/\*\* @page TIM1\_7PWM\_Output Generate 7 PWM signals with 4 different duty cycles

@verbatim

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\* @file TIM1/TIM1\_7PWM\_Output/readme.txt

\* @author MCD Application Team

\* @version V2.0.0

\* @date 25-February-2011

\* @brief Description of the TIM1 7 PWM Output Example.

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@endverbatim

@par Example description

This example shows how to configure the TIM1 peripheral to generate 7 PWM signals

with 4 different duty cycles.

TIM1CLK is fixed to 2 MHz, the TIM1 Prescaler is equal to 0 so the TIM1 counter

clock used is 2 MHz. (By default, fTimer1= fMaster/8 )

TIM1 frequency is defined as follows:

TIM1 frequency = TIM1 counter clock / (TIM1\_Period + 1) = 488.28 Hz.

The TIM1 CCR1 register value is equal to 0x7FF, so the TIM1 Channel 1 and TIM1

Channel 1N generate a PWM signal with a frequency equal to 488.28Hz

and a duty cycle equal to:

TIM1 Channel1 duty cycle = TIM1\_CCR1 /( TIM1\_Period + 1) = 50%.

The TIM1 CCR2 register value is equal to 0x5FF, so the TIM1 Channel 2 and TIM1

Channel 2N generate a PWM signal with a frequency equal to 488.28 Hz

and a duty cycle equal to:

TIM1 Channel2 duty cycle = TIM1\_CCR2 / ( TIM1\_Period + 1)= 37.5%.

The TIM1 CCR3 register value is equal to 0x3FF, so the TIM1 Channel 3 and TIM1

Channel 3N generate a PWM signal with a frequency equal to 488.28 Hz

and a duty cycle equal to:

TIM1 Channel3 duty cycle = TIM1\_CCR3 / ( TIM1\_Period + 1) = 25%.

The TIM1 CCR4 register value is equal to 0x1FF, so the TIM1 Channel 4

generate a PWM signal with a frequency equal to 488.28 Hz

and a duty cycle equal to:

TIM1 Channel4 duty cycle = TIM1\_CCR4 / ( TIM1\_Period + 1) = 12.5%.

The TIM1 waveform can be displayed using an oscilloscope.

@par Directory contents

- TIM1\TIM1\_7PWM\_Output\main.c Main file containing the "main" function

- TIM1\TIM1\_7PWM\_Output\stm8s\_conf.h Library Configuration file

- TIM1\TIM1\_7PWM\_Output\stm8s\_it.c Interrupt routines source

- TIM1\TIM1\_7PWM\_Output\stm8s\_it.h Interrupt routines declaration

@par Hardware and Software environment

- This example runs on STM8S and STM8A High density, Medium density and Low

density devices.

- This example has been tested with STMicroelectronics STM8/128-EVAL evaluation

board and can be easily tailored to any other development board.

- Connect TIM1 pins to an oscilloscope as follows:

- TIM1\_CH1 pin (PC.1)

- TIM1\_CH1N pin (PH.7)

- TIM1\_CH2 pin (PC.2)

- TIM1\_CH2N pin (PH.6)

- TIM1\_CH3 pin (PC.3)

- TIM1\_CH3N pin (PH.5)

- TIM1\_CH4 pin (PC.4)

@par How to use it ?

In order to make the program work, you must do the following :

- Copy all source files from this example folder to the template folder under

Project\Template

- Open your preferred toolchain

- Rebuild all files and load your image into target memory

- Run the example

- Connect the TIM1 pins to an oscilloscope

@note

- High-Density STM8A devices are the STM8AF52xx STM8AF6269/8x/Ax,

STM8AF51xx, and STM8AF6169/7x/8x/9x/Ax microcontrollers where the Flash memory

density ranges between 32 to 128 Kbytes

- Medium-Density STM8A devices are the STM8AF622x/4x, STM8AF6266/68,

STM8AF612x/4x, and STM8AF6166/68 microcontrollers where the Flash memory

density ranges between 8 to 32 Kbytes

- High-Density STM8S devices are the STM8S207xx and STM8S208xx microcontrollers

where the Flash memory density ranges between 32 to 128 Kbytes.

- Medium-Density STM8S devices are the STM8S105x microcontrollers where the Flash

memory density ranges between 16 to 32-Kbytes.

- Low-Density STM8S devices are the STM8S103xx and STM8S903xx microcontrollers

where the Flash density is 8 Kbytes.

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