MOCK-PROJECT: RTOS

**Purpose**: 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.

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**
2. **void gpio\_Init (…)**

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

1. **void gpio\_deinit (...)**

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

1. **void gpio\_write (...)**

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

1. **void gpio\_read (...)**

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

1. **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

1. **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. **Testing**

* Each requirement ID (Ex: FREQ01, CMREQ01) need at least one test case to verify.

Example: To test FREQ41, you can create 1 IAR project to test this feature.

* If requirement which can’t verify test case, you should explain reason why.

1. **Design**

Create flow chart for each function. You can use any software to make it.