

RE Partner Solution

Battery-less Smart Farming Sensor



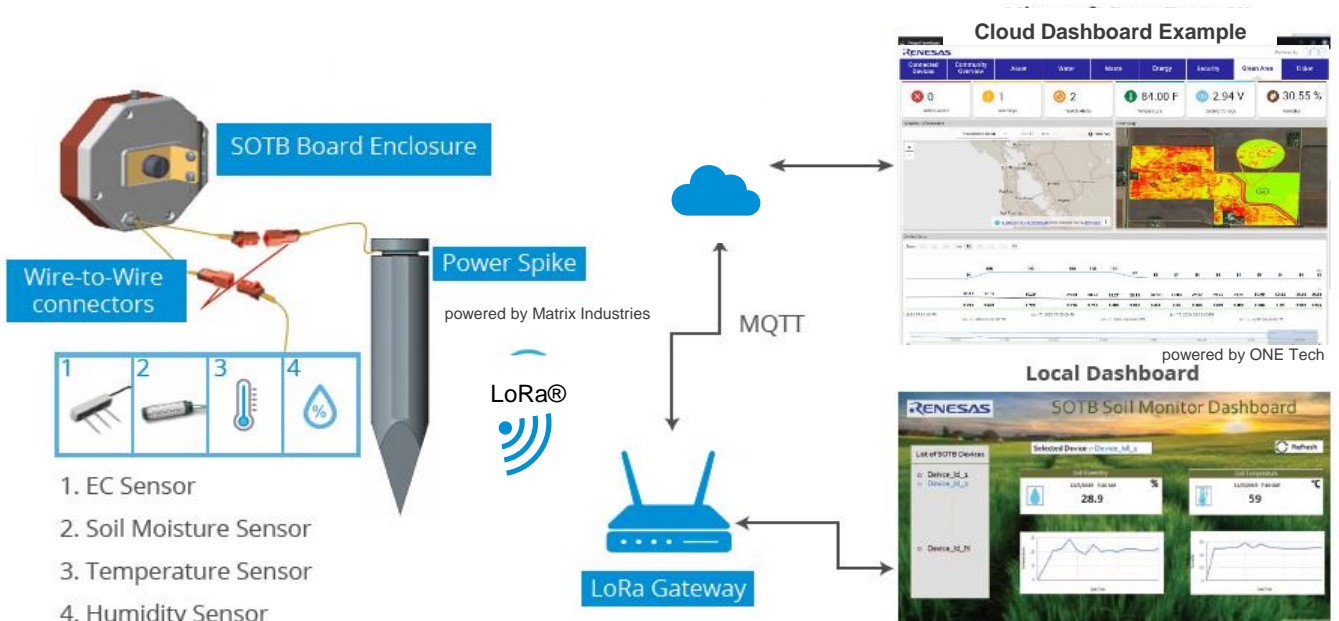
Solution Summary

The Battery-less Smart Farming Sensor solution uses [Renesas RE Family's](#) energy harvesting functionality to create an ultra-low power, highly energy efficient, maintenance-free farming solution. The system is capable of measuring soil parameters like humidity, temperature, soil moisture, electrical conductivity etc. and sending this information via Sub-GHz technology(LoRa®) to cloud for prediction and analysis.

Features/Benefits

- The RE01 MCU will be in software-standby (or off) mode most of the time.
- During its low-power mode, the Energy Harvesting Capability charges the rechargeable battery, checking its voltage level periodically.
- When there is enough power stored, the MCU wakes and communicates with the temperature, humidity, electrical conductivity and soil moisture sensors and gathers the data.
- The sensor readings are then sent out via LoRa® (low-power wide-area) wireless communication.
- A dashboard on a local PC/cloud displays the received sensor readings to the end user.

Diagrams/Graphics



Target Markets and Applications

- Smart Agriculture Sector
- Remote Sensing

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