Software Requirements Specificationfor

Temperature Monitoring App

# Introduction

## Purpose

This document aims to define the software requirements for software device called the Temperature Monitoring App.

# Overall Description

## Product Functions

* Saved temperature
* Write warning and critical thresholds into files
* Turn on red led during warning threshold event
* Blink red led and play sound during critical threshold event
* Disable the buzzer with the button
* Stored files and events into SDCARD

# External Interface Requirements

### 3.1.2 Temperature Monitoring Sensor

|  |  |
| --- | --- |
| **REQ ID** | **Description** |
| TMP-1 | The app shall be able to check the temperature sensor |
| TMP -2 | The app shall be able to save the temperature sensor |
| UART-3 | The app shall be able to support warning and critical thresholds |

## User Interfaces

### 3.1.2 UART

|  |  |
| --- | --- |
| **REQ ID** | **Description** |
| UART-1 | The app shall be able to receive the data/commands from UART |
| UART-2 | The app shall be able to output logs |
| UART-3 | The app shall support command specified in Appendix 1 |

### BUTTONS

|  |  |
| --- | --- |
| **REQ ID** | **Description** |
| BTN-1 | The app shall be able to detect the pression of SW1 and SW2 |
|  |  |

### BUZZER

|  |  |
| --- | --- |
| **REQ ID** | **Description** |
| BUZ-1 | The app shall be able to play sound |
| BUZ-2 | The app shall be able to make a short beep |

|  |  |
| --- | --- |
| **REQ ID** | **Description** |
| LED-1 | The app shall be able to turn on led |
| LED-2 | he app shall be able to turn off led |
| LED-3 | The app shall be able to blink led |

### LEDS

# Use Cases

## Power Up

This use-case is performed by user when the system is turned on.

### Sequence

* The system undergoes initial hardware initialization
* The system use the latest srettings

|  |  |
| --- | --- |
| **REQ ID** | **Description** |
| PON-1 | The app shall ask user for message |
| PON-2 | The app use the latest settings from flash |

## Check temperature

Operator checks the temperature

### Sequence

* The app checks the temperature
* The app checks thresholds temperature

### Requirements

|  |  |
| --- | --- |
| **REQ ID** | **Description** |
| CHECK-1 | The system shall checks the temperature every 1 seconds |
| CHECK-2 | The system shall checks the thresholds |

## Write temperature

Operator writes the temperature

### Sequence

* The app write curerrent temperature
* The App write events

### Requirements

|  |  |
| --- | --- |
| **REQ ID** | **Description** |
| WRT-1 | The app shall write curerrent temperature every 1 minute |
| WRT-2 | The app shall write events into log file |
| WRT-3 | The app shall stored files into SSDCARD |

## Edit parameters

Operator can edit parameters

### Sequence

* Operator types CLI command to edit existing parameters and provide parameter value

### Requirements

|  |  |
| --- | --- |
| **REQ ID** | **Description** |
| EDIT-1 | The app shall be able to edit the parameters |
| EDIT-2 | The following parameters can be changed by user |

# App Requirements

## Temperature

This section describes general requirements of temperature application

|  |  |
| --- | --- |
| **REQ ID** | **Description** |
| GEN-1 | The app shall turn on the red led when temperature increase above the warning threshold |
| GEN-2 | The app shall blink the red led when temperature increase above the critical threshold |
| GEN-3 | The app shall give constant sound when temperature increase above the critical threshold |
| GEN-4 | The app shall disable notifications when the temperature decrease the thresholds |
| GEN-5 | The app shall write the events of the thresholds into the event log file |

# Appendix 1 – Commands List

This section describes all commands available to the user

|  |  |
| --- | --- |
| **Command** | **Description** |
| **date** | Sets current date and time |
| **warning** | Sets the warning threshold |
| **critical** | Sets the critical threshold |
| **Print** | Print the log |
| **Clear** | Clear the log |