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(71) Applicant: **TERADYNE, INC.** [US/US]; 321 Harrison Avenue, Boston, MA 02118 (US).

(72) Inventor: **DIONNE, Gregory, E.**; 115 Oakland Avenue, Arlington, MA 02476 (US).

(74) Agents: **RUBENSTEIN, Bruce, D.** et al.; Teradyne, Inc., 321 Harrison Avenue, Boston, MA 02118 (US).

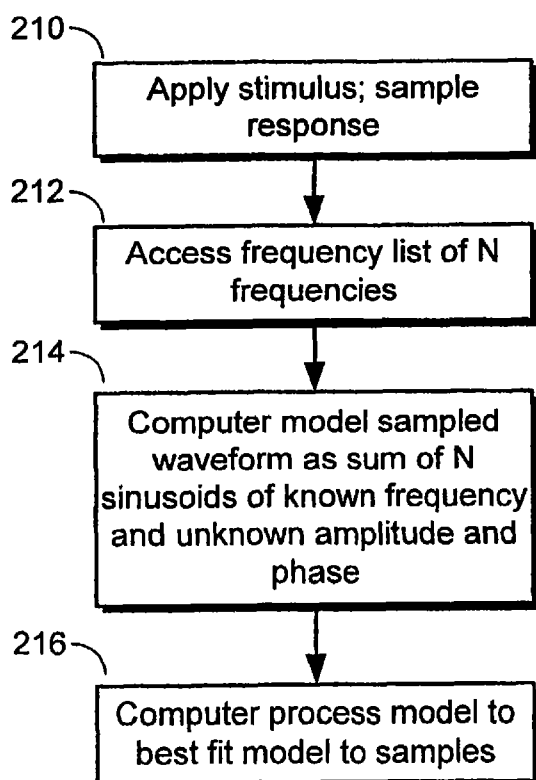
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(54) Title: **LOW LEAKAGE TECHNIQUE FOR DETERMINING POWER SPECTRA OF NON-COHERENTLY SAMPLED DATA**



(57) Abstract: A technique for determining the amplitudes of frequency components of a waveform sampled from an automatic test system includes assembling a list of N frequencies expected to be found in the sampled waveform. A test program running on the tester generally supplies the list of frequencies. The technique assumes that the sampled waveform conforms to an idealized waveform model that mathematically corresponds to a sum of N sinusoids. Each of the N sinusoids that make up the model has unknown amplitude and a frequency that equals one of the N frequencies in the list of frequencies. The technique attempts to solve for the unknown amplitude of each of the N frequencies by mathematically minimizing, via a linear least-squares algorithm, the difference between the model and the actual, sampled waveform.



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