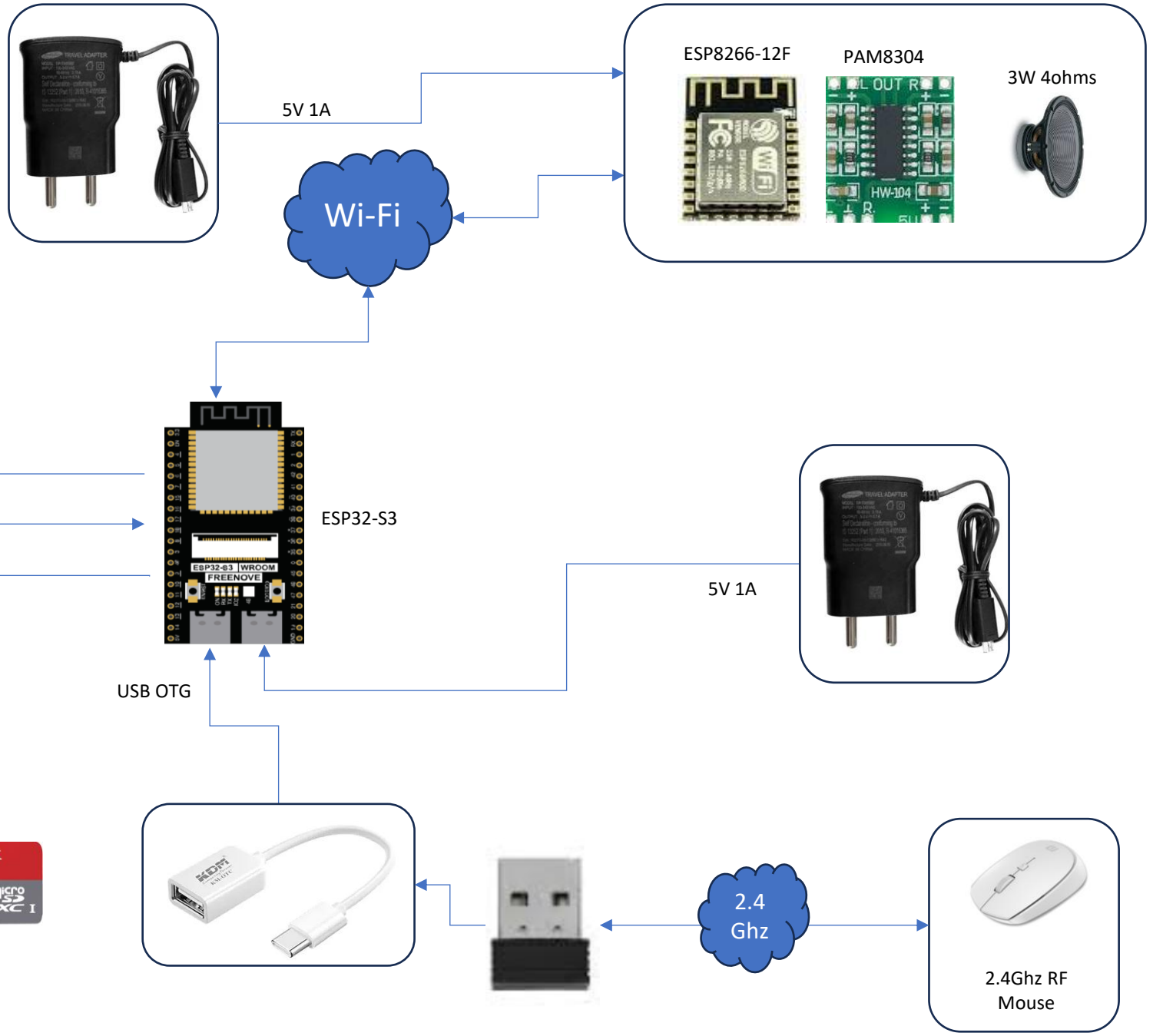
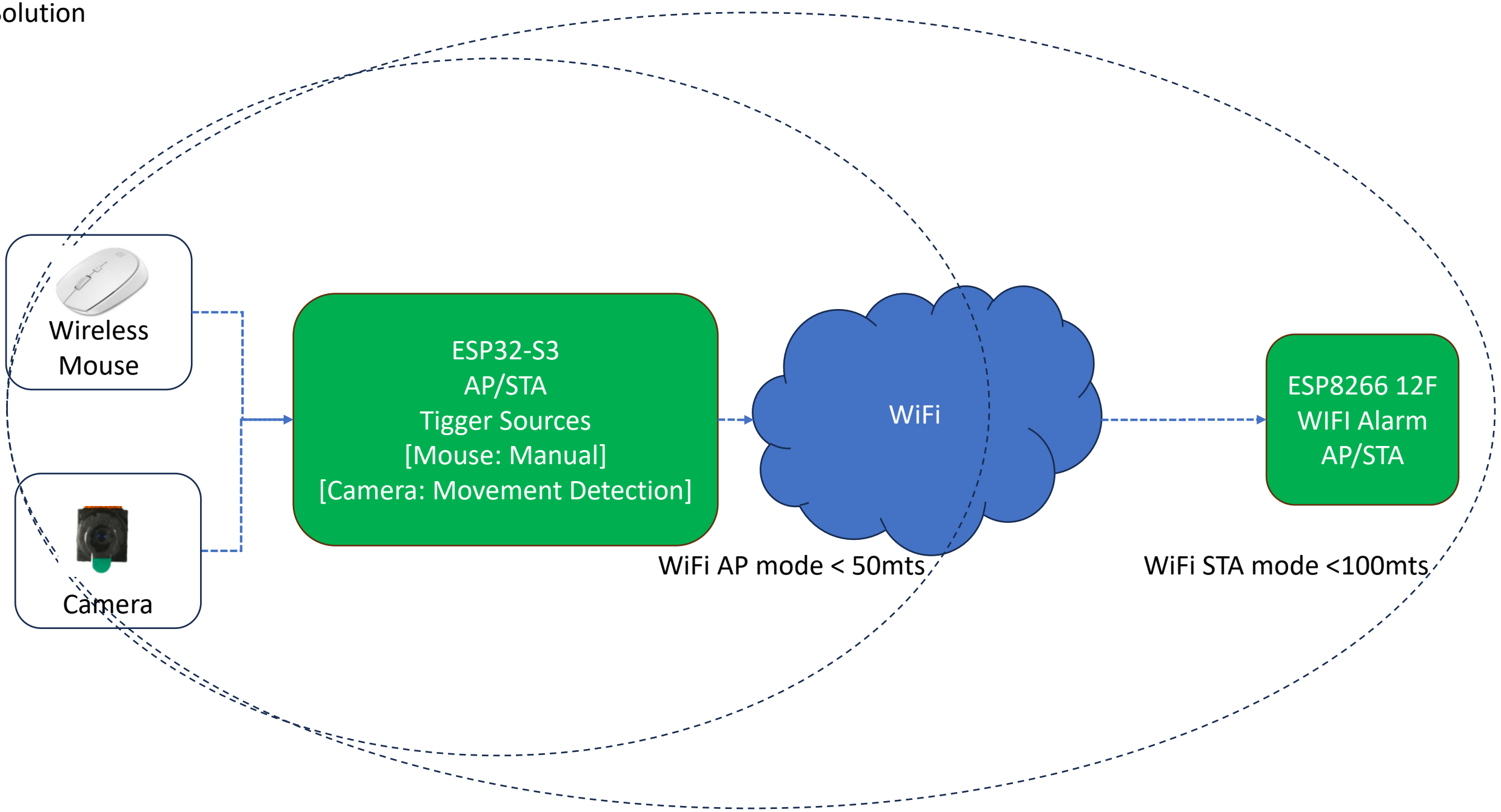
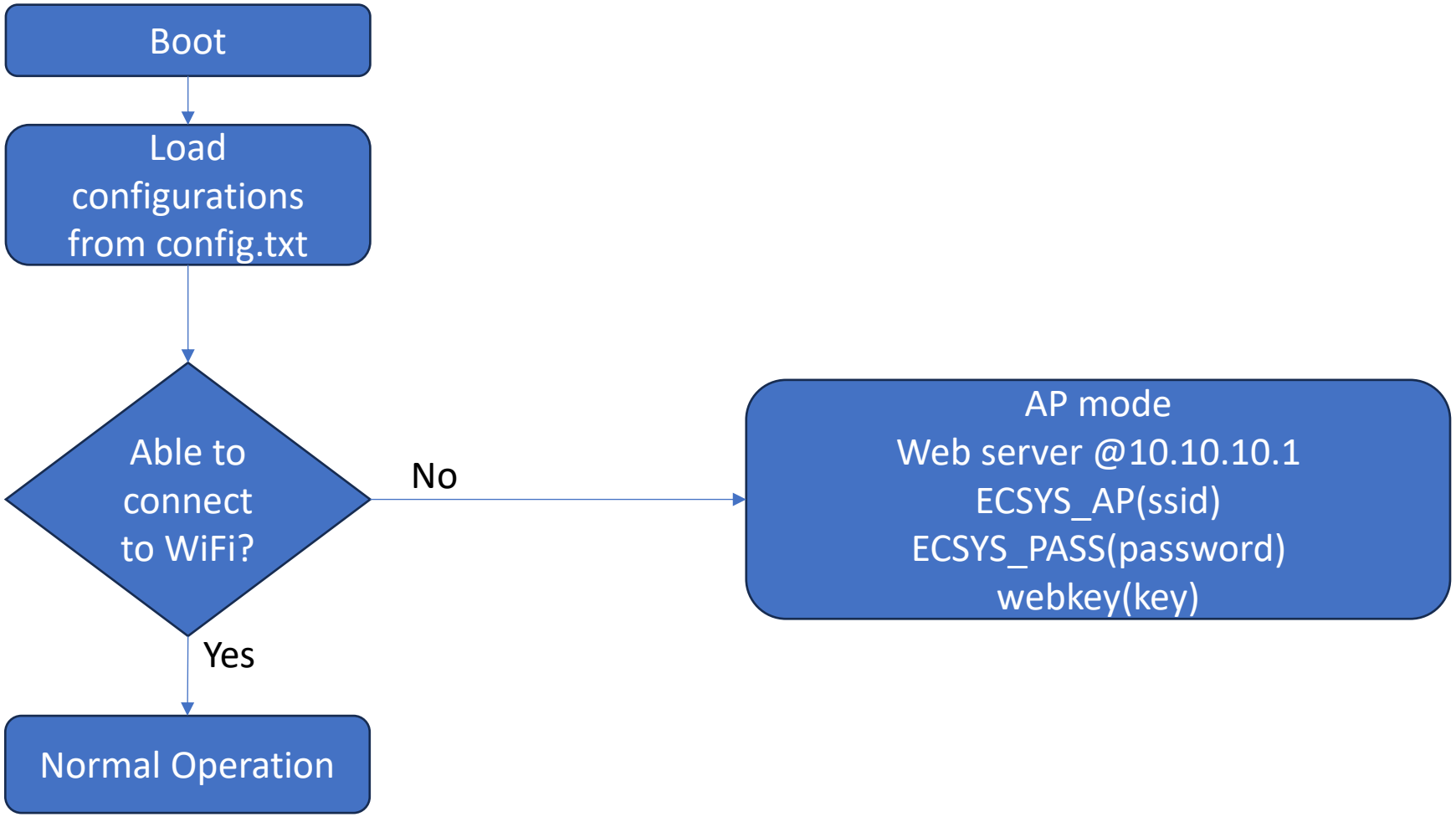
System


5V 1A
ESP8266-12F
PAM8304
3W 4ohms
0.91 inch 128×32 Blue OLED Display
Wi-Fi
OV2640
2MP
ESP32-S3
5V 1A
USB OTG
2.4
Ghz
2.4Ghz RF
Mouse

Solution


Wireless
Mouse
Camera
ESP32-S3
AP/STA
Tigger Sources
[Mouse: Manual]
[Camera: Movement Detection]
WiFi
ESP8266 12F
WIFI Alarm
AP/STA
WiFi AP mode < 50mts
WiFi STA mode <100mts

ESP 8266 -12F


Boot
Load configurations from config.txt
Able to connect to WiFi?
No
AP mode
Web server @10.10.10.1
ECSYS_AP(ssid)
ECSYS_PASS(password)
webkey(key)
Yes
Normal Operation

ESP 8266 -12F

On Boot

LED Colour = ON
LED White = ON

On Attempt to Connect to WiFi

Both LED's will Blink in Sync

Able to connect to WiFi?

No

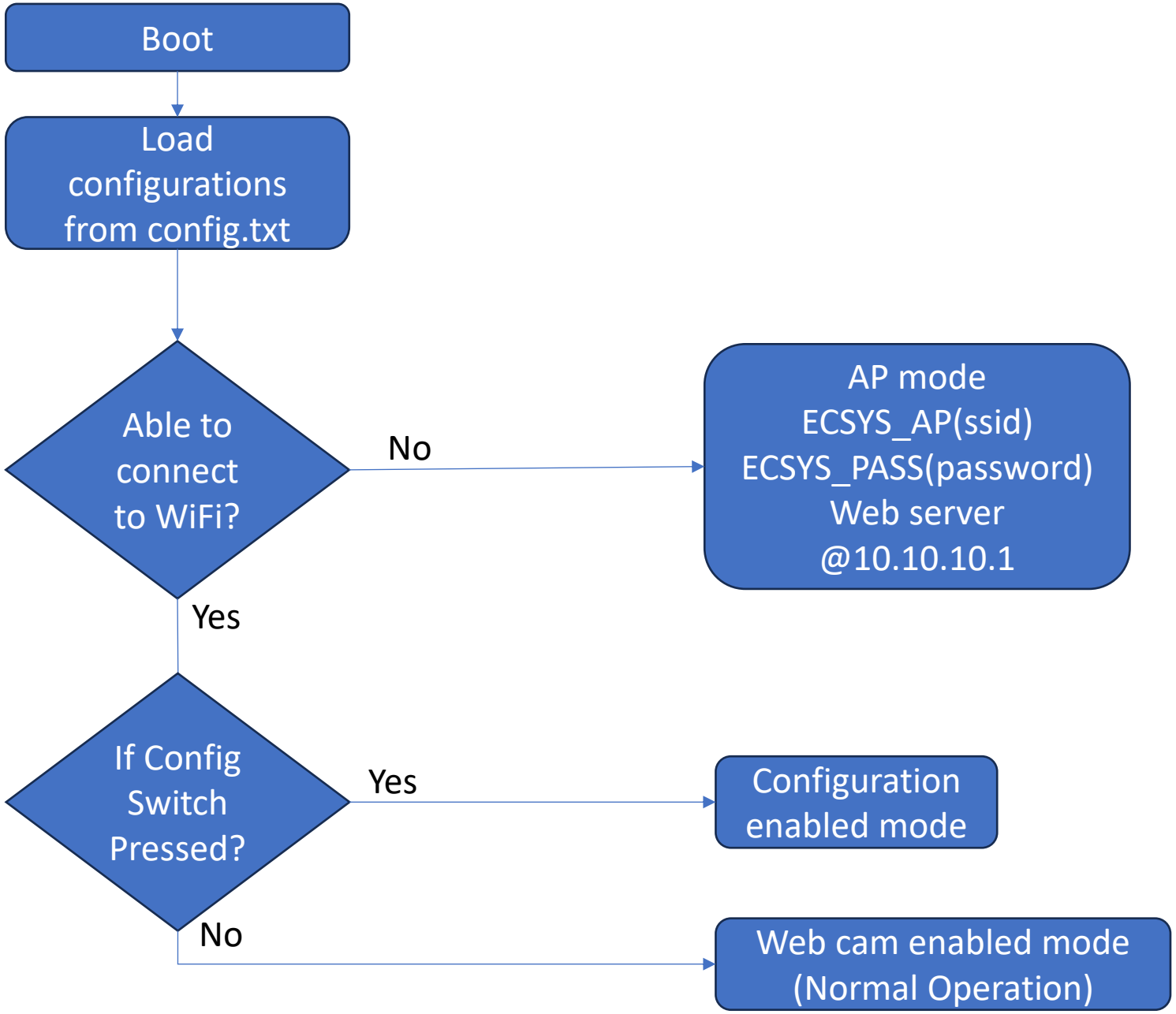
AP Mode
Both LED's will blink in Alternative

Yes

LED White = OFF
LED Colour = BLINK upon receiving KEEP ALIVE packets

When WiFi Alarm unable to connect to preconfigured Wifi LAN network it will enter into AP mode. In this mode user can connect using default username and password and enter credentials for new available WiFi network

ESP32-S3


Boot
Load configurations from config.txt
Able to connect to WiFi?
No
AP mode
ECSYS_AP(ssid)
ECSYS_PASS(password)
Web server
@10.10.10.1
Yes
If Config Switch Pressed?
Yes
Configuration enabled mode
No
Web cam enabled mode (Normal Operation)

Screen Shots

Region Of Interest (ROI)
This area is processed for image processing to detect any movement

ECSYS Configuration[233 Bytes]

Sample Configuration

ssid = sarath_nivas_EXT #wifi ssid
pass = land1234 #wifi password
jpeg = 100 #jpeg image quality 0 - 100
beacon = 15 #beacon time out 1-255 seconds
mouse = 3 #mouse level sensitivity L=0,L+R=1,L+R+M=2,L+R+M+S=3,L+R+M+S+movement=4
key = espkey #secret shared between wifi alarm and ecsys
mdini = 16,24 #start time 0-23, duration 0 -24 in hrs, 0 = disable
mdth = 1024 #motion detection threshold 1 - 2^32
mdroi = 40,40,560,400 #x,y,w,h on 640x480 ROI for motion detection
mdalrm = yes # if yes alarm will ring on motion detection
tz = UTC-5:30 #setting timezone for India
ts = 2025,02,20,10,30 #if NTP fails this year,month,date,hour,minute will be time at bootup
sdcard = yes #enable = yes [MAKE SURE SDCARD IS INSERTED FOR SYSTEM BOOT UP if enabled]
led = yes #enable = yes else disabled blinking led
msg = 1234567890 #user specific message

```
ssid = [redacted]
pass = [redacted]
jpeg = 100
beacon = 15
mouse = 3
key = espkey
mdini = 16,24
mdth = 1024
mdroi = 40,40,560,400
mdalrm = no
tz = UTC-5:30
ts = 2025,02,20,10,30
sdcard = yes
led = yes
msg = 1234567890
```

BLUE SLOW BLINKING – System bootup

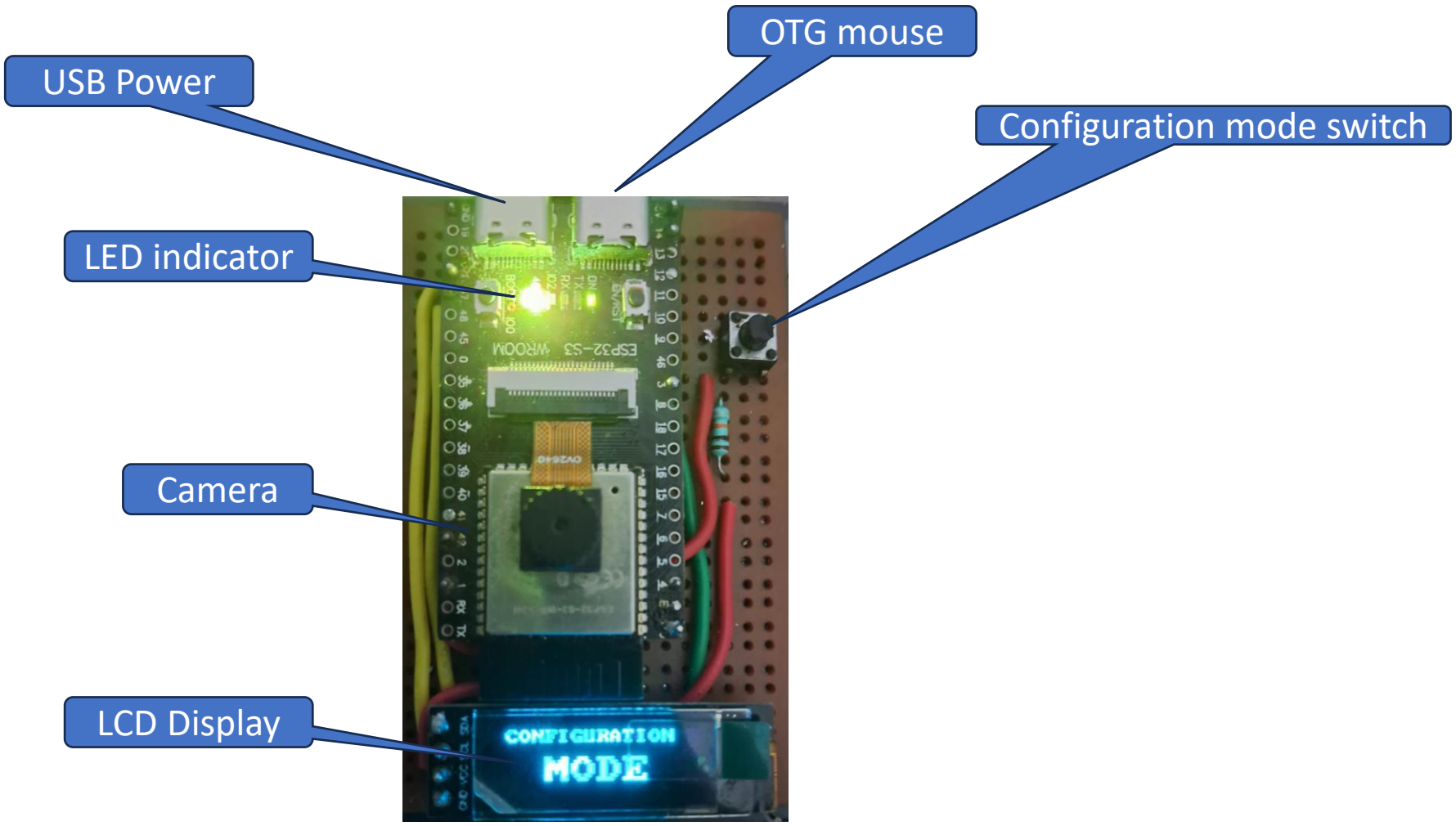
WHITE SLOW BLINKING with LCD NO SCROLL– System running , showing WiFi = STA or AP ,
SD = Y/N, IP address Y/N (If Y NTP is synced and N means configured time is used), Current time,
“NOT CONNECTED”

GREEN SLOW BLINKING – System connected to alarm unit with LCD – scrolling left showing
“SYSTEM ACTIVE” and user message.

YELLOW Slow blinking Press user switch to enter into configuration mode. LCD will display
Configuration Mode

ORANGE Slow blinking. LCD will display Remote Monitoring WEB

ALARM LCD will display and Scroll “System Active” and User message


USB Power
OTG mouse
Configuration mode switch
LED indicator
Camera
LCD Display
CONFIGURATION
MODE