PA Pool Project – Requirements Document

EQUIPHILLO

System Requirements

[SR_0010]

- The BLE Keyboard project shall use the STM32F446RE development board for its implementation.

[SR_0020]

- The BLE Keyboard project shall use the X-NUCLEO-BNRG2A1 expansion board.

[SR_0025]

- The X-NUCLEO-BNRG2A1 expansion board shall have the BLUENRG-M2SP Bluetooth processor.

[SR_0030]

- The BLE Keyboard project shall integrate a Bluetooth stack that complies with the Bluetooth stack protocol for the chosen Bluetooth application processor that manages the BLE communication.

[SR_0040]

- The BLE Keyboard project shall Implement FreeRTOS as the Real-Time Operating System to manage multitasking, task scheduling, and efficient resource utilization.

[SR_0050]

- The BLE Keyboard project shall Implement peripheral libraries compatible with STM32 microcontrollers for simplified interaction with peripherals like GPIO, UART, and Bluetooth modules.

[SR_0060]

- The BLE Keyboard project shall handle all the necessary logic for the keypress and debouncing of the matrix keyboard keys.

[SR_0070]

- The BLE Keyboard project shall implement secure Bluetooth pairing mechanisms to establish and maintain secure connections between devices.

[SR_0080]

- The BLE Keyboard project shall implement data streaming capabilities for transmitting keyboard inputs wirelessly.

[SR_0090]

- The BLE Keyboard project shall integrate security features to ensure the confidentiality and integrity of Bluetooth communication.

[SR_0130]

- The BLE Keyboard project shall be constantly energized via the board mini B connector (CN1 ST-LINK USB).

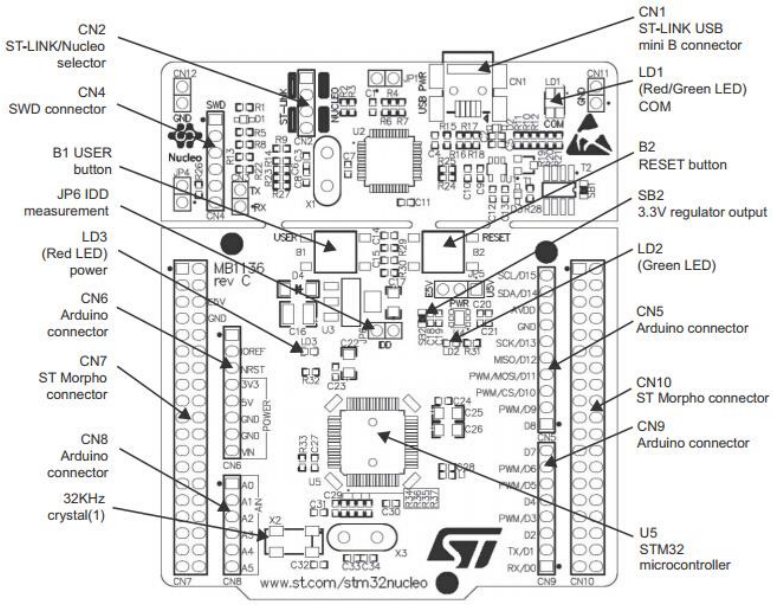

Image 1. STM32F446RE schematic.