

DESIGNING A SHOCK CIRCUIT FOR A VIRTUAL FENCE SYSTEM

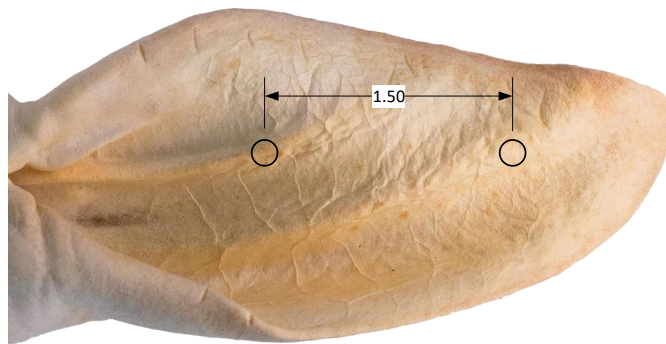
Client: USDA funded Virtual Fence Project

Background

Many livestock husbandries and conservation benefits are gained by carefully controlling where animals graze on landscapes. Barbed or electric wire fences are the foundation for grazing management and rotational grazing systems that are widely used to improve livestock production and maintain healthy landscapes. Contemporary ranching operations require substantial flexibility for controlling when and where animals graze to access forage and manage grazing impacts. Providing such adaptive fencing arrangements is prohibitively expensive with current wire fences. The virtual fence system provides an alternative approach to precision animal management.

Scope

We are looking for a team of electrical and biological engineers who can design a shock circuit that will deliver from 1-4 mA of current across 1.5 inches of metal clips on animal ear as shown below.



2-prong animal ear tag at 1.5 inches apart should deliver 3 mA current.

Performance Requirements

1. Circuit weighing less than 15g
2. Provide electrical feedback when the shock was delivered.
3. Preferably variable output voltage not exceeding 7kV

Budget:

A budget of up to \$2000 will be provided to develop this prototype along with guidance from a graduate student.

Open for **BE** and **ECE** students