## ACQUIRING TABLETOP AND BREEDER GIN ENERGY Sean Donohoe Cody Blake Joe Thomas USDA-ARS Cotton Ginning Research Unit Stoneville, MS

## Abstract

Physically separating the cotton lint from the seed contributes to the total energy embodied in a bale of commodity cotton. The past research efforts of others have used different types of measurement equipment to look at energy in the ginning process. The objective of this work is to focus on the low-cost measurement of the power and energy used by small scale tabletop and breeder gins in operation. To enable low-cost measurement, this work develops a proof-of-concept system consisting of hardware and software components. The system stores the data it collects on a memory card that the user can transfer to a computer for post-processing. A simplification for the current stage of development is to focus on single-phase power. This simplification makes it easier to benchmark the potential accuracy against existing systems. The single-phase system also provides a simplified platform for feature development. The hardware and software are both still undergoing testing and optimization. Future work to expand the system to multiphase power can be considered once the major features are finalized, and testing is complete.