



Key Components

- Software
 - WISX IoT Platform
 - WISX Environmental Application
- Hardware
 - Sensor
 - Sensor Interface Unit (SIU)
 - Gateway
 - Network Switch

WISX IoT Suite of Solutions and Products

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 analytics as well as generate greater insights for predictive actions to be taken to improve efficiency of city services and operations.

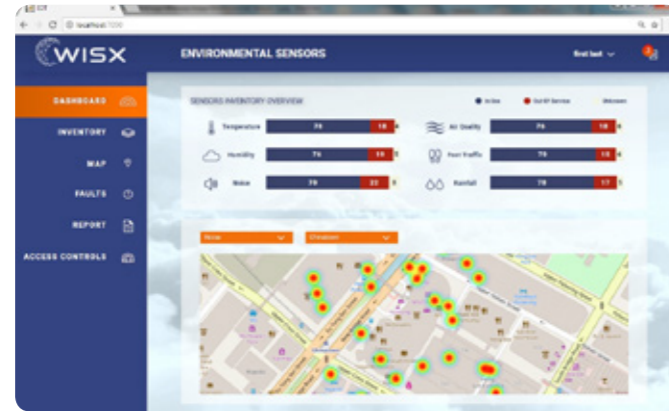
Some of our WISX IoT solutions include

- WISX Smart Street Lighting
- WISX Smart Indoor Lighting
- WISX Smart Energy Resource Management
- WISX Smart Water Resource Management
- WISX Smart Environment Monitoring
- WISX Smart Waste Management
- WISX Smart Lift Monitoring

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Future-Proof: Scalable and IoT-Ready

WISX IoT Platform deployed for Smart Environment Monitoring is a highly adaptable and scalable unified platform. It easily integrates with other modules or applications and serves as an important platform for cities aspiring to transform by offering enhanced value beyond environment monitoring. The interconnected WISX IoT-ready infrastructure can be deployed as a shared network for various smart connected sensors and devices to deliver other city services (such as street light management and CCTV monitoring) and functionalities for various industry verticals (such as public safety and security, intelligent transport, etc.) to benefit its residents.



Dashboard view of status of all environmental sensors to make more informed decision to enhance city management



Dashboard view with bin sensors status and location detail, for more efficient and optimised cleaning schedule

Global Track Record

We have 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, Brazil and India.

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ST Engineering Electronics Ltd.

100 Jurong East Street 21, Singapore 609602
 T: (65) 6567 6769 • F: (65) 6567 6300 • E-mail: mktg.infocomm@stengg.com
www.stengg.com



Smart Environment Monitoring



WISX Smart Environment Monitoring

Major environmental changes can have hazardous effects on cities and its residents. It is important to leverage smart technologies and Internet of Things (IoT) to constantly monitor, productively manage and proactively control environmental sensors to help city operators to respond quickly and decisively to changes in the environment, thus ensuring a comfortable, safer and liveable city for its residents.



Smart, Efficient and Proactive Key Highlights

WISX Smart Environment Monitoring System provides an ideal end-to-end smart city solution on a single platform. It enables remote monitoring of every aspect of the environment and gives an intuitive overview of the environmental sensors for easy and efficient management. It also provides alerts to city operators on changes in the environment to make more informed city planning and increase overall maintenance productivity. The collected data can be analysed to develop preventive and predictive maintenance regimes to raise overall service delivery standard for residents. The WISX Smart Environment Monitoring System comprises the following solutions:

- Environment Monitoring (Air quality, weather, toilet and flood)
- Noise Pollution Monitoring
- Waste Management
- Rodent Detection and Capture



- **Unified and Versatile**
 - Supports multiple wireless communications networks on an integrated IoT platform (e.g. LoRaWan, NB-IoT and 400MHz Band)
 - Provides universal Sensor Interface Units (SIU) that are compatible with many third party sensors
- **Enhances Operational Efficiency**
 - Provides real-time status of sensor performance
 - Real-time monitoring and alert system to monitor different aspects of the environment
 - Remote access to sensor performance through intuitive application
- **Optimises Maintenance and Resource Management**
 - Automatic fault alert and notification to maintenance team
 - Preventive and predictive maintenance
- **Enhances Security**
 - Secure and robust end-to-end data encryption
- **Future-Proof and Scalable**
 - Supports future add-ons of sensors and smart city services and applications for various industry verticals (e.g. smart street lighting, utilities monitoring, lift monitoring, public safety and security)



	Features	Benefits
General	<ul style="list-style-type: none"> • Intuitive application • Informative dashboard view with real-time monitoring and alert, and notification • Supports multiple communications networks • Secure AES 128 or 256 data encryption • Future-proof wireless solution to provide for scalability • Provides up to 10 years of battery life for the meter interface unit* 	<ul style="list-style-type: none"> • Users can access the system anytime and anywhere • Overview of sensors operational status to support troubleshooting, repair, maintenance activities, etc. • Users can deploy any communications network to meet their operational needs • Prevents unauthorised interruption during operation • Minimal infrastructure cost for future add-ons • Minimises maintenance cost for adopting wireless solution
Air Quality Monitoring	<ul style="list-style-type: none"> • Real-time monitoring of PM2.5 level and CO2 level • Analyses and predicts the trend of PM2.5 and CO2 level using historical data 	<ul style="list-style-type: none"> • Regulates air pollution in areas that exceed national level • Provides web-based advisory for outdoor activities • Better prepared for preventive measures (air purifier and issue mask)
Weather Monitoring	<ul style="list-style-type: none"> • Shows heat map of specific area and sends alert if temperature is above threshold • Real-time monitoring of wind speed and direction, air pressure, air temperature and humidity • Analyses and predicts the trend of wind direction and speed using historical data 	<ul style="list-style-type: none"> • Adjusts temperature of air conditioner for respective area • Serves as an alternative source to improve the accuracy of weather forecasting • Provides estate builder optimal positioning of building • Enables agencies and wind farmers to make more informed decision on the locations and positions of wind turbines

*Depends on sending interval and sensor power consumption

	Features	Benefits
Rodent Detection and Capture	<ul style="list-style-type: none"> • Real-time location of rodent traps with built-in GPS • Real-time alert when rodent is caught • Analyses and pinpoints potential locations of infestation using historical data 	<ul style="list-style-type: none"> • Reduces manpower deployed to locate rodent traps • Takes necessary action before rodent decomposes • Reallocates rodent traps to highly infested areas; reduces cost of hiring pest controllers
Waste Management	<ul style="list-style-type: none"> • Real-time location of bins with built-in GPS • Real-time monitoring of bin level and positioning of bin lids • Analyses bin usage pattern using historical data 	<ul style="list-style-type: none"> • Reduces manpower deployed to locate bins and repositions them to optimise resources • Reduces manpower by optimising route planning to collect from bins that are full • Reallocates more bins to high usage areas to reduce time wasted in cleaning up overflowed bins
Noise Detection and Pollution Monitoring	<ul style="list-style-type: none"> • Detects abnormal loud noise in construction area • Detects abnormal loud noise in residential area at night • Detects abnormal loud noise in common areas 	<ul style="list-style-type: none"> • Better regulates noise pollution in construction area • Tracks down noise pollution in residential area • Serves as an alternative source for crisis management especially for areas with no CCTV coverage
Toilet Monitoring	<ul style="list-style-type: none"> • Real-time tracking of odour level • Real-time tracking of usage (availability of cubicle and number of users) • Analyses usage pattern using historical data 	<ul style="list-style-type: none"> • Plans cleaning schedule based on real-time toilet condition to optimise service level • Saves waiting time for users who can choose to use a less crowded toilet • Reduces cost of inventory (e.g toilet paper, soap) with predictive inventory planning • Schedules cleaning based on less crowded period • Optimises manpower deployment based on toilet usage
Flood Level Monitoring	<ul style="list-style-type: none"> • Real-time monitoring of sewage water level and water flow • Analyses water level and water flow pattern using historical data 	<ul style="list-style-type: none"> • Directs water to less congested area to prevent flooding • Makes more informed decision making on infrastructure building to prevent future flooding

