



LoRa enabled Street Light Controller (LCU) (with E-Meter)

Model: LoRa®

Technology: LoRaWAN® sensor based

Communication: Wireless

Datasheet 1.0

Technical SSTPL

**Technical SSTPL Sehaj Synergy Technologies
Pvt. Ltd.**

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1. Brief Description

LoRa Enabled Street light controller is having feature to control streetlight through ambient light, commands, scheduling etc. With these features this retrofit street light controller makes streetlight smarter. This controller has LoRa module, through which it makes two-way communication. Gateway will work as a mediator between Streetlight controller and LoRa network server. This controller has unique MAC address which is unique identifier as well.

1.1 Features

1. 90-240V power supply.
2. 120 Watts max load capacity.
3. Surge protection.
4. RTC based scheduling.
5. Light dimming.
6. Weather based Ambient Light(optional).
7. On/Off Scheduling
8. Power failure alert (optional).
9. Energy parameter (KWH, voltage, current, KW, Frequency, power factor)
10. Manually On/Off and dimming through commands

1.2 Applications

1. Smart Lighting

2. Image of LoRa Enabled Street light Controller



125mm*120mm*75mm.

3. Specification LoRa Device

| Parameter | Range |
|-----------------------|---|
| Frequency range | 865 to 867 MHz |
| Modulation | LoRa® Spread-Spectrum |
| RF output power | Up to 20 dBm |
| Receiver sensitivity | -137 dBm (SF 12; SB 125 kHz, CR 4/6) |
| RF data rate | 0.24 to 5 kbps |
| RF range | up to 5000 m (line of sight) |
| Operating voltage | 3 V to 3.7 V, Separate 5V option |
| Current consumption | < 10 μ A (module in sleep, RTC running) 23 mA (Rx) 123 mA (Tx mode) |
| Operating temperature | -40°C to +85°C |

4. SOFTWARE DESCRIPTION

4.1 ON, OFF and Dimmer Operation

- **ON and OFF operation**

Micro Controller STM32 assigned for ON & OFF operation of streetlight through relay. Deviated pin initialize as pull-down, extremely high frequency & output push pull mode.

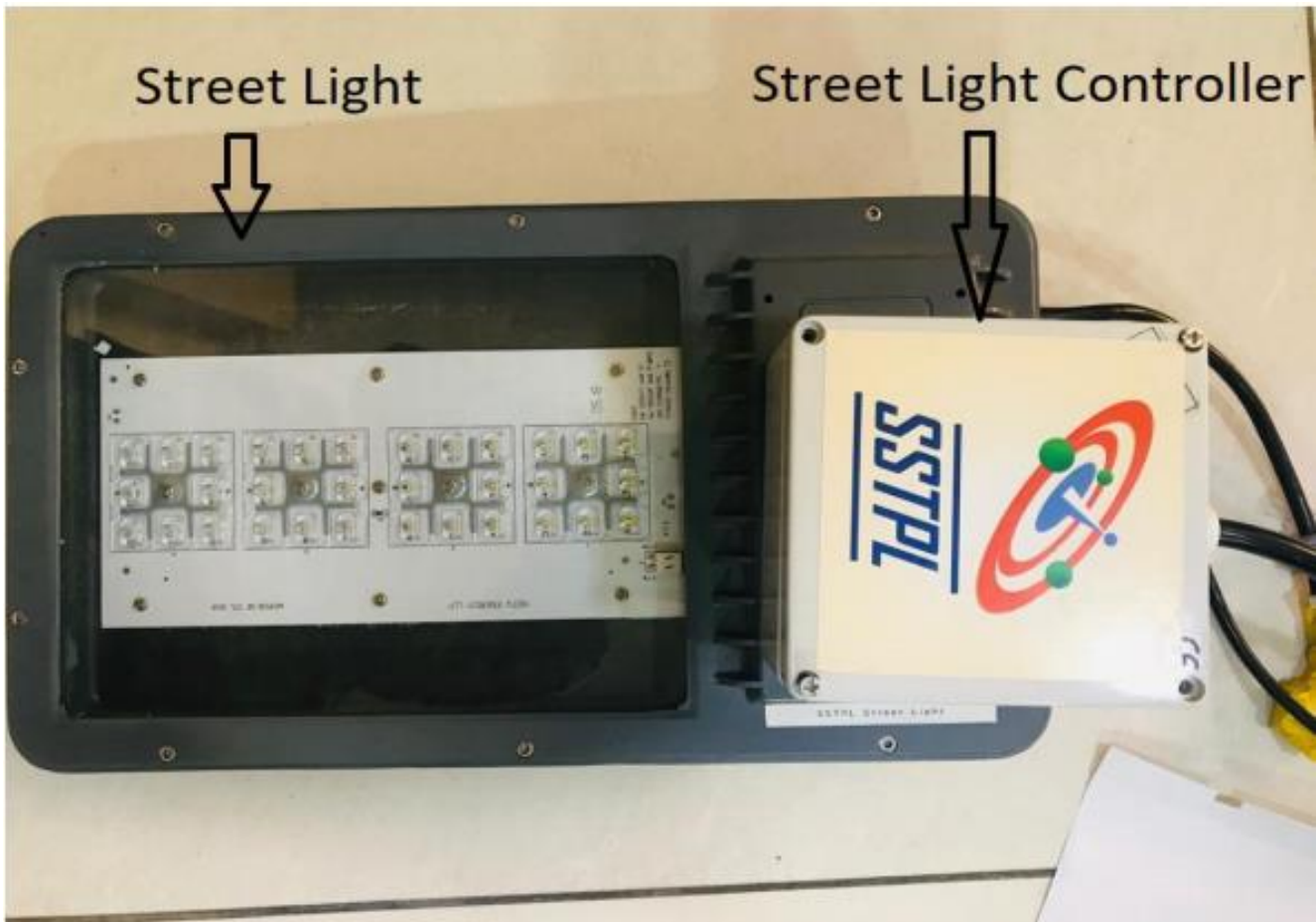
- **Dimmer operation**

Dimmer is use for changing the intensity of streetlight. The intensity can be adjusting from 10% to 100%. This dimmer intensity adjustment done by PWM (Pulse Width Modulation). Dedicated Pin used to operate dimmer. In normal condition when streetlight turns to ON dimmer intensity static with 15%. Which can be change as per requirement.

4.2 Weather Based Automation (Optional)

Weather based automation done by using Lux Sensor (Ambient light Sensor). This sensor measures the lux value in environment and give current output to controller using ADC (Analog to digital Converter) output. The Application of “Weather Based Automation” in “Smart Street Light Controller”, if lux value less then threshold value then streetlight automatically turns to ON. The controller also calculates the lux percentage and according to lux percentage dimmer intensity will adjust.

5. Streetlight with Controller



6. IMPORTANT NOTICE

6.1 Disclaimer

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