Smart Streetlight Control and Management System (LCMS™)

Brighten the City with the Right Light
The Next Generation of Intelligent Lighting Control
Enlighten City Extraordinary Luminance and Unlock the Connected Future

Commitment to protecting the environmental sustainability is an essential element of everyday city infrastructure. National sustainability has become one of the key policies reinforced by worldwide countries to slow down the global warming crisis and the creature extinction. We combine lighting control with an intelligent cloud computing platform to form Billion Streetlight Control and Management System - Smart Outdoor LCMS™, the future of lighting management that shines the city with exceptional luminaires and discovers a sea of opportunity for energy conservation.

Create a Sustainable future with IoT Technology

Through connecting existing lighting control system to IoT technology, the city not only can drastically reduce manpower and maintenance costs, but also save more than 70% of energy consumption per year. We enhance the traffic management for rural roads, urban streets, and industrial pave with improved visibility to protect drivers’ safety.

Hybrid Communication Intelligence

We combine broadband wireless, mobile broadband 3G/4G LTE, and broadband powerline communication (PLC) to transmit monitoring data of an extensive range of streetlights without distance limitations.

Energy-Saving, Better Payback Time

A user-defined scale with ten brightness dimming levels allows administrators to maximize the efficiency of every luminaire, which significantly contributes to the reduction of CO2 and energy dissipation, and helps to diminish light pollution and to slow down rapid climate change.

Versatile Cloud-Based Management

The cloud computing platform integrated with complex performance analysis grasps the real-time luminaire status of different streetlights in a configuration report. Through monitoring streetlight performance 24/7 and delivering immediate facility failure alarms, Billion LCMS™ automatically notifies critical power outages, streetlight abnormalities and further prevents traffic incidents and crime rate happening.

Automation & Sensory Integration

Integrated with ambient streetlight sensor, Billion LCMS™ can effectively control the streetlight activities through adjusting brightness by environmental luminance, temperature & humidity and motion activities by corresponding to different outdoor scenarios.
Expedite Urban Development and Bring Your City into A Leading Role

Government

Billion LCMS™ enables lower lighting expenditure with smart multi-level dimming functionality by adjusting streetlight brightness based on sunlight illuminance level and time period setting on the web interface. Therefore, the government can better allocate the municipal budget into other infrastructure development including roads, railways, telecommunications, and power facilities.

Citizen

We help city prosper by revitalizing neighborhoods, attracting visitors and ensuring residents and tourists’ safety with superior lighting control. By integrating with street light, smart lighting control, sensory devices, IP-camera and communications, Billion LCMS™ effectively deters crime and improves traffic safety while making the city a valued destination in better living quality and ensuring best lighting experience for citizens.

Maintenance Team

Combining barcode scanning and GPS technologies, Billion LCMS™ installer App allows technicians to pinpoint the location of the installation site and access the detailed information of each lighting equipment in real-time to further shorten the O&M (Operation & Maintenance) process and streamline management flow.
Create Extraordinary Tomorrows for the Planet and Our People

Billion LCMS™ acts as a state-of-art intelligent lighting control system and the safeguard of our ecosystem by delivering a better system payback time, optimal streetlight energy efficiency, and less utility pollution. Whether it is a single or scattered groups of streetlights, administrators can effortlessly review on-hand illumination statistics, operational streetlight status, and power consumption data. Colorful icons identify and label streetlight fixtures that are either overheated or undiscovered in through management reports to maximize the speed of facility repair and to receive instant service failure notifications.

**LCMS™ System Architecture**

Suitable for parking lot / campus / industrial park / street lighting applications
LCMS™ System Components

**Billion SG7500**
Intelligent Power Line Street Lighting Control Box
- Communicate over AC power line
- Remote lighting switch on/off functionality
- Dimming adjustment 10% ~ 100%
- Measure AC output for - Voltage
  - Current
  - Power Consumption
- Compact and modest model size
- IP-65 compliant rugged design for high level of protection against dust and water

**Billion SG7501**
Intelligent Power Line Street Lighting Control Box
- Communicate over AC power line
- Remote lighting switch on/off functionality
- Dimming adjustment 10% ~ 100%
- Measure AC output for - Voltage
  - Current
  - Power Consumption
- Compatible with ANSI C136.41 Standard
- IP-65 compliant rugged design for high level of protection against dust and water

**Billion SG7510**
Broadband Powerline Smart Streetlight Segment Controller
- 3G/4G broadband mobile network backhaul.
- With internal RTC incorporating with NTP for accurate timing control.
- In-built timing schedule enabling off-line data collection.
- Browser-based lighting management configuration allows multiple user access.
- Embedded Ethernet connector for IP-based applications.

**Billion SG7530**
Broadband Powerline Smart Streetlight Wireless Bridge
- Reduce the number of segment controllers.
- Embedded Ethernet connector for IP-based applications
- Based on 802.11b/g/n with DES, 3DES, AES Data encryption
- Support WiFi mesh network

**Billion SG1300**
LCMS Surge Protection Device
- Max Load Current: 4 Amp
- Nominal Discharge Current: 5KA (10 * 8/20us waveform)
- Max. Discharge Current: 10KA (1 * 8/20us waveform)
- Protection Level (1.2/50us):
  - Differential Mode (Line to Neutral): 10KV
  - Common Mode (Line to Earth & Neutral to Earth): 10KV
- Compact and modest model size
- IP-67 compliant rugged design for high level of protection against dust and water

Environmental Sensors

**Temperature and Humidity Sensor**
- Water/weather resistance, convection design
- Easy-to-install mounting plate for sensor
- Suitable for outdoor monitoring

**Ambient Light Sensor**
- Total daily uncertainty of only 2%
- Fast response time
- Requiring high-end accuracy and reliability.
Dynamic Functional Configuration to meet your streetlight management requirement

We provide a convenient platform for administrators to monitor and command a series of complicated, time-sensitive dimming instructions at only one fingertip away. Billion LCMS™ represents a revolutionary IoT lighting control system customized for your specific streetlight operational demand.

Real-Time Data Tracking and Analysis
The information of individual streetlight including current, voltage, and total power consumption on daily, monthly, and yearly basis can be easily reviewed through a browser-based portal to enable a centralized streetlight management.

Manage Streetlight Without Boundaries
Integrated with Google, Bing, ArcGIS, Open Layer (Open Street) map display, Billion LCMS™ allows the administrator to oversee multiple streetlight networks and access detailed information of each streetlight via both online and offline modes.

Remote Troubleshooting to Identify the Location of Abnormal Streetlight
Through the embedded map function, the system can pinpoint the malfunction streetlight and deliver troubleshooting alarms via email/SMS for real-time status tracking and diagnosis, which enables an ever-efficient streetlight management and maintenance for administrators.

Achieve Environment Sustainability through Advanced Dimming Options
The system provides a user-defined table with ten dimming options, energy saving configurations, and automatic on/off control for a single or a group of geographically scattered street lamps. The administrator can also set up multiple dimming instructions based on local sunrise and sunset schedules, which can save up to 80% power consumption.
We also provide Billion LCMS™ Cloud-Lite integrating Billion streetlight management system into a portable computing device, which allows the administrator to use a local server to better manage critical information with more flexibility.

**System Key Features**

- Monitor and analyze the current, voltage, and power consumption information of different segments of street lights.
- Effortless hardware installation through direct controller deployment in the lighting poles.
- Convenient use of on-the-ground BPLC (Broad band Power Line Connection) which diminishes the need of holes digging on the existing lighting fixture.
- Detailed energy saving report generation. No rewiring required.
- Secured, encrypted data transmission compared to wireless technology through enhanced VPN and IPSec technologies.
- Valued-Added Smart City applications integration including camera security, environmental sensors, WiFi Hotspot, metering, public signage, etc.
- Intelligent control, energy saving, and automatic dimming based on regional sunrise and sunset schedule to increase energy saving 30% +.

Suitable for small field / POC (Proof-of-Concept)
About BILLION

BILLION Electric Co., Ltd. (www.billion.com, Taiex: 3027, trading as Billion) is a leading global information and communication technology (ICT) solutions provider. We enhance life and communication efficiency through a better-connected world, acting as a responsible corporate citizen, an innovative enabler for the information society, and a collaborative contributor to the industry. BILLION’s over 900 employees worldwide are committed to creating optimal value for telecom operators and determined to pursue the position of industry vanguard by providing our current and future customers the highest quality of technology outputs.

www.billion.com

Billion Products and Solutions

Power
Ranging from transformers, in-home and in-building broadband power-line accesses, adapters to switches, BILLION presents its solid expertise in the manufacturing of a variety of AC/DC switching power supply equipments for worldwide clients.

LED Drivers | Smart Lighting
To create an extraordinary lighting experience, BILLION provides a rich selection of outdoor and indoor LED drivers both purposed for high-efficiency and high-performance, as well as integrates cloud monitoring technology to build a comprehensive indoor and streetlight control management system.

Communication
BILLION also has a strong R&D team dedicated to the development of a complete portfolio of advanced network communication products, including Fiber, xDSL, Cable, 3G, 4G LTE, and M2M broadband networking CPE.

Smart Energy | Smart Grid
Bridging the in-depth knowledge of power and network communication, BILLION builds sustainable energy saving solutions to help industrial, commercial, and residential users in reducing utility overhead while maximizing asset management.