outside\_to\_system\_acpwr

► system\_to\_outside\_acpwr

Remote Switch

outside\_to\_system\_usrin

► system\_to\_outside\_usrout

outside\_to\_system\_acpwr Fuse fused\_acpwr Voltage

sensor\_to\_mcu\_asig Sensor

mcu\_dcpwr

sensor\_to\_mcu\_dsig\_1

system\_to\_outside\_acpwr\_1

ESP32

Block Owner

Smartphone App

Zach

Transformer

Voltage Sensor

Mack

Transformer

Jorian

ESP32

Mack

Fuse

Zach

Node

Jorian

2

\_rwpcd\_edonNode

Node

system\_to\_outside\_acpwr\_2

mcu\_to\_node\_dsig\_1

node\_dcpwr\_1

sensor\_to\_mcu\_dsig\_2

user\_bluetooth\_in

user\_bluetooth\_out

Smartphone App

user\_wifi\_out

2

\_gisd\_edon\_ot\_ucmuser\_wifi\_in

system\_to\_outside\_usrout

outside\_to\_system\_usrin

system\_to\_outside\_ACpwr

sensor\_to\_mcu\_ds

Node\_dcpwr

Node "n"

C-13 AC

Plug

sensor\_to\_plug\_fused\_acpwr

mcu\_to\_node\_dsig

relay\_to\_sensor\_fused\_acpwr

Power Relay

Current Sensor

**fuse\_acpwr**

Interface Definitions

Interface Properties

outside\_to\_sytem\_acpwr ● Vnominal: 120VAC via a NEMA 5-15R connector

● Ipeak: 15A

● Inominal: 500mA

fused\_acpwr ● Vnominal: 120VAC via a NEMA 5-15R connector

● Ipeak: 5A

● Inominal: 500mA

● Disconnects system from input when 5A draw is exceeded

mcu\_dcpwr ● Vnominal: 5VDC

● Inominal: 500mA

● Powers ESP32 Microcontroller

node\_dcpwr\_(n)\* ● Vnominal: 5VDC

● Inominal: 500mA

● Powers Realys

sensor\_to\_mcu\_dsig\_(n)\* ● Vnominal: <1VDC

● Reports current on output channels

● Inominal: <5A

mcu\_to\_node\_dsig\_(n)\* ● Disables output after a time of upto 1 hour ± 1 minute when enabled

● Operate output channels independently

● Imax: 1.2A

user\_bluetooth\_in ● Enable/disable each channel

● Set delay on each output

● Interface must be via a mobile phone (Android)

user\_bluetooth\_out ● Display status of outputs

● Able to update output statuses from 20 feet away

user\_wifi\_in ● User interacts with system via Smartphone App

● Enable/disable each channel

● Set timer on each output

user\_wifi\_out ● Display status of outputs

● Able to update output statuses from 20 feet away

● Confirms length of timers

system\_to\_outside\_usrout ● Display status of outputs

● Able to update output statuses from 20 feet away

● Confirms timers if set

outside \_to\_system\_usrin ● User interacts with system via Smartphone App

● 9/10 users able to operate switches in <10 seconds without any previous training or knowledge of the interface

● Enable/Disable each channel

● Set delay on each output

● Accepts inputs from 20 feet away

● Disables output after a time of upto 1 hour ± 1 minute when enabled

system\_to\_outside\_acpwr\_(n)\* ● Turn off and on at least 2 independent household lamps with up to 100W

incandescent bulbs and report current watts delivered by each channel

● Vnominal: 120VAC via a NEMA 5-15R connector

● Ipeak: 5A

● Inominal: 500mA

● Outputs will turn off after times of up to 60 minutes when selected

\*note: n represents the nth redundant node