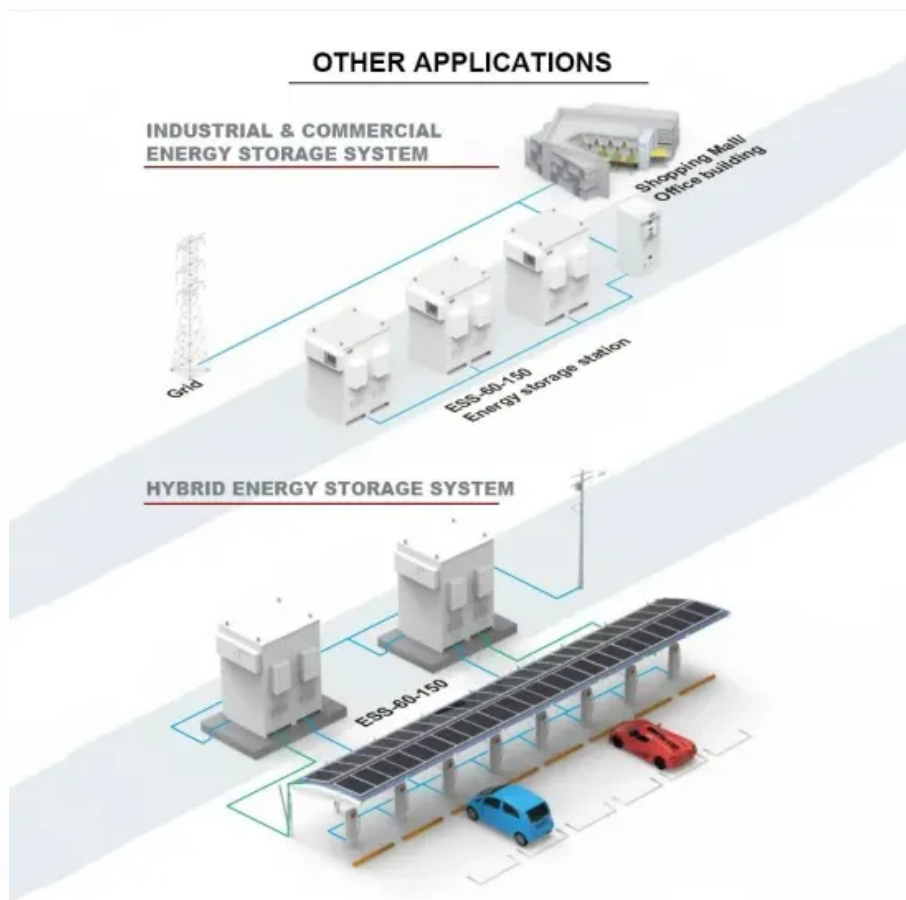**Solar Storage Container Solutions**

Solar powered lora base station

Overview

In this project I show how I built a remote, solar-powered weather station that transmits temperature and humidity readings over LoRa, and a base station that publishes the data to the Internet with MQTT (er, I guess we are supposed to say "cloud" now).How does a Lora module communicate with a weather station?

When the LoRa module receives the JSON message from the weather station, it simply writes the message over the serial UART which is connected to the second board, an IoT Experimenter development board. The IoT Experimenter has an ESP8266 WiFi microcontroller which provides a gateway to the Internet.

What is a solar-powered weather station?

Solar-powered weather station that transmits temperature and humidity readings over LoRa, and a base station that publishes the data.

How does Lora work?

The main goal of this project is to read the weather parameters by using various sensors, process the data through an ESP32, and then transmit them through the LoRa module. The receiver LoRa unit will collect the data from the Sender node and uploads it to the Server for monitoring and analysis purpose.

How does a Lora node work?

In this post we're going to focus upon building a very simple LoRa node device that will take temperature, humidity and pressure readings. The data will flow from the LoRa node, to TTS (via a gateway), where it can then be passed on to another device for storage and reporting.

How much does a Lora module cost?

LoRa modules are relatively cheap (about $8 for a bare module), but the

easiest way to use LoRa is to buy development boards that also have a microcontroller on them. Moteino and Anarduino MiniWireless both have LoRa enabled transceivers that work well and are essentially the same. Each is basically a small Arduino with ATmega328 and LoRa module.

What are the advantages of a Lora network cell?

One more advantage is that one LoRa network cell can connect end devices to hundreds of nodes. The weather station will be fully solar-powered, so no need to worry about the external power supply. You can install it in a remote place without laying long cables to provide power.
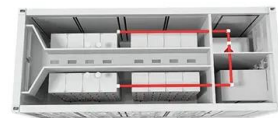
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