**PO3\_DGW\_DIGITAL\_WATCH**

**Software Requirement Specification**

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| **Reference Document** | PO3\_DGW\_CYRS |
| **Version** | V0.3 |
| **Status** | Reviewed |

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| **Table of History** | | | |
| **Version** | **Author** | **Date** | **Change** |
| 0.0 | Amr Ibrahim | 29/01/2020 | Initial Creation |
| 0.1 | - Ghada Mohamed  - Mariam El-Shakafi | 30/01/2020 | Updated Alarm Mode and Stopwatch Mode Requirements |
| 0.2 | Mariam El-Shakafi | 31/01/2020 | Fulfilled review points |

**Table of Contents**

[1 Introduction 3](#_Toc31394129)

[1.1 Software Features 3](#_Toc31394130)

[2 Functional Requirements: 4](#_Toc31394131)

[2.1 Display Time Mode 4](#_Toc31394132)

[2.2 Adjust Time Mode 5](#_Toc31394133)

[2.3 Alarm Mode 6](#_Toc31394134)

[2.4 Stopwatch Mode 7](#_Toc31394135)

# **1 Introduction**

This section introduces the software requirements specification (SRS) for the Digital Watch.

## **1.1 Software Features**

The major feature of the digital watch as listed below.

* Display time with 12 AM/PM format.
* Adjust time.
* Alarm to set according to user input.
* Stopwatch (Start, Stop).
* Three buttons to control the system:
  + MODE
  + FUNC1
  + FUNC2

# **2 Functional Requirements:**

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| **Req ID** | Req\_P03DGW\_SRS\_DisplayTime\_001\_V01 | | |
| **Covers** | FUNC\_PO3\_DGW\_CYRS\_01\_V01 | **Test Scope** | ITD |
| **Description** | The software shall enter Display Time mode in two cases:   * At Initialization * When (Current mode = Stopwatch mode & MODE button is pressed) | | |

## **2.1 Display Time Mode**

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| **Req ID** | Req\_P03DGW\_SRS\_DisplayTime\_002\_V01 | | |
| **Covers** | FUNC\_PO3\_DGW\_CYRS\_01\_V01 | **Test Scope** | ITD |
| **Description** | The software shall display the time on LCD in HH:MM:SS AM/PM format. | | |

## **2.2 Adjust Time Mode**

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| **Req ID** | Req\_P03DGW\_SRS\_AdjustTime\_001\_V01 | | |
| **Covers** | FUNC\_PO3\_DGW\_CYRS\_02\_V01 | **Test Scope** | ITD |
| **Description** | To adjust (minutes) the software shall:   * Take input from FUNC1 button once. * The minutes digits shall start blinking to indicate that it can be modified using FUNC2 button. * Take input from FUNC2 button, each signal will increase the minutes by 1. * If minutes digits > 59, the SW will reset the digits to 00. | | |

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| **Req ID** | Req\_P03DGW\_SRS\_AdjustTime\_002\_V01 | | |
| **Covers** | FUNC\_PO3\_DGW\_CYRS\_02\_V01 | **Test Scope** | ITD |
| **Description** | To adjust (hours) the software shall:   * Take input from FUNC1 button twice. * The hours digits shall start blinking to indicate that it can be modified using FUNC2 button. * Take input from FUNC2 button, each signal will increase the hours by 1. * If hours digits > 12, the SW will reset the digits to 00. | | |

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| **Req ID** | Req\_P03DGW\_SRS\_AdjustTime\_003\_V01 | | |
| **Covers** | FUNC\_PO3\_DGW\_CYRS\_02\_V01 | **Test Scope** | ITD |
| **Description** | To adjust (AM/PM) the software shall:   * Take input from FUNC1 button once. * The format field shall start blinking to indicate that it can be modified using FUNC2 button. * Take input from FUNC2 button, each signal will toggle the format. | | |

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| **Req ID** | Req\_P03DGW\_SRS\_AdjustTime\_004\_V01 | | |
| **Covers** | FUNC\_PO3\_DGW\_CYRS\_02\_V01 | **Test Scope** | ITD |
| **Description** | To apply adjustments, the SW shall take input from FUNC1 button for a fourth time and return to Display Time Mode. | | |

## **2.3 Alarm Mode**

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| **Req ID** | Req\_P03DGW\_SRS\_AlarmMode\_001\_V01 | | |
| **Covers** | FUNC\_PO3\_DGW\_CYRS\_03\_V01 | **Test Scope** | ITD |
| **Description** | The software shall enter Alarm mode:   * when current mode = (Display Time mode &MODE button is pressed). | | |

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| **Req ID** | Req\_P03DGW\_SRS\_AlarmMode\_002\_V01 | | |
| **Covers** | FUNC\_PO3\_DGW\_CYRS\_04\_V01 | **Test Scope** | ITD |
| **Description** | To adjust alarm time (minutes) the software shall:   * Take input from FUNC1 button once. * The minutes digits will start blinking to indicate that it can be modified using FUNC2 button. * Take input from FUNC2 button, each signal will increase the minutes by 1. * If minutes digits > 59, the SW will reset the digits to 00. | | |

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| **Req ID** | Req\_P03DGW\_SRS\_AlarmMode\_003\_V01 | | |
| **Covers** | FUNC\_PO3\_DGW\_CYRS\_04\_V01 | **Test Scope** | ITD |
| **Description** | To adjust alarm time (hours) the software shall:   * Take input from FUNC1 button twice. * The hours digits will start blinking to indicate that it can be modified using FUNC2 button. * Take input from FUNC2 button, each signal will increase the hours by 1. * If hours digits > 12, the SW will reset the digits to 00. | | |

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| **Req ID** | Req\_P03DGW\_SRS\_AlarmMode\_004\_V01 | | |
| **Covers** | FUNC\_PO3\_DGW\_CYRS\_04\_V01 | **Test Scope** | ITD |
| **Description** | To adjust alarm (AM/PM) the software shall:   * Take input from FUNC1 button once. * The formats will start blinking to indicate that it can be modified using FUNC2 button. * Take input from FUNC2 button, each signal will toggle the format. | | |

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| **Req ID** | Req\_P03DGW\_SRS\_AlarmMode\_005\_V01 | | |
| **Covers** | FUNC\_PO3\_DGW\_CYRS\_04\_V01 | **Test Scope** | ITD |
| **Description** | To Set Alarm, the SW take input from FUNC1 button for a fourth time and return to displaying part in Alarm Mode. | | |

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| **Req ID** | Req\_P03DGW\_SRS\_AlarmMode\_006\_V01 | | |
| **Covers** | FUNC\_PO3\_DGW\_CYRS\_05\_V01 | **Test Scope** | ITD |
| **Description** | * In Alarm time mode, if current time = adjusted time, start BUZZER. * If FUNC2 button is pressed, stop BUZZER. | | |

## **2.4 Stopwatch Mode**

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| **Req ID** | Req\_P03DGW\_SRS\_StopWatchMode\_001\_V01 | | |
| **Covers** | FUNC\_PO3\_DGW\_CYRS\_06\_V01 | **Test Scope** | ITD |
| **Description** | The software shall enter Stopwatch mode: when current mode is Alarm mode and software take input from MODE button. | | |

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| **Req ID** | Req\_P03DGW\_SRS\_StopWatchMode\_002\_V01 | | |
| **Covers** | FUNC\_PO3\_DGW\_CYRS\_06\_V01 | **Test Scope** | ITD |
| **Description** | The software shall display 00:00:00. | | |

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| **Req ID** | Req\_P03DGW\_SRS\_StopWatchMode\_003\_V02 | | |
| **Covers** | FUNC\_PO3\_DGW\_CYRS\_07\_V02 | **Test Scope** | ITD |
| **Description** | The software shall start counting when software takes input from FUNC1 button in Stopwatch mode initial state or paused state. | | |

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| **Req ID** | Req\_P03DGW\_SRS\_StopWatchMode\_004\_V01 | | |
| **Covers** | FUNC\_PO3\_DGW\_CYRS\_08\_V01 | **Test Scope** | ITD |
| **Description** | The software shall stop counting when software takes input from FUNC1 button in Stopwatch mode running state. | | |

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| **Req ID** | Req\_P03DGW\_SRS\_StopWatchMode\_005\_V01 | | |
| **Covers** | FUNC\_PO3\_DGW\_CYRS\_09\_V01 | **Test Scope** | ITD |
| **Description** | The software shall reset counter to 00:00:00 when software takes input from FUNC2 button in Stopwatch mode. | | |