Siwat’s Light Control Protocol Version 1.0

Layer 4 Lighting Control Protocol over RS485

# Topology, Slaves and Master

# Payload Format

A single payload is consisted of 3 parts: remaining hop length (RHL), instruction, and data. The last block of the payload must contain “0xFF”

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RHL | INSTRUCTION | DATA-1 | DATA-2 | DATA-3 | DATA-4 | … | DATA-n | 0xFF |

## Remaining Hop Length

In this protocol, each slave does not have a unique identifier. This limitation is compensated by using “remaining hop length” or RHL. RHL tells the network member how far the target slave is, each time the payload travels across the slave, the RHL is decreased by one, the slave that received a payload with RHL value equals to 0 will execute the instruction.

## Instruction and Data

The instruction are the second hexadecimal value in the payload, data are the remaining blocks before 0xFF.

### Instruction Set

|  |  |  |
| --- | --- | --- |
| Instruction | Description | Example |
| 0x00 | Blink the onboard led | RHL 0x00 0xFF  blink onboard LED |
| 0x01 | Turn the LED off | RHL 0x01 0xFF  turn all LEDs off |
| 0x02 | Send data to the strip | RHL 0x02 0xFF  Update the led strip with the value from memory |
| 0x03 [BRIGHTNESS] | Set LED brightness to BRIGHTNESS/250 | RHL 0x03 0x04 0xFF  Set the Brightness level to 4/250 |
| 0x04 [index] [r] [g] [b] |  | RHL 0x04 0x00 0x0A 0x0A 0x0A 0xFF |