**ATOM THREADS PORTING STM8L DISCOVERY**

**Porting, design and test drivers GPIO (Button/Led) on Atomthread RTOS**

1. **Common requirements**

CMREQ01: Atomthread Kernel RTOS can run on board successfully. Can log some debug on terminal.

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| **Function/Requirements: Implementer: Implementation date:**  **Version:** | *CMREQ01 PhucLH15 23 Jul 2019 1.0.0* |  |  |
| **Test case** | **Desired results** | **Test results** | **Problems** |
| Init OS failed | Log *If this is printed, the OS initialization has failed* | Pass |  |
| Init threads LED | Log: “*led\_thread has been created”* | Pass |  |
| Init threads Button | Log *button\_thread has been created* | Pass |  |
| Init threads Display | Log: *display\_thread has been created* | Pass |  |

CMREQ02: Using <https://atomthreads.com/doxygen/kernel/files.html> to view source kernel source and ensure structure when porting.

CMREQ03: Using <https://github.com/kelvinlawson/atomthreads/tree/master/ports/stm8/stm8s-periphs>

To view source driver of peripherals and ensure structure when porting, design.

1. **Drivers API**

void gpio\_Init (…)

FREQ11: If initialization is successful without error, return TRUE.  
FREQ12: If have any error, report error to debug.

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| **Function/Requirements: Implementer: Implementation date:**  **Version:** | FREQ11 *DieuTQ 23 Jul 2019 1.0.0* |  |  |
| **Test case** | **Desired results** | **Test results** | **Problems** |
| Init OS failed | Error | Pass |  |

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| **Function/Requirements: Implementer: Implementation date:**  **Version:** | FREQ12 *DieuTQ 23 Jul 2019 1.0.0* |  |  |
| **Test case** | **Desired results** | **Test results** | **Problems** |
| Init OS failed | Error | Pass |  |

void gpio\_deinit (...)

FREQ21: Release pinout without error, return TRUE  
FREQ22: If have any error, report error to debug.

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| **Function/Requirements: Implementer: Implementation date:**  **Version:** | FREQ21 *DieuTQ 23 Jul 2019 1.0.0* |  |  |
| **Test case** | **Desired results** | **Test results** | **Problems** |
| Init OS failed | Error | Pass |  |

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| **Function/Requirements: Implementer: Implementation date:**  **Version:** | FREQ21 *DieuTQ 23 Jul 2019 1.0.0* |  |  |
| **Test case** | **Desired results** | **Test results** | **Problems** |
| Init OS failed | Error | Pass |  |

void gpio\_write (...)

FREQ31: Allow write 01 bit (0, 1) to selected pins.  
FREQ32: If have any error, report error to debug.

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| **Function/Requirements: Implementer: Implementation date:**  **Version:** | FREQ21 *DieuTQ 23 Jul 2019 1.0.0* |  |  |
| **Test case** | **Desired results** | **Test results** | **Problems** |
| Init OS failed | Error | Pass |  |

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| **Function/Requirements: Implementer: Implementation date:**  **Version:** | FREQ21 *DieuTQ 23 Jul 2019 1.0.0* |  |  |
| **Test case** | **Desired results** | **Test results** | **Problems** |
| Init OS failed | Error | Pass |  |

void gpio\_read (...)

FREQ41: Allow read 01 bit (0, 1) to selected pins.  
FREQ42: If have any error, report error to debug.

void button\_task (...)

FREQ51: receive event (interrupt) from user. And set 03 modes (LED blink 1s, 2s and 3s) and transfer action to “led\_task”.

FREQ52: If have any error, report error to debug

FREQ53: this task has a highest priority

Modes:

+ push 1st time: 1s

+ push 2nd time: 2s

+ push 3rd time: 3s

+ repeat push 4th time: back to 1s

void led\_task (...)

FREQ61: receive event from “button\_task”. And trigger LED blink on/off as selected mode.

FREQ62: If have any error, report error to debug

1. **Non-functional requirements**

**InitClock\_Source();**

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| **Function/Requirements: Implementer: Implementation date:**  **Version:** | FREQ21 *KhaNT3 23 Jul 2019 1.0.0* |  |  |
| **Test case** | **Desired results** | **Test results** | **Problems** |
| Init clock | Log: *“CLK\_SYSCLKSource\_HSI”* | Pass |  |