# System

Web Camera + Microphone [Lenovo Essential FHD Webcam 4XC1B34802]

ESP8266-12F    PAM8403

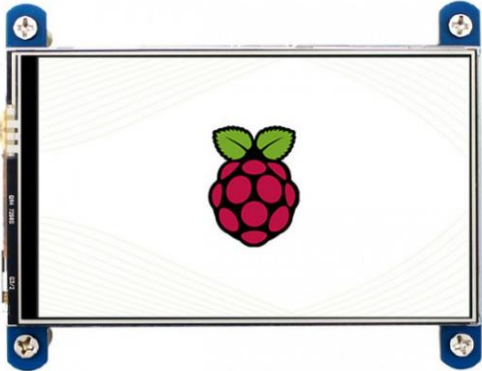3W 4ohms x 2

5V 2A

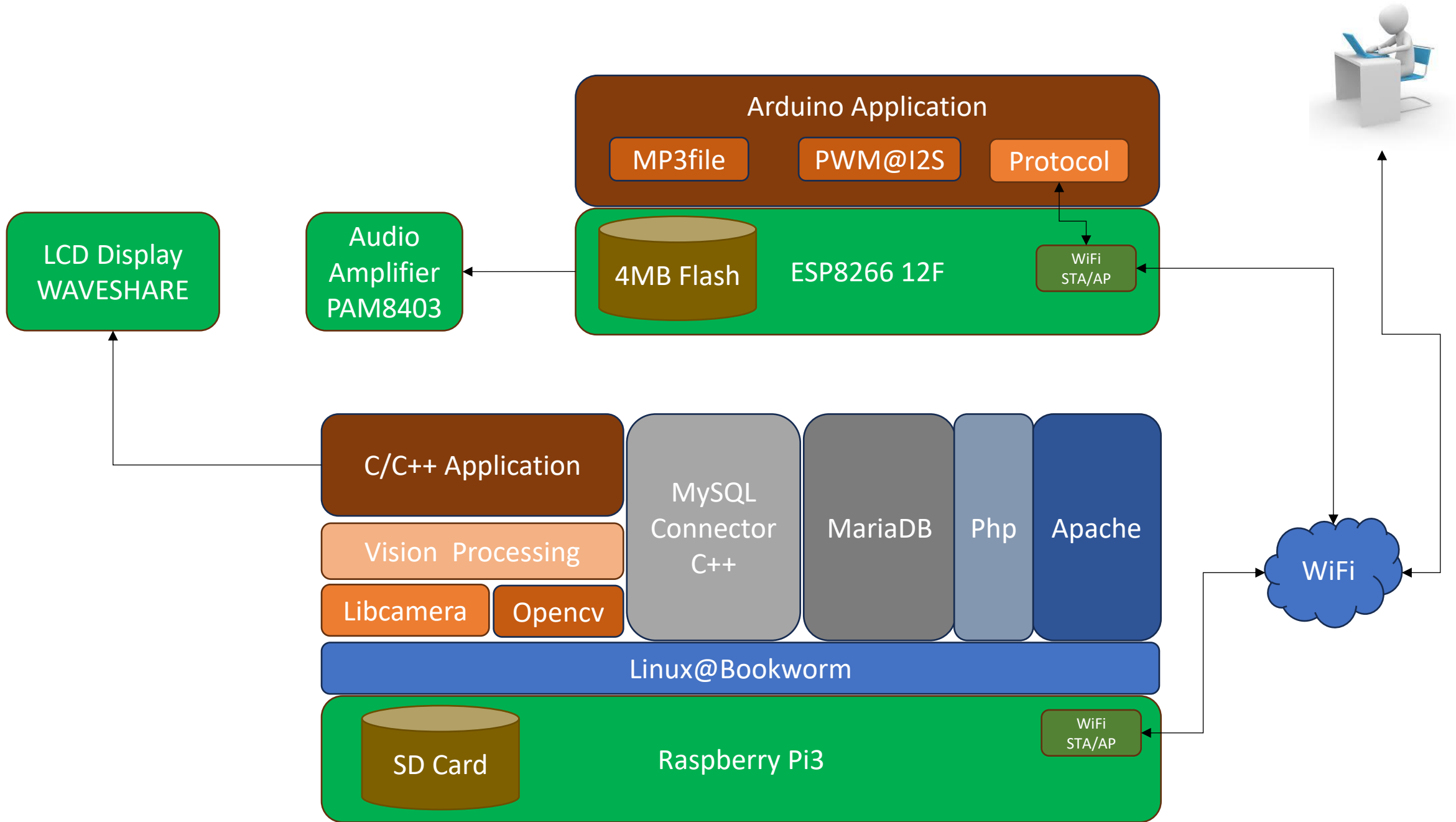Wi-Fi

USB

2.4 Ghz

2.4Ghz RF Mouse

4inch Resistive Touch Screen LCD, 480×800, HDMI, IPS, Low Power
SKU: 12030
Part Number: 4inch HDMI LCD
Brand: Waveshare

HDMI GPIO

5V 2A

# System



**Arduino Application**
- MP3file
- PWM@I2S
- Protocol

**ESP8266 12F**
- 4MB Flash
- WiFi STA/AP

LCD Display WAVESHARE

Audio Amplifier PAM8403

**Raspberry Pi3**
- C/C++ Application
- Vision Processing
- Libcamera
- Opencv
- MySQL Connector C++
- MariaDB
- Php
- Apache
- Linux@Bookworm
- SD Card
- WiFi STA/AP

WiFi

Solution

# ESP 8266 -12F

ESP 8266 -12F

```
                                                    ┌──────────────────────────┐
                    ┌──────────────┐                │         Boot             │◄─────────┐
                    │    Boot      │                └──────────────────────────┘          │
                    └──────────────┘                                                      │
                           │                                                              │
                           ▼                                                              │
                    ┌──────────────┐                                                      │
                    │    Load      │                                                      │
                    │configurations│                                                      │
                    │from config.txt│                                                     │
                    └──────────────┘                                                      │
                           │                                                              │
                           ▼                                                              │
                        ◇ Able to ◇        No          ┌──────────────────────────────┐  │
                        ◇ connect ◇ ──────────────────►│          AP mode             │──┘
                        ◇ to WiFi?◇                     │  Web server @10.10.10.1      │
                           │                            │      ECSYS_AP(ssid)          │
                          Yes                           │   ECSYS_PASS(password)       │
                           ▼                            │        webkey(key)           │
                    ┌──────────────┐                    └──────────────────────────────┘
                    │   Normal     │
                    │  Operation   │
                    └──────────────┘
```

# ESP 8266 -12F

On Boot

On Attempt to Connect to WiFi

WiFi_SSID:

WiFi_PASSWORD:

KEY:

Reboot

**LED Colour = ON**
**LED White = ON**

**Both LED's will Blink in Sync**

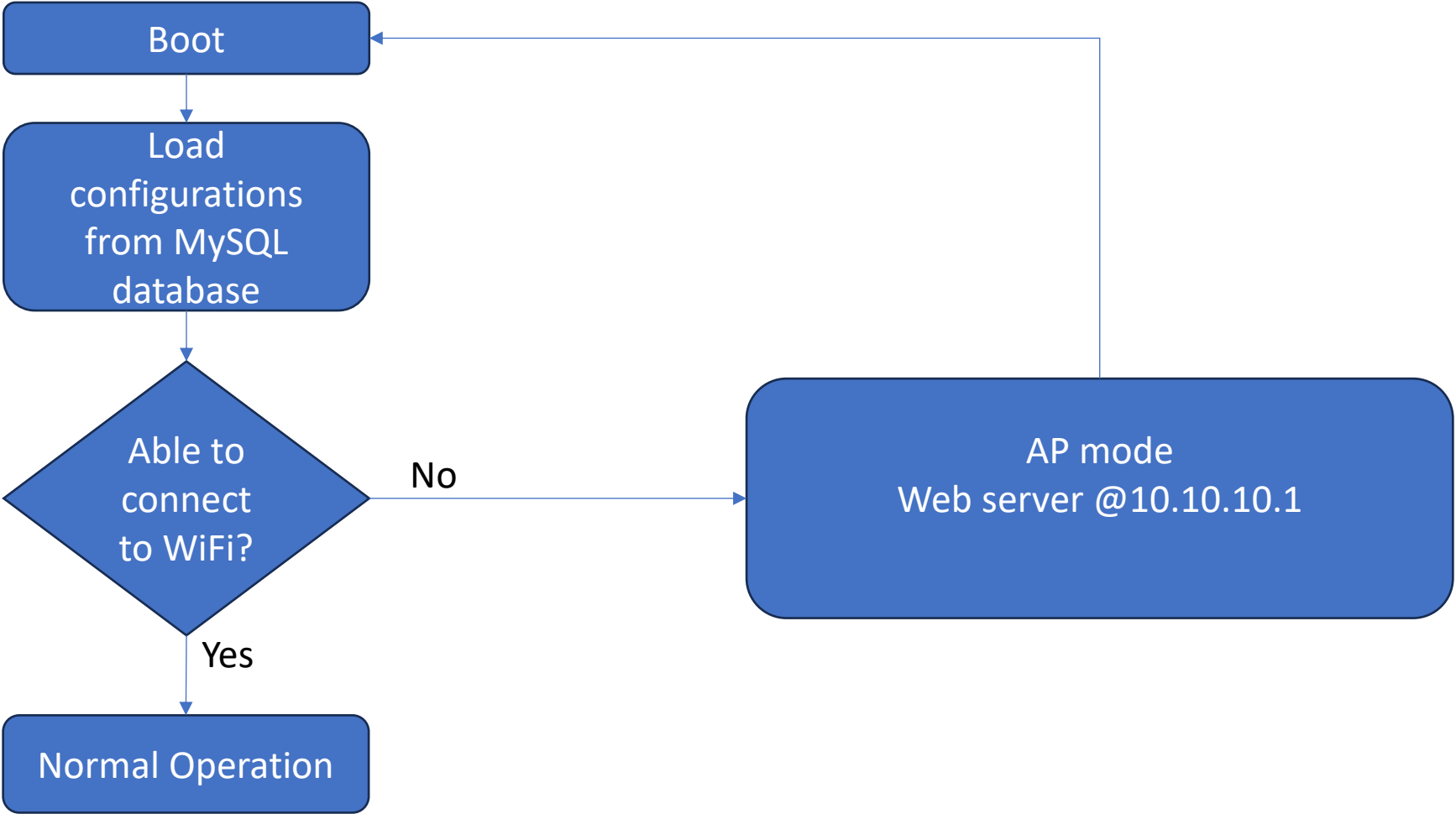**Able to connect to WiFi?**

No

**AP Mode**
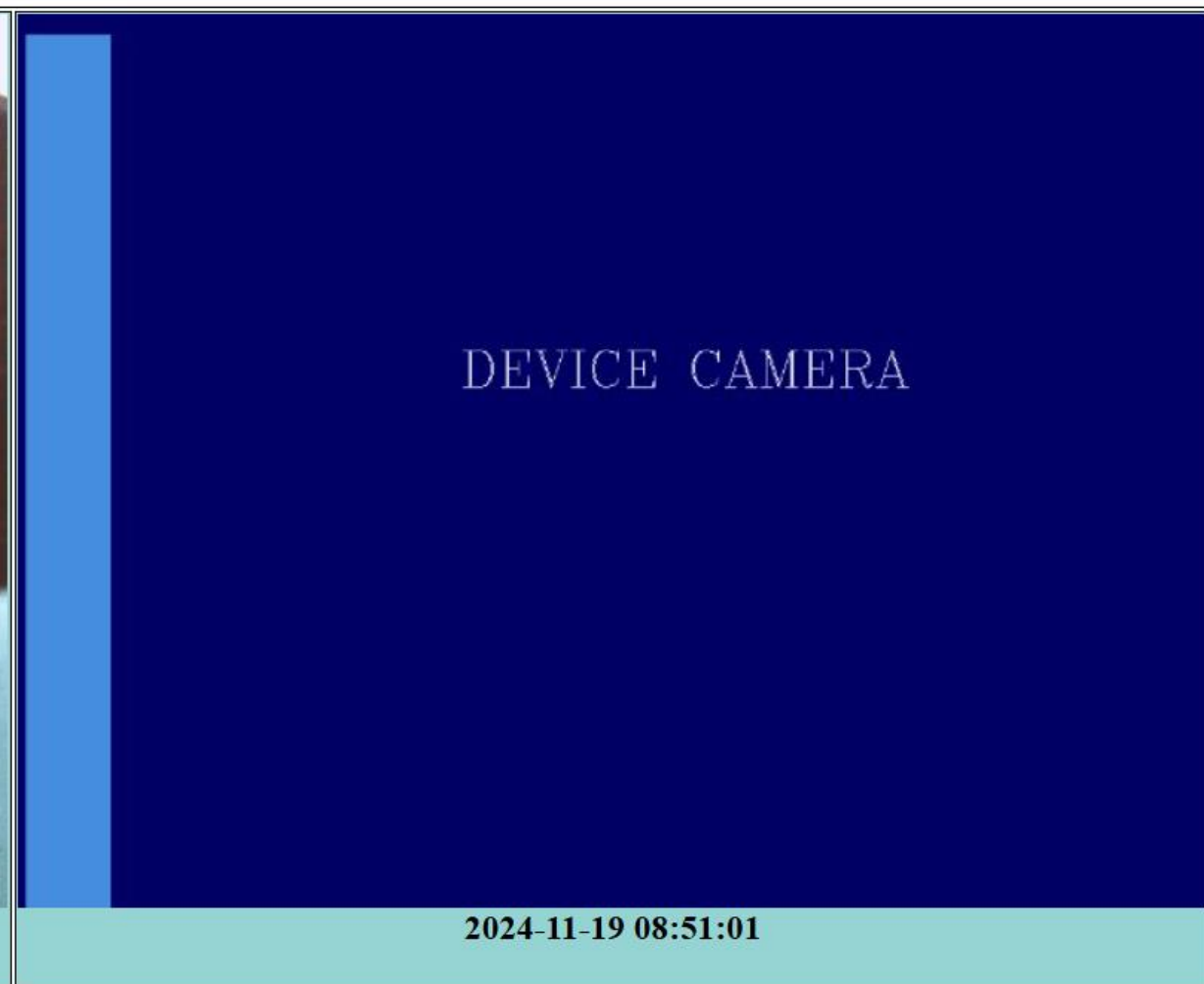**Both LED's will blink in Alternative**

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
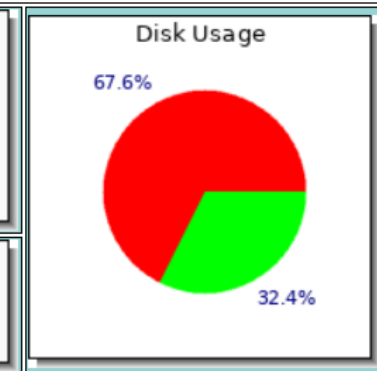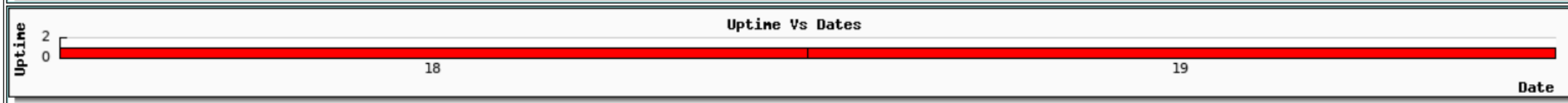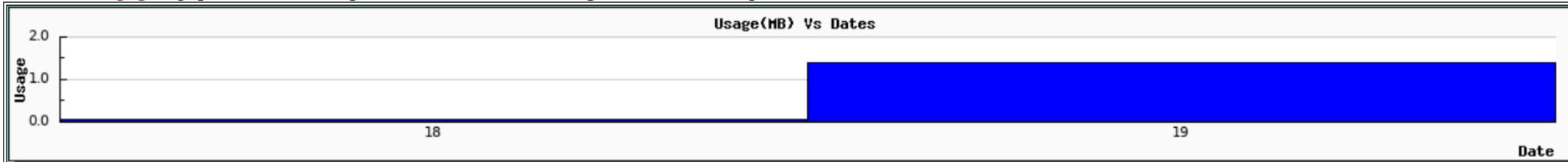
Raspberry Pi3

```
         ┌──────────────┐
         │     Boot     │◄──────────────────────────────────┐
         └──────────────┘                                   │
                │                                            │
                ▼                                            │
      ┌──────────────────┐                                  │
      │       Load       │                                  │
      │  configurations  │                                  │
      │   from MySQL     │                                  │
      │    database      │                                  │
      └──────────────────┘                                  │
                │                                            │
                ▼                                            │
            ╱───────╲                        ┌────────────────────────────┐
           ╱  Able to ╲          No          │         AP mode            │
          ╱  connect    ╲───────────────────►│  Web server @10.10.10.1    │
           ╲  to WiFi?  ╱                     │                            │
            ╲─────────╱                       └────────────────────────────┘
                │
              Yes
                │
                ▼
      ┌──────────────────┐
      │ Normal Operation │
      └──────────────────┘
```

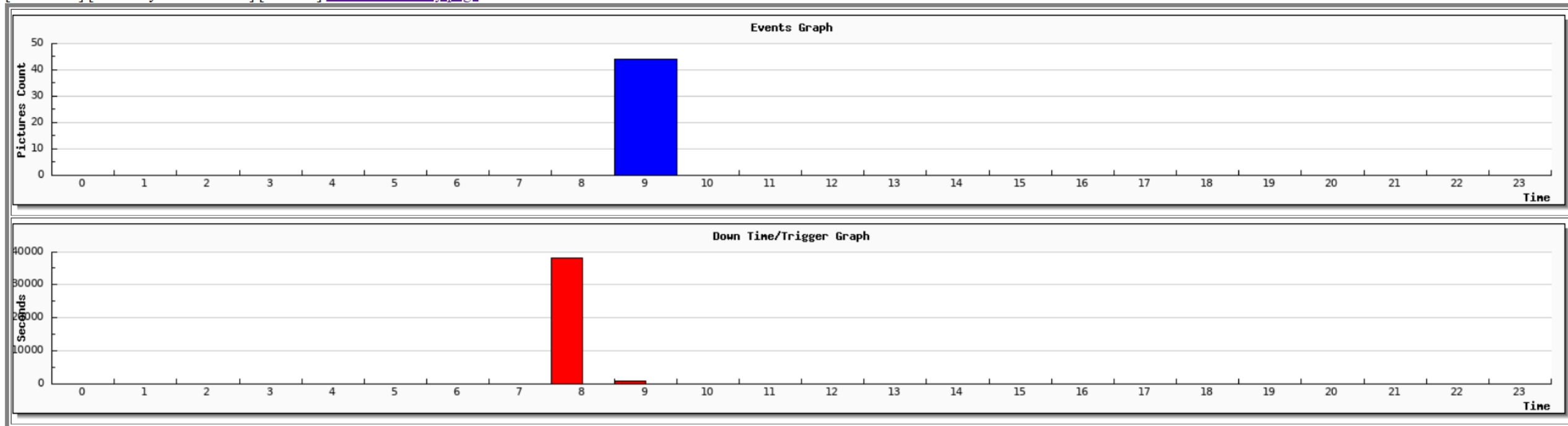**This is a private web site, any unauthorized attempt to access will be prosecuted to the maximum permitted by the law.**

LOGIN

Enter Password

Login

094015@0:0:25[Alarm Disconnected]

2024-11-19 09:40:15

DEVICE CAMERA

2024-11-19 08:51:01

Show Summary
Show Configuration

## Usage(MB) Vs Dates

## Uptime Vs Dates

## Disk Usage

67.6%

32.4%

| 18 | 19 |
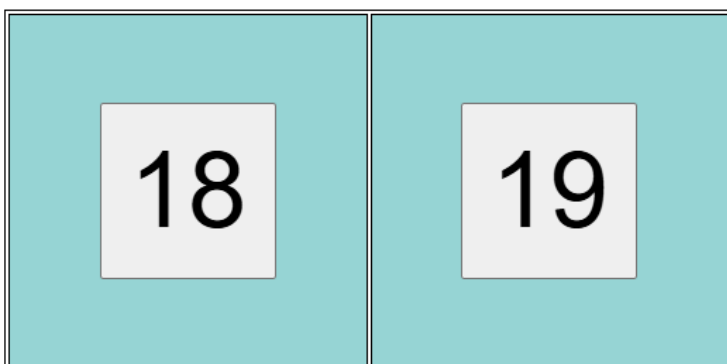
Select Hour: [0 ∨]

Submit

Select Hours to Analyse
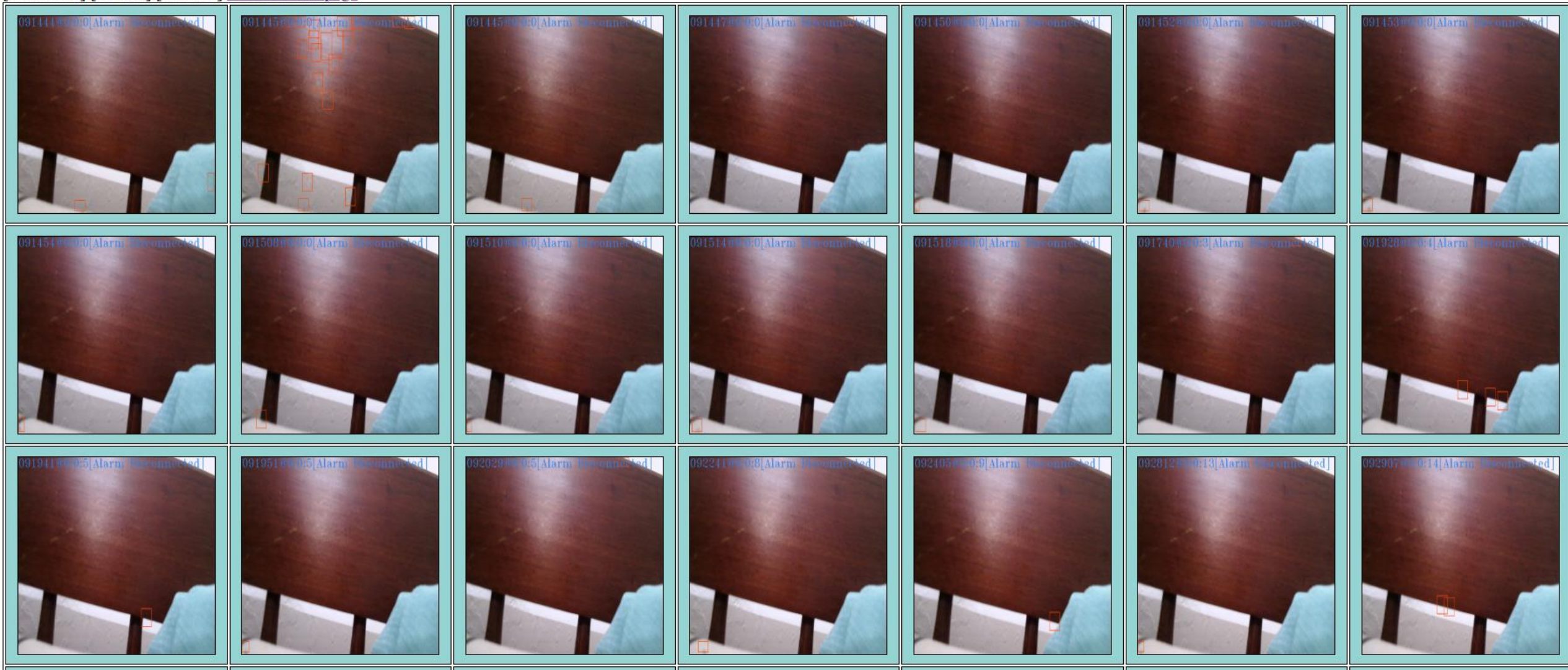
| Network Configuration | | | Mouse Configuration | | Camera Configuration | | | Microphone Configuration | | |
|---|---|---|---|---|---|---|---|---|---|---|

**Mouse Configuration**

| ID | NAME |
|---|---|
| 0 | RAPOO Rapoo 2.4G Wireless Device |
| 1 | RAPOO Rapoo 2.4G Wireless Device System Control |
| 2 | RAPOO Rapoo 2.4G Wireless Device Consumer Control |
| 3 | RAPOO Rapoo 2.4G Wireless Device |
| 4 | ADS7846 Touchscreen |
| 5 | Lenovo FHD Webcam Audio: Lenovo |

**Network Configuration**

| NAME | STATUS |
|---|---|
| sarath_nivas_EXT | wlan0 |
| ecsys_ap | -- |
| Gopalakrishnan | -- |

**Camera Configuration**

| ID | NAME |
|---|---|
| 0 | bcm2835-codec-decode |
| 1 | bcm2835-isp |
| 2 | Lenovo FHD Webcam Audio: Lenovo |

**Microphone Configuration**

| ID | NAME |
|---|---|
| 2 | Lenovo FHD Webcam Audio |

**MASKS**

| ID | 16 | X | 1440 | Y | 540 | W | 480 | H | 540 |
|---|---|---|---|---|---|---|---|---|---|
| ID | 18 | X | 0 | Y | 540 | W | 480 | H | 540 |

| Change Application Parameters | | Change Application Parameters | | Change Network Configuration | |
|---|---|---|---|---|---|
| MOUSE_LEVEL[0-5] | 0 | VOICE_THRESHOLD[>90] | 100 | | |
| MOUSE_NAME | RAPOO Rapoo 2.4G Wirele | VOICE_START[0-23] | 0 | SSID | |
| BEACON_TIMEOUT[1-255] | 15 | VOICE_DURATION[0-24] | 4 | PASSWORD | |
| DIR_MAX[1-255] | 2 | SEC | seckey | WiFi mode | STA ADD |
| CAMERA | Lenovo FHD Webcam Audi | ACCESS | admin | | Submit |
| MICRO | Lenovo FHD Webcam Audi | REBOOT_THRESHOLD[60-100] | 70 | Submit | |