, IL (FACILITY ID: 140935)

SAGA COMMUNICATIONS OF ILLINOIS, LLC

DECEMBER, 2016

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SPURIOUS EMISSION PRODUCT REPORT

The following engineering statement and attached exhibits have been prepared for **Saga Communications of Illinois, LLC** ("Saga"), licensee of three FM translator station in central Illinois, and are in support of their spurious emission product report. This report is intended to fulfill the second special condition on the current construction permit for W228DL, formerly W259CM.[1] In addition, this report is also relevant to the necessary modifications to the licenses of W266BZ and W298AP due to the change in combiner system, which was necessary to accommodate the operation of W228DL.[2]

All measurements contained in this report were acquired through the use of a Rohde & Schwarz ZVL network analyzer. This analyzer additionally performs as a full-featured spectrum analyzer through the ZVL-K1 option. This particular unit also utilizes the FSL-B7 narrow resolution filters. Characterization of notch filters and the combiner system was performed while operating in network analyzer mode. A full two-power calibration of the analyzer was performed in this mode through the use of TOSM standards.

Measurement samples were obtained through the use of a Bird "Thruline" section, and an assortment of -50 dB sample slugs designed for operation across specific frequency ranges. The "Thruline" section was installed at the output of the combiner system, which resulted in samples of the actual transmitted signals. Six notch filter sections were inserted in line between the slug and the analyzer to reduce the level of the three transmitted signals. Prior to obtaining any samples, this filter assembly was characterized across the frequency ranges of interest. The calculated

[1] See FCC File No. BMPFT-20160909AAC.
[2] See FCC File No. BLFT-20110824ABM for W266BZ, and BLFT-20110824ABN for W298AP.

spurious emission products for the three facilities at the facility are detailed in the report following this engineering statement and associated analyzer plots.

Plots #1 and #2 depict the characterization of the notch filter and associated cables. Plot #1 illustrates the span from 85 to 115 MHz, with markers at the three carriers of interest. Plot #2 picks up where Plot #1 leaves off, illustrating the span from 115 MHz to 600 MHz. This range was chosen due to its upper limit being above that where fifth order products would be predicted to occur, as is detailed in the product report following the engineering statement. The insertion loss of the filter assembly at the three translator frequencies is summarized in the following table.

Translator	Frequency	Filter Insertion Loss
W228DL	93.5 MHz	20.53 dB
W266BZ	101.1 MHz	12.88 dB
W298AP	107.5 MHz	17.30 dB

In addition, as plot #2 depicts, at other frequencies within the range of consideration, the filter insertion loss does not exceed 1.2 dB, excepting those frequencies in the vicinity of 460.2 MHz, where the insertion loss is 7.4 dB. The product report does not indicate the expected generation of any product in the vicinity of this frequency, and therefore an assumed insertion loss of the filter of 1.2 dB be used at all frequencies of interest.

In addition to characterizing the notch filter assembly utilized for the spectrum analyzer measurements, the combiner itself was characterized through S21 measurements performed individually between each of input ports and the output of the combiner. Due to somewhat undesired measured characteristics, the tuning of the 93.5 MHz portion of the combiner was adjusted.

Plots #3 through #5 depict the final characterization of the combiner at each of the three input frequencies. Each of these plots demonstrates the isolation between the various operational frequencies of the combiner system. Following the acquisition of the characterization data, the actual spectrum analysis measurements were performed.

Plots #6 through #10 illustrate the measurements performed with the three translators off line. These measurements are utilized to illustrate the other signals that are present. A marker is placed at each of the identified signals within the FM band. Therefore, when the translators are operational, as depicted in plot #11, the products generated within the FM band, which are the most likely products to be generated, can be identified by comparison.

Plot #12 illustrates the spectrum analyzer measurements when the three translators are operational. The three markers on this plot correspond to the locations of the transmitted carriers. These measured values are to be adjusted by the insertion loss of the filter assembly to determine the actual sampled signal level. The following table provides this information.

Callsign	Frequency	Indicated Level	Filter Loss	Sampled Signal Level	TPO (W)
W228DL	93.5 MHz	-28.41 dBm	20.53 dB	-7.88 dBm	316
W266BZ	101.1 MHz	-22.11 dBm	12.88 dB	-9.23 dBm	307
W298AP	107.5 MHz	-30.42 dBm	17.30 dB	-13.12 dBm	307

The required attenuation of the spurious emission products, which will all be found further than 600 kHz away from each of the carriers, is therefore defined by the specifications in Section 73.317(d) of the Commission's Rules. Specifically, spurious products must be no less than -68.0 dBc relative to W228DL, and -67.9 dBc relative to W266BZ and W298AP. Taking the sampled

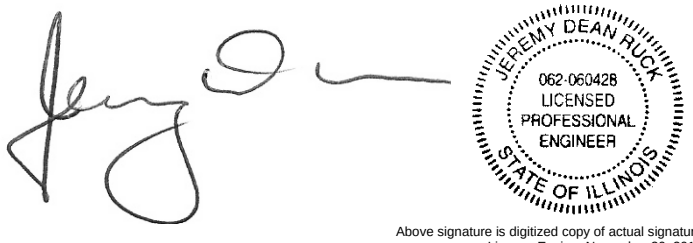
signal level values in the above table, combined with the worst-case filter assembly attenuation, it follows that to comply with the emission requirements irrespective of the transmitter under consideration, measured products must have a level of no greater than -82.2 dBm.[3]

Subsequent measurements were performed at appropriate frequency ranges to illustrate any products that result when the translators are on-line. In plots #13 and #14, the most likely products, those occurring in the FM band, are identified. These products, plus any not specifically identified that may be in existence on these plots, but not on plots #6 through #11, have magnitudes of less than -82.2 dBm. As a result, all potential products up to 115 MHz comply with the spurious emission requirements.

The remaining plots, numbered #15 through #22, depict various frequency spans up to 600 MHz. These plots are not indicative of any measured signal in excess of the maximum permissible under the Commission's Rules. As a result, it is respectfully submitted that the combined operation of the three translator facilities complies with the Commission's spurious emission requirements as detailed in Section 73.317 of the Commission's Rules.

[3] Value is determined by assuming W298AP is the reference transmitter. From the sampled level of -13.12 dBm, the required attenuation value of -67.9 dBc is added. To this intermediate value, the filter assembly insertion loss worst-case of 1.2 dB is subtracted out. The resulting level is the above listed -82.2 dBm.

The preceding statement and attached exhibits have been prepared by me, or under my direction, and are true and accurate to the best of my belief and knowledge.



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Jeremy D. Ruck, PE
December 20, 2016

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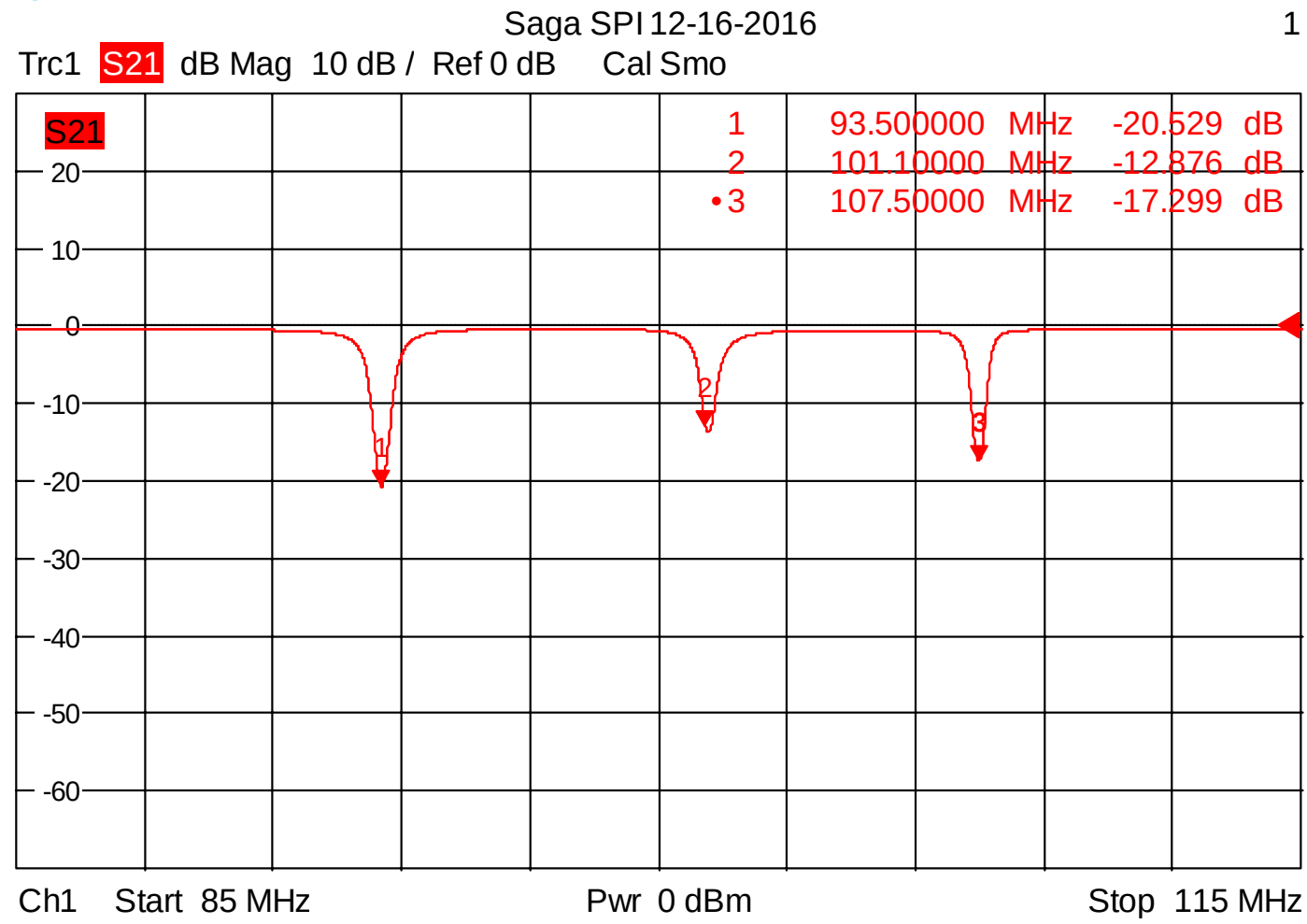

Plot #1 - Filter Characterization at Translator Carriers.

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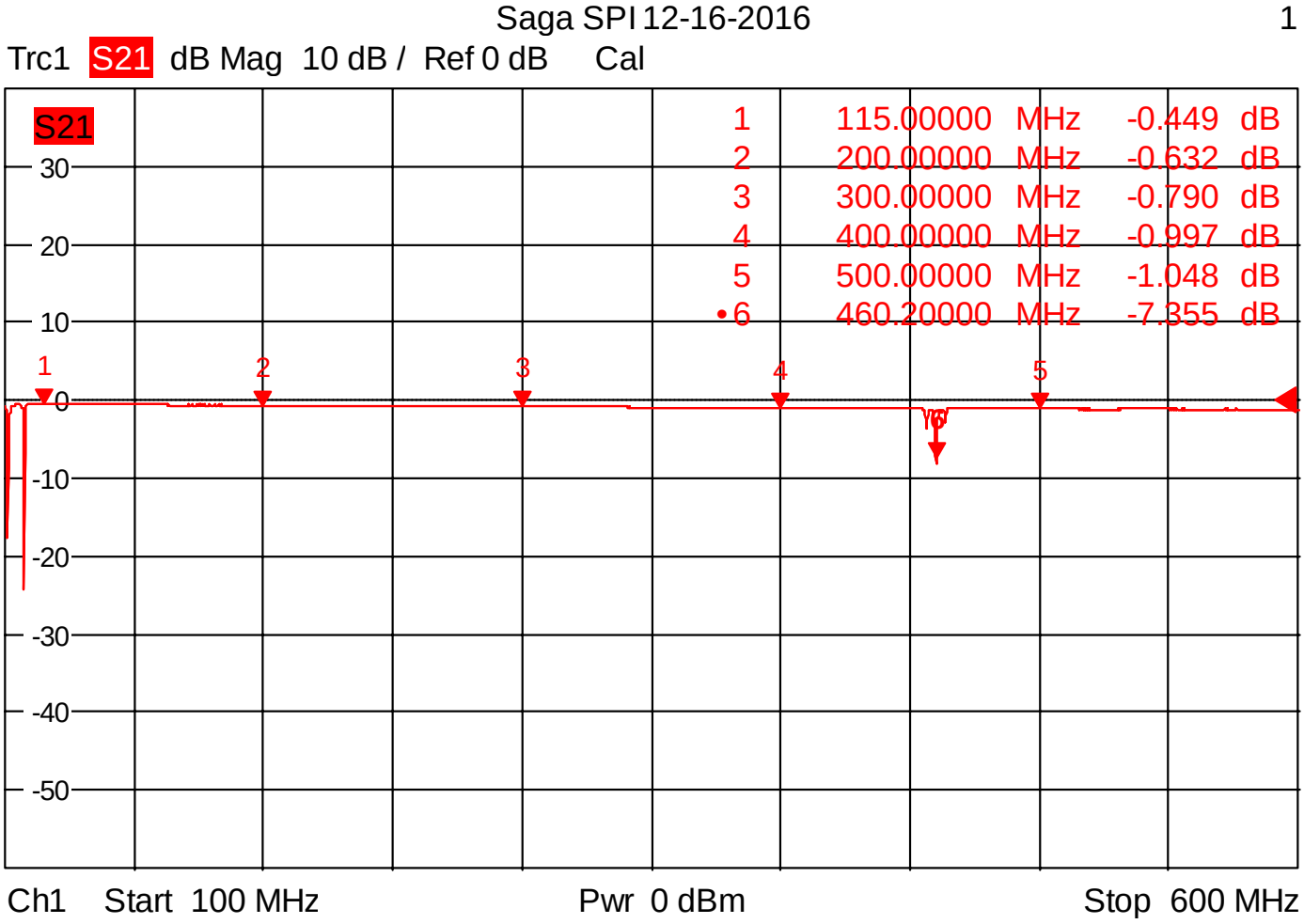

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Plot #2 - Filter Characterization from 115 MHz to 600 MHz.

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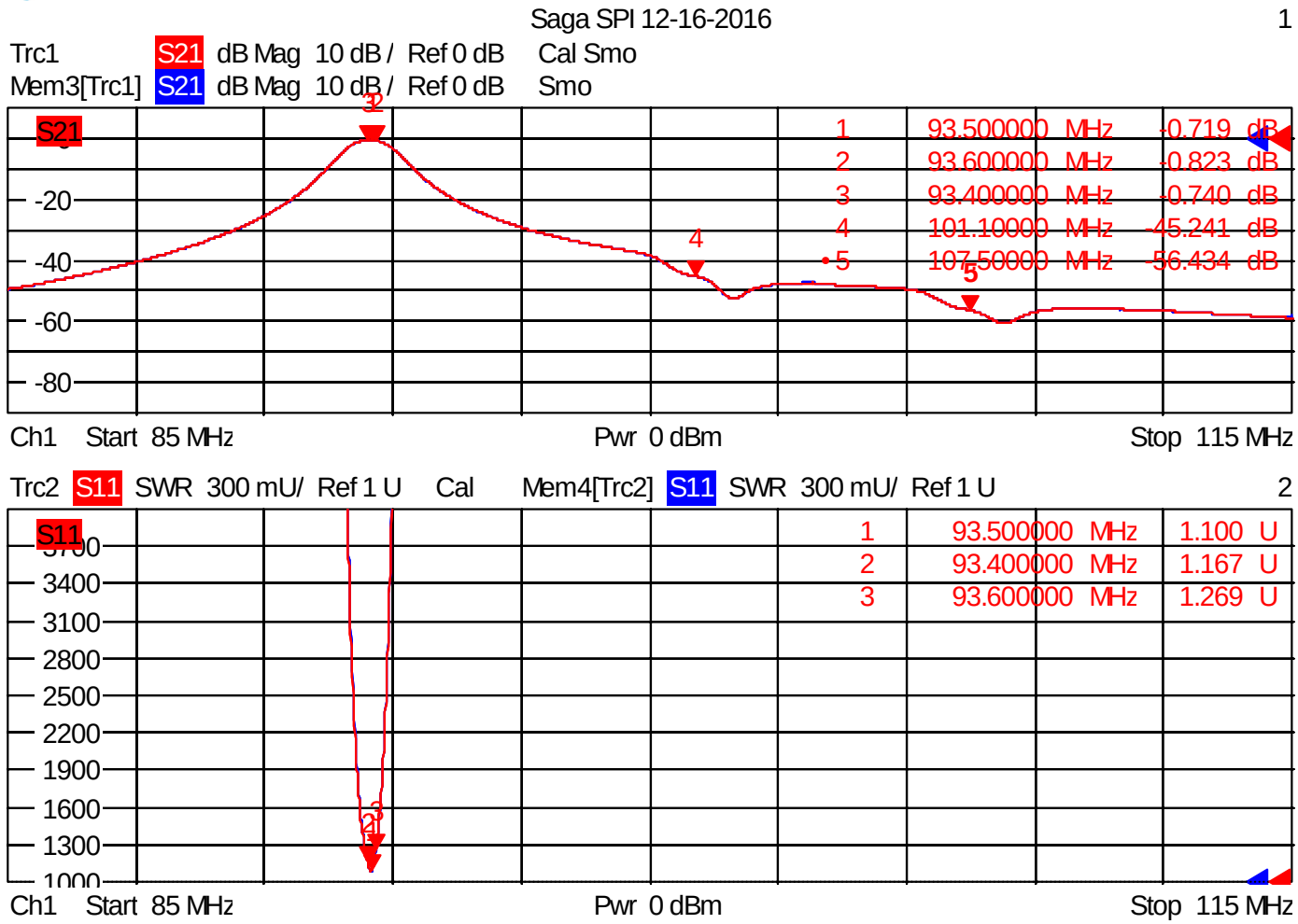

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Plot #3 - Combiner Characterization for W228DL Input.

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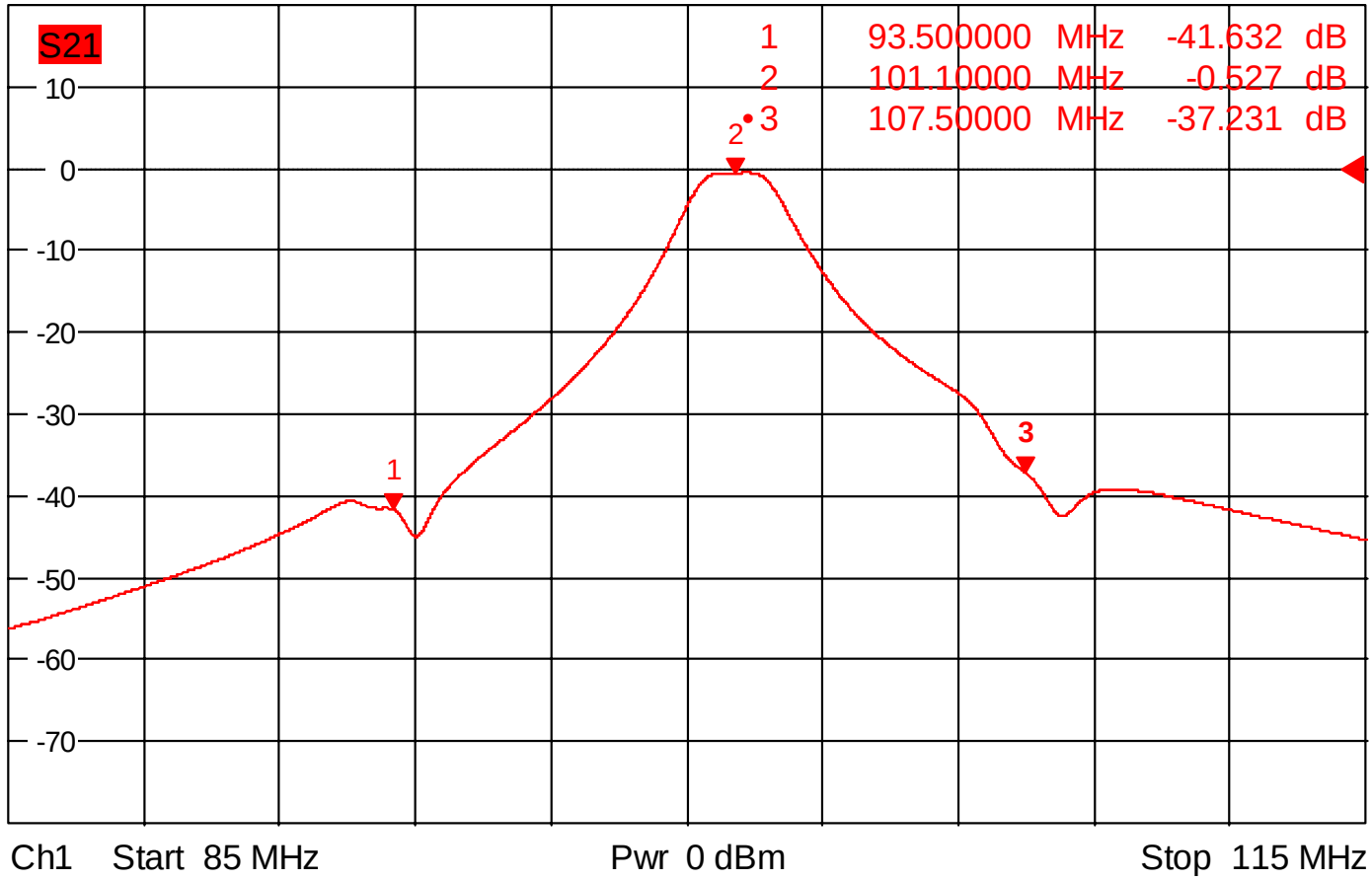

Plot #4 - Combiner Characterization for W266BZ Input.

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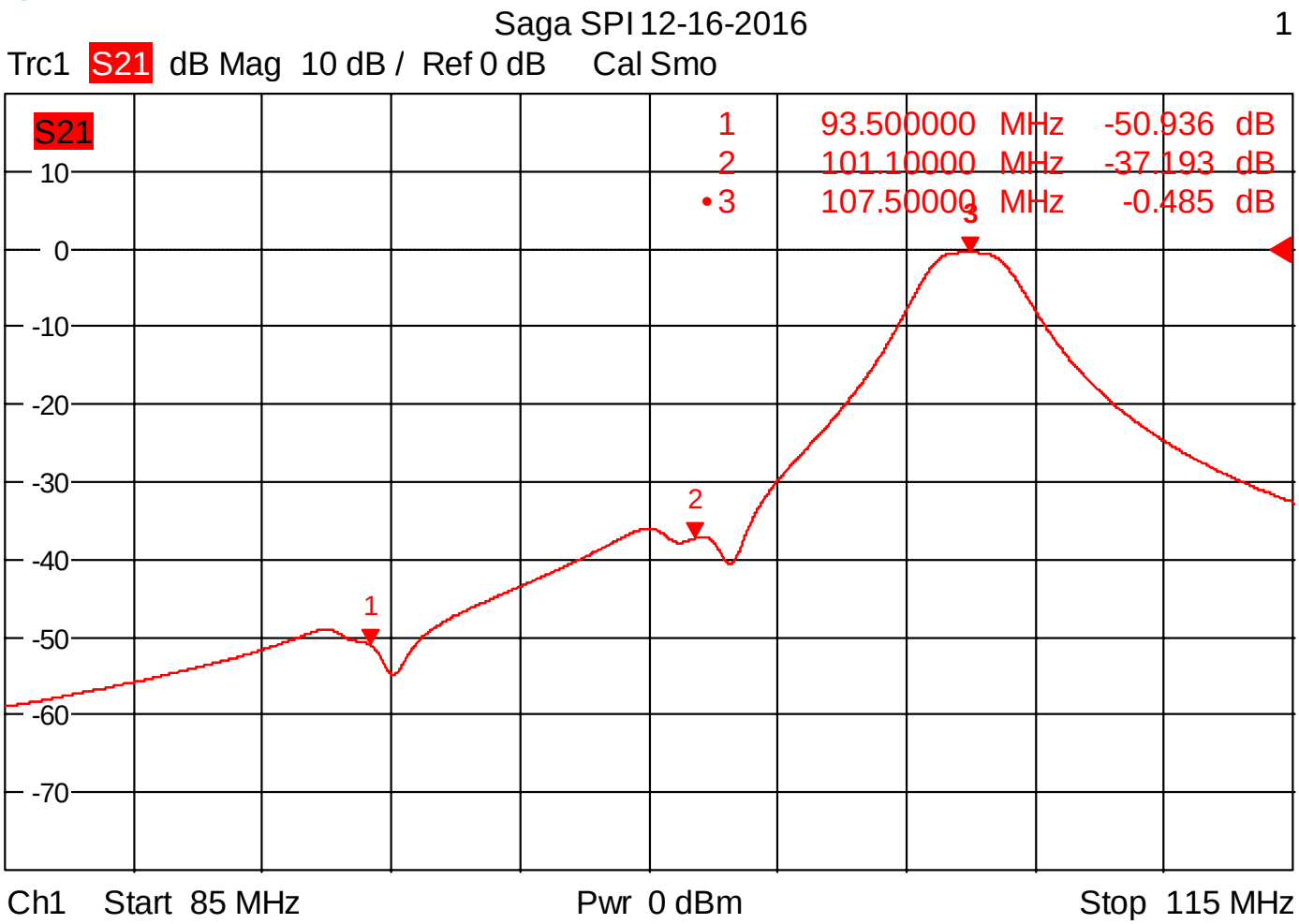

Plot #5 - Combiner Characterization for W298AP Input.

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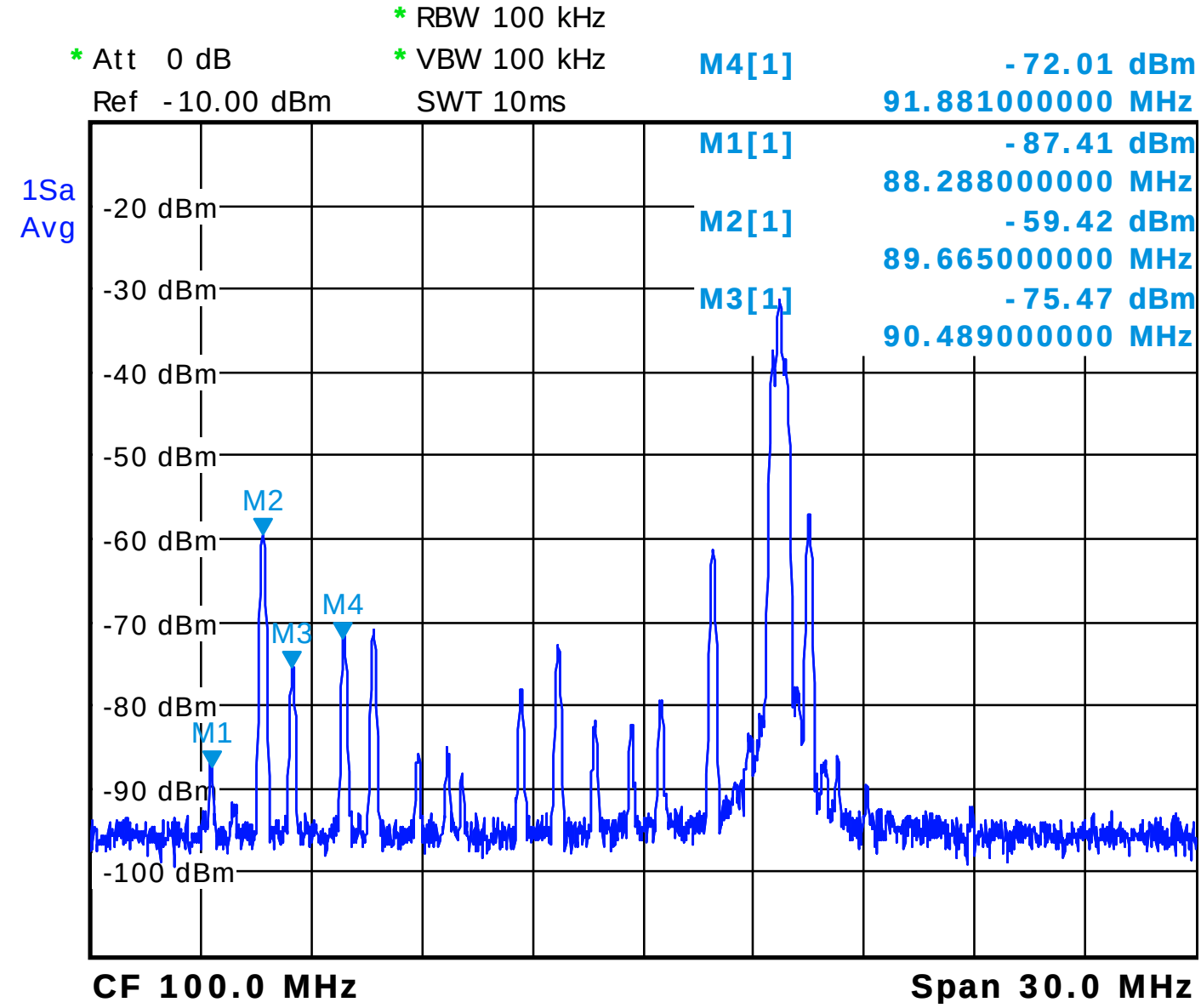

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Plot #6 - Spectrum Analyzer Measurements with Translators Off-Line.

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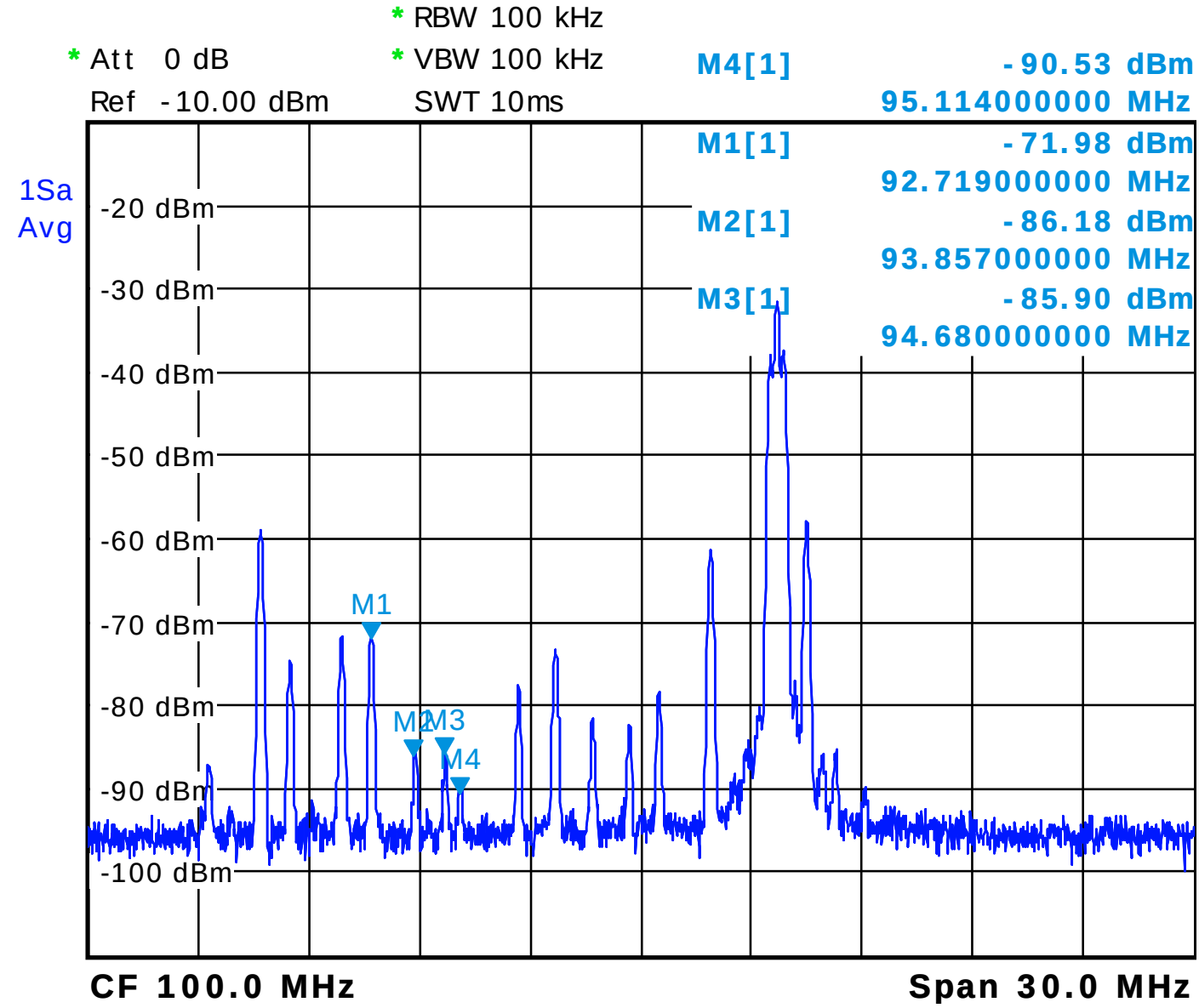

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Plot 7 - Spectrum Analyzer Measurements with Translators Off-Line.

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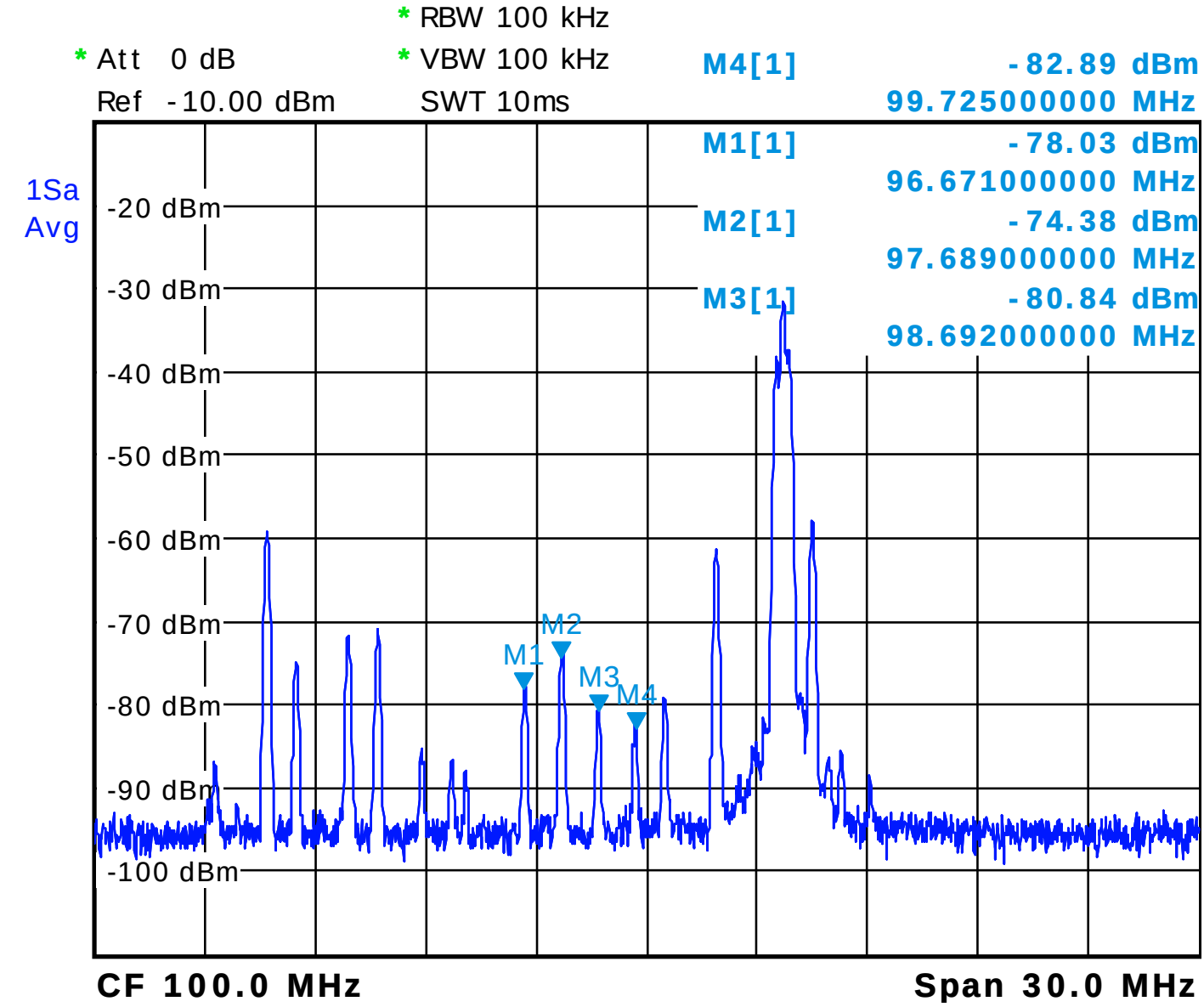

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Plot 8 - Spectrum Analyzer Measurements with Translators Off-Line.

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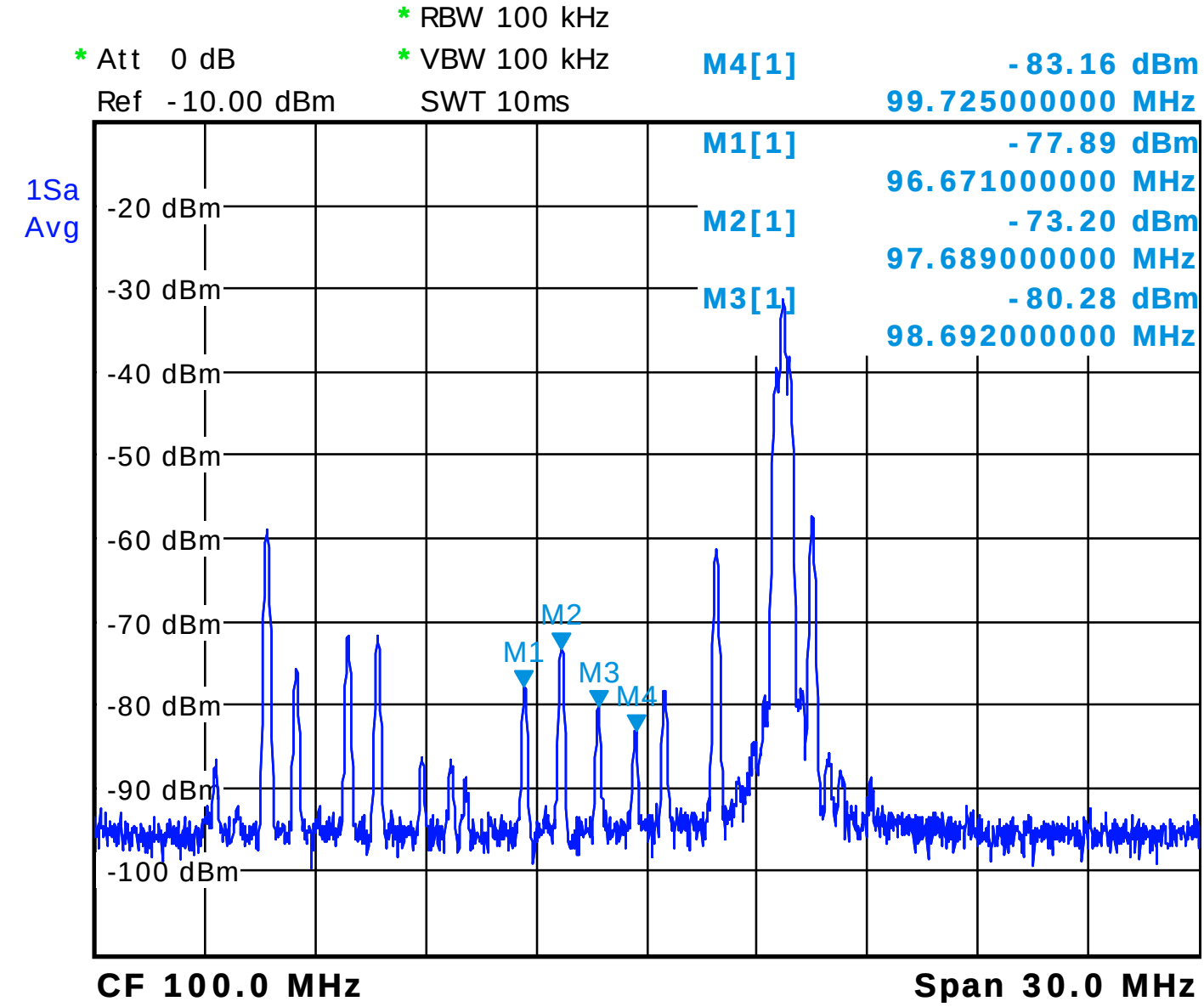

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Plot 9 - Spectrum Analyzer Measurements with Translators Off-Line.

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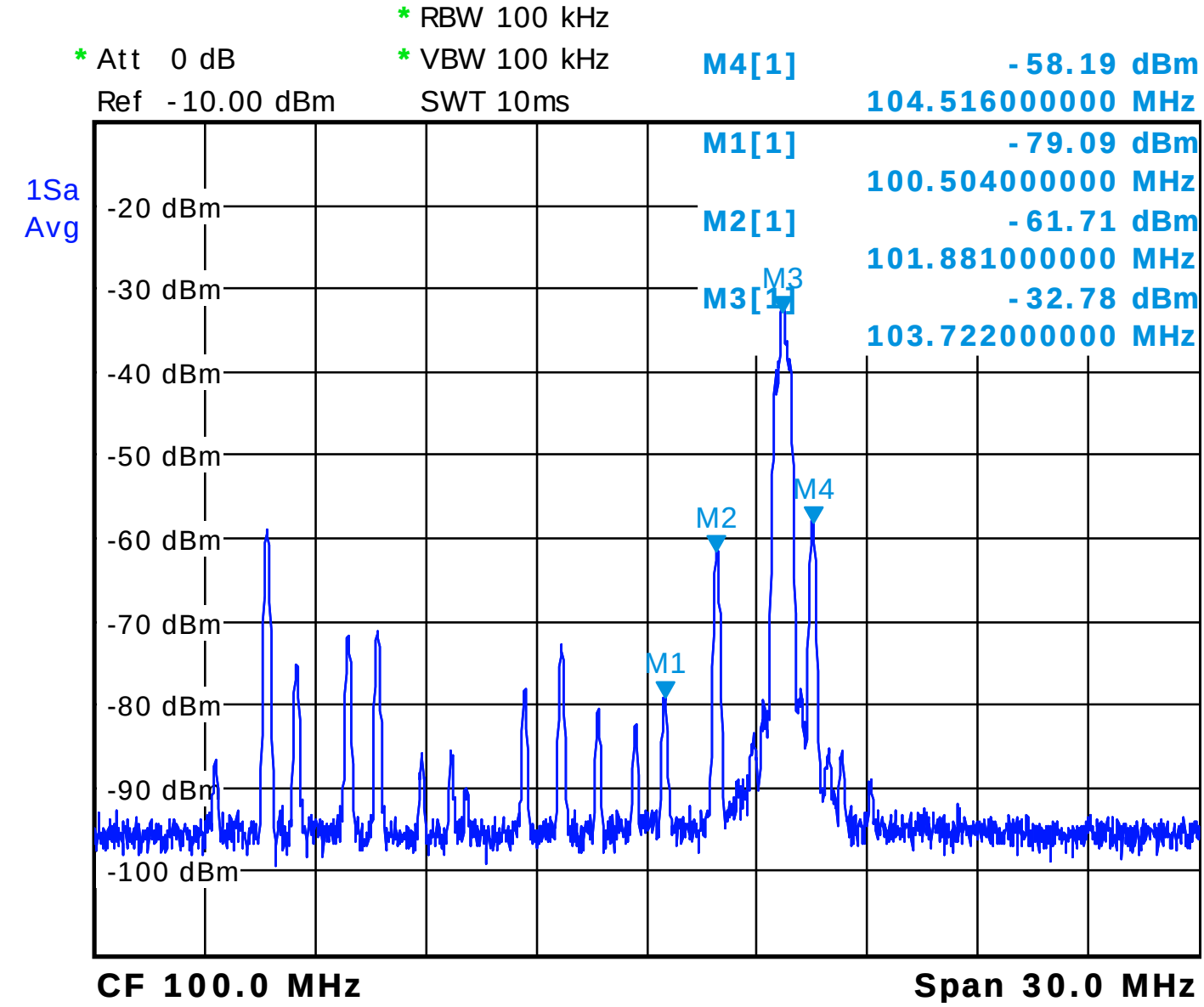

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Plot 10 - Spectrum Analyzer Measurements with Translators Off-Line.

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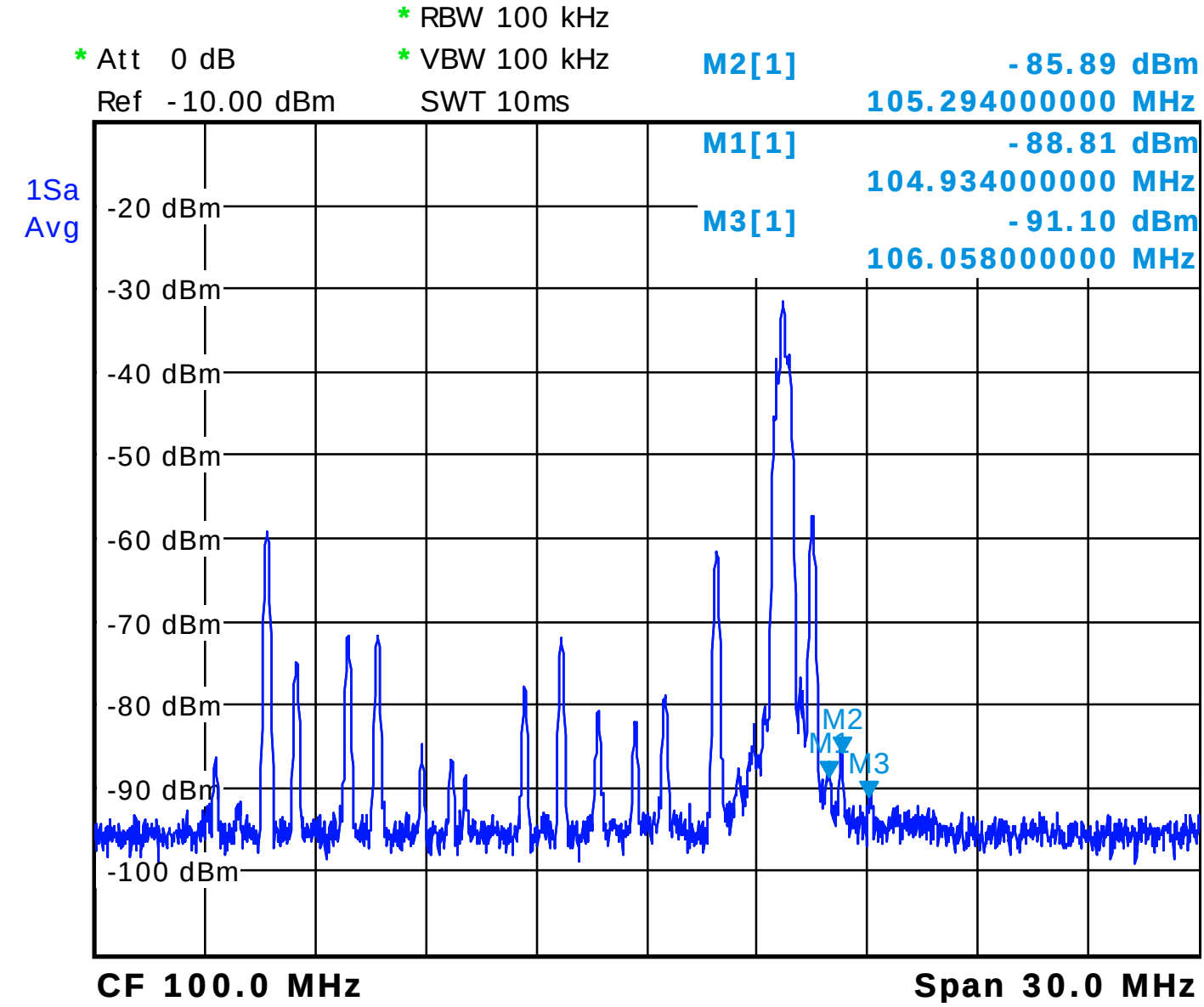

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Plot 11 - Spectrum Analyzer Measurements with Translators Off-Line.

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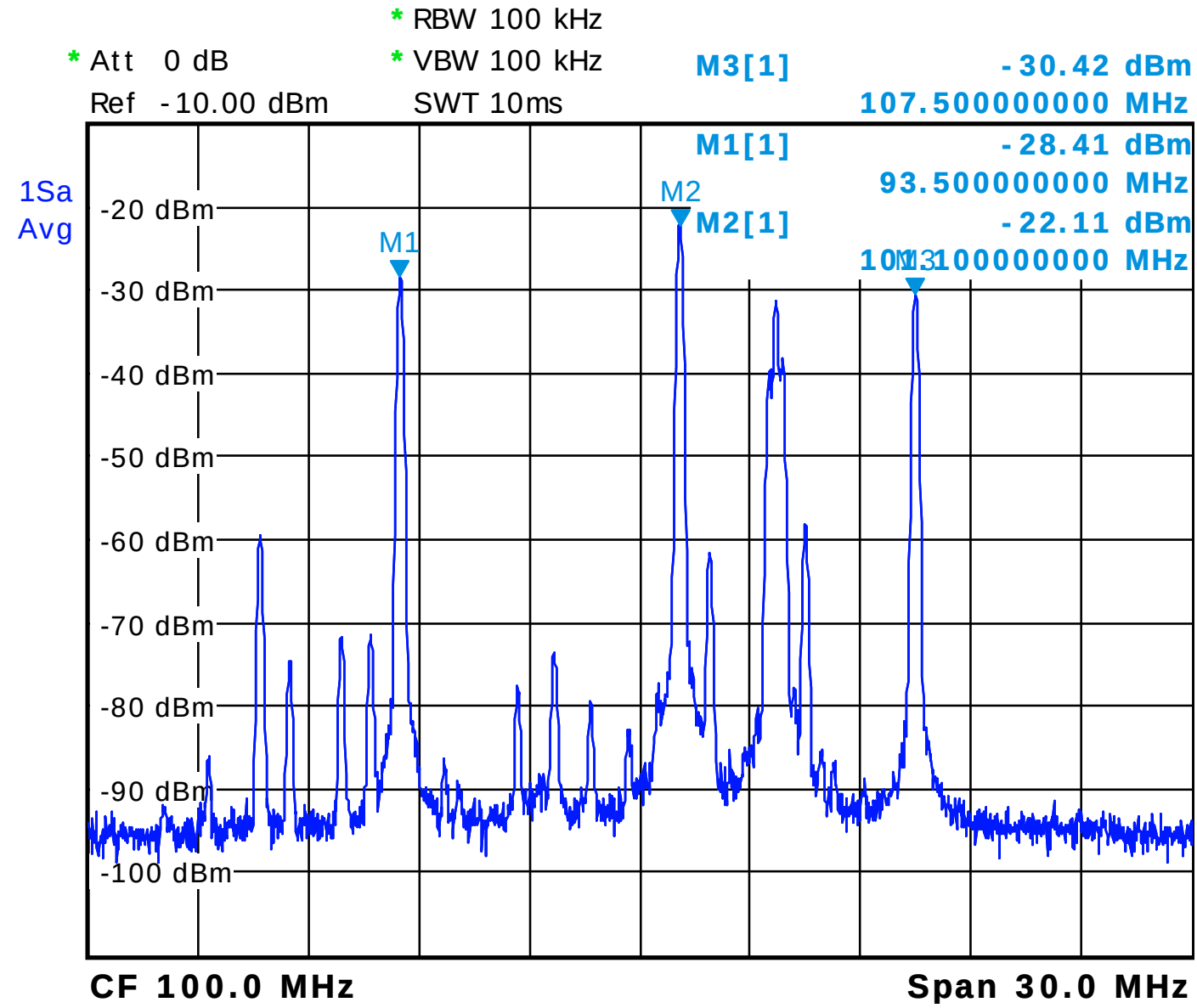

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Plot #12 - Spectrum Analyzer Measurements Illustrating Translator Carrier Frequencies.

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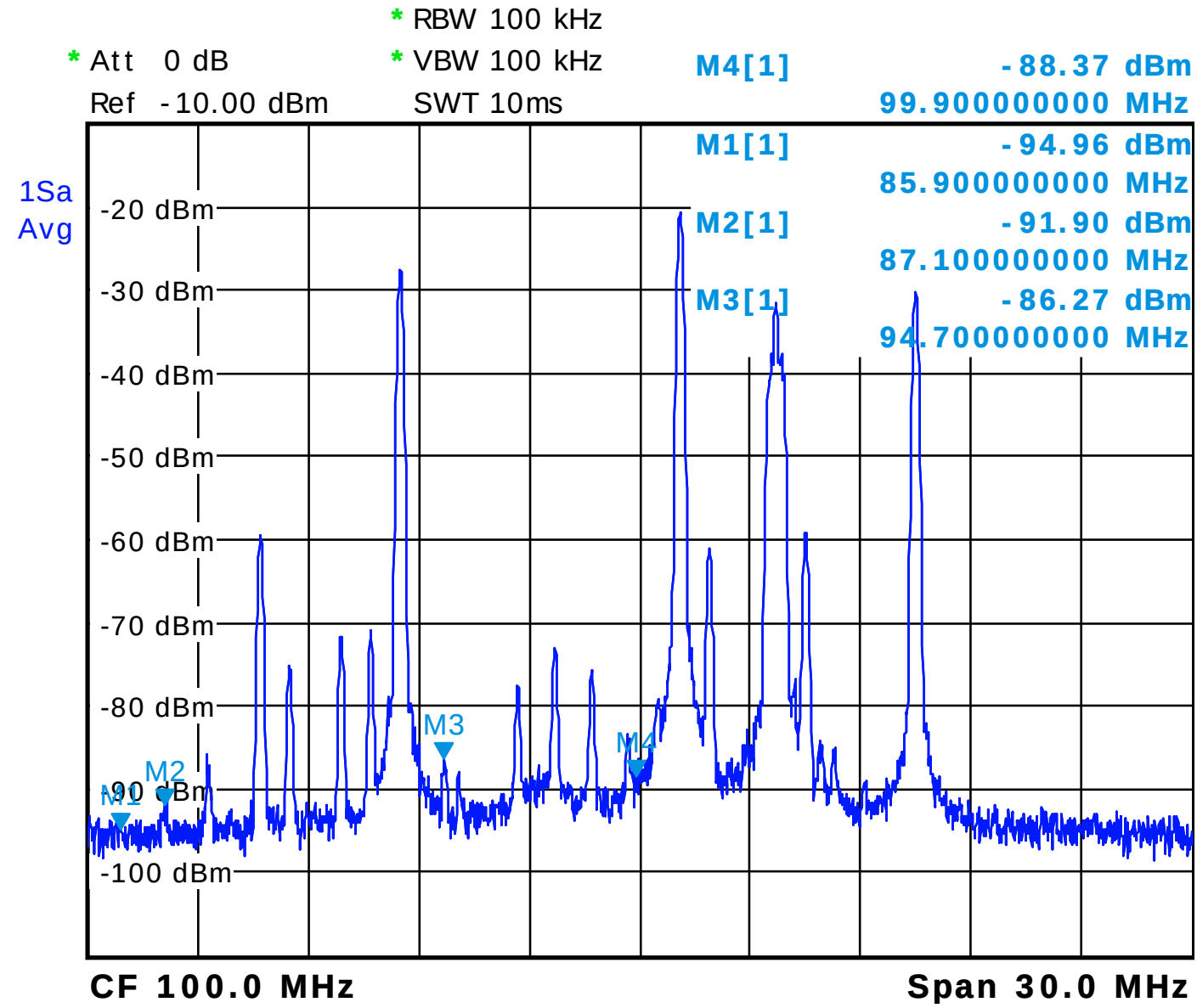

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Plot #13 - Spectrum Analysis Measurement Identifying Products. Product Group 1.

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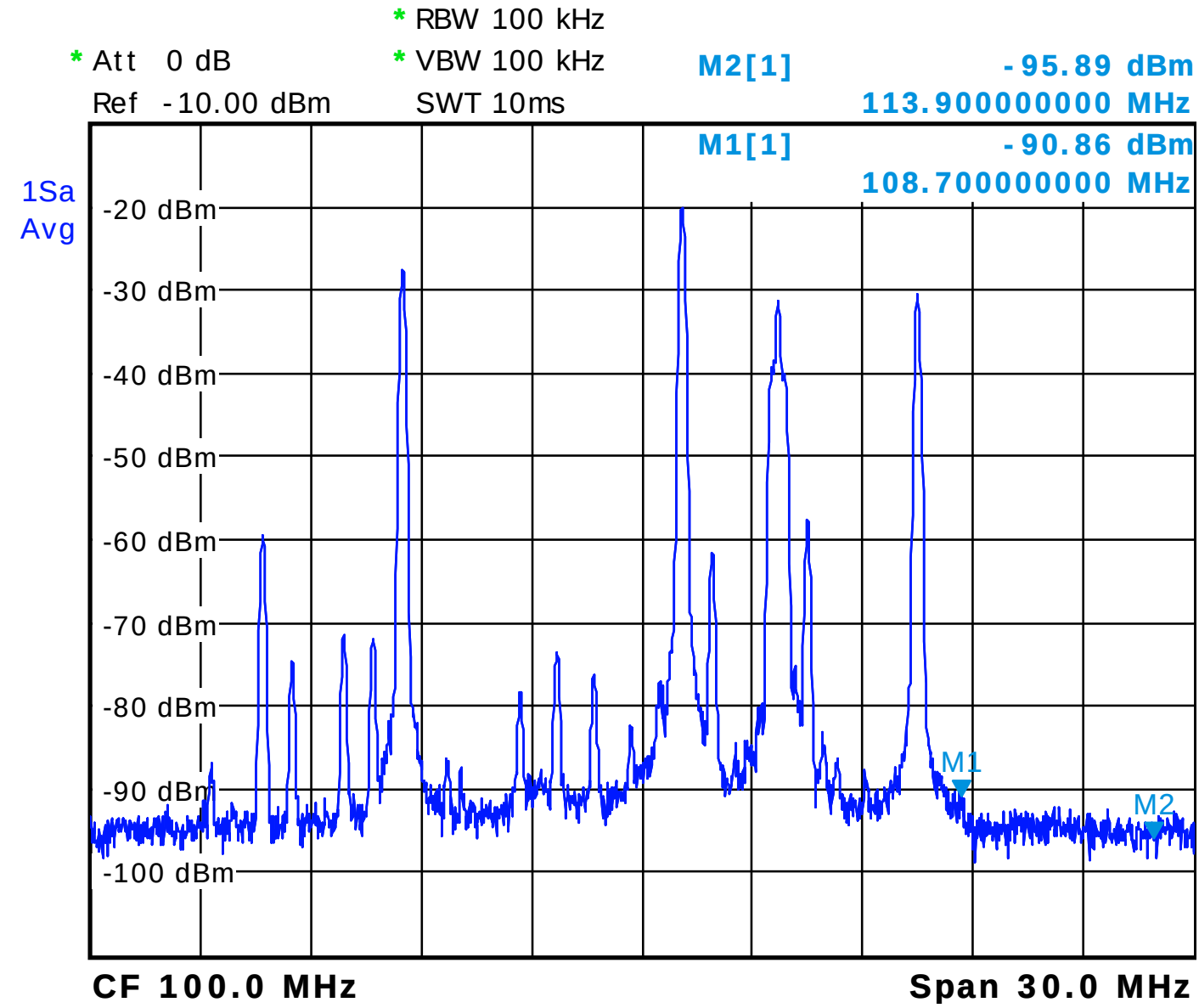

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Plot #14 - Spectrum Analysis Measurement Identifying Products. Product Group 2.

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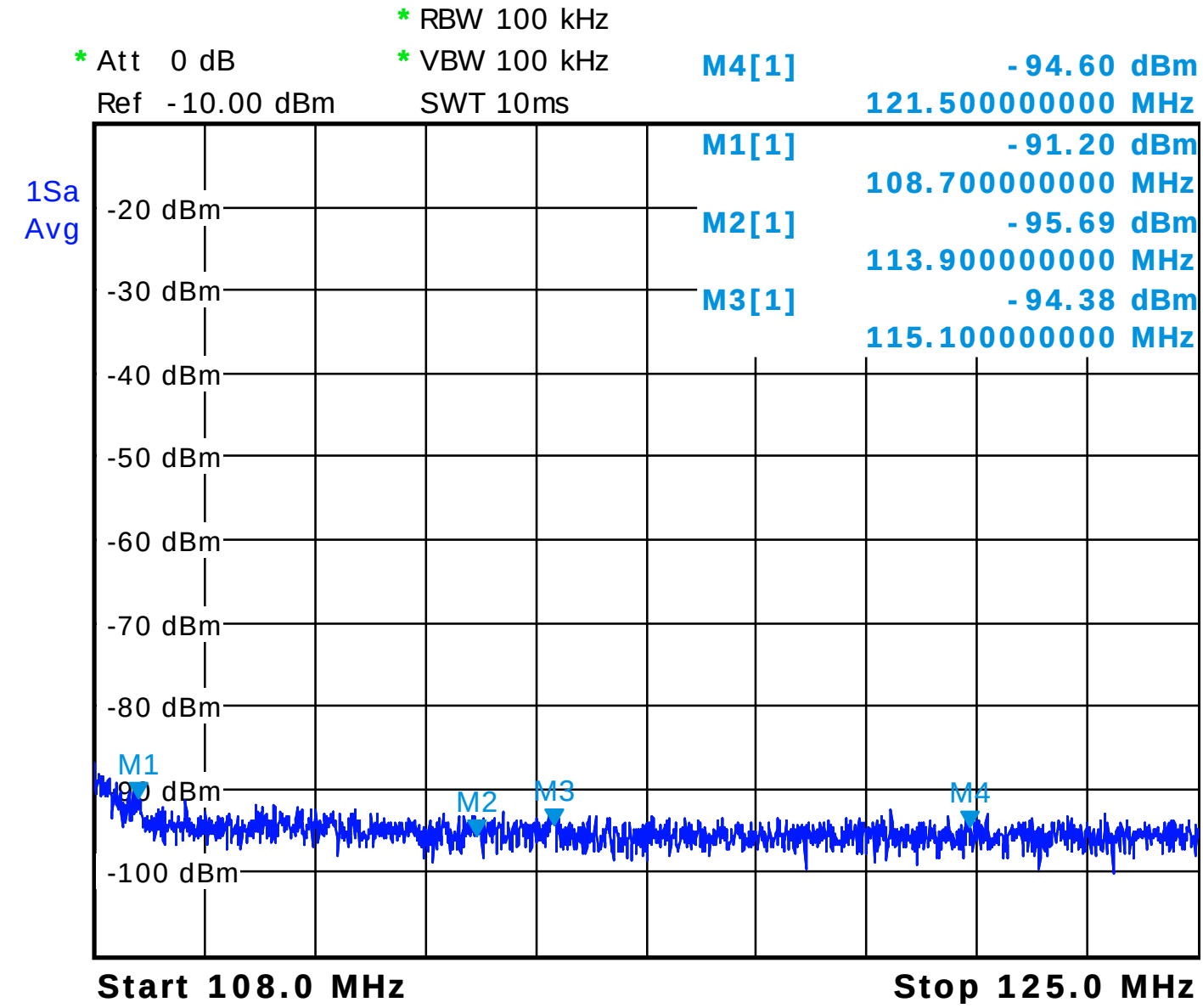

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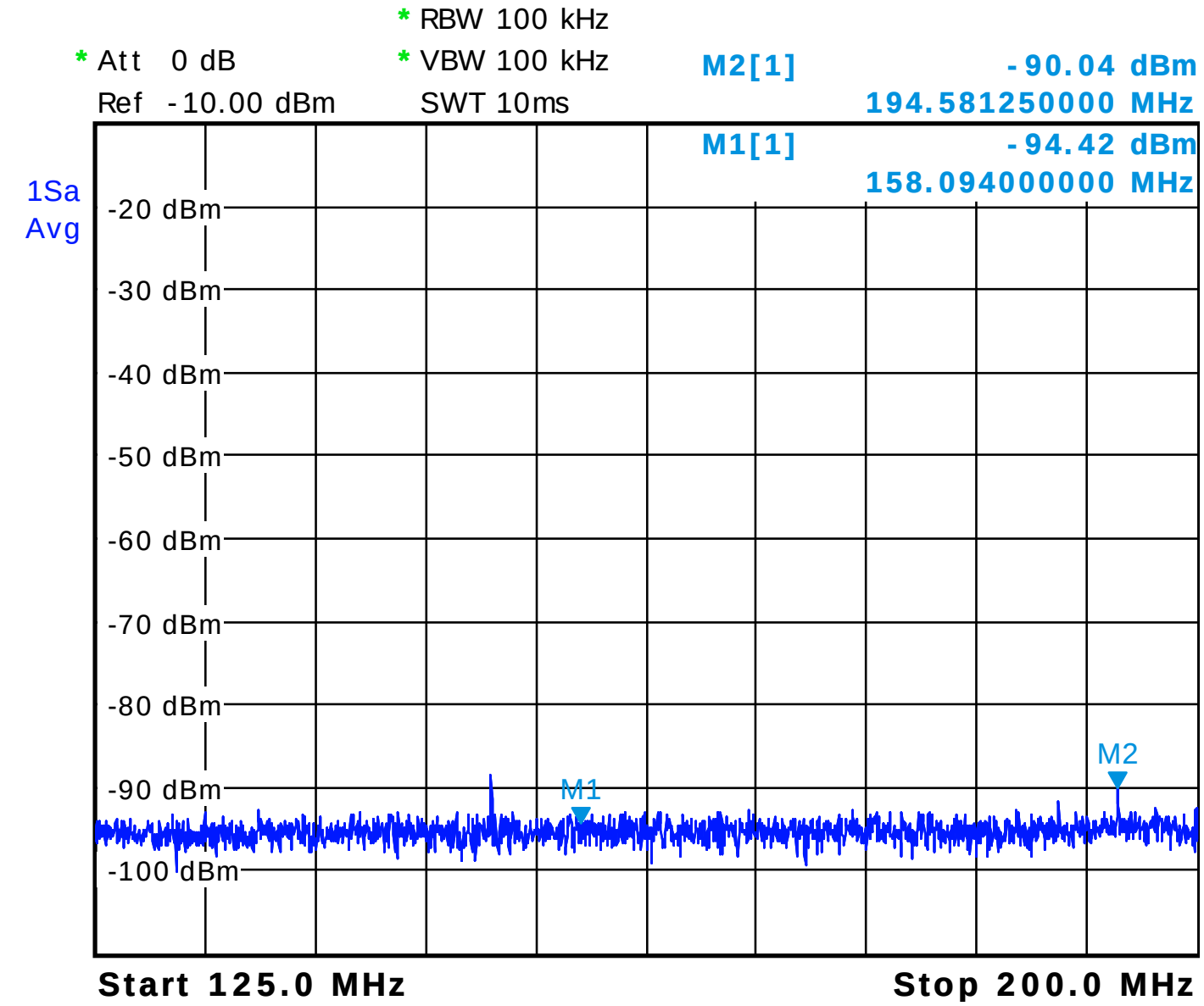
Plot #15 - Spectrum Analysis Measurements Across Span of 108-125 MHz.



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Plot #16 - Spectrum Analysis Measurements Across Span of 125-200 MHz.

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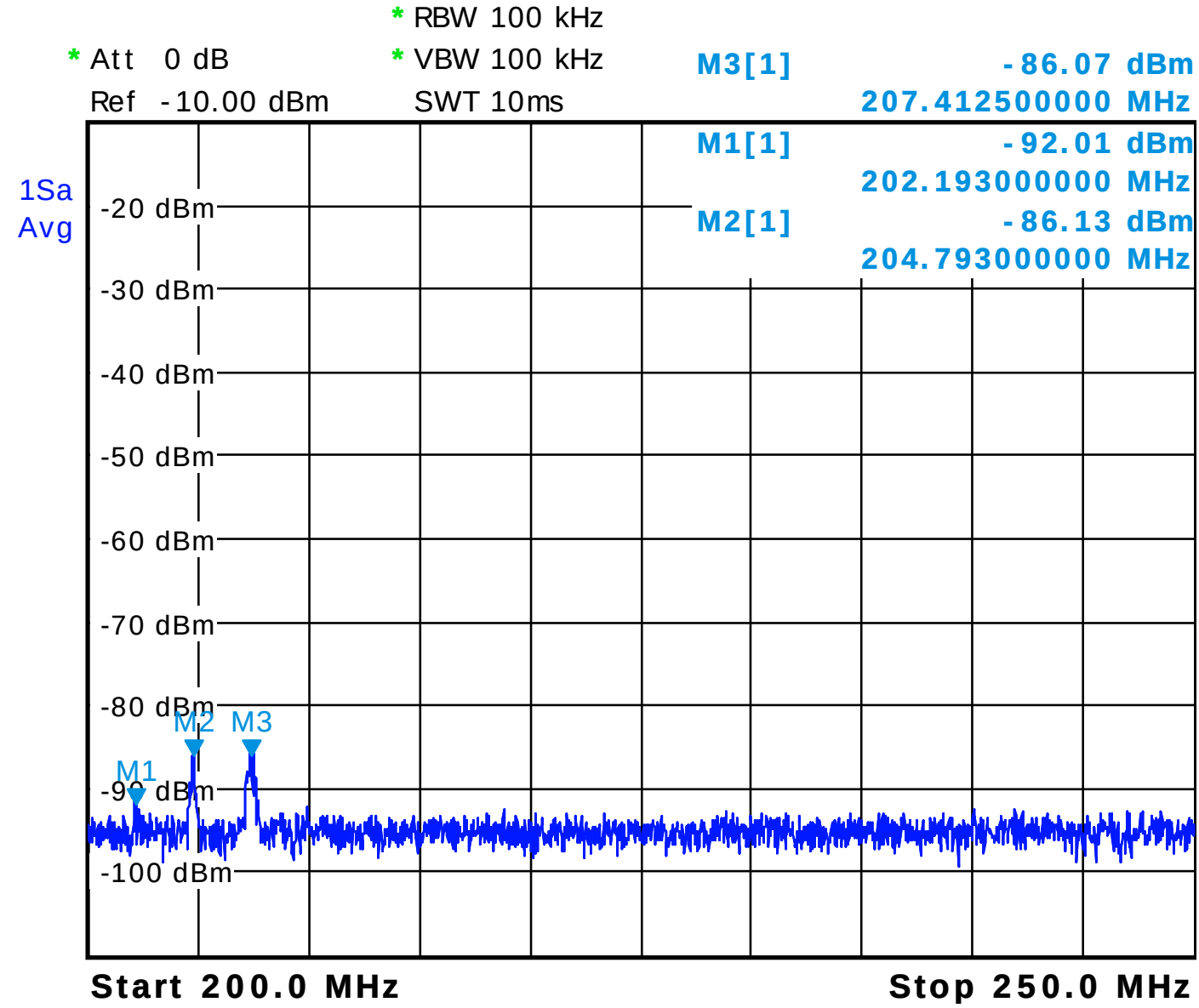

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Plot #17 - Spectrum Analysis Measurements Across Span of 200-250 MHz.

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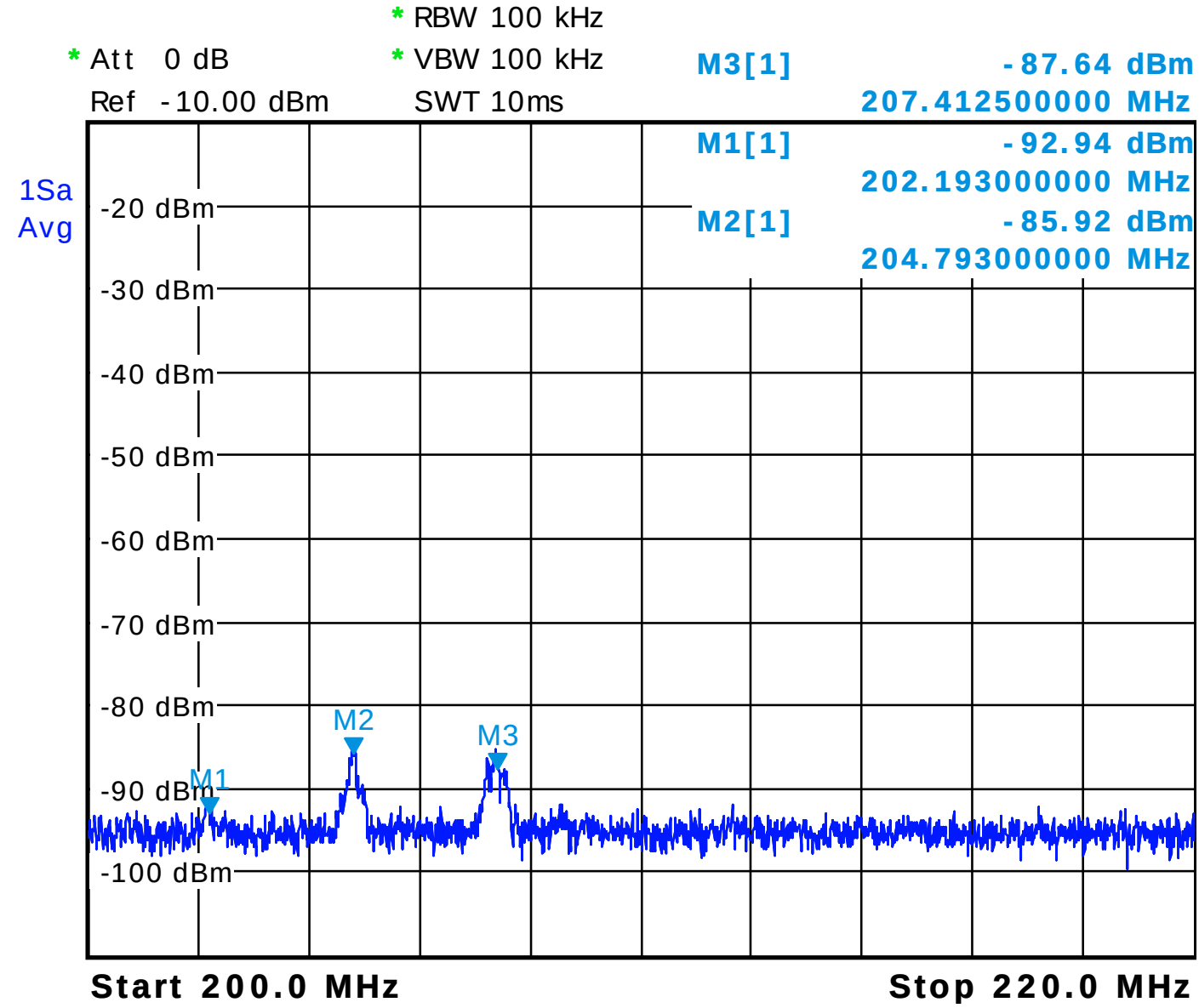

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Plot #18 - Spectrum Analysis Measurements Detail in Range of 200-220 MHz.

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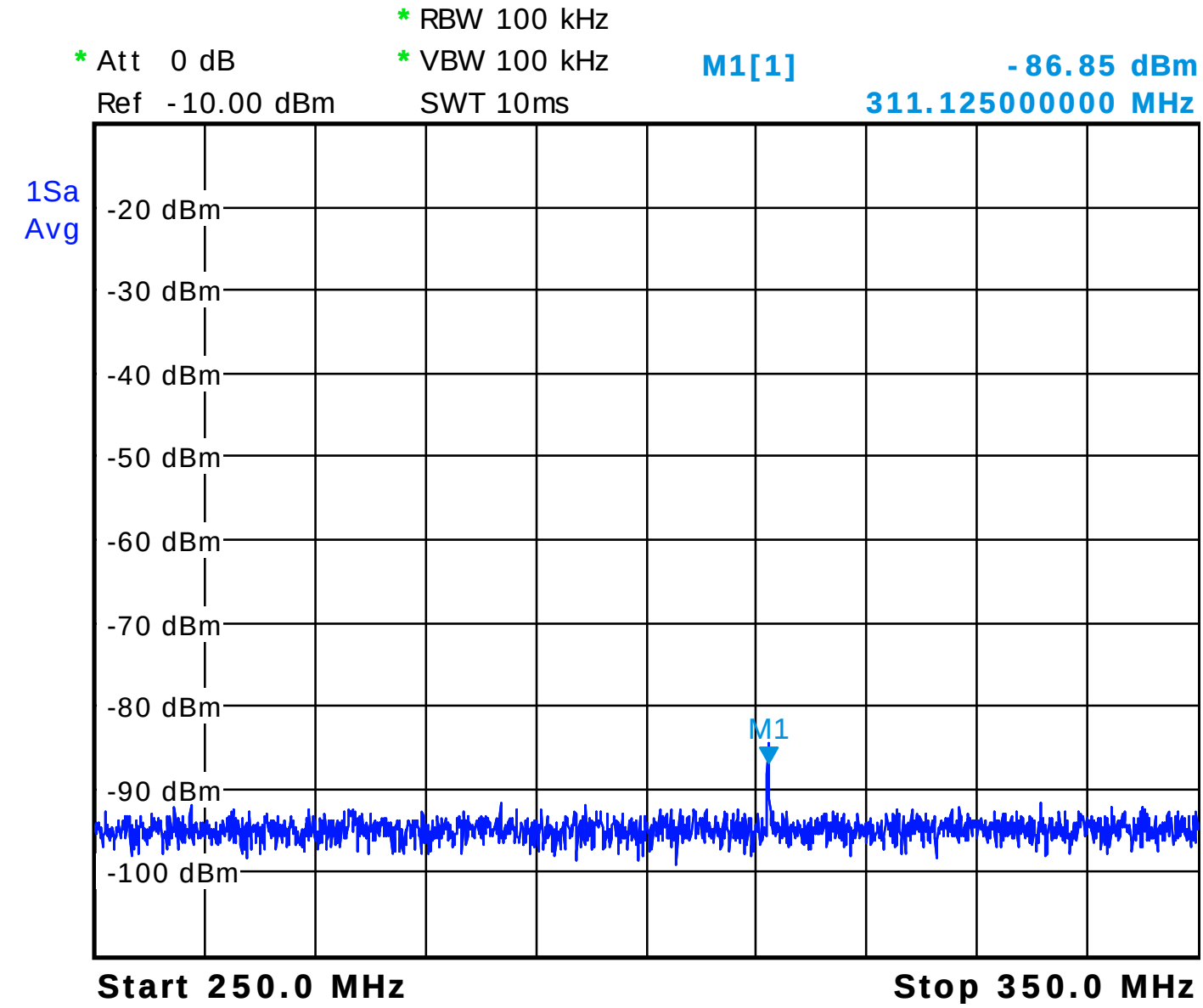

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Plot #19 - Spectrum Analysis Measurements Across Span of 250-350 MHz.

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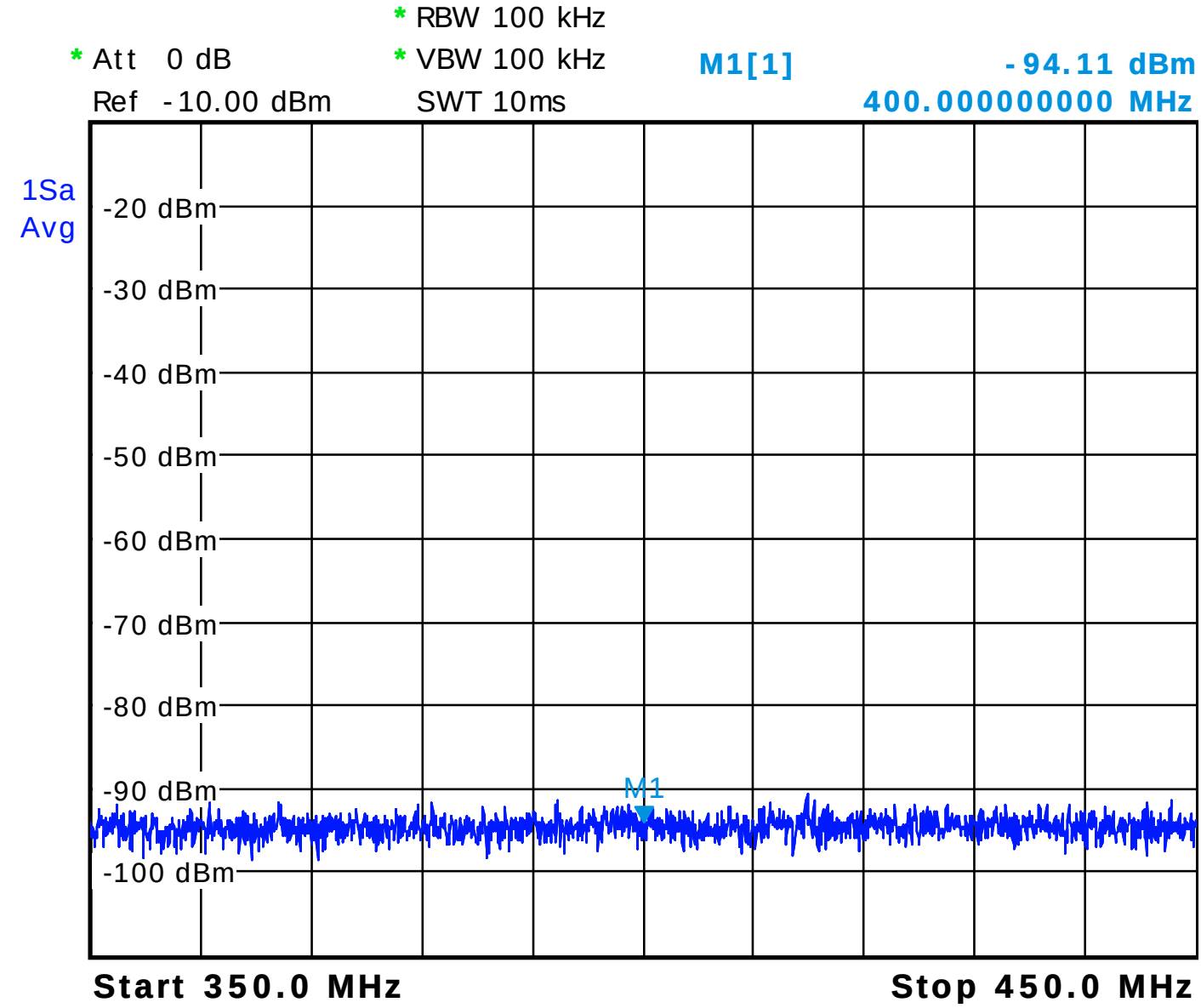

Plot #20 - Spectrum Analysis Measurements Across Span of 350-450 MHz.

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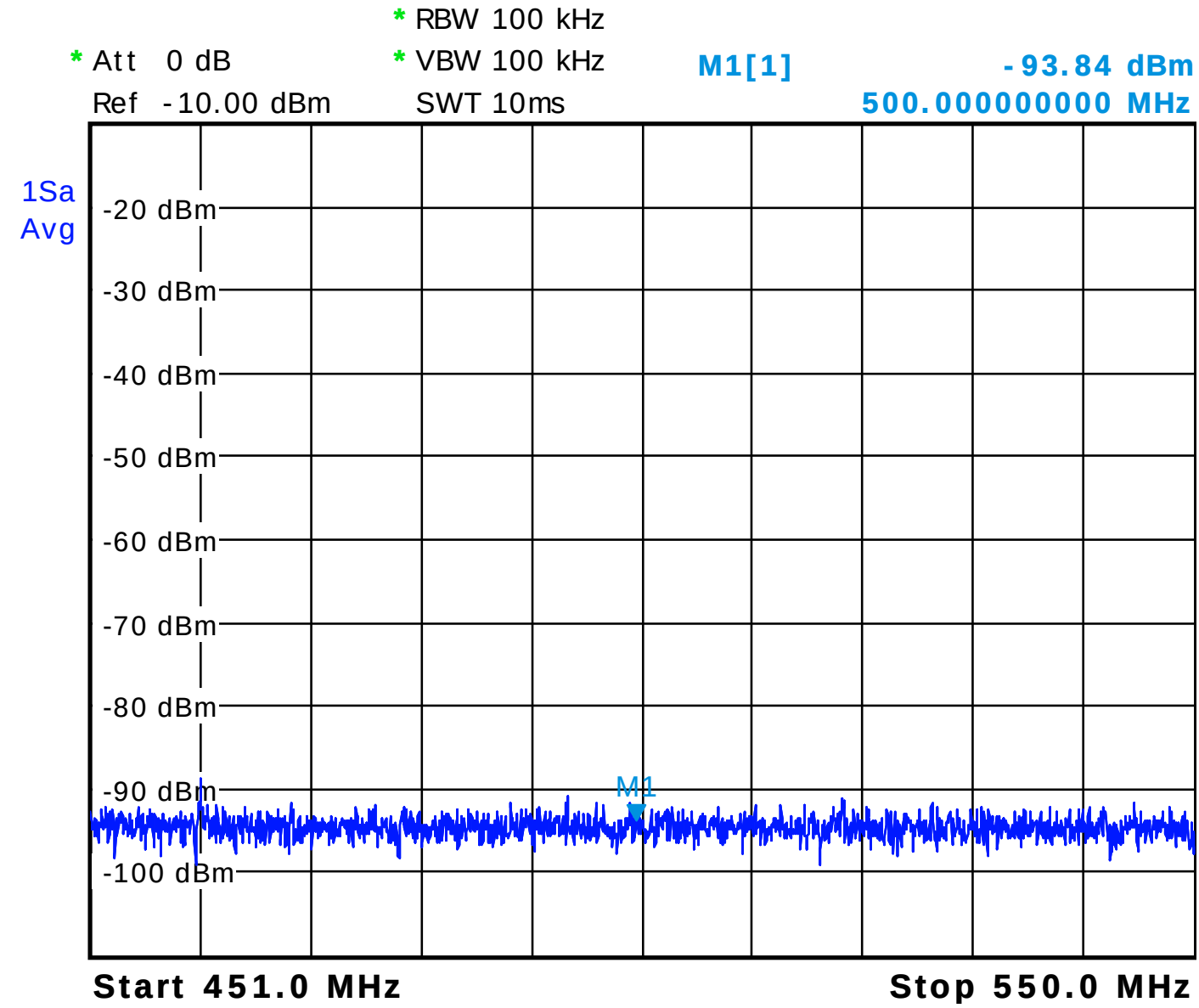

Plot #21 - Spectrum Analysis Measurements Across Span of 451-550 MHz.

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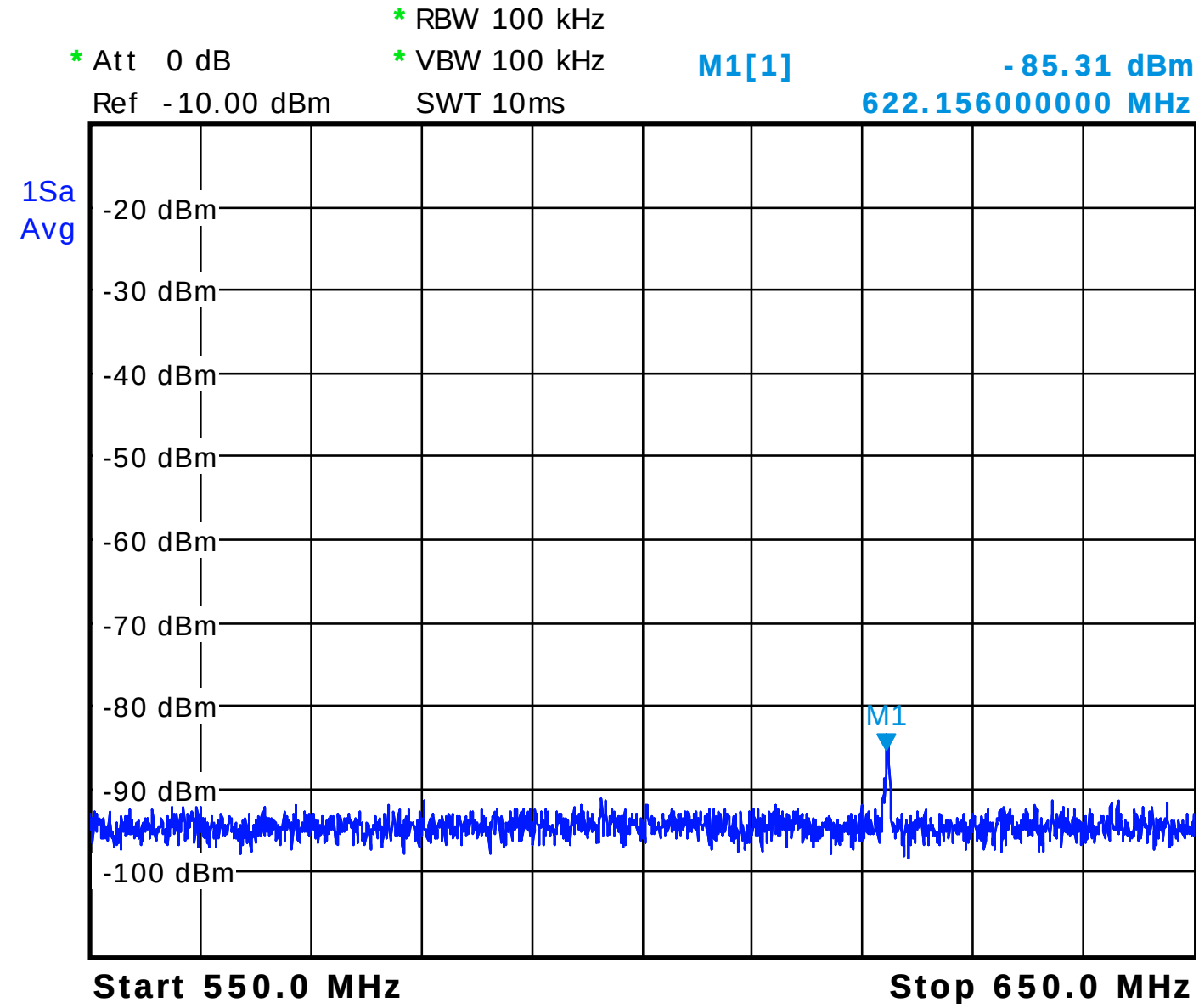

Plot #22 - Spectrum Analysis Measurements Across Span of 550-650 MHz.

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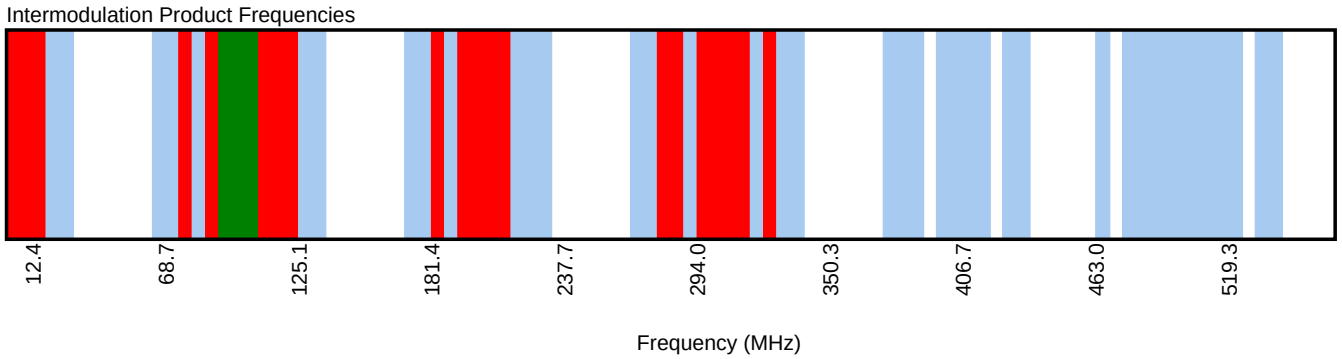
Saga Springfield FX Intermod Report




```
---- Transmitters Considered ----
ID          Freq (MHz)  ERP (kW)
---------   ---------- ---------
W259CM.C      93.5        0.25
W266BZ       101.1        0.25
W298AP       107.5        0.25

Intermodulation Products:

--- 93.5 MHz ---  Order = 1
  W259CM.C[0.25 kW]: (1) * 93.5

--- 101.1 MHz ---  Order = 1
  W266BZ[0.25 kW]: (1) * 101.1

--- 107.5 MHz ---  Order = 1
  W298AP[0.25 kW]: (1) * 107.5

--- 6.4 MHz ---  Order = 2
  W298AP[0.25 kW]: (1) * 107.5; W266BZ[0.25 kW]: (-1) * 101.1

--- 7.6 MHz ---  Order = 2
  W266BZ[0.25 kW]: (1) * 101.1; W259CM.C[0.25 kW]: (-1) * 93.5

--- 14.0 MHz ---  Order = 2
  W298AP[0.25 kW]: (1) * 107.5; W259CM.C[0.25 kW]: (-1) * 93.5

--- 187.0 MHz ---  Order = 2
  W259CM.C[0.25 kW]: (2) * 93.5

--- 194.6 MHz ---  Order = 2
  W266BZ[0.25 kW]: (1) * 101.1; W259CM.C[0.25 kW]: (1) * 93.5

--- 201.0 MHz ---  Order = 2
  W298AP[0.25 kW]: (1) * 107.5; W259CM.C[0.25 kW]: (1) * 93.5

--- 202.2 MHz ---  Order = 2
  W266BZ[0.25 kW]: (2) * 101.1

--- 208.6 MHz ---  Order = 2
  W298AP[0.25 kW]: (1) * 107.5; W266BZ[0.25 kW]: (1) * 101.1

--- 215.0 MHz ---  Order = 2
  W298AP[0.25 kW]: (2) * 107.5

--- 79.5 MHz ---  Order = 3
```

```
  W298AP[0.25 kW]: (-1) * 107.5; W259CM.C[0.25 kW]: (2) * 93.5

--- 85.9 MHz ---  Order = 3
  W266BZ[0.25 kW]: (-1) * 101.1; W259CM.C[0.25 kW]: (2) * 93.5

--- 87.1 MHz ---  Order = 3
  W298AP[0.25 kW]: (-1) * 107.5; W266BZ[0.25 kW]: (1) * 101.1
  W259CM.C[0.25 kW]: (1) * 93.5

--- 94.7 MHz ---  Order = 3
  W298AP[0.25 kW]: (-1) * 107.5; W266BZ[0.25 kW]: (2) * 101.1

--- 99.9 MHz ---  Order = 3
  W298AP[0.25 kW]: (1) * 107.5; W266BZ[0.25 kW]: (-1) * 101.1
  W259CM.C[0.25 kW]: (1) * 93.5

--- 108.7 MHz ---  Order = 3
  W266BZ[0.25 kW]: (2) * 101.1; W259CM.C[0.25 kW]: (-1) * 93.5

--- 113.9 MHz ---  Order = 3
  W298AP[0.25 kW]: (2) * 107.5; W266BZ[0.25 kW]: (-1) * 101.1

--- 115.1 MHz ---  Order = 3
  W298AP[0.25 kW]: (1) * 107.5; W266BZ[0.25 kW]: (1) * 101.1
  W259CM.C[0.25 kW]: (-1) * 93.5

--- 121.5 MHz ---  Order = 3
  W298AP[0.25 kW]: (2) * 107.5; W259CM.C[0.25 kW]: (-1) * 93.5

--- 280.5 MHz ---  Order = 3
  W259CM.C[0.25 kW]: (3) * 93.5

--- 288.1 MHz ---  Order = 3
  W266BZ[0.25 kW]: (1) * 101.1; W259CM.C[0.25 kW]: (2) * 93.5

--- 294.5 MHz ---  Order = 3
  W298AP[0.25 kW]: (1) * 107.5; W259CM.C[0.25 kW]: (2) * 93.5

--- 295.7 MHz ---  Order = 3
  W266BZ[0.25 kW]: (2) * 101.1; W259CM.C[0.25 kW]: (1) * 93.5

--- 302.1 MHz ---  Order = 3
  W298AP[0.25 kW]: (1) * 107.5; W266BZ[0.25 kW]: (1) * 101.1
  W259CM.C[0.25 kW]: (1) * 93.5

--- 303.3 MHz ---  Order = 3
  W266BZ[0.25 kW]: (3) * 101.1

--- 308.5 MHz ---  Order = 3
  W298AP[0.25 kW]: (2) * 107.5; W259CM.C[0.25 kW]: (1) * 93.5

--- 309.7 MHz ---  Order = 3
  W298AP[0.25 kW]: (1) * 107.5; W266BZ[0.25 kW]: (2) * 101.1

--- 316.1 MHz ---  Order = 3
  W298AP[0.25 kW]: (2) * 107.5; W266BZ[0.25 kW]: (1) * 101.1

--- 322.5 MHz ---  Order = 3
  W298AP[0.25 kW]: (3) * 107.5

--- 1.2 MHz ---  Order = 4
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  W298AP[0.25 kW]: (-1) * 107.5; W266BZ[0.25 kW]: (2) * 101.1
  W259CM.C[0.25 kW]: (-1) * 93.5

--- 12.8 MHz ---  Order = 4
  W298AP[0.25 kW]: (2) * 107.5; W266BZ[0.25 kW]: (-2) * 101.1

--- 15.2 MHz ---  Order = 4
  W266BZ[0.25 kW]: (2) * 101.1; W259CM.C[0.25 kW]: (-2) * 93.5

--- 20.4 MHz ---  Order = 4
  W298AP[0.25 kW]: (2) * 107.5; W266BZ[0.25 kW]: (-1) * 101.1
  W259CM.C[0.25 kW]: (-1) * 93.5

--- 21.6 MHz ---  Order = 4
  W298AP[0.25 kW]: (1) * 107.5; W266BZ[0.25 kW]: (1) * 101.1
  W259CM.C[0.25 kW]: (-2) * 93.5

--- 28.0 MHz ---  Order = 4
  W298AP[0.25 kW]: (2) * 107.5; W259CM.C[0.25 kW]: (-2) * 93.5

--- 173.0 MHz ---  Order = 4
  W298AP[0.25 kW]: (-1) * 107.5; W259CM.C[0.25 kW]: (3) * 93.5

--- 179.4 MHz ---  Order = 4
  W266BZ[0.25 kW]: (-1) * 101.1; W259CM.C[0.25 kW]: (3) * 93.5

--- 180.6 MHz ---  Order = 4
  W298AP[0.25 kW]: (-1) * 107.5; W266BZ[0.25 kW]: (1) * 101.1
  W259CM.C[0.25 kW]: (2) * 93.5

--- 188.2 MHz ---  Order = 4
  W298AP[0.25 kW]: (-1) * 107.5; W266BZ[0.25 kW]: (2) * 101.1
  W259CM.C[0.25 kW]: (1) * 93.5

--- 193.4 MHz ---  Order = 4
  W298AP[0.25 kW]: (1) * 107.5; W266BZ[0.25 kW]: (-1) * 101.1
  W259CM.C[0.25 kW]: (2) * 93.5

--- 195.8 MHz ---  Order = 4
  W298AP[0.25 kW]: (-1) * 107.5; W266BZ[0.25 kW]: (3) * 101.1

--- 207.4 MHz ---  Order = 4
  W298AP[0.25 kW]: (2) * 107.5; W266BZ[0.25 kW]: (-1) * 101.1
  W259CM.C[0.25 kW]: (1) * 93.5

--- 209.8 MHz ---  Order = 4
  W266BZ[0.25 kW]: (3) * 101.1; W259CM.C[0.25 kW]: (-1) * 93.5

--- 216.2 MHz ---  Order = 4
  W298AP[0.25 kW]: (1) * 107.5; W266BZ[0.25 kW]: (2) * 101.1
  W259CM.C[0.25 kW]: (-1) * 93.5

--- 221.4 MHz ---  Order = 4
  W298AP[0.25 kW]: (3) * 107.5; W266BZ[0.25 kW]: (-1) * 101.1

--- 222.6 MHz ---  Order = 4
  W298AP[0.25 kW]: (2) * 107.5; W266BZ[0.25 kW]: (1) * 101.1
  W259CM.C[0.25 kW]: (-1) * 93.5

--- 229.0 MHz ---  Order = 4
  W298AP[0.25 kW]: (3) * 107.5; W259CM.C[0.25 kW]: (-1) * 93.5
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--- 374.0 MHz --- Order = 4
  W259CM.C[0.25 kW]: (4) * 93.5

--- 381.6 MHz --- Order = 4
  W266BZ[0.25 kW]: (1) * 101.1; W259CM.C[0.25 kW]: (3) * 93.5

--- 388.0 MHz --- Order = 4
  W298AP[0.25 kW]: (1) * 107.5; W259CM.C[0.25 kW]: (3) * 93.5

--- 389.2 MHz --- Order = 4
  W266BZ[0.25 kW]: (2) * 101.1; W259CM.C[0.25 kW]: (2) * 93.5

--- 395.6 MHz --- Order = 4
  W298AP[0.25 kW]: (1) * 107.5; W266BZ[0.25 kW]: (1) * 101.1
  W259CM.C[0.25 kW]: (2) * 93.5

--- 396.8 MHz --- Order = 4
  W266BZ[0.25 kW]: (3) * 101.1; W259CM.C[0.25 kW]: (1) * 93.5

--- 402.0 MHz --- Order = 4
  W298AP[0.25 kW]: (2) * 107.5; W259CM.C[0.25 kW]: (2) * 93.5

--- 403.2 MHz --- Order = 4
  W298AP[0.25 kW]: (1) * 107.5; W266BZ[0.25 kW]: (2) * 101.1
  W259CM.C[0.25 kW]: (1) * 93.5

--- 404.4 MHz --- Order = 4
  W266BZ[0.25 kW]: (4) * 101.1

--- 409.6 MHz --- Order = 4
  W298AP[0.25 kW]: (2) * 107.5; W266BZ[0.25 kW]: (1) * 101.1
  W259CM.C[0.25 kW]: (1) * 93.5

--- 410.8 MHz --- Order = 4
  W298AP[0.25 kW]: (1) * 107.5; W266BZ[0.25 kW]: (3) * 101.1

--- 416.0 MHz --- Order = 4
  W298AP[0.25 kW]: (3) * 107.5; W259CM.C[0.25 kW]: (1) * 93.5

--- 417.2 MHz --- Order = 4
  W298AP[0.25 kW]: (2) * 107.5; W266BZ[0.25 kW]: (2) * 101.1

--- 423.6 MHz --- Order = 4
  W298AP[0.25 kW]: (3) * 107.5; W266BZ[0.25 kW]: (1) * 101.1

--- 430.0 MHz --- Order = 4
  W298AP[0.25 kW]: (4) * 107.5

--- 65.5 MHz --- Order = 5
  W298AP[0.25 kW]: (-2) * 107.5; W259CM.C[0.25 kW]: (3) * 93.5

--- 71.9 MHz --- Order = 5
  W298AP[0.25 kW]: (-1) * 107.5; W266BZ[0.25 kW]: (-1) * 101.1
  W259CM.C[0.25 kW]: (3) * 93.5

--- 73.1 MHz --- Order = 5
  W298AP[0.25 kW]: (-2) * 107.5; W266BZ[0.25 kW]: (1) * 101.1
  W259CM.C[0.25 kW]: (2) * 93.5

--- 78.3 MHz --- Order = 5

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  W266BZ[0.25 kW]: (-2) * 101.1; W259CM.C[0.25 kW]: (3) * 93.5

--- 80.7 MHz ---  Order = 5
  W298AP[0.25 kW]: (-2) * 107.5; W266BZ[0.25 kW]: (2) * 101.1
  W259CM.C[0.25 kW]: (1) * 93.5

--- 88.3 MHz ---  Order = 5
  W298AP[0.25 kW]: (-2) * 107.5; W266BZ[0.25 kW]: (3) * 101.1

--- 92.3 MHz ---  Order = 5
  W298AP[0.25 kW]: (1) * 107.5; W266BZ[0.25 kW]: (-2) * 101.1
  W259CM.C[0.25 kW]: (2) * 93.5

--- 102.3 MHz ---  Order = 5
  W298AP[0.25 kW]: (-1) * 107.5; W266BZ[0.25 kW]: (3) * 101.1
  W259CM.C[0.25 kW]: (-1) * 93.5

--- 106.3 MHz ---  Order = 5
  W298AP[0.25 kW]: (2) * 107.5; W266BZ[0.25 kW]: (-2) * 101.1
  W259CM.C[0.25 kW]: (1) * 93.5

--- 116.3 MHz ---  Order = 5
  W266BZ[0.25 kW]: (3) * 101.1; W259CM.C[0.25 kW]: (-2) * 93.5

--- 120.3 MHz ---  Order = 5
  W298AP[0.25 kW]: (3) * 107.5; W266BZ[0.25 kW]: (-2) * 101.1

--- 122.7 MHz ---  Order = 5
  W298AP[0.25 kW]: (1) * 107.5; W266BZ[0.25 kW]: (2) * 101.1
  W259CM.C[0.25 kW]: (-2) * 93.5

--- 127.9 MHz ---  Order = 5
  W298AP[0.25 kW]: (3) * 107.5; W266BZ[0.25 kW]: (-1) * 101.1
  W259CM.C[0.25 kW]: (-1) * 93.5

--- 129.1 MHz ---  Order = 5
  W298AP[0.25 kW]: (2) * 107.5; W266BZ[0.25 kW]: (1) * 101.1
  W259CM.C[0.25 kW]: (-2) * 93.5

--- 135.5 MHz ---  Order = 5
  W298AP[0.25 kW]: (3) * 107.5; W259CM.C[0.25 kW]: (-2) * 93.5

--- 266.5 MHz ---  Order = 5
  W298AP[0.25 kW]: (-1) * 107.5; W259CM.C[0.25 kW]: (4) * 93.5

--- 272.9 MHz ---  Order = 5
  W266BZ[0.25 kW]: (-1) * 101.1; W259CM.C[0.25 kW]: (4) * 93.5

--- 274.1 MHz ---  Order = 5
  W298AP[0.25 kW]: (-1) * 107.5; W266BZ[0.25 kW]: (1) * 101.1
  W259CM.C[0.25 kW]: (3) * 93.5

--- 281.7 MHz ---  Order = 5
  W298AP[0.25 kW]: (-1) * 107.5; W266BZ[0.25 kW]: (2) * 101.1
  W259CM.C[0.25 kW]: (2) * 93.5

--- 286.9 MHz ---  Order = 5
  W298AP[0.25 kW]: (1) * 107.5; W266BZ[0.25 kW]: (-1) * 101.1
  W259CM.C[0.25 kW]: (3) * 93.5

--- 289.3 MHz ---  Order = 5
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  W298AP[0.25 kW]: (-1) * 107.5; W266BZ[0.25 kW]: (3) * 101.1
  W259CM.C[0.25 kW]: (1) * 93.5

--- 296.9 MHz ---  Order = 5
  W298AP[0.25 kW]: (-1) * 107.5; W266BZ[0.25 kW]: (4) * 101.1

--- 300.9 MHz ---  Order = 5
  W298AP[0.25 kW]: (2) * 107.5; W266BZ[0.25 kW]: (-1) * 101.1
  W259CM.C[0.25 kW]: (2) * 93.5

--- 310.9 MHz ---  Order = 5
  W266BZ[0.25 kW]: (4) * 101.1; W259CM.C[0.25 kW]: (-1) * 93.5

--- 314.9 MHz ---  Order = 5
  W298AP[0.25 kW]: (3) * 107.5; W266BZ[0.25 kW]: (-1) * 101.1
  W259CM.C[0.25 kW]: (1) * 93.5

--- 317.3 MHz ---  Order = 5
  W298AP[0.25 kW]: (1) * 107.5; W266BZ[0.25 kW]: (3) * 101.1
  W259CM.C[0.25 kW]: (-1) * 93.5

--- 323.7 MHz ---  Order = 5
  W298AP[0.25 kW]: (2) * 107.5; W266BZ[0.25 kW]: (2) * 101.1
  W259CM.C[0.25 kW]: (-1) * 93.5

--- 328.9 MHz ---  Order = 5
  W298AP[0.25 kW]: (4) * 107.5; W266BZ[0.25 kW]: (-1) * 101.1

--- 330.1 MHz ---  Order = 5
  W298AP[0.25 kW]: (3) * 107.5; W266BZ[0.25 kW]: (1) * 101.1
  W259CM.C[0.25 kW]: (-1) * 93.5

--- 336.5 MHz ---  Order = 5
  W298AP[0.25 kW]: (4) * 107.5; W259CM.C[0.25 kW]: (-1) * 93.5

--- 467.5 MHz ---  Order = 5
  W259CM.C[0.25 kW]: (5) * 93.5

--- 475.1 MHz ---  Order = 5
  W266BZ[0.25 kW]: (1) * 101.1; W259CM.C[0.25 kW]: (4) * 93.5

--- 481.5 MHz ---  Order = 5
  W298AP[0.25 kW]: (1) * 107.5; W259CM.C[0.25 kW]: (4) * 93.5

--- 482.7 MHz ---  Order = 5
  W266BZ[0.25 kW]: (2) * 101.1; W259CM.C[0.25 kW]: (3) * 93.5

--- 489.1 MHz ---  Order = 5
  W298AP[0.25 kW]: (1) * 107.5; W266BZ[0.25 kW]: (1) * 101.1
  W259CM.C[0.25 kW]: (3) * 93.5

--- 490.3 MHz ---  Order = 5
  W266BZ[0.25 kW]: (3) * 101.1; W259CM.C[0.25 kW]: (2) * 93.5

--- 495.5 MHz ---  Order = 5
  W298AP[0.25 kW]: (2) * 107.5; W259CM.C[0.25 kW]: (3) * 93.5

--- 496.7 MHz ---  Order = 5
  W298AP[0.25 kW]: (1) * 107.5; W266BZ[0.25 kW]: (2) * 101.1
  W259CM.C[0.25 kW]: (2) * 93.5
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--- 497.9 MHz --- Order = 5
  W266BZ[0.25 kW]: (4) * 101.1; W259CM.C[0.25 kW]: (1) * 93.5

--- 503.1 MHz --- Order = 5
  W298AP[0.25 kW]: (2) * 107.5; W266BZ[0.25 kW]: (1) * 101.1
  W259CM.C[0.25 kW]: (2) * 93.5

--- 504.3 MHz --- Order = 5
  W298AP[0.25 kW]: (1) * 107.5; W266BZ[0.25 kW]: (3) * 101.1
  W259CM.C[0.25 kW]: (1) * 93.5

--- 505.5 MHz --- Order = 5
  W266BZ[0.25 kW]: (5) * 101.1

--- 509.5 MHz --- Order = 5
  W298AP[0.25 kW]: (3) * 107.5; W259CM.C[0.25 kW]: (2) * 93.5

--- 510.7 MHz --- Order = 5
  W298AP[0.25 kW]: (2) * 107.5; W266BZ[0.25 kW]: (2) * 101.1
  W259CM.C[0.25 kW]: (1) * 93.5

--- 511.9 MHz --- Order = 5
  W298AP[0.25 kW]: (1) * 107.5; W266BZ[0.25 kW]: (4) * 101.1

--- 517.1 MHz --- Order = 5
  W298AP[0.25 kW]: (3) * 107.5; W266BZ[0.25 kW]: (1) * 101.1
  W259CM.C[0.25 kW]: (1) * 93.5

--- 518.3 MHz --- Order = 5
  W298AP[0.25 kW]: (2) * 107.5; W266BZ[0.25 kW]: (3) * 101.1

--- 523.5 MHz --- Order = 5
  W298AP[0.25 kW]: (4) * 107.5; W259CM.C[0.25 kW]: (1) * 93.5

--- 524.7 MHz --- Order = 5
  W298AP[0.25 kW]: (3) * 107.5; W266BZ[0.25 kW]: (2) * 101.1

--- 531.1 MHz --- Order = 5
  W298AP[0.25 kW]: (4) * 107.5; W266BZ[0.25 kW]: (1) * 101.1

--- 537.5 MHz --- Order = 5
  W298AP[0.25 kW]: (5) * 107.5