



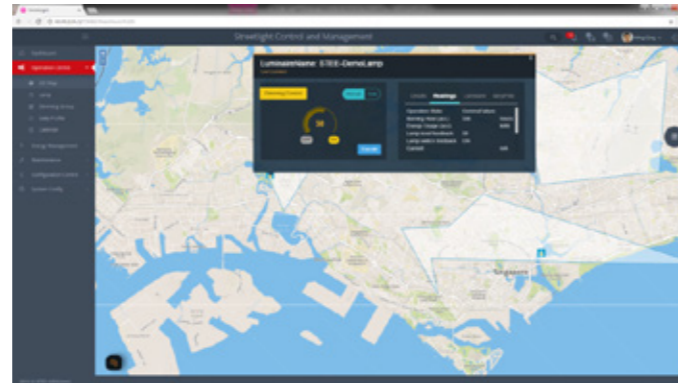
Dashboard view with alert notification, power consumption graph and lighting status

### Future-Proof: Scalable and IoT-Ready

WISX IoT Platform deployed for Smart Street Lighting is a highly adaptable and scalable unified platform. It can easily integrate with other modules or applications and serves as an important platform for cities aspiring to transform with its enhanced value beyond street light management. The interconnected IoT-ready infrastructure can be deployed as a shared network for various smart, connected sensors and devices to deliver other city services such as monitoring of noise levels and video surveillance. It can also be applied to various industry verticals such as public safety and security, intelligent transport, digital healthcare to benefit residents.

### Global Track Record

ST Electronics has a proven track record in deploying more than 15 million wireless sensors and smart solutions that power and transform cities worldwide. Our solutions help to improve street light management, city planning and operational efficiency, resulting in energy savings essential for sustainable and liveable smart cities. Our global footprint covers various countries such as the UK, the US, Canada, France, New Zealand, Israel, Brazil and India.



GIS Map with cluster control of street lightings for dimming or switching on/off

### WISX IoT Solutions

WISX IoT Solutions help smart cities to manage multiple city services on a common platform. The Platform leverages best of breed technologies and standards to facilitate data exchange and analysis as well as generate greater insights for predictive actions to be taken to improve efficiency of city services and operations.

WISX IoT Solutions also include WISX Smart Utilities, WISX Smart Environment Monitoring, WISX Smart Lift Monitoring, WISX Gateway, WISX Communications and WISX Sensor Interface Units.

[www.WISX.io](http://www.WISX.io)

### About ST Electronics

ST Electronics (Singapore Technologies Electronics Limited), is the electronics arm of Singapore Technologies Engineering Ltd, one of the largest public-listed companies on the Singapore Exchange. ST Electronics is a global engineering company specialising in the design, development and integration of advanced electronics and communications systems. Our capabilities are in Rail & Intelligent Transportation; Satellite & Broadband Communications; Info Comm Technologies; Command & Control operations, Training & Simulation; Intelligent Building & Security Systems and Cybersecurity. We have a presence in over 20 countries spanning North America, Latin America, Europe, Africa, the Middle East, China, India and Southeast Asia.

(WISX-Lighting-B1-1)

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# WISX Smart Street Lighting



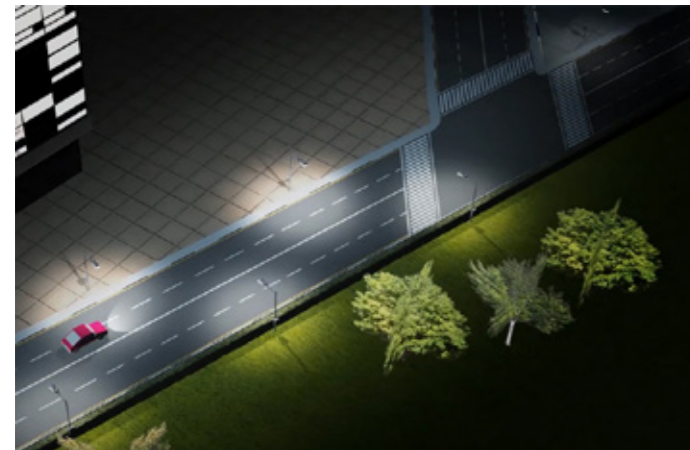
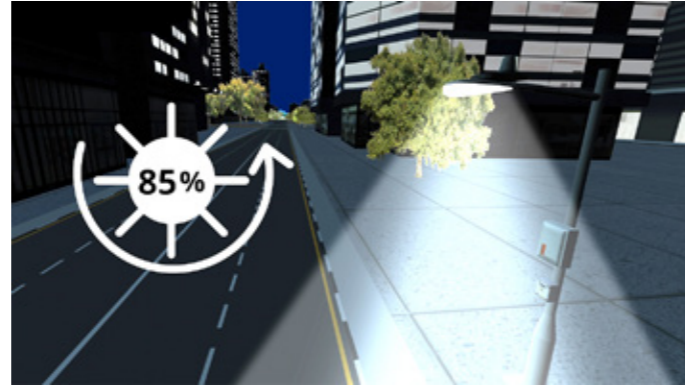


# WISX Smart Street Lighting

Street lighting contributes to an increasingly significant part of cities' energy use and is a growing concern on municipal budgets. As cities move beyond the current progressive adoption of LED outdoor lights to reduce the cost of energy consumption and manpower for maintenance, there is a growing trend to harness smart technologies to explore Internet of Things (IoT) solutions for more sustainable and cost-effective street light management.

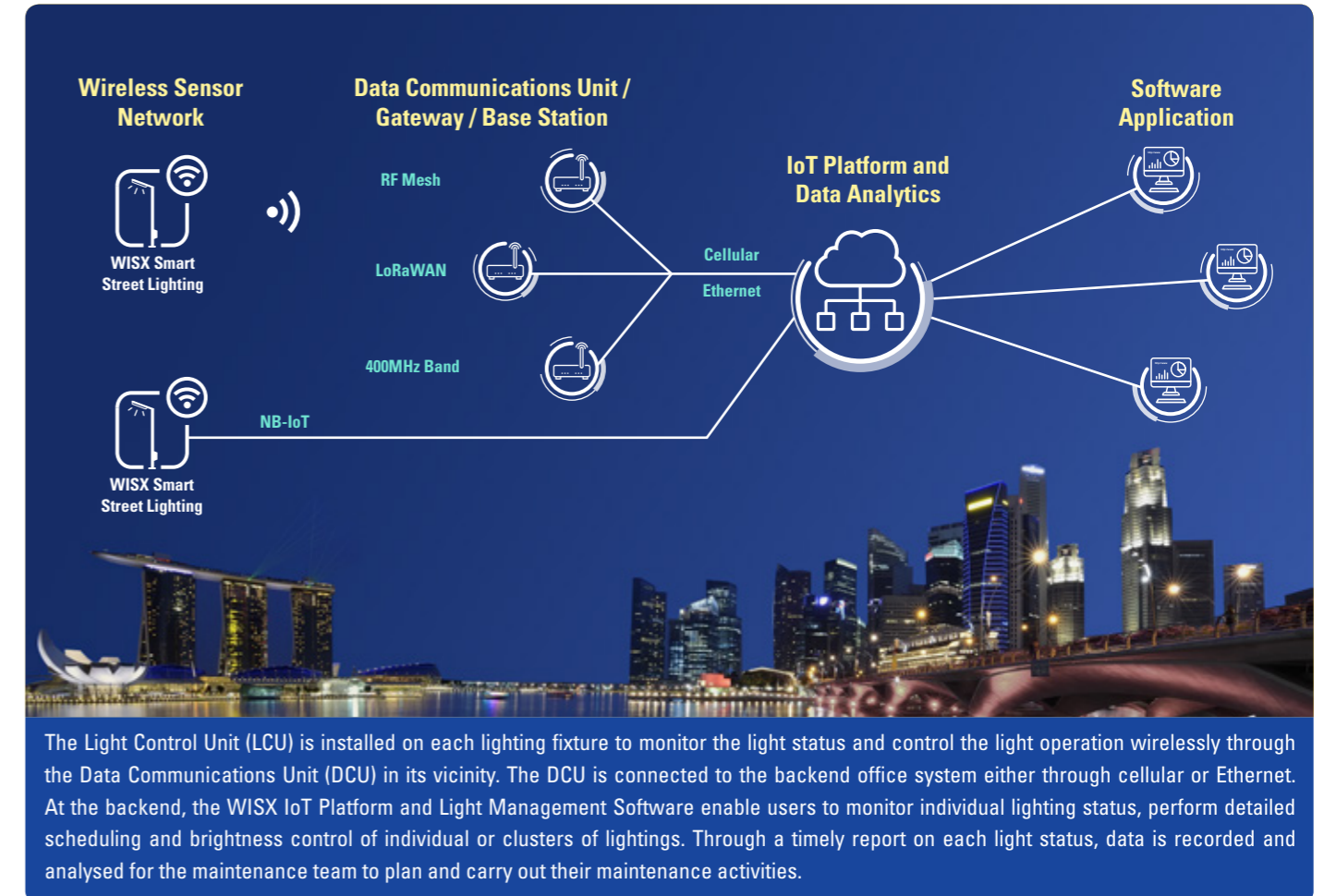
## Smart, Efficient and Proactive

WISX Smart Street Lighting System provides an ideal end-to-end smart city solution on a single platform to deliver full awareness of street lights performance while intelligently monitoring and controlling them remotely in response to varying environmental conditions. It supports automated light management through the use of sensors (e.g. luminosity and proximity sensors), offering a more responsive and efficient maintenance regime with a high rate of availability, reduced downtime and energy consumption. Through this system, data is collected and analysed to better address light faults through enhanced preventive and predictive-based maintenance planning, thus optimising manpower and inventory management.



## Key Highlights

- Unified and Versatile**
  - Supports multiple wireless communications networks on an integrated IoT platform (e.g. LoRaWan, 400MHz Band, RF Mesh, NB-IoT, WiFi-LTE)
- Cost and Energy Savings**
  - Controls and schedules individual or cluster of lights (dimming, switching on or off) in response to varying environmental conditions
  - Integrates LUX sensors to optimise lighting efficiency
  - Reduces cost and time of implementation using industrial standard NEMA sockets
- Enhances Operational Efficiency**
  - Provides status of lighting performance on a real-time basis
  - Supports automated lighting management through feedback from supporting sensors
  - Remote access to lighting performance through software application
- Optimises Maintenance and Resource Management**
  - Automatic fault alert and notification to maintenance team
  - Preventive and predictive-based maintenance planning
- Enhances Security**
  - Secure and robust end-to-end data encryption
- Future-proof and Scalable**
  - Supports future add-ons of street lights and smart city services and applications for various industry verticals (e.g. utilities monitoring, environment monitoring, public safety and security)



The Light Control Unit (LCU) is installed on each lighting fixture to monitor the light status and control the light operation wirelessly through the Data Communications Unit (DCU) in its vicinity. The DCU is connected to the backend office system either through cellular or Ethernet. At the backend, the WISX IoT Platform and Light Management Software enable users to monitor individual lighting status, perform detailed scheduling and brightness control of individual or clusters of lightings. Through a timely report on each light status, data is recorded and analysed for the maintenance team to plan and carry out their maintenance activities.

## Key Components

- Software**
  - WISX IoT Platform
  - WISX Light Management Software
- Hardware**
  - LED light with Driver
  - Light Control Unit (LCU)
  - Data Concentrator Unit (DCU)
  - Network Switch

## Features & Benefits

Features	Benefits
Intuitive software application	Users can access the system anytime and anywhere
Tracking of power consumption over time	Real-time visibility of energy consumption in each power distribution box
Informative dashboard view with real-time monitoring and alert notification	Overview of lighting status to support troubleshooting, repair, maintenance activities etc.
Secure AES 128 or 256 data encryption	Prevents unauthorised interruption during operation
Supports multiple communications networks	Users can deploy any communications network to meet their operational needs
Integrates environmental data into the WISX IoT Platform	Greater flexibility in customising the lighting schedule based on real-time feedback on environmental conditions
Ability to schedule dimming or switching on or off of the lightings	Remote scheduling and control of lighting to reduce energy consumption
Future-proof wireless solution to provide for scalability	Minimal infrastructure cost for future add-ons of new lights or other IoT applications
Integrates with other sensors for various applications such as video monitoring	Provides multiple services and applications for users to better manage, control and optimise resources