# IOT ENTERPRISE KIT

## – *ACCELERATING TIME-TO-MARKET IOT SOLUTIONS*

- JUNE 2018

**RAK**

*The simplest, the best*

# Smart Farm

- Optimize Farm, increase crop yield and save operating costs with 24/7 fully-automated temperature and humidity and soil monitoring protection.
- Remotely monitor with low power/long range sensors and a gateway to keep a close eye on your property, at any time, from anywhere.

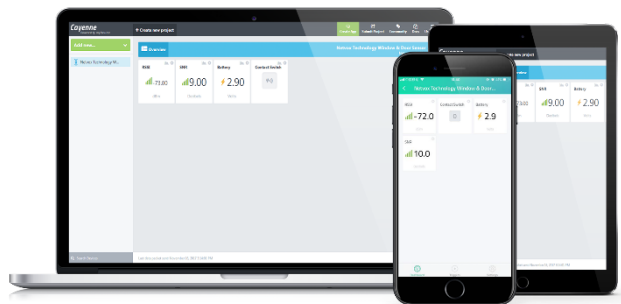| | | |
|---|---|---|
| **Cayenne IoT Ready™** Dash Board | **5 years** Battery power | Automated Reports |
| **FC** **LoRaWAN™** | **4km** Long range | **0.1% vwc** High Precision |

# Includes

- **LoRa Gateway RAK831**

- **Soil Moisture Sensor**

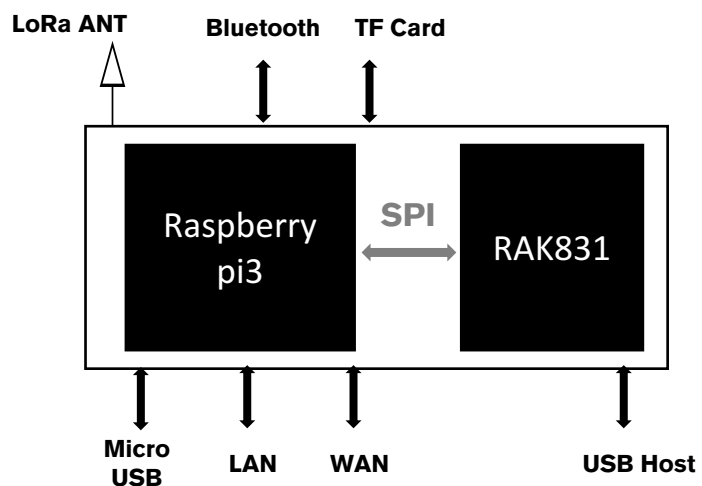- **Wireless Light Sensor**

- **Wireless Indoor Temperature Humidity Sensor**

# Certification

| Product | Certification |
|---|---|
|  Soil Moisture Sensor | Planning |

# LoRa Gateway RAK831



## Key Features

| | |
|---|---|
| **Computing** | Raspberry Pi3 (Linux) |
| **Frequency** | 433MHz, 470MHz, 868MHz, 915MHz |
| **Interface** | SPI |
| **Transmitting** | 25dBm(Max) |
| **Receiving** | -142.5 dBm(Min) |
| **TRX Indication** | two LEDs to indication the status of TX or RX |
| **Power Consumption** | TX:149mA; RX:211mA; Stand-by :27mA |
| **Distance** | up to 15 km |
| **Dimension** | 92mm x 68.3mm x 53.5mm |
| **Operating Temp** | -40℃ ~ 85℃(industry) |
| **Optional** | GPS receiver |

**Block Diagram**

# Soil Moisture Sensor



## Main Features

- Compatible with LoRaWAN™protocol
- Detect the amount of water in the soil
- Built-in antenna

| Key Features | |
|---|---|
| **Power Supply** | Adapter DC powered(12V/1A) |
| **Working power(max)** | 70mA(detect)，110mA(transmit) |
| **Sensor resolution** | 0.1% vwc in mineral soil<br>0.25% vwc in growth medium |
| **Sensor accuracy** | +-3% VWC |
| **Sensor detect range** | 0-100%VWC |
| **Spread technique** | LoRa®/FSK |
| **Sensor Communication range** | 4km (Line of sight) |
| **Dimension** | 111mm*86mm*42mm |
| **LoRaWAN™ band supported: (Configured before shipment)** | 🌎US915 🌎AU915 🌎AS923<br>🌎EU868 🌎KR920 🌎CN470 |

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