CM4-05  Wireless LED Panel/Network Controlling System

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A networked lighting network (by LED) such as different buildings with lighting decoration in the Victoria Harbour, that the patterns of the light of each building could be controlled by a wireless notebook computer using the Wireless LAN standard. Such system can be used in many theme parks such as Disneyland and other applications. Setting up the lighting network would be more convenient by using wireless.

The main objective of this project was to develop a wireless platform to control the lighting system in order to make the system becoming more efficient and provide a more convenient way to control and configure the system.
Advantages

The system connected to an embedded system which was used to receive the signal. No wire connection was needed indoor. User could change all the settings of the system by using a wireless notebook computer on the ground floor instead of going upstairs and use the computer which was connected to the system. Moreover, several lighting system could be controlled by one notebook computer. These lighting systems could cooperate with others to flash and produced a wonderful scene. This was hard to implement by using wire because connecting the lighting system of several buildings needed extremely long wire and the cost was huge.

Methodology

Wireless Development board is used to develop a new system for replacing the original wire. And a software is implemented in mobile side computer which use for configure the LED light pattern in the host side. Whole system in host side is controled by the 8051 miroprocessor. So, the host side become a embedded system which have a automatic control function.
RESULTS

1. Develop a communication protocol to communicate between the designed pattern to the lighting hardware

2. Apply a network communication protocol into the lighting system treating each light source as a network node

3. Develop a software to program the lighting pattern of the light sources in the network