

2009 Guangdong/Hong Kong Technology Corporation Scheme

LED Lighting Electronics with Remote Monitoring and Control

LED 照明及其遙控所需之電子集成線路

1. Theme

LED Lighting Electronics with Remote Monitoring and Control

2. Background

Solid State Lighting (SSL) using LEDs will dominate lighting market in the years to come due to its power efficiency, long life-time, and other advantages. Many cities in the world started to change street lights with ones implemented with LEDs. Some of them require remote monitoring and controlling these LEDs from a central station. At office buildings and homes, use of LED based lighting in existing electrical infrastructure with remote control enables significant energy and cost savings. We solicit proposals to develop LED drivers integrated with wireless transceivers (such as Zigbee or Z-Wave) to be used in a meshed network for street, enterprise, and resident lighting applications.

3. Objective

The objective of the proposed theme is to develop cost-effective LED drivers with remote monitoring and control features and relevant functions for city, enterprise, and home lighting applications.

4. Research Tasks and Targets

Research Tasks:

- (1) high-efficiency LED drivers,
- (2) low-power wireless transceivers for a meshed network,
- (3) thermal management electronics,
- (4) a system solution for central control.

Research Targets:

The target of the research theme is to investigate and implement approaches that fully utilize LED advantages for these applications and deliver the following items:

- (1) an architecture design of system solution,
- (2) a single chip IC that integrate LED drivers, wireless transceivers, thermal management electronics, and interface ports,
- (3) a prototype demonstration.

5. Benefits to Businesses and Institutions

Successful implementation of the research results will benefit all people in Hong Kong. The Hong Kong Government will save cost of electricity and maintenance of street lights. The enterprises and residents will save this cost for offices and homes, respectively. Remote monitoring and control LED lights enhance operation efficiency and save time. Additionally, the project contributes to slowing down global warming.

6. Enquiry

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