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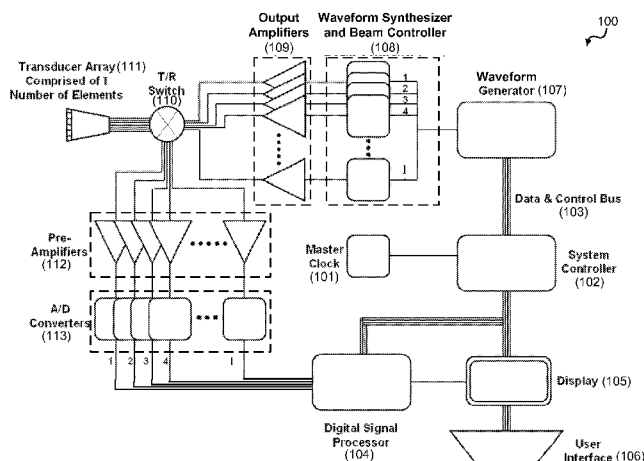
(54) Title: SPREAD SPECTRUM CODED WAVEFORMS IN ULTRASOUND IMAGING

FIG. 1A

(57) **Abstract:** Techniques, systems, and devices are disclosed for ultrasound imaging using spread spectrum, coherent, frequency- and/or phase-coded waveforms. In one aspect, a method of creating an image from an acoustic waveform in an acoustic imaging device includes setting the device into a transmit mode to transmit an acoustic waveform toward a target, in transmitting the acoustic waveform, synthesizing, in one or more waveform synthesizers, a plurality of substantially orthogonal coded waveforms that form a composite waveform as the transmitted acoustic waveform toward the target, in which each waveform corresponds to a distinct frequency band, setting the device into a receive mode to receive a returned acoustic waveform that returns from at least part of the target, converting the received returned acoustic waveform from analog format to digital format as a received composite waveform comprising information of the target, and processing the received composite waveform to produce an image of the target.

