The STM32F103CBT6 microcontroller in test is shipped on a Blue Pill board (figure? Section 2) with all the necessary components for its peripherals. However, the implementation in this thesis does not require some included blocks such as the RTC or the voltage regulator, thus some unused hardware pins and/or components. As a result, some parts are removed from the Blue Pill board for testing purpose; and later on, the board is redesigned following [figure 1].

[Figure: redesigned blue pill]