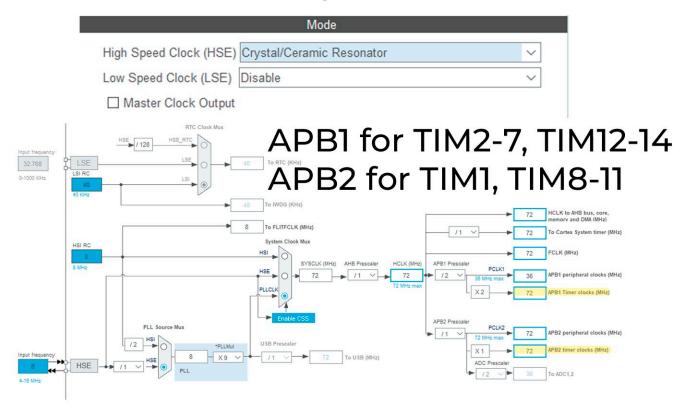
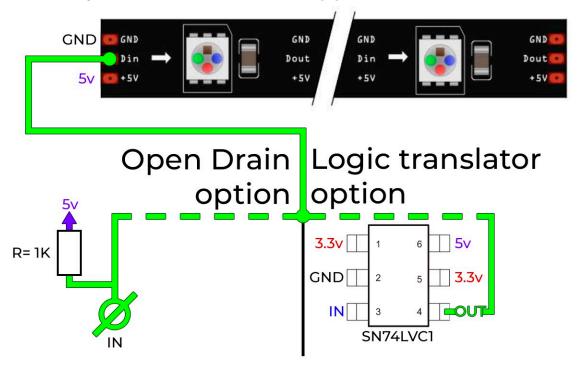
Start your CubeMX Project, enable debug and set APBx clocks to f >32 MHz



3. Choose your connection type



3. Choose timer and channel.

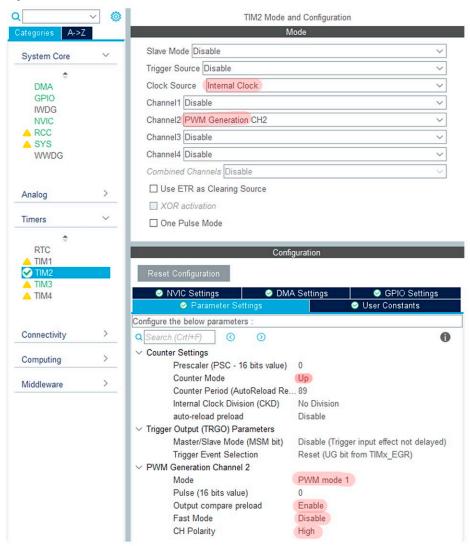
*be shure that you've chosen FT pin, if you use OD

Table 5. Medium Pins							1-density STM32F	103	XX p	oin definition	S (continued) Alternate functions ⁽⁴⁾	
LFBGA100	UFBG100	LQFP48/UFQFPN48	TFBGA64	LQFP64	LQFP100	VFQFPN36	Pin name	Type ⁽¹⁾	I / O Level ⁽²⁾	Main function ⁽³⁾ (after reset)	Default	Remap
B4	А3	45	В3	61	95	-	PB8	1/0	FT	PB8	TIM4_CH3 ⁽⁹⁾	I2C1_SCL / CANRX
A4	В3	46	А3	62	96	-	PB9	1/0	FT	PB9	TIM4_CH4 ⁽⁹⁾	I2C1_SDA/ CANTX
D4	СЗ	-	-	-	97	-	PE0	1/0	FT	PE0	TIM4_ETR	-
C4	A2	-	-	-	98	-	PE1	1/0	FT	PE1	-	-
E5	D3	47	D4	63	99	36	V _{SS_3}	S	-	V _{SS_3}	1-	-1
F5	C4	48	E4	64	100	1	V _{DD_3}	S	-	V _{DD_3}	==	-

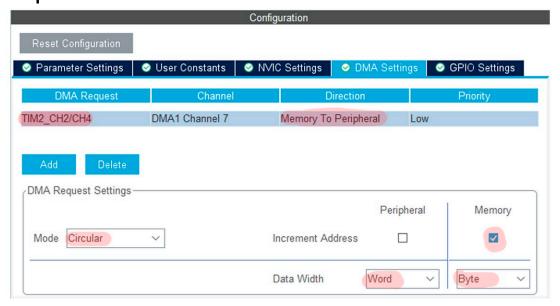
^{1.} I = input, O = output, S = supply.

^{2.} FT = 5 V tolerant.

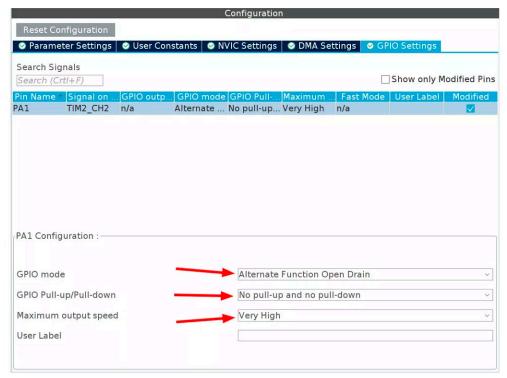
4. Set up your Timer.



5. Set up DMA.



6. Set up GPIO. Set maximum speed and OD mode if you use Open Drain.



7. Search for your DMA Handler and add it to the lib.

```
♣ ARGB.c × ♣ ARGB.h × ♣ main.c ×
    41
              /* Private variables ---
             TM_HandleTypeDef htim2;
              DMA_HandleTypeDef hdma_tim2_ch2_ch4;
aRGB.c × ARGB.h × amain.c ×
                        ///< Family: {WS2811S, WS2811F, WS2812, SK6812}
     #define WS2812
    -// WS2811S - RGB, 400kHz;
     // WS2811F - RGB, 800kHz;
     // WS2812 - GRB, 800kHz;
     1/ SK6812 - RGBW, 800kHz
     #define NUM_PIXELS 144 ///< Pixel quantity
     #define USE_GAMMA_CORRECTION 1 ///< Gamma-correction should fix red&gre
      #define TIM_NUM 2 ///< Timer number
                       TIM_CHANNEL_2 ///< Timer's PWM channel
      #define TIM CH
      #define DMA_HANDLE hdma_tim2_ch2_ch4 ///< DMA Channel
     -// DMA channel can be found in main.c / tim.c
```

8. Set your params, and now it's ready!