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(54) Title: SCANNING PROBE MICROSCOPE AND METHOD FOR RESONANCE-ENHANCED DETECTION USING A RANGE OF MODULATION FREQUENCIES

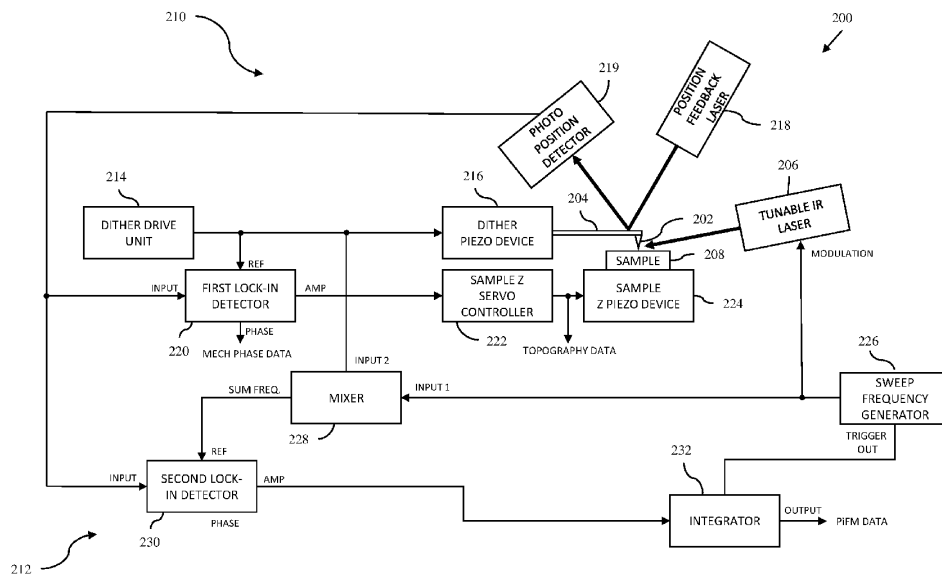


FIG. 2

(57) Abstract: A scanning probe microscope and method for resonance-enhanced detection using the scanning probe microscope uses a light source that is modulated in a range of frequencies to irradiate an interface between a probe tip of the microscope and a sample with modulated electromagnetic radiation from the light source. The vibrational response of the driven cantilever in response to the modulated electromagnetic radiation at the interface between the probe tip and the sample is then detected. The amplitude of the vibrational response of the cantilever over the entire range of modulation frequencies is measured to derive a photo-induced force microscope (PiFM) value.

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