

Use Case

Smart Solar Street Light Solutions

Integrated Wireless Remote Monitoring & Control System for Street Lights.

CHALLENGE

A Smart City MSI M/s. Chandra Electricals from Andhra Pradesh was faced with the challenge of providing integrated wireless solution for Remote monitoring and Control for Solar Street Lights. The solution must continuously monitor the operation of luminaries in centralized monitoring system that helps in reducing the energy consumption, maintenance & manpower cost and increasing efficiency.

SOLUTION

Utthunga provided fully integrated wireless solution for Remote monitoring and Control for Street Lights. The sophisticated solution continuously monitors the operation of luminaries by a centralized monitoring system, which helps in reducing the energy consumption, maintenance & manpower cost and increasing efficiency. The user now can easily monitor and control the Street Lights from a centralized location. The system maintains database to store useful information from each street light. Hence maintaining the system with maximum uptime and continuous monitoring.

SMART SOLAR STREET LIGHT COMPONENTS

- Smart Controller with inbuilt wireless communication
- Smart Gateway
- Remote Management Software

SMART GATEWAY

- Store & Forward
- Secure wireless communication
- In-built cellular modem for uplink
- In-built sub 1GHz modem for downlink
- Low power gateway

SMART CONTROLLER

- Secure wireless communication & IEEE 802.15.4 standard
- Sub 1GHz frequency range which has less interference
- Low power node
- In-build battery fuel gauge with impedance based monitoring
- Automatic network maintenance



REMOTE MANAGEMENT SOFTWARE

RMS gives you the power to monitor, manage and proactively maintain solar street lights securely over the Internet. RMS enables you to set up and change lighting profiles in real-time with dimming, ON/OFF of LED street lights to ensure lighting and optimal power consumption. The software monitors your off-grid street light system day and night and sends alerts when needed to identify issues and deal with problems in real-time. RMS enables collecting, analyzing and presenting this data in a user-friendly and insightful manner.

Data is continuously and securely streamed from smart controller to RMS cloud service. Over 12 different indicators are also sent to the cloud to monitor services maintained by the controller. This data is stored in the Cloud to enable ongoing support, maintenance, and troubleshooting.

FEATURES OF RMS & SMART CONTROLLER

- Controlling ON/OFF/Brightness of Street Lights from RMS
 - City-wise
 - Street-wise
 - Individual Street Light
- User configurable dimming profiles through RMS
- Charts/Graphs which provides Insights & Trends
- Alerts & Notifications
- Secure and authorized access
- Secure Wireless Communication
- Real Time Data:
 - Battery Charging Current
 - Battery Discharging Current
 - Battery Voltage
 - Luminary Status (ON/FF)
 - Harvested Energy
 - Impedance based Battery State of Health (SoH)
 - Impedance based Battery State of Charge (SoC)
 - Temperature monitoring
 - Luminary Brightness Level
 - Solar Panel Voltage
 - Solar Panel Current
 - Consumed Energy
 - Carbon Credits

