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- (54) **Title: A TWO-DIMENSIONAL DISCRETE FOURIER TRANSFORM HARDWARE ACCELERATOR**

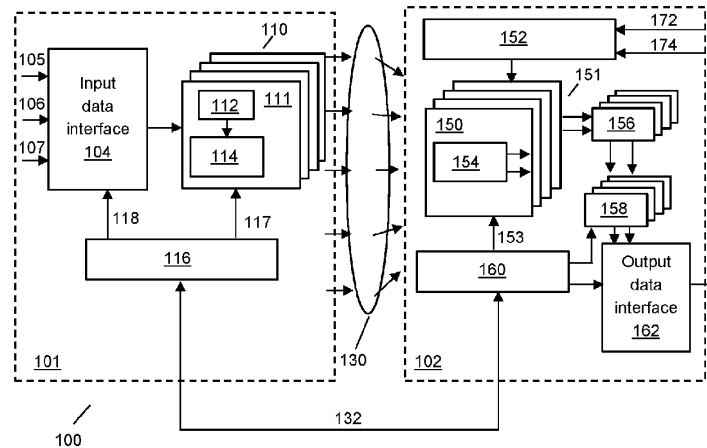


FIGURE 1

- (57) **Abstract:** This document describes a two-dimensional discrete Fourier transform (DFT) hardware accelerator comprising an ultrasonic transmitter configured to convert input signals to I/Q ultrasonic waves which are then transmitted to a lens, and an ultrasonic receiver configured to receive and convert ultrasonic waves to baseband signals, whereby the lens is provided between the transmitter and the receiver, and whereby the I/Q ultrasonic waves transmitted by the transmitter will superimpose on the lens before being received by the receiver.

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