

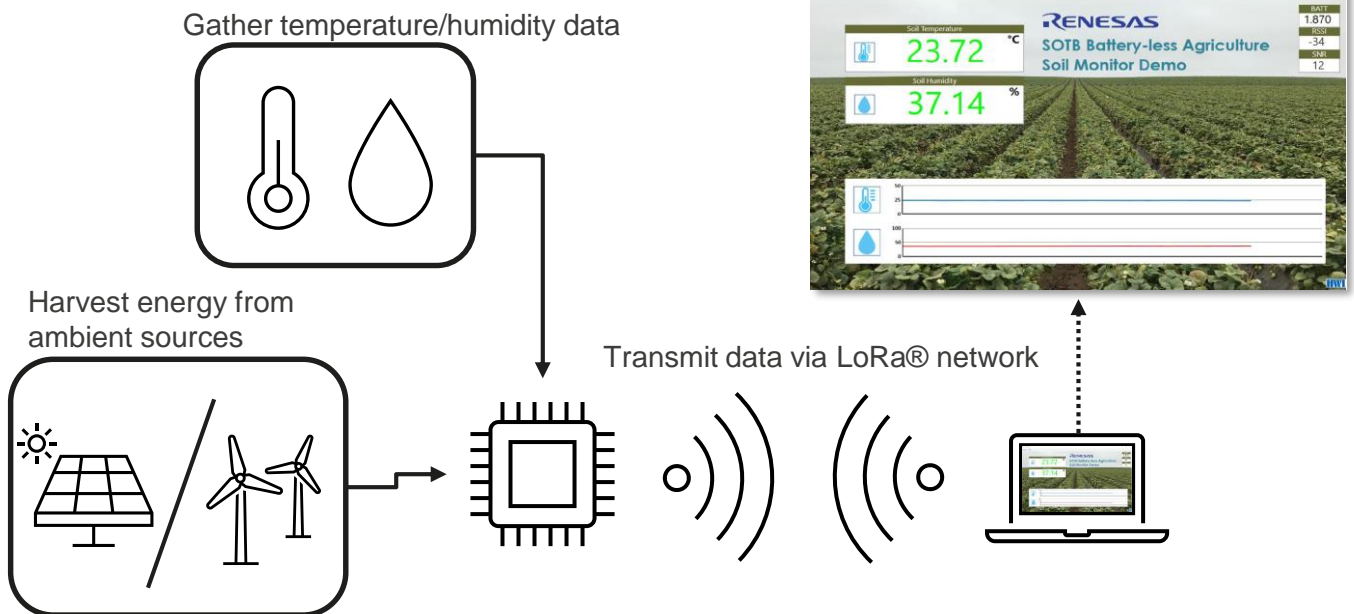
### Solution Summary

The SOTB Battery-less Soil Monitor is a solution intended for use in extremely low-power sensing applications. It harvests ambient energy (e.g. solar or wind) and gathers temperature and humidity data, sending the results over the long-range LoRa® radio network.

### Features/Benefits

- Minimal power draw with little maintenance:
  - Sleep state with a wakeup timer, drawing <1 mA when operating at 1.8V
  - Can operate without a battery by charging/discharging a capacitor, and drastically reduce the need for in-field maintenance
- Long-range (up to 30 miles in rural areas) transmission of data is suited for outdoor usage and agricultural applications

### Diagrams/Graphics

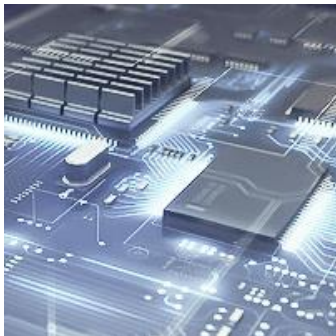


### Target Markets and Applications

- Agriculture
- IoT

## Halleck-Willard, Inc

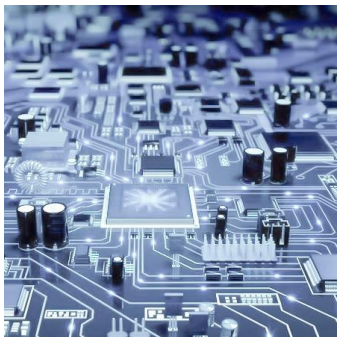
- Operating for 35 years and counting
- 120+ patents secured by employees over time
- Extensive experience in medical product development
- 3-time consecutive recipient of Renesas IDH (Independent Design House) of the Year award
- Engineering services provided to clients across 6 continents



**Embedded Systems  
Hardware Design**



**Full-stack IoT  
Software Development**



**Electromechanical  
System Design**



**RF Communications**