

# Wireless dimming control technology of induction lamp in energy efficient lighting

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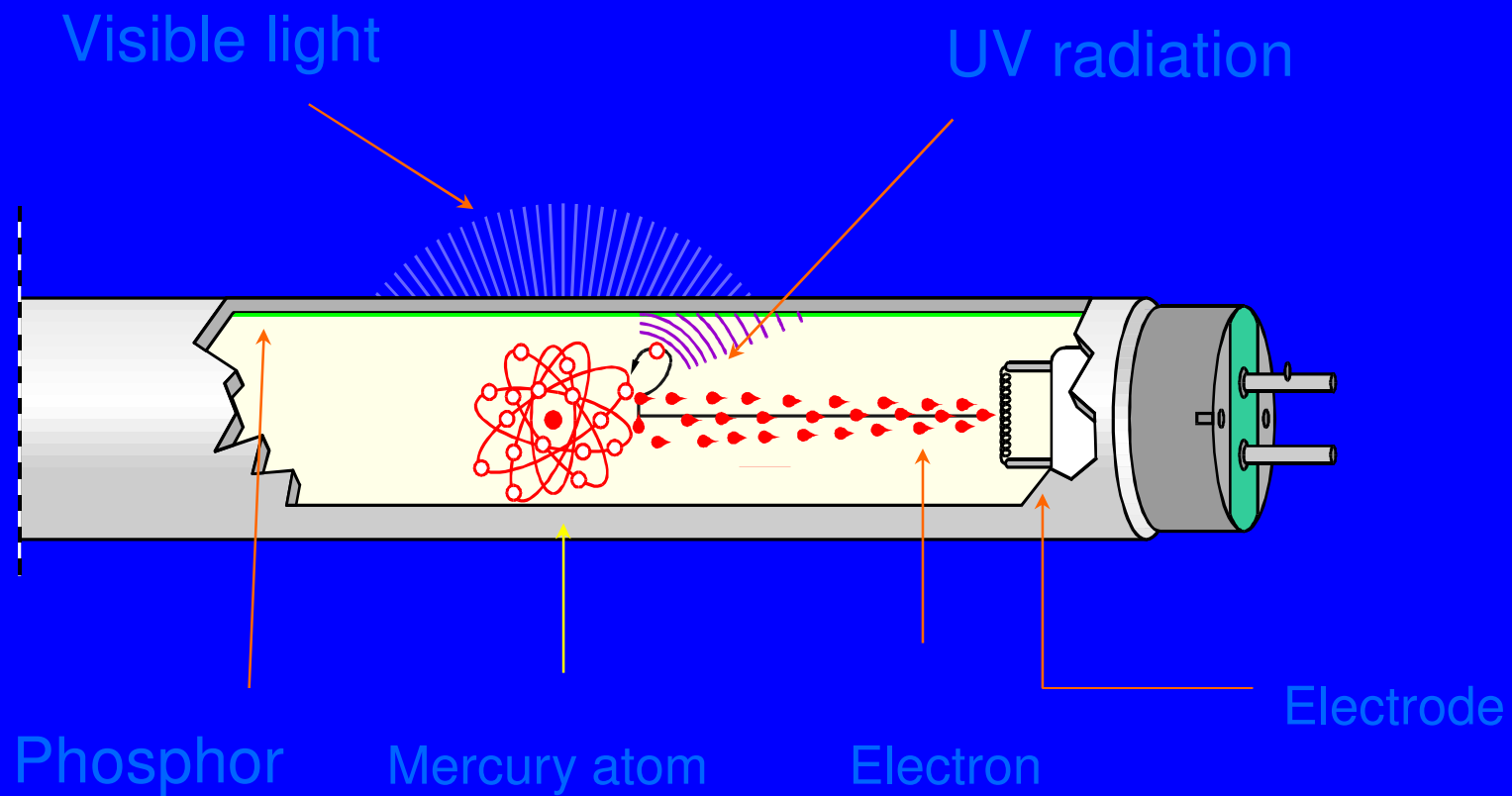
Shanghai Hongyuan Lighting &  
Electric Equipment Co. Ltd

## Why wireless dimming?

- For the energy efficient lighting retrofits
  - reduce the wires
  - protect the existing decoration
  - convenient operate

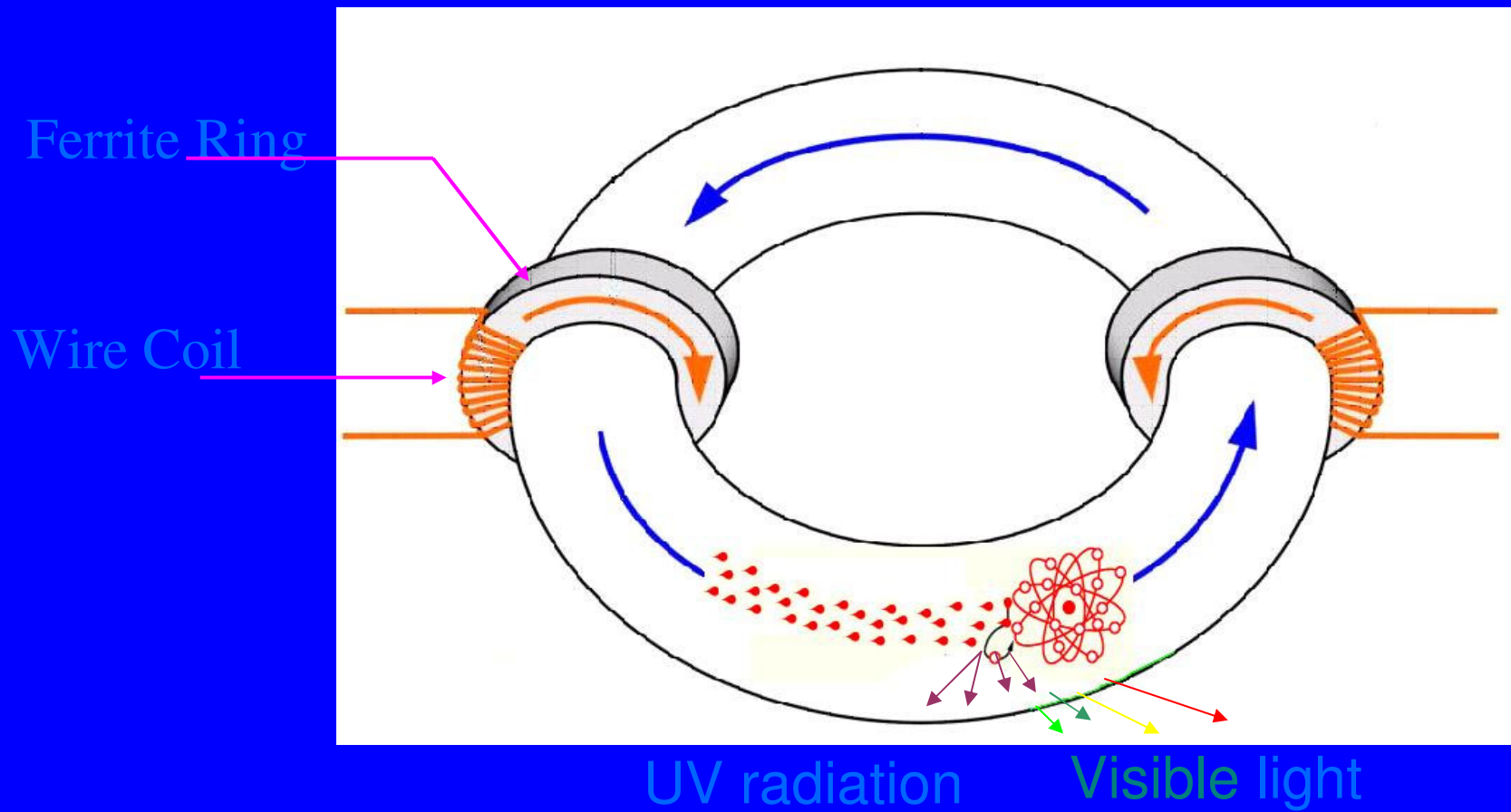
## 2. Dimming of the lamp

### Traditional Fluorescent Lamp



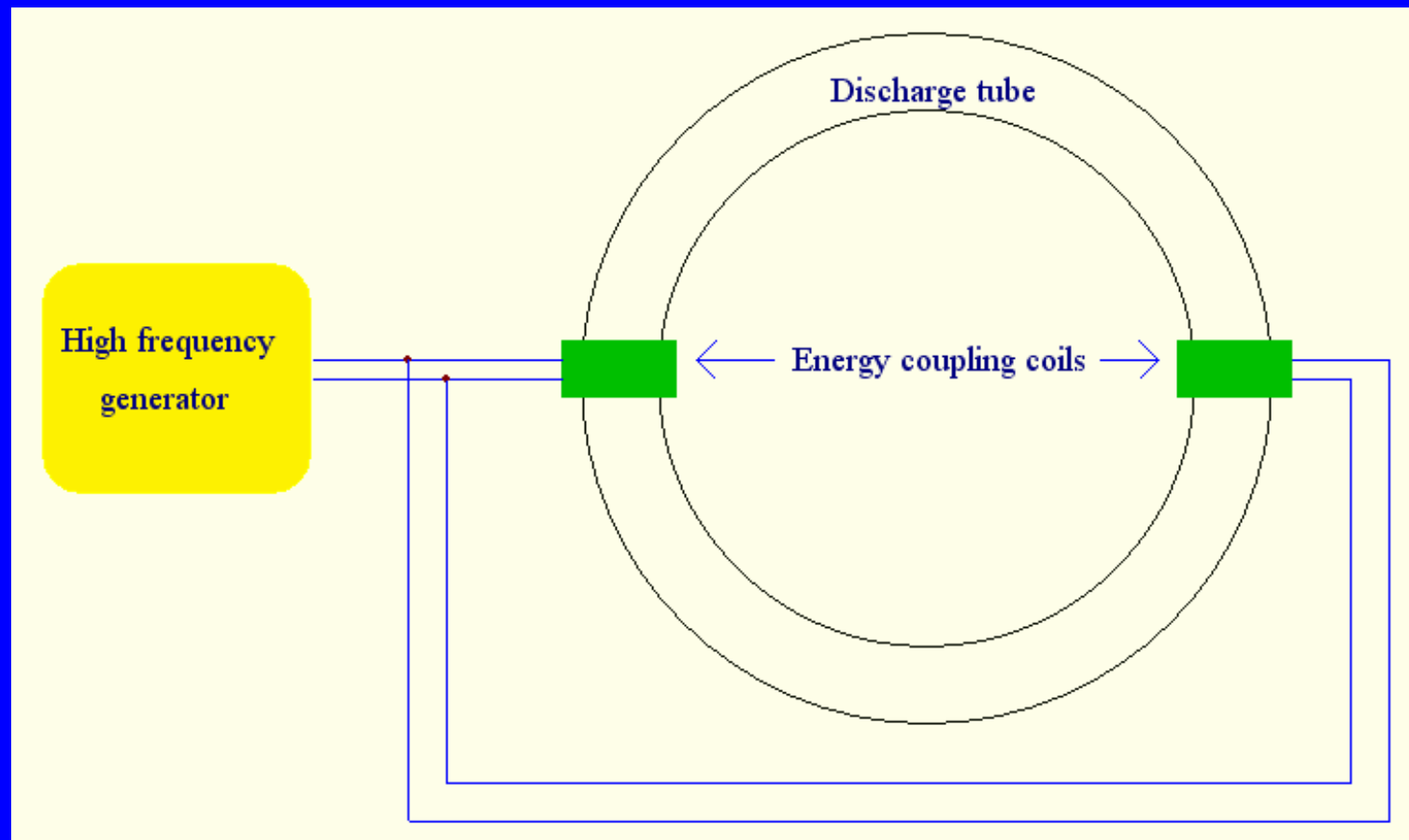
## 2. Dimming of the lamp

### Induction Lamp



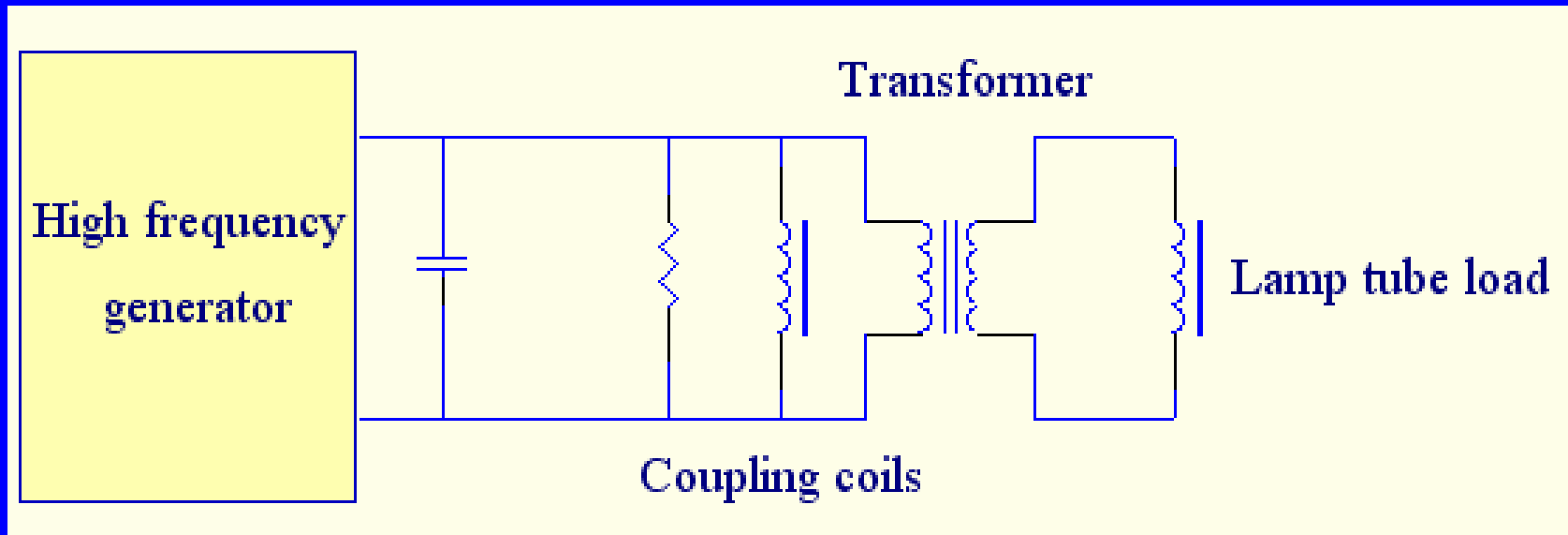
## 2. Dimming of the lamp

The lamp circuit



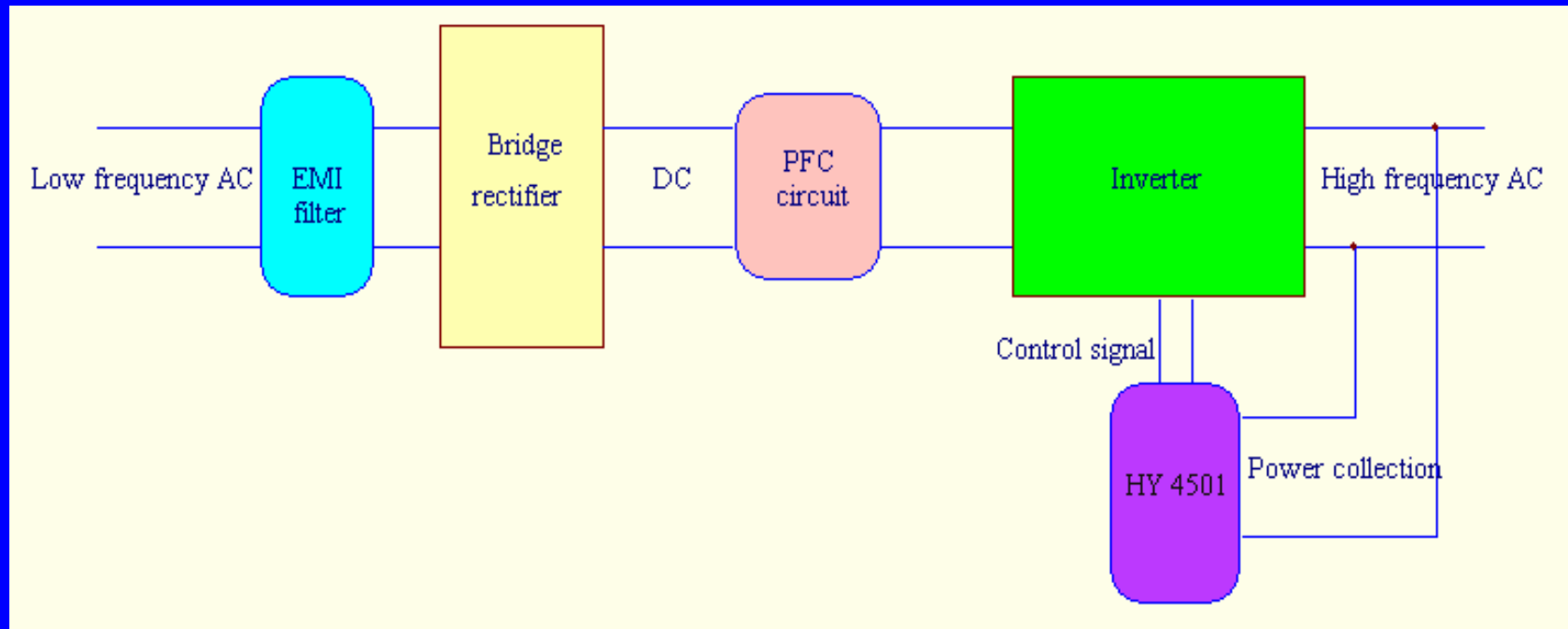
## 2. Dimming of the lamp

Energy transfer model



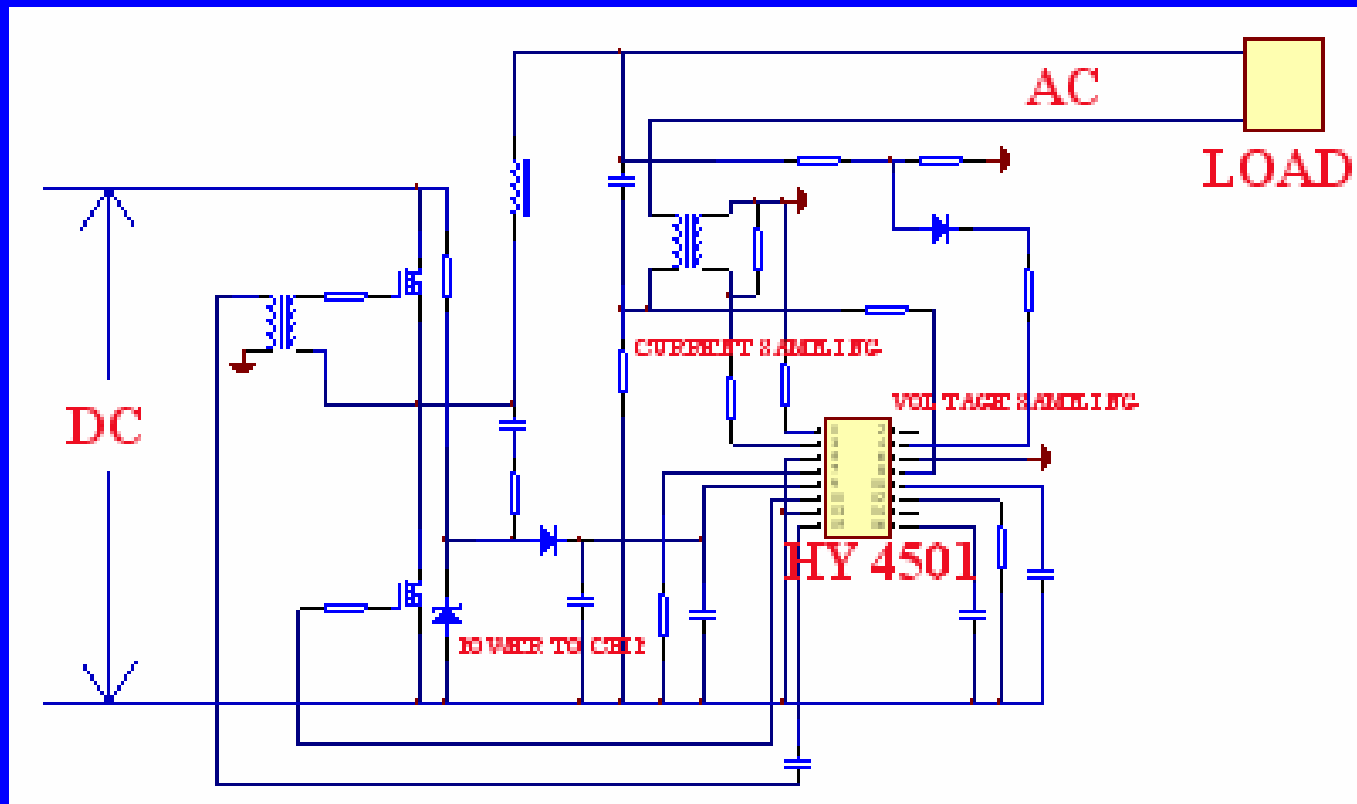
## 2. Dimming of the lamp

The high frequency generator



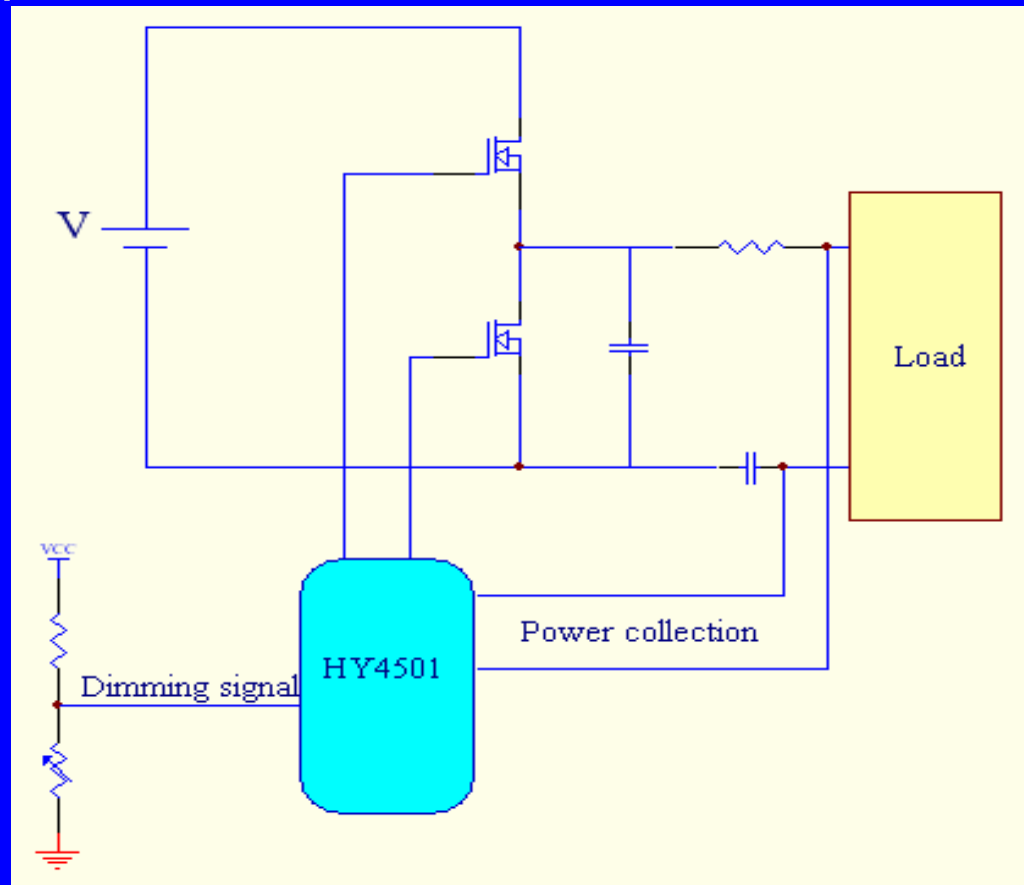
## 2. Dimming of the lamp

The inverter circuit



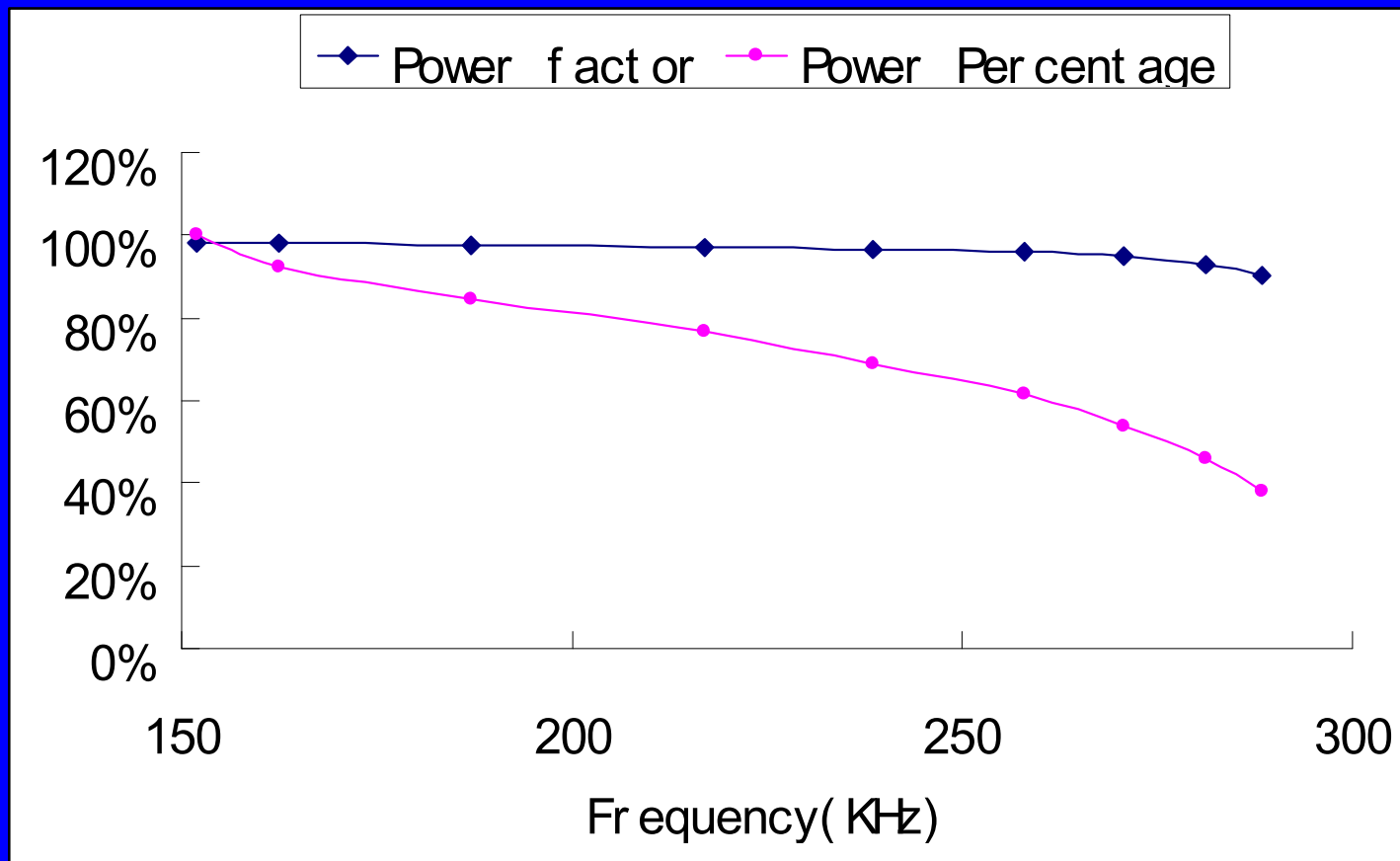
## 2. Dimming of the lamp

The simplified circuit



## 2. Dimming of the lamp

### The variation with frequency



## 3. Wireless technology

- Some solution for wireless
  - Infrared solution
  - Cable synchronizing
  - Bluetooth solution

## 3. Wireless technology

- Infrared solution
  - television remote control systems
  - a standard called IrDA(Infrared Data Association)
  - a digital mode
  - reliable and cheap
- "line of sight" technology
- "one to one" technology

### 3. Wireless technology

- Cable synchronizing

PDA using a valuable tool

semi-wireless :the correct cable or cradle to connect

### 3. Wireless technology

- **Bluetooth** solution
- The hardware a very small radio module
- **wireless**
- **inexpensive.**
- **No worry**

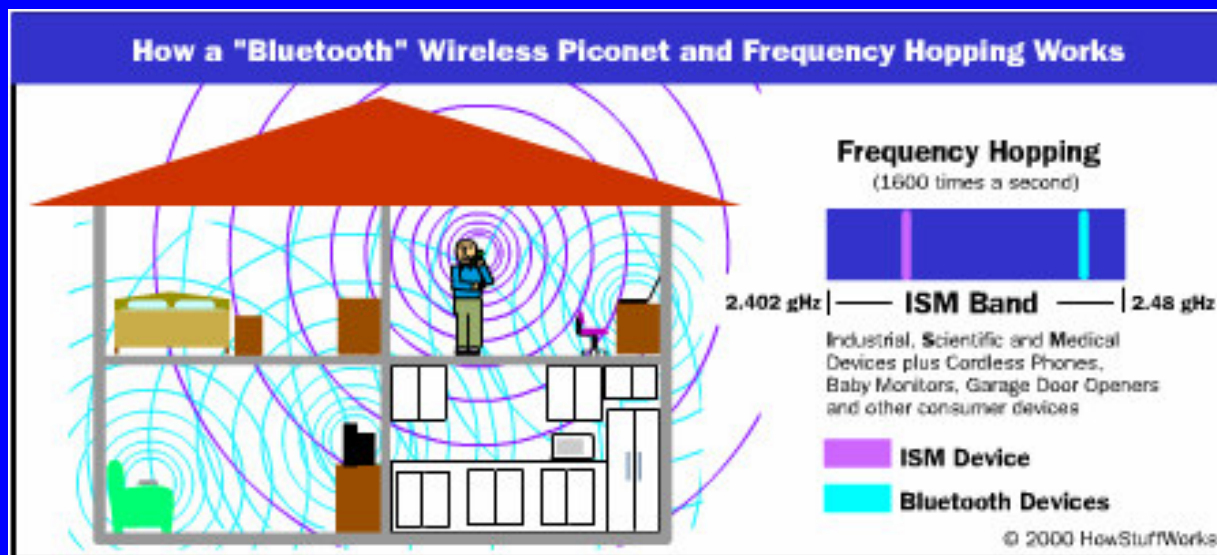
### 3. Wireless technology

- Bluetooth Frequency is **2.45 gigahertz** in ISM band.
- Baby monitors, garage-door openers and the newest generation of cordless phones use this ISM band.



## 3. Wireless technology

- Avoiding Interference:
- spread-spectrum frequency hopping.
- Lower power



## 3. Wireless technology

- The solution

## 4. Application prospect

- It can be used in Daylighting system
- It can be used in EMC project

**Thank you!!!**