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(54) Title: STATISTICAL MAPPING IN AN OPTOACOUSTIC IMAGING SYSTEM

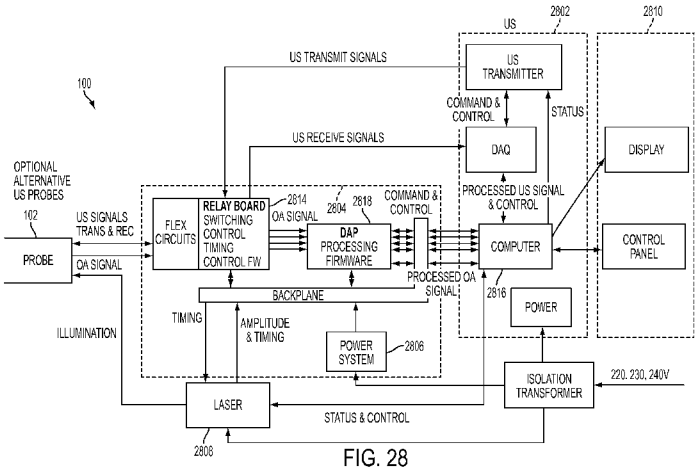


FIG. 28

(57) Abstract: Electromagnetic energy is deposited into a volume, an acoustic return signal from energy deposited in the volume is measured, and a parametric map that estimates values of at least one parameter as spatially represented in the volume is computed. A reference level of a region of interest is determined, and upper and lower color map limits are specified, with at least one of them being determined in relation to the reference level. The parametric map is then rendered in the palette of a color map by mapping the estimated values of the parametric map onto the color map according to the color map limits. Two wavelengths of energy can be applied to the volume, and the parametric map computation can be adapted by applying an implicit or explicit model of, or theoretical basis for, distribution of electromagnetic energy fluence within the volume pertaining to the two wavelengths. The actual electromagnetic energy fluence caused by each wavelength has a propensity, due to variability within the volume, to differ from the modeled or theoretical electromagnetic energy fluence.

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