DESIGN AND FABRICATION OF MORPHING ARM DRONE FOR AGRICULTURE MAPPING USING GPS

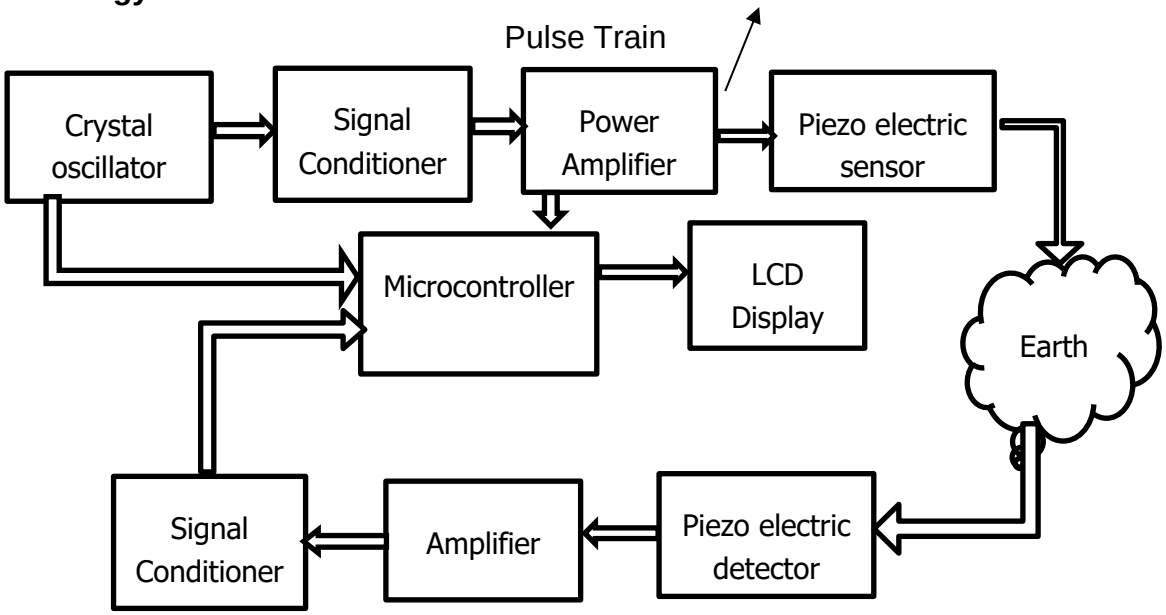
Project Reference No.: *47S_BE_3733*

College ***:*** *Angadi Institute of Technology & Management*
Branch ***:*** *Department of Electronics and Communication Engineering*
Guide(s) ***:*** *Dr. G. R. Udupi*
Student(S) ***:*** *Mr. Mahalingappa Shrishail Huchagoudar*
Mr. Rahul Ramesh Rajmane
Ms. Pooja D
Ms. Prerana P. Masguppi

Scope / Objectives of the project:

The project's objective is to develop an embedded based precise underground water locator system. It ensures accurate real-time underground water measurement using piezo crystal sensor. The system aims to have an adaptable water allocation pattern in underground which helps the agriculture farmers to identify the water table for all the seasons.

Methodology:



Crystal oscillator is used to get a stable frequency which will be in the range of ultra sound that is more than 40GHz. Where in earth is considered leaky capacitor with lumped resistance. The pulse train of ultra sound is impressed on earth with proper impendence matching. Then receiver piezo crystal is enabled for known period of time. Enable period of the received signal directly proportional to depth of the reflected signal. The received signal will have very week signal strength. A digitally controlled amplifier (Gain is digitally varies i.e., programmable gain control amplifier is designed using microcontroller which will determine depth of the water body. It is similar to the navigational radar system principle is used). The depth of the water body is displayed on the LCD display.

Expected Outcome of the project:

1. Accurate Underground water Location detection: The project should provide a reliable method for accurately locating underground water.

2. Real-Time or Near-Real-Time Position Information: The system should be capable of providing real-time or near-real-time position data, allowing for immediate tracking and monitoring of underground water assets.

3. Data Communication: The ability to transmit location information to the surface or remote stations is an important outcome, enabling remote monitoring and control.

4. Cost-Effective Solution: The project should strive to provide a cost-effective solution that can be deployed for various underground water applications without excessive expenses.