**MICRO CONTROLLER BASED WIRELESS MATCHBOX WITH DIGITAL LANTERN**

**ABSTRACT**

The project aims in designing a system which is capable of dimming operation wirelessly. The project makes use of RF technology for communication between two systems.

RF Communication ranges in between 30 KHz to 300 GHz. RF communication works by creating electromagnetic waves at a source and being able to pick up those electromagnetic waves at a particular destination. These electromagnetic waves travel through the air at near the speed of light. The wavelength of an electromagnetic signal is inversely proportional to the frequency; the higher the frequency, the shorter the wavelength.

The controlling device of the whole system is Microcontroller. The project has two Microcontroller based systems which are communicating through RF medium. Intensity controlling device is interfaced to Microcontroller which gives variable voltage to controller as input and this transmitted through RF transmitter interfaces to it. This will be received by the RF receiver at lamp and fed this to Microcontroller which varies the

intensity of lamp using PWM (Pulse Width Modulation) present in the Microcontroller. The whole task is achieved by a set of instructions present in the Microcontroller which are programmed using Embedded C language.

**Features:**

1. Aims at energy conservation.

2. Provides user friendly intensity control unit.

3. Wireless data transmission.

**BLOCK DIAGRAM UNIT:**

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