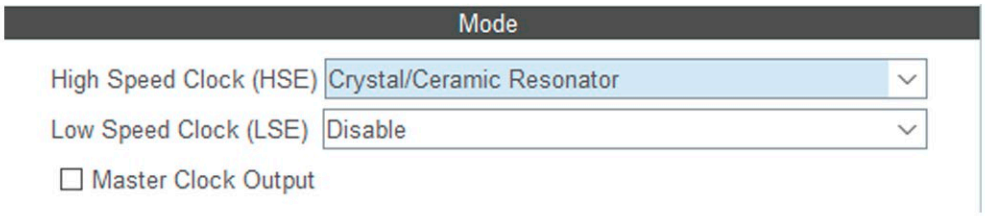
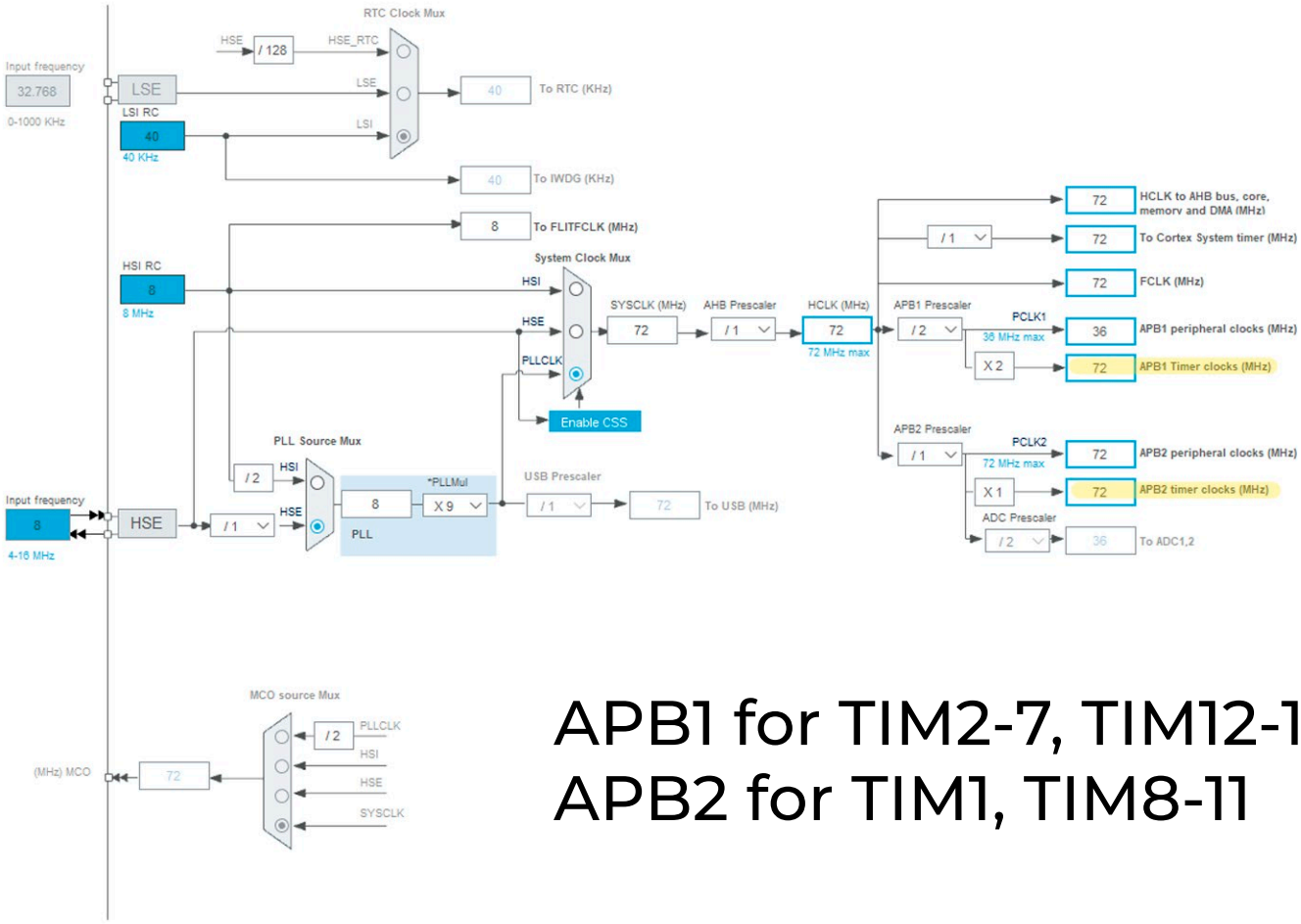
Installing of a WS2812b library

1. Start your CubeMX Project, set debug and set RCC to External resonator.



2. Set APBx clocks to 72 MHz



APB1 for TIM2-7, TIM12-14
APB2 for TIM1, TIM8-11

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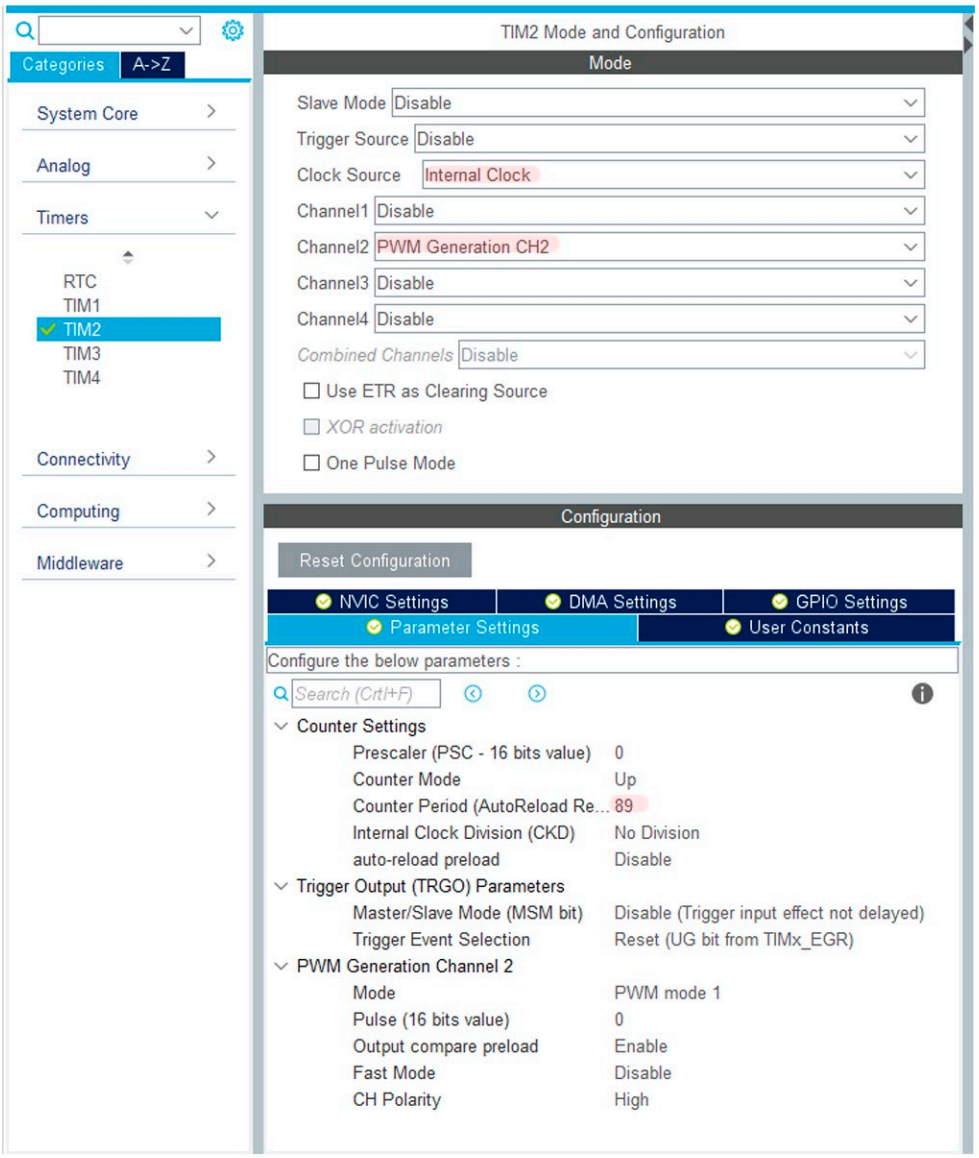
3. Configure preferred timer and channel.
4. Set Timer counter to 89.



Why 89? You have 800 kHz LED signal freq. You need to divide APB clock by signal fq. APB speed is 72 MHz, i.e $72*10^6$ Hz.

$$\frac{72*10^6\ \text{Hz}}{8*10^5\ \text{Hz}} = 90 \Rightarrow 89$$, coz' variable starts from 0

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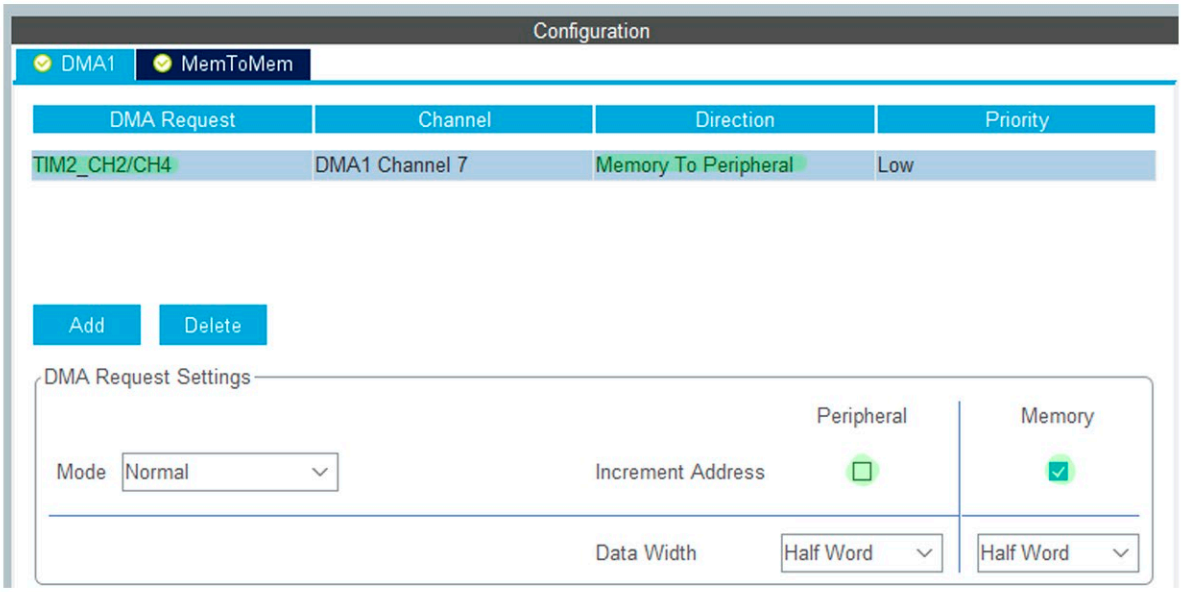
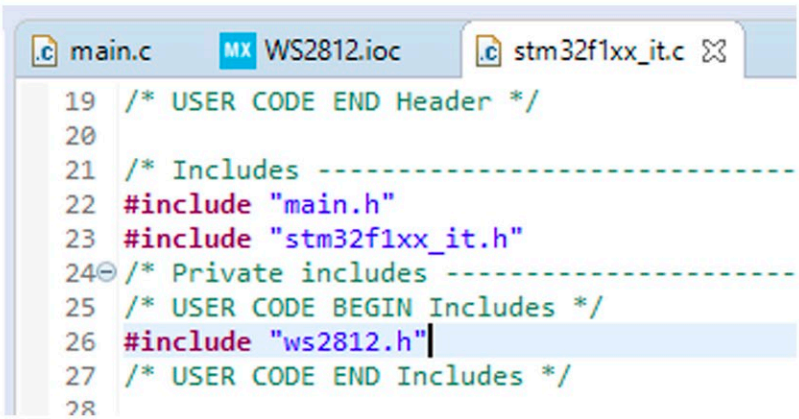
5. Set up DMA channel.

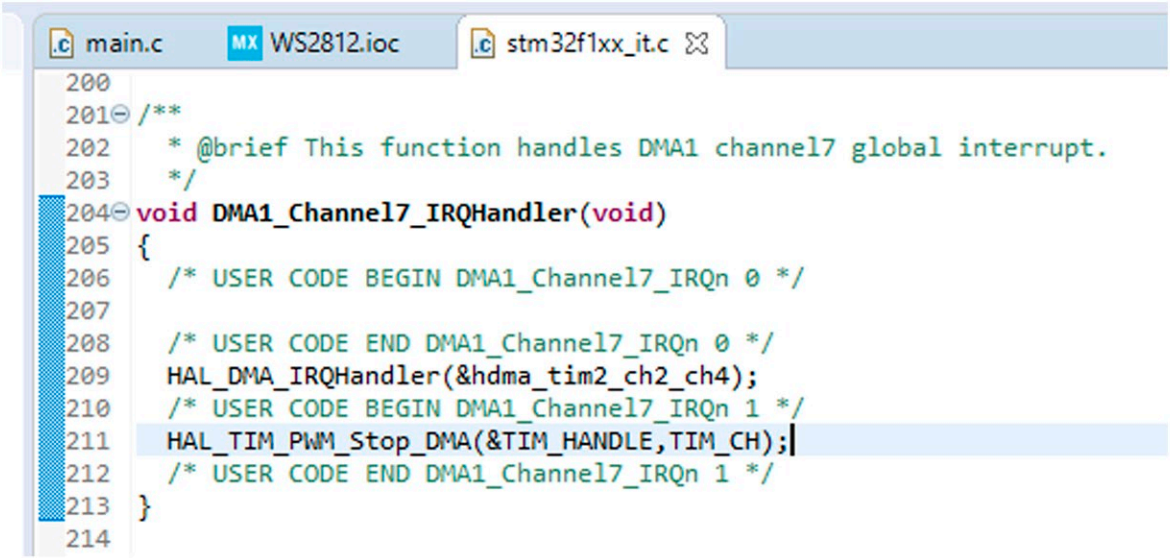


6. Now save .ioc file and generate code.
7. Add the library to your source destination.
8. Search for stm32xxxx_it.c file.
9. Include lib header file.



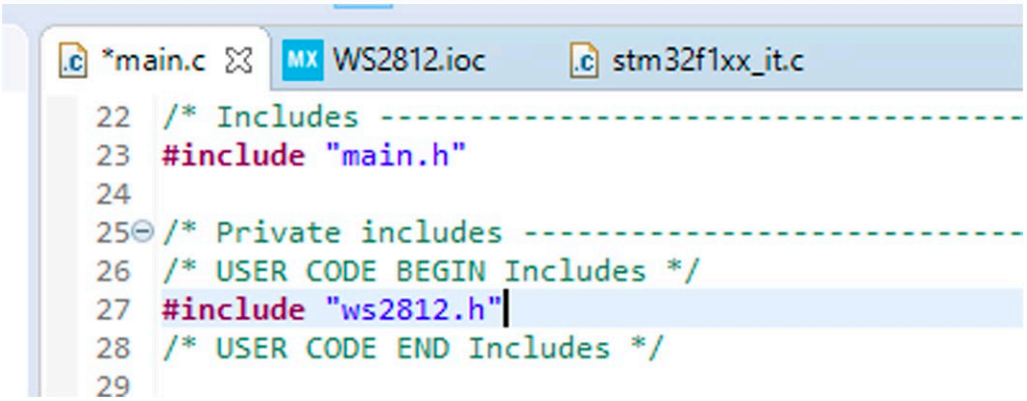
Installing of a WS2812b library

10. Search for your IRQ Handler and add:



HAL_TIM_PWM_Stop_DMA(&TIM_HANDLE,TIM_CH);

11. Add library to your main.c file.



12. Now it is ready to work!

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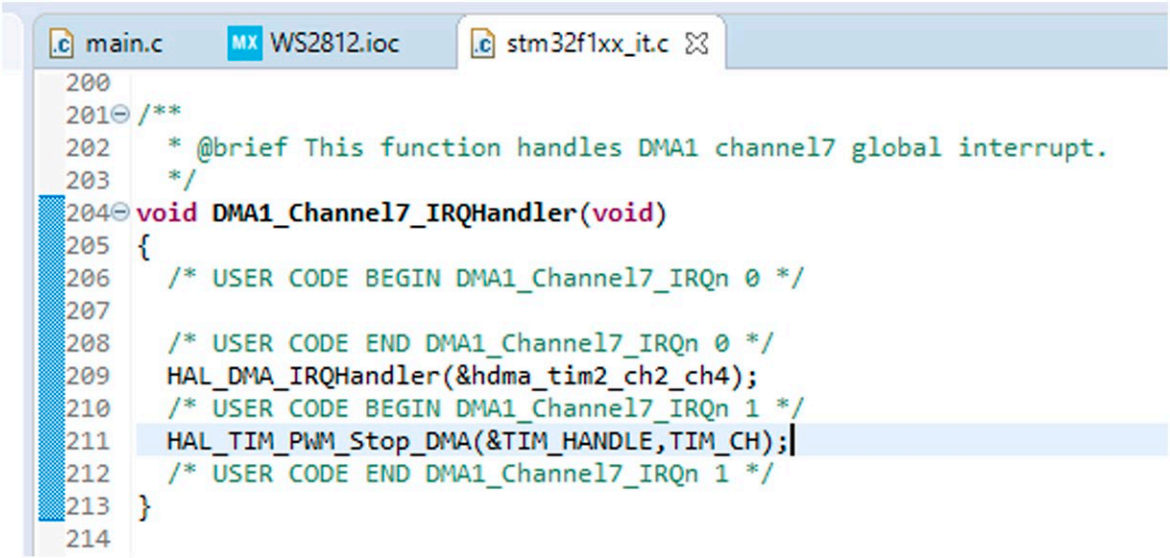

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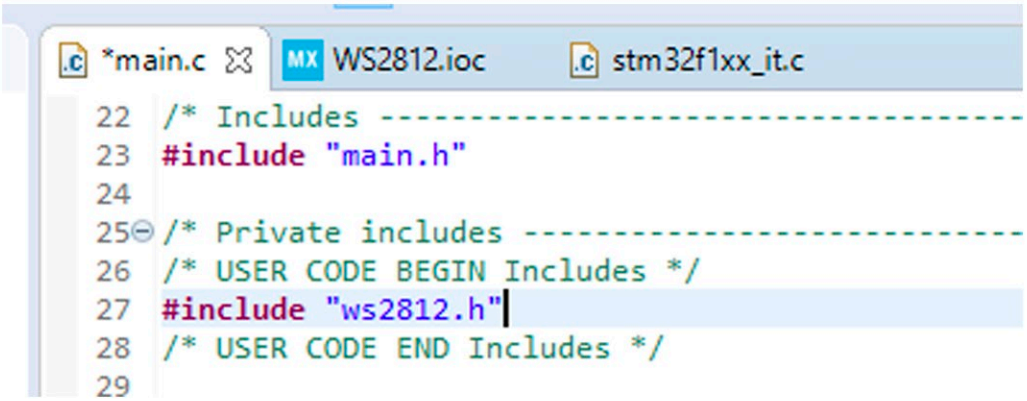

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