

LoRa Power Management

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This report details the update made to an existing solar powered LoRa gateway with the aim of improving system uptime, via enhanced power management, together with redesigning the code base to bring it up to modern standards. The aforementioned update involved replacing legacy hardware from the previous system, and rewriting the existing code base to improve efficiency and maintainability, in addition to allowing customisation of operation parameters. It works as a standalone system, in addition to providing a stepping stone for new ventures into the intersection between the areas of solar power and the Internet of Things.

Solar power is becoming increasingly prevalent as governments and private entities look to move away from the use of fossil fuels towards renewable energy. As this transition is made, solar panel owners will look to optimize the amount of energy generated, in order to achieve maximal efficiency.

The Internet of Things (IoT) is also an area of rapid growth, with the number of IoT-connected devices growing exponentially year-on-year. Accordingly, the number of gateways used to connect devices with the cloud is also growing as increased network capacity is required.