We claim:

1. A system (800) for determining frequency spacings to prevent intermodulation distortion signal interference, the system (800) comprising:

a sensor assembly (810); and

a meter verification module (820) communicatively coupled to the sensor assembly (810), the meter verification module (820) being configured to:

determine a frequency of a first signal to be applied to the sensor assembly (810) of a vibratory meter;

set a demodulation window about the frequency of the first signal; and

determine a frequency of the second signal to be applied to the sensor assembly such that a frequency of an intermodulation distortion signal generated by the first signal and the second signal is outside the demodulation window.

2. The system (800) of claim 1, wherein the meter verification module (820) is further configured to:

determine a bandwidth that includes the frequency of the first signal; and

determine the frequency of the second signal such that the frequency of the second signal is within the bandwidth that includes the frequency of the first signal.

3. The system (800) of claim 2, wherein the bandwidth is a frequency response bandwidth of the sensor assembly.

4. The system (800) of one of any of the foregoing claims 1 through 3, wherein the frequency of the first signal is a resonant frequency of the sensor assembly.

5. The system (800) of one of any of the foregoing claims 1 through 4, wherein the intermodulation distortion signal is generated in one of the meter verification module (820) and the sensor assembly (810).

6. The system (800) of one of any of the foregoing claims 1 through 5, wherein the first signal and the second signal are components of a drive signal that is applied by the meter verification module (820) to the sensor assembly (810).

7. The system (800) of one of any of the foregoing claims 1 through 6, wherein the second signal is applied to the sensor assembly (810) to characterize a frequency response of the sensor assembly (810).

8. The system (800) of one of any of the foregoing claims 1 through 7, wherein the meter verification module (820) being configured to determine the frequency of the second signal to be applied to the sensor assembly (810) such that a frequency of an intermodulation distortion signal generated by the first signal and the second signal is outside the demodulation window comprises the meter verification module (820) being configured to determine the frequency of the second signal such that the frequency of the intermodulation distortion signal is adjacent to the demodulation window.

9. The system (800) of one of any of the foregoing claims 1 through 8, wherein the meter verification module (820) is further configured to determine a frequency of one or more additional signals such that frequencies of a plurality of intermodulation distortion signals generated by the one or more additional signals lie outside the demodulation window of the first signal.

10. The system (800) of claim 9, wherein the meter verification module (820) is further configured to:

determine a bandwidth that includes the frequency of the first signal; and

determine the frequencies of the one or more additional signals such that the frequencies of the one or more additional signals are within the bandwidth that includes the frequency of the first signal.

11. The system (800) of claim 9, wherein the meter verification module (820) is further configured to set demodulation windows about the one or more additional signals and determine the frequencies of the one or more additional signals such that the

frequencies of a plurality of intermodulation distortion signals generated by the one or more additional signals lie outside the demodulation windows of the one or more additional signals.

12. A method of determining frequency spacings to prevent intermodulation distortion signal interference, the method comprising:

determining a frequency of a first signal to be applied to a sensor assembly of a vibratory meter;

setting a demodulation window about the frequency of the first signal; and

determining a frequency of the second signal to be applied to the sensor assembly such that a frequency of an intermodulation distortion signal generated by the first signal and the second signal is outside the demodulation window.

13. The method of claim 12, further comprising:

determining a bandwidth that includes the frequency of the first signal; and

determining the frequency of the second signal such that the frequency of the second signal is within the bandwidth that includes the frequency of the first signal.

14. The method of claim 13, wherein the bandwidth is a frequency response bandwidth of the sensor assembly.

15. The method of one of any of the foregoing claims 12 through 14, wherein the frequency of the first signal is a resonant frequency of the sensor assembly.

16. The method of one of any of the foregoing claims 12 through 15, wherein the intermodulation distortion signal is generated in one of the meter electronics and the sensor assembly.

17. The method of one of any of the foregoing claims 12 through 16, wherein the first signal and the second signal are components of a drive signal that is applied by the meter electronics to the sensor assembly.

18. The method of one of any of the foregoing claims 12 through 17, wherein the second signal is applied to the sensor assembly to characterize the sensor assembly.

19. The method of one of any of the foregoing claims 12 through 18, wherein determining the frequency of the second signal to be applied to the sensor assembly such that a frequency of an intermodulation distortion signal generated by the first signal and the second signal is outside the demodulation window comprises determining the frequency of the second signal comprised such that the frequency of the intermodulation distortion signal is adjacent to the demodulation window.

20. The method of one of any of the foregoing claims 12 through 19, further comprising determining frequencies of one or more additional signals such that frequencies of a plurality of intermodulation distortion signals generated by the one or more additional signals lie outside the demodulation window of the first signal.

21. The method of claim 20, further comprising:

determining a bandwidth that includes the frequency of the first signal; and

determining the frequencies of the one or more additional signals such that the frequencies of the one or more additional signals are within the bandwidth that includes the frequency of the first signal.

22. The method of claim 20, further comprising setting demodulation windows about the one or more additional signals and determining the frequencies of the one or more additional signals such that the frequencies of a plurality of intermodulation distortion signals generated by the one or more additional signals lie outside the demodulation windows of the one or more additional signals.