

Abstract Submitted  
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**Wrist-mounted Ultrasonic Device**<sup>1</sup> TODD NEER, McMurry University — This project shows an ultrasonic device can be made small enough to be worn on the wrist and therefore added as a function for a running watch. An existing ultrasonic device was modified by stripping the circuit board to necessary components, replacing the 9V battery with a smaller alternative, and fitting it to a wrist mounted case. The wrist-mounted device shows a 68% mass reduction and 84% volume reduction and emits an ultrasonic frequency of 21-22kHz.

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