# Hardware Properties

|  |  |
| --- | --- |
| Button-  -GPIO  -Type : Toggle / pwm\_increase / pwm\_decrease  -Relay no : (Which relay should be triggered) |  |
| Relay-  -GPIO  -Type : Normal/Inverse/pwm  -Order : (Physical button order to show the colour) [255, if order not required] |  |
| Light-  -GPIO |  |
|  |  |
|  |  |
|  |  |

# Communication protocols

## MQTT topics

(/set- send message to ESP i.e. receive on ESP) (x- Number, always 0 based)

|  |  |  |
| --- | --- | --- |
| /uartout/set | Esp will send message on uart. |  |
| /uartin | Message received on uart by esp will be published on this topic. |  |
| /debug | All debug messages when connected to mqtt |  |
| /relay/x/set | Set relay On/Off |  |
| /relay/x | Relay status will be published by esp on this topic |  |
| /rcfg/set | Relay configuration setup | Not used |
| /bcfg/set | Button configuration setup | Not used |
| /conf | All the response for config will be published on this by ESP. |  |
| /conf/set | Publish all configuration related message to this topic. |  |
| /strpbrt/x/set | Set 2812b strip brightness | Int |
| /strpthm/x/set | Set theme of 2812b strip | Int |
| /strpspd/x/set | Led strip speed | Int |
| /strpclr/x/set | Led strip colour | int |
|  |  |  |
|  |  |  |

## Commands for- /relay/x/set

|  |  |
| --- | --- |
| 0 | Off |
| 1 | On |
| 2 | Toggle |
| 3 | Get current status |

## JSON message formats

### Relay configure

|  |  |
| --- | --- |
| Mode- Type of command (New, Update, get, delete all) [Single delete is not possible]  GPIO- Relay GPIO  Type- Type of relay (Normal, Inverse)  No- Relay number in case of updating the relay. | |
| Add a new relay | {  "rcfg": {  "mode": "NEW",  "GPIO": 1,  "type": "Inverse",  “boot\_mode”: “RELAY\_BOOT\_SAME”  }  } |
| Delete all the relays | {  "rcfg": {  "mode": "DELETE\_ALL"  }  } |
| Get all the relays  (Not yet implemented) | {  "rcfg": {  "mode": "GET\_ALL"  }  } |
| Get single relay | {  "rcfg": {  "mode": "GET\_SINGLE",  "rno": 2  }  } |
| Update single relay | {  "rcfg": {  "mode": "UPDATE",  "GPIO": 1,  "type": "Inverse",  "rno": 2  }  } |
| Ex-  "{\"rcfg\":{\"m\":1,\"g\": 12,\"t\": 1,}}" -- Add new  "{\"rcfg\":{\"m\":4,\"g\": 1,\"r\": 1}}" – Get single  "{\"rcfg\":{\"m\":2}}" – Delete All  "{\"rcfg\":{\"m\":5,\"g\": 12,\"t\": 1, \"r\":0}}" – Update | |

### Button configure

|  |  |
| --- | --- |
| Mode- Type of command (New, Update, get, delete all) [Single delete is not possible]  GPIO- Button GPIO  ~~Type- Type of button (Toggle, Latched)~~ [Not implemented, Always Toggle]  No- Relay number associated with button. (Should be 0xFF in case of virtual relays)  No2- Button number in case of updating the button. | |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
| Ex-  "{\"bcfg\":{\"m\":1,\"g\": 27,\"r\": 0}}" -- Add new  "{\"bcfg\":{\"m\":4,\"b\": 1}}" – Get single  "{\"bcfg\":{\"m\":2}}" – Delete All  "{\"bcfg\":{\"m\":5,\"g\": 12,\"t\": 1, \"b\":0, \"r\":1}}" – Update | |

Esp8266 Pins-

Buttons: 10, 9, 12, 13

Relays: 16, 5, 4, 14

Esp32 Pins:

Buttons: 34, 35, 32, 33, 25, 26, 27, 14, 12, 13

Relays: 23, 22, 21, 19, 18, 5, 4, 2

2812b will be on gpio 15

New tested pins-

Relays- 23, 22, 21, 19, 18, 5, 17, 16

Buttons- 13, 12, 14, 27, 33, 32, 15, 2, [4, 0 (extra for fan)]

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