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| SOVY |
| Digital Calculator PO1\_DGC\_SRS |

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# Document Status

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| Name | SOVY |
| Version | 1.1 |
| Status | Proposed |
| Author | HMM |
| Date | 7/3/2021 |

# Document History

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| --- | --- | --- | --- |
| Version | Author | Date | Change |
| 1.0 | AAF | 5/3/2021 | Initial Creation. |
| 1.1 | HMM | 7/3/2021 | Added Requirements:   * Req\_1ST123\_SRS\_overall\_001-V1.0 * Req\_1ST123\_SRS\_overall\_002-V1.0 * Req\_1ST123\_SRS\_overall\_003-V1.0 * Req\_1ST123\_SRS\_overall\_004-V1.0 * Req\_1ST123\_SRS\_overall\_005-V1.0 * Req\_1ST123\_SRS\_overall\_006-V1.0 * Req\_1ST123\_SRS\_overall\_007-V1.0 * Req\_1ST123\_SRS\_overall\_008-V1.0 * Req\_1ST123\_SRS\_overall\_009-V1.0 * Req\_1ST123\_SRS\_overall\_010-V1.0 * Req\_1ST123\_SRS\_overall\_011-V1.0 * Req\_1ST123\_SRS\_overall\_012-V1.0 |

# Reference Documents

|  |  |  |  |
| --- | --- | --- | --- |
| Ref. No. | Doc. Name | Version | Status |
| 1 | PO1\_DGC\_CRS\_DigitalCalculator | 1.7 | Released |
| 2 | PO1\_DGC\_HSI\_DigitalCalculator | 1.3 | Released |

# Project Description

“Sovy” is a simple digital calculator that performs basic mathematical operations and displays the operation on an LCD-screen, with an ON/OFF button and keypad for user input.

# Software Context Diagram

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1. **Software Req****uirements**

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| Req\_ID: | Req\_1ST123\_SRS\_overall\_001-V1.0 | | Covers: | | Req\_1ST123\_CRS\_overall\_001-V1.1 |
| Author: | Habiba Mahmoud | | Date: | | 7/3/2021 |
| Description: | The System Handler shall wait for “**Button Pressed**” signal to be received. | | | | |
| Inputs: | “**No Pressed Buttons**” signal | Outputs: | | “**No signal**” signal | |
| Test Scope: | ITD/ VTD | |  | |  |

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| Req\_ID: | Req\_1ST123\_SRS\_overall\_002-V1.0 | | Covers: | | Req\_1ST123\_CRS\_overall\_002-V1.0 |
| Author: | Habiba Mahmoud | | Date: | | 7/3/2021 |
| Description: | When Keypad Handler receives “**Button [0-9] Signal**” it sends “**Data signal**” to System Manager. | | | | |
| Inputs: | **“Button [0-9] signal”** | Outputs: | | **“Data signal”** | |
| Test Scope: | ITD/ VTD | |  | |  |

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| Req\_ID: | Req\_1ST123\_SRS\_overall\_003-V1.0 | | Covers: | | Req\_1ST123\_CRS\_overall\_003-V1.1 |
| Author: | Habiba Mahmoud | | Date: | | 7/3/2021 |
| Description: | The System Handler shall do subtraction operation when “**Sub signal**” is received. | | | | |
| Inputs: | “**Sub signal**” | Outputs: | | “**Sub operation signal**” | |
| Test Scope: | ITD/ VTD | |  | |  |

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| Req\_ID: | Req\_1ST123\_SRS\_overall\_004-V1.0 | | Covers: | | Req\_1ST123\_CRS\_overall\_003-V1.1 |
| Author: | Habiba Mahmoud | | Date: | | 7/3/2021 |
| Description: | The System Handler shall do add operation when “**Addition signal**” is received. | | | | |
| Inputs: | “**Addition signal**” | Outputs: | | “**Add operation signal**” | |
| Test Scope: | ITD/ VTD | |  | |  |

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| Req\_ID: | Req\_1ST123\_SRS\_overall\_005-V1.0 | | Covers: | | Req\_1ST123\_CRS\_overall\_003-V1.1 |
| Author: | Habiba Mahmoud | | Date: | | 7/3/2021 |
| Description: | The System Handler shall do multiply operation when signal “**Multiply signal**” is received. | | | | |
| Inputs: | “**Multiply signal**” | Outputs: | | “**Multiply operation signal**” | |
| Test Scope: | ITD/ VTD | |  | |  |

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| Req\_ID: | Req\_1ST123\_SRS\_overall\_006-V1.0 | | Covers: | | Req\_1ST123\_CRS\_overall\_003-V1.1 |
| Author: | Habiba Mahmoud | | Date: | | 7/3/2021 |
| Description: | The System Manager shall do Division operation when “**Division signal**” is received from the Keypad Handler. | | | | |
| Inputs: | “**Division signal**” | Outputs: | | “**Division operation signal**” | |
| Test Scope: | ITD/ VTD | |  | |  |

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| Req\_ID: | Req\_1ST123\_SRS\_overall\_007-V1.0 | | Covers: | | Req\_1ST123\_CRS\_overall\_003-V1.1 |
| Author: | Habiba Mahmoud | | Date: | | 7/3/2021 |
| Description: | The Keypad Handler shall send “**Clear Command signal**” to System Manager when “**Clear signal pressed**” is received. | | | | |
| Inputs: | “**Clear signal pressed**” | Outputs: | | “**Clear signal**” | |
| Test Scope: | ITD/ VTD | |  | |  |

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| Req\_ID: | Req\_1ST123\_SRS\_overall\_008-V1.0 | | Covers: | | Req\_1ST123\_CRS\_overall\_003-V1.1 |
| Author: | Habiba Mahmoud | | Date: | | 7/3/2021 |
| Description: | when signal “**Equal signal**” is received, the system manager shall calculate the result and send “**Result signal**” to Lcd Handler | | | | |
| Inputs: | “**Equal signal**” | Outputs: | | “**Result signal**” | |
| Test Scope: | ITD/ VTD | |  | |  |

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| Req\_ID: | Req\_1ST123\_SRS\_overall\_009-V1.0 | | Covers: | | Req\_1ST123\_CRS\_overall\_006-V1.1 |
| Author: | Habiba Mahmoud | | Date: | | 7/3/2021 |
| Description: | The System Handler shall do another operation on the result when **“Multiply signal”, “Add signal”, “Sub signal”**, **“Division signal”** is received after a “**Result signal**” | | | | |
| Inputs: | **“Multiply signal”,**  **“Add signal”,**  **“Sub signal”**,  **“ Division signal”** | Outputs: | | “ **Multiply operation** ”  “ **Add operation**”,  “ **Sub operation**”,  “ **Division operation**” | |
| Test Scope: | ITD/ VTD | |  | |  |

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| Req\_ID: | Req\_1ST123\_SRS\_overall\_010-V1.0 | | Covers: | | Req\_1ST123\_CRS\_overall\_004-V1.2 |
| Author: | Habiba Mahmoud | | Date: | | 7/3/2021 |
| Description: | The System Handler shall support multi operations in one line.  E.g: 2+4\*2= 10 | | | | |
| Inputs: | **“Multiply signal”,**  **“Add signal”,**  **“Sub signal”**,  **“ Division signal”** | Outputs: | | “ **Multiply operation** ”  “ **Add operation** ”,  “ **Sub operation** ”,  “ **Division operation** ” | |
| Test Scope: | ITD/ VTD | |  | |  |

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| Req\_ID: | Req\_1ST123\_SRS\_overall\_011-V1.0 | | Covers: | | Req\_1ST123\_CRS\_overall\_008-V1.1 |
| Author: | Habiba Mahmoud | | Date: | | 7/3/2021 |
| Description: | The System Handler shall secure division by zero and send “**Math Error signal**” to the Lcd Handler | | | | |
| Inputs: | **“Division signal”** | Outputs: | | **“Math Error signal”** | |
| Test Scope: | ITD/ VTD | |  | |  |

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| Req\_ID: | Req\_1ST123\_SRS\_overall\_012 -V1.0 | | Covers: | | Req\_1ST123\_CRS\_overall\_010-V1.1 |
| Author: | Habiba Mahmoud | | Date: | | 7/3/2021 |
| Description: | The System Manager shall send “**Syntax Error signal**” to the Lcd Handler when two operation signals are sent consecutively. | | | | |
| Inputs: | **“Multiply signal”,**  **“Add signal”,**  **“Sub signal”**,  **“ Division signal”** | Outputs: | | **“Syntax Error signal”** | |
| Test Scope: | ITD/ VTD | |  | |  |